

DEPARTMENT OF HIGHWAYS STATE OF COLORADO

PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. I 70-3 (34) 220 STATE HIGHWAY NO. 91 STRAIGHT CREEK TUNNEL SUMMIT AND CLEAR CREEK COUNTIES

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	1	326

R.O.W. Acquired Under I 70-3 (14) 220

AS CONSTRUCTED,
REVISED DATE *October 26, 1973*

CONTRACTOR - STRAIGHT CREEK CONSTRUCTORS
DISTRICT ENGINEER - R. C. HOPPER
CONSTRUCTION ENGINEERS - P. R. McCOLLOUGH
J. B. COOK

SCALES OF ORIGINAL DRAWINGS

ON PLANS AS SHOWN
ON PROFILES AS SHOWN

GRADE LINE ON PROFILES IS SHOWN AS GRADE OF FINISHED ROADWAYS
GROSS LENGTH OF PROJECT = 8,941.0 FEET
1.693 MILES
LENGTH IN SUMMIT COUNTY = 2,821.0 FEET
0.534 MILES
LENGTH IN CLEAR CREEK COUNTY = 6,119.6 FEET
1.159 MILES

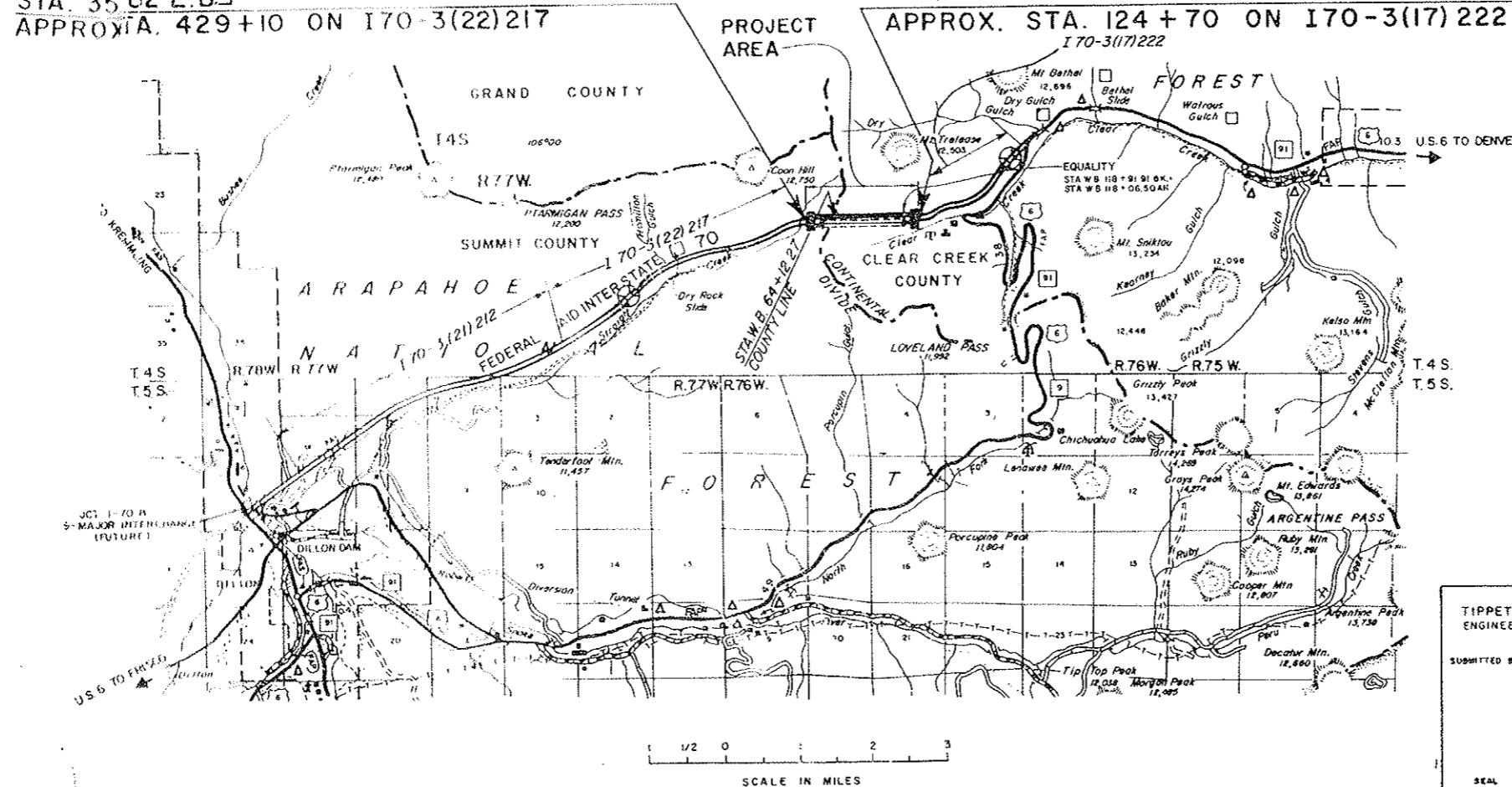
WESTBOUND
ROADWAY
STATIONING

ESTIMATED QUANTITIES:

Estimated Quantities for the various items of the Contract are listed in the Proposal Schedule of Volume I, Non-Technical Documents of the Contract Documents for Construction of the Straight Creek Tunnel.

STA. 35+91 W.B.] BEGIN I 70-3(34)220 OPPOSITE
STA. 35+82 E.B.]
APPROX. 429+10 ON I 70-3(22)217

STA. 124+46.46 W.B.] END I 70-3(34)220 OPPOSITE
STA. 124+75.19 E.B.]
APPROX. STA. 124+70 ON I 70-3(17)222



ALL SCALES SHOWN ARE
FOR ORIGINAL DRAWINGS.

INDEX OF DRAWINGS

(SEE SHEET 2)

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO

APPROVED: *[Signature]*
CHIEF ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

APPROVED: _____
DIVISION ENGINEER

DESIGNED BY
TIPPETTS-ABBETT-McCARTHY-STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

SUBMITTED BY: *Frank Lilien*
PARTNER

Edward J. Lovell
PARTNER
C.O.L.D. LIC. NO. 6984

Gilbert A. Bonforte
PROJECT ENGINEER
C.O.L.D. LIC. NO. 7050

DRAWING NO. G1-1

INDEX OF DRAWINGS

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	170-3(39)Z20	2	

PROJECT - GENERAL

1	G1-1	TITLE SHEET
2	G1-2	INDEX OF DRAWINGS SHEET 1
2AX	C1-2A	INDEX OF DRAWINGS SHEET 2
3	G1-3	INDEX OF DRAWINGS SHEET 3 - ABBREVIATIONS
3AX	G1-3A	INDEX OF DRAWINGS SHEET 4
3AX-3aCX		SUMMARY OF FINAL QUANTITIES
3AX-3bCX		SUMMARY OF FINAL QUANTITIES
3AX-3cBX		SUMMARY OF FINAL QUANTITIES
3AX-3dCX		SUMMARY OF FINAL QUANTITIES
3AX-3eUX		FINAL SUMMARY OF CHANGE ORDERS
3f-3h		RIGHT OF WAY SHEETS

CIVIL - GENERAL

4	G2-1	TUNNELS AND VENTILATION BUILDINGS - ALIGNMENT AND PROFILES
5	G2-2	ALIGNMENT AND PROFILE - STA. 410+00 BK. TO STA. 26+50 AH.
6	G2-3	ALIGNMENT AND PROFILE - STA. 26+50 TO STA. 43+00
7	G2-4	ALIGNMENT AND PROFILE - STA. 43+00 TO STA. 59+50
8	G2-5	ALIGNMENT AND PROFILE - STA. 59+50 TO STA. 76+00
9	G2-6	ALIGNMENT AND PROFILE - STA. 76+00 TO STA. 92+50
10	G2-7	ALIGNMENT AND PROFILE - STA. 92+50 TO STA. 109+00
11	G2-8	ALIGNMENT AND PROFILE - STA. 109+00 TO EQUALITY E.B. STA. 118+91.91 BK. - STA. 109+00 TO EQUALITY E.B. STA. 118+88.60 BK.
12	G2-9	ALIGNMENT AND PROFILE - EQUALITY STA. 118+06.50 AH. TO STA. 134+00
13	G2-10	NORTH TUNNEL - GENERAL ARRANGEMENT - WEST VENTILATION BUILDING TO STA. W.M. 48+70.58
14	G2-11	NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 48+70.58 TO STA. W.B. 61+77.08
15	G2-12	NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 61+77.08 TO STA. W.B. 74+83.58
16	G2-13	NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 74+83.58 TO STA. W.B. 87+90.08
17	G2-14	NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 87+90.08 TO STA. W.B. 100+96.58
18	G2-15	NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 100+96.58 TO STA. W.B. 114+03.08
19	G2-16	NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 114+03.08 TO EAST VENTILATION BUILDING
20	G2-17	SOUTH TUNNEL - GENERAL ARRANGEMENT - WEST VENTILATION BUILDING TO STA. E.B. 40+82.43
21	G2-18	SOUTH TUNNEL - GENERAL ARRANGEMENT - STA. E.B. 40+82.43 TO EAST VENTILATION BUILDING
22	G3-1	WEST PORTAL AREA - GENERAL PLAN AND SECTION
22AX	G3-1A	WEST PORTAL AREA - WATER STORAGE TANK LOCATION
22B	G3-1B	WEST PORTAL AREA - EXCAVATION, WATER STORAGE
22CX	G3-1C	WEST PORTAL AREA - FOOTING, WATER STORAGE TANK
22DX	G3-1D	WEST PORTAL AREA - FLOOR, WATER STORAGE TANK
22EX	G3-1E	WEST PORTAL AREA - WALLS, WATER STORAGE TANK
22FX	G3-1F	WEST PORTAL AREA - ROOF, WATER TANK
22GX	G3-1G	WEST PORTAL AREA - WATER STORAGE TANK - TOWER
22HX	G3-1H	WEST PORTAL AREA - WATER STORAGE TANK, HANDRAILS
22IX	G3-1I	WEST PORTAL AREA - WATER TANK H.M. FRAME & DOORS
22JX	G3-1J	WEST PORTAL AREA - WATER TANK H.M. FRAME & DOORS
22KX	G3-1K	WEST PORTAL AREA - BILCO SCUTTLES - WATER STORAGE TANK
23	G3-2	WEST PORTAL AREA - SECTIONS - B-DETAILS - VOID
24	G3-3	WEST PORTAL AREA - WALL HOUSE - WATER STORAGE TANK PIPING - VOID
25	G3-4	WEST PORTAL AREA - WATER STORAGE TANK - VOID
25A	G3-4A	EAST PORTAL AREA - GASOLINE PUMP HOUSE
26	G3-5	EAST PORTAL AREA - BUTTRESS BERN - PLAN SECTIONS & DETAILS
27	G4-1	HAUL ROAD TO DRY GULCH BORROW AREA
27AX	G4-1A	DRY GULCH PIT
27BX	G4-1B	DRY GULCH PIT
28	G4-2	EAST PORTAL AREA - SUBSURFACE DRAINAGE AND TREATMENT OF LANDSLIDE SCARPS - PLANS
29	G4-3	EAST PORTAL AREA - SUBSURFACE DRAINAGE - SECTIONS & DETAILS
29AX	G4-3A	EAST PORTAL AREA - 42" C.M.P. COLLECTOR PIPE - E.P.
30	G4-4	EAST PORTAL AREA - ROADWAY GRADING AND DRAINAGE PLAN AT VENTILATION BUILDING
30AX	G4-4A	EAST PORTAL AREA - AIR CURTAIN DESTRUCTOR
30BX	G4-4B	EAST PORTAL AREA - AIR CURTAIN DESTRUCTOR ANGLE IRON FRAME AND DOOR FRAME ASSY.

CIVIL - WEST PORTAL SECTION

31	C1-1	NORTH TRANSITION SEGMENT - PLANS AND LONGITUDINAL SECTION
32	C1-2	NORTH TRANSITION SEGMENT - CROSS SECTIONS - VOID
32AX	C1-2A	NORTH TRANSITION - WEST PORTAL
33	C1-3	NORTH TRANSITION SEGMENT - MISCELLANEOUS DETAILS - VOID
33AX	C1-3A	CEILING DUCT DIVIDER & STRINGER ASSY. IN N.W. TRANSITION
33BX	C1-3B	PRESTRESSED DUCT DIVIDER WALL NORTHWEST TRANSITION
33CX	C1-3C	NORTHWEST TRANSITION CEILING DTLS.
34	C1-4	SOUTH TRANSITION SEGMENT - PLANS & LONGITUDINAL SECTION
35	C1-5	SOUTH TRANSITION SEGMENT - CROSS SECTION
36	C1-6	NORTH CONDUIT SEGMENTS - TYPICAL CROSS SECTION
37	C1-7	SOUTH CONDUIT SEGMENTS - TYPICAL CROSS SECTION
38	C1-8	(SEE REINFORCEMENT-PLACEMENT (RP) SET) - VOID

CIVIL - TUNNEL

39	G2-1	TYPICAL INTERIOR DIMENSIONS - VOID
39AX	C2-1A	TYPICAL SECTION/TUNNEL INTERIOR
39BX	C2-1B	TYPICAL ROADWAY SECTION
40	C2-2	TUNNEL STEEL SUPPORTS - ARRANGEMENT ALONG PROFILE
41	C2-3	TUNNEL SUPPORTS - ROCK BOLTING - TYPICAL CROSS SECTION - VOID
42	C2-4	TUNNEL STEEL SUPPORTS - ROCK BORE SECTION - TYPICAL CROSS SECTIONS
42AX	C2-4A	EXCAVATION AND SUPPORT - TYPE IIIa
42BX	C2-4B	EXCAVATION AND SUPPORT - TYPE IIIb
42CX	C2-4C	EXCAVATION AND SUPPORT - TYPE IIIb MOD.
42DX	C2-4D	EXCAVATION AND PRIMARY SUPPORT
42EX	C2-4E	EXCAVATION AND SUPPORT - 9 DRIFTS
42FX	C2-4F	EXCAVATION AND SUPPORT - 13 DRIFTS
42GX	C2-4G	EXCAVATION AND SUPPORT - 5 DRIFTS
42HX	C2-4H	EXCAVATION AND SUPPORT - TYPE IIIa
42IX	C2-4I	EXCAVATION AND SUPPORT - TYPE IIIa OR IIIb
42JX	C2-4J	EXCAVATION AND SUPPORT - TYPE IIIb MOD. SPEC.
42KX	C2-4K	TUNNEL STEEL SUPPORTS - PLAN AT CROSS PASSAGWAYS
43	C2-5	TUNNEL STEEL SUPPORTS - ROCK BORE SECTION - TYPICAL DETAILS
44	C2-6	TUNNEL STEEL SUPPORTS - PLAN AT CROSS PASSAGWAYS
44AX	C2-6A	SUPPORT AT WEST CROSS PASSAGWAY
44BX	C2-6B	SUPPORT AT CENTER CROSS PASSAGWAY
44CX	C2-6C	SUPPORT AT EAST CROSS PASSAGWAY
45	C2-7	TUNNEL STEEL SUPPORTS - DETAILS AT CROSS PASSAGWAYS AND PULPITS
45AX	C2-7A	SUPPORT AT PULPIT SOUTH WALL
45BX	C2-7B	SUPPORT AT PULPIT NORTH WALL
45CX	C2-7C	PULPIT NO. 7
46	G2-8	TUNNEL STEEL SUPPORTS - DETAILS OF TRANSITION SETS - VOID
47	C2-9	STEEL SUPPORTS - CONDUIT SEGMENTS - WEST & EAST PORTALS
48	C2-10	TUNNEL CROSS SECTION - TUNNEL SECTION TYPE I - VOID
49	C2-11	TUNNEL CROSS SECTION - TUNNEL SECTION TYPES IIA, IIB, & IIIB
50	C2-12	TUNNEL CROSS SECTION - TUNNEL SECTION TYPE IIIB
50AX	C2-12A	LOAD CELL INSTALLATION
51	G2-13	TUNNEL CROSS SECTION - TUNNEL SECTION TYPE IV - VOID
51AX	C2-13A	CIVIL TUNNEL TYPICAL CROSS SECTION - TUNNEL SECTION TYPE IIB MOD.
51BX	C2-13B	CIVIL TUNNEL TYPICAL CROSS SECTION - TUNNEL SECTION IIB
51CX	C2-13C	CIVIL TUNNEL TYPICAL CROSS SECTION - TUNNEL SECTION IIB
51DX	C2-13D	DETAILS SECTION TYPE IIB
51EX	C2-13E	CIVIL TUNNEL TYPICAL CROSS SECTION - TUNNEL SECTION IVa
51FX	C2-13F	CIVIL TUNNEL TYPICAL CROSS SECTION - TUNNEL SECTION TYPE IVa
51GX	C2-13G	CIVIL TUNNEL TYPICAL CROSS SECTION - TUNNEL SECTION TYPE IIIa
51HX	C2-13H	DETAILS SECTION IIIa
51IX	C2-13I	ROCK BOLTS - 18x42.7 CHANNEL INSTALLATION SECTION TYPE IIIa
51JX	C2-13J	INVERT - TYPE IIIa
51KX	C2-13K	CIVIL TUNNEL TYPICAL CROSS SECTION - TUNNEL SECTION TYPE IIIa AND IIIb
52	G2-14	TUNNEL CROSS SECTION - TUNNEL SECTION TYPE IVb - VOID
53	G2-15	TUNNEL AIR DUCT SYSTEM - TYPICAL TUNNEL SEGMENT - CEILING PLAN AND DETAILS - VOID
53AX	C2-15A	CEILING PANEL SCHEDULE
53BX	C2-15B	CEILING PANEL SCHEDULE
53CX	C2-15C	STRUCTURAL SLAB - N127, N128, N129, AND N130
54	G2-16	TUNNEL AIR DUCT SYSTEM - TYPICAL TUNNEL SEGMENT - CEILING SECTIONS AND DETAILS - VOID
54AX	C2-16A	PRECAST CEILING LONGITUDINAL JOINTS
54BX	C2-16B	PANEL JOINT DETAILS - TUNNEL CEILING
54CX	C2-16C	LAYOUT FOR ATTACHING METAL PANELS TO PRECAST TUNNEL CEILING PANELS
54DX	C2-16D	WATER PROOFING AND SEALANT DETAILS FOR TUNNEL CEILING
55	G2-17	TUNNEL AIR DUCT SYSTEM - TYPICAL TUNNEL SEGMENT - DUCT DIVIDER WALL - VOID
55AX	C2-17A	PRESTRESSED DUCT DIVIDER WALL
55BX	C2-17B	CEILING DUCT DIVIDER WALL AND STRINGER ASSY.
55CX	C2-17C	CEILING INSERT DETAIL
56	G2-18	TUNNEL AIR DUCT SYSTEM - NORTH TRANSITION SEGMENT - WEST PORTAL SECTION - DUCT DIVIDER WALL - VOID
57	G2-19	TUNNEL AIR DUCT SYSTEM - NORTH TRANSITION SEGMENT - EAST PORTAL SECTION - DUCT DIVIDER WALL - VOID
58	G2-20	TUNNEL AIR DUCT SYSTEM - CENTER BULKHEAD - VOID
58AX	C2-20A	CEILING BULKHEAD SEG. 84 - CENTER BULKHEAD
58BX	C2-20B	TUNNEL AIR DUCT SYSTEM - TYPICAL TUNNEL SEGMENT - FRESH AIR FLUES
59	C2-21	FRESH AIR FLUES
59AX	C2-21A	FLUE B.O., PATTERN
59BX	C2-21B	FLUE MODIFICATION FOR M.H. DIST. STAT.
60	C2-22	CROSS PASSAGWAYS - PLAN
61	C2-23	CROSS PASSAGWAYS - PROFILES
62	C2-24	CROSS PASSAGWAYS - SECTIONS AND DETAILS
62AX	C2-24A	CENTER CROSS PASSAGWAY
62BX	C2-24B	CENTER CROSS PASSAGWAY
62CX	C2-24C	CENTER CROSS PASSAGWAY
62DX	C2-24D	CENTER CROSS PASSAGWAY EXCAVATION
62EX	C2-24E	TRENCH EXCAVATION THRU CENTER CROSS PASSAGWAY
62FX	C2-24F	EAST CROSS PASSAGWAY
62GX	C2-24G	EAST CROSS PASSAGWAY
62HX	C2-24H	CROSS PASSAGWAY DETAILS
62IX	C2-24I	CROSS PASSAGWAY DOOR DETAILS
63	C2-25	TRAFFIC CONTROL PULPITS - GENERAL ARRANGEMENT
64	C2-26	TRAFFIC CONTROL PULPITS - DETAILS
65	C2-27	MISCELLANEOUS CONCRETE DETAILS
65AX	C2-27A	PLAN & ELEVATION OF TYPICAL CURBS
65BX	C2-27B	CURB DETAILS
65CX	C2-27C	CAST CURB PANELS
65DX	C2-27D	PLAN OF PRECAST CURBS THRU WEST VENT. BUILDING
65EX	C2-27E	PLAN OF PRECAST CURBS THRU WEST VENT. BUILDING
65FX	F2-27F	DETAILS OF PRECAST CURBS THRU WEST VENT. BUILDING
65GX	C2-27G	PLAN OF PRECAST CURBS THRU EAST VENT. BUILDING
65HX	C2-27H	PLAN OF PRECAST CURBS THRU EAST VENT. BUILDING
65IX	C2-27I	DETAILS OF PRECAST CURBS THRU EAST VENT. BUILDING
66	G2-28	WALL SURFACING - TYPICAL TUNNEL SEGMENT - TYPICAL PANEL AND TILING DETAILS - VOID

67	G2-29	WALL SURFACING - DETAILS FOR OPTIONAL HAND LAID TILING - VOID
67AX	C2-28BA	TYPICAL TILE WALL PANELS
67BX	C2-28BB	WALL TILE DETAILS
68	C2-29	WALL SURFACING - DETAILS AT PULL BOX OPENING
69	C2-30	WALL SURFACING - DETAILS AT MISCELLANEOUS OPENINGS - SHEET 1
70	C2-31	WALL SURFACING - DETAILS AT MISCELLANEOUS OPENINGS - SHEET 2
71	C2-32	WALL SURFACING - DETAILS AT CROSS PASSAGWAYS
71AX	C2-32A	PORCELAIN EMBEL MAURCH PANELS
72	G2-33	CEILING SURFACING PLAN - SECTIONS AND DETAILS - VOID
72AX	C2-33A	PLAN AT MESSAGE BOARD LOCATION
73	G2-34	(SEE REINFORCEMENT-PLACEMENT (RP) SET) - VOID
74	G2-35	(SEE REINFORCEMENT-PLACEMENT (RP) SET) - VOID
75	C2-36	MISCELLANEOUS METAL - RAILINGS, LADDERS & DOORS
76	C2-37	MISCELLANEOUS METAL - WALKWAY CAR RAIL
77	G2-38	SEEPAGE DRAIN SYSTEM - PROFILE - VOID
77AX	C2-38A	ROADWAY PIPING IN WEST BUILDING NORTH ROADWAY
77BX	C2-38B	PLAN - TUNNEL PIPING, TRANS. TO N17
77CX	C2-38C	PLAN - TUNNEL PIPING, N18 TO N35
77DX	C2-38D	PLAN - TUNNEL PIPING, N36 TO N53
77EX	C2-38E	PLAN - TUNNEL PIPING, N54 TO N71
77FX	C2-38F	PLAN - TUNNEL PIPING, N72 TO N80
77GX	C2-38G	PLAN - TUNNEL PIPING, N81 TO N85
77HX	C2-38H	PLAN - TUNNEL PIPING, N86 TO N98
77IX	C2-38I	PLAN - TUNNEL PIPING, N99 TO N116
77JX	C2-38J	PLAN - TUNNEL PIPING, N117 TO N134
77KX	C2-38K	PLAN - TUNNEL PIPING, N135 TO N152
77LX	C2-38L	PLAN - TUNNEL PIPING, N153 TO N.E. TRANS. SEGMENT
77MX	C2-38M	PLAN - TUNNEL PIPING NORTH ROADWAY AND EAST VERT. BUILDING ROADWAY
77NX	C2-38N	SECTIONS THRU NORTH ROADWAY - EAST VENT. BUILDING
78	G2-39	SEEPAGE DRAIN SYSTEM - DETAILS - VOID
78AX	C2-39A	SEEPAGE DRAIN SYSTEM
78BX	C2-39B	SEEPAGE DRAIN SYSTEM
78CX	C2-39C	DRAINAGE AND WATER SUPPLY SYSTEM
78DX	C2-39D	DRAINAGE AND WATER SUPPLY SYSTEM
78EX	C2-39E	TUNNEL PIPING SECTIONS
78FX	C2-39F	DRAINAGE AND WATER SUPPLY SYSTEMS
78GX	C2-39G	EQUALIZER SYSTEM
79	G2-40	WASTE WATER DRAIN SYSTEM - PROFILE
80	G2-41	WASTE WATER DRAIN SYSTEM - DETAILS - VOID
80AX	C2-41A	CATCH BASIN, FRAME AND GRATE
80BX	C2-41B	CATCH BASIN, FRAME AND GRATE
80CX	C2-41C	PIPE DETAILS - PLAN AT MANHOLES (8" SEEP)
80DX	C2-41D	PIPE DETAILS - ELEVATIONS AT MANHOLES (8" SEEP)
80EX	C2-41E	PIPE DETAILS - PLAN AT MANHOLES (42" SEEP)
80FX	C2-41F	PIPE DETAILS - ELEVATIONS AT MANHOLES (42" SEEP)
80GX	C2-41G	WATER AND SEWER MANHOLE - TUNNEL SECT'S
80HX	C2-41H	WATER SUPPLY MANHOLE - BASE SECTION
80IX	C2-41I	SEWER MANHOLE - BASE SECTION
80JX	C2-41J	SEWER MANHOLE - BASE SECTION
80KX	C2-41K	SEWER MANHOLE - BASE SECTION
80LX	C2-41L	EQUALIZER MANHOLE
80MX	C2-41M	FRESH WATER MANHOLE FOR 12" Ø SEEP AREA
80NX	C2-41N	SEWER MANHOLE FOR 12" Ø SEEP AREA
80OX	C2-41O	FRESH WATER MANHOLE FOR 12" Ø SEEP AREA
80PX	C2-41P	SEWER MANHOLE FOR 12" Ø SEEP AREA
80QX	C2-41Q	SPECIAL MANHOLE AT STATION 123+29.8
80RX	C2-41R	SPECIAL MANHOLE AT STATION 124+08.2
80SX	C2-41S	MANHOLES ON CONCRETE INVERT
81	C2-42	DRAINAGE SYSTEM - SOUTH TUNNEL - WEST PORTAL SECTION
82	C2-43	DRAINAGE SYSTEM - SOUTH TUNNEL - EAST PORTAL SECTION
83	C2-44	DRAINAGE SYSTEM - SOUTH TUNNEL - PORTAL SECTIONS - DETAILS
84	C2-45	WATER SUPPLY SYSTEM - PROFILE
85	G2-46	WATER SUPPLY SYSTEM - DETAILS - VOID
85AX	C2-46A	MANHOLE AND CATCH BASIN DETAILS
85BX	C2-46B	FIRE HYDRANT CONNECTION
85CX	C2-46C	FIRE HYDRANT BLOCK OUT

CIVIL - EAST PORTAL SECTION

86	C3-1	NORTH CONDUIT SEGMENTS - TYPICAL TUNNEL CONDUIT SECTION
86AX	C3-1A	NORTH CONDUIT SEGMENTS - EAST PORTAL
87	C3-2	NORTH CONDUIT SEGMENTS - TYPICAL CUT - AND - COVER CONDUIT SECTION
88	C3-3	SOUTH CONDUIT SEGMENTS - TYPICAL TUNNELED AND CUT AND COVER CONDUIT SECTIONS
88AX	C3-3A	EXCAVATION AND SUPPORT SOUTH CONDUIT SEGMENT
88BX	C3-3B	PILOT TUNNEL CONCRETE LINING
89	C3-4	NORTH AND SOUTH CONDUIT SEGMENTS - MISCELLANEOUS DETAILS
90	C3-5	NORTH TRANSITION SEGMENT - PLANS AND LONGITUDINAL SECTION
91	C3-6	NORTH TRANSITION SEGMENT - CROSS SECTION - VOID
91AX	C3-6A	EAST PORTAL - NORTH TRANSITION SEGMENT
92	C3-7	NORTH TRANSITION SEGMENT - MISCELLANEOUS DETAILS - VOID
92AX	C3-7A	CEILING DETAILS AT N.E. TRANSITION
92BX	C3-7B	DUCT DIVIDER WALL THRU N.E. TRANSITION
92CX	C3-7C	N.E. TRANSITION P.E. CEILING DETAILS
93	C3-8	SOUTH TRANSITION SEGMENT - PLANS AND LONGITUDINAL SECTION
94	C3-9	SOUTH TRANSITION SEGMENT - CROSS SECTION
95	G3-10	(SEE REINFORCEMENT-PLACEMENT (RP) SET) - VOID

Schematic of Pressure Admitting Station
AS CONSTRUCTED
REVISED DATE OCT. 26, 1973

STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
PROJECT-GENERAL
INDEX OF DRAWINGS
SHEET 1
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS

INDEX OF DRAWINGS

See cont. below

REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(4) 220	2 AX	326

VOID - SEE Sheet No. 2

PROJECT - GENERAL	
1	01-1 TITLE SHEET
2	01-2 INDEX OF DRAWINGS - SHEET 1
3	01-3 INDEX OF DRAWINGS - SHEET 2 - ABBREVIATIONS
4	01-4 SUMMARY OF APPROXIMATE QUANTITIES
5	01-5 RIGHT OF WAY SHEETS
CIVIL - GENERAL	
6	02-1 TUNNELS AND VENTILATION BUILDINGS - ALIGNMENT AND PROFILES
7	02-2 ALIGNMENT AND PROFILE - STA. 101+00 TO STA. 25+00
8	02-3 ALIGNMENT AND PROFILE - STA. 26+00 TO STA. 42+00
9	02-4 ALIGNMENT AND PROFILE - STA. 43+00 TO STA. 59+50
10	02-5 ALIGNMENT AND PROFILE - STA. 59+50 TO STA. 76+00
11	02-6 ALIGNMENT AND PROFILE - STA. 76+00 TO STA. 92+50
12	02-7 ALIGNMENT AND PROFILE - STA. 92+50 TO STA. 109+00
13	02-8 ALIGNMENT AND PROFILE - STA. 109+00 TO EQUALITY W.B. STA. 110+00 TO STA. 118+00 TO EQUALITY E.B. STA. 118+00 TO STA. 131+00
14	02-9 ALIGNMENT AND PROFILE - EQUALITY STA. 118+00 TO STA. 131+00
15	02-10 NORTH TUNNEL - GENERAL ARRANGEMENT - WEST VENTILATION BUILDING TO STA. W.B. 42+00 TO 53
16	02-11 NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 43+00 TO STA. W.B. 61+00
17	02-12 NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 61+00 TO STA. W.B. 71+00
18	02-13 NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 71+00 TO STA. W.B. 87+00
19	02-14 NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 87+00 TO STA. W.B. 100+00
20	02-15 NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 100+00 TO STA. W.B. 114+00
21	02-16 NORTH TUNNEL - GENERAL ARRANGEMENT - STA. W.B. 114+00 TO EAST VENTILATION BUILDING
22	02-17 SOUTH TUNNEL - GENERAL ARRANGEMENT - STA. E.B. 118+00 TO EAST VENTILATION BUILDING
23	02-18 SOUTH TUNNEL - GENERAL ARRANGEMENT - STA. E.B. 118+00 TO EAST VENTILATION BUILDING
24	03-1 WEST PORTAL AREA - GENERAL PLAN AND SECTIONS
25	03-2 WEST PORTAL AREA - SECTIONS AND DETAILS
26	03-3 WEST PORTAL AREA - WELL HOUSE AND WATER STORAGE TANK
27	03-4 WEST PORTAL AREA - WATER STORAGE TANK
28	03-5 WEST PORTAL AREA - WELL HOUSE AND WATER STORAGE TANK - MISCELLANEOUS [SEE REINFORCEMENT PLACEMENT (RP) SET]
CIVIL - WEST PORTAL SECTION	
29	03-1 NORTH TRANSITION SEGMENT - PLANS AND LONGITUDINAL SECTION
30	03-2 NORTH TRANSITION SEGMENT - CROSS SECTIONS
31	03-3 NORTH TRANSITION SEGMENT - MISCELLANEOUS DETAILS
32	03-4 SOUTH TRANSITION SEGMENT - PLANS AND LONGITUDINAL SECTION
33	03-5 SOUTH TRANSITION SEGMENT - CROSS SECTIONS
34	03-6 NORTH CONDUIT SEGMENTS - TYPICAL CROSS SECTIONS
35	03-7 SOUTH CONDUIT SEGMENTS - TYPICAL CROSS SECTIONS
36	03-8 TRANSITION AND CONDUIT SEGMENTS - REINFORCEMENT DETAILS [SEE REINFORCEMENT PLACEMENT (RP) SET]
CIVIL - TUNNEL	
37	02-1 TYPICAL INTERIOR DIMENSIONS
38	02-2 TUNNEL STEEL SUPPORTS - ARRANGEMENT ALONG PROFILE
39	02-3 TUNNEL STEEL SUPPORTS - ROCK BOLTING - TYPICAL CROSS SECTIONS
40	02-4 TUNNEL STEEL SUPPORTS - ROCK BORE SECTION - TYPICAL CROSS SECTIONS
41	02-5 TUNNEL STEEL SUPPORTS - ROCK BORE SECTION - TYPICAL DETAILS
42	02-6 TUNNEL STEEL SUPPORTS - PLAN AT CROSS PASSAGEWAYS
43	02-7 TUNNEL STEEL SUPPORTS - DETAILS AT CROSS PASSAGEWAYS AND JOINTS
44	02-8 TUNNEL STEEL SUPPORTS - DETAILS OF TRANSITION SETS
45	02-9 TUNNEL STEEL SUPPORTS - SECTION SEGMENTS - WEST AND EAST PORTALS
46	02-10 TUNNEL CROSS SECTION - TUNNEL SECTION TYPE 1A
47	02-11 TUNNEL CROSS SECTION - TUNNEL SECTION TYPE 1B
48	02-12 TUNNEL CROSS SECTION - TUNNEL SECTION TYPE 1C
49	02-13 TUNNEL CROSS SECTION - TUNNEL SECTION TYPE 1D
50	02-14 TUNNEL CROSS SECTION - TUNNEL SECTION TYPE 1E
51	02-15 TUNNEL AIR DUCT SYSTEM - TYPICAL TUNNEL SEGMENT - CEILING PLAN AND DETAILS
52	02-16 TUNNEL AIR DUCT SYSTEM - TYPICAL TUNNEL SEGMENT - CEILING SECTIONS AND DETAILS
53	02-17 TUNNEL AIR DUCT SYSTEM - TYPICAL TUNNEL SEGMENT - DUCT DIVIDER WALL
54	02-18 TUNNEL AIR DUCT SYSTEM - NORTH TRANSITION SEGMENT - WEST PORTAL SECTION - DUCT DIVIDER WALL
55	02-19 TUNNEL AIR DUCT SYSTEM - NORTH TRANSITION SEGMENT - EAST PORTAL SECTION - DUCT DIVIDER WALL
56	02-20 TUNNEL AIR DUCT SYSTEM - CENTER BUILDING
57	02-21 TUNNEL AIR DUCT SYSTEM - TYPICAL TUNNEL SEGMENT - FRESH AIR FLUES
58	02-22 CROSS PASSAGEWAYS - PLAN
59	02-23 CROSS PASSAGEWAYS - PROFILES
60	02-24 CROSS PASSAGEWAYS - SECTIONS AND DETAILS
61	02-25 TRAFFIC CONTROL PULPITS - GENERAL ARRANGEMENT
62	02-26 TRAFFIC CONTROL PULPITS - DETAILS
63	02-27 MISCELLANEOUS CONCRETE DETAILS
64	02-28 WALL SURFACING - TYPICAL TUNNEL SEGMENT - TYPICAL PANEL AND CHIMES DETAILS

VOID - SEE Sheet No. 2

STRUCTURAL	
65	02-29 WALL SURFACING - DETAILS FOR OPTIONAL HAND-PAID FINISH
66	02-30 WALL SURFACING - DETAILS AT PULL BOX OPENINGS
67	02-31 WALL SURFACING - DETAILS AT MISCELLANEOUS OPENINGS - SHEET 1
68	02-32 WALL SURFACING - DETAILS AT MISCELLANEOUS OPENINGS - SHEET 2
69	02-33 WALL SURFACING - DETAILS AT CROSS PASSAGEWAYS
70	02-34 CEILING SURFACING - PLAN, SECTIONS AND DETAILS
71	02-35 TYPICAL CROSS SECTIONS - REINFORCEMENT [SEE REINFORCEMENT PLACEMENT (RP) SET]
72	02-36 MISCELLANEOUS REINFORCEMENT DETAILS
73	02-37 MISCELLANEOUS METAL - RAILINGS, LADDERS AND DOORS
74	02-38 MISCELLANEOUS METAL - WALKWAY CAR RAIL
75	02-39 SEEPAGE DRAIN SYSTEM - PROFILE
76	02-40 SEEPAGE DRAIN SYSTEM - DETAILS
77	02-41 WASTE WATER DRAIN SYSTEM - PROFILE
78	02-42 WASTE WATER DRAIN SYSTEM - DETAILS
79	02-43 DRAINAGE SYSTEM - SOUTH TUNNEL - WEST PORTAL SECTION
80	02-44 DRAINAGE SYSTEM - SOUTH TUNNEL - EAST PORTAL SECTION
81	02-45 DRAINAGE SYSTEM - SOUTH TUNNEL - PORTAL SECTIONS - DETAILS
82	02-46 WATER SUPPLY SYSTEM - PROFILE
83	02-47 WATER SUPPLY SYSTEM - DETAILS
CIVIL - EAST PORTAL SECTION	
84	03-1 NORTH CONDUIT SEGMENTS - TYPICAL TUNNELED CONDUIT SECTION
85	03-2 SOUTH CONDUIT SEGMENTS - TYPICAL CUT-AND-COVER CONDUIT SECTION
86	03-3 NORTH AND SOUTH CONDUIT SEGMENTS - MISCELLANEOUS DETAILS
87	03-4 NORTH TRANSITION SEGMENT - PLANS AND LONGITUDINAL SECTION
88	03-5 NORTH TRANSITION SEGMENT - CROSS SECTIONS
89	03-6 NORTH TRANSITION SEGMENT - MISCELLANEOUS DETAILS
90	03-7 SOUTH TRANSITION SEGMENT - PLANS AND LONGITUDINAL SECTION
91	03-8 SOUTH TRANSITION SEGMENT - CROSS SECTIONS
92	03-9 SOUTH TRANSITION SEGMENT - MISCELLANEOUS DETAILS
93	03-10 CUT-AND-COVER AND TUNNELED CONDUIT SEGMENTS - REINFORCEMENT DETAILS [SEE REINFORCEMENT PLACEMENT (RP) SET]
ARCHITECTURAL	
94	A-1 WEST VENTILATION BUILDING - ROADWAY FLOOR PLAN - NORTH
95	A-2 WEST VENTILATION BUILDING - ROADWAY FLOOR PLAN - SOUTH
96	A-3 WEST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - NORTH
97	A-4 WEST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - SOUTH
98	A-5 WEST VENTILATION BUILDING - ROOF PLAN - NORTH
99	A-6 WEST VENTILATION BUILDING - ROOF PLAN - SOUTH
100	A-7 WEST VENTILATION BUILDING - NORTH ELEVATION
101	A-8 WEST VENTILATION BUILDING - SOUTH ELEVATION
102	A-9 WEST VENTILATION BUILDING - EAST ELEVATION
103	A-10 WEST VENTILATION BUILDING - WEST ELEVATION
104	A-11 WEST VENTILATION BUILDING - BUILDING SECTIONS
105	A-12 WEST VENTILATION BUILDING - STAIR DETAILS - SHEET 1
106	A-13 WEST VENTILATION BUILDING - STAIR DETAILS - SHEET 2
107	A-14 WEST VENTILATION BUILDING - STAIR DETAILS - SHEET 3
108	A-15 WEST VENTILATION BUILDING - DOOR SCHEDULE AND ROOM FINISH SCHEDULE
109	A-16 WEST VENTILATION BUILDING - CONTROL ROOM AREA - DETAILS
110	A-17 EAST VENTILATION BUILDING - BASEMENT FLOOR PLAN
111	A-18 EAST VENTILATION BUILDING - ROADWAY FLOOR PLAN - NORTH
112	A-19 EAST VENTILATION BUILDING - ROADWAY FLOOR PLAN - SOUTH
113	A-20 EAST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - NORTH
114	A-21 EAST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - SOUTH
115	A-22 EAST VENTILATION BUILDING - ROOF PLAN - NORTH
116	A-23 EAST VENTILATION BUILDING - ROOF PLAN - SOUTH
117	A-24 EAST VENTILATION BUILDING - NORTH ELEVATION
118	A-25 EAST VENTILATION BUILDING - SOUTH ELEVATION
119	A-26 EAST VENTILATION BUILDING - EAST ELEVATION
120	A-27 EAST VENTILATION BUILDING - WEST ELEVATION
121	A-28 EAST VENTILATION BUILDING - BUILDING SECTIONS
122	A-29 EAST VENTILATION BUILDING - STAIR DETAILS - SHEET 1
123	A-30 EAST VENTILATION BUILDING - STAIR DETAILS - SHEET 2
124	A-31 EAST VENTILATION BUILDING - STAIR DETAILS - SHEET 3
125	A-32 EAST VENTILATION BUILDING - DOOR SCHEDULE AND ROOM FINISH SCHEDULE
126	A-33 EAST VENTILATION BUILDING - CONTROL ROOM AREA - DETAILS
127	A-34 WEST AND EAST VENTILATION BUILDINGS - WALL SECTIONS AND DETAILS - SHEET 1
128	A-35 WEST AND EAST VENTILATION BUILDINGS - WALL SECTIONS AND DETAILS - SHEET 2
129	A-36 WEST AND EAST VENTILATION BUILDINGS - MISCELLANEOUS DETAILS - SHEET 1
130	A-37 WEST AND EAST VENTILATION BUILDINGS - MISCELLANEOUS DETAILS - SHEET 2
131	A-38 WEST AND EAST VENTILATION BUILDINGS - MISCELLANEOUS DETAILS - SHEET 3
132	A-39 WEST AND EAST VENTILATION BUILDINGS - PORTAL DETAILS
133	A-40 WEST AND EAST VENTILATION BUILDINGS - DOOR DETAILS - SHEET 1
134	A-41 WEST AND EAST VENTILATION BUILDINGS - DOOR DETAILS - SHEET 2
135	A-42 WEST AND EAST VENTILATION BUILDINGS - DOOR DETAILS - SHEET 3
136	A-43 WEST AND EAST VENTILATION BUILDINGS - WINDOW DETAILS
137	A-44 WEST AND EAST VENTILATION BUILDINGS - REST ROOMS - DETAILS
138	A-45 WEST AND EAST VENTILATION BUILDINGS - STAIR DETAILS
139	A-46 WEST AND EAST VENTILATION BUILDINGS - STAIR DETAILS

VOID - SEE Sheet No. 2

STRUCTURAL	
140	S-1 WEST VENTILATION BUILDING - FOUNDATION PLAN
141	S-2 WEST VENTILATION BUILDING - ROADWAY FLOOR PLAN - NORTH
142	S-3 WEST VENTILATION BUILDING - ROADWAY FLOOR PLAN - SOUTH
143	S-4 WEST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - NORTH
144	S-5 WEST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - SOUTH
145	S-6 WEST VENTILATION BUILDING - ROOF PLAN - NORTH
146	S-7 WEST VENTILATION BUILDING - ROOF PLAN - SOUTH
147	S-8 WEST VENTILATION BUILDING - COLUMN SCHEDULE
148	S-9 WEST VENTILATION BUILDING - FAN ROOM FLOOR - NORTH - PLAN OF FAN DUCTS
149	S-10 WEST VENTILATION BUILDING - ROADWAY FLOOR DETAILS
150	S-11 WEST VENTILATION BUILDING - NORTH WALL - PLAN AND ELEVATION
151	S-12 WEST VENTILATION BUILDING - SOUTH WALL - PLAN AND ELEVATION
152	S-13 WEST VENTILATION BUILDING - EAST WALL - PLAN AND ELEVATION
153	S-14 WEST VENTILATION BUILDING - NORTH TRANSITION - PLAN AND SECTIONS
154	S-15 WEST VENTILATION BUILDING - SOUTH TRANSITION - PLAN AND SECTIONS
155	S-E1 EAST VENTILATION BUILDING - FOUNDATION PLAN
156	S-E2 EAST VENTILATION BUILDING - BASEMENT PLAN
157	S-E3 EAST VENTILATION BUILDING - ROADWAY FLOOR PLAN OVER BASEMENT
158	S-E4 EAST VENTILATION BUILDING - ROADWAY FLOOR PLAN - NORTH
159	S-E5 EAST VENTILATION BUILDING - ROADWAY FLOOR PLAN - SOUTH
160	S-E6 EAST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - NORTH
161	S-E7 EAST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - SOUTH
162	S-E8 EAST VENTILATION BUILDING - ROOF PLAN - NORTH
163	S-E9 EAST VENTILATION BUILDING - ROOF PLAN - SOUTH
164	S-E10 EAST VENTILATION BUILDING - CONTROL ROOM CEILING - PLAN AND DETAILS
165	S-E11 EAST VENTILATION BUILDING - COLUMN SCHEDULE
166	S-E12 EAST VENTILATION BUILDING - BASEMENT - PART PLAN AND DETAILS - SHEET 1
167	S-E13 EAST VENTILATION BUILDING - BASEMENT - PART PLAN AND DETAILS - SHEET 2
168	S-E14 EAST VENTILATION BUILDING - BASEMENT - WALL SECTIONS
169	S-E15 EAST VENTILATION BUILDING - BASEMENT - COLUMN AND BUTTRESS DETAILS
170	S-E16 EAST VENTILATION BUILDING - ROADWAY FRAMING OVER BASEMENT - SECTIONS AND DETAILS
171	S-E17 EAST VENTILATION BUILDING - BASEMENT - SECTIONS AND DETAILS
172	S-E18 EAST VENTILATION BUILDING - NORTH WALL - PLAN AND ELEVATION
173	S-E19 EAST VENTILATION BUILDING - SOUTH WALL - PLAN AND ELEVATION
174	S-E20 EAST VENTILATION BUILDING - NORTH AND SOUTH WALLS - COUNTERPARTS
175	S-E21 EAST VENTILATION BUILDING - WEST WALL - PLAN AND ELEVATION
176	S-E22 EAST VENTILATION BUILDING - NORTH TRANSITION - PLAN AND SECTIONS
177	S-E23 EAST VENTILATION BUILDING - SOUTH TRANSITION - PLAN AND SECTIONS
178	S-E24 EAST VENTILATION BUILDING - FAN ROOM FLOOR - NORTH - PLAN OF FAN DUCTS
179	S-WE1 WEST AND EAST VENTILATION BUILDINGS - TYPICAL FOUNDATION DETAILS AND GENERAL NOTES
180	S-WE2 WEST AND EAST VENTILATION BUILDINGS - TYPICAL FOUNDATION DETAILS AND SCHEDULES
181	S-WE3 WEST AND EAST VENTILATION BUILDINGS - REAR WALLS - SECTIONS AND DETAILS
182	S-WE4 WEST AND EAST VENTILATION BUILDINGS - TRANSITIONS - SECTIONS AND DETAILS
183	S-WE5 WEST AND EAST VENTILATION BUILDINGS - CONSTRUCTION PROCEDURE AND DETAILS
184	S-WE6 WEST AND EAST VENTILATION BUILDINGS - ROADWAY GEOMETRY
185	S-WE7 WEST AND EAST VENTILATION BUILDINGS - ROADWAY - SECTIONS AND DETAILS - SHEET 1
186	S-WE8 WEST AND EAST VENTILATION BUILDINGS - ROADWAY - SECTIONS AND DETAILS - SHEET 2
187	S-WE9 WEST AND EAST VENTILATION BUILDINGS - ROADWAY FLOOR DETAILS
188	S-WE10 WEST AND EAST VENTILATION BUILDINGS - FRONT WALL DETAILS
189	S-WE11 WEST AND EAST VENTILATION BUILDINGS - MISCELLANEOUS ROADWAY DETAILS
190	S-WE12 WEST AND EAST VENTILATION BUILDINGS - STRUCTURAL STEEL - TYPICAL DETAILS AND NOTES
191	S-WE13 WEST AND EAST VENTILATION BUILDINGS - FAN DUCTS - SECTIONS AND DETAILS - SHEET 1
192	S-WE14 WEST AND EAST VENTILATION BUILDINGS - FAN DUCTS - SECTIONS AND DETAILS - SHEET 2
193	S-WE15 WEST AND EAST VENTILATION BUILDINGS - FAN ROOM FLOOR DETAILS
194	S-WE16 WEST AND EAST VENTILATION BUILDINGS - ROOF DETAILS
195	S-WE17 WEST AND EAST VENTILATION BUILDINGS - LOWER WALL DETAILS
196	S-WE18 WEST AND EAST VENTILATION BUILDINGS - MISCELLANEOUS DETAILS

REINFORCEMENT PLACEMENT (RP) SET
Sheet Nos. RP-1 thru RP-12 (Tunnel and Portal Sections). See RP-1 for Index to Sheets.

REINFORCEMENT PLACEMENT (RS) SET
Sheet Nos. RS-00 thru RS-111 (West Ventilation Building). See RS-00 for Index to sheets.

(R-6) Rev. 4-1-68 Deleted Sheet No. 26
(R-7) Rev. 5-31-69 C.D.H. Deleted Sheet No. 187 H10-17-68
Subject to final approval

Reviewed up to 10% inclusive.

NO. SHEET	DESCRIPTION OF REVISION	BY	CHK	APP

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

PROJECT - GENERAL
INDEX OF DRAWINGS
SHEET 2

TIPPETTS, ABBETT, MCCARTHY, STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED BY: *William T. ...*
CHECKED BY: *...*
APPROVED BY: *...*

DATE: AUG. 1967

61-2A

INDEX OF DRAWINGS (Continued)

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	3	326

AS CONSTRUCTED
REVISED DATE *Oct. 26, 1973*

MECHANICAL

197	M-1	EAST VENTILATION BUILDING - FAN ROOM - NORTH - FAN ARRANGEMENT
198	M-2	WEST VENTILATION BUILDING - FAN ROOM - NORTH - FAN ARRANGEMENT
199	M-3	EAST AND WEST VENTILATION BUILDINGS - SUPPLY FANS - SECTIONS
200	M-4	EAST AND WEST VENTILATION BUILDINGS - EXHAUST FANS - SECTIONS
201	M-5	EAST AND WEST VENTILATION BUILDINGS - EXHAUST FANS - SECTIONS AND DETAILS
202	M-6	EAST AND WEST VENTILATION BUILDINGS - EXHAUST FANS - EVASE STACKS, DAMPERS & SUPPORTS
203	M-7	EAST AND WEST VENTILATION BUILDINGS - LOUVERS, BULKHEADS AND HOISTS - GENERAL ARRANGEMENT
204	M-8	EAST AND WEST VENTILATION BUILDINGS - LOUVERS, BULKHEADS AND HOISTS - SUB-ASSEMBLY - SHEET 1
205	M-9	EAST AND WEST VENTILATION BUILDINGS - LOUVERS, BULKHEADS AND HOISTS - SUB-ASSEMBLY - SHEET 2
206	M-10	EAST AND WEST VENTILATION BUILDINGS - JIB CRANE AND TRANSFER CARS
207	M-11	TUNNEL - WALKWAY CAR - ASSEMBLY
208	M-12	EAST AND WEST VENTILATION BUILDINGS - SUPPLY FAN DAMPERS - DAMPER LEAF
209	M-13	EAST AND WEST VENTILATION BUILDINGS - SUPPLY FAN DAMPERS - OPERATING MECHANISM
210	M-14	EAST AND WEST VENTILATION BUILDINGS - SUPPLY FAN DAMPERS - SUPPORT STRUCTURE - SHEET 1
211	M-15	EAST AND WEST VENTILATION BUILDINGS - SUPPLY FAN DAMPERS - SUPPORT STRUCTURE - SHEET 2
- M-16 to M-19 (NOT USED)		
212	M-20	WEST VENTILATION BUILDING - ROADWAY FLOOR PLAN - NORTH - HEATING, VENTILATING & PLUMBING
213	M-21	WEST VENTILATION BUILDING - ROADWAY FLOOR PLAN - SOUTH - HEATING, VENTILATING & PLUMBING
214	M-22	WEST VENTILATION BUILDING - BOILER ROOM - HEATING, VENTILATING AND PLUMBING
215	M-23	WEST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - NORTH - HEATING, VENTILATING & PLUMBING
216	M-24	WEST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - SOUTH - HEATING, VENTILATING & PLUMBING
217	M-25	WEST VENTILATION BUILDING - ROOF PLAN - NORTH - HEATING, VENTILATING AND PLUMBING
218	M-26	WEST VENTILATION BUILDING - ROOF PLAN - SOUTH - HEATING, VENTILATING AND PLUMBING
219	M-27	WEST VENTILATION BUILDING - SECTIONS - HEATING AND VENTILATING
220	M-28	WEST VENTILATION BUILDING - PLANS AND SECTIONS - PLUMBING
221	M-29	EAST AND WEST VENTILATION BUILDINGS - EQUIPMENT SCHEDULES - HEATING AND VENTILATING
222	M-30	WEST VENTILATION BUILDING - PLANS AND RISER DIAGRAMS - PLUMBING
223	M-31	EAST VENTILATION BUILDING - BASEMENT PLAN - PLUMBING
224	M-32	EAST VENTILATION BUILDING - BASEMENT SECTIONS - PLUMBING
225	M-33	EAST VENTILATION BUILDING - BASEMENT SECTIONS AND FLOW DIAGRAMS - PLUMBING
226	M-34	EAST VENTILATION BUILDING - BASEMENT PLAN - HEATING AND VENTILATING
227	M-35	EAST VENTILATION BUILDING - ROADWAY FLOOR PLAN - NORTH - HEATING, VENTILATING & PLUMBING
228	M-36	EAST VENTILATION BUILDING - ROADWAY FLOOR PLAN - SOUTH - HEATING, VENTILATING & PLUMBING
229	M-37	EAST VENTILATION BUILDING - BOILER ROOM - HEATING, VENTILATING AND PLUMBING
230	M-38	EAST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - NORTH - HEATING, VENTILATING & PLUMBING
231	M-39	EAST VENTILATION BUILDING - FAN ROOM FLOOR PLAN - SOUTH - HEATING, VENTILATING & PLUMBING
232	M-40	EAST VENTILATION BUILDING - ROOF PLAN - NORTH - HEATING, VENTILATING AND PLUMBING
233	M-41	EAST VENTILATION BUILDING - ROOF PLAN - SOUTH - HEATING, VENTILATING AND PLUMBING
234	M-42	EAST VENTILATION BUILDING - SECTIONS - HEATING AND VENTILATING
235	M-43	EAST VENTILATION BUILDING - PLANS AND RISER DIAGRAMS - PLUMBING
236	M-44	EAST VENTILATION BUILDING - DETAILS - HEATING AND VENTILATING
237	M-45	VENTILATION BUILDINGS - DETAILS AND SCHEDULES - PLUMBING
238	M-46	FLOW AND CONTROL DIAGRAMS - KEY TO SYMBOLS - HEATING AND VENTILATING
239	M-47	EMERGENCY GENERATOR
240	M-48	CARBON MONOXIDE SAMPLING, ANALYZING AND RECORDING SYSTEM

ELECTRICAL

241	E-G1	POWER SUPPLY - SINGLE LINE DIAGRAM - GENERAL ARRANGEMENT
242	E-G2	POWER DISTRIBUTION - DETAILED SINGLE LINE DIAGRAM - (TYPICAL PER BUILDING)
243	E-G3	FAN CONTROL - ELEMENTARY DIAGRAM
	E-G4	(NOT USED)
244	E-G5	MISCELLANEOUS CONTROL AND ELEMENTARY DIAGRAMS
245	E-G6	CONTROL BOARDS AND PANELS
246	E-G7	GROUNDING - PLAN AND TYPICAL DETAILS
247	E-G8	TELEPHONE RISER DIAGRAMS
248	E-G9	TUNNEL AND PORTAL PLAZAS - MISCELLANEOUS DETAILS
249	E-G10	POWER AND LIGHTING PANEL SCHEDULES - SHEET 1
250	E-G11	POWER AND LIGHTING PANEL SCHEDULES - SHEET 2
251	E-T1	TUNNEL - PLANS, SECTIONS AND DETAILS - SHEET 1
252	E-T2	TUNNEL - PLANS, SECTIONS AND DETAILS - SHEET 2
253	E-T3	TUNNEL - PLANS, SECTIONS AND DETAILS - SHEET 3
254	E-T4	TUNNEL - WIRING DIAGRAMS - SHEET 1
255	E-T5	TUNNEL - WIRING DIAGRAMS - SHEET 2
256	E-T6	TUNNEL - WIRING DIAGRAMS - SHEET 3
257	E-T7	TUNNEL - CROSS PASSAGeways - CONDUIT AND CABLE SCHEDULE
258	E-W1	WEST VENTILATION BUILDING - ELECTRICAL EQUIPMENT ROOM - POWER AND CONTROL - PLAN
259	E-W2	WEST VENTILATION BUILDING - ROADWAY FLOOR - NORTH - POWER AND CONTROL - PLAN
260	E-W3	WEST VENTILATION BUILDING - ROADWAY FLOOR - SOUTH - POWER AND CONTROL - PLAN
261	E-W4	WEST VENTILATION BUILDING - FAN FLOOR - NORTH - POWER, CONTROL AND LIGHTING - PLAN
262	E-W5	WEST VENTILATION BUILDING - FAN FLOOR - SOUTH - POWER, CONTROL AND LIGHTING - PLAN
263	E-W6	WEST VENTILATION BUILDING - ROADWAY FLOOR - NORTH - LIGHTING PLAN
264	E-W7	WEST VENTILATION BUILDING - ROADWAY FLOOR - SOUTH - LIGHTING PLAN
265	E-W8	WEST VENTILATION BUILDING - CONDUIT AND CABLE SCHEDULE
266	E-E1	EAST VENTILATION BUILDING - ELECTRICAL EQUIPMENT ROOM - POWER AND CONTROL - PLAN
267	E-E2	EAST VENTILATION BUILDING - ROADWAY FLOOR - NORTH - POWER AND CONTROL - PLAN
268	E-E3	EAST VENTILATION BUILDING - ROADWAY FLOOR - SOUTH - POWER AND CONTROL - PLAN
269	E-E4	EAST VENTILATION BUILDING - FAN FLOOR - NORTH - POWER, CONTROL AND LIGHTING - PLAN
270	E-E5	EAST VENTILATION BUILDING - FAN FLOOR - SOUTH - POWER, CONTROL AND LIGHTING - PLAN
271	E-E6	EAST VENTILATION BUILDING - CONTROL ROOM AND BASEMENT - POWER, CONTROL & LIGHTING - PLAN
272	E-E7	EAST VENTILATION BUILDING - ROADWAY FLOOR - NORTH - LIGHTING PLAN
273	E-E8	EAST VENTILATION BUILDING - ROADWAY FLOOR - SOUTH - LIGHTING PLAN
274	E-E9	EAST VENTILATION BUILDING - CONDUIT AND CABLE SCHEDULE
275	E-WE1	WEST AND EAST VENTILATION BUILDINGS - 24.9 KV AND 450 V SWITCHGEAR
276	E-WE2	WEST AND EAST VENTILATION BUILDINGS - MOTOR CONTROL CENTERS
277	E-WE3	WEST AND EAST VENTILATION BUILDINGS - CONDUIT SECTIONS AND DETAILS - SHEET 1
278	E-WE4	WEST AND EAST VENTILATION BUILDINGS - CONDUIT SECTIONS AND DETAILS - SHEET 2
279	E-WE5	WEST AND EAST VENTILATION BUILDINGS - CONDUIT AND CABLE SCHEDULE - SHEET 1
280	E-WE6	WEST AND EAST VENTILATION BUILDINGS - CONDUIT AND CABLE SCHEDULE - SHEET 2
281	E-WE7	WEST AND EAST VENTILATION BUILDINGS - CONDUIT AND CABLE SCHEDULE - SHEET 3
282	E-WE8	WEST AND EAST VENTILATION BUILDINGS - CONDUIT AND CABLE SCHEDULE - SHEET 4
283	E-WE9	WEST AND EAST VENTILATION BUILDINGS - CONDUIT AND CABLE SCHEDULE - SHEET 5

Void
see Sheet 3A-X

TRAFFIC CONTROL SYSTEM

284	TC-1	TUNNEL - TRAFFIC CONTROL DEVICES - TUNNEL SIGNING AND LOOP DETECTORS
285	TC-2	EAST VENTILATION BUILDING - TRAFFIC CONTROL DEVICES - TRAFFIC CONTROL CONSOLE
286	TC-3	EAST VENTILATION BUILDING - TRAFFIC CONTROL DEVICES AND CONSOLE - DETAILS
287	TC-4	TUNNEL APPROACH SIGNING
288	TC-5	OVERHEIGHT VEHICLE DETECTORS - PORTAL SIGNS

TUNNEL APPROACH FEATURES

289	GA-1	PLAN OF WEST PORTAL APPROACH - RIGHT-OF-WAY - WORK AREAS - APPROACH SIGNING
290	GA-2	PLAN OF EAST PORTAL APPROACH - RIGHT-OF-WAY - WORK AREAS - APPROACH SIGNING
291	GA-3	EAST PORTAL AREA - UNDERGROUND STORAGE TANK - PLAN, SECTIONS AND DETAILS

PHYSICAL DATA

292	GD-1	TEMPERATURE DATA SUMMARY - EAST PORTAL
293	GD-2	TEMPERATURE SUMMARY - PILOT TUNNEL - DEGREE DAYS, RAINFALL, PARSHALL FLUME & WIND DATA

GENERAL SUBSURFACE INFORMATION

294	GO-1	PILOT TUNNEL DATA - GEOLOGIC PLAN AND PROFILE - T.B.L. STA. 28 + 73.7 TO T.B.L. STA. 44 + 00
295	GO-2	PILOT TUNNEL DATA - GEOLOGIC PLAN AND PROFILE - T.B.L. STA. 44 + 00 TO T.B.L. STA. 57 + 00
296	GO-3	PILOT TUNNEL DATA - GEOLOGIC PLAN AND PROFILE - T.B.L. STA. 57 + 00 TO T.B.L. STA. 70 + 00
297	GO-4	PILOT TUNNEL DATA - GEOLOGIC PLAN AND PROFILE - T.B.L. STA. 70 + 00 TO T.B.L. STA. 83 + 00
298	GO-5	PILOT TUNNEL DATA - GEOLOGIC PLAN AND PROFILE - T.B.L. STA. 83 + 00 TO T.B.L. STA. 96 + 00
299	GO-6	PILOT TUNNEL DATA - GEOLOGIC PLAN AND PROFILE - T.B.L. STA. 96 + 00 TO T.B.L. STA. 109 + 00
300	GO-7	PILOT TUNNEL DATA - GEOLOGIC PLAN AND PROFILE - T.B.L. STA. 109 + 00 TO T.B.L. STA. 121 + 00

301	GS-1	EAST PORTAL AREA - SUBSURFACE INVESTIGATIONS - BORING LOGS
302	GS-2	SUBSURFACE INVESTIGATIONS - BORING LOGS
303	GS-3	SUBSURFACE INVESTIGATIONS - BORING LOGS
304	GS-4	SUBSURFACE INVESTIGATIONS - BORING LOGS
305	GS-5	SUBSURFACE INVESTIGATIONS - BORING LOGS
306	GS-6	EAST PORTAL AREA - SUBSURFACE INVESTIGATIONS - BORING LOGS
307	GS-7	EAST PORTAL AREA - SUBSURFACE INVESTIGATIONS - BORING LOGS
308	GS-8	EAST AND WEST PORTAL AREAS - SUBSURFACE INVESTIGATIONS - BORING LOGS
309	GS-9	WEST PORTAL AREA - SUBSURFACE INVESTIGATIONS - BORING LOGS
310	GS-10	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
311	GS-11	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
312	GS-12	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
313	GS-13	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
314	GS-14	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
315	GS-15	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
316	GS-16	SUBSURFACE INVESTIGATION - BORING LOGS - INCLINOMETER HOLES

MISCELLANEOUS DRAWINGS

317	MS-1	CONCRETE INLETS, TYPES 3 AND 3 DOUBLE
318	MS-2	MANHOLE, TYPE 1 AND STEPS FOR MANHOLES AND INLETS
319	MS-3	CHAIN LINK FENCE
320	MS-4	TIMBER BARRICADES
321	MS-5	CONSTRUCTION IDENTIFICATION SIGNS
322	MS-6	TRAFFIC SIGNING FOR HIGHWAY CONSTRUCTION - SHEET 1
323	MS-7	TRAFFIC SIGNING FOR HIGHWAY CONSTRUCTION - SHEET 2
324	MS-8	TRAFFIC SIGNING FOR HIGHWAY CONSTRUCTION - SHEET 3
325	MS-9	BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS
326	MS-10	PEDESTALS, FOOTINGS AND SIGN ISLANDS FOR GROUND SIGNS

ABBREVIATIONS

<p>A AMPERE</p> <p>AC ALTERNATING CURRENT</p> <p>AH AHEAD</p> <p>ALT. ALTERNATE</p> <p>ARRGT ARRANGEMENT</p> <p>AUTO. AUTOMATIC</p> <p>BK. BACK</p> <p>BLDG. BUILDING</p> <p>B.M. BENCHMARK</p> <p>BU. BEAM</p> <p>BOT. BOTTOM</p> <p>BP BEAM WALL BEARING PLATE</p> <p>B.W. BOTH WAYS</p> <p>C.C., C.C., C.16 C CENTER TO CENTER</p> <p>C.D.H., CDH COLORADO DEPARTMENT OF HIGHWAYS</p> <p>C.I. CAST IRON</p> <p>CKT. CIRCUIT</p> <p>CO CARBON MONOXIDE</p> <p>COL. COLUMN</p> <p>COMB. COMBINATION</p> <p>CONC., CONCR. CONCRETE</p> <p>CONST. JT., C.J. CONSTRUCTION JOINT</p> <p>CONT. JT. CONTINUOUS JOINT</p> <p>CONTR. JT. CONTRACTION JOINT</p> <p>C.R.P., CMP CORRUGATED METAL PIPE</p> <p>C.R. COLD ROLLED</p> <p>CS CONTROL SWITCH</p> <p>C.S. CURVE TO SPIRAL</p>	<p>CSK. COUNTERSINK</p> <p>CTRS. CENTERS</p> <p>C_c DEGREE OF CURVE</p> <p>DC DIRECT CURRENT</p> <p>D.F. DRINKING FOUNTAIN</p> <p>DIA. DIAMETER</p> <p>DM., DIMEN. DIMENSION</p> <p>DISTR. DISTRIBUTION</p> <p>DN. DOWN</p> <p>DWG. DRAWING</p> <p>E EAST</p> <p>E.B. EASTBOUND</p> <p>EA. EACH</p> <p>E.F. EACH FACE</p> <p>EL., ELEV. ELEVATION</p> <p>ENCL. ENCLOSURE</p> <p>EQ. EQUALITY</p> <p>E.W. EACH WAY</p> <p>E.W.H. ELECTRIC WATER HEATER</p> <p>EXP. JT. EXPANSION JOINT</p> <p>F FARENHEIT</p> <p>F.C. FOOT CANDLE</p> <p>F.F. FAR FACE</p> <p>FIK. FINISH, FINISHED</p> <p>FL. FLOOR</p> <p>FLG. FLANGE</p> <p>F.S. FAR SIDE</p> <p>FTG. FOOTING</p>	<p>GALV. GALVANIZED</p> <p>GA. GAUGE</p> <p>GEN. GENERATOR</p> <p>G.P.M., GPM GALLONS PER MINUTE</p> <p>G.S.T., GST GLAZED STRUCTURAL TILE</p> <p>HEX. HD. HEXAGONAL HEAD</p> <p>H.P. HIGH POINT</p> <p>HE. HEIGHT</p> <p>H.V. HIGH VOLTAGE</p> <p>H.W. HIGH WATER</p> <p>I.D. INSIDE DIAMETER</p> <p>I.F. INTERIOR FACE</p> <p>INT. INTERIOR</p> <p>INVT. INVERT</p> <p>JAN. JAN. CLOS.</p> <p>J.T. JANITOR'S CLOSET</p> <p>KV KILOVOLT</p> <p>KVA EACH WAY</p> <p>KW KILOWATT</p> <p>L.A. LOW ALLOY</p> <p>L.P. LOW POINT</p> <p>L.G. LONG</p> <p>L.H. LEFT HAND</p> <p>LT. LEFT</p> <p>MACH. MACHINE</p> <p>MAX. MAXIMUM</p> <p>M.C.C. MOTOR CONTROL CENTER</p> <p>MM THOUSAND CIRCULAR MILS</p>	<p>MECH. JT. MECHANICAL JOINT</p> <p>M.H. MANHOLE</p> <p>M.M. MINIMUM</p> <p>M.O. MASONRY OPENING</p> <p>N NORTH</p> <p>N.F. NEAR FACE</p> <p>N.C. NOT IN CONTRACT</p> <p>NO NUMBER</p> <p>N.S. NEAR SIDE</p> <p>N.T.S. NOT TO SCALE</p> <p>O.A. OVERALL</p> <p>O.C. ON CENTER S</p> <p>O.D. OUTSIDE DIAMETER</p> <p>P.C. POINT OF CURVATURE</p> <p>P.C.C. POINT OF COMPOUND CURVATURE</p> <p>P.B.L., PGL PROFILE GRADE LINE</p> <p>PERF. PERFORATED</p> <p>P.G.P. PROFILE GRADE POINT</p> <p>P.S. POINT</p> <p>P.I. POINT OF INTERSECTION</p> <p>PL., E PLATE</p> <p>P.O.T. POINT ON TANGENT</p> <p>PROJ. PROJECTION</p> <p>P.T. POINT OF TANGENCY</p> <p>P.V.C. POINT OF VERTICAL CURVATURE</p> <p>R RISER</p> <p>RAD., R RADIUS</p> <p>RDWY. ROADWAY</p> <p>REINF. REINFORCED or REINFORCEMENT</p>	<p>REQD. REQUIRED</p> <p>R.H. RIGHT HAND</p> <p>RM. ROOM</p> <p>RT. RIGHT</p> <p>S SOUTH or SLOPE</p> <p>S.C. SPIRAL TO CURVE</p> <p>SECT. SECTION</p> <p>SQ. SQUARE</p> <p>S.T. SPIRAL TO TANGENT</p> <p>STA. STATION</p> <p>STD. STANDARD</p> <p>STIFF. STIFFENER</p> <p>SW. SWITCH</p> <p>T.A.M.S., TAMS TIPPETTS ABBETT MCCARTHY STRATTON</p> <p>T.B.L. TUNNEL BASE LINE</p> <p>TEL. TELEPHONE</p> <p>TRANSF. TRANSFORMER</p> <p>T.S. TANGENT TO SPIRAL</p> <p>T.S. TOP OF SLAB</p> <p>TYP. TYPICAL</p> <p>V.C. VITRIFIED CLAY</p> <p>VENT. VENTILATION</p> <p>VIT. VITREOUS or VITRIFIED</p> <p>W WEST</p> <p>W.B. WESTBOUND</p> <p>WF. WIDE FLANGE</p> <p>W.P. WORKING POINT</p> <p>W.S. WATERSTOP</p>
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NO	DATE	DESCRIPTION OF REVISION	BY	CH	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
PROJECT - GENERAL INDEX OF DRAWINGS SHEET 2 ABBREVIATIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED A.T.	CHECKED A.T.	APPROVED <i>Abraham Felber</i>	DRAWING NO. 61-3		
SUBMITTED <i>Richard M. ...</i>		SCALE	DATE AUG 1967		
NEW YORK, N. Y.					

INDEX OF DRAWINGS (Continued)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	3AX	

AS CONSTRUCTED
REVISED DATE *OCT. 26, 1973*

ELECTRICAL

241	E-G1	POWER SUPPLY - SINGLE LINE DIAGRAM - GENERAL ARRANGEMENT
242	E-G2	POWER DISTRIBUTION - DETAILED SINGLE LINE DIAGRAM - (TYPICAL PER BUILDING)
242 AX		ELEMENTARY DIAGRAM - MOTOR CONTROL CENTER
242 BX		UNIT CONNECTION DIAGRAM - EAST & WEST
242 CX		UNIT CONNECTION DIAGRAM
242 DX		EQUIPMENT SUMMARY - MOTOR CONTROL CENTER NO. 1 (EAST)
242 EX		INTERCONNECTION DIAGRAM - MOTOR CONTROL CENTER NO. 1 (EAST)
242 FX		EQUIPMENT SUMMARY - MOTOR CONTROL CENTER NO. 2 (EAST)
242 GX		INTERCONNECTION DIAGRAM - MOTOR CONTROL CENTER NO. 2 (EAST)
242 HX		EQUIPMENT SUMMARY - MOTOR CONTROL CENTER NO. 3 (EAST)
242 IX		INTERCONNECTION DIAGRAM - MOTOR CONTROL CENTER NO. 3 (EAST)
242 JX		EQUIPMENT SUMMARY - MOTOR CONTROL CENTER NO. 4 (EAST-NORTH)
242 KX		INTERCONNECTION DIAGRAM - MOTOR CONTROL CENTER NO. 4 (EAST-NORTH)
242 LX		EQUIPMENT SUMMARY - MOTOR CONTROL CENTER NO. 4 (EAST-SOUTH)
242 MX		INTERCONNECTION DIAGRAM - MOTOR CONTROL CENTER NO. 4 (EAST-SOUTH)
242 NX		EQUIPMENT SUMMARY - MOTOR CONTROL CENTER NO. 1 (WEST)
242 OX		INTERCONNECTION DIAGRAM - MOTOR CONTROL CENTER NO. 1 (WEST)
242 PX		EQUIPMENT SUMMARY - MOTOR CONTROL CENTER NO. 2 (WEST)
242 QX		INTERCONNECTION DIAGRAM - MOTOR CONTROL CENTER NO. 2 (WEST)
242 RX		EQUIPMENT SUMMARY - MOTOR CONTROL CENTER NO. 3 (WEST)
242 SX		INTERCONNECTION DIAGRAM - MOTOR CONTROL CENTER NO. 3 (WEST)
242 TX		EQUIPMENT SUMMARY - MOTOR CONTROL CENTER NO. 4 (WEST-NORTH)
242 UX		INTERCONNECTION DIAGRAM - MOTOR CONTROL CENTER NO. 4 (WEST-NORTH)
242 VX		EQUIPMENT SUMMARY - MOTOR CONTROL CENTER NO. 4 (WEST-SOUTH)
242 WX		INTERCONNECTION DIAGRAM - MOTOR CONTROL CENTER NO. 4 (WEST-SOUTH)
242 XX		SCHEMATIC WIRING DIAGRAM
242 YX		DETAIL WIRING DIAGRAM
242 ZX		INTERCONNECTION WIRING DIAGRAM - WEST BUILDING
242 AY		INTERCONNECTION WIRING DIAGRAM - EAST BUILDING
242 BY		SCHEMATIC WIRING DIAGRAM FOR SWITCH OPERATOR
242 CY		DETAIL WIRING DIAGRAM FOR SWITCH OPERATOR
242 DY		34.5 KV - 4 BAY - INDOOR - METAL ENCLOSED SWITCHGEAR
242 EY		34.5 KV - 4 BAY - INDOOR - METAL ENCLOSED SWITCHGEAR
242 FY		34.5 KV - 4 BAY - INDOOR - METAL ENCLOSED SWITCHGEAR
242 GY		4.5 KV - 4 BAY - INDOOR - METAL ENCLOSED SWITCHGEAR
243	E-G3	FAN CONTROL - ELEMENTARY DIAGRAM
243 AX		ELEMENTARY DIAGRAM - FAN CONTROL, EAST
243 BX		ELEMENTARY DIAGRAM - FAN CONTROL, EAST
243 CX		ELEMENTARY DIAGRAM - FAN CONTROL, EAST
243 DX		ELEMENTARY DIAGRAM - FAN CONTROL, EAST AND WEST
243 EX		ELEMENTARY DIAGRAM - FAN CONTROL, WEST
243 FX		ELEMENTARY DIAGRAM - FAN CONTROL, WEST
243 GX		ELEMENTARY DIAGRAM - FAN CONTROL, WEST
243 HX		DETAILS OF QUINDAR SYSTEM (REMOTE FAN CONTROL)
243 IX		DETAILS OF QUINDAR SYSTEM (REMOTE FAN CONTROL)
243 JX		DETAILS OF QUINDAR SYSTEM (REMOTE FAN CONTROL)
243 KX		DETAILS OF QUINDAR SYSTEM (REMOTE FAN CONTROL)
243 LX		DETAILS OF QUINDAR SYSTEM (REMOTE FAN CONTROL)
243 MX		DETAILS OF QUINDAR SYSTEM (REMOTE FAN CONTROL)
243 NX		DETAILS OF QUINDAR SYSTEM (REMOTE FAN CONTROL)
243 OX		DETAILS OF QUINDAR SYSTEM (REMOTE FAN CONTROL)
243 PX		DETAILS OF QUINDAR SYSTEM (REMOTE FAN CONTROL)
243 QX		DETAILS OF QUINDAR SYSTEM (REMOTE FAN CONTROL)

ELECTRICAL

243 RX	ELECTRICAL	ELEMENTARY DIAGRAM - AKD-5 POWER MASTER
243 SX		ELEMENTARY DIAGRAM - AKD-5 POWER MASTER
243 YX		POWER CIRCUIT FOR FANS
243 UX		POWER CIRCUIT FOR FANS
243 VX		BREAKER CONTROL CIRCUIT
243 WX		BREAKER CONTROL CIRCUIT
243 XX		BREAKER CONTROL CIRCUIT
243 YX		BREAKER CONTROL CIRCUIT
243 ZX		BREAKER CONTROL CIRCUIT
243 AY		BREAKER CONTROL CIRCUIT
243 BY		BREAKER CONTROL CIRCUIT
243 CY		BREAKER CONTROL CIRCUIT
243 DY		REMOTE CONNECTION
243 EY		REMOTE CONNECTION
243 FY		REMOTE CONNECTION
243 GY		REMOTE CONNECTION
243 HY		REMOTE CONNECTION
243 IY		REMOTE CONNECTION
243 JY		REMOTE CONNECTION
243 KY		REMOTE CONNECTION
243 LY		AKD-5 POWERMASTER, INDOOR SWITCHGEAR
243 MY		AKD-5 POWERMASTER, INDOOR SWITCHGEAR
243 NY		OUTLINE - FAN CONTROL BOARD
243 OY		OUTLINE - POWER CONTROL BOARD
243 PY		OUTLINE - LOCAL CONTROL BOARD
243 QY		OUTLINE - LOCAL CONTROL BOARD
243 RY		CONNECTION DIAGRAM - FAN CONTROL BOARD
243 SY		CONNECTION DIAGRAM - FAN CONTROL BOARD
243 TY		CONNECTION DIAGRAM - FAN CONTROL BOARD
243 UY		CONNECTION DIAGRAM - POWER CONTROL BOARD
243 VY		CONNECTION DIAGRAM - POWER CONTROL BOARD
243 WY		CONNECTION DIAGRAM - LOCAL CONTROL BOARD
243 XY		CONNECTION DIAGRAM - LOCAL CONTROL BOARD
244		NOT USED
244	E-G4	MISCELLANEOUS - CONTROL & ELEMENTARY DIAGRAMS
244	E-G5	CONTROL BOARDS & PANELS
245	E-G6	GROUNDING - PLAN & TYPICAL DETAILS
246	E-G7	TELEPHONE RISER DIAGRAMS
247	E-G8	TUNNEL AND PORTAL PLAZAS - MISCELLANEOUS DETAILS
248	E-G9	POWER & LIGHTING - PANEL SCHEDULES SHEET 1
249	E-G10	POWER & LIGHTING - PANEL SCHEDULES SHEET 2
250	E-G11	TUNNEL - PLANS, SECTIONS & DETAILS SHEET 1
251	E-12	TUNNEL - PLANS, SECTIONS & DETAILS SHEET 2
252	E-13	TUNNEL - PLANS, SECTIONS & DETAILS SHEET 3
253	E-14	TUNNEL - WIRING DIAGRAMS SHEET 1
254	E-15	TUNNEL - WIRING DIAGRAMS SHEET 2
255	E-16	TUNNEL - WIRING DIAGRAMS SHEET 3
256	E-17	TUNNEL - CROSS PASSAGEWAYS - CONDUIT & CABLE SCHEDULE
257	E-18	WEST VENTILATION BUILDING - ELECTRICAL EQUIPMENT ROOM - POWER & CONTROL - PLAN
258	E-19	WEST VENTILATION BUILDING - ROADWAY FLOOR - NORTH - POWER & CONTROL - PLAN
259	E-20	WEST VENTILATION BUILDING - ROADWAY FLOOR - SOUTH - POWER & CONTROL - PLAN
260	E-21	WEST VENTILATION BUILDING - FAN FLOOR - NORTH - POWER, CONTROL & LIGHTING-PLAN
261	E-22	WEST VENTILATION BUILDING - FAN FLOOR - SOUTH - POWER, CONTROL & LIGHTING-PLAN
262	E-23	WEST VENTILATION BUILDING - ROADWAY FLOOR - NORTH - LIGHTING PLAN
263	E-24	WEST VENTILATION BUILDING - ROADWAY FLOOR - SOUTH - LIGHTING PLAN
264	E-25	WEST VENTILATION BUILDING - CONDUIT & CABLE SCHEDULE
265	E-26	WEST VENTILATION BUILDING - CONDUIT & CABLE SCHEDULE
266	E-E1	EAST VENTILATION BUILDING - ELECTRICAL EQUIPMENT ROOM - POWER & CONTROL - PLAN
267	E-E2	EAST VENTILATION BUILDING - ROADWAY FLOOR - NORTH - POWER & CONTROL - PLAN
268	E-E3	EAST VENTILATION BUILDING - ROADWAY FLOOR - SOUTH - POWER & CONTROL - PLAN
269	E-E4	EAST VENTILATION BUILDING - FAN ROOM - NORTH - POWER, CONTROL & LIGHTING-PLAN
270	E-E5	EAST VENTILATION BUILDING - FAN ROOM - SOUTH - POWER, CONTROL & LIGHTING-PLAN
271	E-E6	EAST VENTILATION BUILDING - CONTROL ROOM & BASEMENT - POWER, CONTROL & LIGHTING - PLAN
272	E-E7	EAST VENTILATION BUILDING - ROADWAY FLOOR - NORTH - LIGHTING PLAN
273	E-E8	EAST VENTILATION BUILDING - ROADWAY FLOOR - SOUTH - LIGHTING PLAN
274	E-E9	EAST VENTILATION BUILDING - CONDUIT & CABLE SCHEDULE

ELECTRICAL

275	E-WE1	WEST & EAST VENTILATION BUILDINGS - 24.9 KV & 460V SWITCHGEAR
276	E-WE2	WEST & EAST VENTILATION BUILDINGS - MOTOR CONTROL CENTERS
277	E-WE3	WEST & EAST VENTILATION BUILDINGS - CONDUIT SECTIONS & DETAILS SHEET 1
278	E-WE4	WEST & EAST VENTILATION BUILDINGS - CONDUIT SECTIONS & DETAILS SHEET 2
279	E-WE5	WEST & EAST VENTILATION BUILDINGS - CONDUIT & CABLE SCHEDULE SHEET 1
280	E-WE6	WEST & EAST VENTILATION BUILDINGS - CONDUIT & CABLE SCHEDULE SHEET 2
281	E-WE7	WEST & EAST VENTILATION BUILDINGS - CONDUIT & CABLE SCHEDULE SHEET 3
282	E-WE8	WEST & EAST VENTILATION BUILDINGS - CONDUIT & CABLE SCHEDULE SHEET 4
283	E-WE9	WEST & EAST VENTILATION BUILDINGS - CONDUIT & CABLE SCHEDULE SHEET 5
TRAFFIC CONTROL SYSTEM		
284	TC-1	TUNNEL - TRAFFIC CONTROL DEVICES - TUNNEL SIGNING AND LOOP DETECTORS
284 AX	TC-1A	DETAIL ADJACENT TO MESSAGE BOARDS
285	TC-2	EAST VENTILATION BUILDING-TRAFFIC CONTROL DEVICES-TRAFFIC CONTROL CONSOLE
286	TC-3	EAST VENTILATION BUILDING-TRAFFIC CONTROL DEVICES AND CONSOLE - DETAILS
287	TC-4	TUNNEL APPROACH SIGNING
288	TC-5	OVERHEIGHT VEHICLE DETECTORS - PORTAL SIGNS
TUNNEL APPROACH FEATURES		
289	GA-1	PLAN OF WEST PORTAL APPROACH - RIGHT OF WAY-HORK AREAS - APPROACH SIGNING
290	GA-2	PLAN OF EAST PORTAL APPROACH - RIGHT OF WAY-HORK AREAS - APPROACH SIGNING
291	GA-3	EAST PORTAL AREA - UNDERGROUND STORAGE TANK-PLAN, SECTION AND DETAILS
PHYSICAL DATA		
292	GO-1	TEMPERATURE DATA SUMMARY - EAST PORTAL
293	GO-2	TEMPERATURE SUMMARY - PILOT TUNNEL-DEGREE-DAYS, RAINFALL, PARSHALL FLUME & WIND DATA GENERAL SUBSURFACE INFORMATION
294	GO-1	PILOT TUNNEL DATA-GEOLOGIC PLAN AND PROFILE-T.B.L. STA. 28+73.7 TO T.B.L. STA. 57+00
295	GO-2	PILOT TUNNEL DATA-GEOLOGIC PLAN AND PROFILE-T.B.L. STA. 44+00 TO T.B.L. STA. 57+00
296	GO-3	PILOT TUNNEL DATA-GEOLOGIC PLAN AND PROFILE-T.B.L. STA. 57+00 TO T.B.L. STA. 70+00
297	GO-4	PILOT TUNNEL DATA-GEOLOGIC PLAN AND PROFILE-T.B.L. STA. 70+00 TO T.B.L. STA. 83+00
298	GO-5	PILOT TUNNEL DATA-GEOLOGIC PLAN AND PROFILE-T.B.L. STA. 83+00 TO T.B.L. STA. 96+00
299	GO-6	PILOT TUNNEL DATA-GEOLOGIC PLAN AND PROFILE-T.B.L. STA. 96+00 TO 109+00
300	GO-7	PILOT TUNNEL DATA-GEOLOGIC PLAN AND PROFILE-T.B.L. STA. 109+00 TO STA. 121+00
301	GS-1	EAST PORTAL AREA - SUBSURFACE INVESTIGATIONS - BORING LOGS
302	GS-2	SUBSURFACE INVESTIGATIONS - BORING LOGS
303	GS-3	SUBSURFACE INVESTIGATIONS - BORING LOGS
304	GS-4	SUBSURFACE INVESTIGATIONS - BORING LOGS
305	GS-5	SUBSURFACE INVESTIGATIONS - BORING LOGS
306	GS-6	EAST PORTAL AREA - SUBSURFACE INVESTIGATIONS - BORING LOGS
307	GS-7	EAST PORTAL AREA - SUBSURFACE INVESTIGATIONS - BORING LOGS
308	GS-8	EAST AND WEST PORTAL AREAS - SUBSURFACE INVESTIGATIONS - BORING LOGS
309	GS-9	WEST PORTAL AREA - SUBSURFACE INVESTIGATIONS - BORING LOGS
310	GS-10	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
311	GS-11	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
312	GS-12	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
313	GS-13	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
314	GS-14	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
315	GS-15	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
316	GS-16	SUBSURFACE INVESTIGATIONS - BORING LOGS - INCLINOMETER HOLES
MISCELLANEOUS DRAWINGS		
317	MS-1	CONCRETE INLETS, TYPES 3 AND 3 DOUBLE
318	MS-2	MANHOLE, TYPE 1 AND STIPS FOR MANHOLES AND INLETS
319	MS-3	CHAIN LINK FENCE
320	MS-4	TIMBER BARRICADES
321	MS-5	CONSTRUCTION IDENTIFICATION SIGNS
322	MS-6	TRAFFIC SIGNING FOR HIGHWAY CONSTRUCTION - SHEET 1
323	MS-7	TRAFFIC SIGNING FOR HIGHWAY CONSTRUCTION - SHEET 2
324	MS-8	TRAFFIC SIGNING FOR HIGHWAY CONSTRUCTION - SHEET 3
325	MS-9	BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS
326	MS-10	PEDESTALS, FOOTINGS AND SIGN ISLANDS FOR GROUND SIGNS

STATE OF COLORADO-DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

PROJECT- GENERAL

INDEX OF DRAWINGS

SHEET 4

GI-3A

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)	3aAX	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF Bk. 1	PROJECT CHANGE ORDER NO	REMARKS
SP-14	1	Mobilization and Demobilization	Lump Sum	Lump sum	100%	.0	Pg 1	W.O.#14153 C.O.#1	Completed Under the Contract Mod. Agreement
1A	2	Clearing and Grubbing	Lump Sum	Lump sum	83%	-17%	Pg 2	C.O.#204	
SP-11	3	Field Facilities	Lump Sum	Lump sum	109.5%	+9.5%	Pg 3	C.O.#51, C.O.#204	
SP-13	4	Concrete Test Laboratory	Lump Sum	Lump sum	101.5%	+1.5%	Pg 4	C.O.#24	
17-C	5	Emergency Gasoline Storage Tank and 6" Pipe Connection to East Ventilation Building	Lump Sum	Lump sum	100%	0	Pg 5		
1B	6	Unclassified Excavation For Well House and Water Tank	Cu. Yds.	5,300	3,602	-1,698	Pg. 6	C.O.#19	
1B	7	Unclassified Excavation For Pipe Trenches	Cu. Yds.	1,600	2,166	+566	Pg. 7	C.O.#19 and Supp.#1	
1B	8	Borrow Excavation, Buttress Berm, Water Storage Tank and Around Ventilation Buildings	Cu. Yds.	335,000	67,484	-267,516	Pg 8	W.O.#14153 C.O.#1 C.O.#55, C.O.#83, C.O.#111 and Supp's #1, #2, #3, C.O.#128, C.O.#142, C.O.#204	
6F	9	2 inch Diameter Perforated Black Steel Pipe, Furnished and Installed	Lin. Ft.	1,680	1,623	-57	Pg 11		
6F	10	2 inch Diameter Galvanized Steel Pipe, Furnished and Installed	Lin. Ft.	120	135	+15	Pg 12		
6F	11	42 inch Diameter Bituminous Coated Corrugated Metal Collector Pipe, 12ga., Furnished and Installed	Lin. Ft.	425	567	+142	Pg 13		
6F	12	8 inch Diameter Perforated Galvanized Corrugated Metal Pipe, 16ga., Furnished and Installed	Lin. Ft.	150	0	-150	Pg 14	C.O.#204	
4A	13	Concrete Class 6, Miscellaneous, Portal Areas	Cu. Yds.	400	399.22	-0.78	Pg 15	C.O.#19, C.O.#26 and Supp.#1	
4A	14	Reinforcing Steel Bars, Numbers 3 through 11, Portal Areas	Tons	23	23.32	+0.32	Pg 17	C.O.#19, C.O.#26 and Supp.#1	
1F	15	Structural Backfill, Class 1, West Portal Area	Cu. Yds.	300	819	+519	Pg 19	C.O.#9 and Supp.#1, C.O.#9, C.O.#204	

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)	3a BX	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF. Bk-1	PROJECT CHANGE ORDER NO.	REMARKS
1F	16	Structure Backfill Class 2, Portal Areas	Cu. Yds.	650	638	-12	Pg. 21	C.O. #19	
1F	17	Sand Fill, West Portal Area	Cu. Yds.	50	94	+44	Pg. 23	C.O. #19	
4A	18	Polyvinylchloride Waterstop, Type C, Well House and Water Storage Tank	Lin. Ft.	600	403	-197	Pg. 24	C.O. #19	
5A	19	Crushed Aggregate Subbase, East Portal Service Road	Cu. Yds.	300	0	-300	Pg. 25	C.O. #204	
1E	20	Dry Rubble Paving, Ditches and Slope Protection	Cu. Yds.	400	0	-400	Pg. 26	C.O. #204	
1E	21	Extension of Inclinator Casing	Lump Sum	Lump sum	30.7%	69.3%	Pg. 27	C.O. #204	
17C	22	Water Supply System, West Portal Area	Lump Sum	Lump sum	100%	0	Pg. 28	C.O. #19, C.O. #57, C.O. #138	
6C	23	Hollow Metal Door, Water Storage Tank	Each	1	2	+1	Pg. 29	C.O. #19	
6C	24	Roof Scuttles and Floor Door, Well House and Water Storage Tank	Lump Sum	Lump sum	100%	0	Pg. 30	C.O. #19	
6C	25	Access Door and Screen, Collector Pipe Inlet.	Each	1	1	0	Pg. 31		
6C	26	Steel Ladders Water Storage Tank	Lbs	900	532	-368	Pg. 32	C.O. #19	
6C	27	Pipe Railings Well House and Water Storage Tank	Lbs	300	235	-65	Pg. 33	C.O. #19	
6C	28	Cast Iron Castings, Well House and Water Storage Tank	Lbs	1,200	507	-693	Pg. 34	C.O. #19	
1B	29	Portal Section Excavation, Unclassified	Cu. Yds.	90,500	68,223	-22,277	Pg. 37	C.O. #146, C.O. #172, C.O. #204	Completed Under Contract Mod. Agreement
1C	30	Tunnel Excavation Class I, II, III	Cu. Yds.	356,500	259,108	-97,392	Pg. 41	C.O. #5, C.O. #35, C.O. #11, C.O. #107, C.O. #146, C.O. #204	Completed under Contract Mod. Agreement
1C	31	Tunnel Excavation Class B IVa	Cu. Yds.	21,500	11,107	-10,393	Pg. 42	C.O. #107, C.O. #204	Completed Under Contract Mod. Agreement

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)	3a CX	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF. Bk-1	PROJECT CHANGE ORDER No.	REMARKS
1C	32	Tunnel Excavation Class B IVb	Cu Yds.	60,000	492	-59,508	Pg. 43	C.O.#204	Completed Under Contract Mod. Agreement
2A	34	Structural Steel Tunnel Supports Class A, Type A-441	Tons	6,500	4,306.90	-2,193.10	Pg. 49	C.O.#1, C.O.#7 and Supp.#1, C.O.#35, C.O.#71, C.O.#81, C.O.#107, C.O.#172 C.O.#204	Completed Under Contract Mod. Agreement
2A	35	Structural Steel Tunnel Supports Class B, Type A 441	Tons	6,800	763.01	-6,036.99	Pg.51	C.O.#1, C.O.#107, C.O.#204	Completed Under Contract Mod. Agreement
2A	36	Structural Steel Tunnel Supports Class B and Structural Steel Transition Tunnel Supports, Class A Furnished but not installed Type A-441	Tons	300	0	-300	Pg. 52	C.O.#204	Not Req'd. Under Contract Mod. Agreement
2A	37	Structural Steel Supports Type A-36 All Tie Rods and Nuts	Tons	840	157.02	-682.98	Pg. 55	C.O.#1, C.O.#12, C.O.#35, C.O.#81, C.O.#172, C.O.#204	Completed Under Contract Mod. Agreement
2A	38	Structural Steel Lagging Type A-36	Tons	1,170	365.31	-804.69	Pg. 58	C.O.#22, C.O.#35, C.O.#172, C.O.#204	Completed Under Contract Mod. Agreement
2A	39	Structural Steel Liner Plates	Tons	300	0	-300	Pg. 59	C.O.#204	Not Req'd Under Contract Mod. Agreement
2A	40	Rock Bolts 5/8 inch Diameter, Less Than 6 Feet Long Ungrouted	Lin. Ft.	9,300	627	-8,673	Pg. 60	C.O.#126	Completed Under Contract Mod. Agreement
2A	41	Rock Bolts 3/4 inch Diameter, Over 6 Feet Long, Grouted	Lin Ft.	53,500	36660	-16840	Pg. 62	C.O.#42, C.O.#126, C.O.#204	Completed Under Contract Mod. Agreement
2A	42	Welded Wire Fabric Safety Netting, Attached to Rock Bolts	Lbs	53,000	629	-52,371	Pg. 63	C.O.#126	Completed Under Contract Mod. Agreement
2A	43	Welded Wire Fabric Safety Netting, Attached to Structural Steel Support Sets	Lbs	47,000	0	-47,000	Pg. 64	C.O.#204	Not Req'd. Under Contract Mod. Agreement
2A	45	Timber Blocking Assembly at Spring Line	Each	3,300	944	-2,356	Pg. 66	C.O.#1, C.O.#28	Completed Under Contract Mod. Agreement
1C	46	Feeler Holes	Lin. Ft.	18,000	2,633	-15,367	Pg. 68		
1C	47	Probe Holes	Lin. Ft.	2,000	0	-2,000	Pg. 69	C.O.#204	
4A	48	Concrete Class 1 Tunnel Lining	Cu Yds	68,500	41,421.77	-27,078.23	Pg.74	C.O.#1, C.O.#35, C.O.#71, C.O.#72 and Supp.#1, C.O.#126, C.O.#146, C.O.#172, C.O.#204	Completed Under Contract Mod. Agreement

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	COLORADO	I 70-3(34)	36 AX	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO.	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF. Bk. I	PROJECT CHANGE ORDER No.	REMARKS
4A	49	Concrete Class 2, Tunnel Lining	Cu. Yds.	29,500	890.34	-28,609.66	Pg. 75	C.O.#1, C.O.#72 and Supp.#1, C.O.#204	Completed Under Contract Mod. Agreement
4A	50	Concrete Class 1, Conduit Portal Sections	Cu. Yds.	18,500	18863.51	+ 363.51	Pg. 81	C.O.#146	
4A	51	Concrete Class 2, Conduit Portal Sections	Cu. Yds.	20,800	7,470.30	-13,329.70	Pg. 83	C.O.#31, C.O.#112	
4A	52	Concrete Class 3, Second Stage Tunnel	Cu. Yds.	8,200	0	-8,200	Pg. 84	C.O.#160 and Supplements, C.O.#204	
4A	53	Concrete Class 4, Tunnel Ceiling Slab	Cu. Yds.	10,400	0	-10,400	Pg. 85	C.O.#150 and Supplements, C.O.#204	
4A	54	Concrete Class 5, Transition Air Duct Floor	Cu. Yds.	175	0	-175	Pg. 86	C.O.#150 and Supp. #2, C.O.#204	
6D	56	Damproofing, Portal Section Segments and tunnel Ceiling	Sq. Ft.	355,000	62,978	-292,022	Pg. 88	C.O.#1, C.O.#150 and Supplements	
4A	58	Concrete Class 3, Miscellaneous Tunnel	Cu. Yds.	400	80.92	-319.08	Pg. 90	C.O.#126, C.O.#145 and Supplements, C.O.#172	
4A	59	Reinforced Concrete Roadway Base Slab, Class 6	Sq. Yds.	25,000	0	-25,000	Pg. 91	C.O.#179, C.O.#204	
6A	60	Glazed Structural Tile Wall	Sq. Ft.	169,500	179,953	+10453	Pg. 92		
6A	61	Hand-Laid Glazed Structural Wall Tile	Sq. Ft.	60,000	0	-60,000	Pg. 93	C.O.#160, C.O.#161, C.O.#204	
4B	63	Precast Concrete Ceiling Panels including Embedded Tile Surfacing	Sq. Ft.	2,900	0	-2,900	Pg. 95	C.O.#150 and Supp. #2, C.O.#204	
4B	64	Precast Concrete Wall Panels For Air Duct Divider Wall	Sq. Ft.	127,000	0	-127,000	Pg. 96	C.O.#150, C.O.#204	
4A	65	Fill Concrete, Class 7, Portal Sections	Cu. Yds.	1,500	282.99	-1,217.01	Pg. 97		
4A	66	Reinforcing Steel Bars Nos 3 Through Nos 11, Tunnel	Tons	5,000	1,789.19	-3,210.81	Pg. 101	C.O.#35, C.O.#56, C.O.#71, C.O.#80, C.O.#145 and Supp.#3, C.O.#150, C.O.#160 and Supp.#5, C.O.#172, C.O.#204	

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)	36 BX	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF. BK/	PROJECT CHANGE ORDER No.	REMARKS
4A	67	Reinforcing Steel Bars Nos 14 S and 18 S	Tons	4,000	2,259.22	-1,740.78	Pg. 102	C.O.#172, C.O.#204	Completed Under Contract Mod Agreement
4A	68	Reinforcing Bar Splices For Bars No. 14 S	Each	2,400	0	-2,400	Pg. 103	C.O.# 56, C.O.#172, C.O.#204	Completed Under Contract Mod. Agreement
4A	69	Reinforcing Bar Splices For Bars No. 18 S	Each	1,050	484	-566	Pg. 104	C.O.#56, C.O.#172	
3B	71	Steel Pipes For Grouting and Venting	Lbs.	70,000	21,786	-48,214	Pg. 106	C.O.#112 and Supp.#1	Provides Payment Under Contract Mod. Agreement Completed Under Contract Mod Agreement
3B	72	Grouting Connections	Each	1,000	274	-726	Pg. 107	C.O.#125	Completed Under Contract Mod. Agreement
3B	73	Portland Cement in Grout	Cu. Ft.	16,000	57,599	+41,599	Pg. 112	C.O.#103, C.O.#125, C.O.#204	Spec. Revision and Contract Unit Price Revision Completed Under Contract Mod. Agreement
6E	74	Sheet Metal For Panning	Lbs.	15,000	8,678	-6,322	Pg. 113		Completed Under Contract Mod Agreement
6E	76	Galvanized Steel Pipe and Fittings, 4-inch Diameter and Smaller	Lbs.	58,400	53,850	-4,550	Pg. 118	C.O.#1, C.O.#145-Supp#6, C.O.#172	
6E	77	Galvanized Steel Pipe and Fittings Larger than 4-inch Diameter	Lbs.	1,400	0	-1,400	Pg. 119	C.O.#204	Not Used Due to Existing Drainage Requirements
6E	78	4-inch Diameter Extra Strength Vitrified Clay Pipe	Lin. Ft.	4,800	666	-4,134	Pg. 122	C.O.#145 and Supp's, C.O.#172	Completed under C.O.#145 and supp's
6E	79	12-inch Diameter Extra Strength Vitrified Clay Pipe	Lin. Ft.	17,000	0	-17,000	Pg. 123	C.O.#145 and Supp's, C.O.#204	
6E	80	8-inch Diameter Extra Strength Vitrified Clay Pipe and Fittings	Lin. Ft.	18,000	2,220	-15,780	Pg. 125	C.O.#146, C.O.#172	Completed under contract mod. agreement
6E	81	4-inch Diameter Vitrochem, Extra Strength Pipe and Fittings	Lin. Ft.	1,150	0	-1,150	Pg. 126	C.O.#145, C.O.#204	
6E	82	12-inch Diameter Vitrochem, Extra Strength Pipe and Fittings	Lin. Ft.	8,400	0	-8,400	Pg. 127	C.O.#145, C.O.#204	
17C	83	Tunnel Water Supply System	Lump Sum	Lump Sum	100%	0	Pg. 128	C.O.#145 and Supp#3	
6E	84	Cast Iron Roadway Catch Basins	Each	112	2	-110	Pg. 129	C.O.#145 and Supplements	Eliminated by Design Revision

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I70-3(34)	3c AX	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO.	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF. Bk.I	PROJECT CHANGE ORDER No.	REMARKS
6C	85	Cast Iron Manhole Frames and Covers	Each	67	0	-67	Pg. 130	C.O.*145 and Supplements, C.O.*172, C.O.*204	Completed Under C.O.*145 and Supplements
6C	86	Cast Iron Manhole Steps	Lbs	2,300	154	-2,146	Pg. 131	C.O.*145 and Supplements, C.O.*172	Completed Under C.O.*145 and Supplements
6C	87	Cast Iron Drain Inlets	Each	28	28	0	Pg. 133		
6C	88	Traffic Control Pulpits	Each	7	7	0	Pg. 134	C.O.*166	
6C	89	Tunnel Ceiling Structural Steel Beam	Lbs.	255,000	0	-255,000	Pg. 135	C.O.*150, Supp.*2, C.O.*204	
6C	90	Tunnel Walkway Car Rail and Supports	Lbs	343,000	18,526	-324,474	Pg. 136	C.O.*1, C.O.*143	Completed Under Contract Mod. Agreement
6C	91	A 441 Steel Ceiling Hangers	Each	1,530	867	-663	Pg. 137	C.O.*1, C.O.*79, C.O.*150 and Supp.*2	Completed Under C.O.*150
6C	92	Fresh Air Flue Liners	Lbs.	1,030,000	1,117,055	+87,055	Pg. 140	C.O.*1, C.O.*71, C.O.*148, C.O.*150 and Supp's, C.O.*160 and Supp's, C.O.*172	
6C	93	Exhaust Port Liners	Lbs	44,500	0	-44,500	Pg. 141	C.O.*1, C.O.*150 and Supp.*1, C.O.*204	
6C	94	Sliding Doors in Air Duct Bulkhead	Each	2	0	-2	Pg. 142	C.O.*150, C.O.*204	
6C	95	Doors in Duct Divider Wall Panels	Each	8	0	-8	Pg. 143	C.O.*150, C.O.*204	
6C	96	Doors in Cross Passageways	Each	3	3	0	Pg. 144		
6C	97	Doors in Transformer Vaults	Each	4	4	0	Pg. 145		
6C	98	Air Duct Access Hatches	Each	8	0	-8	Pg. 146	C.O.*150, C.O.*204	
6C	99	Vitreous Enamel Coated Pipe Railing	Lin. Ft.	8,060	8,057	-3	Pg. 147		
6C	100	Pull Box Distribution Stations	Each	45	43	-2	Pg. 148	C.O.*181, C.O.*204	
6C	101	Fire Extinguisher Cabinets	Each	34	34	0	Pg. 149		
6C	102	Air Sampling Cabinets	Each	5	5	0	Pg. 150		
6C	103	Miscellaneous Metal Work	Lbs	335,000	10,473	-324,527	Pg. 151	C.O.*1, C.O.*150 and Supp's, C.O.*160, C.O.*172, C.O.*204	
1F	104	Sand Fill	Cu. Yds.	1,000	0	-1,000	Pg. 152	C.O.*145 and Supp.*3, C.O.*204	
1F	105	Granular Insulating Fill	Cu. Yds.	830	849	+19	Pg. 153	C.O.*145 and Supp.*3	

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3 (34)	3c BX	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO.	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF. BK.	PROJECT CHANGE ORDER No.	REMARKS
1F	106	Structure Backfill, Class 1, Tunnel	Cu. Yds.	12,100	2,237	-9,863	Pg. 155	C.O.*145 and Supp.*3, C.O.*172	Completed under contract mod. agreement
1F	107	Structure Backfill, Class 2, Tunnel	Cu. Yds.	9,400	77	-9,323	Pg. 156	C.O.*145 and Supp.*3, C.O.*172, C.O.*204	
1F	108	Vertical Filter Drains	Lin. Ft.	500	0	-500	Pg. 157	C.O.*204	
5A	109	Crushed Aggregate Subbase Tunnel	Cu. Yds.	9,600	0	-9,600	Pg. 158	C.O.*179, C.O.*204	
5A	110	Crushed Stone Surfacing, Pilot Tunnel	Cu. Yds.	1,300	0	-1,300	Pg. 159	C.O.*1, C.O.*172	
4A	111	Polyvinylchloride Waterstop, Type A	Lin. Ft.	17,000	9,923	-7,077	Pg. 160	C.O.*72, C.O.*172, C.O.*204	Completed under contract mod. agreement
4A	112	Polyvinylchloride Waterstop, Type B	Lin. Ft.	400	517	+117	Pg. 161		
4A	113	Polyvinylchloride Waterstop Type C	Lin. Ft.	7,200	131	-7,069	Pg. 162	C.O.*150, C.O.*204	Completed Under Contract Mod. Agreement
6B	114	Concrete Block Masonry Air Duct Bulkhead	Sq. Ft.	400	385	-15	Pg. 163	C.O.*150, C.O.*161	
6B	115	Concrete Block Masonry Transformer Vaults	Sq. Ft.	300	281	-19	Pg. 164	C.O.*161	
5C	116	Bituminous Tack Coat	Sq. Yds.	49,200	0	-49,200	Pg. 165	C.O.*179	
5B	117	Asphaltic Concrete Binder Course	Sq. Yds.	24,600	0	-24,600	Pg. 166	C.O.*179	
5B	118	Sand-Asbestos-Asphaltic Surface Course	Sq. Yds.	24,600	0	-24,600	Pg. 167	C.O.*179	
6C	119	Vitreous Enamel Signs	Lump Sum	Lump Sum	100%	0	Pg. 168		
6E	120	Perforated Galvanized Corrugated Metal Pipe, 12-inch Diameter	Lin. Ft.	270	266	-4	Pg. 169		
6E	121	Perforated Galvanized Corrugated Metal Pipe, 18-inch Diameter	Lin. Ft.	470	0	-470	Pg. 170	C.O.*172	
6E	122	Brick Manholes, South Tunnel	Each	2	0	-2	Pg. 171	C.O.*172	
6E	123	Sump Pumps, South Tunnel	Lump Sum	Lump Sum	100%	0	Pg. 172	M.C.R.*11	

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)	3d AX	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO.	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF. Bk. I	PROJECT CHANGE ORDER No.	REMARKS
2B	124	Tunnel Instrumentation	Lump Sum	Lump Sum	72.9%	-27.1%	Pg 184	C.O.*14 and Supplement, C.O.*204	Completed Under Contract Mod Agreement
SP-16	125	Maintain Pilot Bore West Vent. Build.	Lump Sum	Lump Sum	92.9%	-7.1%	Pg 185	C.O.*204	Completed Under Contract Mod Agreement
7A	126	Earth Excavation	Cu. Yd.	11,000	15,137	+4,137	Pg 186	C.O.*30	
7A	127	Rock Excavation	Cu. Yd.	700	3,173	+2,473	Pg 187		
7B	128	Structure Backfill, Class 2	Cu. Yd.	2,000	155	-1,845	Pg 188	C.O.*53	
8A	129	Concrete Class B-1	Cu. Yd.	3,500	4,367.57	+867.57	Pg 189	C.O.*150-Supp.*2	
8A	130	Concrete Class B-2	Cu. Yd.	8,100	7,766.84	-333.16	Pg 190	C.O.*30, C.O.*53, C.O.*172	
8A	131	Concrete Class B-3	Cu. Yd.	1,900	1,581.25	-318.75	Pg 191	C.O.*30	
8A	132	Concrete Class B-5	Cu. Yd.	1,100	953.05	-146.95	Pg 192	C.O.*74	
8A	133	Concrete Class B-7	Cu. Yd.	500	565.86	+65.86	Pg 193		
8A	134	Pneumatically Placed Mortar	Cu. Yd.	280	226.14	-53.86	Pg 194	C.O.*187	
8A	135	Reinforcing Steel Bars	Tons	1,100	930.58	-169.42	Pg 196	C.O.*30, C.O.*53, C.O.*61, C.O.*74, C.O.*150-Supp.*2, C.O.*172	
8A	136	Welded Wire Fabric	Lbs.	112,000	162,304	+50,304	Pg 197	C.O.*30, C.O.*187	
8B	137	Precast Concrete Panels, Exposed Aggregate	Lump Sum	Lump Sum	100%	0	Pg 198	C.O.*64	
4B	138	Precast Concrete Ceiling Panels, Including Embedded Tile Surfacing	Sq. Ft.	9,800	7,787	-2,013	Pg 199	C.O.*172, C.O.*185	
9A	139	Masonry Work, Exterior Walls	Lump Sum	Lump Sum	100%	0	Pg 200	C.O.*65, C.O.*172	
9A	140	Masonry Work, Interior Walls	Lump Sum	Lump Sum	100%	0	Pg 201	C.O.*65	
9A	141	Masonry Work, Tile Wall Backup	Sq. Ft.	15,400	12,382	-3,018	Pg 202	C.O.*65	
10A	142	Structural Steel	Lump Sum	Lump Sum	100%	0	Pg 203	C.O.*59, C.O.*63, C.O.*144	
6A	143	Glazed Structural Wall Tile	Sq. Ft.	8,700	7,148	-1,552	Pg 204	C.O.*160, C.O.*172, C.O.*193	
16B	144	All Other Work, West Ventilation Building	Lump Sum	Lump Sum	100%	0	Pg 206	C.O.*1, C.O.*79, C.O.*83, C.O.*93, C.O.*150-Supp.*2 & 3, C.O.*154, C.O.*172, C.O.*179 and Supp.*2, C.O.*175	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO.	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF Bk-I	PROJECT CHANGE ORDER No.	REMARKS
7A	145	Earth Excavation <i>East Vent. Build.</i>	Cu. Yds.	25,700	46,627	+20,927	Pg 207	C.O.*30	
7A	146	Rock Excavation	Cu. Yds.	11,200	2,314	-8,886	Pg 208		
7B	147	Structure Backfill	Cu. Yds.	2,000	224	-1,776	Pg 209	C.O.*30, C.O.*172	
8A	148	Concrete Class B-1	Cu. Yds.	4,400	4,827.34	+427.34	Pg 210	C.O.*150-Supp.*2	
8A	149	Concrete Class B-2	Cu. Yds.	9,800	9,247.58	-552.42	Pg 211	C.O.*29, C.O.*30, C.O.*172	
8A	150	Concrete Class B-3	Cu. Yds.	1,900	1,824.64	-75.36	Pg 212	C.O.*30	
8A	151	Concrete Class B-4	Cu. Yds.	950	936.45	-13.55	Pg 213	C.O.*17, C.O.*53	
8A	152	Concrete Class B-5	Cu. Yds.	1,150	935.73	-214.27	Pg 214	C.O.*74	
8A	153	Concrete Class B-7	Cu. Yds.	550	648.47	+98.47	Pg 215	C.O.*120	
8A	154	Pneumatically Applied Mortar	Cu. Yds.	280	225.05	-54.95	Pg 216	C.O.*187	
8A	155	Reinforcing Steel Bars	Tons	1,250	1,218.71	-31.29	Pg 218	C.O.*30, C.O.*33, C.O.*61, C.O.*62, C.O.*74, C.O.*114, C.O.*120, C.O.*150-Supp.*2, C.O.*172	
8A	156	Welded Wire Fabric	Lbs	108,000	146,450	+38,450	Pg 219	C.O.*30, C.O.*187	
8B	157	Precast Concrete Panels, Exposed Aggregate	Lump Sum	Lump Sum	100%	0	Pg 220	C.O.*64	
4B	158	Precast Concrete Ceiling Panels, Including Embedded Tile Surfacing	Sq. Ft.	9,800	7,854	-1,946	Pg 221	C.O.*172, C.O.*185	
9A	159	Masonry Work Exterior Walls	Lump Sum	Lump Sum	100%	0	Pg 222	C.O.*65, C.O.*172	
9A	160	Masonry Work Interior Walls	Lump Sum	Lump Sum	100%	0	Pg 223	C.O.*65	
9A	161	Masonry Work, Tile Wall Back-up	Sq. Ft.	15,400	13,132	-2,268	Pg 224	C.O.*65	
10A	162	Structural Steel	Lump Sum	Lump Sum	100%	0	Pg 225	C.O.*63, C.O.*144	
6A	163	Glozed Structural Wall Tile	Sq. Ft.	8,700	7,560	-1,140	Pg 226	C.O.*160-Supp.*5, C.O.*172, C.O.*193	
16B	164	All Other Work <i>East Ventilation Building</i>	Lump Sum	Lump Sum	100%	0	Pg 228	C.O.*1, C.O.*79, C.O.*93, C.O.*150-Supp.*2 & 3, C.O.*154, C.O.*158, C.O.*172, C.O.*179 and Supp.*2	

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I70-3(34)	34CX	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF. Bk. I	PROJECT CHANGE ORDER No.	REMARKS
17A	165	Tunnel Ventilation System	Lump Sum	Lump Sum	100%	0	Pg. 229	C.O.#1, C.O.#134, C.O.#186	
17B	166	Heating, Ventilation and Air Conditioning	Lump Sum	Lump Sum	100%	0	Pg. 230	C.O.#60, C.O.#162, C.O.#172	
17C	167	Plumbing, Water Supply and Fire Protection	Lump Sum	Lump Sum	100%	0	Pg. 231	C.O.#135, C.O.#145 - Supp's #1, 7, & 8, C.O.#172 and Supp.#1, C.O.#36	
17D	168	Carbon Monoxide (CO) System	Lump Sum	Lump Sum	100%	0	Pg. 232		
17E	169	Walkway Car	Lump Sum	Lump Sum	100%	0	Pg. 233		
18B	170	24.9 KV Supply, Tie Wiring	Lump Sum	Lump Sum	100%	0	Pg. 234		
18B	171	24.9 KV Switchgear	Lump Sum	Lump Sum	100%	0	Pg. 235		
18B	172	24.9 KV to 460v. Power Transformer	Lump Sum	Lump Sum	100%	0	Pg. 236		
18B	173	Low Voltage Switchgear and Motor Control Centers	Lump Sum	Lump Sum	100%	0	Pg. 237		
18B	174	Tunnel Power Supply System	Lump Sum	Lump Sum	100%	0	Pg. 238		
18B	175	Low Voltage Power and Control Wiring	Lump Sum	Lump Sum	100%	0	Pg. 239	C.O.#32	
18B	176	A.C. Power Distribution Panels	Lump Sum	Lump Sum	100%	0	Pg. 240		
18B	177	Control Boards	Lump Sum	Lump Sum	100%	0	Pg. 241		
18B	178	Supervisory System Equipment for Remote Control	Lump Sum	Lump Sum	100%	0	Pg. 242		
18B	179	Electric Heating and Pipe Tracing	Lump Sum	Lump Sum	100%	0	Pg. 243	C.O.#136, C.O.#172	
18B	180	Emergency Electric Generator System	Lump Sum	0	Lump Sum	+100%	Pg. 244	C.O.#1 and Supp.#1	
18B	181	Miscellaneous Control Equipment	Lump Sum	Lump Sum	100%	0	Pg. 245		
18C	182	Grounding System	Lump Sum	Lump Sum	100%	0	Pg. 246		
18D	183	Tunnel Lighting System	Lump Sum	Lump Sum	100%	0	Pg. 247	C.O.#38, C.O.#159, C.O.#195	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(34)	3 of 11	

SUMMARY OF FINAL QUANTITIES

SPEC. SECT.	ITEM NO.	DESCRIPTION	UNIT	PLAN QUANTITIES	FINAL QUANTITIES	DIFF.	TABULATION REF. BK. I	PROJECT CHANGE ORDER No.	REMARKS
18E	184	East Building Lighting System	Lump Sum	Lump Sum	100%	0	Pg. 248	C.O. #54	
18E	185	West Building Lighting System	Lump Sum	Lump Sum	100%	0	Pg. 249	C.O. #54	
18F	186	Conduit and Duct System, Tunnel	Lump Sum	Lump Sum	100%	0	Pg. 250	C.O. #150 - Supp. #1 & 5, C.O. #169, C.O. #172, C.O. #181, C.O. #195	
18F	187	Conduit and Duct System, East Building and Portal Area	Lump Sum	Lump Sum	100%	0	Pg. 251	C.O. #32, C.O. #54, C.O. #78	
18F	188	Conduit and Duct System, West Building and Portal Area	Lump Sum	Lump Sum	100%	0	Pg. 252	C.O. #32, C.O. #54, C.O. #78	
18G	189	120 240 Volt D.C. Supply System	Lump Sum	Lump Sum	100%	0	Pg. 253		
18H	190	T.V. Surveillance System	Lump Sum	0	Lump Sum	+100%	Pg. 254	C.O. #1 and Supp. #1	
18I	191	Loop Vehicle Detectors	Lump Sum	Lump Sum	100%	0	Pg. 255		
18I	192	Variable Matrix Signs	Lump Sum	Lump Sum	100%	0	Pg. 256	C.O. #177, C.O. #197	
18I	193	Stop Here on Red Signal Blankout Signs	Lump Sum	Lump Sum	100%	0	Pg. 257		
18I	194	Portal Traffic Signal Units	Lump Sum	Lump Sum	100%	0	Pg. 258		
18I	195	Overheight Vehicle Detectors and Overheight Vehicle Signs	Lump Sum	0	Lump Sum	+100%	Pg. 259	C.O. #1 and Supp. #1	
18I	196	Fixed Legend Reflectorized Signs	Lump Sum	0	Lump Sum	+100%	Pg. 260	C.O. #1 and Supp. #1	
18I	197	Variable Speed Signs	Lump Sum	Lump Sum	100%	0	Pg. 261		
18I	198	Tunnel Closed-Use U.S. 6 Blankout Signs	Lump Sum	Lump Sum	0	-100%	Pg. 262	C.O. #115	
18I	199	Outdoor Sirens	Lump Sum	0	Lump Sum	+100%	Pg. 263	C.O. #1 and Supp. #1	
18I	200	Traffic Control Console	Lump Sum	Lump Sum	100%	0	Pg. 264	C.O. #115	
	201	Cost Reduction	Each	0	40	+40	Pg. 265	C.O. #72	Completed Under Contract Mod. Agreement

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)	3e AX	

FINAL SUMMARY OF CHANGE ORDERS

C. O. NO.	W. O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
1	14153	Deletion of certain contract bid items				Bk.2 Pg. 1	Affects contract bid items
	16527	Re-insertion of certain contract bid items				Bk.2 Pg. 1	Supplement to C.O. 1 Affects contract bid items
	18064	Fresh air flue liners	0	0	0	Bk.2 Pg. 1	Supplement # 1 to C.O. 1 No change in cost
2	10961	Stone surfacing - pilot tunnel	0	0	0	Bk.2 Pg. 2	No change in cost to the project
3	18002	Retimbering pilot tunnel	10000.00	14496.14	+ 4496.14	Bk.2 Pg. 3	
	16530	Maintain pilot tunnel	10000.00	1886.81	- 8113.19	Bk.2 Pg. 3	Supplement # 1 to C.O. 3
4	10962	Reduction in size of horizontal drill hole				Bk.2 Pg. 4	No change in cost to the project
5	10964	Stationing of east cross passageway				Bk.2 Pg. 5	Paid under contract bid items
6	18026	Telephone communications	4804.00	5136.08	+ 332.0	Bk.2 Pg. 6	
	16531	Telephone communications				Bk.2 Pg. 6	Supplement to C.O. 6 Paid under C.O. 6
7	18029	Top heading and bench method - west portal				Bk.2 Pg. 7	Paid under contract bid items
	18045	Top heading and bench method - east portal also provides payment for 12150 steel wall plate				Bk.2 Pg. 7	Supplement # 1 to C.O. 7 Paid under contract bid items
	18098	To apply certain change orders to the west portal of the south tunnel	0	0	0	Bk.2 Pg. 7	Supplement to C.O. 7, 22, 28 No change in cost
8	18032		-----	-----	-----	Bk.2 Pg. 8	Never executed
9	18033	Extend 24" cross drain	7500.00	4098.35	- 3401.65	Bk.2 Pg. 9	
	21883	24" cross drains in west portal area				Bk.2 Pg. 9	Paid under contract modification agreement

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I70-3(34)	3e BX	

FINAL SUMMARY OF CHANGE ORDERS

C. O. NO.	W. O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
	16505	Extend 24" cross drains				Bk2 Pg. 9	Supplement #2 to C.O. 9 Paid under the agreement
10	18034	Changes to requirements for paint	0	0	0	Bk2 Pg.10	No change in cost to the project
12	18037	Revision of size of certain steel beams				Bk2 Pg.11	Paid under contract bid items
13	18038	Rock bolting	-----	-----	-----	Bk2 Pg.12	Never executed
14	18042	Tunnel instrumentation				Bk2 Pg.13	Paid under contract bid items
	16561	Terminates C.O.14 and establishes certain other Tunnel instrumentation				Bk2 Pg.13	Supplement #1 to C.O. 14 Paid under contract bid items
15			-----	-----	-----	Bk2 Pg.14	Never executed
16	18049	Investigate foundation conditions at W.V.B.	6000.00	4122.77	-1877.23	Bk2 Pg.15	
17	18048	Fill concrete in W.V.B.				Bk2 Pg.16	Paid under contract bid items
18	18051	Removal of interior and wall footings	5000.00	1810.94	-3189.06	Bk2 Pg.17	
19	18052	Water supply system	0	927.73	+927.73	Bk2 Pg.18	
	18087	Water collecting system	1700.00	9571.18	+7871.18	Bk2 Pg.18	Supplement to C.O. 19 Some items paid under bid items
20	18057	Piling for footings in W.V.B.	125000.00	87380.29	-37619.71	Bk2 Pg.19	
	18042	Forming for fill concrete in W.V.B. foundation	2500.00	6485.22	+3985.22	Bk2 Pg.19	Supplement #1 to C.O. 20
21	18076	Breaking of concrete test cylinders	0	0	0	Bk2 Pg.20	No change in cost to the project
22	18078	Logging clamp assemblies				Bk2 Pg.21	Paid under contract bid items

FINAL SUMMARY OF CHANGE ORDERS

C. O. NO.	W. O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
23	—					Bk.2 Pg.22	Never executed
24	18082	Certain accessories for the concrete test lab				Bk.2 Pg.23	Paid under contract bid items
25	18083	Concrete slump consistencies	0	0	0	Bk.2 Pg.24	No change in cost to the project
26	18085	Extension of drainage	25666.68	25371.29	- 295.39	Bk.2 Pg.25	Some items paid under contract bid items
	21880	Collecting water at the corner of the E.V.B.				Bk.2 Pg.25	Supplement #1 to C.O. 26 Paid under C.O. 26
	21889	Drainage for the south tunnel				Bk.2 Pg.25	Supplement #2 to C.O. 26 Paid under C.O. 26
27	18089	Compensation for handling costs	1000.00	0	-1000.00	Bk.2 Pg.26	Change order was never used
28	18107	Concrete wall plate beam				Bk.2 Pg.27	Paid under contract bid items
29	18093	Concrete trench in E.V.B.	1700.00	1226.40	- 473.60	Bk.2 Pg.28	Some items paid under contract bid items
30	18095	Install vehicle hoist in E.V.B.	2800.00	5451.21	+ 2651.21	Bk.2 Pg.29	Some items paid under contract bid items
31	18102	Acceptance of concrete in conduit portal sections	1500.08	1500.08	0	Bk.2 Pg.30	Lump sum
32	18104	Larger size electrical conduits and cables	24337.84	24337.84	0	Bk.2 Pg.31	Lump sum
33	18105	Install four manholes in E.V.B.	950.00	923.88	- 26.12	Bk.2 Pg.32	Some items paid under contract bid items
34	18109	9" P.V.C. waterstop in E.V.B.	400.00	281.48	- 118.52	Bk.2 Pg.33	
35	18110	Extension of project limits in south tunnel				Bk.2 Pg.34	Paid under contract bid items
36	18097	Explosion proof motor for water system E.V.B.	150.48	150.48	0	Bk.2 Pg.35	Lump sum
37	18124	Modification of steel support sets				Bk.2 Pg.36	Paid under contract bid items

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	DESCRIPTION
38	18120	Increase to tunnel lighting system	2133.36	2133.36	0	Bk.2 Pg.37	Lump sum
39	18099	Cadweld splices	5200.00	7829.20	2629.20	Bk.2 Pg.38	
40	18116	Tunneling procedure in east portal slide area				Bk.2 Pg.39	Paid under contract bid items
41	18118	Tunneling procedure in east portal slide area				Bk.2 Pg.40	Paid under contract bid items
42	18123	Sidewall rock bolts		2944.65		Bk.2 Pg.41	Grouted bolts paid under contract bid items
43	18062	Change in concrete design	0	0	0	Bk.2 Pg.42	No change in cost to the project
44	18066	Change in alignment	0	0	0	Bk.2 Pg.43	No change in cost to the project
45	18074	Emergency D.C. lighting system	2893.05	2893.05	0	Bk.2 Pg.44	Lump sum
46	16506	Drainage system in the landslide	3000.00	2229.51	-770.49	Bk.2 Pg.45	
47	16509	Slide area drainage	900.00	682.25	-217.75	Bk.2 Pg.46	
48	16510	Installation of ventilation fans	162000.00	162000.00	0	Bk.2 Pg.47	Lump sum
	21754	Certain ventilation equipment work	5000.00	5000.27	+ 0.27	Bk.2 Pg.47	Supplement #1 to C.O. 48
	21906	Small motors and turning gears	10260.00	10260.00	0	Bk.2 Pg.47	Supplement #2 to C.O. 48 Lump sum
	21918	Motor starters for the small turning motors	2235.00	6265.61	+ 4030.61	Bk.2 Pg.47	Supplement #3 to C.O. 48
	21882	Storage of ventilation equipment	5000.00	27476.42	+22476.42	Bk.2 Pg.47	Supplement #4 to C.O. 48
	03028	Access doors	955.84	955.84	0	Bk.2 Pg.47	Supplement #5 to C.O.48 Lump sum
	17012	Repair of fan motor				Bk.2 Pg.47	Supplement #6 to C.O.48 — Deleted by supplement #7

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	170-3(34)	3e EX	

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
	00233	Repair to 100 H.P. motor	1921.02	2165.63	+ 244.61	Bk.2 Pg.47	Supplement # 7 to C.O. 48
49	16513	Extension of 24" cross drains	3750.00	1717.82	-2032.18	Bk.2 Pg.48	Some items paid under contract bid items
50	16514	Revision to certain electrical work	358.41	358.41	0	Bk.2 Pg.49	Lump sum
51	16515	Extension on C.D.H. field office				Bk.2 Pg.50	Paid under contract bid items
52	16517	Slide mass instrumentation	60500.00	17087.01		Bk.2 Pg.51	Plan amount includes \$20000.00 from W.O. 21817
	21875	Modifies method of payment for C.O. 52		37362.52		Bk.2 Pg.51	Supplement #1 to C.O. 52 Paid with C.O. 52 funds
	21801	Surveying MPBX holes		2172.20		Bk.2 Pg.51	Supplement #2 to C.O. 52 Paid with C.O. 52 funds
	21817	Drilling drainage hole in slide mass		4684.00		Bk.2 Pg.51	Supplement #3 to C.O. 52 Paid with C.O. 52 funds
	21780	Protective instrument housings	11000.00	11000.00		Bk.2 Pg.51	Supplement #4 to C.O. 52 Lump sum
			71500.00	73088.73	+1588.73		Totals for C.O. 52 and supplements
53	16516	48" precast manhole in the W.V.B.	1400.00	2976.06	+1576.06	Bk.2 Pg.52	
54	16519	Modification of lighting fixtures	-230.60	-230.60	0	Bk.2 Pg.53	Lump sum credit
55	16520	Tunnel excavation stockpile	23920.00	44789.28	+20869.28	Bk.2 Pg.54	
56	16528	Lap splices-reinforcing steel-west portal conduit				Bk.2 Pg.55	Paid under contract bid items
57	16529	Modification to water supply system	7500.00	12067.97	+4567.97	Bk.2 Pg.56	
58	16168	Wall tile in ventilation buildings	0	0	0	Bk.2 Pg.57	No change in cost to the project
	16549	Precast concrete ceiling panels	0	0	0	Bk.2 Pg.57	Supplement #1 to C.O. 58 No change in cost
59	16532	Install 18WF45 steel beams in ventilation buildings	1000.00	610.42	-389.58	Bk.2 Pg.58	
60	16533	Additional ducts and dampers	655.52	655.52	0	Bk.2 Pg.59	Lump sum

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	I70-3(34)	3e FX	

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
61		#8 reinforcing steel dowels	6400.00	7271.98	+ 871.98	Bk.2 Pg.60	
	21786	Provides additional \$4500.00 for C.O. 61				Bk.2 Pg.60	Supplement to C.O. 61 Included in C.O. 61
62	16537	Substitution of certain bid items				Bk.2 Pg.61	Paid under respective contract bid items
63	16542	Installation of three 18WF45 beams	800.00	1254.42	+ 454.42	Bk.2 Pg.62	
64	16543	Acceptance of certain precast concrete panels	- 4911.11	- 4911.11	0	Bk.2 Pg.63	Lump sum credit
65	16544	Lightweight concrete masonry blocks	- 4835.00	- 4835.00	0	Bk.2 Pg.64	Lump sum credit
66	21843	Installation of M.P.B.X. in pilot tunnel	1000.00	2157.57	+1151.57	Bk.2 Pg.65	
67	16548	Modification of curb face channel in E.V.B.	150.00	354.17	+ 204.17	Bk.2 Pg.66	
68	16550	Extension of contract time	0	0	0	Bk.2 Pg.67	No change in cost to the project
69	16553	Modification of roadway catch basins	0	0	0	Bk.2 Pg.68	No change in cost to the project
70	16554	Replaces welded wire fabric in W.V.B.				Bk.2 Pg.69	Paid under contract bid items
71	21847	Changes to traffic control pulpits				Bk.2 Pg.70	Paid under contract bid items
72	16572	VOID				Bk.2 Pg.71	Voided by W.O. 21834
72	21834	Provides for continuous concrete placement				Bk.2 Pg.71	Paid under contract bid items
	21844	Removal of forms	0	0	0	Bk.2 Pg.71	Supplement to C.O. 72 No change in cost
73	16559	Concrete design mix	0	0	0	Bk.2 Pg.72	No change in cost to the project
74	21853	Fan foundations for future fans	11840.40	11840.40	0	Bk.2 Pg.73	Lump sum

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	I70-3(34)	3eGX	

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
75	21859	Correction of certain dimensions on plans	0	0	0	Bk2 Pg.74	No change in cost to the project
76	—		—————	—————	—————	Bk2 Pg.75	Never executed
77	21865		—————	—————	—————	Bk2 Pg.76	Never executed
78	21867	Installation of certain conduits	1774.00	1774.00	0	Bk2 Pg.77	Lump sum
79	21869	Ceiling hanger rods				Bk2 Pg.78	Paid under contract bid items
80	21870	Added reinforcing steel bars at wall plate beam	14887.44	15216.74	+ 329.30	Bk2 Pg.79	Bent bars paid for under contract bid items
	21795	Extends limits of C.O. 80				Bk2 Pg.79	Supplement #1 to C.O. 80 Paid under bid items
81	21875	Break out structure				Bk2 Pg.80	Paid under contract bid items
82	21829	Removal and replacement of tunnel supports	65000.00	94553.63	+29553.63	Bk2 Pg.81	
83	21828	Backfill around ventilation buildings	1580.50	1580.50	0	Bk2 Pg.82	Lump sum
84	21832	Remining and resupporting north tunnel	167500.00	0	-167500.00	Bk2 Pg.83	Superseded by C.O. 90 Charges deducted per C.O. 90
85	21831	Installation of measurement devices	2000.00	482.15	-1517.85	Bk2 Pg.84	
86	—		—————	—————	—————	Bk2 Pg.85	Never executed
87	21845	Specification change of reinforcing steel	0	0	0	Bk2 Pg.86	No change in cost to the project
88	21848	Drill drain hole in the tunnel	25000.00	16812.49	-8187.51	Bk2 Pg.87	
89	21849	Payment of fringe benefits				Bk2 Pg.88	No direct change in cost to the project
90	21804	Maintenance of north tunnel — east heading	1772404.90	1747937.47	-24467.43	Bk2 Pg.89	Plan amount includes \$576674.40 from W.O. 21779

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
	21779	Increase to certain C.O. 90 quantities				Bk2 Pg.89	Supplement to C.O. 90 Paid under C.O. 90
91	21810	Change of color	0	0	0	Bk2 Pg.90	Supplement to C.O. 58 No change in cost
92	21812	Installation of M.P.B.X.	10000.00	11812.30	+ 1812.30	Bk2 Pg.91	Supplement to C.O. 14
93	21815	Vibration isolators and styrafoam blockouts	649.00	649.00	0	Bk2 Pg.92	Lump sum
94	21819	Drill rotary drain holes	65000.00	33054.61	-31945.39	Bk2 Pg.93	
95	—		—————	—————	—————	Bk2 Pg.94	Never executed
96	21820	Reduction in cost of class B-7 concrete	—————	—————	—————	Bk2 Pg.95	Voided by W.O. 21792
	21792	Voided C.O. 96	—————	—————	—————	Bk2 Pg.95	Supplement to C.O. 96
97	21825	Change in gradation of mortar	0	0	0	Bk2 Pg.96	No change in cost to the project
98	21776		—————	—————	—————	Bk2 Pg.97	Never executed
99	21778	Drilling for core samples	25000.00	11612.47	-13387.53	Bk2 Pg.98	
	21790	Further core drilling	10000.00	23457.25	+13457.25	Bk2 Pg.98	Supplement #1 to C.O. 99
	21799	Further core drilling	15000.00	24106.39	+ 9106.39	Bk2 Pg.98	Supplement #2 to C.O. 99
100	21781	Reduction of retainage on contract estimate	0	0	0	Bk2 Pg.99	No change in cost to the project
101	21782	Williams groutable rock bolts	37000.00	33907.75	- 3092.25	Bk2 Pg.100	
	21798	Payment for certain work performed under C.O.101	5000.00	0	- 5000.00	Bk2 Pg.100	Supplement #1 to C.O. 101
102	21784	Conditional payment for foundation drifts	1158745.18	1158745.18	0	Bk2 Pg.101	Lump sum

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
103	21789	Change in mixture for grout				Bk2 Pg.102	Paid under revised bid item
105	21797	Change in concrete design mixes	0	0	0	Bk2 Pg.103	No change in cost to the project
106	21751		-----	-----	-----	Bk2 Pg.104	Never executed
107	21963	Change in method of payment for certain types of steel support sets.				Bk2 Pg.105	Paid under contract bid items
108	21763	Additional signal faces	940.00	940.00	0	Bk2 Pg.106	Lump sum
109	21758	Installation of Gloetzal pressure cells	10000.00	40081.06	+30081.06	Bk2 Pg.107	
	03106	Additional tunnel support in certain areas				Bk2 Pg.107	Supplement #1 to C.O. 109 Paid under C.O. 109
110	21765	3 inch gas relief piping	1938.00	1938.00	0	Bk2 Pg.108	Lump sum
111	21761	East portal buttress berm	180000.00	14114.79	-165885.21	Bk2 Pg.109	Part of work paid under contract modification agreement
	21904	Change in finished elevation of buttress berm				Bk2 Pg.109	Supplement #1 to C.O. 111 Paid under agreement
	21956	Interim payments for buttress berm				Bk2 Pg.109	Supplement to C.O. 111 Paid under agreement
	21887	East portal loop ramp road				Bk2 Pg.109	Supplement #2 to C.O. 111 Paid under agreement
112	21762	Interim payments for certain items				Bk2 Pg.110	Paid under contract modification agreement
	21960	Deduction of certain work from contract bid items				Bk2 Pg.110	Supplement #1 to C.O. 112 Paid under agreement
113	21979	Pre-grouting for stabilization purposes				Bk2 Pg.111	Paid under contract modification agreement
114	21772	Disposal of duplicated materials	1557.23	1603.94	+ 46.71	Bk2 Pg.112	

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I70-3(34)	3eJX	

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
115	21977	Revision of control system	63499.00	63499.00	0	Bk2 Pg.113	Lump sum
116	21981	IIIb modified steel behind shield				Bk2 Pg.114	Paid under contract modification agreement
117	21983		—————	—————	—————	Bk2 Pg.115	Never executed
118	21985	Install concrete lining in zone 4				Bk2 Pg.116	Paid under contract modification agreement
119	21990	Support for suspended slab E.V.B.	176.56	176.56	0	Bk2 Pg.117	Lump sum
120	21992	Pedestals for fan bases E.V.B.	1800.00	4545.28	+ 2745.28	Bk2 Pg.118	
121	21994		—————	—————	—————	Bk2 Pg.119	Never executed
122	21997	Crown drift in zone 2				Bk2 Pg.120	Paid under contract modification agreement
123	21998	Multiple drift excavation method				Bk2 Pg.121	Paid under contract modification agreement
124	21999	Pressure grouting in certain areas				Bk2 Pg.122	Paid under contract modification agreement
125	22000	Drill grout and vent holes	800.00	1859.68	+1059.68	Bk2 Pg.123	Some items paid under contract bid items
126	03148	Protection of the south tunnel west heading				Bk2 Pg.124	Paid under contract bid items
127	21955	Permanent instrumentation station	19056.82	17056.82	-2000.00	Bk2 Pg.125	Lump sum
128	21959	Haul borrow excavation	2766.00	2766.00	0	Bk2 Pg.126	Placement of material paid under agreement
129	21957	Reference to the Colorado mining laws	0	0	0	Bk2 Pg.127	No change in cost to the project
130	21961	Construction method in the south tunnel				Bk2 Pg.128	Paid under contract modification agreement
131	21964	Cut anchor bolt sleeves for fan housings	420.00	420.00	0	Bk2 Pg.129	Lump sum

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
132	—					Bk2 Pg.130	Never executed
133	21935	Payment of escalated costs				Bk2 Pg.131	Paid under contract modification agreement
	03008	Scheduled overtime for the contractor				Bk2 Pg.131	Supplement #1 to C.O. 133 Paid under agreement
	03027	Amendment to C.O. 133				Bk2 Pg.131	Supplement #2 to C.O. 133 Paid under agreement
	03093	Escalated and/or extended cost by Jelco inc.				Bk2 Pg.131	Supplement #3 to C.O. 133 Paid under agreement
	17006	Establishes two eight hour shifts				Bk2 Pg.131	Supplement #4 to C.O. 133 Paid under agreement
	17015	Extends effective date of supplement # 4				Bk2 Pg.131	Supplement #5 to C.O. 133 Paid under agreement
134	21968	Modification of jib crane	8198.69	8198.69	0	Bk2 Pg.132	Lump sum
135	21972	Credit for certain items in vehicle pits	-6278.89	-6278.89	0	Bk2 Pg.133	Lump sum credit
136	21970	Additional electric heat and pipe tracing	14661.00	14661.00	0	Bk2 Pg.134	Lump sum
137	21971	Revise design of tunnel lining concrete				Bk2 Pg.135	Paid under contract modification agreement
138	21974	Credit for eliminated items	-8746.26	-8746.26	0	Bk2 Pg.136	Lump sum credit
139	21975	12 inch effluent pipe line	883.39	883.39	0	Bk2 Pg.137	Lump sum
140	01016	Revision to C.O. 79	0	0	0	Bk2 Pg.138	No change in cost to the project
141	21908	Modify pneumatically applied mortar	0	0	0	Bk2 Pg.139	No change in cost to the project
142	21933	Pit run material for cushion W.V.B.	4600.00	5604.77	+1004.77	Bk2 Pg.140	
143	21892	Walkway car rail and supports		-8716.66		Bk2 Pg.141	Credit to bid items 144 and 164 All other payments made under contract modification agreement

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
144	21943	Modification of gunite duct supports	2000.00	844.96	-1155.04	Bk.2 Pg.142	
145	21901	Sewer, seepage, and water mains	170000.00	1496899.35	+1326899.35	Bk.2 Pg.143	Some items paid under contract bid items Plan amount includes \$85000.00 from supplement #3
	03140	Extension of C.O. 145	2068.45	2068.45	0	Bk.2 Pg.143	Supplement #1 to C.O. 145 Lump sum
	03146	Installation of ABS plastic pipe	86865.00	97471.43	+10606.45	Bk.2 Pg.143	Supplement #2 to C.O. 145 Lump sum
	03102	Extension of C.O. 145				Bk.2 Pg.143	Supplement #3 to C.O. 145 Paid under C.O. 145
	03049	Pressure reducing station	4093.40	2741.17	-1352.23	Bk.2 Pg.143	Supplement #4 to C.O. 145
	03050	Extension of ABS piping system	1980.00	353.35	-1626.65	Bk.2 Pg.143	Supplement #5 to C.O. 145
	03071	Substitution of PVC pipe for galvanized pipe				Bk.2 Pg.143	Supplement #6 to C.O. 145 Paid under bid items
	03077	Extension of C.O. 145	5925.00	5925.00	0	Bk.2 Pg.143	Supplement #7 to C.O. 145 Lump sum
	17016	Wall mounted fire hydrant	344.00	885.28	+541.28	Bk.2 Pg.143	Supplement #8 to C.O. 145 Includes lump sum credit
	00238	Provides additional manhole	1300.00	1534.64	+234.64	Bk.2 Pg.143	Supplement #9 to C.O. 145
146	21915	4 inch perforated PVC pipe		31747.10		Bk.2 Pg.144	
147	21907	Install redwood corbels	2900.00	3538.45	+638.45	Bk.2 Pg.145	
148	21913	Document overrun in bid item 92				Bk.2 Pg.146	Paid under contract bid items
149	21917	Install 8" galvanized underdrain	11403.00	6350.49	-5052.51	Bk.2 Pg.147	
150	21998	Tunnel ceiling and duct divider wall		3902319.63		Bk.2 Pg.148	Some items paid under contract bid items
	03006	Modification of bid item 186	75988.00	75988.00	0	Bk.2 Pg.148	Supplement #1 to C.O. 150 Lump sum

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
	03029	Ceiling and duct divider wall through buildings	853.13	853.13	0	Bk2 Pg.148	Supplement #2 to C.O. 150 Some items paid under C.O.150
	03059	Credit against items 144 and 164	-13900.00	-13900.00	0	Bk2 Pg.148	Supplement #3 to C.O. 150 Lump sum credit
	03035	Modification of fresh air flues	11746.12	11746.12	0	Bk2 Pg.148	Supplement #4 to C.O. 150 Lump sum
	17007	Changes to item 186	14729.00	14729.00	0	Bk2 Pg.148	Supplement #5 to C.O. 150 Lump sum
151	21920	Seed and mulch around water storage tank	1365.00	853.13	511.87	Bk2 Pg.149	
152	21922	Modification to ventilation fans	2000.00	12115.95	+10115.95	Bk2 Pg.150	
153	21921	Equipment rental				Bk2 Pg.151	Paid under contract modification agreement
154	21886	Vinyl clad chain link fence	-1544.36	-1544.36	0	Bk2 Pg.152	Lump sum credit
155	21893	Bulkhead in tunnel ventilation system				Bk2 Pg.153	Paid under contract modification agreement
156	21947	Provide bus service from Denver				Bk2 Pg.154	Paid under contract modification agreement
157	21949	Third party rentals				Bk2 Pg.155	Paid under contract modification agreement
158	03127	Suspended acoustical ceiling	1388.00	1388.00	0	Bk2 Pg.156	Lump sum
160	03131	Jersey type safety curb	584438.00	589545.27	+5107.27	Bk2 Pg.157	Some items paid under contract bid items
	03108	Modification of fresh air flues	6753.00	6753.00	0	Bk2 Pg.157	Supplement #1 to C.O. 160 Lump sum
	03009	Forming fresh air flues	33390.00	33549.00	+159.00	Bk2 Pg.157	Supplement #2 to C.O. 160
	03023	Removal of concrete curb				Bk2 Pg.157	Supplement #3 to C.O. 160 Paid under agreement
	03026	Painting of flue blockouts	762.51	0	-762.51	Bk2 Pg.157	Supplement #4 to C.O. 160 Lump sum

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
	03045	Extending safety curb	33208.80	35200.50 ✓	+1991.70	Bk2 Pg.157	Supplement #5 to C.O. 160
	03099	Extends formed flues	33390.00	37047.00	+3657.00	Bk2 Pg.157	Supplement #6 to C.O. 160
161	03134	Escalation of items 114 and 115	241.30	241.30	0	Bk2 Pg.158	Lump sum
162	03137	Glycol solution for heating system	5367.60	5367.60	0	Bk2 Pg.159	Lump sum
163	03138	Chipping and caulking cracks	3605.85	0	-3605.85	Bk2 Pg.160	
	03036	Roof waterproofing on ventilation buildings	117040.00	117040.00	0	Bk2 Pg.160	Supplement #1 to C.O. 163 Lump sum
164	03139	Installation of inclinometer well				Bk2 Pg.161	Paid under contract modification agreement
165	03145	Install natural gas odorizers	4610.13	1858.82	-2752.31	Bk2 Pg.162	
166	03147	Credit against item 88	-2175.00	-2175.00	0	Bk2 Pg.163	Lump sum credit
167	03111	Computer based traffic sign control system	0	0	0	Bk2 Pg.164	No change in cost to the project
168	03113	Grout in the north tunnel portals				Bk2 Pg.165	Paid under contract modification agreement
	03038	Provides extra funds for C.O. 168				Bk2 Pg.165	Supplement #1 to C.O. 168 Paid under the agreement
169	03116	Electrical work required	628.30	628.30	0	Bk2 Pg.166	Lump sum
170	03117	Purchase of two monorail systems				Bk2 Pg.167	Paid under contract modification agreement
171	01509	Retainage	0	0	0	Bk2 Pg.168	No change in cost to the project
172	03120	Limits of construction of south tunnel	-107521.61	-107521.61	0	Bk2 Pg.169	Lump sum credit
	03016	Installation of 4" extra strength clay pipe	650.20	650.20	0	Bk2 Pg.169	Lump sum

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
173	03002	Air curtain destructor				Bk2 Pg.170	Paid under contract modification agreement
174	03005	Lighting system in east and west plaza areas	70268.00	70268.00	0	Bk2 Pg.171	Lump sum
175	03017	Expansion joints in ventilation buildings	5500.00	5500.00	0	Bk2 Pg.172	
176	03022	Caulking roadway slab in ventilation buildings	5253.00	5253.00	0	Bk2 Pg.173	Lump sum
177	03032	Redesign of variable matrix fixed signs	70770.26	70770.26	0	Bk2 Pg.174	
178	03033	16 gauge porcelain enameled panels	121514.00	208940.41	+87426.41	Bk2 Pg.175	
179	03036	Full depth asphaltic concrete	199783.20	237766.07	+37982.87	Bk2 Pg.176	
	03069	Hydrated lime for asphaltic concrete	-6200.00	-6200.00	0	Bk2 Pg.176	Supplement #1 to C.O. 179 Lump sum credit
	16880	Deletion of crushed aggregate subbase	-6200.00	-6200.00	0	Bk2 Pg.176	Supplement #2 to C.O. 179 Lump sum credit
180	03040	Underground fuel storage facility	1796.00	5852.33	+4056.33	Bk2 Pg.177	Paid with state funds only
	03076	Fuel dispensing station	7500.00	2719.89	-4780.11	Bk2 Pg.177	Supplement #1 to C.O. 180 State funds only
181	03052	Electrical conduit installed in tunnel ceiling	2000.00	2502.41	+502.41	Bk2 Pg.178	
182	03048	Credit for use of precast sign bases	-3430.48	-3430.48	0	Bk2 Pg.179	Lump sum credit
183	03051	Accept concrete block walls in ventilation buildings	0	0	0	Bk2 Pg.180	No change in cost to the project
184	03053	Change in concrete testing	0	0	0	Bk2 Pg.181	No change in cost to the project
185	03065					Bk2 Pg.182	Never executed
185	03074	Tunnel ceiling through ventilation buildings		2656.00		Bk2 Pg.183	Some items paid under contract bid items

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(34)	3ePX	

FINAL SUMMARY OF CHANGE ORDERS

C-O NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
186	03060	Revised lower bulkhead guides	3900.00	2893.74	-1006.26	Bk.2 Pg.184	
187	03072	Ducts in the ventilation building transitions				Bk.2 Pg.185	Paid under contract bid items
188	03078	Feminine napkin vendors and disposals	1100.40	1100.40	0	Bk.2 Pg.186	Lump sum
189	03079	Installation of flagpole	1000.00	671.51	328.49	Bk.2 Pg.187	
190	03086	Temperature alarms	2817.05	2817.05	0	Bk.2 Pg.188	Lump sum
191	03095	Emergency telephone reporting cabinets	3429.00	3429.00	0	Bk.2 Pg.189	Lump sum
192	03096	Extension of the contract time	0	0	0	Bk.2 Pg.190	No change in cost to the project
193	17003	Galvanized cap angles for tile walls	8796.17	8796.17	0	Bk.2 Pg.191	Lump sum Some items paid under contract bid items
194	17008	Change to contractors retainage	0	0	0	Bk.2 Pg.192	No change in cost to the project
195	17010	Electrical work required by relocating pulpit #6	1295.74	1295.74	0	Bk.2 Pg.193	Lump sum
196	17014	Temporary operation of ventilation equipment	55300.00	47814.79	-7485.21	Bk.2 Pg.194	
197	17023	"Icy road" on message boards at both portals	3400.00	4919.48	+1519.48	Bk.2 Pg.195	
	00229	"Have a nice day" on message boards	3829.00	2222.57	-1606.43	Bk.2 Pg.195	Supplement #1 to C.O. 197 Paid with state funds only
198	00226	Low power factor investigation report	60422.50	99485.20	+39062.70	Bk.2 Pg.196	
	00239	Modifications to electrical controls	5713.00	5735.49	+22.49	Bk.2 Pg.196	Supplement #1 to C.O. 198
199	00228	Lenses on television surveillance cameras	980.70	2662.93	+1682.23	Bk.2 Pg.197	
200	00230	Concrete approach slabs	2600.00	0	-2600.00	Bk.2 Pg.198	

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(34)	3e Q X	

FINAL SUMMARY OF CHANGE ORDERS

C.O. NO.	W.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
201	16876	Waterproofing system in sedimentation tank	2000.00	0	- 2000.00	Bk.2 Pg.199	
202	16883	Purchase of Greenburg locomotive	6000.00	6000.00	0	Bk.2 Pg.200	Lump sum
203	16885	Excavation - bid items 29 and 30				Bk.2 Pg.201	
204	16940	Changes and deletions in certain change orders and bid items				Bk.2 Pg.202	

CHANGE ORDERS WRITTEN TO COLORADO DEPARTMENT OF HIGHWAYS

C.O. NO.	W.O. NO.	DESCRIPTION	REFERENCE	REMARKS
	00234	V-belt drives on ventilation fans	Bk.2 Pg.205	
	00241	Ventilation fan control speed switches	Bk.2 Pg.206	
	03035	Purchase of safety equipment	Bk.2 Pg.207	Supplement to W.O. 03101
	03058	Purchase of fire protection equipment	Bk.2 Pg.208	
	03101	Purchase of safety and maintenance equipment	Bk.2 Pg.209	
	16455	Compression testing equipment	Bk.2 Pg.210	
	16886	Ground fault protection	Bk.2 Pg.211	
	16930		Bk.2 Pg.212	
11	18036	Purchase of 24" C.S.P. from C.D.H. maintenance	Bk.2 Pg.213	
104	21791	Purchase of Drott crane	Bk.2 Pg.214	
	21948	Purchase of two telescoping work platforms	Bk.2 Pg.215	

FINAL SUMMARY OF CHANGE ORDERS

CHANGE ORDERS WRITTEN TO LEEDS, HILL AND JEWETT INC.

C.O. NO.	W.O. NO.	DESCRIPTION	REFERENCE	REMARKS
	00019	For consulting services	Bk.2 Pg.216	Supplement #1 to consultants agreement of September 28, 1970
	03136	For consulting services	Bk.2 Pg.217	Supplement #4 to consultants agreement
	16951	For consulting services	Bk.2 Pg.218	Supplement #5 to consultants agreement
	21914	For consulting services	Bk.2 Pg.219	Supplement #3 to consultants agreement
	21942	For consulting services	Bk.2 Pg.220	Supplement #2 to consultants agreement

CHANGE ORDERS WRITTEN TO PEAT, MARWICK, MITCHELL

	00726	Extension of time	Bk.2 Pg.221	Supplement to auditors agreement of December 28, 1970
	01525	For auditing services	Bk.2 Pg.222	Supplement to auditors agreement of December 28, 1970
	05386	For auditing unit price items	Bk.2 Pg.223	Supplement to auditors agreement of September 6, 1973
	08004	Extension of time	Bk.2 Pg.223a	Supplement to auditors agreement of September 6, 1973

CHANGE ORDER WRITTEN TO CHARLES POLLARD

	14164	For consulting services	Bk.2 Pg.224	Supplement to consultants agreement of July 19, 1968
--	-------	-------------------------	-------------	--

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)	3eSX	

FINAL SUMMARY OF CHANGE ORDERS

CHANGE ORDER WRITTEN TO PUBLIC SERVICE COMPANY OF COLORADO

C.O. NO.	W.O. NO.	DESCRIPTION	REFERENCE	REMARKS
	10293	Relocate power poles	Bk.2 Pg.225	

CHANGE ORDERS WRITTEN TO CHARLES ROBINSON - GEOLOGIST

	21911	For consulting services	Bk.2 Pg.226	Supplement #2 to the consultants agreement of May 14, 1970
	21928	For consulting services	Bk.2 Pg.227	Supplement #1 to the consultants agreement

CHANGE ORDERS WRITTEN TO ROCK MECHANICS INTERNATIONAL

	01023	For consulting services	Bk.2 Pg.228	Supplement #2 to the consultants agreement of January 14, 1971
	01506	For consulting services	Bk.2 Pg.229	Supplement #1 to the consultants agreement

CHANGE ORDERS WRITTEN TO TIPPETTS - ABBETT - McCARTHY - STRATTON

	01012	For consulting services	Bk.2 Pg.230	Supplement #2 to the consultants agreement of February 16, 1966
159	01020	For consulting services	Bk.2 Pg.231	Supplement to the consultants agreement
	14162	For consulting services	Bk.2 Pg.232	Supplement #1 to the consultants agreement
	16953	Extension of time	Bk.2 Pg.233	Supplement to the consultants agreement

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(34)	3e TX	

FINAL SUMMARY OF CHANGE ORDERS

CHANGE ORDER WRITTEN TO THE BUREAU OF RECLAMATION

C.O. NO.	W.O. NO.	DESCRIPTION	REFERENCE	REMARKS
126A	21952	Provides for added money to the Bureau	Bk.2 Pg.234	Supplement to the July 13, 1970 agreement with the Bureau

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(34)	3e UX	

FINAL SUMMARY OF CHANGE ORDERS

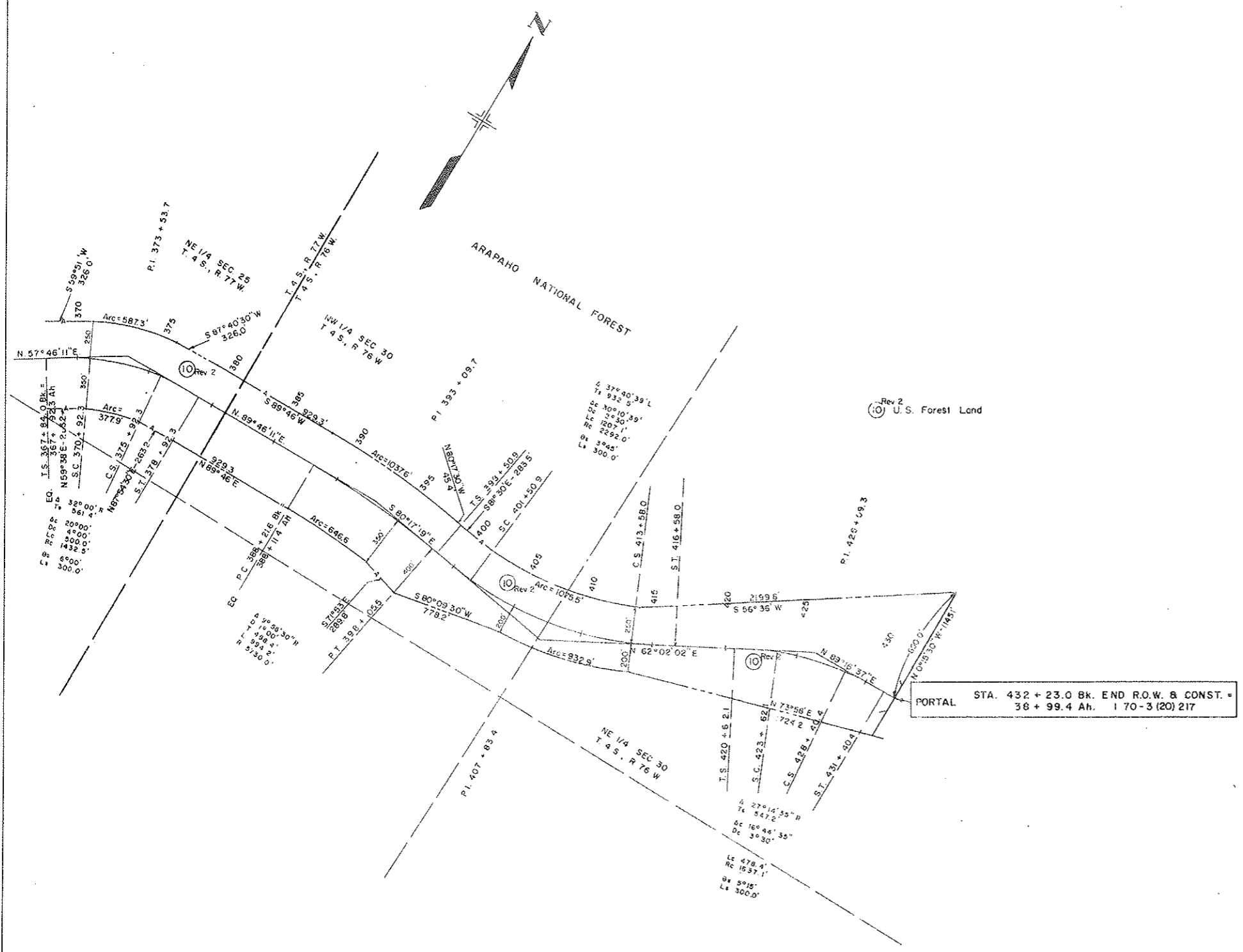
MINOR CONTRACT REVISIONS

M-C-R NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	DIFFERENCE	TABULATION REFERENCE	REMARKS
1	Miscellaneous safety and informational signs	400.00	0	- 400.00	Bk.2 Pg.235	
2	Plaza lighting area	100.00	100.00	0	Bk.2 Pg.236	Lump sum
3	Installation of micro-wave towers	500.00	991.70	+ 491.70	Bk.2 Pg.237	
4	Temporary installation of CO analyzers	250.00	0	- 250.00	Bk.2 Pg.238	
5	Install expanded metal walkways at effluent trench	400.00	224.45	-175.55	Bk.2 Pg.239	
6	Explosion proof flow switch	400.00	0	- 400.00	Bk.2 Pg.240	
7	Piping change in east ventilation building	300.00	212.26	- 87.74	Bk.2 Pg.241	
8	Repair of ventilation fan chain drive	- 120.00	- 94.74	+ 25.26	Bk.2 Pg.242	Credit to state funds only
9	Repair of plaza lighting conduit	450.00	675.65	+ 225.65	Bk.2 Pg.243	
10	Replacing chain pulls with Ramsey hoists	500.00	0	- 500.00	Bk.2 Pg.244	
11	Check valves in the southwest stub tunnel	400.00	326.64	- 73.36	Bk.2 Pg.245	
12	Flow control dampers	256.00	0	-256.00	Bk.2 Pg.246	
13	Pressure breakers	500.00	1246.38	+ 746.38	Bk.2 Pg.247	
14	Credit for certain expenses	-1831.77	-1831.77	0	Bk.2 Pg.248	Lump sum credit

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO	170-3(34)220	3f

RIGHT OF WAY DILLON EAST TO TUNNEL

SCALE 1" = 400'

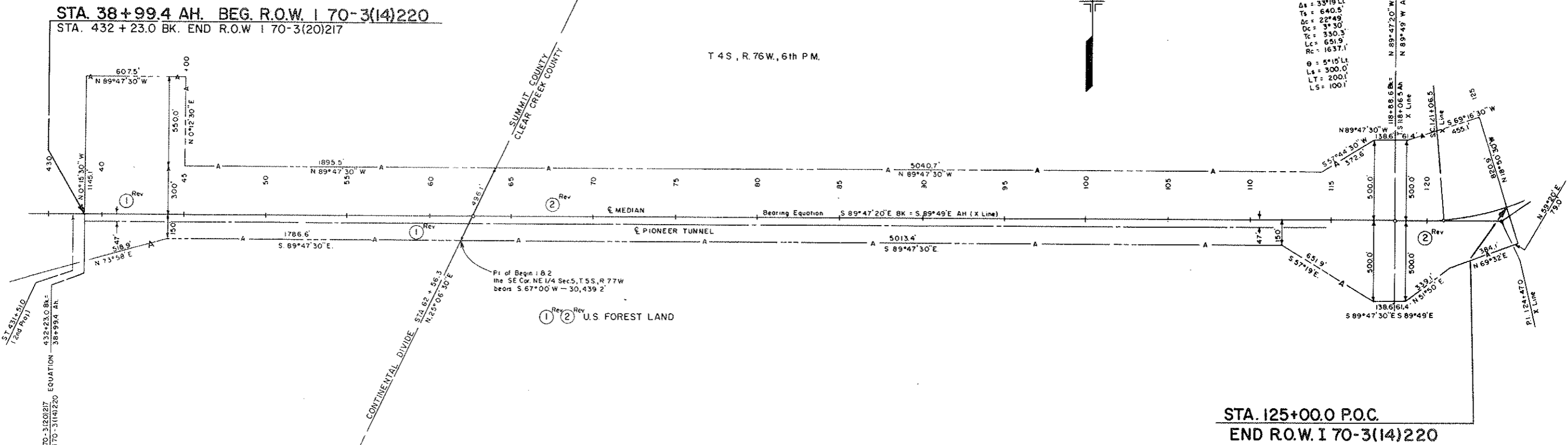


FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	3g	

RIGHT OF WAY
 STRAIGHT CREEK TUNNEL
 Scale 1" = 300'

COLORADO DEPARTMENT OF HIGHWAYS
 PROJECT NO. I 70-3(34)220

SUMMIT & CLEAR CREEK COUNTIES



STA. 38+99.4 AH. BEG. R.O.W. I 70-3(14)220
 STA. 432+23.0 BK. END R.O.W. I 70-3(20)217

STA. 125+00.0 P.O.C.
 END R.O.W. I 70-3(14)220

FEDERAL ROAD REGION NO.	DISTRICT	PROJ NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70-3(34)220	3h	

RIGHT OF WAY
 East Approach to Straight Creek Tunnel

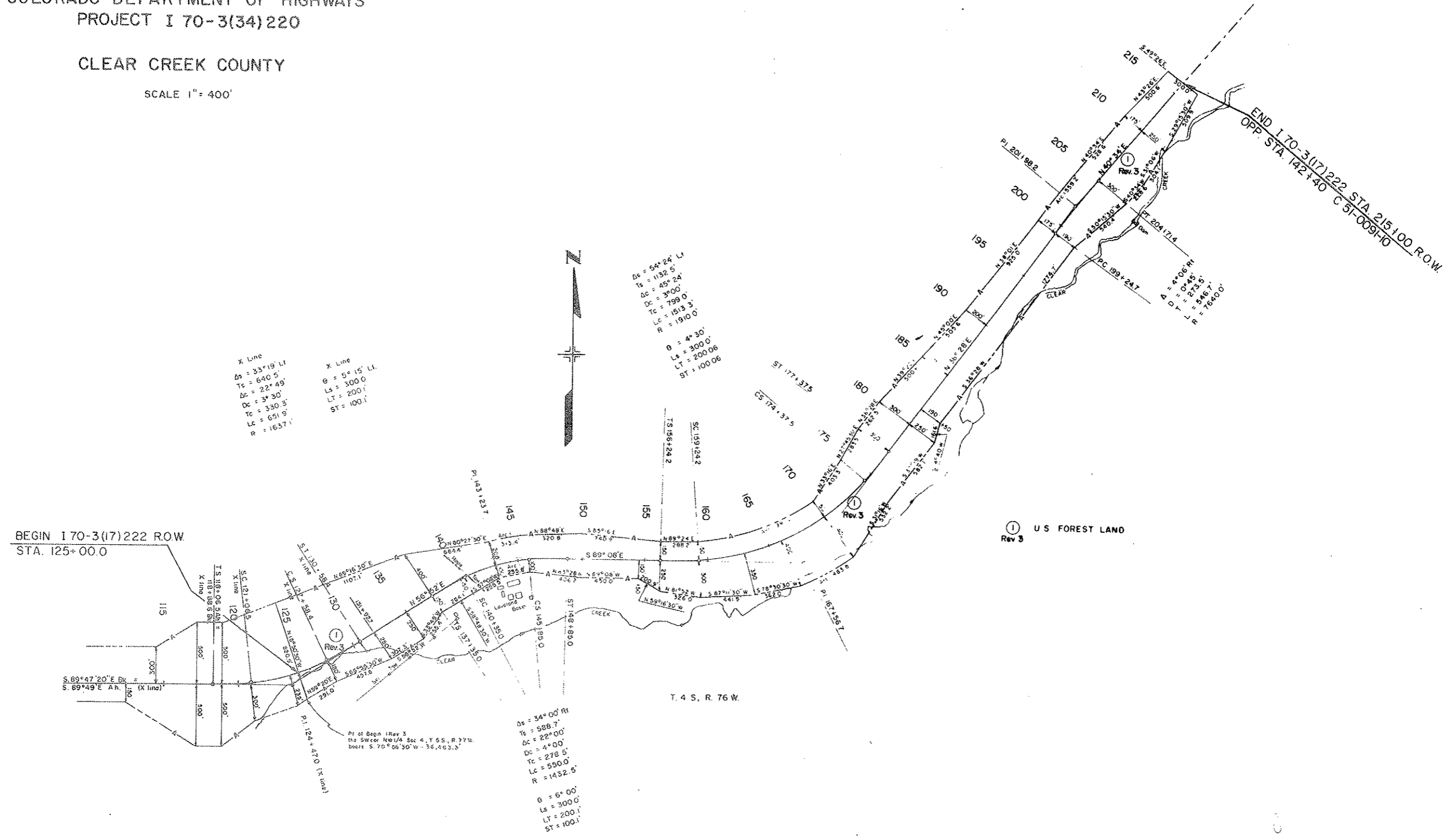
COLORADO DEPARTMENT OF HIGHWAYS
 PROJECT I 70-3(34)220

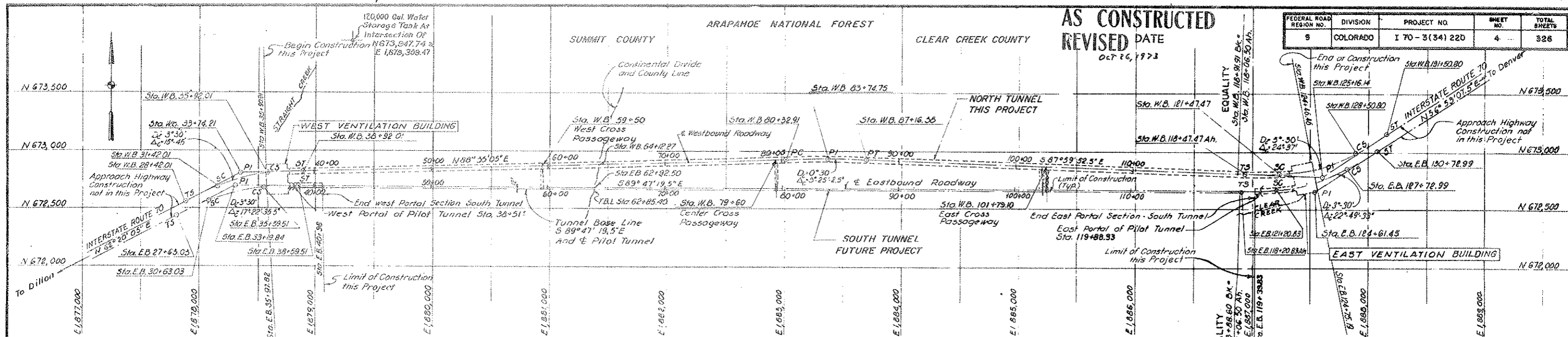
CLEAR CREEK COUNTY

SCALE 1" = 400'

BEGIN 170-3(17)222 R.O.W.
 STA. 125+00.0

END 170-3(17)222 STA. 215+00.0 R.O.W.
 OPP. STA. 142+40 C 57-0091-10





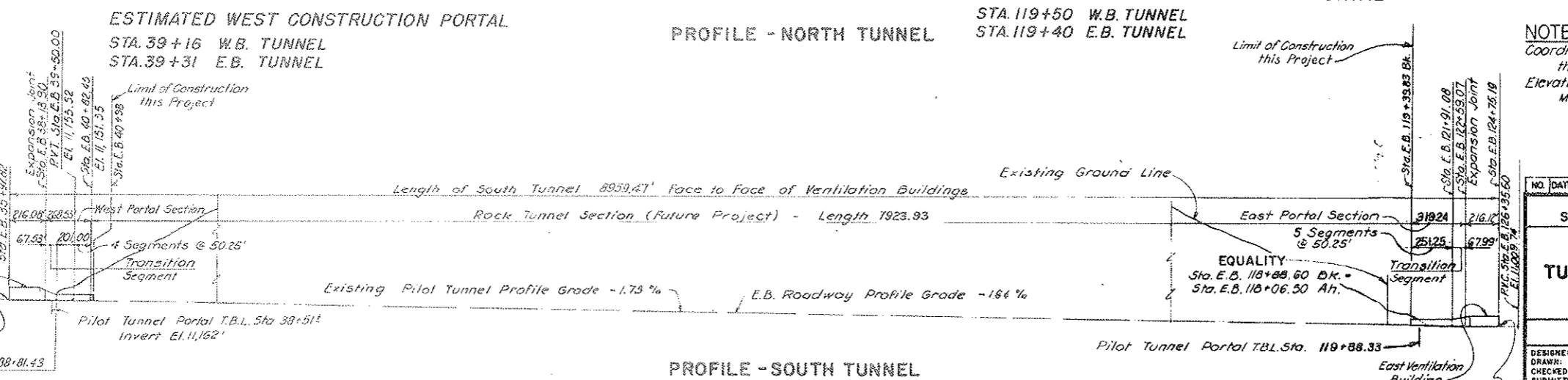
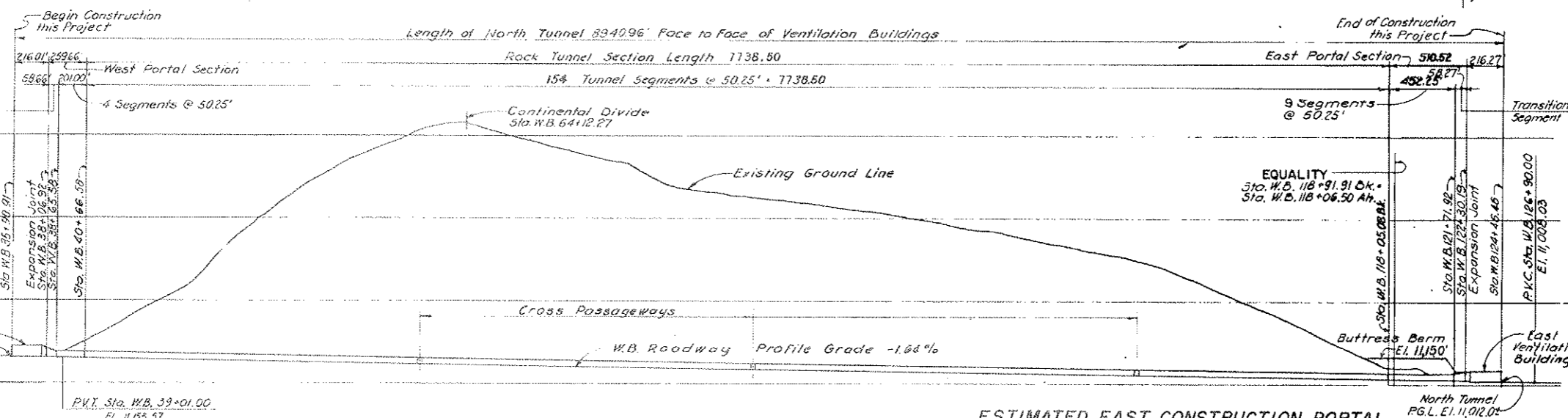
AS CONSTRUCTED
REVISED DATE
Oct 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 22D	4	326

TUNNEL ALIGNMENT - NORTH AND SOUTH TUNNEL

NORTH TUNNEL		
WEST BOUND		COORDINATES
T.S.	Sta. W.B. 26+42.01	N 672,559.46 E 1,877,087.62
S.C.	Sta. W.B. 31+42.01	N 672,590.55 E 1,878,187.12
P.I.	Sta. W.B. 35+74.21	N 672,806.56 E 1,878,558.77
C.S.	Sta. W.B. 35+92.01	N 672,803.15 E 1,878,591.37
S.T.	Sta. W.B. 38+92.01	N 672,819.71 E 1,878,890.80
P.C.	Sta. W.B. 40+39.91	N 672,921.95 E 1,883,080.43
P.T.	Sta. W.B. 43+74.75	N 672,930.43 E 1,883,578.17
T.S.	Sta. W.B. 47+47.47	N 672,806.11 E 1,886,985.33
S.C.	Sta. W.B. 47+47.47	N 672,804.79 E 1,887,220.22
P.I.	Sta. W.B. 47+47.47	N 672,782.75 E 1,887,596.99
C.S.	Sta. W.B. 47+47.47	N 672,931.97 E 1,887,900.58
S.T.	Sta. W.B. 51+30.80	N 673,140.06 E 1,888,156.65

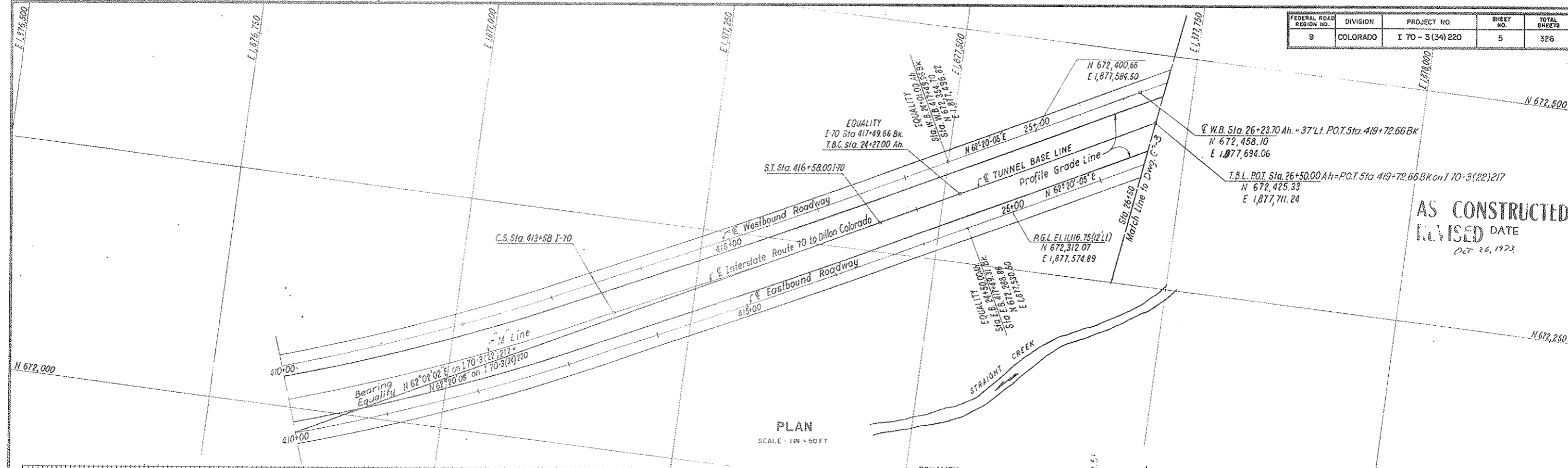
SOUTH TUNNEL		
EAST BOUND		COORDINATES
T.S.	Sta. E.B. 27+63.03	N 672,454.20 E 1,877,807.85
S.C.	Sta. E.B. 30+63.03	N 672,565.26 E 1,878,077.58
P.I.	Sta. E.B. 33+19.84	N 672,692.73 E 1,878,501.00
C.S.	Sta. E.B. 35+39.51	N 672,682.62 E 1,878,558.05
S.T.	Sta. E.B. 38+59.51	N 672,690.68 E 1,878,851.81
T.S.	Sta. E.B. 41+20.83	N 672,681.02 E 1,886,901.17
S.C.	Sta. E.B. 41+20.83	N 672,669.07 E 1,887,200.95
P.I.	Sta. E.B. 41+20.83	N 672,658.66 E 1,887,541.79
C.S.	Sta. E.B. 41+20.83	N 672,852.55 E 1,887,882.29
S.T.	Sta. E.B. 41+20.83	N 673,008.64 E 1,888,078.56



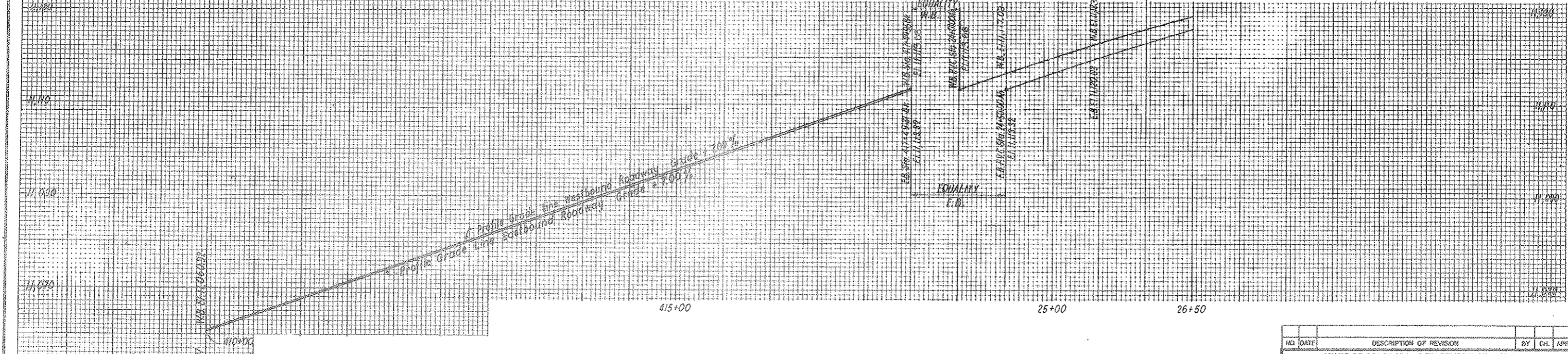
NOTES:
Coordinates as shown on these drawings are referenced to the Colorado State Plane Coordinate System.
Elevations shown on these drawings are referenced to Mean Sea Level Datum.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL TUNNELS AND VENTILATION BUILDINGS ALIGNMENT AND PROFILES					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.M.C.	RECOMMENDED: J.E.C.				
DRAWN: J.E.C.	CHECKED: R.B.A.				
SUBMITTED: [Signature]	APPROVED: [Signature]				
NEW YORK, N. Y.		SCALE: 1/4" = 400 FT		DATE: AUGUST 1967	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	5	326

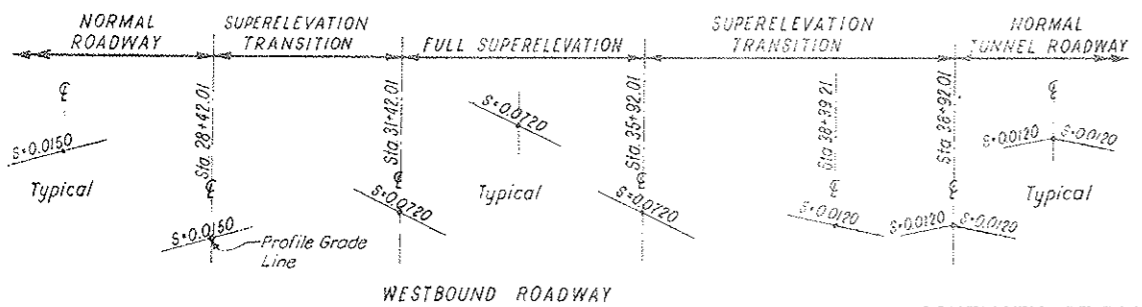
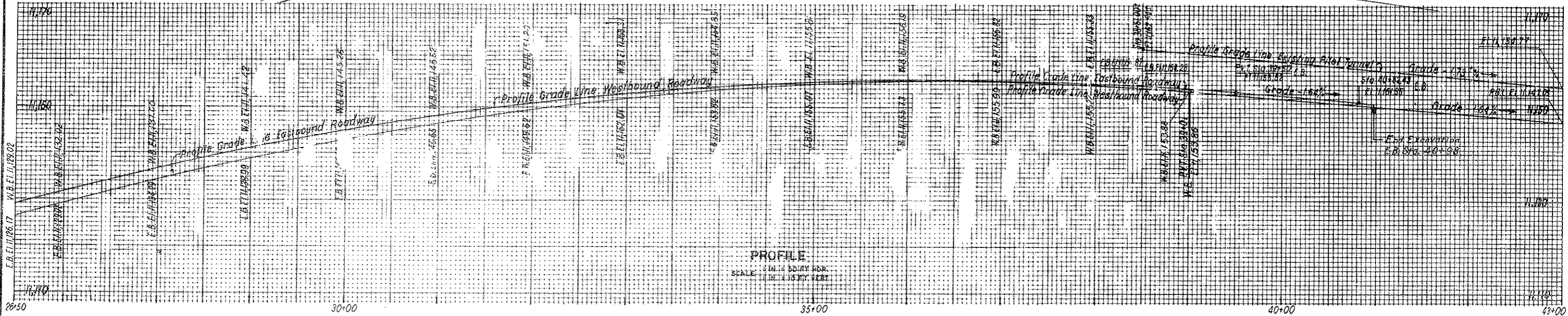
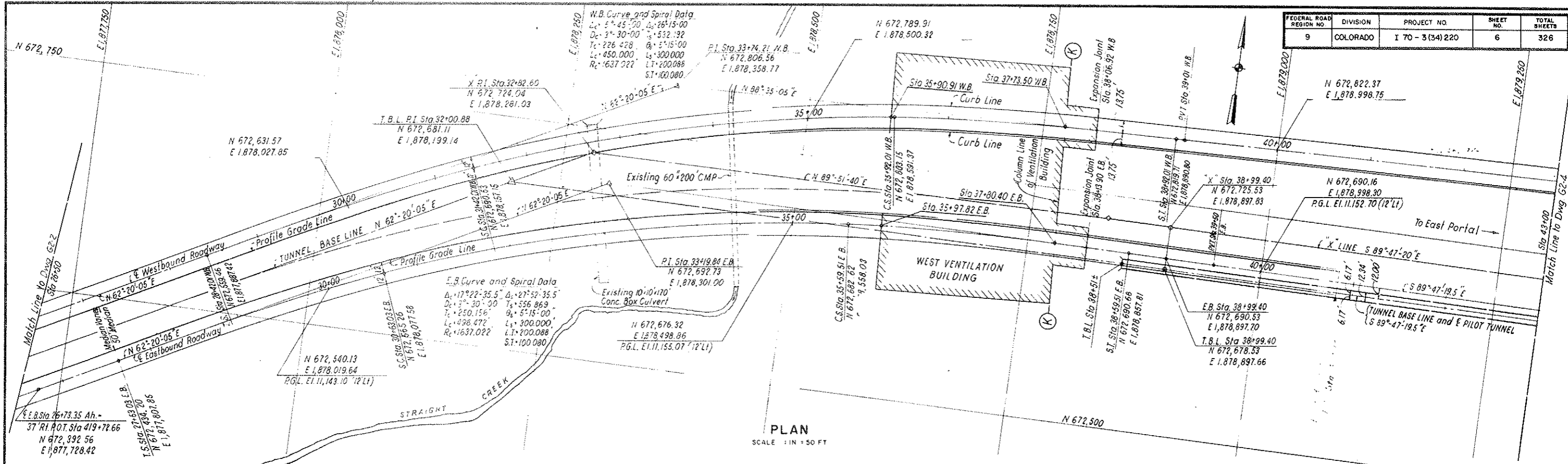


AS CONSTRUCTED
REVISED DATE
 OCT 26, 1972



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL ALIGNMENT AND PROFILE STA. 410+00 BK. TO STA. 26+50 AH.					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R.M.	RECOMMENDED:	APPROVED: <i>[Signature]</i>			
DRAWN: J.L.	CHECKED: R.M. - S.M.R.	DATE: AUGUST 1967			
SUBMITTED:	APPROVED:	DRAWING NO. 62-2			
NEW YORK, N. Y.		SCALE: AS NOTED		DATE: AUGUST 1967	

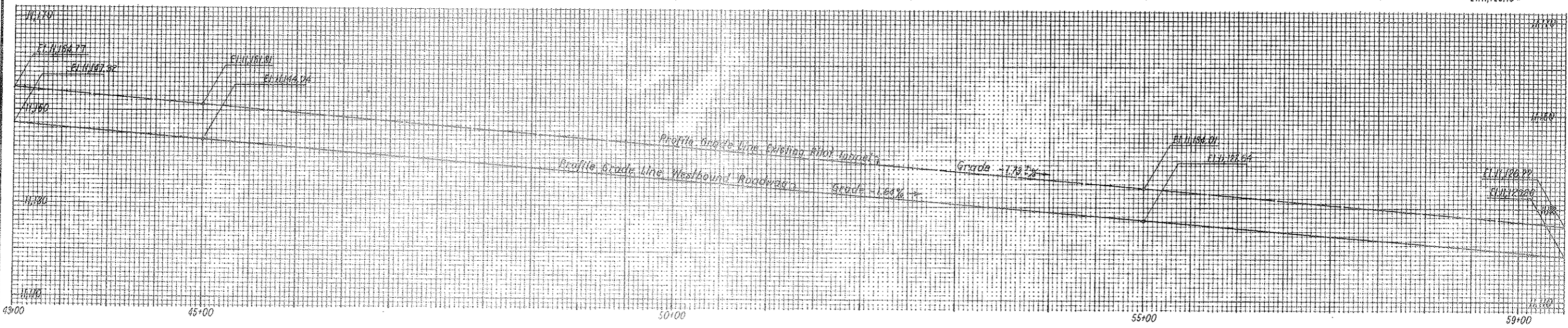
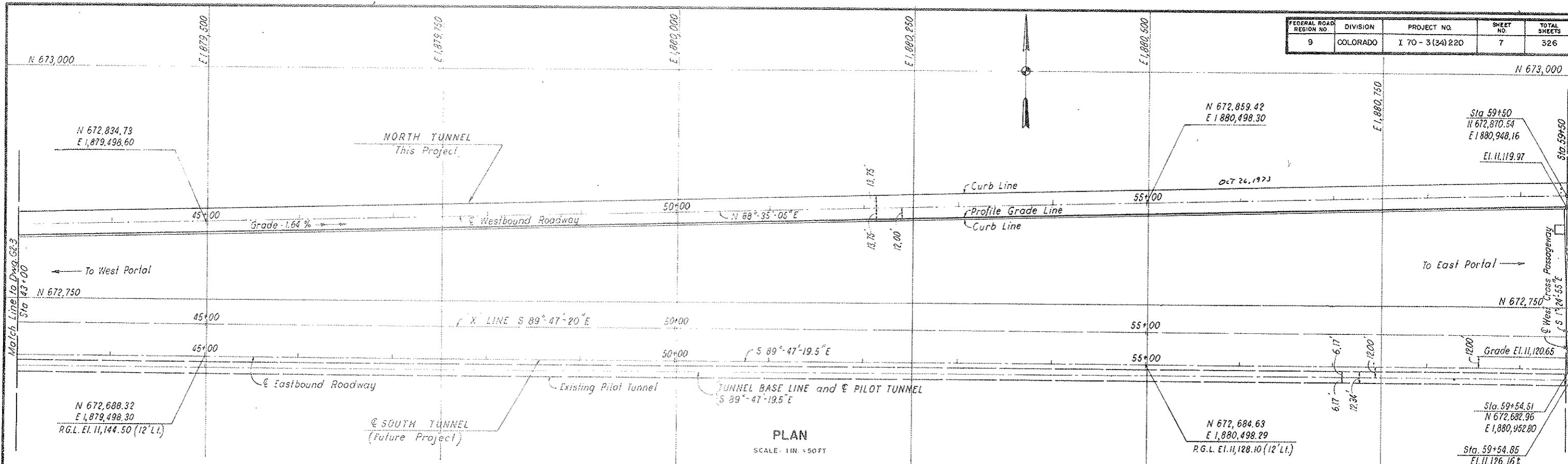
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	6	326



The slope of each roadway lane cross-grade changes uniformly between the sections illustrated
Cross Grades shown are 1/111

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL ALIGNMENT AND PROFILE STA. 26+50 TO STA. 43+00					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	R. M.	RECOMMENDED:			
DRAWN:	J. L.	CHECKED:			
SUBMITTED:	R. M. - S.M.R.	APPROVED:			
DRAWING NO. G2-3					
SCALE: AS NOTED DATE: AUGUST 1967					

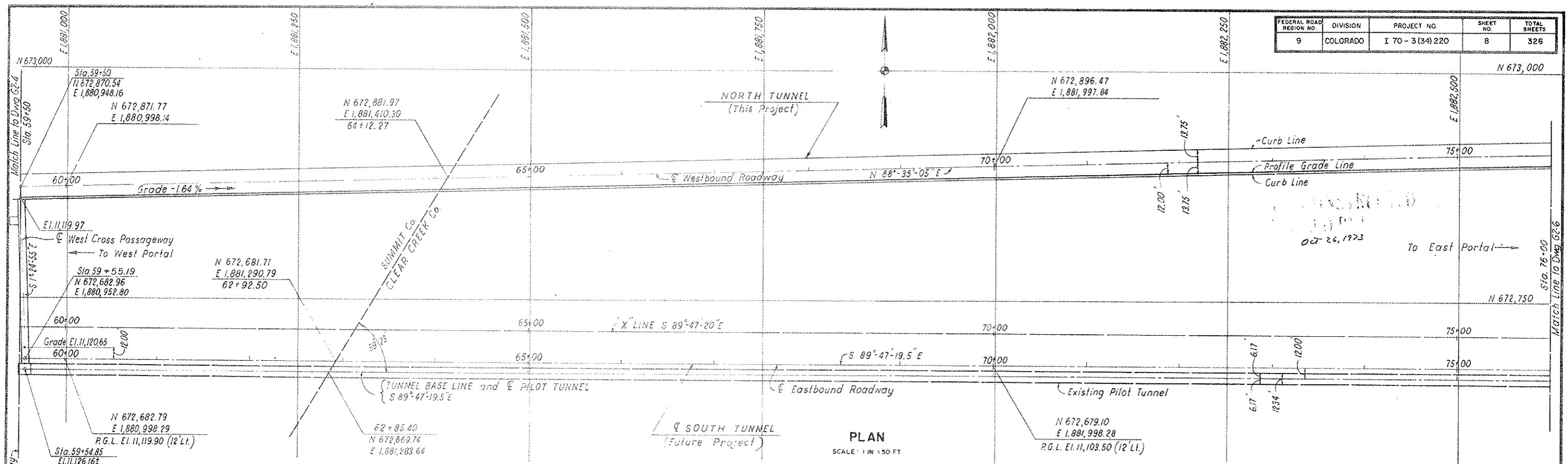
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	7	326



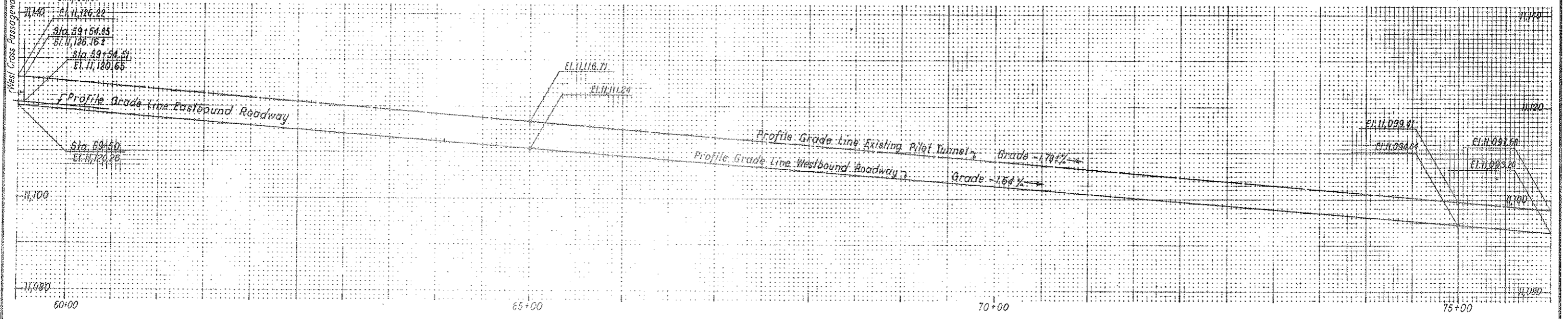
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL ALIGNMENT AND PROFILE STA. 43+00 TO STA. 59+50					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	R. M.	RECOMMENDED BY			
DRAWN BY	J. L.	CHECKED BY	A. J. [Signature]		
SUBMITTED BY	R. M. - S. M. R.	APPROVED BY	[Signature]		
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1957		

DRAWING NO.
G2-4

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	8	326



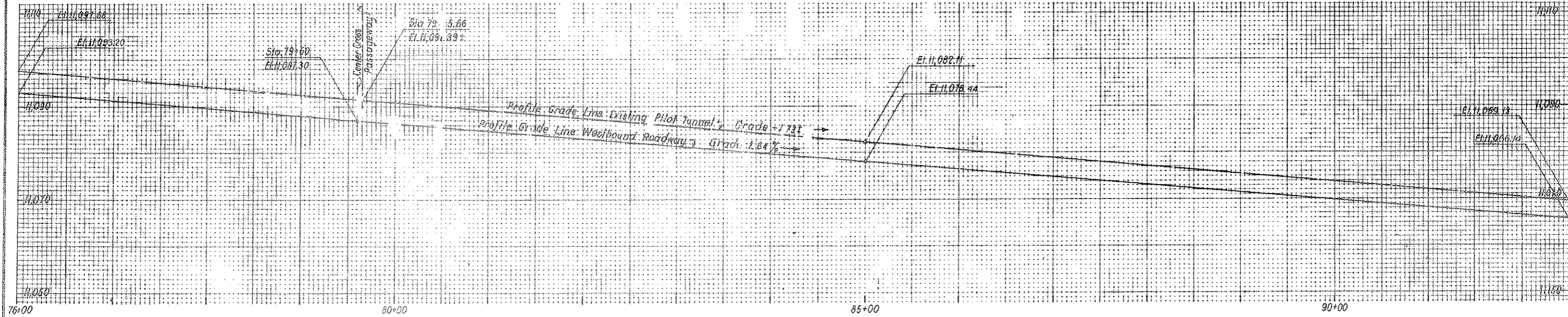
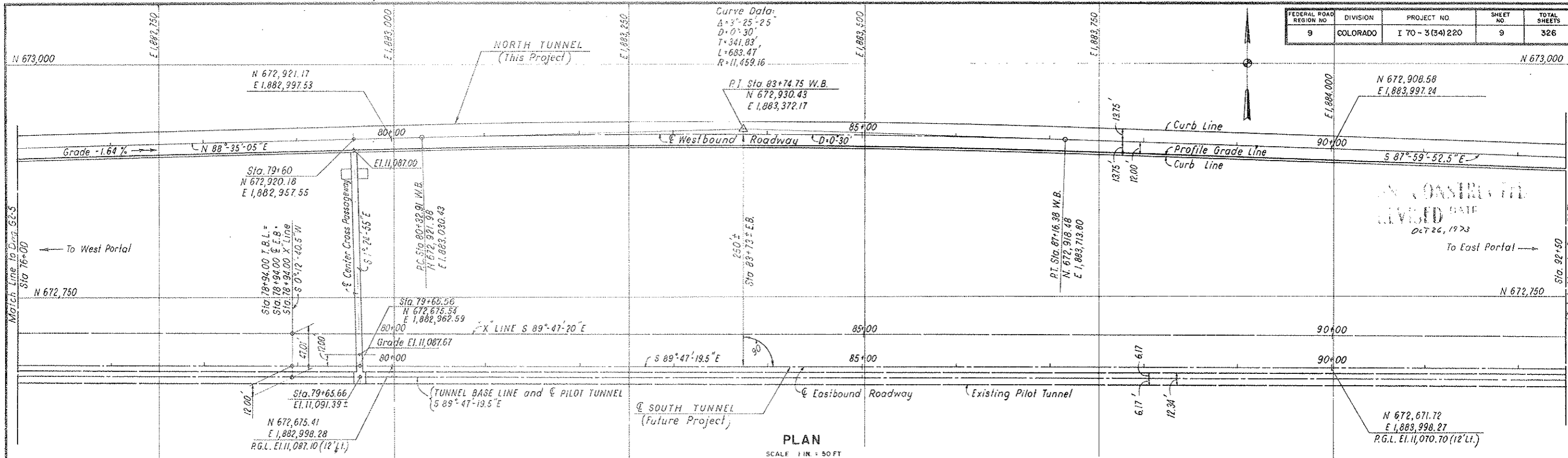
PLAN
SCALE: 1 IN = 50 FT



PROFILE
SCALE: 1 IN = 50 FT HOR.
1 IN = 10 FT VERT.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL ALIGNMENT AND PROFILE STA. 59+50 TO STA. 76+00					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	R. M.	RECOMMENDED:	J. L. Gilbert		
DRAWN:	J. L.	CHECKED:	R. M. - S.M.R.		
CHECKED:	R. M. - S.M.R.	SUBMITTED:	Approved		
SUBMITTED:	Approved				
			DRAWING NO. G2-5		
			SCALE: AS NOTED DATE: AUGUST 1967		

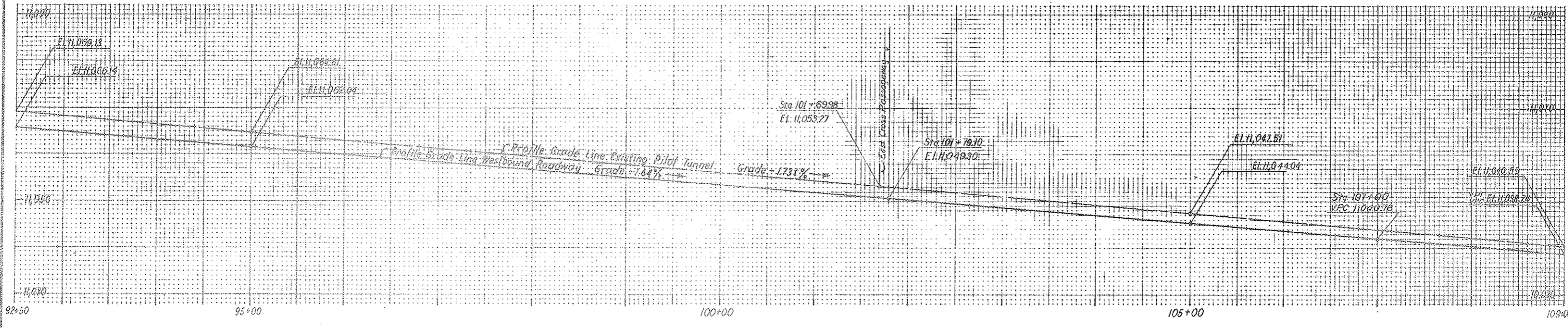
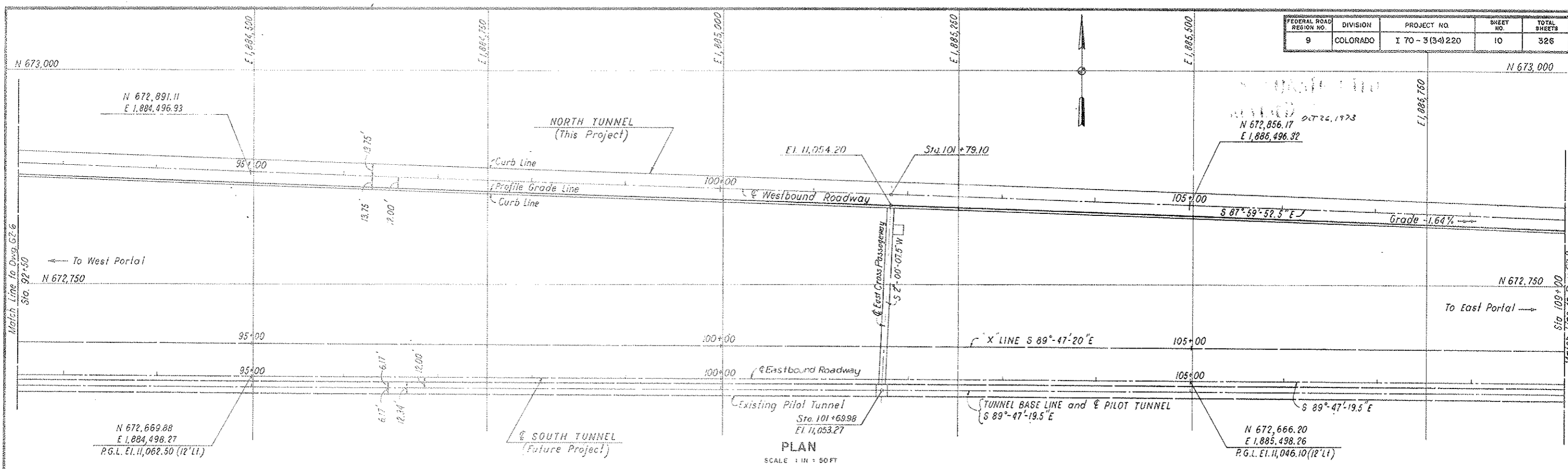
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	9	326



PROFILE
 SCALE 1 IN = 50 FT HOR
 1 IN = 10 FT VERT

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL ALIGNMENT AND PROFILE STA. 76+00 TO STA. 92+50					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	R. M.	RECOMMENDED:	<i>J. L. [Signature]</i>		
DRAWN:	J. L.	CHECKED:	R. M. - S.M.R.	<i>[Signature]</i>	
SUBMITTED:	<i>[Signature]</i>	APPROVED:	<i>[Signature]</i>		
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967		
					DRAWING NO. G2-6

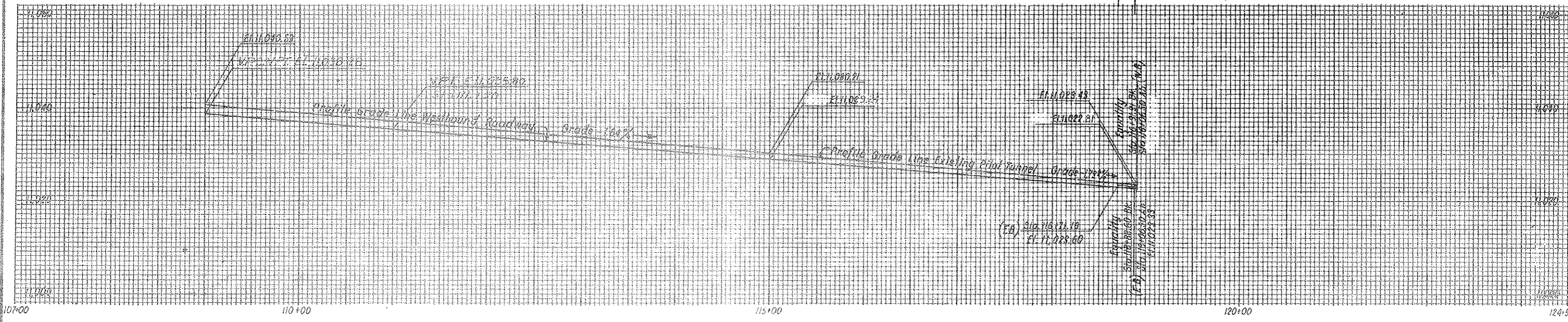
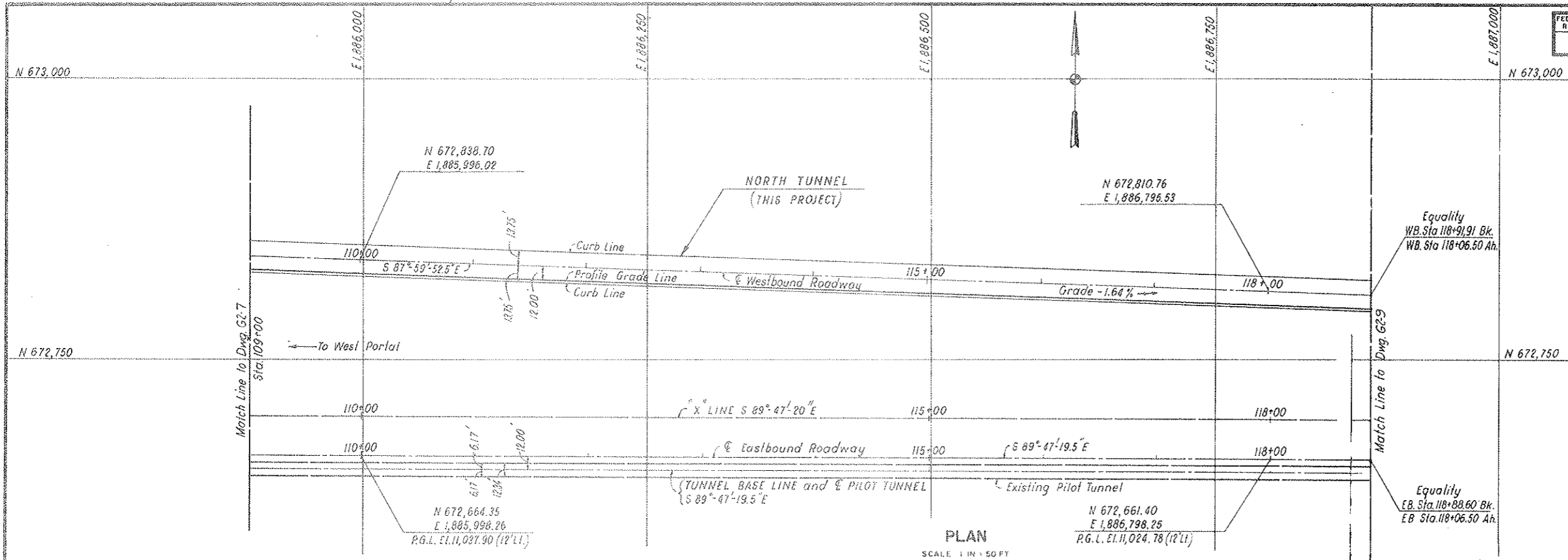
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	10	326



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL ALIGNMENT AND PROFILE STA. 92 + 50 TO STA. 109 + 00					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	R. M.	RECOMMENDED:	J. L. [Signature]		
DRAWN:	J. L.	CHECKED:	R. M. - S.M.R.	[Signature]	
SUBMITTED:	[Signature]	APPROVED:	[Signature]		
NEW YORK, N. Y.		SCALE:	AS NOTED	DATE:	AUGUST 1967
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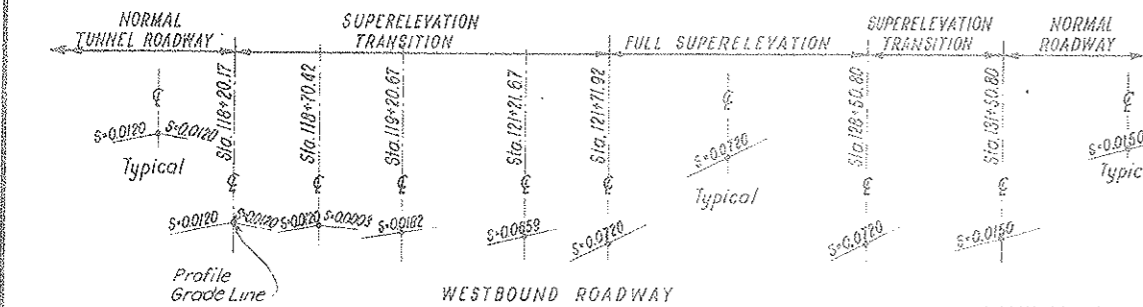
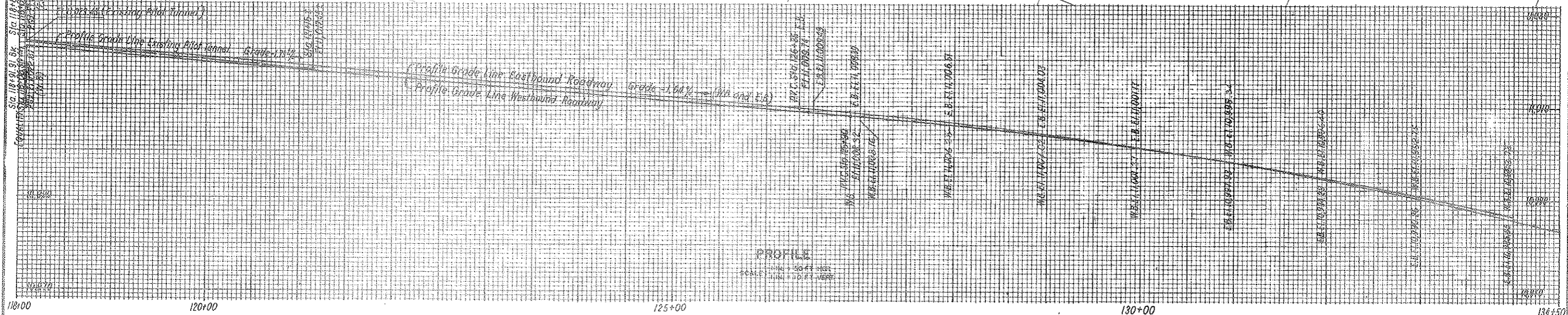
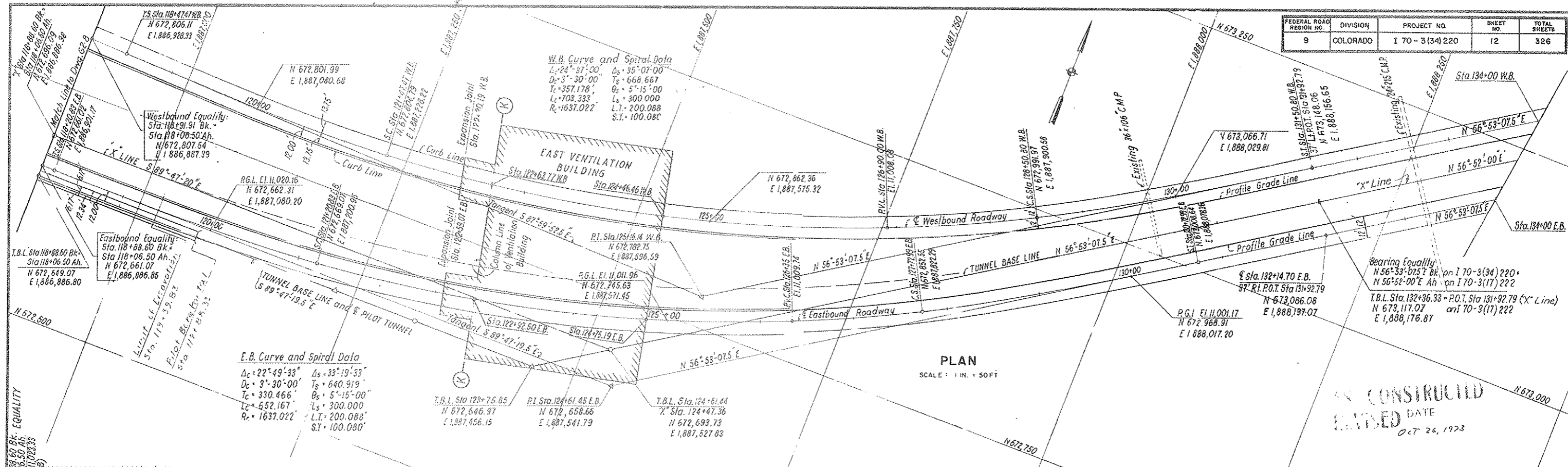
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	11	326

0-726,1973



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL ALIGNMENT AND PROFILE STA. 109+00 TO EQUALITY W.B. STA. 118+91.91 BK. STA. 109+00 TO EQUALITY E.B. STA. 118+88.60 BK.					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	R. M.	RECOMMENDED:	Edward A. Lawrence		
DRAWN:	J. L.	CHECKED:	R. M. S.M.R.	GRAVING NO.	
SUBMITTED:	5/1/67	SUBMITTED:	5/1/67	62-8	
NEW YORK, N. Y.			SCALE: AS NOTED DATE: AUGUST 1967		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	12	326



SCHEMATIC OF ROADWAY CROSS-GRADES

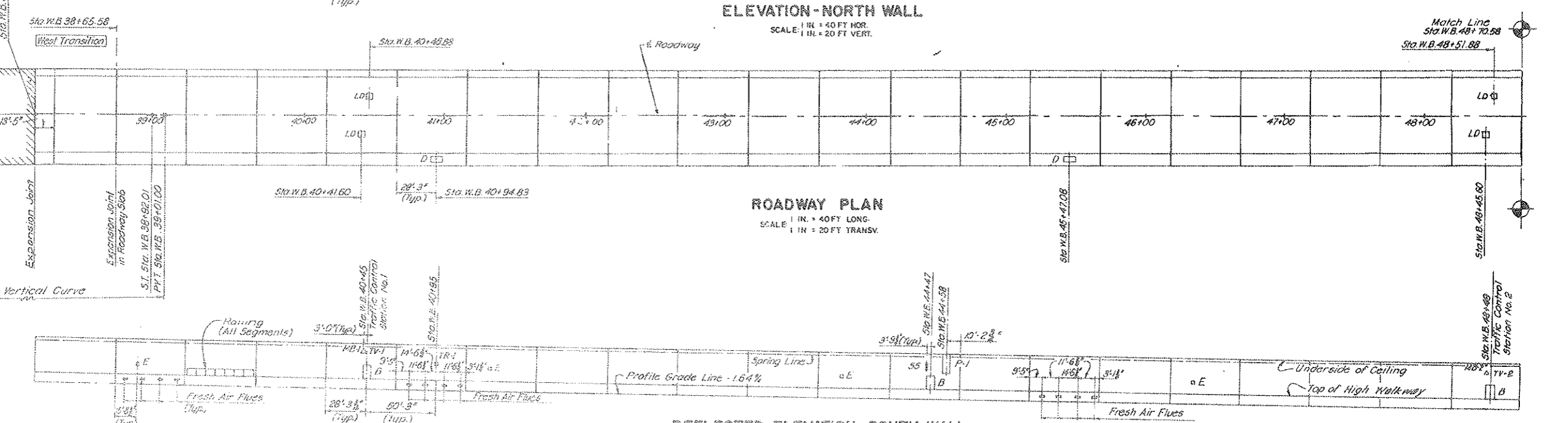
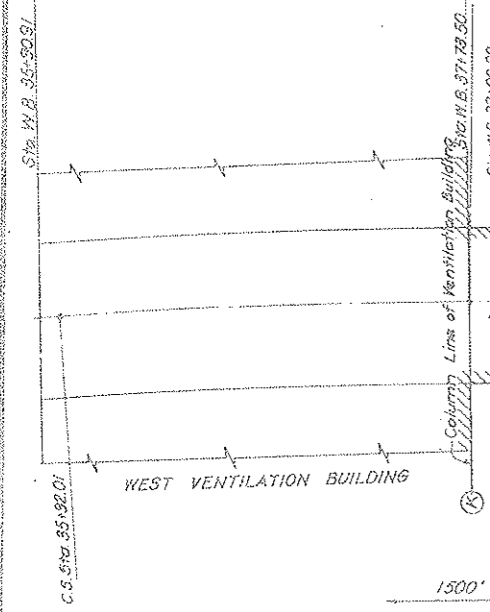
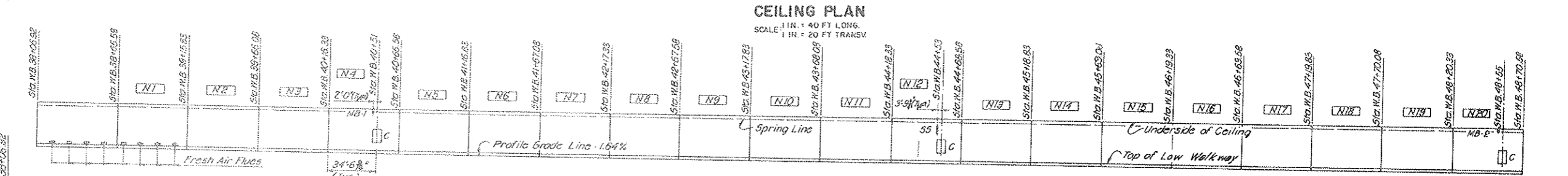
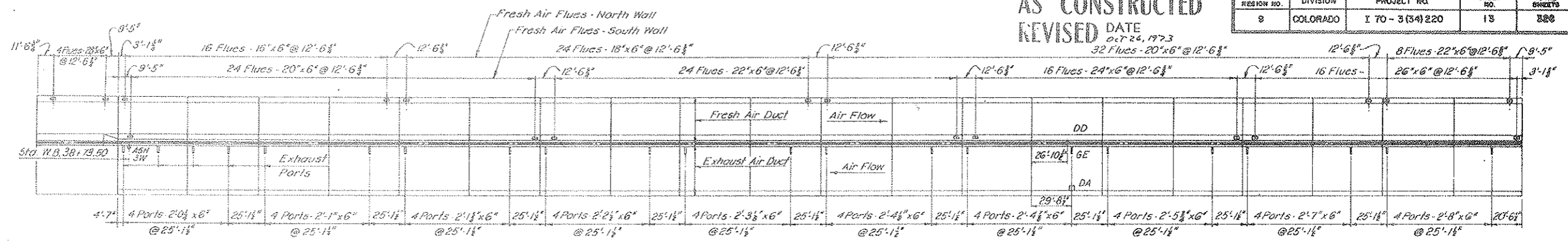
The slope of each roadway lane cross-grade changes uniformly between the sections illustrated
Cross Grades shown are 1/11

NOT CONSTRUCTED
DATE
OCT 26, 1973

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL ALIGNMENT AND PROFILE EQUALITY STA. 118+06.50 AH. TO STA. 134+00					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R. M.	RECOMMENDED: J. L.				
DRAWN: J. L.	CHECKED: R. M. - S.M.R.				
SUBMITTED: [Signature]	APPROVED: [Signature]				
NEW YORK, N. Y.		SCALE: AS NOTED		DATE: AUGUST 1967	

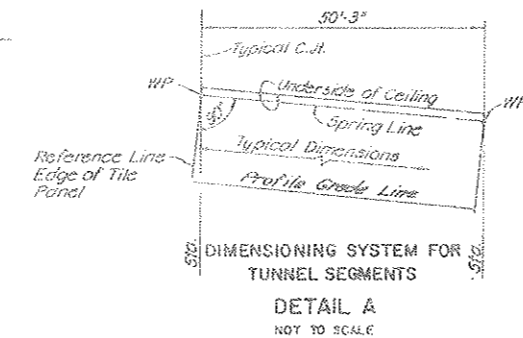
AS CONSTRUCTED
REVISED DATE
Oct 24, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
8	COLORADO	I 70-3(34)220	13	388



- LEGEND:**
- E Fire Extinguisher Cabinet
 - P Traffic Control Pulpit
 - D Manhole Distribution Station in Walkway
 - B Pullbox Distribution Station - High Walkway
 - C Pullbox Distribution Station - Low Walkway
 - MB Message Board
 - LD Loop Detector
 - TV Television Camera
 - SS Stop Signal and Sign
 - TR Tunnel Emergency Reporting Telephone Recess
 - ASH Air Sampling Hood
 - DA Duct Access Hatch
 - DD Duct Divider Wall Door Opening
 - GE Grating Over Exhaust Port

Note See Sheets No. C2-388 & C2-38C
For Tunnel Drainage
Sewer & Water Mains

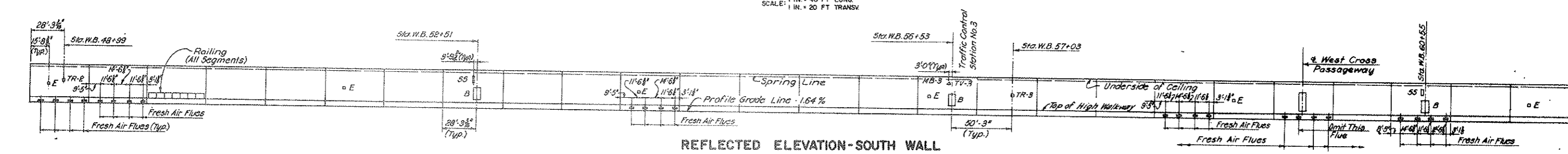
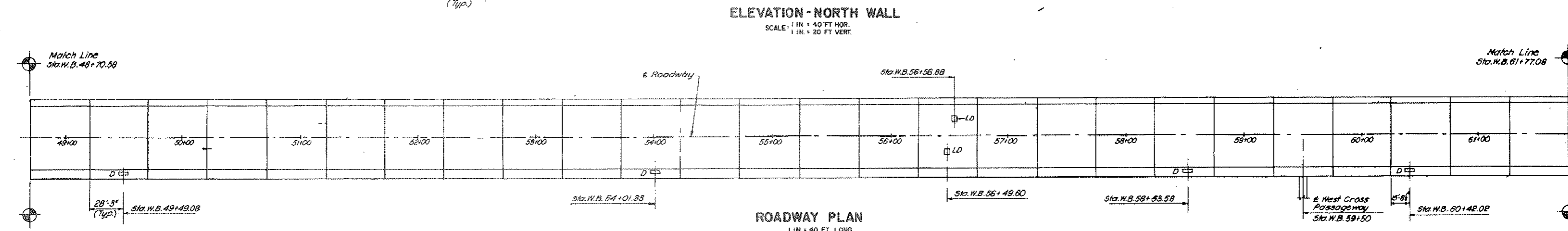
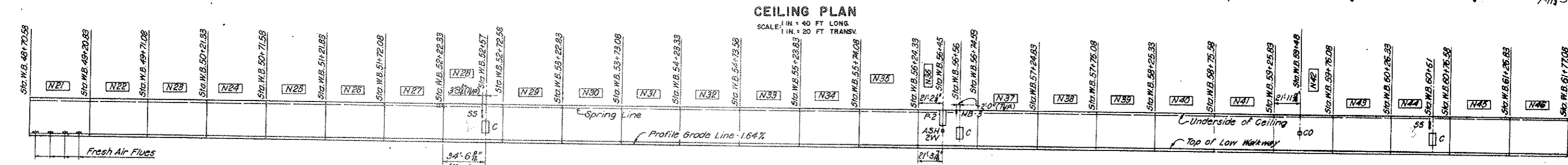
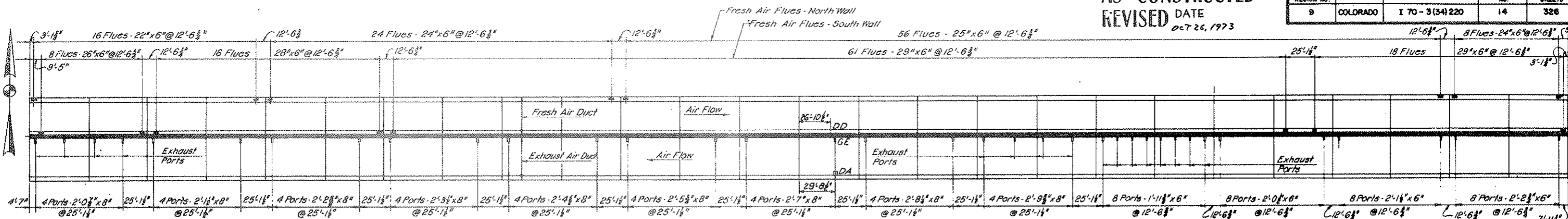


NOTES:
All longitudinal dimensions are measured horizontally along a Roadway. Stationing given at ends of tunnel segments are general profile stations taken along the centerline of roadway. Between ends of tunnel segments longitudinal dimensions are taken as shown on Detail 'A' and are taken along the centerline of roadway. In curved segments longitudinal dimensions are taken along the centerline of roadway and projected transversely on radial lines. Stationing of features such as Pull-Boxes, etc. are given to the nearest foot and are for reference only. Generally, repeating items such as Pull-Boxes, Telephone, etc. are located in the same positions relative to the ends of the segment in which they occur. When this is the case they are dimensioned only on the first segment in which they appear on each drawing. Location of 8" Seep Drain Collector as shown is schematic; for details see For typical segment joint see Dwg. C2-12

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL NORTH TUNNEL GENERAL ARRANGEMENT WEST VENTILATION BUILDING TO STA. WB 48+70.58					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.					
DESIGNED: K.F. McC.	RECOMMENDED: Henry S. ...				
DRAWN: R.B. ...	CHECKED: R.B. ...				
SUBMITTED: ...	DATE: AUGUST 1977				
					62-10

AS CONSTRUCTED
REVISED DATE
0-7-26, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3 (34) 220	14	326

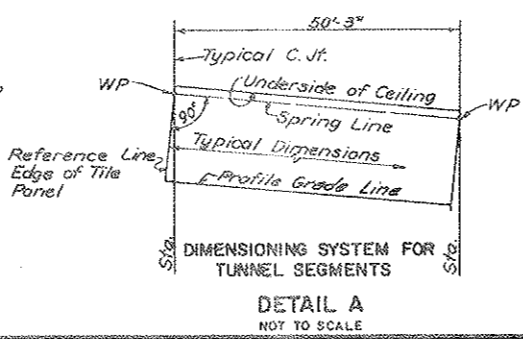


LEGEND

- E Fire Extinguisher Cabinet
- P Traffic Control Pulpit
- D Manhole Distribution Station in Walkway
- B Pullbox Distribution Station - High Walkway
- C Pullbox Distribution Station - Low Walkway
- M Message Board
- LD Loop Detector
- TV Television Camera
- S Stop Signal and Sign
- TR Tunnel Emergency Reporting Telephone Recess
- ASH Air Sampling Head
- DA Duct Access Hatch
- CD Cross Over Pullbox

DDD Duct Divider Wall Door Opening
GGE Grating Over Exhaust Port

Note see sheet # C2-38C - C2-38D
For Tunnel Drainage,
Sewer & Water Mains

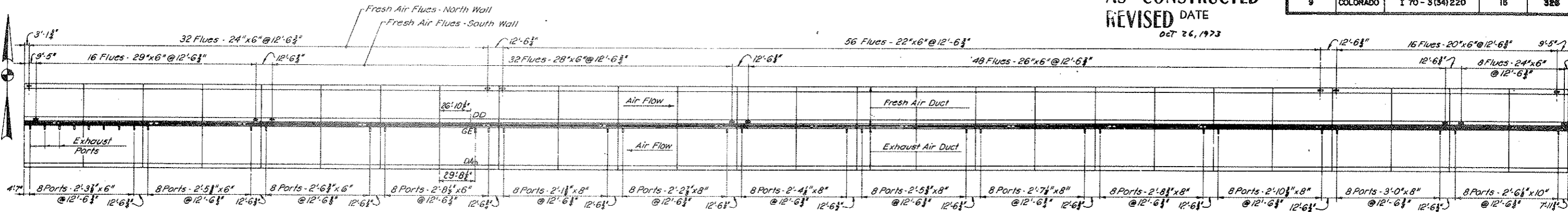


NOTES:
For Notes see Dwg. G2-10

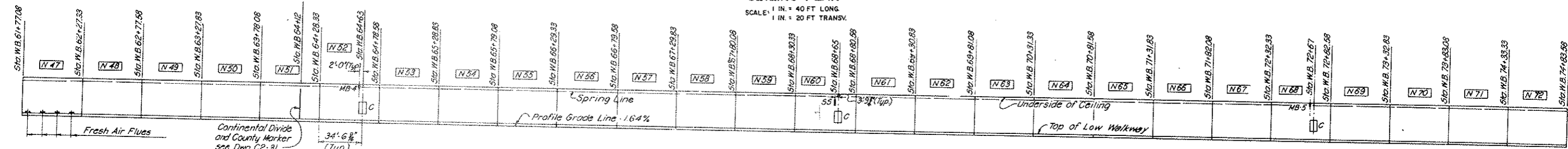
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL NORTH TUNNEL GENERAL ARRANGEMENT STA. W.B. 48+70.58 TO STA. W.B. 61+77.08					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: HFM:G.D.	RECOMMENDED: Howard J. ...				
DRAWN: R.E.	CHECKED: R.E.L.A.-HFM:G.C.				
SUBMITTED: [Signature]	APPROVED: [Signature]				
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967	DRAWING NO. 62-11	

AS CONSTRUCTED
REVISED DATE
OCT 26, 1973

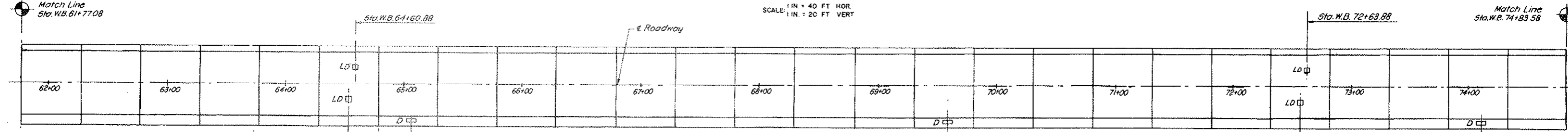
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	16	326



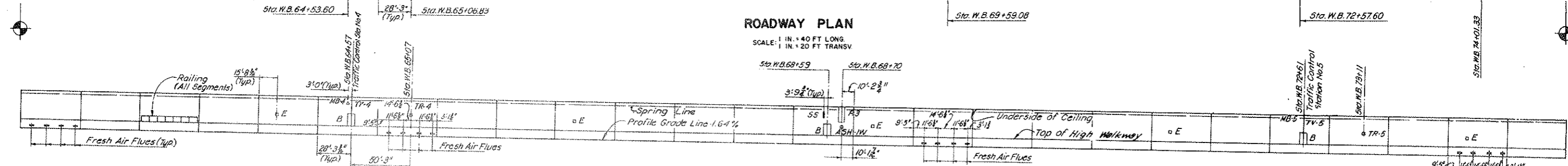
CEILING PLAN
SCALE: 1 IN. = 40 FT LONG
1 IN. = 20 FT TRANSV.



ELEVATION-NORTH WALL
SCALE: 1 IN. = 40 FT HOR.
1 IN. = 20 FT VERT.



ROADWAY PLAN
SCALE: 1 IN. = 40 FT LONG
1 IN. = 20 FT TRANSV.

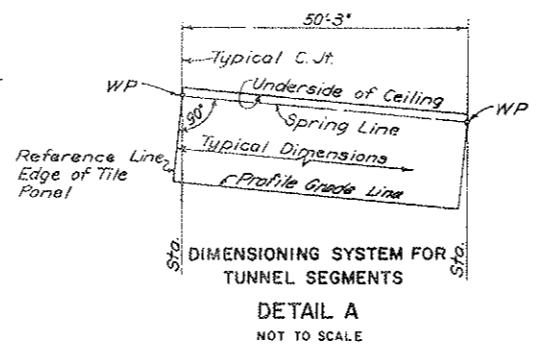


REFLECTED ELEVATION-SOUTH WALL
SCALE: 1 IN. = 40 FT HOR.
1 IN. = 20 FT VERT.

LEGEND

- oE Fire Extinguisher Cabinet
- P Traffic Control Pulpit
- D Manhole Distribution Station in Walkway
- B Pullbox Distribution Station - High Walkway
- C Pullbox Distribution Station - Low Walkway
- 1MB Message Board
- LD Loop Detector
- TV Television Camera
- 1SS Stop Signal and sign
- oTR Tunnel Emergency Reporting Telephone Recess
- oASH Air Sampling Head
- DA Duct Access Hatch
- DD Duct Divider Wall Door Opening
- 1GE Grating Over Exhaust Part

Note See Sheet No. C2-38D - C2-38F
For Tunnel Drainage,
Sewer & Water Mains

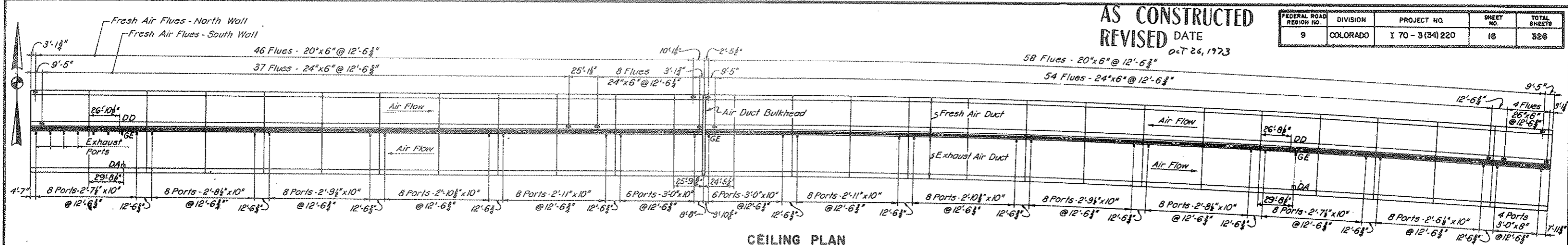


NOTES:
For Notes see Dwg. G2-10

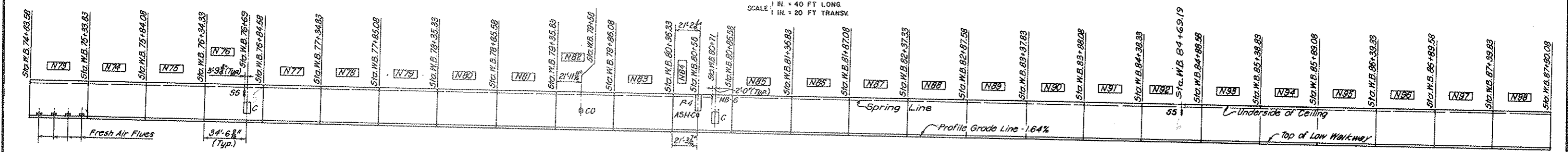
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL NORTH TUNNEL GENERAL ARRANGEMENT STA. W.B. 61+77.08 TO STA. W.B. 74+83.58					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. SOC.	RECOMMENDED: <i>Handwritten</i>				
DRAWN: J.B.	CHECKED: R.A. HEMOC.				
SUBMITTED: <i>Handwritten</i>	APPROVED: <i>Handwritten</i>				
NEW YORK, N. Y.	SCALE: AS NOTED	DATE: AUGUST 1973	DRAWING NO. G2-12		

AS CONSTRUCTED
REVISED DATE 01/26/1973

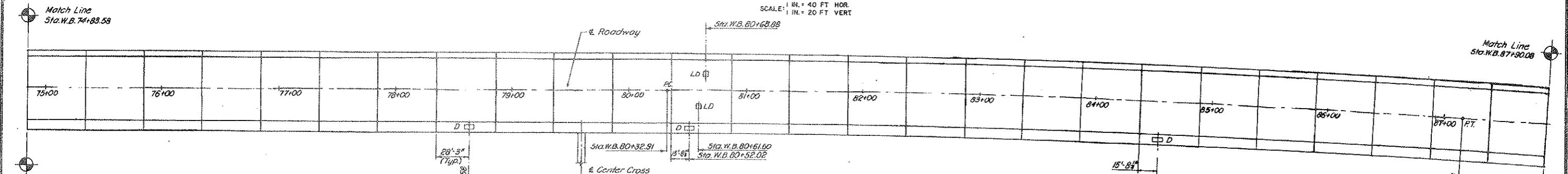
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	18	326



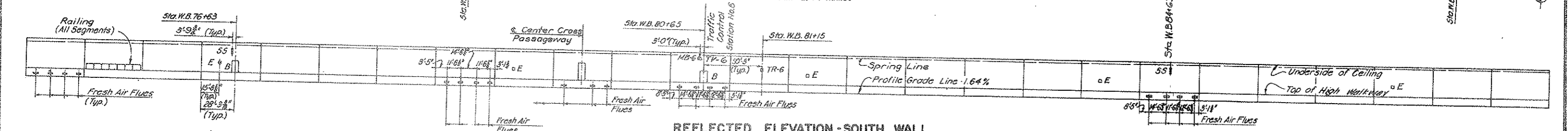
CEILING PLAN
SCALE: 1/4" = 40 FT LONG
1/8" = 20 FT TRANSV.



ELEVATION-NORTH WALL
SCALE: 1/4" = 40 FT HOR.
1/8" = 20 FT VERT.



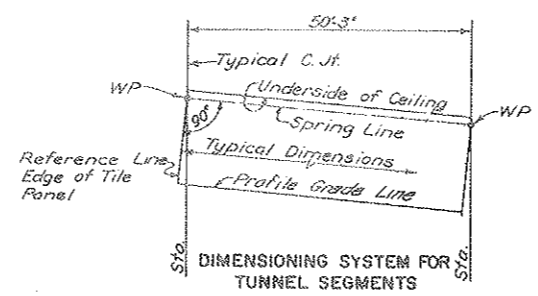
ROADWAY PLAN
SCALE: 1/4" = 40 FT LONG
1/8" = 20 FT TRANSV.



REFLECTED ELEVATION-SOUTH WALL
SCALE: 1/4" = 40 FT HOR.
1/8" = 20 FT VERT.

LEGEND:

- CO Cross Over Pullbox
- DA Duct Access Hatch
- DD Duct Divider Wall Door Opening
- GE Grating Over Exhaust Port
- E Fire Extinguisher Cabinet
- P Traffic Control Pulpit
- D Manhole Distribution Station in Walkway
- B Pullbox Distribution Station - High Walkway
- C Pullbox Distribution Station - Low Walkway
- MB Message Board
- LD Loop Detector
- TV Television Camera
- SS Stop Signal and Sign
- TR Tunnel Emergency Reporting Telephone Recess
- ASH Air Sampling Head



DETAIL A
NOT TO SCALE

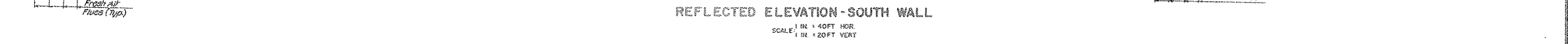
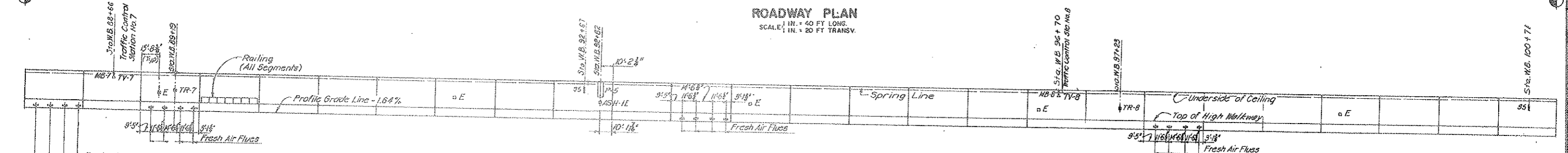
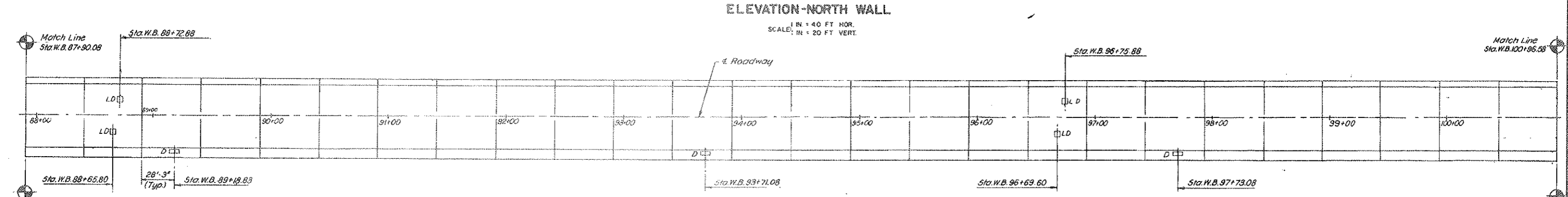
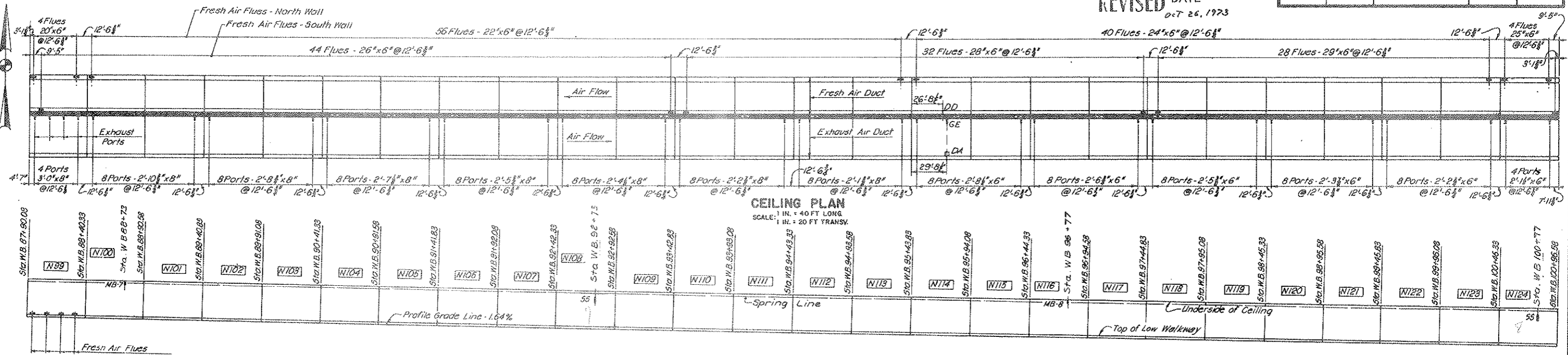
NOTES:
For Notes see Dwg. G2-10

Note See Sheet No. C2-38F - C2-38H
For Tunnel Drainage,
Water & Sewer Mains

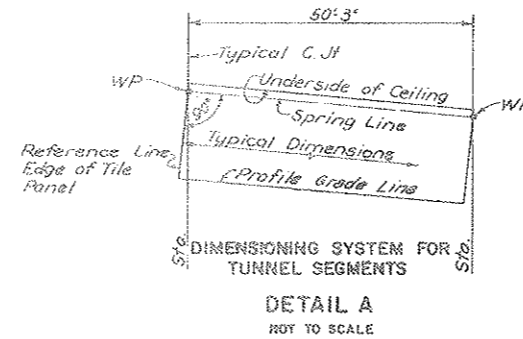
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL NORTH TUNNEL GENERAL ARRANGEMENT STA. W.B. 74+83.58 TO STA. W.B. 87+90.08					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	UFG: C.	RECOMMENDED BY	H. J. ...		
DRAWN BY	R. S.	CHECKED BY	R. J. A. H. M. C.		
SUBMITTED BY	...	APPROVED BY	...		
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967	DRAWING NO. 62-13	

AS CONSTRUCTED
REVISED DATE
0-T 26, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	17	328



- LEGEND**
- o E Fire Extinguisher Cabinet
 - o P Traffic Control Pulpit
 - o D Manhole Distribution Station in Walkway
 - o B Pullbox Distribution Station - High Walkway
 - o C Pullbox Distribution Station - Low Walkway
 - MB Message Board
 - o LD Loop Detector
 - o TV Television Camera
 - o S Stop Signal and Sign
 - o TR Tunnel Emergency Reporting Telephone Recess
 - o ASH Air Sampling Head
 - o DA Duct Access Hatch
 - o DD Duct Divider Wall Door Opening
 - o GE Grating Over Exhaust Port

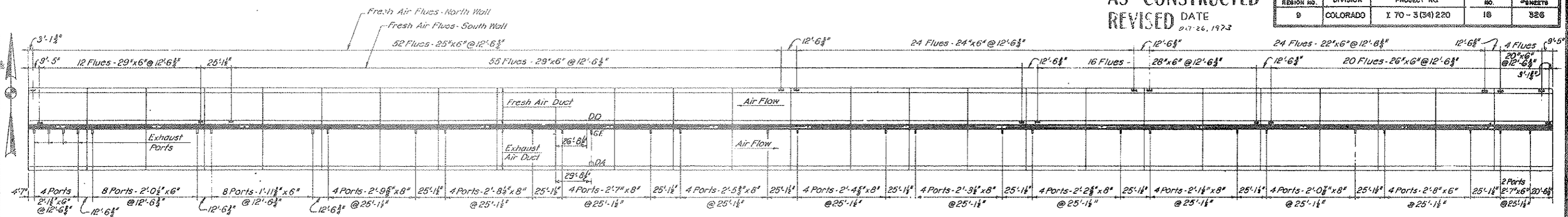


NOTES:
For Notes see Dwg. 62-10
Note See Sheet No. C2-30I - C2-30J
For Tunnel Drainage,
Sewer & Water Mains

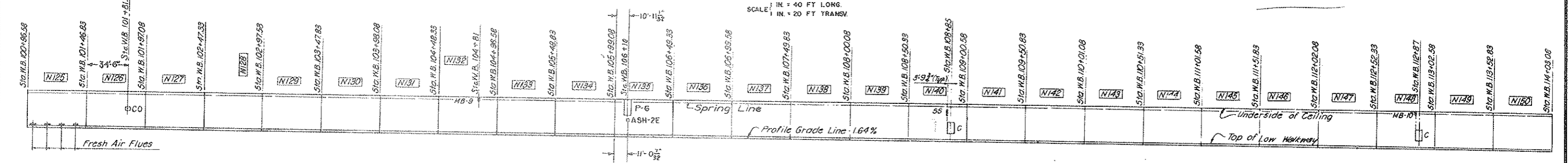
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL NORTH TUNNEL GENERAL ARRANGEMENT STA. W.B. 67+80.08 TO STA. W.B. 100+96.58					
YIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. J. C.	RECOMMENDED: H. J. C.				
DRAWN: R. B.	CHECKED: R. B. - H. J. C.				
SUBMITTED: J. A. S.	DATE: August 1967				
NEW YORK, N. Y.	SCALE: AS NOTED	DATE: AUGUST 1967			

AS CONSTRUCTED
REVISED DATE 07-26, 1973

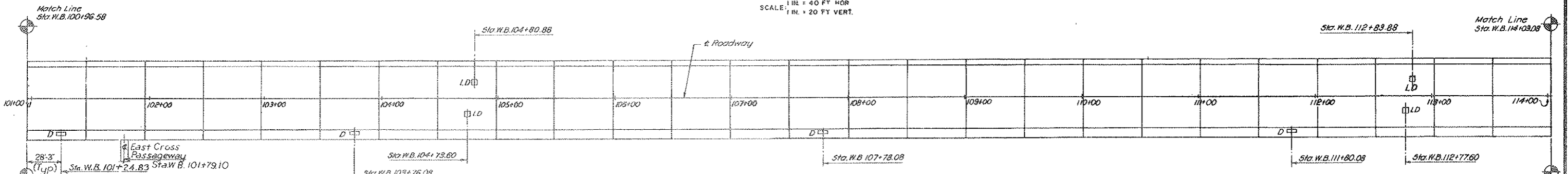
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	18	326



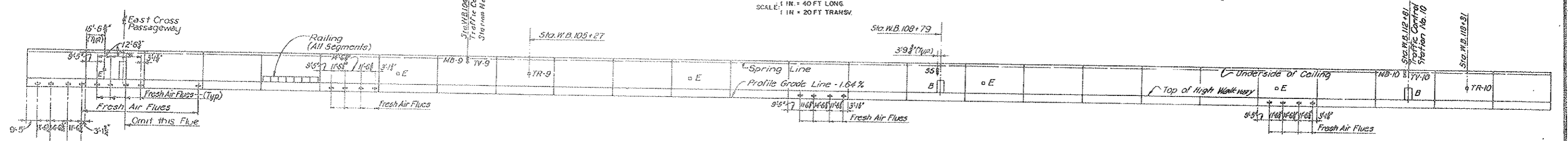
CEILING PLAN
SCALE: 1 IN. = 40 FT LONG
1 IN. = 20 FT TRANSV.



ELEVATION-NORTH WALL
SCALE: 1 IN. = 40 FT HOR
1 IN. = 20 FT VERT.



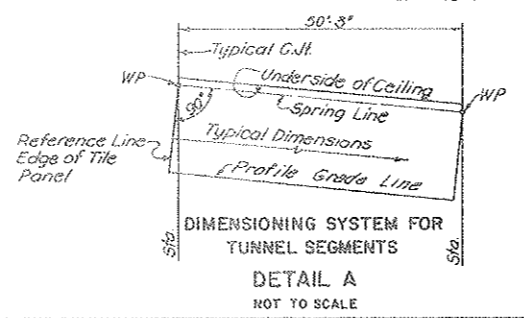
ROADWAY PLAN
SCALE: 1 IN. = 40 FT LONG
1 IN. = 20 FT TRANSV.



REFLECTED ELEVATION-SOUTH WALL
SCALE: 1 IN. = 40 FT HOR
1 IN. = 20 FT VERT.

LEGEND

- E Fire Extinguisher Cabinet
- P Traffic Control Pulpit
- D Manhole Distribution Station in Walkway
- B Pullbox Distribution Station - High Walkway
- C Pullbox Distribution Station - Low Walkway
- MB Message Board
- LD Loop Detector
- TV Television Camera
- SS Stop Signal and Sign
- TR Tunnel Emergency Reporting Telephone Recess
- ASH Air Sampling Head
- DA Duct Access Hatch
- CO Cross Over Pullbox



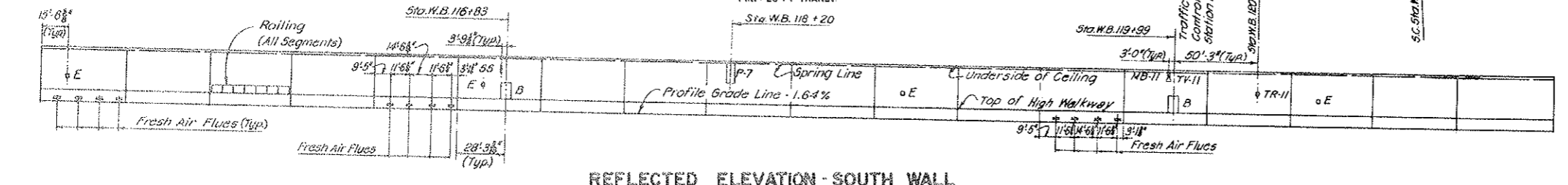
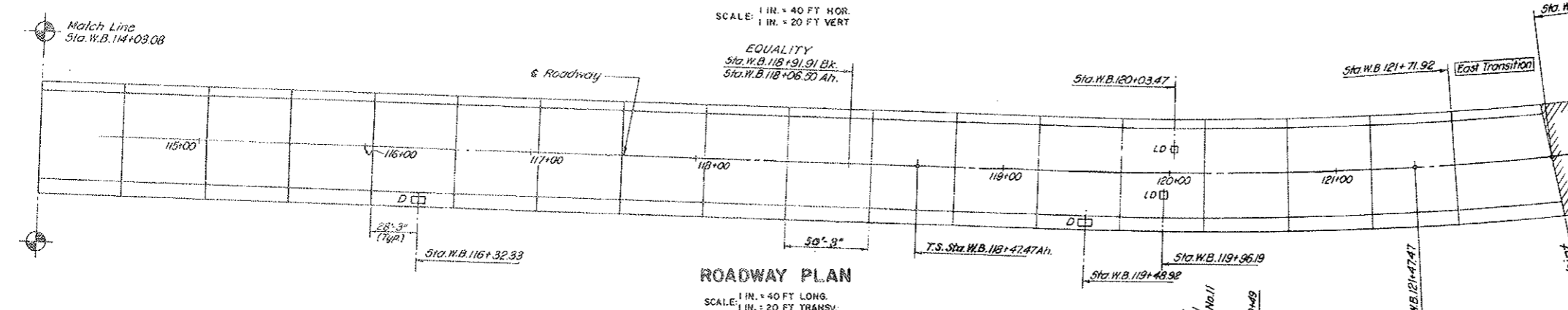
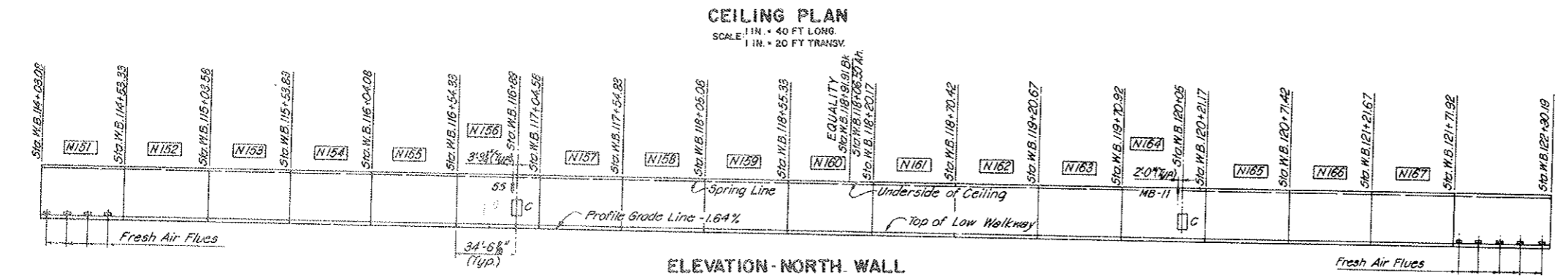
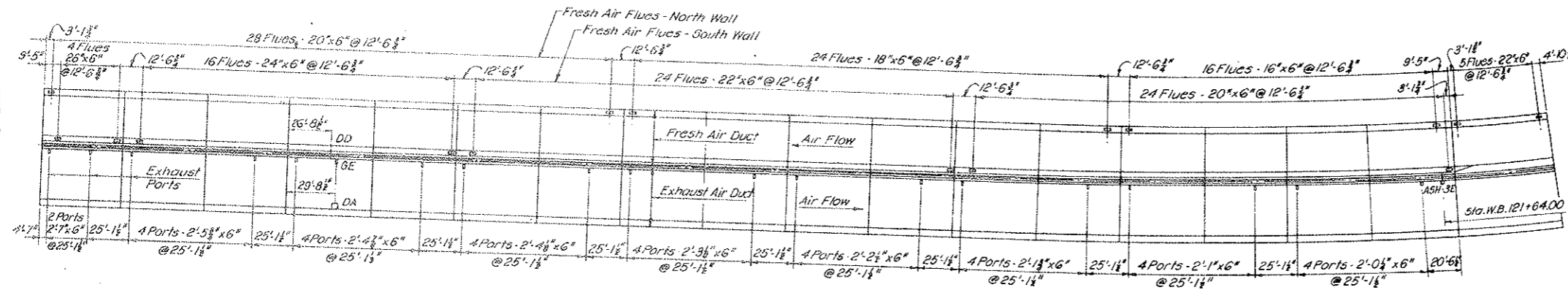
NOTES:
For Notes see Dwg. 62-10

Note See Sheet No. 62-385 - 62-384
For Tunnel Drainage,
WATER & SEWER MAINS.

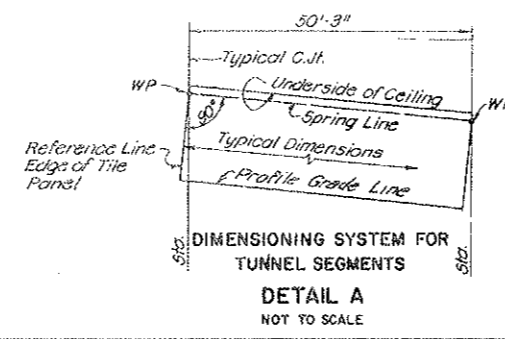
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL NORTH TUNNEL GENERAL ARRANGEMENT STA. W.B. 100+96.58 TO STA. W.B. 114+03.08					
TIPPETTS - ABBETT - MCCARTHY - SYRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F.M.C.	REVISIONS:				
DRAWN: R.B.	BY: J. J. [Signature]				
CHECKED: R.B. & H.F.M.C.	DATE: 8/1/73				
SUBMITTED:	THROUGH: [Signature]				
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1973		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3 (34) 220	19	386

AS CONSTRUCTED
REVISED DATE
 0.7.26.1973



- LEGEND**
- E Fire Extinguisher Cabinet
 - P Traffic Control Pulpit
 - D Manhole Distribution Station in Walkway
 - B Pullbox Distribution Station - High Walkway
 - C Pullbox Distribution Station - Low Walkway
 - MB Message Board
 - OLD Loop Detector
 - TY Television Camera
 - 155 Stop Signal and Sign
 - TR Tunnel Emergency Reporting Telephone Recess
 - ASH Air Sampling Head
 - DA Duct Access Hoop
 - DD Duct Divider Wall Door Open.
 - GE Grating over Exhaust Port



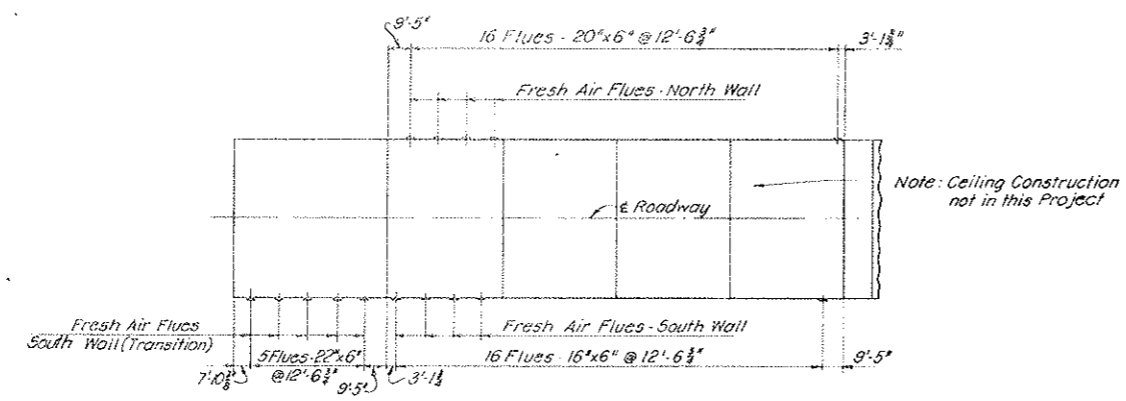
NOTES:
 For Notes see Dwg. G2-10

Note
 See Sheet No. C2-38K - C2-38L
 For Tunnel Drainage,
 Water & Sewer Mains

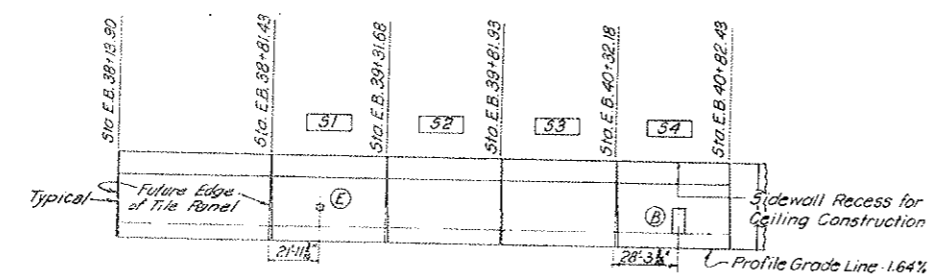
NO	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL NORTH TUNNEL GENERAL ARRANGEMENT STA. W.B. 114 + 03.08 TO EAST VENTILATION BUILDING					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F.M.C.	RECOMMENDED: H.A. Baratta				
DRAWN: R.B.	CHECKED: R.B.A.-H.M.C.				
SUBMITTED: H.A. Baratta	APPROVED: H.A. Baratta				
DATE: AUGUST 1967	SCALE: AS NOTED	DATE: AUGUST 1967			
					DRAWING NO. 62-16

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	20	828

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973

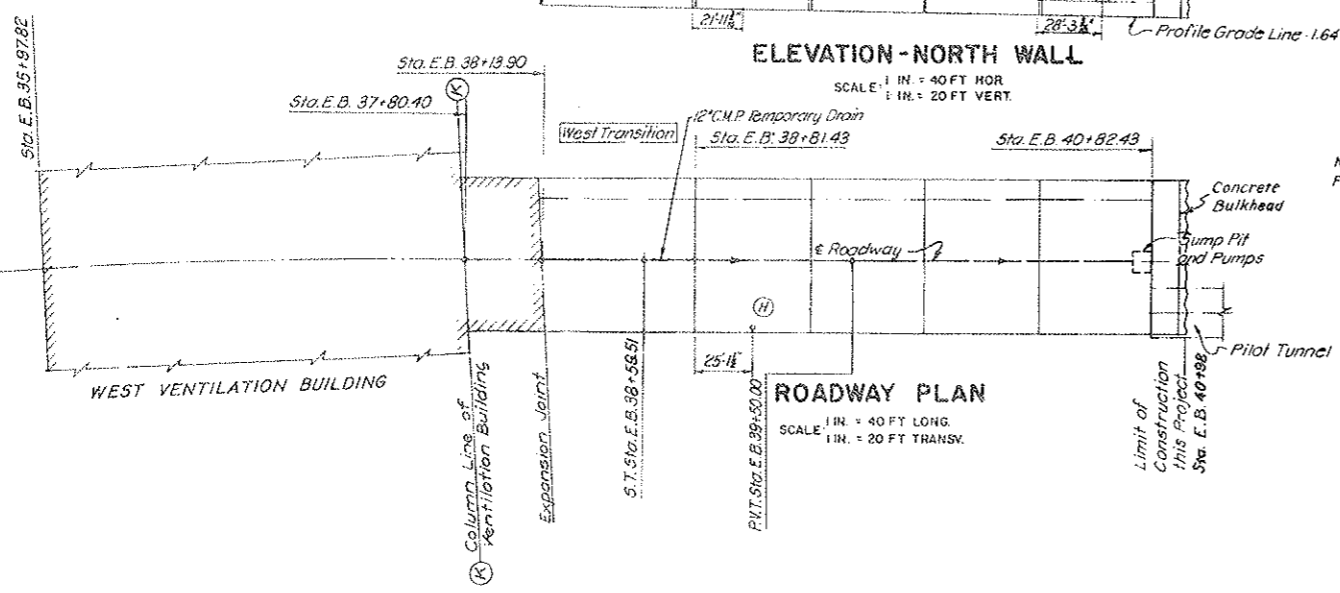


SECTIONAL PLAN
 (ONE FOOT BELOW CEILING KEY)
 SCALE: 1 IN. = 40 FT LONG.
 1 IN. = 20 FT TRANSV.



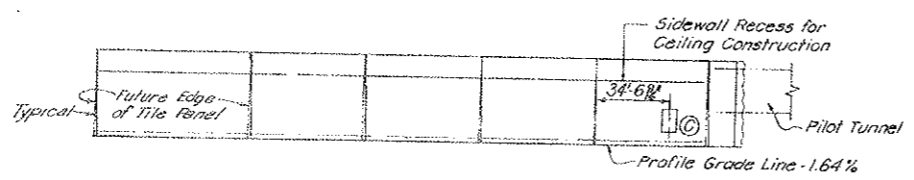
ELEVATION-NORTH WALL
 SCALE: 1 IN. = 40 FT HOR.
 1 IN. = 20 FT VERT.

Notes:
 For Sump Pit see Dwg. G2-42 and G2-44
 Encircled Letters denote blockouts similar to corresponding blockouts shown on Dwg. G2-10 to G2-16 incl.



ROADWAY PLAN
 SCALE: 1 IN. = 40 FT LONG.
 1 IN. = 20 FT TRANSV.

Note: See Sheet No. G2-42 For Tunnel Drainage



REFLECTED ELEVATION-SOUTH WALL
 SCALE: 1 IN. = 40 FT HOR.
 1 IN. = 20 FT VERT.

NOTES:
 For Notes see Dwg. G2-10
 Temporary wood cover and 2ply membrane water-proofing at all pull-box distribution stations in South Tunnel.

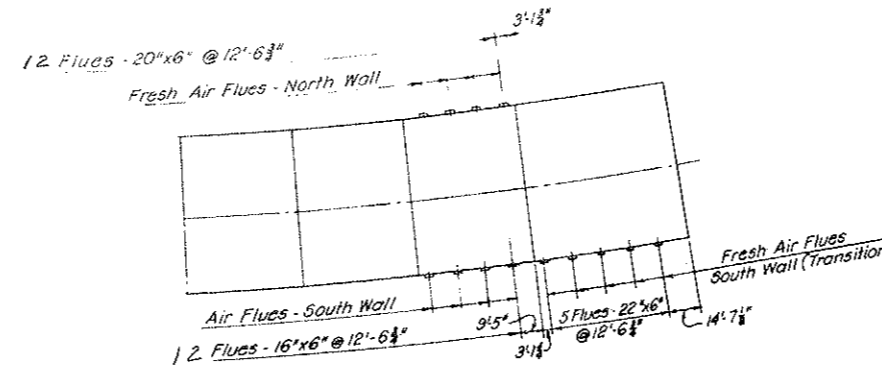
- LEGEND:**
- ⊙ H Flush Type Fire Hydrant
 - ⊙ E Fire Extinguisher Cabinet
 - ⊙ B Pullbox Distribution Station - High Walkway
 - ⊙ C Pullbox Distribution Station - Low Walkway

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL SOUTH TUNNEL GENERAL ARRANGEMENT WEST VENTILATION BUILDING TO STA. E.B. 40 + 82.43					
TIPPLETT'S - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: HEMC	RECOMMENDED:				
DRAWN: RB	APPROVED:				
CHECKED: R.B.A.-HEMC	DATE: AUGUST 1973				
SUBMITTED:	SCALE: AS NOTED				
NEW YORK, N. Y.		DATE: AUGUST 1973		G2-17	

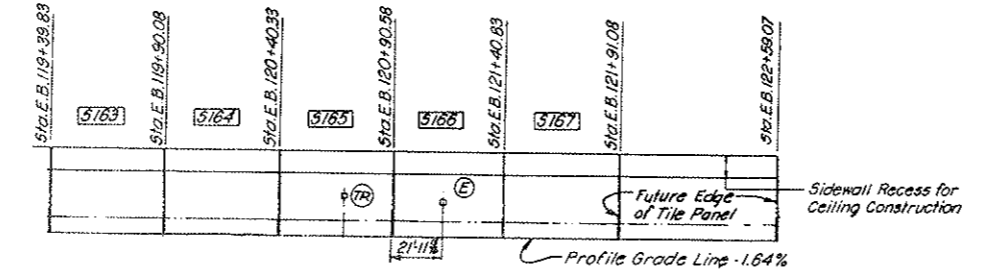
Note: Ceiling Construction
not in this Project

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	21	326

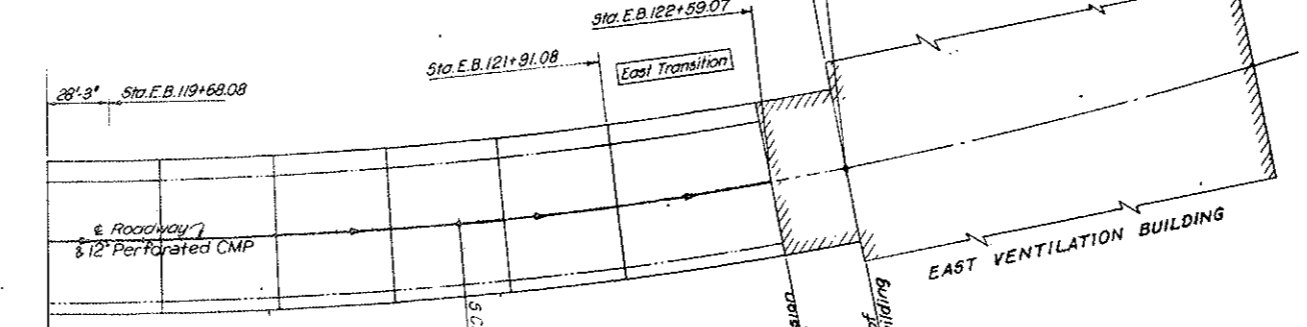
AS CONSTRUCTED
REVISED DATE
OCT 26, 1973



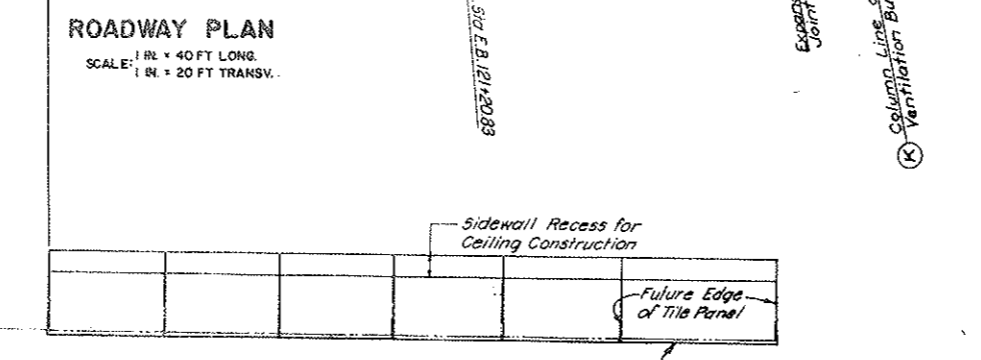
SECTIONAL PLAN
(ONE FOOT BELOW CEILING KEY)
SCALE: 1 IN. = 40 FT LONG.
1 IN. = 20 FT TRANSV.



ELEVATION - NORTH WALL
SCALE: 1 IN. = 40 FT HOR.
1 IN. = 20 FT VERT



ROADWAY PLAN
SCALE: 1 IN. = 40 FT LONG.
1 IN. = 20 FT TRANSV.



REFLECTED ELEVATION - SOUTH WALL
SCALE: 1 IN. = 40 FT HOR.
1 IN. = 20 FT VERT.

Notes
Encircled Letters denote blockouts similar to corresponding blockouts shown on Dwg. G2-10 to G2-16 incl.

- LEGEND:**
- (H) Flush Type Fire Hydrant
 - (E) Fire Extinguisher Cabinet
 - (D) Manhole Distribution Station in Walkway
 - (B) Pullbox Distribution Station - High Walkway
 - (C) Pullbox Distribution Station - Low Walkway
 - (TR) Tunnel Emergency Reporting Telephone Recess

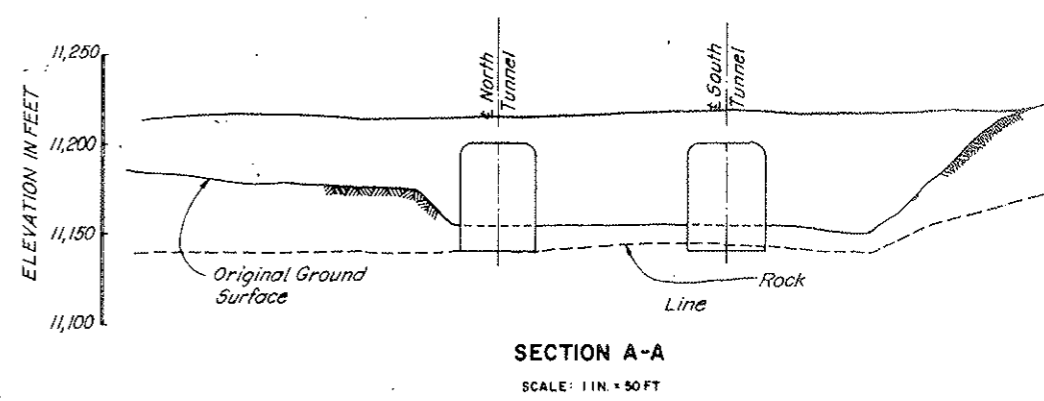
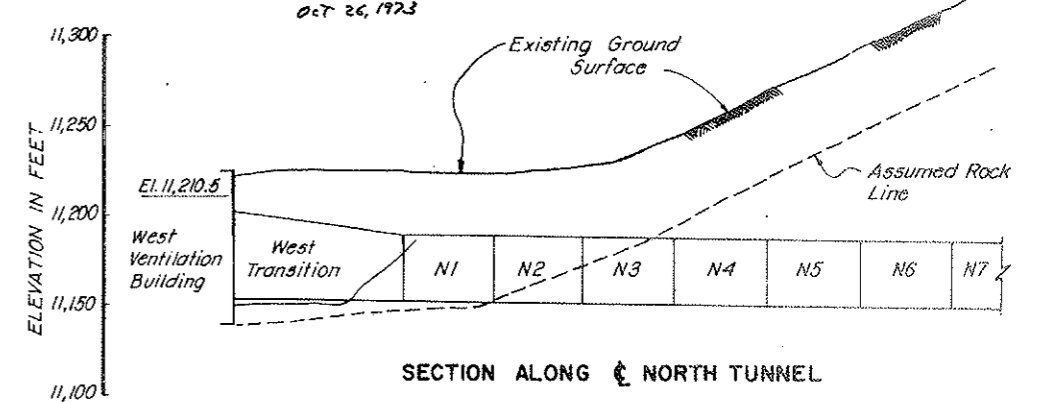
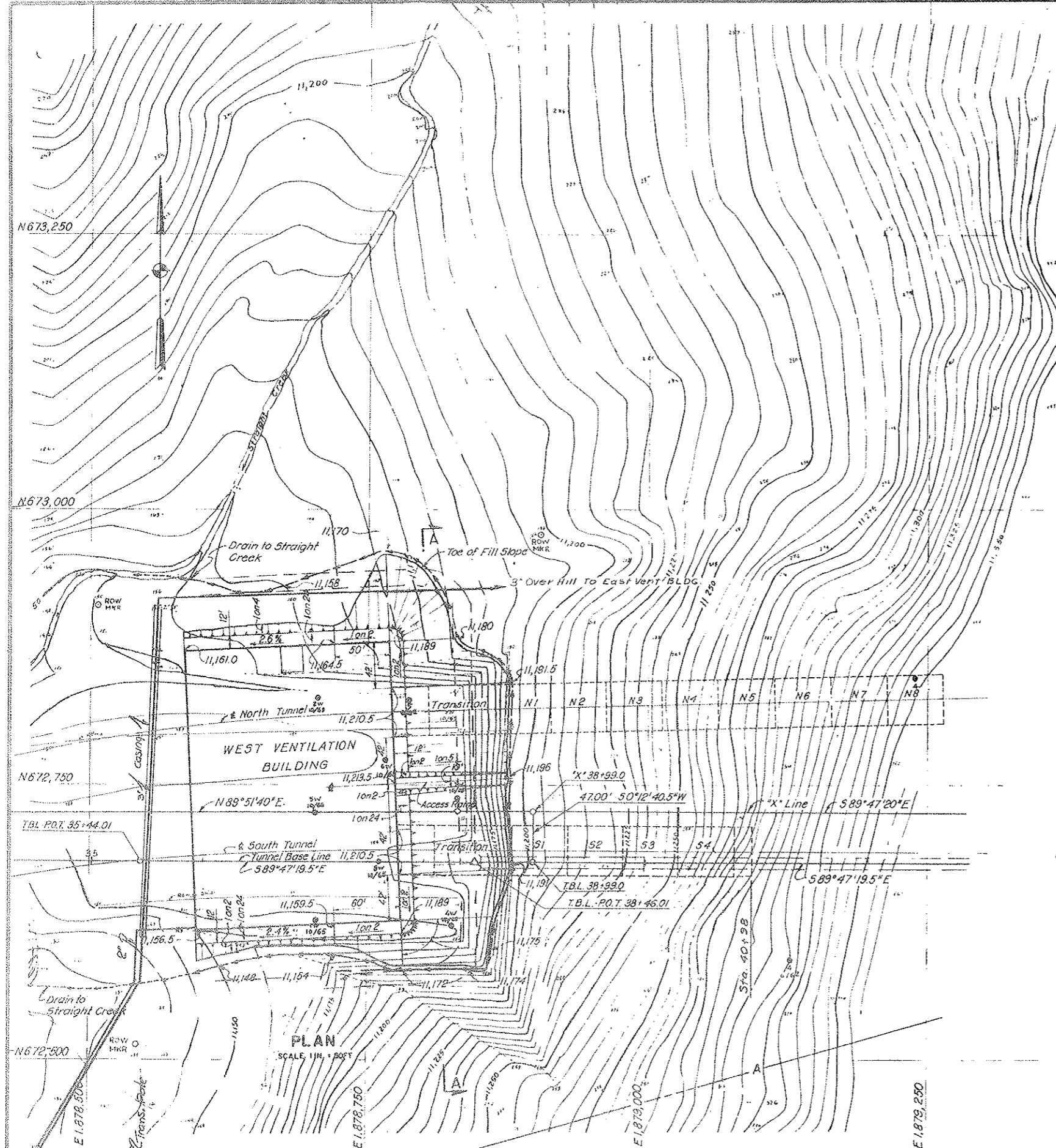
Note: See Sheet No. c2-43
For tunnel Drainage.

NOTES:
For Notes see Dwg. G2-10

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL SOUTH TUNNEL GENERAL ARRANGEMENT STA. E.B. 118 + 71.18 BK. TO EAST VENTILATION BUILDING					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. Mc C.	RECOMMENDED: Henry J. Rowe	DRAWN: R.B.			
CHECKED: R.B.A. Mc C.	APPROVED: Howard G. ...	SUBMITTED: [Signature]			
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967	G2-18	

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	Y 70-3(34) 220	22	528



NOTES:
 See specification for limitations on open cut operations in West Portal Area.

For Water Tank see Dwg. G3-1B
 For West Ventilation Building see Dwg. S-W2 and S-W3.

Embankment around West Ventilation Building shall be constructed with moisture and density control.

NOTE:
 FOR WATER SUPPLY SYSTEM SEE DRWG. NO. G3-1A Thru G3-1K

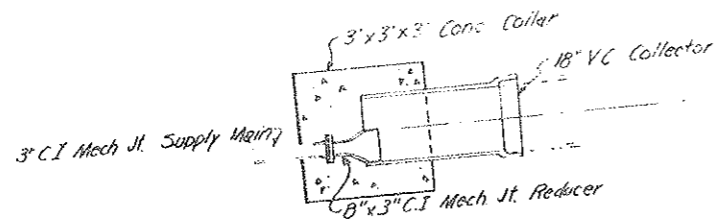
LEGEND:
 ○ Right of Way
 ● Drill Hole
 -A- Existing Right of Way

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL WEST PORTAL AREA GENERAL PLAN AND SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	HFM/C-PLP	RECOMMENDED BY	[Signature]		
DRAWN BY	R.B.	CHECKED BY	[Signature]		
CHECKED BY	H.F.M.C.	DATE	[Signature]		
DATE	11/1/73	SCALE	AS NOTED		
NEW YORK, N. Y.		DATE	AUGUST 1973		

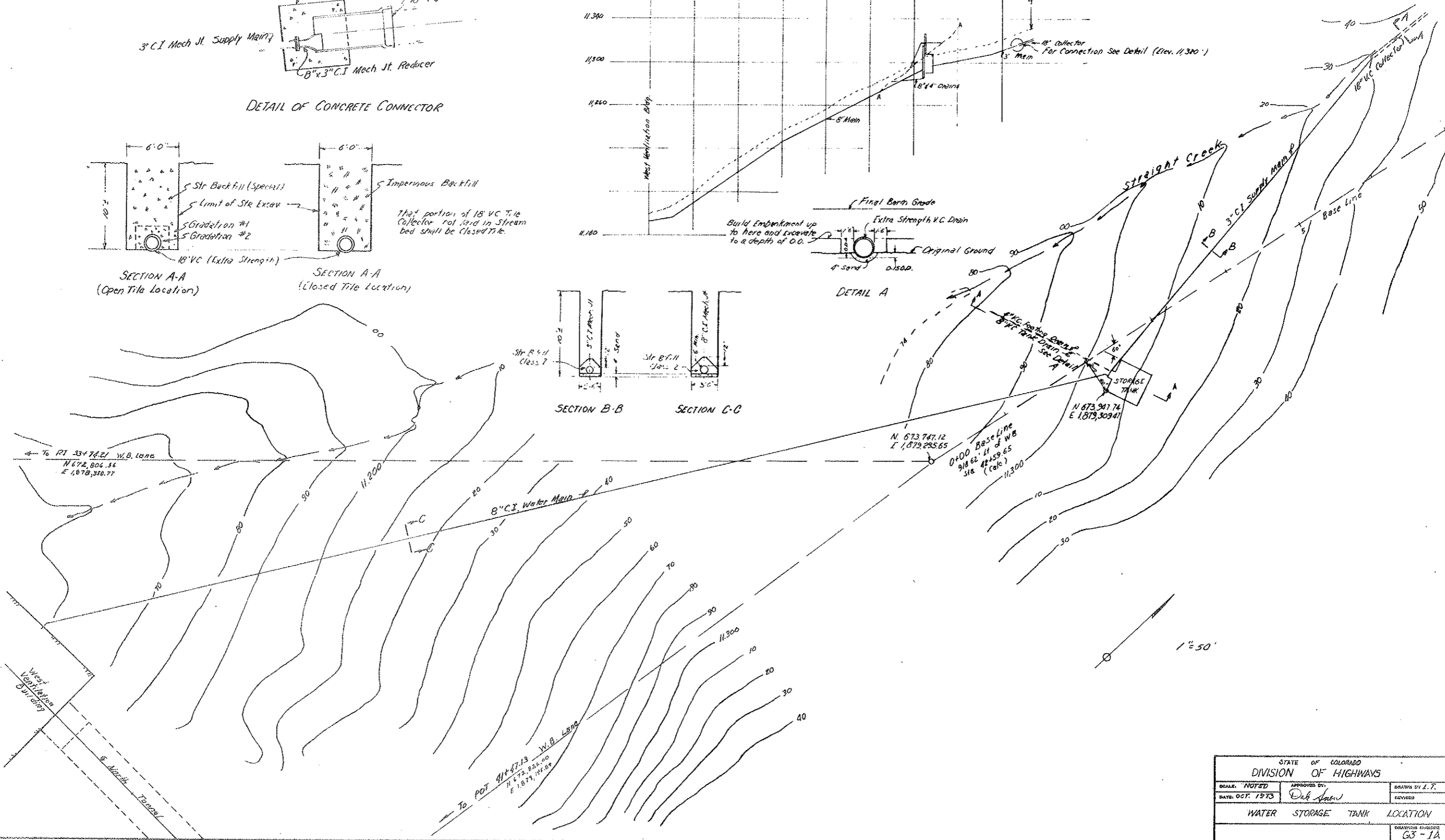
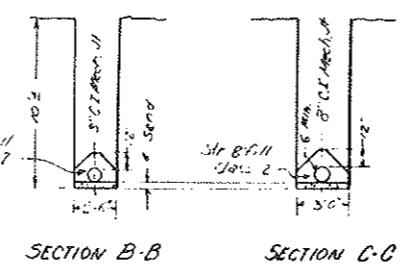
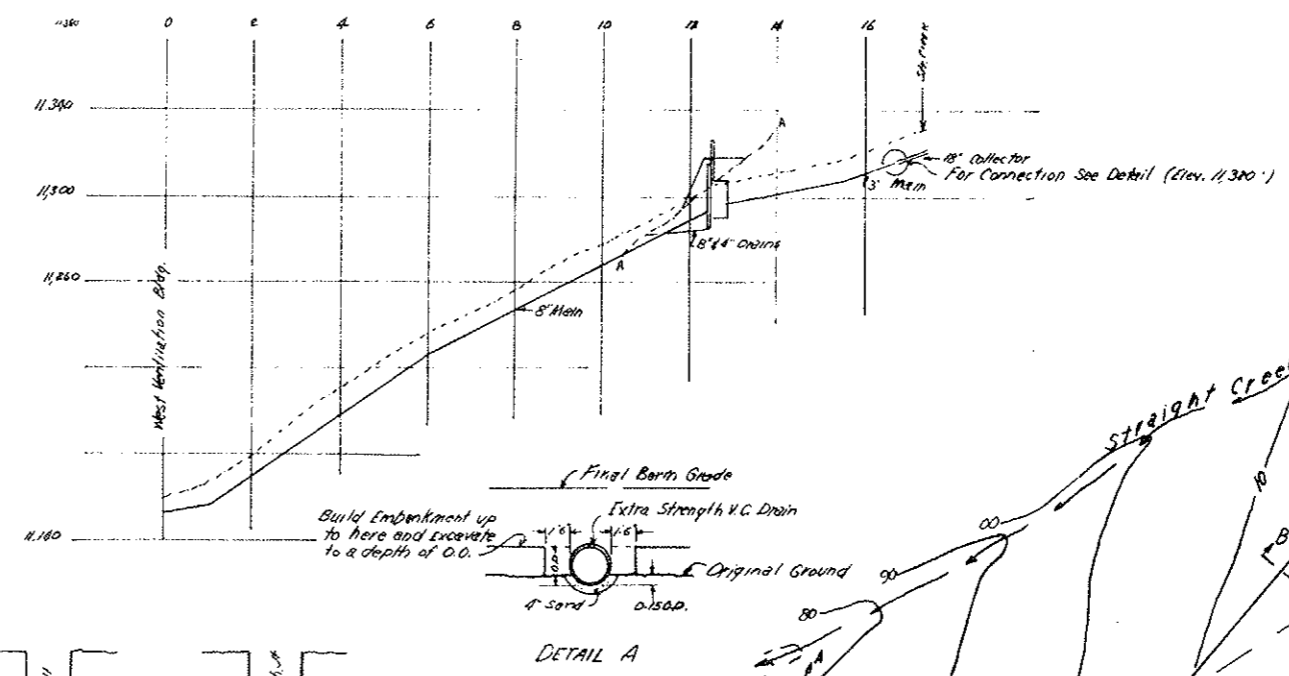
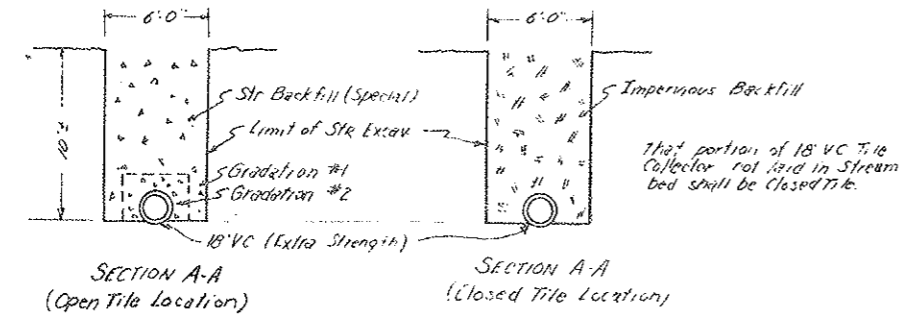
RELOCATION OF STRAIGHT CREEK WATER SUPPLY

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
D	COLORADO	I 70-3(94) 220	22 AX	336

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



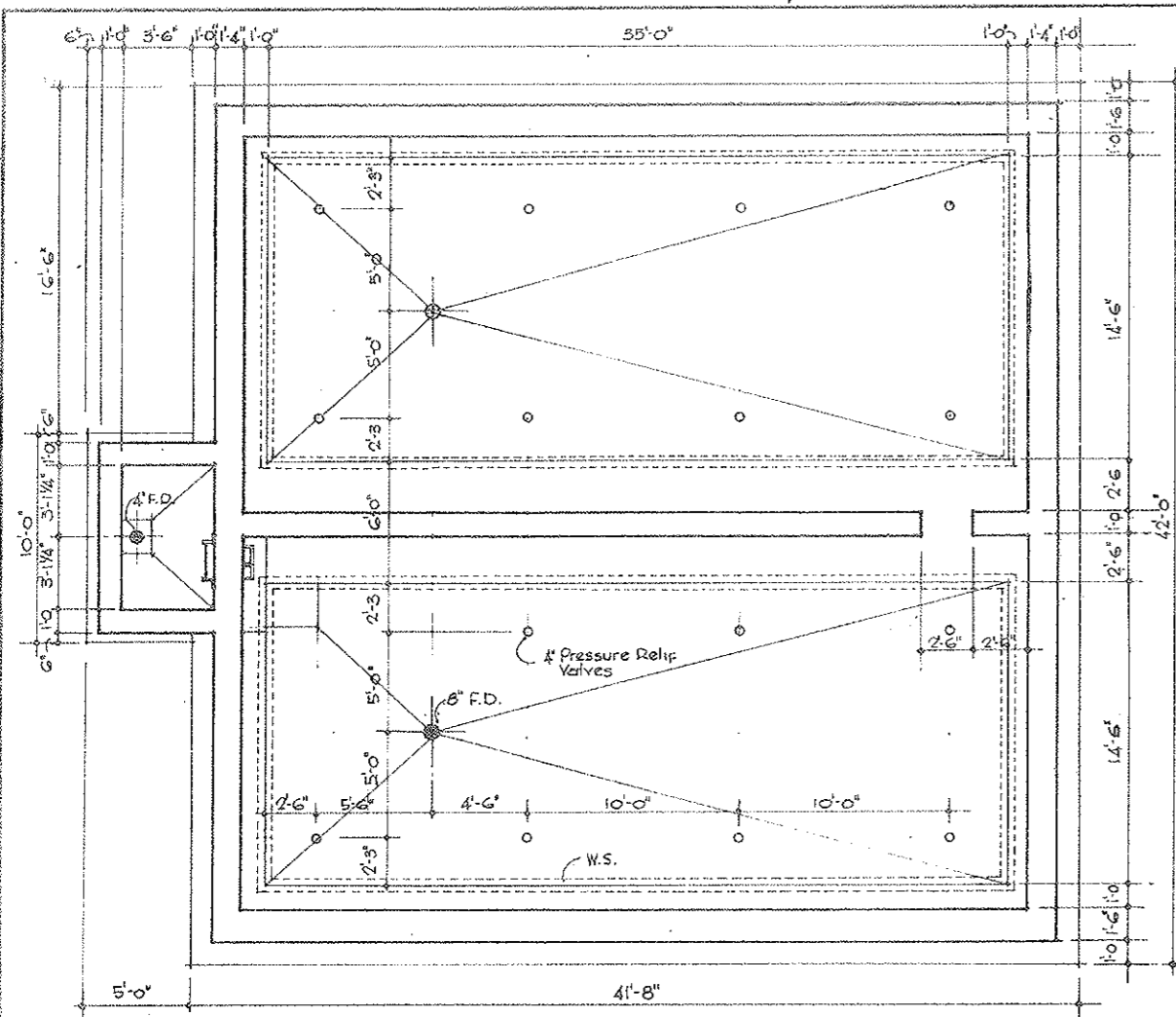
DETAIL OF CONCRETE CONNECTOR



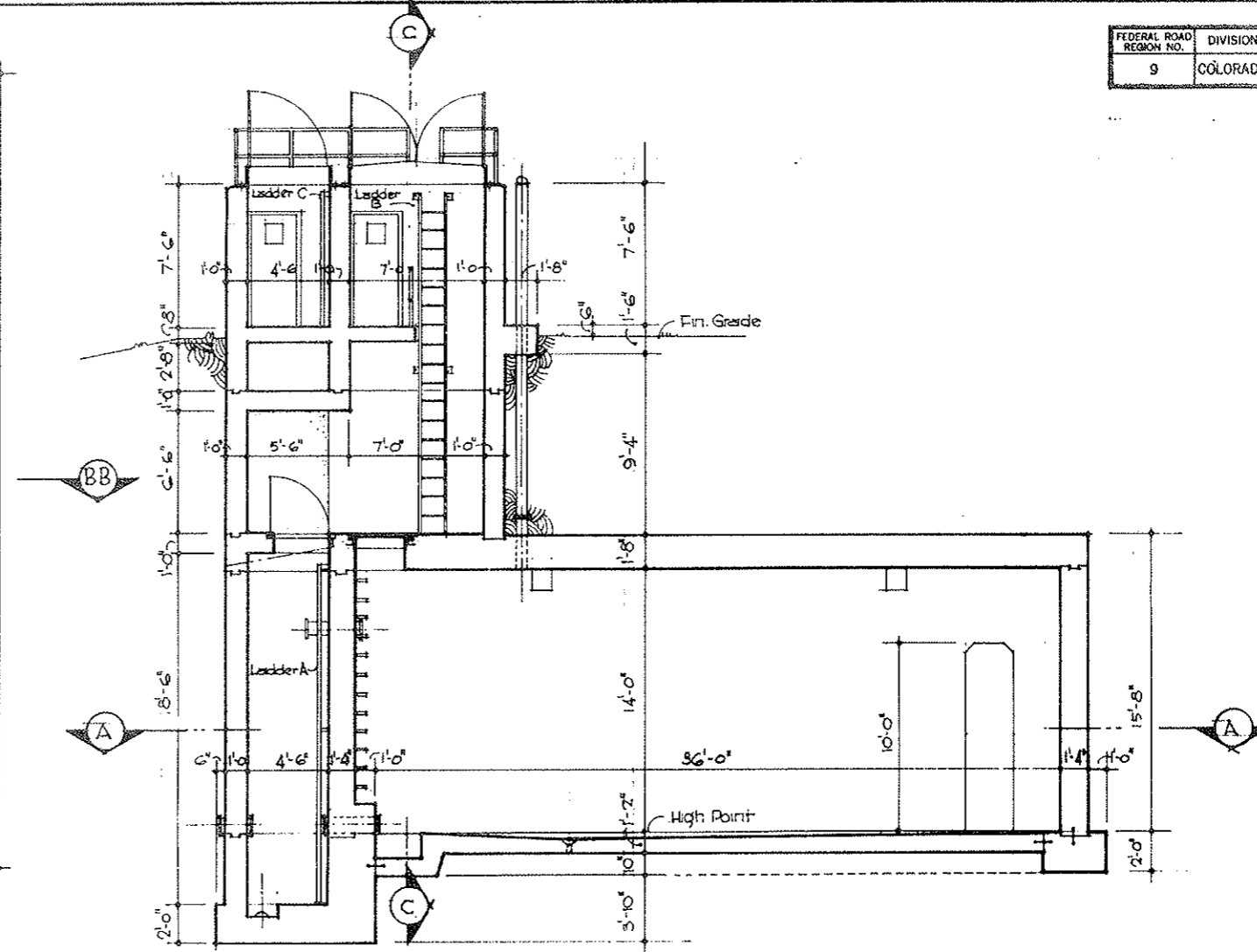
STATE OF COLORADO			
DIVISION OF HIGHWAYS			
SCALE: NOTED	APPROVED BY: <i>Del. [Signature]</i>	DRAWN BY: L. F.	
DATE: OCT. 1973	REVISIONS:		
WATER STORAGE TANK LOCATION		DRAWING NUMBER: G3-1A	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70-3(34)220	22 BX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



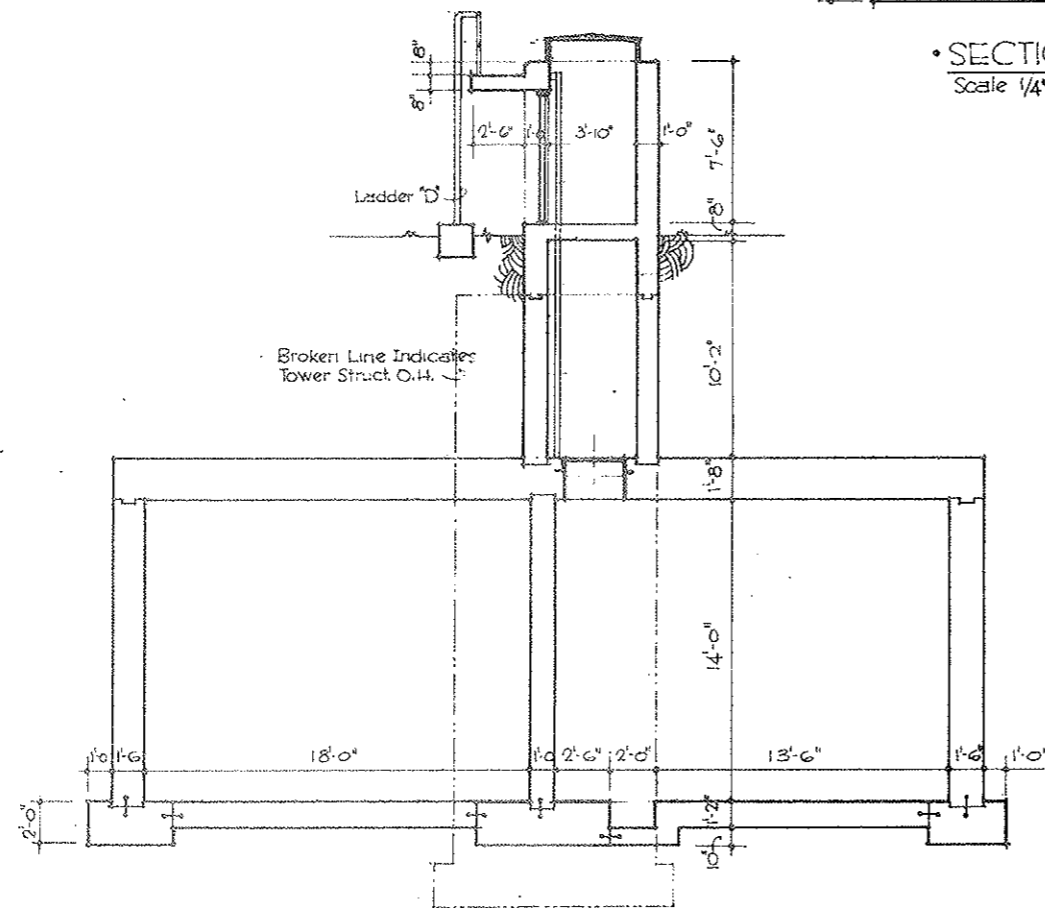
SECTION A-A
 Scale 1/4" = 1'-0"



SECTION B-B
 Scale 1/4" = 1'-0"

NOTE

For Details & Dimns. Not Shown This Sht. See 63-10 - 63-18

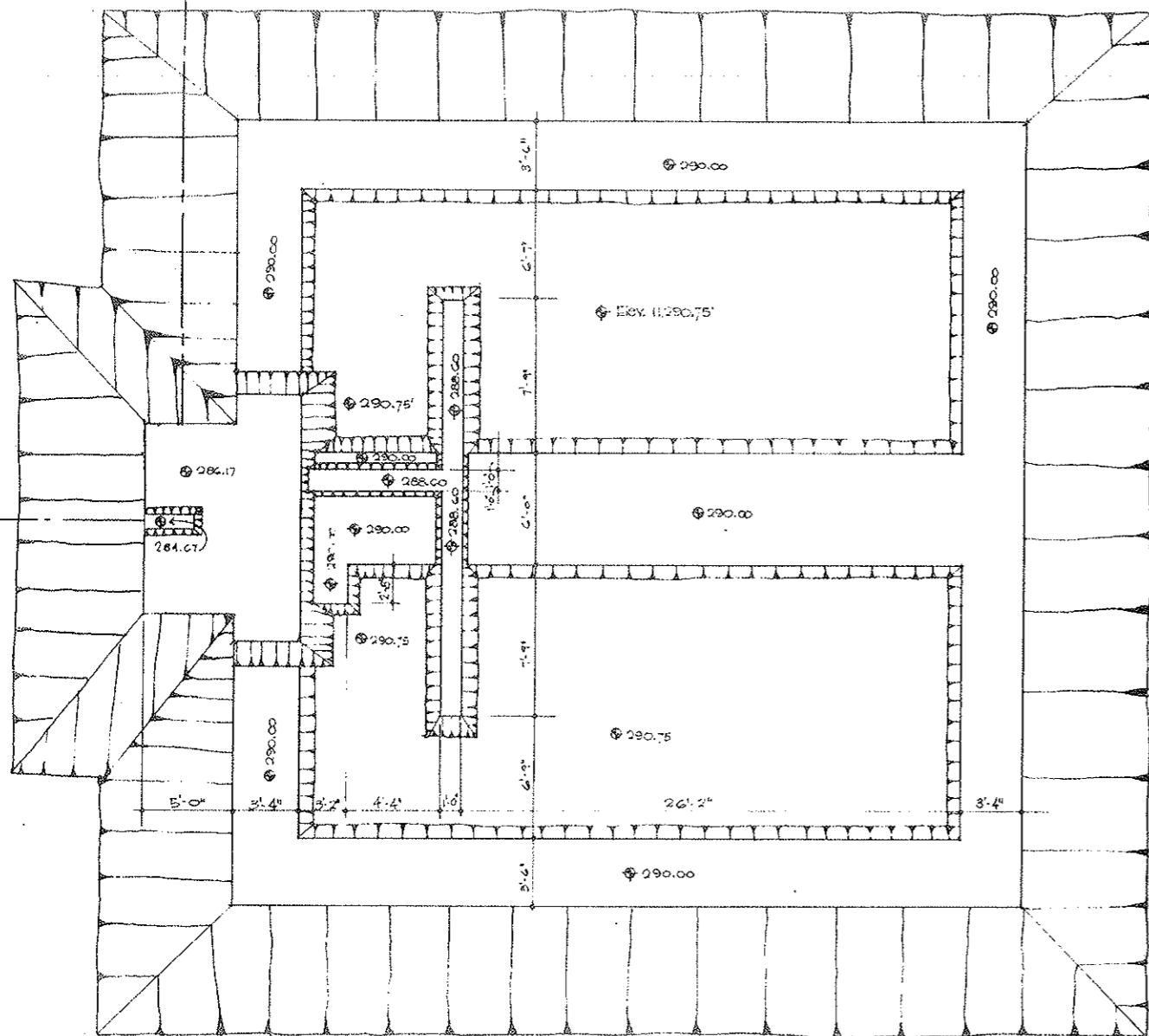


SECTION C-C
 Scale 1/4" = 1'-0"

STATE OF COLORADO			
DIVISION OF HIGHWAYS			
SCALE: NOTED	APPROVED BY:	DRAWN BY J.A.C.	
DATE: 9-9-73	REVISIONS:		
WATER STORAGE TANK			
DESIGNED BY:			G3-18

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	22 CX	326

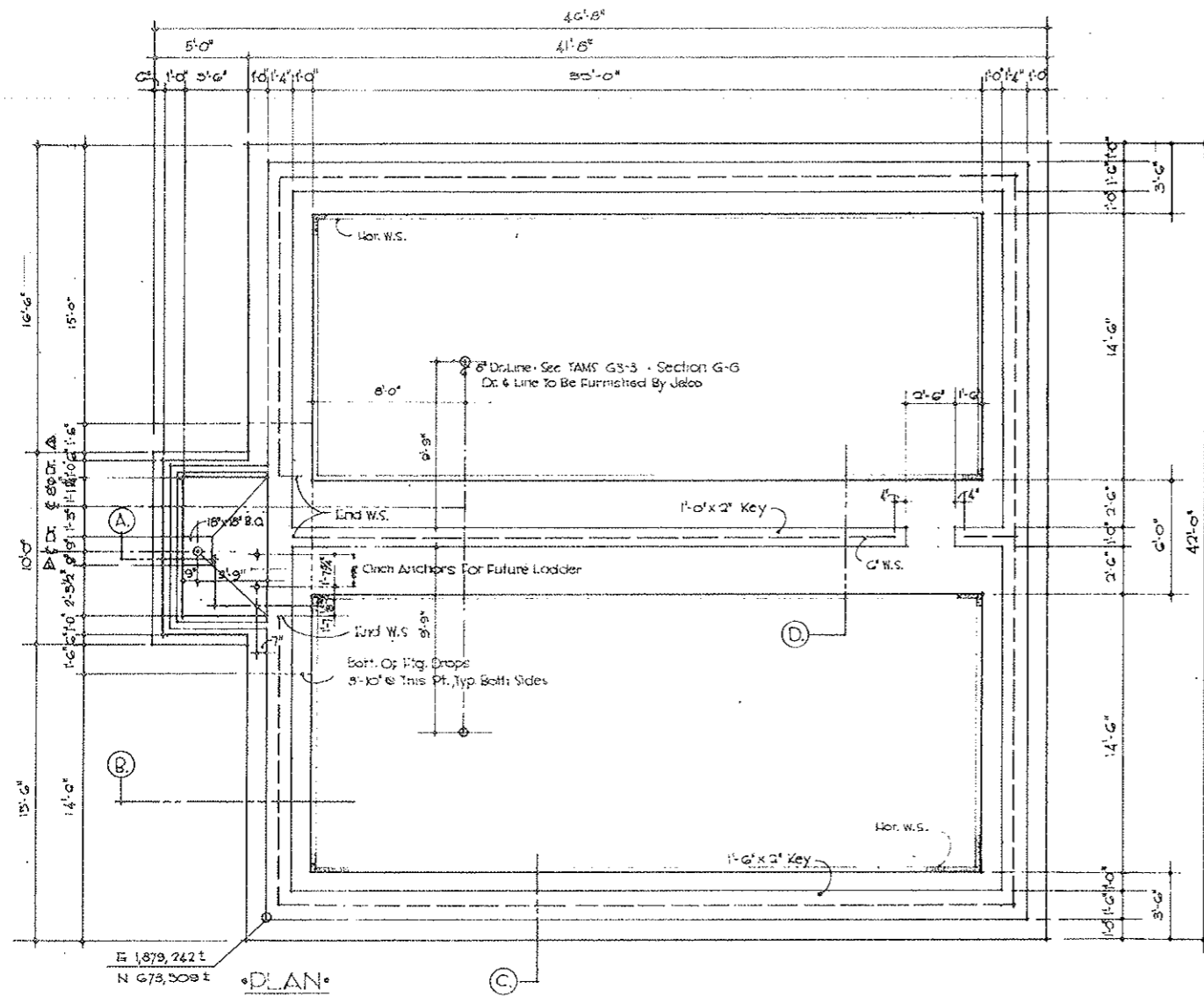
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



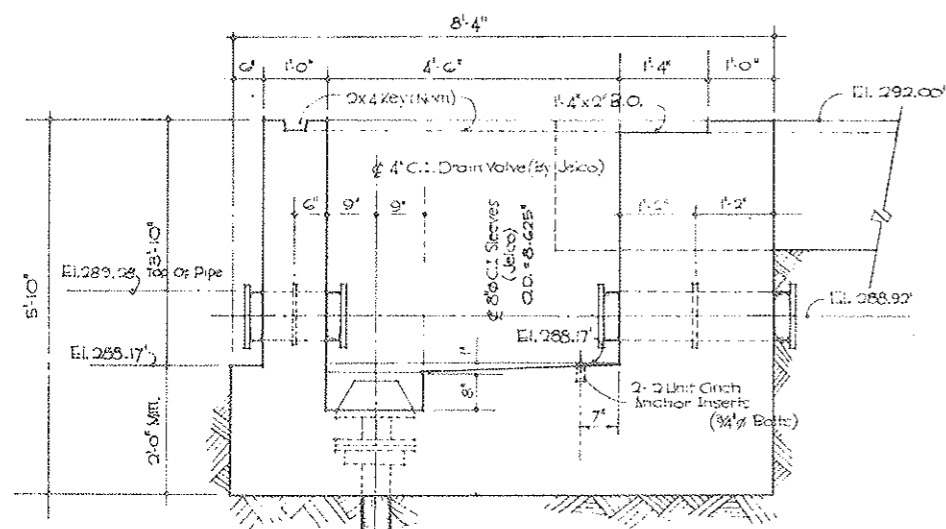
•NOTICE• 3" MAIN & 8" DRAIN
 TRENCHES NOT SHOWN•

•USE THIS DRAWING W/ SCC 093, G3-3 & G3-4•

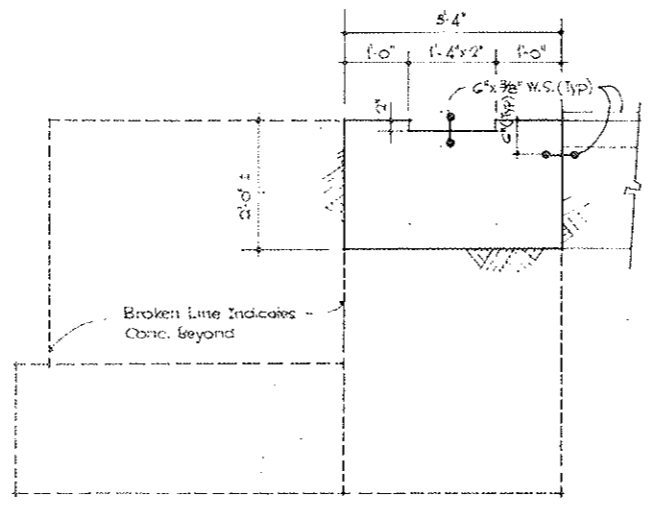
STATE OF COLORADO	
DIVISION OF HIGHWAYS	
SCALE 1/4" = 1'-0"	DRAWN BY JOC
EXCAVATION - WATER STOR., W. PORTAL	
DATE 8/15/68	APPROVED BY G3-1C



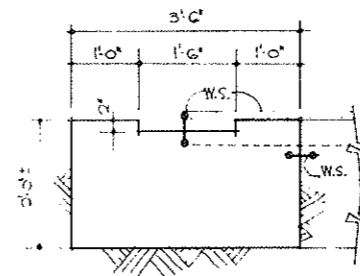
PLAN
Scale 1/4" = 1'-0"



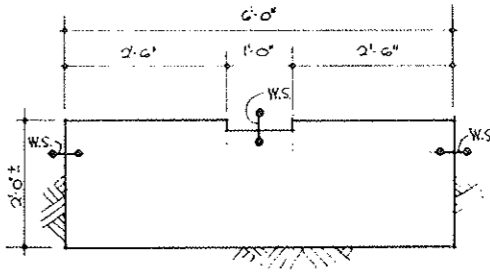
A SECTION
Scale 3/4" = 1'-0"



B SECTION
Scale 3/4" = 1'-0"



C SECTION
Scale 3/4" = 1'-0"



D SECTION
Scale 3/4" = 1'-0"

MATERIALS LIST

Qty Item	Description	Unit	Quantity	Remarks
	Concrete	Cy	68.38	
	Re-steel	Lb.	6550.42	
	Formts	S.F.	950.84	
	4" Waterstop	L.F.	313.33	
	W.S. 90° (Vert)	Ea.	4	
	" " (Hor)	Ea.	8	
	Keys; 1'-0" x 2"	L.F.	128.34	
	Keys,	L.F.	33.50	
	Keys,	L.F.	19.00	
	Crich Anchor Inserts	Ea.	2	
	4" C.I. Drain	Ea.	1	Jelsco
	8" C.I. Pipe	Lb.		Jelsco
	Rock Wash	S.F.		
	Excavation	Cy.		
	8" C.I. Drain & Pipe	Ea. L.F.	2 Ea Dr.	Jelsco

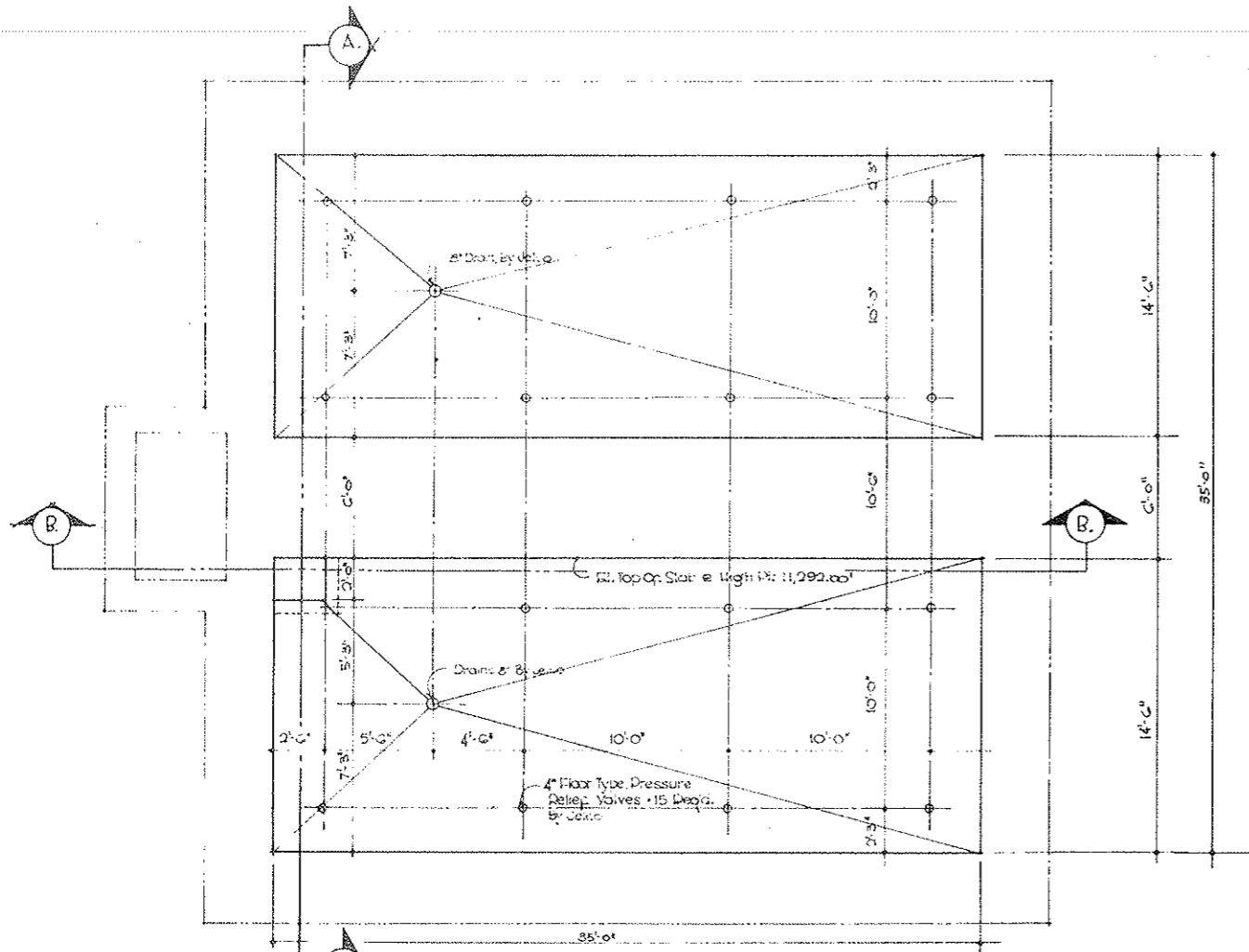
Quantities Are Approx. & To Be Measured In The Field.

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	22 DX	326

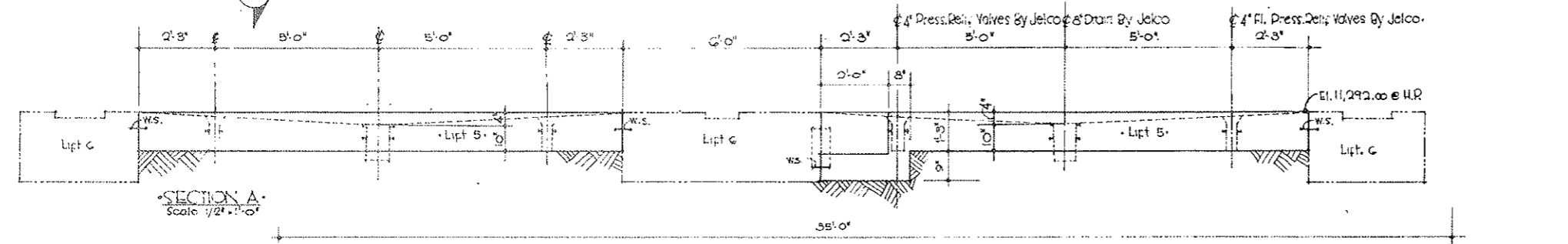
AS CONSTRUCTED
REVISED DATE
OCT 26, 1973

NOTICE
SEE TAMS SHTS. G3-01 & G3-02 FOR REINFORCEMENT

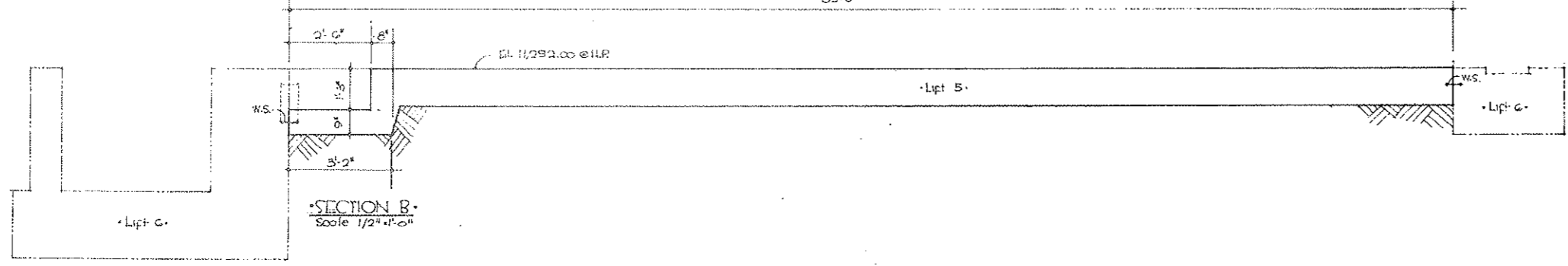
STATE OF COLORADO	
DIVISION OF HIGHWAYS	
SCALE NOTED	DRAWN BY Cather
FOOTING WATER STORAGE TANK	
DATE 8/11/68	APPROVED BY G3-1D



•PLAN•



•SECTION A•
Scale 1/2" = 1'-0"



•SECTION B•
Scale 1/2" = 1'-0"

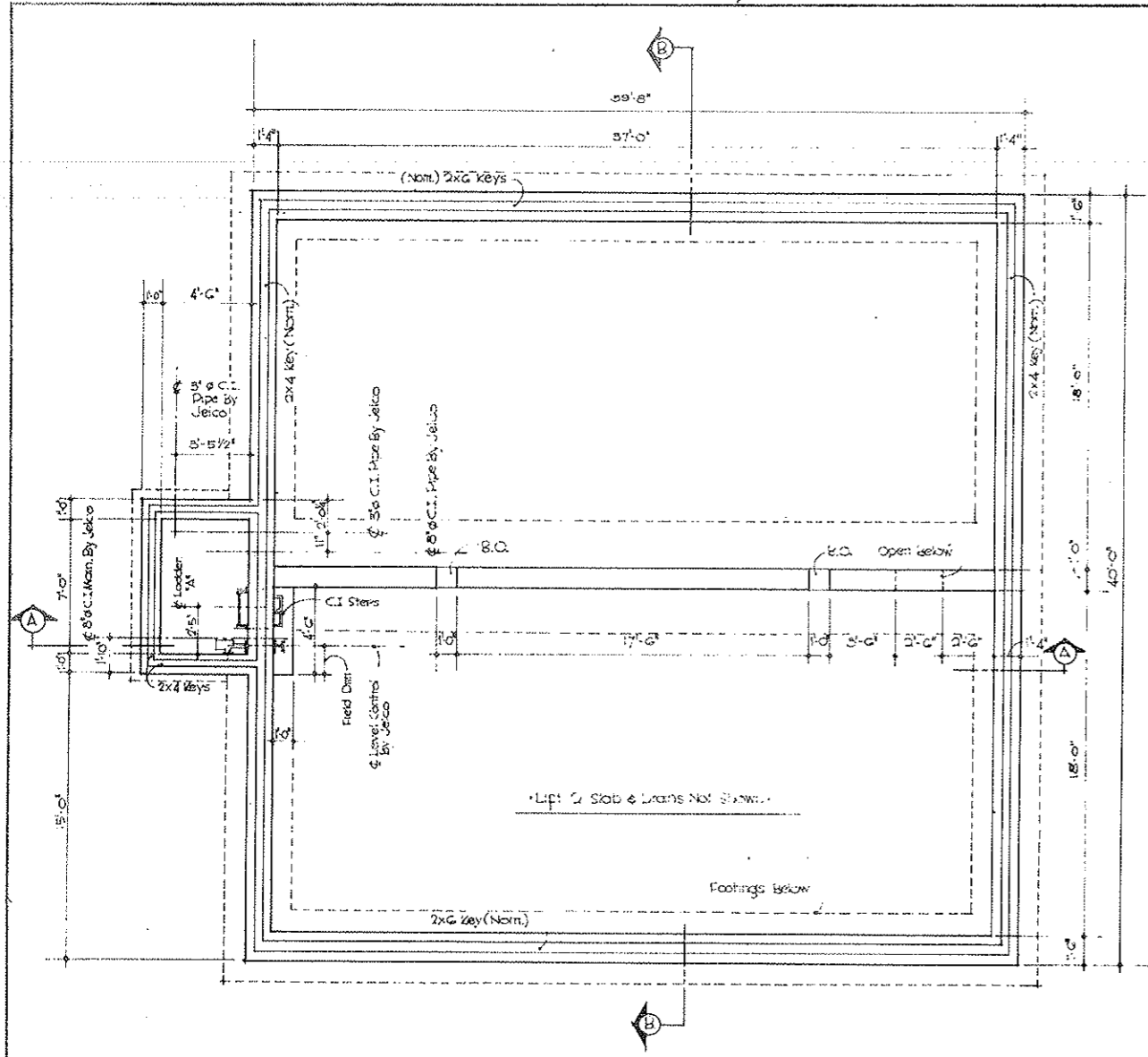
•MATERIALS LIST•				
Pay Item	Description	Unit	Quant.	Remarks
	conc.	cy	75.2	
	Re-steel	Lb	2906.93	
	Forms	S.F.	4.36	
	Rockwash	SF	1225.00	
	8" Drains	Ea.	2	
	4" Press. Rel. Valves	Ea.	15	Jelco
	8" C.C. Pipe		14.5 L.F.	Jelco

Quantities are approx. & to be measured in the field.

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	22-EX	326

AS CONSTRUCTED
REVISED DATE
OCT 26, 1973

STATE OF COLORADO	
DIVISION OF HIGHWAYS	
SCALE	DRAWN BY: C. G. GIBNEY
NOTED	APPROVED
FLOOR- WATER STORAGE TANK	
DATE	APPROVED BY
8-19-68	G. S. 1E

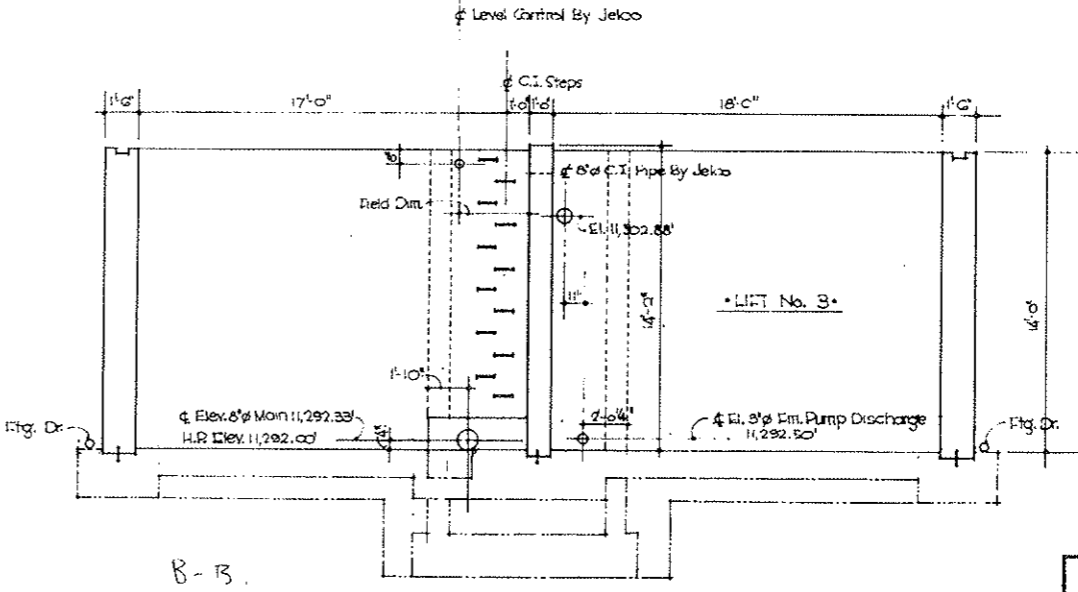
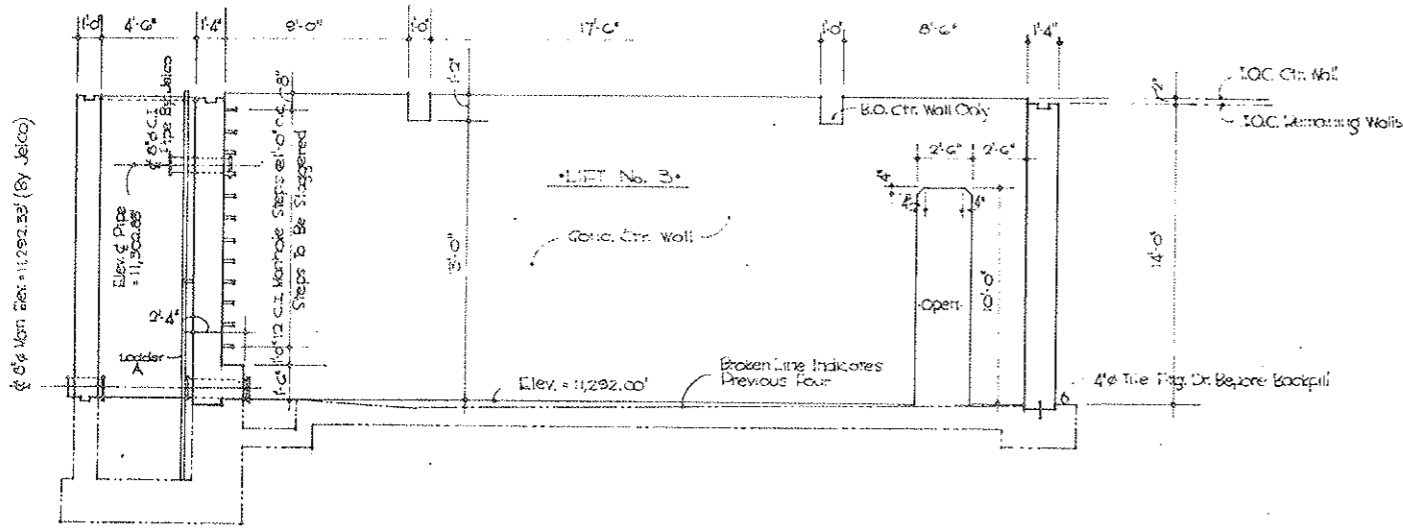


MATERIALS LIST				
Item	Description	Unit	Quant.	Remarks
	Concrete	C.Y.	124.16	
	Rein steel	Lb.		To Be Measured.
	Forms	S.F.	5772.74	
	Keys 2x4	L.F.	17.84	
	Keys 2x6	L.F.	205.12	
	Ladders "Type A"	Lb.	205.12	
	C.I. Steps	Lb.	120.00	
	8" C.I. Pipe			Jelco
	8" C.I. Pipe			Jelco
	Level Control			Jelco
	4" Tie Drain			

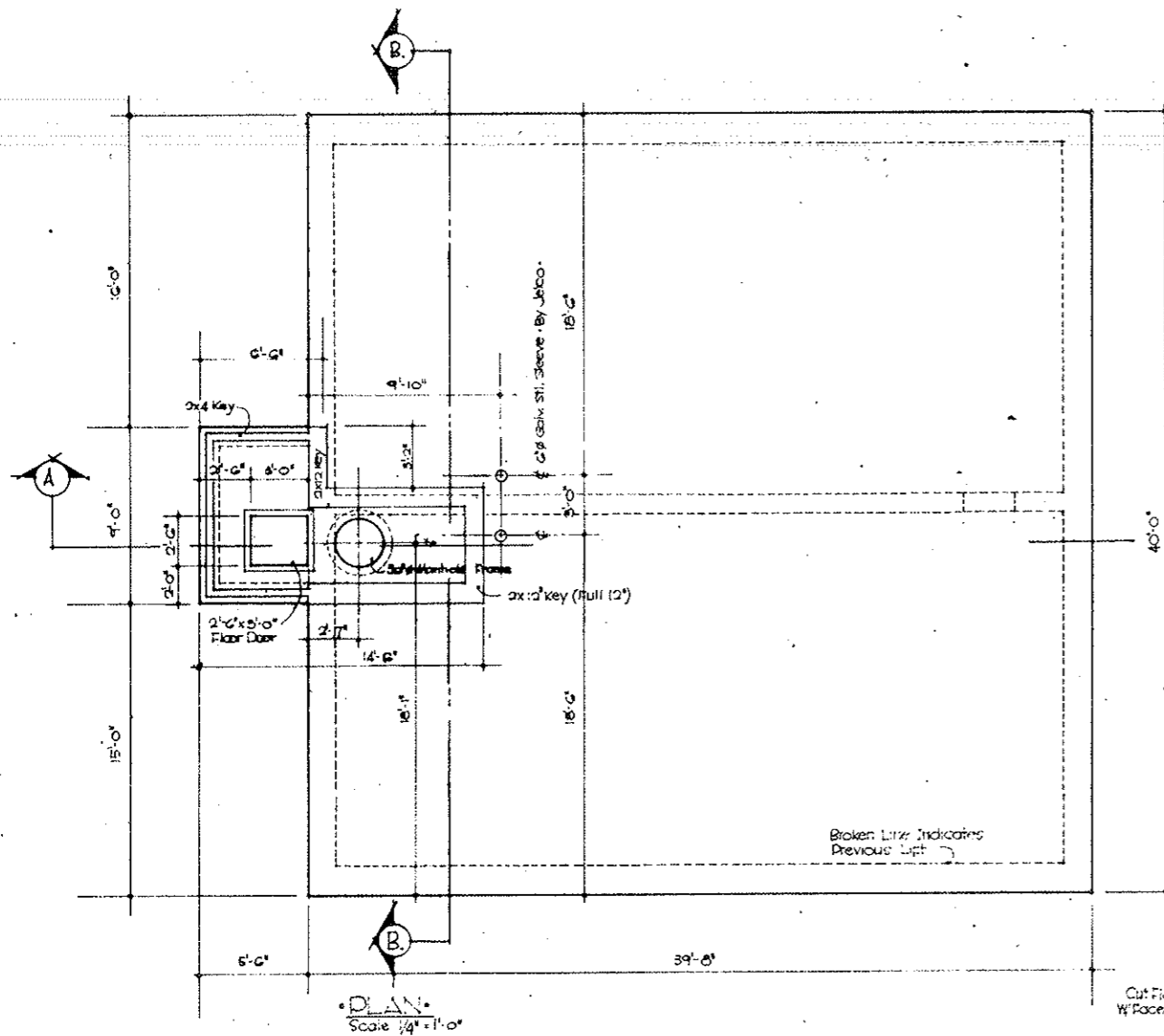
Quantities are Approx. & To Be Measured In The Field.

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	22-FX	326

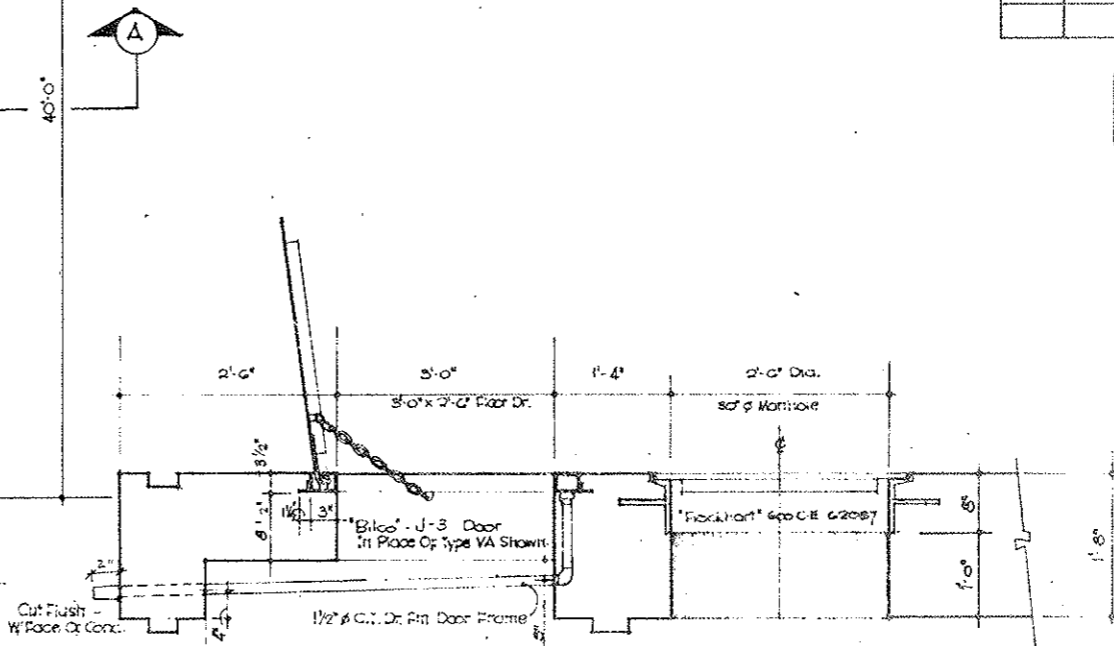
AS CONSTRUCTED
REVISED DATE
 Oct 26, 1928



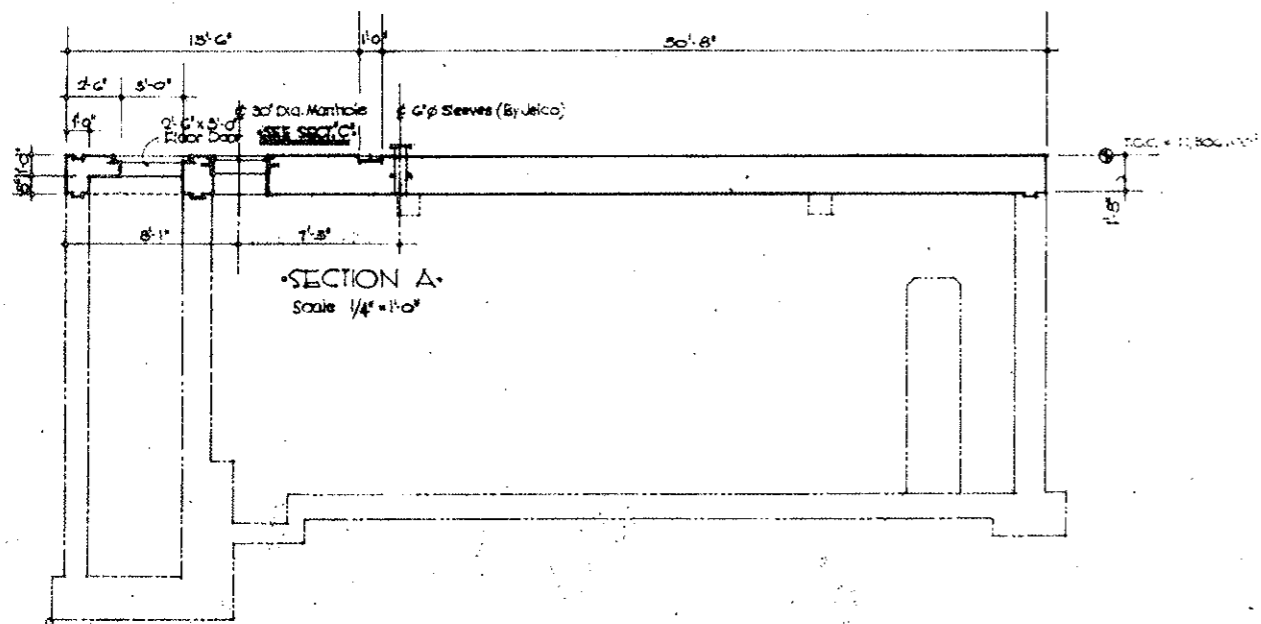
STATE OF COLORADO	
DIVISION OF HIGHWAYS	
SCALE	DESIGNED BY <i>Cather</i>
NOTED	REVISION
WALLS-WATER TANK	
DATE	APPROVED BY
9-10-08	
DATE	APPROVED BY



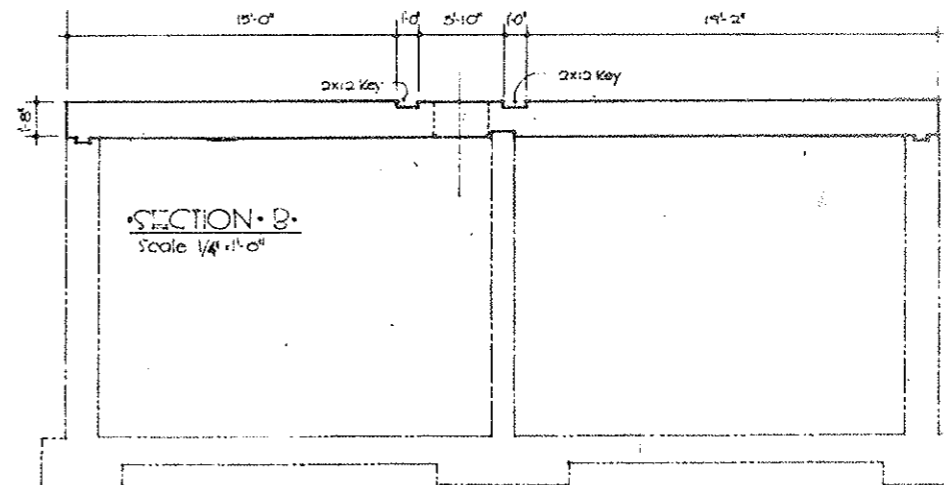
PLAN
Scale $\frac{1}{4}'' = 1'-0''$



SECTION C-C THRU DOOR & M.H.
Scale $1'' = 1'-0''$



SECTION A-A
Scale $\frac{1}{4}'' = 1'-0''$



SECTION B-B
Scale $\frac{1}{4}'' = 1'-0''$

MATERIALS LIST

Qty	Description	Unit	Quant.	Remarks
	Conc.	cu.	99.42	
	Rebar	Lb.		To Be Measured
	Forms	SF.	1074.95	
	Keys - 2x4	L.F.	20.00	
	Keys - 2x12	L.F.	87.99	
	Floor Door	L.S.	1.00	
	Manhole Frame & Cover	L.S.		To Be Measured
	6" p. sleeves (2 Ea)			Jelco
	1 1/2" C.C. Dr. Fin. Floor Door	L.F.	1.0	w/ 1 9/16" Ell.

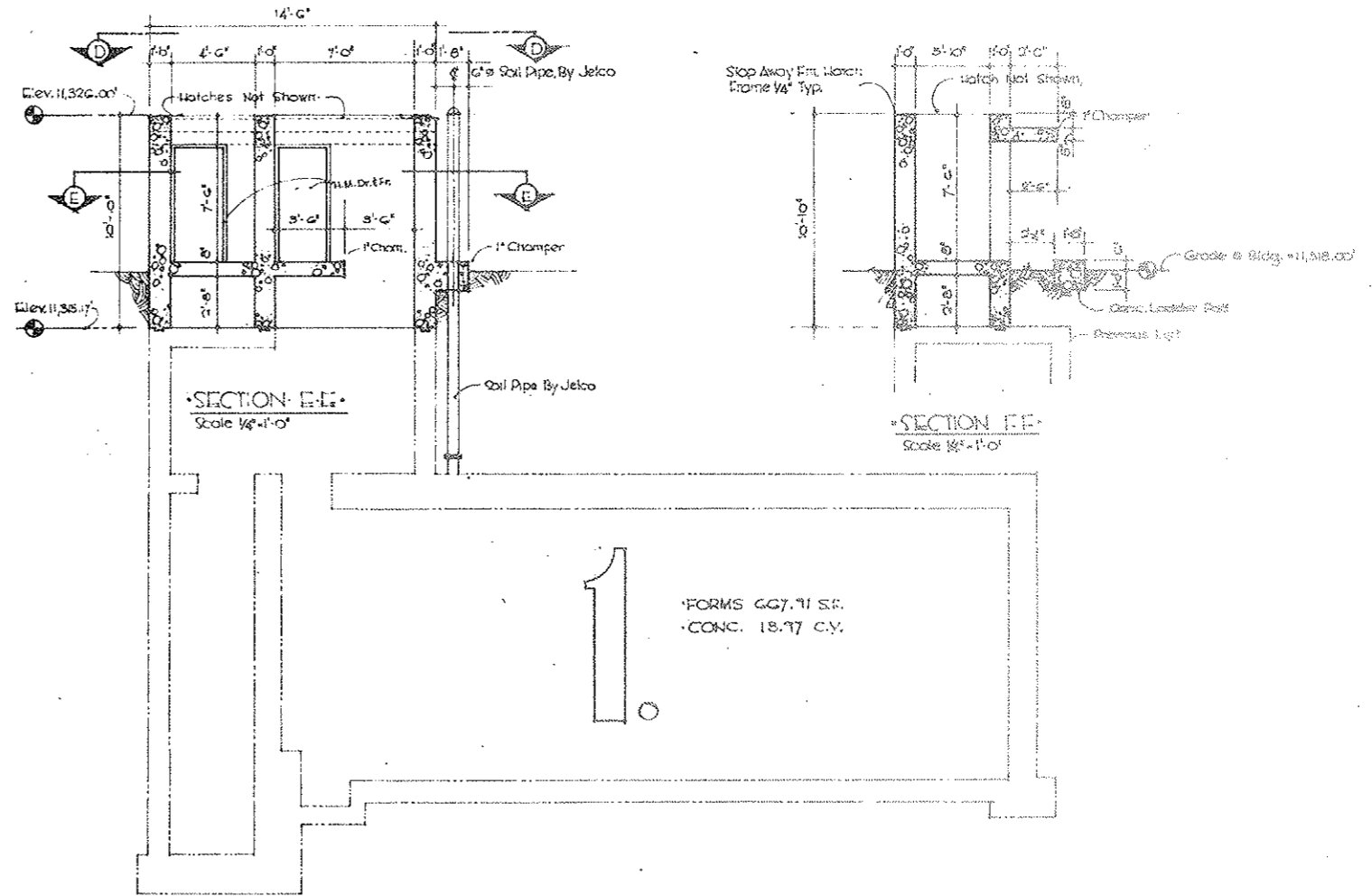
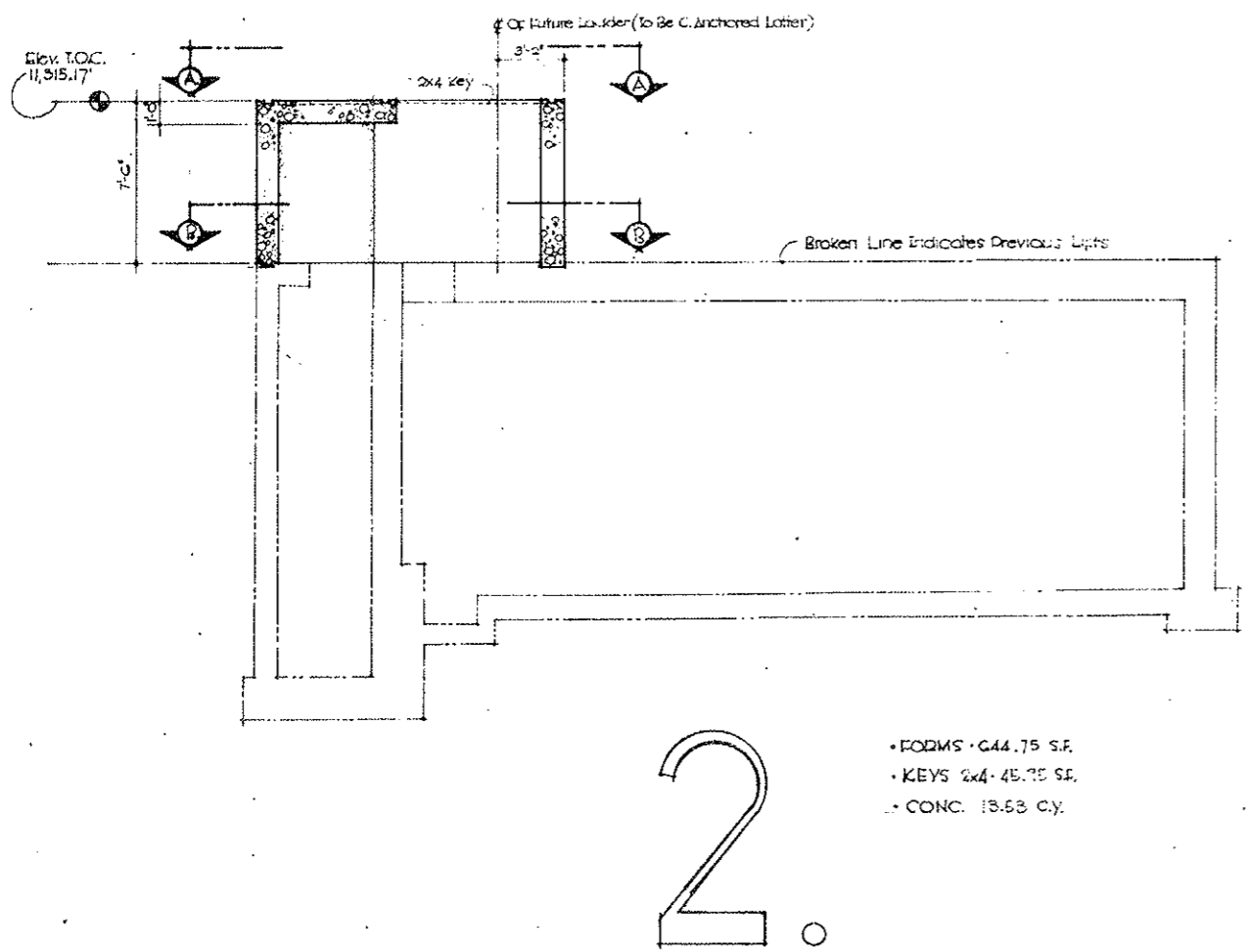
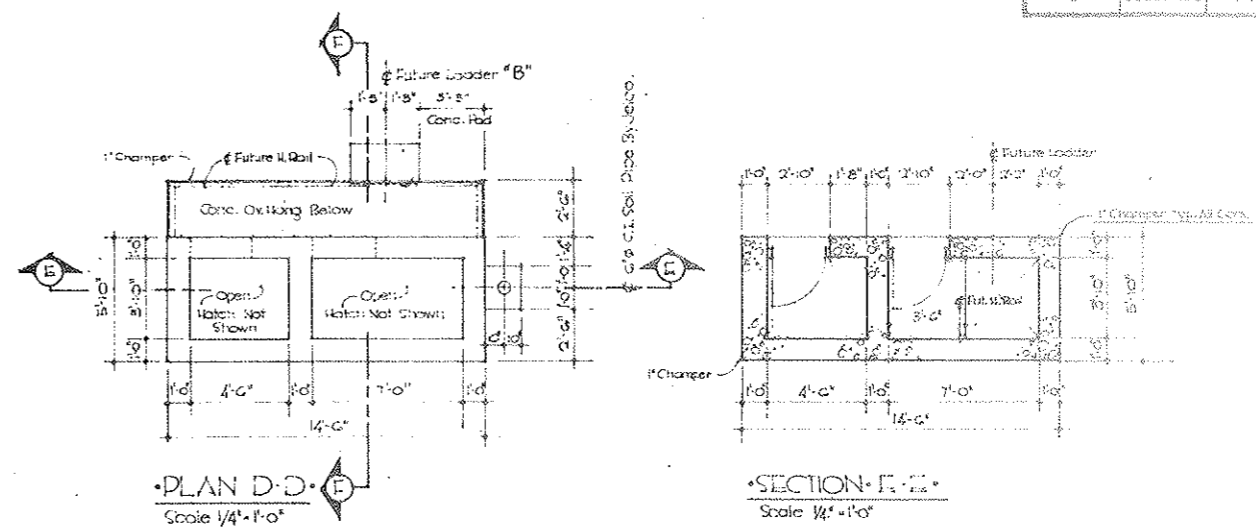
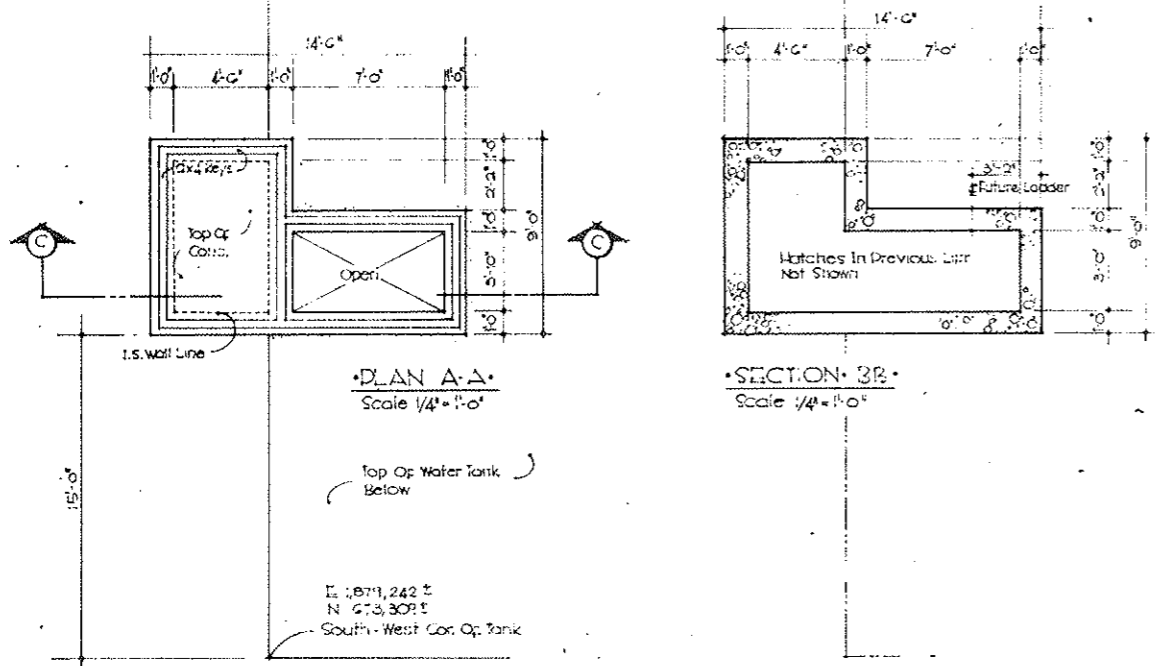
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	2-GX	34

AS CONSTRUCTED
REVISED DATE
OCT 26, 1972

DIVISION OF HIGHWAYS
 PROJECT: ROOF - WATER TANK
 DRAWN: []
 CHECKED: []
 DATE: Sept. 28, 69
 SHEET NO.: 2-GX

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	DATE	SCALE
9	COLORADO	170 2034220	22 HY	5/8

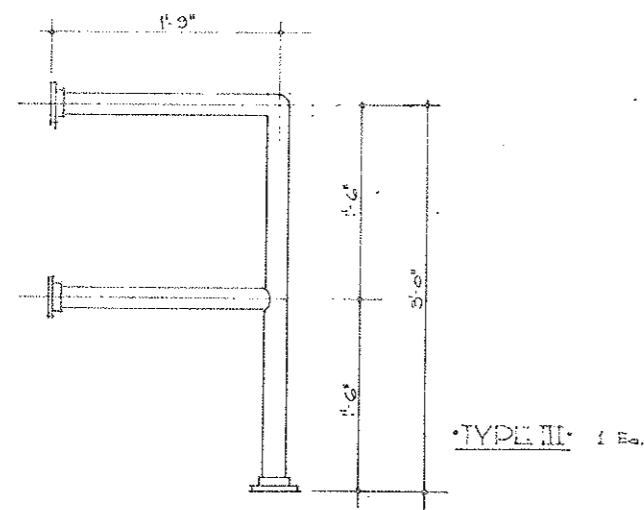
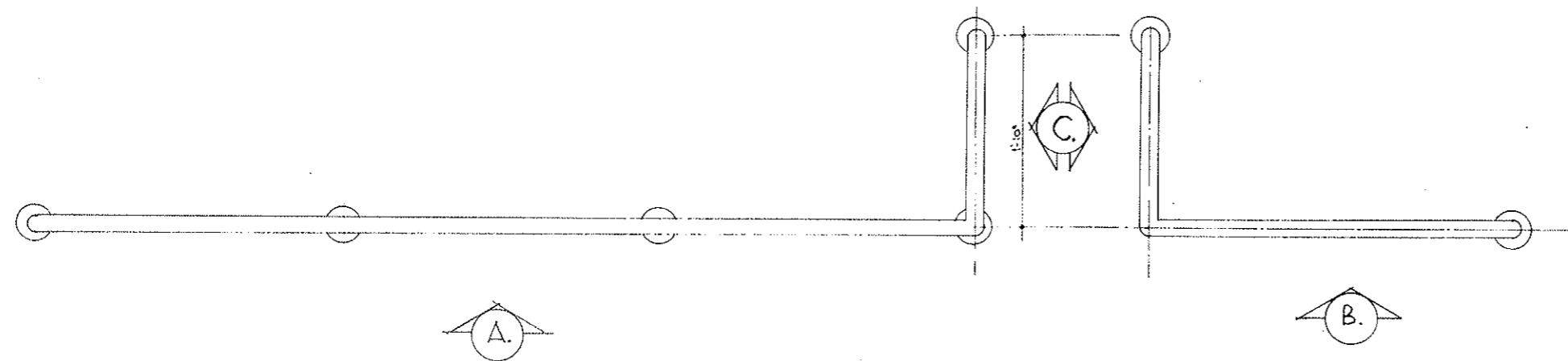
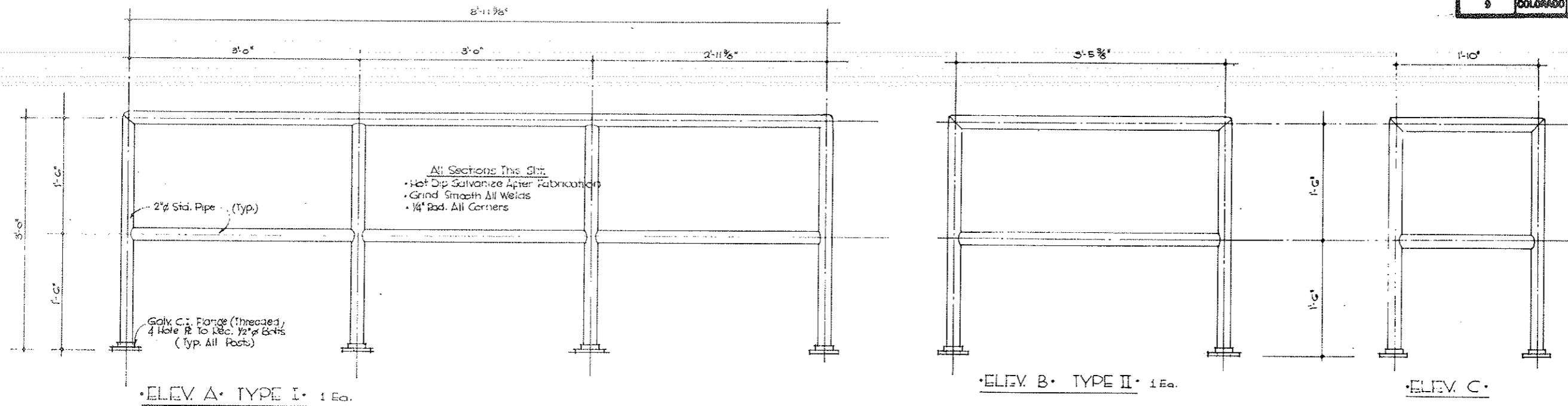
AS CONSTRUCTED
REVISED DATE
OCT 26, 1973



DIVISION OF HIGHWAYS	
DATE	10/21/67
WATER STORAGE TOWER	
DATE	10/21/67
SCALE	5/8

PROJECT NO.	DIVISION	PROJECT NO.	DATE	SCALE
9	COLORADO	170-3(34)220	22 IX	3/8"

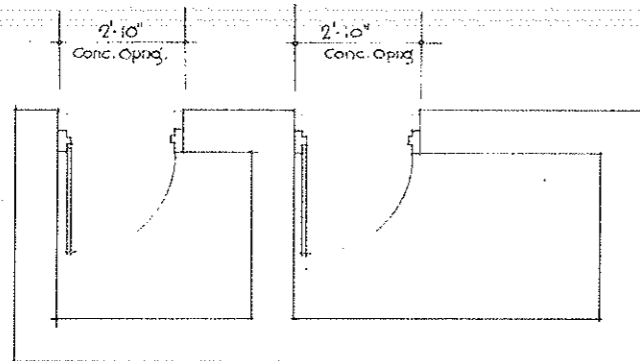
AS CONSTRUCTED
 REVISED DATE
 OCT 20, 1974



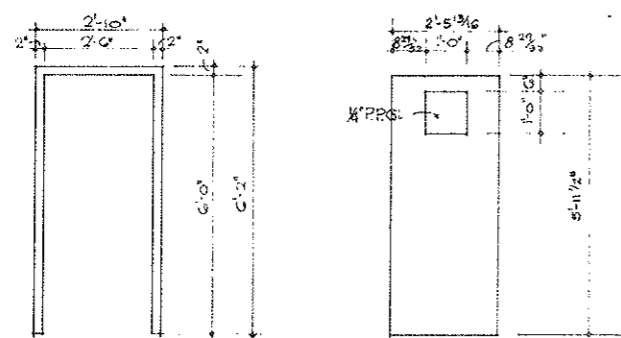
STATE OF COLORADO DIVISION OF HIGHWAYS			
SCALE 1/8" = 1'-0"	DESIGNED BY CJMBT	REVISIONS	
WATER STORAGE TANK HANDRAILS			
DATE Aug 27, 68	APPROVED BY	CHECKED BY	PROJECT NUMBER G-3-11

9	DIVISION	PROJECT NO.	DATE	NO.
9	COLORADO	170-3134220	22 JX	326

AS CONSTRUCTED
REVISED DATE
AT 26, 1973



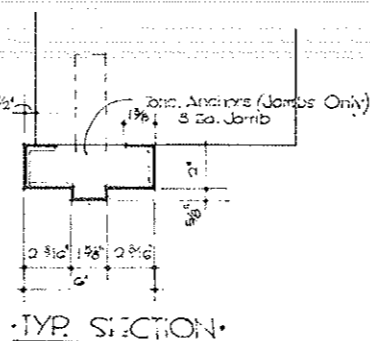
•PLAN•



•FRAME PLAN•

•DOOR PLAN•

Scale 1/2" = 1'-0"



•TYP. SECTION•

HOLLOW-METAL DOORS AND FRAMES SPECIFICATIONS

I. MATERIALS

- Frame and Trim Steel.** Frame and trim steel shall be of clean, earth, pickled, cold rolled and annealed sheet steel.
- Door Facing.** Steel for door face shall be best quality, clean, earth, pickled, cold rolled and annealed sheet steel, with a minimum yield strength of 36,000 psi, and shall be cold rolled, pickled, double annealed, controlled, level and oiled, free from scale, rust, pits, waves or other surface imperfections.
- Galvanized Steel.** Sheet metal for doors and frames shall be Republic Electro-Plumbo electro-galvanized sheet steel, with a minimum yield strength of 36,000 psi, manufactured by Republic Steel Corp., Cleveland, Ohio, or approved equal.
- Screws.** Screws for fastening removable glazing beads, or glazing stops, shall be of brass or stainless steel.

II. CONSTRUCTION REQUIREMENTS

- Sinkages and Mortises.** Sinkages or mortises shall be provided as required for hardware, and shall be accurately formed to templates, so that the hardware will neatly fit into door face and will be flush with the member where so designed. Members of hollow metal work shall be securely fastened together to provide rigid construction in the assembly work. Glazing mouldings shall be secured with countersunk, Phillips type, oval head, machine screws located not more than two (2) inches from each end of the member and at intermediate locations spaced not more than three (3) inches on centers. Connections shall continuously welded, and dressed smooth and flush with the face to be practically invisible.
- One Piece Members.** Each member of the work, such as the jamba and heads of frames, and the faces of doors shall be formed of one piece of metal to avoid joints.
- Joints.** All exposed face joints between these members, including miter, shall be continuously welded, and dressed flush and smooth so as to be practically invisible. Connections shall be continuously welded seams and joints, including reinforcement.
- Clearances.** Doors shall be dimensioned so as to provide the following uniform clearances: one-eighth (1/8) inch at heads; three thirty-seconds (3/32) inch at jamb; and three-eighths (3/8) inch above finished floor.

III. Shop Drawings

- Shop drawings shall show in detail the construction of framing, doors, trim, bucks, and work in conjunction thereto, the size and profile of all members, joining and reinforcing, the method of applying hardware, the method of attachment of anchors, bracing, and the relation of the work under this section to adjacent work.

IV. Hollow Metal Doors.

- General.** Hollow metal doors shall be constructed of No. 16 gauge galvanized steel.
- Mouldings.** Separately formed mouldings for doors shall be 18-gauge steel.
- Type.** Hollow metal doors shall be of the flush type and shall be two (2) inches thick.
- Glass.** All glass shall be secured with mouldings fastened with countersunk, oval head machine screws. The mouldings shall be assembled as frames with corners welded. Screw heads shall be finished to match door finish.
- Reinforcing.** Doors shall be reinforced with suitable vertical Z-shaped stiffeners extending the full height of the doors, spaced not more than six (6) inches apart and welded to face sheets. Doors and panels shall have complete cellular asbestos board filling to reduce metallic ring and to act as a heat insulator.
- Seals.** Edges of doors, including top and bottom, shall be properly sealed. Top and bottom of doors shall have channels welded the full width forming solid flush edges.

V. Hollow Metal Frames.

- General.** Hollow metal frames shall consist of jamba with integral casing and shall be used for doors and transoms, and vision panels.
- Jamba.** The jamba and casing shall be 14-gauge galvanized steel. At corners, jamba and trim shall be mitered and continuously welded, ground and dressed smooth.
- Glazing Mouldings.** Glass for all hollow metal work shall be secured with mouldings of 18-gauge steel fastened with countersunk, oval head machine screws. The mouldings shall be assembled as frames with corners welded. Screw heads shall be finished to match color of frames.
- Anchor and Spreaders.** Frames for doors shall have wall anchors spaced twelve (12) inches from top of frame, and intermediate anchors shall be spaced not more than twenty-four (24) inches apart on both sides. The anchors shall be 1/4-gauge steel and shall be of the adjustable type, to slide on 1/4-gauge steel strap at least six (6) inches long, securely welded to the frame. Anchors of the loose T-type will not be accepted. The leg of the anchors extending into wall shall be crimped, and shall be at least eight (8) inches long, and three (3) inches wide. At the bottom of the door frames extending to the floor, anchors consisting of 1/4-gauge steel angles shall be provided, attached to the back of jamba, having two holes in the horizontal leg. Approved type spreaders of 1/4-gauge steel channel shall be provided for the full width of the jamba.
- Weatherstripping.** Exterior doors and doors opening into the fan rooms shall be weatherstripped, at jamb and head, with continuous seals consisting of dull chrome plated extruded bronze weatherstripping series No. 700, as manufactured by Accurate Metal Weather Strip Co., Inc., Mount Vernon, N. Y., or approved equal. Automatic door bottoms, Type 36H as manufactured by Zero Weather Stripping Co., Inc., Bronx, New York, or approved equal, shall be provided at the bottom of all doors to be weatherstripped.

f. Reinforcement for Hardware.

- General.** Concealed reinforcement of sheet or bar steel shall be provided for hardware and for any other attached work. Hardware reinforcement shall be of sufficient size to receive all screws, bolts and other securing members used for fastening hardware and shall be of the form and dimensions required to properly stiffen the member against all strains transmitted through the hardware.
- Construction.** The reinforcement hereinafter specified for the several items of work shall be constructed as the minimum requirements but other standard forms of a manufacturer that will produce work of equivalent strength may be accepted. Unless otherwise specified, all reinforcement for machine screws shall be not less than one-quarter (1/4) inch thickness of metal for tapping. Hollow metal work shall be drilled and tapped as required for the attachment of hardware. All drilling and tapping shall be located by templates so that accurate alignment will be secured.
- Door Butts.** Reinforcement for door butts shall be of one-quarter (1/4) inch minimum plate at least eight (8) inches longer than the butt. Doors and frames shall have one-quarter (1/4) inch minimum plate reinforcement for door checks and overhead door holders, where the distance between door, opened at an angle of ninety (90) degrees, and an adjacent transverse partition is less than six (6) inches, the reinforcement shall be installed for support of bracket. Lock and latch reinforcement shall be not lighter than 1/2-gauge metal and shall be of such form and size as will adequately reinforce the stiles for lock faces and sashlocks. The back of all hardware cut-outs and tapped reinforcement liable to become plugged with mortar shall be housed with 21-gauge metal.

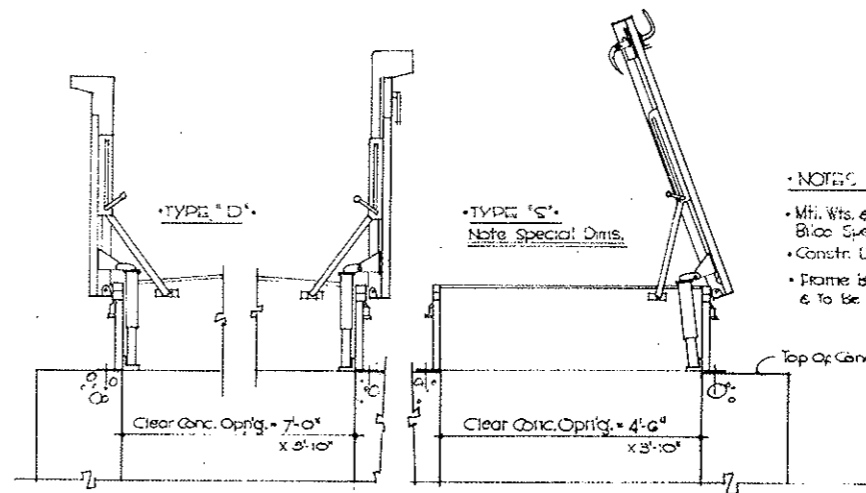
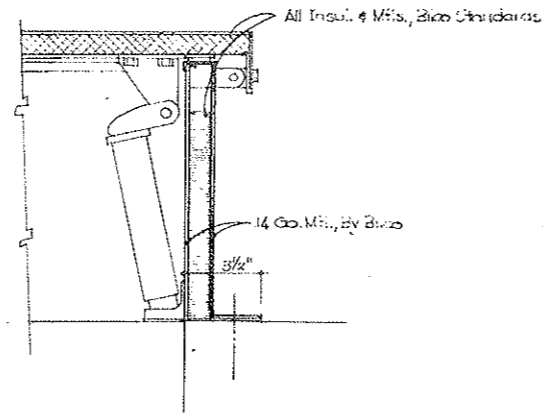
VI. Painting.

- Preparation for Painting.** After assembly, all joints and welds in units where exposed in the finished work shall be carefully ground and smoothed to insure surfaces free from ridges or crevices, tool marks or other blemishes, after which the units shall be thoroughly cleaned of all dirt, grease or rust. Mitters and seams shall be filled as necessary and finished smooth before priming.
- Shop Painting.** Before fabrication of the doors, the inside surfaces shall be shop primed with one coat of an approved rust-inhibitive synthetic primer, baked on. The inside surfaces of the frames shall also receive a shop coat of primer, baked on. In addition to the shop coat primer, the inside surfaces of the frames, from the bottom to a height of eighteen (18) inches, shall be painted with a heavy coat of an approved asphaltum paint before erection. After fabrication, the outside surfaces of the doors and frames shall be filled with an approved enamel filler, applied in a sufficient number of coats, thoroughly baked on and sanded, to obtain a uniformly smooth surface. One shop coat of an approved primer of a color as selected shall then be applied, baked on.

STATE OF COLORADO			
DIVISION OF HIGHWAYS			
SCALE	DRAWN BY	JOC	
	REVISED		
•WATER TANK H.M. FRAME & DOORS			
DATE	APPROVED BY	DESIGN NUMBER	
SEPT. 10, 68		G3-1J	

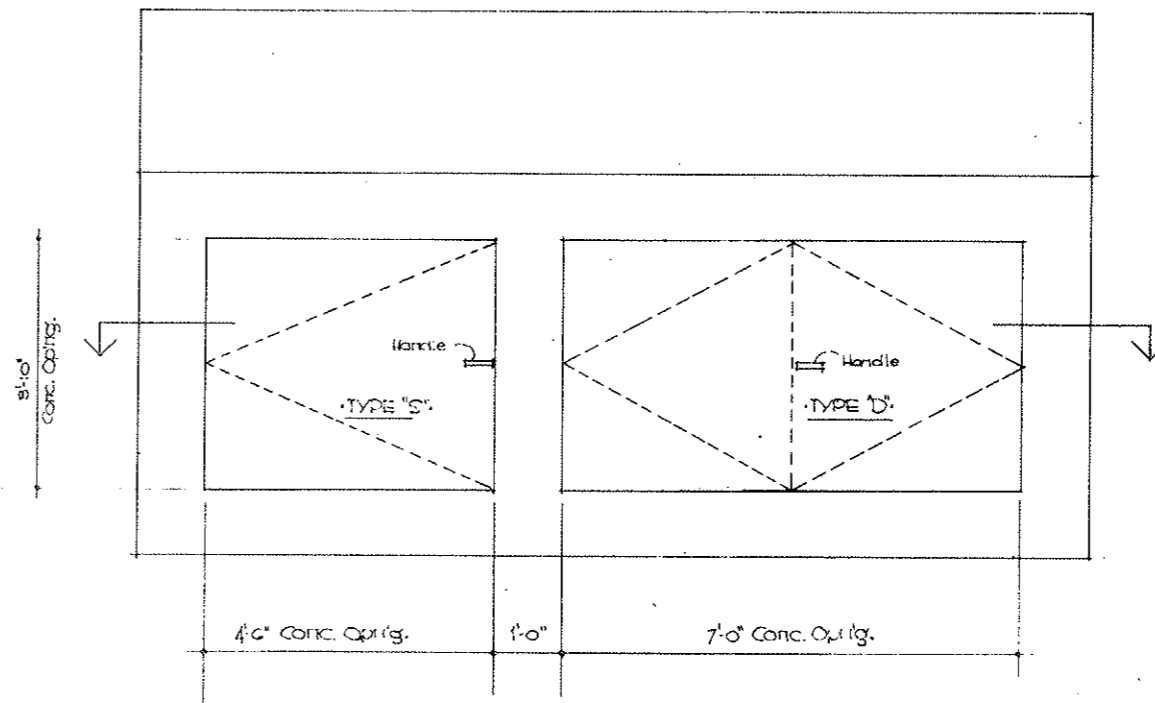
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	F 70 - 3(34)220	22 KX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



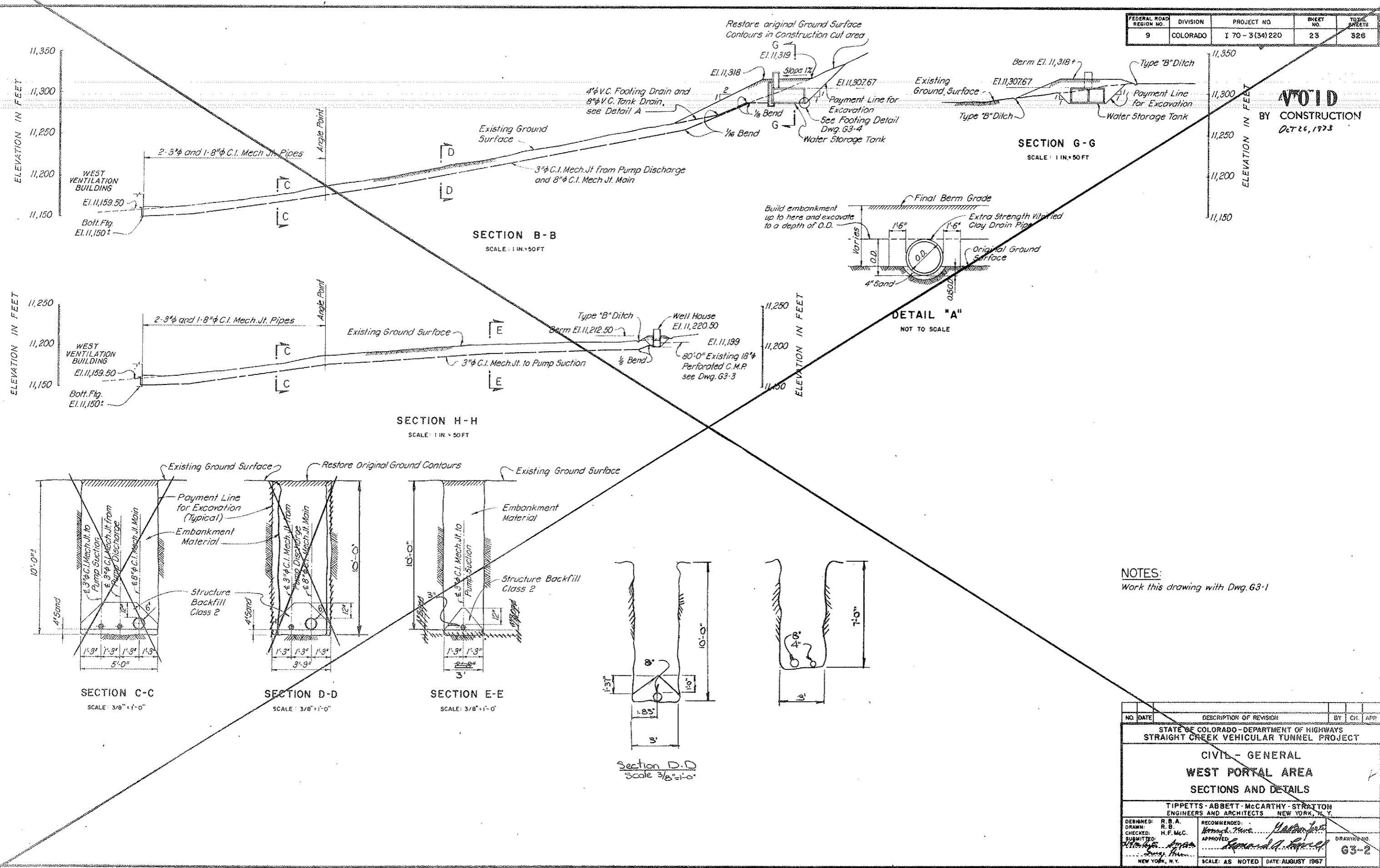
- NOTES TO FABRICATOR •
- Mtl. Wts. & Gages To Be Standard Bisco Specifications.
 - Constr. Details To Be Bisco Standards.
 - Frame Bolt Holes Not To Exceed 21\"/>

• SECTION •
 • ROOF SCUTTLES 1 EA. REQ'D. •
 Scale 1" = 1'-0"



STATE OF COLORADO DIVISION OF HIGHWAYS			
SCALE	DRAWN BY	DATE	
Noted	REYNOLDS	7/9/68	
BILCO SCUTTLES - WATER STORAGE TANK			
DATE	APPROVED BY	DRAWING NUMBER	
7/9/68		G05-1K	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	23	328



VOID BY CONSTRUCTION
Oct 26, 1973

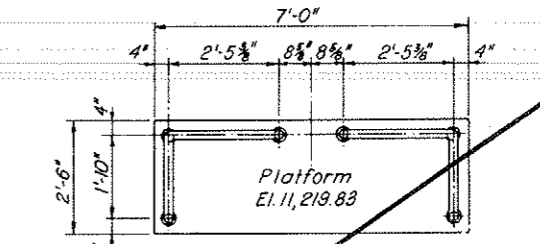
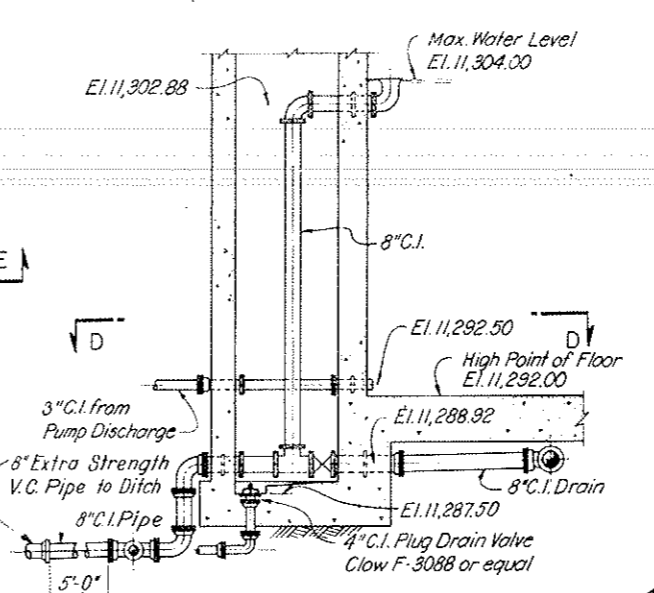
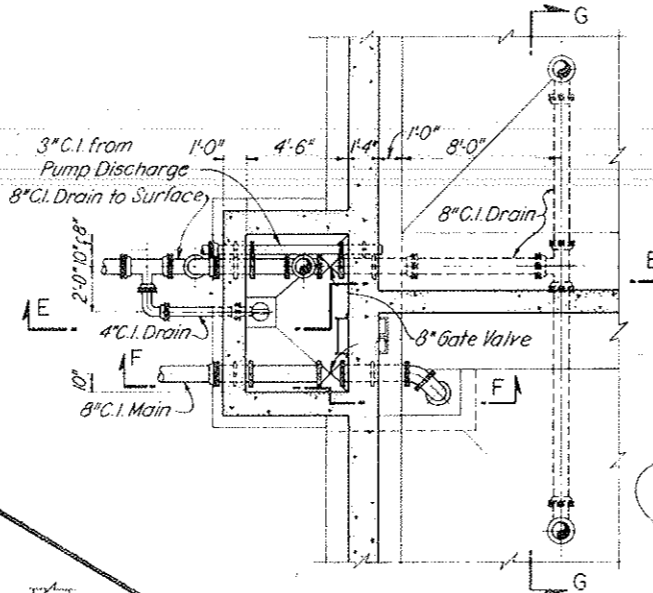
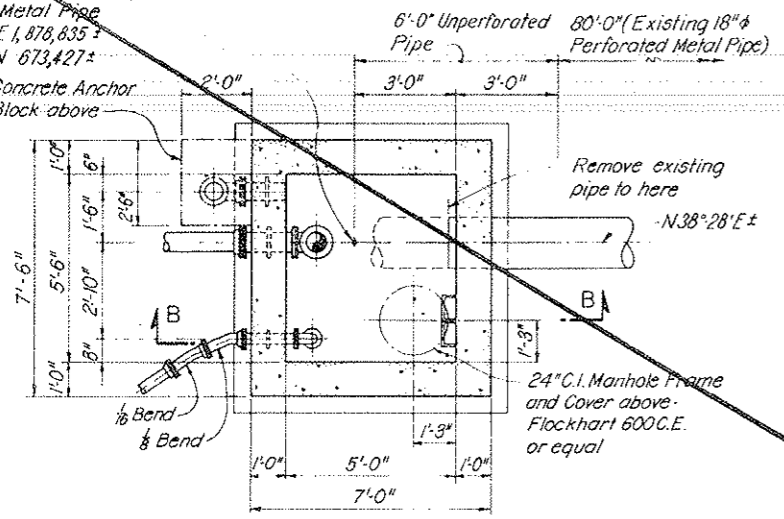
NOTES:
Work this drawing with Dwg. G3-1

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL WEST PORTAL AREA SECTIONS AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	R. B. A.	RECOMMENDED:	H. F. M. C.	[Signature]	
DRAWN:	R. B. A.	APPROVED:	[Signature]	DRAWING NO. G3-2	
CHECKED:	H. F. M. C.	DATE: AUGUST 1967			
SUBMITTED:	[Signature]	SCALE: AS NOTED			
NEW YORK, N. Y.					

VOID See Dwg # G3-1A

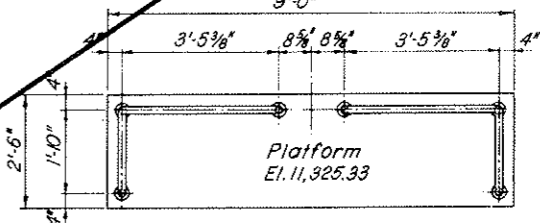
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	24	326

Angle point in existing 18" diam. Corrugated Metal Pipe
 E 1,878,835 ±
 N 673,427 ±
 Concrete Anchor Block above



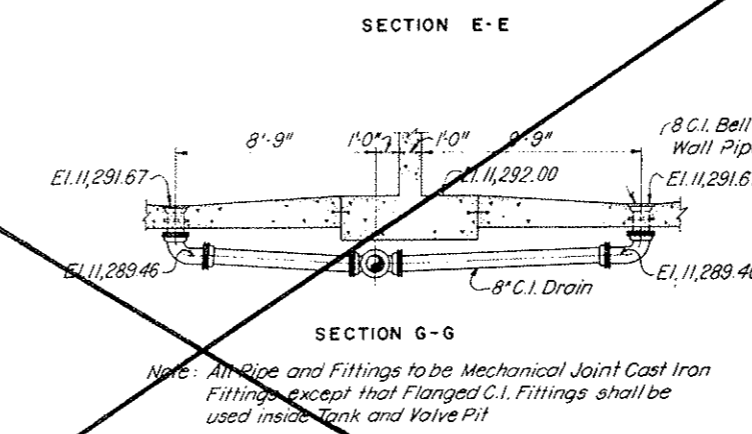
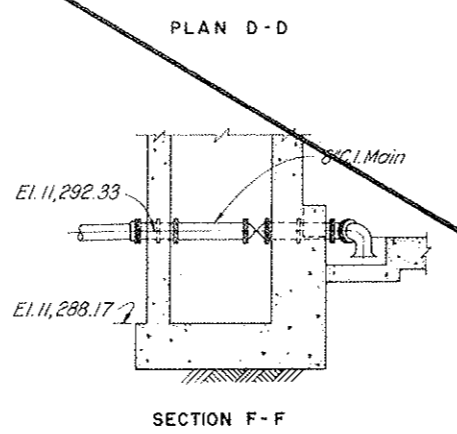
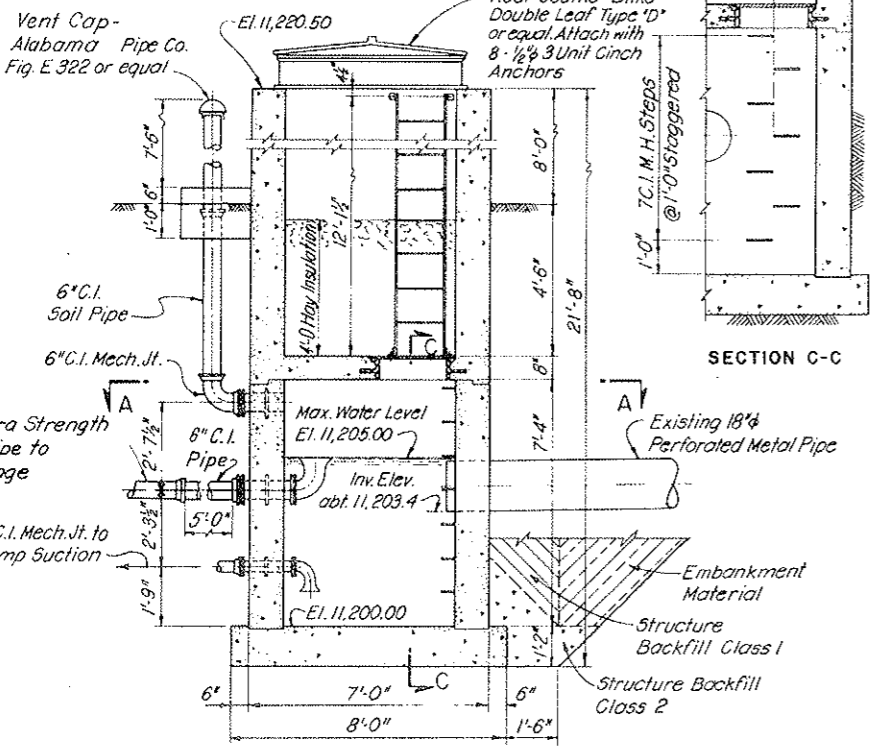
2" φ Std. Steel Pipe Galvanized
 M.I. Floor Flange Galvanized - Use 2 Unit Cinch Anchors

TYPICAL WELDED RAILING DETAILS
 SCALE: 1/2" = 1'-0"



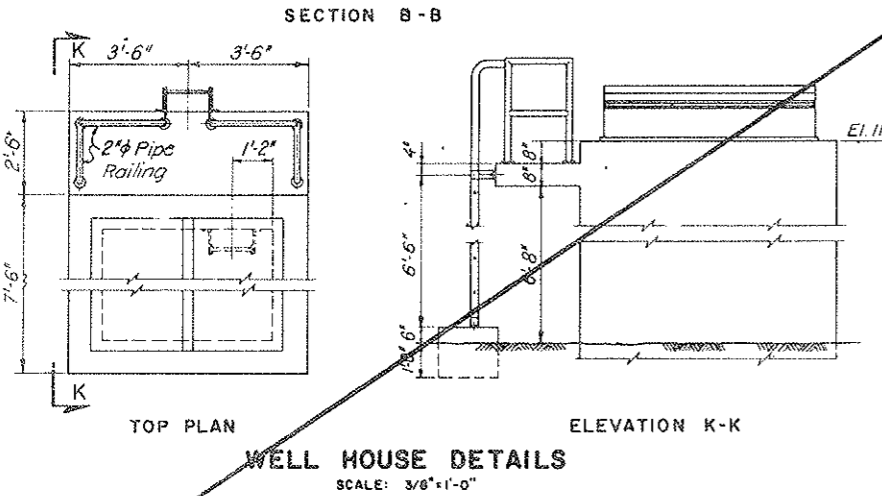
RAILING PLAN WATER STORAGE TANK
 SCALE: 1/2" = 1'-0"

VOID
 BY CONSTRUCTION
 Oct 26, 1973

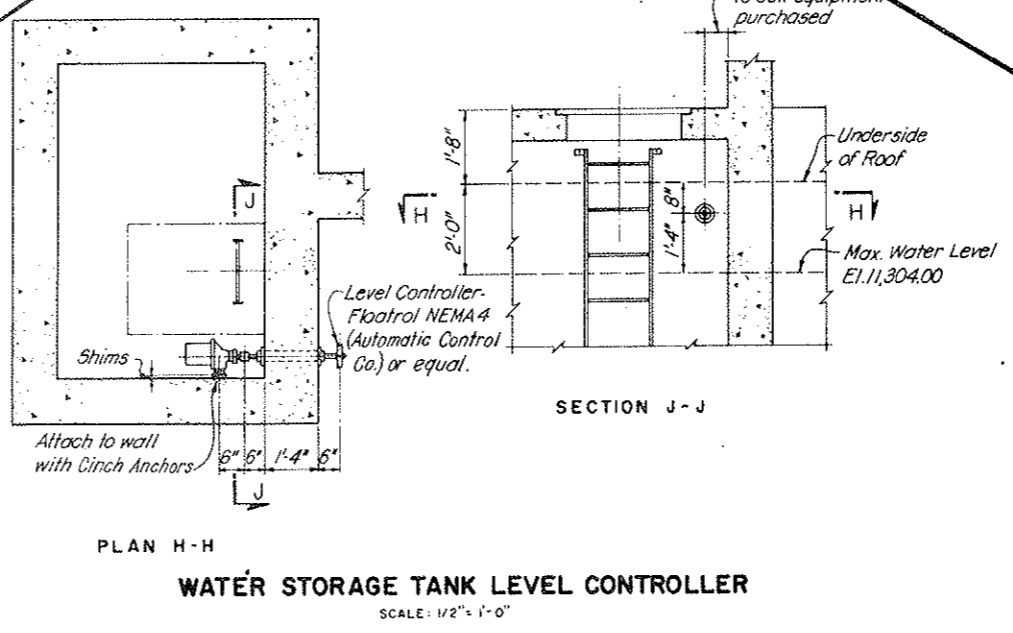


Note: All Pipe and Fittings to be Mechanical Joint Cast Iron Fittings except that Flanged C.I. Fittings shall be used inside Tank and Valve Pit

WEST PORTAL WATER STORAGE TANK PIPING DETAILS
 SCALE: 1/4" = 1'-0"



WELL HOUSE DETAILS
 SCALE: 3/8" = 1'-0"



WATER STORAGE TANK LEVEL CONTROLLER
 SCALE: 1/2" = 1'-0"

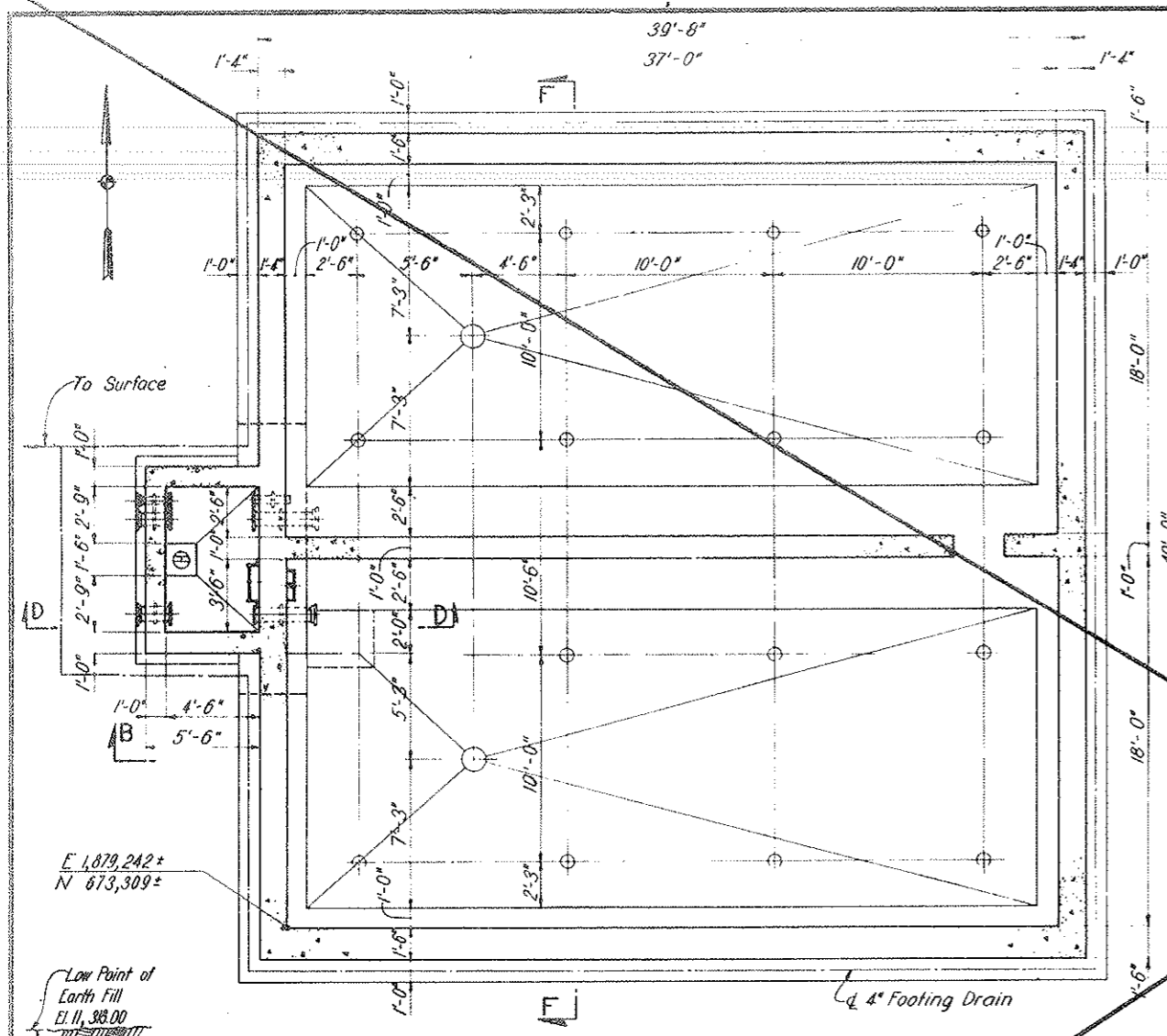
NOTES:
 For Ladder details see Dwg. C2-36.
 For Water Storage Tank details see Dwg. G3-4.
 For General Concrete Notes see Dwg. C2-11.
 Concrete for Well House shall be miscellaneous concrete Class 6.
 For reinforcement details of Well House see Dwg. G3-5

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL					
WEST PORTAL AREA					
WELL HOUSE AND					
WATER STORAGE TANK PIPING					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F.McC.	CHECKED: R.B.	APPROVED: H.F.McC.	RECOMMENDED: H.F.McC.	DRAWING NO. G3-3	
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1957					

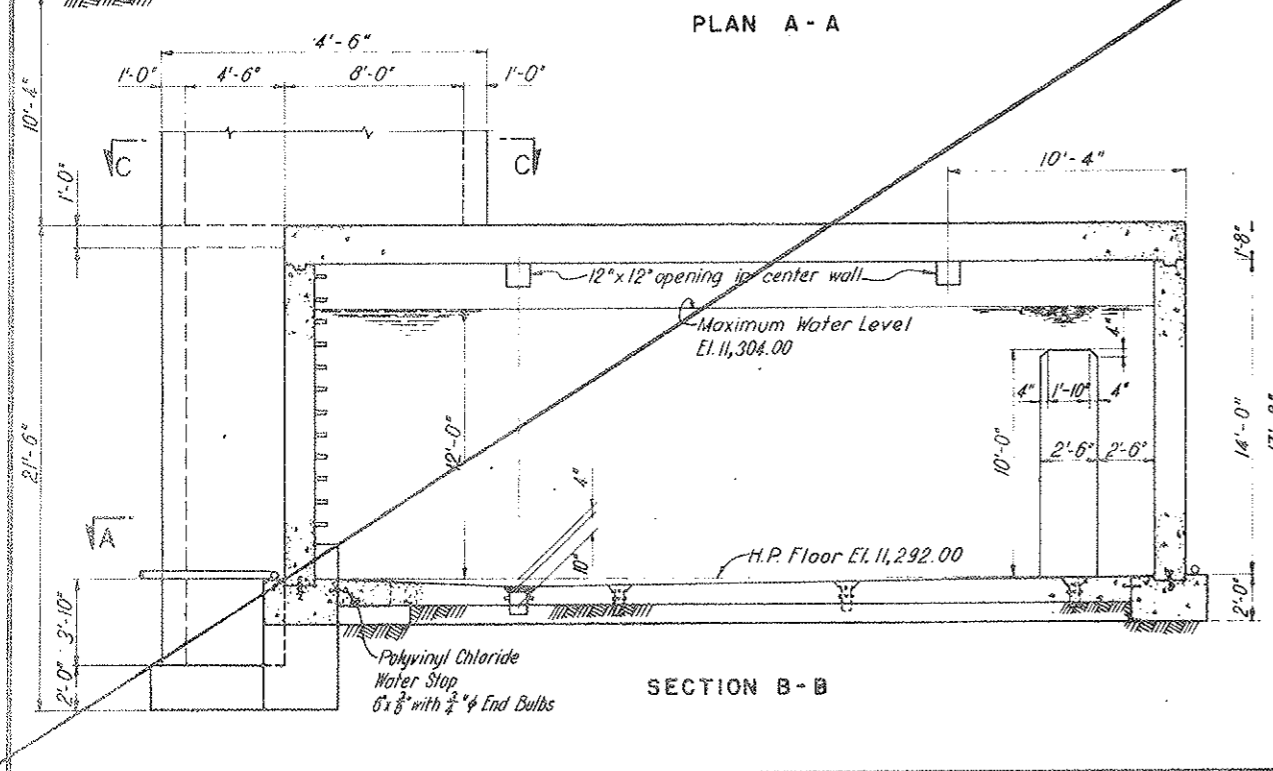
VOID See Dwg G3-1A - G3-1K

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	25	325

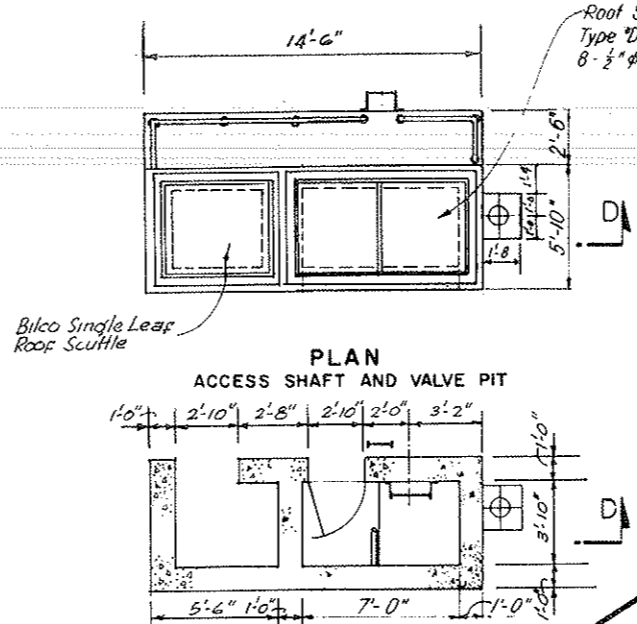
VOID BY CONSTRUCTION
OCT 26, 1973



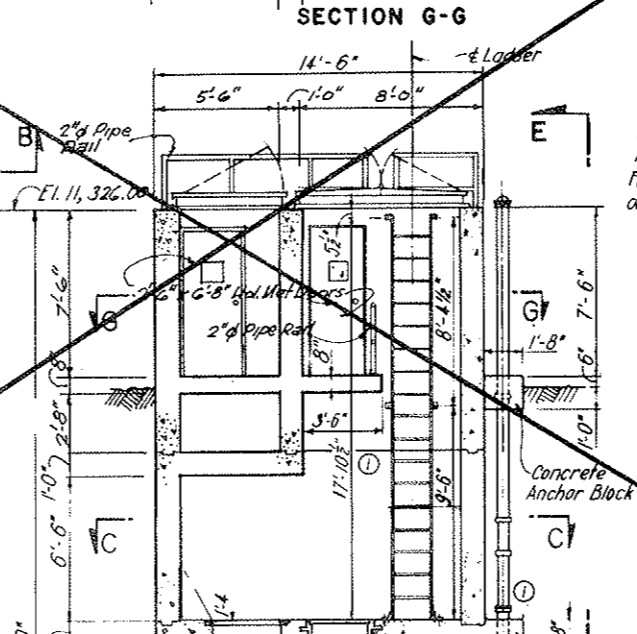
PLAN A-A



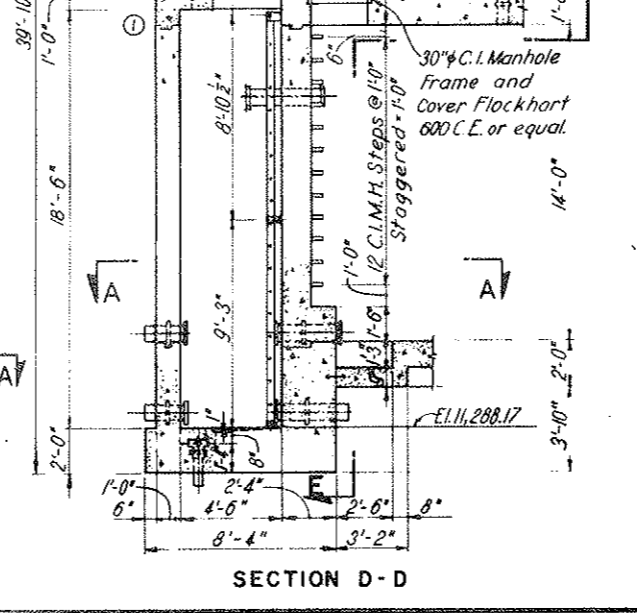
SECTION B-B



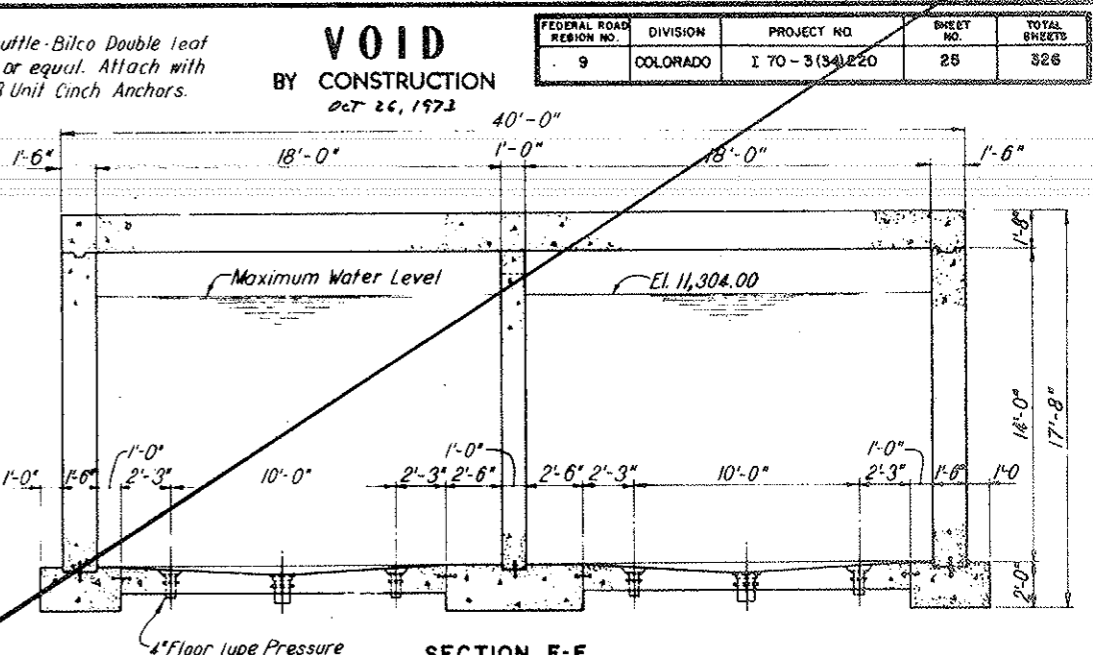
PLAN ACCESS SHAFT AND VALVE PIT



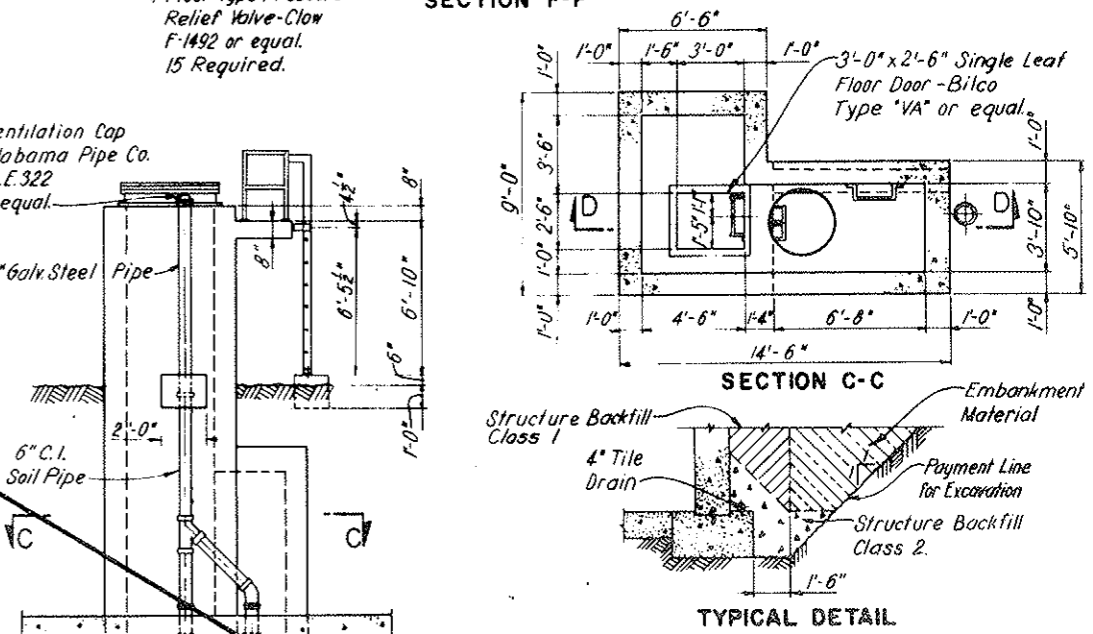
SECTION G-G



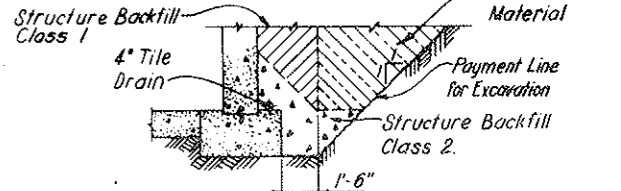
SECTION D-D



SECTION F-F



SECTION C-C



TYPICAL DETAIL FOOTING DRAIN AND BACKFILL

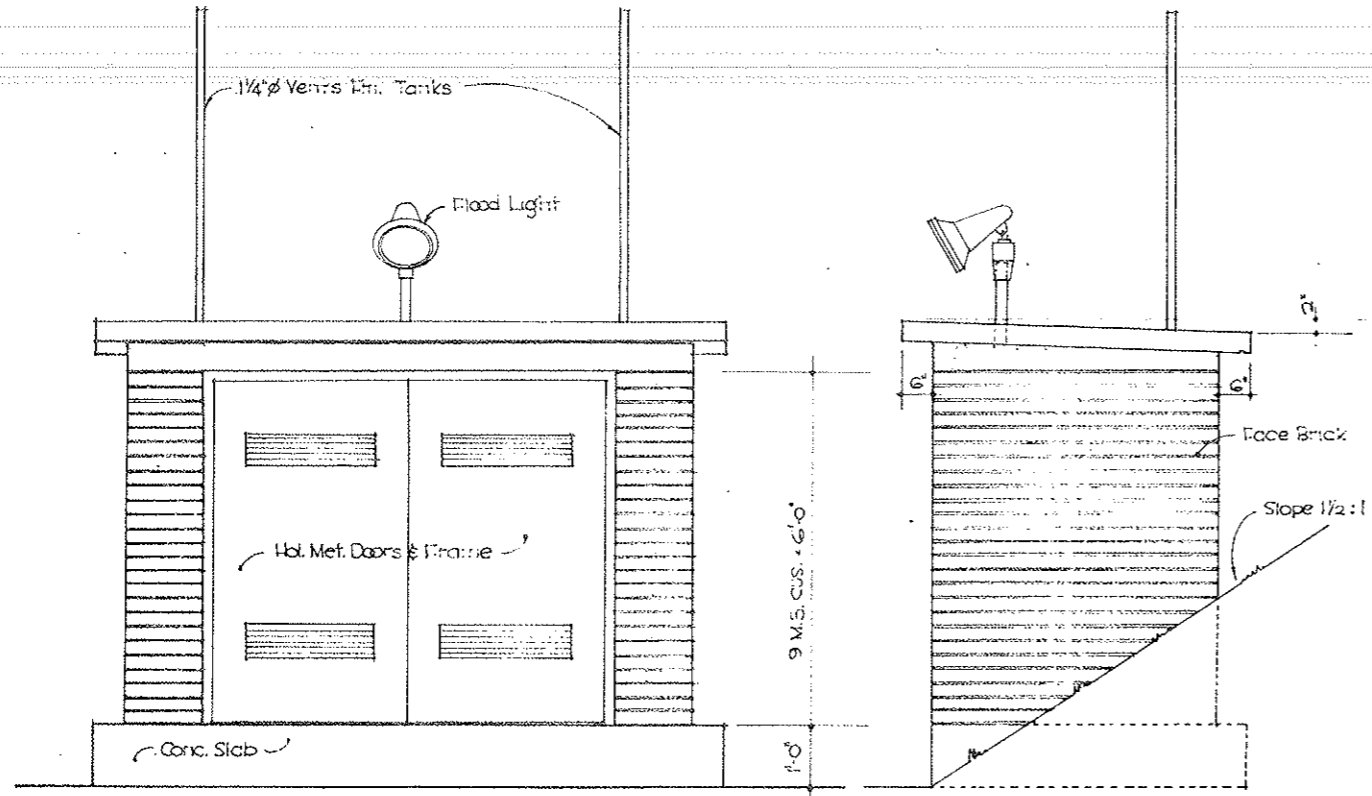
NOTES:
For details of railings and ladders see Dwg. 03-3 and C2-36.
For details of piping see Dwg. 03-3.
Concrete for Water Storage Tank shall be miscellaneous concrete Class 6.
For General Concrete Notes see Dwg. C2-11.
For reinforcement details see Dwg. C3-5.

DESIGNED: H.F.M.C.	RECOMMENDED: H.F.M.C.	DATE: AUGUST 1967
DRAWN: R.F.L.	CHECKED: H.F.M.C.	SCALE: 1/4" = 1'-0"
SUBMITTED: [Signature]	APPROVED: [Signature]	DATE: AUGUST 1967

VOID See Dwg 63-1A-63-1K

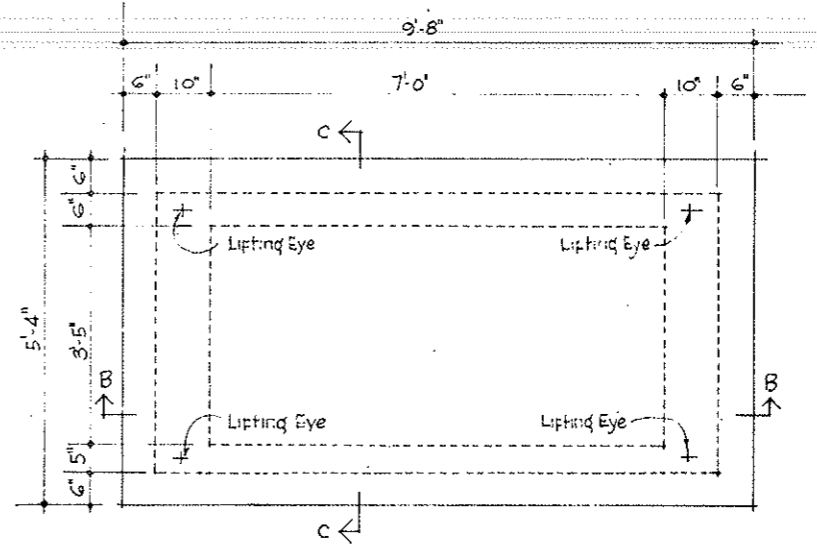
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 - 3(34)220	25 AX	326

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973

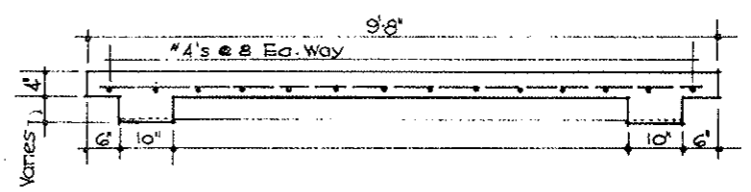


• SOUTH ELEVATION •

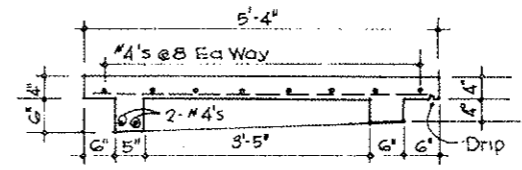
• EAST ELEVATION •



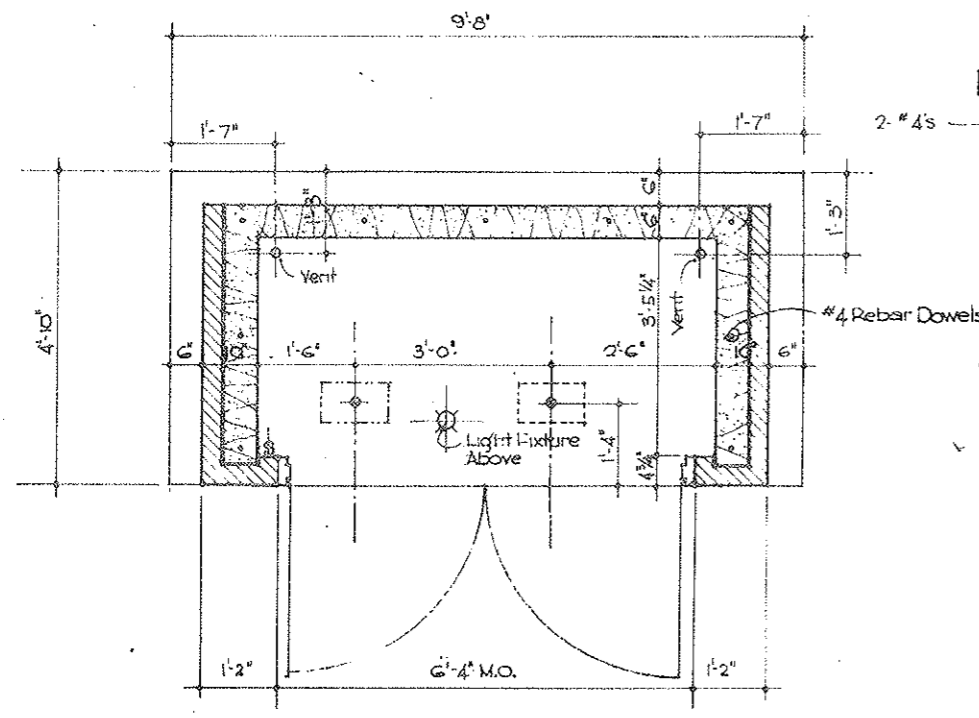
• PLAN FOR ROOF SLAB • NOTE: PROVIDE W/ LIFTING EYES



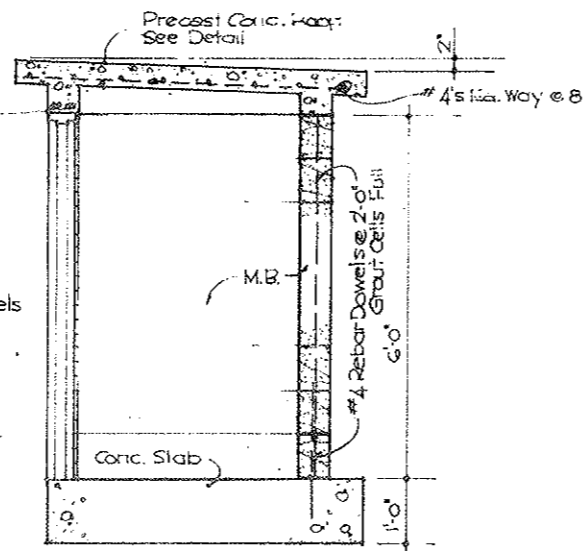
• SECT. B-B •



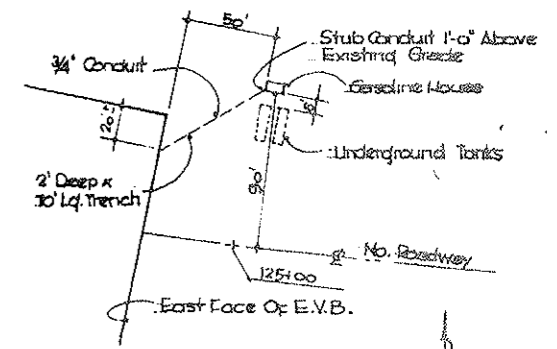
• SECT. C-C •



• PLAN •



• SECT. A-A •

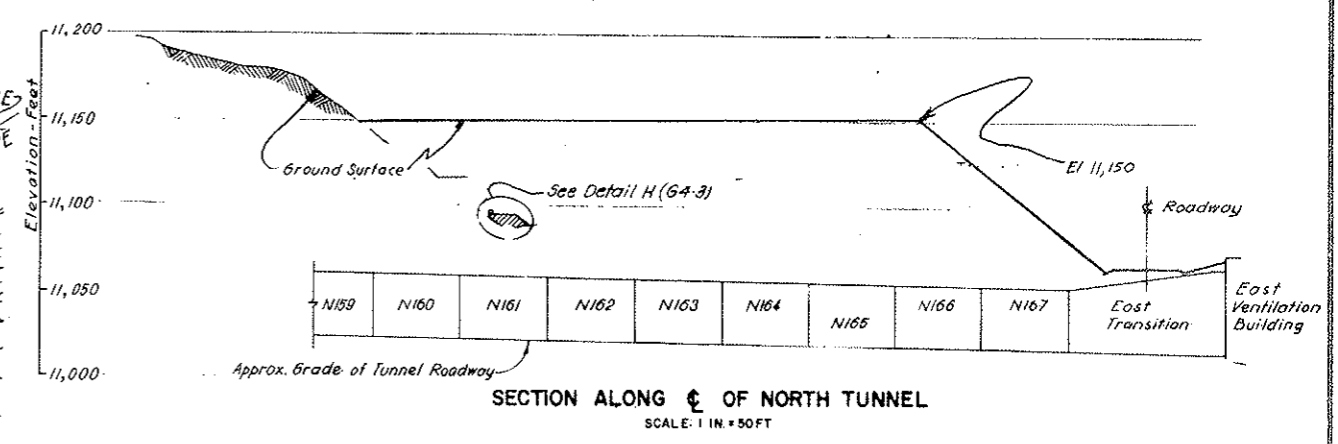
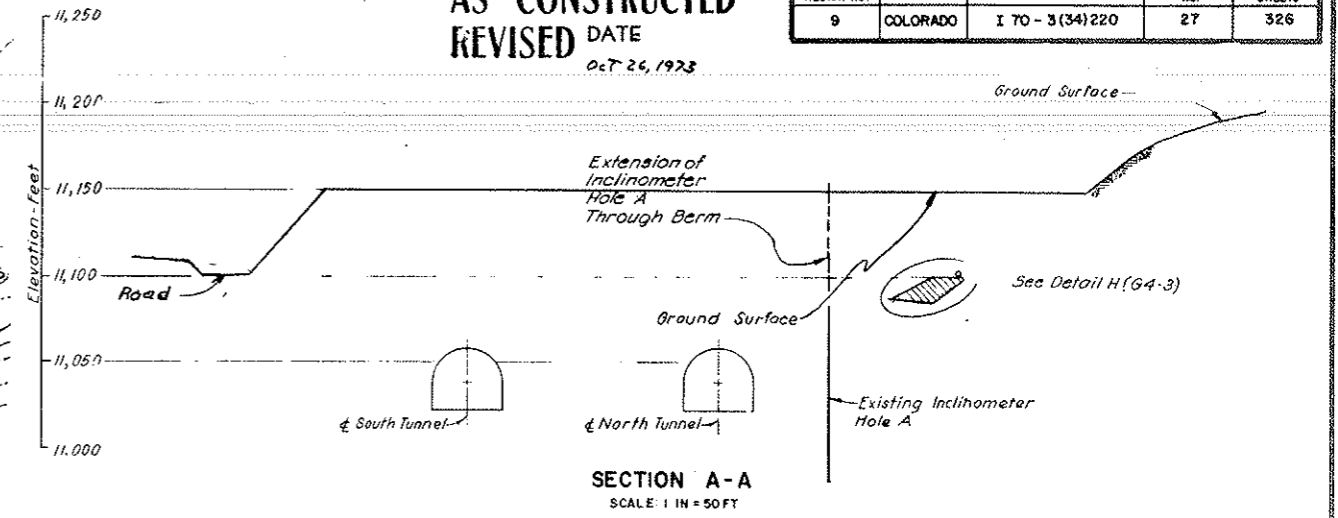
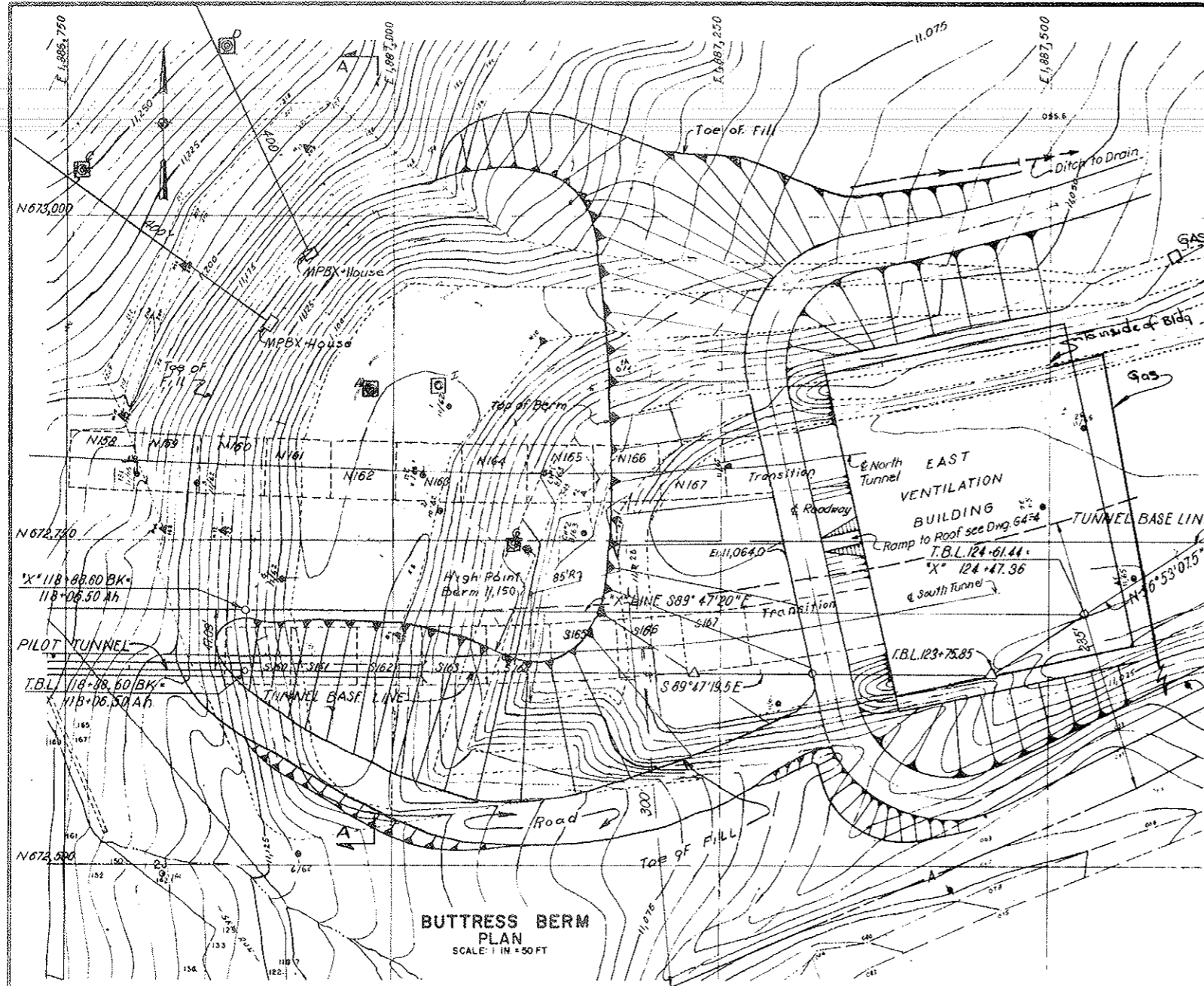


• PLOT PLAN •

STATE OF COLORADO	
DEPARTMENT OF HIGHWAYS	
Prepared By	Checked By
Straight Creek Constructors	
GASOLINE PUMP HOUSE	
W/L/T/B	7-63-4A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	27	326

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1923



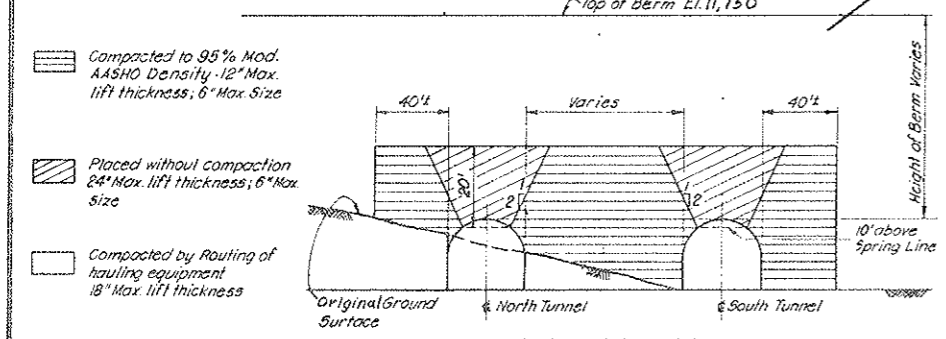
- LEGEND:**
- Inclinerometer Hole With Bldg.
 - Benchmark
 - Drill Hole
 - Existing Right-of-Way

- REFERENCE DRAWINGS:**
- G4-2 East Portal Area, Surface and Subsurface Drainage System, Plan.
 - G4-3 East Portal Area, Surface and Subsurface Drainage System, Sections and Details.
 - G4-4 East Portal Area, Roadway, Grading and Drainage Plan at Ventilation Building.

NOTES:
 The casing in Inclinerometer Hole A, shall be extended 2 feet above final berm elevation. The 3/8 inch OD inclinometer casing shall be installed.

Sand shall be used to fill the annular space between the wall of the boring and the inclinometer casing. See specifications.
 Existing inclinometer holes and benchmarks, outside the limits of the buttress berm, shall not be disturbed.

See specifications for limitations in constructing buttress berm and portal section of Tunnels.
 Clear Creek relocation under Project No. I 70 3(50)219 not shown on this drawing
 For East Ventilation Building see Dwg. 5-E4 and 5-E5.



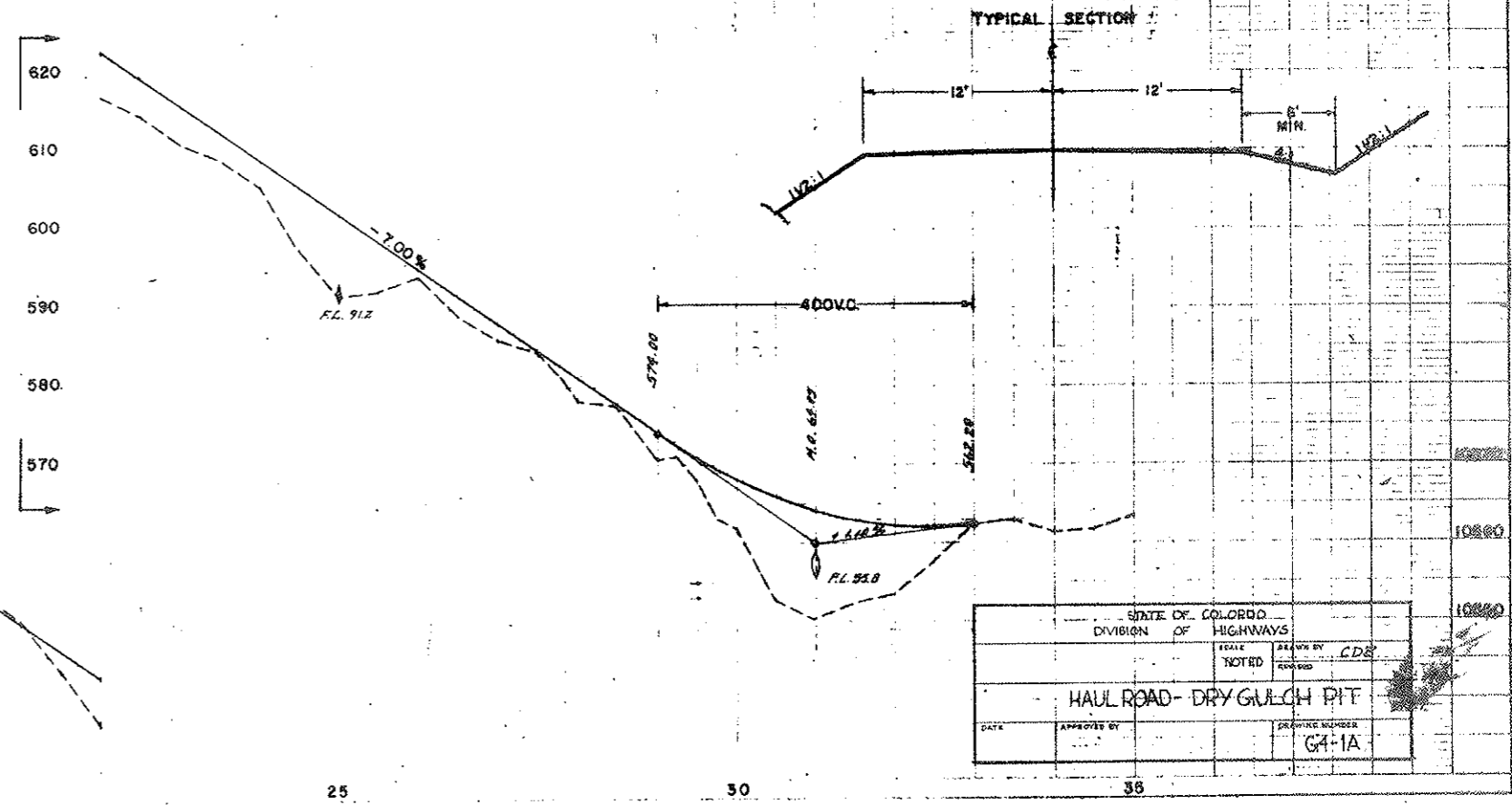
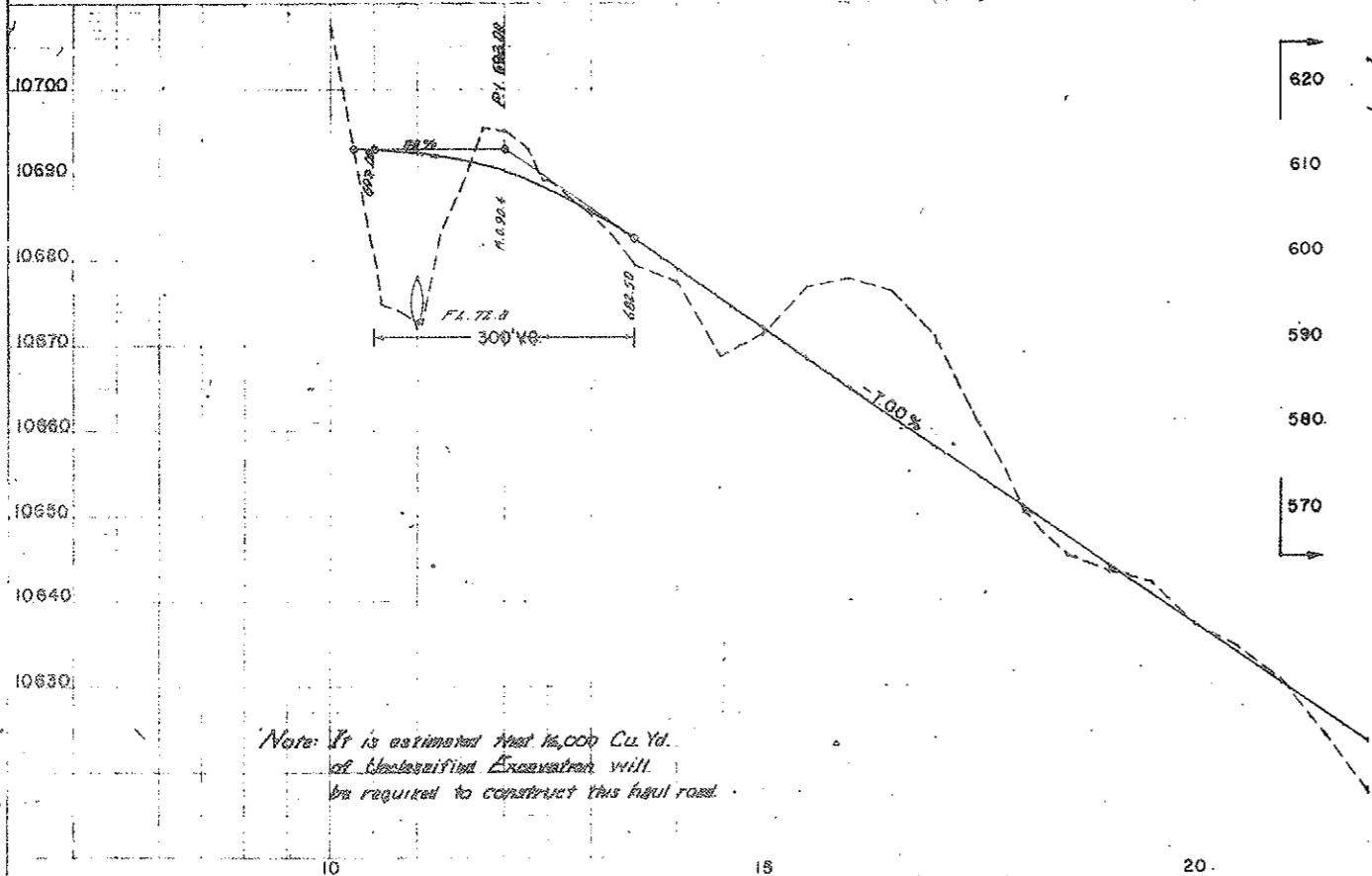
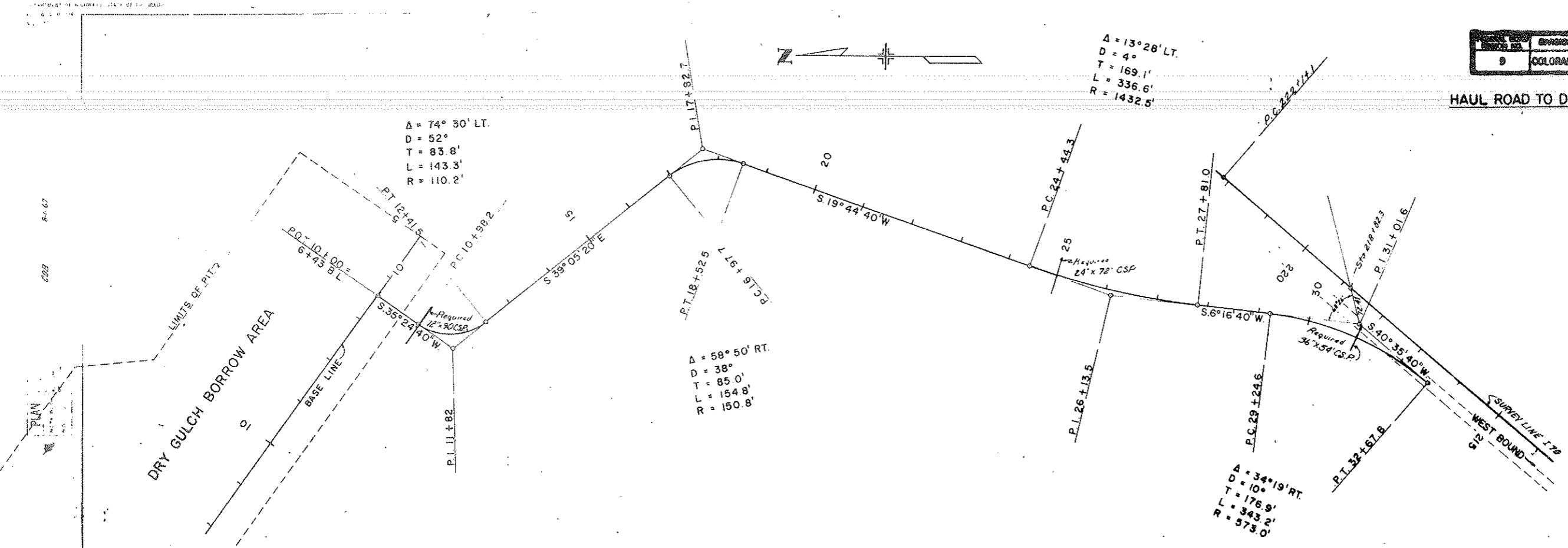
COMPACTION REQUIREMENT
AROUND CUT AND COVER CONDUIT SEGMENTS
 SCHEMATIC
 NOT TO SCALE

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL EAST PORTAL AREA BUTTRESS BERM PLAN, SECTIONS AND DETAILS					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY: P. L. ...	CHECKED BY: S. M. R. - L. B. ...	RECOMMENDED BY: ...	APPROVED BY: ...	DRAWING NO. G4-1	
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1923					

STATE	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3234820	27 AX	326

HAUL ROAD TO DRY GULCH BORROW AREA

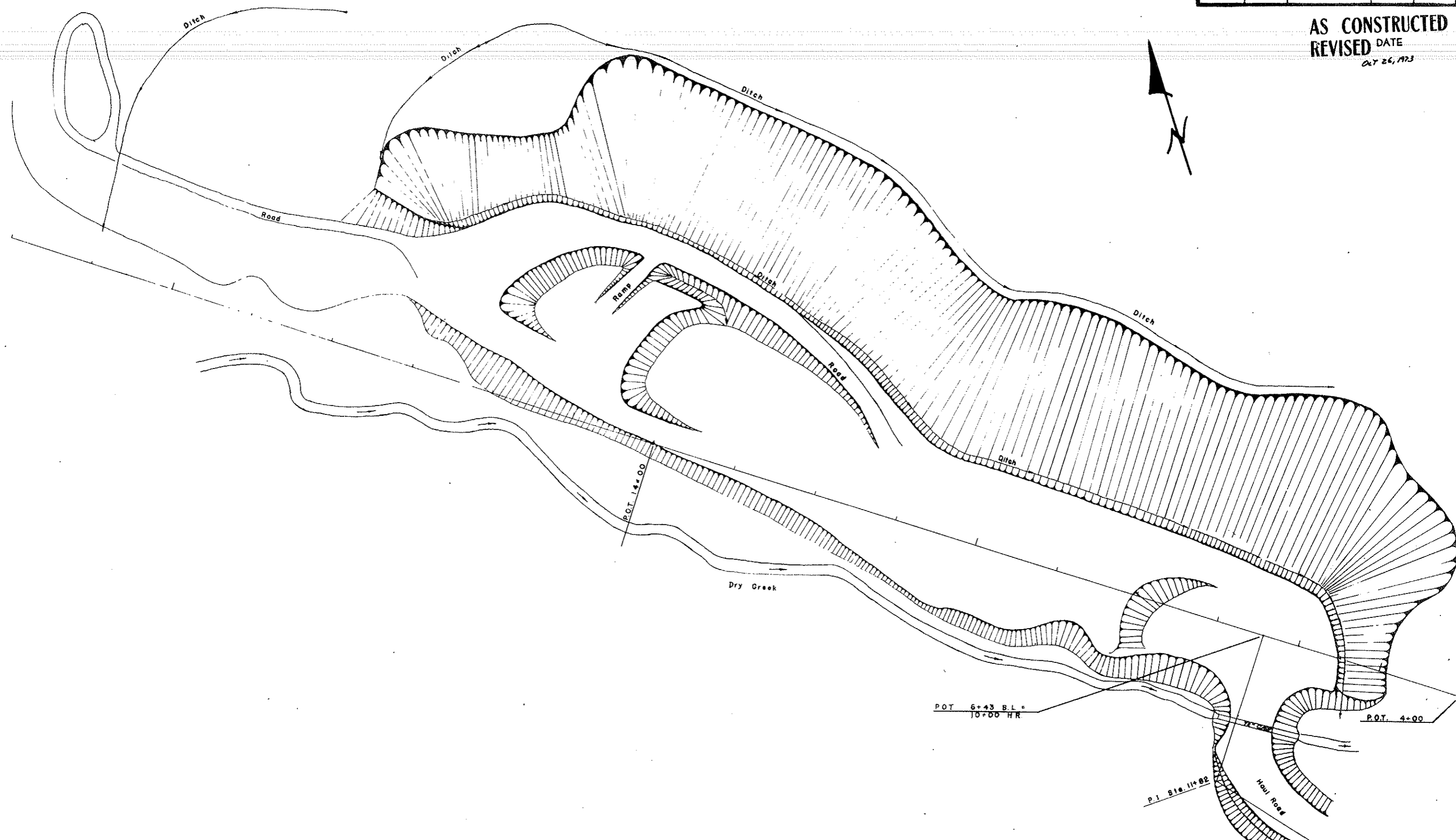
AS CONSTRUCTED
 REVISED DATE
 Oct 24, 1973



STATE OF COLORADO		DIVISION OF HIGHWAYS	
SCALE	NOTED	DESIGNED BY	CDS
HAUL ROAD- DRY GULCH PIT			
DATE	APPROVED BY	DRAWING NUMBER	G4-1A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	27 BX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1923



STATE OF COLORADO		
DIVISION OF HIGHWAY		
SCALE	DESIGNED BY	REVISIONS
1" = 50'	<i>Wm. H. ...</i>	
• DRY GULCH PIT •		
DATE	APPROVED BY	DRAWING NUMBER
		G4-1B

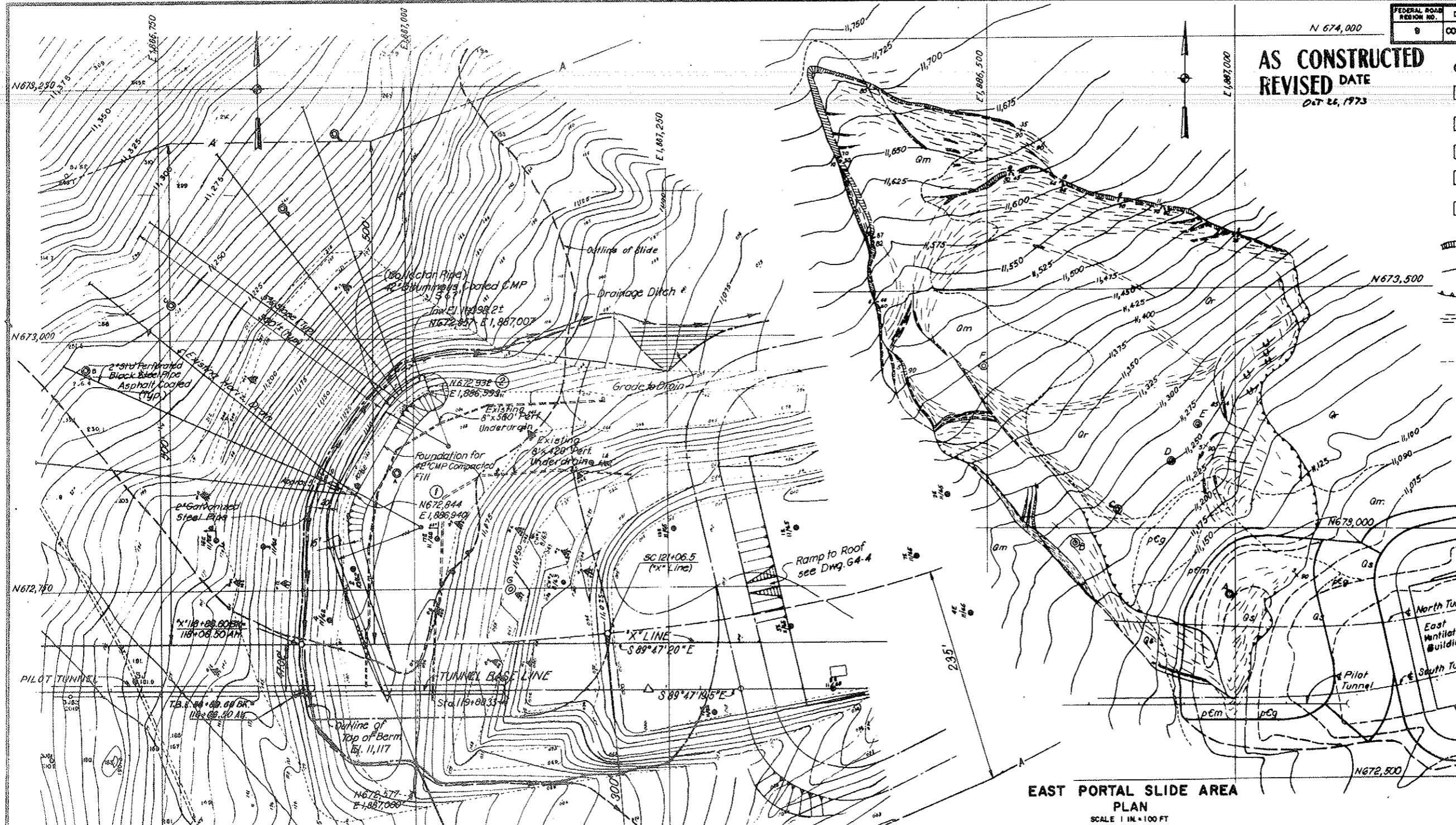
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	28	386

AS CONSTRUCTED
REVISED DATE
 Oct 26, 1973

- GEOLOGIC EXPLANATION**
- Qm** Area covered predominantly by marginal material
 - Qr** Area of soil and talus with scattered bedrock outcrops
 - pCg** Area predominantly of granites, in cut
 - pCm** Area predominantly of metamorphic rocks, in cut
 - Qs** Area predominantly of surficial deposits, in cut
- Landslide scarp showing dip, plunge of striations, and height, in feet
 Vertical landslide scarp
 Landslide thrust showing height of overthrust roll, in feet
 Zone of minor fractures
 Roll in soil
 Approximate contact

- LEGEND:**
- Inclinometer Hole
 - Benchmark
 - Existing Underdrain
 - Existing Right-of-Way Bore Holes

REFERENCE DRAWING
 G4-1 East Portal Area, Buttress Berm, Plan, Sections and Details.
 G4-3 East Portal Area, Subsurface Drainage, Sections and Details.



EAST PORTAL SLIDE AREA
PLAN
 SCALE 1 IN. = 100 FT

NOTES:
 Locations and elevations of the subsurface drains and collector pipe are approximate. Final locations and elevations will be determined by the Engineer.

Existing inclinometer holes and benchmarks, outside of the limits of the buttress berm shall not be disturbed.

Plan and geologic surface features of the East Portal Slide is taken from "Preliminary report on the geologic and physical investigations of the Loveland Basin Landslide, Clear Creek County, Colorado" by C. S. Robinson, R. A. Carroll, and F. T. Lee dated September 1963.

To increase surface runoff in the slide area landslide scarps shall be graded and the open fractures shall be filled and tamped with local material as directed by the Engineer.

Boring 9E not shown on plan, coordinates are: N 672, 835 E 1, 887, 665.

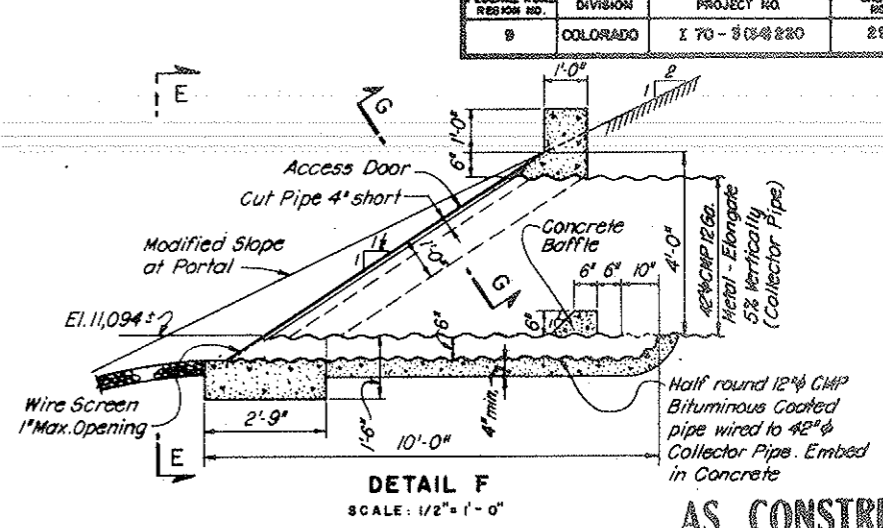
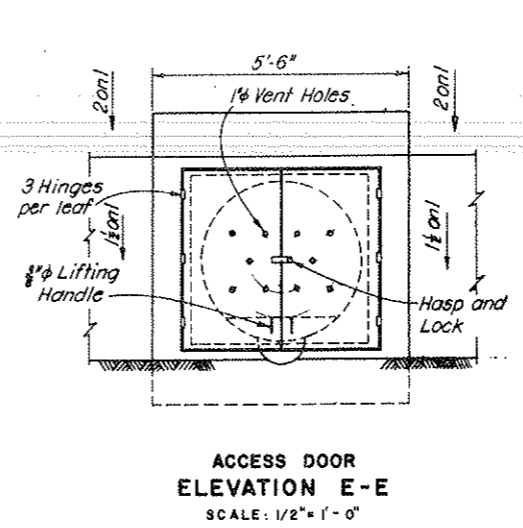
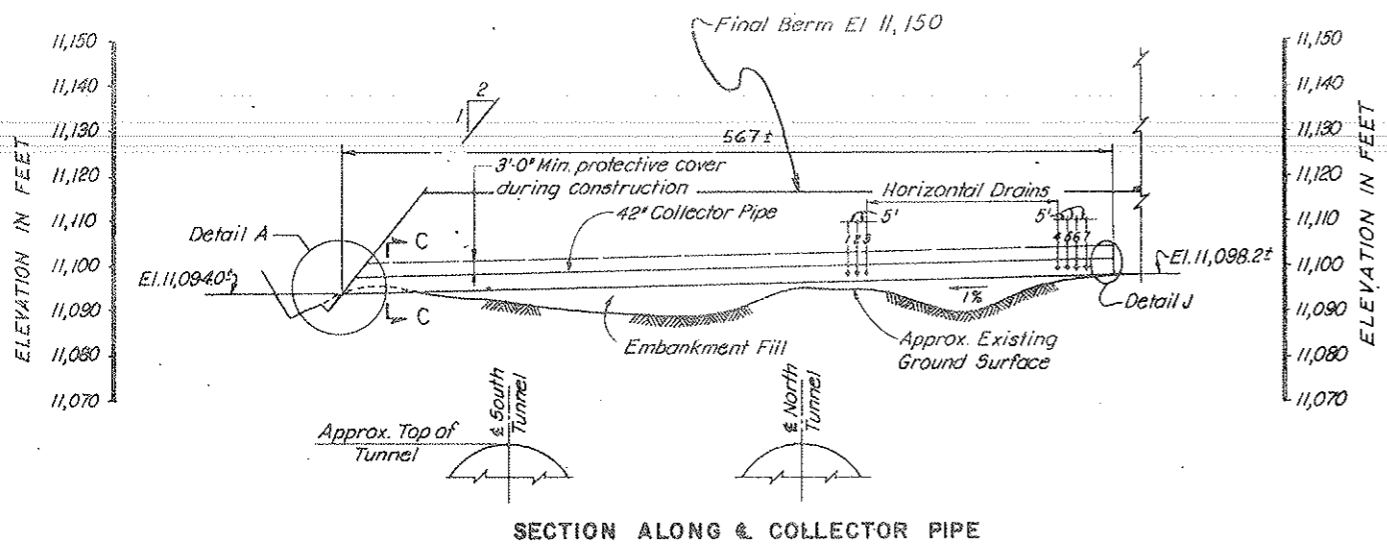
DRAIN NO.	APPROXIMATE INTERSECTION OF 2" DRAIN PIPE WITH & OF 42" COLLECTOR PIPE	APPROX. ELEV.	BEARING FROM REF. POINTS ① AND ②
1	E 1,886,925 N 672,846	11,098.10	N 6.5° W ①
2	E 1,886,927 N 672,852	11,098.15	N 24.5° W ①
3*	E 1,886,929 N 672,858	11,098.20	N 39.5° W ①
4	E 1,886,982 N 672,940	11,099.50	N 36.5° W ②
5	E 1,886,985 N 672,944	11,099.55	N 56° W ②
6	E 1,886,989 N 672,947	11,099.60	N 71.5° W ②
7	E 1,886,993 N 672,950	11,099.65	N 90° ②

SUBSURFACE DRAINAGE SYSTEM
PLAN
 SCALE 1 IN. = 50 FT

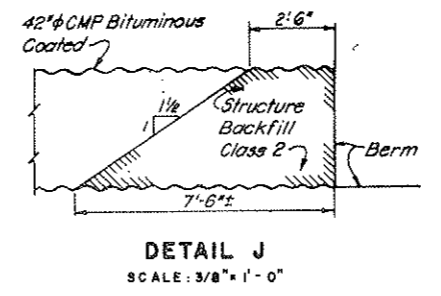
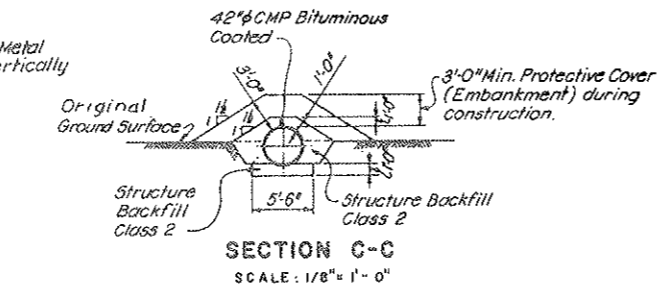
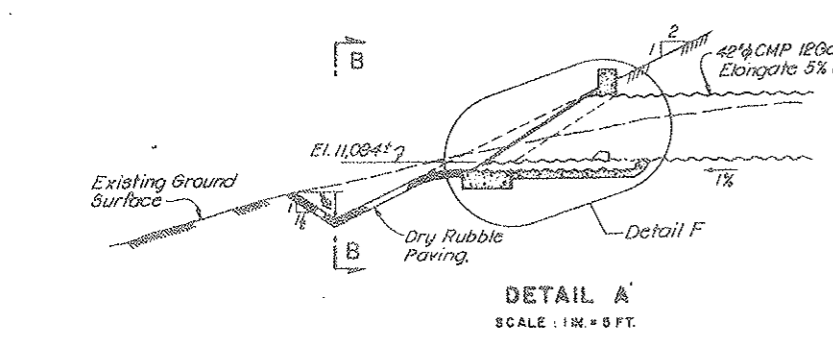
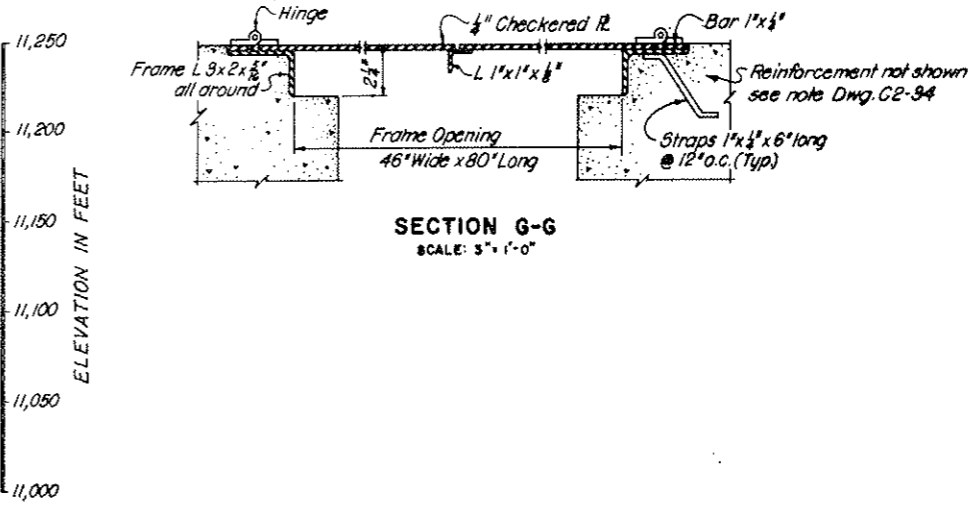
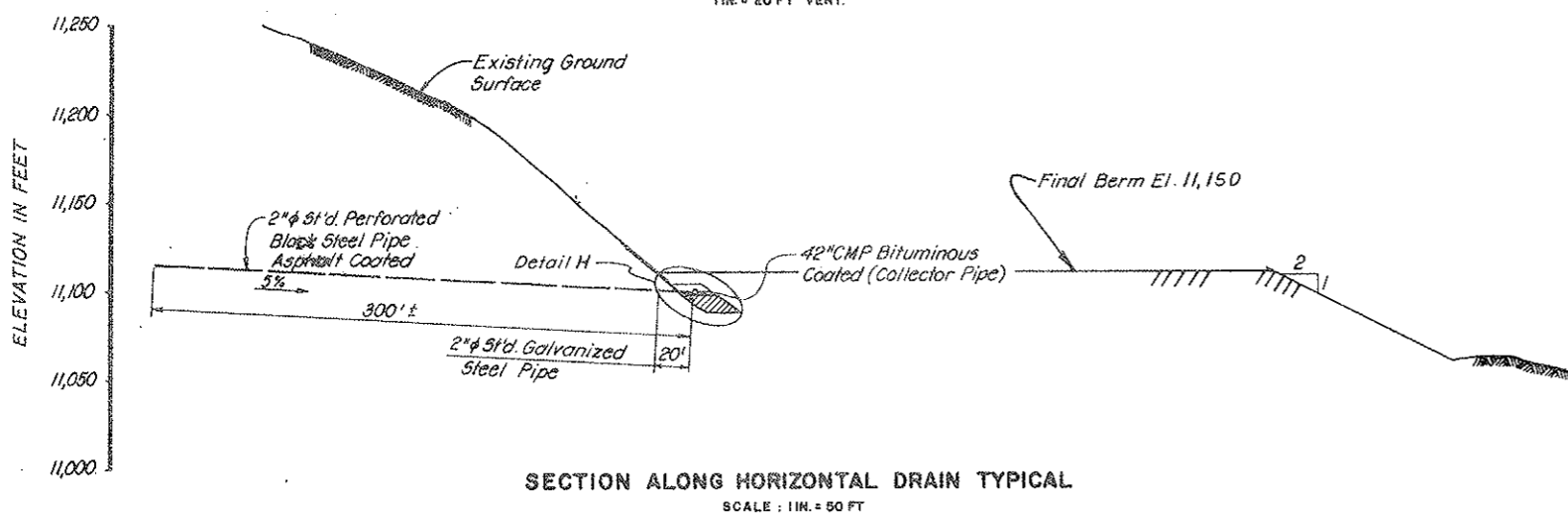
* Existing Horizontal Drain.

NO.	DATE	DESCRIPTION OF REVISIONS	BY	CHKD.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
CIVIL - GENERAL EAST PORTAL AREA SUBSURFACE DRAINAGE AND TREATMENT OF LANDSLIDE SCARPS PLANS				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED BY	CHECKED BY	DATE	SCALE	DATE
F. L. ...	S. M. R. - L. D.	AS NOTED	AUGUST 1967
				DRAWING NO. G4-2

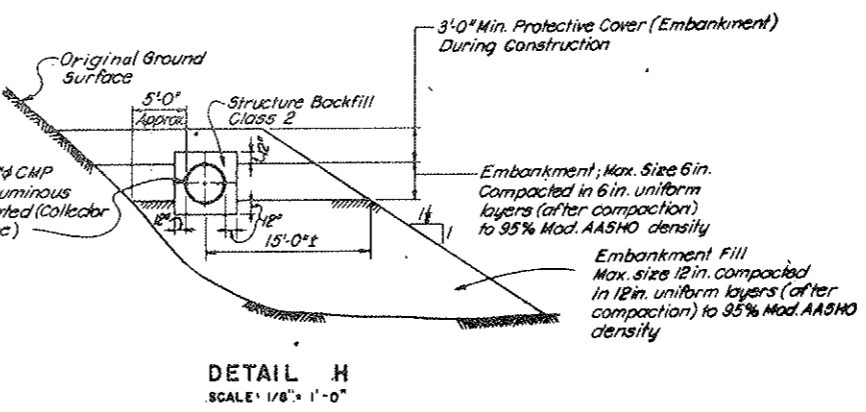
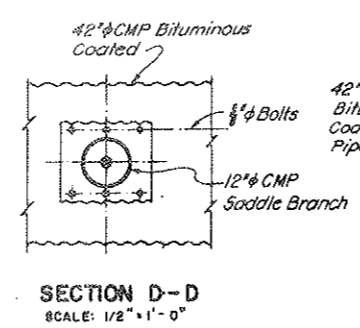
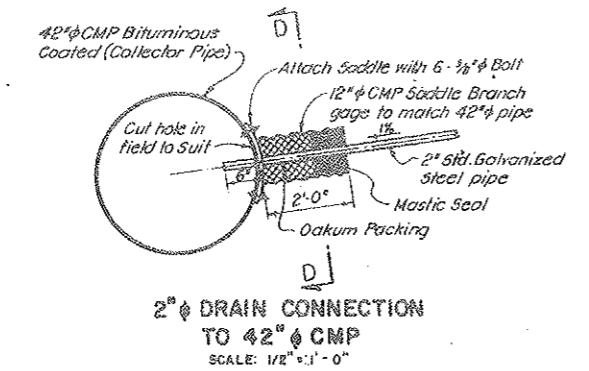
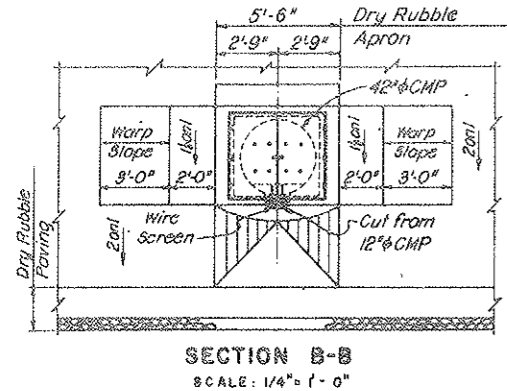
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-5184280	29	326



AS CONSTRUCTED
REVISED DATE
Oct 26, 1978



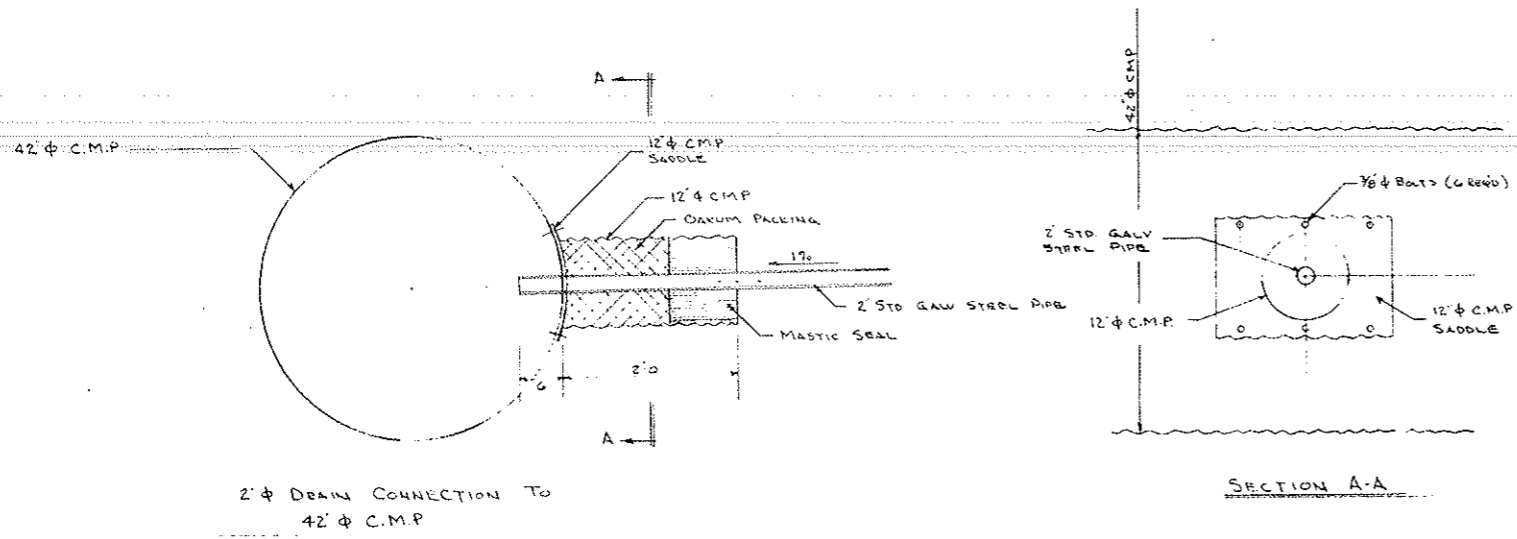
NOTES:
Work this drawing with Dwg. G4-1 and G4-2
Concrete shown on this drawing is miscellaneous concrete Class 6.



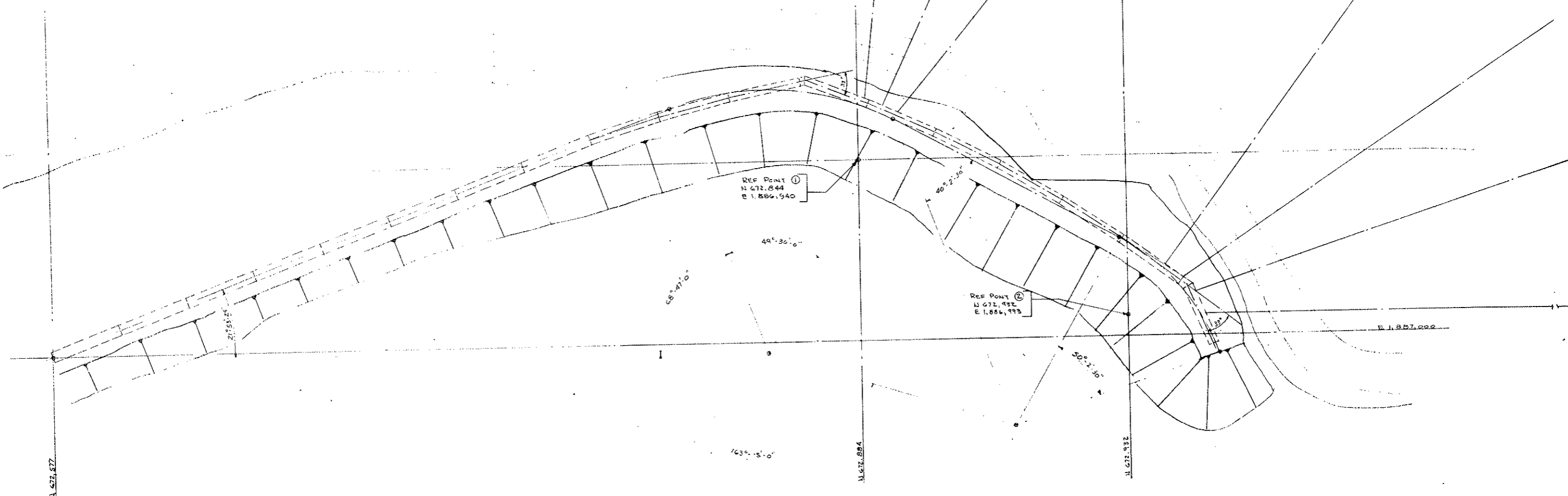
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL EAST PORTAL AREA SUBSURFACE DRAINAGE SECTIONS AND DETAILS					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	L.S.-R.B.A.	CHECKED BY	R.B.	APPROVED BY	[Signature]
DRAWN BY	G.M.R.-L.B.	DATE	APRIL 1977	SCALE	AS NOTED
					DRAWING NO. 64-3

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 - 3(34)220	29 AX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



SECTION A-A

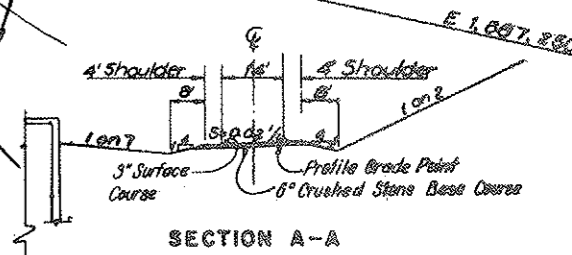
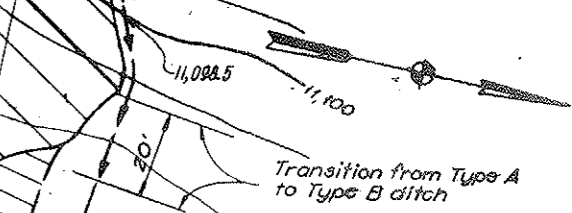
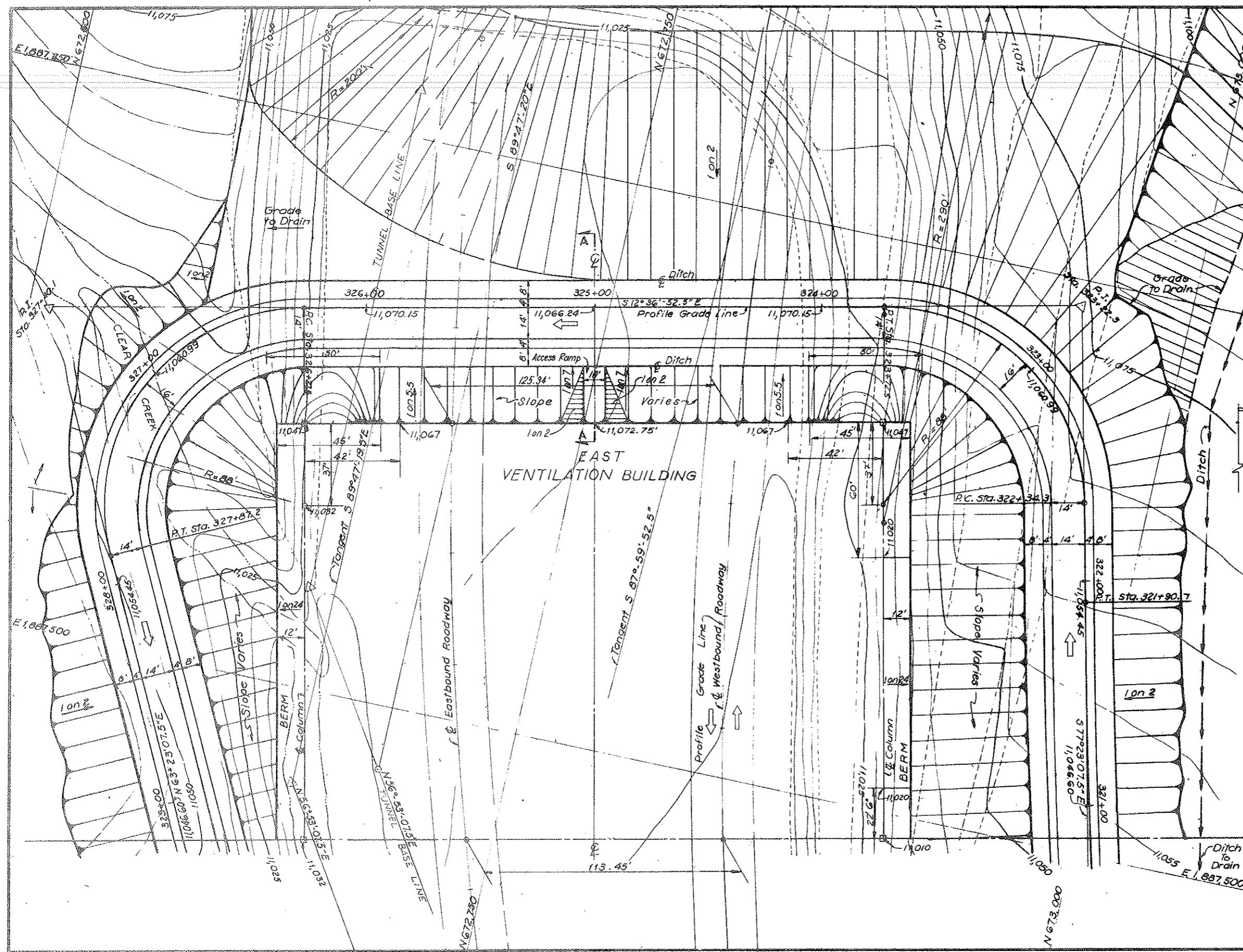


PLAN

STATE OF COLORADO DIVISION OF HIGHWAYS			
SCALE	GRADE BY	REVISED	
1" = 15'	BY		
42" C.M.P. COLLECTOR PIPE, E.P.			
DATE	APPROVED BY	DRAWING NUMBER	
3-18-68		G4-2A	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 5(34)220	80	288

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



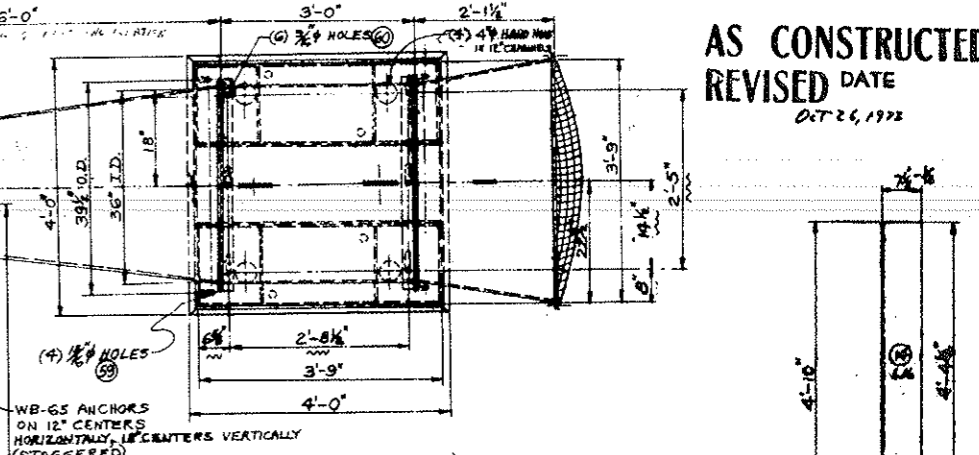
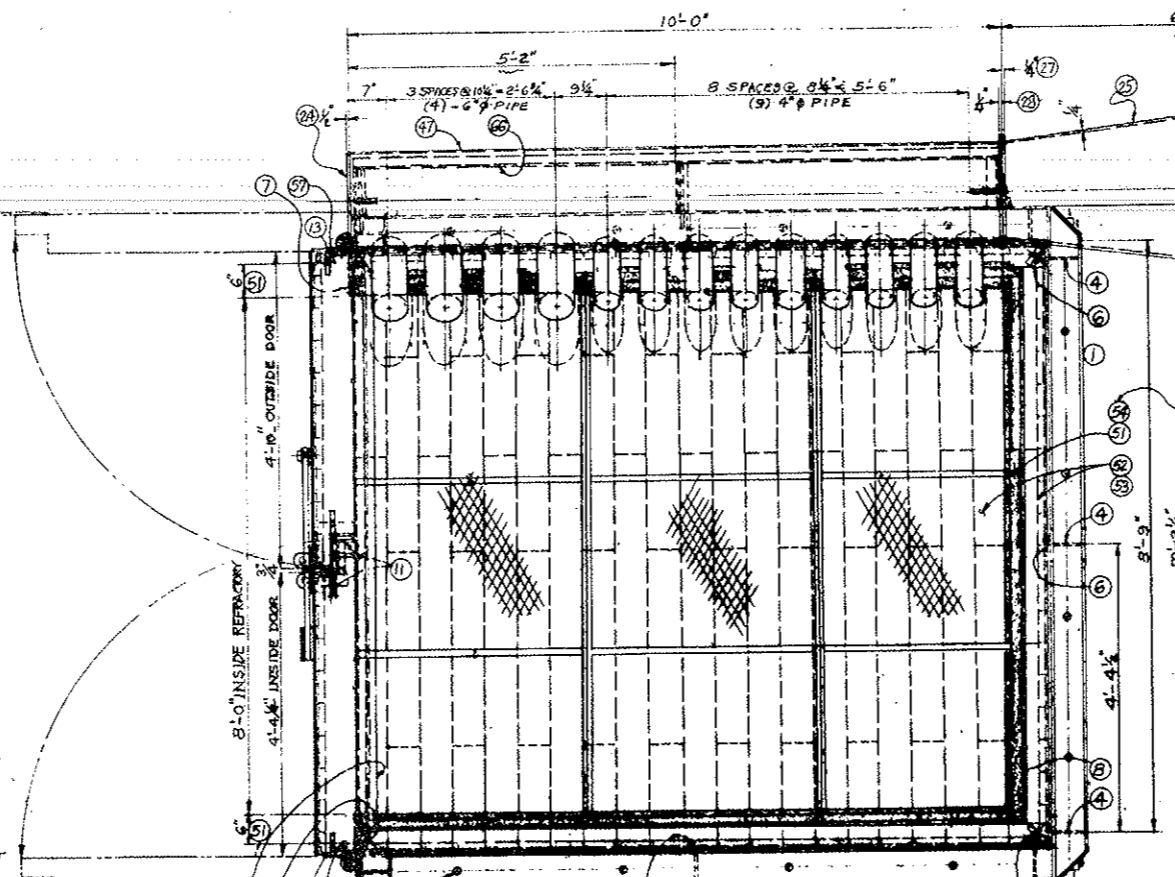
NOTES:
 For details of Type A and Type B ditches see Dwg. G4-1
 Clear creek relocation under Project No. I 70 S(30)218 not shown on this Dwg.
 For East Ventilation Building see Dwg. S-E3
 The elevations shown are the profile grade elevations.
 The 3" surface course and 6" crushed stone base course are not in this contract.
 Contractor shall construct services road to an elevation 9 inches below profile grade elevations.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
CIVIL - GENERAL EAST PORTAL AREA ROADWAY, GRADING AND DRAINAGE PLAN AT VENTILATION BUILDING				
TIPPETT - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED BY	P. P.	CHECKED BY	M. G.	DATE
DRAWN BY	M. G.	APPROVED BY	[Signature]	10/26/73
CHECKED BY	P. P.	SCALE	1" = 40'	SHEET NO.
DATE	10/26/73	DATE	4-19-67	64-4

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1972

ITEM NO.	QTY	DESCRIPTION	MATL.	ITEM NO.	QTY	DESCRIPTION	MATL.
1	6	WBG X 25" X 10-3/4"	A36	37	2	1/2" FLAT X 3 X 14-6"	STEEL
2	4	WBG X 25" X 10-7/8"	A36	38	3	1/2" FLAT X 3 X 14-0"	STEEL
3	2	WBG X 25" X 10-10/16"	A36	39	1	1" FLAT X 3 X 3-2 1/2"	STEEL
4	2	WBG X 25" X 11-1/8"	A36	40	4	3/4" DIA. BAR X 1-3" (BEND)	STEEL
5	2	WBG X 25" X 10-1 1/2"	A36	41	2	1 1/2" DIA. BAR X 10-0"	STEEL
6	8	4 X 4 X 1/2 ANGLE X 10-10 1/2"	A36	42	2	3 DIA. BAR X 0-1 1/2"	STEEL
7	4	4 X 4 X 1/2 ANGLE X 10-7 1/2"	A36	43	20	1 1/2" DIA. SCH 80 PIPE X 0-6"	A36
8	2	4 X 4 X 1/2 ANGLE X 9-3"	A36	44	20	1 1/2" DIA. SCH 80 PIPE X 0-5 1/2"	A36
9	1	10 @ 16.3 CHANNEL X 8-7"	A36	45	9	4 DIA. SCH 120 PIPE X 1-5"	A36
10	2	4 X 3 X 1/2 ANGLE X 9-11 1/2"	A36	46	4	6 DIA. SCH 120 PIPE X 1-5"	A36
11	4	3 X 3 X 1/2 ANGLE X 9-10 1/2"	A36	47	1	18 DIA. SCH 40 PIPE X 10-0"	A36
12	1	3 X 2 X 1/2 ANGLE X 0-6"	A36	48			A36
13	1	15 @ 33.9 CHANNEL X 10-0"	A36	49			A36
14	1	15 @ 33.9 CHANNEL X 4-0"	A36	50	12	#5 REBAR X 3-9"	CONCR
15	1	15 @ 33.9 CHANNEL X 4-0"	A36	51	1	REFRACTORY	REFRACTORY
16	3	15 @ 33.9 CHANNEL X 3-9"	A36	52	1	INSULATION - 1 1/2" X 6 X 36"	INSULATION
17	4	12 @ 20.7 CHANNEL X 12 1/2"	A36	53	2	INSULATION ADHESIVE	ADHESIVE
18	3	6 @ 8.2 CHANNEL X 1-0"	A36	54	180	ANCHORS (REFRACTORY) WB-65	ANCHORS
19	1	1/2" FLAT X 59 1/2" X 9-11 1/2"	M3	55	CONCRETE	CONCRETE	
20	1	1/2" FLAT X 52 1/2" X 9-11 1/2"	M3	56	1	FAN - SERIES 1000 JOY AXIVANE	FAN
21	2	1/2" FLAT X 127" X 10-10 1/2"	M3	57	1	15 @ 33.9 CHANNEL X 10-10 1/2"	A36
22	1	1/2" FLAT X 110 1/2" X 10-10 1/2"	M3	58	1	1 1/2" X 1 1/2" X 1/2" LG. HEX HD BOLT CAPSCREW	GR 5
23	1	1/2" FLAT X 110 1/2" X 10-7"	M3	59	4	3/8-11 NC HEX NUT & LOCKWASHER	GR 5
24	1	1/2" FLAT X 17 1/2" DIA.	M3	60	6	1/2-13 NC X 2 1/2" LG. HEX HD BOLT CAPSCREW	GR 5
25	1	1/2" FLAT X 78" X 3 1/2" X 1/2" (LARGE)	M3	61	52	1/2-13 NC X 1 1/2" LG. HEX HD BOLT CAPSCREW	GR 5
26	1	1/2" FLAT X 36 1/2" X 36 1/2" O.D.	M3	62	4	3/4" FLAT X 4 X 1 1/2"	STEEL
27	1	1/2" FLAT X 17 1/2" DIA. X 2 1/2" O.D.	M3	63	4	3/4" FLAT X 4 X 0-8 1/2"	STEEL
28	1	1/2" FLAT X 18 I.D. X 8 1/2" O.D.	M3	64	2	7 X 4 X 1/2 ANGLE X 9-11 1/2"	STEEL
29	3	1/2" FLAT X 12 X 14-0"	M3	65	36	WASHER (BRONZE) 1/2" X 1 1/2" O.D.	BRONZE
30	8	1/2" FLAT X 3 X 1-0"	M3	66	7	6 @ 8.2 CHANNEL X 9-11 1/2"	A36
31	1	1/2" FLAT X 6 X 4-1 1/2"	M3	67	1	4 @ 1 1/2" H. BEAM X 9-5"	A36
32	1	1/2" FLAT X 6 X 8-4 1/2"	M3				
33	1	1/2" FLAT X 2 X 8-2 1/2"	M3				
34	1	1/2" FLAT X 2 X 4-3 1/2"	M3				
35	1	1/2" FLAT X 2 X 4-1 1/2"	M3				
36	1	1/2" FLAT X 6 X 4-1 1/2"	M3				
37	8	1/2" FLAT X 6 X 0-6"	M3				

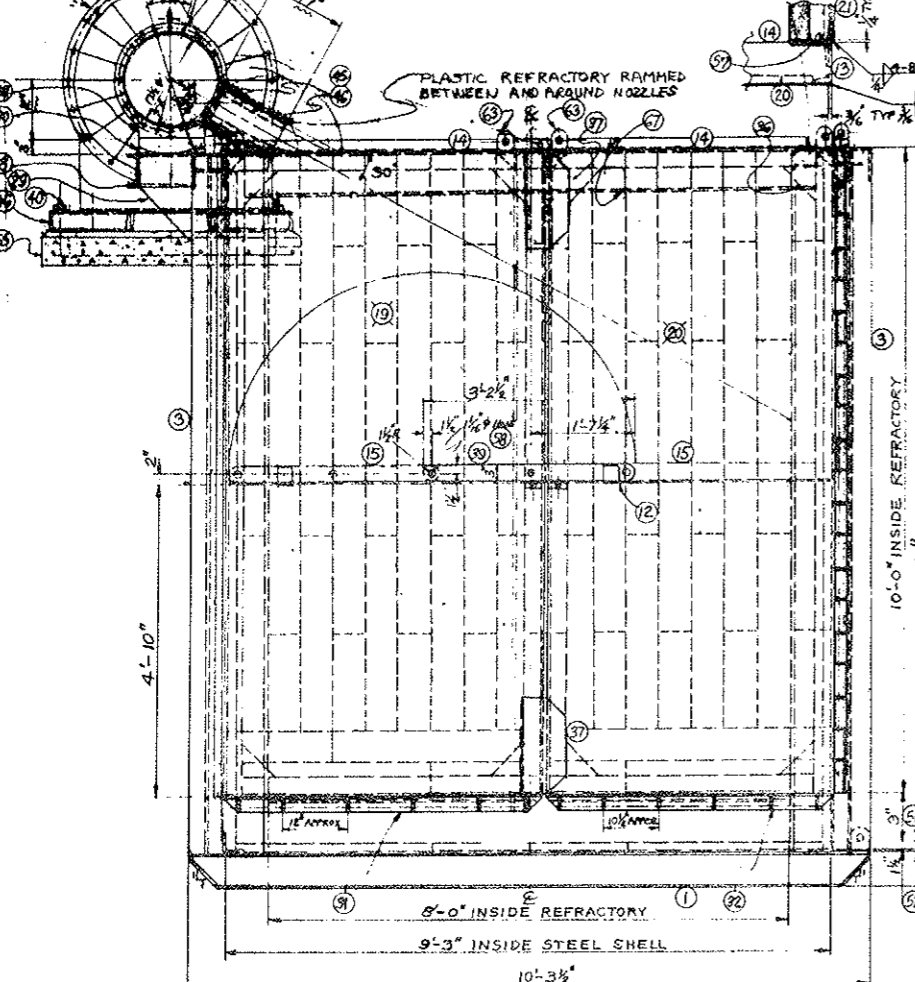
MAKES 2



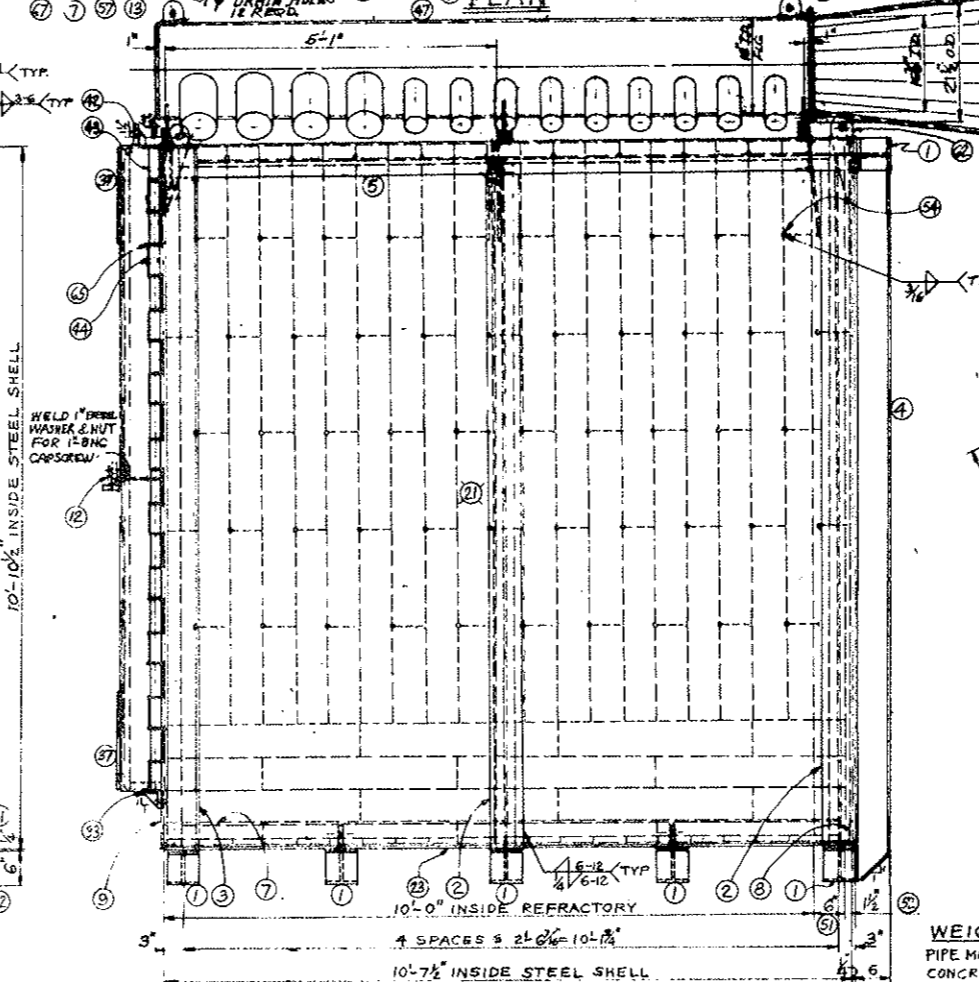
WB-65 ANCHORS ON 12" CENTERS HORIZONTALLY, 18" CENTERS VERTICALLY (STAGGERED)
 50 REQ'D EACH SIDE WALL (5 ROWS @ 10 PER ROW) AS SHOWN
 40 REQ'D END WALL (8 ROWS @ 5 PER ROW)
 36 REQ'D DOOR (4 ROWS @ 9 PER ROW)

MODEL 36-17 1/2-1750
 SERIES 1000 JOY AXIVANE FAN
 12,000 CFM, 80 HORSEPOWER @
 2 1/2" H.G. GAUGE
 INLET CONE W/ SCREEN

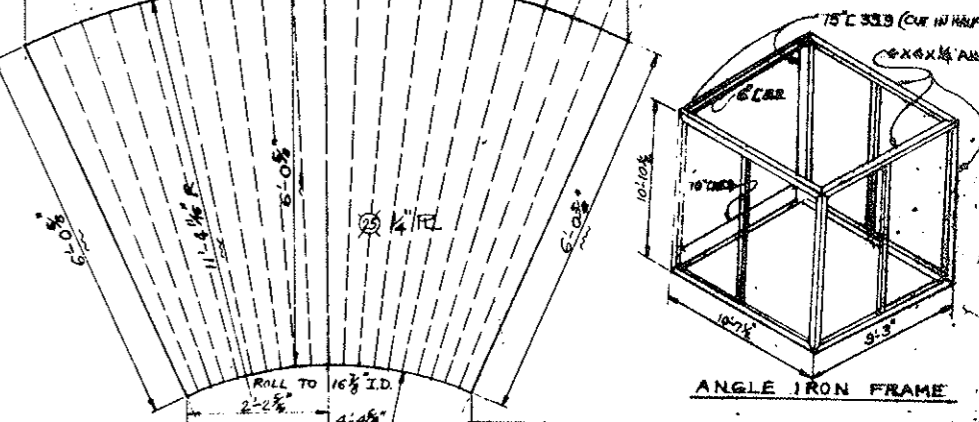
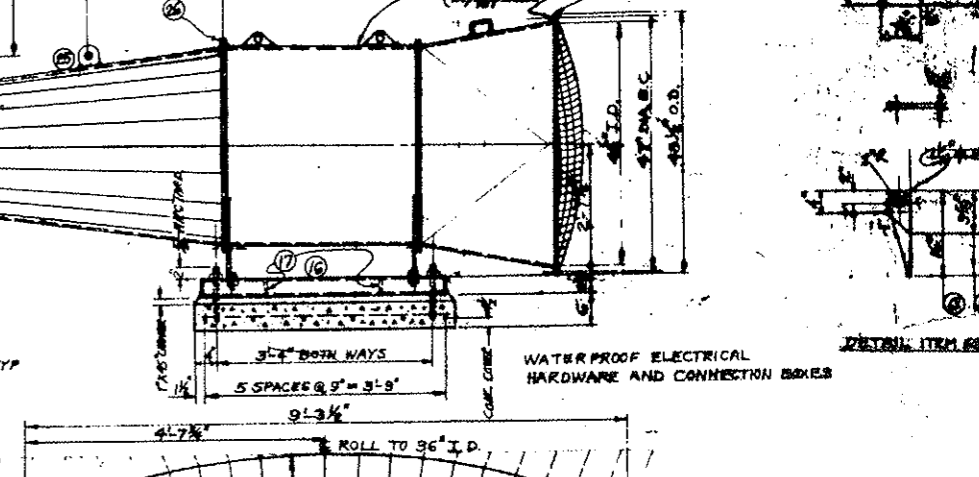
(20) 3/8" HOLES ON 38" B.C.
 (24) 3/8" HOLES ON 20" B.C.
 ALL CONNECTIONS BOLT FLAG TYPE WITH GASKET
 (8) 1/2" BOLTS REQ'D.



END ELEVATION



SIDE ELEVATION



ANGLE IRON FRAME

WEIGHT:
 PIPE MANIFOLD, FAN, TYPES DWT 480#
 CONCRETE FRM BASE 1850#
 TOTAL WEIGHT 2330# (2 1/2 TON)

WEIGHT:
 STEEL SHELL 8750#
 REFRACTORY M BOARD 37,600#
 TOTAL WEIGHT 48,350# (48 1/2 TON)

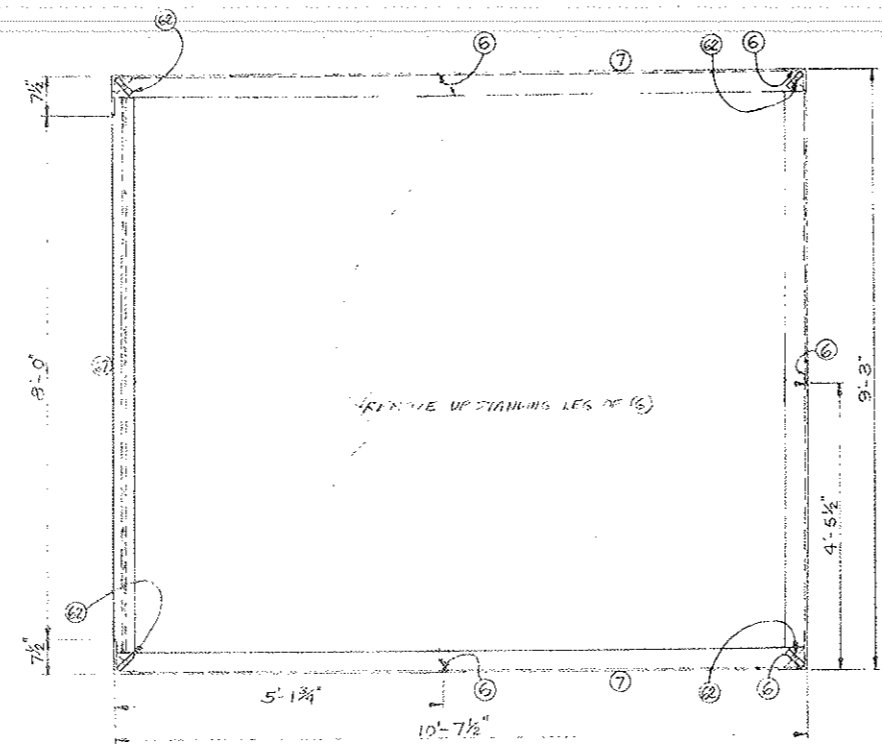
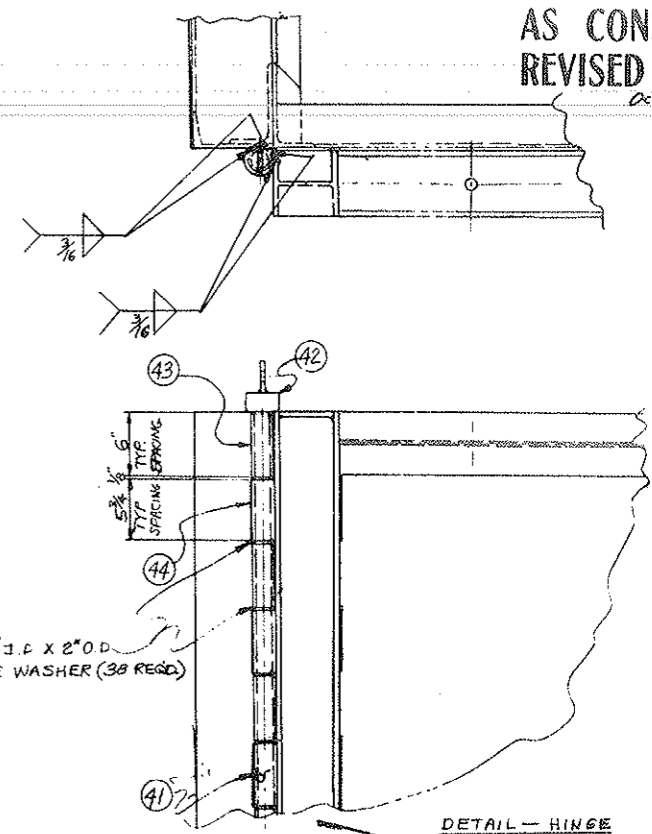
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)280	30 AX	326

STATE OF COLORADO
 DIVISION OF HIGHWAYS
 Prepared By
 COLORADO DIVISION OF HIGHWAYS
 AIR CURTAIN DESTRUCTOR

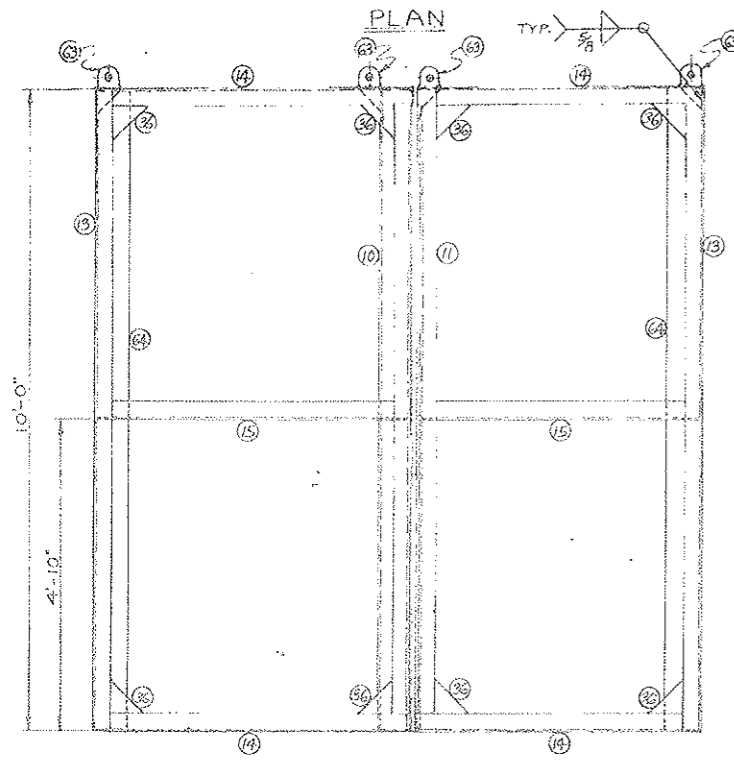
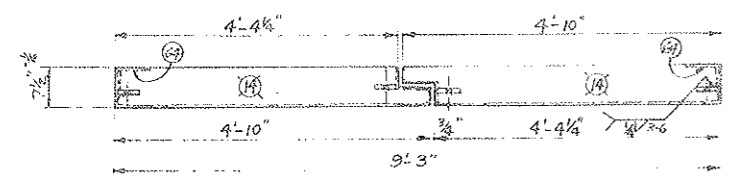
DATE 5-22-72 APPROVED BY [Signature] DRAWING NO. GA-4A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70-3(34)220	30-BX	326

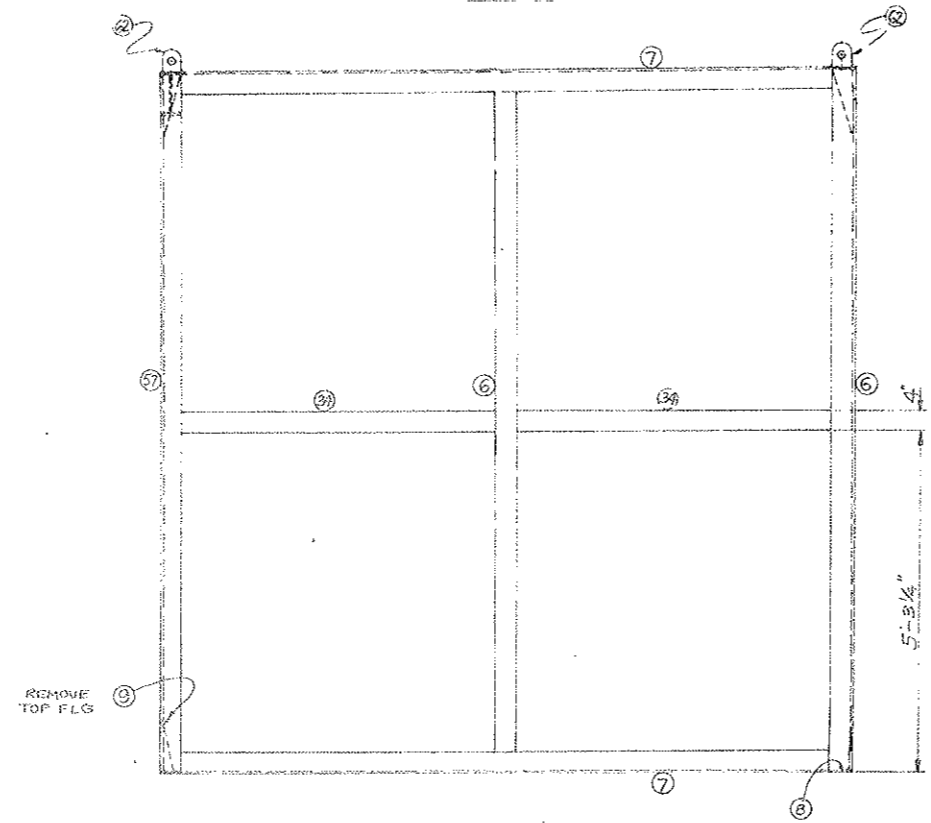
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1972



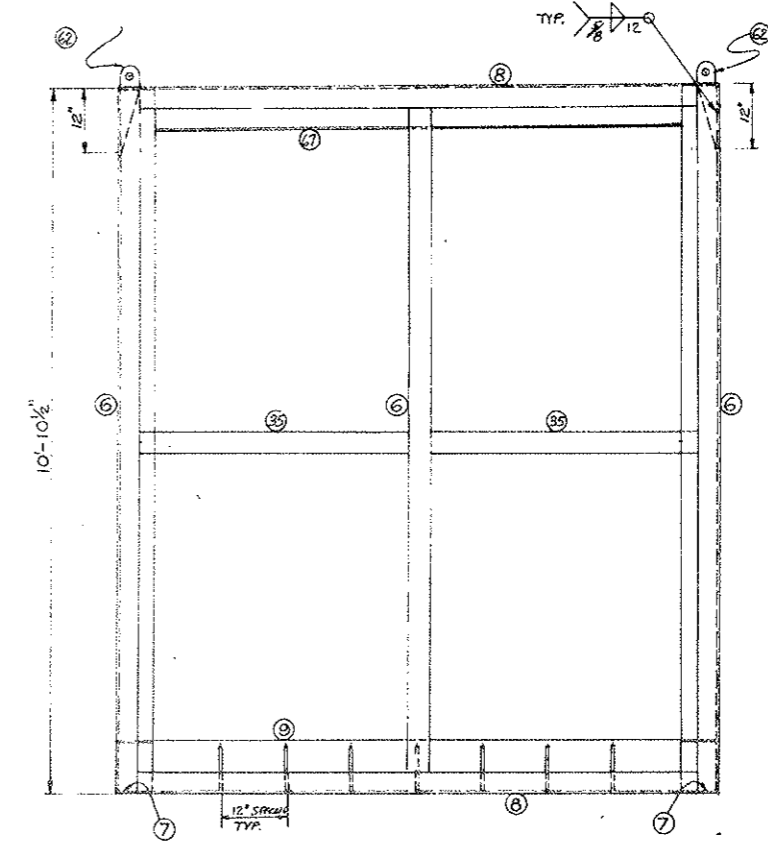
PLAN



DOOR FRAME
 FRONT ELEVATION



SIDE ELEVATION

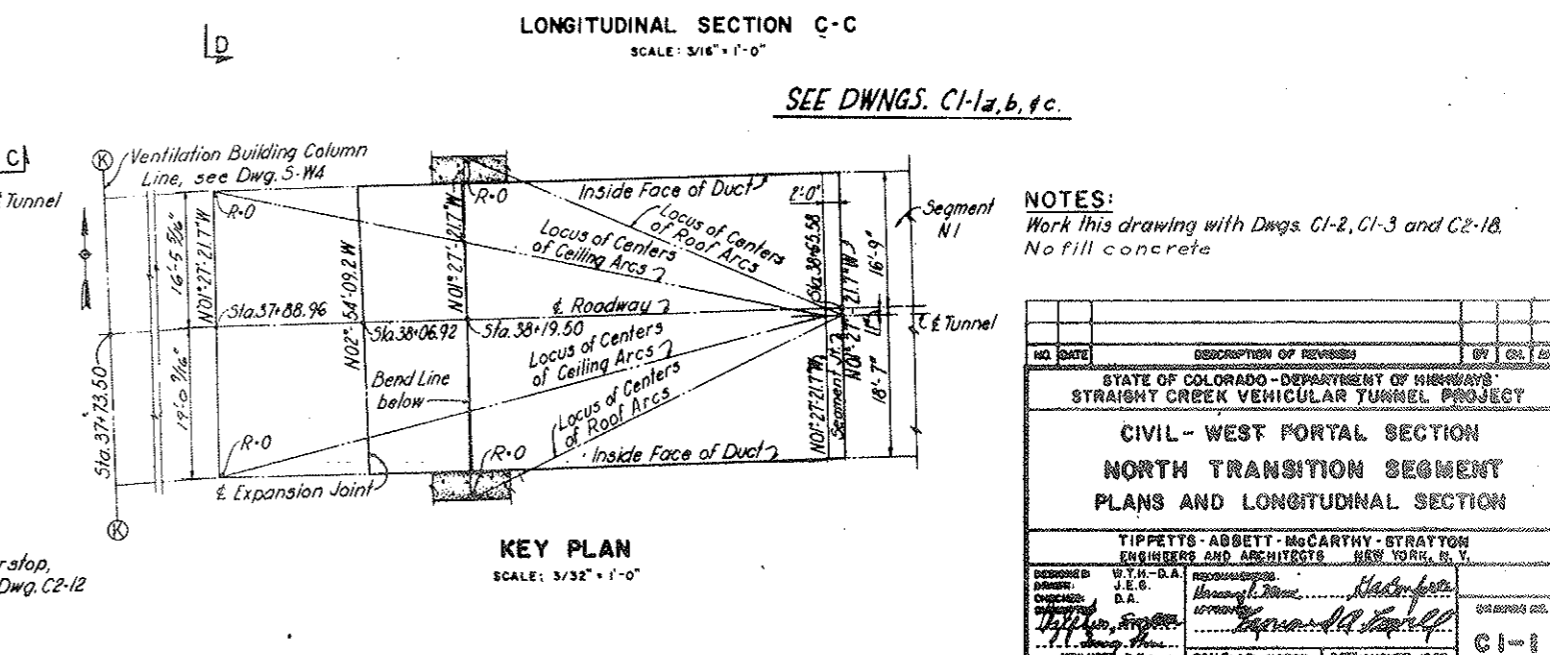
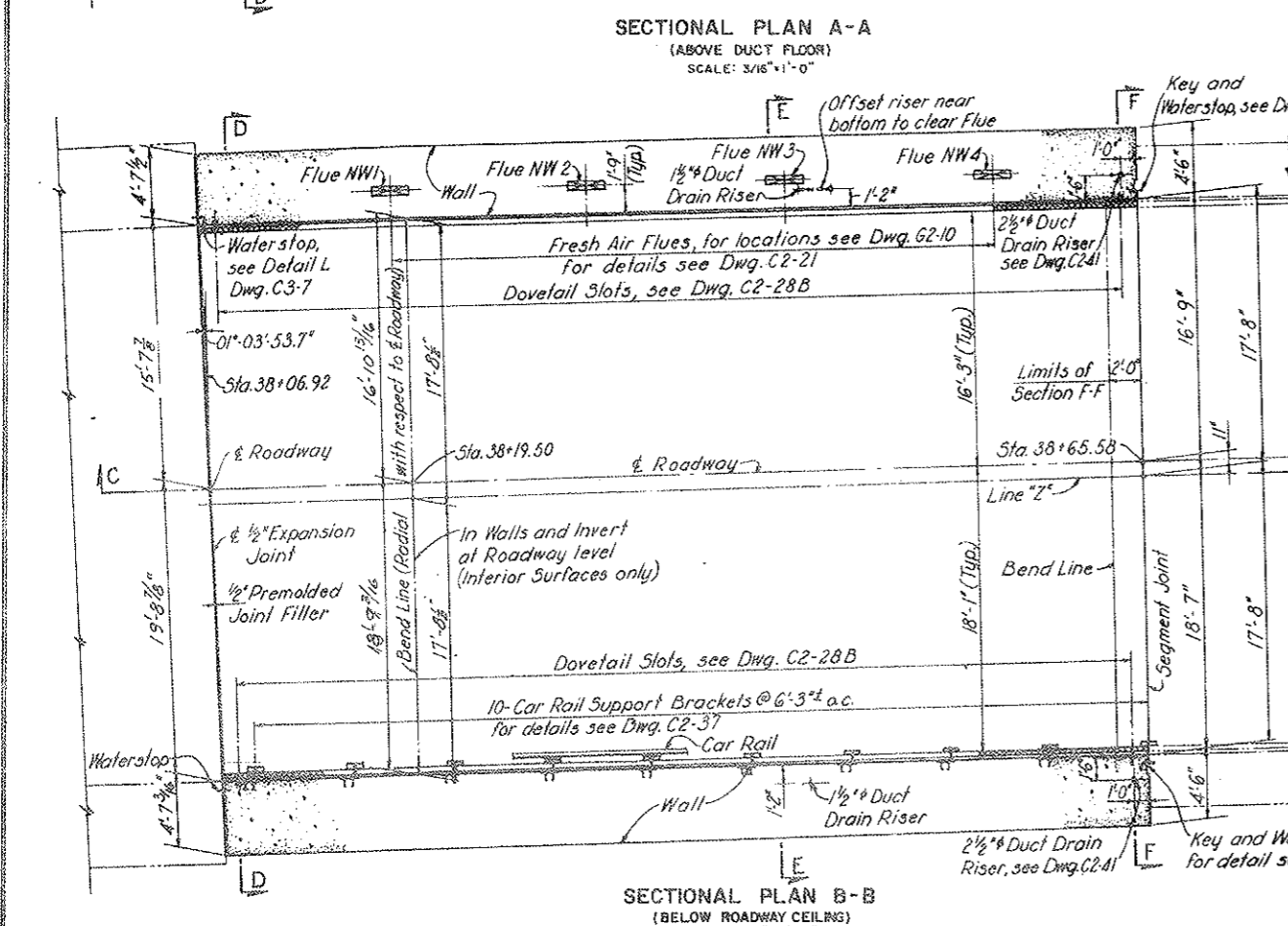
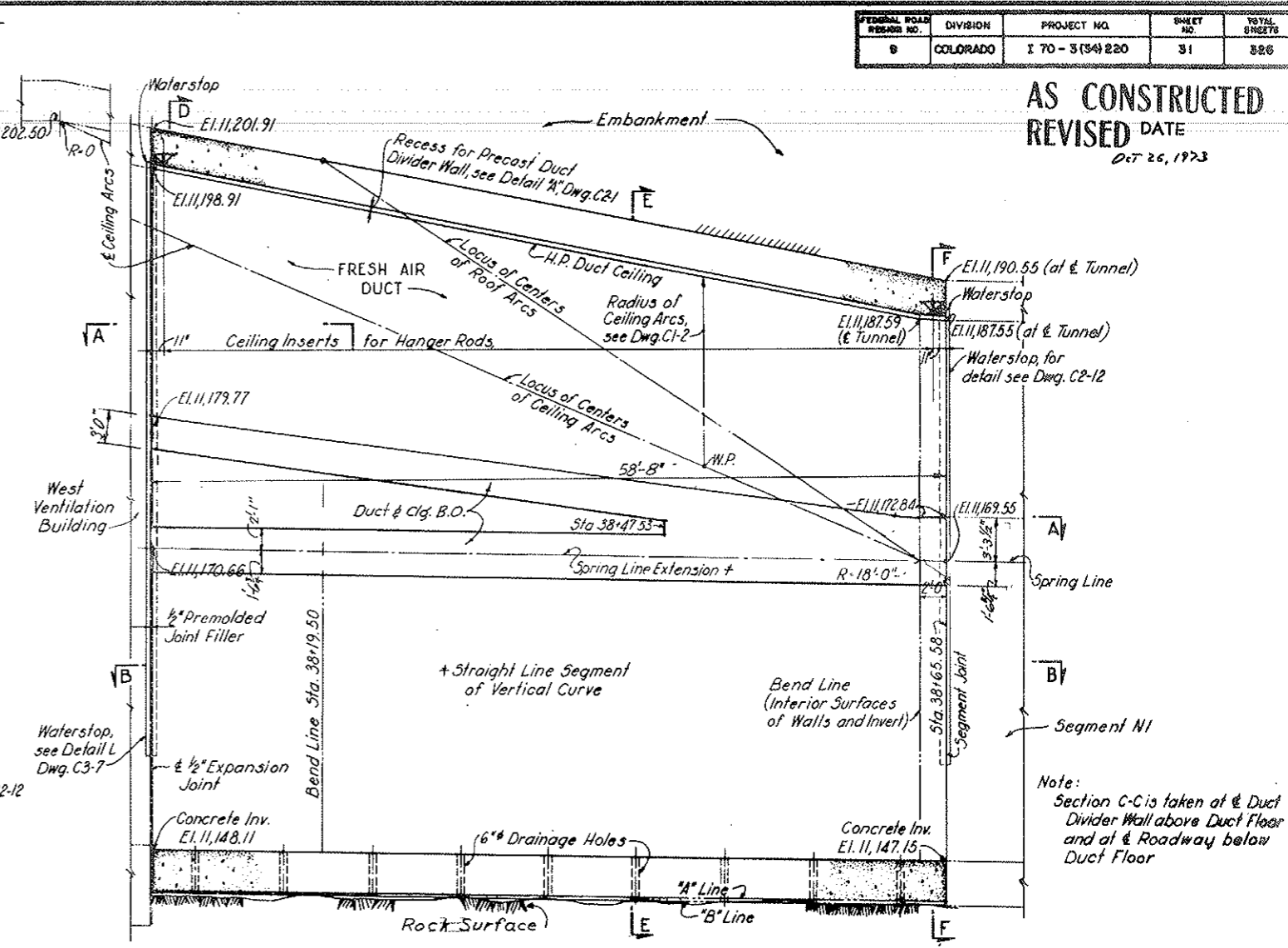
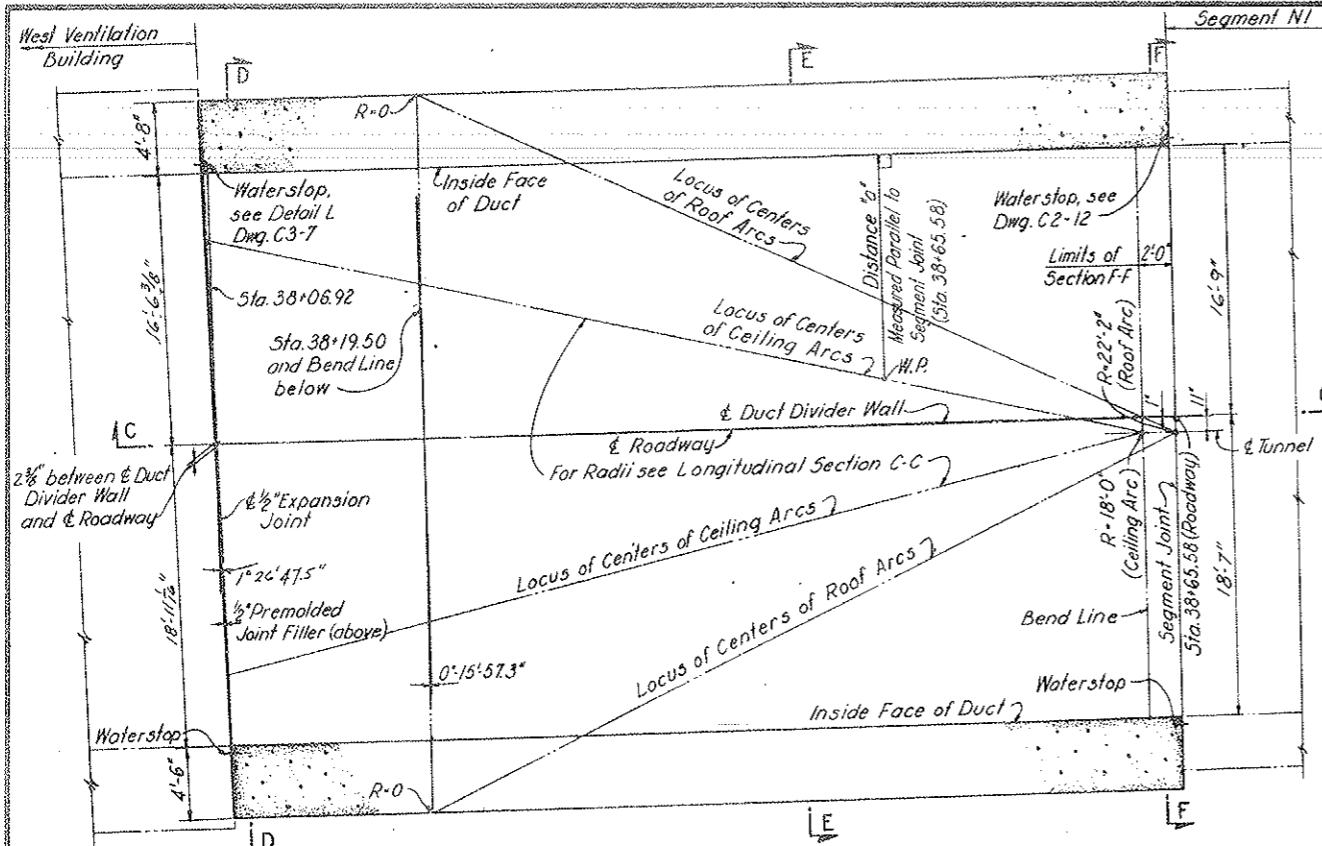


REAR ELEVATION

STATE OF COLORADO DIVISION OF HIGHWAYS		
PREPARED BY COLORADO DIVISION OF HIGHWAYS	DESIGNED BY J. L. ...	DATE 6-12-72
AIR CURTAIN DESTROYER ... ANGLE IRON FRAME AND DOOR FRAME ASSEMBLY		
DATE 6-7-72	APPROVED BY SCC-575a	PROJECT NO. G4-4B

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
8	COLORADO	I 70 - 5 (34) 220	31	886

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973

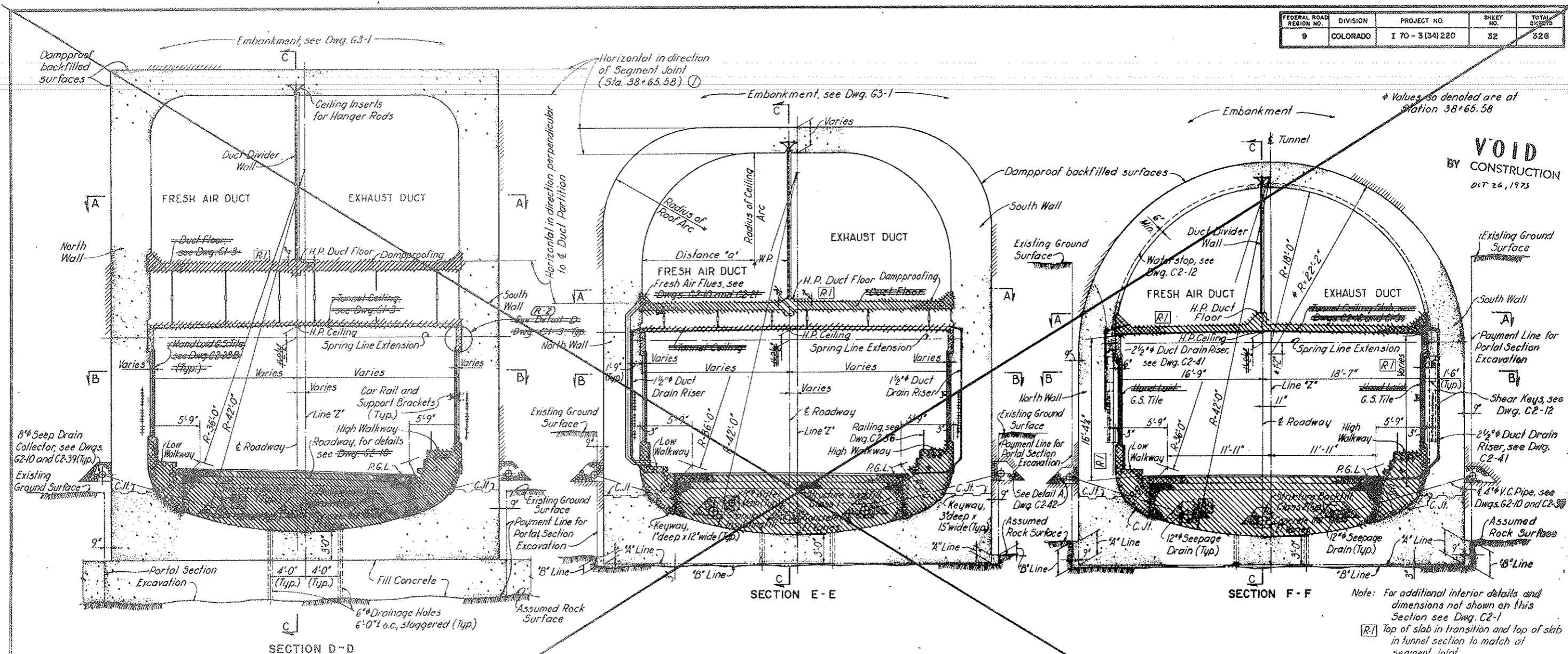


Note:
 Section C-C is taken at & Duct
 Divider Wall above Duct Floor
 and at & Roadway below
 Duct Floor

NOTES:
 Work this drawing with Dwg. C1-2, C1-3 and C2-18.
 No fill concrete

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION NORTH TRANSITION SEGMENT PLANS AND LONGITUDINAL SECTION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	W. T. H. - D. A.	RESPONSIBLE ENGINEER			
DRAWN BY	J. E. G.	CHECKED BY			
CHECKED BY		APPROVED BY			
SCALE AS NOTED DATE: AUGUST 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	32	526



VOID BY CONSTRUCTION
Oct 24, 1975

* Values so denoted are at Station 38+65.58

NOTE:
For Tunnel Drainage Location See Dwg. C2-38
For False & Duct Clg. Details See Dwg.
For Curb Details See Dwg.
For Wall Finish Details See Dwg.
For Roadway Details See Dwg.

NOTES:
For General Concrete Notes see Dwg. C2-11.
For alignment and profiles see Dwg. G2-3.
For steel reinforcement details see Dwg. S2-8.
Segment Joint and Expansion Joint to be set vertically.
Segment Joint in radial direction relative to & Roadway.
Line "Z" bisects the distance between the tunnel walls below roadway ceiling.
Concrete Invert to be constructed on a straight line vertically to the elevations given at each end of the Transition Segment.
Flues to be set in a direction perpendicular to the Spring Line Extension. See Detail A on Dwg. G2-10.
For Duct Divider Wall details see Dwg. C2-18.
For Seepage Drain System see Dwg. C2-38 and C2-39.
~~For Water Supply System see Dwg. C2-45 and C2-46.~~
~~For details of sand bedding and structure backfill see Dwg. C2-19.~~
~~For seepage drains and water main details see Dwg. C2-19.~~
~~For details of water main insulating fill see Dwg. C2-19.~~
Work this drawing with Dwg. C1-1, C1-3 and C2-18.

(R-2) Rev. 7-3-68 C.D.H. Add ref. to Detail D
(R-1) Rev. 4-1-68 Deleted Concrete Protective Course, added Dimension and Note in Accordance with CDH W.O. #14153.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Note added on Sections D-D E-E F-F	E.G.P.	V.A.Z.	S.H.R.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**CIVIL - WEST PORTAL SECTION
NORTH TRANSITION SEGMENT
CROSS SECTIONS**

TIPPETTS-ABBETT-McCARTHY-STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

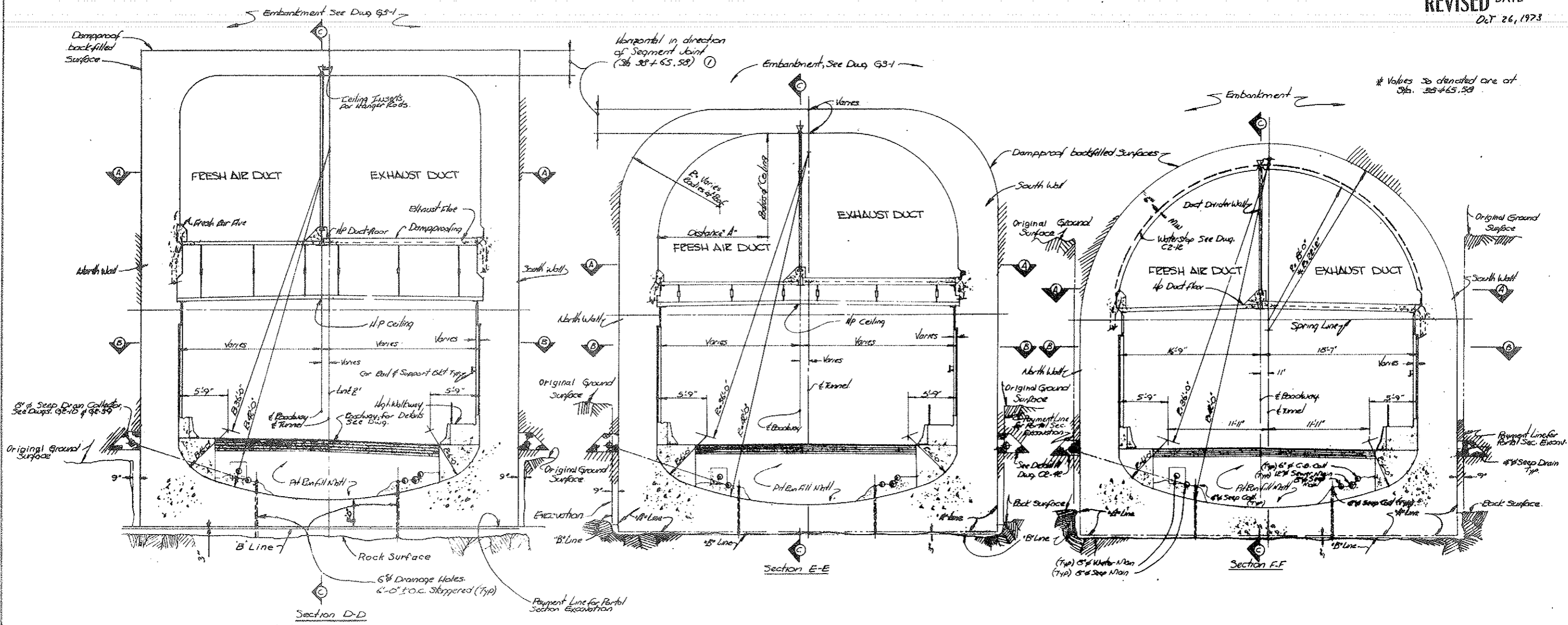
DESIGNED: W.T.M.-D.A.	RECOMMENDED: J.E.G.	DATE: AUGUST 1967
DRAWN: J.E.G.	CHECKED: J.E.G.	
APPROVED: J.E.G.	APPROVED: J.E.G.	

SCALE: 3/16" = 1'-0" SHEET NO. C1-2

VOID See Dwg. C1-2A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	32 AX	326

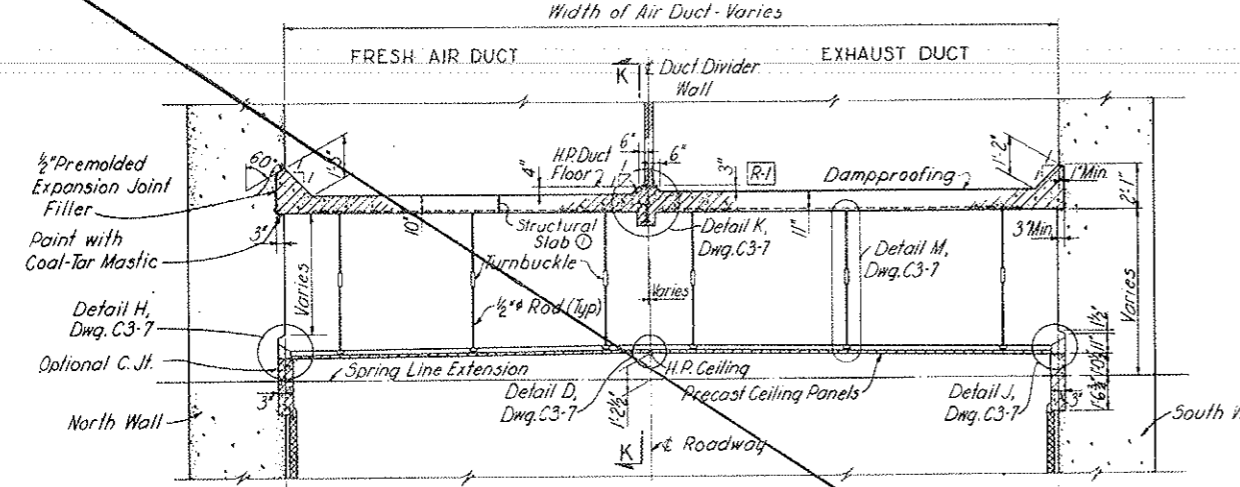
AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



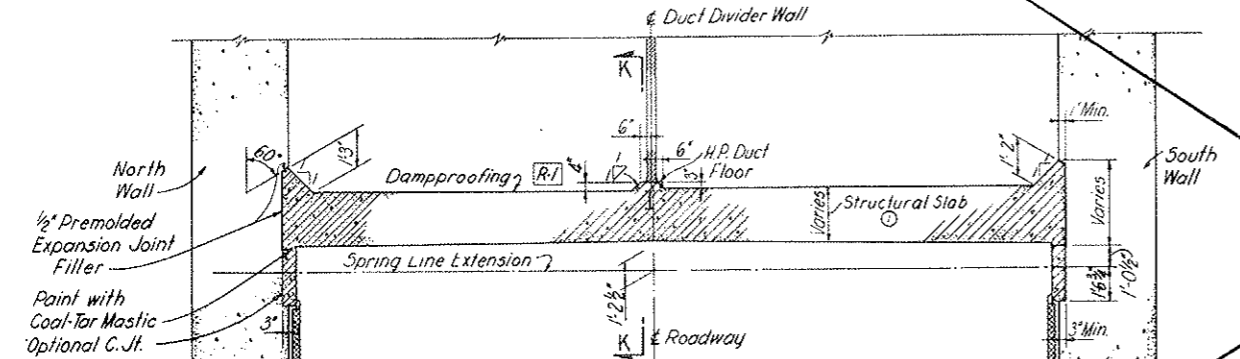
STATE OF COLORADO			
DIVISION OF HIGHWAYS			
SCALE: 3/16" = 1'-0"	APPROVED BY:	DRAWN BY:	
DATE:	REVISION:	REVISION:	
NORTH TRANSITION-WEST PORTAL			
DRAWINGS NUMBER: CI-2A			

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	33	326

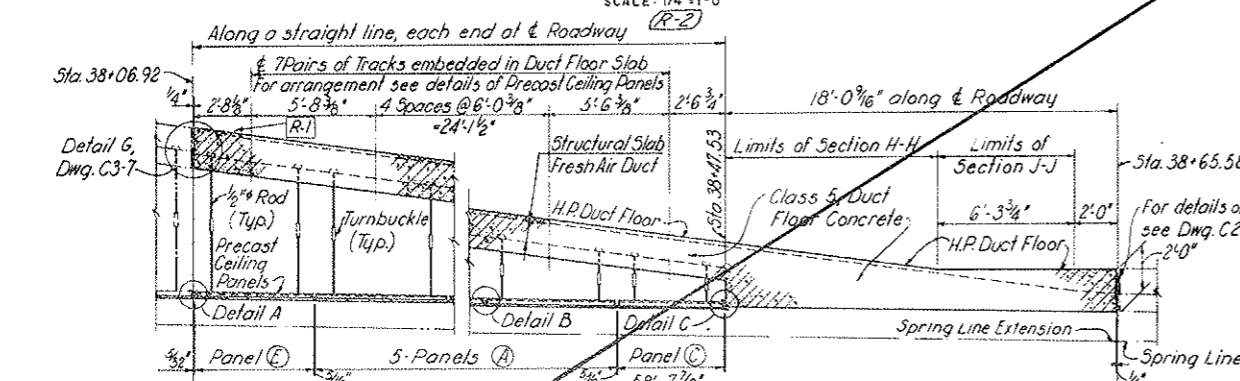
(R-2) Rev 7-3-68 C.D.H. Deleted HL Ceiling & Wall Tile



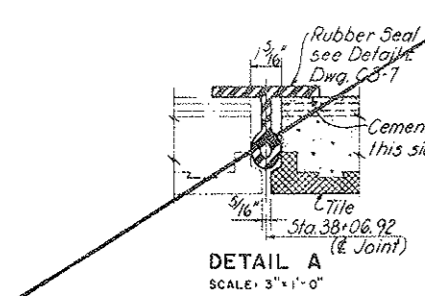
SECTION G-G
SCALE: 1/4" = 1'-0"
(R-2)



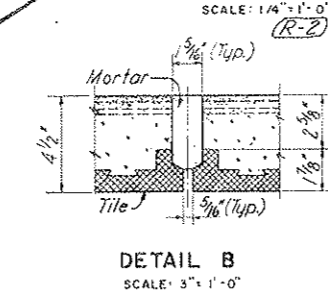
SECTION H-H
SCALE: 1/4" = 1'-0"
(R-2)



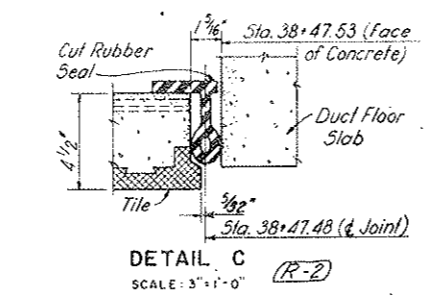
SECTION K-K
SCALE: 1/4" = 1'-0"
(R-2)



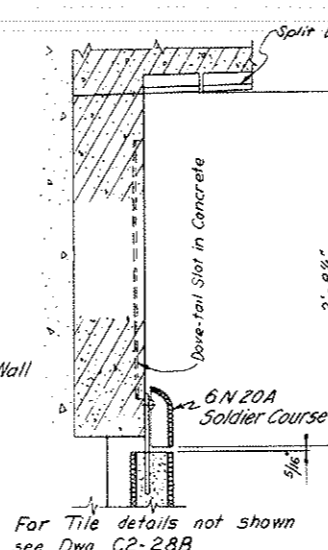
DETAIL A
SCALE: 3" = 1'-0"



DETAIL B
SCALE: 3" = 1'-0"

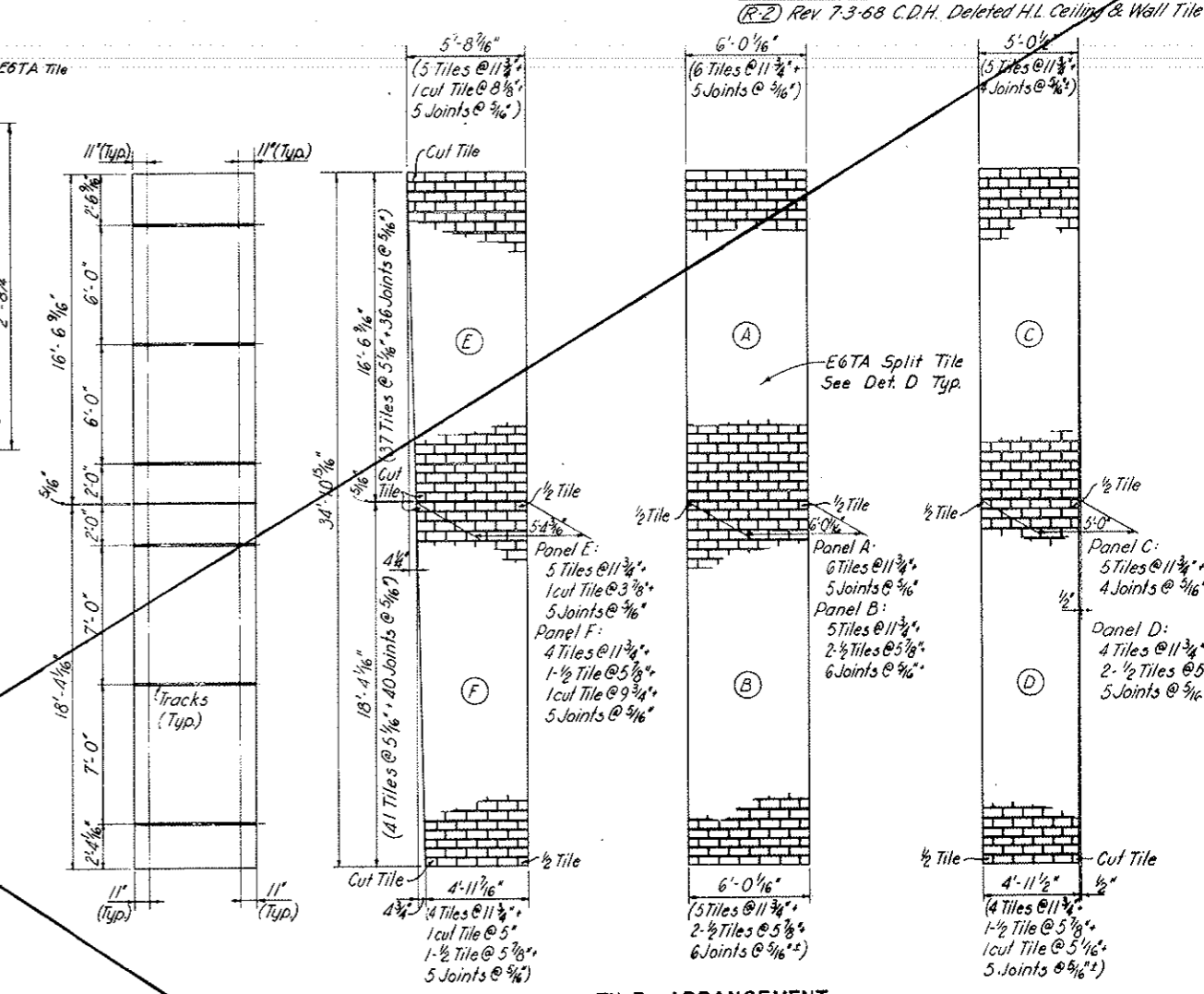


DETAIL C
SCALE: 3" = 1'-0"
(R-2)



DETAIL D
SCALE: 1/2" = 1'-0"
(R-2)

For Tile details not shown see Dwg. C2-28B

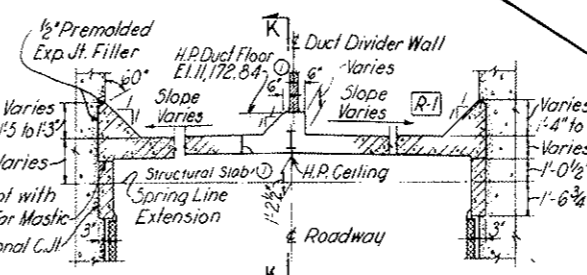


TOP PLAN

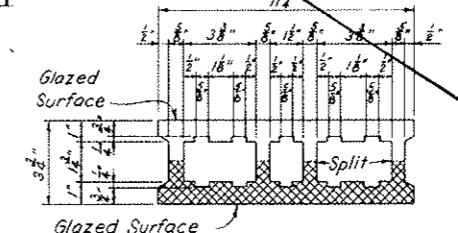
TILE ARRANGEMENT

PRECAST CEILING PANELS
SCALE: 1/4" = 1'-0"

VOID
BY CONSTRUCTION
OCT 26, 1973



SECTION J-J
SCALE: 1/4" = 1'-0"
(R-2)



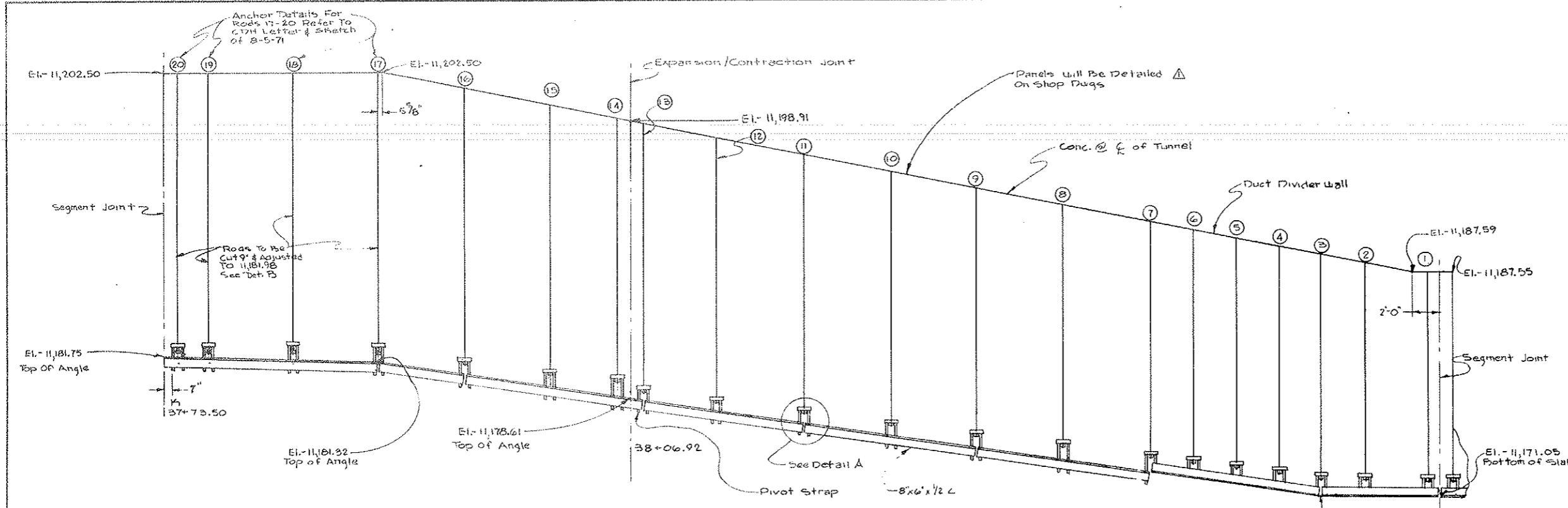
E6TA TILE FOR CEILING AND WALL
SCALE: 3" = 1'-0"
(R-1)

NOTES:
For General Concrete Notes see Dwg. C2-11.
For additional details and notes see Dwg. C3-7. (D)
Ceiling Tile Color shall be White.
Work this drawing with Dwg. C1-1, C1-2 and C2-18.
(R-1) Rev. 4-1-68 Deleted Concrete Protective Course and added Dimension in Accordance with CDH W.O. #14153.

(1) 1/16" Added information Sections G-G, H-H, J-J. Note revised NO. DATE DESCRIPTION OF REVISION BY CH. APP.	
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION NORTH TRANSITION SEGMENT MISCELLANEOUS DETAILS	
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.	
DESIGNED: O. A. - A. Z. E. DRAWN: J. E. G. CHECKED: W. T. H. APPROVED: [Signature]	RECOMMENDED: [Signature] APPROVED: [Signature]
DRAWING NO. C1-3	SCALE: AS NOTED DATE: AUGUST 1967

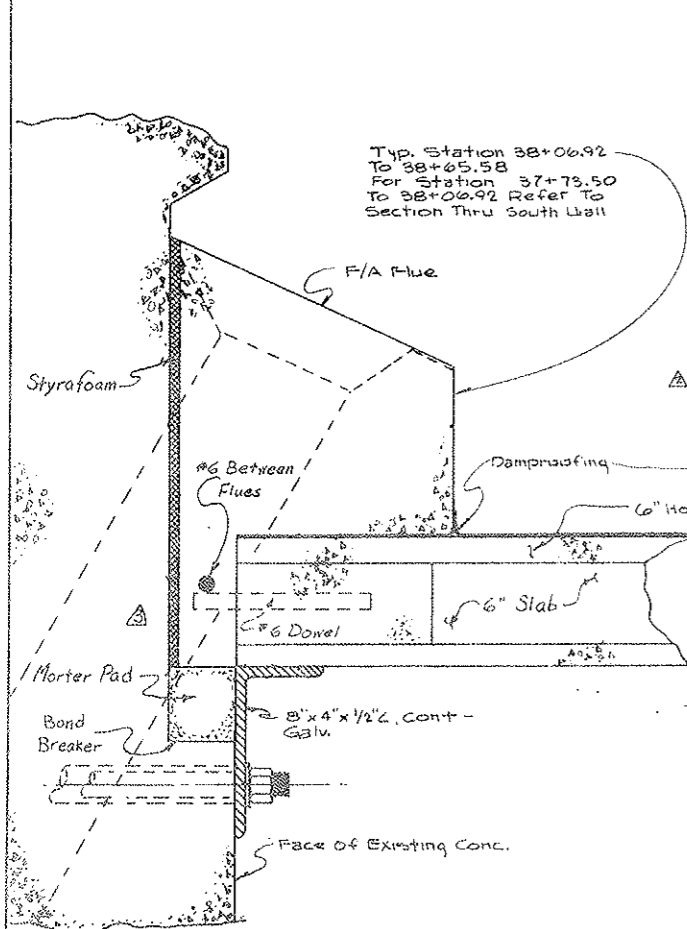
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-34220	33 AX	326

AS CONSTRUCTED
REVISED DATE
 Oct 26, 1973

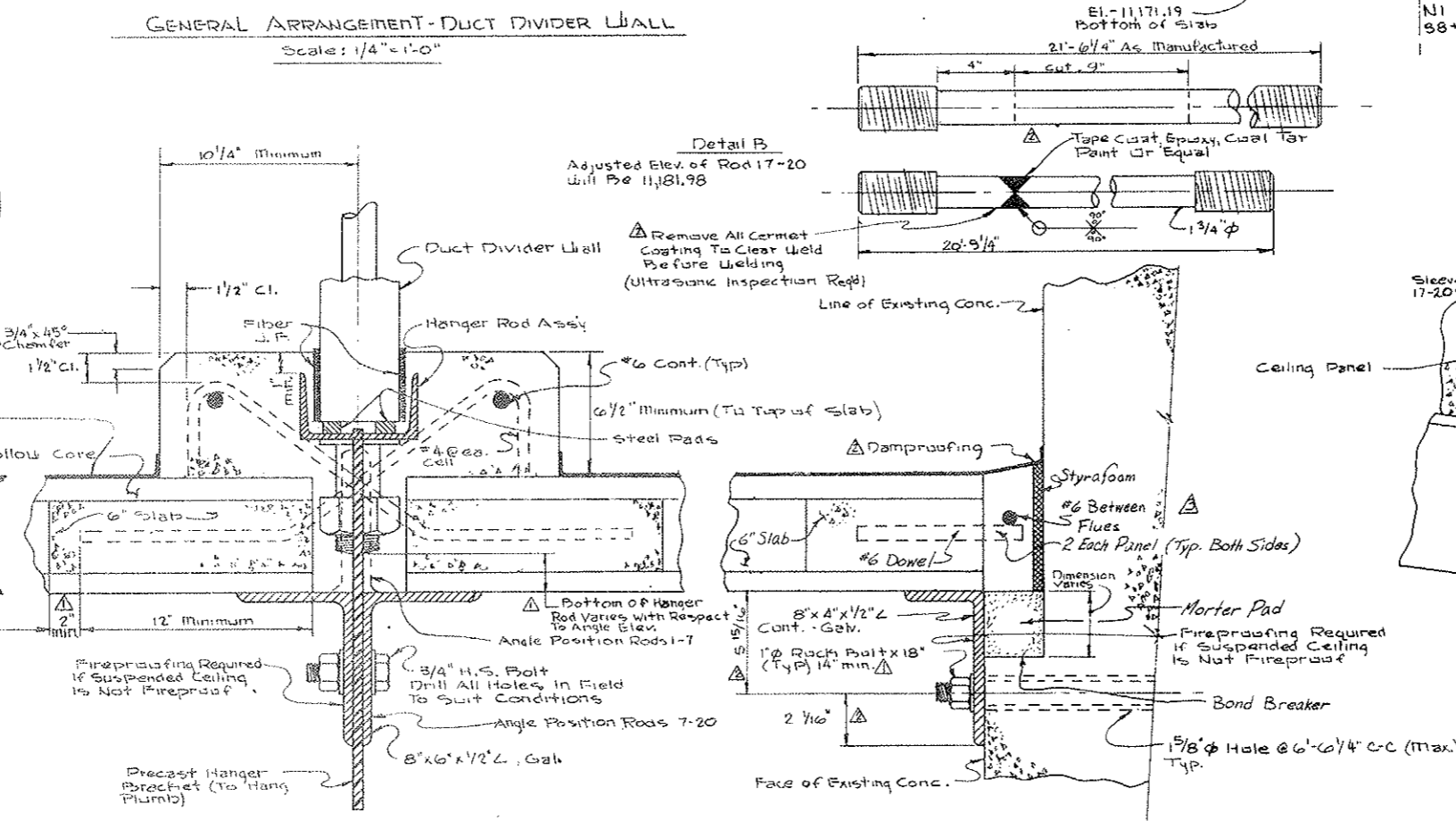


* Hanger Rod	Elevation to Bot of Rod (As Built)	Elevation to Bottom of Ceiling (Theoretical)
1	11,172.15	11,171.00
2	11,172.29	11,171.13
3	11,172.51	11,171.19
4	11,172.77	11,171.25
5	11,173.15	11,172.12
6	11,173.61	11,172.58
7	11,173.94	11,173.04
8	11,174.84	11,173.94
9	11,175.69	11,174.90
10	11,176.54	11,175.85
11	11,177.46	11,176.75
12	11,178.28	11,177.68
13	11,179.01	11,178.47
14	11,179.63	11,179.14
15	11,180.26	11,180.40
16	11,181.01	11,181.40
17	11,181.98	11,181.97
18	11,181.98	11,181.49
19	11,181.98	11,181.66
20	11,181.98	11,181.75

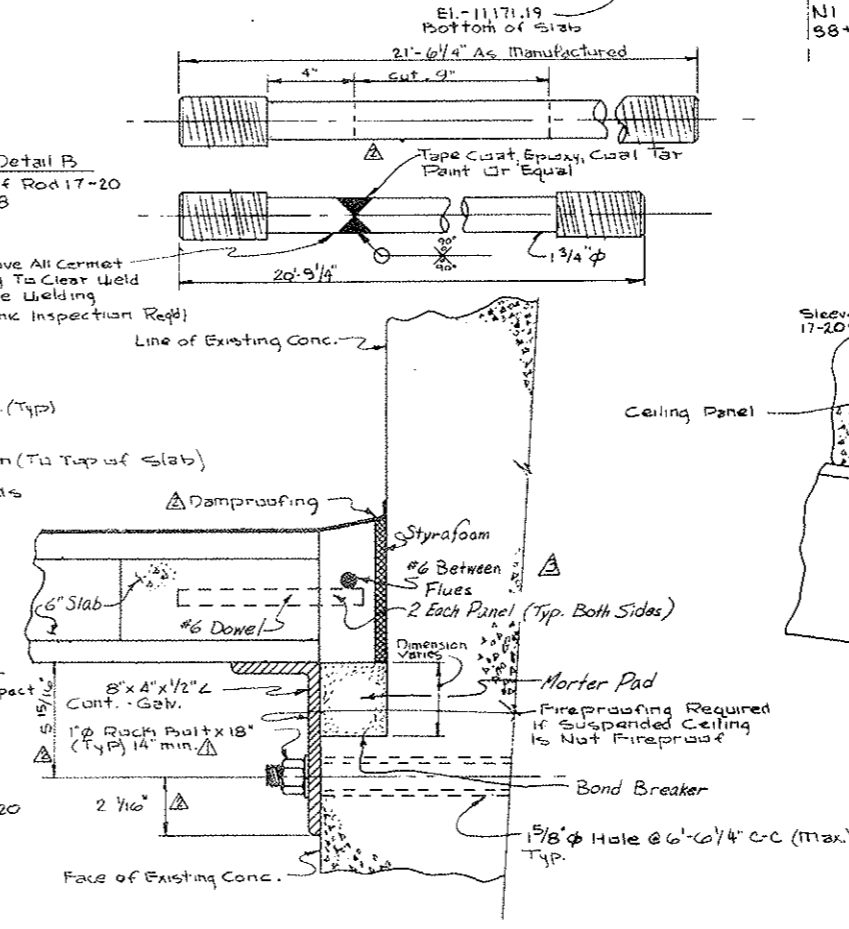
* Rods 1 thru 16 As Surveyed, Rods 17 thru 20 As Calculated (See Detail B)



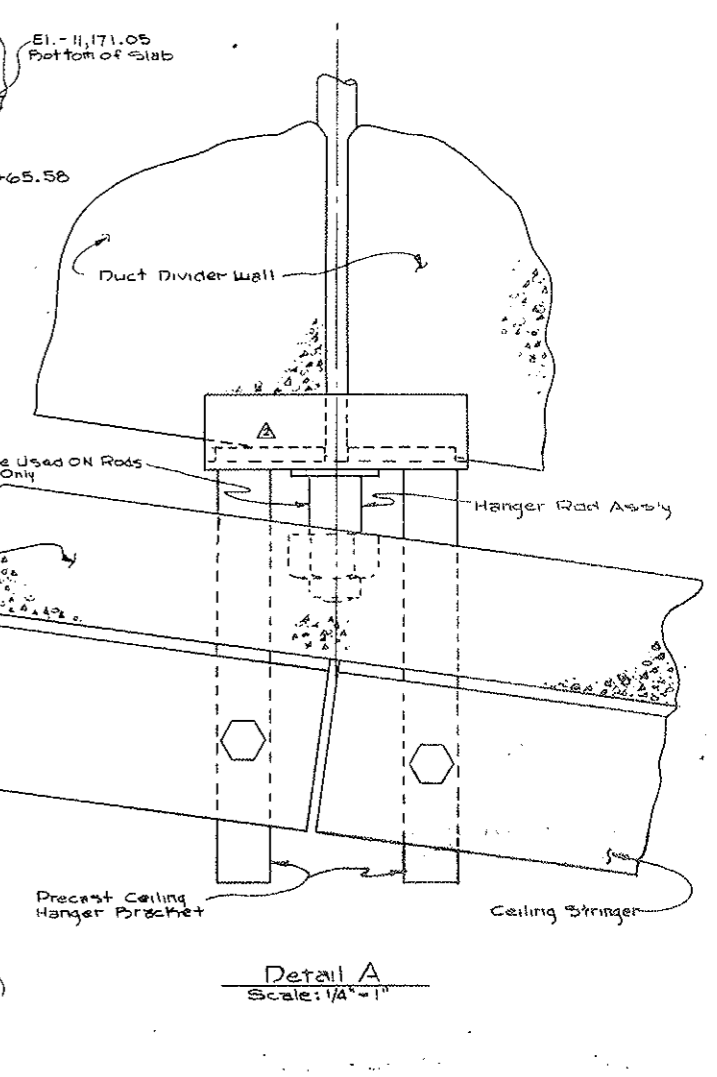
Section Thru North Wall
 Scale: 1/4" = 1'



Section Thru Ceiling Center Support - Looking East
 Scale: 1/4" = 1'



Section Thru South Wall
 Scale: 1/4" = 1'

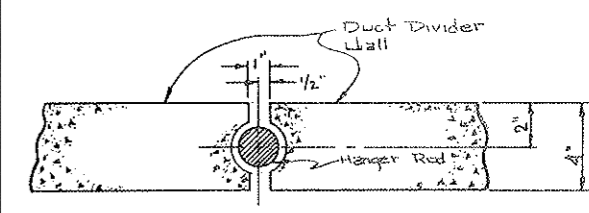
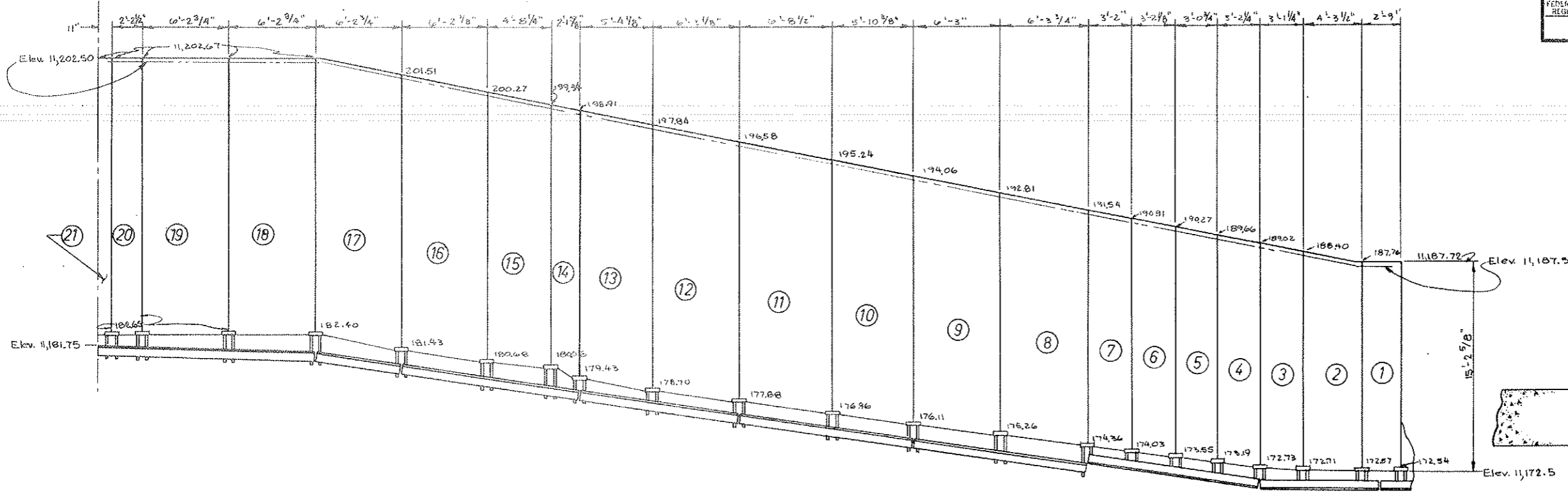


Detail A
 Scale: 1/4" = 1'

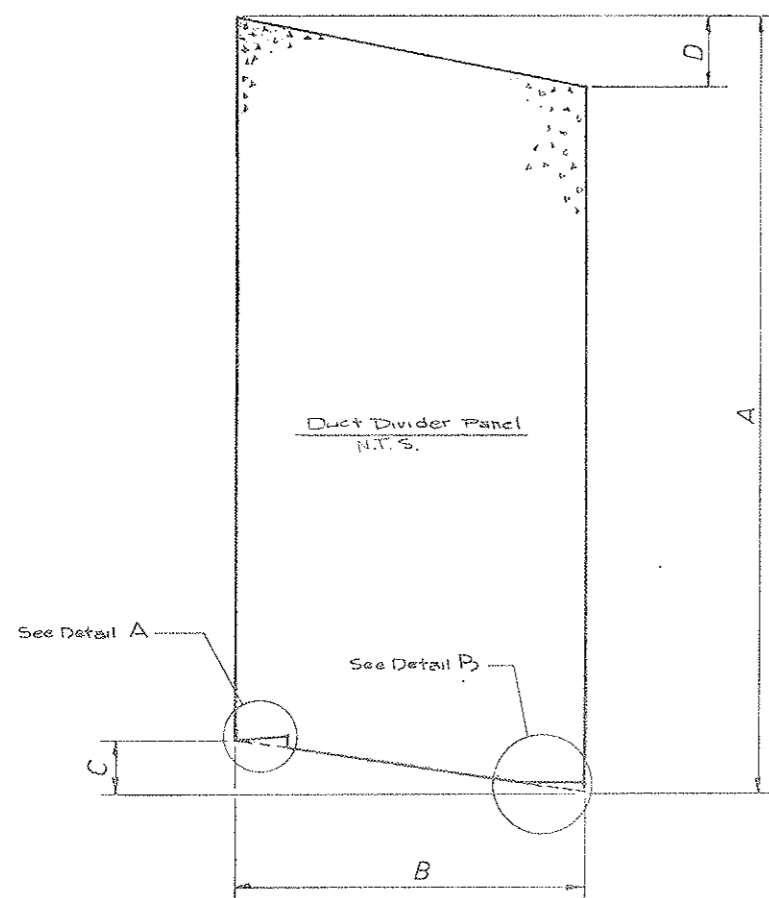
STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By	SCALE	DATE	DRAWN BY
STRAIGHT CREEK CONSTRS	Noted		
CEILING DUCT DIVIDER WALL & STRINGER ASSY IN N.W. TRANSITION			
DATE	APPROVED BY DOH, Date	BY	DRAWING NUMBER
12-7-71	By D.S., Date 5-8-72	As: SCC-453	C1-3A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TITLE SHEETS
9	COLORADO	170-3(34)229	33-BX	326

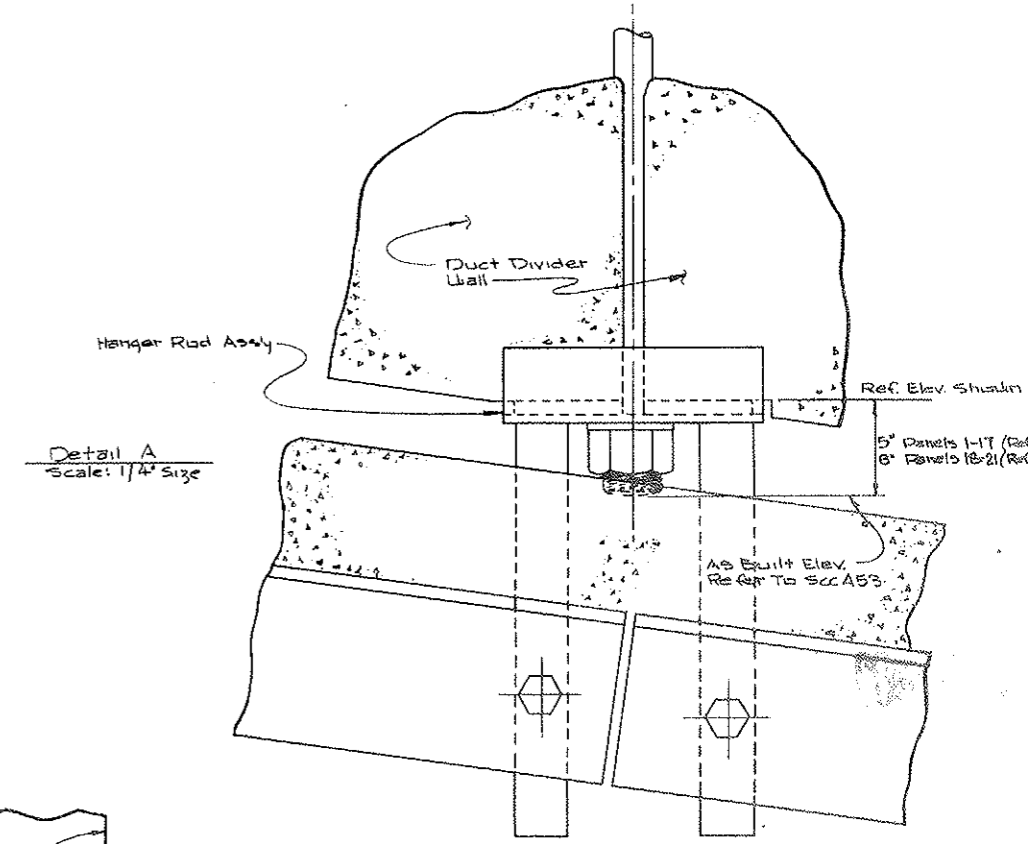
AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



Plan View
 Scale: 1/4" = 1'-0"

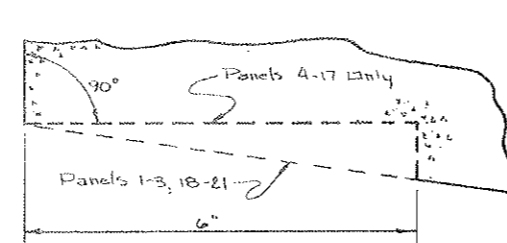


Panel Number	Duct Divider Wall Dimensions			
	A	B	C	D
1	15'-2 5/8"	2'-8"	3/8"	4 1/2"
2	15'-10"	4'-2 1/2"	1 5/8"	7 5/8"
3	16'-3 3/4"	3'-0 1/4"	1/4"	7 1/2"
4	17'-0"	3'-1 1/4"	6 1/4"	7 3/8"
5	17'-1 3/4"	2'-11 3/4"	5 1/8"	7 3/8"
6	17'-5 1/8"	3'-1 1/8"	6 1/2"	7 3/8"
7	17'-6 7/8"	3'-1"	4 3/4"	7 1/2"
8	18'-0 1/4"	6'-2 3/4"	11 3/8"	11'-3 1/4"
9	18'-10 3/8"	6'-2"	11"	11'-3"
10	19'-2 3/8"	5'-9 3/8"	11"	11'-2 1/8"
11	19'-8 1/4"	6'-7 1/2"	11 7/8"	11'-4 1/8"
12	20'-0 3/4"	6'-2 1/8"	10 5/8"	11'-3 1/8"
13	20'-3 3/8"	5'-3 1/8"	9 3/8"	11'-0 1/8"
14	20'-1 1/4"	2'-0 3/8"	8 3/8"	5 1/8"
15	20'-3 1/4"	4'-7 1/4"	8 1/4"	11 1/8"
16	20'-10 3/4"	6'-1 1/8"	9 3/4"	11'-2 1/8"
17	21'-3 5/8"	6'-1 3/4"	11'-0 1/2"	11'-2"
18	20'-3 1/4"	6'-1 3/4"	3"	0"
19	20'-0 1/4"	6'-1 3/4"	0"	0"
20	20'-0 1/4"	2'-1 1/2"	0"	0"
21	20'-0 1/4"	0'-10 1/2"	0"	0"

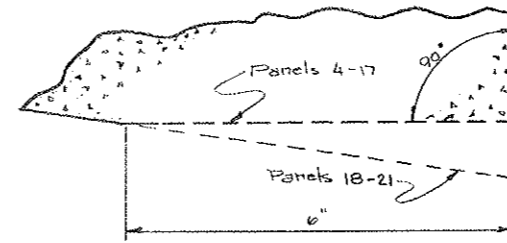


Detail A
 Scale: 1/4" = 1'-0"

- Notes:**
1. Prestressed Strands & Mesh To Be Detailed By Panel Supplier.
 2. Lifting Inserts To Be Detailed Later.
 3. The Face Shown In This Drawing Is The Exhaust Side & Is To Be The Smooth Side.
 4. Concrete To Be 5000 psi Lt. Wt. Concrete.



Detail C
 Scale: 1/2" = 1'-0"

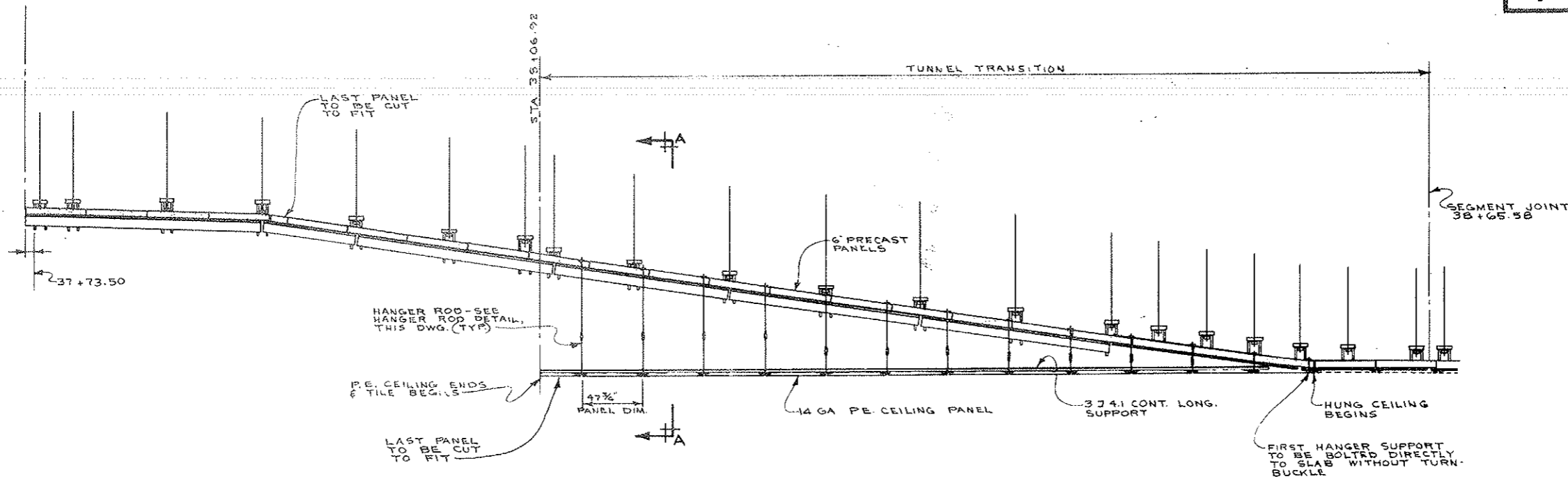


Detail B
 Scale: 1/2" = 1'-0"

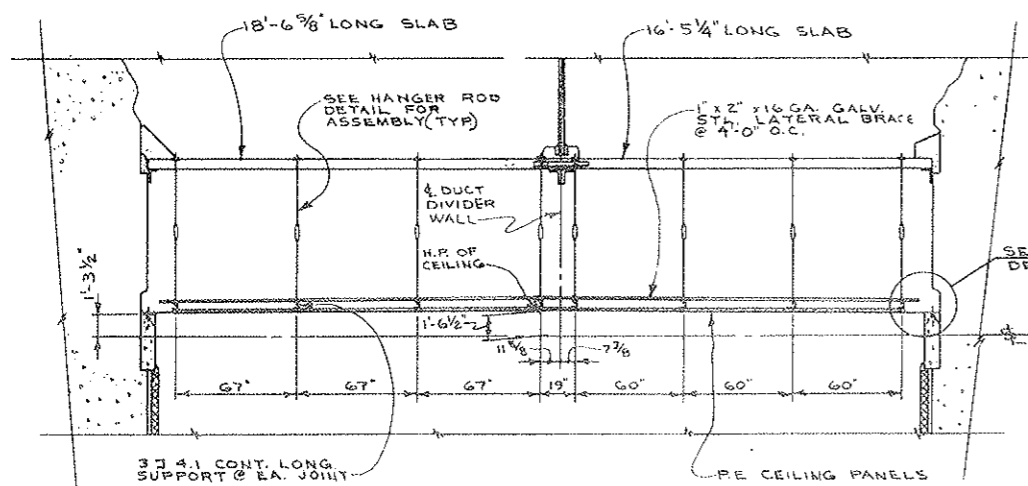
STATE OF COLORADO			
DIVISION OF HIGHWAYS			
DATE	APPROVED BY	DATE	APPROVED BY
2-17-72	B.H.D.S.	3-8-72	AS: SCC484
PROJECT NO. 170-3(34)229		SHEET NO. 33-BX	
TITLE SHEETS 326		DRAWN BY: [Signature]	
PRESTRESSED DUCT DIVIDER WALL NORTH WEST TRANSITION			
BY: D.S.		C1-3B	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	33 CX	326

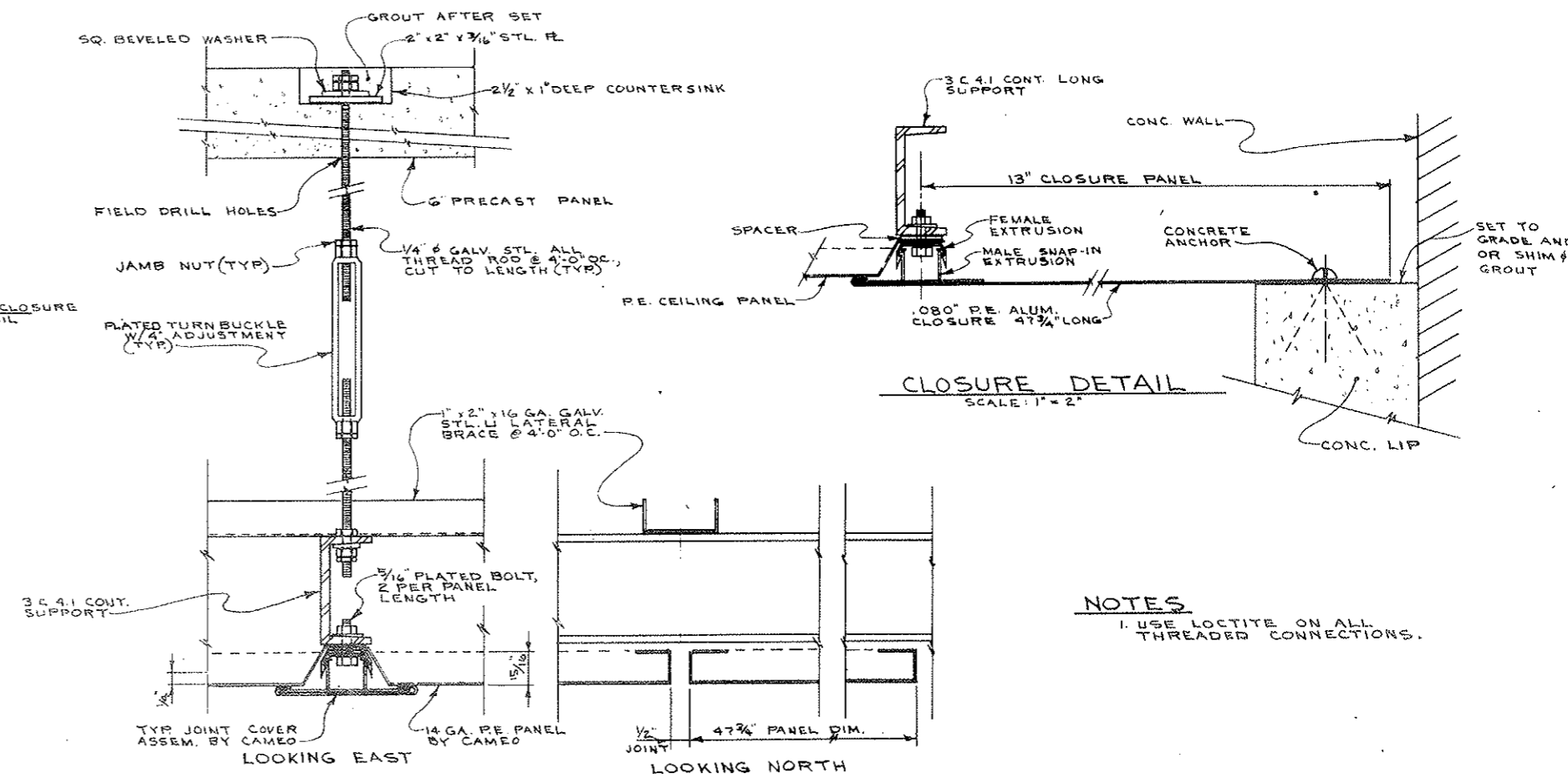
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



LONGITUDINAL TRANSITION SECTION LOOKING NORTH
 SCALE: 1/4" = 1'-0"



SECTION A-A
 SCALE: 1/4" = 1'-0"



HANGER ROD DETAIL
 SCALE: 1" = 2'

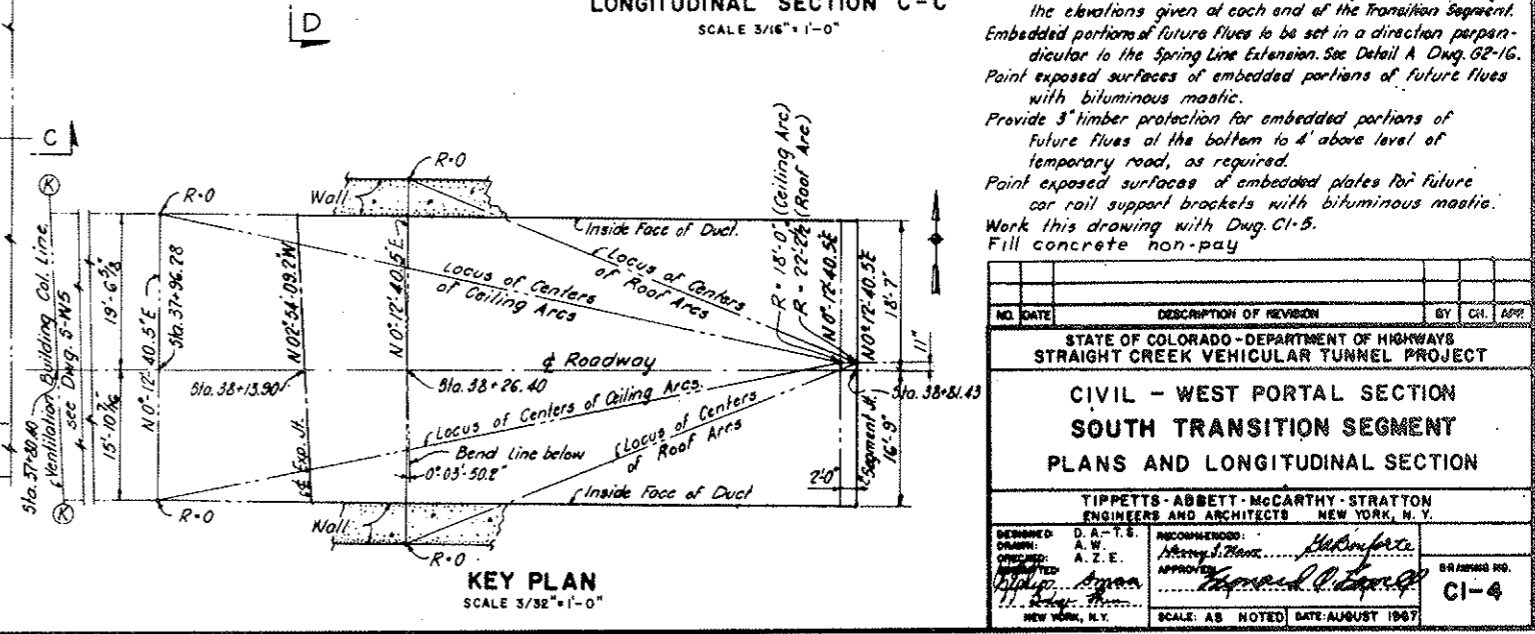
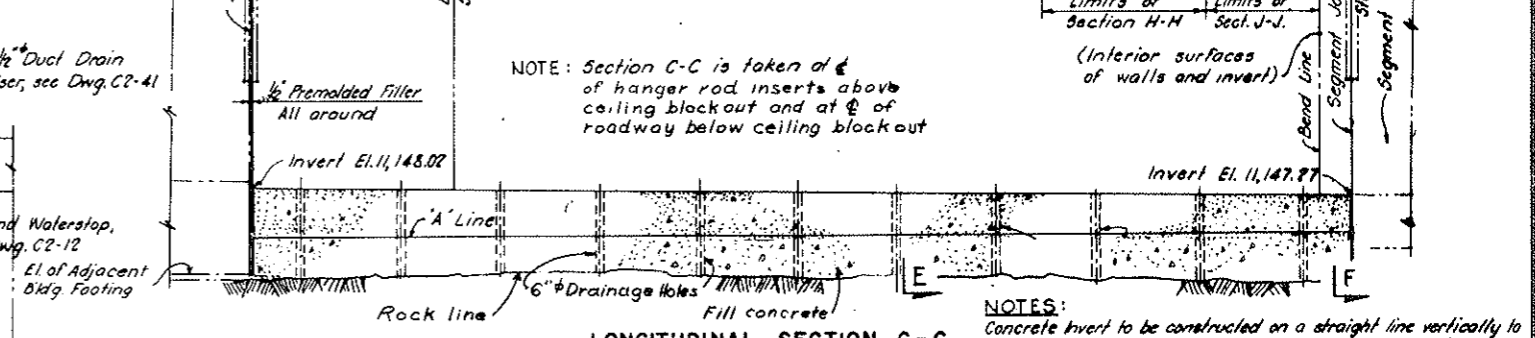
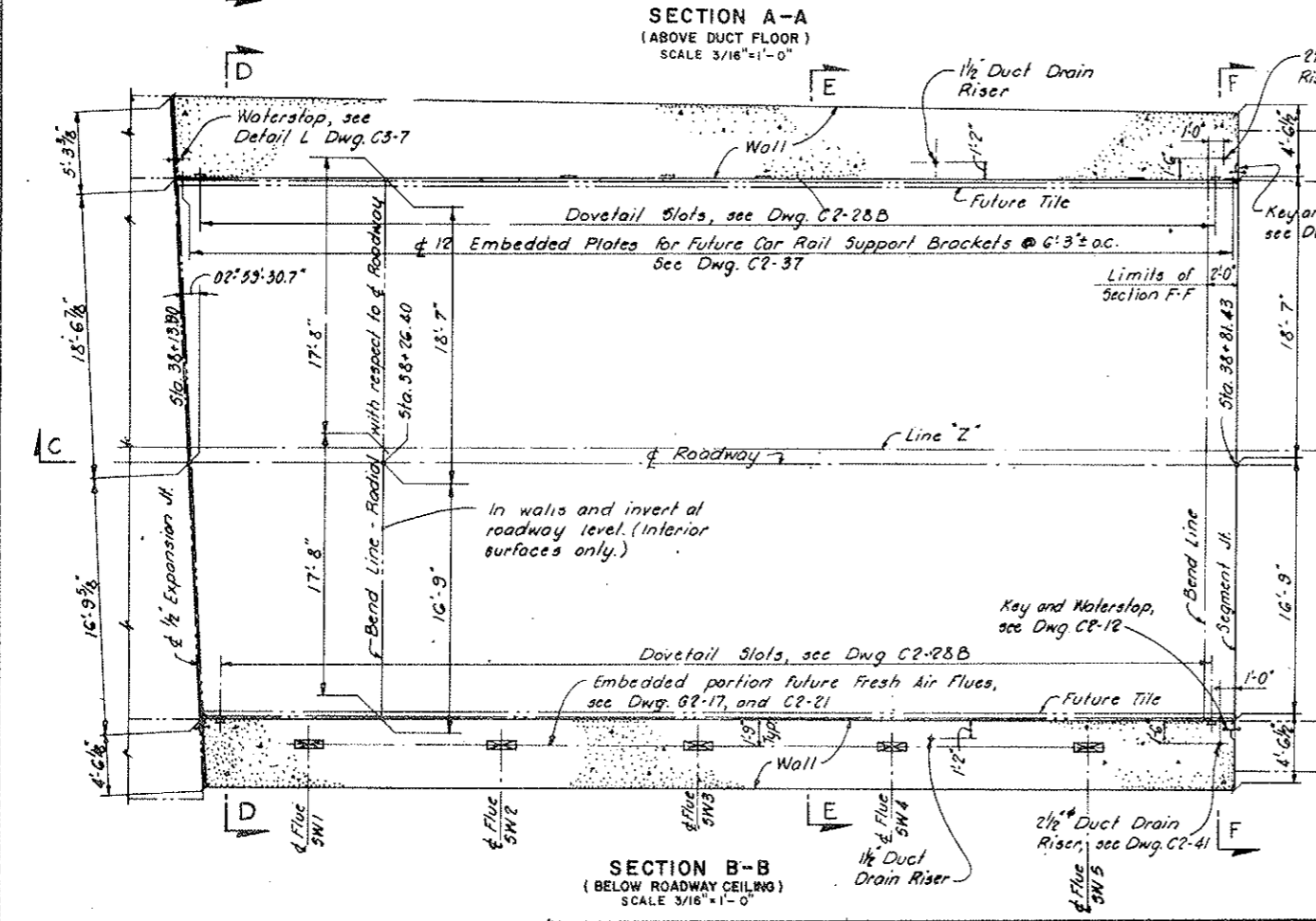
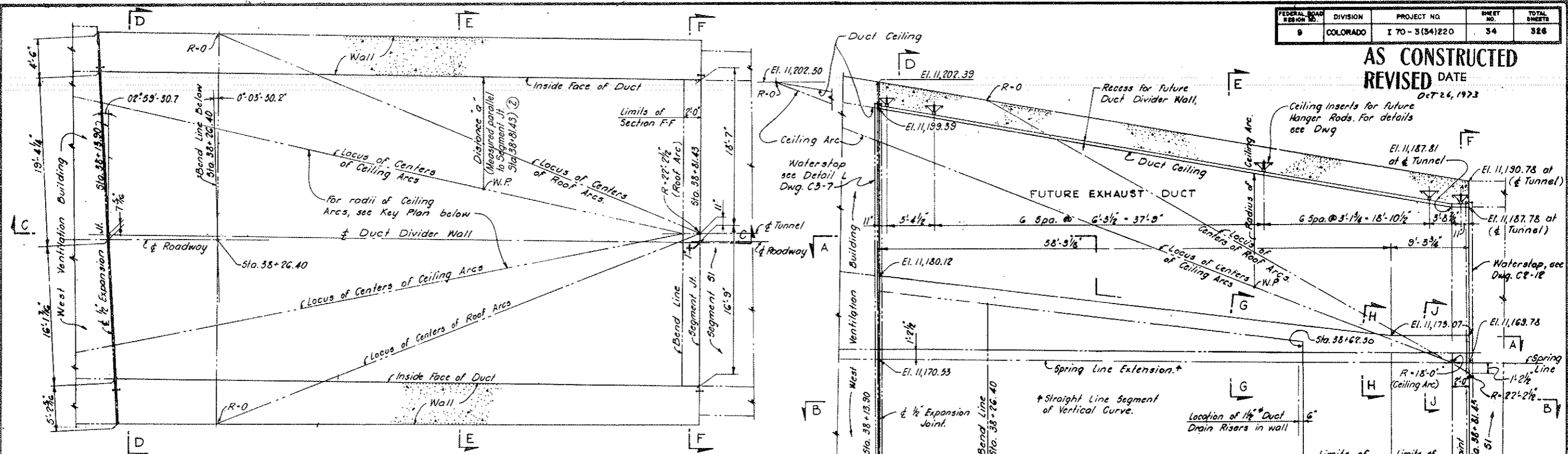
CLOSURE DETAIL
 SCALE: 1" = 2'

NOTES
 1. USE LOCTITE ON ALL THREADED CONNECTIONS.

STATE OF COLORADO DIVISION OF HIGHWAYS	
SCALE NOTED	DRAWN BY WM. GIFFIN
N.W. TRANSITION CEILING DTLS.	
DATE 5-25-72	APPROVED BY SCC-586
DRAWING NUMBER CI-30	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	34	326

AS CONSTRUCTED
REVISED DATE
Oct 26, 1973



NOTE: Section C-C is taken at of hanger rod inserts above ceiling blockout and at of roadway below ceiling blockout

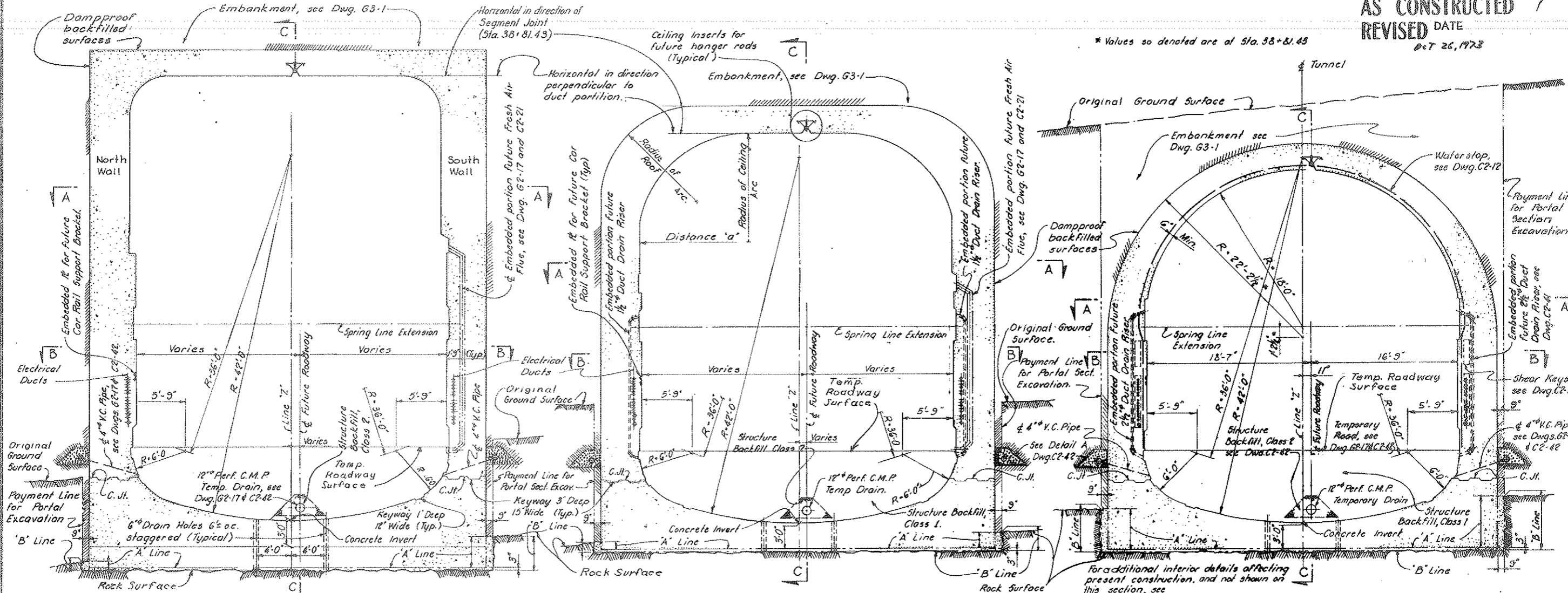
NOTES:
Concrete invert to be constructed on a straight line vertically to the elevations given at each end of the Transition Segment. Embedded portions of future flues to be set in a direction perpendicular to the Spring Line Extension. See Detail A Dwg. C2-16. Paint exposed surfaces of embedded portions of future flues with bituminous mastic. Provide 3" timber protection for embedded portions of future flues at the bottom to 4' above level of temporary road, as required. Paint exposed surfaces of embedded plates for future car rail support brackets with bituminous mastic. Work this drawing with Dwg. C1-5. Fill concrete non-pay

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION SOUTH TRANSITION SEGMENT PLANS AND LONGITUDINAL SECTION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	D. A. T. E.	RECOMMENDED BY	[Signature]		
DRAWN BY	A. Z. E.	APPROVED BY	[Signature]		
CHECKED BY	[Signature]	DATE	AUGUST 1967		
DRAWING NO. C1-4					

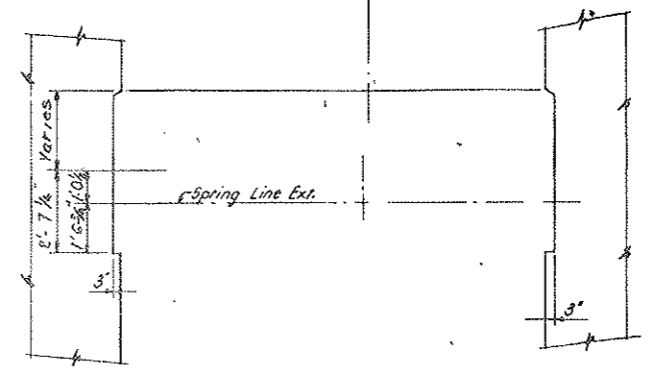
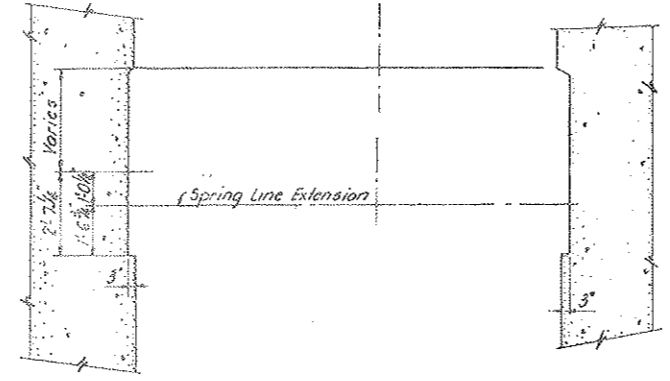
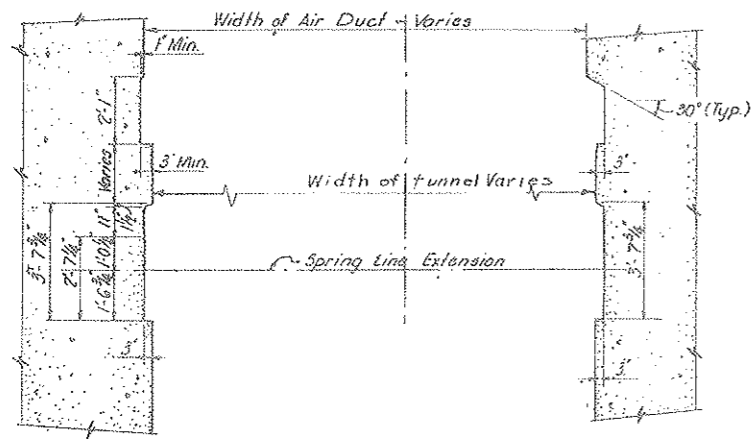
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-5(34)220	38	826

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973

* Values so denoted are at Sta. 38+81.43



NOTES:
 For general concrete notes see Dwg. C2-11.
 For alignment and profiles see Dwg. G2-3.
 For steel reinforcement details see Dwg. C1-8.
 Segment Joint in radial direction relative to Roadway. Line 'Z' bisects the distance between the tunnel walls below the roadway ceiling.
 Work this drawing with Dwg. C1-4.

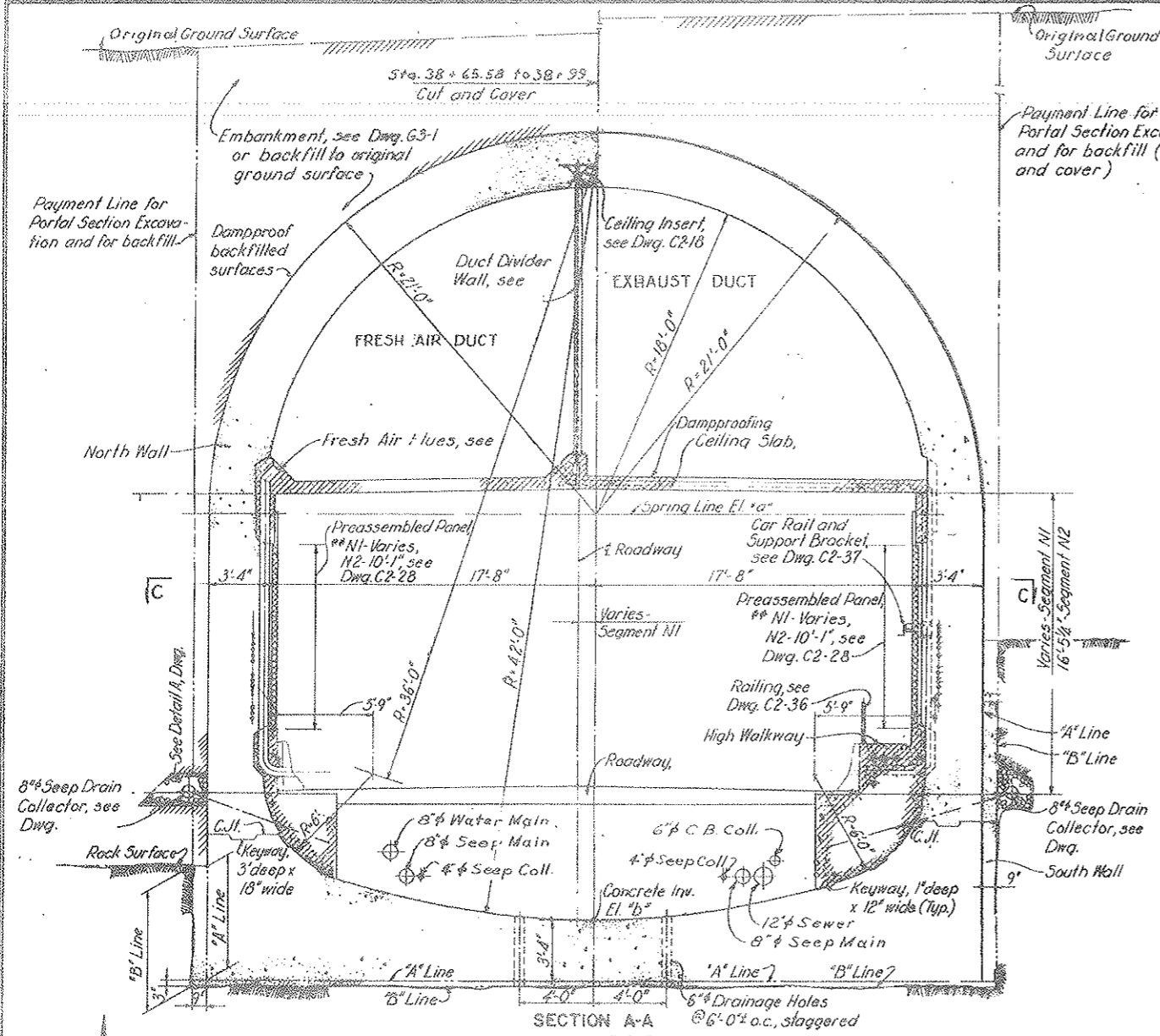


SECTION G-G SCALE 3/8" = 1'-0"
SECTION H-H SCALE 3/8" = 1'-0"
SECTION J-J SCALE 3/8" = 1'-0"
WALL BLOCKOUTS FOR FUTURE CONSTRUCTION

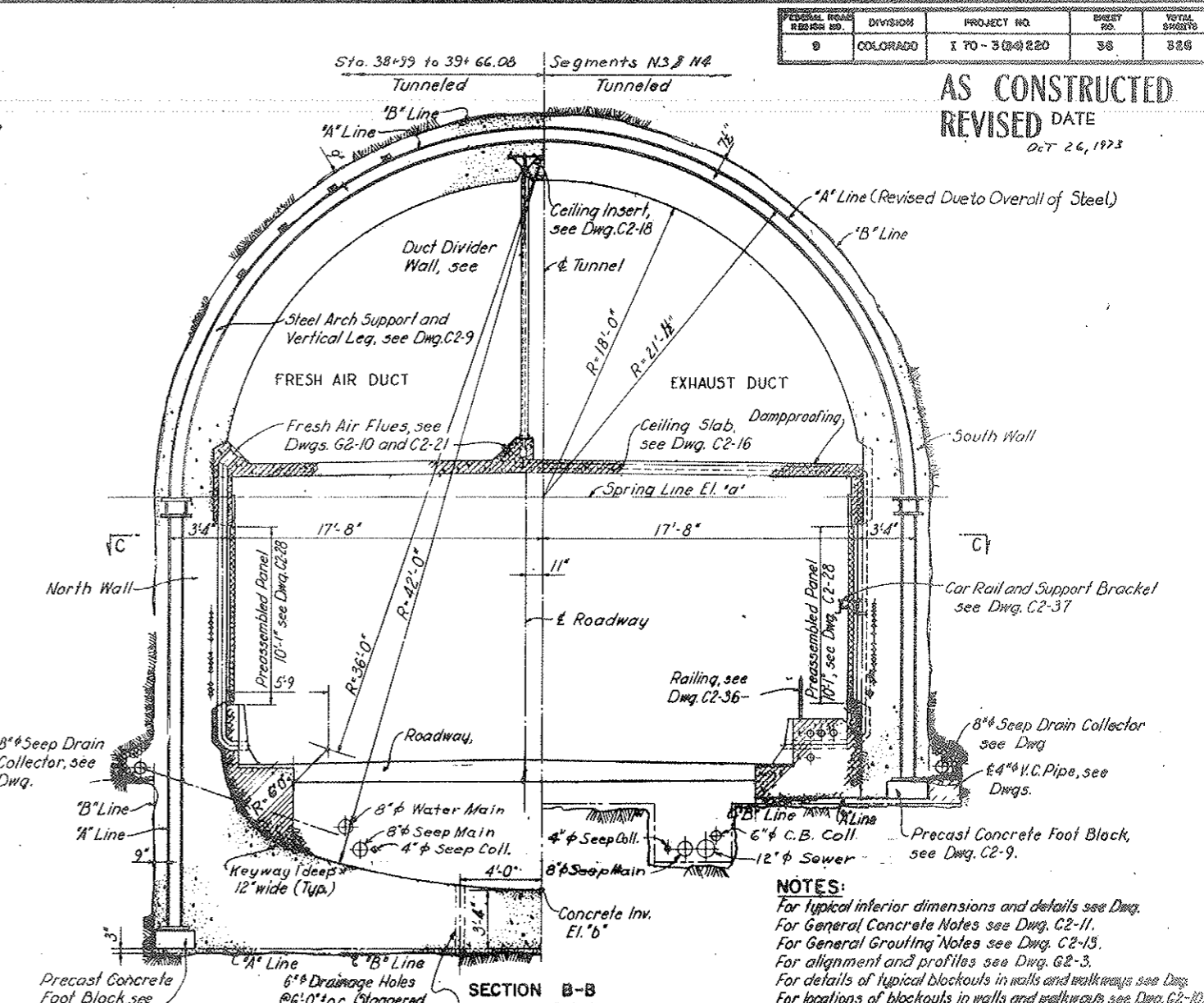
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION SOUTH TRANSITION SEGMENT CROSS SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY D. A. T. S.	CHECKED BY A. W. A. Z. E.	RECORDED BY Henry L. ...	DATE: AUGUST 1967		
SCALE: AS NOTED					CI-5

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(24)220	38	886

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973

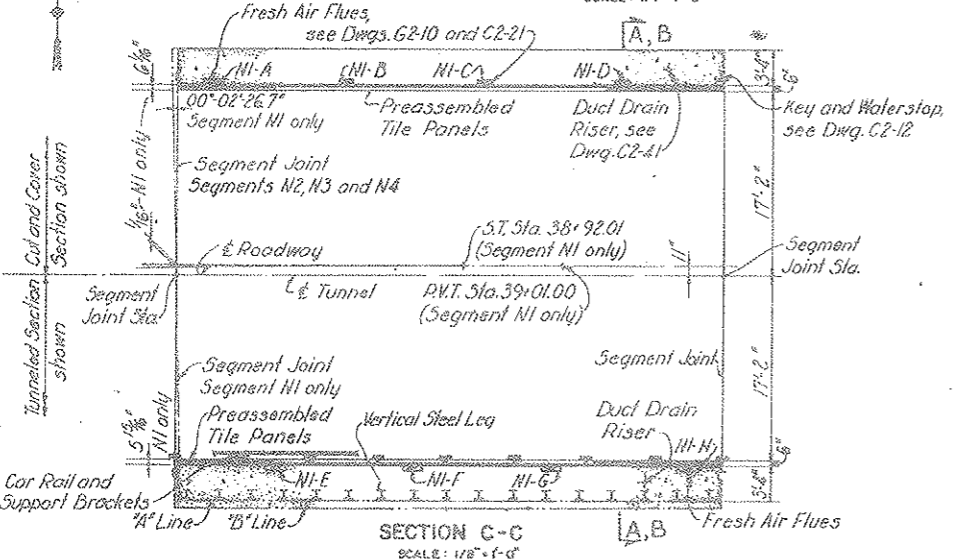


SECTION A-A
 SCALE: 1/4" = 1'-0"



SECTION B-B
 SCALE: 1/4" = 1'-0"

NOTES:
 For typical interior dimensions and details see Dwg. G2-11.
 For General Concrete Notes see Dwg. C2-11.
 For General Grouting Notes see Dwg. C2-15.
 For alignment and profiles see Dwg. G2-3.
 For details of typical blockouts in walls and walkways see Dwg. G2-10.
 For locations of blockouts in walls and walkways see Dwg. G2-10.
 For steel reinforcement details see Dwg. G2-10.
 For steel supports see Dwg. G2-10.
 Unit Segment Joints Perp. to C.
 For Seepage Drain System see Dwg. G2-10.



SECTION C-C
 SCALE: 1/8" = 1'-0"

SEGMENT	SEGMENT JOINT	STATION	ELEVATION	
			"a"	"b"
N1	N1/N2	38+65.58	11,169.55	11,147.15
N2	N2/N3	39+15.83	11,168.60	11,146.33
N3	N3/N4	39+66.08	11,167.77	11,145.50
N4	N4/N5	40+16.33	11,166.95	11,144.68
		40+66.58	11,166.12	

Note:
 All elevations given in this table vary linearly from one end of segment to the other, i.e. between Segment Joints.

FLUE	EMBEDDED LENGTH
NI-A	11'-3 1/8"
NI-B	11'-3 3/8"
NI-C	11'-3 1/8"
NI-D	11'-3 1/8"
NI-E	11'-4"
NI-F	11'-4"
NI-G	11'-3 1/2"
NI-H	11'-3 1/8"

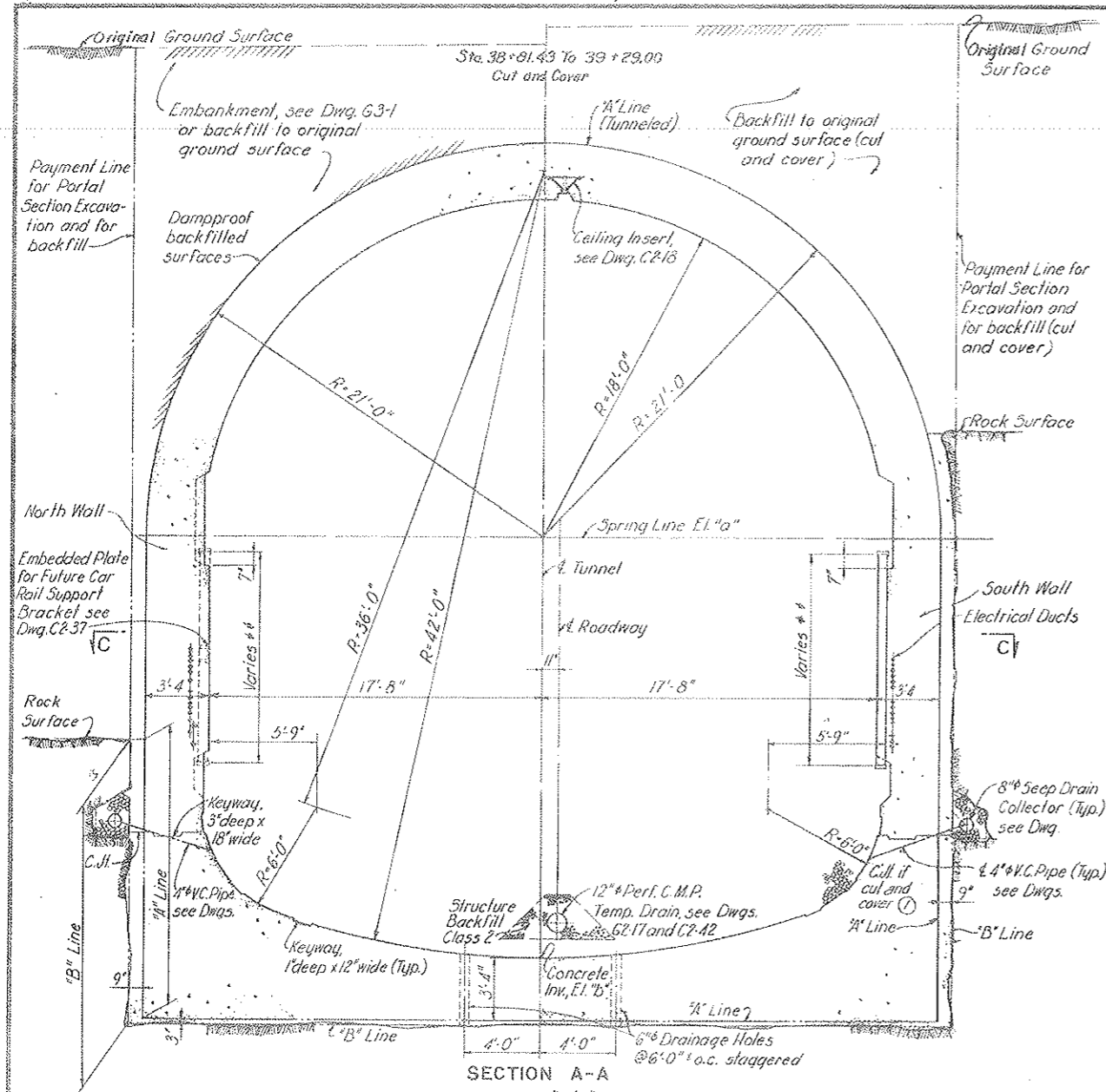
* For portions of Flues embedded in Second Stage Concrete and for details not shown here, see Dwg. C2-21

FLUES - SEGMENT NI
 EMBEDDED LENGTHS
 NOT TO SCALE

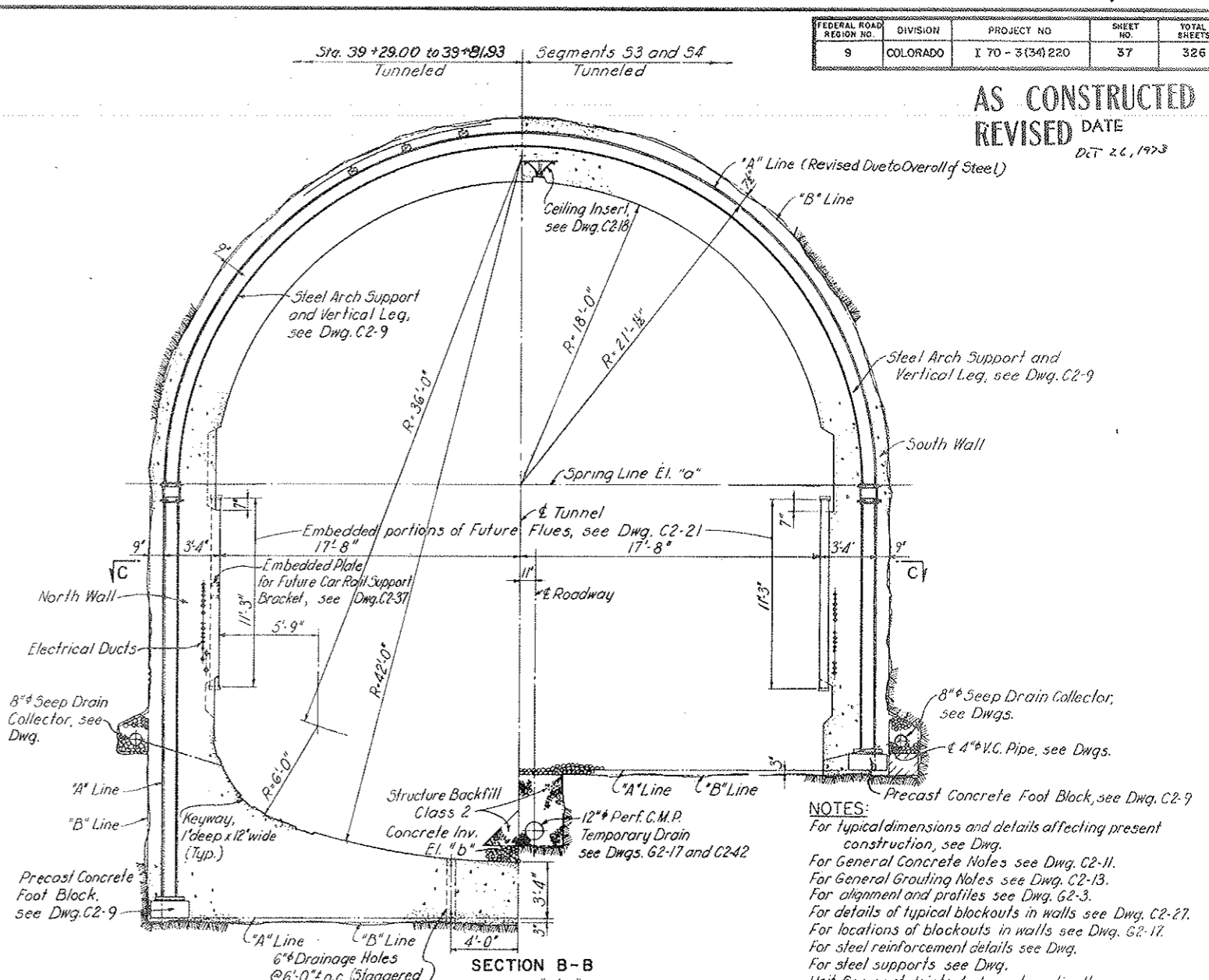
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	DATE
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION NORTH CONDUIT SEGMENTS TYPICAL CROSS SECTIONS					
TIPPETTS - ABBEY - MCCARTHY - STRAYTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	T. B. R.Z.E.	RECOMMENDED BY			
DRAWN BY	A.Z.E.	APPROVED BY			
CHECKED BY		DATE			
SCALE	AS NOTED	DATE	OCT 1973		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	37	326

AS CONSTRUCTED
REVISED DATE
 Dec 26, 1973

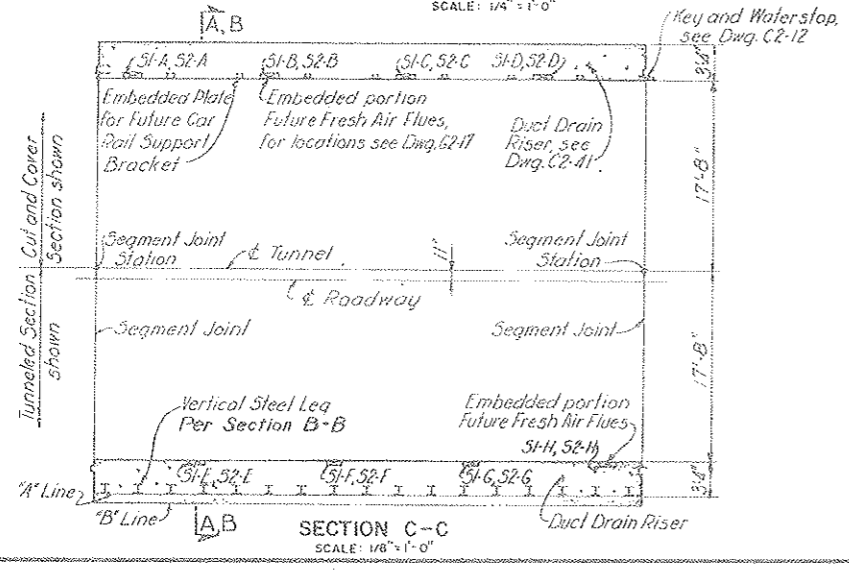


SECTION A-A
 SCALE: 1/4" = 1'-0"



SECTION B-B
 SCALE: 1/4" = 1'-0"

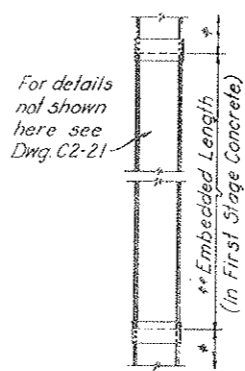
NOTES:
 For typical dimensions and details affecting present construction, see Dwg.
 For General Concrete Notes see Dwg. C2-11.
 For General Grouting Notes see Dwg. C2-13.
 For alignment and profiles see Dwg. G2-3.
 For details of typical blockouts in walls see Dwg. C2-27.
 For locations of blockouts in walls see Dwg. G2-17.
 For steel reinforcement details see Dwg.
 For steel supports see Dwg.
 Unit Segment Joints to be set vertically.
 Paint exposed surfaces of embedded portions of future flues with bituminous mastic.



SECTION C-C
 SCALE: 1/8" = 1'-0"

SEGMENT	SEGMENT JOINT	STATION	ELEVATION	
			"a"	"b"
S1	W Trans./S1	38+81.43	11,169.78	11,147.27
S2	S1/S2	39+31.68	11,169.08	11,146.72
S3	S2/S3	39+81.93	11,168.27	11,146.00
S4	S3/S4	40+32.18	11,167.44	11,145.17
	S4/S5	40+82.43	11,166.62	11,144.35

Note: All elevations given in this table vary linearly from one end of segment to the other, i.e. between Segment Joints.



FLUE	EMBEDDED LENGTH**	FLUE	EMBEDDED LENGTH**
S1-A	11'-2 1/8"	S2-A	11'-2 13/16"
S1-B	11'-2 3/4"	S2-B	11'-2 13/16"
S1-C	11'-2 13/16"	S2-C	11'-3"
S1-D	11'-2 13/16"	S2-D	11'-3"
S1-E	11'-2 13/16"	S2-E	11'-3"
S1-F	11'-2 13/16"	S2-F	11'-2 13/16"
S1-G	11'-2 3/4"	S2-G	11'-2 13/16"
S1-H	11'-2 7/8"	S2-H	11'-3"

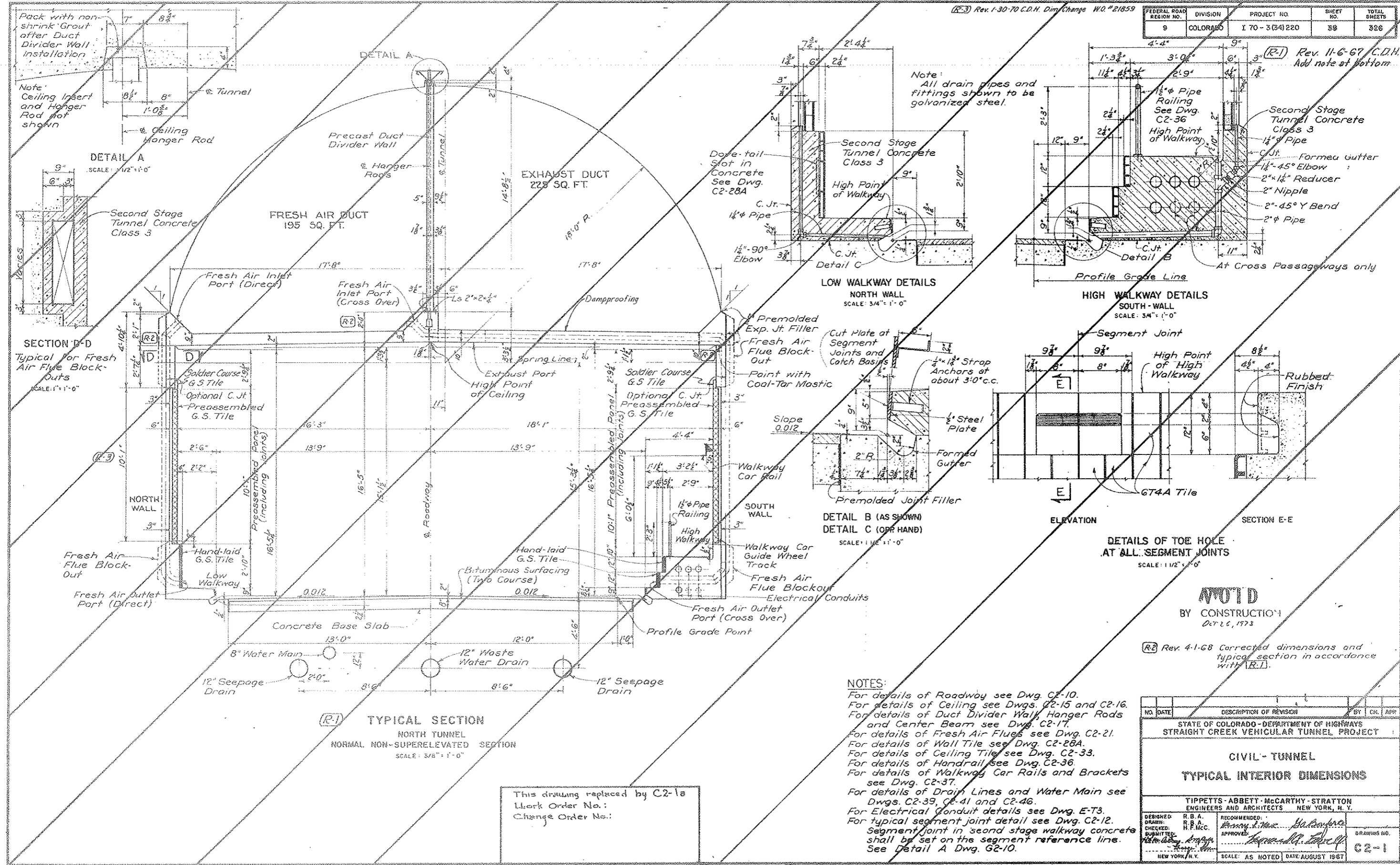
** To be embedded in Second Stage Concrete when South Tunnel is constructed in future. Not under this Contract.

FLUES - SEGMENTS S1 AND S2
 EMBEDDED LENGTHS
 NOT TO SCALE

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION					
SOUTH CONDUIT SEGMENTS					
TYPICAL CROSS SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	T.S.-D.J.B.	RECOMMENDED			
DRAWN	J.E.G.	Checked	W.C. East		
CHECKED	A.T.E.	APPROVED			
DATE	7/1/73	DATE	7/1/73		
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1967					

DRAWING NO. C1-7

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	38	326



NOTED
BY CONSTRUCTION
Oct 26, 1973

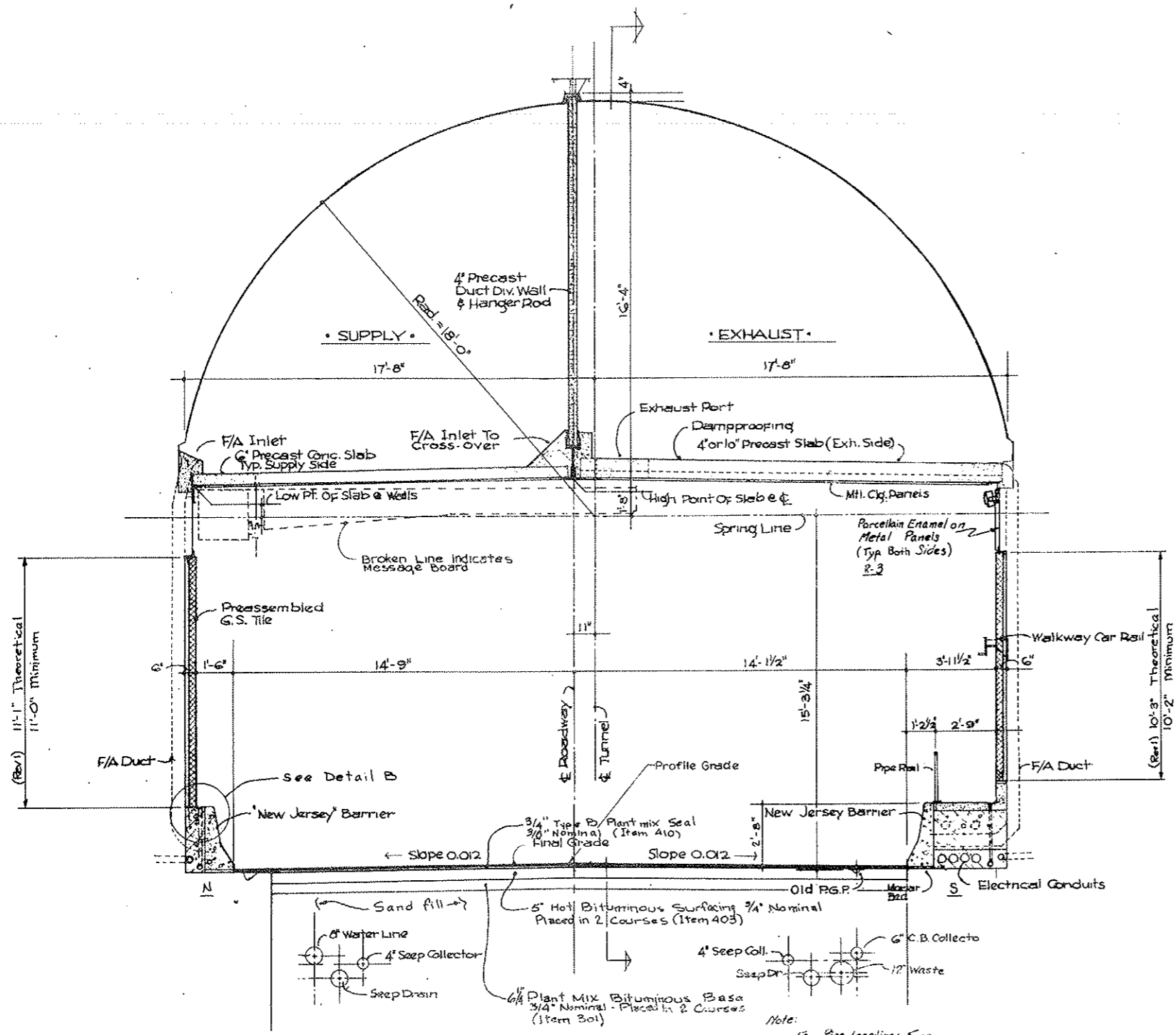
Rev. 4-1-68 Corrected dimensions and typical section in accordance with R.I.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL					
TYPICAL INTERIOR DIMENSIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	R. B. A.	RECOMMENDED BY			
DRAWN BY	R. B. A.	CHECKED BY			
SUBMITTED BY		APPROVED BY			
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1967					

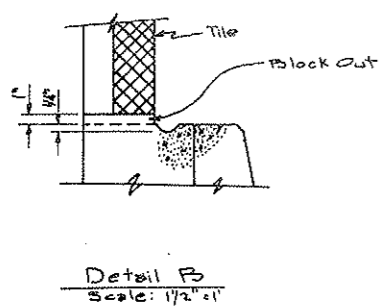
This drawing replaced by C2-1a
Work Order No.:
Change Order No.:

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	39 AX	326

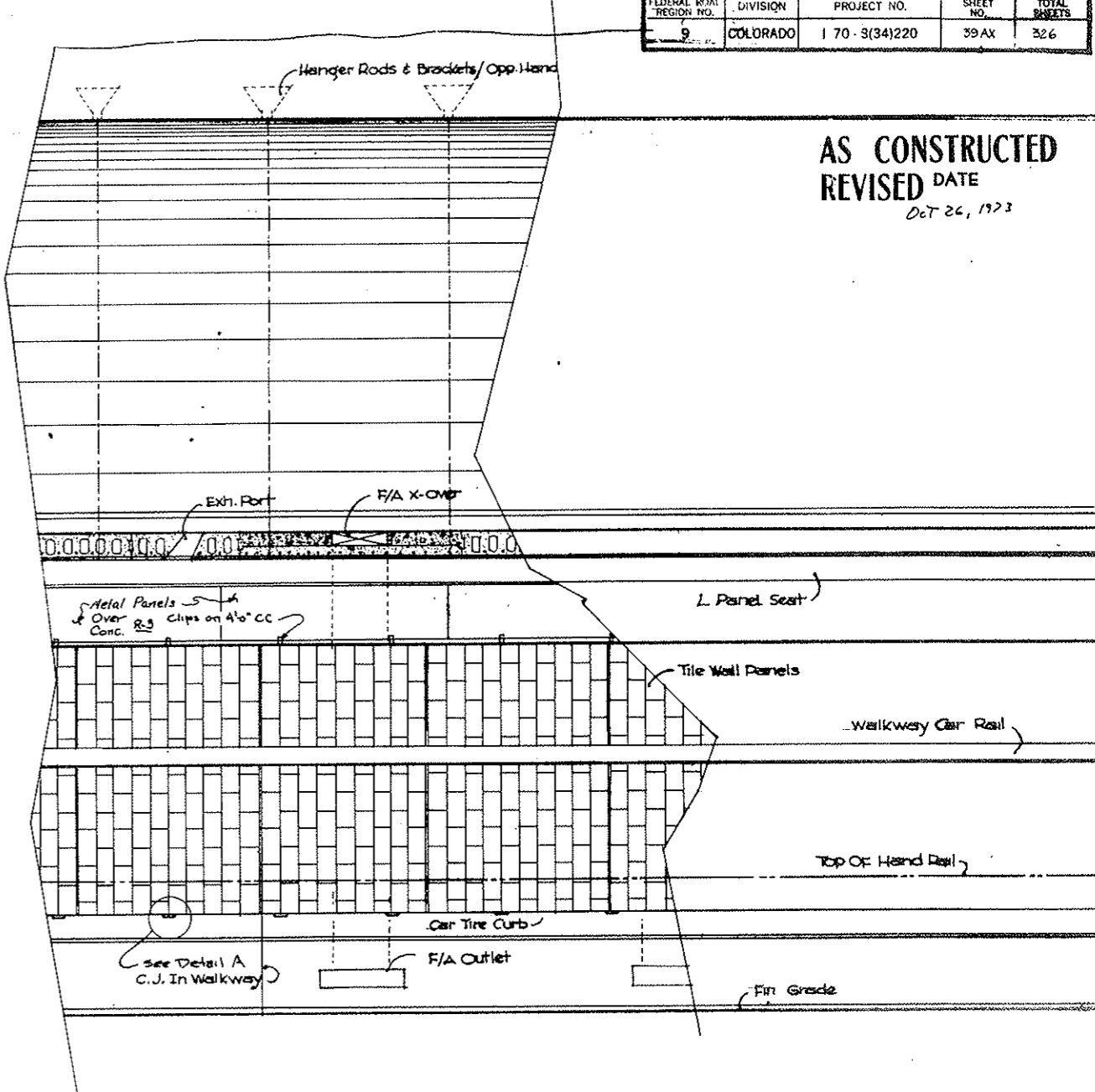
AS CONSTRUCTED
REVISED DATE
Oct 26, 1973



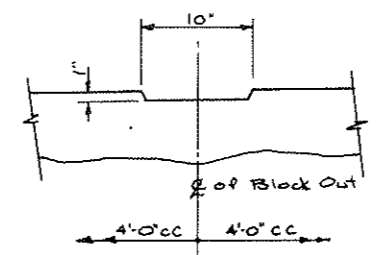
• TYPICAL SECTION • LOOKING EAST •
Scale 3/8" = 1'-0"



Detail B
Scale: 1 1/2" = 1'



• SECTION • LOOKING SOUTH •
Scale 3/8" = 1'-0"

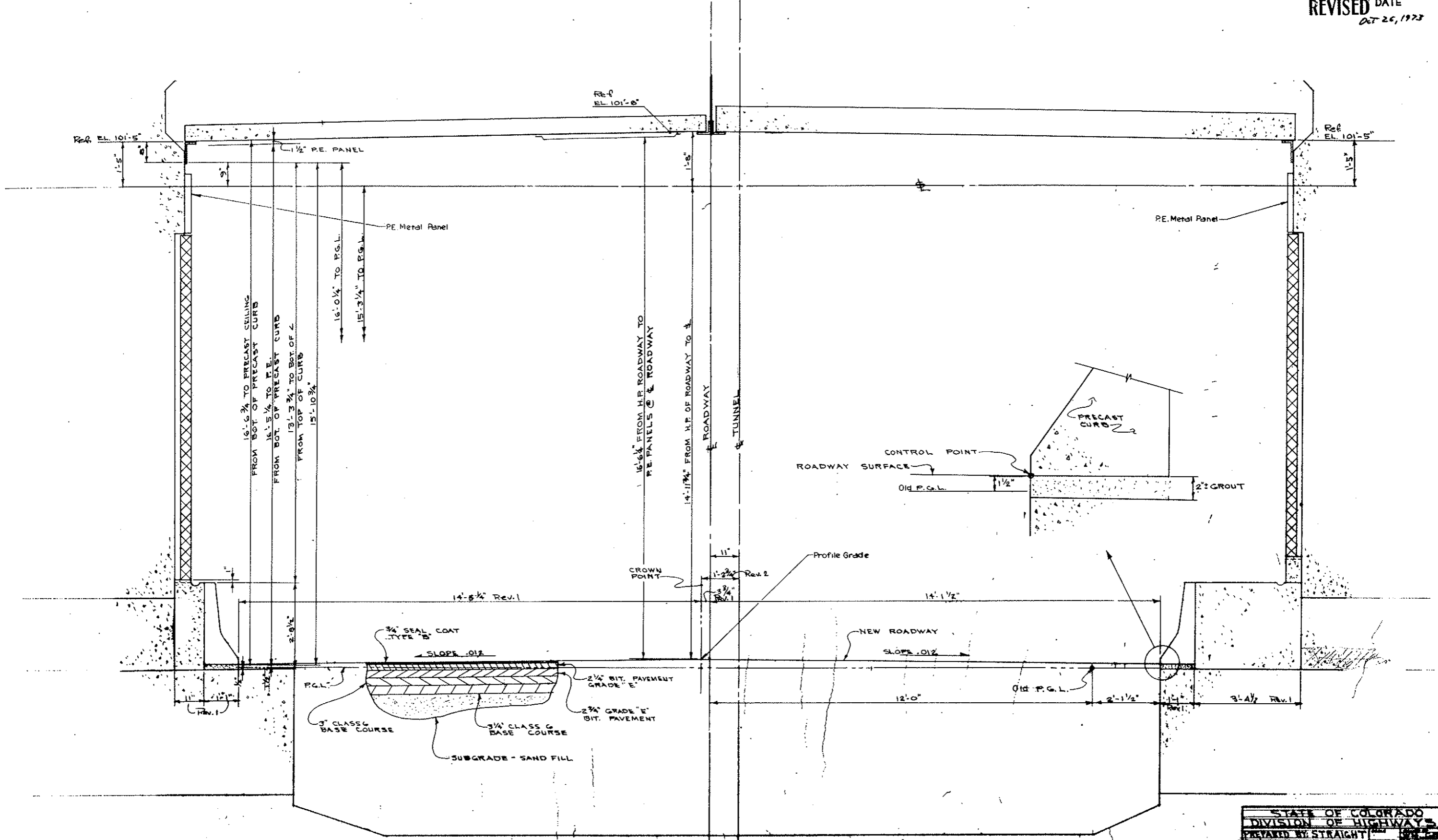


Detail A
Scale: 1 1/2" = 1'

DIVISION OF HIGHWAYS			
Prepared By	DATE	DESIGNED BY	PC
STRAIGHT CREEK CONST.	Noted	Noted	Noted
TYPICAL SECTION / TUNNEL INTERIOR			
DATE	APPROVED BY	DATE	DRAWING NUMBER
11/2/70	By D.L.S.	As SCC 416	C2-1A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	398X	326

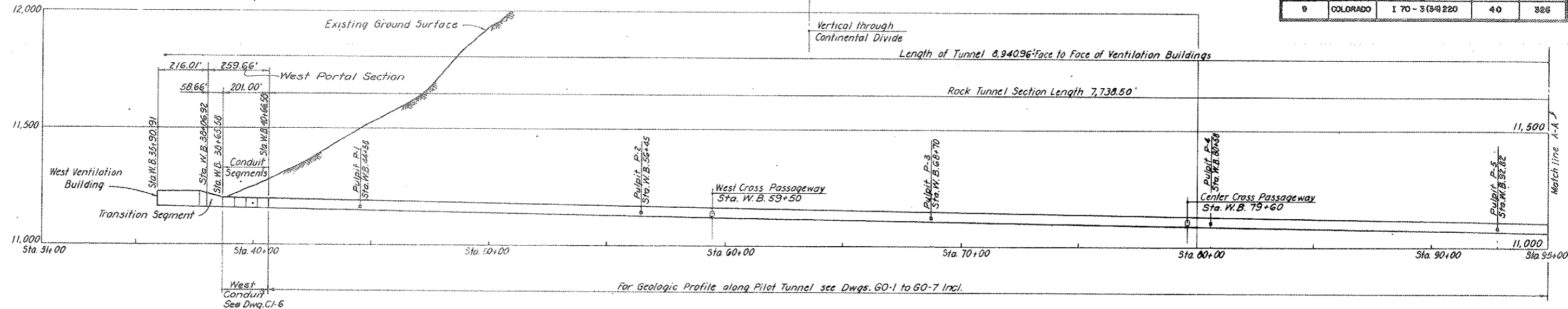
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



SECTION LOOKING EAST

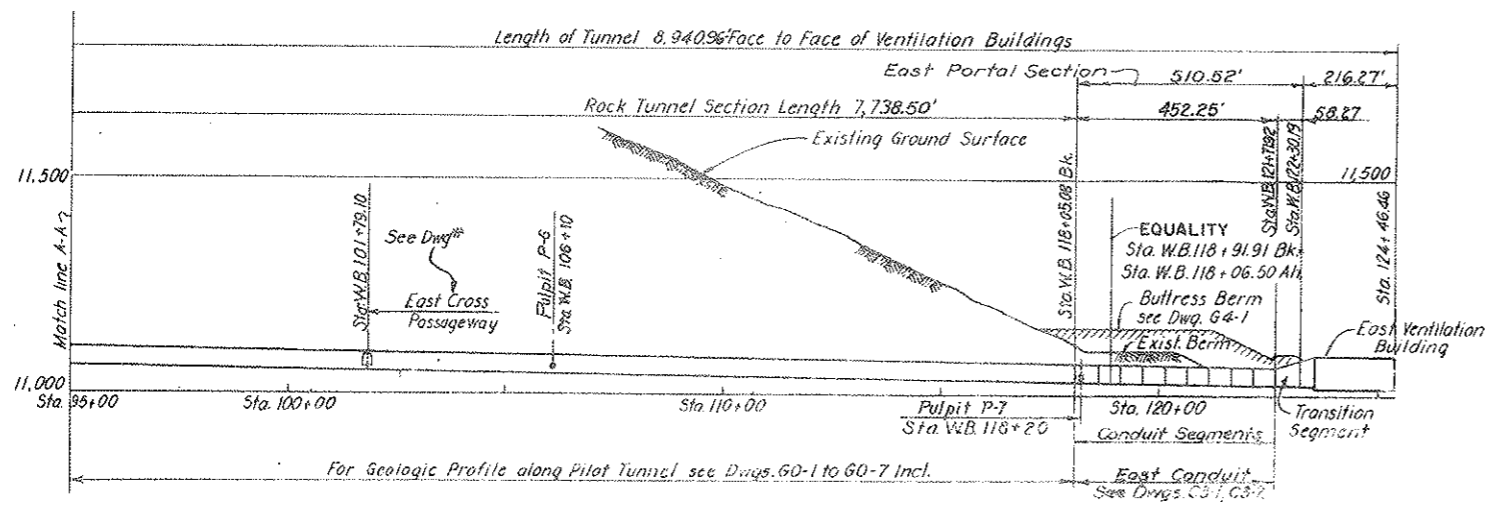
STATE OF COLORADO	
DIVISION OF HIGHWAYS	
DESIGNED BY STRAIGHT	DATE
PREPARED BY CONSTRUCTORS	DATE
TYPICAL ROADWAY SECTION	
NO. 272	C2-1B

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(54)220	40	388



NORTH TUNNEL

AS CONSTRUCTED
REVISED DATE
OCT 26, 1972



NORTH TUNNEL

TUNNEL SECTION TYPE	TUNNEL SUPPORT	ROCK BOLT SUBSTITUTE		ROCK CLASS	ROCK DESCRIPTION	TUNNEL LENGTH IN ROCK CLASS ASSUMED FOR QUANTITY ESTIMATE - FT.	
		TYPE	PATTERN			STEEL SUPPORTS	ROCK BOLT SUBSTITUTE
Ia	Safety Rock Bolting Random Pattern 10 WF 29 @ 5'-0" o.c.	-	-	I	Massive and intact or slightly blocky, having a joint spacing greater than 10 ft with no alteration.	-	1319.75
Ib	10 WF 29 @ 5'-0" o.c.	Ia	6x12	I		310	460
IIa	10 WF 29 @ 3'-0" o.c.	Ia	4x12	II	Moderately blocky and seamy having a joint spacing greater than 0.5 ft with little or no alteration.	240	160
IIb	10 WF 66 @ 5'-0" o.c.	Ia	4x15	II		820	200
IIIa	10 WF 66 @ 3'-0" o.c.	-	-	III	Very blocky and seamy having a joint spacing less than 10 ft, moderately to highly altered with zones of moderate to intense shearing.	2535	-
IIIb	12 WF 106 @ 3'-0" o.c.	-	-	III		630	-
IVa	12 WF 133 @ 3'-0" o.c.	-	-	IV	Highly sheared and completely crushed, squeezing or moderately swelling ground, having a joint spacing from less than 0.1 ft to 0.5 ft, highly altered.	300	-
IVb	14 WF 211 @ 3'-0" o.c. or @ 2'-6" o.c.	-	-	IV		820	-
Total						5,665	2,139.75

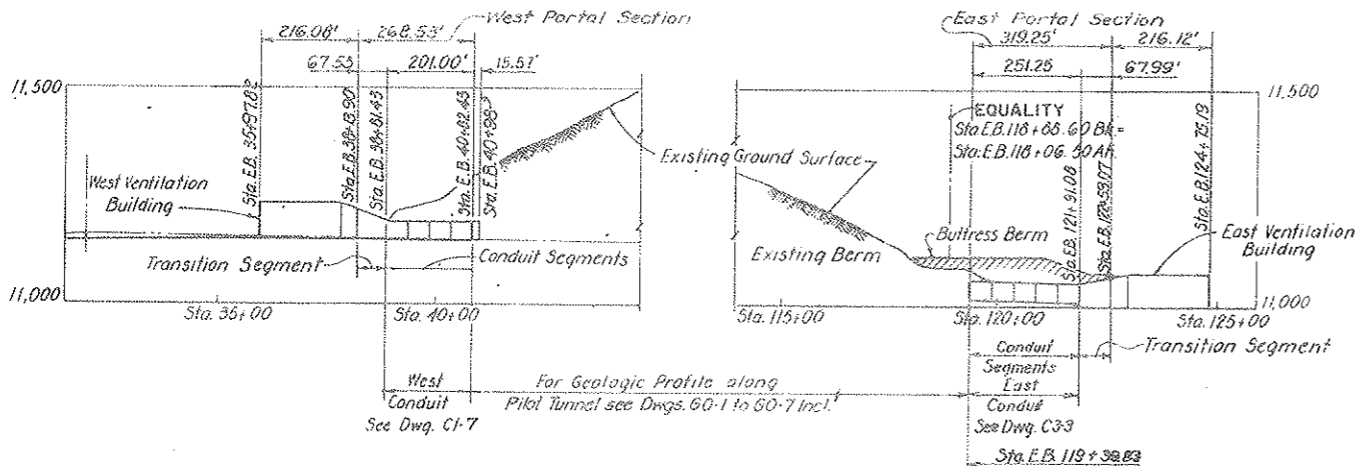
* Roof arch weight, see Details Dwg. C2-4

NOTES:

For special supports at Cross Passageways see Dwg.

For special supports at Traffic Control Pulpits see Dwg.

For overbreak details and contact grouting details see Dwg. C2-18.



SOUTH TUNNEL

GENERAL TUNNEL NOTES

Construction joints and structural steel supports shall be set vertically.

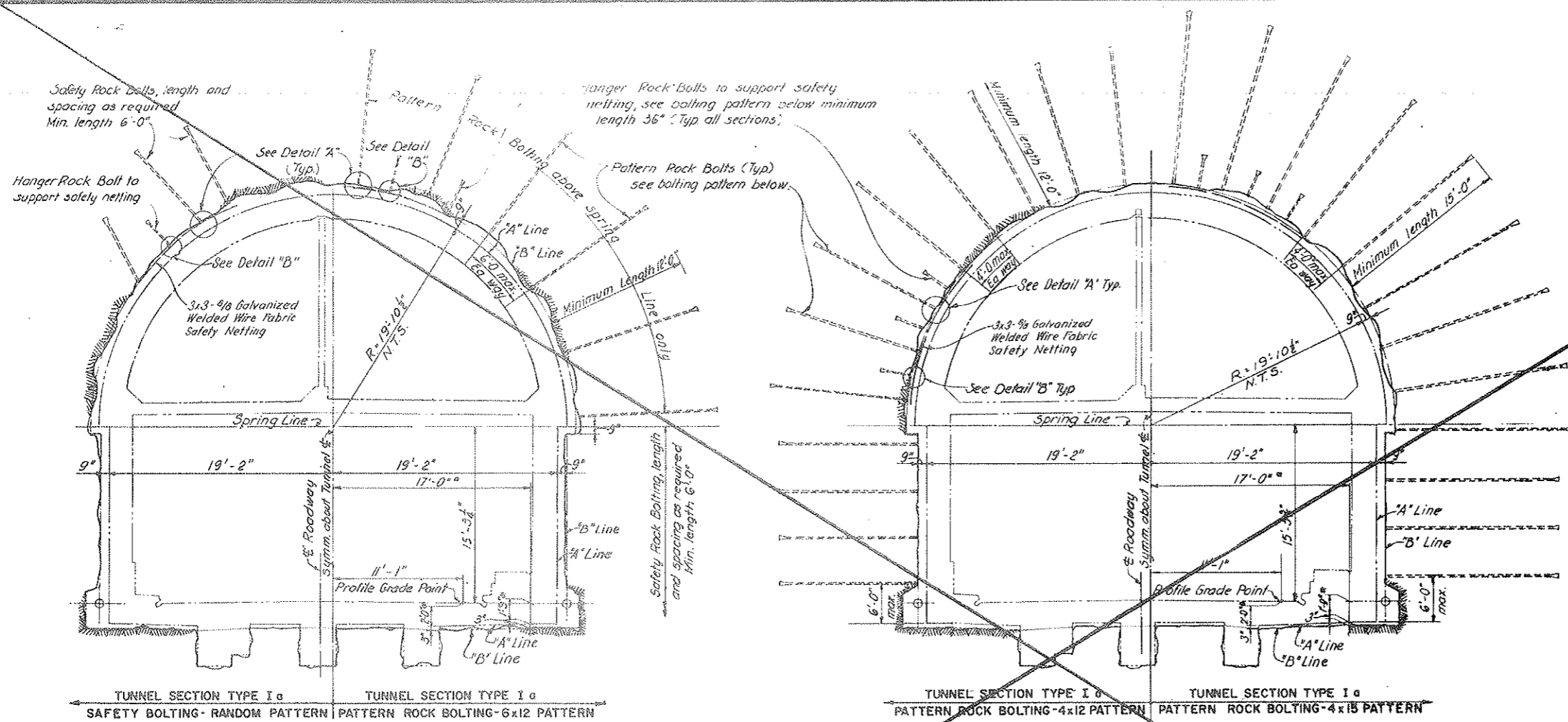
Spacing of steel support sets shall be such that no set occurs at a segment joint or interferes with setting of waterstop or bulkheads. Remove all spracer angles between steel support sets at segment joints prior to concreting.

Cross passageways shall be located in a zone of Tunnel Section Type I, II or IIIa. For other tunnel section zones at listed cross passageway locations, the Engineer shall relocate the cross passageway so as to fall within one of the zones of allowable tunnel section types.

Traffic control pulpits may be located in any segment of Tunnel Section Type I, II or III. If actual geological conditions at listed pulpit locations indicate use of Tunnel Section Type IVa or IVb, the pulpit shall be relocated by the Engineer so as to fall within one of the zones of allowable tunnel section types.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL					
TUNNEL STEEL SUPPORTS					
ARRANGEMENT ALONG PROFILE					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	C. A. K.	REVISIONS BY	[Signature]		
DRAWN BY	H. G. P.	CHECKED BY	[Signature]		
APPROVED BY	[Signature]	DATE	AUGUST 1967		
DRAWING NO. C2-2					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	41	326

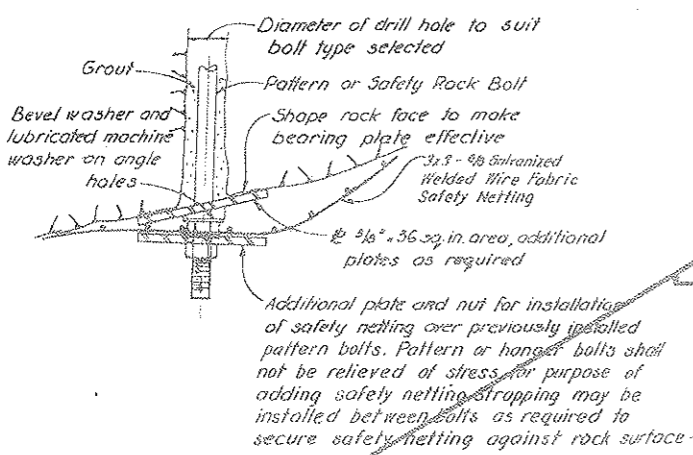


SCALE: 3/16" = 1'-0"

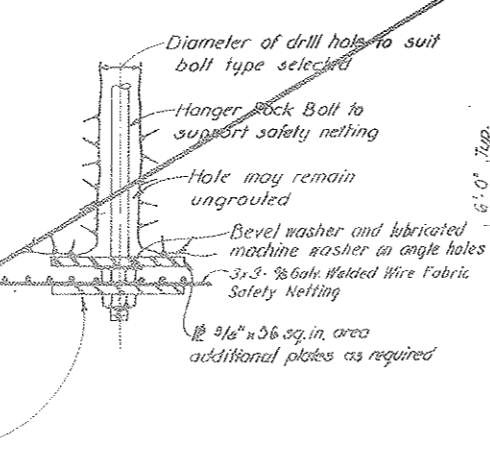
SCALE: 3/16" = 1'-0"

NOTES:
 See specifications for rock bolting requirements.
 Rock bolted Section Type Ia with various pattern rock boltings shown on this drawing are intended as alternatives for Section Types with steel support sets. See Table Dwg. C2-2 for allowable substitutions.
 For definition of A and B Lines see specifications.
 Pattern and safety rock bolts shall be tensioned to 60 to 80 percent of bolt yield strength, but in no case less than 10,000 lbs. All bolts that cannot be tensioned or retensioned to the above requirements without anchorage slip shall be rejected and replaced.
 Pattern and safety rock bolts shall be grouted before concrete lining is placed.
 Minimum bolt size for pattern and safety bolts shall be 3/8" or #6 reinforcing bar. Hollow bolts shall have a net area, not less than a solid 3/8" bolt or #6 reinforcing bar.
 Hanger rock bolts shall be tensioned to 60 to 80 percent of bolt yield strength. All bolts that cannot be tensioned or retensioned to the above requirement shall be rejected or replaced. Minimum bolt size shall be 3/8" or bar of equivalent net area. Grouting of hanger bolts will not be required.
 Self-aligning bolt, nut and washer arrangement such as spherical radius head with matching plate may be used on all ungrouted rock bolts instead of the plate and beveled washer arrangement shown.
 Dimensions noted with an asterisk (*) are typical for all Tunnel Section Type Ia shown on this sheet.

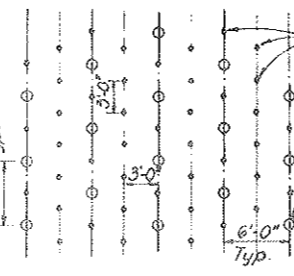
VOID
 BY CONSTRUCTION
 OCT 26, 1973



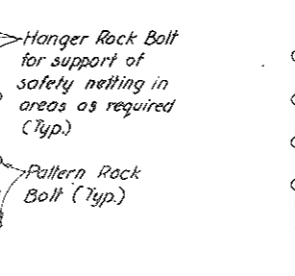
DETAIL A
 SCALE: 1/2" = 1'-0"



DETAIL B
 SCALE: 1/2" = 1'-0"



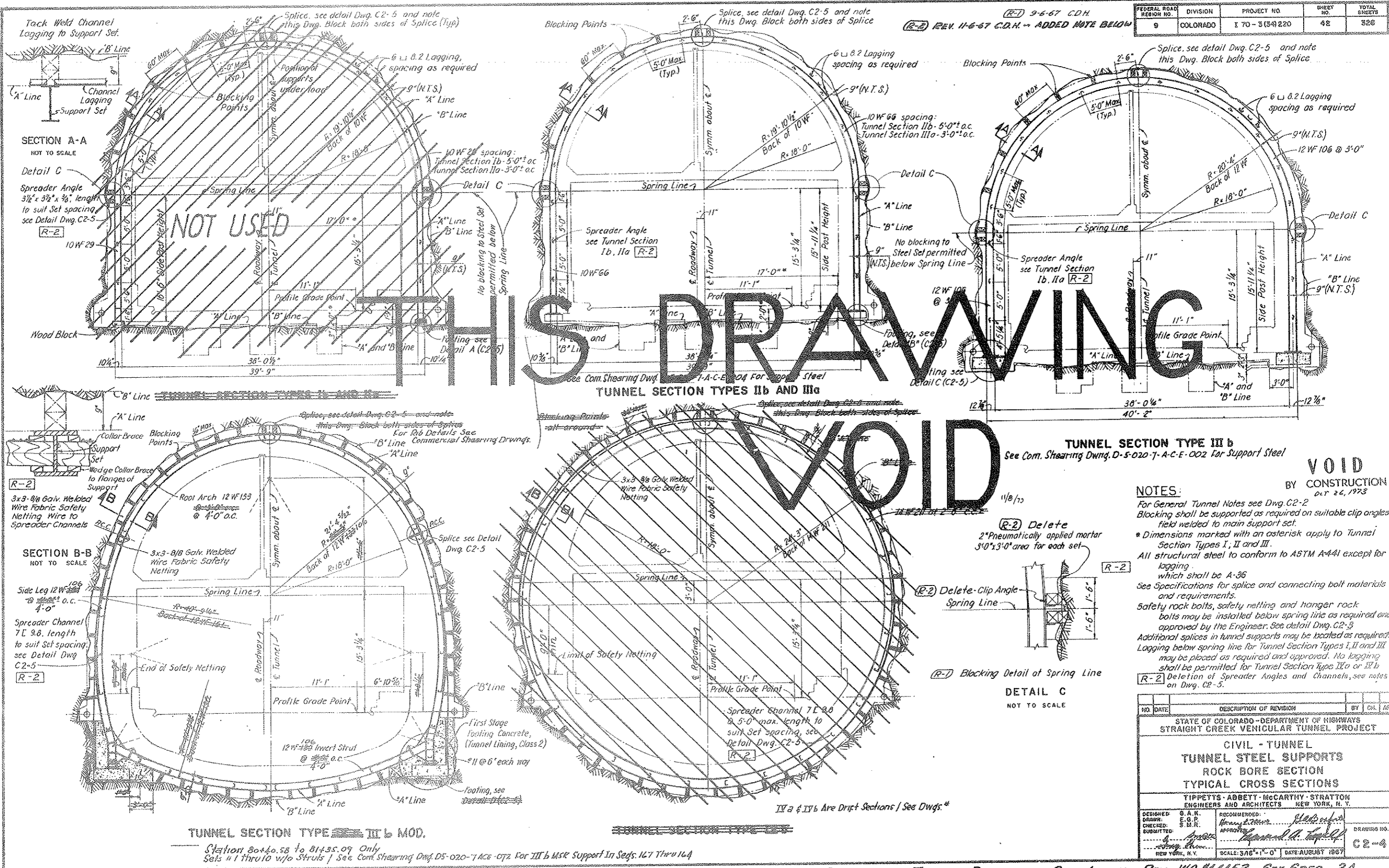
ROCK BOLTING PATTERN
 6x15 PATTERN
 SCALE: 1/8" = 1'-0"



ROCK BOLTING PATTERN
 4x12 AND 4x15 PATTERN
 SCALE: 1/8" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VERICULAR TUNNEL PROJECT					
CIVIL - TUNNEL TUNNEL SUPPORTS ROCK BOLTING TYPICAL CROSS SECTIONS					
TIPPETTS - ABBETT - McCAHNEY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY A. R. D. - S. M. R.	DRAWN BY J. E. R.	CHECKED BY S. M. R.	APPROVED BY [Signature]	DATE AUGUST 1967	SCALE: AS NOTED, DATE AUGUST 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	48	328



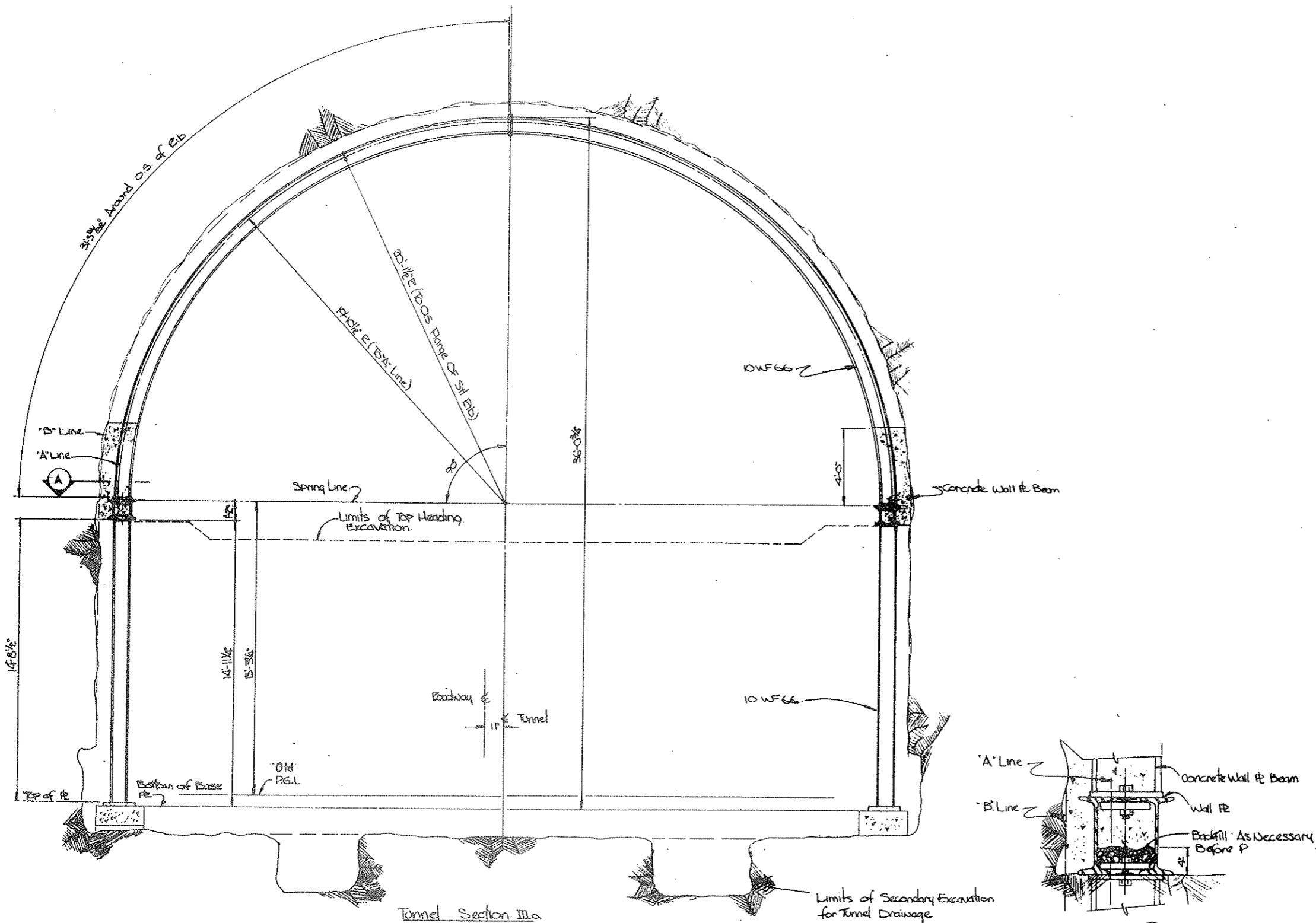
(R-2) ANGLE & CHANNEL SPREADERS - TIMBER BLOCKING & CLIP ANGLES REV. NO. 14153 SEE SPEC. 2A

- NOTES:**
- For General Tunnel Notes see Dwg. C2-2
 - Blocking shall be supported as required on suitable clip angles field welded to main support set.
 - * Dimensions marked with an asterisk apply to Tunnel Section Types I, II and III.
 - All structural steel to conform to ASTM A441 except for lagging which shall be A-36
 - See Specifications for splice and connecting bolt materials and requirements.
 - Safety rock bolts, safety netting and hanger rock bolts may be installed below spring line as required and approved by the Engineer. See Detail Dwg. C2-3
 - Additional splices in tunnel supports may be located as required. Logging below spring line for Tunnel Section Types I, II and III may be placed as required and approved. No logging shall be permitted for Tunnel Section Types IIa or IIIb
 - (R-2) Deletion of Spreader Angles and Channels, see notes on Dwg. C2-5.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL TUNNEL STEEL SUPPORTS ROCK BORE SECTION TYPICAL CROSS SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	G. A. K.	RECOMMENDED:	W. H. B.		
DRAWN:	E. G. P.	CHECKED:	S. M. R.		
SUBMITTED:	J. M. M.	APPROVED:	W. H. B.		
		SCALE: 3/8" = 1'-0"		DATE: AUGUST 1967	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	42 AX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1925



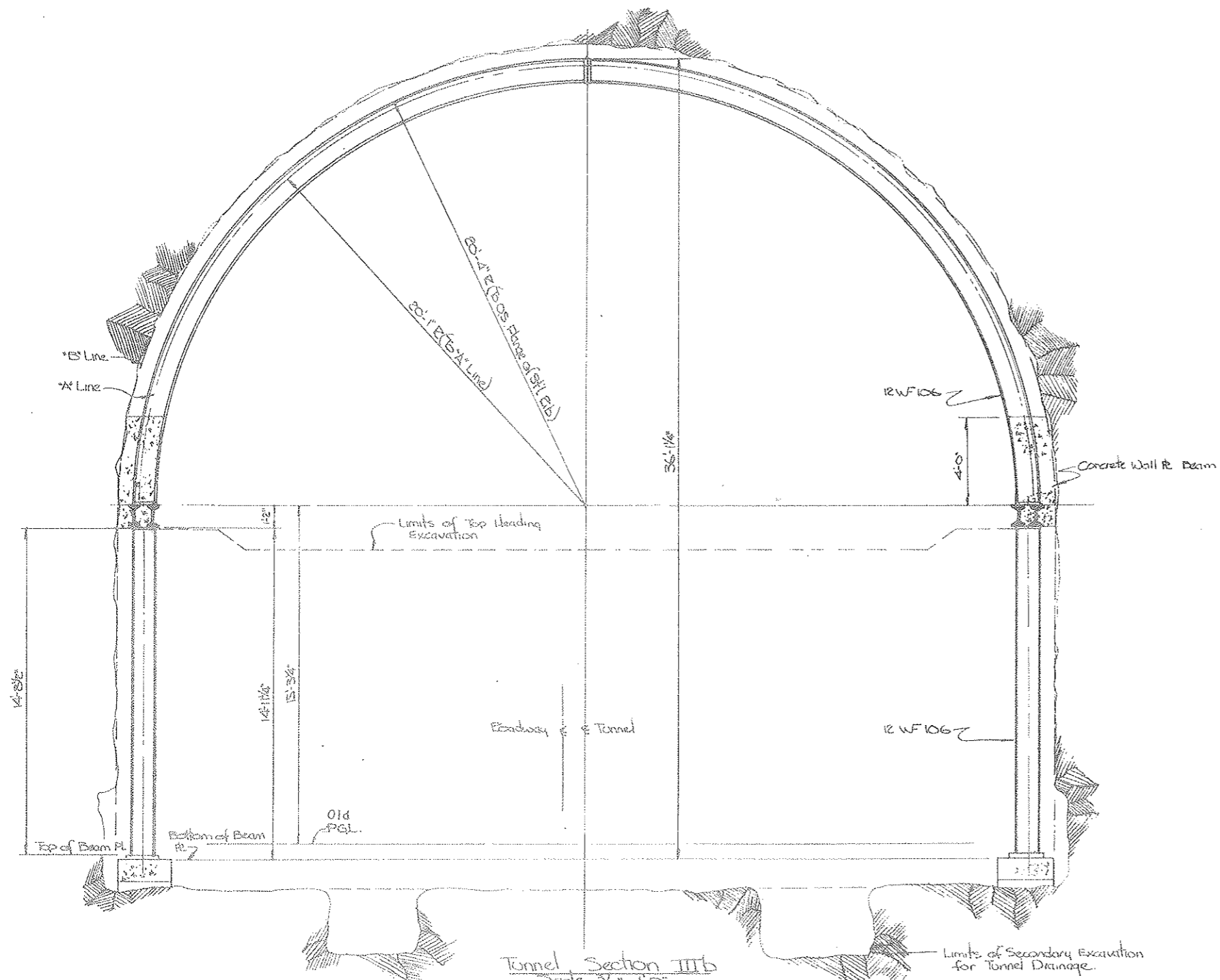
Tunnel Section IIIa
 Scale 1/8"=1'-0"
 From Sta. 39+61.10 To 63+78.08
 • 64+24.33 To 72+82.58
 • 73+83.08 To 80+40.00.

SECTION (A)
 Scale 1/2"=1'-0" After pour

State of Colorado Division of Highways			
SCALE: 1/8"=1'-0"	APPROVED BY:	DESIGNED BY: [Signature]	
DATE:		REVISED:	
EXCAVATIONS* SUPPORT TYPE IIIa			
			ESTIMATED QUANTITY C2-4A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	42 BX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1928

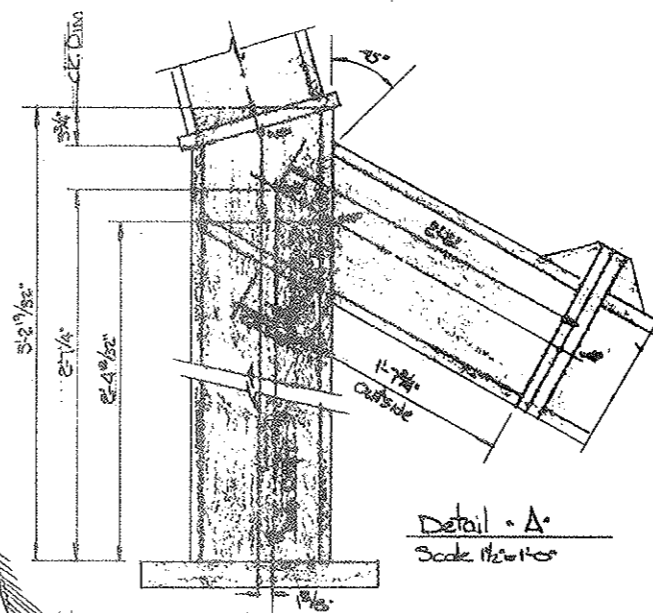
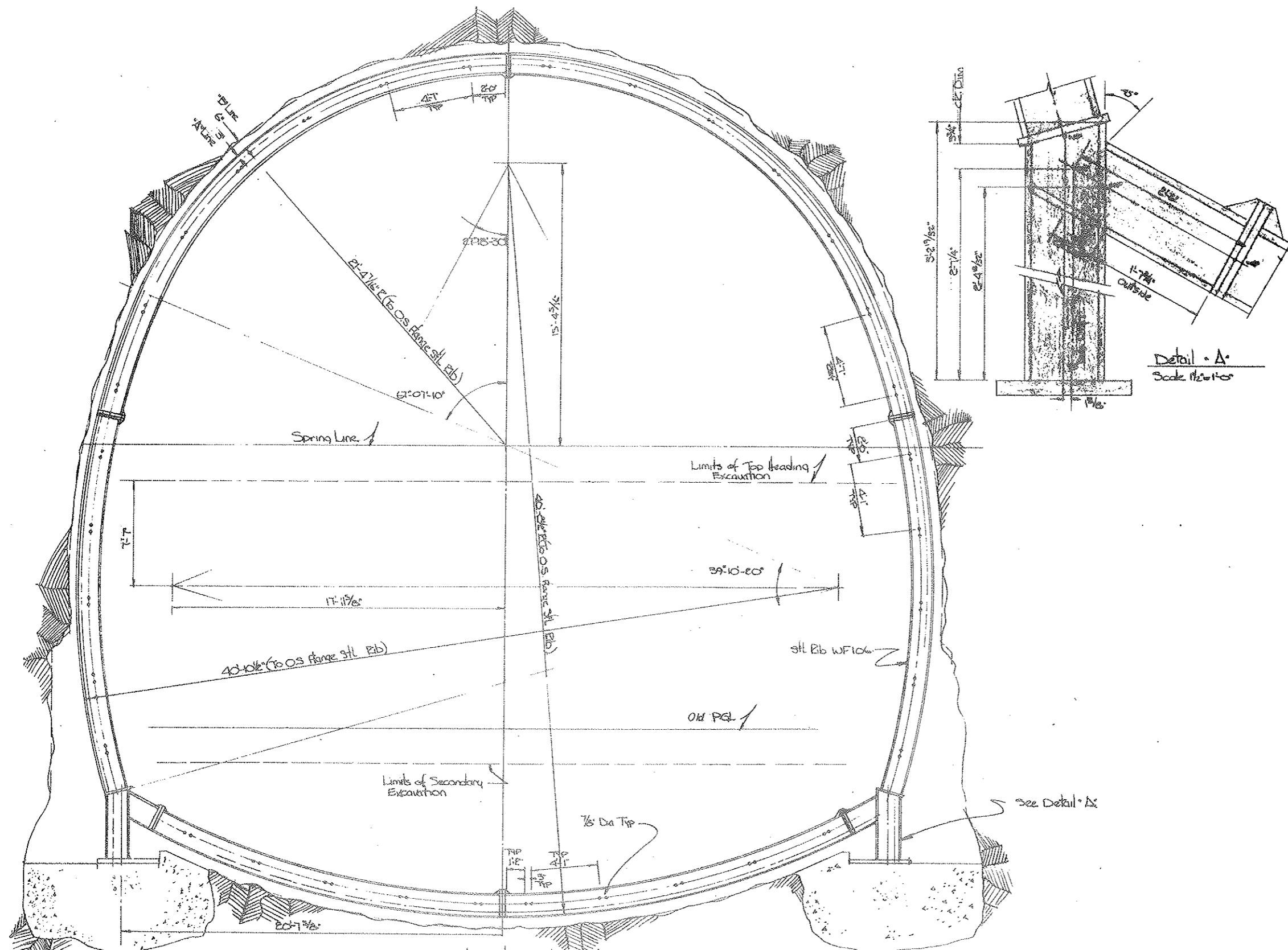


Tunnel Section III b
 Scale 3/8" = 1'-0"
 From Sta 63+78.08 to 64+21.33
 From Sta 72+82.58 to 73+83.08

State of Colorado Division of Highways	
SCALE: 3/8" = 1'-0"	DESIGNED BY: [Signature]
DATE: [Blank]	REVISIONS: [Blank]
EXCAVATION & SUPPORT TYPE III b	
DRAWING NO. C2-43	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	42 CX	326

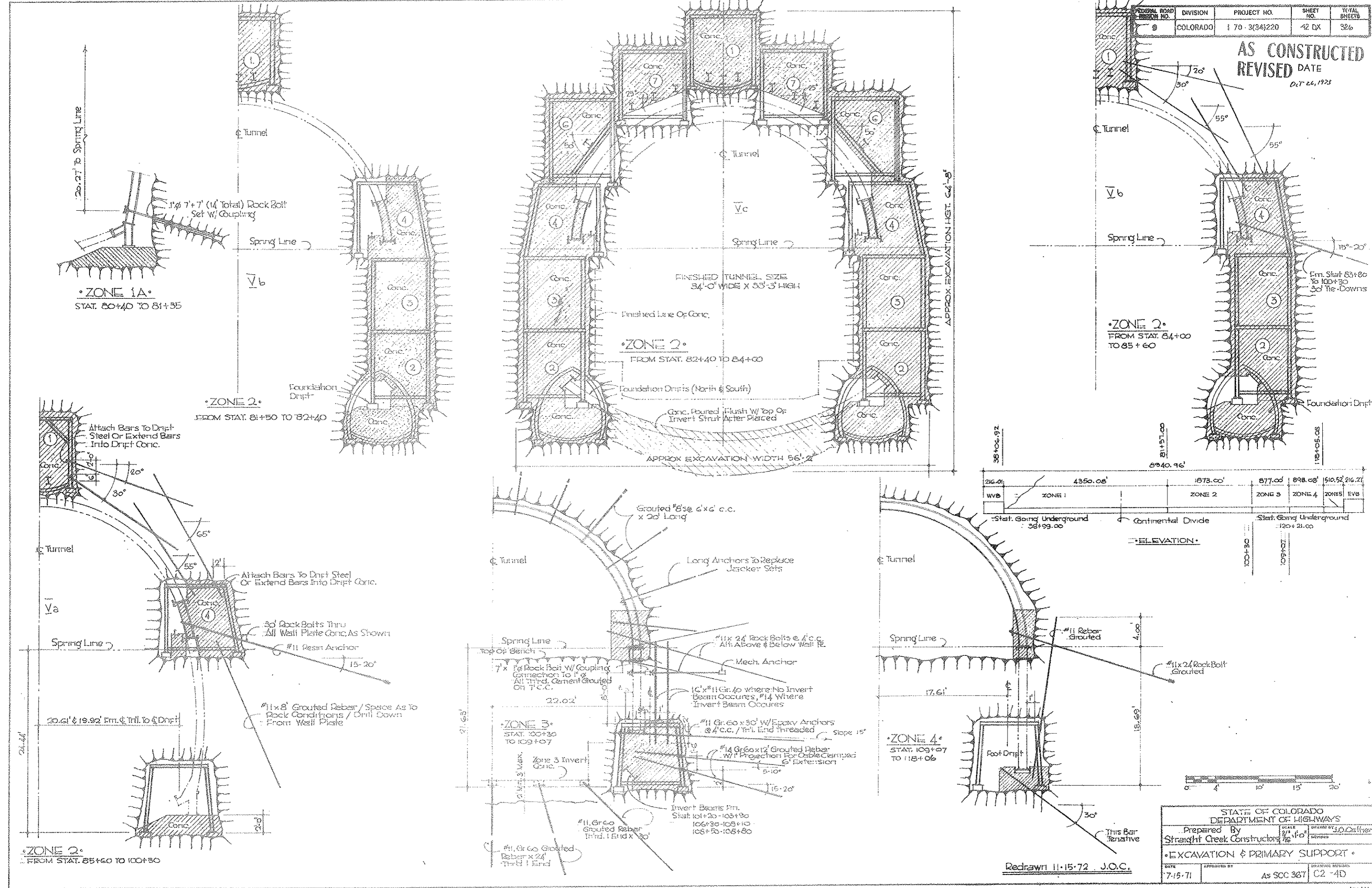
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



Tunnel Section III b Mod., Zone 1a
 Scale: 3/8" = 1'-0"
 From Sta. 80+40 To 81+35

State of Colorado Division of Highways			
DESIGNED BY	APPROVED BY	DATE	REVISION
DATE			
EXCAVATION & SUPPORT TYPE III b Mod.			
ENGINEER'S SIGNATURE			C2-4C

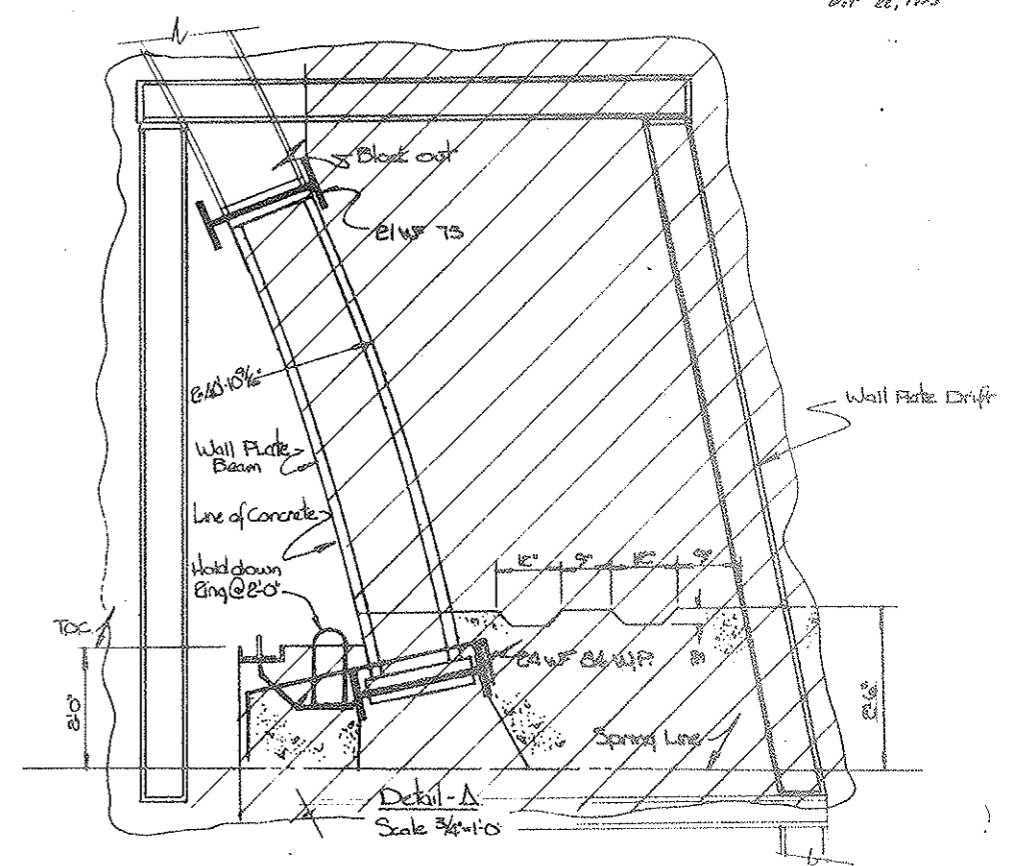
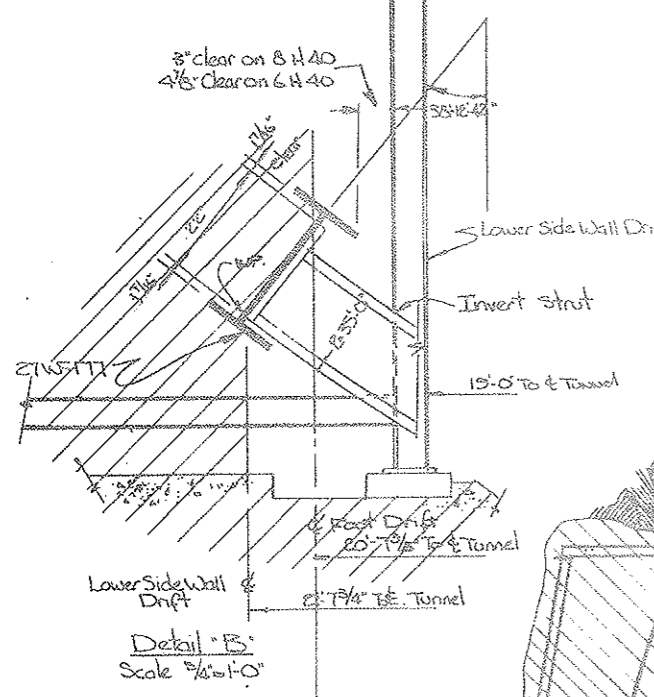
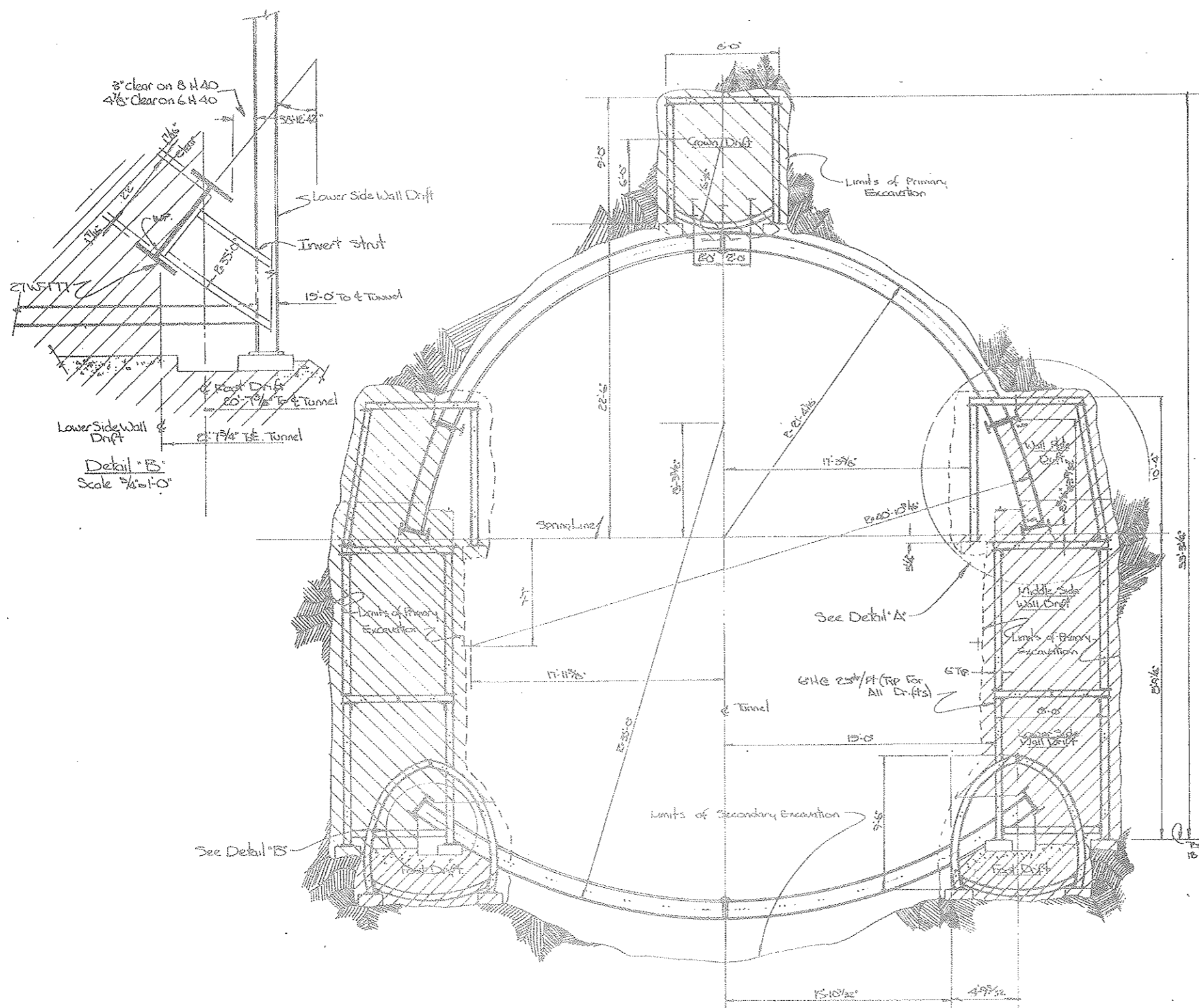
AS CONSTRUCTED
REVISED DATE
 D.T. 26, 1972



216.01	4350.06'	1673.00'	577.00'	898.05'	510.52'	216.27
WVB	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONES	EVB
Stat. Going Underground 58+99.00		Continental Divide		Stat. Going Underground 120+21.00		

REGION & DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9 COLORADO	170-3(34)220	42 EX	326

AS CONSTRUCTED
 REVISED DATE
 8-7-22, 1923



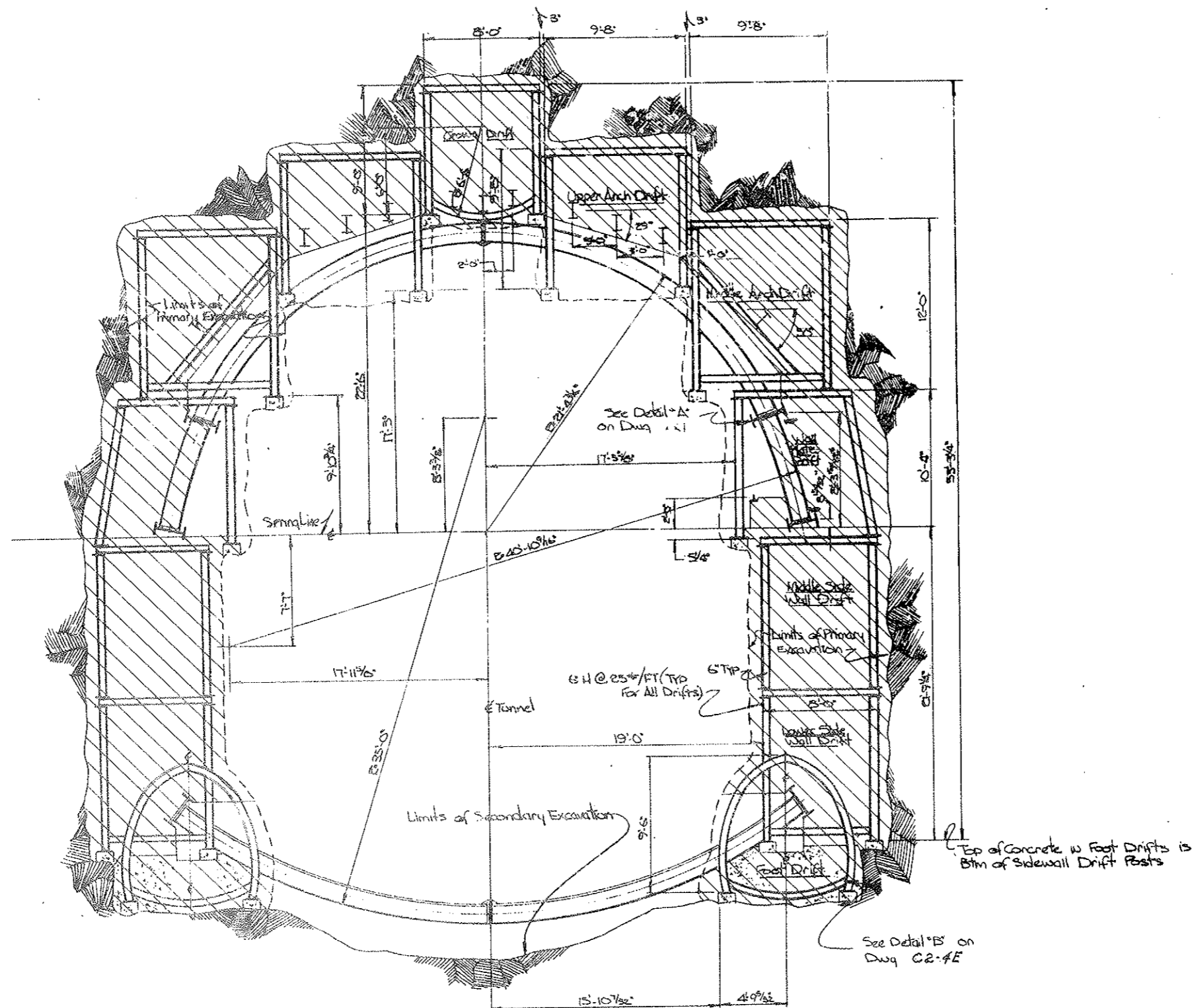
Tunnel Section (9 Drifts)
 Sta 81+30 To 82+40

Top of concrete in first drift is 8 1/4" of edwall drift posts.

State of Colorado Division of Highways		
DESIGNED BY EDWARD J. BROWN	APPROVED BY [Signature]	REVISIONS [Table]
Excavation & Support - 9 DRIFTS		
DRAWN BY C. J. [Signature]		DATE 12-4-22

PROJECT NO.	DIVISION	PROJECT NO.	SHEET	TOTAL SHEETS
9	COLORADO	170-3,315-00	2 FA	136

AS CONSTRUCTED
 REVISION DATE
 OCT 26, 1913

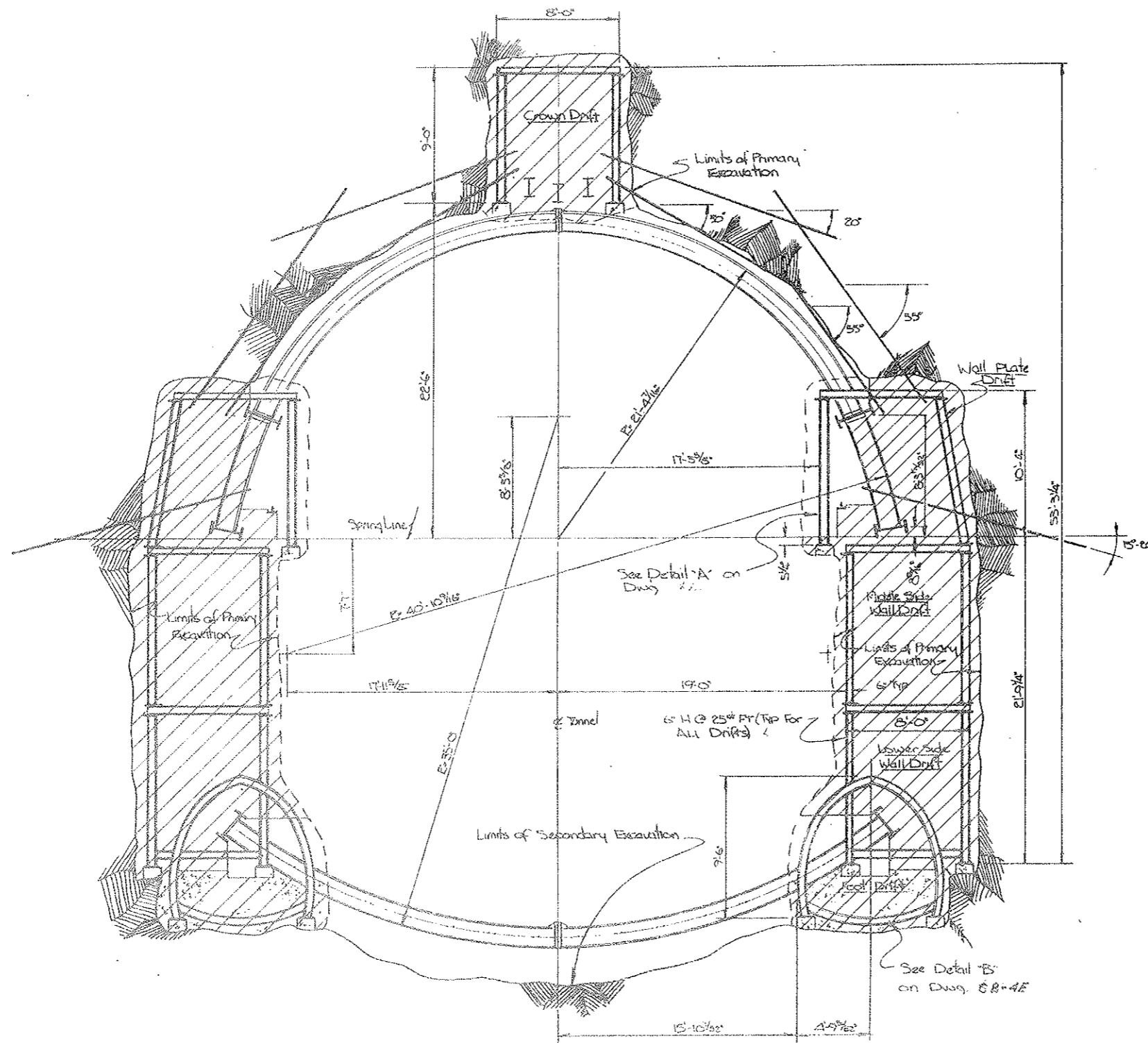


Tunnel Section (13 Drift) Area.
 Sta 82+40 TO 84+00.

State of Colorado Division of Highways		
SCALE: 1/4" = 1'-0"	APPROVED BY:	DESIGNED BY:
DATE: Aug 20, 1913		REVISED:
Excavation & Support - 13 DRIFTS		
		DESIGNED BY: C2-4F

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-31341220	42 GA	336

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

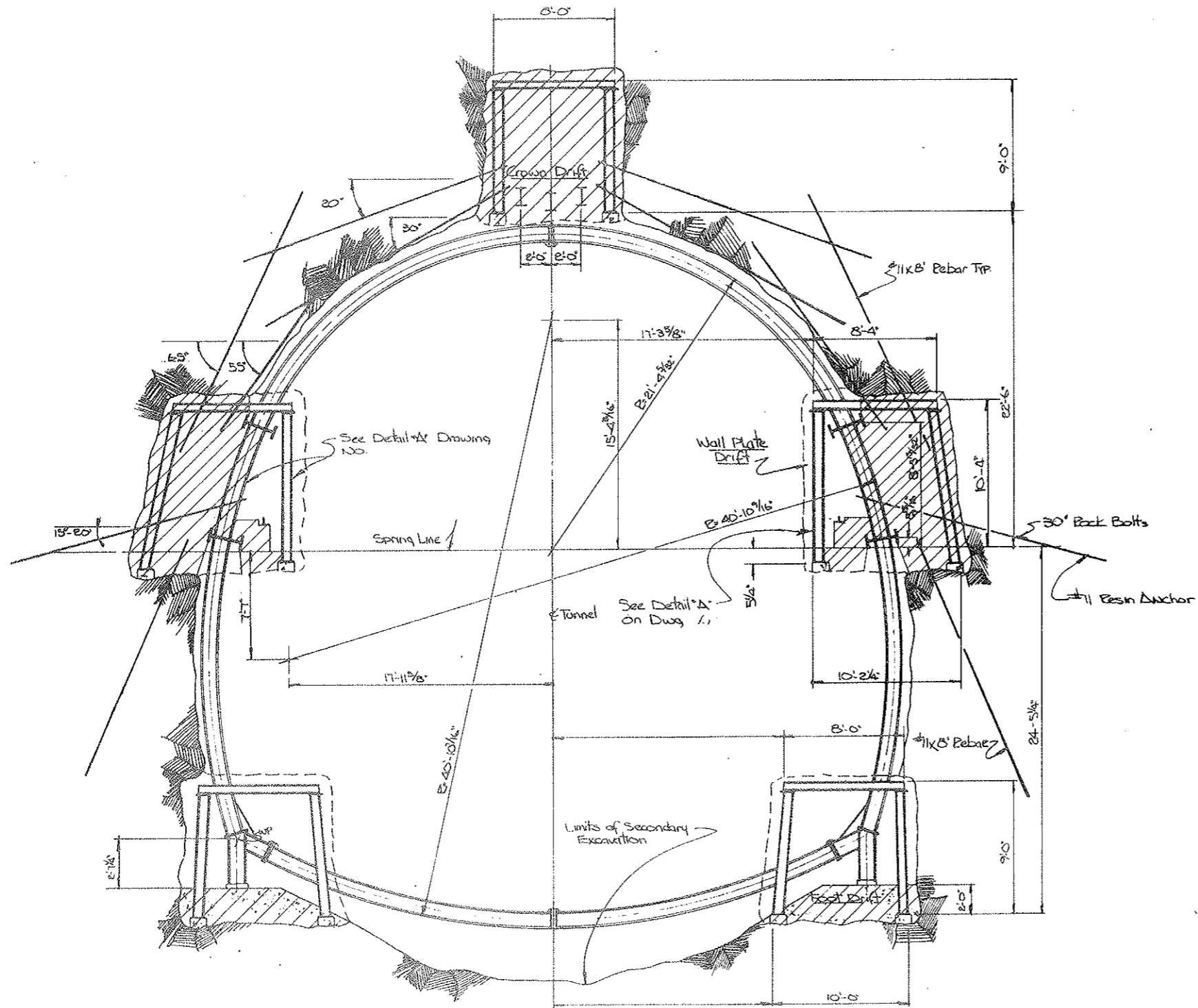


Tunnel Section IVa
 Sta 84+00 to 85+60.

State of Colorado Division of Highways	
DESIGNED BY	DATE
CHECKED BY	DATE
EXCAVATION & SUPPORT - 9 DRIE IS	
CS-4G	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	42 HX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1928

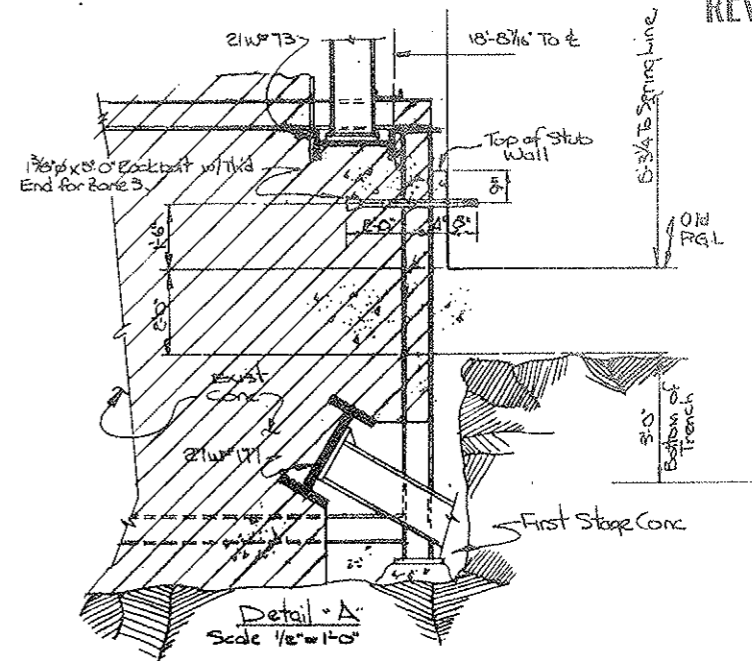
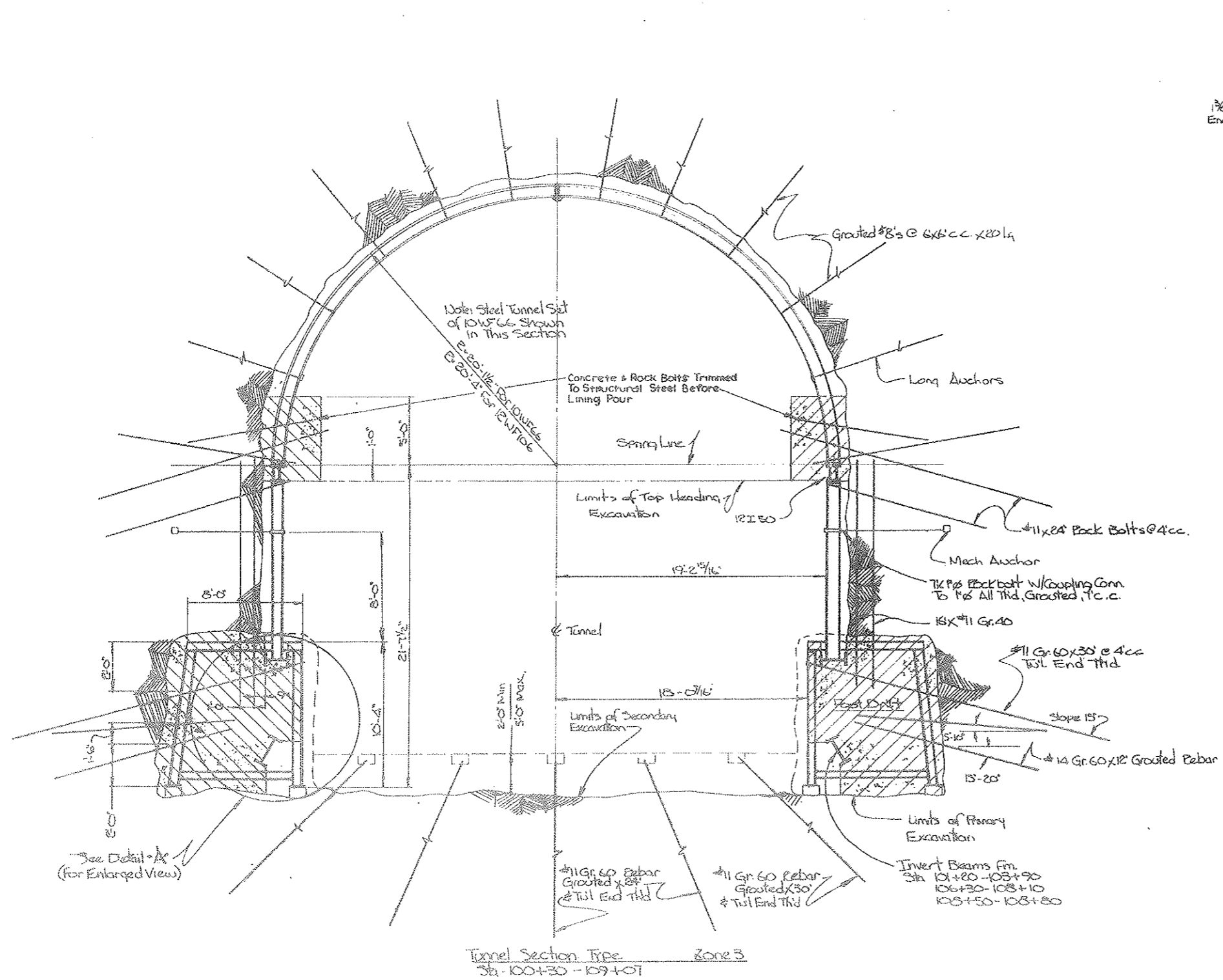


Tunnel Section IIA
 From Sta 85+60 To 100+30.

State of Colorado Division of Highways		
SCALE: 1/4"=1'-0"	APPROVED BY:	DRAWN BY: [Signature]
DATE: Aug 22, 1928		REVISIONS
EXCAVATION & SUPPORT-5 DRIFTS		
		DRAWING NUMBER C2-411

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	42 XX	526

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973

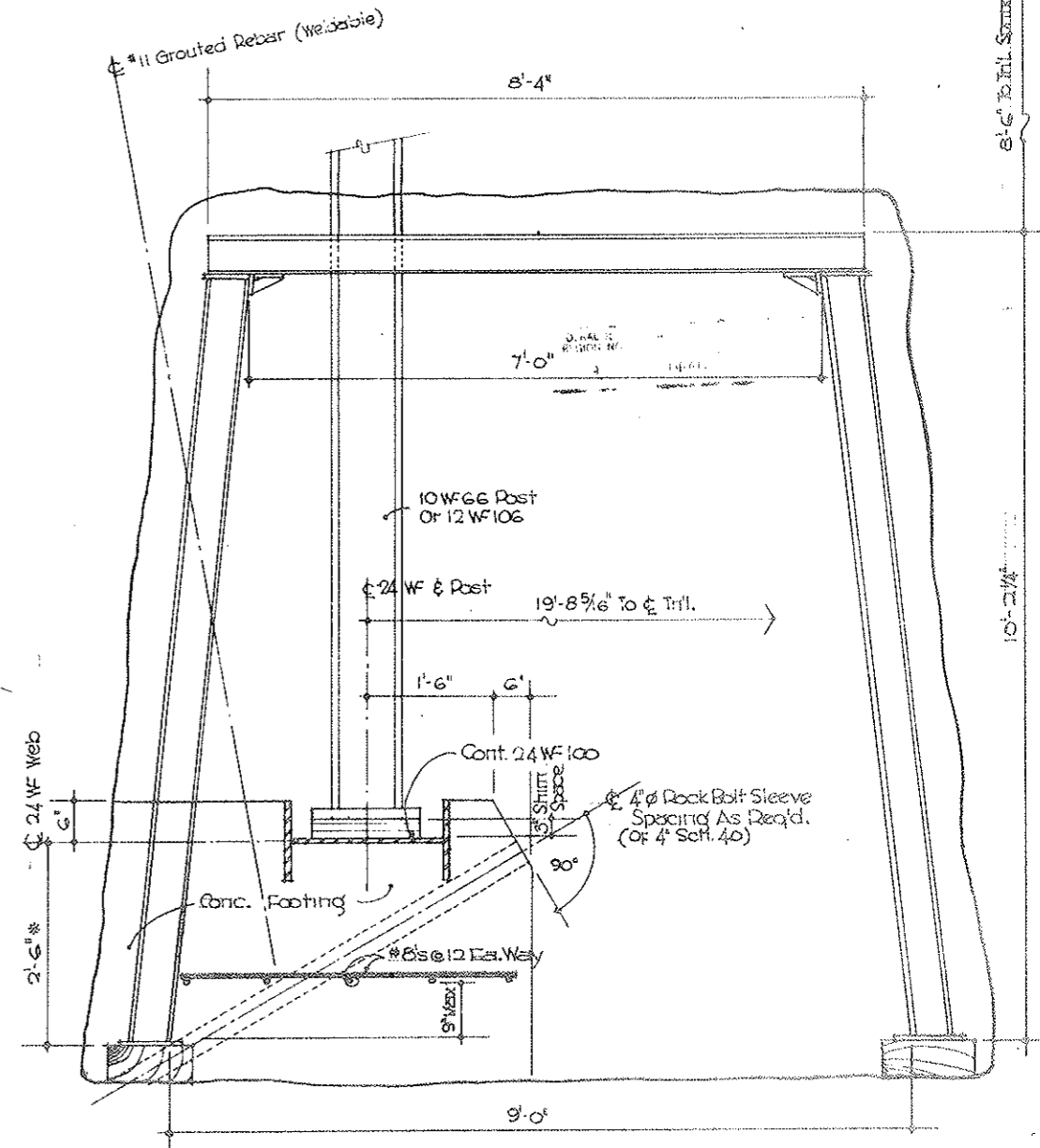
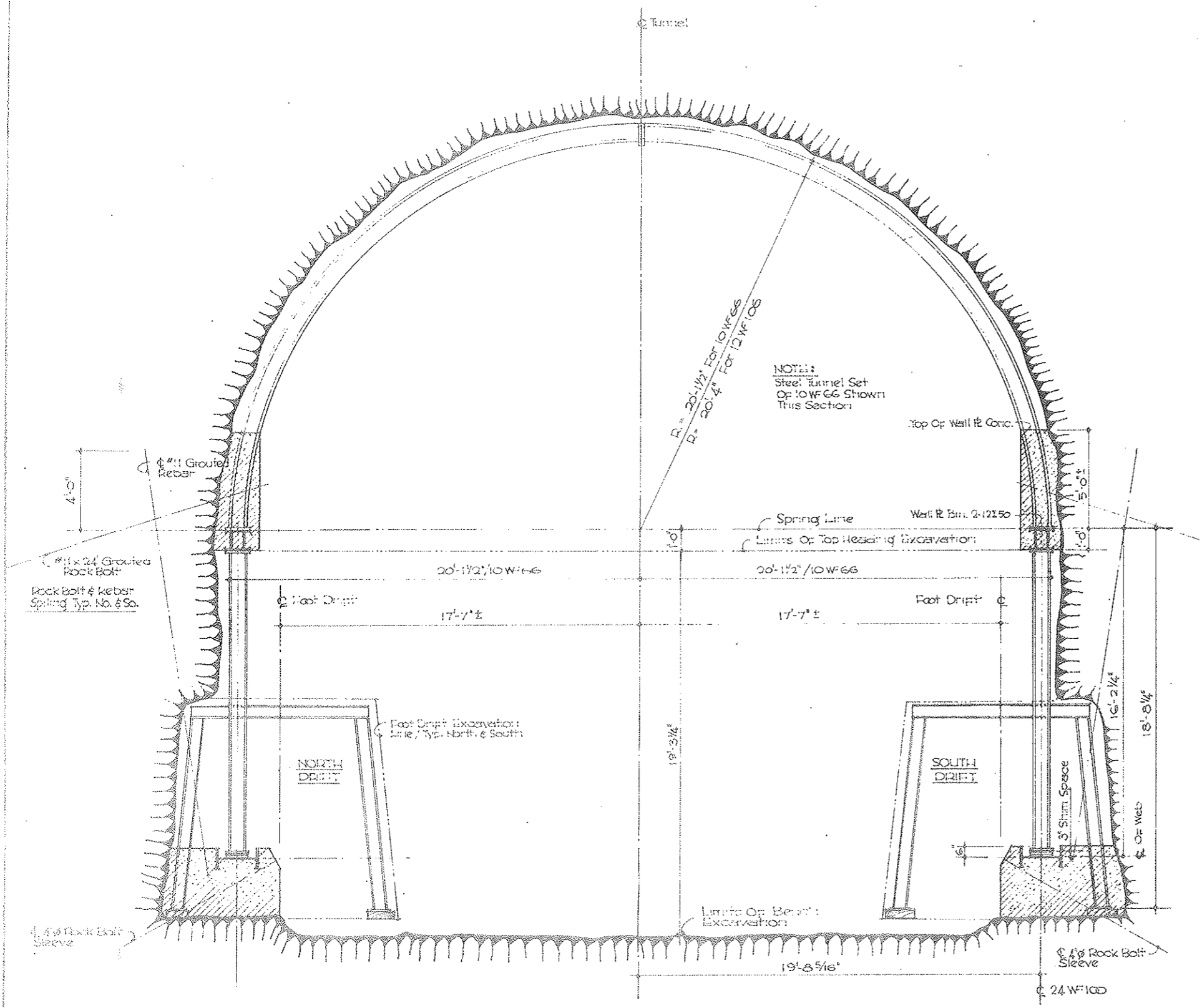


Tunnel Section Type Zone 3
 Sta. 100+30 - 109+01

State of Colorado Division of Highways		
SCALE: 1/2"=1'-0"	APPROVED BY:	DESIGNED BY:
DATE: 11-23-73	REVISION:	REVISION:
EXCAVATION & SUPPORT TYPE IIIa		
C2 41		

SECTION NO.	PROJECT NO.	DATE	BY	SCALE
9	170-3134223		42 JK	3/8" = 1'-0"

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1978



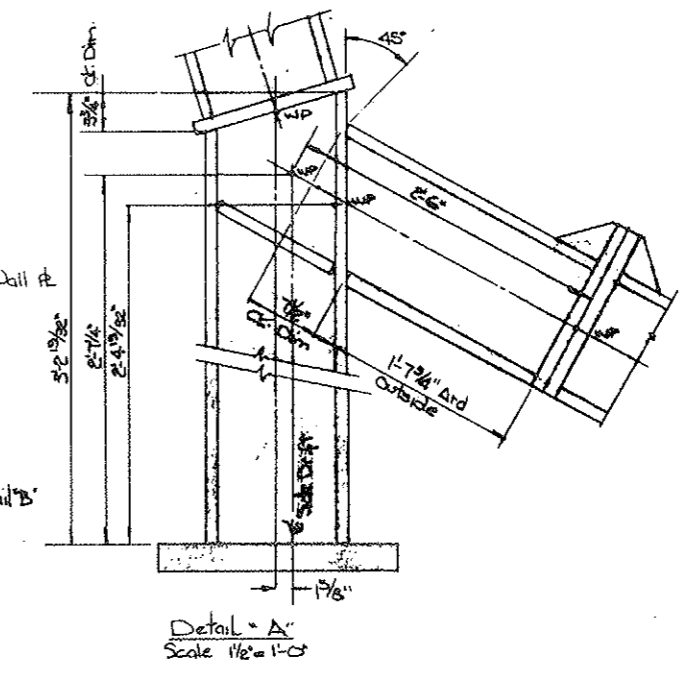
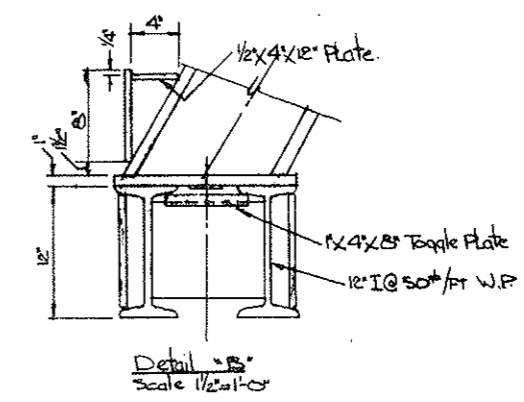
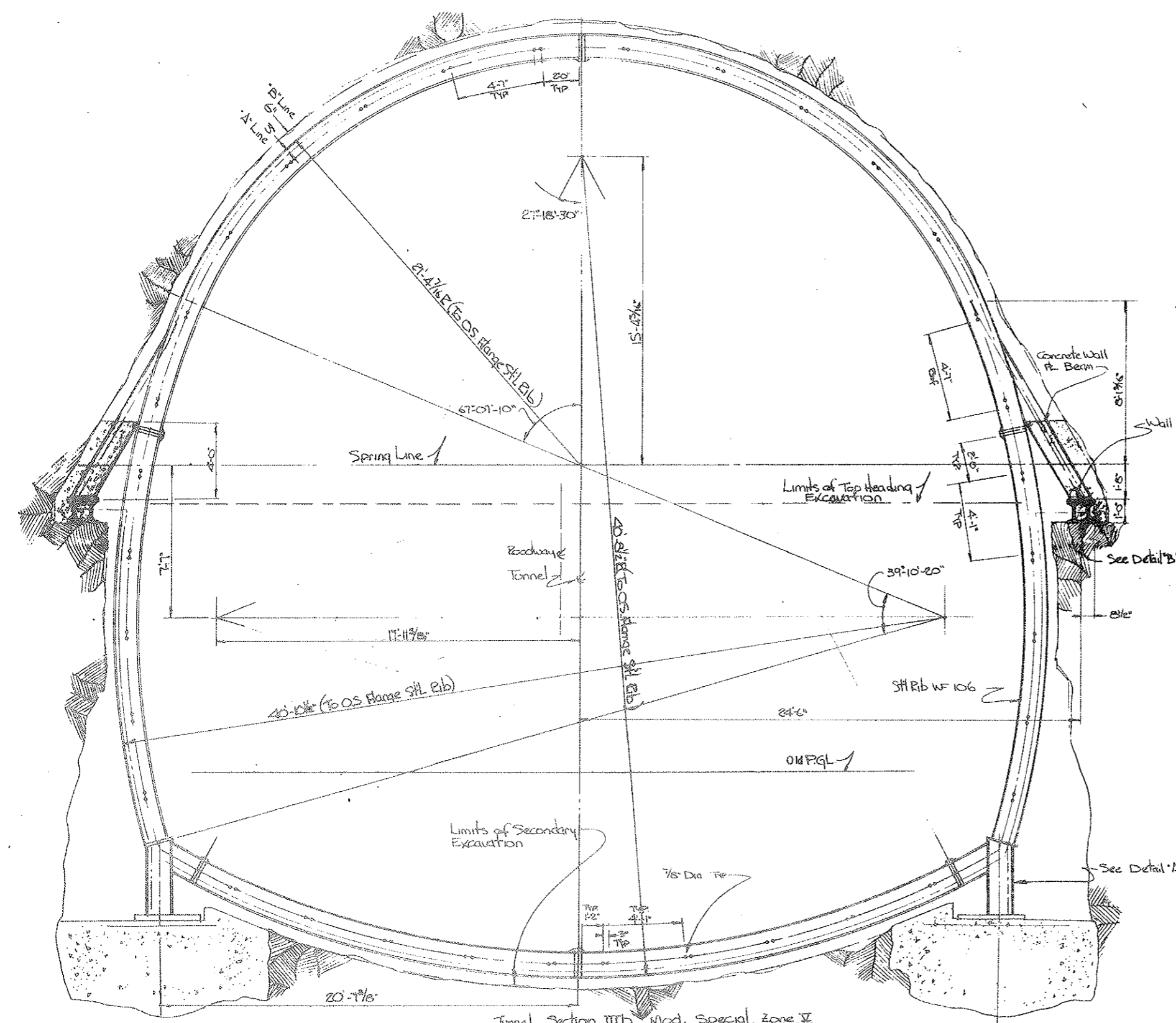
FOOT DRIFT NORTH DRIFT SHOWN / SOUTH DRIFT SYM. ABOUT INL. C.
 Scale 1\"/>

ZONE 4 STAT. 109+07 TO 118+06
 Scale 3/8\"/>

STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
DESIGN NOTED	APPROVED BY	DESIGNED BY	REVISIONS
DATE 8/78			
EXCAVATION & SUPPORT - TYPE IIIa or III b			
Prepared By: Straight Creek Constructors			102-4J

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	42 KX	326

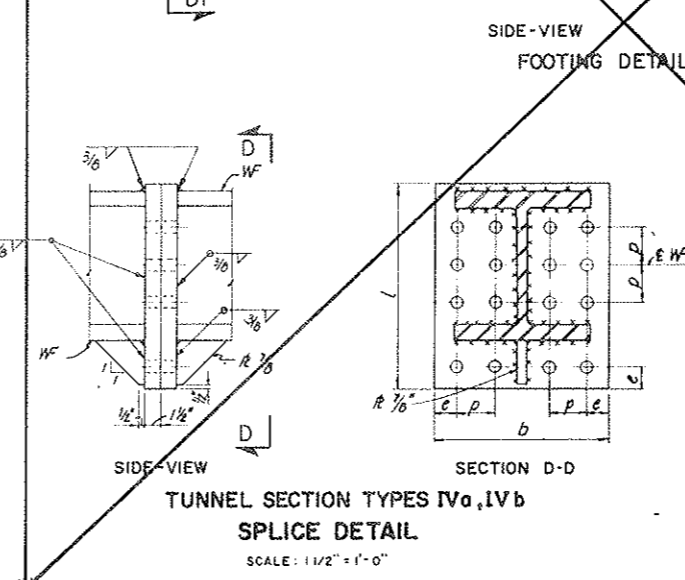
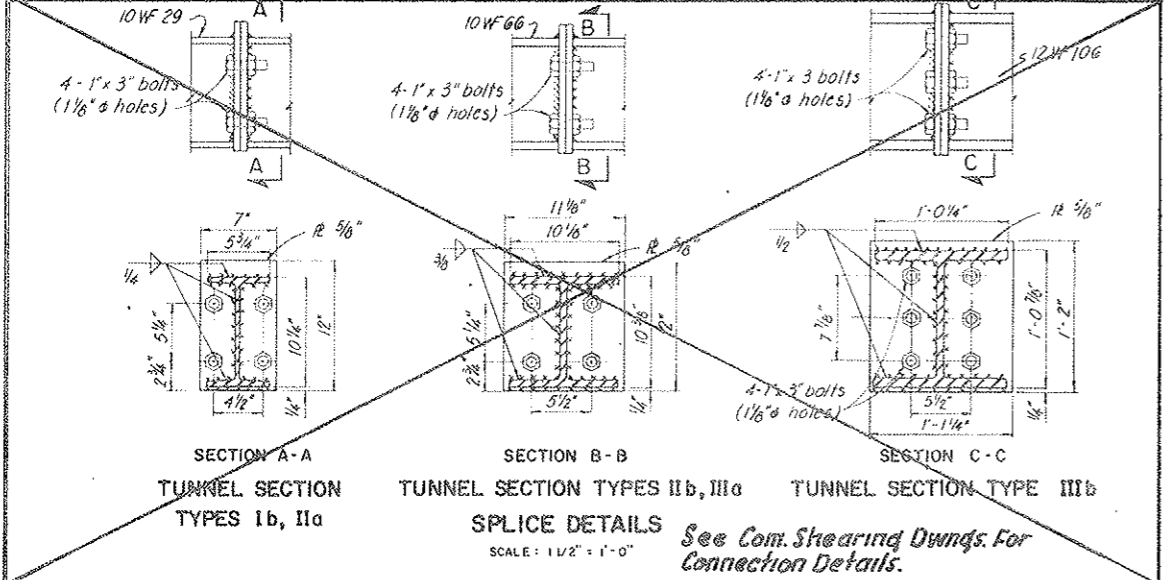
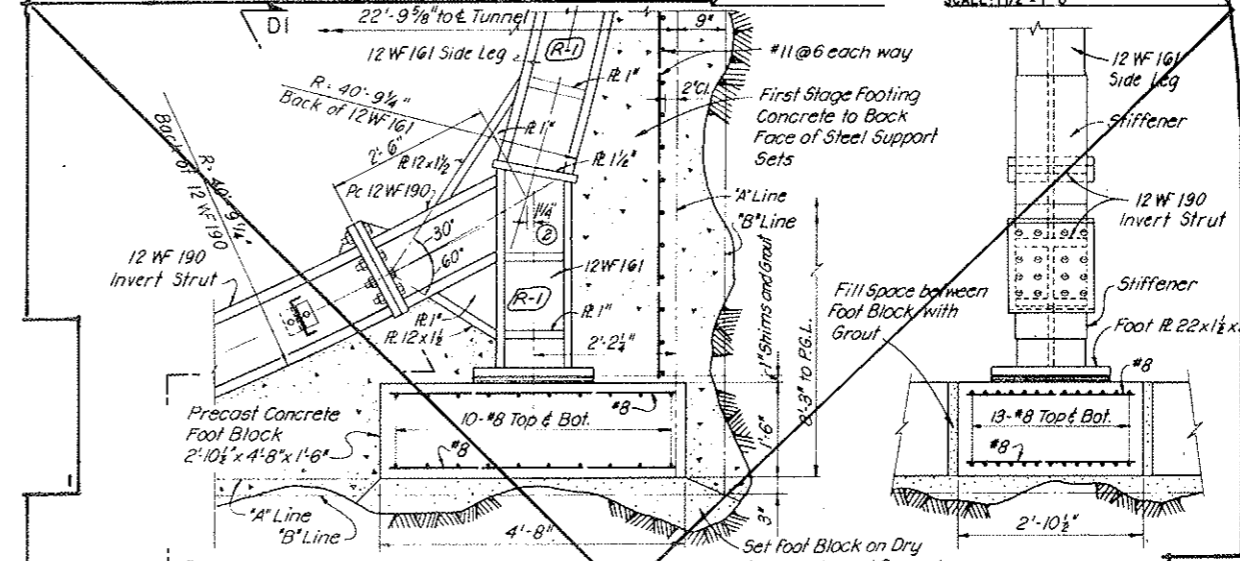
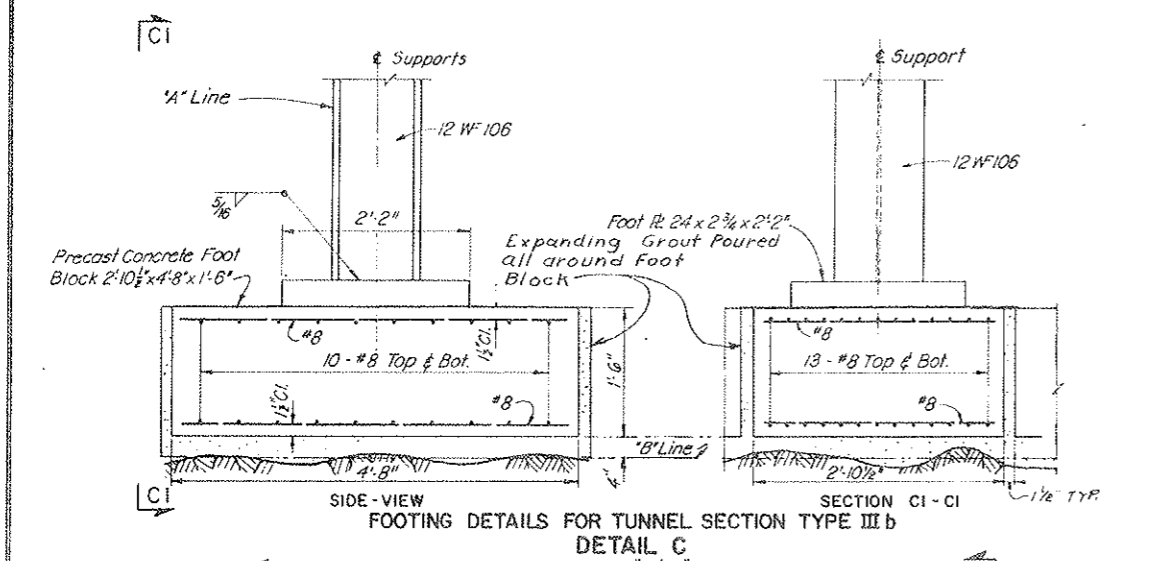
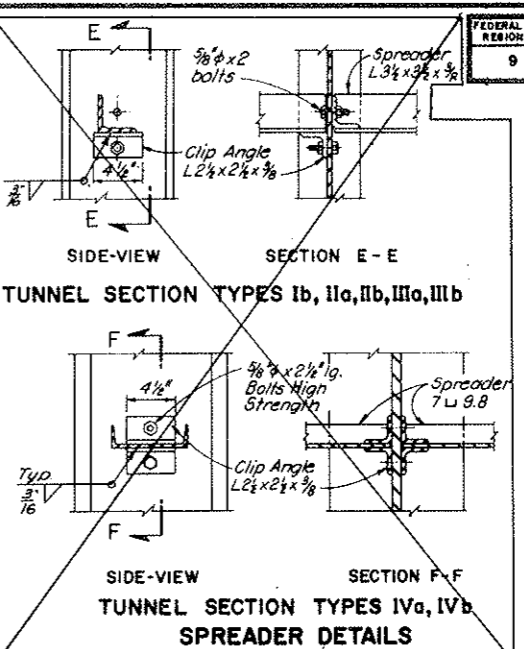
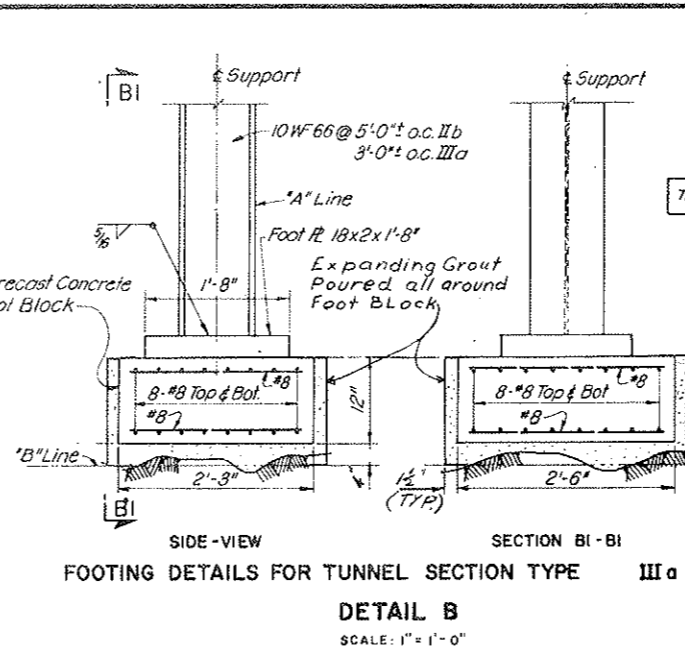
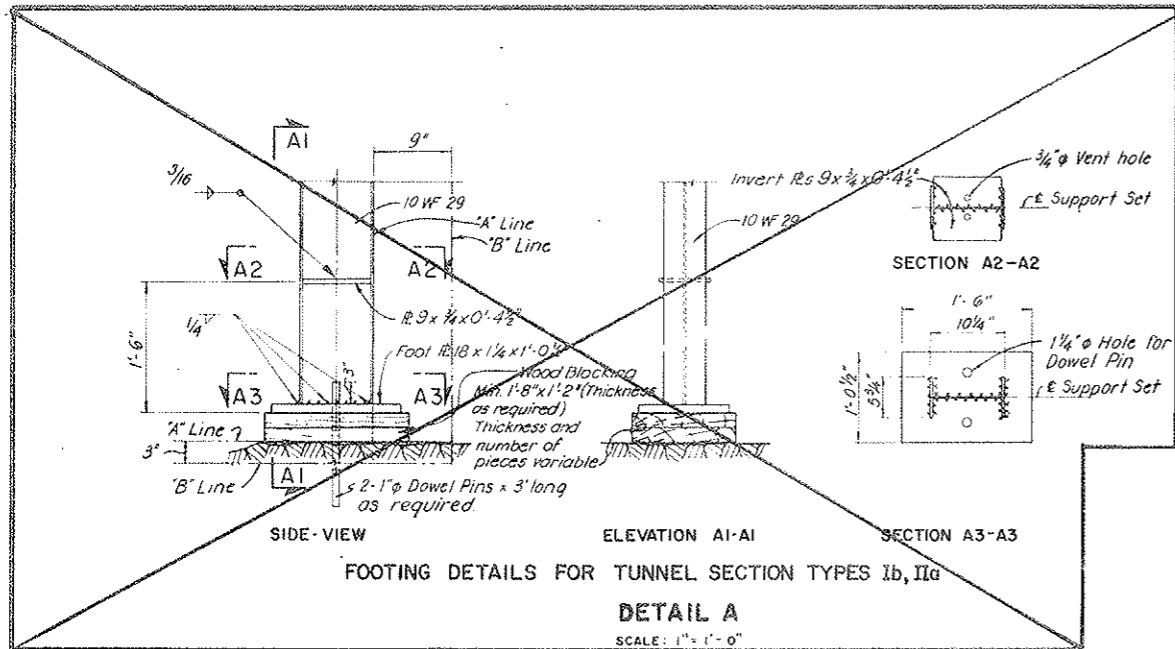
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



Tunnel Section III Mod. Special, Zone IV
 Scale 1/8" = 1'-0"
 From Sta 118+05.08 To 123+06.6

State of Colorado Division of Highways			
DESIGNED	APPROVED BY	DESIGNED BY	REVISIONS
DATE			
EXCAVATION & SUPPORT - TYPE III Mod. Special			
C2-4K			

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



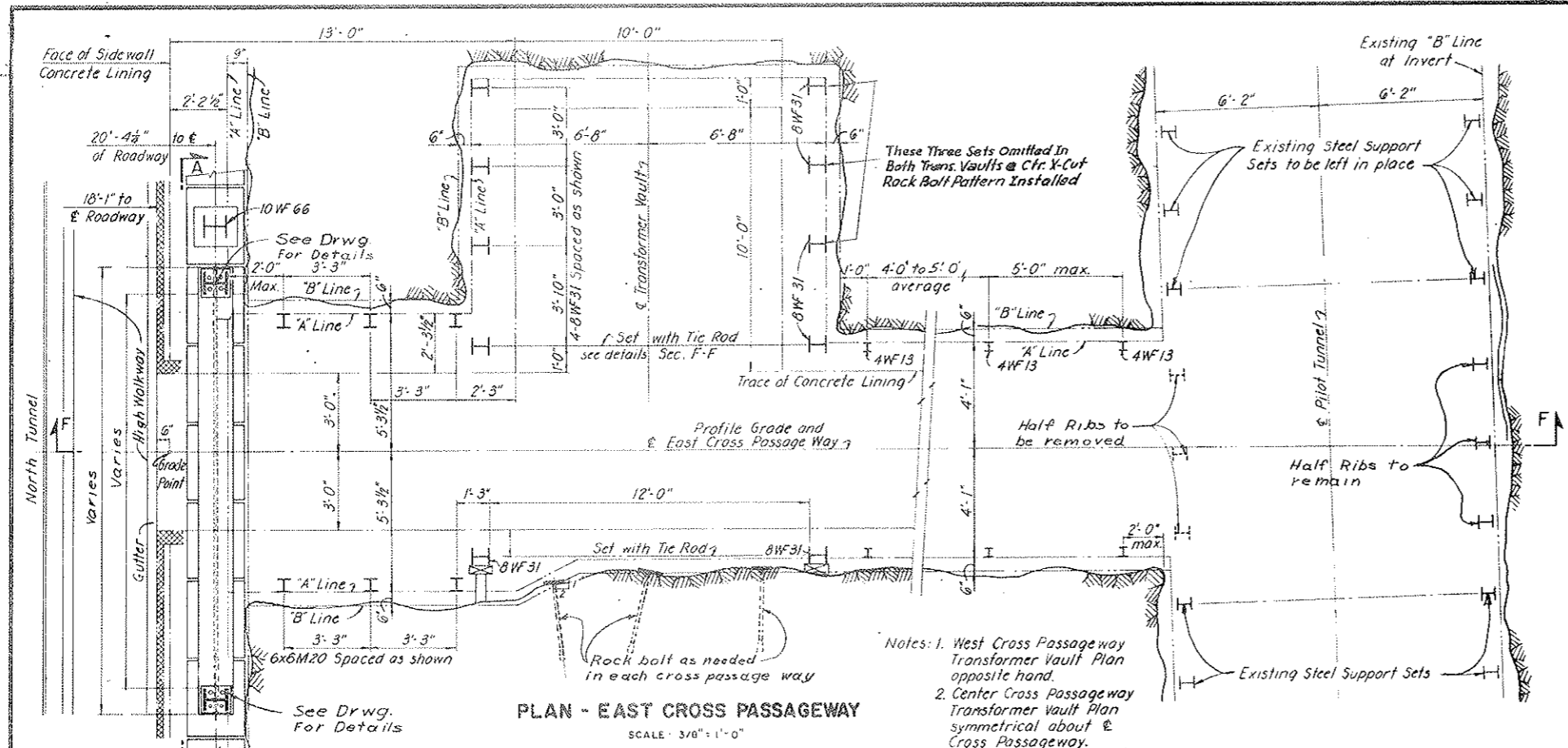
Property	Dimensions in Inches	
	12 WF 133 12 WF 161 12 WF 190	14 WF 211
Plate	b 16 19	17 21
Bolt dia.	d 1 1/8	1 1/4
Edge dist.	e 2	2 3/8
Bolt Spacing	p 3 1/2	3 3/4

NOTES:
 Work this drawing with Dwg. C2-4.
 Precast concrete Foot Blocks are paid for under their respective class of concrete according to Tunnel Section Type

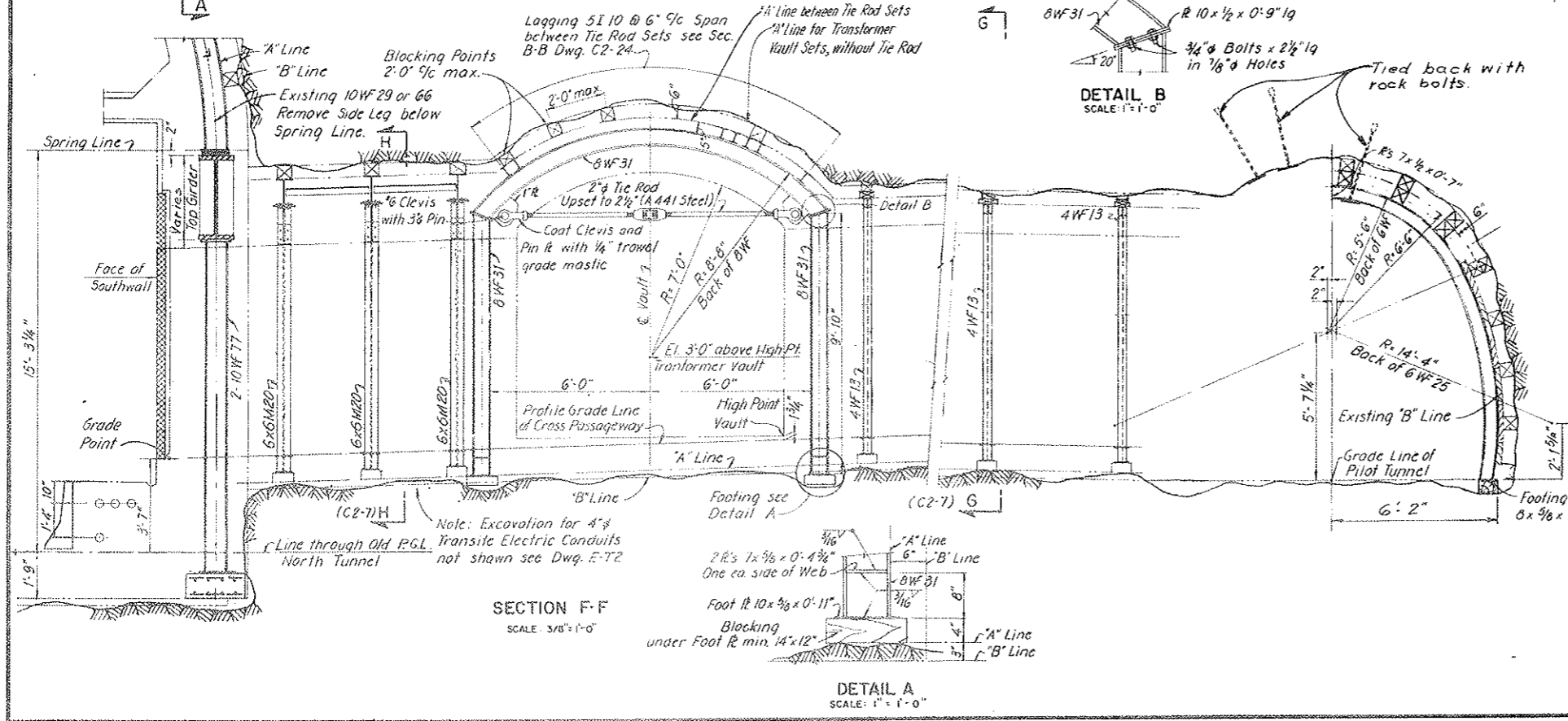
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL TUNNEL STEEL SUPPORTS ROCK BORE SECTION TYPICAL DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	S.M.R.	RECOMMENDED:			
DRAWN:	E.G.P.	CHECKED:			
SUBMITTED:	S.M.R.	APPROVED:			
DRAWING NO. C2-5		SCALE: AS NOTED DATE: AUGUST 1967			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	44	326

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



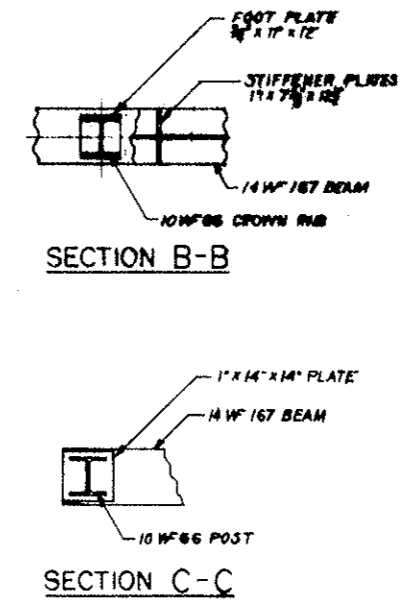
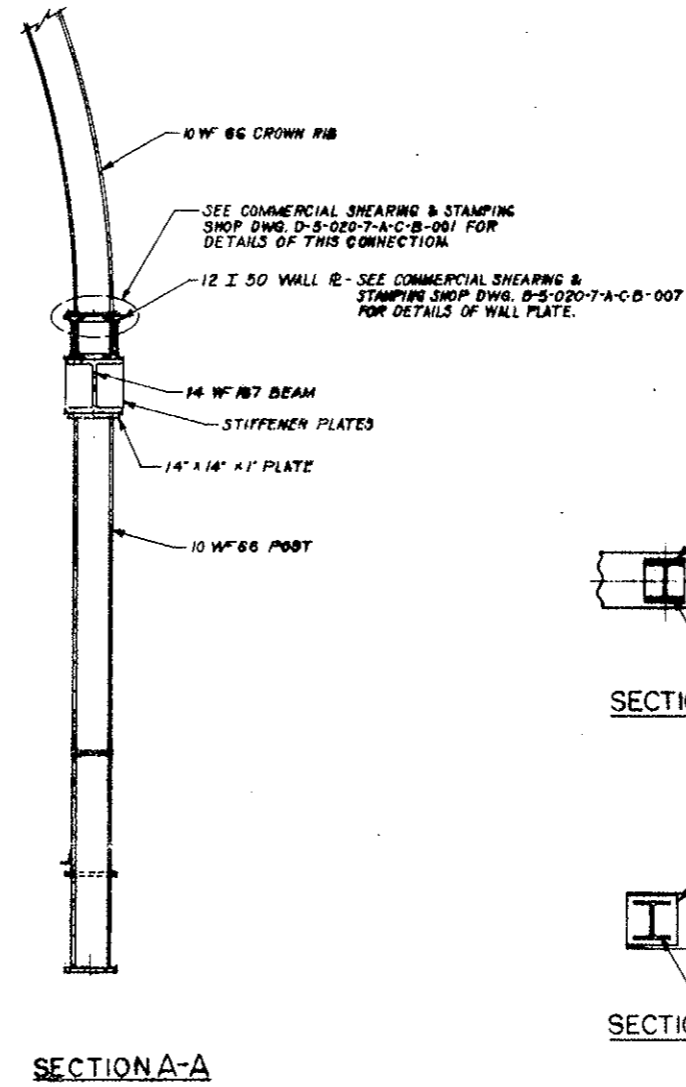
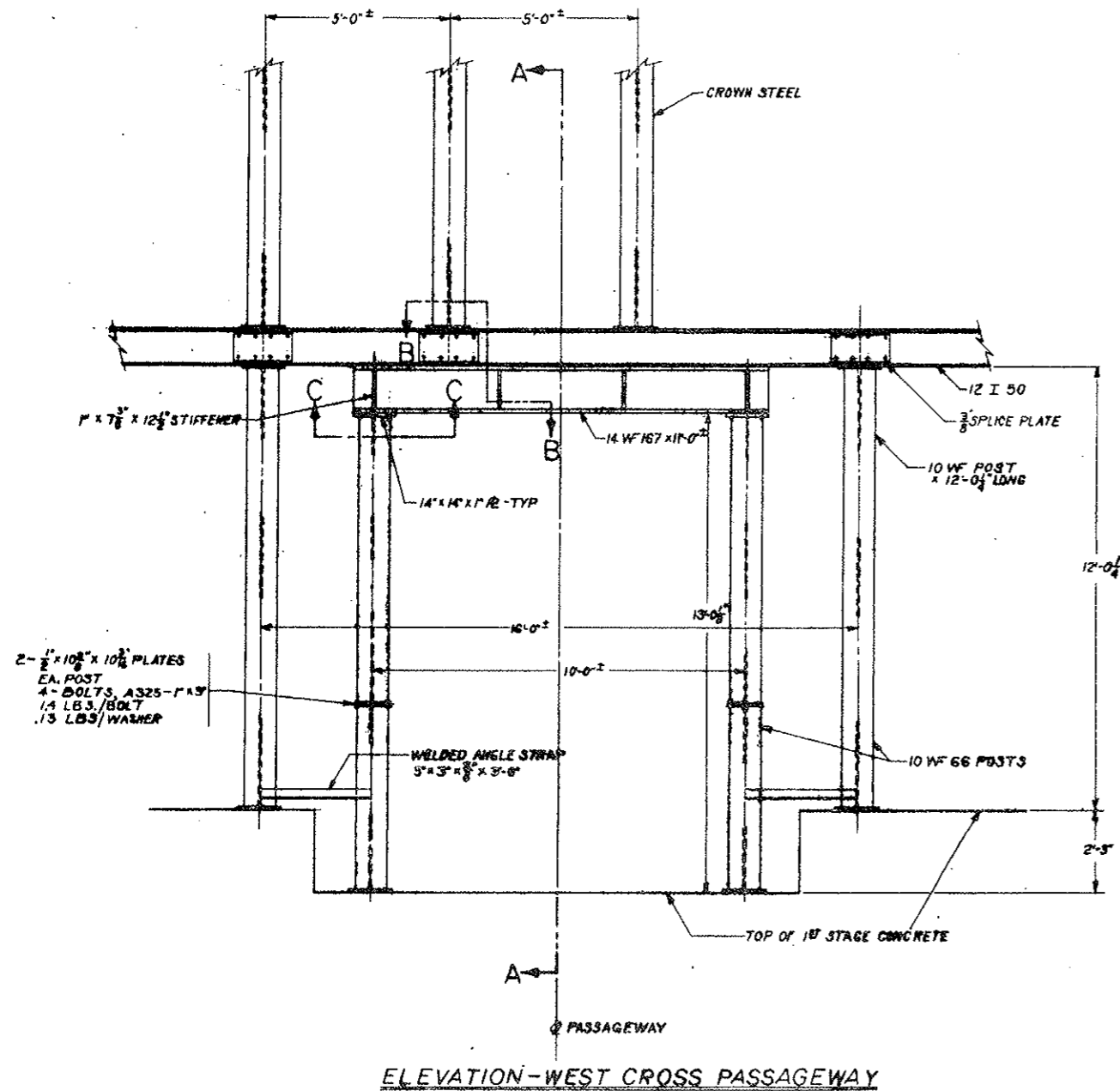
- Notes: 1. West Cross Passage Way Transformer Vault Plan opposite hand.
 2. Center Cross Passage Way Transformer Vault Plan symmetrical about C Cross Passage Way.



- NOTES:**
 For General Tunnel Notes see Dwg. C2-2
 For locations of Cross Passage Ways see Dwgs. G2-10 to G2-16 incl.
 For Cross Passage Way concrete details see Dwg. C2-23 and C2-24.
 All steel support sets, spreader angles and lagging in cross passage ways shall conform to ASTM A-36 except as otherwise shown.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL TUNNEL STEEL SUPPORTS PLAN AT CROSS PASSAGEWAYS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	P.V.P.-S.M.R.	RECOMMENDED:	<i>[Signature]</i>		
DRAWN:	E.G.P.	CHECKED:	<i>[Signature]</i>		
SUBMITTED:	<i>[Signature]</i>	APPROVED:	<i>[Signature]</i>		
			DRAWING NO. C2-6		
			SCALE: AS NOTED DATE: AUGUST 1967		

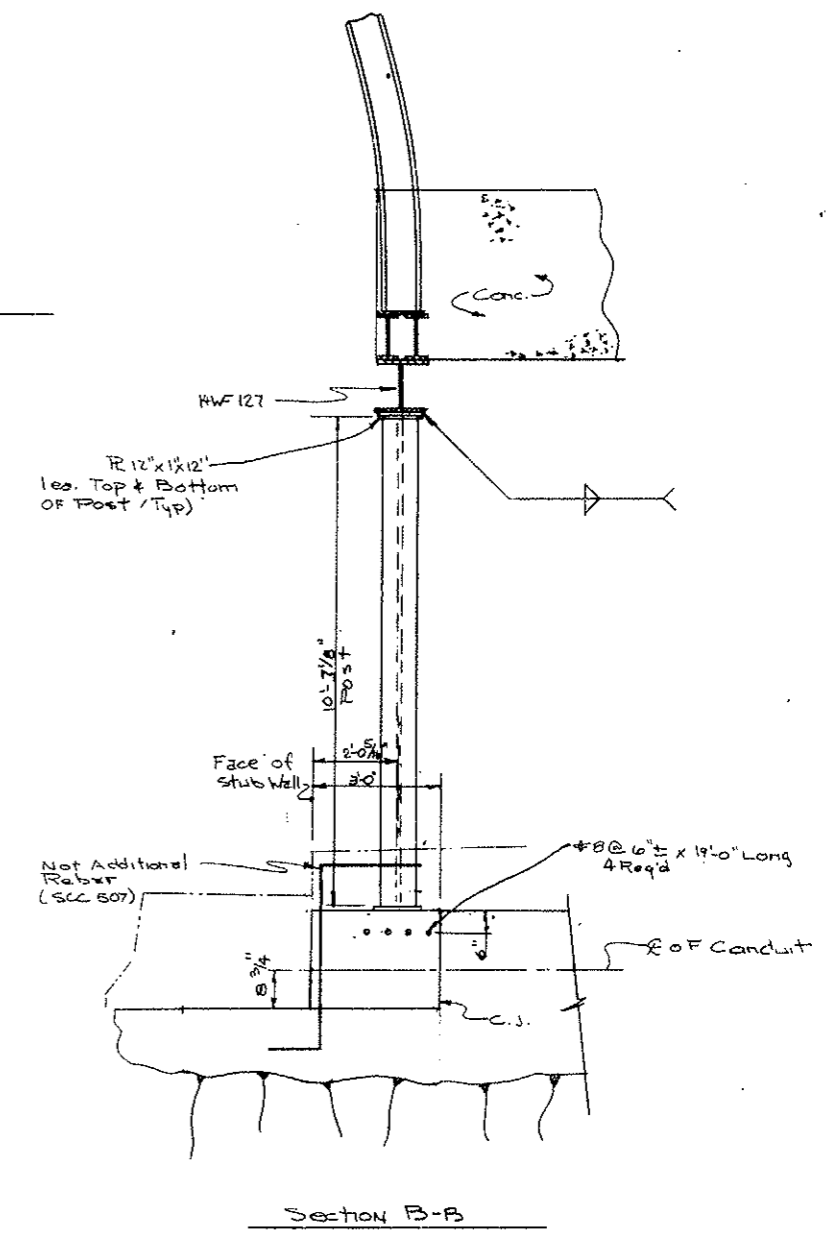
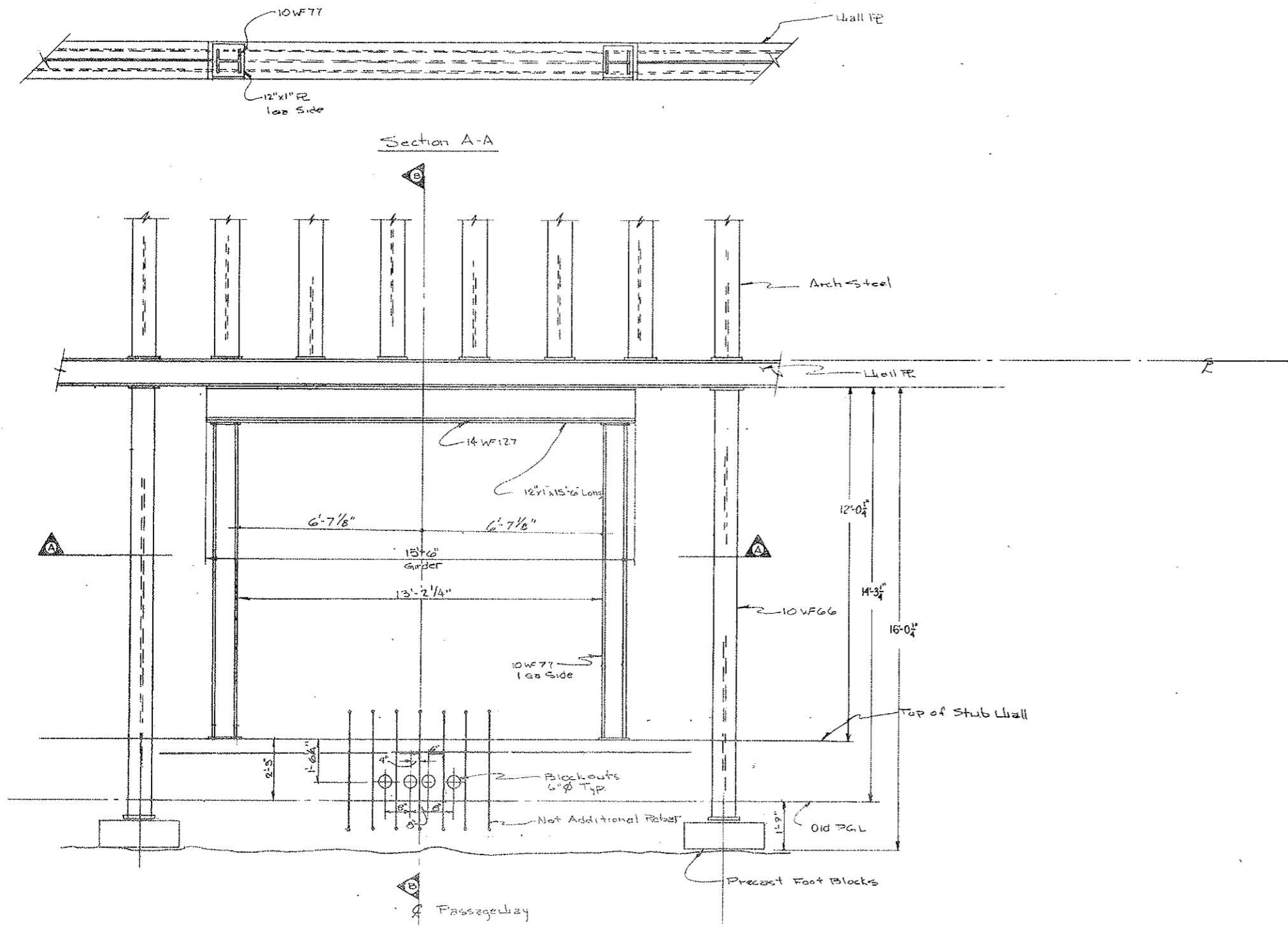
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1978



STRAIGHT CREEK CONSTRUCTORS			
SCALE: 3/4"=1'-0"	APPROVED BY:	DRAWN BY E.F.R.	
DATE: 10/26/78		REVISED	
SUPPORT: AT WEST CROSS PASSAGEWAY			
DRAWING NUMBER: C2-6A			

REGION NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	44 BX	326

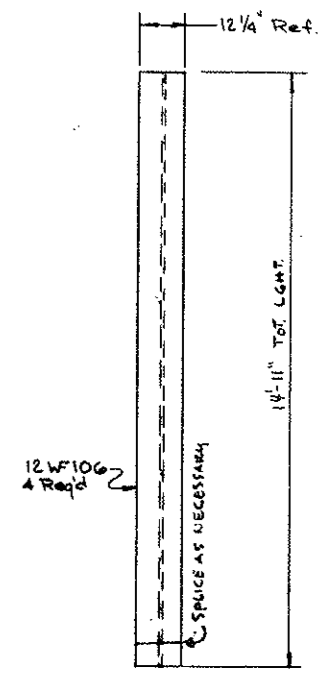
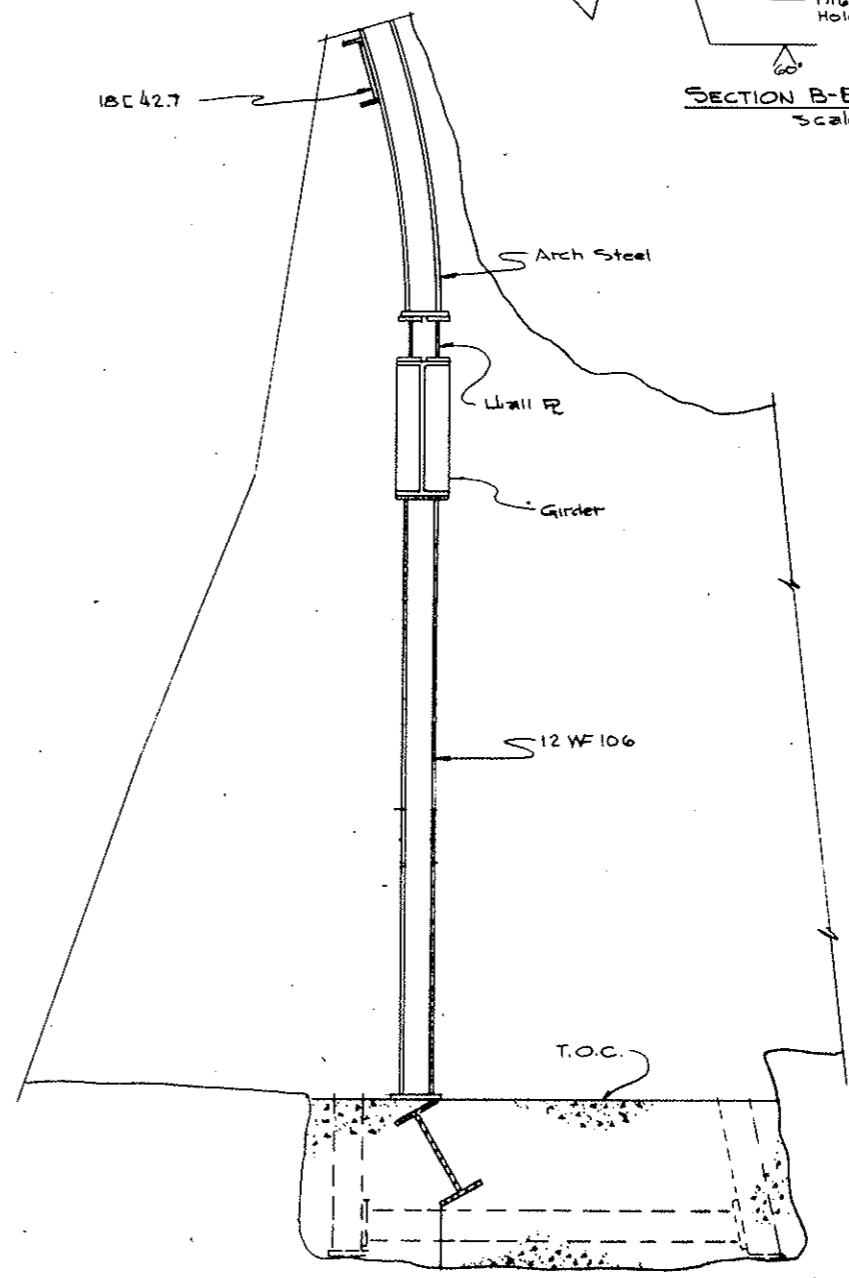
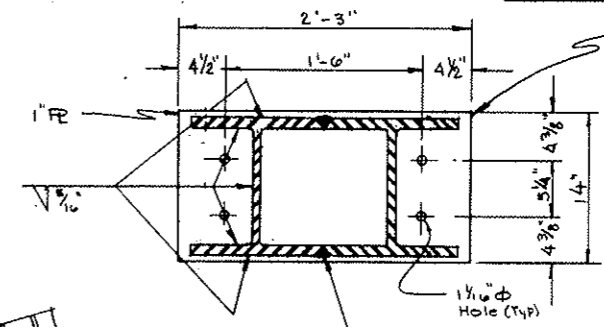
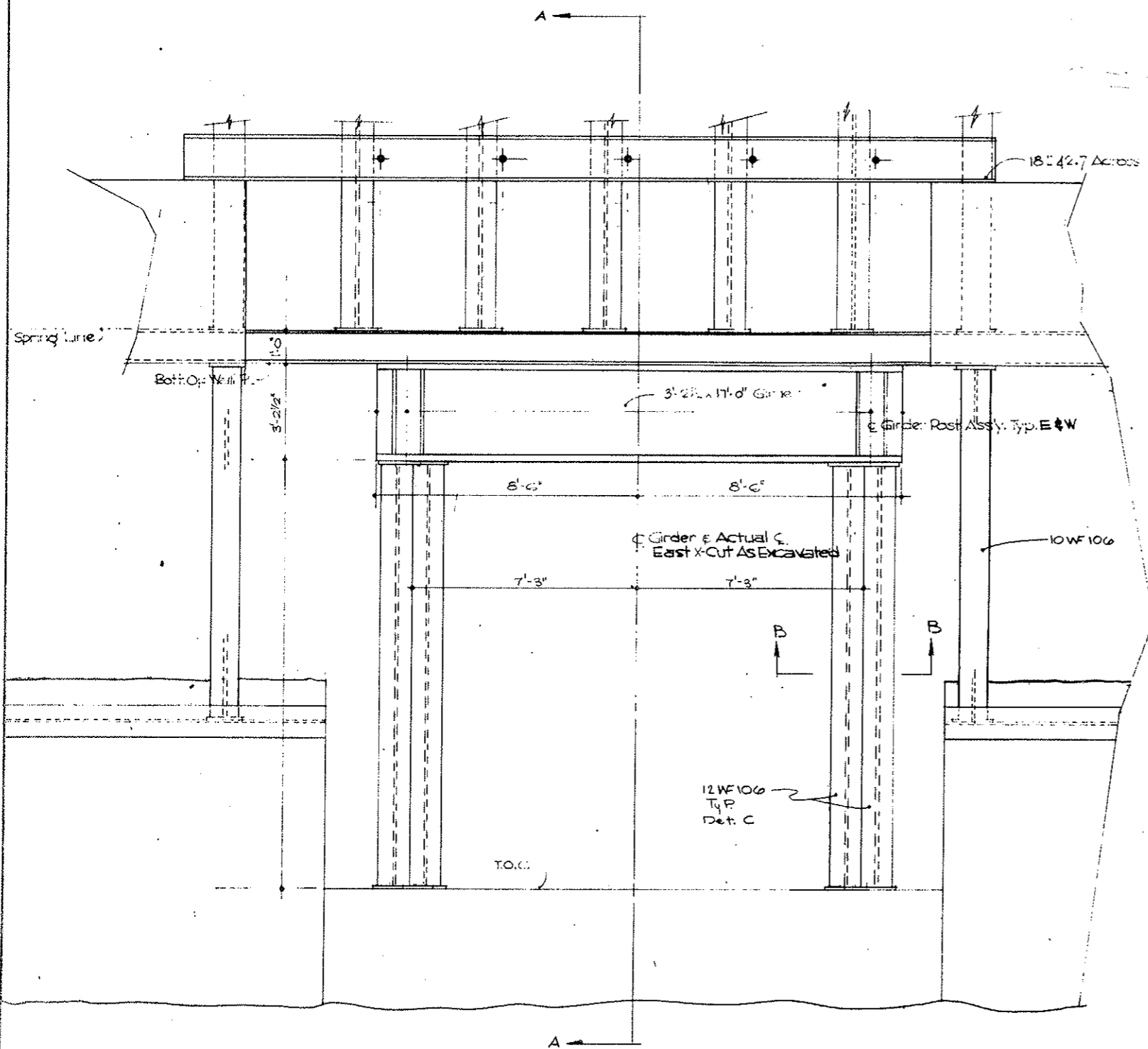
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



STRAIGHT CREEK CONSTRUCTORS			
SCALE	1/2" = 1'-0"	DESIGNED BY	BYNBY
SUPPORT AT CENTER X-PASSAGEWAY			
DATE	APPROVED BY: DOH	DATE:	REVISION
3/28/72	By: AD-566538		C2-603

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	44 CX	326

AS CONSTRUCTED
REVISED DATE
 Oct 26, 1973



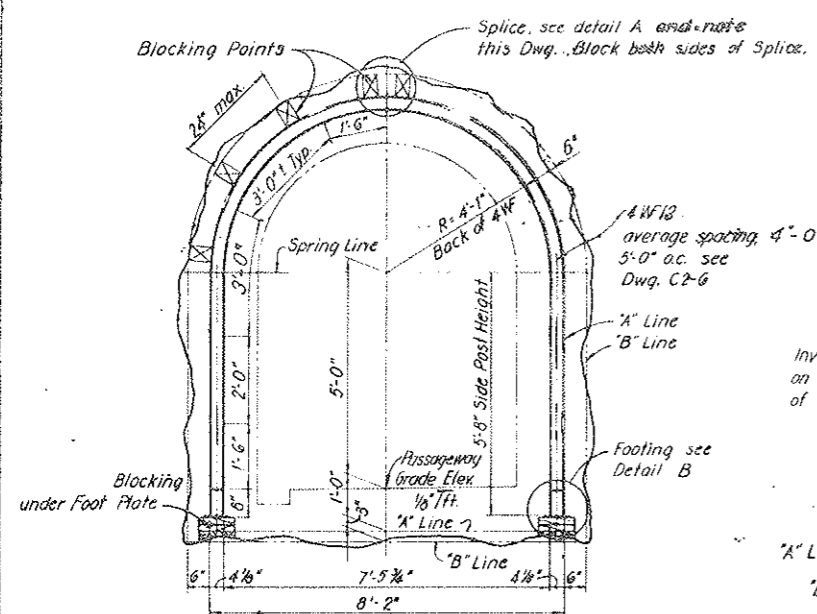
SECTION A-A
 Scale: 1/2"=1'-0"

DETAIL C
 Scale: 1/2"=1'-0"

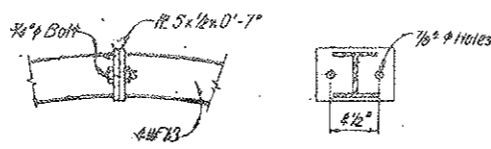
STRAIGHT CREEK CONSTRUCTORS			
SCALE	1/2"=1'-0"	DESIGNED BY	JOBK/LR
SUPPORT AT EAST CROSS PASSAGEWAY			
DATE	2-21-72	APPROVED BY	C2-60

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(24) 220	48	328

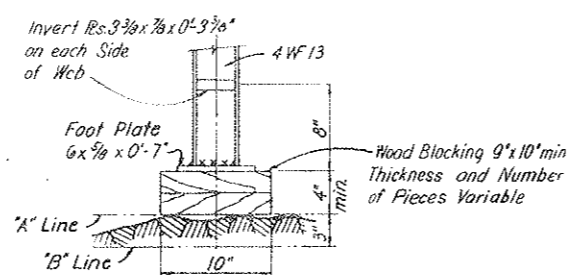
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



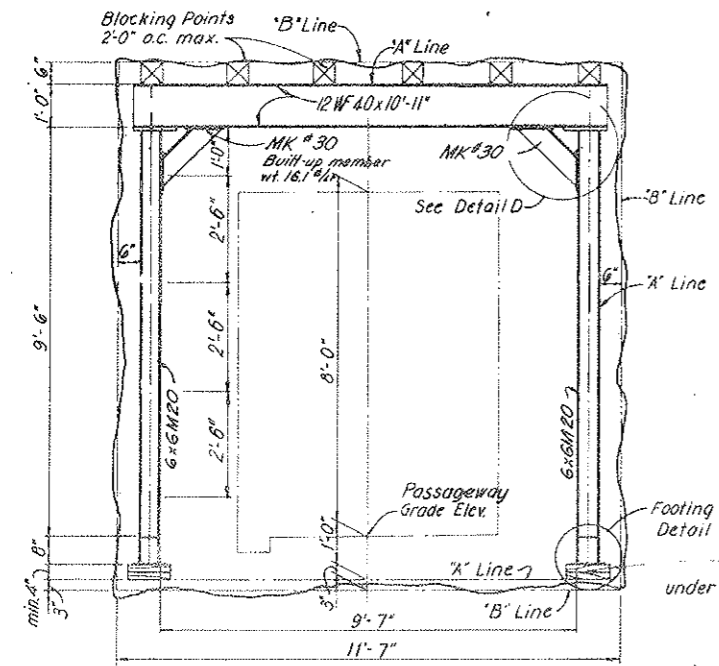
SECTION G-G
 4 WF 13 CROSS PASSAGEWAY SET
 SCALE: 1/2" = 1'-0"



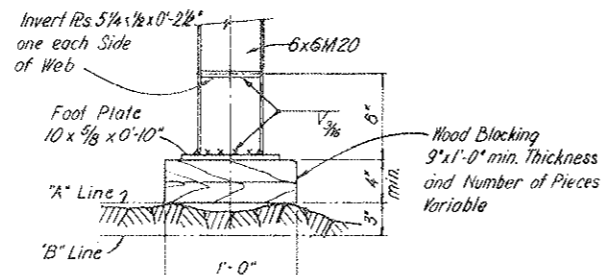
DETAIL A
 SCALE: 1/2" = 1'-0"



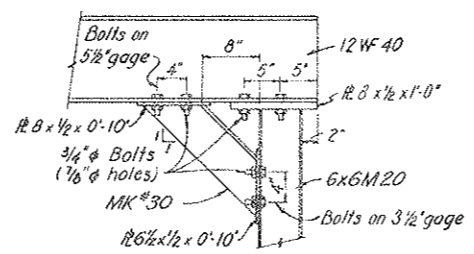
DETAIL B
 SCALE: 1/2" = 1'-0"



SECTION H-H
 RECTANGULAR SET



DETAIL C
 SCALE: 1/2" = 1'-0"



DETAIL D
 SCALE: 1" = 1'-0"

DETAILS FOR CROSS PASSAGEWAYS
 SCALE: 1/2" = 1'-0"

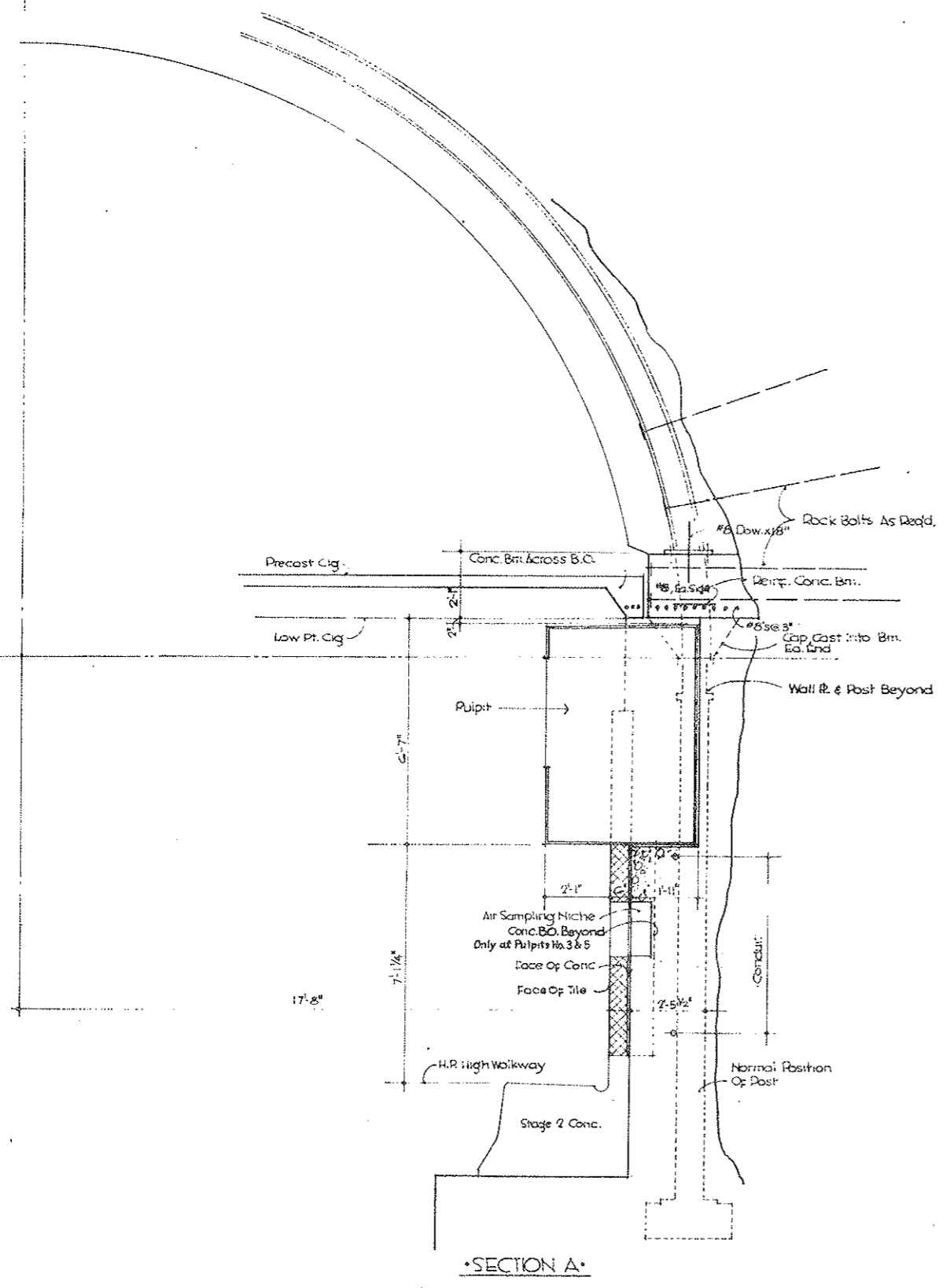
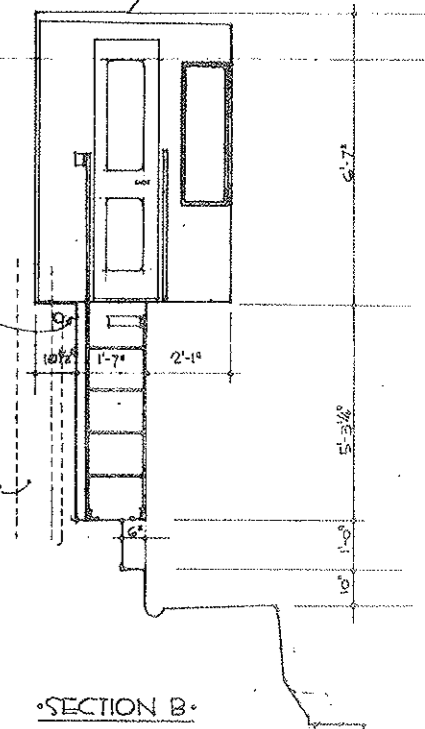
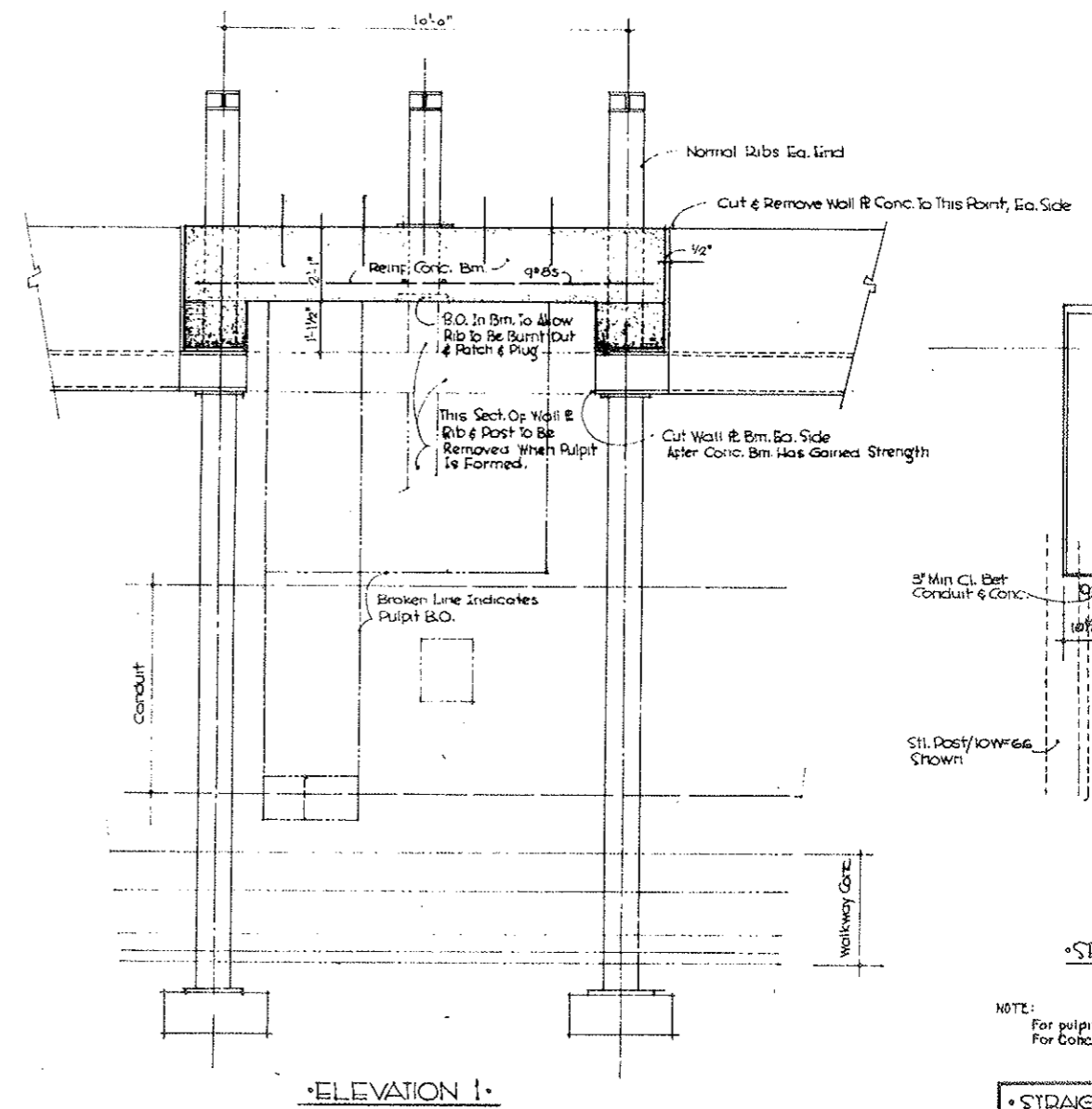
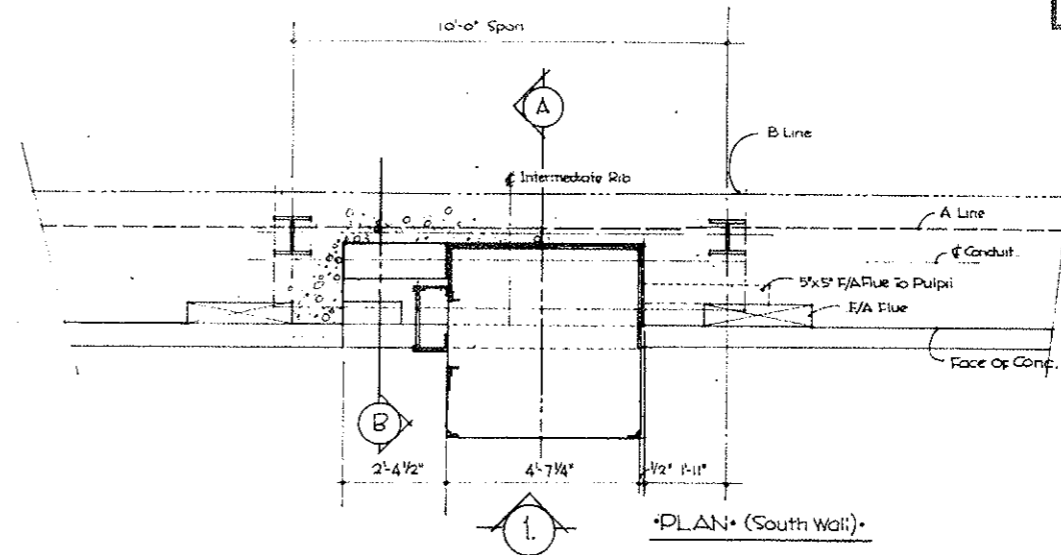
INFORMATIONAL NOTE:

C.S. & S. Co. DWG. MK #30 AREA 4.75 IN ²	STD 6 WF 13.5 3.99 IN ²
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NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL TUNNEL STEEL SUPPORTS DETAILS AT CROSS PASSAGEWAYS AND PULPITS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	P. V. R. - S.E.A.R.	RECHECKED BY	W. J. B. - S.E.A.R.		
DRAWN BY	E. G. P.	CHECKED BY	S. L. R.		
SUBMITTED BY	[Signature]	APPROVED BY	[Signature]		
NEW YORK, N. Y.			SCALE: AS NOTED	DATE: AUGUST 1967	C2-7

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	45 AX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

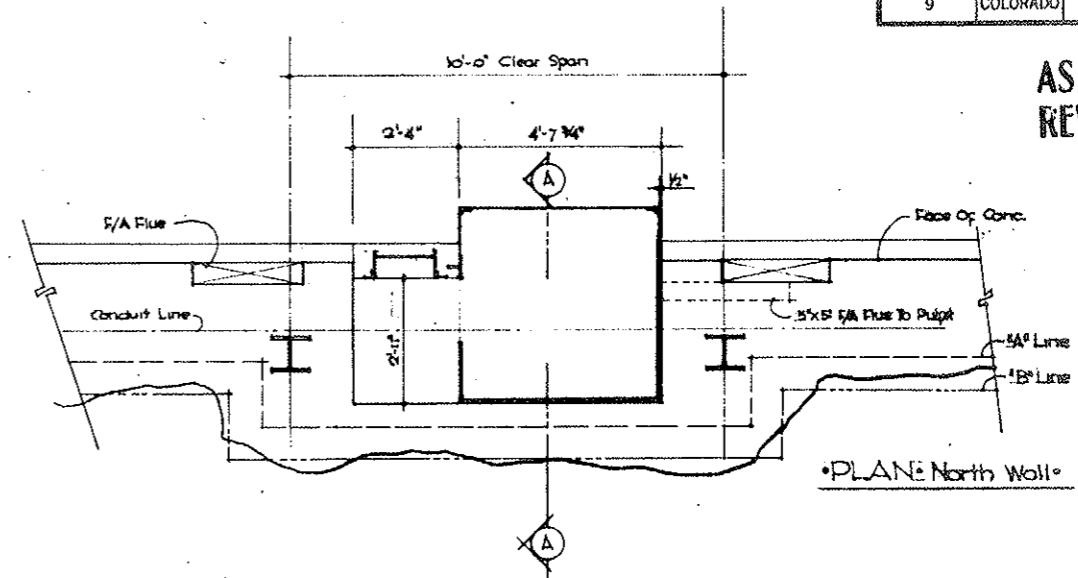


NOTE:
 For pulpits No. 1 & 5
 For Conc. B.O. Dim. See C2-25

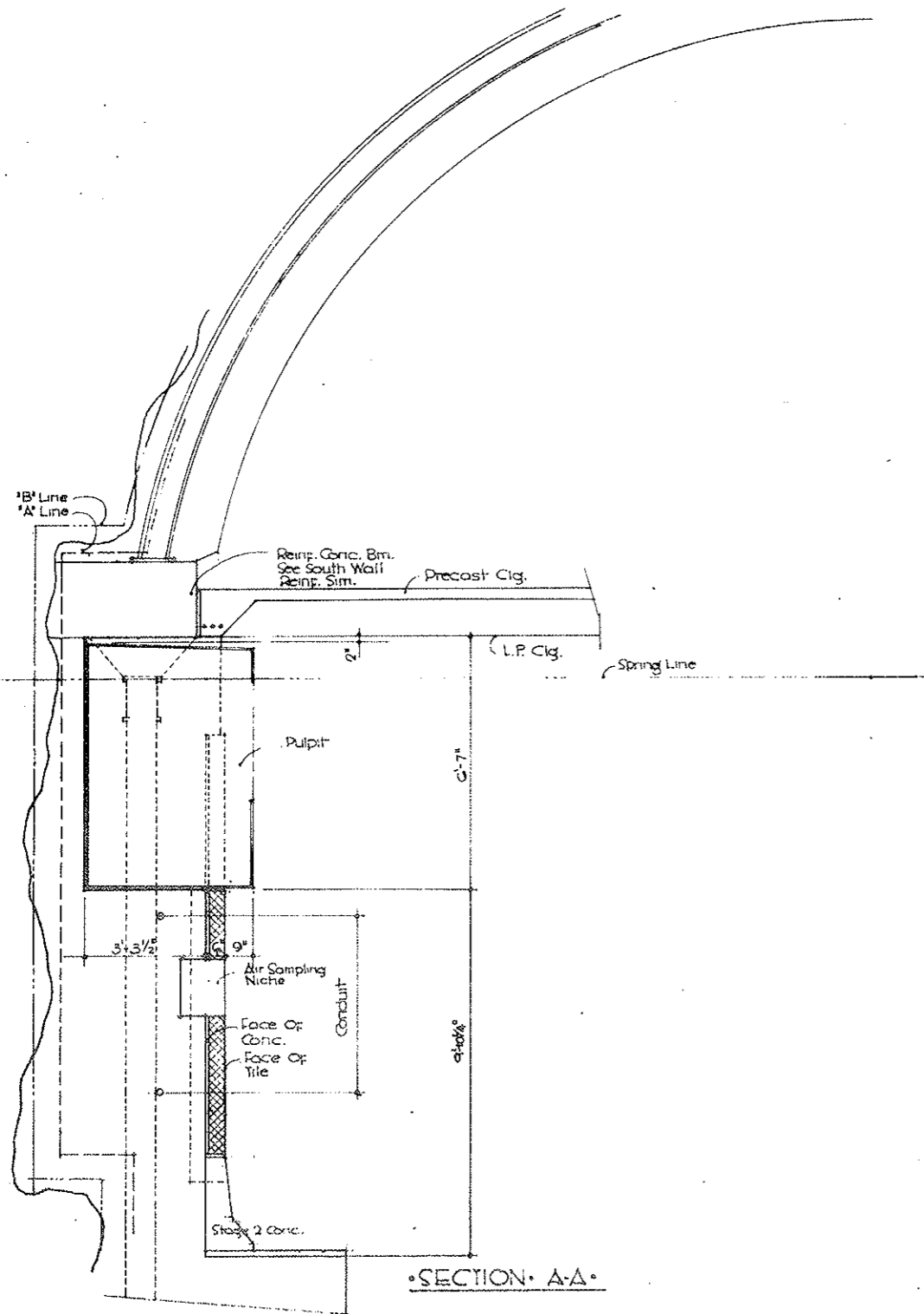
STRAIGHT CREEK CONSTRUCTORS			
SCALE	1/4" = 1'-0"	DRAWN BY	EC
SUPPORT AT PULPIT S ₀ WALL			
DATE	APPROVED BY	DRAWING NUMBER	
5-2-73		C2-7A	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	45 BX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



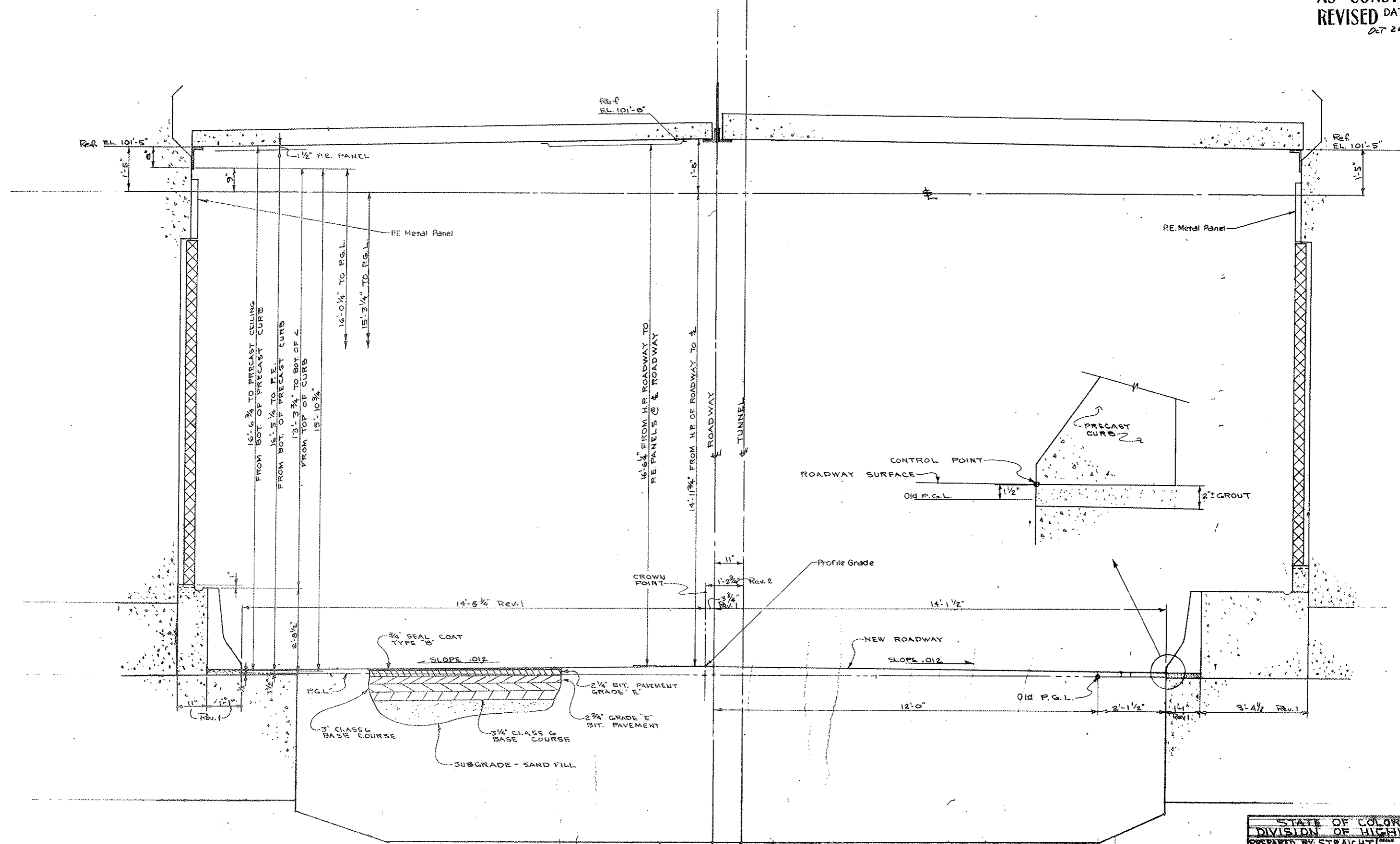
- NOTE•
- For Pulpts No. 2, 4 & 6 Only
 - Rebar For Br. Sim To So. Wall
 - For Conc. B.O. Dimensions, See C2-29
 - Work This Dwg. W/ C2-7A



STRAIGHT CREEK CONSTRUCTORS	
DATE	DESIGNED BY
5/15/69	C2-7B

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70-3(34)220	39BX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973

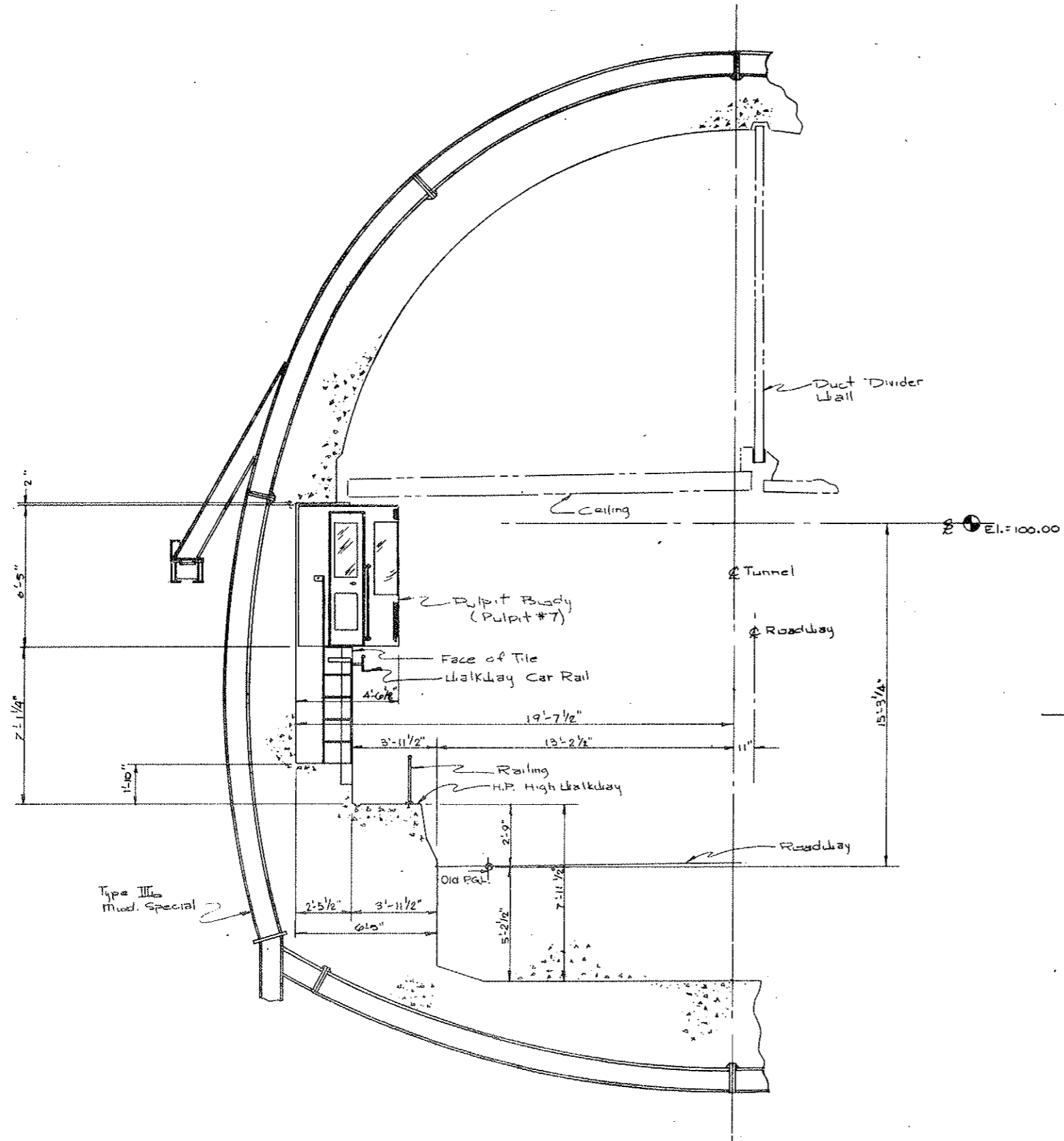


SECTION LOOKING EAST
 SCALE: 3/4" = 1'-0"

STATE OF COLORADO	
DIVISION OF HIGHWAYS	
PREPARED BY STRAIGHT	DATE
ORDE CONSTRUCTORS	REVISED
TYPICAL ROADWAY SECTION	
10-27	C2-1B

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	45 CX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1972



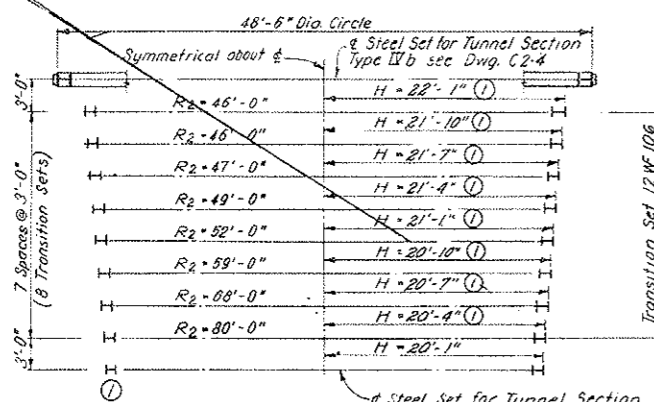
NOTE:
 See C2-25 For Blockout Dim.

GENERAL ARRANGEMENT - LOOKING WEST - STA. @ ϕ OF PULPIT = 118+20.00
 Scale: 3/8" = 1'-0"

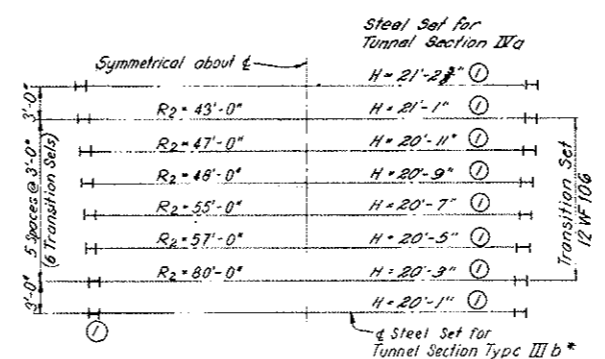
STRAIGHT CREEK CONSTRUCTORS			
DATE	APPROVED BY	DESIGNED BY	CHECKED BY
3/11/72			
PULPIT NO. 7		C2-7C	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	46	126

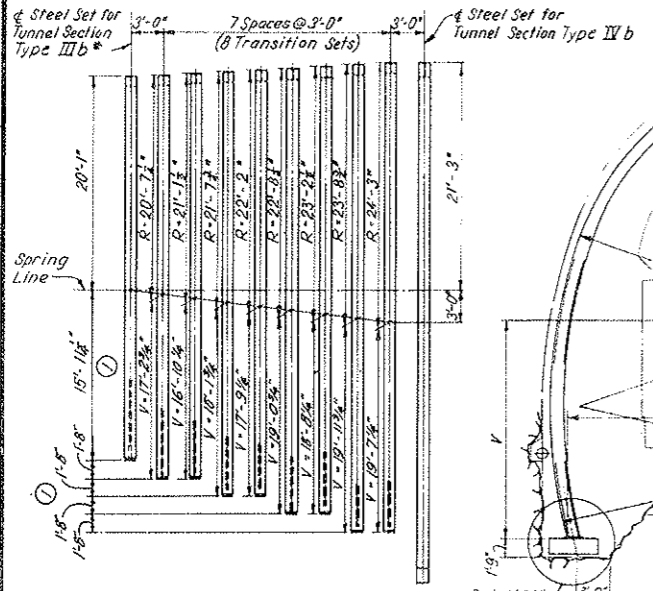
VOID
BY CONSTRUCTION
OCT 26, 1973



PLAN



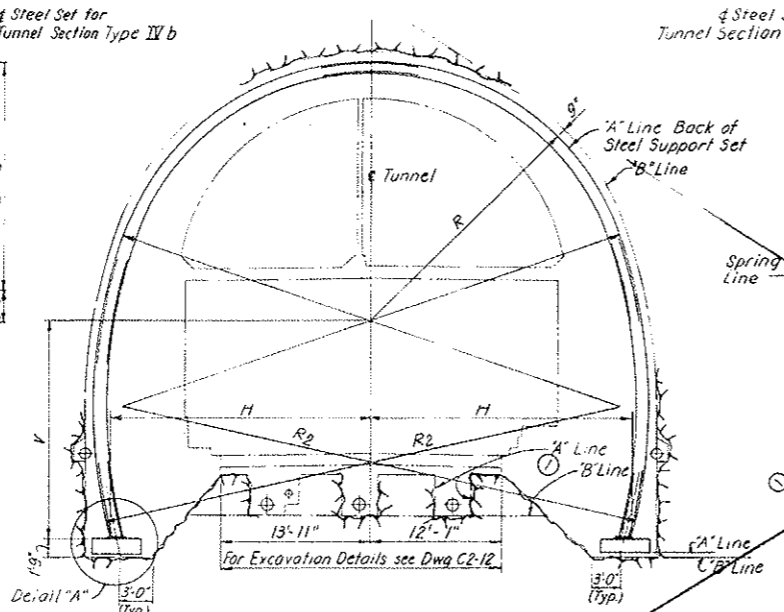
PLAN



ELEVATION

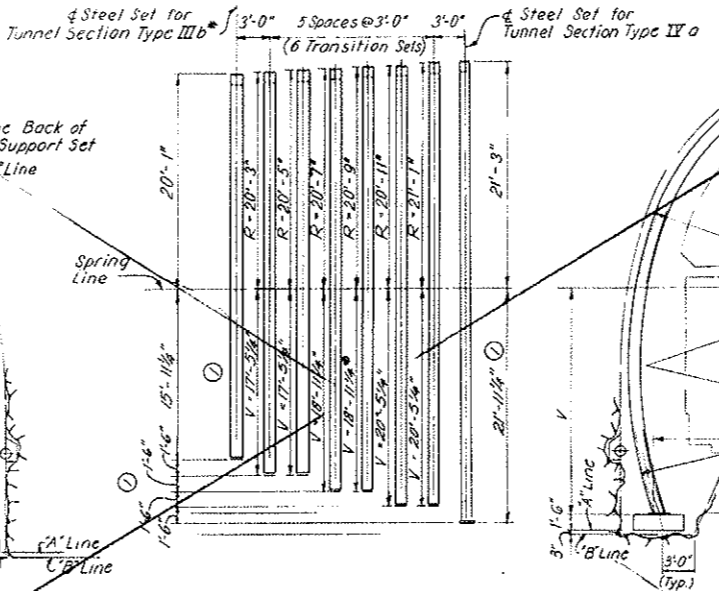
STEEL SETS FOR SECTION III b TO SECTION IV b TRANSITION

* Or lighter straight leg set



TYPICAL TRANSITION SET

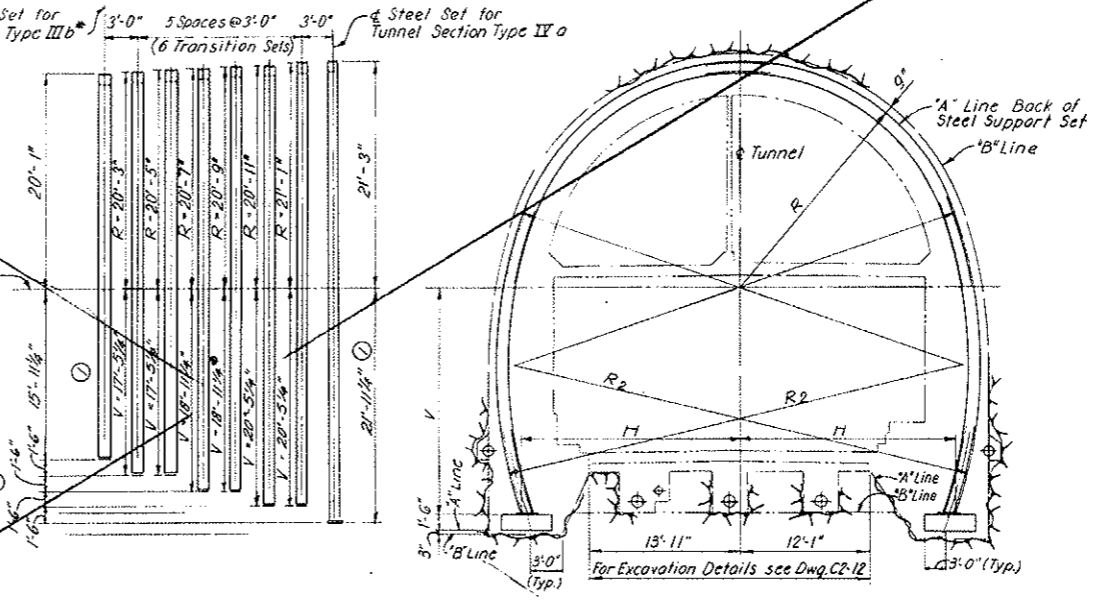
SCALE: 1/8" = 1'-0"



ELEVATION

STEEL SETS FOR SECTION III b TO SECTION IV a TRANSITION

SCALE: 1/8" = 1'-0"

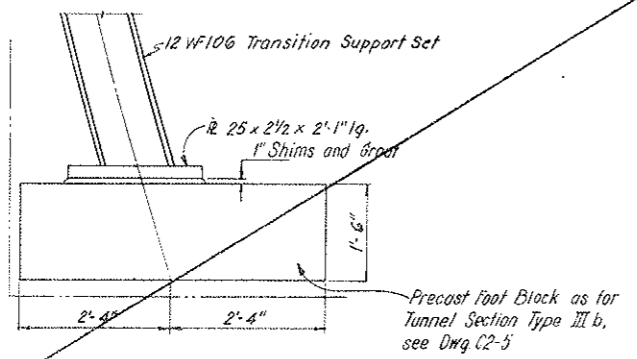


TYPICAL TRANSITION SET

SCALE: 1/8" = 1'-0"

NOTES:

- For General Tunnel Notes see Dwg. C2-2.
- Contractor will be required to keep on hand 6 complete tunnel support sets for transitioning from Tunnel Section Type III b to Tunnel Section Type IV b and 4 complete sets for transitioning from Tunnel Section Type III b to Tunnel Section Type IV a. [R-1]
- For splicing, and lagging details see similar details for Tunnel Section Type III b on Dwg. C2-4.
- Block all curved leg sets at maximum of 60° on centers.
- [R-7] Deletion of Spreader Angles - see notes on Dwg. C2-5. Revision in accordance with CDH W.O. #14153.



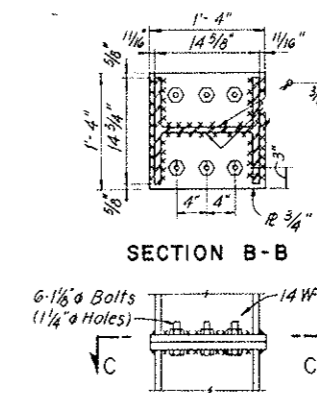
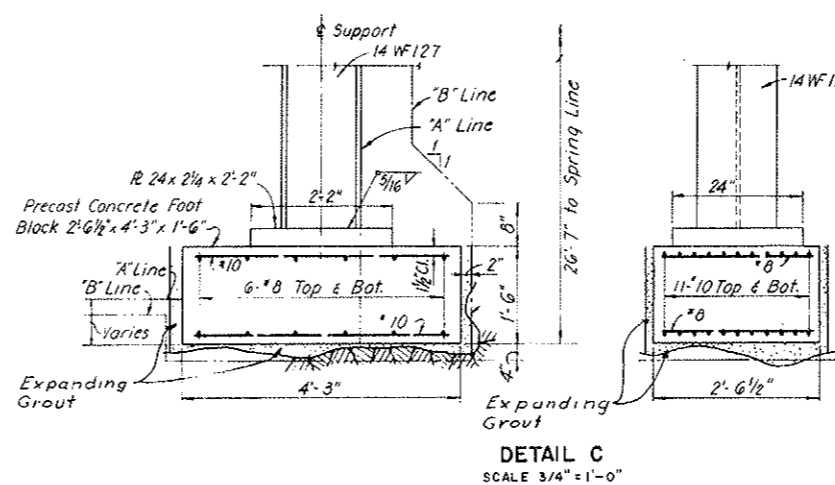
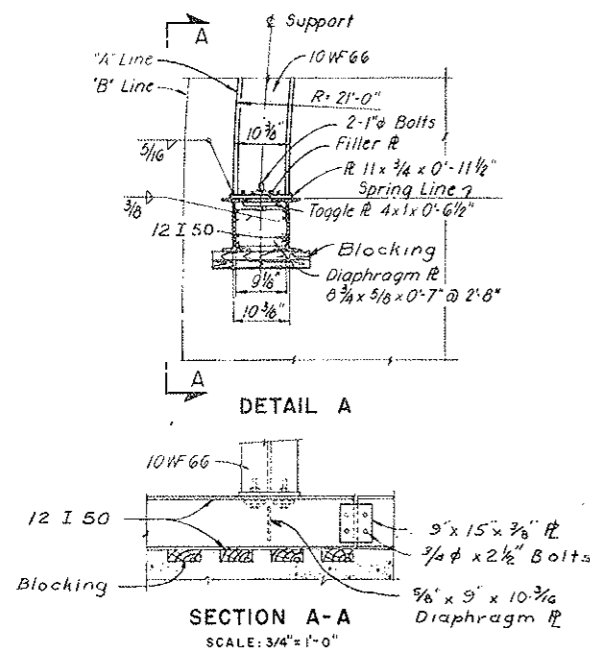
DETAIL A

SCALE: 3/4" = 1'-0"

PROJ. Geometry Revised	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL TUNNEL STEEL SUPPORTS DETAILS OF TRANSITION SETS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. F. MCC.	CHECKED: P. F. L.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. C2-8		
DRAWN: S. M. R.	SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	NEW YORK, N. Y.		
SCALE: AS NOTED			DATE: AUGUST 1967		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	47	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



For 14WF127 as shown, spaced as required.
 For 10WF66 see Dwg. C2-5

SPLICE DETAILS
 SCALE: 1" = 1'-0"

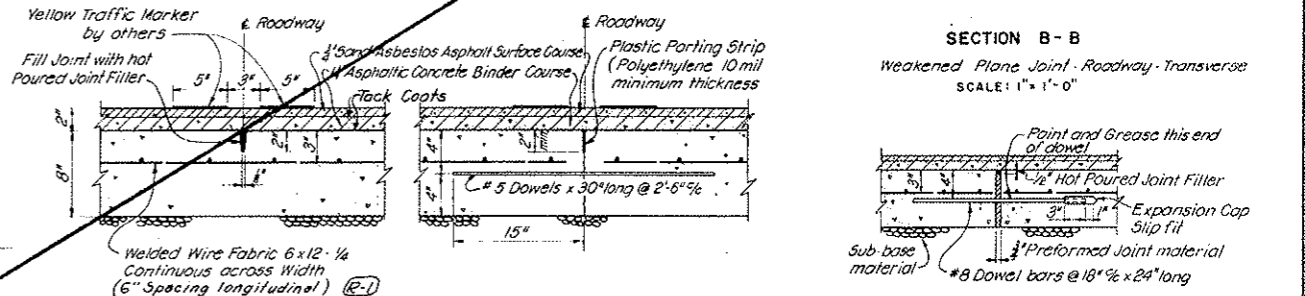
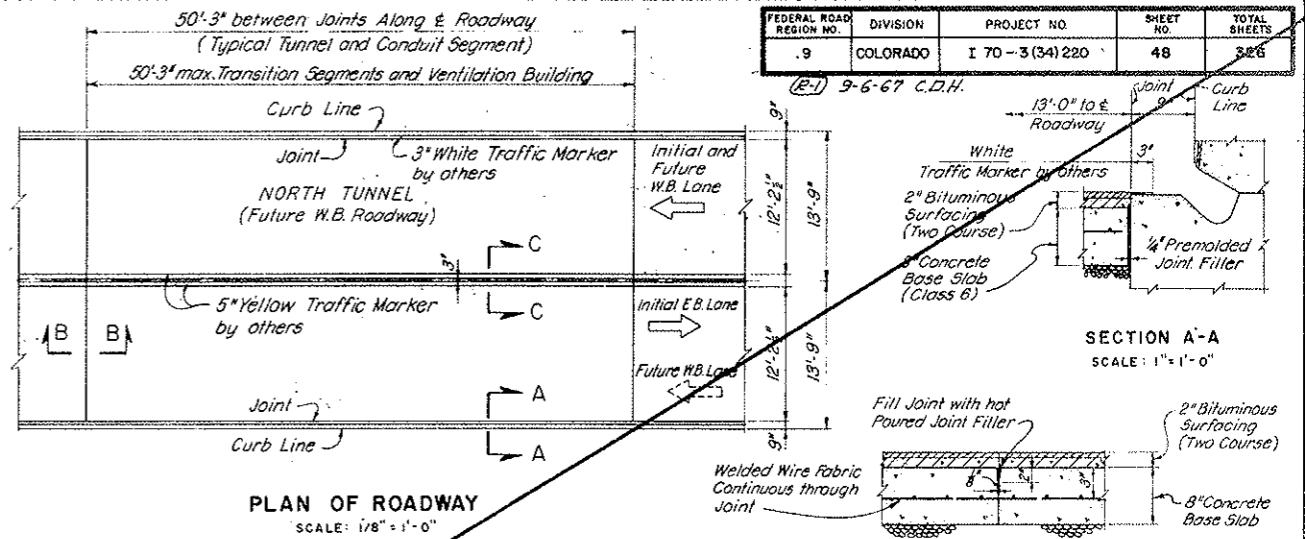
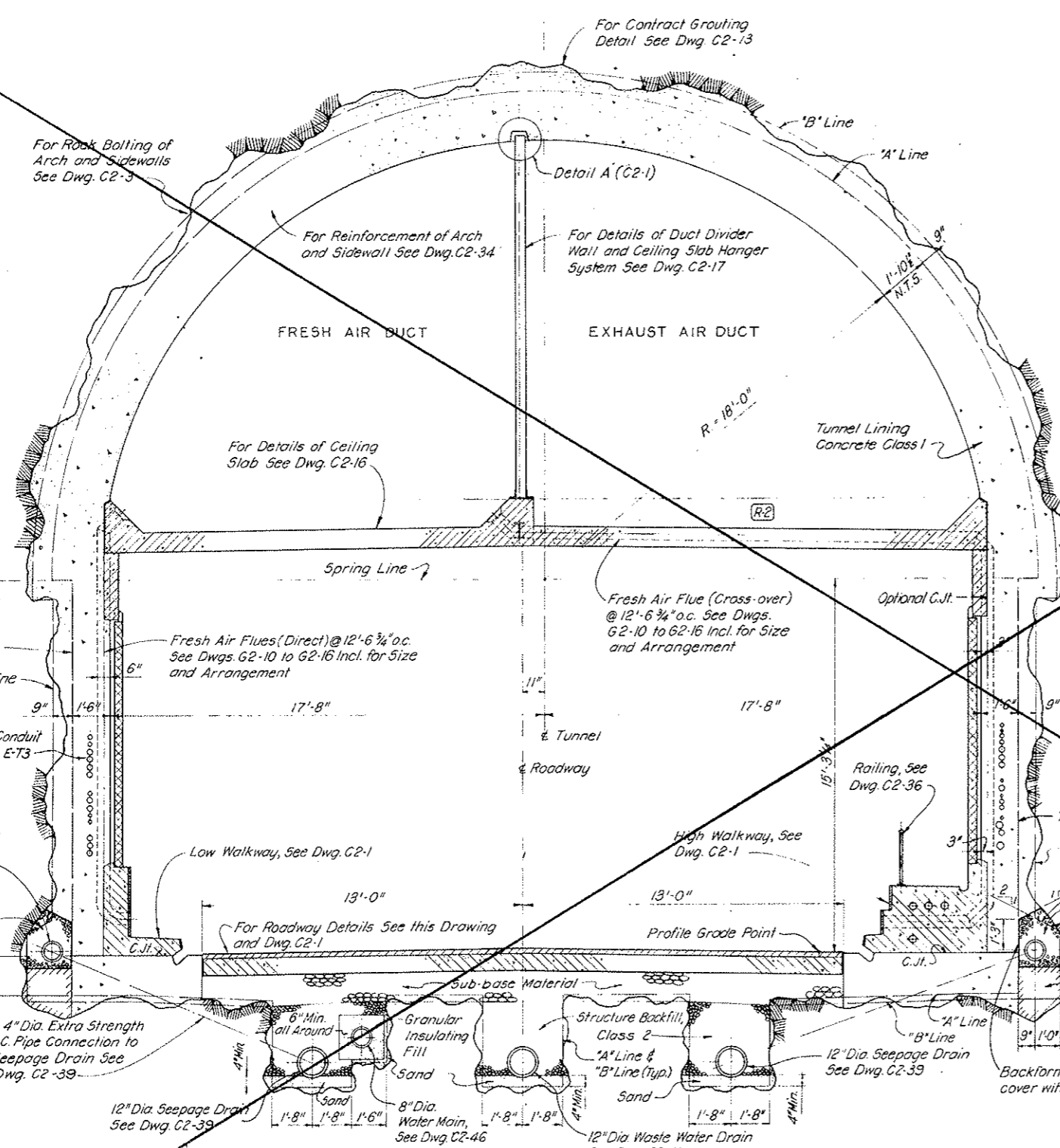
Deletion of Spreader Angles see notes on C2-5.

NOTES
 For notes see Dwg. C2-4.
 For Lagging details see Dwg. C2-4.
 Precast Concrete Foot Blocks are paid for under their respective class of Conduit Portal Section concrete.
 If a construction procedure is proposed using wall plates in combination with posts, the wall plates and posts shall be designed by the Contractor and submitted to the Engineer for approval.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL STEEL SUPPORTS CONDUIT SEGMENTS WEST AND EAST PORTALS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: D.J.B.-T.S.	RECOMMENDED: Harry L. News	DRAWING NO. C2-4			
DRAWN: E.G.P.	APPROVED: [Signature]	SCALE: AS NOTED DATE: AUGUST 1967			
CHECKED: A.Z.E.	APPROVED: [Signature]				
SUBMITTED: [Signature]	APPROVED: [Signature]				
DATE: [Signature]	APPROVED: [Signature]				

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	48	328

(R-1) 9-6-67 C.D.H.



VOID BY CONSTRUCTION
Oct 26, 1973

NOTES:

- For typical interior dimensions and details see Dwg. C2-1
- For General Concrete Notes see Dwg. C2-11.
- For Grouting Details and General Grouting Notes see Dwg. C2-13.
- For Loop Detector installation in bituminous surface course see Dwg. TC-1.
- For typical blockouts in walls and walkways see Dwg. C2-27, and for locations see Dwg. G2-10 to G2-16 incl.
- For steel reinforcement details see Dwg. C2-34 and C2-35.
- Concrete base slab shall be placed by paving machine.
- Sawed joint with hot poured joint filler shown on this drawing for longitudinal and transverse joints may be replaced by plastic parting strip at option of Contractor.

(R-3) Rev. 4-1-68 Details revised in accordance with (R-2)

THIS SHEET VOID

Note: For Assumed Length of Section Type See Dwg. C2-2

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL					
TUNNEL CROSS SECTION					
TUNNEL SECTION TYPE Ia					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	R. B. A.-M.C.T.	RECOMMENDED:	Henry J. ...		
DRAWN:	R. B. A.	CHECKED:	S. M. R.	APPROVED:	Edward G. ...
SUBMITTED:					
DRAWING NO. C2-10					
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1967					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3 (341220)	49	326

GENERAL CONCRETE NOTES:

The design of the Portal and Tunnel Section Segments is based on a compressive strength of 4,000 psi at 28 days except as noted below.

Tunnel Section Type II'a and II'b Segments	5,000 psi
East Portal Section Segments from rock tunnel section up to and including Segments N166, S166	5,000 psi
Ceiling Slab Concrete	5,000 psi
walkway concrete, drainage manholes	
sump pit in tunnels, pipe cradles and enclosure water storage tank and well in west portal area	3,000 psi
Fill concrete	2,500 psi
slab and second stage concrete including walkways shall be formed to follow curve data shown on the alignment drawing.	

Clear concrete cover on main reinforcement unless otherwise shown or noted shall be:

On formed faces of tunnel lining	2 1/2 inches
On unformed face of tunnel placed against rock	3 1/2 inches

Surface finish of concrete shall be:

All surfaces shall have class 1 ordinary surface finish except for the following areas:

formed surfaces of cross passage ways including transformer vaults, all concrete exposed in tiled side walls such as at ladder recesses, traffic control pulpits, walkway car guide wheel track surface,	Class 2 Rubbed
Walkway surfaces, floors in cross passageways and transformer vault, top surface of ceiling slab	horizontal curb surfaces,
precast duct divider wall	Class 3 Float

Reinforcing bars shall conform to AASHTO Designations M-31 and M-187 for intermediate grade, deformed bars for bar sizes up to and including #11, and AASHTO M-174 for intermediate grade deformed steel bars of sizes #14, #16 and #18.

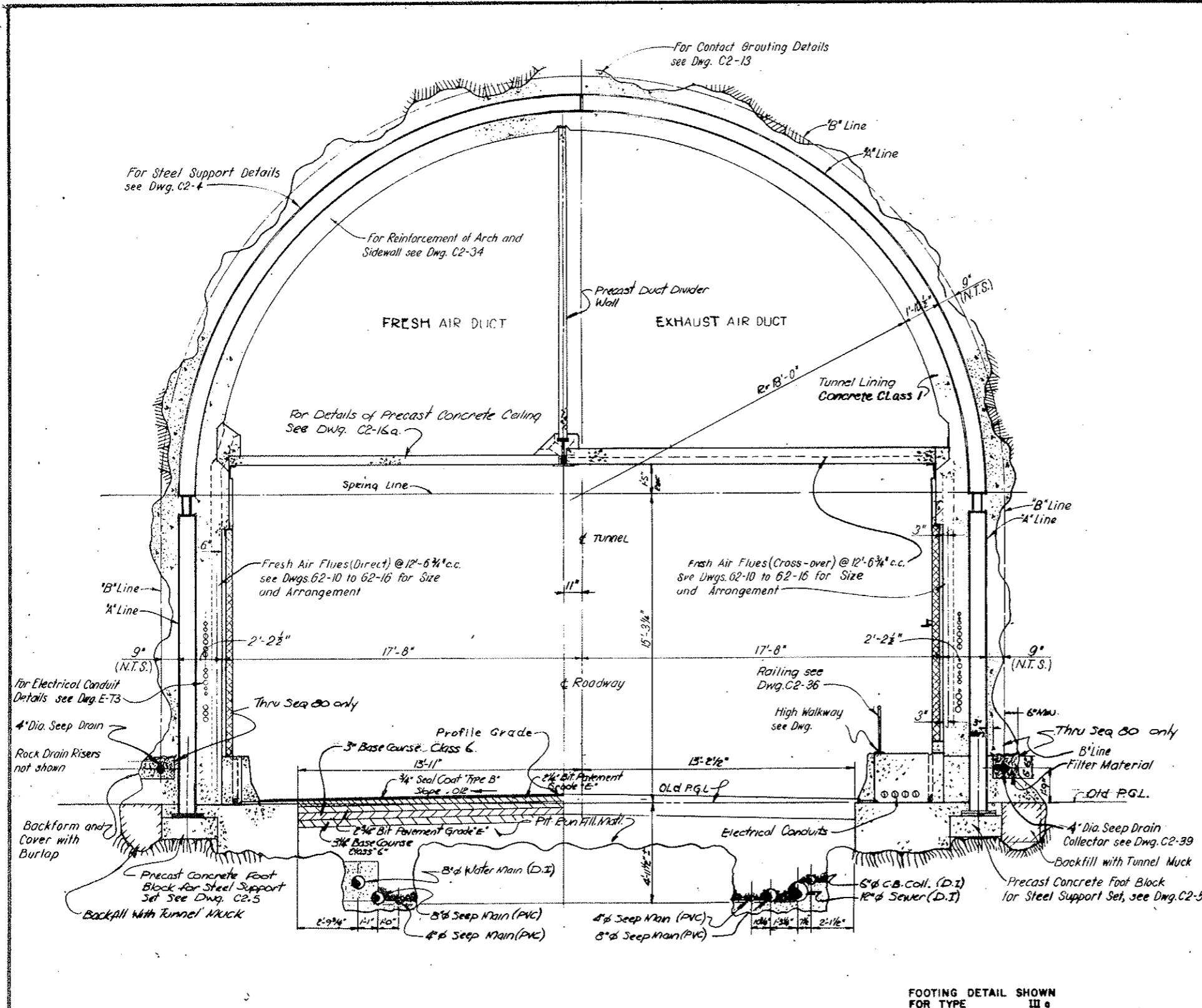
The curved portion of extrados of Cut-and-Cover conduit and transition segments in both East and West Portal Sections may be constructed in straight lines not encroaching into the outlines shown on the drawings, subject to the approval of the Engineer.

NOTES:

For typical interior dimensions and details see Dwg. C2-1A
 For Grouting Details and General Grouting Notes see Dwg. C2-13
 For typical breakout in walls and walkways see Dwg. C2-27, and for locations see Dwgs. G2-10 to G2-16 incl.
 For steel reinforcement details see Dwgs. C2-34 and C2-35

**AS CONSTRUCTED
 REVISED RATE**
 AT 26, 1973

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL TUNNEL CROSS SECTION - TUNNEL SECTION TYPE III a					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	R. B. A.	RECOMMENDED BY	[Signature]		
DRAWN BY	P. L. R.	CHECKED BY	[Signature]		
SUBMITTED BY	[Signature]	APPROVED BY	[Signature]		
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967	C2-11	

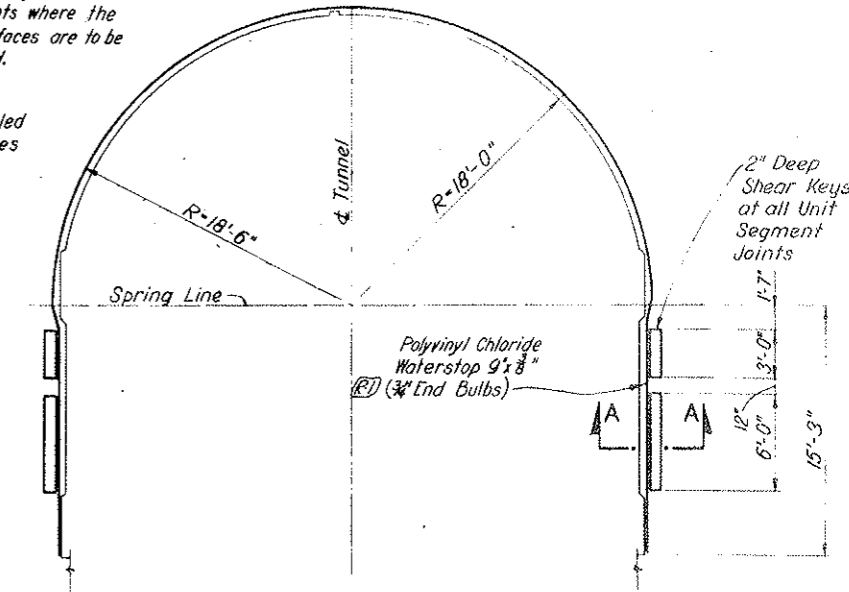
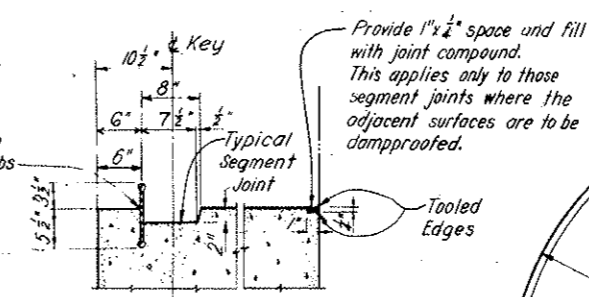
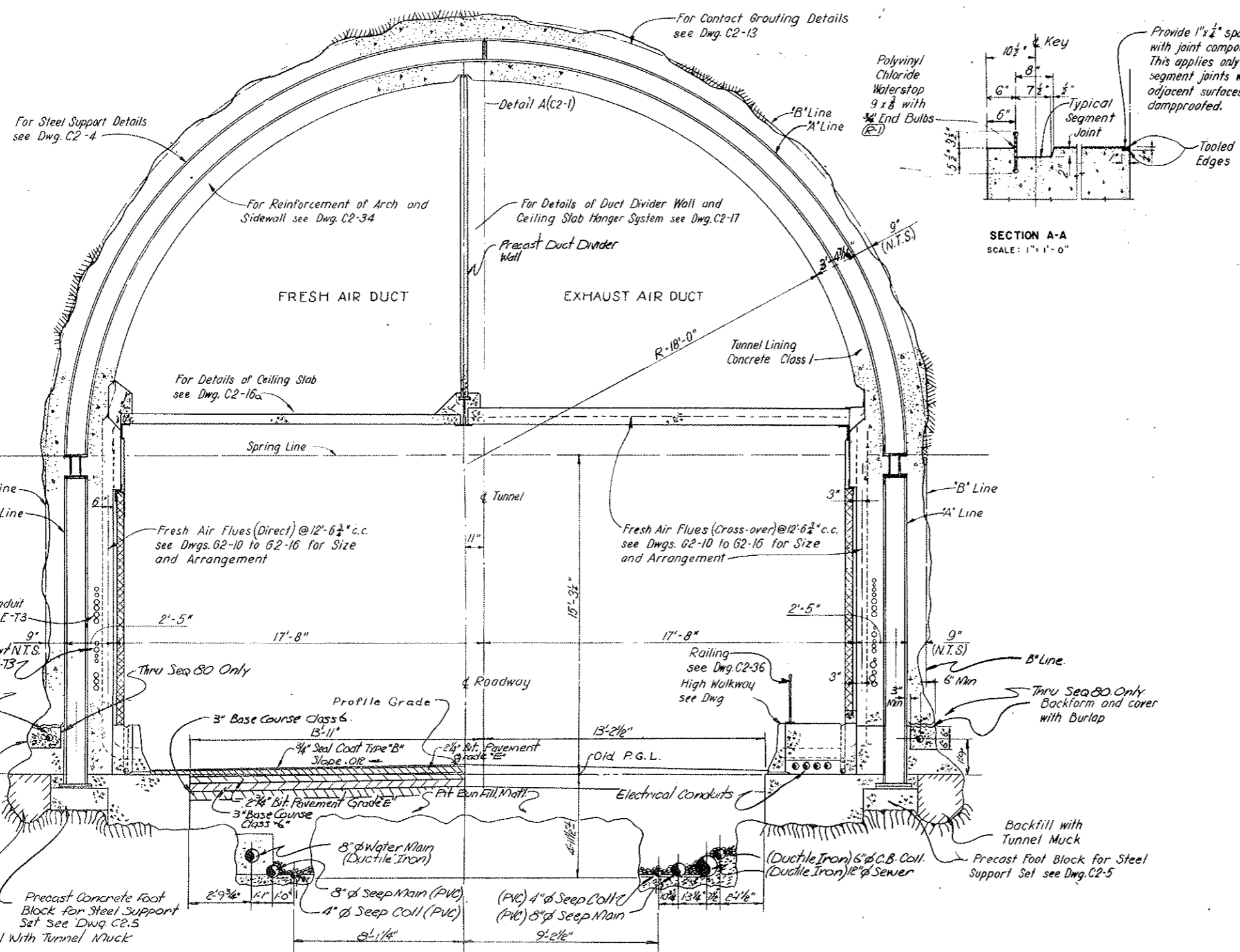


TUNNEL SECTION TYPE III a
 SCALE 3/8" = 1'-0"

FOOTING DETAIL SHOWN FOR TYPE III a

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	50	328

AS CONSTRUCTED
REVISED DATE
 0-7-26, 1973

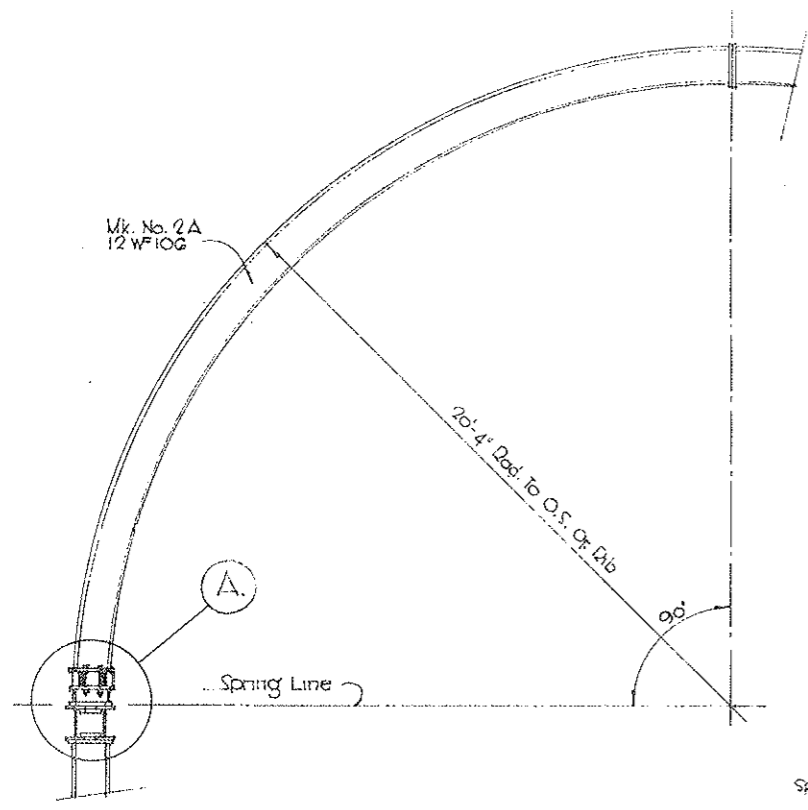


NOTES:
 For typical interior dimensions and details see Dwg. C2-19
 For General Concrete Notes see Dwg. C2-11.
 For Grouting Details and General Grouting Notes see Dwg. C2-13.
 For typical blockouts in walls and walkways see Dwg. C2-27 and for locations see Dws. G2-10 to G2-16 inclusive.
 For steel reinforcement details see Dws. C2-34 and C2-35.
 Unit segment joint shall be set vertically.

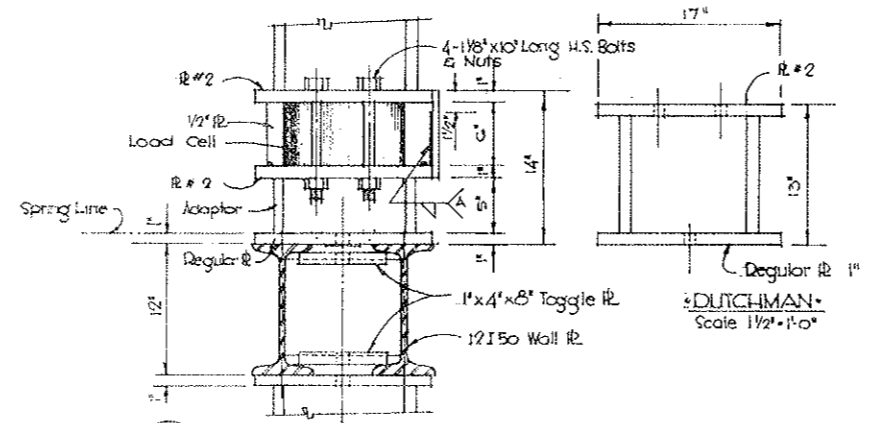
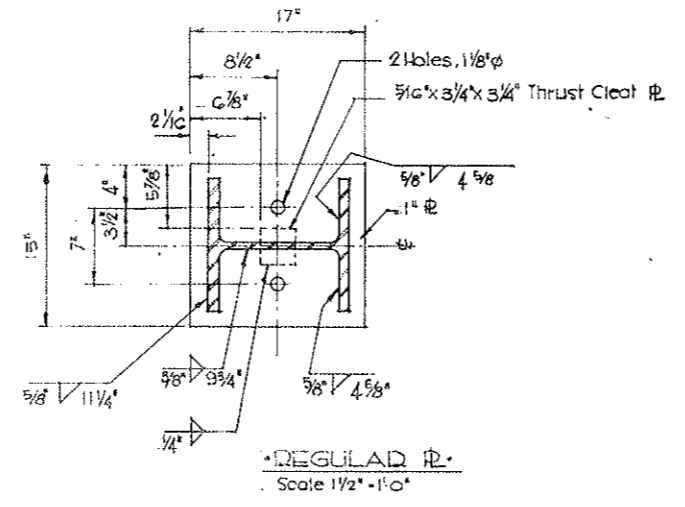
TUNNEL SECTION TYPE IIIb
 SCALE: 3/8"=1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL TUNNEL CROSS SECTION TUNNEL SECTION TYPE IIIb					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	R. B. A.	RECOMMENDED:	H. S. M. R.		
DRAWN:	P. F. L.	CHECKED:	S. M. R.		
SUBMITTED:	M. P. A.	APPROVED:	H. S. M. R.		
DRAWING NO. C2-12					
SCALE: AS NOTED DATE: AUGUST 1967					

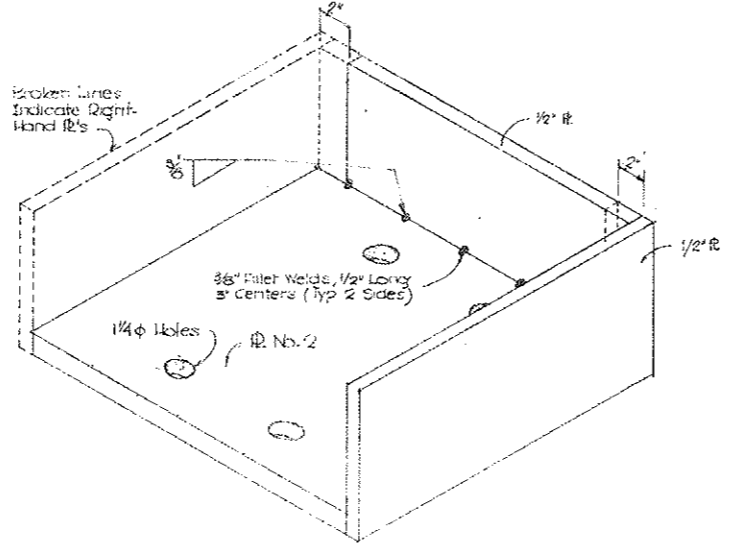
TOTAL SHEETS	52-G
SHEET NO.	57-A
PROJECT NO.	170-3(34)220
DIVISION	COLORADO
SECTION NO.	9



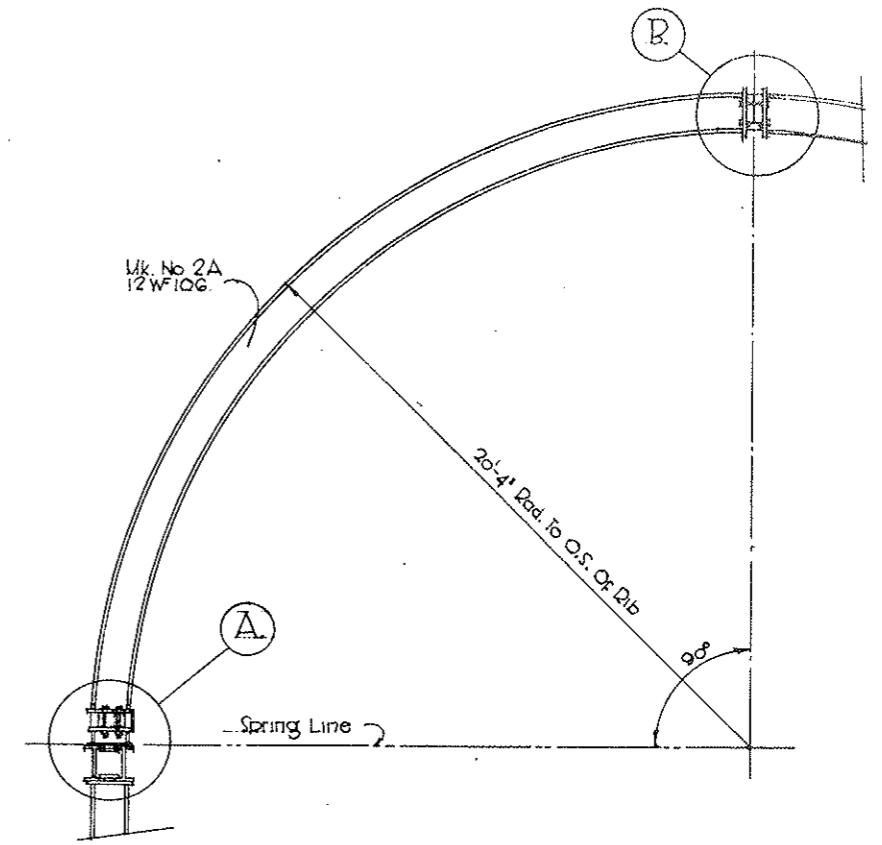
•HALF SECTION•
Scale 3/8" = 1'-0"



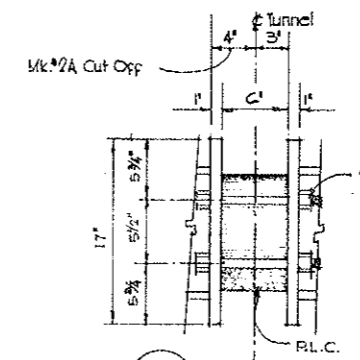
•LOAD CELL ADAPTOR•
Scale 1 1/2" = 1'-0"



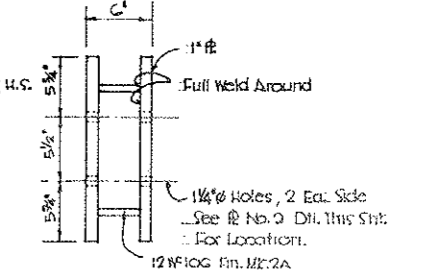
•LEFT HAND ADAPTOR•



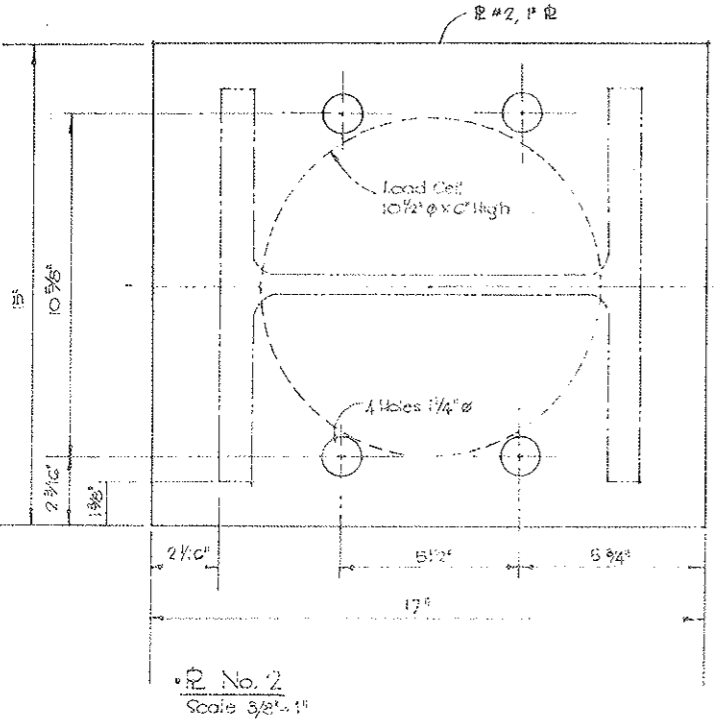
•HALF SECTION • SHOWING R.L.C. @ CROWN SETTING •
Scale 3/8" = 1'-0"



•LOAD CELL •
•@ CROWN •
Scale 1 1/2" = 1'-0"



•DUTCHMAN •
Scale 1 1/2" = 1'-0"



•R No. 2•
Scale 3/8" = 1'-0"

AS CONSTRUCTED
REVISED DATE
Oct 25, 1973

•STRAIGHT CREEK CONSTRUCTORS•			
DESIGNED BY	NOTED	ENGINEER	CHITNEY
DATE	APPROVED BY	QUANTITY CHECKED	C2-12A
7/29/68			

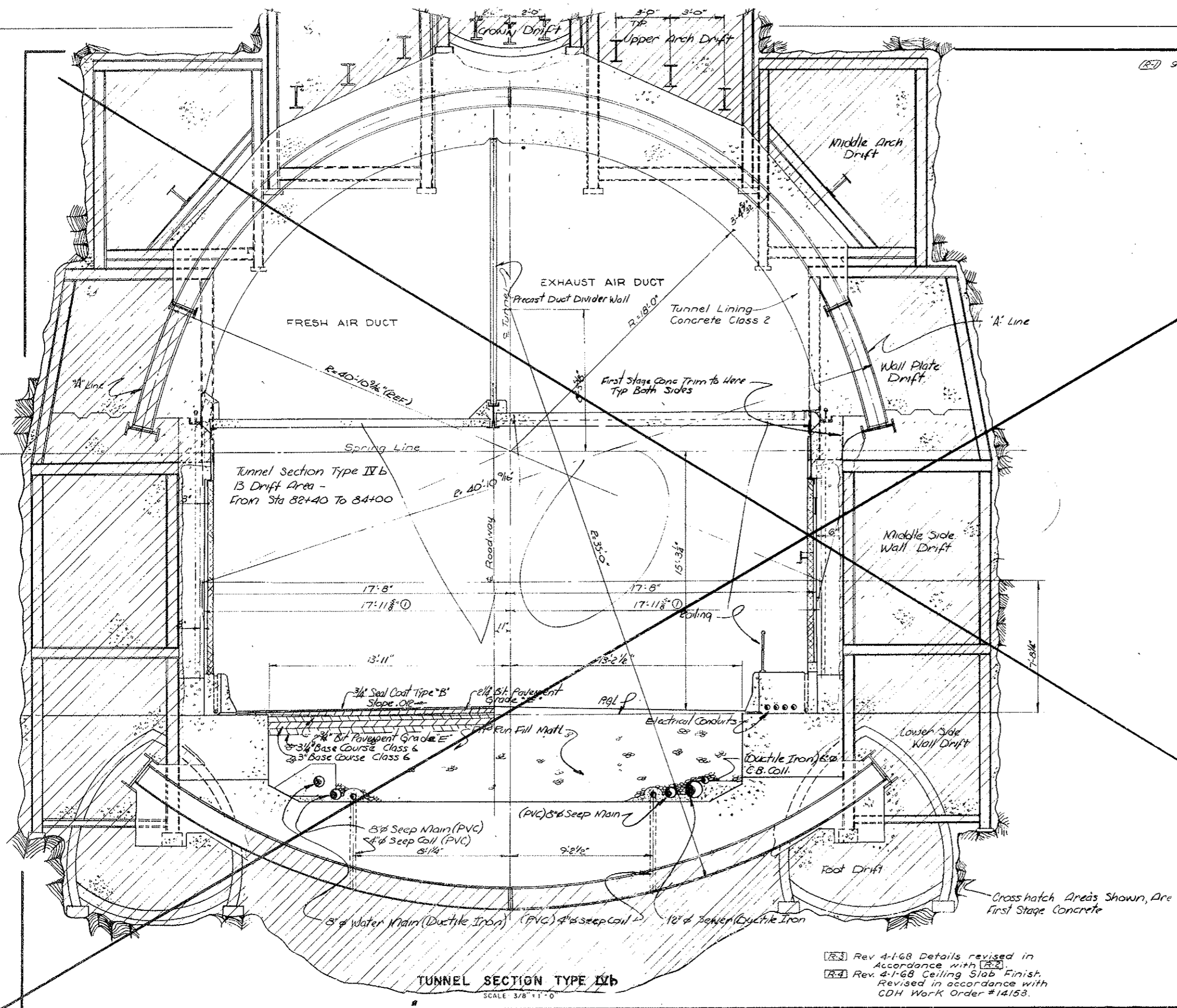
(R2) REV. 11-6-67 C.D.H. - ADDED NOTE BELOW

(R2) 9-6-67 C.D.H.

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	51	324

Contact Grouting
 Step 1: Place 2 1/2" φ pipe caulked at end in contact with rock. The coupling at form end is wired (R2) or bolted to form. ①
 All pipes shall be firmly supported in place.
 Step 2: After concrete has been placed, remove caulking.
 Step 3: Contact grout between concrete and rock.
 Step 4: Fill coupling void with mortar and float surface.

VOID
 BY CONSTRUCTION
 Oct 26, 1973



GENERAL GROUTING NOTES
 Locations and spacing of grout holes as shown on the drawings are indicative only. Number, location and spacing of grout holes will be determined in the field as approved or as directed by the Engineer, to suit actual ground conditions, additional intermediate grout holes will be provided where grout take is excessive. Vent pipes are to be provided as required to ensure effective grouting. Maximum grouting pressures shall not exceed 30 psi. Grouting pressures may be reduced and procedures shall be modified with the approval of the Engineer where there is danger of excessive rock movement or excessive deflection of lining.

NOTES:
 For notes see Dwg. C2-12.

(R3) Rev 4-1-68 Details revised in accordance with (R2).
 (R4) Rev. 4-1-68 Ceiling Slab Finish. Revised in accordance with CDH Work Order #14153.

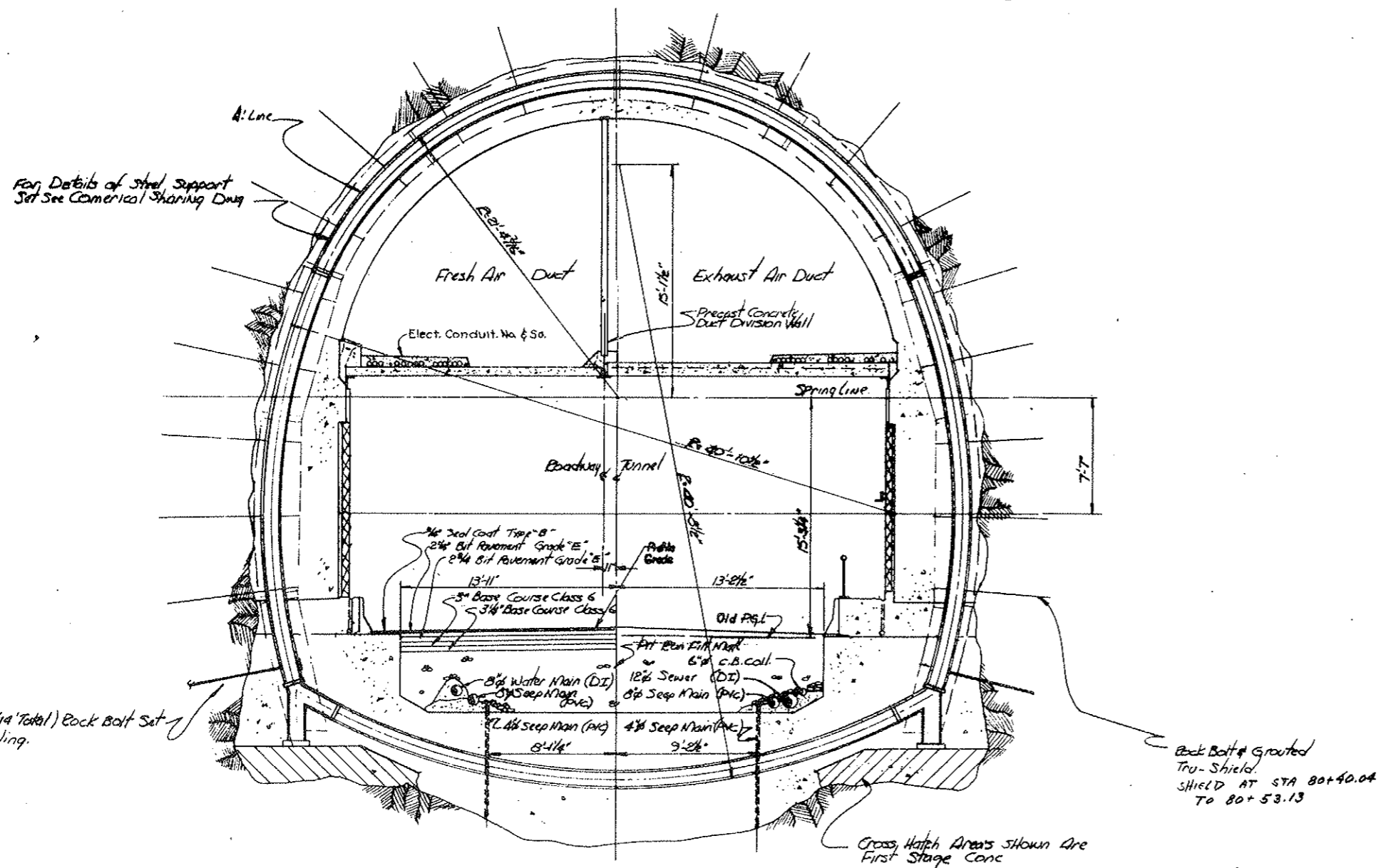
NO.		DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT						
CIVIL - TUNNEL TYPICAL CROSS SECTION TUNNEL SECTION TYPE IVa						
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.						
DESIGNED	RBA-SWR	RECOMMENDED	None	None	None	None
DRAWN	RBA	CHECKED	SMR	APPROVED	None	None
CHECKED	SMR	APPROVED	None	None	None	None
SUBMITTED	None	APPROVED	None	None	None	None
DATE	None	SCALE	AS NOTED	DATE	AUGUST 1967	None

TUNNEL SECTION TYPE IVb
 SCALE: 3/8" = 1'-0"

(R2) DRY PACK DELETED W.O. #14153 SEE SPEC. 2A VOID SEE DWG. C2-13A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	51 AX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



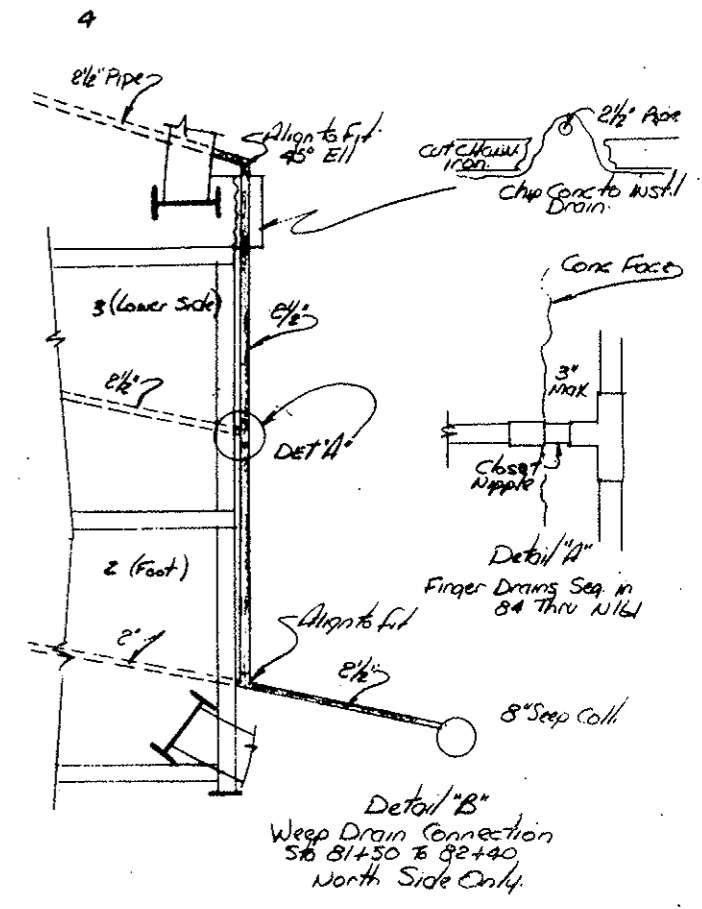
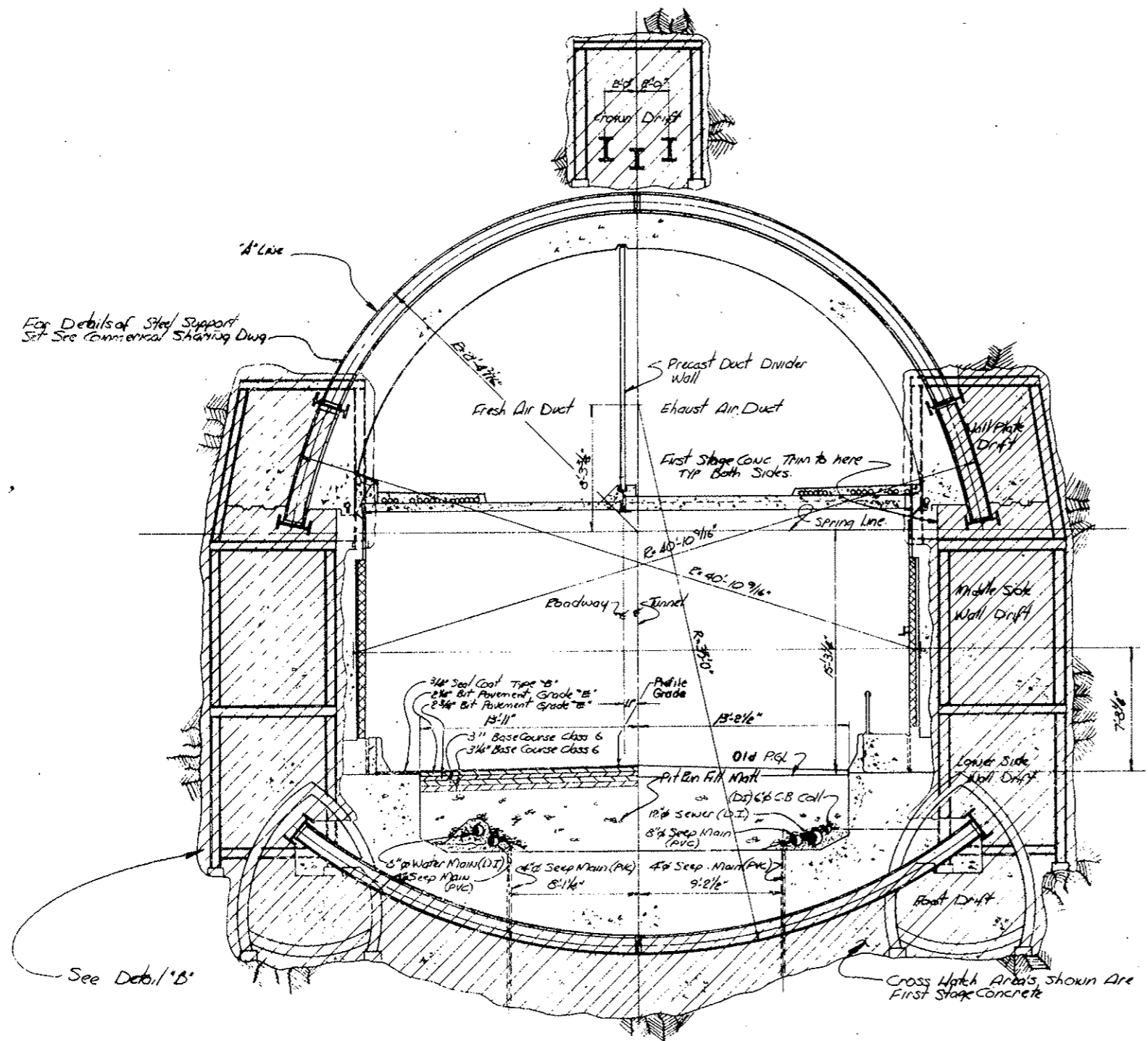
Tunnel Section Zone Ia
 Scale 1/4" = 1'-0"
 Sta. 80+40 to 81+35

NOTE: Electrical Conduit Transitions
 Up to Ceiling from Wall
 At Sta. 80+85.

STATE OF COLORADO DIVISION OF HIGHWAYS		
SCALE: 1/4" = 1'-0"	APPROVED BY:	DRAWN BY: [Signature]
DATE:	DESIGNED BY:	CHECKED BY:
TYPICAL CROSS SECTION - TUNNEL / Sect. Type III Mod.		
C2-13A		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	51 BX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1972



For Details of Steel Support
 See Conventional Shoring Dwg.

See Detail 'B'

Cross Hatch Areas shown are
 First Stage Concrete

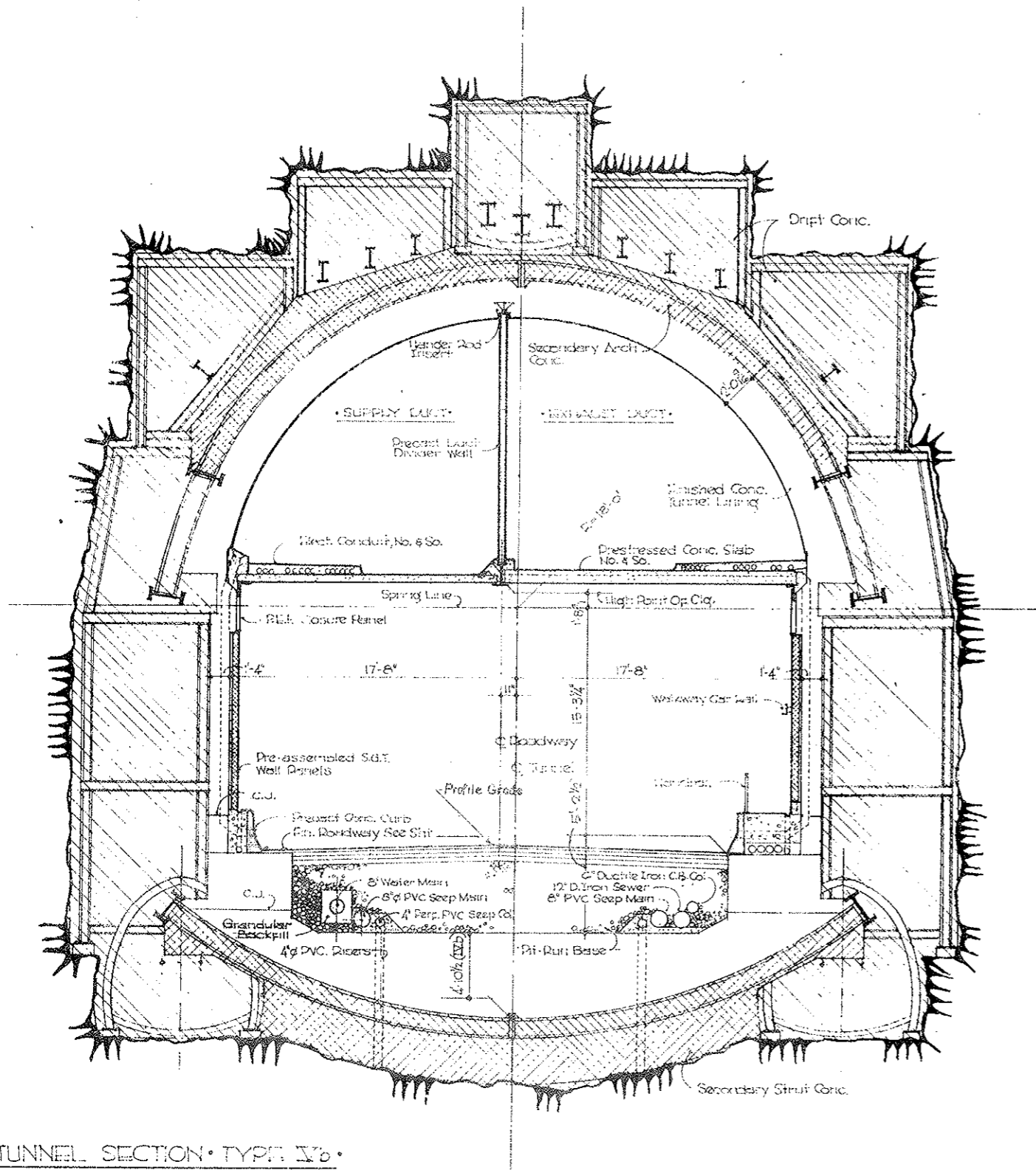
Tunnel Section Type III b
 Scale 1/4" = 1'-0"
 Sta. 81+50 to 82+40

Note Weep Drains were installed
 omitted in Drift 3 on the R/L

State of Colorado Division of Highways		
SCALE: 1/4" = 1'-0"	APPROVED BY:	DRAWN BY:
DATE: 10/9/72		REVISIONS:
Civil Tunnel TYPICAL Cross Section Tunnel Section III b.		
DRAWING NUMBER		C2-13B

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70-3(34)220	51 CX	526

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

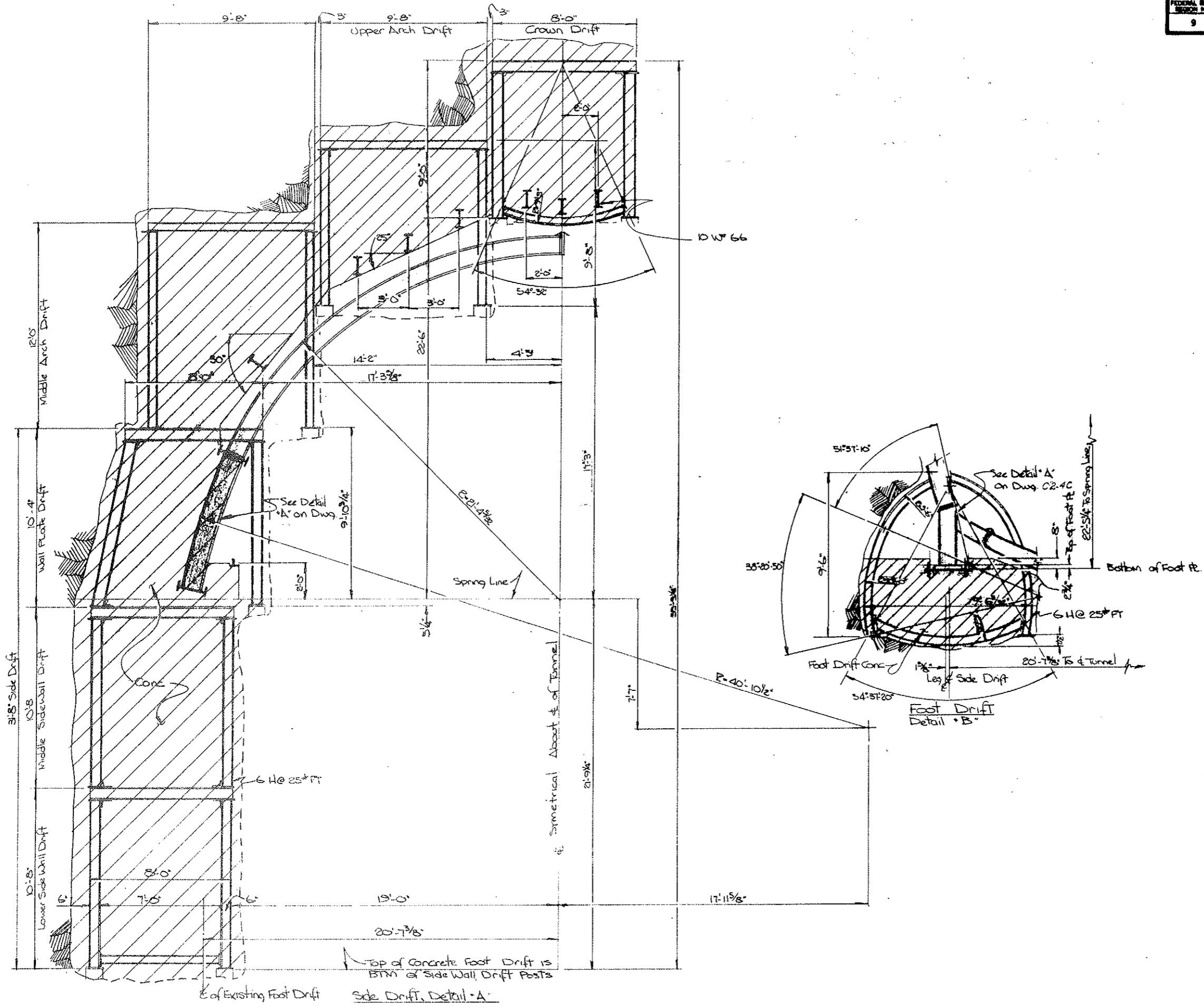


• TUNNEL SECTION • TYPE IVb •
 FROM STATION 82+40 TO 84+00
 13 DRIFT AREA / ZONE 2
 Scale 1/4" = 1'-0"

STATE OF COLORADO			
DIVISION OF HIGHWAYS			
SCALE: NOTED	APPROVED BY:	DRAWN BY:	
DATE:	REVISION:	REVISED:	
• CIVIL TUNNEL •			
TYPICAL CROSS SECT-TUNNEL SECT TYPE IVb			
DRAWING NUMBER			C2-15C

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	510X	326

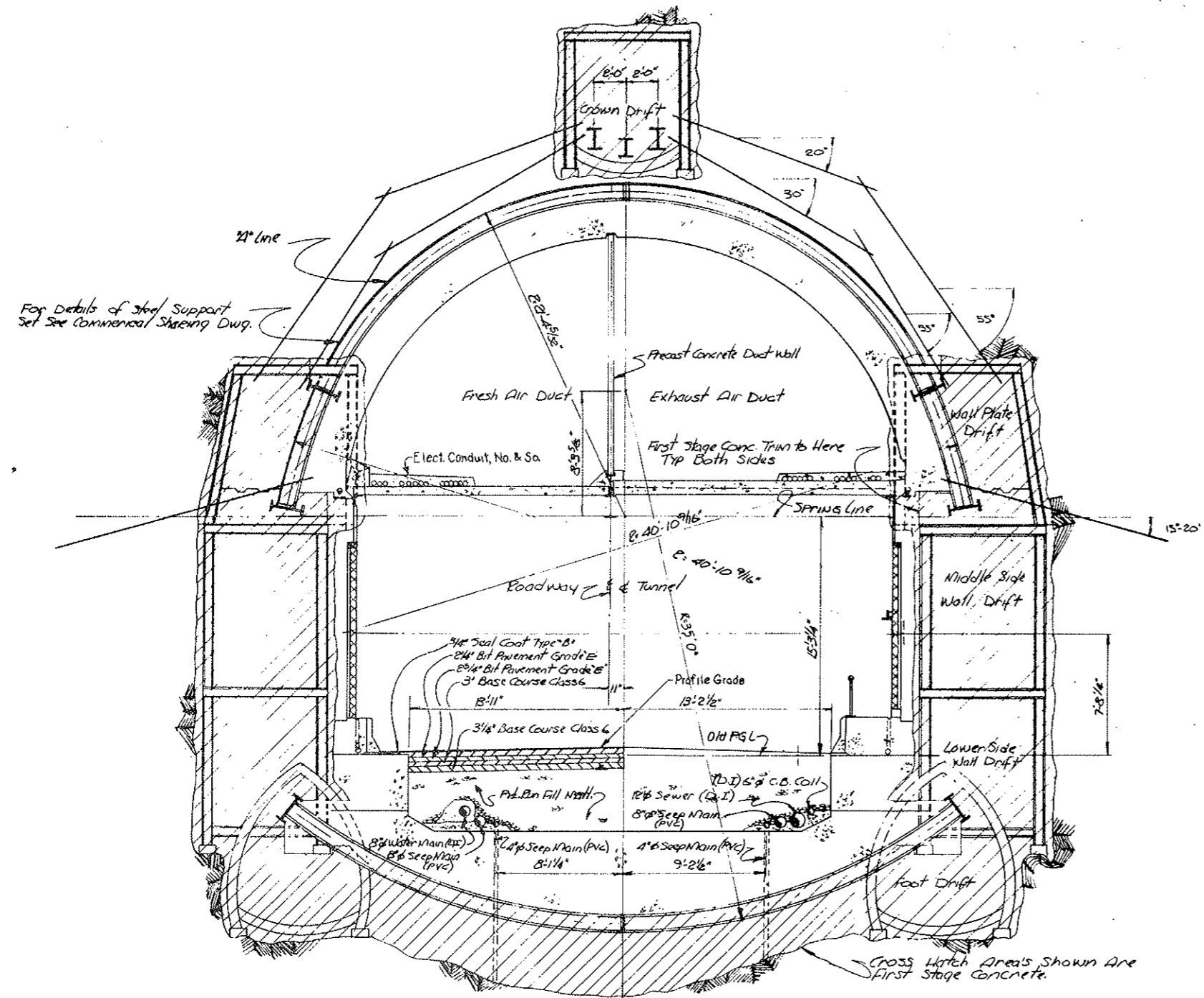
AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



State of Colorado Division of Highways		
SCALE: 3/8"=1'-0"	APPROVED BY:	DRAWN BY: Broder
DATE: Aug 29, 73		REVISED:
DETAILS SECTION TYPE IV6		
DRAWING NUMBER		C2-13D

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	E1 EX	32

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

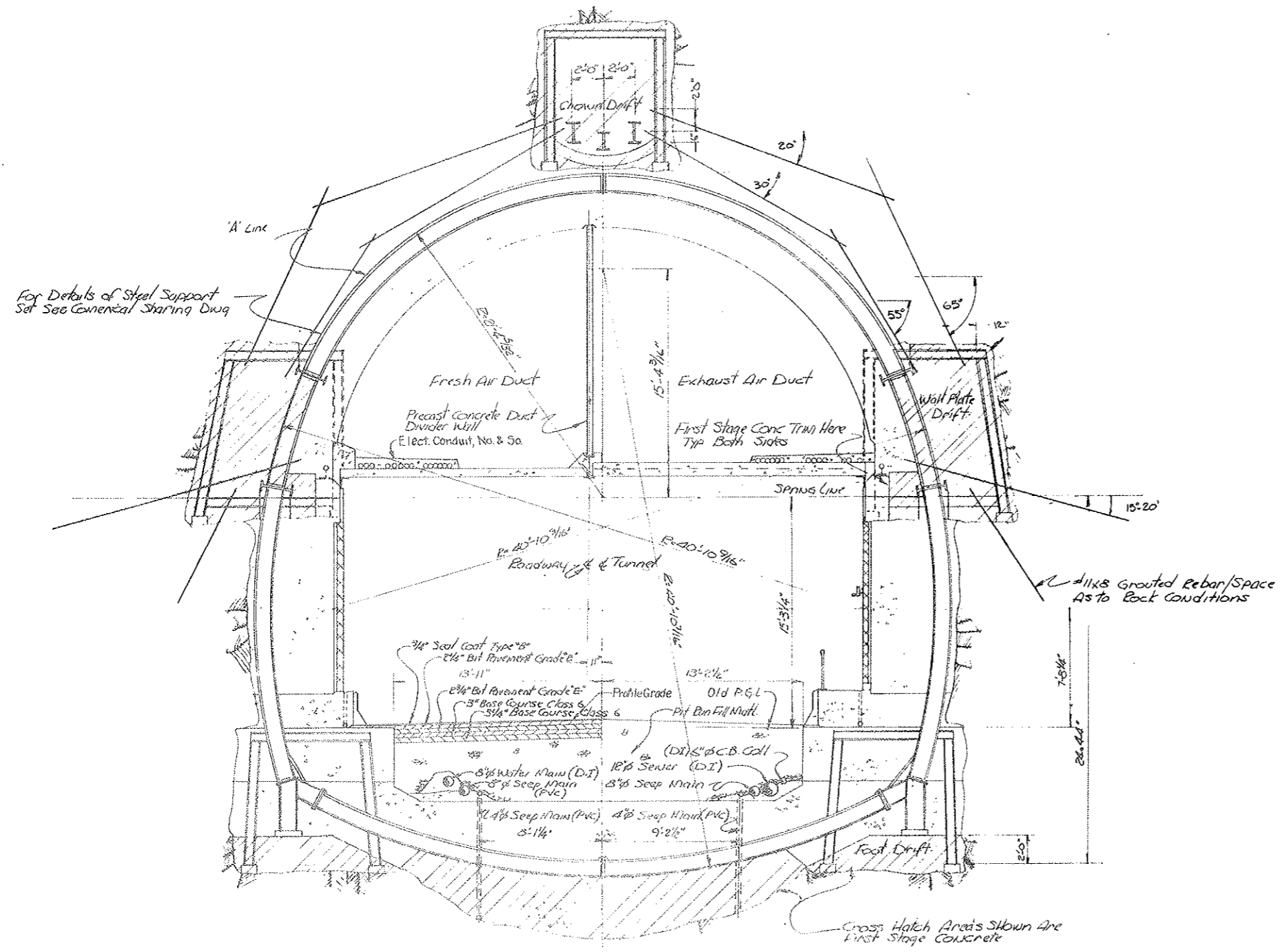


Tunnel Section Type IVa
 Scale 1/4" = 1'-0"
 Sta. 84+00 to 85+60

State of Colorado - Division of Highways		SCALE 1/4" = 1'-0"	DRAWN BY J. Brooks
Civil Tunnel TYPICAL Cross Section Tunnel Section Type IVa		DATE Aug 2, 1973	DRAWING NUMBER C2-13E

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	517A	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

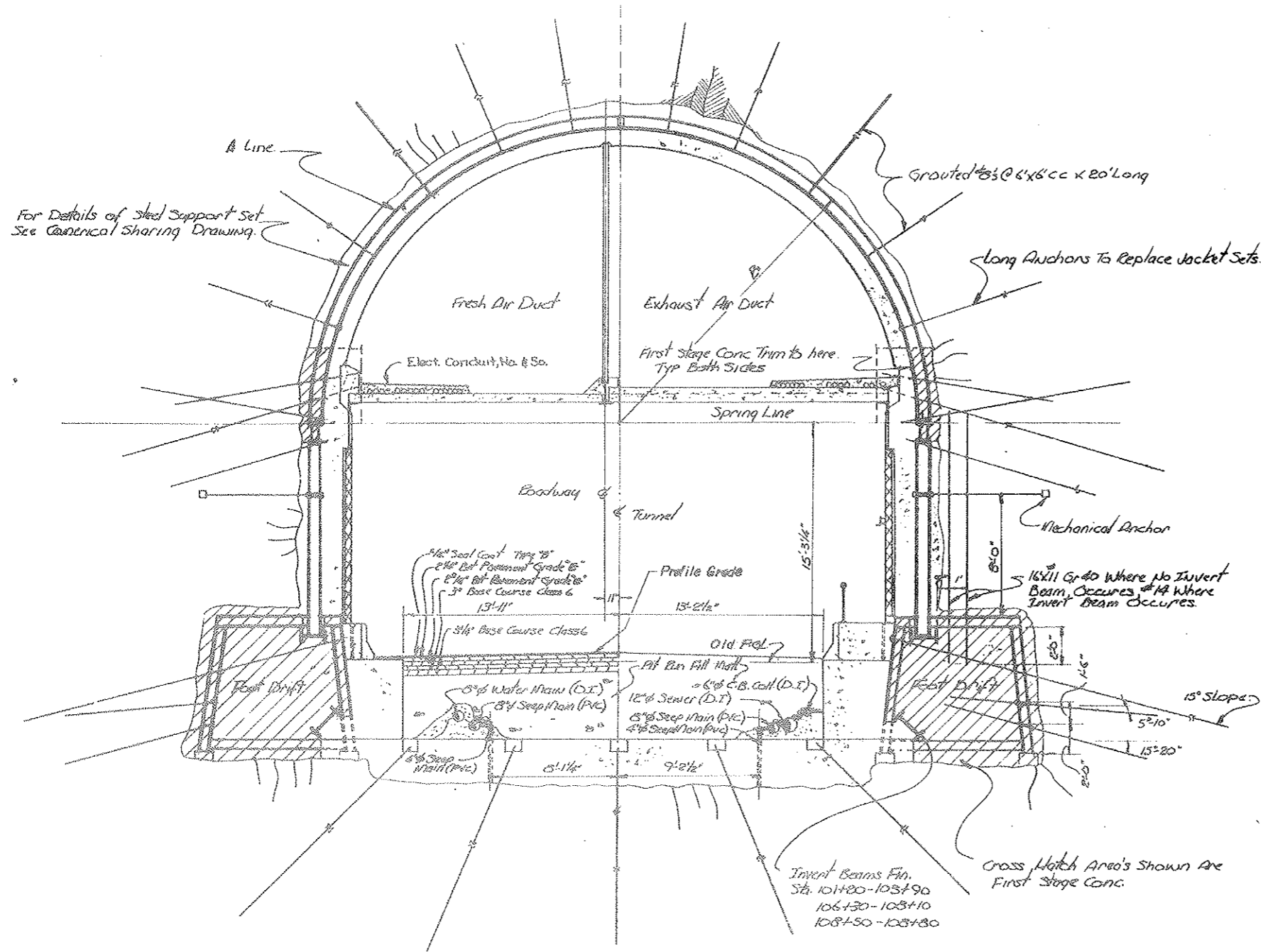


Tunnel Section Type IVa
 Scale 1/4" = 1'-0"
 Sta. 85+60 to 100+30

State of Colorado Division of Highways		
SCALE 1/4" = 1'-0"	DRAWN BY J. Brooks	REVIEWED
Civil Tunnel Typical Cross Sect - Tunnel Sect. Type IVa		
DATE	APPROVED BY	DRAWING NUMBER CE-18F

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	51GX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



Tunnel Section Type Zone 3
 Scale 1/4" = 1'-0"
 Sta. 108+30 to 109+07

NOTE: Electrical Conduit Transitions From Ceiling To Wall At Sta. 108+78 FOR DETAILS OF JOINT SEE DRAW. C2-135

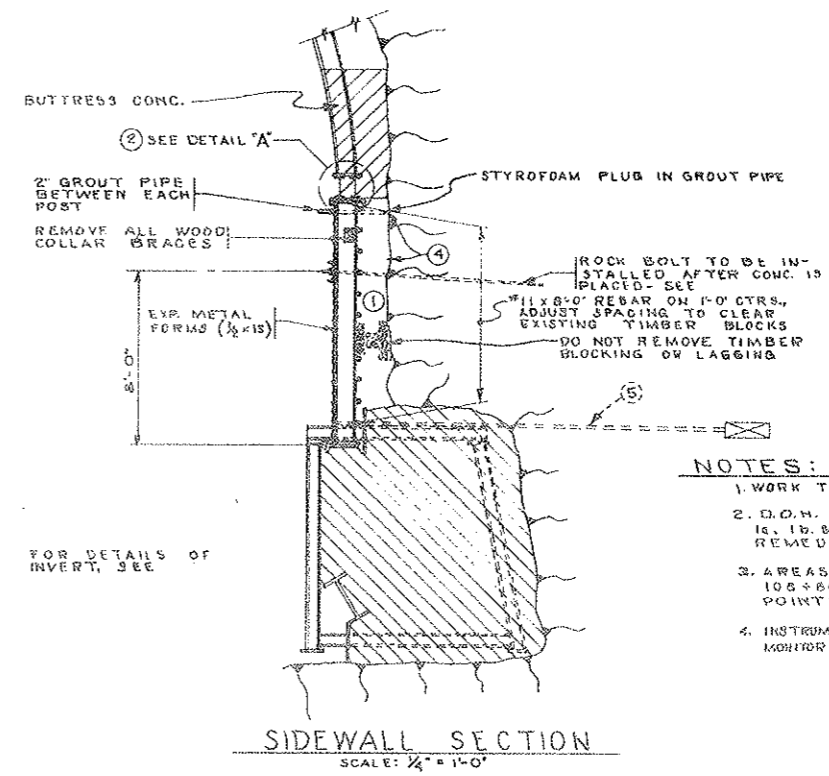
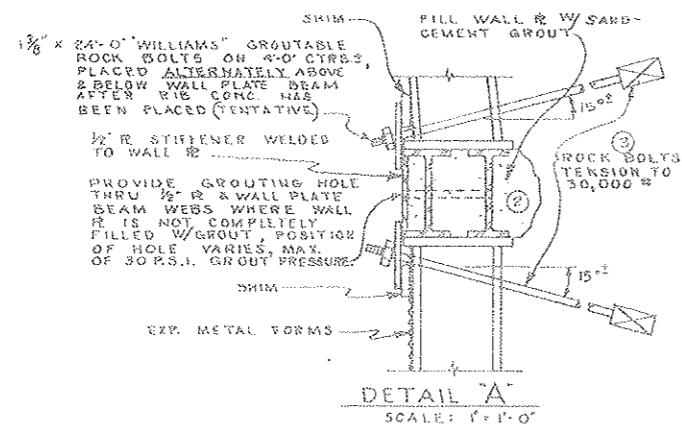
State of Colorado Division of Highways			
DESIGNED BY DATE: 2/18/73	APPROVED BY	DESIGNED BY	DATE
Civil Tunnel, TYPICAL Cross Sect. Tunnel Sect. Type IIIa			
			C2-135

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170 3-14220	SHX	386

SEQUENCE OF WORK

- ① CONCRETE RIBB: a. STA. 104+20 TO 103+80
b. STA. 106+30 TO 105+10
c. STA. 108+50 TO 108+80
- ② GROUT WALL PLATE & DRY PACK TOP OF RIB CONC. TO INSURE FULL BEARING UNDER WALL PLATE.
- ③ INSTALL WILLIAMS ROCK BOLTS ABOVE & BELOW WALL PLATE. TENSION & GROUT IMMEDIATELY.
- ④ PRESSURE GROUT BEHIND RIB CONC.
- ⑤ AT THIS POINT, CONSIDER PLACEMENT OF ADDITIONAL BOLTS #11 x 30' x GRADE 60 REBAR GROUTED W/ RESIN ANCHOR @ TOP OF SILL DRIFTS.
- ⑥ CONCRETE INVERT 1/2 WIDTH x 60' LENGTH, SEE
- ⑦ INSTALL VERT. INVERT REBAR THRU CONC. INVERT, #11 x 30' x GRADE 60 REBAR W/ 6" x 1/4" N.C. THREAD, 8"x8"x1/2" PLATES, SEE
- ⑧ CONCRETE REMAINING 1/2 OF INVERT, SEE
- ⑨ INSTALL VERT. INVERT REBAR, SEE

AS CONSTRUCTED
REVISED DATE
OCT 26, 1973

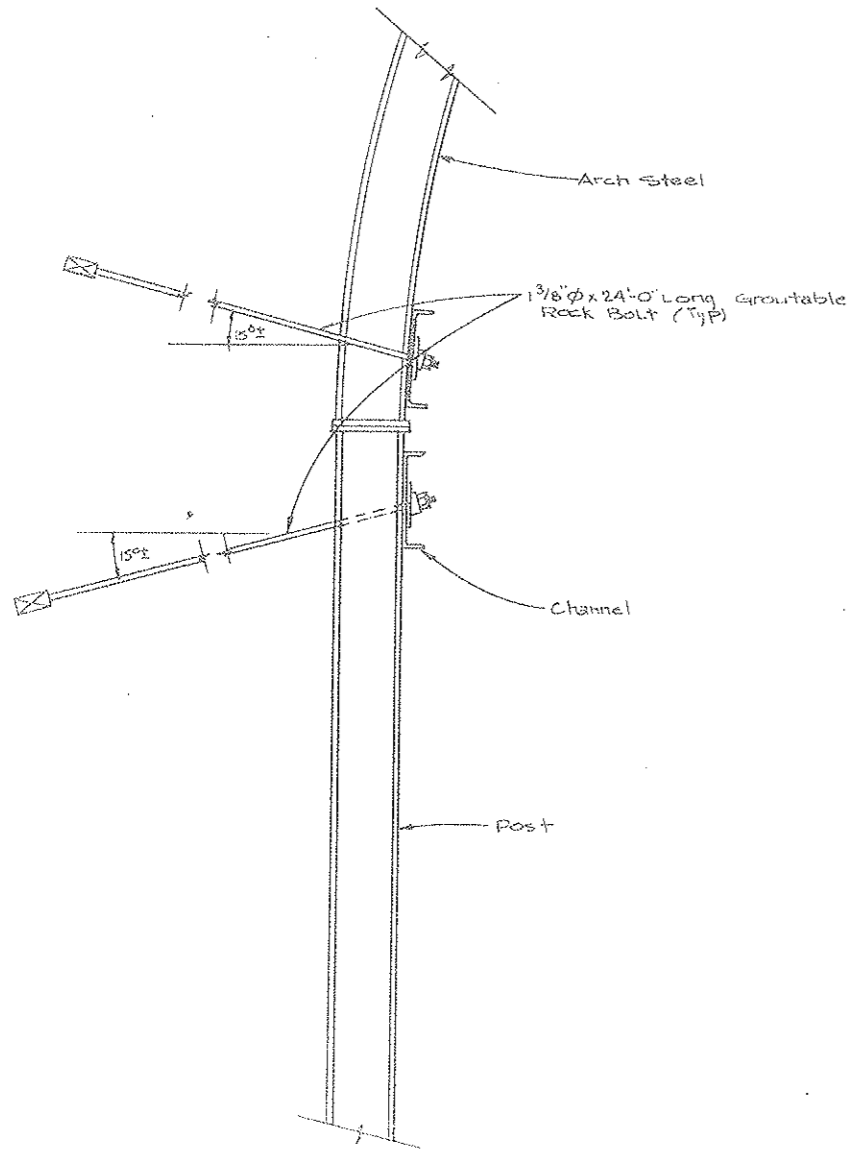


ZONE 3

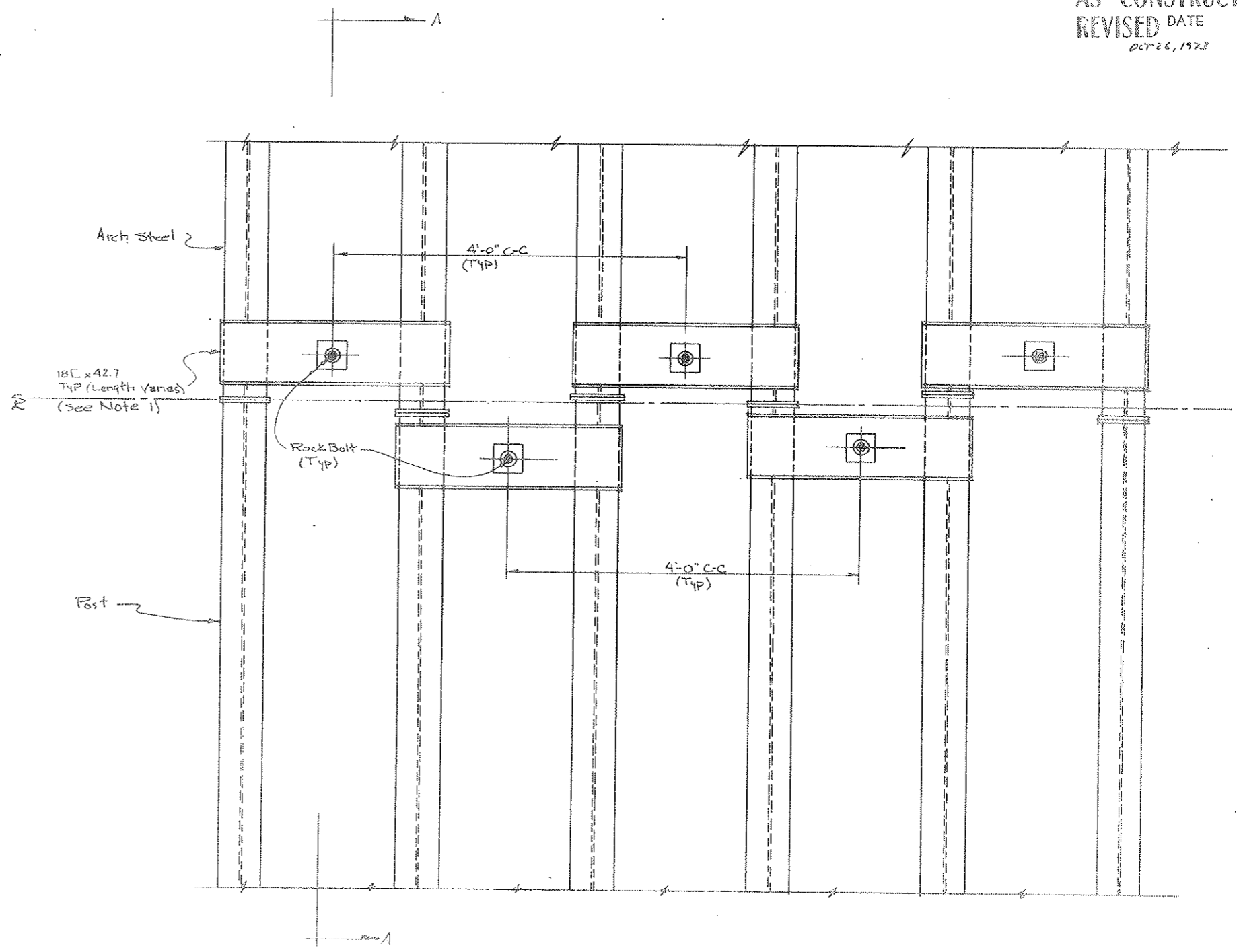
STATE OF COLORADO			
DIVISION OF HIGHWAYS			
SCALE: 1/4" = 1'-0"	APPROVED BY:	DRAWN BY: R.F.R.	
DATE: 11/18/73		REVISION:	
DETAILS SECTION IIIa			
STA. 102+00 TO STA. 104+33		DRAWING NUMBER: C2-13H	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	511X	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1922



SECTION A-A - TYPICAL Where Wall IP Removed
 Scale: 3/4"=1'-0"



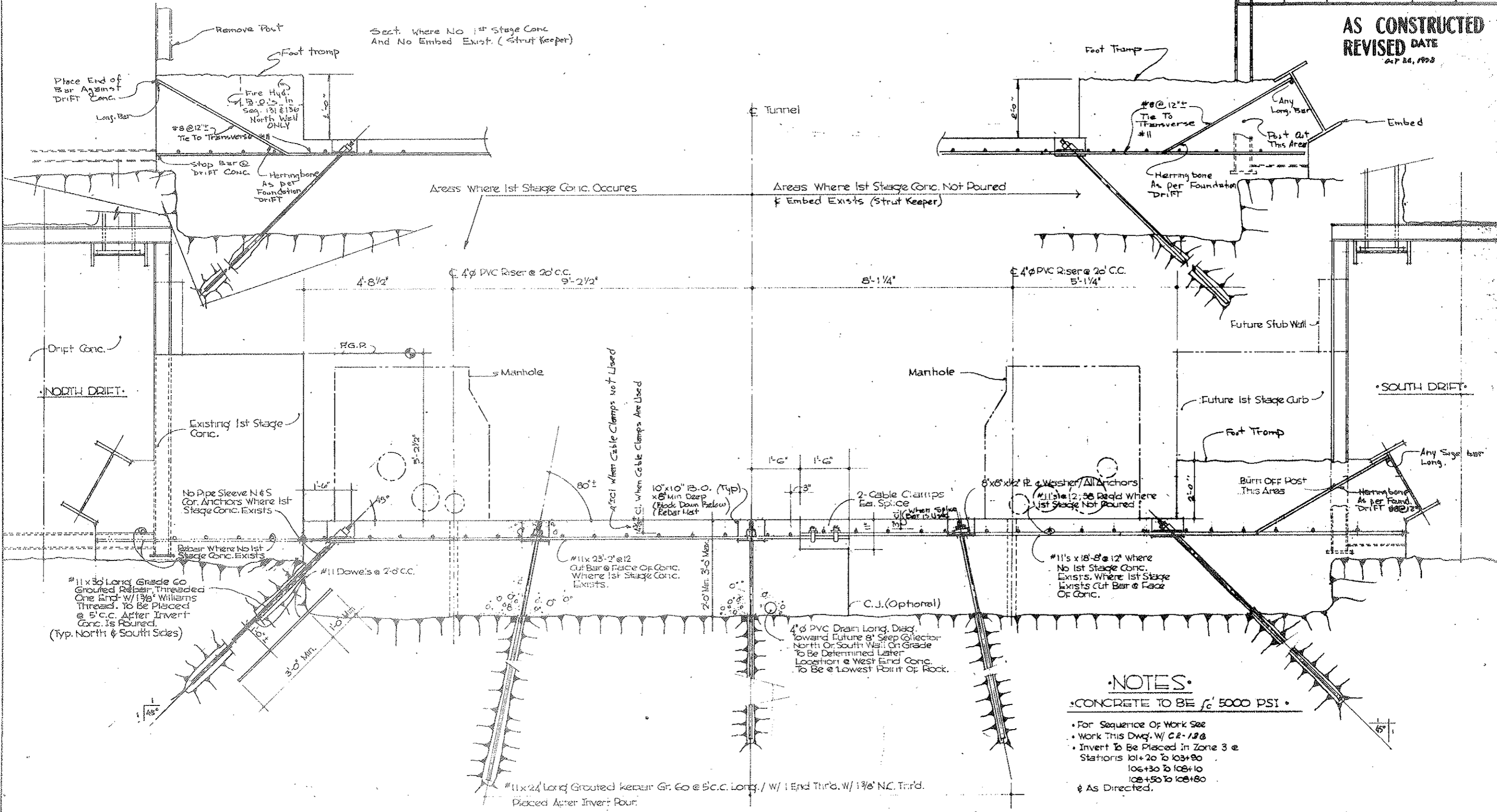
- Notes:
1. 18C x 42.7 Placed Alternately As Shown Above,
 2. Channels to be Installed Only Where Wall IP Has Been Removed.

ZONE-3

STATE OF COLORADO	
DIVISION OF HIGHWAYS	
N. & S. WALL	SCALE BY 3/4"=1'-0"
ROCK BOLT - 18C x 42.7 CHANNEL INSTALLATION SECTION TYPE III	
DATE 7-25-22	APPROVED BY C2-18 I

PROJECT NO.	DIVISION	PROJECT NO.	DATE
9	COLORADO	170-3(34)220	ST.UT 326

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1978



ZONE 3 INVERT LOOKING EAST
 Scale 3/4" = 1'-0"

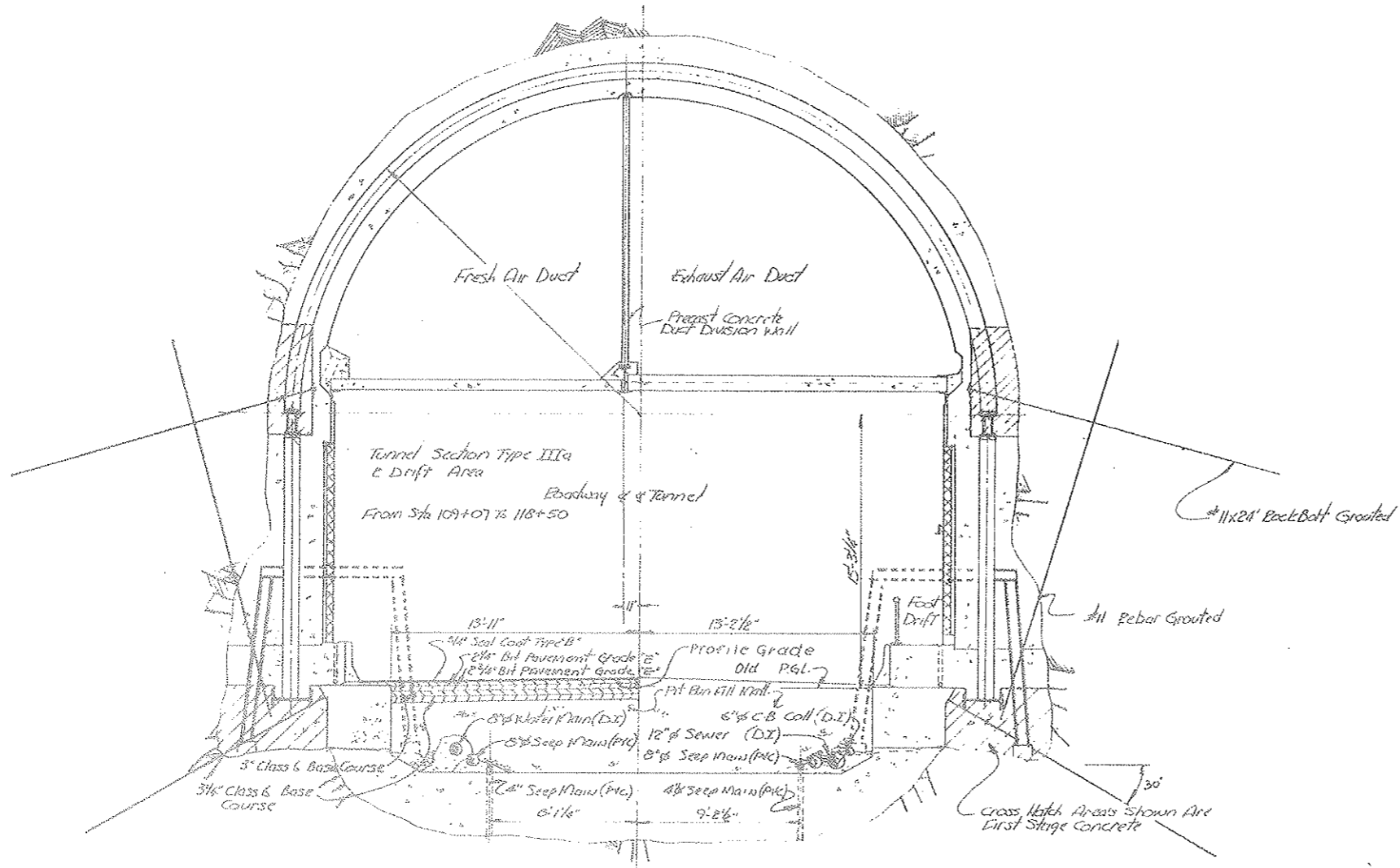
- NOTES**
- CONCRETE TO BE f_c' 5000 PSI •
 - For Sequence Of Work See
 - Work This Dwg. W/ CR-18B
 - Invert To Be Placed In Zone 3 @ Stations 101+20 To 103+00
 106+30 To 108+10
 108+50 To 108+80
 & AS DIRECTED.

Zone 3

STATE OF COLORADO - DIVISION OF HIGHWAYS	
Prepared by Straight Check Constructors	Checked by JCC
• INVERT • SECTION TYPE 10	
DATE 7/21/72	DATE 12-15-1

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	51 KK	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1972



Tunnel Section Type IIIa
 Scale 1/4" = 1'-0"
 Sta 109+07 to 118+05.00 BK.

NOTE:
 Type IIIa only.

ZONE 4

State of Colorado Division of Highways	
SCALE: 1/4" = 1'-0"	APPROVED BY: [Signature]
DATE: [Blank]	REVISION: [Blank]
Civil Tunnel Typical Cross Section - Tunnel Section Type IIIa	
DRAWING NUMBER: CE-15K	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	52	526

VOID
BY CONSTRUCTION
OCT 26, 1973

THIS SHEET IS VOID.

NOTES:

For typical interior dimensions and details see Dwg. C2-1.
For General Concrete Notes see Dwg. C2-11.
For General Grouting Notes see Dwg. C2-13.
For typical blockouts in walls and walkways see Dwg. C2-27, and for locations see Dwg. G2-10 to G2-16 incl.
For steel reinforcement details see Dwg. C2-34 and C2-35.

(R1) Rev. 4-1-68 Ceiling Slab finish revised in accordance with CDH W.O. #14153.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
1		Dimension Location Revised	R.A.	R.B.A.	M.M.

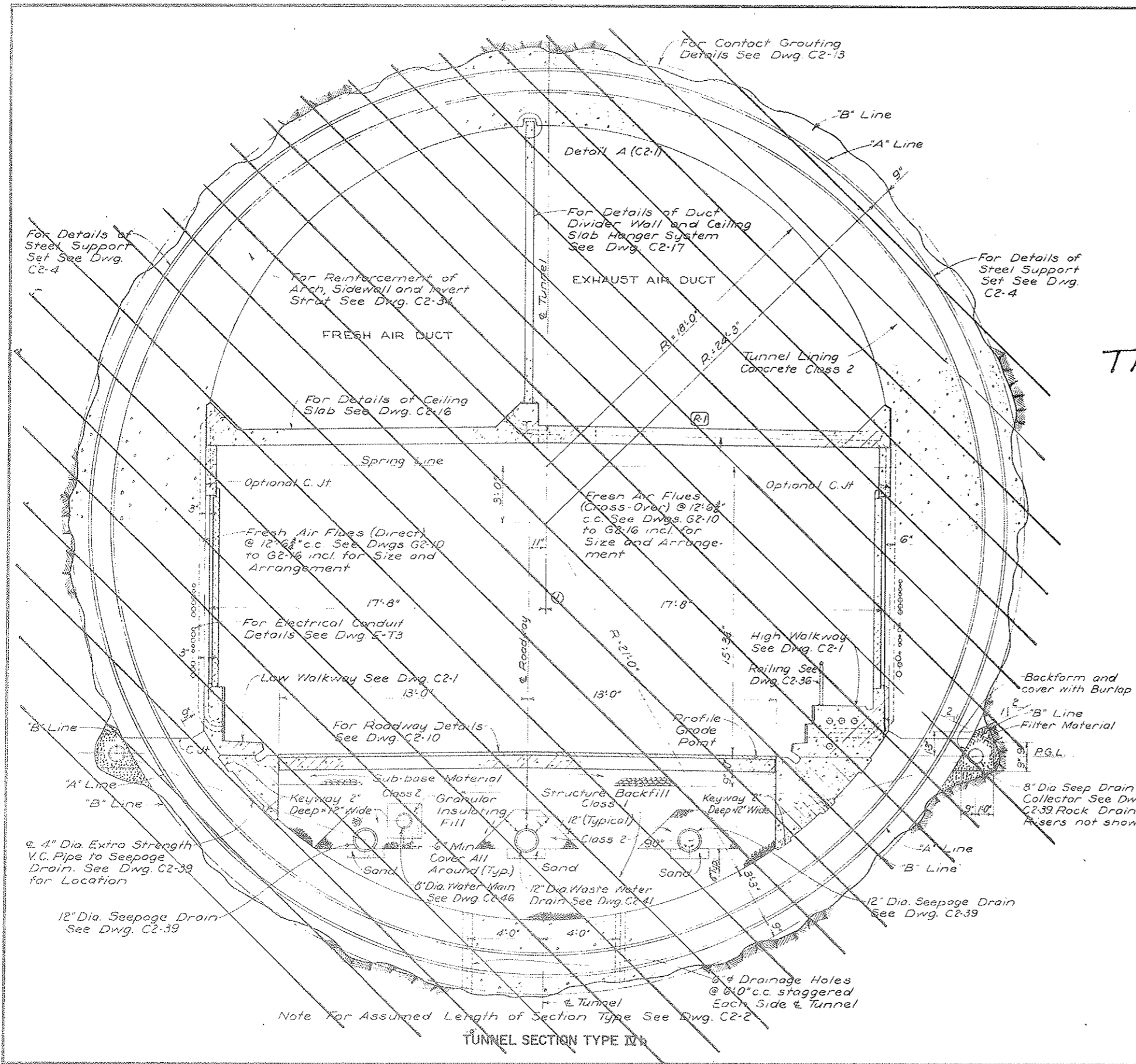
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL-TUNNEL
TUNNEL CROSS SECTION
TUNNEL SECTION TYPE IXb

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

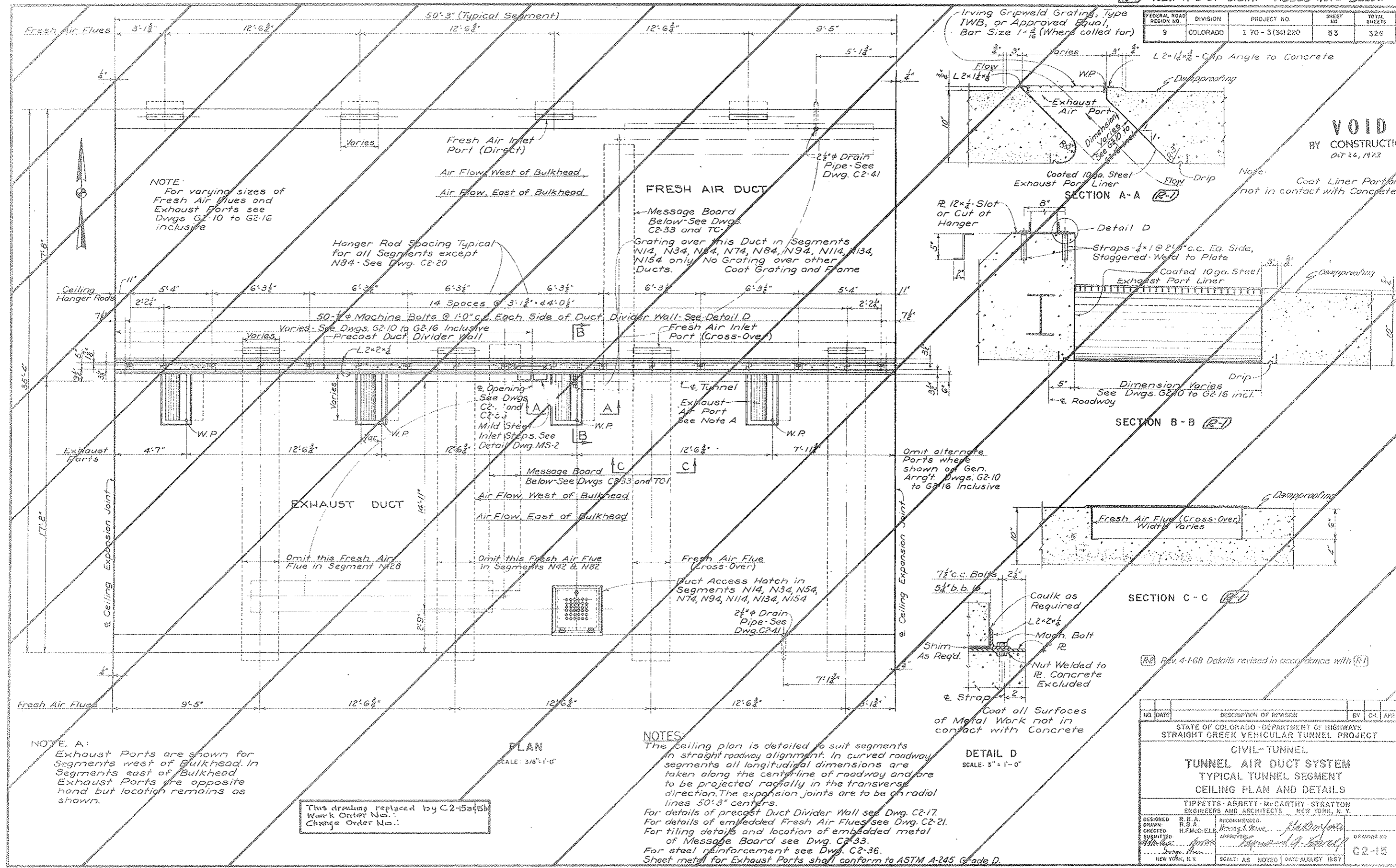
DESIGNED R.B.A.	RECOMMENDED Henry A. Bane	APPROVED James A. Bane	DATE AUGUST 1967
DRAWN R.B.A.	CHECKED S.M.R.	SUBMITTED Amos	SCALE 3/8" = 1'-0"

DRG NO. C2-14



TUNNEL SECTION TYPE IXb

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	53	326



NOTE:
For varying sizes of Fresh Air Flues and Exhaust Ports see Dwg. G2-10 to G2-16 inclusive

Hanger Rod Spacing Typical for all Segments except N84. See Dwg. C2-20

FRESH AIR DUCT
Grating over this Duct in Segments N14, N34, N54, N74, N84, N94, N114, N134, N154 only. No Grating over other Ducts. Coat Grating and Frame

EXHAUST DUCT
Omit this Fresh Air Flue in Segment N28
Omit this Fresh Air Flue in Segments N42 & N82

PLAN
SCALE: 3/8" = 1'-0"

NOTES:
The ceiling plan is detailed to suit segments in straight roadway alignment. In curved roadway segments all longitudinal dimensions are taken along the center-line of roadway and are to be projected radially in the transverse direction. The expansion joints are to be on radial lines 50'-3" centers.
For details of precast Duct Divider Wall see Dwg. C2-17.
For details of embedded Fresh Air Flues see Dwg. C2-21.
For tiling details and location of embedded metal of Message Board see Dwg. C2-33.
For steel reinforcement see Dwg. C2-36.
Sheet metal for Exhaust Ports shall conform to ASTM A-245 Grade D.

DETAIL D
SCALE: 3" = 1'-0"

VOID BY CONSTRUCTION
DATE 26, 1972

Note: Coat Liner Portion not in contact with Concrete

Omit alternate Ports where shown on Gen. Arrgt. Dwg. G2-10 to G2-16 inclusive

(R2) Rev. 4-1-68 Details revised in accordance with (R1)

NOTE A:
Exhaust Ports are shown for Segments west of Bulkhead. In Segments east of Bulkhead Exhaust Ports are opposite hand but location remains as shown.

This drawing replaced by C2-15a(15b) Work Order No.: Change Order No.:

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL TUNNEL AIR DUCT SYSTEM TYPICAL TUNNEL SEGMENT CEILING PLAN AND DETAILS					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	R. B. A.	RECOMMENDED			
DRAWN	R. S. E.	CHECKED	H. J. A. C. E. L.		
SUBMITTED		APPROVED			
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1967					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	53AK	526

AS CONSTRUCTED
REVISED DATE
OCT 26, 1973

Note: Structural Details To Be On Shop Drawings.

Panel Number	Size
1	10" Hollow Core 3'-11 1/2" x 18'-4 1/2"
2	10" Hollow Core 3'-11 1/2" x 18'-4 1/2"
3	4" Solid 3'-11 1/2" x 18'-3 3/4"
4	6" Hollow Core 3'-11 1/2" x 16'-3 3/4"
5	6" Hollow Core 3'-11 1/2" x 16'-3 3/4"

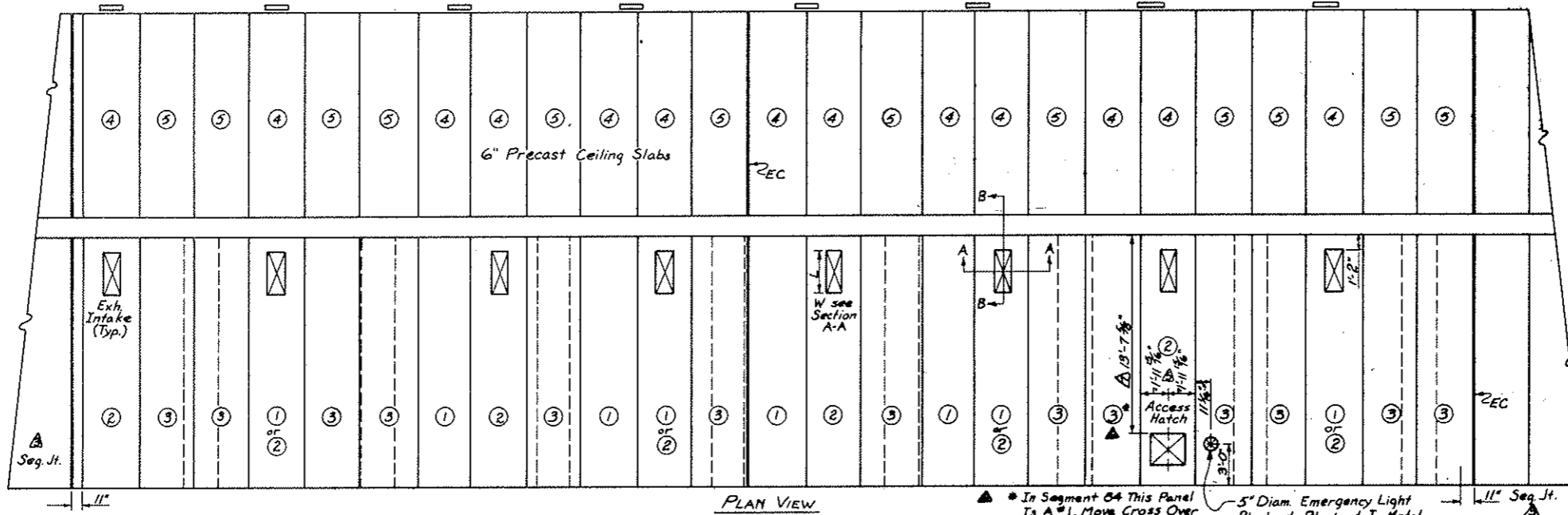
2 Panel Has Blockouts

Tolerance On Panel Length = -0+1/2"

North

Odd Segment

Even Segment



PLAN VIEW

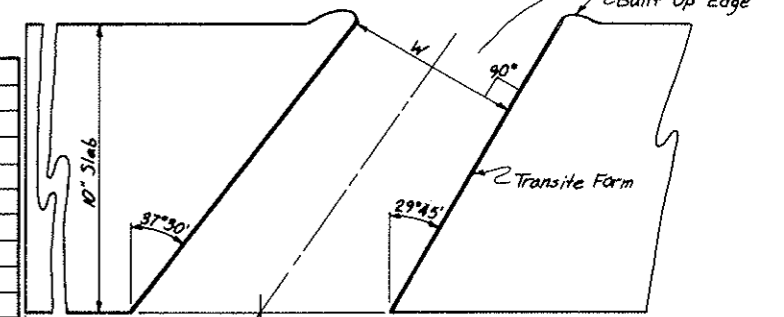
South

Segment	L x W																								
1-2	2'-0 1/2" x 6"																								
3-4	2'-1" x 6"																								
5-6	2'-1 1/2" x 6"																								
7-8	2'-2 1/2" x 6"																								
9-10	2'-3 1/2" x 6"																								
11-12	2'-4 1/2" x 6"																								
13-14	2'-4 3/4" x 6"																								
15-16	2'-5 1/4" x 6"																								
17-18	2'-7" x 6"																								
19-20	2'-8" x 6"																								
21-22	2'-10 1/2" x 8"																								
23-24	2'-1 1/2" x 8"																								
25-26	2'-2 1/2" x 8"																								
27-28	2'-3 1/2" x 8"																								
29-30	2'-4 1/2" x 8"																								
31-32	2'-5 1/2" x 8"																								
33-34	2'-7" x 8"																								
35-36	2'-8 1/4" x 8"																								
37-38	2'-9 3/8" x 8"																								
39-40	1'-11 1/2" x 6"																								
41-42	2'-0 1/2" x 6"																								
43-44	2'-1 1/2" x 6"																								
45-46	2'-2 1/2" x 6"																								
47-48	2'-3 1/2" x 6"																								
49-50	2'-5 1/2" x 6"																								
51-52	2'-6 1/4" x 6"																								
53-54	2'-8 1/2" x 6"																								
55-56	2'-1 1/8" x 8"																								
57-58	2'-2 1/8" x 8"																								
59-60	2'-4 1/8" x 8"																								
61-62	2'-5 1/8" x 8"																								
63-64	2'-7 1/8" x 8"																								
65-66	2'-8 1/8" x 8"																								
67-68	2'-10 1/8" x 8"																								
69-70	3'-0" x 8"																								
71-72	3'-1 1/2" x 8"																								
73-74	3'-3 1/2" x 8"																								
75-76	3'-4 1/2" x 8"																								
77-78	3'-5 1/2" x 8"																								
79-80	3'-7" x 8"																								
81-82	3'-7 1/2" x 8"																								
83-84	3'-9" x 8"																								

* In Segment 84 This Panel Is A #1. Move Cross Over Flue If Necessary. Divider Bulkhead Crosses This Panel.

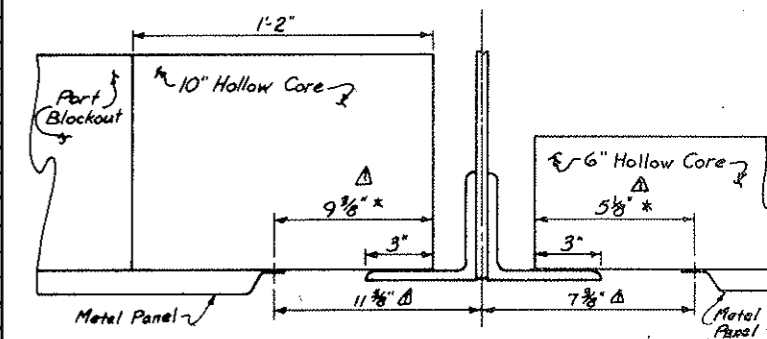
5" Diam. Emergency Light Blockout. Blockout In Metal Ceiling Panels Only.

EXHAUST PORT DETAIL



Exhaust Port Is Shown For The East 2 Ports In Segment 84 and West 2 Ports In Segment 83.

SECTION A-A

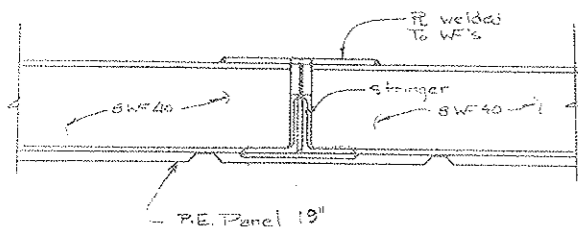


Critical Dimension CENTER SECTION DETAIL SECTION B-B

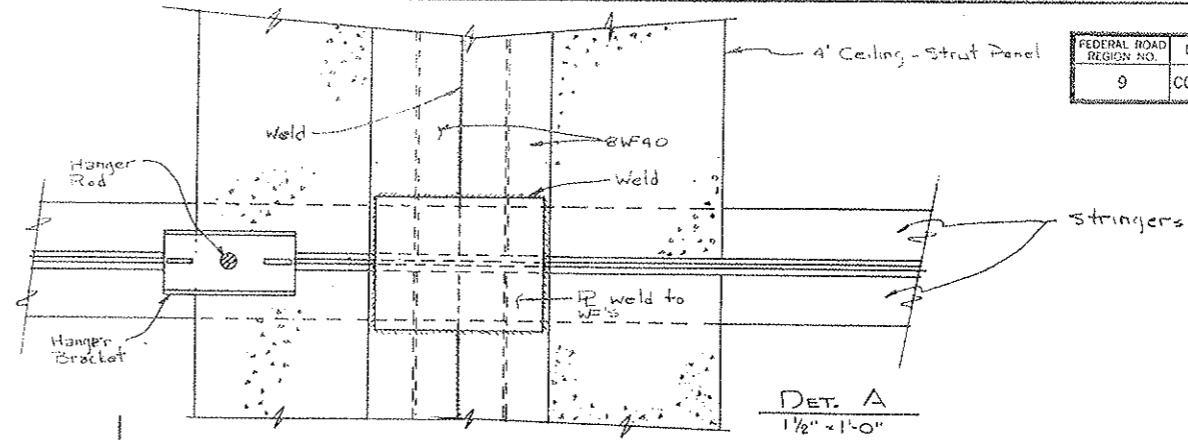
STATE OF COLORADO DIVISION OF HIGHWAYS	
Prepared By Straight Creek Constructors	Checked By R. B. G. / J. M. H.
CEILING PANEL SCHEDULE	
App. By: D. S., Date: 3-8-72	Drawing No.: C2-15A
By: D. S., As: SCC 404-1	10-22-71

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 - 3(34)220	53 CX	326

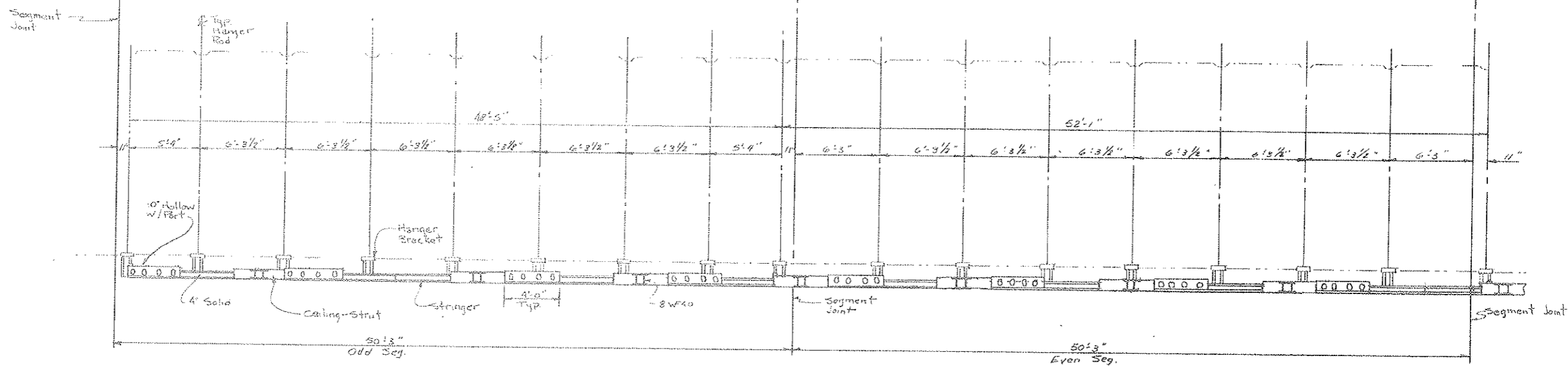
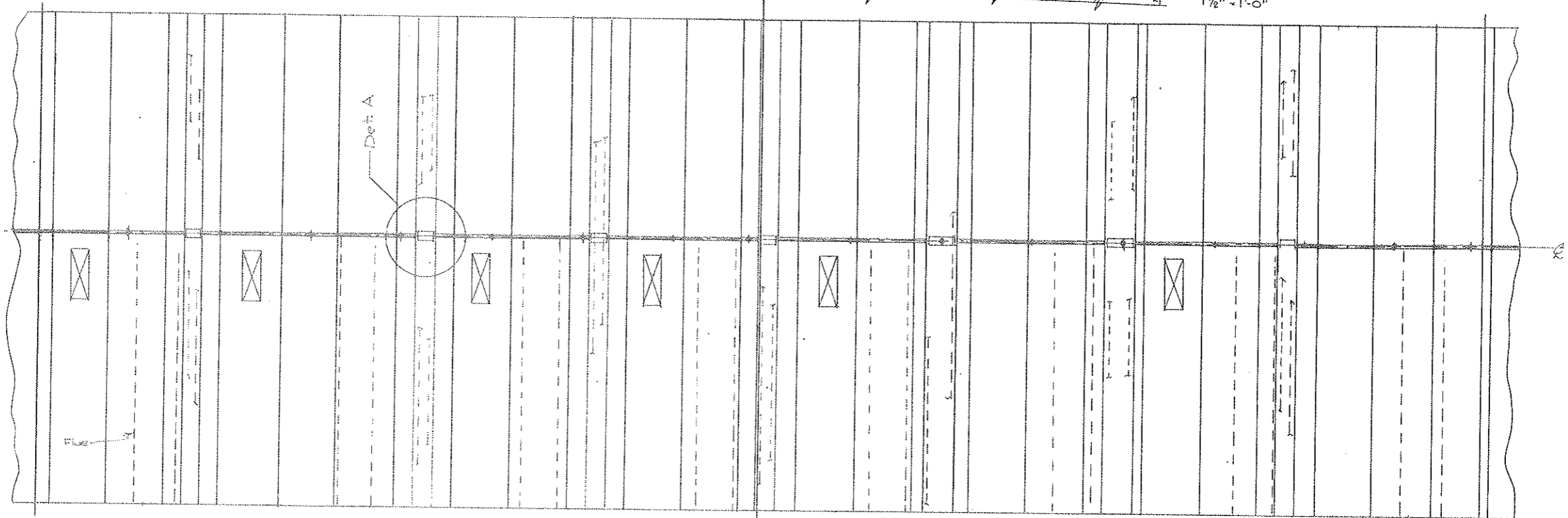
AS CONSTRUCTED
 REVISED DATE
 027 26, 1973



TYPICAL SECTION
 1/2" = 1'-0"



DET. A
 1/2" x 1'-0"



NOTE:
 WORK THIS Dwg. WITH C2-15b

STRAIGHT CREEK CONSTRUCTORS	
SCALE 1/4" = 1'-0"	DRAWN BY S. J. J. J.
DATE 10/30/72	APPROVED BY SEC 608
STRUCTURAL SLAB-N127, N128, N129 & N130	
C2-15C	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	64	328

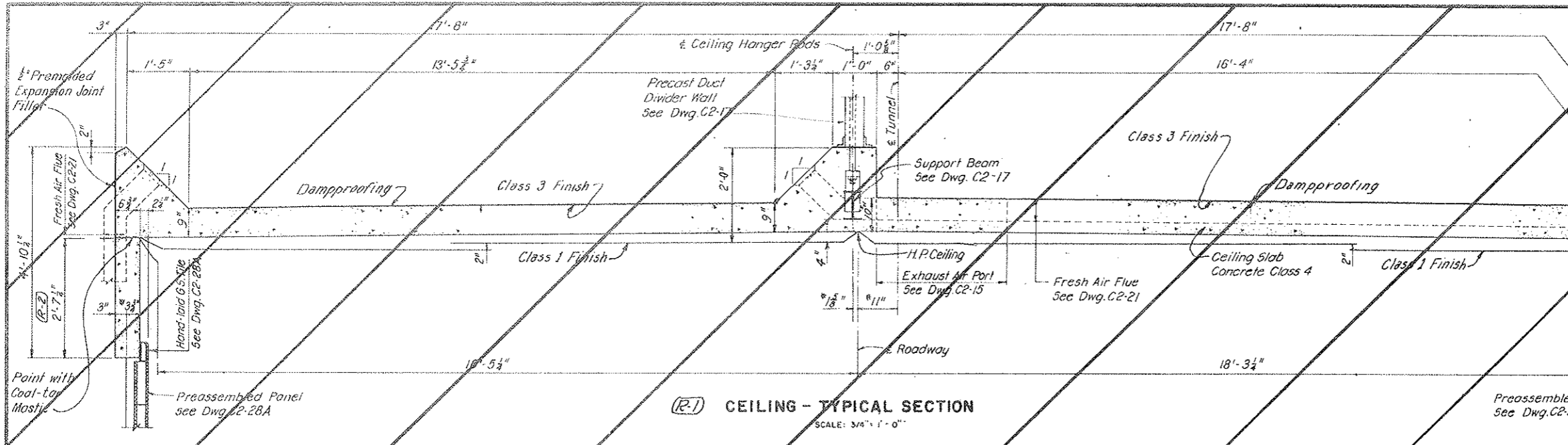
(R-1) Rev. 11-6-67 C.D.H.
Add note at bottom

VOID
BY CONSTRUCTION
Oct 26, 1973

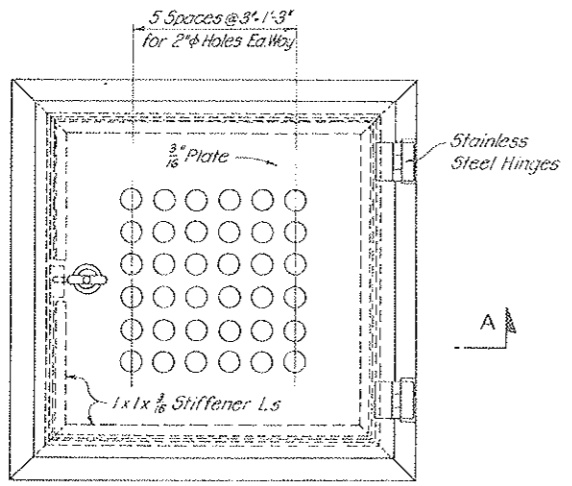
* Dimensions so noted apply to segments in straight roadway alignment only. In curved roadway segments these dimensions vary.

NOTES:
~~Work this sheet with Dwg. C2-15.~~
~~For General Concrete Notes see Dwg. C2-11.~~
~~For Reinforcement see Dwg. C2-10.~~

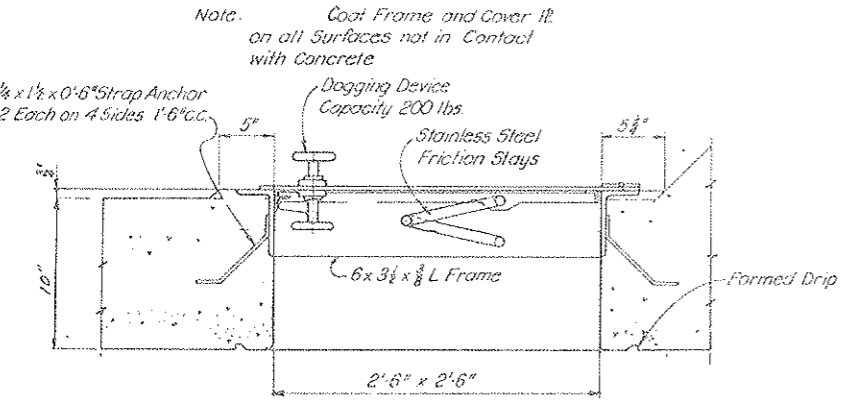
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
		STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
CIVIL - TUNNEL TUNNEL AIR DUCT SYSTEM TYPICAL TUNNEL SEGMENT CEILING SECTIONS AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED DRAWN CHECKED SUBMITTED	R. B. A. R. B. A.-R. B. H. F. McC. H. F. McC.	RECOMMENDED APPROVED			
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967		



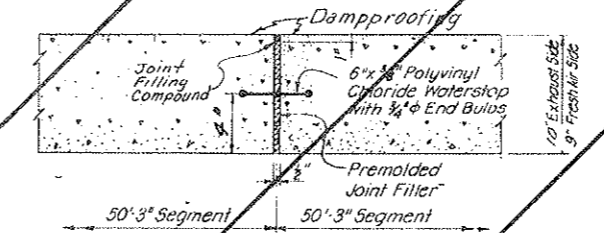
(R-1) CEILING - TYPICAL SECTION
SCALE: 3/4" = 1'-0"



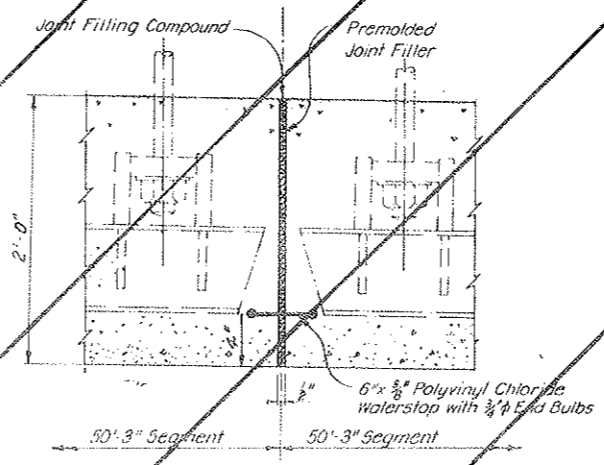
TOP PLAN - FRAME AND COVER



SECTION A-A
(R-1) DUCT ACCESS HATCH DETAILS
SCALE: 1/2" = 1'-0"



(R-1) SEGMENT EXPANSION JOINT IN CEILING SLAB - 50'-3" CENTERS
SCALE: 1 1/2" = 1'-0"

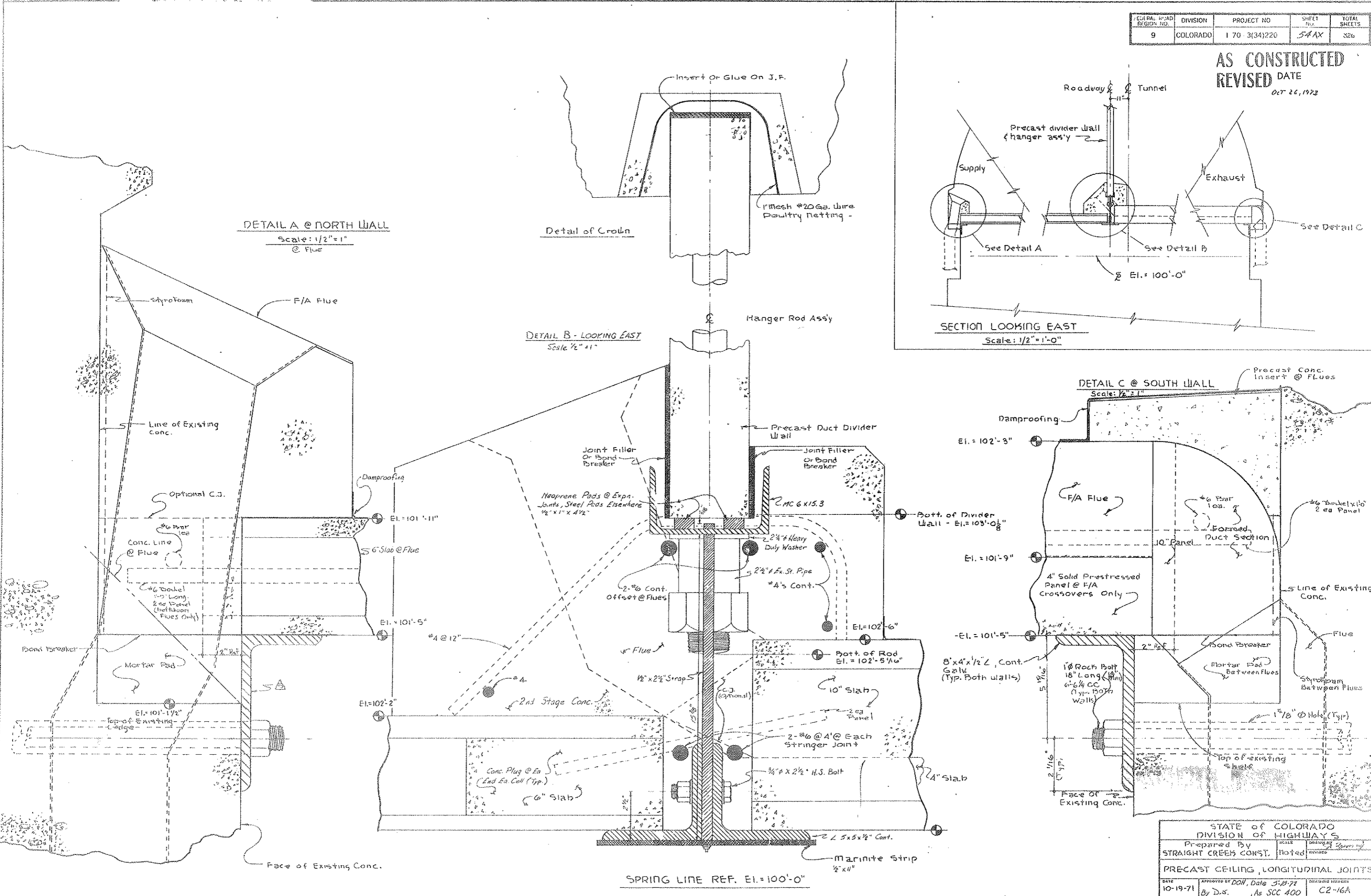


(R-1) SEGMENT EXPANSION JOINT IN CEILING CENTER BEAM
SCALE: 1 1/2" = 1'-0"

(R-1) REV. CEILING & WALL, W.O. 14153, SEE SPEC. 4-A, 6-A, 6-C & 6-D

STATE OF COLORADO REGION NO. 9	DIVISION COLORADO	PROJECT NO. 170-3(34)220	SHEET NO. 54AX	TOTAL SHEETS 326
-----------------------------------	----------------------	-----------------------------	-------------------	---------------------

AS CONSTRUCTED
REVISED DATE
OCT 26, 1972



DETAIL A @ NORTH WALL
Scale: 1/2" = 1"
@ Flue

Detail of Crown

DETAIL B - LOOKING EAST
Scale: 1/2" = 1"

SECTION LOOKING EAST
Scale: 1/2" = 1'-0"

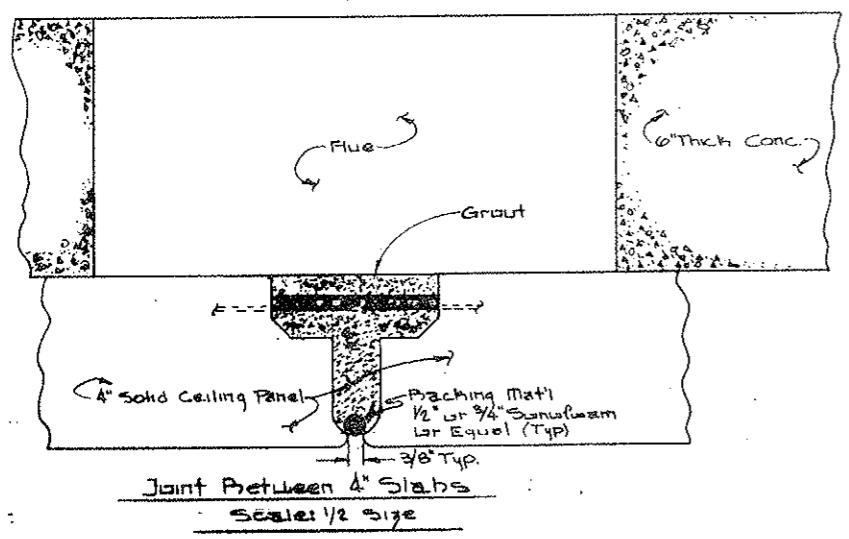
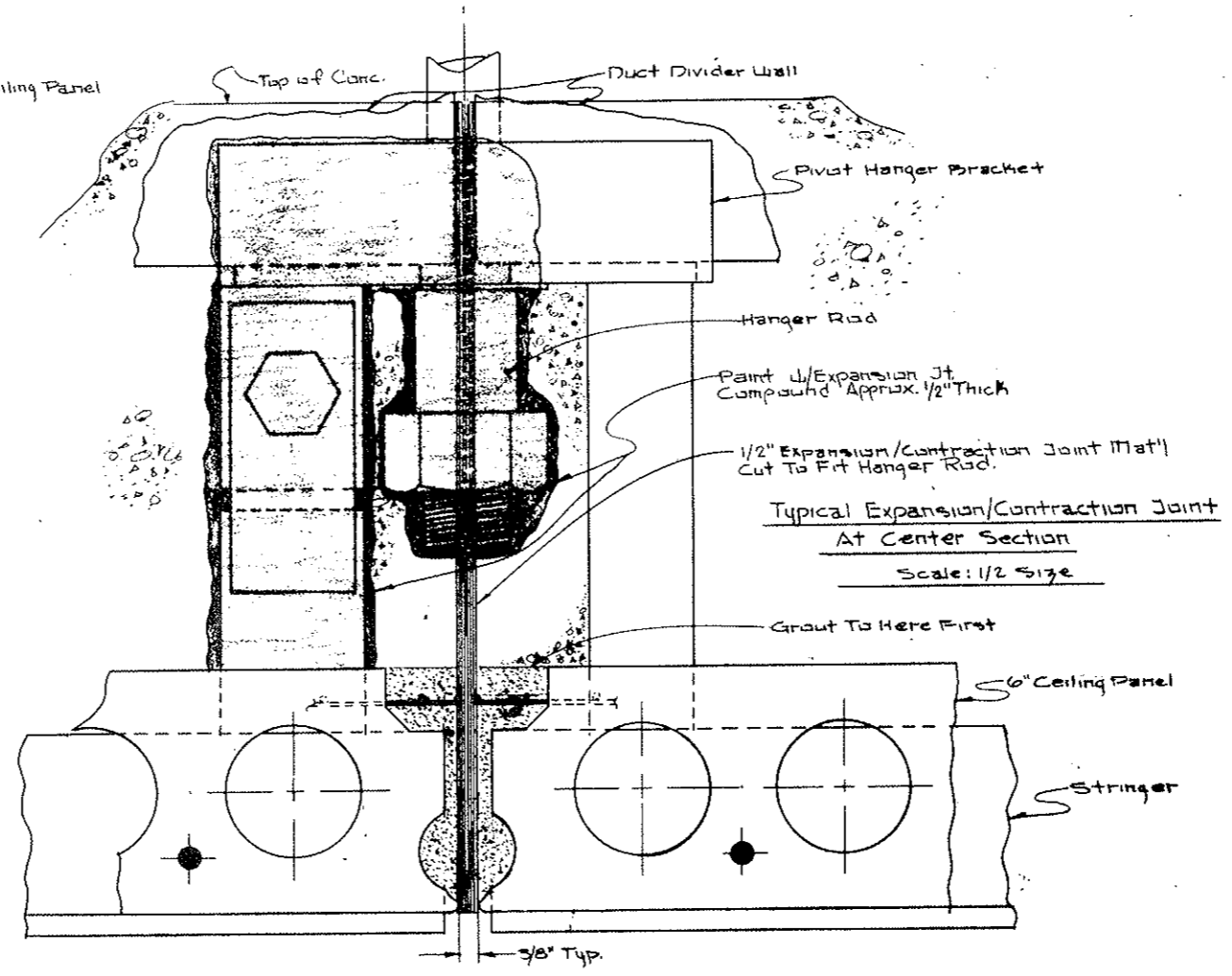
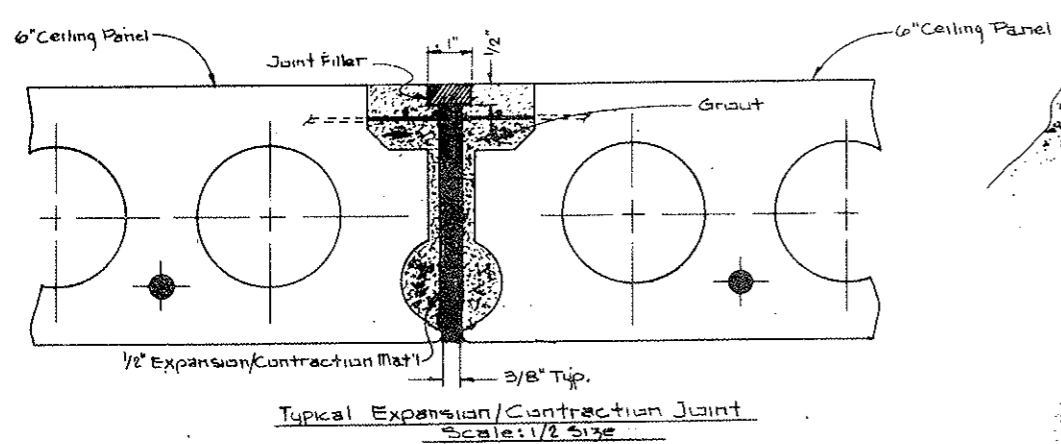
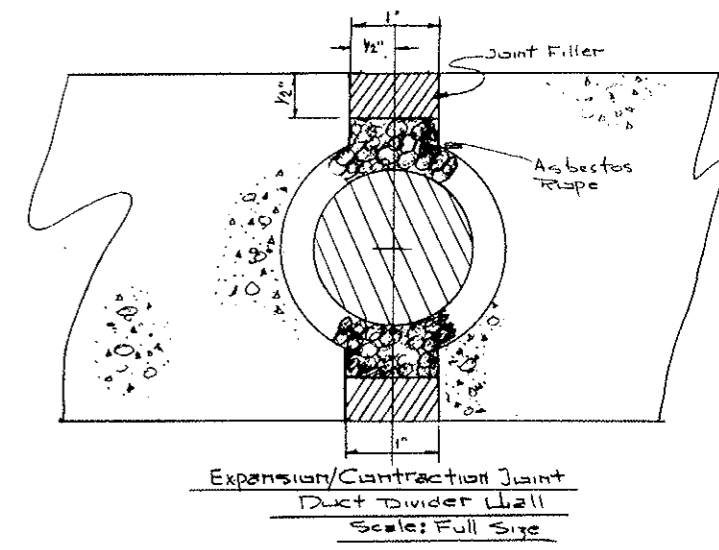
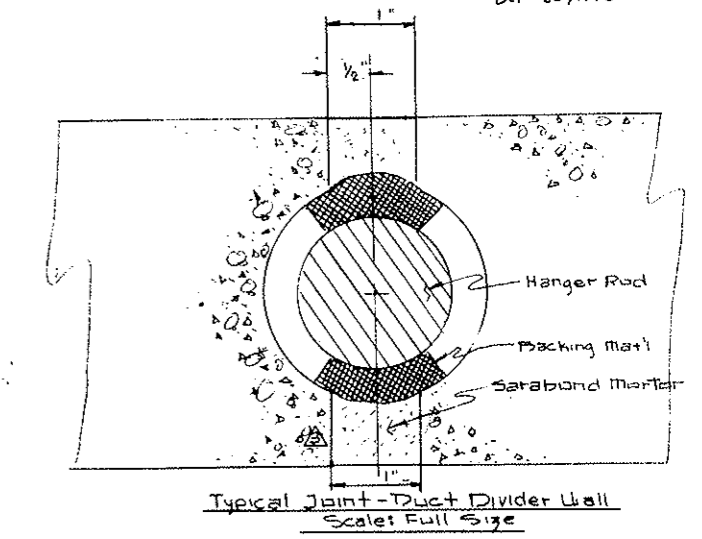
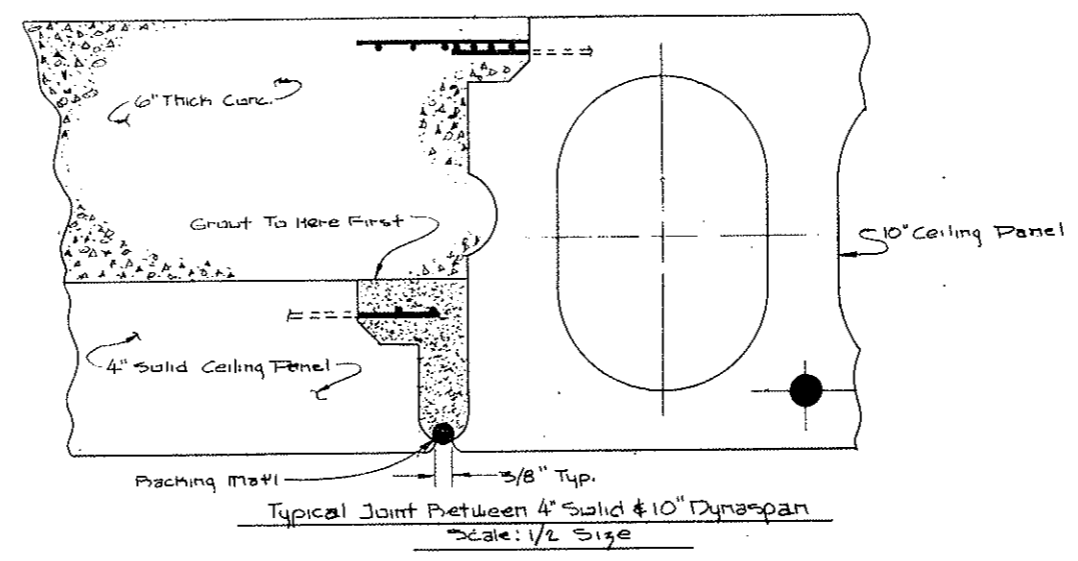
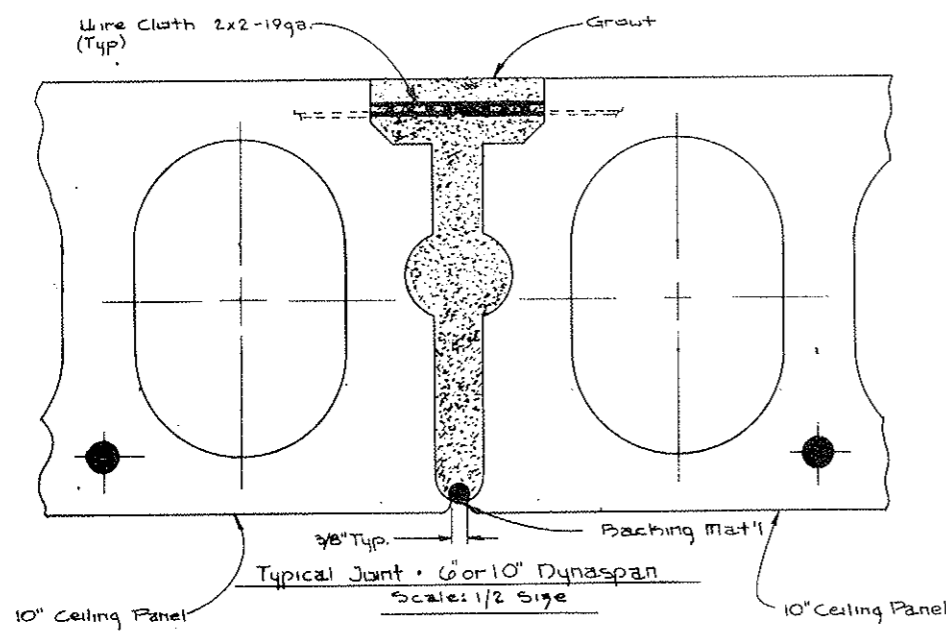
DETAIL C @ SOUTH WALL
Scale: 1/2" = 1"

SPRING LINE REF. EL. = 100'-0"

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By STRAIGHT CREEK CONST.	Checked Noted	Designed Noted	Reviewed Noted
PRECAST CEILING, LONGITUDINAL JOINTS			
DATE 10-19-71	APPROVED BY By D.S.	DATE 5-27-72	DESIGNING DIVISION As SCC 400
			C2-16A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	54 BX	526

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973

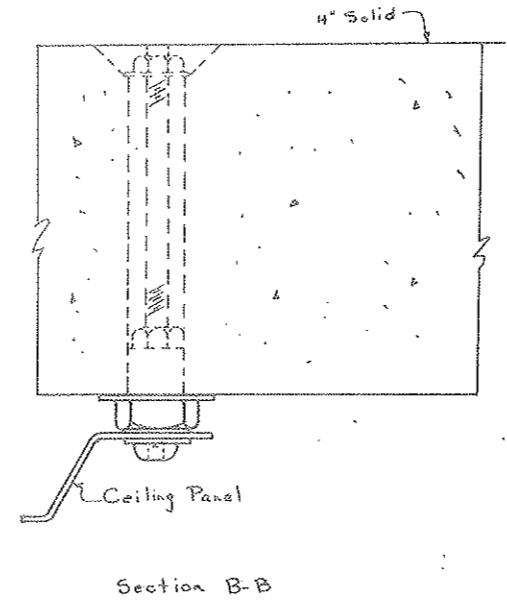
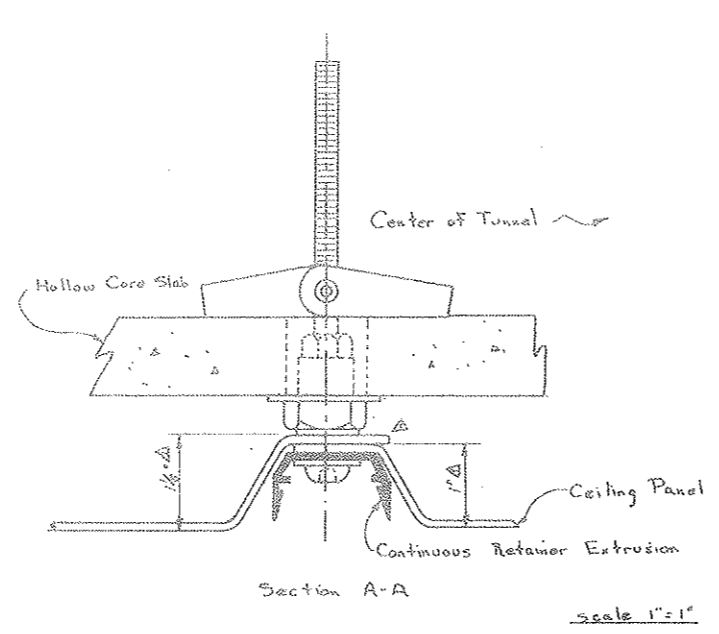
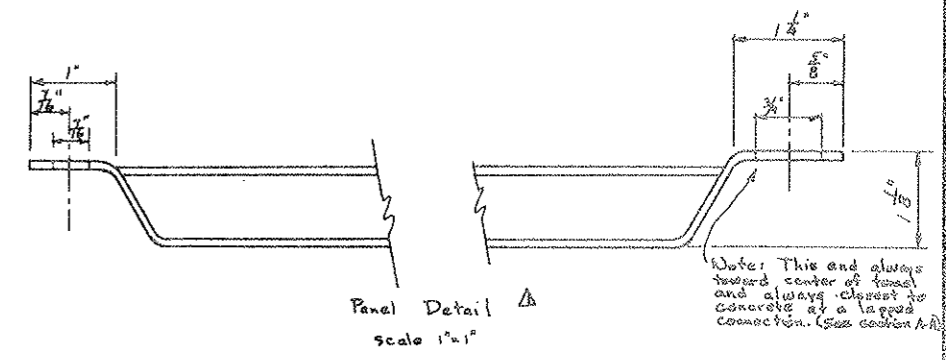
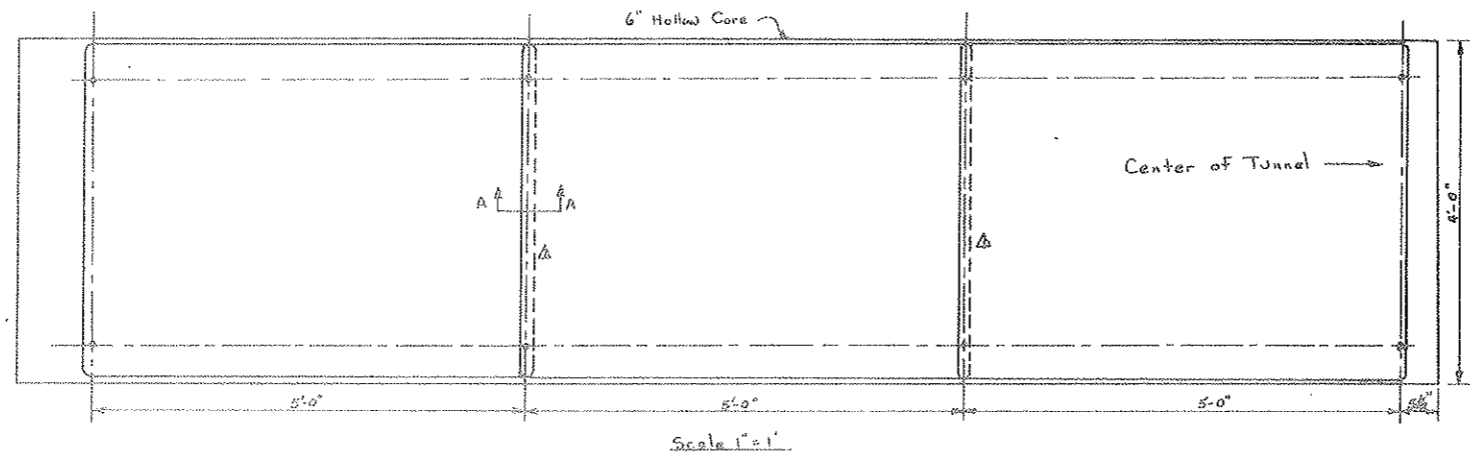
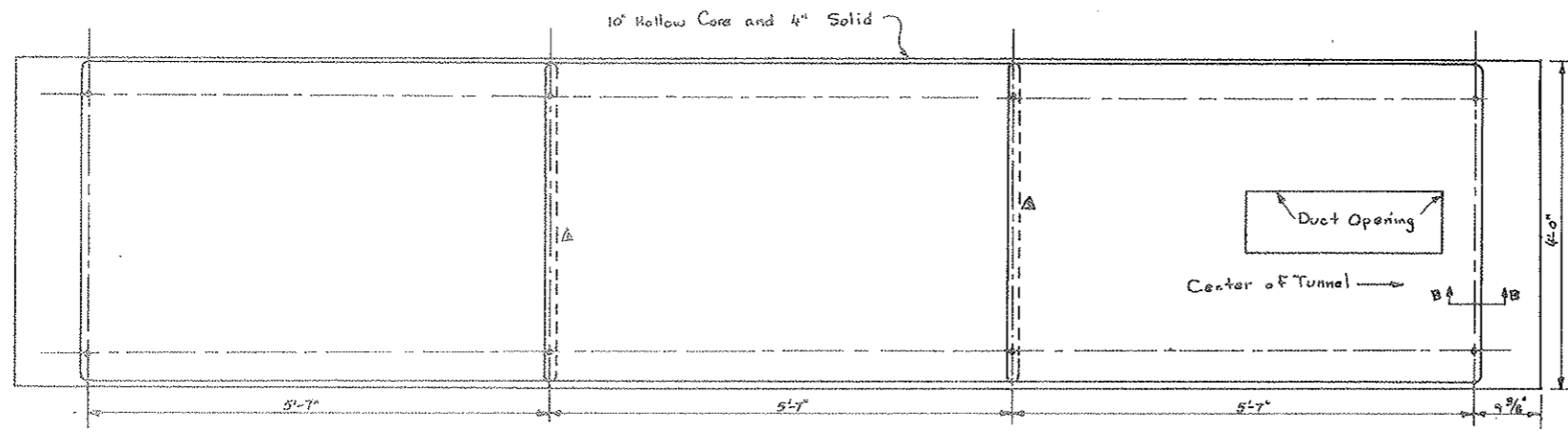


- NOTE:
 1. All Grout To Be 3:1
 2. PE. Pins Not Shown.

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared by	Checked by	Designed by	Drawn by
Straight Creek Constructors	Noted	W. J. J. J.	
PANEL JOINT DETAILS - TUNNEL CEILING			
DATE	APPROVED BY	DATE	SCALE
12-17-71	By: D.S.	Dec 5-17-71	C2-168

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	54CX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



Note: Panels are attached to bottom of precast panels.

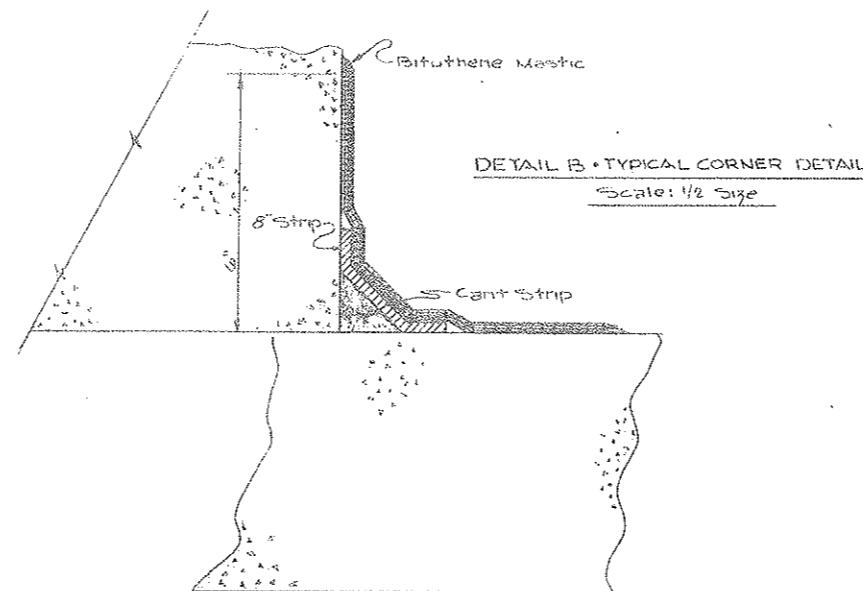
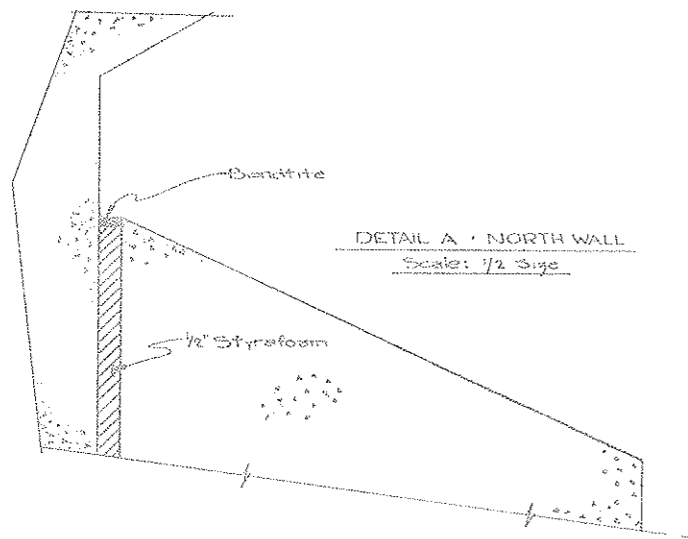
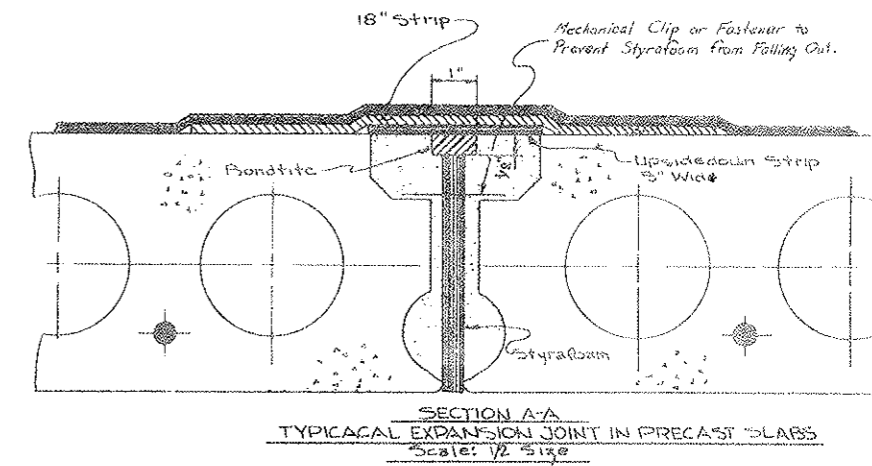
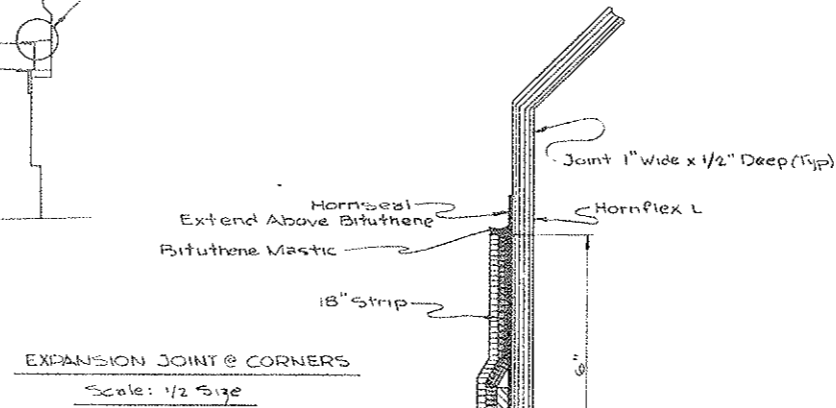
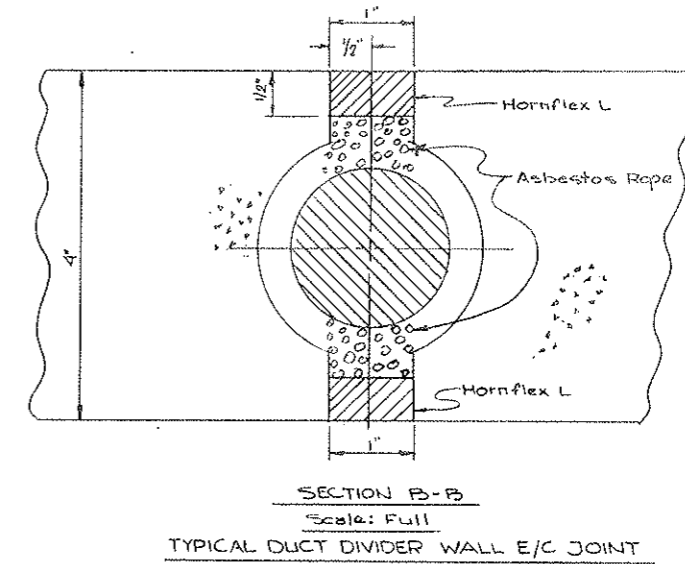
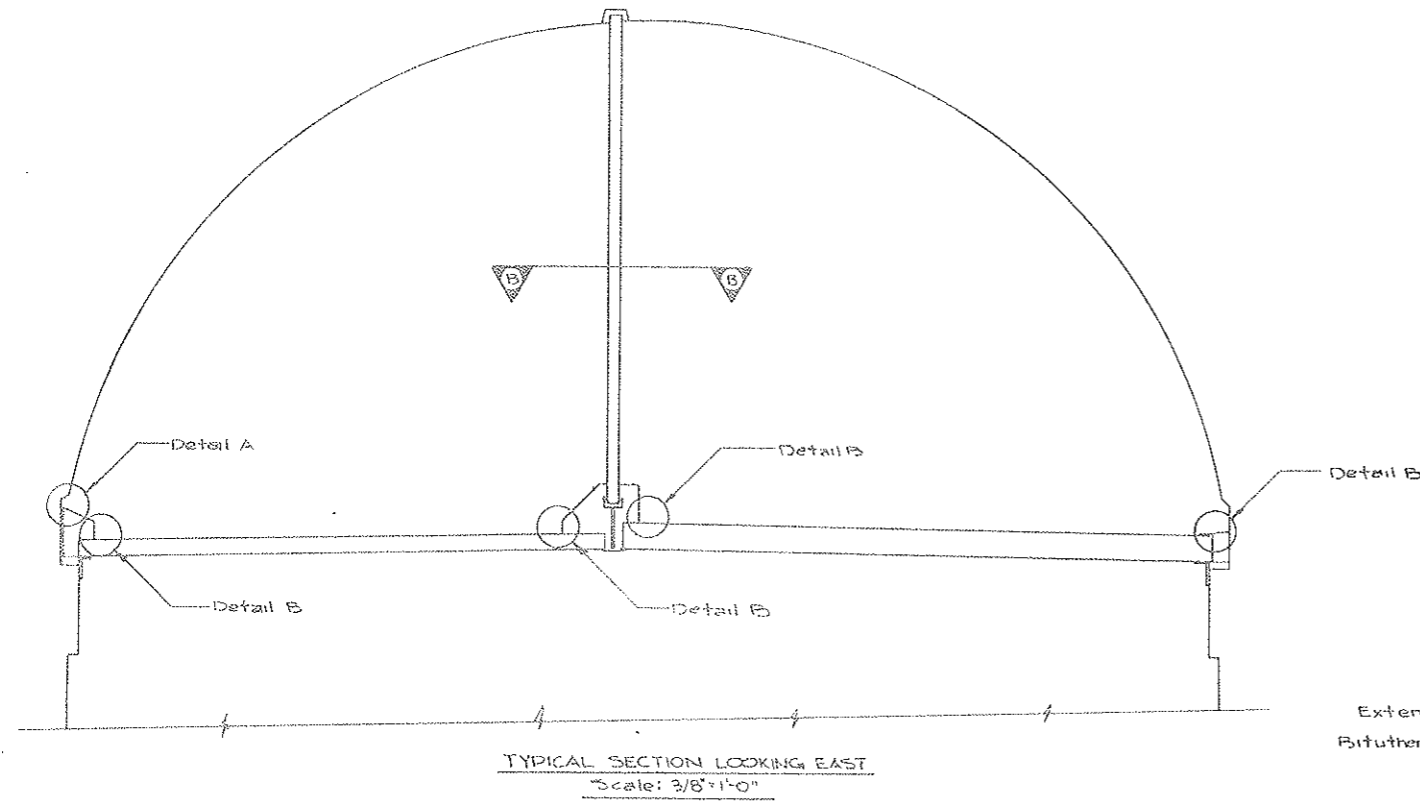
State of Colorado			
Division of Highways			
Prepared By	Straight Creek Const.		
Layout for Attaching Metal Panels To Precast Tunnel Ceiling Panels			
DATE	DESIGNED BY	CHECKED BY	DATE
11-1-71	DON, Date 5-17-72	By D.S.	11-1-71
	No. 900 616		C2-160

Change Order #100, M.O. 21898

Rev. A Change Top Detail

SHEET NO.	PROJECT I.G.	SHEET NO.	TOTAL SHEETS
9	170-3(34)220	54DX	526

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

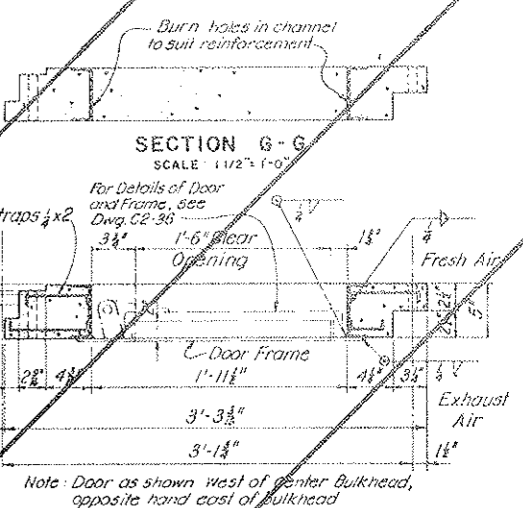
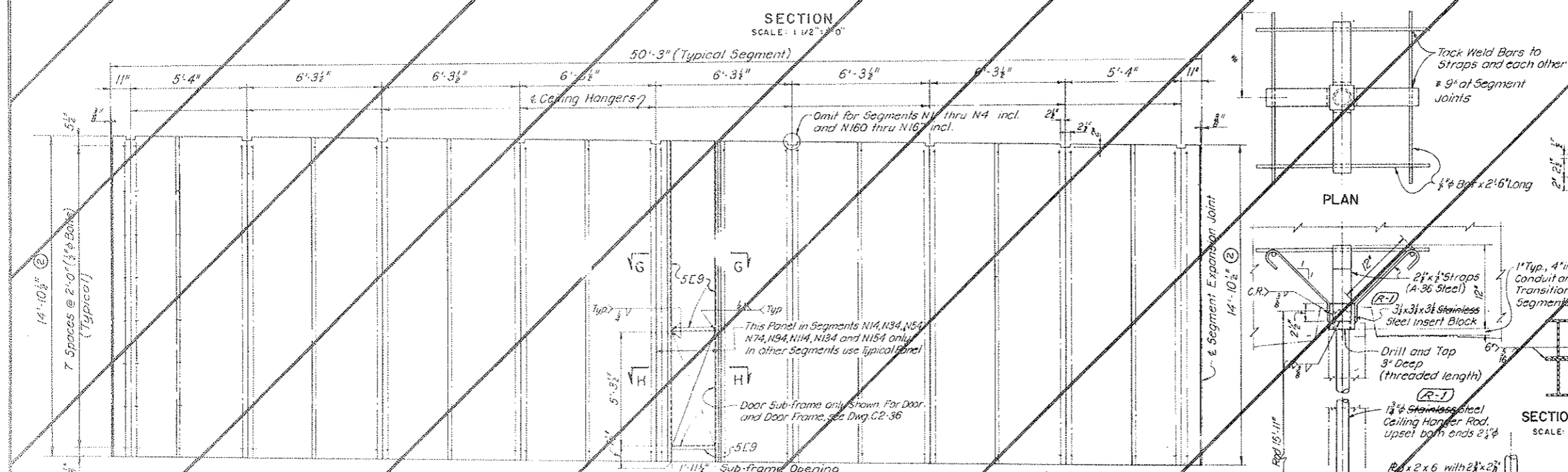
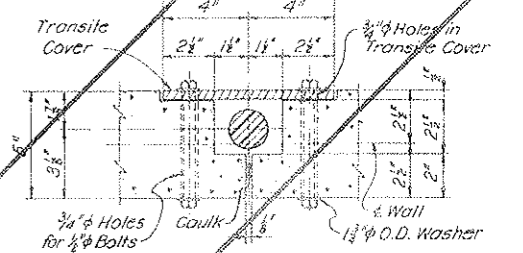
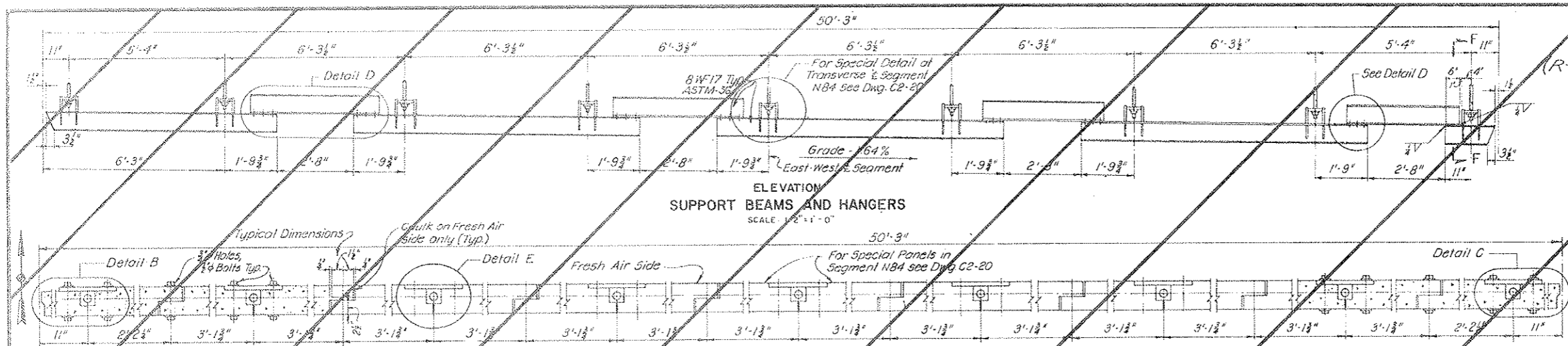


- NOTES:
- 1- For details other than those shown, refer to Bituthene Instruction Booklet.
 - 2- Bituthene will be laid from low point to the high point so that the laps shed water as do shingles on a roof.

STATE OF COLORADO DIVISION OF HIGHWAYS			
SCALE	NOTED	DESIGNED BY	REVISION
		J. Sperry	
WATERPROOFING & SEALANT DETAILS FOR TUNNEL CEILING			
DATE	APPROVED BY	DATE	PROJECT NO.
4-27-72	By D.S.	5-16-72	5CC 570
			CS-16D

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	55	526

(R-1) Rev. 11-6-67 C.D.A. Add note to bottom.



VOID BY CONSTRUCTION
DATE 2.6.1973

NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For steel reinforcement details see Dwg. C2-35.
 Light weight aggregate shall be used in concrete for duct divider panels. Panels shall be silicone waterproofed.
 For special duct divider panel and hanger details at center bulkhead see Dwg. C2-20.
 Ceiling Hanger Rod, Insert Block, Washers and Nuts (R-1) shall be of steel conforming to ASTM A-441.

All welding to conform to the requirements of the current "Code for Welding in Building Construction" AWS D1.0-63 of the American Welding Society.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK
2	3/14/68	Dimension Rev	R.B. ROSS	M.H.
3	7/17/67	Manufacture Revised (Deleted by R-1)	R.B. ROSS	M.H.

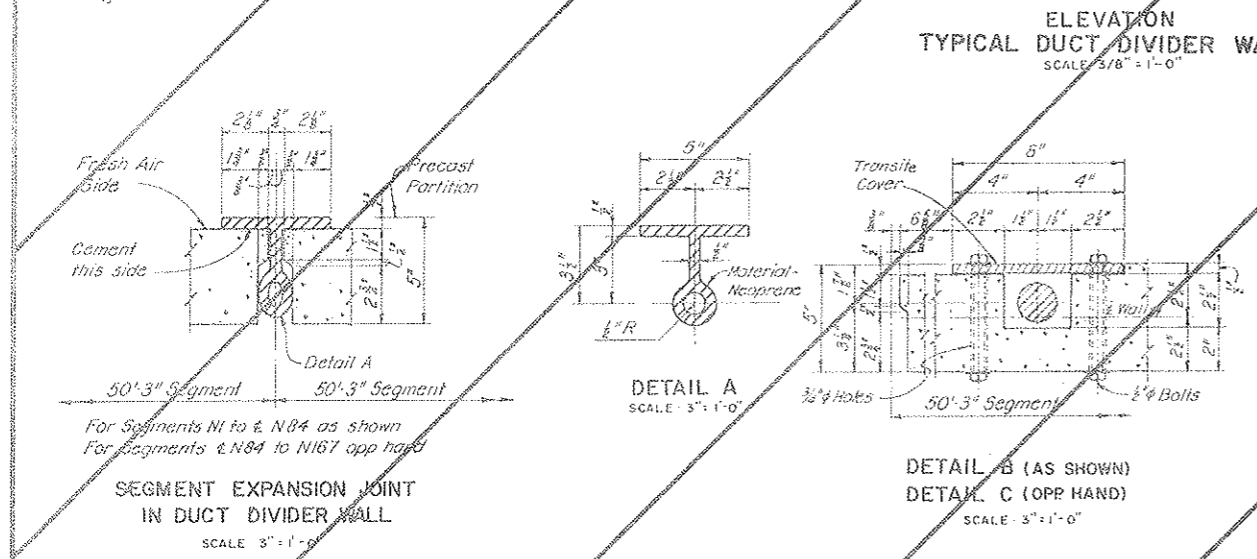
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL-TUNNEL
 TUNNEL AIR DUCT SYSTEM
 TYPICAL TUNNEL SEGMENT
 DUCT DIVIDER WALL

TIPPETTS - ABBEY - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS
 NEW YORK, N. Y.

DESIGNED: R.F.M.C.
 DRAWN: R.B.A.-R.B.
 CHECKED: H.F.M.C.-E.L.B.
 AUTHORITY: [Signature]
 SCALE: AS NOTED
 DATE: AUGUST 1967

DRAWING NO. C2-17



This drawing replaced by C2-17a
 Wash, Outer, Inner
 Change Order No. 1

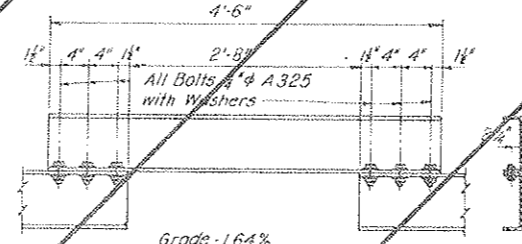
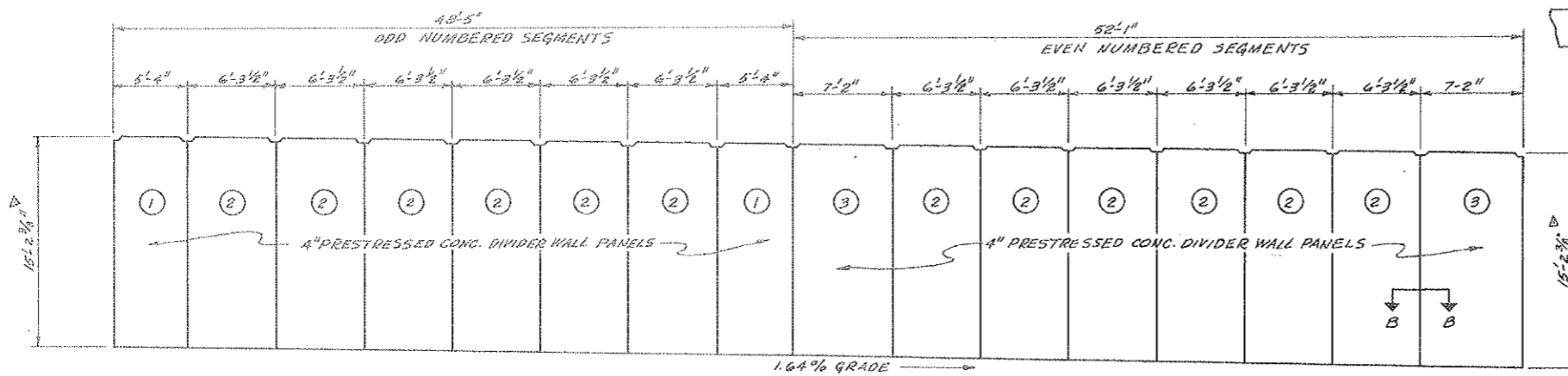


TABLE "A"

Segment	Grade
N1	1.89%
N161	1.61%
N162-N165 incl.	1.59%
N167	1.61%

(R-2) Rev. 4-1-68 Details revised in accordance with (R-1)

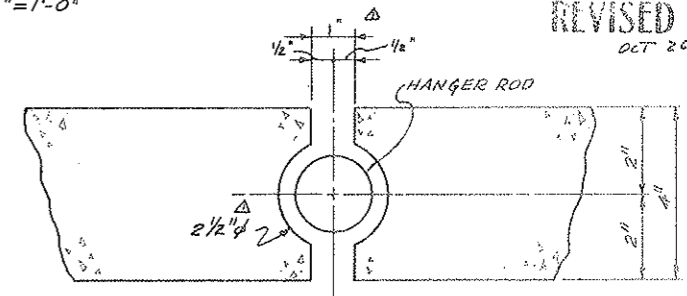
(R-1) CEILING HANGER REV. W.O. 14153, SEE SPEC. # 6C



PROJECT NO.	SHEET NO.	TOTAL SHEETS
170-3(34)220	55 AX	56

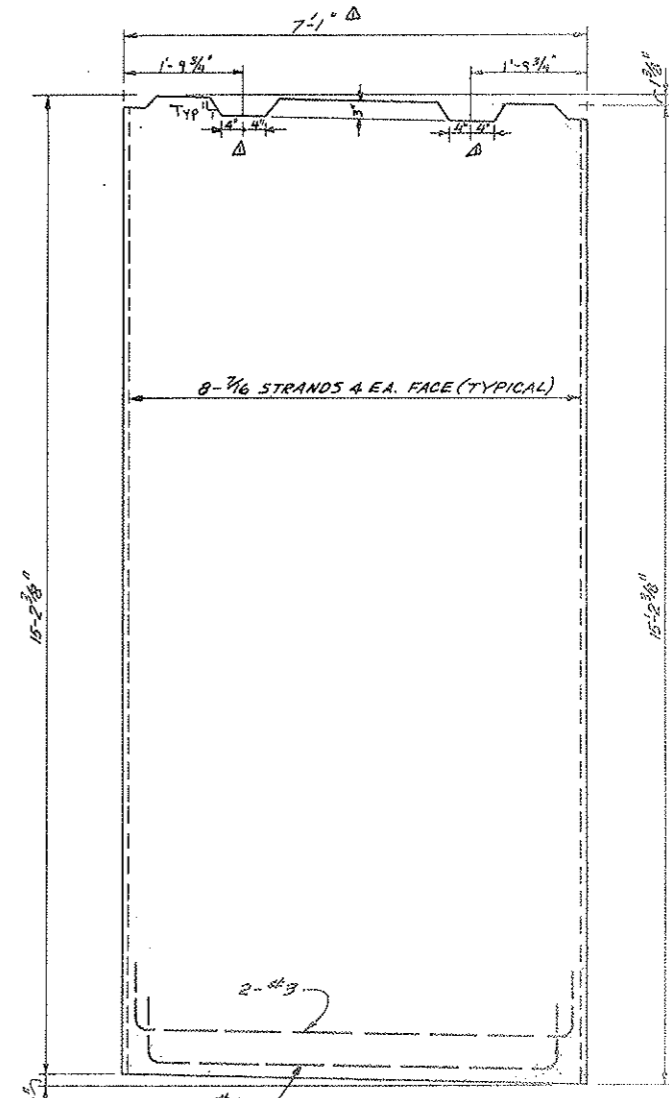
ALL STRAPS 1/4" x 2" x 6' Lg. w/ 1/2" HOOK @ 6" O.C.
4C7.25(TYP)

DOOR FRAME SECTION A-A
1/2" = 1'-0"



AS CONSTRUCTED
REVISED DATE
OCT 26, 1973

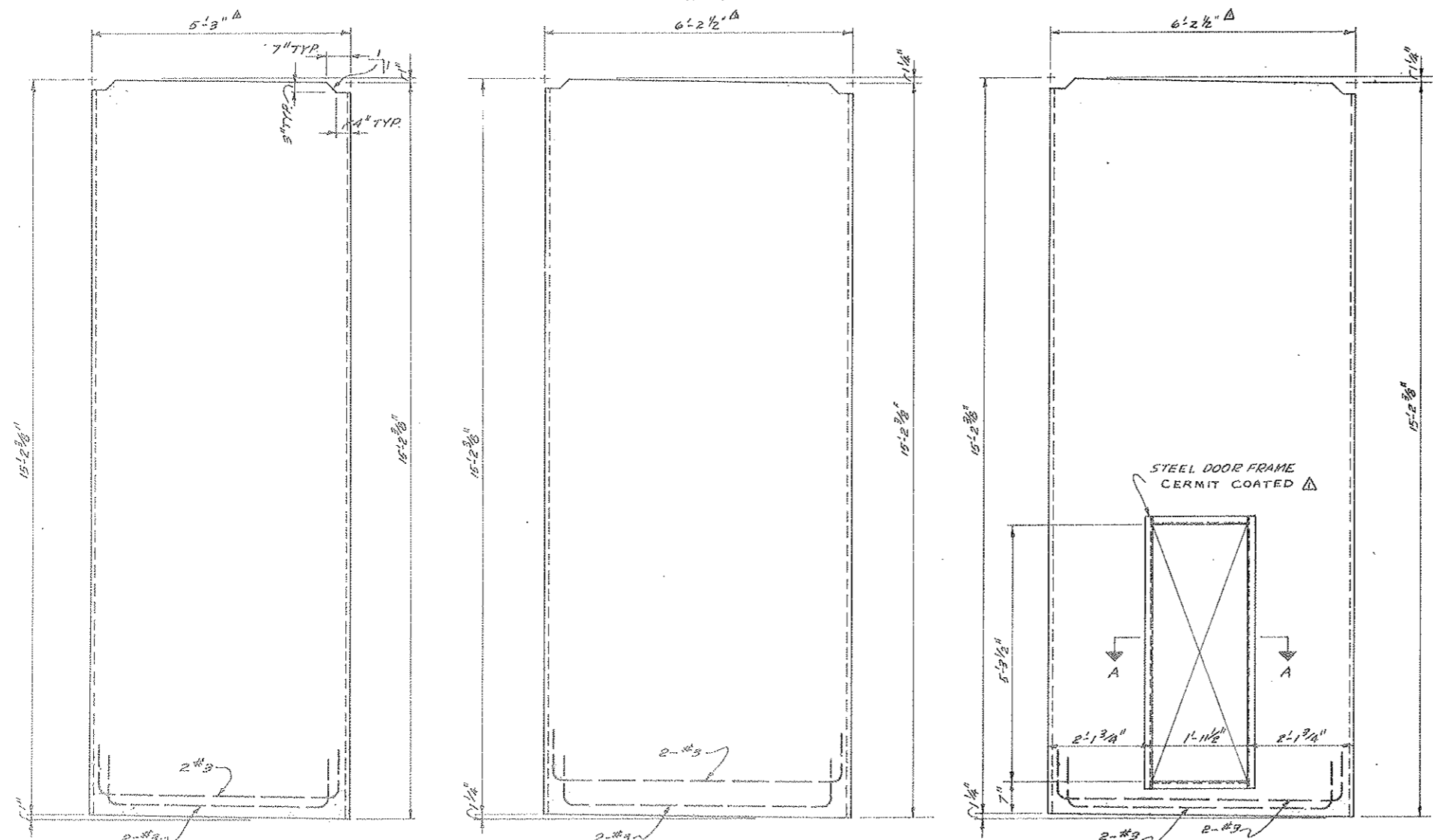
TYPICAL PANEL JOINT SECTION B-B
HALF SCALE



- NOTES:
1. PRESTRESSED STRANDS & ADDITIONAL REBAR TO BE DETAILED BY PANEL SUPPLIER.
 2. LIFTING INSERTS TO BE DETAILED LATER.
 3. FRESH AIR FACE COVERED WITH SPRAYED ON EPOXY COATING.
 4. THE FACE SHOWN ON THIS DRAWING IS THE EXHAUST SIDE WHICH IS TO BE THE SMOOTH SIDE.

DUCT DIVIDER WALL PANEL ③
3/4" = 1'-0"

TYPICAL DIVIDER WALL SEGMENTS
3/16" = 1'-0"



DUCT DIVIDER WALL PANEL ①
3/4" = 1'-0"

DUCT DIVIDER WALL PANEL ②
3/4" = 1'-0"

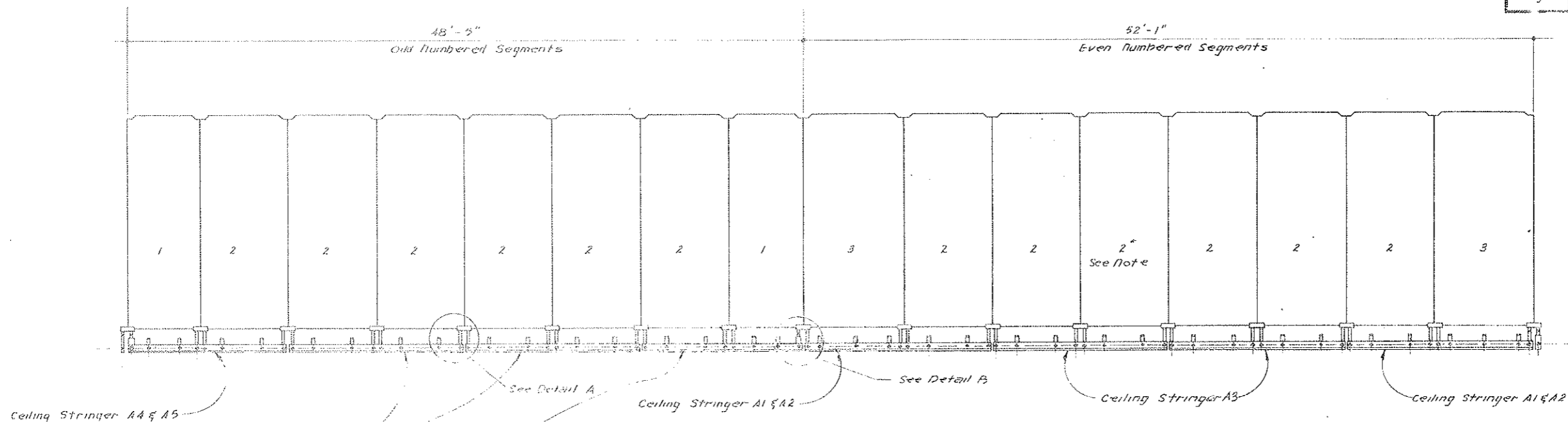
DUCT DIVIDER WALL PANEL ②A
3/4" = 1'-0"

USE IN PLACE OF A #2 CENTER PANEL IN SEGMENTS 14, 34, 54, 74, 94, 114, 134, 154

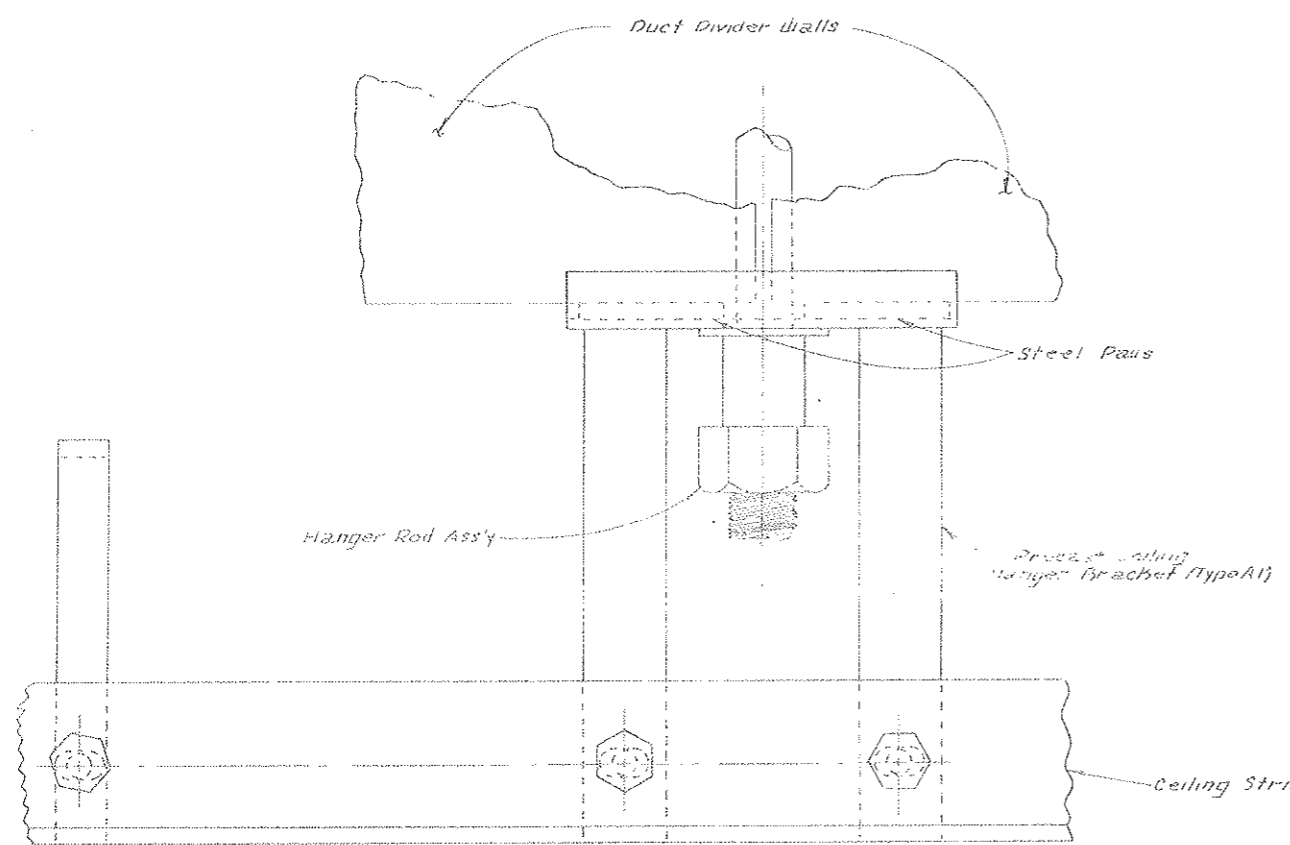
STATE OF COLORADO DIVISION OF HIGHWAYS			
PREPARED BY Straight Creek Constructors	SCALE Noted	DESIGNED BY GOLDMAN	REVIEWED
PRESTRESSED DUCT DIVIDER WALL			
DATE 7-4-71	APPROVED BY D.S.	DATE 5-8-72	DRAWING NUMBER C2-17A

PROJECT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170 BEAVER	558X	326

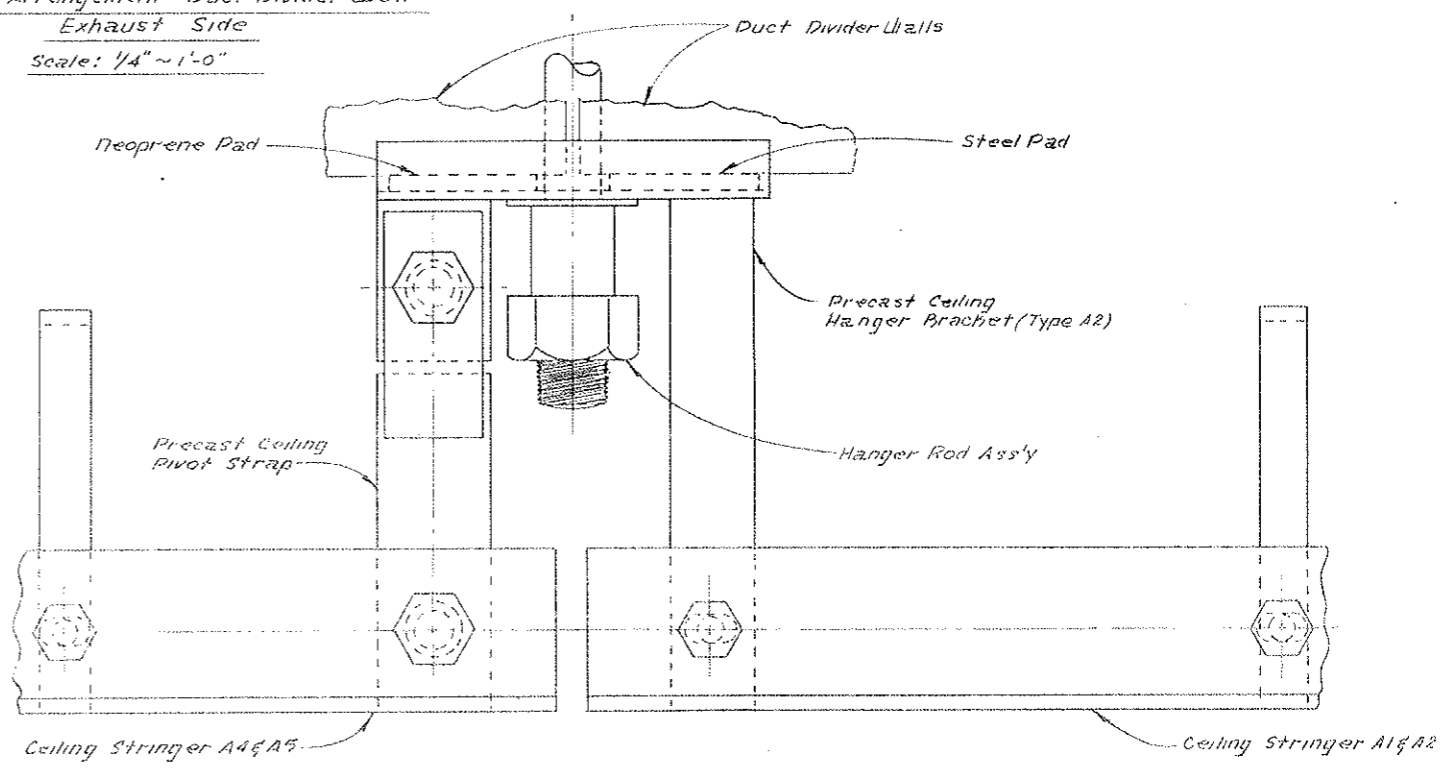
AS CONSTRUCTED
 REVISED DATE
 OCT 22, 1973



General Arrangement - Duct Divider Wall
 Exhaust Side
 Scale: 1/4" = 1'-0"



Detail A
 Scale: 3/8" = 1"



Detail B
 Scale: 3/8" = 1"

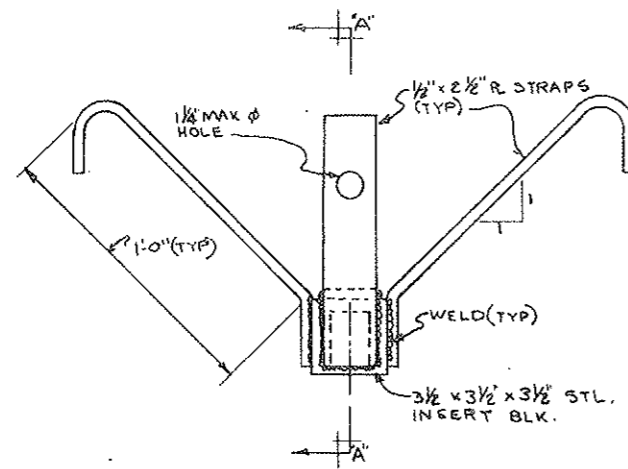
* NOTE:
 Panel with foot in it will be used in place of a #2 center panel in segment 14, 34, 54, 74, 94, 114, 134 & 154.

Change Order #190, w/o #21898

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By STRAIGHT CREEK CONST.	SCALE NOTED	DESIGNED BY J. J. [Signature]	DATE 10-8-71
CEILING DUCT DIVIDER WALL & STRINGER ASS'Y			
APPROVED BY D. S.	DATE 5-8-72	AS NOTED As SCC 390	DRAWING NUMBER C2-17B

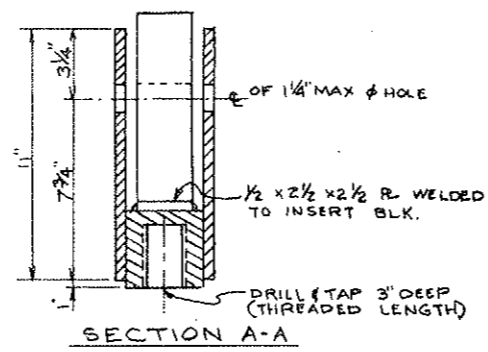
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	55CX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1978

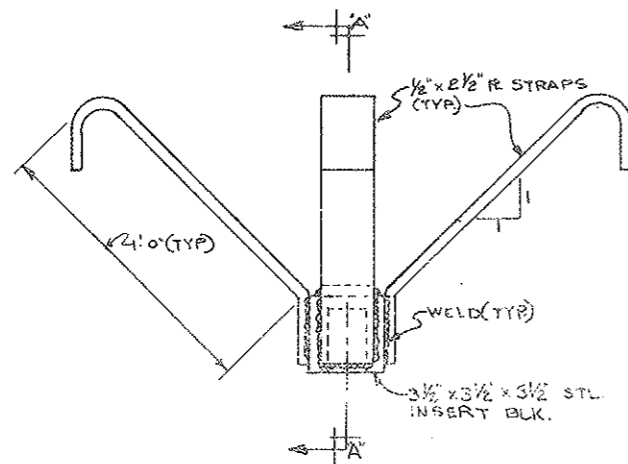


FRONT VIEW
 MODIFIED

NOTE: FOR SEGMENTS N81 TO N164

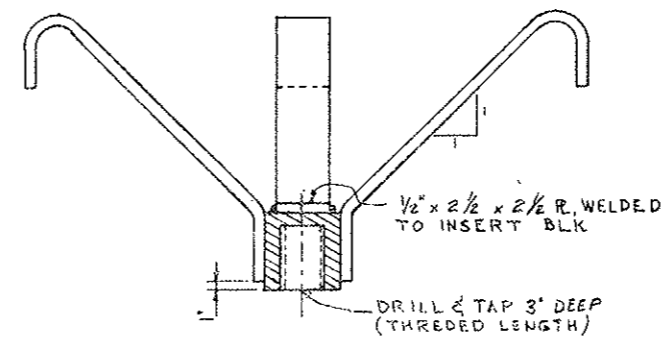


SECTION A-A



FRONT VIEW

NOTE: FOR SEGMENT NW TRANS TO N80 + N165 TO NE TRANS.
 + SW TRANS TO S4 + S165 TO SE TRANS

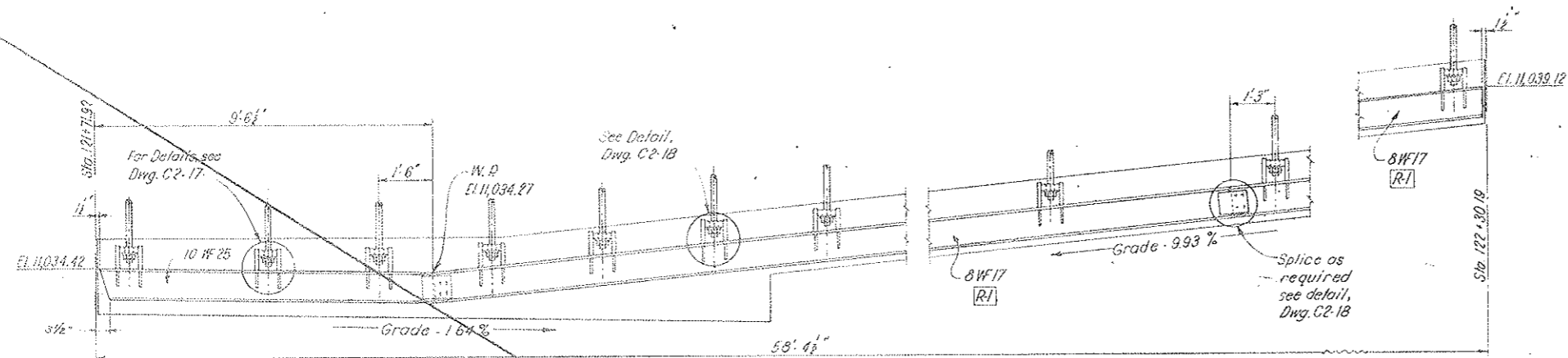


SECTION A-A

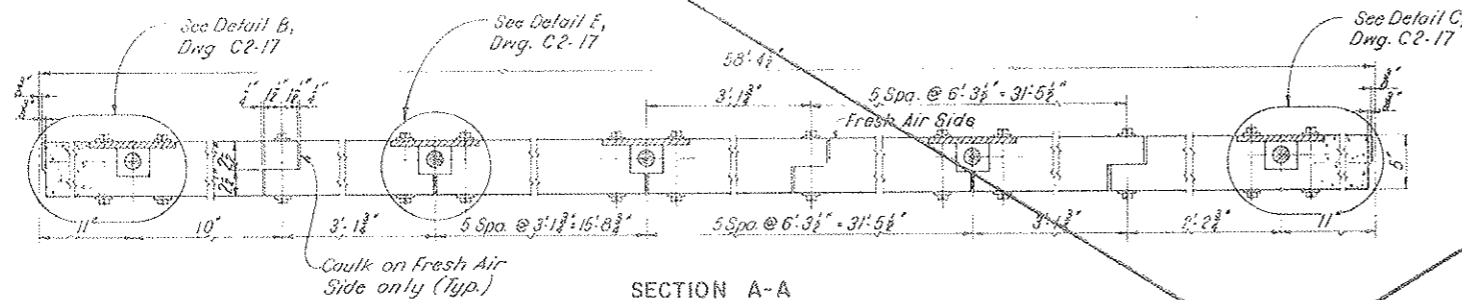
STATE OF COLORADO DIVISION OF HIGHWAYS			
SCALE: 3" = 1'-0"	APPROVED BY:	DRAWN BY: L. T.	
DATE: 10-18-73		REVISED:	
CEILING INSERT DETAIL			
			C2-170-1

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	57	326

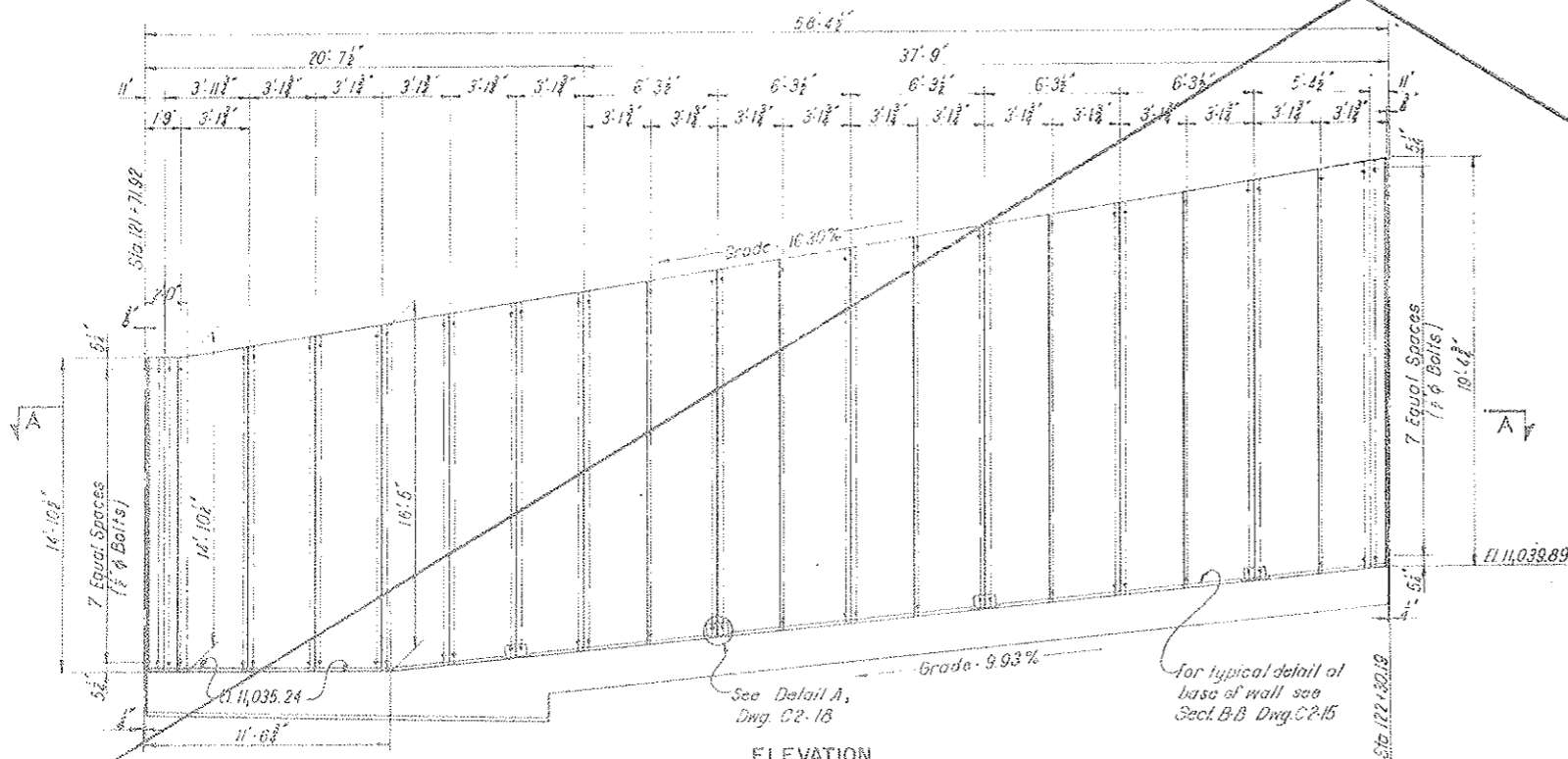
VOID
BY CONSTRUCTION
OCT 26, 1975



ELEVATION SUPPORT BEAM AND HANGERS
SCALE 1/2" = 1'-0"



SECTION A-A
SCALE 1/2" = 1'-0"



ELEVATION DUCT DIVIDER WALL
SCALE 1/4" = 1'-0"

NOTES:
For General Concrete Notes see Dwg. C2-11.
Work this drawing with Dws. C3-5, C3-6, C3-7 and C2-18.

[R] Rev. 4-1-68 Revised Support Beam

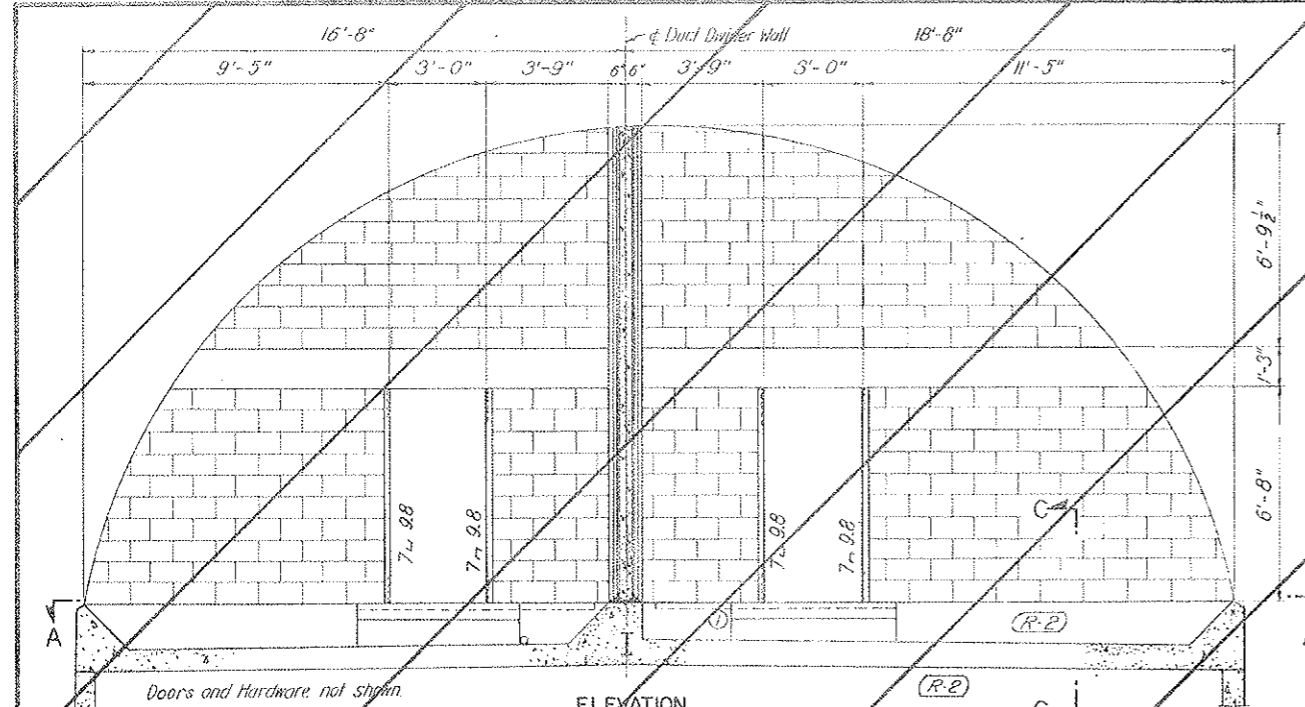
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL TUNNEL AIR DUCT SYSTEM NORTH TRANSITION SEGMENT EAST PORTAL SECTION DUCT DIVIDER WALL					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	D. A.	RECOMMENDED			
DRAWN	J. C. H.	CHECKED	W. T. H.		
APPROVED		APPROVED			
DATE		DATE			
SCALE AS NOTED DATE AUGUST 1967					

VOID See Dwg. C1-31

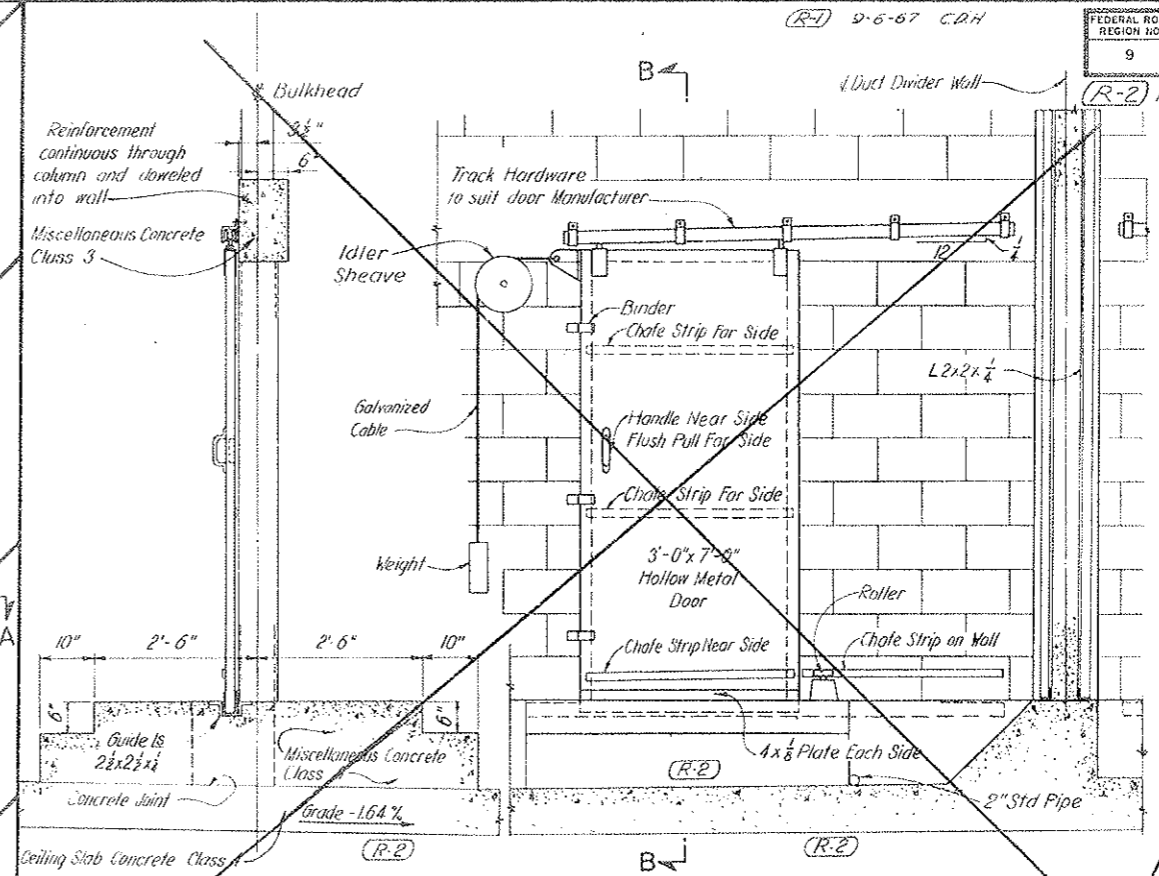
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	X 70 - 3(34) 220	58	326

(R-2) Rev. 11-6-67 C.D.H. Add note at bottom

VOID
BY CONSTRUCTION
OCT 26, 1975



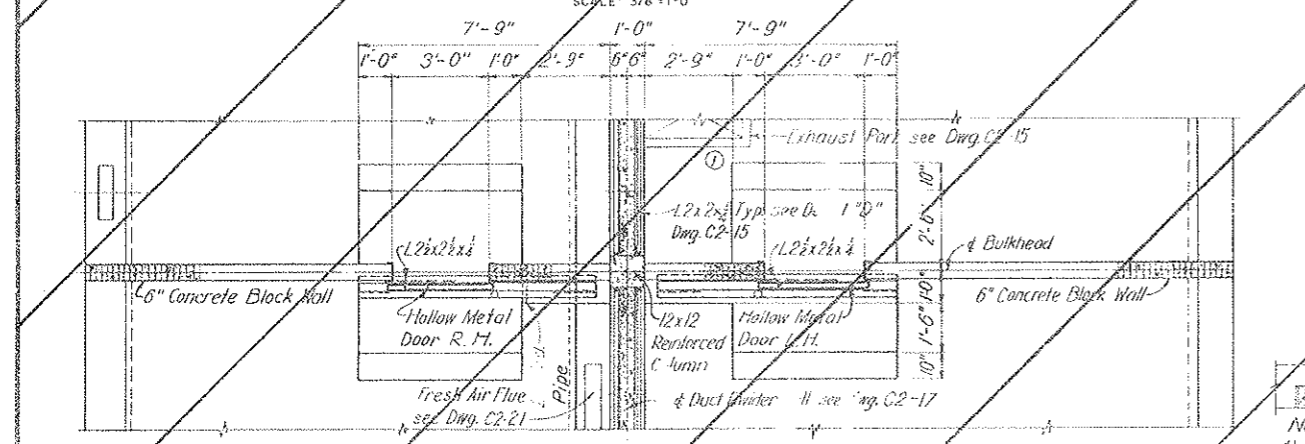
ELEVATION
SCALE: 3/8" = 1'-0"



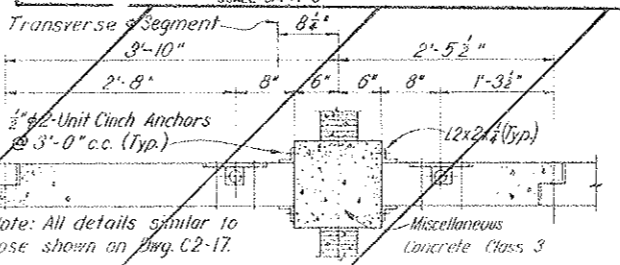
SECTION B-B
SCALE: 3/4" = 1'-0"

ELEVATION R.H. DOOR (AS SHOWN)
ELEVATION L.H. DOOR (OPP HAND)
SCALE: 3/4" = 1'-0"

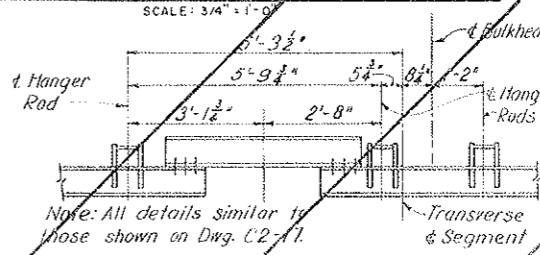
NOTES:
Complete details are not shown for all parts of the work, but as given they indicate the nature of the construction required. Wherever Manufacturers' designations are indicated they shall be interpreted to include "or approved equal."
After laying up not more than four courses of blocks, mortar shall be allowed to set hard before completing wall. For general concrete Notes see Dwg. C2-II.
All doors and hardware shall be cement (R-2) coated except for galvanized cable.



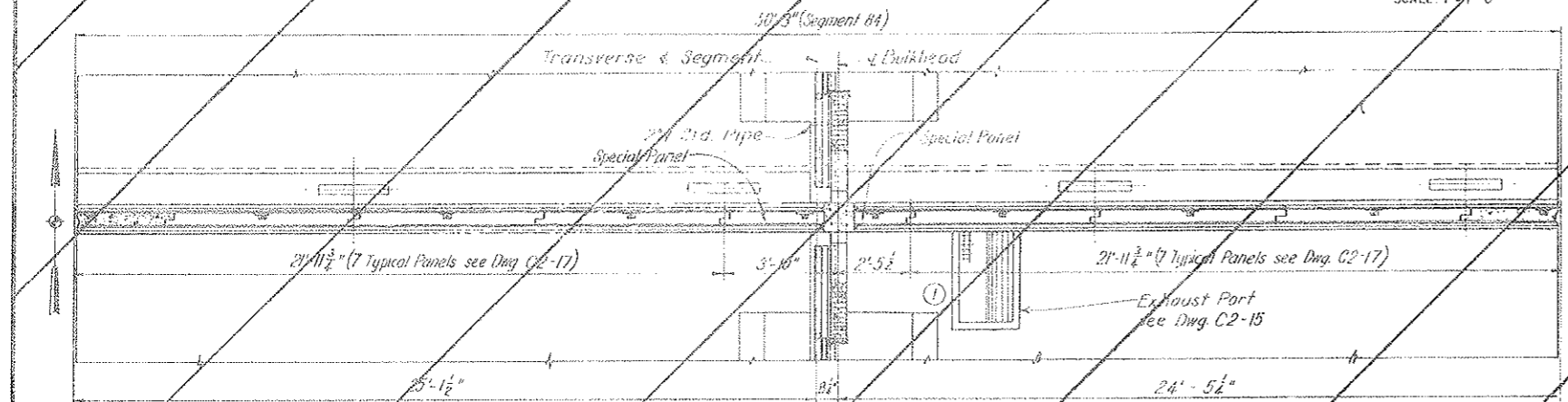
PLAN A-A
SCALE: 3/8" = 1'-0"



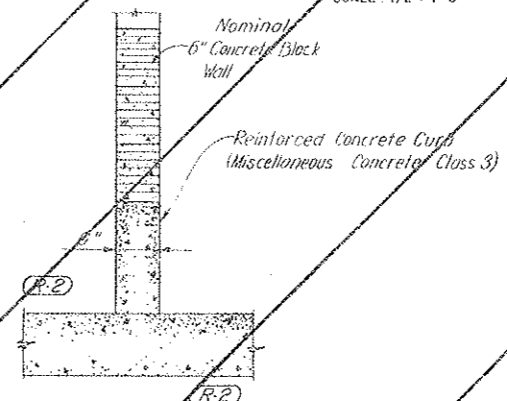
SPECIAL DIVIDER WALL PANELS
SCALE: 1" = 1'-0"



SPECIAL DETAIL AT SEGMENT N84
SCALE: 1/2" = 1'-0"



PLAN - DUCT DIVIDER WALL
SCALE: 3/8" = 1'-0"



SECTION C-C
SCALE: 1" = 1'-0"

(R3) Rev. 4-1-68 Details revised in accordance with (R2)

Voided parts of this drawing replaced by C2-20A.
Work Order No. _____
Change Order No. _____

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
(1)	10/28/75	Corrected Exhaust Port Location.	H.F.M.C.C.		

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL-TUNNEL
TUNNEL AIR DUCT SYSTEM
CENTER BULKHEAD

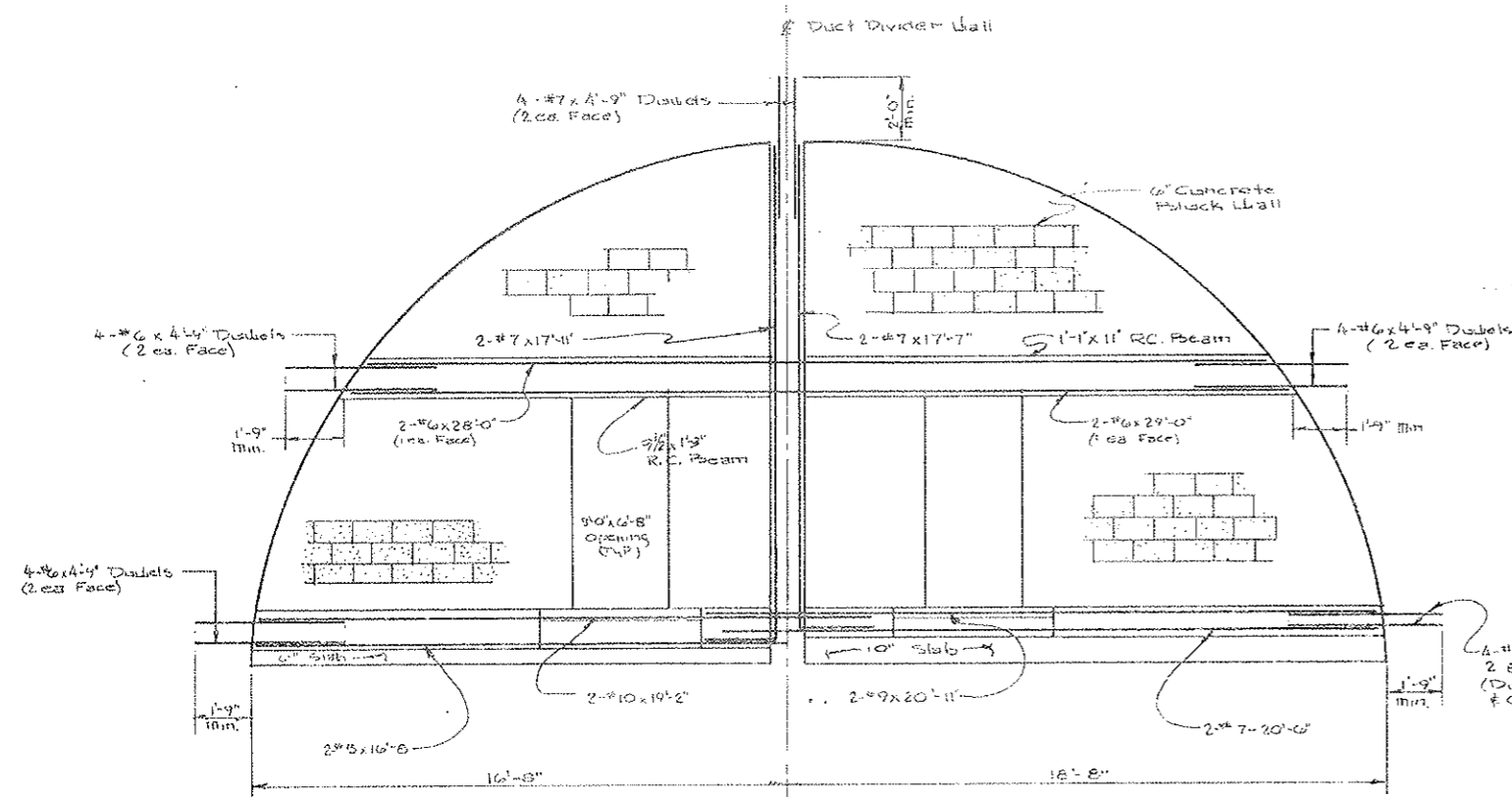
TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: H.F.M.C.C.	RECOMMENDED: H.F.M.C.C.	DATE: AUGUST 1967
DRAWN: P.F.L.	CHECKED: H.F.M.C.C.	SCALE: AS NOTED
CHECKED: H.F.M.C.C.	SUBMITTED: H.F.M.C.C.	DATE: AUGUST 1967
APPROVED: H.F.M.C.C.	APPROVED: H.F.M.C.C.	SCALE: AS NOTED

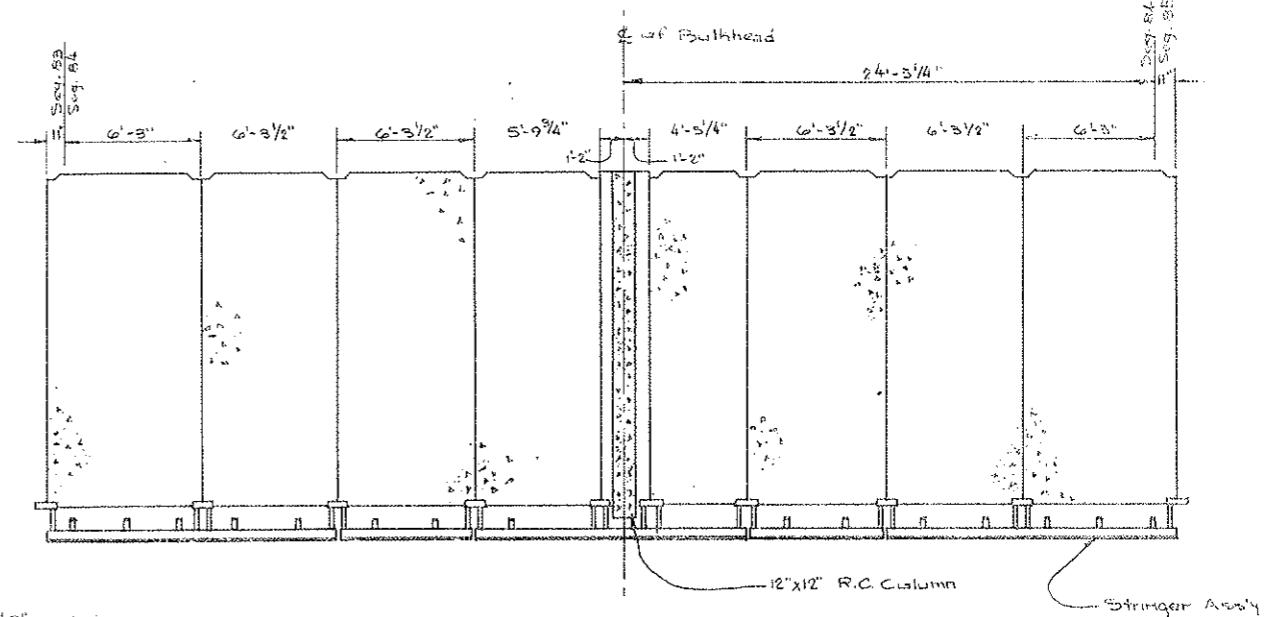
(R-2) DELETE - TUNNEL CEILING TILE, CONCRETE CLASS 3 AIR DUCT FLOOR, MISCELLANEOUS METAL COATING W.O. 14153, SEE SPEC. # 6A, 4A & 6C

VOID See Dwg # C2-20A

9	DIVISION	PROJECT NO.	SHEET	TOTAL SHEETS
	CELESTIAL	170 301 273	SBAX	226

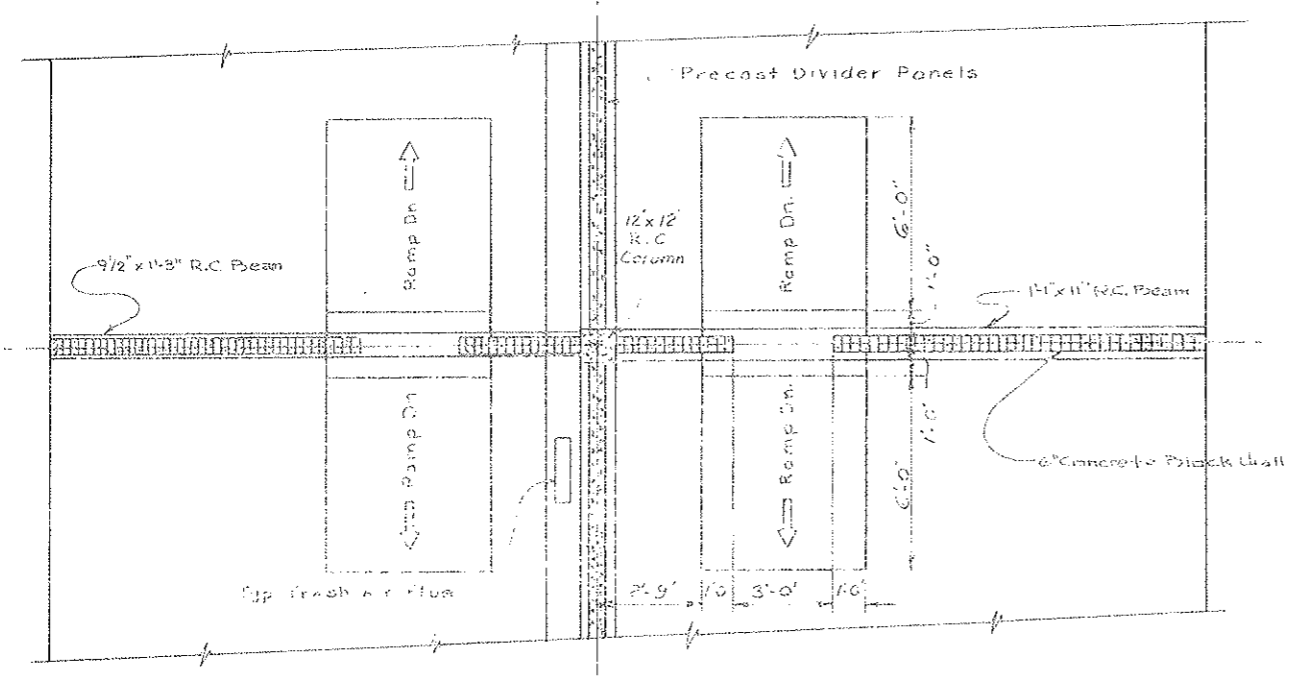


Elevation Looking East
Scale: 3/8" = 1'-0"

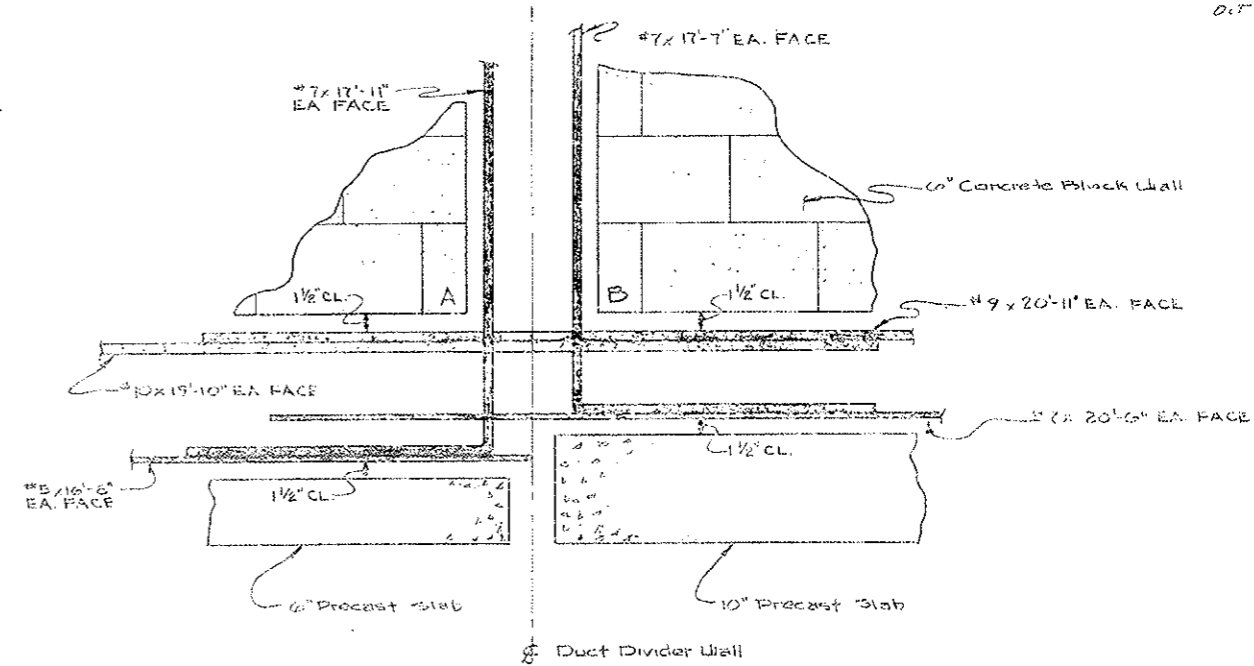


Elev. Looking North - General Arrangement
Scale: 1/4" = 1'-0"

AS CONSTRUCTED
REVISED DATE
01-26-1973



BULKHEAD PLAN VIEW
Scale: 3/8" = 1'-0"



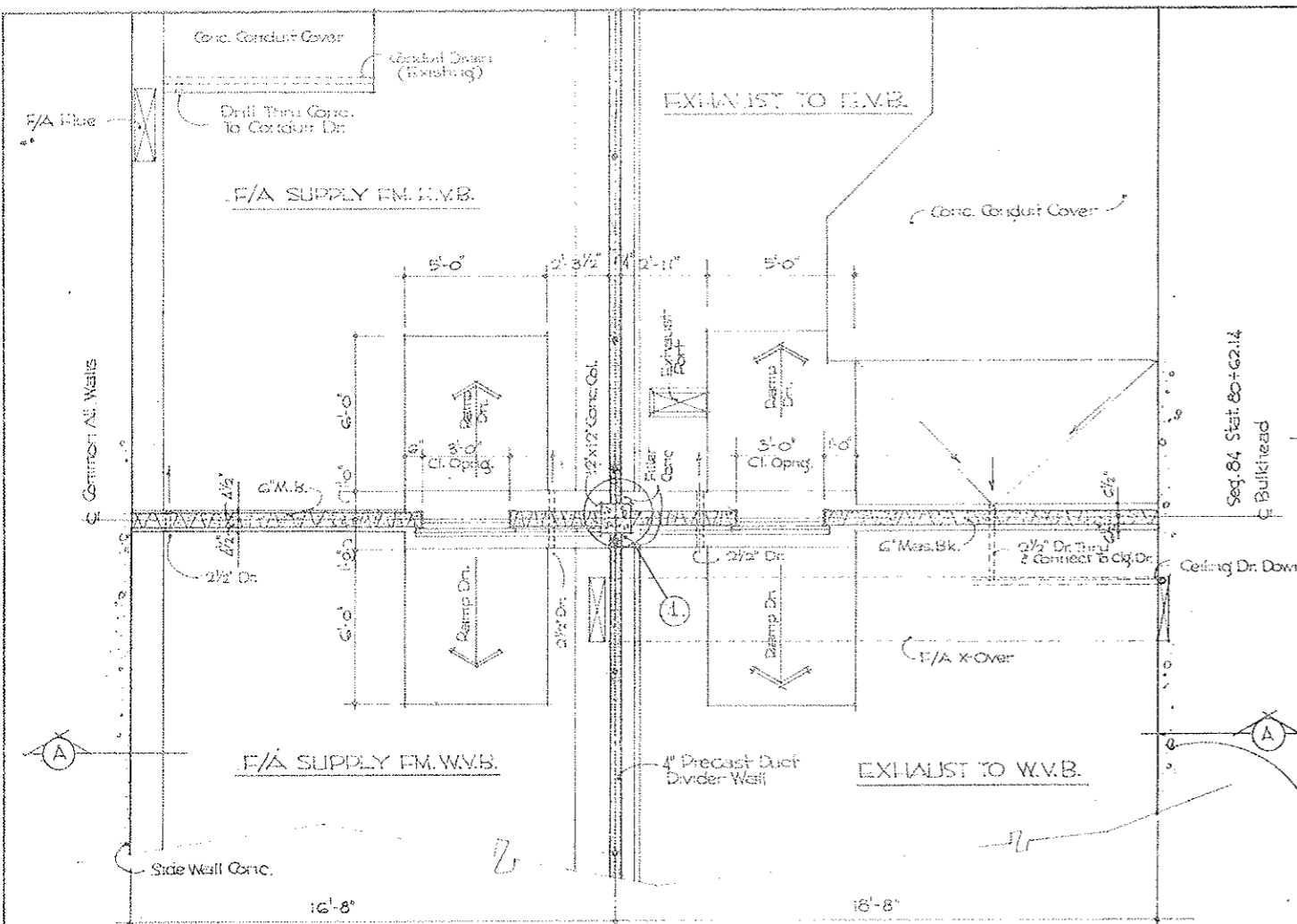
Detail A
Scale: 1/2" = 1'-0"

#10's Extend Post A min of 30"
#9's Extend Post B min of 27"

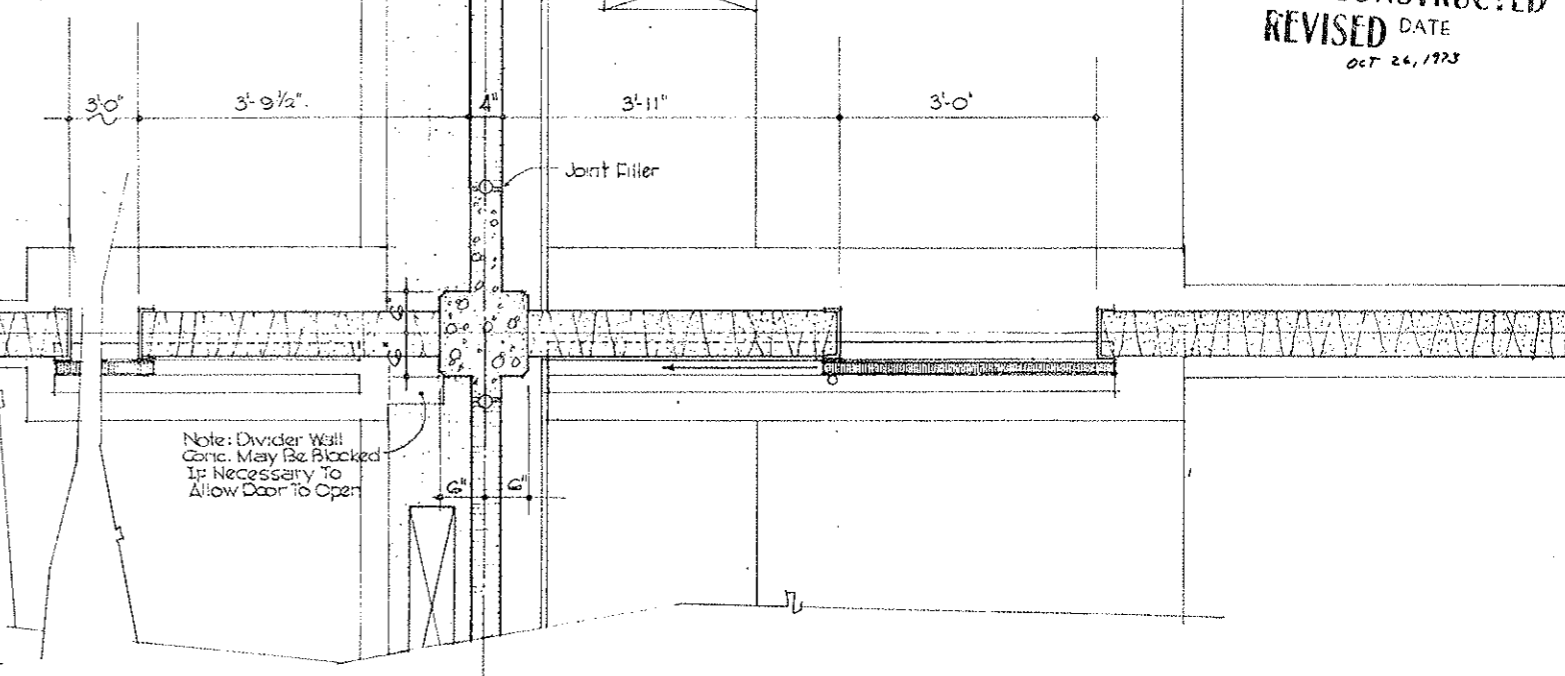
STATE OF COLORADO	
DIVISION OF HIGHWAYS	
DATE	DRAWN BY
2-4-72	By: D.S. AS: SCG-481
PROJECT NO.	DRAWING NUMBER
170 301 273	CR-20A
SHEET NO.	
226	

FEDERAL REGION NO.	D. VISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 3,541,220	58 EX	326

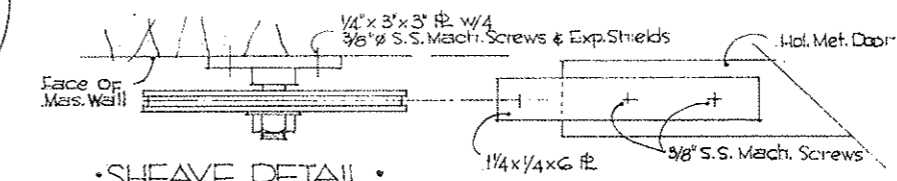
AS CONSTRUCTED
REVISED DATE
 OCT 24, 1973



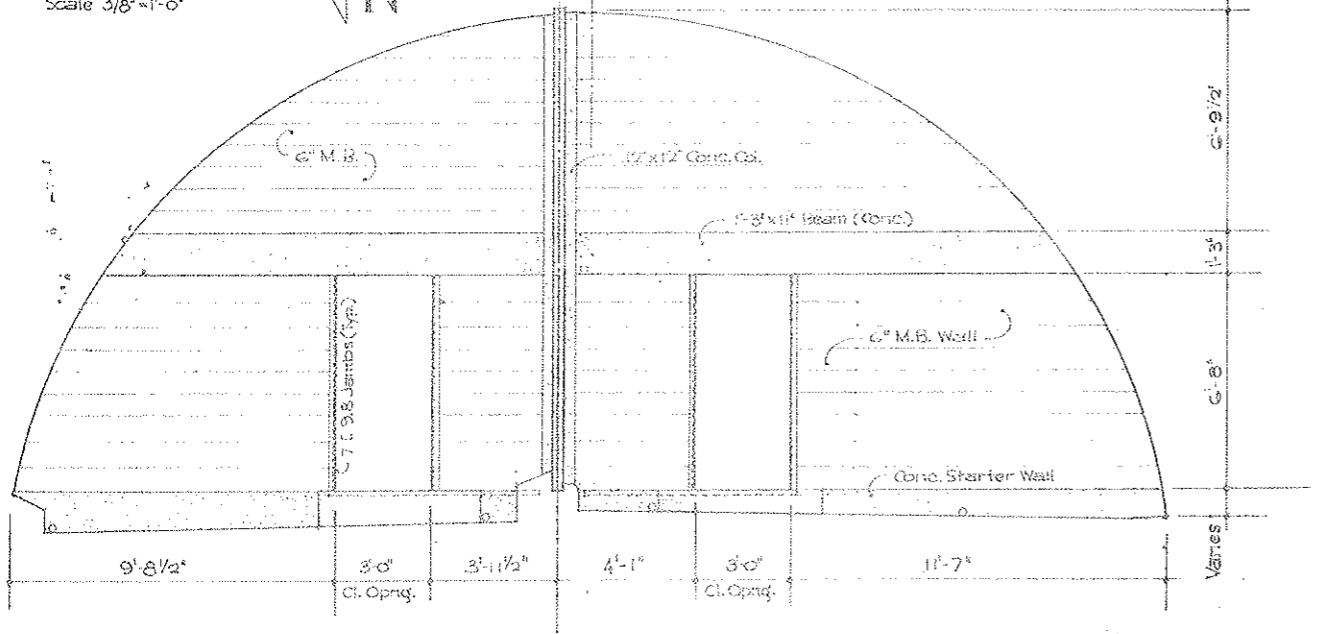
•PLAN•
 Scale 3/8" = 1'-0"



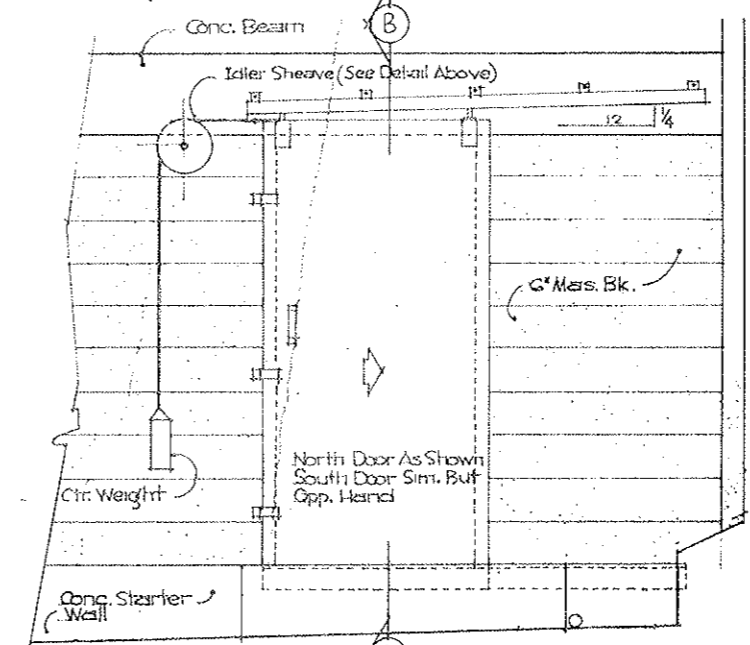
•DETAIL 1•
 Scale 1" = 1'-0"



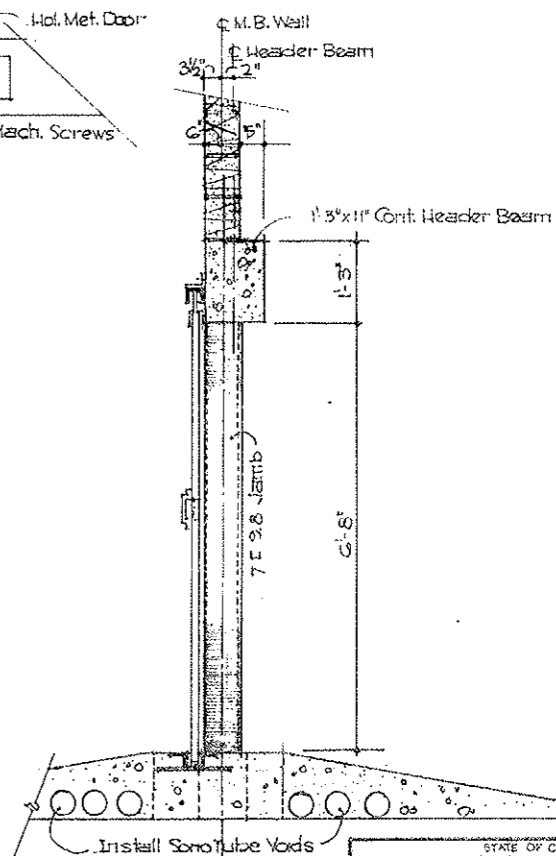
•SHEAVE DETAIL•
 Half Full Size



•SECTION A-A• LOOKING EAST
 Scale 3/8" = 1'-0"



•NORTH DOOR ELEV.• LOOKING EAST
 Scale 3/4" = 1'-0"

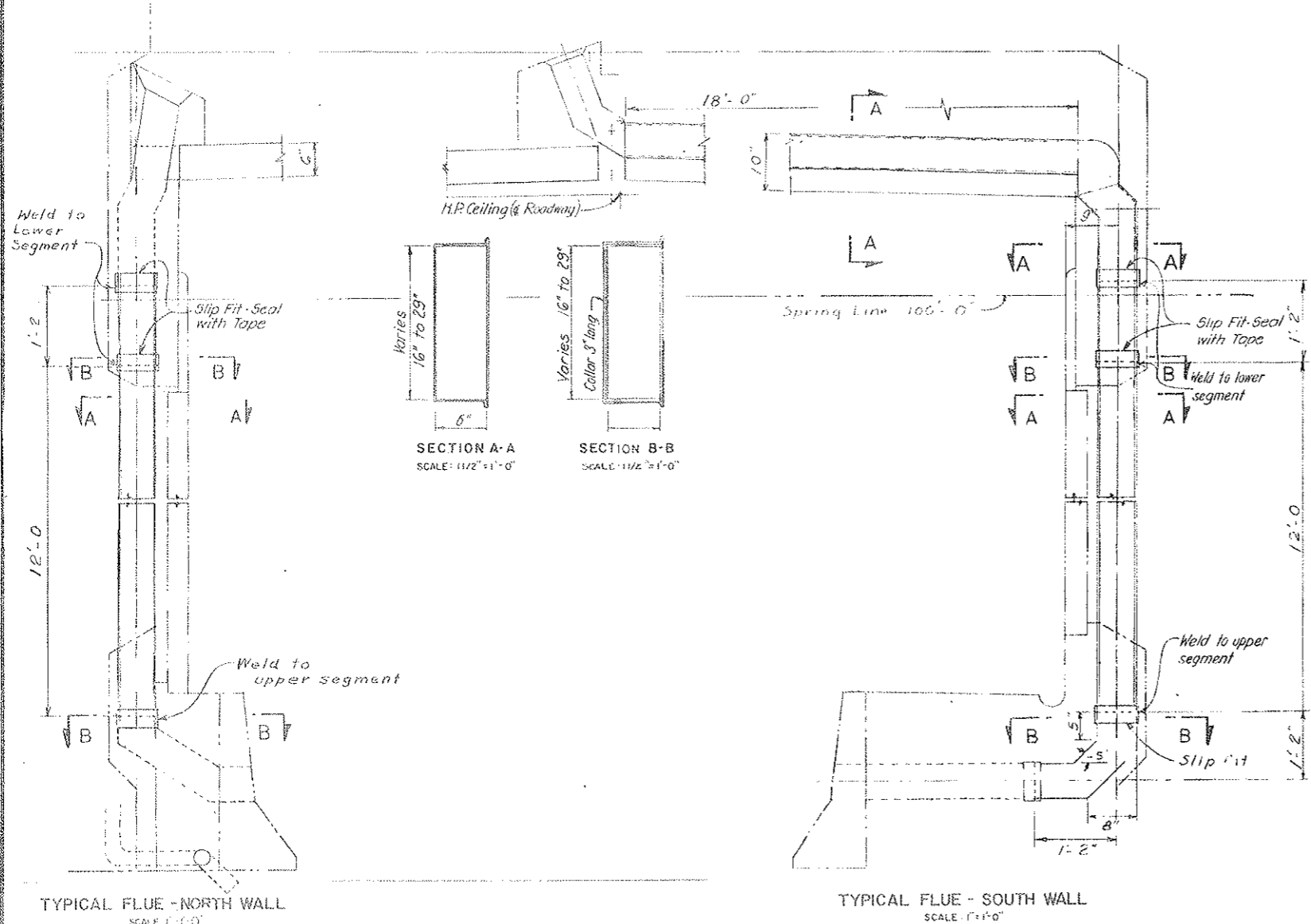


•SECTION B-B•
 Scale 3/4" = 1'-0"

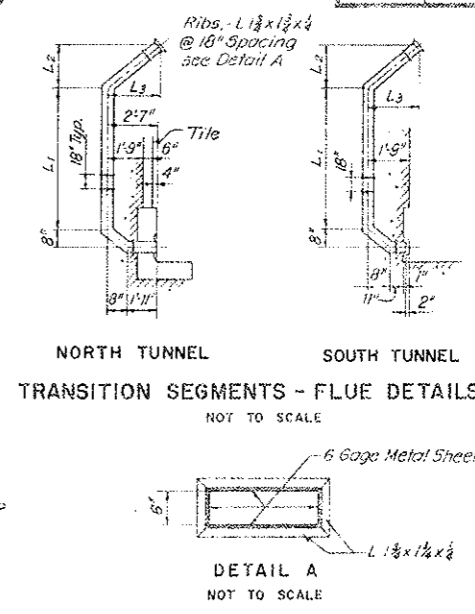
STATE OF COLORADO	
DIVISION OF HIGHWAYS	
DATE	APPROVED BY
12/23/72	301-650
CENTER BULKHEAD	SEG. 84
DATE	APPROVED BY
12/23/72	301-650

AS CONSTRUCTED
REVISED DATE
MAY 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1.70 - 3(34)220	59	328



FLUES	L1	L2	L3
NE1	15'-3 5/8"	2'-3 5/8"	2'-3 5/8"
NE2	17'-1"	2'-5 1/8"	2'-5 1/8"
NE3	18'-4 1/8"	2'-7 1/8"	2'-7 1/8"
NE4	19'-8 1/8"	2'-9 1/8"	2'-9 1/8"
NE5	20'-10 1/8"	3'-0 1/8"	3'-0 1/8"
NW1	18'-2 3/8"	2'-3 3/8"	2'-3 3/8"
NW2	17'-8 3/8"	2'-3 3/8"	2'-3 3/8"
NW3	16'-2 3/8"	2'-3 3/8"	2'-3 3/8"
NW4	14'-7 1/4"	2'-5"	2'-5"
SE1	13'-10 3/8"	2'-3 3/8"	2'-3 3/8"
SE2	14'-8 1/8"	2'-5 1/8"	2'-5 1/8"
SE3	15'-5 1/8"	2'-7 1/8"	2'-7 1/8"
SE4	16'-3 1/8"	2'-9 1/8"	2'-9 1/8"
SE5	17'-1 1/8"	2'-11 1/8"	2'-11 1/8"
SW1	18'-10 1/8"	2'-10 1/8"	2'-10 1/8"
SW2	18'-5 3/8"	2'-8 3/8"	2'-8 3/8"
SW3	17'-2 3/8"	2'-7 3/8"	2'-7 3/8"
SW4	15'-10 1/8"	2'-5 1/8"	2'-5 1/8"
SW5	14'-7 1/4"	2'-4 3/8"	2'-4 3/8"



Note:
For NW trans to N80 and N165 to
1E tras poured in place flues

NOTES:

For size and location of flues see Dwg. G2-10 to G2-16 incl. Vertical dimension between collars of typical flues is detailed to suit segments in straight vertical and horizontal roadway alignment and on the high side of super-elevated segments. For vertical dimensions between collars of non-typical flues see Dwg. C1-6, C1-7, C3-4.

Complete details are not shown for all parts of the work, but as given they indicate the nature of the construction required. Flue metal fabrication details may be modified with the approval of the Engineer.

coat all flue surfaces not in contact with concrete.

Bolted and gasketed flue covers may be as detailed or seal welded.

For flue modification of traffic control pulpit see Dwg. C2-25.

All welds shall be seal welded or sealed with vinyl tape. Flue sheet metal shall conform to ASTM A-245 Grade D. Flues shown for North Tunnel. For South Tunnel wall designation is reversed.

For South Tunnel Portal Sections furnish and install only that part of flue designated as embedded in first stage concrete as noted on this drawing and associated cover plates.

All welding to conform to the requirements of the current "Code for welding in Building Construction" AWS D10.53 of the American Welding Society.

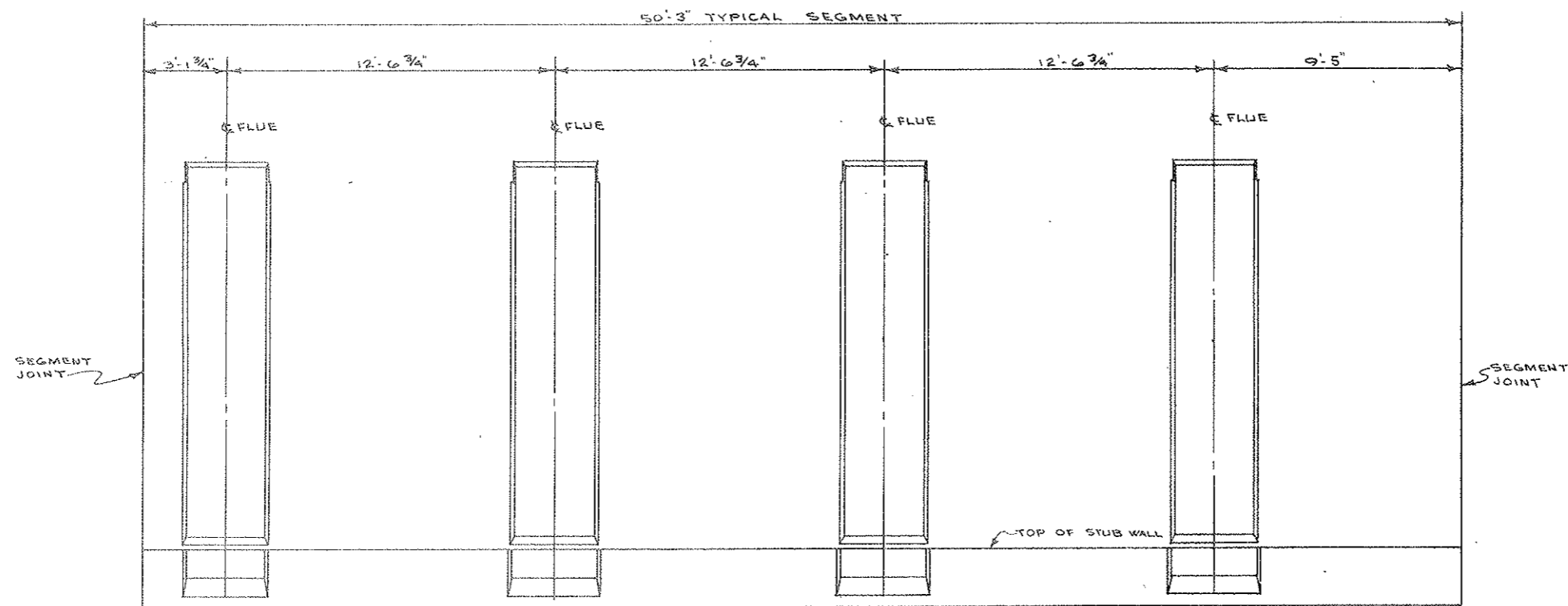
All coated steel and sheet metal shall be repaired by a flame spray coating process if cut, drilled, chipped or welded.

Flue embedded in concrete in segments NW trans to N180, N165 to NE trans, SW trans to S4-S165 to SE trans. See drawing C2-21A for other segments.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL TUNNEL AIR DUCT SYSTEM TYPICAL TUNNEL SEGMENTS FRESH AIR FLUES					
TIPPEYTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H.F. McC.	RECOMMENDED:	H.F. McC.	APPROVED:	H.F. McC.
DRAWN:	P.F.L.	APPROVED:	H.F. McC.		
CHECKED:	H.F. McC.				
SUBMITTED:					
NEW YORK, N. Y.					DRAWING NO.
SCALE: AS NOTED					C2-21
					DATE: AUGUST 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170 3(34)220	59 AX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



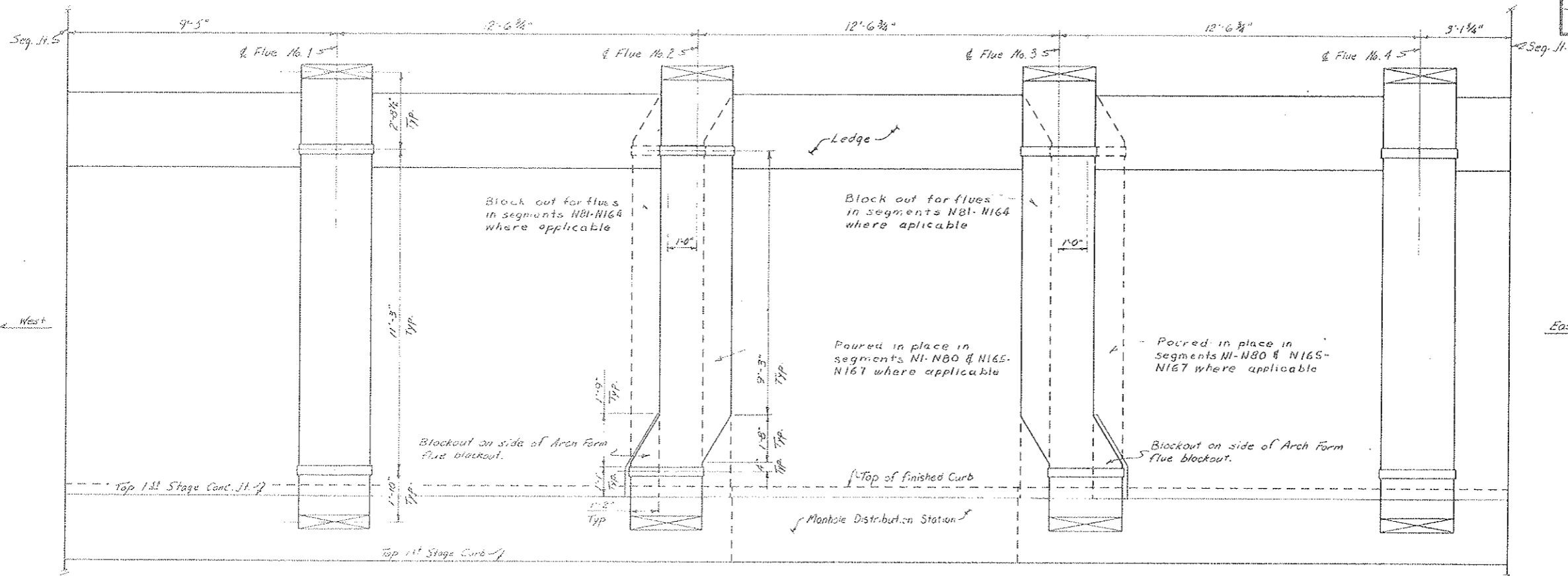
Note:
 For N81 to N164 Blockout Flues.

TYPICAL ELEVATION OF FLUE B.O.
 (LOOKING FROM & TUNNEL)
 SCALE: 3/8" = 1'-0"

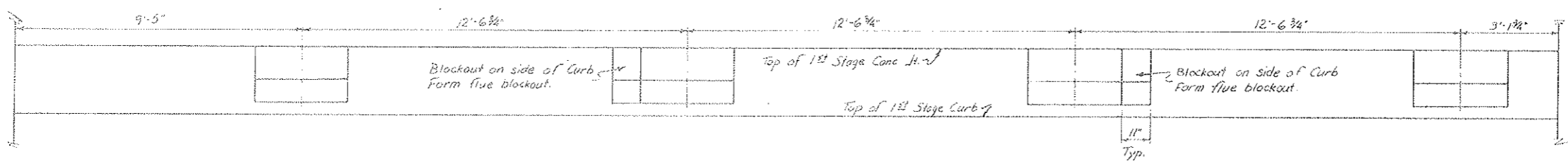
STATE OF COLORADO			
DIVISION OF HIGHWAYS			
DATE	NOTED	BY	DIVISION
1-6-72		W. GAFFIN	
FLUE B.O. PATTERN -			
DATE	APPROVED BY	DRAWING NUMBER	
1-6-72	SEC 690	C2-21A	

FEDERAL ROAD DISTRICT	DIVISION	PROJECT NO	SHEET NO	TOTAL SHEETS
9	COLORADO	1 70 3(34)220	59 BX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



REFLECTED ELEVATION - SOUTH WALL
 Scale 1/2" = 1'-0"
 This occurs in Segments N101, N110, N118, N125, N130, N138, N146, N155 & N163
 In Segments N84 & N92 this also occurs, only the Manhole Distribution Station is between Flue No. 1 & No. 2.

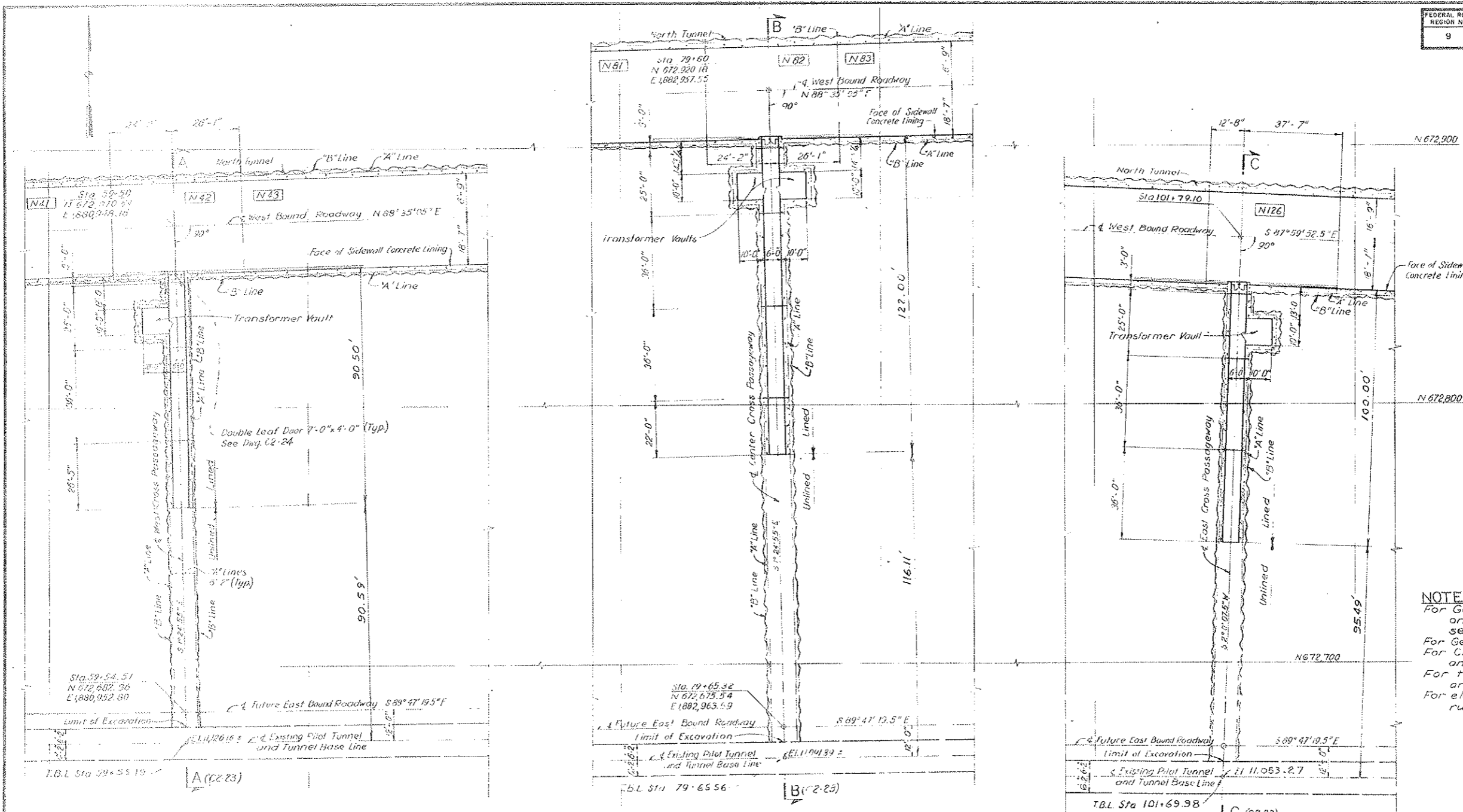


REFLECTED ELEVATION - SOUTH CURB
 Scale 1/2" = 1'-0"
 See note under South Wall for location.

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE 1/8" = 1'-0"	DRAWN BY R.M. GARDNER	REVIEWED BY R.M. GARDNER
FLUE MODIFICATION FOR M.H. DIST. STAT.			
DATE 12-22-71	APPROVED BY J.B.C.	Date 12-28-71 No. SCC 468	DRAWING NUMBER C2-21B

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	60	326

AS CONSTRUCTED
REVISED DATE
 D.T. 26, 1973



NOTES:
 For General Tunnel Notes including note on location of Cross Passageways see Dwg. C2-2.
 For General Concrete Notes see Dwg. C2-11.
 For Cross Passageway profiles A-A, B-B and C-C see Dwg. C2-23.
 For tunnel steel supports see Dwg. C2-6 and C2-7.
 For electrical junction boxes and conduit run details see Dwg. E-73.

WEST CROSS PASSAGEWAY
 STA. WB 59+50

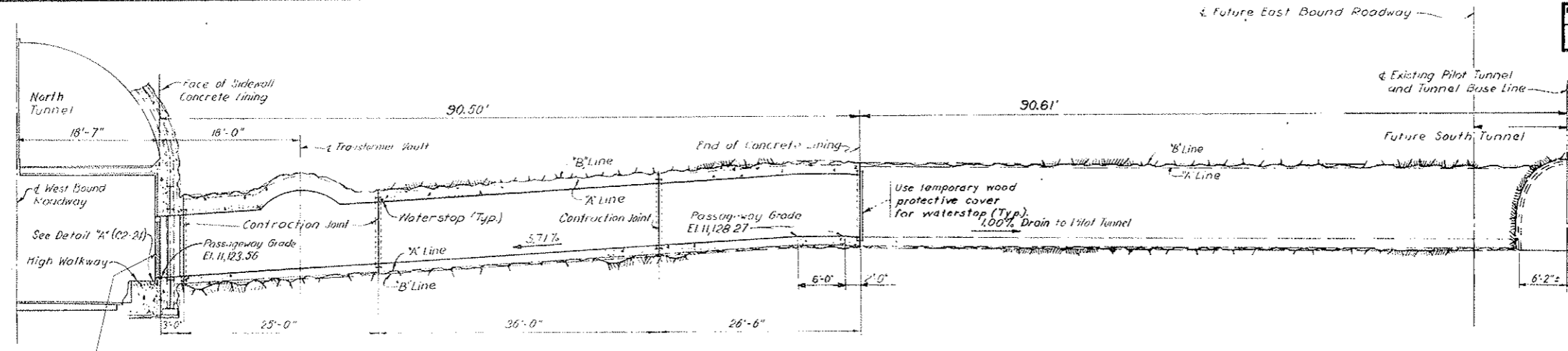
CENTER CROSS PASSAGEWAY
 STA. WB 79+60

EAST CROSS PASSAGEWAY
 STA. WB 102+60

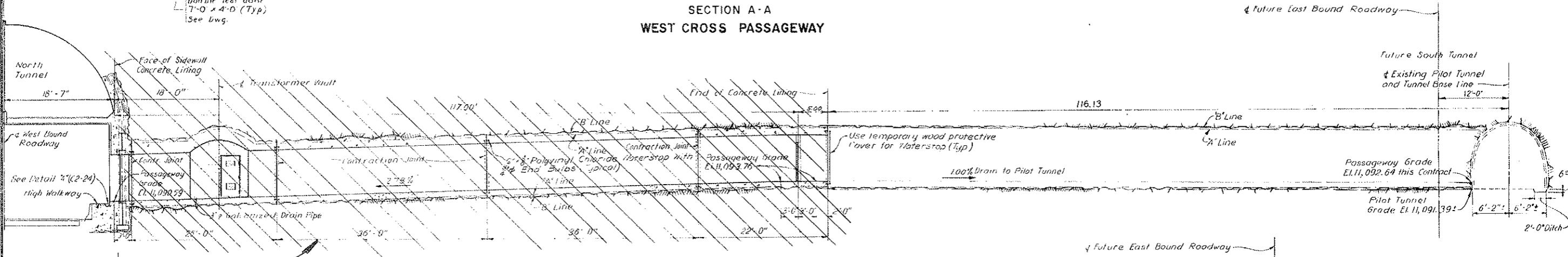
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL CROSS PASSAGEWAYS PLAN					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED DRAWN CHECKED SUBMITTED	P. V. P. P. F. L. S. M. R.	RECOMMENDED APPROVED	<i>[Signatures]</i> APPROVED APPROVED		
NEW YORK, N. Y.					DRAWING NO. C2-22
SCALE: 1 IN = 20 FT DATE: AUGUST 1967					

FEDERAL ROAD REGION NO	DIVISION	PROJECT NO	SHEET NO	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	61	326

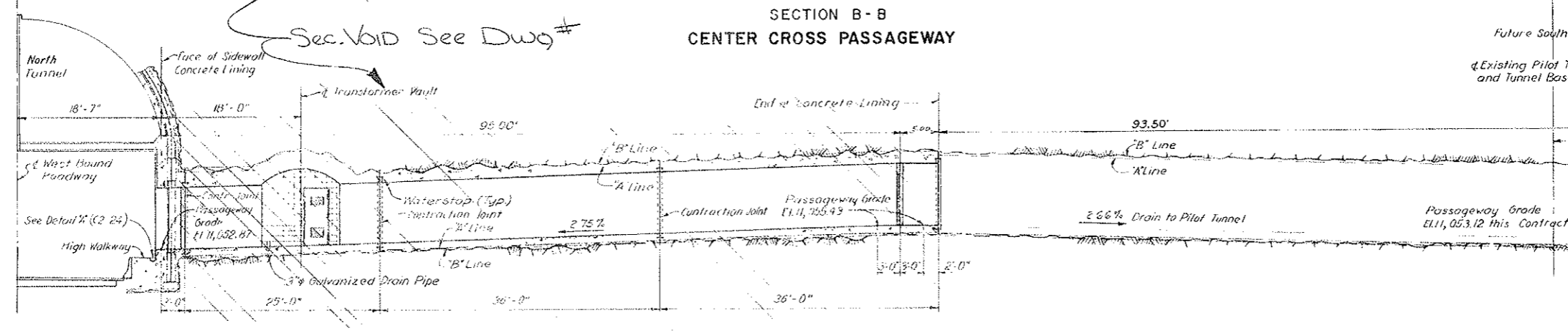
AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



SECTION A-A
 WEST CROSS PASSAGEWAY



SECTION B-B
 CENTER CROSS PASSAGEWAY



SECTION C-C
 EAST CROSS PASSAGEWAY

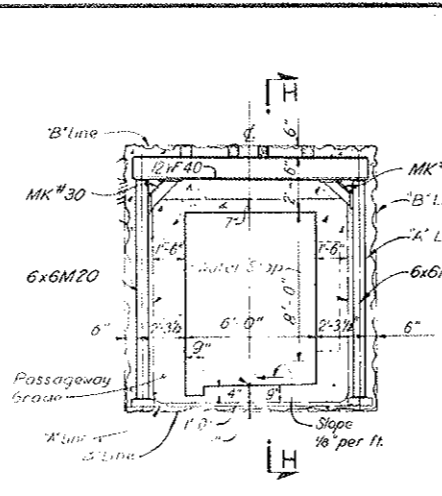
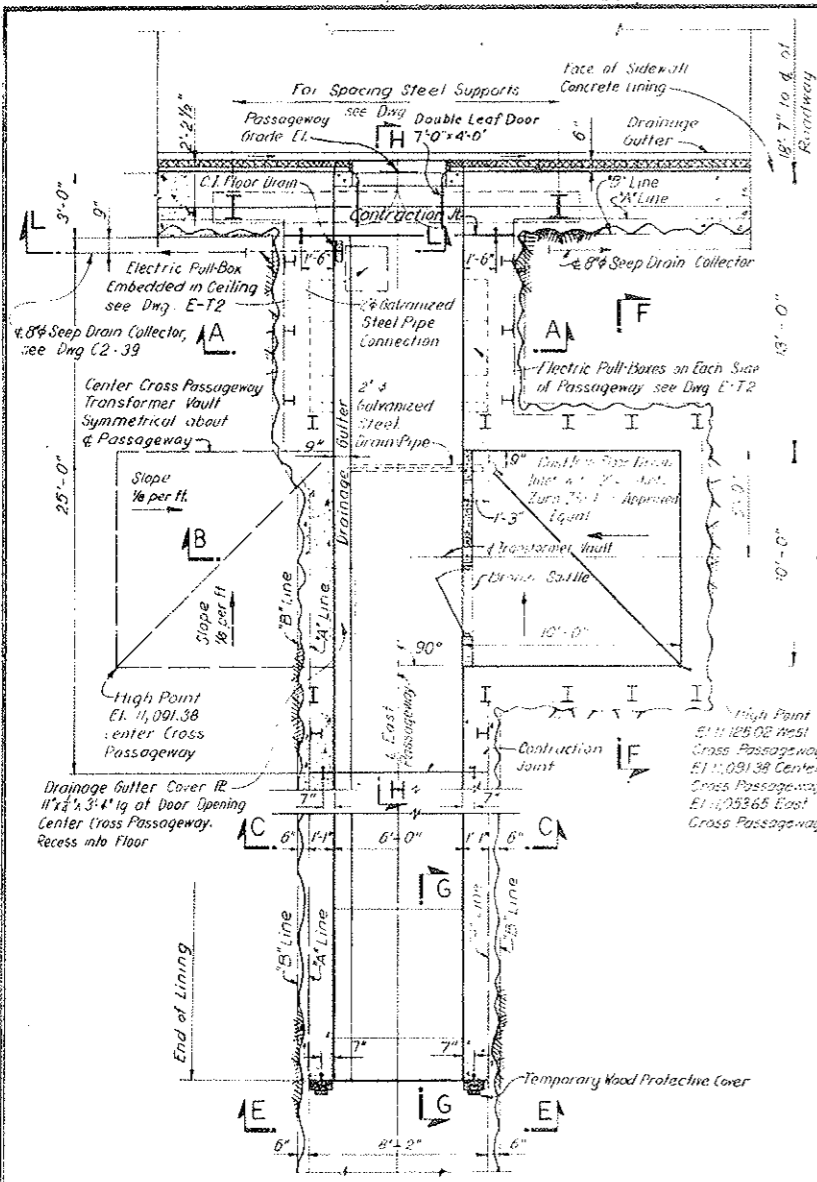
Sec. Void See Dwg #

NOTES:
 Work this drawing with Dwg C2-22.

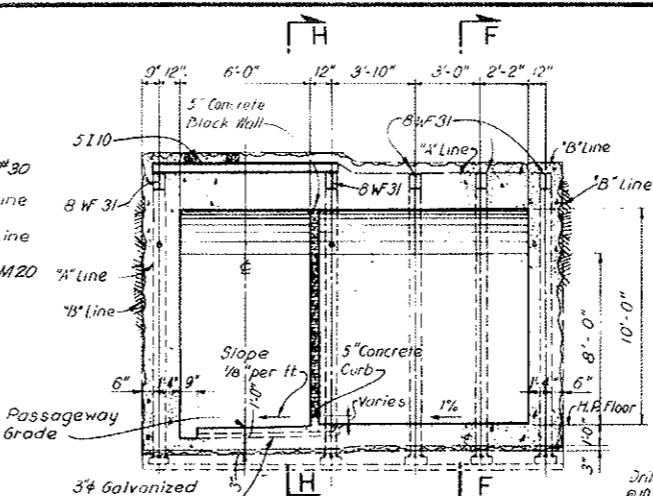
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL CROSS PASSAGEWAYS PROFILES					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED P.Y.P.	CHECKED P.F.L.	RECOMMENDED S.M.R.	APPROVED <i>[Signature]</i>		
DRAWN S.M.R.			DRAWING NO. C2-23		
SUBMITTED G.M.A.			SCALE 1/8" = 1'-0" DATE AUGUST 1967		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	62	326

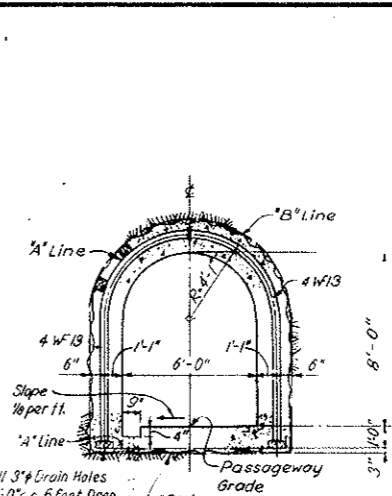
AS CONSTRUCTED
REVISED DATE
 Oct 26, 1973



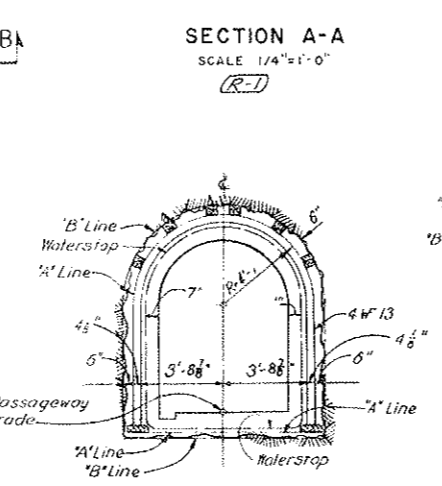
SECTION A-A
 SCALE: 1/4" = 1'-0"
 (R-1)



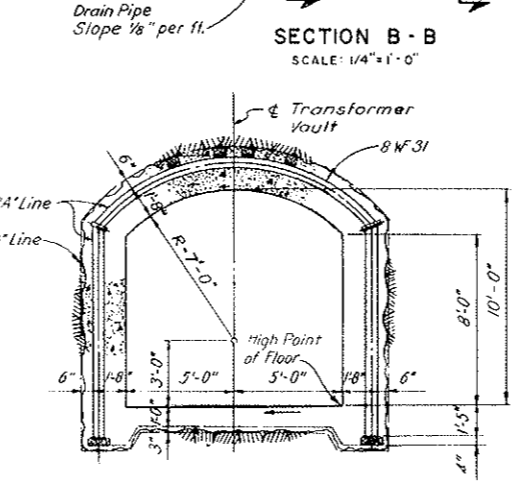
SECTION B-B
 SCALE: 1/4" = 1'-0"



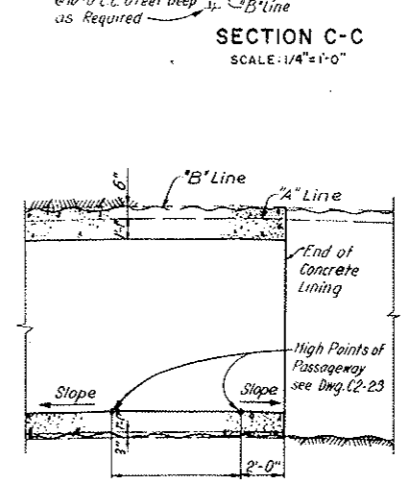
SECTION C-C
 SCALE: 1/4" = 1'-0"



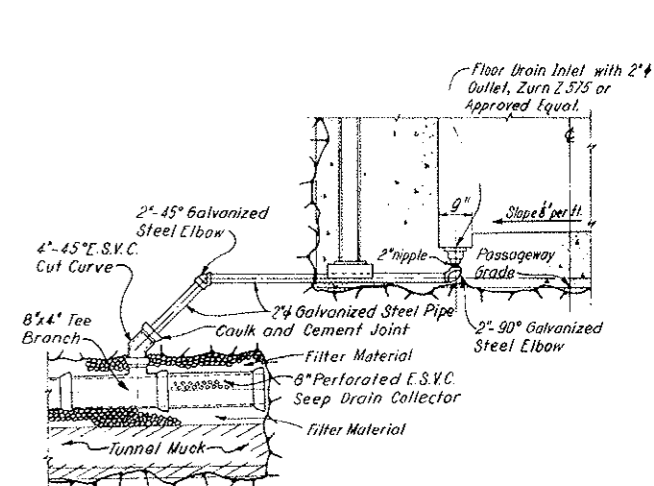
SECTION E-E
 SCALE: 1/4" = 1'-0"



SECTION F-F
 SCALE: 1/4" = 1'-0"

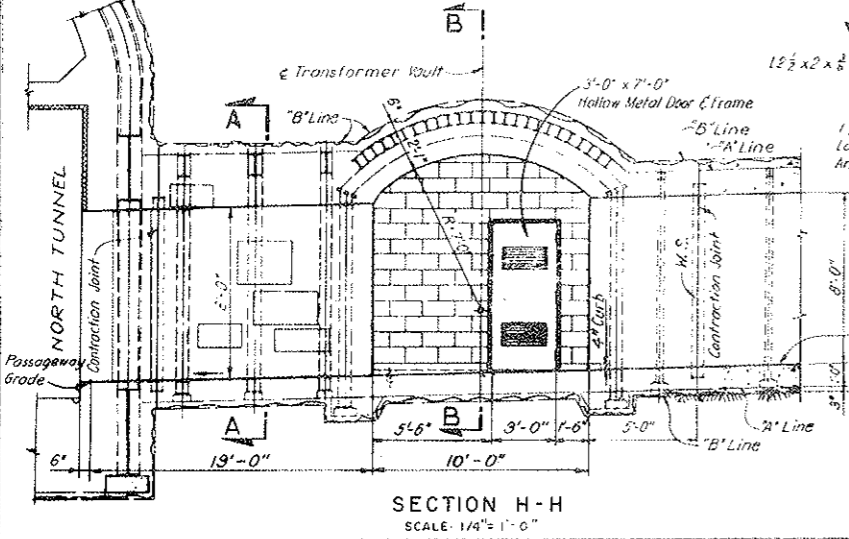


SECTION G-G
 SCALE: 1/4" = 1'-0"

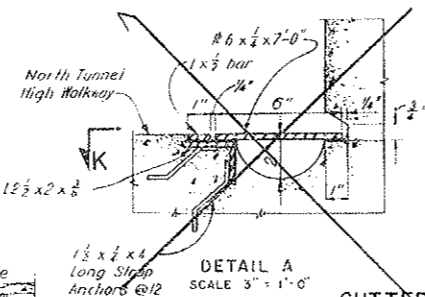


SECTION L-L
 SCALE: 1/2" = 1'-0"

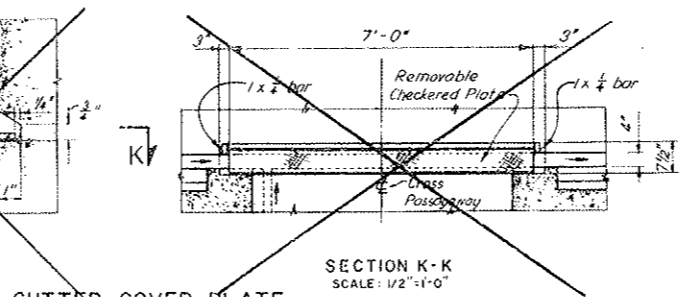
PLAN EAST CROSS PASSAGEWAY SHOWN
 WEST CROSS PASSAGEWAY OPPOSITE HAND AS NOTED
 CENTER CROSS PASSAGEWAY AS NOTED
 SCALE: 1/4" = 1'-0"



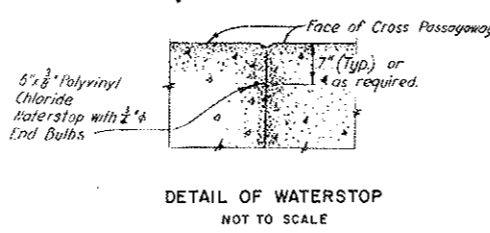
SECTION H-H
 SCALE: 1/4" = 1'-0"



DETAIL A
 SCALE: 3" = 1'-0"



SECTION K-K
 SCALE: 1/2" = 1'-0"



DETAIL OF WATERSTOP
 NOT TO SCALE

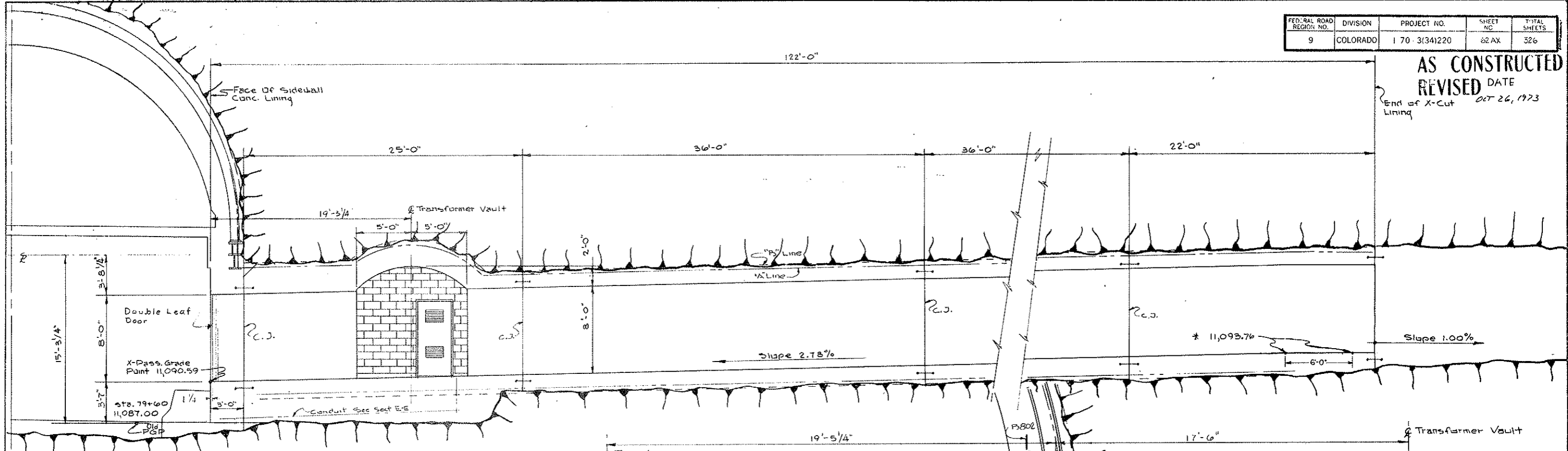
- NOTES:**
- Work this drawing with Dwg. C2-22 and C2-23.
 - For steel support set details see Dwg. C2-6 and C2-7.
 - Reinforcement not shown. Reinforcement shall be #5 @ 12" each way intrados face only.
 - For details of wall surfacing at Cross Passageway opening into North Tunnel see Dwg. C2-32.
 - For details of door, see Dwg. C2-R4I

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL CROSS PASSAGEWAYS SECTIONS AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: SUBMITTED:	P. V. P. P. F. L. S. M. R.	RECOMMENDED: APPROVED:			
NEW YORK, N. Y.					SCALE: AS NOTED DATE: AUGUST 1967
					DRAWING NO. C2-24

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70-3(34)220	62 AX	326

AS CONSTRUCTED
REVISED DATE

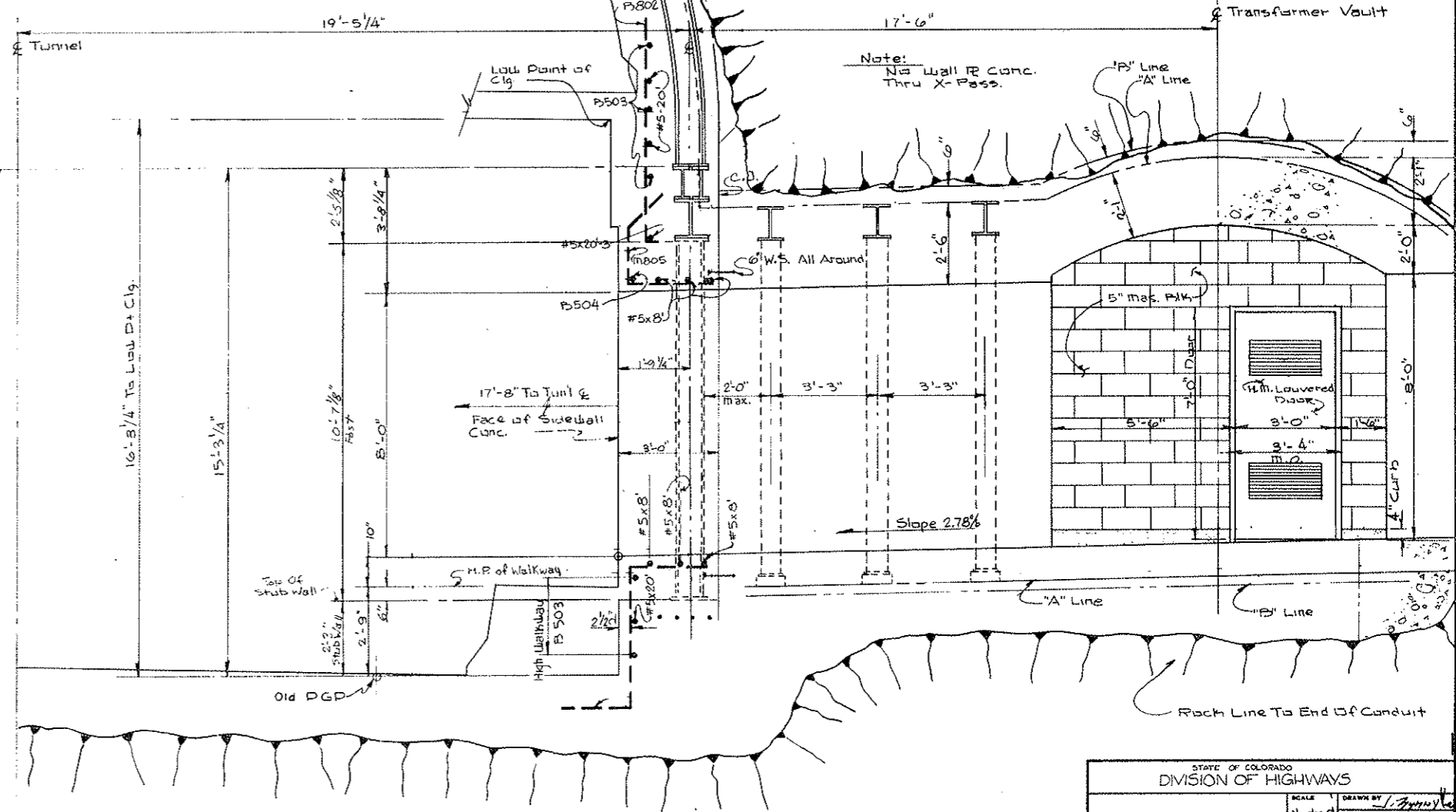
End of X-Cut Lining
OCT 26, 1973



LONGITUDINAL SECTION - Looking East
Scale: 1/4" = 1'-0"

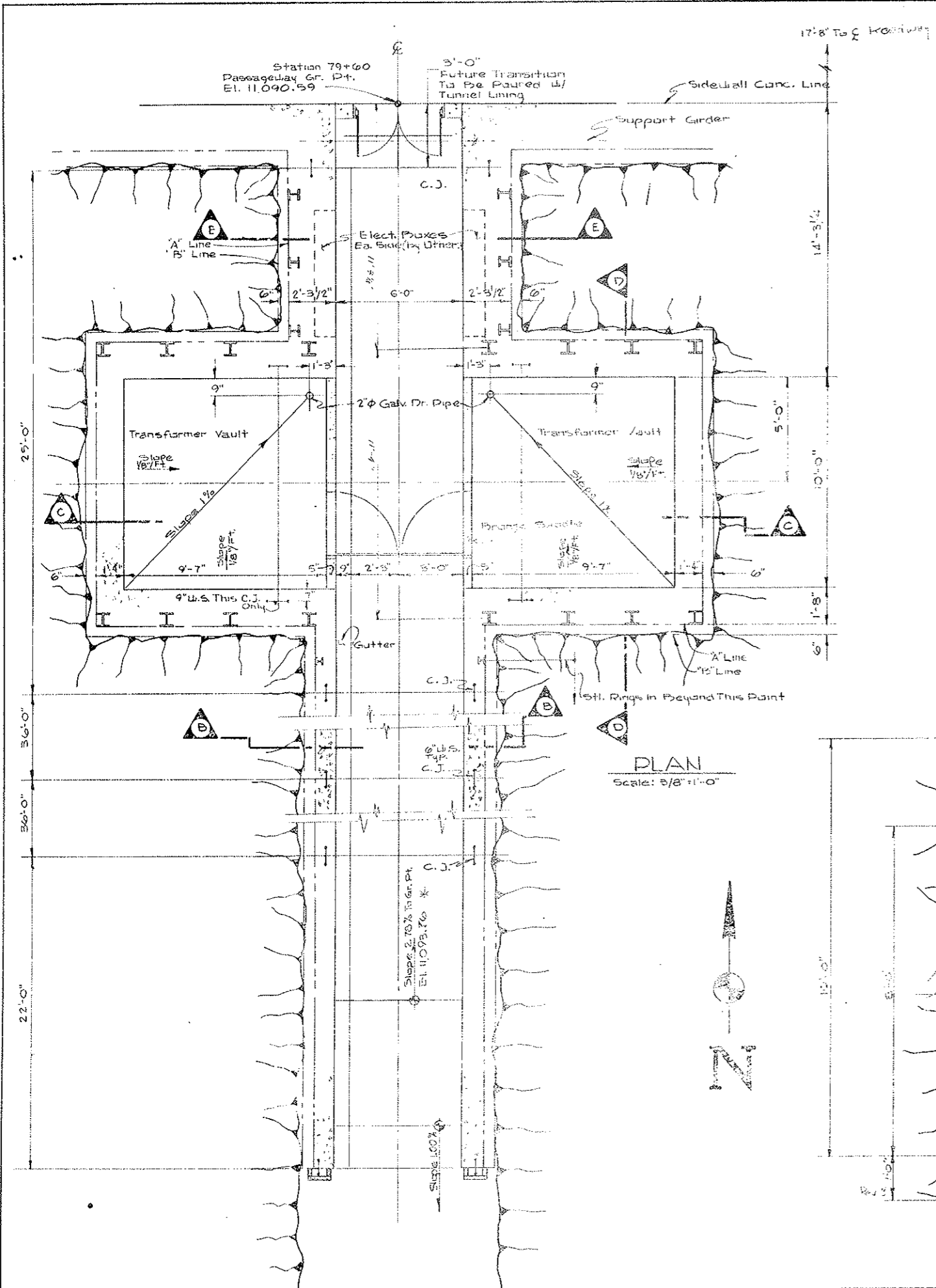


SECTION @ NORTH END - Looking East
Scale: 1/2" = 1'-0"

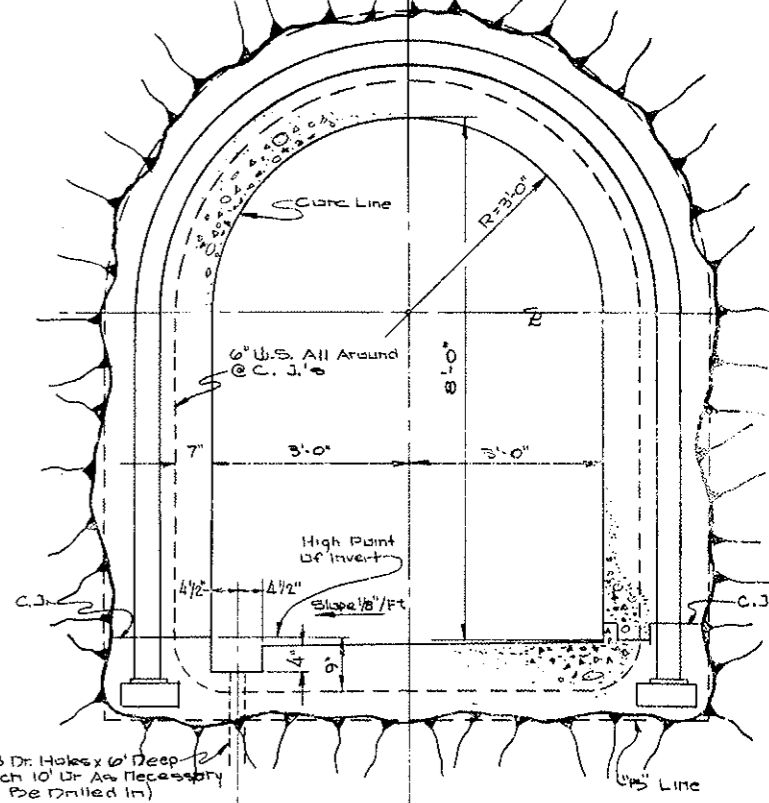


STATE OF COLORADO DIVISION OF HIGHWAYS			
SCALE	NOTED	DRAWN BY	REVISED
		L. Frymire	
CENTER CROSS PASSAGEWAY			
DATE	APPROVED BY DOH, Date	DRAWING NUMBER	
12-20-71	By	As SCC 466	C2-24A

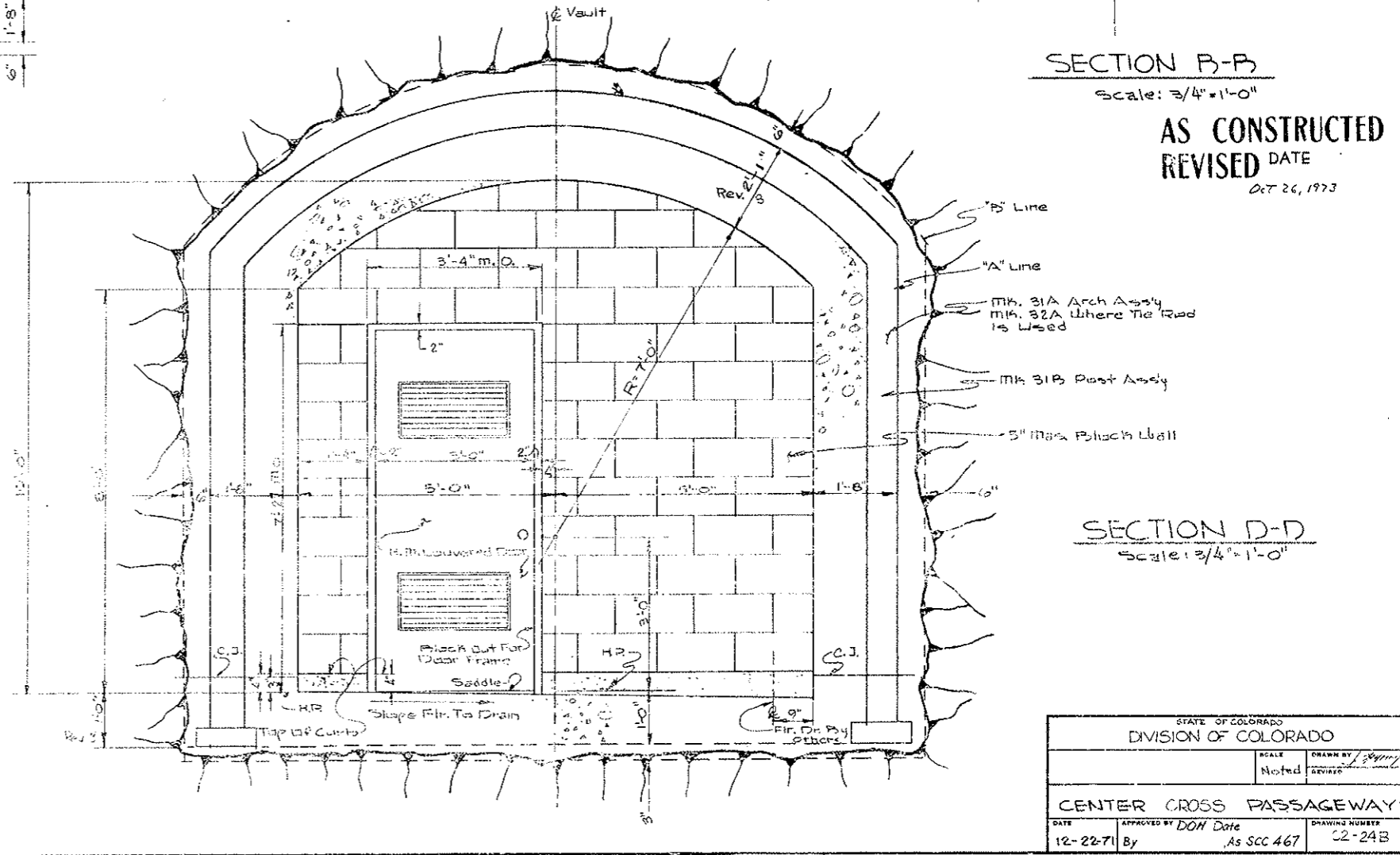
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170 31341220	62 BX	326



PLAN
Scale: 3/8" = 1'-0"



SECTION B-B
Scale: 3/4" = 1'-0"
AS CONSTRUCTED
REVISED DATE
Oct 26, 1973

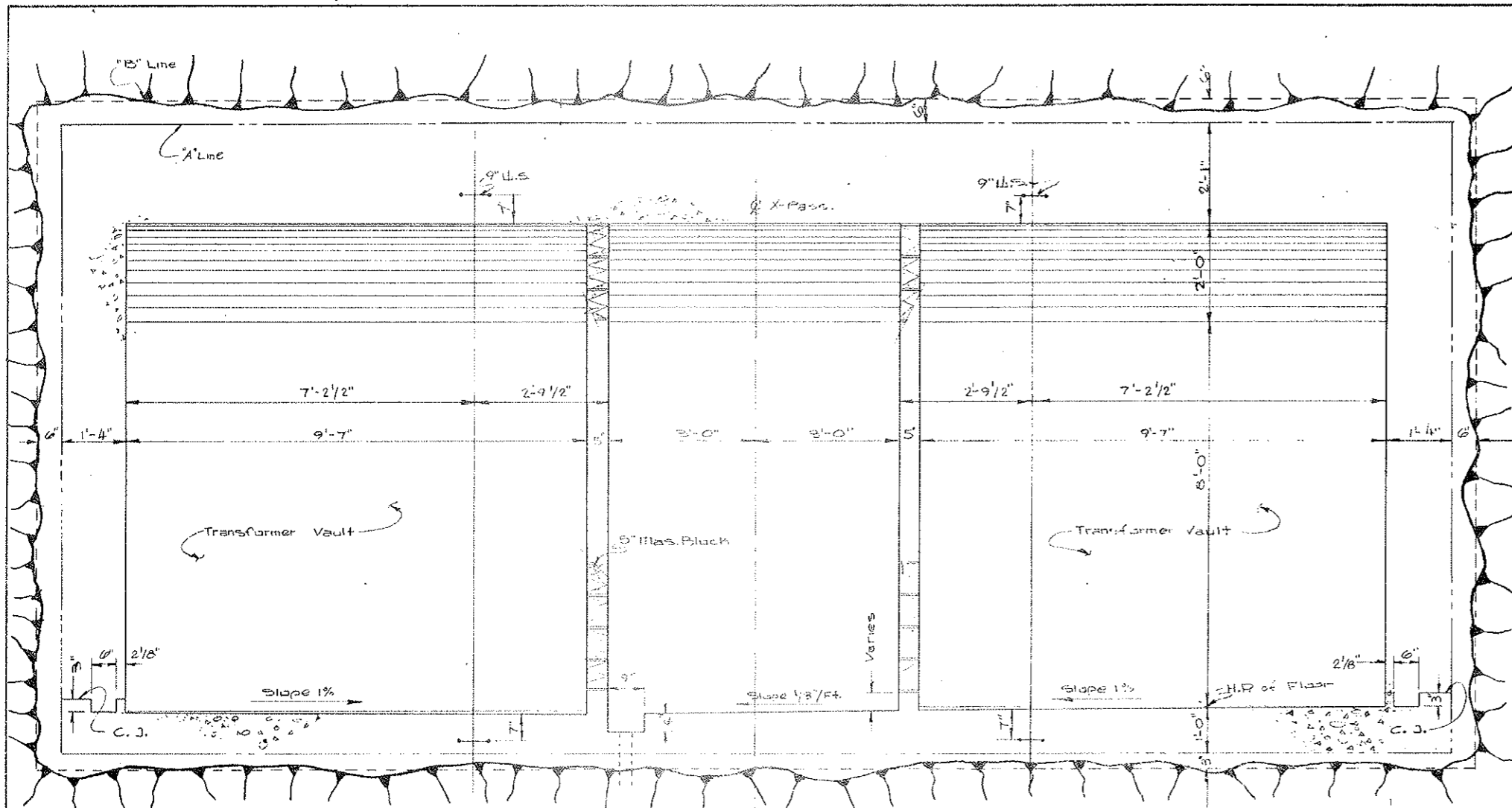


SECTION D-D
Scale: 3/4" = 1'-0"

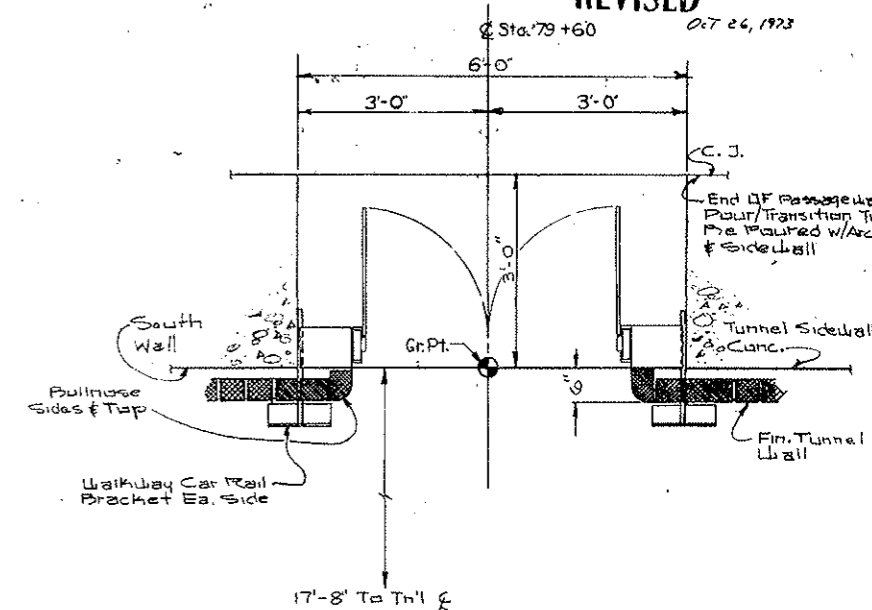
STATE OF COLORADO		DIVISION OF COLORADO	
SCALE	Noted	DRAWN BY	J. J. [Signature]
DATE	12-22-71	APPROVED BY	DOH Date
	By		As SCC 467
CENTER CROSS PASSAGEWAYS		DRAWING NUMBER	
		22-24B	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-31341220	62 CX	326

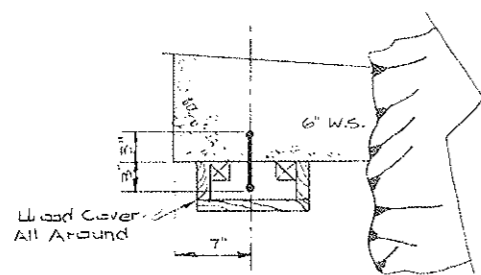
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1923



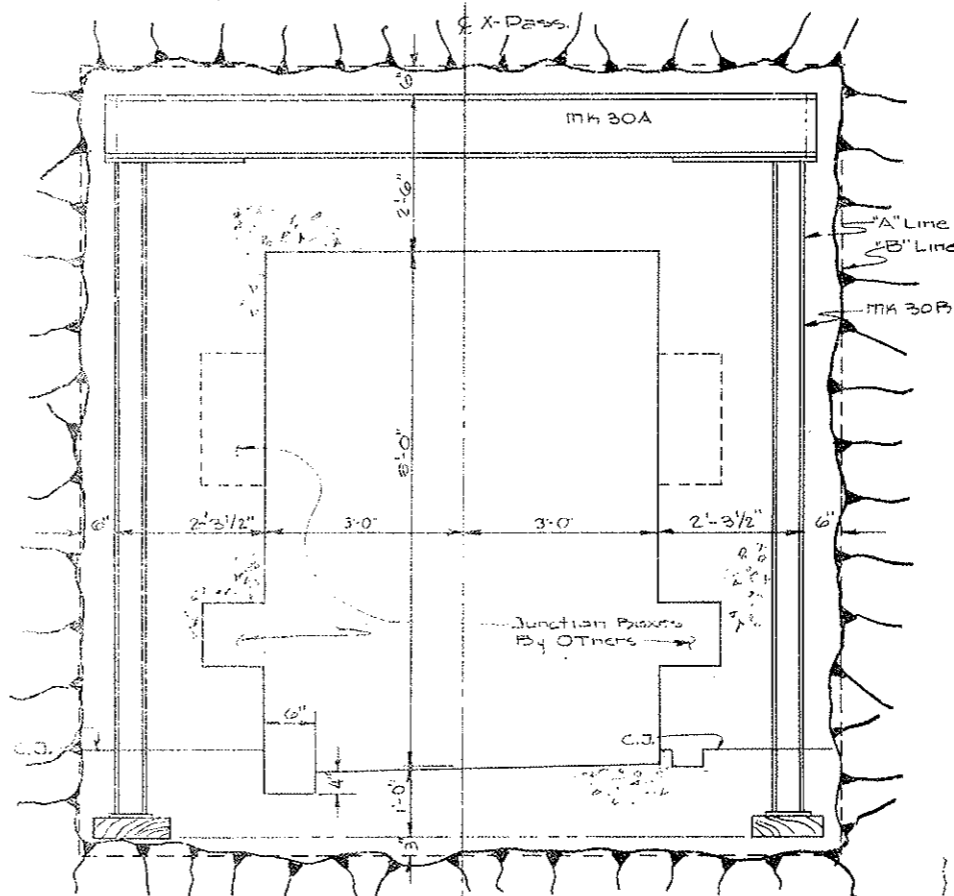
SECTION C-C
 Scale: 3/4" = 1'-0"



DETAIL C • Plan @ X-Pass Transition
 Scale: 3/4" = 1'-0"



DETAIL B
 Scale: 1/2" = 1'-0"

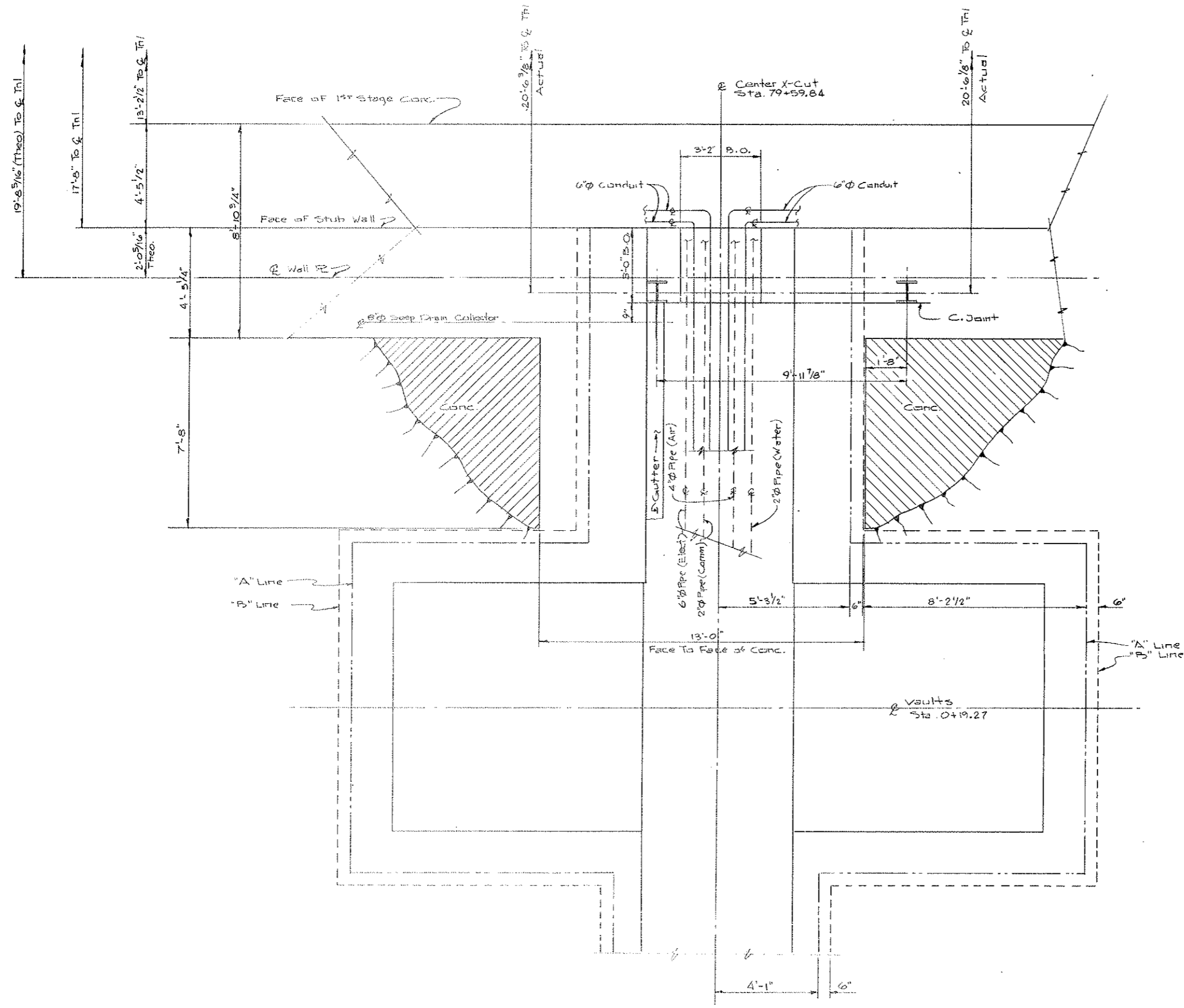


SECTION E-E
 Scale: 3/4" = 1'-0"

STATE OF COLORADO DIVISION OF HIGHWAYS			
SCALE	Noted	DRAWN BY	J. J. [Signature]
DATE	APPROVED BY	DATE	DRAWING NUMBER
12-22-71	By [Signature]	As SCC 469	C2-24C

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	62 DX	326

AS CONSTRUCTED
 REVISED DATE
 0.7 26, 1973



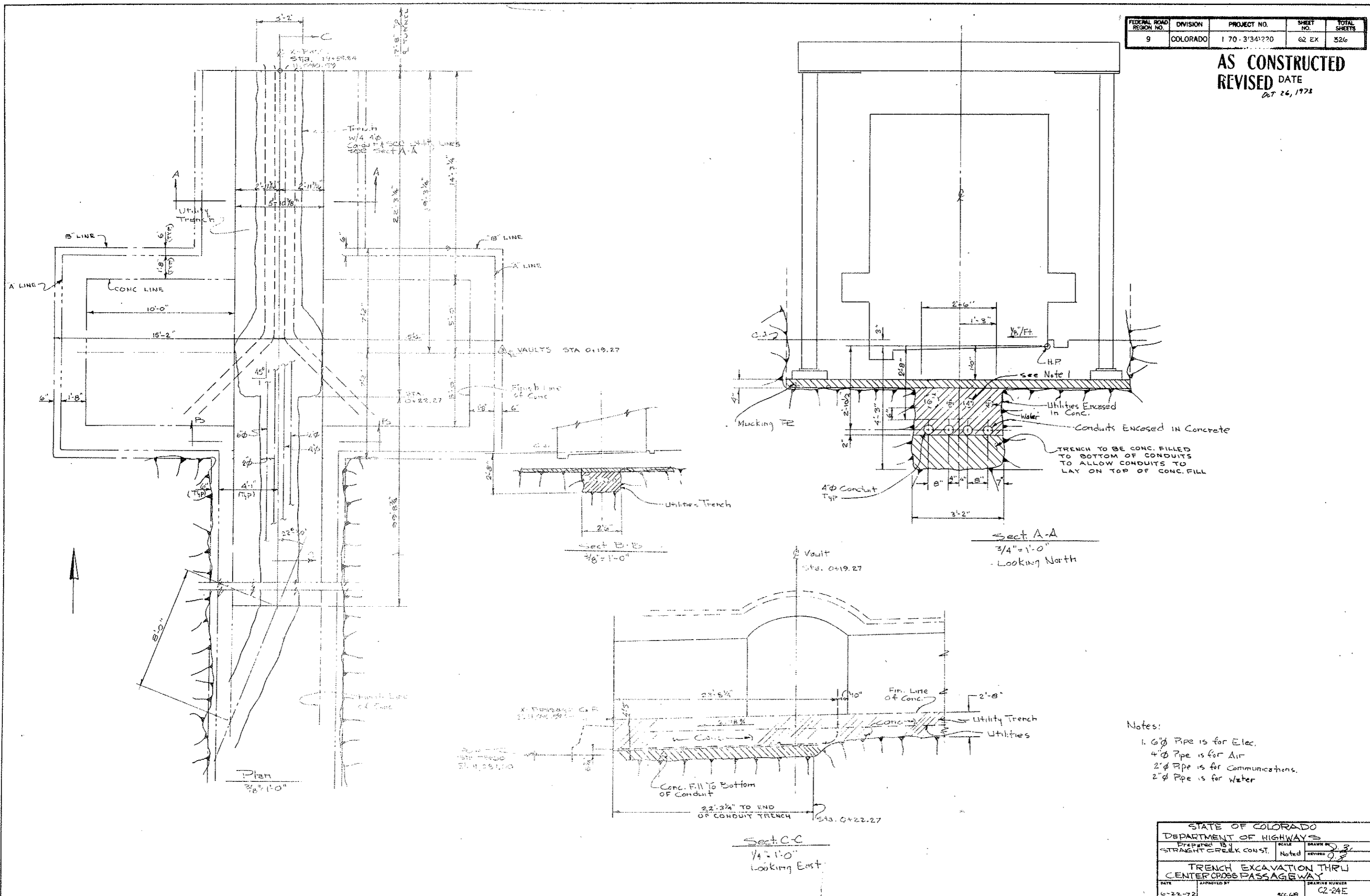
NOTES:

1. Work This Dwg With : C2-24C + C2-24E

STATE OF COLORADO DIVISION OF HIGHWAYS			
SCALE 1/8"=1'-0"	DRAWN BY Bjornny	REVISIONS	
CENTER CROSS PASSAGEWAY EXCAVATION			
DATE 8/7/72	APPROVED BY	SOC 242	DRAWING NUMBER C2-24D

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3'34'220	62 EX	526

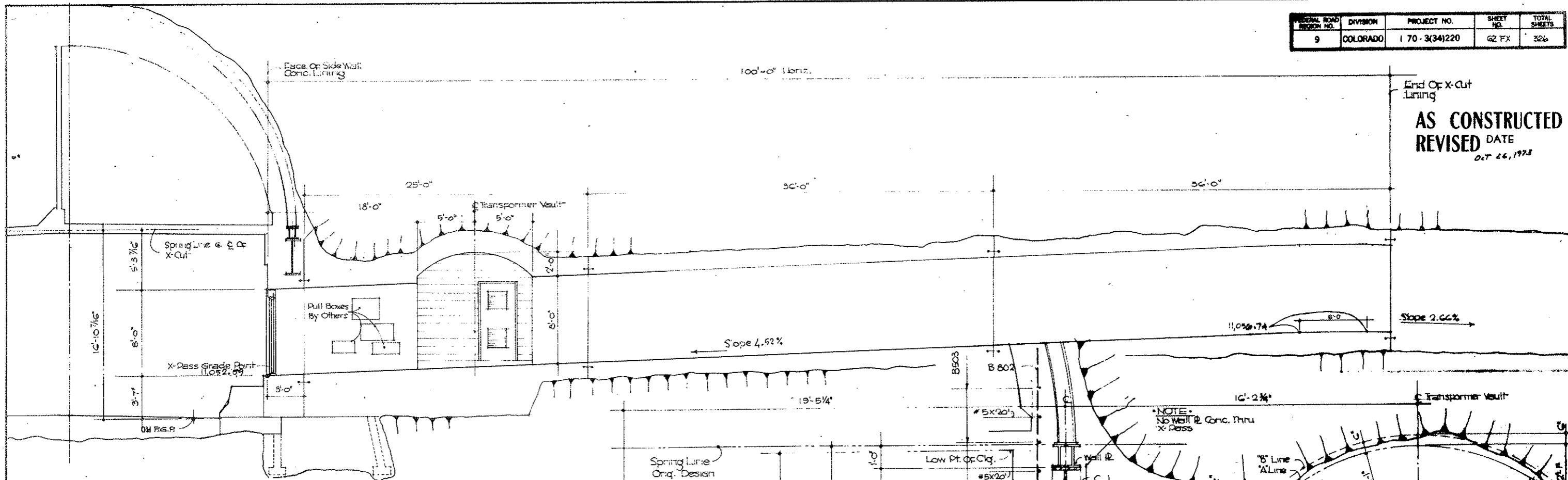
AS CONSTRUCTED
REVISED DATE
Oct 26, 1972



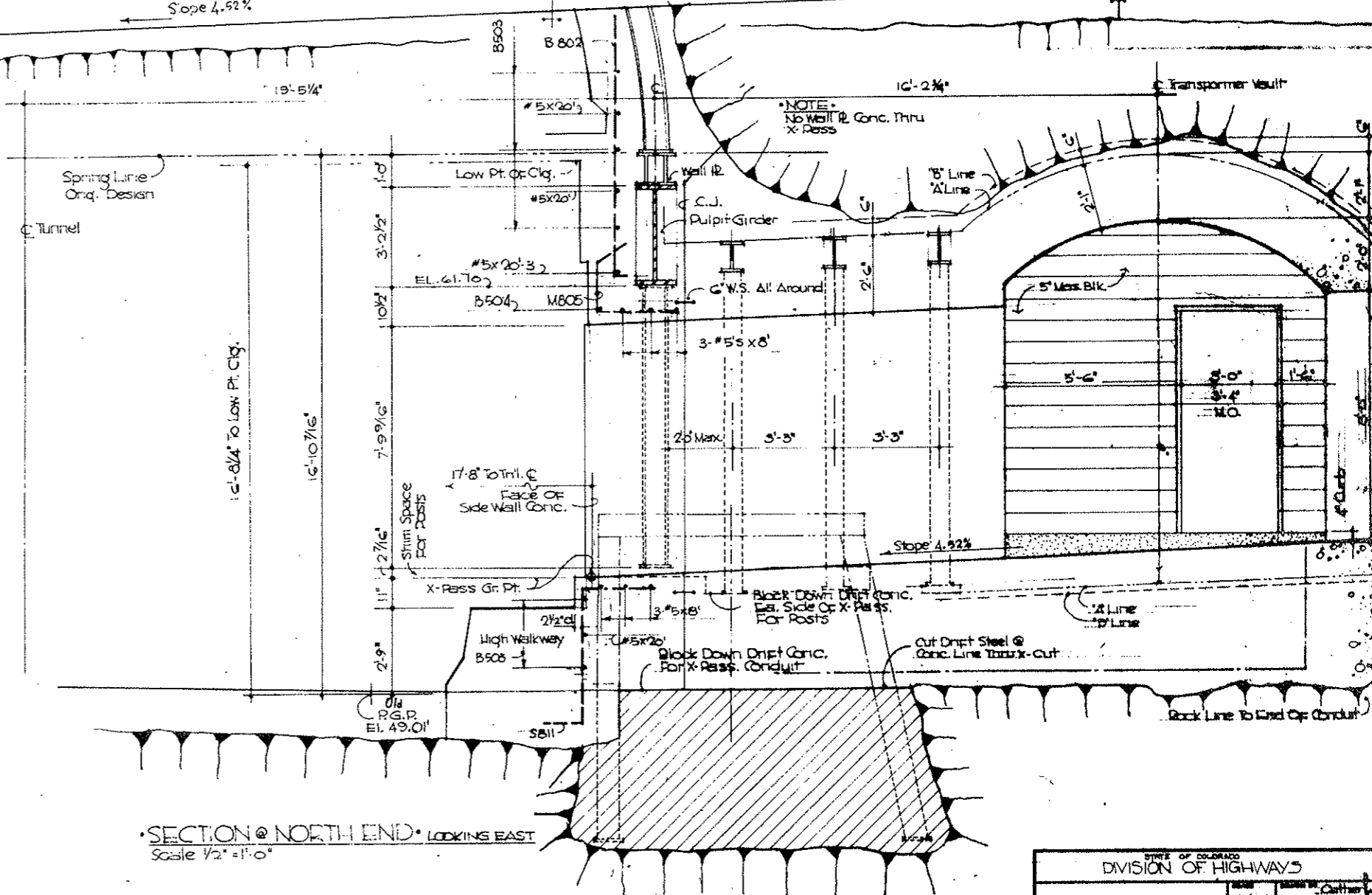
- Notes:
- 1. 6" Pipe is for Elec.
 - 4" Pipe is for Air
 - 2" Pipe is for Communications.
 - 2" Pipe is for Water

STATE OF COLORADO			
DEPARTMENT OF HIGHWAYS			
Prepared By STRAIGHT CREEK CONST.	SCALE Noted	DRAWN BY J. S.	REVIEWED J. S.
TRENCH EXCAVATION THRU CENTER CROSS PASSAGEWAY			
DATE 6-22-72	APPROVED BY SCC:GBB	DRAWING NUMBER C2-24E	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	62 FX	326



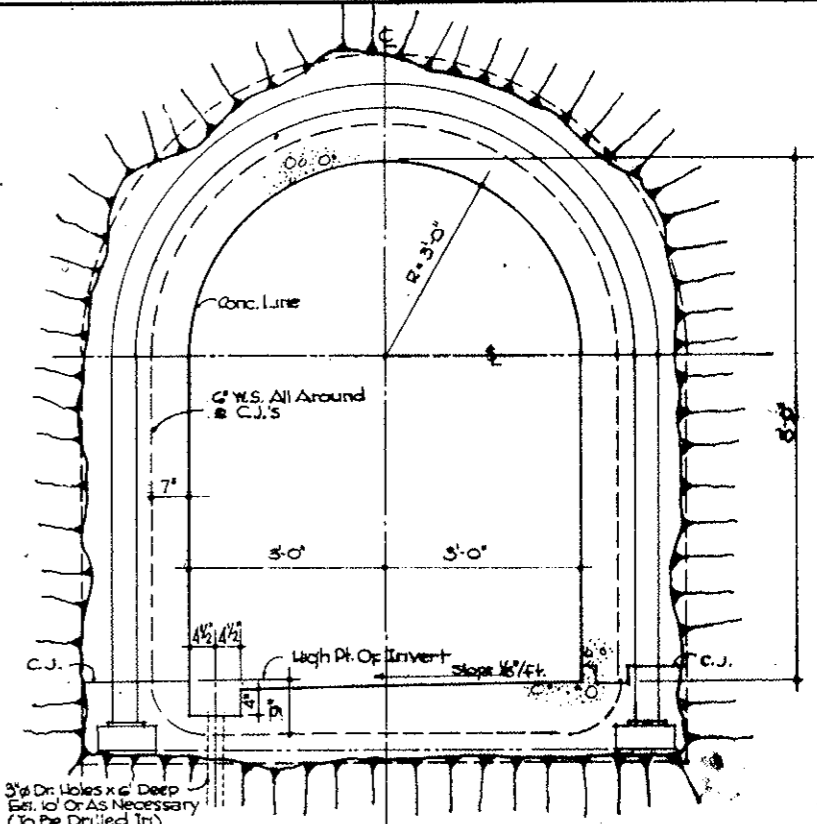
LONGITUDINAL SECTION - LOOKING EAST
Scale 1/4" = 1'-0"



SECTION @ NORTH END - LOOKING EAST
Scale 1/2" = 1'-0"

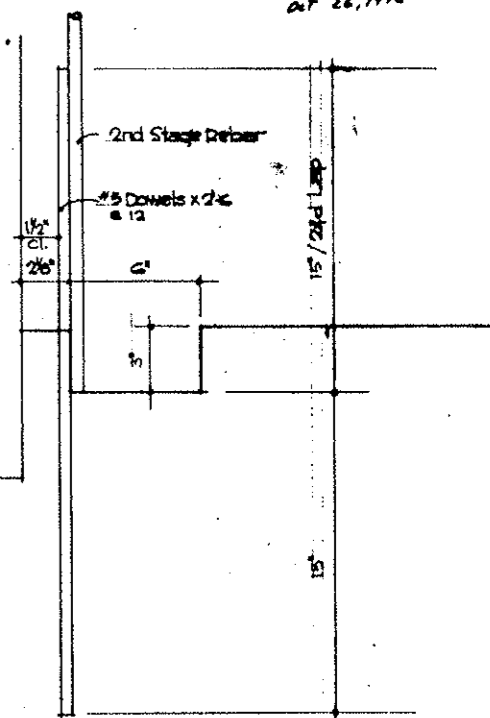
STATE OF COLORADO	
DIVISION OF HIGHWAYS	
DESIGNED BY	Checked
EAST CROSS PASSAGEWAY	
DATE 12-16-71	C2-24F

PROJECT NO.	170-3341220	62GX	326
DIVISION	COLORADO		
DATE			



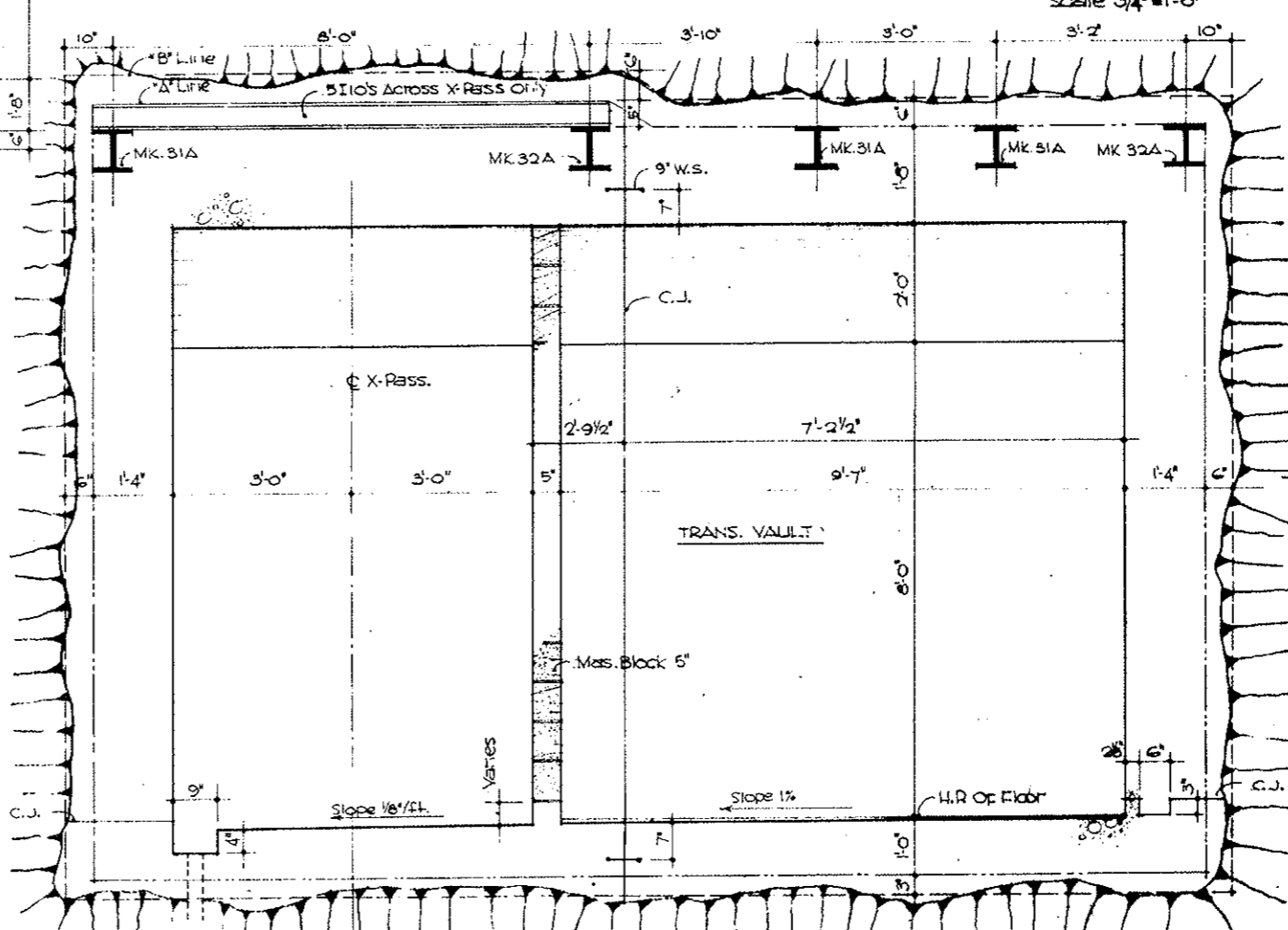
SECTION B-B
Scale 3/4"=1'-0"

AS CONSTRUCTED
REVISED DATE
APR 26, 1972

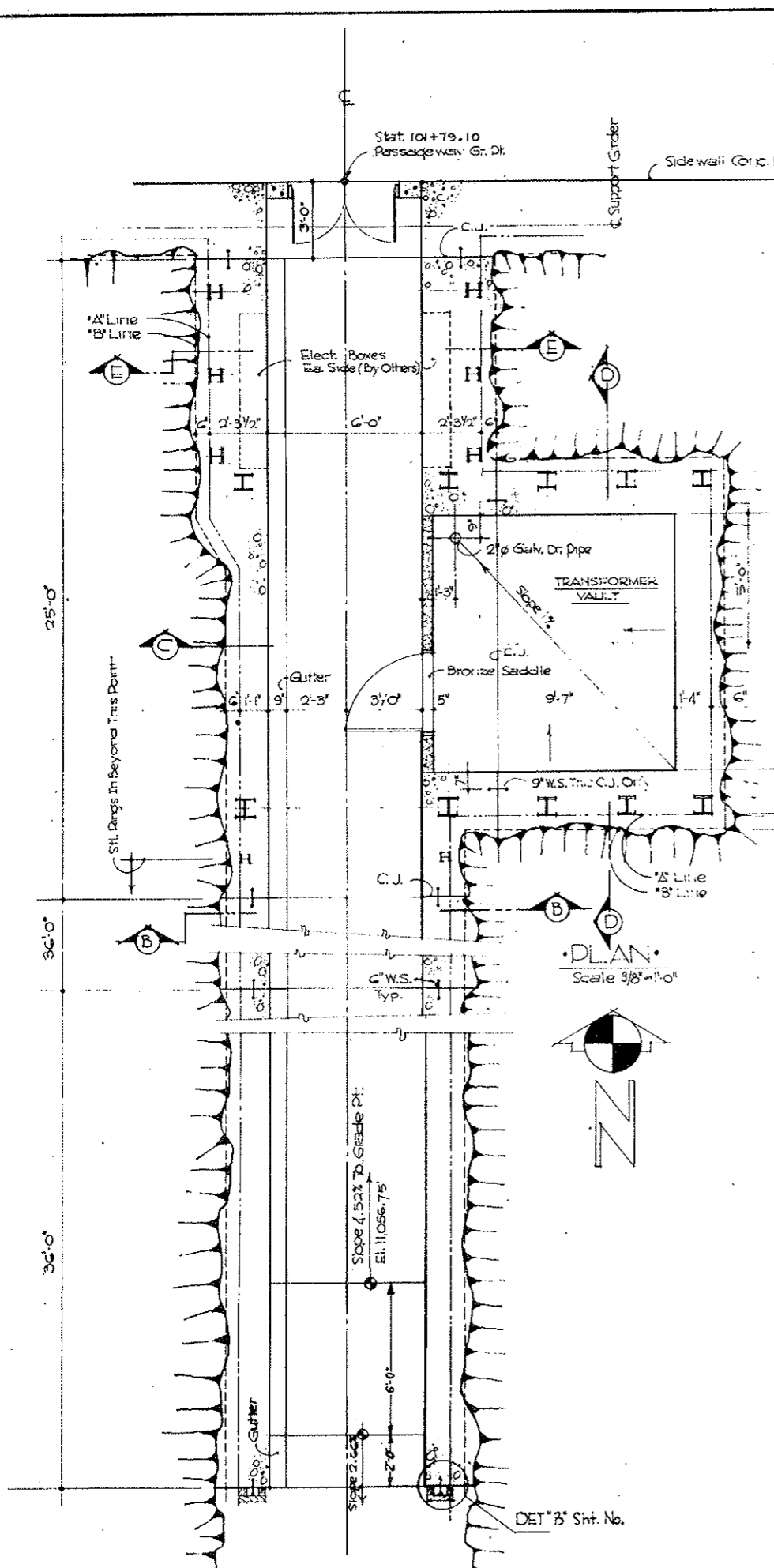


DETAIL C
Scale 3"=1'-0"

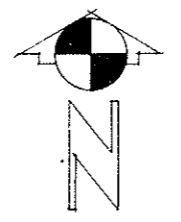
DIVISION OF HIGHWAYS	
EAST CROSS PASSAGEWAY	
DATE	C2-246



SECTION C-C
Scale 3/4"=1'-0"



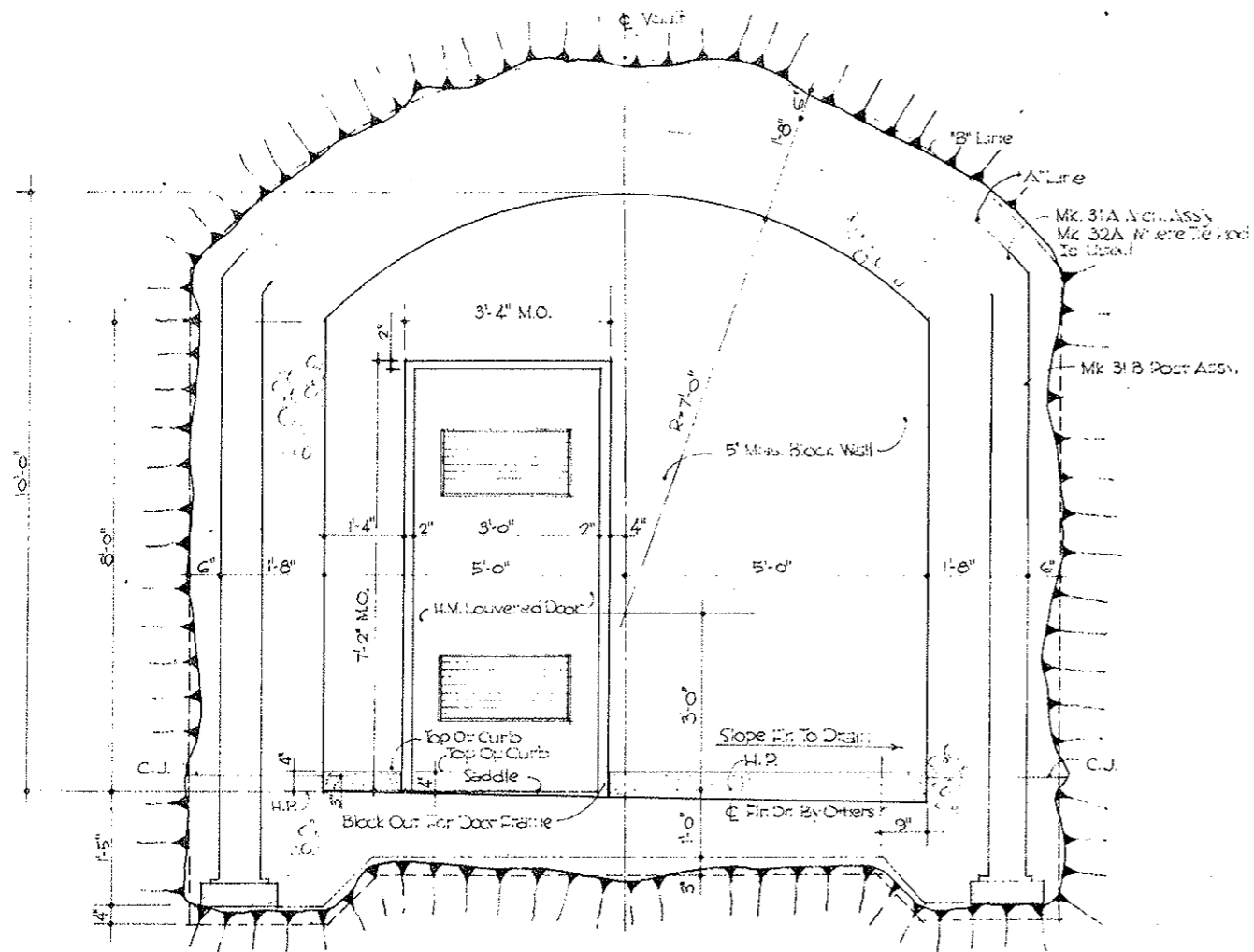
PLAN
Scale 3/8"=1'-0"



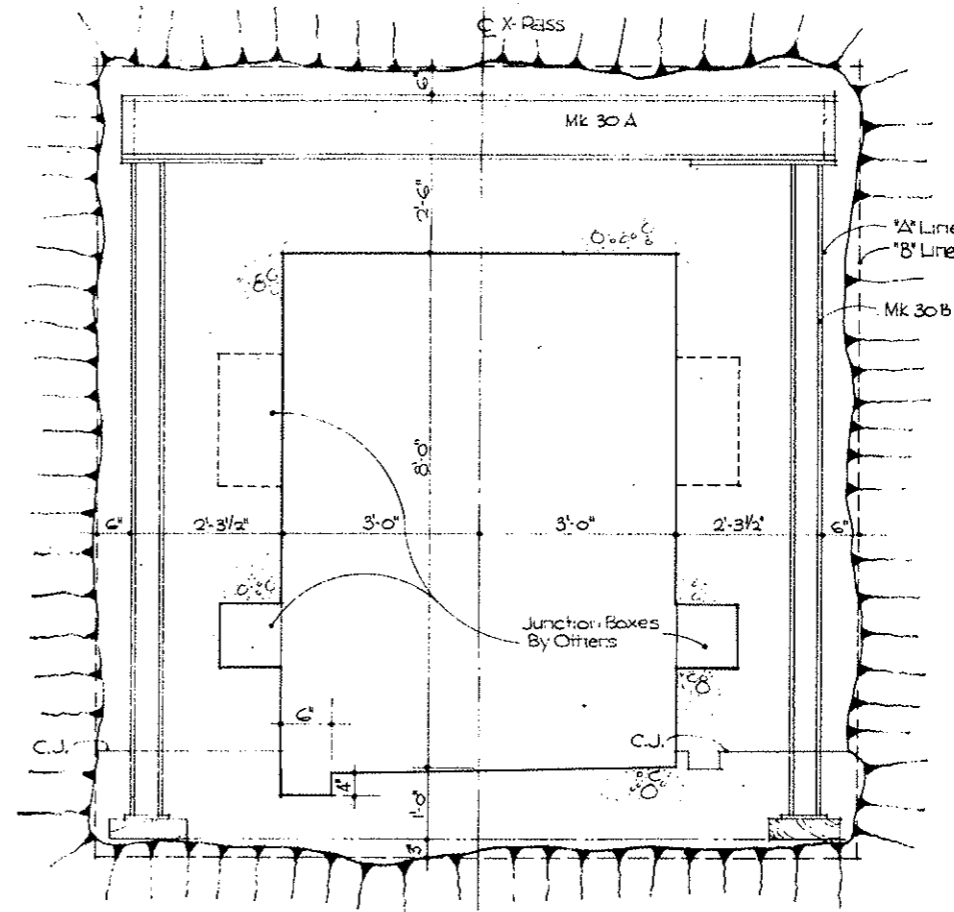
DET "B" Sht. No.

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 - 3(34)220	62 HX	326

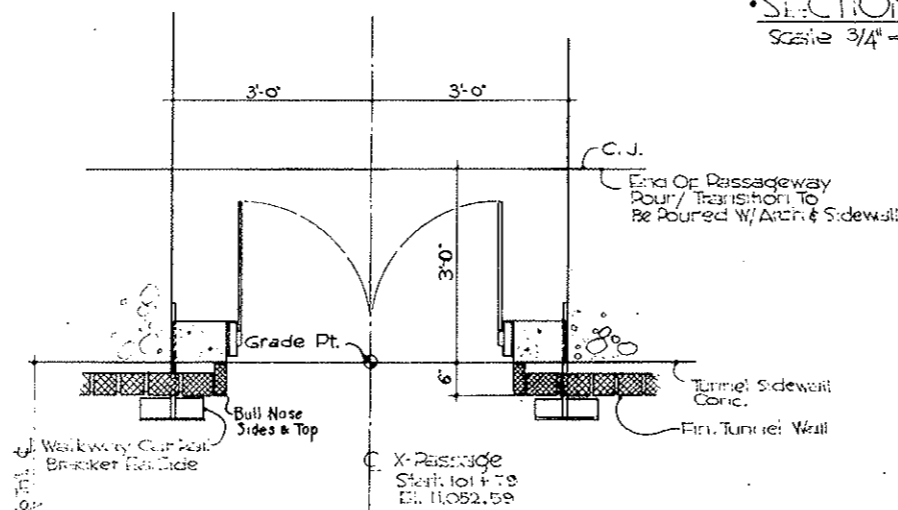
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



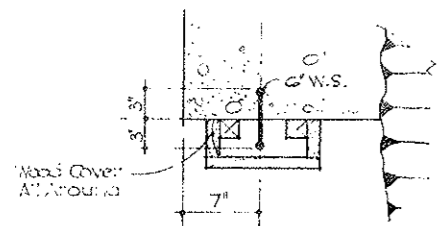
SECTION D-D
 Scale 3/4" = 1'-0"



SECTION E-E
 Scale 3/4" = 1'-0"



DETAIL C PLAN @ X-PASS TRANSITION
 Scale 3/4" = 1'-0"

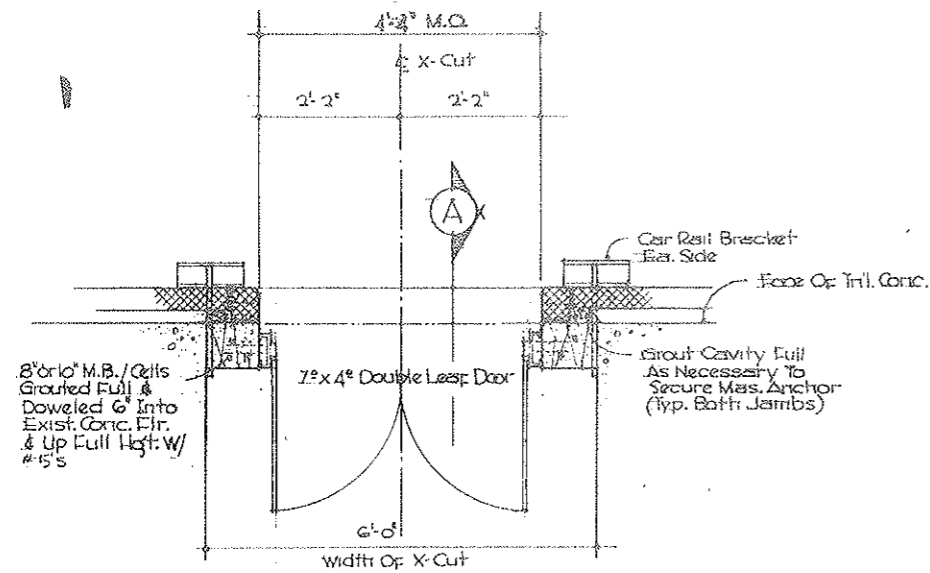


DETAIL B
 Scale 1/2" = 1'-0"

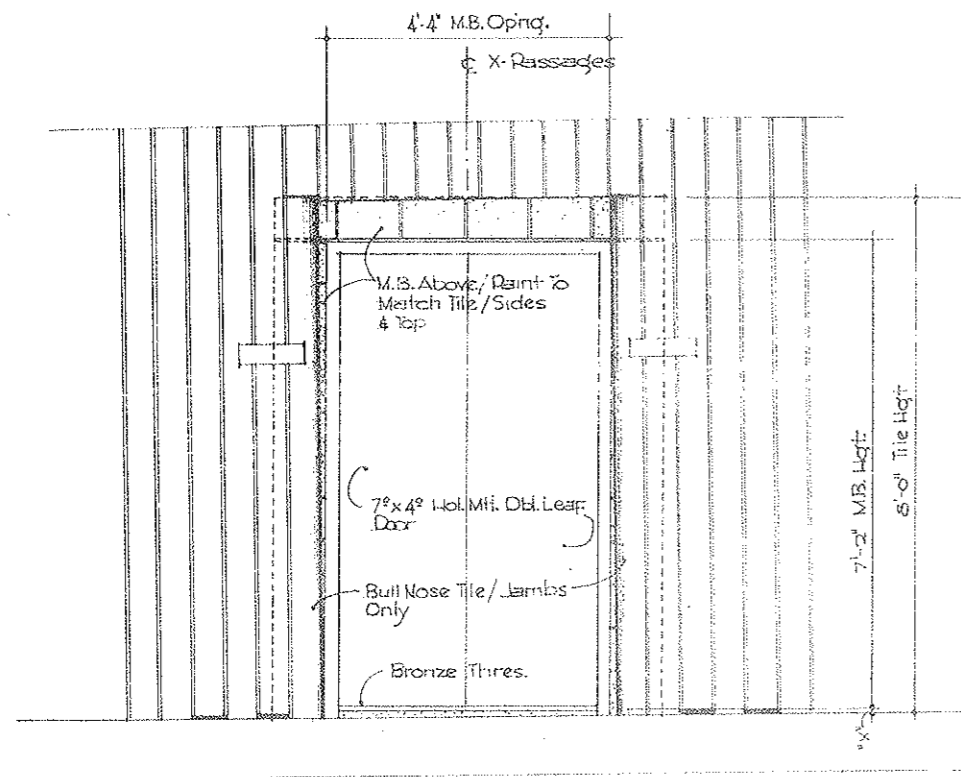
STATE OF COLORADO			
DIVISION OF HIGHWAYS			
SCALE	DESIGNED BY	I.C.C.	
NOTED	REVISED		
CROSS PASSAGEWAY DETAILS			
DATE	APPROVED BY	DATE	DRAWING NUMBER
9/1/73	By	As	C2-244

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1923

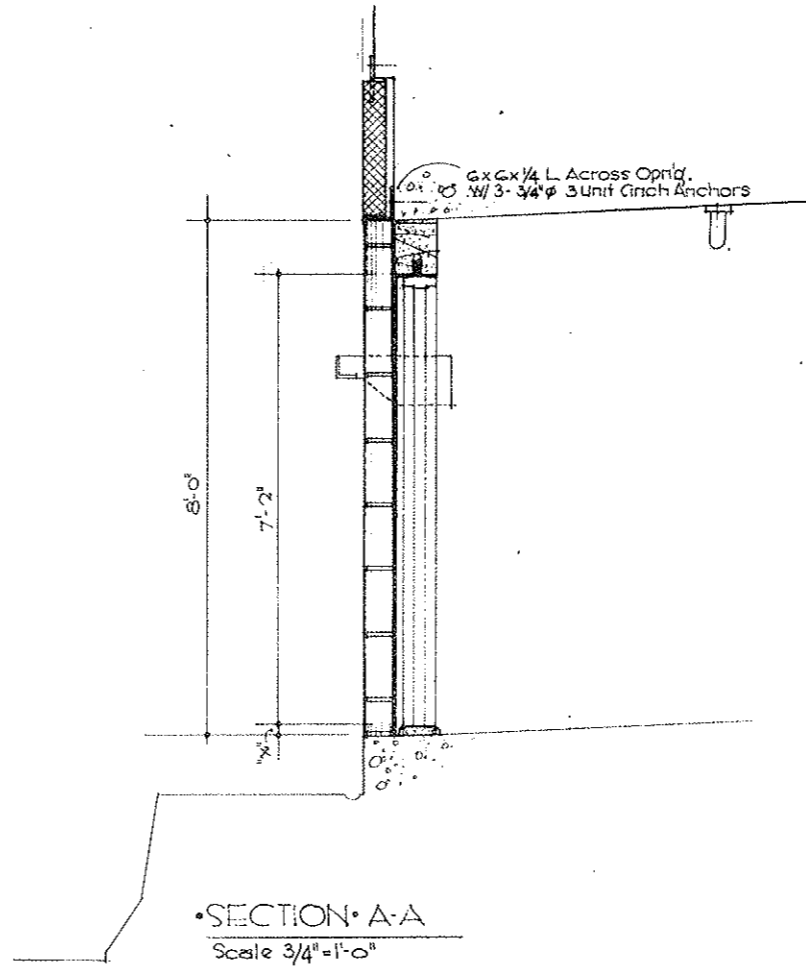
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	62 IX	326



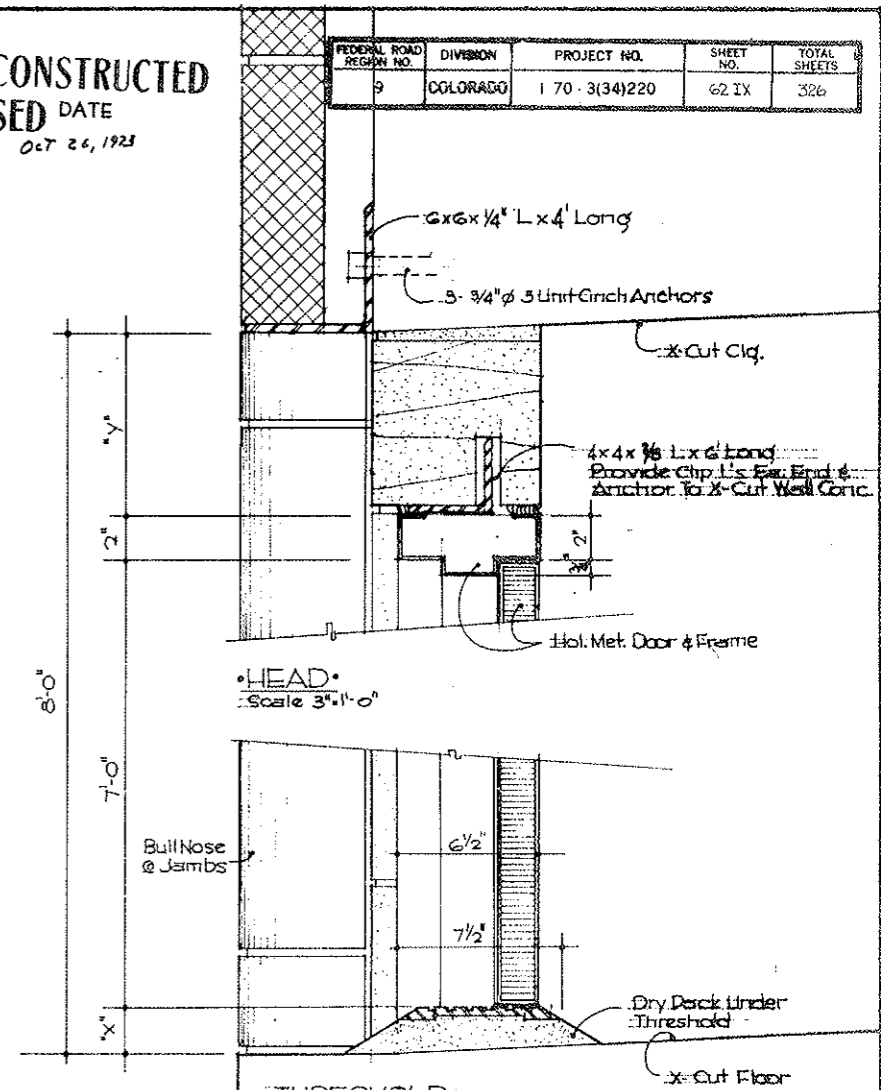
•PLAN•
 Scale 3/4" = 1'-0"



•ELEVATION• LOOKING SOUTH
 Scale 3/4" = 1'-0"



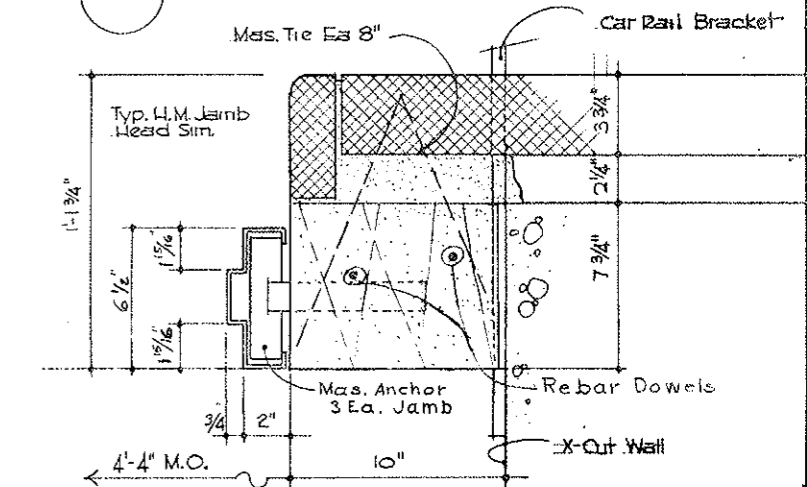
•SECTION A-A•
 Scale 3/4" = 1'-0"



•HEAD•
 Scale 3" = 1'-0"

•THRESHOLD•
 Scale 3" = 1'-0"

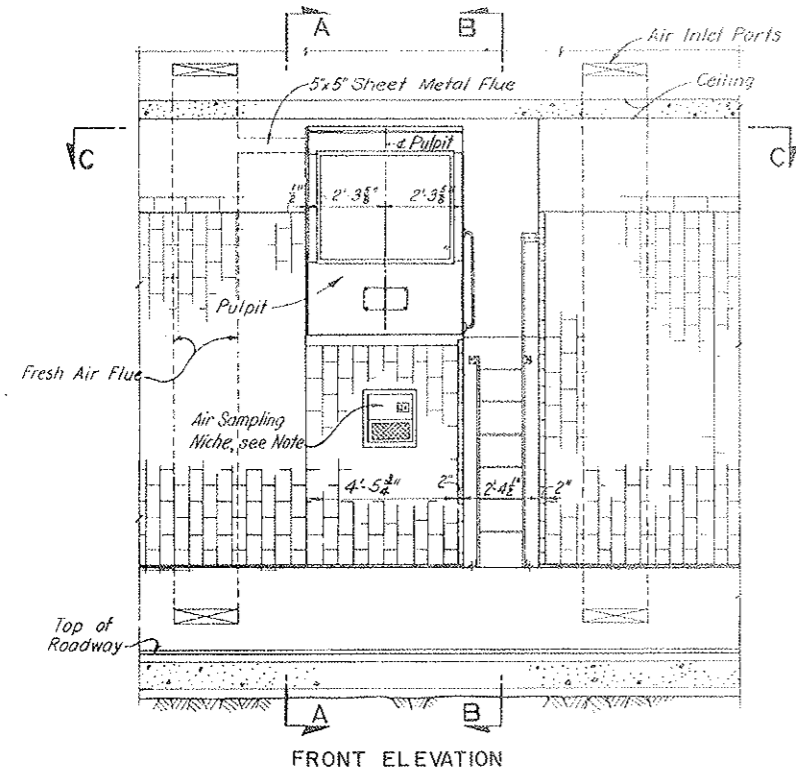
West X-Cut	2"	8"	} Lowest Point
Chr.	1 1/2"	8 1/2"	
East	2"	8"	



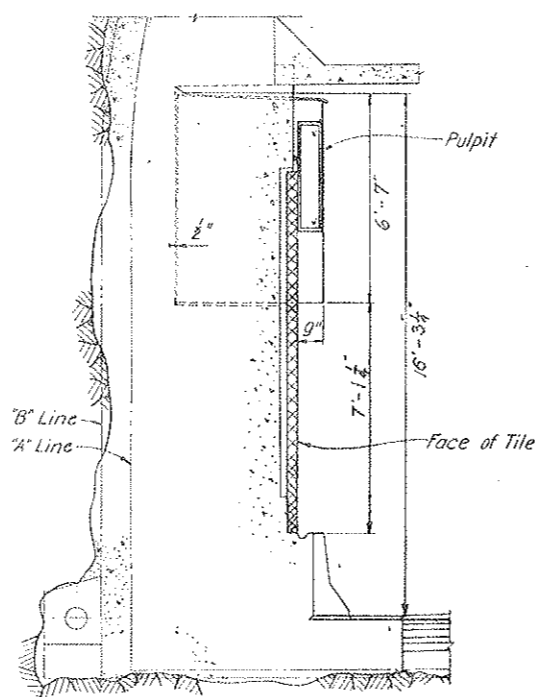
•JAMB•
 Scale 3" = 1'-0"

STATE OF COLORADO	
DIVISION OF HIGHWAYS	
DATE	APPROVED BY
1/26/13	
DATE	APPROVED BY
CROSS PASSAGEWAY DOOR DETAILS	
C2-24 I	

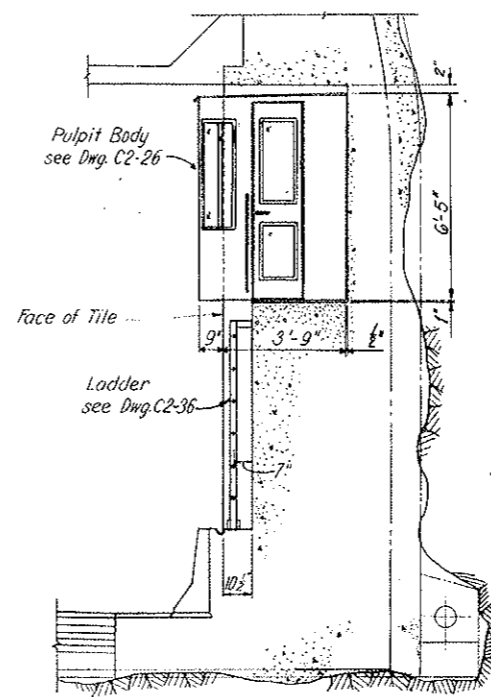
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	63	326



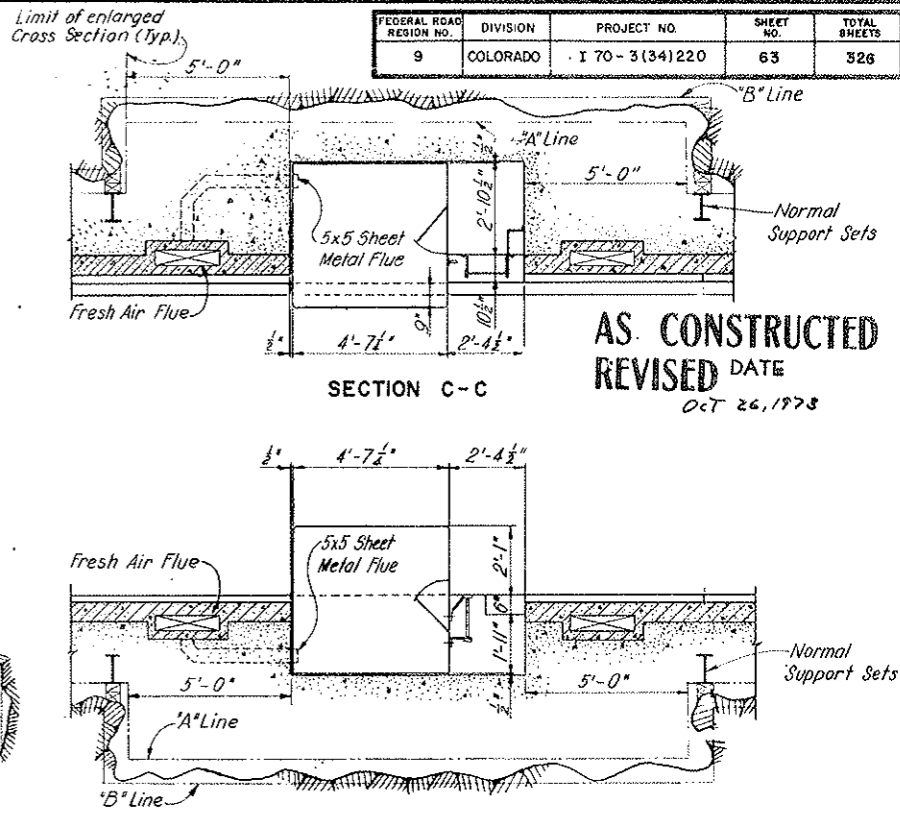
FRONT ELEVATION



SECTION A-A



SECTION B-B

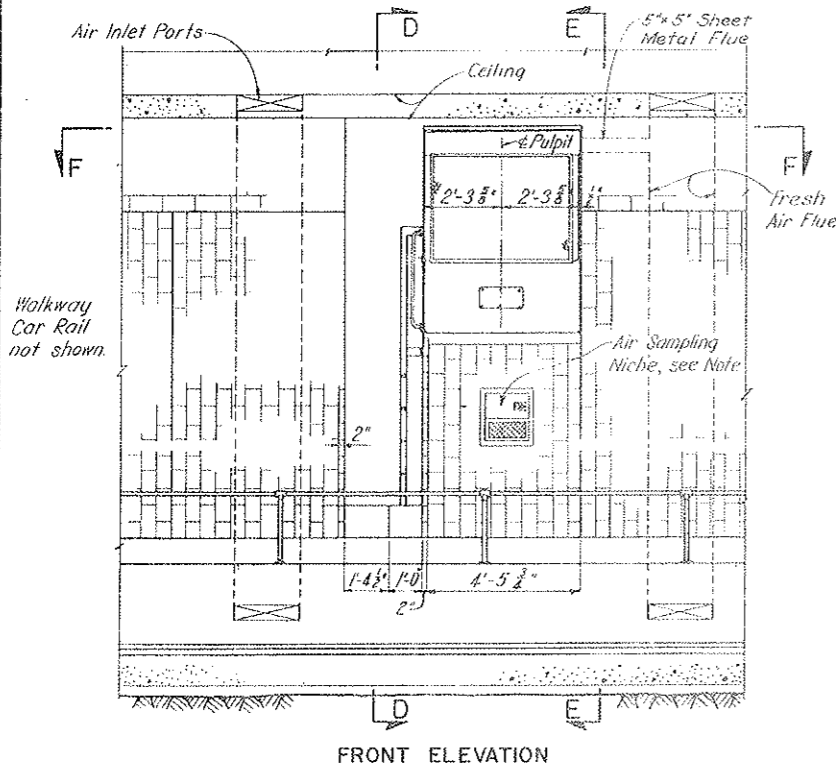


SECTION C-C

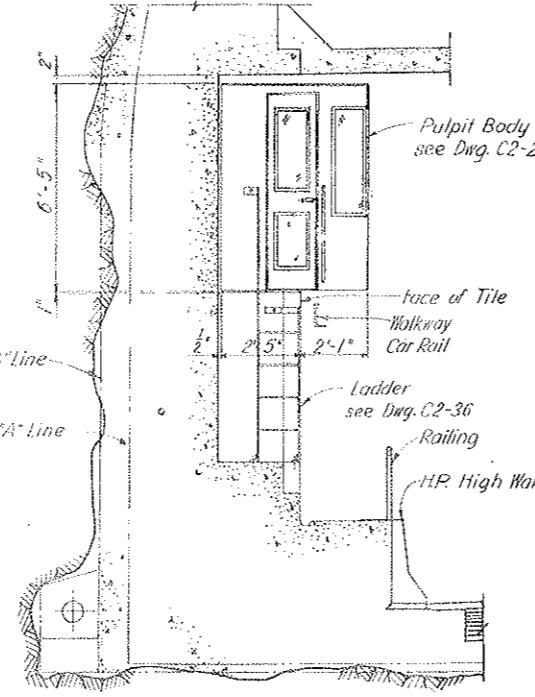
SECTION F-F

AS CONSTRUCTED
REVISED DATE
OCT 26, 1978

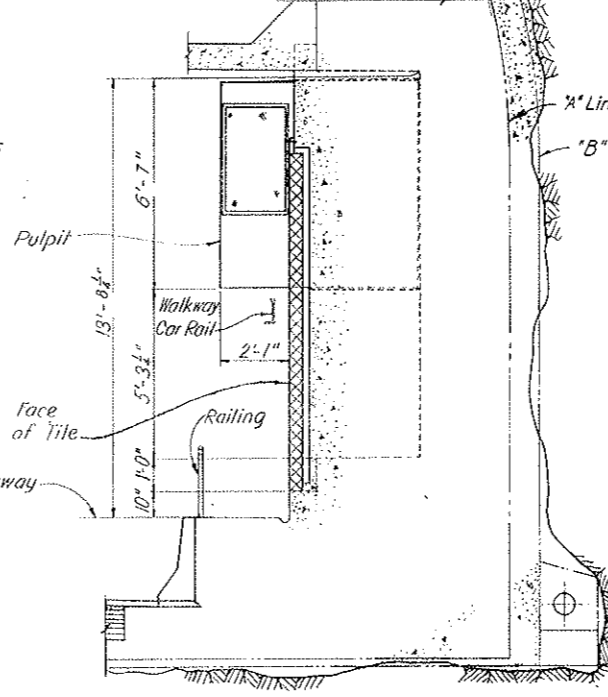
LOW WALKWAY PULPIT (TUNNEL-NORTH WALL)



FRONT ELEVATION



SECTION D-D



SECTION E-E

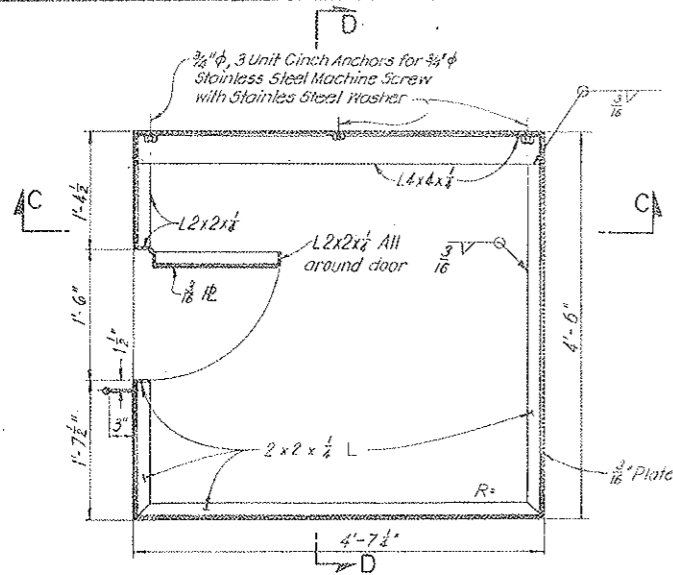
HIGH WALKWAY PULPIT (TUNNEL-SOUTH WALL)

- NOTES:**
- For location of Traffic Control Pulpits and Air Sampling Niches, see Dwg. G2-10 to G2-16 inclusive.
 - For General Tunnel Notes including note on location of Traffic Control Pulpits see Dwg. C2-2.
 - For steel supports details at Traffic Control Pulpit see Dwg. C2-6A - C2-6C.
 - For Traffic Control Pulpit Details see Dwg. C2-26.
 - For concrete block outs at Traffic Control Pulpits, see Dwg. C2-27.
 - For tiling details of Traffic Control Pulpits, see Dwg. C2-30.

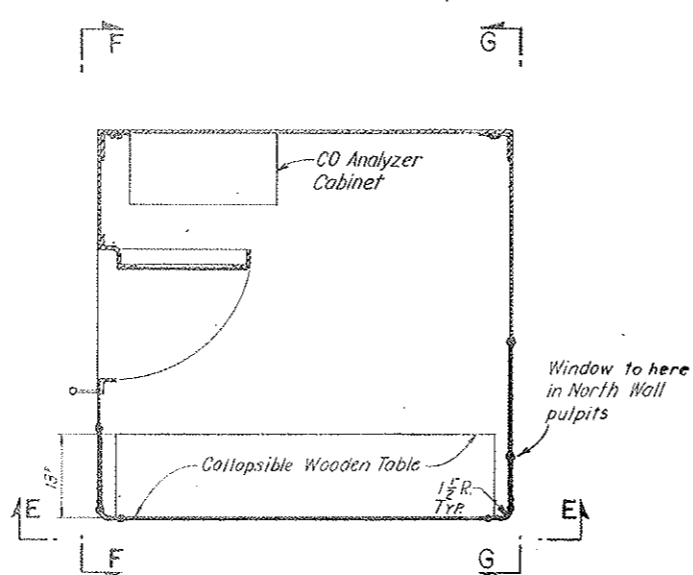
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL TRAFFIC CONTROL PULPITS GENERAL ARRANGEMENT					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H. F. MCC	RECOMMENDED:	Henry J. Kane		
DRAWN:	E. G. P. - BFL	CHECKED:	E. L. B.		
CHECKED:	E. L. B.	APPROVED:	James A. Farrell		
SUBMITTED:	James A. Farrell	DATE:	AUGUST 1967		
NEW YORK, N. Y.	SCALE: 3/8" = 1'-0"	DATE:	AUGUST 1967		
					DRAWING NO. G2-25

AS CONSTRUCTED
REVISED DATE
OCT 26, 1973

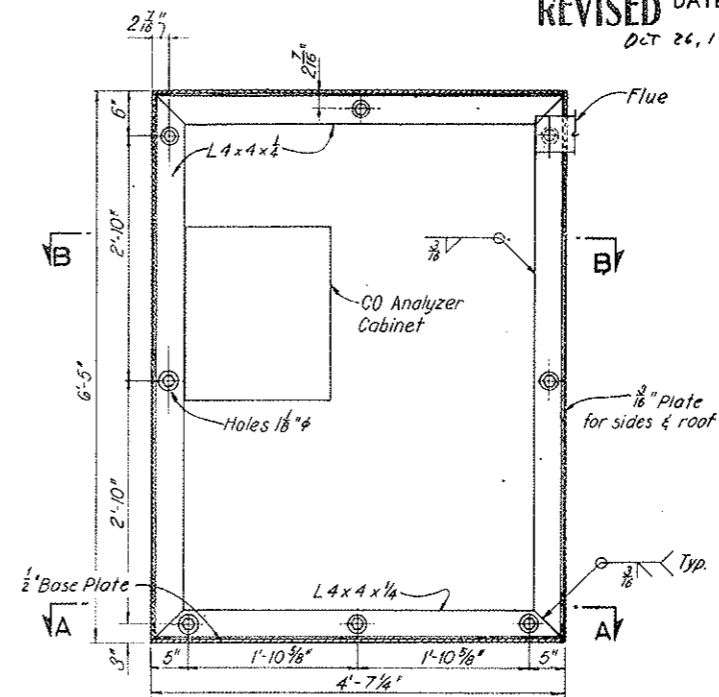
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	64	326



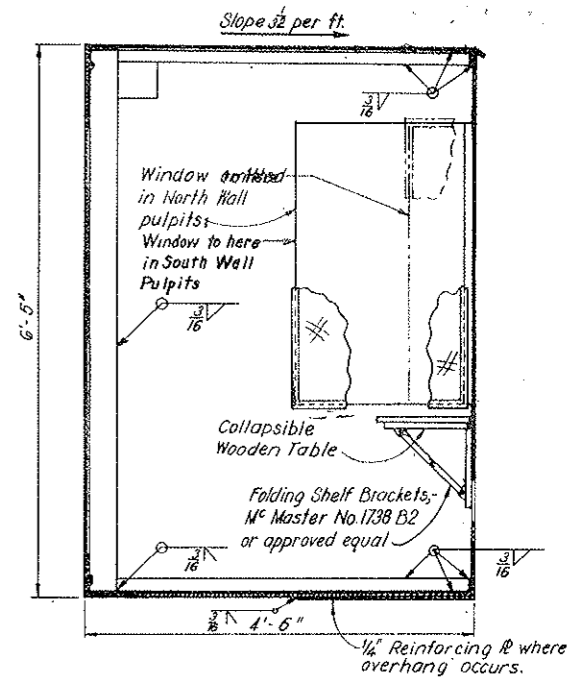
SECTIONAL PLAN A-A



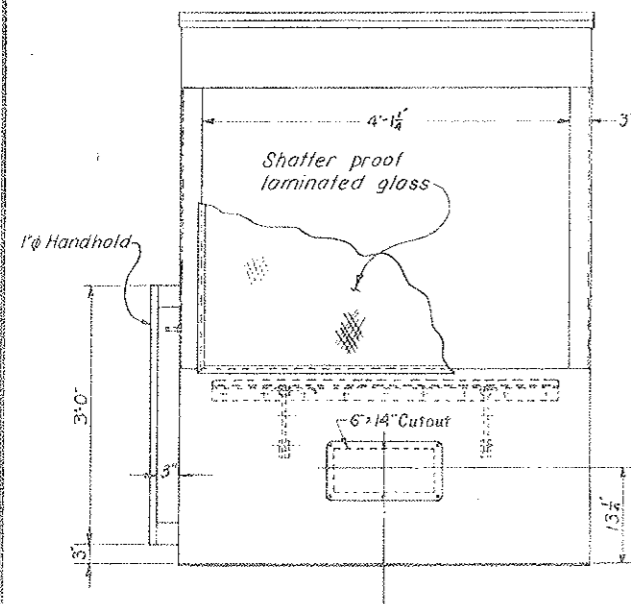
SECTIONAL PLAN B-B



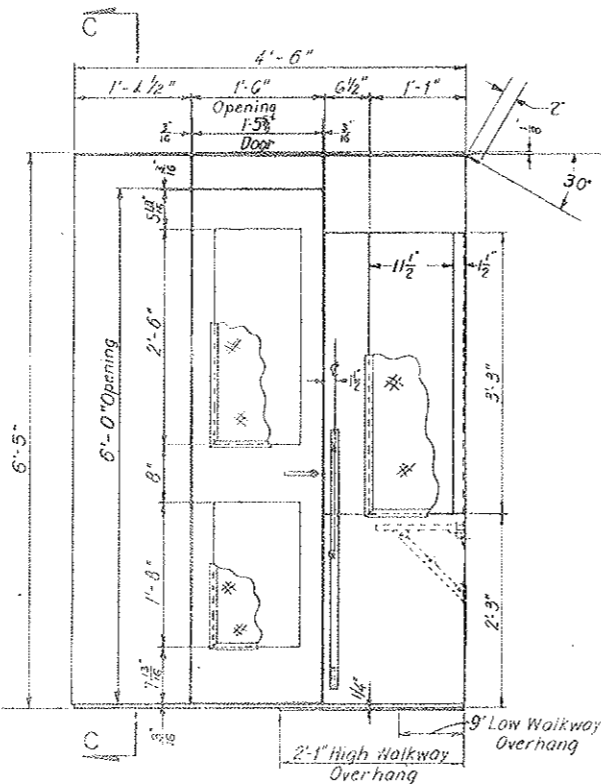
SECTION C-C



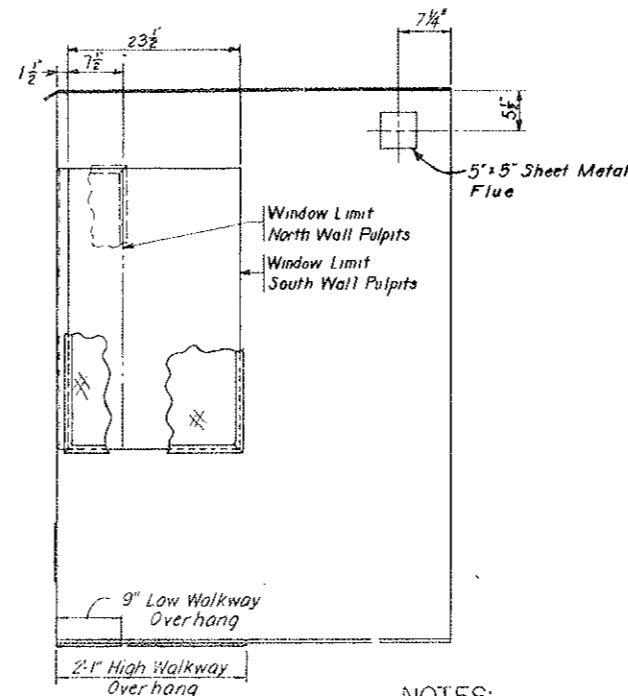
SECTION D-D



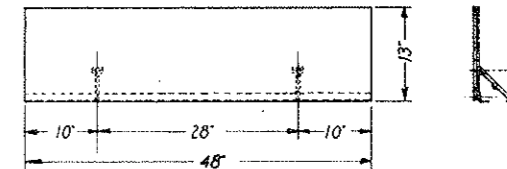
ELEVATION E-E



ELEVATION F-F



ELEVATION G-G



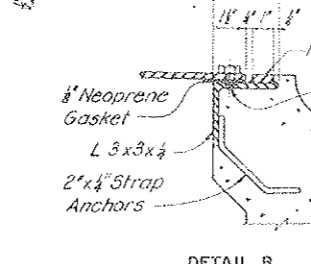
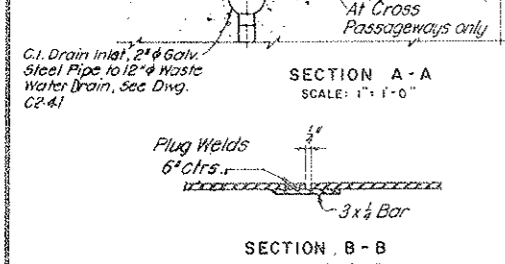
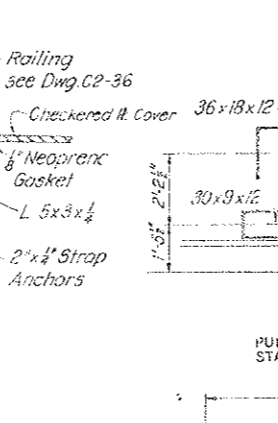
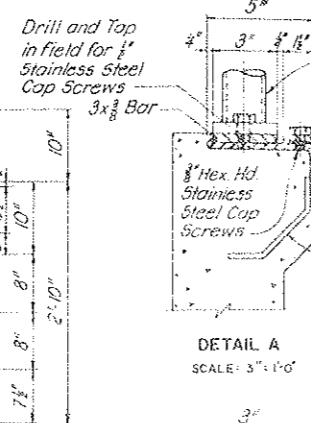
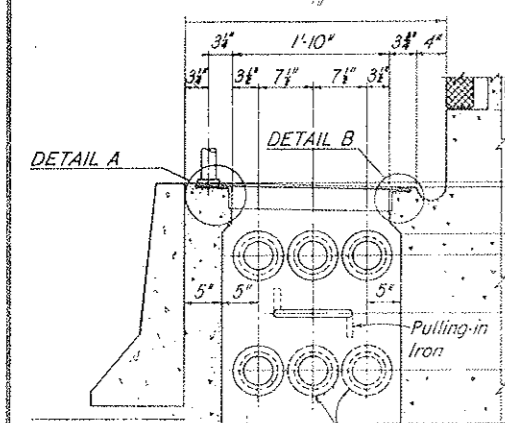
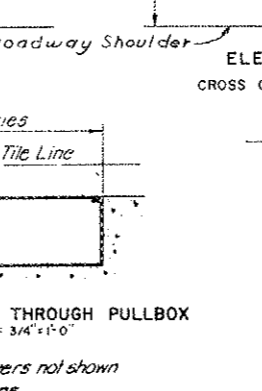
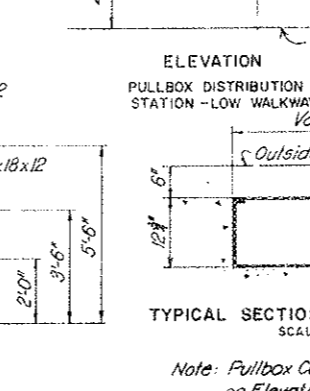
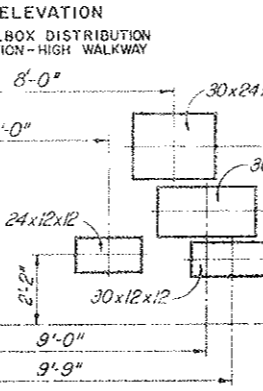
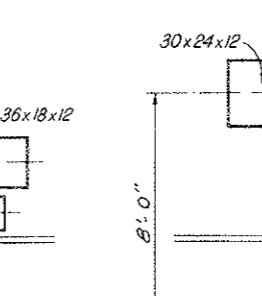
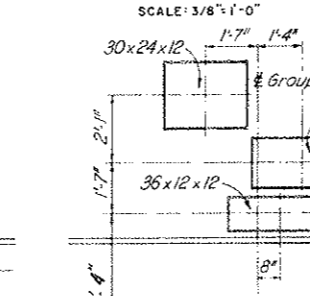
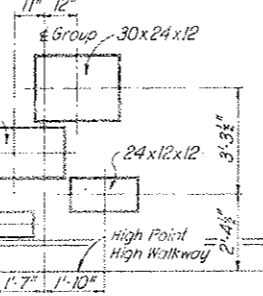
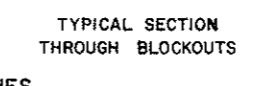
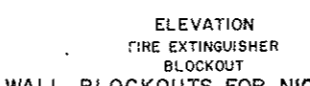
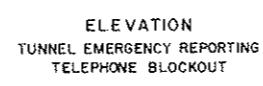
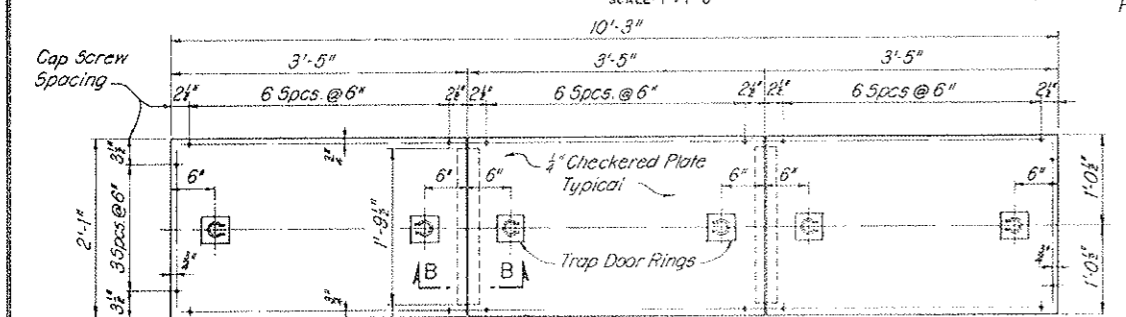
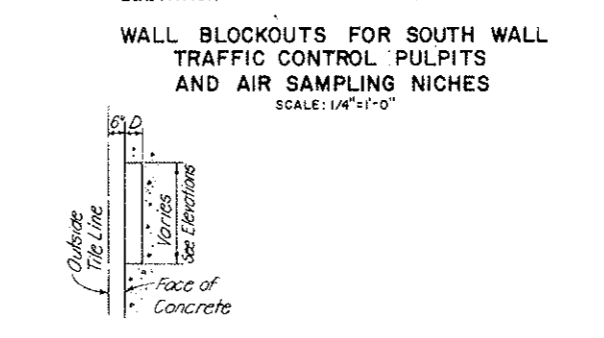
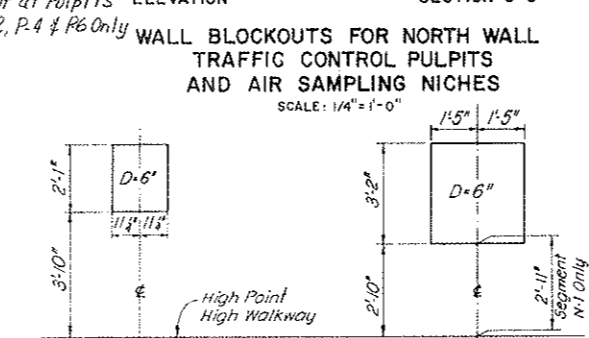
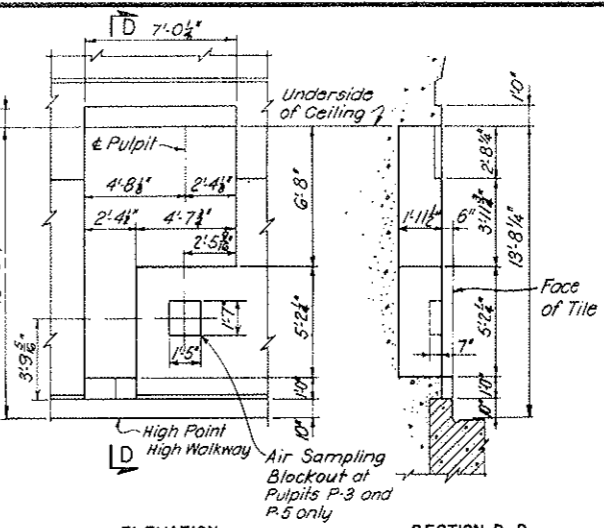
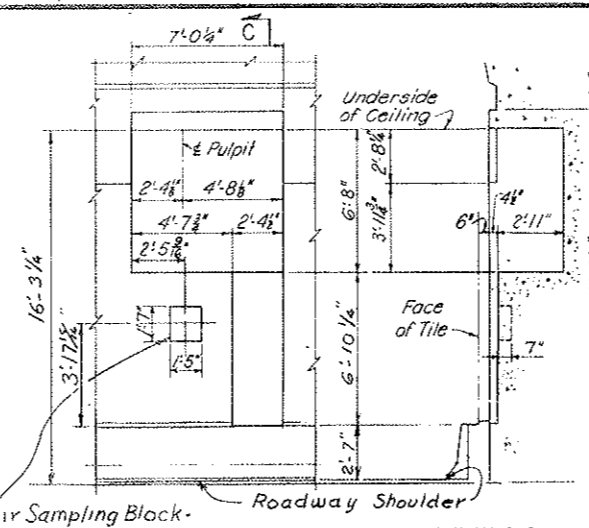
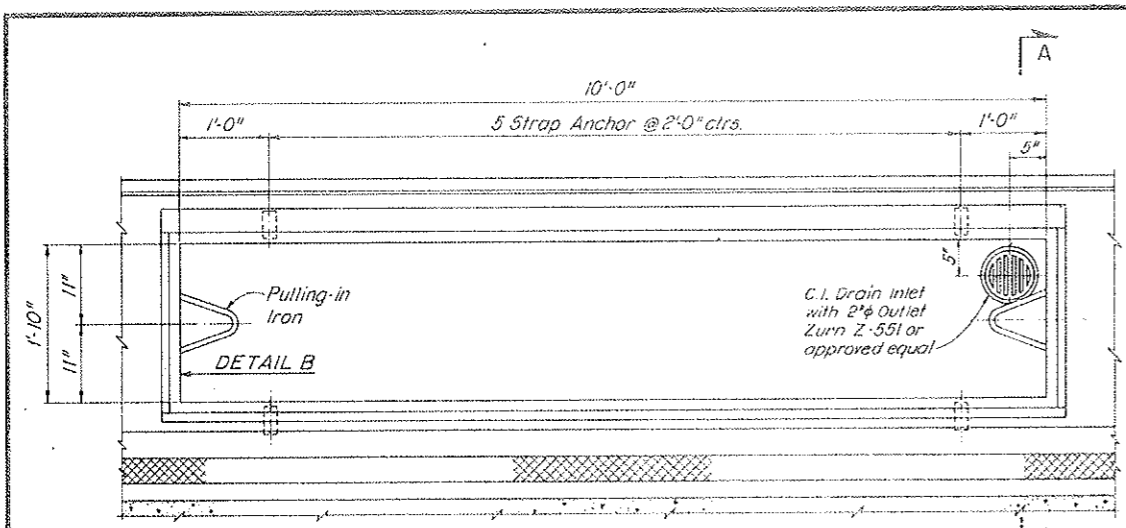
NOTES:

Work this drawing with Dwg. C2-25.
C.O. Analyzer Cabinets in Pulpits P-2, P-3, P-4, P-5 and P-6 only.
South wall pulpit is shown: four (4) pulpits required. North wall pulpits are opposite hand about the tunnel center line and as noted; three (3) pulpits required.
Pulpits shall be Aluminum Alloy 6061-T6, all welded unless otherwise noted.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL TRAFFIC CONTROL PULPITS DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	D. J. S.	RECOMMENDED:	H. D. [Signature]		
DRAWN:	E. G. P.-P.L.F.	CHECKED:	E. L. B.		
SUBMITTED:	[Signature]	APPROVED:	Edward H. [Signature]		
NEW YORK, N. Y.		SCALE:	1" = 1'-0"	DATE:	AUGUST 1967
					DRAWING NO. C2-26

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	65	326

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



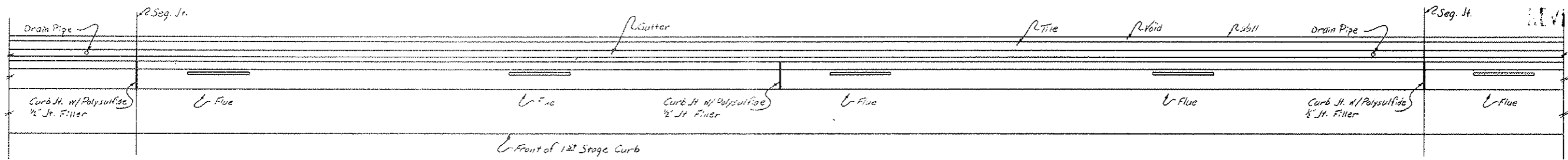
NOTES:
 For number required and Stationing of niches, pullbox distribution stations, cross over pullboxes, traffic control pulpits and manhole distribution stations in tunnel see Dwg. G2-10 to G2-16 inclusive.
 For number required and location of junction boxes in East, Center and West cross passageways see Dwg. E-2.
 Steel reinforcement details not shown.

MANHOLE DISTRIBUTION STATION IN HIGH WALKWAY

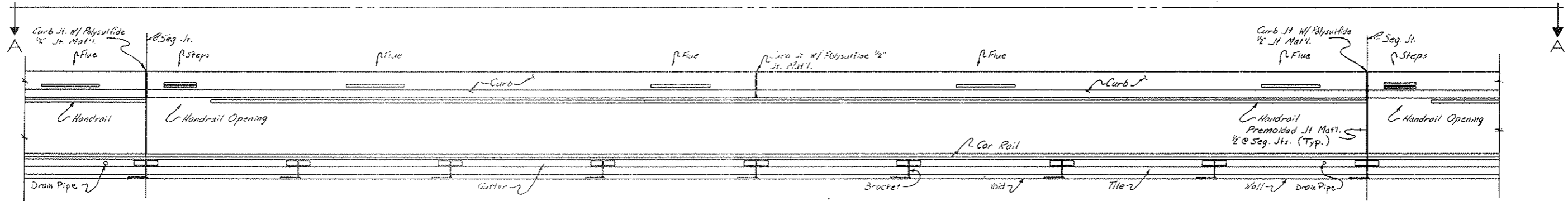
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL MISCELLANEOUS CONCRETE DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H. F. McC.	RECOMMENDED:	H. F. McC.		
DRAWN:	E. L. B.	CHECKED:	H. F. McC.		
SUBMITTED:	H. F. McC.	APPROVED:	H. F. McC.		
SCALE: AS NOTED DATE: AUGUST 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	65	326

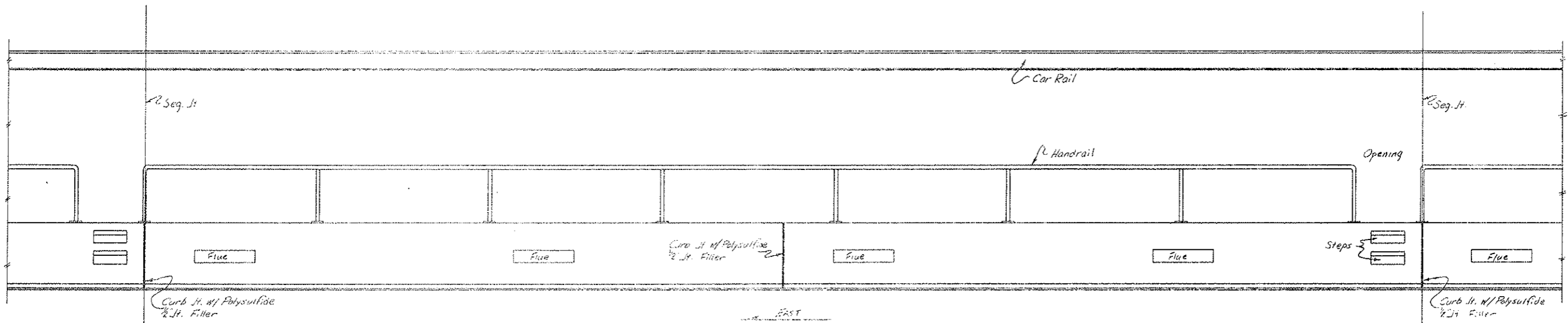
AS CONSTRUCTED
REVISED DATE
OCT 26, 1973



TYPICAL PLAN - NORTH CURB
Scale 1/2" = 1'-0"



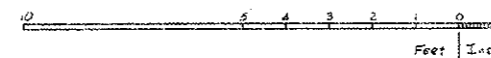
TYPICAL PLAN - SOUTH CURB
Scale 1/2" = 1'-0"



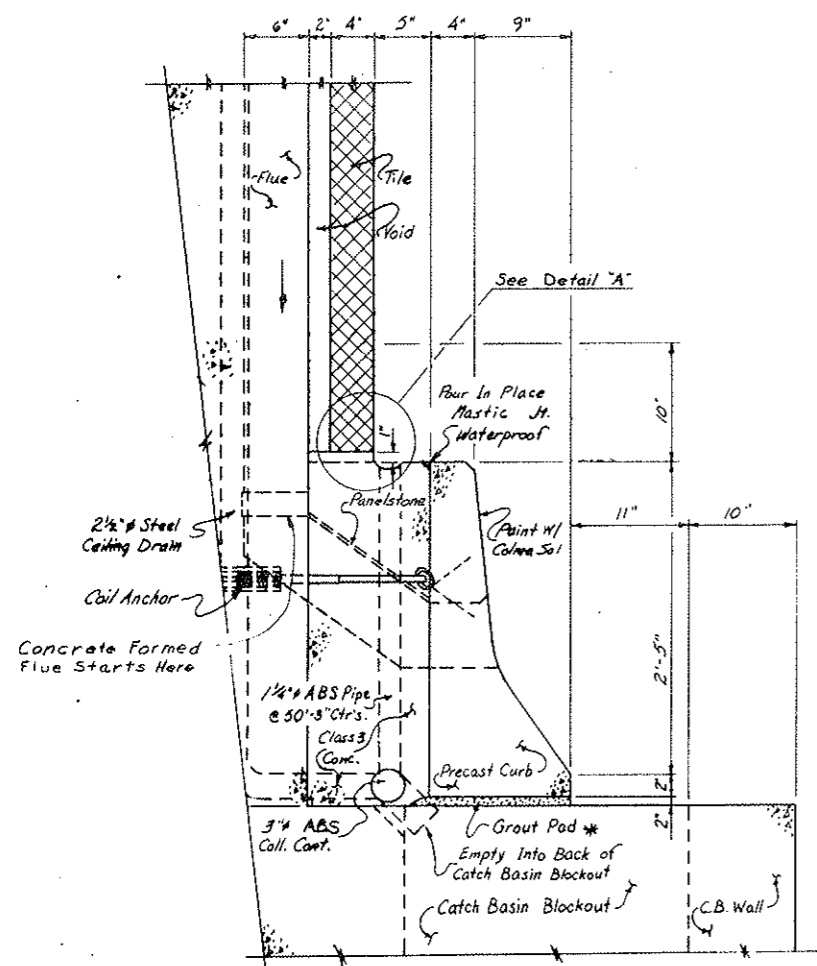
VIEW A-A
TYPICAL ELEVATION - WALKWAY CURB
Scale 1/2" = 1'-0"

NOTE:
Polysulfide Jt. Filler Color Natural Gray.
Each Length of Handrail Should All Be In One Segment.

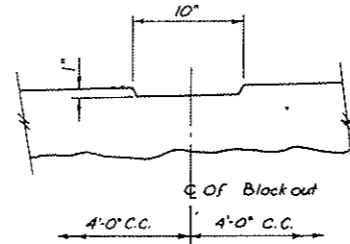
STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE Noted	DRAWN BY R.M. Griffith	REVISIONS
PLAN & ELEVATION OF TYPICAL CURBS			
DATE 11-26-71	APPROVED BY D.O.H. Date 2-3-72	BY D.S.	DRAWING NUMBER As SCC 438 C2-27A



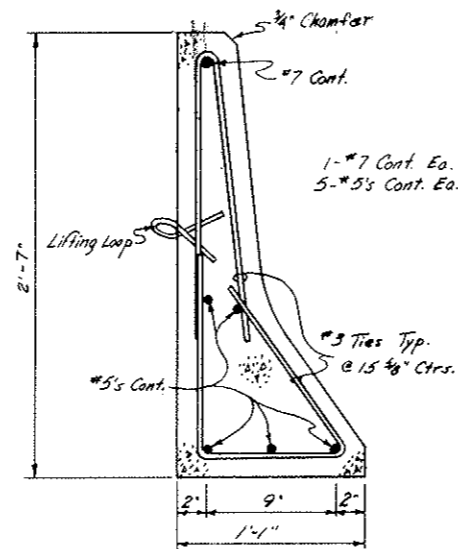
Change Order: 160, W.O. 03291



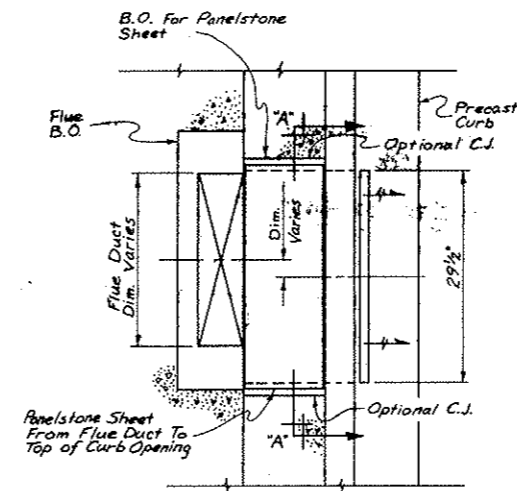
SECTION NORTH CURB (Looking East)
Scale 1/2" = 1'-0"



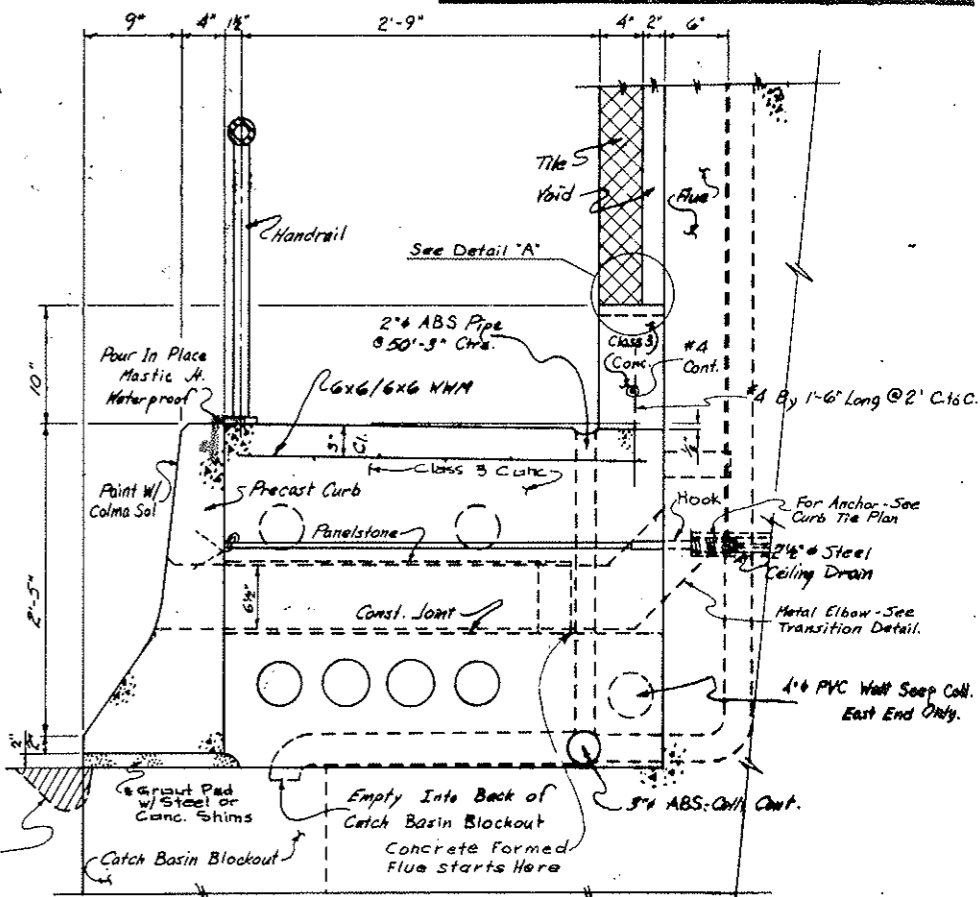
DETAIL - A
Scale 1 1/2" = 1'-0"



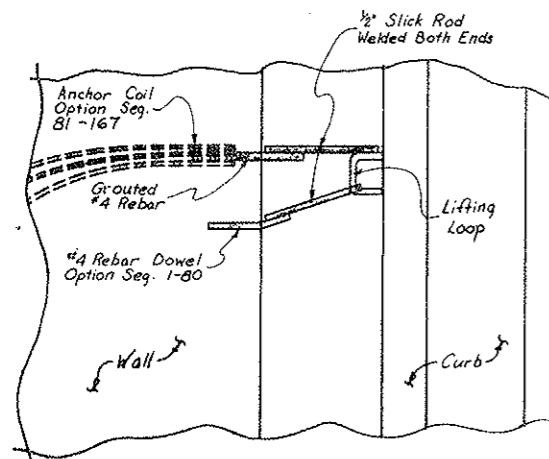
CURB SECTION
SHOWING REBAR
Scale 2" = 1'-0"
Rebar for Precaster's Handling.



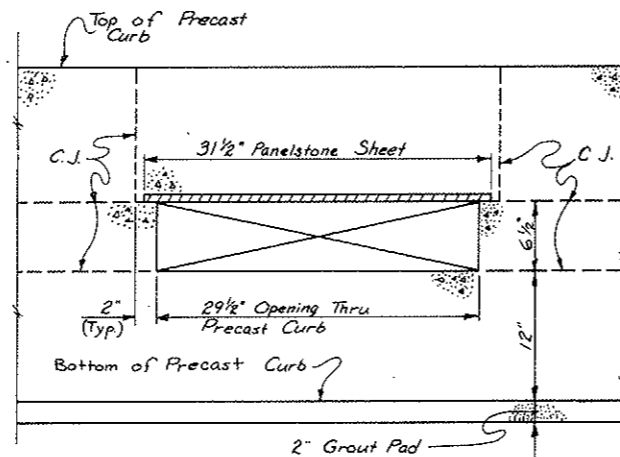
TRANSITION DETAIL
AT NORTH WALL
Scale 1" = 1'-0"



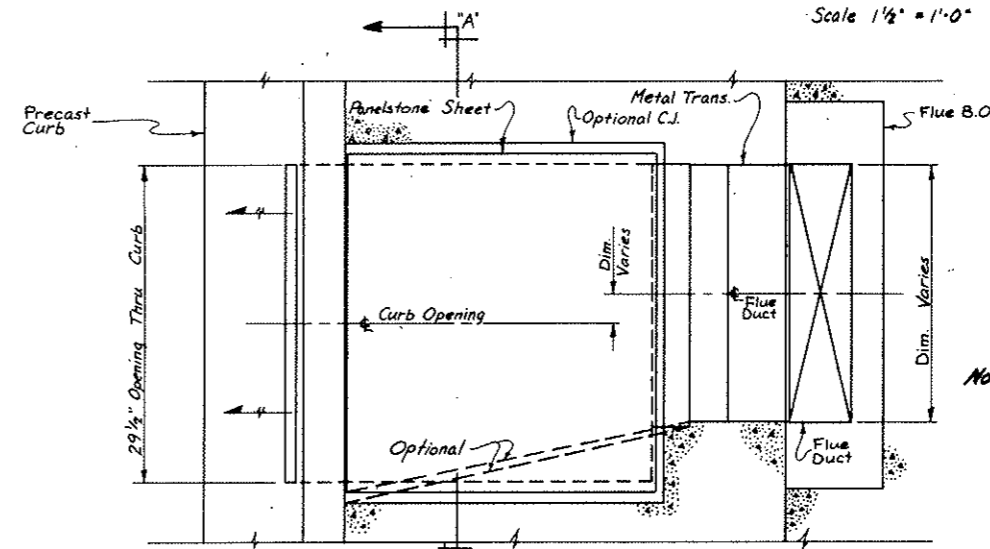
SECTION SOUTH CURB (Looking East)
HIGH WALKWAY
Scale 1/2" = 1'-0"



PLAN - CURB TIES
Scale 1 1/2" = 1'-0"



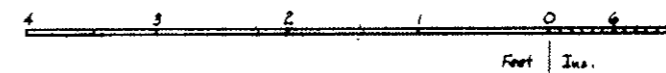
SECTION 'A'-A
Scale 1 1/2" = 1'-0"



TRANSITION DETAIL
AT SOUTH WALL
Scale 1 1/2" = 1'-0"

NOTE:

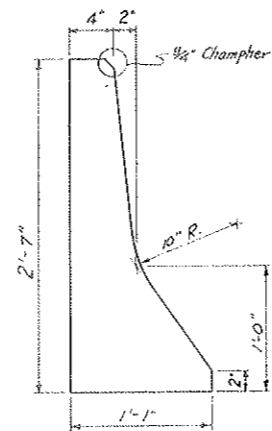
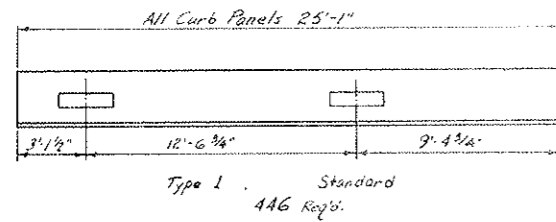
Color Sol Color Aspen Green.
Rebar/Joint Color Natural Gray.
If Optional Cond. Jt. In Curb Is Used 1/4" LIFT TO BE 2800 psi High Strength Conc. Mix.
Color Sol To Be Applied 650 sq. ft. per Gal. 1/2" Cond. @ 3500 Sq Ft. per Gal. 1/2" Cond.
Left In Place Form to be GAF Panelstone or equivalent.
Flues to be Formed Concrete From Lower Elbow R. side & from vertical Flue L. side



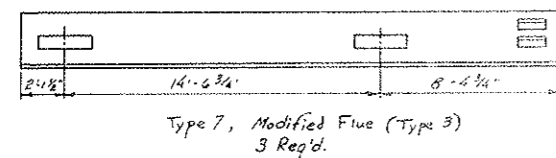
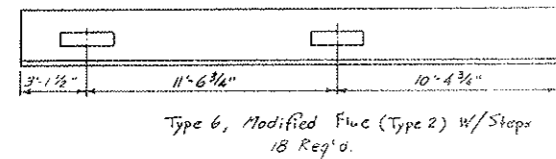
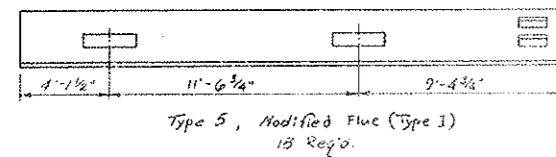
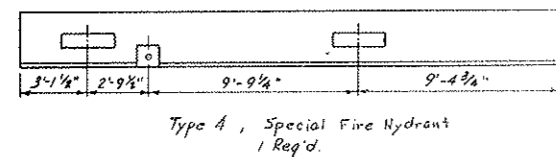
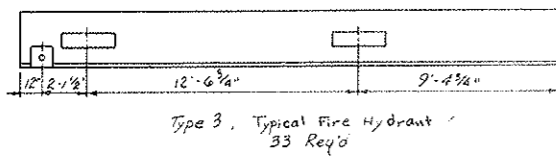
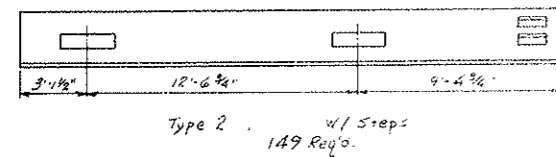
BUREAU OF COLORADO HIGHWAY MATERIALS			
Prepared By	Checked	Reviewed	Approved
Shirley C. Cook			
CURB DETAILS			
Drawn	Checked	Reviewed	Approved
H-26-W	D.C.	J.S.	C2-27B

PROJECT NO.	DATE	PROJECT NO.	SHEET	TOTAL SHEETS
9	02/17/70	170 3/31/220	65 CX	226

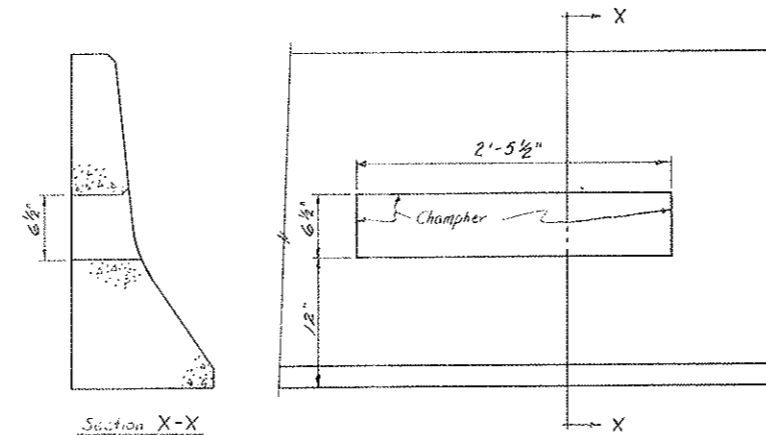
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



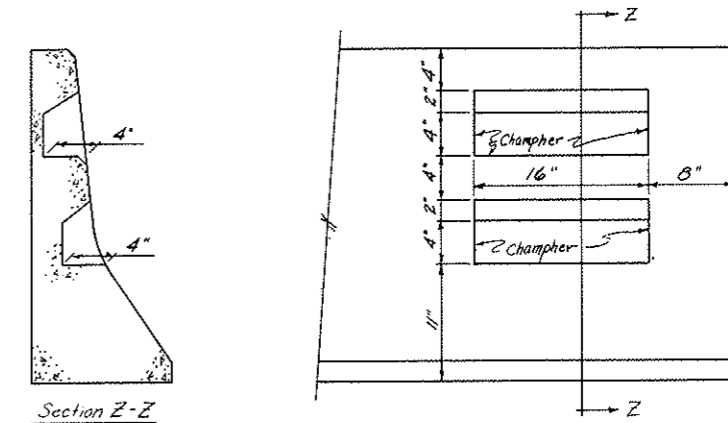
Typical End View
 Scale 1/2" = 1'-0"



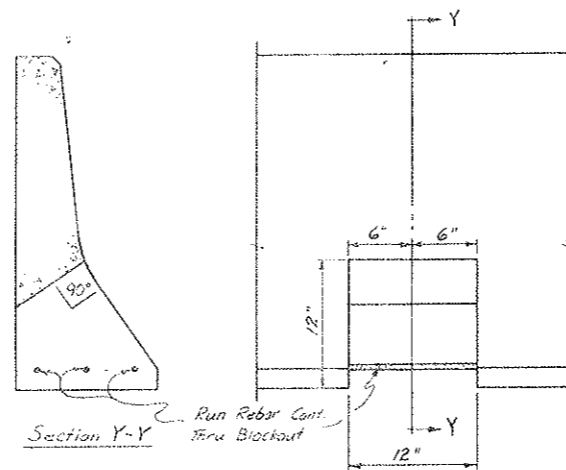
Scale 1/2" = 1'-0"



Flue Blockout
 Scale 1/2" = 1'-0"



Typical Step Blockout
 Scale 1/2" = 1'-0"



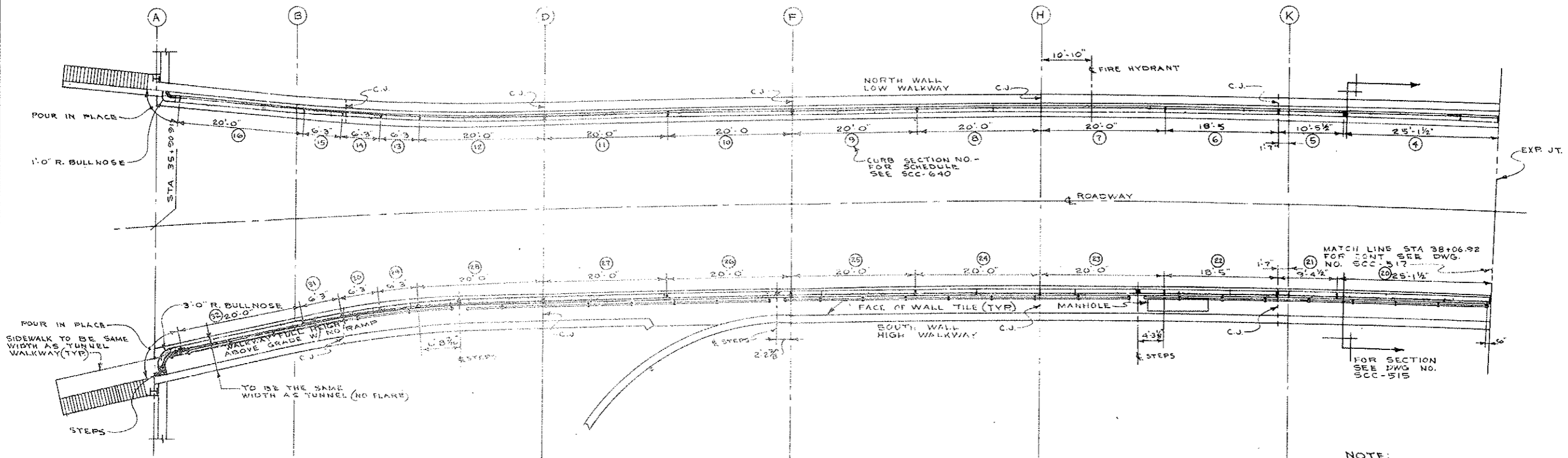
Fire Hydrant Blockout
 Scale 1/2" = 1'-0"

NOTE: 1/2" Chamfer Typical On All Blockout Corners of 90° or less.

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE Noted	DRAWN BY R.M. Griffith	
CAST CURB PANELS			
DATE 11-8-71	APPROVED BY DOH, Date 2-16-72 By D.S., As SCC 419	DRAWING NUMBER C2-27C	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	65 DX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



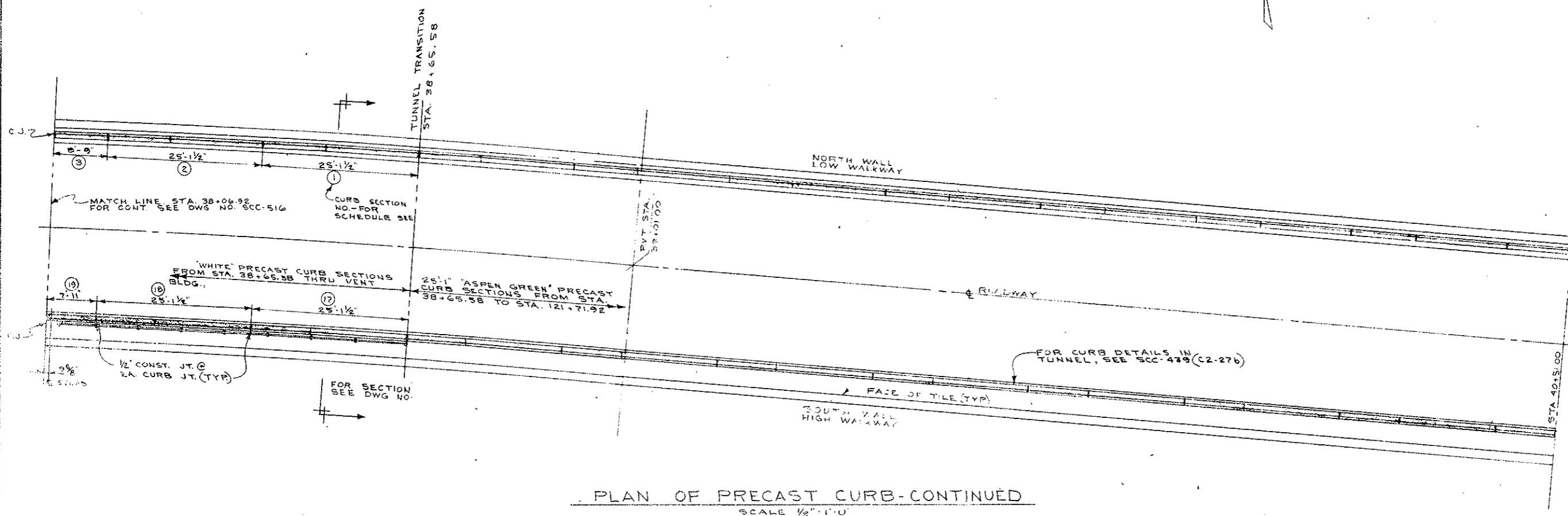
PLAN OF PRECAST CURB
 THRU WEST VENT BUILDING
 SCALE: 1/8" = 1'-0"

- NOTE:
1. PRECAST CURB SECTIONS PAINTED 'WHITE' THRU BUILDING
 2. FOR CURB DETAILS SEE C2-27F

STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
PREPARED BY: STRAHL	SCALE	DRAWN BY: WML	NOTED
CREEK CONSTRUCTORS	NOTED	REVISED	
PLAN OF PRECAST CURBS THRU WEST VENT BLDG.			
DATE: 6-20-72	APPROVED BY:	DRAWING NUMBER: C2-27D	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 3(34)220	65 EX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973

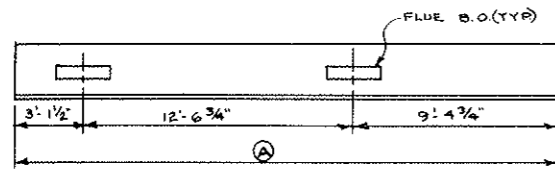


NOTES:
 1. FOR CURB DETAILS SEE C2-27F

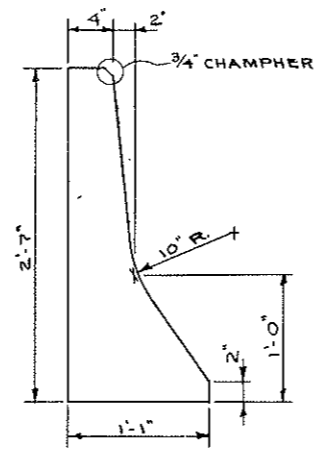
STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
PREPARED BY: STRAIGHT GREEK CONSTRUCTORS	SCALE NOTED	DRAWN BY W. GIFFIN	REVIEWED
PLAN OF PRECAST CURBS THRU WEST VENT BLDG.			
DATE 6-28-72	APPROVED BY	DRAWING NUMBER C2-27E	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	65 FX	326

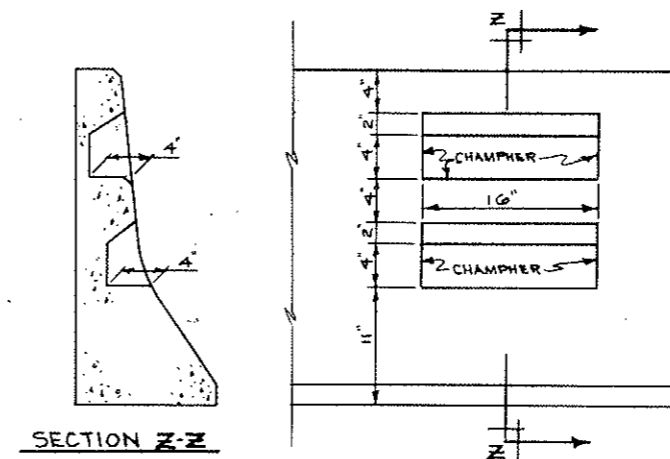
AS CONSTRUCTED
REVISED DATE
 OCT 26, 1978



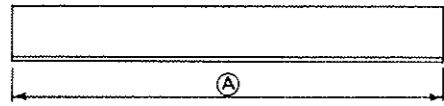
TYPE I, 2 REQ'D
 SCALE: 1/4" = 1'-0"



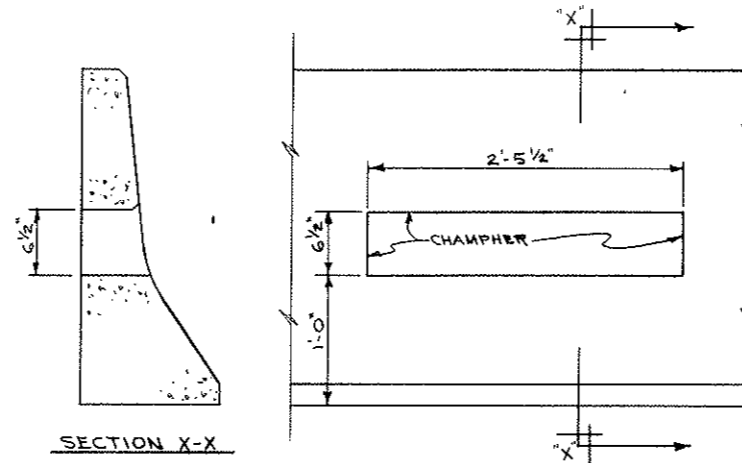
TYPICAL END VIEW
 SCALE: 1/2" = 1'-0"



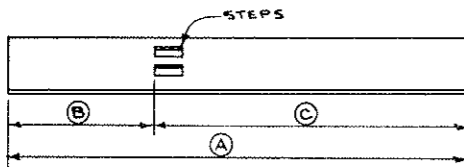
STEP BLOCKOUT DETAIL
 SCALE: 1/2" = 1'-0"



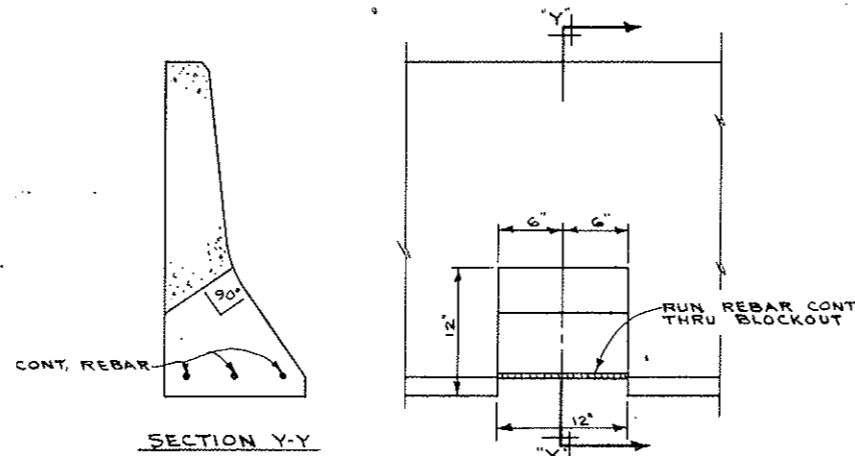
TYPE II, 25 REQ'D
 NO SCALE



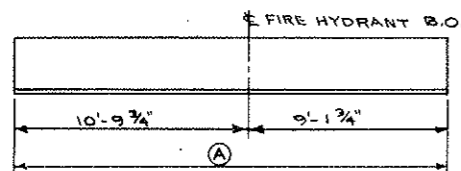
FLUE BLOCKOUT DETAIL
 SCALE: 1/2" = 1'-0"



TYPE III, 4 REQ'D
 NO SCALE



FIRE HYDRANT B.O. DETAIL
 SCALE: 1/2" = 1'-0"



TYPE IV, 1 REQ'D
 SCALE: 1/4" = 1'-0"

SECT. NO.	CURB TYPE	DIMENSIONS			REMARKS
		A	B	C	
1	I	25'-1"			SECTION W/FLUES
2	I	25'-1"			SECTION W/FLUES
3	II	8'-8 1/2"			PLAIN SECTION
4	II	25'-1"			PLAIN SECTION
5	II	10'-5"			PLAIN SECTION
6	II	18'-4 1/2"			PLAIN SECTION
7	IV	19'-11 1/2"			SECTION W/F.H. B.O.
8	II	19'-11 1/2"			PLAIN SECTION
9	II	19'-11 1/2"			PLAIN SECTION
10	II	19'-11 1/2"			PLAIN SECTION
11	II	19'-11 1/2"			PLAIN SECTION
12	II	19'-11 1/2"			PLAIN SECTION
13	II	6'-2 1/2"			PLAIN SECTION
14	II	6'-2 1/2"			PLAIN SECTION
15	II	6'-2 1/2"			PLAIN SECTION
16	II	19'-11 1/2"			PLAIN SECTION
17	II	25'-1"			PLAIN SECTION
18	II	25'-1"			PLAIN SECTION
19	III	7'-10 1/2"			PLAIN SECTION
20	II	25'-1"			PLAIN SECTION
21	II	9'-4"			PLAIN SECTION
22	II	18'-4 1/2"			PLAIN SECTION
23	III	19'-11 1/2"	4'-2 3/8"	15'-8 5/8"	SECTION W/STEPS
24	II	19'-11 1/2"			PLAIN SECTION
25	II	19'-11 1/2"			PLAIN SECTION
26	III	19'-11 1/2"	2'-2 5/8"	17'-8 3/8"	SECTION W/STEPS
27	II	19'-11 1/2"			PLAIN SECTION
28	III	19'-11 1/2"	13'-3 3/8"	6'-8 3/8"	SECTION W/STEPS
29	II	6'-2 1/2"			PLAIN SECTION
30	II	6'-2 1/2"			PLAIN SECTION
31	II	6'-2 1/2"			PLAIN SECTION
32	II	19'-11 1/2"			PLAIN SECTION

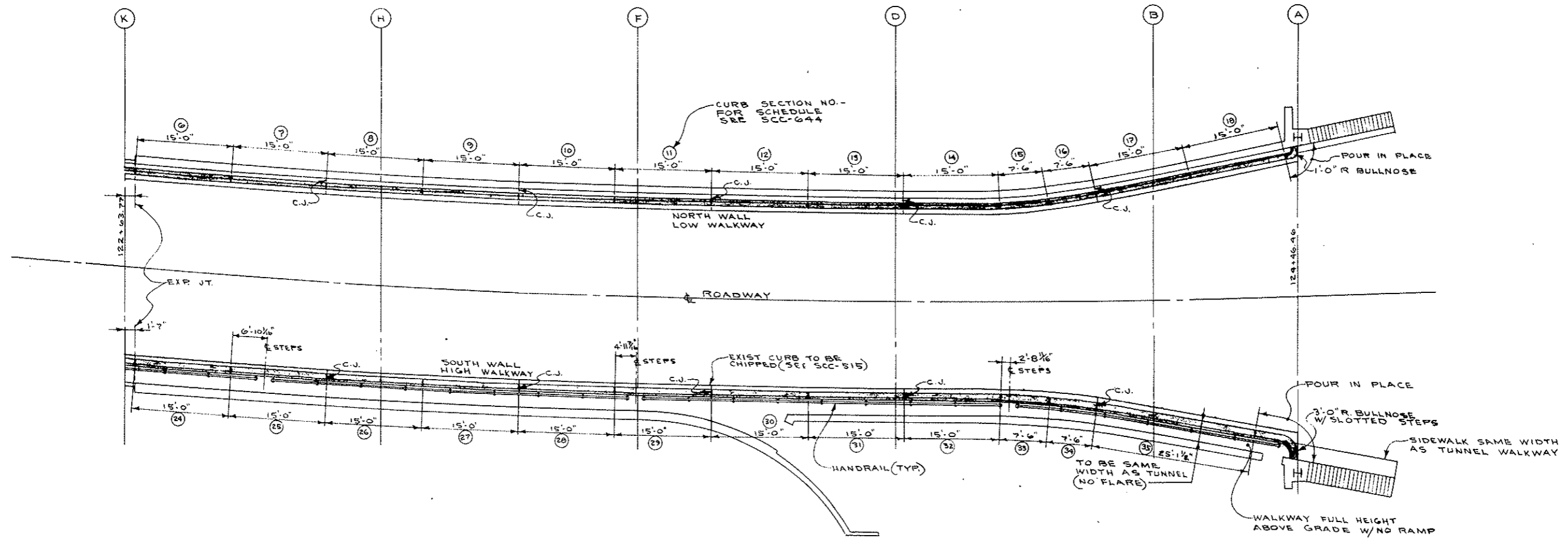
NOTES:

- FOR CURB LAYOUT SEE C2-27D AND C2-27E
- ALL CURBS AND BLOCKOUTS TO BE PAINTED WITH WHITE COLMA-SOL.
- FOR DETAILS OF FLUE BLOCK-OUTS AND CURB TIE-BACKS SEE C2-27B

STATE OF COLORADO			
DIVISION OF HIGHWAYS			
PREPARED BY: STRAIGHT CREEK CONSTRUCTORS	SCALE: AS NOTED	DESIGNED BY: GIFFIN	NOTED BY:
DETAILS OF PRECAST CURBS THRU WEST VENT. BLDG.			
DATE: 7-21-72	APPROVED BY:	DRAWING NUMBER: C2-27F	SCALE: 1/4" = 1'-0"

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	65 GX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



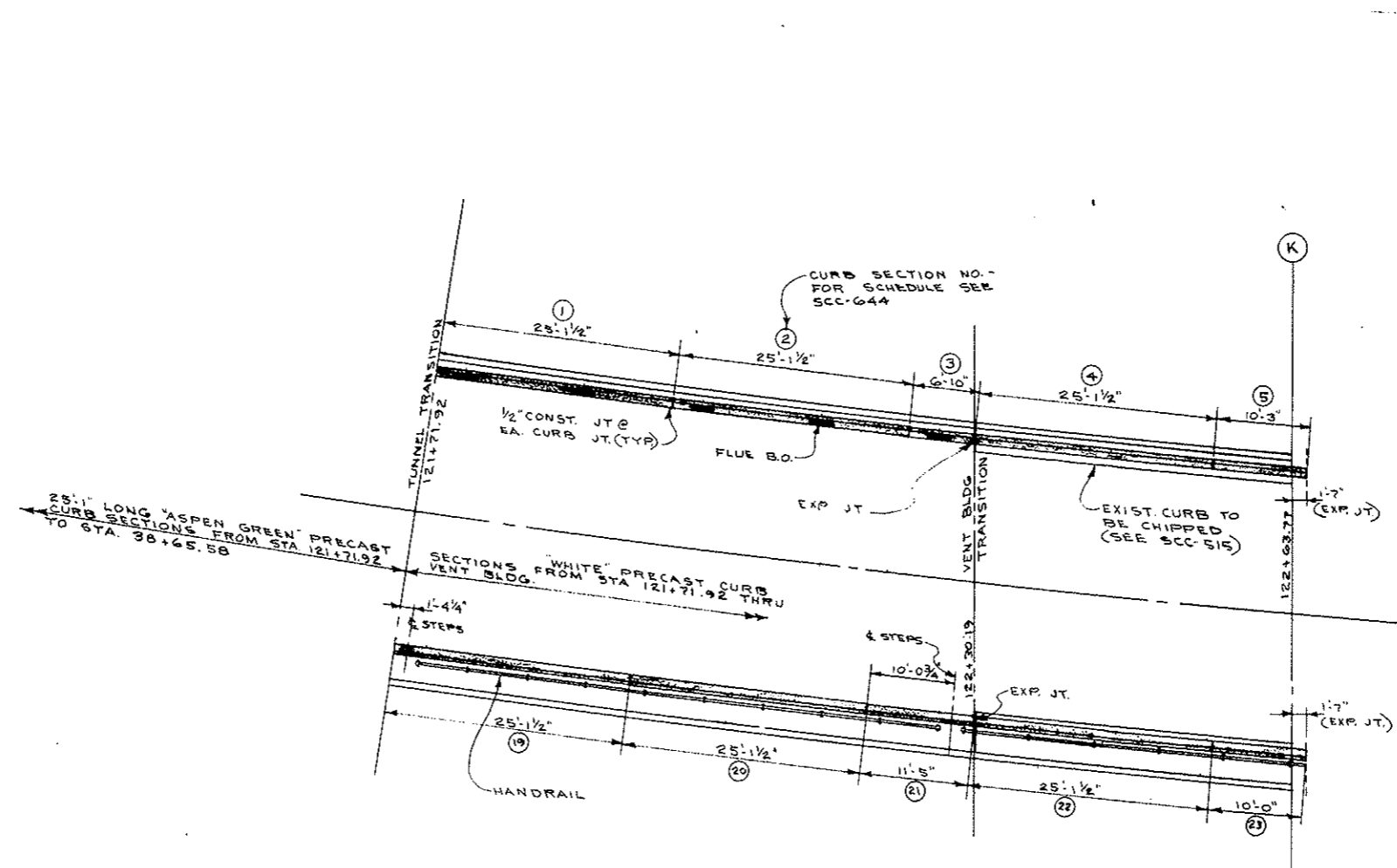
PLAN OF PRECAST CURB
 THRU EAST VENT BUILDING
 SCALE: 1/8" = 1'-0"

- NOTES:
- HANDRAIL LAYOUT IS NOT DRAWN TO SCALE.
 - FOR CURB DETAILS SEE C2-271

STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
PREPARED BY: STRAIGHT CREEK CONSTRUCTORS	SCALE: NOTED	DESIGNED BY: W.M. GIBLIN	REVISED:
PLAN OF PRECAST CURBS THRU EAST VENT BLDG.			
DATE: 6-23-72	APPROVED BY:	SCC-625	DRAWING NUMBER: C2-27G

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	65HX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

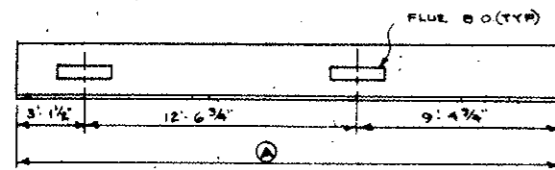


PLAN OF PRECAST CURB
THRU EAST TRANSITION
 SCALE: 1/8" = 1'-0"

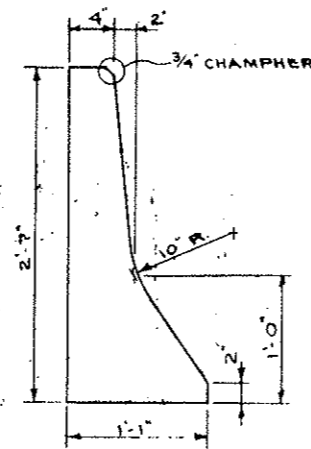
- NOTES:
- HANDRAIL LAYOUT IS NOT DRAWN TO SCALE.
 - FOR CURB DETAILS SEE C2-27

STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
PREPARED BY: STRAIGHT CREEK CONSTRUCTORS	SCALE: NOTED	DESIGNED BY: WM GIFFIN	REVIEWED BY:
PLAN OF PRECAST CURB THRU EAST VENT. BLDG - SHT. 2			
DATE: 6-23-72	APPROVED BY:	DRAWING NUMBER: SCC-626	C2-27H

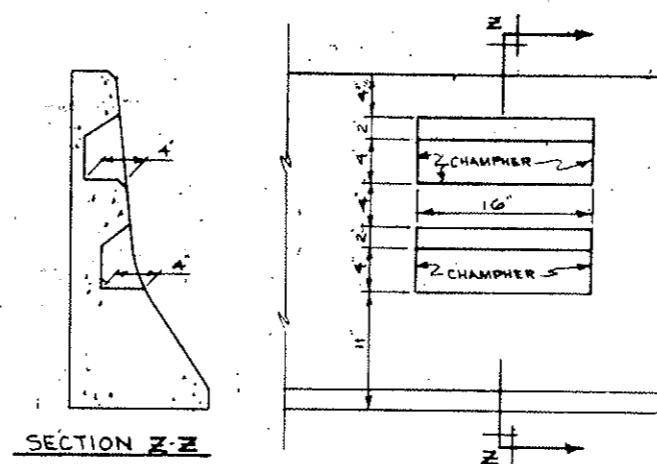
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



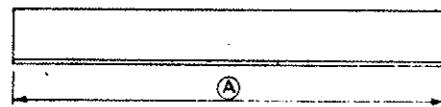
TYPE I, 2 REQ'D
 SCALE: 1/4" = 1'-0"



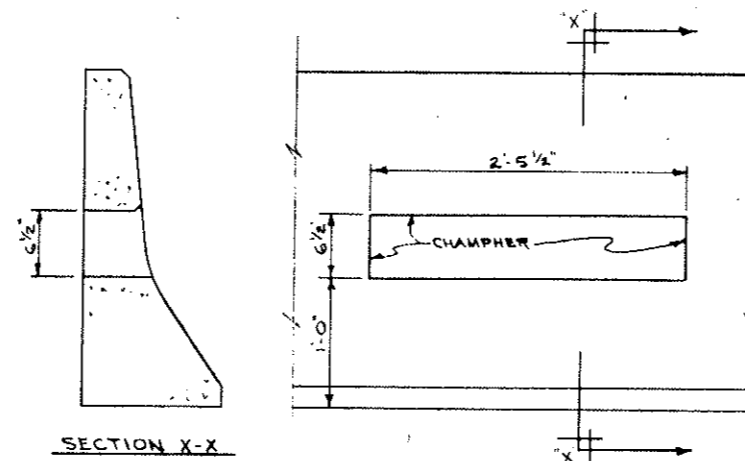
TYPICAL END VIEW
 SCALE: 1/2" = 1'-0"



SECTION Z-Z
 STEP BLOCKOUT DETAIL
 SCALE: 1/2" = 1'-0"

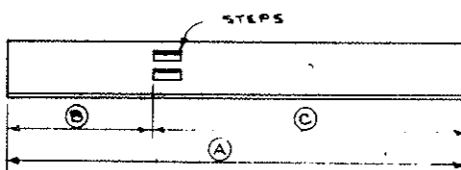


TYPE II, 27 REQ'D
 NO SCALE

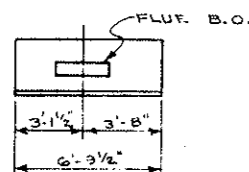


SECTION X-X

FLUE BLOCKOUT DETAIL
 SCALE: 1/2" = 1'-0"



TYPE III, 5 REQ'D
 NO SCALE



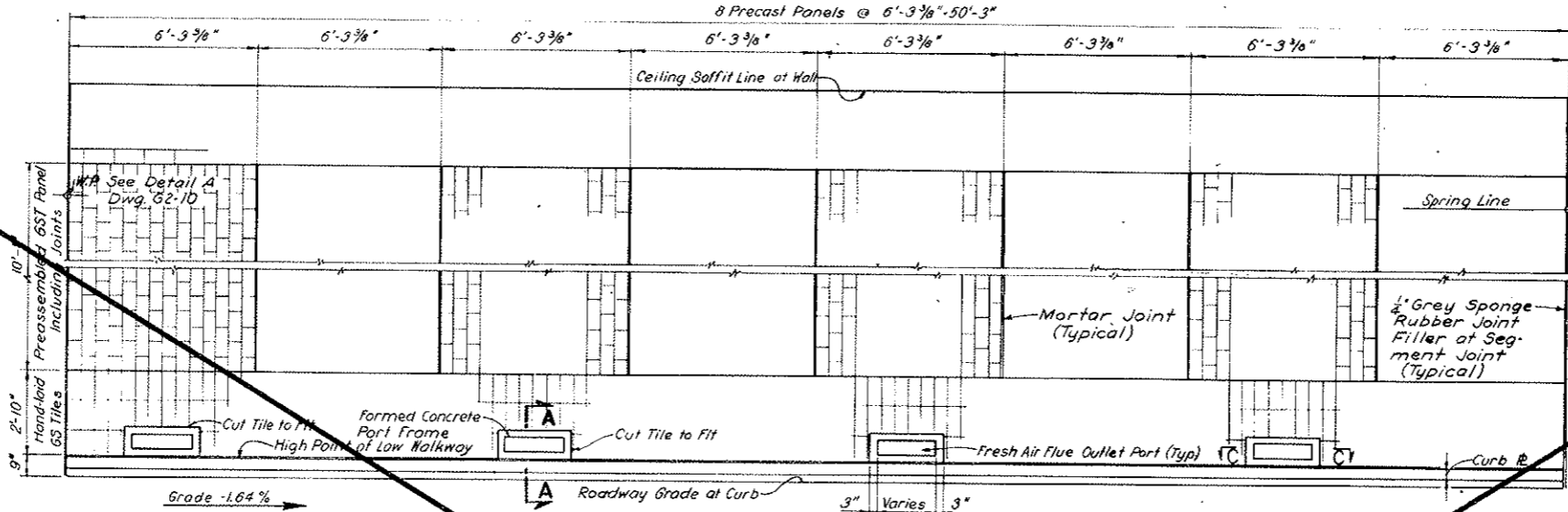
TYPE IV, 1 REQ'D
 SCALE: 1/4" = 1'-0"

SECT. NO.	CURB TYPE	DIMENSIONS			REMARKS
		A	B	C	
1	I	25'-1"			SECT. W/FLUES
2	I	25'-1"			" "
3	IV	6'-9 1/2"			SECT. W/ONE FLUE
4	II	25'-1"			PLAIN SECT.
5	II	10'-2 1/2"			" "
6	II	14'-11 1/2"			" "
7	II	14'-11 1/2"			" "
8	II	14'-11 1/2"			" "
9	II	14'-11 1/2"			" "
10	II	14'-11 1/2"			" "
11	II	14'-11 1/2"			" "
12	II	14'-11 1/2"			" "
13	II	14'-11 1/2"			" "
14	II	14'-11 1/2"			" "
15	II	7'-5 1/2"			" "
16	II	7'-5 1/2"			" "
17	II	14'-11 1/2"			" "
18	II	14'-11 1/2"			" "
19	III	25'-1"	23'-1"	2'-0"	SECT. W/STEPS
20	II	25'-1"			PLAIN SECT.
21	III	11'-4 1/2"	8"	10'-8 1/2"	SECT. W/STEPS
22	II	25'-1"			PLAIN SECT.
23	II	9'-11 1/2"			" "
24	II	14'-11 1/2"			" "
25	III	14'-11 1/2"	7'-5 1/4"	7'-5 3/8"	SECT. W/STEPS
26	II	14'-11 1/2"			PLAIN SECT.
27	II	14'-11 1/2"			" "
28	II	14'-11 1/2"			" "
29	III	14'-11 1/2"	9'-4 3/8"	5'-7 3/8"	SECT. W/STEPS
30	II	14'-11 1/2"			PLAIN SECT.
31	II	14'-11 1/2"			" "
32	II	14'-11 1/2"			" "
33	III	7'-5 1/2"	4'-1 1/8"	3'-4 3/8"	SECT. W/STEPS
34	II	7'-5 1/2"			PLAIN SECT.
35	II	25'-1"			" "

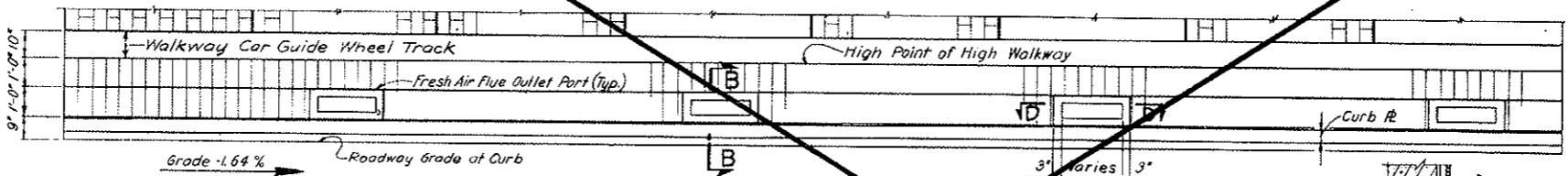
- NOTES:
- FOR CURB LAYOUT SEE C2-276 AND C2-27H
 - ALL CURBS AND BLOCKOUTS TO BE PAINTED WITH WHITE COLMA-SOL.
 - FOR DETAILS OF FLUE BLOCK-OUTS AND CURB TIE-BACKS SEE C2-27B.

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	66	326

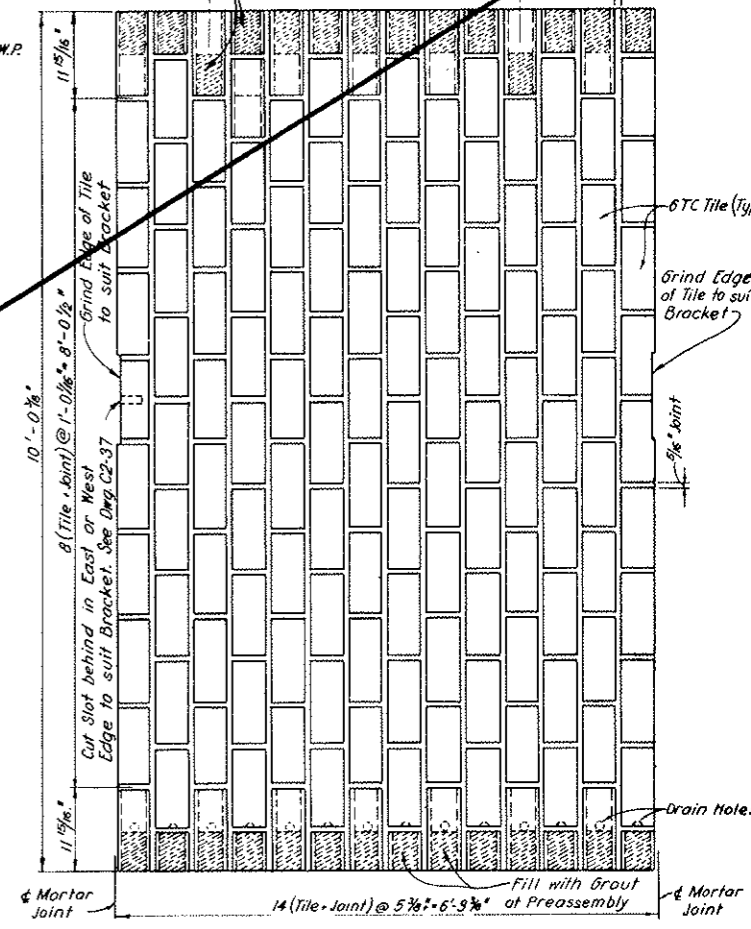
VOID BY CONSTRUCTION
 OCT 25, 1973
 (R-1) Rev. 11-6-67 C.D.H. Add note at bottom
 (R-2) Rev. 7-3-68 C.D.H. Deleted Note
 Fill with Grout at Preassembly
 1/2" x 2 Bar



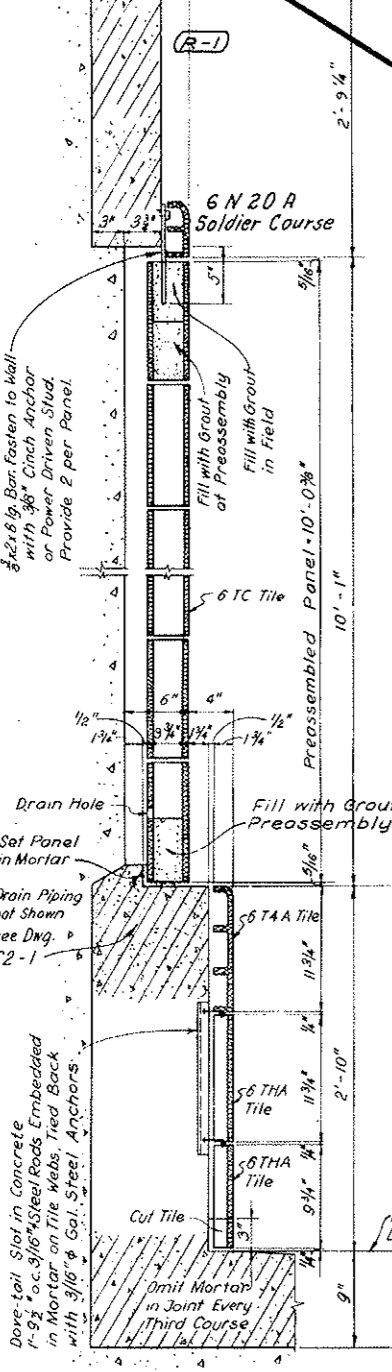
ELEVATION - TYPICAL UNIT SEGMENT - NORTH WALL
 SCALE 3/8" = 1'-0"



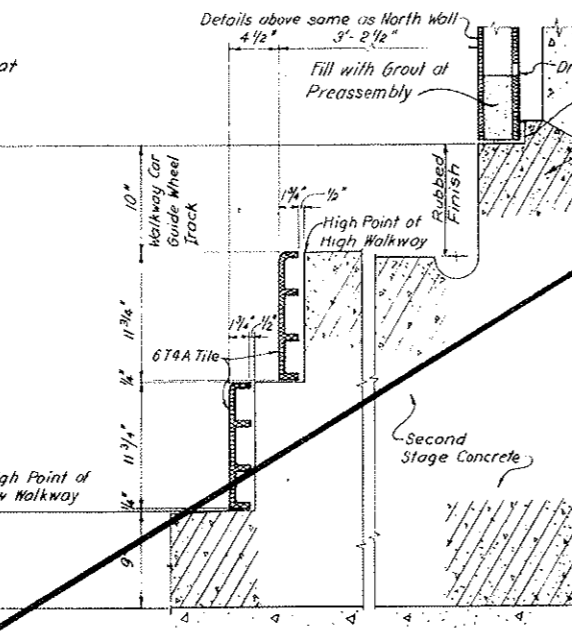
REFLECTED ELEVATION - TYPICAL UNIT SEGMENT - SOUTH WALL
 SCALE 3/8" = 1'-0"



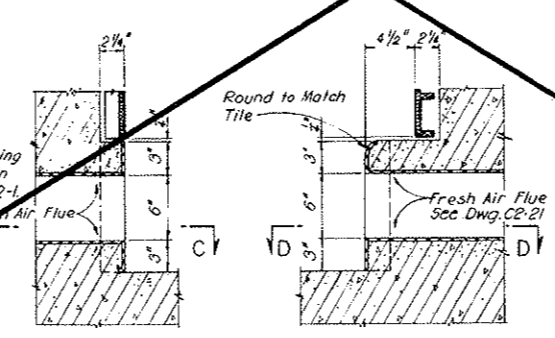
ELEVATION
 SECTION
 TYPICAL PREASSEMBLED GS TILE PANEL
 SCALE 1" = 1'-0"



TYPICAL SECTION NORTH WALL
 SCALE 1 1/2" = 1'-0"

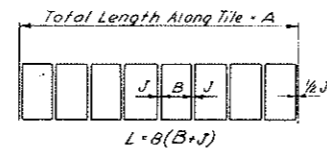


TYPICAL SECTION SOUTH WALL
 SCALE 1 1/2" = 1'-0"



DETAIL AT FRESH AIR OUTLET PORTS
 SCALE 1 1/2" = 1'-0"

Segment No.	NORTH WALL			SOUTH WALL		
	Total Length Along Tile A	Panel Width B	Approximate Joint Thickness J	Total Length Along Tile A	Panel Width B	Approximate Joint Thickness J
N1, N83	Treat as typical segments, adjust joints J					
N84 through N95, eo. Segment	50'-3 1/16"	6'-3 1/16"	7/16"	50'-2 1/16"	6'-3"	1/4"
N97	Treat as typical segment, adjust joints J					
N160 to N167 incl.	See Dwg. C3-4					



NOTES:
 Wall surfacing for tunnel shall be bid as either one of two alternate tiling systems, using preassembled panels as shown on this drawing or alternately conventional hand laid G.S. Tile Units as shown on Dwg. C2-28B. Contractor's option for alternate tiling systems are limited between Sta. W.B. 38+65.58 and W.B. 121+71.92 of North Tunnel.
 Openings in wall surface as shown on Dwg. C2-29 to C2-32 inclusive are detailed for preassembled panels. For optional hand-laid tiling systems openings may be shifted as required to coordinate with closest tile course.
 The drawing is typical for North Tunnel between stationing limits given above except on curved portions where panel and joint widths will be as specified in tabulation on this sheet. Segments within super-elevated portion of roadway will be longer than typical. For dimensions of longer panels see Dwg. C3-4.
 Erection of preassembled panels to be coordinated with Walkway Car Rail. See Dwg. C2-37.
 Wall tiling colors shall be as follows:
 North Tunnel between Sta. W.B. 38+65.58 and W.B. 121+71.92 - Mist Green.
 North Tunnel west of W.B. 38+65.58 and east of W.B. 121+71.92 - White.
 Complete details are not shown for all parts of the work but as given they indicate the nature of construction required.
 (R-2) For details of wall tiling at Fire Hydrants see Dwg. C2-46.

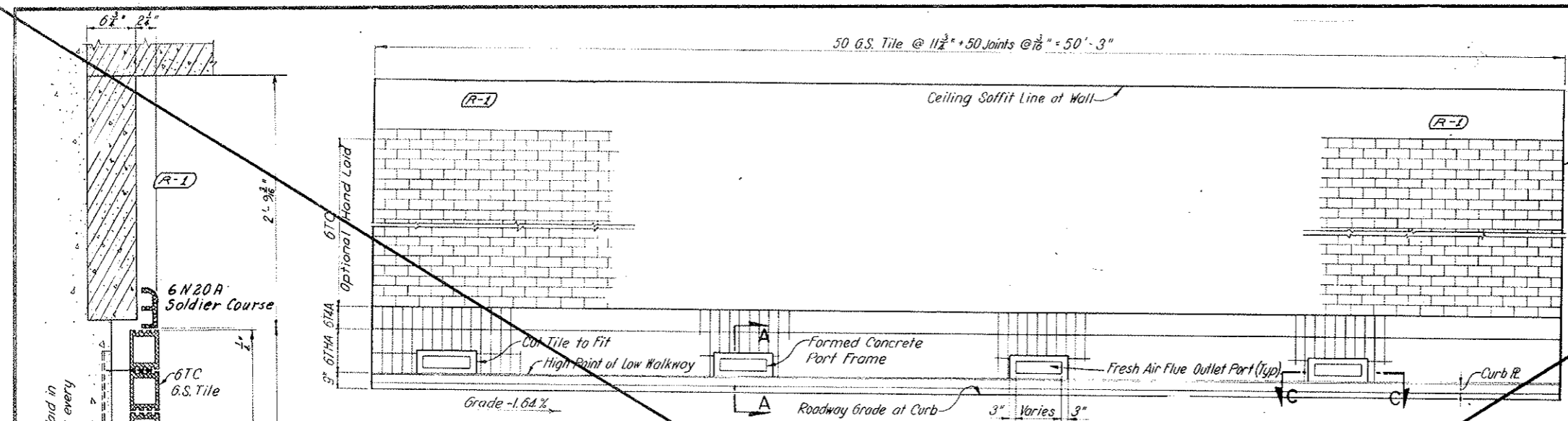
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL WALL SURFACING TYPICAL TUNNEL SEGMENT TYPICAL PANEL AND TILING DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H.F.M.C.	RECOMMENDED:	W. J. ...		
DRAWN:	P.F.L.	CHECKED:	E.L.B.		
CHECKED:	E.L.B.	SUBMITTED:	...		
			DRAWING NO. C2-28A		
			SCALE: AS NOTED DATE: AUGUST 1967		

(R-1) DELETE WALL & TUNNEL CEILING TILE W.O. 14153, SEE SPEC. # 6A VOID See Dwg. C2-28B

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	67	526

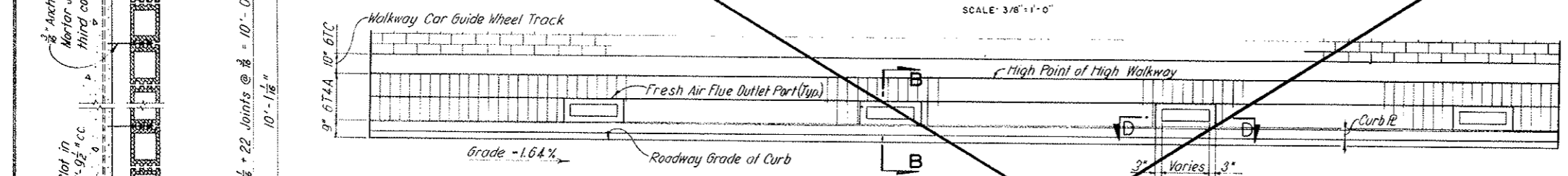
(R-1) Rev. 11-6-67 C.D.H. Add note at bottom

VOID
BY CONSTRUCTION
OCT 26, 1973



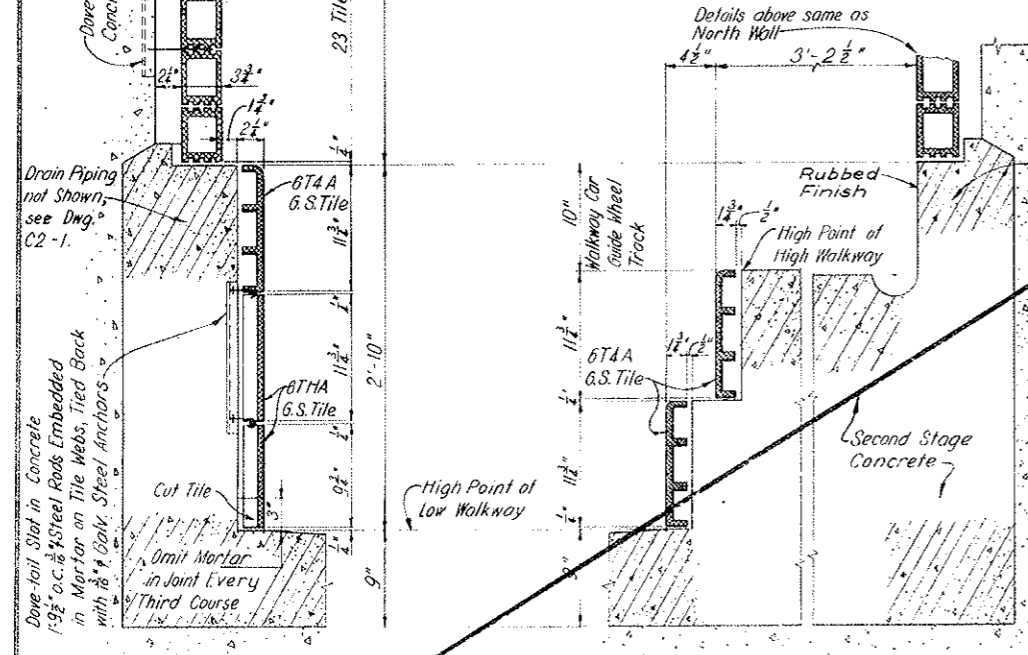
ELEVATION - TYPICAL UNIT SEGMENT - NORTH WALL

SCALE: 3/8" = 1'-0"



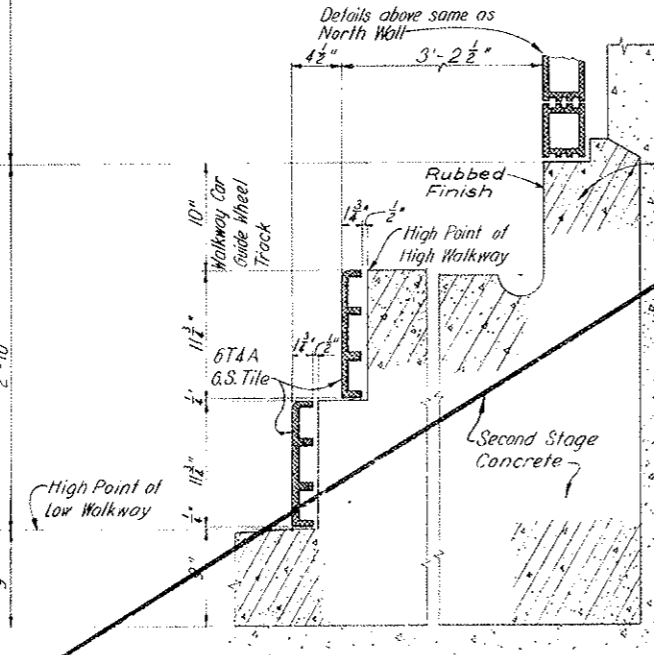
REFLECTED ELEVATION - TYPICAL UNIT SEGMENT - SOUTH WALL

SCALE: 3/8" = 1'-0"



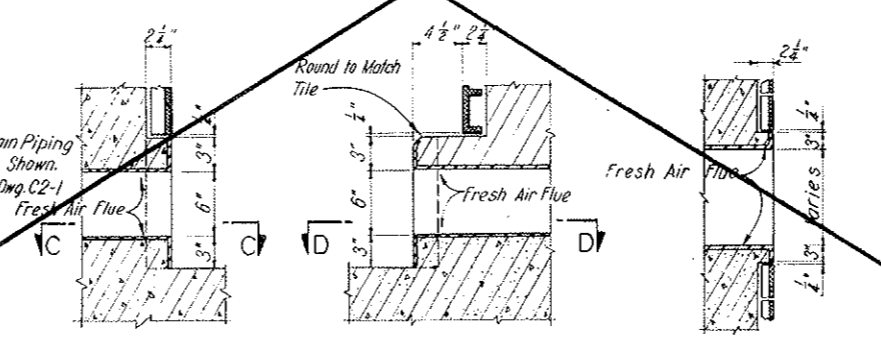
TYPICAL SECTION NORTH WALL

SCALE: 1/2" = 1'-0"



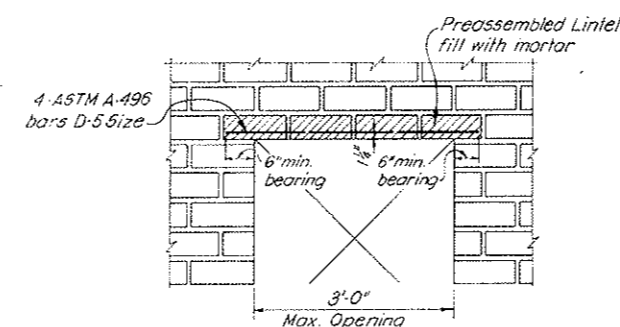
TYPICAL SECTION SOUTH WALL

SCALE: 1/2" = 1'-0"



DETAIL AT FRESH AIR OUTLET PORTS

SCALE: 1/2" = 1'-0"



LINTEL DETAIL

SCALE: 5/4" = 1'-0"

NOTES:
Work this drawing with Dwg. C2-28A.

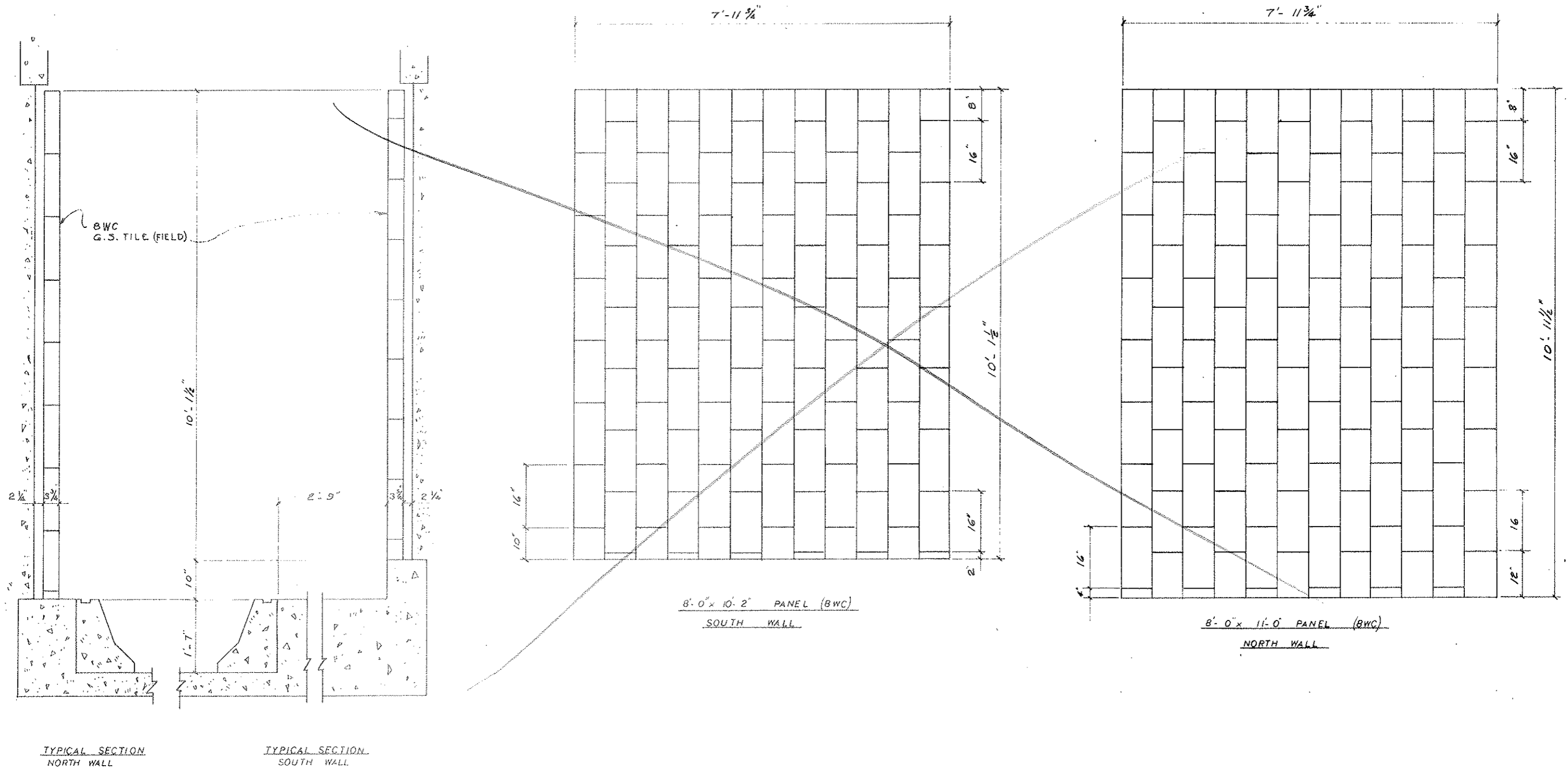
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL WALL SURFACING DETAILS FOR OPTIONAL HAND-LAID TILING					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H.F. MCC.	RECOMMENDED:			
DRAWN:	P.F.L.	CHECKED:			
SUBMITTED:	E.L.B.	APPROVED:			
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967	DRAWING NO. C2-28B	

(R-1) DELETE WALL & TUNNEL CEILING TILE W.O. 14153, SEE SPEC. # 6A

VOID See Dwg # C2-28BA

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	67AX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973

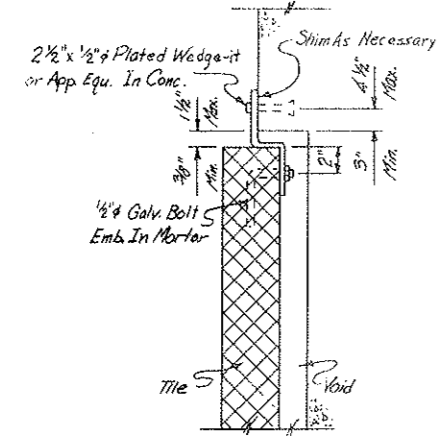


STATE OF COLORADO DIVISION OF HIGHWAYS		
SCALE: 1" = 1'-0"	APPROVED BY:	DRAWN BY: LT
DATE: 11-13-75		REVISED:
TYPICAL TILE WALL PANELS		
DRAWING NUMBER:		CZ-28 BA

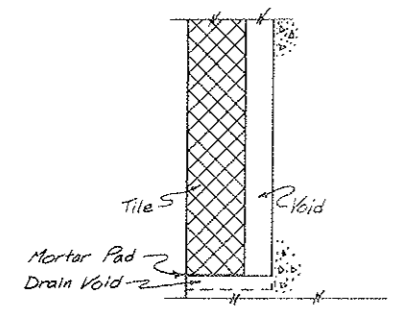
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70-3(34)220	67 BX	326

AS CONSTRUCTED
REVISED DATE
 Oct 26, 1973

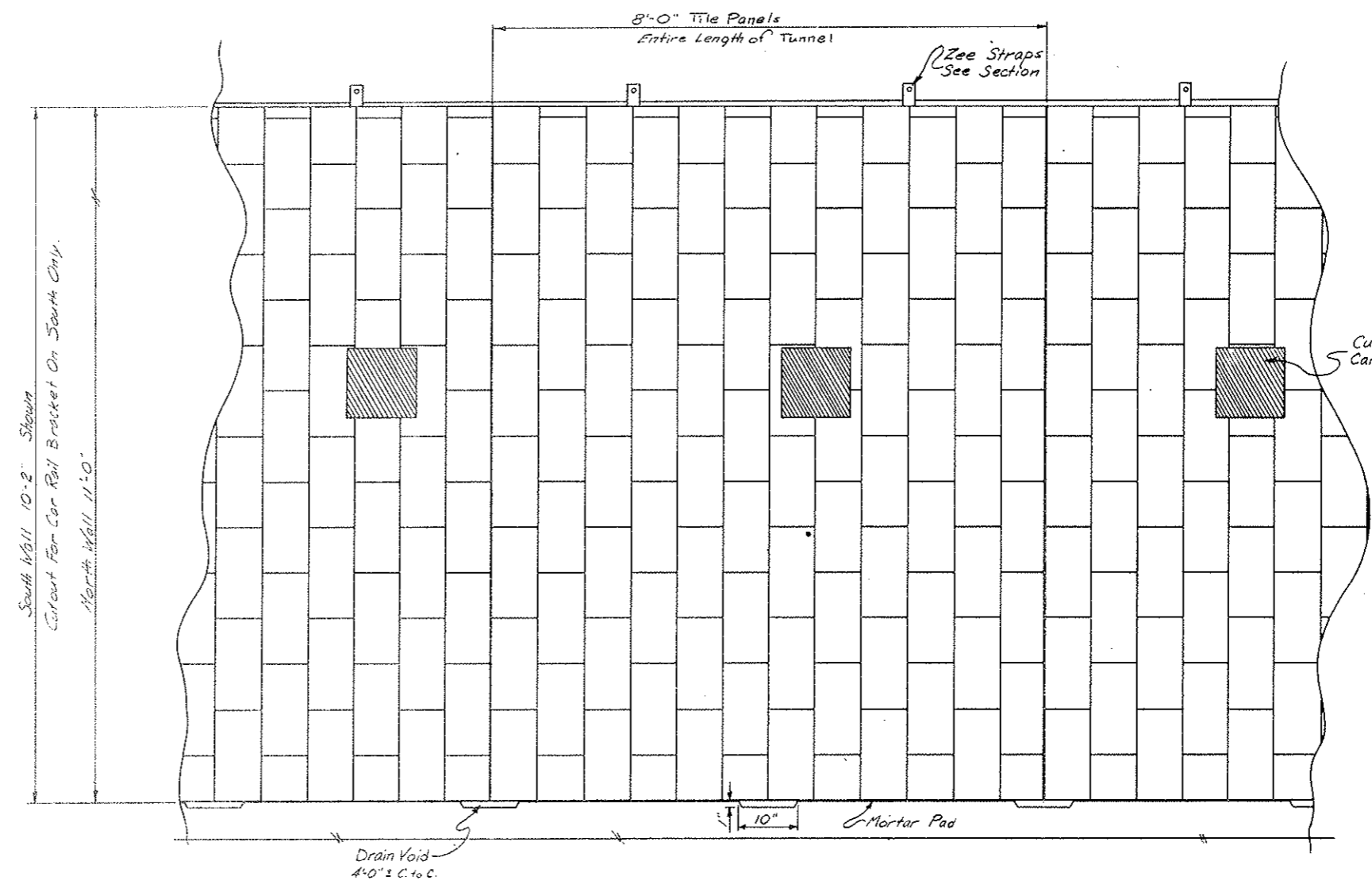
2 Galv. $\frac{3}{8}$ " x 2" x 9" Zee Straps Each Panel



SECTION SHOWING
 WALL TILE CONNECTION @ TOP
 Scale 2" = 1'-0"



SECTION SHOWING
 WALL TILE CONNECTION @ BOTTOM
 Scale 2" = 1'-0"

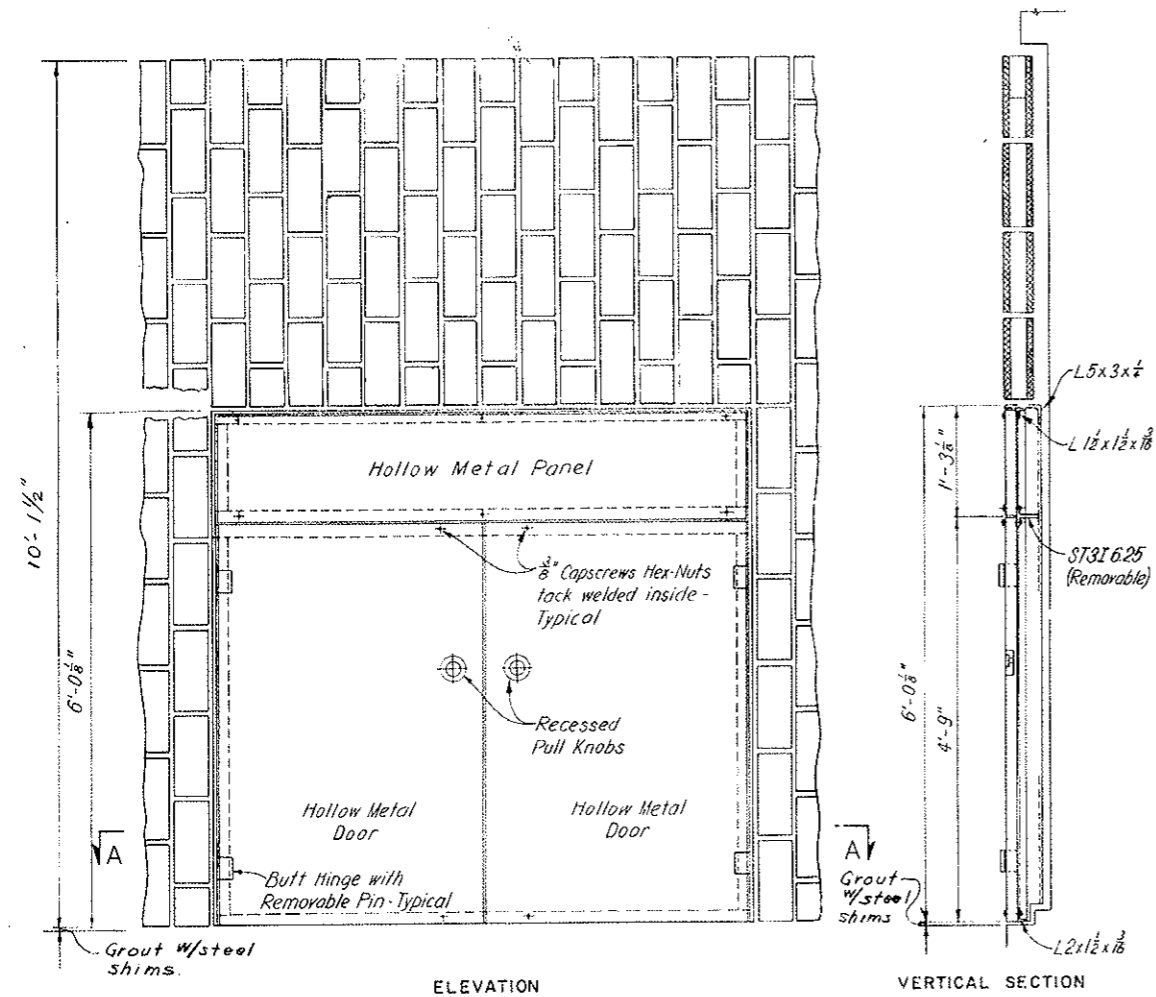


WALL ELEVATION
 Scale 1" = 1'-0"

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE Noted	DRAWN BY R.M. Griffin	REVISIONS
WALL TILE DETAILS			
DATE 7-18-72	APPROVED BY D.O.H. Date By At SCC-454	DRAWING NUMBER C2-28BB	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	68	326

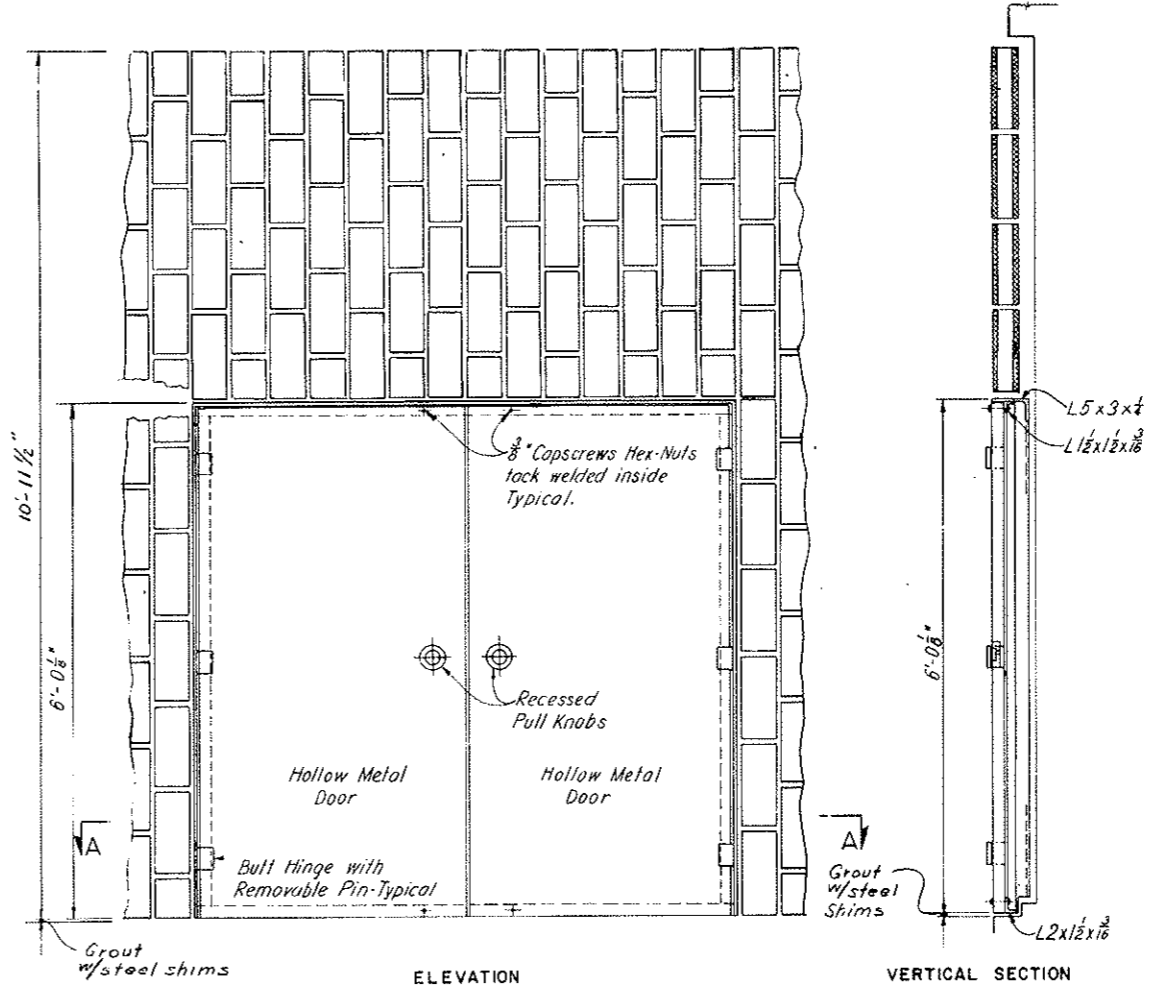
AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



ELEVATION

VERTICAL SECTION

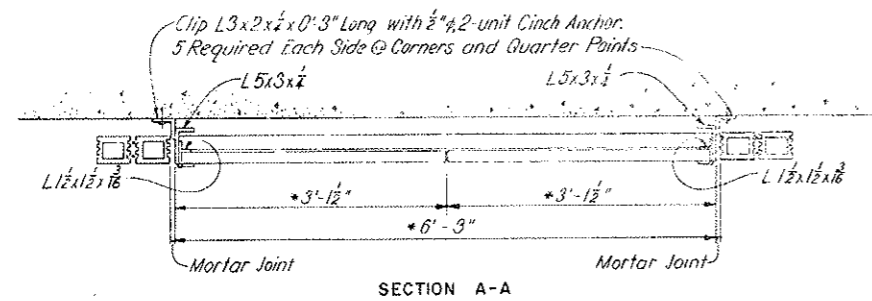
PANEL AT PULLBOX DISTRIBUTION STATION, HIGH WALKWAY



ELEVATION

VERTICAL SECTION

PANEL AT PULLBOX DISTRIBUTION STATION, LOW WALKWAY



SECTION A-A

NOTES:

For number required and locations in tunnel of Distribution Stations see Dwg. 62-10 to 62-16 incl. Tile panels standard 8' width. Panels are cut in field to fit block out for pull boxes.

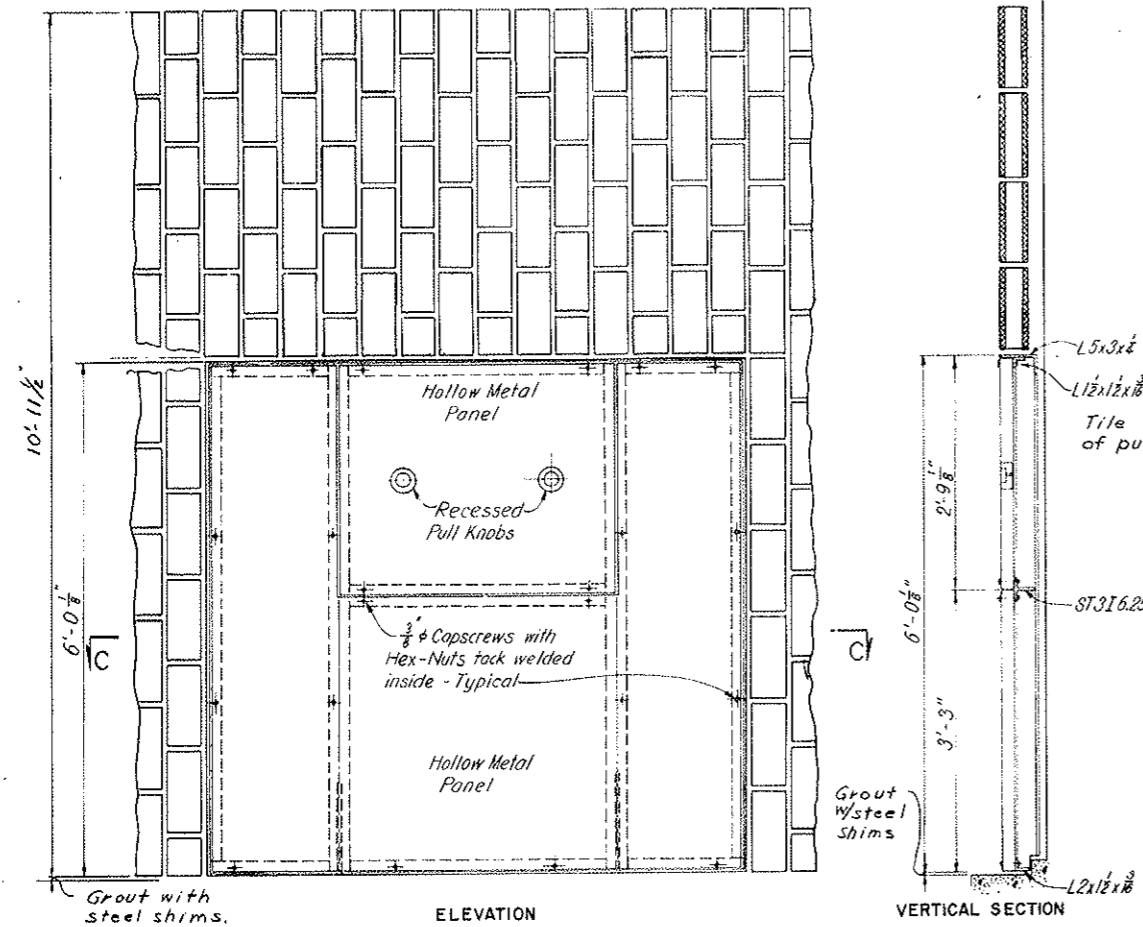
Pullbox Panels to be of welded construction. Coat all surfaces except tunnel face of panel which shall have a porcelain enamel surface, color matched to tile surfacing. Cap screw fastenings shall be stainless steel.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL WALL SURFACING DETAILS AT PULLBOX OPENINGS					
TIPPETTS · ABBETT · MCCARTHY · STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	H. F. McC.	RECOMMENDED:			
DRAWN	P. F. L.	APPROVED:			
CHECKED	E. L. B.				
SUBMITTED					
DRAWING NO. 02-29		SCALE: 1" = 1'-0" DATE: AUGUST 1967			

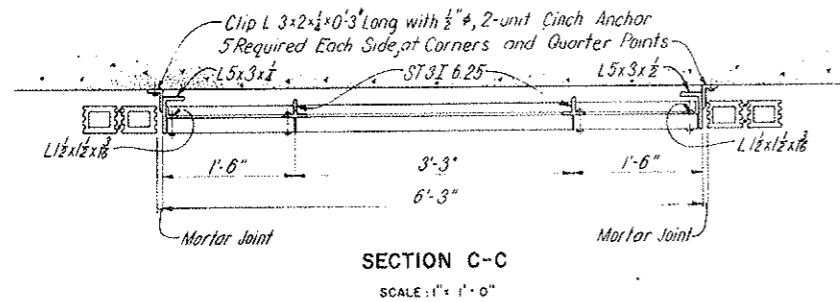
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	69	326

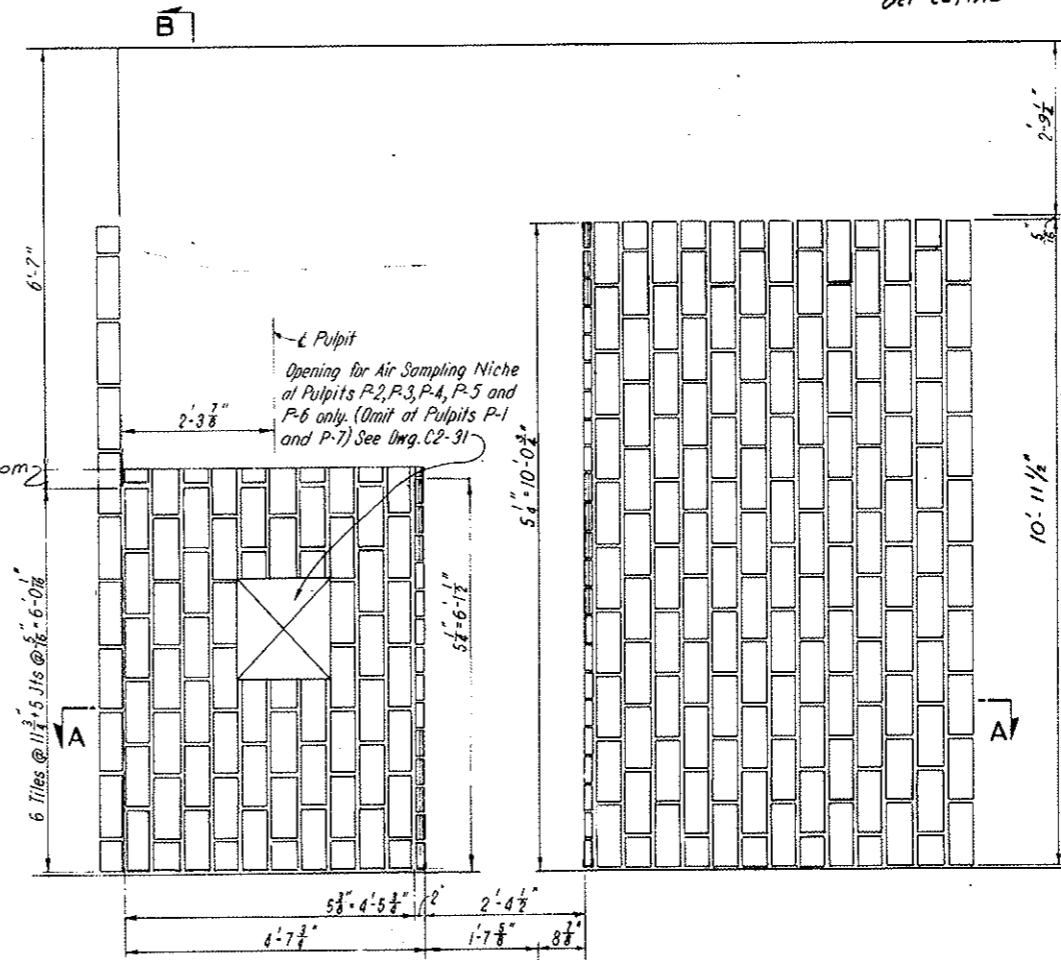
Details at top same as
 Typical Panel, see Dwg. C2-28A



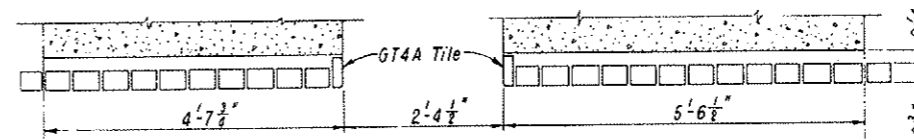
ELEVATION
 ACCESS PANEL FOR CROSS-OVER PULL-BOX
 SCALE 1" = 1'-0"



SECTION C-C
 SCALE 1" = 1'-0"



ELEVATION
 TILE AT NORTH WALL PULPITS (AS SHOWN)
 TILE AT SOUTH WALL PULPITS (OPPOSITE HAND)



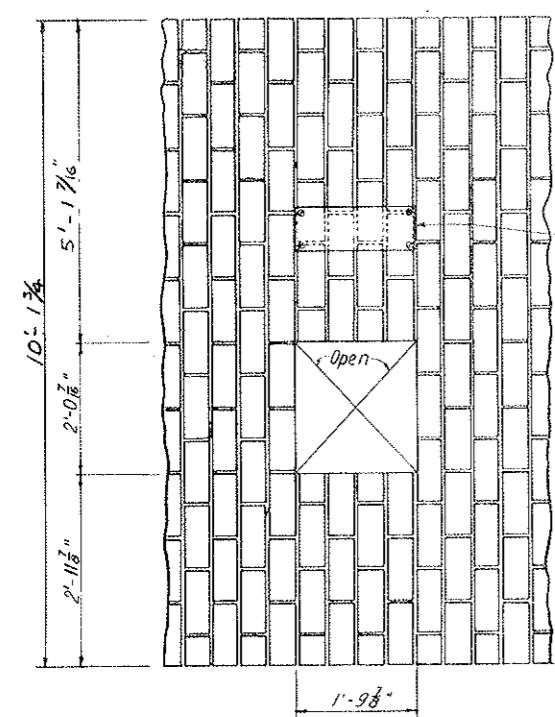
SECTION A-A
 SPECIAL WALL DETAILS AT TRAFFIC CONTROL PULPITS
 SCALE 3/4" = 1'-0"

NOTES:

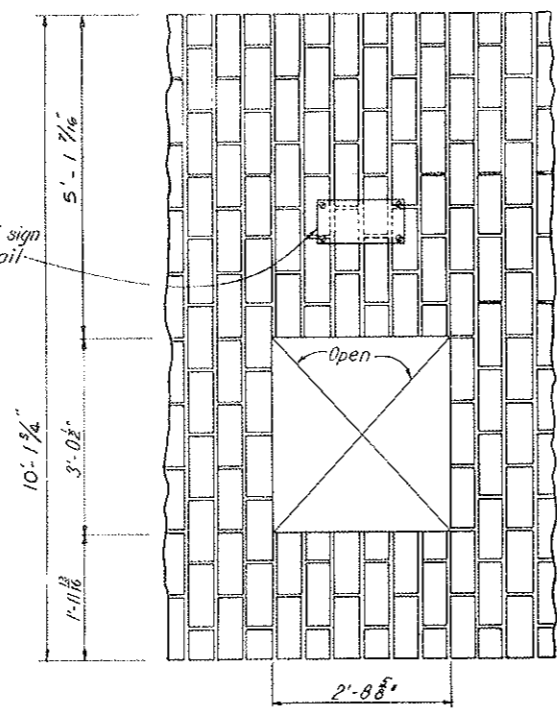
Work this drawing with Dwg. C2-28B and C2-29.
 For number required and locations in tunnel of Traffic Control Pulpits
 see Dwg. 62-10 to 62-16.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL WALL SURFACING DETAILS AT MISCELLANEOUS OPENINGS SHEET 1					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	H. E. McC.	RECOMMENDED:	H. E. McC.		
DRAWN	P. F. L.	APPROVED:	H. E. McC.		
CHECKED	E. L. B.				
SUBMITTED					
DRAWING NO. C2-30					
SCALE: AS NOTED DATE AUGUST 1967					

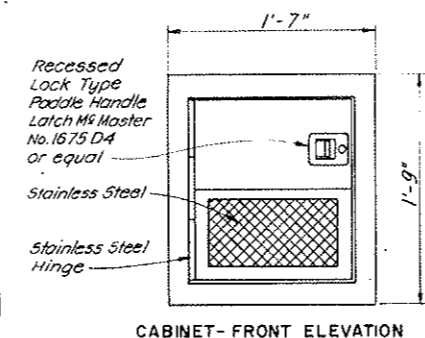
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	70	326



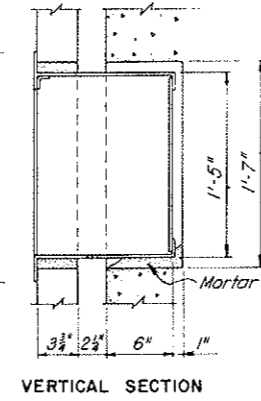
PANEL FOR TELEPHONE NICHE
SCALE 3/4" = 1'-0"



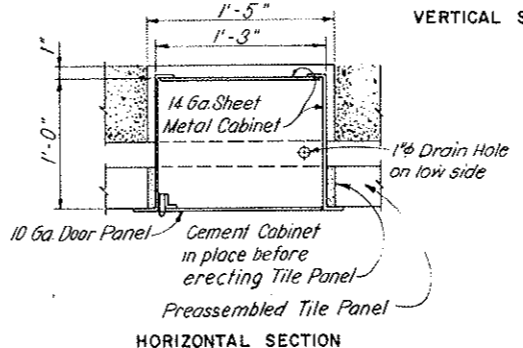
PANEL FOR FIRE EXTINGUISHER NICHE
SCALE 3/4" = 1'-0"



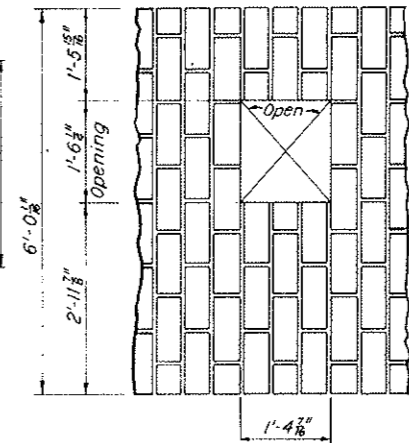
CABINET-FRONT ELEVATION



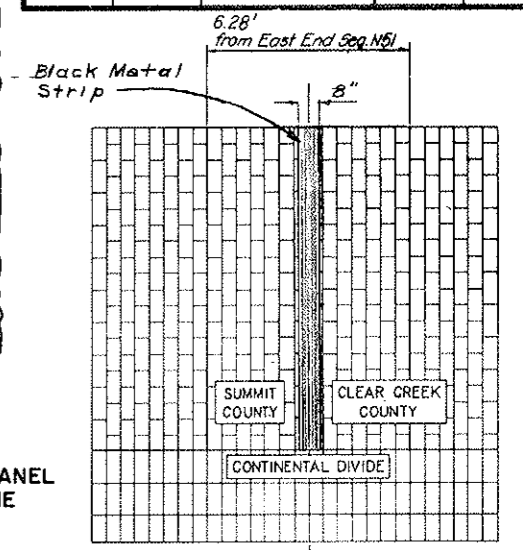
VERTICAL SECTION



HORIZONTAL SECTION

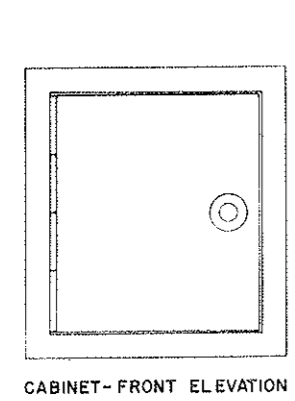


PREASSEMBLED PANEL FOR AIR SAMPLING NICHE
SCALE 3/4" = 1'-0"

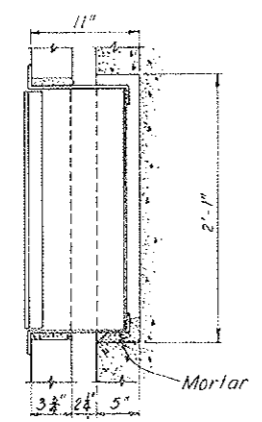


ELEVATION-NORTH WALL CONTINENTAL DIVIDE MARKER
SCALE 3/8" = 1'-0"

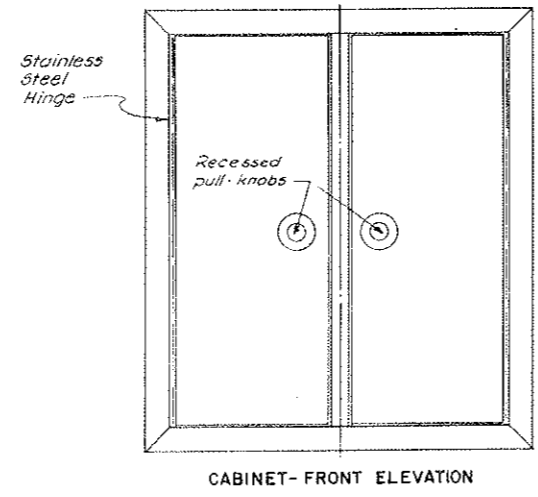
AS CONSTRUCTED
REVISED DATE
Oct 26, 1973



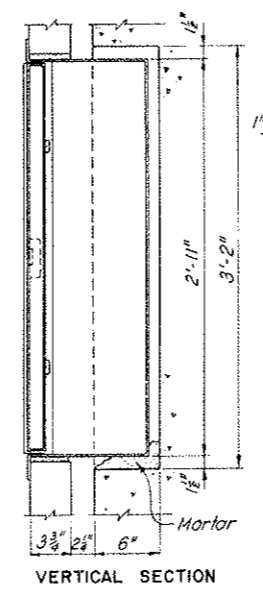
CABINET-FRONT ELEVATION



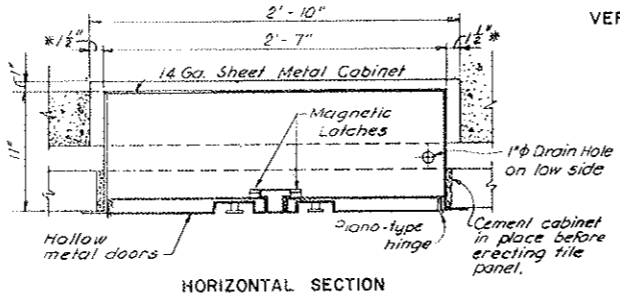
VERTICAL SECTION



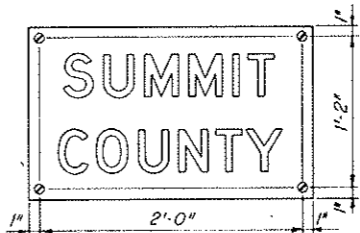
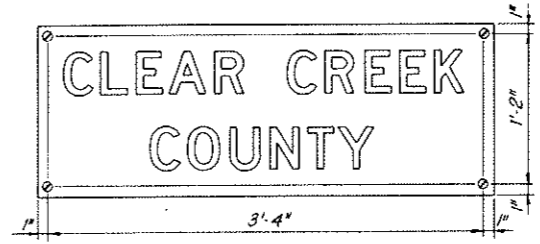
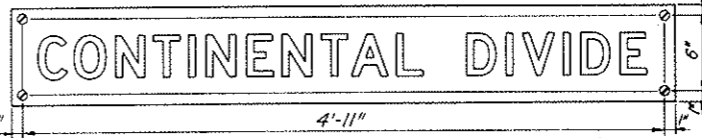
CABINET-FRONT ELEVATION



VERTICAL SECTION

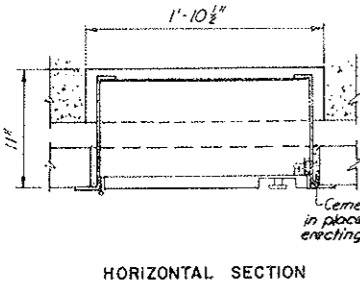


HORIZONTAL SECTION

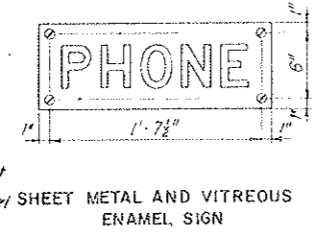


SHEET METAL AND VITREOUS ENAMEL SIGNS
SCALE 1 1/2" = 1'-0"

Notes: All signs to be sheet metal and vitreous enamel with lead inserts and Stainless screw fasteners. All letters to be BPR series D, 4" high. *Phone* and *Fire* to be red letters on white background. Others to be black letters on white background.



HORIZONTAL SECTION



SHEET METAL AND VITREOUS ENAMEL SIGN

TUNNEL EMERGENCY REPORTING TELEPHONE NICHE
SCALE 1 1/2" = 1'-0"



SHEET METAL AND VITREOUS ENAMEL SIGN

FIRE EXTINGUISHER NICHE
SCALE 1 1/2" = 1'-0"

NOTES:

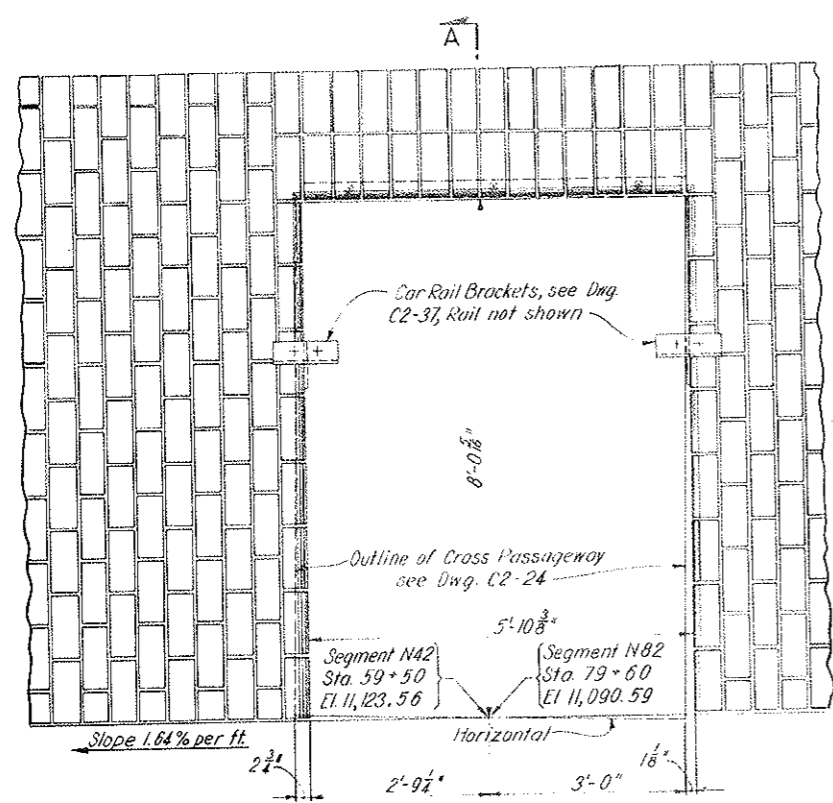
For number required and locations in tunnel of all niches and recesses see Dwg. G2-10 to G2-16 inclusive.

Cabinets for fire extinguisher and air sampling niches shall be of welded construction and coated on all surfaces except for tunnel face of boxes which shall have a vitreous enamel surface. Face colors shall be as follows:
Fire extinguisher cabinets - Red Frame, White Doors
Air Sampling cabinets - Mist Green

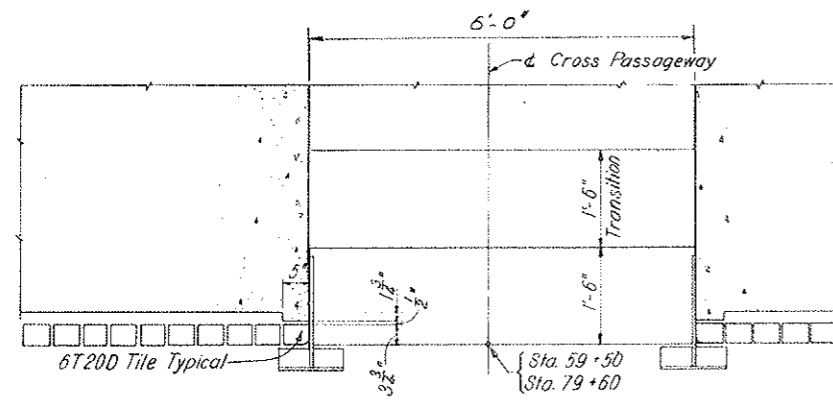
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL WALL SURFACING DETAILS AT MISCELLANEOUS OPENINGS SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS - NEW YORK, N. Y.					
DESIGNED:	H.F. McC.	RECOMMENDED:	H. J. ...		
DRAWN:	P.F.L.	CHECKED:	E.L.B.		
SUBMITTED:	H. J. ...	APPROVED:	Edward A. ...		
				DRAWING NO.	C2-31
				SCALE:	AS NOTED DATE: AUGUST 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	71	326

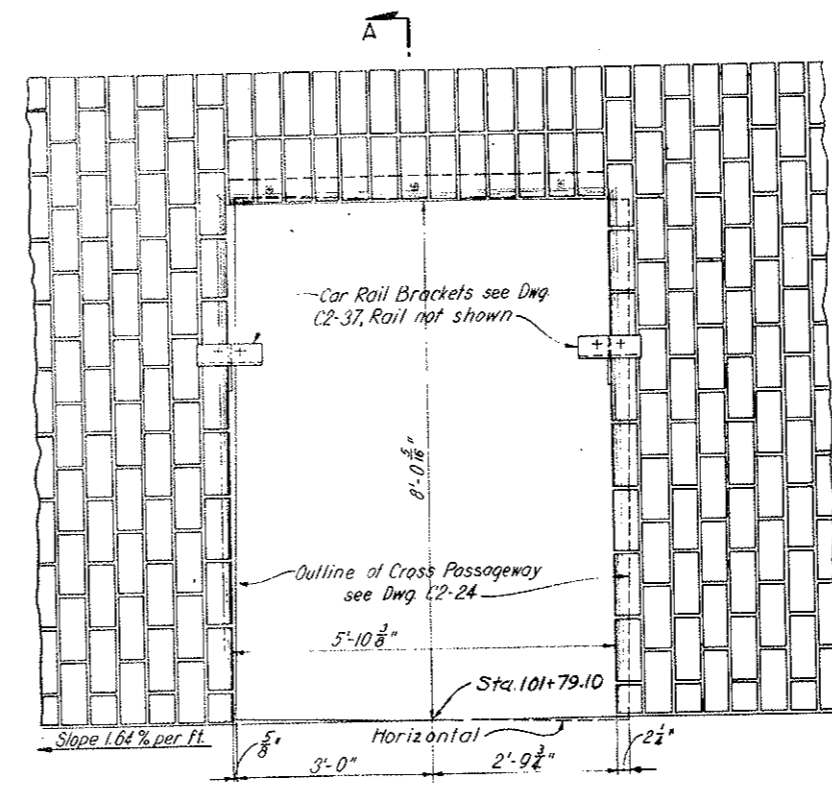
AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



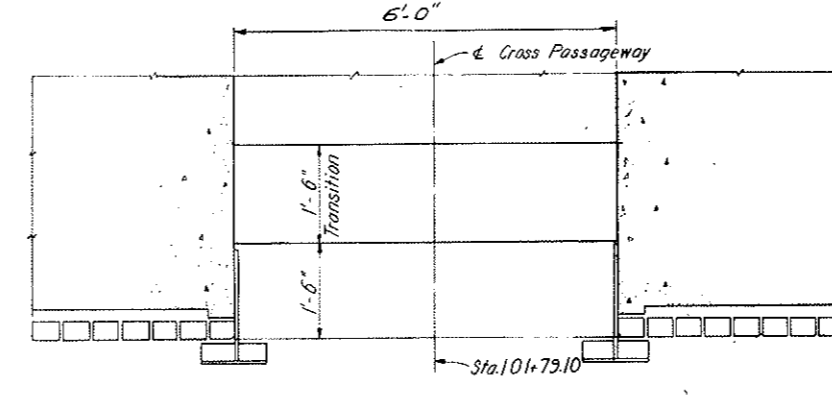
ELEVATION



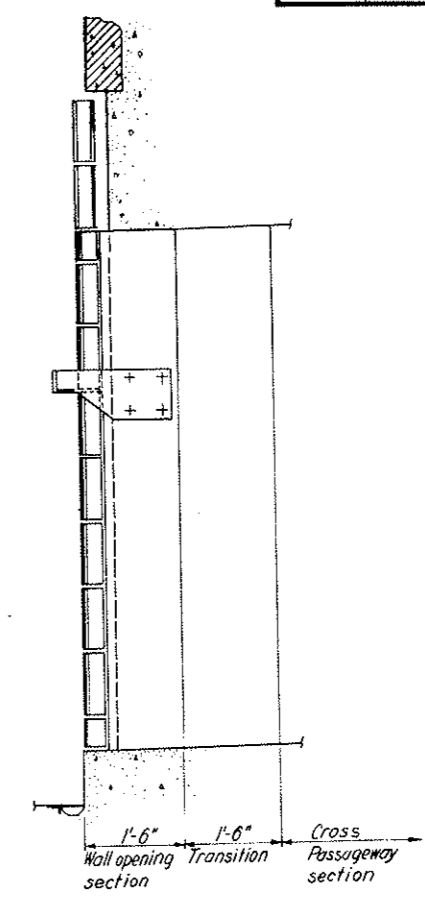
HORIZONTAL SECTION
WALL OPENING IN SEGMENTS N42 AND N82



ELEVATION



HORIZONTAL SECTION
WALL OPENING IN SEGMENT N126



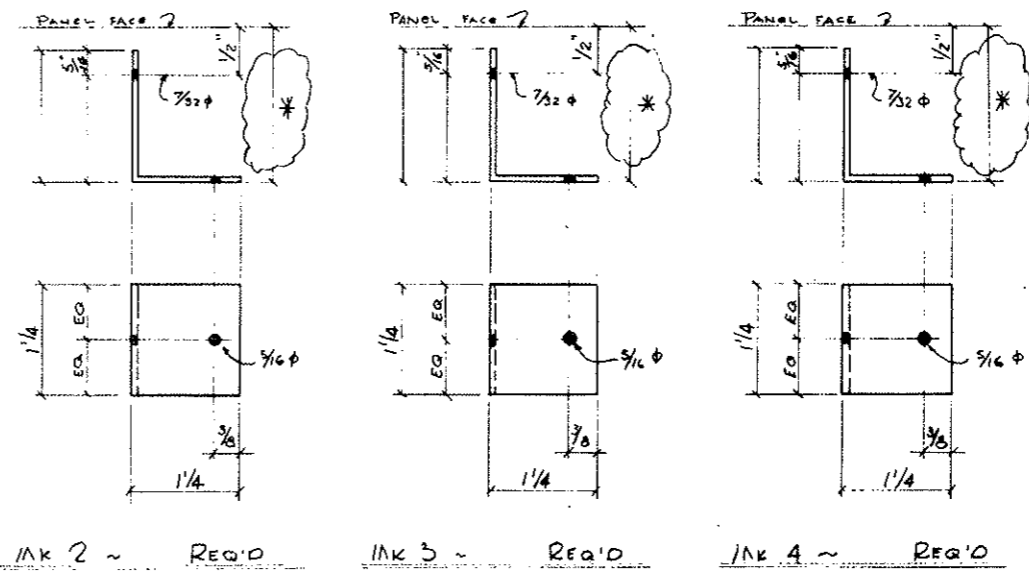
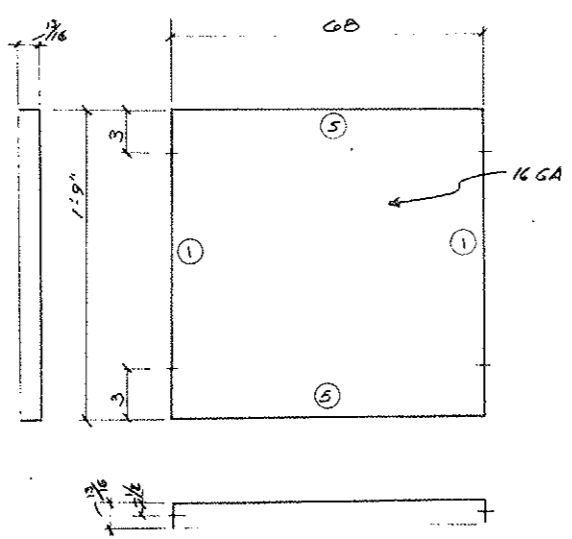
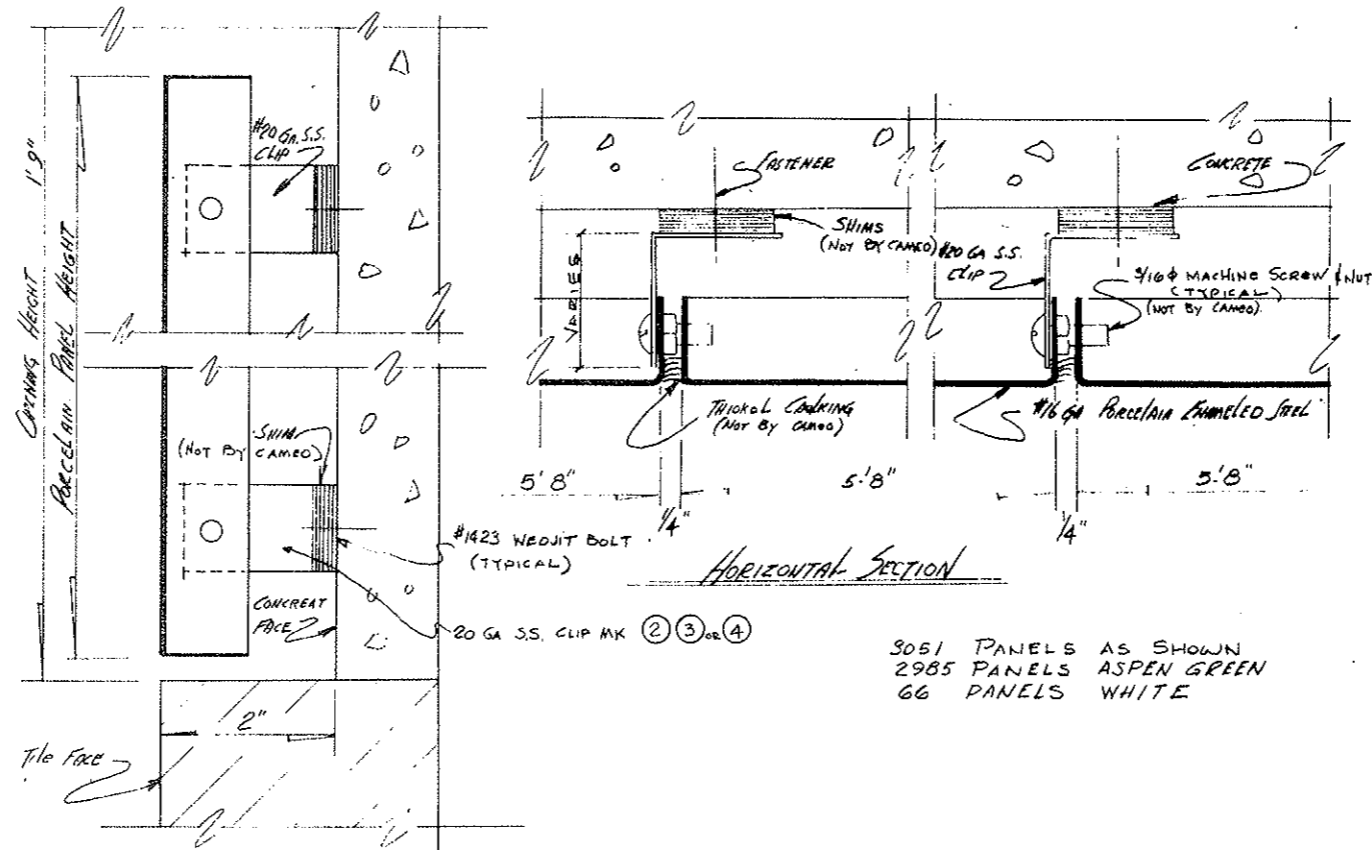
SECTION A-A

NOTES:
 For location of Cross Passageways see Dwgs. G2-11, G2-13 and G2-15.
 For Details of Cross Passageways see Dwgs. C2-22, C2-23 and C2-24.
 For Wall Surfacing Details see Dwg. C2-28A - C2-31
 For Walkway Car Rail Details see Dwg. C2-37.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL WALL SURFACING DETAILS AT CROSS PASSAGEWAYS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. F. Mc C.	RECOMMENDED:				
DRAWN: P. E. L.	Checked: <i>Henry J. Shaw</i>				
CHECKED: E. L. B.	APPROVED: <i>Edward J. Shaw</i>				
SUBMITTED: <i>George R. Shaw</i>					
NEW YORK, N. Y.	SCALE: 3/4" = 1' - 0"	DATE: AUGUST 1967	DRAWING NO. C2-32		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	71AX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

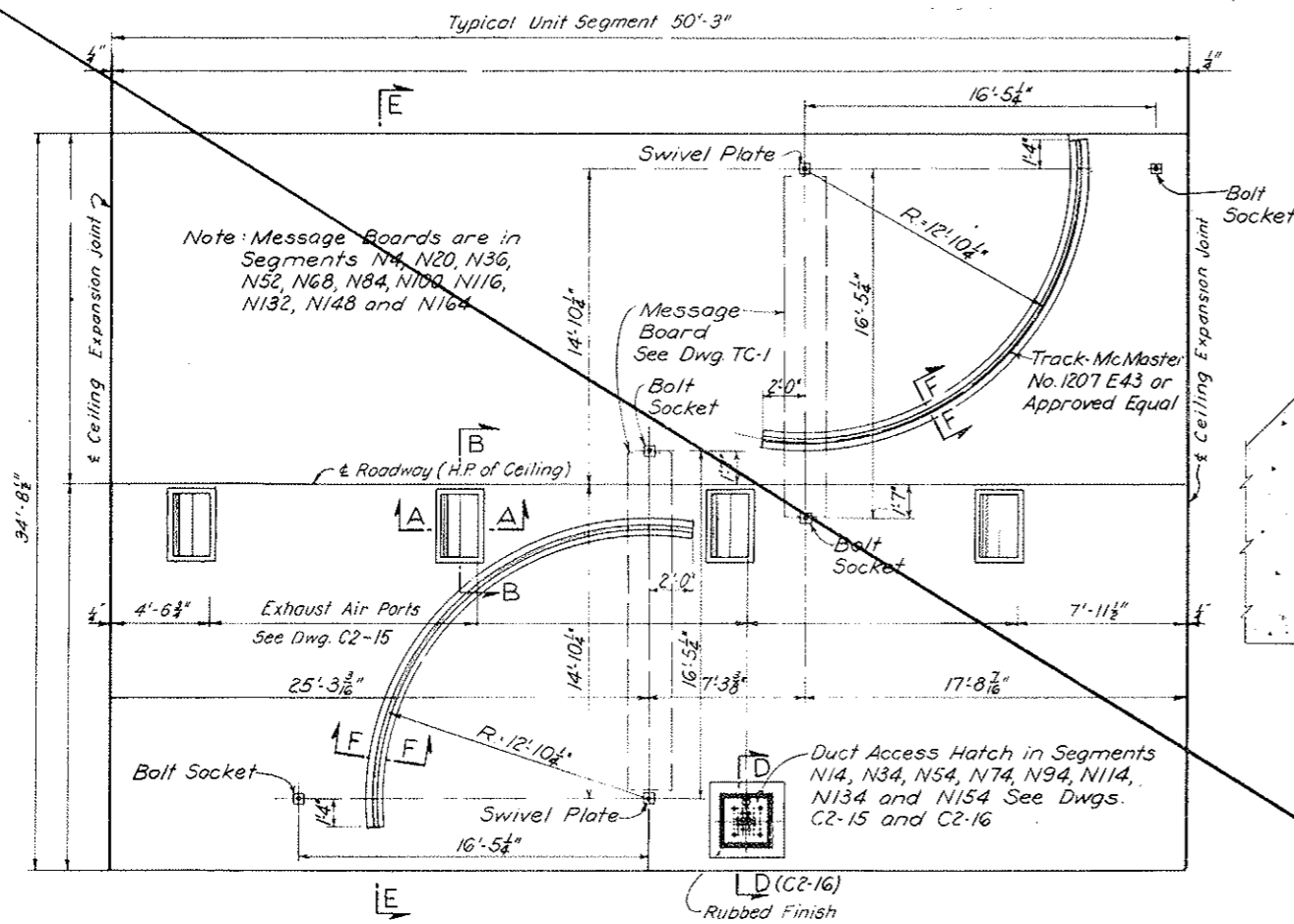


STATE OF COLORADO DIVISION OF HIGHWAYS		
SCALE:	APPROVED BY:	DRAWN BY L.T.
DATE: OCT 1973	KEYED:	
PORCELAIN ENAMEL HAUNCH PANELS		
DRAWING NUMBER:		C2-32A

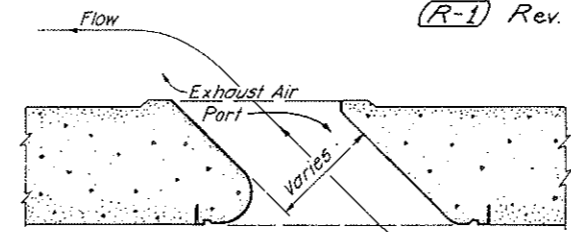
Typical Unit Segment 50'-3"

(R-1) Rev. 11-6-67 C.D.H. Add note at bottom

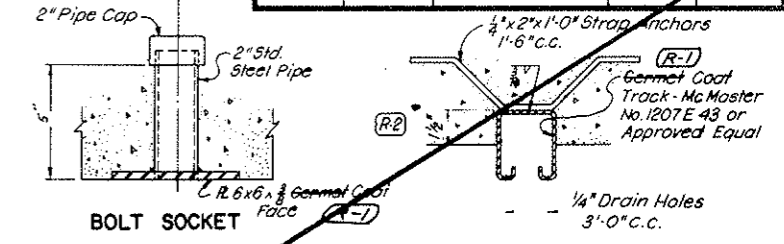
FEDERAL REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	72	328



(R-1) REFLECTED CEILING UNDERSIDE PLAN
SCALE 1/4" = 1'-0"

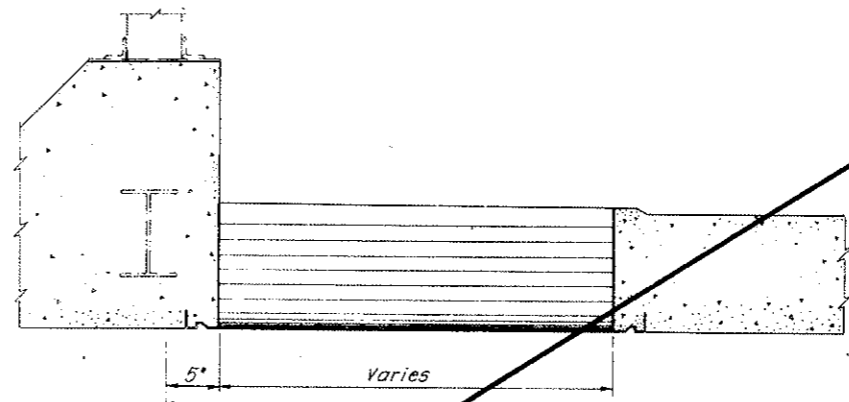


(R-1) SECTION A-A

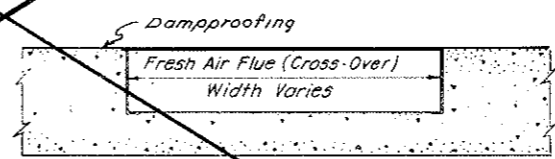
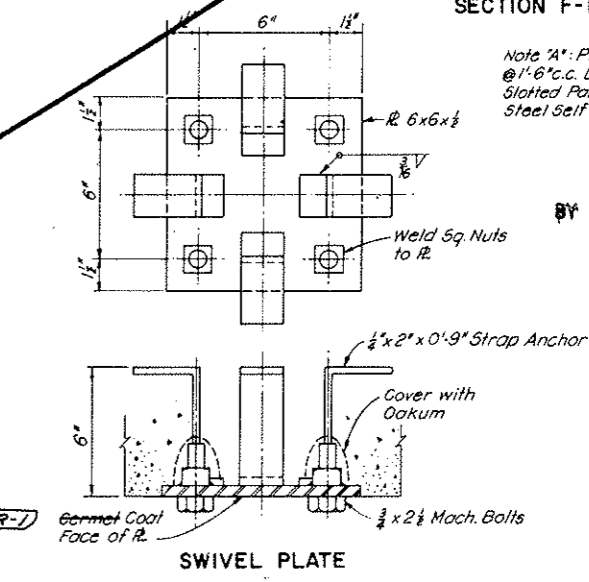


Note 'A': Provide L5 1x1 1/2 x 0'-2" @ 1'-6" c.c. Drill in field for 3/8" x 3/8" Slotted Pan Head Stainless Steel Self Tapping Screws.

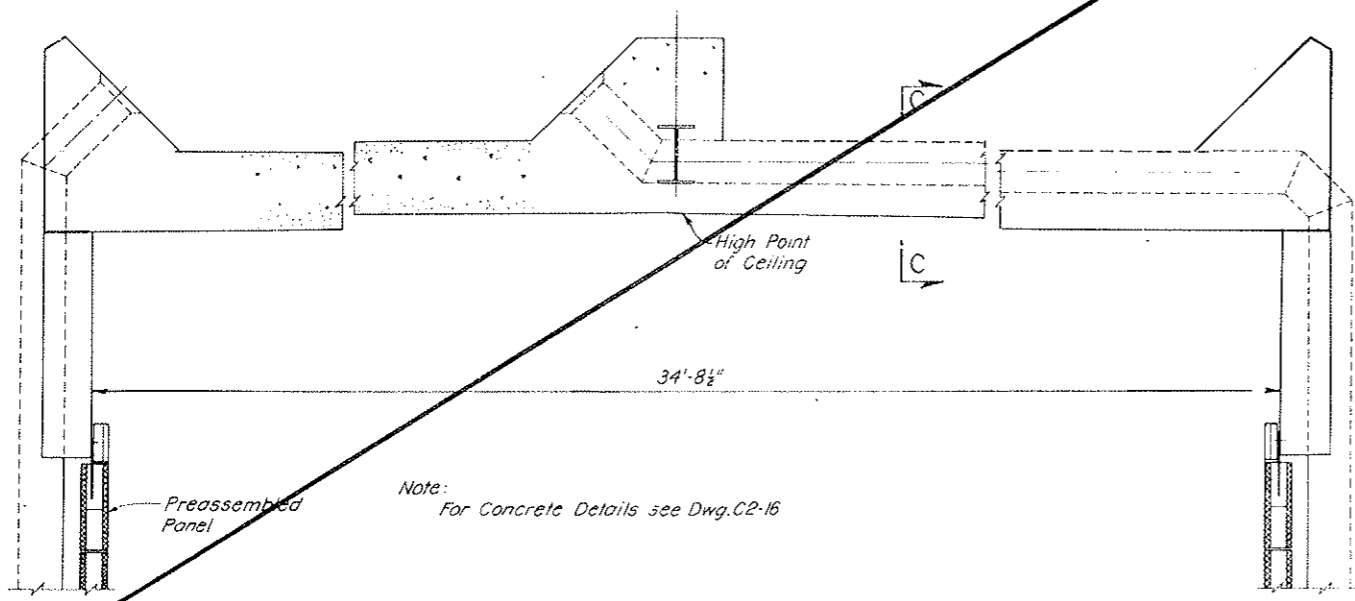
VOID
BY CONSTRUCTION
OCT 26, 1973



(R-1) SECTION B-B



(R-1) SECTION C-C



(R-1) SECTION E-E

Note: For Concrete Details see Dwg. C2-16

(R-1) Note: TYPE 6N20A Wall Tile, as manufactured by the Robinson Brick and Tile Co., Denver, Colo. To be used as Soldier Course.

NOTES:
Ceiling Underside Plan is detailed to suit segments in straight roadway alignment. In curved roadway segments all longitudinal dimensions are taken along the centerline of roadway and are to be projected radially in the transverse direction. Ceiling tiling shall be adjusted so that tiling terminates in radial expansion joints at 60'-0" centers.
Wherever Manufacturers' designations are indicated they shall be interpreted to include "or approved equal".
Ceiling tile color shall be white.

(R-1) Rev. 4-1-68 Rev. Section F-F in accordance with CDH W.O. #14153.

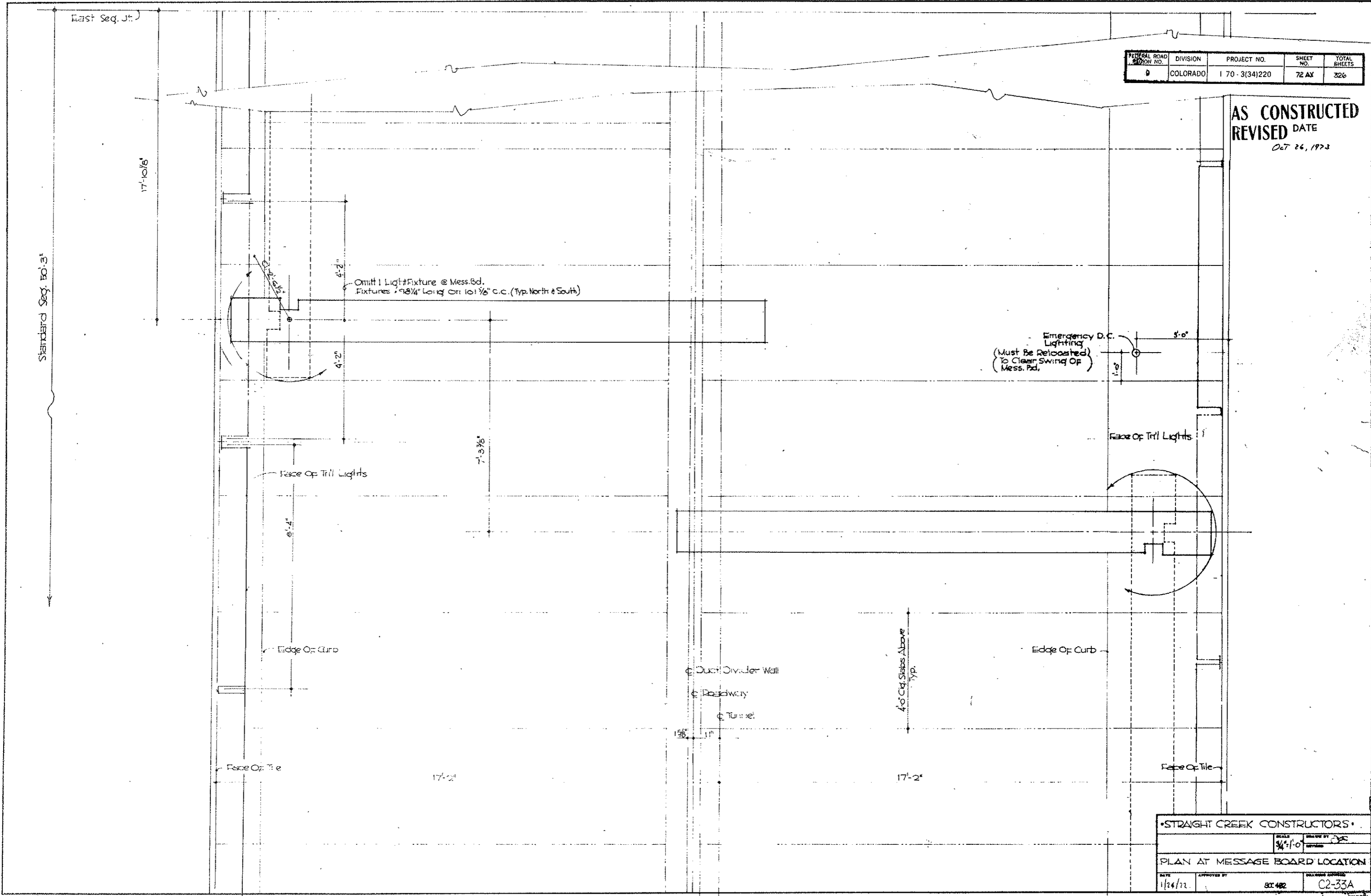
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL CEILING SURFACING PLAN, SECTIONS AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R.B.A.-H.F.M.C.C.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: R.B.	CHECKED: H.F. McC.				
CHECKED: H.F. McC.	APPROVED: <i>[Signature]</i>				
SUBMITTED: <i>[Signature]</i>	DRAWING NO. C2-33				
NEW YORK, N. Y.		SCALE: AS NOTED DATE: AUGUST 1967			

(R-1) DELETE TUNNEL CEILING TILE, CONCRETE CLASS 3 AIRDUCT FLOOR, MISCELLANEOUS METAL COATING, W.O. 14153, SEE SPEC. # 6A, 4A & 6C

VOID See Dwg # C2-33A

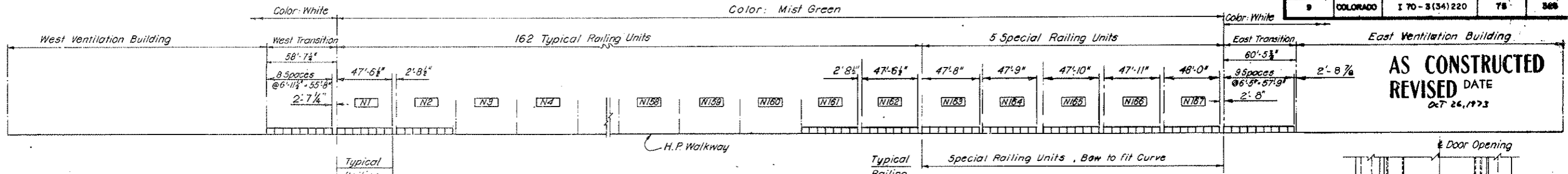
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
D	COLORADO	170-3(34)220	72 AX	326

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973

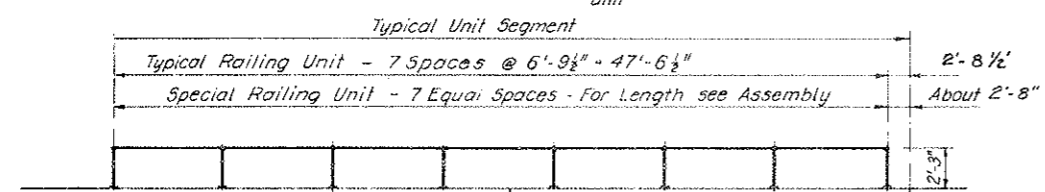


• STRAIGHT CREEK CONSTRUCTORS •			
SCALE	1/4" = 1'-0"	DATE	1/24/73
PLAN AT MESSAGE BOARD LOCATION			
APPROVED BY	DATE	DRAWING NUMBER	C2-33A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	78	308

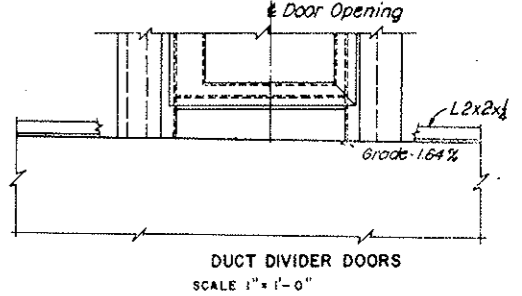
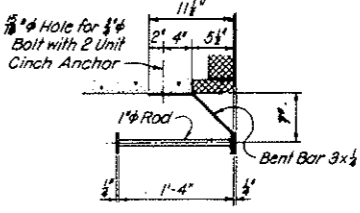
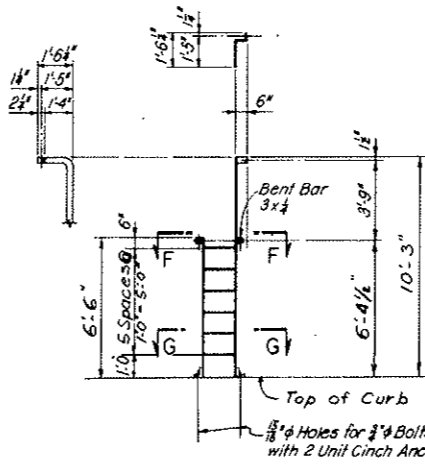
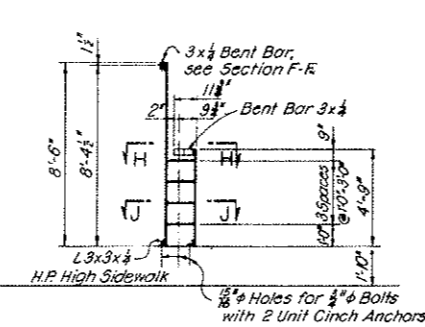


**AS CONSTRUCTED
REVISED DATE**
OCT 26, 1973



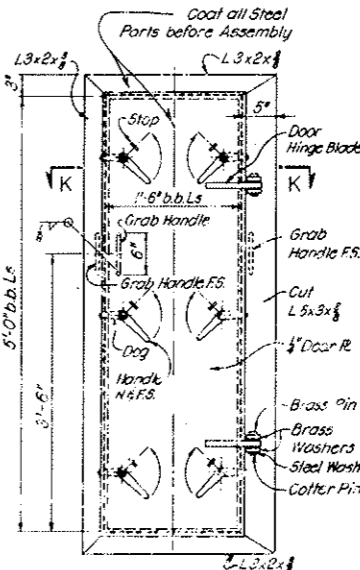
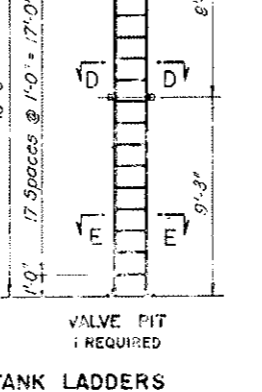
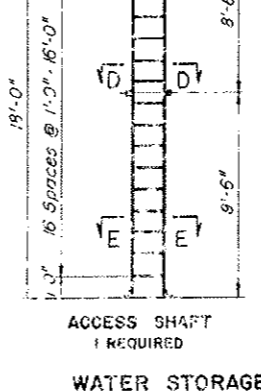
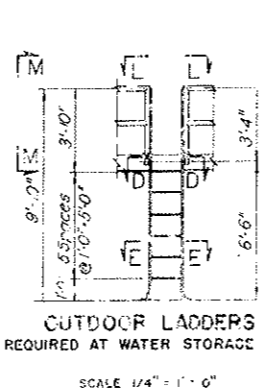
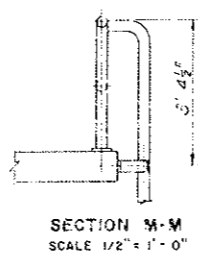
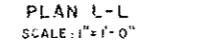
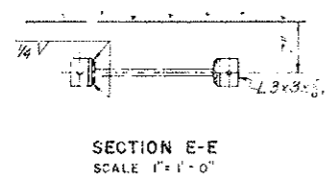
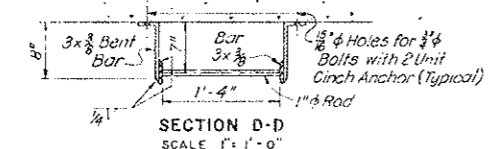
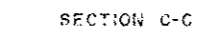
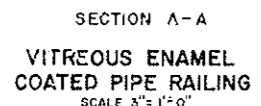
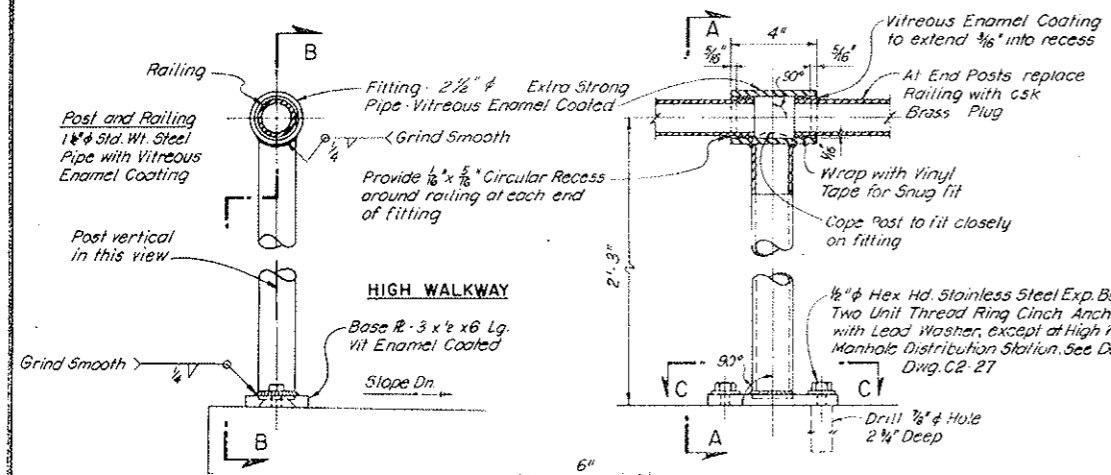
RAILING ASSEMBLY

SCALE: 1" = 40 FT HOR.
1" = 20 FT VERT.



DETAIL RAILING UNITS

SCALE 3/16" = 1'-0"



NOTES:
For location of Duct Divider Wall Doors see Dwg. G2-10 to G2-16 incl., C2-15 and C2-17
For Traffic Control Pulpits see Dwg. C2-25.
For Water Storage Tank see Dwg. G3-13 - G3-1K
All welding to conform to the requirements of the current "Code for Welding in Building Construction" AWS D10.33 of the American Welding Society.
All coated steel and sheet metal shall be repaired by a flame spray coating process if cut, drilled, chipped or welded.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL - TUNNEL
MISCELLANEOUS METAL RAILINGS, LADDERS AND DOORS

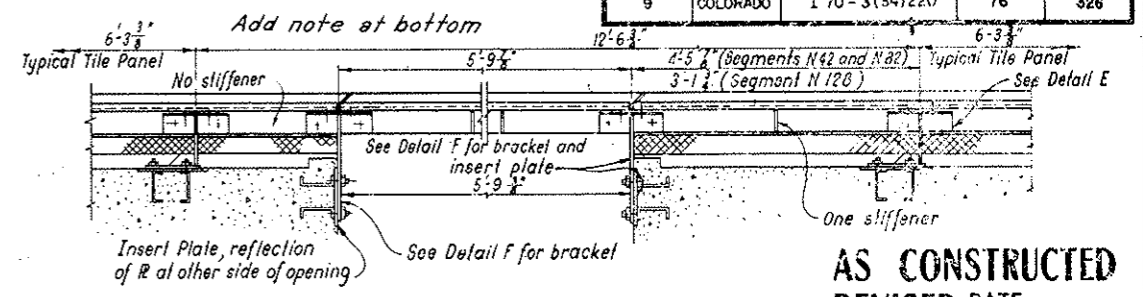
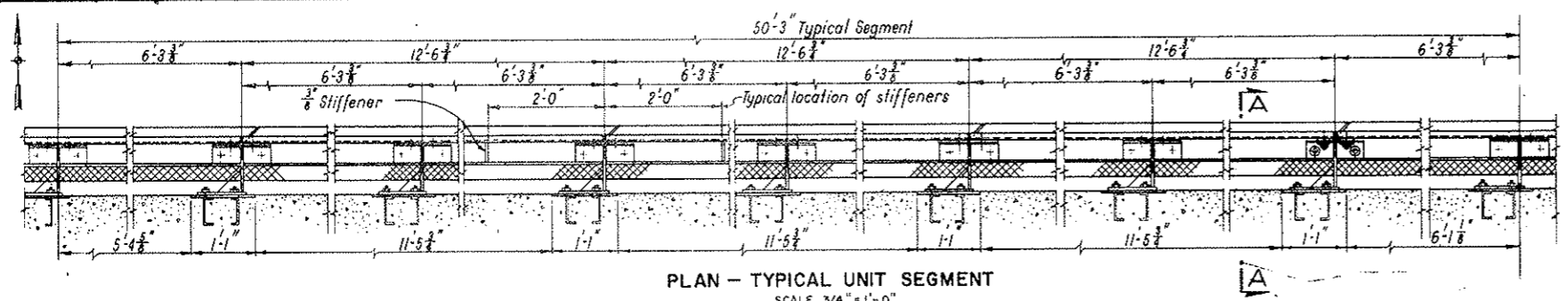
TIPPETS - ABBETT - McCARTHY - STRATTON
ENGINEERS AND ARCHITECTS - NEW YORK, N.Y.

DESIGNED BY: R.B.A.
DRAWN BY: R.B.A.
CHECKED BY: E.L.B.
SUBMITTED BY: [Signature]
APPROVED BY: [Signature]
NEW YORK, N.Y.

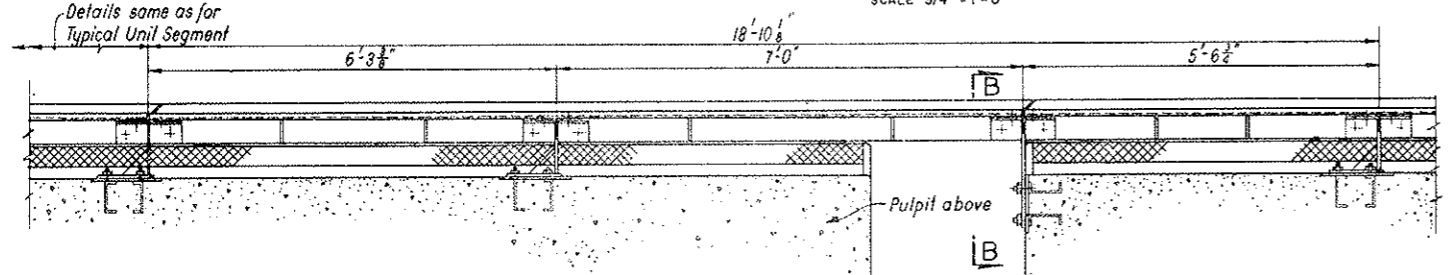
RECOMMENDED BY: [Signature]
DATE: AUG 15, 1973

CRASHING NO. 02-78

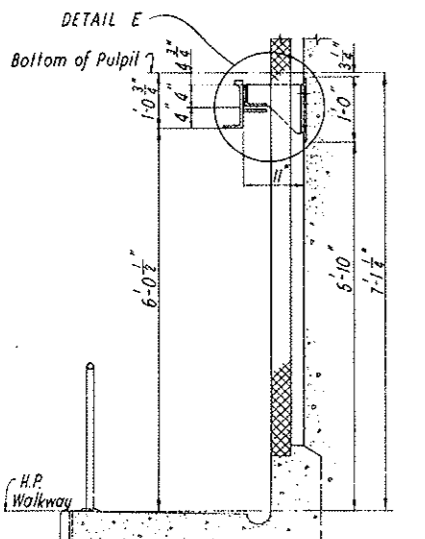
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	76	326



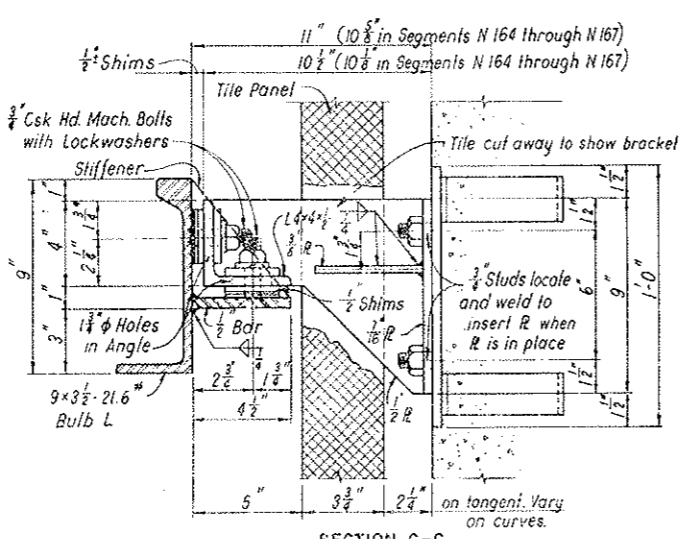
AS CONSTRUCTED
REVISED DATE
OCT 24, 1973



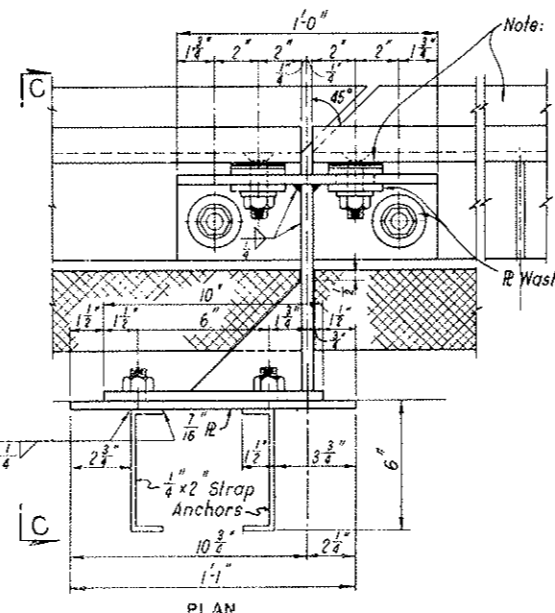
PLAN - SEGMENTS N12, N60, N108 AND N156
SCALE 3/4" = 1'-0"



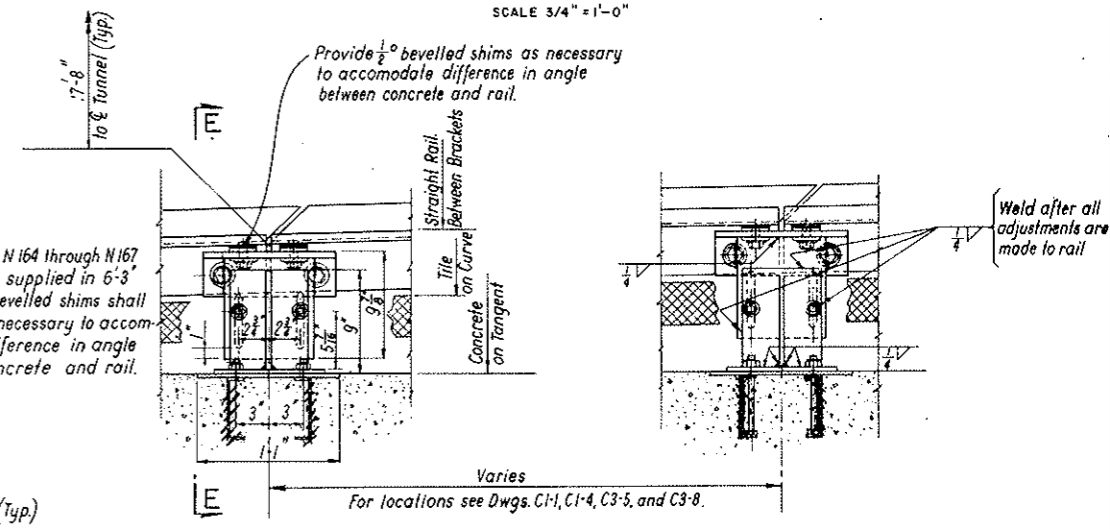
SECTION A-A - TYPICAL
SCALE 3/4" = 1'-0"



SECTION C-C
SCALE 3" = 1'-0"



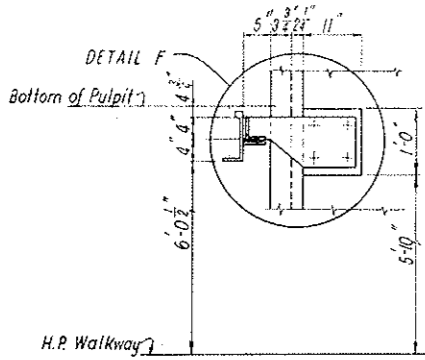
PLAN
SCALE 3" = 1'-0"



PLAN - CAR RAIL AND BRACKETS IN TRANSITIONS
SCALE 1/2" = 1'-0"

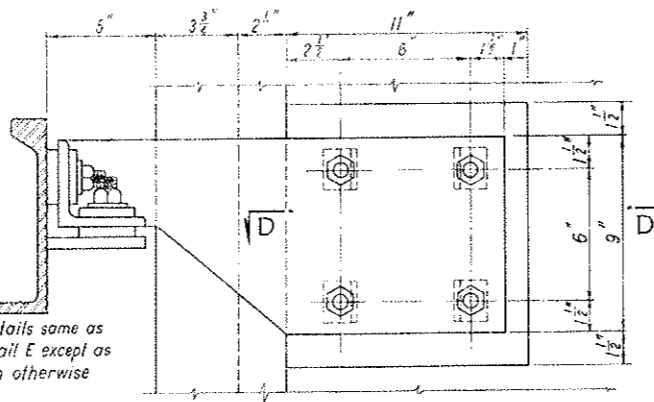
NOTES

- For Walkway Car, see Dwg. M-11
- All welding to conform to the requirements of the current Code for Welding in Building Construction AWS D1.0-63 of the American Welding Society.
- Typical support brackets are shown for east-to-west erection of tile panels. Brackets of opposite hand shall be used where the panels are erected from west-to-east or as required by Pullbox Panels.
- Curved rail shall be furnished at the approaches to the recesses for Walkway Car storage; see Dwg. S-W2, S-W3, S-E4 and S-E5.
- Only insert plates to be provided in South Tunnel stubs under this contract.
- Coat exposed surfaces of insert plate and all surfaces of bracket plates including stiffeners. All coated steel and sheet metal shall be repaired by a flame spray coating process if cut, drilled, chipped or welded.

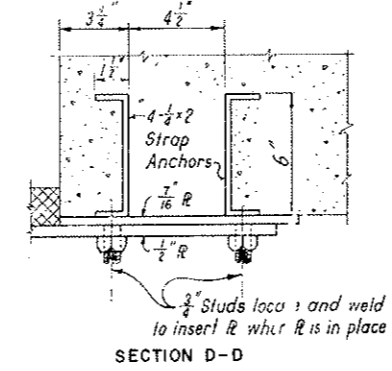


SECTION B-B
SCALE 3/4" = 1'-0"

Note: All details same as at Detail E except as shown otherwise

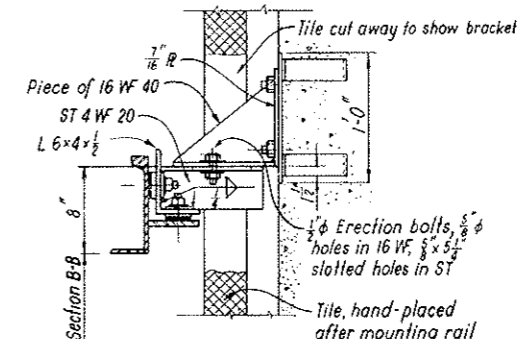


ELEVATION
SCALE 3" = 1'-0"



SECTION D-D
SCALE 3" = 1'-0"

DETAIL F
SCALE 3" = 1'-0"

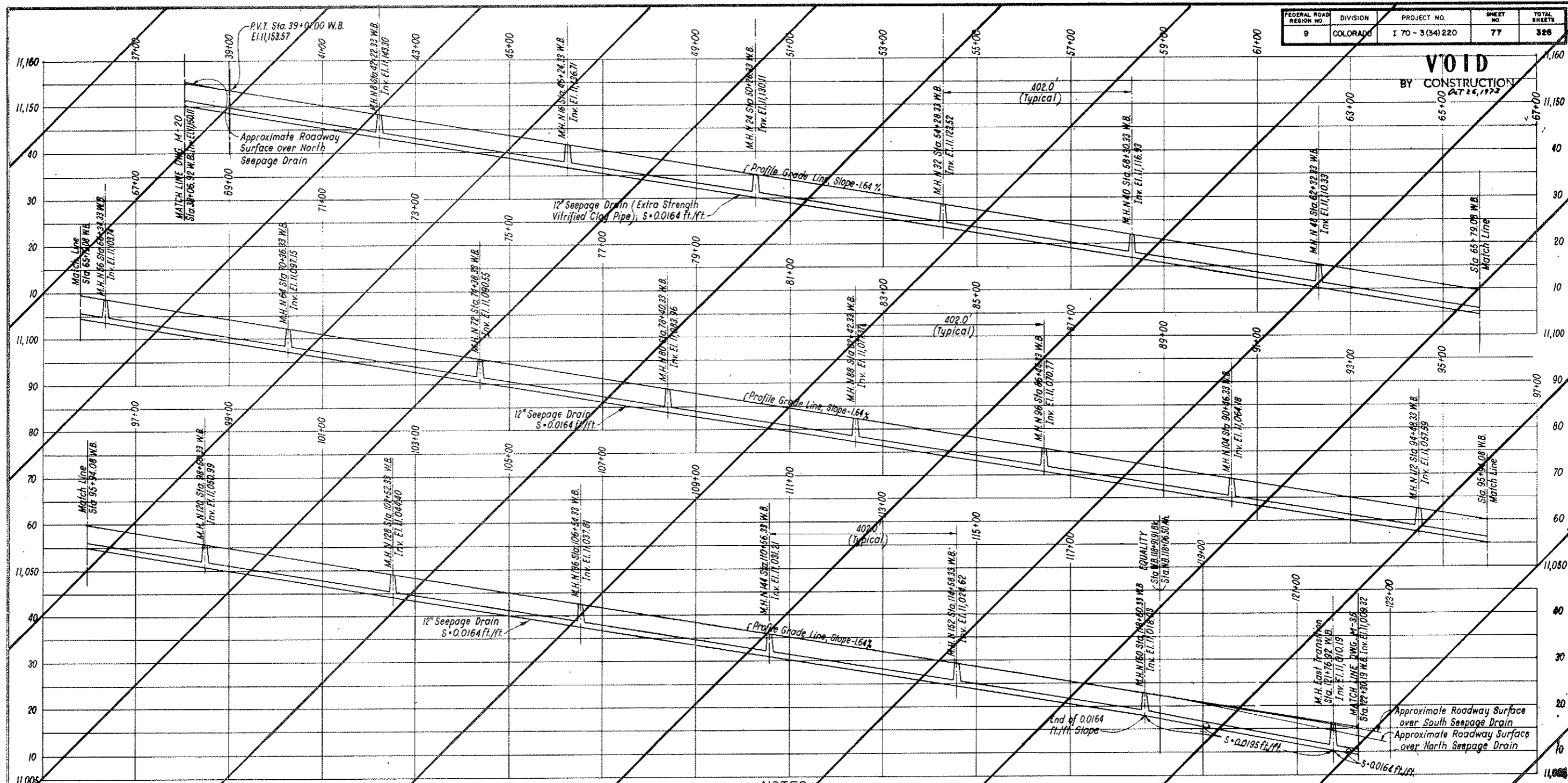


SECTION E-E
SCALE 1/2" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL					
MISCELLANEOUS METAL					
WALKWAY CAR RAIL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. McC.	RECOMMENDED: Henry I. Hart	APPROVED: Howard A. Taylor			
DRAWN: J.L.B.	CHECKED: E.L.B.	SUBMITTED: [Signature]			
NEW YORK, N. Y.	SCALE: AS NOTED	DATE: AUGUST 1967			DRAWING NO. C2-37

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	77	328

VOID BY CONSTRUCTION
 DT 26, 1972



PROFILE
 SCALE 1" = 100 FT. HOR.
 1" = 10 FT. VERT

NOTES:
 Dimensions for the seepage drain system are measured along the centerline of roadway.
 Elevations are given for both 12" Seepage Drains.
 For relation between Profile Grade Line and normal roadway surface, see Dwg. C2-1.
 Seepage drain manholes are identified according to the tunnel segment they are located in; thus M.H. N. 88 is located in the north tunnel segment N. 88.
 For schematic layout of seep drain system see Dwg. G2-10 to G2-18.
 For Details see Dwg. C2-39.
 For Pipe Bedding Materials see Dwg. C1-6, C1-7, C2-10 through C2-18, C3-1 and C3-2.

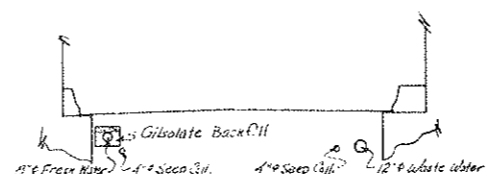
For connection of existing 8" CMP underdrain in buttress berm to 8" Seep Drain Collector, see Dwg. G4-1.
 North Wall Seep Drain Collector shall be laid continuously, from Sta. W.B. 37+73.50 to Sta. W.B. 122+63.77.
 South Wall Seep Drain Collector shall be laid continuously, between the above mentioned stations, except at Cross Passageways. See Dwg. G2-11, G2-13 and G2-15.

This drawing replaced by C2-38 thru C2-39M
 Marked accordingly
 Change Entered

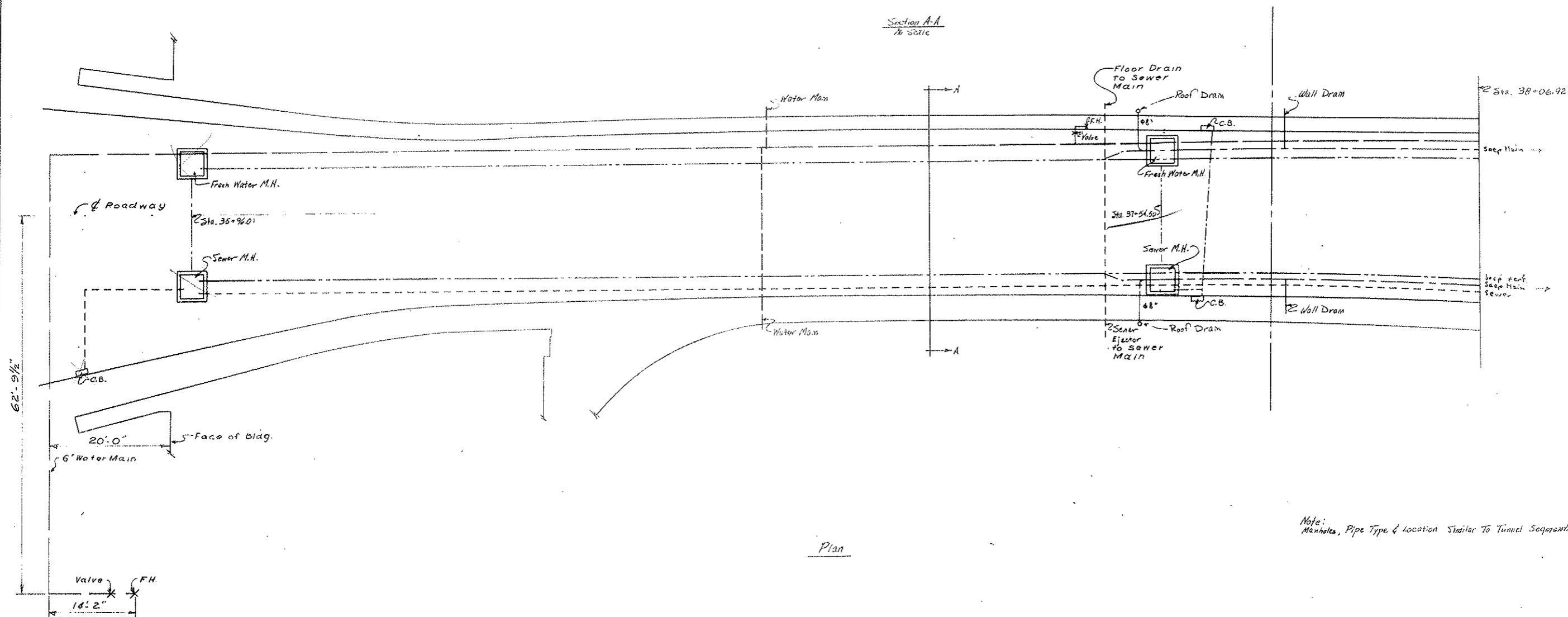
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL SEEPAGE DRAIN SYSTEM PROFILE					
TIPPETTS - ABBETT - MCCARTHY - SYRINGTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: M.E.	CHECKED: M.E. - S.M.R.		APPROVED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	
DRAWN: J.L.	SUBMITTED: <i>[Signature]</i>		REVISION NO. C2-38		
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1967					

FEDERAL ROAD DISTRICT	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170 31341770	77 AX	300

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



Section A-A
 No Sotte

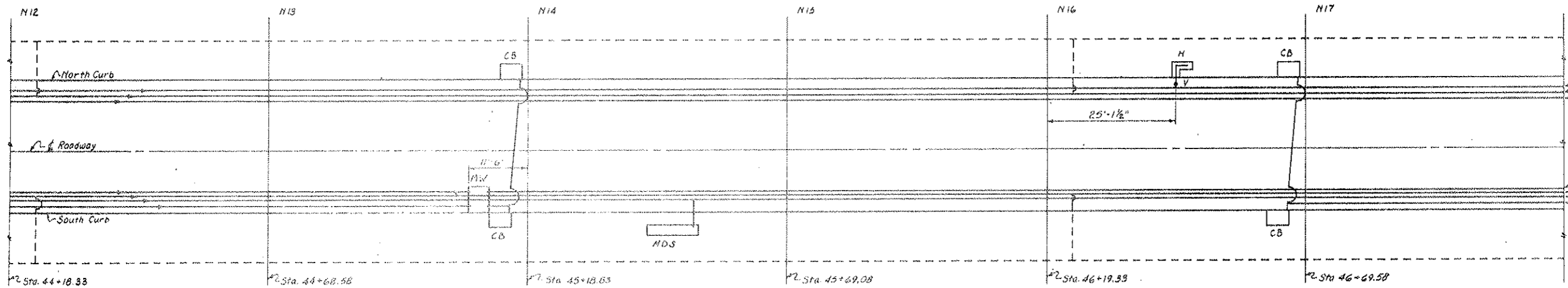
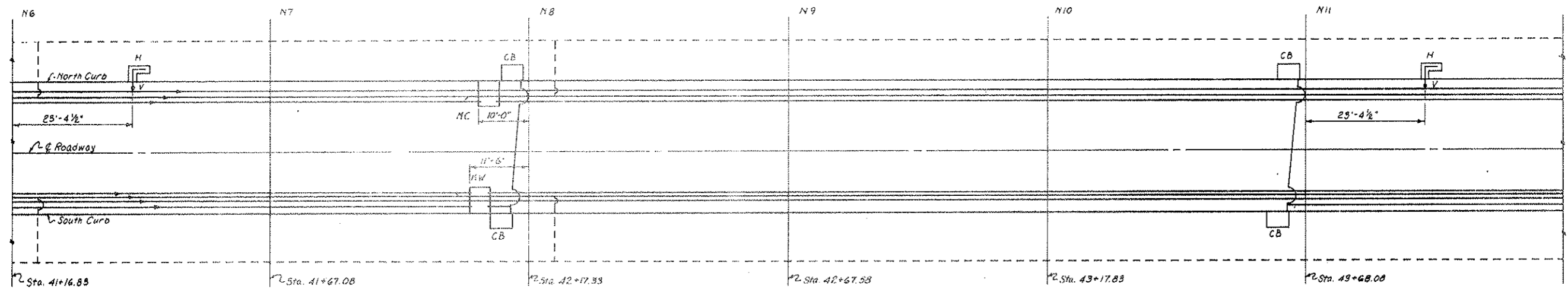
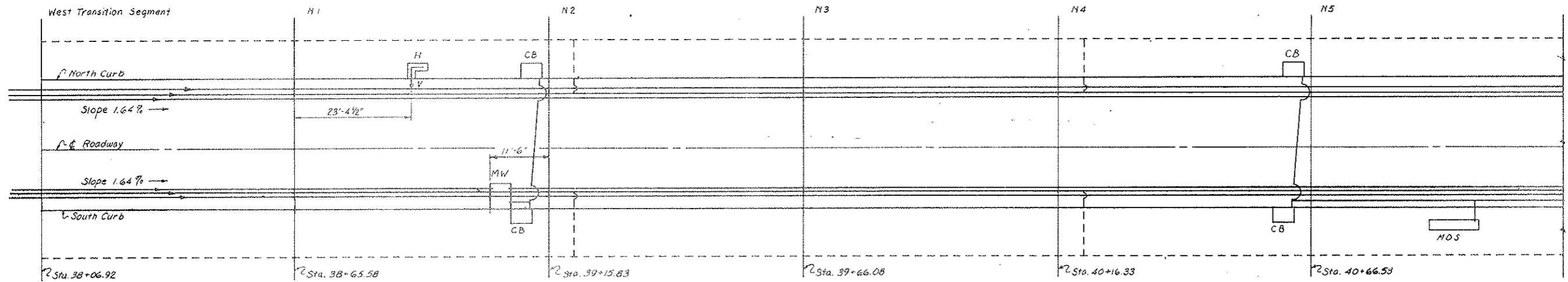


Note: Manholes, Pipe Type & Location Similar To Tunnel Segments.

STATE OF COLORADO			
DIVISION OF HIGHWAYS			
Prepared By	SCALE	DATE	DESIGNED BY
Straight Creek Constructors	1/8"=1'-0"	9-16-71	D.S.
ROADWAY PIPING IN WEST VENT BUILDING			
NORTH ROADWAY			
DATE	APPROVED BY	PROJECT NO.	PROJECT SHEET
9-16-71	D.S.	170 31341770	77 AX
			02-33A

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

PROJECT NO.	170-3(34)220	DATE	77 BX	226
NO. 9	COLORADO			



5" 8" Water Main
 18" 8" Seep Main
 24" 8" Seep Coll. (Part.)
 Typical
 4" 8" Seep Coll. (Part.)
 28" 8" Seep Main
 12" 8" Sewer Main
 6" 8" C.B. Coll.

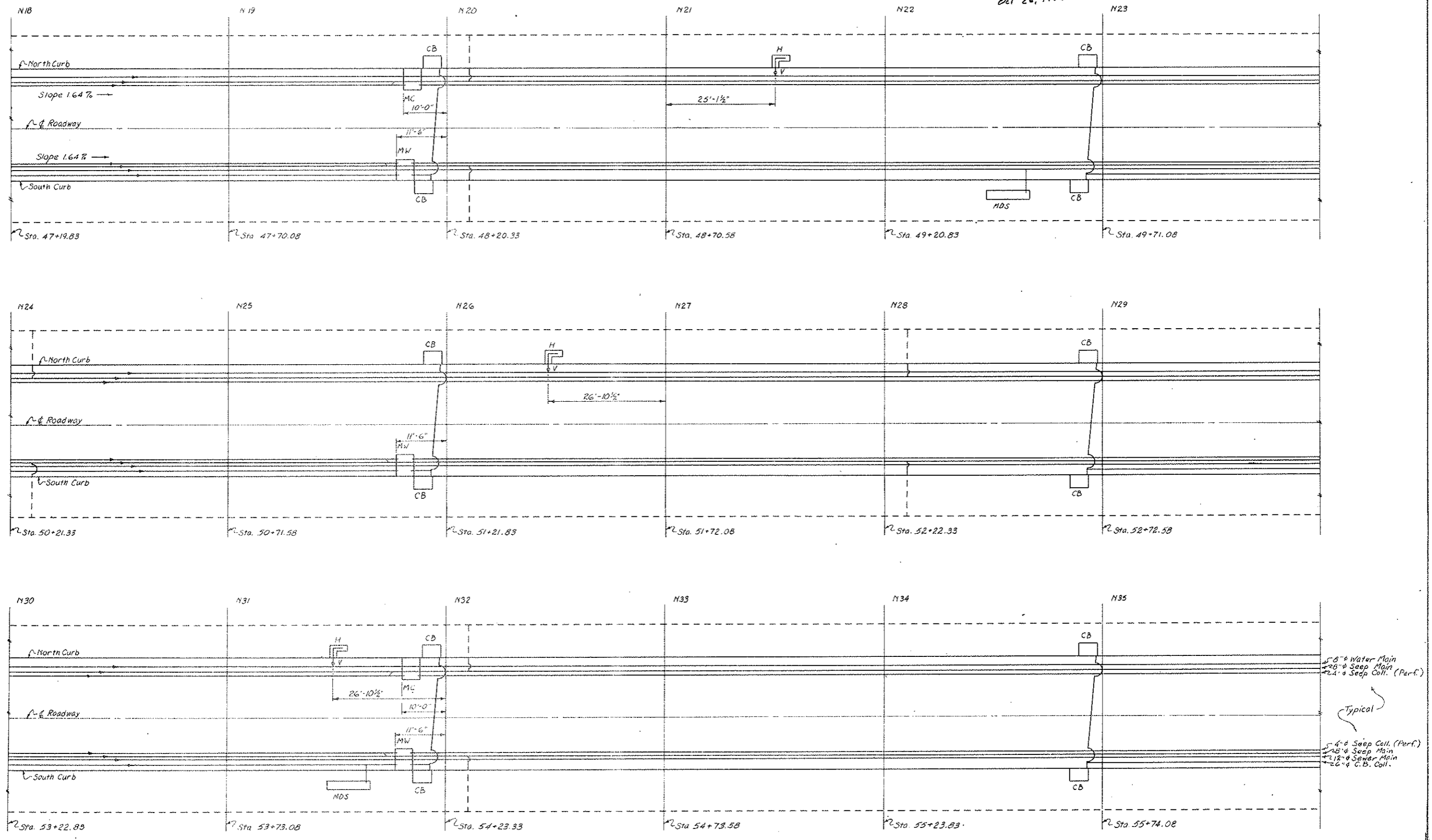
LEGEND:
 MW Manhole Waste & Seepage
 HC Manhole Water Supply & Seepage
 H Flush Type Fire Hydrant
 CB Roadway Gutter Catch Basin
 --- Pipe In Place
 - - - Pipe To Be Installed
 V Valve Box
 MDS Manhole Distribution Station

NOTE:
 Bina Flange 4" 8" Perforated Seep Collector in Manholes.
 Use 45° Y's @ Connection Of 4" 8" Seep Coll & 8" 8" Seep Main.
 All Manholes 4' x 4'.
 Determine Exact Location Of Existing Cross Over Pipe In Field.

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By	SCALE	10 to 1'	DRAWN BY R.M. GRIFFIN
Straight Creek Constructors		DATE	REVIEWED
PLAN - TUNNEL PILING, Trans. to N17			
DATE	APPROVED BY DOH, Date	2-10-72	DRAWING NUMBER
4/19/71	By D.S.	As SCC 313	C2-388B

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1972

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	77 CX	526



LEGEND:
 MW Manhole Waste & Seepage
 MC Manhole Water Supply & Seepage
 H Flush Type Fire Hydrant
 CB Roadway Gutter Catch Basin
 --- Pipe In Place
 - - - - - Pipe To Be Installed
 V Valve Box
 MDS Manhole Distribution Station

NOTE:
 Blind Flange & Perforated Seep Collector in Manholes.
 Use 45° Y3 @ Connection Of 4" Seep Coll & 8" Seep Main.
 All Manholes 4' x 4'.
 Determine Exact Location Of Existing Cross Over Pipe In Field.

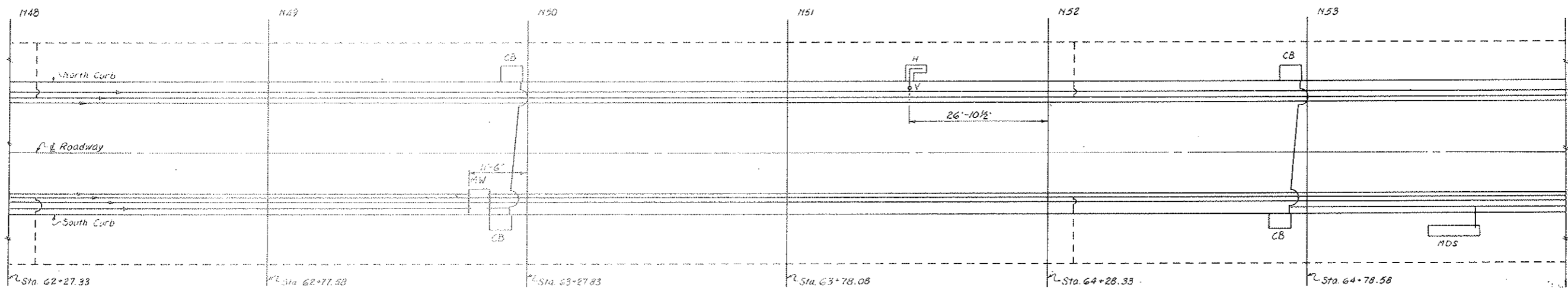
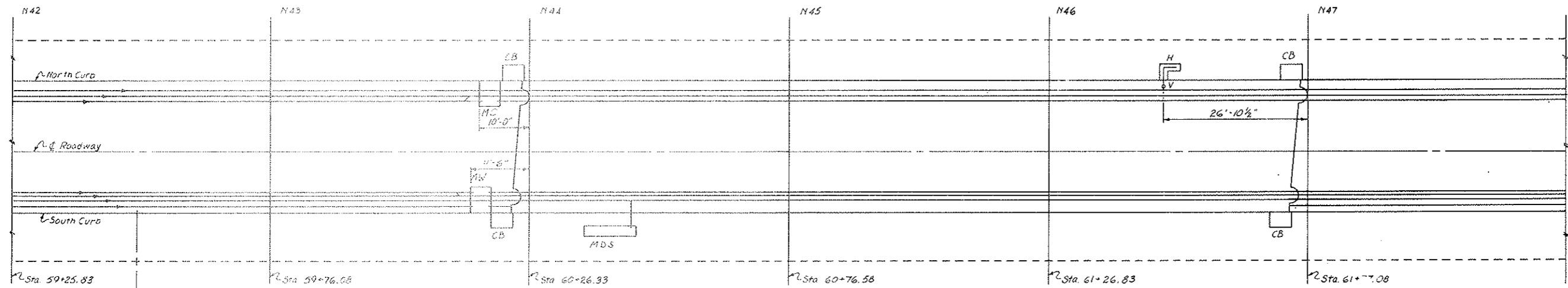
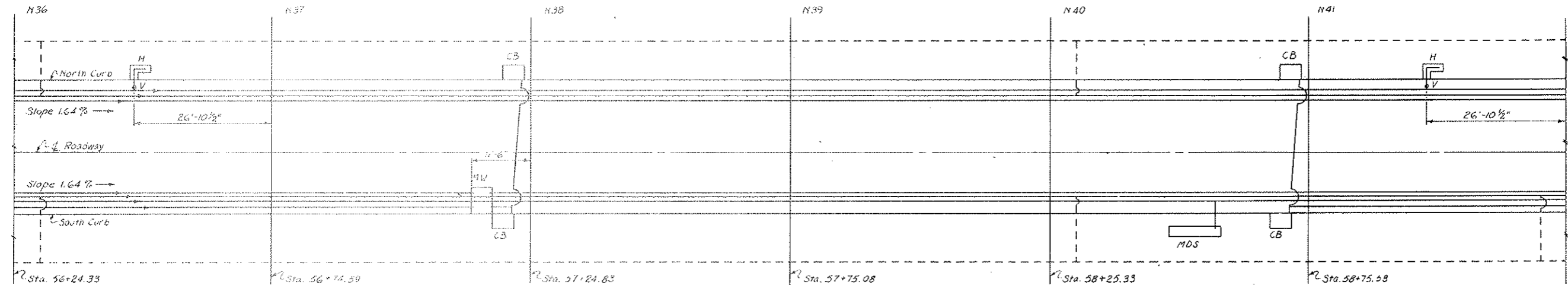
5" 8" Water Main
 28" Seep Main
 24" Seep Coll. (Perf.)
 Typical
 4" Seep Coll. (Perf.)
 28" Seep Main
 12" Sewer Main
 26" C.B. Coll.

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE 10 to 1" = 1'	DATE 4/19/71	DRAWN BY R.H. Griffith
PLANNED TUNNEL PIPING, N18 to N35		APPROVED BY DOH, Date 2-10-72 By D.S., As SCC 314	REVIEWED C2-38C

Change Order #45, W.O. 21901

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	77 DX	326



LEGEND:
 MW Manhole Waste & Seepage
 MC Manhole Water Supply & Seepage
 H Flush Type Fire Hydrant
 CB Roadway Gutter Catch Basin
 --- Pipe To Be Installed
 V Valve Box
 MDS Manhole Distribution Station

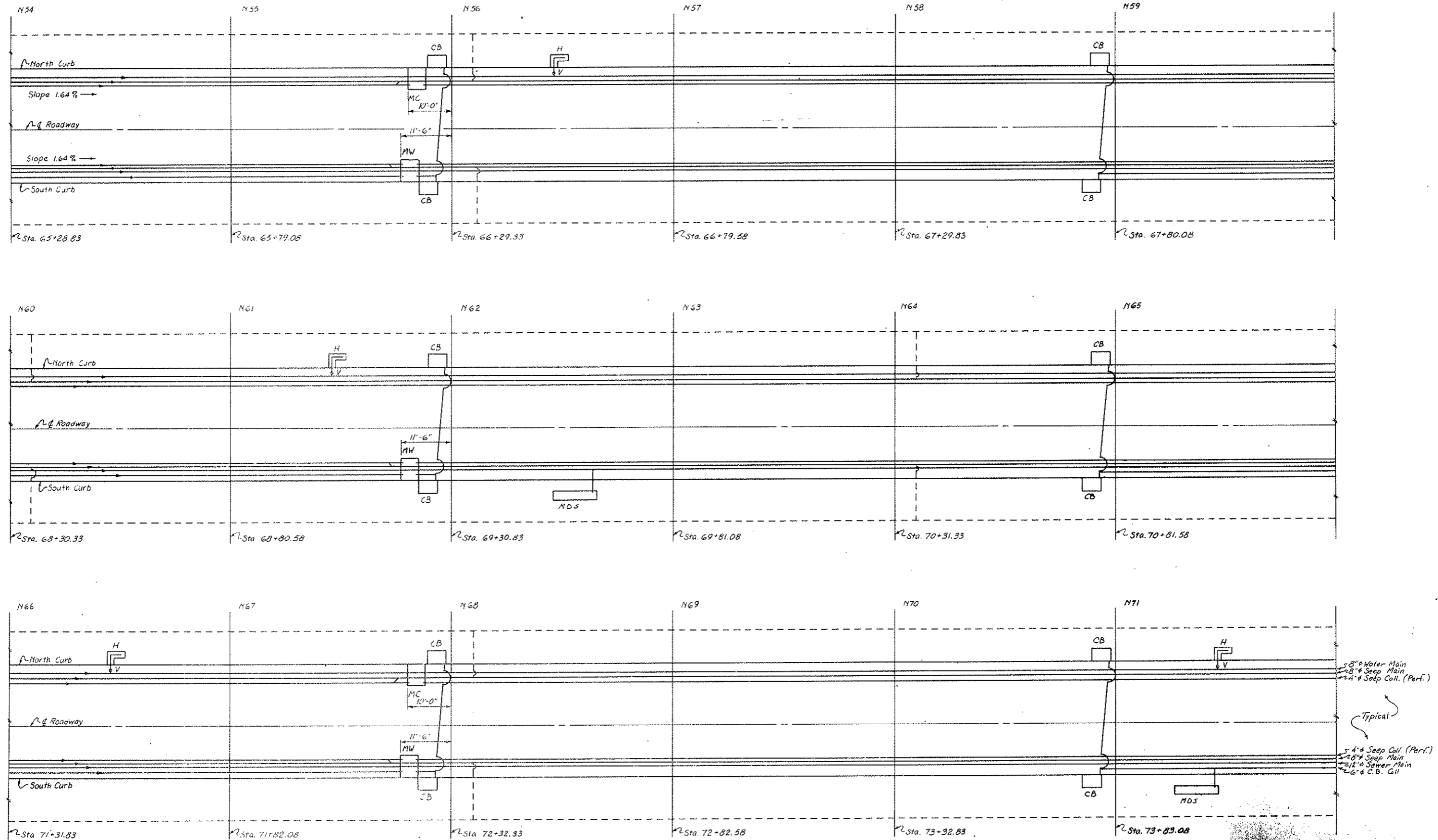
NOTE:
 Blind Flange 4" Perforated Seep Collector in Manholes.
 Use 45° Y3 @ Connection of 4" Seep Coll. & 8" Seep Main.
 All Manholes 4' x 4'.
 Determine Exact Location of Existing Cross Over Pipe In Field

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE 10 to 1'-0"	DRAWN BY R.M. Griffith	
PLAN - TUNNEL PIPING, N36 to N53			
DATE 4/20/71	APPROVED BY D.S.	DATE 2-10-72	DRAWING NUMBER C2-38D

Change Order #145-140-24901

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	77 EX	326



LEGEND:
 MW Manhole Waste & Seepage
 MC Manhole Water Supply & Seepage
 H Flush Type Fire Hydrant
 CB Roadway Gutter Catch Basin
 --- Pipe in Place
 - - - Pipe to Be Installed
 V Valve Box
 MDS Manhole Distribution Station

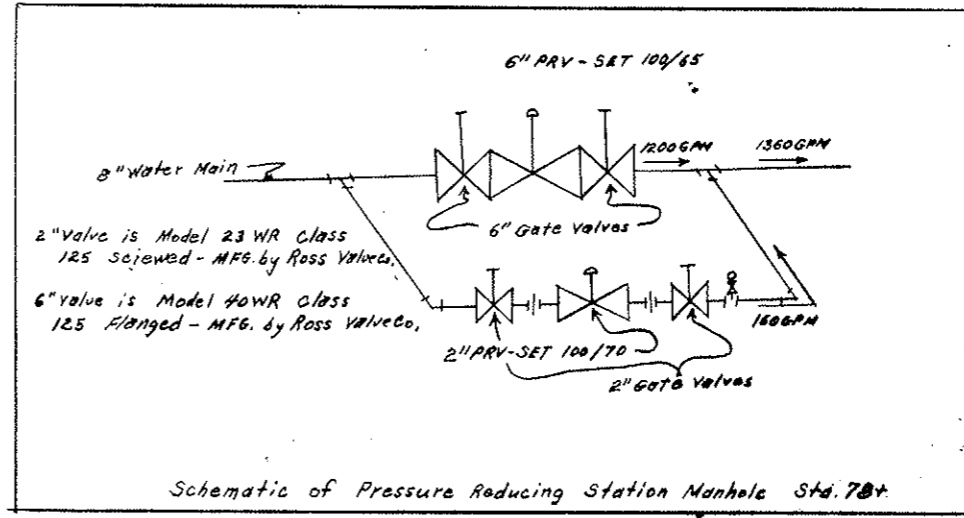
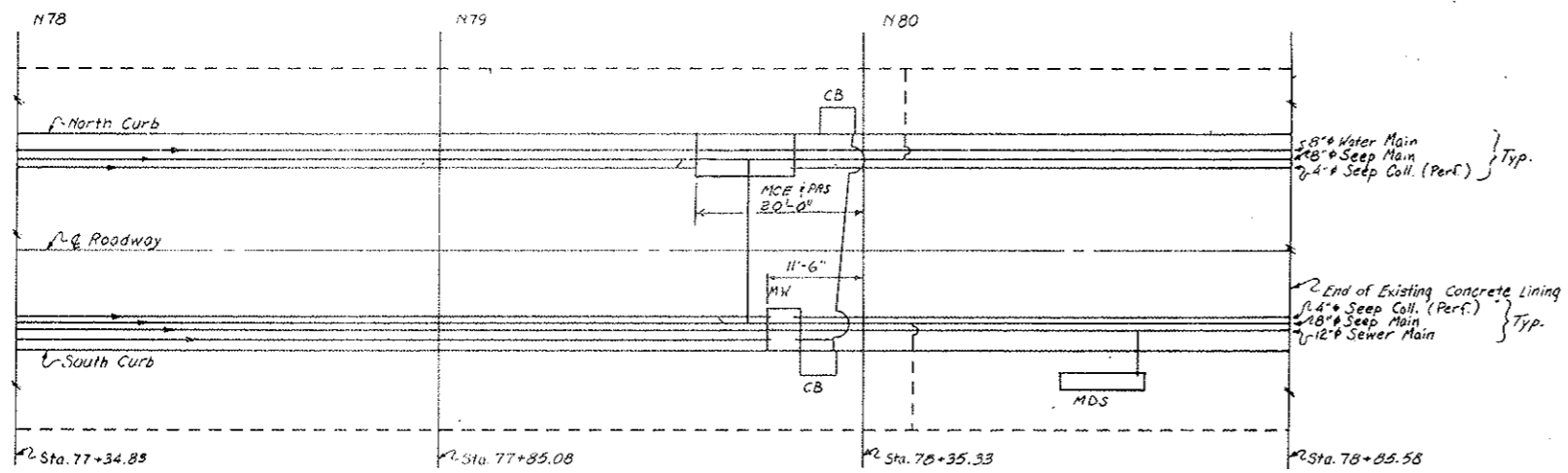
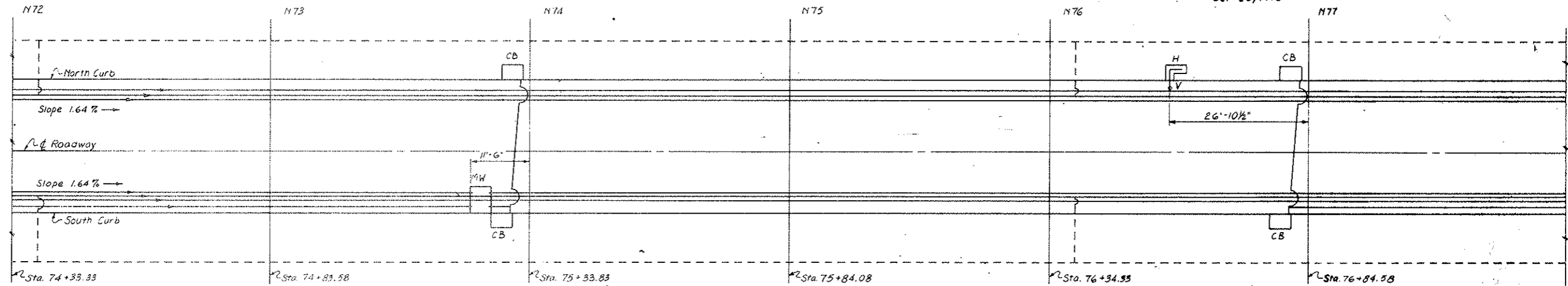
NOTE:
 Blind Flange 4" Perforated Seep Collector in Manholes.
 Use 45° 1/2" Connection of 4" Seep Coll & 8" Seep Main.
 All Manholes 4' x 4'.
 Determine Exact Location of Existing Cross Over Pipe In Field.
 Determine Exact Location of Existing Fire Hydrant Block Outs In Field.

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE 10/11/0	DRAWN BY R.M.G./H.A. REVISED	
PLAN & TUNNEL PIPING, N54 to N71			
DATE 4/22/71	APPROVED BY DOH, Date 2-10-76 By D.S.	As SCC 916	DRAWING NUMBER C2-58E

Change Order #45, No. 2190

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	DATE
9	COLORADO	170-3(34)220	7/73



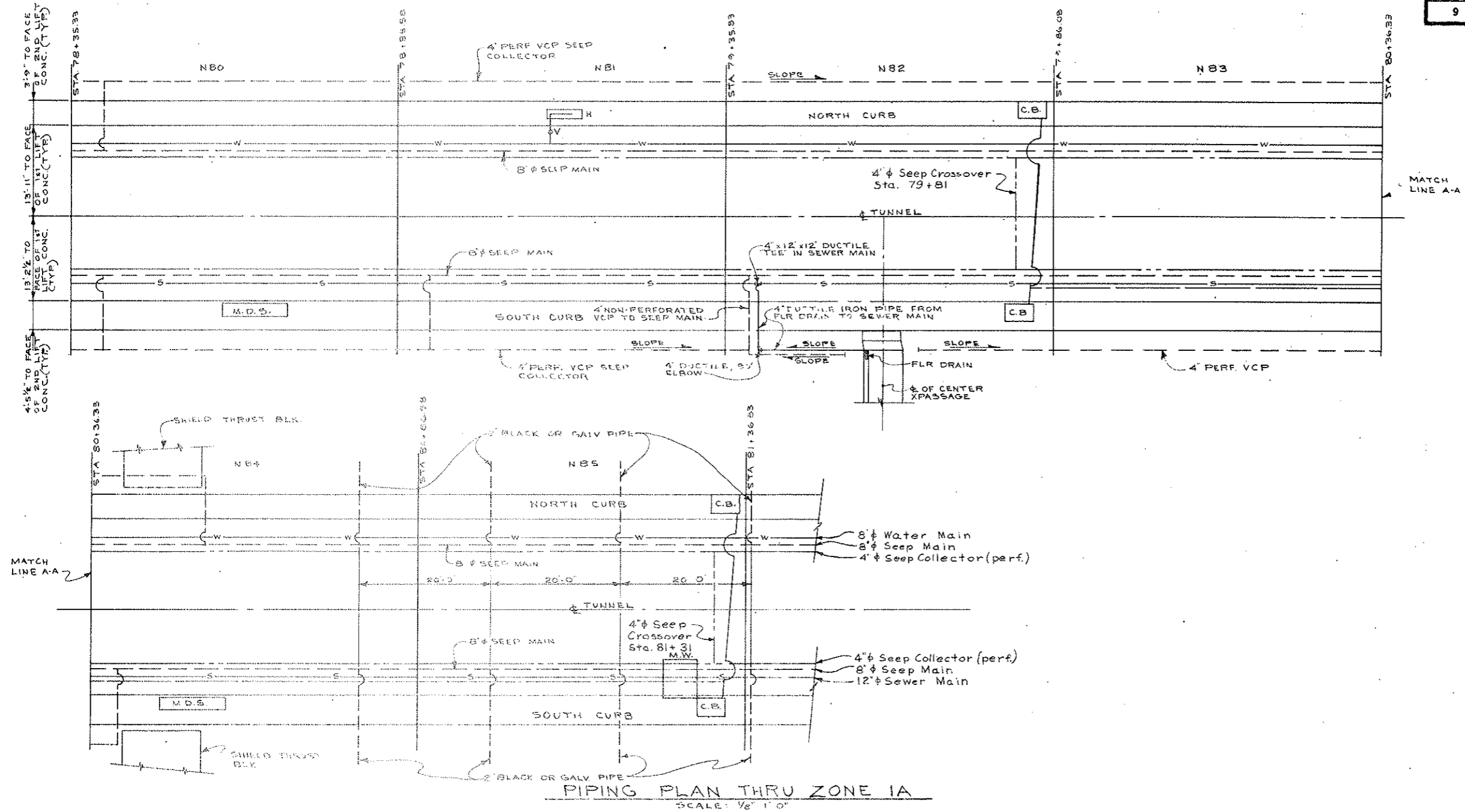
LEGEND:
 MW Manhole Waste & Seepage
 MC Manhole Water Supply & Seepage
 H Flush Type Fire Hydrant
 CB Roadway Gutter Catch Basin
 --- Pipe To Be Installed
 V Valve Box
 MCE Manhole Water Supply, Seepage & Equalizer
 MDS Manhole Distribution Station
 RRS Pressure Reducing Station Manhole at Sta. 78+ ONLY

NOTE:
 Blind Flange 4" Perforated Seep Collector, in Manholes.
 Use 45° YS @ Connection Of 4" Seep Coll. & 8" Seep Main.
 Determine Exact Location Of Existing Cross-Over Pipe In Field.

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE 10' to 1"0	DESIGNED BY R.M. Orin	CHECKED BY
PLAN - TUNNEL PIPING, N72 to N80			
DATE 4/22/71	APPROVED BY D.S.	DATE 2-10-72	BY As SCC 917
		DRAWING NUMBER CE-38F	

Change Order #445, N.D. 21901

REGIONAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	77GX	326



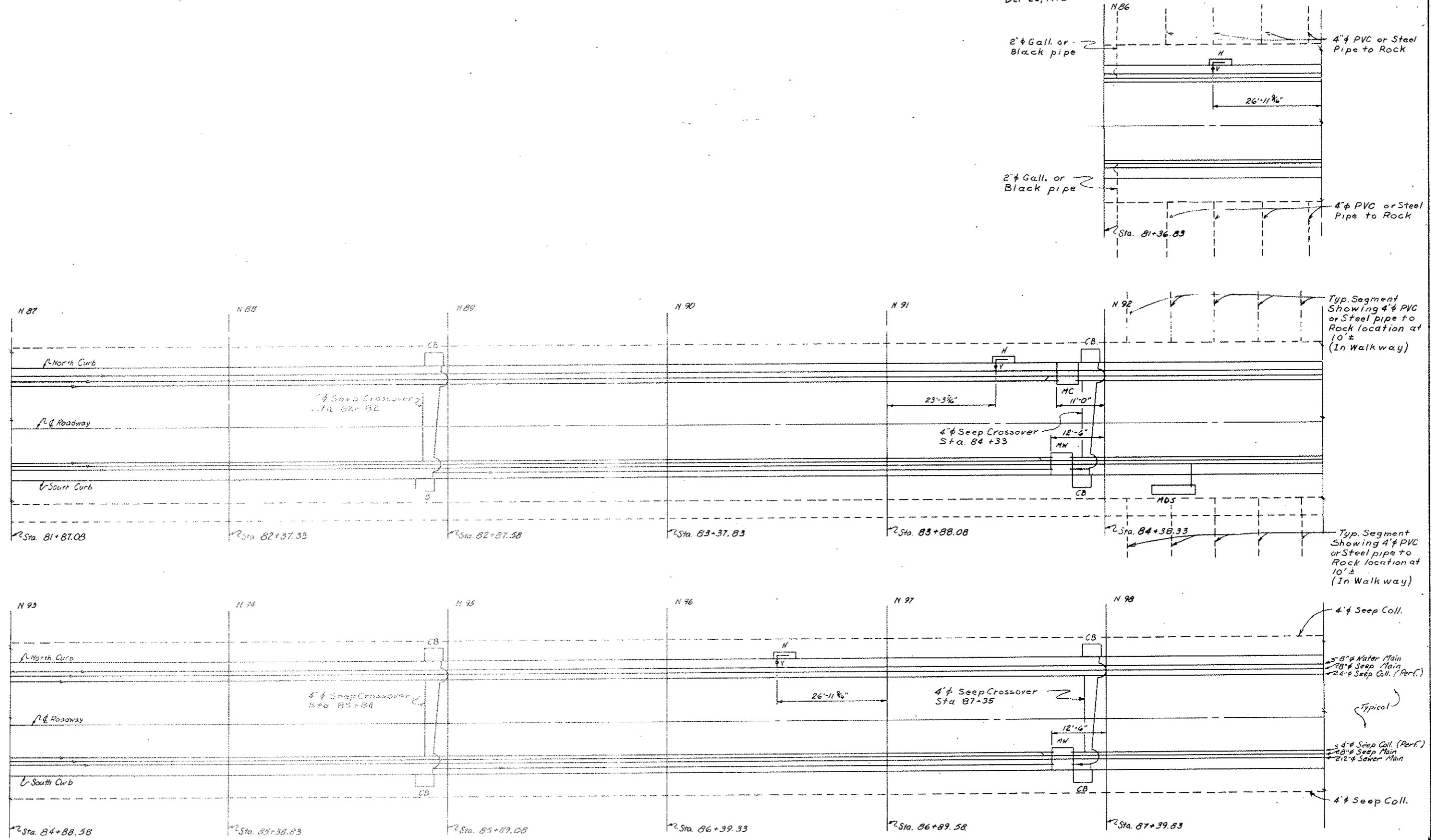
LEGEND

6" ϕ C.B. COLLECTOR	-----
12" ϕ SEWER	-----
SEEP MAIN	-----
4" ϕ SEEP COLLECTOR	-----
8" ϕ WATER MAIN	-----

STATE OF COLORADO			
DIVISION OF HIGHWAYS			
SCALE	NOTED	DESIGNED BY	WM GIFFIN
PLAN-TUNNEL PIPING, N81-N85			
DATE	APPROVED BY	DATE	DRAWING NUMBER
9/4/73	BY: AS. SEC. 831		C2-38G

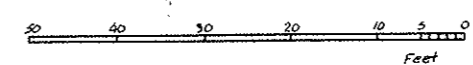
AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	77 HX	326



- LEGEND
- MW Manhole Waste & Seepage
 - MC Manhole Water Supply & Seepage
 - H Flush Type Fire Hydrant
 - CB Roadway Outer Curb Basin
 - Pipe In Place
 - - - Pipe To Be Installed
 - V Valve Box
 - MDS Manhole Distribution Station

NOTE:
 Blind Flange 4" Perforated Seep Collector In Manholes.
 Use 45° Ys & Connection Of 4" Seep Coll & 8" Seep Main.

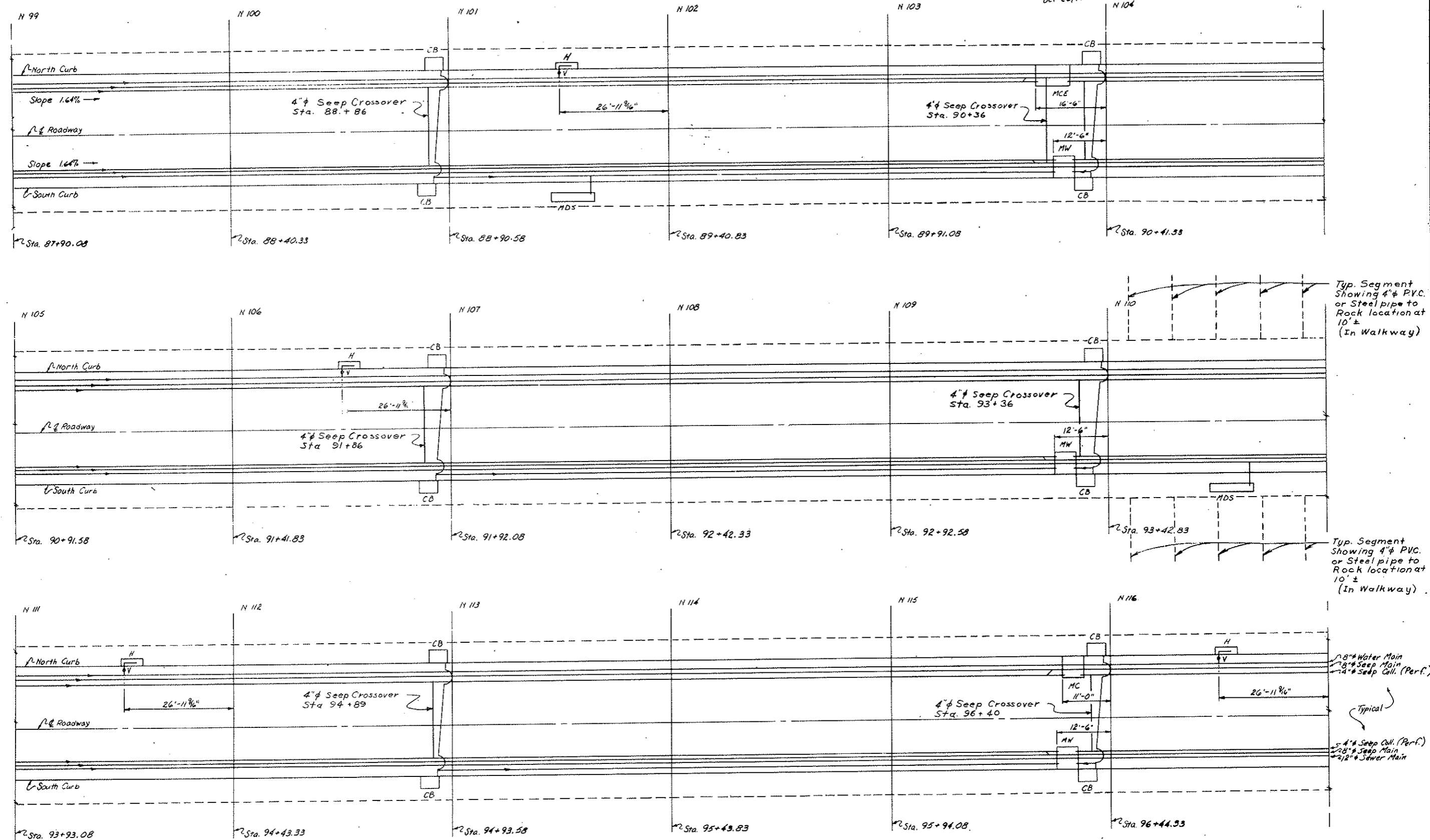


STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By STRAIGHT CREEK CONSTRUCTORS	SCALE 10' to 1"	DRAWN BY R.M. Griffith	REVISIONS
PLAN-TUNNEL PIPING -N86 to N98			
DATE 10-27-71	APPROVED BY By D.S.	DOH, Date 2-10-72 As SCC 408	DRAWING NUMBER C2-38H

AS CONSTRUCTED
REVISED DATE

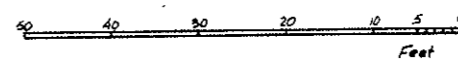
Oct 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	77IX	326



- LEGEND
- MW Manhole Waste & Seepage
 - MC Manhole Water Supply & Seepage
 - H Flush Type Fire Hydrant
 - CB Roadway Gutter Catch Basin
 - Pipe In Place
 - - - Pipe To Be Installed
 - V Valve Box
 - MCE Manhole Water, Seepage & Equalizer
 - MDS Manhole Distribution Station

NOTE:
Blind Flange 4" Perforated Seep Collector In Manholes.
Use 45° Y's & Connection Of 4" Seep Coll. & 8" Seep Main.

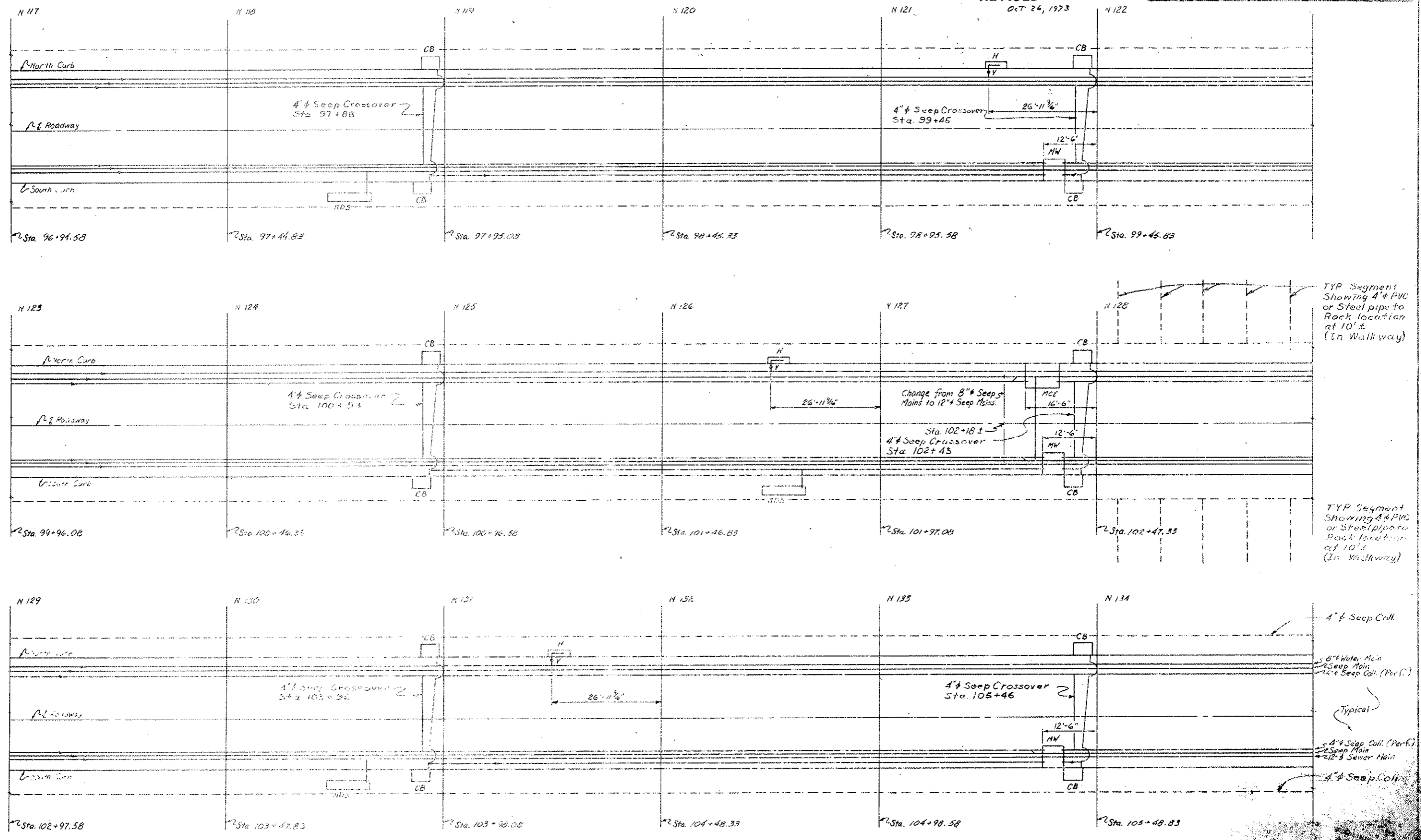


STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By	SCALE	DATE	DRAWN BY
STRAIGHT CREEK CONSTRUCTORS	10' to 1"	2-10-72	R.M. GRIFFIN
PLAN TUNNEL PIPING - N 99 to N 116			
DATE	APPROVED BY	DATE	BY
10-27-71	D.S.	2-10-72	As SCC 409
			C2-381

AS CONSTRUCTED
REVISED DATE

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170 31241220	77 JX	324

OCT 26, 1973



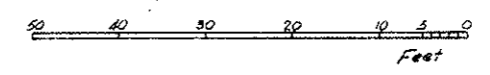
TYP Segment Showing 4" PVC or Steel pipe to Rock location at 10' ± (In Walkway)

TYP Segment Showing 4" PVC or Steel pipe to Rock location at 10' ± (In Walkway)

4" Seep Coll.
8" Water Main
8" Seep Main
8" Seep Coll. (Perf.)
Typical
4" Seep Coll. (Perf.)
8" Seep Main
8" Seep Coll.
4" Seep Coll.

- LEGEND
- MW Manhole Water Supply & Seepage
 - MC Manhole Water Supply & Seepage
 - H Cast Type Fire Hydrant
 - CB Roadway Gutter Catch Basin
 - Pipe In Place
 - Pipe to be Installed
 - V Valve Box
 - MCE Manhole Water, Seepage & Equalizer
 - MDS Manhole Distribution Station

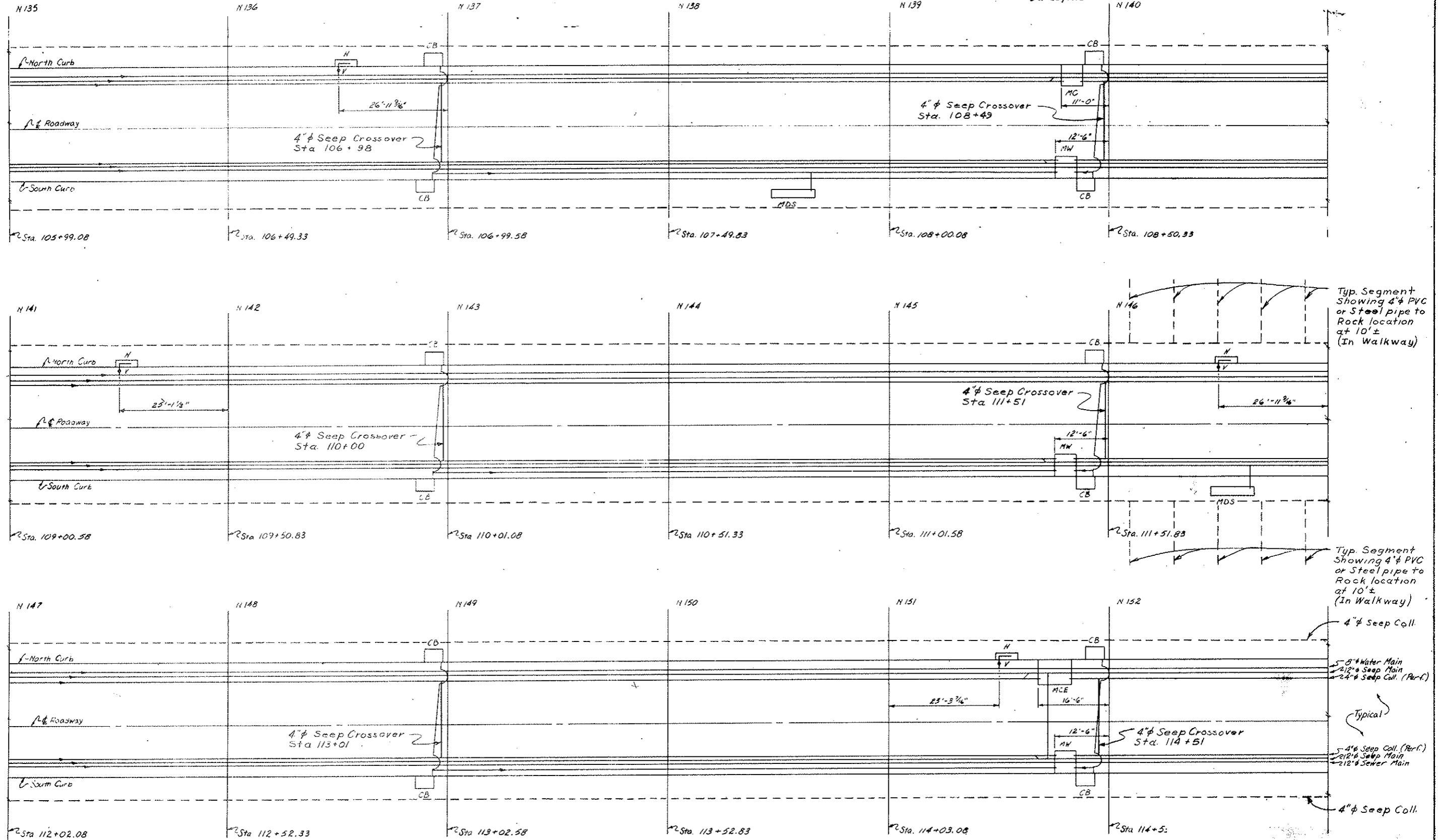
NOTE:
Blind = large 4" Perforated Seep Collector In Manholes.
Use 45° Y & Connection of 4" Seep Coll. to 8" or 12" Seep Main.



STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By STRAIGHT CREEK CONSTRUCTORS	SCALE 1" = 10'	DESIGNED BY K. J. GRIFFIN	DATE 10-27-71
PLAN TUNNEL PIPING - N 117 to N 134			
APPROVED BY D. S.	DATE 2-10-72	DESIGNED BY D. S.	DATE 10-27-71

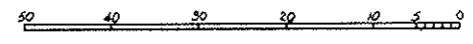
AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	77 KX	326



LEGEND
 MW Manhole Waste & Seepage
 MC Manhole Water Supply & Seepage
 H Flush Type Fire Hydrant
 CB Roadway Gutter Catch Basin
 --- Pipe In Place
 - - - - - Pipe To Be Installed
 V Valve Box
 MCE Manhole Seepage & Equalizer
 MDS Manhole Distribution Station

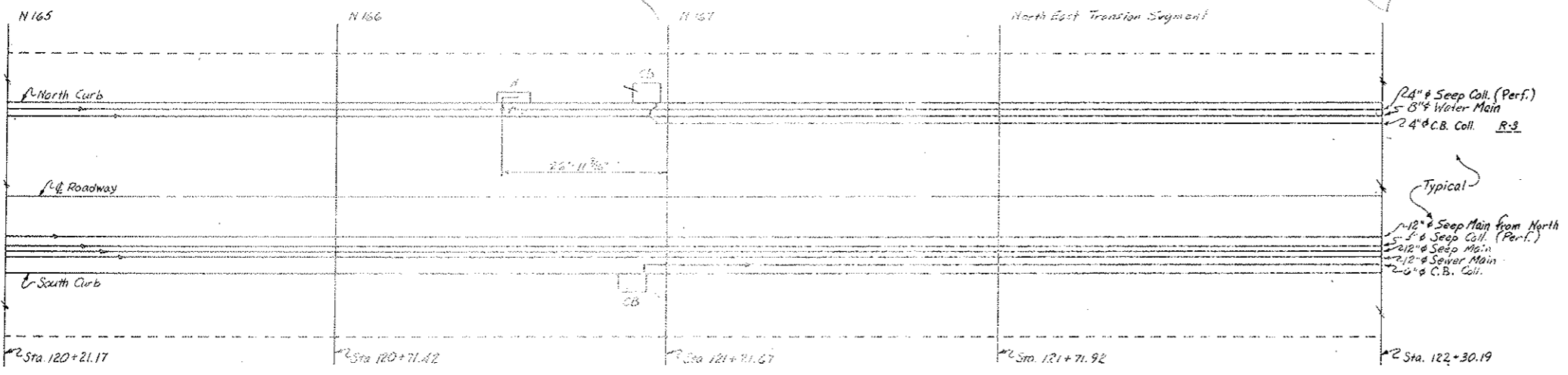
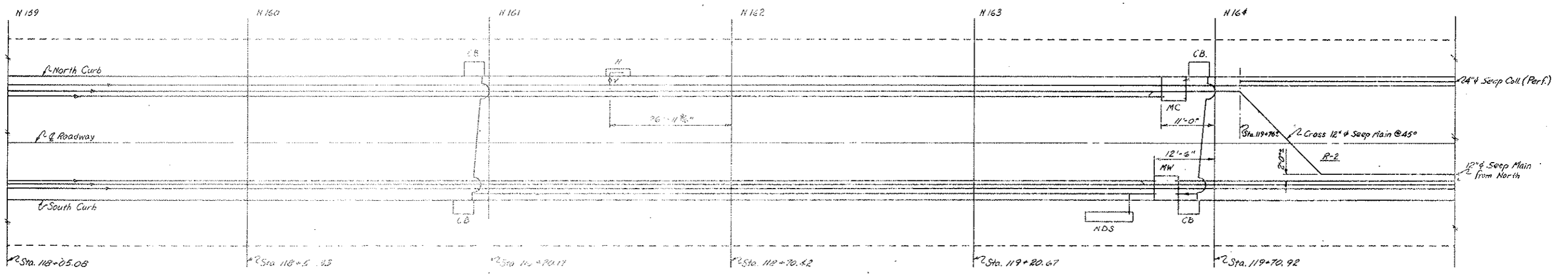
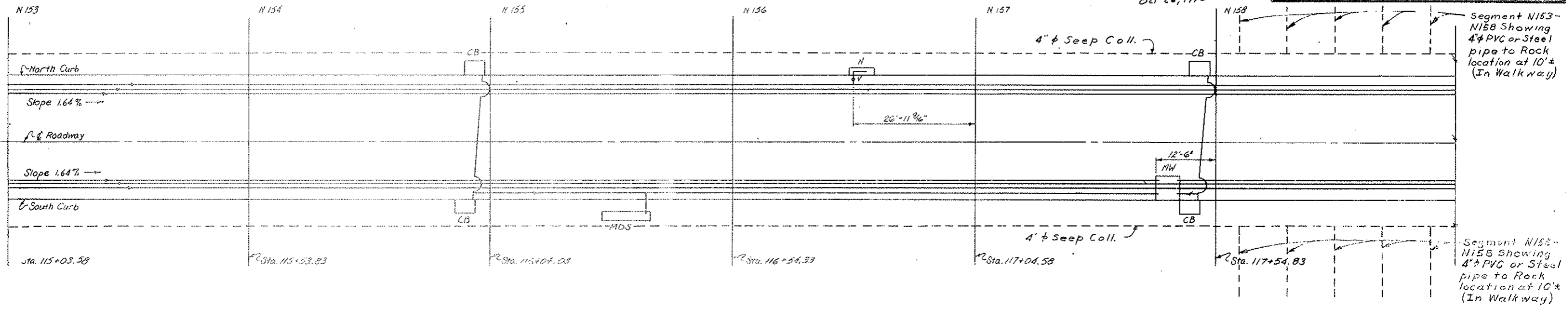
NOTE:
 Blind Flange 4" Perforated Seep Collector In Manholes.
 Use 45° Y3 & Connection Of 4" Seep Coll. 4" Seep Main.



STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By STRAIGHT CREEK CONSTRUCTORS	SCALE 10' to 1"	DRAWN BY R.M. Griffith	REVISED
PLAN TUNNEL PIPING - N135 to N152			
DATE 10-28-71	APPROVED BY DOH, Date 2-10-72 By D.S.	AS SCC 411	DRAWING NUMBER C2-38K

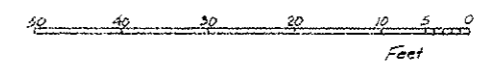
AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1972

DATE	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170 3-1-220	77LX	326



- LEGEND**
- MW Manhole Waste & Seepage
 - MC Manhole Water Supply & Seepage
 - H Flush Type Fire Hydrant
 - CB Roadway Gutter Catch Basin
 - Pipe In Place
 - - - - - Pipe To Be Installed
 - Y Valve Box
 - MDS Manhole Distribution Station

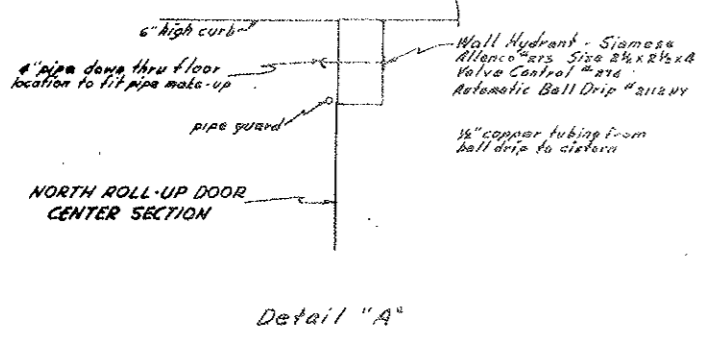
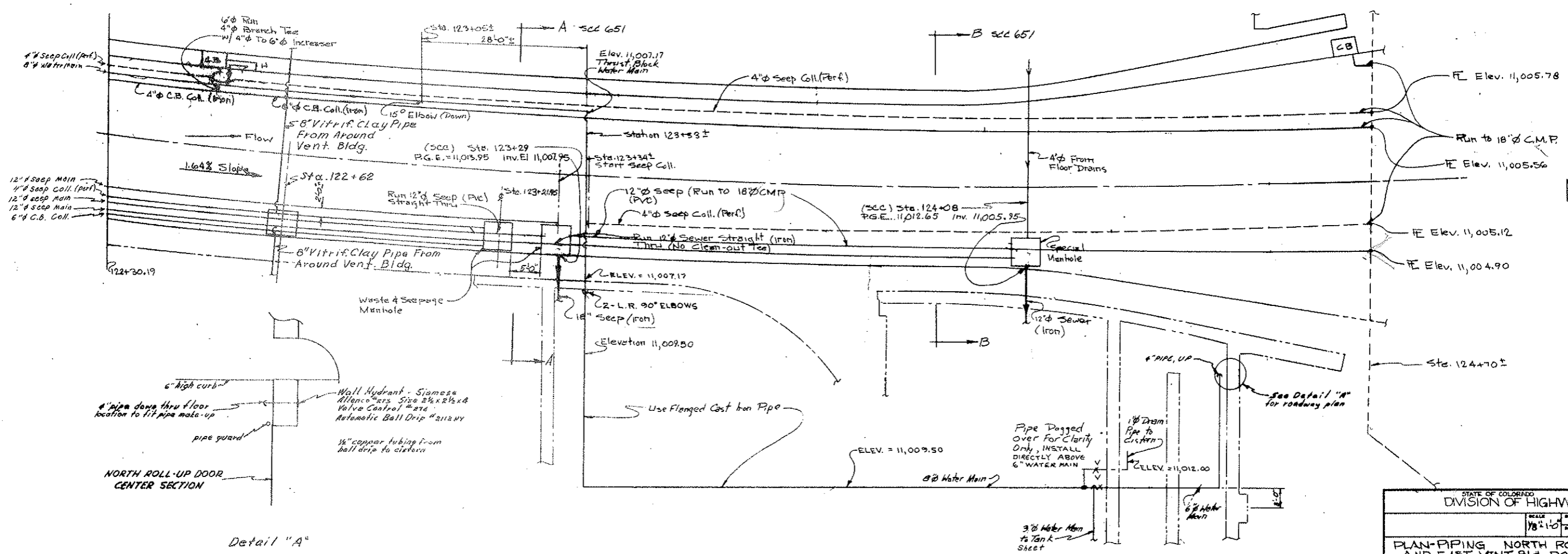
NOTE:
 Blind Flange 4" Perforated Seep Collector In Manholes.
 Use 45° Ys @ Connection Of 4" Seep Coll. & 12" Seep Main.



STATE OF COLORADO			
DIVISION OF HIGHWAYS			
Prepared By	SCALE	DATE	DRAWN BY
STRAIGHT CREEK CONSTRUCTION	1/2" = 1'	10-28-71	R.M. Griffith
PLAN TUNNEL PIPING - N153 to N.E. Trans. Seg.			
DATE	APPROVED BY	DATE	DRAWING NUMBER
10-28-71	D.S.	2-10-72	CR-381
By		As SEC 412	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	77 MX	326

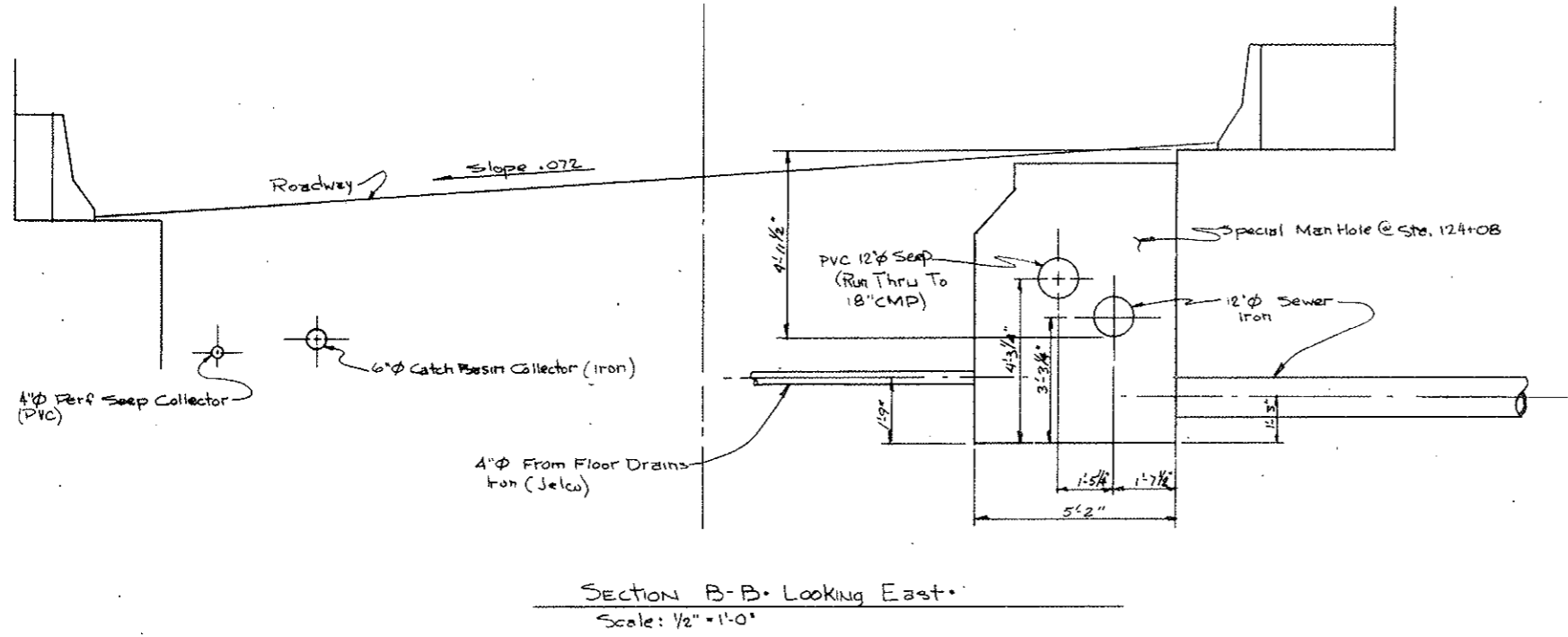
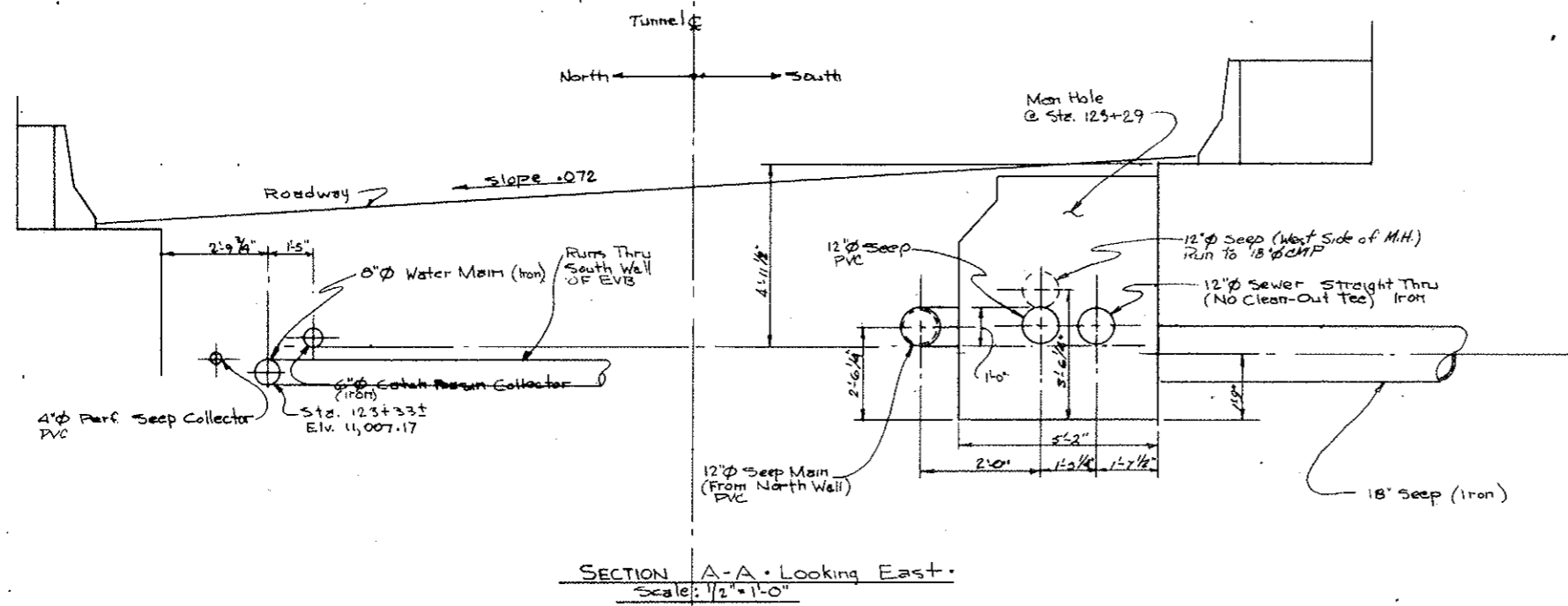
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



STATE OF COLORADO DIVISION OF HIGHWAYS			
SCALE 1/8" = 1'-0"	DRAWN BY LARRY J. ...	DATE 9/19/72	APPROVED BY SCL 650
PLAN-PIPING NORTH ROADWAY AND EAST VENT BLDG ROADWAY			C2-38M

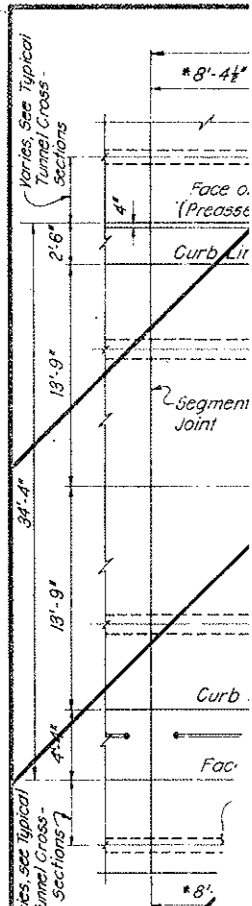
FEDERAL ROAD DISTRICT NO.	SECTION	PROJECT NO.	DATE	BY
9	COLORADO	170-2034220	77HX	SLG

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1972



WORK THIS DWG. WITH C2-36M

STATE OF COLORADO DIVISION OF HIGHWAYS		
DATE	APPROVED BY	SECTION
8/11/72	SCC 651	C2-36N



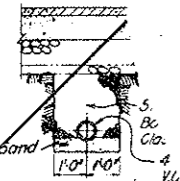
Note: 8" C.I. Water
12" Vitr. Pipe.
Drain not



"B" Line

3/4" Drain Hole
20'-0" Long (typ)

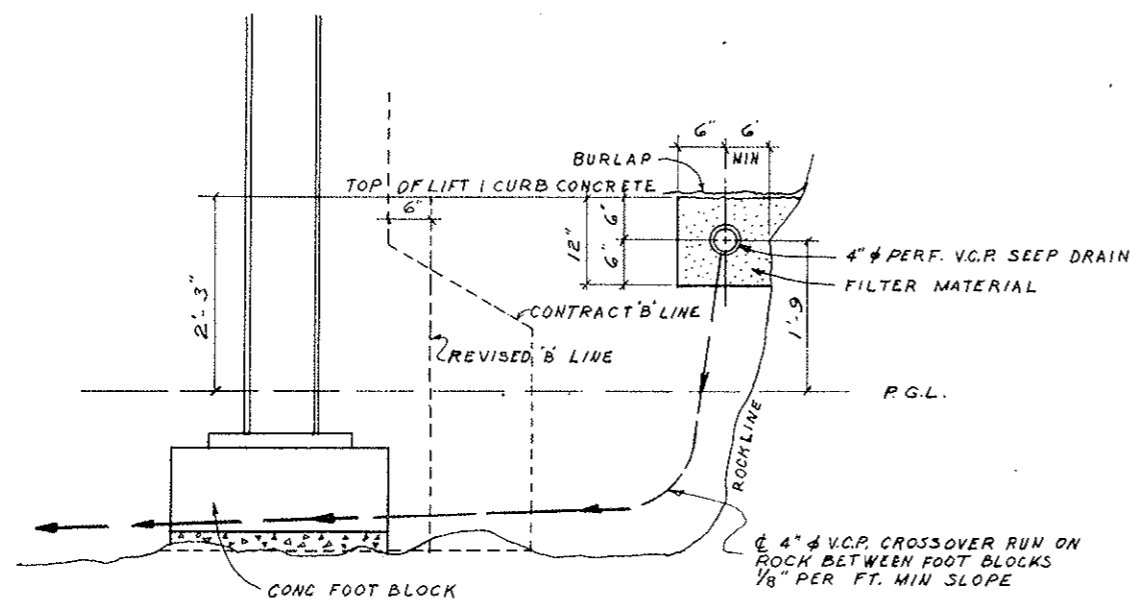
8" Perforated
Seep Drain
Collector,
see Detail.



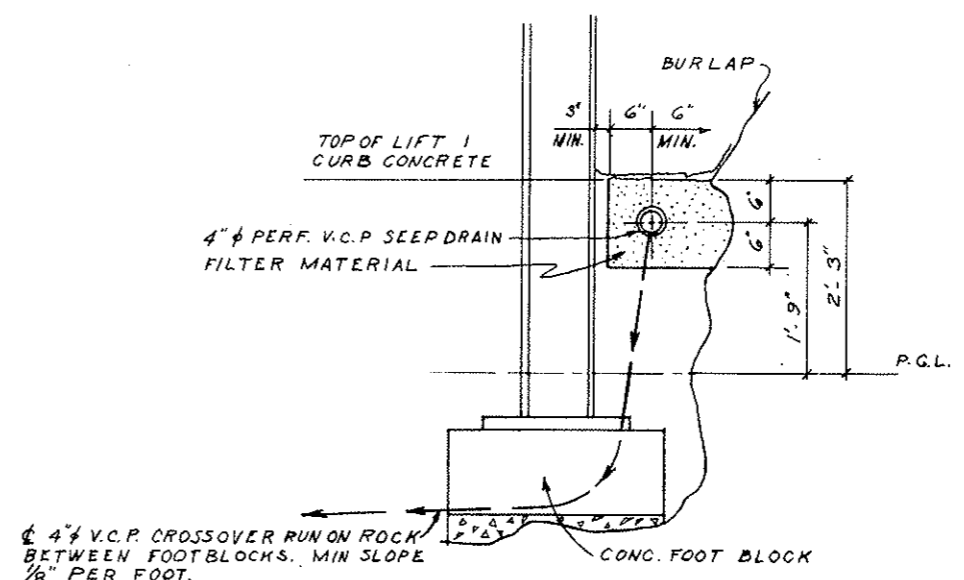
SECTION F - F
SCALE: 3/8" = 1'-0"

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	78 AX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 24, 1973



TYPICAL SECTION



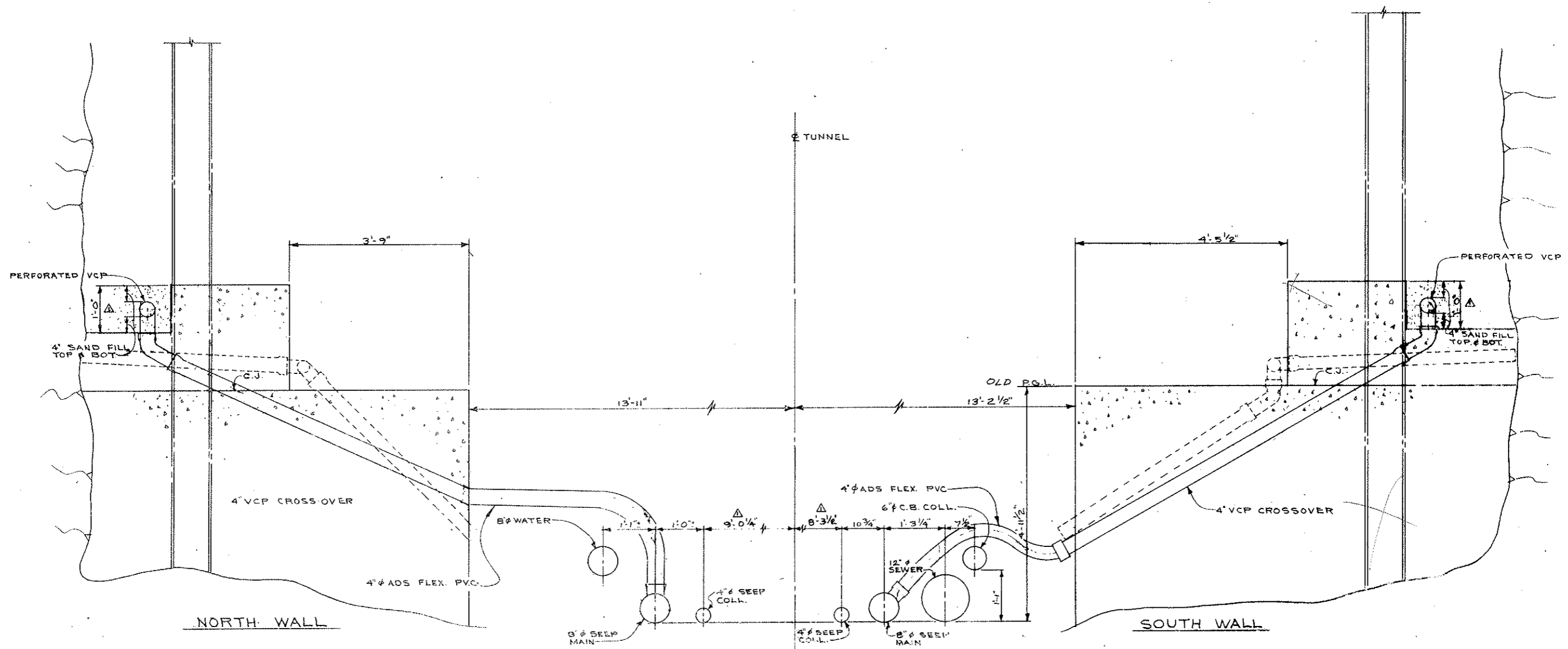
SECTION WHERE TIGHT

NOTE:
 FOR SEGMENTS NW TRANS THRU N80
 N89 THRU NE TRANS.
 SW TRANS THRU S4
 S15 THRU SE TRANS.

STATE OF COLORADO DIVISION OF HIGHWAYS			
SCALE: 1" = 1'-0"	APPROVED BY:	DRAWN BY: L.T.	
DATE: 10/25/73		REVISED:	
SEEPAGE DRAIN SYSTEM			
			DRAWING NUMBER C2-39A

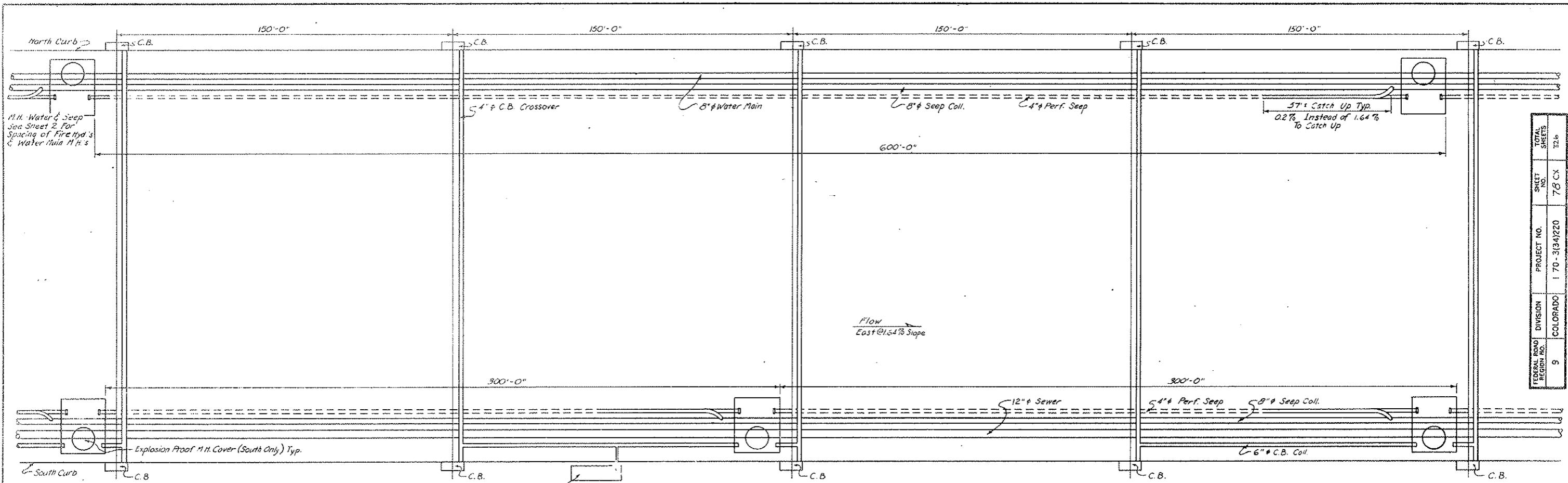
FEDERAL ROAD DESIGN NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 - 3(34)220	78 BX	326

AS - CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



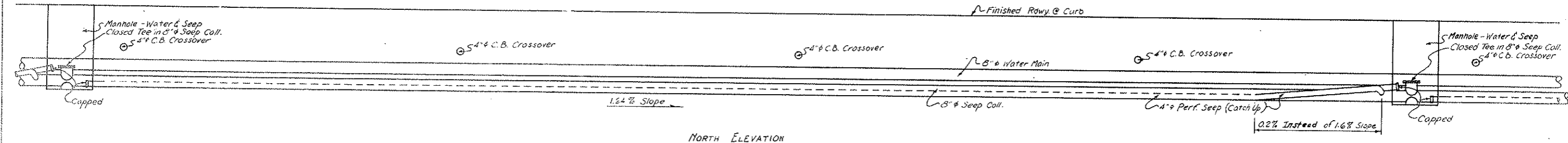
SECTION LOOKING EAST
 ZONE 1A - SEGMENTS 81-85
 SCALE: 1"=1'-0"

STATE OF COLORADO			
DIVISION OF HIGHWAYS			
DATE	DESIGNED BY	DATE	REVISION NUMBER
	BY: AS		C2-39B

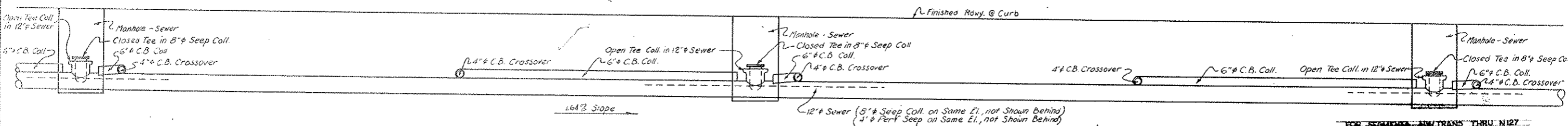


FEDERAL ROAD DISTRICT NO.	9
DIVISION	COLORADO
PROJECT NO.	170-3(34)220
SHEET NO.	78 CX
TOTAL SHEETS	72.6

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



NORTH ELEVATION



SOUTH ELEVATION, REFLECTED

FOR ENGINEERS AND TRANS. THRU N127

SHEET No. 1

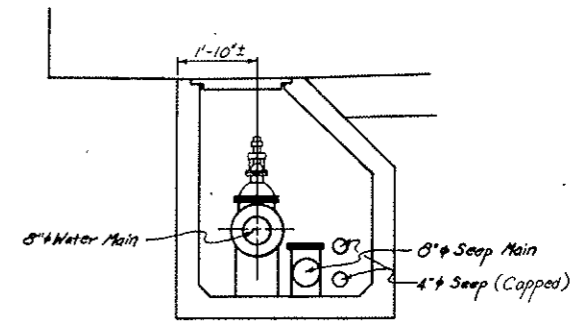
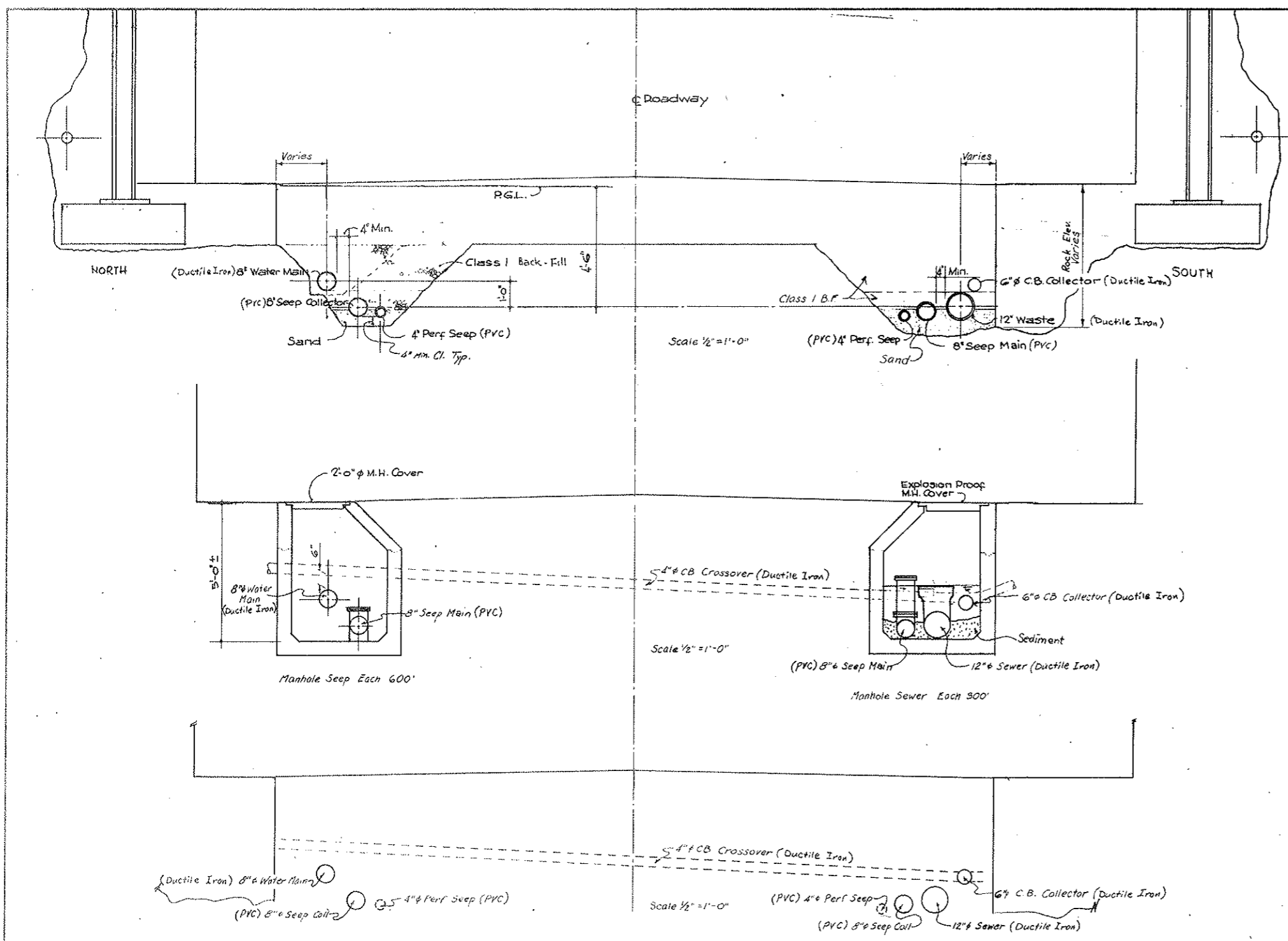
STATE OF COLORADO
 DIVISION OF HIGHWAYS

Prepared By	SCALE	DRAWN BY
Straight Creek Constructors	None	R.M. J. J. J.
DRAINAGE & WATER SUPPLY SYSTEMS		
DATE	APPROVED BY	DRAWING NO.
4/6/77	DOH, Date 2-10-78 By D.S. AS SCC 301	CL-39C

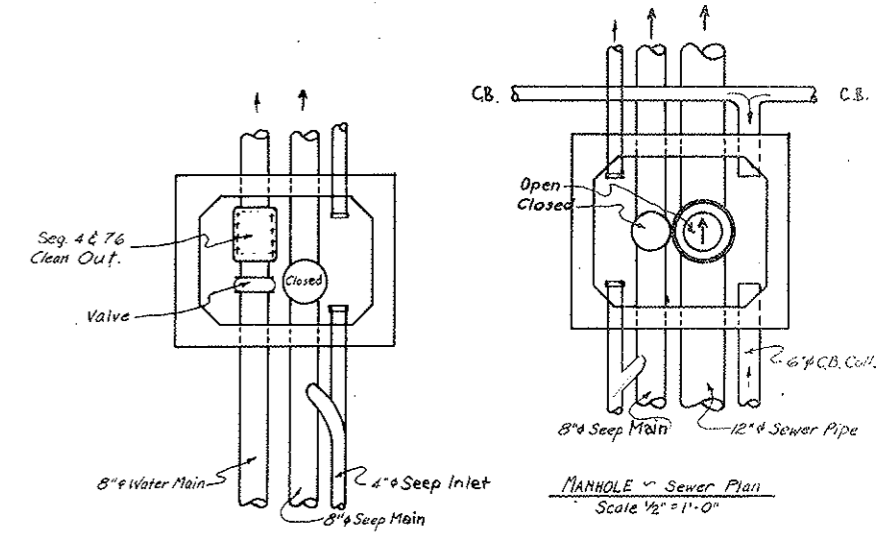
Change Order #145, W-8-B-901

PROJECT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
170-3(34)220	COLORADO	170-3(34)220	78 DX	326

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



MANHOLE - Water Main - Each 1800' North Only
 Scale None



MANHOLE - Water Main Section
 Scale None

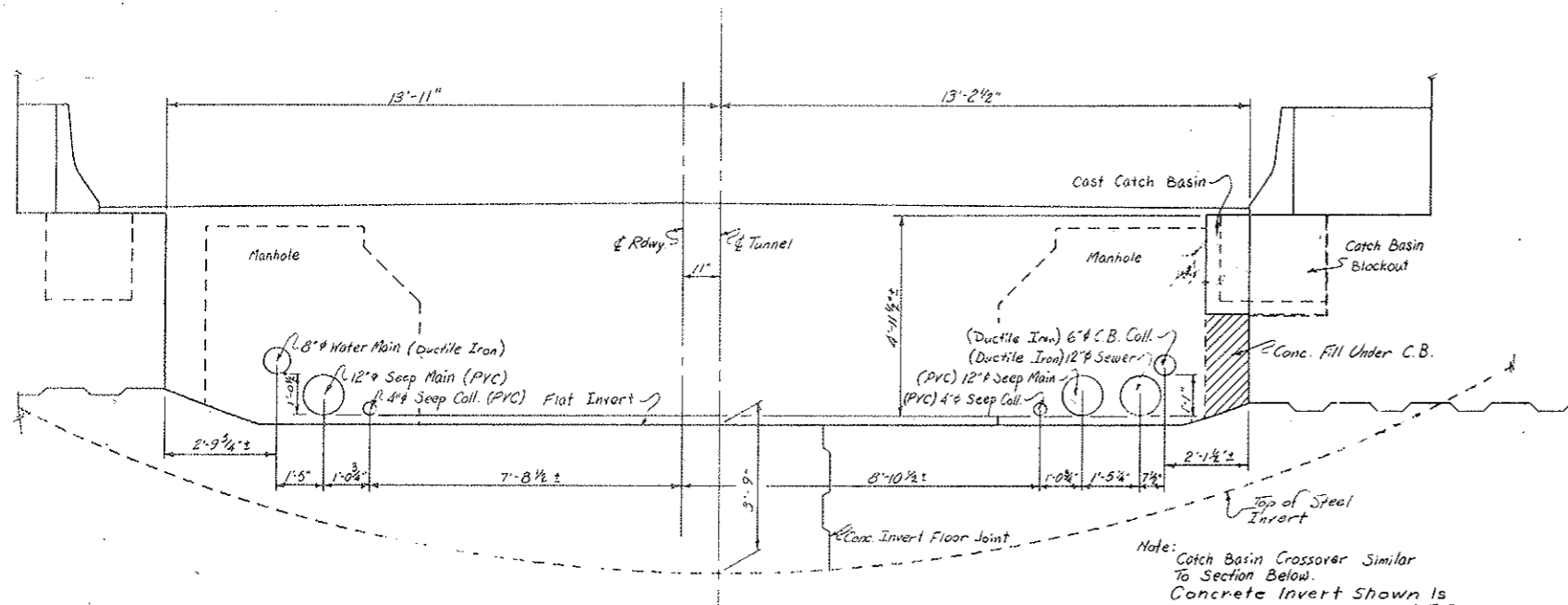
MANHOLE - Sewer Plan
 Scale 1/2" = 1'-0"

FOR SEGMENTS NW TRANS THRU N127

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE Varies	DRAWN BY R.H. Griffith	
DRAINAGE AND WATER SUPPLY SYSTEMS			
DATE 4/1/71	APPROVED BY D.S.	DATE 2-10-72	DRAWING NUMBER C2-59D

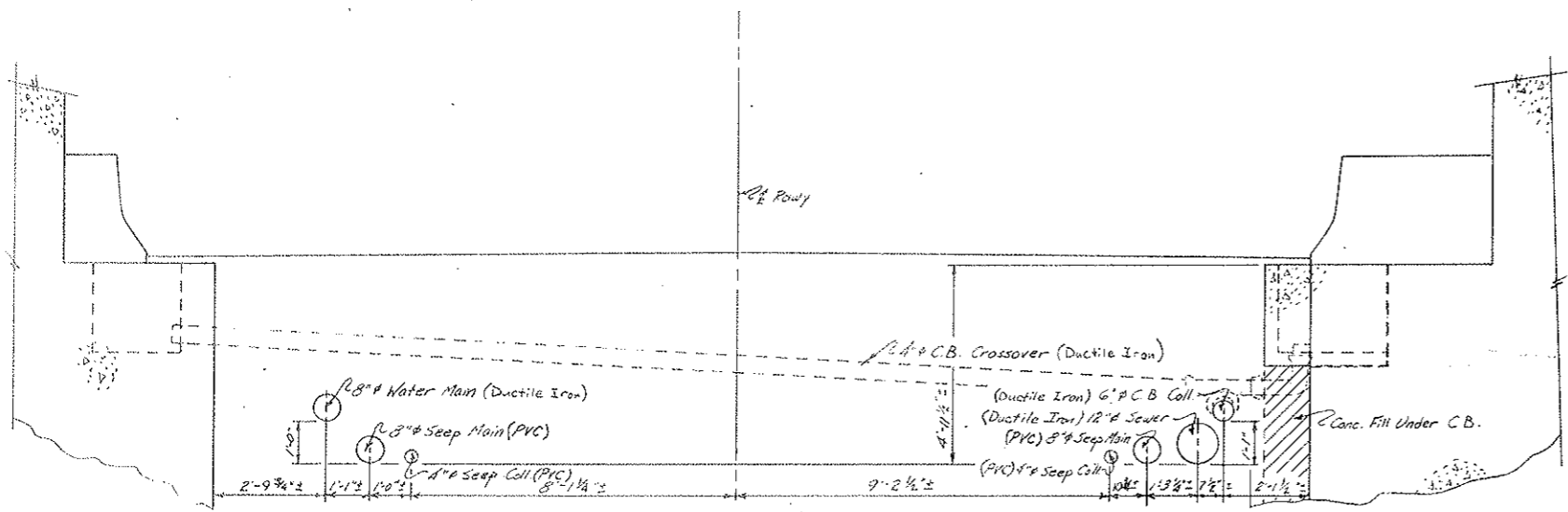
PLAT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	WOLPACD	170-3(3)1220	78EX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1972

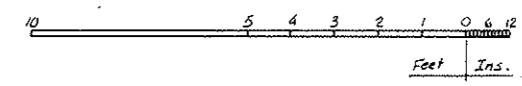


SECTION - LOOKING EAST FROM STA 102+18
 Scale 1/2" = 1'-0"

Note:
 Catch Basin Crossover Similar
 To Section Below.
 Concrete Invert Shown Is
 For Segments N159-NE Trans.



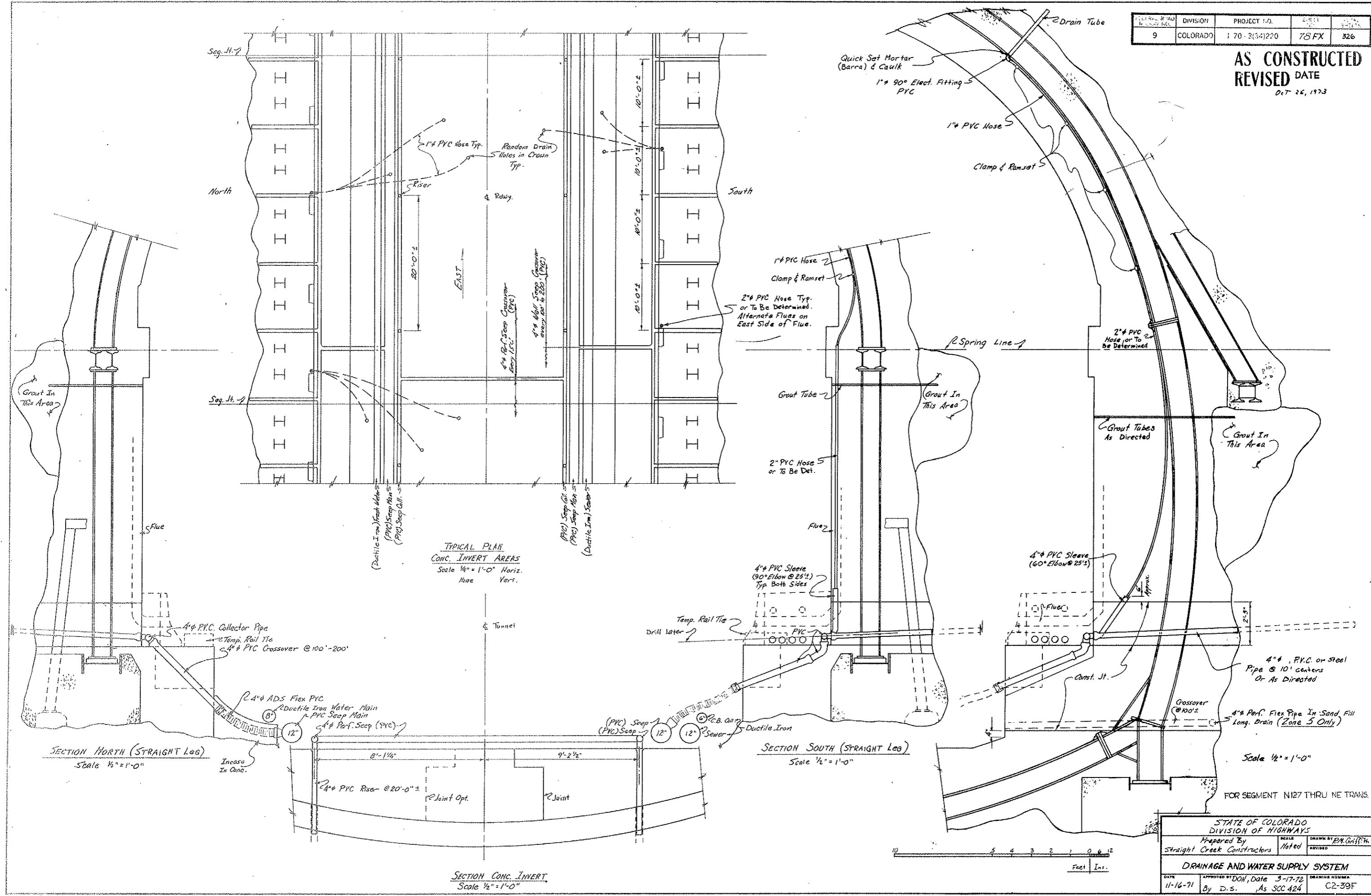
SECTION LOOKING EAST TO STA. 102+18
 Scale 1/2" = 1'-0"



STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By STRAIGHT CREEK CONSTRUCTORS	SCALE Noted	DATE 11-3-71	DRAWN BY PH.GRIFFIN
Tunnel Piping - Sections			
APPROVED BY By D.S.	DATE 2-10-72	AS PER As SCC 415	DRAWING NUMBER C2-39E

STATE ROAD DISTRICT NO.	DIVISION	PROJECT I.O.	SHEET	DATE
9	COLORADO	70-3(54)220	78FX	326

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



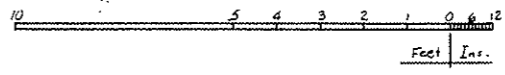
TYPICAL PLAN
CONC. INVERT AREAS
 Scale 1/4" = 1'-0" Horiz.
 None Vert.

SECTION NORTH (STRAIGHT LEG)
 Scale 1/2" = 1'-0"

SECTION SOUTH (STRAIGHT LEG)
 Scale 1/2" = 1'-0"

SECTION CONC. INVERT
 Scale 1/2" = 1'-0"

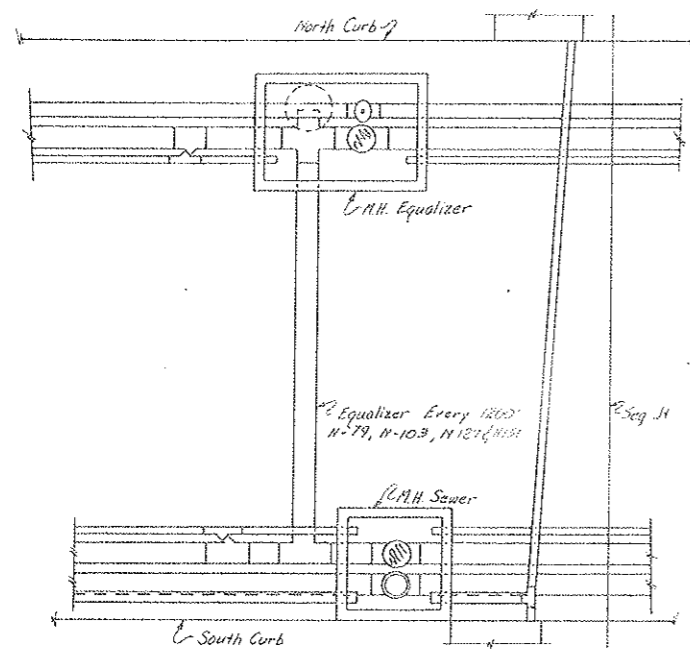
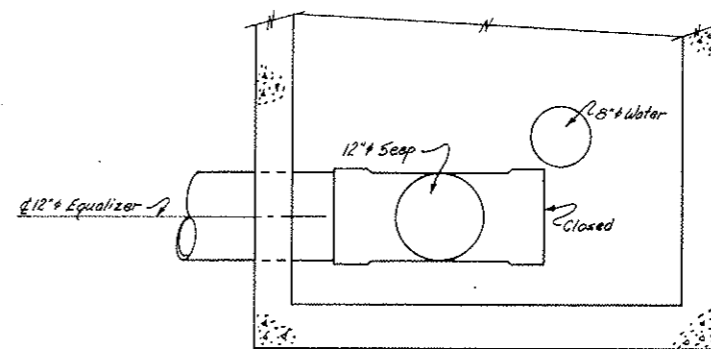
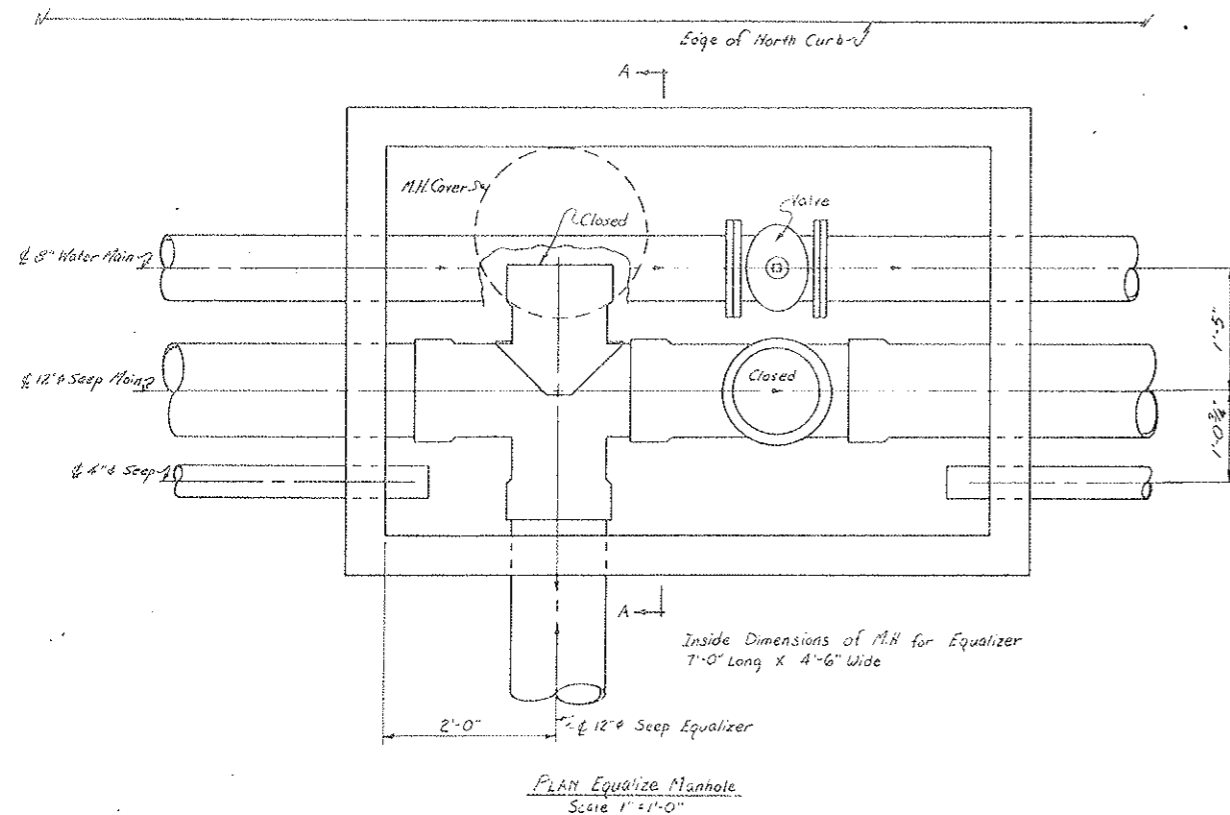
STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE Noted	DRAWN BY R.M. Griffith	REVISED
DRAINAGE AND WATER SUPPLY SYSTEM			
DATE 11-16-71	APPROVED BY D.O.H., Date 3-17-72 By D.S., As SCC 424	DRAWING NUMBER C2-39F	



FOR SEGMENT N127 THRU NE TRANS.

9	COLORADO	1 70 3134/220	76 GX	326
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AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1972

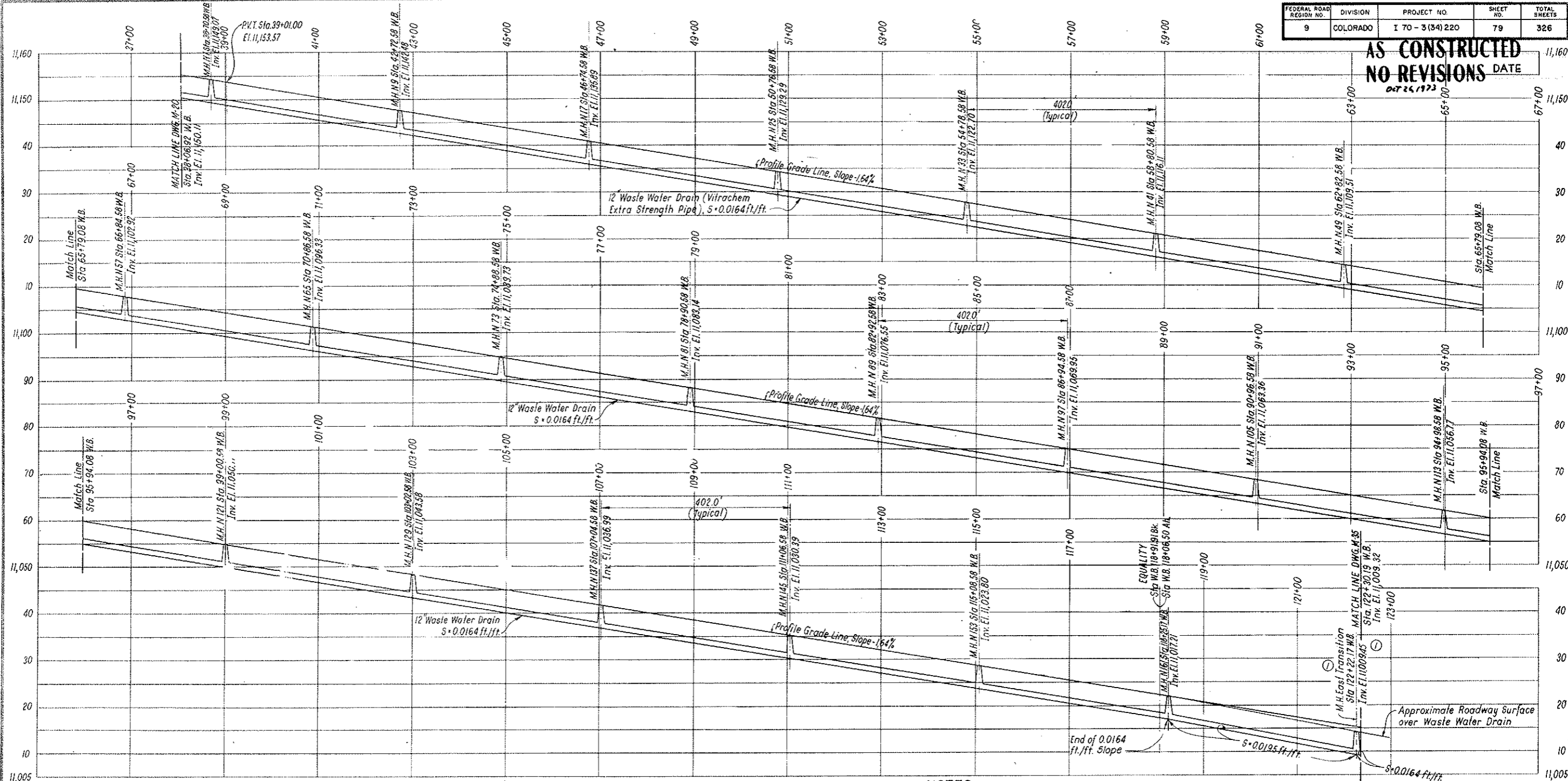


STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By STRAIGHT CREEK CONSTRUCTORS	SCALE Noted	DRAWN BY R.M.G. Griffith	REVIEWED
Equalizer System			
DATE 11-4-71	APPROVED BY DOH, Date By D.S. As SCC 418	1-11-72	DR. SHEET NUMBER C2-39G

Change Order #146, M.O. 81904

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	79	326

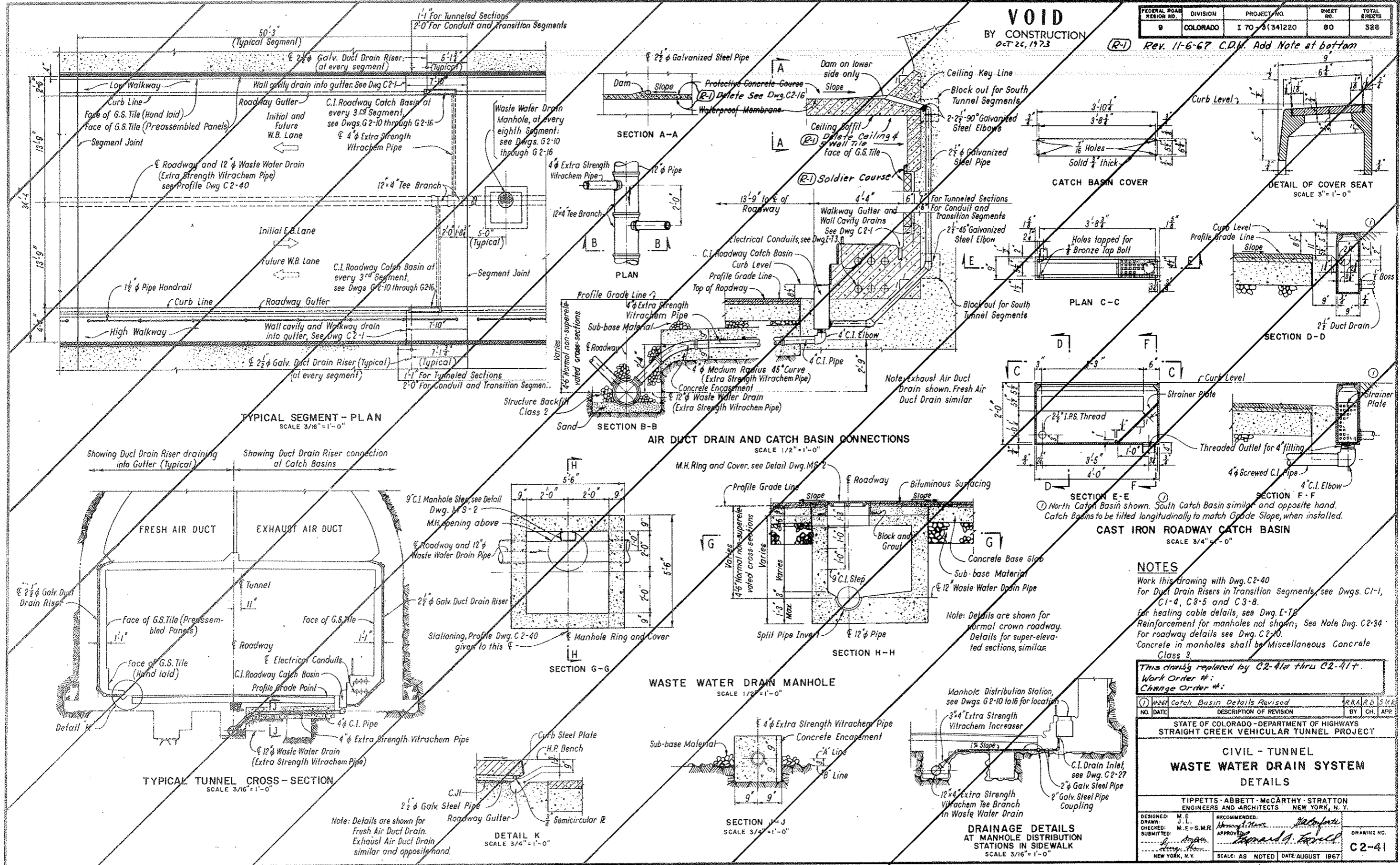
AS CONSTRUCTED
NO REVISIONS DATE
 OCT 24 1973



PROFILE
 SCALE: 1 IN. = 100 FT. HOR.
 1 IN. = 10 FT. VERT.

NOTES
 Dimensions for the waste water drain system are measured along the centerline of roadway.
 For relation between Profile Grade Line and normal roadway surface see Dwg. C2-1.
 Waste water drain manholes are identified according to the tunnel segment they are located in; thus M.H.N. 49 is located in the north tunnel segment N 49.
 For schematic layout of waste water drain system see Dwg. G 2-10 to G 2-18.
 For details see Dwg. C2-41A - C2-41S.
 For pipe bedding materials see Dwg. C1-6, C1-7, C2-10 through C2-14, C3-1, and C3-2.

① Stationing Revised		J.L.	R.B.A.	S.M.R.
NO.	DATE	DESCRIPTION OF REVISION		BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
CIVIL - TUNNEL WASTE WATER DRAIN SYSTEM PROFILE				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED: M.E.	RECOMMENDED:			
DRAWN: J.L.	CHECKED: M.E. - S.M.R.			
SUBMITTED:	APPROVED:			
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967	
				DRAWING NO. C2-40



VOID BY CONSTRUCTION
 OCT 26, 1973
 (R-1) Rev. 11-6-67 C.D.M. Add Note at bottom

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	80	328

NOTES

Work this Drawing with Dwg. C2-40
 For Duct Drain Risers in Transition Segments, see Dwg. C1-1, C1-4, C3-5 and C3-8.
 For heating cable details, see Dwg. E-7B
 Reinforcement for manholes not shown; See Note Dwg. C2-34
 For roadway details see Dwg. C2-10.
 Concrete in manholes shall be Miscellaneous Concrete Class 3.

This drawing replaced by C2-41a thru C2-41f.
 Work Order #:
 Change Order #:

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1	10/26/73	Catch Basin Details Revised	R.B.A.	R.B.	S.M.R.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**CIVIL - TUNNEL
 WASTE WATER DRAIN SYSTEM
 DETAILS**

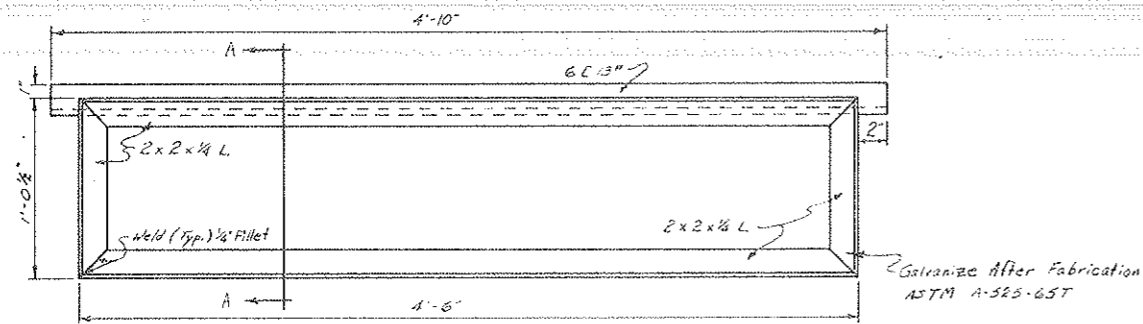
TIPPETTS - ABBETT - McCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS
 NEW YORK, N. Y.

DESIGNED: M.E.L.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. C2-41
CHECKED: M.E.-S.M.R.	APPROVED: <i>[Signature]</i>	
SUBMITTED: <i>[Signature]</i>	SCALE: AS NOTED	DATE: AUGUST 1967

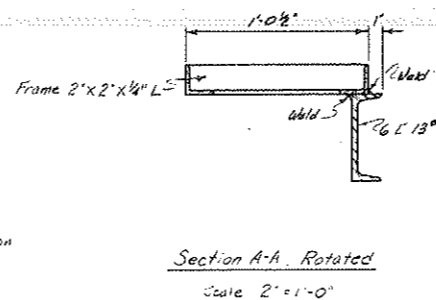
(R-1) DELETE CONCRETE CLASS 3 AIR DUCT FLOOR, TUNNEL CEILING GLAZED TILE & WATERPROOFING TUNNEL AIR FLOOR, W.O. #14153, SEE SPEC. NO'S 4-A, 6-A & 6-D

COUNTY ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLOPAD	170 3(3)220	80 AX	836

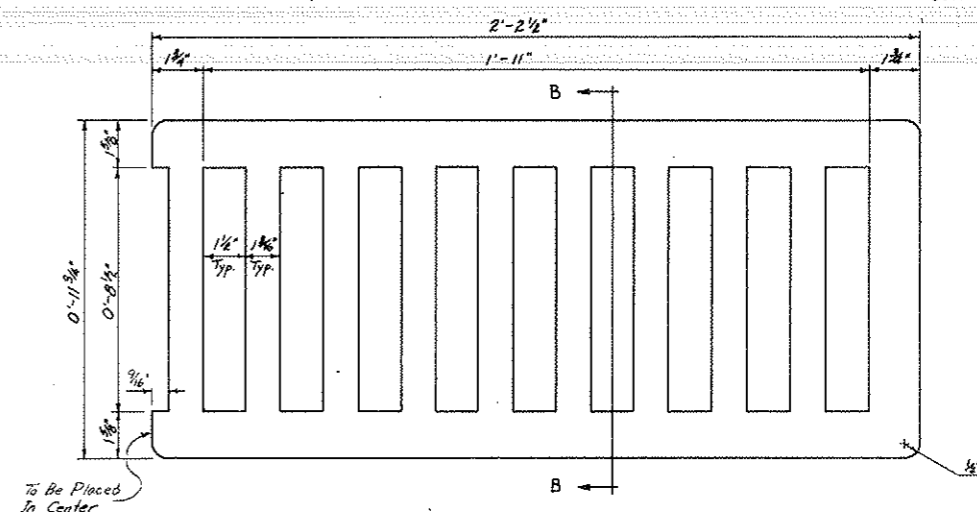
AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973



Plan
 Catch Basin Frame
 Scale 2" = 1'-0"

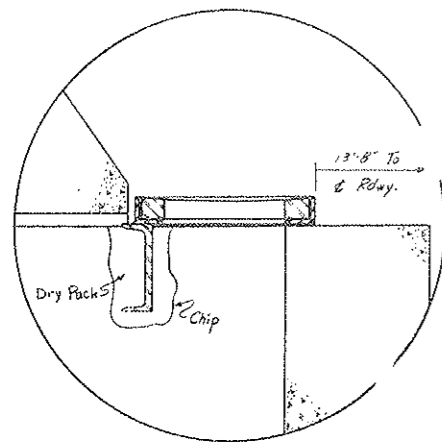


Section A-A, Rotated
 Scale 2" = 1'-0"

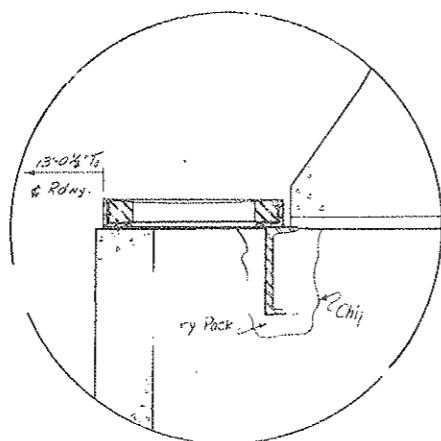


Plan - Catch Basin Grate
 2 Req'd. per Catch Basin
 Scale 4" = 1'-0"

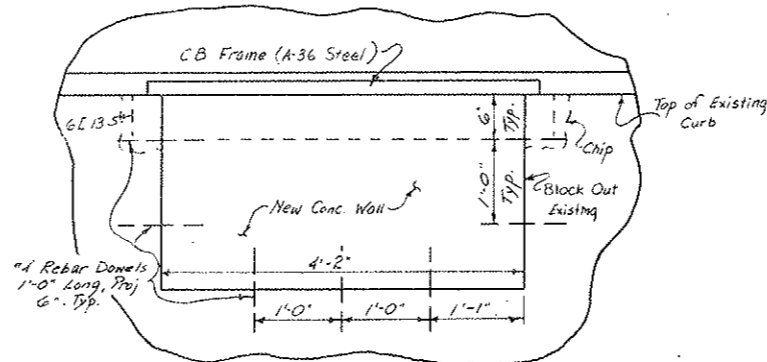
To Be Cast From Ductile Iron Grade 100-70-03
 ASTM A536-67



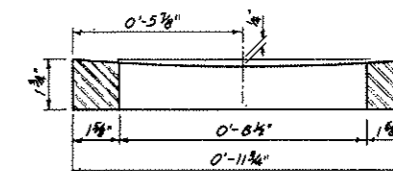
Detail B
 Scale 2" = 1'-0"



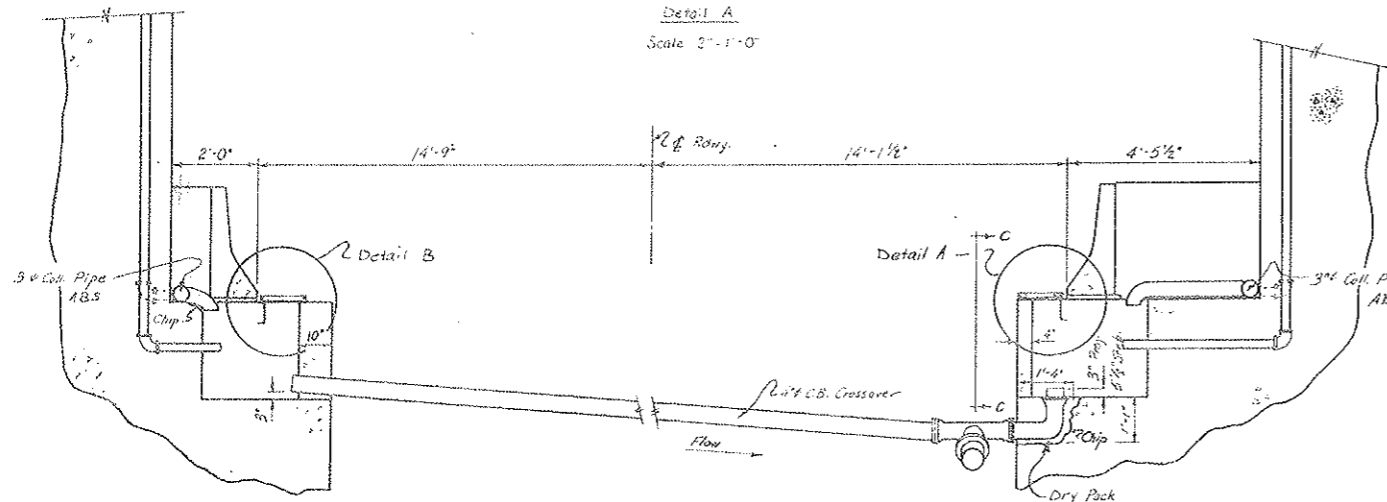
Detail A
 Scale 2" = 1'-0"



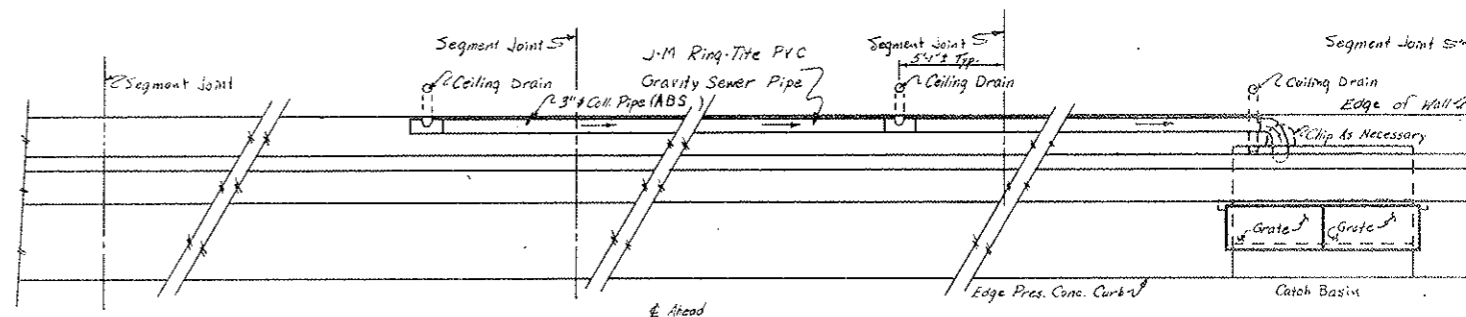
View C-C
 Scale 1" = 1'-0"



Section B-B, Rotated
 Scale 4" = 1'-0"



Tunnel Section Showing Proposed Catch Basin
 Scale 1/2" = 1'-0"



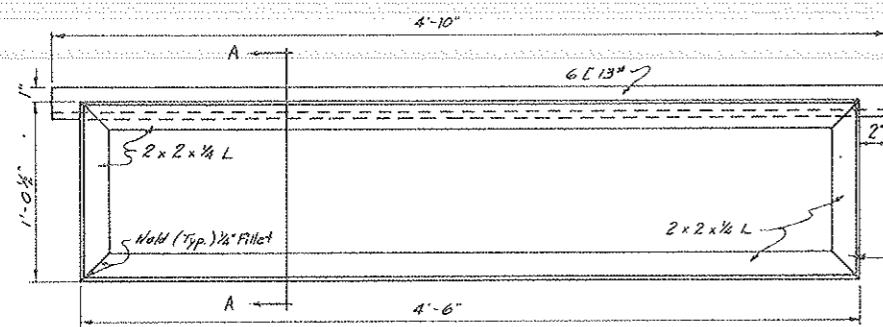
Plan North Side
 South Side Similar

Note:
 This Drawing For Segments H1 to N80 Inc.

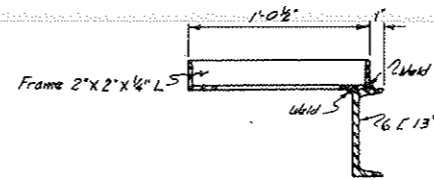
STATE OF COLORADO			
DIVISION OF HIGHWAYS			
Prepared By	SCALE	DESIGNED BY	DATE
Straight Creek Constructors	Noted	M. D. Smith	
Catch Basin, Frame & Grate			
DATE	APPROVED BY	DATE	DRAWING NUMBER
10-7-71	By D. S. As SCC 397	2-10-72	C2-41A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLCFADO	170-31341220	80BX	326

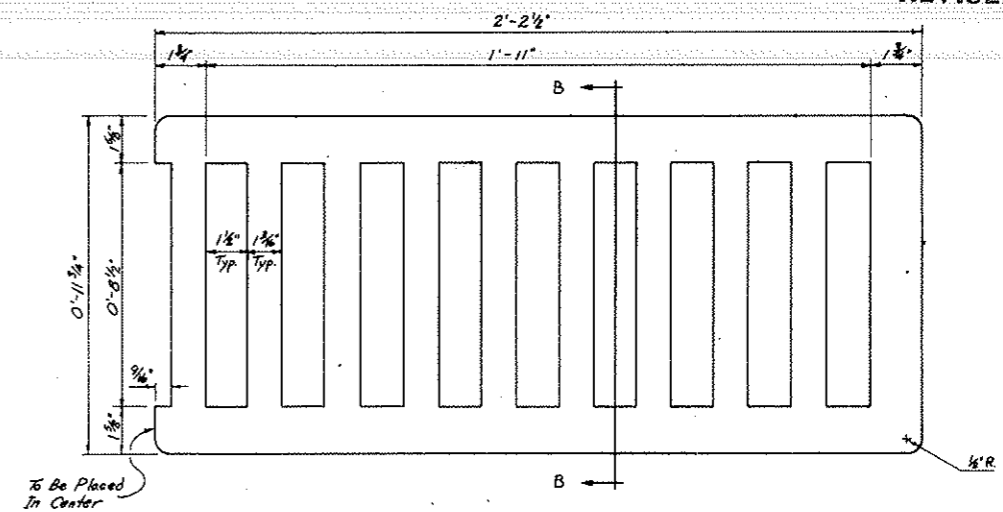
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



Plan
 Catch Basin Frame
 Scale 2" = 1'-0"

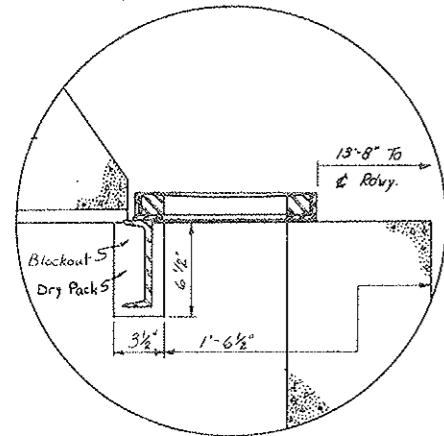


Section A-A, Rotated
 Scale 2" = 1'-0"

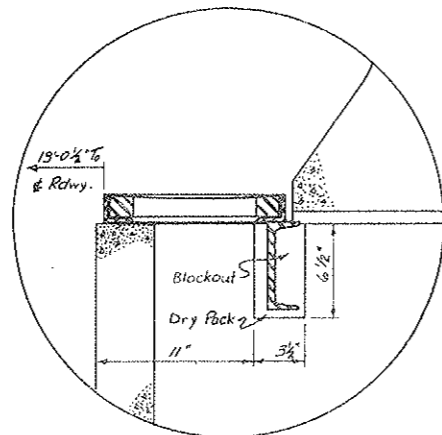


Plan - Catch Basin Grate
 2 Req'd per Catch Basin
 Scale 4" = 1'-0"

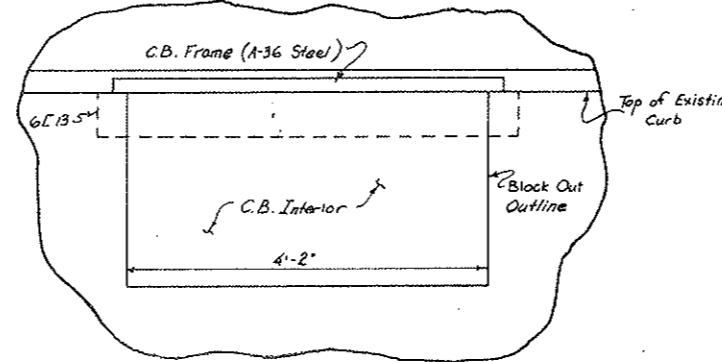
To Be Cast From Ductile Iron Grade 100-70-03
 ASTM A536-67



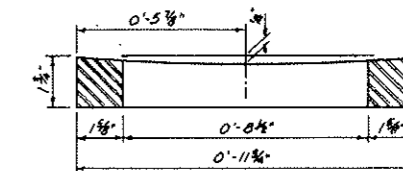
Detail B
 Scale 2" = 1'-0"



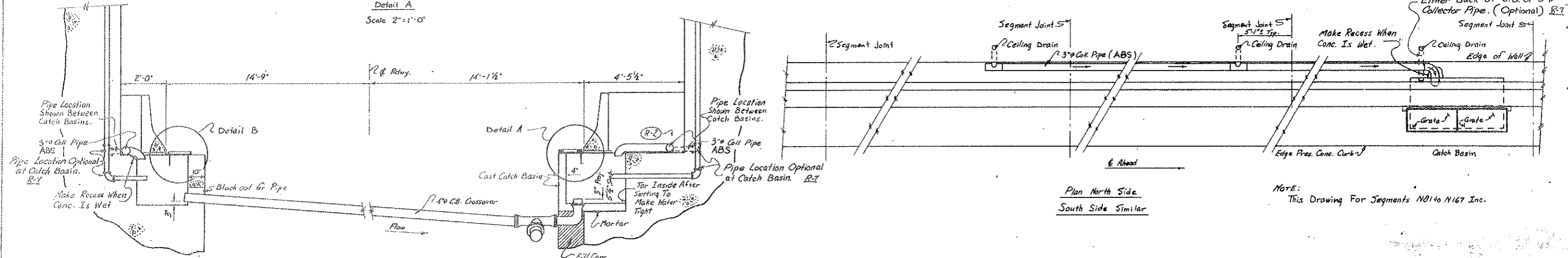
Detail A
 Scale 2" = 1'-0"



Frame In Relation To Catch Basin
 Scale 1" = 1'-0"



Section B-B, Rotated
 Scale 4" = 1'-0"



Plan North Side
 South Side Similar

NOTE:
 This Drawing For Segments N01 to N167 Inc.

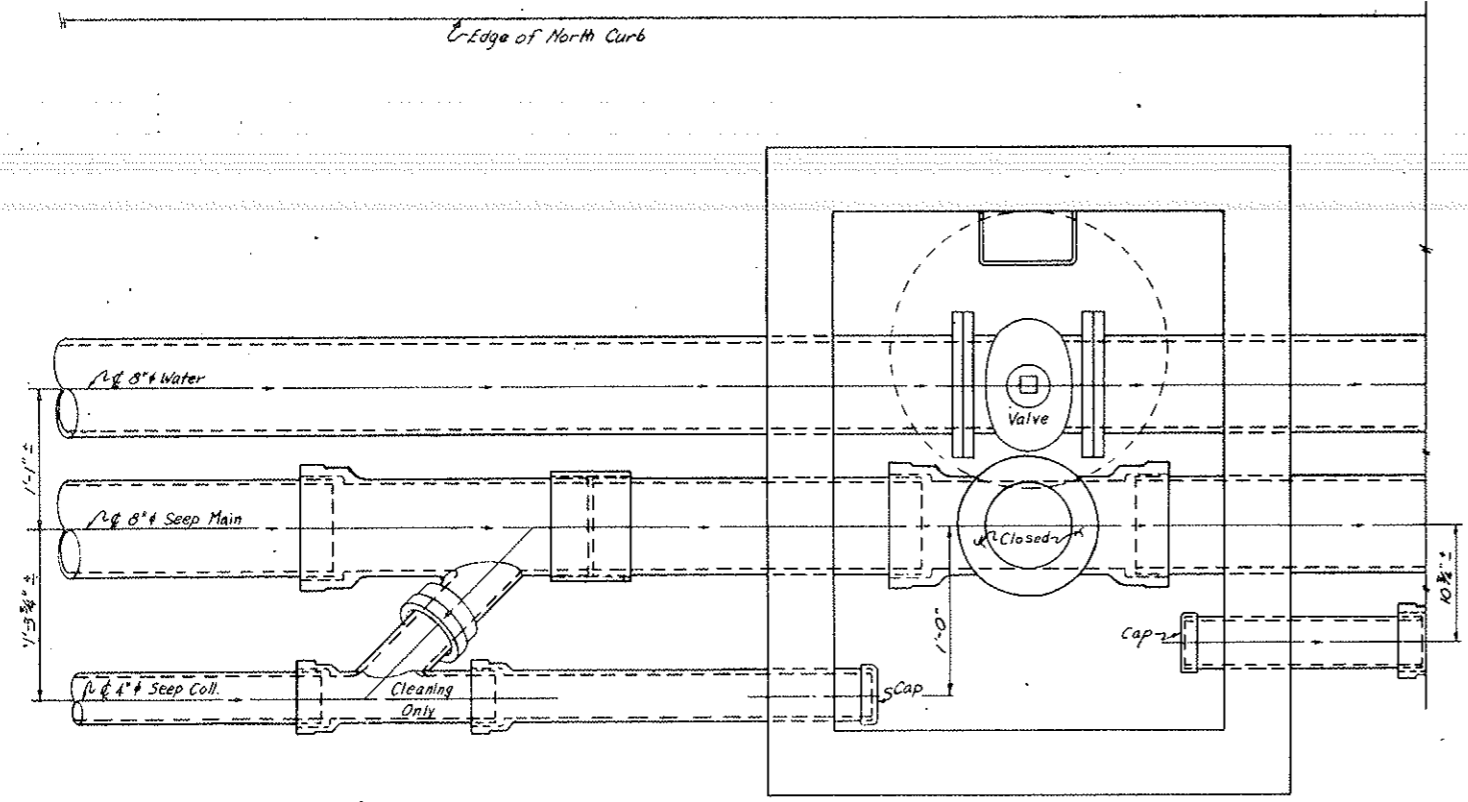
Tunnel Section Showing Proposed Catch Basin
 Scale 1/2" = 1'-0"

STATE OF COLORADO			
DIVISION OF HIGHWAYS			
Prepared By	SCALE	DRAWN BY	NOTED
Straight Creek Constructors	Noted	R.M. Griffith	R.M. Griffith
Catch Basin, Frame & Grate			
DATE	APPROVED BY	DATE	DESIGN NUMBER
11-30-71	By p.a.s.	4-20-72	As SCC 444 C2-41B

Change Order No. 145, N.O. # 21904

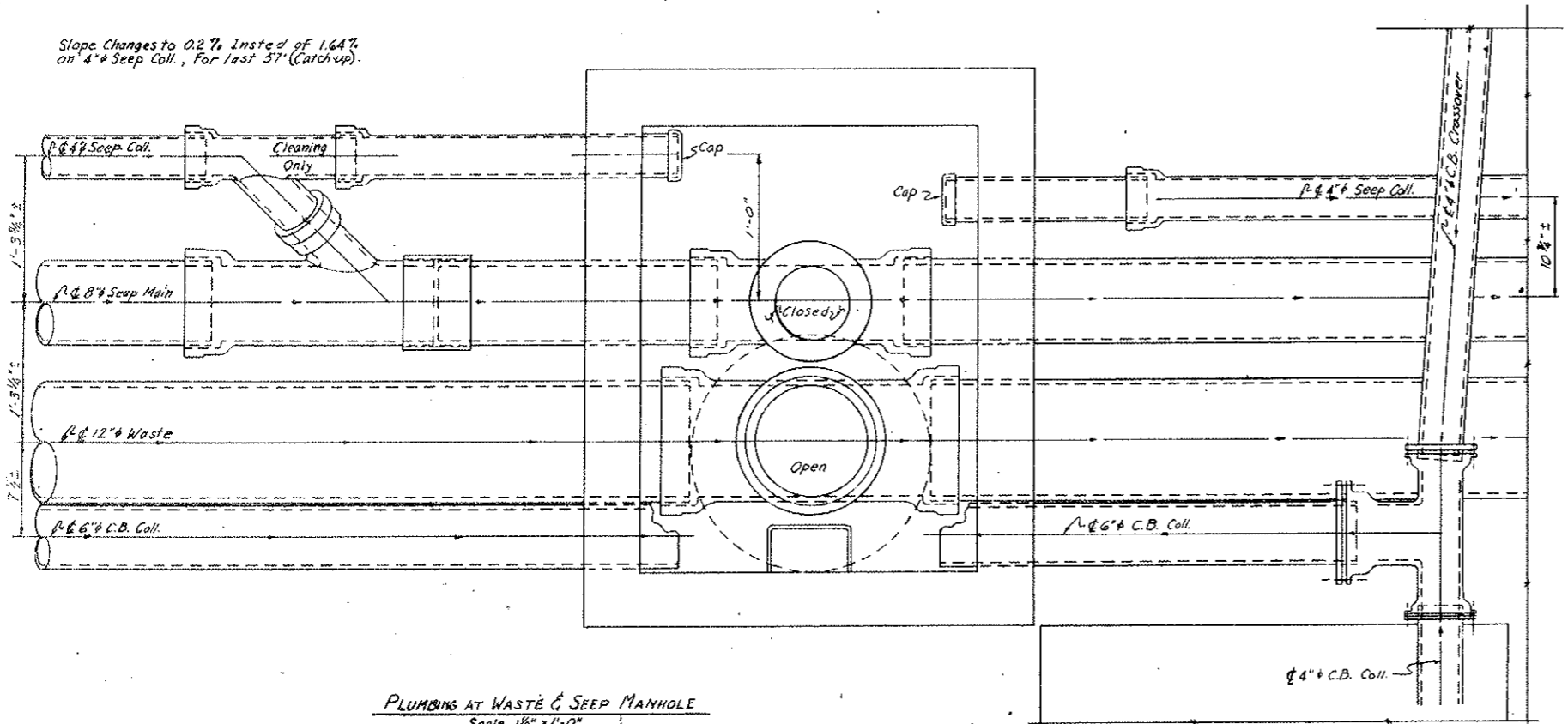
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	30CX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1923



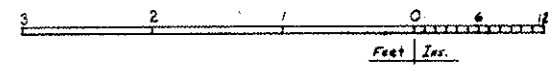
Slope Changes to 0.2% Instead of 1.64% on 4" Seep Coll., For last 57' (Catch-up).

PLUMBING AT FRESH WATER & SEEP MANHOLE
 Scale 1/2" = 1'-0"



Slope Changes to 0.2% Instead of 1.64% on 4" Seep Coll., For last 57' (Catch-up).

PLUMBING AT WASTE & SEEP MANHOLE
 Scale 1/2" = 1'-0"

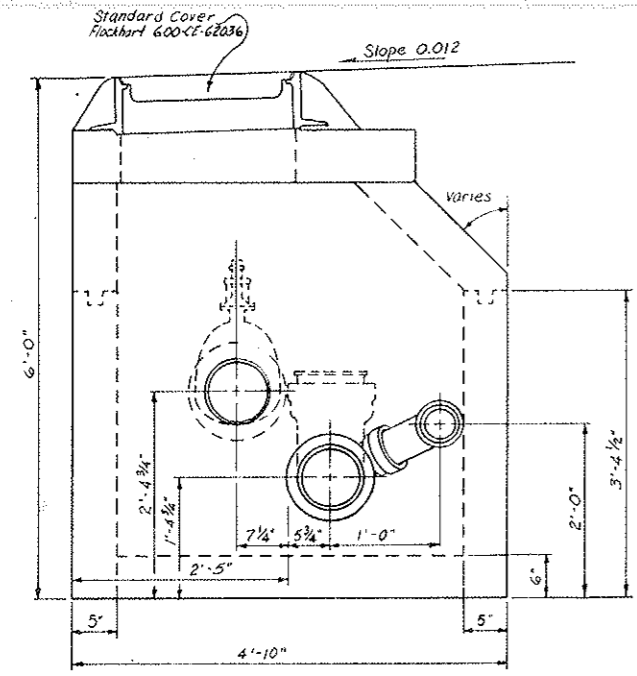


STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE 1/2" = 1'-0"	DRAWN BY R.H. Griffin	DESIGNED BY
PIPING DETAILS - PLAN @ MANHOLES (8" Seep)			
DATE 5/3/71	APPROVED BY By D.S.	DATE 1-11-72	DRAWING NUMBER C2-41C

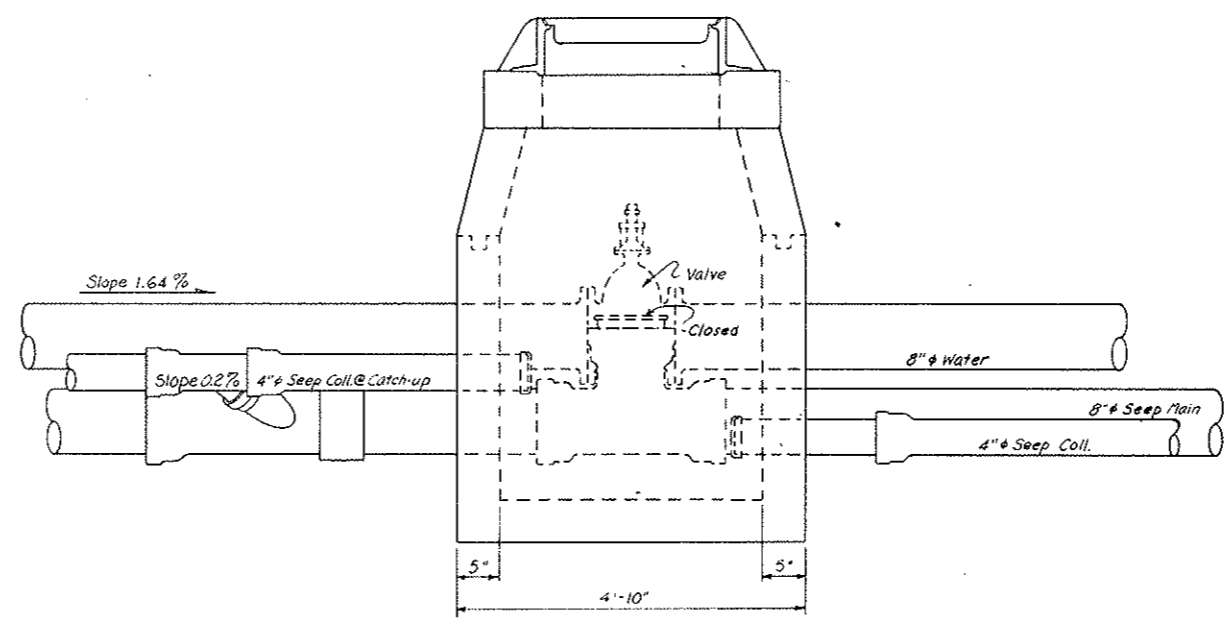
Change Order #145, W.O. 21901

EDMUND ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)270	80DX	326

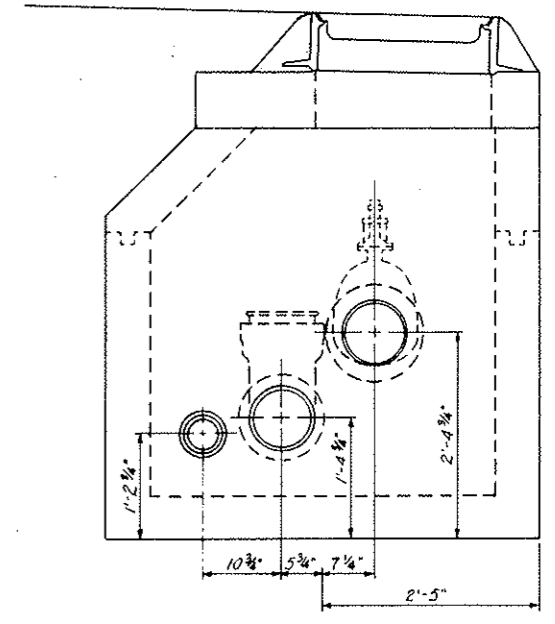
AS CONSTRUCTED
 REVISED DATE
 02-26, 1973



Looking East

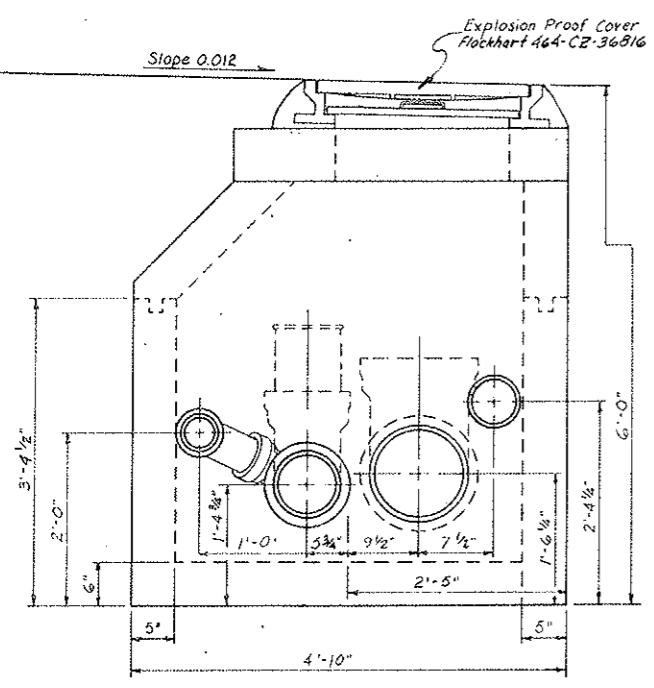


Looking North

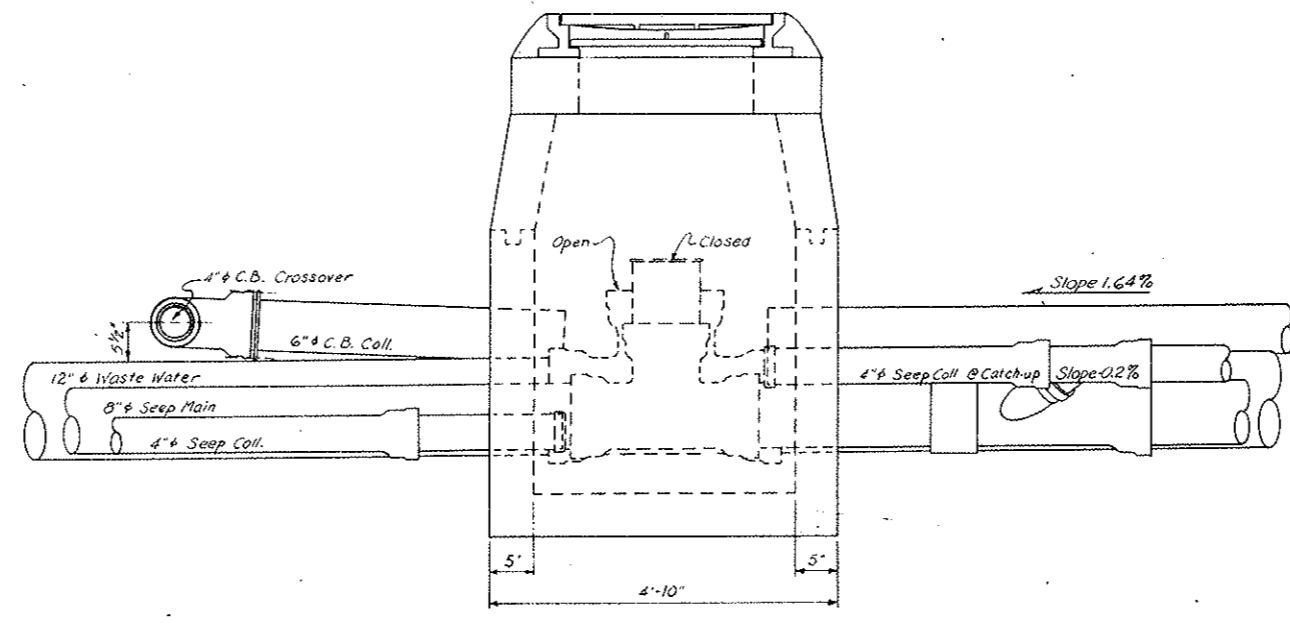


Looking West

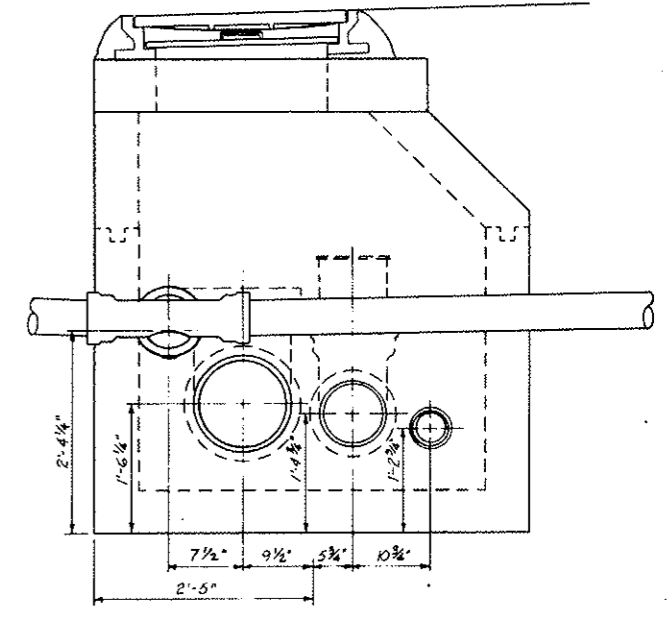
WATER & SEEP ~ MANHOLE & PLUMBING ~ ELEVATIONS



Looking East



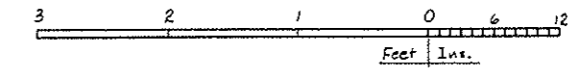
Looking South



Looking West

WASTE & SEEP ~ MANHOLE & PLUMBING ~ ELEVATIONS

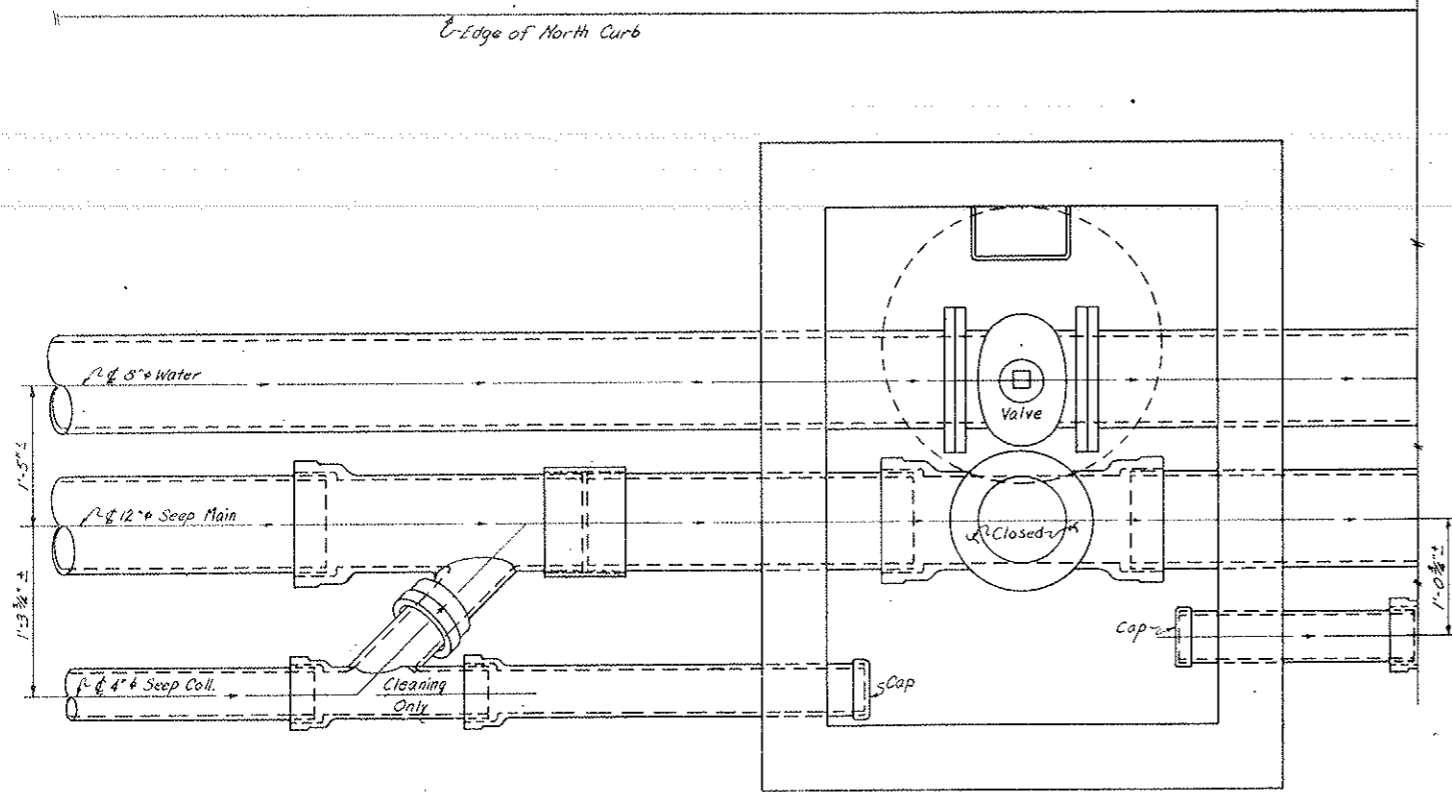
NOTE:
 Top Sections and Cover Slabs To Be Set At A Later Date. Base Sections To Be Covered During Interim.



STATE OF COLORADO DIVISION OF HIGHWAYS	
Prepared By Straight Creek Constructors	SCALE 1" = 1'-0"
DRAWING NUMBER C2-41D	
DATE 5/5/71	APPROVED BY DOH, Date 1-11-72 By D.S. As SCC 333

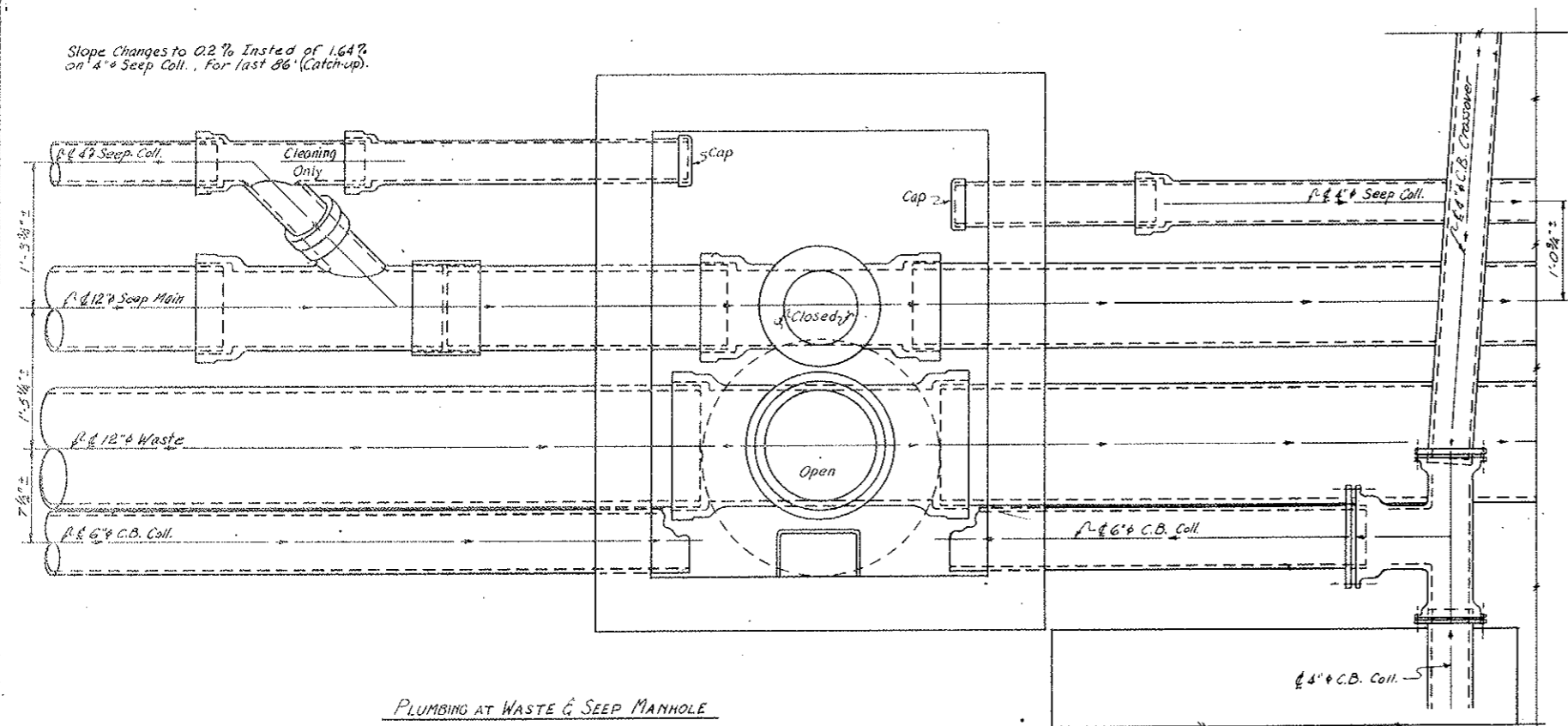
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	80 EX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1923



Slope Changes to 0.2% Instead of 1.64% on 4" Seep Coll., For last 86' (Catch-up).

PLUMBING AT FRESH WATER & SEEP MANHOLE



Slope Changes to 0.2% Instead of 1.64% on 4" Seep Coll., For last 86' (Catch-up).

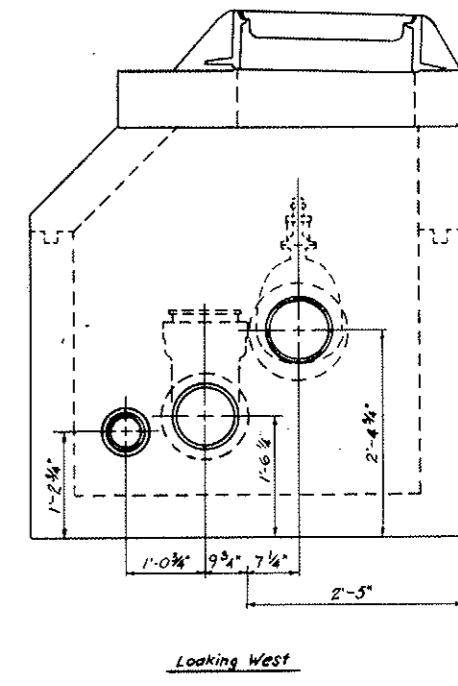
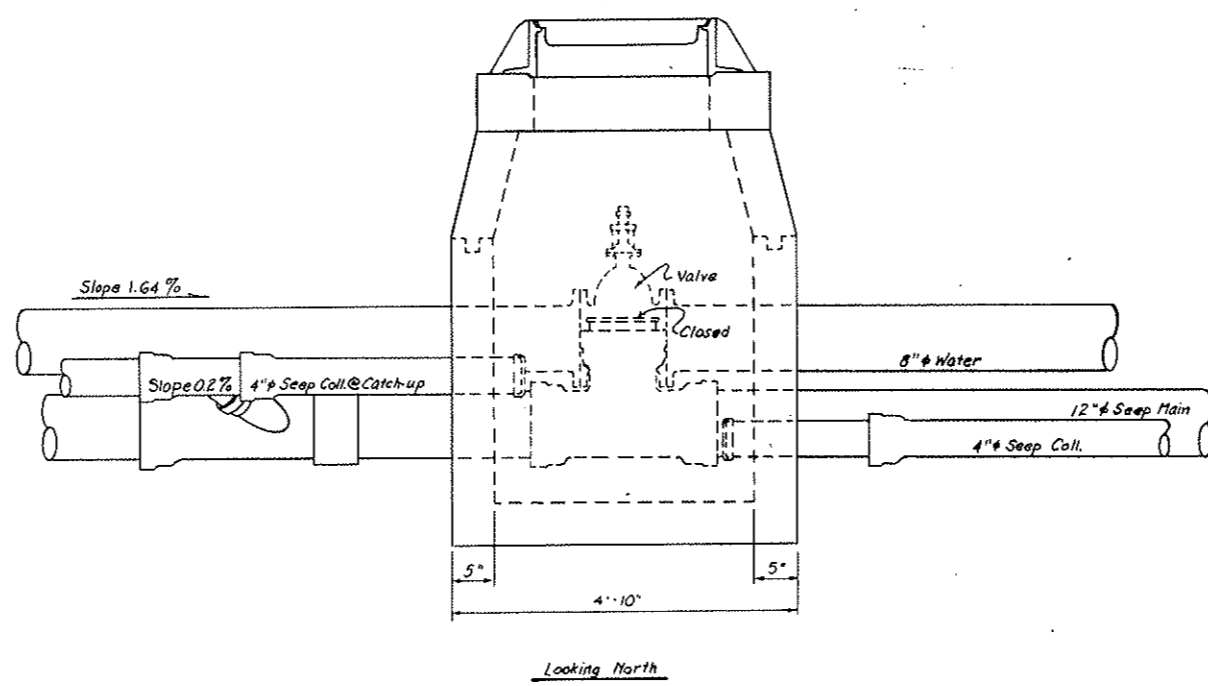
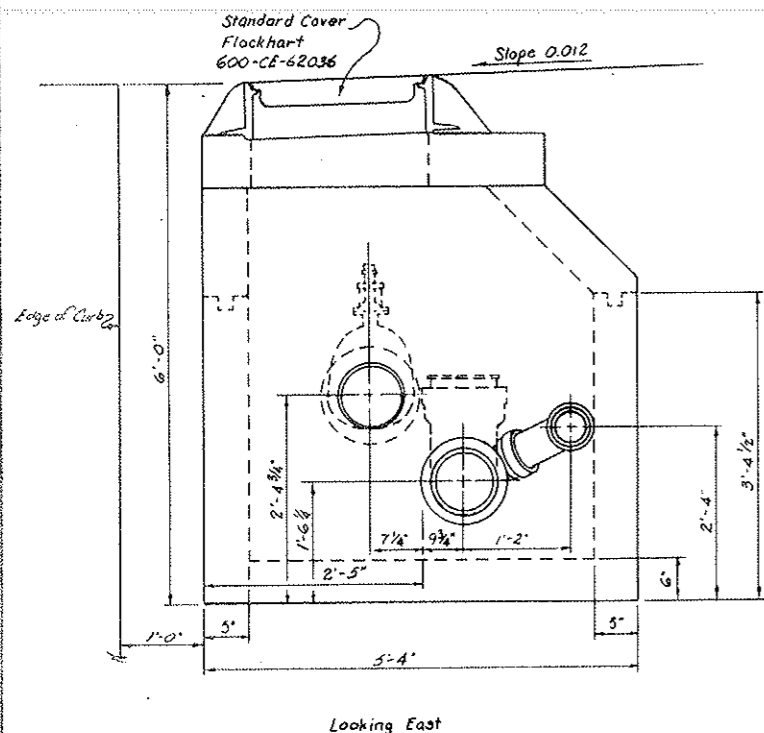
PLUMBING AT WASTE & SEEP MANHOLE

NOT TO SCALE
 Indicates Position Only

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE None	DRAWN BY R.H. GRIFFIN	
PIPING DETAILS - PLAN @ MANHOLES (12" Seep)			
DATE 12/2/71	APPROVED BY DOR, Date By D.S. 1-17-72	REVISION NUMBER As SCC 447	C2-41E

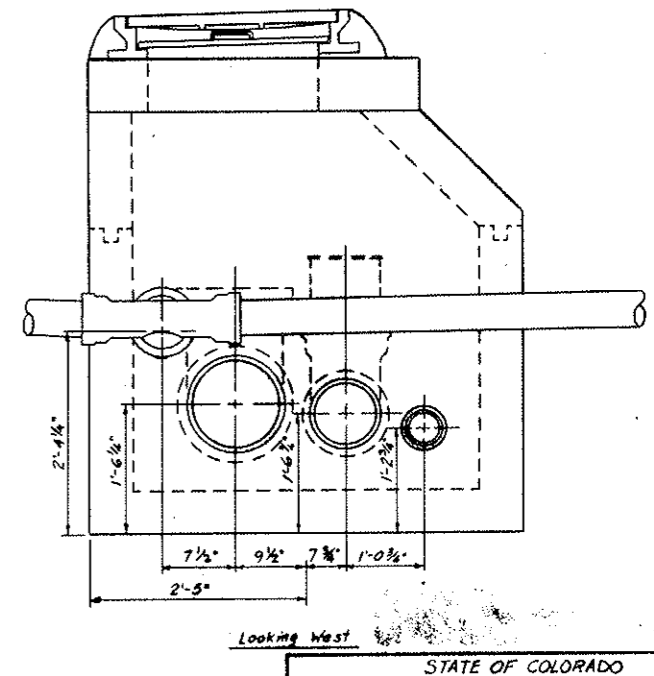
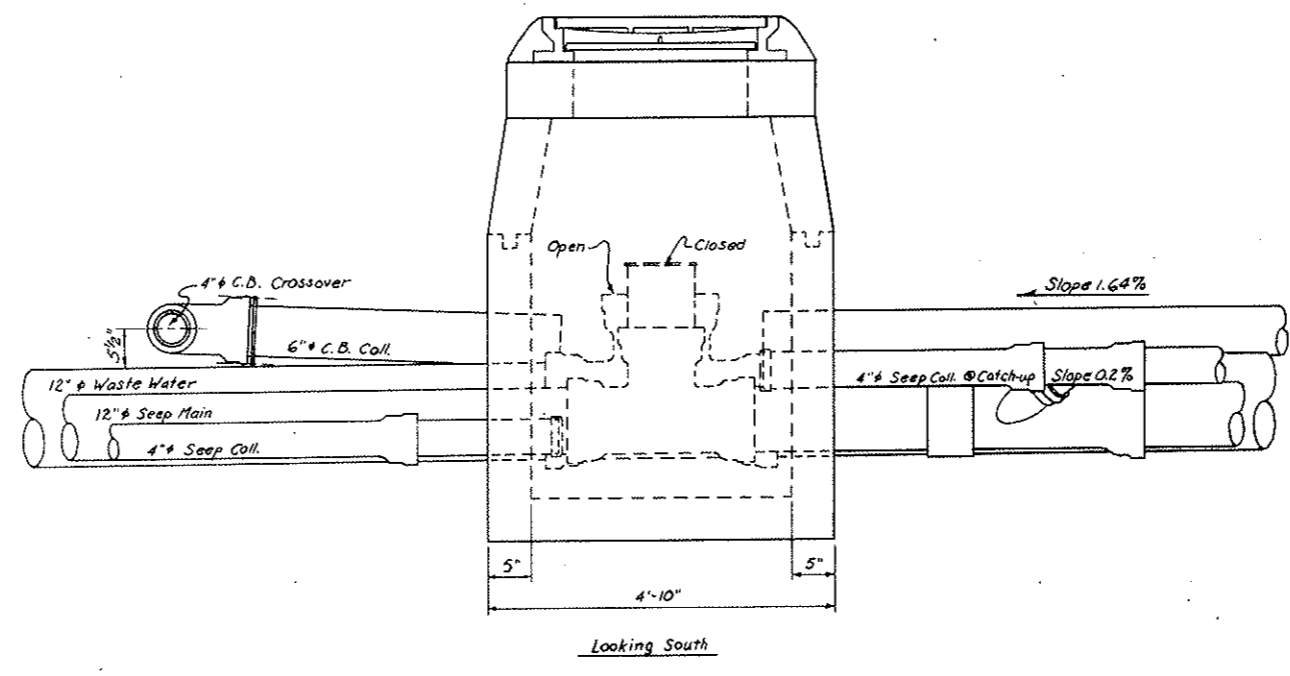
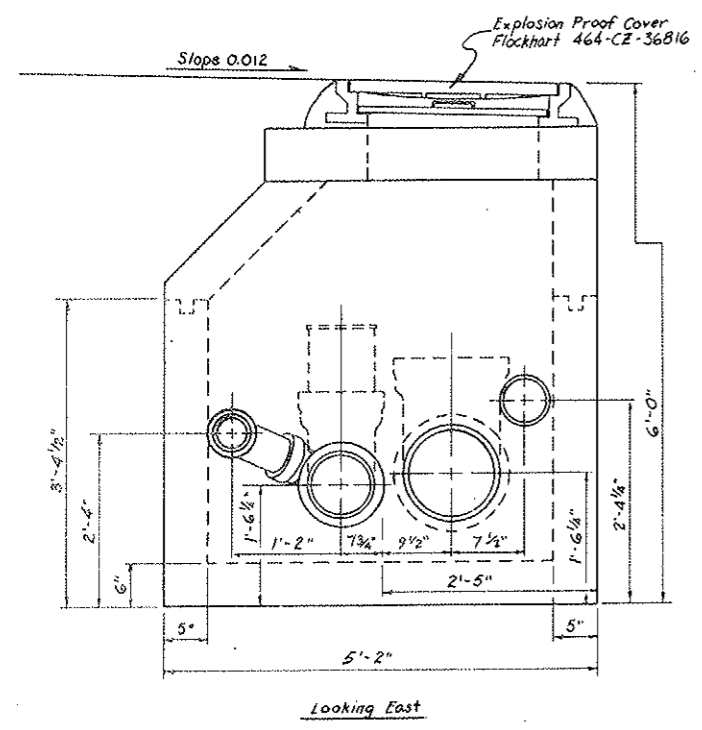
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	00 FX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1978



WATER & SEEP ~ MANHOLE & PIPING ~ ELEVATIONS

NOT TO SCALE
 Indicates Position Only



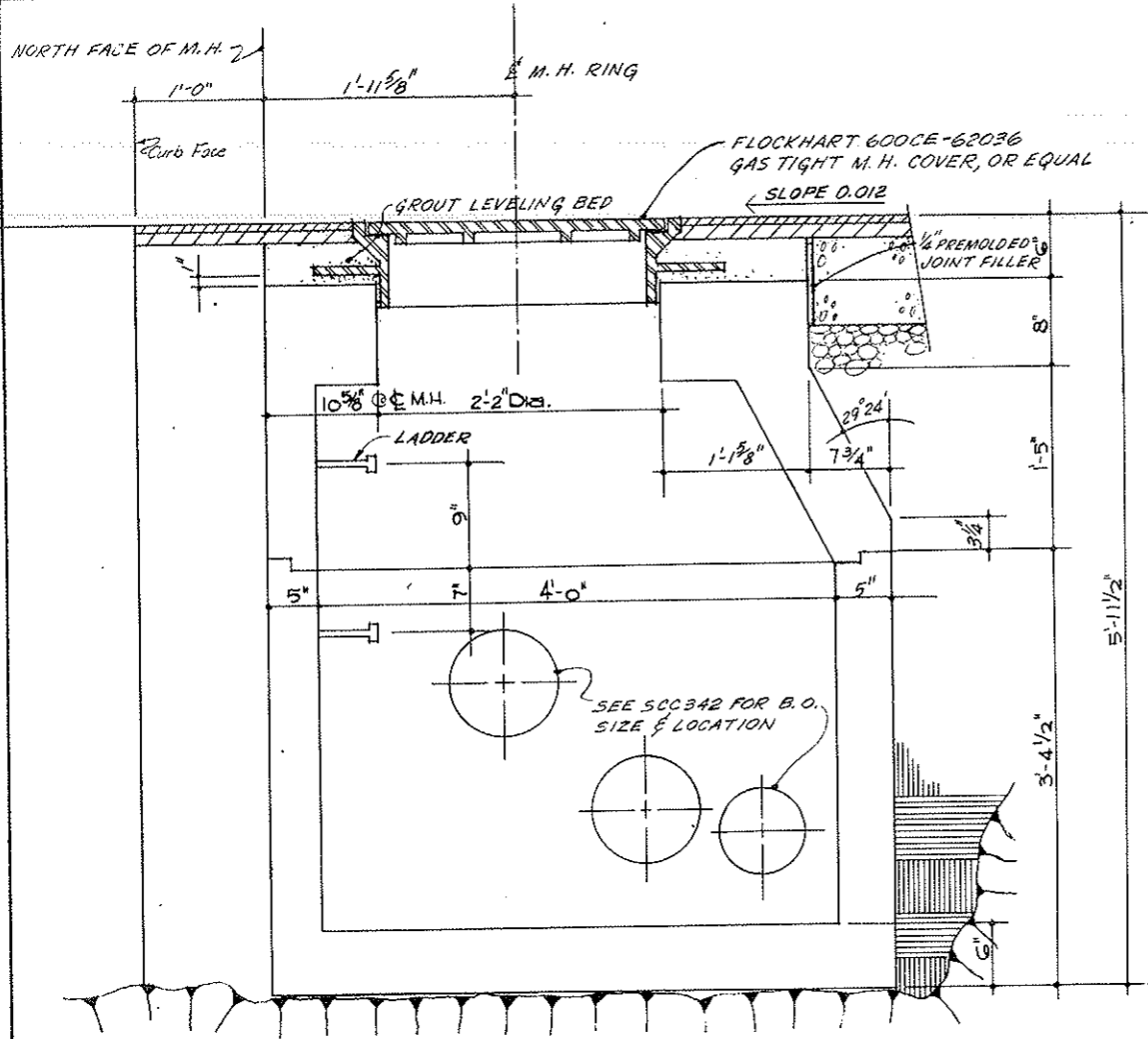
WASTE & SEEP ~ MANHOLE & PIPING ~ ELEVATIONS

Notes:
 Top Sections and Cover Slabs to be Set in Place
 before Base Sections to be Covered During Install.

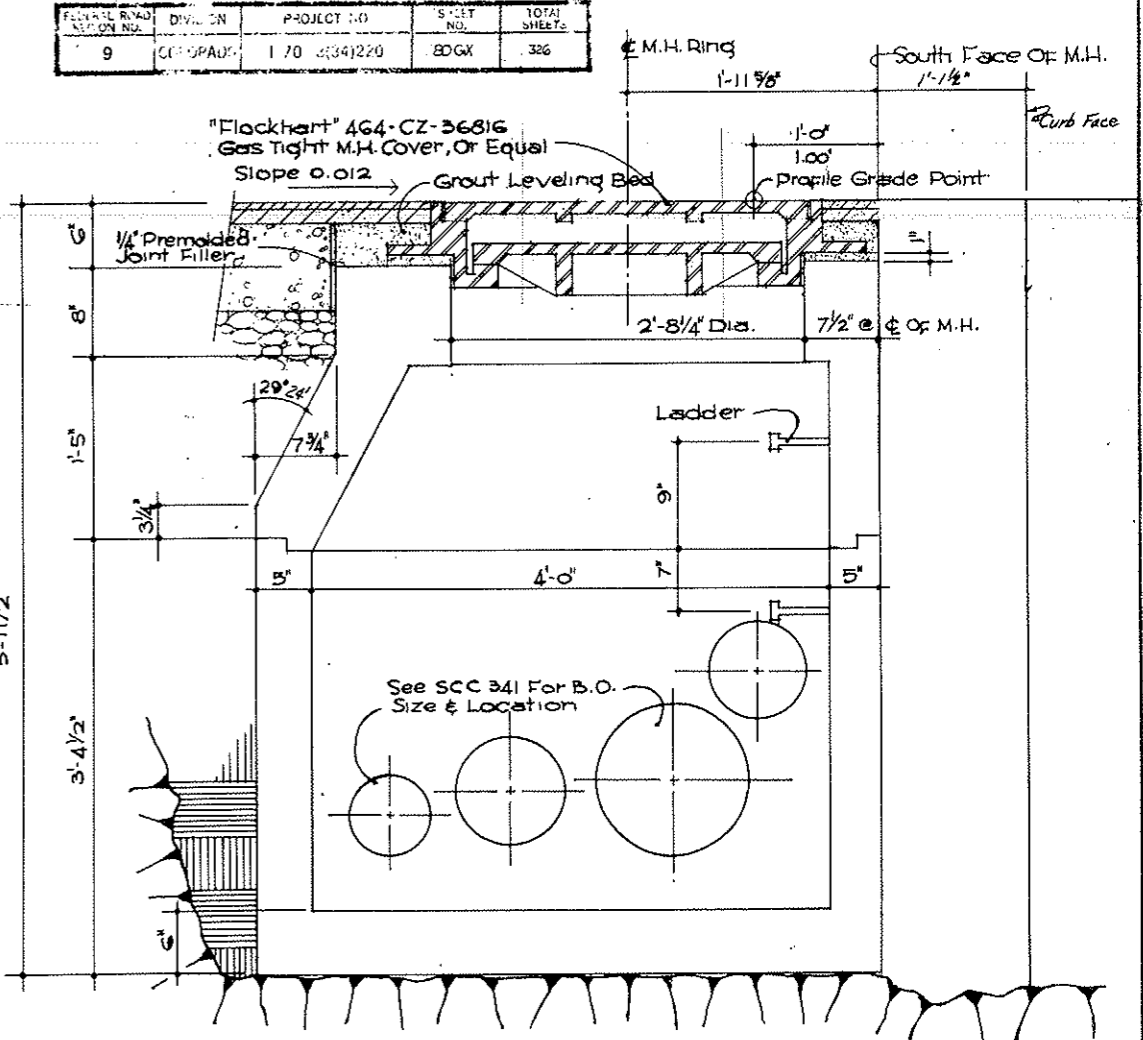
STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By	SCALE	DRAWN BY R.H.G.R.H.	
Straight Creek Constructors	None	REVISED R.H.G.R.H.	
PIPING DETAILS ~ ELEVATION @ MANHOLES (12" Seep)			
DATE	APPROVED BY	DATE	DRAWING NUMBER
12-2-71	By D.S.	1-17-78	As SCC 446
			C2-41F

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT I.D.	SHEET NO.	TOTAL SHEETS
9	CORONADO	170 3341220	80GX	326



SECTION LOOKING EAST
 (THRU FRESH WATER M.H.)
 SCALE: 1/2" = 1'-0"



SECTION LOOKING EAST
 (THRU SEWER M.H.)
 SCALE: 1/2" = 1'-0"

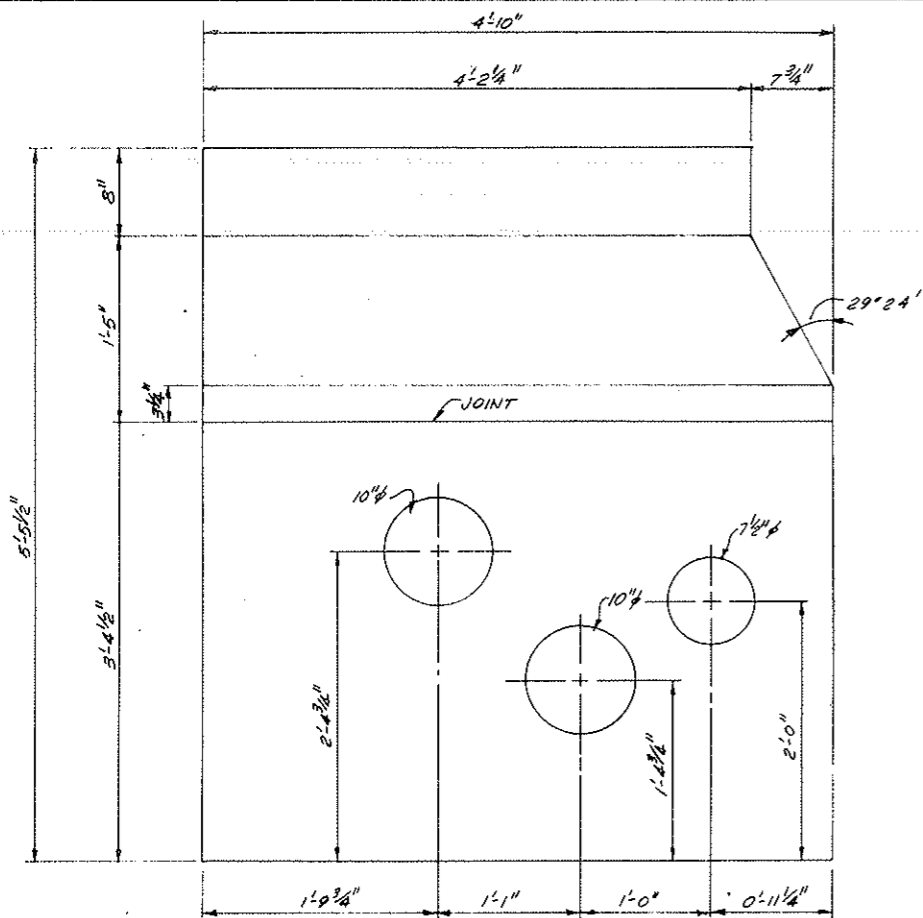
NOTE:
 This Drawing For General Layout Of Manhole
 Covers and Frames Only.



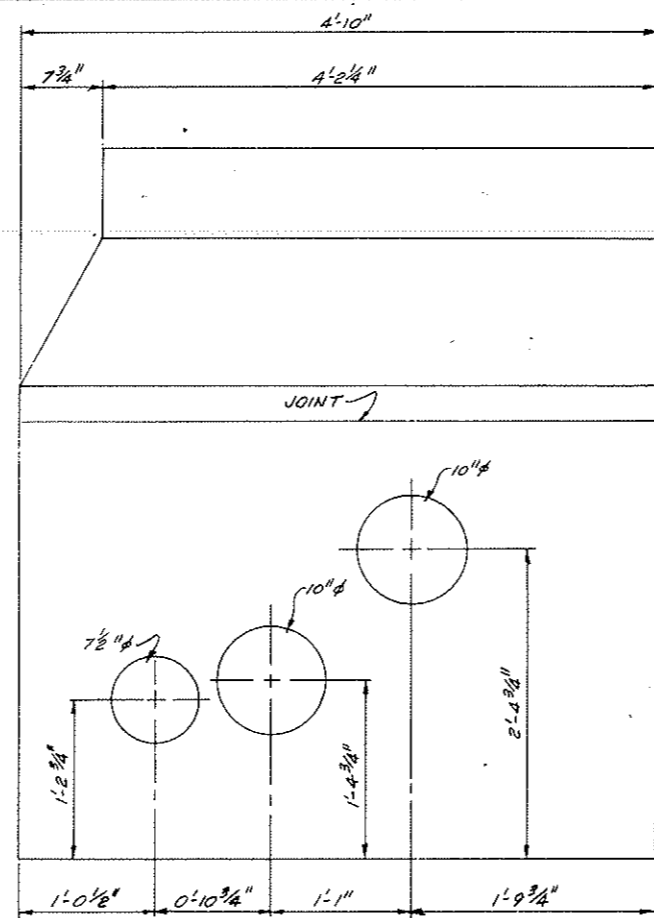
FOR 8" & SEEP MAIN

STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
PREPARED BY STRAIGHT CREEK CONSTRUCTORS	SCALE NOTED	DRAWN BY CATHER	NOTED R.A. Griffith
WATER & SEWER MANHOLE-TUNNEL SECTS.			
DATE 7-7-71	APPROVED BY DOH, Date By D.S. As SCC 343B	1-11-72	DRAWING NUMBER C2-41G

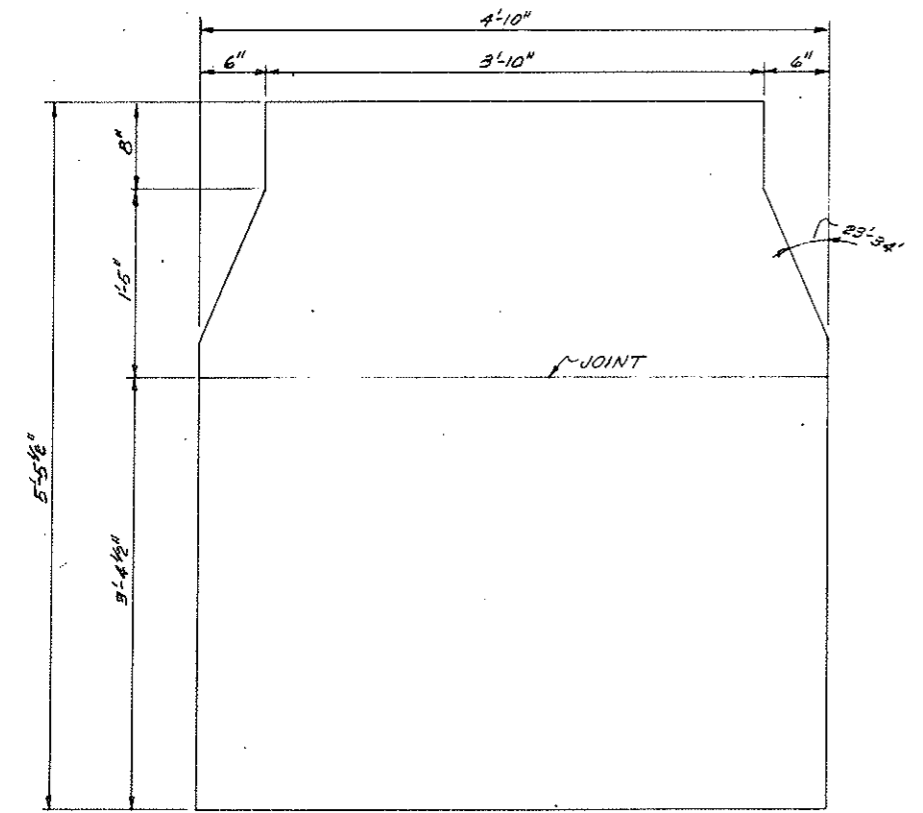
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 3(34)220	80HX	326



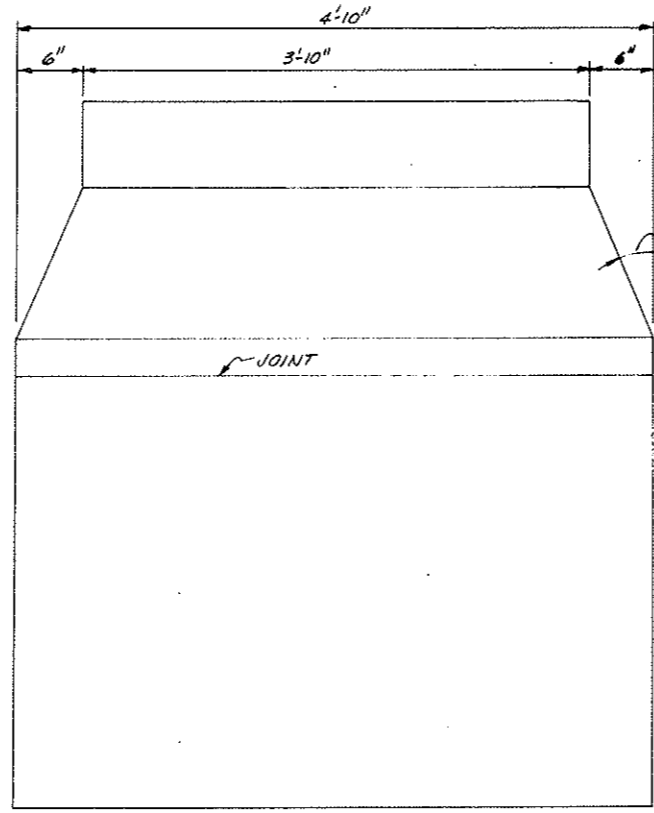
WEST ELEVATION
SCALE: 1/2" = 1'-0"



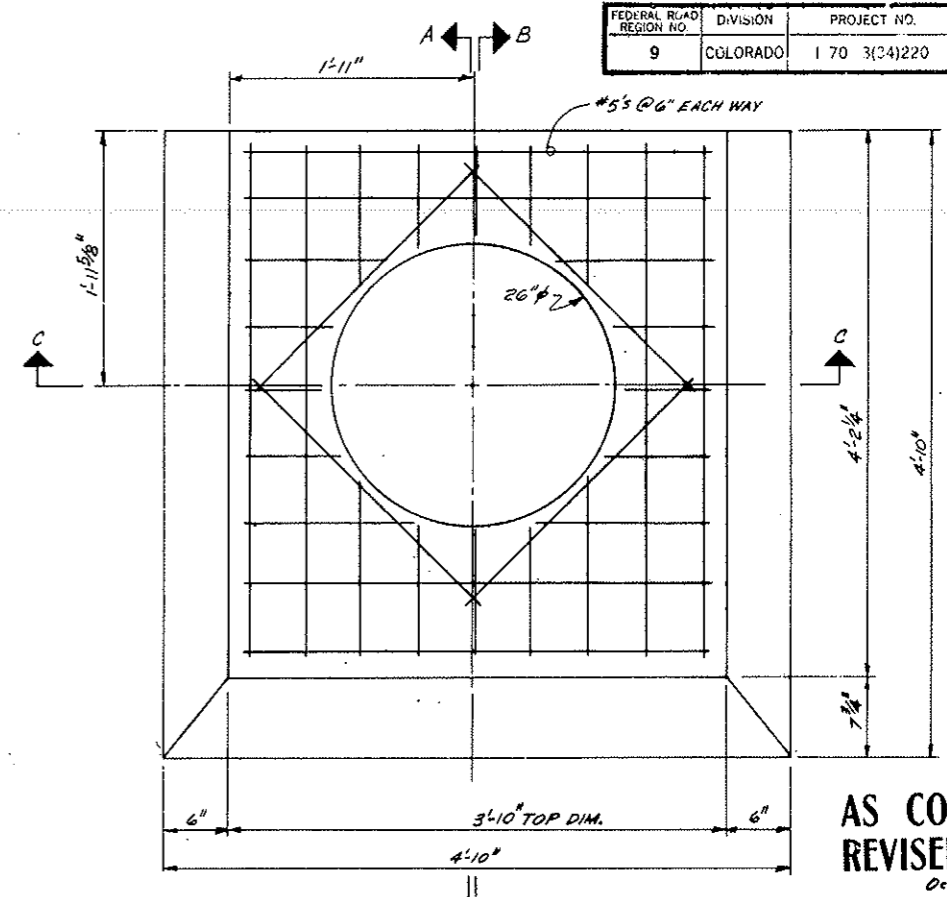
EAST ELEVATION
SCALE: 1/2" = 1'-0"



NORTH ELEVATION
SCALE: 1/2" = 1'-0"



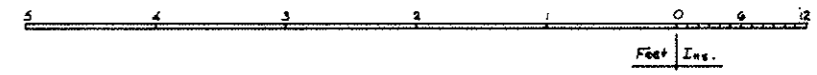
SOUTH ELEVATION
SCALE: 1/2" = 1'-0"



TOP VIEW
SCALE: 1/8" = 1'-0"

AS CONSTRUCTED
REVISED DATE
OCT 25, 1973

NOTE:
For Reinforcement of Walls & Base See Drwg. C2-411

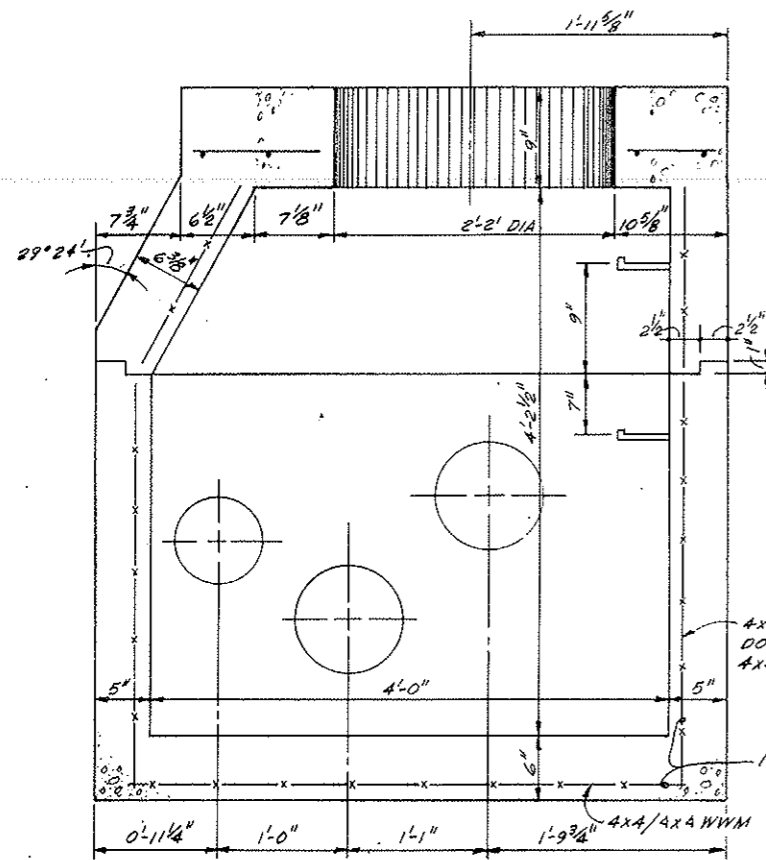


FOR 8" φ SEEP MAIN

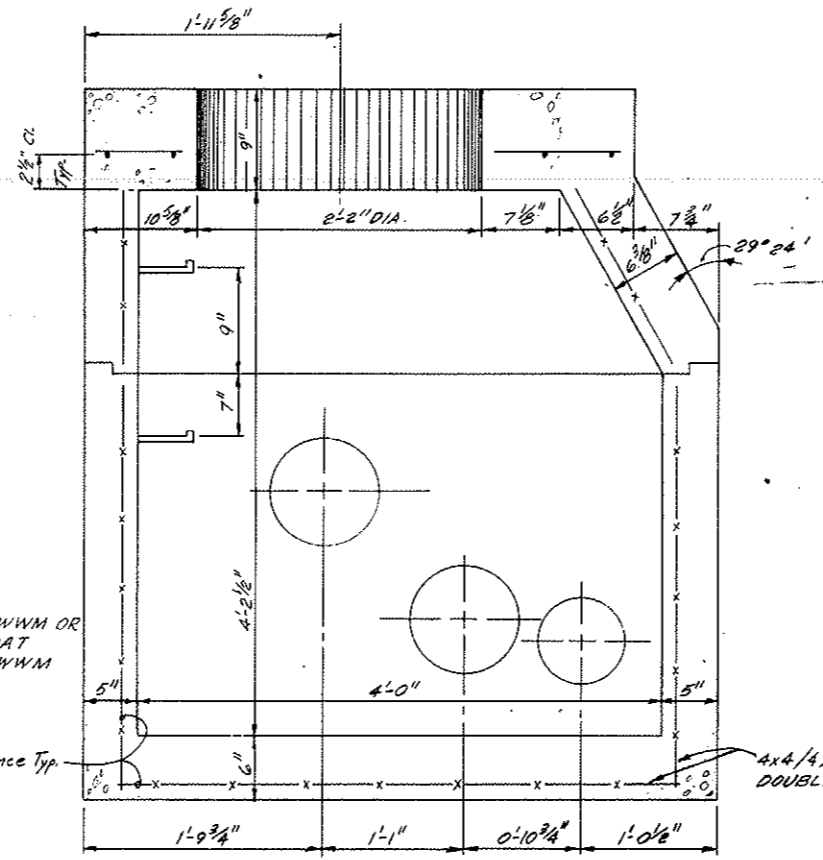
STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
PREPARED BY Straight Creek Constructors	SCALE NOTED	DESIGNED BY GOLDMAN	DRAWN BY
WATER SUPPLY MANHOLE - BASE SECTION			
DATE 6/23/71	APPROVED BY DOH, Date 1-11-72 By D.S.	PROJECT NO. AS SCC 542	DRAWING NUMBER C2-41H

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 3(34)220	80 IX	326

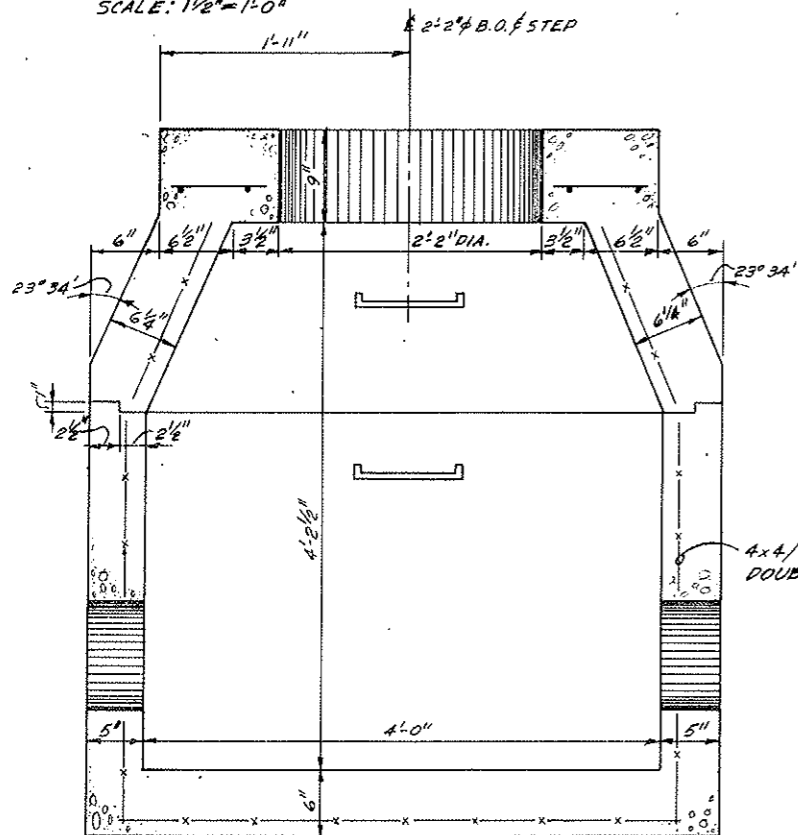
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



SECTION A-A LOOKING WEST
 SCALE: 1/2" = 1'-0"

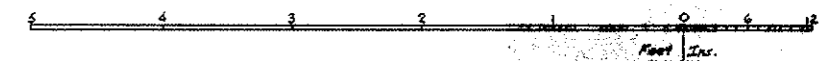


SECTION B-B LOOKING EAST
 SCALE: 1/2" = 1'-0"



SECTION C-C LOOKING NORTH
 SCALE: 1/2" = 1'-0"

NOTE:
 For Reinforcement of Manhole Top See Drwg. C2-41H

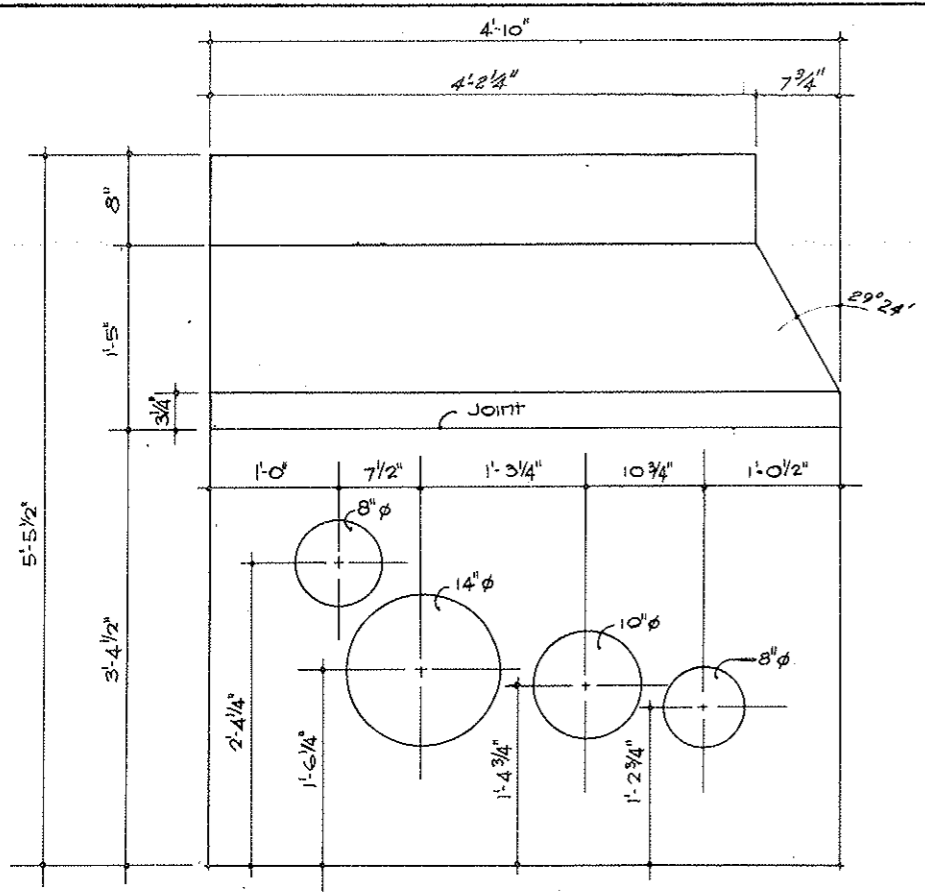


FOR 8" ϕ SEEP MAIN

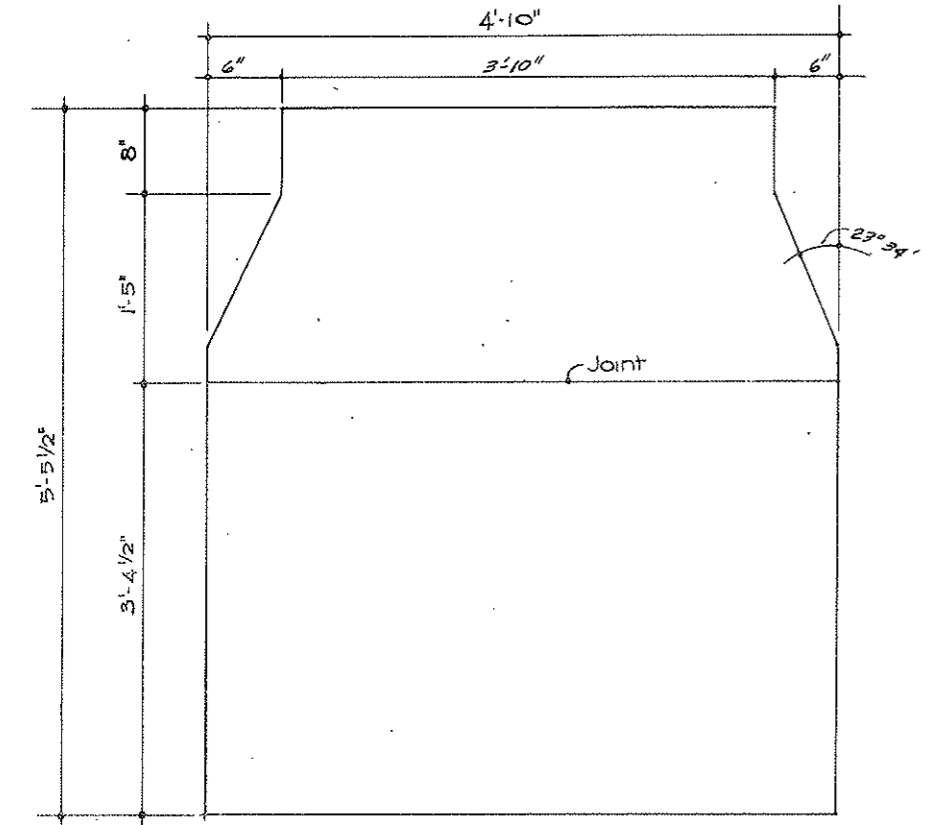
STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
PREPARED BY Straight Creek Constructors	SCALE NOTED	DRAWN BY GOLDMAN	CHECKED BY
WATER SUPPLY MANHOLE - BASE SECTION			
DATE 6-30-71	APPROVED BY D.S.	DATE 1-11-72	SCALE C2-41I

Change Order #145, N.O. 21901

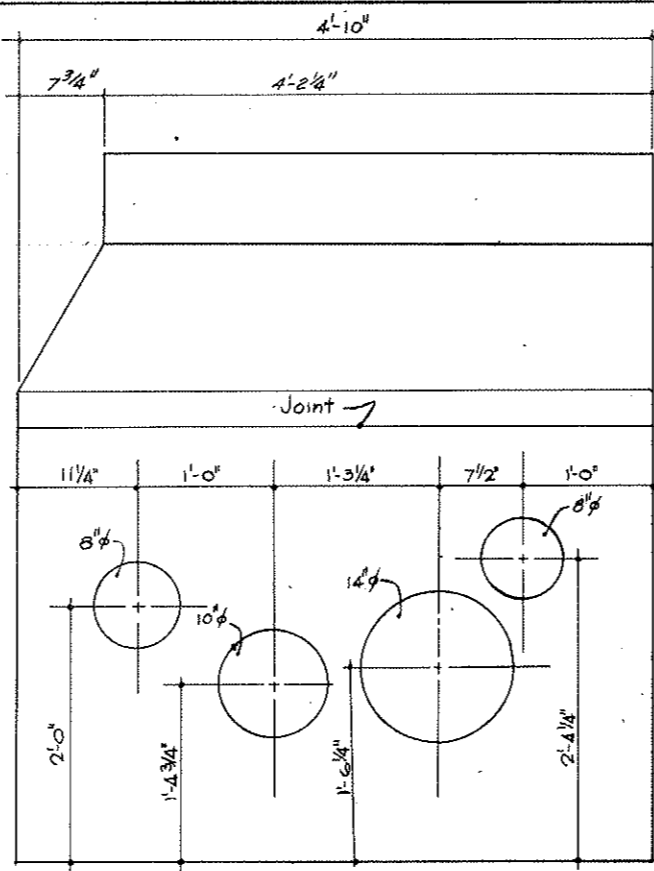
DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9 COLORADO	1 70-3(34)220	BOJX	326



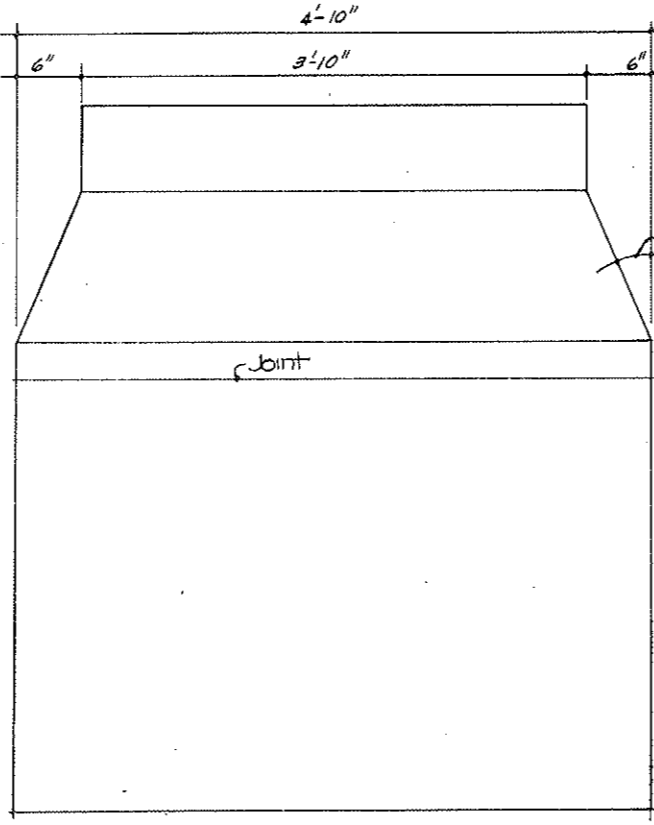
• EAST ELEVATION •
Scale 1/2" = 1'-0"



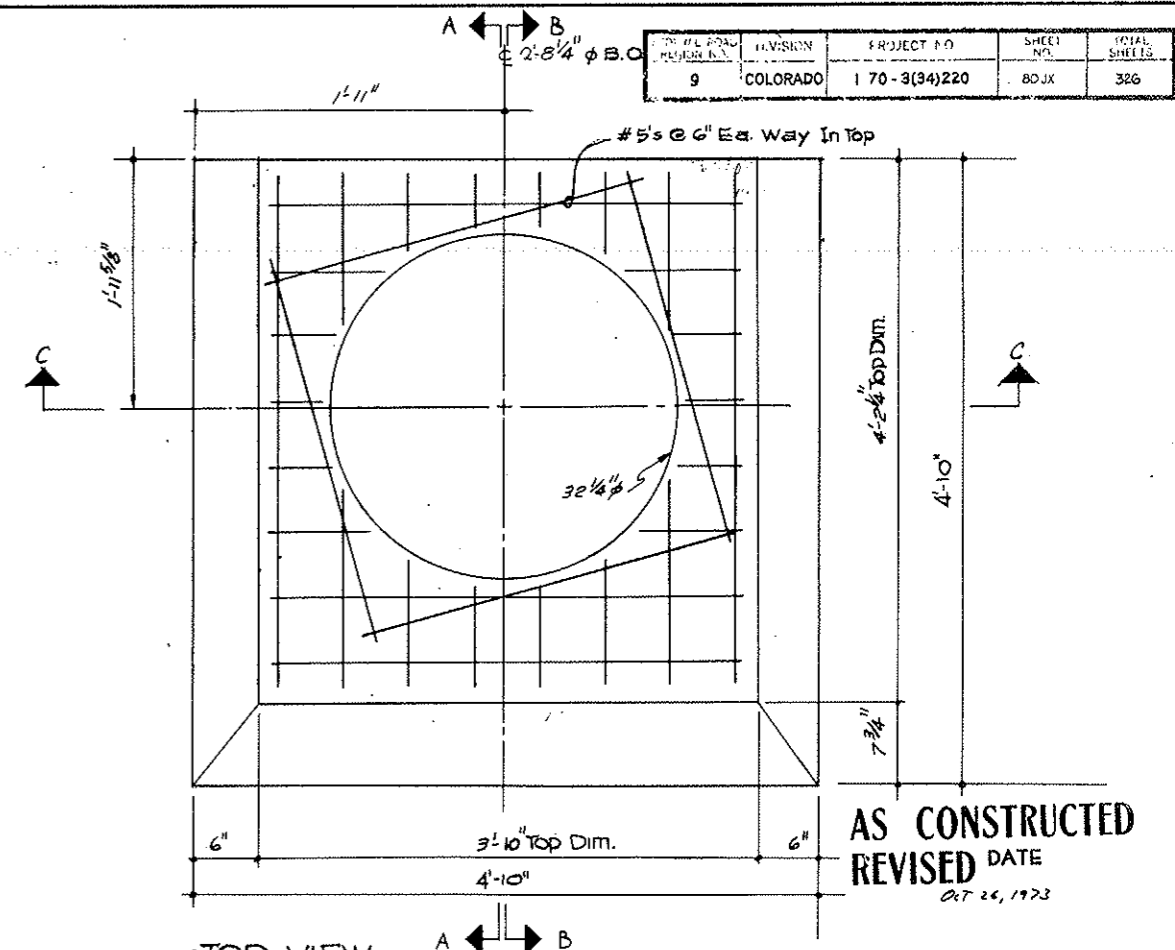
• SOUTH ELEVATION •
Scale 1/2" = 1'-0"



• WEST ELEVATION •
Scale 1/2" = 1'-0"

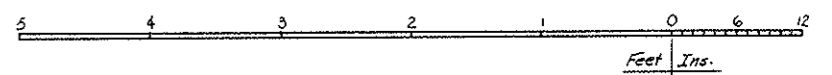


• NORTH ELEVATION •
Scale 1/2" = 1'-0"



• TOP VIEW •
Scale 1/2" = 1'-0"

AS CONSTRUCTED
REVISED DATE
Oct 26, 1973

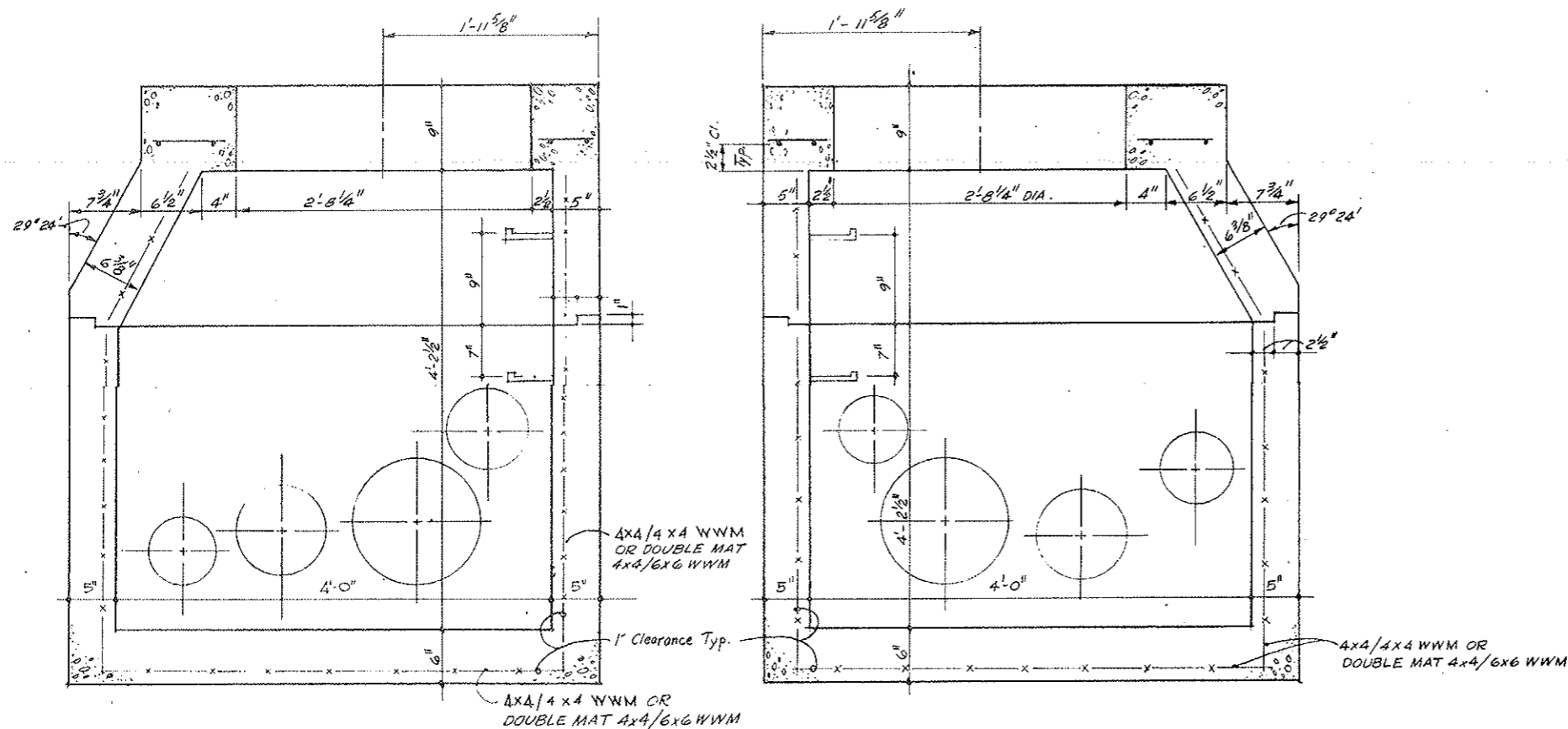


FOR 8" & SEEP MAIN

STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
PREPARED BY Straight Creek Constructors	SCALE NOTED	DRAWN BY CATHER	REVISED
SEWER MANHOLE - BASE SECTION			
DATE 6-25-71	APPROVED BY DCH, Date 1-11-72 By D.S.	AS SCC 341A	DRAWING NUMBER C2-41J

GENERAL NOTES	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	WGRADC	170 5341220	80 KX	326

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973

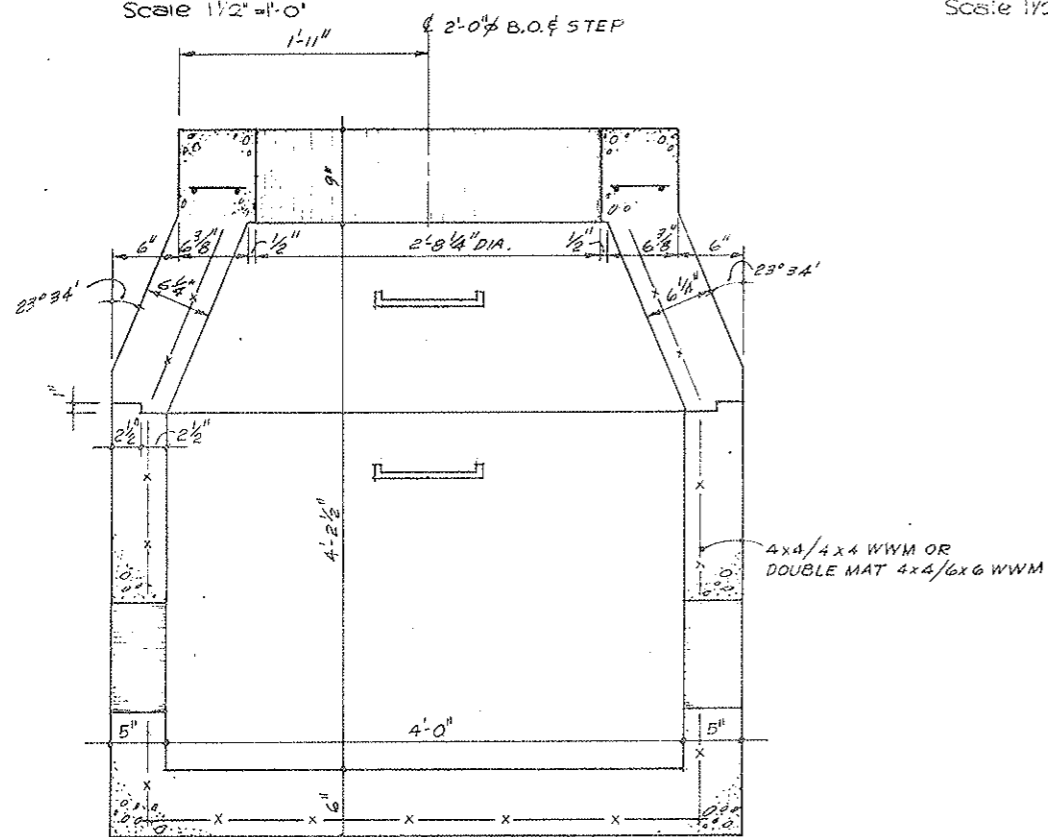


SECTION A-A LOOKING EAST

Scale 1/2" = 1'-0"

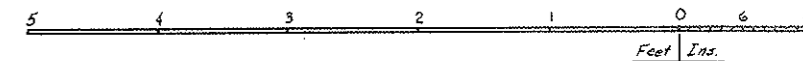
SECTION B-B LOOKING WEST

Scale 1/2" = 1'-0"



SECTION C-C LOOKING SOUTH

Scale 1/2" = 1'-0"



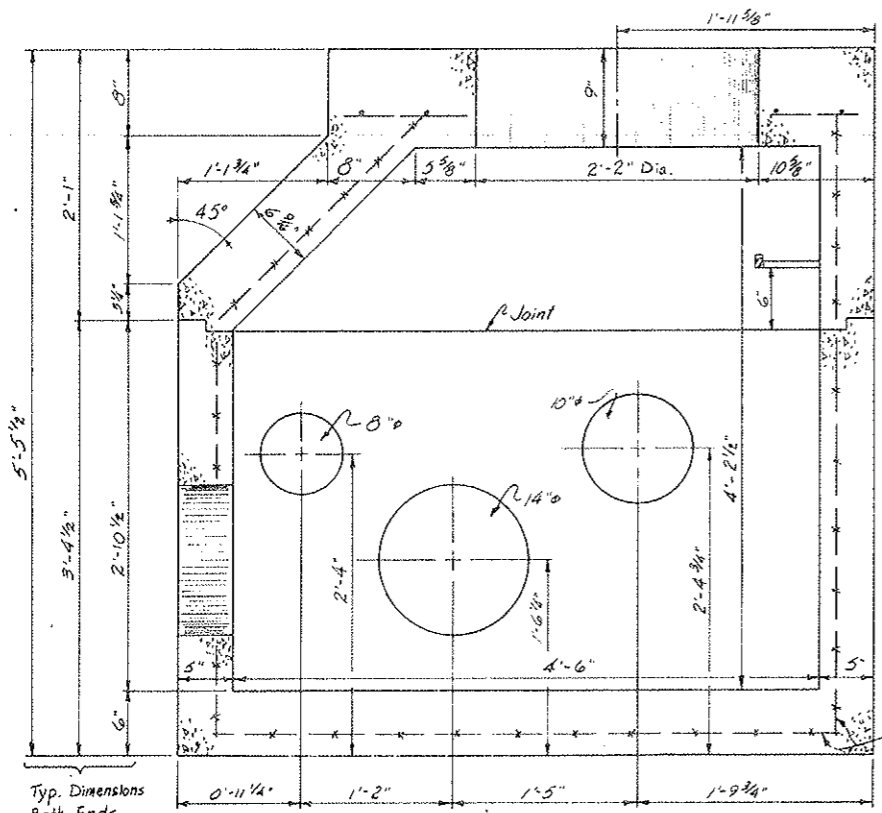
FOR 8" Ø SEEP MAIN

STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
PREPARED BY	SCALE	DESIGNED BY	CATHER
Straight Creek Constructors	NOTED	DRAWN BY	GOLDMAN
SEWER MANHOLE - BASE SECTION			
DATE	APPROVED BY DOH, Date	DATE	DRAWING NUMBER
6-25-71	By D.S. As SCC 341B	1-11-78	C2-41K

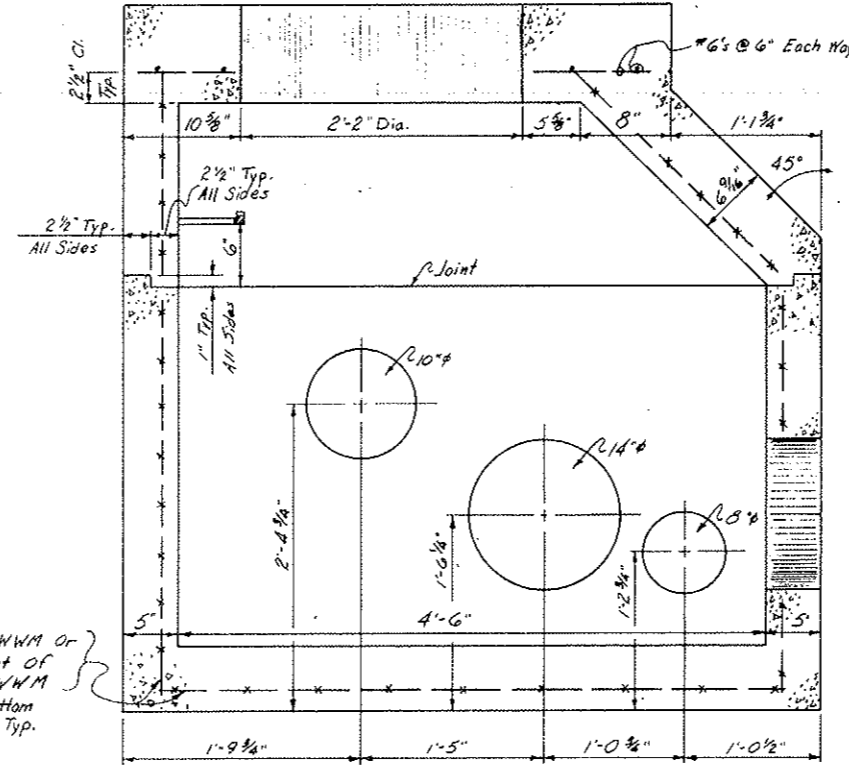
Change Order #157-10-0100

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	801X	326

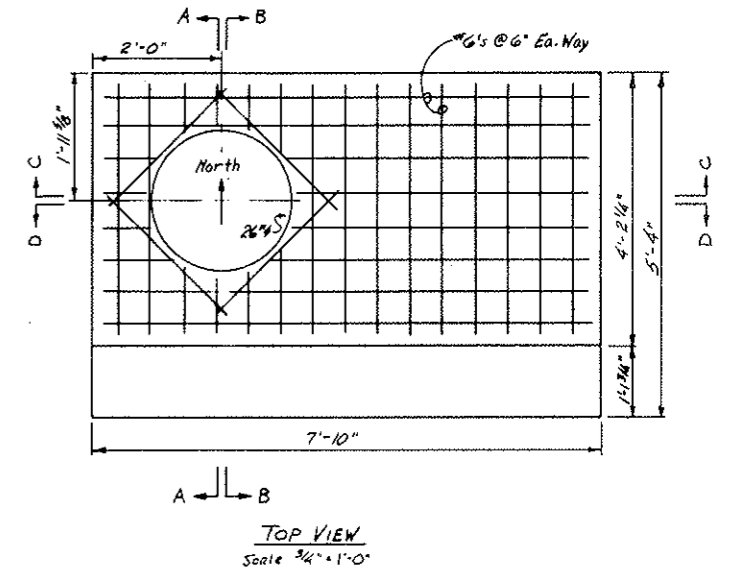
AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



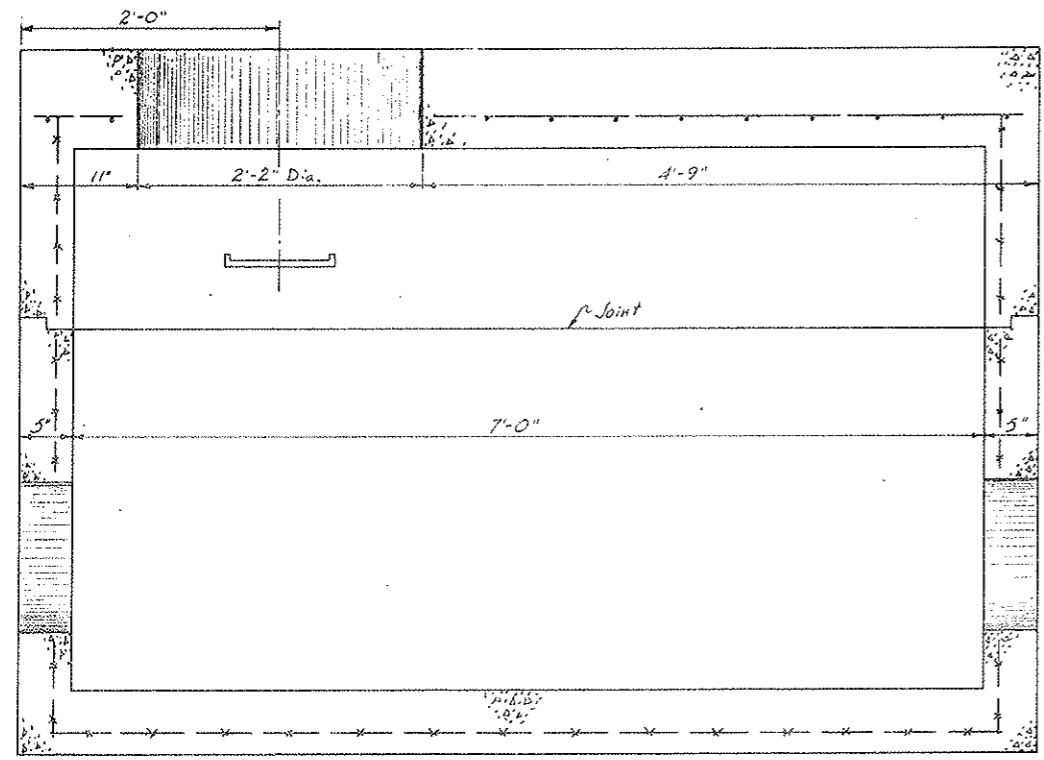
SECTION A-A - LOOKING WEST
 Scale 1 1/2" = 1'-0"



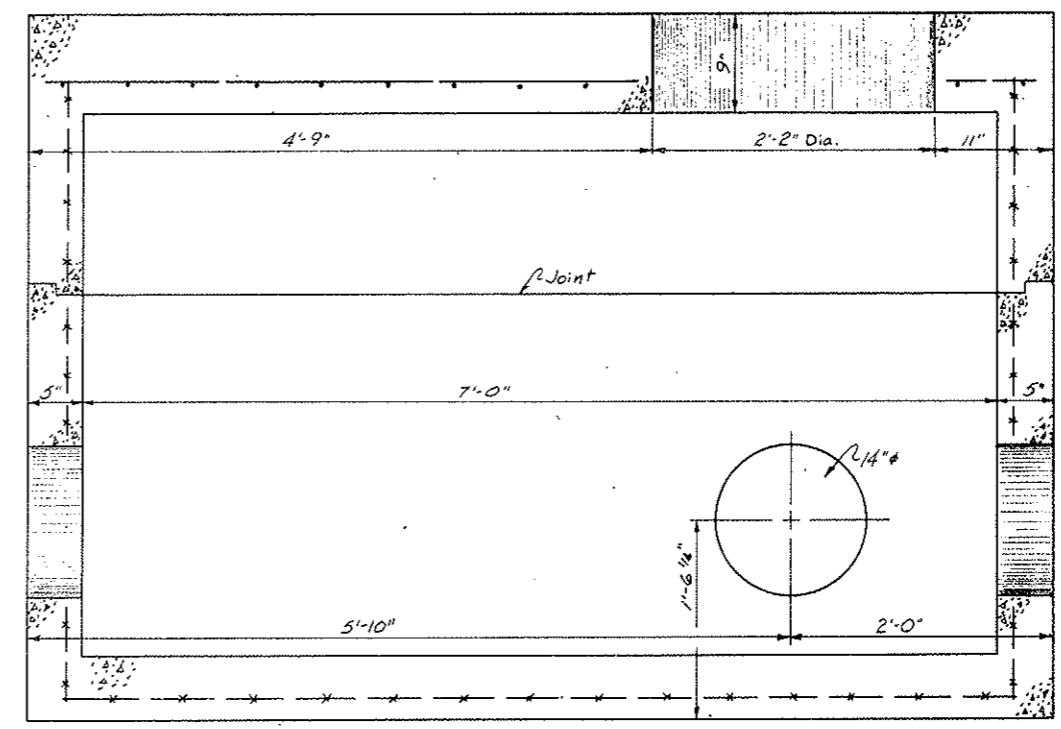
SECTION B-B - LOOKING EAST
 Scale 1 1/2" = 1'-0"



TOP VIEW
 Scale 3/4" = 1'-0"



SECTION C-C - LOOKING NORTH
 Scale 1 1/2" = 1'-0"



SECTION D-D - LOOKING SOUTH
 Scale 1 1/2" = 1'-0"

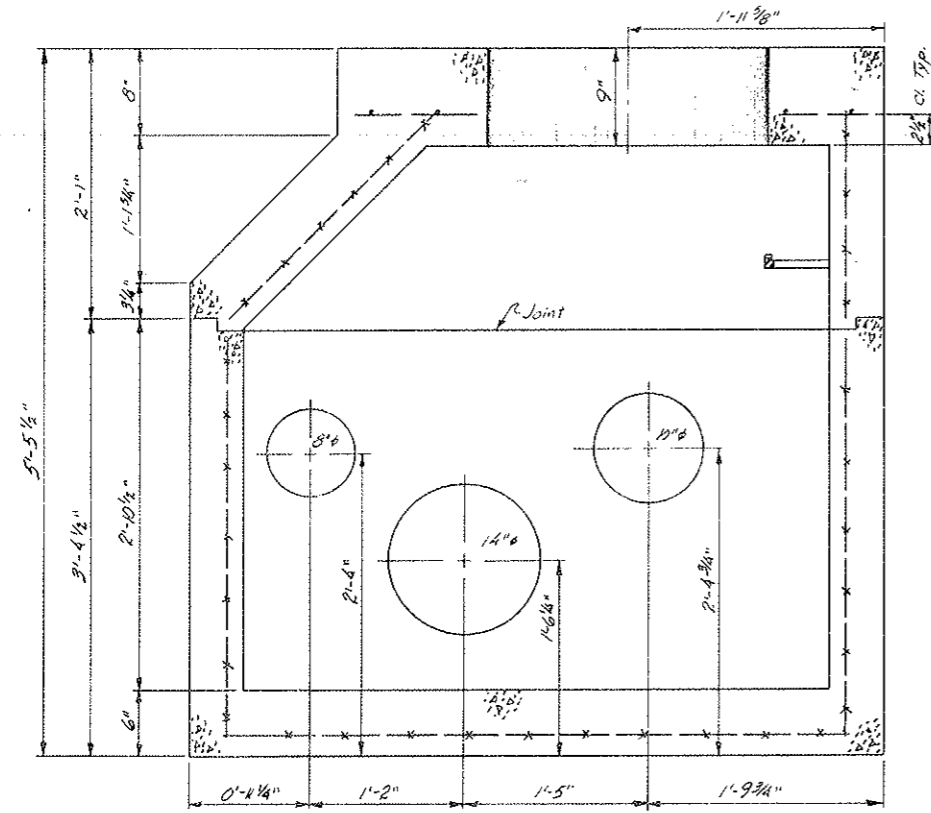
NOTE: Use Manhole Cover, Flockhart 600-CE-62036.



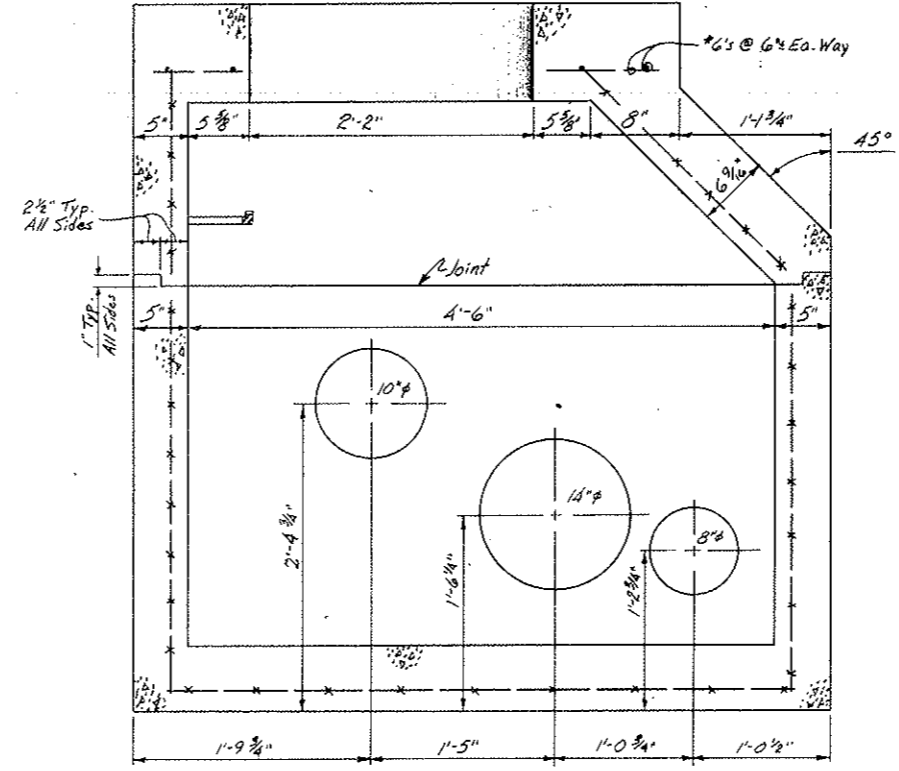
STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE As Shown	DRAWN BY R.R.G./R.P.H.	REVISIONS
EQUALIZER MANHOLE			
DATE 11-10-71	APPROVED BY D.S.	DATE 1-11-72	DRAWING NUMBER C2-41L

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	80 MX	326

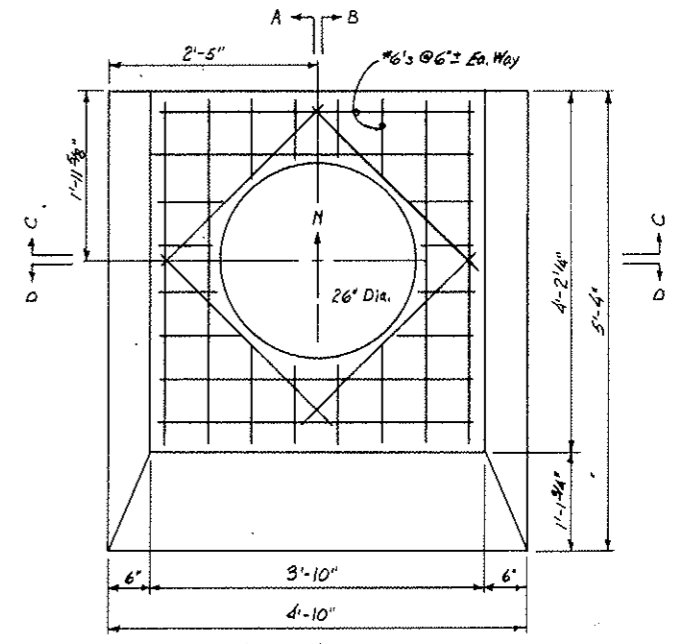
AS CONSTRUCTED
REVISED DATE
OCT 26, 1972



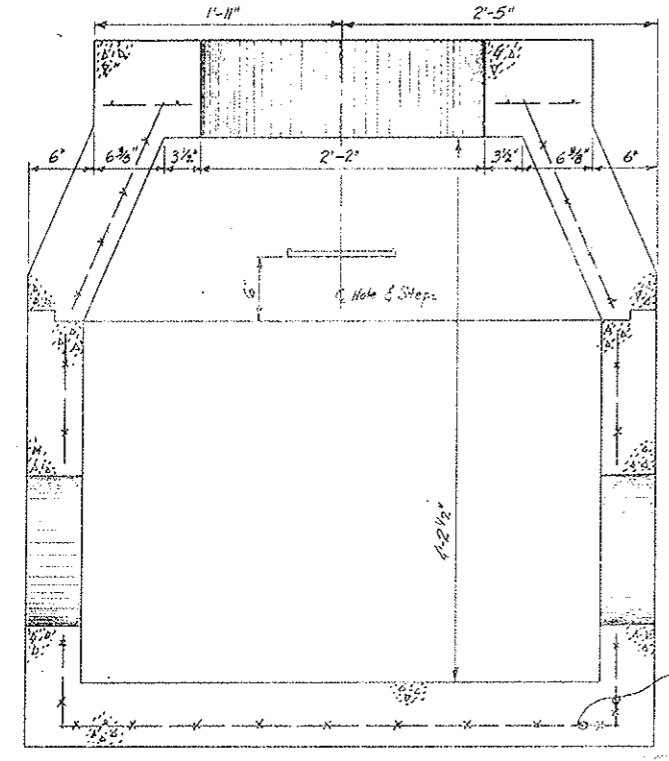
SECTION A-A - LOOKING WEST
Scale 1/2" = 1'-0"



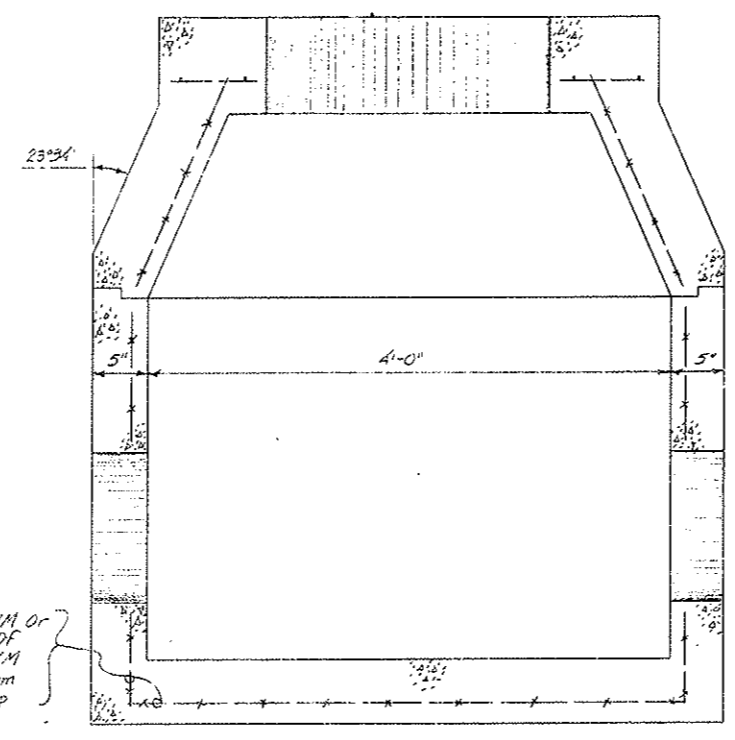
SECTION B-B - LOOKING EAST
Scale 1/2" = 1'-0"



TOP VIEW
Scale 1" = 1'-0"

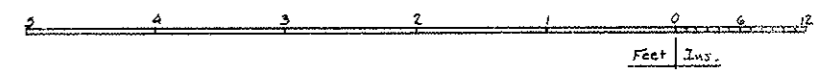


SECTION C-C - LOOKING NORTH
Scale 1/2" = 1'-0"



SECTION D-D - LOOKING SOUTH
Scale 1/2" = 1'-0"

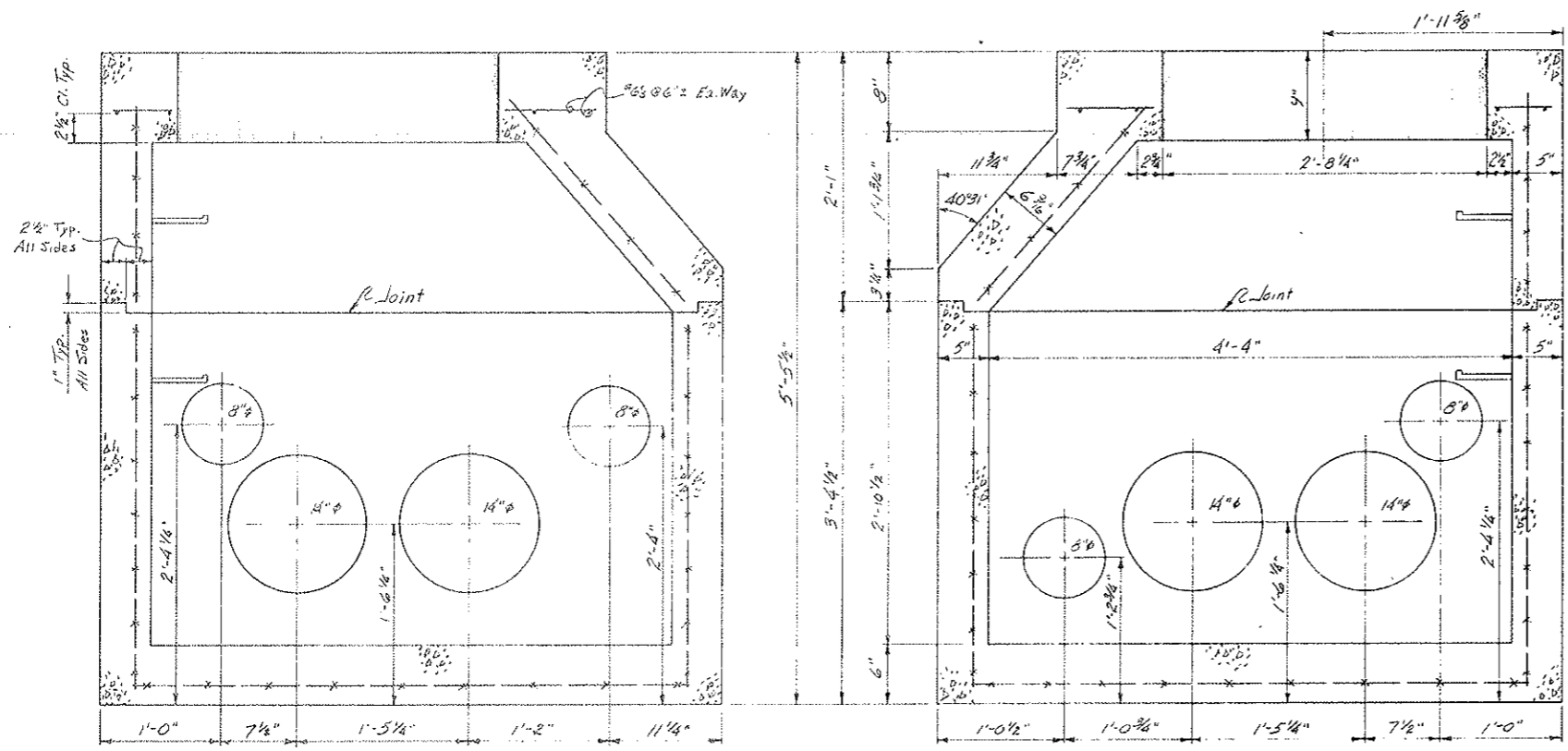
4x4/6x6 HWIM OR
Double Mat OF
4x4/6x6 HWIM
Sides & Bottom
1" Clearance Top



STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE	DRAWN BY M. J. HENRY	
FRESH WATER MANHOLE FOR 12' x 6' SLEEP AREA			
DATE 12-1-71	APPROVED BY DOH, Date 1-7-72 By D.S.	As SCC 442	DRAWING NUMBER C2-41M

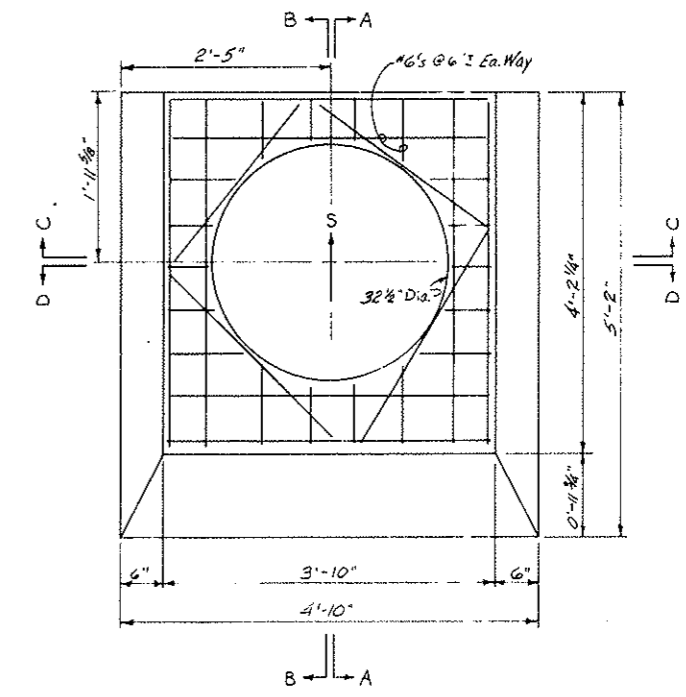
UNIVERSITY	PROJECT NO.	SHEET	DATE
COLORADO	170 3(3)226	80 NX	526

AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1973

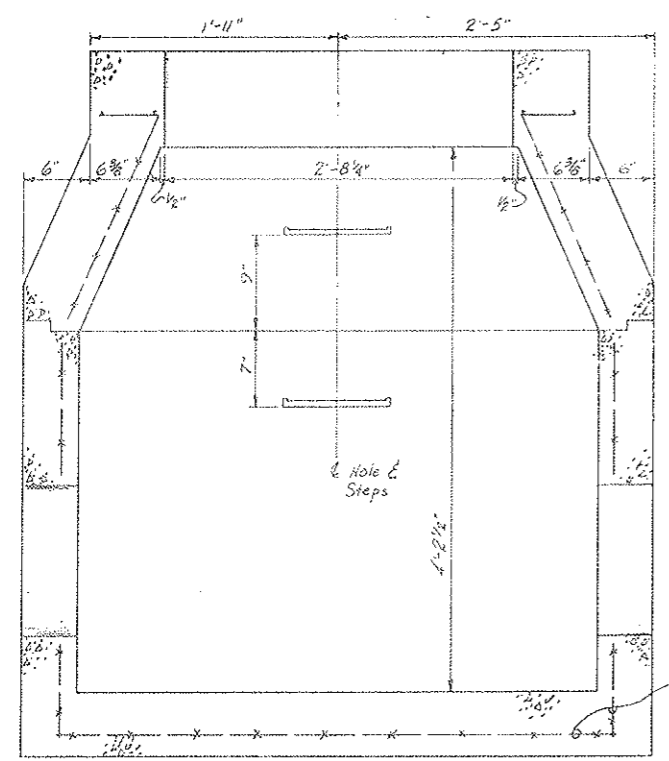


SECTION A-A - LOOKING WEST
 Scale 1 1/2" = 1'-0"

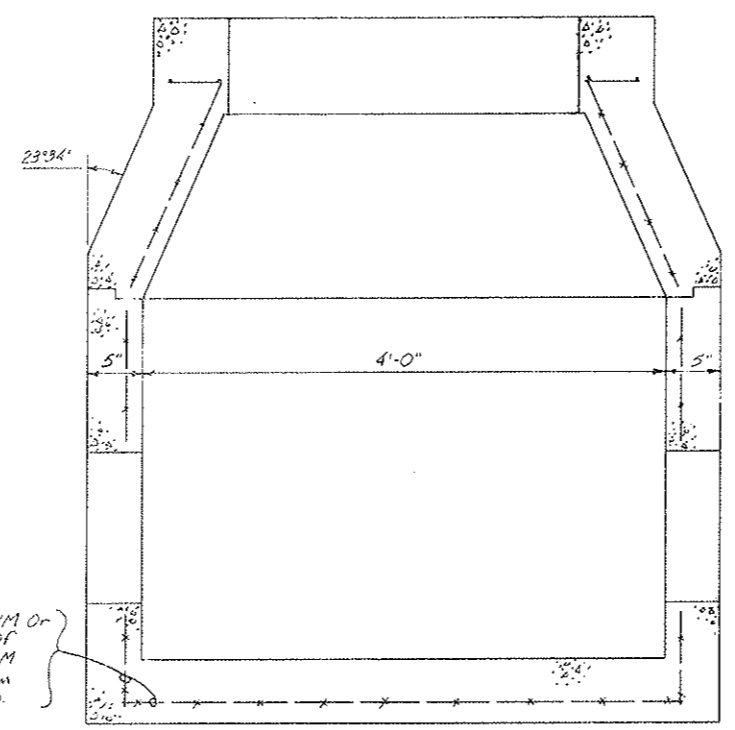
SECTION B-B - LOOKING EAST
 Scale 1 1/2" = 1'-0"



TOP VIEW
 Scale 1" = 1'-0"

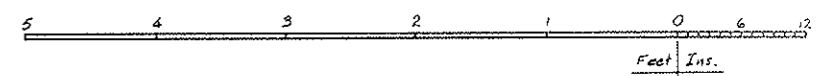


SECTION C-C - LOOKING SOUTH
 Scale 1 1/2" = 1'-0"



SECTION D-D - LOOKING NORTH
 Scale 1 1/2" = 1'-0"

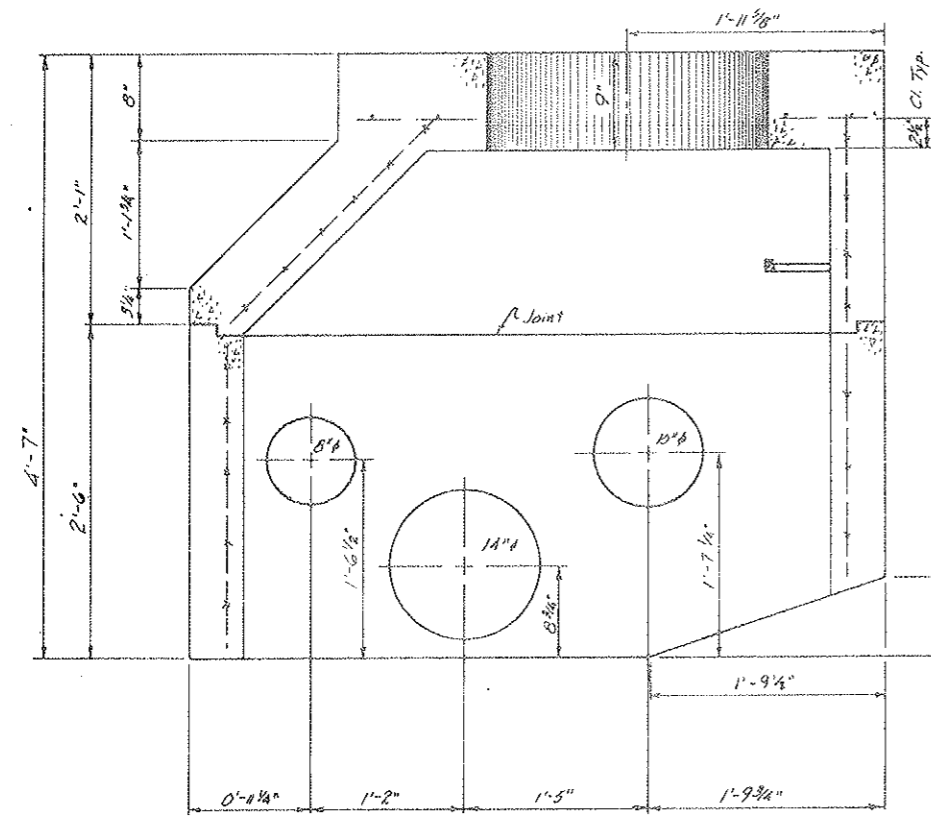
4x4/4x4 WWM Or
 Double Mat Of
 4x4/6x6 WWM
 Sides & Bottom
 1" Clearance Typ.



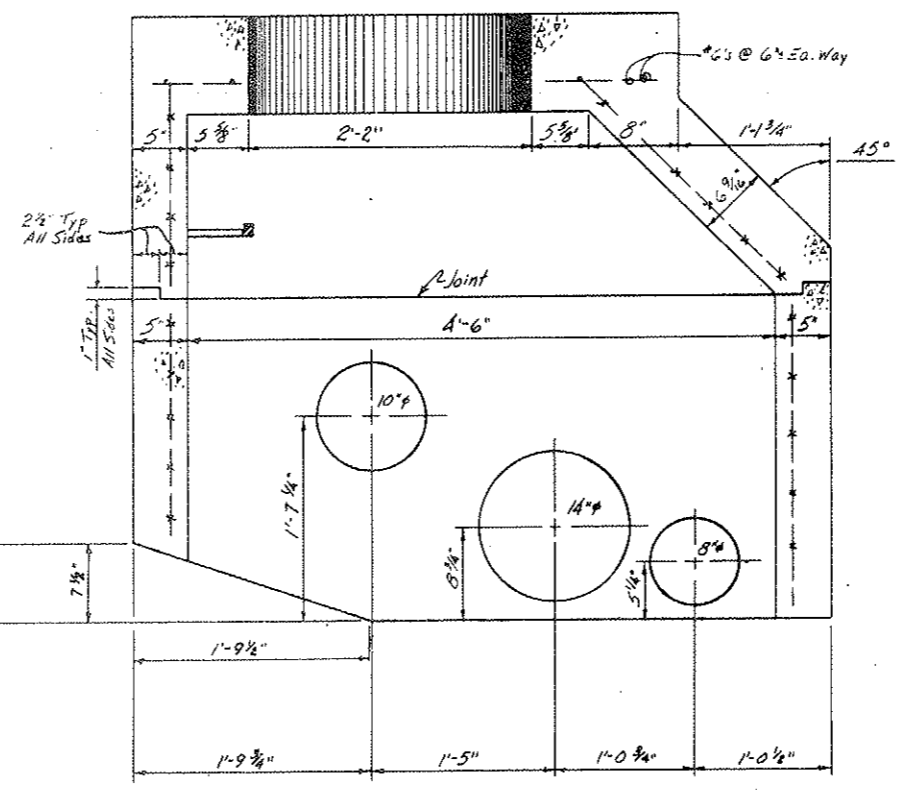
STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE Noted	DRAWN BY P.M. Griffith	REVISIONS
SEWER MANHOLE FOR 12" S&EP AREA			
DATE 11-30-71	APPROVED BY DOH, Date By D.S. As SCC 441	1-17-72	DRAWING NUMBER C2-41N

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 - 3(34)220	80 OK	326

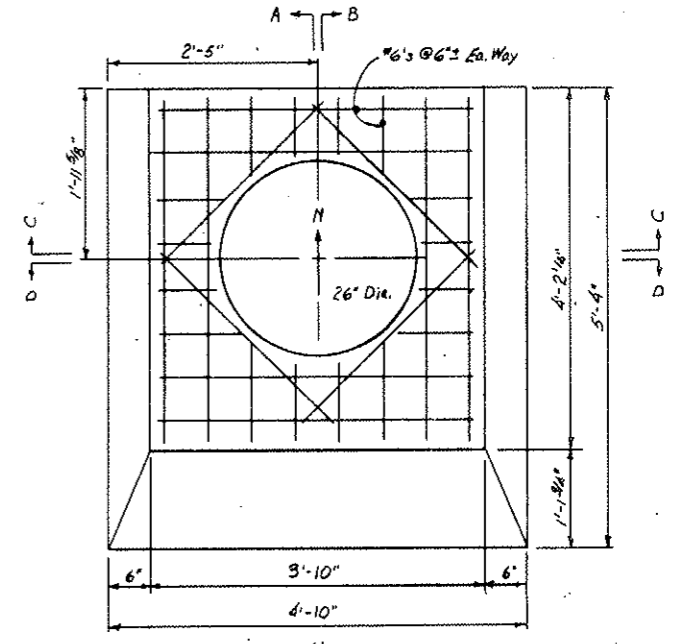
AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



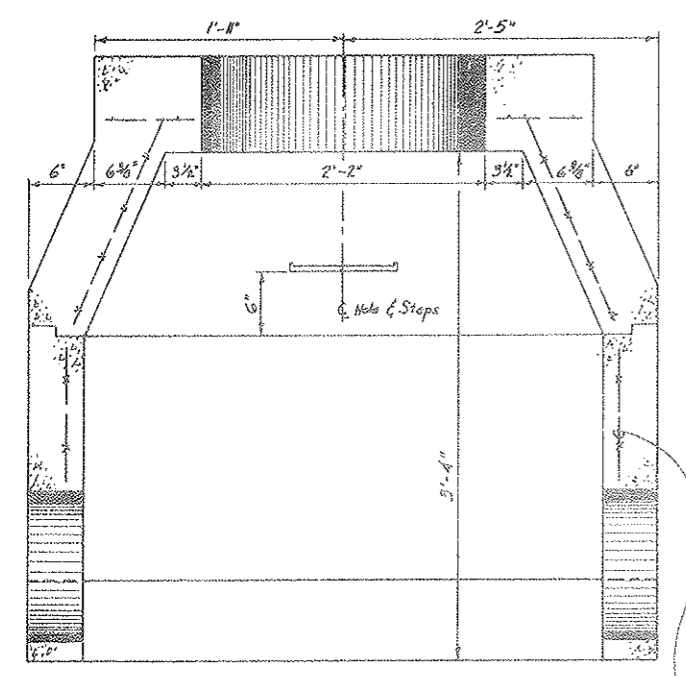
SECTION A-A - LOOKING WEST
 Scale 1/2" = 1'-0"



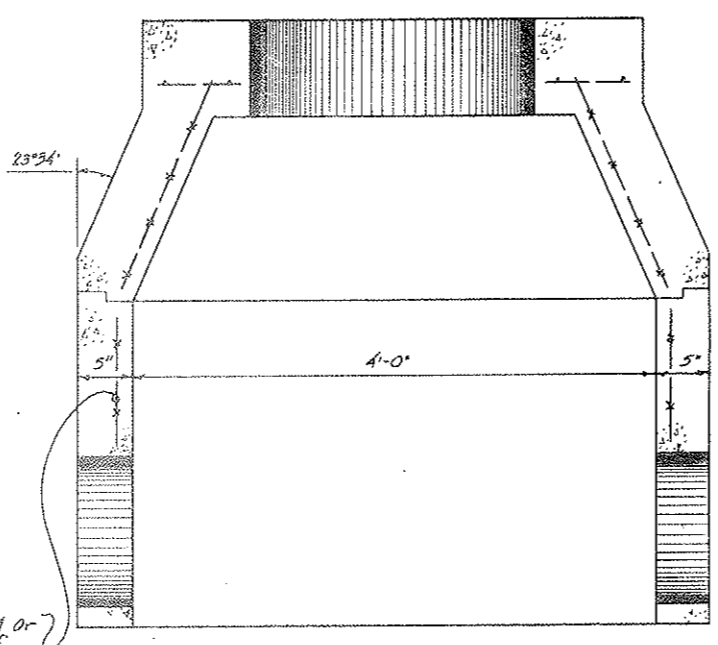
SECTION B-B - LOOKING EAST
 Scale 1/2" = 1'-0"



TOP VIEW
 Scale 1" = 1'-0"

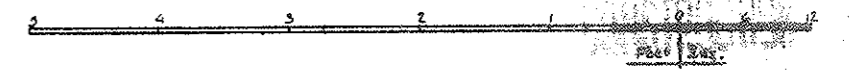


SECTION C-C - LOOKING NORTH
 Scale 1/2" = 1'-0"



SECTION D-D - LOOKING SOUTH
 Scale 1/2" = 1'-0"

4x4/4x4 WWM OR
 Double Mat of
 4x4/6x6 WWM
 Sides, 1" Clearance

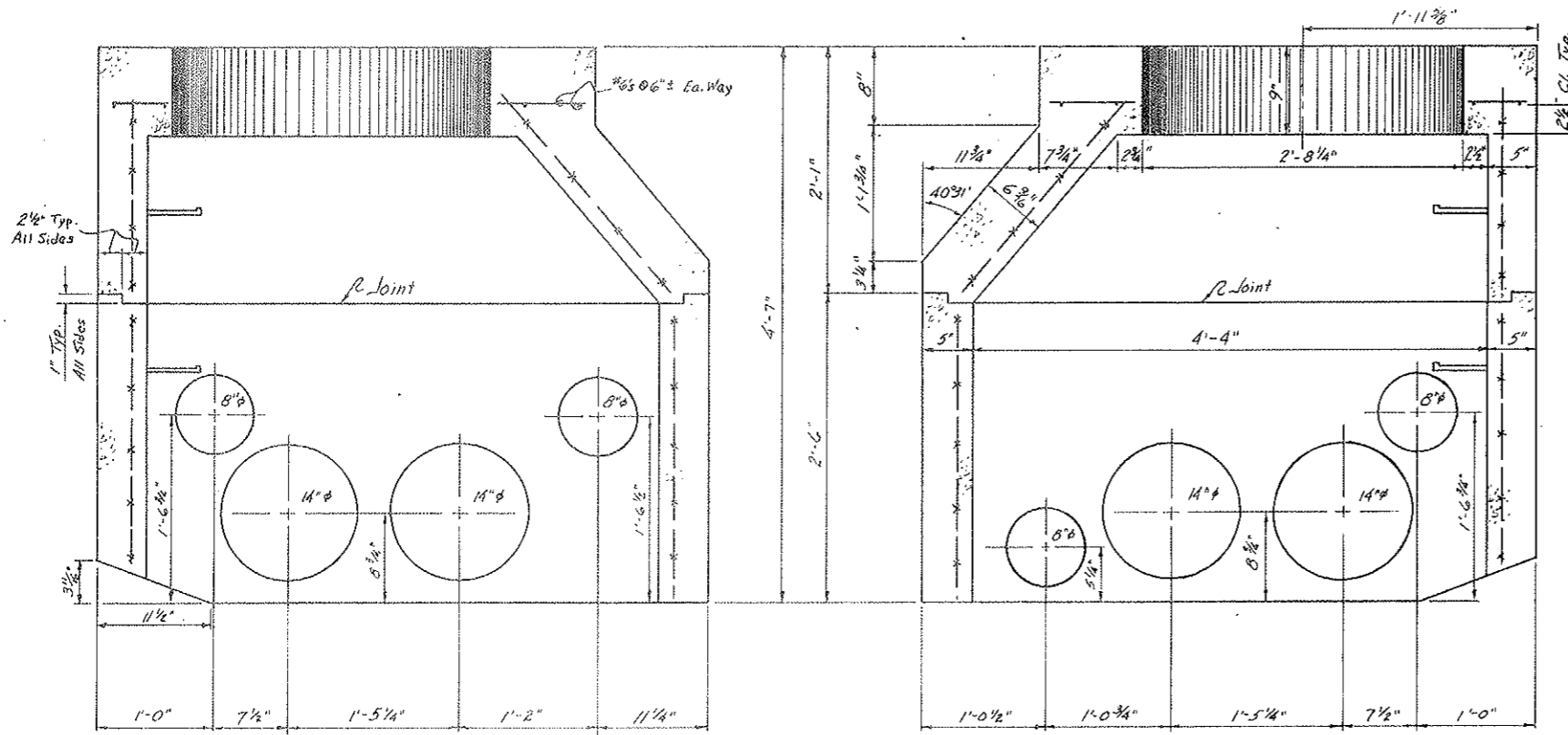


FOR CONCRETE INVERT AREAS

STATE OF COLORADO DIVISION OF HIGHWAYS	
Prepared By Straight Creek Constructors	Checked By P.H. Gifford
FRESH WATER MANHOLE FOR 12" S&P AREA	
Date 12-1-71	By D.S.
Approved by DOH, Date 1-17-72	As per 300 451
CR-410	

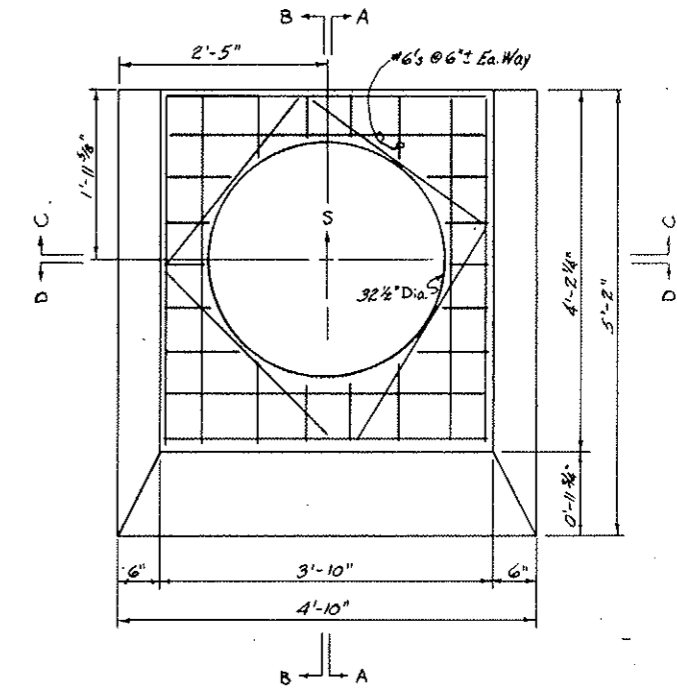
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70-3(34)220	80 PX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

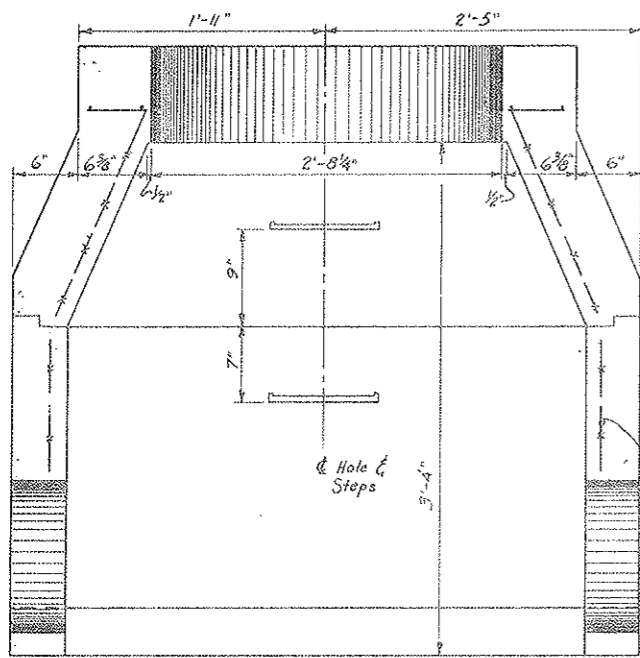


SECTION A-A - LOOKING WEST
 Scale 1/2" = 1'-0"

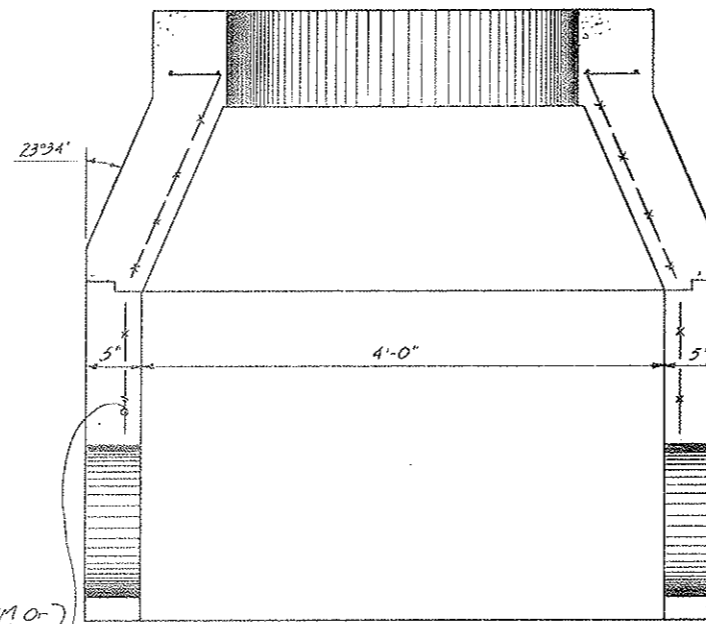
SECTION B-B - LOOKING EAST
 Scale 1/2" = 1'-0"



TOP VIEW
 Scale 1" = 1'-0"

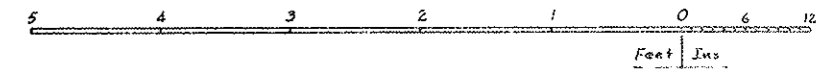


SECTION C-C - LOOKING SOUTH
 Scale 1/2" = 1'-0"



SECTION D-D - LOOKING NORTH
 Scale 1/2" = 1'-0"

4x4/4x4 W/M Or
 Double Mat of
 4x4/6x6 W/M
 Sides, 1" Clearance

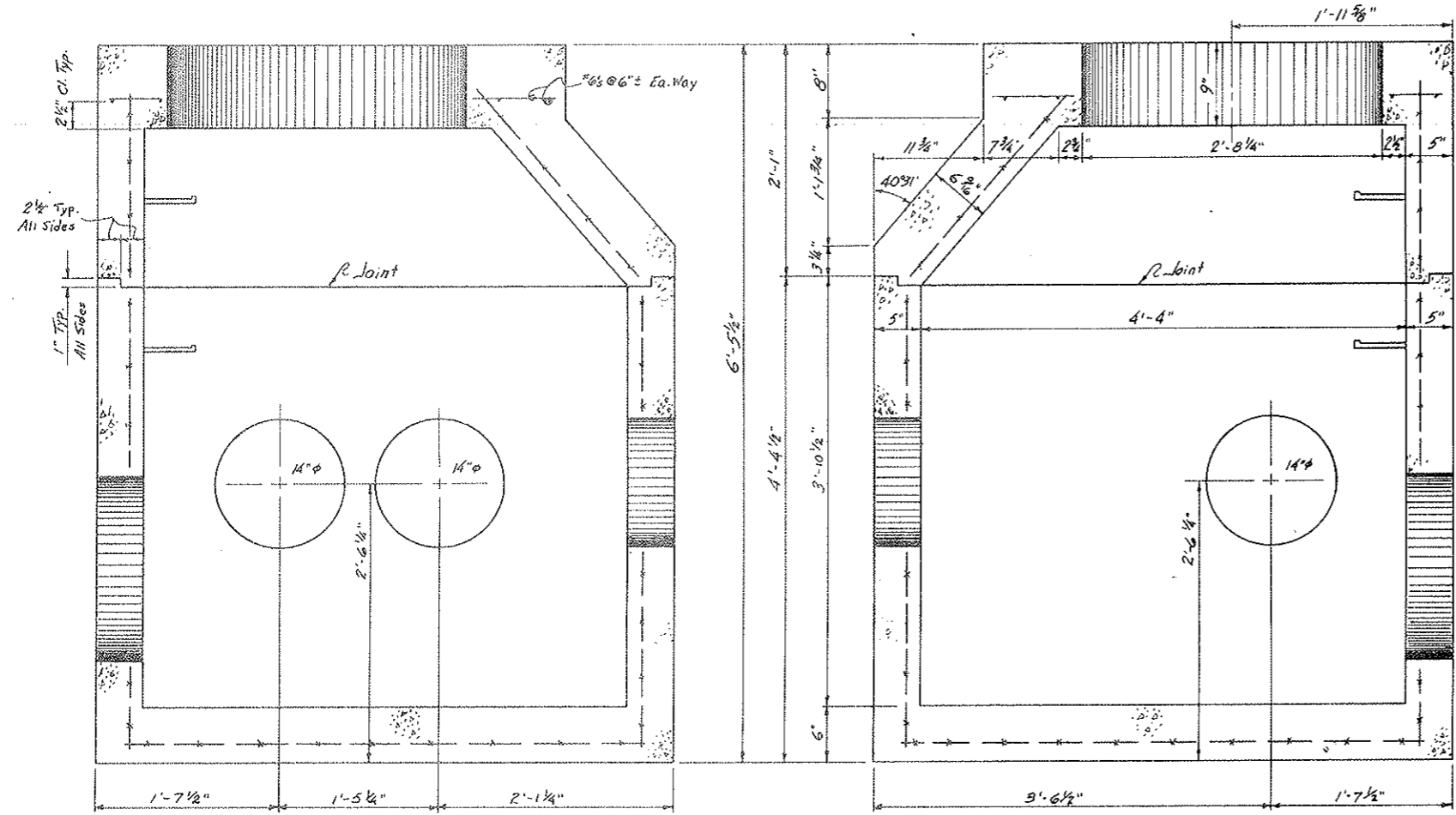


FOR CONCRETE INVERT AREAS

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE 1/4" = 1'-0"	DATE 11-30-71	DRAWN BY R.M.G. (R)
SEWER MANHOLE FOR 12" SLEEP AREA			
By D.S.	APPROVED BY DON, Date 1-17-72	DATE 11-30-71	REVISION REVISED
	As SCC 452		DRIVING NUMBER CR-41P

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	80 QX	386

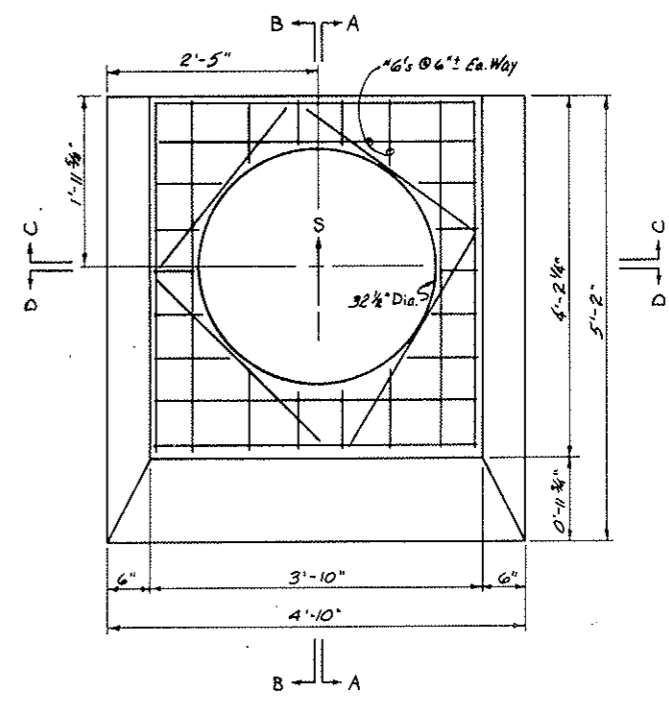
AS CONSTRUCTED
 REVISED DATE
 OCT 20, 1973



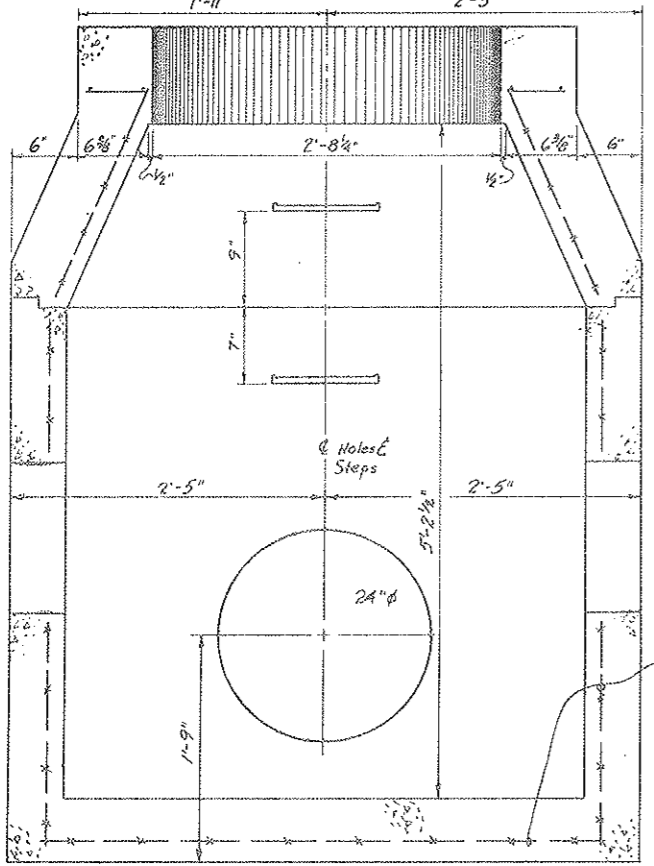
SECTION A-A - LOOKING WEST
 Scale 1/2" = 1'-0"

Scale 1/2" = 1'-0"

SECTION B-B - LOOKING EAST
 Scale 1/2" = 1'-0"



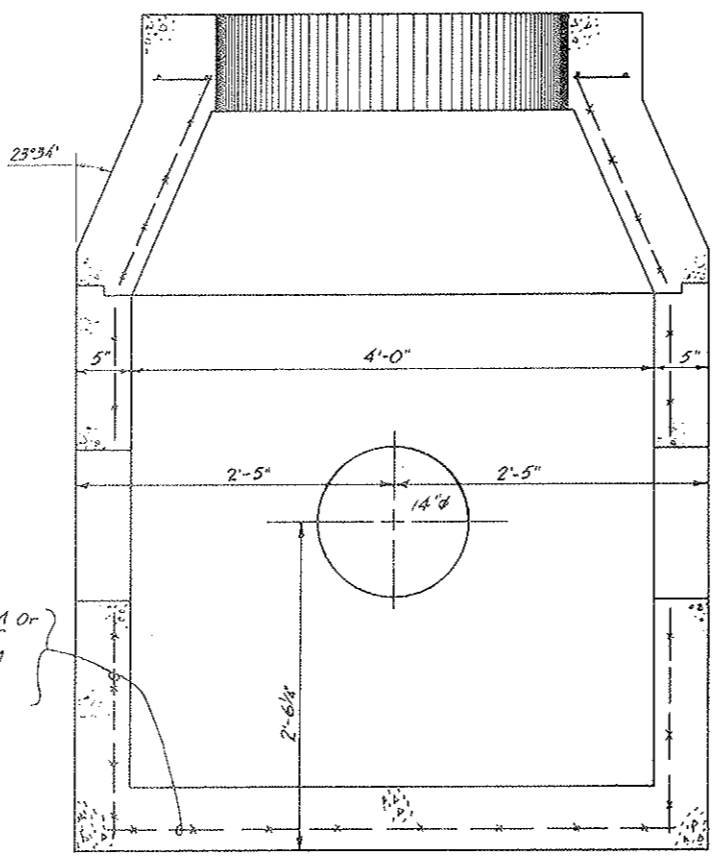
TOP VIEW
 Scale 1" = 1'-0"



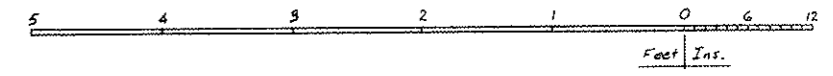
SECTION C-C - LOOKING SOUTH
 Scale 1/2" = 1'-0"

{ 4x4/4x4 WWM Or
 Double Mat Of
 4x4/6x6 WWM
 Sides & Bottom
 1" Clearance Typ.

Scale 1/2" = 1'-0"



SECTION D-D - LOOKING NORTH
 Scale 1/2" = 1'-0"



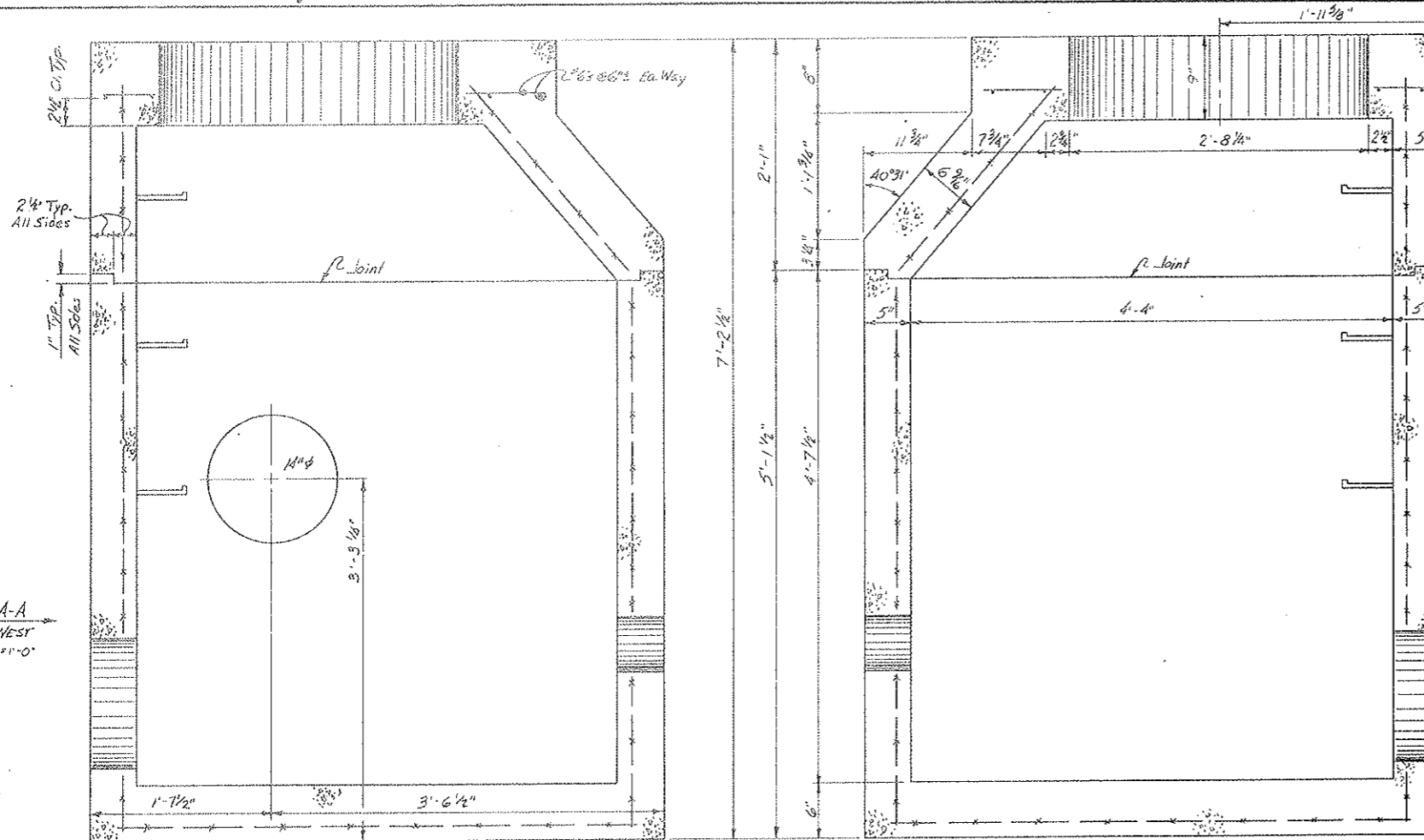
SPECIAL for EAST Vent Build.
 1 Reg'd.

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By	SCALE	DRAWN BY R.M.G./R.H.	
Straight Creek Constructors	Noted	REVISED	
SPECIAL MANHOLE @ Sta. 123+29 ±			
DATE	APPROVED BY	DATE	DRAWING NUMBER
8-29-72	By D.S.	4-11-72	C2-41Q
	As SCC-597		

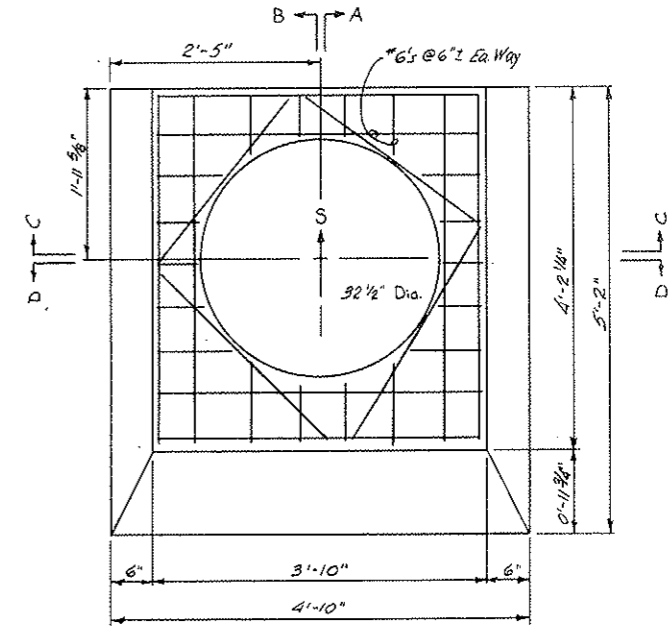
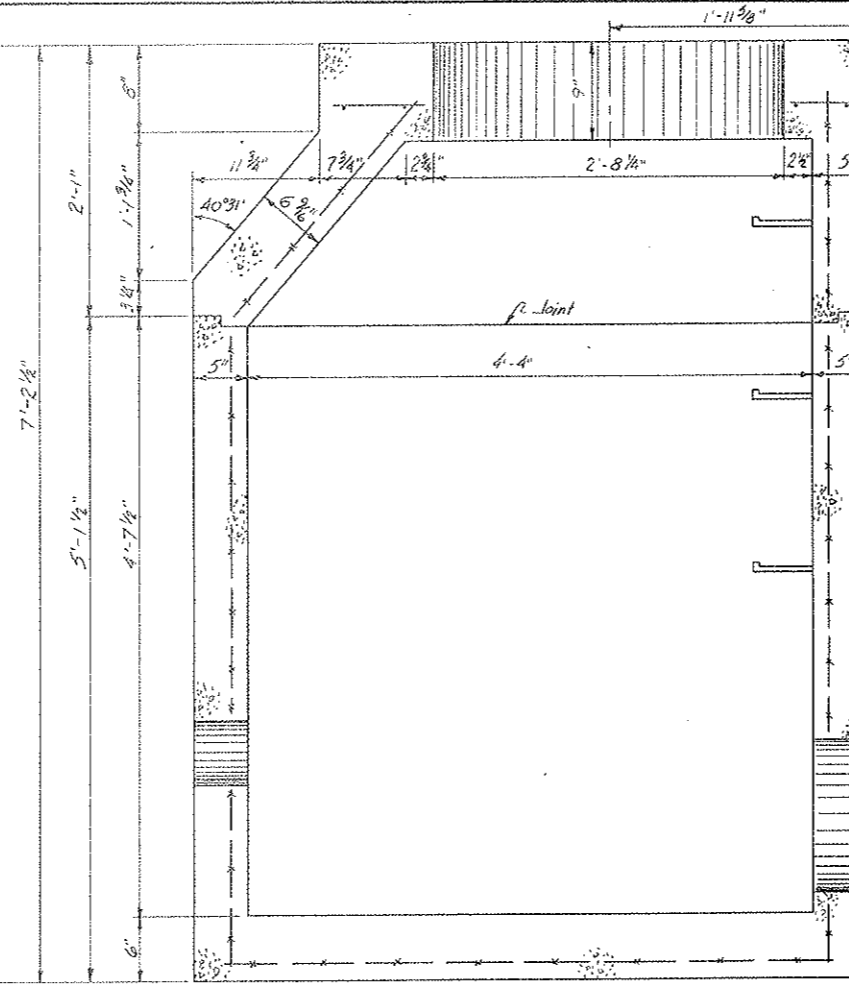
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3-3-1273	60 RX	326

AS CONSTRUCTED
REVISED DATE
Oct 26, 1973

SECTION A-A
LOOKING WEST
Scale 1/4" = 1'-0"

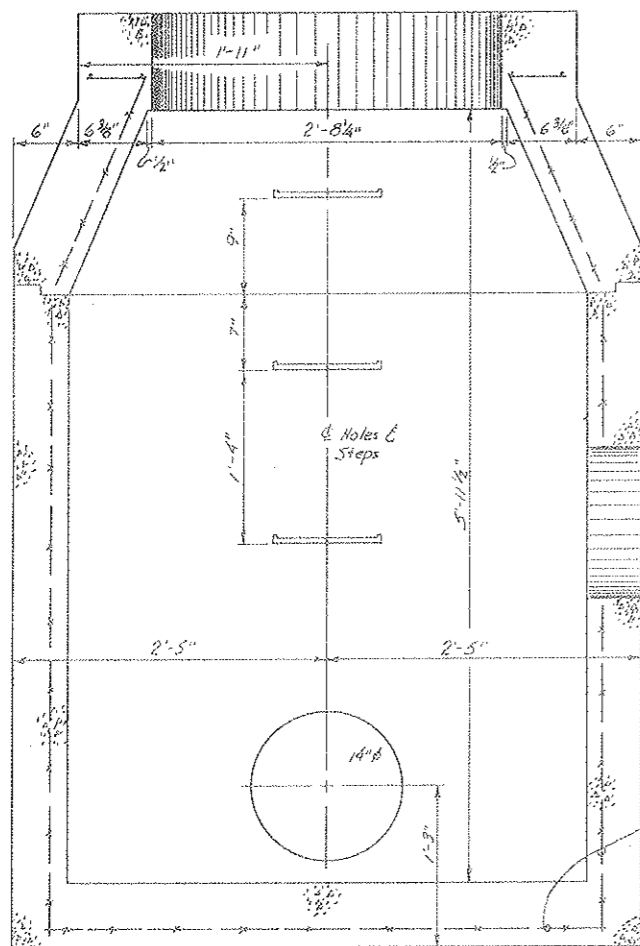


SECTION B-B
LOOKING EAST
Scale 1/4" = 1'-0"



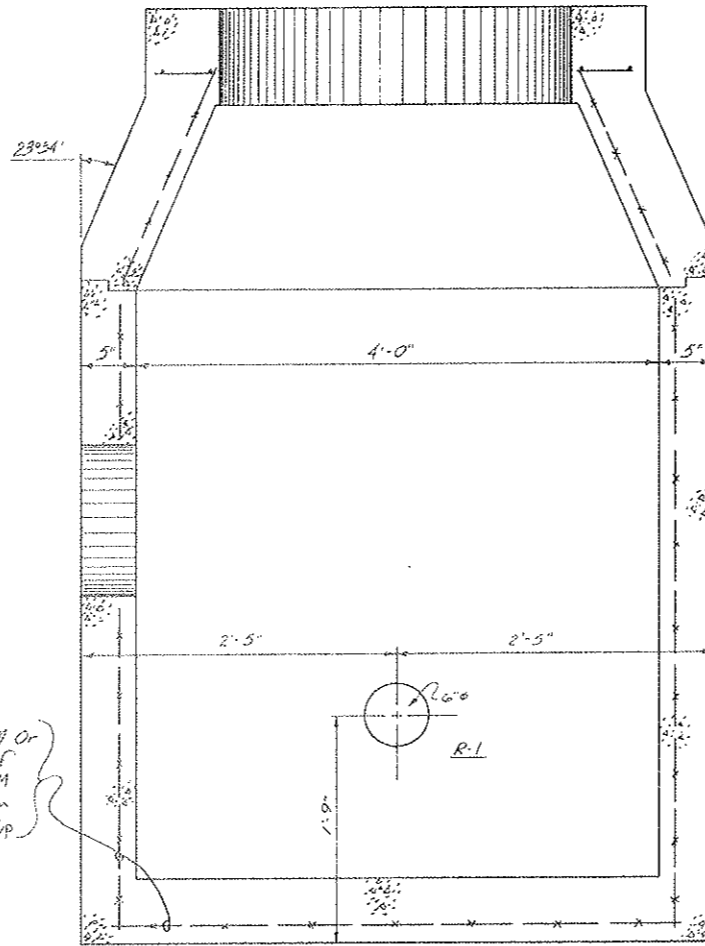
TOP VIEW
Scale 1/4" = 1'-0"

SECTION C-C
LOOKING SOUTH
Scale 1/4" = 1'-0"



4x4 14x14 W/M Or
Double Mat Of
4x4 14x14 W/M
Sides & Bottom
1" Clearance Typ

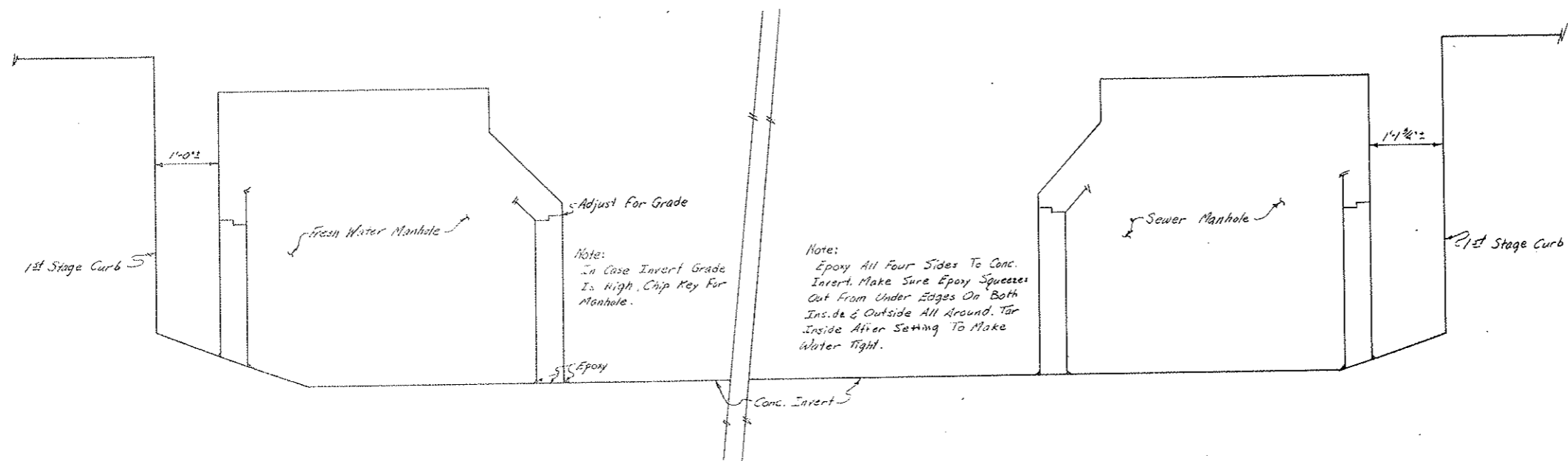
SECTION D-D
LOOKING NORTH
Scale 1/4" = 1'-0"



STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors		SCALE Noted	DRAWN BY R.M. Griffin
SPECIAL MANHOLE @ Sta. 124+08 ±			
DATE 4-14-78	APPROVED BY D.O.H., Date 5-1-78 By D.S.	AS. SCC-548	DRAWING NUMBER C2-41R

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	80 SX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1972

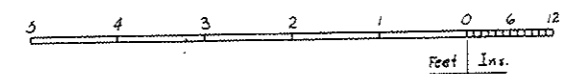


VIEW LOOKING EAST - MANHOLE PLACING ON CONC. INVERT
 Scale 1"=1'-0"

Note:
 In Case Invert Grade Is High, Chip Key For Manhole.

Note:
 Epoxy All Four Sides To Conc. Invert. Make Sure Epoxy Squeezes Out From Under Edges On Both Inside & Outside All Around. Tar Inside After Setting To Make Water Tight.

NOTE:
 Manholes To Be Made According To Drawings C2-410 & C2-41F
 Adjustment For Grade To Be Made In M.H. Joint & In Grout Pad For Ring.



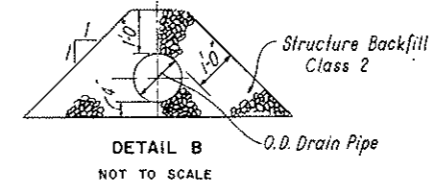
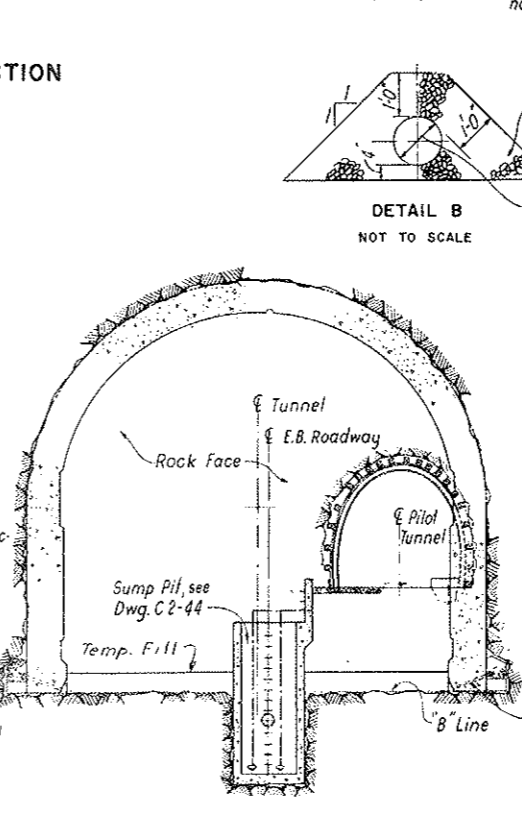
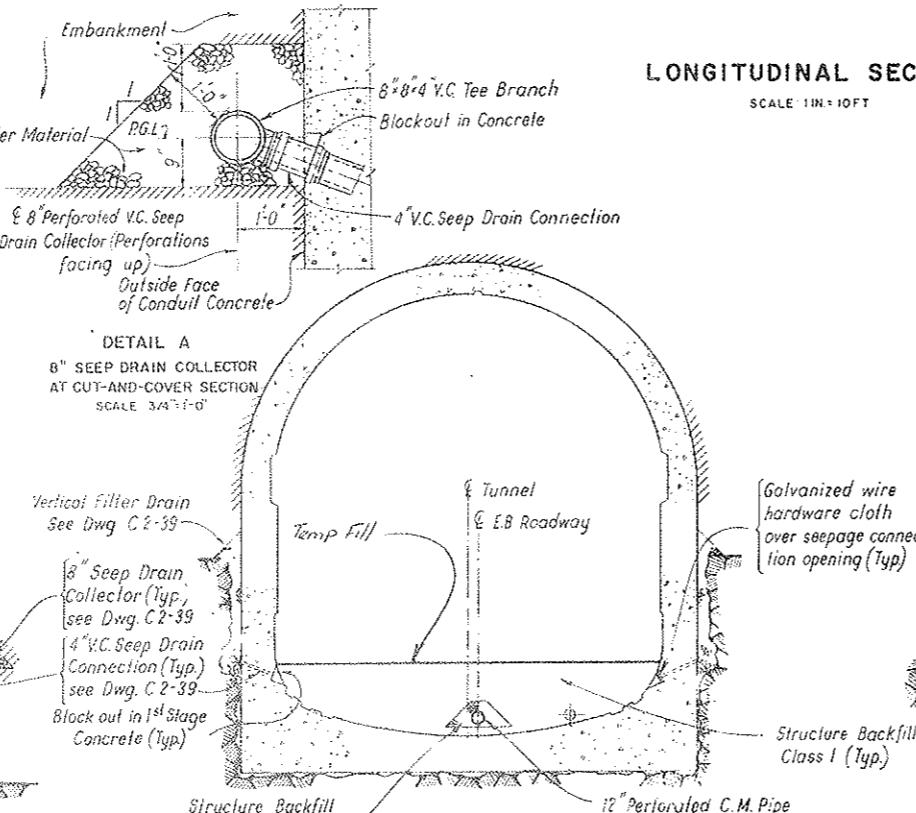
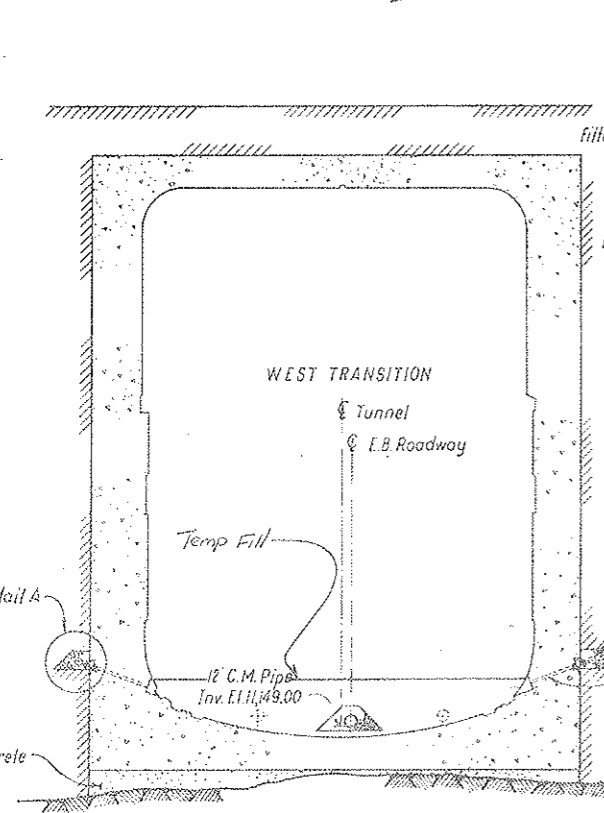
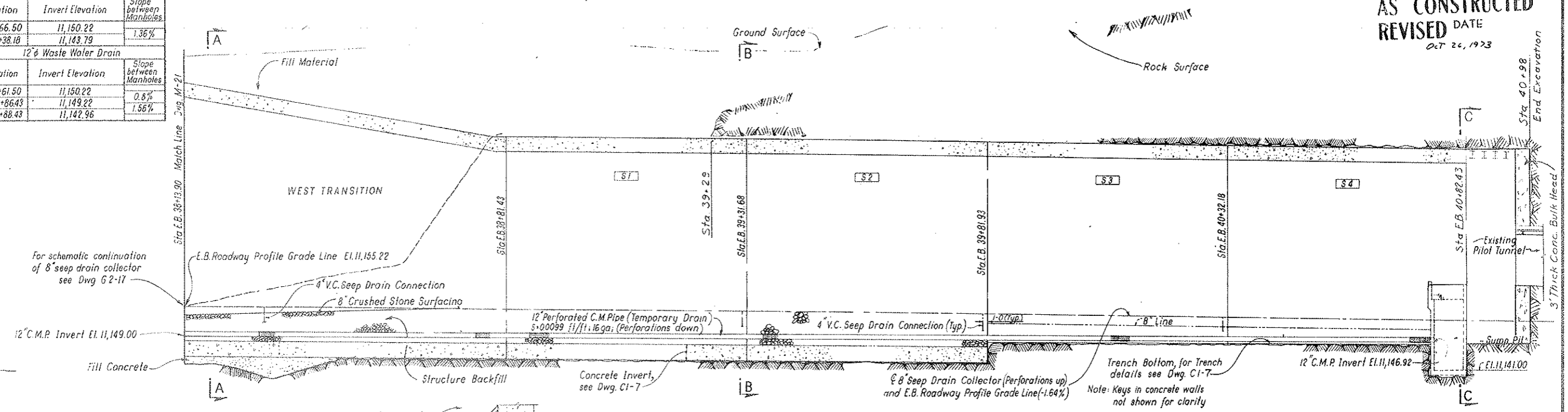
STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE 1"=1'-0"	DRAWN BY K.M. Griffin	REVISED
MANHOLES ON CONCRETE INVERT			
DATE 12-4-71	APPROVED BY By D.S.	DOH, Date 1-17-72 As SCC 450	DRAWING NUMBER C2-415

Change Order #145, W.O. 21901

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3 (34) 220	81	326

AS CONSTRUCTED
REVISED DATE
 Oct 26, 1923

INVERT GRADES FOR FUTURE DRAINS		
12" Seepage Drain		
M.H. Station	Invert Elevation	Slope between Manholes
E.B. 37+66.50	11,150.22	1.36%
E.B. 42+38.18	11,143.79	
12" Waste Water Drain		
M.H. Station	Invert Elevation	Slope between Manholes
E.B. 37+61.50	11,150.22	0.6%
E.B. 38+86.43	11,149.22	1.56%
E.B. 42+88.43	11,142.96	



NOTES

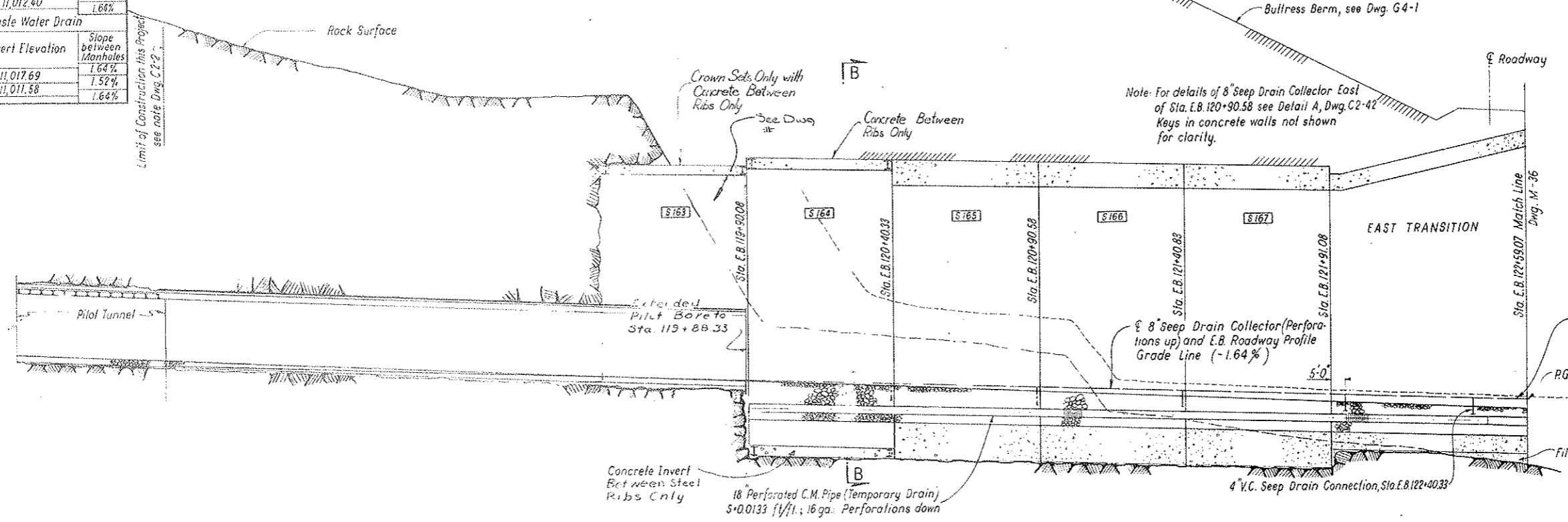
Dimensions for the drainage system are measured along the centerline of roadway
 For schematic plan layout of drainage system see Dwg. G 2-17.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL					
DRAINAGE SYSTEM					
SOUTH TUNNEL - WEST PORTAL SECTION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: M. E.	RECOMMENDED:				
DRAWN: J. L.	Checked: M. E. - S. M. R.				
CHECKED: M. E. - S. M. R.	Approved: <i>[Signature]</i>				
SUBMITTED:	Approved: <i>[Signature]</i>				
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1927		
					DRAWING NO. C2-42

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3 (34) 220	82	326

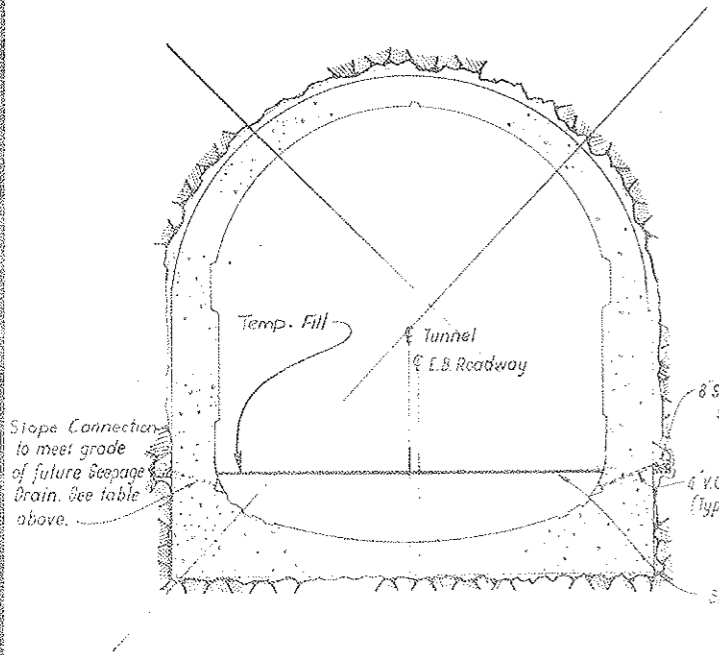
**AS CONSTRUCTED
REVISED DATE**
OCT 26, 1973

INVERT GRADES FOR FUTURE DRAINS		
12" ϕ Seepage Drain		
M.H. Station	Invert Elevation	Slope between Manholes
E.B. 118+76.18	11,018.52	1.64%
E.B. 121+96.08	11,012.40	1.52%
12" ϕ Waste Water Drain		
M.H. Station	Invert Elevation	Slope between Manholes
E.B. 118+44.33	11,017.69	1.64%
E.B. 122+46.33	11,011.58	1.64%

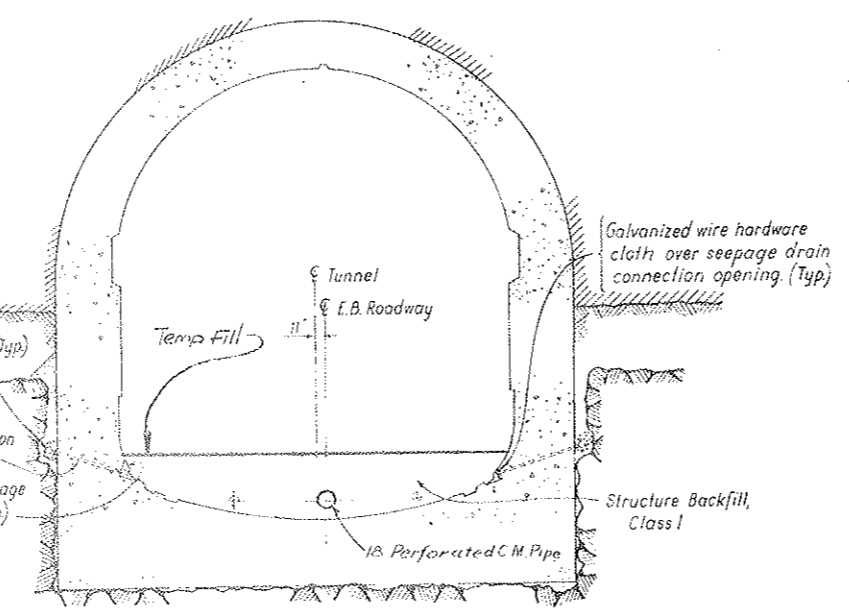


LONGITUDINAL SECTION

SCALE: 1 IN = 20 FT HOR
1 IN = 10 FT VERT



SECTION A-A
SCALE: 1/8" = 1'-0"



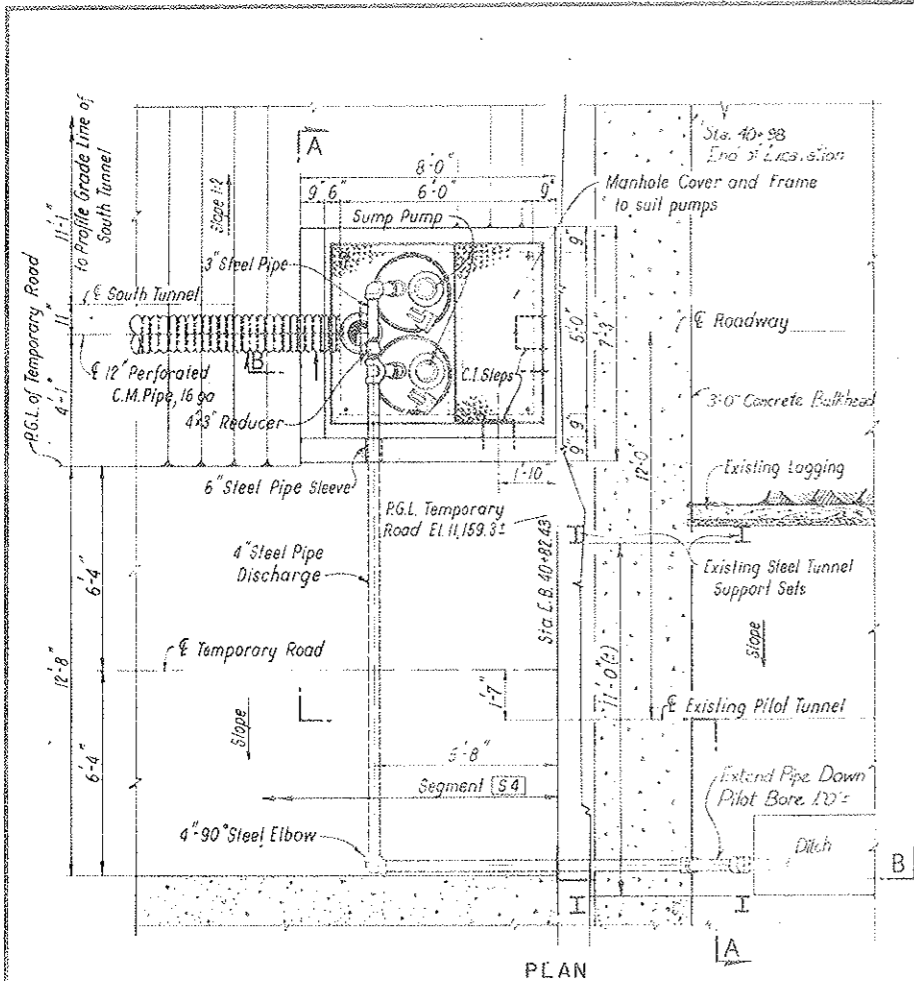
SECTION B-B
SCALE: 1/8" = 1'-0"

NOTES
The portal section segments shown are illustrative only and are set for bidding purposes. Actual section used will be determined in field with the approval of the Engineer. See Dwg. C3-5.
Dimensions for the drainage system are measured along the centerline of roadway.
For schematic plan layout of drainage system, see Dwg. G2-18. Location and spacing of 3" ϕ rock drain holes as shown are tentatively set for bidding, and may be modified in field, as directed by the Engineer, to suit actual existing conditions.
For details of the seepage drain system see Dwg. C2-39.

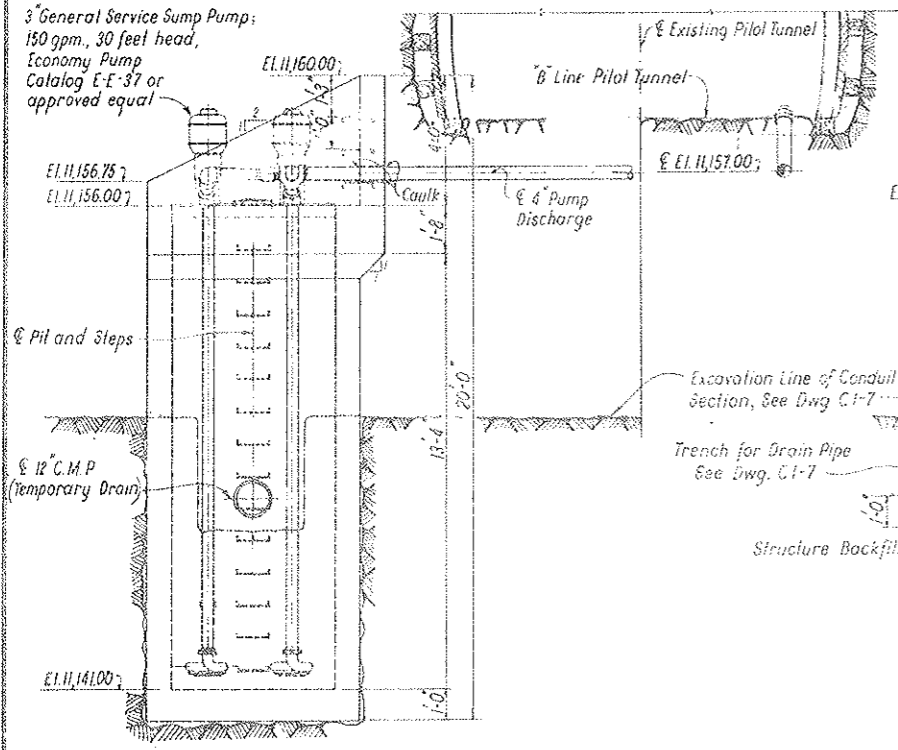
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL DRAINAGE SYSTEM SOUTH TUNNEL - EAST PORTAL SECTION					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: M.E.	RECOMMENDED:				
DRAWN: J.L.	Checked: Henry J. Blawie				
CHECKED: M.E. - S.M.R.	APPROVED: [Signature]				
SUBMITTED: [Signature]	DATE: August 1967				
NEW YORK, N. Y.					DRAWING NO. C2-43

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	83	326

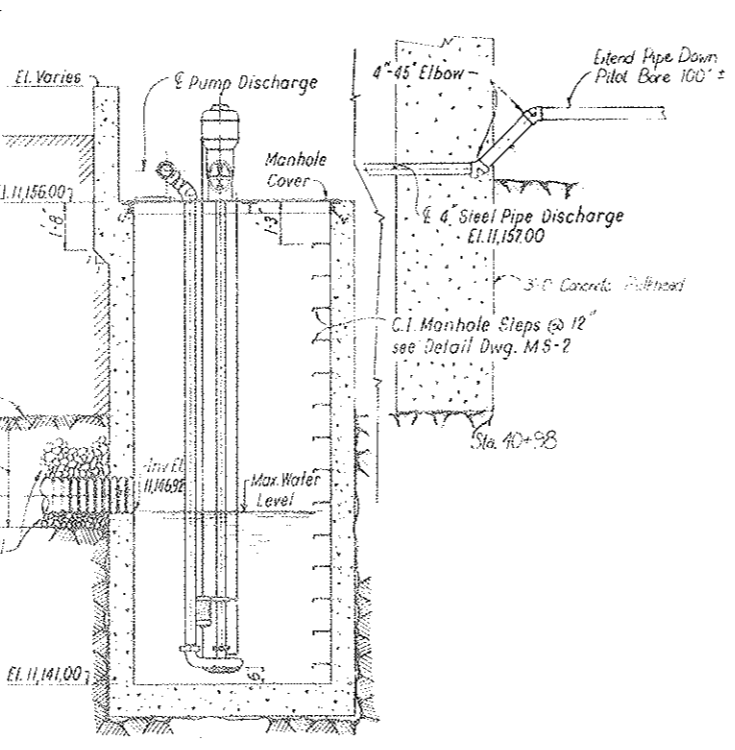
AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



PLAN



SECTION A-A



SECTION B-B

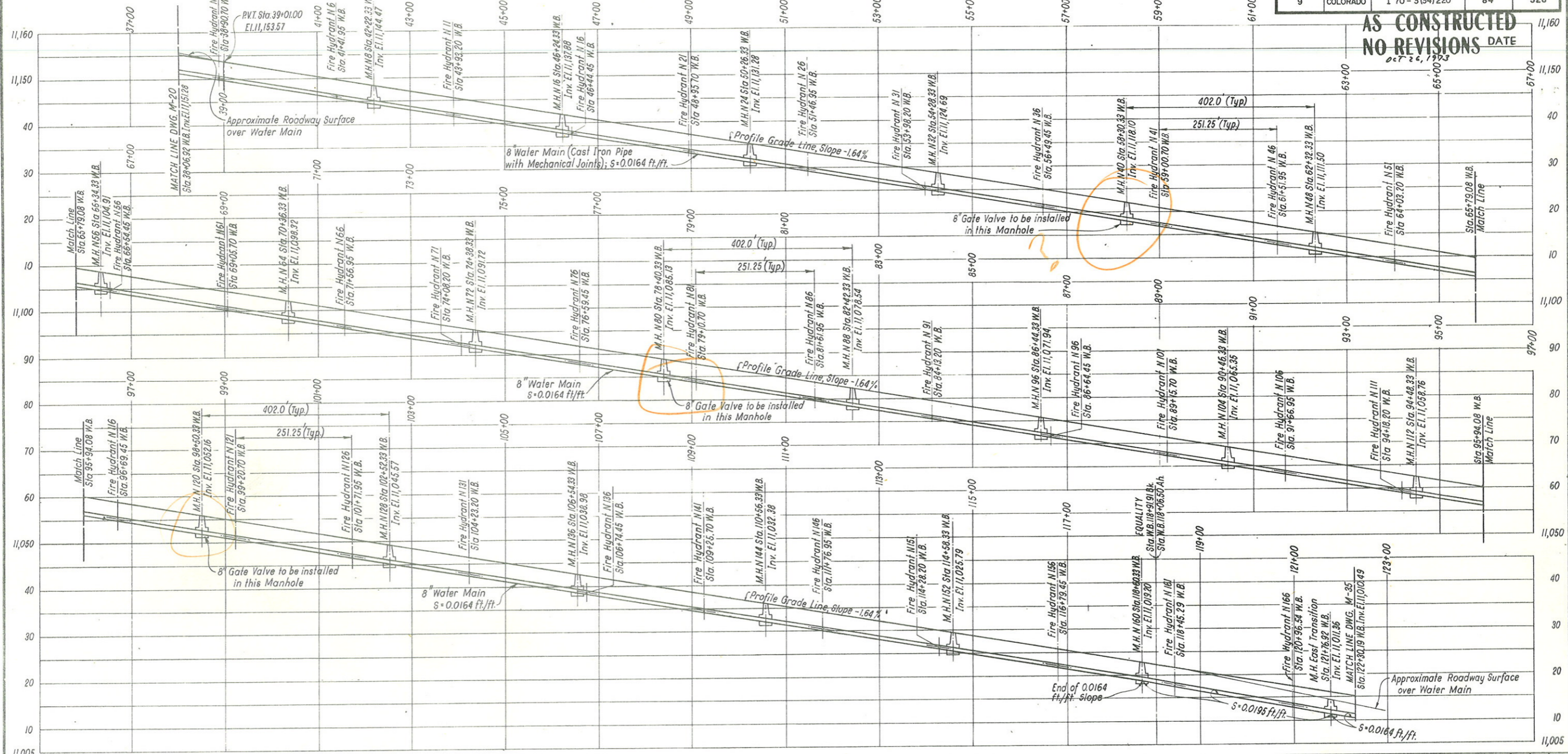
WEST PORTAL - SUMP PIT AND PUMPS

NOTES
 Work this drawing with Dwg. C2-42 and C2-43.
 Sump pit and drop inlet reinforcement not shown.
 Reinforcement will be nominal. See note Dwg. C2-34.
 Concrete in Sump Pit shall be Miscellaneous
 Concrete Class 3

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL DRAINAGE SYSTEM SOUTH TUNNEL - PORTAL SECTIONS DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: M.E.	CHECKED: M.E. - S.M.R.		RECOMMENDED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	
SUBMITTED: <i>[Signature]</i>			NEW YORK, N. Y.		
SCALE: 3/8" = 1'-0"				DATE: AUGUST 1967	
					DRAWING NO. C2-44

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	84	326

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1963



PROFILE
 SCALE: 1 IN = 100 FT HOR.
 1 IN = 10 FT VERT.

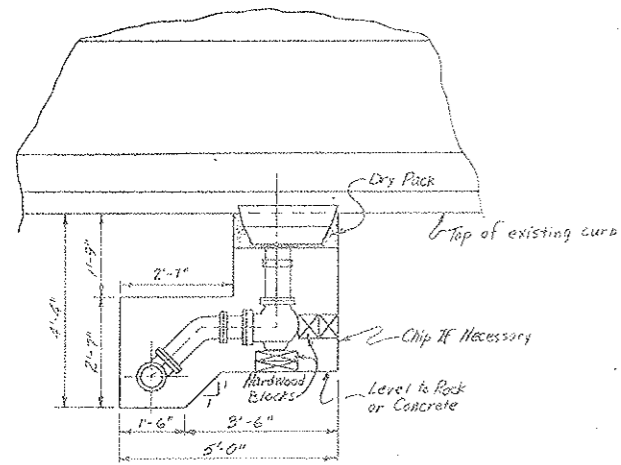
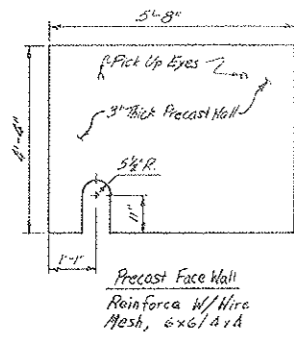
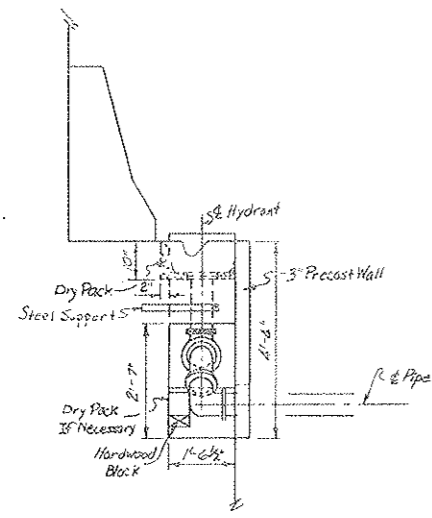
NOTES
 Dimensions for the water supply system are measured along the centerline of roadway.
 For relation between Profile Grade Line and normal roadway surface, see Dwg. C2-1
 Manholes and fire hydrants are identified according to the tunnel segment they are located in; thus Fire Hydrant N 51 is located in North Tunnel Segment 51. Stationing of fire hydrant is given to the centerline of hydrant box shown on Dwg. C2-46.
 For details see Dwg. C2-46.
 For Pipe Bedding Materials see Dwgs. C1-6, C1-7, C2-10 through C2-14, C3-1 and C3-2.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL WATER SUPPLY SYSTEM PROFILE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: M.E.	CHECKED: M.E. - S.M.R.	RECOMMENDED: Henry J. ...	APPROVED: ...	DRAWING NO. C2-45	
NEW YORK, N. Y.		SCALE: AS NOTED		DATE: AUGUST 1967	

DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
2-2106600	170-2106200	85 BX	326

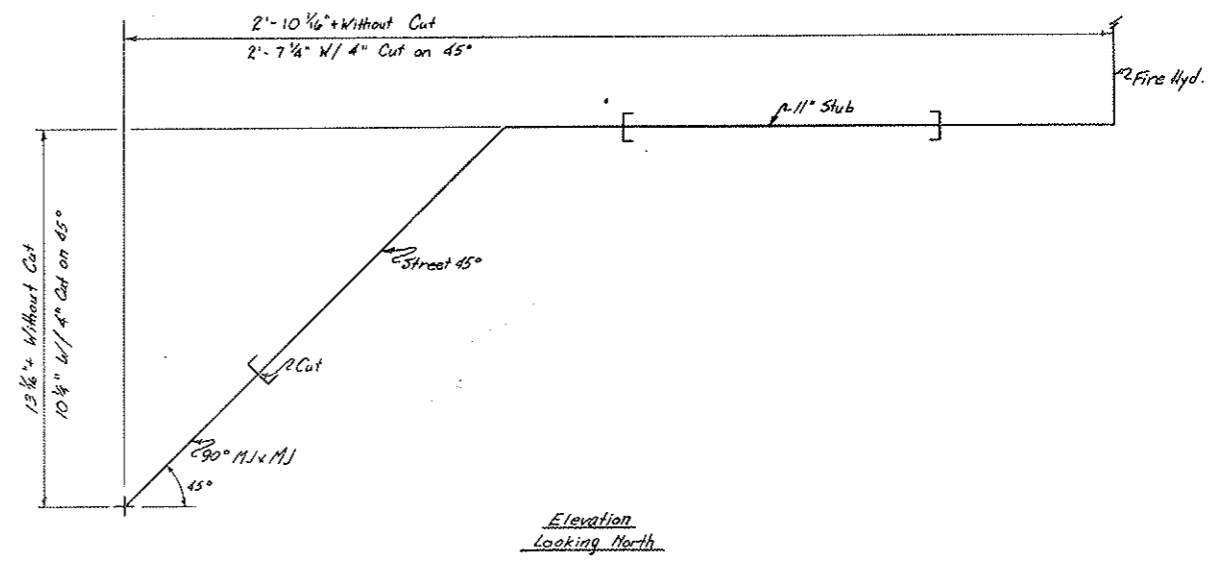
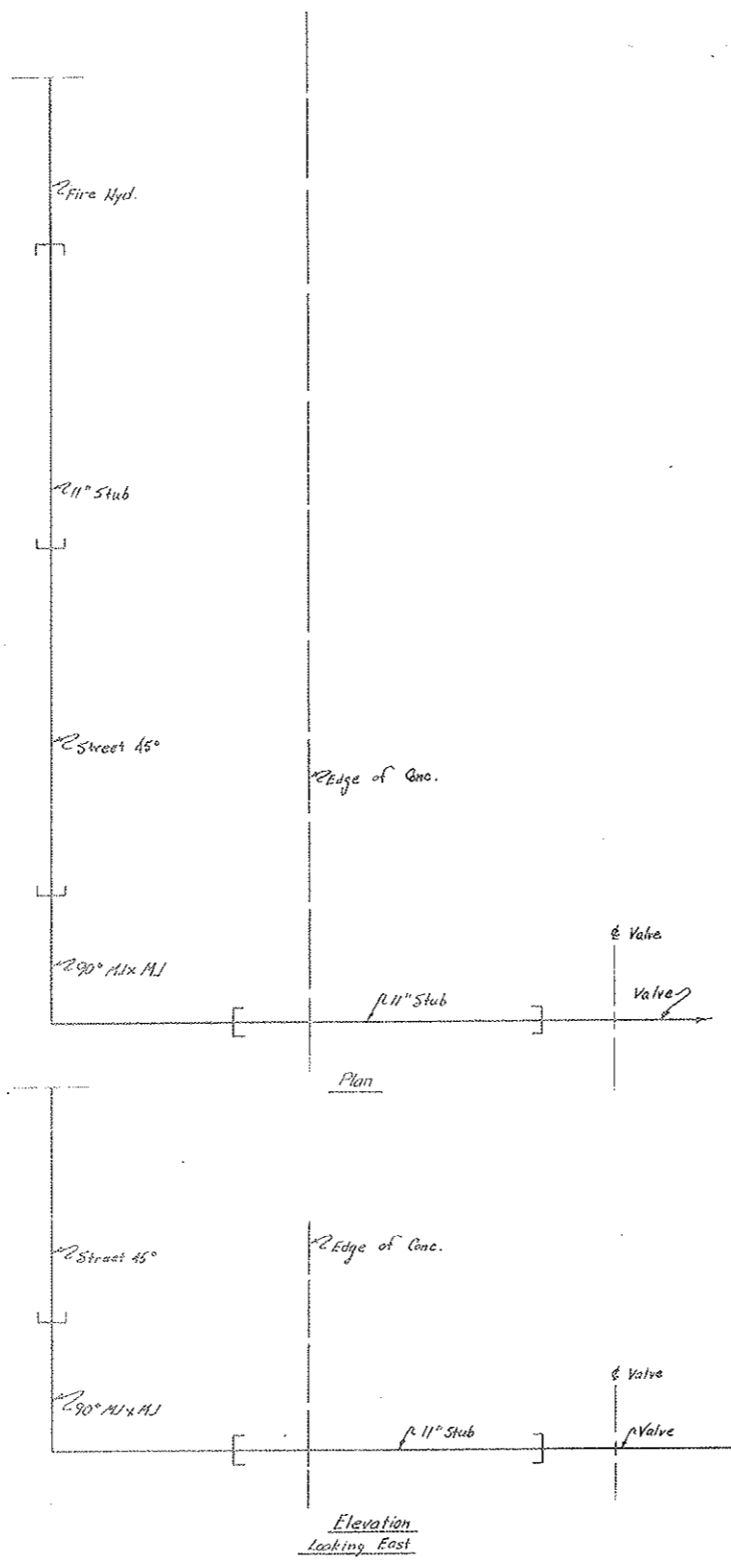
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

FIRE HYDRANT BACKOUT
 WEST



NOTE:
 Dimensions May Be Altered
 To Meet Field Conditions.
 Inst. Material To Be Determined

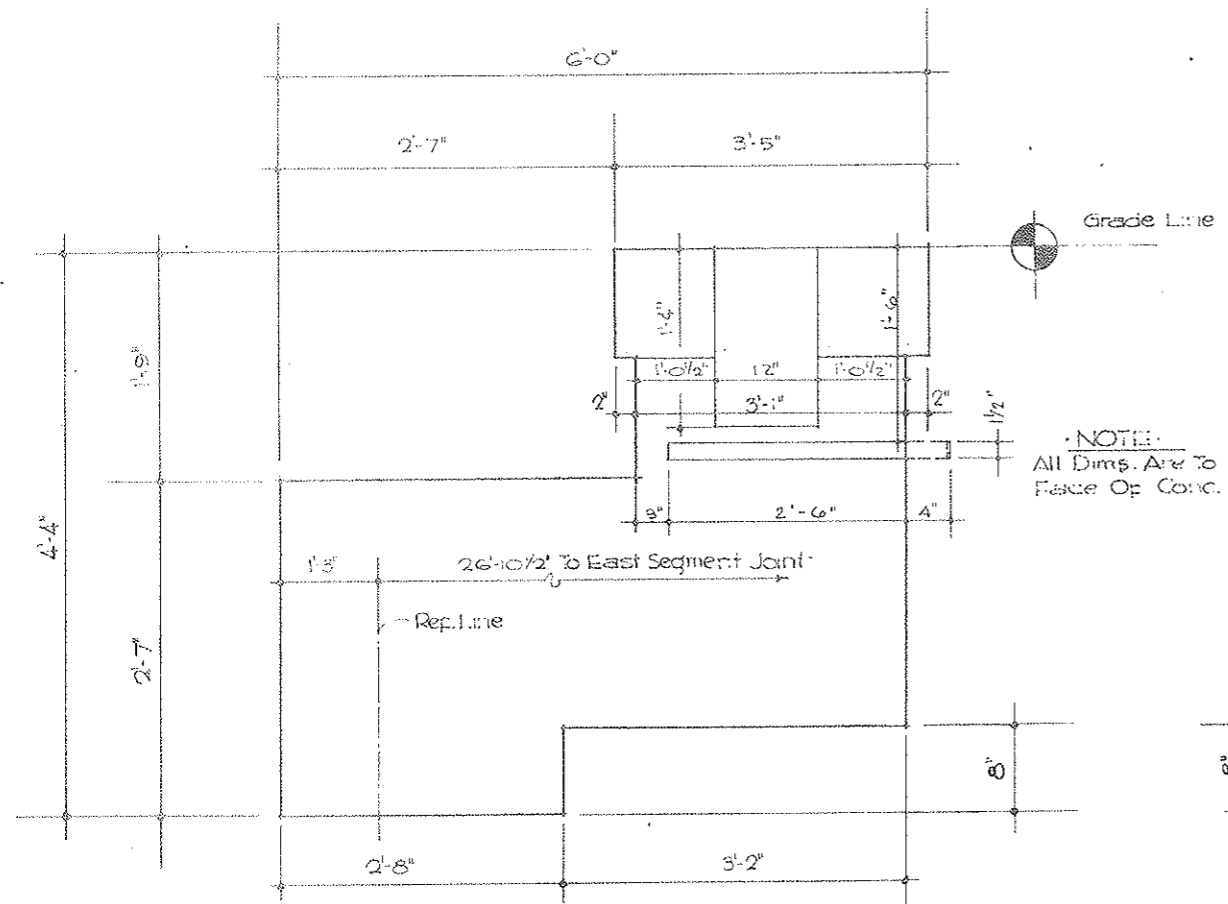
Scale 1/2" = 1'-0"



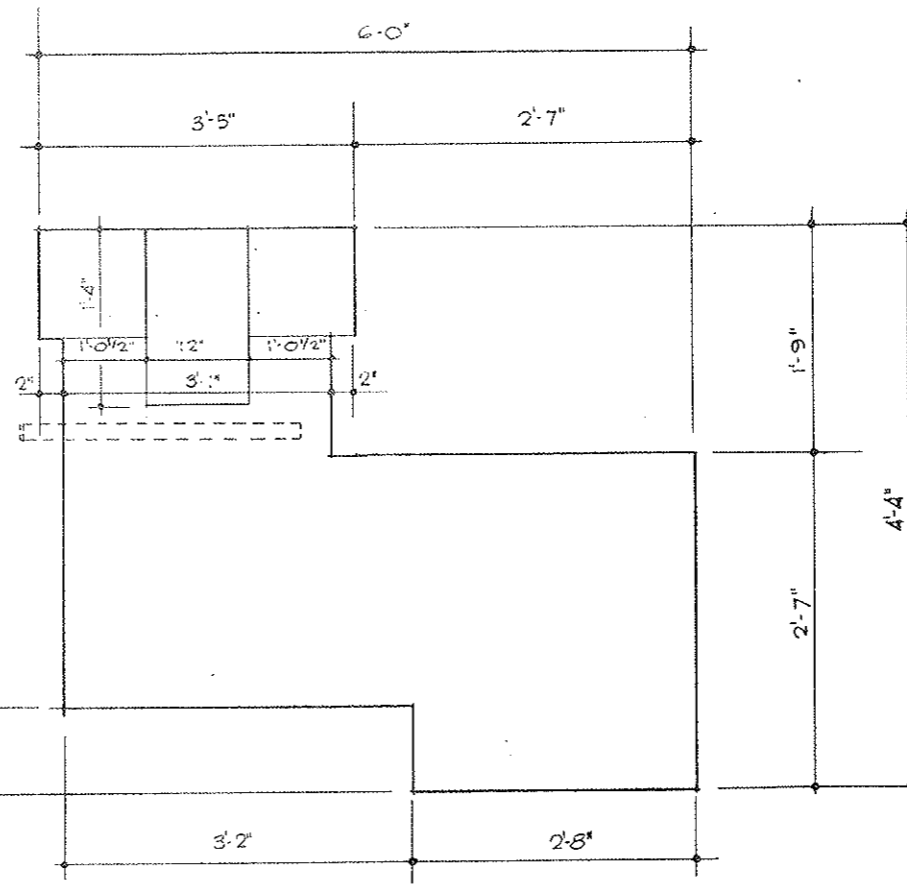
State of Colorado Division of Highways			
Prepared By Straight Creek Constructors	SCALE 1" = 10'	DRAWN BY K.A.G.-H.M.	
Fire Hydrant Connection			
DATE 8-13-71	APPROVED BY D.L.S.	DATE 2-1-72	DRAWING NUMBER C2-46B

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 - 3(34)220	88CX	226

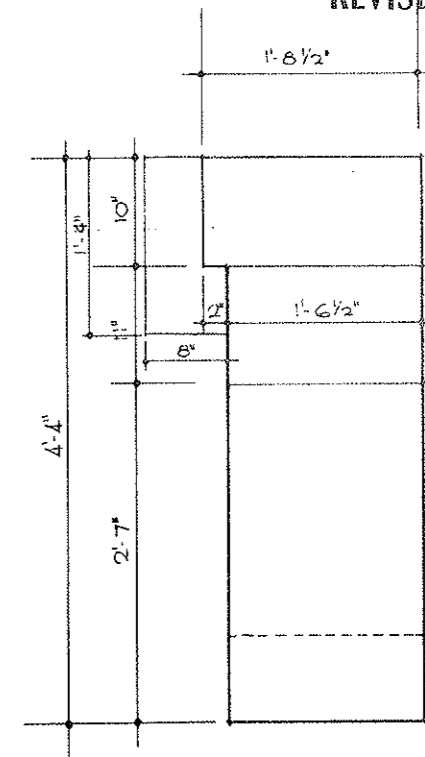
AS CONSTRUCTED
REVISED DATE
OCT 26, 1973



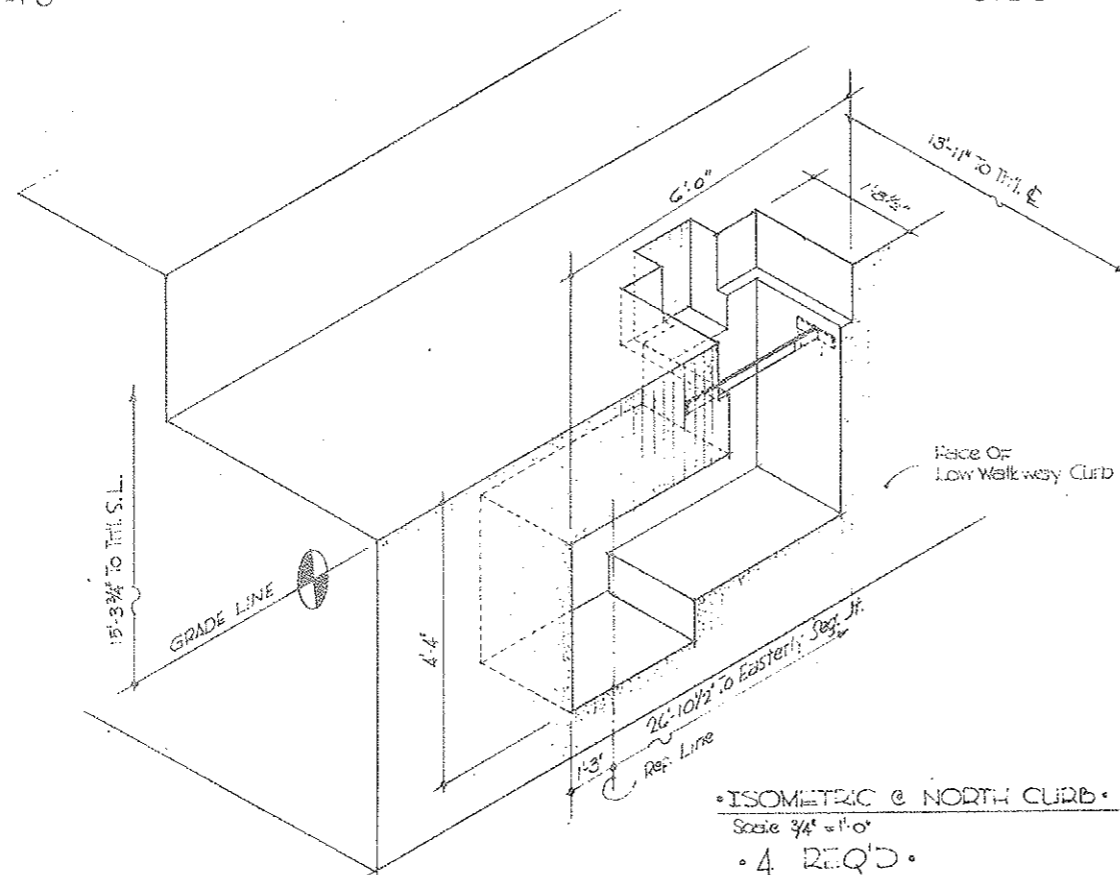
•FRONT VIEW• LOOKING NORTH
Scale 1/2" = 1'-0"



•REAR VIEW•
Scale 1/2" = 1'-0"

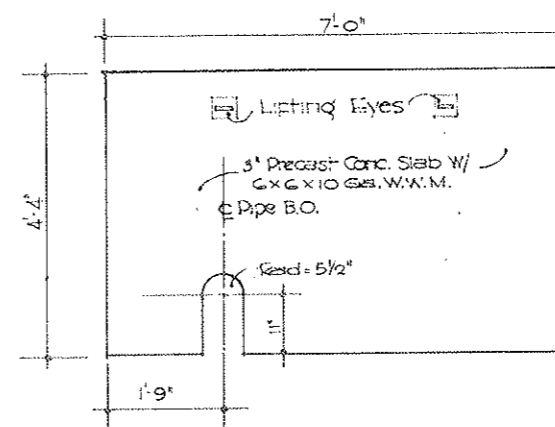


•SIDE VIEW• LOOKING EAST.
Scale 1/2" = 1'-0"



•ISOMETRIC @ NORTH CURB•
Scale 3/4" = 1'-0"
• 4 REQ'D.

•ZONE IV.
Install In Segments
N-141, 146, 151 & 156

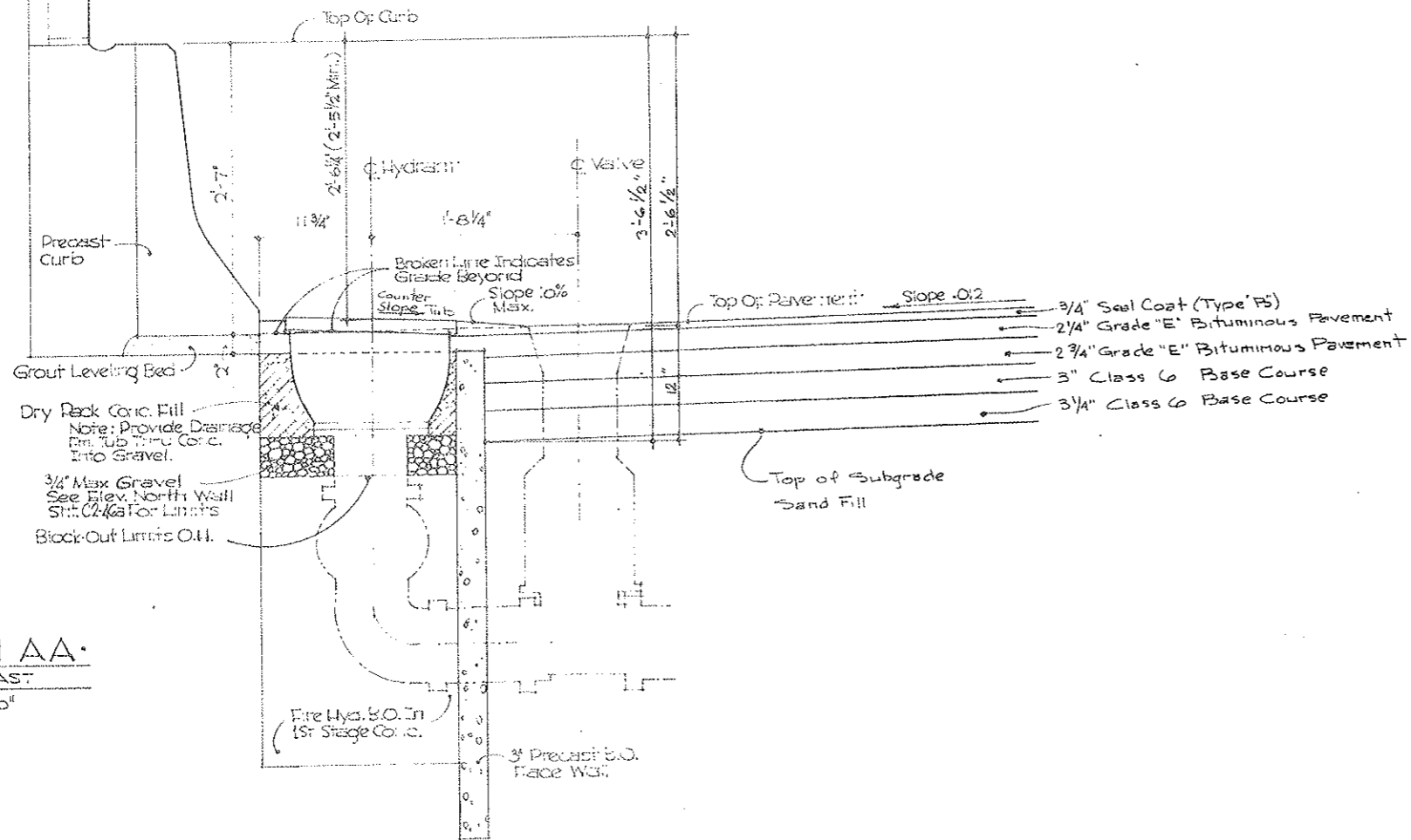


•FIRE HYD. COVER Φ @ FACE OF LOW CURB•
Scale 3/4" = 1'-0"
4 REQ'D.

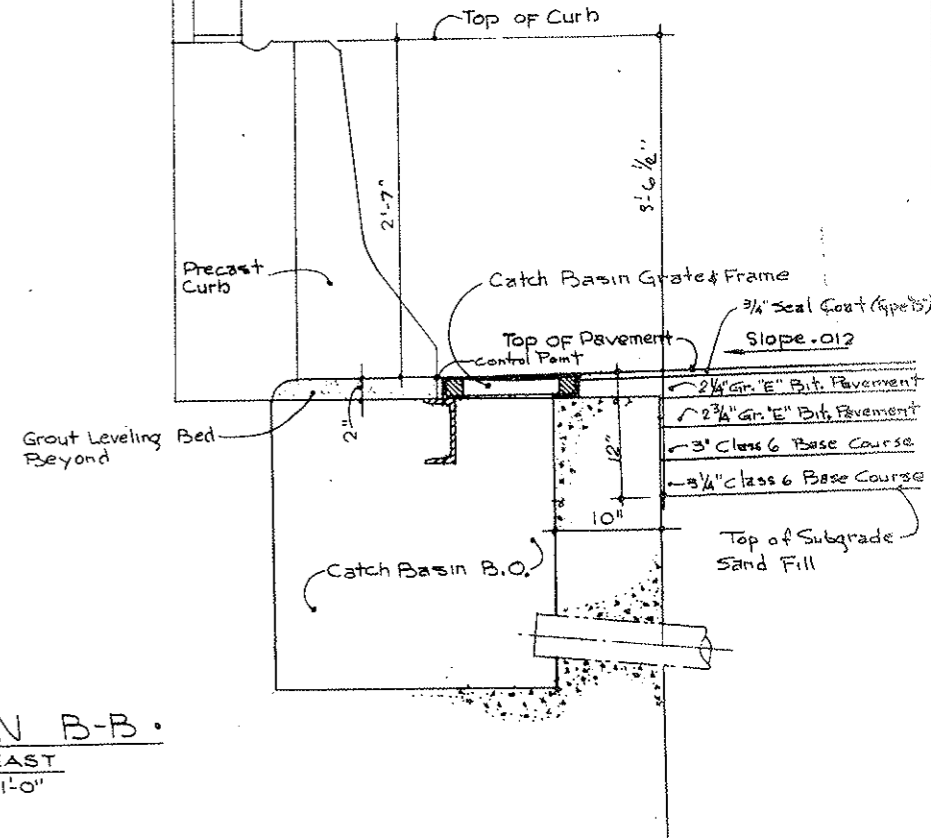
STATE OF COLORADO		DIVISION OF HIGHWAYS	
SCALE	Checked By	DESIGNED BY	DATE
Noted		J.O. Coffey	
FIRE HYD. BLOCK-OUT			
DATE	APPROVED BY	DATE	DESIGNED BY
11/10/71	DOH, Dada	1-11-78	
	By D.S.	As SCC 494	C2-46C

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	85 AX	206

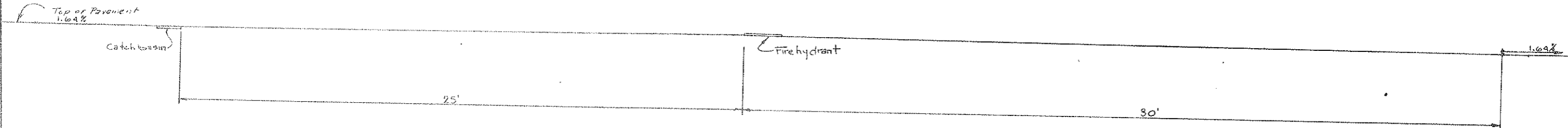
AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



SECTION AA
 LOOKING EAST
 Scale 1 1/2" = 1'-0"



SECTION B-B
 LOOKING EAST
 Scale 1/2" = 1'-0"

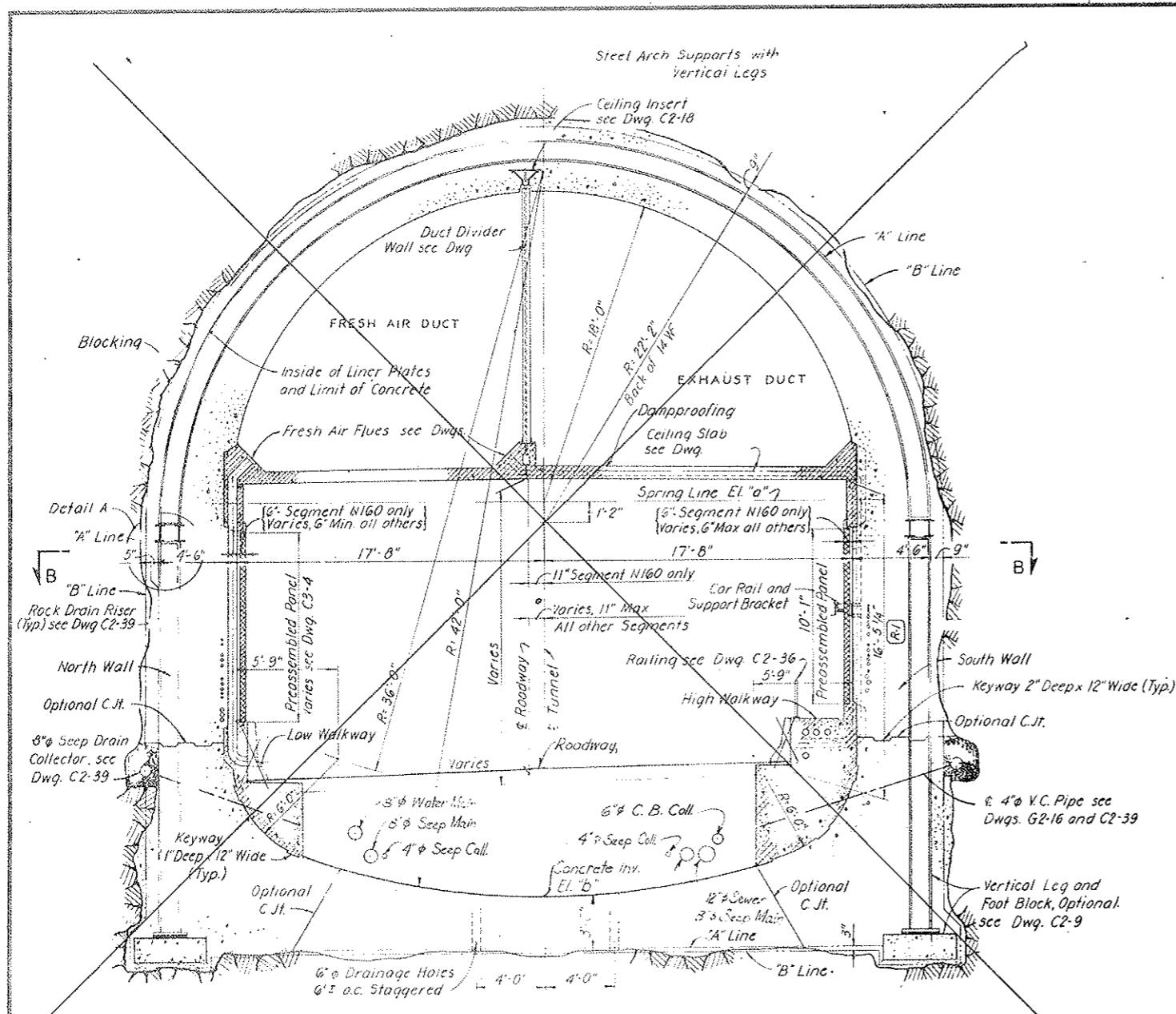


Profile
 1/2" = 1'-0"

STATE OF COLORADO			
DIVISION OF HIGHWAYS			
SCALE	DESIGNED BY	NOTED	REVISED
MANHOLE & CATCH BASIN DETAILS			
DATE	APPROVED BY	DESIGNED BY	
10-18-72	SOC 604	C2-46A	

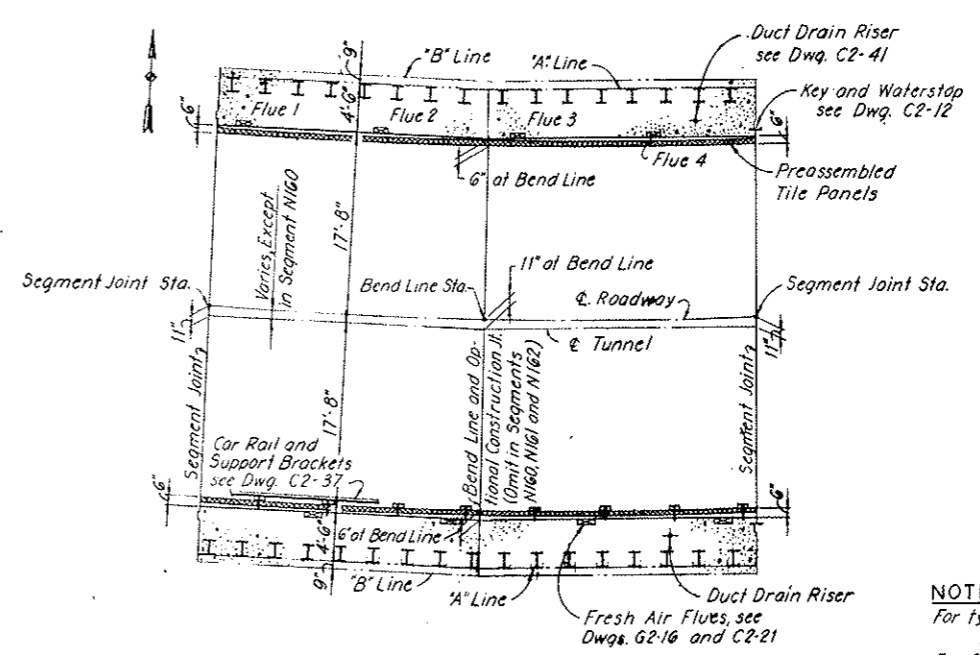
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	86	328

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1975



SECTION A-A
 SCALE: 1/4" = 1'-0"

Note: For Flues 1 through 4, see Dwg. G2-16, C2-21 and C3-4



SECTION B-B
 SCALE: 1/8" = 1'-0"

- NOTES:**
- For typical interior dimensions and details see Dwg.
 - For General Concrete Notes see Dwg. C2-11.
 - For General Grouting Notes see Dwg. C2-13.
 - For alignment and profiles see Dwg. G2-9.
 - For details of typical blockouts in walls and walkways see Dwg. C2-27.
 - For locations of blockouts in walls and walkways see Dwg. G2-16.
 - For steel reinforcement details see Dwg. C3-10.
 - For steel supports see Dwg. C3-11A.
 - Segment Joints and Bend Line to be set vertically and in radial direction relative to alignment of Roadway.
 - For Seepage Drain System see Dwg. C2-38L.
 - For Waste Water Drain System see Dwg. C2-38L.
 - For Water Supply System see Dwg. C2-38L.

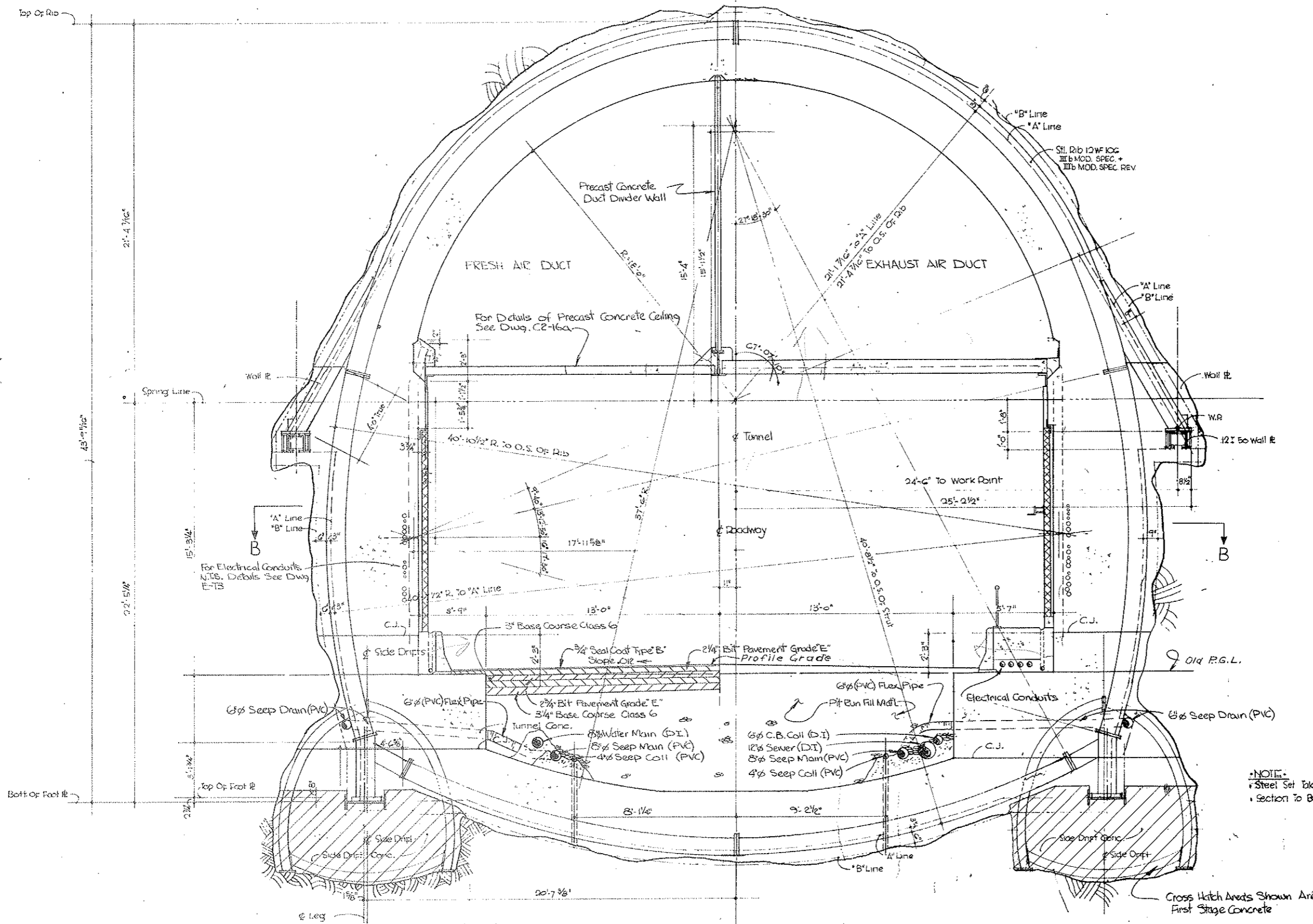
SEGMENT	SEGMENT JOINT	STATION	ELEVATION		BEND LINE STATION
			a	b	
N159	N158/N159	118+05.08	11,039.21	11,016.94	
N160	N159/N160	118+55.335K	11,038.39	11,016.12	
N161	N160/N161	118+20.17	11,037.57	11,015.30	
N162	N161/N162	118+70.42	11,036.76	11,014.30	
N163	N162/N163	119+20.67	11,035.96	11,013.29	119+45.80
N164	N163/N164	119+70.92	11,035.16	11,012.29	
	N164/N165	120+21.17	11,034.36	11,011.29	119+96.05

Note: All elevations given in this table vary linearly from one end of segment to the other, i.e. between segment joints.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION NORTH CONDUIT SEGMENTS TYPICAL TUNNELED CONDUIT SECTION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	D. J. B.-T.S.	RECOMMENDED:	Henry L. Ross	[Signature]	
DRAWN:	E. G. P.	CHECKED:	A. Z. E.	[Signature]	
APPROVED:	[Signature]	APPROVED:	[Signature]	DRAWING NO. C3-1	
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	70-3(34)220	86AX	326

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



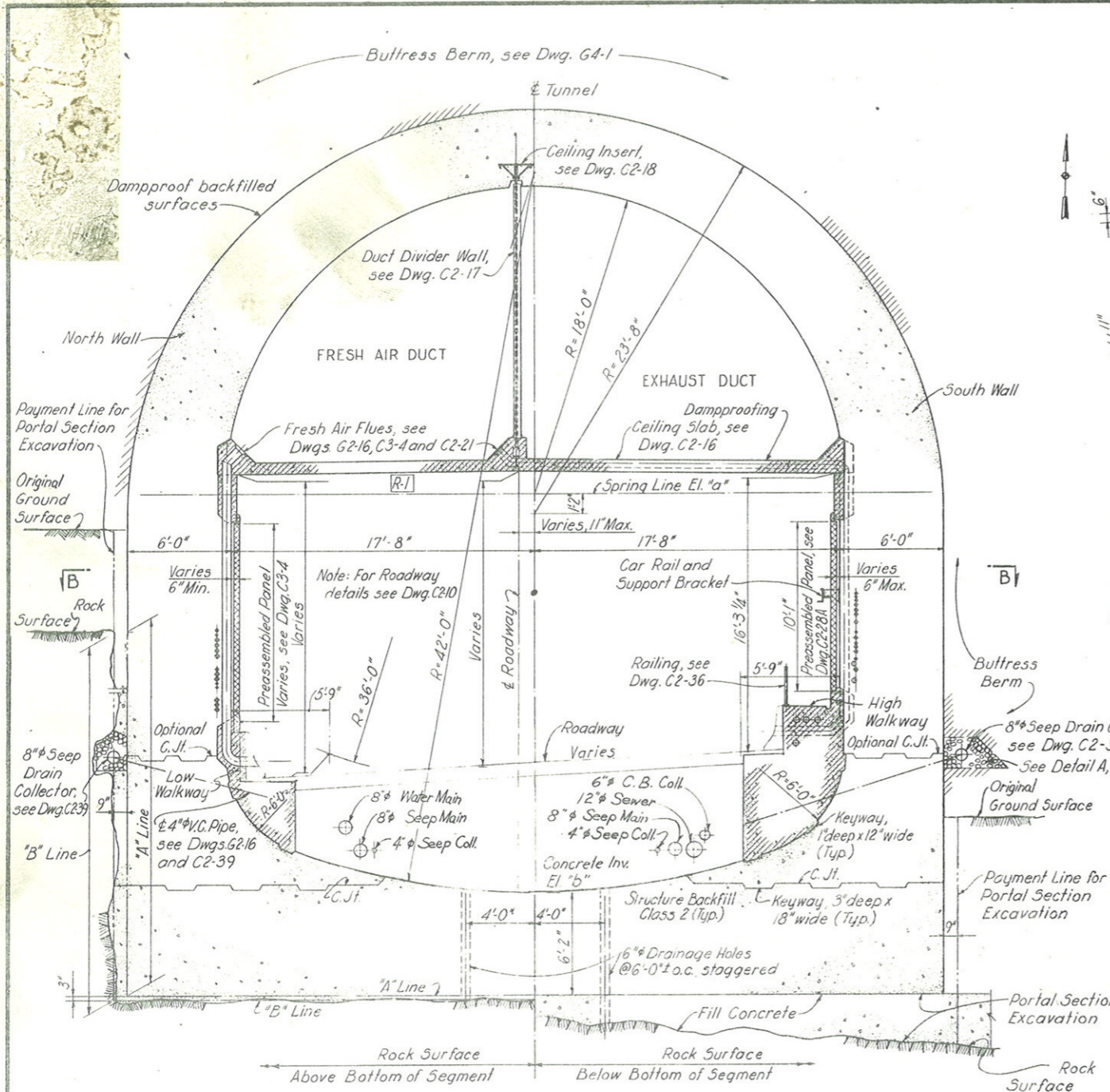
NOTE:
 Steel Set Taken From Comm. Shearing Dwg No. 05-020-7ACE-071
 Section To Be Used In East Portal Conduit Segments N183 THROUGH

Sta. 118+05.08 Bk. To 120+15.20

STATE OF COLORADO	
DIVISION OF HIGHWAYS	
SCALE	DATE
1/8" = 1'-0"	J.D. CARROLL
NORTH CONDUIT SEGMENTS - EAST PORTAL	
DATE	DESIGNED BY
1-22-67	C.S.-IA

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	87	326

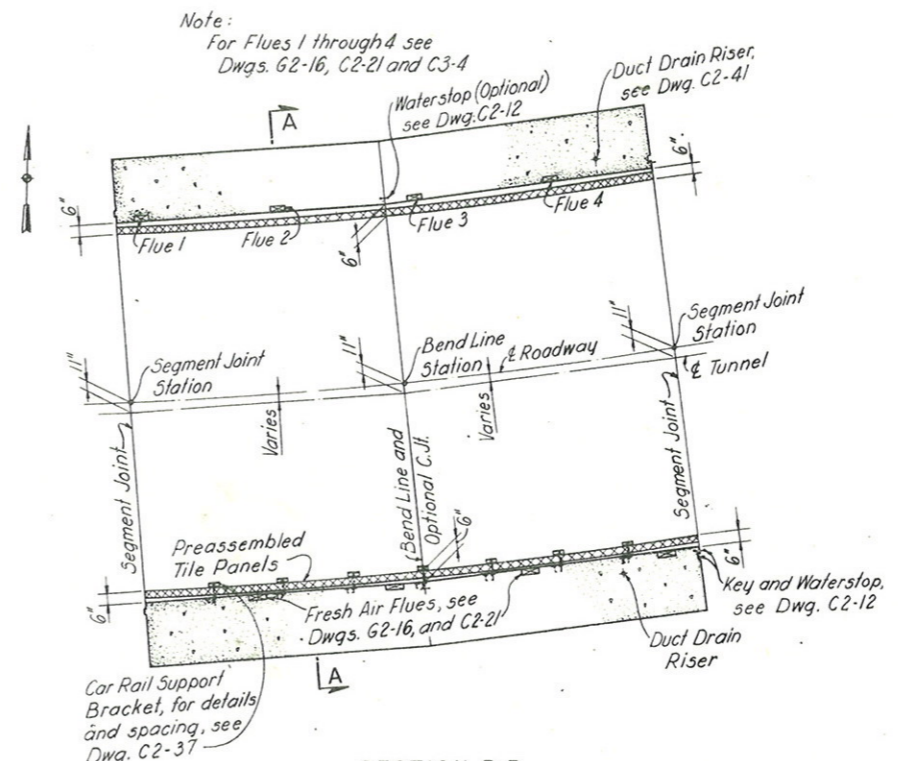
AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



SECTION A-A
 SCALE: 1/4" = 1'-0"

SEGMENT	SEGMENT JOINT	STATION	ELEVATION		BEND LINE STATION
			"a"	"b"	
N165	N164/N165	120+21.17	11,034.36	11,011.29	120+46.295
N166	N165/N166	120+71.42	11,033.56	11,010.29	120+96.545
N167	N166/N167	121+21.67	11,032.76	11,009.28	121+46.795
	N167/E. Trans.	121+71.92	11,031.95	11,008.28	

Note: All elevations given in this table vary linearly from one end of segment to the other, i.e. between Segment Joints.

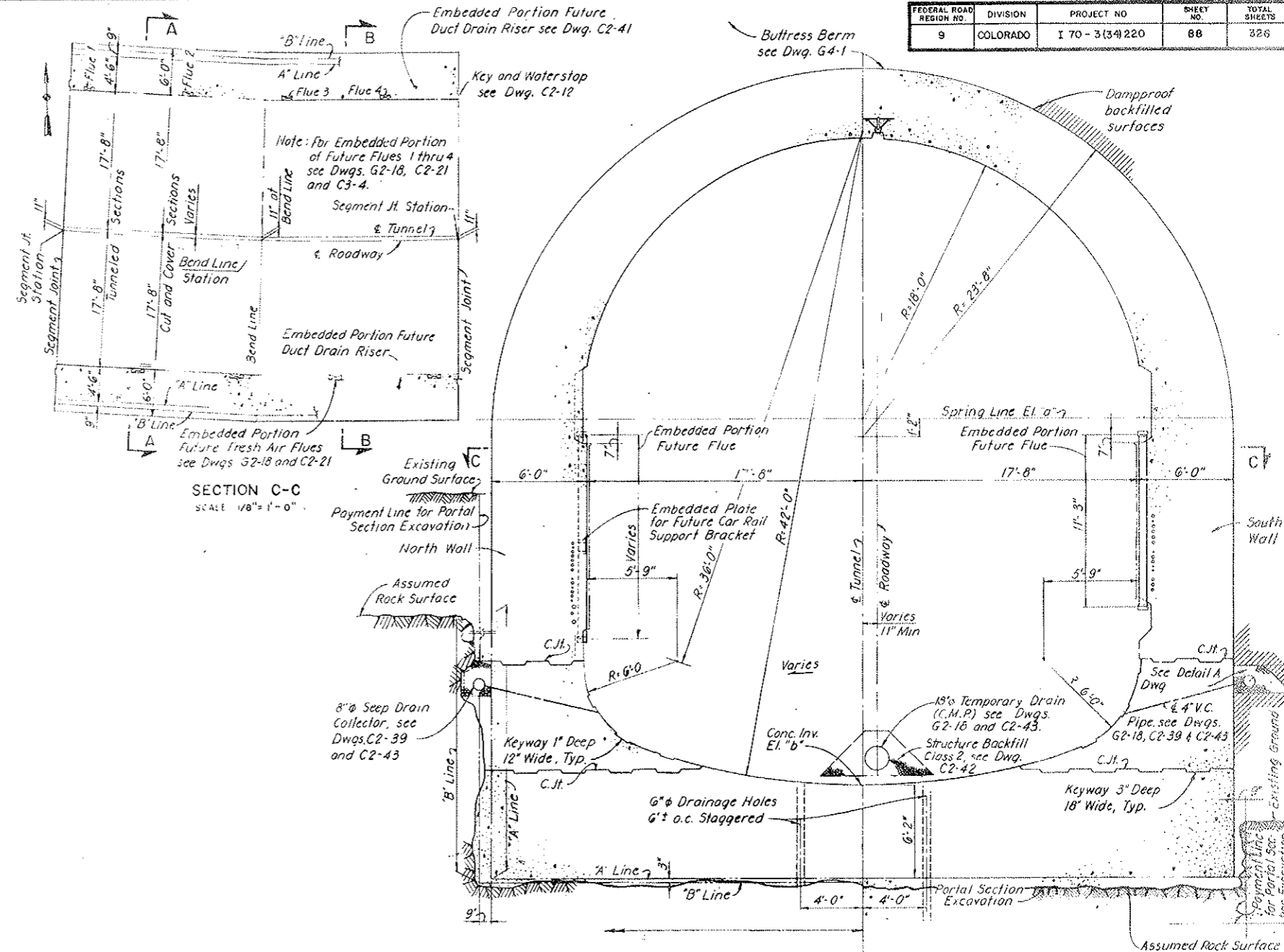


SECTION B-B
 SCALE: 1/8" = 1'-0"

- NOTES:**
- For typical interior dimensions and details see Dwg.
 - For General Concrete Notes see Dwg. C2-11.
 - For alignment and profiles see Dwg. G2-9.
 - For details of typical blockouts in walls and walkways see Dwg. C2-27.
 - For locations of blockouts in walls and walkways see Dwg. G2-16.
 - For steel reinforcement details see Dwg. C3-105.
 - Segment Joint and Bend Line to be set vertically and in radial direction relative to alignment of & Roadway.
 - For Seepage Drain System see Dwg. C2-38L.
 - For Waste Water Drain System see Dwg. C2-39L.
 - For Water Supply System see Dwg. C2-38L.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION NORTH CONDUIT SEGMENTS TYPICAL CUT- AND - COVER CONDUIT SECTION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	T.S.-P.V.P.	RECOMMENDED:			
DRAWN:	J.E.G.	CHECKED:			
CHECKED:	D.A.	APPROVED:			
BY:		DATE:	AUGUST 1967		
		SCALE:	AS NOTED		DATE:
					DRAWING NO. C3-2

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	88	326



NOTES:

- For typical dimensions and details affecting present construction, see Dwg.
- For General Concrete Notes see Dwg. C2-11
- For General Grouting Notes see Dwg. C2-13
- For alignment and profiles see Dwg. G2-9
- For details of typical blockouts in Walls see Dwg.
- For locations of blockouts in Walls see Dwg. G2-16
- For steel reinforcement details see Dwg.
- For steel supports see Dwg.
- Segment Joints and Bend Line to be set vertically and in radial direction relative to alignment of Roadway.
- Point exposed surfaces of embedded portions of future flues with bituminous mastic.
- 3" timber protection for flue blockouts on the South Wall at the bottom, to 6" above level of temporary road, as required.
- See Dwg. C3-3A for segments S164 and S163

**SECTION B-B
TYPICAL CUT- AND COVER SECTION**
SCALE: 1/4" = 1'-0"

AS CONSTRUCTED
REVISED DATE
Oct 24, 1973

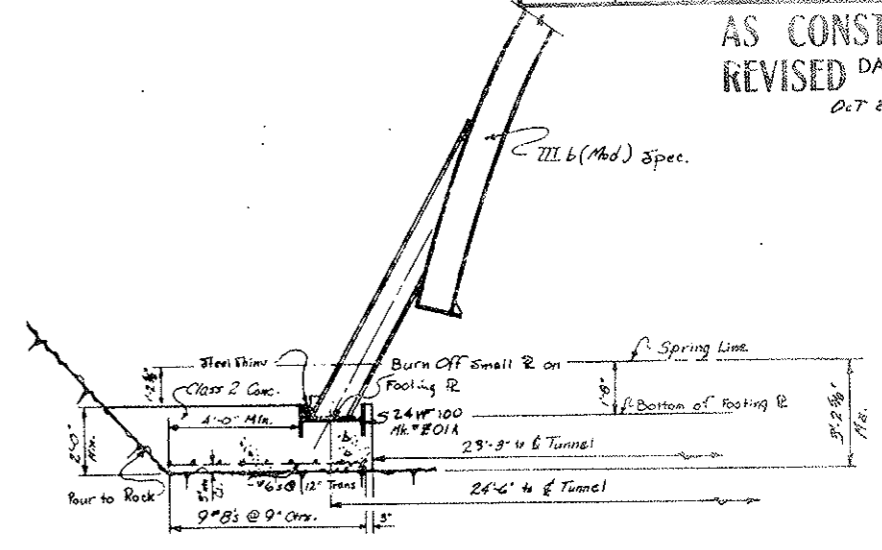
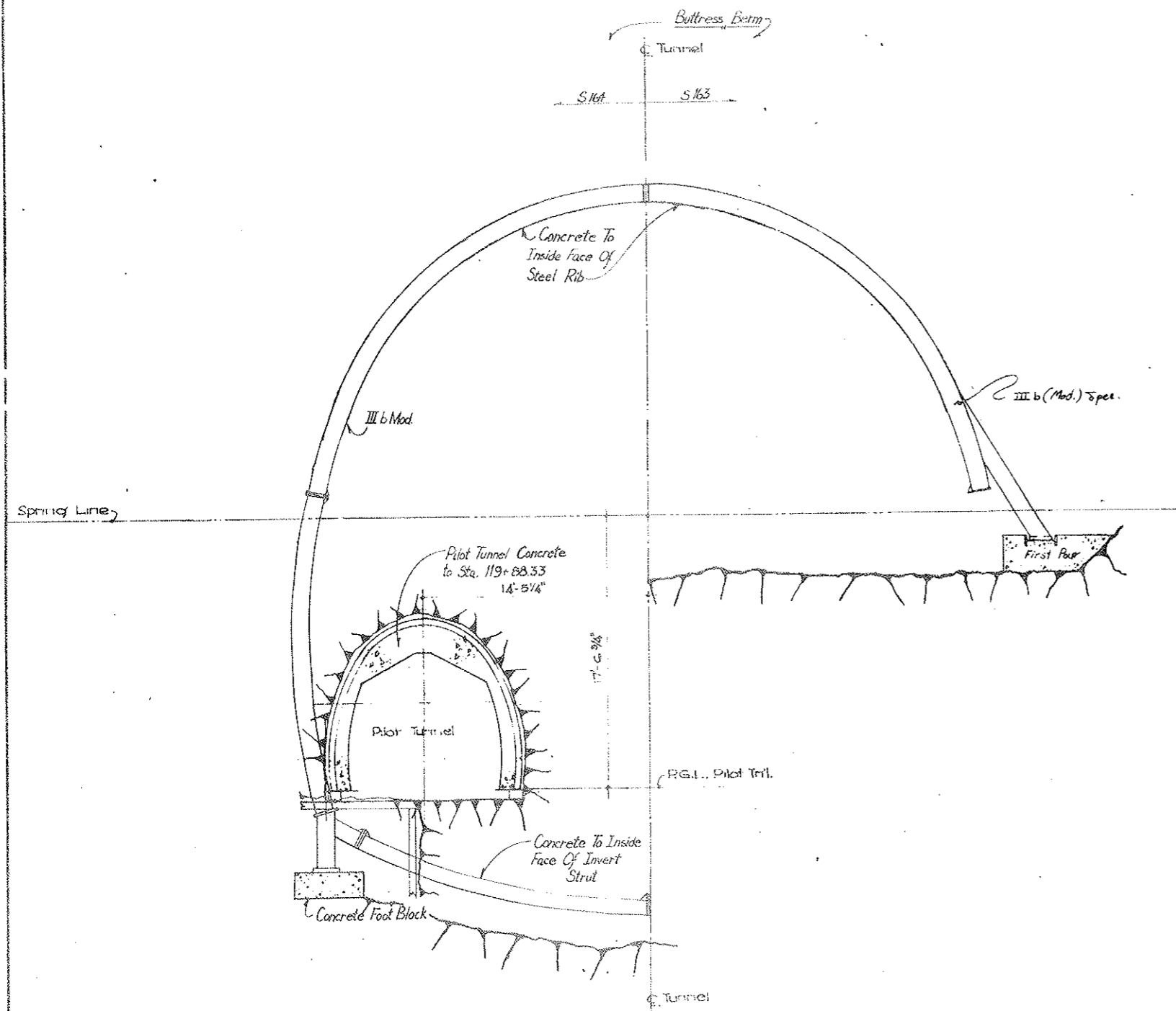
SECTION B-B	SEGMENT	SEGMENT JOINT	STATION	ELEVATION		BEND LINE STATION
				a	b	
	S164					120+15.21
	S165					120+65.46
	S166					121+15.71
	S167					121+65.96
	S167/E' Trans					

Note: All elevations given in this table vary linearly from one end of segment to the other, i.e. between Segment Joints.

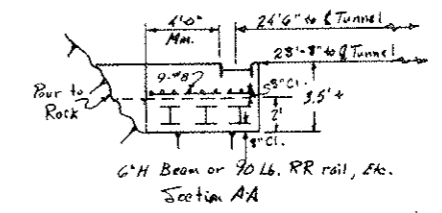
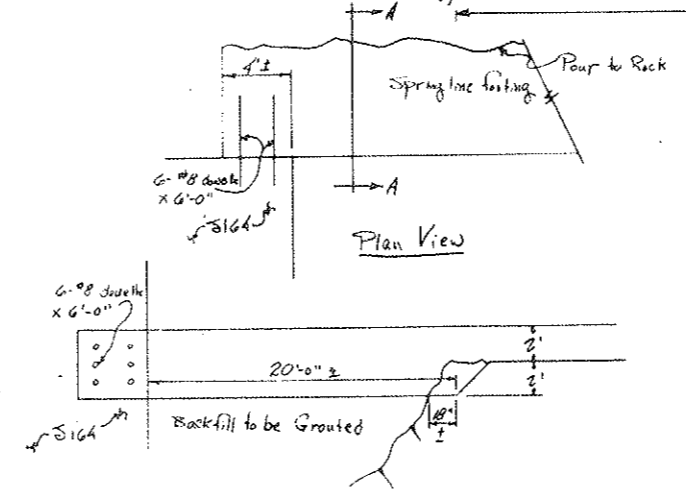
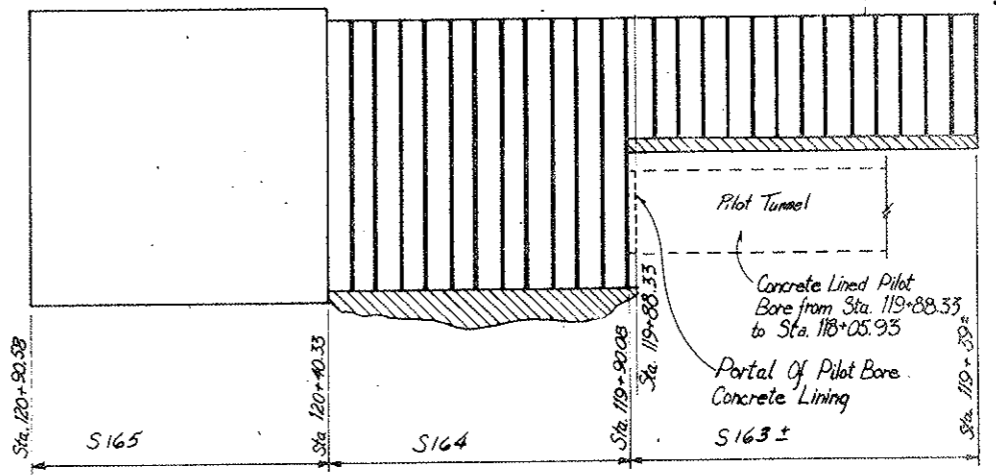
NO.	DATE	DESCRIPTION OF REVISION	BY	CR.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION SOUTH CONDUIT SEGMENTS TYPICAL TUNNELED AND CUT- AND COVER CONDUIT SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRAYTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	D. J. B.-T.S.	RECOMMENDED:	Henry K. ...		
DRAWN:	E. G. P.	CHECKED:	D. A.		
APPROVED:		APPROVED:			
NEW YORK, N. Y.					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-31541220	88AX	328

AS CONSTRUCTED
REVISED DATE
Oct 26, 1923



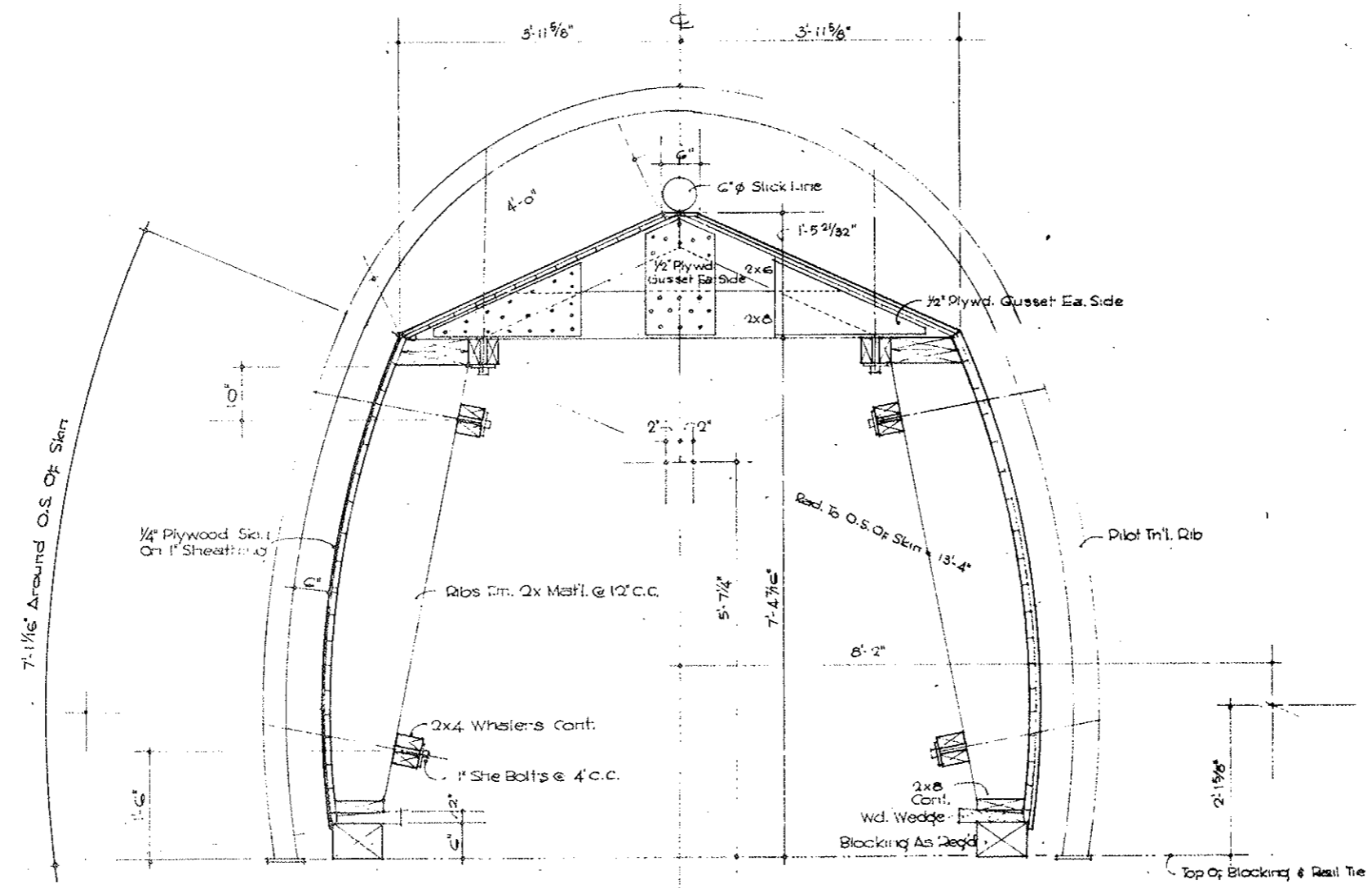
SILL DETAIL
Scale 8/8" = 1'-0"
R-1 R-2



STATE OF COLORADO			
DIVISION OF HIGHWAYS			
DESIGNED BY	CHECKED BY	APPROVED BY	DATE
			4/8/27
EXCAVATION + SUPPORT SO. CONDUIT SEGMENTS			
DATE	APPROVED BY	SCALE	SHEET NO.
4/8/27		SEE 826	C3-3A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70 - 3(34)220	88 BX	266

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973



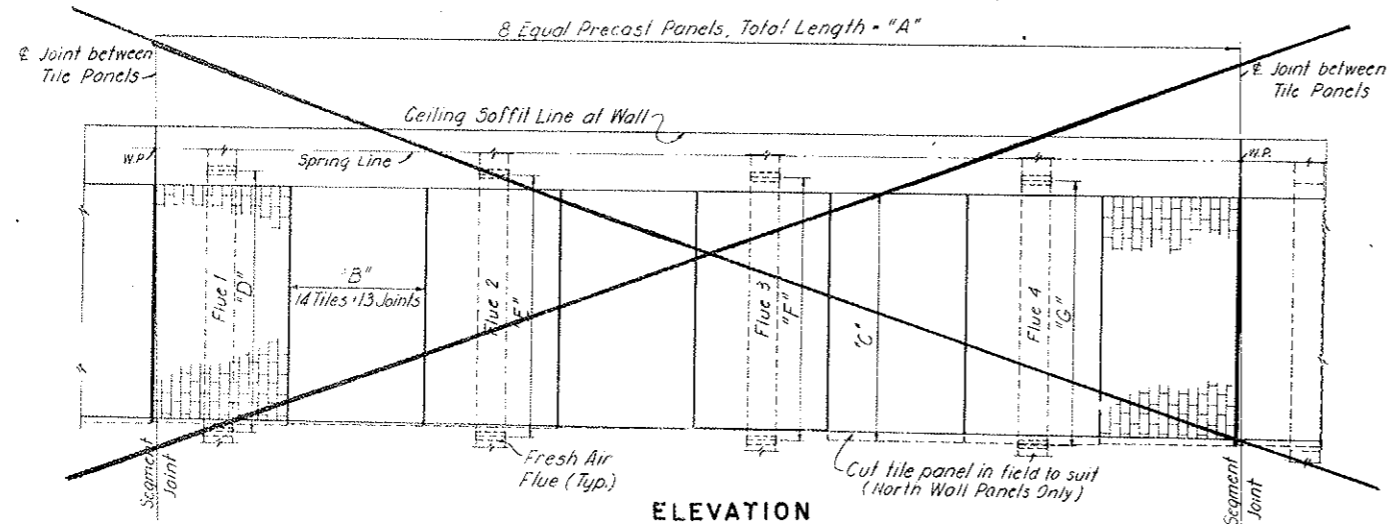
SECTION: 4 PANELS REQ'D. @ 12'-6" EA.
 Scale 1"=1'-0"

NOTE:
 Concrete Lining from
 Sta. 118+05.93 to Sta. 118+88.33
 For a Total of 261.50 ft.

STATE OF COLORADO DIVISION OF HIGHWAYS			
DATE	APPROVED BY	DESIGNED BY	CHECKED BY
5-3-71			
PILOT TUNNEL CONCRETE LINING		C3-38	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	89	326

AS CONSTRUCTED
REVISED DATE
 017 26, 1973



ELEVATION
TILE PANELS - NORTH TUNNEL - NORTH AND SOUTH WALLS
FLUES - NORTH AND SOUTH TUNNELS - NORTH WALL

NOTES:
 For tile panel details see Dwg. C2-2BBA
 For flue details see Dwg. C2-21

NORTH TUNNEL				
FLUE DIMENSIONS - NORTH WALL				
SEGMENT	"D"	"E"	"F"	"G"
N160	11'-3"	11'-3"	11'-3"	11'-3"
N161	11'-3 3/8"	11'-3 3/4"	11'-4"	11'-4 1/2"
N162	11'-5 1/8"	11'-6 1/8"	11'-7 1/8"	11'-8 1/8"
N163	11'-9 1/8"	11'-10"	11'-10 1/8"	12'-0 1/8"
N164	12'-1"	12'-2"	12'-3 1/8"	12'-4"
N165	12'-5"	12'-6"	12'-7"	12'-8"
N166	12'-9"	12'-9 3/8"	12'-11"	13'-0"
N167	13'-0 1/8"	13'-1 3/8"	13'-1 3/4"	13'-2 1/4"

Dimensions given in table are lengths of that portion of flue that is embedded in first stage concrete.

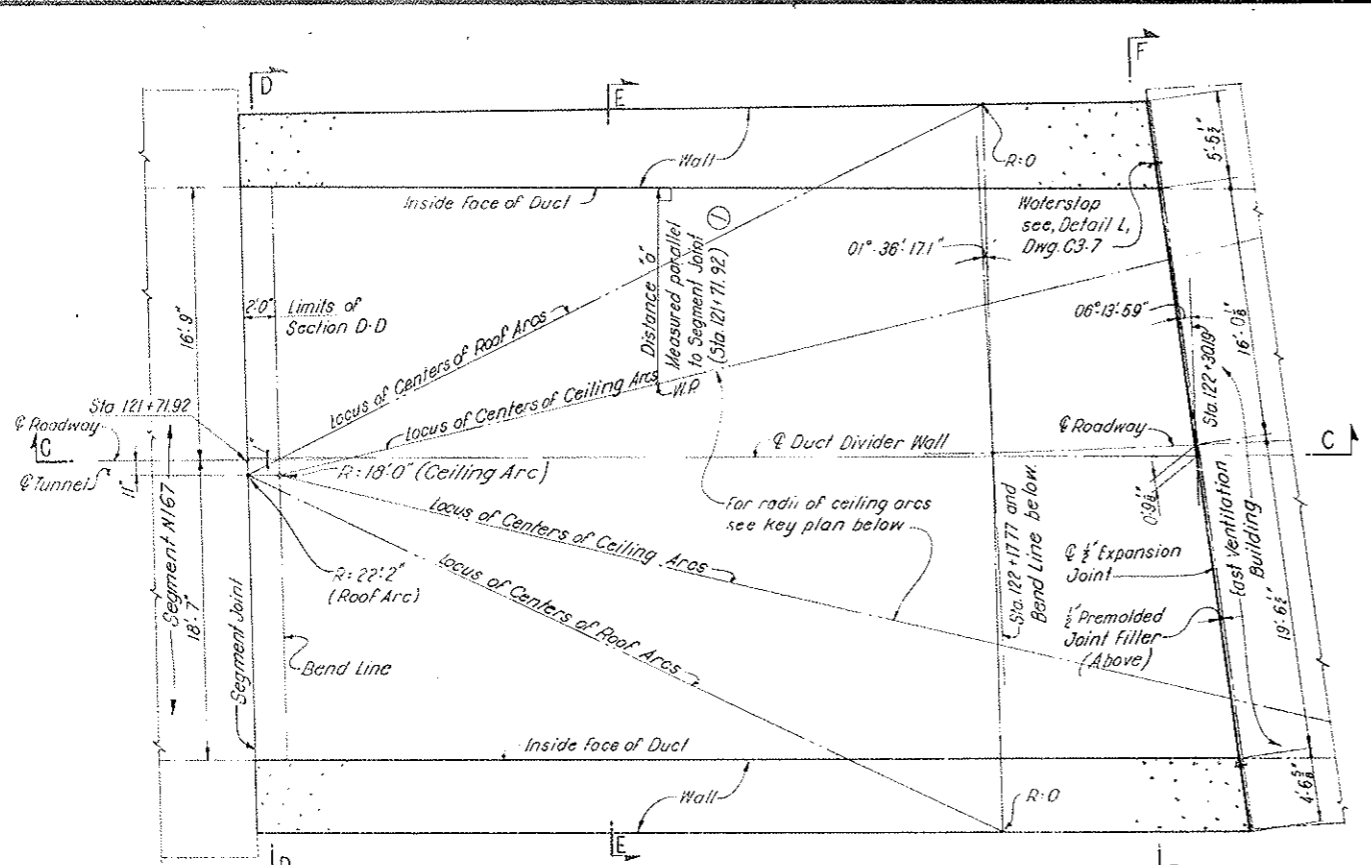
SOUTH TUNNEL				
FLUE DIMENSIONS - NORTH WALL				
SEGMENT	"D"	"E"	"F"	"G"
S160	11'-3 1/4"	11'-3 5/8"	11'-4"	11'-4 3/8"
S161	11'-5"	11'-6 1/8"	11'-7"	11'-8"
S162	11'-9"	11'-10"	11'-11"	12'-0"
S163	12'-1"	12'-1 7/8"	12'-2 1/8"	12'-4"
S164	12'-5"	12'-6 1/8"	12'-7"	12'-8"
S165	12'-9"	12'-10"	12'-11"	13'-0"
S166	13'-0 1/8"	13'-1 3/8"	13'-2"	13'-2 3/8"
S167	13'-2 3/4"	13'-2 3/4"	13'-2 3/4"	13'-2 3/4"

Dimensions given in table are lengths of that portion of future flue that is embedded in first stage concrete under present contract.

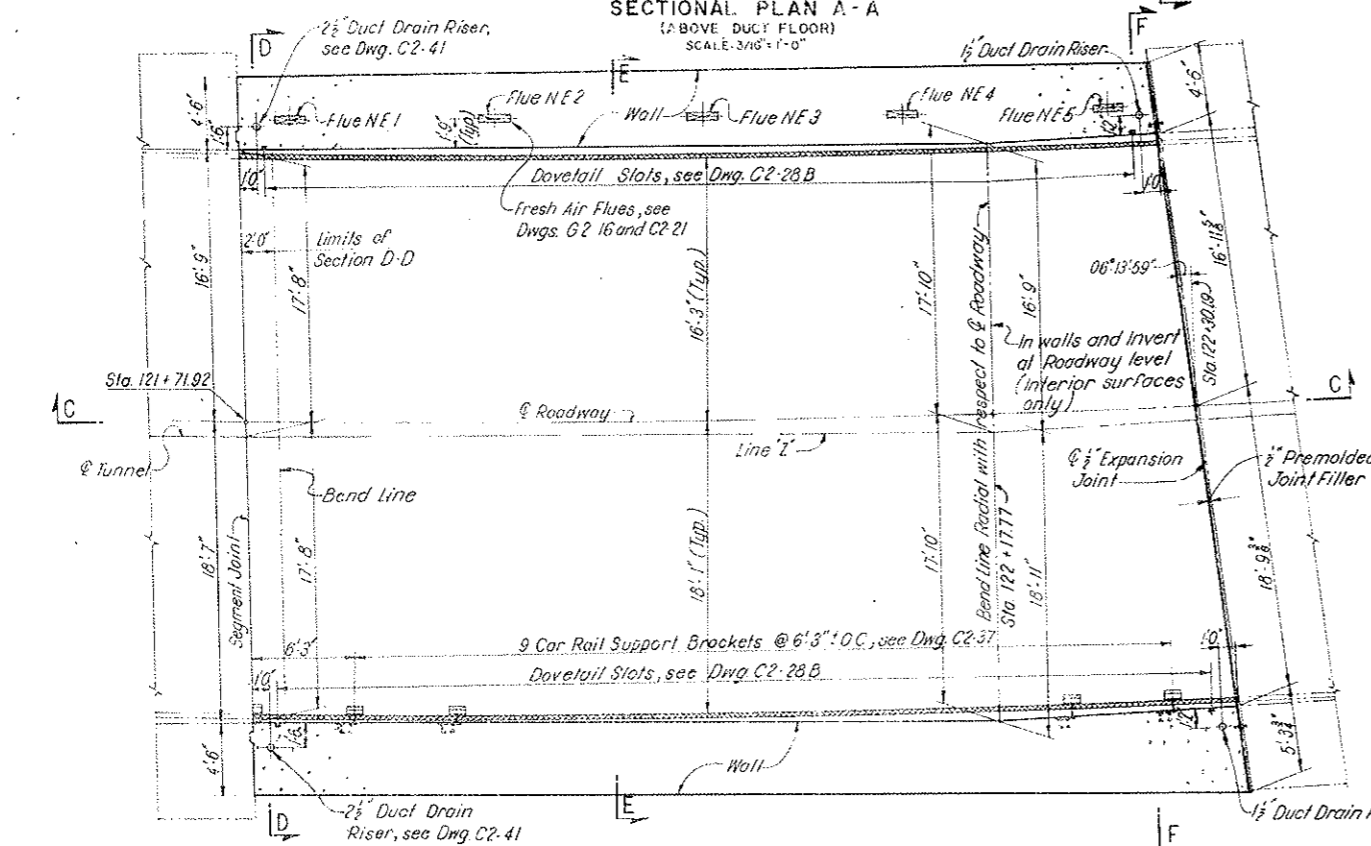
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION NORTH AND SOUTH CONDUIT SEGMENTS MISCELLANEOUS DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: P.V.P.	CHECKED: J.E.G.	RECOMMENDED: Henry S. Rowe	[Signature]		
DRAWN: J.E.G.	CHECKED: D.A.	APPROVED: Edward J. Farrell	[Signature]		
SCALE: 1/4" = 1'-0"	DATE: AUGUST 1967	DRAWING NO. C3-4			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	90	326

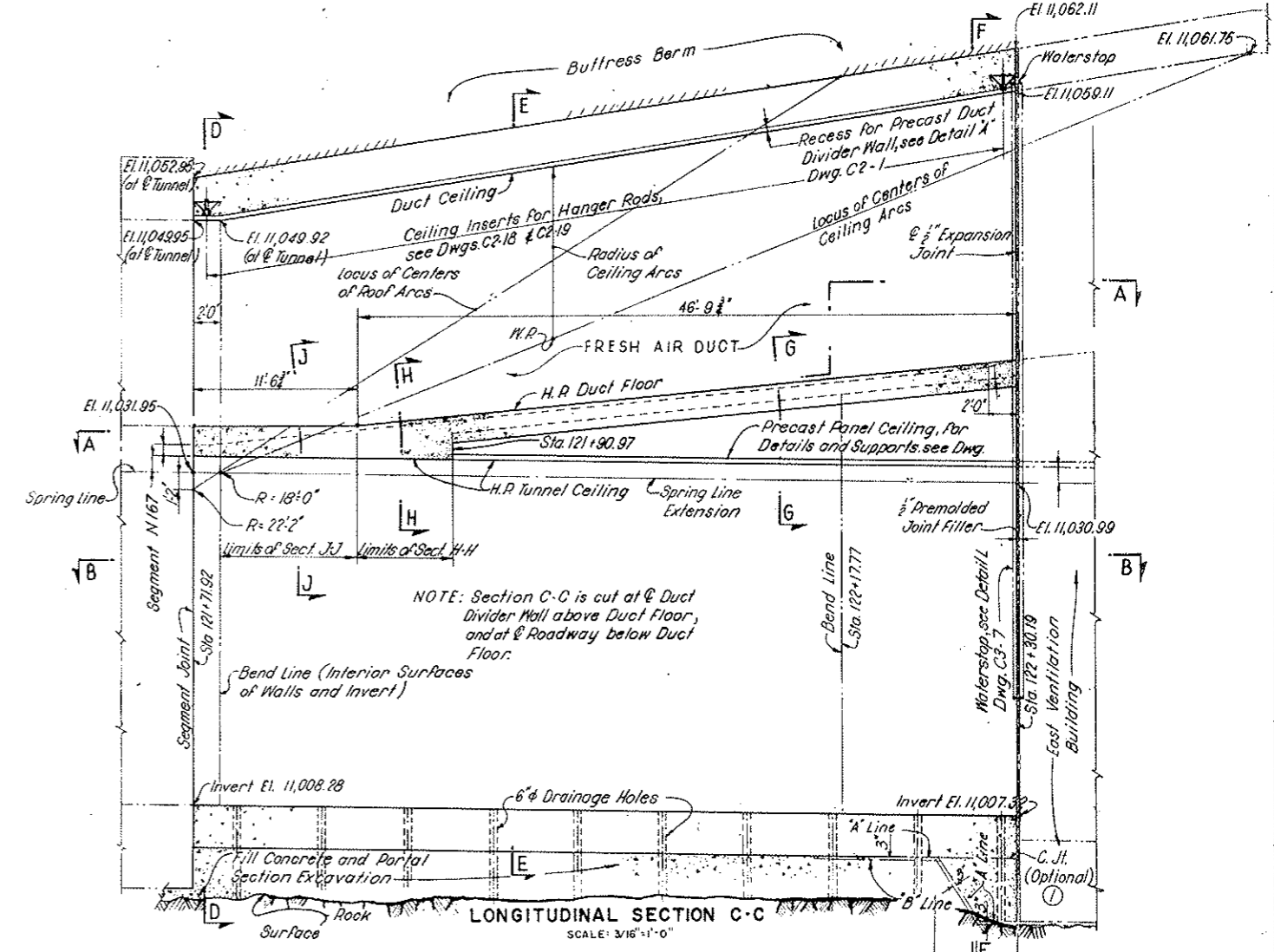
AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



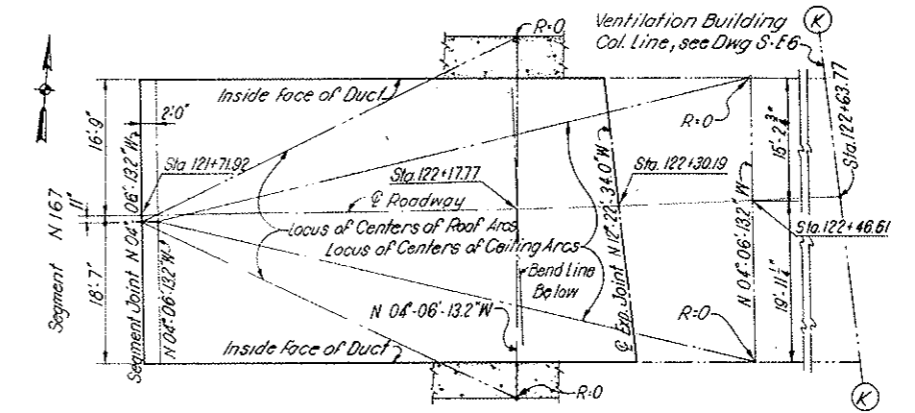
SECTIONAL PLAN A-A
 (ABOVE DUCT FLOOR)
 SCALE: 3/16" = 1'-0"



SECTIONAL PLAN B-B
 (BELOW ROADWAY CEILING)
 SCALE: 3/16" = 1'-0"



LONGITUDINAL SECTION C-C
 SCALE: 3/16" = 1'-0"



KEY PLAN
 SCALE: 3/32" = 1'-0"

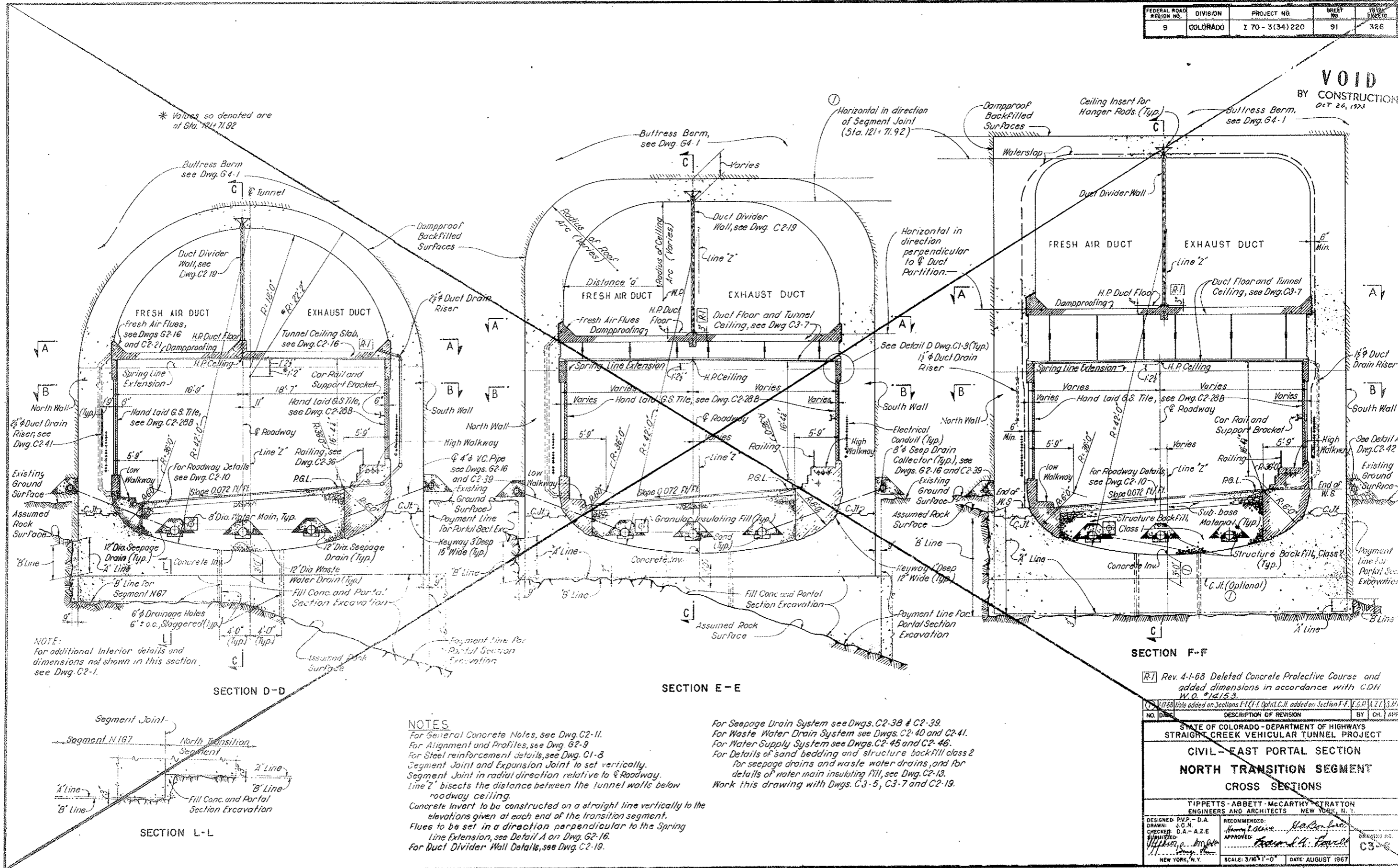
NOTE: Work this drawing with Dwg. C-1

DESIGNED: P.V.P. - D.A.		RECOMMENDED: <i>Handwritten signature</i>	
DRAWN: J.C.N.		CHECKED: D.A. - A.Z.E.	
CHECKED: D.A. - A.Z.E.		APPROVED: <i>Handwritten signature</i>	
SUBMITTED: <i>Handwritten signature</i>		DATE: AUGUST 1967	
DESIGNED BY: P.V.P.		DRAWING NO. C3-5	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	91	326

VOID
BY CONSTRUCTION
OCT 24, 1973

* Values so denoted are at Sta. 121+71.92



NOTE:
For additional interior details and dimensions not shown in this section, see Dwg. C2-1.

NOTES
For General Concrete Notes, see Dwg. C2-11.
For Alignment and Profiles, see Dwg. G2-9.
For Steel reinforcement details, see Dwg. C1-8.
Segment Joint and Expansion Joint to set vertically.
Segment Joint in radii direction relative to ϕ Roadway.
Line "Z" bisects the distance between the tunnel walls below roadway ceiling.
Concrete Invert to be constructed on a straight line vertically to the elevations given at each end of the transition segment.
Flues to be set in a direction perpendicular to the Spring Line Extension, see Detail A on Dwg. G2-16.
For Duct Divider Wall Details, see Dwg. C2-19.

For Seepage Drain System see Dwgs. C2-38 & C2-39.
For Waste Water Drain System see Dwgs. C2-40 and C2-41.
For Water Supply System see Dwgs. C2-45 and C2-46.
For Details of sand bedding and structure backfill class 2 for seepage drains and waste water drains, and for details of water main insulating fill, see Dwg. C2-13.
Work this drawing with Dwgs. C3-5, C3-7 and C2-19.

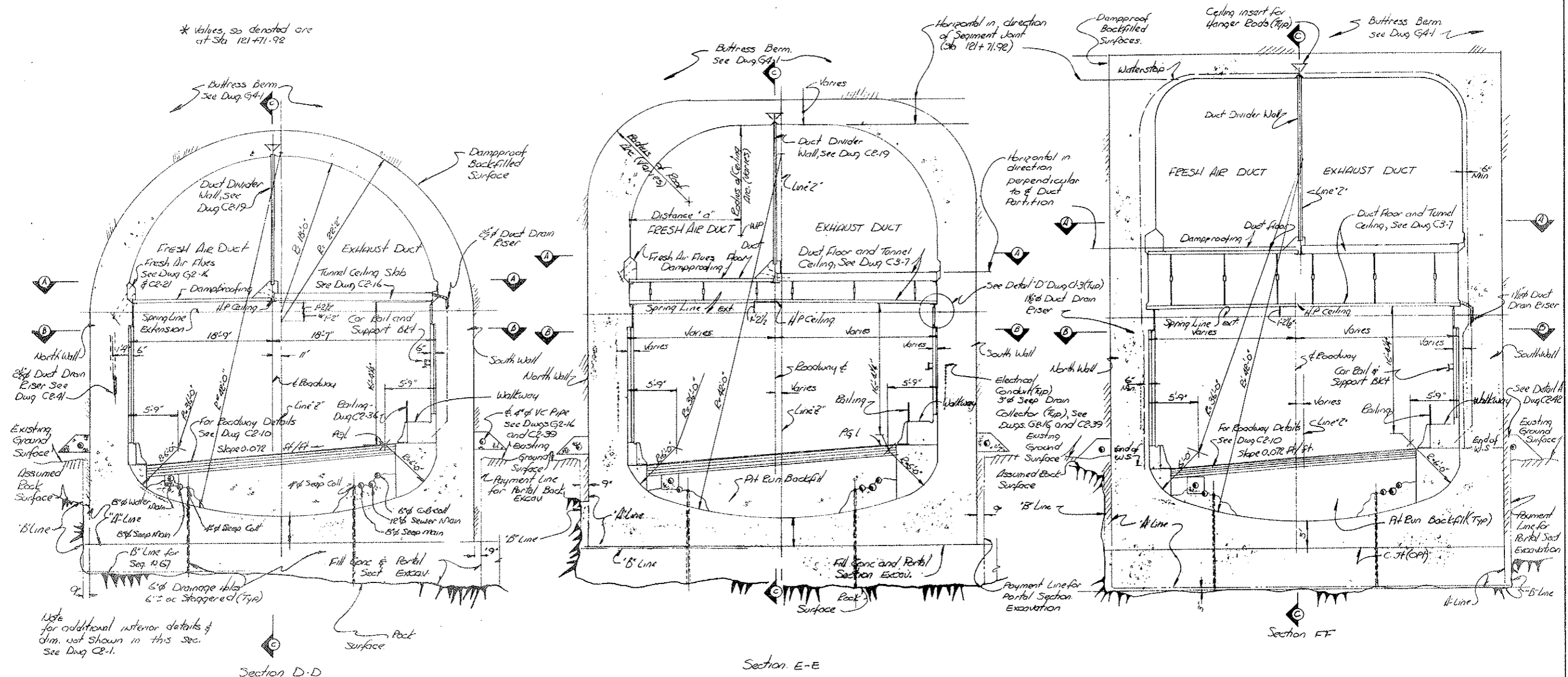
(R1) Rev. 4-1-68 Deleted Concrete Protective Course and added dimensions in accordance with CDH W.O. #14153.
(C1) 1/16/69 Note added on Sections F-C-F Optional C.Jt. added on Section F-F. (C.G.P. 4/21/69) S.M.P.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION					
NORTH TRANSITION SEGMENT					
CROSS SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: P.V.P. - D.A.	RECOMMENDED: <i>Walter L. Taylor</i>				
DRAWN: J.C.N.	CHECKED: D.A. - A.Z.E.				
SUBMITTED: <i>Walter L. Taylor</i>	APPROVED: <i>Walter L. Taylor</i>				
NEW YORK, N. Y.		SCALE: 3/16" = 1'-0"	DATE: AUGUST 1967		

VOID See Dwg # C3-6A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170 3134)220	91AX	

* Values, so denoted are at Sta 121+71.92



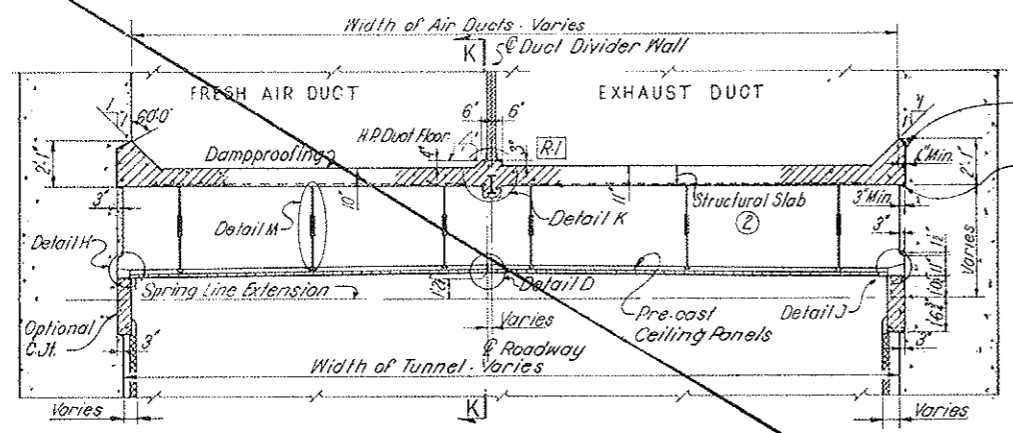
Note for additional interior details & dim. not shown in this sec. See Dwg CE-1.

STATE OF COLORADO DIVISION OF HIGHWAYS		
SCALE: 1/2" = 1'	APPROVED BY:	DRAWN BY: JAC
DATE: 9-9-73		REVISED:
* EAST PORTAL & -- NORTH TRANSITION SEGMENT --		
		DRAWING NUMBER: 13-614

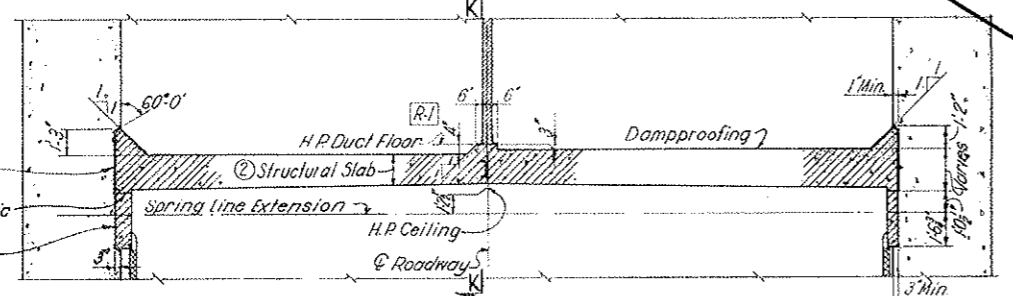
VOID
BY CONSTRUCTION
Oct 26, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	92	326

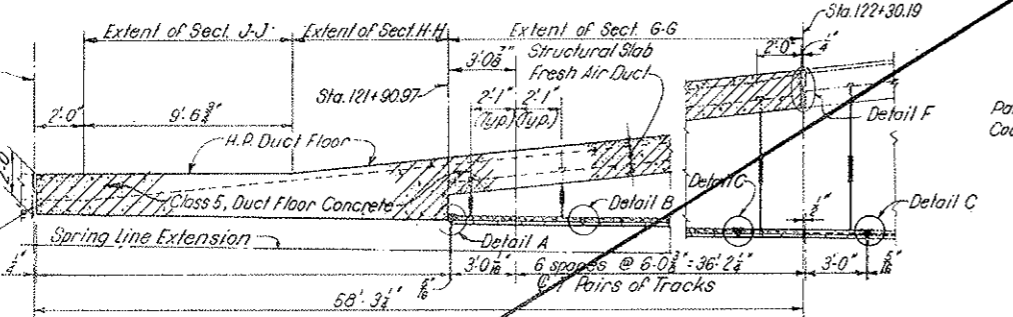
②-2 7-3-68 C.D.H. DELETED HAND LAID FILE ON WALLS AND CEILING



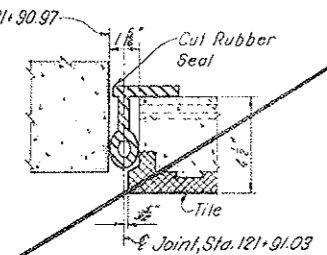
SECTION G-G
SCALE: 1/4" = 1'-0"
②-2



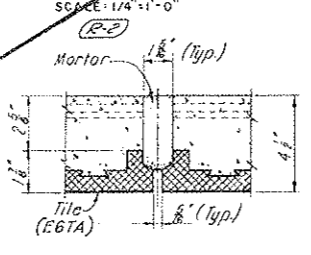
SECTION H-H
SCALE: 1/4" = 1'-0"
②-2



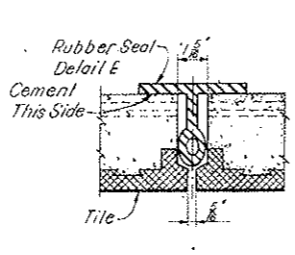
SECTION K-K
SCALE: 1/4" = 1'-0"
②-2



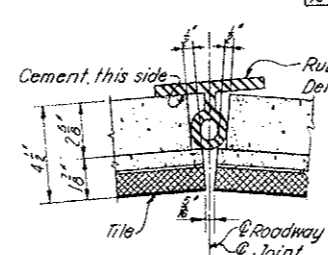
DETAIL A
SCALE: 3" = 1'-0"
②-2



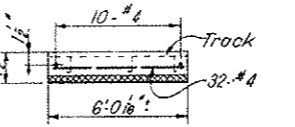
DETAIL B
SCALE: 3" = 1'-0"
②-2



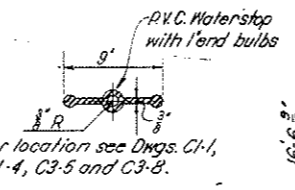
DETAIL C
SCALE: 3" = 1'-0"
②-2



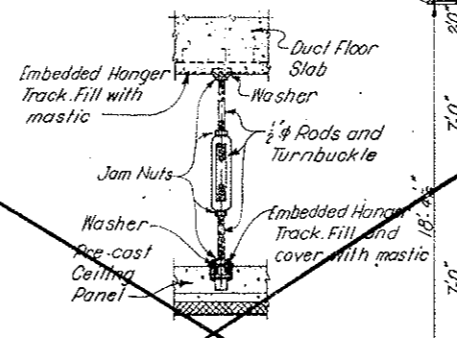
DETAIL D
SCALE: 3" = 1'-0"
②-2



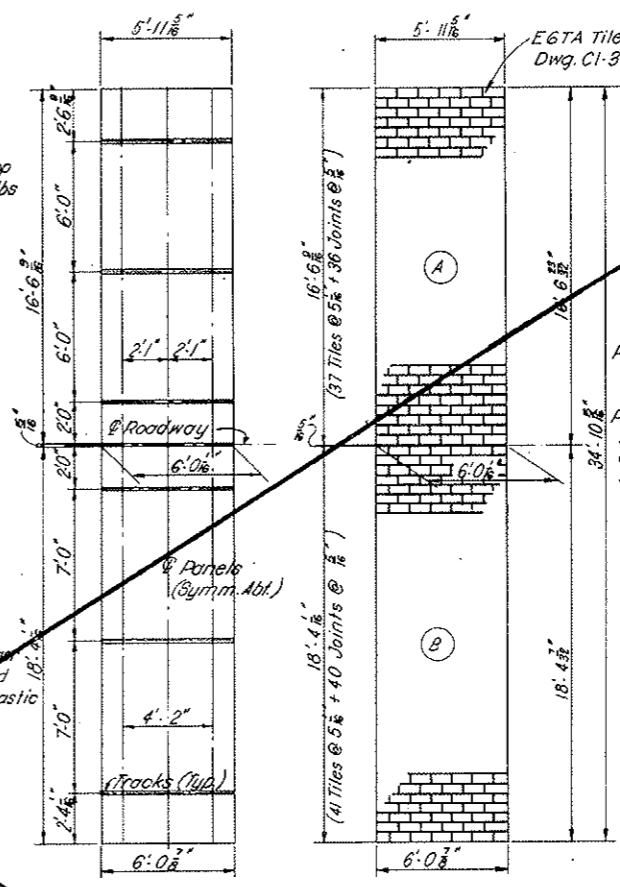
TYPICAL PANEL REINFORCEMENT
NOT TO SCALE



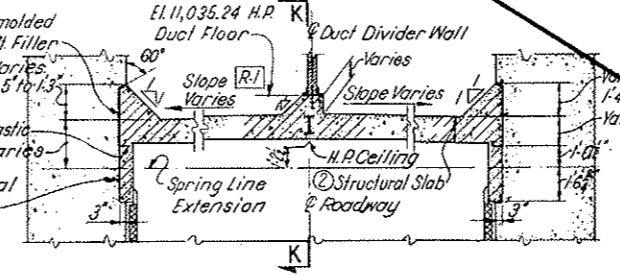
DETAIL L
NOT TO SCALE



DETAIL M
NOT TO SCALE

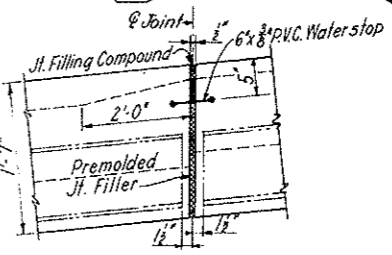


TOP PLAN
TILE ARRANGEMENT
SCALE: 1/4" = 1'-0"



SECTION J-J
SCALE: 1/4" = 1'-0"
②-2

DETAIL H (AS SHOWN)
DETAIL J (OPPOSITE HAND)
NOT TO SCALE
②-2



DETAIL G (OPPOSITE HAND)
SCALE: 1" = 1'-0"
②-2

NOTES:
For General Concrete Notes see Dwg. C2-11.
The Duct Floor and the Pre-cast Ceiling Panels shall be of light-weight Portland cement concrete, to weigh not more than 110 lb. per cu ft. The Duct Floor shall be of Class T-4 concrete, and the Ceiling Panels of Class T-4A.
For reinforcement of Duct Floor, see Dwg. C2-35. For Tile details see Dwg. C2-288 and C1-3.
The Hanger Tracks embedded in the Duct Floor and Ceiling Panels shall be Unistrut P-3300 series or approved equal, galvanized after fabrication and cutting to length. The galvanizing shall conform to A.S.T.M. specification A-153, except that the zinc shall weigh 2 oz. per sq. ft. of surface. The Hanger Rods, Turnbuckles, Nuts and Washers shall be of Stainless Steel Type 316, annealed, conforming to ASTM A 276 and Grade B.B.M. of ASTM A 320, with a minimum yield point of 30,000 Psi, finish type (3).
After the Ceiling Panels are installed and final adjustments made, the Tracks shall be filled with a bituminous mastic.
Work this drawing with Dwg. C2-19, C3-5 and C3-6.

②-2 Rev. 4-1-68 Revised Details F, G and K. Added dimensions and deleted Concrete Protective Course in accordance with CDH W.O. #14153.

Dimensions corrected on Detail K			
Notes added to Sections G-G, H-H & J-J			
Sections G-G, H-H: Top of slab corrected to the horizontal			
Nomenclature Revised			
NO.	DATE	DESCRIPTION OF REVISION	BY

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL - EAST PORTAL SECTION
NORTH TRANSITION SEGMENT
MISCELLANEOUS DETAILS

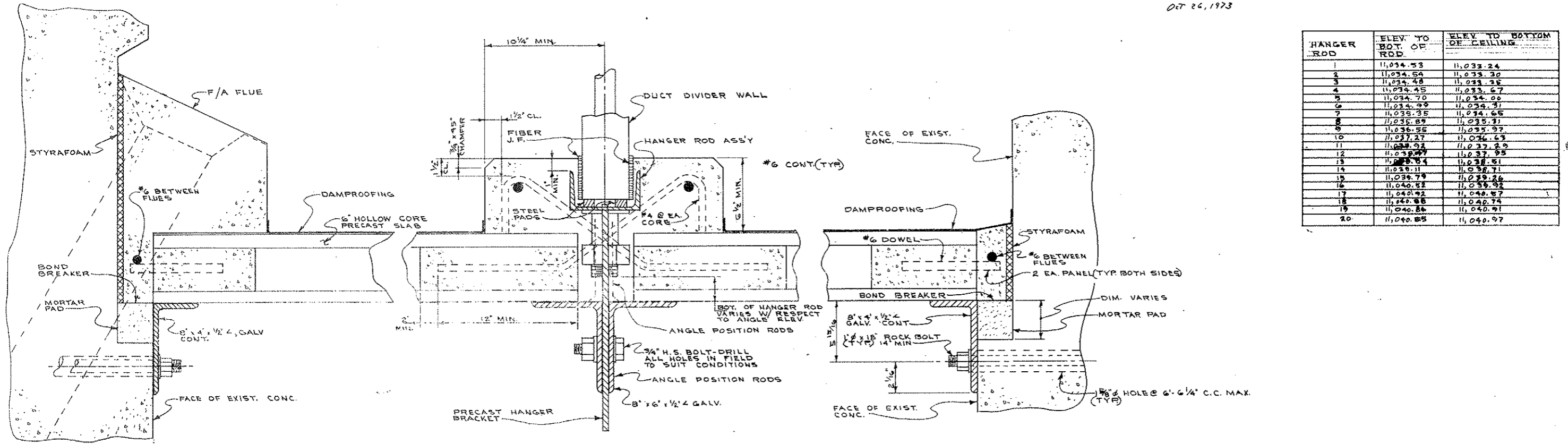
TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N.Y.

DESIGNED: D. J. A. Z. B. | RECOMMENDED: Henry K. Rose | DRAWING NO. C3-79
DRAWN: W. T. H. | APPROVED: Leonard A. Foxall
CHECKED: W. T. H. | DATE: AUGUST 1967

VOID See Dwg. # C3-79

AS CONSTRUCTED
 REVISED DATE
 OCT 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	92 AX	326

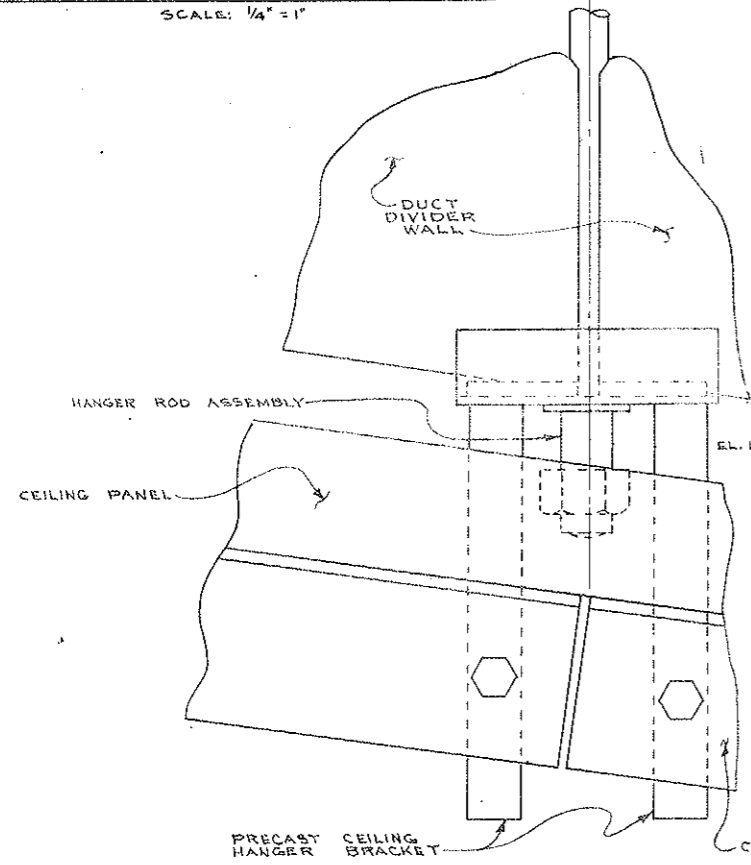


HANGER ROD	ELEV. TO BOT. OF ROD.	ELEV. TO BOTTOM OF CEILING
1	11,034.53	11,033.24
2	11,034.54	11,033.30
3	11,034.48	11,033.35
4	11,034.45	11,033.67
5	11,034.70	11,034.00
6	11,034.99	11,034.31
7	11,035.35	11,034.65
8	11,035.89	11,035.71
9	11,036.55	11,036.97
10	11,037.27	11,037.63
11	11,038.02	11,037.99
12	11,038.77	11,037.95
13	11,038.54	11,038.51
14	11,038.11	11,038.71
15	11,039.79	11,039.26
16	11,040.32	11,039.92
17	11,040.92	11,040.67
18	11,040.88	11,040.74
19	11,040.88	11,040.91
20	11,040.85	11,040.97

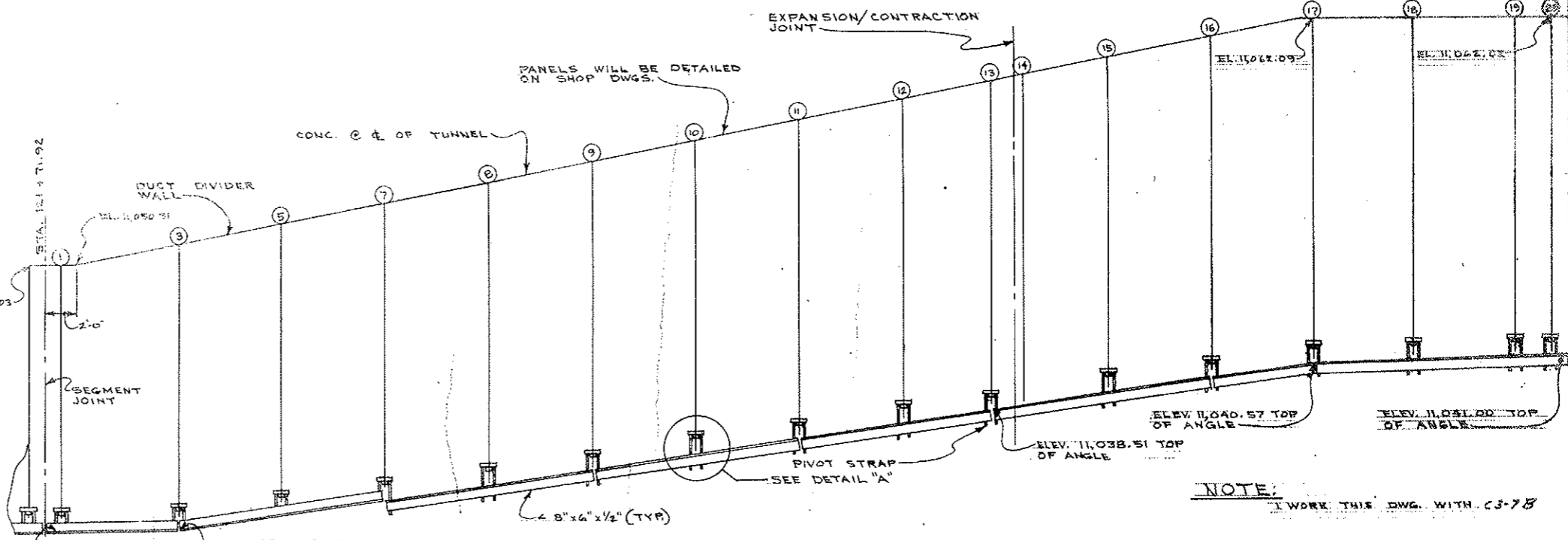
SECTION THRU NORTH WALL
 SCALE: 1/4" = 1"

SECTION THRU CEILING LOOKING EAST
 SCALE: 1/4" = 1"

SECTION THRU SOUTH WALL
 SCALE: 1/4" = 1"



DETAIL "A"
 SCALE: 1/4" = 1"



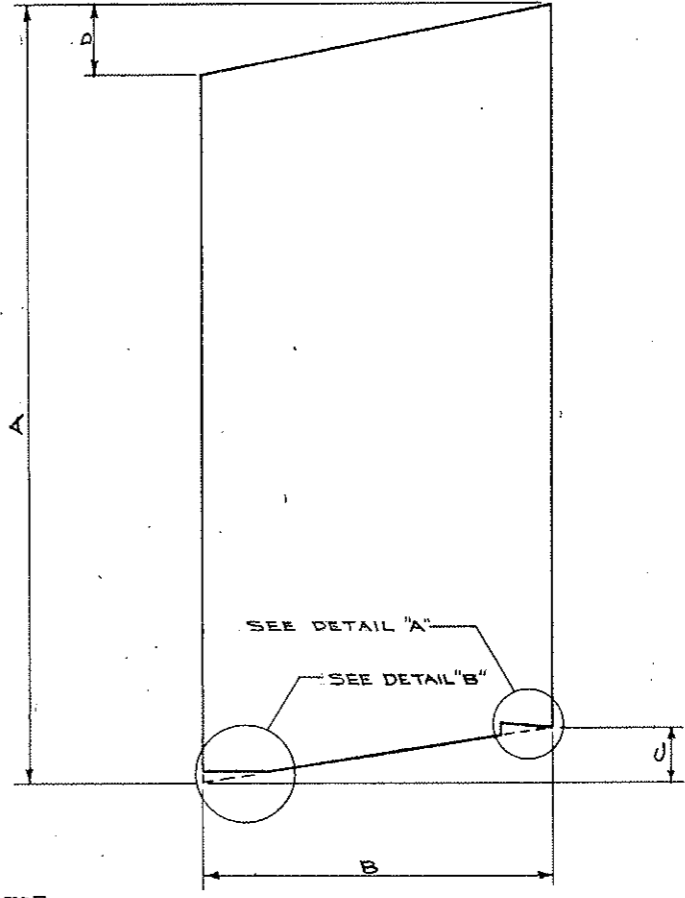
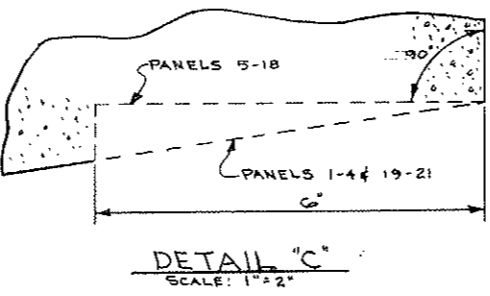
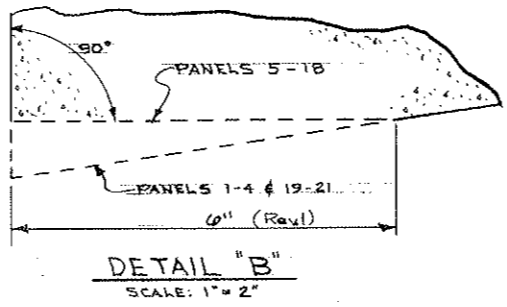
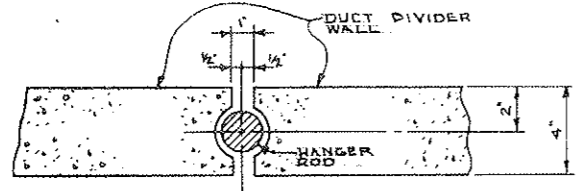
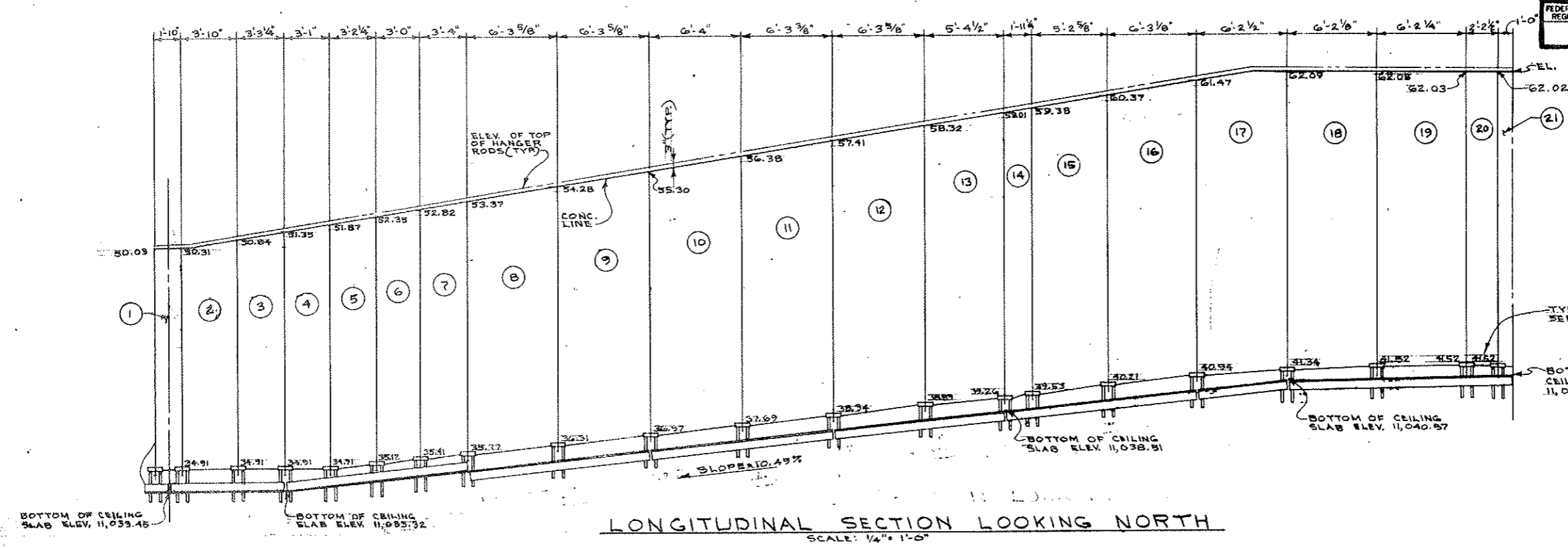
LONGITUDINAL SECTION LOOKING NORTH
 SCALE: 1/4" = 1'-0"

NOTE:
 I WORK THIS DWG. WITH C3-78

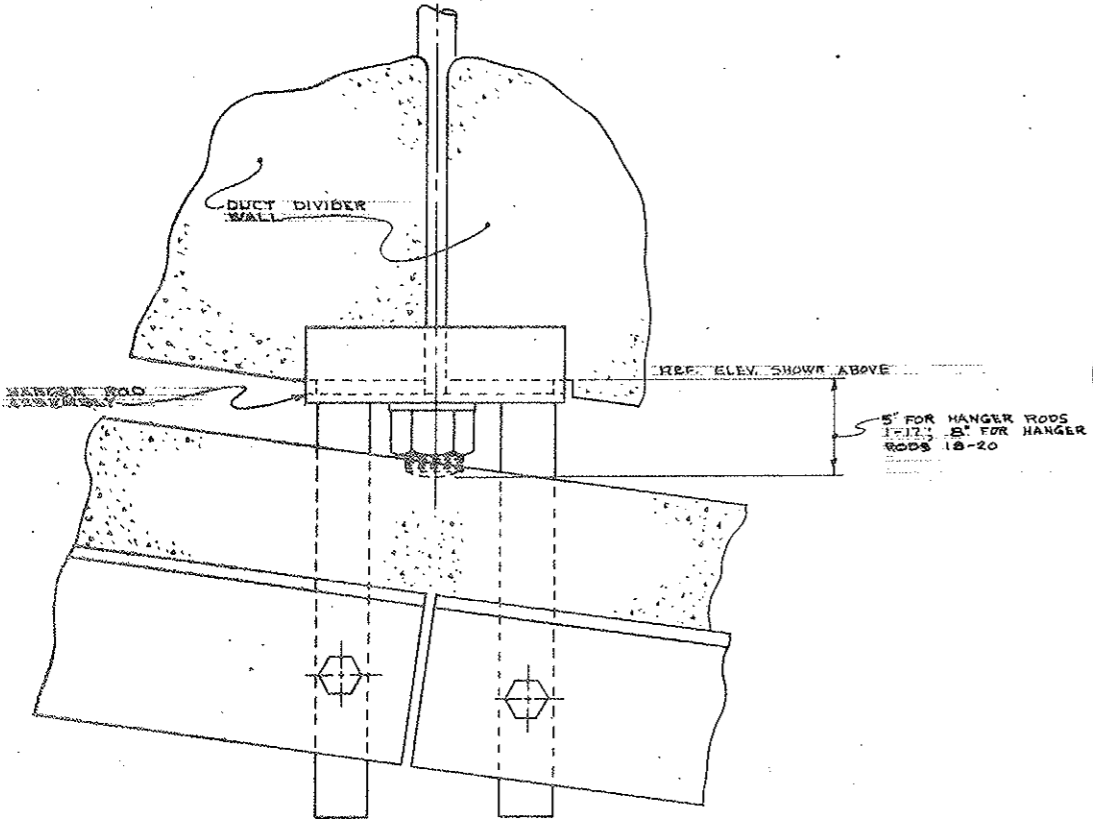
STATE OF COLORADO
 DIVISION OF HIGHWAYS
 PREPARED BY: STRAIGHT CREEK CONSTRUCTORS
 CEILING DETAILS AT N.E. TRANSITION
 DATE: 8-28-72 APPROVED BY: ECC 662 DRAWING NUMBER: C3-7A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	92 BX	326

AS CONSTRUCTED
REVISED DATE
 OCT 26, 1973



PANEL NUMBER	DUCT DIVIDER WALL DIMENSIONS			
	A	B	C	D
1	15'-2 1/8"	1'-9"	0"	3 3/8"
2	15'-9 1/8"	3'-9"	0"	6 3/8"
3	16'-3 1/4"	3'-2 1/4"	0"	6 1/8"
4	16'-9 1/4"	3'-0"	0"	6 1/4"
5	17'-3 3/4"	3'-1 1/4"	3"	5 3/4"
6	17'-7 1/2"	2'-11"	4 3/4"	5 5/8"
7	17'-10 1/2"	3'-3"	5 1/4"	6 5/8"
8	18'-4 3/4"	6'-2 5/8"	7 3/4"	10 15/16"
9	18'-10 3/8"	6'-2 3/8"	8 5/8"	1'-0 1/4"
10	19'-3 1/4"	6'-3"	9 3/8"	1'-1"
11	19'-7 3/4"	6'-2 3/8"	8 1/2"	1'-0 3/8"
12	19'-10 3/4"	6'-2 5/8"	7 3/4"	10 15/16"
13	19'-11 3/8"	5'-3 1/2"	4 15/16"	8 1/4"
14	20'-0 3/8"	11'-10 1/4"	4 1/4"	4 7/16"
15	20'-8 1/8"	5'-1 5/8"	9"	11 1/8"
16	21'-1 7/8"	6'-2 1/8"	9 1/2"	11 3/16"
17	21'-0 3/4"	6'-1 1/2"	5 1/4"	7 3/16"
18	20'-7 1/4"	6'-1 1/8"	2 3/8"	0"
19	20'-4 3/8"	6'-1 1/4"	0"	0"
20	20'-4 1/8"	2'-1 1/2"	0"	0"
21	20'-4"	0'-11 1/2"	0"	0"

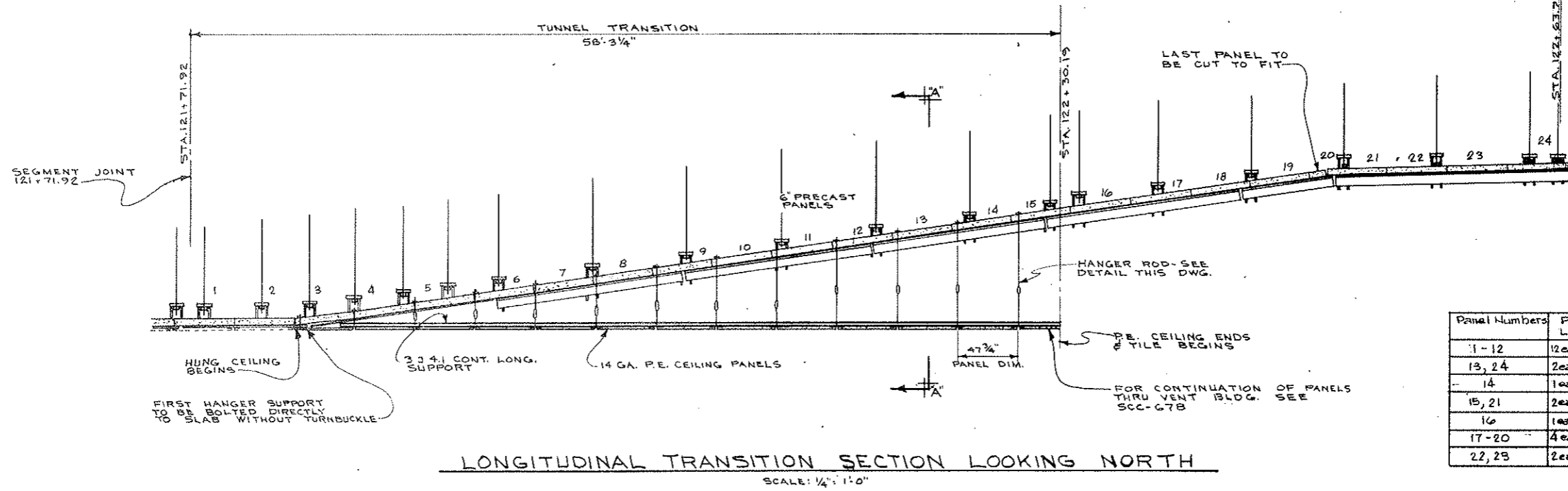


DETAIL "A"
 SCALE: 1/4" = 1'-0"

- NOTES:
1. PRESTRESSED STRANDS & MESH TO BE DETAILED BY PANEL SUPPLIER.
 2. LIFTING INSERTS TO BE DETAILED LATER.
 3. THE FACE SHOWN ON THIS DRAWING IS THE EXHAUST SIDE & IS TO BE THE SMOOTH SIDE.
 4. CONCRETE TO BE 5000 P.S.I. LT. WT. CONC.

STATE OF COLORADO
 DIVISION OF HIGHWAYS
 PREPARED BY: STRAIGHT CREEK CONSTRUCTORS
 DATE: 10-29-72
 APPROVED BY: [Signature]
 DRAWING NUMBER: C5-7B

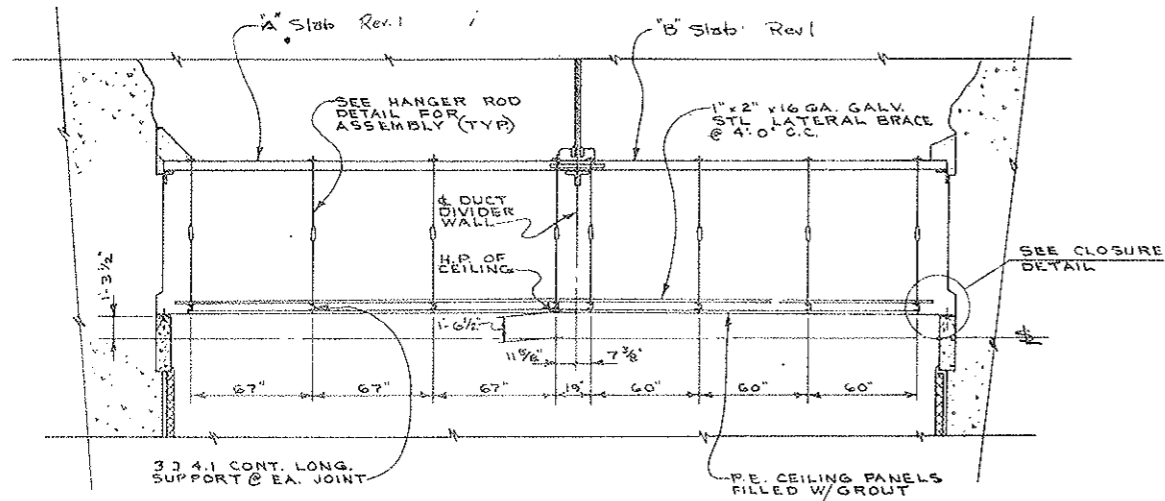
TOTAL SHEETS	236
SHEET NO.	92 CX
PROJECT NO.	170-3(34)220
DIVISION	COLORADO
FEDERAL ROAD DISTRICT	9



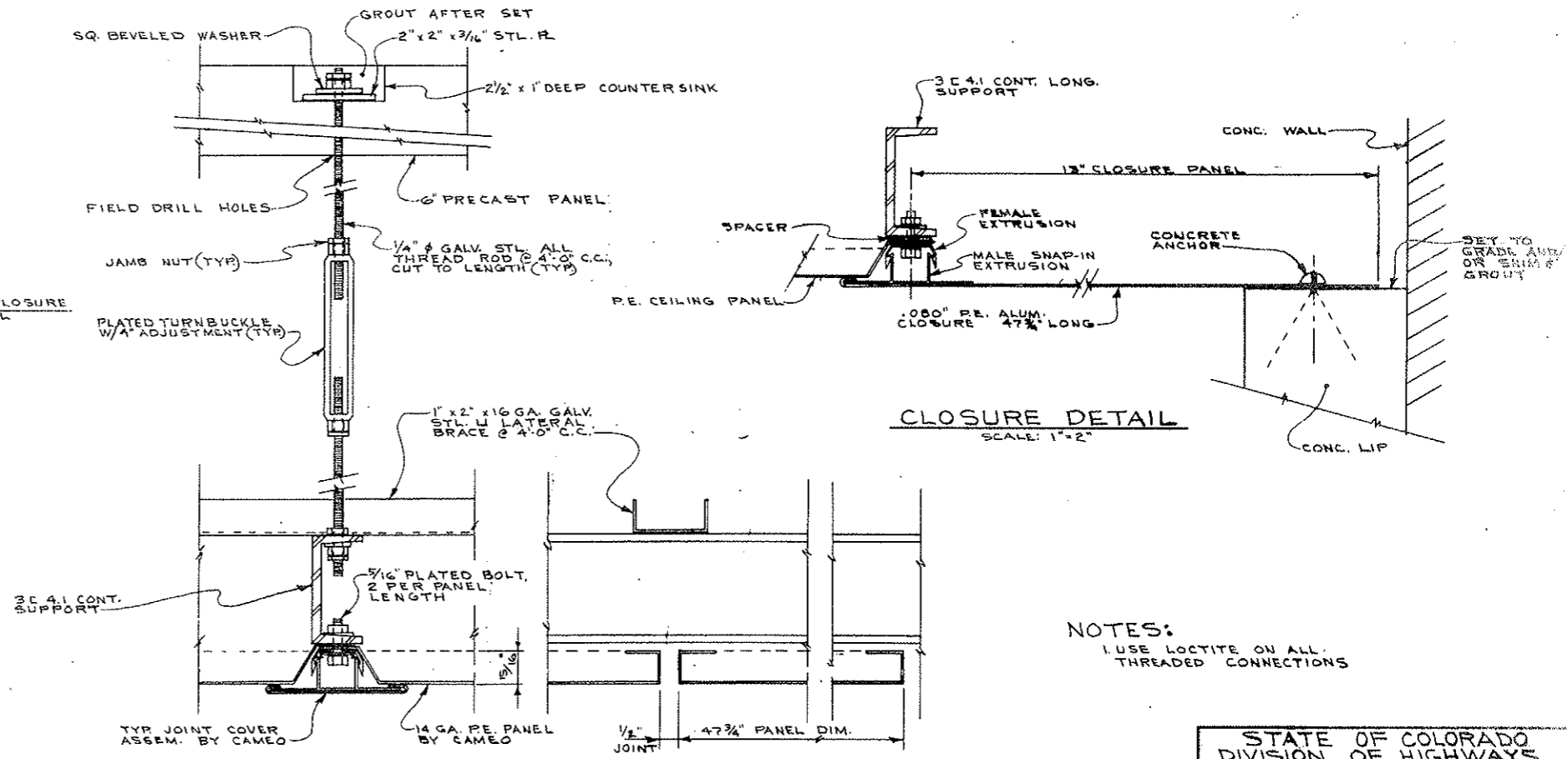
Panel Numbers	Panel A Length	Panel B Length
1-12	12 ea. 15'-9 9/8"	12 ea. 16'-8 7/8"
13, 24	2 ea. 18'-11 1/8"	2 ea. 16'-9 7/4"
14	1 ea. 19'-0 9/8"	1 ea. 16'-11 1/4"
15, 21	2 ea. 19'-2 2/8"	2 ea. 17'-0 3/4"
16	1 ea. 19'-3 1/8"	1 ea. 17'-1 3/4"
17-20	4 ea. 19'-4 1/4"	4 ea. 17'-2 1/8"
22, 23	2 ea. 18'-11 1/8"	2 ea. 16'-10 1/2"

LONGITUDINAL TRANSITION SECTION LOOKING NORTH
 SCALE: 1/4" = 1'-0"

Rev. 1



SECTION A-A
 SCALE: 1/4" = 1'-0"



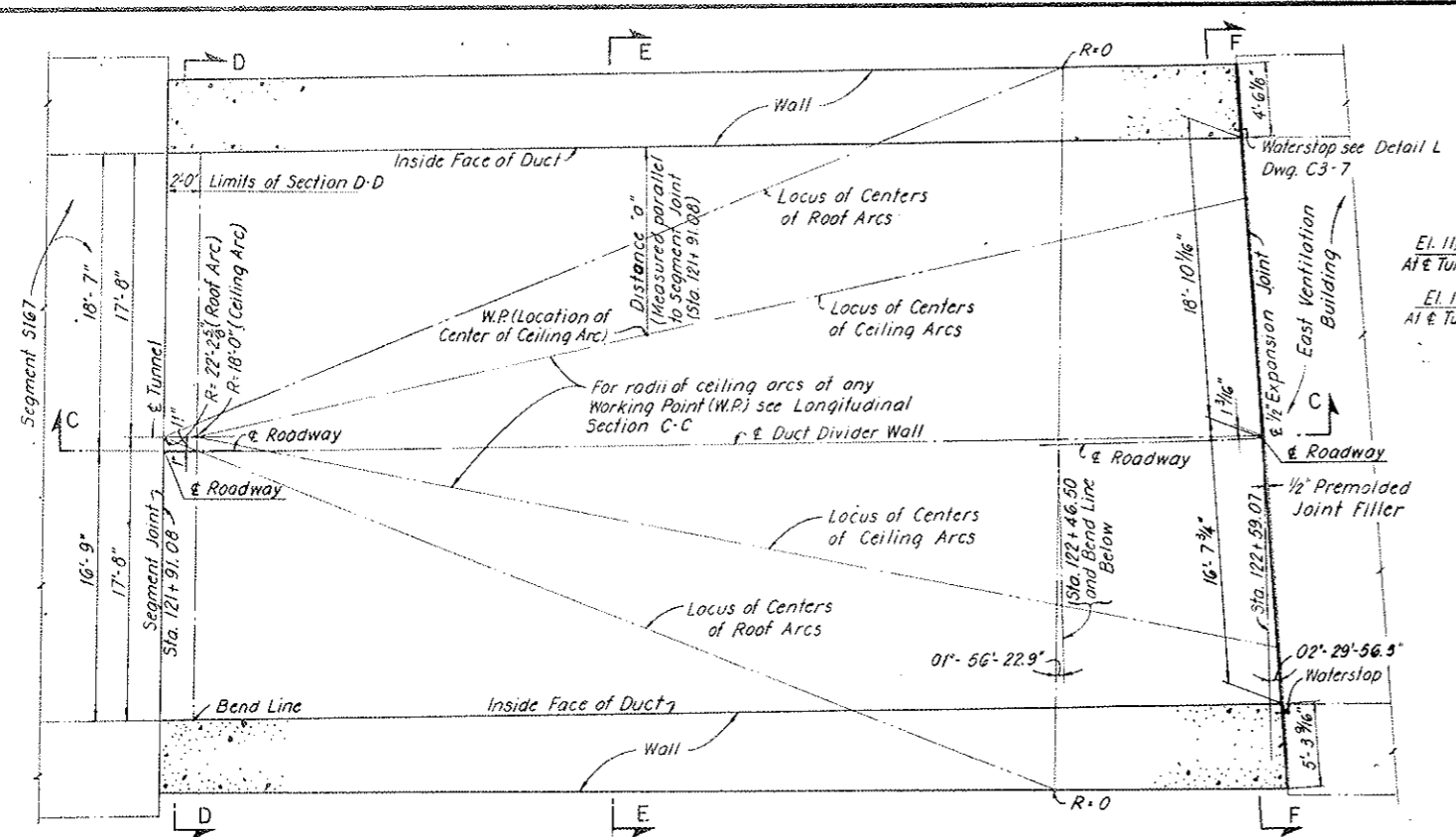
CLOSURE DETAIL
 SCALE: 1" = 2"

HANGER ROD DETAIL
 SCALE: 1" = 2"

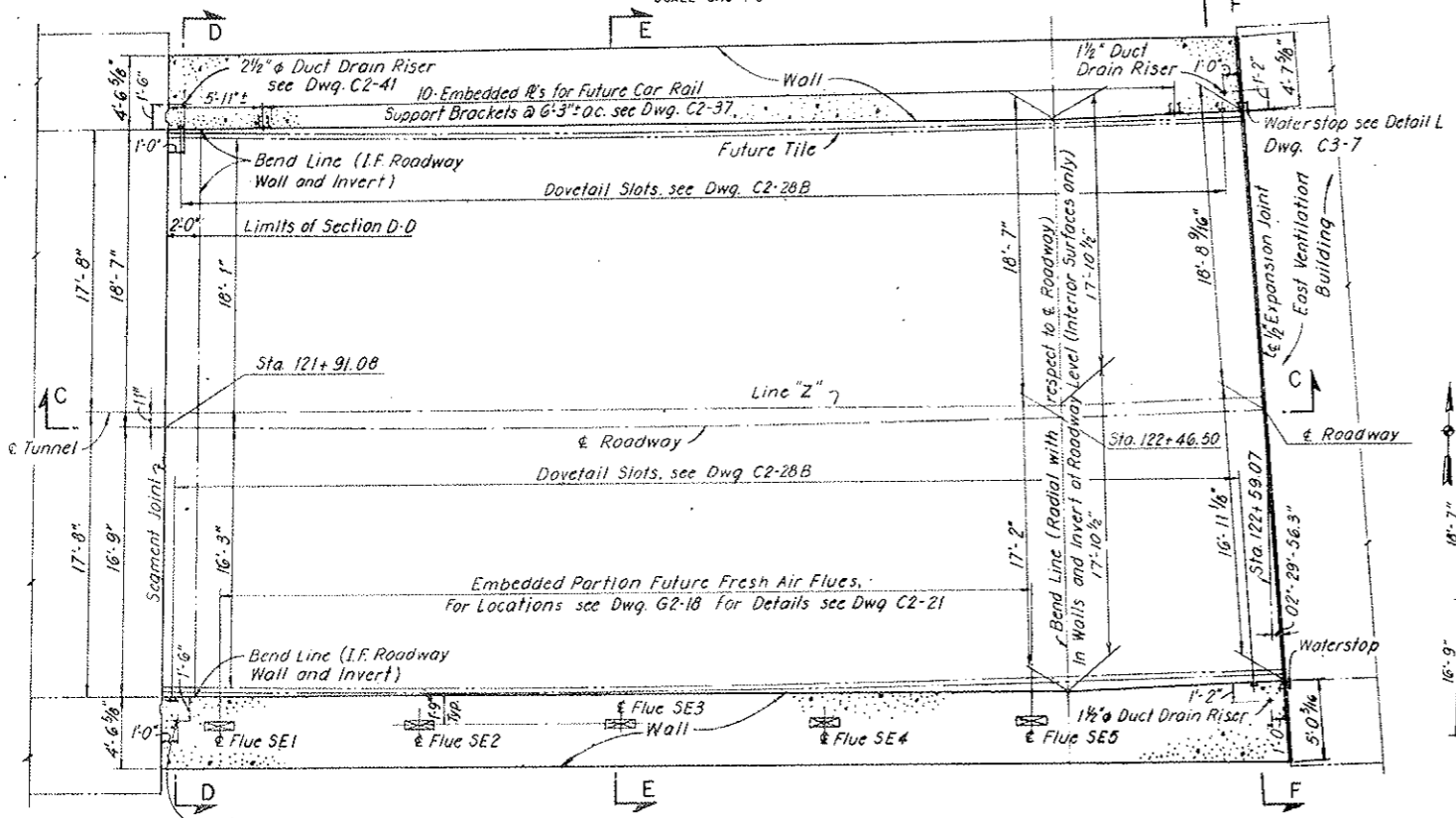
NOTES:
 1. USE LOCTITE ON ALL THREADED CONNECTIONS

STATE OF COLORADO
 DIVISION OF HIGHWAYS
 PREPARED BY: STRAIGHT CREEK CONSTRUCTORS
 N.E. TRANSITION P.E. CEILING DETAILS
 DATE: 8-29-72
 DRAWING NUMBER: C3-7C

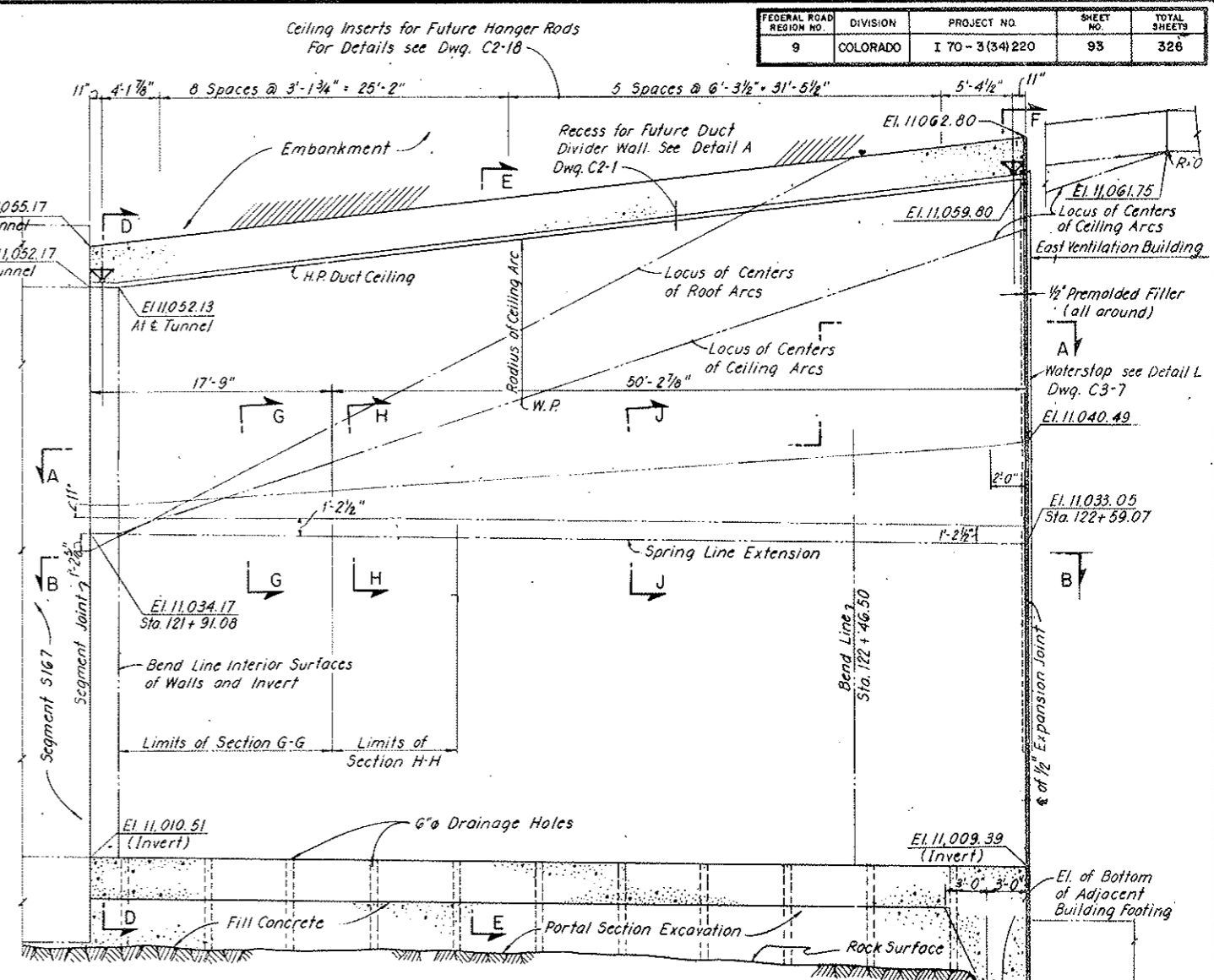
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	93	326



SECTIONAL PLAN A-A
(ABOVE DUCT FLOOR)
SCALE: 3/16" = 1'-0"



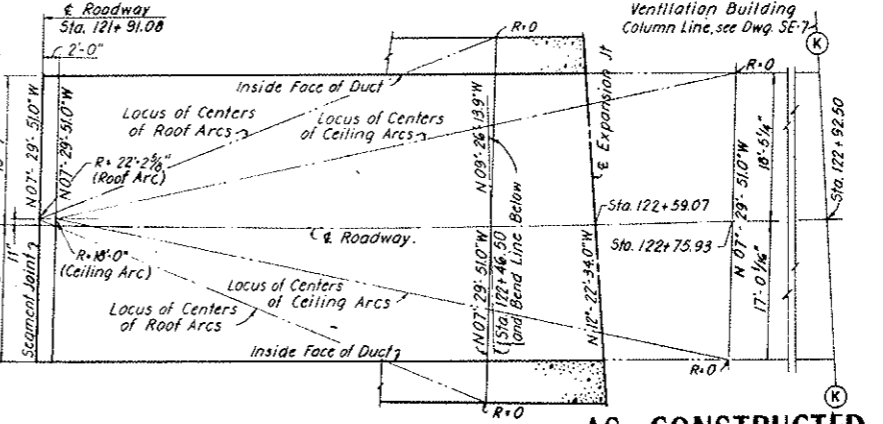
SECTIONAL PLAN B-B
(BELOW ROADWAY CEILING)
SCALE: 3/16" = 1'-0"



LONGITUDINAL SECTION C-C
SCALE: 3/16" = 1'-0"

Note: Section C-C is taken at & of Duct Divider Wall above Duct Floor and at & of Roadway below Duct Floor.

NOTES:
For General Concrete Notes see Dwg. C2-11.
For alignment and profiles see Dwg. G2-9.
For steel reinforcement details see Dwg. C1-8.
Segment Joint and Expansion Joint to be set vertically.
Segment Joint in radial direction relative to & Roadway.
Line "Z" bisects the distance between the tunnel walls below the roadway ceiling.
Concrete Invert to be constructed on a straight line vertically to the elevations given at each end of the Transition Segment.
Work this drawing with Dwg. C3-9.



KEY PLAN
SCALE: 3/32" = 1'-0"

AS CONSTRUCTED
REVISED DATE
0-7-26, 1973

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL - EAST PORTAL SECTION
SOUTH TRANSITION SEGMENT
PLANS AND LONGITUDINAL SECTION

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.V.P. - D.A.
DRAWN: E.G.P.
CHECKED: D.A. - A.Z.E.
APPROVED: *[Signature]*
NEW YORK, N. Y.

RECOMMENDED: *[Signature]*
APPROVED: *[Signature]*

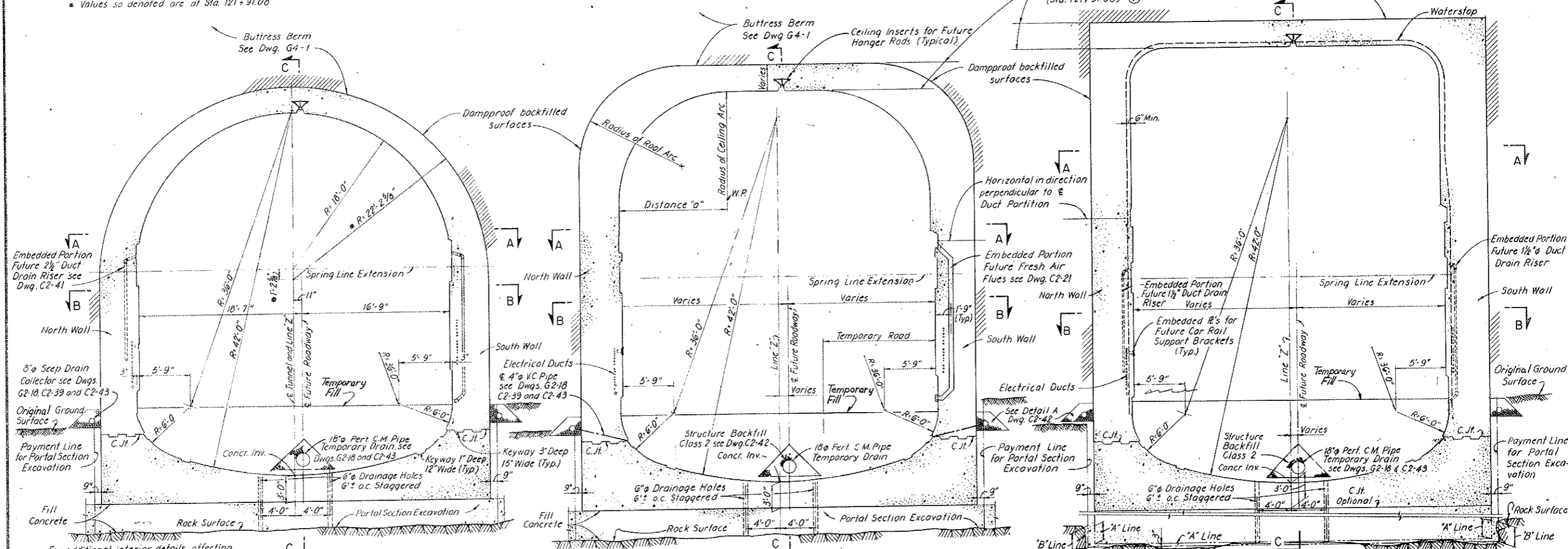
SCALE: AS NOTED DATE: AUGUST 1967

DRAWING NO. C3-8

AS CONSTRUCTED
REVISED DATE **OCT 26, 1973**

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	94	326

* Values so denoted are at Sta. 121+91.08



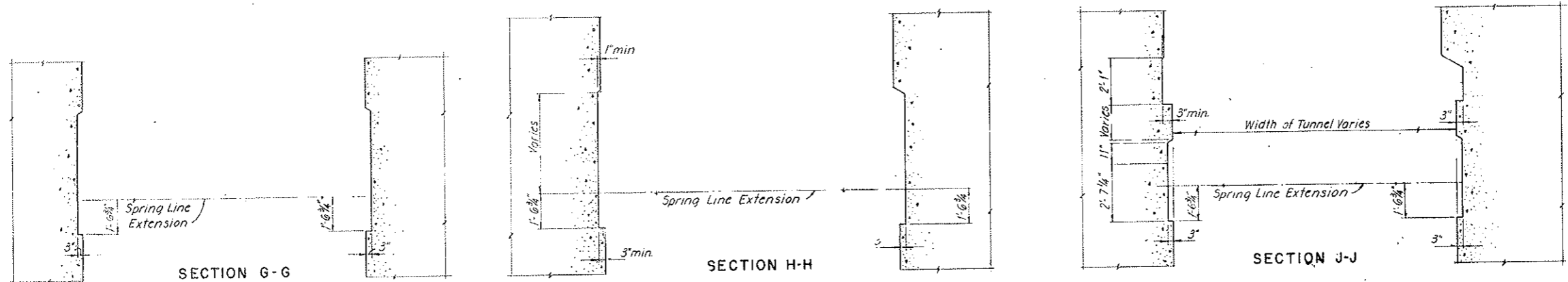
For additional interior details affecting present construction, and not shown on this Section, see Dwg. C2-1

SECTION D-D
 SCALE 3/16" = 1'-0"

SECTION E-E
 SCALE 3/16" = 1'-0"

SECTION F-F
 SCALE 3/16" = 1'-0"

NOTES:
 Embedded portions of future flues to be set in a direction perpendicular to the Spring Line Extension. See Detail A Dwg G2-16.
 Paint exposed surfaces of embedded portions of future flues with bituminous mastic.
 Provide 3" timber protection for embedded portions of future flues at the bottom, to 6" above level of temporary road, as required.
 Paint exposed surfaces of embedded plates for future car rail support brackets with bituminous mastic.
 Work this drawing with Dwg. C3-8



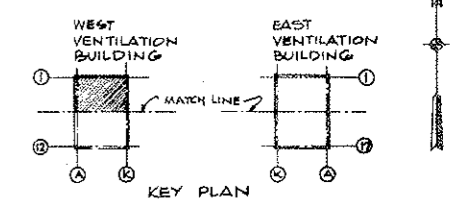
WALL BLOCKOUTS FOR FUTURE CONSTRUCTION
 SCALE 3/8" = 1'-0"

① 1/4" hole added on Sections E-E & F-F. D.H. C.H. added on Sect. F-F. E.G.P. A.Z.E. S.M.R.

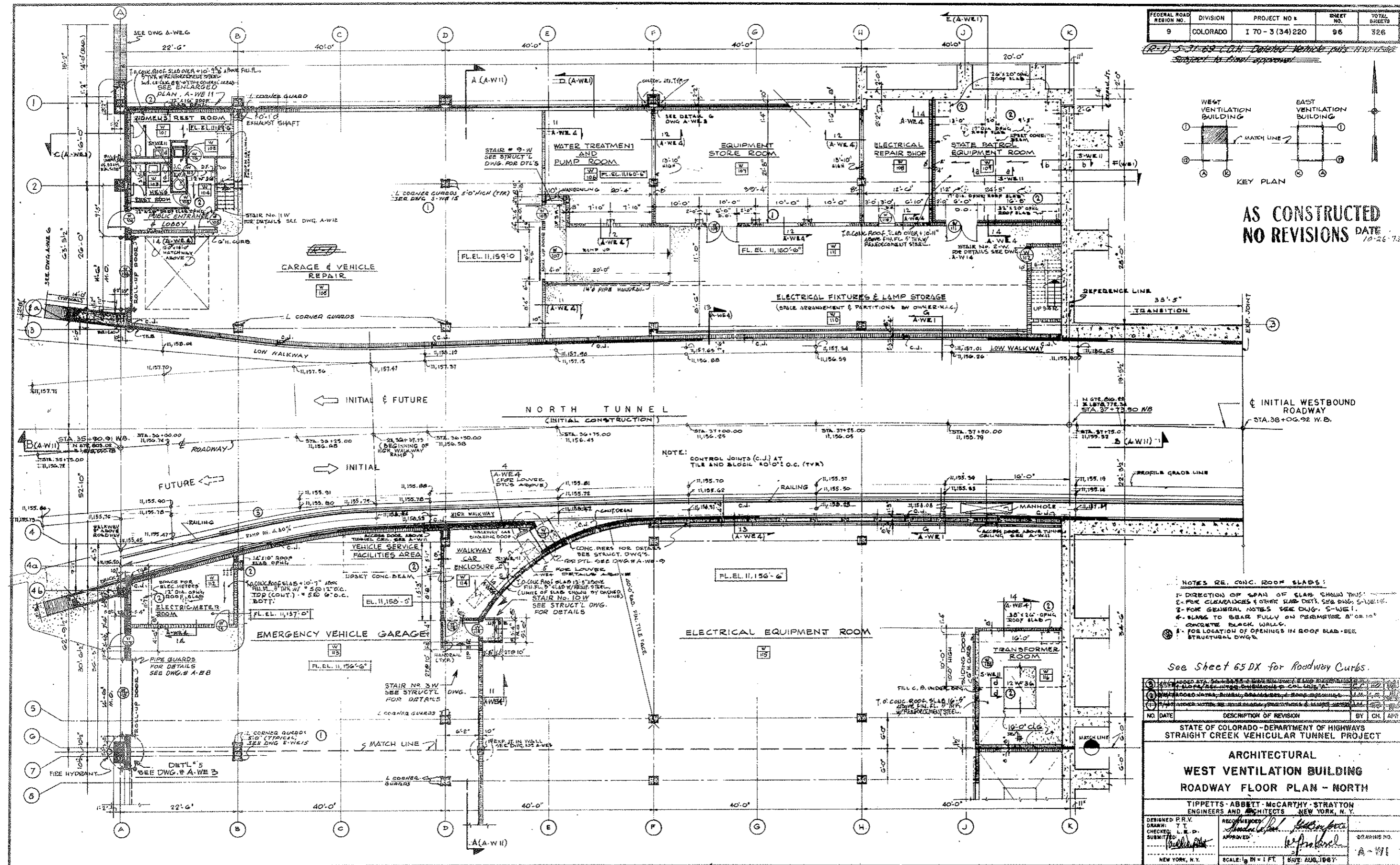
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION SOUTH TRANSITION SEGMENT CROSS SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: P.V.P. - D.A.	RECOMMENDED:				
DRAWN: E.G.P.	Checked: <i>[Signature]</i>				
CHECKED: D.A. - A.Z.E.	APPROVED:				
SUBMITTED: <i>[Signature]</i>					
DATE: 8/1/73	SCALE: AS NOTED	DATE: AUGUST 1967	DRAWING NO. C3-9		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO &	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	96	326

(P-1) 5-31-69 C.H. Deleted Vehicle parts 11/10/72
Subject to final approval



AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



- NOTES RE. CONC. ROOF SLABS:
- 1- DIRECTION OF SPAN OF SLAB SHOWN THIS WAY
 - 2- FOR CLEARANCES & OTHER SLAB DETS. SEE DWG. S-W-E-1
 - 3- FOR GENERAL NOTES SEE DWG. S-W-E-1
 - 4- SLABS TO BEAR FULLY ON PERIMETER 8" OR 10" CONCRETE BLOCK WALLS
 - 5- FOR LOCATION OF OPENINGS IN ROOF SLAB - SEE STRUCTURAL DWG.

See Sheet 65 DX for Roadway Curbs.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1					
2					
3					
4					

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST VENTILATION BUILDING
ROADWAY FLOOR PLAN - NORTH

TIPPETTS-ABBETT-McCARTHY-STAYTON
ENGINEERS AND ARCHITECTS
NEW YORK, N.Y.

DESIGNED P.R.V.
DRAWN: T.T.
CHECKED: L.E.D.
SUBMITTED: [Signature]
NEW YORK, N.Y.

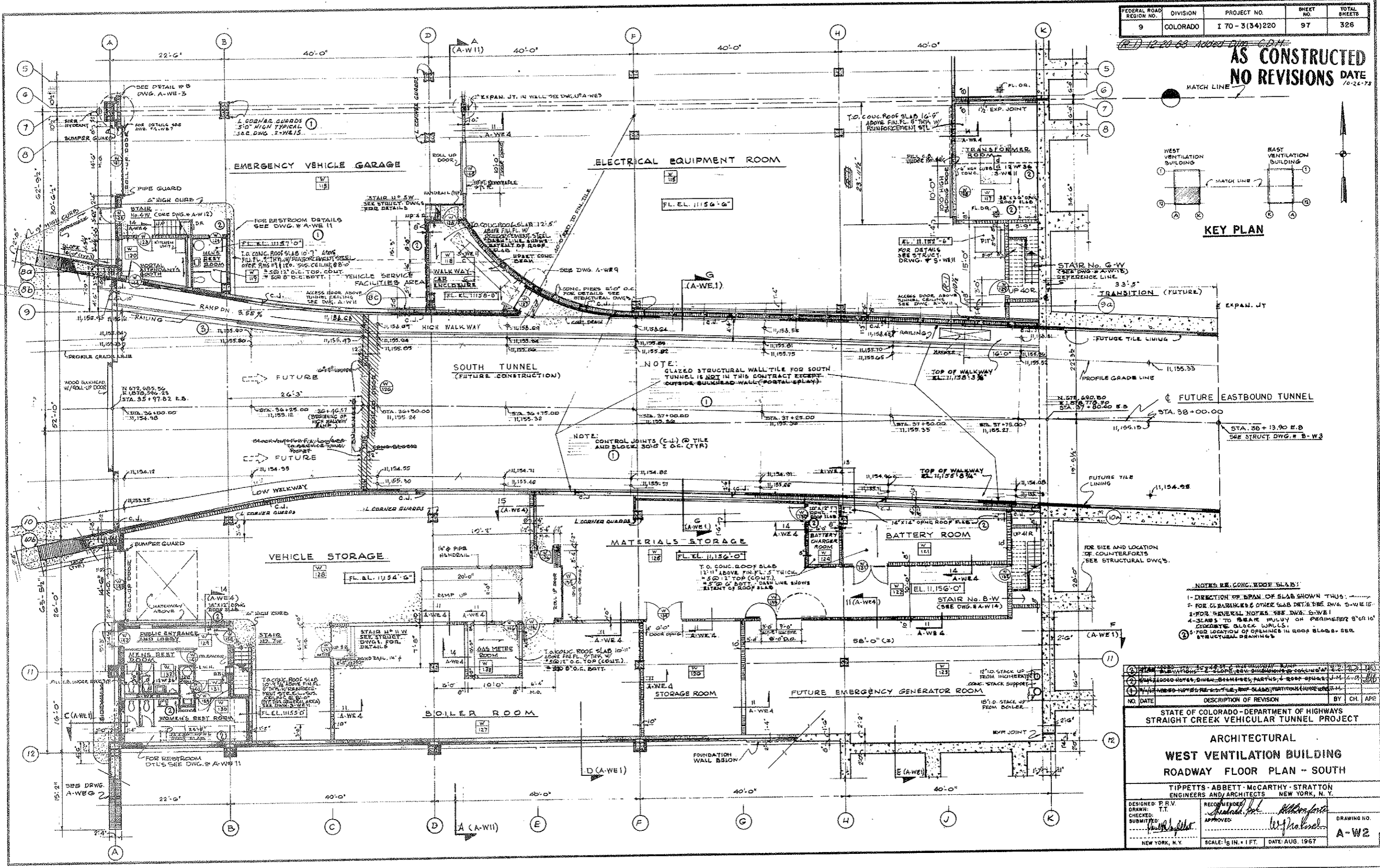
REVISIONS: [Signature]
APPROVED: [Signature]
DATE: [Signature]
SCALE: 1/8" = 1' FT. DATE: AUG. 1967

DRAWING NO. A-W-1

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	97	328

12-20-68 Added Dim. C.D.H.

**AS CONSTRUCTED
NO REVISIONS DATE**
10-26-73



STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**ARCHITECTURAL
WEST VENTILATION BUILDING
ROADWAY FLOOR PLAN - SOUTH**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.B.V.
DRAWN: T.T.
CHECKED: [Signature]
SUBMITTED: [Signature]
APPROVED: [Signature]

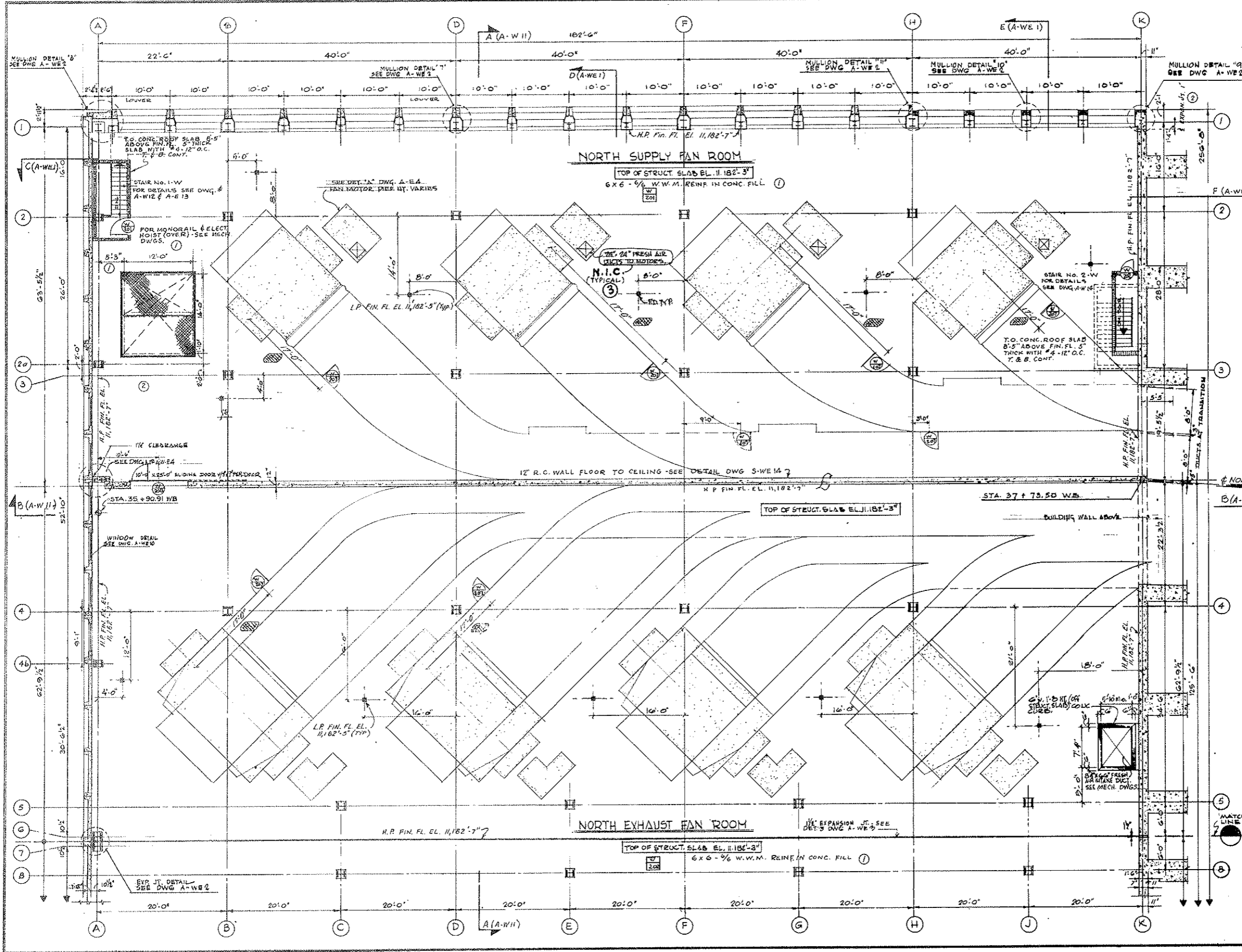
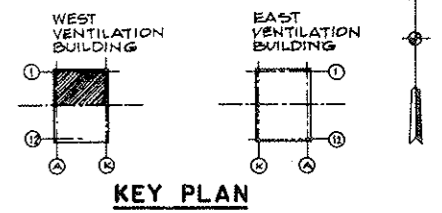
SCALE: 1/8" = 1' FT. DATE: AUG. 1967

DRAWING NO. A-W2

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	98	326

Rev. 10-26-73
 Subject to final approval

AS CONSTRUCTED
REVISED DATE 10-26-73



NOTE A:
 TUNNEL VENTILATION SYSTEM (BID ITEM 105)
 REVISED SEE W.O. 14153 & SPEC. 11-A
 SEE MECHANICAL DWGS FOR CONTRACT BIDDING

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		IDENTIFIED N.I.C. ITEMS - SEE NOTE A	C.C.	J.S.	
2		ADDED EXPAN. JOINTS AND OMITTED NOTES	J.M.	J.S.	
3		ADDED REIN. IN CONC. FILL & MISC. NOTES & DIMEN.	J.M.	J.S.	

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST VENTILATION BUILDING
FAN ROOM FLOOR PLAN - NORTH

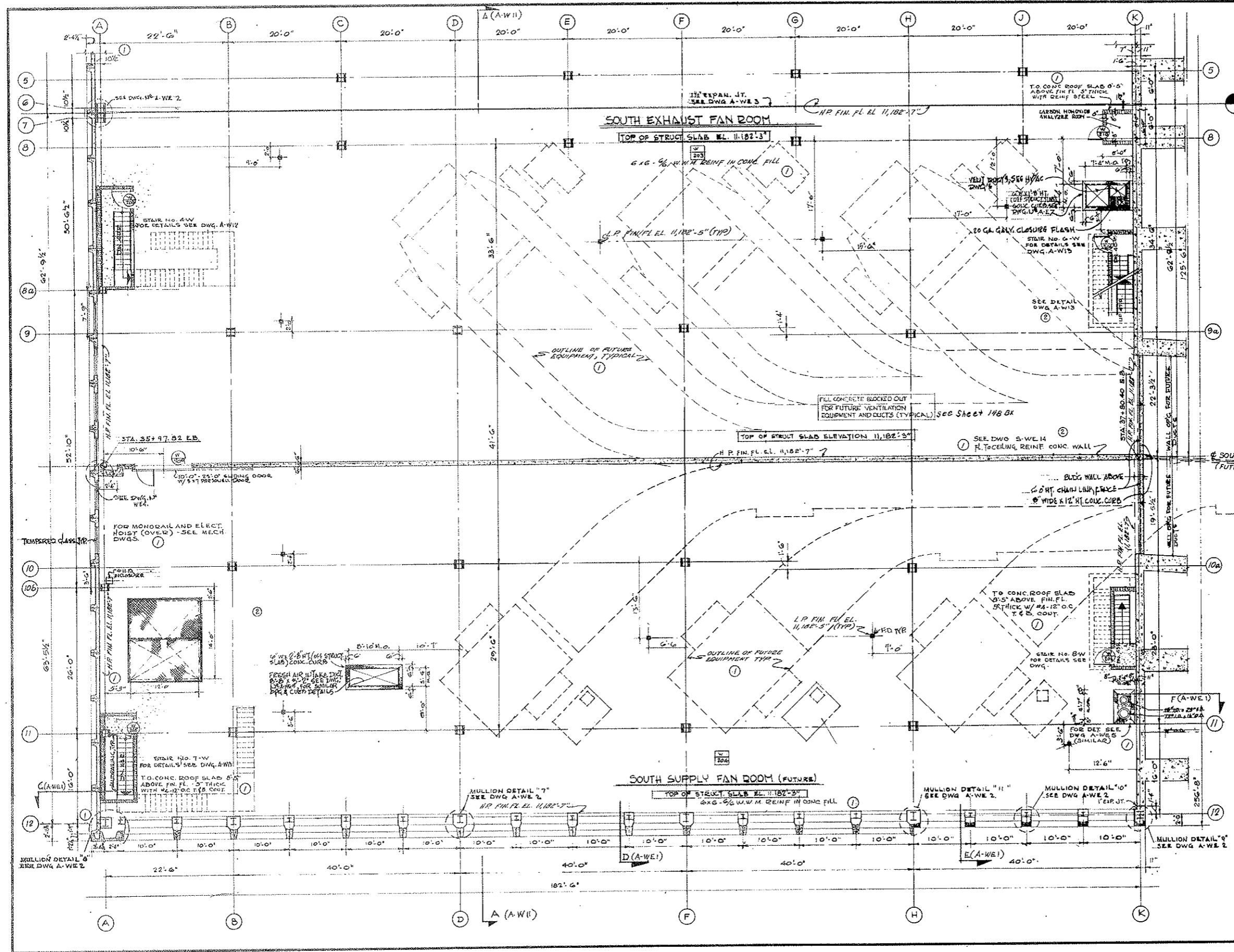
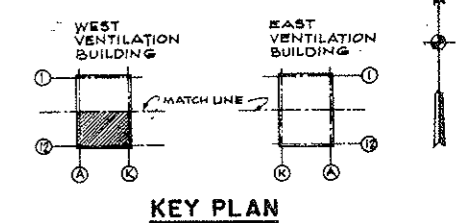
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.R.V.	CHECKED: T.T.	RECOMMENDED: [Signature]
DRAWN: [Signature]	SUBMITTED: [Signature]	APPROVED: [Signature]

NEW YORK, N.Y. SCALE: 1/8" = 1'-0" DATE: AUG. 1967 DRAWING NO. **A-W3**

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	99	326

AS CONSTRUCTED
NO REVISIONS DATE 10-21-75



See Sheet 149 BX for Fan Duct Blockouts

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST VENTILATION BUILDING
FAN ROOM FLOOR PLAN - SOUTH

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.R.V.
 DRAWN: T.T.
 CHECKED: [Signature]
 SUBMITTED: [Signature]

RECOMMENDED: [Signature]
 APPROVED: [Signature]

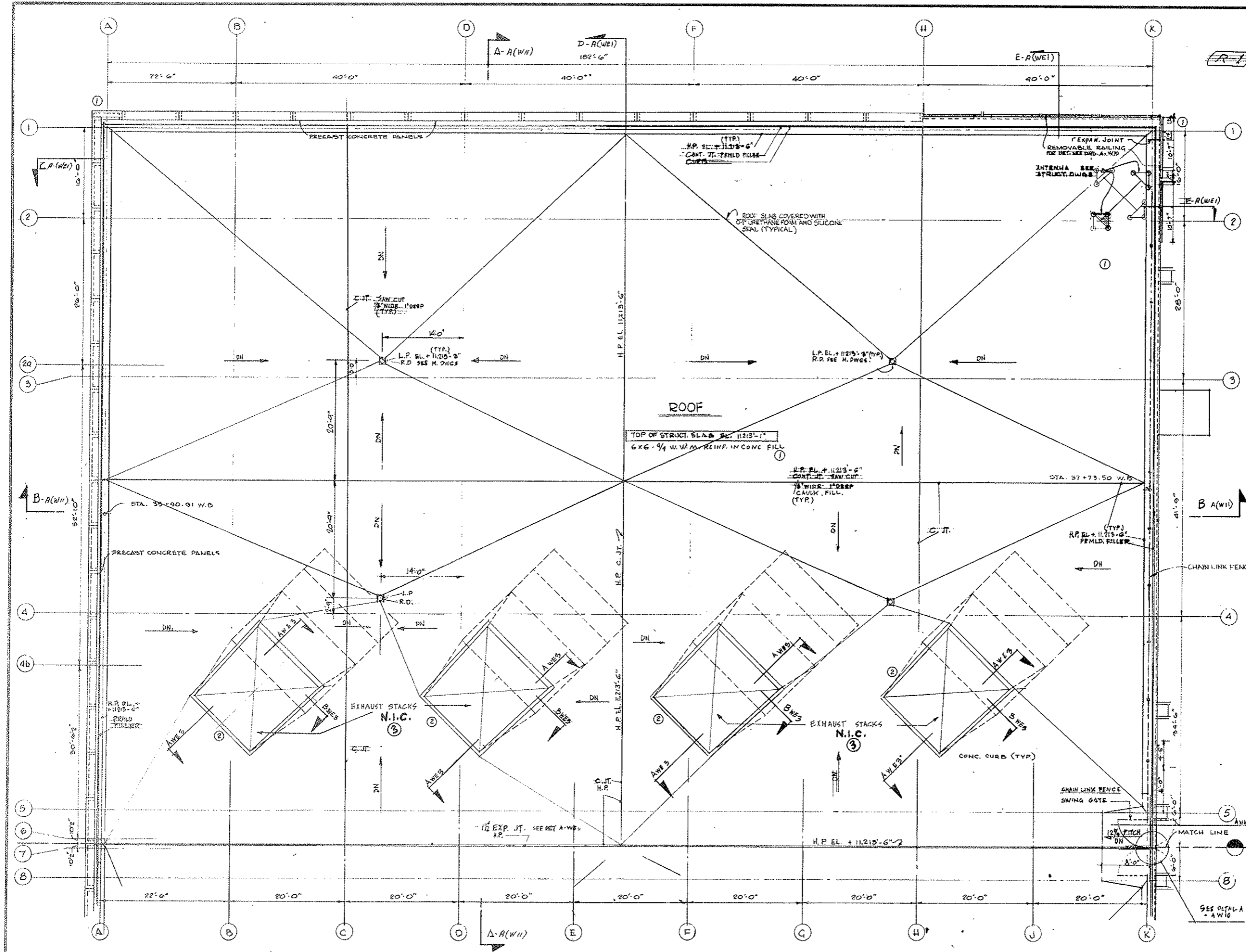
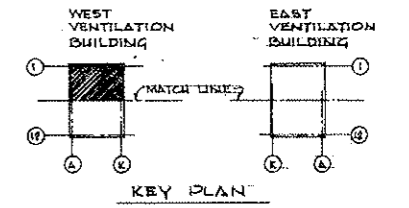
NEW YORK, N.Y. SCALE: 1/8 IN. = 1 FT. DATE: AUG., 1987

DRAWING NO. **A-W4**

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3 (34) 220	100	328

Rev 11-6-67 C.D.H. Add note at bottom

AS CONSTRUCTED
REVISED DATE



NOTE A:
TUNNEL VENTILATION SYSTEM (BID ITEM 105)
REVISED SEE W.D. 14153 & SPEC. H.A. SEE
ADDITIONAL DWGS. FOR COVERAGE LIMITS.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.
1		IDENTIFIED N.I.C. ITEMS - SEE NOTE A.		
2		OMITTED CURBS - REV. ROOF PITCHES		
3		REINFORCED CONCRETE FILL - RESEATED EXHAUST STACKS		

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST VENTILATION BUILDING
ROOF PLAN - NORTH

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED BY: P.V.
DRAWN BY: M.G.
CHECKED BY: [Signature]
SUBMITTED BY: [Signature]

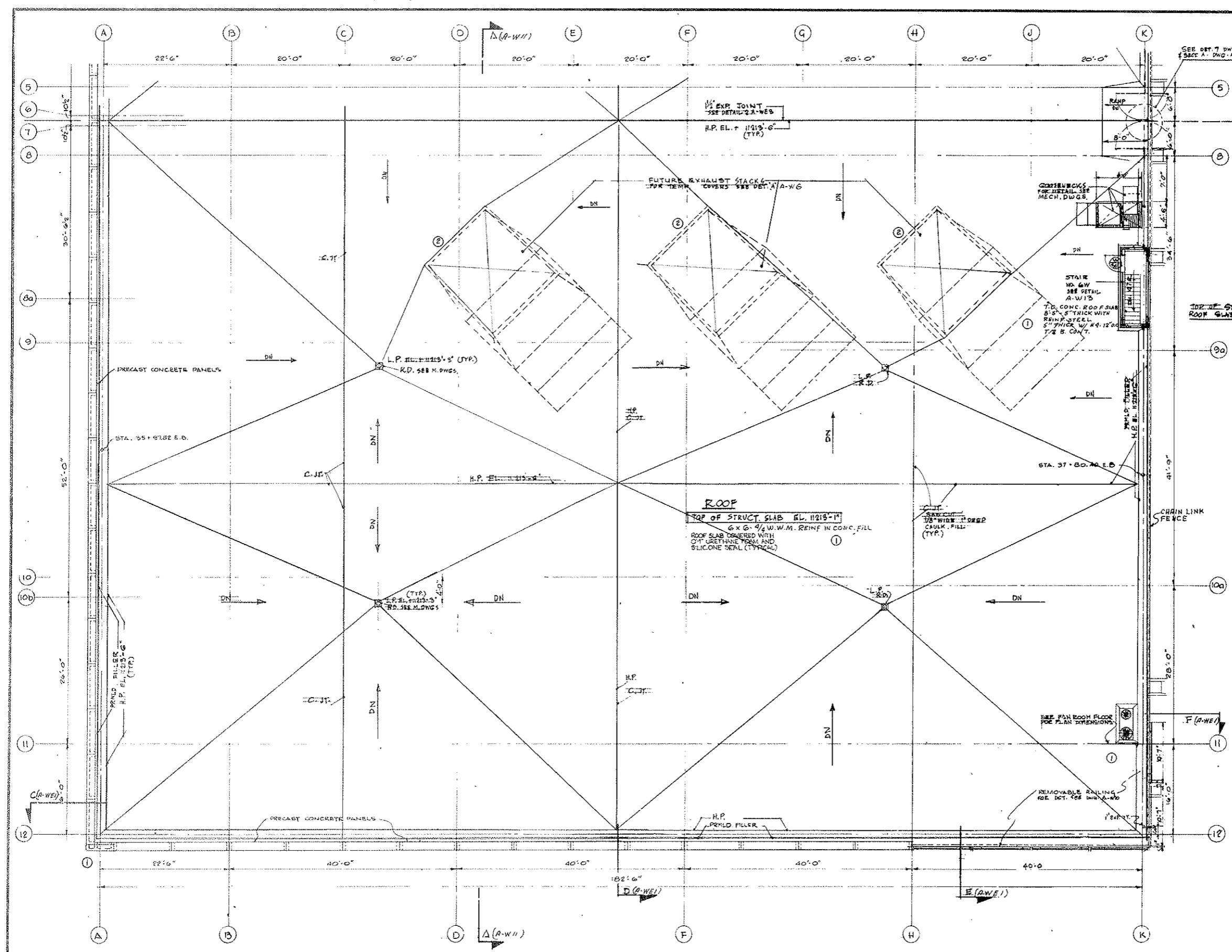
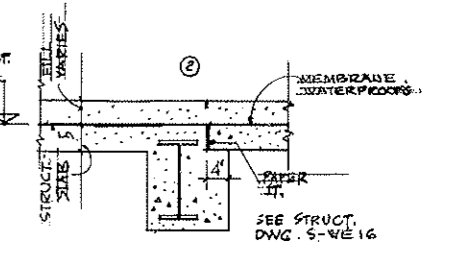
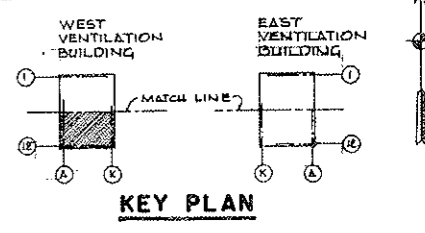
RECOMMENDED BY: [Signature]
APPROVED BY: [Signature]

NEW YORK, N. Y. SCALE: 1/8" = 1'-0" DATE: AUG. 1967

(R-1) TUNNEL VENTILATION SYSTEM REV. W.D. 14153, SEE SPEC. # 17A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	101	326

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

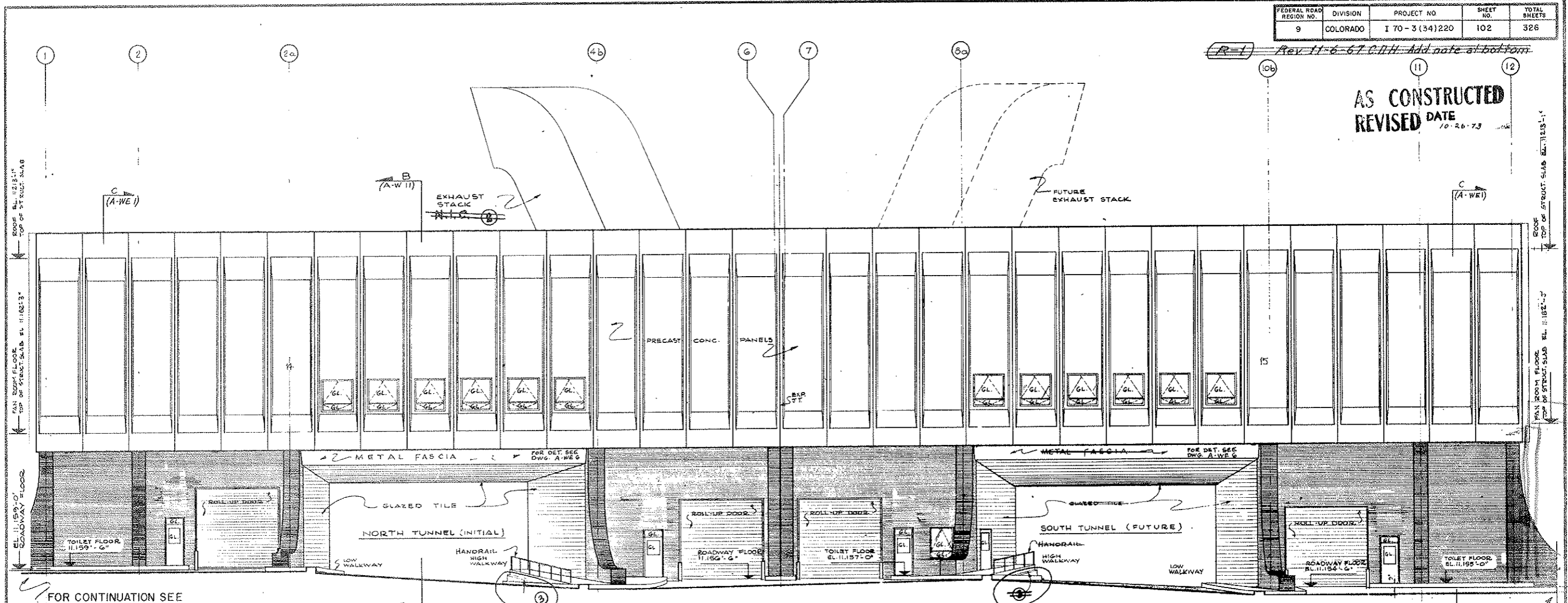


DESIGNED: P.R.V.	CHECKED: M.Q.	DRAWING NO.	A-WE
SUBMITTED: [Signature]		APPROVED: [Signature]	DATE: AUG. 1967
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
ARCHITECTURAL WEST VENTILATION BUILDING ROOF PLAN - SOUTH			
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	102	326

Rev 11-6-67 C.I.H. Add note at bottom

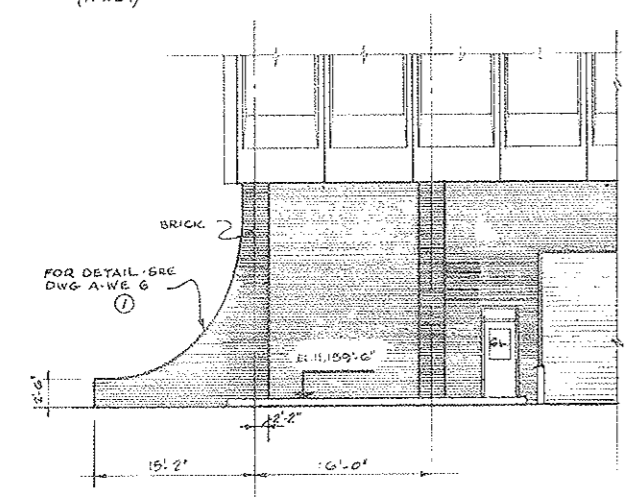
AS CONSTRUCTED
REVISED DATE 10-26-73



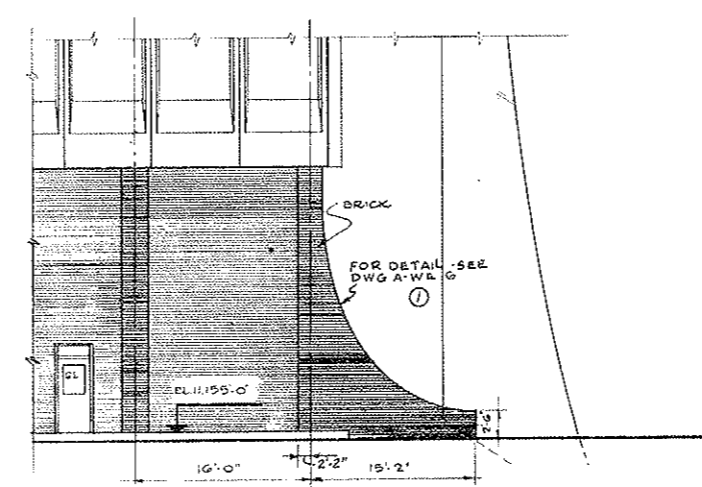
FOR CONTINUATION SEE PART. ELEV. A.

FOR CONTINUATION SEE PART. ELEV. B.

WEST ELEVATION



PART. ELEV. A.



PART. ELEV. B.

NOTE:
 ALL EXTERIOR GLAZING TO BE LAMINATED SAFETY GLASS

NOTE A:
 TUNNEL VENTILATION SYSTEM (BID ITEM 105)
 REVISED SEE W.O. 14153-C SPEC. 7A - SEE MECHANICAL DWGS. FOR CONTRACT LIMITS

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.
1		REVISED HIGH WALKWAY CURBS		
2		REVISIONS - N.O. ITEMS - SEE NOTE A		
3		ADDED NOTES		

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST VENTILATION BUILDING
WEST ELEVATION

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS - NEW YORK, N. Y.

DESIGNED P.R.V.
 DRAWN T.T.
 CHECKED [Signature]
 SUBMITTED [Signature]

RECOMMENDED [Signature]
 APPROVED [Signature]

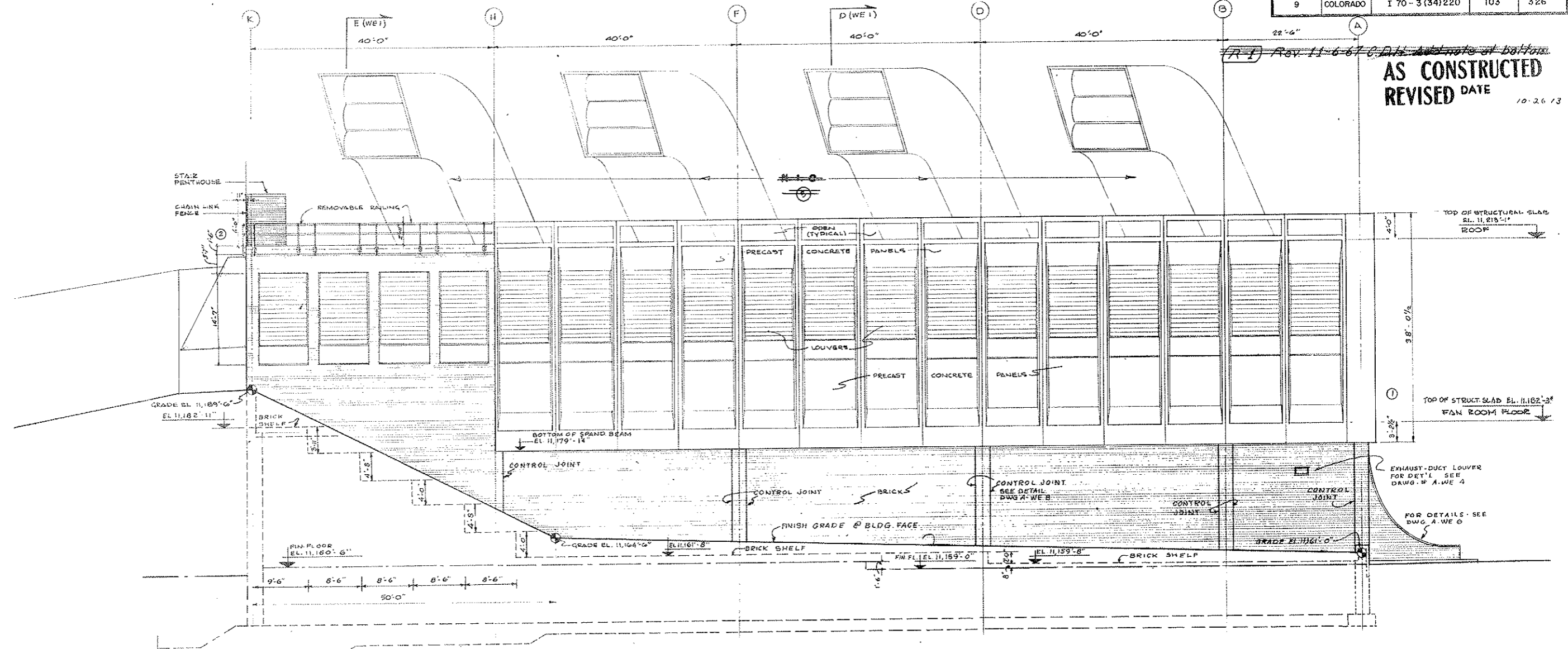
NEW YORK, N.Y. SCALE: 1/8" = 1 FT. DATE: AUG. 1967

DRAWING NO. **A-W7**

Rev 11-6-67 C.I.H. Add note at bottom

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	103	326

AS CONSTRUCTED
REVISED DATE 10-26-13



NORTH ELEVATION

NOTE A
 TUNNEL VENTILATION SYSTEM (BID ITEM 105)
~~REVISED SEE W.O. 14153 & SPEC. # 17A~~
~~SEE MECH. DWGS. FOR CONTRACT LIMITS.~~

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST VENTILATION BUILDING
NORTH ELEVATION

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS
 NEW YORK, N. Y.

DESIGNED: PRV
 DRAWN: M.G.
 CHECKED: [Signature]
 SUBMITTED: [Signature]

RECOMMENDED: [Signature]
 APPROVED: [Signature]

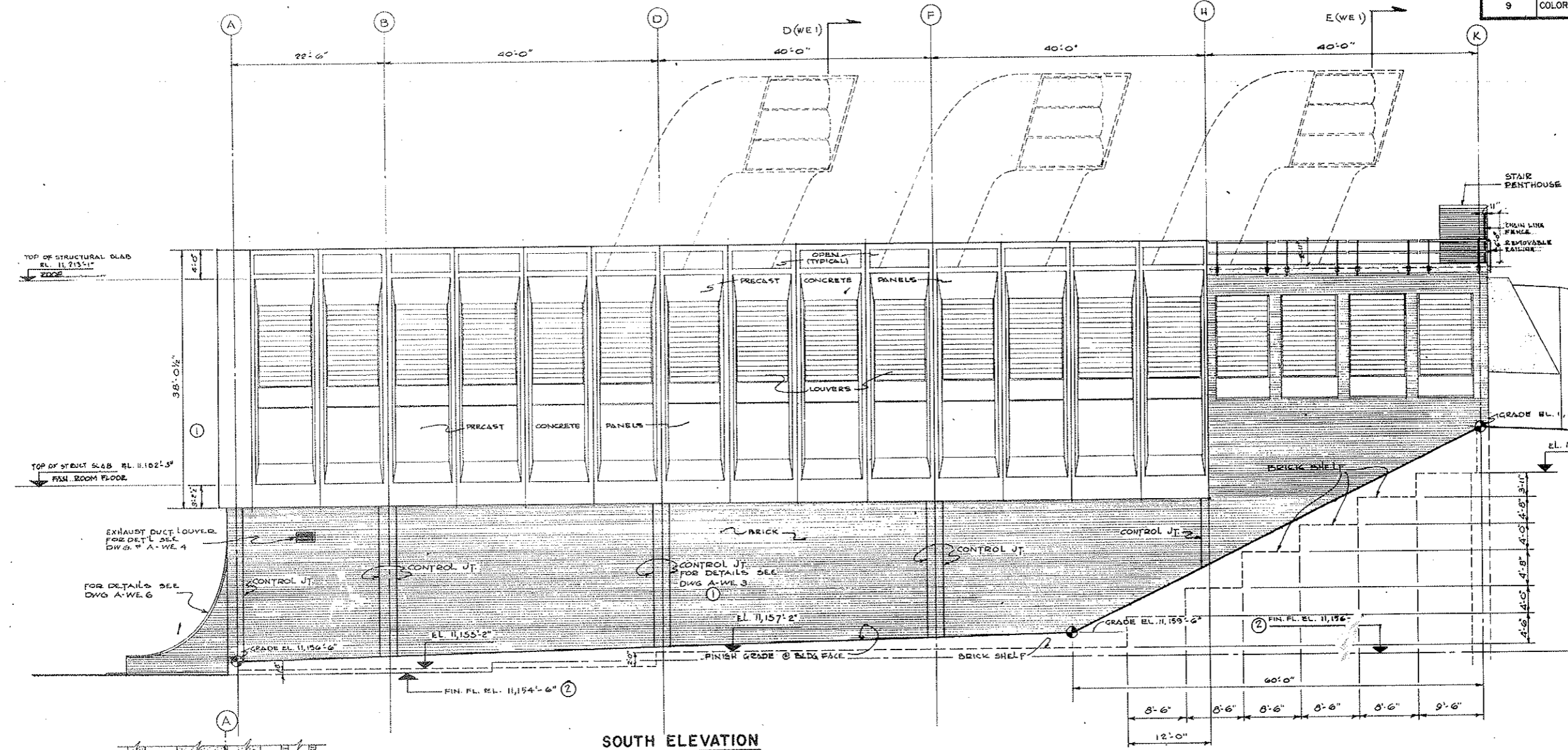
DATE: AUG. 1967
 SCALE: 1/8" = 1'-0"
 NEW YORK, N. Y.

DRAWING NO.
A-W8

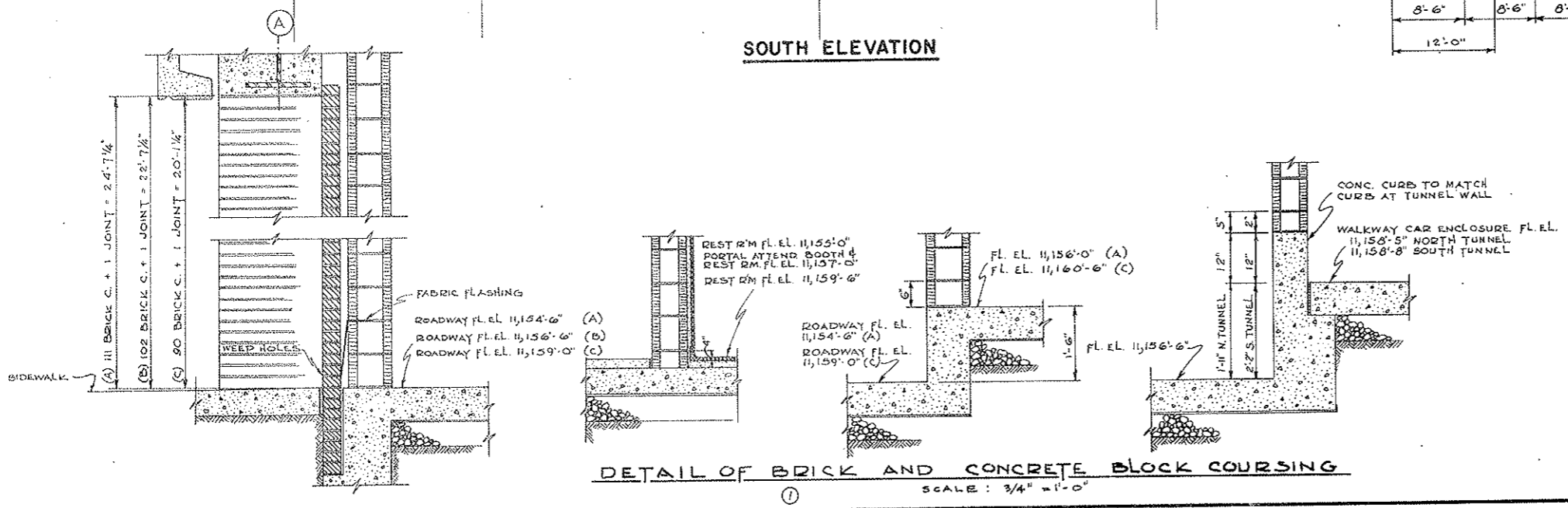
~~(R-1) TUNNEL VENTILATION SYSTEM REV. W.O. 14153, SEE SPEC. # 17A~~

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	104	326

AS CONSTRUCTED
NO REVISIONS DATE 10-26-75



SOUTH ELEVATION



DETAIL OF BRICK AND CONCRETE BLOCK COURSING
 SCALE: 3/4" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST VENTILATION BUILDING
SOUTH ELEVATION

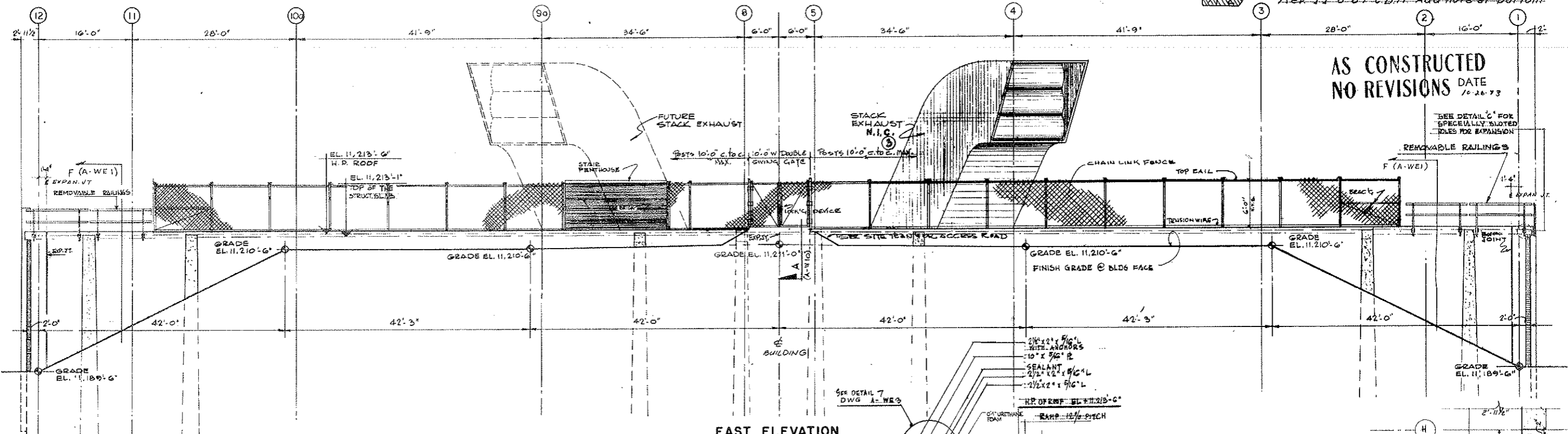
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: PRV	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. A-W9
DRAWN: M.G.	CHECKED: <i>[Signature]</i>	
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	

NEW YORK, N. Y. SCALE: 8 IN = 1 FT. DATE: AUG. 1967

*Subject to final approval
 9-6-67 C.D.H.
 9-22-69 Rev. Sect. B 7.3-69 *
 5-5-69 C.D.H.
 Rev. Dim. 11-10-68
 Rev. 1-1-6-67 C.D.H. Add note at bottom

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3 (34) 220	105	326



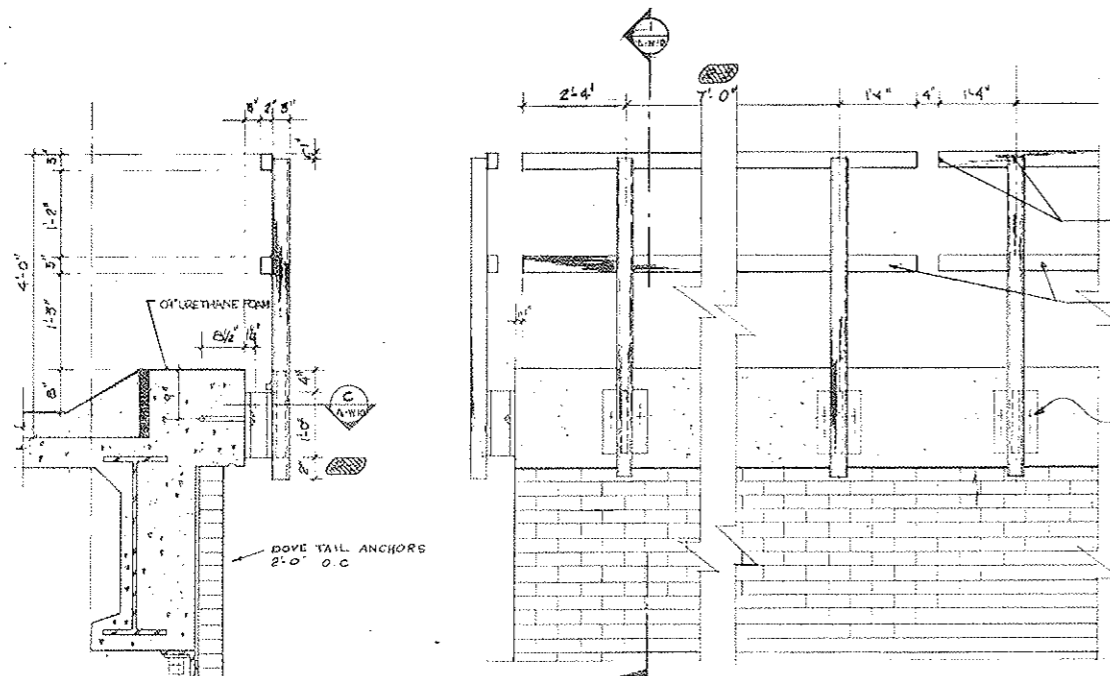
AS CONSTRUCTED
NO REVISIONS
 DATE 10-26-73

SEE DETAIL C FOR SPECIALLY SLOTTED PILES FOR EXPANSION

EAST ELEVATION
 SCALE: 1/8" = 1'-0"

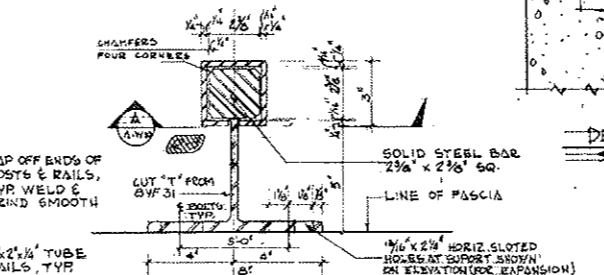
PLAN
REMOVABLE ROOF RAIL
 SCALE: 1/4" = 1'-0"

NOTE:
 TYPICAL FOR OPPOSITE SIDE OF BUILDING, EAST BUILDING SIMILAR

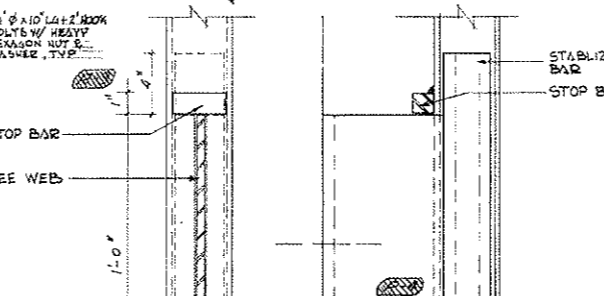


TYPICAL SECT. SCALE: 3/8" = 1'-0"
CORNER ELEV. SCALE: 3/8" = 1'-0"
TYPICAL SIDE ELEV. SCALE: 3/8" = 1'-0"

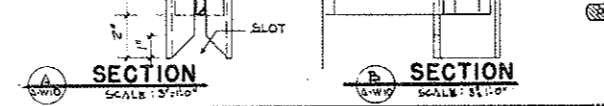
REMOVABLE ROOF HANDRAIL
 SCALE: AS NOTED



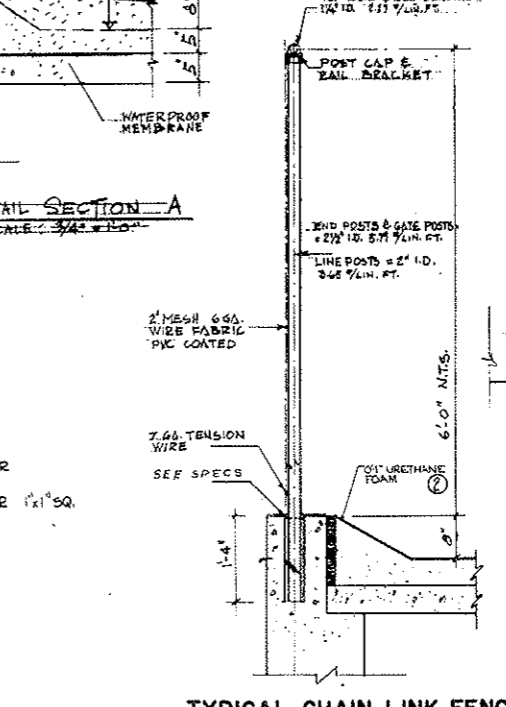
DETAIL SECTION A
 SCALE: 3/4" = 1'-0"



TYPICAL SECTION
 SCALE: 3/4" = 1'-0"



SECTION
 SCALE: 3/4" = 1'-0"

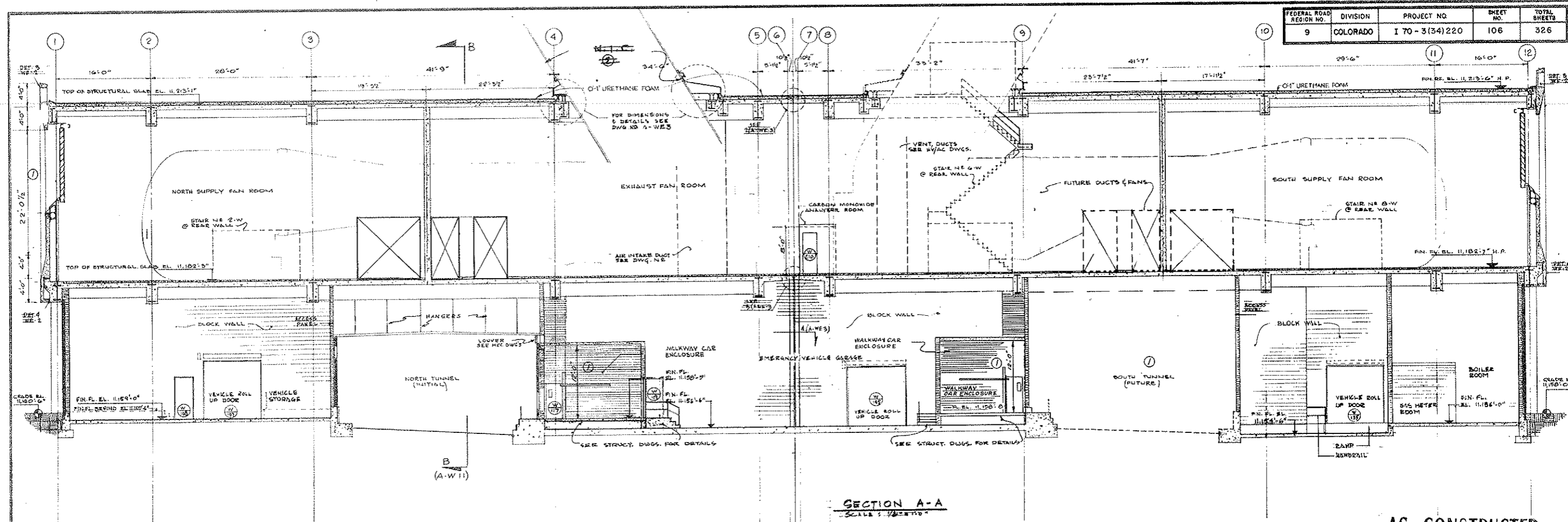


TYPICAL CHAIN LINK FENCE
 SECTION & DETAILS 1/4" = 1'-0"

NOTE:
 1 FOR FURTHER DETAILS: SEE CDH STANDARD DWG. NO. M-607-B (JULY 1, 1965, LATEST REV. 2-6-67)
 NOTE A: TUNNEL VENTILATION SYSTEM (BID ITEM 105) REVISED. SEE W.O. 14153 & SPEC. 17A. SEE MECH. DWGS. FOR CONTRACT LIMITS.

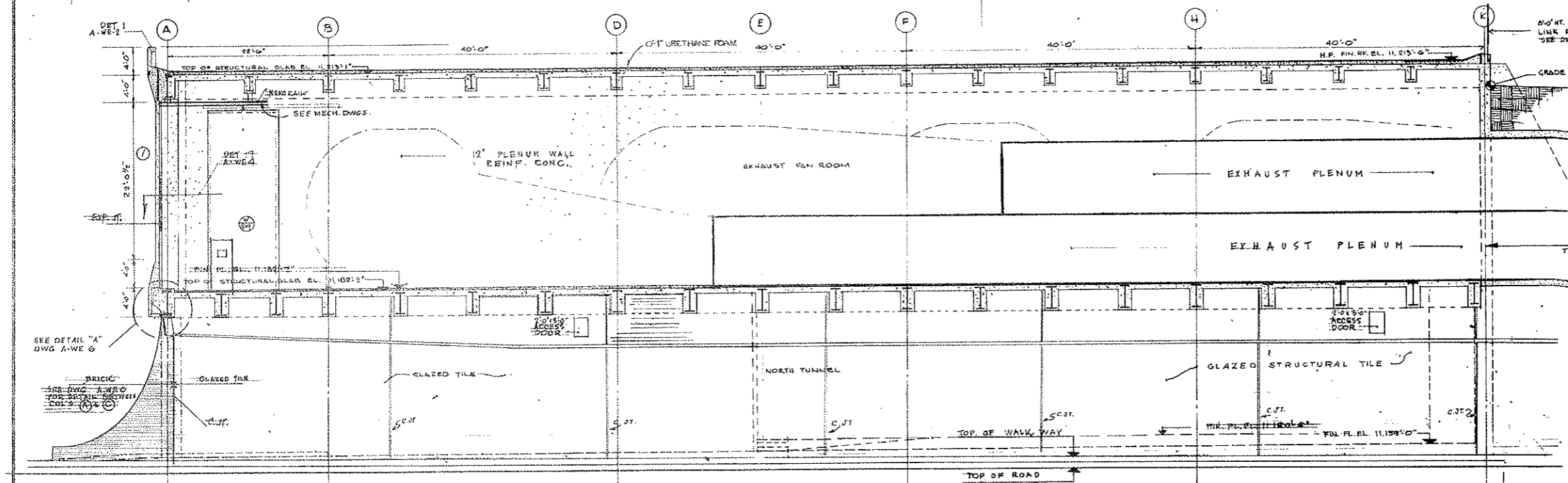
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DRAWN: F.G.	CHECKED: [Signature]	RECOMMENDED: [Signature]	APPROVED: [Signature]
SUBMITTED: [Signature]	CHECKED: [Signature]	RECOMMENDED: [Signature]	APPROVED: [Signature]
NO. DATE	DESCRIPTION OF REVISION	BY	CH. APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
ARCHITECTURAL			
WEST VENTILATION BUILDING			
EAST ELEVATION			
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.			
NEW YORK, N. Y.	SCALE: AS SHOWN	DATE: AUG. 1967	DRAWING NO. A-W10

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	106	326



SECTION A-A
SCALE: 1/8" = 1'-0"

AS CONSTRUCTED
REVISED DATE 10-26-73



SECTION B-B
SCALE: 1/8" = 1'-0"

NOTE A:
TUNNEL VENTILATION SYSTEM
(BID ITEM 105) REVISED
SEE MECH. DWGS. FOR CONTRACT
DETAILS

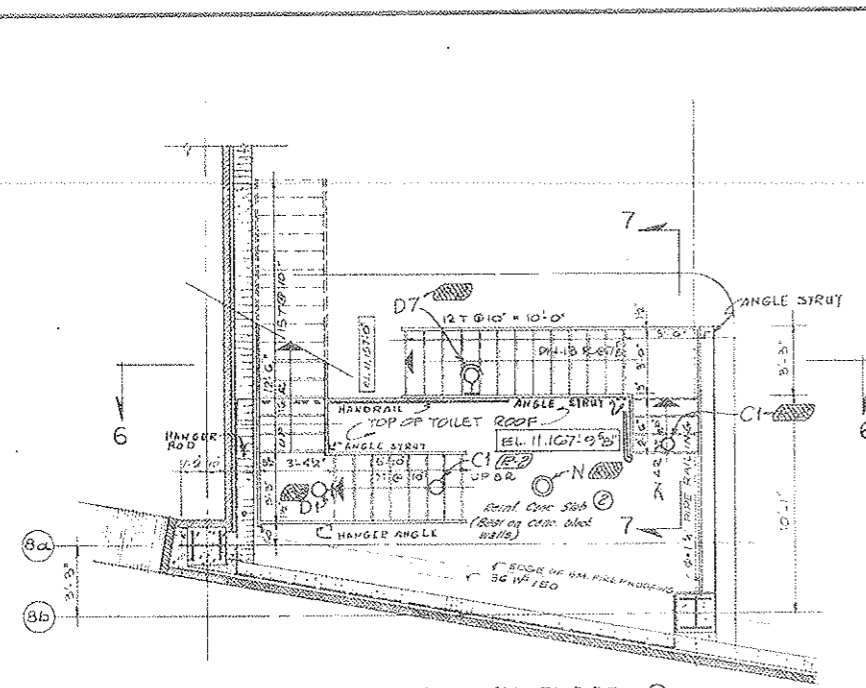
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
ARCHITECTURAL WEST VENTILATION BUILDING BUILDING SECTIONS				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED BY	P.R.V.	RECOMMENDED BY		
DRAWN BY	M.G.	CHECKED BY		
CHECKED BY		APPROVED BY		
NEW YORK, N. Y.		SCALE: 1/8" = 1'-0"	DATE: AUG. 1967	

DRAWING NO.
A-WII

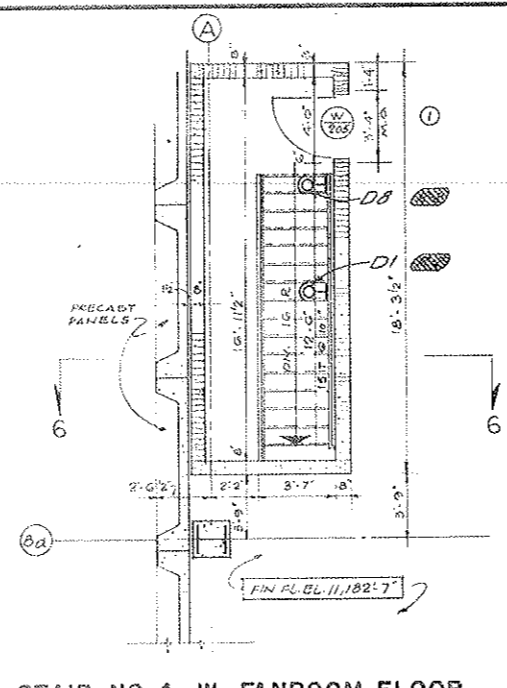
* (10-1) 5-31-69 CDH Additions 4-10-71-85
 * (10-2) 5-31-69 CDH Additions 4-10-71-85
 * Subject to final approval

FEDERAL ROAD REGION NO	DIVISION	PROJECT NO	SHEET NO	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	107	326

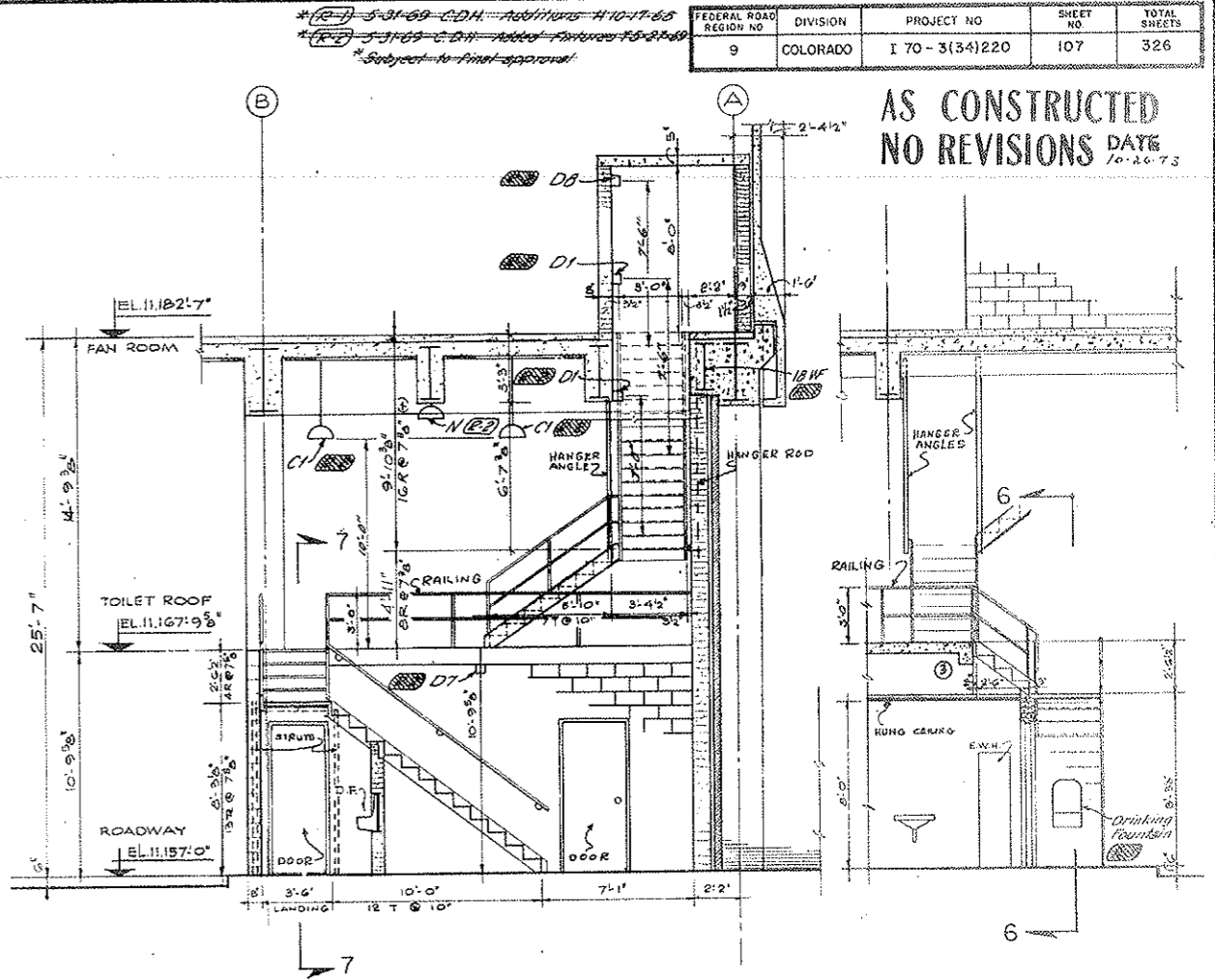
AS CONSTRUCTED
 NO REVISIONS DATE 10-20-73



STAIR NO. 4-W ROADWAY FLOOR ①

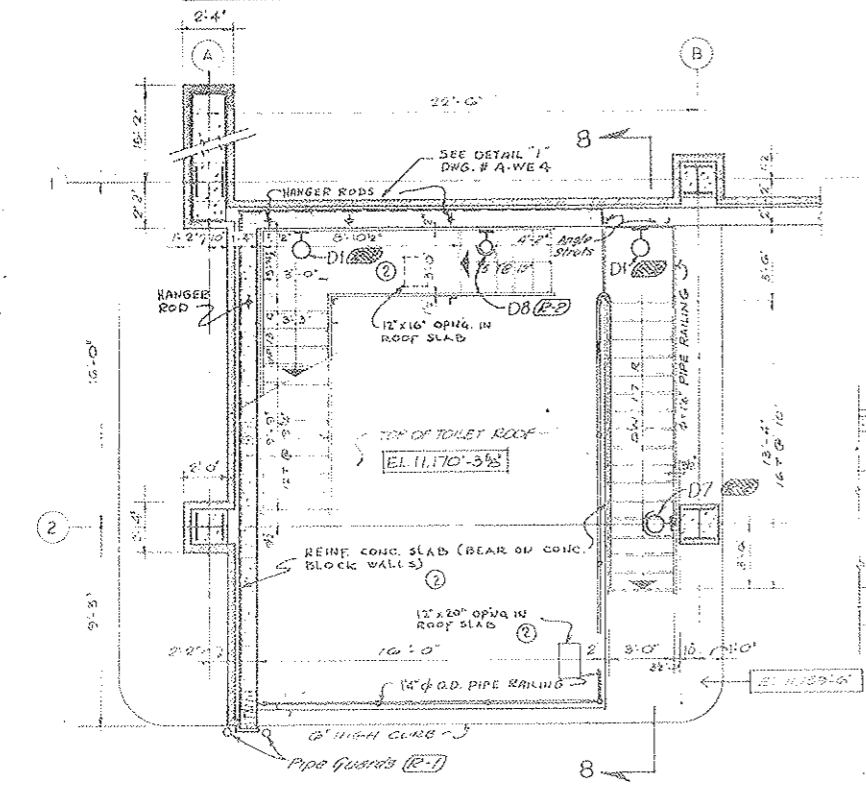


STAIR NO. 4-W FANROOM FLOOR

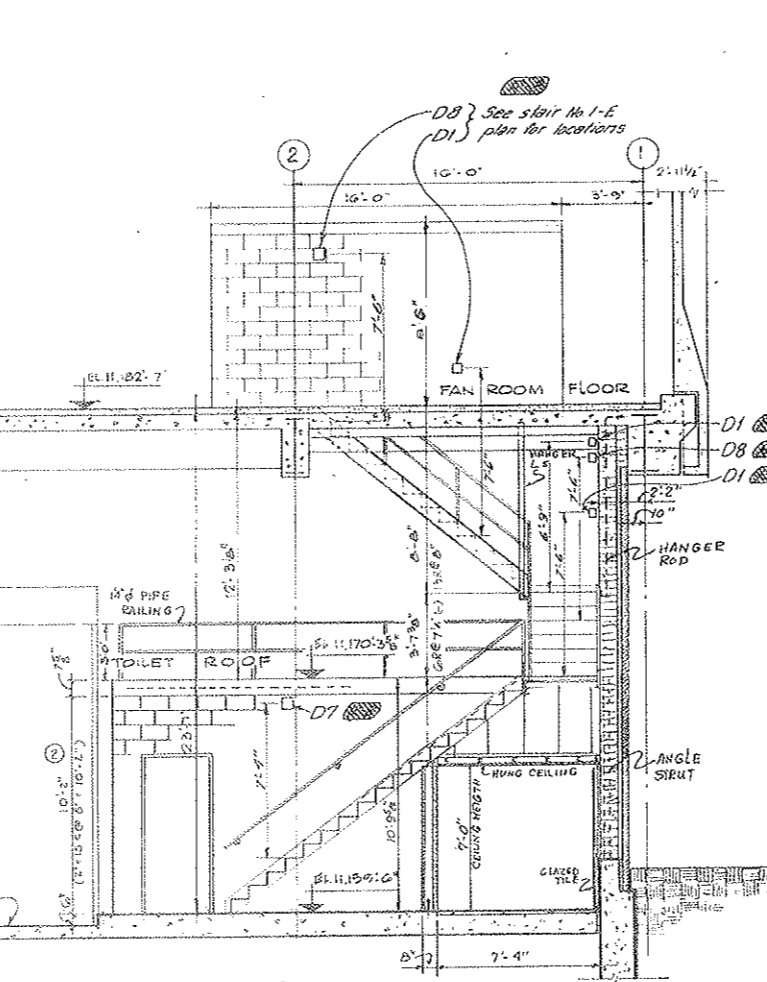


SECTION 6-6
 STAIR NO. 4-W ①

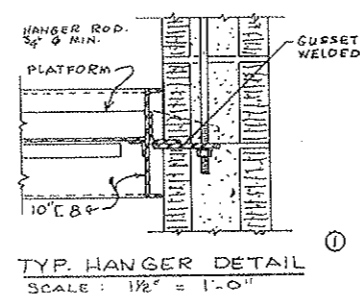
SECTION 7-7 ①
 STAIR NO. 4-W



STAIR NO. 1-W ROADWAY FLOOR
 FANROOM FLOOR
 OPPOSITE HAND STAIR NO. 1-E ①



SECTION 8-8
 STAIR NO. 1-W ①



TYP. HANGER DETAIL
 SCALE: 1/2" = 1'-0"

See Note A-1 on Drawing A-113 (10-2)

NOTE:
 ② FOR LOCATIONS OF OPENINGS IN ROOF SLABS - SEE STRUCTURAL DWGS.

DESIGNED T.T.	RECOMMENDED BY	DATE	BY
DRAWN T.T.	APPROVED		
CHECKED L.D.			
SUBMITTED			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
 WEST VENTILATION BUILDING
 STAIR DETAILS - SHEET I

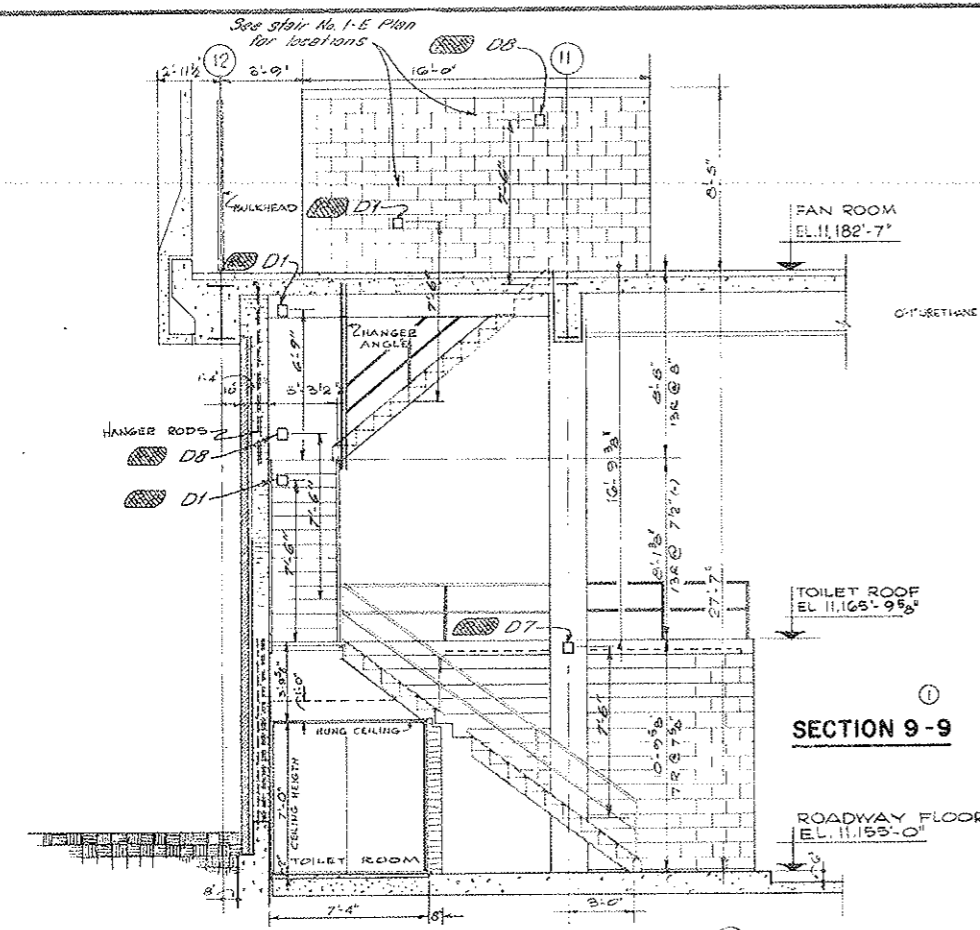
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

SCALE: 1/4" IN = 1 FT. DATE AUG. 1967

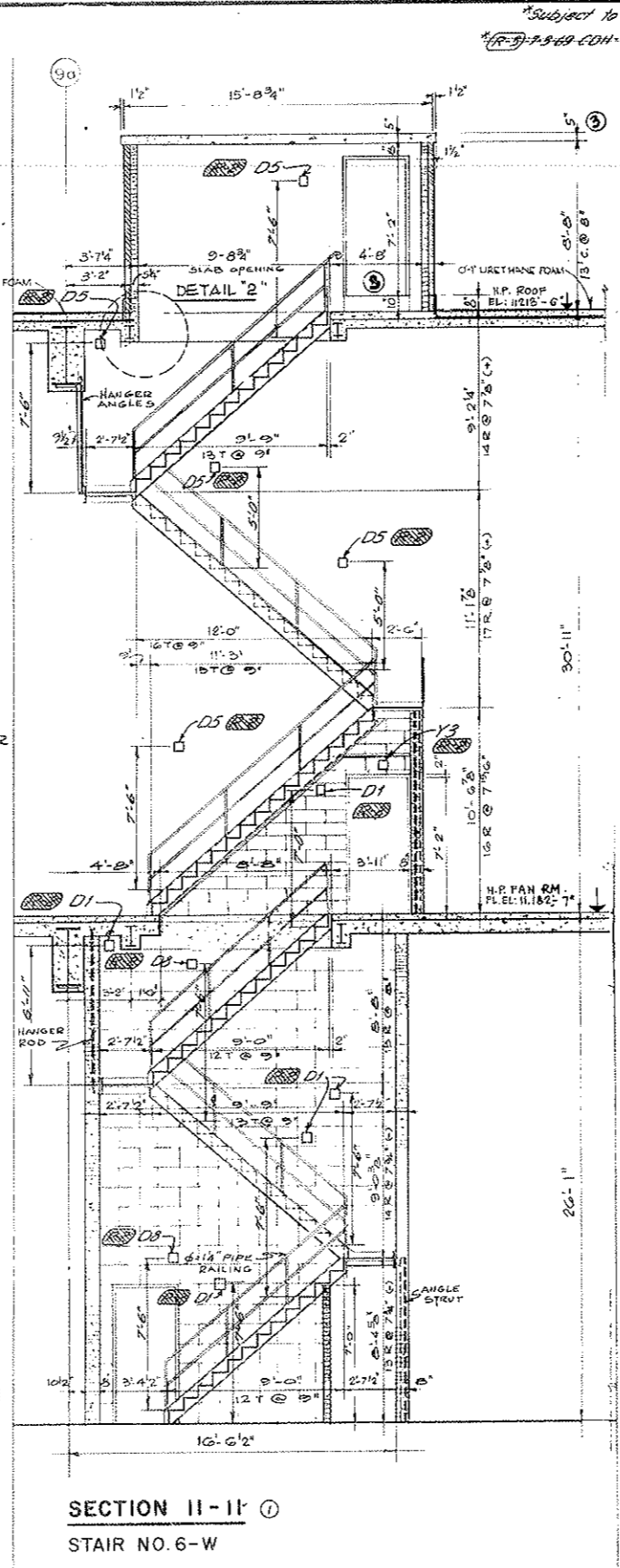
DRAWING NO. A-W12

*Subject to final approval
 *R-3-7-69 C.D.H. - Civil. Future Mt.
 *E-7-5-31-69 C.D.H. Additions - H-10-17-68
 *R-2-5-31-69 C.D.H. Added Lt. Features - 7-5-68

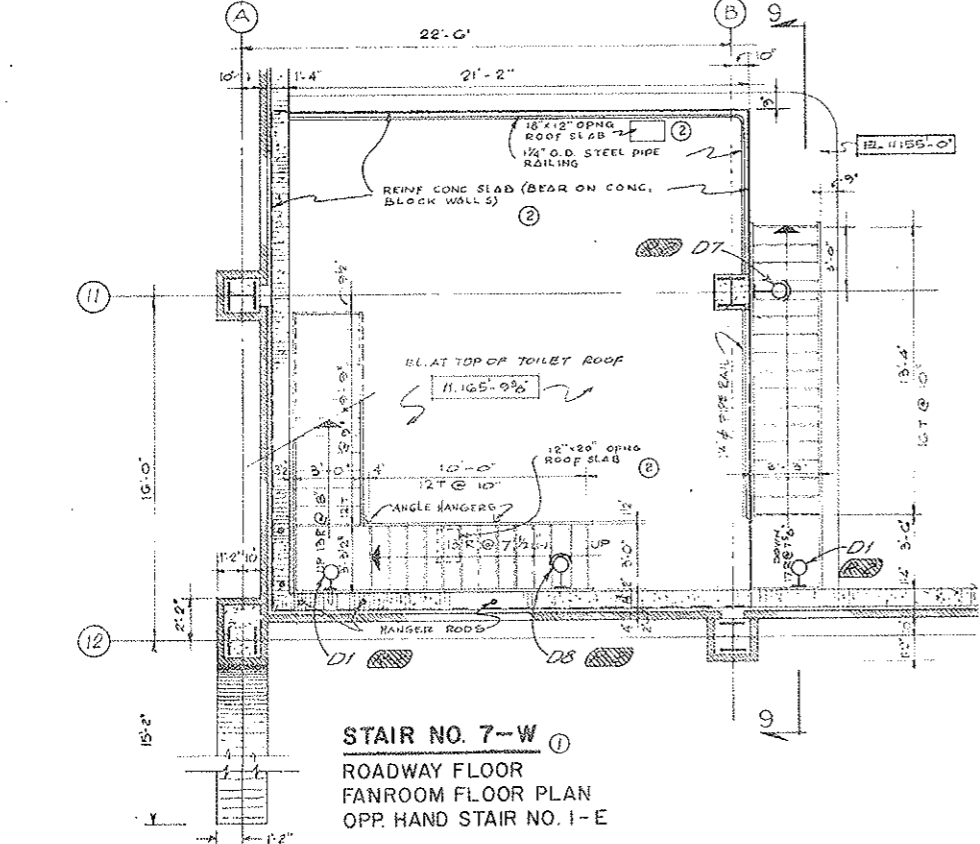
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	108	326



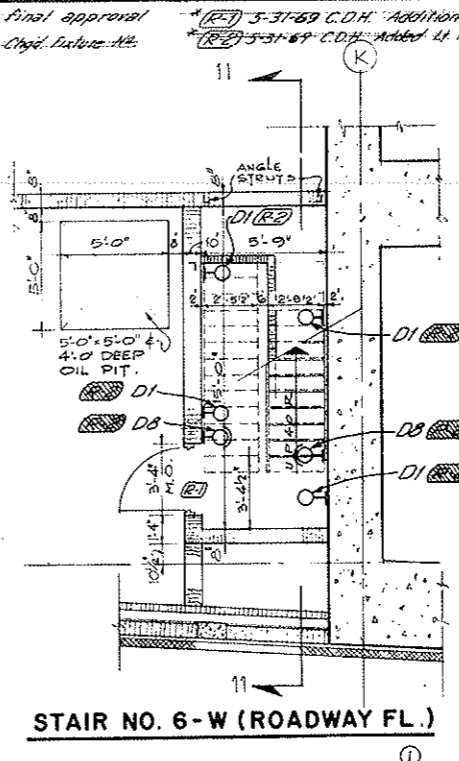
SECTION 9-9



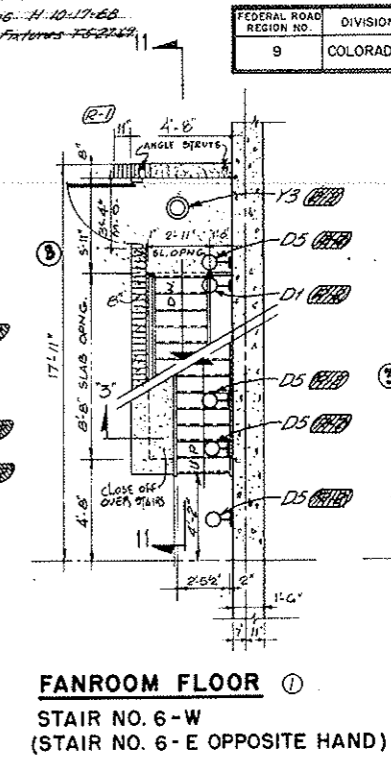
SECTION 11-11



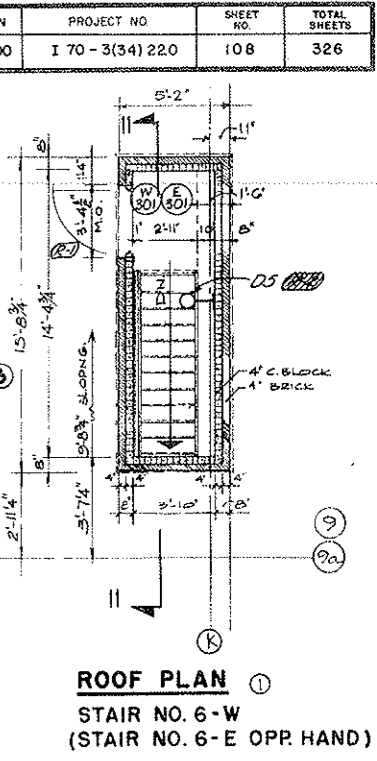
STAIR NO. 7-W
 ROADWAY FLOOR
 FANROOM FLOOR PLAN
 OPP. HAND STAIR NO. 1-E



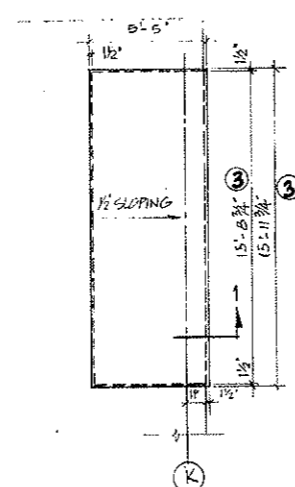
STAIR NO. 6-W (ROADWAY FL.)



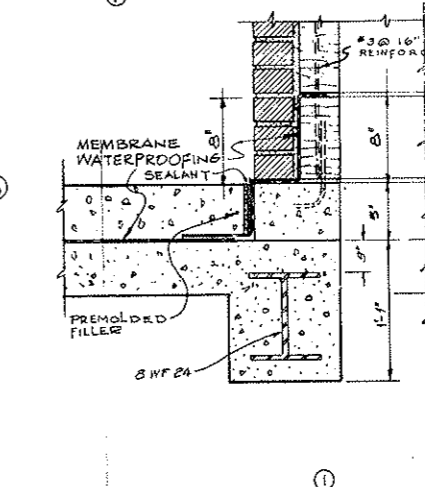
FANROOM FLOOR
 STAIR NO. 6-W
 (STAIR NO. 6-E OPPOSITE HAND)



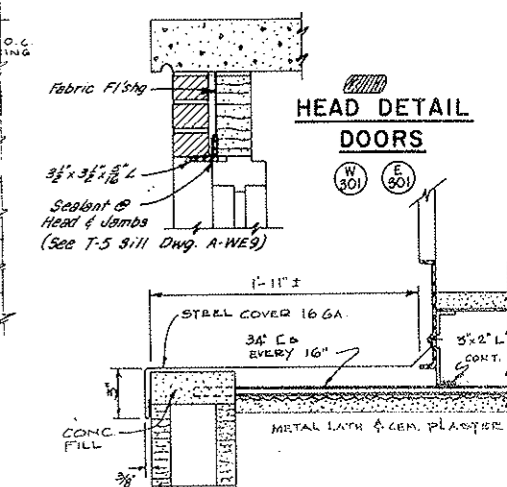
ROOF PLAN
 STAIR NO. 6-W
 (STAIR NO. 6-E OPP. HAND)



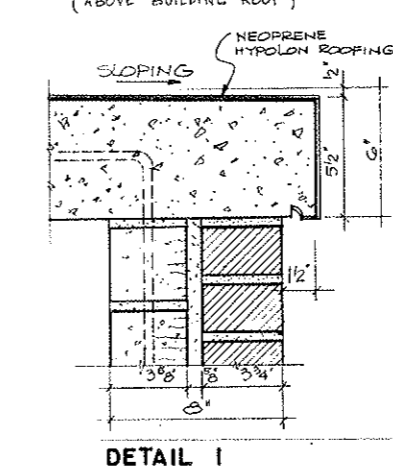
BULKHEAD ROOF
 (ABOVE BUILDING ROOF)



DETAIL '2'



HEAD DETAIL DOORS
 AS CONSTRUCTED
 NO REVISIONS
 DATE 10-26-73



DETAIL 1

NOTE:
 FOR LOCATION OF OPENINGS IN ROOF SLAB SEE STRUCTURAL DWGS.
 See Note A' Dwg. A-119

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK
1		REVISED DIMENSIONS @ 1/8\"/>		
2		ADD REINFORCING TO ROOF SLAB, DIMS ADDED		
3		ADD HANGERS & STRUTS TO DETAIL '2'		

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST VENTILATION BUILDING
STAIR DETAILS-SHEET 2

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: T.T.
 DRAWN: T.T.
 CHECKED: L.G.
 SUBMITTED: [Signature]

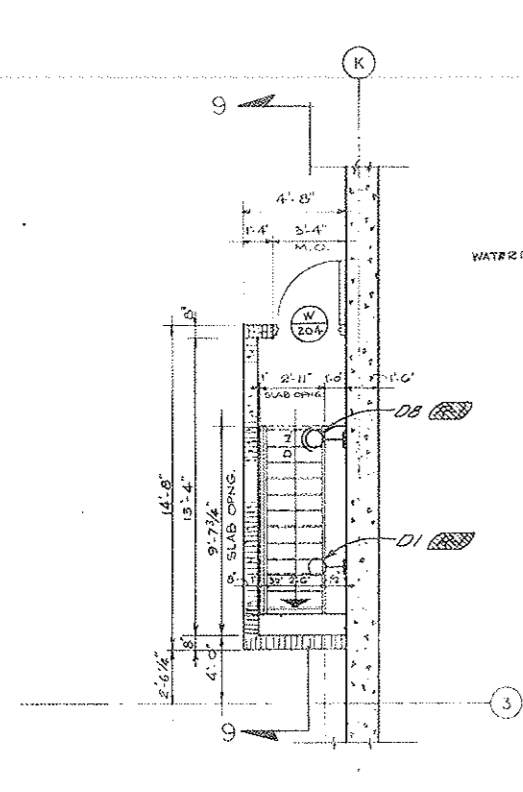
RECOMMENDED: [Signature]
 APPROVED: [Signature]

DRAWING NO. **A-W13**

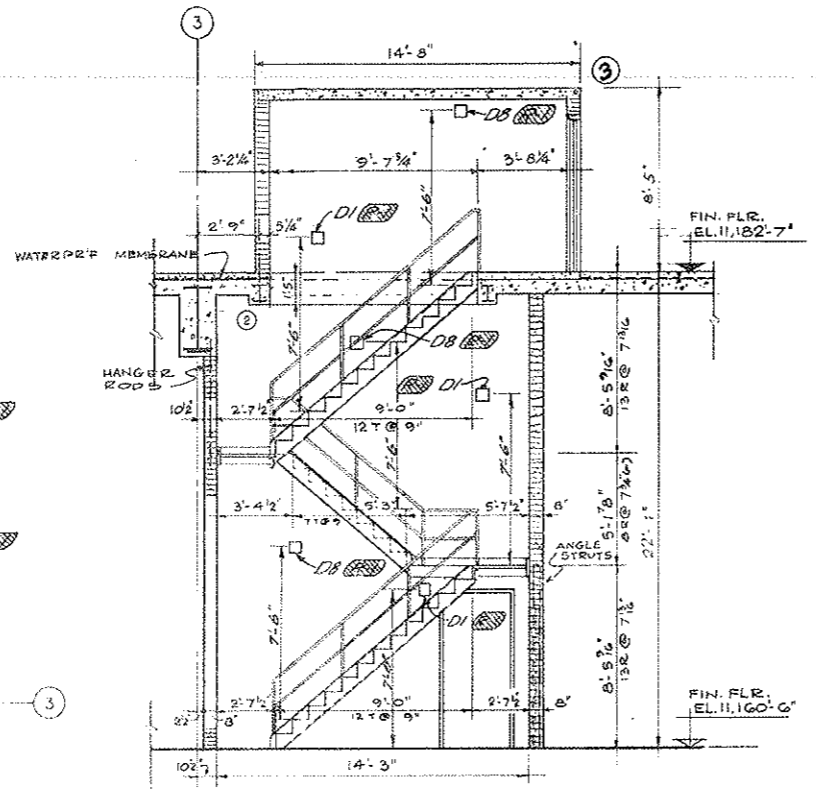
SCALE: 1/2" = 1'-0"
 DATE: AUG. 1967
 NEW YORK, N. Y.

FP-1-5-51-69-2-Div. - Added to Figures 1-5 & 2-4-9
 Subject to final approval

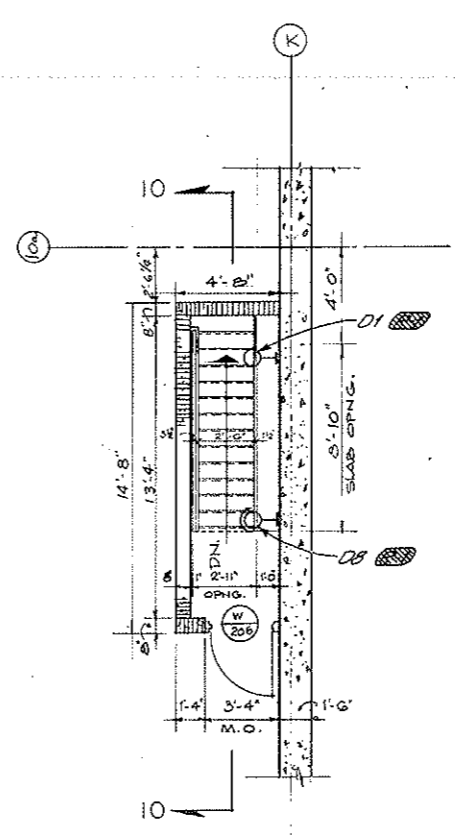
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	109	326



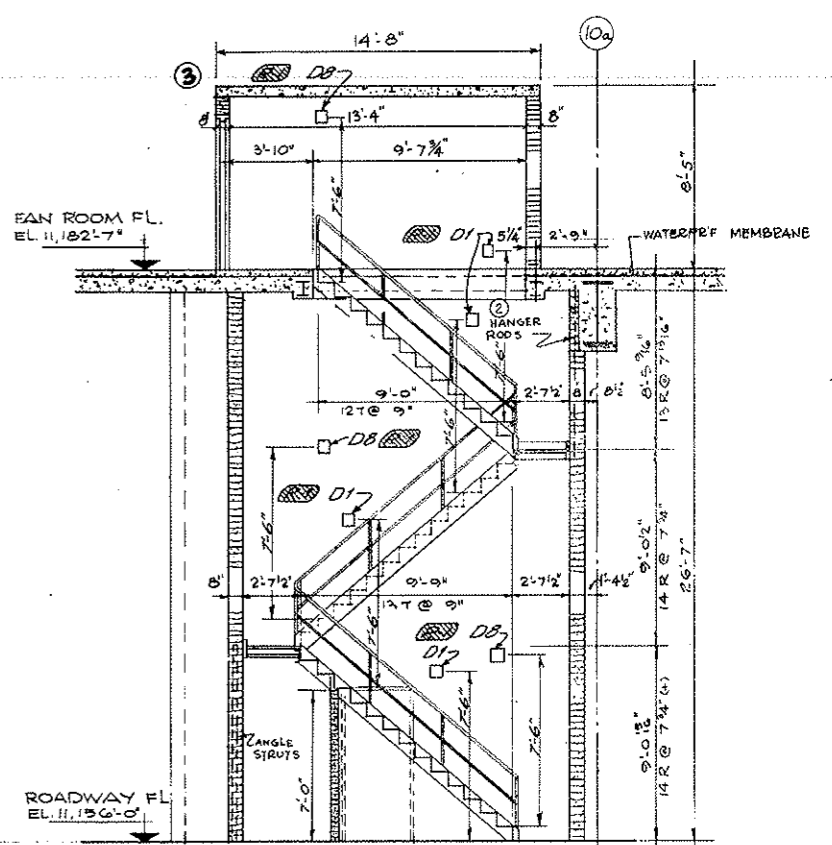
STAIR NO. 2 - W
FANROOM FLOOR



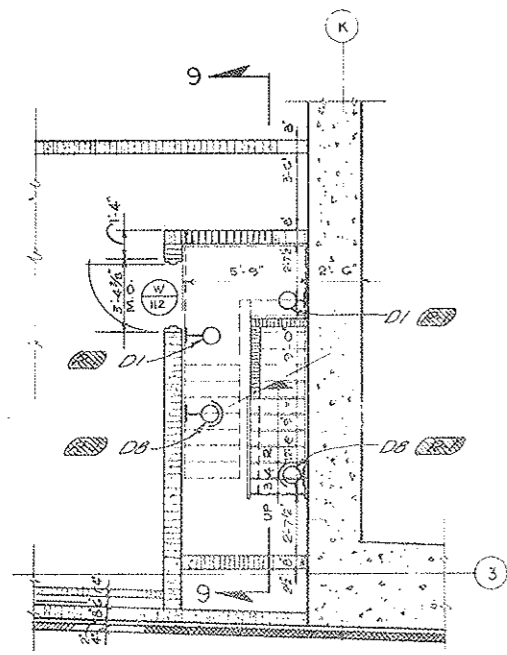
SECTION 9-9
STAIR NO. 2 - W



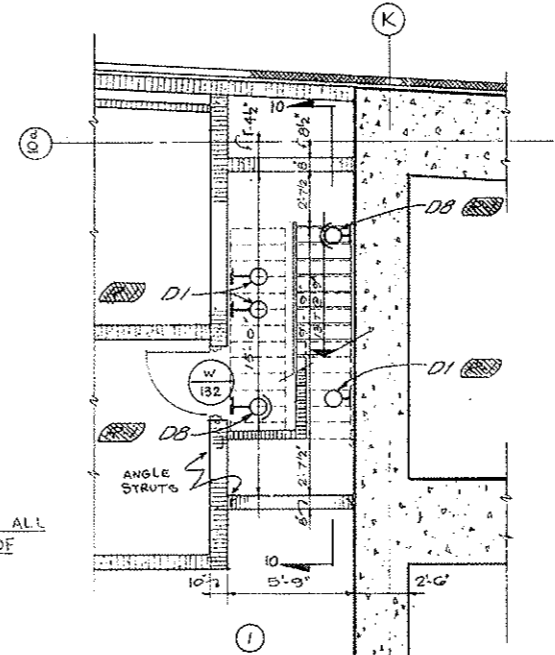
STAIR NO. 8 - W
FANROOM FLOOR



SECTION 10-10
STAIR NO. 8 - W



STAIR NO. 2 - W
ROADWAY FLOOR



STAIR NO. 8 - W
ROADWAY FLOOR

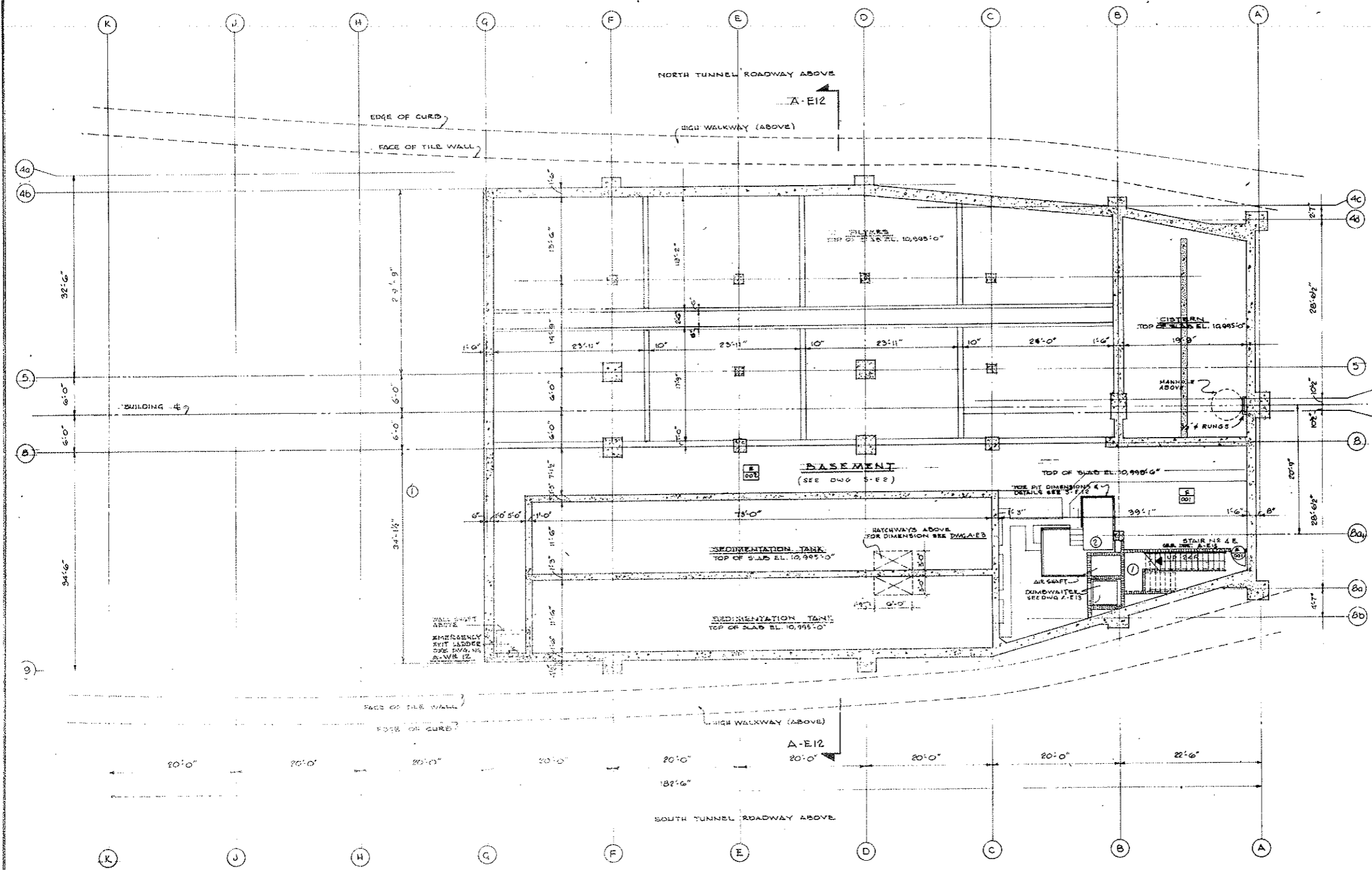
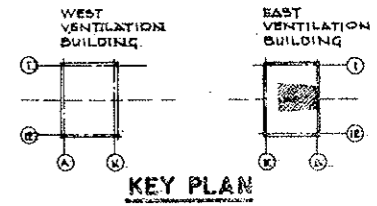
- ① **NOTE**
- 1- STAIR SUPPORTS INDICATED ARE DIAGRAMMATIC ONLY.
 - 2- STAIR FABRICATOR TO SHOW ON SHOP DRAWINGS ALL STRUCTURAL DETAILS NECESSARY FOR SUPPORT OF STAIR FOR APPROVAL BY ENGINEER.

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
1		DELETED OVERHANG OF STAIR ROOF SLABS			
2		OMITTED DRAWING			
3		ADDED HANGERS & STRUTS & NOTES			
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ARCHITECTURAL WEST VENTILATION BUILDING STAIR DETAILS - SHEET 3					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: T.T.	RECOMMENDED: [Signature]	DRAWING NO. A-W14			
DRAWN: T.T.	CHECKED: L.D.	SCALE: 1/4" = 1 FT DATE: AUG. 1967			
SUBMITTED: [Signature]	APPROVED: [Signature]				

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	111	326

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1					
2					

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

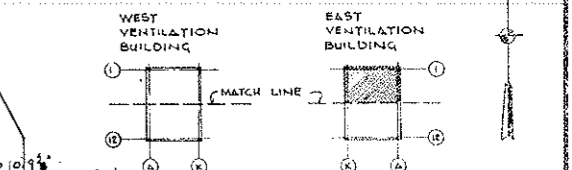
**ARCHITECTURAL
EAST VENTILATION BUILDING
BASEMENT FLOOR PLAN**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

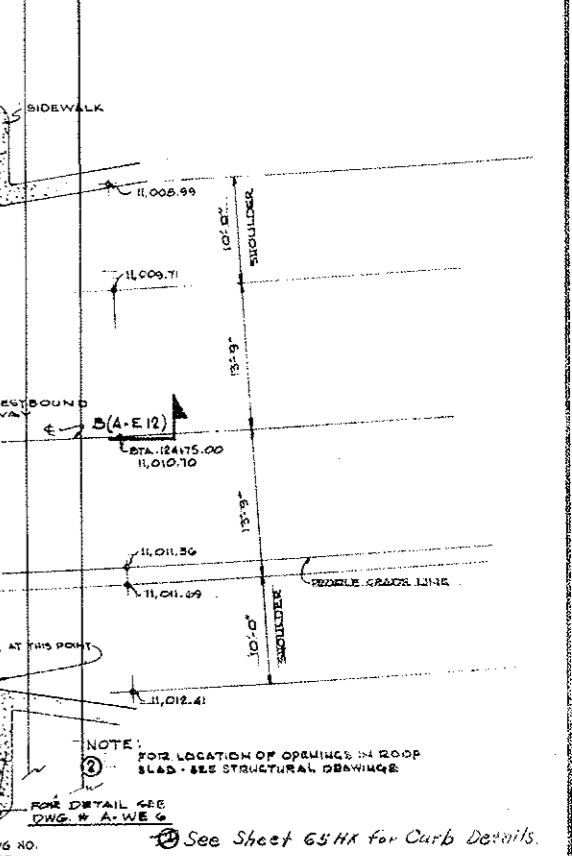
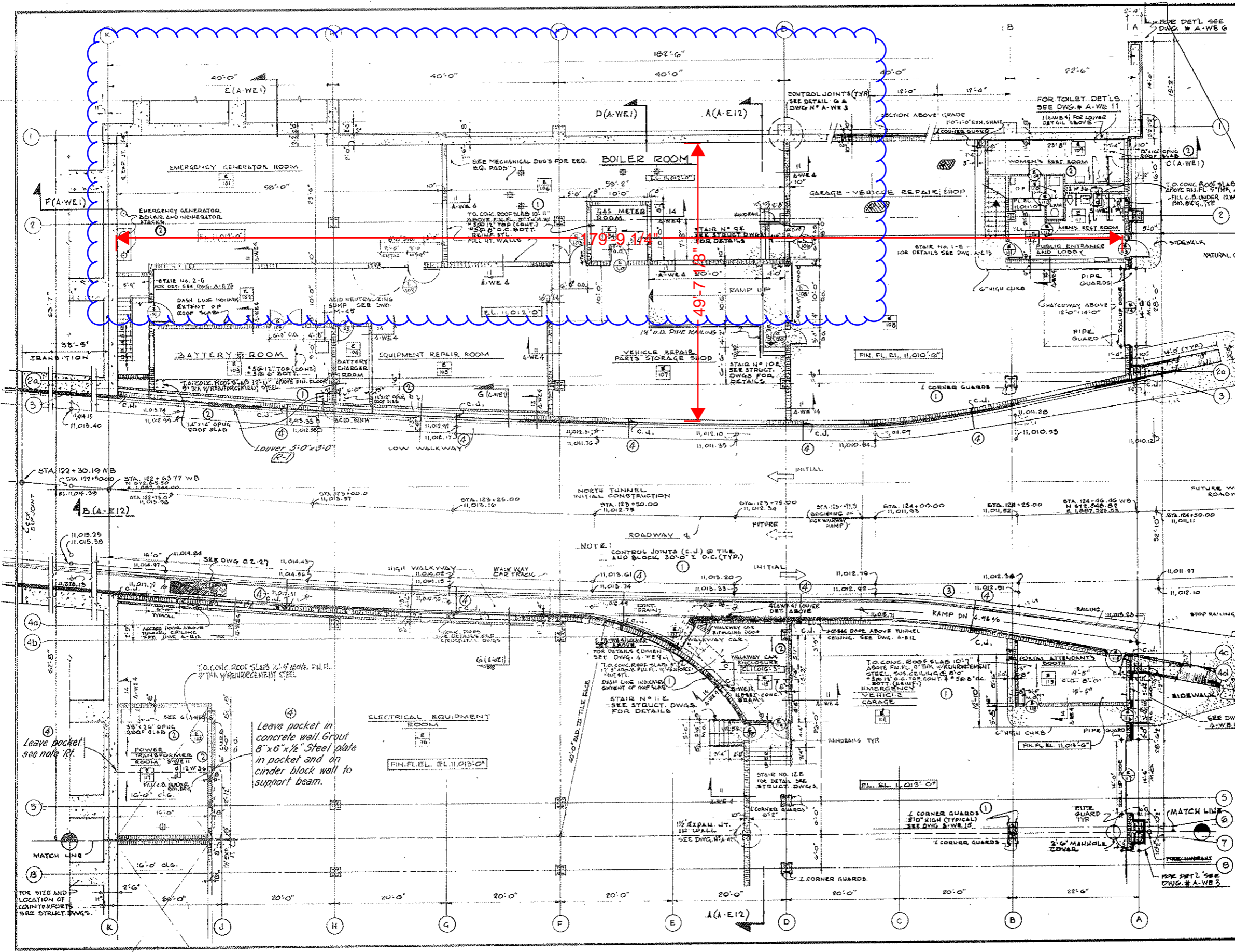
DESIGNED P.D.V.	RECOMMENDED	
DRAWN M.G.	CHECKED	APPROVED
CHECKED		
SUBMITTED		

NEW YORK, N. Y. SCALE: 1/8" = 1'-0" DATE: AUG. 1967 DRAWING NO. A-E1

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	112	326



KEY PLAN
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.
1		See Sheet 65 HA for Curb Details.		
2		FOR LOCATION OF OPENINGS IN ROOF SLAB - SEE STRUCTURAL DRAWING		
3		FOR DETAIL SEE DWG. # A-WE 6		
4		See Sheet 65 HA for Curb Details.		

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
EAST VENTILATION BUILDING
ROADWAY FLOOR PLAN - NORTH

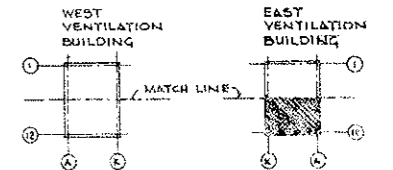
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.R.V.
 DRAWN: H.G.
 CHECKED: L.E.D.
 SUBMITTED: [Signature]
 APPROVED: [Signature]

SCALE: 1/8" = 1' FT. DATE: AUG. 1967
 DRAWING NO. A-E2
 NEW YORK, N.Y.

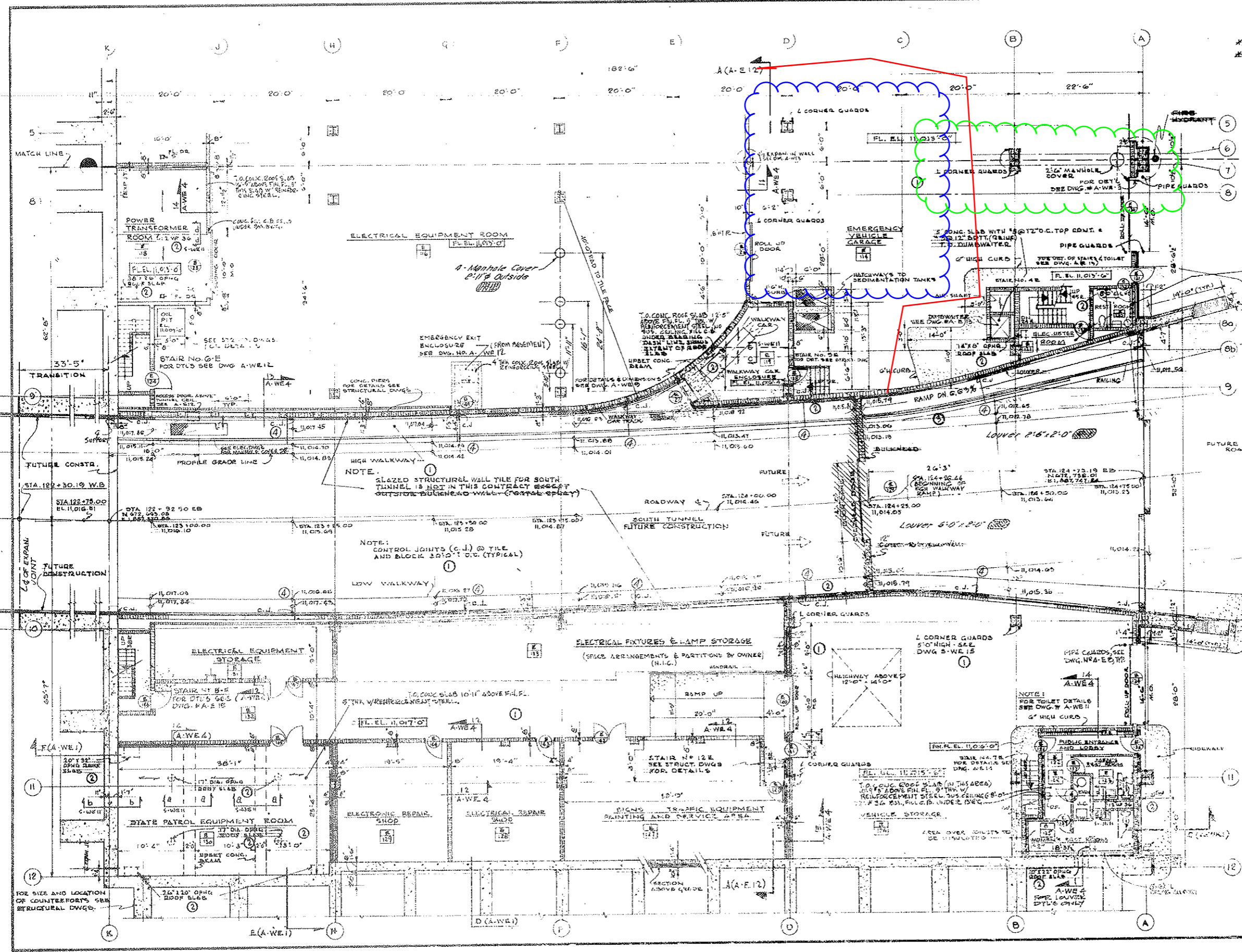
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	113	326

~~REVISED 5-31-69 CON. added M.N.B. 5-2-69~~
~~REVISED 5-31-69 CON. added M.N.B. 5-2-69~~
 Subject to final approval



KEY PLAN

AS CONSTRUCTED
 REVISED DATE 10-26-92



NOTE: FOR LOCATION OF ROOF SLAB OPENINGS SEE STRUCTURAL DRAWING.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK
1		State of Colorado - Department of Highways		
2		State of Colorado - Department of Highways		
3		State of Colorado - Department of Highways		

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
EAST VENTILATION BUILDING
ROADWAY FLOOR PLAN - SOUTH

TIPPETS ABBETT MCCARTHY STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N.Y.

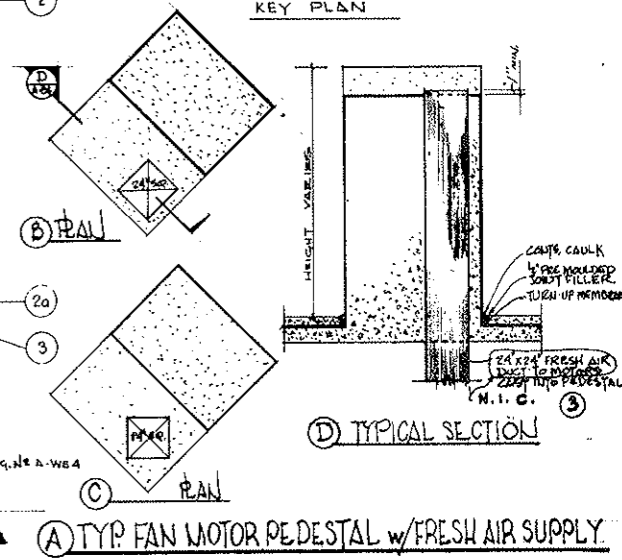
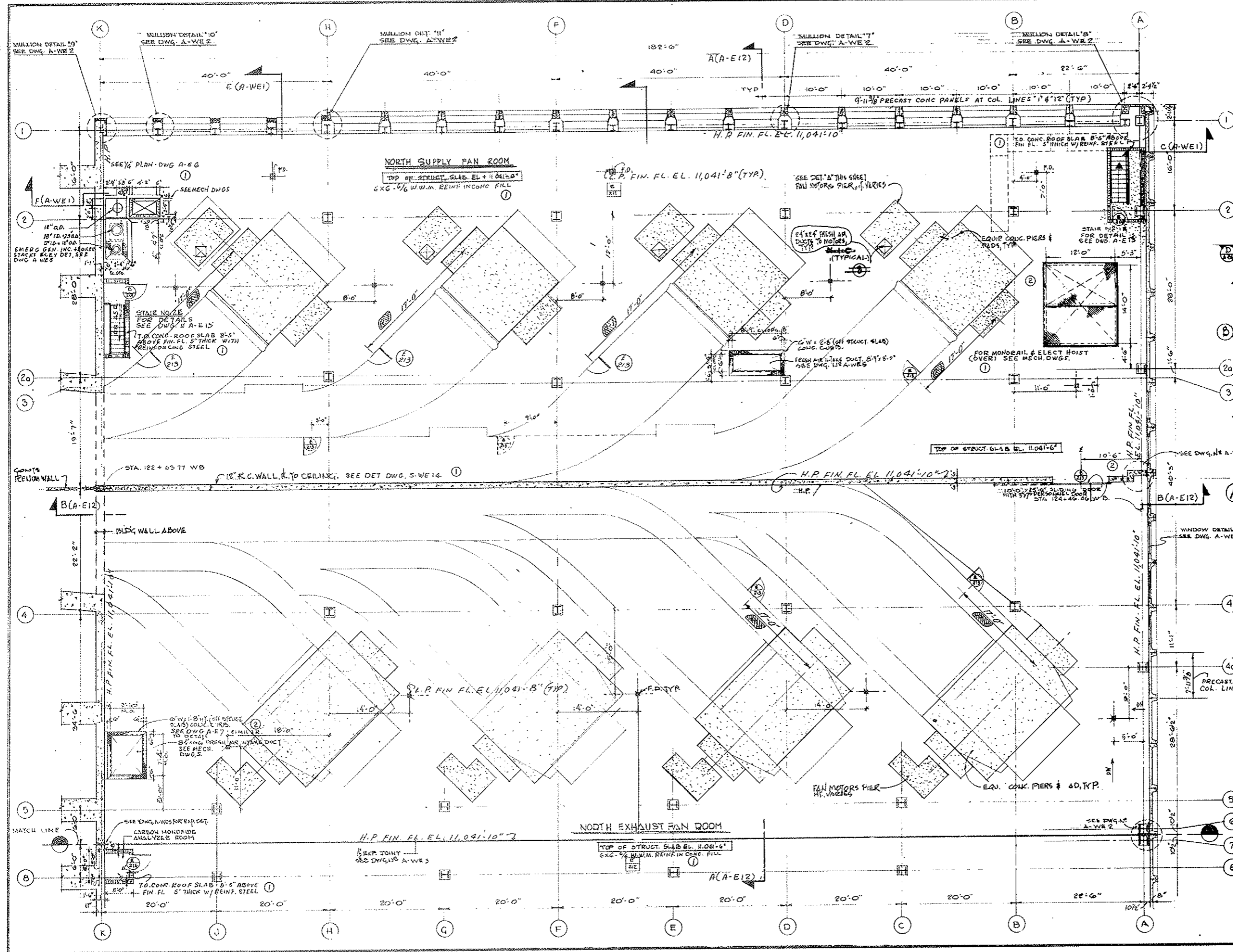
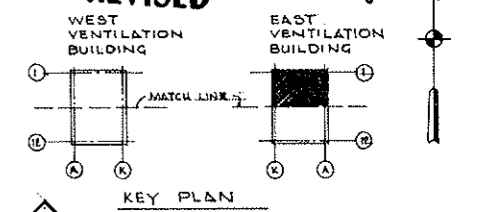
DESIGNED BY	RECOMMENDED BY	DATE
DRAWN BY	CHECKED BY	
SUBMITTED BY	APPROVED BY	

SCALE: 1/8" = 1'-0" DATE: AUG. 1967

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	114	326

5-31-69 - Revised Dimensions 11-10-73
 Subject to final approval

AS CONSTRUCTED
REVISED DATE 10-26-73



NOTE A
 TUNNEL VENTILATION SYSTEM
 (BID ITEM 105) REVISED SEE W.D. 11-153
 FROM 11-111 SEE MECH. DWGS. FOR
 CONTRACT LIMITS

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		IDENTIFIED N.I.C. ITEMS - SEE NOTE A			
2		ADDED DIMS. DIMS. REVISED - NO. 105			
3		ADDED REIN. IN CONCRETE FILL & MISCELLANEOUS DIMS.			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
EAST VENTILATION BUILDING
FAN ROOM FLOOR PLAN - NORTH

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

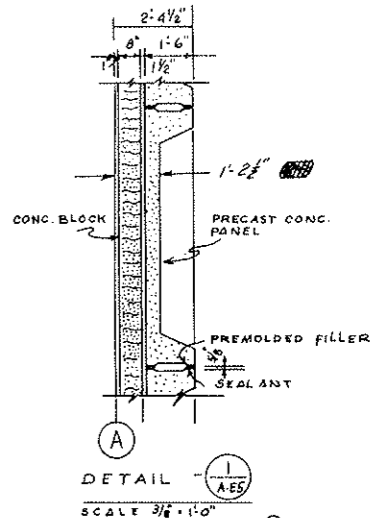
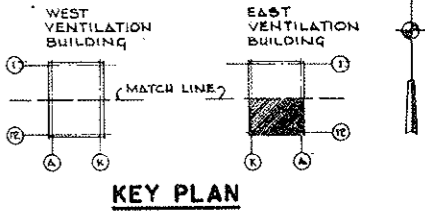
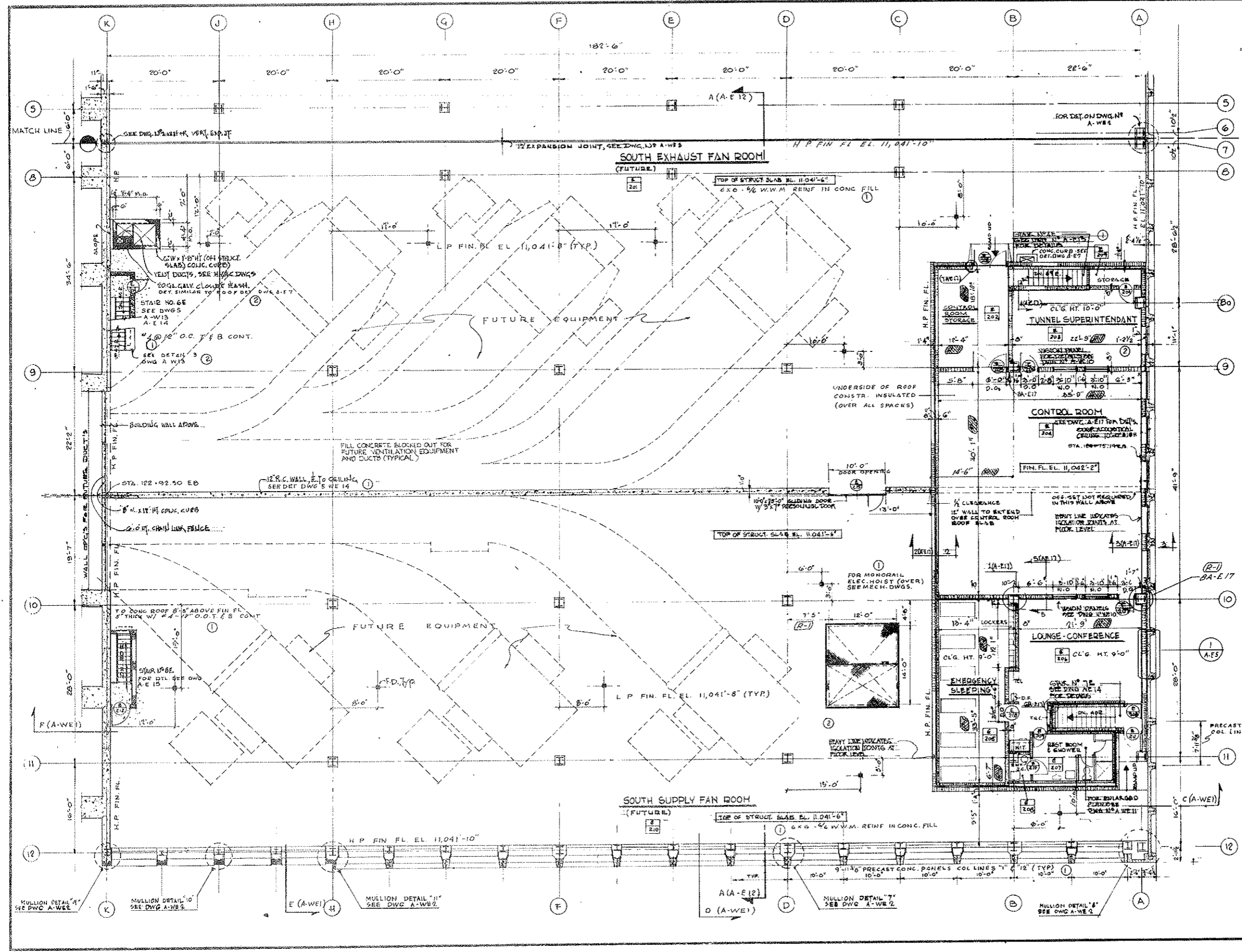
DESIGNED: PRV
 DRAWN: M.G.
 CHECKED: [Signature]
 SUBMITTED: [Signature]

RECOMMENDED: [Signature]
 APPROVED: [Signature]

NEW YORK, N. Y. SCALE: 1/8" = 1 FT. DATE: AUG. 1967 DRAWING NO. A-E4

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	115	326

AS CONSTRUCTED NO REVISIONS DATE 10-26-73



See Sheet 179A for Fan Duct Blockouts

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
EAST VENTILATION BUILDING
FAN ROOM FLOOR PLAN - SOUTH

TIPPETTS - ABBETT - MCCARTHY - STRAYTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.R.V.
 DRAWN: M.C./G.E.
 CHECKED: L.G.
 SUBMITTED: [Signature]
 NEW YORK, N.Y.

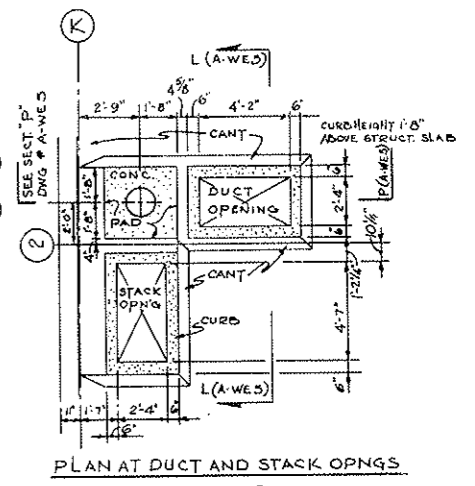
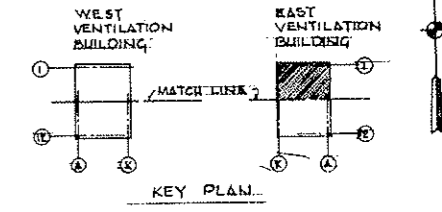
RECOMMENDED: [Signature]
 APPROVED: [Signature]
 NEW YORK, N.Y.

DRAWING NO. **A-E5**

SCALE: 1/8" = 1'-0"
 DATE: AUG. 1967

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	118	326

AS CONSTRUCTED
REVISED DATE
 /0-26-73



NOTE A:
 TUNNEL VENTILATION SYSTEM (SEE ITEM 105)
 REVISED SEE W.S. 1155 & SPEC. 1177
 SEE MECH. DWGS. FOR CONTRACT UNITS.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.
1		IDENTIFIED MECH. ITEMS SEE NOTE A	J.M.	J.M.
2		OMITTED CANTS - REVISED ROOF OUTLINE	J.M.	J.M.
3		ADDED CURB ALONG FULLY ROOF OVER SET - CORRECT ROOF SLAB	J.M.	J.M.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
EAST VENTILATION BUILDING
ROOF PLAN - NORTH

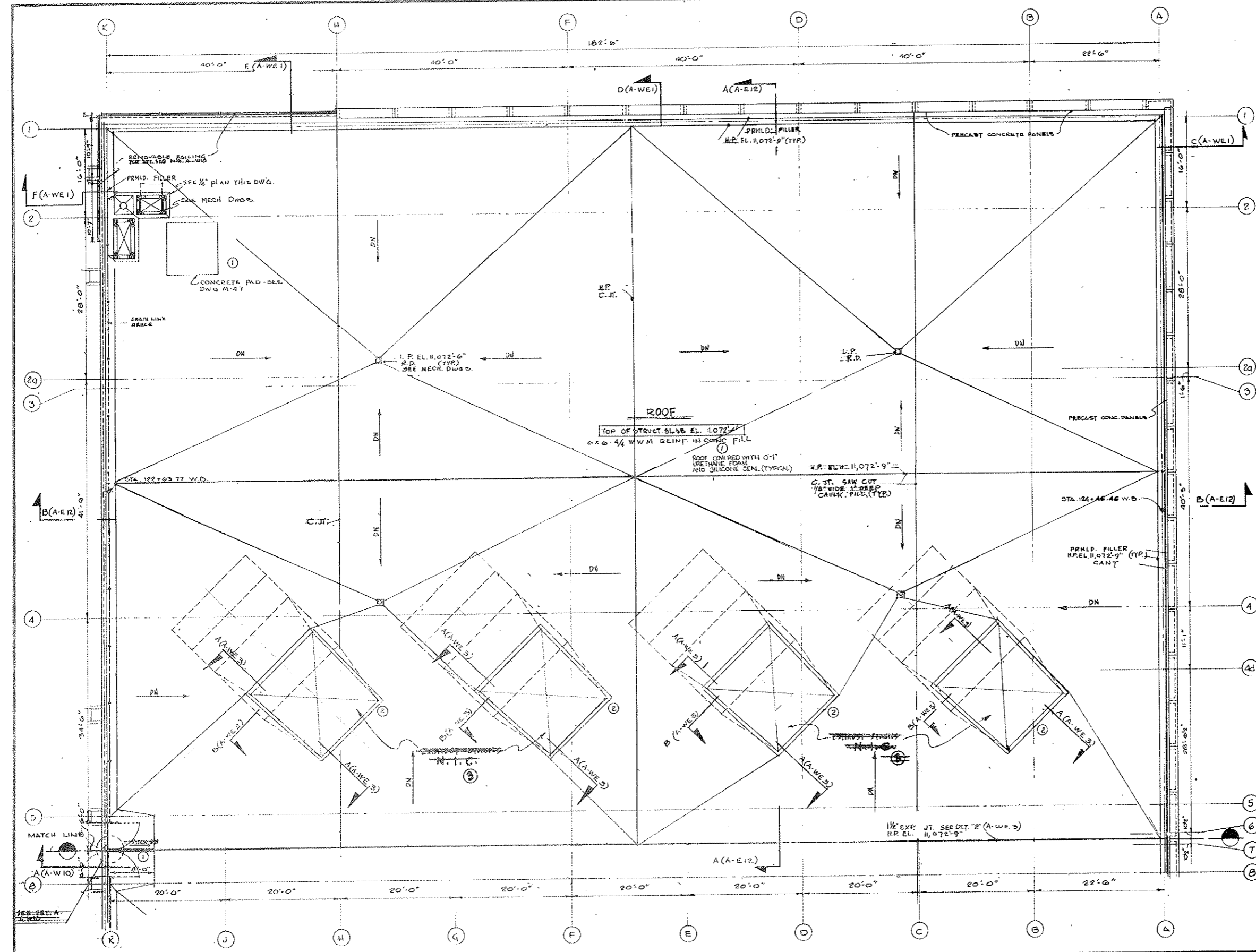
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.R.V.
 DRAWN: M.G.
 CHECKED: [Signature]
 SUBMITTED: [Signature]

RECOMMENDED: [Signature]
 APPROVED: [Signature]

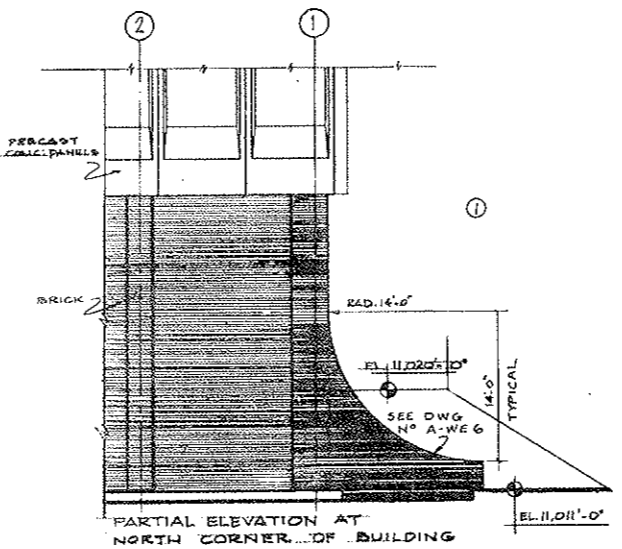
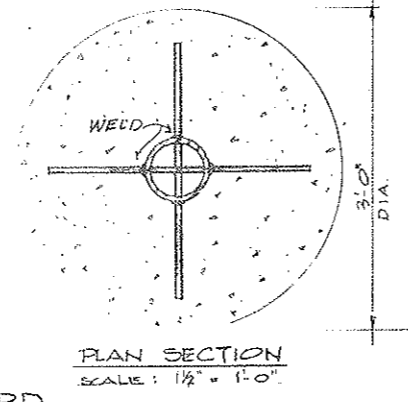
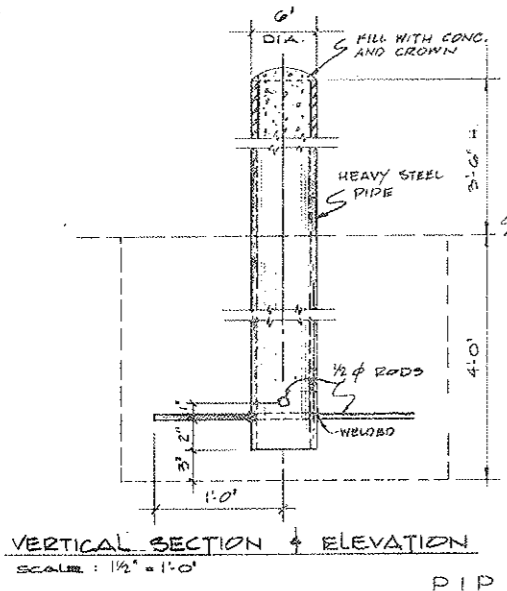
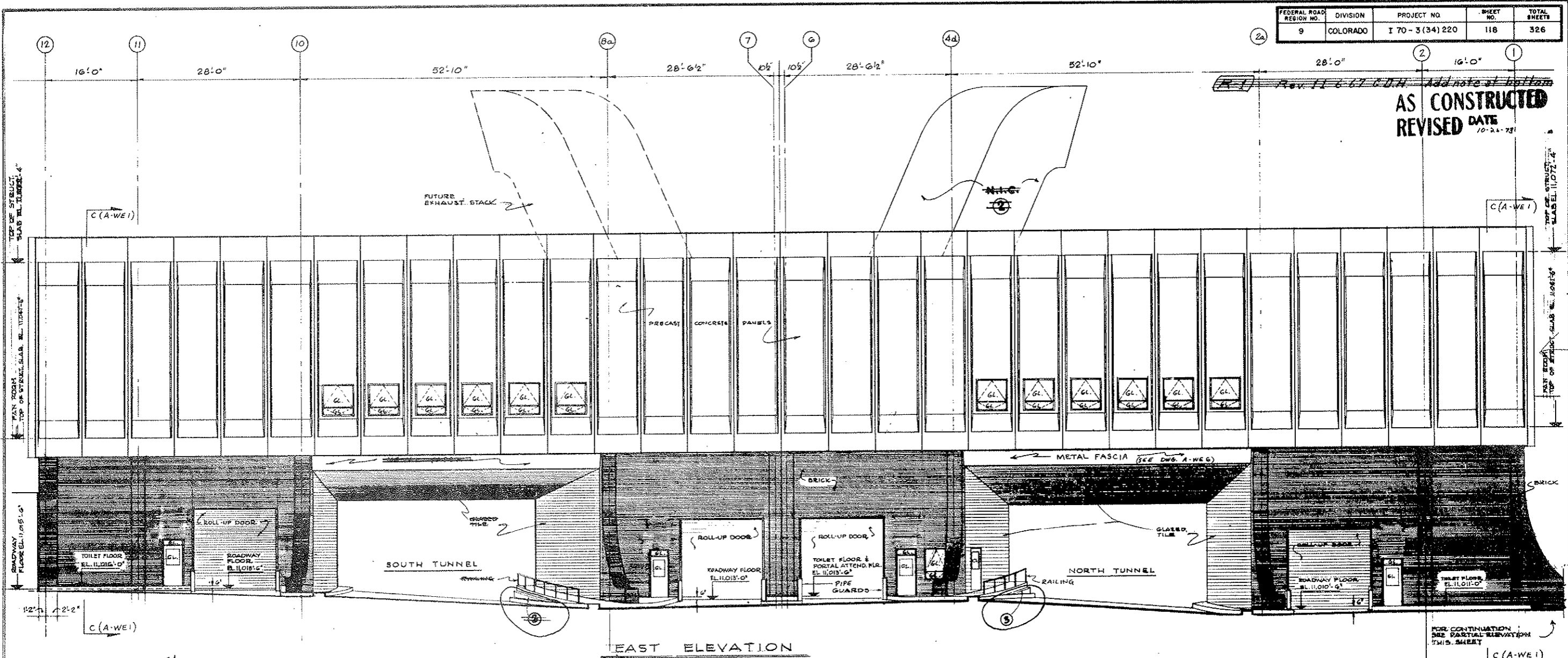
DATE: AUG. 1967

DRAWING NO. **A-E6**



FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	118	326

Rev. 11-6-67 C.D.H. Add note at bottom
AS CONSTRUCTED
REVISED DATE 10-21-73



NOTE:
 ① ALL EXTERIOR GLAZING TO BE LAMINATED SAFETY GLASS

NOTE A:
 TUNNEL VENTILATION SYSTEM (BID ITEM 105)
 REQUIRED - SEE W.O. 1155 & SPEC. 11A
 SEE NECH. DIVOC. FOR CONTRACT LIMITS.

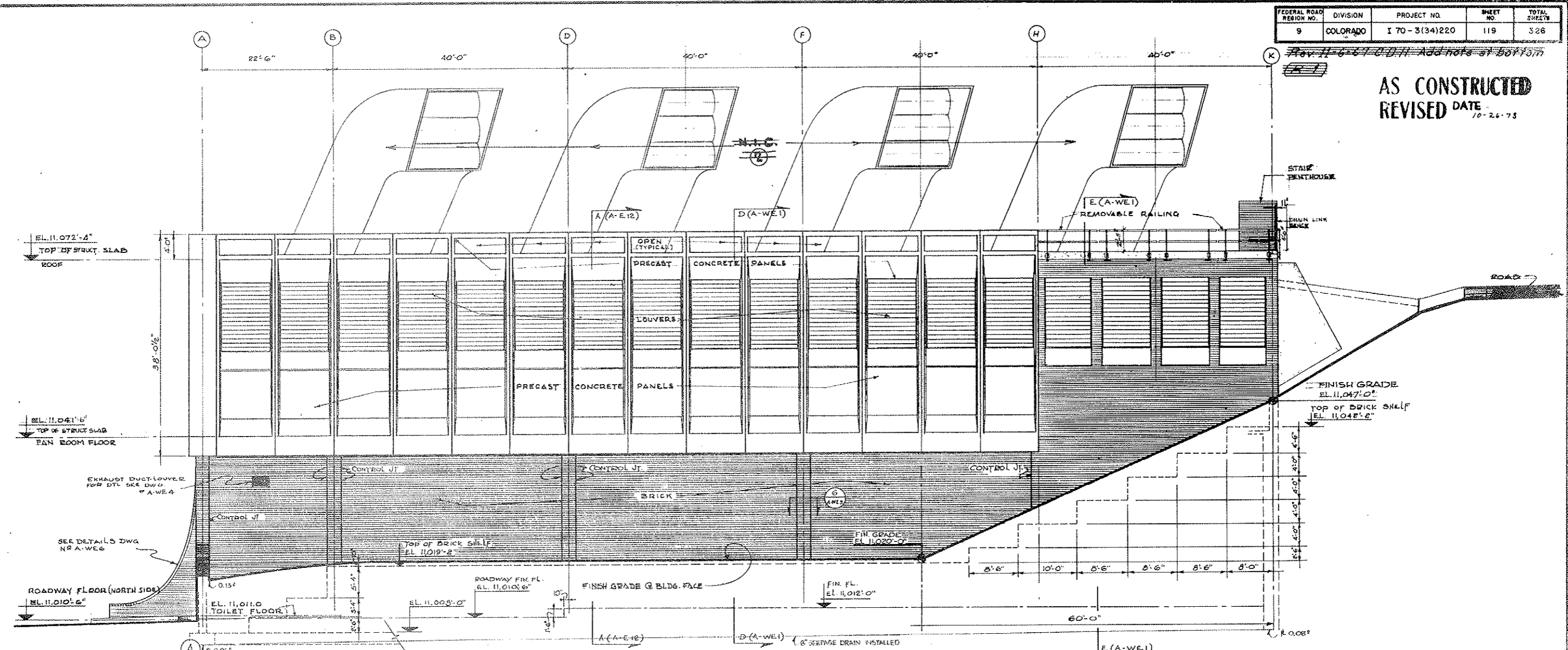
①	REVISED HIGH WALKWAY CURBS	S.G.	10/16/73		
②	IDENTIFIED N.T.C. ITEMS - SEE NOTE 'A'	C.C.	10/16/73		
③	REVISED DET., ADDED SECTION MARKS & NOTES	S.H.	10/16/73		
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ARCHITECTURAL EAST VENTILATION BUILDING EAST ELEVATION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: P.R.V.	RECOMMENDED: [Signature]				
DRAWN: T.T.	CHECKED: [Signature]				
SUBMITTED: [Signature]	APPROVED: [Signature]				
NEW YORK, N. Y.		SCALE: 1/8" = 1'-0"	DATE: AUG. 1967		

(R-1) TUNNEL VENTILATION SYSTEM REV. W.O. 1155, SEE SPEC. 11A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	119	326

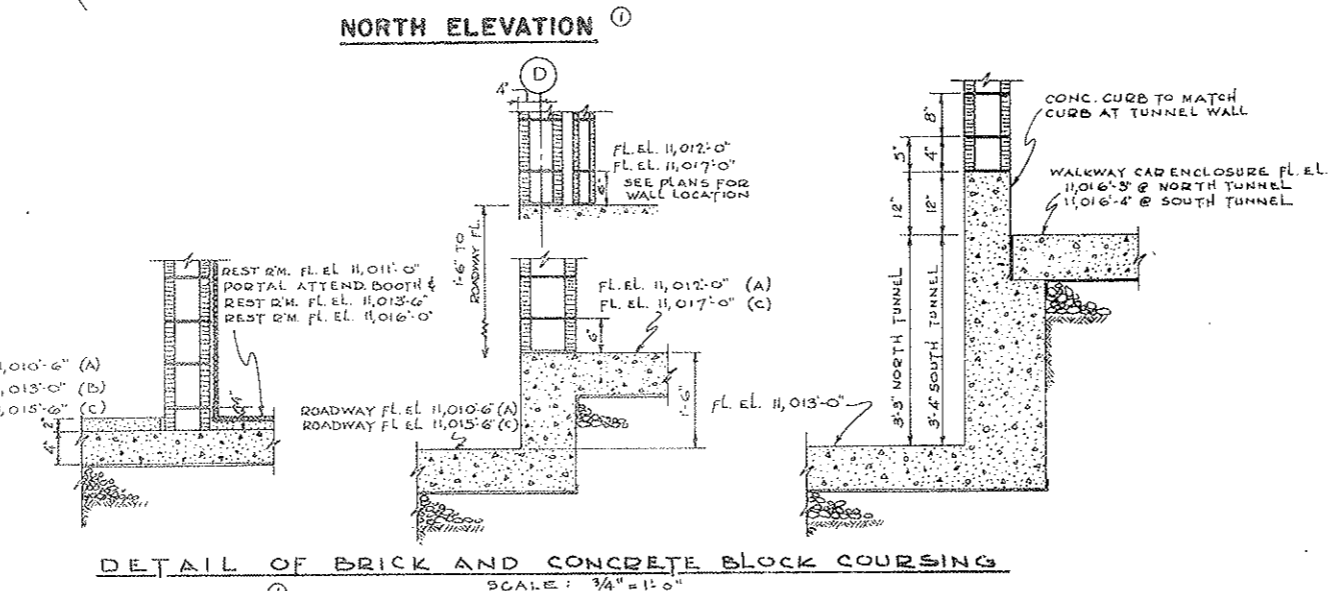
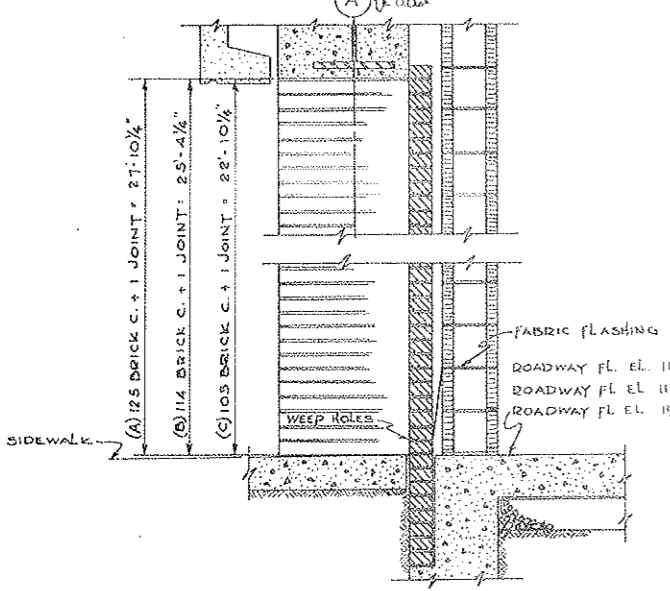
Rev. 11-6-67 O.D.H. Add notes at bottom

AS CONSTRUCTED
REVISED DATE 10-26-75



NORTH ELEVATION

NOTE A:
TUNNEL VENTILATION SYSTEM (BID ITEM 165)
 REVISED PER W.O. 1463 - SEE SPEC # 17A.
 SEE MECH. PWS FOR CONTRACT LIMITS.



DETAIL OF BRICK AND CONCRETE BLOCK COURSING
 SCALE: 3/4" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		IDENTIFIED N.C. ITEMS - SEE NOTE A			
2		ADDED BRICK SHELVES & COURSING DETAILS			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
 EAST VENTILATION BUILDING
 NORTH ELEVATION

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

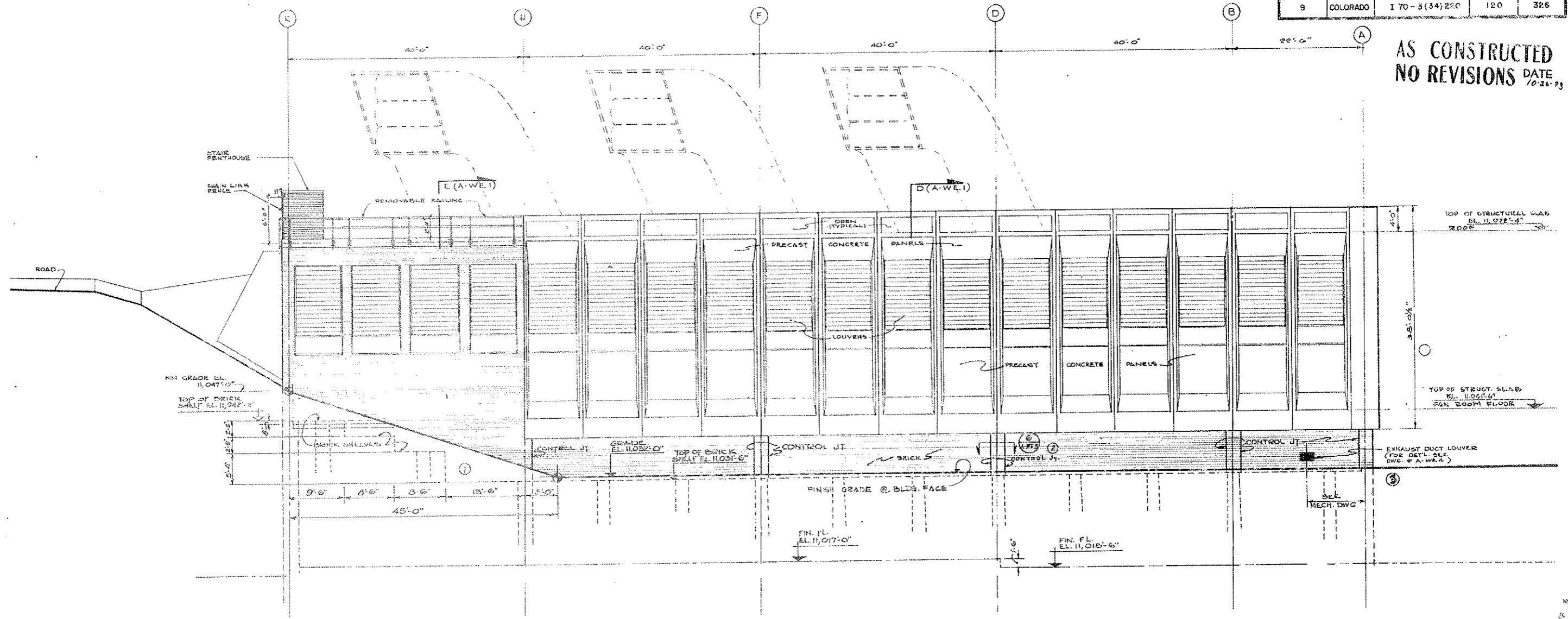
DESIGNED: R.R.
 DRAWN: T.T.
 CHECKED: [Signature]
 SUBMITTED: [Signature]

RECOMMENDED: [Signature]
 APPROVED: [Signature]

NEW YORK, N. Y. SCALE: 1/8" = 1'-0" DATE: AUG. 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)280	120	326

AS CONSTRUCTED
NO REVISIONS DATE 10-31-73

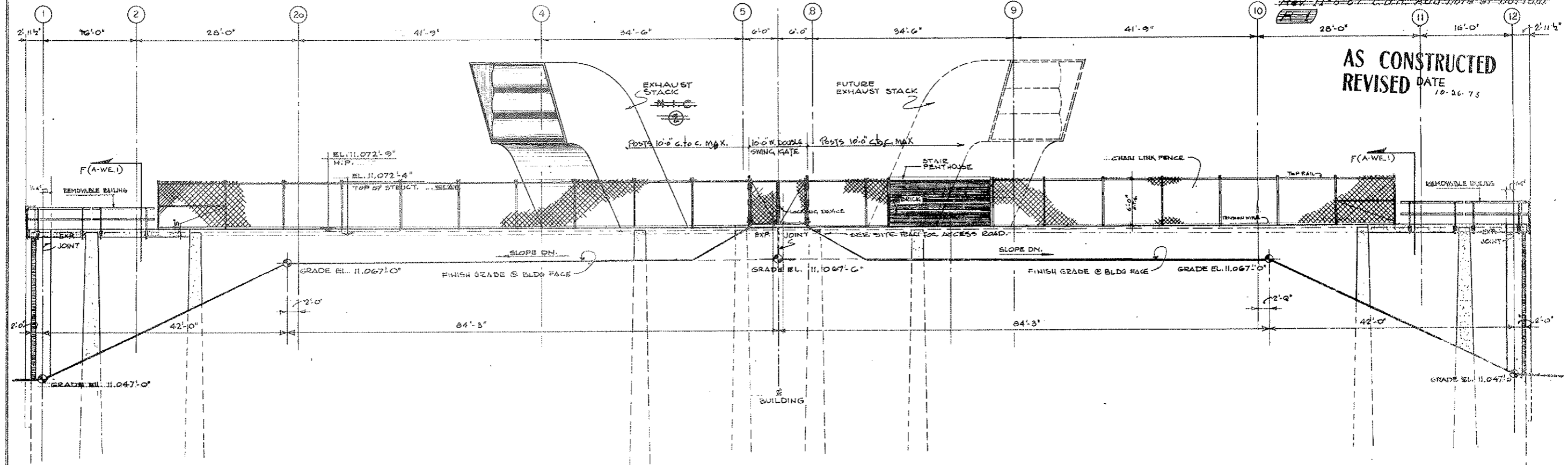


SOUTH ELEVATION

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
ARCHITECTURAL EAST VENTILATION BUILDING SOUTH ELEVATION				
TIPPEYTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS - NEW YORK, N. Y.				
DESIGNED P.R.V.	DRAWN M.G.	CHECKED <i>[Signature]</i>	RECOMMENDED <i>[Signature]</i>	APPROVED <i>[Signature]</i>
SUBMITTED <i>[Signature]</i>				
SCALE: 3/8" = 1'-0"				DATE: AUG. 1977
NEW YORK, N.Y.				DRAWING NO. A-210

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	121	326

Rev. 11-6-67 C.D.H. Add note at bottom



WEST ELEVATION

NOTE A:
 TUNNEL VENTILATION SYSTEM (BID ITEM 105)
 REVISED - SEE W.O. 14153 & SPEC. 17.A.
 SEE MECH. DWGS. FOR CONTRACT LIMITS.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

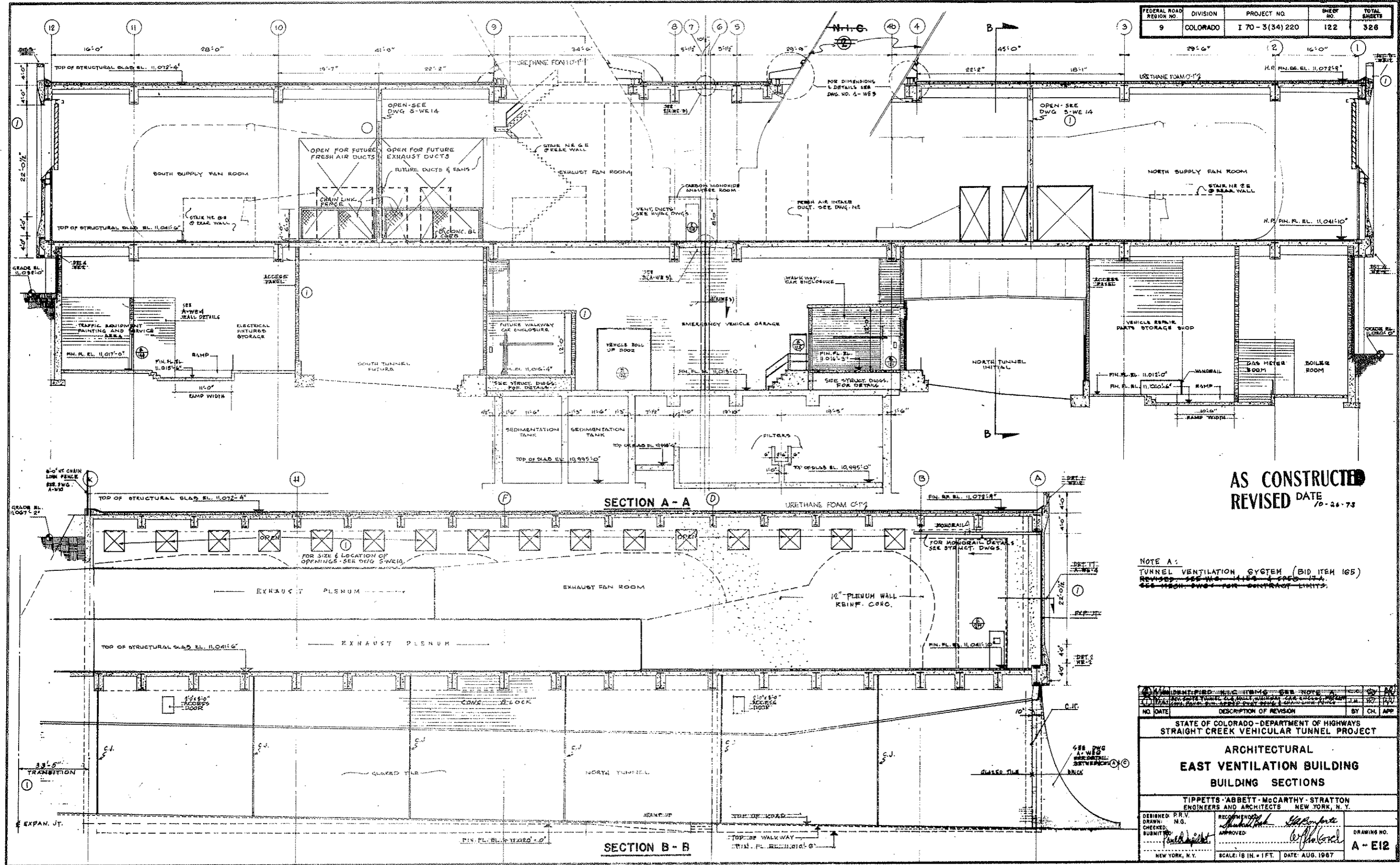
ARCHITECTURAL
EAST VENTILATION BUILDING
WEST ELEVATION

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED BY: PRV	RECOMMENDED BY: T.T.
DRAWN BY: T.T.	CHECKED BY: T.T.
SUBMITTED BY: T.T.	APPROVED BY: T.T.

NEW YORK, N. Y. SCALE: 1/8" = 1' DATE: AUG. 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	122	326

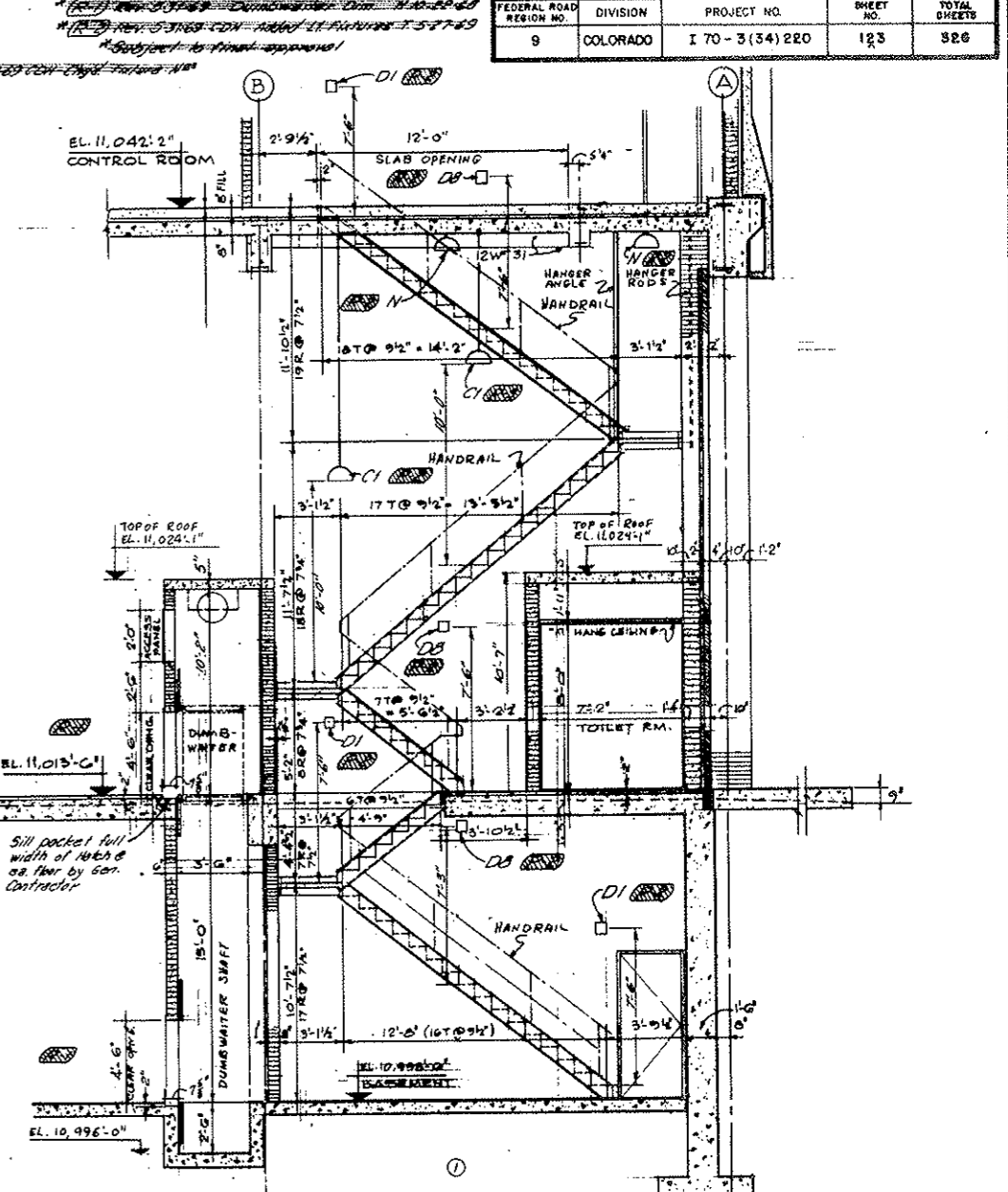
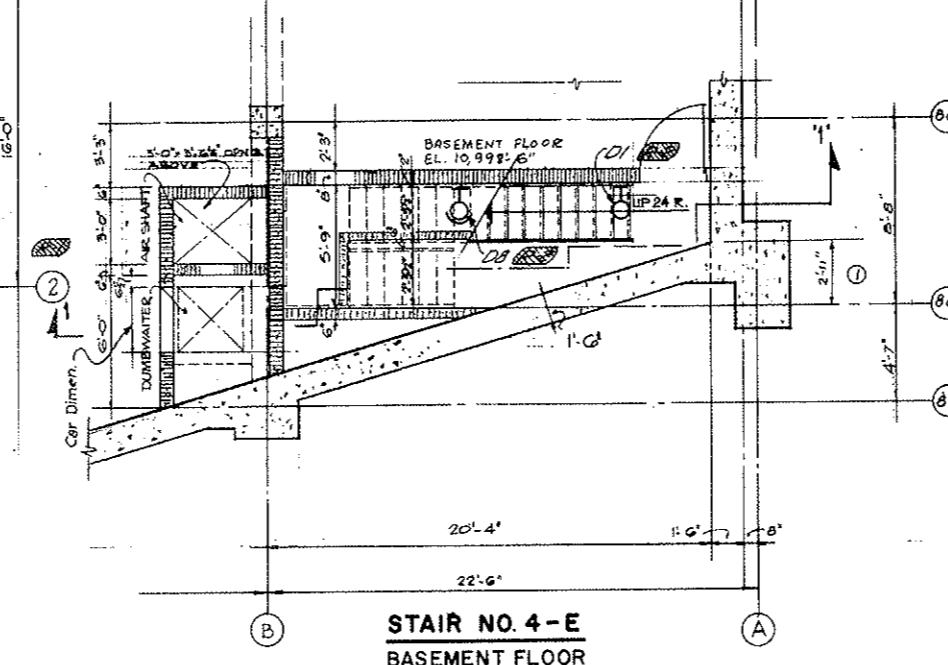
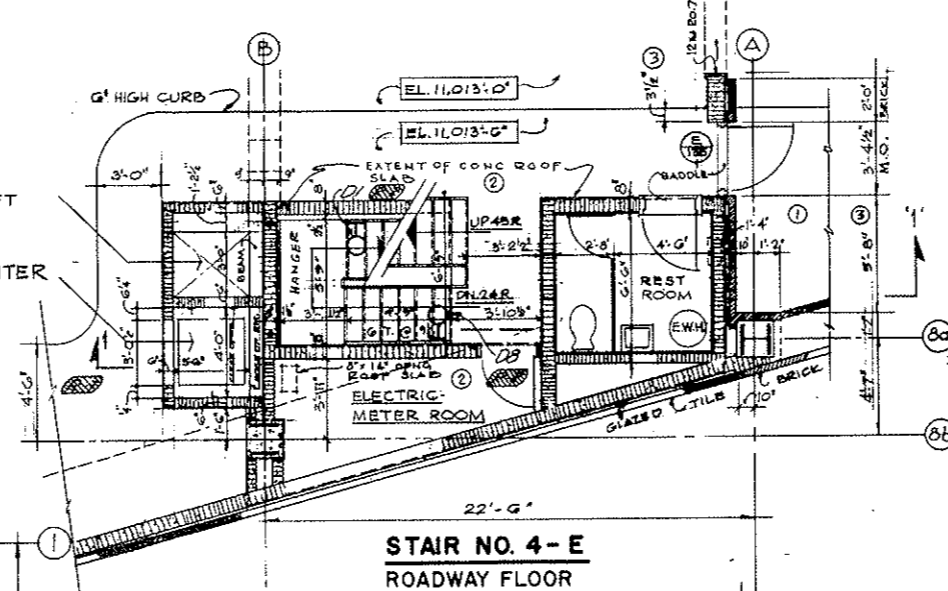
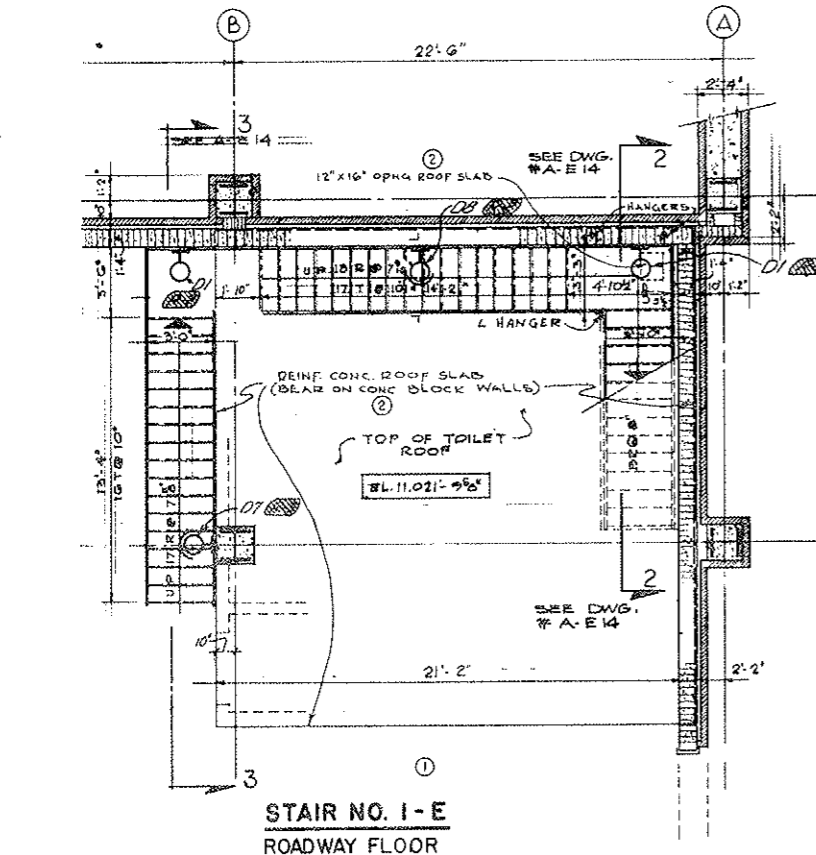
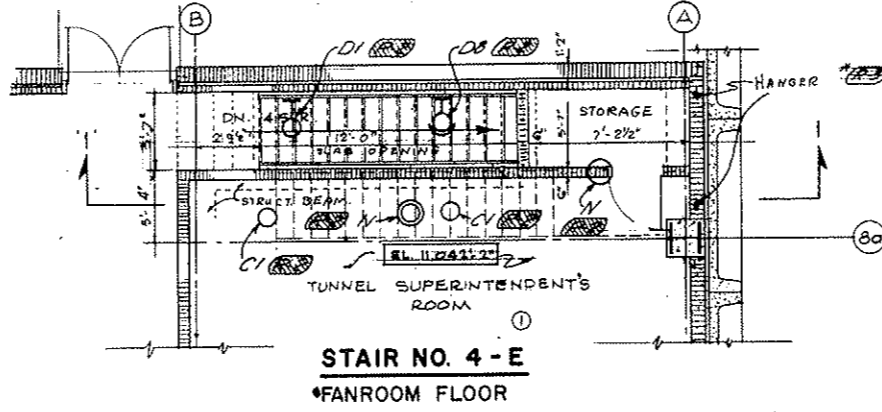
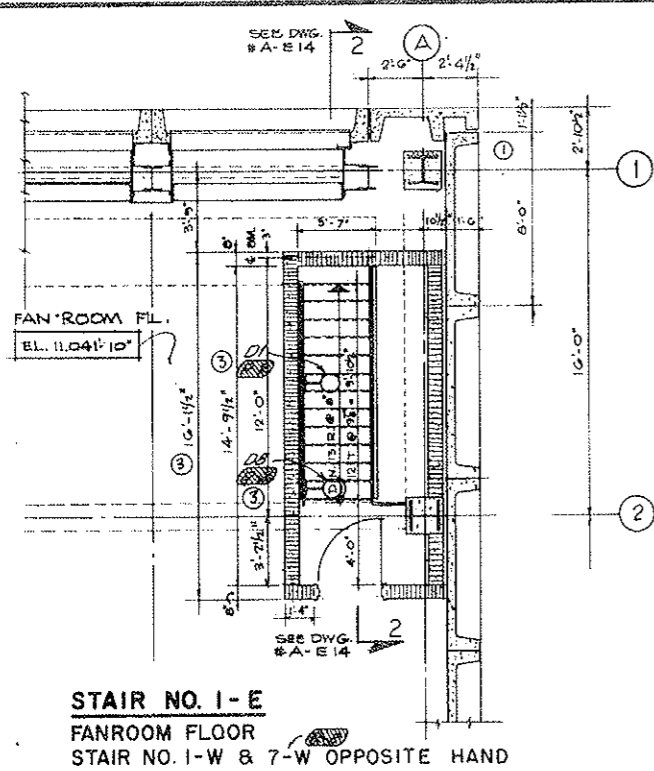


AS CONSTRUCTED
REVISED DATE
 10-26-73

NOTE A:
 TUNNEL VENTILATION SYSTEM (BID ITEM 165)
 REVISED SEE H.S. 4115 & SPEC. 17A
 SEE H.S.H. DWG. FOR CONTRACT LIMITS.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ARCHITECTURAL EAST VENTILATION BUILDING BUILDING SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED P.R.V.	H.G.	RECOMMENDED BY	<i>[Signature]</i>	APPROVED	<i>[Signature]</i>
DRAWN	H.G.	CHECKED	<i>[Signature]</i>	APPROVED	<i>[Signature]</i>
SUBMITTED	<i>[Signature]</i>	APPROVED	<i>[Signature]</i>		
NEW YORK, N. Y.					DRAWING NO. A-E12

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	123	326



Note A
Dimensions indicated are to centerline of outlet bar.
For lighting systems notes see Dwg. No. E-W-7

**AS CONSTRUCTED
NO REVISIONS**
DATE 10-26-73

REVIEWED	DIMENSIONS	STAIRS 1-E & 4-E	10/26/73	J.M.
REMOVED	ROOF SLAB	ADDED OPENING ROOF SLAB	10/26/73	J.M.
ADDED	HANGERS	STAIR SERRATES & MESH DET.	10/26/73	J.M.
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK. APPR.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
ARCHITECTURAL EAST VENTILATION BUILDING STAIR DETAILS - SHEET I				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED	T.T.	RECOMMENDED	Richard Park	Approved
DRAWN	T.T.	CHECKED	L.D.	Approved
SUBMITTED	10/26/73	DATE	10/26/73	BY
NEW YORK, N. Y.				SCALE: 1/4" = 1 FT. DATE: AUG. 1967
				DR. SHEET NO. A-E-13

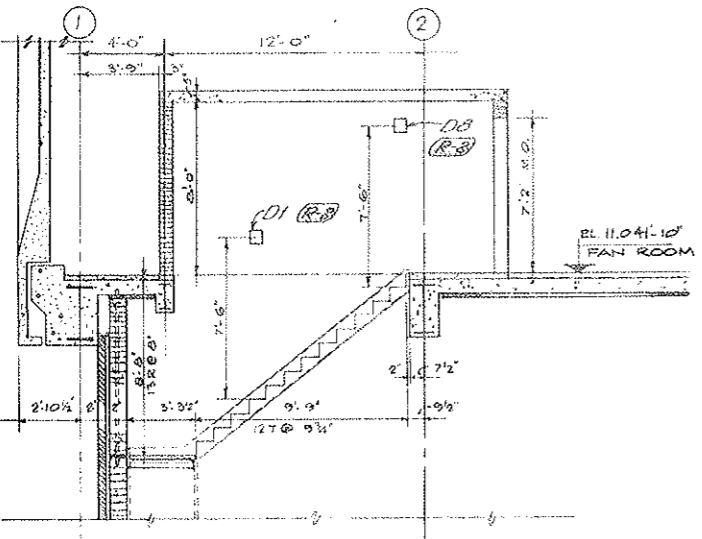
(R-3) 1-3-69 C.D.H. - Civil - Parture 112

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	124	326

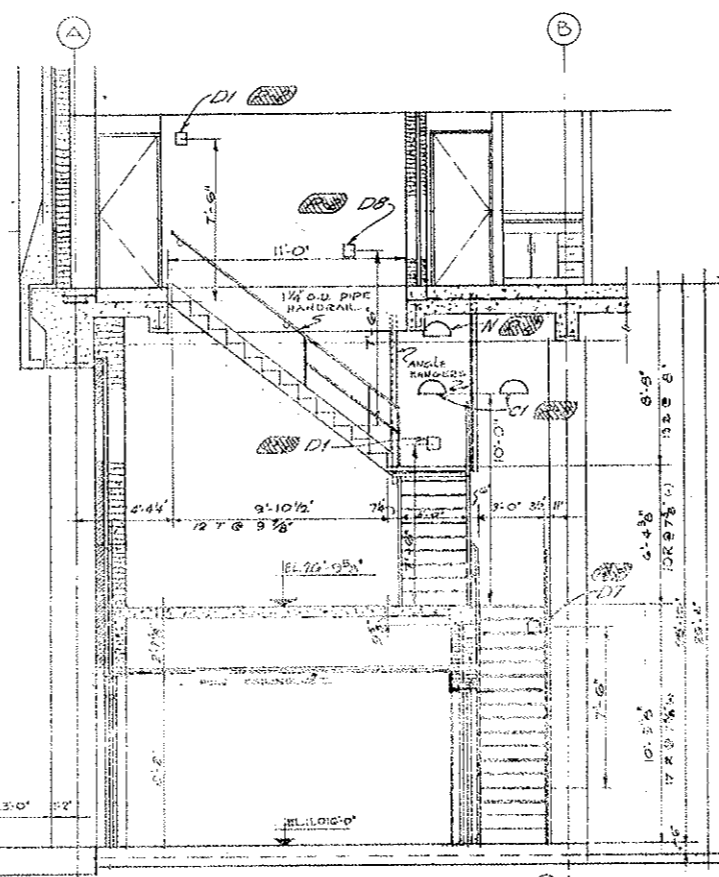
(R-1) 12-20-68-Rev-Dim. C.D.H.
 (R-2) 3-21-69 C.D.H. Rev. Added LI. Fixtures: T.5-27-69
 * Subject to final approval

AS CONSTRUCTED
 NO REVISIONS DATE 10-26-73

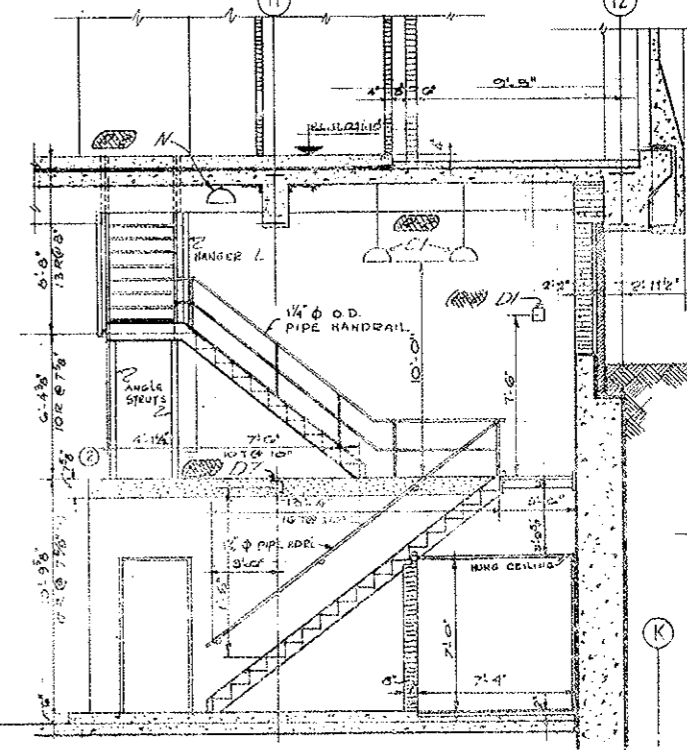
See "Note A" Draw. A-E-13 (R-2)



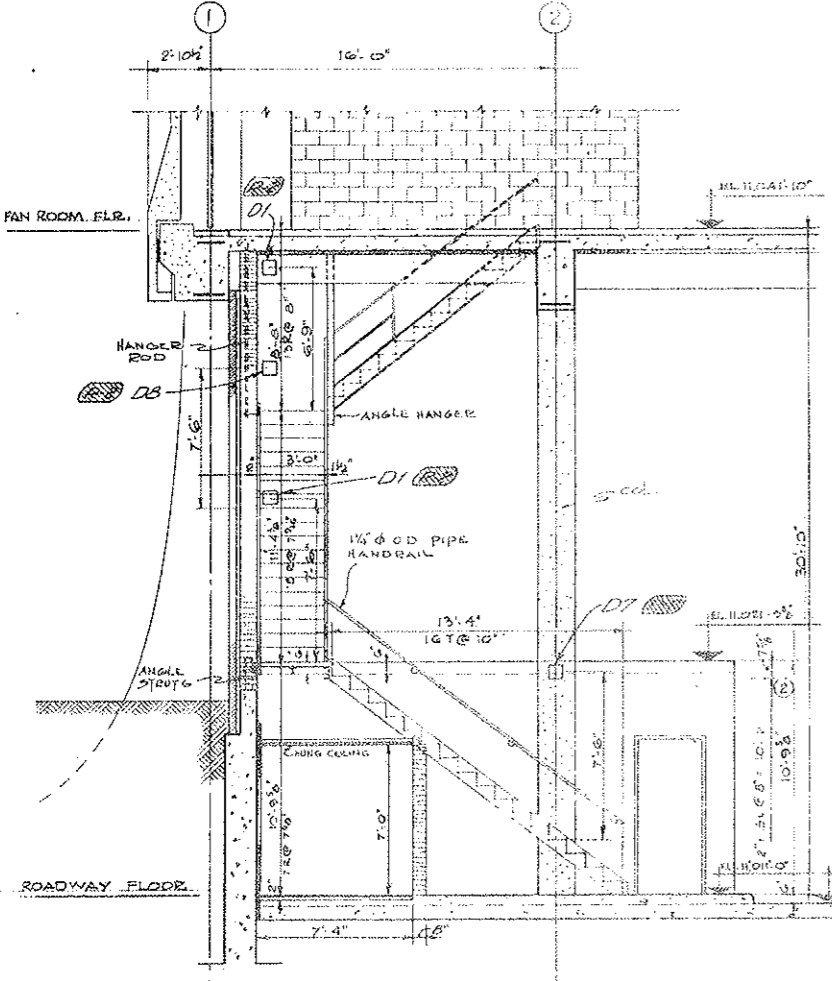
SECTION 2-2
 STAIR NO. 1-E
 FOR PLAN SEE DWG. NO. A-E-13



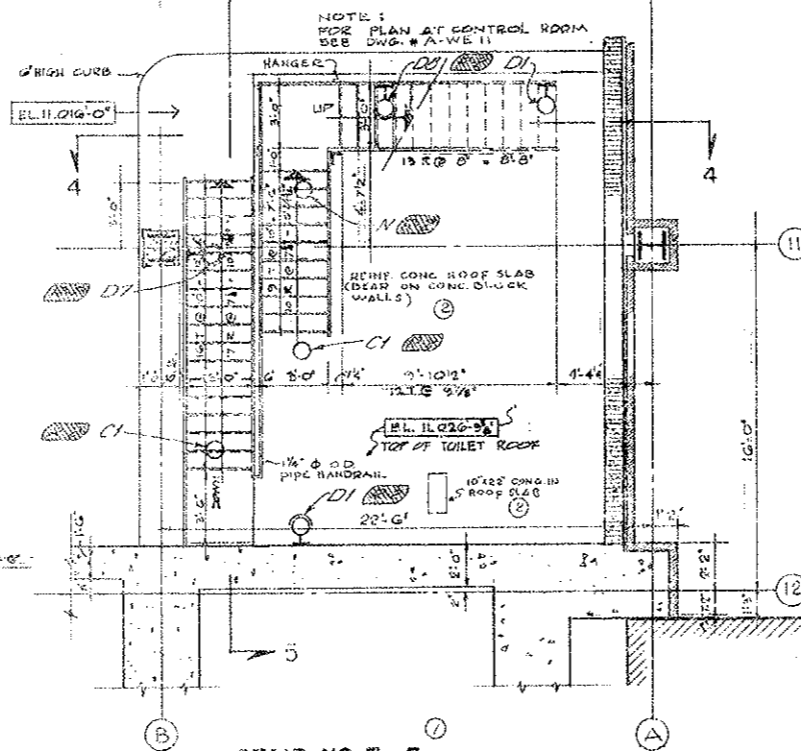
SECTION 4-4
 STAIR NO. 7-E



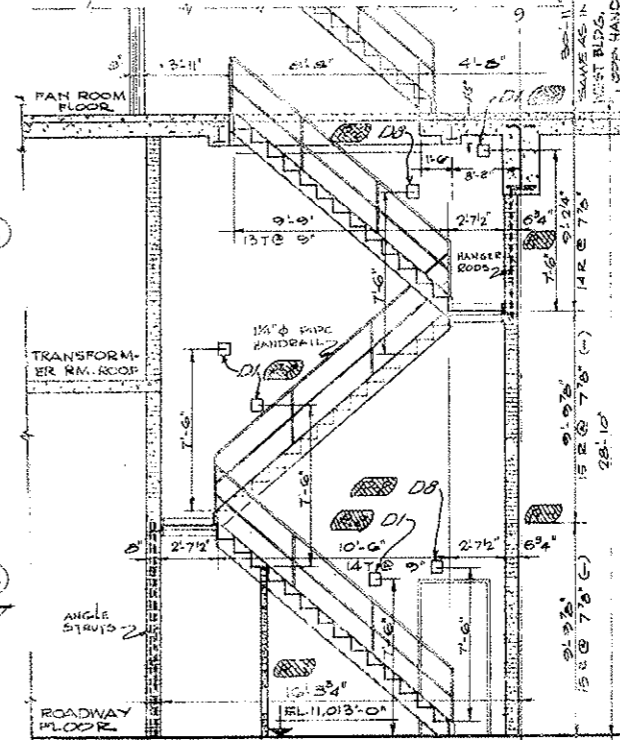
SECTION 5-5
 STAIR NO. 7-E



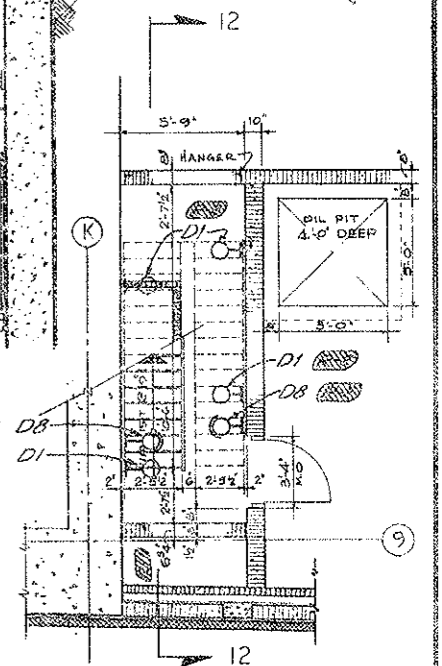
SECTION 3-3
 STAIR NO. 1-E
 FOR PLAN SEE DWG. A-E-13



SECTION 4-4
 STAIR NO. 7-E



SECTION 12-12
 STAIR NO. 6-E



SECTION 6-6
 STAIR NO. 6-E
 ROADWAY FLOOR

NOTE:
 6 3/4" Dim. is from inside of block wall to Column 9. Wall remains 5" thick.

NOTE:
 FOR FAN ROOM FLOOR PLAN & ROOF SEE DWG. # A-W-13

NOTE:
 FOR PLAN OF CONTROL ROOM SEE DWG. # A-W-11

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
-----	------	-------------------------	----	-----	------

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
 EAST VENTILATION BUILDING
 STAIR DETAILS - SHEET 2

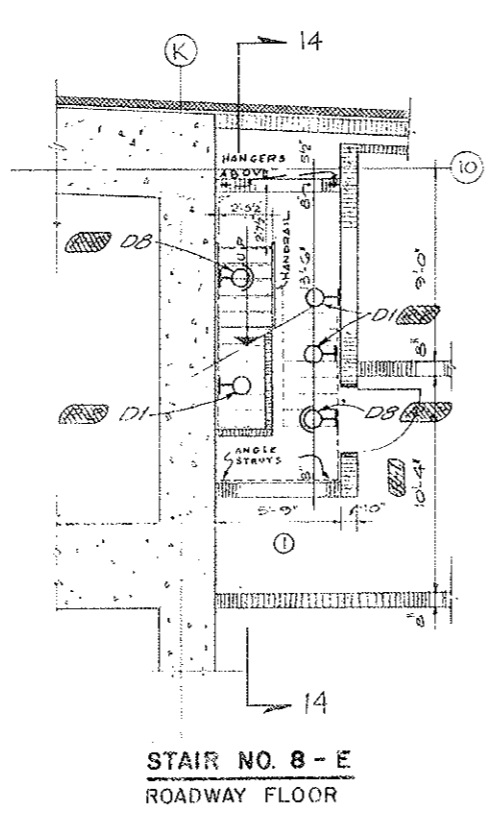
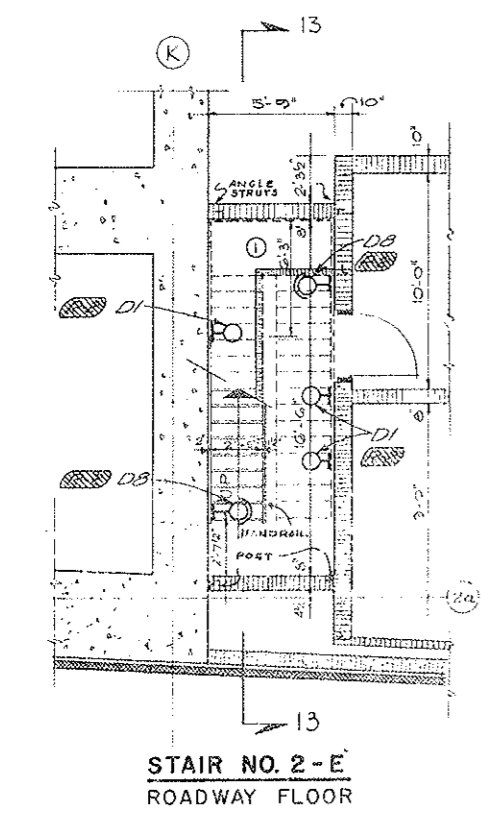
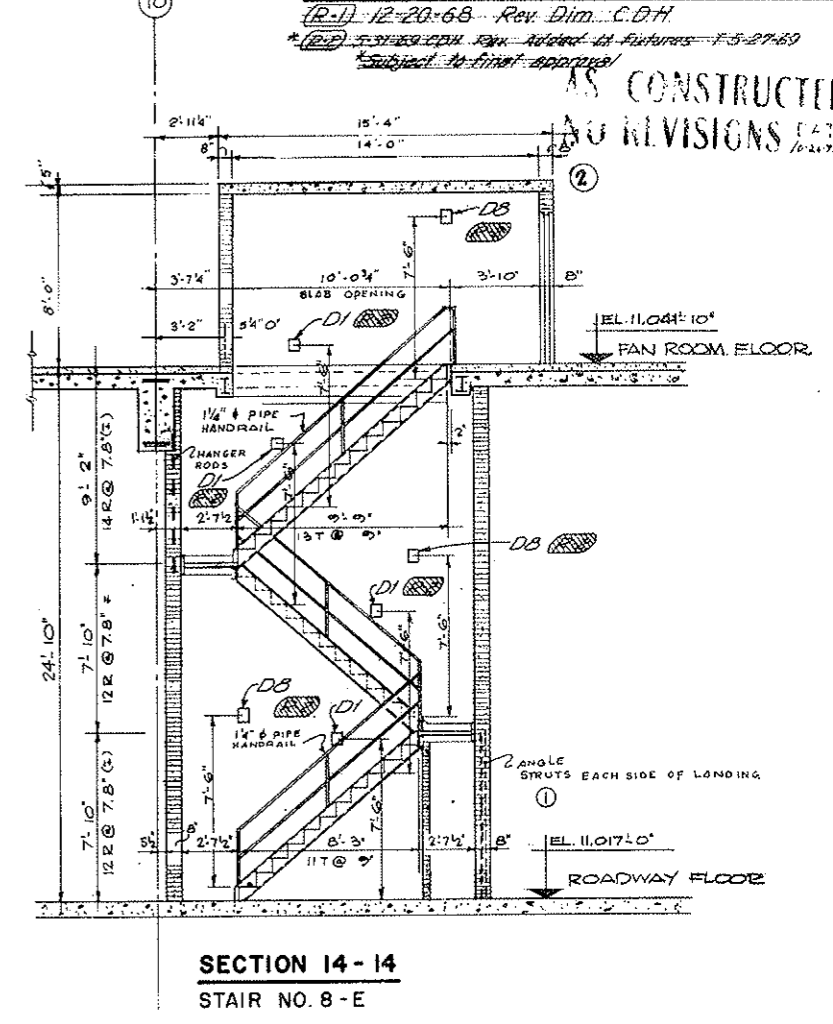
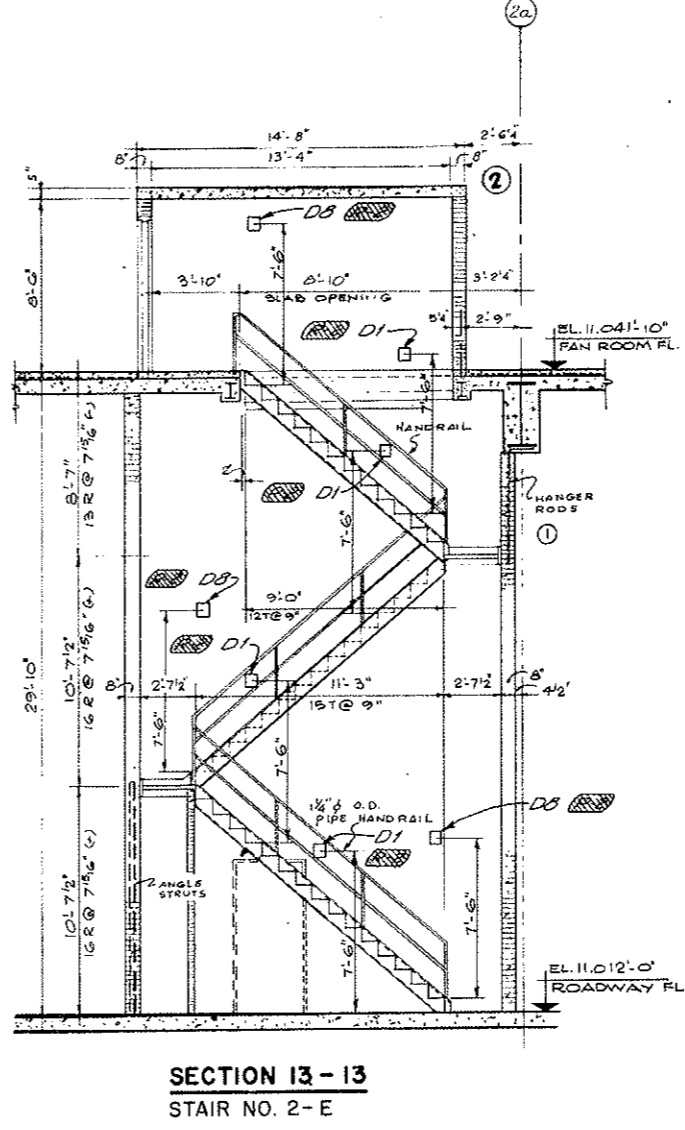
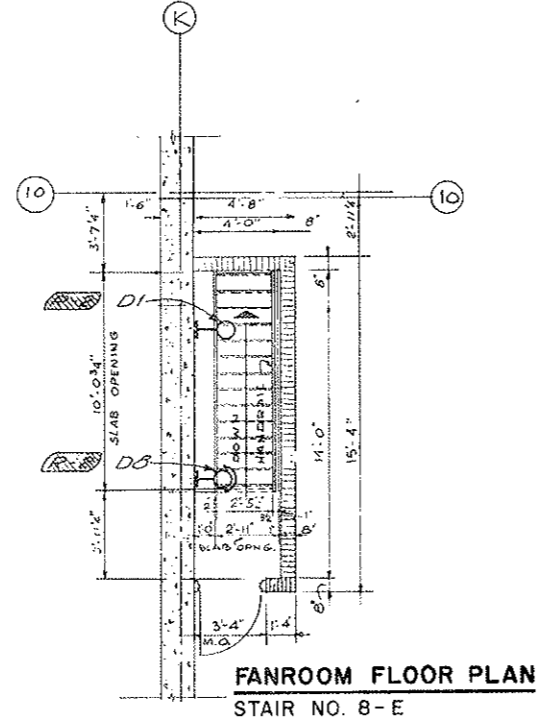
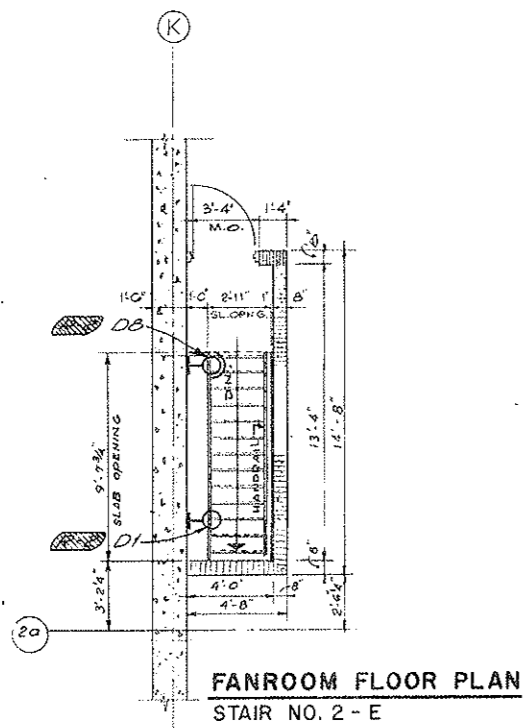
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED BY T.T. DRAWN BY T.T. CHECKED BY L.D. SUBMITTED BY [Signature] APPROVED BY [Signature]
 NEW YORK, N.Y. SCALE 1/8" = 1'-0" DATE AUG. 1967 DRAWING NO. A-E-14

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	125	326

(R-1) 12-20-68 Rev. Dim. C.D.H.
 * (P.P.) 5-21-69 P.P.H. Rev. Added 44 Fixtures F-5-27-69
 Subject to final approvals

AS CONSTRUCTED
 NO REVISIONS



See "Note A" Dwg A-E13

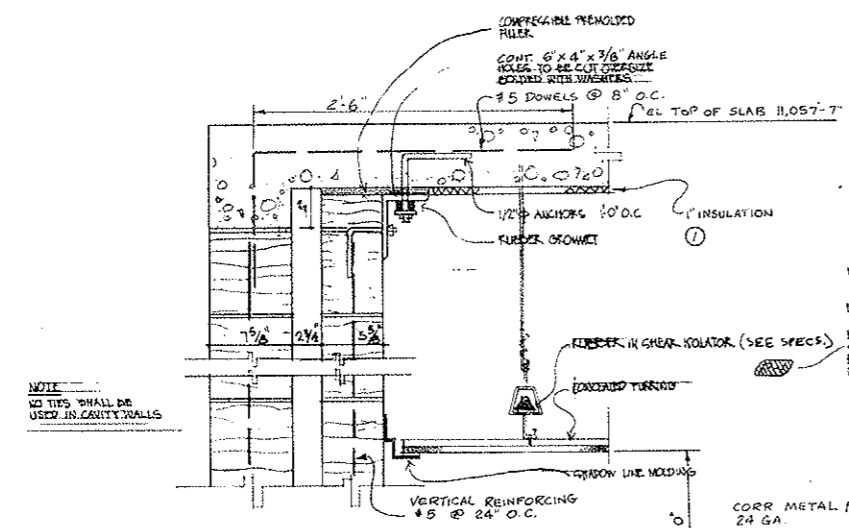
NOTE:
 - STAIR SUPPORTS INDICATED ARE DIAGRAMMATIC ONLY
 - STAIR FABRICATOR TO SHOW ON SHOP DRAWINGS ALL STRUCTURAL DETAILS NECESSARY FOR SUPPORT OF STAIR, FOR APPROVAL BY ENGINEER.

DESIGNED: T.T.	CHECKED: L.O.	APPROVED: [Signature]	DRAWING NO. A-E15
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
ARCHITECTURAL EAST VENTILATION BUILDING STAIR DETAILS - SHEET 3			
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.			
SCALE: 3/4" = 1' FT. DATE AUG. 1967			

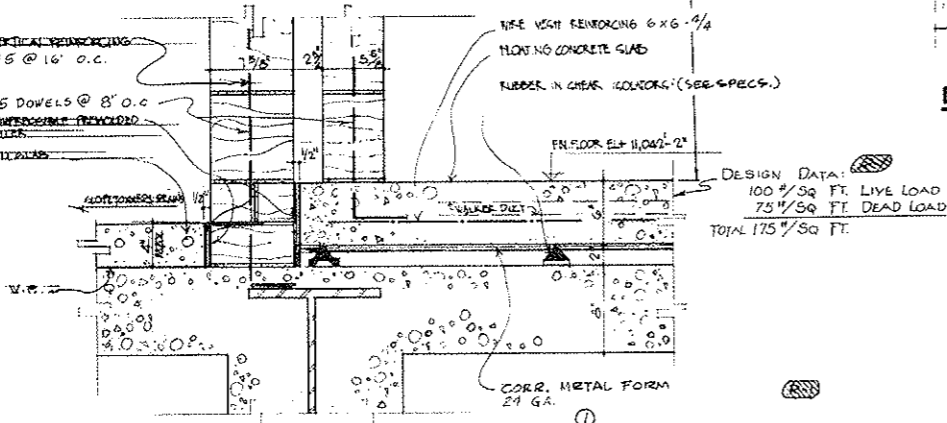
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(13)212	127	326

5-31-68 EPH Revised Dimensions 11-10-68
Subject to final approval

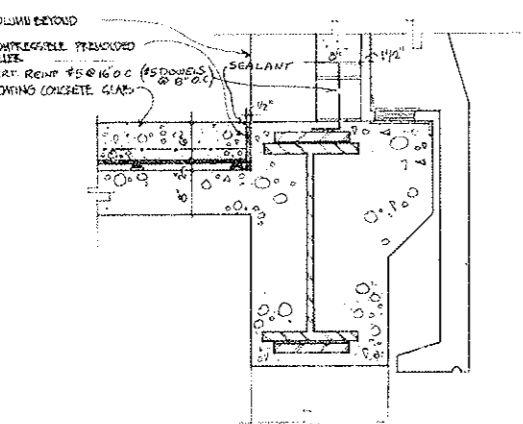
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



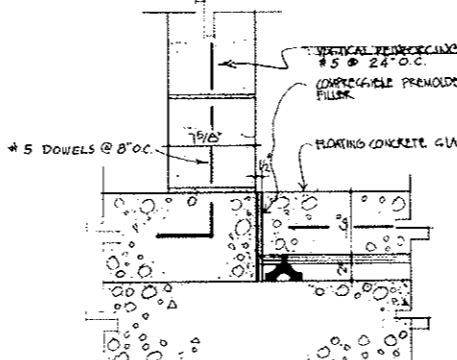
DETAIL SECTION 2-2
1/2" = 1'-0"



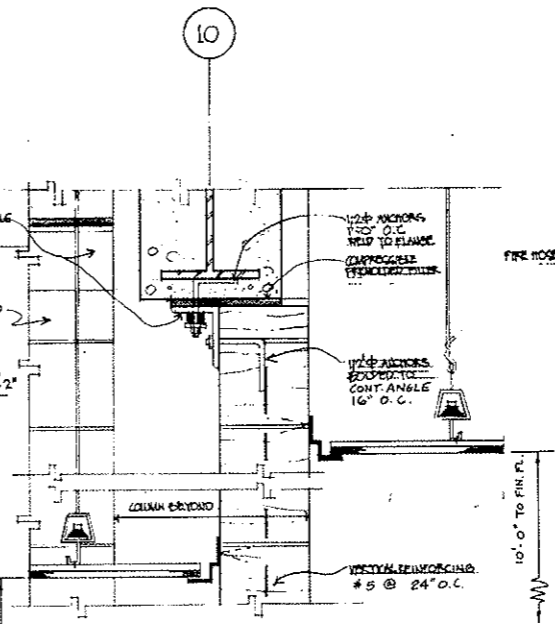
DETAIL SECTION 5-5
1/2" = 1'-0"



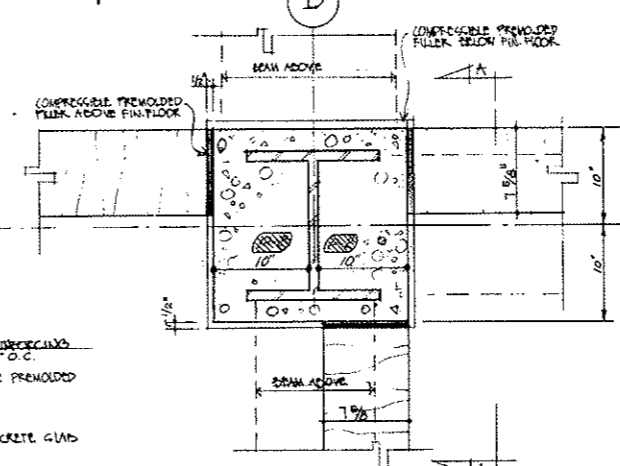
DETAIL SECTION 3-3
3/4" = 1'-0"



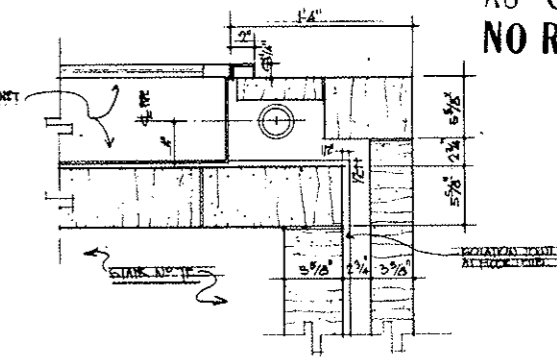
DETAIL SECTION 4-4
1/2" = 1'-0"



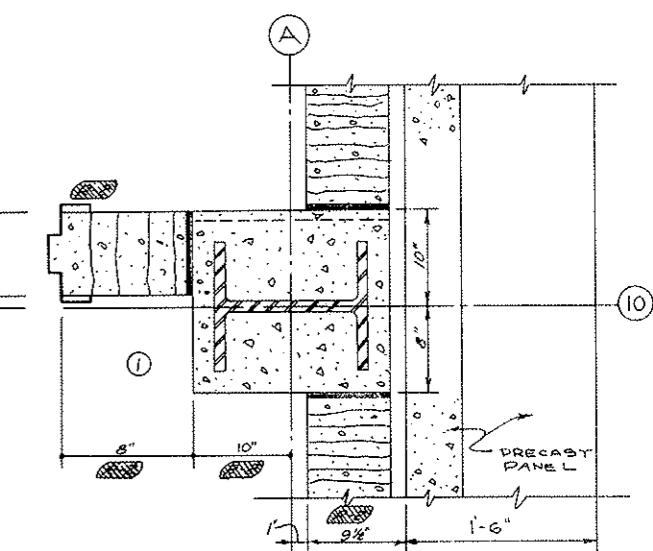
SECTION A-A
1/2" = 1'-0"



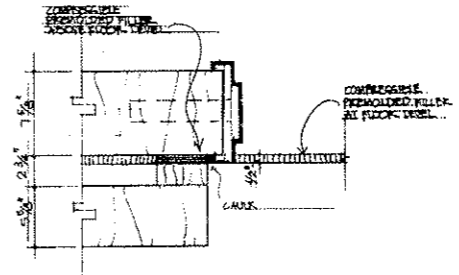
DETAIL SECTION 1
1/2" = 1'-0"



DETAIL 6 - FIRE HOSE CABINET
1/2" = 1'-0"



DETAIL SECTION 8
SCALE 1/2" = 1'-0"



DETAIL 7
1/2" = 1'-0"

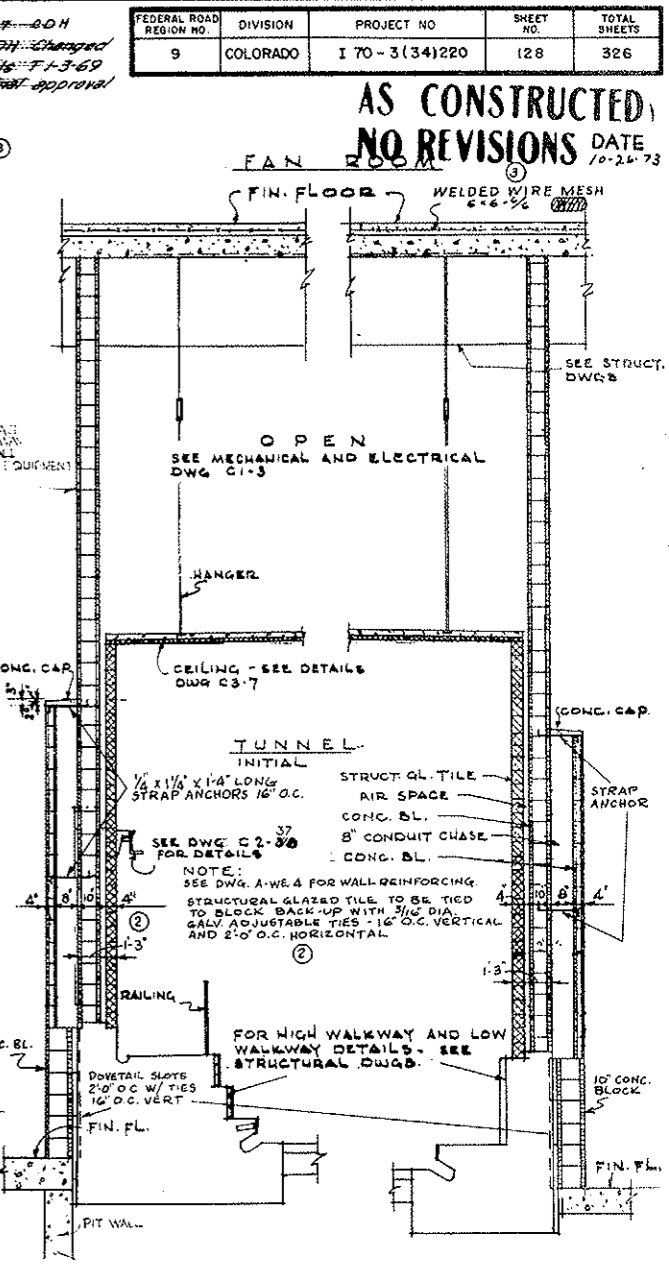
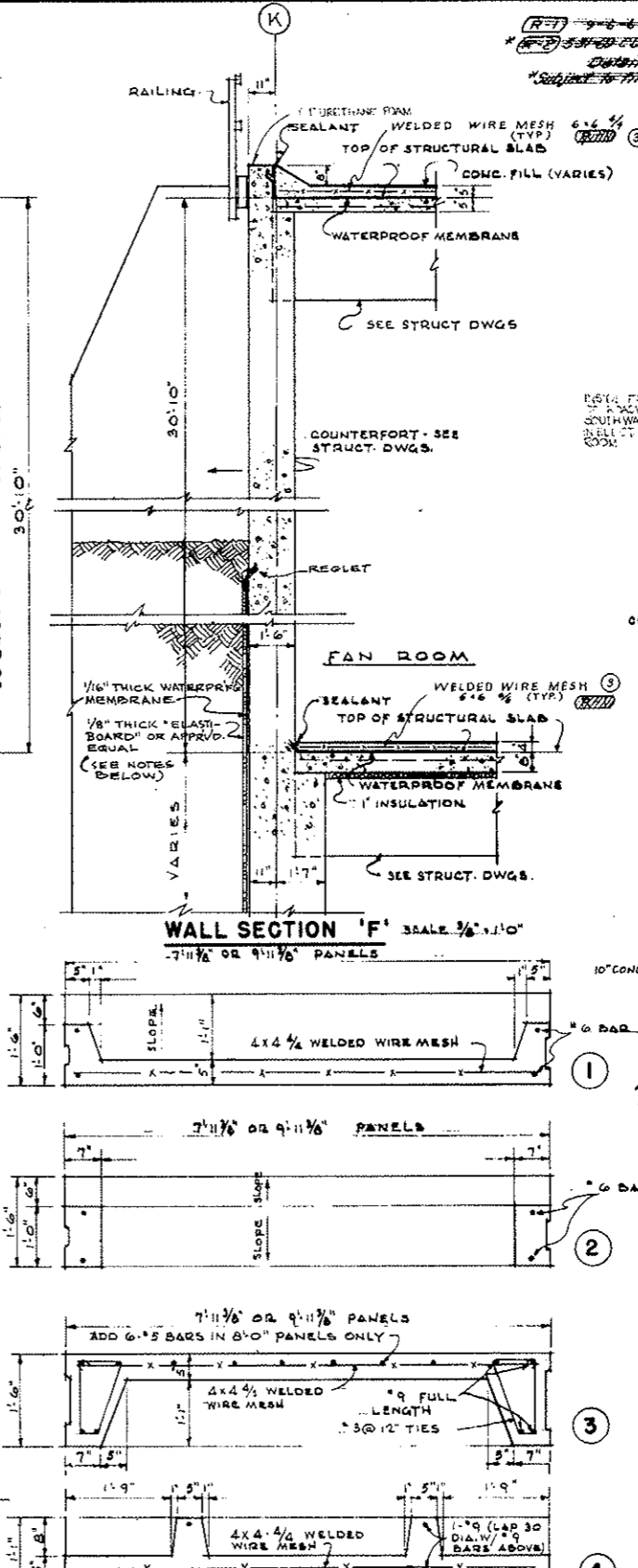
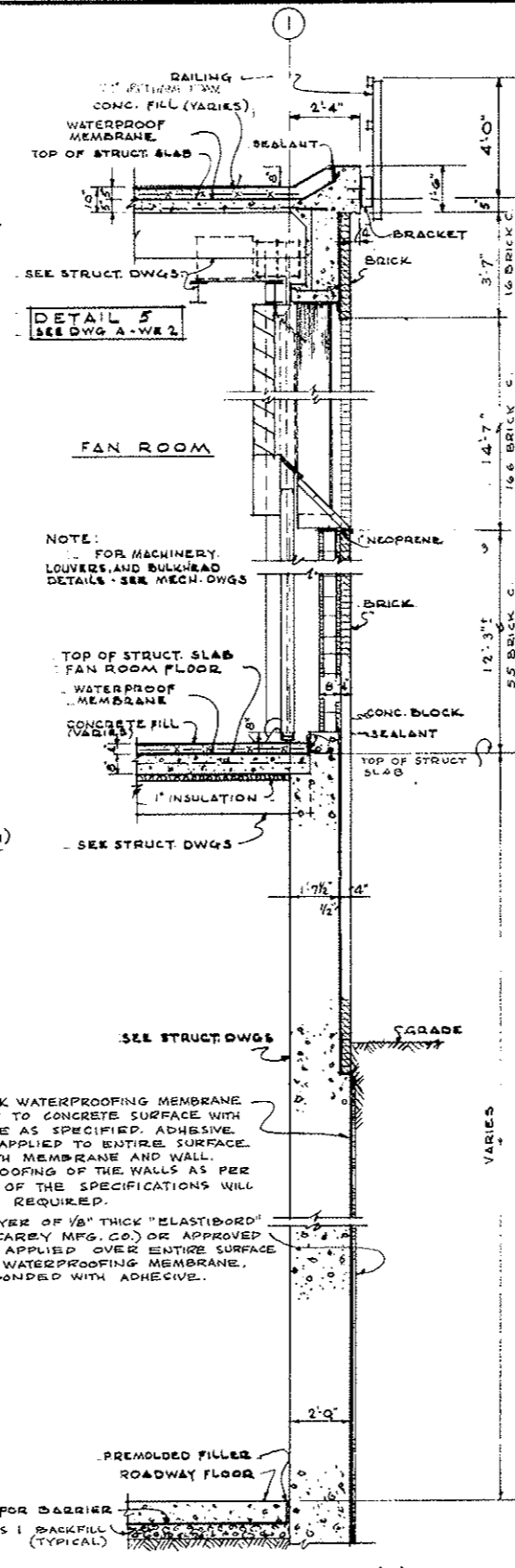
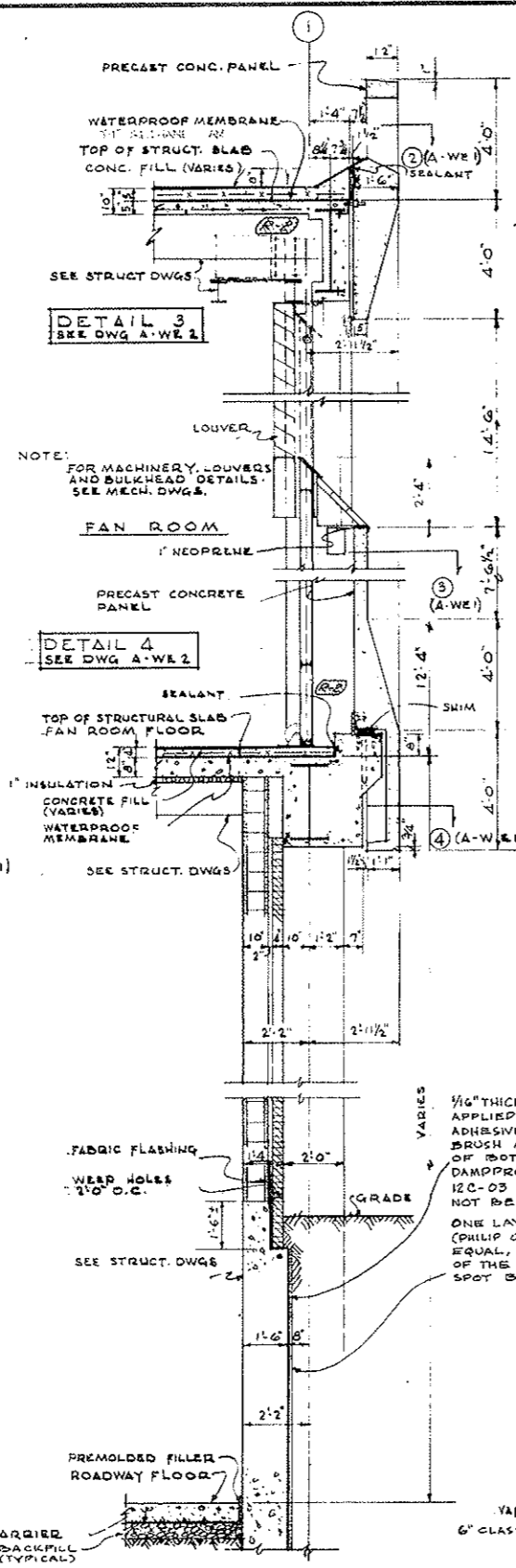
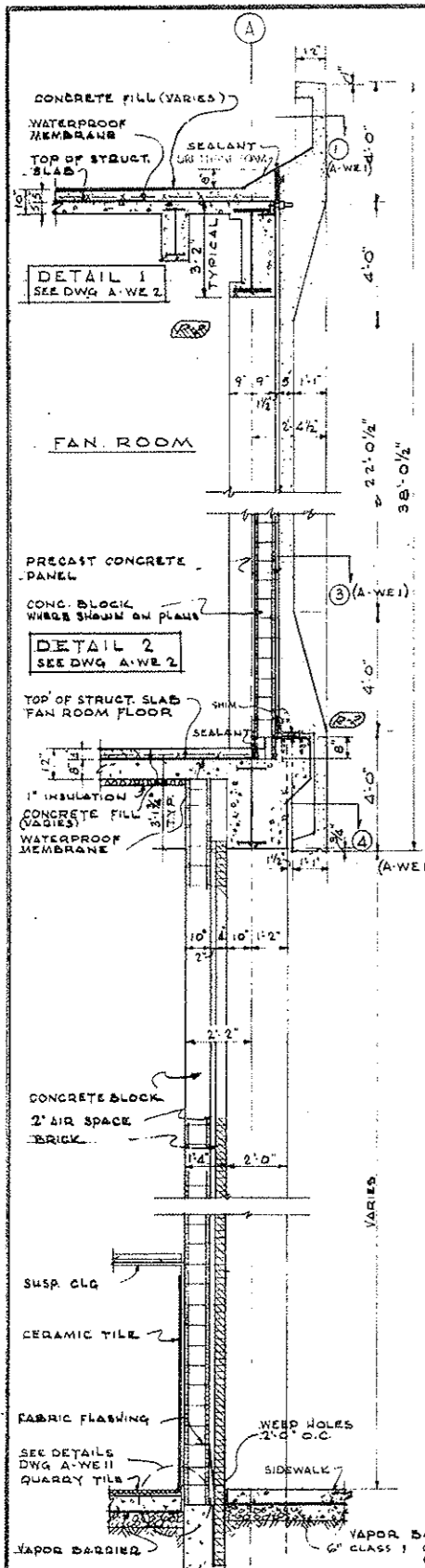
NOTE
FOR LOCATION OF DETAILS ON THIS DRAWING SEE DRAWING A-E-17

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
ARCHITECTURAL			
EAST VENTILATION BUILDING CONTROL ROOM AREA - DETAILS			
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.			
DESIGNED BY P.R.V. C.E.	CHECKED BY M. J. ...	APPROVED BY G. ...	DRAWING NO. A-E-17
NEW YORK, N.Y.		SCALE: AS SHOWN	DATE: AUG. 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	128	326

AS CONSTRUCTED
NO REVISIONS DATE 10-25-73

RET 10-1-67-00H
 5-1-69-00H-Changed
 Date: 1-3-69
 Subject: Final approval



NOTE:
 1. FOR ADDITIONAL PRECAST CONCRETE PANEL REINFORCING DETAILS, SEE DWG. A-W-E-2

NOTE:
 FOR MACHINERY, LOUVERS AND BULKHEAD DETAILS - SEE MECH. DWGS.

NOTE:
 FOR MACHINERY, LOUVERS AND BULKHEAD DETAILS - SEE MECH. DWGS.

NOTE:
 2. NORTH (INITIAL) ROADWAY AS SHOWN SOUTH (FUTURE) ROADWAY OMIT TILE WALLS AND HUNG CEILING

NO.	DATE	DESCRIPTION OF REVISION	BY	CH. APP.
1		REVISED DIMEN. ADDED REINF. SIZE	J.M.	J.M.
2		REVISED SEC. G-G ADDED NOTE	J.M.	J.M.
3		ADDED PANEL REINFORCING DETAILS	J.M.	J.M.
4		ADDED WALL WATERPROOFING	J.M.	J.M.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST AND EAST VENTILATION BUILDINGS
WALL SECTIONS AND DETAILS - SHEET 1

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N.Y.

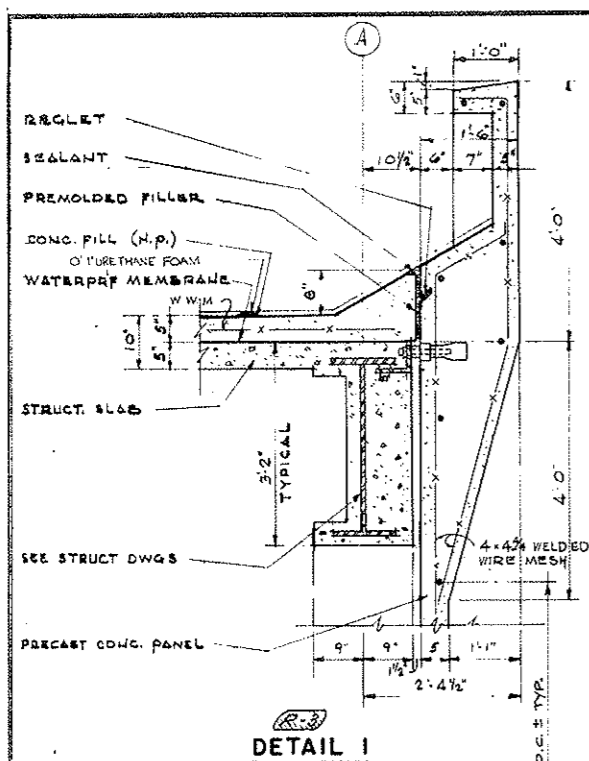
DESIGNED: P.R.V.
 DRAWN: J.M.
 CHECKED: J.M.
 SUBMITTED: J.M.

RECOMMENDED: J.M.
 APPROVED: J.M.

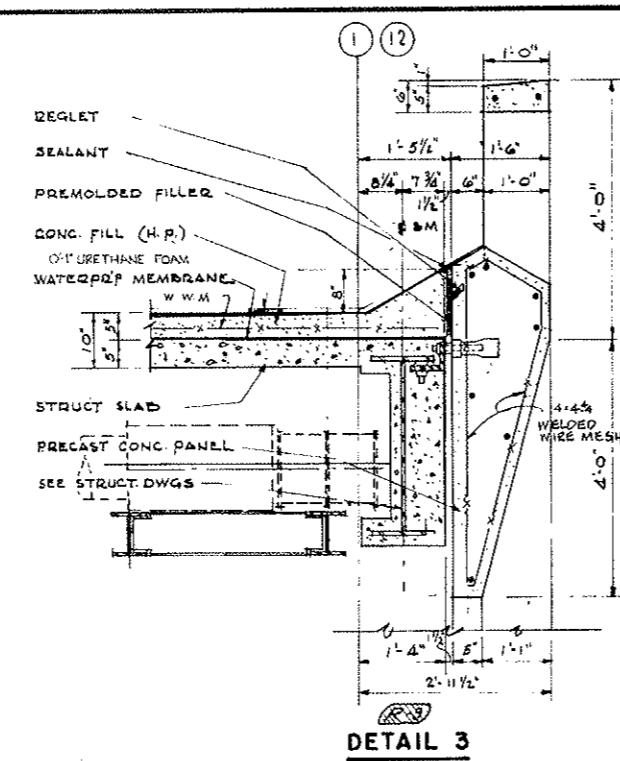
NEW YORK, N.Y. SCALE: AS NOTED DATE: AUG. 1967

DRAWING NO. **A-W-E-1**

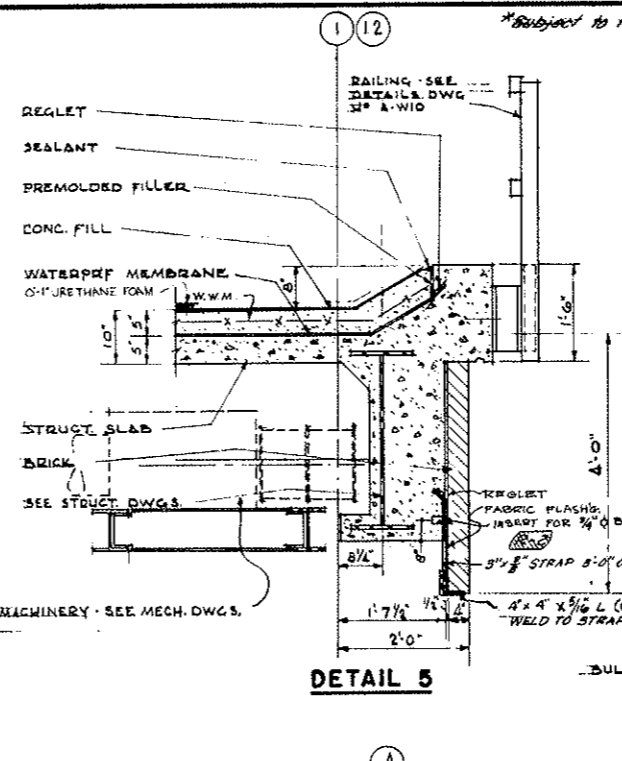
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	129	326



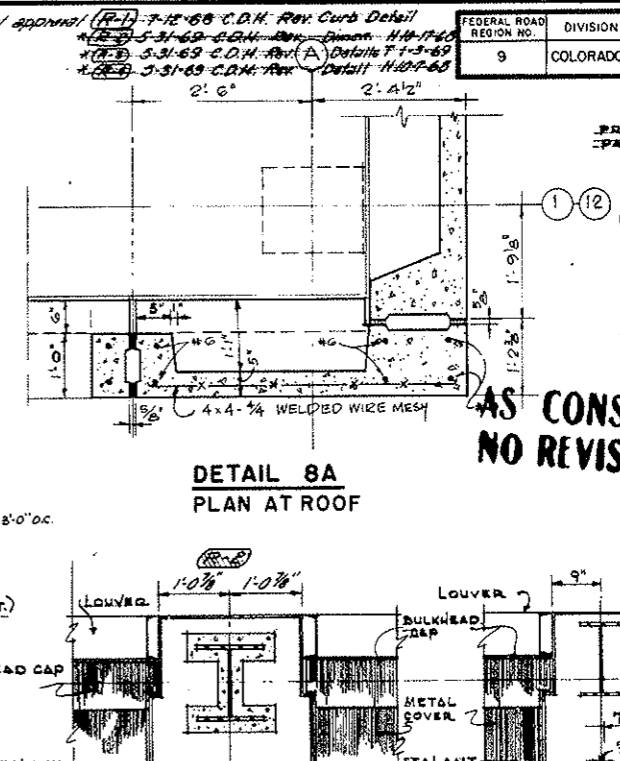
DETAIL 1



DETAIL 3

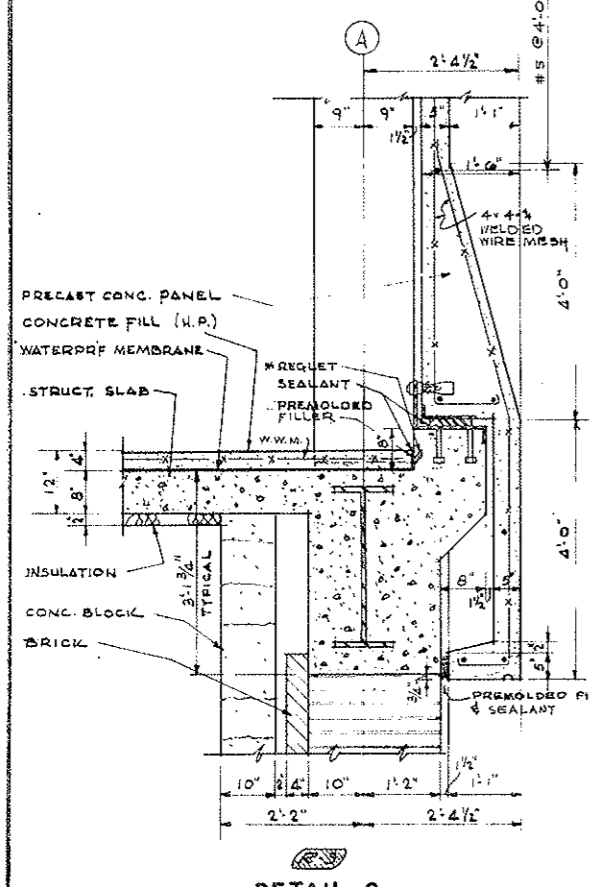


DETAIL 5

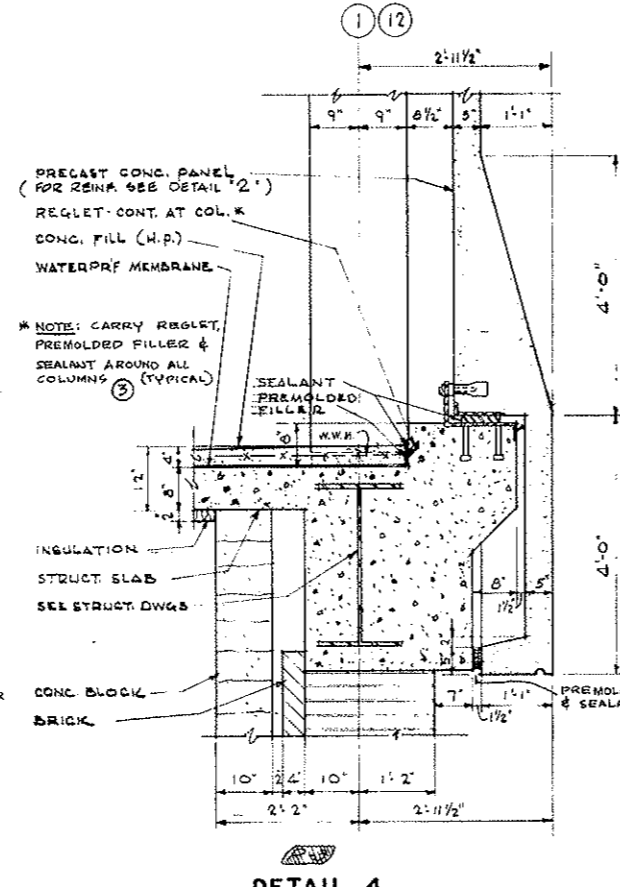


DETAIL 8A
PLAN AT ROOF

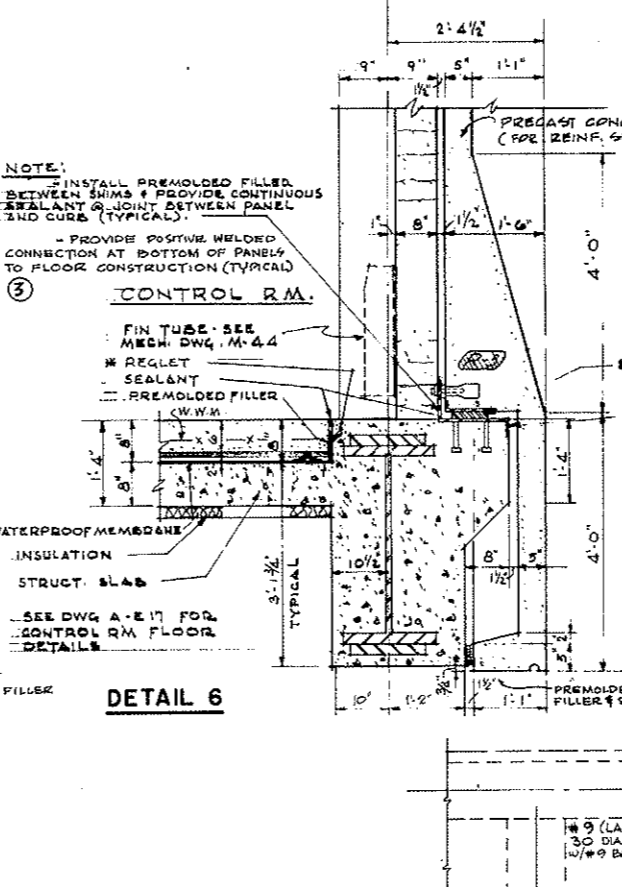
**AS CONSTRUCTED
NO REVISIONS**
DATE 10-26-78
EXPANSION JOINT DETAIL
FAN ROOM FLOOR



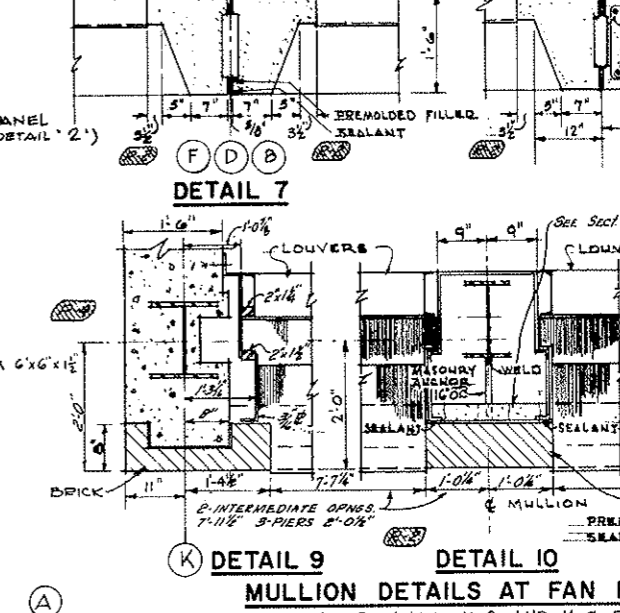
DETAIL 2



DETAIL 4

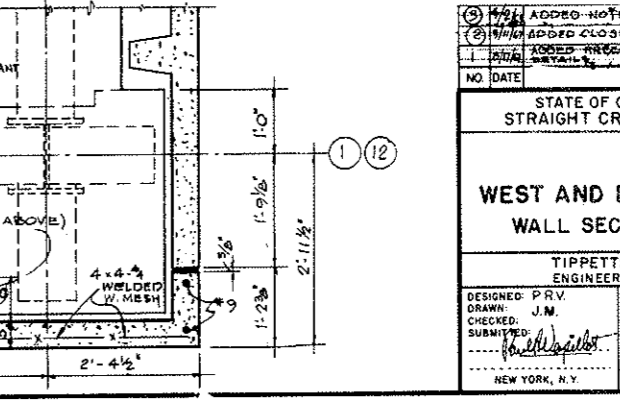


DETAIL 6



DETAIL 7

DETAIL 8



DETAIL 9

DETAIL 10

DETAIL 11

MULLION DETAILS AT FAN ROOM
SEE MECHANICAL DRAWINGS M-8 AND M-9 FOR LOUVER DETAILS

NOTE:
- ALL PRECAST PANEL REINF. BARS INDICATED THUS (•) ON ABOVE DETAILS ARE # 5 BARS
- FOR ADDITIONAL PRECAST PANEL REINFORCING DETAILS, SEE DWG. # A-WE 1
- SHIMS AND CONNECTING L'S BY PRECAST CONCRETE CONTRACTOR

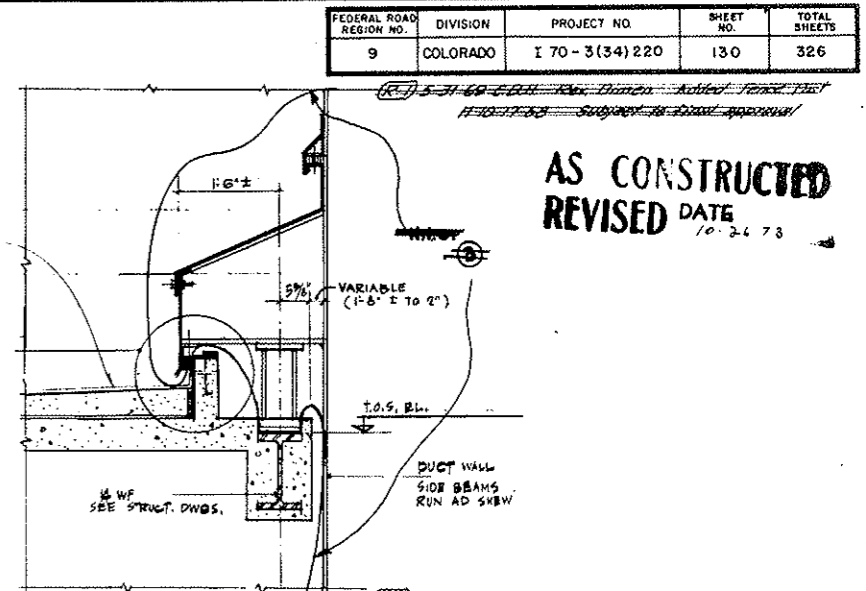
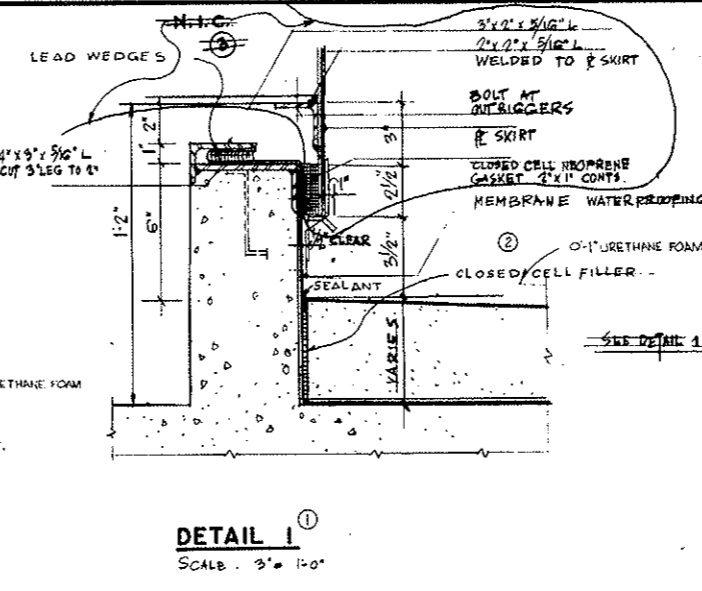
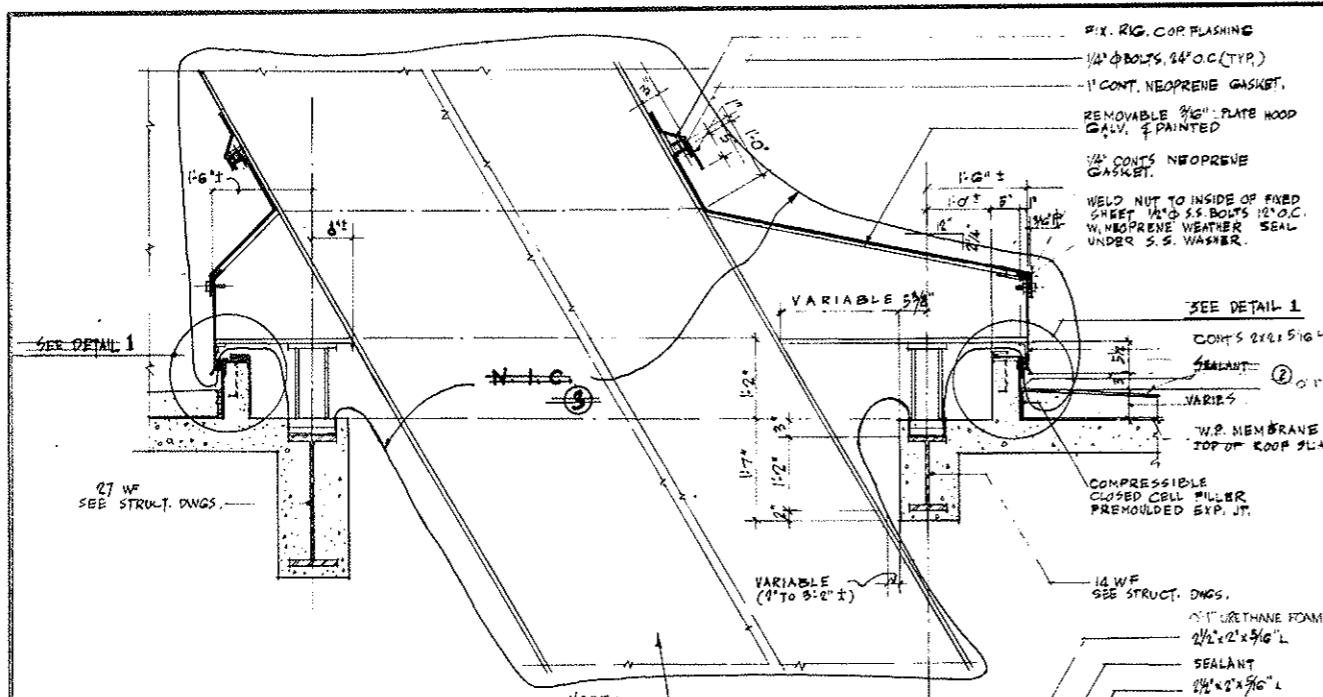
NOTE:
- INSTALL PREMOLDED FILLER BETWEEN SHIMS & PROVIDE CONTINUOUS SEALANT @ JOINT BETWEEN PANEL 2ND CURS (TYPICAL)
- PROVIDE POSITIVE WELDED CONNECTION AT BOTTOM OF PANELS TO FLOOR CONSTRUCTION (TYPICAL)
③ CONTROL RM.
FIN TUBE - SEE MECH. DWG. M-44
REGLET - SEALANT
PREMOLDED FILLER (W.W.M.)
WATERPROOF MEMBRANE
INSULATION
STRUCT. SLAB
SEE STRUCT. DWGS
CONC. BLOCK
BRICK
PREMOLDED FILLER & SEALANT

DETAIL 8B
PLAN AT HAUNCH

①	ADDED NOTES AT DETAILS 4 & 6	PRV	4/23/78
②	ADDED CLOSURE RIB AT COLUMN	J.M.	PRV 4/23/78
③	ADDED PRECAST CONC. PANEL REINFORCING DETAILS	T.T.	PRV 4/23/78
NO DATE	DESCRIPTION OF REVISION	BY	CH. APR
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
ARCHITECTURAL WEST AND EAST VENTILATION BUILDINGS WALL SECTIONS AND DETAILS - SHEET 2			
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.			
DESIGNED: PRV	RECOMMENDED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	DRAWING NO.
DRAWN: J.M.	CHECKED: <i>[Signature]</i>	DATE: AUG. 1967	A-WE2
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	SCALE: 3/4" = 1'-0"	
NEW YORK, N.Y.			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	130	326

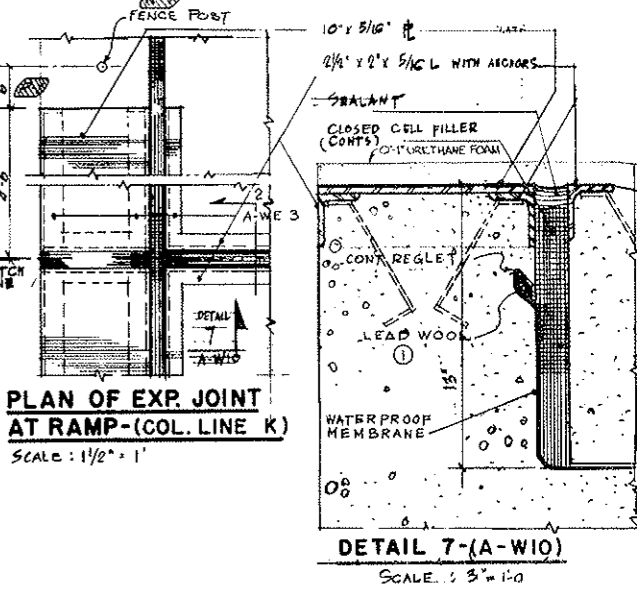
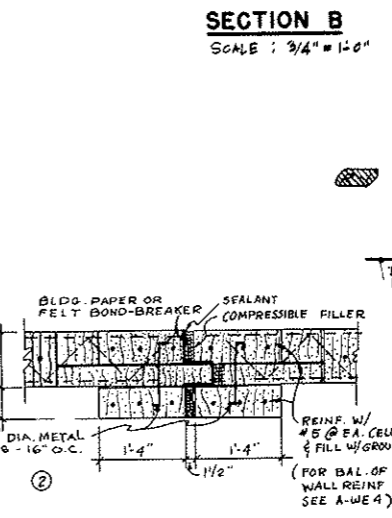
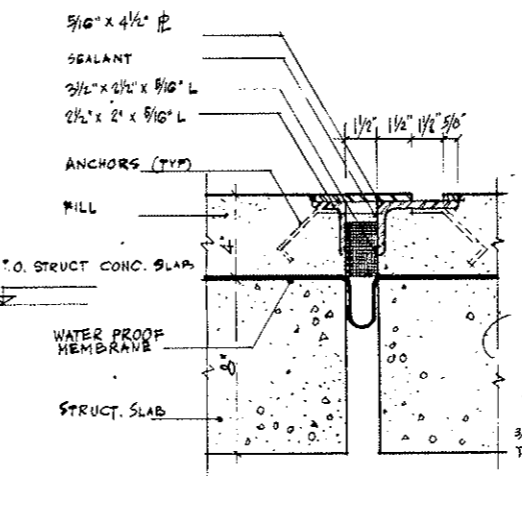
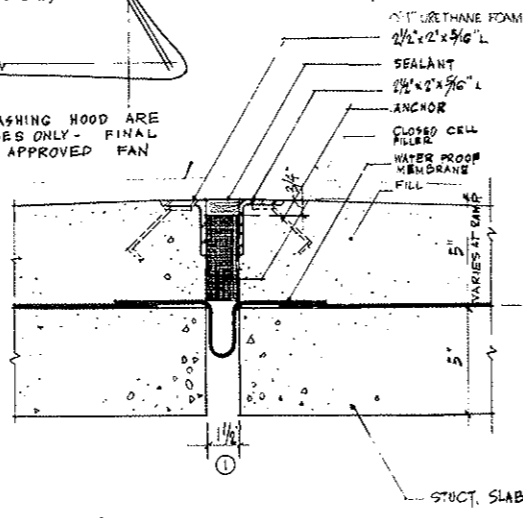
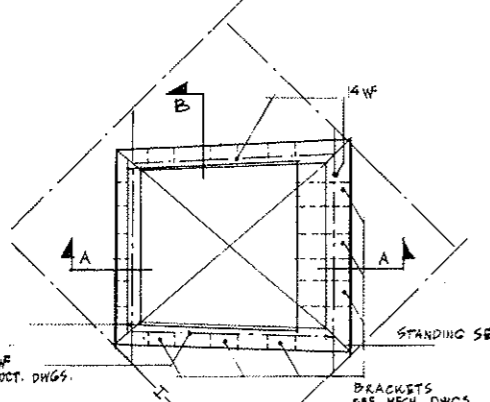
AS CONSTRUCTED
REVISED DATE
10-26-78



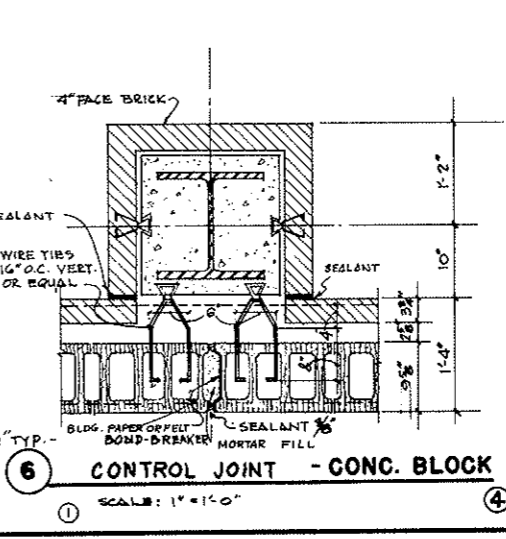
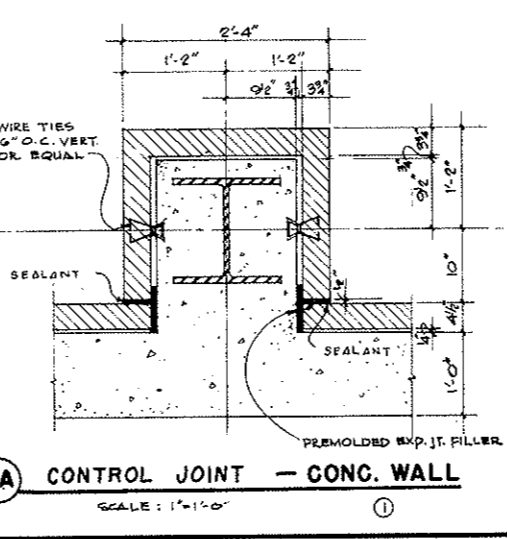
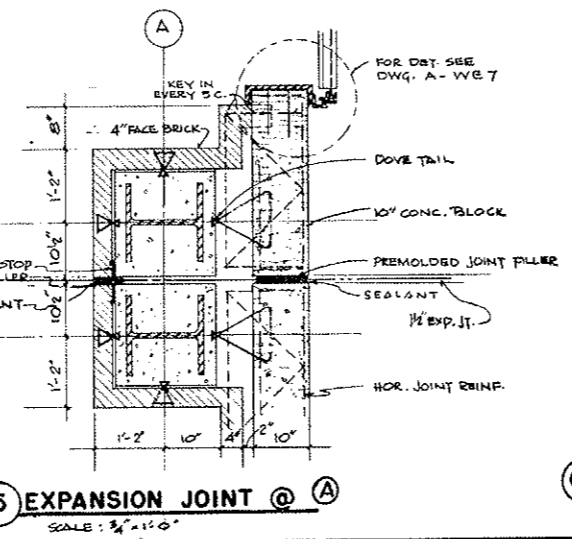
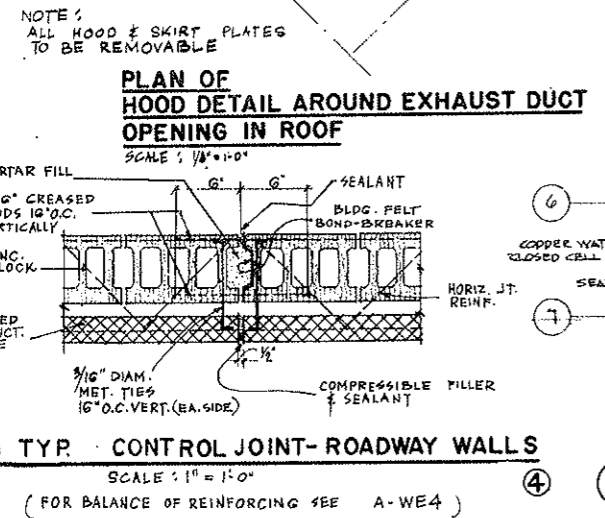
SECTION A-A
SCALE: 3/4" = 1'-0"

DETAIL 1
SCALE: 3" = 1'-0"

SECTION B
SCALE: 3/4" = 1'-0"



4 EXP. JOINT IN 10" CONC. BLOCK WALL
SCALE: 1/2" = 1'-0"



NOTE A:
TUNNEL VENTILATION SYSTEM - (BID ITEM 105)
REVISED - SEE W.O. 1159 & SPEC. 17-A
SEE MECH. DWGS. FOR CONTRACT LIMITS

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.
1		REVISED DETAIL 6 - ADDED DETAIL 3		
2		IDENTIFICATION ITEMS - SEE NOTE A		
3		REVISED DETAIL 7 - SEE NOTE A		
4		PROVIDED NOTE - OMITTED ELEV. AND PART TITLE		
5		REVISED DETAIL 7 - A, C, AND 7		

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST AND EAST VENTILATION BUILDINGS
MISCELLANEOUS DETAILS - SHEET 1

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED: P.R.S.
DRAWN: G.O.
CHECKED: [Signature]
SUBMITTED: [Signature]

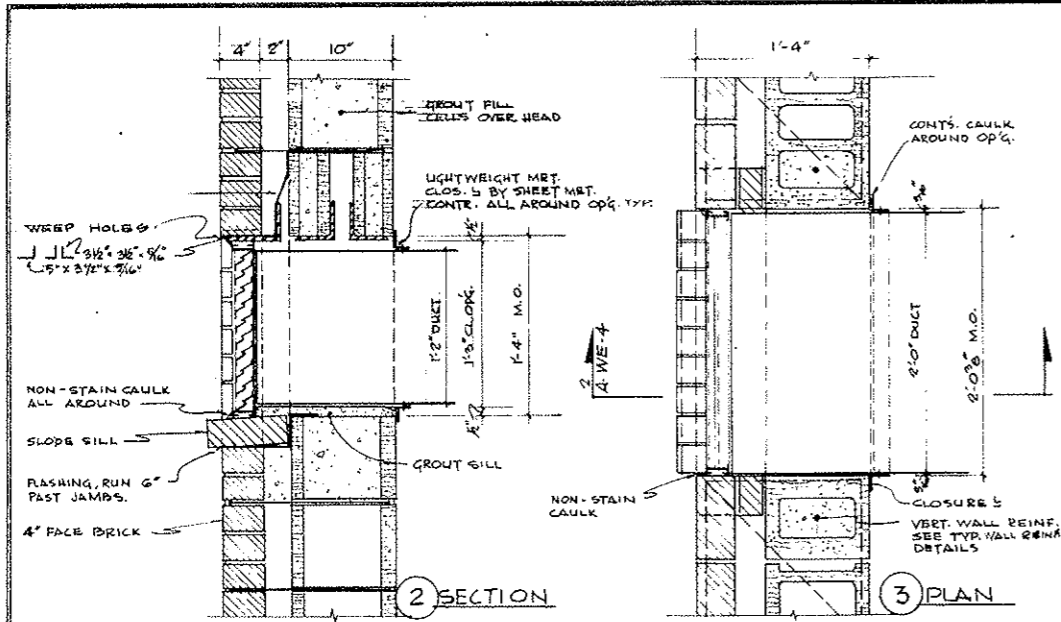
RECOMMENDED: [Signature]
APPROVED: [Signature]

SCALE: AS SHOWN
DATE: AUG. 1967

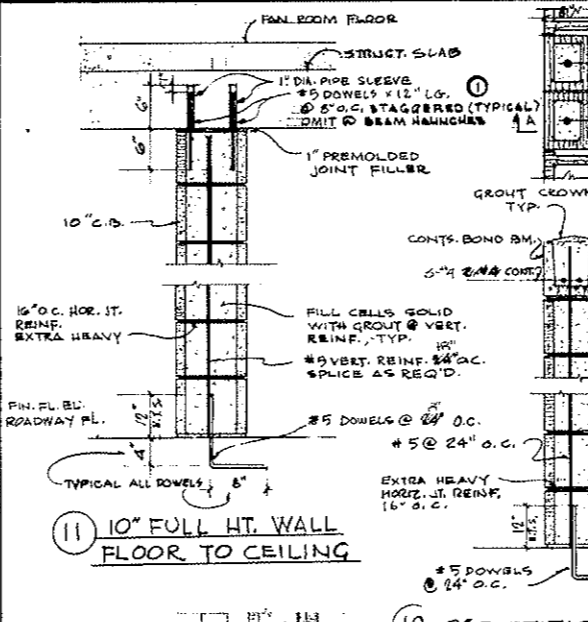
DRAWING NO. A-WE3

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	131	326

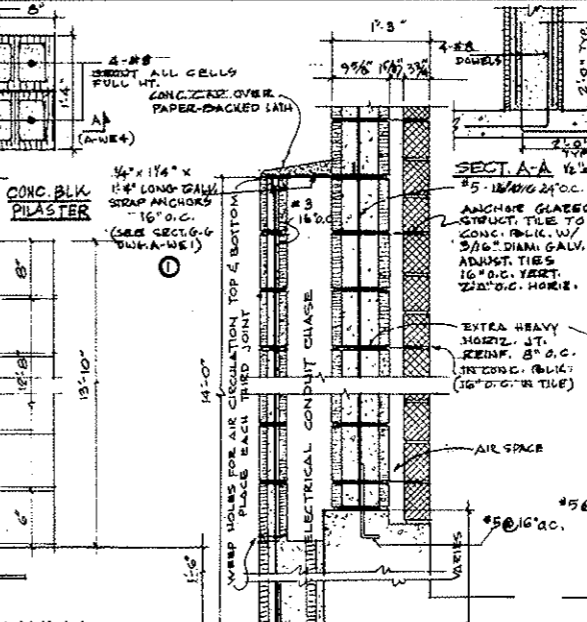
(R-1) 5-31-69 C.D.H. Rev. Dimensions H 10-17-68
 Subject to final approval. * 5 @ 24" O.C. DOWELS



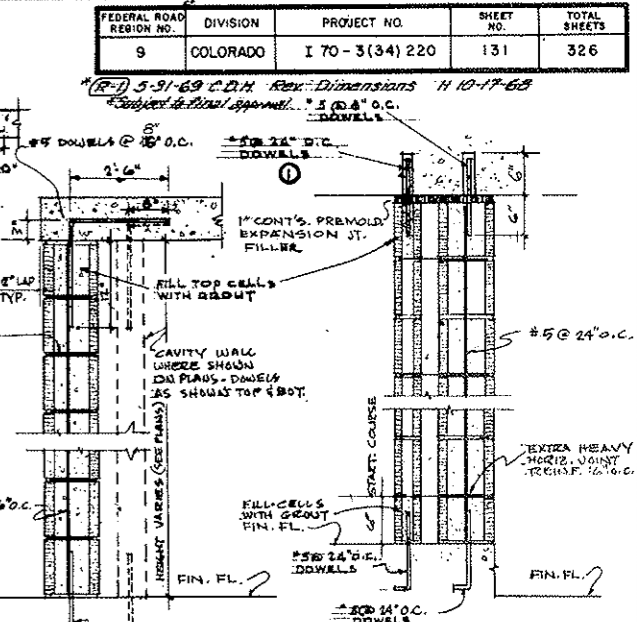
1 EXHAUST DUCT OVER REST ROOM
 SCALE: 1/2" = 1'-0"



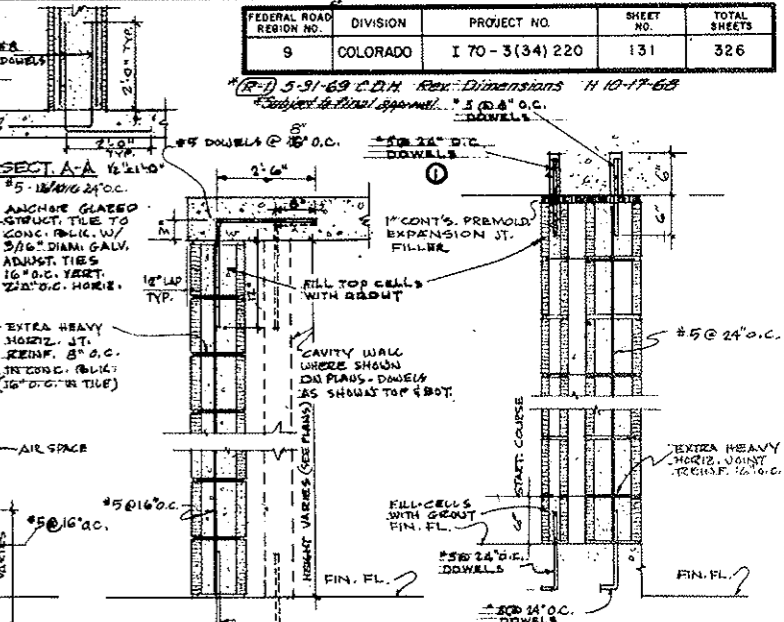
11 10' FULL HT. WALL
 FLOOR TO CEILING



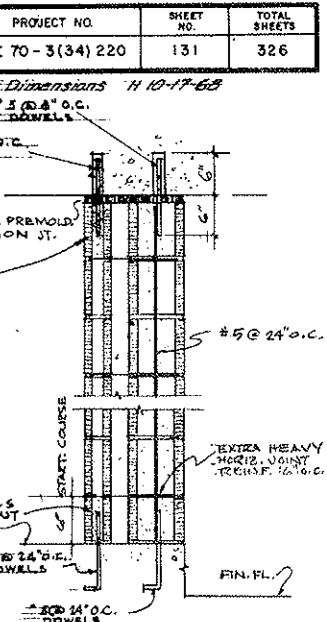
12 8' PARTITION WALL



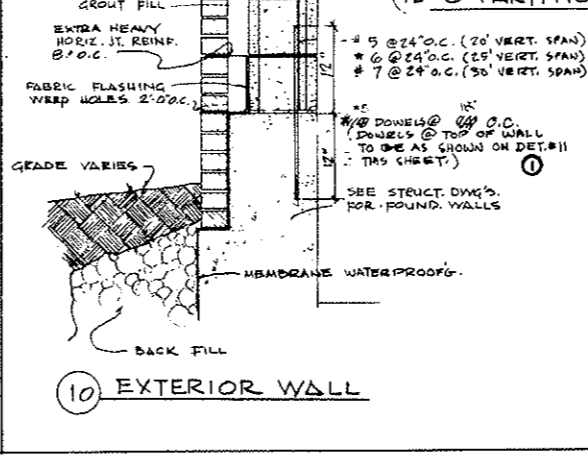
13 ROADWAY WALL



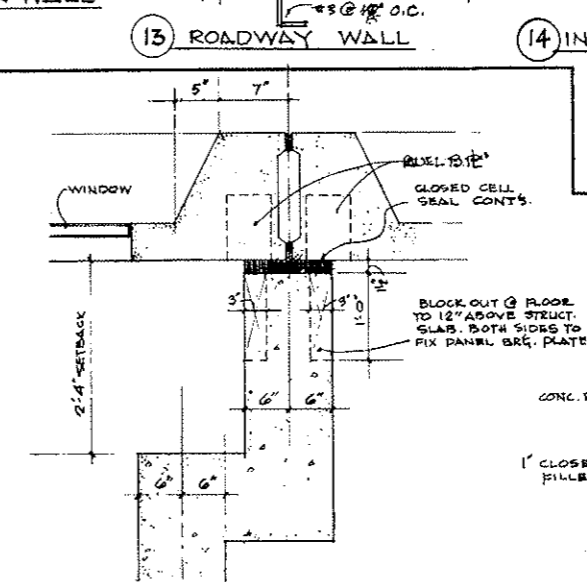
14 INTERIOR BEARING WALL



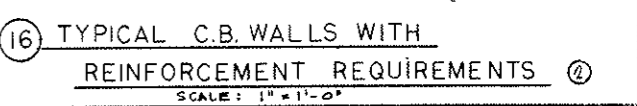
15 INTERIOR CAVITY WALL



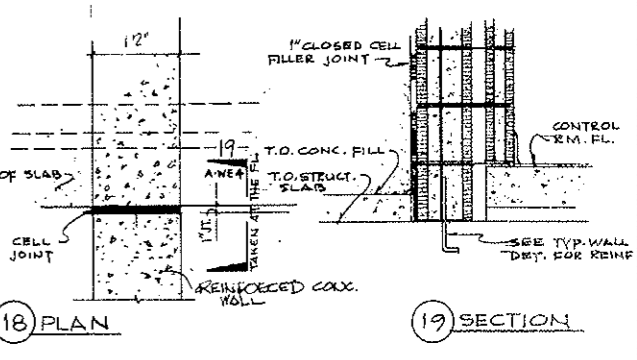
10 EXTERIOR WALL



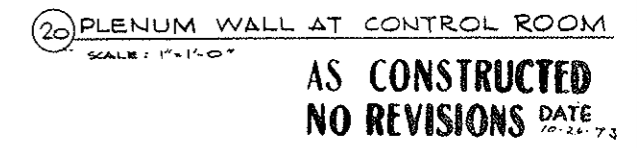
17 PLENUM WALL DETAIL ON COL. LINE A



16 TYPICAL C.B. WALLS WITH REINFORCEMENT REQUIREMENTS



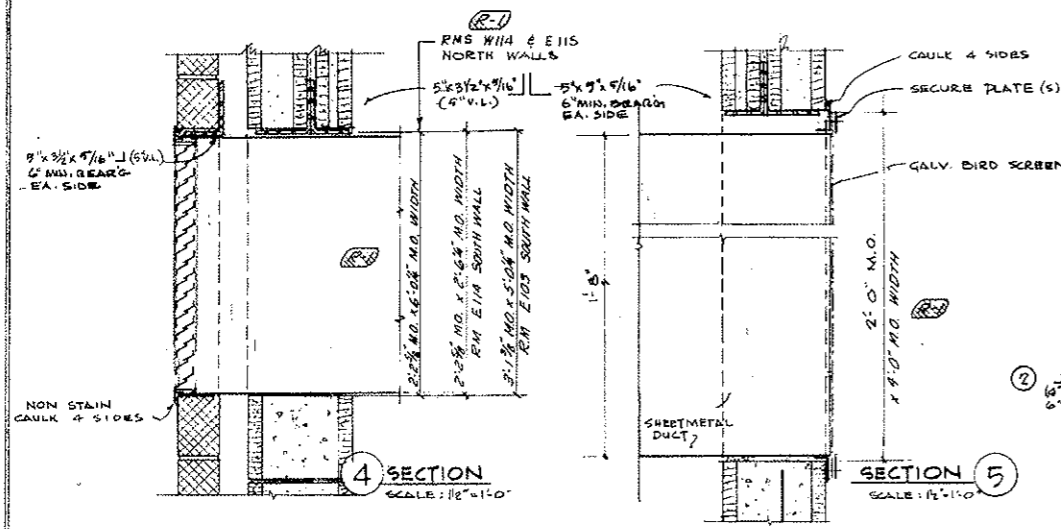
18 PLAN



19 SECTION

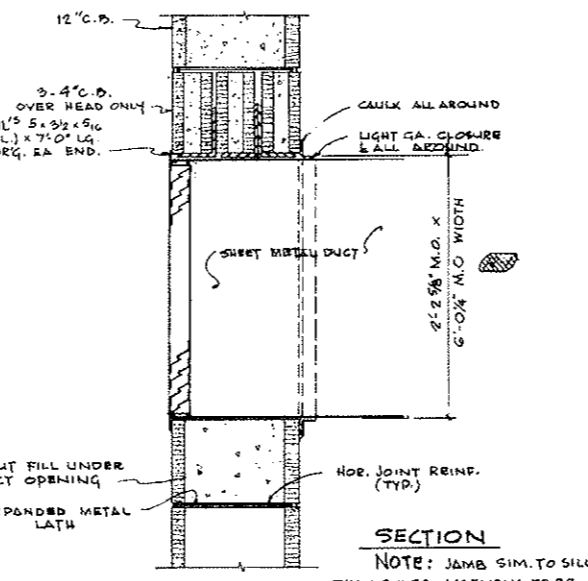
20 PLENUM WALL AT CONTROL ROOM
 SCALE: 1" = 1'-0"

AS CONSTRUCTED
 NO REVISIONS DATE 10-26-73



FRESH AIR DUCT TO ELEC. EQUIP. RM. 0

0 (DETAIL NOS. 6, 7, 8 DELETED)



9 DUCT IN BULKHEAD WALL
 SCALE: 1/2" = 1'-0"

NOTE: WEST BUILDING NORTH SIDE AS SHOWN SOUTH SIDE OPP. HAND
 EAST BUILDING NORTH SIDE OPP. HAND SOUTH SIDE NO OFFSET REQ'D.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH. APP.
1		REVISED WALL REINF. DIMENSIONS & SCHED.		
2		REVISED CONG. BLK. REINF. DET. / S.A. DUCT TO ELEC. RM.		

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
 WEST AND EAST VENTILATION BUILDINGS
 MISCELLANEOUS DETAILS - SHEET 2

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.R.S.
 DRAWN: M.G.
 CHECKED: [Signature]
 SUBMITTED: [Signature]

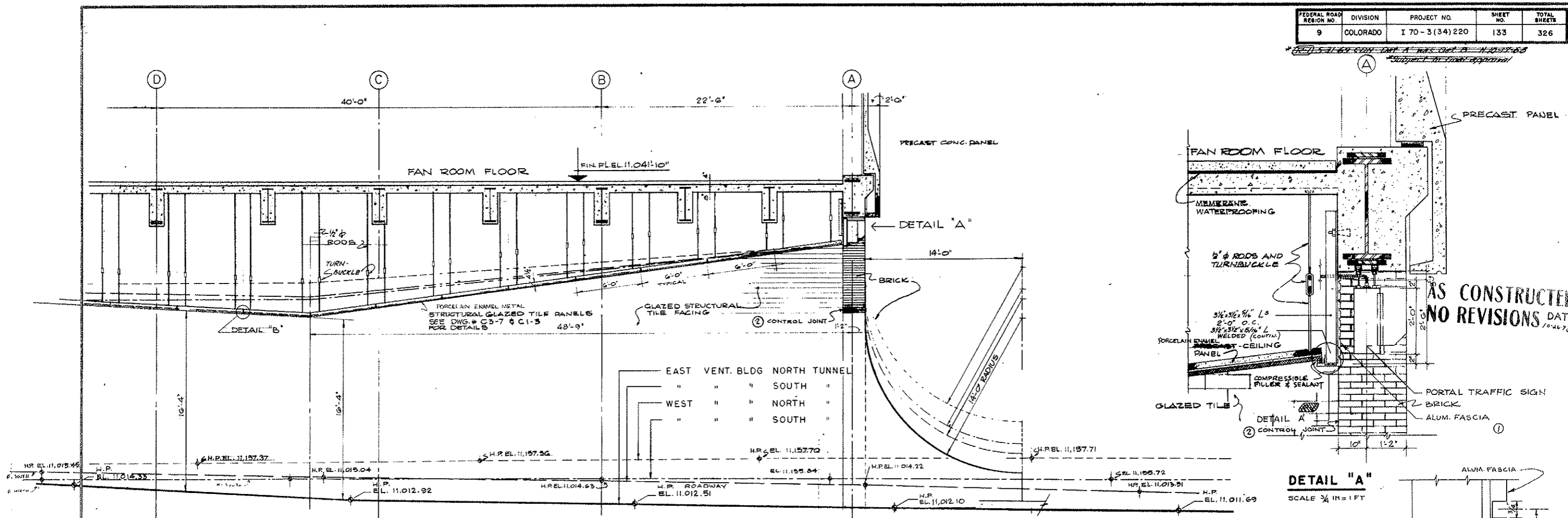
RECOMMENDED: [Signature]
 APPROVED: [Signature]

NEW YORK, N. Y. SCALE: AS NOTED DATE: AUG. 1967

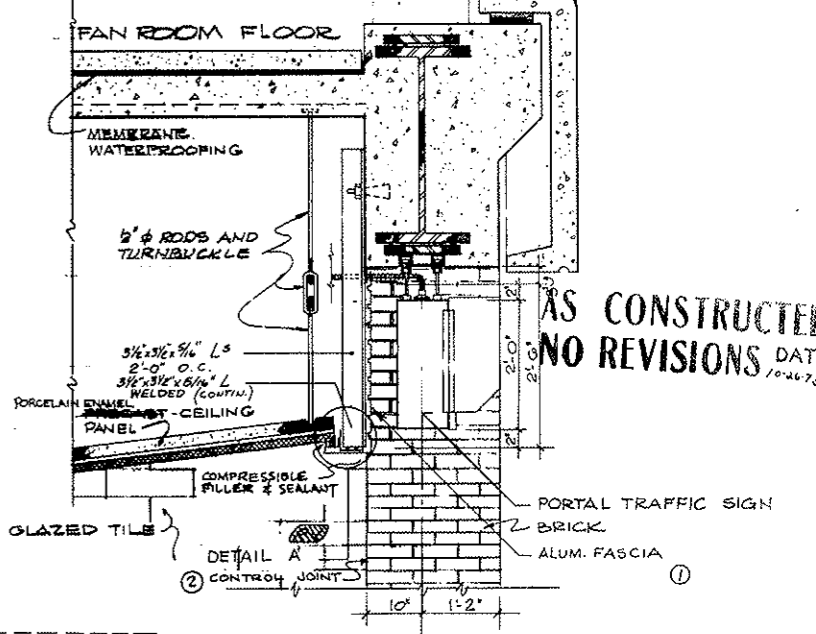
DRAWING NO. A-WE4

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	133	326

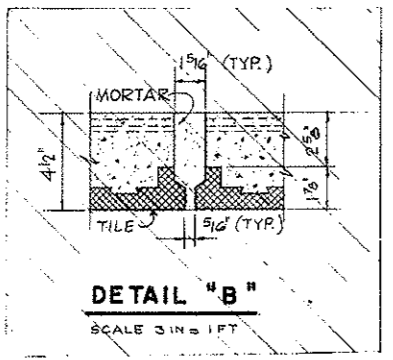
*SEE 5-1-68 CON. DET. A WAS DET. B 4-10-68
 SUBJECT TO FINAL APPROVAL



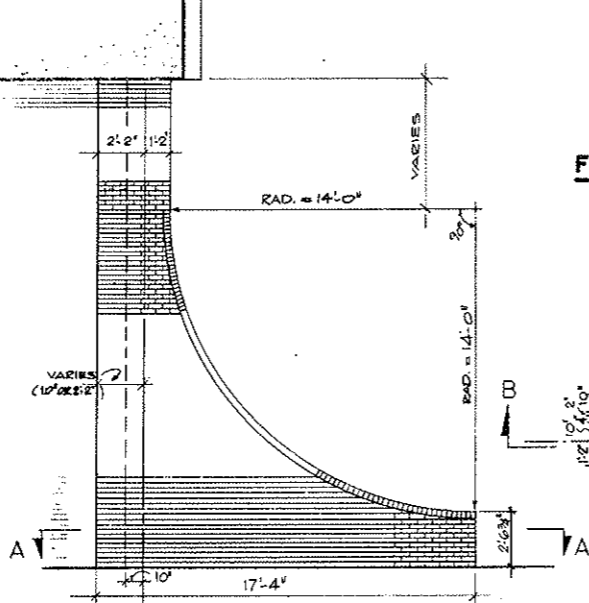
SECTION THRU TUNNEL ENTRANCE
 SCALE 1/4 IN = 1 FT.



DETAIL "A"
 SCALE 3/4 IN = 1 FT

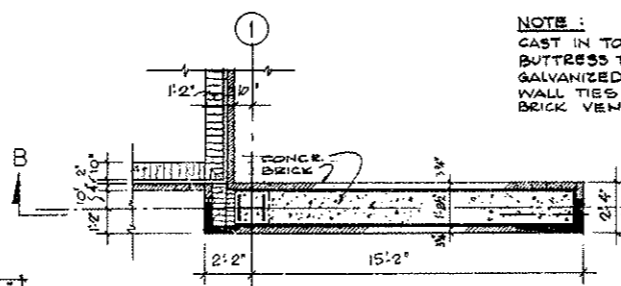


DETAIL "B"
 SCALE 3 IN = 1 FT



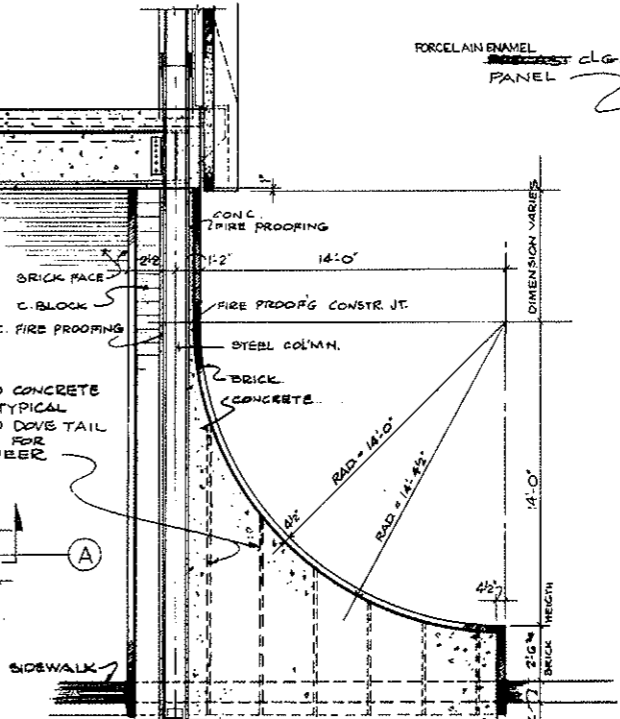
ELEVATION
 SCALE 1/4 IN = 1 FT

FACADE WALL DETAILS
 SCALE 1 IN = 1 FT.

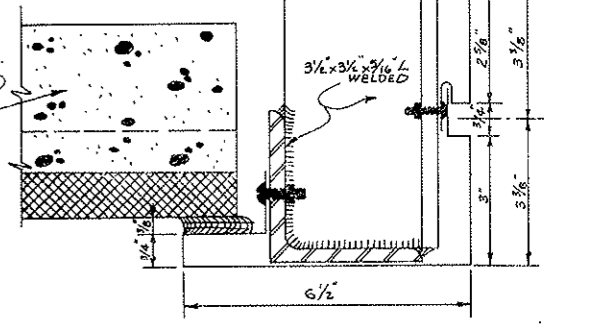


PLAN SECTION A-A
 SCALE 1/4 IN = 1 FT

NOTE:
 CAST IN TO CONCRETE
 BUTTRESS TYPICAL
 GALVANIZED DOVE TAIL
 WALL TIES FOR
 BRICK VENEER



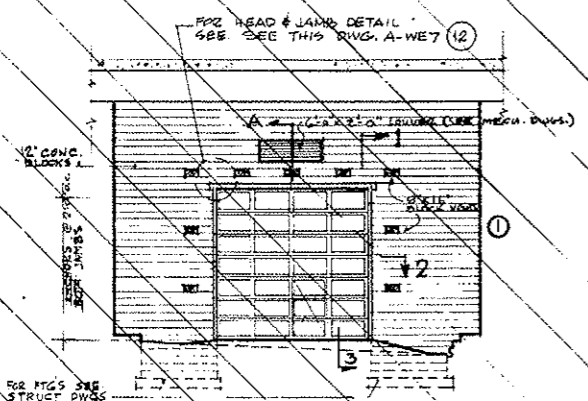
LONG SECTION B-B
 SCALE 1/4 IN = 1 FT



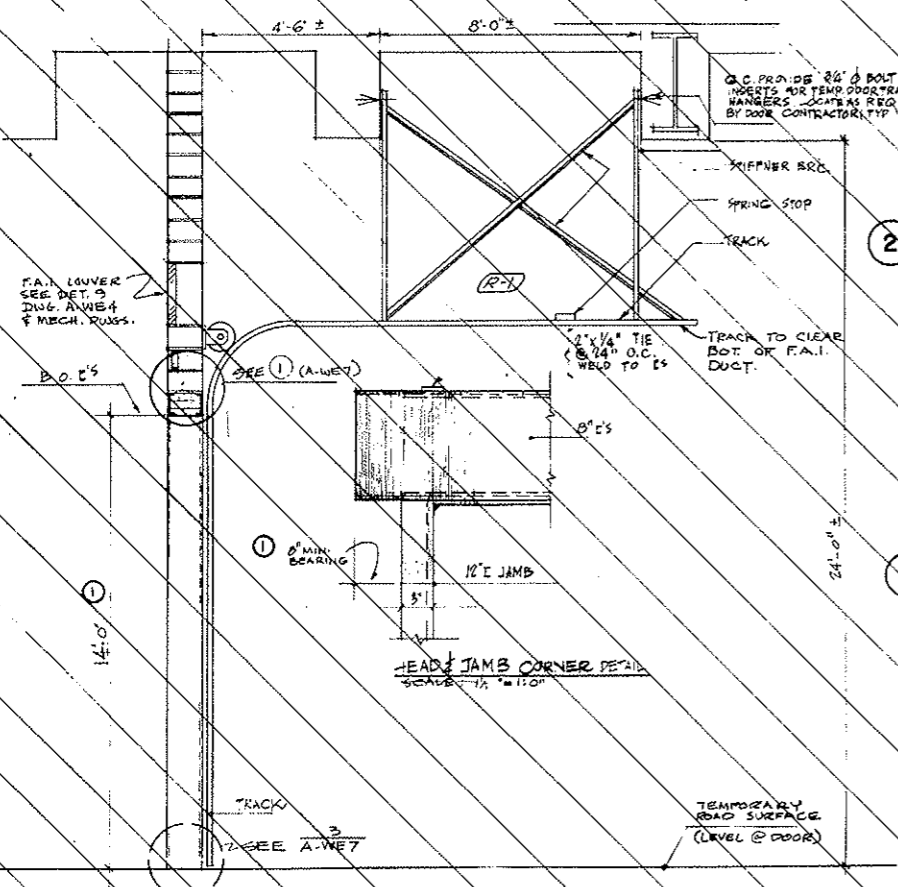
DETAIL "A"
 HALF FULL SIZE

DESIGNED BY	P.R.V.	RECOMMENDED BY	<i>[Signature]</i>	DRAWN BY	T.T.	APPROVED BY	<i>[Signature]</i>
DRAWN BY	T.T.	CHECKED BY	<i>[Signature]</i>	SUBMITTED BY	<i>[Signature]</i>	DATE	AUG, 1967
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT ARCHITECTURAL WEST AND EAST VENTILATION BUILDINGS PORTAL DETAILS TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.							
SCALE: AS SHOWN DATE: AUG, 1967 A-WEG							

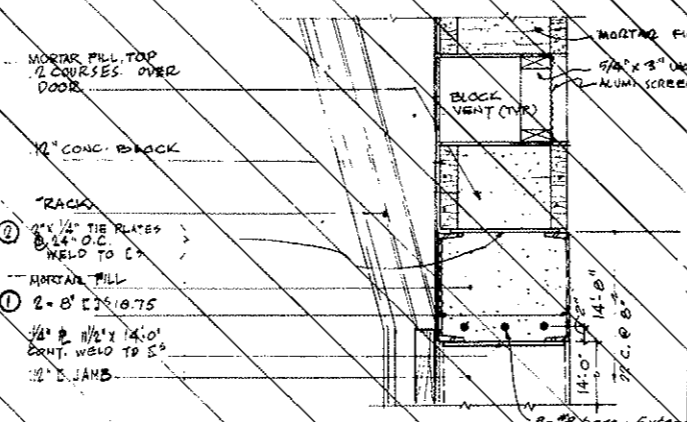
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	134	326



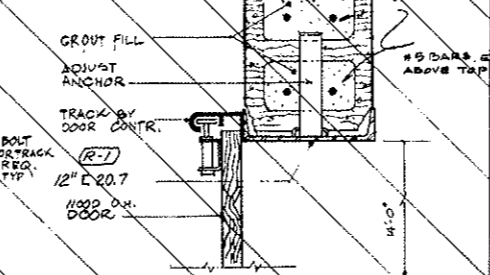
ELEV. OF BULKHEAD AT SOUTH TUNNEL
SCALE: 1/8" = 1'-0"



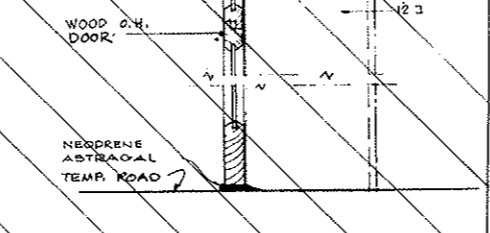
A SECTION
SCALE: 3/8" = 1'-0"



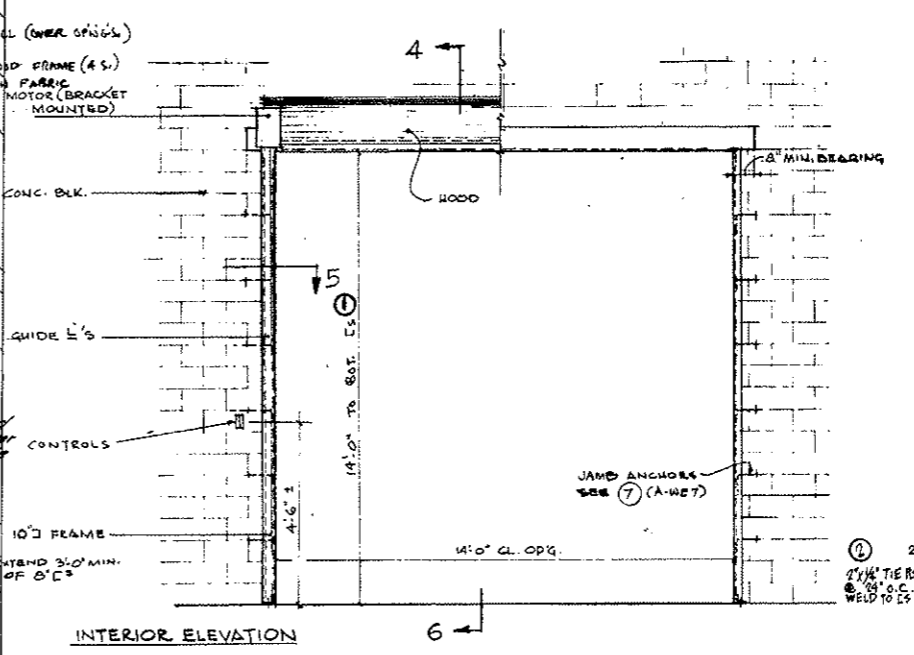
1 TYP. HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



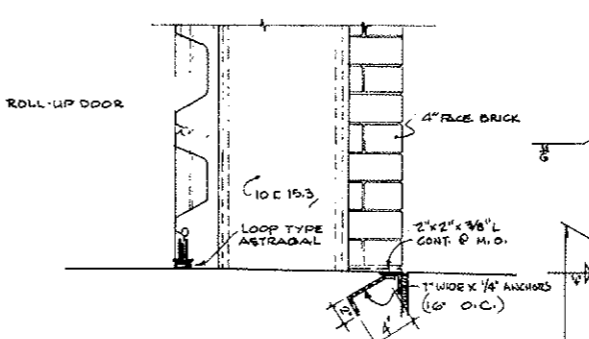
2 TYP. JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



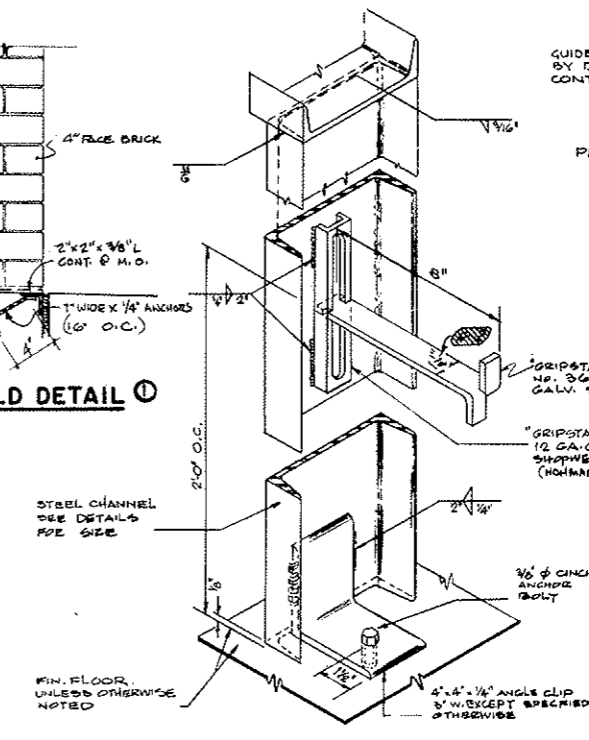
3 TYP. THRESHOLD DETAIL
SCALE: 1 1/2" = 1'-0"



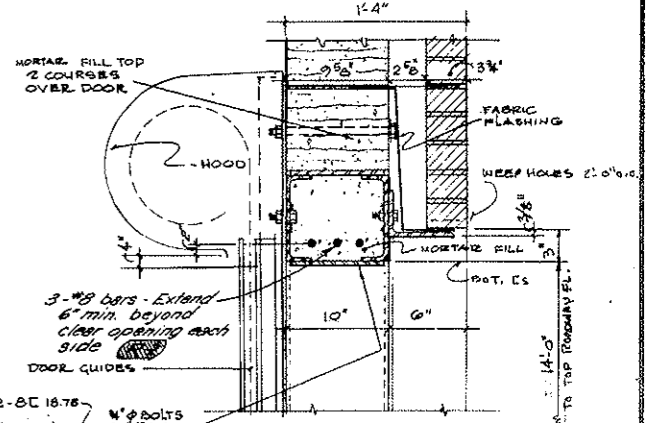
TYPICAL EXTERIOR ROLL-UP DOOR
SCALE: 3/8" = 1'-0"



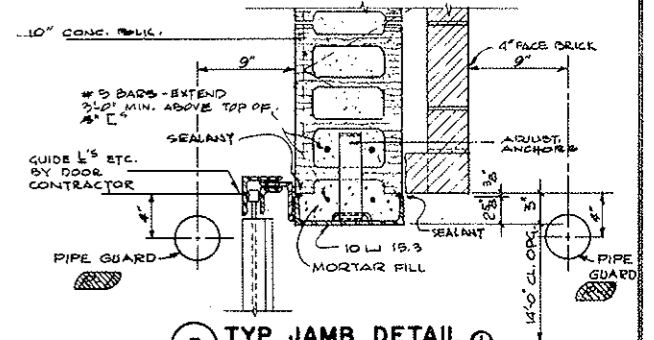
6 TYP. THRESHOLD DETAIL
SCALE: 1 1/2" = 1'-0"



7 TYPICAL CHANNEL DOOR FRAME DETAIL
NO SCALE



4 TYPICAL HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



5 TYP. JAMB DETAIL
SCALE: 1 1/2" = 1'-0"

AS CONSTRUCTED NO REVISIONS DATE 10-26-73

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL WEST AND EAST VENTILATION BUILDINGS DOOR DETAILS - SHEET I

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

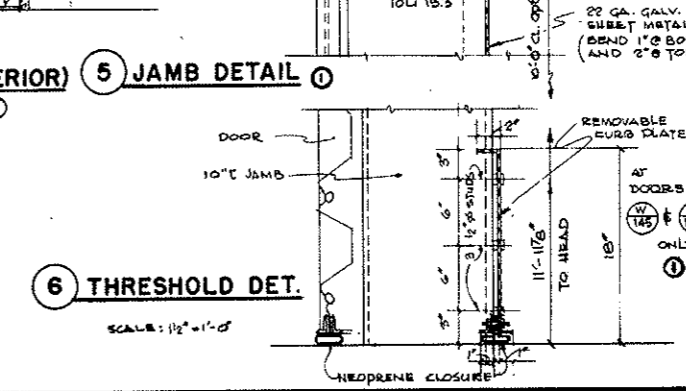
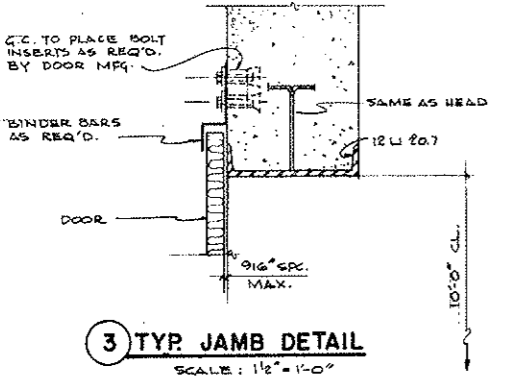
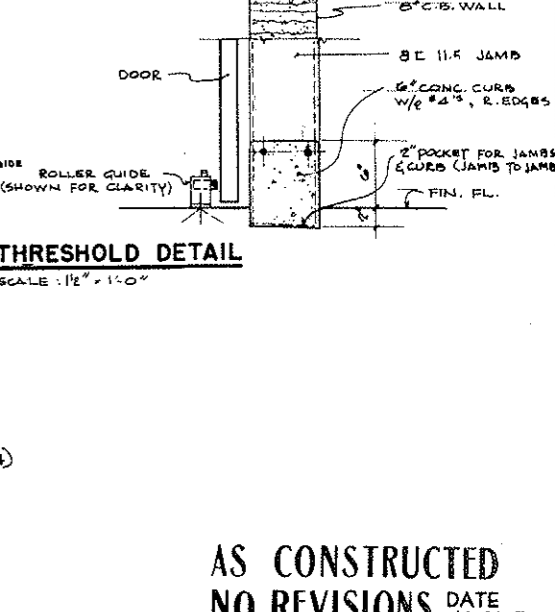
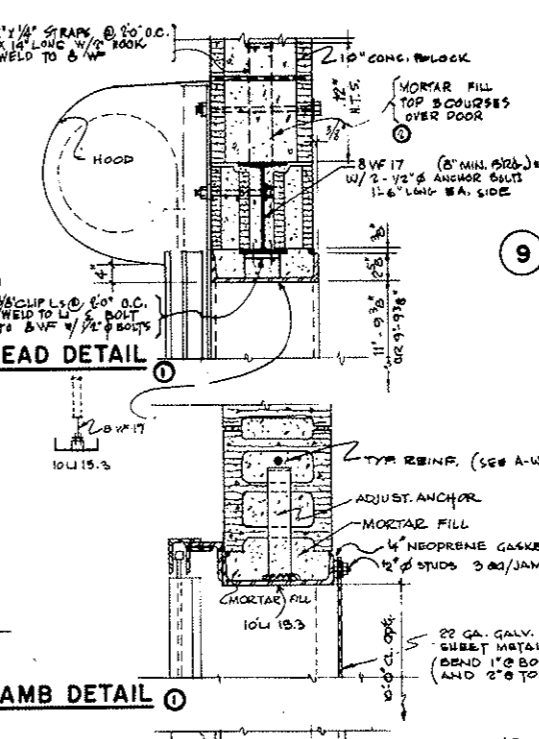
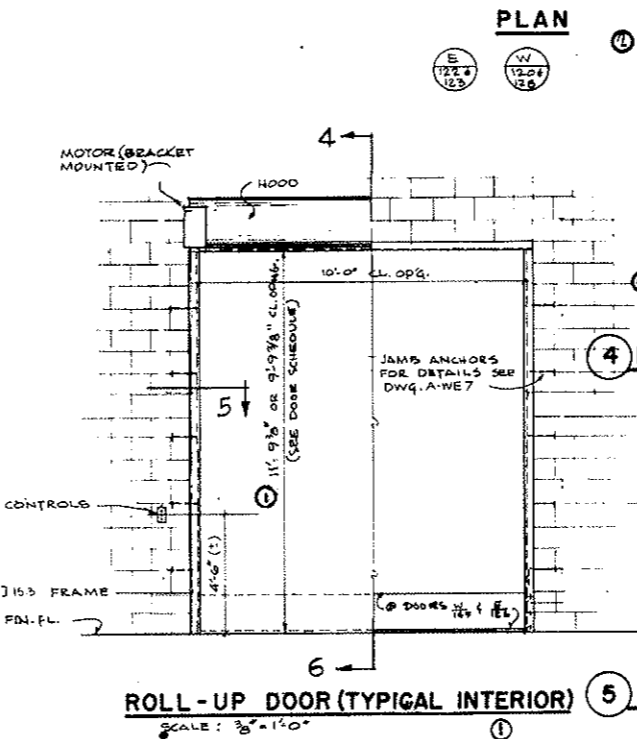
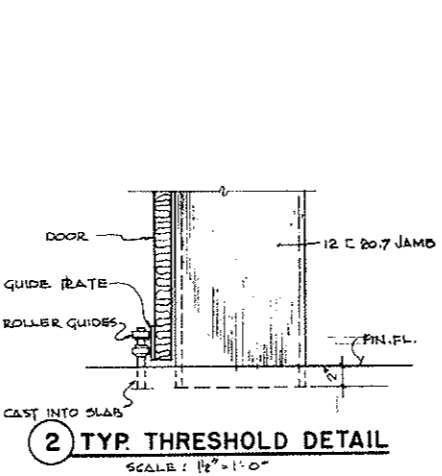
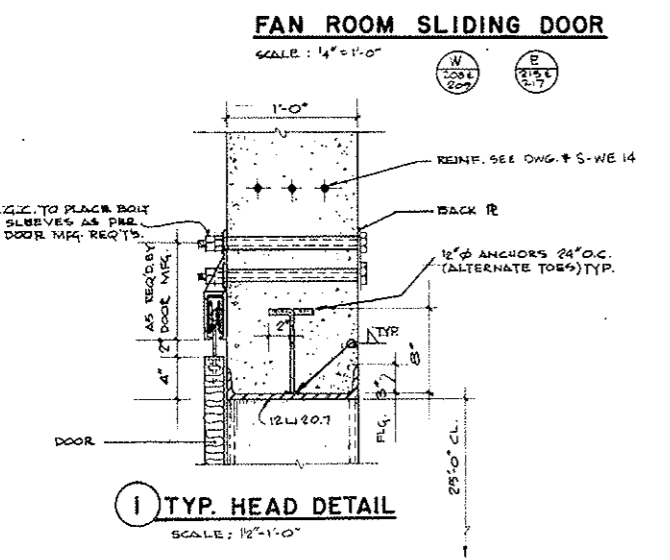
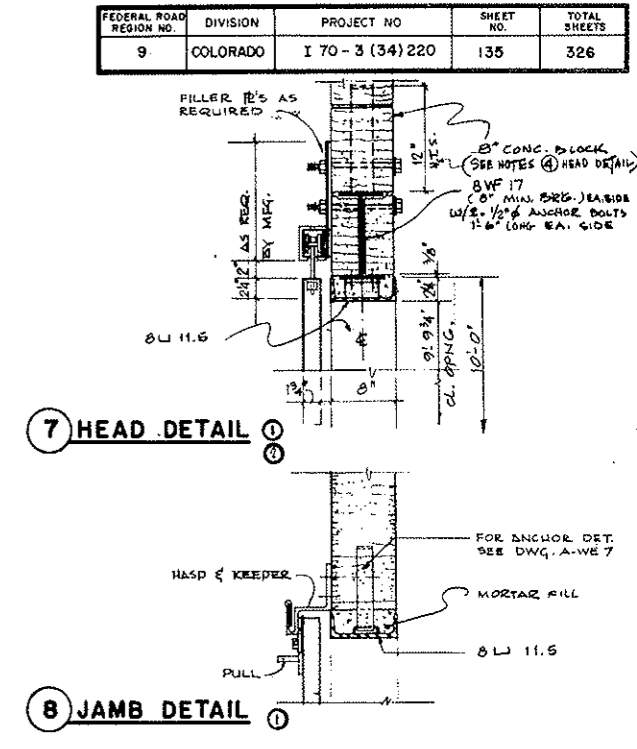
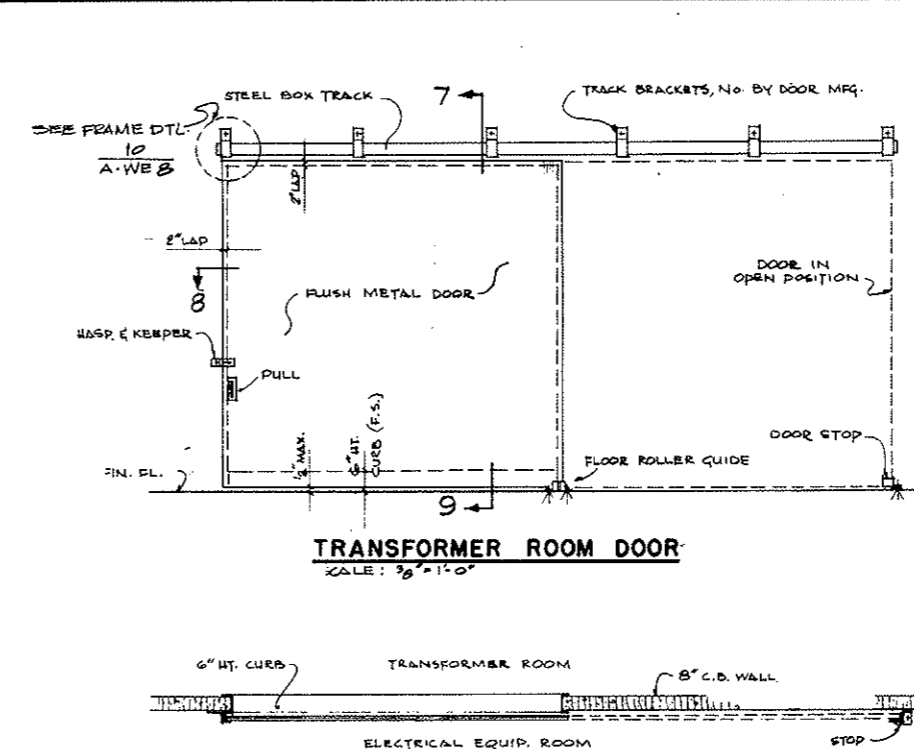
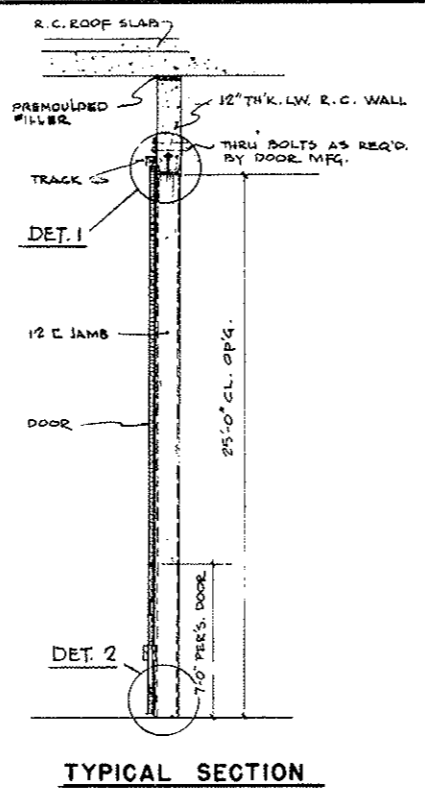
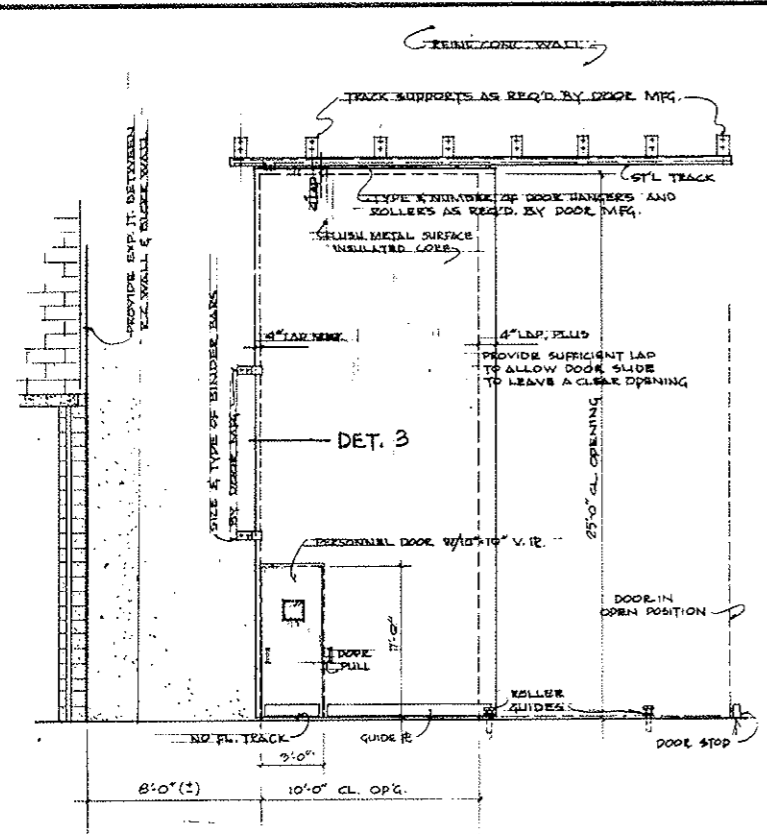
DESIGNED: P.R.S.
DRAWN: N.G.
CHECKED: [Signature]
SUBMITTED: [Signature]

RECOMMENDED: [Signature]
APPROVED: [Signature]

DRAWING NO. **A-WET**

NEW YORK, N. Y. SCALE: AS SHOWN DATE: AUG. 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3 (34) 220	135	326



AS CONSTRUCTED
NO REVISIONS DATE 7-26-73

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST AND EAST VENTILATION BUILDINGS
DOOR DETAILS - SHEET 2

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N.Y.

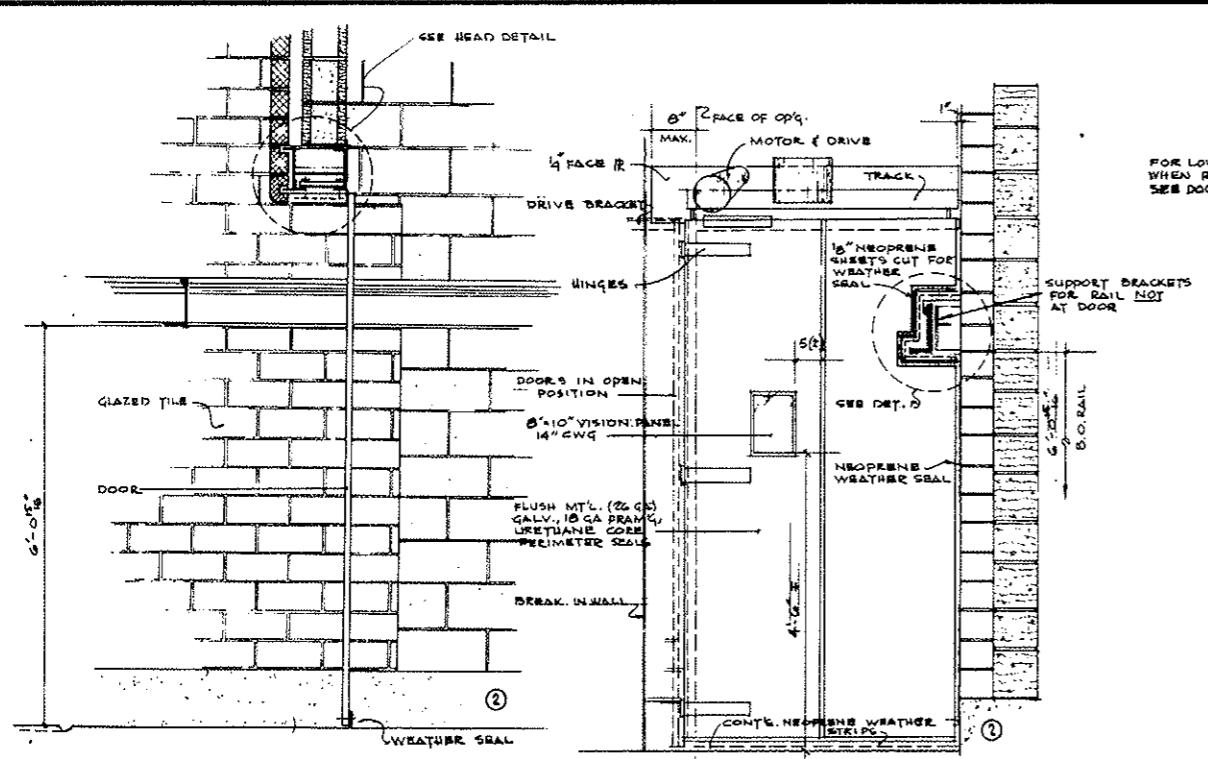
DESIGNED: P.R.S.
DRAWN: M.G.
CHECKED: [Signature]
SUBMITTED: [Signature]

RECOMMENDED: [Signature]
APPROVED: [Signature]

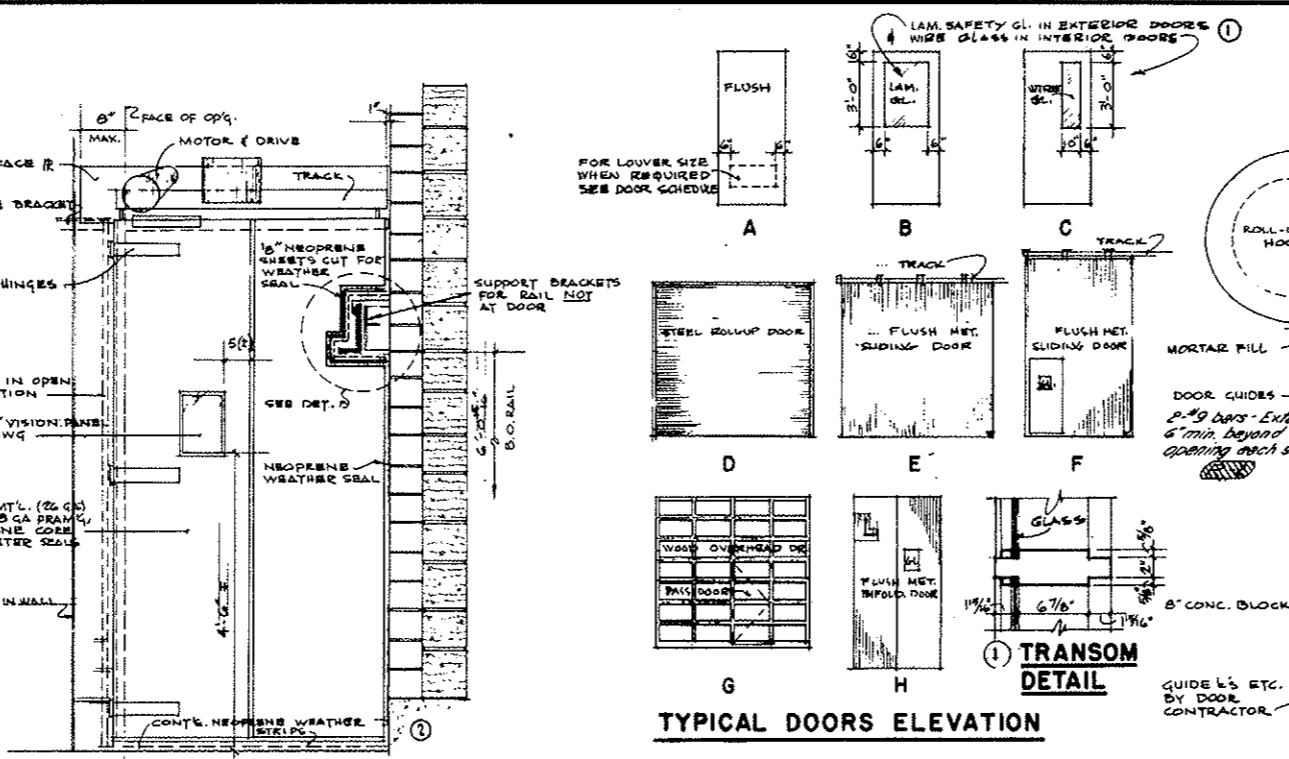
NEW YORK, N.Y. SCALE: AS SHOWN DATE: AUG. 1967

DRAWING NO. **A-WEB**

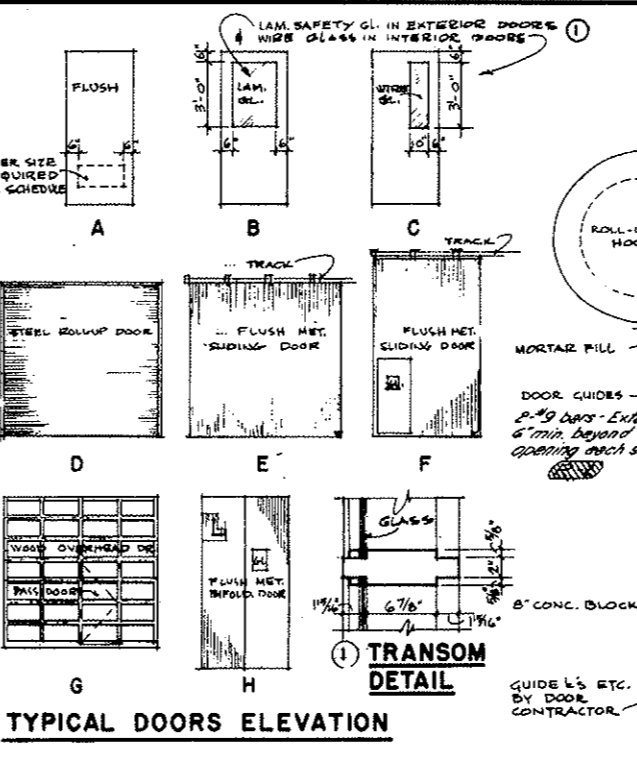
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)2 20	136	326



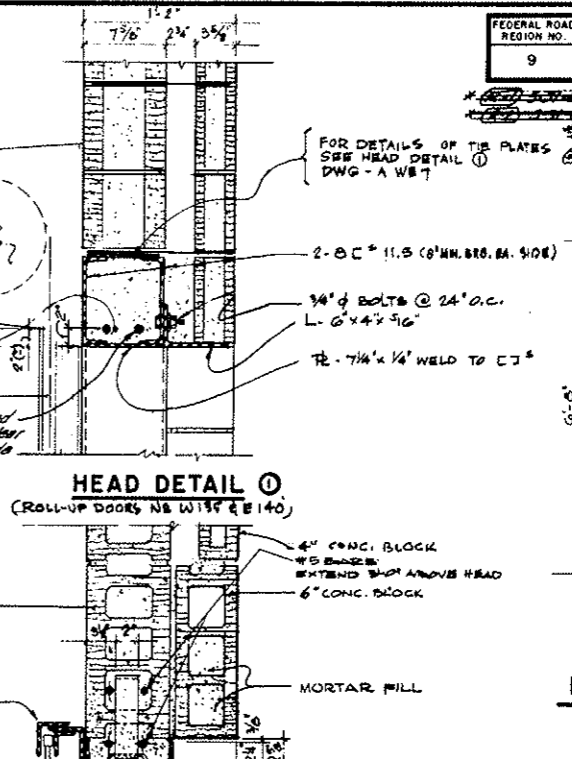
WALKWAY CAR ENCLOSURE BIFOLDING DOOR
SCALE: 3/8" = 1'-0"



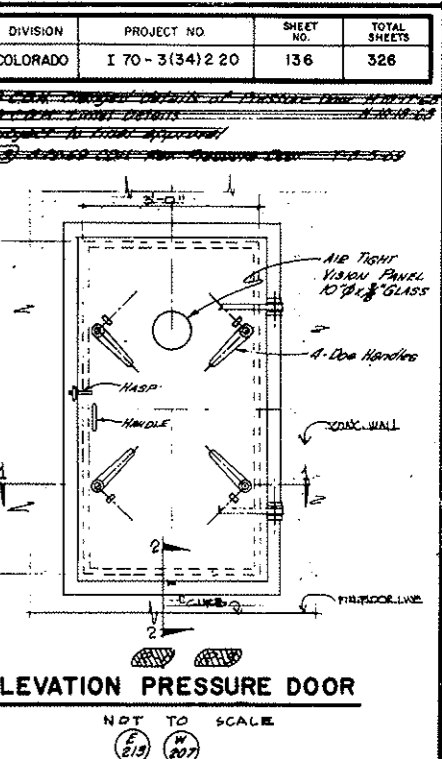
INSIDE ELEVATION
SCALE: 3/8" = 1'-0"



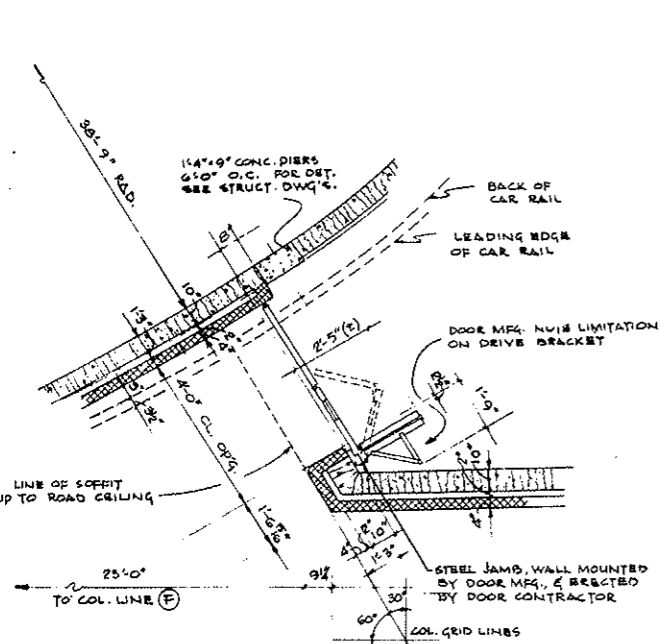
TYPICAL DOORS ELEVATION



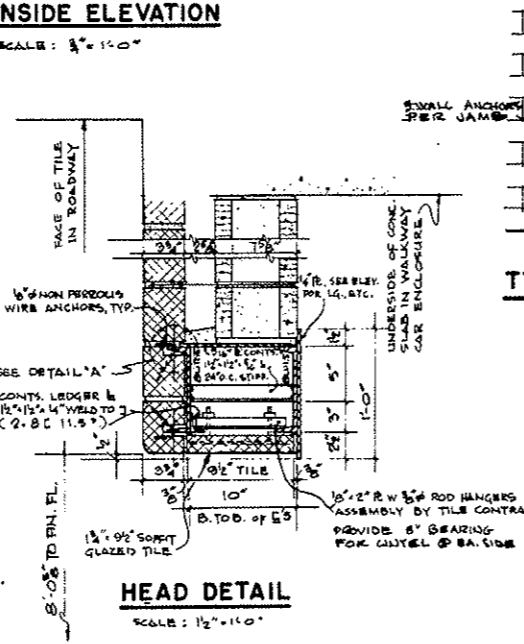
HEAD DETAIL
(Roll-up doors No. W135 & E140)



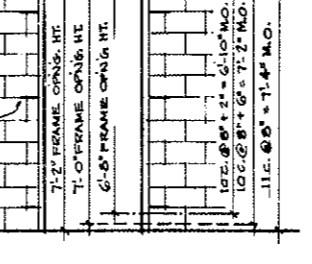
ELEVATION PRESSURE DOOR
NOT TO SCALE



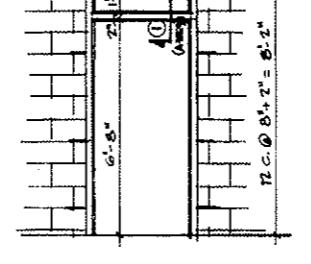
TYPICAL PLAN
SCALE: 3/8" = 1'-0"



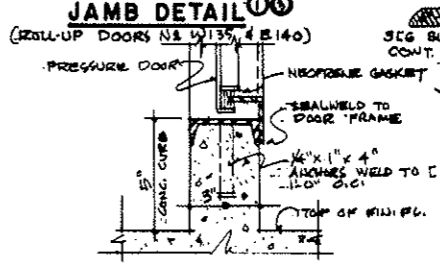
HEAD DETAIL
SCALE: 1/2" = 1'-0"



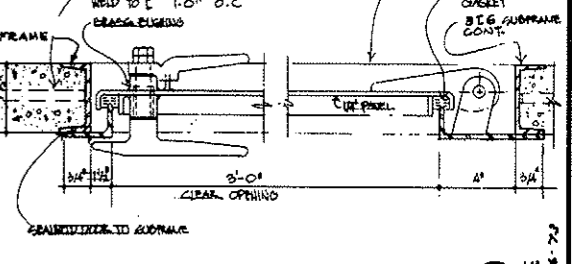
TYP. H.M. FRAME ELEV.
SCALE: 3/8" = 1'-0"



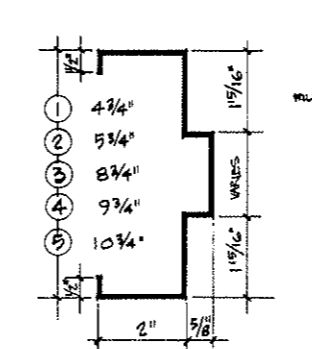
ENTRANCE FRAME ELEV.
SCALE: 3/8" = 1'-0"



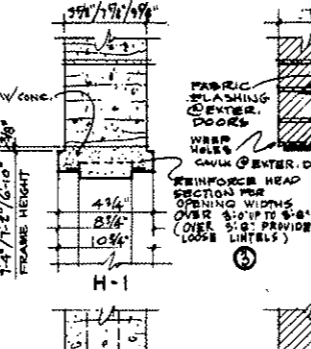
DETAIL SECTION 2-2
NOT TO SCALE



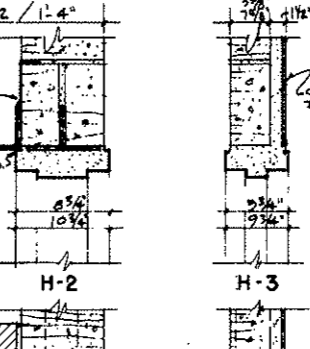
PLAN DETAIL 1-1 PRESSURE DOOR
NOT TO SCALE



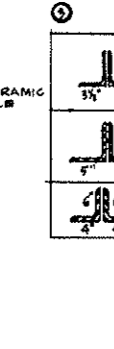
FRAME TYPES
SCALE: 1/2" FULL SIZE



H-1, H-2, H-3



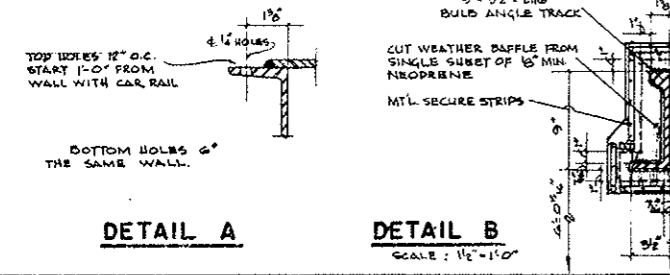
J-1, J-2, J-3



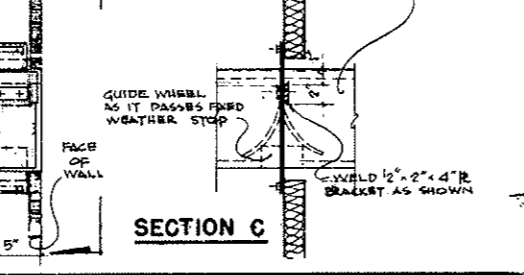
T-1, T-2, T-3, T-4, T-5

LOOSE LINTEL SCHEDULE

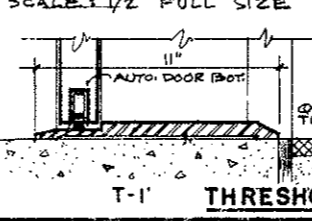
5" x 3 1/2"	2-5" x 3 1/2" x 3/16"	8" WALL
5" x 3 1/2"	5" x 5" x 3/16" + 5" x 3 1/2" x 3/16"	10" WALL
6" x 3 1/2"	2-6" x 4" x 3/16" (For 8'-0" openings) (R2)	10" WALL



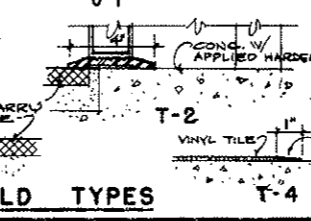
DETAIL A, DETAIL B
SCALE: 1/2" = 1'-0"



SECTION C



T-1 THRESHOLD TYPES



T-2, T-3, T-4, T-5

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ARCHITECTURAL
WEST AND EAST VENTILATION BUILDINGS
DOOR DETAILS-SHEET 3

TIPPETTS, ABBETT, MCCARTHY, STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.R.S./P.R.V.
DRAWN: M.G./P.R.V.
CHECKED: [Signature]
DATE: [Signature]

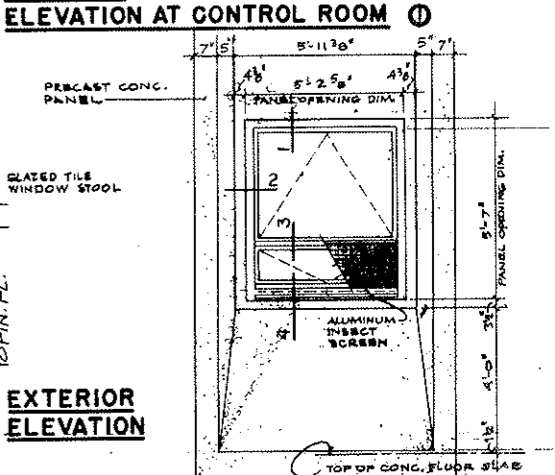
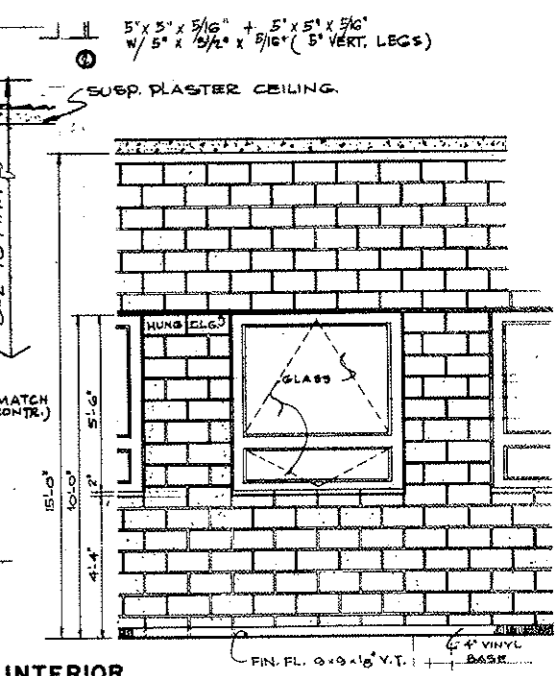
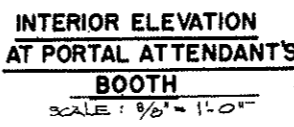
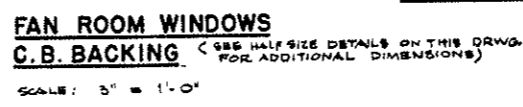
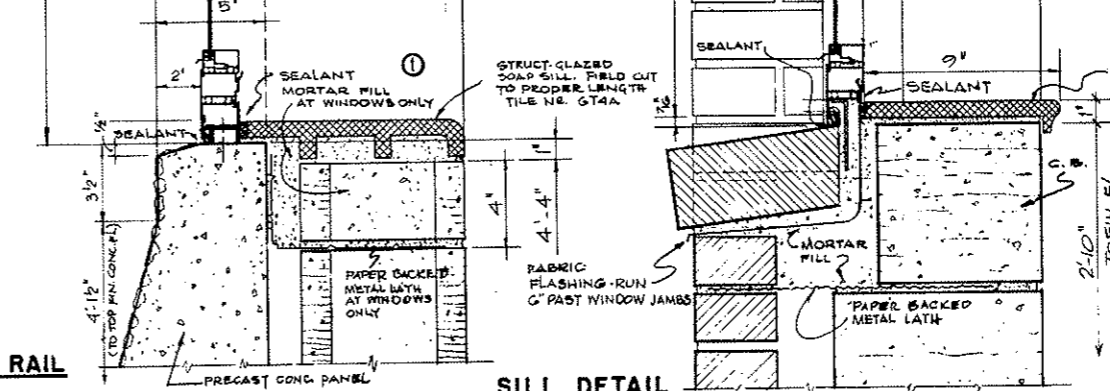
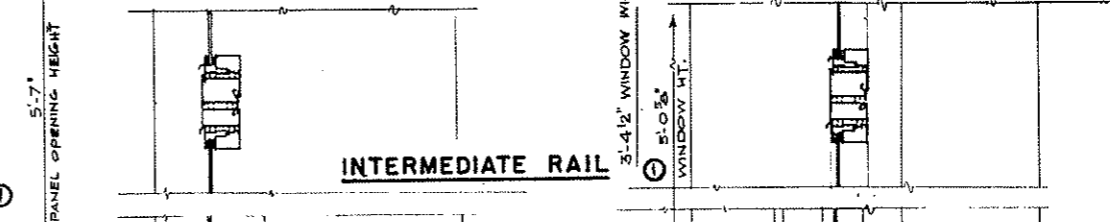
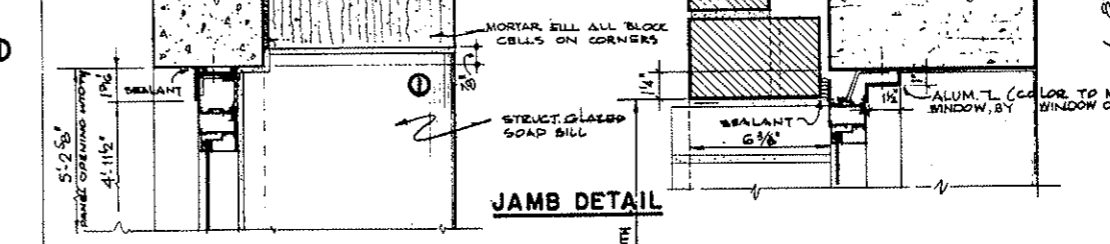
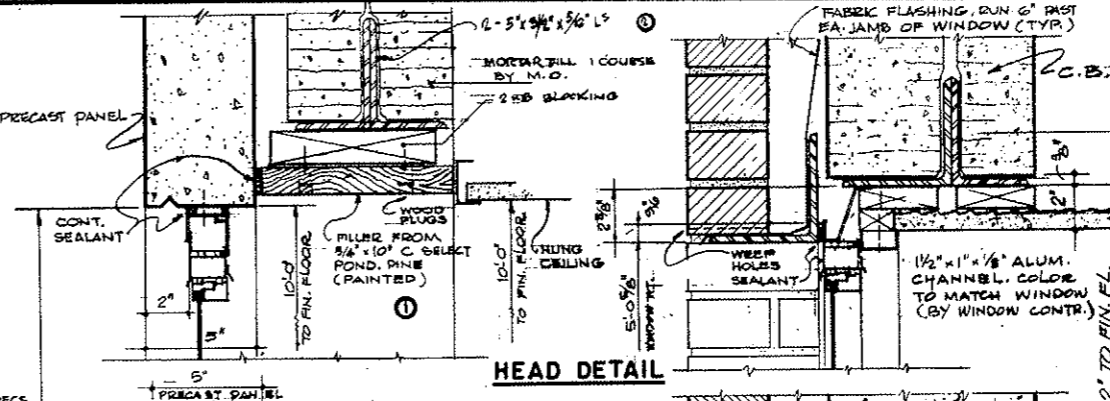
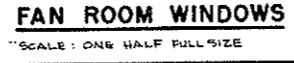
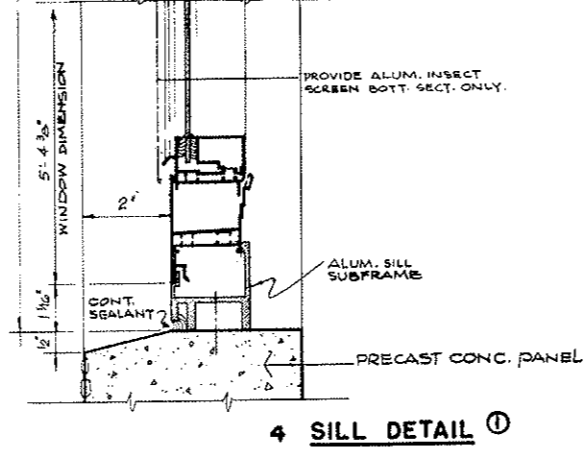
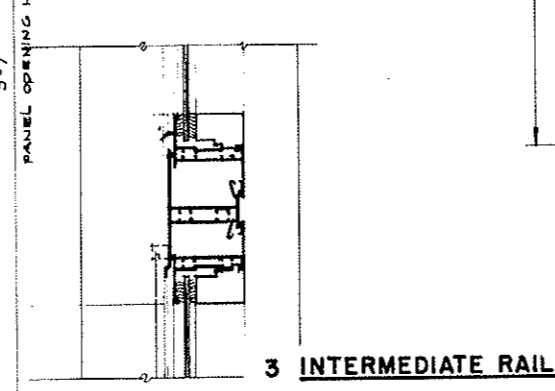
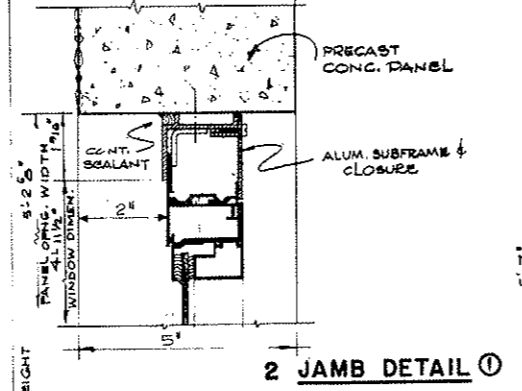
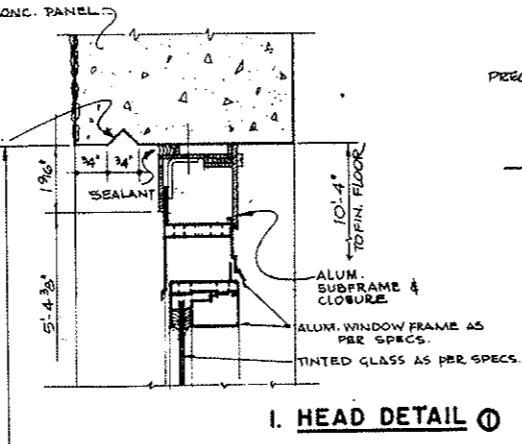
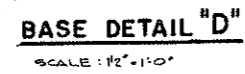
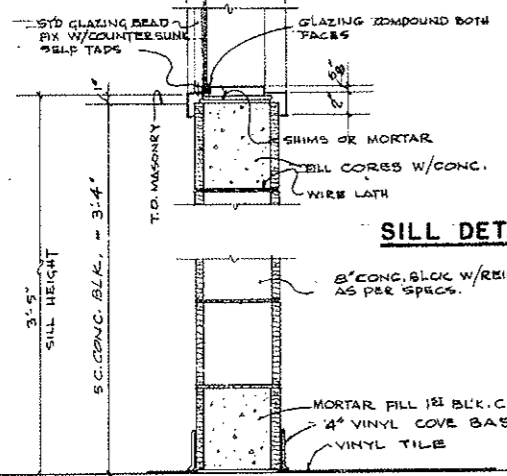
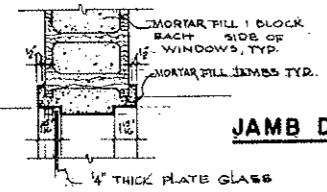
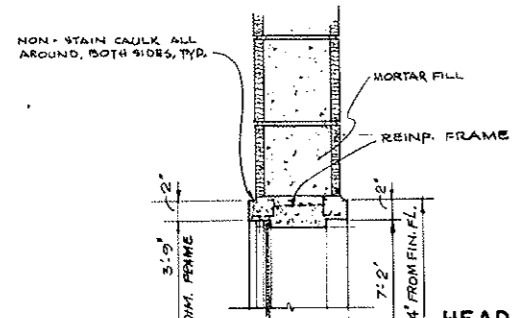
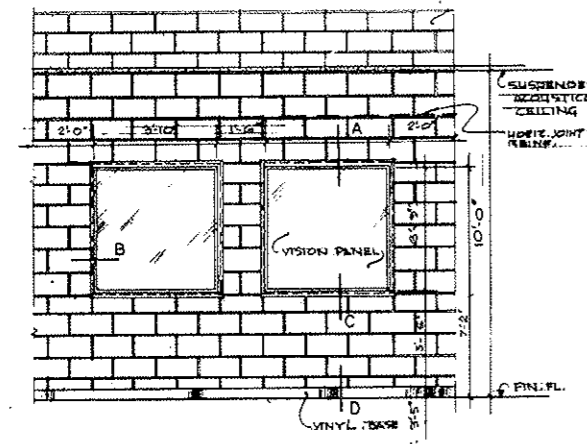
RECOMMENDED: [Signature]
APPROVED: [Signature]

SCALE: AS SHOWN DATE: AUG. 1967

DRAWING NO. **A-WE-9**

AS CONSTRUCTED
NO REVISIONS
 DATE: 7-26-73

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(13)212	137	326

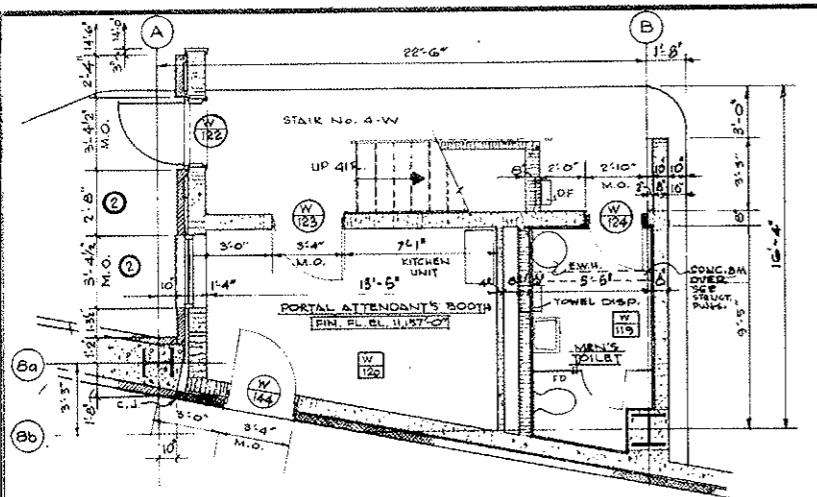


AS CONSTRUCTED
NO REVISIONS
DATE 10-26-73

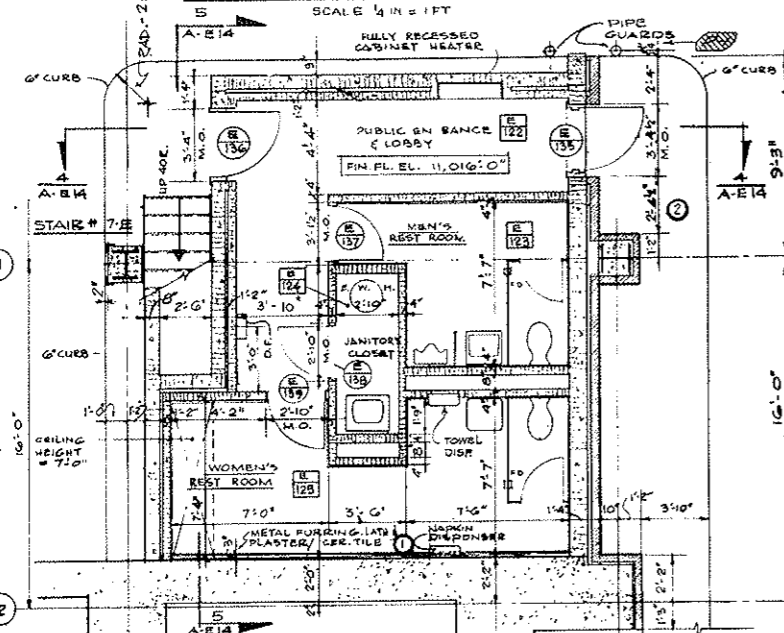
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ARCHITECTURAL WEST AND EAST VENTILATION BUILDINGS WINDOW DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.					
DESIGNED BY	P.R.S.	CHECKED BY	M.S.	APPROVED BY	[Signature]
SUBMITTED BY	[Signature]	DATE	AUG. 1967	DRAWING NO.	A-WE10
NEW YORK, N.Y. SCALE: AS SHOWN DATE: AUG. 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	138	326

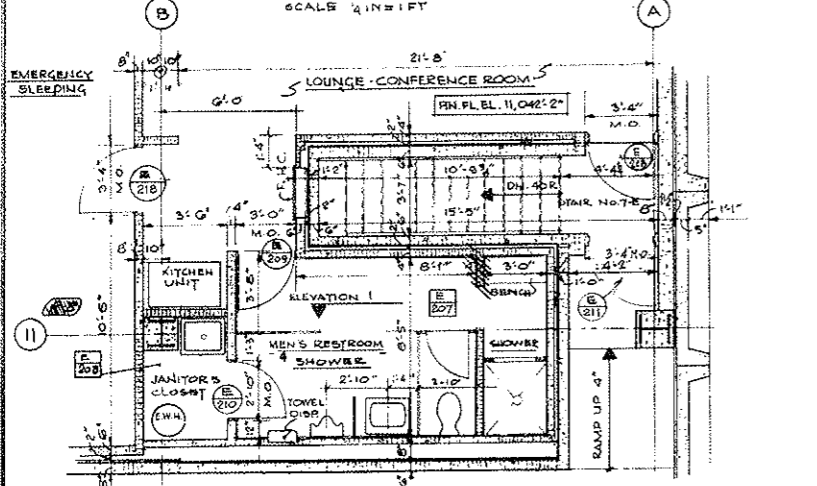
REVISED DIMENSIONS - 8-10-66
 Subject to final approval
 REVISED DIMENSIONS - 8-22-69



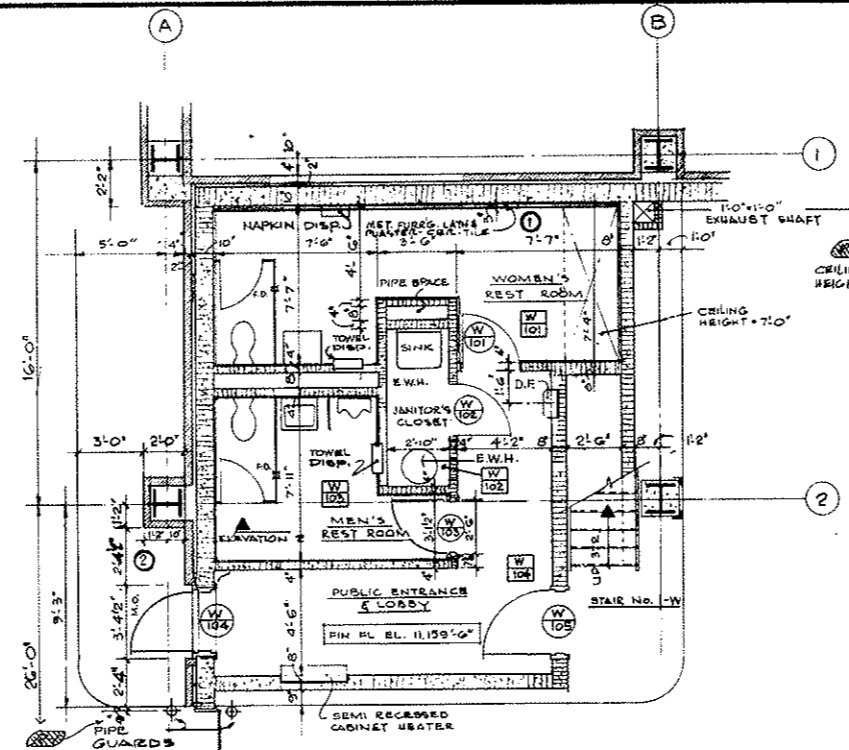
WEST VENTILATION BUILDING



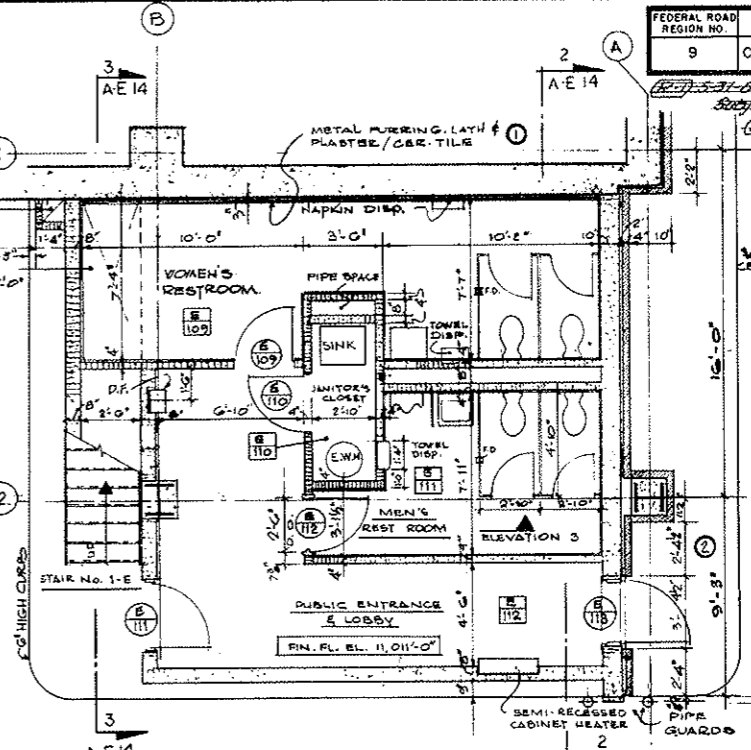
EAST VENTILATION BUILDING



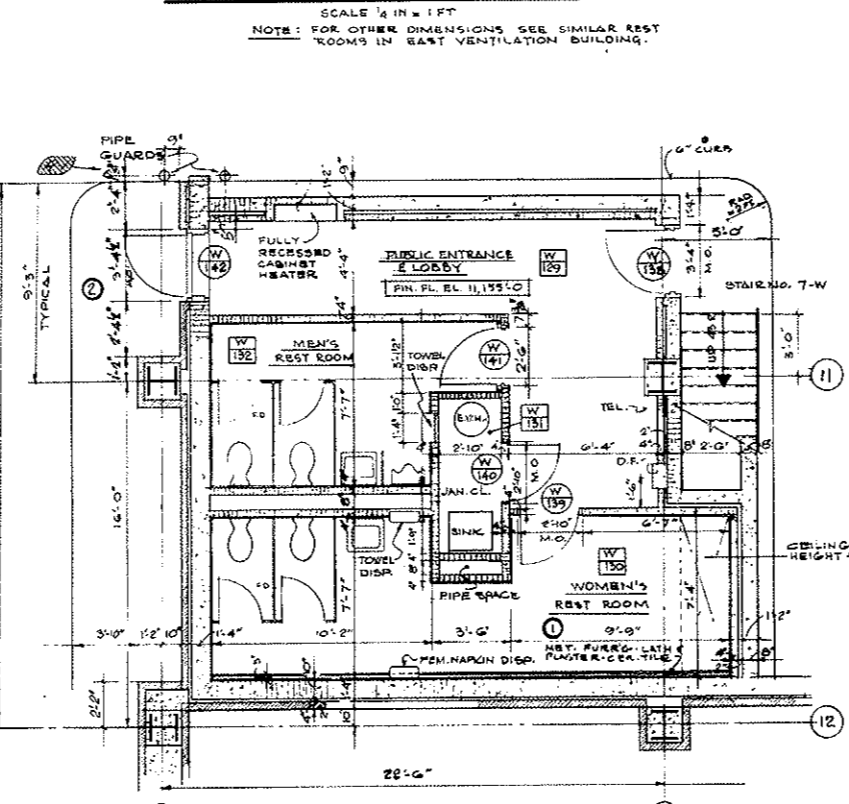
EAST VENTILATION BUILDING



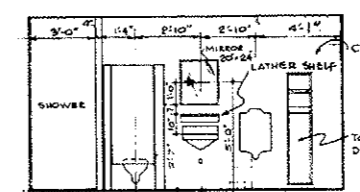
WEST VENTILATION BUILDING



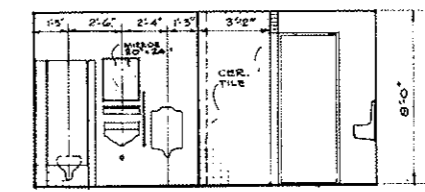
EAST VENTILATION BUILDING



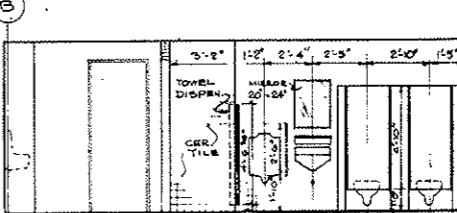
WEST VENTILATION BUILDING



ELEVATION 1



ELEVATION 2



ELEVATION 3

BASE & CEILING CORNER DETAIL

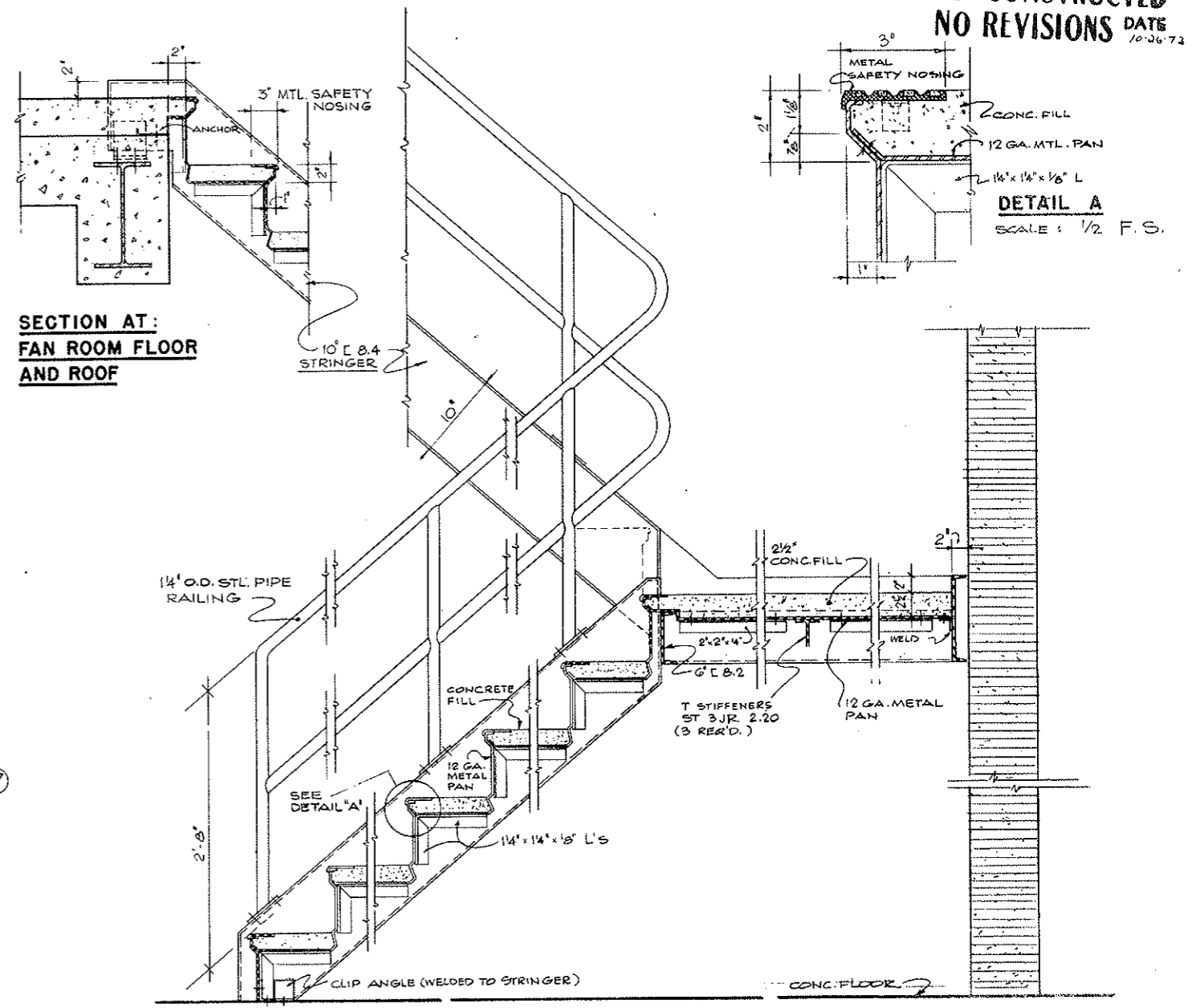
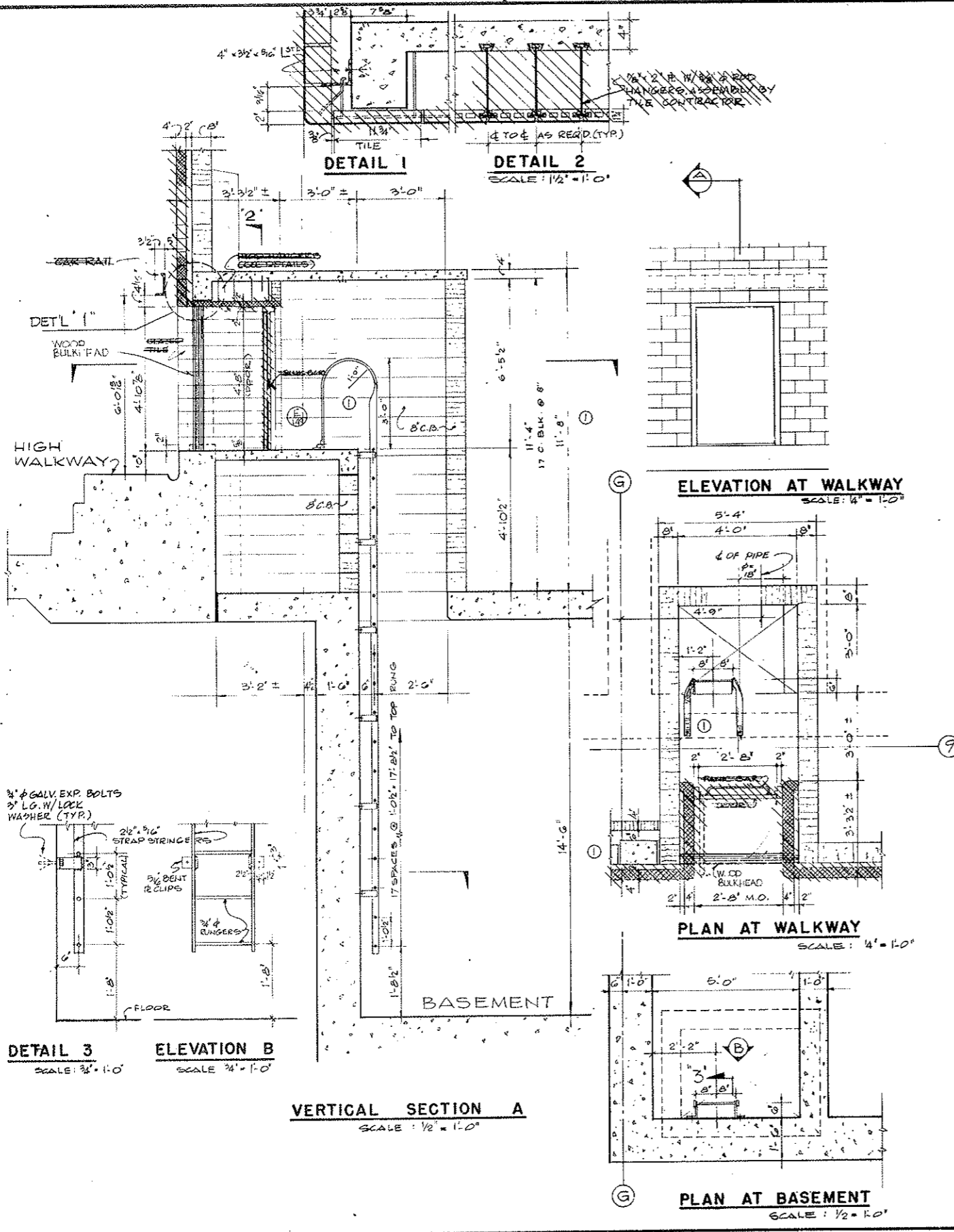
SCALE 3/4 IN = 1 FT.
 NOTE: MEMBRANE WATER-PROOFING TO BE USED ONLY IN E 120, E 207

AS CONSTRUCTED
NO REVISIONS DATE 10-20-73

DESIGNED: P.R.V.	RECOMMENDED: [Signature]	DATE: []	BY: []
DRAWN: M.O.	CHECKED: L.D.	NO. DATE:	DESCRIPTION OF REVISION:
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
ARCHITECTURAL WEST AND EAST VENTILATION BUILDINGS REST ROOMS - DETAILS			
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.			
NEW YORK, N. Y.	SCALE: AS SHOWN	DATE: AUG. 1967.	DRAWING NO. A-WELL

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	139	326

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

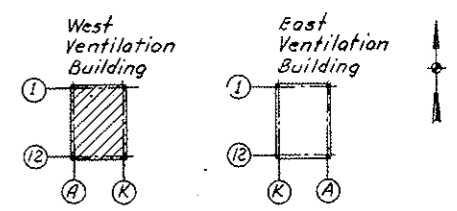
ARCHITECTURAL
WEST AND EAST VENTILATION BUILDINGS
STAIR DETAILS

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.R.S.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. A-WE 12
DRAWN: T.I.	APPROVED: <i>[Signature]</i>	
CHECKED: <i>[Signature]</i>	DATE: AUG. 1967	
SUBMITTED: <i>[Signature]</i>	SCALE: AS SHOWN	

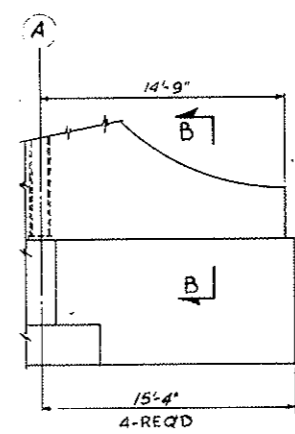
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	140	326

~~FOR PLAN DIMENSION CHANGE~~
~~FOR DIMENSION CHANGE~~
~~FOR DIMENSION CHANGE~~

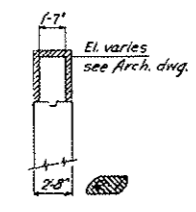


KEY PLAN
AS CONSTRUCTED
REVISED DATE
 10-26-73

- NOTES:**
1. F1, F2, F3, etc. indicate Type of Footings. P1, P2, P3 indicate Type of Pedestals. For Footing and Pedestal Schedules, see Dwg. No. S-WE2 & S-W1A.
 2. (---) denotes top of concrete pier. [---] denotes bottom of footing elevation.
 3. For Tunnel splay geometry, see Dwg. S-WE 6.
 4. For North wall see Dwg. S-W 11; South wall S-W 12; East wall S-W 13; South Transition S-W 15; North Transition S-W 14.
 5. For references to coordinate system, roadway stationing & datum for elevations see Dwg. No. G2-1.
 6. For General Notes & typical details see Dwg. No. S-WE 1.
- Legend of Section Marks**
- A7 Refers to Section A7-A7 on Dwg. No. S-WE 10
- A7(WE10)
7. Elevations shown [---] for the bottom of footings are based on information obtained from bore logs taken in the general area, and assume bearing on undisturbed soil. In the event that sound rock is encountered before the footing elevation recorded on the drawing is reached, the footing shall bear at rock level, except as shown on Dwg. S-W 13. Footings shall be either entirely on rock or entirely on soil.
 8. Drain pipes shall slope uniformly between points of given elevation.



ELEVATION A-A
 SCALE: 3/16" = 1'-0"



SECTION B-B
 SCALE: 3/16" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Added partial bottom footings & pier elev.			
2		Footings marks revised			
3		GENERAL REVISIONS - DRAINAGE LINES			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

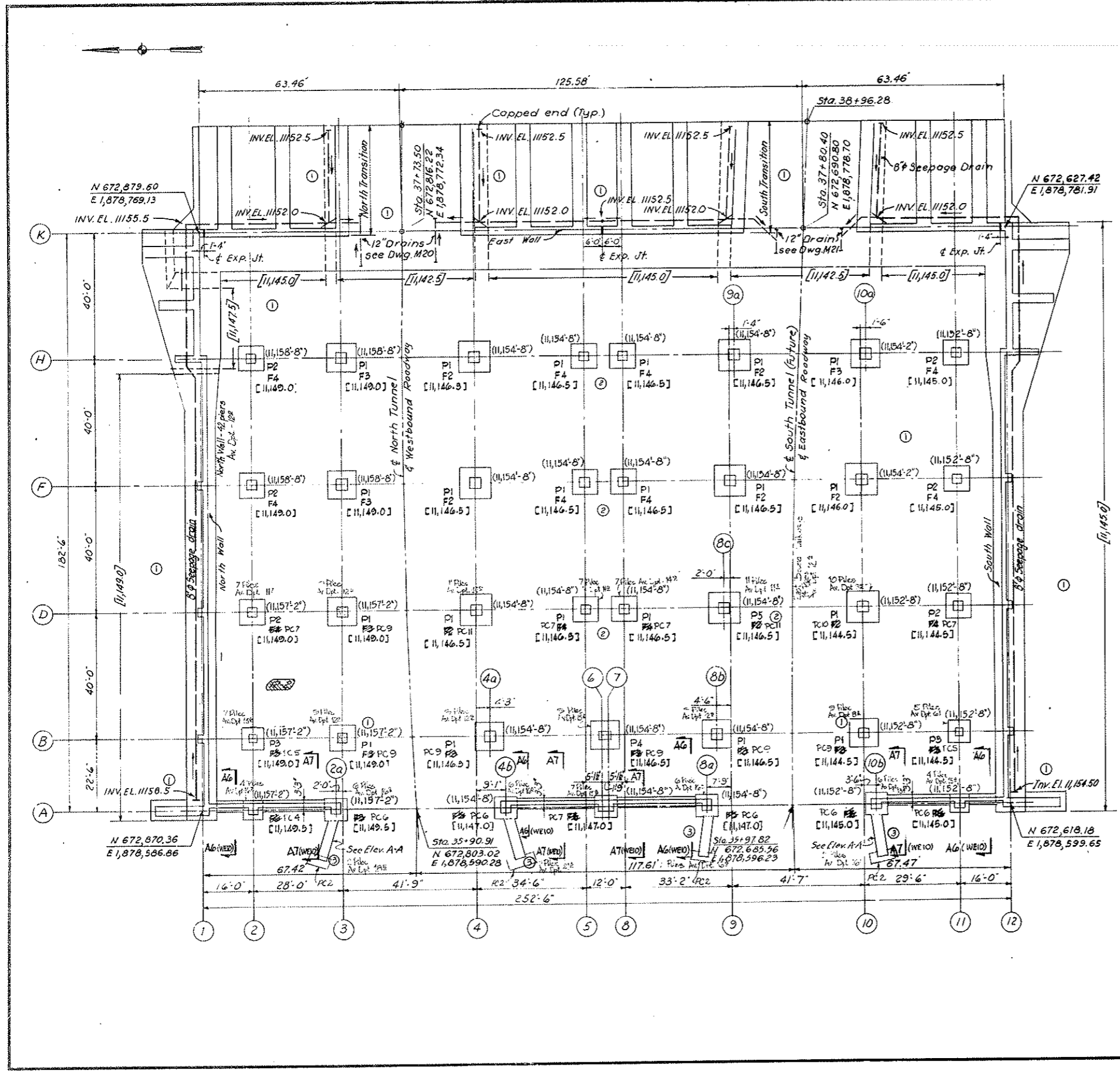
STRUCTURAL
WEST VENTILATION BUILDING
FOUNDATION PLAN

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E. R. S. / P. S.
 DRAWN: W. J. K. / G. H.
 CHECKED: F. R. W.
 SUBMITTED: [Signature]

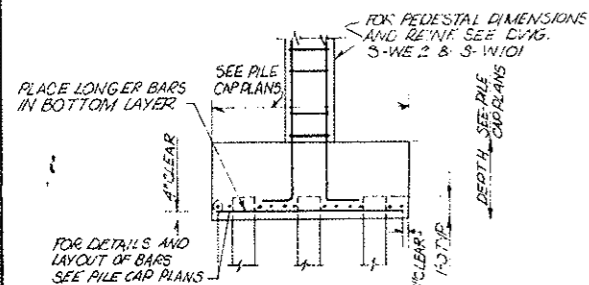
RECOMMENDED: [Signature]
 APPROVED: [Signature]

NEW YORK, N. Y. SCALE: 1/16" = 1 FT DATE: AUG. 1967 DRAWING NO. S-WI

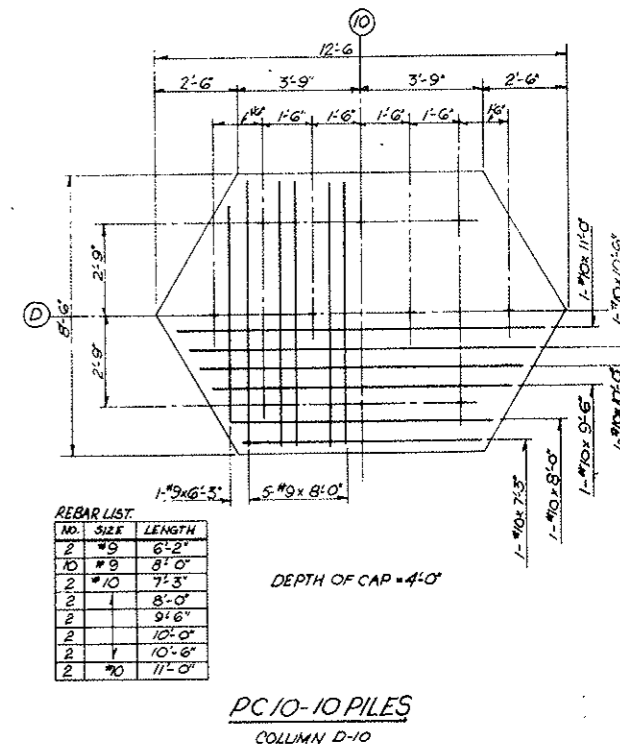
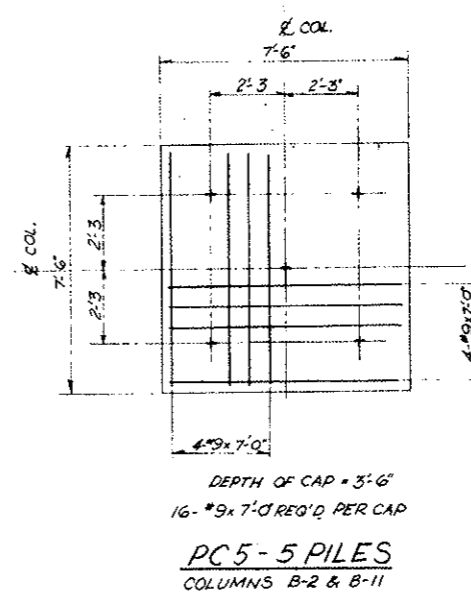
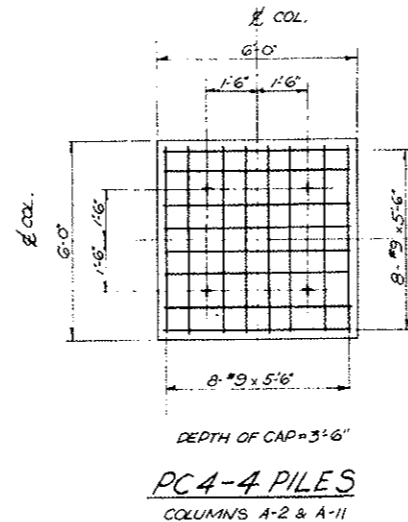
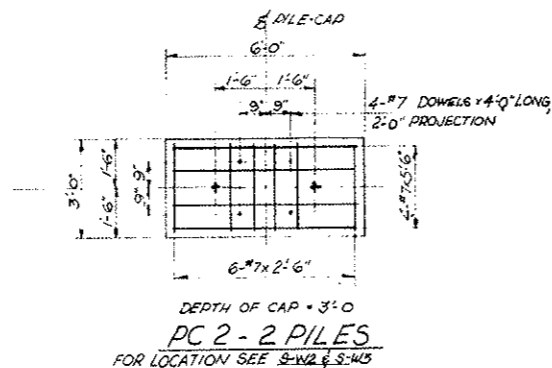


FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	MOAX	326

AS CONSTRUCTED
REVISED DATE Oct 24, 1973

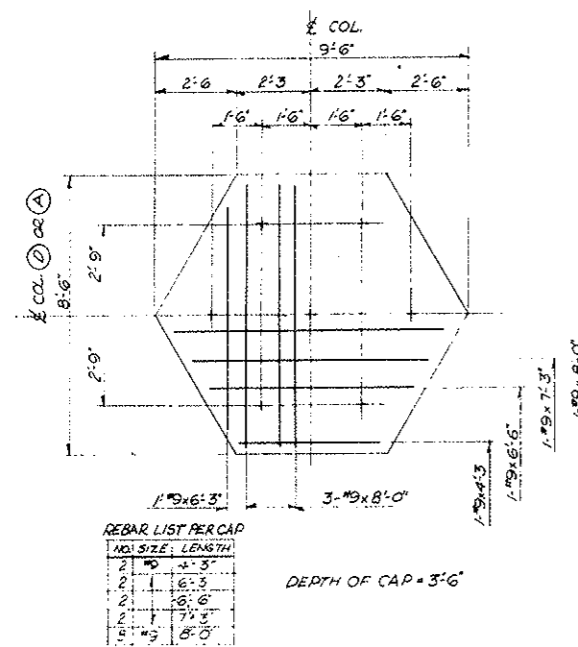
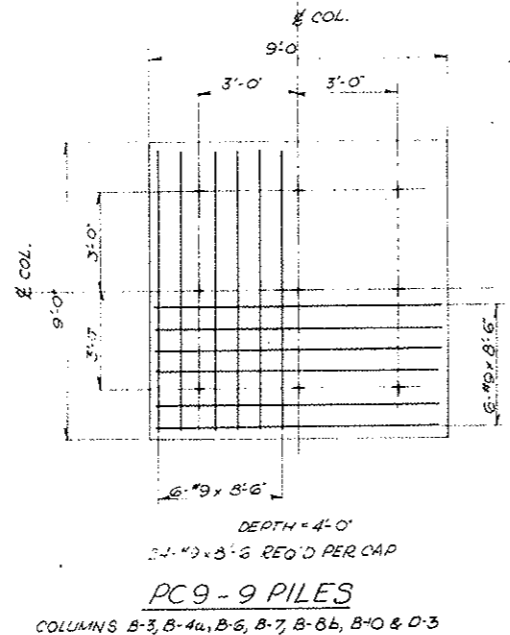
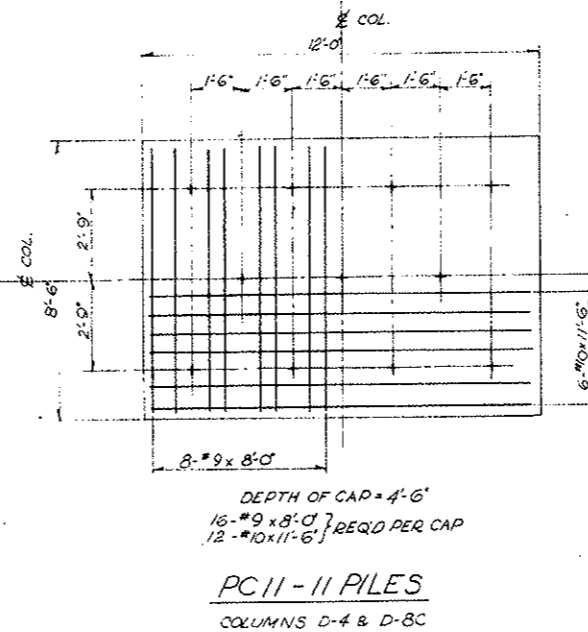
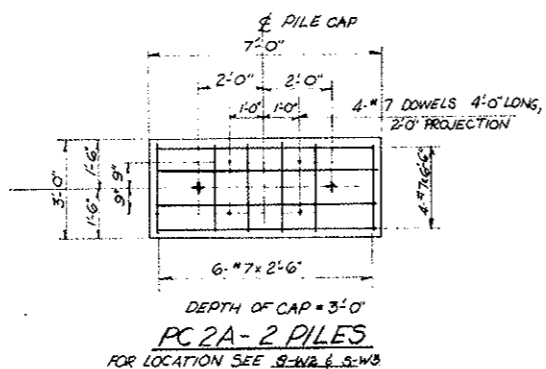
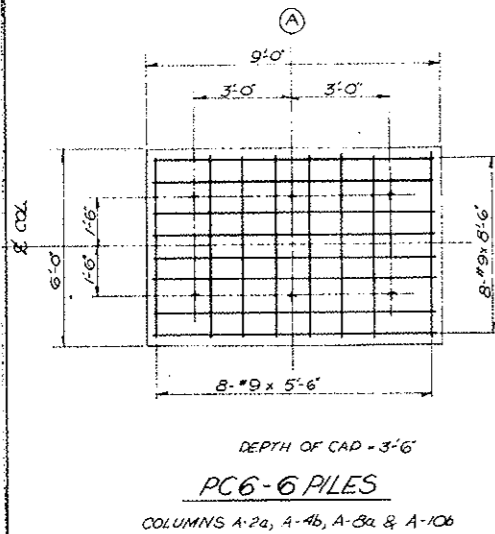


NOTE: PILE CAP REINFORCEMENT SUPERSEDES FOOTING REINFORCEMENT SHOWN ON DWG. S-W101
TYPICAL PILE CAP SECTION



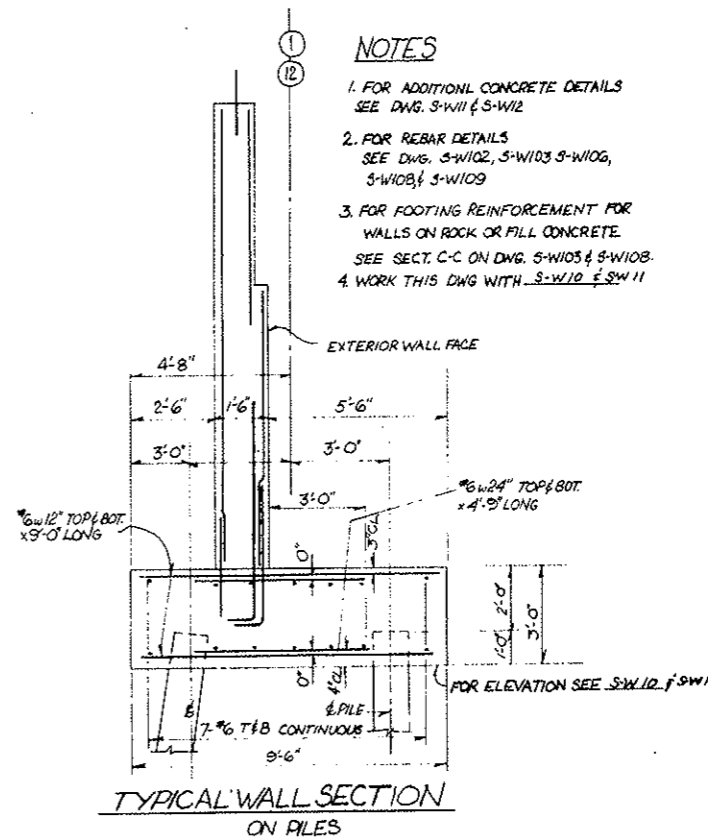
REBAR LIST

NO.	SIZE	LENGTH
2	#8	6'-2"
2	#8	8'-0"
2	#10	7'-3"
2	#8	8'-0"
2	#8	9'-6"
2	#8	10'-0"
2	#8	10'-6"
2	#8	11'-0"



REBAR LIST PER CAP

NO.	SIZE	LENGTH
2	#8	4'-5"
2	#8	6'-5"
2	#8	6'-6"
2	#8	7'-3"
2	#8	8'-0"



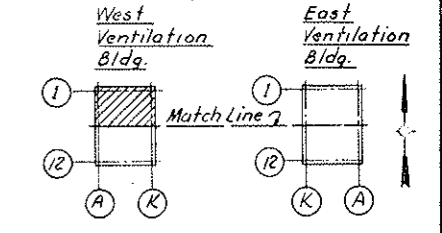
- NOTES**
1. FOR ADDITIONAL CONCRETE DETAILS SEE DWG. S-W11 & S-W12
 2. FOR REBAR DETAILS SEE DWG. S-W102, S-W103, S-W106, S-W107 & S-W109
 3. FOR FOOTING REINFORCEMENT FOR WALLS ON ROCK OR FILL CONCRETE SEE SECT. C-C ON DWG. S-W103 & S-W108
 4. WORK THIS DWG WITH S-W10 & S-W11

STATE OF COLORADO
DIVISION OF HIGHWAYS

DESIGNER NOTED	APPROVED BY:	DRAWN BY: TALS/JLR
DATE: JAN 10, 1974		REVISION:
PILE FOUNDATIONS - COLUMN PILE CAPS AND NORTH AND SOUTH PERIMETER WALLS		DESIGNED BY: TALS/JLR
WEST VENTILATION BUILDING		S-W1A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	141	326

~~9-6-67 C.D.H.~~
~~7-3-68 C.D.H. DIMENSION CHANGE~~
~~7-12-68 C.D.H. Add Sewage Ejector Pit~~



KEY PLAN

~~5-31-69 C.D.H. Dimension Change~~
~~5-31-69 C.D.H. Deleted Section 11-10-11-68~~
 *Subject to final approval

AS CONSTRUCTED
REVISED DATE 10-26-73

CEILING SLAB OVER INTERIOR ROOMS

For framing plans and reinforcing details of ceiling slabs supported on masonry walls, see Dwg. S-W143, S-W144, A-W1 & A-W2

- NOTES:
1. M.H. = Manholes. For location see Mechanical dwgs. For details see dwgs. C2-39, C2-41, C2-46
 2. For reinforcing & details of floor slabs see Dwg. No. S-W1.
 3. For roadway slab details see Dwg. No. C2-10.
 4. T.P. - Top of Parapet. See Dwg. S-W1.
 5. Work this drawing with Dwg. S-W1, 6, 7, 8, 9 & 10.
 6. Elevation of brick shelves for west wall of building to be 1'-10" below Roadway Floor slab unless otherwise noted.
 7. For Dimensions of Pile Caps along Roadway See Dwg. S-W1A.

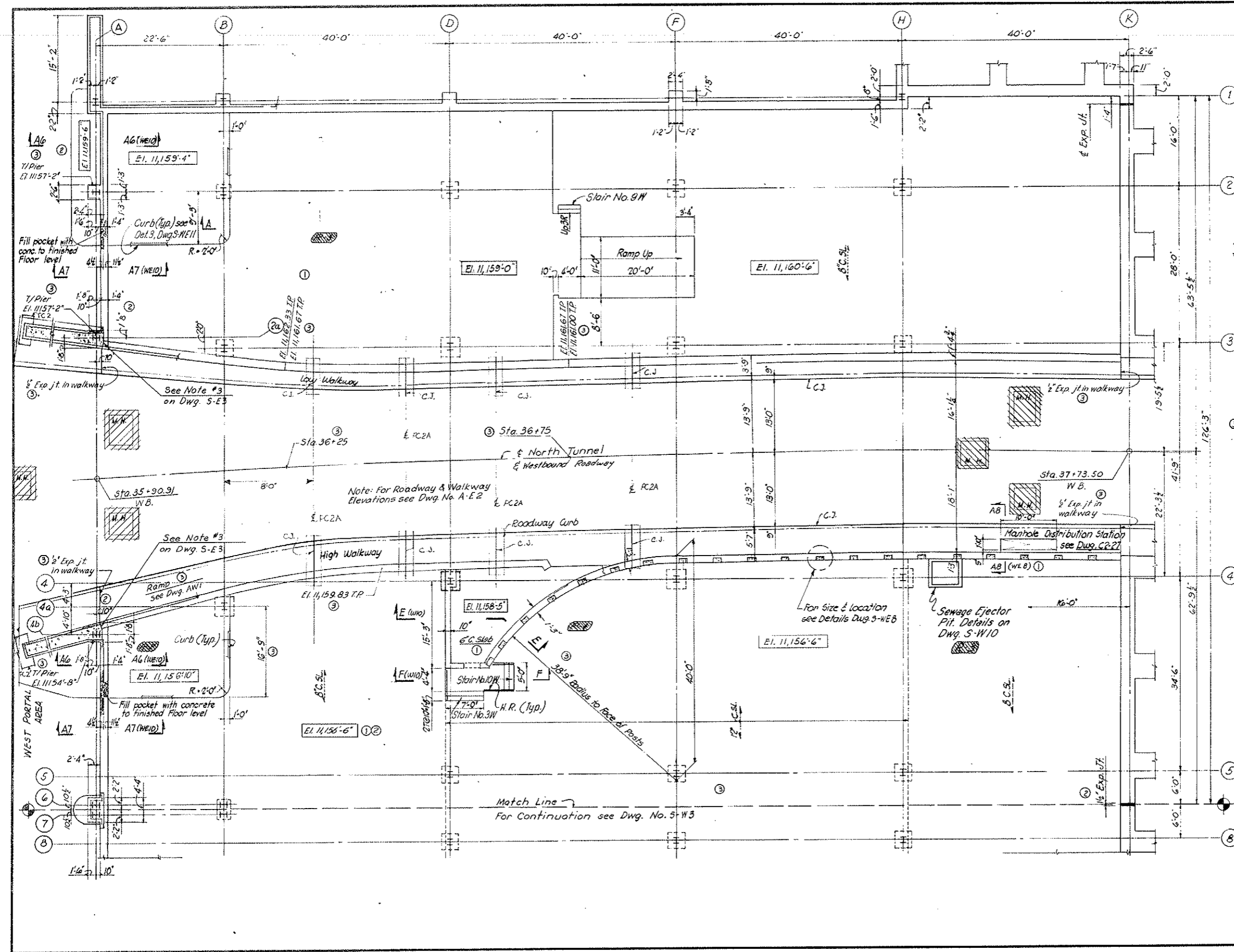
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		General Revisions			
2		General Revisions			
3		General Revisions			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL WEST VENTILATION BUILDING ROADWAY FLOOR PLAN NORTH

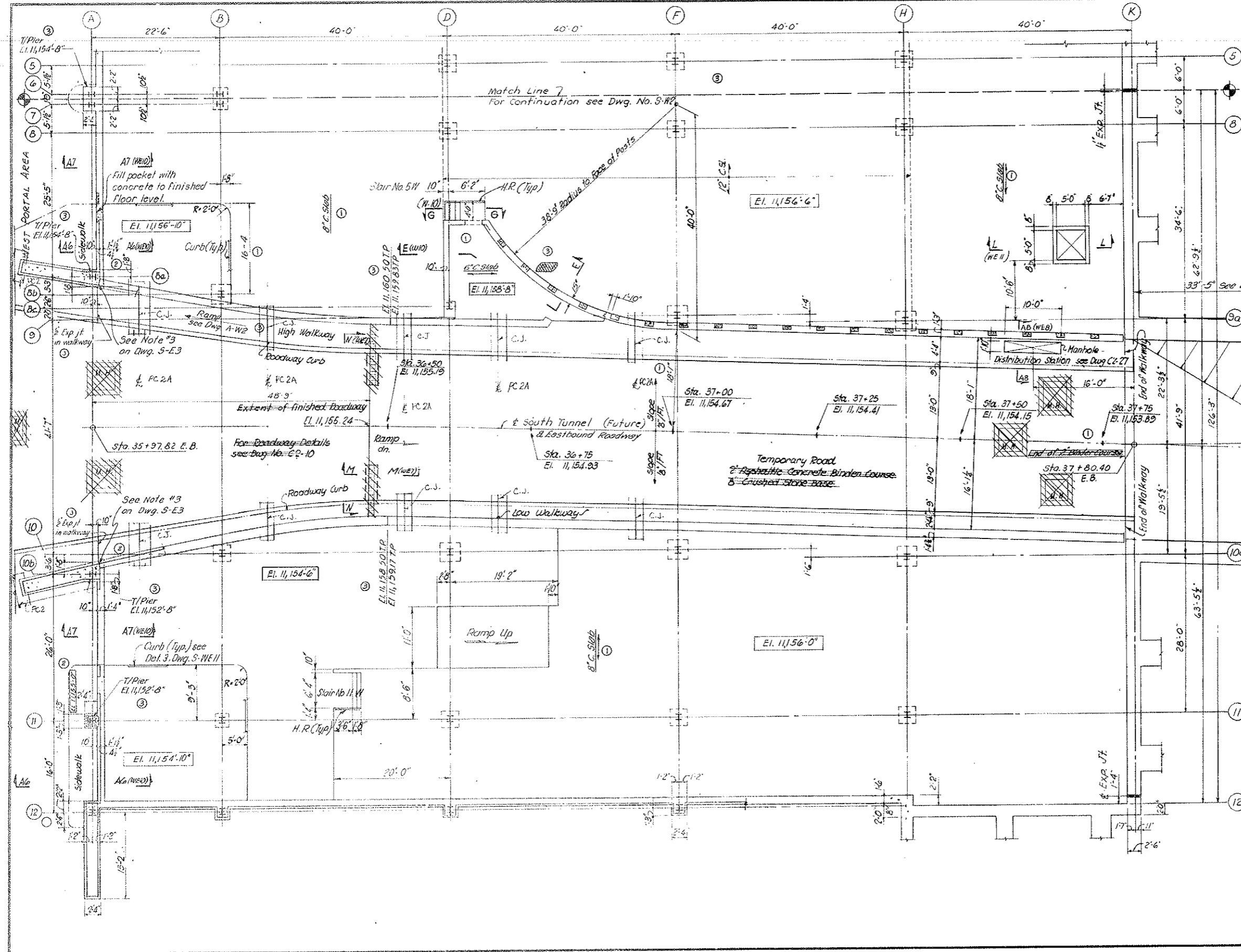
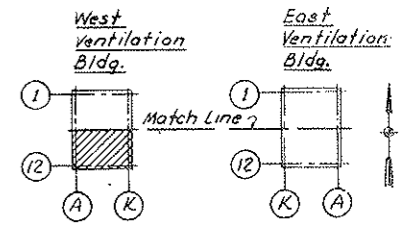
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E.R.S.	RECOMMENDED: H.H. Ruffolo	DRAWING NO. S-W2
DRAWN: G.H.	APPROVED: [Signature]	
CHECKED: F.R.W.		
SUBMITTED: [Signature]		
SCALE: 1/8" = 1'-0"	DATE: AUG. 1967	



FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(134)220	142	326

Project 5-41-69 C.D.H. Draw. No. 11-112-15-503
 Subject to Final Approval

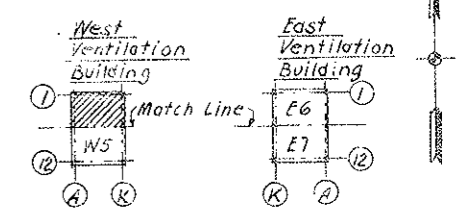


① For notes see Dwg. No. S-W2
 NOTE
 For Dim. of Pole Caps along Roadway See S-W1A

①	General Revisions	18	10		
②	General Revisions	18	10		
③	General Revisions	18	10		
④	General Revisions	18	10		
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL WEST VENTILATION BUILDING ROADWAY FLOOR PLAN SOUTH					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E. R. S.	RECOMMENDED: H. P. Meyer				
DRAWN: G. H.	APPROVED: L. R. ...				
CHECKED: F. R. W.					DRAWING NO. S-W3
SUBMITTED: L. R. ...					SCALE: 1/8" = 1' FT DATE: AUG. 1973
NEW YORK, N. Y.					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	143	326

AS CONSTRUCTED
REVISED DATE 10-2-73



KEY PLAN

Girder Schedule
 See Dwg. No. S-WE12 For Welding & Cov. Pl. Details

Mark	Section	Size	Cover Plate		Remarks
			Approx. Length	Location	
G1	36WF245	19x1/2	33'-0"	Bot. Flg.	Low Alloy
G2	36WF300	20x1/2	33'-0"	T.&B. Flg.	Low Alloy
G3	36WF300	14x1/2	49'-0"	T.&B. Flg.	ABS

Legend

- L.A. - Low Alloy Steel.
 - I - Column passes Thru Floor.
 - I - Column Above Only.
 - I - Column Below Only.
 - ⊕ - Jib Crane Support.
 - B.R. - Wall Bearing Plate (Schedule on S-WE12)
 - U.N. - Unless otherwise noted
- For Notes and Ref. Dngs., see Dwg. S-WS

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

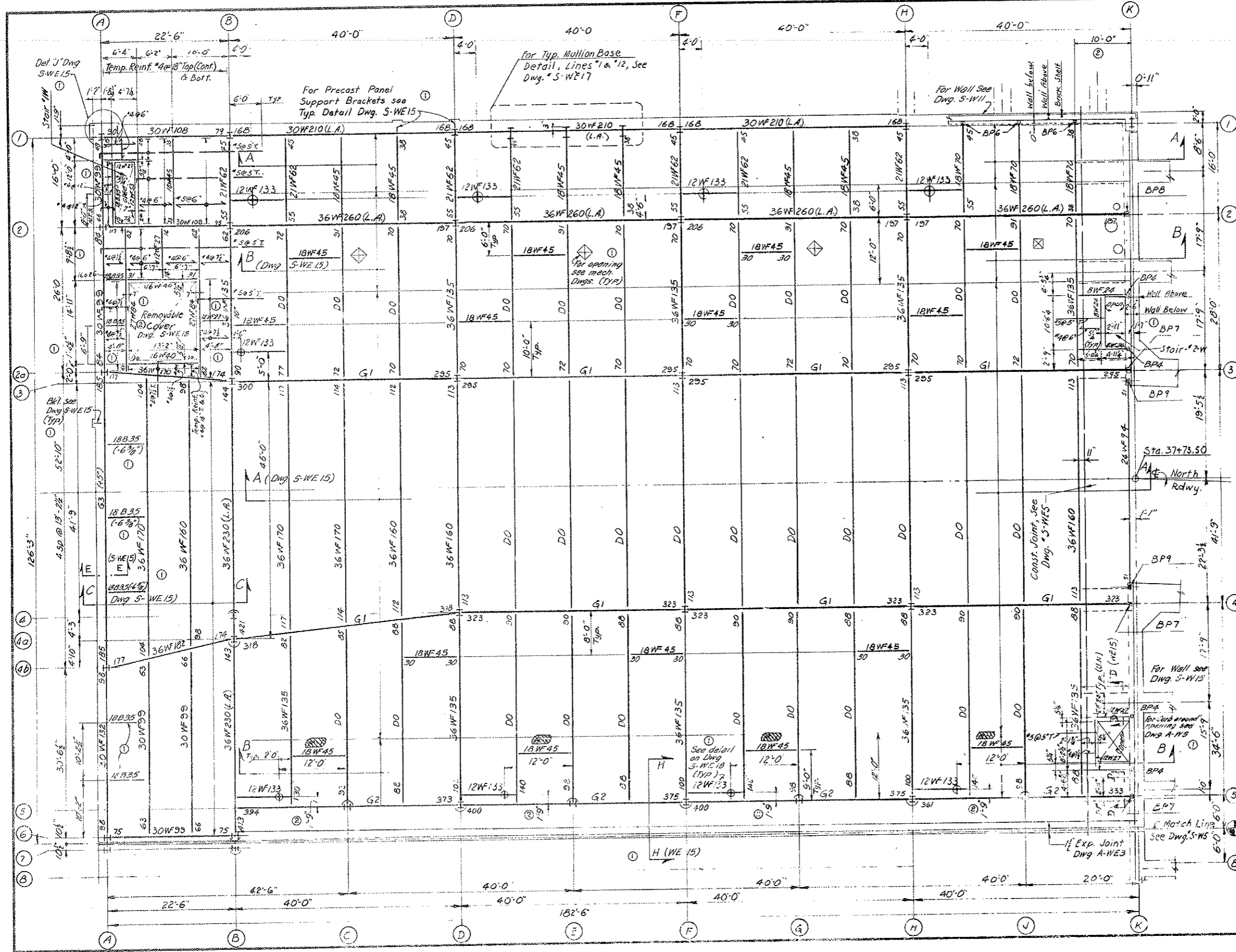
STRUCTURAL
WEST VENTILATION BUILDING
FAN ROOM FLOOR PLAN
NORTH

FIPPLETT'S - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N.Y.

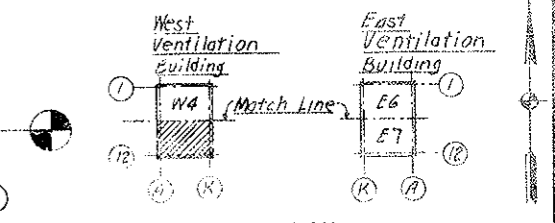
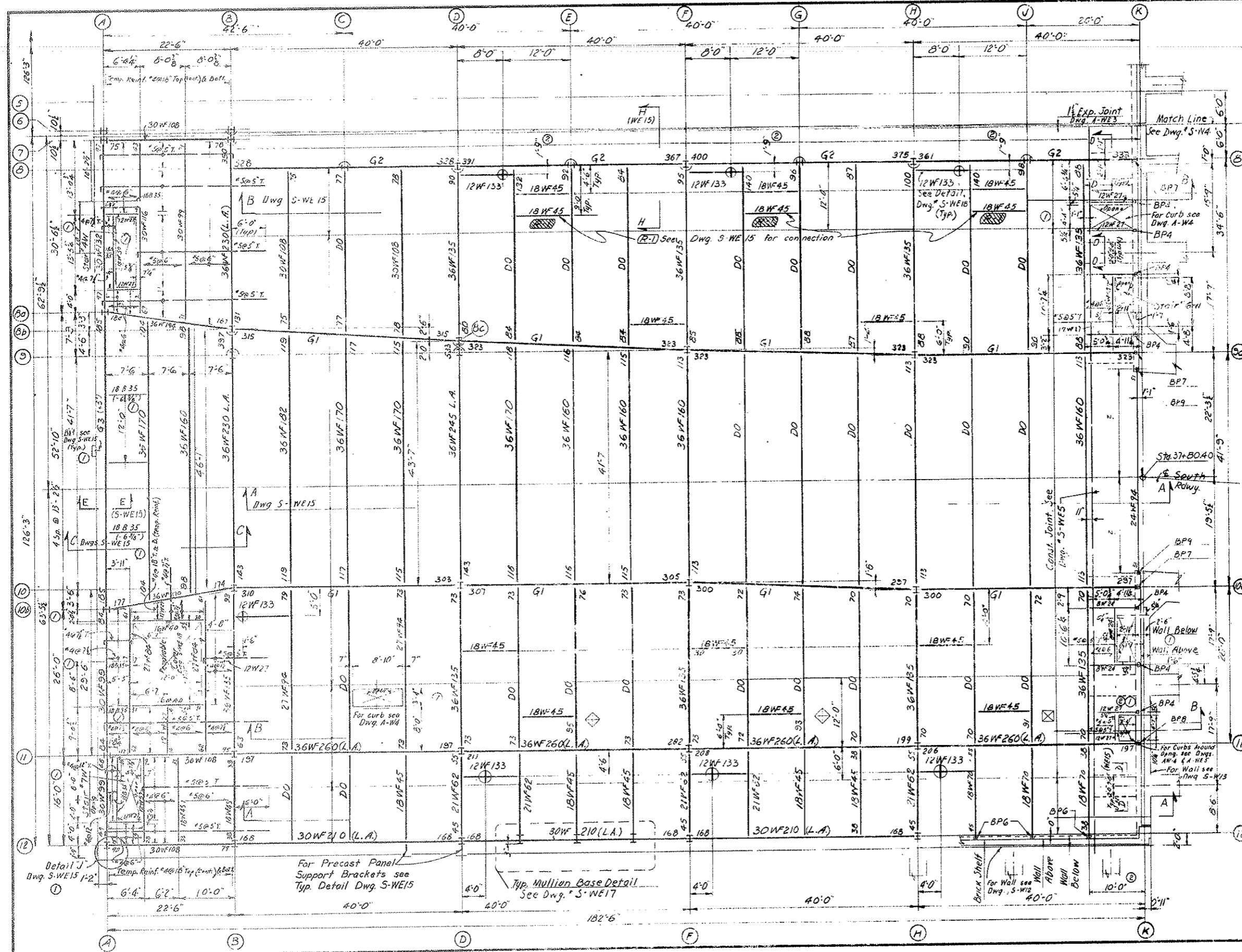
DESIGNED: K.B.
 DRAWN: R.J.
 CHECKED: E.E.
 SUBMITTED: R. J. ...

RECOMMENDED: ...
 APPROVED: ...

DATE: AUG 1967
 SCALE: 1/8" = 1'-0"



FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-31941230	144	326



- NOTES:**
- For General Notes see Dwg. S-WE-1
 - Top of Structural Concrete Slab Elev. +1182'-3"
 - Top of Structural Steel 3" Below Top of Slab unless otherwise noted.
 - For Structural Steel Notes and Moment Connections see Dwg. S-WE-12
 - Concrete Slab is 8" thick unless otherwise shown. For Slab Reinforcement see Dwg. S-WE-15
 - Beams shall be equally spaced unless otherwise noted.
 - Top Flange of Beams shall be adequately braced during the pouring of the Slab.
 - For Bearing Plates (B.P.) Schedule see Dwg. S-WE-5.
 - For Reinf. of Curbs see Typical Detail on Dwg. S-WE-14
 - For location of Precast Panel Support Brackets see architectural Dwg. and Panel Manuf. Dwg.
 - Legend and Girder Schedule, see Dwg. S-W4.
 - Web Stiffener Detail for Girders Bearing on wall @ Col. Line "K" (G₁, G₂ & 36WF260 on Line "2" & "11") see Dwg. S-WE-5.
 - For Stairs and Landings see Arch. Dwg.
 - For Dowels @ Gunite Ducts and Concrete Partition Wall see Dwg. S-WE-13 & 14.
 - For connection of Beams, Framing into Spandrel Beams see Dwg. S-WE-15
 - Reinforced Concrete shown thus:
 "T" Indicates Steel in Top of Slab
 "B" Indicates Steel in Bottom of Slab

- REFERENCE DRAWINGS:**
- Architectural: AW3, AW4
 - Mechanical: M-2, M-10, M-23, M-24
 - Structural: S-W4, S-W11, S-W12, S-W13, S-WE1, S-WE5, S-WE12 thru S-WE15, S-WE17 and S-WE18.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

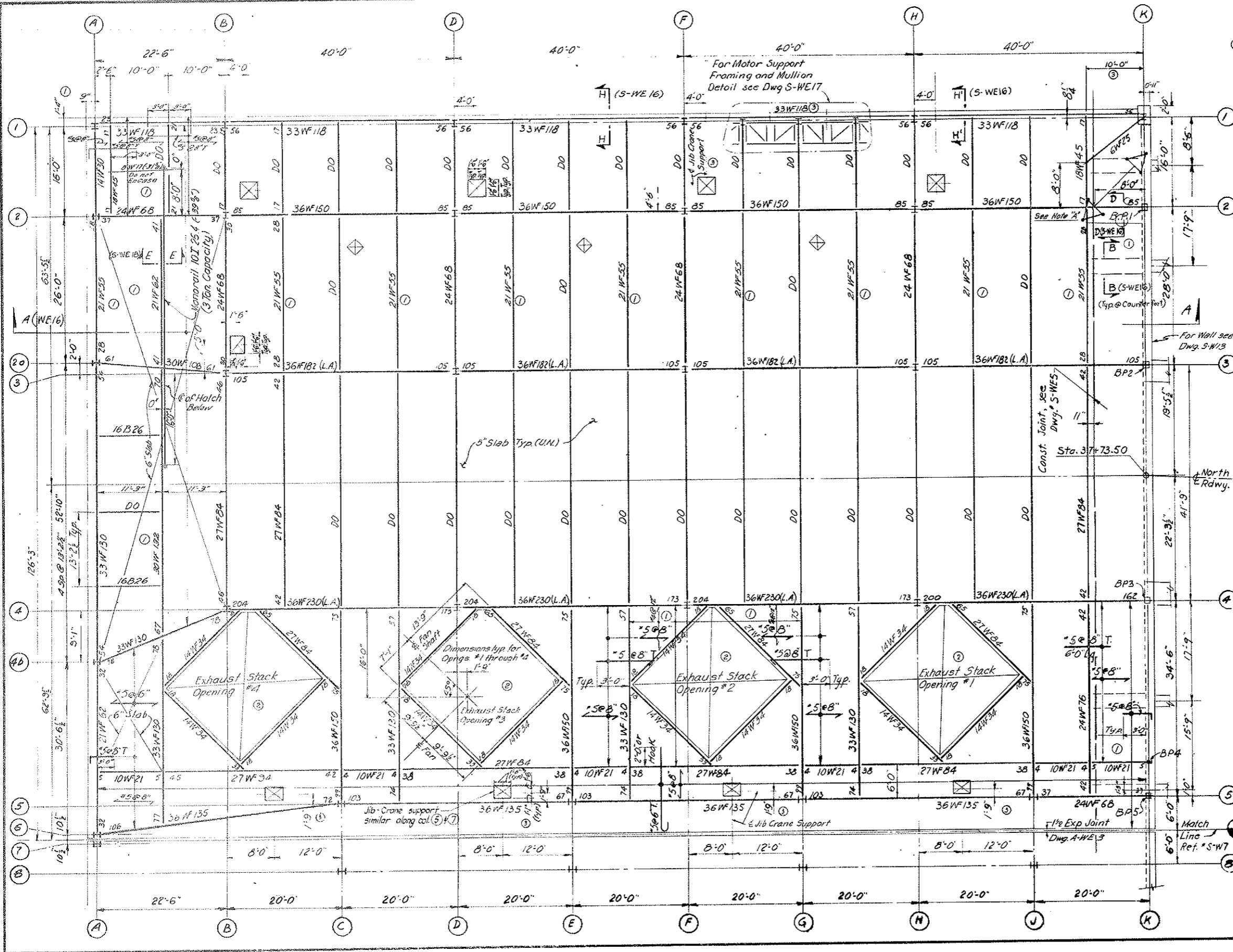
STRUCTURAL WEST VENTILATION BUILDING FAN ROOM SOUTH

TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

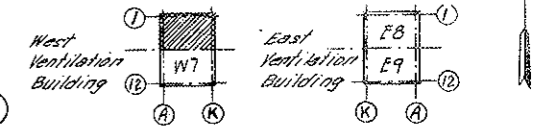
DESIGNED BY K. B. R. R.	RECOMMENDED BY [Signature]
DRAWN BY R. R.	APPROVED BY [Signature]
CHECKED BY T. F.	
SUBMITTED BY L. R. [Signature]	

DESIGNED BY: K. B. R. R.
 DRAWING NO.: S-W5
 NEW YORK, N. Y. SCALE: 1/8" = 1'-0" DATE: AUG. 1957

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-5(34)220	145	326



NOTE A: Microwave Tower (Not in Contract)
 Contractor is to obtain final position, dimensions and details of proposed Microwave Antenna and supporting towers before casting the concrete roof members below. This information is to be submitted to the Engineer to verify that the supporting structural roof members are satisfactory.



- KEY PLAN**
- NOTES:**
- For General Notes, see Dwg. S-WE-1.
 - Top of structural concrete roof slab El. 11,213'-1"
 - Top of Structural Steel 3" below Top of Slab unless otherwise noted.
 - For Strudl Steel notes and Moment Connections see Dwg. S-WE-12.
 - Concrete Slab is 5" thick, unless otherwise noted. For Reinf. see Dwg. S-WE-16.
 - Bottom Reinforcement in Slab shown thus \rightarrow
 - Top Reinforcement in Slab noted thus \leftarrow
 - Reinforcement around openings #1, #2, & #3 similar to Reinforcement around opening #2.
 - Beams to be equally spaced between Column Lines unless otherwise shown.
 - Top Flange of Beams shall be adequately braced during the pouring of the Slab.
 - Total Slab depth 12" at Jib-Crane location marked thus \boxtimes . For detail see Dwg. S-WE-16. (East Building similar). For details of Head Bearing see Dwg. M-10.
 - For curbs around Exhaust Stack Openings, see Dwg. A-WE-3.
 - For Reinf. of curbs see Typ. Detail on Dwg. S-WE-14.
 - For support Brackets of Exhaust Stacks see Dwg. M-6.
 - For Bearing Plates (B.P.) Schedule & Slit. for Bms. Bearing on conc., see Dwg. S-WE-5.
 - For Legend see Dwg. S-WE-5.

REF. DRAWINGS
 ARCH: A-W5, A-W6
 MECH: M-6, M-10, M-25, M-26.
 STRUCT: S-W7, S-W13
 S-WE 1, 5, 12, 14, 15, 16, 17, 18.

AS CONSTRUCTED NO REVISIONS DATE 10-26-73

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.
1		Added Jib-Crane supports located at grid lines 6 and 7.		
2		Added Exhaust Stack opening #3.		
3		Revised Exhaust Stack opening #1.		

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL WEST VENTILATION BUILDING ROOF PLAN NORTH

TIPPETTS-ABBETT-McCARTHY-STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: S.D.S.
 DRAWN: R.R.
 CHECKED: L.G.
 SUBMITTED: L. Gordon, P.E.

RECOMMENDED: [Signature]
 APPROVED: [Signature]

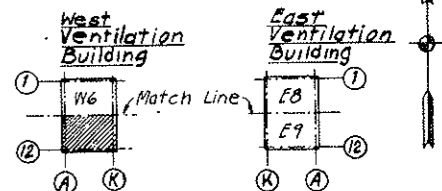
SCALE: 1/8" = 1'-0" DATE: AUG. 1967

S-W 6

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	146	326

AS CONSTRUCTED
NO REVISIONS DATE 10-26-74

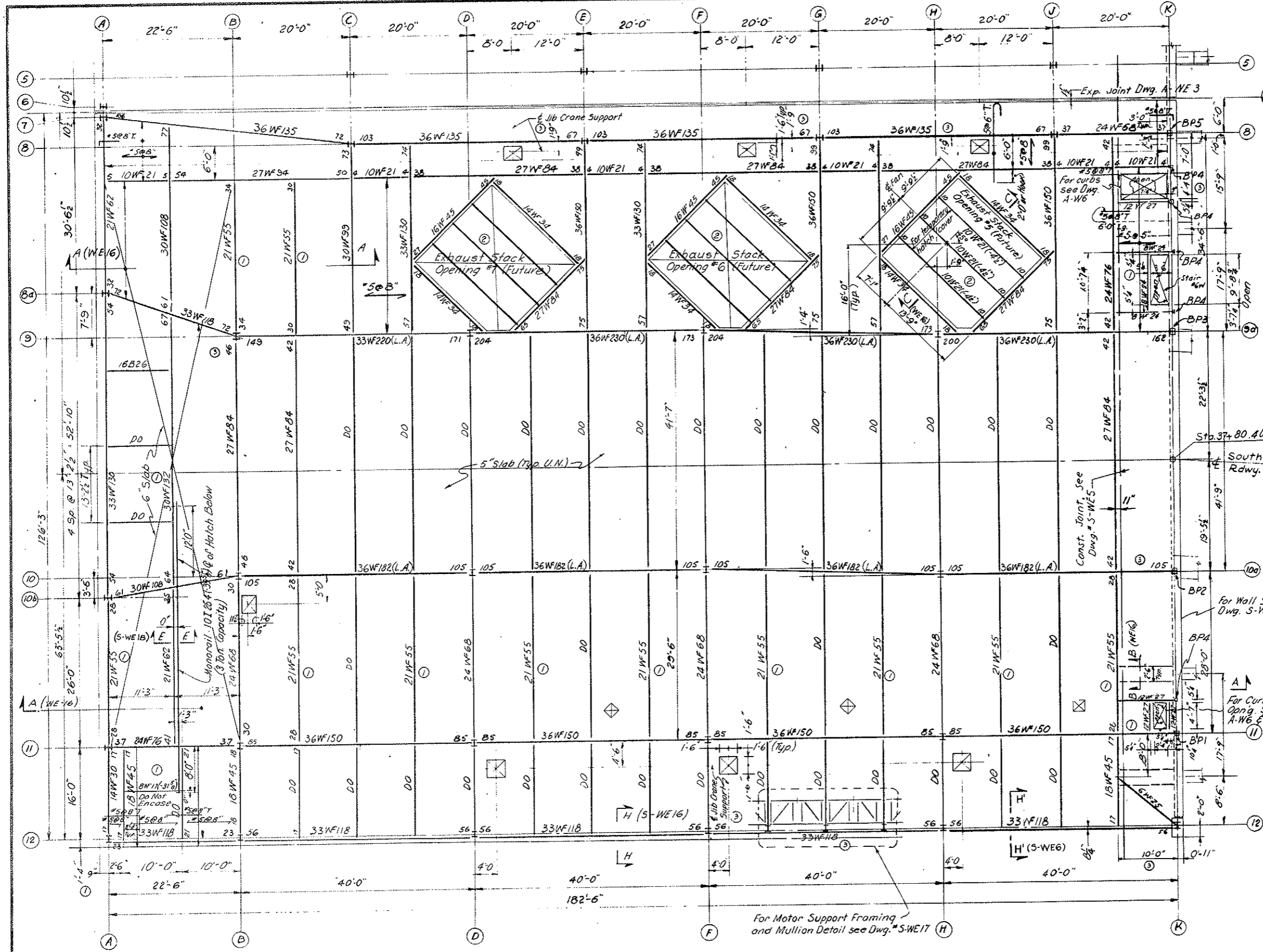
Match Line
Ret. S-W6



KEY PLAN

NOTES:

1. For notes and reference drawings see Dwg. S-W6
2. Reinforcement around openings #5, #6, #7 similar to reinforcement around opening #2 as shown on Dwg. S-W6 (Replaces Note #8 on Dwg. S-W6)
3. For legend see Dwg. S-E-8



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Added 1/8\"/>			
2		Added 1/8\"/>			
3		Added 1/8\"/>			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL WEST VENTILATION BUILDING ROOF PLAN SOUTH

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: S.S.
DRAWN: R.R.
CHECKED: L.F.
SUBMITTED: L. S. (Signature)

RECOMMENDED: J.P. (Signature)
APPROVED: J.P. (Signature)

DRAWING NO. S-W7

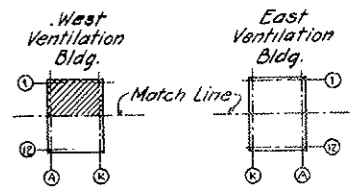
SCALE: 1/8" = 1'-0" DATE: AUG. 1967

For Motor Support Framing and Mullion Detail see Dwg. S-W17

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	148	326

Rev. 11-6-67 C.D.H. Add note at bottom

AS CONSTRUCTED
REVISED DATE 10-26-73



KEY PLAN

NOTES:

1. For Sections 1 thru 6 and Details of Duct-Divider Wall see Dwg. SWE 13 and SWE 14.
2. For other Sect. and layout of Fan Ducts, see Dwg. M 12.
3. Locations of steel frames are shown for guidance only. Max. spacing of frames not to exceed 7'-0". Final spacing of frames to be approved by Engineer.
4. All Fan Ducts to be made of gunite.
5. For Fan Damper Details see Dwg. M12 thru M15.
6. For location of access doors to fan ducts see dwg. M1.
7. See Sheet 145 AX for Duct Layout.

NOTE A

Tunnel Ventilation System (Bid Item 165) revised See W/O 14153 & Spec. 17A For R.I.C. items see the Mechanical Drawings.
 All concrete work required for equipment support as well as the concrete ducts remain in this contract. Construction of the Evase Slack Roof Frame, Concrete Duct Work within the Ventilation Buildings, Fan & Motor Concrete Bases and Anchor Bolts, shall be executed according to details furnished by the fan manufacturer under separate contract.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Added frame of Note C			
2		Added note at bottom			
3		GENERAL REVISION			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

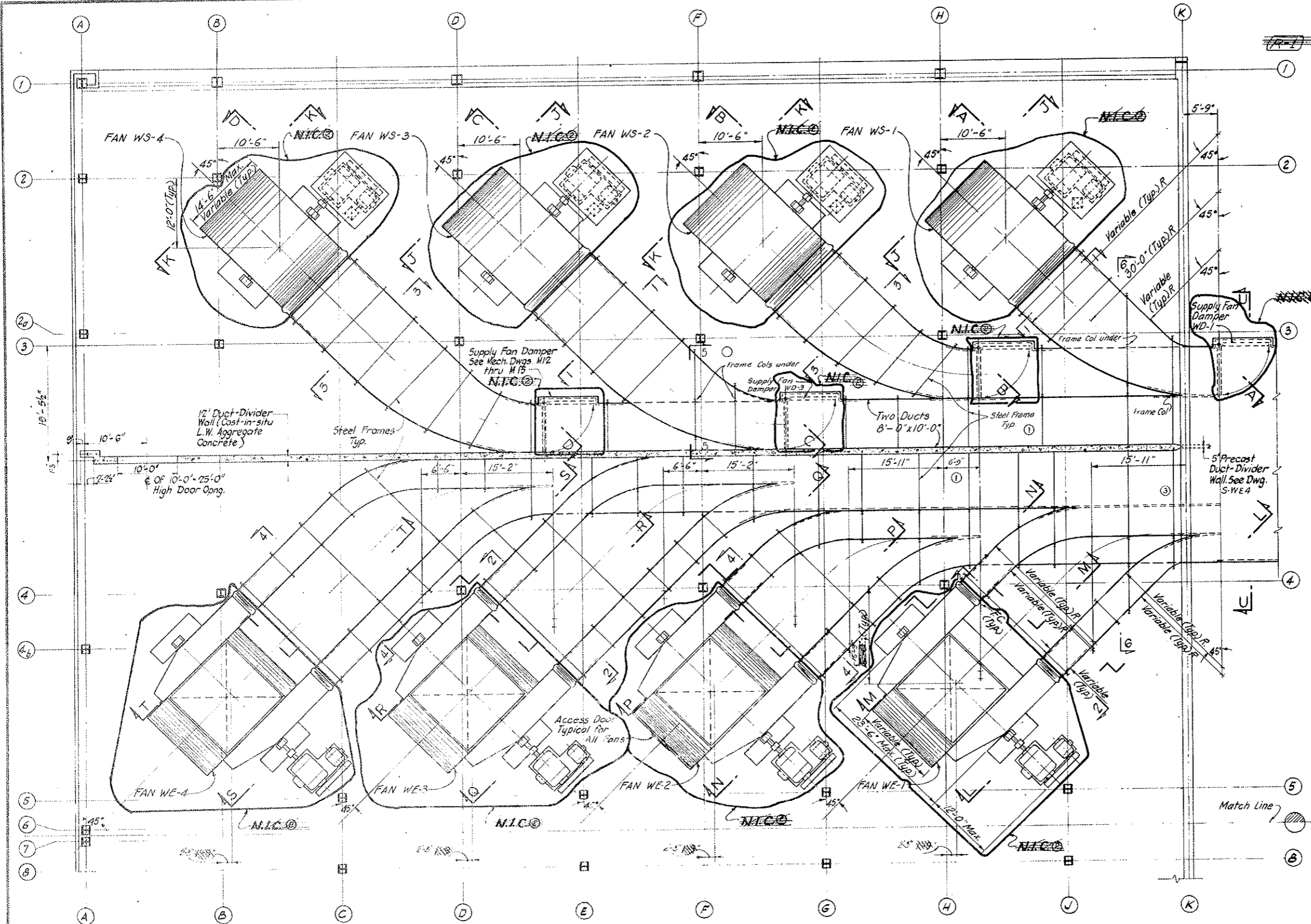
STRUCTURAL
WEST VENTILATION BUILDING
 FAN ROOM FLOOR
 NORTH
 PLAN OF FAN DUCTS

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: S.D.S.
 DRAWN: D.K.
 CHECKED: F.R.W.
 SUBMITTED: S. R. ...

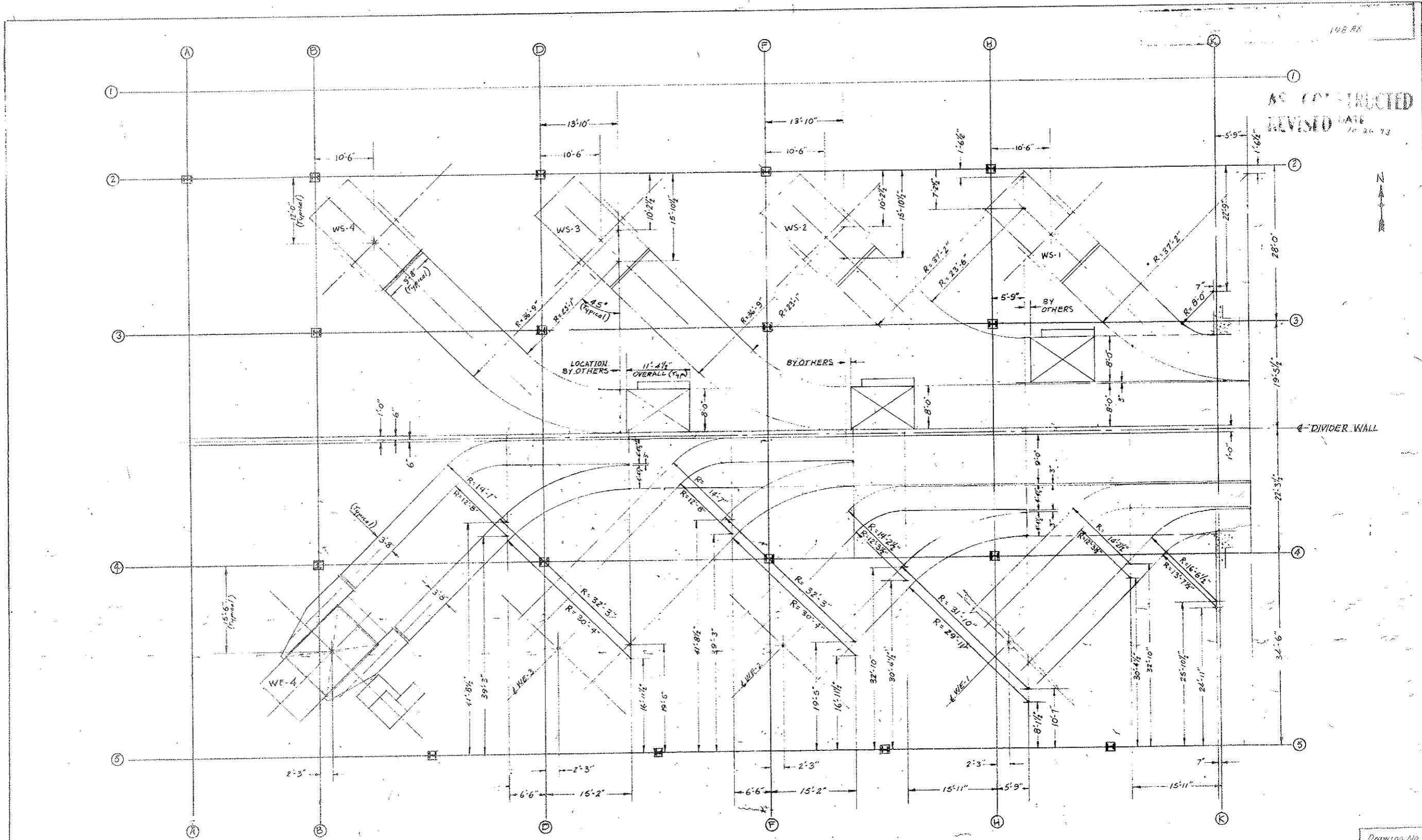
RECOMMENDED: [Signature]
 APPROVED: [Signature]

NEW YORK, N.Y. SCALE: 1/8" = 1'-0" DATE: AUG. 1967 DRAWING NO. S-WS



PLAN

~~(R-1) TUNNEL VENTILATION SYSTEM W/O 14153 SEE SPEC. 17A~~



AS CONSTRUCTED
REVISED DATE 7/26/73



4-DIVIDER WALL

- NOTES:
1. All dimensions pertaining to ducts are inside (air-side).
 2. Refer to assembly drawings SPEDS:3016, 3076, 3077, & 3114 for equipment dimensions and location of inlet and outlet flanges with respect to fan centrifuges.
 3. Allow 6" min. between flanges and concrete ducts for flexible connections.
 4. Location (East-West) of damper door support structures to be by others.

	C	D	E	F	G	H	I	J	K

See Sheet 1492X and 1495X for Fan Base Details

Drawing No
SW59A

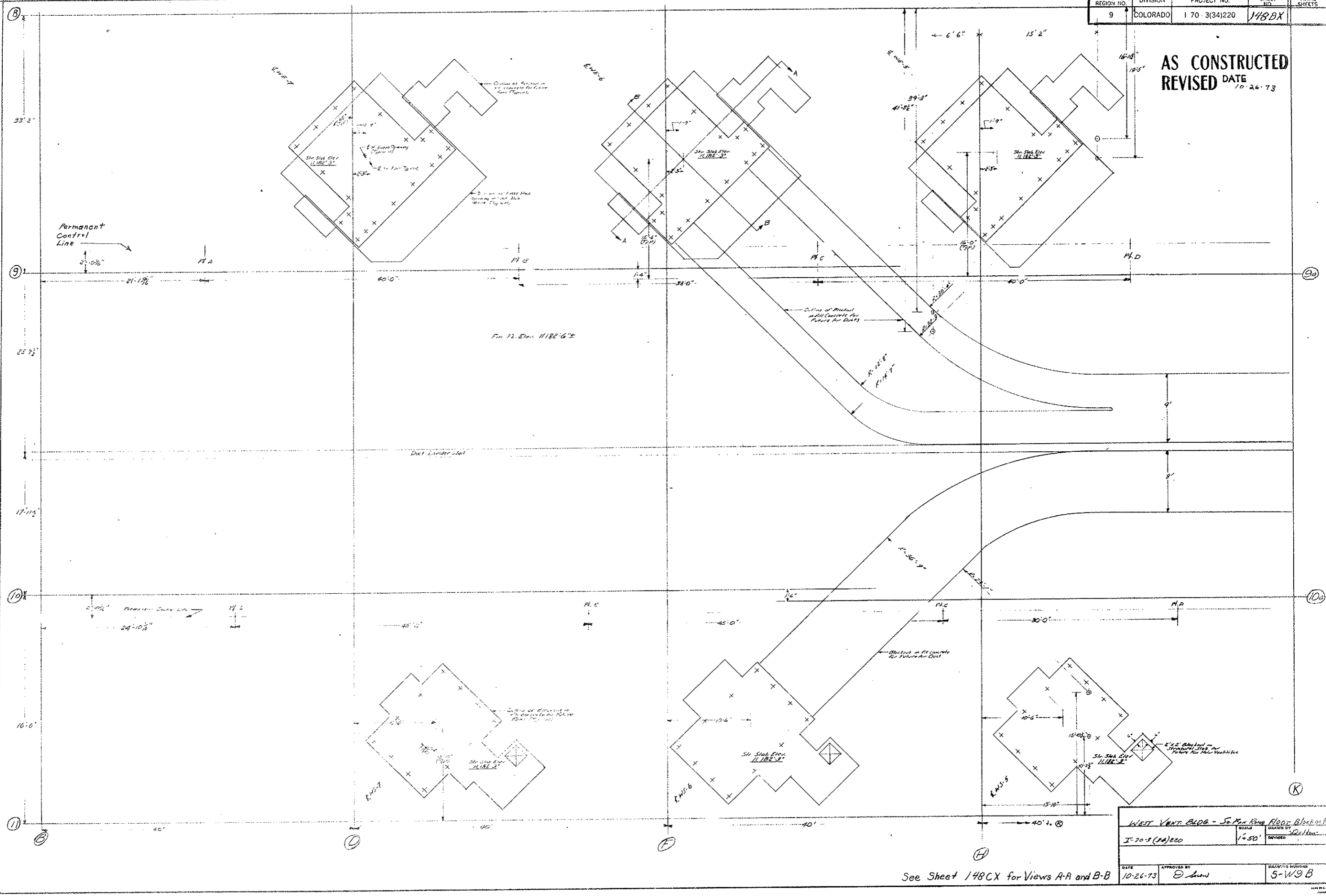
THIS DRAWING AND THE INVENTION DESIGN AND DETAIL SHOWN THEREON ARE THE PROPERTY OF AMERICAN STANDARD INDUSTRIAL COMPANY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH THIS CONTRACT. ALL RIGHTS TO THE USE HEREIN AND IN THE FUTURE SHALL BE RESERVED BY AMERICAN STANDARD INDUSTRIAL COMPANY AND SHALL BE RETURNED TO THE COMPANY UPON THE COMPLETION OF THE PROJECT.

AMERICAN STANDARD INDUSTRIAL DIVISION - DETROIT 32, MICHIGAN

DESCRIPTION: Concrete Duct Layout
FOR West Ventilation Building

PROPOSAL LAYOUT
NO. 9888-212-1 BY: [Signature]
SCALE: 1/8" = 1'-0" DATE: 8-25-70

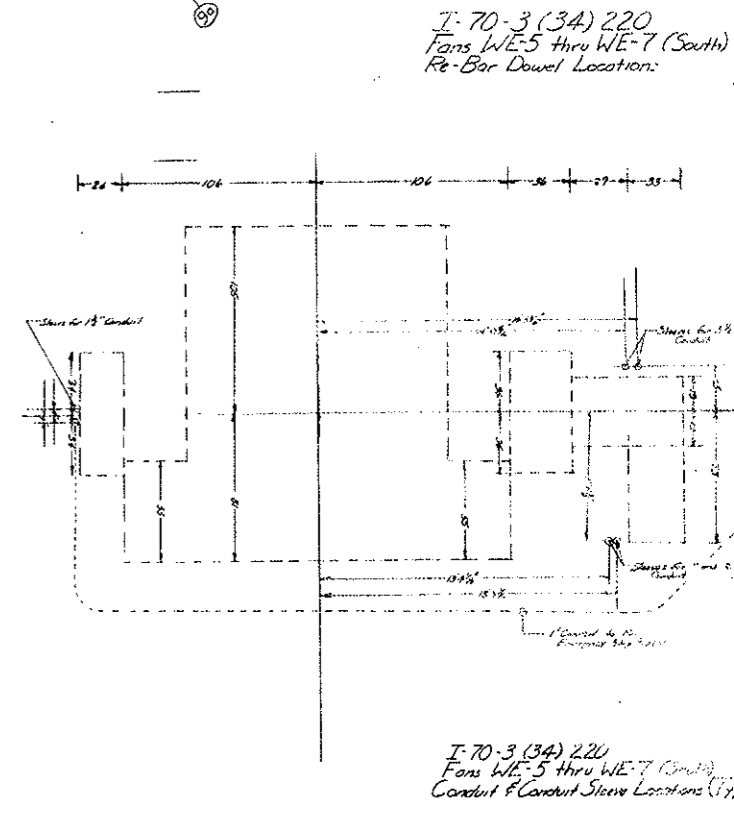
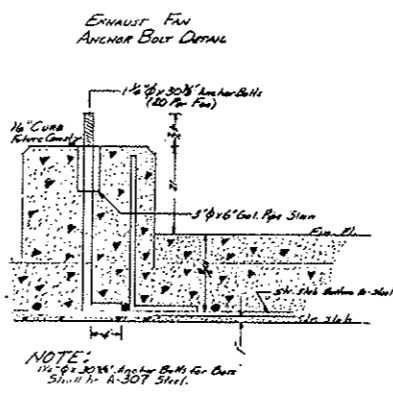
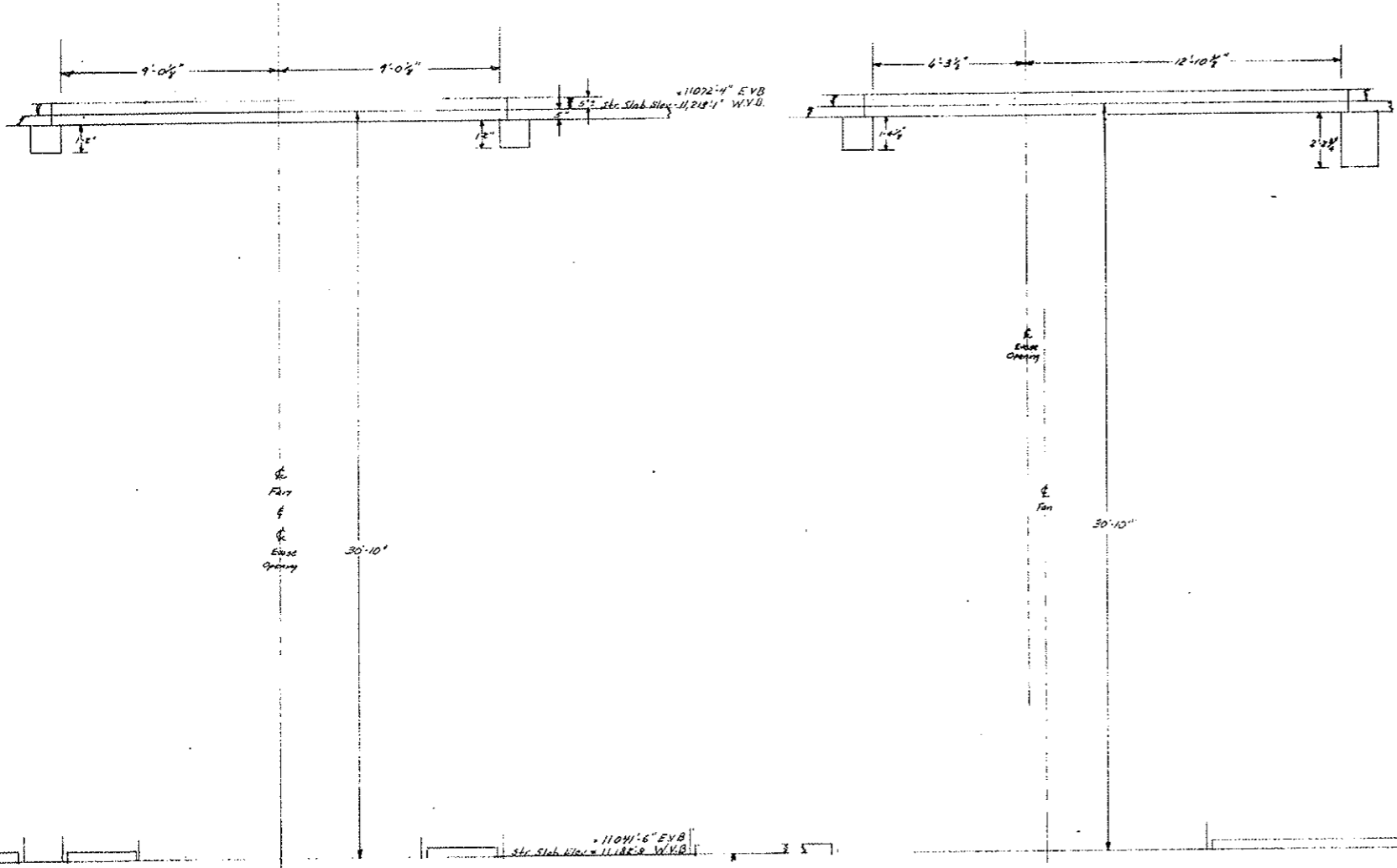
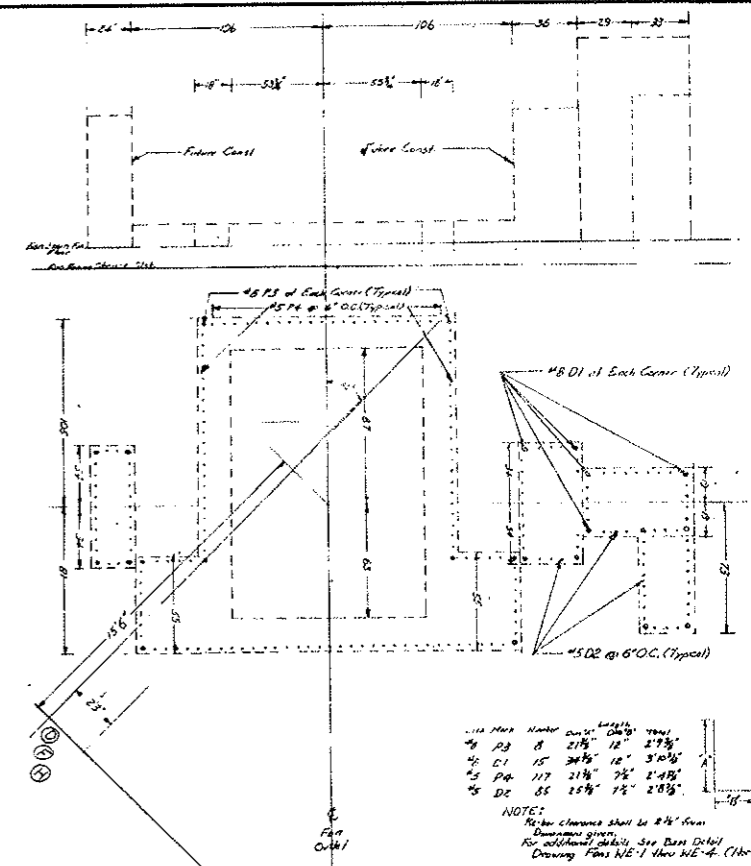
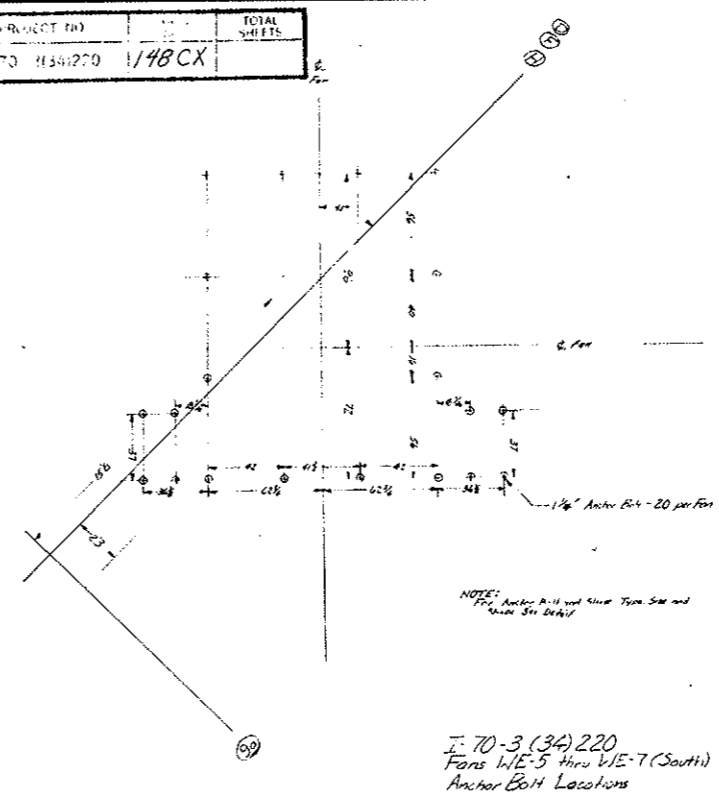
AS CONSTRUCTED
REVISED DATE 10-26-73



WEST VENT CUDS - So. Pen. Room Floor Blockouts	
SCALE	DRAWN BY
1"=50'	2/2/73
DATE	APPROVED BY
10-26-73	[Signature]
DRAWING NUMBER	
S-W9B	

See Sheet 148CX for Views A-A and B-B

PROJECT NO.	DATE	PROJECT NO.	PROJECT NO.	TOTAL SHEETS
9	10/26/73	170-3(34)220	178 BX	



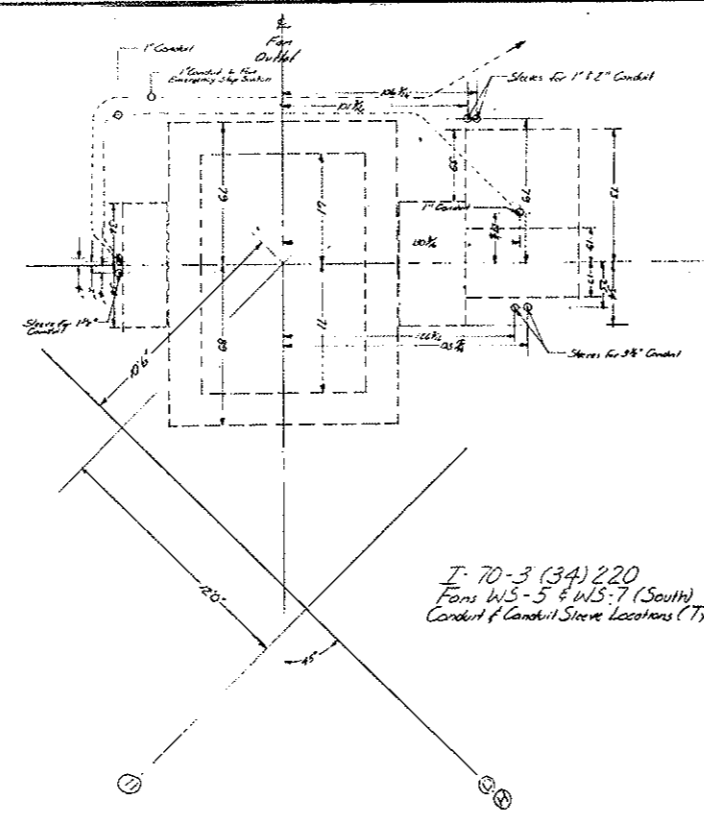
View A-A

View B-B
For Sections A-A and B-B see Sheet 148 BX for West Vent Bldg.
178 BX for East Vent Bldg.

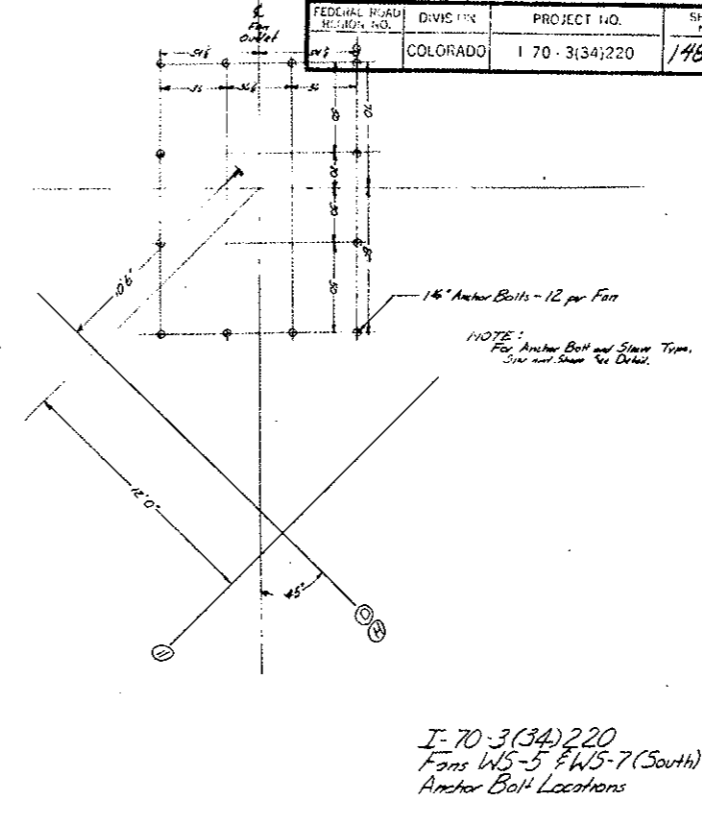
AS CONSTRUCTED
REVISED DATE 10-26-73

WEST EXHAUST FAN BASE DETAILS		SCALE	DESIGNED BY
I-70-3 (34) 220		None	DeHa-
DATE	APPROVED BY	CHECKED BY	
10-26-73	B. Low	S-W9C	

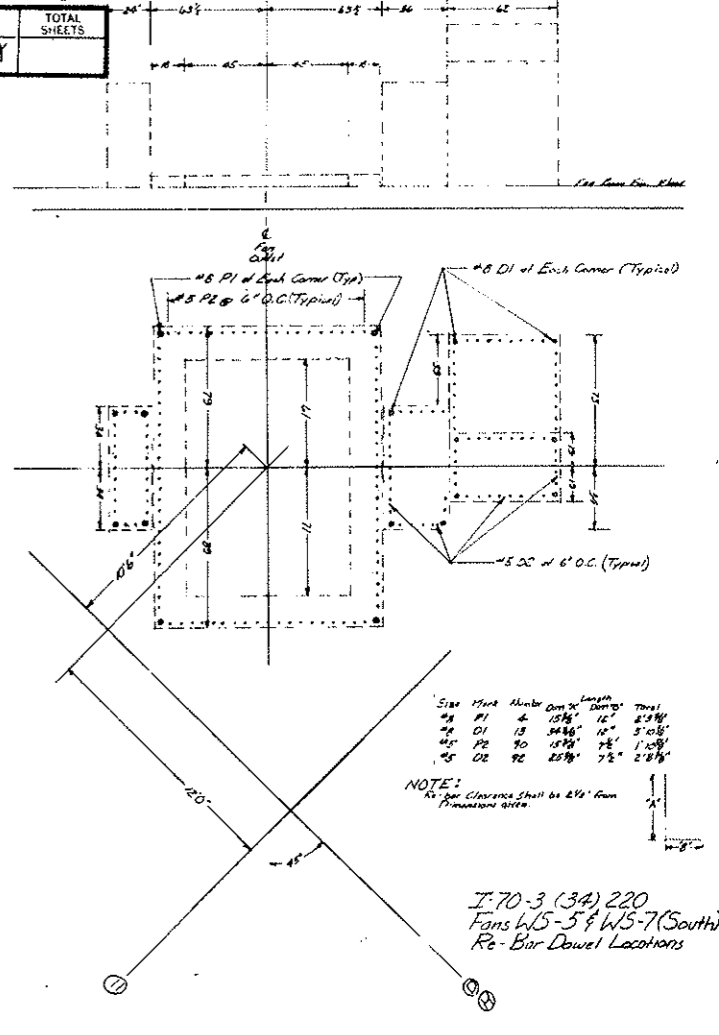
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
COLORADO		I-70-3(34)220	148 DX	



I-70-3(34)220
Fans WS-5 & WS-7 (South)
Conduit Sleeve Locations (Typ)



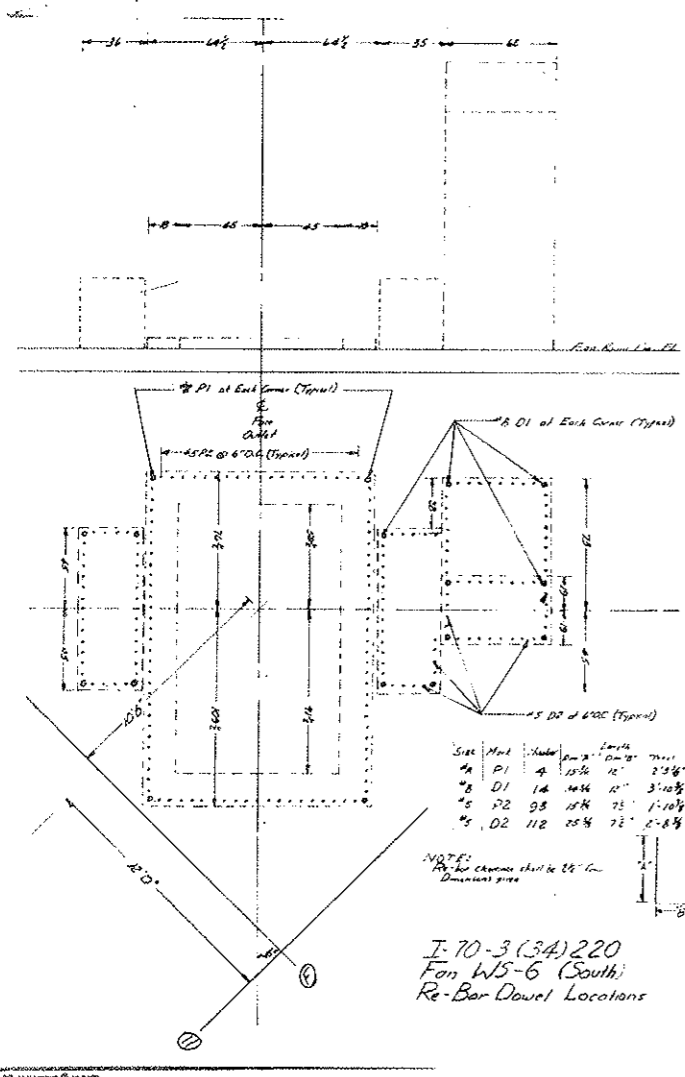
I-70-3(34)220
Fans WS-5 & WS-7 (South)
Anchor Bolt Locations



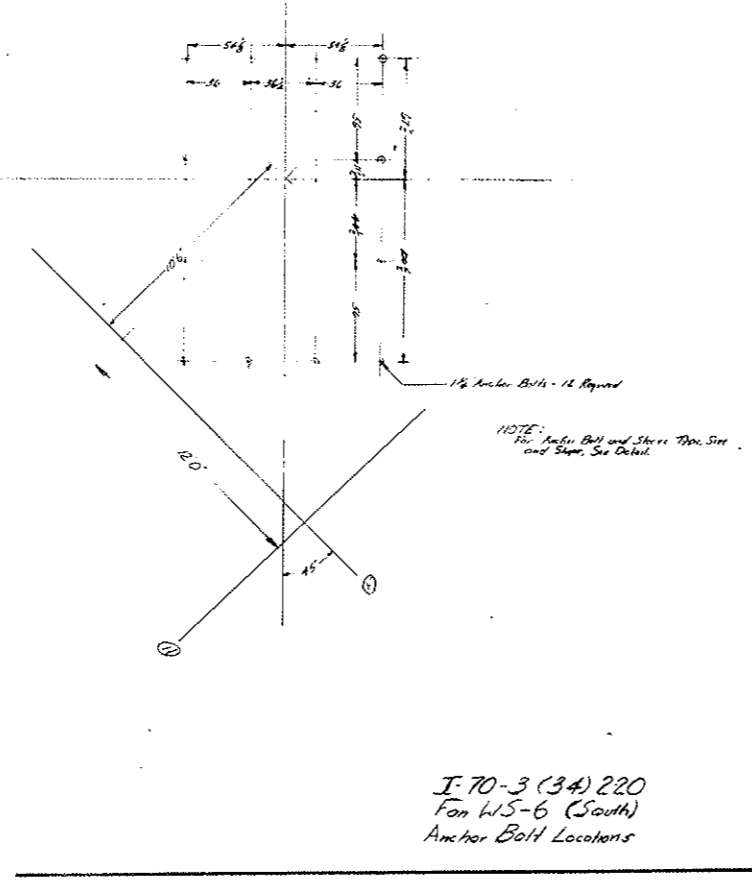
I-70-3(34)220
Fans WS-5 & WS-7 (South)
Re-Bar Dowel Locations

Size	Mark	Number	Dim ¹	Dim ²	Total
#6	DI	4	15 1/2"	12"	27 1/2"
#5	DI	12	34 1/2"	12"	46 1/2"
#5	RE	20	18 1/2"	12"	30 1/2"
#5	RE	20	25 1/2"	7 1/2"	32 1/2"

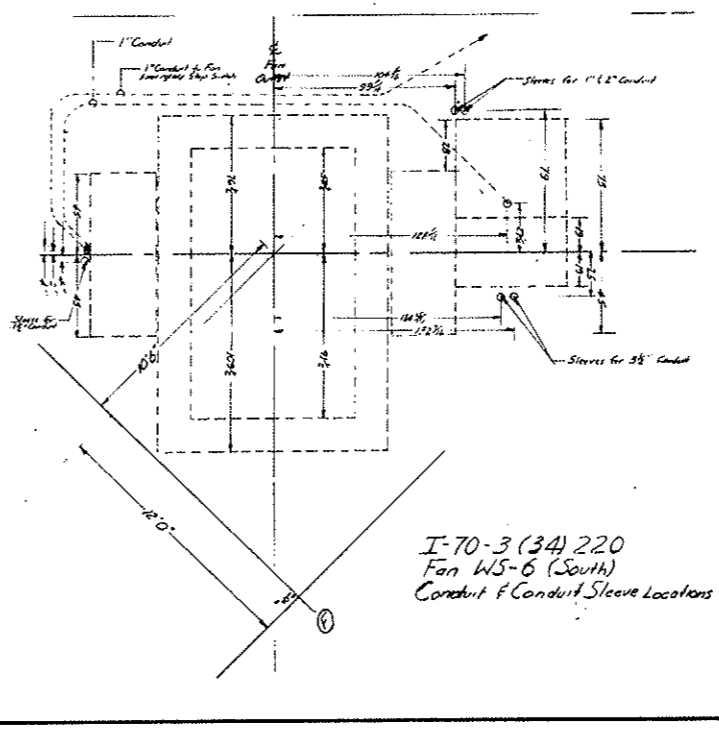
NOTE: All clearances shall be 2 1/2" from permanent items.



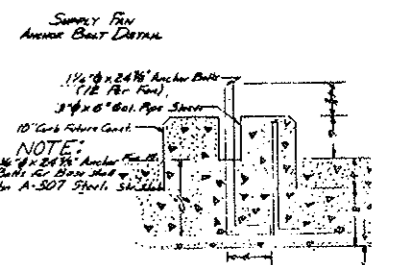
I-70-3(34)220
Fan WS-6 (South)
Re-Bar Dowel Locations



I-70-3(34)220
Fan WS-6 (South)
Anchor Bolt Locations



I-70-3(34)220
Fan WS-6 (South)
Conduit Sleeve Locations



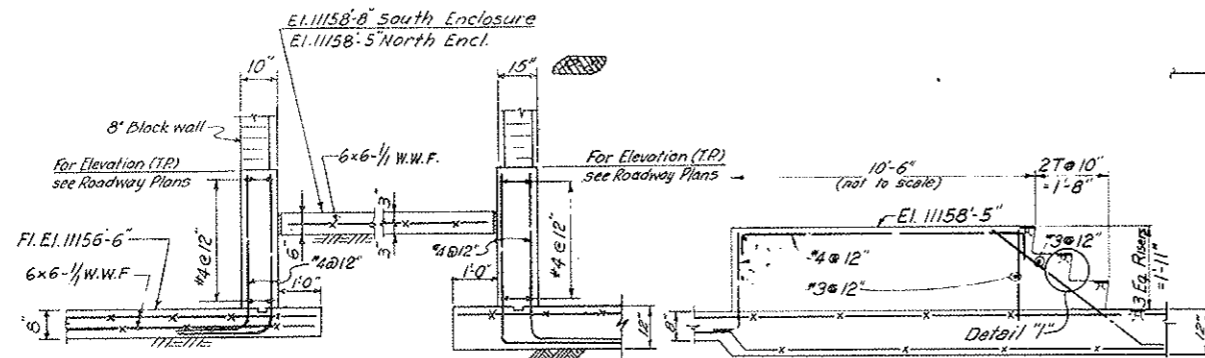
AS CONSTRUCTED
REVISED DATE 10-26-73

WEST-SUPPLY FAN BASE DETAIL		DATE	APPROVED BY	DRAWN BY
I-70-3(34)220		10-26-73	D. Shaw	S-W9D

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	149	326

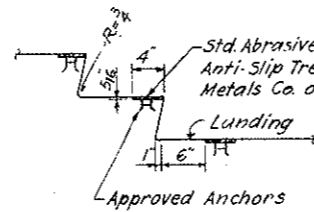
~~REVISED SECTION E-E~~
~~REVISED SECTION F-F~~
~~REVISED SECTION G-G~~
 SUBJECT TO APPROVAL
 REVISED DIMENSION 1-8-5-69

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

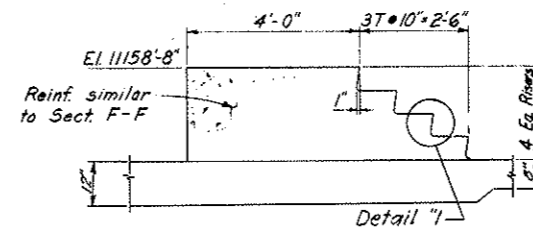


SECTION E-E
 (THRU WALKWAY CAR ENCLOSURE) ①②
 SCALE: 1/2" = 1'-0"

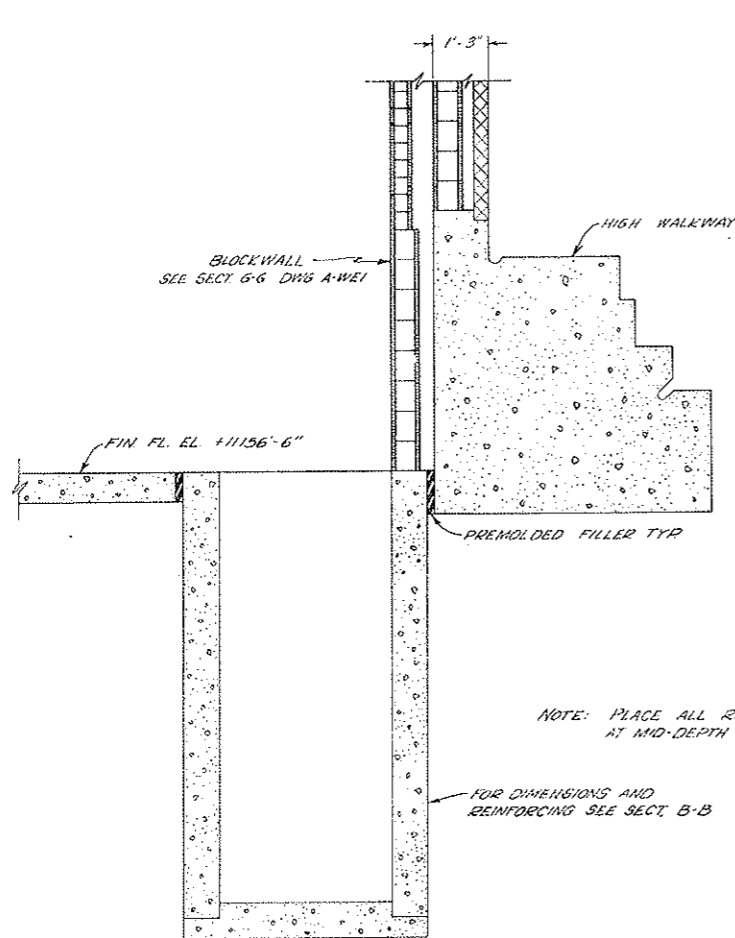
SECTION F-F
 SCALE: 1/2" = 1'-0"



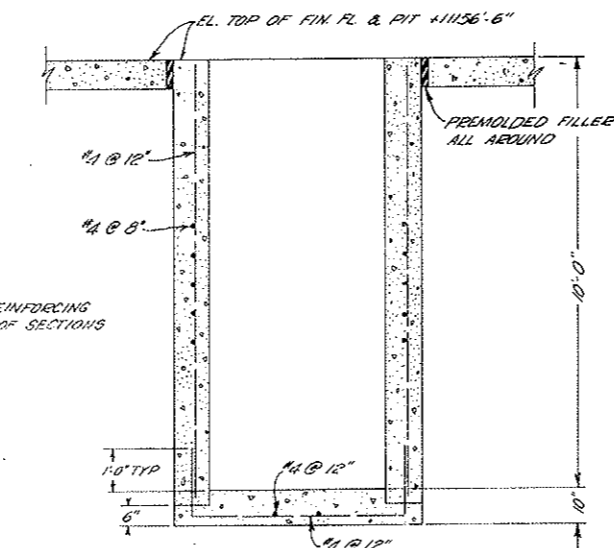
DETAIL I
 SCALE: 1" = 1'-0"



SECTION G-G
 SCALE: 1/2" = 1'-0"

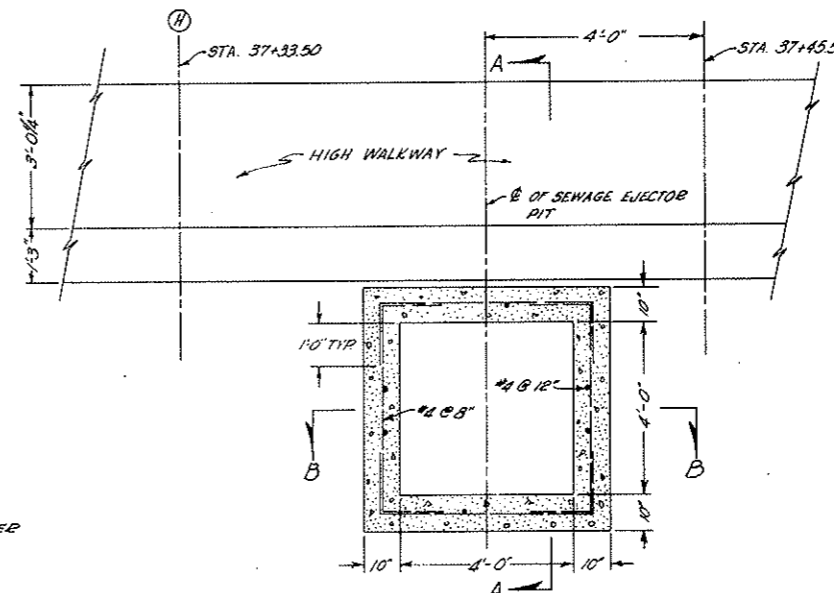


SECTION A-A
 SCALE: 1/2" = 1'-0"



SECTION B-B
 SCALE: 1/2" = 1'-0"

DETAILS OF SEWAGE EJECTOR PIT



PLAN
 SCALE: 1/2" = 1'-0"

① For location of sections see Dwg. Nos. S-W2 & S-W3

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
1		Revised Section E-E			
2		Change and increase			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL
WEST VENTILATION BUILDING
ROADWAY FLOOR DETAILS

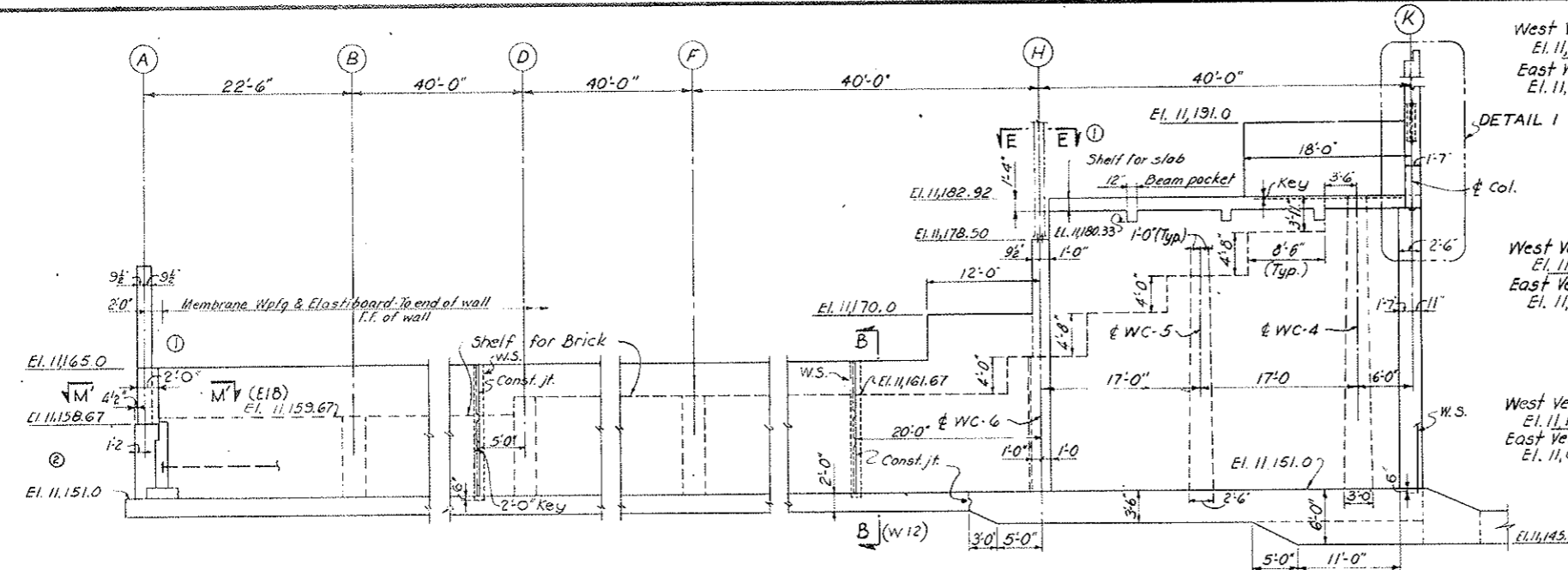
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED E. R. S.
 DRAWN: A. R. P.
 CHECKED: F. R. W.
 SUBMITTED: *[Signature]*

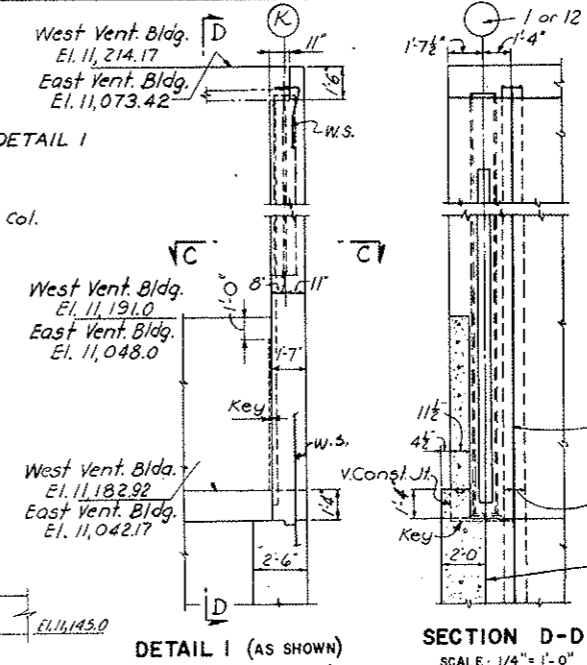
RECOMMENDED: *[Signature]*
 APPROVED: *[Signature]*

NEW YORK, N. Y. SCALE: AS NOTED DATE: AUG 1967 DRAWING NO. S-W10

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	150	328

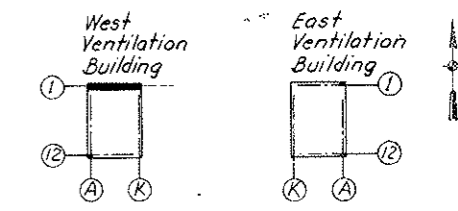


ELEVATION A-A
SCALE: 1/8" = 1'-0"

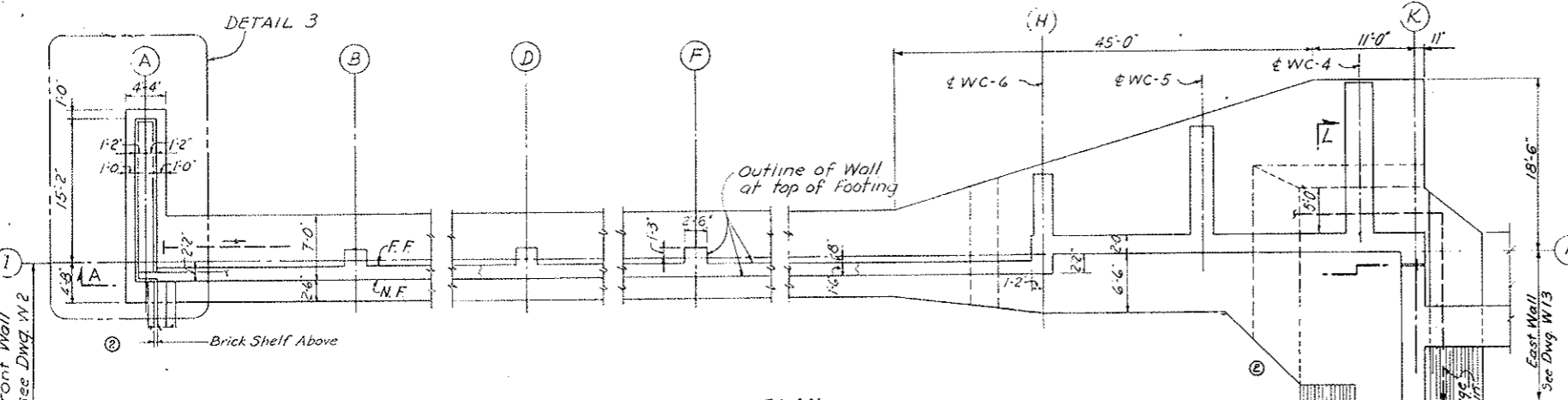


DETAIL 1 (AS SHOWN)
DETAIL 2 (OPP. HAND)
SCALE: 1/4" = 1'-0"
FOR LOCATION OF DETAIL 2 SEE DWGS. W12 & E18

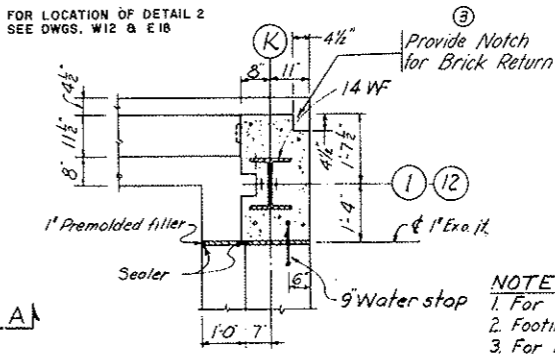
SECTION D-D
SCALE: 1/4" = 1'-0"



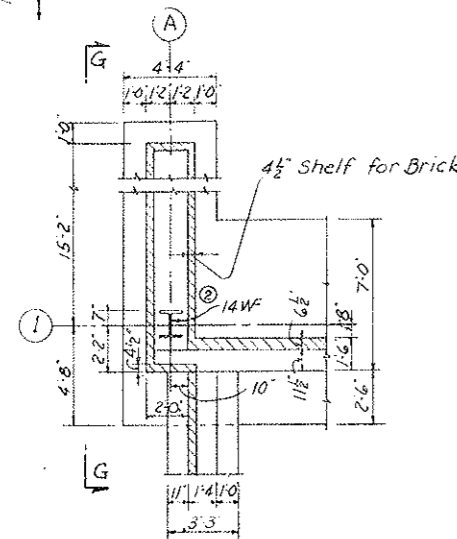
KEY PLAN
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



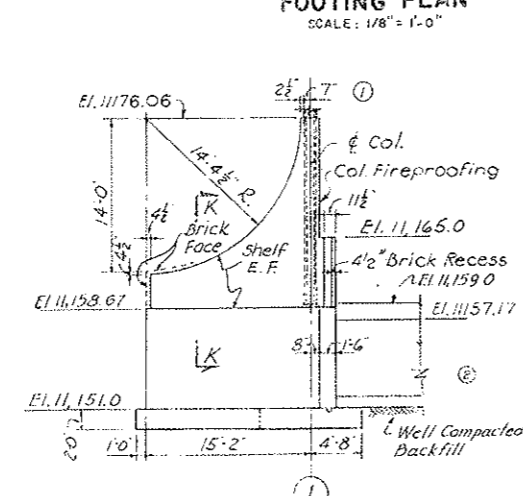
FOOTING PLAN
SCALE: 1/8" = 1'-0"



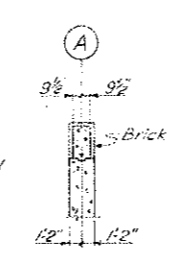
SECTION C-C
SCALE: 1/2" = 1'-0"



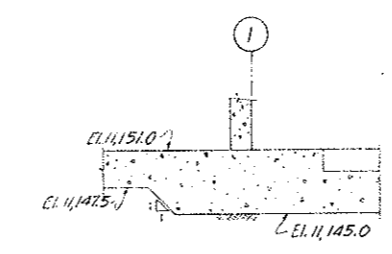
DETAIL 3
SCALE: 1/4" = 1'-0"



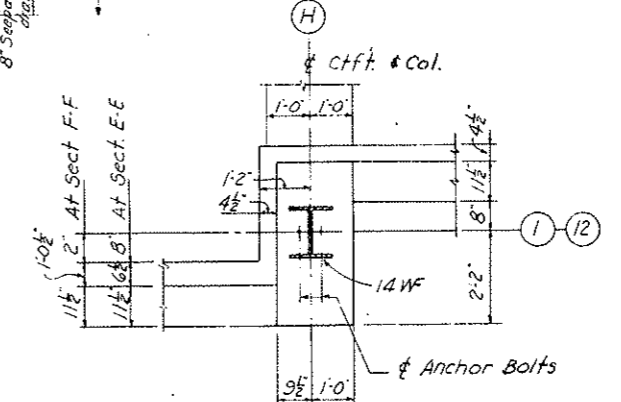
ELEVATION G-G
SCALE: 1/8" = 1'-0"



SECTION K-K
SCALE: 1/4" = 1'-0"



SECTION L-L
SCALE: 1/4" = 1'-0"

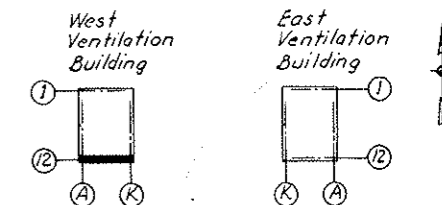


SECTION E-E (AS SHOWN)
SECTION F-F (OPP. HAND)
SCALE: 1/2" = 1'-0"
FOR LOCATION OF SECTION F-F SEE DWGS. W12 & E18

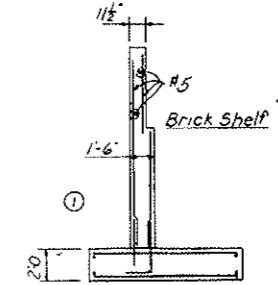
- NOTES**
- For General Notes see Dwg. WE1.
 - Footing to be built on undisturbed soil.
 - For Anchor Bolts and Bearing Plates for Columns and Beams, see Structural Steel Drawings.
 - Dovetail Anchor Slots for brick not shown.
 - Membrane Waterproofing and Elastiboard shall terminate at the bottom, one foot below the top of Slab inside the Building and at the top as shown on Dwg. A-WE1. At other ends the membrane shall terminate in a register.
 - For Grading see Dwg. G3-1
 - Embankment behind walls is to be constructed with moisture and density control.
 - For excavation payment lines see Dwg. WE3.
 - Membrane waterproofing shall extend 3' along E.F. of counterforts and around pedestals.
 - For Seepage Drain see Dwg. W1.

NO. DATE		DESCRIPTION OF REVISION	BY	CHK.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
STRUCTURAL				
WEST VENTILATION BUILDING				
NORTH WALL - PLAN AND ELEVATION				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED: P.S.	RECOMMENDED: <i>[Signature]</i>	DRAWN: W.J.K.		
CHECKED: E.R.S., P.S.	APPROVED: <i>[Signature]</i>	SUBMITTED: <i>[Signature]</i>		
L. J. Anderson, P.E.		NEW YORK, N. Y.		
SCALE: AS NOTED		DATE: AUG. 1967		S-W11

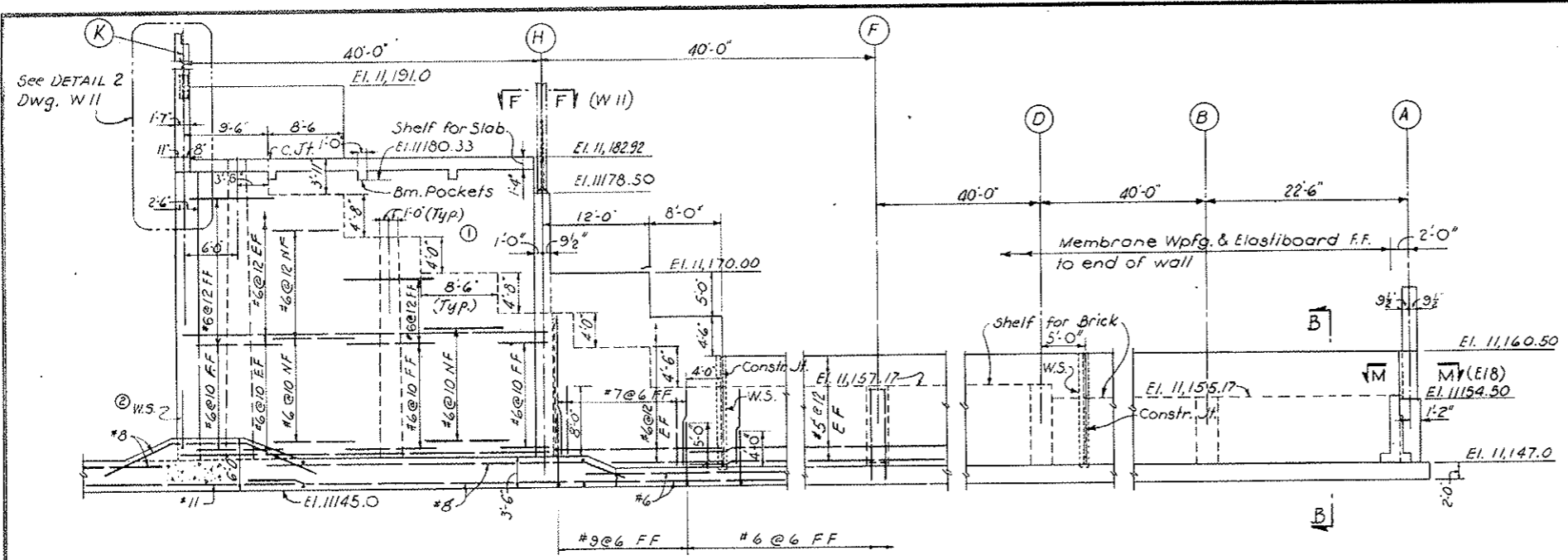
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	151	326



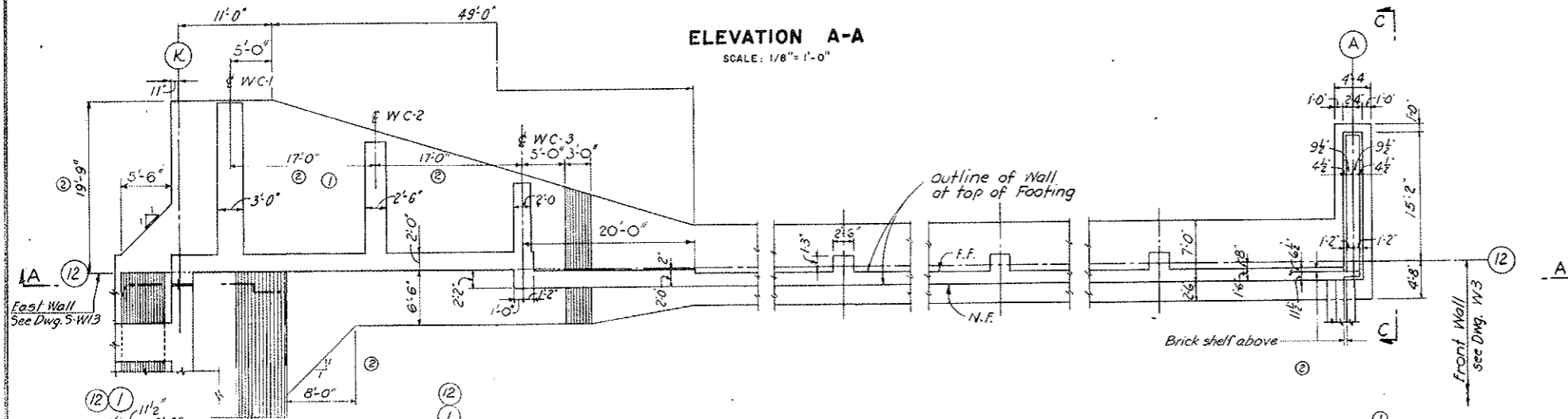
KEY PLAN
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



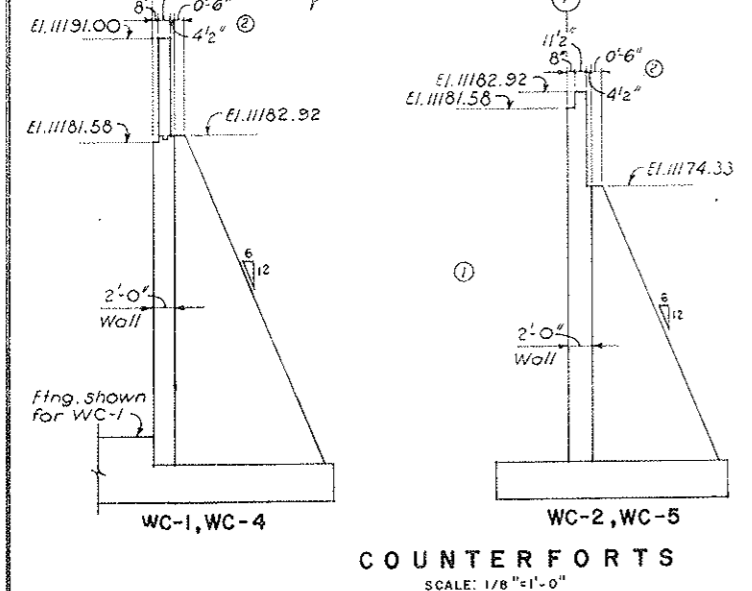
SECTION B-B
 SCALE: 3/16"=1'-0"



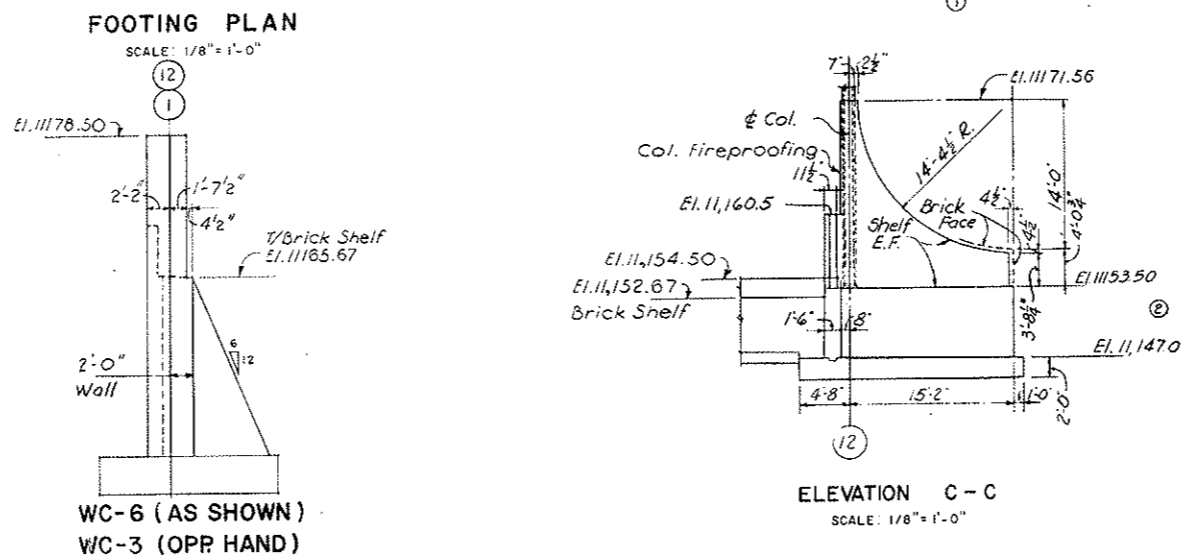
ELEVATION A-A
 SCALE: 1/8"=1'-0"



FOOTING PLAN
 SCALE: 1/8"=1'-0"



COUNTERFORTS
 SCALE: 1/8"=1'-0"



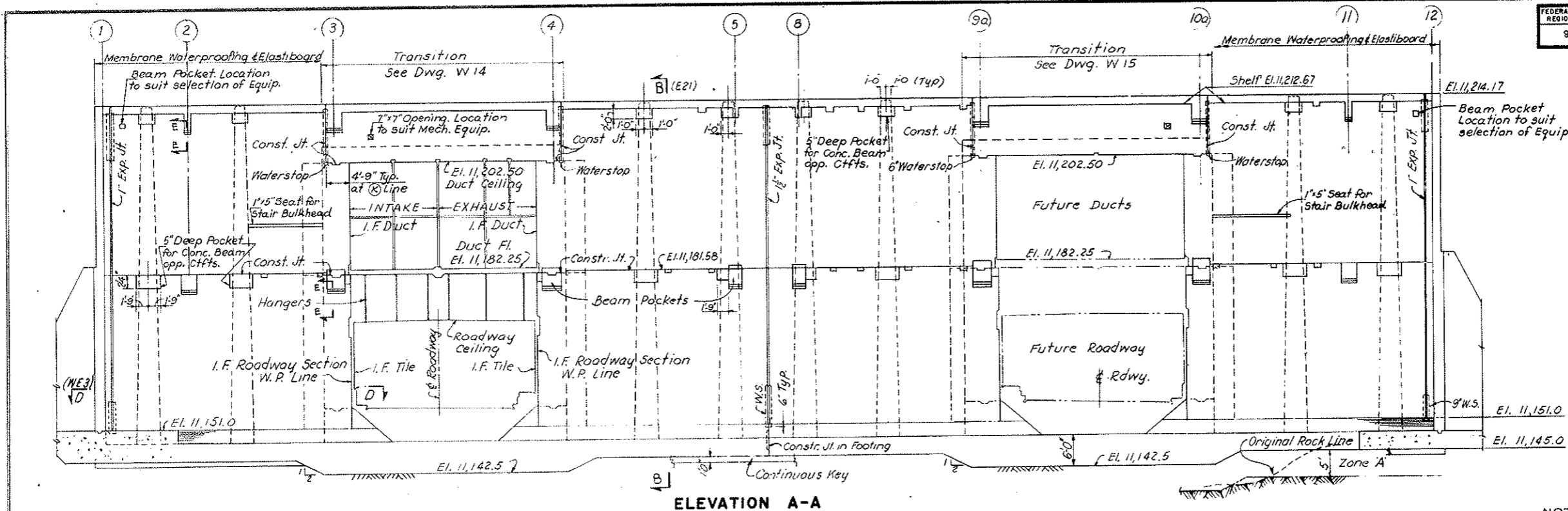
ELEVATION C-C
 SCALE: 1/8"=1'-0"

- NOTE:
1. For General Notes see Dwg. WF-1
 2. Footings to be constructed on undisturbed soil
 3. For additional Notes see W-11
 4. For Seepage Drain see Dwg. W1.

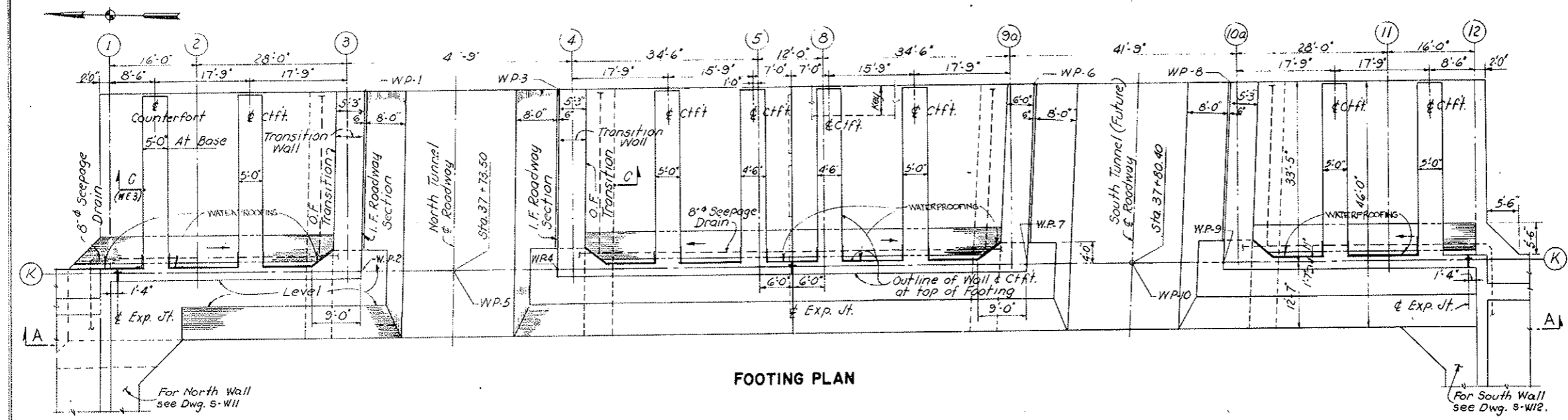
DESIGNED: P.S.	RECOMMENDED: [Signature]	DRAWING NO.
DRAWN: W.J.K.	APPROVED: [Signature]	S-W12
CHECKED: E.R.S. & P.S.	DATE: AUG. 1967	
SUBMITTED: L. Kudwin, P.E.		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	152	326

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



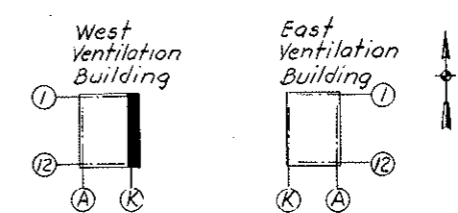
ELEVATION A-A



FOOTING PLAN

ROADWAY WORKING POINTS COORDINATES			
WP-1	N	672,834.15	E 1,878,804.89
2	N	672,832.95	E 1,878,771.49
3	N	672,798.80	E 1,878,806.68
4	N	672,797.65	E 1,878,773.06
5	N	672,816.22	E 1,878,772.34
6	N	672,709.37	E 1,878,811.26
7	N	672,709.38	E 1,878,777.76
8	N	672,674.04	E 1,878,813.05
9	N	672,674.05	E 1,878,779.55
WP-10	N	672,690.80	E 1,878,778.70

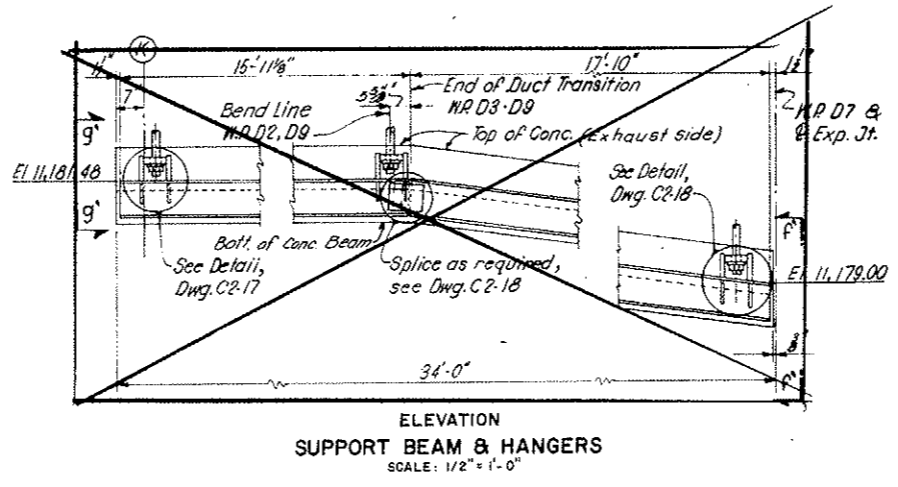
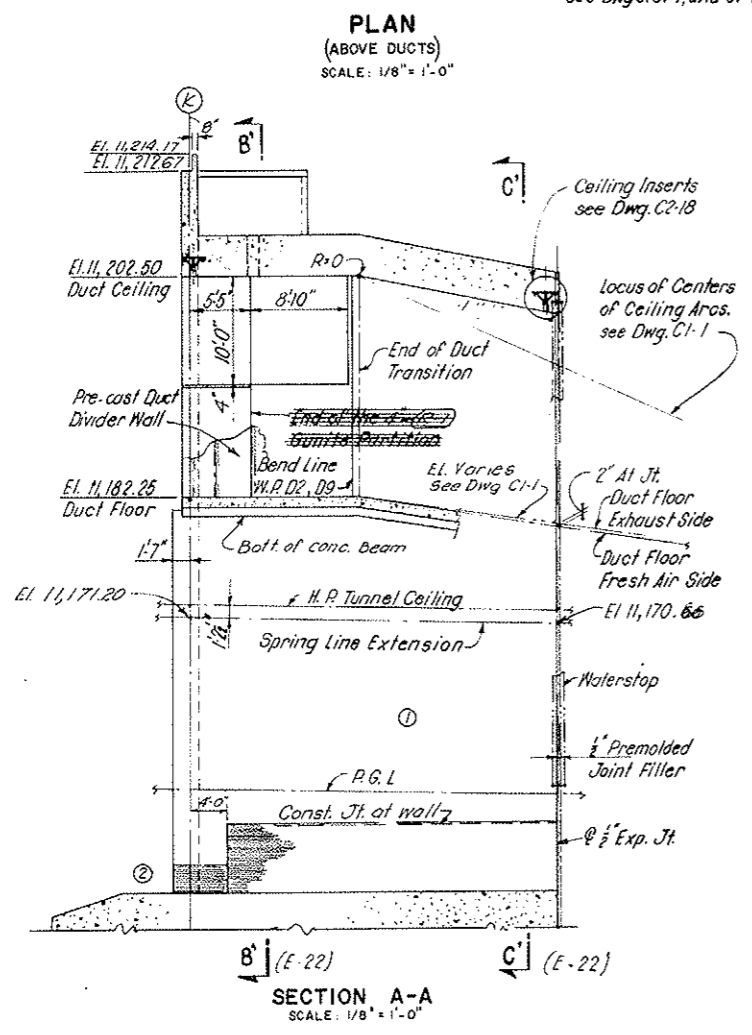
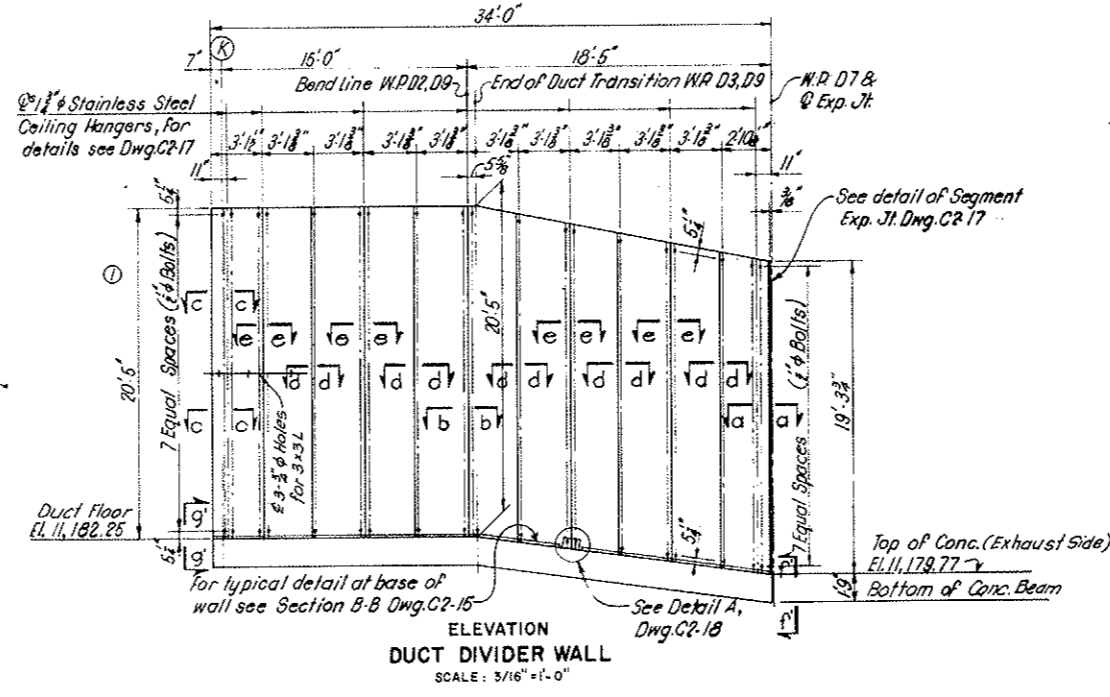
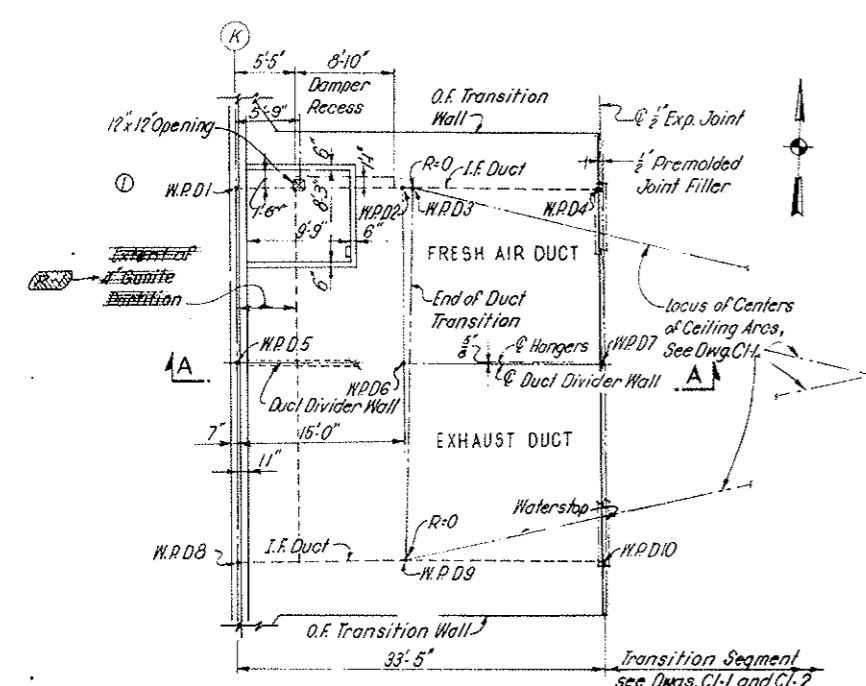
NOTES
 For General Notes see Dwg. SWE1
 Footings to be constructed on undisturbed soil.
 Rock within Zone A shall be removed without the use of explosives, or other such means, replaced with Class 1 Material, and compacted to a minimum of 95% of maximum dry density as determined in accordance with AASHTO Designation T180-57 (modified).
 Membrane Waterproofing & Elastiboard shall extend from El. 11,154.0 to 1 ft. below finished grade on F.F. of wall and along the transition walls for 8 ft. from (C) line, also to extend 3 ft. along E.F. of counterforts.
 For Reinforcement see Dwg. S-WE3.
 For additional details see Architectural drawings.
 For excavation payment lines see Dwg. WE3.
 For seepage drain inverts see Dwg. W1.
 For Section E-E see Dwg. S-WE3.
 For Details of Beam Pockets for Structural Steel see Dwg. S-WE5.



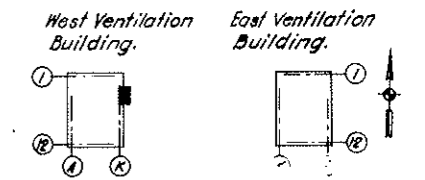
KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL					
WEST VENTILATION BUILDING					
EAST WALL - PLAN AND ELEVATION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: P.S.	RECOMMENDED: <i>[Signature]</i>		DRAWING NO.		
DRAWN: W.J.K.	APPROVED: <i>[Signature]</i>		S - W13		
CHECKED: E.R.S., P.S.	DATE: AUG. 1987		SCALE: 3/32" = 1'-0"		
SUBMITTED: <i>[Signature]</i>					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	153	326



DUCT WORKING POINTS COORDINATES			
WP - DI	N - 672	E - 1,878	EL
D1	832.82	771.50	
D2	833.58	786.48	
D3	833.61	787.37	
D4	834.11	804.89	
D5	816.10	772.35	
D6	816.86	787.32	
D7	817.40	805.74	
D8	797.37	773.30	
D9	798.13	788.27	
WP - D10	798.70	806.68	



AS CONSTRUCTED
REVISED DATE 10-26-73

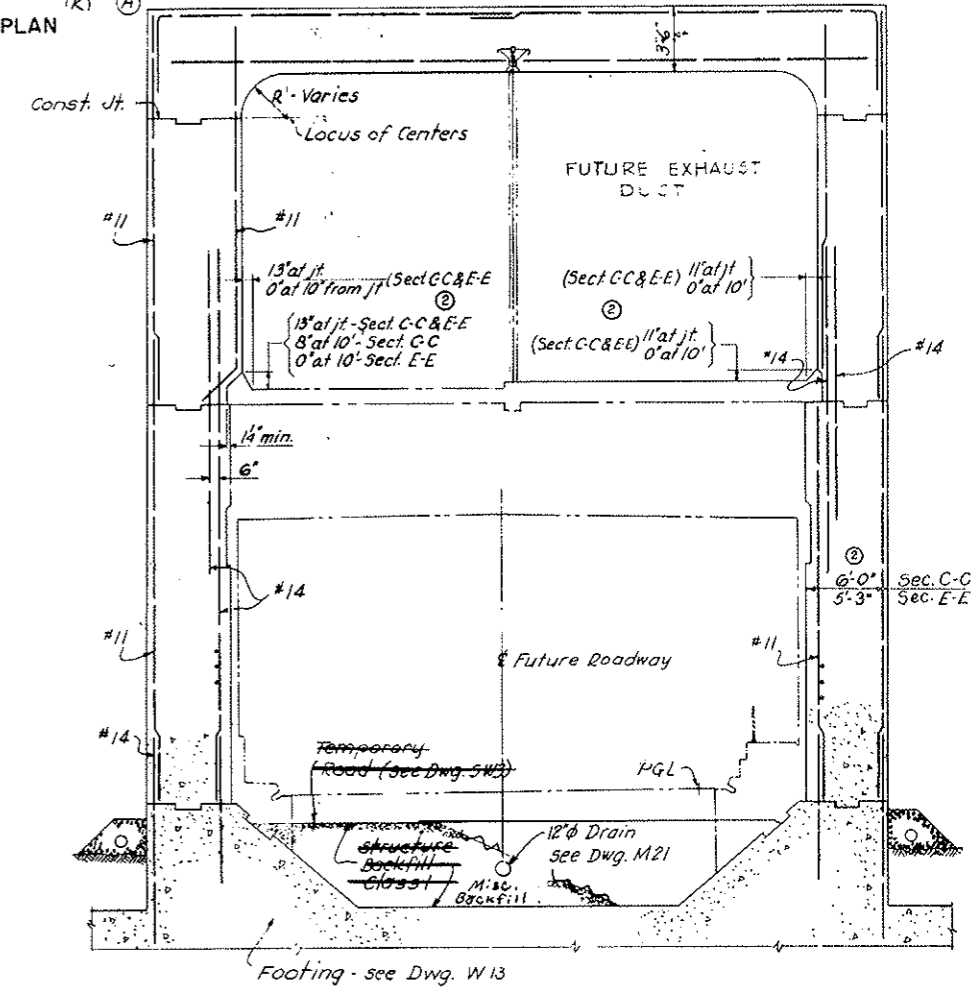
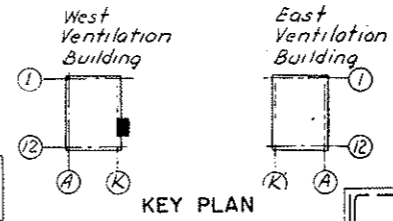
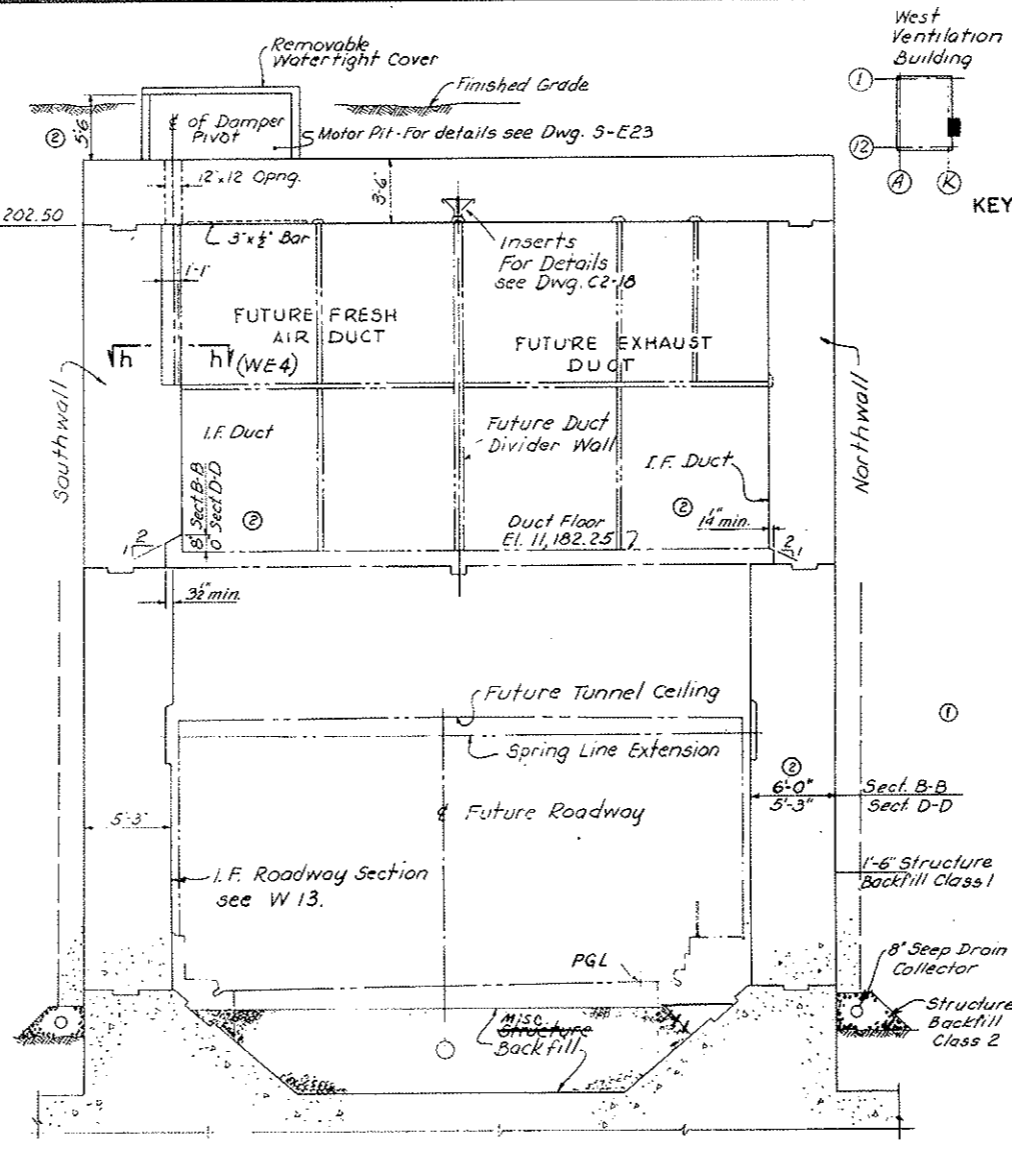
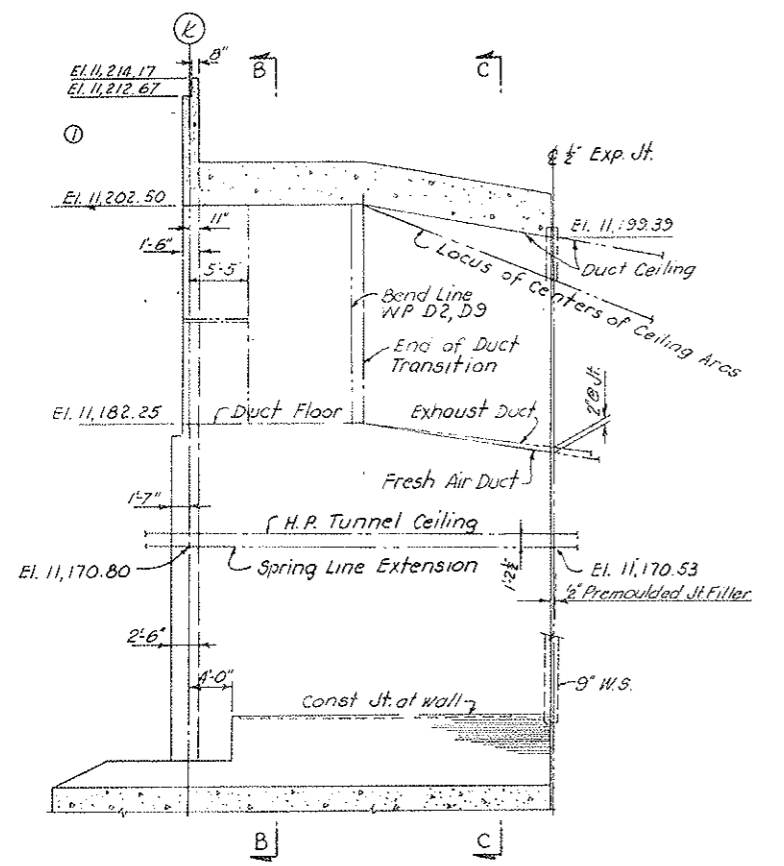
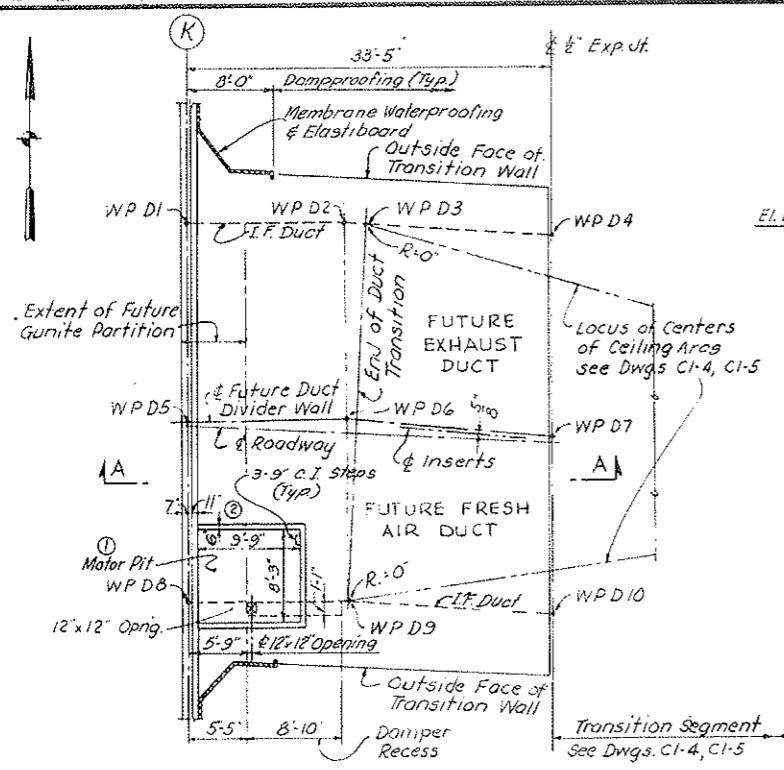
NOTES
 For General Notes see Dwg. S-WE1.
 Work this Dwg. with Dwg. S-W13.
 For additional applicable notes see Dwg. S-WE4.
 For alignment and profiles see Dwg. G2-3.
 For excavation payment lines see Dwg. WE3.
 Membrane Waterproofing and Dampproofing similar to that of South Transition, West Bldg.
 For Sections a-a, b-b, c-c, d-d & e-e see Dwg. S-WE4. Sections a-a and c-c are shown opposite hand on S-WE4.
 For Section f-f' & g-g' see Dwg. S-WE4.

See Civil Drawings for Details of Ceiling.

②	General Revisions	B	FR	WJH
①	General Revisions	AM	FR	WJH
NO.	DATE	DESCRIPTION OF REVISION		
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
STRUCTURAL WEST VENTILATION BUILDING NORTH TRANSITION - PLAN AND SECTIONS				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED: P.S. J.C.N.	CHECKED: J.C.N.	RECOMMENDED: [Signature]	DRAWING NO.	
SUBMITTED: [Signature]	APPROVED: [Signature]	DATE: AUG. 1967		S-W14

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	154	326

AS CONSTRUCTED
REVISED DATE 10-26-73

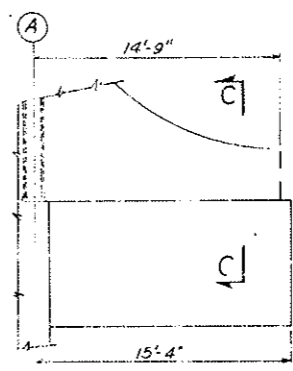
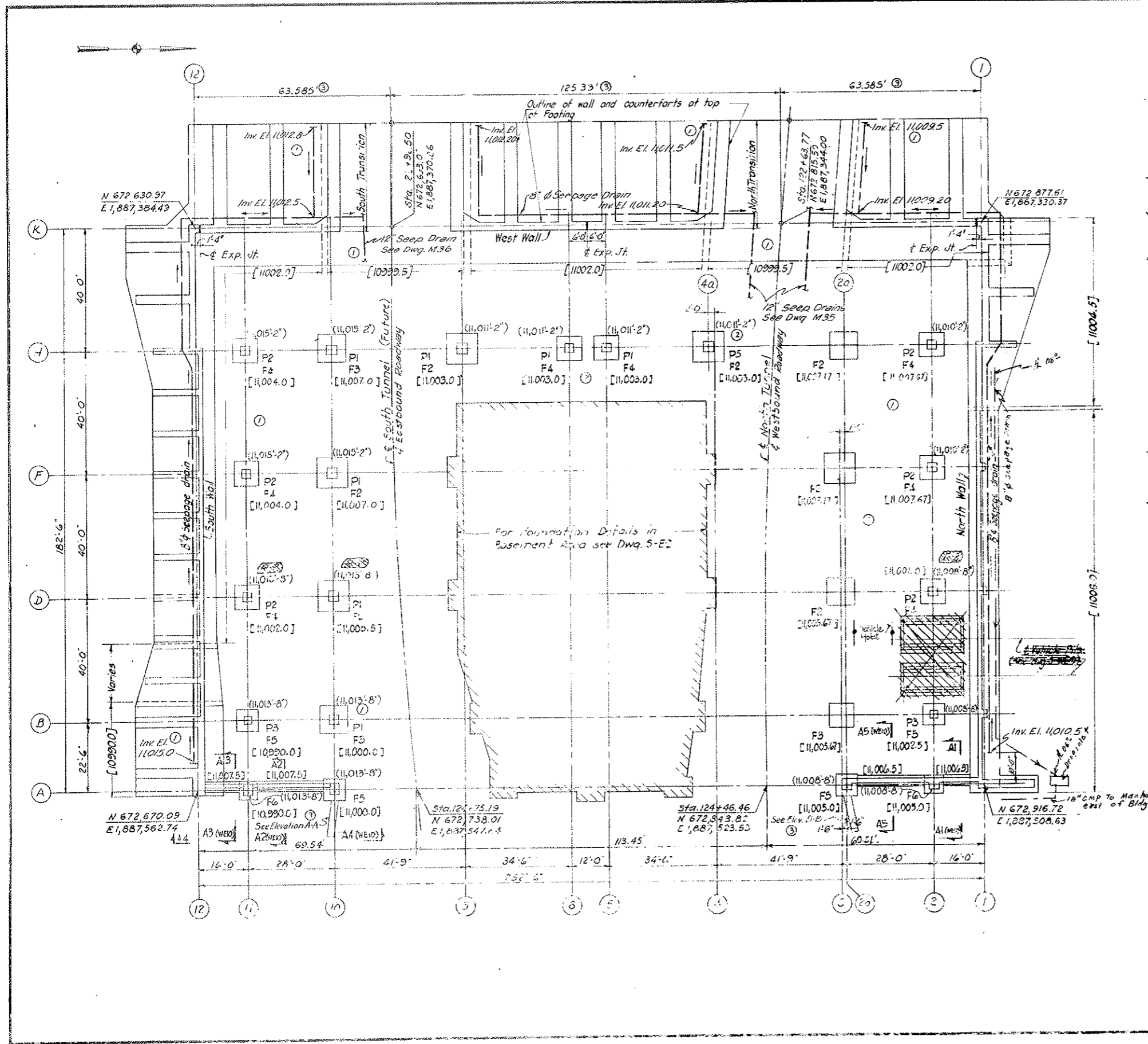


DUCT WORKING POINTS		
COORDINATES		
WP-D1	N 672,709.65	E 1,878,777.74
-D2	N 672,710.41	E 1,878,792.72
-D3	N 672,710.38	E 1,878,794.65
-D4	N 672,710.15	E 1,878,811.22
-D5	N 672,690.93	E 1,878,778.69
-D6	N 672,691.69	E 1,878,793.67
-D7	N 672,691.43	E 1,878,812.17
-D8	N 672,674.20	E 1,878,779.54
-D9	N 672,674.96	E 1,878,794.52
WP-D10	N 672,674.72	E 1,878,813.02

NOTES:
 For General Notes see S-WE 1.
 Work this drawing with S-W13.
 Provide all recesses, embedded metal, inserts, etc., necessary for the construction of the future Roadway and Ducts.
 For alignment and profile see Dwg. G2-3.
 For seepage Drains see Dwg. W-1.
 Locations of Sections D-D & E-E are given on Dwg. S-E23

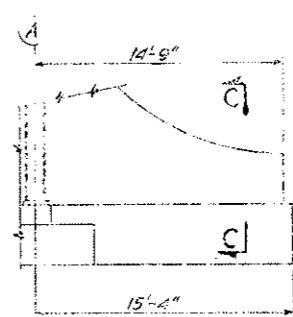
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT		
STRUCTURAL WEST VENTILATION BUILDING SOUTH TRANSITION - PLAN AND SECTIONS		
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.		
DESIGNED: P.S. DRAWN: W.J.K. CHECKED: E.R.S., P.S. SUBMITTED: R. Davidson, P.E.	RECOMMENDED: J.R. Wagoner, H.A. Conforte APPROVED: Frank A. Fisher	DRAWING NO. S - W15
NEW YORK, N. Y.		SCALE: AS NOTED DATE: AUG. 1967

FEDERAL ROAD DISTRICT NO. 2	DIVISION 1	PROJECT NO. I 70-3(3422)	SHEET 155	TOTAL SHEETS 162
DATE: 10-24-73				

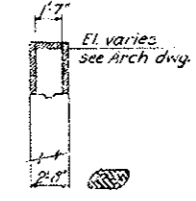


KEY PLAN
AS CONSTRUCTED
 REVISED DATE 10-24-73

⊙ ELEVATION A-A
 SCALE: 3/16" = 1'-0"



⊙ ELEVATION B-B
 SCALE: 3/16" = 1'-0"

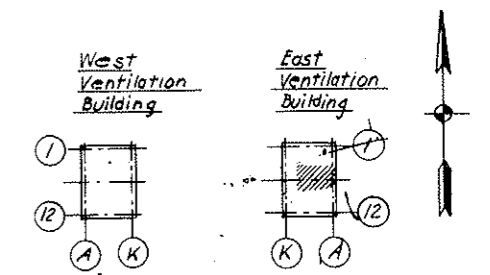


⊙ SECTION C-C
 SCALE: 3/16" = 1'-0"
 Note: for additional details see Sect. M-M on Dwg. S-EIT

- NOTES:
- F1, F2, F3 etc. indicate Type of Footing.
 - P1, P2, P3 indicate Type of Pedestal.
 - For Footing and Pedestal Schedules, see Dwg. No S-WE2
 - For Tunnel splay geometry, see Dwg. S-WE6
 - For North Wall see Dwg. S-E18; South Wall S-E19; West Wall S-E21; South Transition S-E23; North Transition S-E22; North & South Wall Counterforts S-E20.
 - For references to coordinate system, roadway stationing & datum for Elevations see Dwg. No G2-1
 - For General Notes & Typical Details see Dwg. #S-WE1
- Legend of Section Marks:
- A7 Refers to Section A7-A7 on Dwg. #S-WE10 A7(WE10)
- Elevations shown [---] for the bottom of footings are based on information obtained from bore logs taken in the general area and in most cases assumed to bear on rock. In the event rock is not encountered at the elevation recorded on the drawing, the footing shall be taken down to rock or to an elevation 10 ft. below finished floor level, whichever is less, except wall footings which shall be entirely on rock. Column footings shall be either entirely on soil or entirely on rock.
 - Seepage Drains shall slope uniformly between pts. of given elevation.
 - (---) denotes top of pier elevation.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS			
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
STRUCTURAL			
EAST VENTILATION BUILDING			
FOUNDATION PLAN			
TIPPETTS - ABBETT - MCCARTHY - STRAYTON			
ENGINEERS AND ARCHITECTS - NEW YORK, N. Y.			
DESIGNED BY: E.R.W.	RECOMMENDED BY: [Signature]	CHECKED BY: E.R.W.	APPROVED BY: [Signature]
DRAWN BY: W.J.K./G.H.	DATE: 10-24-73	SUBMITTED BY: [Signature]	DATE: 10-24-73
SCALE: 1/16" = 1'-0"	DATE: AUG. 1967	DRAWING NO. S-E1	

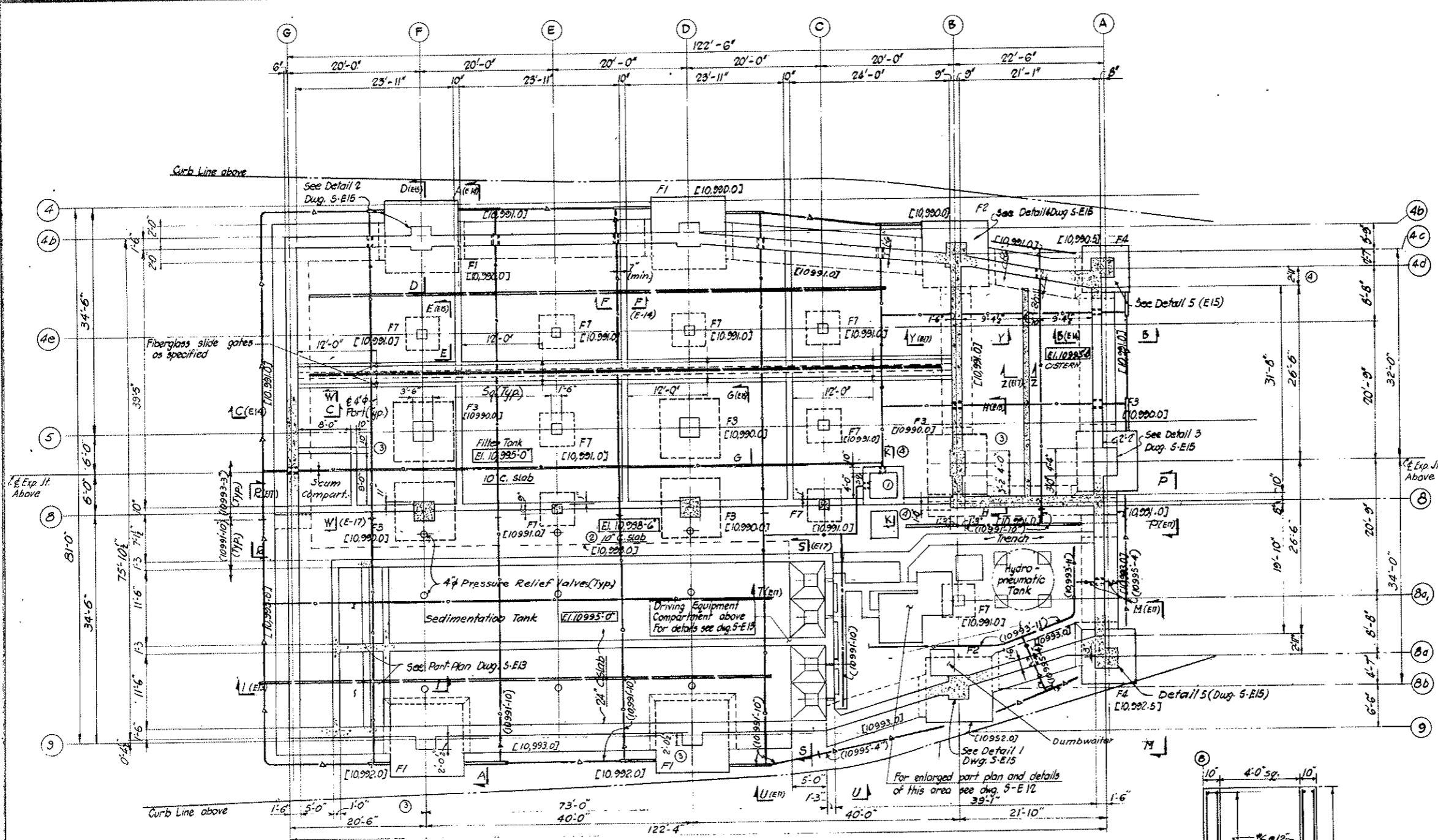
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	156	326



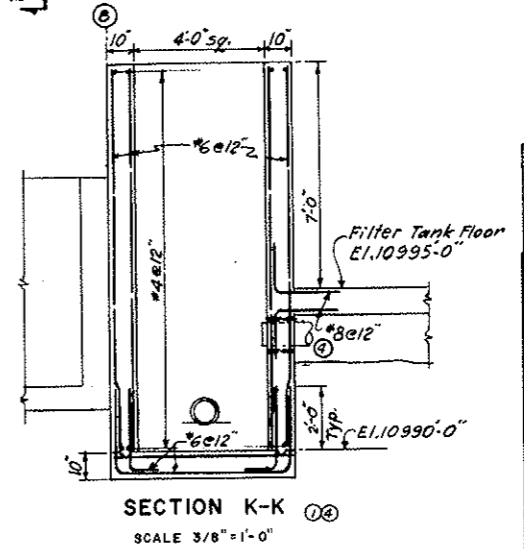
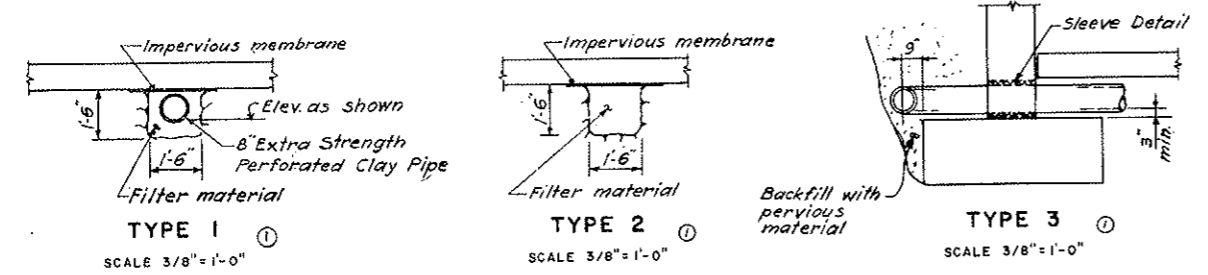
KEY PLAN
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

- Notes:**
- F1, F2, F3 etc. indicate Type of Footings see Dwg. 5-WE 2 for Schedule.
 - For Section & Details of Columns & Buttresses see Dwg. 5-E14 thru 5-E17
 - For Basement Part Plan and Details see Dwg. 5-E12 & 5-E13
 - [---] denotes bottom of footing elevation.
[....] denotes top of slab elevation.
(---) Invert Elevation of pipes—to be 10993.5 unless otherwise noted.

- Subsurface Drainage System**
- Type 1 - Pipe in Trench
 - Type 2 - Trench
 - Type 3 - Perimeter drains
 - Pressure Relief Valve
 - Pressure relief valves to be same type as shown on Dwg. G3-4.



BASEMENT PLAN
SCALE 1/8"=1'-0"

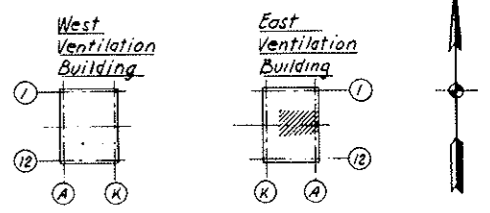
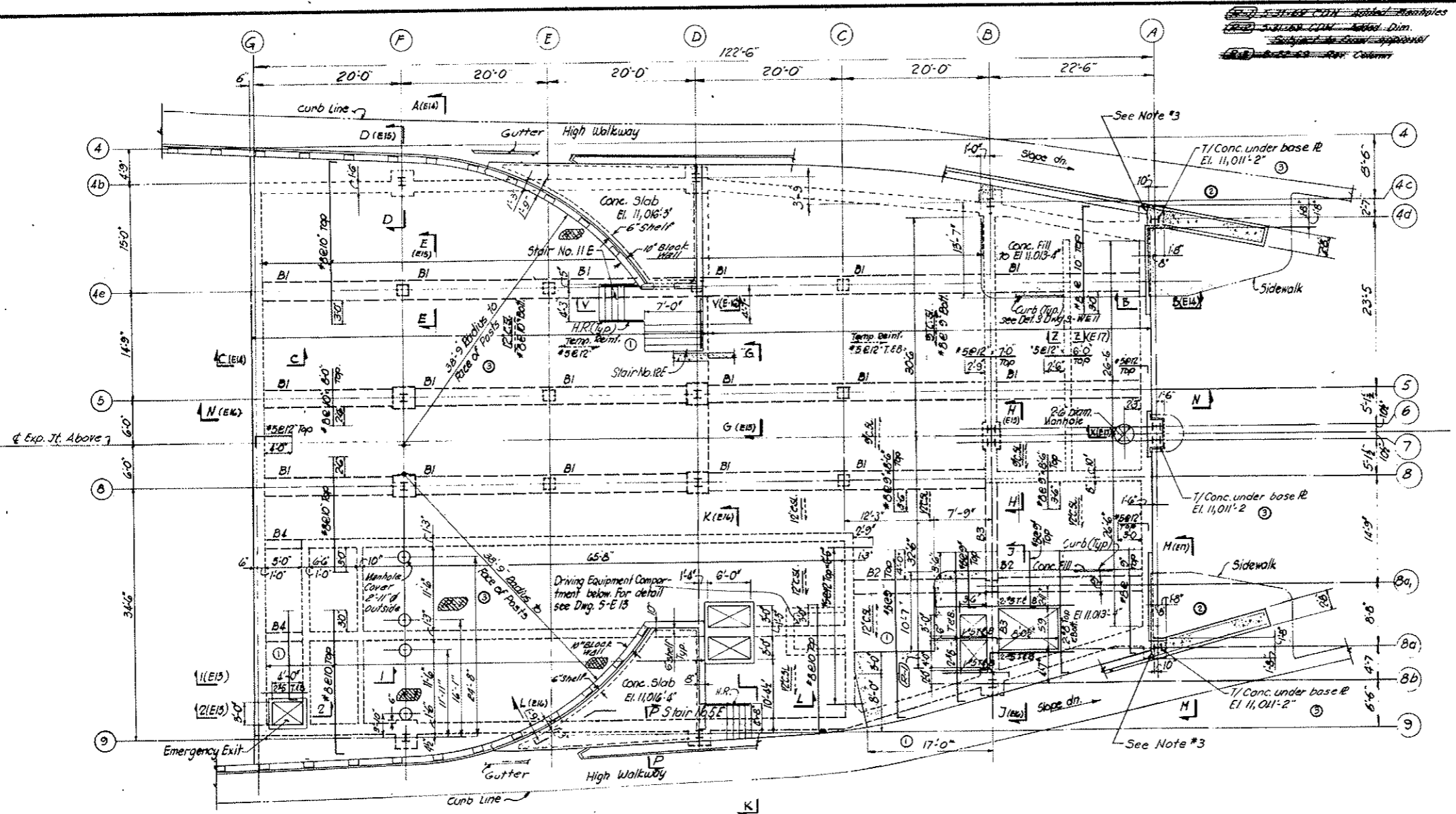


SECTION K-K
SCALE 3/8"=1'-0"

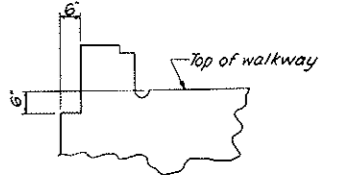
DESIGNED E.R.S.	RECOMMENDED: J.P. Abbot, J.M. McCarthy	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
DRAWN: G.H.	CHECKED: F.R.W.					
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL EAST VENTILATION BUILDING BASEMENT PLAN						
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.						
DESIGNED E.R.S. DRAWN: G.H. CHECKED: F.R.W. SUBMITTED: L. Ruckman, Jr.	APPROVED: Frank Ruckman, Jr.	DRAWING NO. S-E2 SCALE AS SHOWN DATE: AUG 1967 NEW YORK, N. Y.				

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	157	326

W12'18.05
H10'14.68
18-5-69



KEY PLAN
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



SECTION P-P
SCALE: 1/8"=1'-0"

Note: Slab reinf. to be #5 @ 12" cont. each way unless otherwise noted. ③

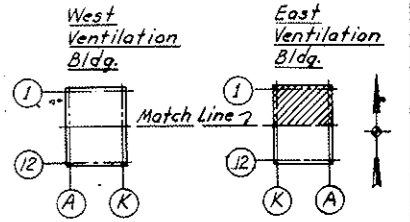
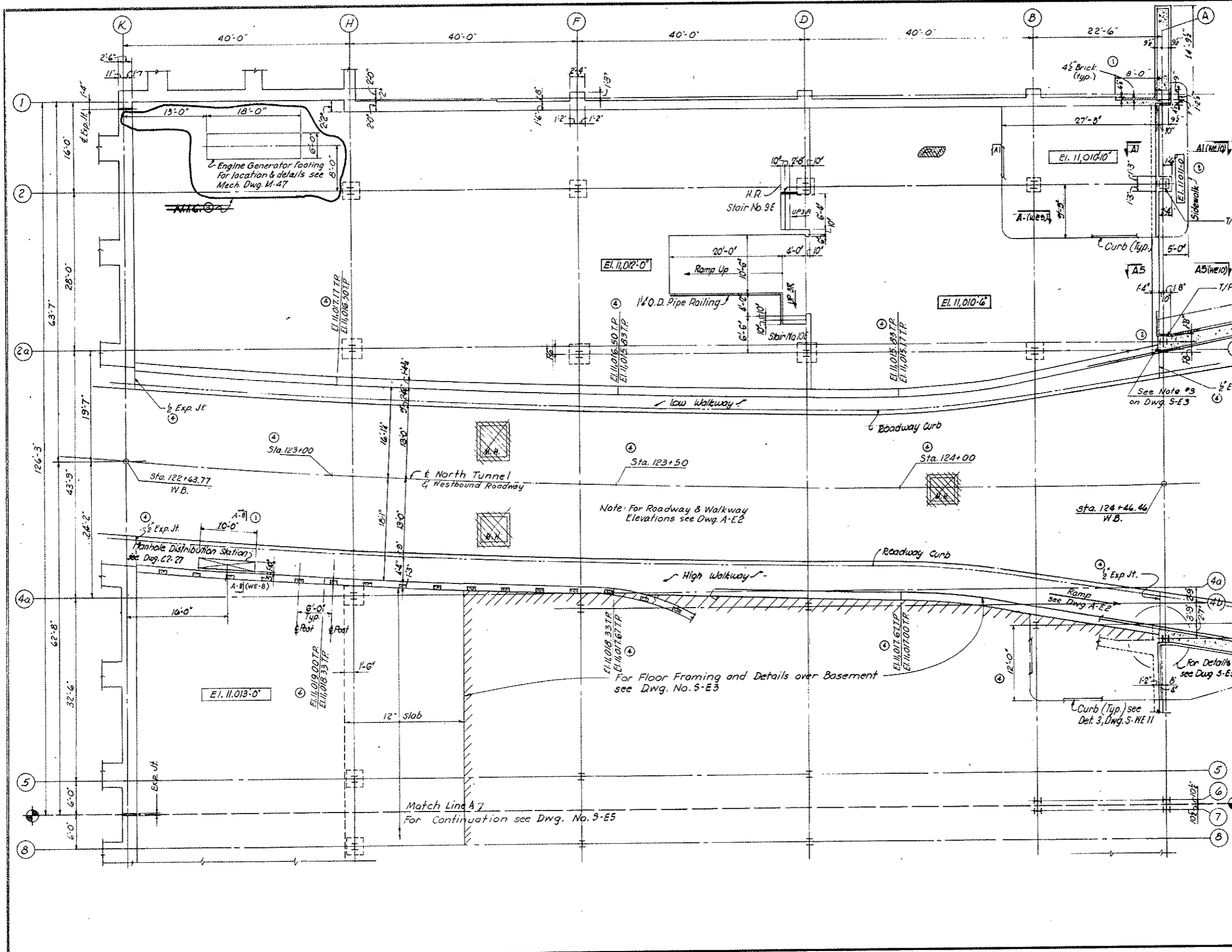
TOP OF ROADWAY SLAB
El. 11,013'-0" Unless otherwise noted

- NOTES:
1. For additional re-bars around openings see typical details dwg. 5-E13
 2. For dimensions of sidewalk see Architect's dwgs.
 3. At Cols. along Col. line (A) finish walkway wall only after Base Plate is in place.
 4. For reinforcing steel see bar detail dwgs.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL EAST VENTILATION BUILDING ROADWAY FLOOR PLAN OVER BASEMENT					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	E. R. S.	RECOMMENDED:	R. W. W. [Signature]		
DRAWN:	G. H. W.	APPROVED:	[Signature]		
CHECKED:	F. R. W.	SUBMITTED:	L. [Signature]		
DRAWING NO.		S-E 3			
NEW YORK, N. Y.		SCALE: 1/8"=1'-0"		DATE: AUG. 1967	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	158	326

As Constructed
Subject to Final Approval



KEY PLAN
AS CONSTRUCTED
REVISED DATE 10-26-73

- NOTES:**
1. M.H. = Manholes. For location see Mech dwgs. For details see Dwgs: C2-39, C2-41, C2-46
 2. For reinforcing & details of floor slabs see Dwg. S-WE1.
 3. For roadway slab details see Dwg. C2-10
 4. TP = Top of Parapet - See Dwg. S-WE7
 5. Work this dwg. with Dwgs. S-WE6, 7 & 8
 6. Top of brick shelves for East Wall to be 1'-10" below top of Roadway slab unless otherwise noted.

CEILING SLABS OVER INTERIOR ROOMS
For framing plans and reinforcing details of ceiling slabs supported on masonry walls, see Dwgs: S-E158, S-E159, A-E2 & A-E3

- NOTES:**
- M.H. = Manholes. For location see Mech. dwgs.
For details see dwgs: C2-39, C2-41, C2-46

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1	9/1/67	General Revisions	A.G.	W.R.	W.R.W.
2		General Revisions	W.R.	W.R.	W.R.W.
3		General Revisions	W.R.	W.R.	W.R.W.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL
EAST VENTILATION BUILDING
ROADWAY FLOOR PLAN
NORTH

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E.R.S.
DRAWN: G.H.
CHECKED: F.R.W.
SUBMITTED: R. Ruder

RECOMMENDED: J. J. G. G.
APPROVED: J. J. G. G.
SUBMITTED: J. J. G. G.

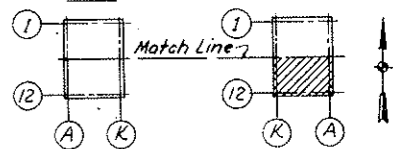
DRAWING NO. **S-E 4**

NEW YORK, N. Y. SCALE: 1/8" = 1' DATE: AUG. 1967

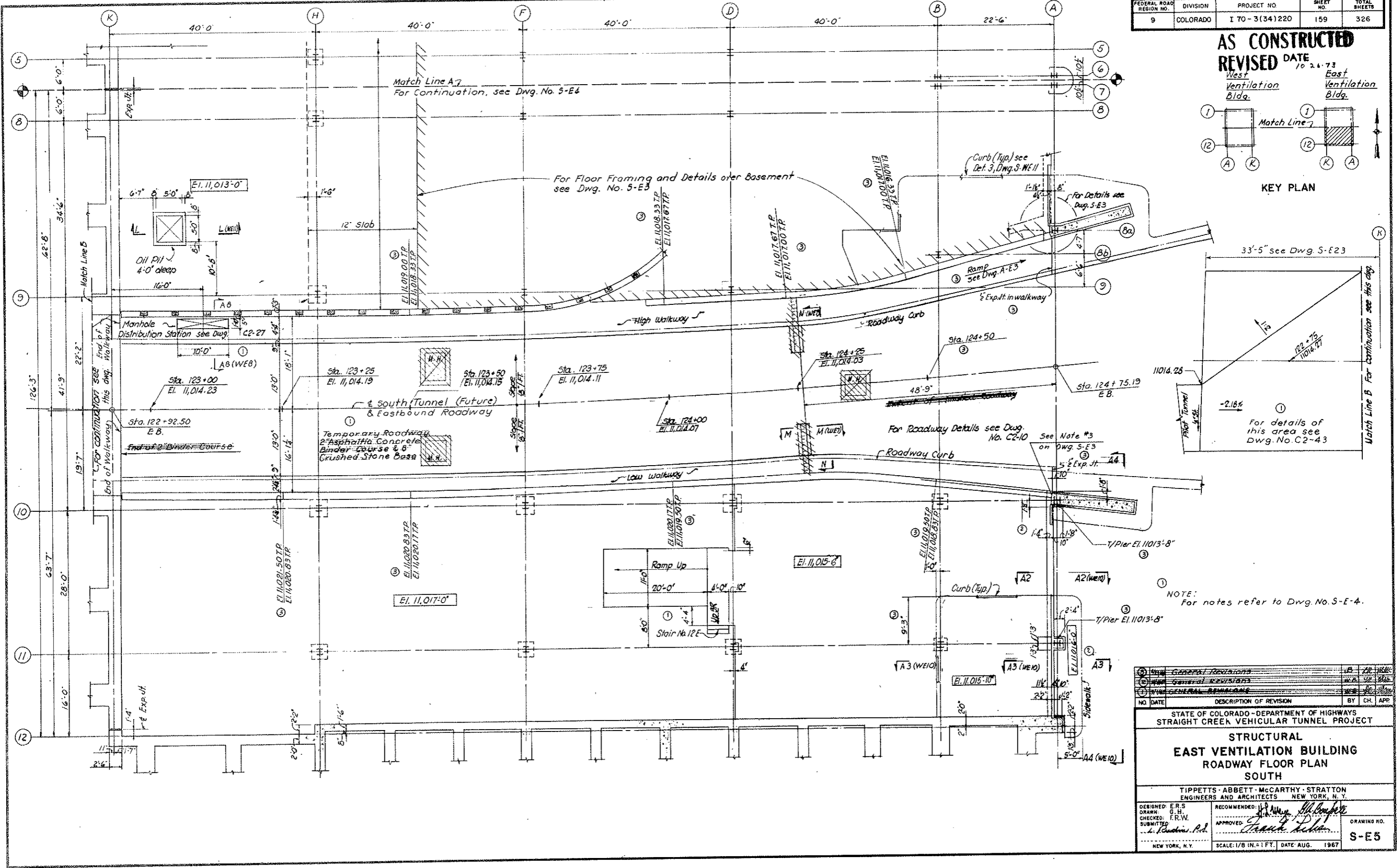
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	159	326

AS CONSTRUCTED
REVISED DATE 10.21.73

West Ventilation Bldg. East Ventilation Bldg.



KEY PLAN



NOTE: For notes refer to Dwg. No. 5-E-4.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
1		GENERAL REVISIONS			
2		GENERAL REVISIONS			
3		GENERAL REVISIONS			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL EAST VENTILATION BUILDING ROADWAY FLOOR PLAN SOUTH

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E.R.S.
 DRAWN: G.H.
 CHECKED: F.R.W.
 SUBMITTED: L. Decker, P.E.

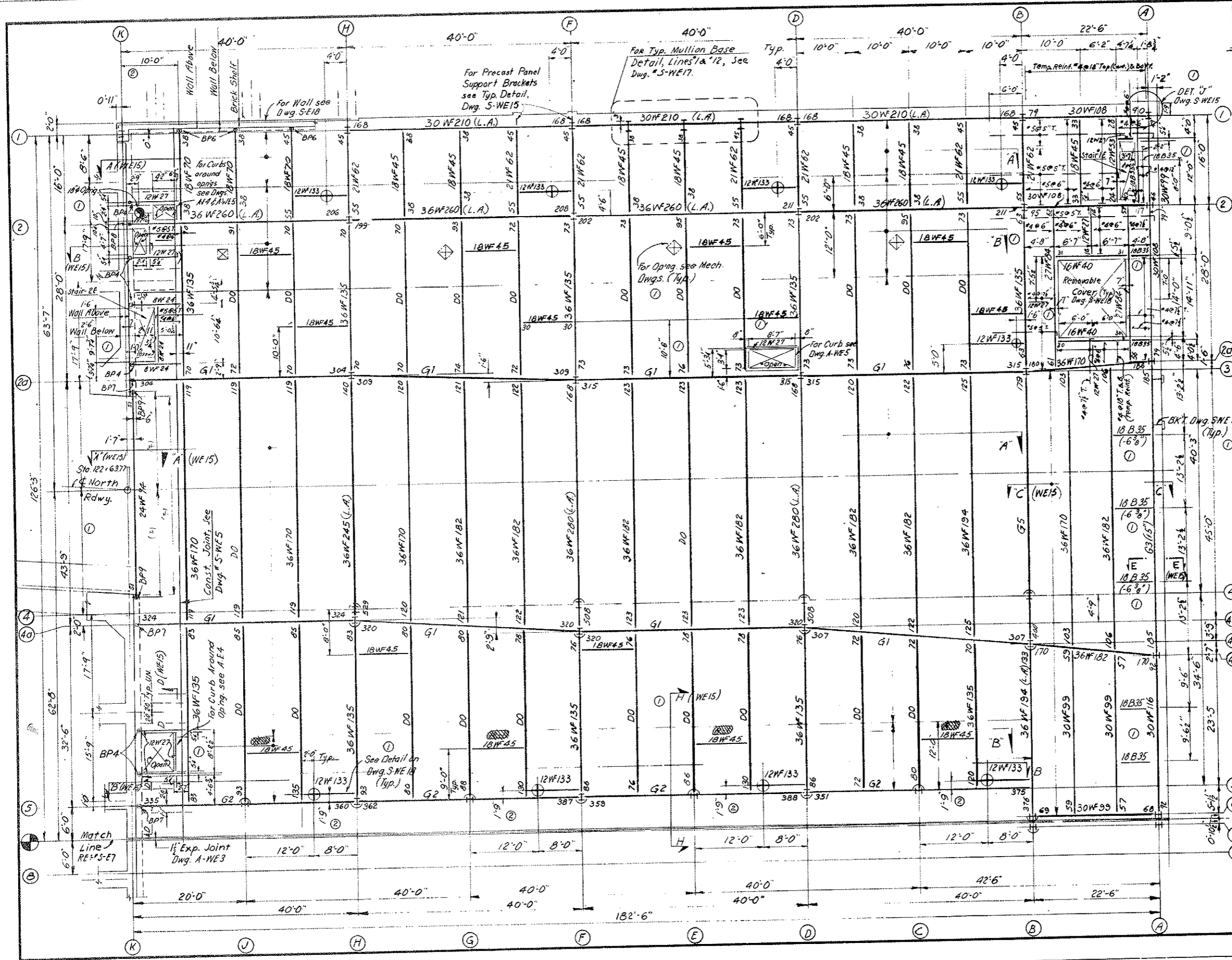
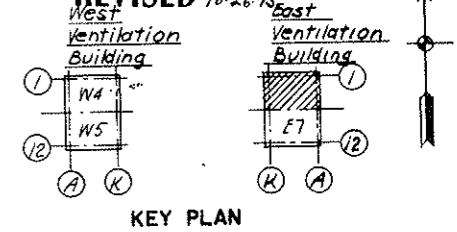
RECOMMENDED: J. J. [Signature]
 APPROVED: [Signature]
 L. Decker, P.E.

DRAWING NO. **S-E5**

SCALE: 1/8" = 1 FT. DATE: AUG. 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	160	326

AS CONSTRUCTED
REVISED DATE 10-26-73
 West Ventilation Building
 East Ventilation Building



Girder Schedule
 See Dwg. No. S-WE12 For Working & Cov. Pl. Details.

Mark	Section	Cover Plate		Location	Remarks
		Size	Approx. Length		
* G1	36WF245	19-1/4"	33'-0"	Bott. Flg.	Low Alloy
* G2	36WF300	20-1/4"	33'-0"	T.&B. Flg.	Low Alloy
G3	36WF300	14-1/2 x 2	49'-0"	T.&B. Flg.	A36
G4	36WF245	19-1/4"	35'-6"	Bott. Flg.	Low Alloy
G5	36WF230	19-3/8"	34'-0"	T.&B. Flg.	Low Alloy

* Web Stiffener Details for Girders Bearing on Wall @ Col. Line K (G1, G2 and 36WF260 on line "2" & "11"), see Dwg. S-WE5.

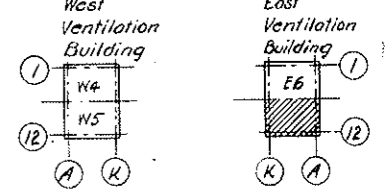
- Legend**
- I - Column passes Thru Floor
 - ⊖ - Column Above Only
 - ⊕ - Column Below Only
 - ⊗ - Jib Crane Support
 - L.A. - Low Alloy Steel.
 - B.P. - Beam Wall Bearing Plate Details and Anchor Bolt Setting for Same, See Schedule on Dwg. S-WE5
 - U.N. Unless otherwise noted
- For Notes and Ref. Dwg., see Dwg. S-E7

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT	
STRUCTURAL EAST VENTILATION BUILDING FAN ROOM FLOOR PLAN NORTH	
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.	
DESIGNED: H.B. DRAWN: R.R. CHECKED: J.F. SUBMITTED: L. P. ...	RECOMMENDED: [Signature] APPROVED: [Signature] DATE: AUG. 1967
DRAWING NO. S-E6	SCALE: 1/8" = 1'-0" DATE: AUG. 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	161	326

(R-7) Rev. 2-10-70 C.R.H. 10118 REAR DRIVE, I-70 #16542

AS CONSTRUCTED
REVISED DATE 10.26.73



KEY PLAN

- NOTES:**
- For General Notes see Dwg. S-WE1
 - Top of Structural Concrete Slab Elev. 11041'-6"
 - Top of Structural Steel 3" below top of Slab unless otherwise noted.
 - For Str. Steel Notes and Moment Connections see Dwg. S-WE12
 - Concrete Slab is 8" thick unless otherwise shown. For Slab Reinforcement see Dwg. S-WE15
 - Reinforced Concrete shown thus:
"T" Indicates Steel in Top of Slab
"B" Indicates Steel in Bottom of Slab
 - Beams shall be equally spaced unless otherwise noted.
 - Top Flange of Beams shall be adequately braced during the pouring of the Slab.
 - For Bearing Plates (B.P. and Stiffener for Beams bearing on Concrete, see Dwg. S-WE5.
 - For Reinf. of Curbs, see Typ. Det. on Dwg. S-WE14.
 - For location of Precast Panel Support Brackets, see Architectural Dwg. and Panel Manuf. Dwg.
 - For Openings for Sanitary Installations, see Arch. and Mech. Dwg.
 - Legend and Girder Schedule, see Dwg. S-E6.
 - For Stairs and Landings, see Arch. Dwg.
 - For Dowels at Gunite Ducts and Concr. Partition Wall, see Dwg. S-WE13 and S-WE14 & S-E24
 - For Conn. of Beams Framing into Spandrel Beams, see Dwg. S-WE15.
- REFERENCE DRAWINGS:**
- Arch: A-E4 and A-E5
Mech: M-1, M-10, M-38 and M-39.
Struct: S-E6, S-WE1, 5, 12, 13, 14, 15, 17 & 18.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APPR.
1		General Revisions			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL
EAST VENTILATION BUILDING
FAN ROOM FLOOR PLAN
SOUTH

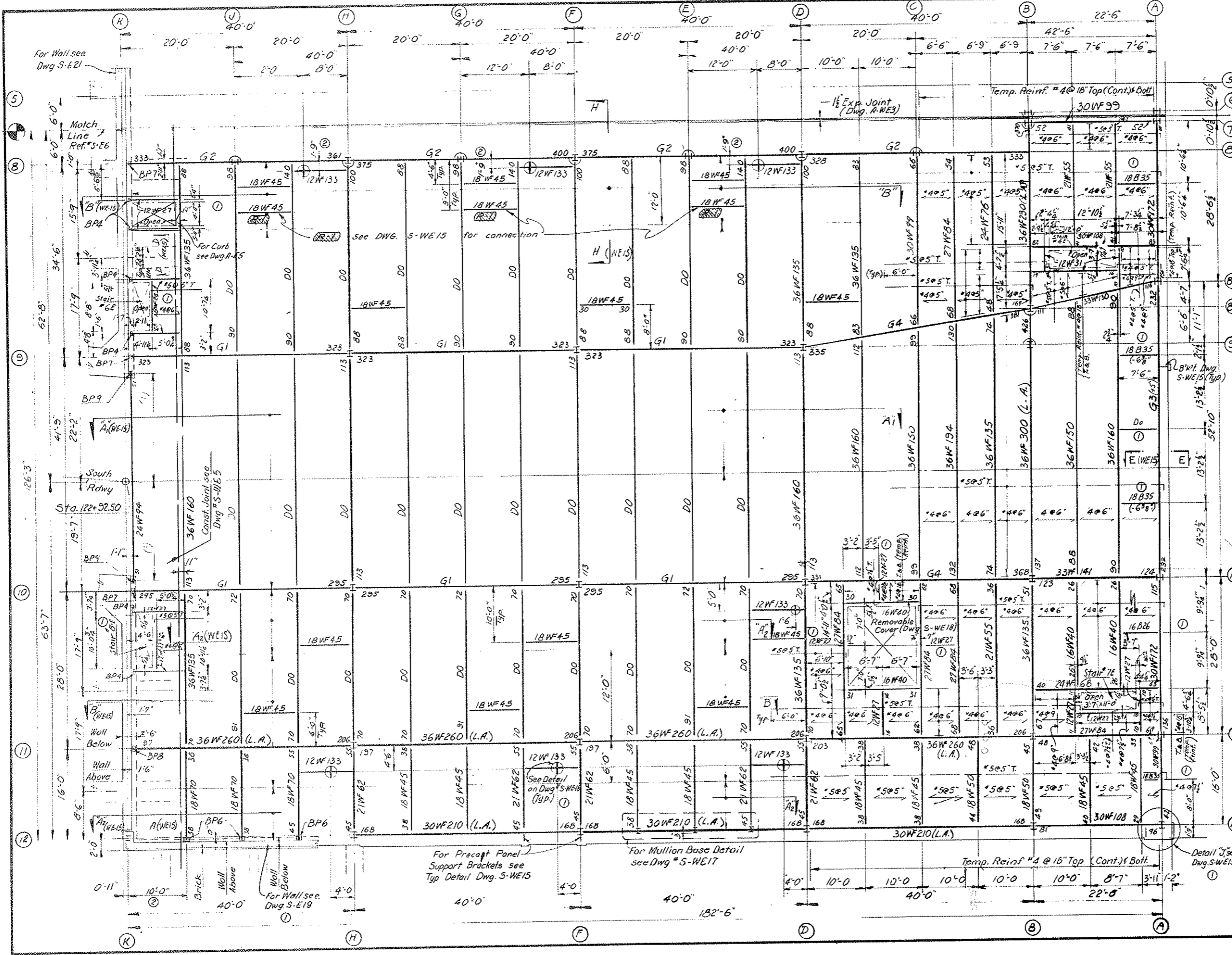
TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED: K.B.
DRAWN: R.R.
CHECKED: I.F.
SUBMITTED: L. Martin, P.E.

RECOMMENDED: [Signature]
APPROVED: [Signature]

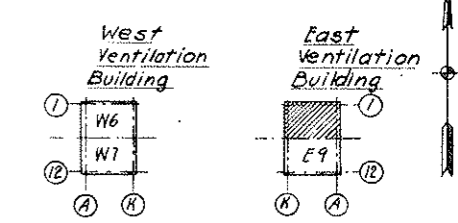
DRAWING NO. S-E7

SCALE: 1/8" = 1'-0"
DATE: AUG. 1967



FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	162	326

AS CONSTRUCTED
NO REVISIONS
DATE 10-26-73



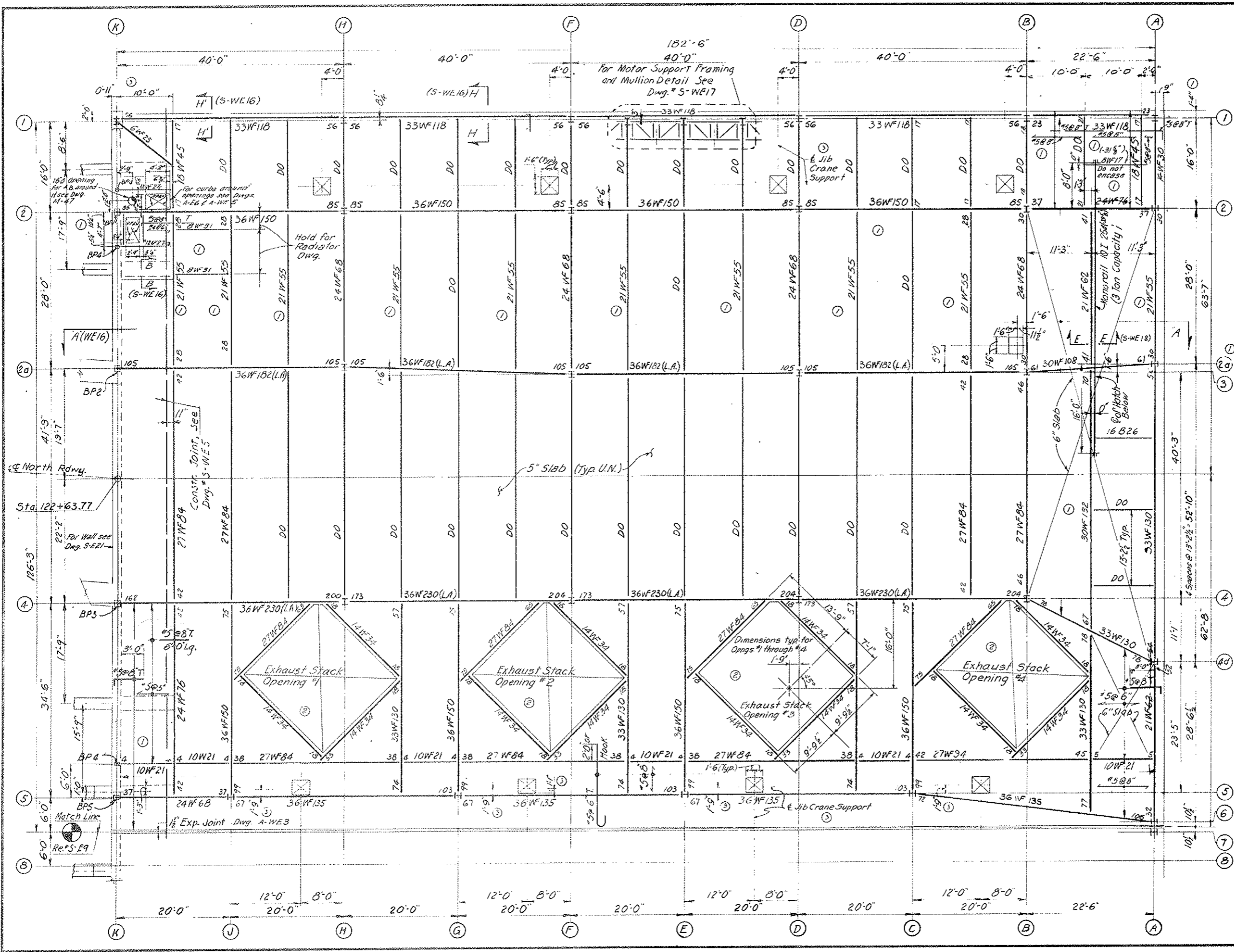
KEY PLAN

LEGEND

- B.P. Beam Wall Bearing Plates. See schedule on Dwg. S-WE12.
- U.M. Unless otherwise noted.
- L.A. Low Alloy Steel.

NOTES

- For Notes, and Reference Dwg. see Dwg. S-E9.
- Reinforcement around Openings #1, #2, #3, #4 similar to Reinforcement around Opening #2, as shown on Dwg. S-W6. (Replaces Note #8 on Dwg. S-E9)



NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
1		Added 6\"/>			
2		Added Exhaust Stack Opening #1			
3		General Revision			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL EAST VENTILATION BUILDING ROOF PLAN NORTH

TIPPETTS-ABBETT-McCARTHY-STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

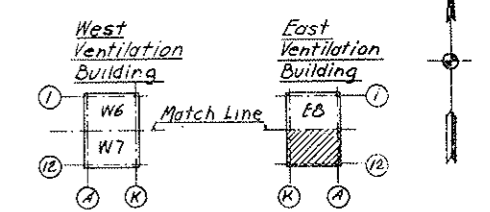
DESIGNED: S.D.S.
DRAWN: R.R.
CHECKED: J.F.
SUBMITTED: L.L. [Signature]
NEW YORK, N. Y.

RECOMMENDED: [Signature]
APPROVED: Frank [Signature]
SCALE: 1/8"=1'-0" DATE AUG. 1967

DRAWING NO. S-E 8

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	163	326

AS CONSTRUCTED
NO REVISIONS DATE 10-31-78



- NOTES:
- For General Notes, see Dwg S-WE-1.
 - Top of Structural Concrete Roof Slab $E1 + 11072'-4"$
 - Top of Structural Steel (-3") Below Top of Slab Unless Otherwise Noted.
 - For Structural Steel Notes & Moment Connections See Dwg. S-WE12.
 - For Legend See Dwg. S-EB
 - Bottom Reinforcement in slab shown Thus
 - Top Reinf. in Slab Shown Thus ... T.
 - Reinforcement Around Opening #5, #6, #7 Similar to Reinf. Around Opening #2. As Shown On Dwg. S-W6.
 - Beams To Be Spaced Equally Between Column Lines, Unless Otherwise Shown.
 - Top Flange of Beams shall be adequately braced during the pouring of the Slab.
 - For Jib Crane support see Notes on Dwg. S-W6
 - Concrete Slab to be 5" Thick (UN). For Reinf. See Dwg. S-WE16.
 - For Curbs Around Exhaust Stock Openings See Dwg. A-WE3.
 - For Reinf. of Curbs See Typ. Detail On Dwg. S-WE14.
 - For Support Brackets of Exhaust Stacks See Dwg. Me
 - For Bearing Plates (B.P.) Schedule & Stiff. For Beams Bearing on Conc. See Dwg. S-WE5

REF DWGS
 ARCH: A-EG, A-E7
 MECH: M-8, M-10, M-40, M-41, M-47.
 STRUCT: S-WE1, 5, 12, 14, 15, 16, 17, 18.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Added Jib Crane Support Detail			
2		Added Exhaust Stack Detail			
3		General Revisions			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

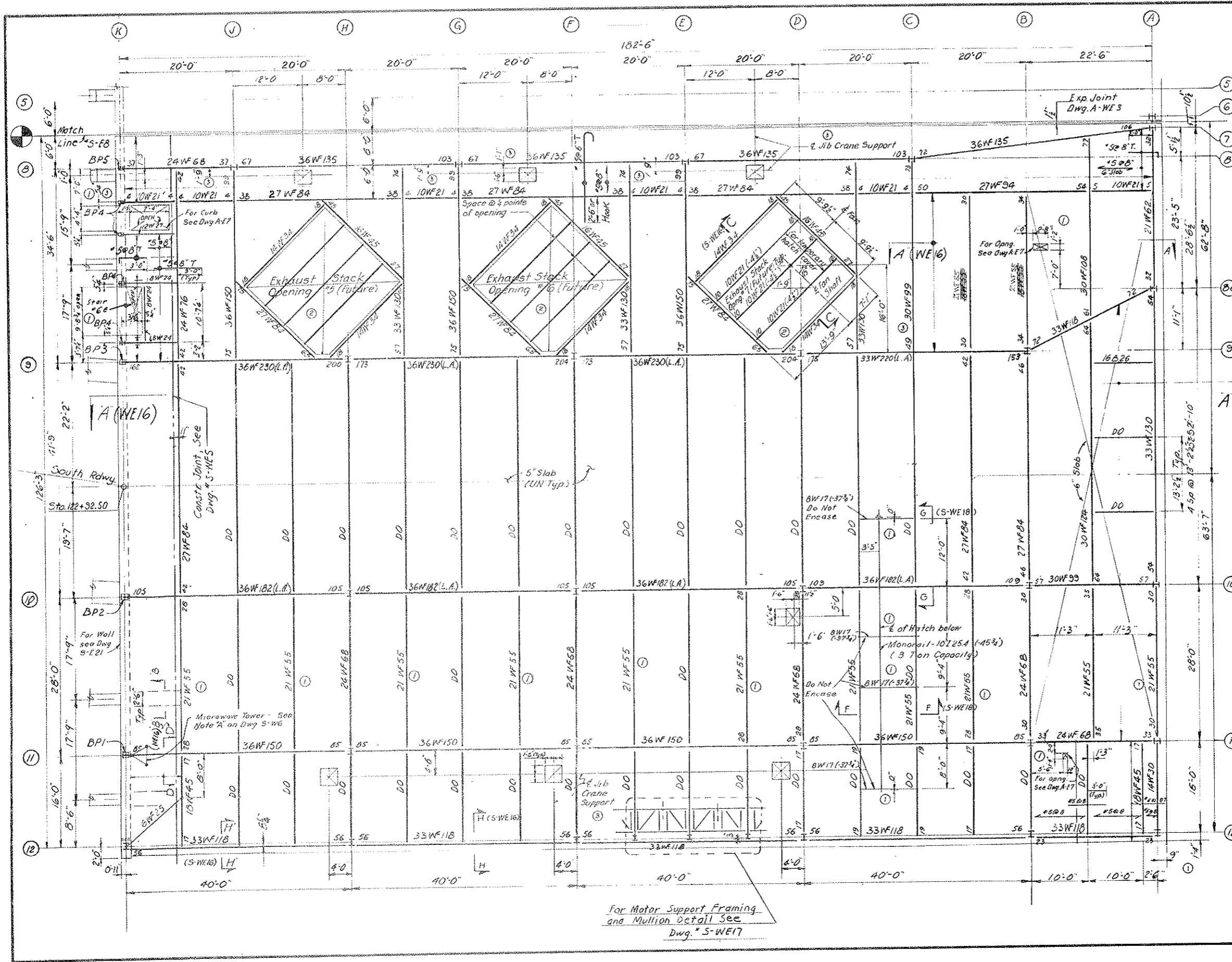
**STRUCTURAL
 EAST VENTILATION BUILDING
 ROOF PLAN
 SOUTH**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: S.D.S.
 DRAWN: R.B.
 CHECKED: I.F.
 SUBMITTED: A. Rindin, P.E.

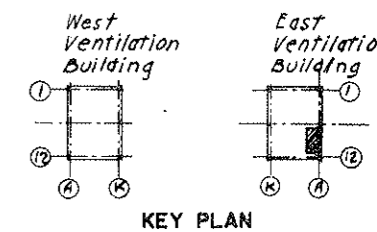
RECOMMENDED: J. M. ...
 APPROVED: ...

DRAWING NO. S-E9
 NEW YORK, N. Y. SCALE: 1/8" = 1'-0" DATE: AUG. 1967

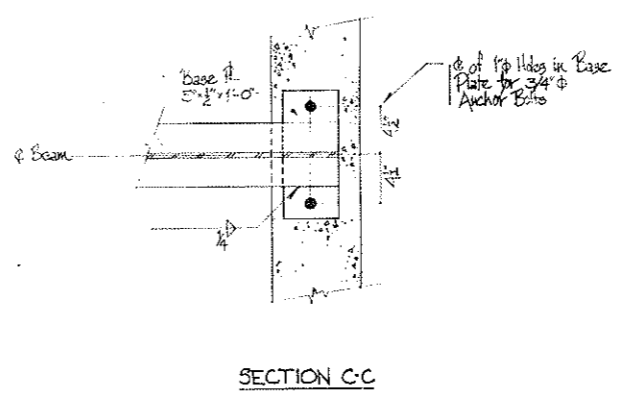
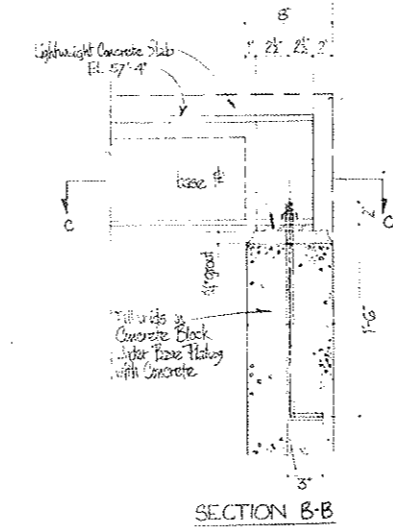
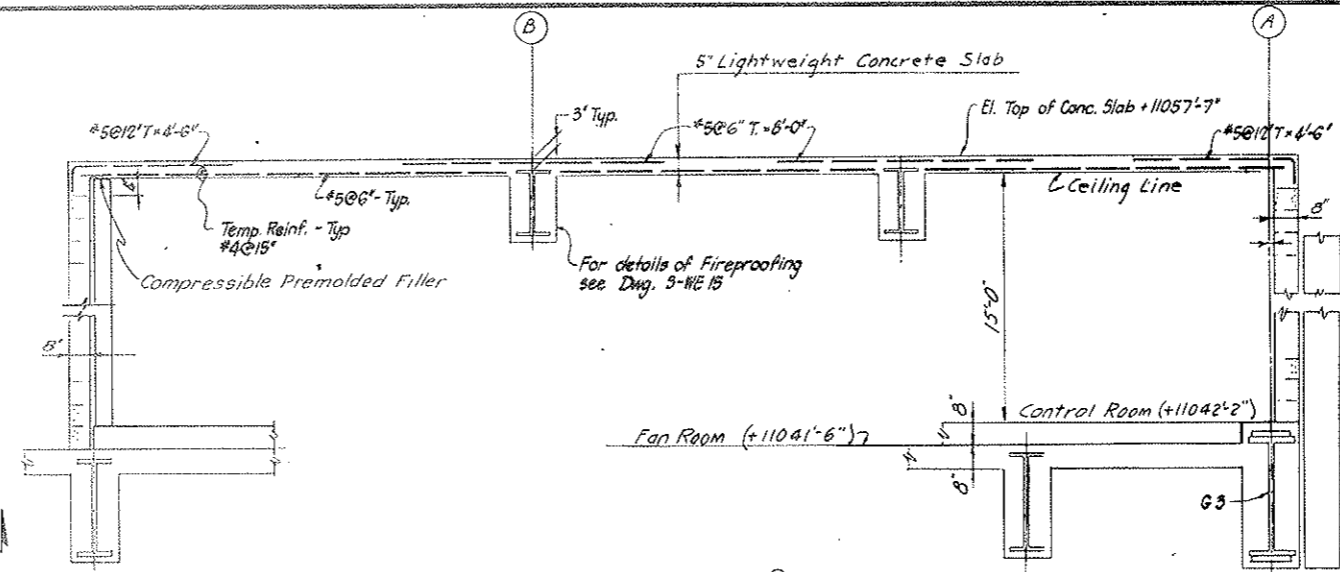
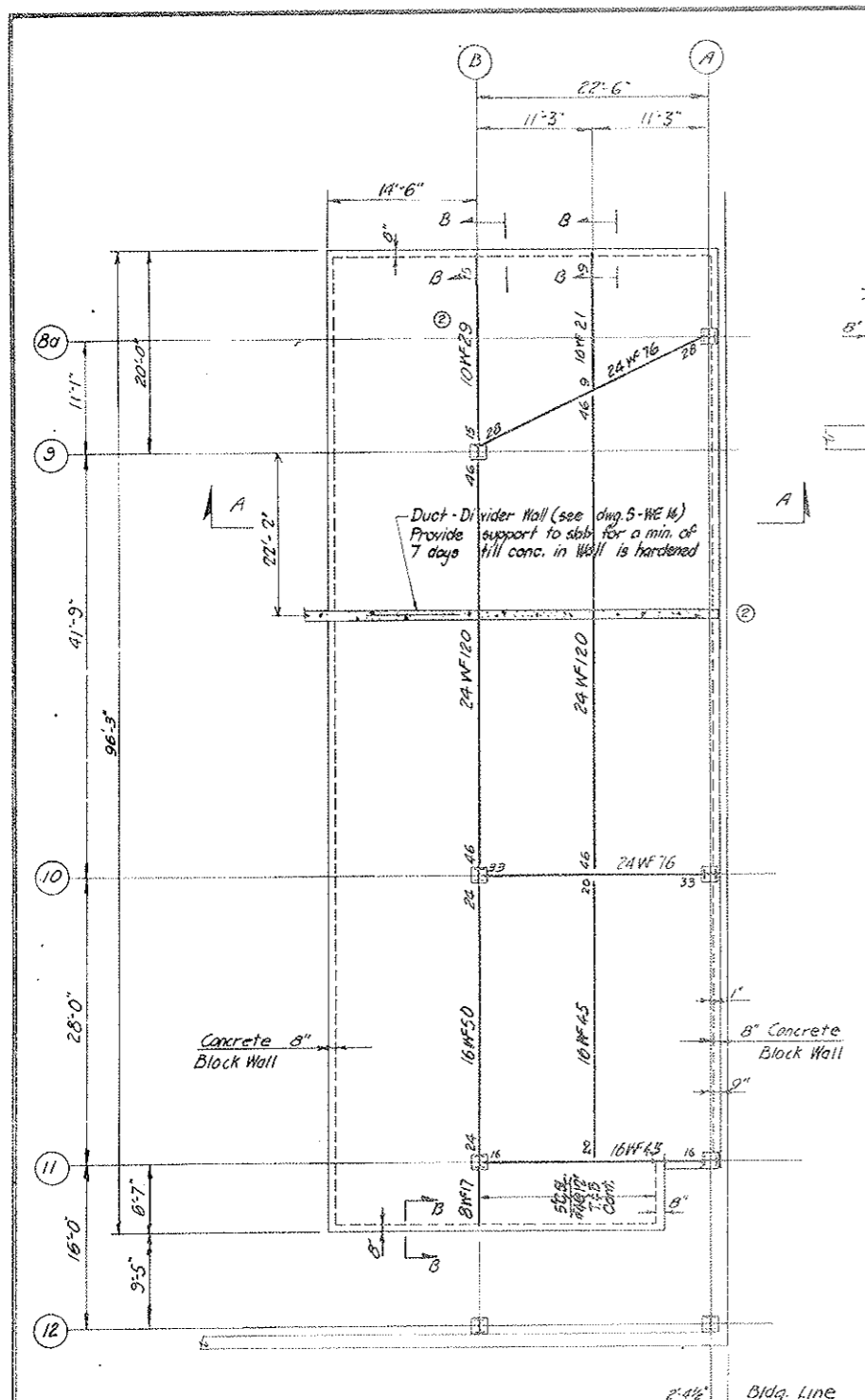


FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	164	326

AS CONSTRUCTED
REVISED DATE 7-26-73



NOTE:
① For Masonry Details see Dwg. A-W/E.4.



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

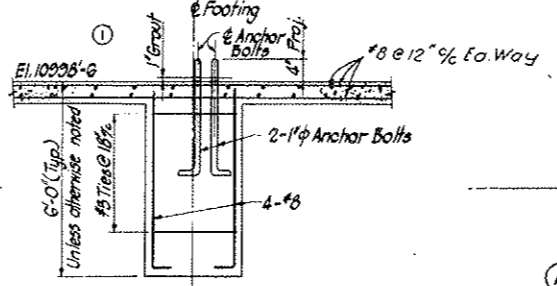
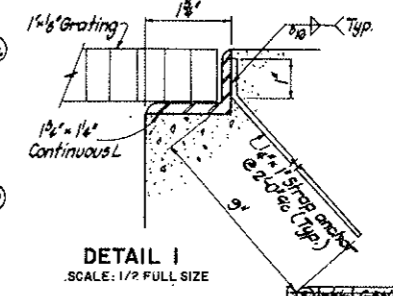
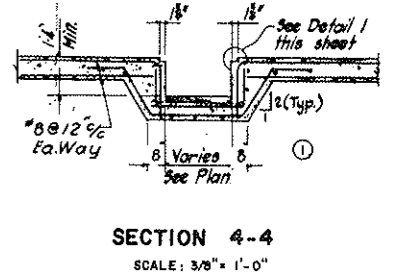
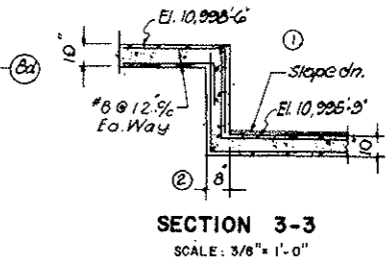
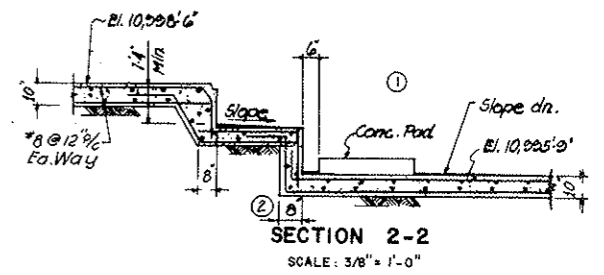
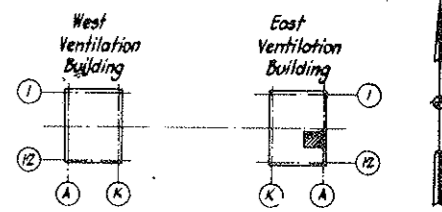
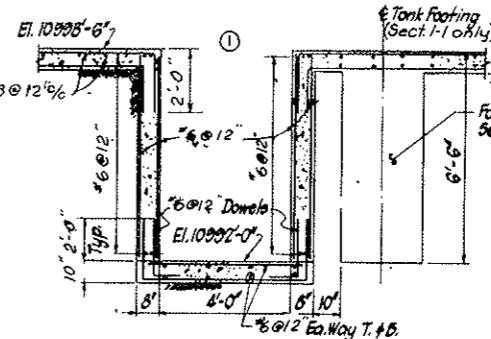
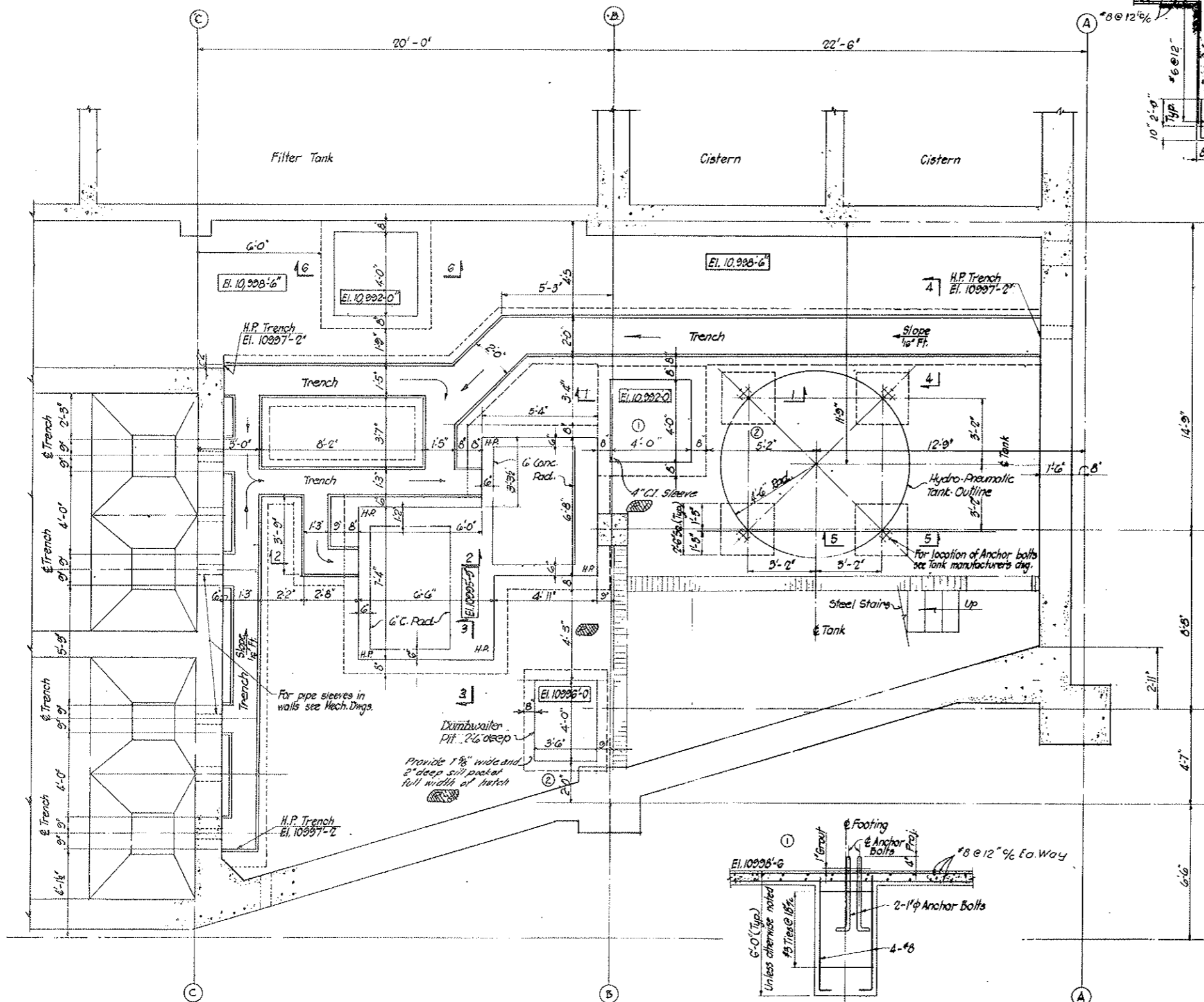
STRUCTURAL
EAST VENTILATION BUILDING
CONTROL ROOM CEILING - PLAN AND DETAILS

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED: S.D.S.	RECOMMENDED: <i>A. Wilson</i>	DRAWING NO.
DRAWN: R.R.	APPROVED: <i>Frank L. ...</i>	S-E10
CHECKED: F.R.W.	DATE: AUG. 1987	
SUBMITTED: <i>W. R. ...</i>		

NEW YORK, N. Y.

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	166	326

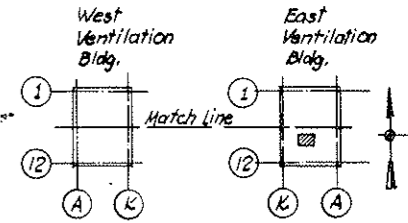


STATE OF COLORADO - DEPARTMENT OF HIGHWAYS		STRAIGHT CREEK VEHICULAR TUNNEL PROJECT	
STRUCTURAL EAST VENTILATION BUILDING BASEMENT - PART PLAN AND DETAILS SHEET 1			
TIPPETTS-ABBETT-MCCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.			
DESIGNED: E.R.S.	DRAWN: G.H.	CHECKED: F.R.W.	SUBMITTED: 10-24-73
RECOMMENDED: [Signature]		APPROVED: [Signature]	
NEW YORK, N.Y.		SCALE: AS NOTED	DATE: AUG. 1967

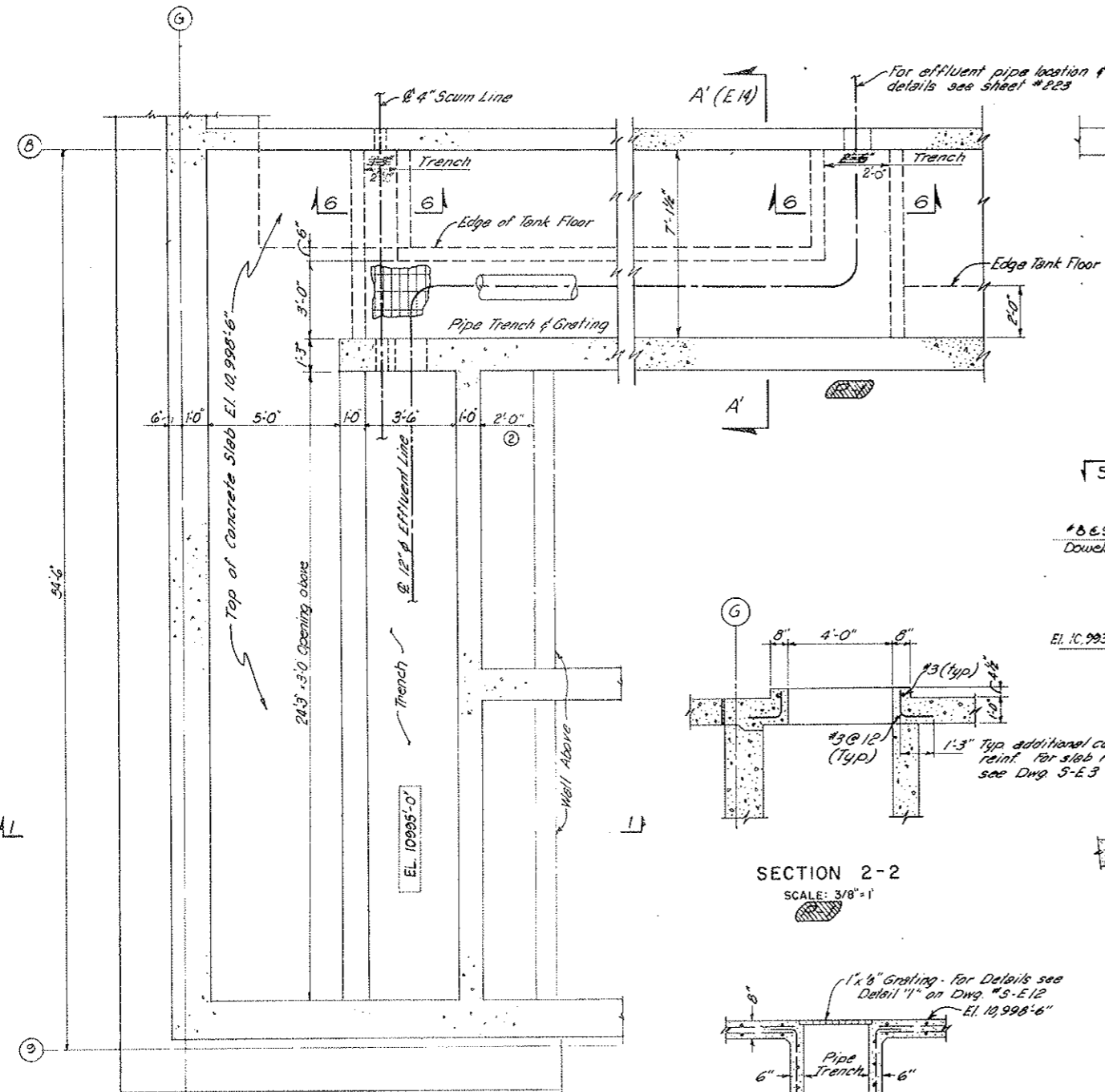
S-E 12

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	187	328

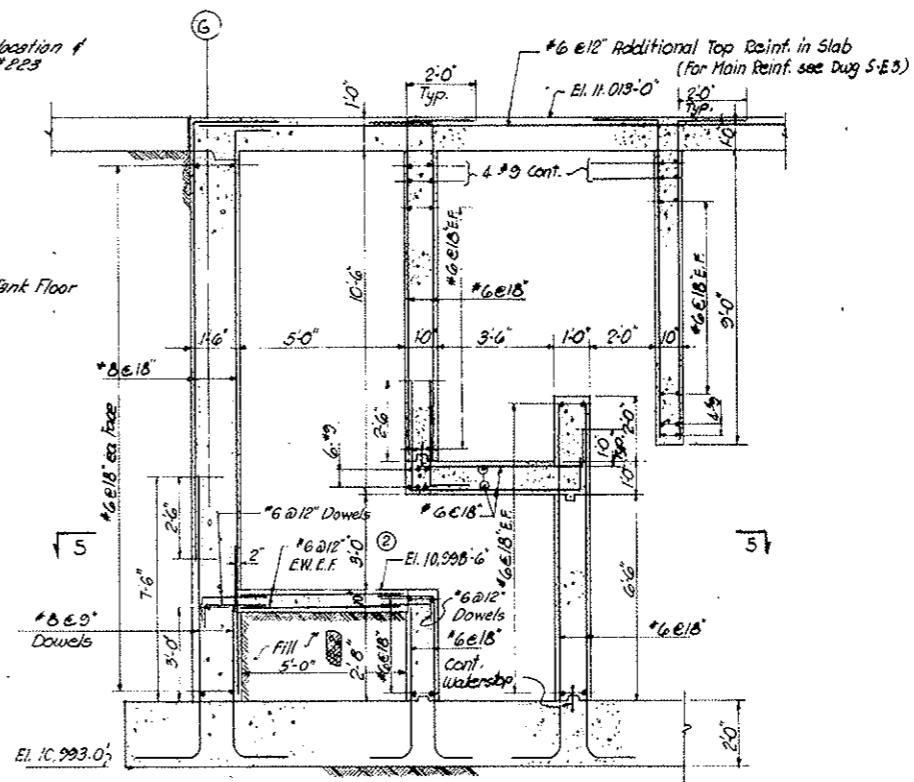
(P-1) Rev. 5-21-69 General Revisions
(P-2) Rev. 7-22-69 Rev. Dim. Only to Final Submittal



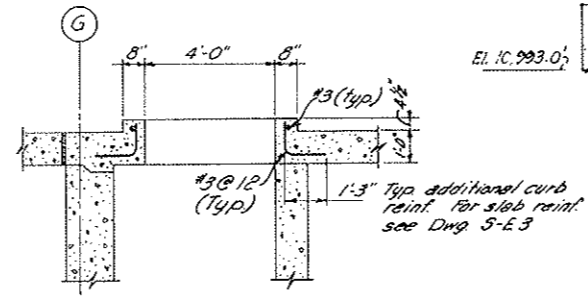
KEY PLAN
AS CONSTRUCTED
REVISED DATE 10-26-73



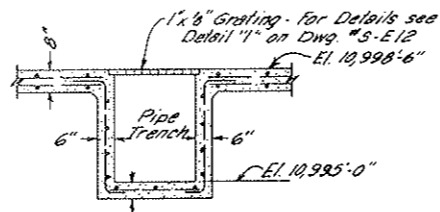
PART PLAN 5-5



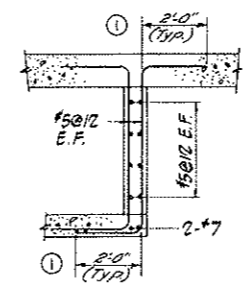
SECTION 1-1



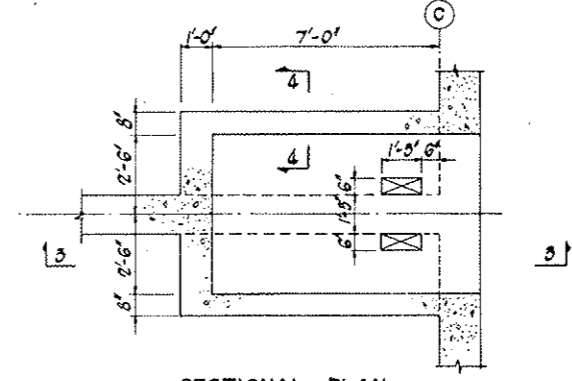
SECTION 2-2
SCALE: 3/8"=1'



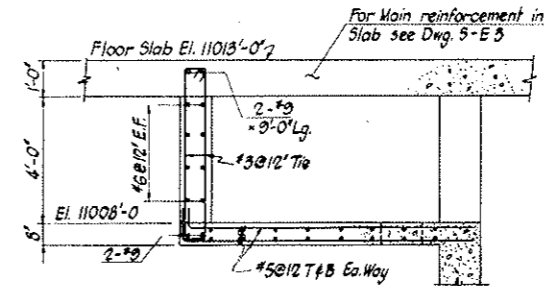
SECTION 6-6
SCALE: 3/8"=1'



SECTION 4-4



SECTIONAL PLAN



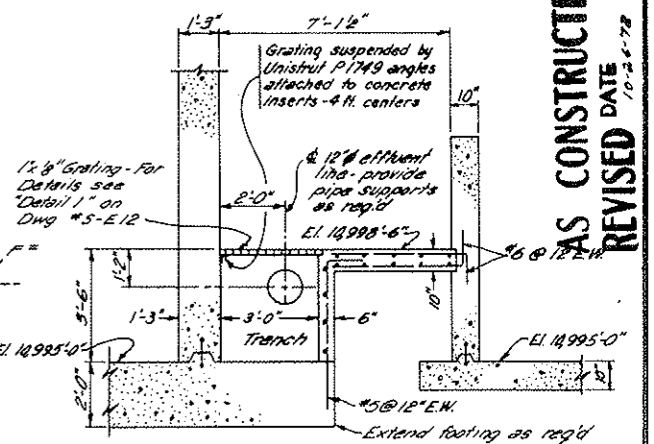
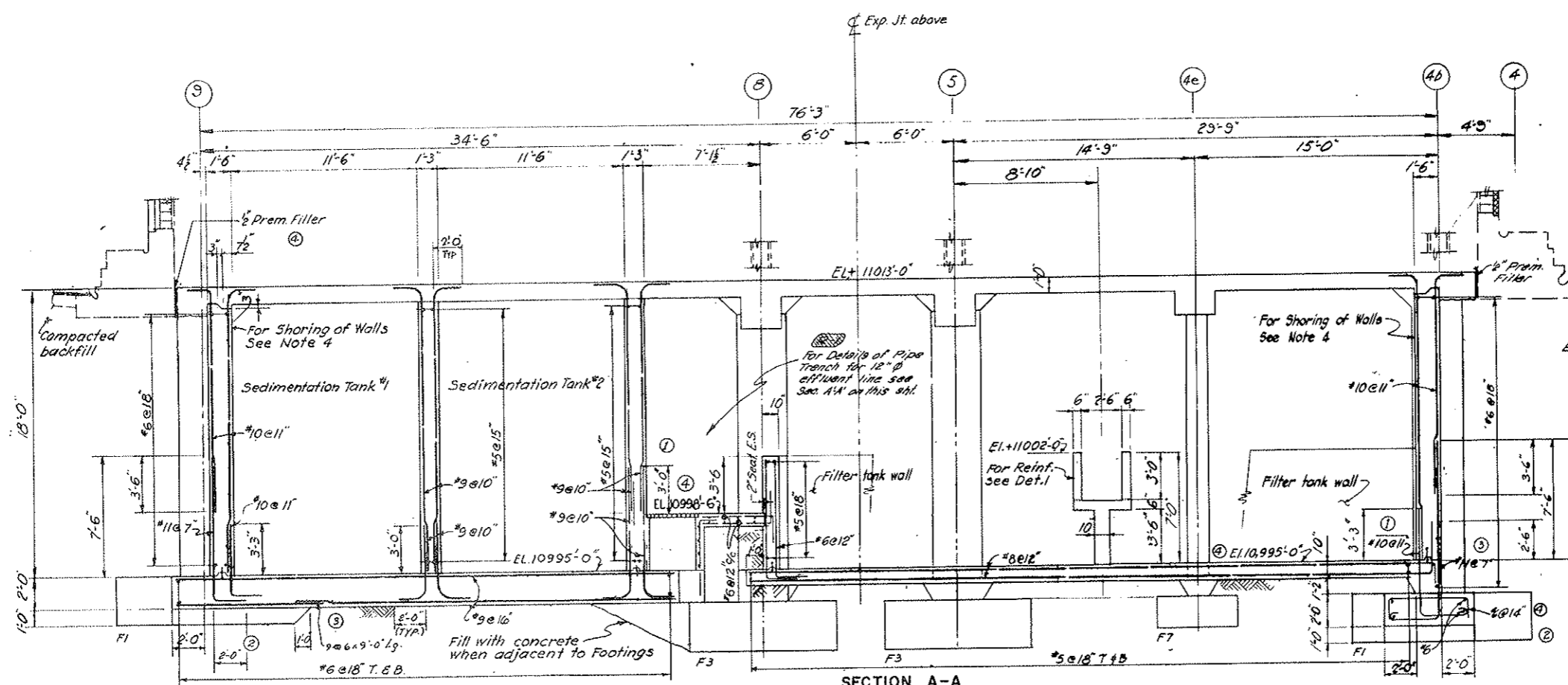
SECTIONAL ELEVATION 3-3

- NOTES:
1. For General Notes see Dwg. 5-WE 1.
 2. For size and location of pipe sleeves in walls see Mech. dwgs.
 3. For typical detail of waterstop see Dwg. 5-E 1.
 4. For location of section 2-2 see Dwg. No. 5-E 3

DRIVING EQUIPMENT COMPARTMENT
For location see Dwg. No. 5-E2 & 5-E3

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL EAST VENTILATION BUILDING BASEMENT- PART PLAN AND DETAILS SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E.R.S.	RECOMMENDED: J.P. [Signature]	DRAWING NO. S-E13			
DRAWN: G.H.	CHECKED: F.R.W.	DATE: AUG. 1967			
SUBMITTED: G. [Signature]	APPROVED: [Signature]	SCALE: 3/8" = 1'-0"			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	168	326

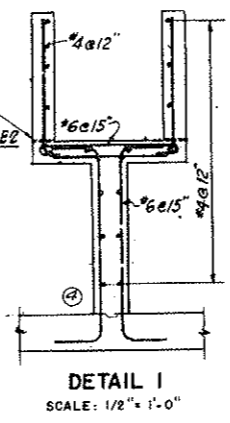
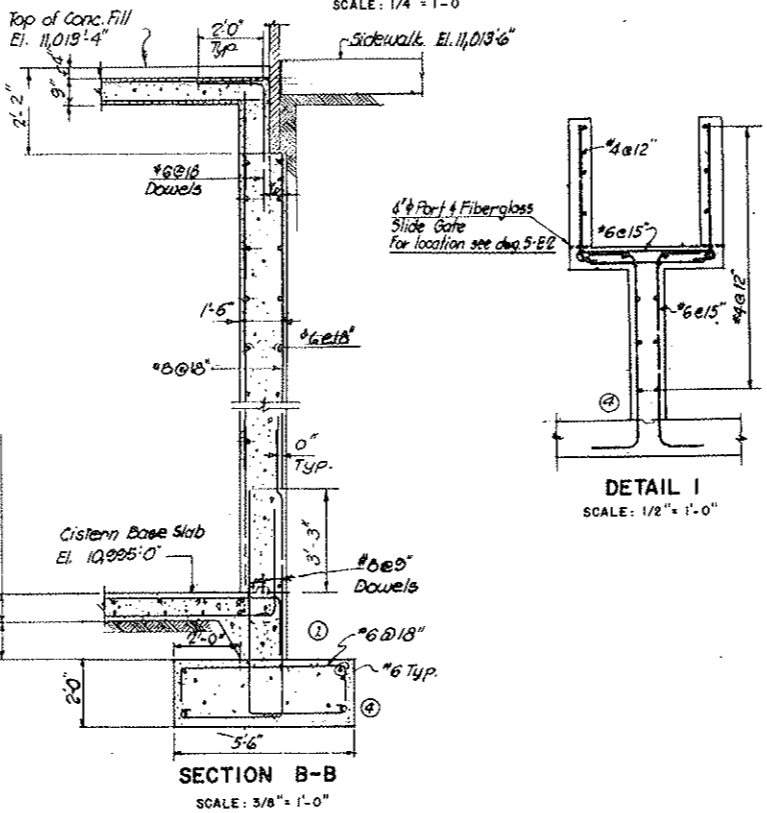
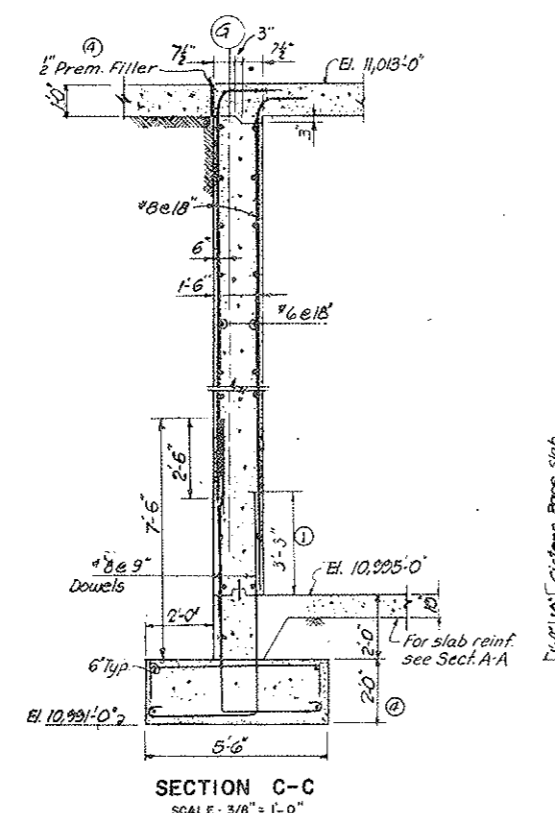
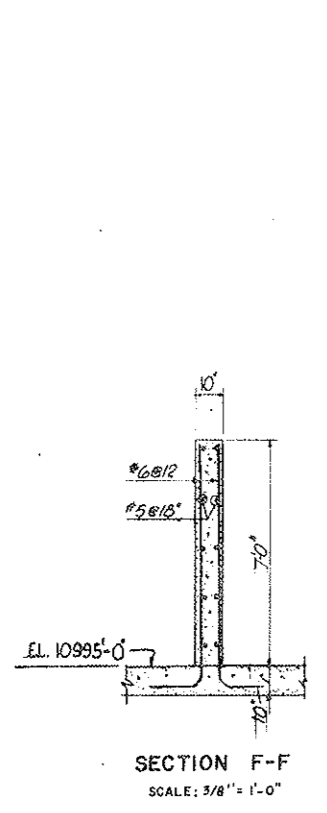


AS CONSTRUCTED
REVIS'D DATE 7-2-72

Note: For remainder of section and reinforcement see Section A-A. For Effluent Pipe location and Details see Dwg. "M-31"

SECTION A'-A'
SCALE: 3/8" = 1'-0"

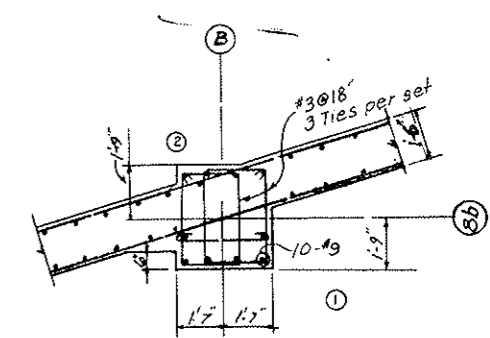
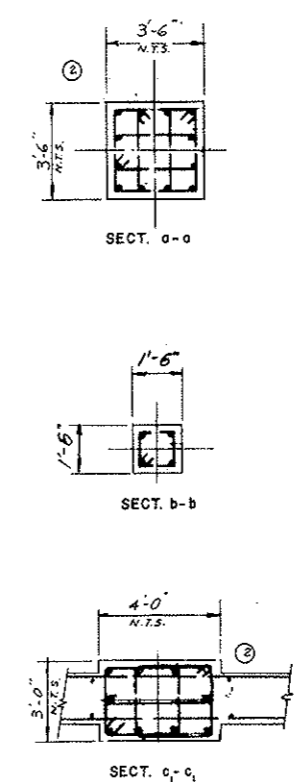
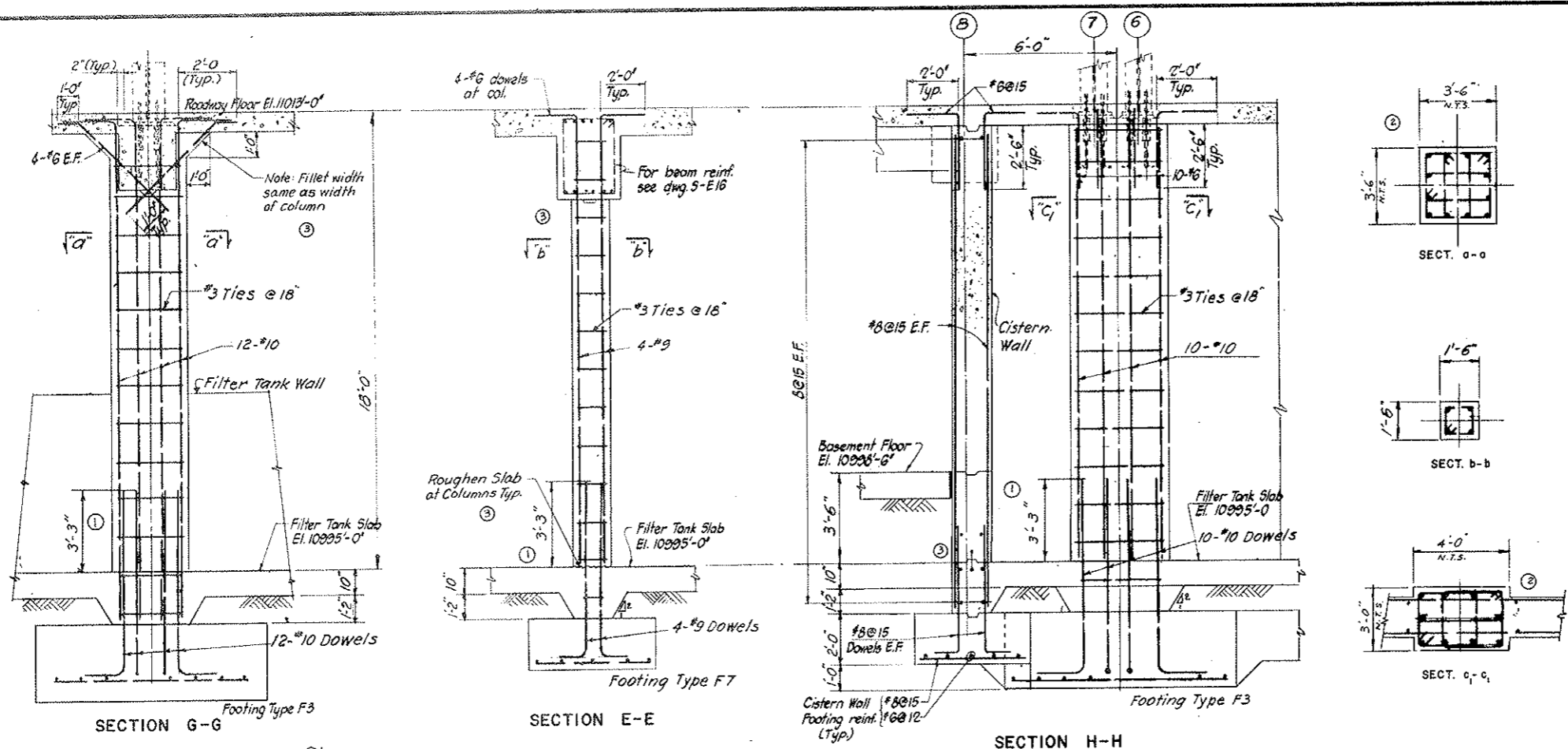
- Notes:
1. F1, F2 Etc. indicate Type of Footing.
 2. For Reinforcing Bars in Footings see Schedule Dwg. 5-WE-2
 3. For Reinforcing Bars in Columns and Buttresses see Dwg. 5-E19
 4. Basement Wall Retaining Earth must be shored for 7 days after Roadway Floor Slab is cast.
 5. For location of Sections see Dwg. No. S-E2 & S-E3.



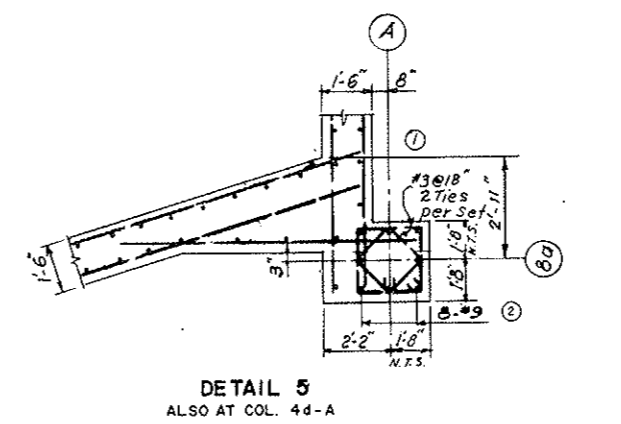
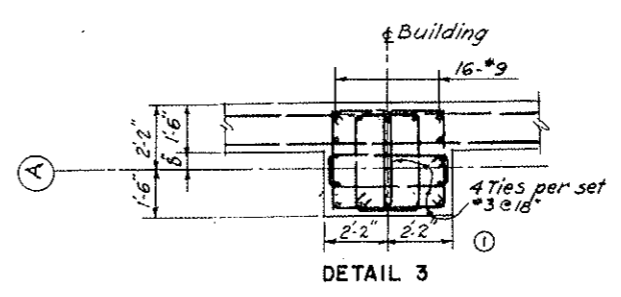
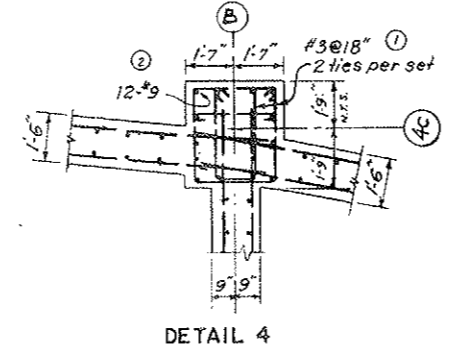
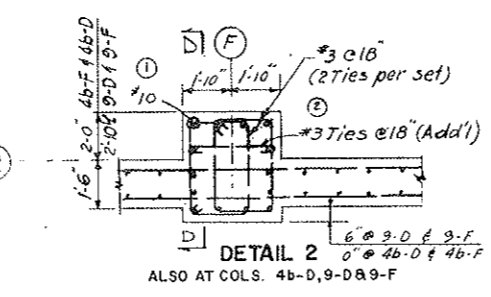
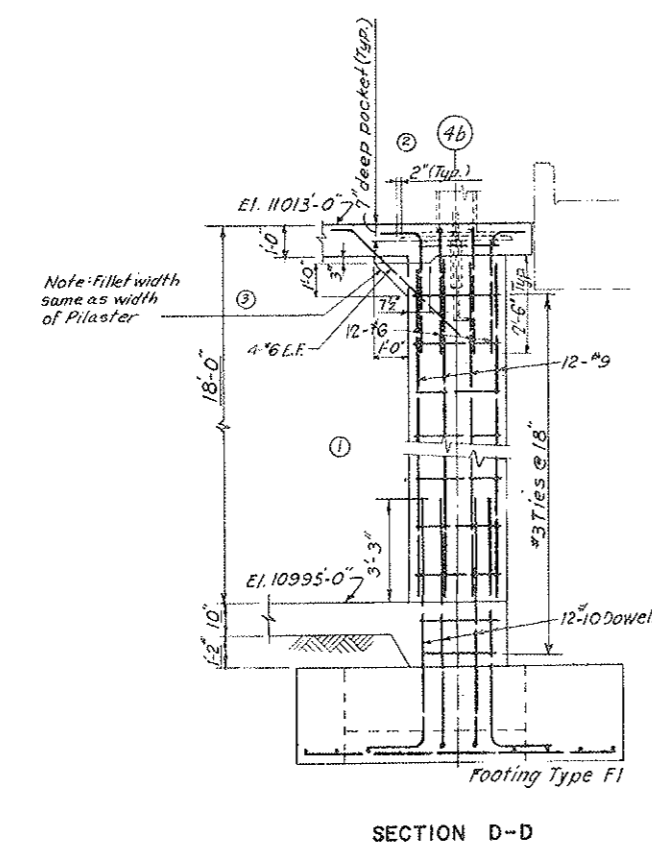
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL EAST VENTILATION BUILDING BASEMENT - WALL SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E.R.S.	RECOMMENDED: [Signature]	DRAWING NO. S-E14			
DRAWN: R.R.G.H./A.R.P.	CHECKED: F.R.W.	DATE: AUG. 1967			
SUBMITTED: [Signature]	APPROVED: [Signature]	SCALE: AS NOTED			
NEW YORK, N. Y.					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	169	326

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NOTE: For location of sections & details see Dwg. No. S-E2 & S-E3.



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Added fillet & detail			
2		General Revisions			
3		REVISIONS			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**STRUCTURAL
EAST VENTILATION BUILDING
BASEMENT- COLUMN AND BUTTRESS DETAILS**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E.R.S.
DRAWN: R.H./A.R.P.
CHECKED: F.R.W.
SUBMITTED: L. ...

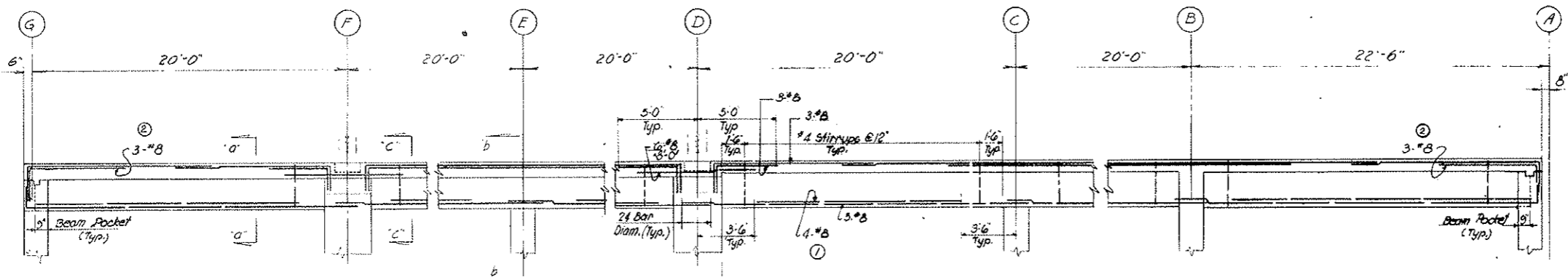
RECOMMENDED: ...
APPROVED: ...
DRAWING NO. S-E15

NEW YORK, N. Y. SCALE: 3/8" = 1'-0" DATE: AUG. 1967

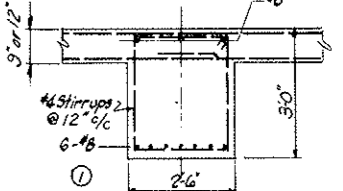
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	170	326

5-31-69 RSM - Dist. Chg. 11-10-68
 Subject to final approval

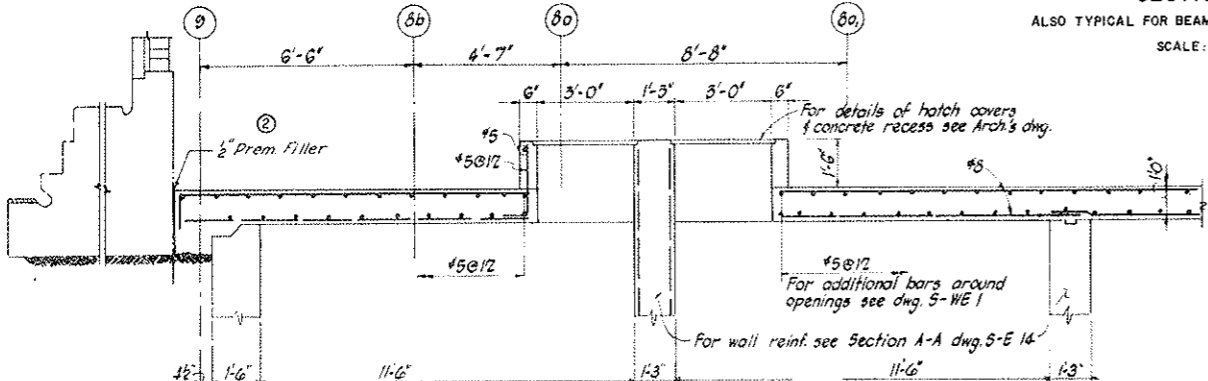
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



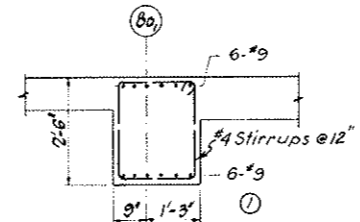
SECTION N-N (BEAM B1)
 ALSO TYPICAL FOR BEAMS AT COL. LINE (4) & (8)
 SCALE: 1/4" = 1'-0"



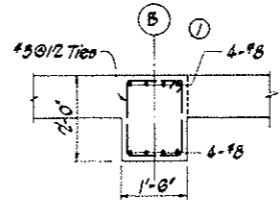
SECTION a-a (BEAM B1)
 SCALE: 1/2" = 1'-0"



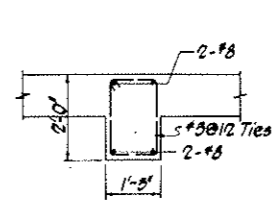
SECTION K-K
 SCALE: 3/8" = 1'-0"



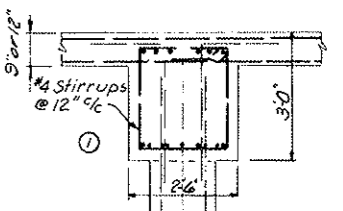
BEAM B2
 SCALE: 1/2" = 1'-0"



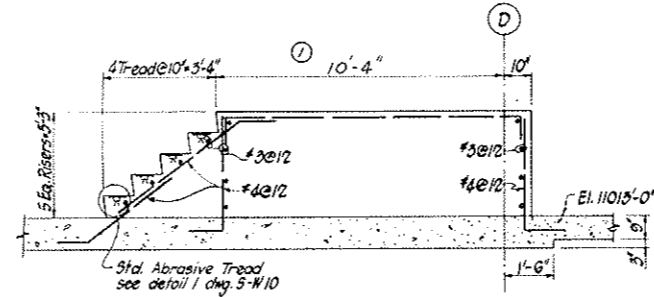
BEAM B3
 SCALE: 1/2" = 1'-0"



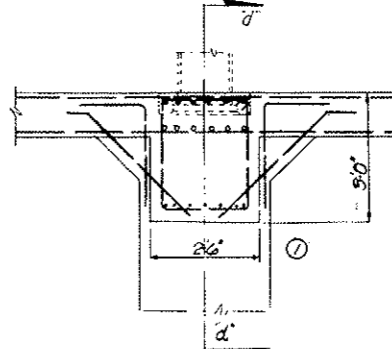
BEAM B4
 SCALE: 1/2" = 1'-0"



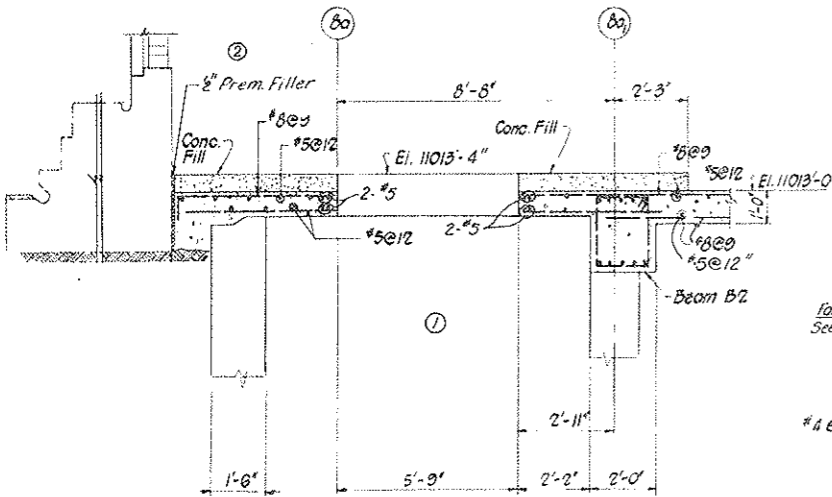
SECTION b-b (BEAM B1)
 SCALE: 1/2" = 1'-0"



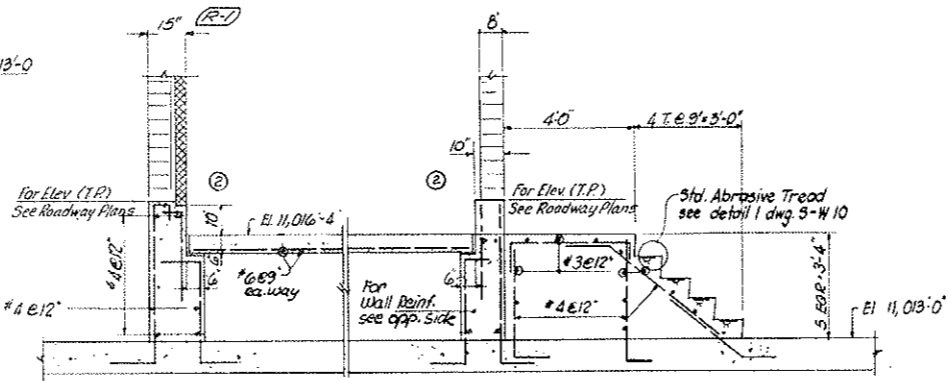
SECTION V-V
 SCALE: 3/8" = 1'-0"



SECTION c-c (BEAM B1)
 SCALE: 1/2" = 1'-0"



SECTION J-J
 SCALE: 3/8" = 1'-0"



SECTION L-L
 SCALE: 3/8" = 1'-0"

NOTE: For location of Sections see Dwg No. S-E3.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Revised wall, Added fillet, #8 bars			
2		Added #4 #8 bars			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL
EAST VENTILATION BUILDING
ROADWAY FRAMING OVER BASEMENT
SECTIONS AND DETAILS

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS
 NEW YORK, N. Y.

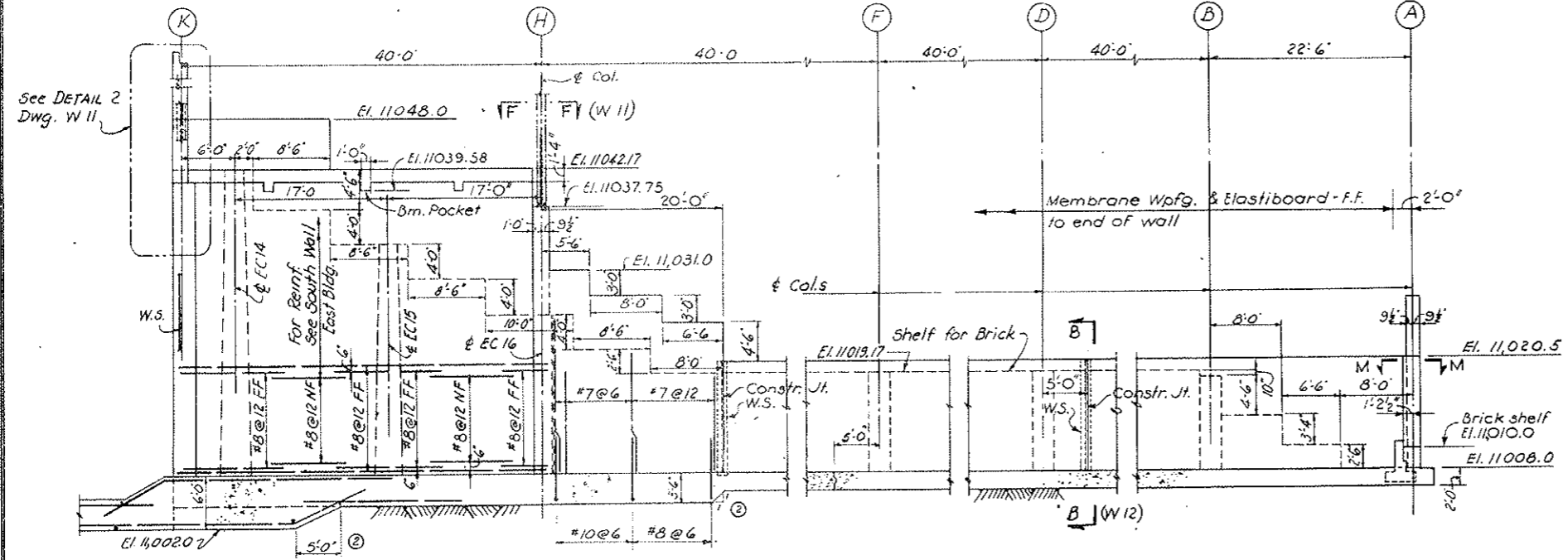
DESIGNED: E.R.S.
 DRAWN: R.R.T.G.H.
 CHECKED: F.R.W.
 SUBMITTED: L. Rudin P.D.

RECOMMENDED: [Signature]
 APPROVED: [Signature]

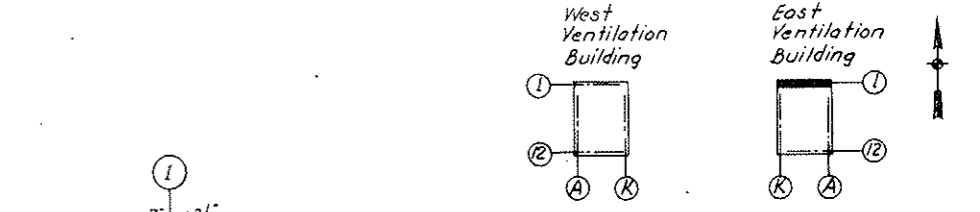
SCALE: AS NOTED
 DATE: AUG. 1967

DRAWING NO. **S-E 16**

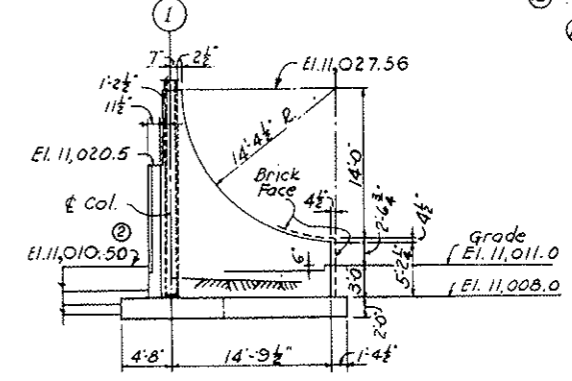
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	172	326



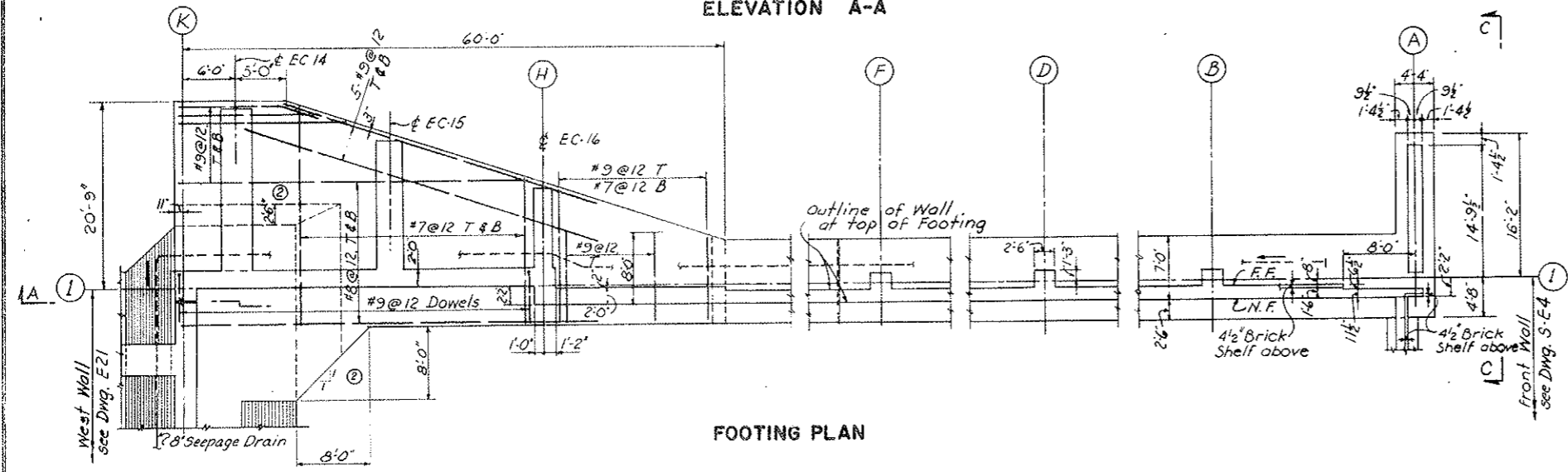
ELEVATION A-A



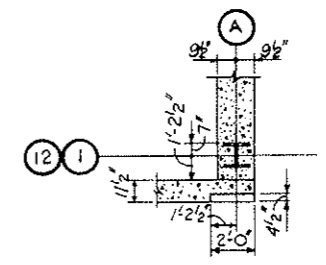
KEY PLAN
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



SECTION C-C



FOOTING PLAN



SECTION M-M (SHOWN)
SECTION M'-M' (OPPHAND)
SCALE 1/4" = 1'-0"

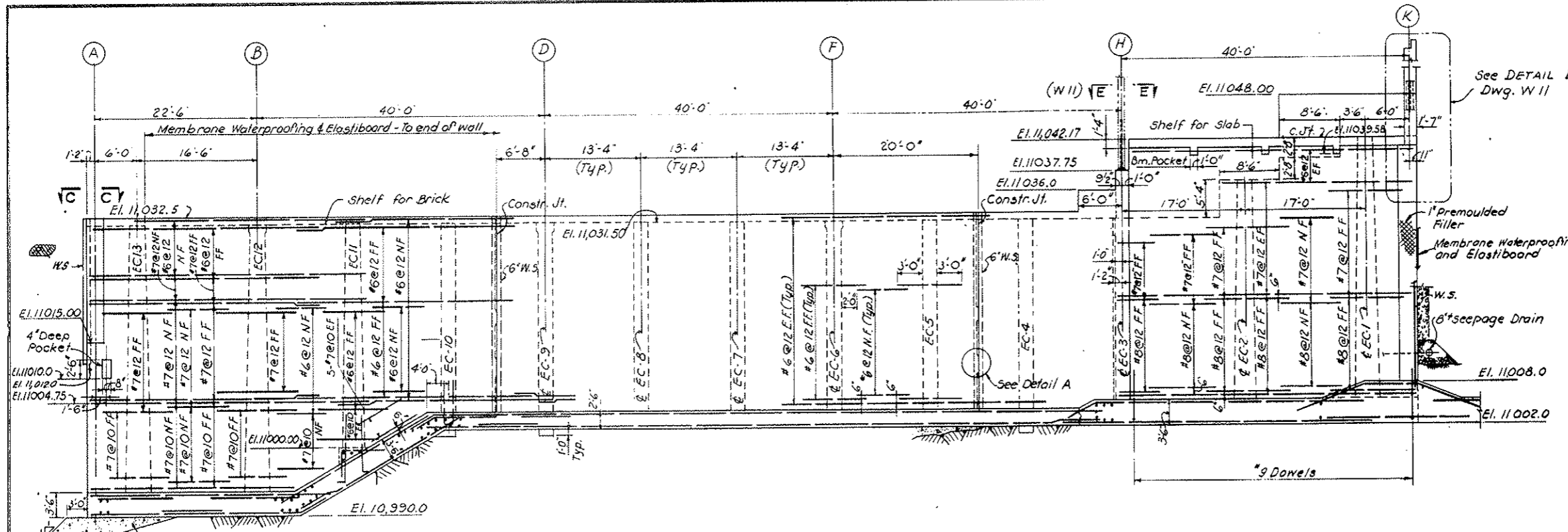
NOTES

1. For General Notes see Dwg. WE1.
2. Footings to be constructed on sound rock.
3. For Anchor Bolts and Bearing Plates for columns and Beams, see Structural Steel Drawings.
4. Dovetail Anchor Slots for brick not shown.
5. Membrane Waterproofing and Elastiboard shall terminate at the bottom, one foot below the top of slab inside the Building and at the top as shown on Dwg. A-WE1. At other ends the membrane shall terminate in a reglet.
6. For Grading see Dwg. G4-4.
7. Embankment behind walls is to be constructed with moisture and density control.
8. For excavation payment lines see Dwg. WE-3.
9. Membrane waterproofing shall extend 3' along E.F. of counterforts and around pedestals.
10. For Seepage Drain Inverts see Dwg. E-1.

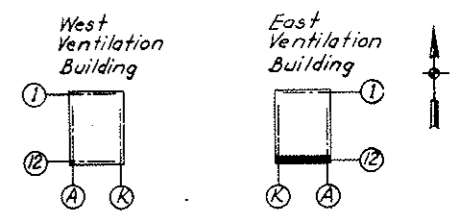
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL EAST VENTILATION BUILDING NORTH WALL - PLAN AND ELEVATION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: P.S.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: W.J.K.	CHECKED: E.R.S. & P.S.	APPROVED: <i>[Signature]</i>			
SUBMITTED: <i>[Signature]</i>			DRAWING NO.		
		SCALE: 1/8" = 1'-0"		DATE: AUG. 1967	
			S-E18		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	173	326

REVISED DRAWING NO. 10-26-78

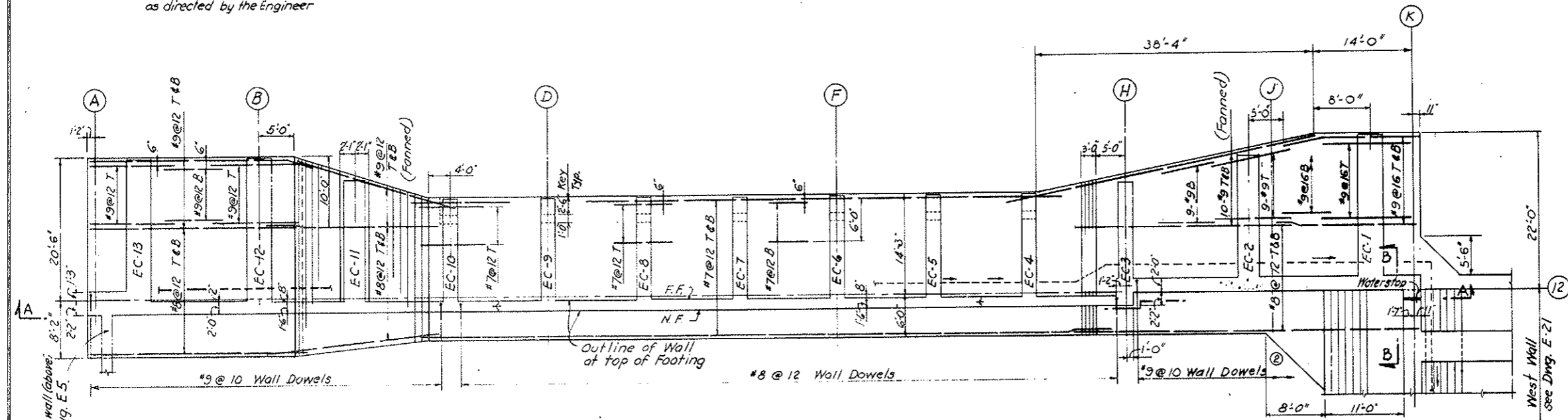


ELEVATION A-A

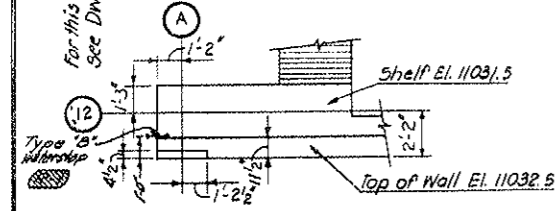


KEY PLAN
AS CONSTRUCTED
NO REVISIONS DATE 10-26-78

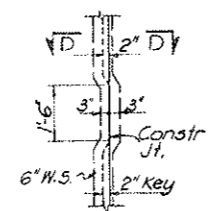
- NOTES
1. For General Notes see Dwg. WE1.
 2. Footings to be constructed on sound rock.
 3. For additional applicable notes see dwg. E18.
 4. For Counterforts and additional Wall details see Dwg. E20.
 5. For seepage drain inverts, see Dwg. E1.



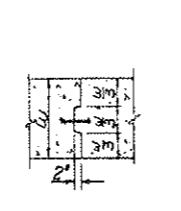
FOOTING PLAN



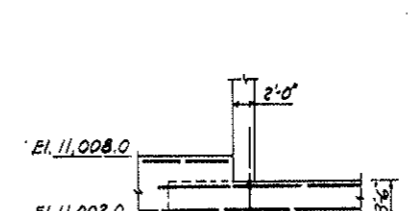
SECTION C-C
SCALE: 1/4" = 1'-0"



DETAIL A
SCALE: 3/8" = 1'-0"



SECTION D-D
SCALE: 3/8" = 1'-0"



SECTION B-B

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

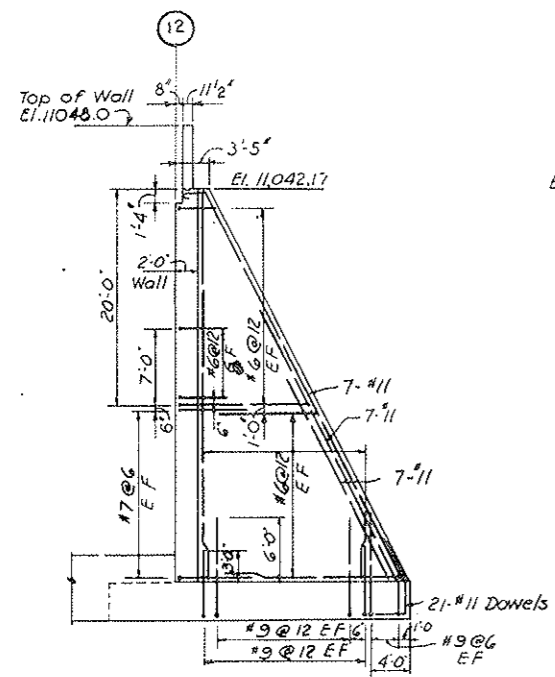
STRUCTURAL
EAST VENTILATION BUILDING
SOUTH WALL - PLAN AND ELEVATION

TIPPETTS · ABBETT · MCCARTHY · STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

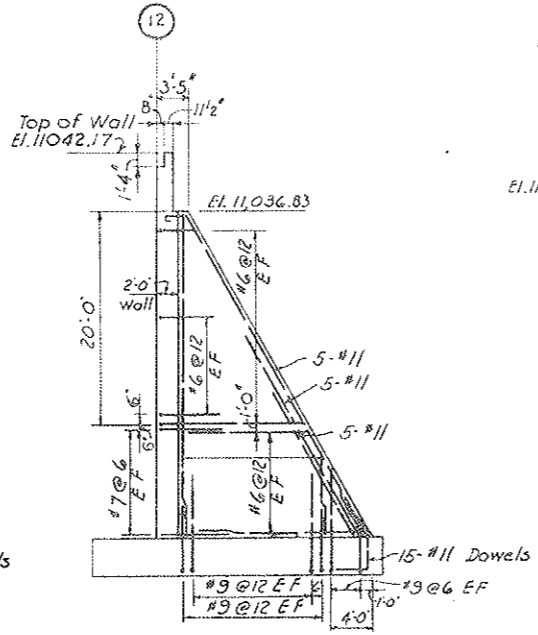
DESIGNED: P.S.
DRAWN: W.J.K.
CHECKED: E.R.B., P.S.
SUBMITTED: K. Anderson, P.E.

RECOMMENDED: R. W. ...
APPROVED: Frank ...

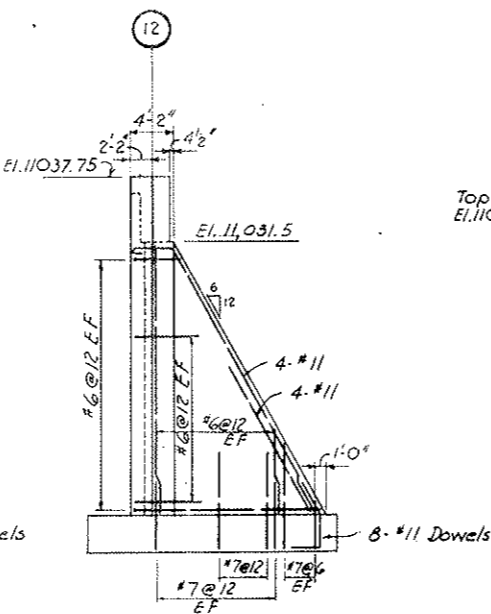
DRAWING NO. S-E19
SCALE: 1/8" = 1'-0" DATE: AUG. 1987
NEW YORK, N. Y.



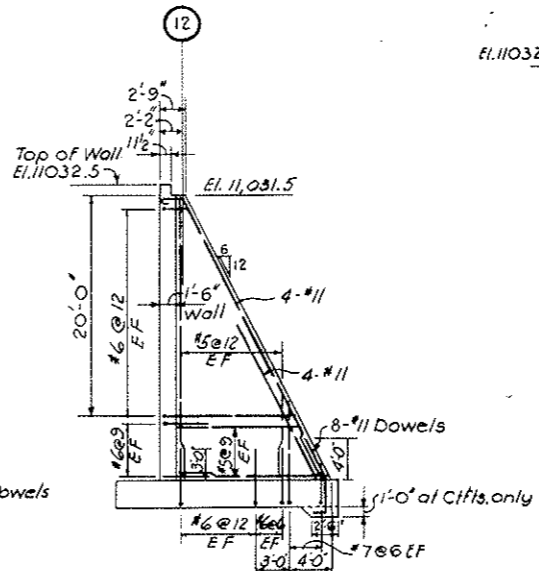
EC-1



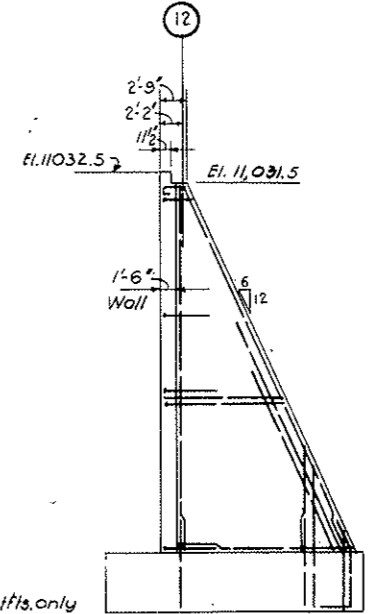
EC-2



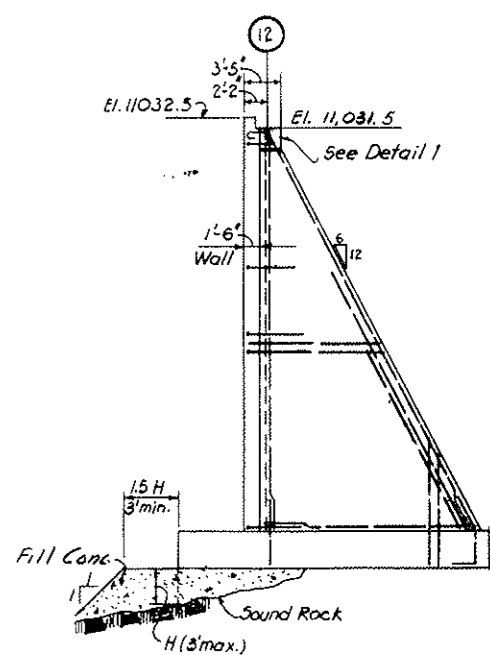
EC-3



EC-4,5,7,8,10 AS SHOWN
EC-6,9 SIMILAR EXCEPT AS SHOWN IN DETAIL I

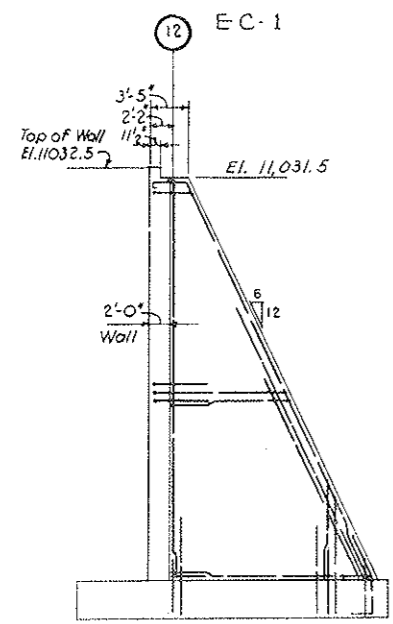


EC-11
Reinf similar to EC-1

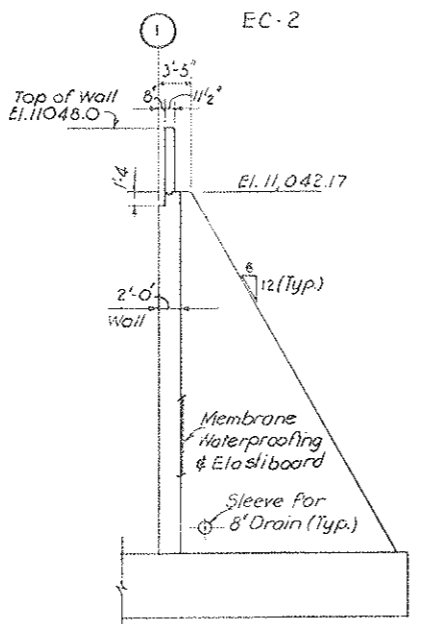


EC-12
Reinf similar to EC-1

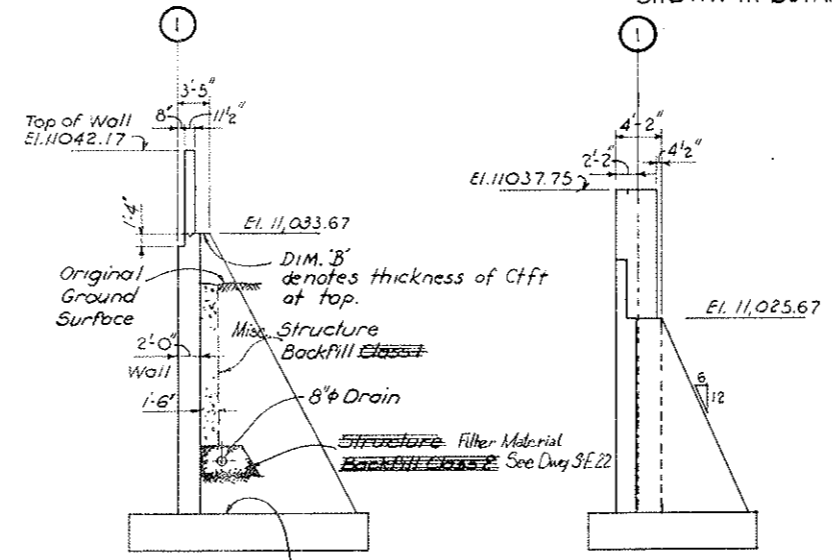
AS CONSTRUCTED
REVISED DATE 10-26-73



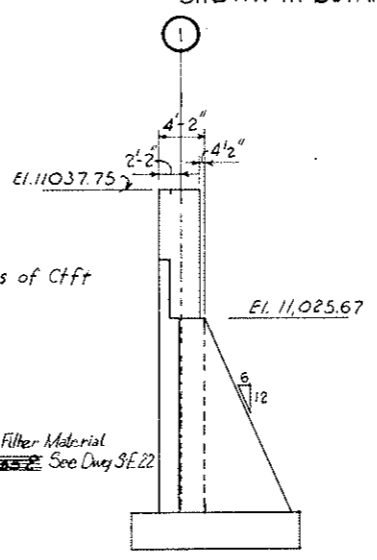
EC-13
Reinf similar to EC-1



EC-14
Reinf similar to EC-1



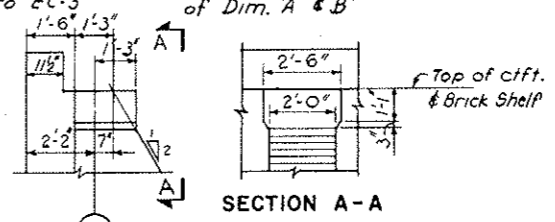
EC-15
Reinf similar to EC-2



EC-16
Reinf similar to EC-3

COUNTERFORT	DIM. 'A'	DIM. 'B'
EC-1	3'-6"	2'-0"
-2	3'-0"	2'-0"
-3	2'-0"	2'-0"
-4	2'-0"	2'-0"
-5	2'-0"	2'-0"
-6	2'-0"	Def. 1
-7	2'-0"	2'-0"
-8	2'-0"	2'-0"
-9	2'-0"	Def. 1
-10	2'-0"	2'-0"
-11	3'-0"	2'-0"
-12	3'-6"	Def. 1
-13	3'-6"	2'-0"
-14	3'-6"	2'-0"
-15	3'-0"	2'-0"
EC-16	2'-0"	2'-0"

NOTE:
See EC-15 for explanation of Dim. 'A' & 'B'



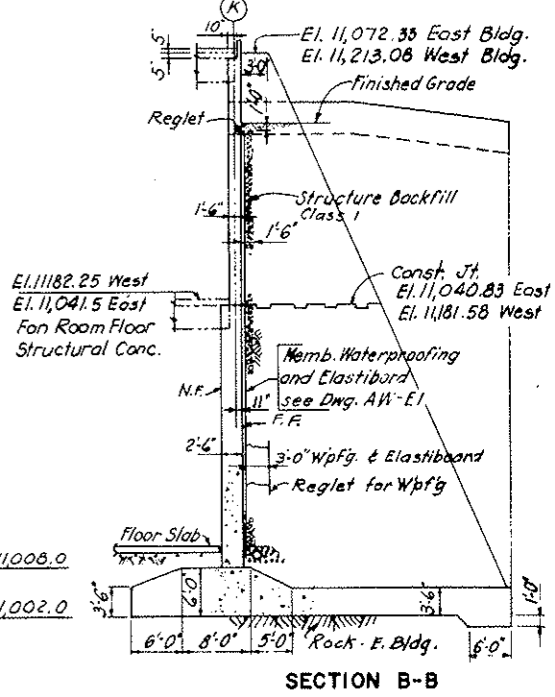
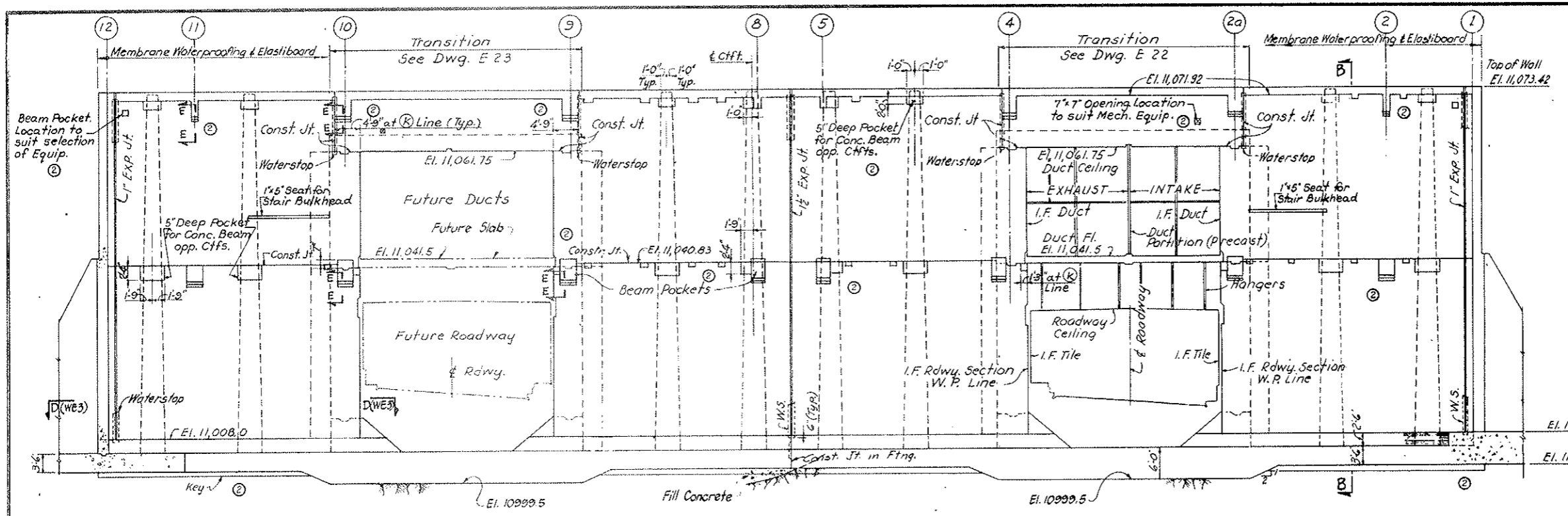
DETAIL I
SCALE 3/8"=1'-0"

- NOTES**
- For General Notes see Dwg. WE-1.
 - Work this Dwg with Dwgs. E-18, E-19.
 - For additional applicable notes see Dwg. E-18.
 - For elevations of top of Footings see Dwgs. E-18, E-19.

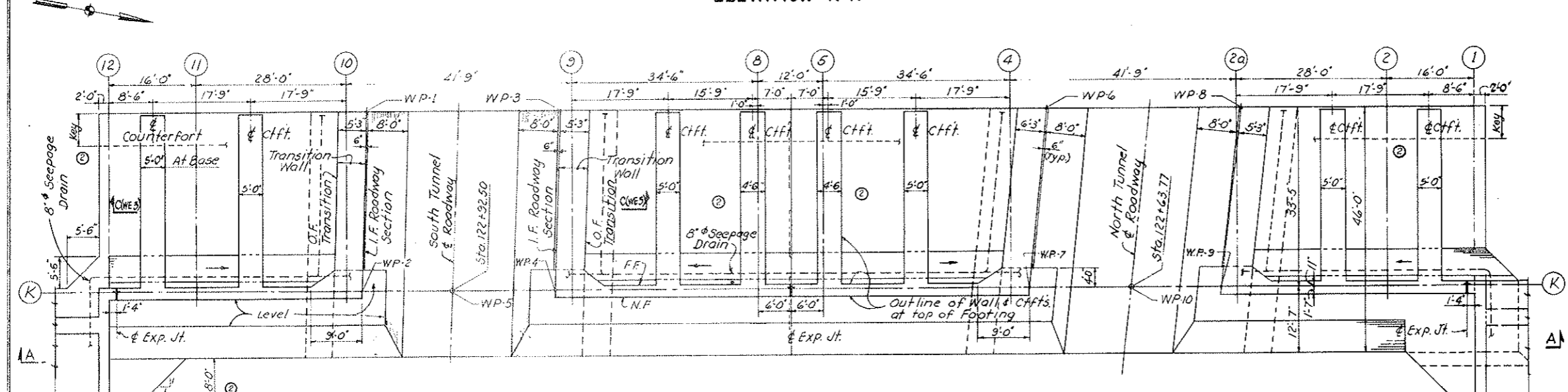
DESIGNED: P.S.		RECOMMENDED: [Signature]	
DRAWN: W.J.K.		APPROVED: [Signature]	
CHECKED: E.R.S., P.S.		DATE: AUG 1967	
SUBMITTED: [Signature]		DRAWING NO. S-E 20	

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
STRUCTURAL
EAST VENTILATION BUILDING
NORTH AND SOUTH WALLS - COUNTERFORTS
TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	175	326



ELEVATION A-A

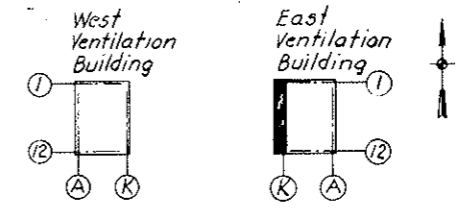


FOOTING PLAN

ROADWAY WORKING POINTS		
COORDINATES		
WP-1	N 672,670.48	E 1,887,341.61
2	N 672,676.71	E 1,887,374.45
3	N 672,705.29	E 1,887,333.47
4	N 672,711.24	E 1,887,366.88
5	N 672,693.08	E 1,887,370.86
6	N 672,793.22	E 1,887,314.68
7	N 672,797.27	E 1,887,348.00
8	N 672,828.13	E 1,887,307.02
9	N 672,831.94	E 1,887,340.40
WP-10	N 672,815.50	E 1,887,344.00

- NOTES:
- For General Notes see Dwg. WE-1
 - Footing to be constructed on rock
 - Memb. Wpfg. & Elastiboard shall extend from El. 11,011.0 to 1' below finished grade on the F.F. of wall and along the transition walls for 8' from "K" line.
 - For additional applicable notes see dwg. S-E18
 - For reinforcement see dwg. S-WE3
 - Fill concrete to be placed as directed by Engineer.
 - Memb. Waterproofing and Elastiboard shall extend 3' along each face of counterforts.
 - For Seepage Drain Inverts see Dwg. E1
 - For Section E-E, see Dwg. S-WE5.
 - For Details of Beam Pockets for Structural Steel see Dwg. S-WE5.

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

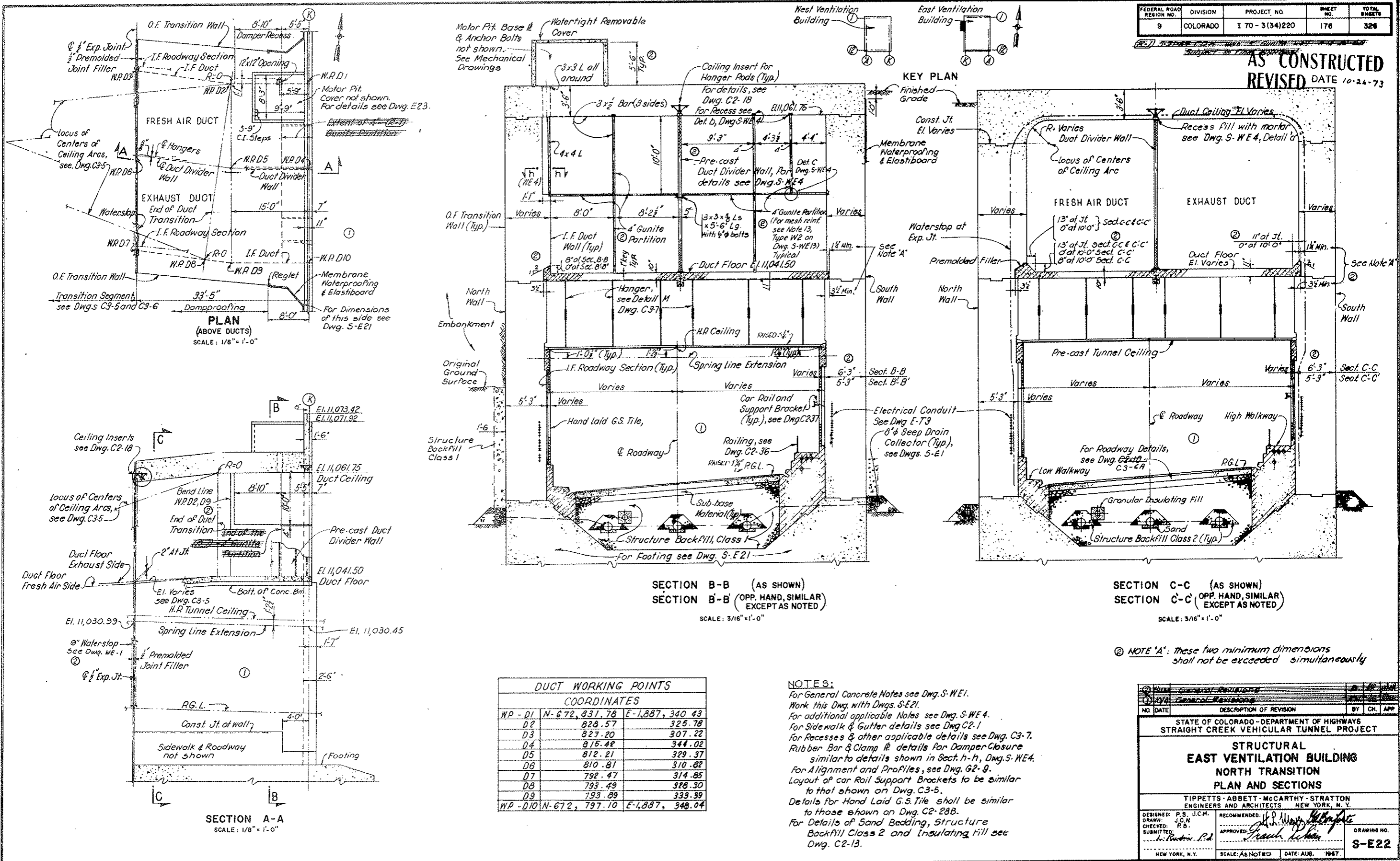


KEY PLAN

Add'l. Dim. 25' Seepage Drain opening, Seal 1/2" for Bulkhead, transitions with thickness 1/2" corner & CFT thickness 1/2" for General Restraints	NO. DATE DESCRIPTION OF REVISION BY CH. APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT	
STRUCTURAL EAST VENTILATION BUILDING WEST WALL - PLAN AND ELEVATION	
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.	
DESIGNED: P.S. DRAWN: W.J.K. CHECKED: E.R.S., P.S. SUBMITTED: L. R. ...	RECOMMENDED: [Signature] APPROVED: [Signature] DATE: AUG. 1967
NEW YORK, N. Y.	DRAWING NO. S - E 21

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	176	326

AS CONSTRUCTED
REVISED DATE 10-26-73



DUCT WORKING POINTS		
COORDINATES		
WP - D1	N-672, 331.78	E-1,887, 340.43
D2	828.57	325.78
D3	827.20	307.22
D4	815.48	344.02
D5	812.21	329.37
D6	810.81	310.82
D7	792.47	314.85
D8	793.49	328.30
D9	793.89	339.39
WP - D10	N-672, 797.70	E-1,887, 348.04

NOTES:
 For General Concrete Notes see Dwg. S-WE1.
 Work this Dwg. with Dwg. S-E21.
 For additional applicable Notes see Dwg. S-WE4.
 For Sidewalk & Gutter details see Dwg. C2-1.
 For Recesses & other applicable details see Dwg. C3-7.
 Rubber Bar & Clamp details for Damper Closure similar to details shown in Sect. h-h, Dwg. S-WE4.
 For Alignment and Profiles, see Dwg. G2-9.
 Layout of Car Rail Support Brackets to be similar to that shown on Dwg. C3-5.
 Details for Hand Laid G.S. Tile shall be similar to those shown on Dwg. C2-28B.
 For Details of Sand Bedding, Structure Backfill Class 2 and Insulating Fill see Dwg. C2-13.

NOTE 'A': These two minimum dimensions shall not be exceeded simultaneously

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL EAST VENTILATION BUILDING NORTH TRANSITION PLAN AND SECTIONS

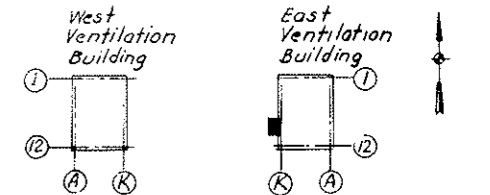
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: P.S. J.C.M.
 DRAWN: J.C.M.
 CHECKED: P.S.
 SUBMITTED: K. R. ...

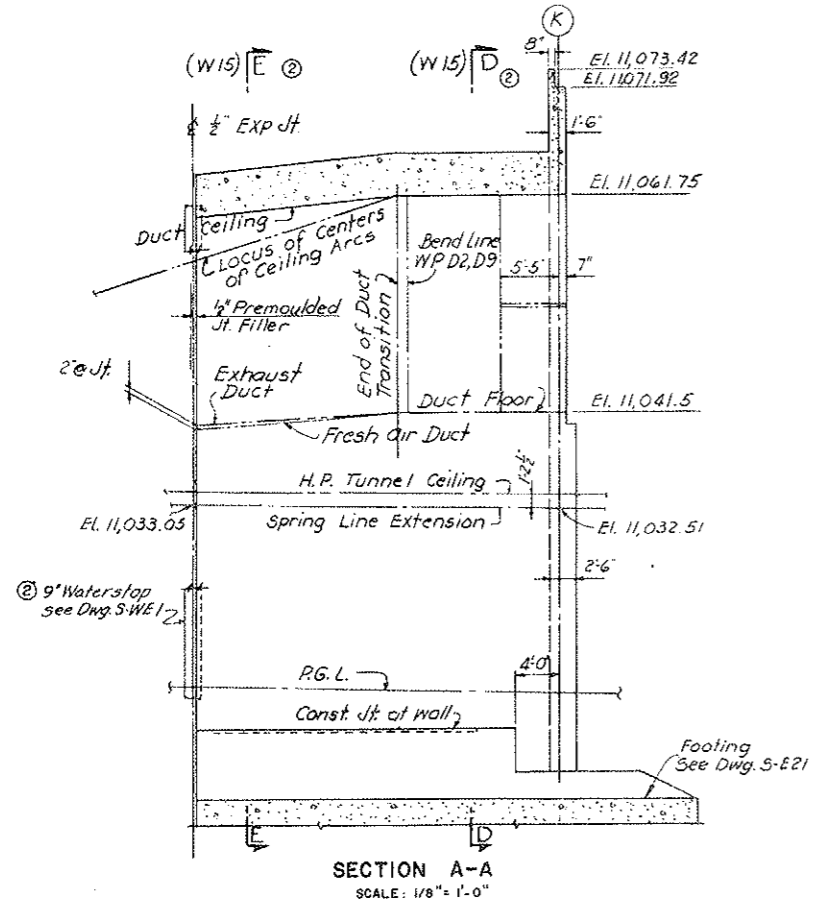
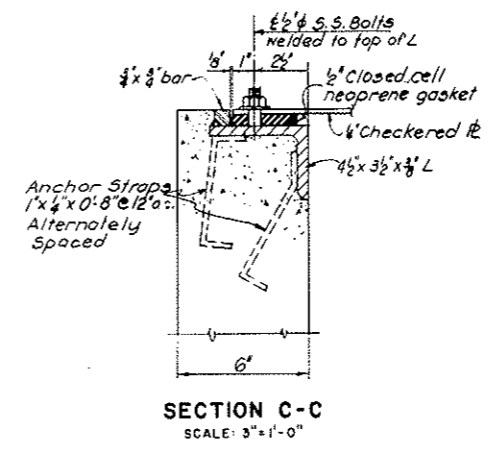
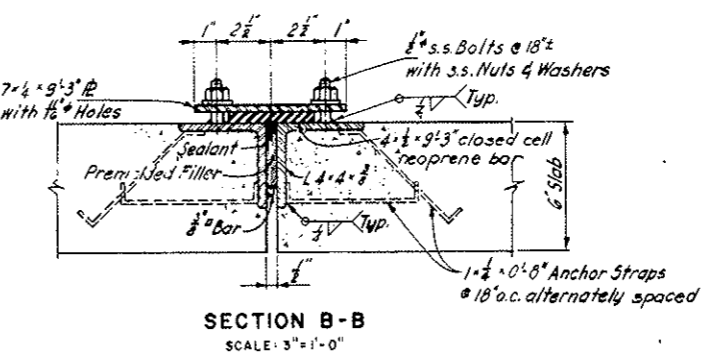
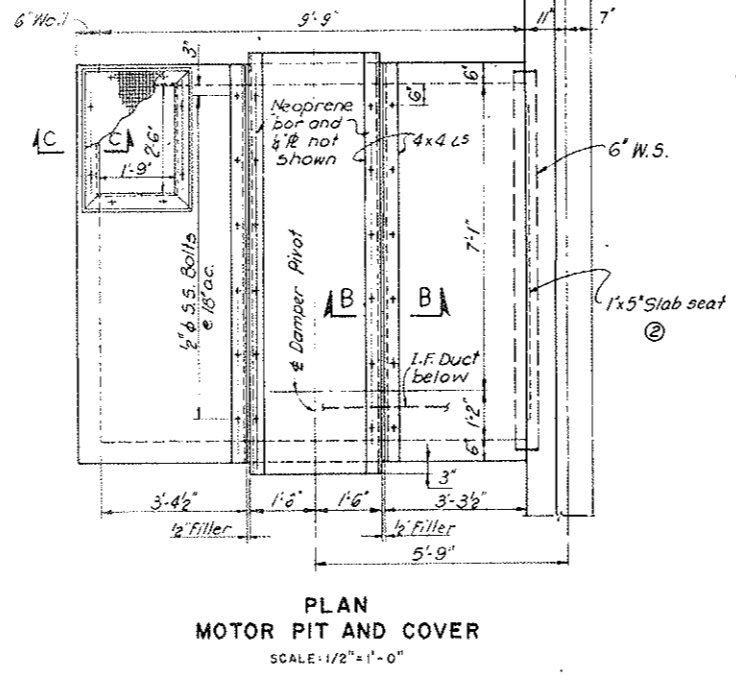
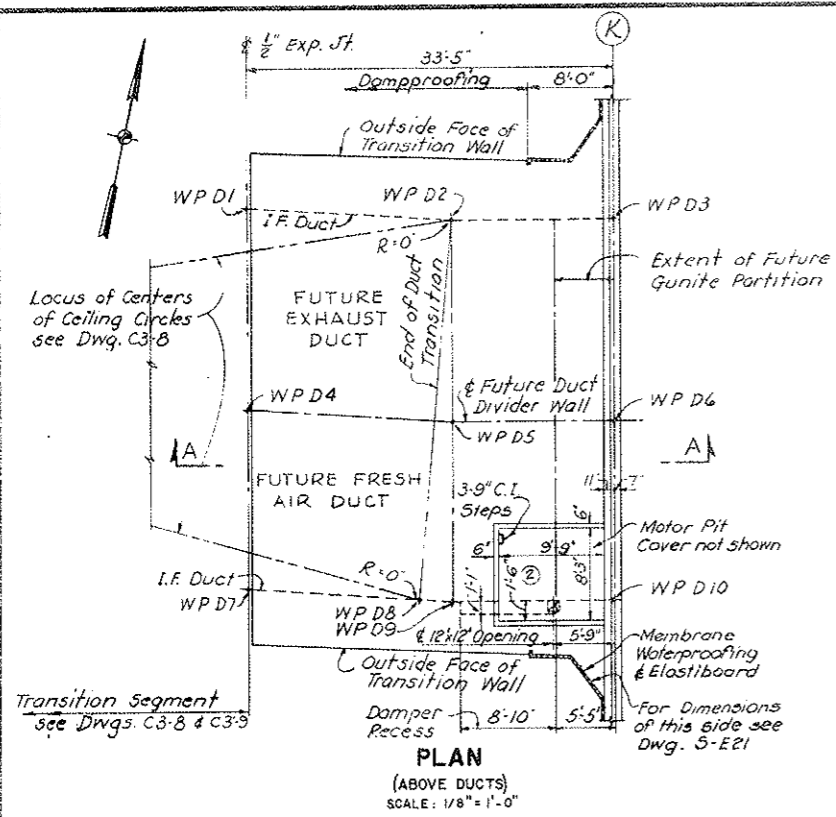
RECOMMENDED: ...
 APPROVED: ...
 DRAWING NO. S-E22

NEW YORK, N. Y. SCALE: AS NOTED DATE: AUG. 1967.

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	177	326



KEY PLAN
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



DUCT WORKING POINTS COORDINATES		
WP-D1	N 672,705.41	E 1,887,333.94
-D2	N 672,708.27	E 1,887,352.17
-D3	N 672,711.48	E 1,887,366.82
-D4	N 672,687.11	E 1,887,337.96
-D5	N 672,689.95	E 1,887,356.19
-D6	N 672,693.16	E 1,887,370.84
-D7	N 672,670.75	E 1,887,341.55
-D8	N 672,673.13	E 1,887,356.80
-D9	N 672,673.59	E 1,887,359.78
WP-D10	N 672,676.80	E 1,887,374.43

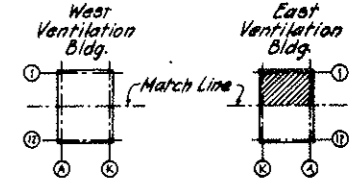
NOTES:
 For applicable notes see Dwg. E 22.
 For alignment and profile see Dwg. G 2-9.
 Provide all recesses, embedded metal inserts, etc. necessary for the construction of the future Roadway & Ducts.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT		
STRUCTURAL		
EAST VENTILATION BUILDING		
SOUTH TRANSITION - PLAN AND SECTIONS		
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.		
DESIGNED: P.S. DRAWN: W.J.K. CHECKED: E.R.S., R.S. SUBMITTED: L. R. ...	RECOMMENDED: [Signature] APPROVED: [Signature]	DRAWING NO. S-E 23
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUG. 1967		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	178	326

Rev. 11-6-67 C.D.H. Add note at bottom

AS CONSTRUCTED
REVISED DATE 10-26-73



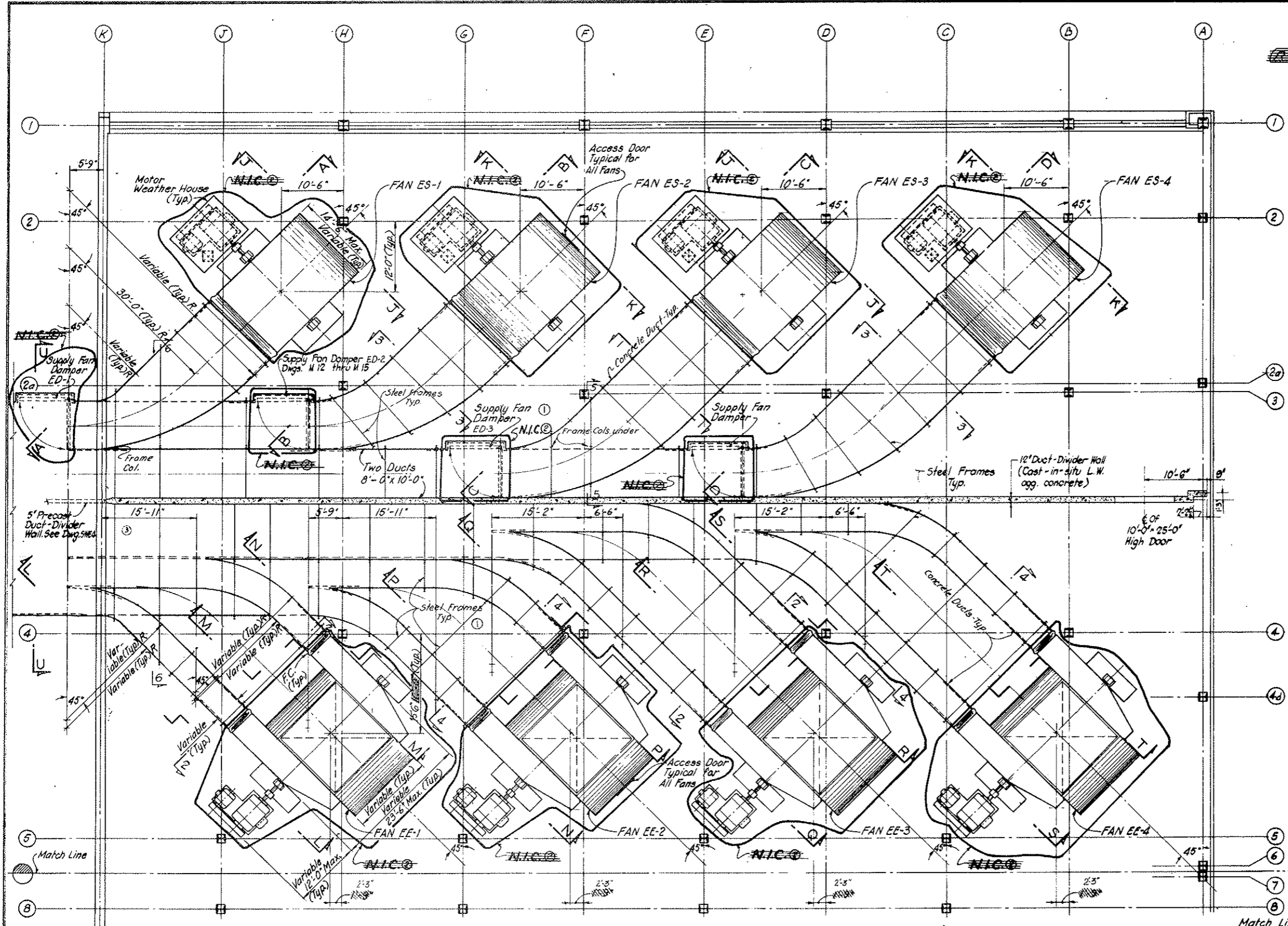
KEY PLAN

NOTES:

1. For Sections 1 thru 6 and Details of Duct-Divider Wall see Dwg. SWE 13 and SWE 14.
2. For other Sections and layout of Fan-Ducts see Dwg. M 1.
3. Location of steel frames are shown for guidance only. Max. spacing of frames not to exceed 7'-6". Final spacing of frames to be approved by the Engineer.
4. All Fan-Ducts to be made of gunite.
5. For Fan Damper Details see Dwg. M12 thru M15.
6. For location of access doors to fan ducts see Dwg. M1.
7. See Sheet No 178 AX for Duct Layout.

NOTE A

Tunnel Ventilation System (Bid Item 165) revised See W.O. 14153 & Spec. 11A. For N.I.C. items see the Mechanical drawings.
 All concrete work required for equipment support as well as the concrete ducts remain in this contract. Construction of the Swave Stack Roof Frame, Concrete Duct Work within the Ventilation Buildings, Fan & Motor Concrete Bases and Anchor Bolts, shall be executed according to details furnished by the Fan Manufacturer under separate contract.



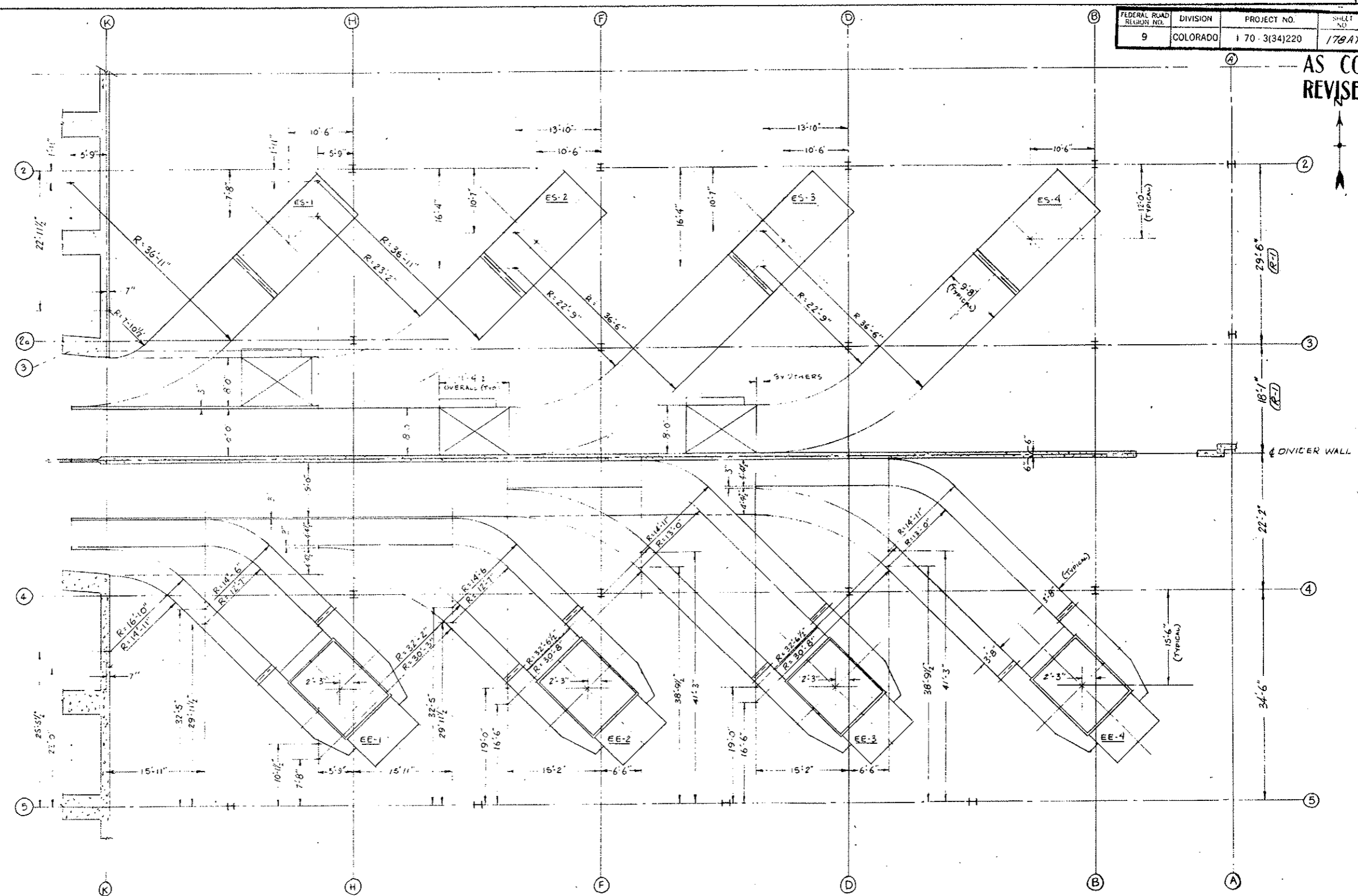
PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL EAST VENTILATION BUILDING FAN ROOM FLOOR NORTH PLAN OF FAN DUCTS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: S.D.S.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. S-E24			
DRAWN: D.K.	CHECKED: F.R.W.	SCALE: 1/8" = 1'-0" DATE: AUG 1967			
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	NEW YORK, N. Y.			

TUNNEL VENTILATION SYSTEM REV. W.O. 14153, SEE SPEC. 11A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	178AX	

AS CONSTRUCTED
 REVISED DATE 10-24-73



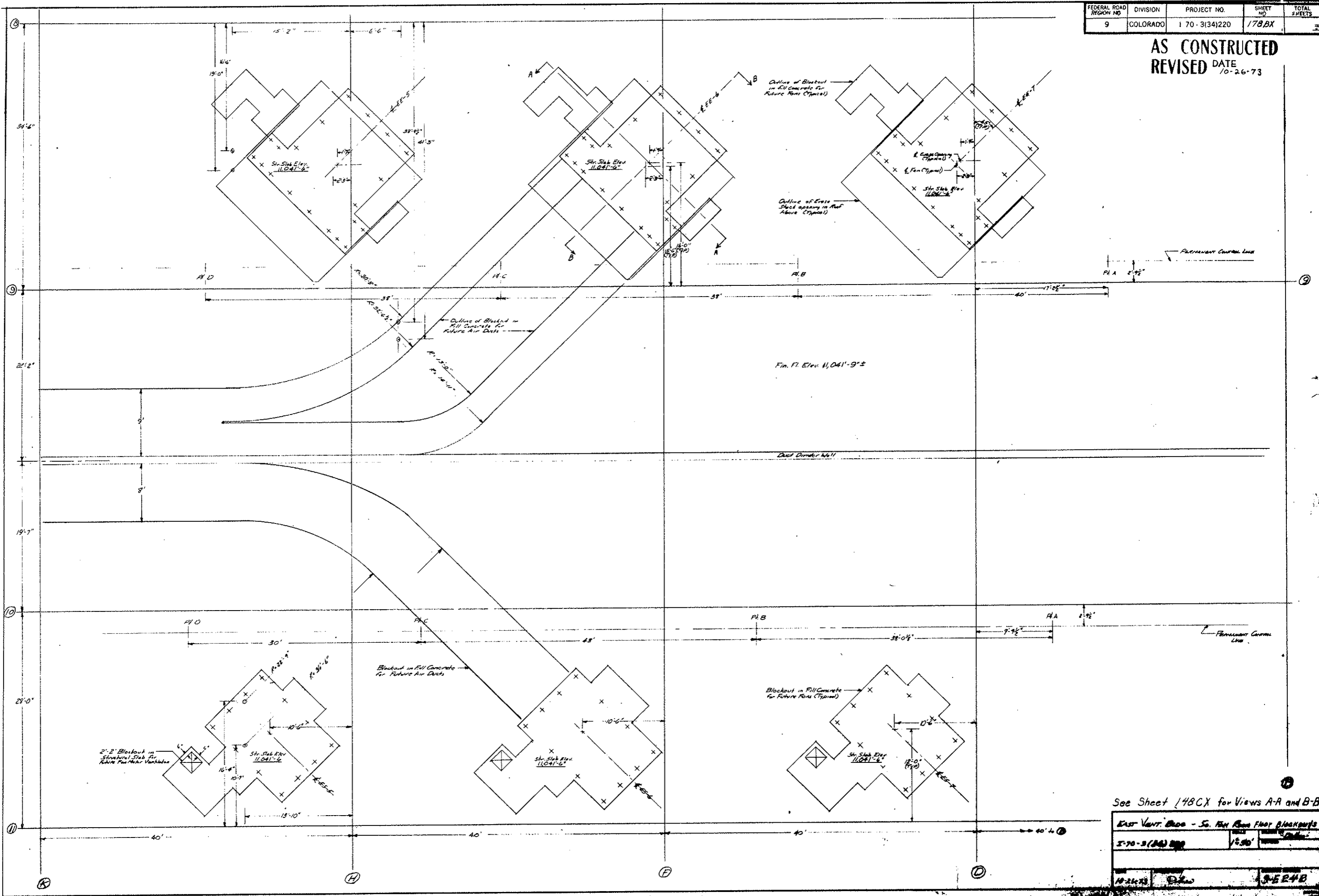
- NOTES:
- All dimensions pertaining to ducts are inside (air-side).
 - Refer to assembly dwgs 503-00-3075, 3076, 3077, & 3114 for equipment dimensions and location of inlet and outlet flanges with respect to fan centerlines.
 - Allow 6" min. between flanges and ducts for flexible connections.
 - Location (East-West) of damper door support structures by others.
 - Do not scale dimensions.

See Sheets 178CX and 178DX for Fan Base Details

Concrete Duct Layout East Ventilation Building	9/17/73-5 10/31/73	Revised 10/31/73	Drawing No. S-E24A
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FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	178 BX	

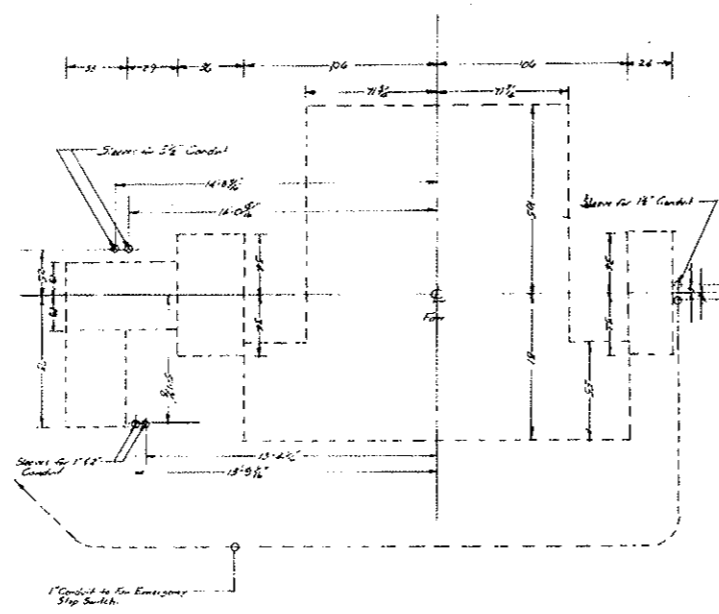
AS CONSTRUCTED
REVISED DATE 70-26-73



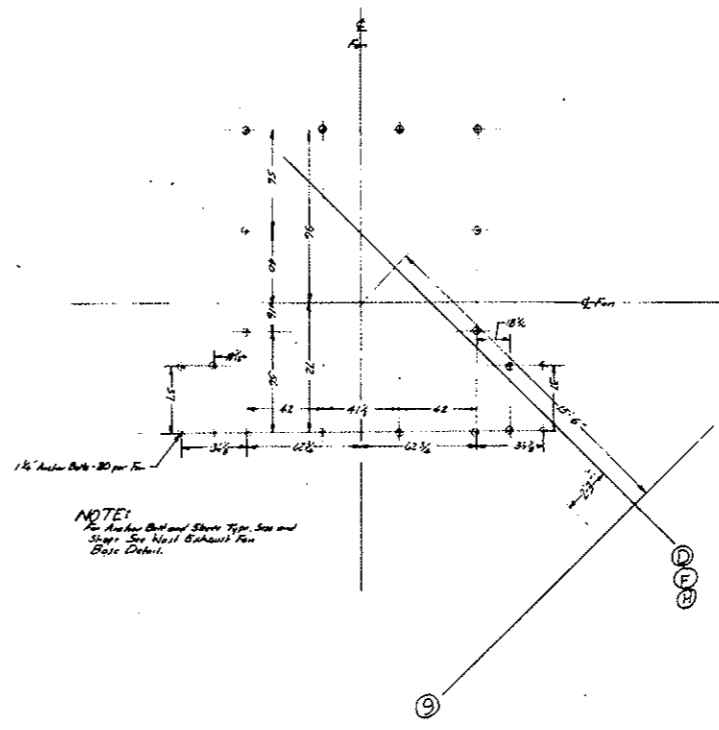
See Sheet 178CX for Views A-A and B-B

East Vent. Blows - So. Fan Room Floor Blockouts	
170-3(34)220	1/250'
178 BX	3-2-73

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I-70-3(34)220	178CX	

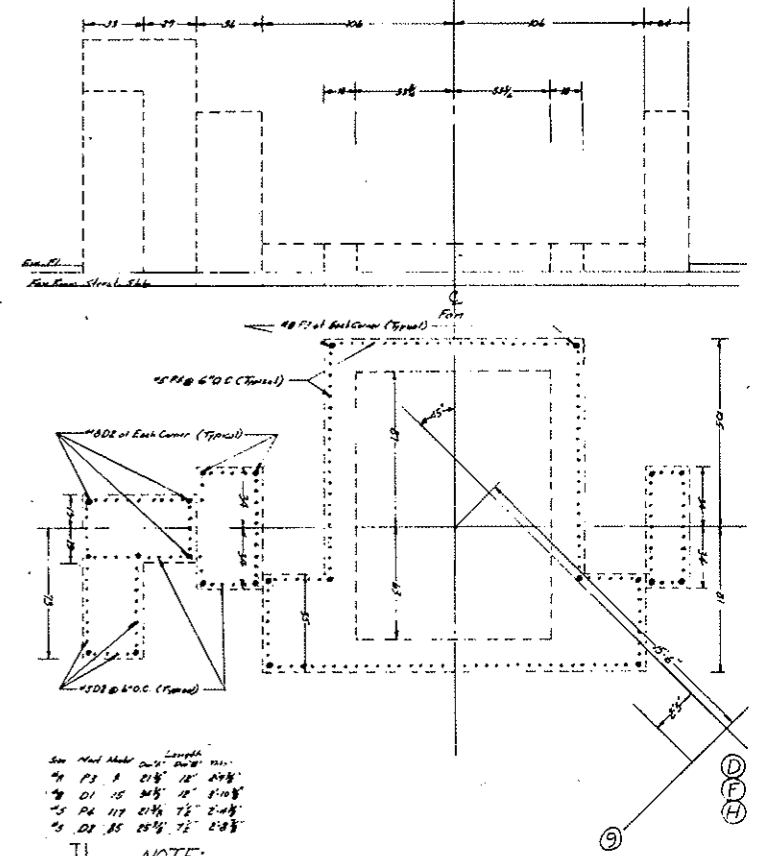


I-70-3 (34) 220
FANS EE-5 THRU EE-7 (SOUTH)
CONDUIT & CONDUIT SLEEVE LOCATIONS
EAST VENTILATION BUILDING



NOTE:
See Anchor Bolt and Sleeve Type, Size and Spacing See Next Sheet for Fan Base Detail.

I-70-3 (34) 220
FANS EE-5 THRU EE-7 (SOUTH)
ANCHOR BOLT LOCATIONS
EAST VENTILATION BUILDING



See Next Sheet for Length

Re-Bar	Length
#4	12' 0"
#4	12' 0"
#4	12' 0"
#4	12' 0"
#4	12' 0"

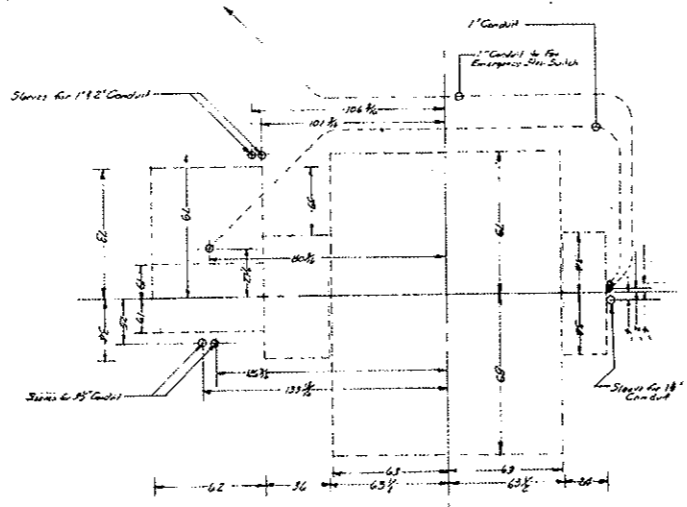
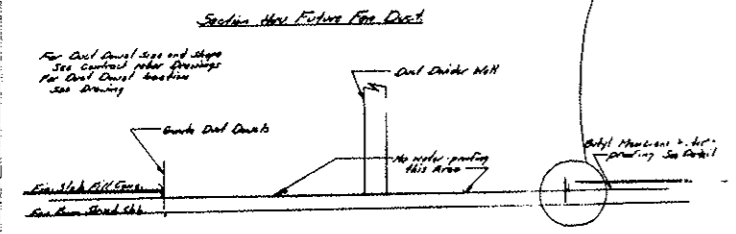
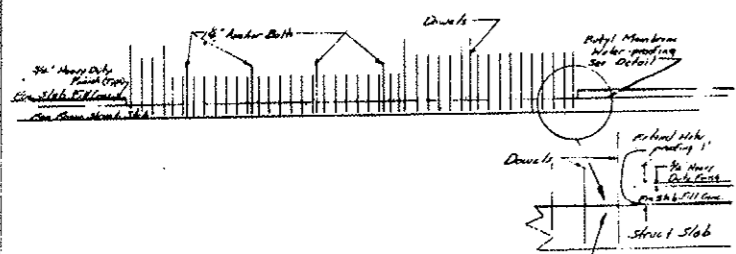
NOTE:
Re-Bar Clearance shall be 2" from Dimension Given.

I-70-3 (34) 220
FANS EE-5 THRU EE-7 (SOUTH)
RE-BAR DOWEL LOCATION
EAST VENTILATION BUILDING

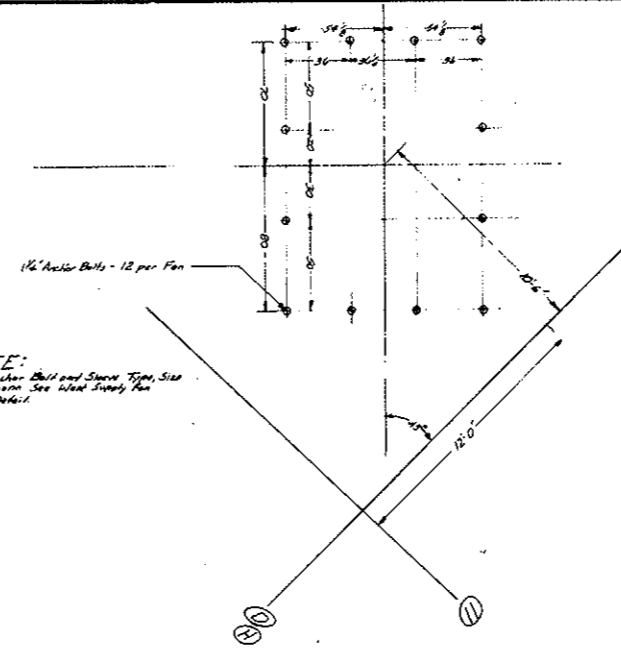
AS CONSTRUCTED
REVISED DATE 10-26-73

East Exhaust Fan Base Detail	
DATE: 10-26-73	DESIGNED BY: D. Snow
DRAWN BY: [Signature]	
I-70-3 (34) 220	5-E24C

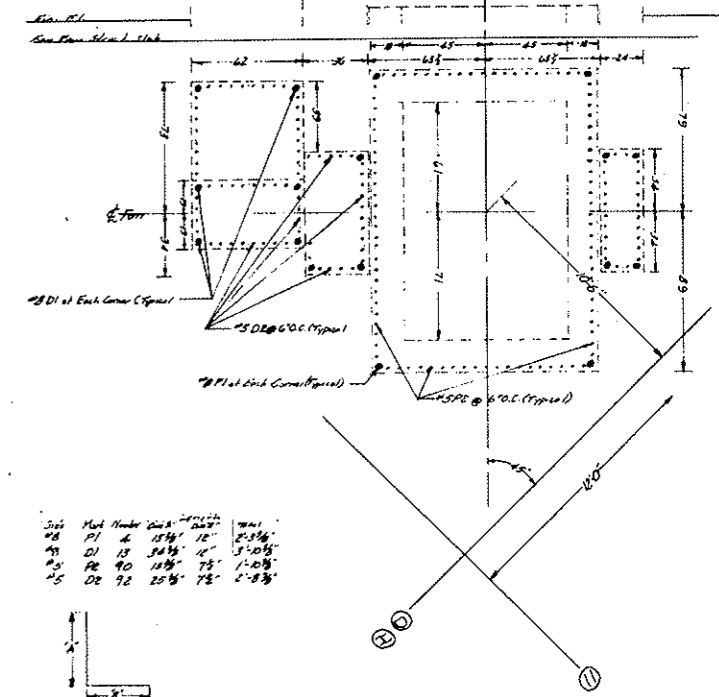
EAST AND WEST VENTILATION BUILDINGS
SOUTH PORTIONS
Section thru Base of Future Fans



NOTE:
For Anchor Bolt and Sleeve Type, Size and Shape See Weld Supply Fan Base Detail



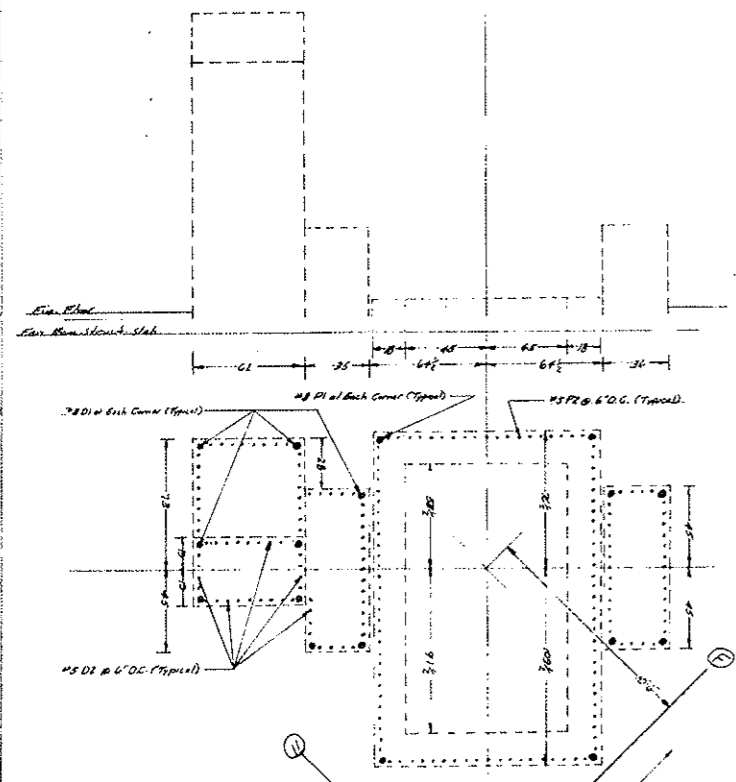
I-70-3(34)220
FANS ES-5 & ES-7 (SOUTH)
ANCHOR BOLT LOCATIONS
EAST VENTILATION BUILDING



Size	Material	Quantity	Weight
#3	PI 4	18'	2.35'
#3	DI 14	36'	5.10'
#3	PI 90	15'	1.10'
#3	DI 92	25'	2.85'

NOTE:
Re-bar Clearance shall be 24" from dimensions given.

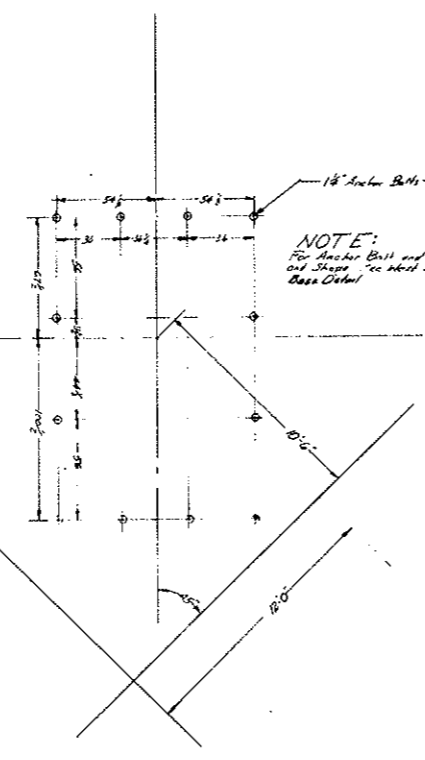
I-70-3(34)220
FANS ES-5 & ES-7 (SOUTH)
RE-BAR DOWEL LOCATIONS
EAST VENTILATION BUILDING
AS CONSTRUCTED
REVISED DATE 10-26-73



Size	Material	Quantity	Weight
#3	PI 4	18'	2.35'
#3	DI 14	36'	5.10'
#3	PI 90	15'	1.10'
#3	DI 92	25'	2.85'

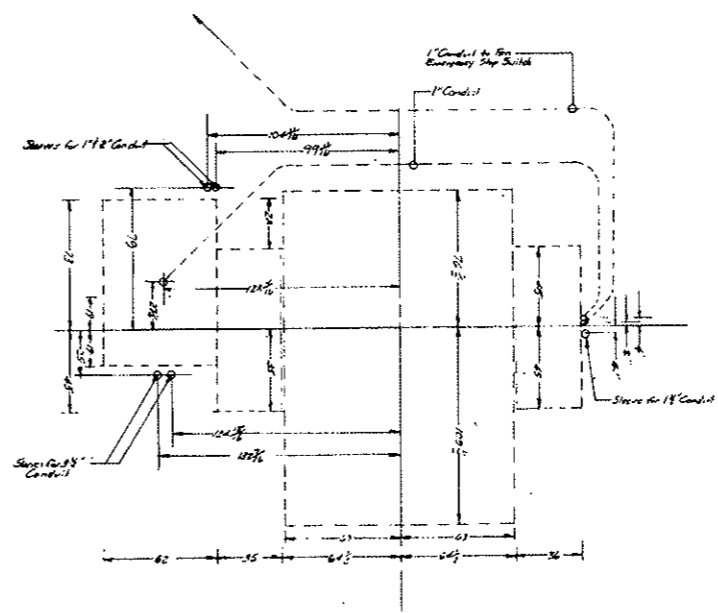
NOTE:
Re-bar Clearance shall be 24" from dimensions given.

I-70-3(34)220
FAN ES-6 (SOUTH)
RE-BAR DOWEL LOCATIONS
EAST VENTILATION BUILDING



NOTE:
For Anchor Bolt and Sleeve Type, Size and Shape See Weld Supply Fan Base Detail

I-70-3(34)220
FAN ES-6 (SOUTH)
ANCHOR BOLT LOCATIONS
EAST VENTILATION BUILDING



I-70-3(34)220
FAN ES-6 (SOUTH)
CONDUIT & CONDUIT SLEEVE LOCATIONS
EAST VENTILATION BUILDING

East Supply Fan Base Detail		DATE: 10-26-73	APPROVED BY: D. Law	DRAWN BY: D. Law
I-70-3(34)220				S-E 24 D

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	179	326

GENERAL NOTES

- A. SPECIFICATIONS**
 The design, fabrication and erection shall conform to the applicable requirements of the following codes, as amended to date:
1. Denver Building Code
 2. AASHO Standard Specifications for Highway Bridges
 3. A.I.S.C. Manual
 4. A.C.I. Building Code
 5. A.W.S. - Welding Code for Building

B. FOUNDATION NOTES

1. The principal building foundations are designed for a bearing pressure of 7 1/2 tons per square foot on rock or undisturbed soil. Roadway and walkway footings and other minor footings may rest on well-compacted backfill.
2. Use concrete fill to provide level bearing surfaces for wall or column footings on rock where required.
3. Bottom of wall and column footings bearing on earth are to be carried ten feet ± below roadway floor grade or outside finished grade to provide for frost conditions, unless otherwise shown.
4. Concrete shall not be poured on frozen ground. Frozen soil shall be completely removed (not by explosive or similar means) and replaced by Class 1 backfill compacted to a minimum of 95% of maximum dry density as determined in accordance with AASHO designation T 180-57 (Modified).

C. DESIGN LOADINGS

1. Dead Loads

a. Roof	
Concrete fill & roofing =	40
5" concrete slab =	65
Mechanical ducts =	7
Total	110 PSF
b. Fan Room Floor	
Concrete pads	50
Concrete fill	40
8" concrete slab	100
Mech. ducts	10
Total	200 PSF
Over Roadway	
Hung ceiling	50
Concrete fill	40
8" concrete slab	100
Mech. ducts	10
Total	200 PSF

c. Concrete fill in Control Room 80 PSF
 Note: Add weight of stone concrete fireproofing for beam and column design.

2. Live Loads

- Roof = 70 PSF snow load or 2K wheel load of snow-removing equipment.
- Fan Room Floor slabs = 325 PSF (includes weight of fan-duct walls) beams & girders = 250 PSF; or concentrated 5K wheel load or jib crane or fan motors load
- Stairs and Control Room - 100 PSF
- Structural Ceilings - 50 PSF
- Roadway Floor over Water Treatment Level (East Vent. Slab) - H 20-S16 AASHO Loading or 250 PSF Uniform load

3. Lateral Loads (Working stresses increased by 50%)

- Wind pressure = 40 PSF
- Earthquake forces for Zone I area - refer to Denver Building Code for earthquake factors

D. REINFORCED CONCRETE

1. Strength of Concrete

Concrete for the various parts of the buildings shall have a minimum ultimate compressive strength of twenty-eight (28) days and be of the classes shown in the following table:

Class & Type	Min. Ult. Comp. Stress	Location or Usage
B-1 Stone Concrete	4000 psi	Roof & floor slabs; Struct. steel fireproofing; Roadway fl. sl. & beams over water treatment level.
B-2 Stone Concrete	4000 psi	Walls, footings, columns and pedestals.
B-3 Stone Concrete	3000 psi	Sidewalks & walkways, slabs on grade & equipment bases, roadway base slabs
B-4 Stone Conc.	2500 psi	Fill under footings
B-5 Stone Conc.	2500 psi	Floor and roof fill
B-7 Lightweight Conc.	4000 psi	Duct divider wall, control room ceiling slab, precast duct-divider wall.
B-8 Gunitite	5000 psi	Fan room floor & Transition duct walls

① B-6 (See Sect. E-E on S-WE16) Temp. slab cover for 2000psi room slack opening

② Reinforcing Steel: (See Specs. for designation)
 a. Bars: Intermediate grade, billet-steel deformed bars, AASHO M31 (fs-20,000psi)
 b. Wire Mesh: Welded wire fabric AASHO M55 (fs-30,000psi)

③ Details and Placement: Reinforcement detailing and placement, unless otherwise indicated, shall conform to ACI 315 and ACI 318.
 a. All bars marked continuous shall be lapped at splices and corners and hooked at non-continuous ends.
 b. Splice - lap 30 bar dia. unless otherwise noted. Splices of adjacent rods shall be staggered.

④ c. Provide min. temperature reinf. of #4@15 in slabs.
 d. Where beams, girders or supporting walls run parallel to principal slab reinf., provide transverse negative steel equal to the temperature reinf. (min. #4@12) and extending 2'-6" min. beyond face of support unless noted otherwise.
 e. For typical details see Dwg. S-WE 1, S-WE 15 and S-WE 16.
 f. For Reinforcing Bar Note see Dwg. S-WE 2.

⑤ Concrete Covering Over Steel Reinf. shall be as specified below:
 Footings and other principal struct. members in which conc. is deposited against the ground 5" between steel and ground
 For walls, beams, col. and slabs on grade 2 inches*
 For framed slabs 1 inch
 *For surfaces exposed to sewage in the Water Treatment Level add 1/2".

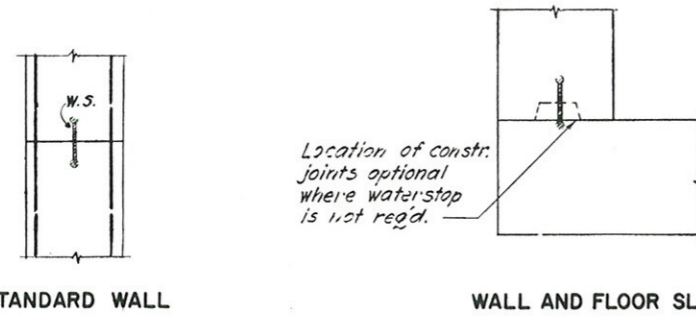
5. Miscellaneous:
 a. For elevations of floors sloped for drainage, location of drains and thickness of concrete fill on floors and roofs see Mech. and Arch. Dwg.

b. All pipe, conduits, sleeves, bolts and other embedded items, as well as all openings, slots, recesses, pads shall be located & checked by the Contractor before concrete is poured.
 c. For the required inserts, openings, etc. refer to the Arch. Mech. and Elect. Dwg. as well as the Struct. Dwg.
 d. Masonry wall dowels see note S-WE 7.

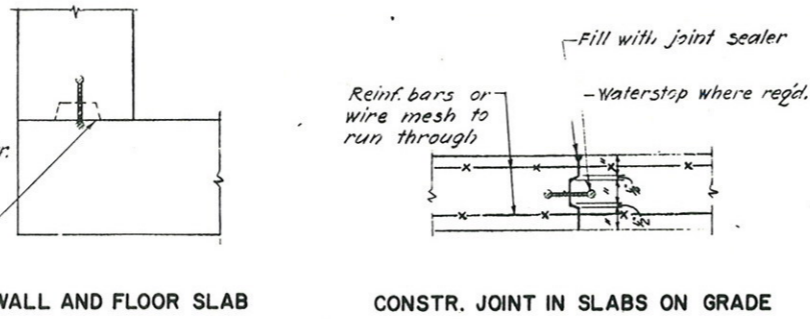
E. REFERENCE NOTES

1. For Structural Steel Notes, see Dwg. No. S-WE 12.
2. For special construction procedure for construction of the rear building walls see Dwg. No. S-WE 5.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL WEST AND EAST VENTILATION BUILDINGS TYPICAL FOUNDATION DETAILS AND GENERAL NOTES TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.			
DESIGNED: E. R. S. / S.D.S.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. S-W-E-1	
DRAWN: A. R. P.	APPROVED: <i>[Signature]</i>	SCALE: NONE DATE: AUG. 1967	
CHECKED: F. R. W.	SUBMITTED: <i>[Signature]</i>		
NEW YORK, N. Y.			



Location of constr. joints optional where waterstop is not reqd.



Reinf. bars or wire mesh to run through

Fill with joint sealer

Waterstop where reqd.

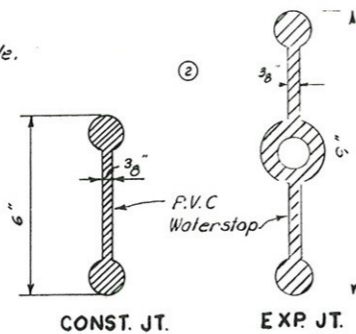
CONSTR. JOINT IN SLABS ON GRADE

TYPICAL CONSTRUCTION JOINTS

WATERSTOP NOTES:

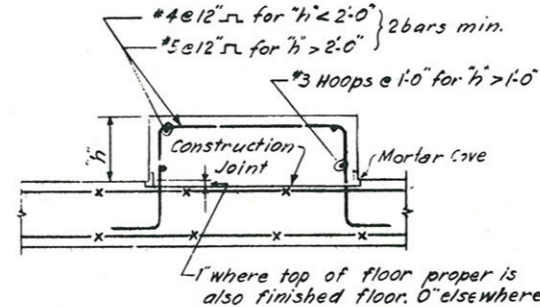
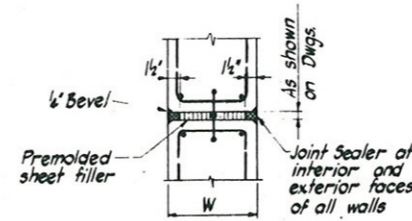
Continuous waterstop, as per specifications, 9" wide to be provided only at joints required to be watertight as follows:

- 1.- In all construction joints of exterior building and basement walls below grade.
- 2.- In all basement walls retaining water on one side only.
- 3.- In sedimentation tank floor slab at construction joints.



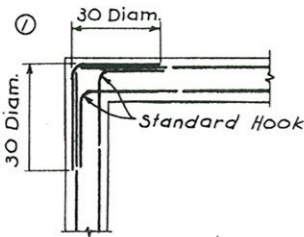
WATERSTOP DETAILS

TYP. WALL EXPANSION JOINT

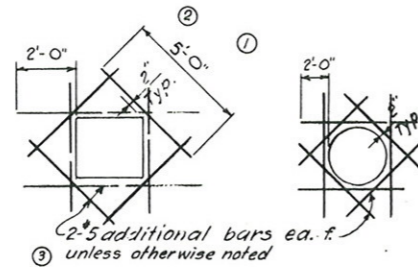


For dimensions & location of pads see Mechanical & Electrical drawings.

CONC. EQUIPMENT BASE

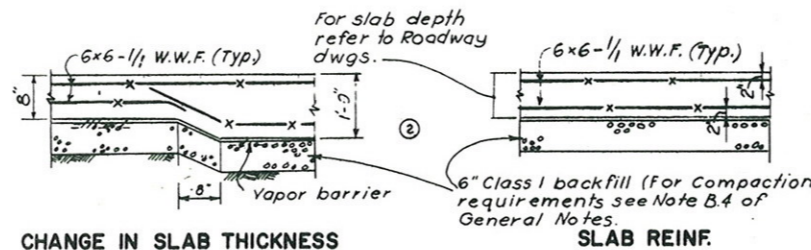
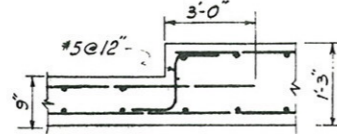
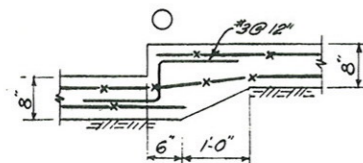


AT CORNER



AT OPENINGS IN WALLS & SLABS

TYPICAL REINFORCEMENT



CHANGE IN SLAB THICKNESS

SLAB ON GRADE

TYP. STEP-UP IN SLAB

NOTES:

1. For spacing & details of constr. joints see Specifications.
2. Welded wire fabric lap details shall conform to ACI Standard 315-65.
3. At slab openings add 2-#5x5'-0" bars at each corner in top of slab.

AS CONSTRUCTED NO REVISIONS DATE 10-26-73

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	180	326

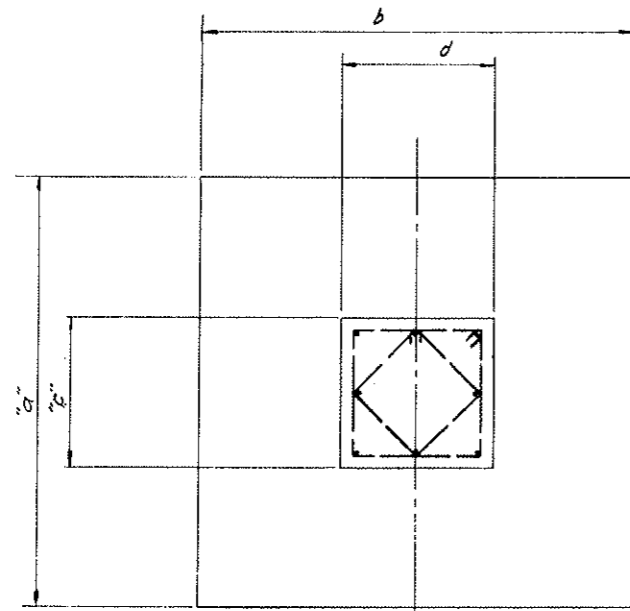
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

PEDESTAL FOOTING

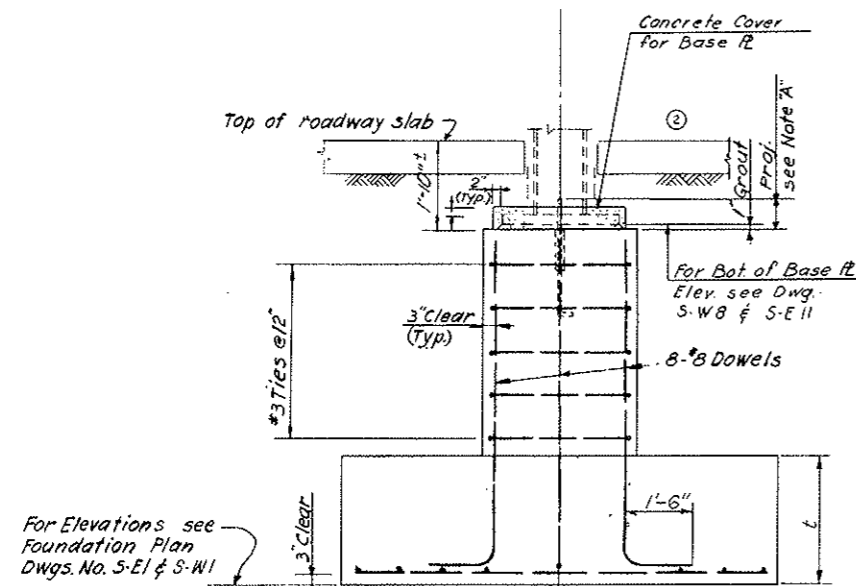
PEDESTAL	"c" & "d"
P1	3'-6"
P2	3'-0"
P3	2'-6"
P4	3'-0" x 4'-0"
P5	4'-0"

FOOTING SCHEDULE

FOOTING	"a" & "b"	"e"	REINFORCING BARS EACH WAY
F1	11'-0"	3'-0"	18-#9
F2	10'-0"	3'-0"	16-#9
F3	9'-0"	3'-0"	13-#8
F4	8'-0"	2'-6"	12-#8
F5	7'-0"	2'-6"	11-#7
F6	6'-0"	2'-6"	7-#6
F7	5'-0"	2'-0"	5-#6



PLAN

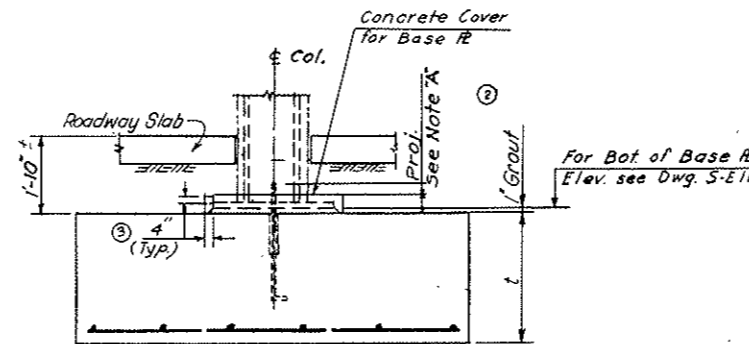


For Elevations see Foundation Plan Dwgs. No. S-EI & S-WI

NOTE "A": Projection of all Anchor Bolts to be 2 inches above Top of Base Plates.
For Elevation and Size of Base Plates see Column Sched. Dwgs. No. S-W8 & S-E11.

ELEVATION

COLUMNS ON PEDESTALS AND FOOTINGS



COLUMNS ON FOOTINGS

(COL. LINE 2 & 2A, EAST BUILDING)

REINFORCING BAR NOTE

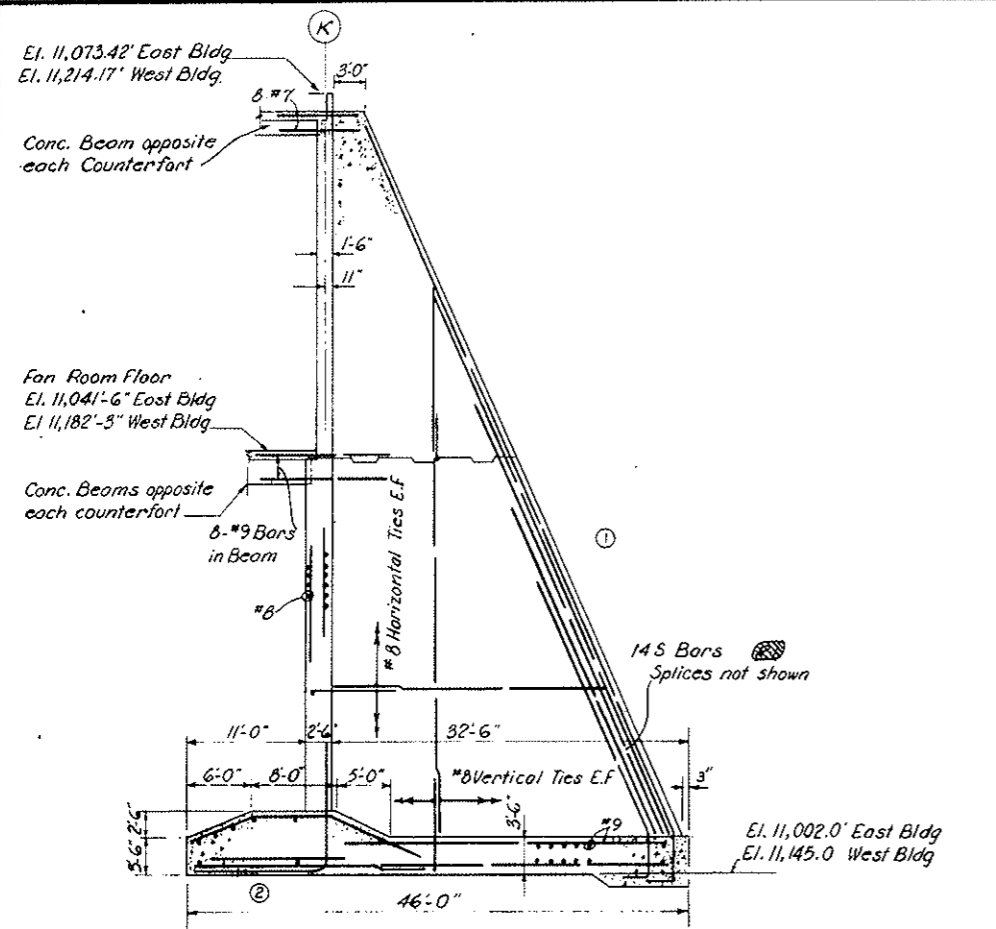
Reinforcing bar details on the "Structural" Drawings are mainly typical details shown for bidding purposes for final and complete reinforcing details see the "Structural Reinforcement" Drawings.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Added Note			
2		Structural Revisions			
3		General Revisions			

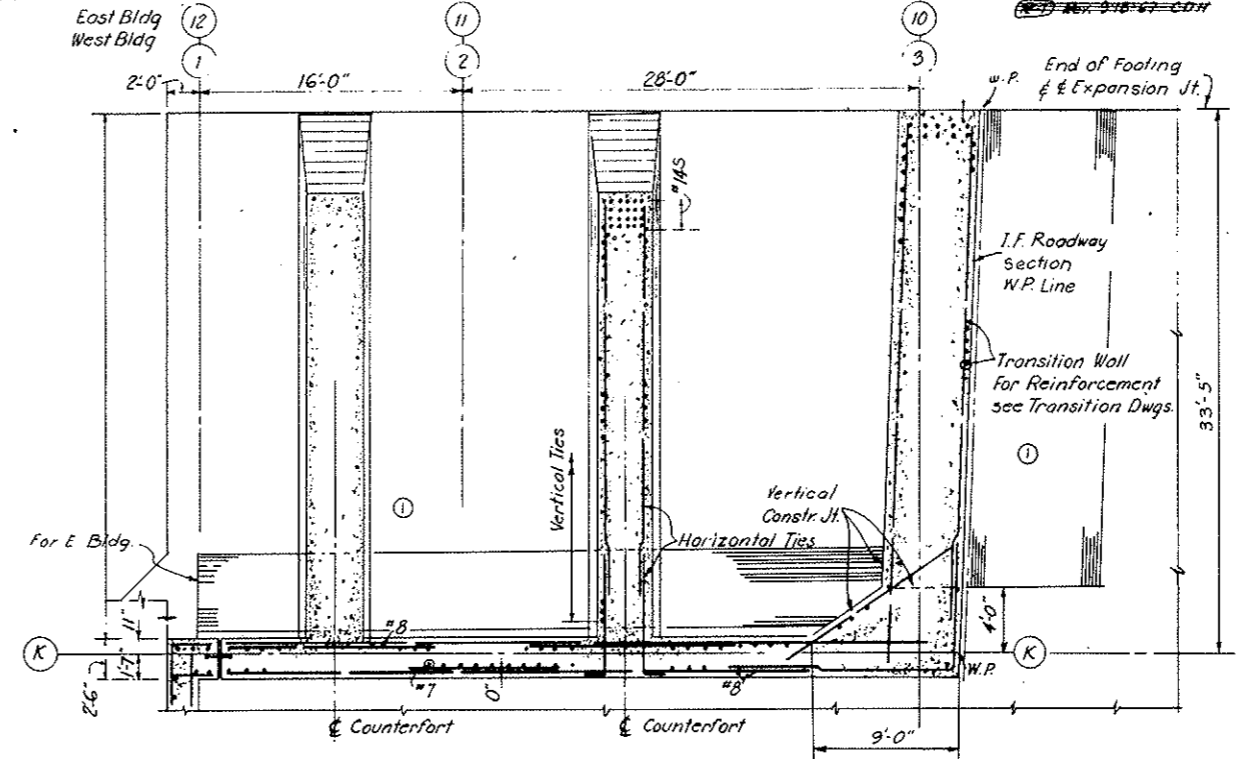
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
STRUCTURAL
WEST AND EAST VENTILATION BUILDINGS
TYPICAL FOUNDATION DETAILS
AND SCHEDULES

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.
DESIGNED: E. R. S.
DRAWN: R. R. / A. R. P.
CHECKED: E. R. W.
SUBMITTED: L. Keaton, P. E.
RECOMMENDED: J. D. Allen, P. E.
APPROVED: J. D. Allen, P. E.
DRAWING NO. S-WE2
NEW YORK, N. Y. SCALE: NONE DATE: AUG. 1967

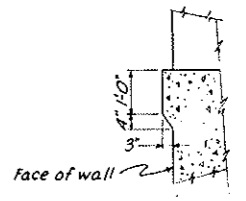
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	181	326



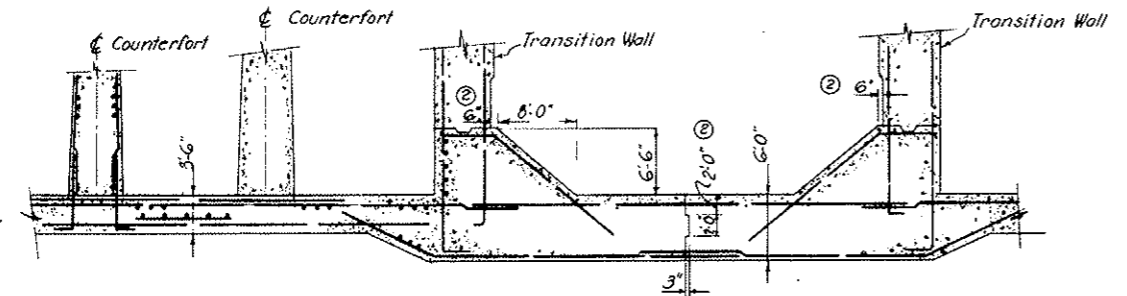
TYPICAL COUNTERFORT & FOOTING REINF.
SCALE: 1/8" = 1'-0"



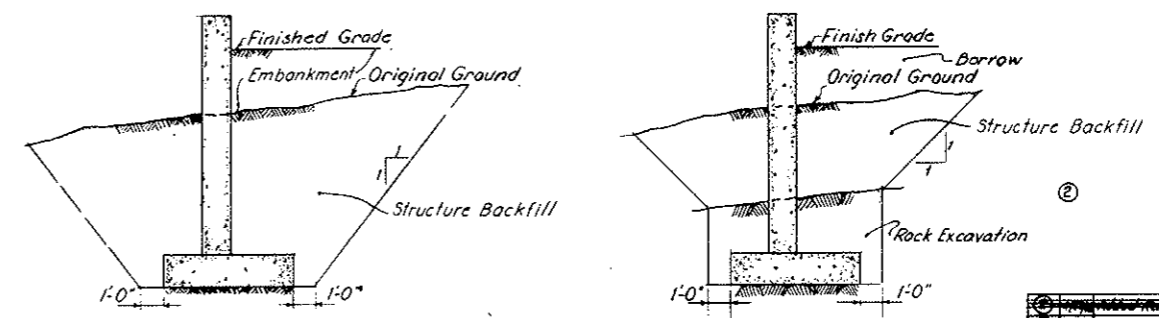
SECTION D-D
SCALE: 3/16" = 1'-0"



SECTION E-E
SCALE: 1/2" = 1'-0"
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



SECTION C-C
SCALE: 1/8" = 1'-0"



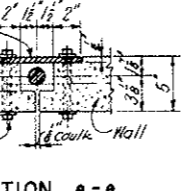
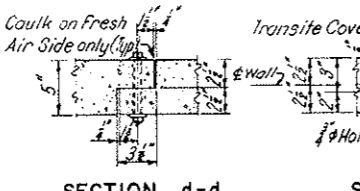
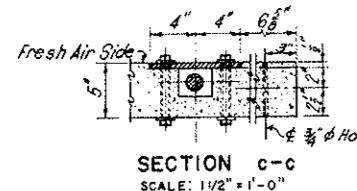
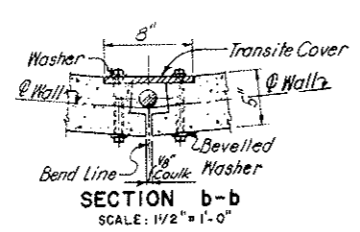
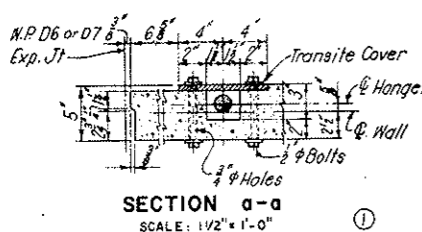
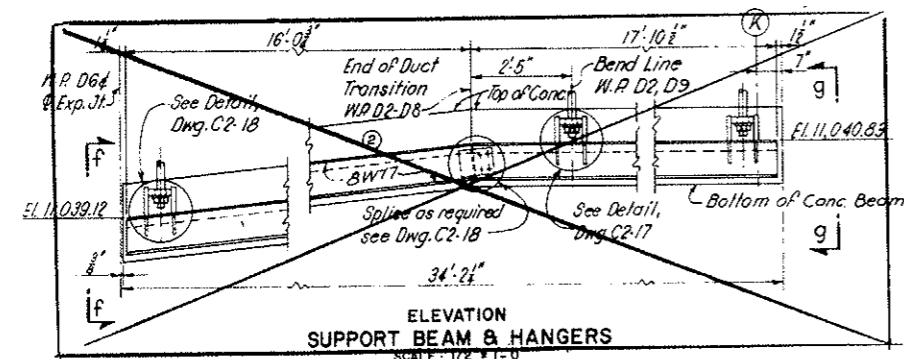
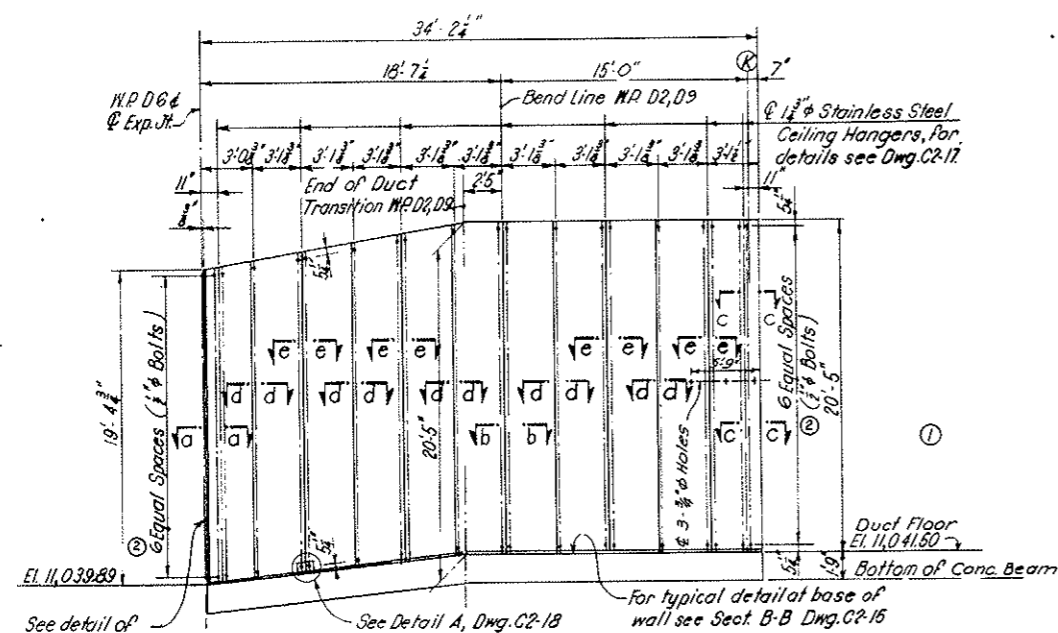
EXCAVATION PAYMENT LINES
NO SCALE

② Fill material below Original Ground is Structure Backfill.
Fill material above Original Ground is considered as Borrow.

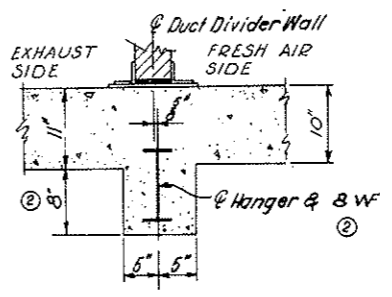
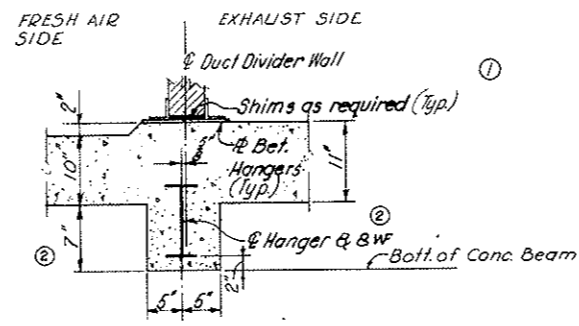
DESIGNED: P.S.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. S-WE3
DRAWN: L.A.V.	APPROVED: <i>[Signature]</i>	SCALE: AS NOTED
CHECKED: E.R.S., P.S.	DATE: AUG 1987	
SUBMITTED: <i>[Signature]</i>		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	182	326

AS CONSTRUCTED
REVISED DATE 10-26-73

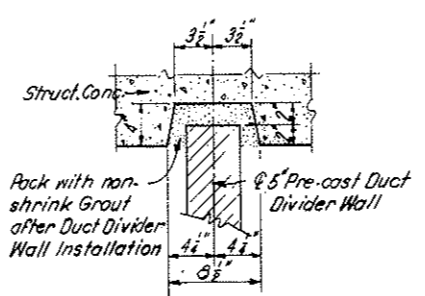


**PRECAST DUCT DIVIDER WALL
NORTHEAST TRANSITION**

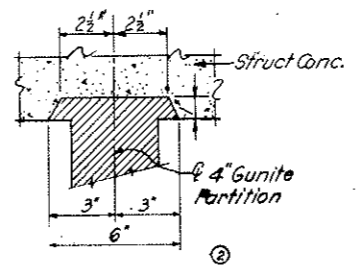


**SECTION f-f (As shown)
SECTION f-f' (Opp. hand)**
SCALE: 1" = 1'-0"

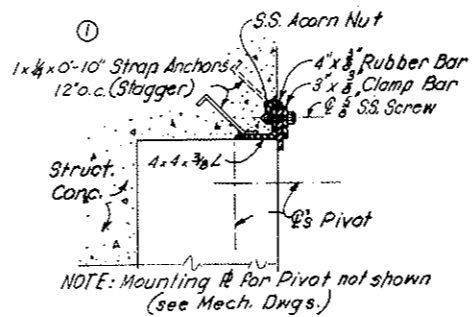
**SECTION g-g (As shown)
SECTION g-g' (Opp. hand)**
SCALE: 1" = 1'-0"



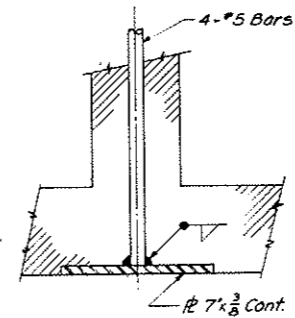
NOTE: Ceiling Insert and Hanger Rod not shown.



DETAIL "b"
SCALE: 3" = 1'-0"



NOTE: Mounting R for Pivot not shown (see Mech. Dwg.)



DETAIL C
SCALE: 3" = 1'-0"

NOTES:
For General Notes see Dwg. S-ME1.
Mark this Drawing with Dwg. S-E22
The Duct Floor shall not be constructed until the placement of backfill has been completed.
Reinforcement similar to Southwest Transition, see Dwg. S-M15.
The Pre-cast Tunnel Ceiling Panels shall be placed parallel to the Roadway Profile between the elevations shown in Section A-A, in chords of approximately 12' length. The Panels shall be similar in length and detail to those shown on Dwg. C1-3 and C3-7.
All concrete surfaces shall be Class 1 ordinary surface finish except as follows: Duct surfaces in contact with ventilating air flow shall be Class 2 rubbed. Walkway surfaces shall be Class 3 float.
Dampproofing to extend from 1' below Roadway level to 1' below Finished Grade and from the Exp. Jt. to within 8' of (K) line. Membrane waterproofing shall continue from this point to the North and South Walls.

See Civil Drawings for Details of Ceiling.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL WEST AND EAST VENTILATION BUILDINGS TRANSITIONS SECTIONS AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.C.N./P.S.	RECOMMENDED: J.P.	DRAWING NO. S-WE4			
DRAWN: J.C.N.	CHECKED: P.S.	DATE: AUG. 1967			
SUBMITTED: L. Anderson, P.E.	APPROVED: [Signature]	SCALE: AS NOTED			

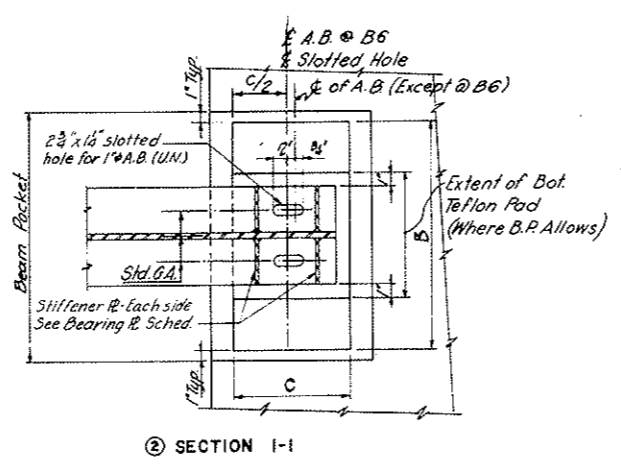
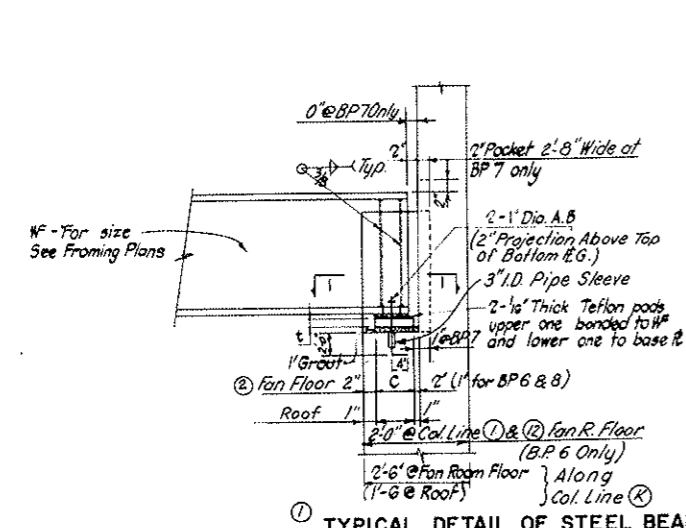
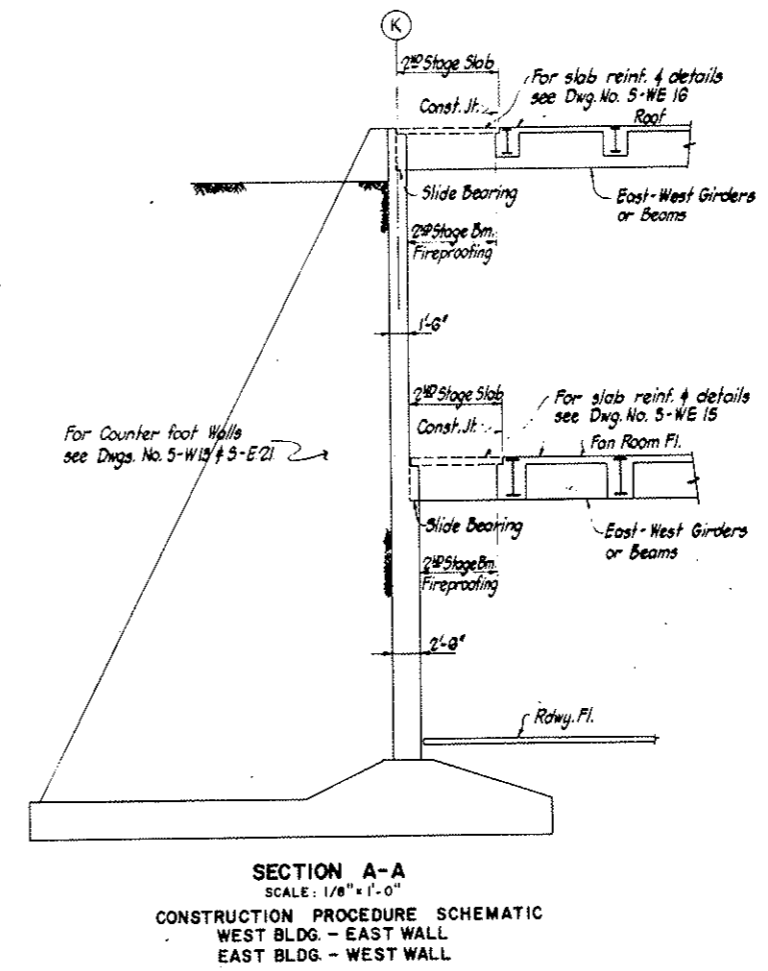
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	183	328

**AS CONSTRUCTED
NO REVISIONS DATE 10-26-73
CONSTRUCTION PROCEDURE**

EAST BUILDING - WEST WALL
WEST BUILDING - EAST WALL

This procedure is to insure that no thrust is transmitted to the building frame from rotation of the rear wall caused by backfill pressure. The Contractor is to observe all precautions to achieve this effect. Either of the two methods outlined below could be followed.

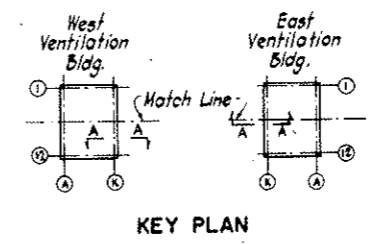
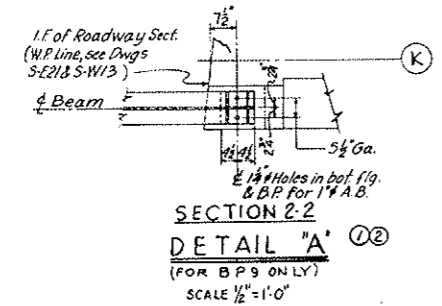
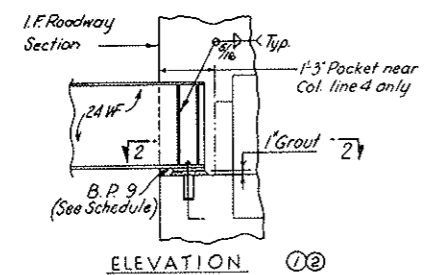
- Method 1**
- Construct rear walls full height with counterforts and transition segments. Place backfill behind rear wall to proper height with compaction as required by the specifications.
 - During Step 1, proceed with erection of steel superstructure and provide slide bearings as shown in Section A-A. The steel frame must be adequately braced to maintain proper alignment and plumbness, while resisting frictional forces at the slide bearings, caused by the deflection of the rear wall. Proceed with coating of concrete floors walls and fireproofing omitting portions near the rear wall as shown in Section A-A, to allow for deflection of the wall.
 - Cast the 2nd stage of the Fan Room floor and Roof slabs and fire-proofing shown on Section A-A.
- Method 2**
- If the steel beams bearing on the rear wall are placed two or more days after completion of the rear-wall backfilling (see Step 1 of Method 1) while the deflection of the wall will have taken place, the special procedure outlined in Method 1 may be omitted; i.e., use ordinary bearings instead of slide bearings for the steel beams and place concrete in one continuous operation.



TYPICAL DETAIL OF STEEL BEAMS BEARING ON CONCRETE

- NOTES:**
- After proper completion of backfilling behind wall, tighten nuts to fix bearing and pour omitted portion of beam fireproofing.
 - For Bearing # size see Schedule this Dwg.

BEARING # SCHEDULE				
MARK	SIZE C x T x B	LOCATION	STIFFENER SIZE	REMARKS
BP 1	8' x 1' x 1'-0"	Roof	5" x 1/2"	
BP 2	8' x 1' x 1'-2"	Roof	5" x 1/2"	
BP 3	8' x 1 1/2' x 1'-9"	Roof	7 1/2" x 1/2"	
BP 4	8' x 1' x 0'-8"	Roof and Fan Floor	---	
BP 5	8' x 1' x 0'-9"	Roof	---	
BP 6	6' x 3/4' x 0'-10"	Fan Floor	4" x 1/2"	No Slotted Holes. Provide 1/4" Hole Omit Teflon Pads
BP 7	11' x 2 1/2' x 2'-6"	Fan Floor	7 1/2" x 3/8"	
BP 8	9' x 1 1/2' x 1'-10"	Fan Floor	7 1/2" x 1/4"	
BP 9	9' x 3/4' x 0'-9"	Fan Floor	4" x 1/4"	See Def. A'
BP 10	5' x 1" x 0'-6 1/2"	Motor Supt Platform	---	See Dwg S-WE 17



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
1		Revised beam pockets			
2		General Revision			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

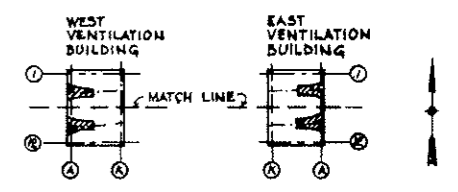
**STRUCTURAL
WEST AND EAST VENTILATION BUILDINGS
CONSTRUCTION PROCEDURE AND DETAILS**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: L.R. - S.S.	RECOMMENDED: <i>A. J. ...</i>	DRAWING NO. S-WE 5
DRAWN: D.K.	CHECKED: I.F.	
SUBMITTED: <i>H. ...</i>	APPROVED: <i>Frank ...</i>	

NEW YORK, N. Y. SCALE: AS NOTED DATE: AUG. 1967

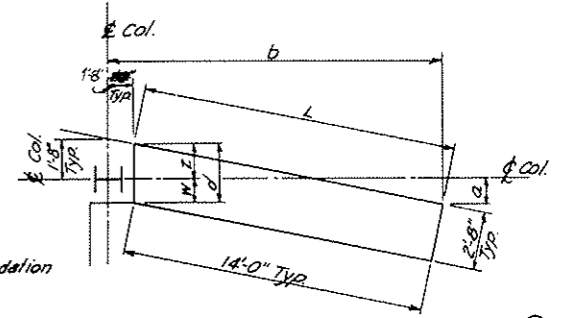
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	184	328



KEY PLAN
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

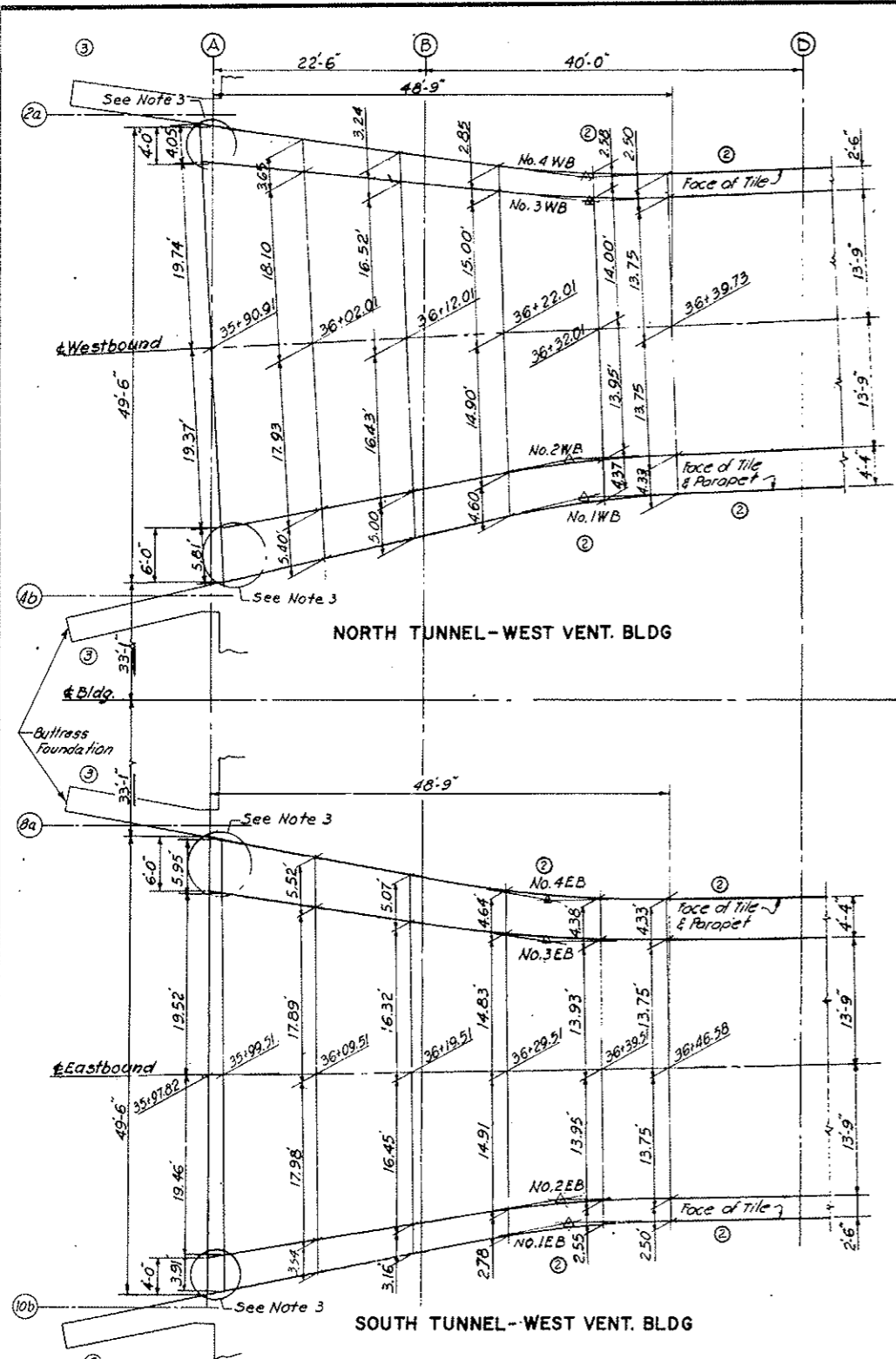
NOTES

- 1) For highway and tunnel alignment see dwgs. no. G2-2 thru G2-9
- 2) For roadway and walkway elevations within building see dwgs. A-E3, A-E5, A-W1 & A-W2
- 3) For continuation of walkway see Architectural Dwgs. A-W1, A-W2, A-E2, A-E3.



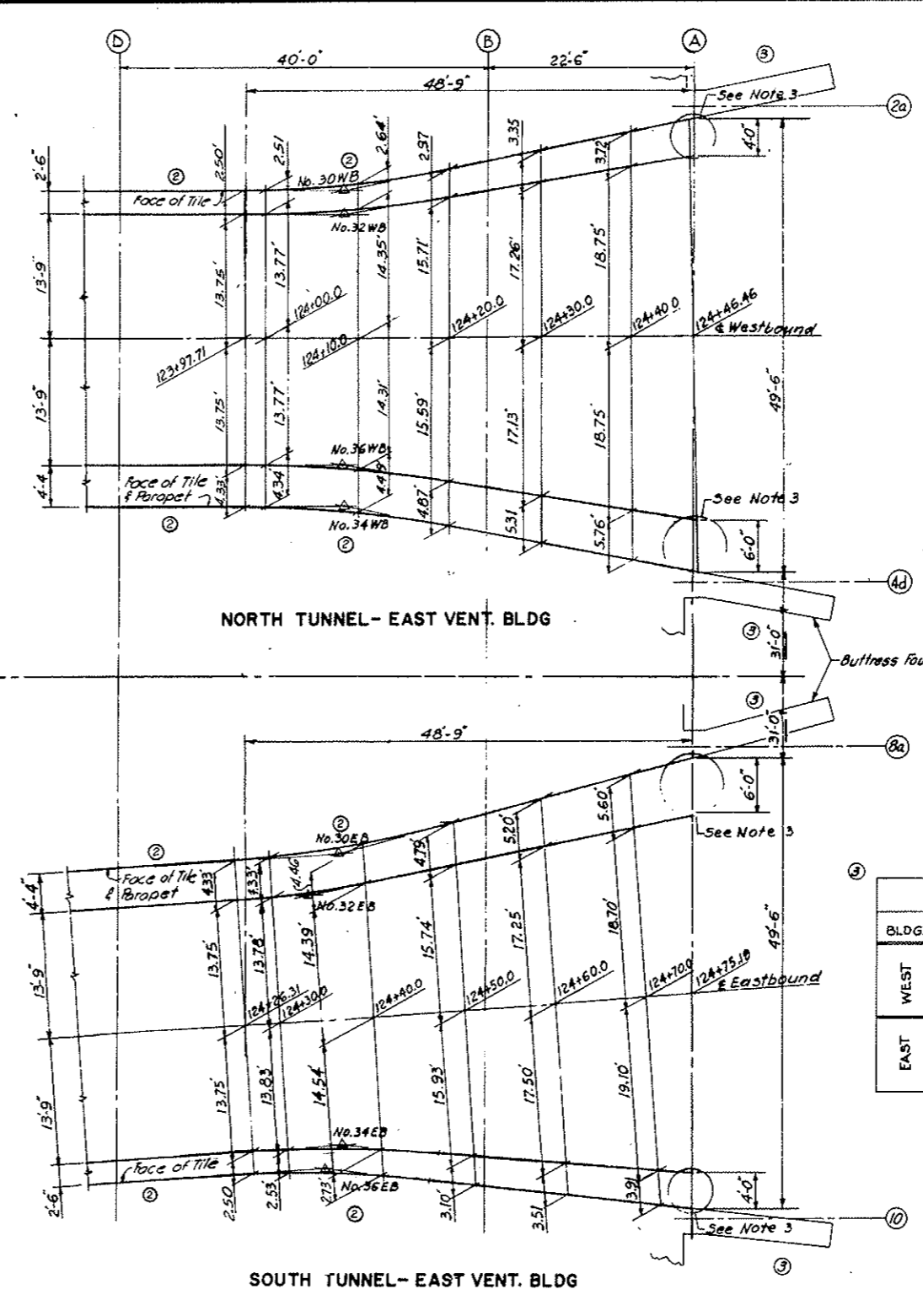
BUTTRESS FOUNDATION PLAN
8-REQ'D - FOR ORIENTATION, SEE PLANS ON THIS DWG.

BLDG.	PART	COL. LINE	CONTROLLING DIMENSIONS					BUTTRESS FOUNDATION	
			a	b	L	w	z	d	ELEV. TOP
WEST TUNNEL	2a	0'-5 1/2"	15'-4 3/4"	14'-4 1/2"	1'-2 1/4"	1'-6"	2'-8 1/4"	11,157'-2"	11,149'-5"
	4b	2'-2 3/4"	15'-4 3/4"	14'-8"	1'-4 1/2"	1'-4 1/2"	2'-9"	11,154'-8"	11,147'-0"
SOUTH TUNNEL	8a	1'-3 1/2"	15'-5"	14'-6 1/2"	1'-3 1/4"	1'-5 1/2"	2'-8 1/2"	11,154'-8"	11,147'-0"
	10b	1'-5"	15'-5"	14'-6 1/2"	1'-5 1/2"	1'-5 1/2"	2'-8 1/2"	11,152'-8"	11,145'-0"
NORTH TUNNEL	2a	1'-6 1/4"	15'-5"	14'-6 1/2"	1'-3 1/4"	1'-5"	2'-8 1/2"	11,008'-8"	11,005'-0"
	4d	1'-2 1/4"	15'-5"	14'-6"	1'-5"	1'-5 1/2"	2'-8 1/2"	11,008'-8"	11,005'-0"
SOUTH TUNNEL	8a	2'-6 1/2"	15'-4 3/4"	14'-8 1/2"	1'-5"	1'-4 1/2"	2'-9 1/4"	11,008'-8"	11,005'-0"
	10	0'-1 1/4"	15'-4 3/4"	14'-8 1/2"	1'-1 1/2"	1'-6 1/2"	2'-8 1/4"	11,013'-8"	11,006'-0"



WEST VENT. BLDG.			
CURVE No.	L	R	Δ
1WB	19.93	95.51	11°-57'-14"
2WB	19.95	118.75	9°-37'-37"
3WB	19.97	145.72	7°-51'-5"
4WB	19.95	113.94	10°-1'-54"
1EB	20.07	97.57	11°-47'-6"
2EB	20.07	119.42	9°-37'-50"
3EB	20.09	143.78	8°-0'-16"
4EB	20.06	110.50	10°-24'-13"

EAST VENT. BLDG.			
CURVE No.	L	R	Δ
30WB	20.00	95.36	12°-00'-54"
32WB	20.06	116.39	9°-52'-27"
34WB	20.09	148.36	7°-45'-33"
36WB	20.08	113.18	10°-9'-52"
30EB	20.02	118.74	9°-39'-33"
32EB	20.01	95.89	11°-57'-25"
34EB	19.99	148.62	7°-42'-27"
36EB	20.08	116.15	9°-54'-19"



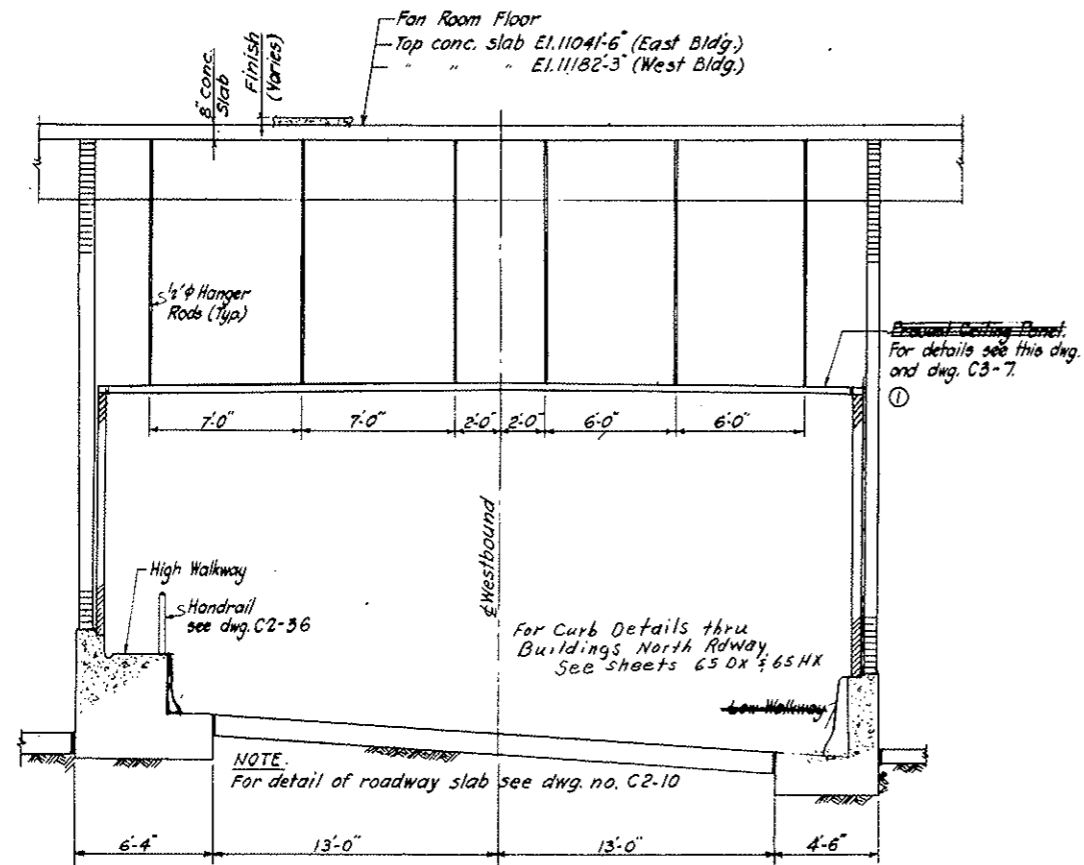
DESIGNED: E.R.S.	RECOMMENDED: [Signature]	DRAWING NO.
DRAWN: A.R.P.	APPROVED: [Signature]	S-WE6
CHECKED: F.R.W.	DATE: AUG. 1967	
SUBMITTED: [Signature]	SCALE: 1/8"=1'-0"	

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

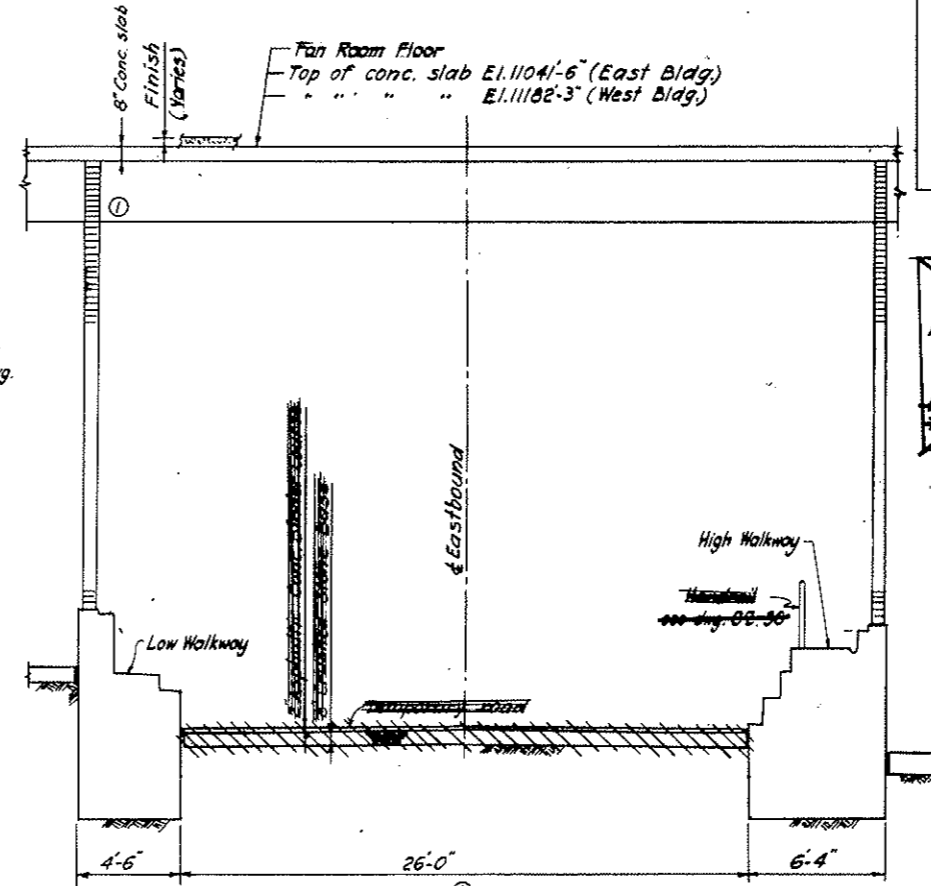
STRUCTURAL
WEST AND EAST VENTILATION BUILDINGS
ROADWAY GEOMETRY

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

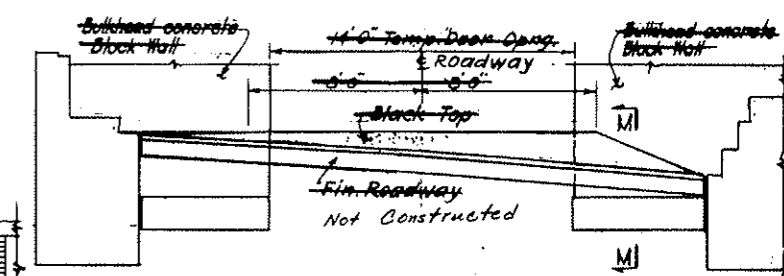
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	185	326



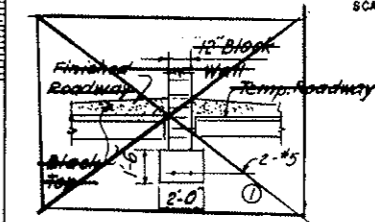
TYP. ROADWAY SECTION
SCALE: 1/4" = 1'-0"



TYP. FUTURE ROADWAY SECTION
SCALE: 1/4" = 1'-0"



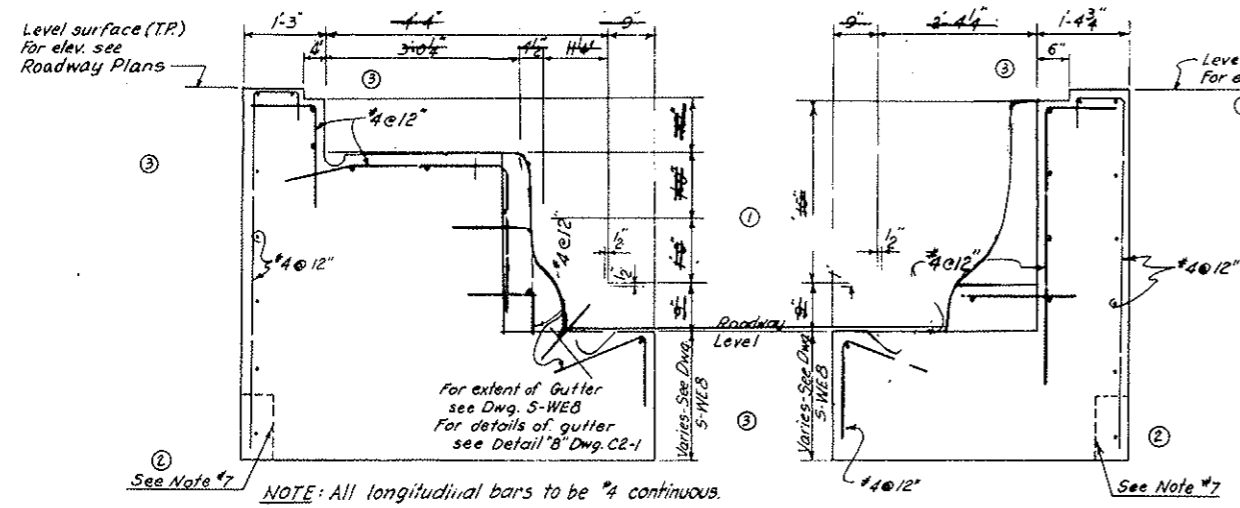
SECTION N-N
SCALE: 1/4" = 1'-0"
AS CONSTRUCTED
REVISED DATE 10-26-73



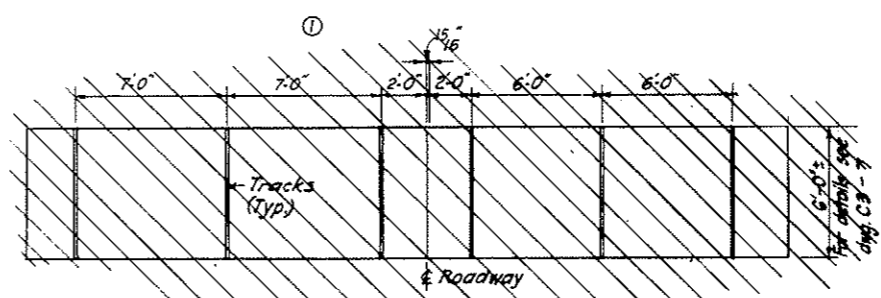
SECTION M-M
SCALE: 1/4" = 1'-0"

MASONRY WALL DOWELS
① For detail of Roadway Floor and Fan Room Floor dowels for masonry walls see Arch. Dwg. A-WE4. For location of these walls see Arch. Floor Plans.

- NOTES:**
- For roadway slab elevations see Architectural roadway Floor Plans.
 - For details of ceiling hangers see dwg. C3-7, detail "M".
 - For more details of Precast Ceiling Panel see dwg. C3-7.
 - All roadway wall footings are to be founded directly on rock or on fill concrete to rock.
 - Read this drawing in conjunction with Dwg. S-WE8.
 - For location of sections see Dwg. S-W3 & S-E5.
 - Recess face of walkway wall to clear buttress and to prevent bearing on it (where required).
 - See Note #3 on Dwg. S-E3.
 - For Dowels see Dwg. A-WE4.



WALKWAYS
SCALE: 3/4" = 1'-0"



TYPICAL PRECAST CEILING PANEL
SCALE: 1/4" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

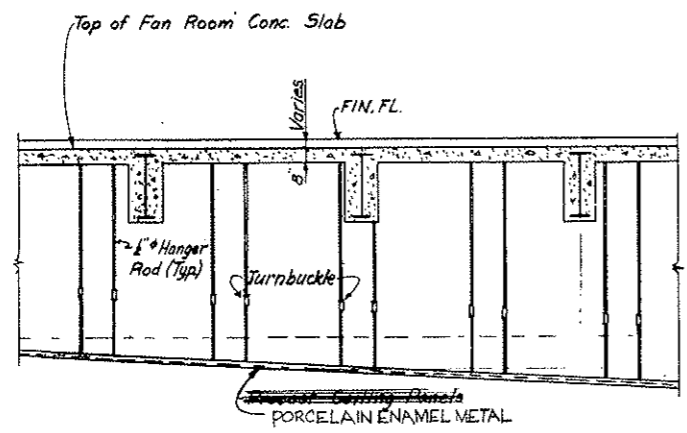
STRUCTURAL
WEST AND EAST VENTILATION BUILDINGS
ROADWAY - SECTIONS AND DETAILS
SHEET 1

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

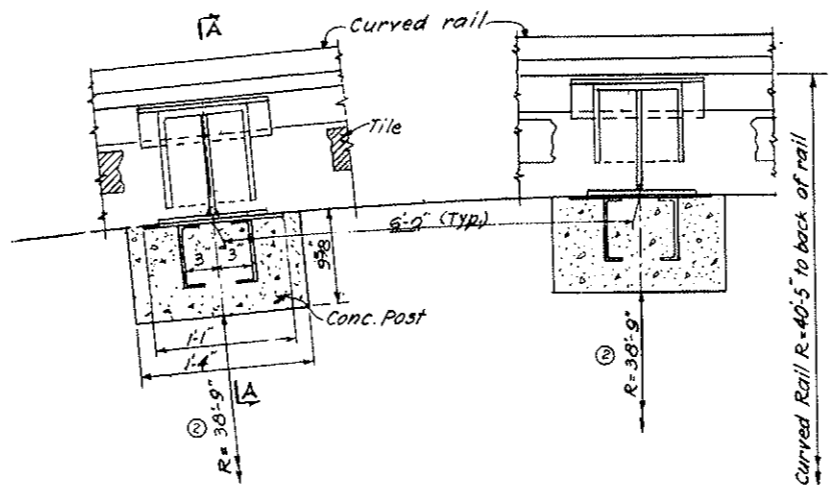
DESIGNED: E.R.S.	RECOMMENDED: [Signature]
DRAWN: A.R.P.	APPROVED: [Signature]
CHECKED: F.R.W.	
SUBMITTED:	

DATE: AUG. 1967
DRAWING NO. S-WE7
NEW YORK, N.Y.

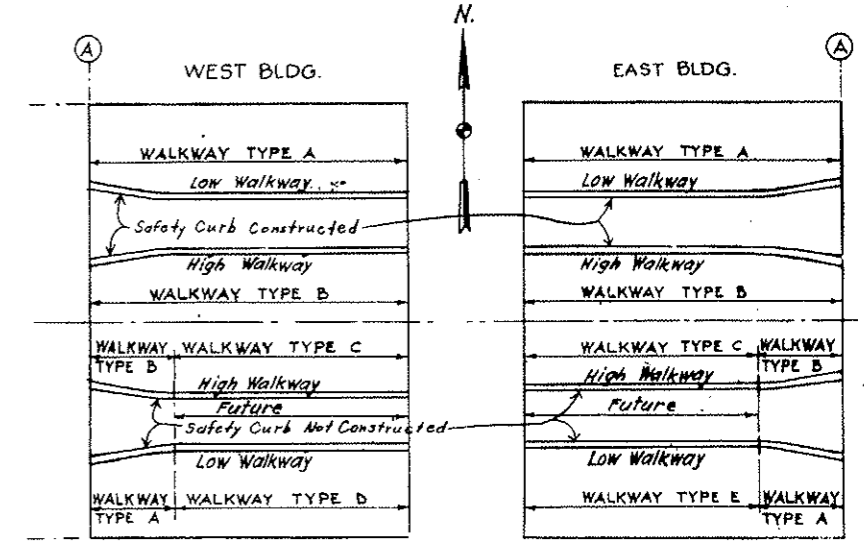
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	186	326



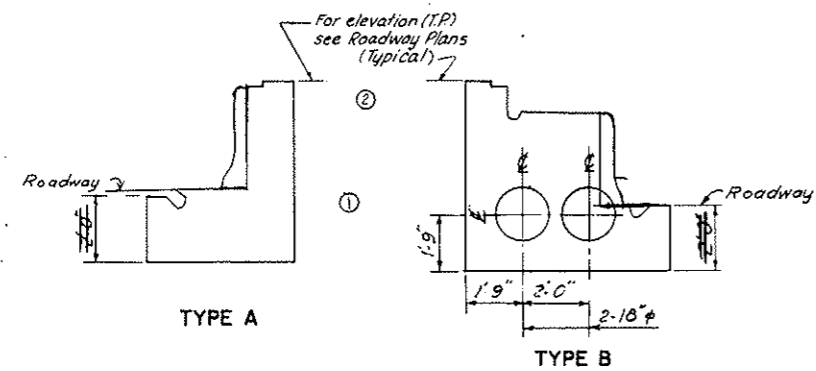
TYP. LONGITUDINAL SECTION THRU TUNNEL CEILING
SCALE: 1/4" = 1'-0"



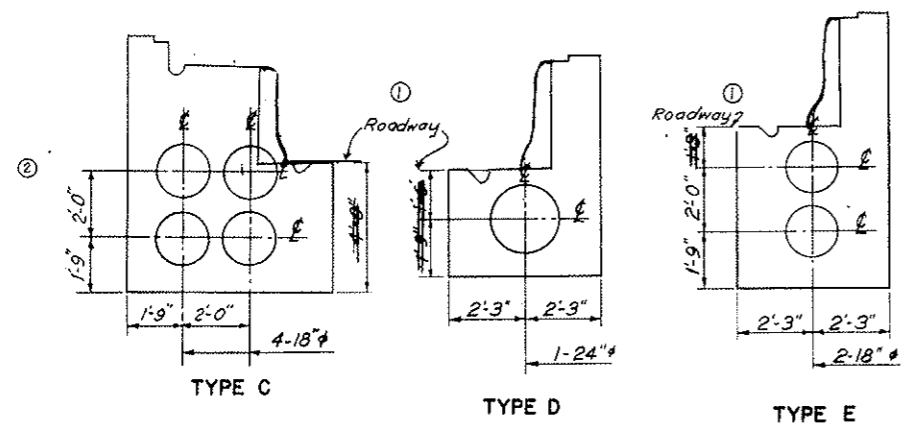
PLAN
CAR RAIL AND BRACKETS ON CURVE
AT WALKWAY CAR ENCLOSURE
SCALE: 1/2" = 1'-0"



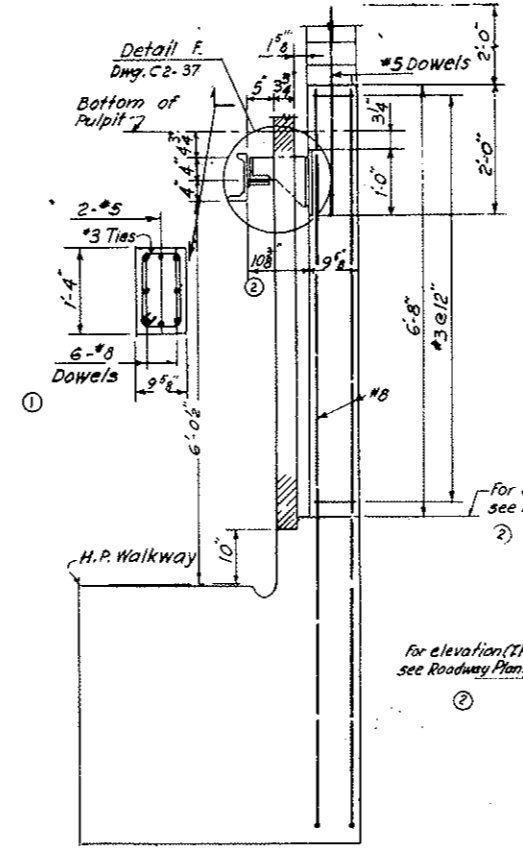
KEY PLAN
AS CONSTRUCTED
REVISED DATE 10-24-73



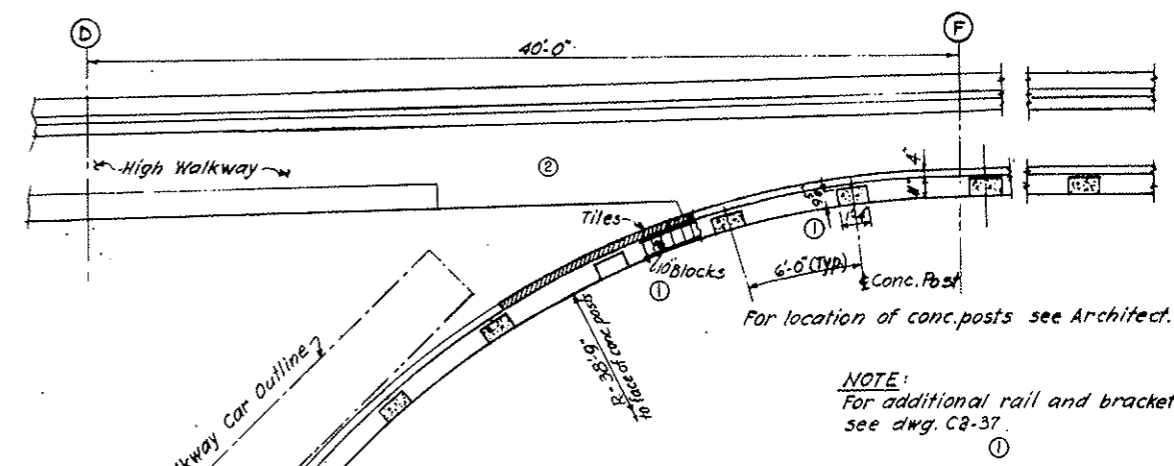
NOTE: For typ. walkway reinforcement see Dwg. S-WE 7.
Tubes to be Sonovoids or equal.



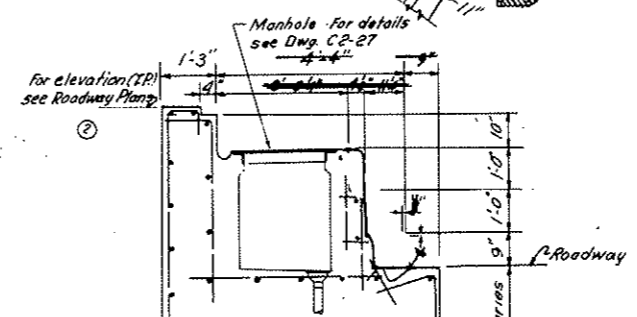
WALKWAYS
SCALE: 3/8" = 1'-0"



SECTION A-A
TYP. AT COLUMNS
SCALE: 3/4" = 1'-0"



PLAN
WALKWAY CAR ENCLOSURE
SCALE: 1/4" = 1'-0"



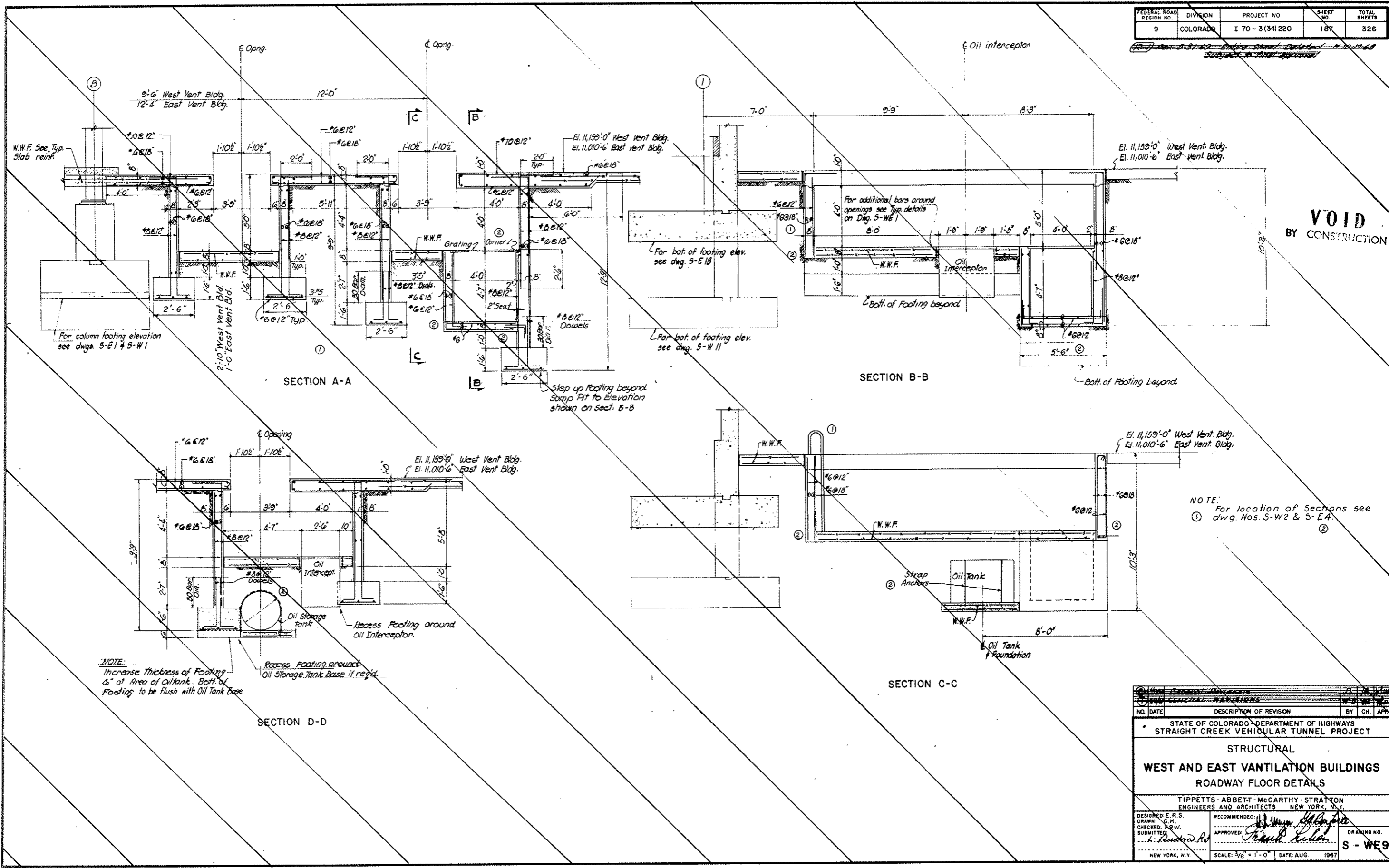
SECTION THRU WALKWAY AT ELECT. MANHOLE
SCALE: 1/2" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL WEST AND EAST VENTILATION BUILDINGS ROADWAY - SECTIONS AND DETAILS SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E.S.	RECOMMENDED: J.L.	APPROVED: <i>[Signature]</i>			
DRAWN: A.R.P.	CHECKED: F.R.W.	APPROVED: <i>[Signature]</i>			
SUBMITTED: <i>[Signature]</i>	DRAWING NO. S-WE8				
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUG. 1967		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	187	326

DATE: 5-21-63
 SUBJECT: STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

VOID
 BY CONSTRUCTION



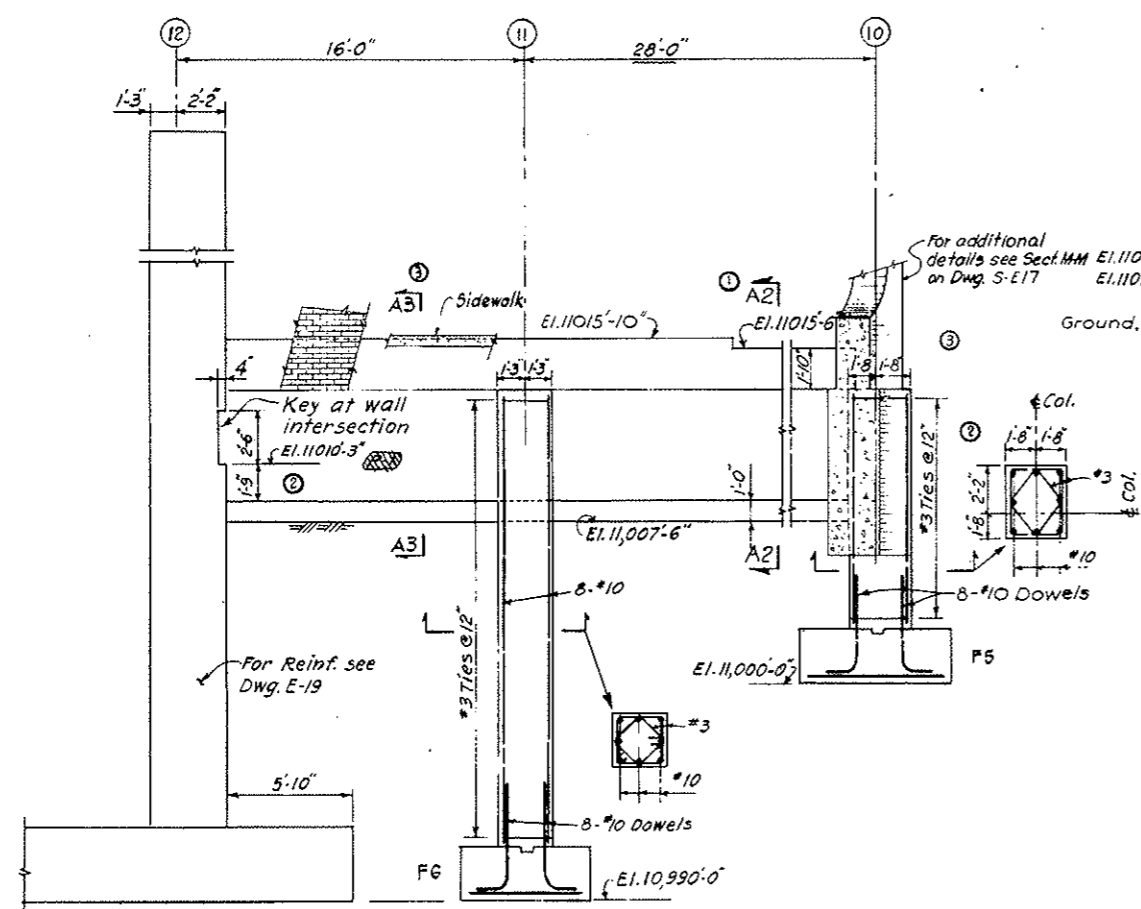
NOTE:
 For location of Sections see
 ① dwg. Nos. S-W2 & S-E4
 ②

NOTE:
 Increase Thickness of Footing
 6" at Area of Oil Tank. Both of
 Footing to be flush with Oil Tank Base

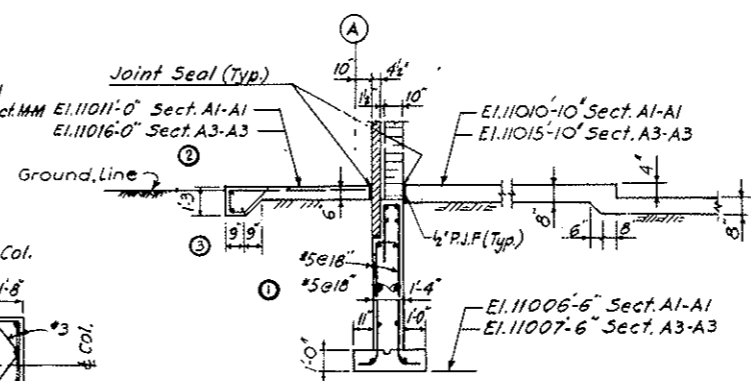
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL WEST AND EAST VENTILATION BUILDINGS ROADWAY FLOOR DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.					
DESIGNED: E. R. S.	DRAWN: G. H.		RECOMMENDED: <i>[Signature]</i>		
CHECKED: P. R. W.	SUBMITTED: <i>[Signature]</i>		APPROVED: <i>[Signature]</i>	DRAWING NO.	
NEW YORK, N.Y.			SCALE: 3/8" = 1'-0"	DATE: AUG 1967	S - WE 9

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	188	326

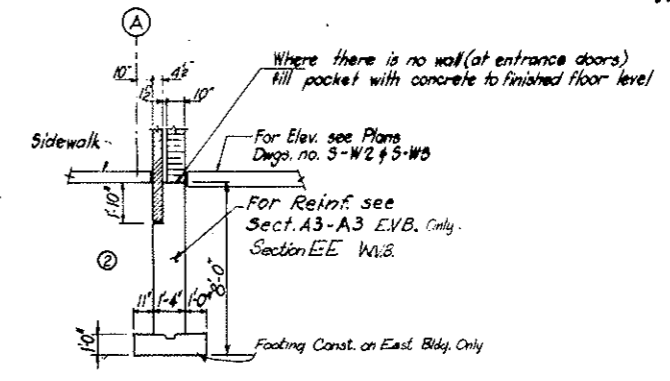
AS CONSTRUCTED
REVISED DATE 10-26-73



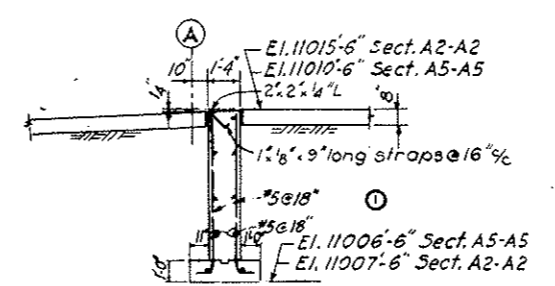
(EAST BLDG. ONLY)
SECTION A4-A4
 SCALE: 1/4" = 1'-0"



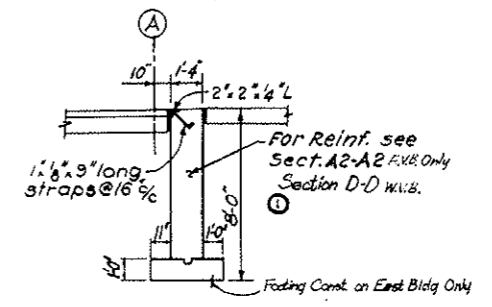
SECTION A1-A1
SECTION A3-A3
 SCALE: 1/4" = 1'-0"



SECTION A6-A6
 SCALE: 1/4" = 1'-0"

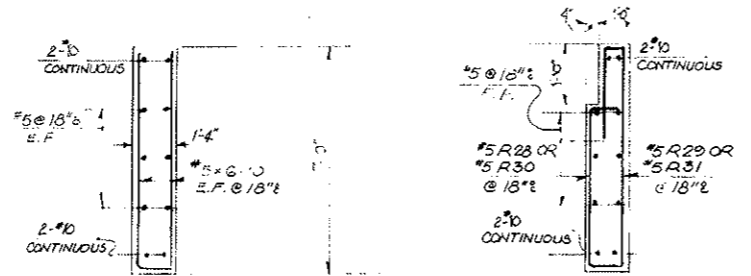


SECTION A2-A2
SECTION A5-A5
 SCALE: 1/4" = 1'-0"



SECTION A7-A7
 SCALE: 1/4" = 1'-0"

NOTE:
 ① For location of Sections see Dwg. S-W2 & S-W3.
 Work this Dwg. with S-W107



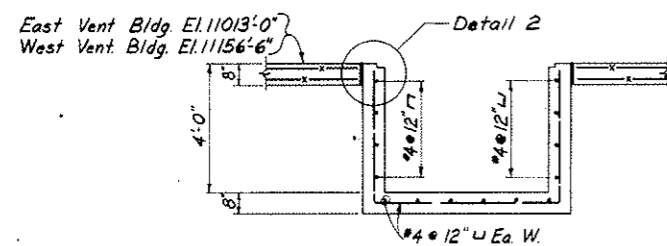
SECTION D-D SCALE: 3/8" = 1'-0" **SECTION E-E**
 WEST WALL - WEST VENTILATION BLDG ONLY

- NOTES:
 1. FOR LOCATION OF SECT. D-D & E-E AND WALL REINFORCEMENT SEE S-W107
 2. FOR ADDITIONAL WALL DIMENSIONS SEE S-WE10
 3. SEE S-W107 FOR REINFORCING FOR WEST VENT BLDG.

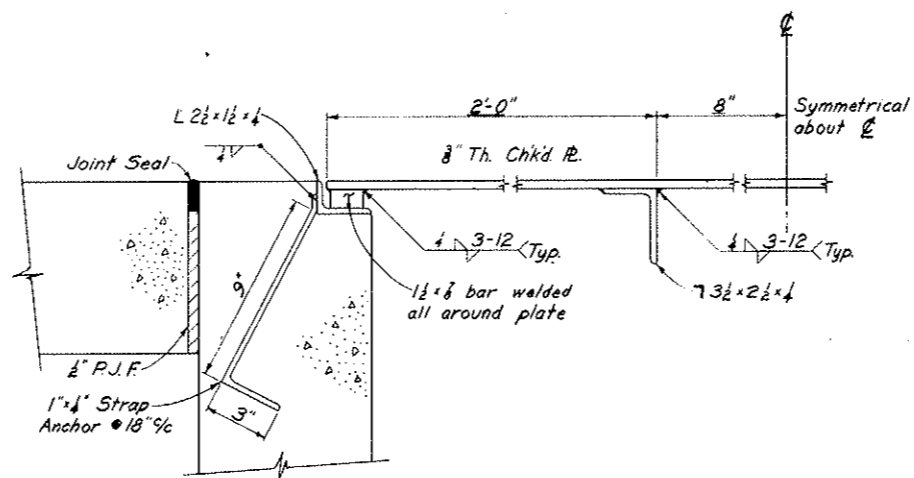
DESIGNED BY: E.R.S.	RECOMMENDED BY: [Signature]	DATE: []	BY: []	APP: []
CHECKED BY: F.R.W.	APPROVED BY: [Signature]	STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT		
STRUCTURAL WEST AND EAST VENTILATION BUILDINGS FRONT WALL DETAILS				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED BY: E.R.S.	RECOMMENDED BY: [Signature]	DATE: []	BY: []	APP: []
CHECKED BY: F.R.W.	APPROVED BY: [Signature]	DRAWING NO. S-WE10		
NEW YORK, N. Y. SCALE: 1/4" = 1'-0" DATE: AUG. 1967				

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	189	326

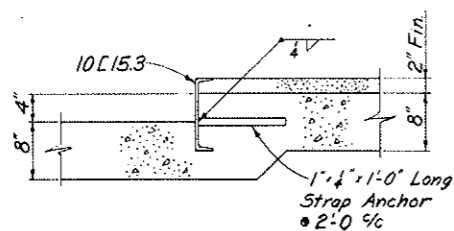
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



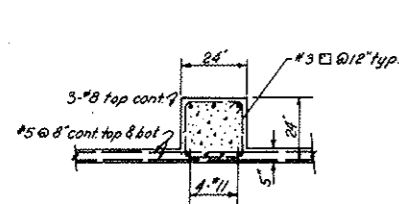
SECTION L-L
SCALE: 3/8" = 1'-0"



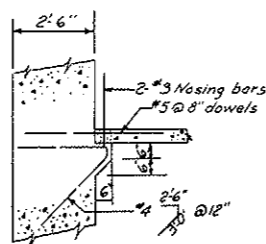
DETAIL 2
SCALE: 3/8" = 1'-0"



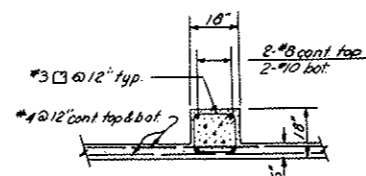
DETAIL 3
TYPICAL CURB
SCALE: 1" = 1'-0"



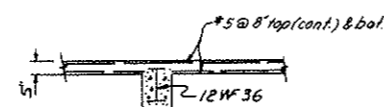
SECTION a-a



SECTION b-b



SECTION c-c



SECTION d-d

DETAILS OF ROADWAY CEILING SLABS ①
SCALE: 3/8" = 1'-0"

NOTES:

1. For locations of sections see Dwg. A-E2, A-E3, A-W1 & A-W2.
2. For clearances, temperature reinf., fire-proofing of steel beam and other details see Dwg. S-WE15.
3. For General Notes see Dwg. S-WE1. Use Class B-1 type concrete.
4. Fill 16" section of block wall with grout for the full height centered on steel or concrete beams.

① NOTE:
For location of section L-L see dwg. Nos. S-W3 & S-E5.

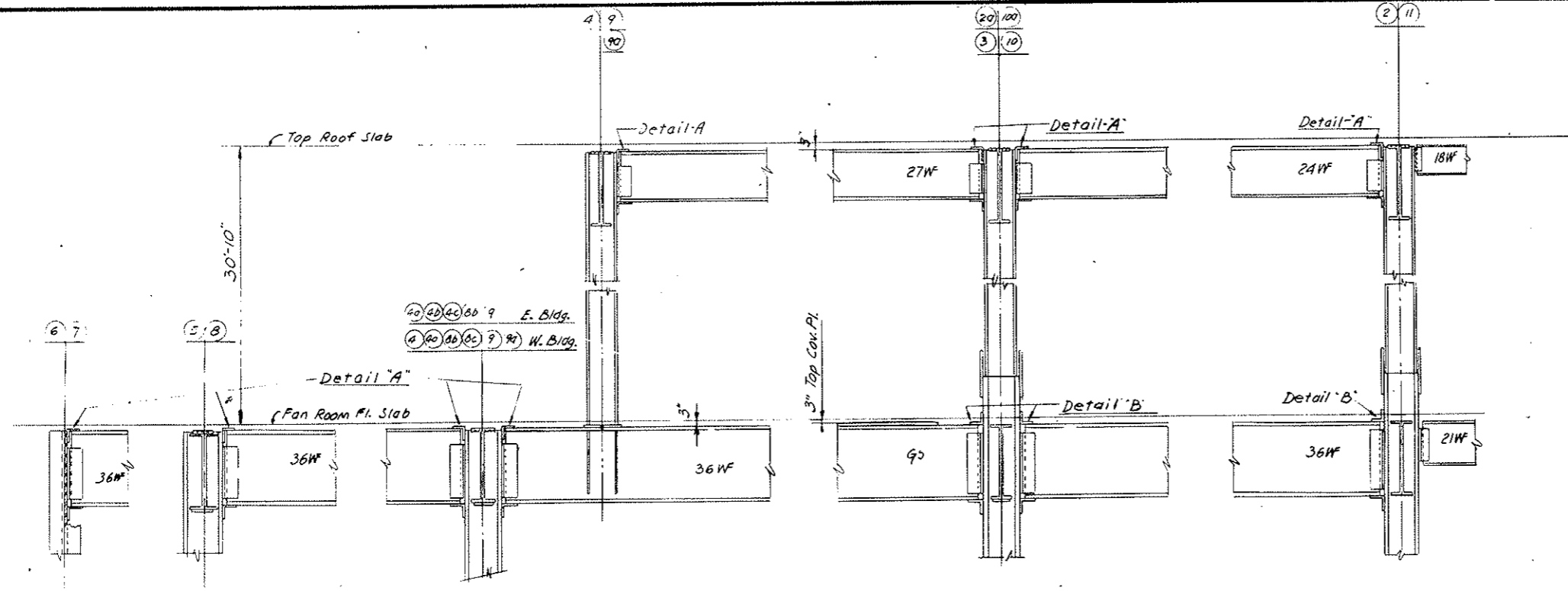
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL WEST AND EAST VENTILATION BUILDINGS MISCELLANEOUS ROADWAY DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E.R.S.	RECOMMENDED: <i>[Signature]</i>		DRAWING NO. S-WE11		
DRAWN: A.D.	CHECKED: F.R.W.		APPROVED: <i>[Signature]</i>		
SUBMITTED: <i>[Signature]</i>	DATE: AUG 1967		SCALE: AS NOTED		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	190	326

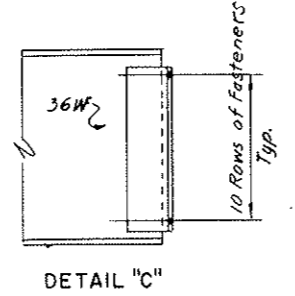
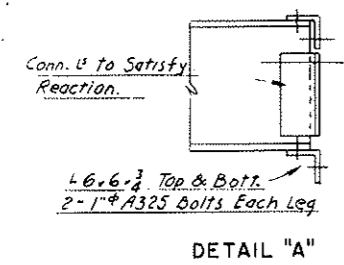
STRUCTURAL STEEL NOTES

1. MATERIALS
 - a. All structural steel shall conform to the latest specifications of ASTM A36, unless noted otherwise.
 - b. Steel marked L.A. shall conform to the latest specifications of ASTM A441 for high strength low-alloy steel.
2. CONNECTIONS
 - a. All shop connections shall be welded or riveted.
 - b. All field connections shall be friction type with min. 7/8" dia. high strength ASTM A325 bolts, unless noted otherwise.
3. Beam and girder reactions are indicated on plans in KIPS.
4. All connections shall be designed for indicated end reactions, but minimum connection shall be equivalent to AISC "Framed Beam Connections" unless otherwise shown.
5. High strength low-alloy ASTM A490 bolts or equivalent rivets may be used instead of A325 bolts where required by high end reactions.
6. For moment connections see Drawing S-WE 12.
7. Connections for secondary members may be made with 1/2" dia. ASTM A307 bolts where noted on the drawings or specifications.
8. All ends of columns at splice and of other bearing connections shall be milled to complete true bearing. Stiffener angles or plates shall be milled.
9. Where columns are supported on beams provide milled fitted stiffeners to match size and location of column flanges.
10. Provide grout holes in base plates where one side of plate is 30" or longer.
11. Contractor shall furnish all plates, clip-angles, connections, etc. required for completion of the structure, even if every such item is not shown on the drawings.
12. For additional structural steel items, see Mechanical Drawings.

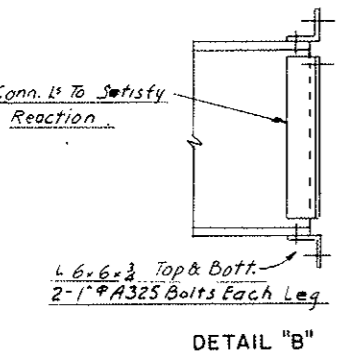
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



TYPICAL MOMENT CONNECTIONS-COLUMN LINES B, D, F, H
 NORTH-SOUTH DIRECTION
 FOR EAST-WEST DIRECTION SEE DETAIL "C" THIS SHEET

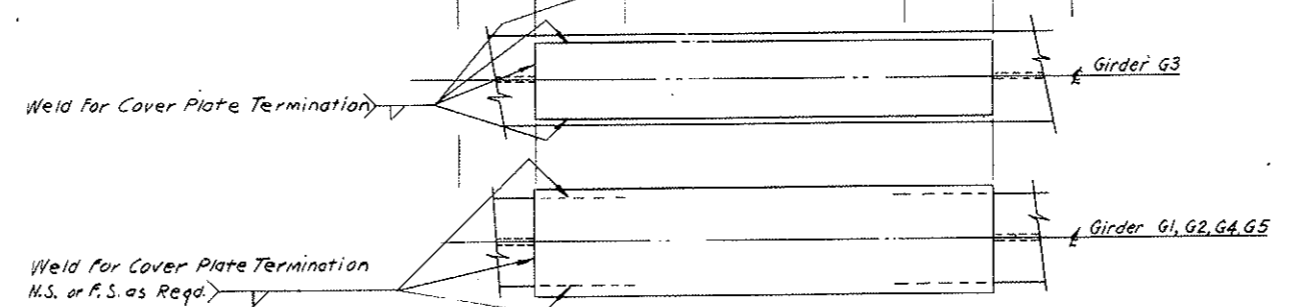


TYPICAL 36 WF BEAM TO COLUMN CONNECTION
 ROOF & FAN ROOM FLOOR-EAST & WEST DIRECTION



	Support	Support	Support	Support
G1	3'-6"	3'-6"	3'-6"	3'-6"
Weld Size	1/2"	1/2"	1/2"	1/2"
G2	3'-6"	3'-6"	3'-6"	3'-6"
Weld Size	1/2"	1/2"	1/2"	1/2"
G3	1'-11"	2'-0"	2'-0"	1'-11"
Weld Size	3/16"	1/2"	1/2"	3/16"
G4	2'-3"	3'-6"	3'-6"	2'-3"
Weld Size	1/2"	1/2"	1/2"	1/2"
G5	2'-3"	3'-3"	2'-6"	North 12'-6"
Weld Size	1/2"	1/2"	1/2"	1/2"

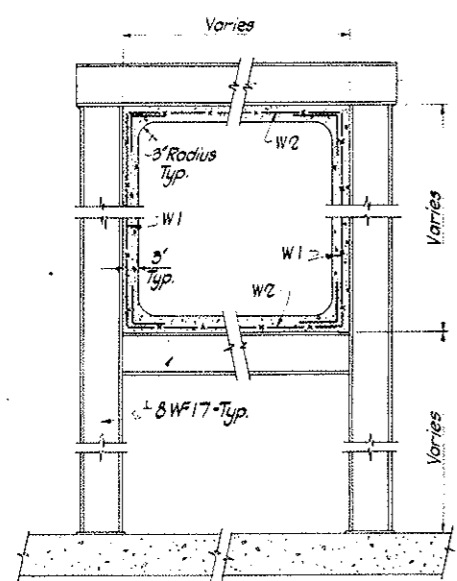
All Welds Continuous



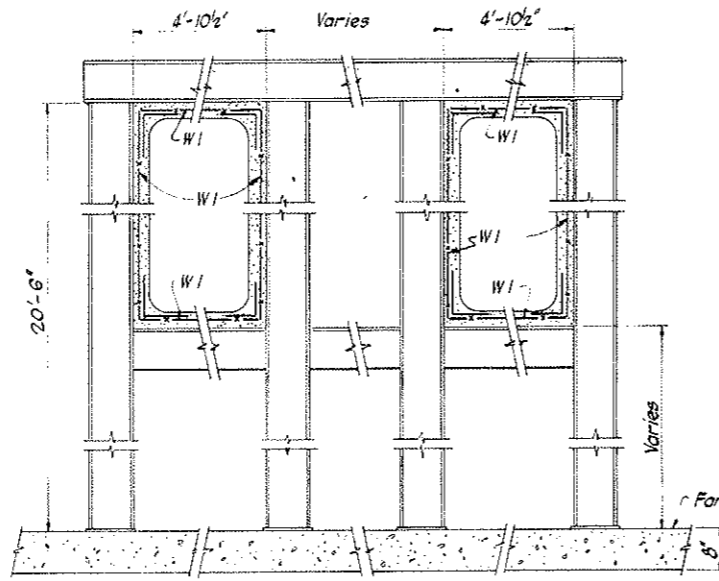
SIZE, LENGTH & LOCATION OF COVER PLATE WELDING
 FOR COVER PLATE SIZES & LOCATION SEE GIRDER SCHEDULE ON S-W4, S-E6

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL WEST AND EAST VENTILATION BUILDINGS STRUCTURAL STEEL TYPICAL DETAILS AND NOTES					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY S.D.S.	DRAWN BY R.R.	CHECKED BY I.F.	SUBMITTED BY A. S. ...	RECOMMENDED BY J. ...	APPROVED BY Frank ...
DRAWING NO. S-WE12				DATE: AUG. 1967	

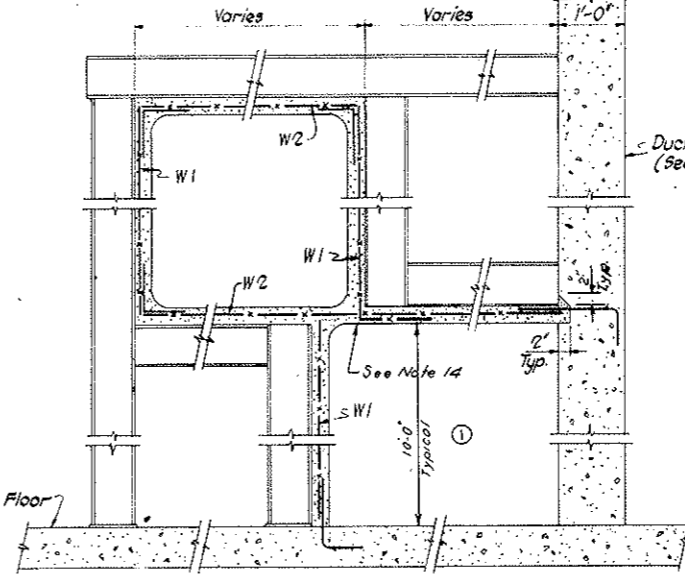
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	191	326



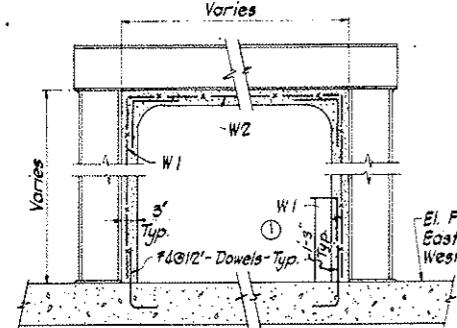
SECTION 1-1
SCALE: 3/4" = 1'-0"



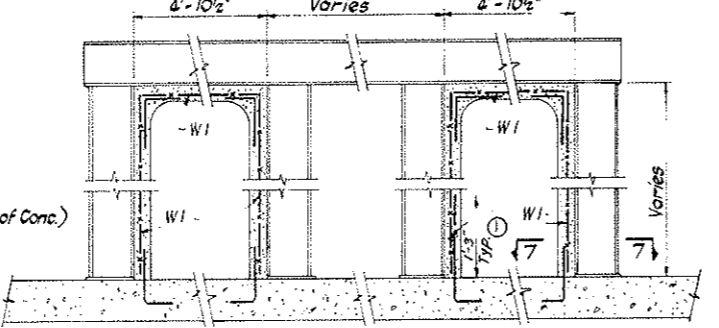
SECTION 2-2
SCALE: 3/4" = 1'-0"



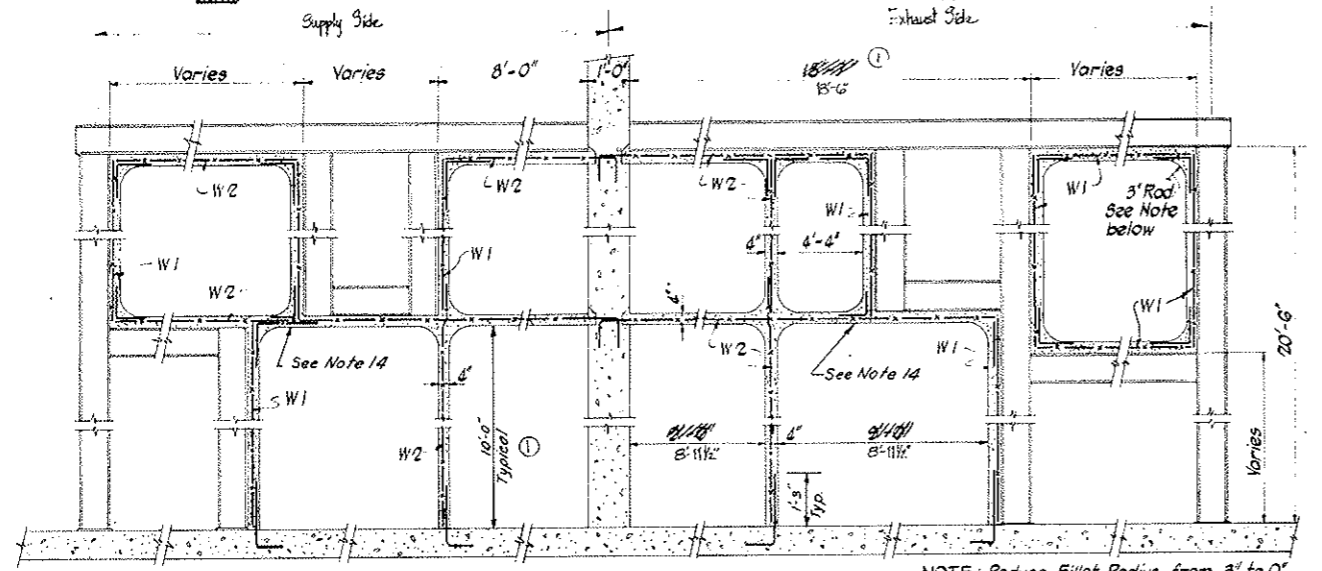
SECTION 5-5
SCALE: 3/4" = 1'-0"



SECTION 3-3
SCALE: 3/4" = 1'-0"

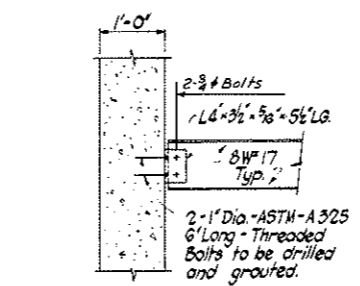


SECTION 4-4
SCALE: 3/4" = 1'-0"

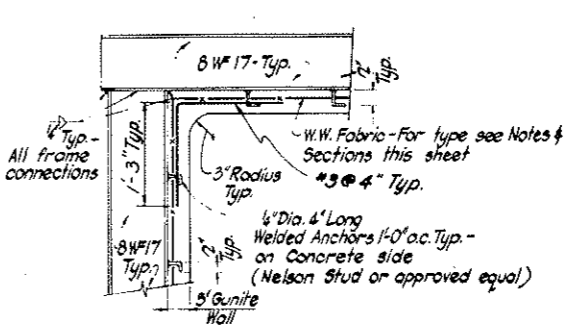


SECTION 6-6
SCALE: 1/2" = 1'-0"

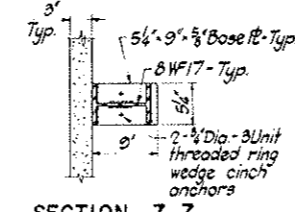
NOTE: Reduce Fillet Radius from 3' to 0' within 1'-7" to 0'-7" from Col. line (K) Typ. this section.



TYPICAL DETAIL OF CONNECTION FOR STEEL FRAMING TO CONC. WALL

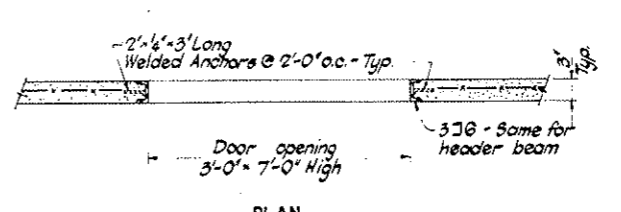


TYPICAL DETAIL OF GUNITE ANCHORAGE TO STEEL FRAME



SECTION 7-7
BASE PLATE DETAIL FOR STEEL FRAMES
SCALE: 1" = 1'-0"

NOTE: Place Base Pl. symmetrical to C of 8 WF17 where 3' Gunite Wall does not reach Fan Room Fl.



PLAN TYP. DETAIL AT DOOR OPENING IN GUNITE WALLS
SCALE: 1" = 1'-0"

NOTE: See Mech. and Architectural Dwg. for location and detailing of Access doors.

NOTES:

- Details shown on this sheet do not cover all cases but illustrate general type of construction required.
- Gunite shall develop a min. of 5000 PSI of ultimate compressive strength in 28 days.
- Welded wire fabric shall have a min. yield strength of 65000 PSI and shall conform to AASHTO M55.
- All members of steel frames to be 8 WF17.
- All slabs and walls 3' thick, unless noted otherwise.
- All Gunite walls are to be continuously keyed to Fan room floor slab, and Duct-Roofs to 12" thick Duct-Divider wall, where possible.
- Laps for W.W. Fabric to be 60 Dia. of largest wire lapped unless shown otherwise.
- Dowels - 4 @ 12" Typ. - are to extend 1'-3" into Fan Room Floor, Slab or Duct-Divider Wall.
- For additional dimensions and details of Fan ducts, see Mechanical Dwg.
- For location of Section 1-1 thru 7-7 see Dwg. SW9 & SE 24.
- W.W. Fabric is placed at mid-depth of all slabs and wall.
- All inside walls or slabs to which steel frames are not attached are 4" thick.
- Type of W.W. Fabric:
W1 - 3-3 - 2/2
W2 - 2-2 - 2/2
- Where duct walls are supported on gunite slab below gunite slabs are to be shored for 7 days after pouring of walls above.

LOADS:

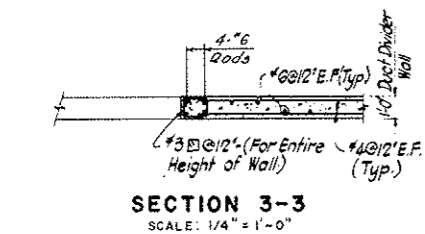
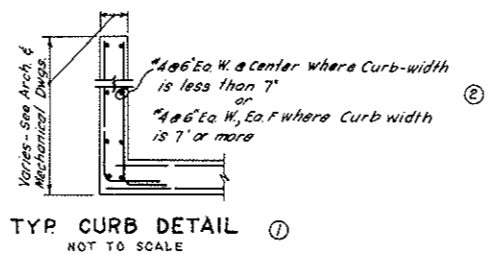
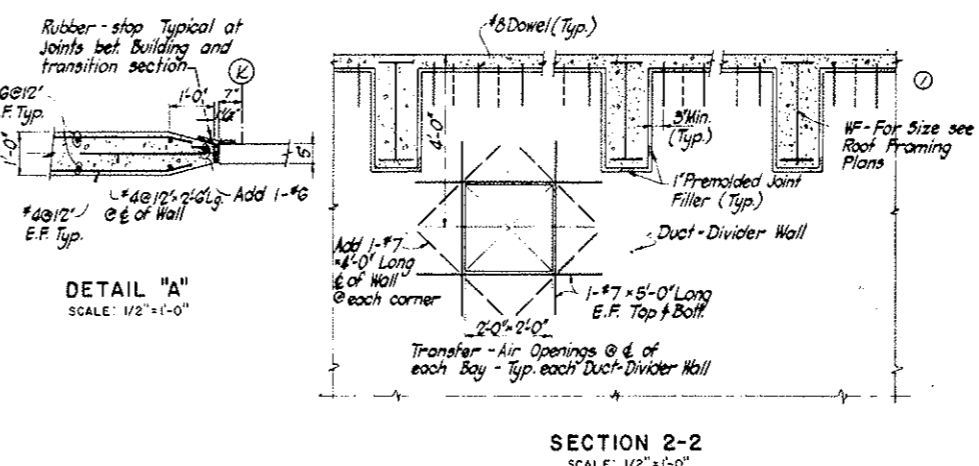
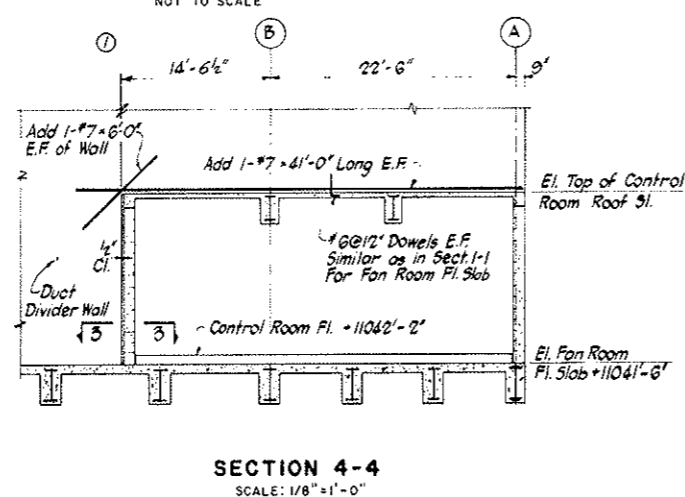
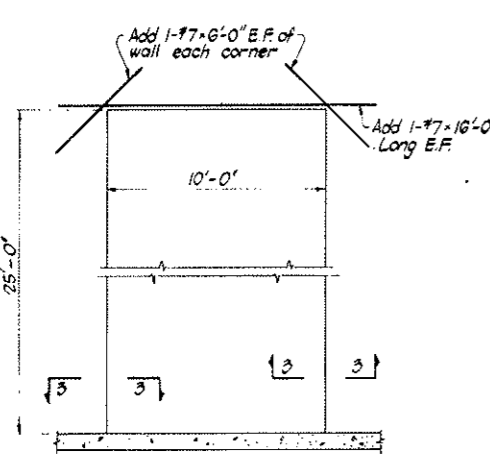
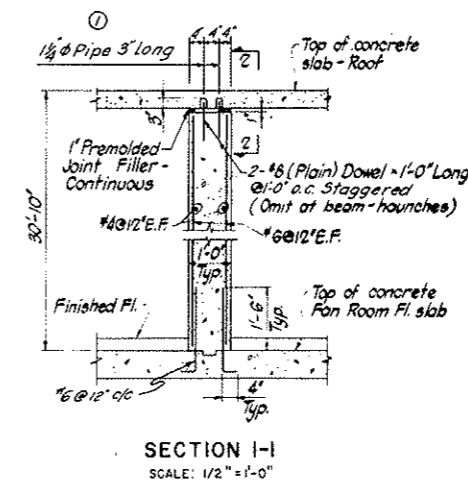
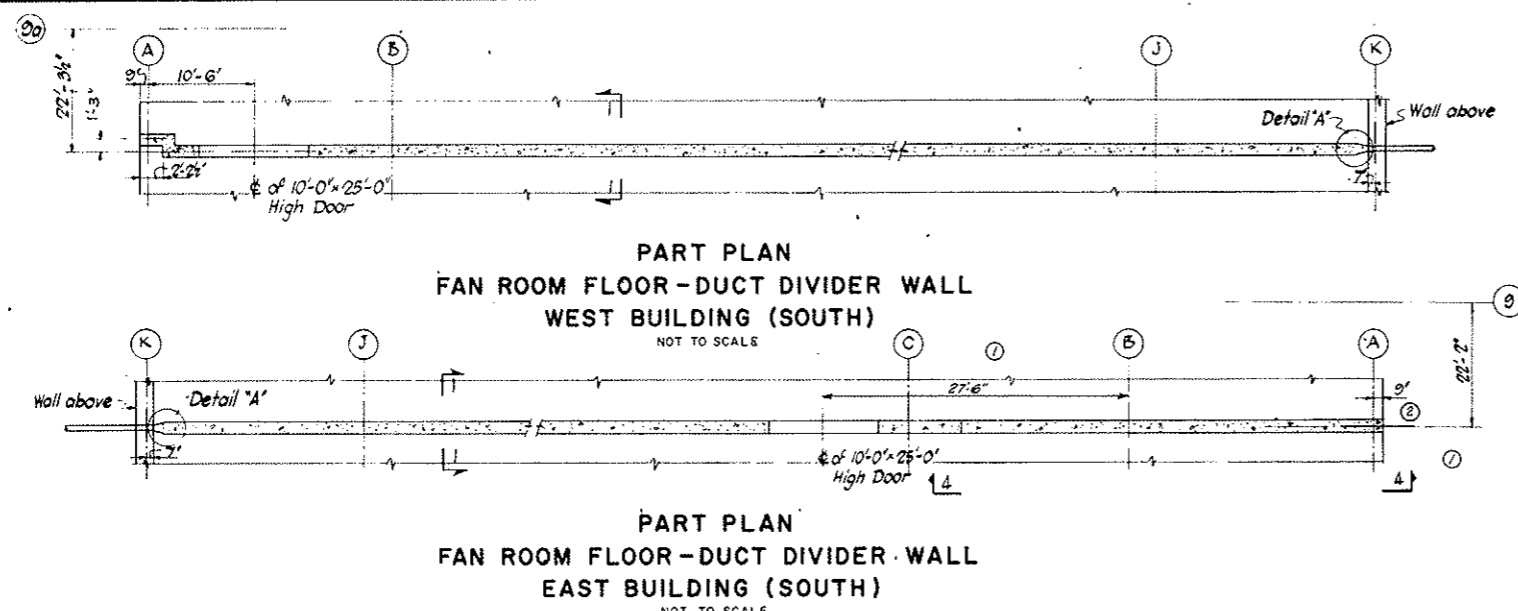
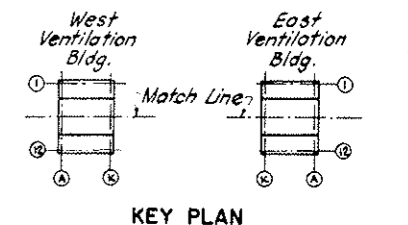
Live Load	30 PSF
Air - Pressure (Supply Ducts)	36 PSF
Air - Pressure (Exhaust Ducts)	33 PSF
Dead weight - Gunite	150 LBS/CUFT

AS CONSTRUCTED
NO REVISIONS
DATE 10-26-73

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL WEST AND EAST VENTILATION BUILDINGS FAN DUCTS - SECTIONS AND DETAILS SHEET 1					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: S.D.S.	RECOMMENDED: P. J. [Signature]				
DRAWN: D.K.	CHECKED: F.R.W.	APPROVED: [Signature]			
SUBMITTED: [Signature]					
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUG. 1967	DRAWING NO. S-WE13	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	192	326

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NOTE: Use this detail of the end of the wall at Col. Line A

- NOTES:
- See Dwg. 5W9 and 9E24 for Location of Duct-Divider Walls in North half of East & West Buildings.
 - Use Light-weight aggregate concrete in Duct-Divider Wall.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
1		REVISED CURB DETAIL			
2		GENERAL REVISION			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL
WEST AND EAST VENTILATION BUILDINGS
FAN DUCTS - SECTIONS AND DETAILS
SECTION 2

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

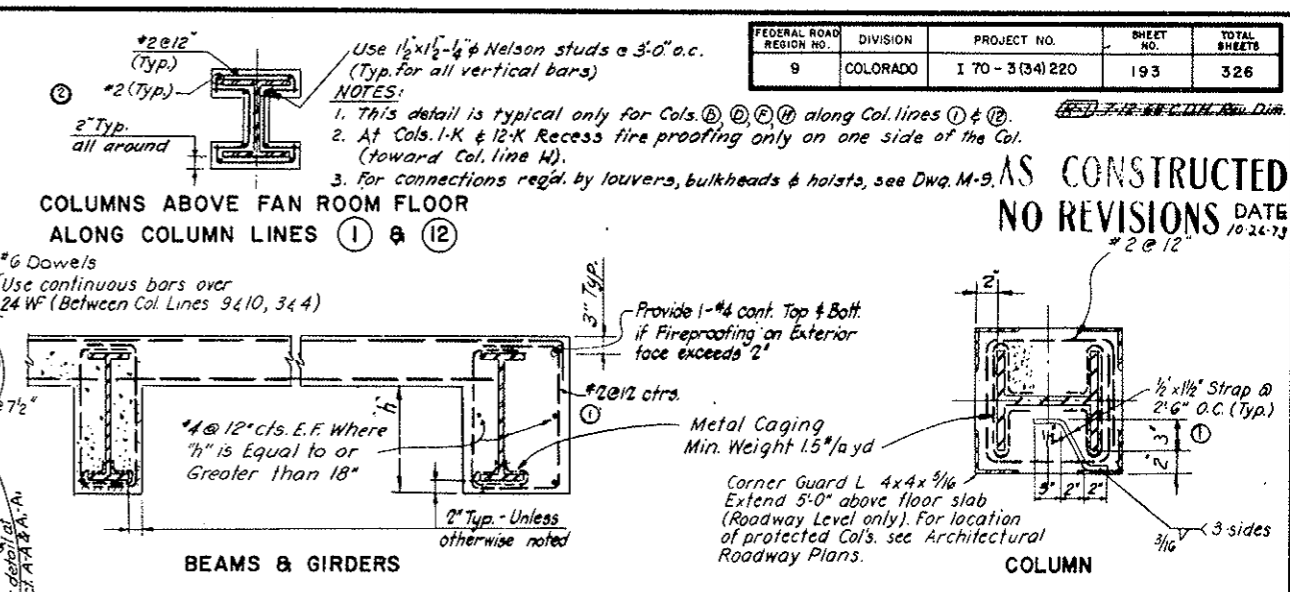
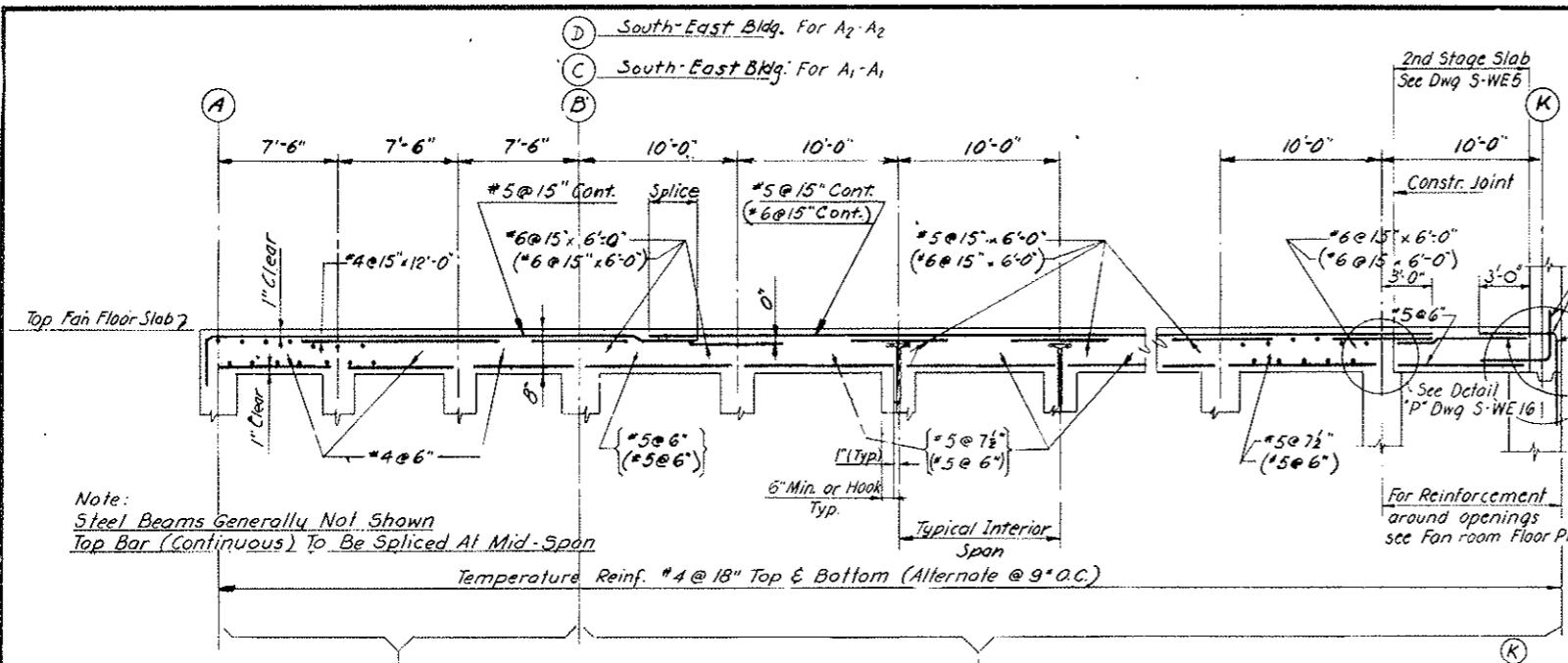
DESIGNED: S.O.S.
DRAWN: D.K.
CHECKED: F.R.W.
SUBMITTED: L. Anderson, P.E.

RECOMMENDED: J. H. [Signature]
APPROVED: [Signature]

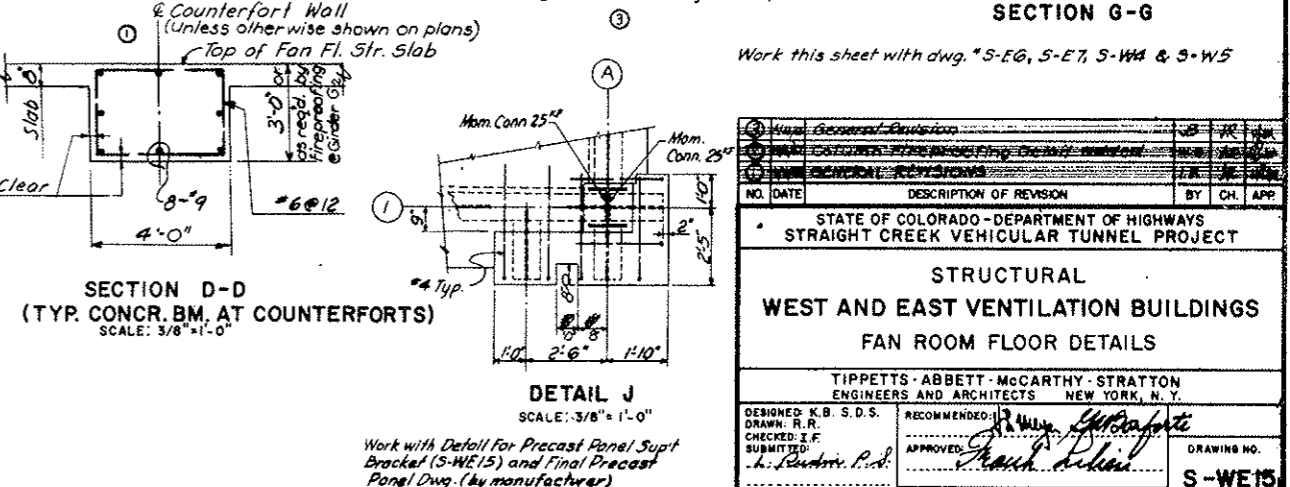
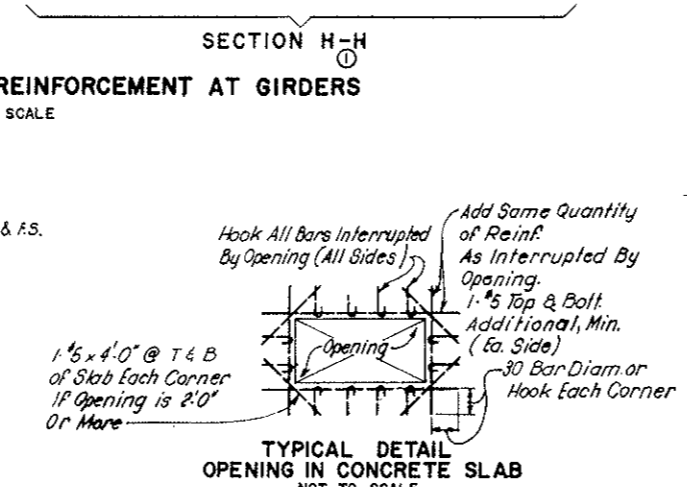
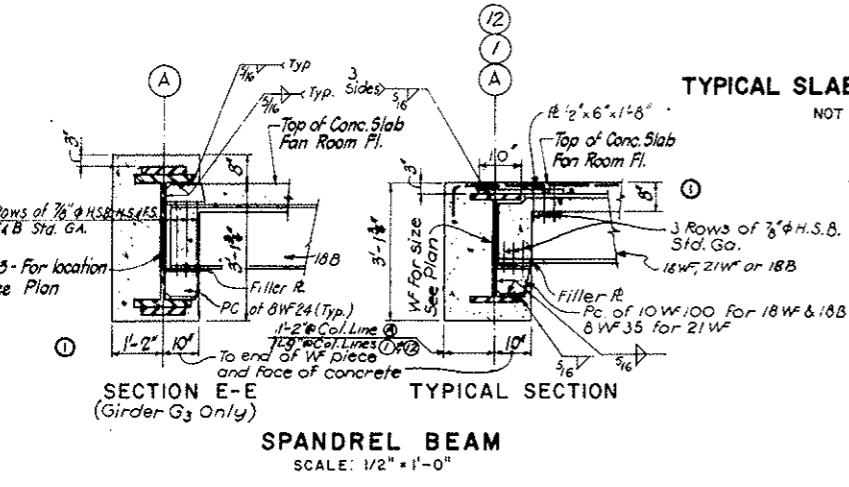
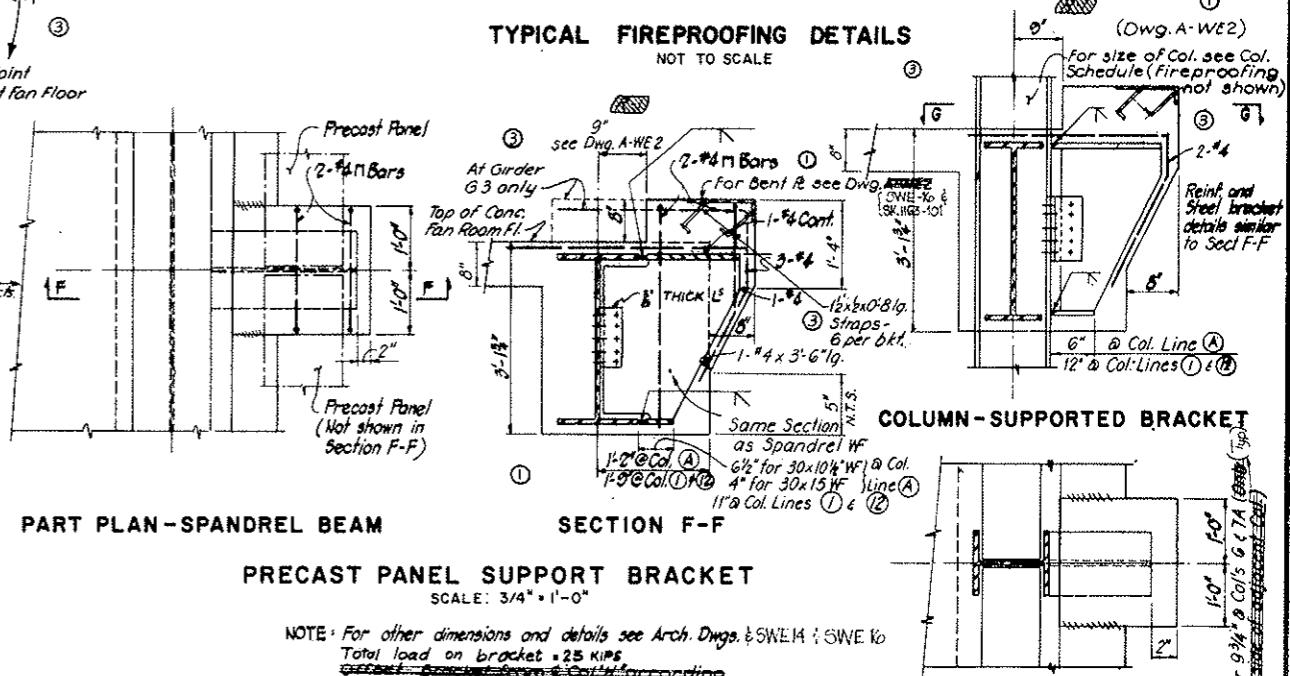
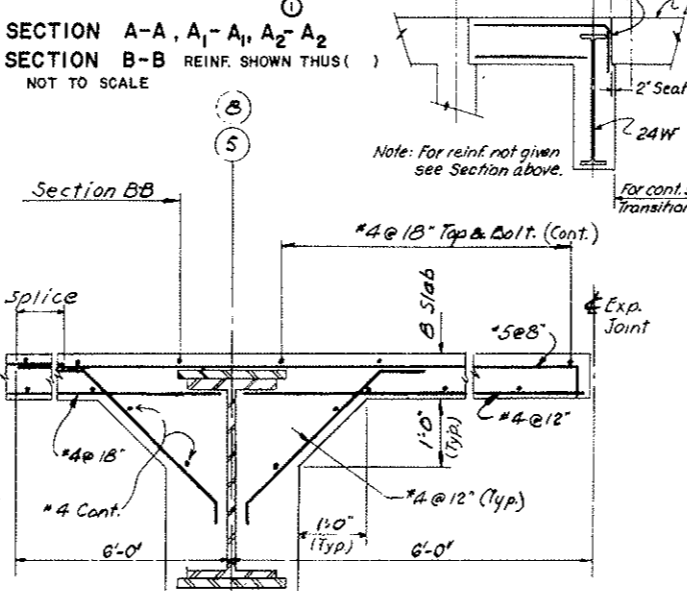
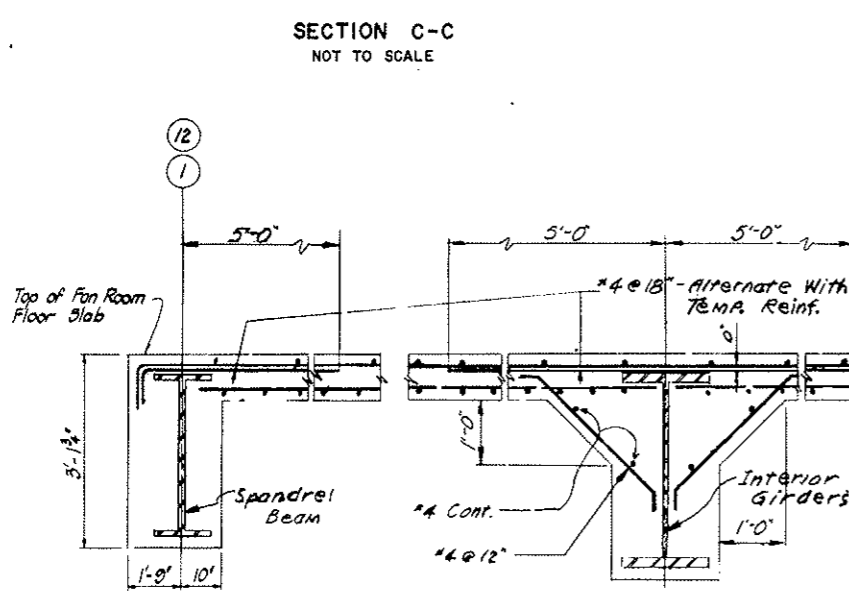
SCALE: AS NOTED DATE: AUG. 1967

DRAWING NO. S-WE14

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9	COLORADO	I 70-3(34)220	193	326



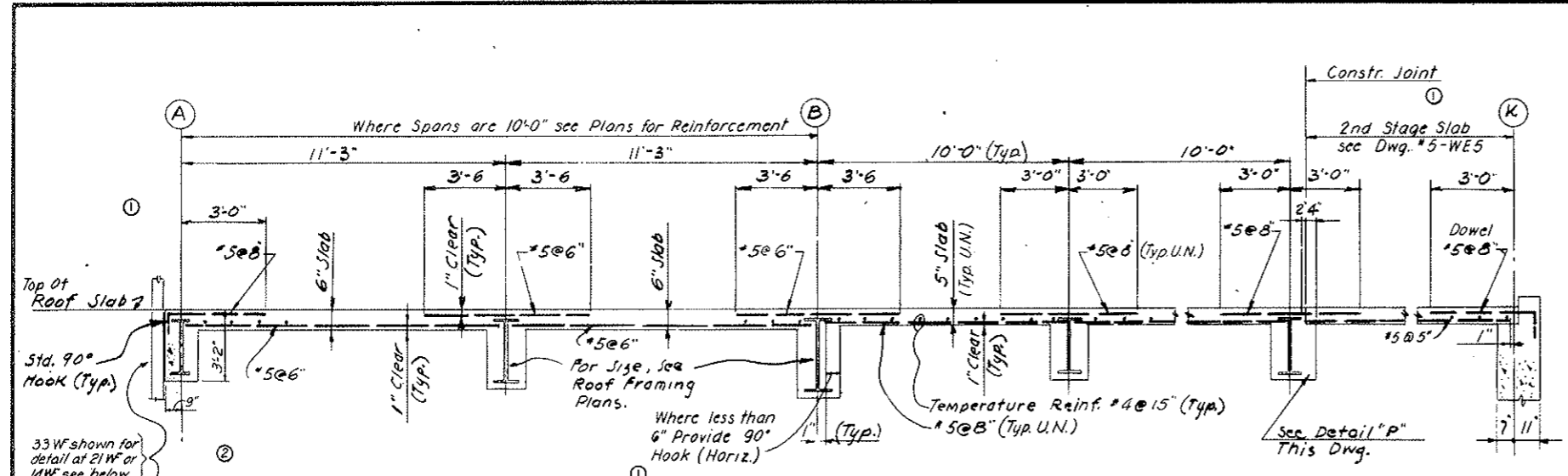
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



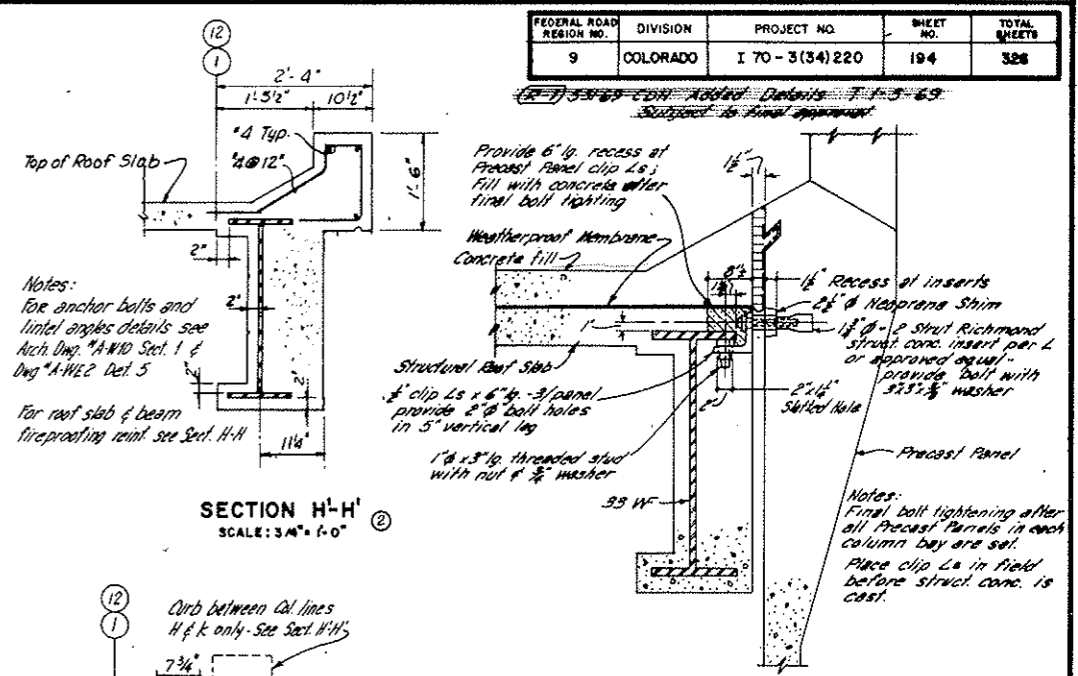
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL WEST AND EAST VENTILATION BUILDINGS FAN ROOM FLOOR DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: K.B. S.D.S.	RECOMMENDED: R. Kelly, J. P. Goff				
DRAWN: R.R.	CHECKED: J.F.				
SUBMITTED: L. S. ...	APPROVED: ...				
NEW YORK, N. Y.	SCALE: AS NOTED	DATE: AUG. 1967	DRAWING NO. S-WE15		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	194	328

Subject to Final Approval

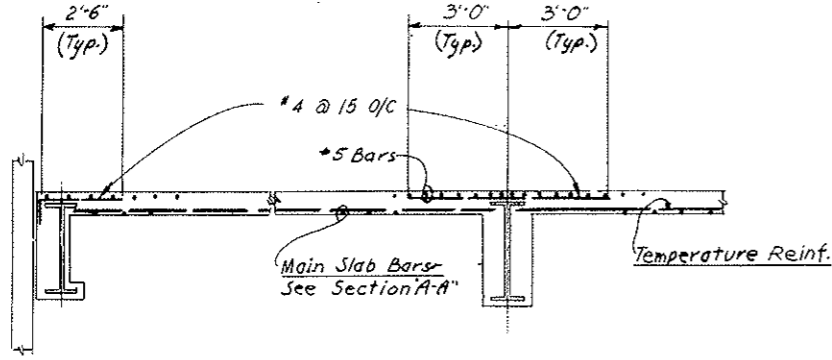


SECTION A-A
SCALE: 3/8" = 1'-0"

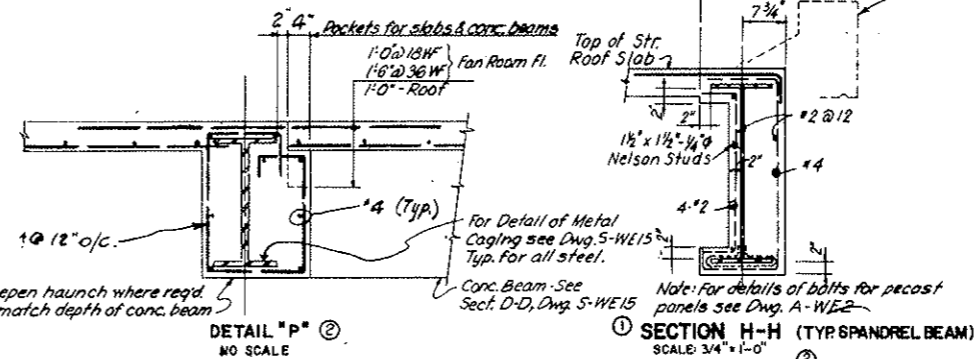


SECTION H-H
SCALE: 3/4" = 1'-0"

Note: For details of bolts for precast panels see Dwg. A-WE2

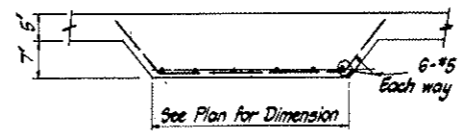


ADDITIONAL REINFORCEMENT AT BEAMS
PARALLEL TO MAIN BARS
NO SCALE

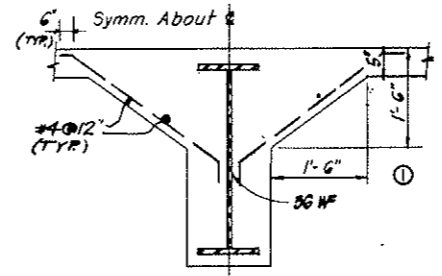


DETAIL P
NO SCALE

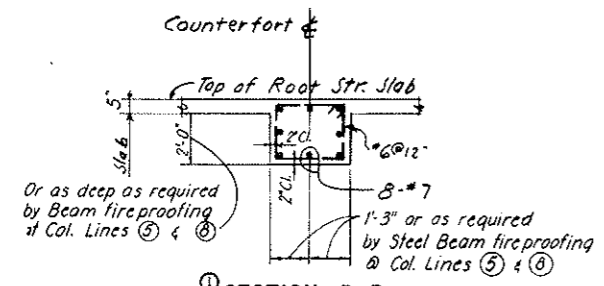
SECTION H-H (TYP. SPANDREL BEAM)
SCALE: 3/4" = 1'-0"



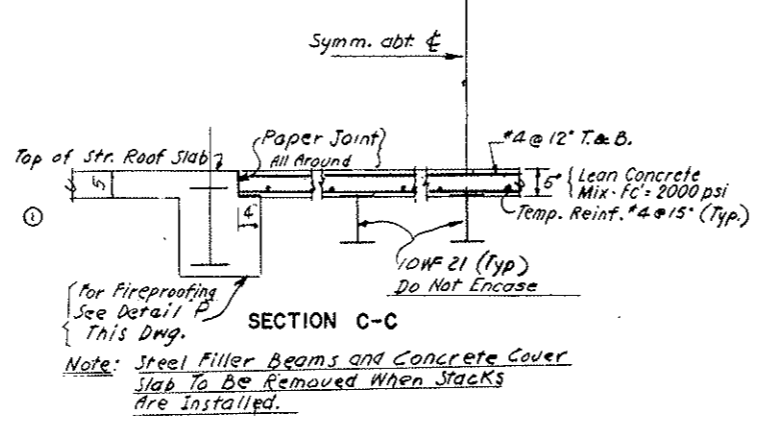
DETAIL AT JIB-CRANE SUPPORT



SECTION D-D
SCALE: 3/4" = 1'-0"

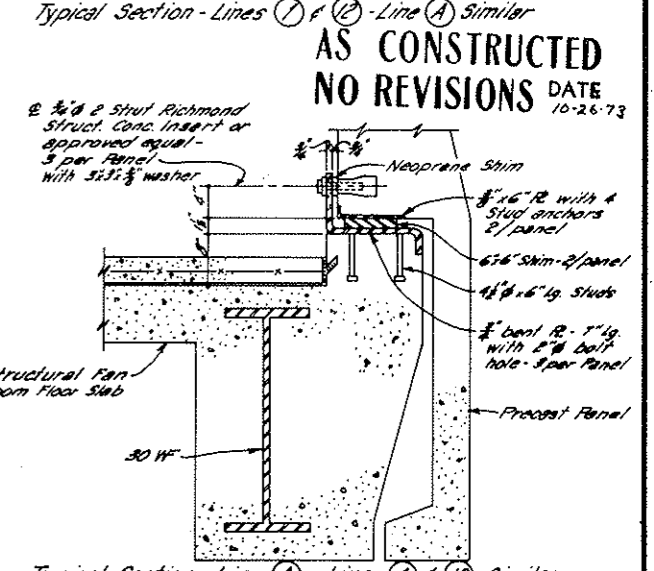


SECTION B-B
(TYP. CONCR. BEAM AT COUNTERFORT)
SCALE: 3/8" = 1'-0"



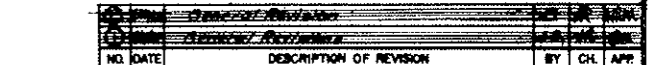
DETAIL OF TEMPORARY HATCH COVERS
FOR OPENINGS #5, #6, #7 SOUTH SIDES, EAST & WEST BLDGS.
NO SCALE

PRECAST PANELS
ROOF CONNECTION DETAILS
NO SCALE



AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

PRECAST PANELS
FAN ROOM FLOOR CONNECTION DETAILS
NO SCALE



- Notes:
1. Typical Beam Girder & Column fireproofing details shown on Dwg. #5-WE15
 2. Typical detail for openings in conc. slab shown on Dwg. #5-WE15

Reference Drawings:
Work with Dwg:
S-W6, S-W7, S-E8, S-E9

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

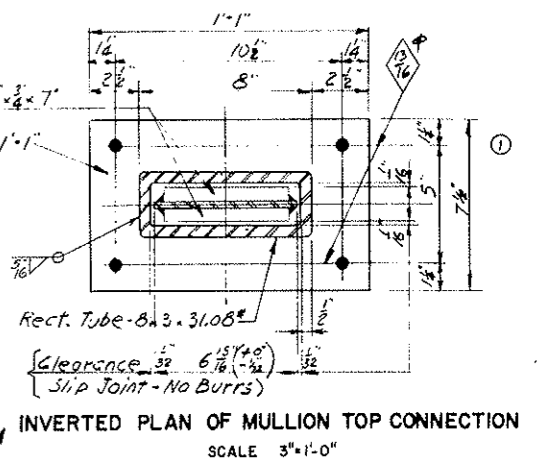
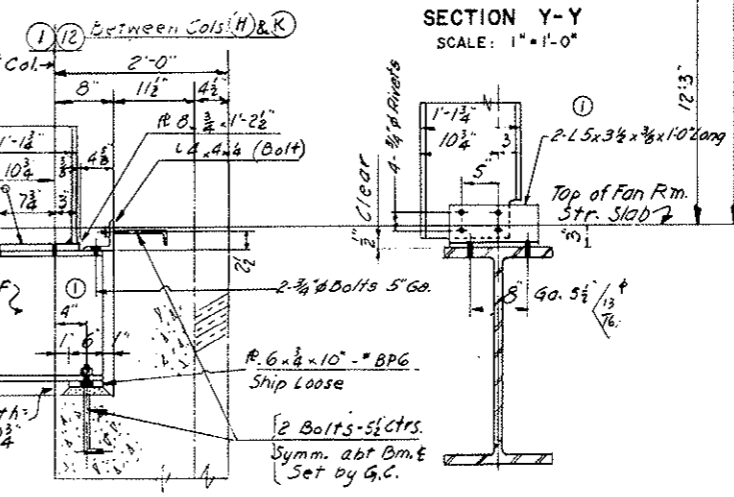
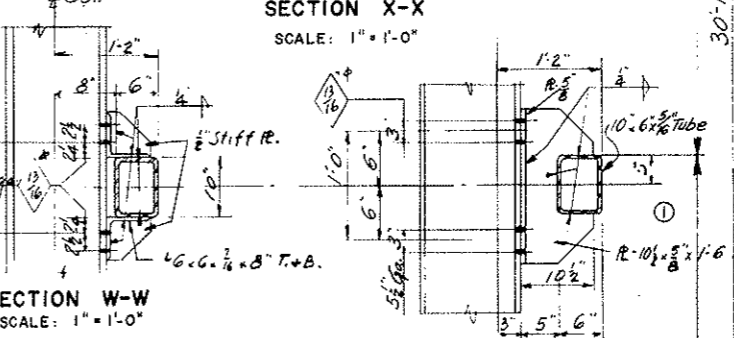
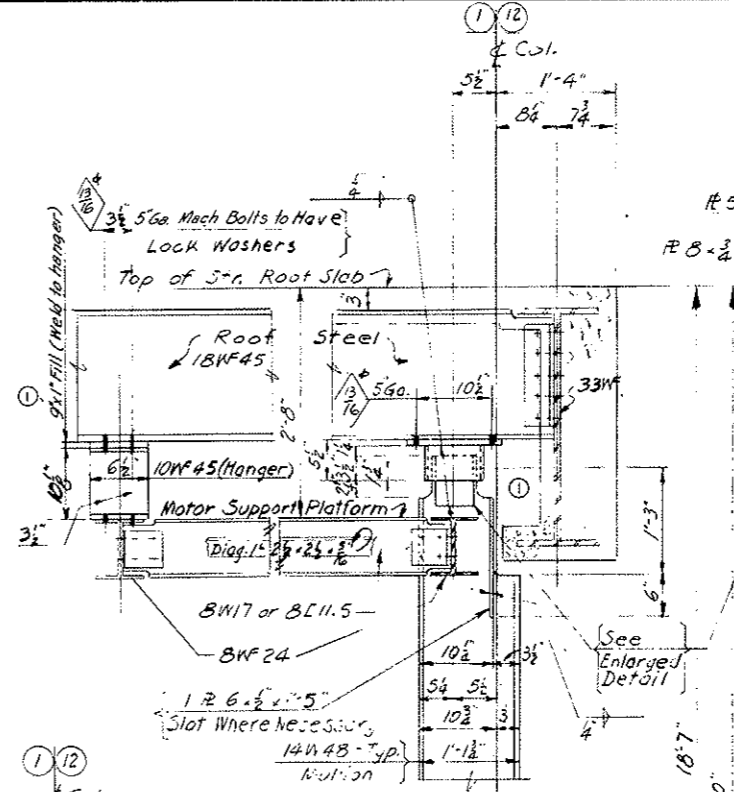
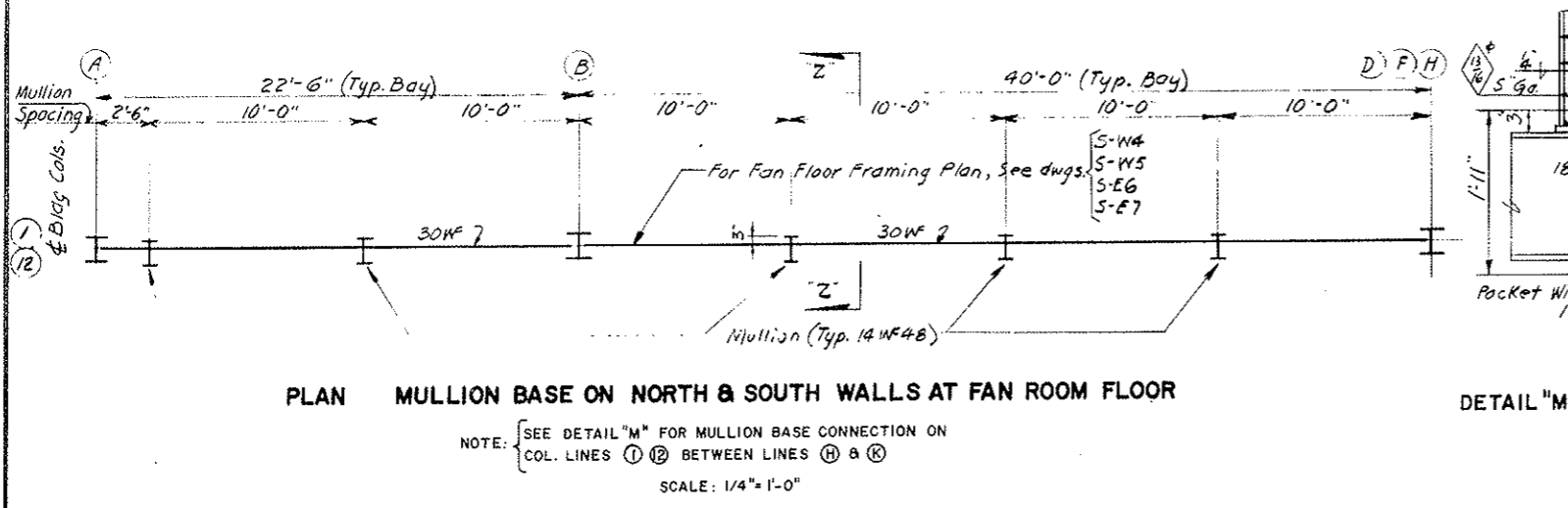
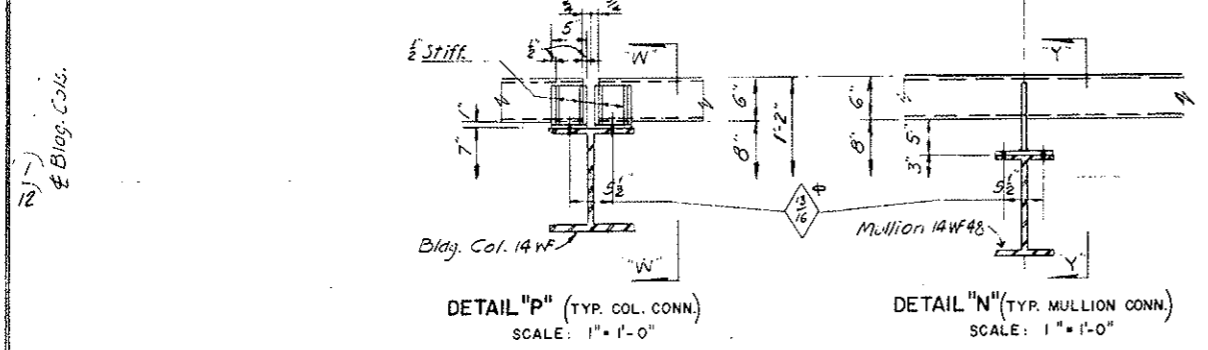
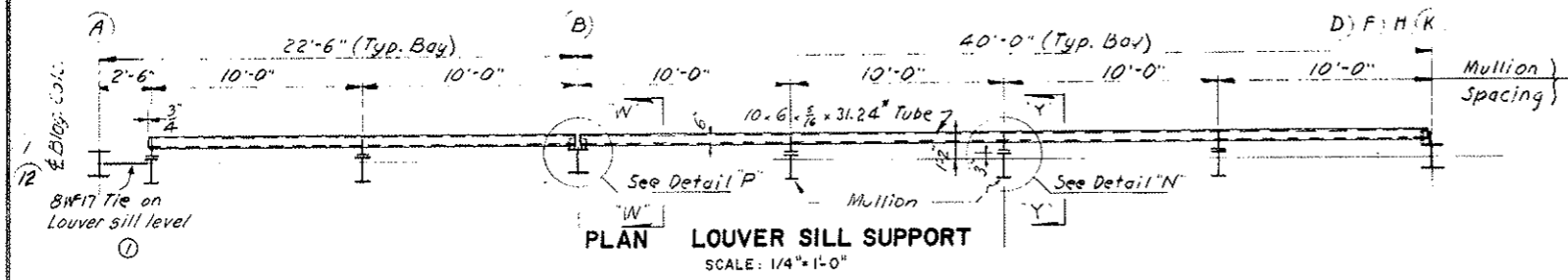
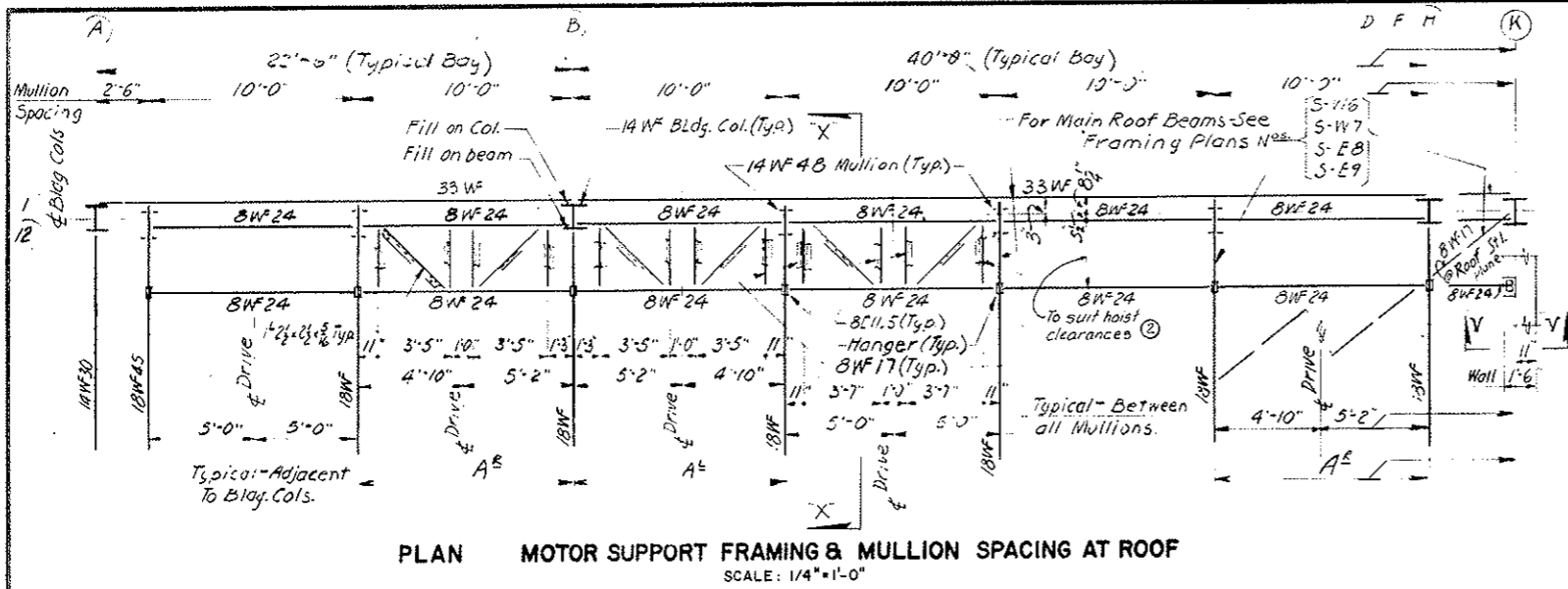
**STRUCTURAL
WEST AND EAST VENTILATION BUILDINGS
ROOF DETAILS**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N.Y.

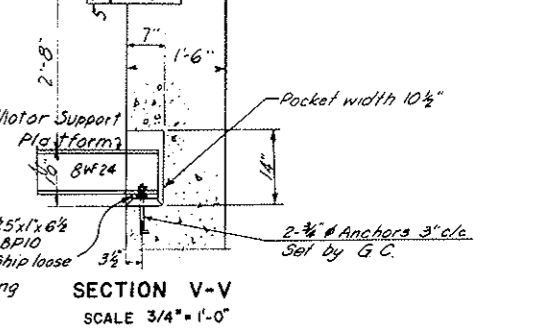
DESIGNED: S.S.	RECOMMENDED: [Signature]	DRAWING NO.
DRAWN: S.R.	CHECKED: [Signature]	S-WE16
SUBMITTED: [Signature]	APPROVED: [Signature]	

NEW YORK, N.Y. SCALE: AS NOTED DATE: AUG. 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	195	326



AS CONSTRUCTED
NO REVISIONS DATE 10-24-73



NOTE:
 ① This drawing to be read in conjunction with Dwg: M7, M3, N9, AWE-1
 ② All bolts for secondary members marked for ⑫ & holes may be ASTM A307 bolts.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL
WEST AND EAST VENTILATION BUILDINGS
 LOUVER WALL DETAILS

TIPPETTS - ABBETT - McCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: K.B.
 DRAWN: R.R.
 CHECKED: F.R.W.
 SUBMITTED: A. Radwin, P.E.

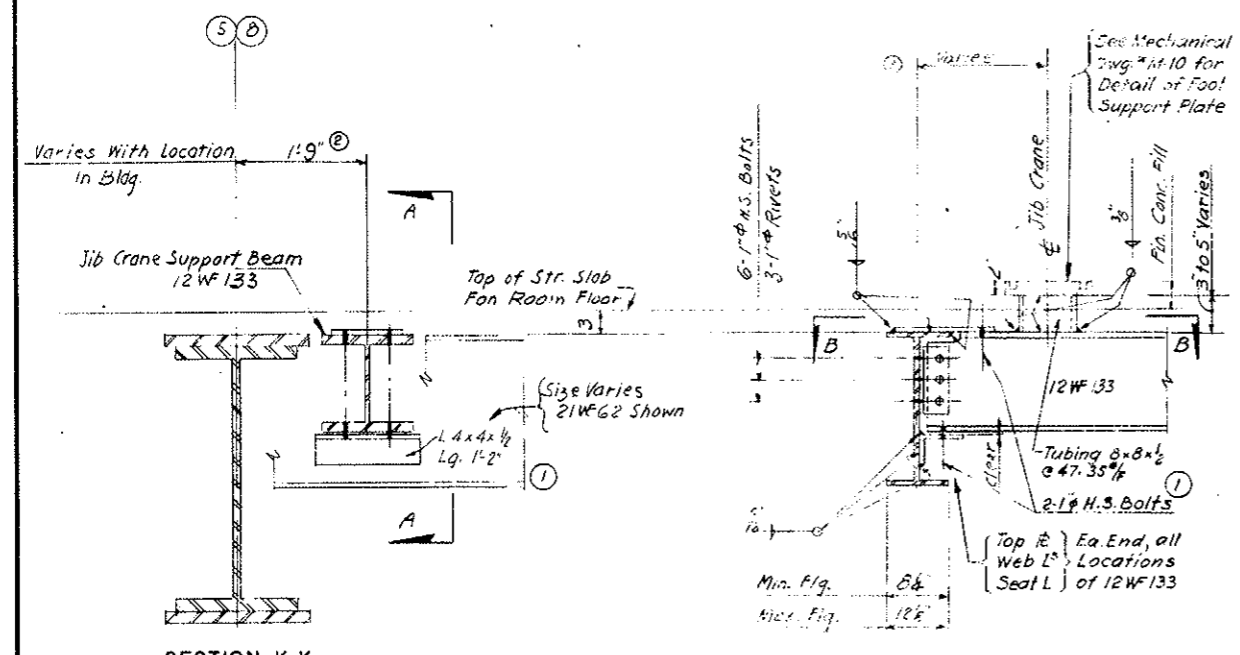
RECOMMENDED: [Signature]
 APPROVED: [Signature]

SCALE: AS NOTED DATE: AUG. 1967

DRAWING NO. **S-WE17**

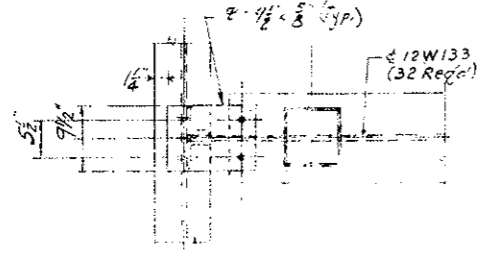
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	196	326

AS CONSTRUCTED NO REVISIONS DATE 10-16-67



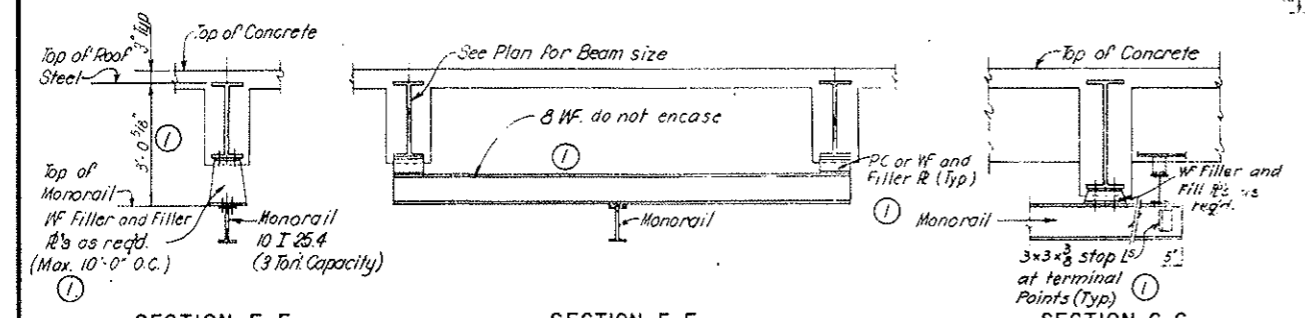
SECTION K-K

SECTION A-A



PLAN SECTION B-B

JIB CRANE SUPPORT FRAMING ON FAN ROOM FLOOR
SCALE: 1"=1'-0"



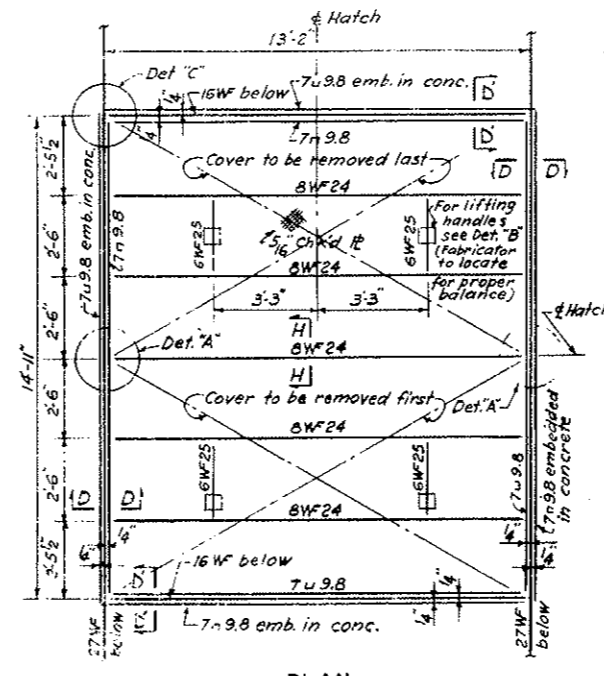
SECTION E-E
(For Stop angles see Sect. G-G)

SECTION F-F

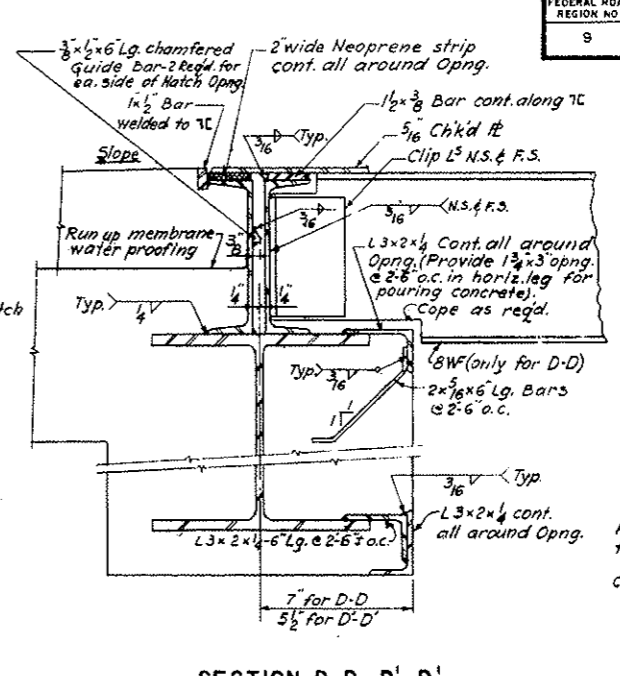
SECTION G-G

NOTES: 1- Monorail to be connected to beams above at all intersection and terminal points.
2- Maximum distance between connections to be 10'-0" (U.N.)

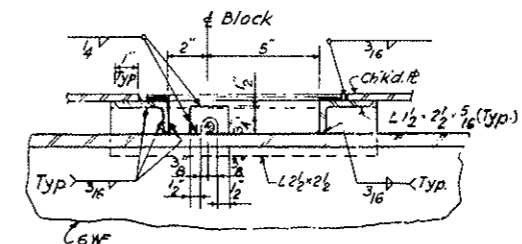
TYPICAL MONORAIL DETAILS
SCALE: 1/2"=1'-0"



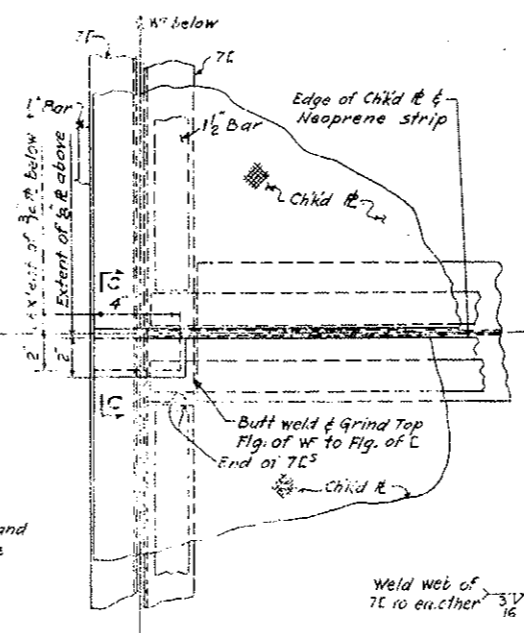
PLAN REMOVABLE FAN FLOOR HATCH COVER
SCALE: 3/8"=1'-0"



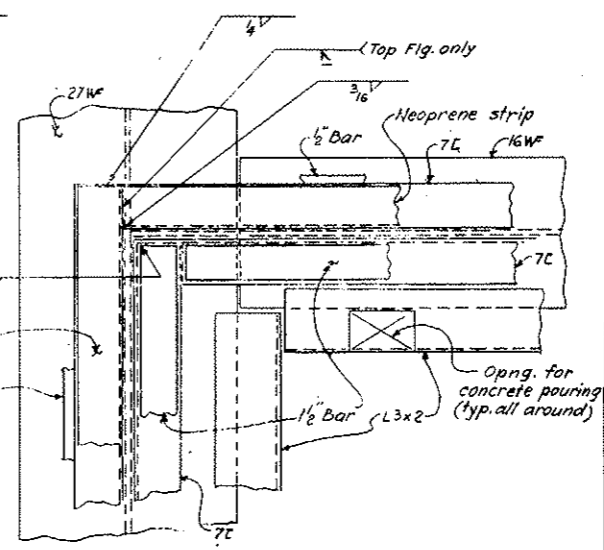
SECTION D-D, D'-D'
SCALE: 3"=1'-0"



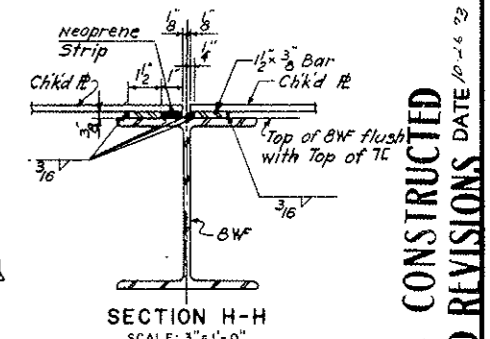
SECTION K-K
SCALE: 5"=1'-0"



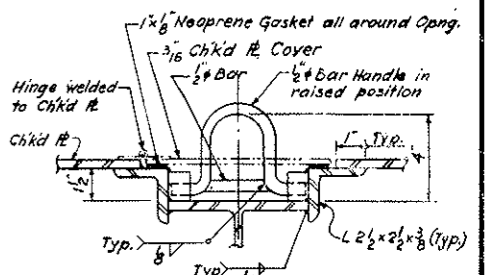
DETAIL A
SCALE: 3"=1'-0"



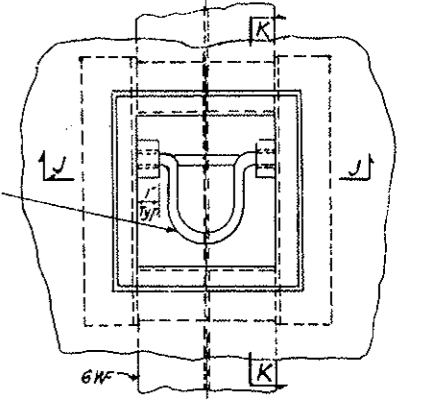
DETAIL C (TYP)
(CH'K'D PLATE NOT SHOWN)
SCALE: 3"=1'-0"



SECTION H-H
SCALE: 3"=1'-0"



SECTION J-J
SCALE: 3"=1'-0"



DETAIL B (TYP)
(CH'K'D PLATE COVER NOT SHOWN)
SCALE: 3"=1'-0"

REFERENCE DRAWINGS:

Mechanical M-10
Structural S-W4 thru S-W7, SE-6 thru S-E9

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
STRUCTURAL
WEST AND EAST VENTILATION BUILDINGS
MISCELLANEOUS DETAILS

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N.Y.
DESIGNED: K.B. S.D.S.
DRAWN: R.R.
CHECKED: J.P.
SUBMITTED: A. R. ...
RECOMMENDED: ...
APPROVED: ...
DATE: AUG. 1967
SCALE: AS NOTED
DATE: AUG. 1967
DRAWING NO. S-WE10

INDEX OF DRAWINGS

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	I 70-3(34)220	RP-1	

NOT CONSTRUCTED
REVISED DATE
OCT 26, 1973

CIVIL GENERAL

RP-1	G1-101	INDEX OF REINFORCEMENT PLACEMENT DRAWINGS
RP-2	G3-101	WEST PORTAL AREA - REINFORCEMENT - WATER STORAGE TANK SHEET 1 OF 2
RP-3	G3-102	WEST PORTAL AREA - REINFORCEMENT - WATER STORAGE TANK SHEET 2 OF 2
RP-4	G3-103	WEST PORTAL AREA REINFORCEMENT WELL HOUSE VOID

CIVIL - WEST PORTAL SECTION - REINFORCEMENT

RP-5	C1-101	NORTH TRANSITION SEGMENT - BASE SLAB - PLAN AND SECTION
RP-6	C1-102	NORTH TRANSITION SEGMENT - CROSS SECTIONS
RP-7	C1-103	NORTH TRANSITION SEGMENT - NORTH & SOUTH WALLS - OUTSIDE FACE
RP-8	C1-104	NORTH TRANSITION SEGMENT - NORTH WALL - INSIDE FACE
RP-9	C1-105	NORTH TRANSITION SEGMENT - SOUTH WALL - INSIDE FACE
RP-10	C1-106	NORTH TRANSITION SEGMENT - ROOF SLAB AND ARCH
RP-11	C1-107	NORTH TRANSITION SEGMENT - REINFORCEMENT SCHEDULES 1 AND DETAILS
RP-12	C1-108	NORTH TRANSITION SEGMENT - REINFORCEMENT SCHEDULES 11
RP-13	C1-109	NORTH TRANSITION SEGMENT - WALKWAYS AND UPPER WALL - SECOND STAGE CONCRETE
RP-14	C1-110	NORTH TRANSITION SEGMENT - DUCT FLOOR AND PRECAST CEILING PANELS - SHEET 1 OF 2 VOID
RP-15	C1-111	NORTH TRANSITION SEGMENT - DUCT FLOOR AND PRECAST CEILING PANELS - SHEET 2 OF 2 VOID
RP-16	C1-112	NORTH TRANSITION SEGMENT - DUCT DIVIDER WALL VOID
RP-17	C1-113	SOUTH TRANSITION SEGMENT - BASE SLAB - PLAN AND SECTIONS
RP-18	C1-114	SOUTH TRANSITION SEGMENT - CROSS SECTIONS
RP-19	C1-115	SOUTH TRANSITION SEGMENT - NORTH AND SOUTH WALLS - OUTSIDE FACE
RP-20	C1-116	SOUTH TRANSITION SEGMENT - NORTH WALL - INSIDE FACE
RP-21	C1-117	SOUTH TRANSITION SEGMENT - SOUTH WALL - INSIDE FACE
RP-22	C1-118	SOUTH TRANSITION SEGMENT - ROOF SLAB AND ARCH
RP-23	C1-119	SOUTH TRANSITION SEGMENT - REINFORCEMENT SCHEDULES 1 AND DETAILS
RP-24	C1-120	SOUTH TRANSITION SEGMENT - REINFORCEMENT SCHEDULES 11
RP-25	C1-121	NORTH AND SOUTH CONDUIT SEGMENTS WITH INVERT SLAB - CROSS SECTION AND DETAILS
RP-26	C1-122	NORTH AND SOUTH CONDUIT SEGMENTS WITH INVERT SLAB - INVERT SLAB AND LONGITUDINAL SECTIONS
RP-27	C1-123	NORTH AND SOUTH CONDUIT SEGMENTS WITH INVERT SLAB - WALL ELEVATIONS
RP-28	C1-124	NORTH AND SOUTH CONDUIT SEGMENTS WITH INVERT SLAB - REINFORCEMENT SCHEDULES
RP-29	C1-125	NORTH AND SOUTH CONDUIT SEGMENTS WITHOUT INVERT SLAB - CROSS SECTION AND DETAILS
RP-30	C1-126	NORTH AND SOUTH CONDUIT SEGMENTS WITHOUT INVERT SLAB - WALL ELEVATION AND REINFORCEMENT SCHEDULES
RP-31	C1-127	CIVIL - PORTAL SECTIONS - REINFORCEMENT - SOUTH TUNNEL - DROP INLET MANHOLES AND SUMP PITS

CIVIL - TUNNEL - REINFORCEMENT

RP-32	C2-101	TUNNEL SEGMENTS - LINING REINFORCEMENT GUIDE AND SUMMARY
RP-33	C2-102	STANDARD SEGMENT - TUNNEL SECTION TYPE 1a - LINING - OUTSIDE FACE VOID
RP-34	C2-103	STANDARD SEGMENT - TUNNEL SECTION TYPES 1a, 1b, 11a, 11b AND 111a - LINING - INSIDE FACE - SHEET 1 OF 2
RP-35	C2-104	STANDARD SEGMENT - TUNNEL SECTION TYPES 1a, 1b, 11a, 11b AND 111a - LINING - INSIDE FACE - SHEET 1 OF 2
RP-36	C2-105	STANDARD SEGMENT - TUNNEL SECTION TYPE 111b - LINING - INSIDE FACE - SHEET 1 OF 2
RP-37	C2-106	STANDARD SEGMENT - TUNNEL SECTION TYPE 111b - LINING - INSIDE FACE - SHEET 2 OF 2
RP-38	C2-107	STANDARD SEGMENT - TUNNEL SECTION TYPE 111b - LINING - INSIDE FACE - SHEET 1 OF 2 VOID
RP-38AX	C2-107A	TRUSS REBAR PATTERN FOR 2 TYPICAL SEGMENTS
RP-38BX	C2-107B	TRUSS REBAR PATTERN FOR 2 TYPICAL SEGMENTS
RP-38CX	C2-107C	CURB REBAR LAYOUT SEGMENT N81
RP-38DX	C2-107D	CURB REBAR LAYOUT SEGMENT N82
RP-38EX	C2-107E	CURB REBAR LAYOUT SEGMENTS N83 - N 85
RP-38FX	C2-107F	SIDEWALL AND ARCH REBAR SEGMENTS N81 - N85
RP-38GX	C2-107G	9 DRIFTS REBAR SEGMENTS N86 - N87
RP-38HX	C2-107H	9 AND 13 DRIFTS, REBAR SEGMENTS N88 - N95
RP-38IX	C2-107I	5 DRIFTS, REBAR SEGMENTS N94 - N123
RP-38JX	C2-107J	SEGMENTS N124 - N140 REBAR PATTERN
RP-38KX	C2-107K	SEGMENTS N141 - N158 CURB REBAR LAYOUT
RP-38LX	C2-107L	ARCH AND SIDEWALL REBAR - SEGMENT N141 - N145 + N 151 - N156
RP-38MX	C2-107M	ARCH AND SIDEWALL REBAR SEGMENTS N146 - N150 + N157 - N158

RP-39	C2-108	STANDARD SEGMENT - TUNNEL SECTION TYPE 111b - LINING - INSIDE FACE - SHEET 2 OF 2 VOID
RP-40	C2-109	STANDARD SEGMENT - TUNNEL SECTION TYPE 111b - LINING - INSIDE FACE - SHEET 1 OF 2 VOID
RP-41	C2-110	STANDARD SEGMENT - TUNNEL SECTION TYPE 111b - LINING - INSIDE FACE - SHEET 2 OF 2 VOID
RP-42	C2-111	STANDARD SEGMENT - TUNNEL SECTION TYPE 111b - LINING - INSIDE FACE - SHEET 1 OF 2 VOID
RP-43	C2-112	STANDARD SEGMENT - TUNNEL SECTION TYPE 111b - LINING - INSIDE FACE - SHEET 2 OF 2 VOID
RP-44	C2-113	MODIFIED FLUES - TUNNEL SECTION TYPES 1a, 1b, 11a, 11b, 111a AND 111b
RP-45	C2-114	MODIFIED FLUES - TUNNEL SECTION TYPE 111b VOID
RP-46	C2-115	MODIFIED FLUES - TUNNEL SECTION TYPE 111b VOID
RP-47	C2-116	TELEPHONE, FIRE EXTINGUISHER RECESSES AND CENTER BULKHEAD FRAMING
RP-47AX	C2-116A	MISCELLANEOUS REBAR DETAILS
RP-48	C2-117	PULLBOX STATION IN HIGH WALKWAY WALL - NORMAL FLUES
RP-49	C2-118	PULLBOX STATION IN HIGH WALKWAY WALL - MODIFIED FLUES - SEGMENTS N44, N84 AND N92 - TUNNEL SECTION TYPES 1a, 1b, 11a, 11b, 111a AND 111b
RP-50	C2-119	PULLBOX STATION IN HIGH WALKWAY WALL - MODIFIED FLUES - SEGMENTS N44, N84, AND N92 - TUNNEL SECTION TYPE 111b VOID
RP-51	C2-120	PULLBOX STATION IN HIGH WALKWAY WALL - MODIFIED FLUES - SEGMENTS N44, N84, AND N92 - TUNNEL SECTION TYPE 111b VOID
RP-52	C2-121	PULLBOX STATION IN LOW WALKWAY - DISTRIBUTION STATION
RP-53	C2-122	PULLBOX STATION IN LOW WALKWAY WALL - CROSSOVER PULLBOX
RP-54	C2-123	CROSS PASSAGEWAY OPENING - SEGMENTS N42 AND N82
RP-55	C2-124	CROSS PASSAGEWAY OPENING - SEGMENTS N128 VOID
RP-55AX	C2-124A	CENTER AND EAST CROSS PASSAGEWAY - REBAR DETAILS
RP-56	C2-125	TRAFFIC CONTROL PULPIT - HIGH WALKWAY WALL
RP-56AX	C2-125A	HIGH WALKWAY PULPIT REBAR DETAILS - SOUTH WALL
RP-57	C2-126	TRAFFIC CONTROL PULPIT - LOW WALKWAY WALL - SEGMENT N133 VOID
RP-58	C2-127	TRAFFIC CONTROL PULPIT - LOW WALKWAY WALL - SEGMENT N36 AND N84
RP-58AX	C2-127A	LOW WALKWAY PULPIT - REBAR DETAIL
RP-59	C2-128	TRANSITION FROM TUNNEL SECTION TYPE 111b TO 111a AND 111b - LINING - ADDITIONAL REINFORCEMENT VOID
RP-60	C2-129	CIVIL - TUNNEL AND CONDUIT SEGMENTS - REINFORCEMENT - LOW AND HIGH WALKWAYS - STANDARD SEGMENT AND DETAILS AT FIRE HYDRANT
RP-61	C2-130	CIVIL - TUNNEL AND CONDUIT SEGMENTS - REINFORCEMENT - WALKWAYS AND SECOND STAGE WALL CONCRETE - DETAILS AT MISCELLANEOUS OPENINGS
RP-62	C2-131	CEILING SLAB - STANDARD SEGMENT - WEST OF BULKHEAD - EXHAUST PORTS AT 12' - 63/4" o.c. VOID
RP-63	C2-132	CIVIL - TUNNEL AND WEST CONDUIT SEGMENTS - REINFORCEMENT - CEILING SLAB - STANDARD SEGMENT - WEST OF BULKHEAD - EXHAUST PORTS AT 25' - 1-1/2' o.c. VOID
RP-64	C2-133	CEILING SLAB - STANDARD SEGMENT - EAST OF BULKHEAD - EXHAUST PORTS AT 12' - 63/4" o.c. VOID
RP-65	C2-134	CIVIL - TUNNEL AND EAST CONDUIT SEGMENTS - REINFORCEMENT - CEILING SLAB - STANDARD SEGMENT - EAST OF BULKHEAD - EXHAUST PORTS AT 25' - 1-1/2' o.c. VOID
RP-66	C2-135	CEILING SLAB - DETAILS FOR SEGMENTS N42 AND N82 VOID
RP-67	C2-136	CEILING SLAB - DETAILS FOR SEGMENT N128 VOID
RP-68	C2-137	CEILING SLAB - DETAILS FOR SEGMENT N84 VOID
RP-69	C2-138	CIVIL - TUNNEL AND PORTAL SECTIONS - REINFORCEMENT - CEILING SLAB - PROTECTIVE COURSE DETAILS VOID
RP-70	C2-139	CIVIL - TUNNEL AND CONDUIT SEGMENTS - REINFORCEMENT - CEILING ACCESS HATCHES AND FOOT BLOCKS
RP-71	C2-140	DUCT DIVIDER WALLS VOID
RP-72	C2-141	CIVIL - TUNNEL AND PORTAL SECTIONS - REINFORCEMENT - ROADWAY CONCRETE BASE SLAB VOID
RP-73	C2-142	MANHOLES IN NORTH TUNNEL - ROADWAY VOID
RP-74	C2-143	WEST AND EAST CROSS PASSAGEWAYS - TRANSFORMER VAULT
RP-75	C2-144	CENTER CROSS PASSAGEWAY - TRANSFORMER VAULTS
RP-76	C2-145	CROSS PASSAGEWAYS - MISCELLANEOUS DETAILS

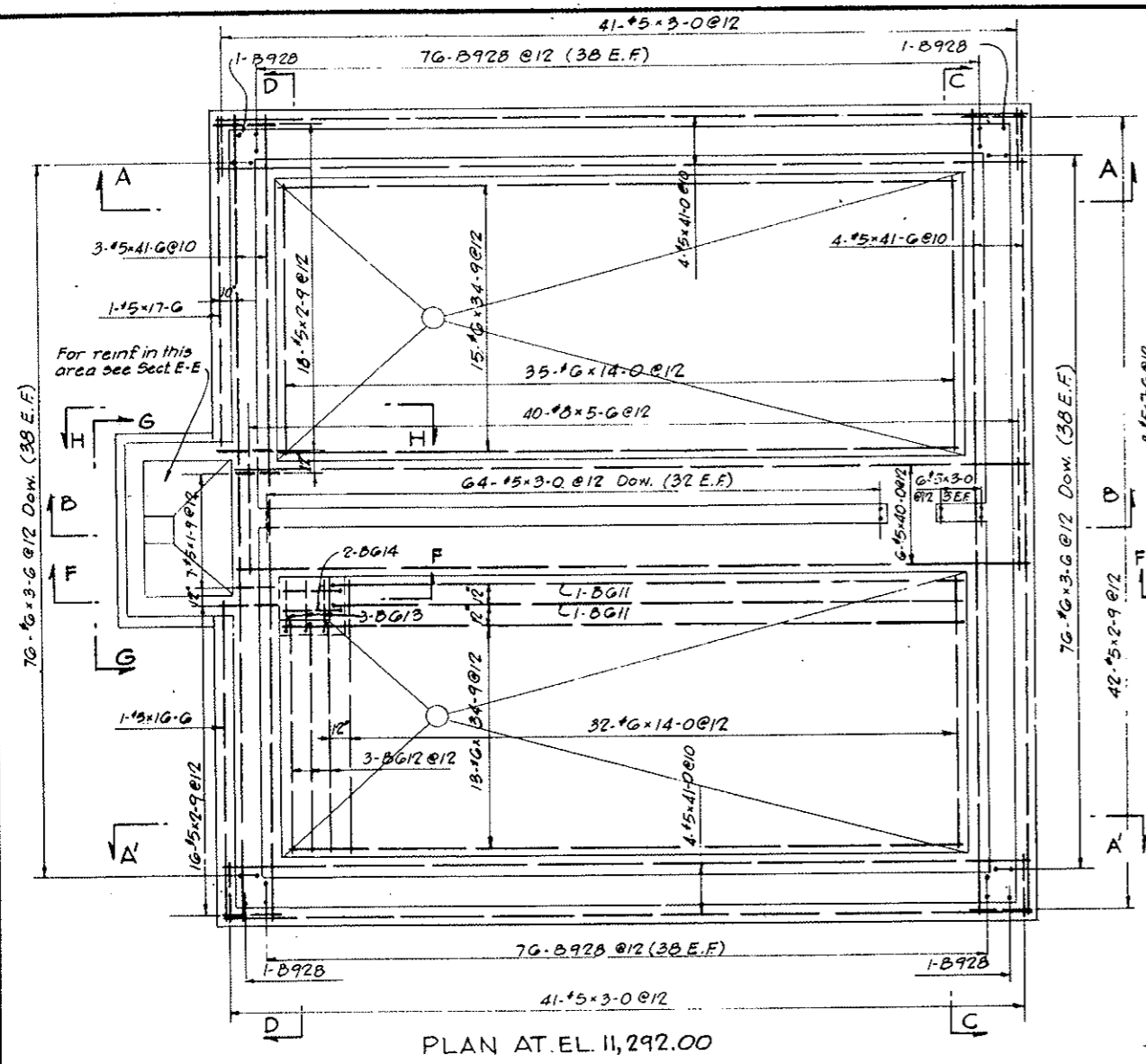
CIVIL - EAST PORTAL SECTION - REINFORCEMENT

RP-77	C3-101	NORTH CONDUIT SEGMENTS - TUNNELLED - CROSS SECTION - AND DETAILS VOID
RP-77AX	C3-101A	NORTH CONDUIT SEGMENTS - TUNNELLED
RP-78	C3-102	NORTH CONDUIT SEGMENTS - TUNNELLED - INVERT SLAB AND LONGITUDINAL SECTIONS VOID
RP-79	C3-103	NORTH CONDUIT SEGMENTS - TUNNELLED - WALL ELEVATIONS - AND DETAILS VOID
RP-80	C3-104	NORTH CONDUIT SEGMENTS - TUNNELLED - REINFORCEMENT SCHEDULES VOID
RP-81	C3-105	NORTH CONDUIT SEGMENTS - CUT AND COVER - CROSS SECTION AND DETAILS
RP-82	C3-106	NORTH CONDUIT SEGMENTS - CUT AND COVER - INVERT SLAB AND LONGITUDINAL SECTIONS
RP-83	C3-107	NORTH CONDUIT SEGMENTS - CUT AND COVER - WALL ELEVATIONS
RP-84	C3-108	NORTH CONDUIT SEGMENTS - CUT AND COVER - REINFORCEMENT SCHEDULES
RP-85	C3-109	SOUTH CONDUIT SEGMENTS - TUNNELLED - CROSS SECTION - AND DETAILS VOID
RP-85AX	C3-109A	REBAR SOUTH CONDUIT SEGMENT S164
RP-85BX	C3-109B	REBAR SOUTH CONDUIT SEGMENT S163
RP-86	C3-110	SOUTH CONDUIT SEGMENTS - TUNNELLED - INVERT SLAB AND LONGITUDINAL SECTIONS VOID
RP-87	C3-111	SOUTH CONDUIT SEGMENTS - TUNNELLED - WALL ELEVATIONS - AND DETAILS VOID
RP-88	C3-112	SOUTH CONDUIT SEGMENTS - TUNNELLED - REINFORCEMENT - SCHEDULES VOID
RP-89	C3-113	SOUTH CONDUIT SEGMENTS - CUT AND COVER - CROSS SECTION AND DETAILS
RP-90	C3-114	SOUTH CONDUIT SEGMENTS - CUT AND COVER - INVERT SLAB AND LONGITUDINAL SECTIONS
RP-91	C3-115	SOUTH CONDUIT SEGMENTS - CUT AND COVER - WALL ELEVATIONS
RP-92	C3-116	SOUTH CONDUIT SEGMENTS - CUT AND COVER - REINFORCEMENT SCHEDULES
RP-93	C3-117	NORTH TRANSITION SEGMENT - BASE SLAB - PLAN AND SECTIONS
RP-94	C3-118	NORTH TRANSITION SEGMENT - CROSS SECTIONS
RP-95	C3-119	NORTH TRANSITION SEGMENT - NORTH AND SOUTH WALLS - OUTSIDE FACE
RP-96	C3-120	NORTH TRANSITION SEGMENT - NORTH WALL - INSIDE FACE
RP-97	C3-121	NORTH TRANSITION SEGMENT - SOUTH WALL - INSIDE FACE
RP-98	C3-122	NORTH TRANSITION SEGMENT - ROOF SLAB AND ARCH
RP-99	C3-123	NORTH TRANSITION SEGMENT - REINFORCEMENT SCHEDULES 1 AND DETAILS
RP-100	C3-124	NORTH TRANSITION SEGMENT - REINFORCEMENT SCHEDULES 11
RP-101	C-125	NORTH TRANSITION SEGMENT - WALKWAYS AND UPPER WALL - SECOND STAGE CONCRETE
RP-102	C3-126	NORTH TRANSITION SEGMENT - DUCT FLOOR AND PRECAST CEILING PANELS - SHEET 1 OF 2 VOID
RP-103	C3-127	NORTH TRANSITION SEGMENT - DUCT FLOOR AND PRECAST CEILING PANELS - SHEET 2 OF 2 VOID
RP-104	C3-128	NORTH TRANSITION SEGMENT - DUCT DIVIDER WALL VOID
RP-105	C3-129	SOUTH TRANSITION SEGMENT - BASE SLAB - PLAN AND SECTIONS
RP-106	C3-130	SOUTH TRANSITION SEGMENT - CROSS SECTIONS
RP-107	C3-131	SOUTH TRANSITION SEGMENT - NORTH & SOUTH WALLS - OUTSIDE FACE
RP-108	C3-132	SOUTH TRANSITION SEGMENT - NORTH WALL - INSIDE FACE
RP-109	C3-133	SOUTH TRANSITION SEGMENT - SOUTH WALL - INSIDE FACE
RP-110	C3-134	SOUTH TRANSITION SEGMENT - ROOF SLAB AND ARCH
RP-111	C3-135	SOUTH TRANSITION SEGMENT - REINFORCEMENT SCHEDULES 1 AND DETAILS
RP-112	C3-136	SOUTH TRANSITION SEGMENT - REINFORCEMENT SCHEDULES 11

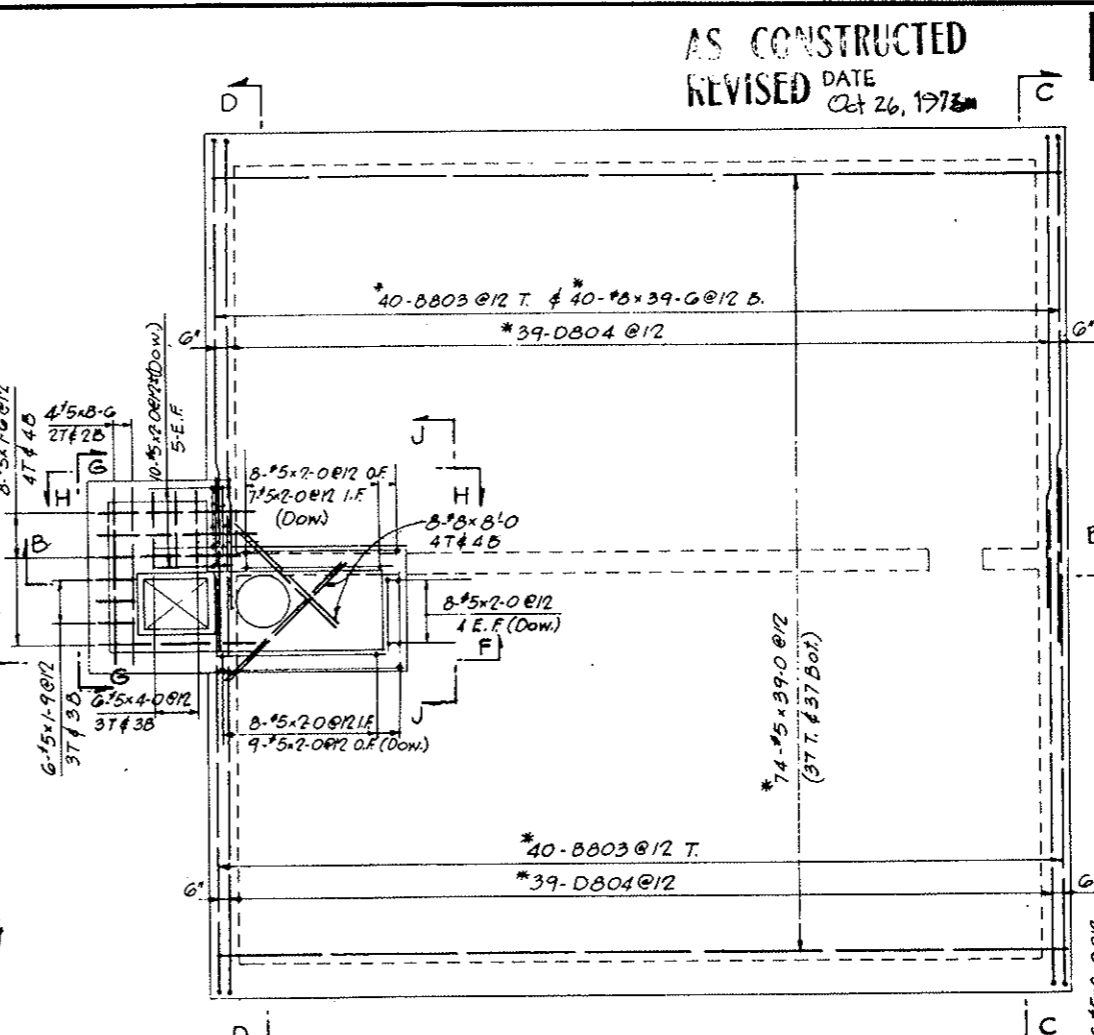
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL					
INDEX OF REINFORCEMENT PLACEMENT DRAWINGS					
TIPPETTS - ABBETT - MCCARTHY - BRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY S. M. R.	CHECKED BY R. B. A.	APPROVED BY <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>		
NEW YORK, N. Y.		SCALE: NO SCALE	DATE: NOV. 1967		
					61-101

AS CONSTRUCTED
REVISED DATE
Oct 26, 1973

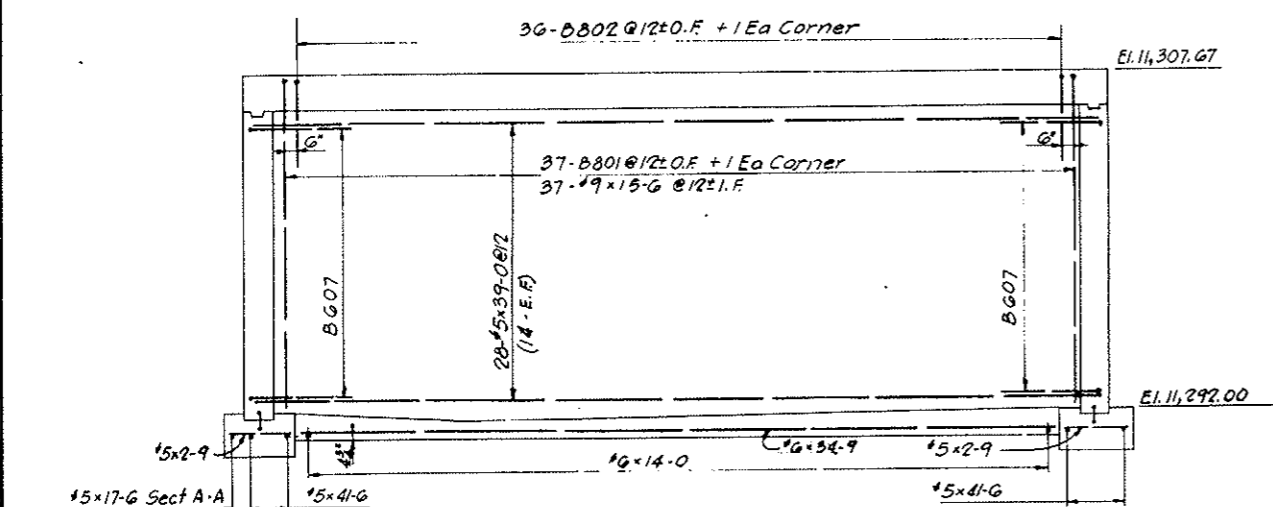
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-2	112



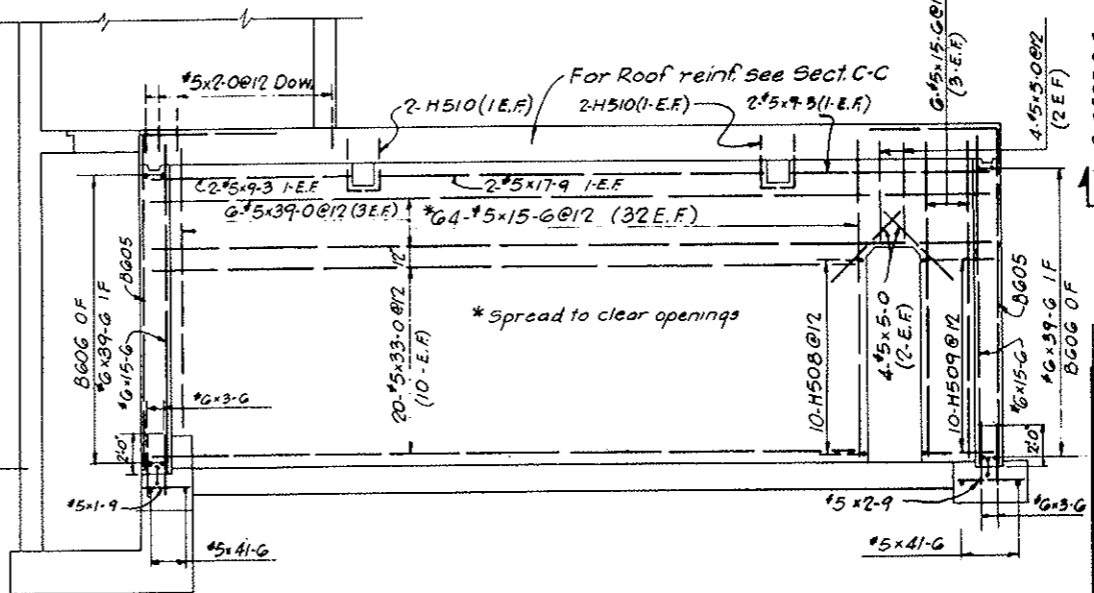
PLAN AT EL. 11,292.00



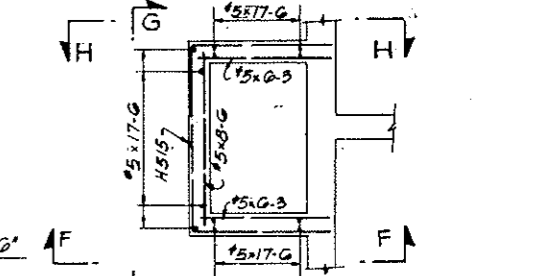
PLAN AT ELEV. 11,307.67
* - Cut in field to clear manhole



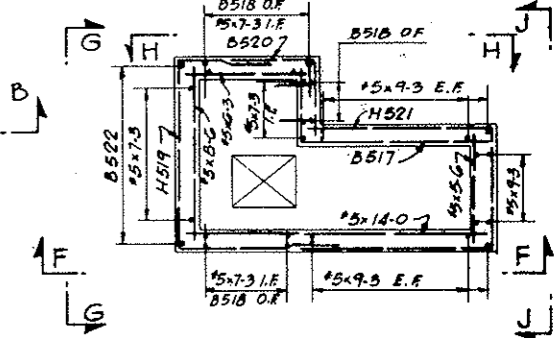
SECTION A-A (As Shown)
SECTION A'-A (Opp. Hand)



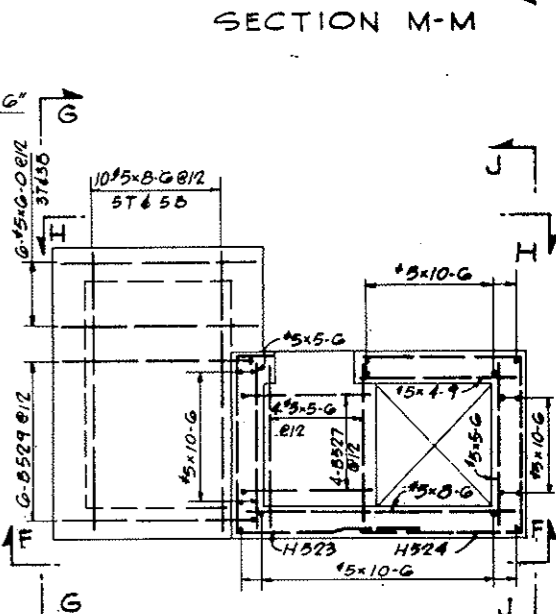
SECTION B-B



SECTION L-L



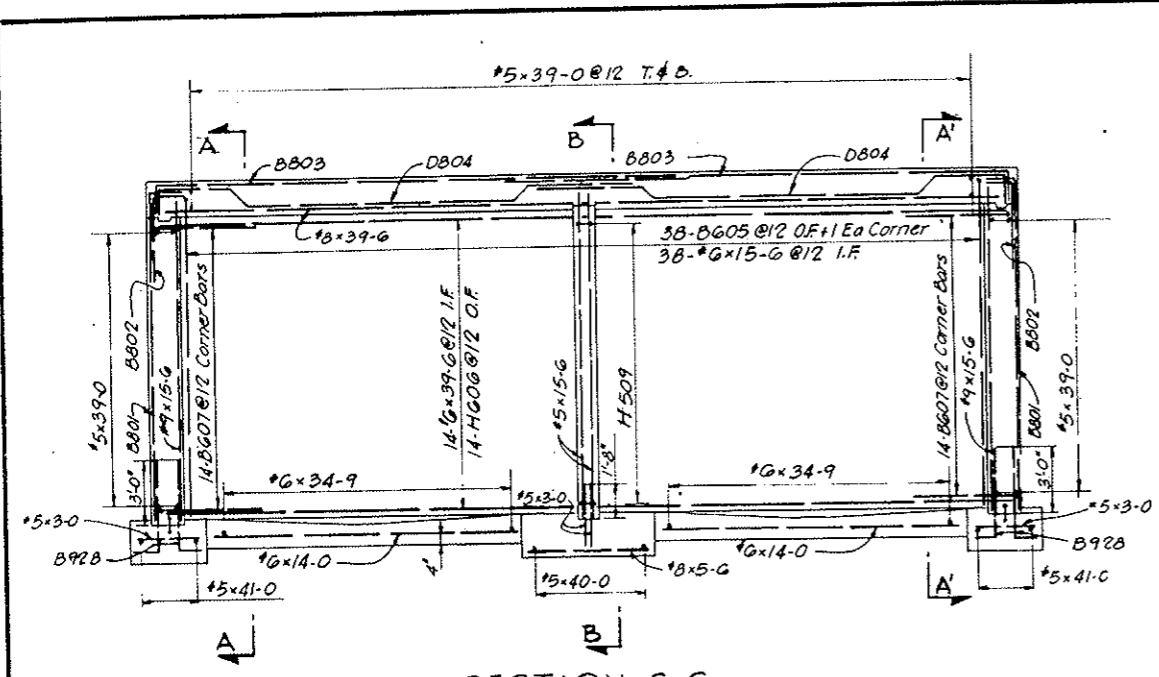
SECTION M-M



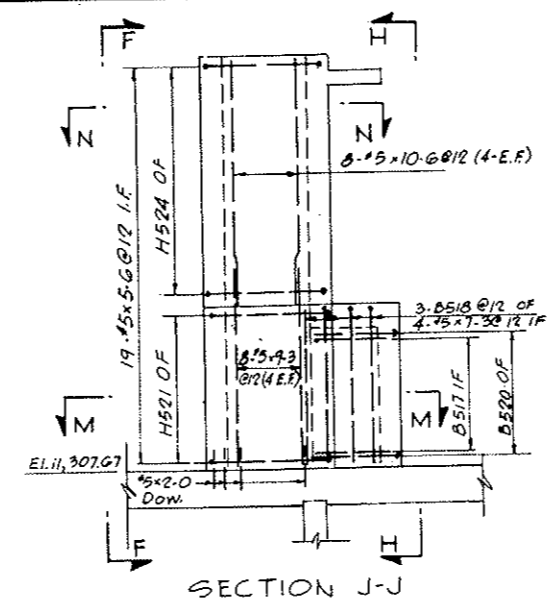
SECTION N-N

NOTES:
For notes see Dwg. G3-102.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - GENERAL WEST PORTAL AREA REINFORCEMENT WATER STORAGE TANK SHEET 1 OF 2 TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. MFC.		RECOMMENDED: <i>[Signature]</i>		DRAWING NO. G3-101	
DRAWN: M.E.		CHECKED: H.F. MFC.		DATE: NOV. 1967	
SUBMITTED: <i>[Signature]</i>		APPROVED: <i>[Signature]</i>		SCALE: 1/4" = 1'-0"	



SECTION C-C



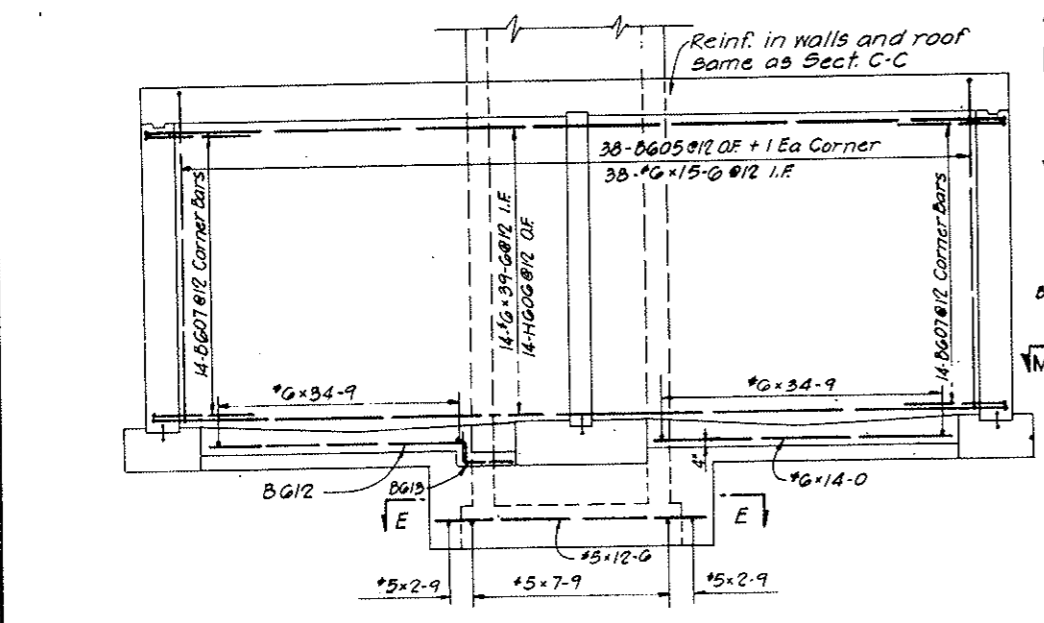
SECTION J-J

REINFORCEMENT SCHEDULE					
STRAIGHT BARS					
NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH
74	#9	15-0	0	#5	14-0
			3		12-0
40	#8	39-0	38		10-0
8	#8	8-0	5		9-0
40	#8	5-0	34		9-3
			58		8-0
28	#6	39-0	10		7-9
28	#6	34-9	8		7-0
76	#8	15-0	17		7-3
67	#6	14-0	44		6-0
152	#6	3-0	19		0-3
			6		0-0
7	#5	41-0	15		5-0
8	#5	40-0	0		5-0
6	#5	40-0	0		4-9
130	#8	39-0	0		4-0
20	#8	38-0	0		3-3
2	#8	17-9	152		3-0
27	#7	17-0	78		2-9
1	#7	16-0	55		2-0
6	#5	15-0	13		1-9

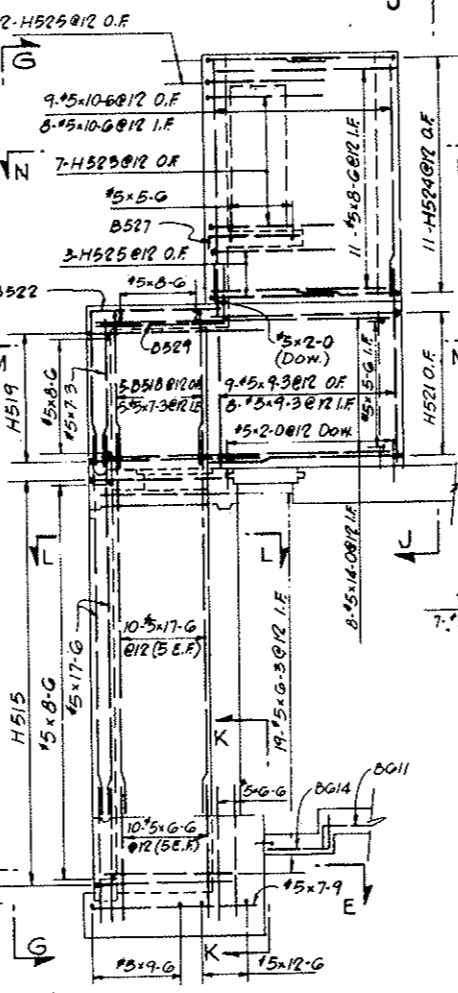
REINFORCEMENT SCHEDULE - BENT BARS												
BENDING DIAGRAMS												
DIMENSIONS												
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	A	B	C	D	E	F	H	K	
B801	78	#8	17-0		1-0	5-0						
B802	76	#8	5-0		1-0	4-0						
B803	80	#8	25-8		1-2	24-0						
D804	76	#8	24-8		1-5	2-0	1-3	12-5	1-0	1-2	5-0	
B805	80	#6	21-0		6-0	15-0						
H806	28	#6	49-0		4-9	34-0	4-9					
B807	36	#6	9-0		4-9	4-9						
H508	10	#5	4-8		2-0	0-8	2-0					
H509	10	#5	7-4		3-4	0-8	3-4					
H510	4	#5	6-0		2-0	1-0	2-0					
B811	2	#6	32-10		0-10	32-0						
B812	3	#6	12-10		0-10	12-0						
B813	3	#6	4-3		1-0	2-9						
B814	2	#6	3-9		1-0	2-3						
H515	20	#5	21-8		6-0	8-8	6-0					
A516	3	#5	3-7	0-7	3-0							
B817	0	#5	12-3		5-9	8-0						
B518	14	#5	9-0		1-8	7-4						
H519	7	#5	20-5		4-5	8-8	7-0					
B820	7	#5	7-0		3-9	3-9						
H521	8	#5	22-10		8-8	5-0	8-8					
B822	7	#5	13-0		6-2	7-4						
H523	7	#5	12-0		1-0	5-0	5-0					
H524	11	#5	15-2		4-10	5-0	4-10					
H825	5	#5	16-0		5-0	5-0	5-0					
B826	7	#5	3-0		0-0	3-0						
B827	4	#5	4-0		0-0	4-0						
B928	150	#9	5-0		1-0	4-0						
B929	6	#5	3-0		2-0	0-0						

All bent bar marks to be prefixed by No. 63-101.

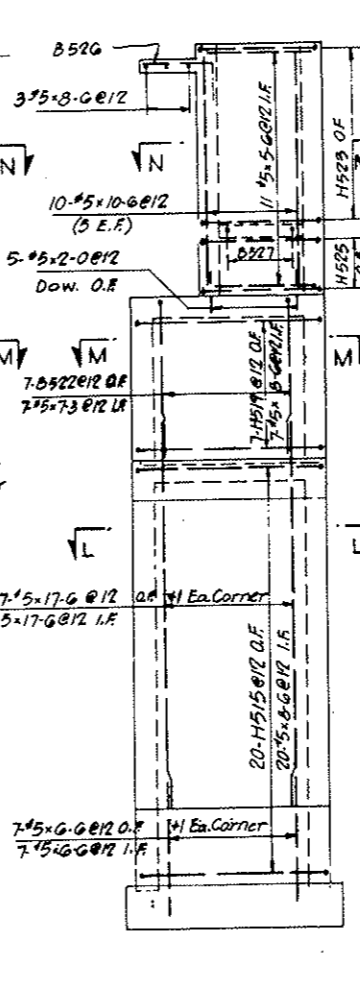
AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



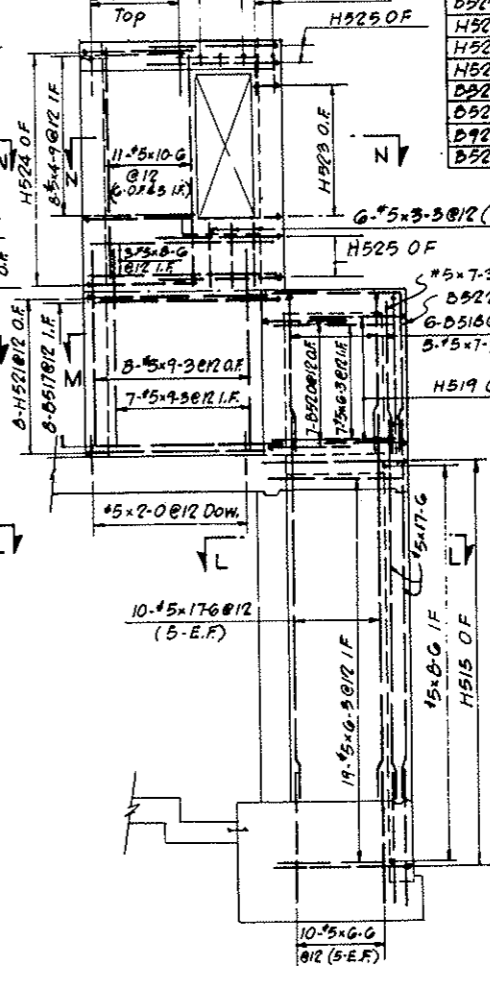
SECTION D-D



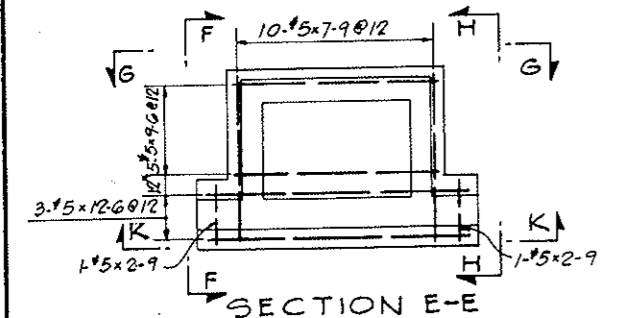
SECTION F-F



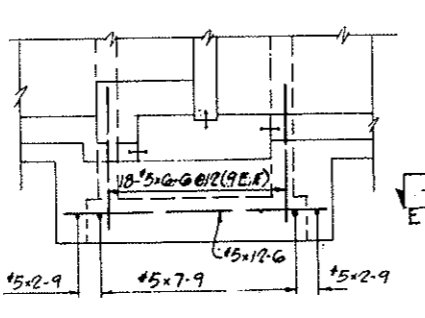
SECTION G-G



SECTION H-H



SECTION E-E



SECTION K-K

NOTES:
For General Concrete Notes see Dwg. C2-11
For concrete details see Dwg. G3-4
All reinforcement to have 2" clear concrete cover
Laps and splices are in accordance with table on Dwg. C2-103.
For General Reinforcement Notes see Dwg. C2-103.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL WEST PORTAL AREA REINFORCEMENT WATER STORAGE TANK SHEET 2 OF 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	H.F. McC.	RECOMMENDED	Hanning	APPROVED	Hanning
DRAWN	M.F.	CHECKED	H.F. McC.	APPROVED	Hanning
SUBMITTED	H.F. McC.	DATE	NOV. 1987		
DRAWING NO.					G3-102

For dowels: see Sections F-F, G-G, H-H & K-K

SECTION K-K

SECTION F-F

SECTION G-G

SECTION H-H

DRAWING NO. G3-102

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-4	112

VOID
BY CONSTRUCTION
Oct 26, 1973

REINFORCEMENT SCHEDULE

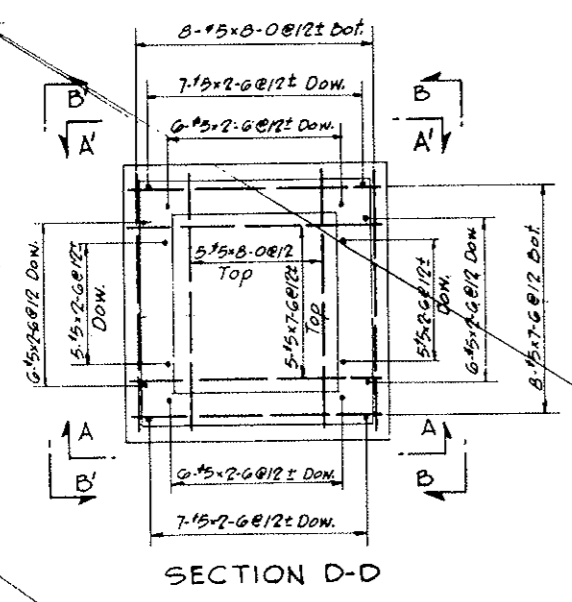
BENDING DIAGRAMS

BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS		
				B	C	D
H501	42	#5	10'-0"	1'-9"	7'-0"	1'-9"
B502	7	#5	3'-0"	0'-0"	3'-0"	

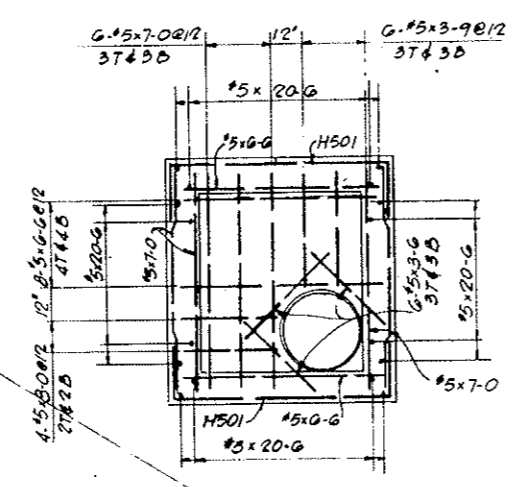
All bent bar marks to be prefixed by No.G3-102

STRAIGHT BARS

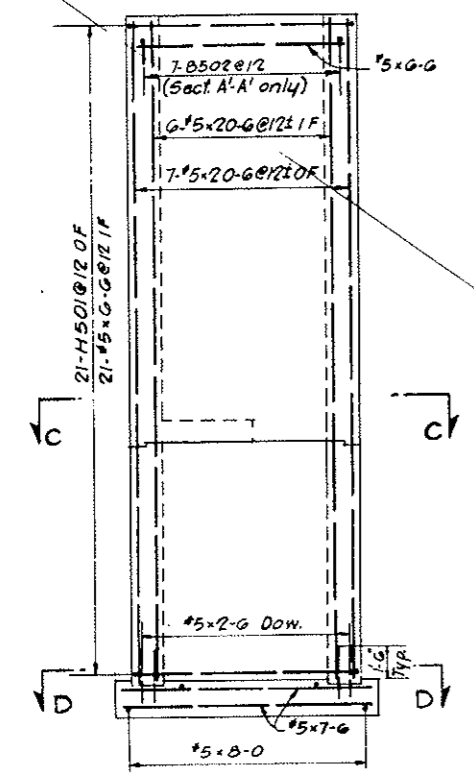
NO. REQ'D	BAR SIZE	BAR LENGTH
48	#5	20'-0"
13	#5	8'-0"
13	#5	7'-0"
90	#5	7'-0"
53	#5	6'-0"
6	#5	3'-9"
6	#5	3'-0"
4	#5	3'-0"
48	#5	2'-0"



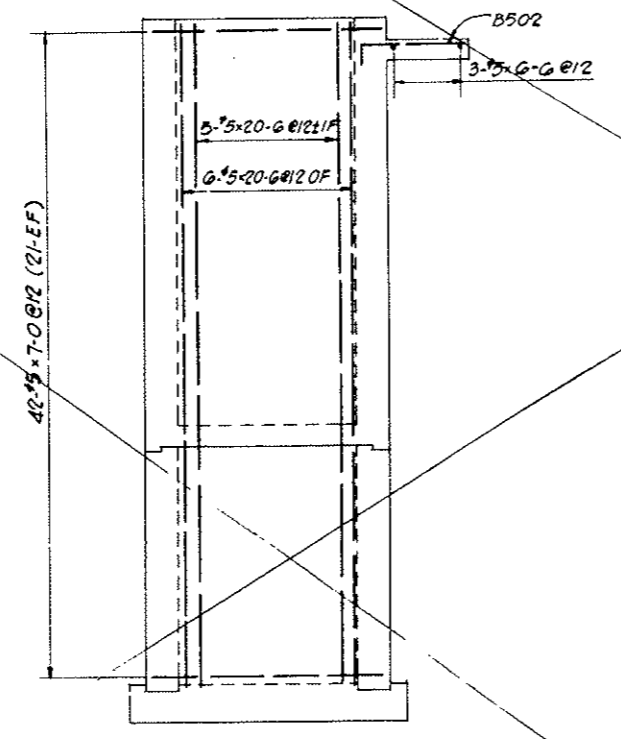
SECTION D-D



SECTION C-C



SECTION A-A (As Shown)
SECTION A'-A' (As Noted)



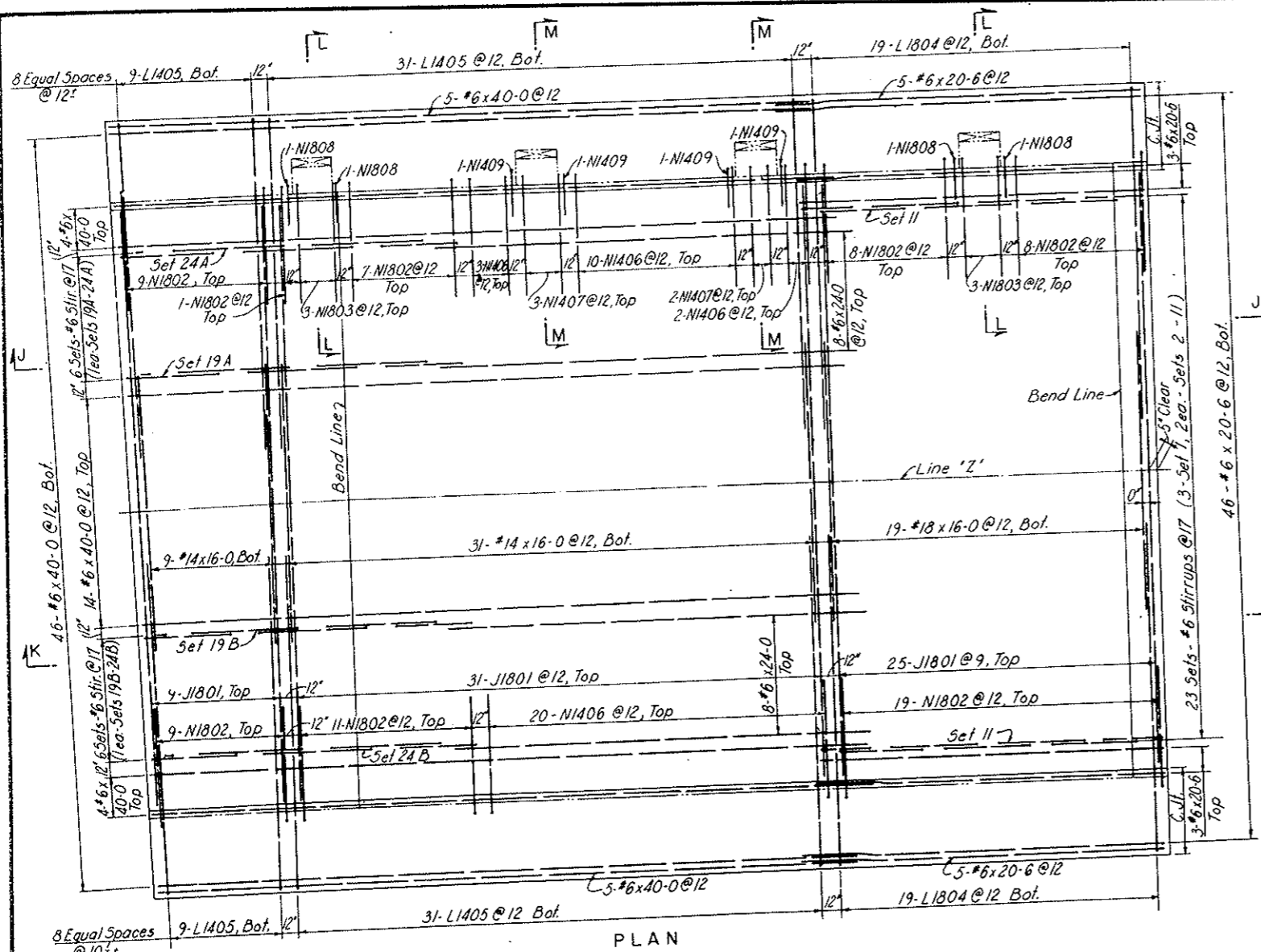
SECTION B-B (As Shown)
SECTION B'-B' (Opp. Hand)

NOTES:
For Concrete General Notes see Dwg. C2-11.
For concrete details see Dwg. G3-3.
All reinforcement to have 2" clear concrete cover.
Laps and splices are in accordance with table on Dwg. C2-103.
For General Reinforcement Notes see Dwg. C2-103.

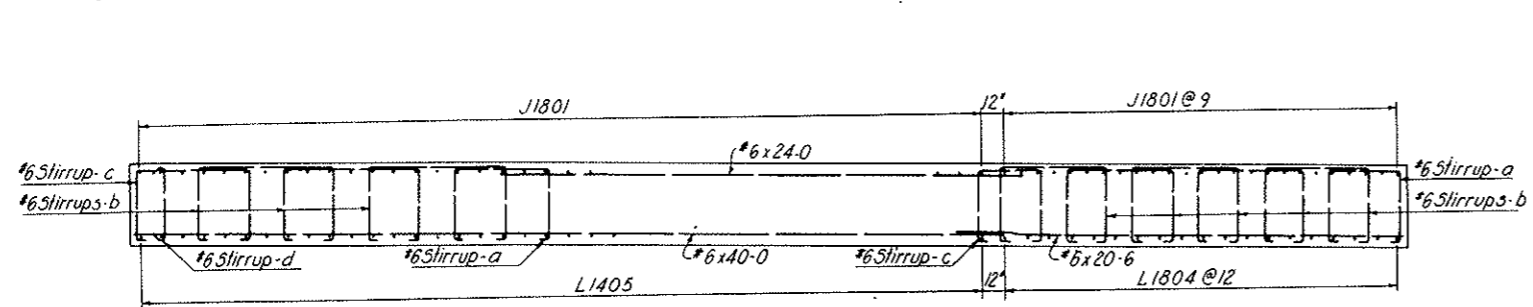
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - GENERAL WEST PORTAL AREA REINFORCEMENT WELL HOUSE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F.M.C.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: M.F.M.C.	CHECKED: <i>[Signature]</i>				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
		DRAWING NO.		G3-103	
NEW YORK, N.Y.		SCALE: 1/4" = 1'-0"		DATE: NOV. 1967	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RP-5	112

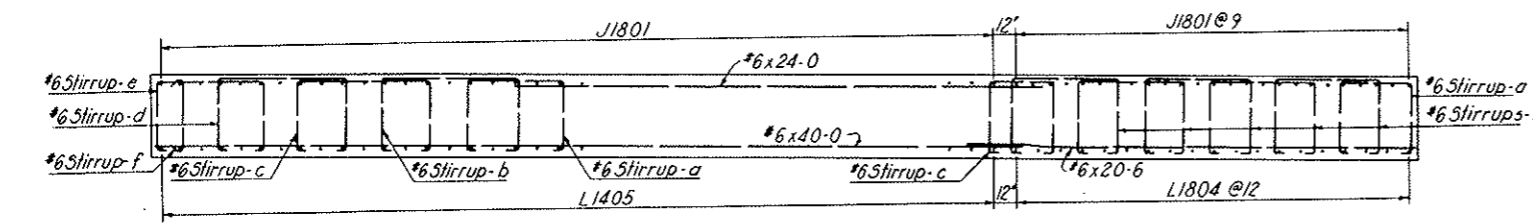
AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



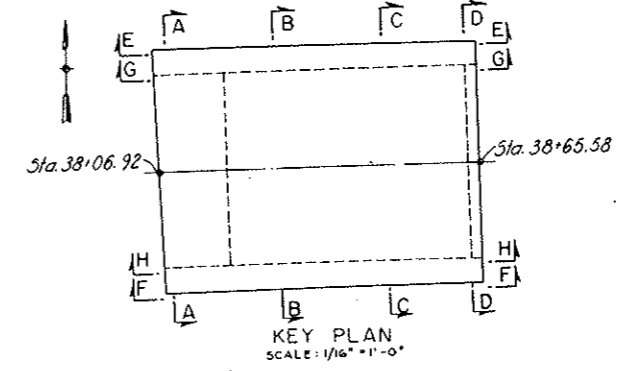
PLAN



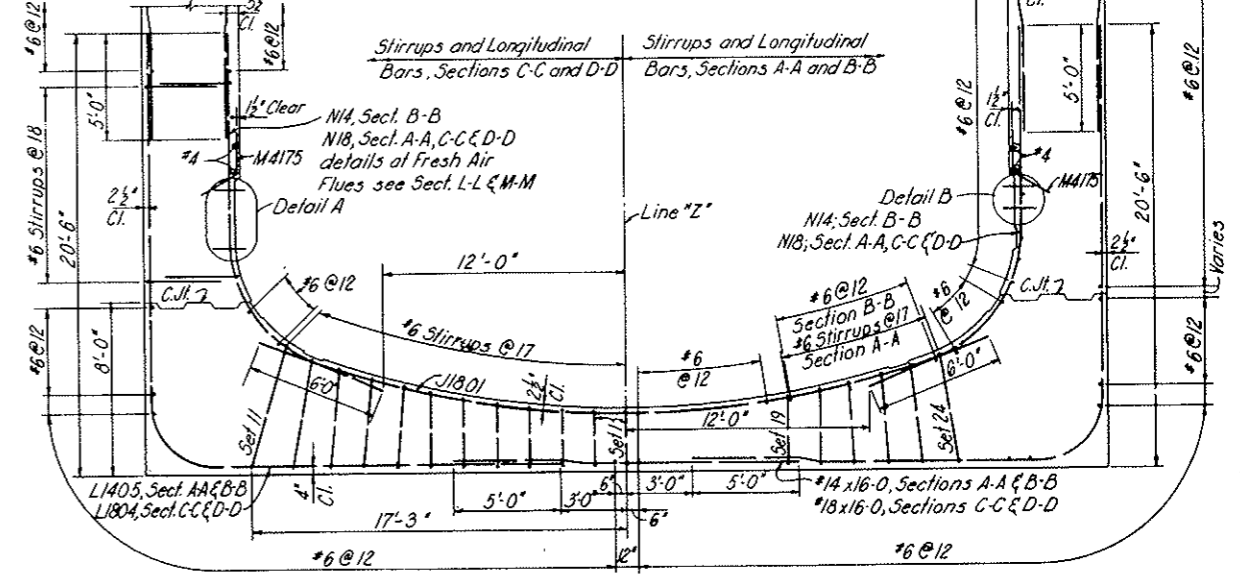
SECTION J-J



SECTION K-K

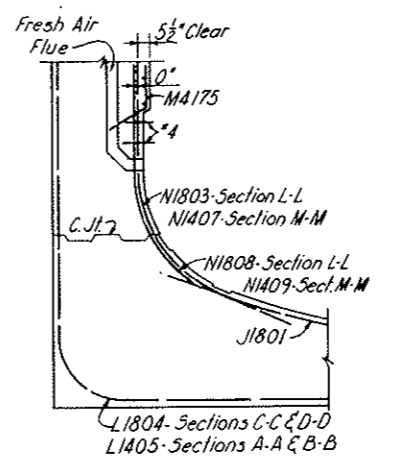


KEY PLAN
SCALE: 1/16" = 1'-0"

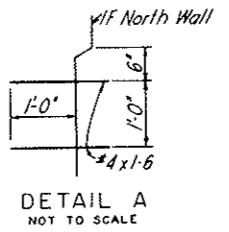


- SECTION A-A
- SECTION B-B
- SECTION C-C
- SECTION D-D

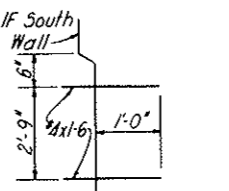
NOTES:
 Work this drawing with Dwg. CI-102 through CI-108.
 For General Reinforcement Notes see Dwg. C2-103.
 For General Concrete Notes see Dwg. C2-11.
 For concrete outlines see Dwg. CI-1 through CI-3.
 All stirrup spacing to be measured along inside face of concrete.
 Clear cover for outside face reinforcement is from neat concrete surface or the "A" Line.
 Drape or hickey longitudinal bars or stirrups as required.
 Alternate splices of longitudinal bars where possible.



SECTION L-L
SECTION M-M



DETAIL A
NOT TO SCALE

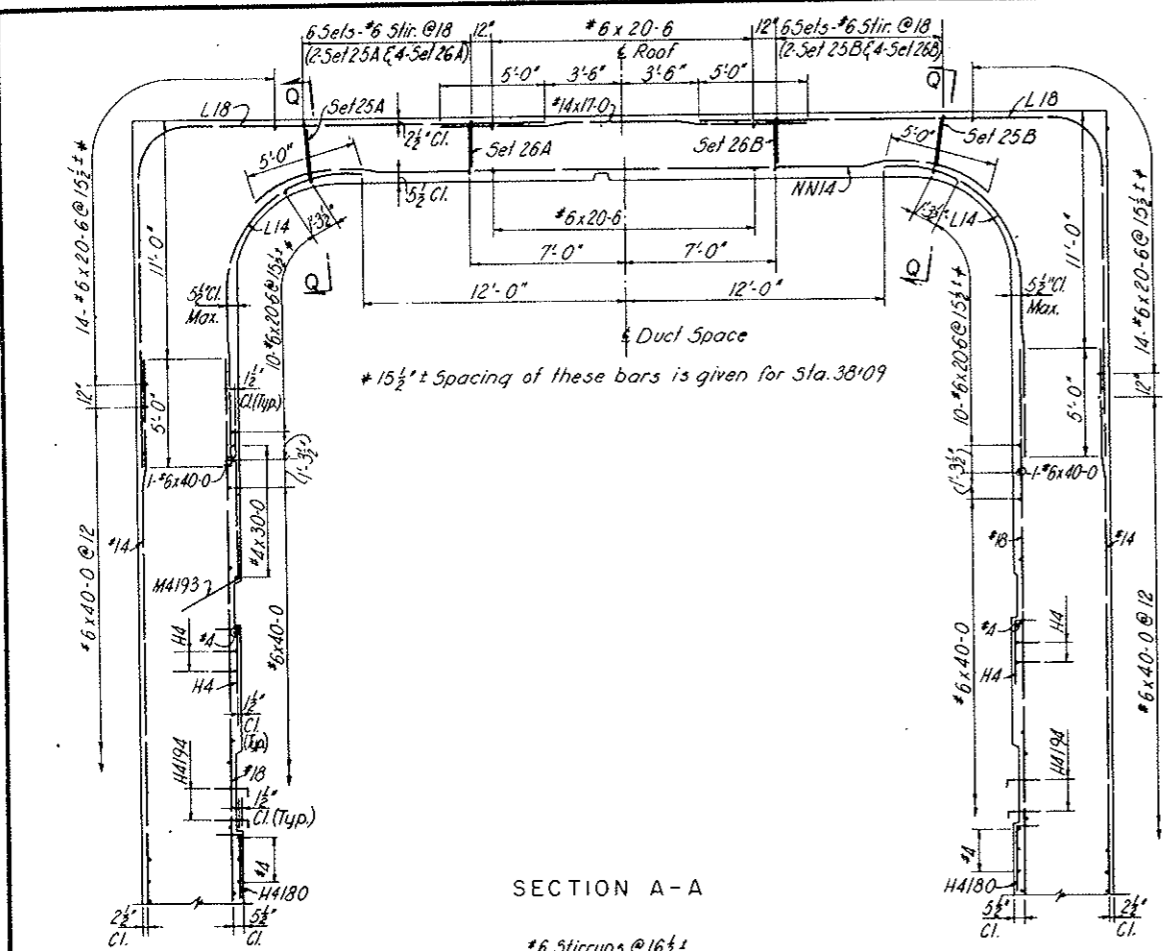


DETAIL B
NOT TO SCALE

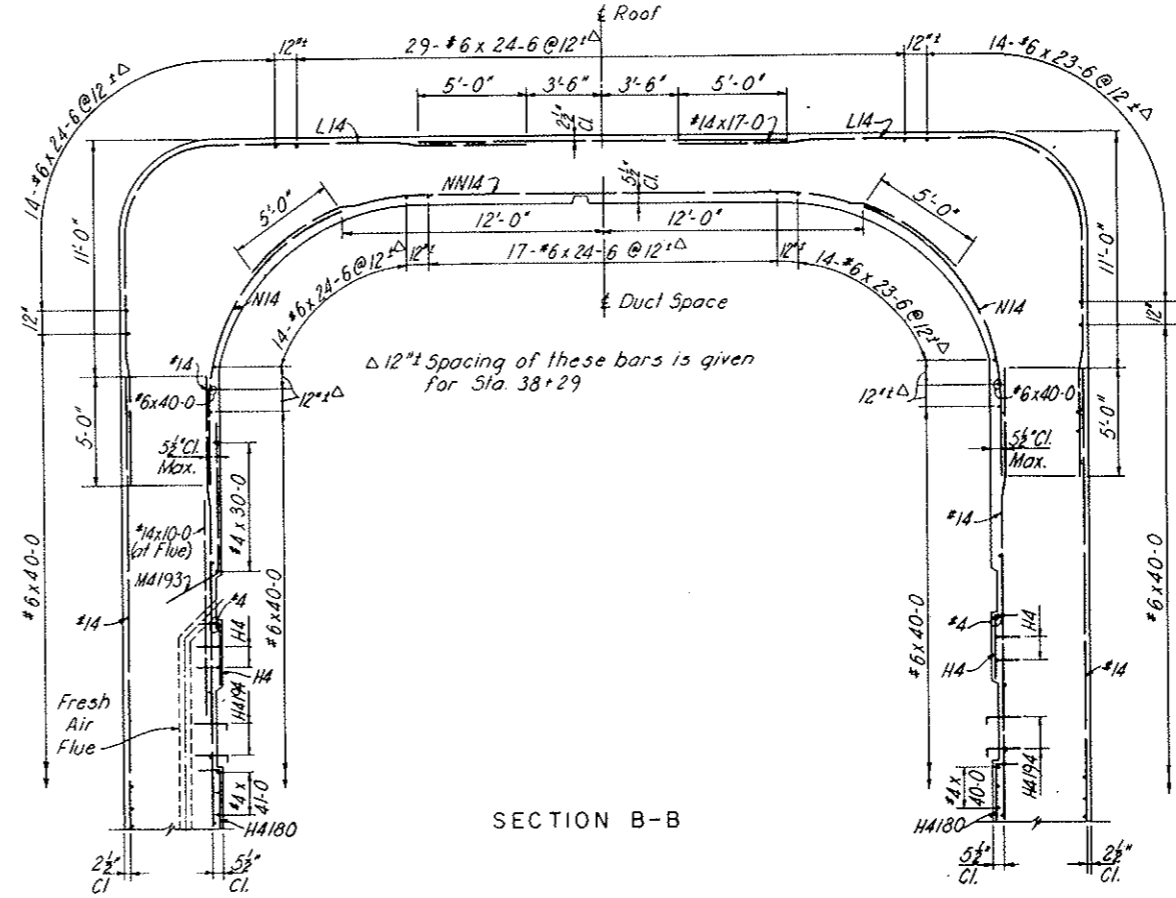
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION REINFORCEMENT					
NORTH TRANSITION SEGMENT BASE SLAB - PLAN AND SECTION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: D.A.	CHECKED: J.E.G.-AZE	APPROVED: [Signature]	DRAWING NO. CI-101		
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"	DATE: NOV. 1967		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-6	112

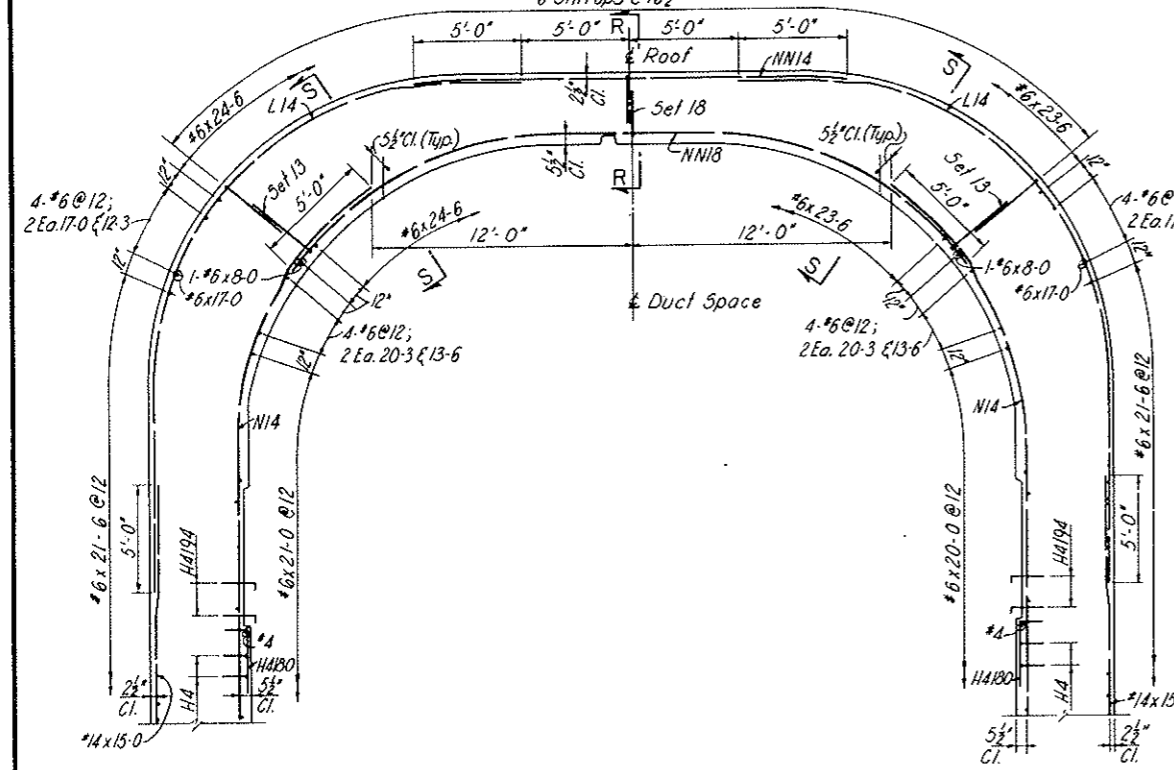
AS CONSTRUCTED
NO REVISIONS DATE
 07 26, 1973



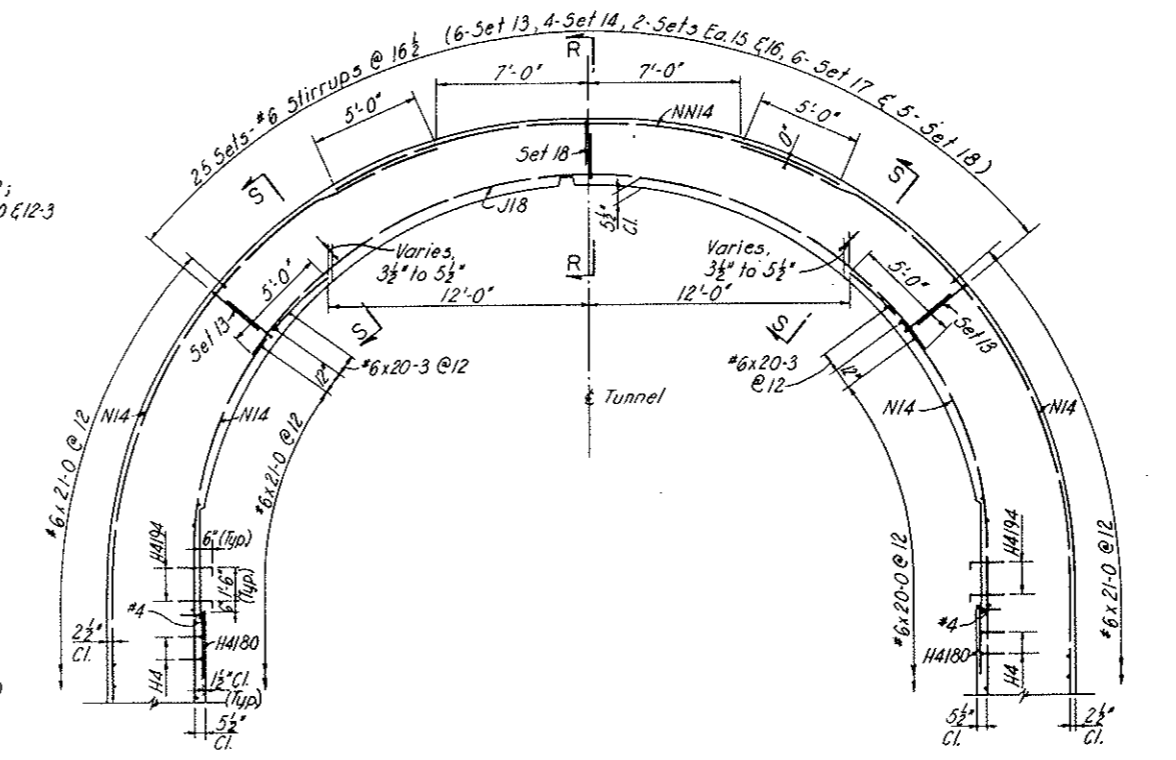
SECTION A-A



SECTION B-B



SECTION C-C



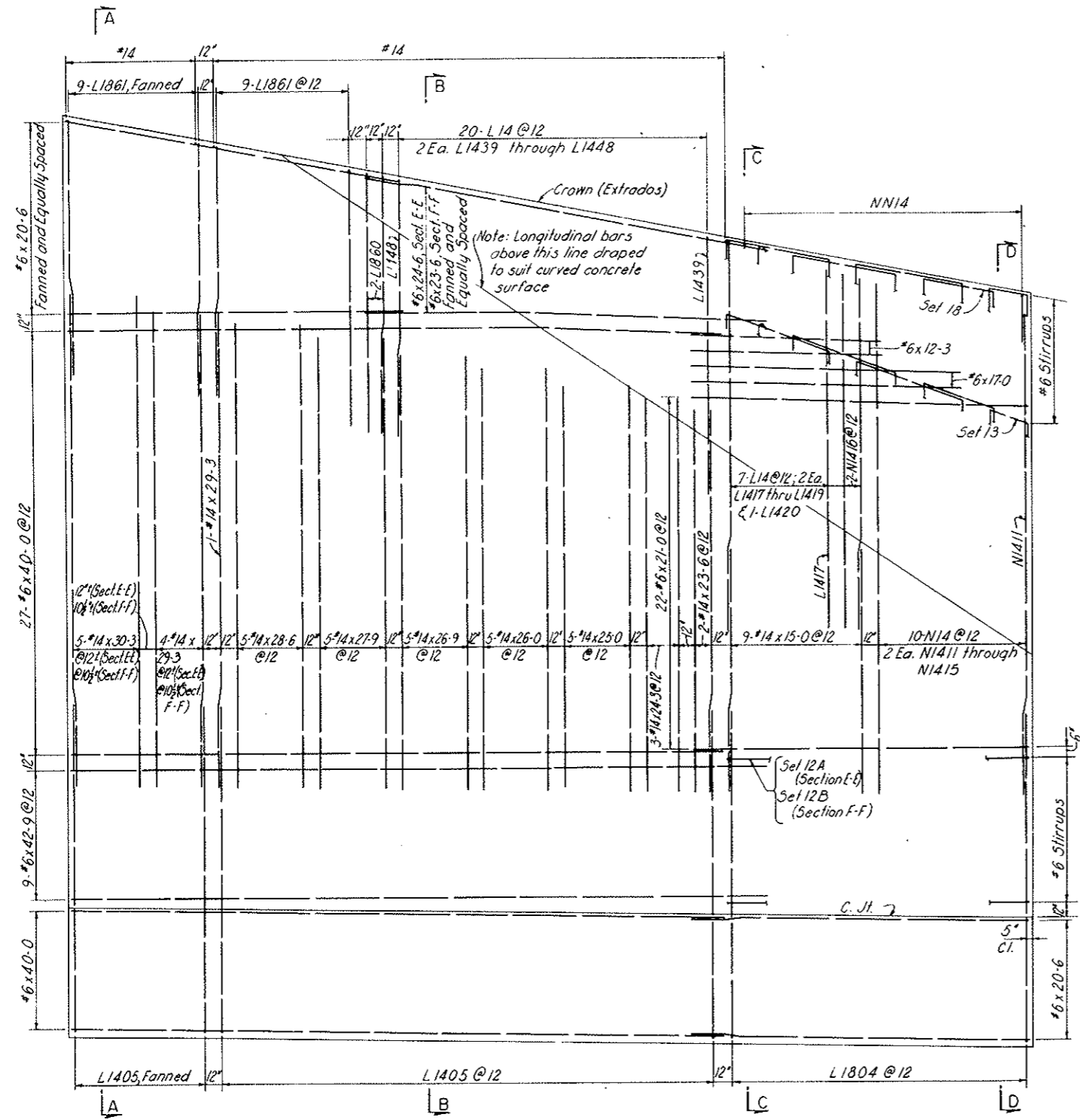
SECTION D-D

NOTES:
 Work this drawing with Dwg. CI-101 and Dwg. CI-103 through CI-108.
 All lap lengths specified on the drawings are minimum values.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT CROSS SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	D.A.	CHECKED BY	J.E.G.	APPROVED BY	<i>[Signature]</i>
DRAWN BY	J.E.G.	APPROVED BY	<i>[Signature]</i>	DATE	NOV. 1967
SCALE: 1/4" = 1'-0"					DRAWING NO. CI-102

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-7	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



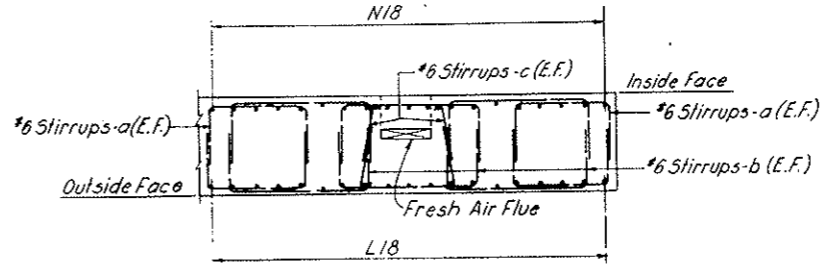
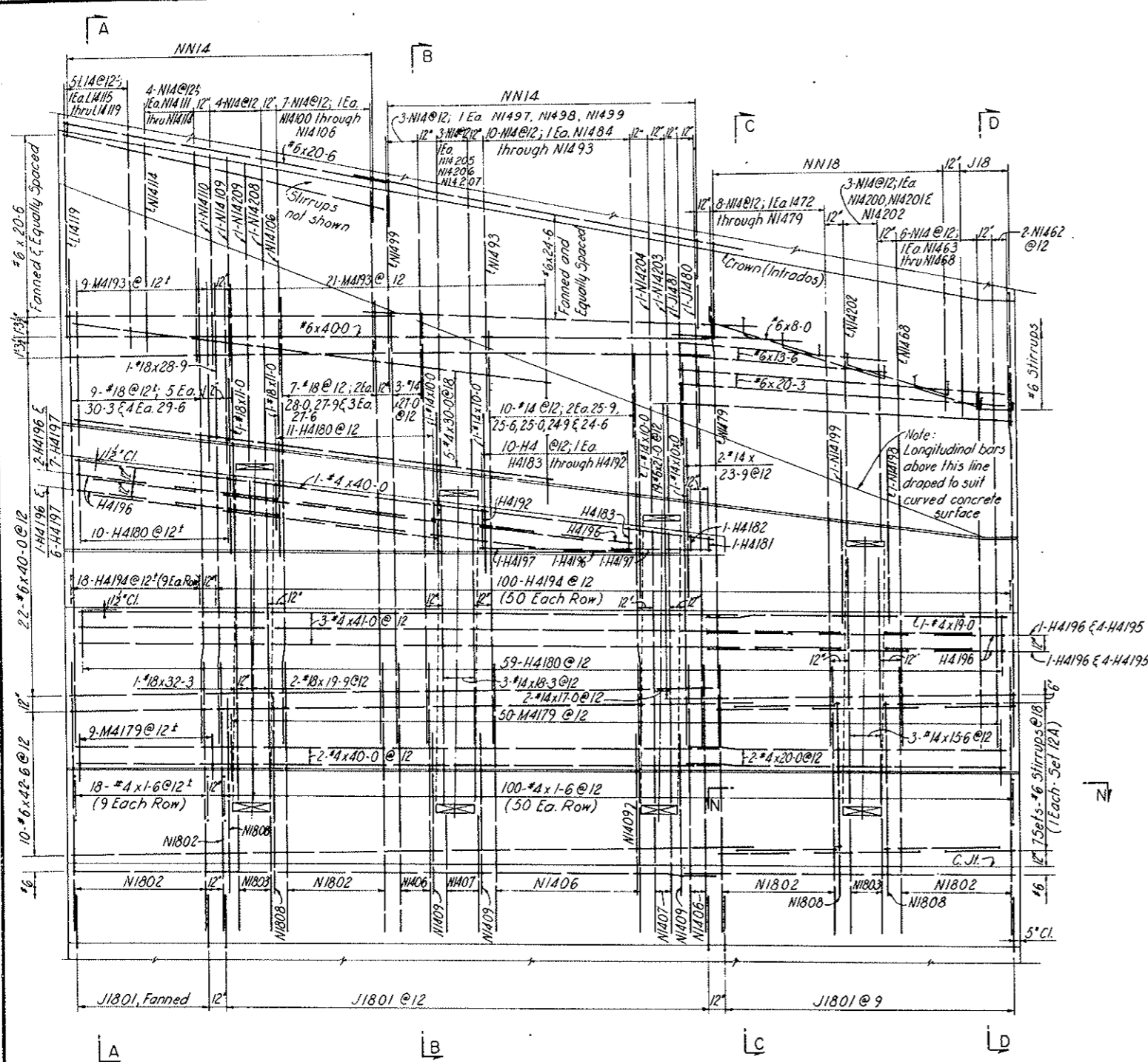
SECTION E-E (NORTH WALL)
 SECTION F-F (SOUTH WALL)

NOTES:
 Work this drawing with Dwgs. CI-101 and CI-102 and with Dwgs. CI-104 through CI-108.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT NORTH AND SOUTH WALLS - OUTSIDE FACE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY O.A.	DRAWN BY J.E.G.	CHECKED BY J.E.G.	REVISIONS BY [Signature]	APPROVED BY [Signature]	DRAWING NO. CI-103
NEW YORK, N. Y.			SCALE: 1/4" = 1'-0"	DATE: NOV. 1967	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-8	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



SECTION N-N

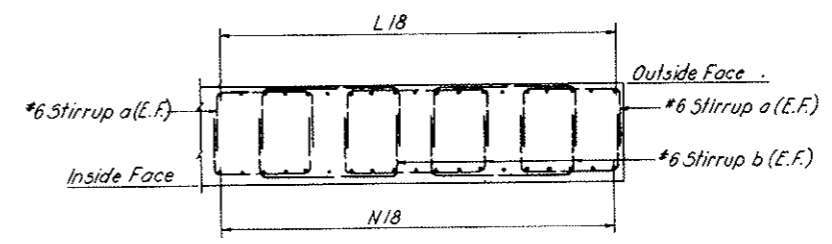
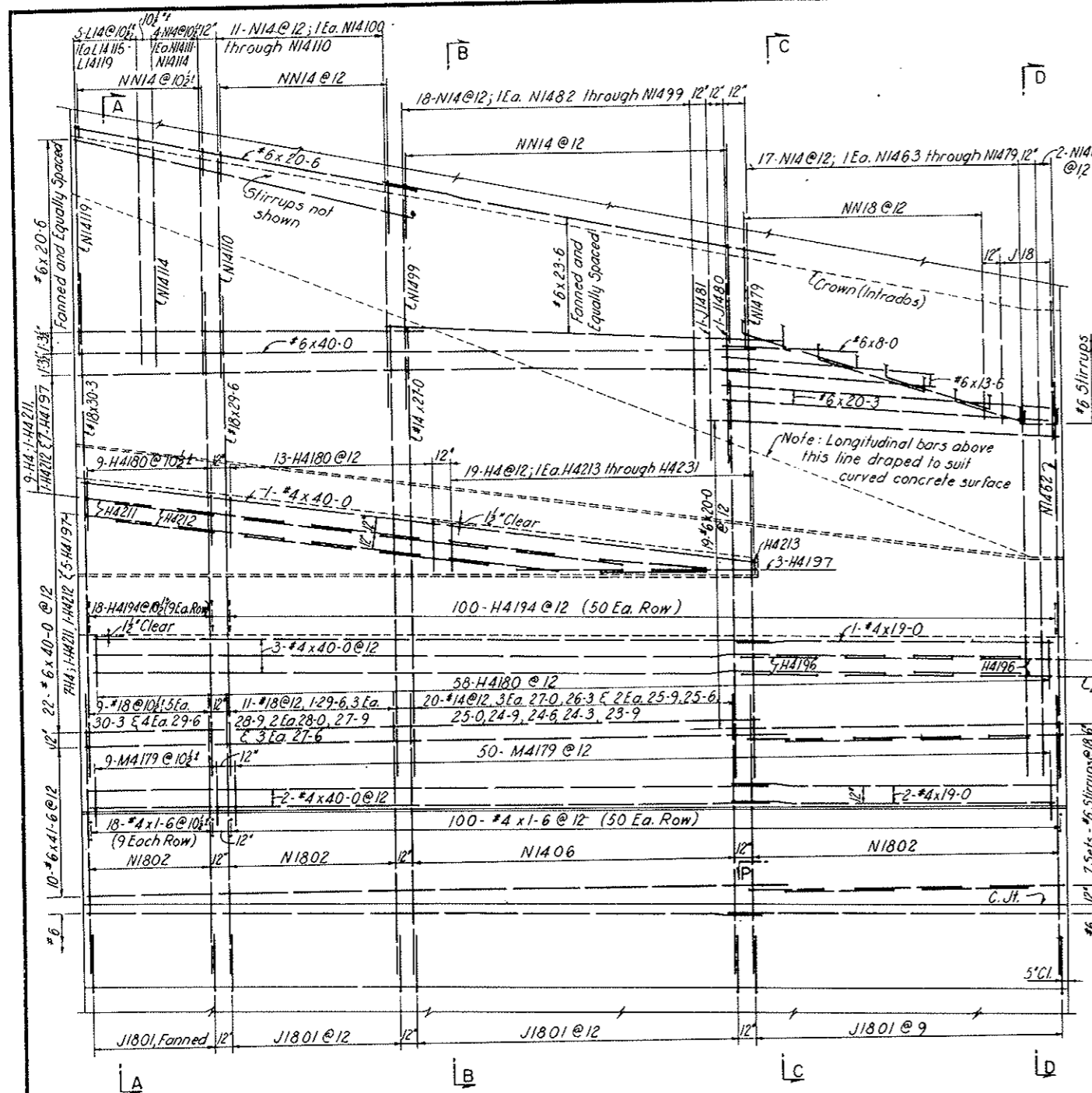
SECTION G-G

NOTES:
 Work this drawing with Dwg. CI-101 through CI-103
 and with Dwg. CI-105 through CI-108.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT NORTH WALL - INSIDE FACE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: D.A.	DRAWN: J.E.G.		CHECKED: J.E.G.		APPROVED: <i>[Signature]</i>
SUBMITTED: <i>[Signature]</i>		SCALE: 1/4" = 1'-0"		DATE: NOV. 1967	
					DRAWING NO. CI-104

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-9	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



SECTION P-P

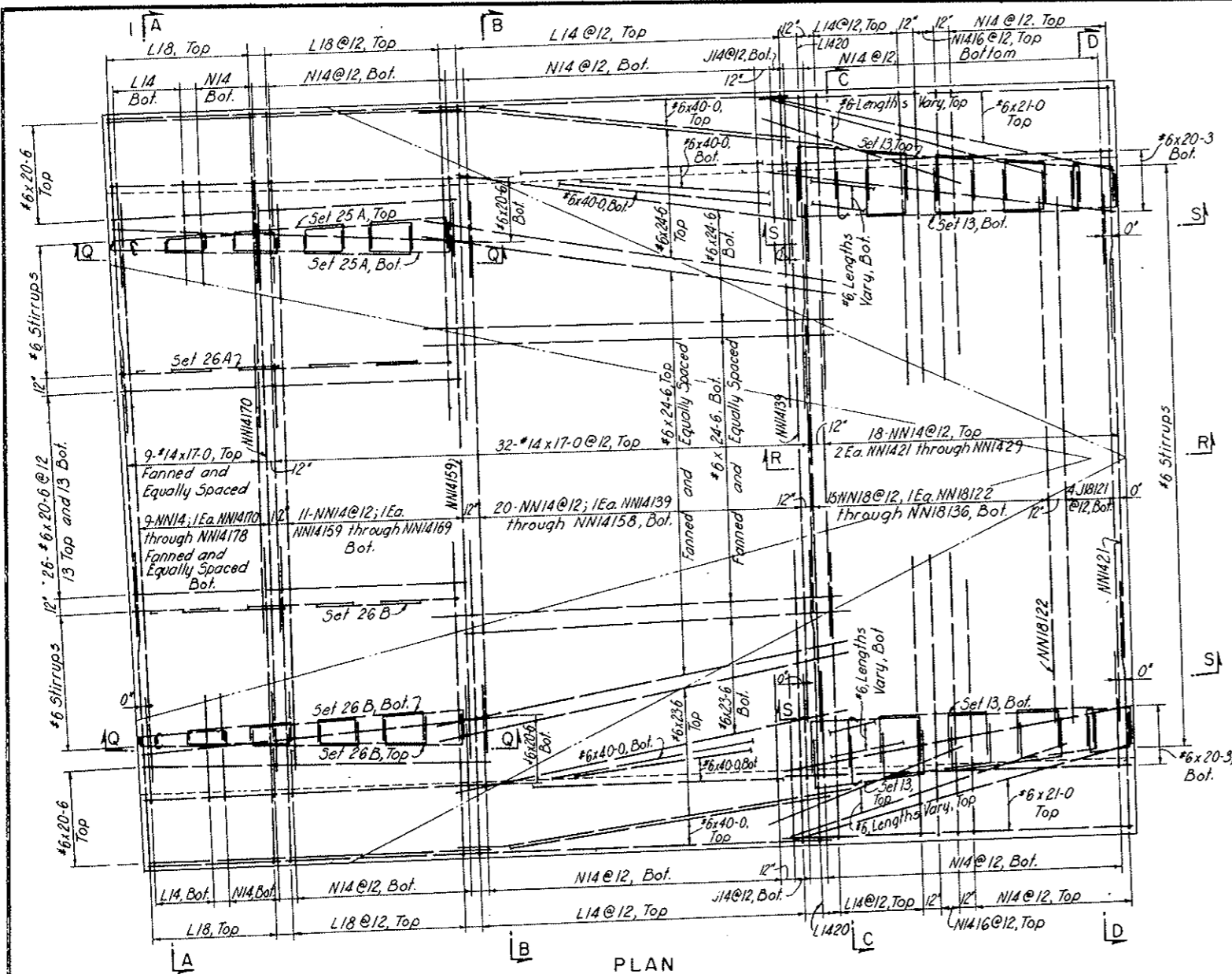
SECTION H-H

NOTES:
 Work this drawing with Dwgs. CI-101 through CI-104 and Dwgs. CI-106 through CI-108.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT SOUTH WALL - INSIDE FACE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: D.A.	DRAWN: J.E.G.		CHECKED: J.E.G.		APPROVED: <i>[Signature]</i>
DATE: 11/1/67	SCALE: 1/4" = 1'-0"		DATE: NOV. 1967		DRAWING NO. CI-105

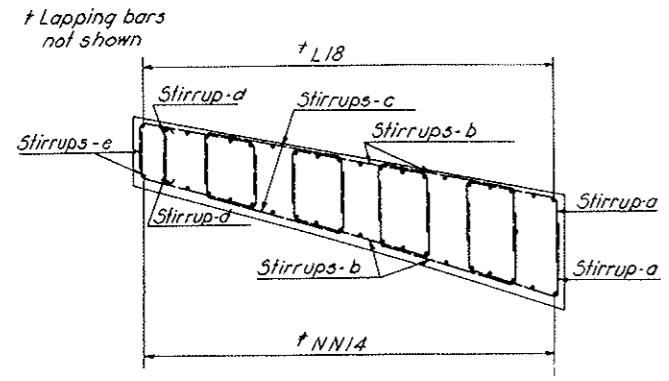
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-10	112

AS CONSTRUCTED
NO REVISIONS DATE
 Oct 26, 1973

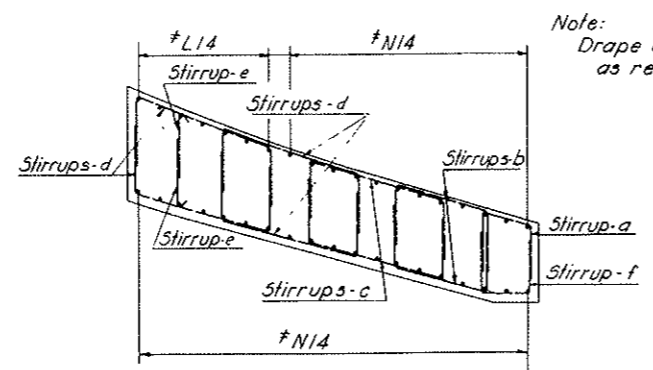


PLAN

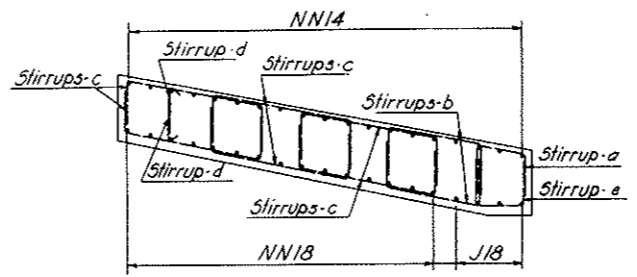
NOTES:
 Work this drawing with Dwg. CI-101 through CI-105
 and with Dwg. CI-107 and CI-108.



SECTION Q-Q
 Arrangement of Stirrups for Sets 25A, 25B,
 26A and 26B.



SECTION S-S
 Arrangement of Stirrups for Sets 13 and 14



SECTION R-R
 Arrangement of Stirrups for Sets 15
 through 18

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT ROOF SLAB AND ARCH					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS - NEW YORK, N. Y.					
DESIGNED: D.A.	RECOMMENDED:				
DRAWN: J.E.G.	APPROVED:				
CHECKED: J.E.G. - R.B.A.	APPROVED:				
DATE: 10/26/73	DATE: 10/26/73				
SCALE: 1/4" = 1'-0"	DATE: NOV, 1967				
					DRAWING NO. CI-106

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-11	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973

REINFORCEMENT SCHEDULE - STIRRUPS.											
BENDING DIAGRAMS											
SET	BAR	NUMBER REQ'D	BAR	BAR	DIMENSIONS						
NO.	MARK	PER SET	TOTAL	SIZE	LENGTH	A	B	C	D	G	H
1	a SF6301	1	3	6	9-4	0-5	2-7	3-4	2-7	0-5	
	b SF6302	5	15	6	10-10	0-5	2-7	4-10	2-7	0-5	
	c SF6303	1	3	6	8-10	0-5	2-7	2-10	2-7	0-5	
2	a SF6304	1	2	6	9-6	0-5	2-8	3-4	2-8	0-5	
	b SF6305	5	10	6	11-0	0-5	2-8	4-10	2-8	0-5	
	c SF6306	1	2	6	9-0	0-5	2-8	2-10	2-8	0-5	
3	a SF6307	1	2	6	9-10	0-5	2-10	3-4	2-10	0-5	
	b SF6308	5	10	6	11-4	0-5	2-10	4-10	2-10	0-5	
	c SF6309	1	2	6	9-4	0-5	2-10	2-10	2-10	0-5	
4	a SF6310	1	2	6	10-2	0-5	3-0	3-4	3-0	0-5	
	b SF6311	5	10	6	11-8	0-5	3-0	4-10	3-0	0-5	
	c SF6312	1	2	6	9-8	0-5	3-0	2-10	3-0	0-5	
5	a SF6313	1	2	6	10-8	0-5	3-3	3-4	3-3	0-5	
	b SF6314	5	10	6	12-2	0-5	3-3	4-10	3-3	0-5	
	c SF6315	7	2	6	10-2	0-5	3-3	2-10	3-3	0-5	
6	a SF6316	1	2	6	11-4	0-5	3-7	3-4	3-7	0-5	
	b SF6317	5	10	6	12-10	0-5	3-7	4-10	3-7	0-5	
	c SF6318	1	2	6	10-10	0-5	3-7	2-10	3-7	0-5	
7	a SF6319	1	2	6	12-0	0-5	3-11	3-4	3-11	0-5	
	b SF6320	5	10	6	13-6	0-5	3-11	4-10	3-11	0-5	
	c SF6321	1	2	6	11-6	0-5	3-11	2-10	3-11	0-5	
8	a SK6322	1	2	6	12-0		4-4	3-4	4-4		
	b SK6323	5	10	6	13-6		4-4	4-10	4-4		
	c SK6324	1	2	6	11-6		4-4	2-10	4-4		
9	a SK6325	1	2	6	12-10		4-9	3-4	4-9		
	b SK6326	5	10	6	14-4		4-9	4-10	4-9		
	c SK6327	1	2	6	12-4		4-9	2-10	4-9		
10	a SK6328	1	2	6	13-10		5-3	3-4	5-3		
	b SK6329	5	10	6	15-4		5-3	4-10	5-3		
	c SK6330	1	2	6	13-4		5-3	2-10	5-3		
11	a SK6331	1	2	6	15-4		6-0	3-4	6-0		
	b SK6332	5	10	6	16-10		6-0	4-10	6-0		
	c SK6333	1	2	6	14-10		6-0	2-10	6-0		
12A	a SK6334	4	28	6	10-2		2-11	4-4	2-11		
	b SK6335	6	42	6	12-2		2-11	6-4	2-11		
	c SK6336	4	28	6	2-8	0-7	2-1			0-0	
12B	a SK6337	1	6	6	10-2		2-11	4-4	2-11		
	b SK6338	6	42	6	12-2		2-11	6-4	2-11		
13	a SY6337	1	6	6	8-1		2-9	2-7	2-9	0-9 1/2	
	b SY6338	2	12	6	10-9		3-0	4-9	3-0	0-11	
	c SY6339	2	12	6	12-10		3-0	6-10	3-0	0-11	
	d SY6340	4	24	6	13-11		3-6	6-11	3-6	1-2	
	e SK6341	2	12	6	4-1	0-7	3-6			0-0	
	f SK6342	1	6	6	8-0		2-9	2-6	2-9		
14	a SY6343	1	4	6	8-1		2-9	2-7	2-9	0-9 1/2	
	b SY6344	2	8	6	10-3		2-9	4-9	2-9	0-10	
	c SY6345	2	8	6	12-3		2-9	6-9	2-9	0-10	
	d SY6346	4	16	6	12-10		3-0	6-10	3-0	0-11	
	e SK6347	1	4	6	3-7	0-7	3-0			0-0	
	f SK6348	1	4	6	8-0		2-9	2-6	2-9		
15	a SY6349	1	2	6	8-0		2-9	2-6	2-9	0-9	
	b SY6350	2	4	6	10-2		2-9	4-8	2-9	0-9	
	c SY6351	6	12	6	12-0		2-8	6-8	2-8	0-8 1/2	
	d SK6352	2	4	6	3-3	0-7	2-8			0-0	
	e SK6353	1	2	6	7-6		2-6	2-6	2-6		

REINFORCEMENT SCHEDULE - STIRRUPS											
BENDING DIAGRAMS											
SET	BAR	NUMBER REQ'D	BAR	BAR	DIMENSIONS						
NO.	MARK	PER SET	TOTAL	SIZE	LENGTH	A	B	C	D	G	H
16	a SY6354	1	2	6	7-6		2-6	2-6	2-6		0-8
	b SY6355	2	4	6	9-8		2-6	4-8	2-6		0-8
	c SY6356	6	12	6	11-10		2-7	8-8	2-7		0-8
	d SK6357	2	4	6	3-2	0-7	2-7			0-0	
	e SK6358	1	2	6	7-6		2-6	2-6	2-6		
17	a SY6359	1	6	6	7-6		2-6	2-6	2-6		0-7 1/2
	b SY6360	2	12	6	9-7		2-6	4-7	2-6		0-7 1/2
	c SY6361	6	36	6	11-8		2-6	6-8	2-6		0-7 1/2
	d SK6362	2	12	6	3-1	0-7	2-6			0-0	
	e SK6363	1	6	6	7-0		2-3	2-6	2-3		
18	a SY6364	1	5	6	7-0		2-3	2-6	2-3		0-5 1/2
	b SY6365	2	10	6	9-0		2-3	4-6	2-3		0-5 1/2
	c SY6366	6	30	6	11-1		2-3	6-7	2-3		0-5 1/2
	d SK6367	2	5	6	2-10	0-7	2-3			0-0	
	e SK6368	1	5	6	7-0		2-3	2-6	2-3		
19A	a SF6369	1	1	6	11-8	0-5	3-3	4-4	3-3	0-5	
	b SF6370	3	3	6	13-8	0-5	3-3	6-4	3-3	0-5	
	c SF6371	1	1	6	12-8	0-5	3-3	5-4	3-3	0-5	
	d SK6372	1	1	6	4-5	0-7	3-3			0-7	
19B	a SF6373	1	1	6	11-8	0-5	3-3	4-4	3-3	0-5	
	b SF6374	1	1	6	13-8	0-5	3-3	6-4	3-3	0-5	
	c SF6375	1	1	6	13-7	0-5	3-3	6-3	3-3	0-5	
	d SF6376	1	1	6	13-4	0-5	3-3	8-0	3-3	0-5	
	e SF6377	1	1	6	12-4	0-5	3-3	5-0	3-3	0-5	
	f SK6378	1	1	6	4-5	0-7	3-3			0-7	
20A	a SF6379	1	1	6	12-4	0-5	3-7	4-4	3-7	0-5	
	b SF6380	3	3	6	14-4	0-5	3-7	6-4	3-7	0-5	
	c SF6381	1	1	6	13-4	0-5	3-7	5-4	3-7	0-5	
	d SK6382	1	1	6	4-9	0-7	3-7			0-7	
20B	a SF6383	1	1	6	12-4	0-5	3-7	4-4	3-7	0-5	
	b SF6384	1	1	6	14-4	0-5	3-7	6-4	3-7	0-5	
	c SF6385	1	1	6	14-3	0-5	3-7	6-3	3-7	0-5	
	d SF6386	1	1	6	14-0	0-5	3-7	8-0	3-7	0-5	
	e SF6387	1	1	6	13-0	0-5	3-7	5-0	3-7	0-5	
	f SK6388	1	1	6	4-9	0-7	3-7			0-7	
21A	a SF6389	1	1	6	13-0	0-5	3-11	4-4	3-11	0-5	
	b SF6390	3	3	6	15-0	0-5	3-11	6-4	3-11	0-5	
	c SF6391	1	1	6	14-0	0-5	3-11	5-4	3-11	0-5	
	d SK6392	1	1	6	5-1	0-7	3-11			0-7	
21B	a SF6393	1	1	6	13-0	0-5	3-11	4-4	3-11	0-5	
	b SF6394	1	1	6	15-0	0-5	3-11	6-4	3-11	0-5	
	c SF6395	1	1	6	14-11	0-5	3-11	6-3	3-11	0-5	
	d SF6396	1	1	6	14-8	0-5	3-11	8-0	3-11	0-5	
	e SF6397	1	1	6	13-8	0-5	3-11	5-0	3-11	0-5	
	f SK6398	1	1	6	5-1	0-7	3-11			0-7	
22A	a SK6399	1	1	6	13-0		4-4	4-4	4-4		
	b SK6400	3	3	6	15-0		4-4	6-4	4-4		
	c SK6401	1	1	6	14-0		4-4	5-4	4-4		
	d SK6402	1	1	6	5-6	0-7	4-4			0-7	
22B	a SK6403	1	1	6	13-0		4-4	4-4	4-4		
	b SK6404	1	1	6	15-0		4-4	6-4	4-4		
	c SK6405	1	1	6	14-11		4-4	6-3	4-4		
	d SK6406	1	1	6	14-8		4-4	8-0	4-4		
	e SK6407	1	1	6	13-8		4-4	5-0	4-4		
	f SK6408	1	1	6	5-6	0-7	4-4			0-7	
23A	a SK6409	1	1	6	13-10		4-9	4-4	4-9		
	b SK6410	3	3	6	15-10		4-9	6-4	4-9		
	c SK6411	1	1	6	14-10		4-9	5-4	4-9		
	d SK6412	1	1	6	5-11	0-7	4-9			0-7	

REINFORCEMENT SCHEDULE - STIRRUPS											
BENDING DIAGRAMS											
SET	BAR	NUMBER REQ'D	BAR	BAR	DIMENSIONS						
NO.	MARK	PER SET	TOTAL	SIZE	LENGTH	A	B	C	D	G	H
23B	a SK6394	1	1	6	13-10		4-9	4-4	4-9		
	b SK6395	1	1	6	15-10		4-9	6-4	4-9		
	c SK6396	1	1	6	15-9		4-9	6-3	4-9		
	d SK6397	1	1	6	15-6		4-9	6-0	4-9		
	e SK6400	1	1	6	14-8		4-9	5-0	4-9		
	f SK6397	1	1	6	5-11	0-7	4-9			0-7	
24A	a SK6401	1	1	6	14-10		5-3	4-4	5-3		
	b SK6402	3	3	6	16-10		5-3	6-4	5-3		
	c SK6403	1	1	6	15-10		5-3	5-4	5-3		
	d SK6404	1	1	6	8-5	0-7	5-3			0-7	
24B	a SK6405	1	1	6	14-10		5-3	4-4	5-3		
	b SK6406	1	1	6	16-10		5-3	6-4	5-3		
	c SK6407	1	1	6	16-9		5-3	6-3	5-3		
	d SK6408	1	1	6	16-6		5-3	6-0	5-3		
	e SK6409	1	1	6	15-6		5-3	5-0	5-3		
	f SK6410	1	1	6	6-5	0-7	5-3			0-7	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-12	112

AS CONSTRUCTED
NO REVISIONS DATE
0.7 26, 1973

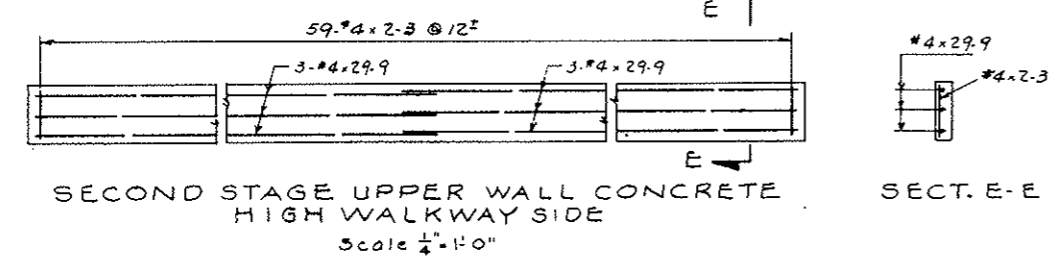
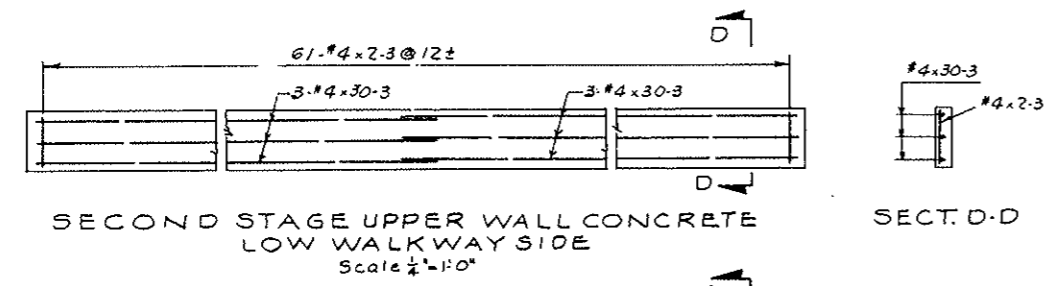
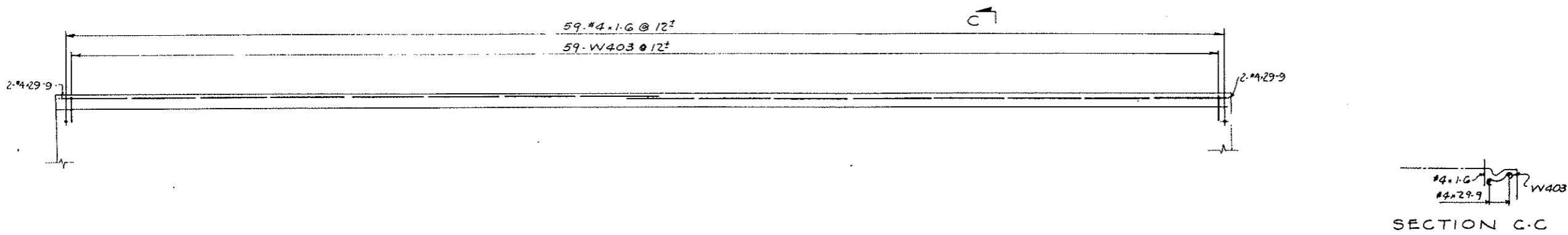
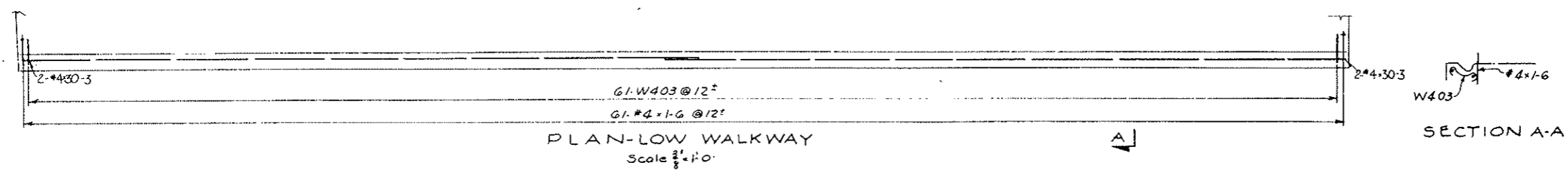
REINFORCEMENT SCHEDULE - BENT BARS										
BENDING DIAGRAMS										
TYPE H TYPE J TYPE L										
BAR MARK	NO.	REQ'D	SIZE	LENGTH	B	C	D	H	R	
H4180	160	4	4-0	0	3-0	1-0				
H4181	1	4	1-11	0	0-11	1-0				
H4182	1	4	2-0	0	1-0	1-0				
H4183	1	4	2-7	0	1-7	1-0				
H4184	1	4	2-8	0	1-8	1-0				
H4185	1	4	2-10	0	1-10	1-0				
H4186	1	4	2-11	0	1-11	1-0				
H4187	1	4	3-1	0	2-1	1-0				
H4188	1	4	3-2	0	2-2	1-0				
H4189	1	4	3-4	0	2-4	1-0				
H4190	1	4	3-5	0	2-5	1-0				
H4191	1	4	3-6	0	2-6	1-0				
H4192	1	4	3-7	0	2-7	1-0				
H4194	236	4	1-10	0	1-6	0-4				
H4195	8	4	7-3	1-0	5-3	1-0				
H4196	10	4	6-3	1-0	4-3	1-0				
H4197	36	4	8-3	1-0	6-3	1-0				
H4211	2	4	6-0	1-0	4-0	1-0				
H4212	2	4	7-10	1-0	5-10	1-0				
H4213	1	4	1-10	0	0-10	1-0				
H4214	1	4	1-11	0	0-11	1-0				
H4215	1	4	2-1	0	1-1	1-0				
H4216	1	4	2-2	0	1-2	1-0				
H4217	1	4	2-4	0	1-4	1-0				
H4218	1	4	2-5	0	1-5	1-0				
H4219	1	4	2-6	0	1-6	1-0				
H4220	1	4	2-8	0	1-8	1-0				
H4221	1	4	2-9	0	1-9	1-0				
H4222	1	4	2-11	0	1-11	1-0				
H4223	1	4	3-0	0	2-0	1-0				
H4224	1	4	3-2	0	2-2	1-0				
H4225	1	4	3-3	0	2-3	1-0				
H4226	1	4	3-4	0	2-4	1-0				
H4227	1	4	3-6	0	2-6	1-0				
H4228	1	4	3-7	0	2-7	1-0				
H4229	1	4	3-8	0	2-8	1-0				
H4230	1	4	3-10	0	2-10	1-0				
H4231	1	4	3-11	0	2-11	1-0				
J1801	65	18	36-5		35-4	3-10				42-5
J18121	4	18	36-3		30-9	8-3				18-8
J180	2	14	13-3		12-8	1-7				13-6
J181	2	14	13-4		12-10	1-8				13-3 1/2
L1804	38	18	37-11	17-2	4-9	16-0				3-0
L1860	4	18	33-1	15-8	4-5	13-0				2-10
L1861	36	18	33-4	16-3	3-6	13-7				2-3
L1405	80	14	37-11	17-2	4-9	16-0				3-0
L1417	4	14	33-5	1-2	24-10	7-5				15-10
L1418	4	14	34-3	2-2	23-4	8-8				14-10
L1419	4	14	34-10	3-1	21-11	9-10				13-1 1/2
L1420	2	14	35-6	4-0	20-6	11-0				13-0 1/2

REINFORCEMENT SCHEDULE - BENT BARS										
BENDING DIAGRAMS										
TYPE L TYPE M TYPE N										
BAR MARK	NO.	REQ'D	SIZE	LENGTH	B	C	D	H	R	
L1439	4	14	29-0	6-1	19-7	3-4				12-5 1/2
L1440	4	14	29-6	7-1	18-1	4-4				11-6
L1441	4	14	29-10	8-0	16-7	5-3				10-6 1/2
L1442	4	14	30-4	9-0	15-1	6-3				9-7
L1443	4	14	30-9	10-0	13-6	7-3				8-7
L1444	4	14	31-2	10-11	12-1	8-2				7-8
L1445	4	14	31-7	11-11	10-6	9-2				6-8
L1446	4	14	32-0	12-10	9-0	10-1				5-9
L1447	4	14	32-5	13-10	7-6	11-1				4-9
L1448	4	14	32-9	14-9	6-0	12-0				3-9 1/2
L1415	2	14	17-7	7-5	9-8	0-6				6-1 1/2
L1416	2	14	17-5	7-8	9-3	0-6				5-10 1/2
L1417	2	14	17-6	7-11	8-11	0-8				5-8
L1418	2	14	17-7	8-2	8-6	0-11				5-5
L1419	2	14	17-7	8-4	8-2	1-1				5-2 1/2
M4179	118	4	4-0		2-0	2-0	1-0			
M4193	30	4	10-0		7-0	3-0	1-6			
N1802	72	18	19-8	2-3	7-11	9-6	6-4			6-5
N1803	6	18	10-2	2-3	7-11	0	6-4			6-5
N1808	4	18	13-0	0	5-7	7-5	2-5			6-5
N406	35	14	19-8	2-3	7-11	9-6	6-4			6-5
N407	5	14	10-2	2-3	7-11	0	6-4			6-5
N409	4	14	11-3	0	5-7	5-8	2-5			6-5
N411	4	14	36-6	0	27-3	9-3	15-0			21-7
N412	4	14	37-6	0	26-9	10-9	15-0			20-8
N413	4	14	38-3	0	26-2	12-15	15-0			19-8
N414	4	14	38-11	0	25-8	13-3	15-0			18-8 1/2
N415	4	14	39-11	0	25-2	14-9	15-0			17-9
N416	4	14	30-8	0	24-7	6-1	15-0			16-10
N462	4	14	27-6	0	14-9	12-9	6-3			15-11
N463	2	14	27-6	0	14-8	12-10	6-3			15-10
N464	2	14	27-6	0	14-7	12-11	6-3			15-9
N465	2	14	27-7	0	14-6	13-1	6-3			15-8
N466	2	14	27-8	0	14-5	13-3	6-3			15-7
N467	2	14	27-9	0	14-4	13-5	6-3			15-6
N468	2	14	27-10	0	14-3	13-7	6-3			15-5
N469	1	14	27-11	0	14-2	13-9	6-3			15-4
N470	1	14	28-0	0	14-1	13-11	6-3			15-3
N471	1	14	28-4	0	14-0	14-4	6-3			15-1
N472	2	14	28-8	0	14-0	14-8	6-3			14-11
N473	2	14	28-11	0	13-11	15-0	6-3			14-9
N474	2	14	29-2	0	13-10	15-4	6-3			14-7
N475	2	14	29-8	0	13-9	15-11	6-3			14-5
N476	2	14	30-0	0	13-8	16-4	6-3			14-3
N477	2	14	30-4	0	13-7	16-9	6-3			14-1
N478	2	14	30-7	0	13-6	17-1	6-3			13-11
N479	2	14	31-0	0	13-6	17-6	6-3			13-9
N482	1	14	13-11	0	13-5	0-6	6-3 1/2			13-1 1/2
N483	1	14	13-10	0	13-4	0-6	6-3 1/2			12-11
N484	2	14	13-9	0	13-3	0-6	6-3 1/2			12-9
N485	2	14	13-10	0	13-2	0-8	6-3 1/2			12-6 1/2
N486	2	14	14-0	0	13-1	0-11	6-3 1/2			12-4
N487	2	14	14-2	0	13-0	1-2	6-3 1/2			12-1 1/2

REINFORCEMENT SCHEDULE - BENT BARS										
BENDING DIAGRAMS										
TYPE N TYPE NN										
BAR MARK	NO.	REQ'D	SIZE	LENGTH	B	C	D	H	R	
N1488	2	14	14-2	0	12-10	1-4	6-3 1/2			11-1 1/2
N1489	2	14	14-4	0	12-9	1-7	6-3 1/2			11-9
N1490	2	14	14-5	0	12-8	1-9	6-3 1/2			11-6 1/2
N1491	2	14	14-7	0	12-7	2-0	6-3 1/2			11-4
N1492	2	14	14-8	0	12-6	2-2	6-3 1/2			11-2
N1493	2	14	14-10	0	12-5	2-5	6-3 1/2			10-1 1/2
N1494	1	14	14-10	0	12-3	2-7	6-3 1/2			10-9
N1495	1	14	15-0	0	12-2	2-10	6-3 1/2			10-7
N1496	1	14	15-1	0	12-1	3-0	6-3 1/2			10-4 1/2
N1497	2	14	15-3	0	12-0	3-3	6-3 1/2			10-2
N1498	2	14	15-5	0	11-11	3-6	6-3 1/2			10-0
N1499	2	14	15-6	0	11-10	3-8	6-3 1/2			9-9 1/2
N14100	2	14	15-8	0	11-9	3-11	6-4			9-8
N14101	2	14	15-10	0	11-8	4-2	6-4			9-5
N14102	2	14	15-11	0	11-6	4-5	6-4			9-2
N14103	2	14	16-1	0	11-5	4-8	6-4			8-11
N14104	2	14	16-1	0	11-3	4-10	6-4			8-8 1/2
N14105	2	14	16-3	0	11-2	5-1	6-4			8-5 1/2
N14106	2	14	16-4	0	11-0	5-4	6-4			8-2 1/2
N14107	1	14	16-6	0	10-11	5-7	6-4			8-0
N14108	1	14	16-7	0	10-9	5-10	6-4			7-9
N14109	2	14	16-8	0	10-7	6-1	6-4			7-6
N14110	2	14	16-8	0	10-5	6-3	6-4			7-3
N14111	2	14	16-10	0	10-4	6-6	6-4			7-0
N14112	2	14	16-11	0	10-2	6-9	6-4			6-9
N14113	2	14	17-4	0	10-4	7-0	6-4			6-7
N14114	2	14	17-3	0	10-0	7-3	6-4			6-4
N14198	1	14	10-10	0	4-4	6-6	0-7			15-4
N14199	1	14	11-0	0	3-9	7-3	0-5			15-0
N14200	1	14	14-11	0	14-2	0-9	6-3			15-4
N14201	1	14	15-1	0	14-1	1-0	6-3			15-3
N14202	1	14	15-3	0	14-0	1-3	6-3			15-1
N14203	1	14	17-5	0	13-5	4-0	6-3 1/2			13-1 1/2
N14204	1	14	17-9	0	13-4	4-5	6-3 1/2			12-11
N14205	1	14	19-7	0	12-3	7-4	6-3 1/2			10-9
N14206	1	14	19-10	0	12-2	7-8	6-3 1/2			10-7
N14207	1	14	20-2	0	1					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-13	112

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973



REINFORCEMENT SCHEDULE - BENT BARS														
BENDING DIAGRAMS														
BAR MARK	NO.	REQ'D.	SIZE	BAR LENGTH	A	B	C	D	E	F	G	H	K	R
LOW WALKWAY														
W403	G1		#4	2.5	0.6	1.5					0.6			0.6
HIGH WALKWAY														
W403	59		#4	2.5	0.6	1.5					0.6			0.6

STRAIGHT BARS		
NO. REQ'D.	SIZE	BAR LENGTH
LOW WALKWAY		
4	#4	30.3
61	#4	1.6
HIGH WALKWAY		
4	#4	29.9
59	#4	1.6
UPPER WALL L.W. SIDE		
6	#4	30.3
61	#4	2.3
UPPER WALL H.W. SIDE		
6	#4	29.9
59	#4	2.3

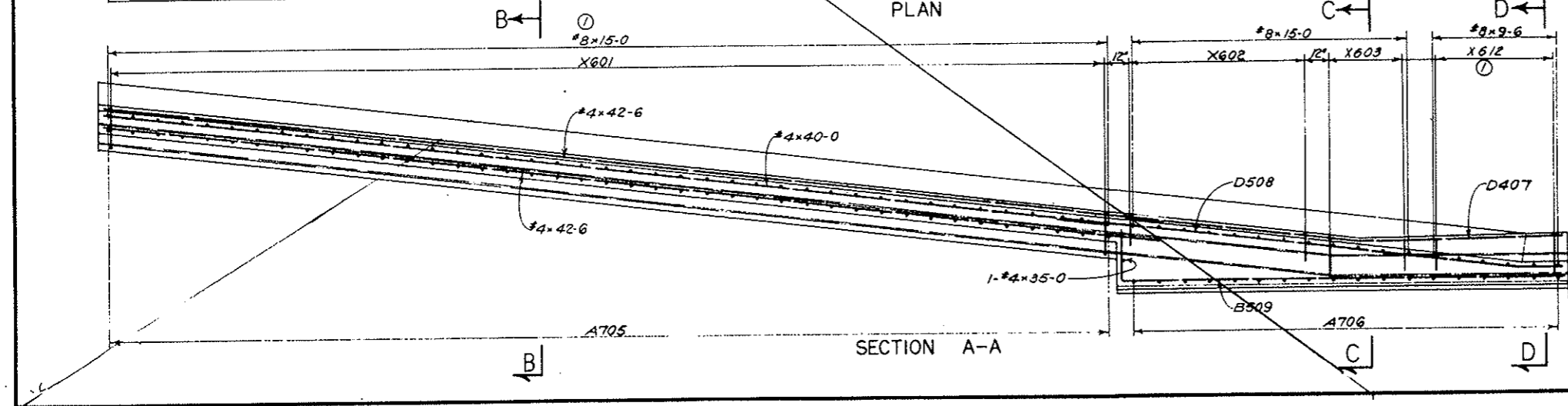
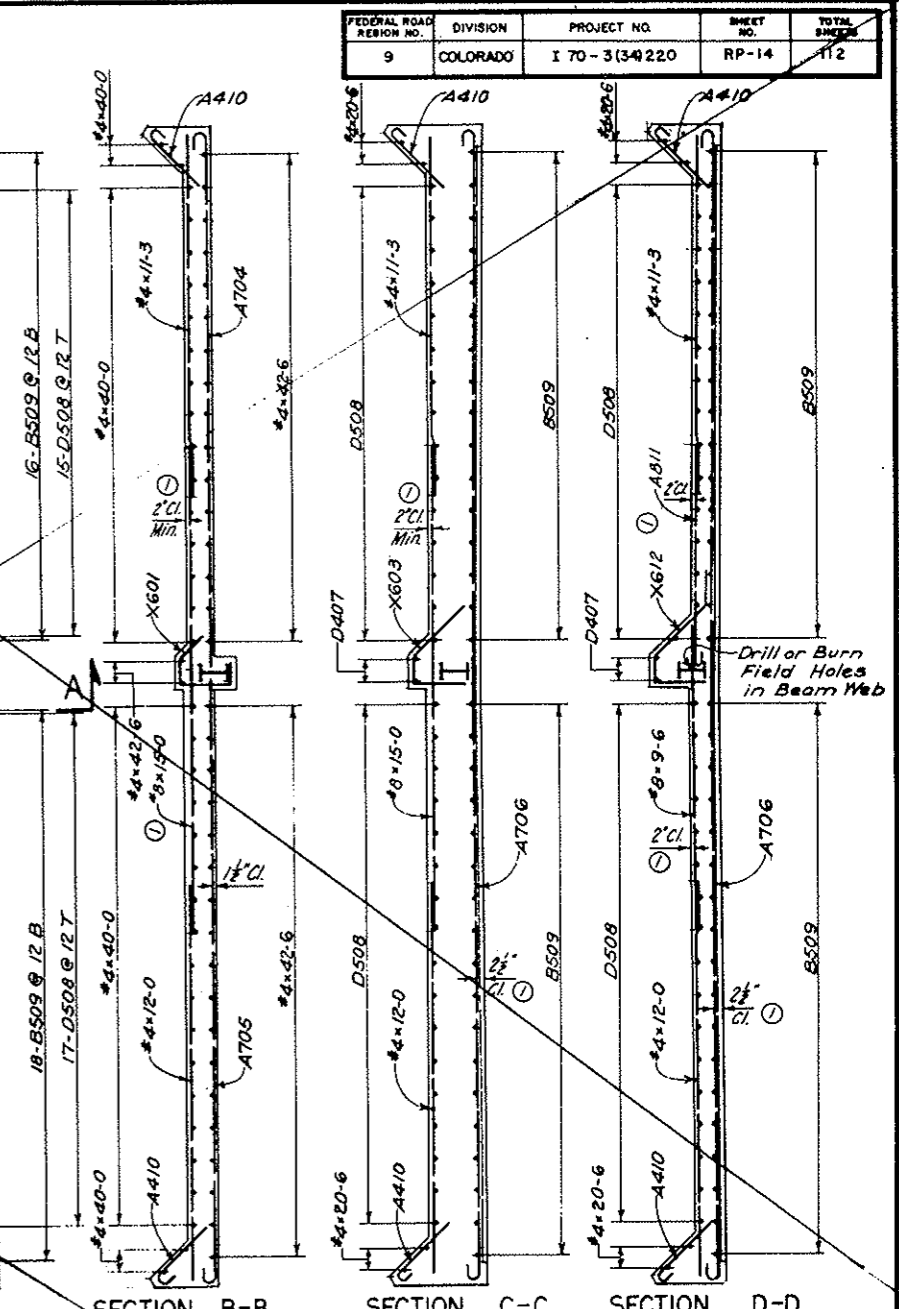
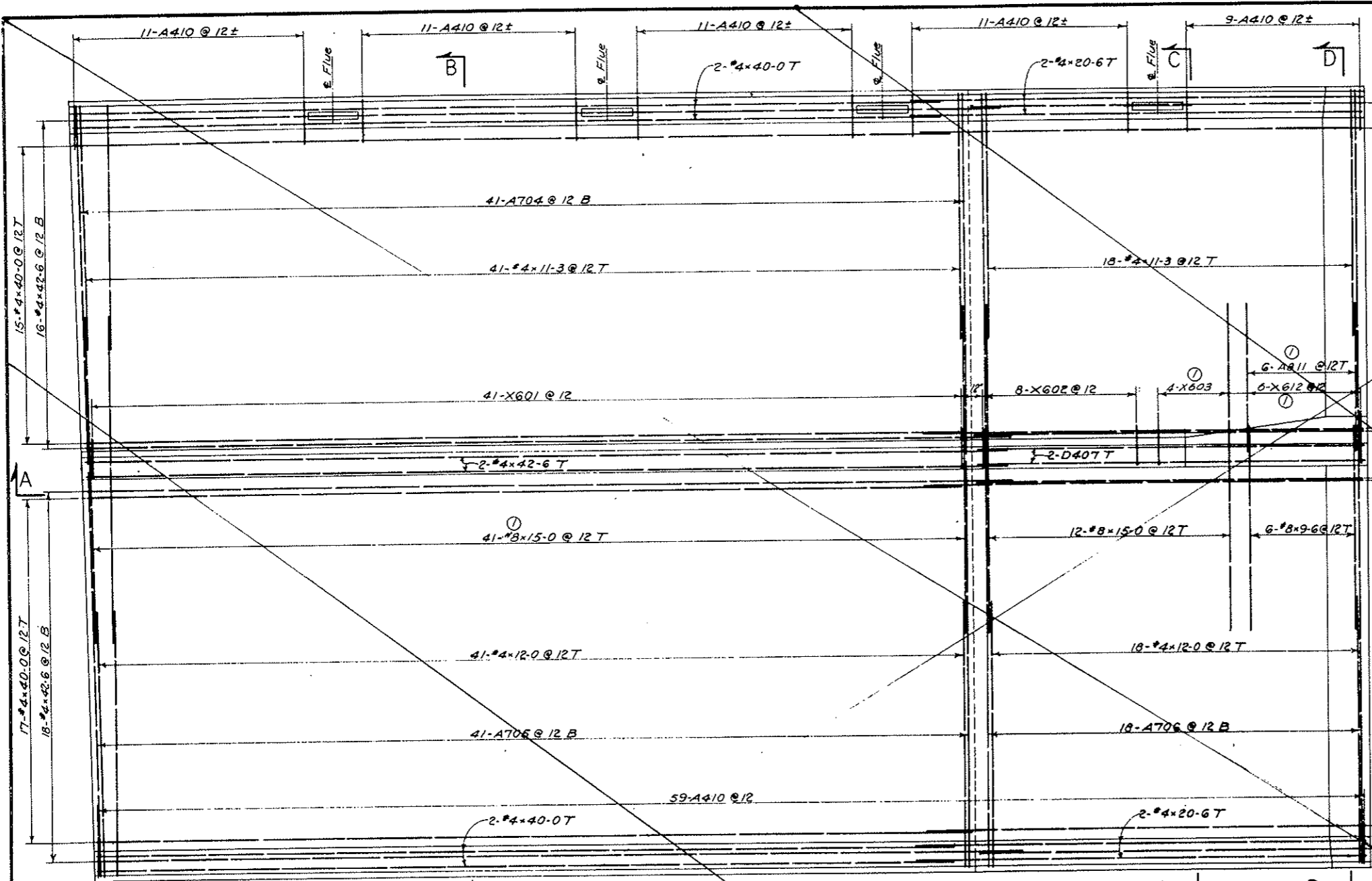
NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwg. C1-2.

All bent bar marks to be prefixed by No. C1-109

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL WEST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT WALKWAYS AND UPPER WALL SECOND STAGE CONCRETE TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H. F. M. C. C.	RECOMMENDED:			
DRAWN:	H. F. M. C. C.	CHECKED:	R. B. A.		
SUBMITTED:		APPROVED:			
NEW YORK, N. Y.					

DRAWING NO.
 CI-109

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-14	112



NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwg. C1-1.
 For Bar List see Dwg. C1-111.

VOID
 BY CONSTRUCTION
 OCT 26, 1973

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Reinforcing Details Revised	J.E. ROA	SMR	

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
CIVIL - WEST PORTAL SECTION
 REINFORCEMENT
NORTH TRANSITION SEGMENT
 DUCT FLOOR AND PRECAST CEILING PANELS
 SHEET 1 OF 2

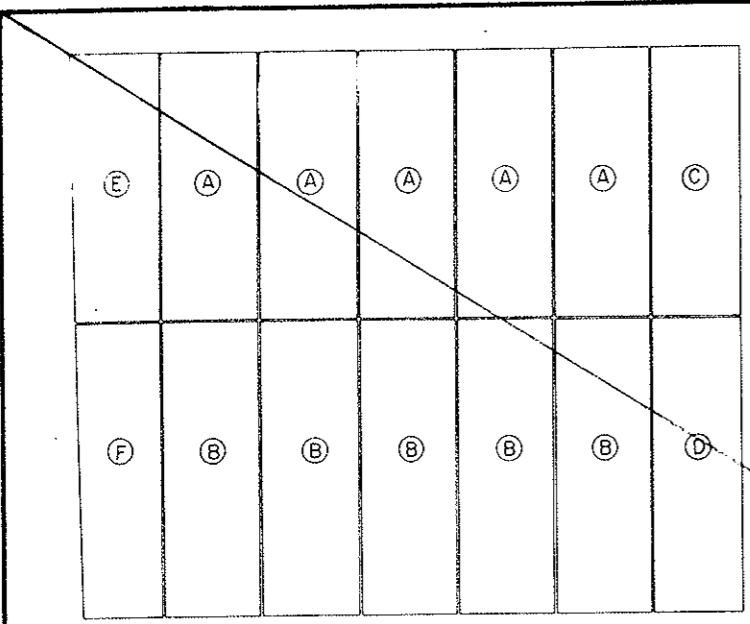
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS
 NEW YORK, N. Y.

DESIGNED: R. B. A.
 DRAWN: R. B. A.
 CHECKED: H. F. McC.
 SUBMITTED: [Signature]

RECOMMENDED: [Signature]
 APPROVED: [Signature]

DRAWING NO. CI-110
 SCALE: 3/8" = 1'-0"
 DATE:

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-15	112



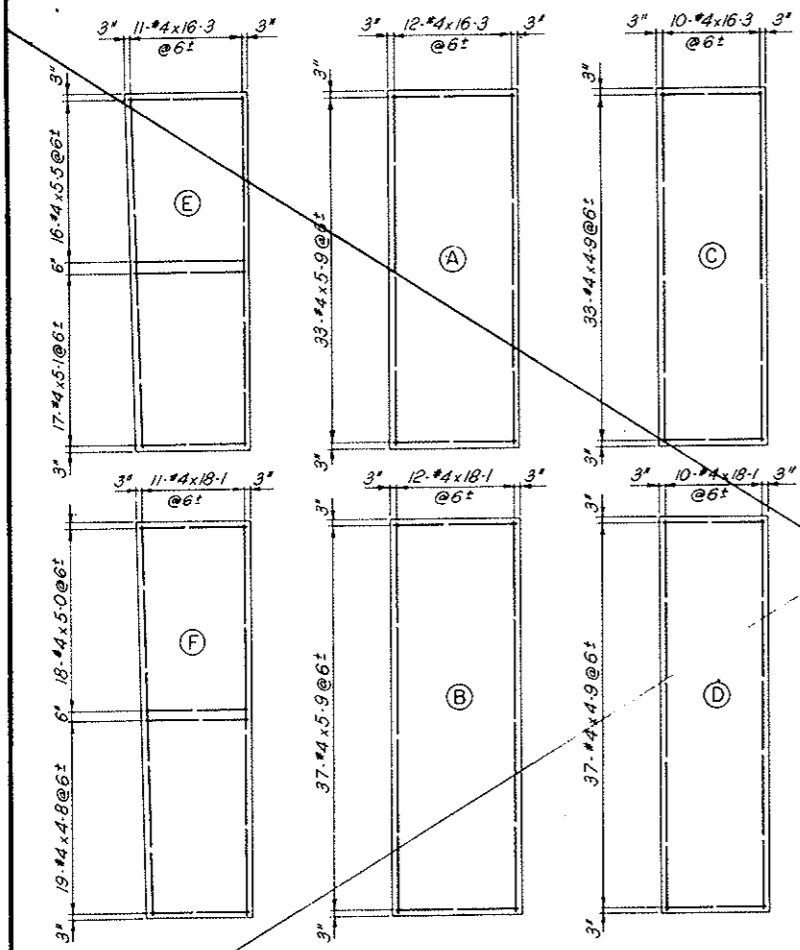
PLAN
SCALE: 3/16" = 1'-0"

DUCT FLOOR REINFORCEMENT											
STRAIGHT BARS			BENT BARS								
NO. REQ'D.	BAR SIZE	BAR LENGTH	BENDING DIAGRAMS								
53	#8	15-0									
6	#8	9-6									
36	#4	42-6									
36	#4	40-0									
1	#4	35-0									
4	#4	20-6									
59	#4	12-0									
59	#4	11-3									

BAR MARK	NO. REQ'D.	BAR SIZE	BAR LENGTH	DIMENSIONS									
				A	B	C	D	E	G	H	F		
A704	41	#7	17-3	0-9	15-6						0		
A705	41	#7	19-3	0-9	18-6						0		
A706	18	#7	36-9	0-9	35-3						0-9		
A811	6	#8	8-0	1-0	7-0						0		
X601	41	#6	4-5	0-9	1-7	0-10	1-3				1-0		
X602	8	#6	4-1	0	1-0	0-10	2-3				1-7		
X603	4	#6	4-8	0	1-7	0-10	2-3				1-7		
X612	6	#6	5-8	0	1-7	0-10	2-3				1-7	1-0	
D508	32	#5	20-3				1-9	18-6			0-3		
B509	34	#5	19-9		2-3	17-6							
D407	2	#4	17-6				9-6	8-0			1-4		
A410	112	#4	2-9	0-6	2-3								

All bent bar marks to be prefixed by No. C1-110

VOID
BY CONSTRUCTION
AT 26, 1973



TYPICAL REINFORCEMENT
SCALE: 1/4" = 1'-0"



TYPICAL SECTION
SCALE: 1" = 1'-0"

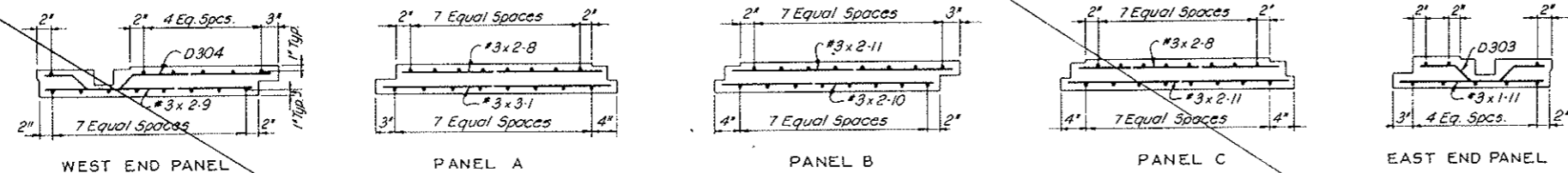
PANELS		
5'-A'	5'-B'	1'-C'
1'-D'	1'-E'	1'-F'
REINFORCING SCHEDULE STRAIGHT BARS		
NO. REQ'D.	BAR SIZE	BAR LENGTH
81	#4	18-1
81	#4	16-3
350	#4	5-9
16	#4	5-5
17	#4	5-1
18	#4	5-0
70	#4	4-9
19	#4	4-8

PRECAST CEILING PANELS

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C1-3.

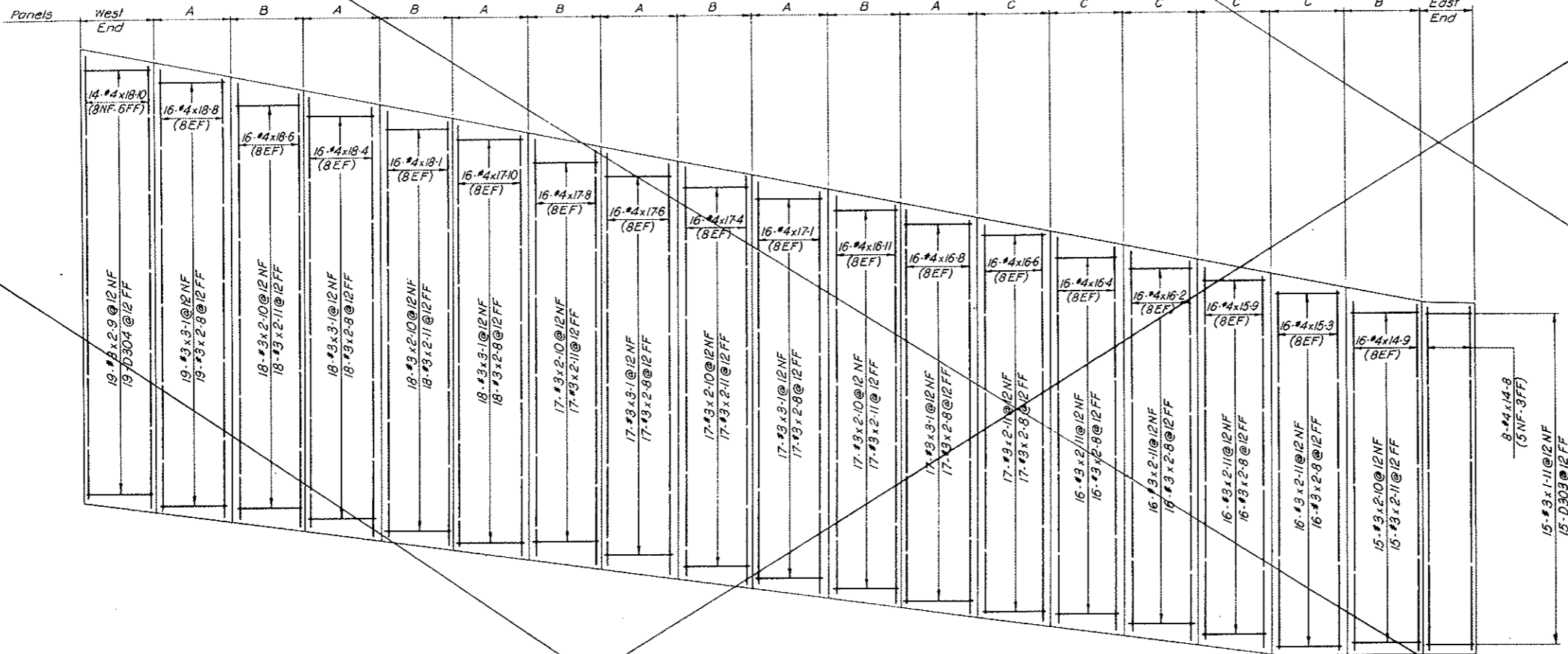
(1) <i>Minor Reinforcing Details Revised</i> NO. DATE DESCRIPTION OF REVISION BY CHL APP.		J.E.G. P.A.S.M.E.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT DUCT FLOOR AND PRECAST CEILING PANELS SHEET 2 OF 2		
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.		
DESIGNED: R. B. A. DRAWN: R. B. A. CHECKED: R. B. A. SUBMITTED: <i>R.B.A.</i>	RECOMMENDED: <i>[Signature]</i> APPROVED: <i>[Signature]</i>	DRAWING NO. C1-111
NEW YORK, N. Y. SCALE: AS NOTED DATE:		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-16	112



TYPICAL PANEL SECTIONS
Scale: 1"=1'-0"

REINFORCEMENT SCHEDULE - BENT BARS								
BENDING DIAGRAM								
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS				
				C	D	E		
D303	15	#3	1-11	0-6	0-3	0-5	0-2	0-5
D304	19	#3	3-3	0-6	0-3	0-5	0-3	1-10



ELEVATION
Scale: 3/8"=1'-0"

REIN. SCHEDULE STRAIGHT BARS			REIN. SCHEDULE STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH
14	#4	18-10	16	#4	16-4
16		18-8	15		16-2
16		18-6	16		15-9
16		18-4	16		15-3
16		18-1	16		14-9
16		17-10	8	#4	14-8
16		17-8			
16		17-6	106	#3	3-1
16		17-4	183		2-11
16		17-1	102		2-10
16		16-11	19		2-9
16		16-8	187		2-8
16	#4	16-6	15	#3	1-11

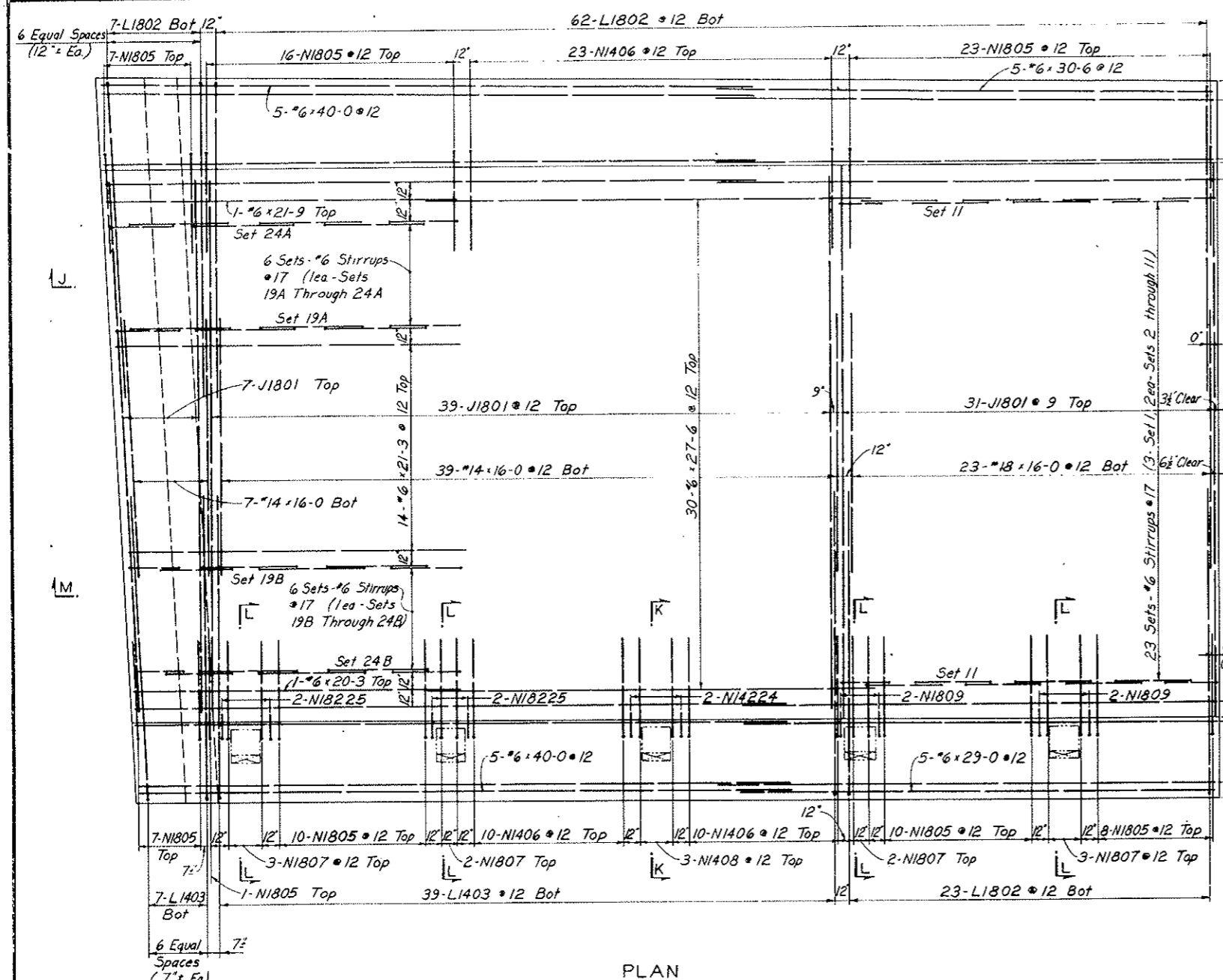
VOID
BY CONSTRUCTION
Oct 26, 1973

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-19.

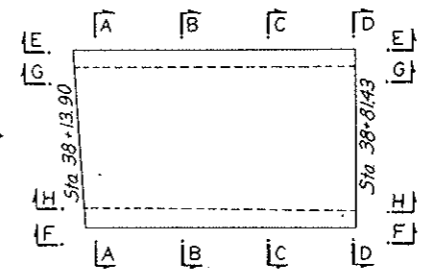
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT DUCT DIVIDER WALL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R. B. A.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: R. B. A.	CHECKED: <i>[Signature]</i>				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
NEW YORK, N. Y.		SCALE: AS NOTED	DATE:		
					DRAWING NO. CI-N2

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RP-17	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973

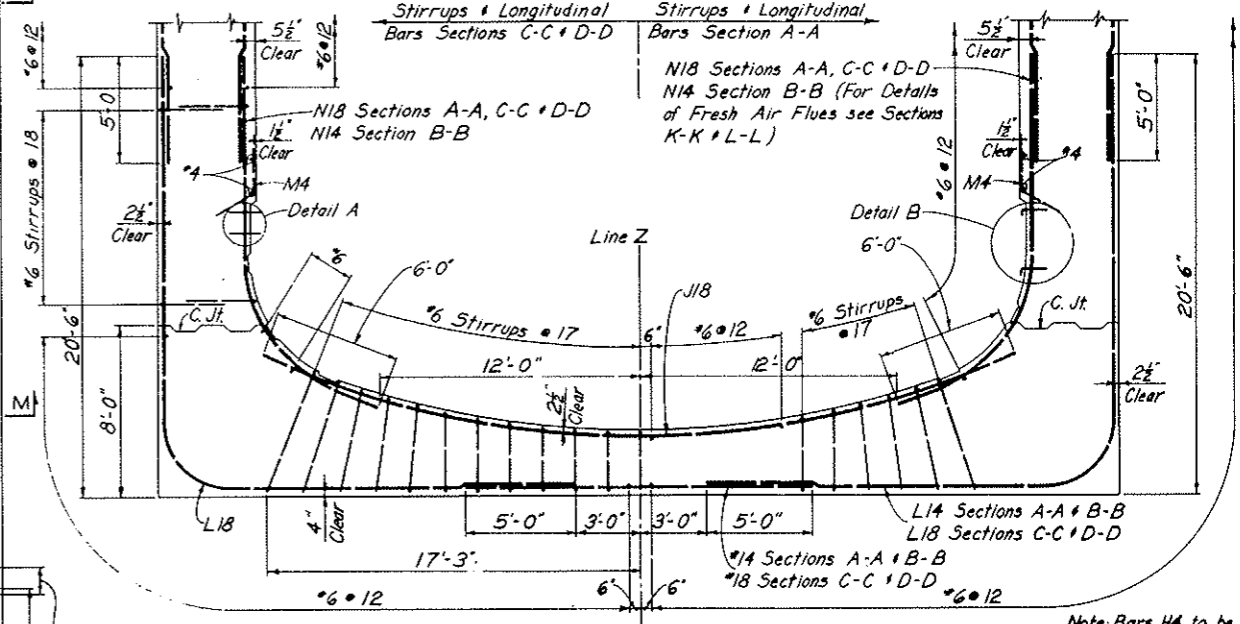


PLAN

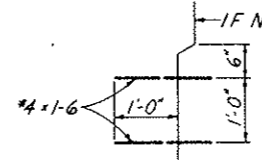


KEY PLAN
Not To Scale

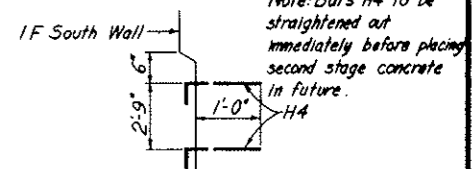
Note: For continuation of Sections see Dwg. CI-114



SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D

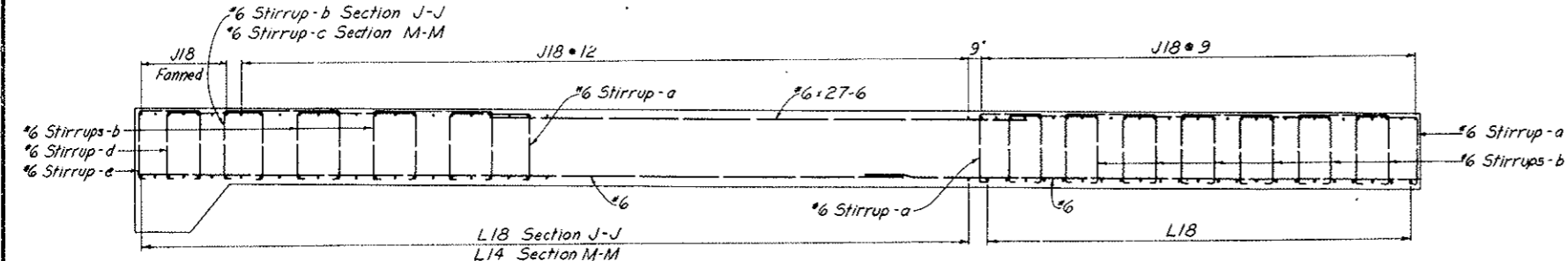


DETAIL A
Not To Scale

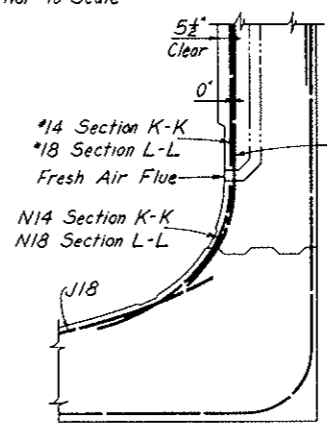


DETAIL B
Not To Scale

NOTES:
 Work this drawing with Dwg. CI-114 through CI-120.
 For General Reinforcement Notes see Dwg. C2-103.
 For General Concrete Notes see Dwg. C2-11.
 For concrete outlines see Dwg. CI-4 + CI-5.
 All stirrup spacing to be measured along inside face of concrete.
 Clear cover for outside face reinforcement is from nearest concrete surface or the 'A' Line.
 Drape or hickey longitudinal bars or stirrups as required.



SECTION J-J
SECTION M-M

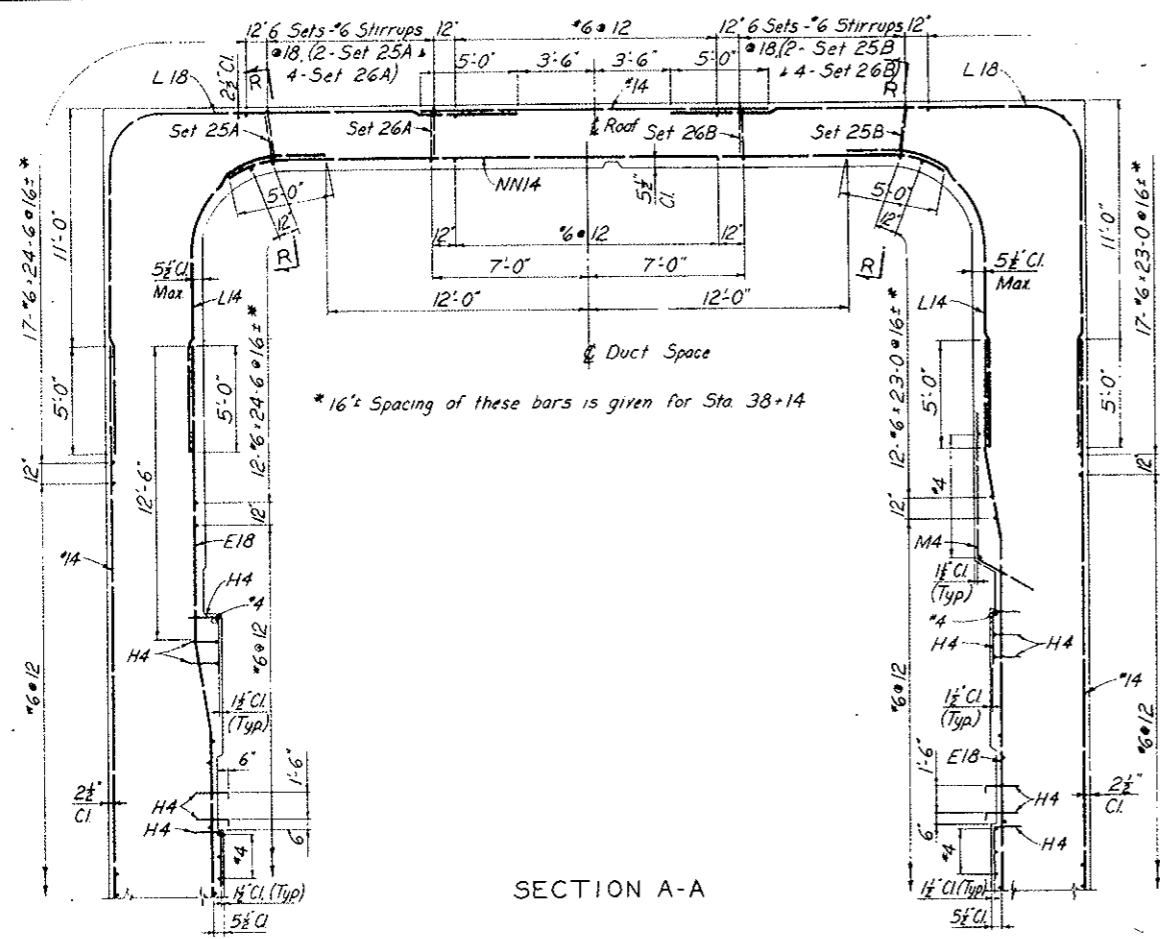


SECTION K-K
SECTION L-L

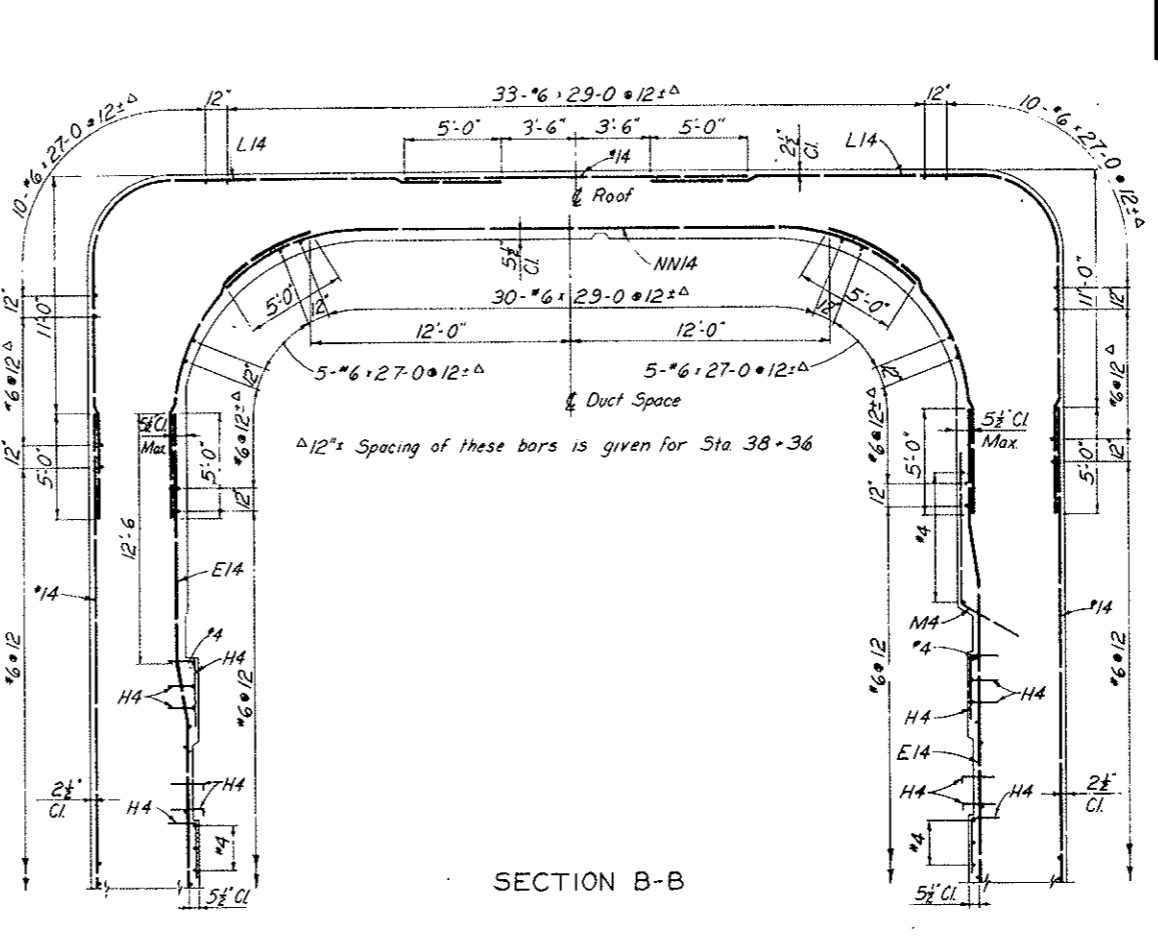
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT BASE SLAB - PLAN AND SECTION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED A.D.	DRAWN: A.D.	CHECKED: W.T.H. - R.B.A.	APPROVED: [Signature]	DRAWING NO.	
SCALE: 1/4" = 1'-0"	DATE: NOV. 1967	CI-113			

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3 (34) 220	RP-18	112

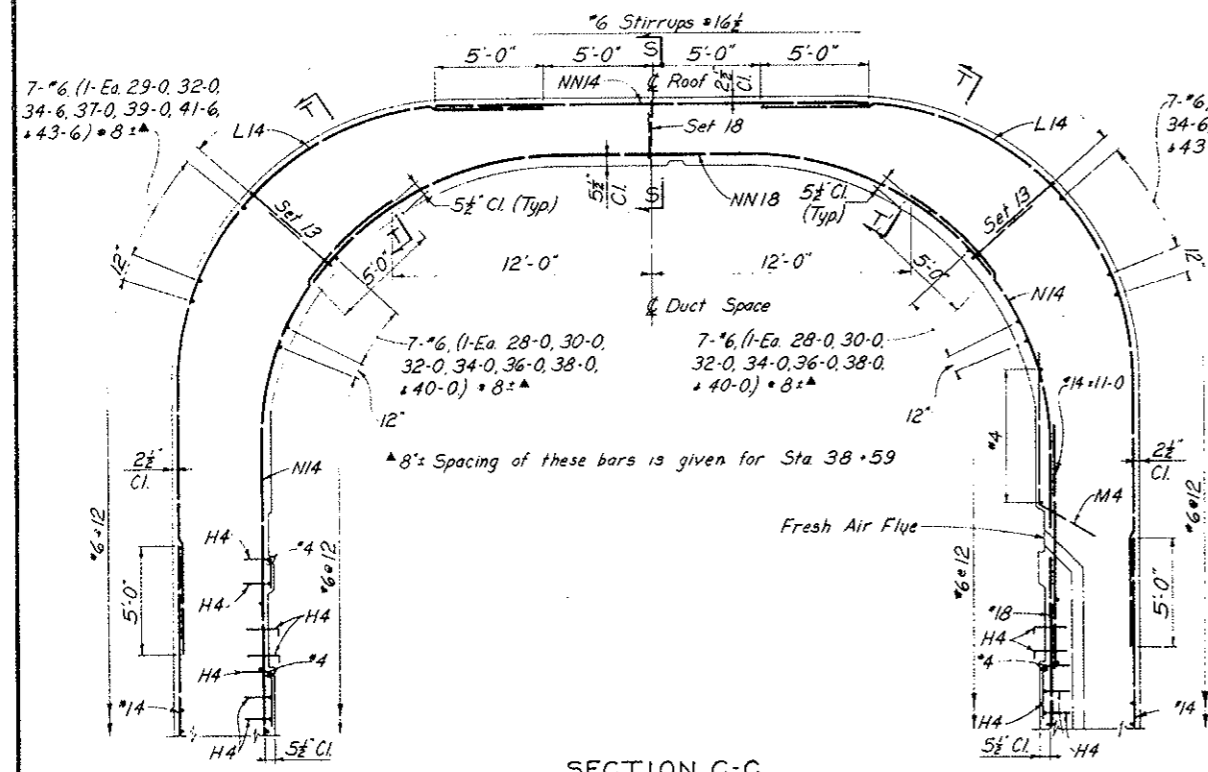
AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



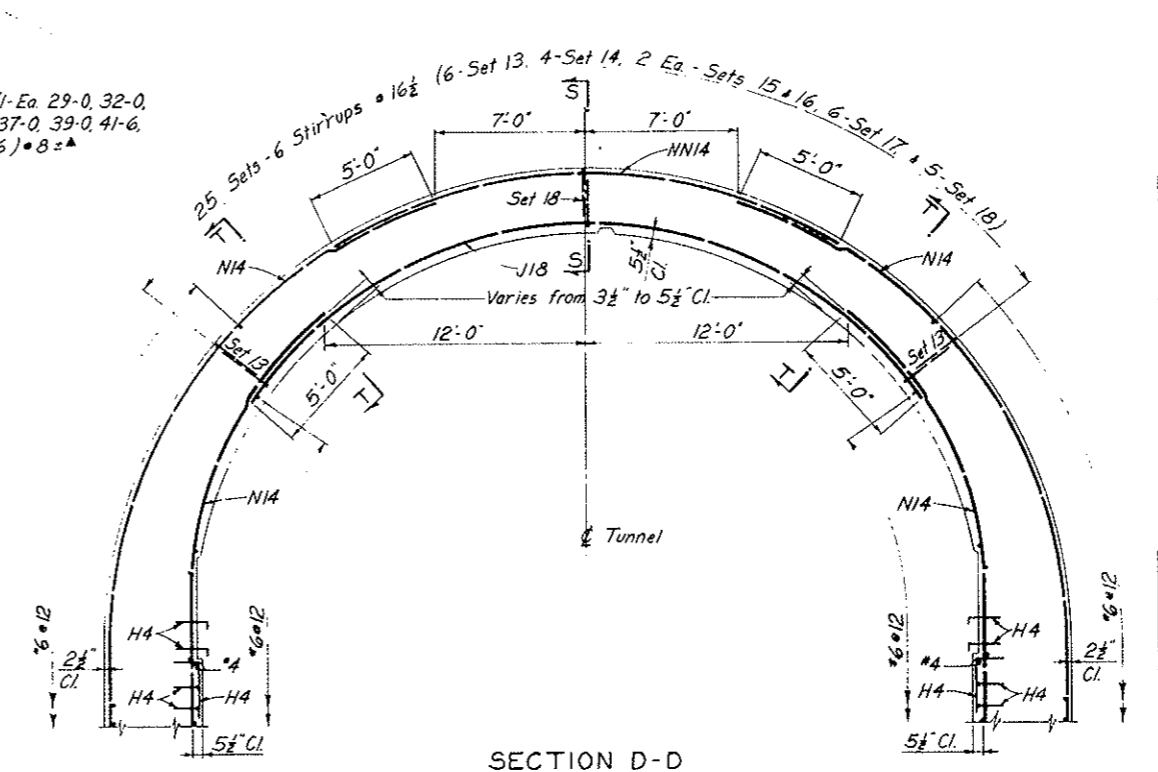
SECTION A-A



SECTION B-B



SECTION C-C



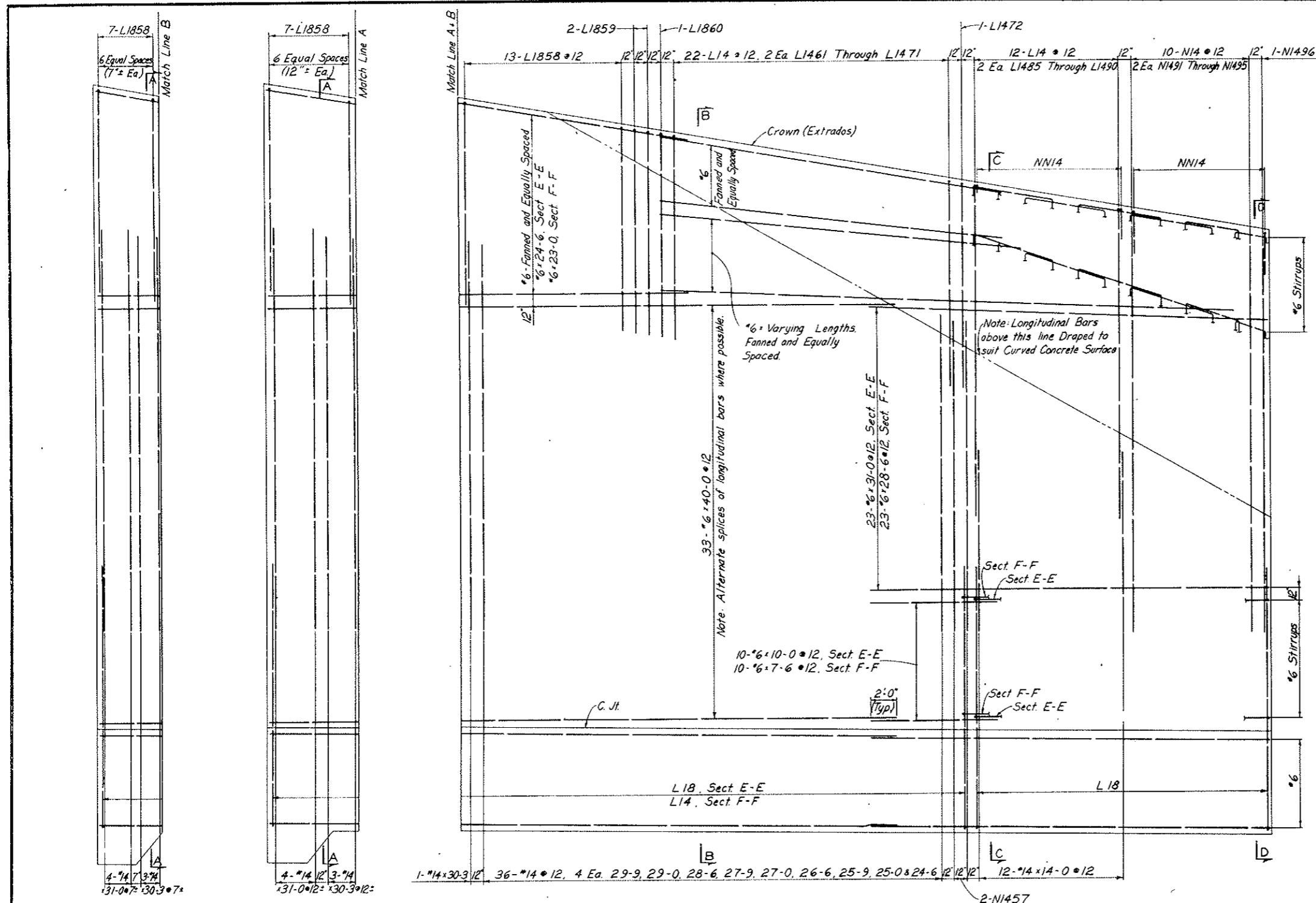
SECTION D-D

NOTES:
 Work this drawing with Dwg. CI-113 and CI-115 through CI-120.
 All lap lengths specified on the drawings are minimum values.
 SK4 ties for E14 and E18 bars not shown, see Detail C - Dwg CI-116 and Detail D - Dwg CI-117.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT CROSS SECTIONS					
TIPPETTS · ABBETT · MCCARTHY · STRATTON ENGINEERS AND ARCHITECTS · NEW YORK, N. Y.					
DESIGNED: A.D.	RECOMMENDED:				
DRAWN: A.D.	APPROVED:				
CHECKED: W.T.H.	DATE:				
SUBMITTED:	SCALE: 1/4" = 1'-0"	DATE: NOV 1967			
					DRAWING NO. CI-114

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3 (34) 220	RP-19	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



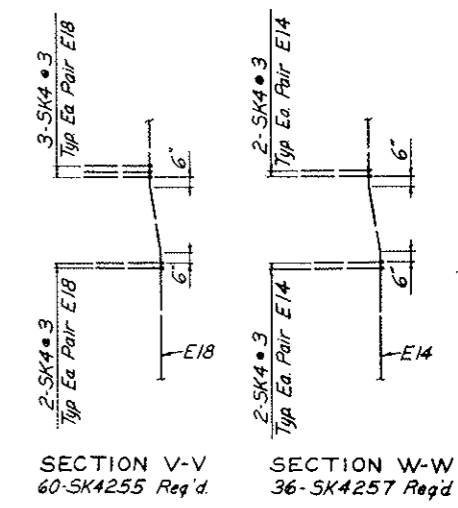
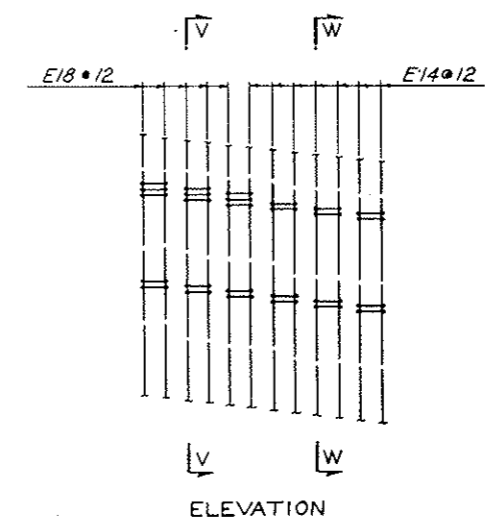
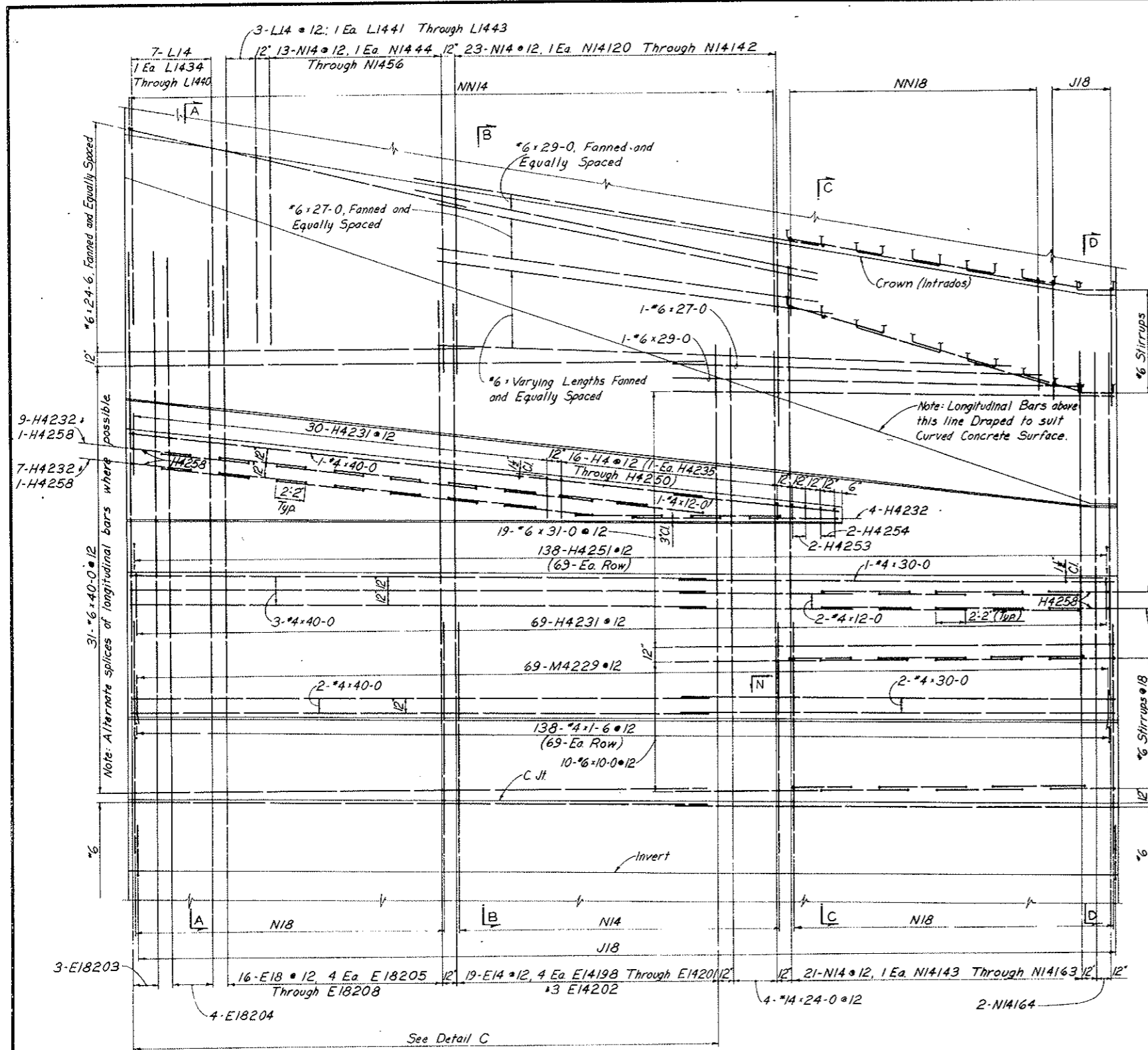
SECTION E-E (NORTH WALL)
 SECTION F-F (SOUTH WALL)

NOTES:
 Work this drawing with Dwgs. CI-113, CI-114 and CI-116 through CI-120.

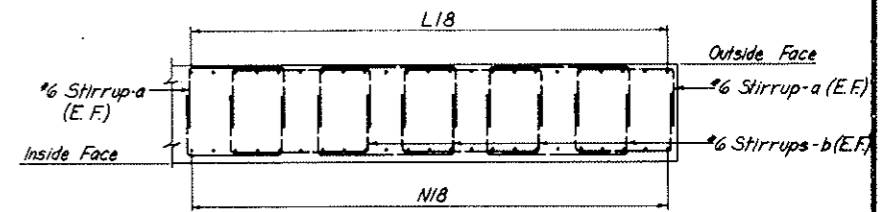
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT NORTH AND SOUTH WALLS - OUTSIDE FACE TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS - NEW YORK, N. Y.					
DESIGNED	A. O.	RECOMMENDED	[Signature]		
DRAWN	A. O.	CHECKED	W. T. H.	[Signature]	
APPROVED	[Signature]	DATE	NOV. 1967	DRAWING NO. CI-115	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RP-20	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



DETAIL C
 Typical Arrangement of E Bars with SK4 Ties.
 For Location see Section G-G.



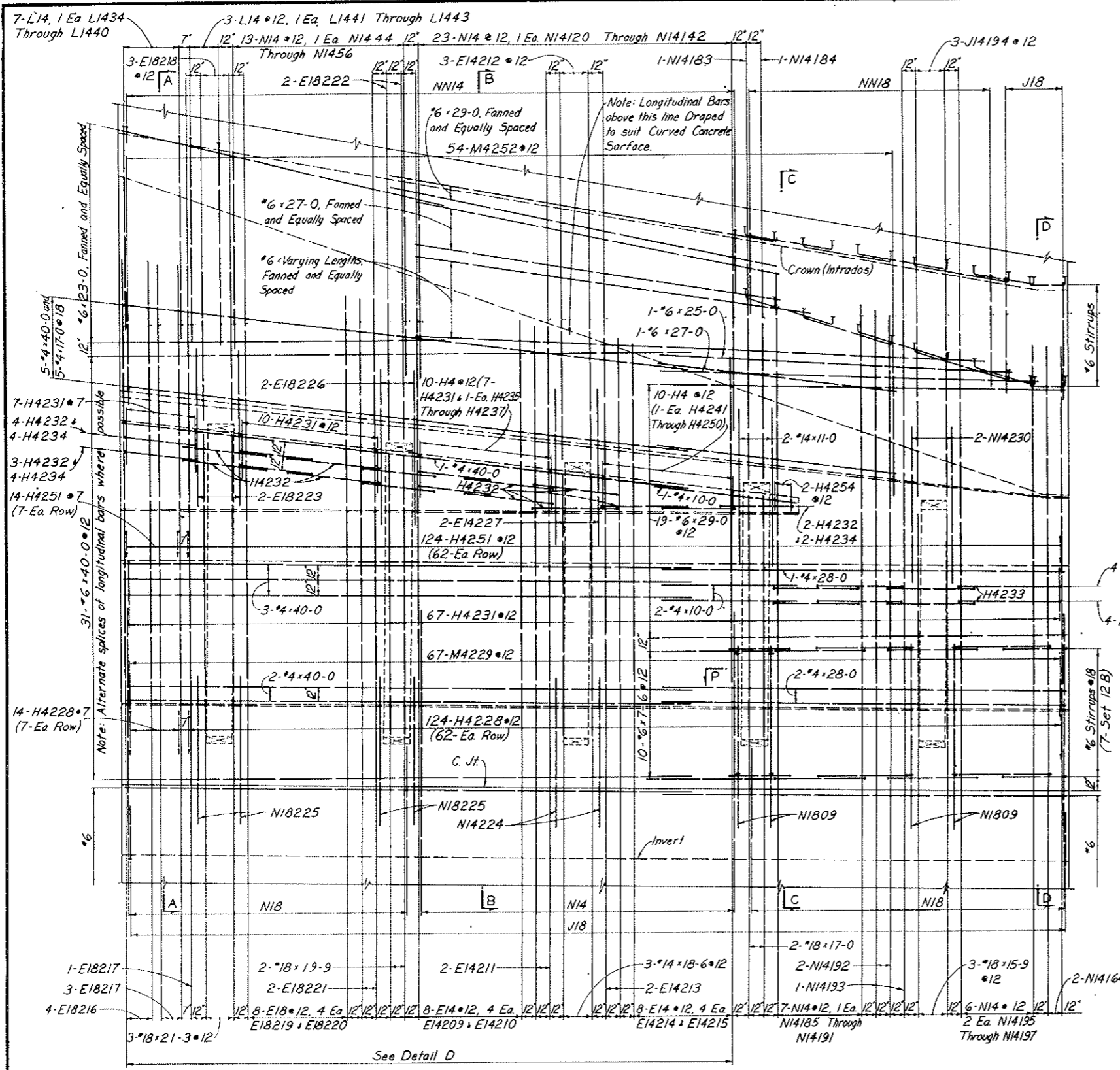
NOTES:
 Work this drawing with Dwg. CI-113, CI-114, CI-115,
 and CI-117 through CI-120.

SECTION G-G

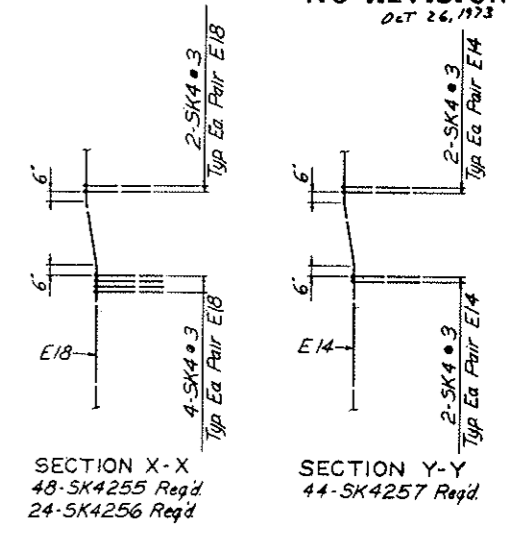
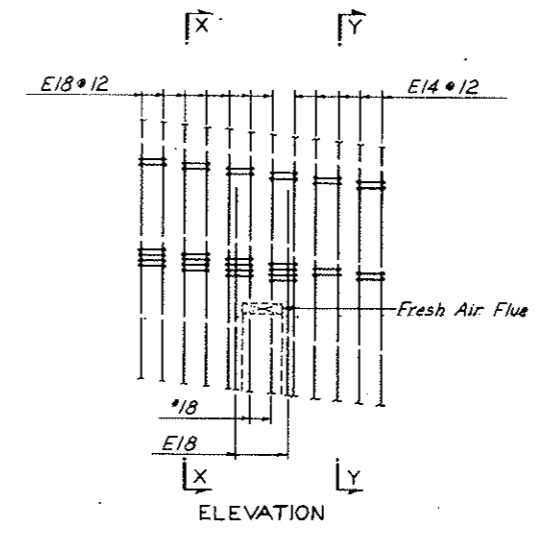
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT NORTH WALL - INSIDE FACE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY A. D.	CHECKED BY W. T. M. - R. B. A.	RECOMMENDED BY <i>[Signature]</i>	APPROVED BY <i>[Signature]</i>	DRAWING NO. CI-116	
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"	DATE: NOV. 1967		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3 (34)220	RP-21	112

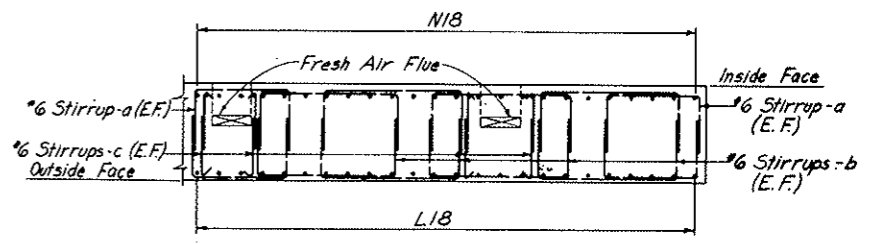
AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



SECTION H-H



DETAIL D
 Typical Arrangement of E Bars with SK4 Ties.
 For Location see Section H-H.



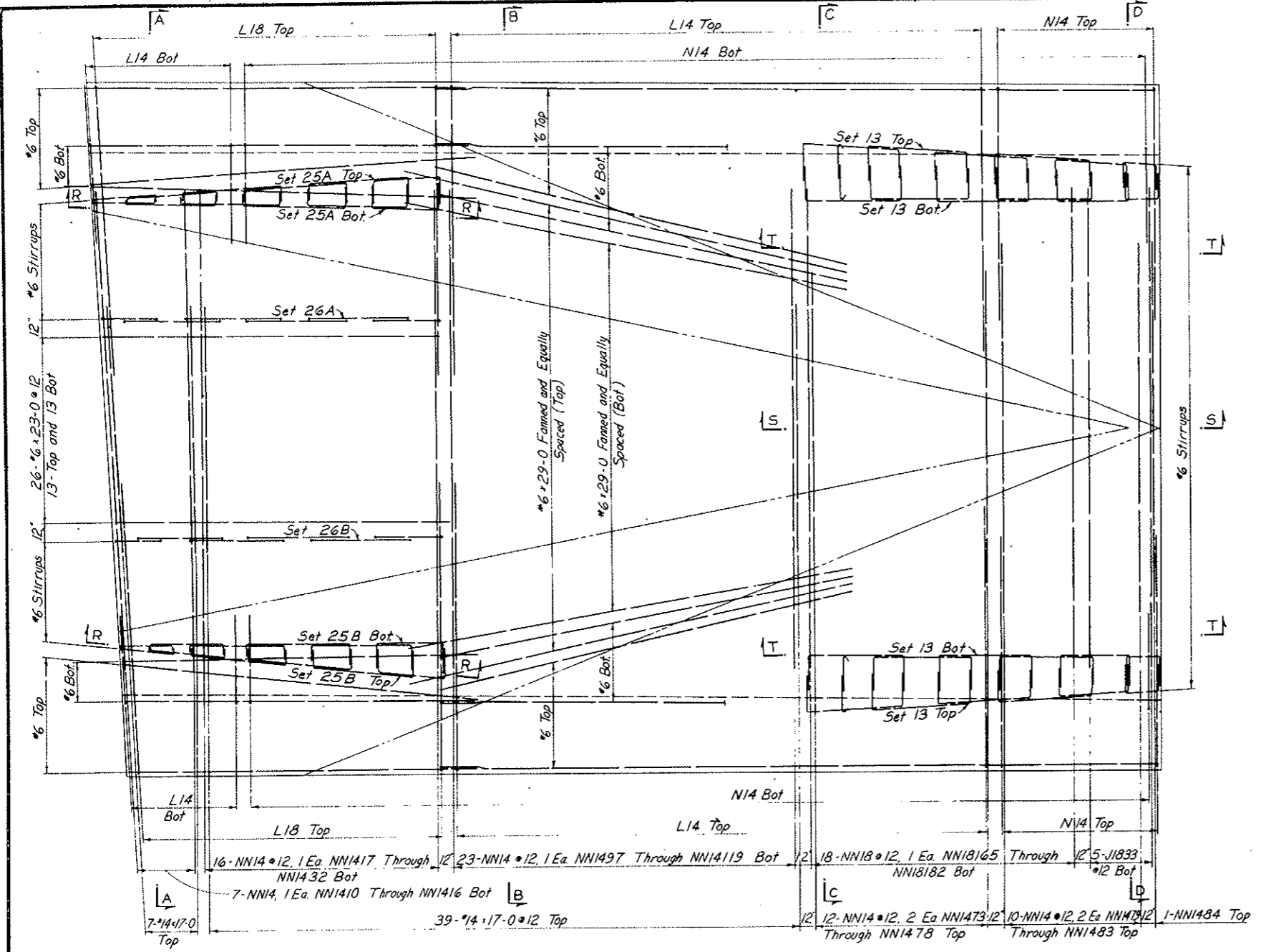
SECTION P-P

NOTES:
 Work this drawing with Dwg. CI-113 through CI-116
 and CI-118 through CI-120.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT SOUTH WALL - INSIDE FACE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: A.D.	APPROVED:				
DRAWN: A.D.	CHECKED: W.T.H. - R.B.A.				
CHECKED: W.T.H. - R.B.A.	APPROVED:				
SCALE: 1/4" = 1'-0"	DATE: NOV. 1967				
					DRAWING NO. CI-117

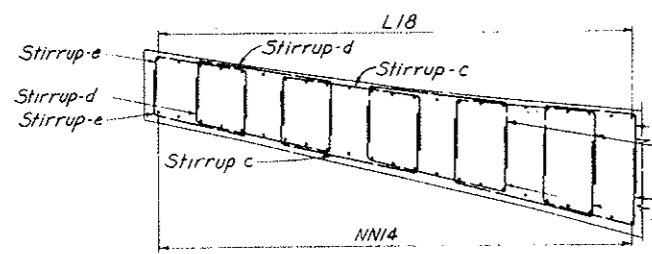
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3 (34) 220	RP-22	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973

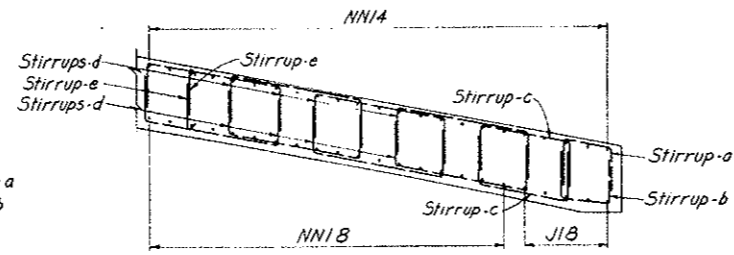


NOTES:
 Work this drawing with Dwg. CI-113 through CI-117 and Dwg. CI-119 and CI-120.

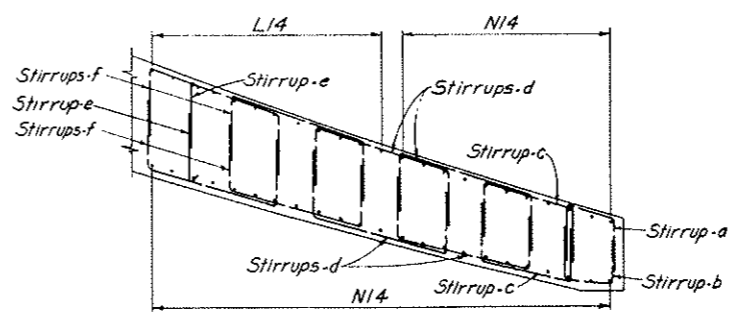
PLAN



SECTION R-R
 Arrangement of Stirrups for Sets 25A, 25B, 26A and 26B



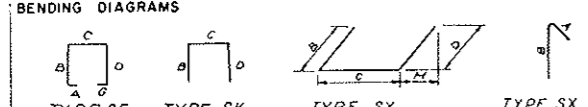
Note: Drape or hickey stirrups as required.
 SECTION S-S
 Arrangement of Stirrups for Sets 15 Through 18

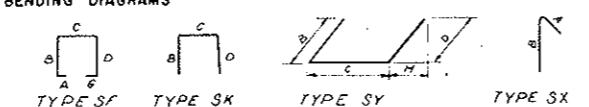


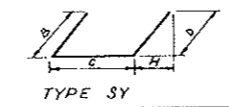
SECTION T-T
 Arrangement of Stirrups for Sets 13 and 14

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT ROOF SLAB AND ARCH TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED A.D.	DRAWN A.D.	CHECKED W.T.H. - R.B.A.	APPROVED	DATE	SCALE
DRAWING NO. CI-118					DATE: NOV. 1967

AS CONSTRUCTED
NO REVISIONS DATE
 0.7.26.77

REINFORCEMENT SCHEDULE - STIRRUPS											
BENDING DIAGRAMS											
											
DIMENSIONS											
SET	BAR NO.	BAR MARK	NUMBER REQ'D	BAR SIZE	BAR LENGTH	A	B	C	D	G	H
1	a	SF6301	2	6	9-4	0-5	2-7	3-4	2-7	0-5	
1	b	SF6302	6	18	10-10	0-5	2-7	4-10	2-7	0-5	
2	a	SF6303	2	4	9-6	0-5	2-8	3-4	2-8	0-5	
2	b	SF6304	6	12	11-0	0-5	2-8	4-10	2-8	0-5	
3	a	SF6305	2	4	9-10	0-5	2-10	3-4	2-10	0-5	
3	b	SF6306	6	12	11-4	0-5	2-10	4-10	2-10	0-5	
4	a	SF6307	2	4	10-2	0-5	3-0	3-4	3-0	0-5	
4	b	SF6308	6	12	11-8	0-5	3-0	4-10	3-0	0-5	
5	a	SF6309	2	4	10-8	0-5	3-3	3-4	3-3	0-5	
5	b	SF6310	6	12	12-2	0-5	3-3	4-10	3-3	0-5	
6	a	SF6311	2	4	11-4	0-5	3-7	3-4	3-7	0-5	
6	b	SF6312	6	12	12-10	0-5	3-7	4-10	3-7	0-5	
7	a	SF6313	2	4	12-0	0-5	3-11	3-4	3-11	0-5	
7	b	SF6314	6	12	13-6	0-5	3-11	4-10	3-11	0-5	
8	a	SK6315	2	4	12-0		4-4	3-4	4-4		
8	b	SK6316	6	12	13-6		4-4	4-10	4-4		
9	a	SK6317	2	4	12-10		4-9	3-4	4-9		
9	b	SK6318	6	12	14-4		4-9	4-10	4-9		
10	a	SK6319	2	4	13-10		5-3	3-4	5-3		
10	b	SK6320	6	12	15-4		5-3	4-10	5-3		
11	a	SK6321	2	4	15-4		6-0	3-4	6-0		
11	b	SK6322	6	12	16-10		6-0	4-10	6-0		
12A	a	SK6323	4	28	10-4		3-0	4-4	3-0		
12A	b	SK6324	8	56	12-4		3-0	6-4	3-0		
12B	a	SK6325	4	28	10-4		3-0	4-4	3-0		
12B	b	SK6326	8	56	12-4		3-0	6-4	3-0		
12B	c	SK6327	8	56	12-4		3-0	6-4	3-0		
13	a	SY6328	1	6	7-6		2-6	2-6	2-6	0-8	
13	b	SY6329	1	6	7-2		2-4	2-6	2-4	0-2	
13	c	SY6330	2	12	10-2		2-9	4-8	2-9	0-9	
13	d	SY6331	4	24	13-1		3-2	6-9	3-2	1-0	
13	e	SK6332	2	12	13-10	0-7	3-3				
13	f	SY6332	4	24	13-9		3-5	6-11	3-5	1-2	
14	a	SY6333	1	4	7-2		2-4	2-6	2-4	0-8	
14	b	SY6334	1	4	7-2		2-4	2-6	2-4	0-2	
14	c	SY6335	2	8	9-8		2-6	4-8	2-6	0-8	
14	d	SY6336	4	16	12-11		3-1	6-9	3-1	0-10	
14	e	SK6337	2	8	13-8	0-7	3-1				
14	f	SY6337	4	16	13-2		3-2	6-10	3-2	1-0	
15	a	SY6338	1	2	7-2		2-4	2-6	2-4	0-7	
15	b	SY6339	1	2	7-2		2-4	2-6	2-4	0-2	
15	c	SY6340	2	4	9-8		2-6	4-8	2-6	0-7	
15	d	SY6341	8	16	12-1		2-8	6-9	2-8	0-8	
15	e	SK6342	2	4	13-3	0-7	2-8				
16	a	SY6343	1	2	7-2		2-4	2-6	2-4	0-6	
16	b	SY6344	1	2	7-0		2-3	2-6	2-3	0-2	
16	c	SY6345	2	4	9-7		2-6	4-7	2-6	0-7	
16	d	SY6346	8	16	11-8		2-8	6-8	2-6	0-7	
16	e	SK6347	2	4	11-4	0-7	2-8				
17	a	SY6348	1	6	7-0		2-3	2-6	2-3	0-6	
17	b	SY6349	1	6	7-0		2-3	2-6	2-3	0-2	
17	c	SY6350	2	12	9-3		2-4	4-7	2-4	0-6	
17	d	SY6351	8	48	11-4		2-4	6-8	2-4	0-6	
17	e	SK6352	2	12	12-11	0-7	2-4				

REINFORCEMENT SCHEDULE - STIRRUPS												
BENDING DIAGRAMS												
												
DIMENSIONS												
SET	BAR NO.	BAR MARK	NUMBER REQ'D	BAR SIZE	BAR LENGTH	A	B	C	D	G	H	
18	a	SY6353	1	5	6		6-10		2-2	2-6	2-2	0-5
18	b	SY6354	1	5	6		6-10		2-2	2-6	2-2	0-2
18	c	SY6355	2	10	6		8-10		2-2	4-6	2-2	0-5
18	d	SY6356	8	40	6		10-11		2-2	6-7	2-2	0-5
18	e	SK6357	2	10	6		2-9	0-7	2-2			
19A	a	SF6358	1	1	6		11-8	0-5	3-3	4-4	3-3	0-5
19A	b	SF6359	3	3	6		13-8	0-5	3-3	6-4	3-3	0-5
19A	c	SF6360	1	1	6		13-4	0-5	3-3	6-0	3-3	0-5
19A	d	SF6361	1	1	6		11-4	0-5	3-3	4-0	3-3	0-5
19B	a	SF6358	1	1	6		11-8	0-5	3-3	4-4	3-3	0-5
19B	b	SF6359	2	2	6		13-8	0-5	3-3	6-4	3-3	0-5
19B	c	SF6360	1	1	6		13-4	0-5	3-3	6-0	3-3	0-5
19B	d	SF6362	1	1	6		12-5	0-5	3-3	5-1	3-3	0-5
19B	e	SF6363	1	1	6		10-8	0-5	3-3	3-4	3-3	0-5
20A	a	SF6364	1	1	6		12-4	0-5	3-7	4-4	3-7	0-5
20A	b	SF6365	3	3	6		14-4	0-5	3-7	6-4	3-7	0-5
20A	c	SF6366	1	1	6		14-0	0-5	3-7	6-0	3-7	0-5
20A	d	SF6367	1	1	6		12-0	0-5	3-7	4-0	3-7	0-5
20B	a	SF6364	1	1	6		12-4	0-5	3-7	4-4	3-7	0-5
20B	b	SF6365	2	2	6		14-4	0-5	3-7	6-4	3-7	0-5
20B	c	SF6366	1	1	6		14-0	0-5	3-7	6-0	3-7	0-5
20B	d	SF6368	1	1	6		13-1	0-5	3-7	5-1	3-7	0-5
20B	e	SF6369	1	1	6		11-4	0-5	3-7	3-4	3-7	0-5
21A	a	SF6370	1	1	6		13-0	0-5	3-11	4-4	3-11	0-5
21A	b	SF6371	3	3	6		15-0	0-5	3-11	6-4	3-11	0-5
21A	c	SF6372	1	1	6		14-8	0-5	3-11	6-0	3-11	0-5
21A	d	SF6373	1	1	6		12-8	0-5	3-11	4-0	3-11	0-5
21B	a	SF6370	1	1	6		13-0	0-5	3-11	4-4	3-11	0-5
21B	b	SF6371	2	2	6		15-0	0-5	3-11	6-4	3-11	0-5
21B	c	SF6372	1	1	6		14-8	0-5	3-11	6-0	3-11	0-5
21B	d	SF6374	1	1	6		13-9	0-5	3-11	5-1	3-11	0-5
21B	e	SF6375	1	1	6		12-0	0-5	3-11	3-4	3-11	0-5
22A	a	SK6376	1	1	6		13-0		4-4	4-4	4-4	
22A	b	SK6377	3	3	6		15-0		4-4	6-4	4-4	
22A	c	SK6378	1	1	6		14-8		4-4	6-0	4-4	
22A	d	SK6379	1	1	6		12-8		4-4	4-0	4-4	
22B	a	SK6376	1	1	6		13-0		4-4	4-4	4-4	
22B	b	SK6377	2	2	6		15-0		4-4	6-4	4-4	
22B	c	SK6378	1	1	6		14-8		4-4	6-0	4-4	
22B	d	SK6380	1	1	6		13-9		4-4	5-1	4-4	
22B	e	SK6381	1	1	6		12-0		4-4	3-4	4-4	
23A	a	SK6382	1	1	6		13-10		4-9	4-4	4-9	
23A	b	SK6383	3	3	6		15-10		4-9	6-4	4-9	
23A	c	SK6384	1	1	6		15-6		4-9	6-0	4-9	
23A	d	SK6385	1	1	6		13-6		4-9	4-0	4-9	
23B	a	SK6382	1	1	6		13-10		4-9	4-4	4-9	
23B	b	SK6383	2	2	6		15-10		4-9	6-4	4-9	
23B	c	SK6384	1	1	6		15-6		4-9	6-0	4-9	
23B	d	SK6385	1	1	6		14-7		4-9	5-1	4-9	
23B	e	SK6386	1	1	6		12-10		4-9	3-4	4-9	
24A	a	SK6387	1	1	6		14-10		5-3	4-4	5-3	
24A	b	SK6388	3	3	6		16-10		5-3	6-4	5-3	
24A	c	SK6389	1	1	6		16-6		5-3	6-0	5-3	
24A	d	SK6390	1	1	6		14-6		5-3	4-0	5-3	
24B	a	SK6387	1	1	6		14-10		5-3	4-4	5-3	
24B	b	SK6388	2	2	6		16-10		5-3	6-4	5-3	
24B	c	SK6389	1	1	6		16-6		5-3	6-0	5-3	
24B	d	SK6391	1	1	6		15-7		5-3	5-1	5-3	
24B	e	SK6392	1	1	6		13-10		5-3	3-4	5-3	

REINFORCEMENT SCHEDULE - STIRRUPS												
BENDING DIAGRAMS												
												
DIMENSIONS												
SET	BAR NO.	BAR MARK	NUMBER REQ'D	BAR SIZE	BAR LENGTH	A	B	C	D	G	H	
25A	a	SY6393	2	4	6		11-2		3-4	4-6	3-4	0-7
25A	b	SY6394	4	8	6		13-1		3-3	6-7	3-3	0-7
25A	c	SY6395	2	4	6		11-9		2-7	6-7	2-7	0-6
25A	d	SY6396	2	4	6		11-2		2-5	6-4	2-5	0-5
25A	e	SY6397	2	4	6		8-10		2-3	4-4	2-3	0-5
25B	a	SY6393	2	4	6		11-2		3-4	4-6	3-4	0-7
25B	b	SY6394	4	8	6		13-1		3-3	6-7	3-3	0-7
25B	c	SY6395	2	4	6		11-9		2-7	6-7	2-7	0-6
25B	d	SY6396	2	4	6		10-1		2-5	5-3	2-5	0-5
25B	e	SY6397	2	4	6		7-10		2-3	3-4	2-3	0-5
26A	a	SY6400	2	8	6</							

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-24	112

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NO REVISIONS DATE
 Oct 26, 1973

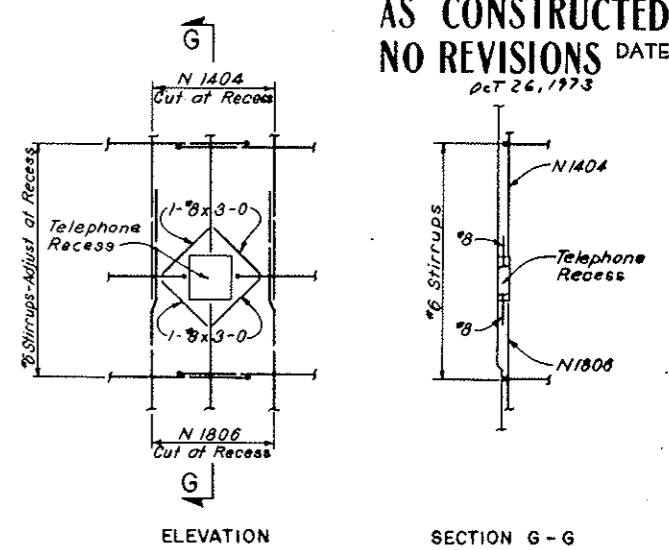
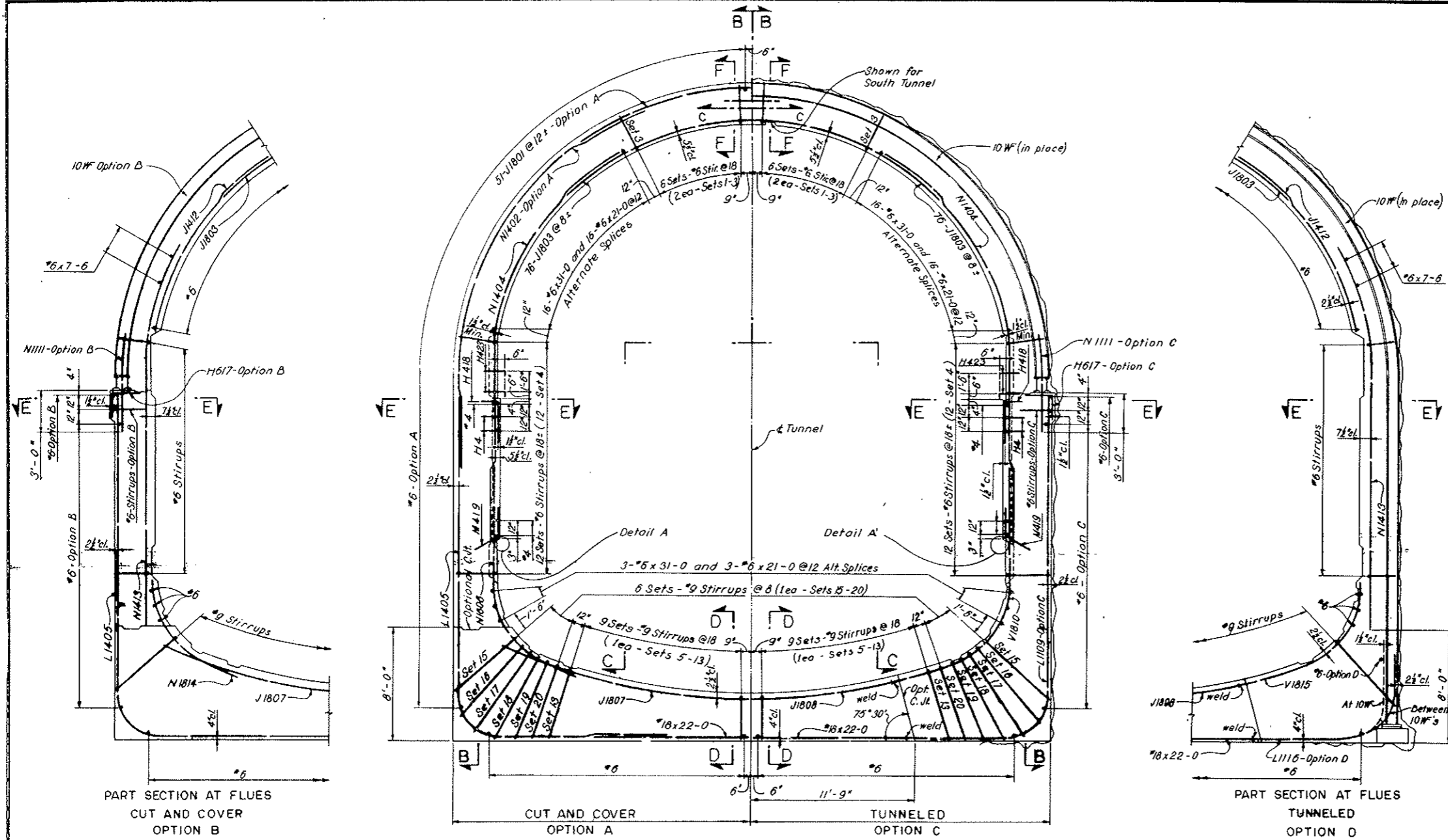
REINFORCEMENT SCHEDULE - BENT BARS									
BENDING DIAGRAMS									
TYPE E					TYPE H				
BAR MARK	NO.	REQ'D SIZE	LENGTH	B	C	D	H	R	
E18203	3	18	31-0	14-0	4-6	12-6	0-9		
E18204	4	18	30-9	14-0	4-3	12-6	0-8		
E18205	4	18	30-3	14-0	3-9	12-6	0-7		
E18206	4	18	29-6	13-9	3-3	12-6	0-6		
E18207	4	18	29-0	13-6	3-0	12-6	0-6		
E18208	4	18	28-9	13-3	3-0	12-6	0-5		
E18216	4	18	29-9	5-0	4-3	20-6	0-8		
E18217	4	18	29-6	5-3	4-0	20-3	0-8		
E18218	3	18	10-6	5-3	3-9	1-6	0-7		
E18219	4	18	28-6	5-6	3-6	19-6	0-7		
E18220	4	18	27-6	5-3	3-3	19-0	0-6		
E18221	2	18	27-0	5-6	3-0	18-6	0-6		
E18222	2	18	9-6	5-3	3-0	1-3	0-5		
E18223	2	18	11-3	0	3-9	7-6	0-7		
E18226	2	18	11-3	0-9	3-0	7-6	0-6		
E14198	4	14	28-6	13-0	3-0	12-6	0-5		
E14199	4	14	28-0	12-6	3-0	12-6	0-4		
E14200	4	14	27-6	12-0	3-0	12-6	0-3		
E14201	4	14	27-0	11-6	3-0	12-6	0-3		
E14202	4	14	26-6	11-0	3-0	12-6	0-2		
E14209	4	14	26-3	5-3	3-0	18-3	0-5		
E14210	4	14	25-9	5-0	3-0	17-9	0-4		
E14211	2	14	25-3	5-0	3-0	17-3	0-4		
E14212	3	14	9-3	5-0	3-0	1-3	0-4		
E14213	2	14	24-6	4-9	3-0	16-9	0-3		
E14214	4	14	24-0	4-6	3-0	16-6	0-3		
E14215	4	14	23-6	4-6	3-0	16-0	0-2		
E14227	2	14	11-3	0-9	3-0	7-6	0-4		
H4228	138	4	1-6	0	1-2	0-4			
H4231	190	4	4-3	0	3-0	1-3			
H4232	43	4	8-9	1-3	6-2	1-4			
H4233	2	4	9-9	1-3	7-2	1-4			
H4234	10	4	7-9	1-3	5-2	1-4			
H4235	2	4	4-3	0	2-11	1-4			
H4236	2	4	4-0	0	2-10	1-2			
H4237	2	4	4-0	0	2-9	1-3			
H4238	1	4	3-9	0	2-7	1-2			
H4239	1	4	3-9	0	2-6	1-3			
H4240	1	4	3-9	0	2-5	1-4			
H4241	2	4	3-6	0	2-3	1-3			
H4242	2	4	3-6	0	2-2	1-4			
H4243	2	4	3-3	0	2-1	1-2			
H4244	2	4	3-3	0	1-11	1-4			
H4245	2	4	3-0	0	1-10	1-2			
H4246	2	4	3-0	0	1-9	1-3			
H4247	2	4	2-9	0	1-7	1-2			
H4248	2	4	2-9	0	1-6	1-3			
H4249	2	4	2-9	0	1-5	1-4			
H4250	2	4	2-6	0	1-4	1-2			
H4251	276	4	1-10	0	1-6	0-4			
H4253	2	4	2-3	0	1-1	1-2			
H4254	4	4	2-3	0	0-11	1-4			
H4258	4	4	6-9	1-4	4-2	1-3			

REINFORCEMENT SCHEDULE - BENT BARS									
BENDING DIAGRAMS									
TYPE J		TYPE L		TYPE M		TYPE N			
BAR MARK	NO.	REQ'D SIZE	LENGTH	B	C	D	H	R	
J1801	77	18	36-3		35-2	3-11		42-5	
J1833	5	18	36-9		30-10	8-4		48-5	
J14104	3	14	14-6		13-11	1-8		15-7	
L1802	92	18	38-9	17-3	4-9	16-9		3-0	
L1858	40	18	33-9	13-6	3-7	16-8		2-3	
L1859	4	18	33-6	13-0	4-4	16-2		2-9	
L1860	2	18	33-3	12-6	5-2	15-7		3-3	
L14203	46	14	38-0	17-3	4-9	16-0		3-0	
L1434	2	14	38-0	9-1	7-2	1-9		4-6	
L1435	2	14	38-0	9-0	7-5	1-7		4-9	
L1436	2	14	37-9	8-9	7-8	1-4		4-11	
L1437	2	14	37-9	8-6	8-0	1-3		5-1	
L1438	2	14	37-9	8-5	8-3	1-1		5-3	
L1439	2	14	37-9	8-3	8-8	1-0		5-5	
L1440	2	14	37-6	8-0	8-10	0-8		5-7	
L1441	2	14	37-6	7-10	9-1	0-7		5-9	
L1442	2	14	37-6	7-7	9-5	0-6		6-0	
L1443	2	14	37-3	7-5	9-10	0		6-3	
L1461	4	14	33-0	11-10	6-5	14-9		4-1	
L1462	4	14	32-6	10-11	7-7	14-0		4-10	
L1463	4	14	32-3	10-2	8-9	13-4		5-7	
L1464	4	14	32-0	9-6	10-1	12-5		6-5	
L1465	4	14	31-6	8-6	11-5	11-7		7-3	
L1466	4	14	31-3	7-9	12-7	10-11		8-0	
L1467	4	14	30-9	6-11	13-10	10-0		8-10	
L1468	4	14	30-6	6-7	15-2	9-3		9-8	
L1469	4	14	30-3	5-6	16-4	8-5		10-5	
L1470	4	14	29-9	4-6	17-8	7-7		11-3	
L1471	4	14	29-6	3-9	18-10	6-11		12-0	
L1472	2	14	29-3	3-3	19-7	6-5		12-6	
L1485	4	14	37-6	12-10	20-10	3-10		13-3	
L1486	4	14	36-9	11-8	22-1	3-0		14-1	
L1487	4	14	36-0	10-7	23-3	2-2		14-10	
L1488	4	14	35-6	9-6	24-7	1-5		15-7	
L1489	4	14	35-0	8-6	25-9	0-9		16-4	
L1490	4	14	34-3	7-2	27-1	0		17-3	
N1805	82	18	19-0	9-0	7-11	2-1	12-9	6-5	
N1807	10	18	10-0	0	7-11	2-1	4-4	6-5	
N1809	4	18	13-6	0	5-3	8-3	2-0	6-5	
N18225	4	18	11-0	0	5-3	5-9	2-0	6-5	
N1406	43	14	19-0	9-0	7-11	2-1	12-9	6-4	
N1408	3	14	10-0	0	7-11	2-1	4-4	6-4	
N1444	2	14	17-3	0	10-1	7-2	6-5	6-5	
N1445	2	14	17-0	0	10-4	6-8	6-4	7-1	
N1446	2	14	16-9	0	10-5	6-4	6-4	7-3	
N1447	2	14	16-9	0	10-6	6-3	6-4	7-5	
N1448	2	14	16-9	0	10-8	6-1	6-4	7-8	
N1449	2	14	16-6	0	10-9	5-9	6-4	7-10	

REINFORCEMENT SCHEDULE - BENT BARS									
BENDING DIAGRAMS									
TYPE N									
BAR MARK	NO.	REQ'D SIZE	LENGTH	B	C	D	H	R	
N1450	2	14	16-6	0	10-10	5-8	6-4	8-0	
N1451	2	14	16-6	0	11-0	5-6	6-4	8-3	
N1452	2	14	16-3	0	11-1	5-2	6-4	8-5	
N1453	2	14	16-3	0	11-2	5-1	6-4	8-8	
N1454	2	14	16-0	0	11-3	4-9	6-4	8-10	
N1455	2	14	16-0	0	11-5	4-7	6-4	9-0	
N1456	2	14	16-0	0	11-6	4-6	6-4	9-3	
N1457	4	14	24-0	0	1-9	22-3	0-2	12-6	
N1491	4	14	39-6	0	25-3	14-3	15-0	18-1	
N1492	4	14	39-0	0	25-10	13-2	15-2	18-1	
N1493	4	14	38-6	0	26-3	12-3	15-1	19-8	
N1494	4	14	38-0	0	26-10	11-2	15-2	20-5	
N1495	4	14	37-3	0	27-1	10-2	15-2	21-2	
N1496	2	14	36-6	0	27-3	9-3	15-9	21-8	
N1420	2	14	16-0	0	11-4	4-8	6-4	8-10	
N1421	2	14	15-9	0	11-5	4-4	6-4	9-0	
N1422	2	14	15-9	0	11-6	4-3	6-4	9-2	
N1423	2	14	15-9	0	11-7	4-2	6-4	9-5	
N1424	2	14	15-6	0	11-9	3-9	6-4	9-7	
N1425	2	14	15-6	0	11-10	3-8	6-4	9-10	
N1426	2	14	15-3	0	11-11	3-4	6-4	10-0	
N1427	2	14	15-3	0	12-0	3-3	6-4	10-2	
N1428	2	14	15-3	0	12-2	3-1	6-4	10-5	
N1429	2	14	15-0	0	12-3	2-9	6-4	10-7	
N1430	2	14	15-0	0	12-4	2-8	6-4	10-9	
N1431	2	14	15-0	0	12-5	2-7	6-4	11-0	
N1432	2	14	14-9	0	12-6	2-3	6-4	11-2	
N1433	2	14	14-9	0	12-7	2-2	6-4	11-4	
N1434	2	14	14-6	0	12-9	1-9	6-4	11-7	
N1435	2	14	14-6	0	12-10	1-8	6-4	11-9	
N1436	2	14	14-3	0	12-11	1-4	6-4	12-0	
N1437	2	14	14-3	0	13-0	1-3	6-4	12-2	
N1438	2	14	14-3	0	13-1	1-2	6-4	12-4	
N1439	2	14	14-0	0	13-2	0-10	6-4	12-7	
N1440	2	14	14-0	0	13-4	0-8	6-4	12-9	
N1441	2	14	14-0	0	13-5	0-7	6-4	13-0	
N1442	2	14	14-0	0	13-6	0-6	6-4	13-2	
N1443	1	14	32-9	0	13-3	19-6	6-3	12-10	
N1444	1	14	32-6	0	13-4	19-2	6-3	13-0	
N1445	1	14	32-3	0	13-5	18-10	6-3	13-2	
N1446	1	14	32-0	0	13-6	18-6	6-3	13-5	
N1447	1	14	32-0	0	13-7	18-5	6-3	13-7	
N1448	1	14	31-9	0	13-9	18-0	6-3	13-10	
N1449	1	14	31-6	0	13-10	17-8	6-3	14-0	
N1450	1	14	31-3	0	13-11	17-4	6-3	14-3	
N1451	1	14	31-0	0	14-0	17-0	6-3	14-5	
N1452	1	14	30-9	0	14-1	16-8	6-3	14-7	
N1453	1	14	30-3	0	14-1	16-2	6-3	14-8	
N									

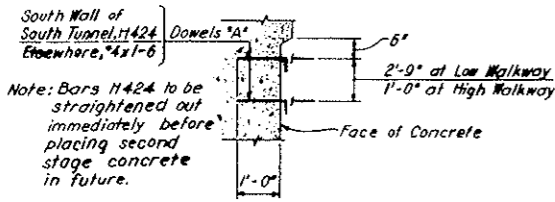
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-25	112

AS CONSTRUCTED
NO REVISIONS DATE
Oct 26, 1973



Note: In conformity with the concrete outline drawings this reinforcement at telephone recess is detailed for conduit segment with invert slab only.

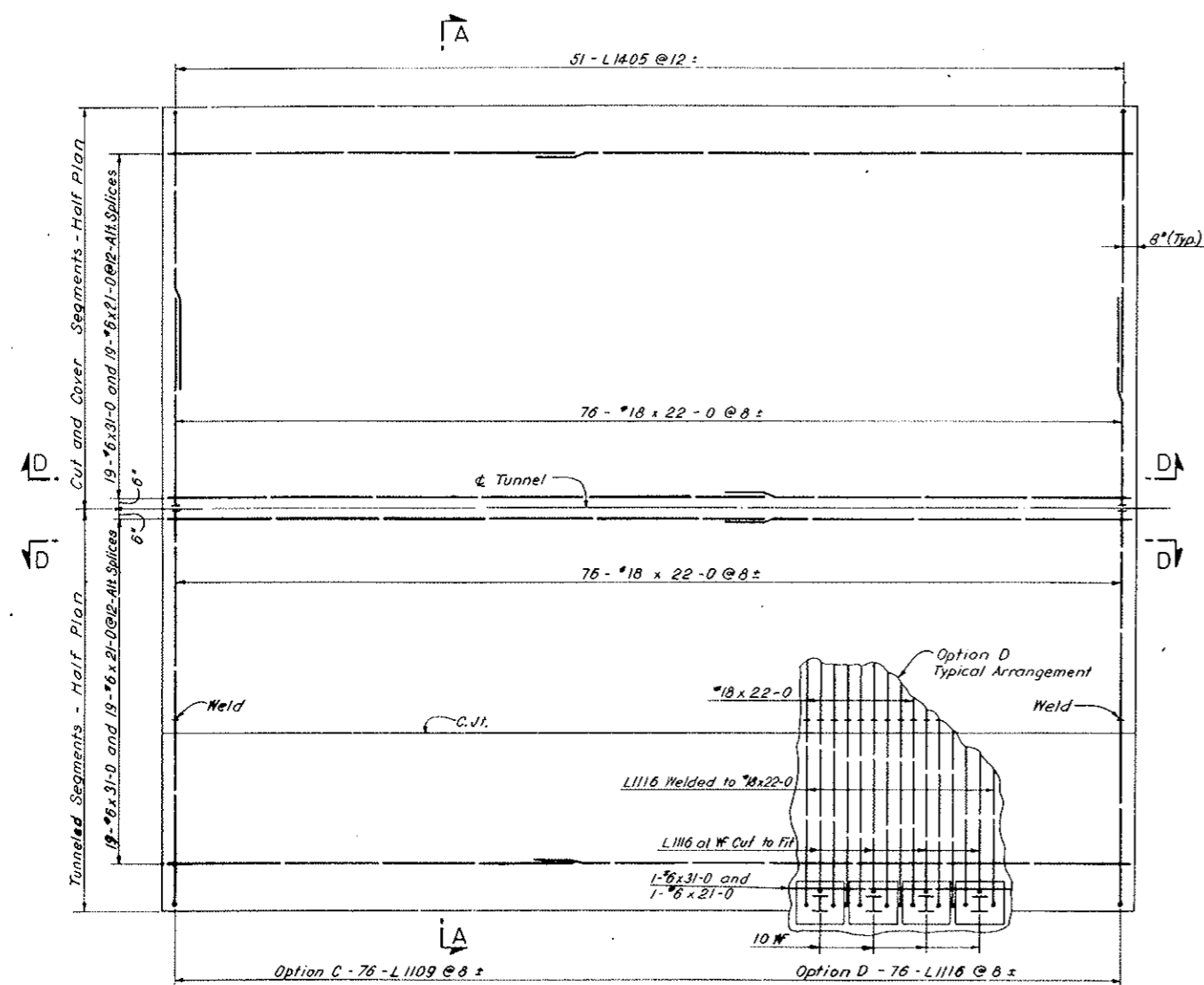
NOTES:
Work this drawing with Dwg. C1-122, C1-123 and C1-124. For General Reinforcement Notes see Dwg. C2-103. For General Concrete Notes see Dwg. C2-11. For concrete outlines see Dwg. C1-6 and C1-7. All stirrup spacing is to be measured along the inside face of concrete.
Options: Each segment will be built under one of the following options, as approved by the Engineer:
Option A - Cut and Cover, no structural steel sets.
Option B - Cut and Cover, structural steel arch supports.
Option C - Tunneled, with structural steel arch supports.
Option D - Tunneled, with complete structural steel sets.
Clear cover for outside face reinforcement is measured from neat concrete surface or the A Line.
For Reinforcement in Second Stage Concrete see Dwg. C2-129, C2-130 and C2-132.
For Reinforcement in Precast Concrete see Dwg. C2-139 and C2-140.



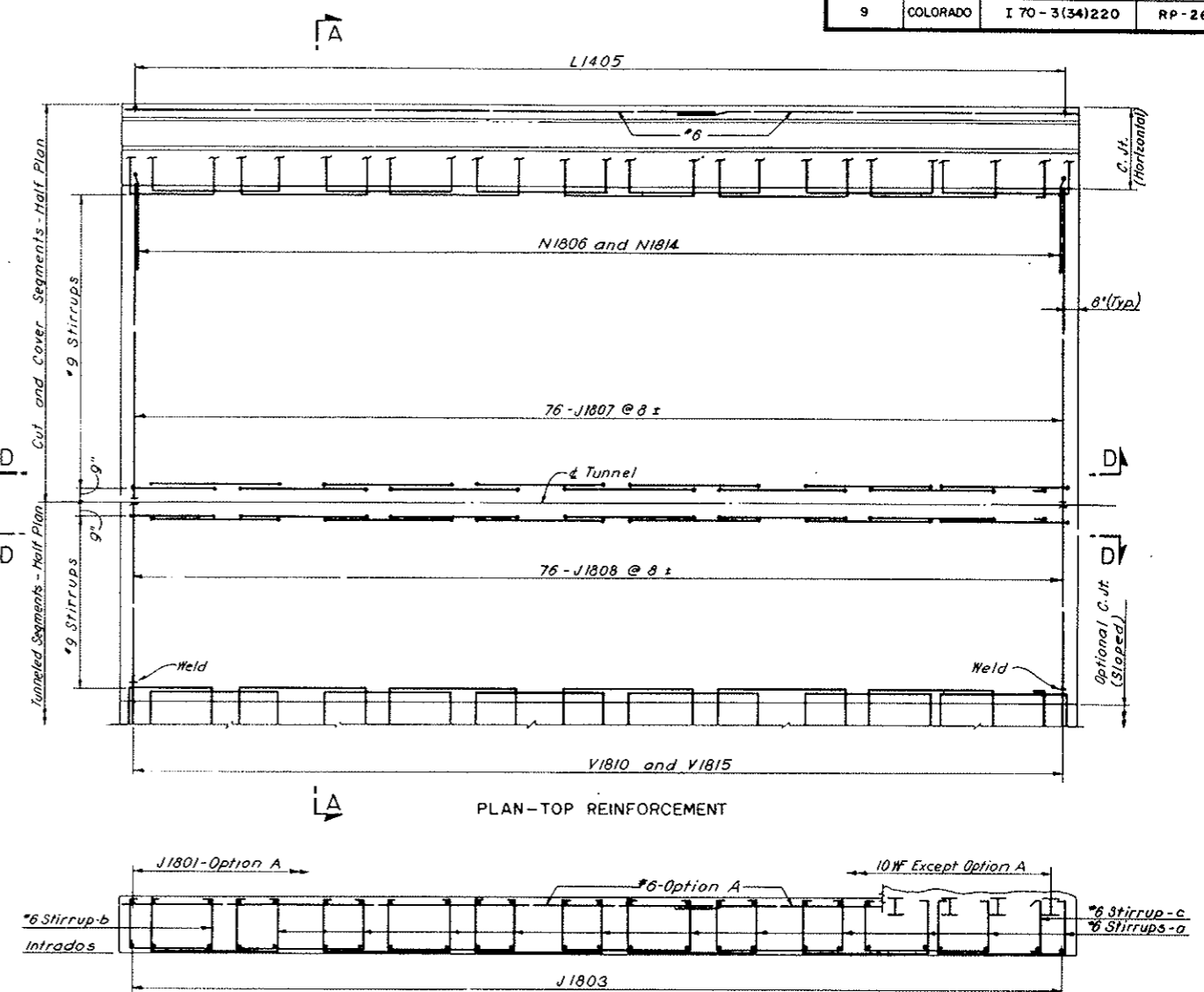
DETAIL A (As Shown)
DETAIL A (Opposite Hand)
Not to Scale

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION REINFORCEMENT NORTH AND SOUTH CONDUIT SEGMENTS WITH INVERT SLAB CROSS SECTION AND DETAILS TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	W.T.H.	RECOMMENDED BY	[Signature]		
DRAWN BY	P.E.L.	CHECKED BY	[Signature]		
SUBMITTED BY	[Signature]	APPROVED BY	[Signature]		
NEW YORK, N. Y.	SCALE: 1/4" = 1'-0"	DATE: NOV. 1967	DRAWING NO. C1-121		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-26	112

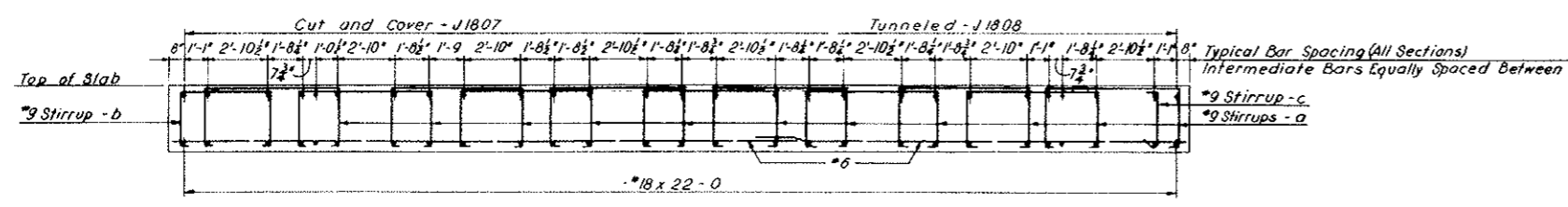


PLAN-BOTTOM REINFORCEMENT

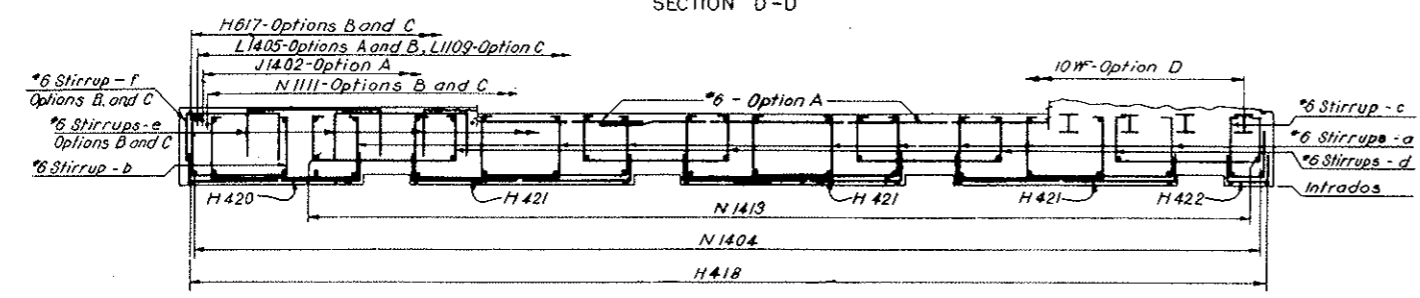


PLAN-TOP REINFORCEMENT

SECTION F-F



SECTION D-D



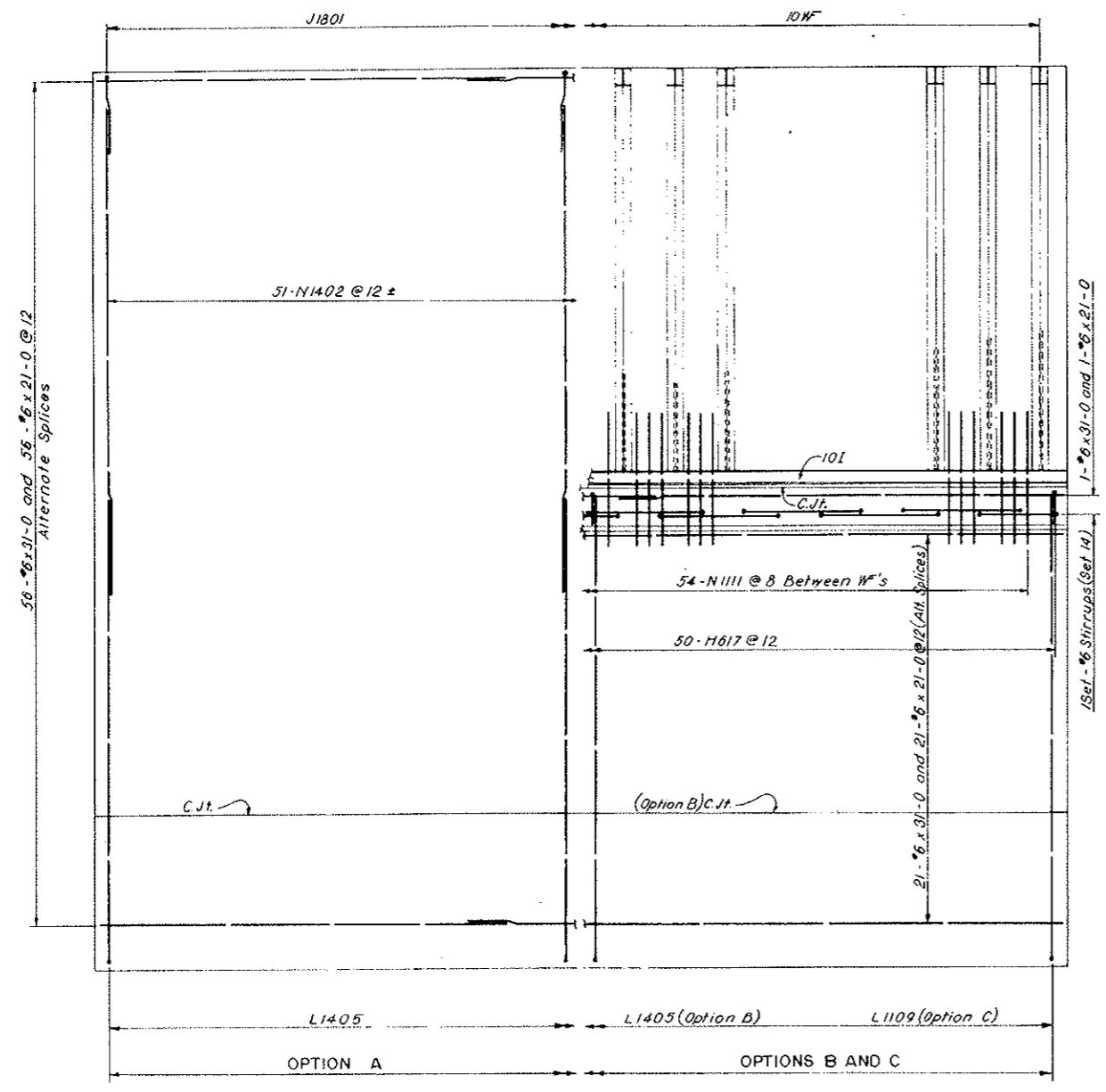
SECTION E-E-SOUTH TUNNEL-AS SHOWN
NORTH TUNNEL-OPP HAND

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973

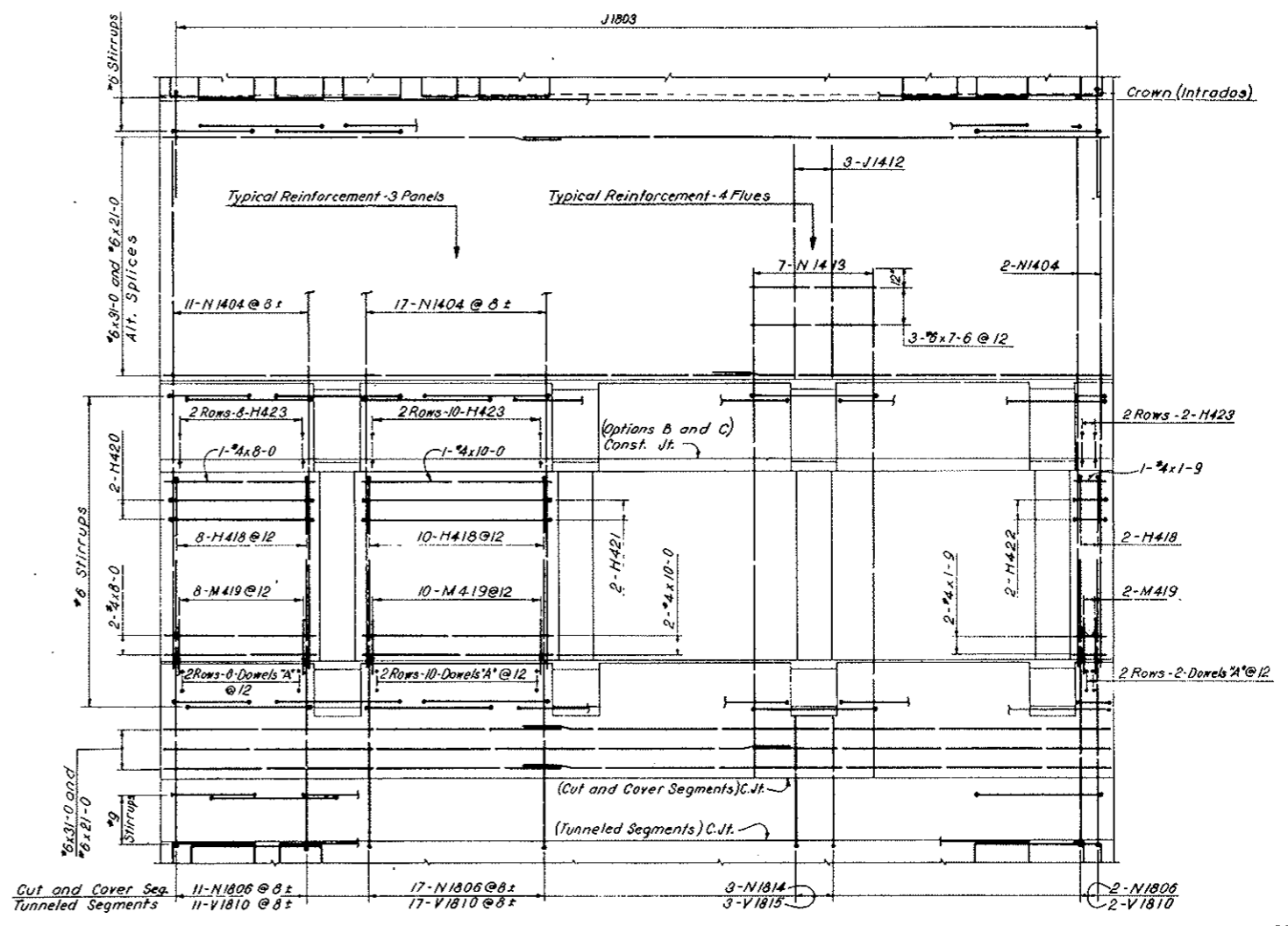
NOTES:
Work this drawing with Dwg. CI-121, CI-123 and CI-124.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION REINFORCEMENT					
NORTH AND SOUTH CONDUIT SEGMENTS WITH INVERT SLAB					
INVERT SLAB AND LONGITUDINAL SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: W.T.H.	RECOMMENDED:				
DRAWN: P.E.L.	CHECKED: P.E.L.-W.T.H.				
SUBMITTED:	APPROVED:				
		DRAWING NO. CI-122			
		SCALE: 1/4" = 1'-0" DATE: NOV. 1967			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	R P - 27	112



SECTION B - B



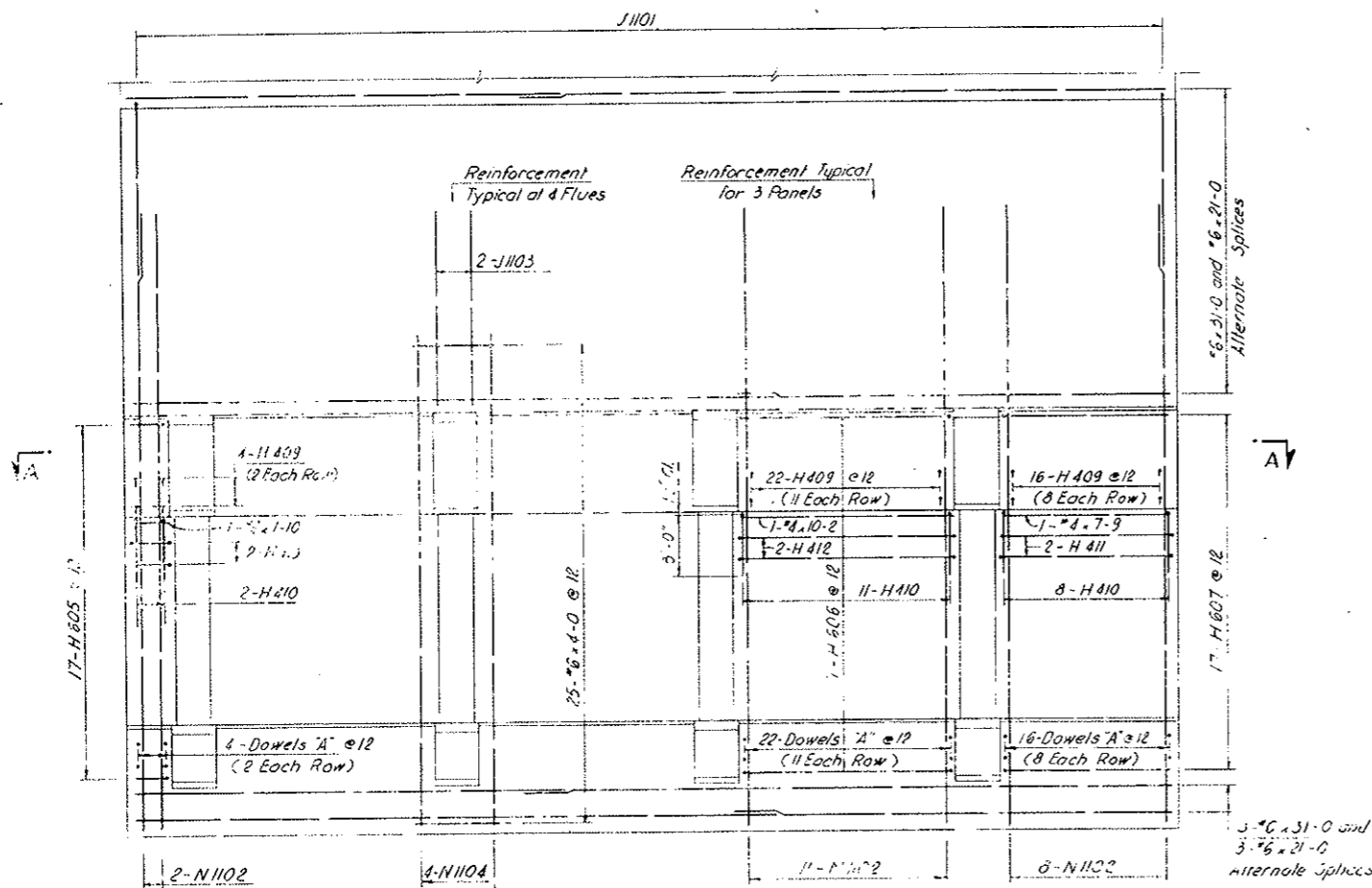
SECTION C - C
SOUTH TUNNEL - AS SHOWN
NORTH TUNNEL - OPP HAND

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973

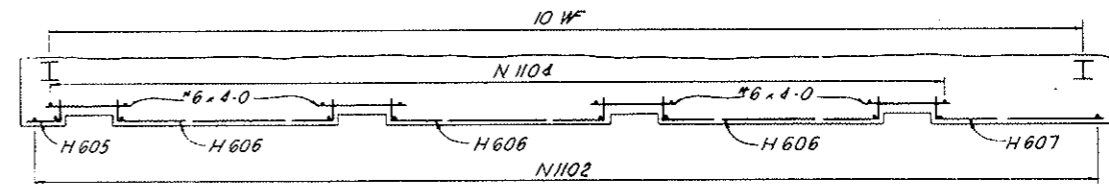
NOTES:
Work this drawing with Dwg. CI-121, CI-122 and CI-124.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - WEST PORTAL SECTION REINFORCEMENT NORTH AND SOUTH CONDUIT SEGMENTS WITH INVERT SLAB WALL ELEVATIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: W.T.H.	RECOMMENDED:				
DRAWN: P.F.L.	Checked: <i>W. H. H. H.</i>				
CHECKED: P.F.L. - W.T.H.	Submitted: <i>W. H. H. H.</i>				
SUBMITTED: <i>W. H. H. H.</i>	Approved: <i>W. H. H. H.</i>				
NEW YORK, N. Y.	SCALE: 1/4" = 1'-0"	DATE: NOV. 1967	DRAWING NO. CI-123		

AS CONSTRUCTED
NO REVISIONS DATE
 Oct 26, 1973



SECTION C-C
 NORTH TUNNEL (AS SHOWN)
 SOUTH TUNNEL (OPPOSITE END)



SECTION A-A

REINFORCEMENT SCHEDULE - BENT BARS									
BENDING DIAGRAMS									
DIMENSIONS									
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	D	H	R	
H605	34	#6	3-9	1-0	1-9	1-0			
H606	102	#6	12-0	1-0	10-0	1-0			
H607	34	#6	10-0	1-0	8-0	1-0			
(1) H408	36	#4	1-6	0-4	1-2	0			
H409	172	#4	1-10	0-4	1-6	0			
H410	86	#4	1-5	1-3	5-0	0			
H411	4	#4	10-3	1-3	7-9	1-3			
H412	12	#4	12-8	1-3	10-2	1-3			
H413	2	#4	4-4	1-3	1-10	1-3			
N1101	51	#11	46-0	3-7		9-9	18-7		
N1102	16	#11	11-0	10-10		1-0	15-10		
N1103	25	#11	31-0	15-0	18-0	5-1	15-10		
N1104	32	#11	24-0	6-0	18-0	1-0	18-10		

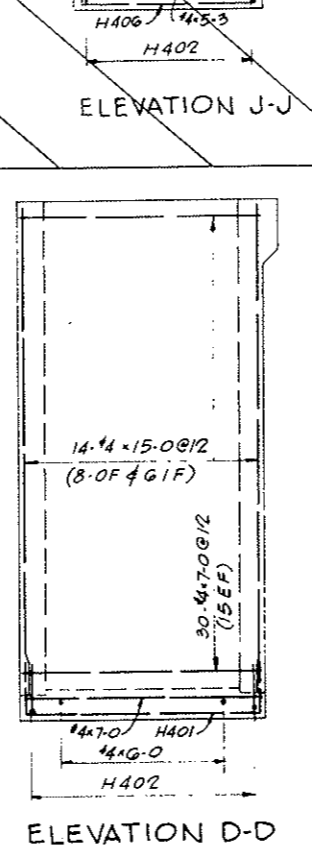
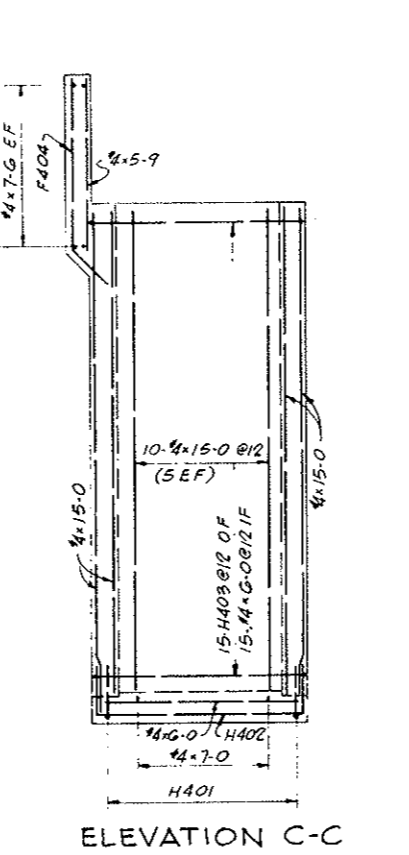
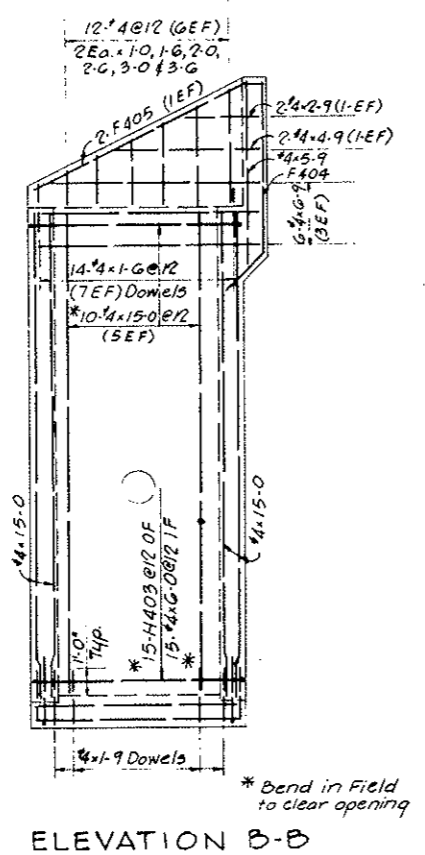
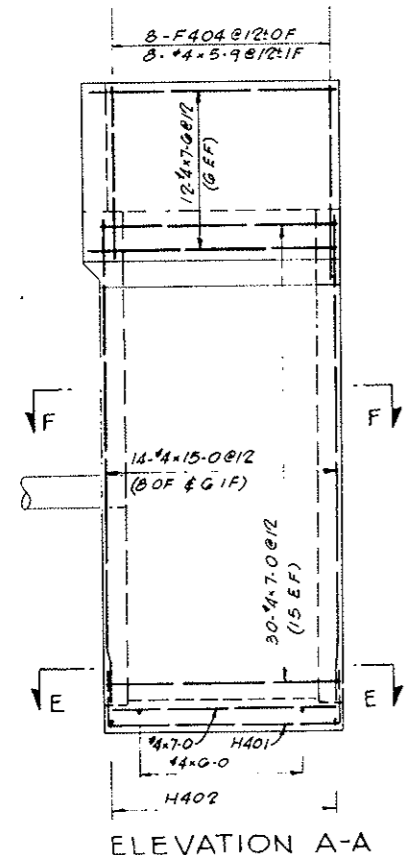
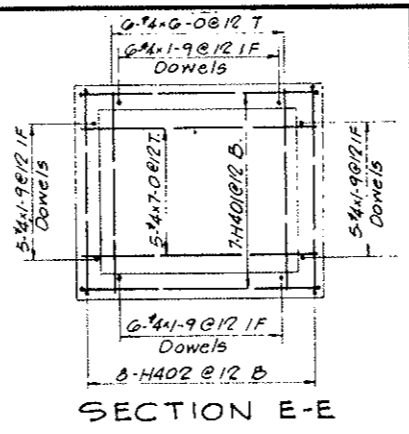
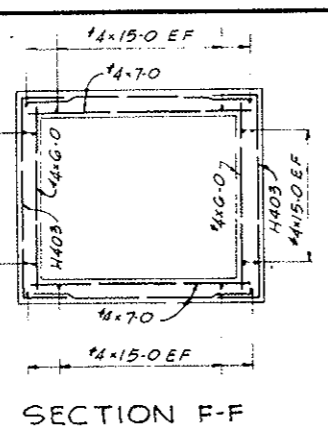
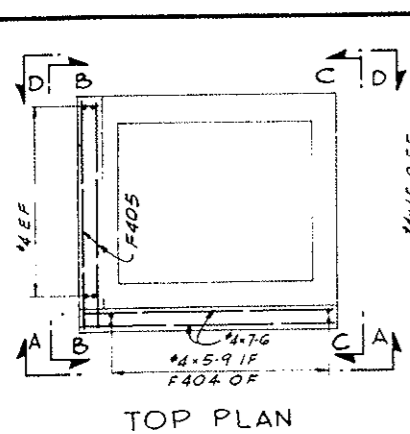
REINFORCEMENT SCHEDULE - STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
(2)	8	#11 10-0
(2)	8	#11 9-0
(2)	3	#8 8-0
(2)	3	#8 7-0
(2)	8	#8 4-0
	55	#6 31-0
	55	#6 21-0
(2)	19	#6 8-0
	200	#6 4-0
	6	#4 10-2
	2	#4 7-9
	2	#4 1-10
	86	#4 1-6
(3)	86	#4 1-6

(2) N1, S4 only
 (3) North Tunnel only

ALL BAR MARKS TO BE PREFIXED BY NUMBER C1-123
 (1) South Tunnel only.

NOTES:
 Work this drawing with Dwg. C1-125.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - WEST PORTAL SECTION REINFORCEMENT NORTH AND SOUTH CONDUIT SEGMENTS WITHOUT INVERT SLAB WALL ELEVATION AND REINFORCEMENT SCHEDULE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	W. T. H.	CHECKED BY	J. E. C.	RECOMMENDED BY	<i>Joseph J. McCarthy</i>
DRAWN BY	J. E. C.	APPROVED BY	<i>Joseph J. McCarthy</i>	DRAWING NO.	C1-126
SUBMITTED BY	<i>Joseph J. McCarthy</i>	DATE	NOV 1967	SCALE	1/4" = 1'-0"
NEW YORK, N. Y.					



REINFORCEMENT SCHEDULE - BENT BARS

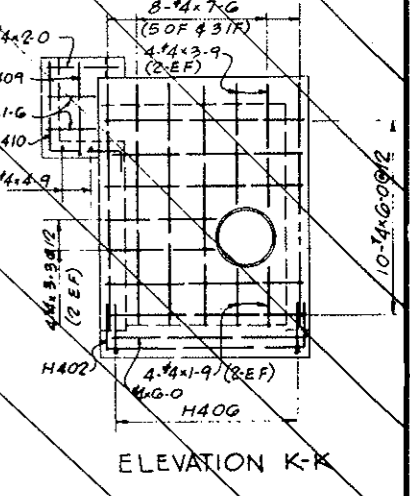
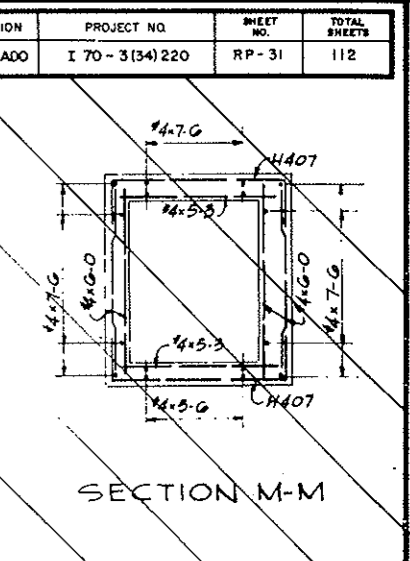
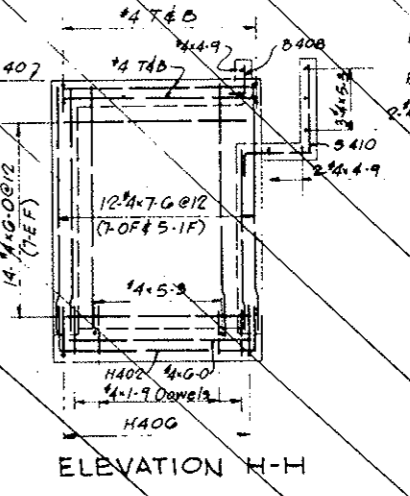
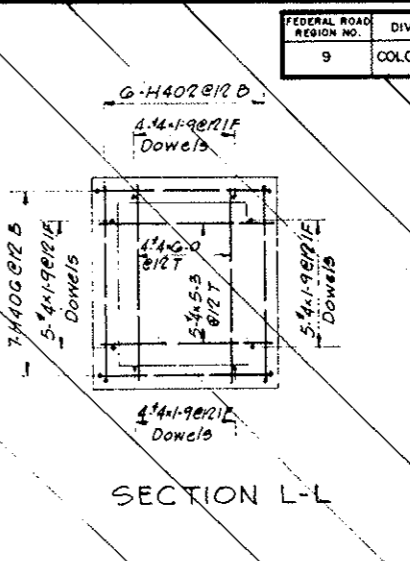
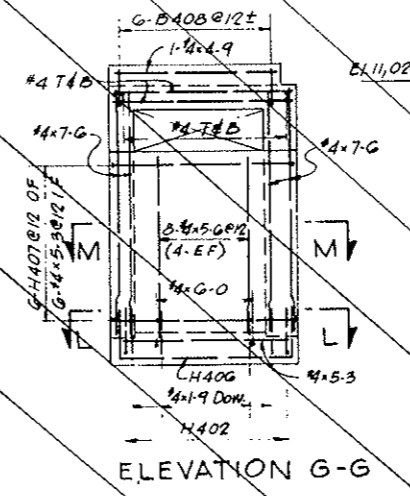
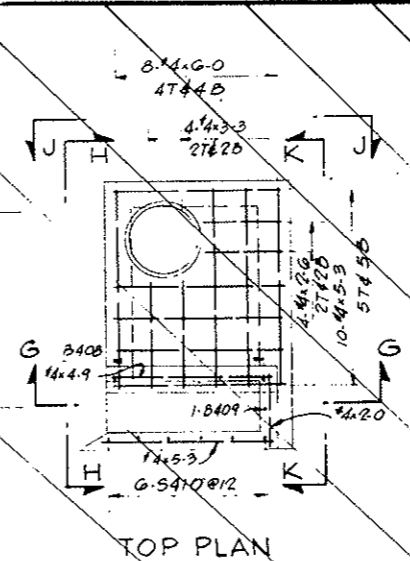
BENDING DIAGRAMS

BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	D	H
H401	7	#4	10-2	1-7	7-0	1-7	
H402	8	#4	9-2	1-7	6-0	1-7	
H403	30	#4	8-10	1-4	6-2	1-4	
F404	8	#4	6-3	5-3	1-5	1-0	
F405	2	#4	7-7	7-0	0-7	0-3	

STRAIGHT BARS

NO. REQ'D	BAR SIZE	BAR LENGTH
48	#4	15-0
12	#4	7-6
65	#4	7-0
6	#4	6-9
36	#4	6-0
8	#4	5-9
2	#4	4-9
2	#4	3-6
2	#4	3-0
2	#4	2-9
2	#4	2-6
2	#4	2-0
22	#4	1-9
16	#4	1-6
2	#4	1-0

All bent bar marks to be prefixed by No C2-14G.



REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS

BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	D
H402	6	#4	9-2	1-7	0-0	1-7
H406	7	#4	8-5	1-7	5-3	1-7
H407	15	#4	8-7	1-4	5-5	1-4
B408	6	#4	1-6	0-6	1-0	
B409	7	#4	4-2	1-8	2-9	
S410	6	#4	5-4	2-9	0-0	0-7

All bent bar marks to be prefixed by No C2-14G.

STRAIGHT BARS

NO. REQ'D	BAR SIZE	BAR LENGTH
28	#4	7-6
36	#4	6-8
3	#4	5-6
3	#4	5-3
2	#4	4-9
4	#4	3-9
5	#4	3-3
4	#4	2-6
2	#4	2-0
22	#4	1-9
2	#4	1-6

AS CONSTRUCTED
 REVISED DATE Oct 26, 1973
 NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwg. C2-44.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL - PORTAL SECTIONS
 REINFORCEMENT
 SOUTH TUNNEL
 SUMP PIT

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS
 NEW YORK, N. Y.

DESIGNED: S.M.R.
 DRAWN: M.F.
 CHECKED: H.M.
 SUBMITTED: [Signature]
 APPROVED: [Signature]
 NEW YORK, N. Y.

DRAWING NO. CI-127

SCALE: 3/8" = 1'-0" DATE:

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	RP - 32	112

SEGMENT NUMBER	HIGH WALKWAY FLUES		FIRE EXTING. RECESS See Detail Dwg. C2-116	TELEPHONE RECESS See Detail Dwg. C2-116	PULLBOX ON HIGH SIDE See Detail Dwg. C2-116	LOW WALKWAY SIDES See Detail Dwg. C2-116	CROSS PASSAGEWAY OPENING & PULLBOX	PULPIT	DELETIONS TO STANDARD REINFORCEMENT SCHEDULES	ADDITIONS TO STANDARD REINFORCEMENT SCHEDULE	
	NORMAL	MODIFIED								DELETIONS TO STANDARD REINFORCEMENT SCHEDULES	ADDITIONS TO STANDARD REINFORCEMENT SCHEDULE
N5		X							HW-2,3 & 4	HW-2,3 & 4 on Dwg. C2-113	
N6	X										
N7	X										
N8	X										
N9	X										
N10	X										
N11	X										
N12	X				X				HW-3,4 & 5; LW-4	HW-3,4 & 5 on Dwg. C2-125; LW-4 on Dwg. C2-121	
N13	X										
N14	X								HW-2,3 & 4	HW-2,3 & 4 on Dwg. C2-113	
N15	X										
N16	X										
N17	X										
N18	X										
N19	X										
N20	X								HW-3; LW-4	HW-3 on Dwg. C2-117; LW-4 on Dwg. C2-121	
N21	X								HW-2,3 & 4	HW-2,3 & 4 on Dwg. C2-113	
N22	X										
N23	X										
N24	X										
N25	X										
N26	X										
N27	X										
N28	X								HW-3; LW-4	HW-3 on Dwg. C2-117; LW-4 on Dwg. C2-121	
N29	X										
N30	X										
N31	X								HW-2,3 & 4	HW-2,3 & 4 on Dwg. C2-113	
N32	X										
N33	X										
N34	X										
N35	X										
N36	X								LW-2,3 & 4; HW-3	LW-2,3 & 4 on Dwg. C2-127; HW-3 on Dwg. C2-117	
N37	X										
N38	X										
N39	X										
N40	X								HW-2,3 & 4	HW-2,3 & 4 on Dwg. C2-113	
N41	X										
N42	X								HW-2 & 3; LW-3	HW-2 & 3 on Dwg. C2-123; LW-3 on Dwg. C2-122	
N43	X										
N44	X								HW-1,2 & 3; LW-4	HW-1,2 & 3 on Dwg. C2-118	
N45	X										
N46	X										
N47	X										
N48	X										
N49	X										
N50	X										
N51	X										
N52	X								HW-3; LW-4	HW-3 on Dwg. C2-117; LW-4 on Dwg. C2-121	
N53	X								HW-2,3 & 4	HW-2,3 & 4 on Dwg. C2-113	
N54	X										
N55	X										
N56	X										
N57	X										
N58	X										
N59	X										
N60	X								HW-3,4 & 5; LW-4	HW-3,4 & 5 on Dwg. C2-125; LW-4 on Dwg. C2-121	
N61	X										
N62	X								HW-2,3 & 4	HW-2,3 & 4 on Dwg. C2-113	
N63	X										
N64	X										
N65	X										
N66	X										
N67	X										
N68	X								HW-3; LW-4	HW-3 on Dwg. C2-117; LW-4 on Dwg. C2-121	
N69	X										
N70	X										
N71	X								HW-2,3 & 4	HW-2,3 & 4 on Dwg. C2-113	
N72	X										
N73	X										
N74	X										
N75	X										
N76	X								HW-3; LW-4	HW-3 on Dwg. C2-117; LW-4 on Dwg. C2-121	
N77	X										
N78	X										
N79	X										
N80	X								HW-2,3 & 4	HW-2,3 & 4 on Dwg. C2-113	
N81	X								C2-105 - C2-107	C2-101A, C2-107B, C2-107C, C2-107F, C2-116A	
N82	X								C2-105 - C2-107	C2-101A, C2-107B, C2-107E + C2-107F, C2-116A, C2-127A	
N83	X								C2-105 - C2-107	C2-101A, C2-107B, C2-107E + C2-107F, C2-116A, C2-127A	

NOTES ON USE OF REINFORCEMENT GUIDE AND SUMMARY:

This guide summarizes for each tunnel segment the required additions and deletions to Standard Segment Reinforcement Schedules prepared for each Tunnel Section Type (TST). The Standard Segment Reinforcement Schedule represents the reinforcement of a segment without any recesses or openings in the tunnel lining. The listed deletions and additions amend the Standard Segment Reinforcement Schedule for those segments having various recesses and openings in the tunnel lining.

The appropriate Tunnel Section Type (TST) will be determined in the field by the Engineer to suit actual geological conditions encountered.

The Standard Segment Reinforcement Schedule for each Tunnel Section Type (TST) are shown on the following drawings:

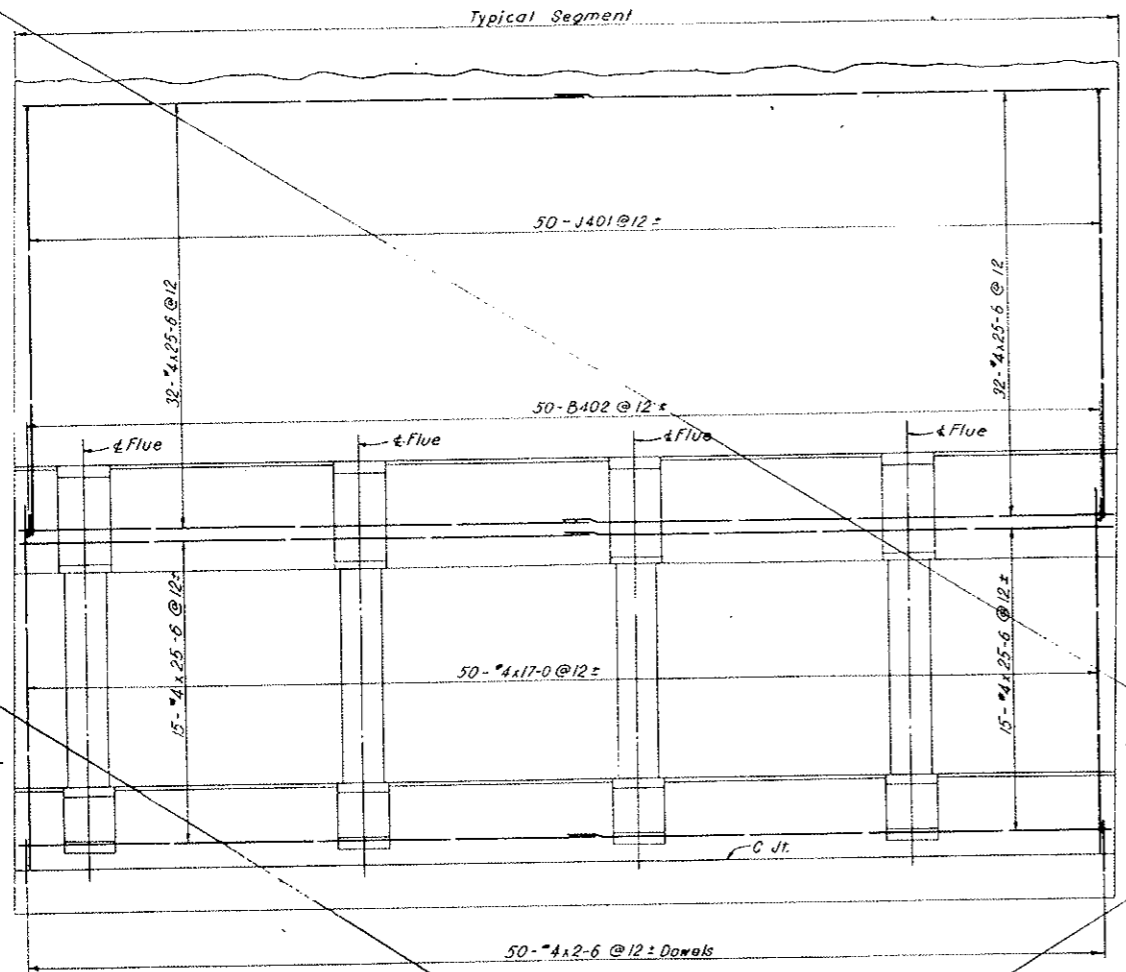
Tunnel Section Type	Standard Segment Reinforcement Schedule
Ib, IIa, IIb, IIIa	C2-104
IIIb	C2-106

AS CONSTRUCTED
REVISED DATE Oct 26, 1973

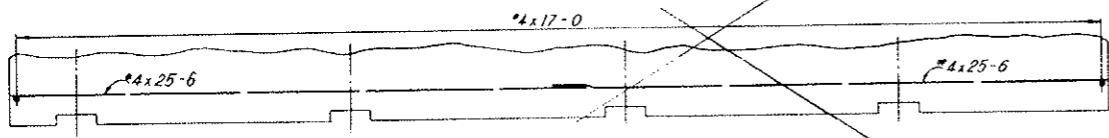
For general arrangement drawings see Dwg. G2-10 to G2-16 inclusive.
For General Reinforcement Notes see Dwg. C2-103

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT TUNNEL SEGMENTS LINING REINFORCEMENT GUIDE AND SUMMARY					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	S.M.R.	RECOMMENDED:	H. J. [Signature]		
DRAWN:	S.S.	CHECKED:	R.B.A.		
SUBMITTED:	[Signature]	APPROVED:	[Signature]		
DRAWING NO. C2-101					
SCALE: NO SCALE DATE: NOV. 1967					

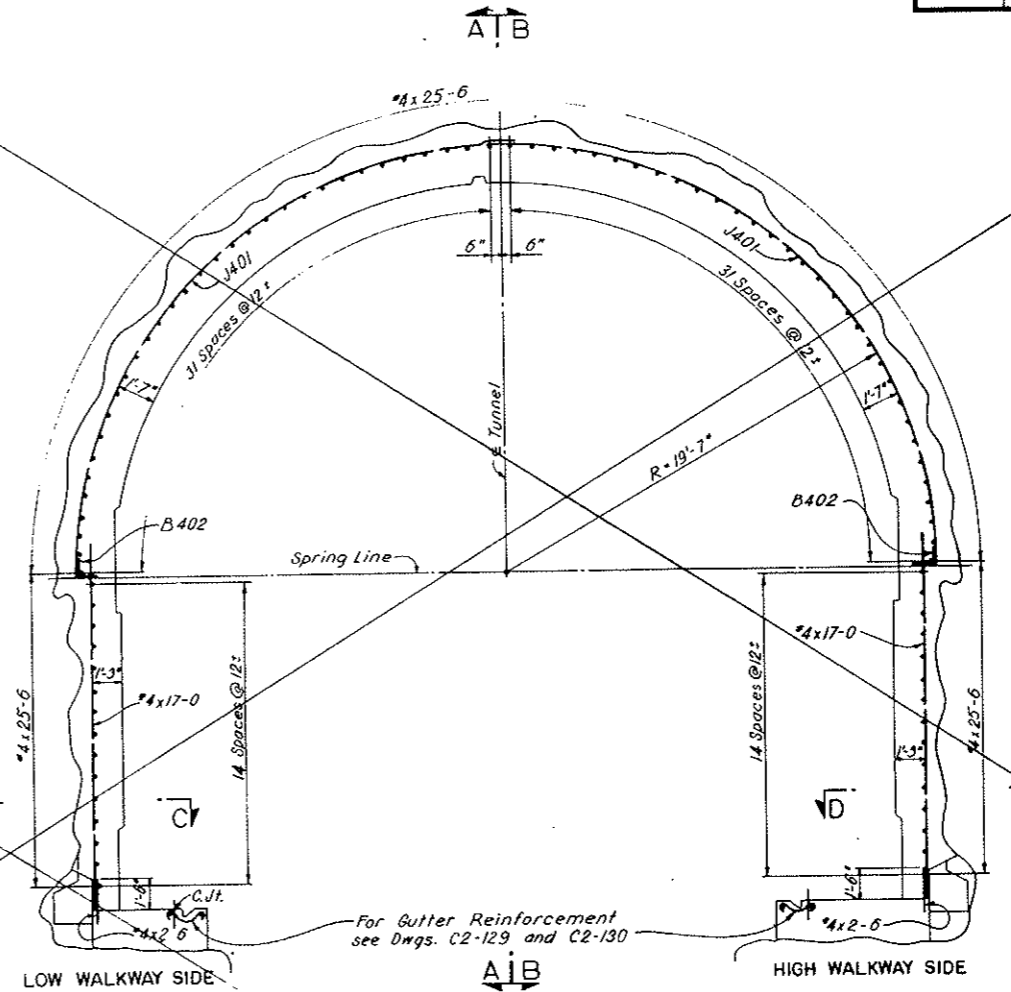
VOID
BY CONSTRUCTION
Oct 26, 1973



SECTION A-A (AS SHOWN)
SECTION B-B (SIMILAR)
OUTSIDE FACE REINFORCEMENT SHOWN ONLY



SECTION C-C (AS SHOWN)
SECTION D-D (SIMILAR)



TYPICAL TRANSVERSE SECTION-LOOKING EAST
NORTH TUNNEL AS SHOWN - SOUTH TUNNEL OPPOSITE HAND
INSIDE FACE REINFORCEMENT NOT SHOWN
(TAKEN BETWEEN FLUES)

NOTES:
For General Concrete Notes see Dwg. C2-11
For concrete details see Dwg. C2-10
Laps and splices are in accordance with
table on Dwg. C2-103.

REINFORCEMENT SCHEDULE BENT BARS									
BENDING DIAGRAMS									
B		C		R		H			
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	R	H		
ARCH									
J401	100	#4	31-6	-	28-3	19-7	6-0		
B402	100	#4	2-8	1-4	1-4				

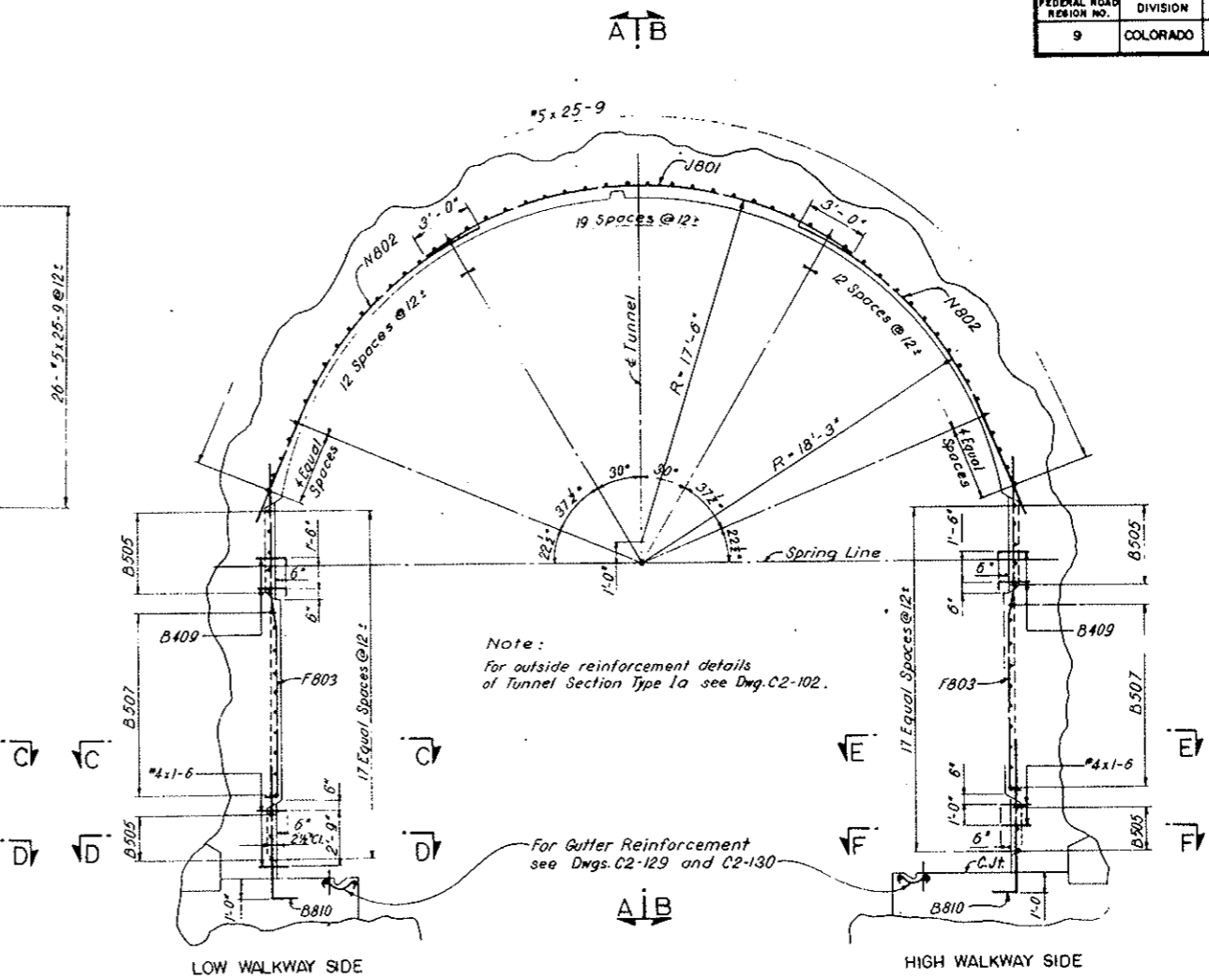
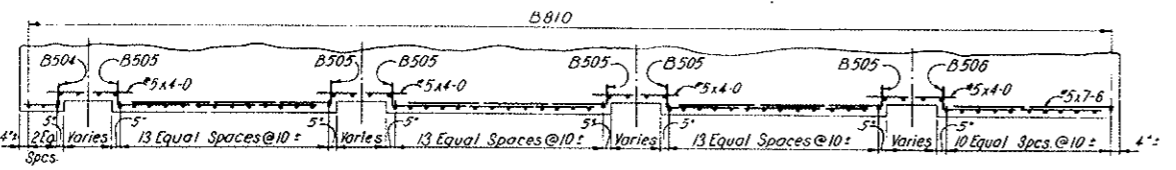
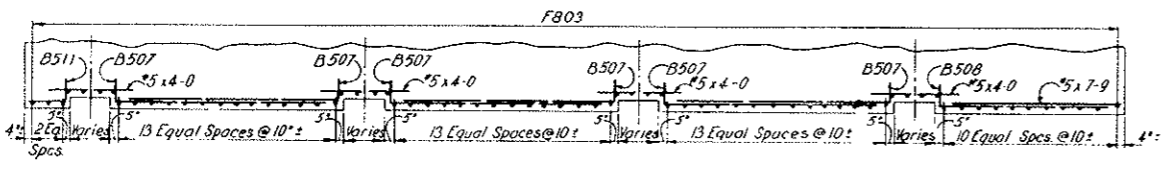
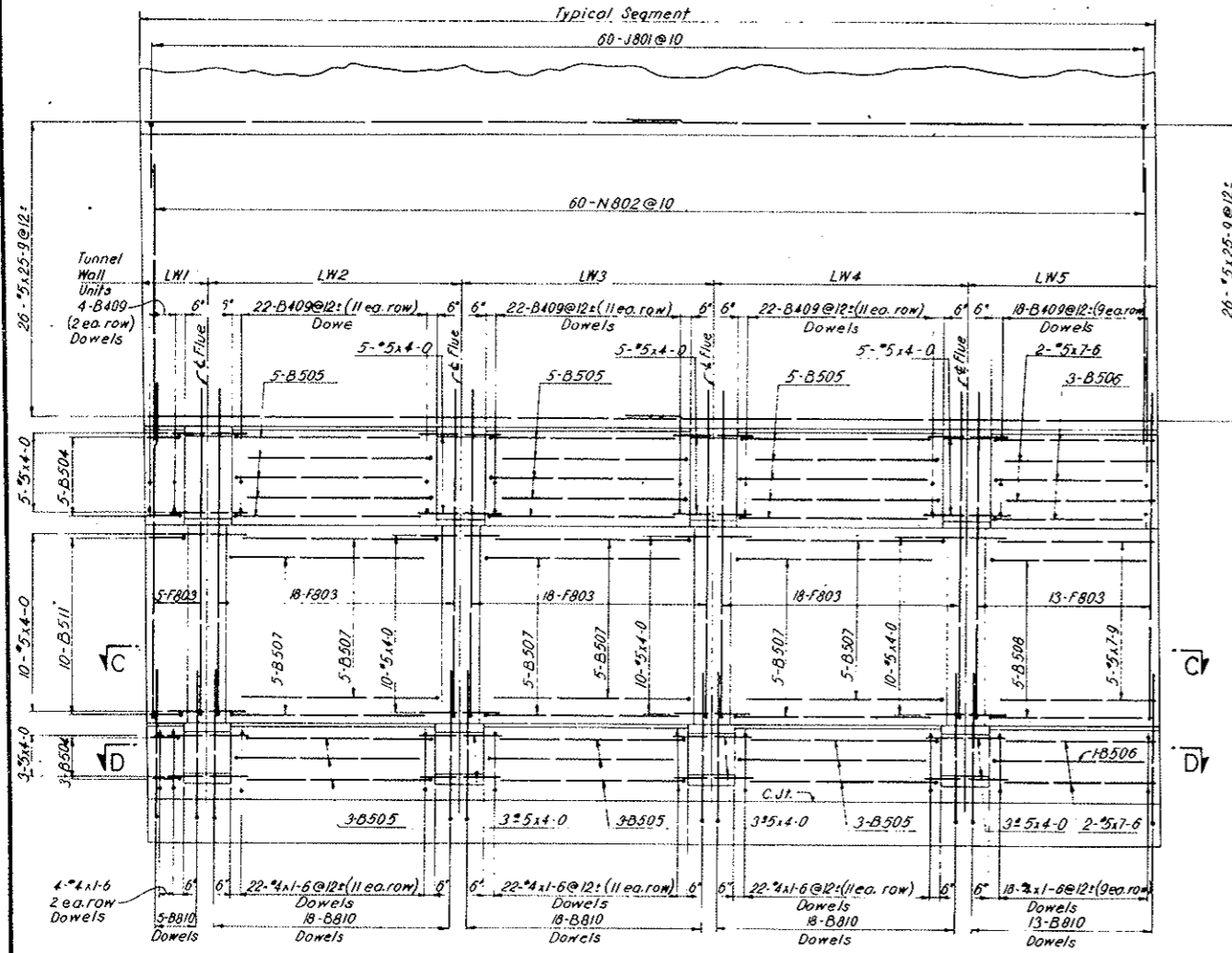
All bent bar marks to be prefixed by No. C2-102.

STRAIGHT BARS		
NO. REQ'D	SIZE	BAR LENGTH
ARCH		
128	#4	25-6
LOW WALKWAY SIDE		
50	#4	17-0
50	#4	2-6
30	#4	25-6
HIGH WALKWAY SIDE		
50	#4	17-0
50	#4	2-6
30	#4	25-6

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT					
STANDARD SEGMENT TUNNEL SECTION TYPE Ia LINING - OUTSIDE FACE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H. F. Mc C.	RECOMMENDED:	<i>Henry J. ...</i>		
DRAWN:	P. L. F.	CHECKED:	<i>H. F. Mc C.</i>		
SUBMITTED:	<i>H. F. Mc C.</i>	APPROVED:	<i>Frank ...</i>		
DRAWING NO. C2-102					
NEW YORK, N. Y. SCALE: 1/4" = 1'-0" DATE: NOV. 1967					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-34	112

AS CONSTRUCTED
REVISED DATE *Oct 26, 1975*



Note:
 For outside reinforcement details of Tunnel Section Type 1a see Dwg. C2-102.

For Gutter Reinforcement see Dwgs. C2-129 and C2-130

GENERAL REINFORCEMENT NOTES:

The drawings in this Reinforcement Placement (RP) Set supersede and replace the following drawings on the Contract Drawing Set, dated August 1967:

- C1-8 (Sheet 38 of 326)
- C3-10 (Sheet 95 of 326)
- C2-34 (Sheet 73 of 326)
- C2-35 (Sheet 74 of 326)

Reference notes on other drawings of the Contract Drawing Set dated August 1967 referring to the above drawings are void.

Reinforcement lap and embedment lengths shown have been detailed in accordance with the provision of the Standard Specifications for Highway Bridges of the AASHTO (1965). Additional splices, where used with the approval of the Engineer, shall conform to the requirements of the AASHTO Specifications.

Additional reinforcement steel shall be required at spring line extrados if rib, wall plate and post type set is adopted for use by the Contractor. Such extrados steel shall be of the same size and spacing as that shown for the intrados face of the face of spring line and shall be developed to be fully effective at the wall plate. Details to be submitted by the Contractor.

Clear concrete cover on main reinforcement unless otherwise shown or noted shall be:

- 2 1/2 inches on formed faces of tunnel lining
- 3 1/2 inches on unformed face of tunnel placed against rock

All dimensions of bent bars are out-to-out of bar.

NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For Concrete details see Dwgs. C2-10 and C2-11.
 For Segments N5-N50-N52-N58-N71-N80 only.

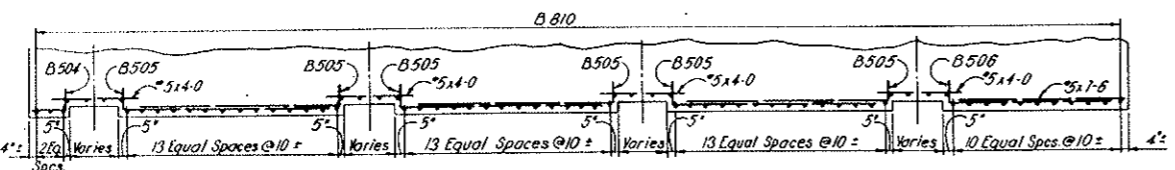
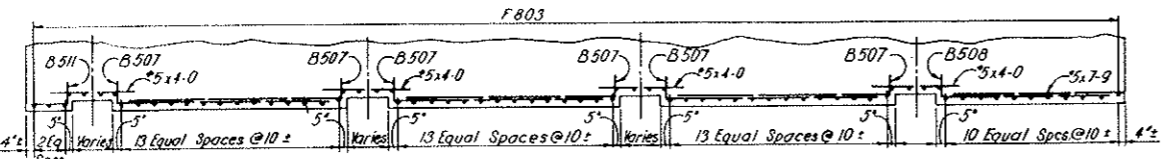
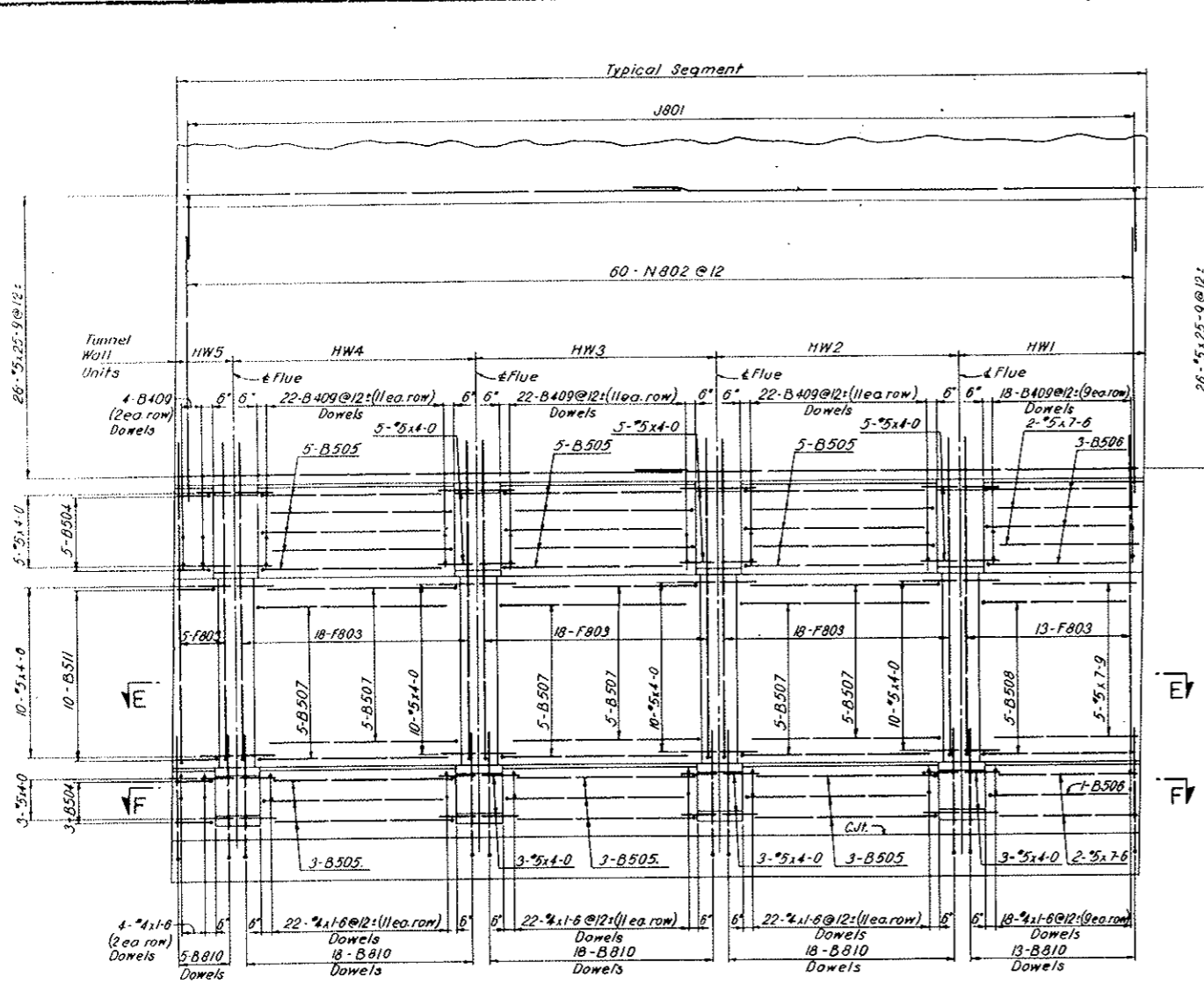
NO. OF BARS	BAR SIZE											MAX. SIZE				
	2	3	4	5	6	7	8	9	10	11	12					
15 - 2,500 GAL	LAP SPlice LENGTH (in.)	COMPRESSION	27	12	12	14	17	20	24	27	31	35	38	41	45	49
		TENSION TOP BARS	45	17	17	23	28	34	40	45	51	57	64	—	—	—
		TENSION OTHER BARS	27	12	12	14	17	20	24	27	31	35	38	—	—	—
15 - 3,000 GAL	EMBEDMENT LENGTH (in.)	COMPRESSION	14	6	6	7	8	9	10	11	12	13	14	15	16	17
		TENSION TOP BARS	34	9	9	12	14	17	20	24	28	34	40	45	51	57
		TENSION OTHER BARS	20	6	6	7	8	9	10	11	12	13	14	15	16	17
15 - 3,500 GAL	LAP SPlice LENGTH (in.)	COMPRESSION	20	12	12	14	17	20	24	27	31	35	38	41	45	49
		TENSION TOP BARS	37	17	17	23	28	34	40	45	51	57	64	—	—	—
		TENSION OTHER BARS	24	12	12	14	17	20	24	27	31	35	38	—	—	—
15 - 4,000 GAL	LAP SPlice LENGTH (in.)	COMPRESSION	17	6	6	7	8	9	10	11	12	13	14	15	16	17
		TENSION TOP BARS	28	9	9	12	14	17	20	24	28	34	40	45	51	57
		TENSION OTHER BARS	17	6	6	7	8	9	10	11	12	13	14	15	16	17
15 - 4,500 GAL	LAP SPlice LENGTH (in.)	COMPRESSION	20	12	12	14	17	20	24	27	31	35	38	41	45	49
		TENSION TOP BARS	32	12	12	14	17	20	24	28	34	40	45	—	—	—
		TENSION OTHER BARS	24	12	12	14	17	20	24	27	31	35	38	—	—	—
15 - 5,000 GAL	EMBEDMENT LENGTH (in.)	COMPRESSION	10	6	6	7	8	9	10	11	12	13	14	15	16	17
		TENSION TOP BARS	24	5	5	6	7	8	9	10	11	12	13	14	15	16
		TENSION OTHER BARS	15	6	6	7	8	9	10	11	12	13	14	15	16	17

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-35	112

AS CONSTRUCTED
REVISED DATE Oct 24, 1975

NO. REQ'D	SIZE	BAR LENGTH
ARCH		
104	#5	25-9
L W 1		
18	#5	4-0
4	#4	1-6
L W 2		
18	#5	4-0
22	#4	1-6
L W 3		
18	#5	4-0
22	#4	1-6
L W 4		
18	#5	4-0
22	#4	1-6
L W 5		
5	#5	7-9
4	#5	7-6
H W 1		
18	#4	1-6
H W 2		
18	#4	1-6
H W 3		
18	#5	4-0
22	#4	1-6
H W 4		
18	#5	4-0
22	#4	1-6
H W 5		
18	#5	4-0
4	#4	1-6

REINFORCEMENT SCHEDULE BENT BARS									
BENDING DIAGRAMS									
DIMENSIONS									
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	D	E	H	R
ARCH									
J801	60	#8	22-4	20-10			3-5	17-6	
N802	120	#8	18-9	5-3	13-6			18-3	
L W 1									
B810	5	#8	8-10	1-2	7-8				
F803	5	#8	16-10	0-6	8-3	1-6	6-7	0-3	
B504	8	#5	2-9	1-0	1-9				
B511	10	#5	3-0	1-0	2-0				
B409	4	#4	1-10	0-4	1-6				
L W 2									
B810	18	#8	8-10	1-2	7-8				
F803	18	#8	16-10	0-6	8-3	1-6	6-7	0-3	
B505	8	#5	10-2	1-0	9-2				
B507	10	#5	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
L W 3									
B810	18	#8	8-10	1-2	7-8				
F803	18	#8	16-10	0-6	8-3	1-6	6-7	0-3	
B505	8	#5	10-2	1-0	9-2				
B507	10	#5	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
L W 4									
B810	18	#8	8-10	1-2	7-8				
F803	18	#8	16-10	0-6	8-3	1-6	6-7	0-3	
B505	8	#5	10-2	1-0	9-2				
B507	10	#5	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
L W 5									
B810	13	#8	8-10	1-2	7-8				
F803	13	#8	16-10	0-6	8-3	1-6	6-7	0-3	
B506	4	#5	8-6	1-0	7-6				
B508	5	#5	8-9	1-0	7-9				
B409	18	#4	1-10	0-4	1-6				
H W 1									
B810	13	#8	8-10	1-2	7-8				
F803	13	#8	16-10	0-6	8-3	1-6	6-7	0-3	
B508	4	#5	8-6	1-0	7-6				
B508	5	#5	8-9	1-0	7-9				
B409	18	#4	1-10	0-4	1-6				
H W 2									
B810	18	#8	8-10	1-2	7-8				
F803	18	#8	16-10	0-6	8-3	1-6	6-7	0-3	
B505	8	#5	10-2	1-0	9-2				
B507	10	#5	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
H W 3									
B810	18	#8	8-10	1-2	7-8				
F803	18	#8	16-10	0-6	8-3	1-6	6-7	0-3	
B505	8	#5	10-2	1-0	9-2				
B507	10	#5	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
H W 4									
B810	18	#8	8-10	1-2	7-8				
F803	18	#8	16-10	0-6	8-3	1-6	6-7	0-3	
B505	8	#5	10-2	1-0	9-2				
B507	10	#5	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
H W 5									
B810	5	#8	8-10	1-2	7-8				
F803	5	#8	16-10	0-6	8-3	1-6	6-7	0-3	
B504	8	#5	2-9	1-0	1-9				
B511	10	#5	3-0	1-0	2-0				
B409	4	#4	1-10	0-4	1-6				



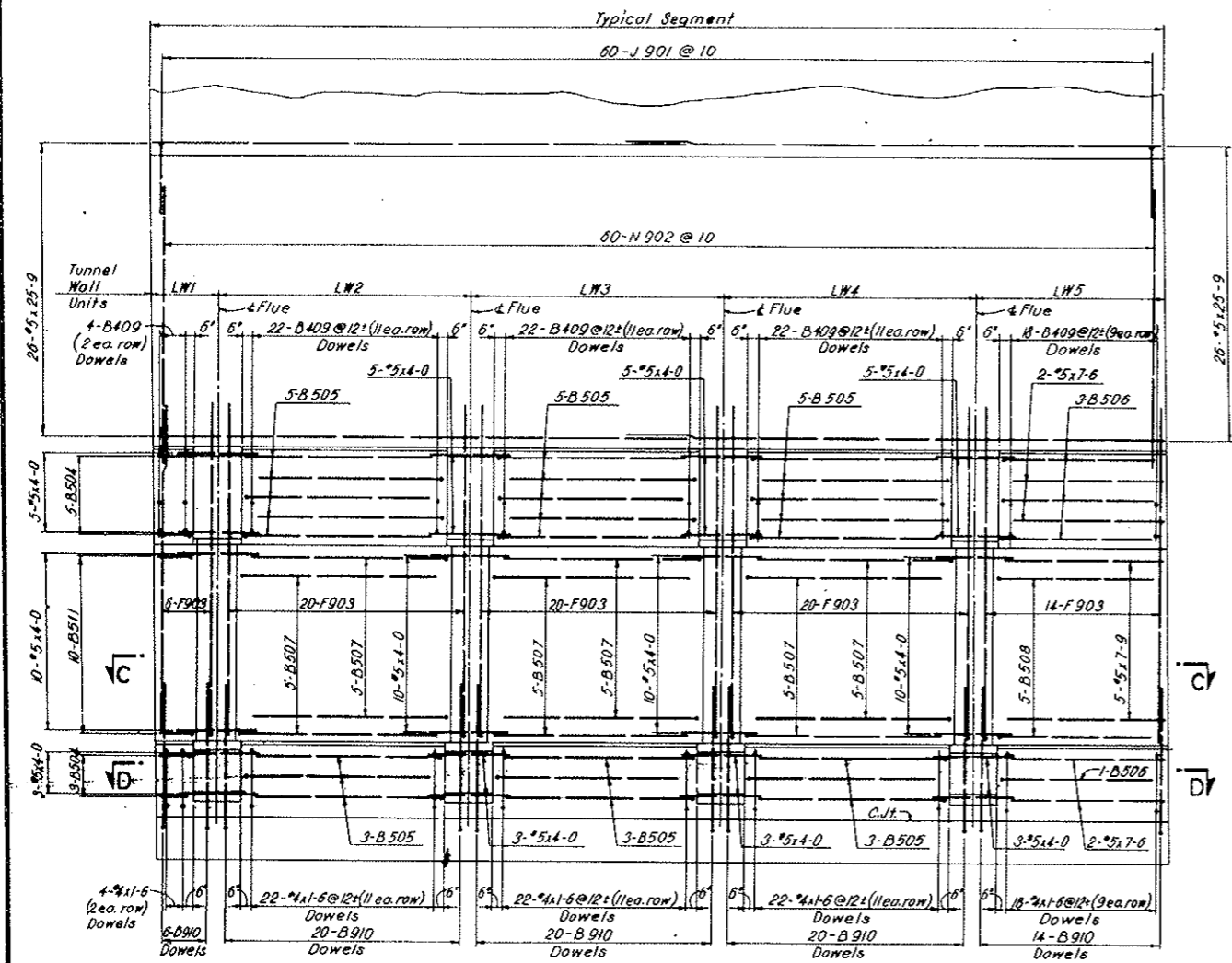
NOTES:
For notes see Dwg. C2-103.
For Segments N5-50+N52-N58+N71-N80 only

All bent bar marks to be prefixed by No. C2-103

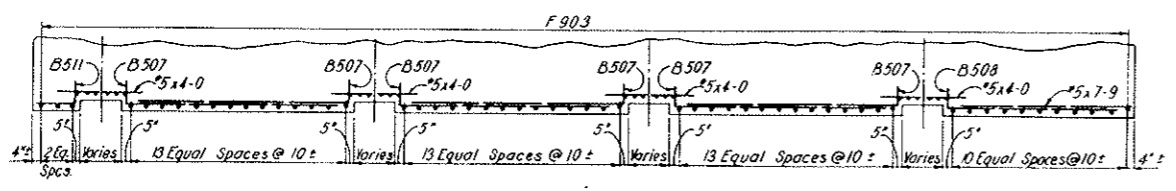
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - TUNNEL REINFORCEMENT STANDARD SEGMENT TUNNEL SECTION TYPE - SHEET 2 OF 2 III a LINING -					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H.F. Mc C.	RECOMMENDED:	Honoring P. J. ...		
DRAWN:	P.E.L.	CHECKED:	H.F. Mc C.		
SUBMITTED:	Honoring P. J. ...	DATE:	NOV. 1987	DRAWING NO. C2-104	
NEW YORK, N. Y.			SCALE:	1/4" = 1'-0"	DATE:

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-36	112

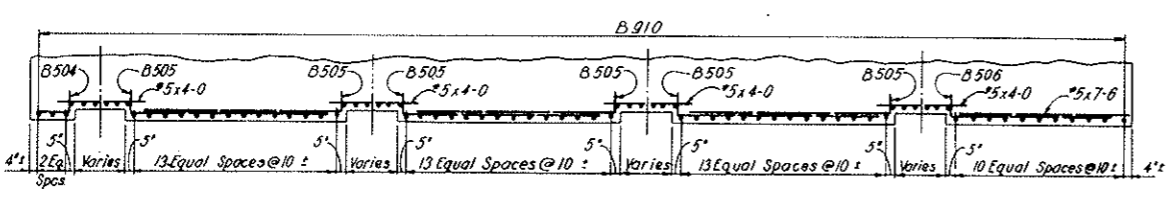
AS CONSTRUCTED
REVISED DATE Oct 24, 1973



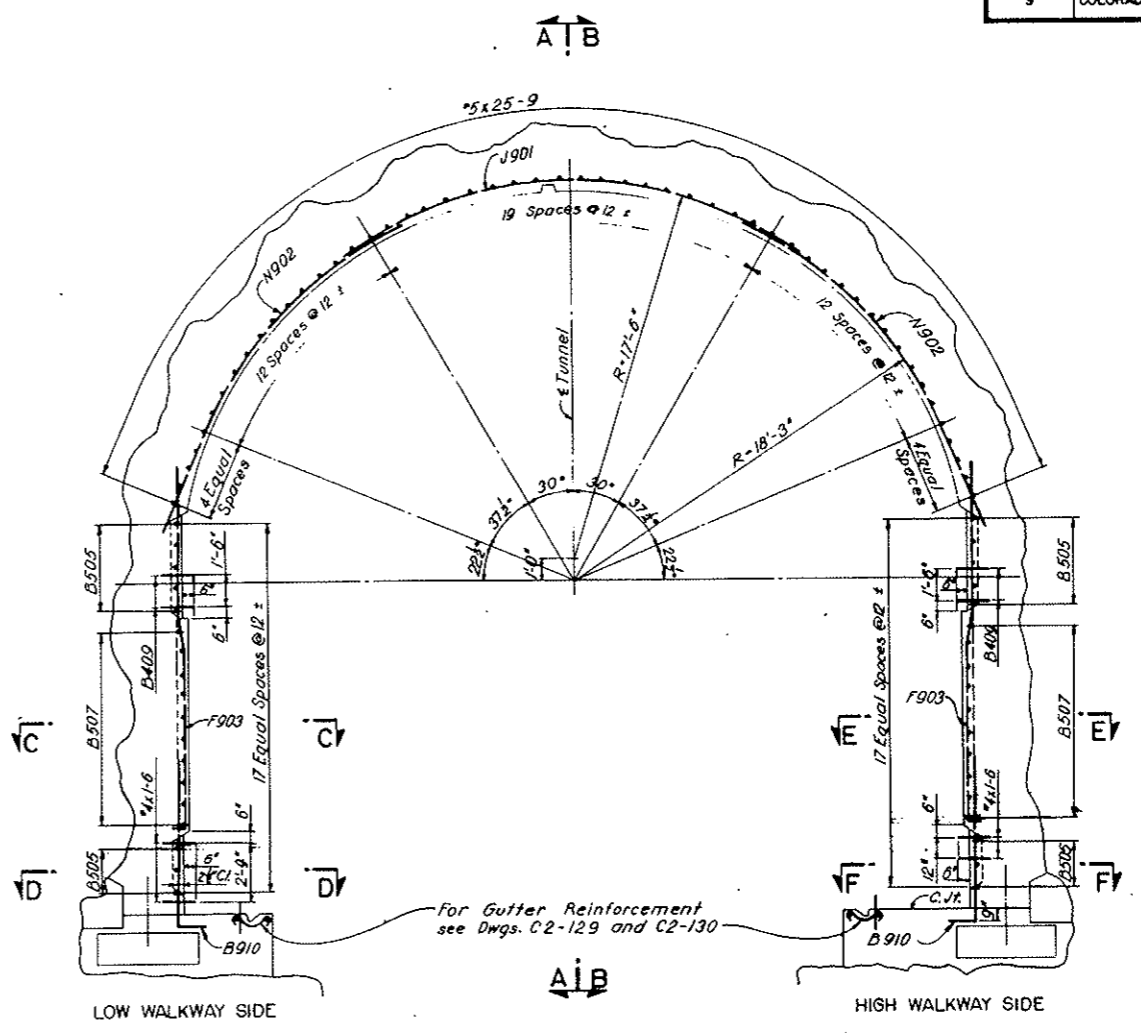
SECTION A-A
(INSIDE ELEVATION-LOW WALKWAY SIDE)



SECTION C-C



SECTION D-D



TYPICAL TRANSVERSE SECTION-LOOKING EAST
NORTH TUNNEL AS SHOWN - SOUTH TUNNEL OPPOSITE HAND
(TAKEN BETWEEN FLUES)

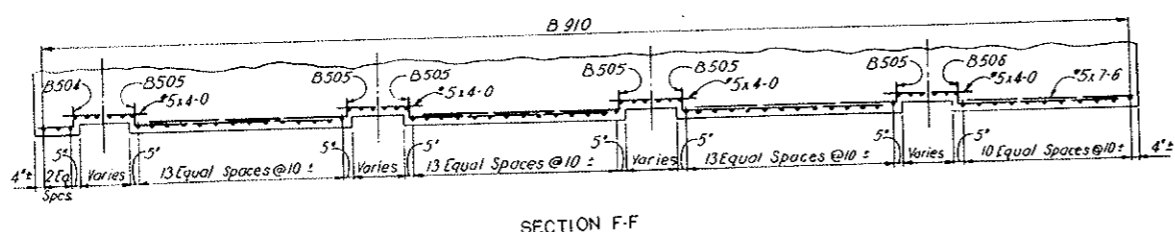
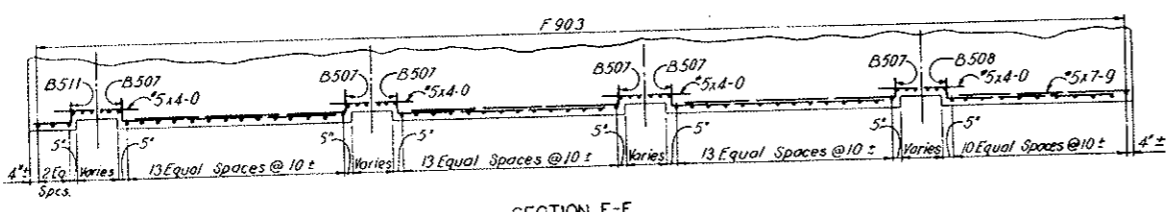
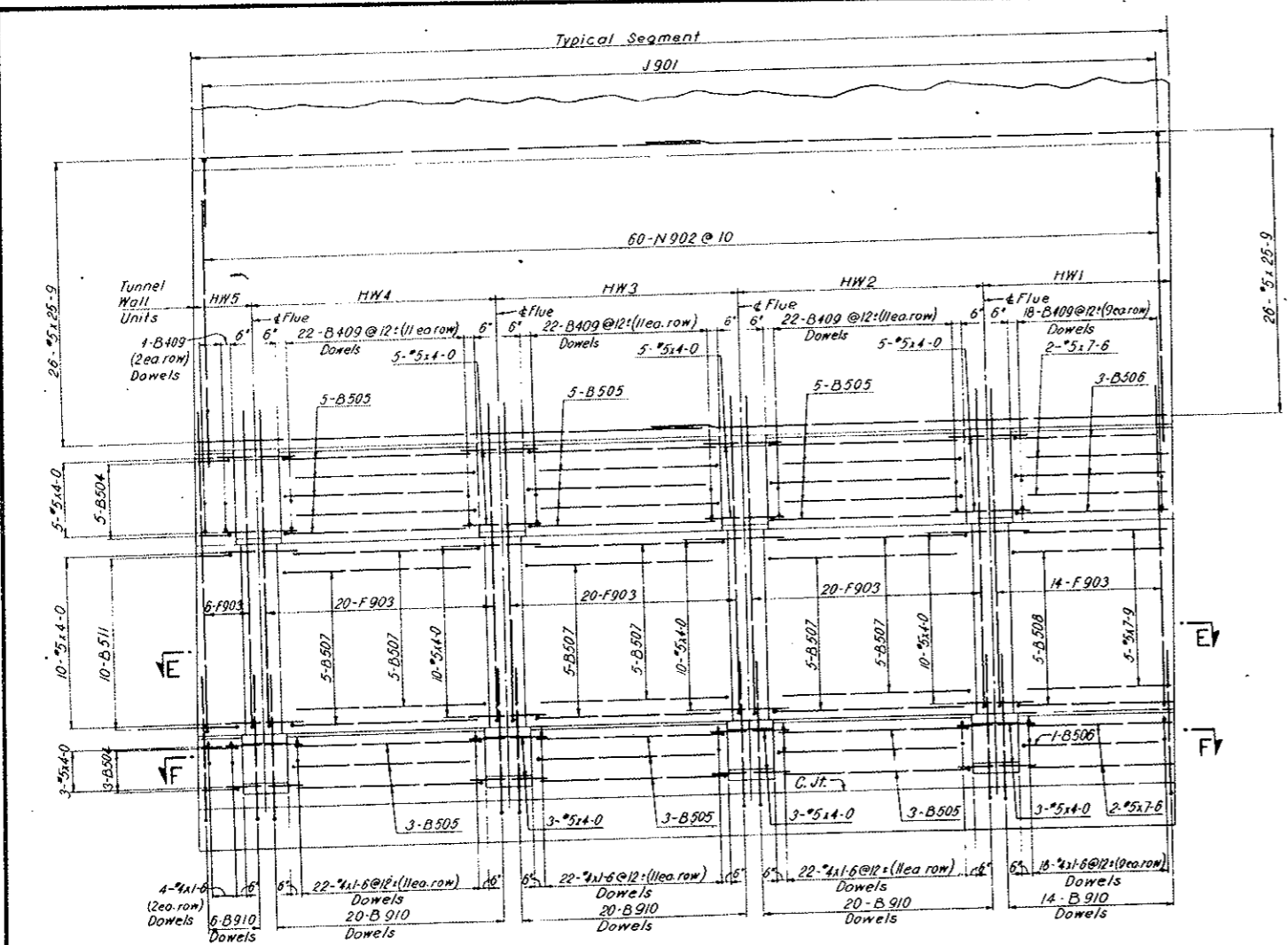
NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-12.
For General Reinforcement Notes see Dwg. C2-103.
For Segments N51, N69, N70 only

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT STANDARD SEGMENT TUNNEL SECTION TYPE III b LINING - SHEET 1 OF 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. F. McC. C.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: R. F. L.	CHECKED: H. F. McC. C.				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
NEW YORK, N. Y.	SCALE: 1/4" = 1'-0"	DATE: NOV. 1967	DRAWING NO. C2-105		

AS CONSTRUCTED
REVISED DATE 02-26-1975

STRAIGHT BARS		
NO. REQ'D	SIZE	BAR LENGTH
ARCH		
104	#5	25-9
L W 1		
18	#5	4-0
4	#4	1-6
L W 2		
18	#5	4-0
22	#4	1-6
L W 3		
18	#5	4-0
22	#4	1-6
L W 4		
18	#5	4-0
22	#4	1-6
L W 5		
18	#4	1-6
4	#5	7-9
4	#5	7-6
H W 1		
18	#4	1-6
5	#5	7-9
4	#5	7-6
H W 2		
18	#5	4-0
22	#4	1-6
H W 3		
18	#5	4-0
22	#4	1-6
H W 4		
18	#5	4-0
22	#4	1-6
H W 5		
18	#5	4-0
4	#4	1-6

REINFORCEMENT SCHEDULE BENT BARS											
BENDING DIAGRAMS											
②		③		④		⑤		⑥		⑦	
DIMENSIONS											
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	D	E	H	R		
ARCH											
J 901	60	#9	22-4		20-10					3-5 17-8	
N 902	120	#9	18-9	5-3	13-6					18-3	
L W 1											
F 903	6	#9	17-0	0-6	8-3	1-6	6-9	0-3			
B 504	8	#5	2-9	1-0	1-9						
B 511	10	#5	3-0	1-0	2-0						
B 409	4	#4	1-10	0-4	1-6						
B 910	6	#9	9-1	1-4	7-9						
L W 2											
B 409	22	#4	1-10	0-4	1-6						
B 505	8	#5	10-2	1-0	9-2						
F 903	20	#9	17-0	0-6	8-3	1-6	6-9	0-3			
B 910	20	#9	9-1	1-4	7-9						
B 507	10	#5	10-8	1-0	9-8						
L W 3											
B 409	22	#4	1-10	0-4	1-6						
B 505	8	#5	10-2	1-0	9-2						
F 903	20	#9	17-0	0-6	8-3	1-6	6-9	0-3			
B 910	20	#9	9-1	1-4	7-9						
B 507	10	#5	10-8	1-0	9-8						
L W 4											
B 409	22	#4	1-10	0-4	1-6						
B 505	8	#5	10-2	1-0	9-2						
F 903	20	#9	17-0	0-6	8-3	1-6	6-9	0-3			
B 910	20	#9	9-1	1-4	7-9						
B 507	10	#5	10-8	1-0	9-8						
L W 5											
B 409	18	#4	1-10	0-4	1-6						
B 506	4	#5	8-6	1-0	7-6						
F 903	14	#9	17-0	0-6	8-3	1-6	6-9	0-3			
B 910	14	#9	9-1	1-4	7-9						
B 508	5	#5	8-9	1-0	7-9						
H W 1											
B 409	18	#4	1-10	0-4	1-6						
B 506	4	#4	8-6	1-0	7-6						
F 903	14	#9	17-0	0-6	8-3	1-6	6-9	0-3			
B 910	14	#9	9-1	1-4	7-9						
B 508	5	#5	8-9	1-0	7-9						
H W 2											
B 409	22	#4	1-10	0-4	1-6						
B 505	8	#5	10-2	1-0	9-2						
F 903	20	#9	17-0	0-6	8-3	1-6	6-9	0-3			
B 910	20	#9	9-1	1-4	7-9						
B 507	10	#5	10-8	1-0	9-8						
H W 3											
B 409	22	#4	1-10	0-4	1-6						
B 505	8	#5	10-2	1-0	9-2						
F 903	20	#9	17-0	0-6	8-3	1-6	6-9	0-3			
B 910	20	#9	9-1	1-4	7-9						
B 507	10	#5	10-8	1-0	9-8						
H W 4											
B 409	22	#4	1-10	0-4	1-6						
B 505	8	#5	10-2	1-0	9-2						
F 903	20	#9	17-0	0-6	8-3	1-6	6-9	0-3			
B 910	20	#9	9-1	1-4	7-9						
B 507	10	#5	10-8	1-0	9-8						
H W 5											
B 409	4	#4	1-10	0-4	1-6						
B 504	8	#5	2-9	1-0	1-9						
F 903	6	#9	17-0	0-6	8-3	1-6	6-9	0-3			
B 910	6	#9	9-1	1-4	7-9						
B 511	10	#5	3-0	1-0	2-0						



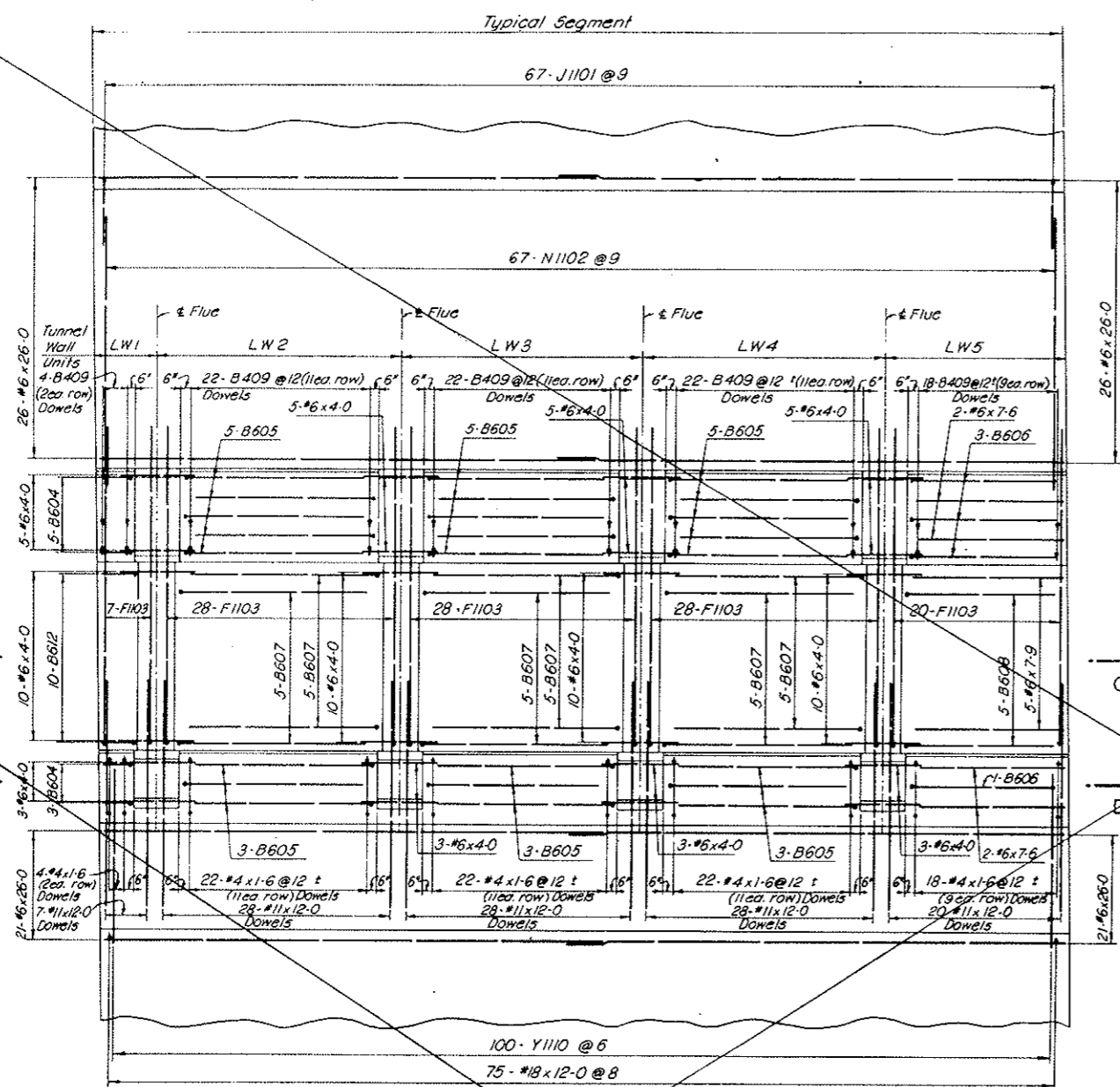
NOTES:
For notes see Dwg. C2-103.
For Segments N5, N69-N70 only

All bent bar marks to be prefixed by No. C2-105.

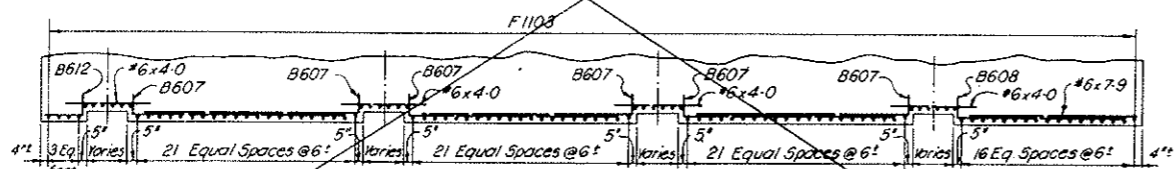
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.
STATE OF COLORADO-DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT					
STANDARD SEGMENT TUNNEL SECTION TYPE III B LINING - SHEET 2 OF 2					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. McC.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. C2-106			
DRAWN: P.E.L.	CHECKED: H.F. McC.	DATE: NOV 1967			
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	SCALE: 1/4" = 1'-0"			
DATE: <i>[Signature]</i>	DATE: <i>[Signature]</i>	NEW YORK, N. Y.			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-38	112

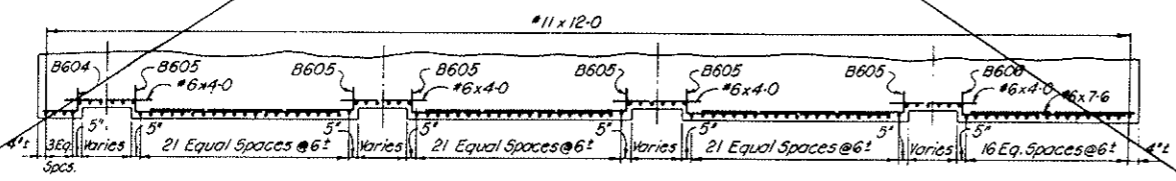
VOID
BY CONSTRUCTION
Oct 26, 1973



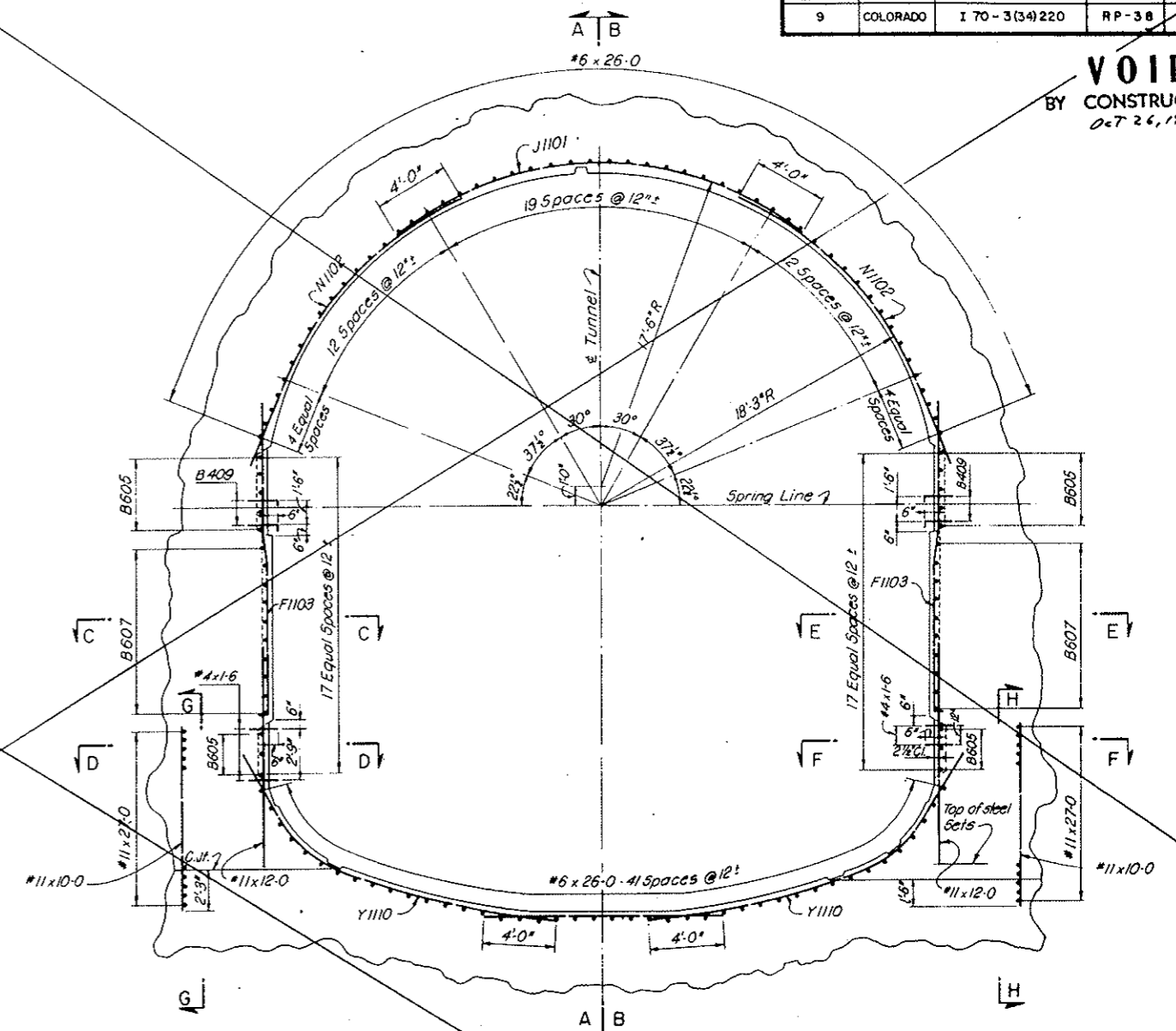
SECTION A-A
(INSIDE ELEVATION - LOW WALKWAY SIDE)



SECTION C-C



SECTION D-D



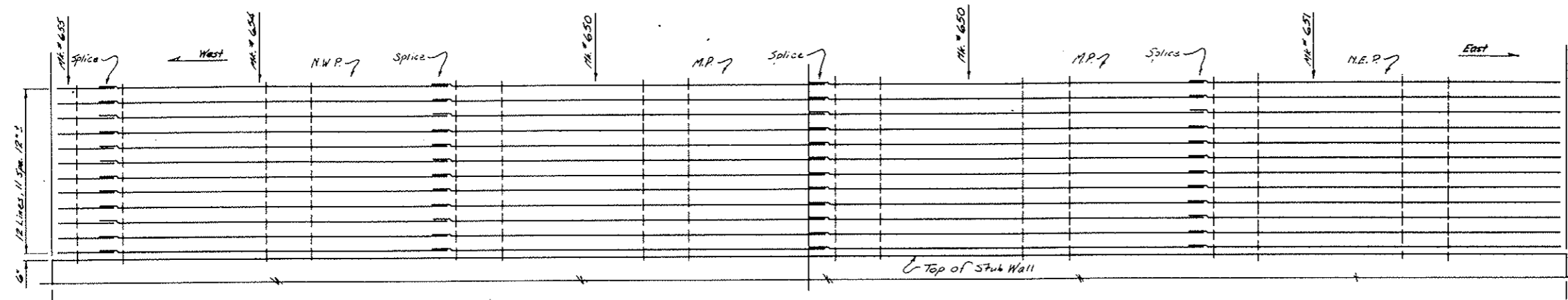
TYPICAL TRANSVERSE SECTION - LOOKING EAST
NORTH TUNNEL AS SHOWN - SOUTH TUNNEL OPPOSITE HAND
(TAKEN BETWEEN FLUES)

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-13.
For General Reinforcement Notes see Dwg. C2-103.

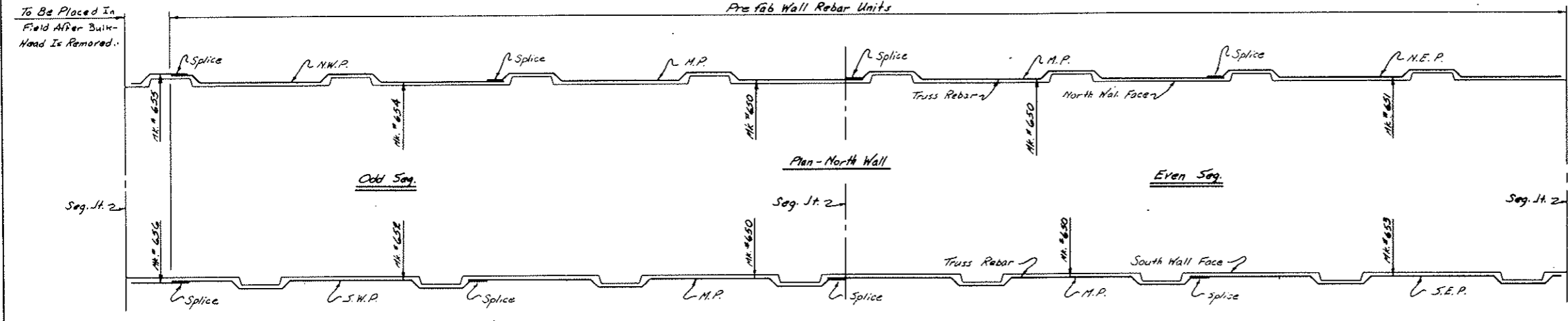
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT STANDARD SEGMENT TUNNEL SECTION TYPE IIIa LINING - INSIDE FACE - SHEET 1 OF 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. F. Mc C.	RECOMMENDED: Henry J. ...				
DRAWN: R. B.	CHECKED: R. B. A.				
SUBMITTED: ...	APPROVED: Frank Miller				
NEW YORK, N. Y.	SCALE: 1/4" = 1'-0"	DATE: NOV. 1967	DRAWING NO. C2-107		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	RP-38AX	112

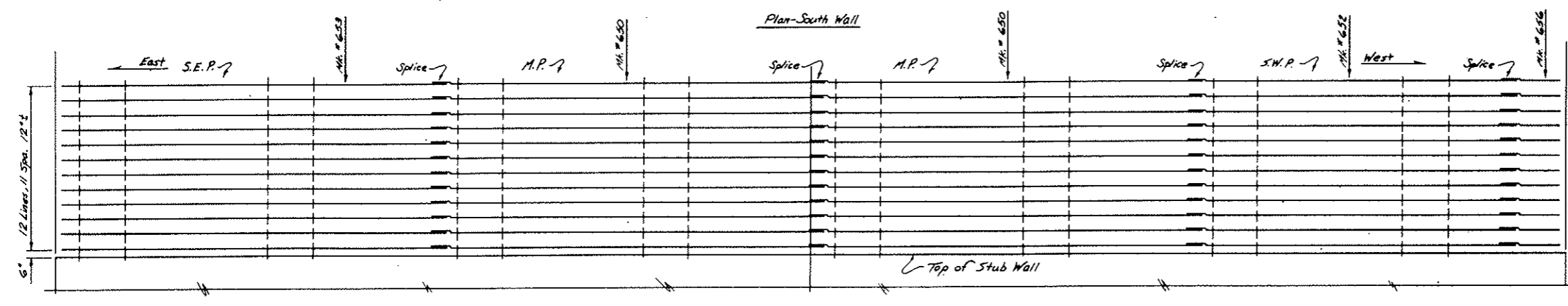
AS CONSTRUCTED
 REVISED DATE
 Oct 26, 1975



Elevation-North Wall
 Note: Elevation Looking North



Plan-North Wall
 Note: Elevation Looking South



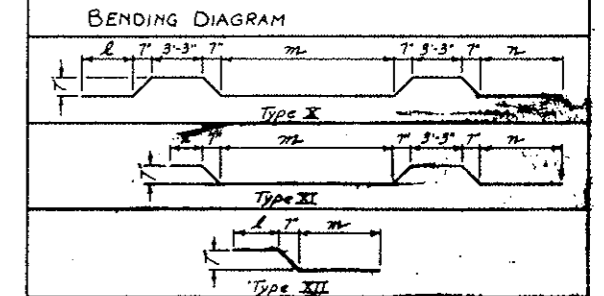
Elevation-South Wall
 Note: Elevation Looking South

To Be Placed In Field After Bulk-Head Is Removed.



BAR LIST (Dimensions are 0. to 0.)							
Mark	Size	Type	Length	Dimensions			No. Req'd.
				ℓ	m	n	
650	#6	X	27'-8"	1'-6"	8'-1 3/4"	8'-1 3/4"	48
651	#6	X	26'-4"	1'-6"	8'-1 3/4"	6'-10"	12
652	#6	X	23'-7"	1'-6"	8'-1 3/4"	4'-1"	12
653	#6	X	26'-9"	0'-7"	8'-1 3/4"	8'-1 3/4"	12
654	#6	II	23'-8"	1'-7 1/2"	8'-1 3/4"	8'-1 3/4"	12
655	#6	III	4'-7"	0'-7"	3'-2"		12
656	#6	Str.	4'-4"				12

Note: No. Req'd. is for Each 2 Segment Set. (Long bars only.)



NOTE: Splice is 18" Typical.
 For Segments N.W.-N.E. only.

- LEGEND:
- N.W.P. Northwest Panel
 - N.E.P. North east Panel
 - S.W.P. South west Panel
 - S.E.P. South east Panel
 - M.P. Middle Panel

STATE OF COLORADO
 DIVISION OF HIGHWAYS

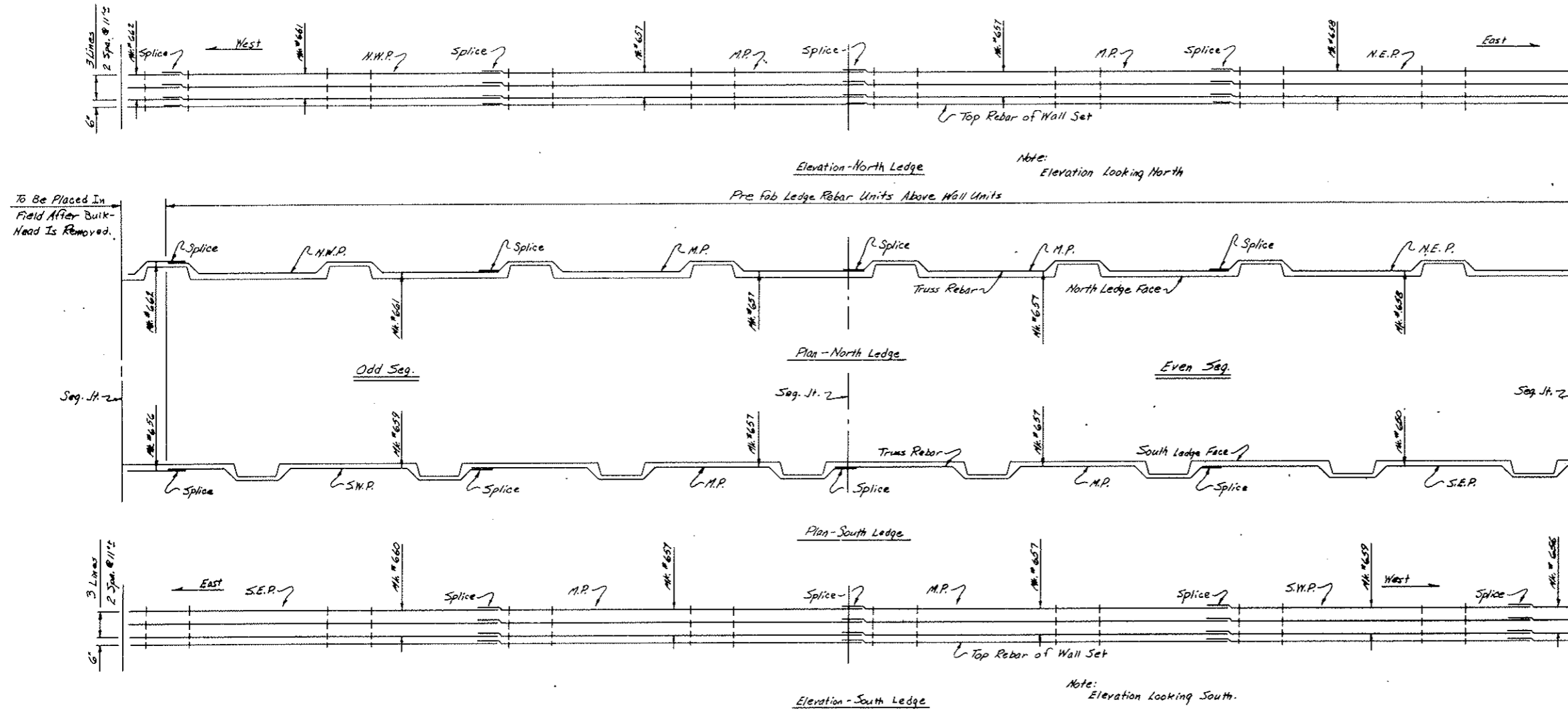
Prepared By
 Stright Creek Constructors

TRUSS REBAR PATTERN FOR 2 TYPICAL SEGMENTS

DATE: 2-17-72
 APPROVED BY: D.S. (Signature)
 DATE: 2-24-72
 DRAWING NUMBER: CC-107A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	CGCOLORADO	170-3(3-1)220	PP-33BX	12

AS CONSTRUCTED
 REVISED DATE Oct 24, 1975

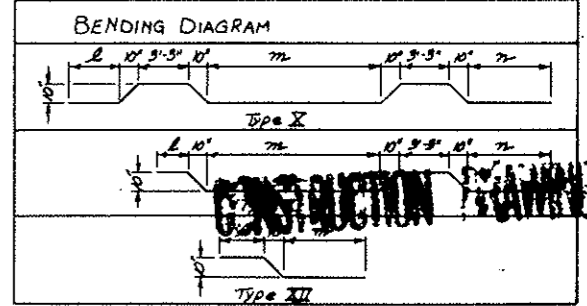


To Be Placed In Field After Bulk-Head Is Removed.

BAR LIST (Dimensions are O. to O.)

Mark	Size	Type	Length	Dimensions			No. Req'd
				L	W	H	
657	#6	X	28'-0"	1'-6"	7'-7 1/4"	7'-7 1/4"	12
658	#6	X	26'-11"	1'-6"	7'-7 1/4"	6'-7"	5
659	#6	X	24'-2"	1'-6"	7'-7 1/4"	5'-10"	3
660	#6	X	26'-10"	0'-4"	7'-7 1/4"	7'-7 1/4"	3
661	#6	II	25'-8"	1'-7 1/4"	7'-7 1/4"	7'-7 1/4"	3
662	#6	XII	4'-0"	0'-4"	3'-2"		3
656	#6	Str.	4'-4"				3

Note: No. Req'd. is for Each 2 Segment Set. (Long bars only.)



NOTE: Splice is 18" Typical. For Segments N61-N64 only

LEGEND:
 N.W.P. Northwest Panel
 N.E.P. Northeast Panel
 S.W.P. Southwest Panel
 S.E.P. Southeast Panel
 M.P. Middle Panel

STATE OF COLORADO
 DIVISION OF HIGHWAYS

Prepared By: Straight Creek Constructors

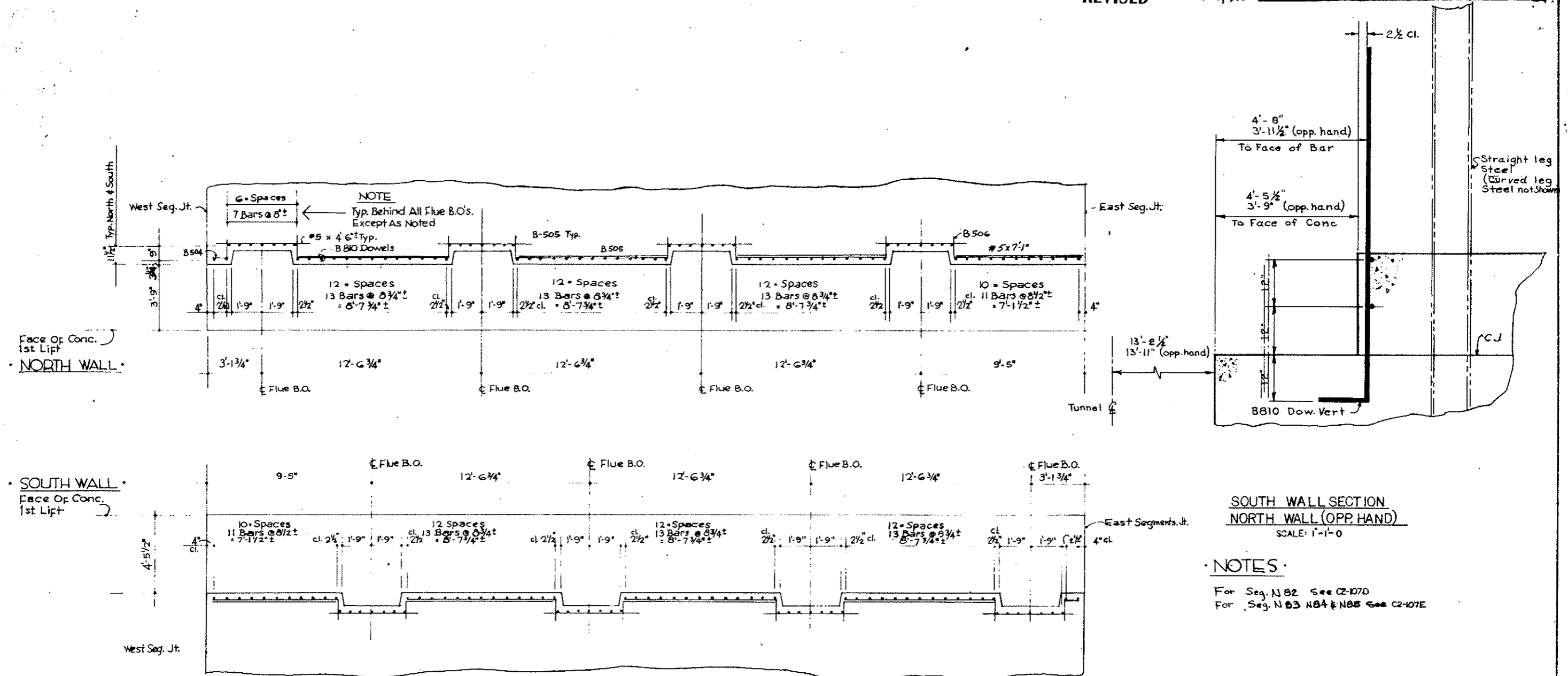
TRUSS REBAR PATTERN FOR 2 TYPICAL SEGMENTS

DATE: 8-28-78 APPROVED BY DOH. DATE: 8-29-78
 By D.S. AS SCC-497

CE-1078

AS CONSTRUCTED
REVISED DATE 02-26-1973

ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(34)220	RP 38 CX	112



**SOUTH WALL SECTION
NORTH WALL (OPP. HAND)**
SCALE: 1"=1'-0"

- NOTES**
- For Seg. N82 See C2-107D
 - For Seg. N83 N84 & N85 See C2-107E

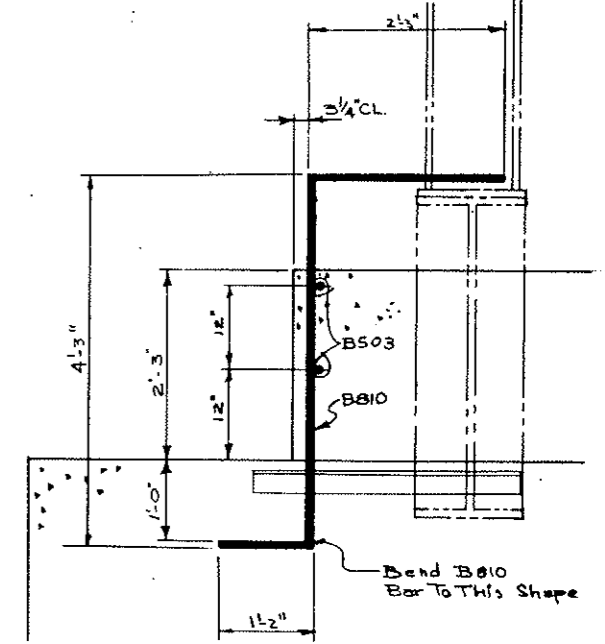
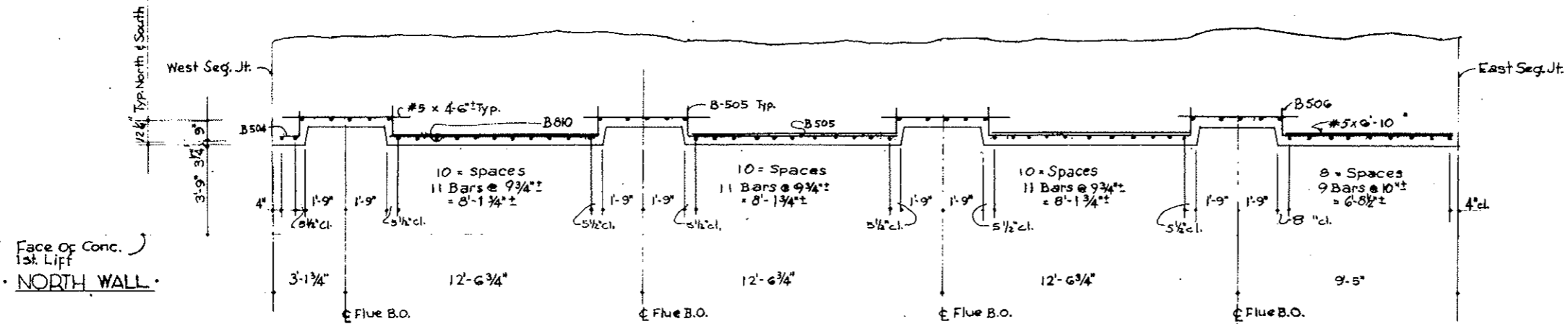
Zone Ia
Seg. N82 Only.

ZONE IA

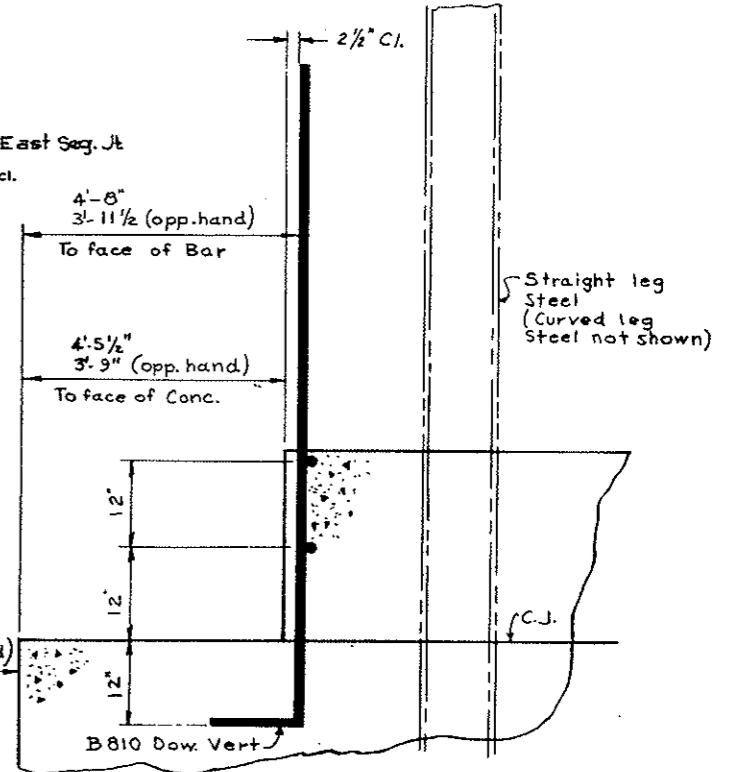
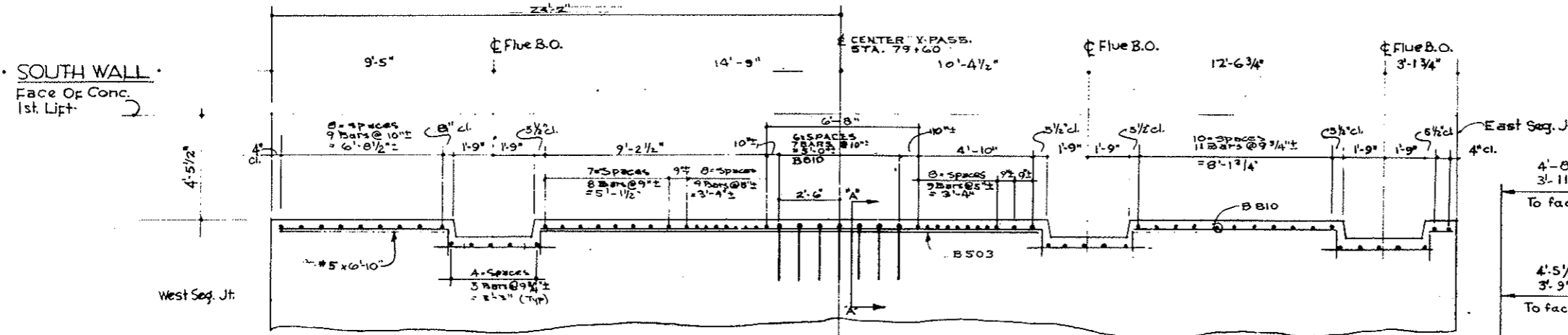
STATE OF COLORADO	
DIVISION OF HIGHWAYS	
SCALE	DATE
DESIGNED BY	REVISION
CURB REBAR LAYOUT SEG. 81	
DATE	APPROVED BY
1/4/72	500 330
DRAWING NUMBER	
C2-107C	

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

REGIONAL ROAD NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(34)220	RP 381X	112



SECTION A-A

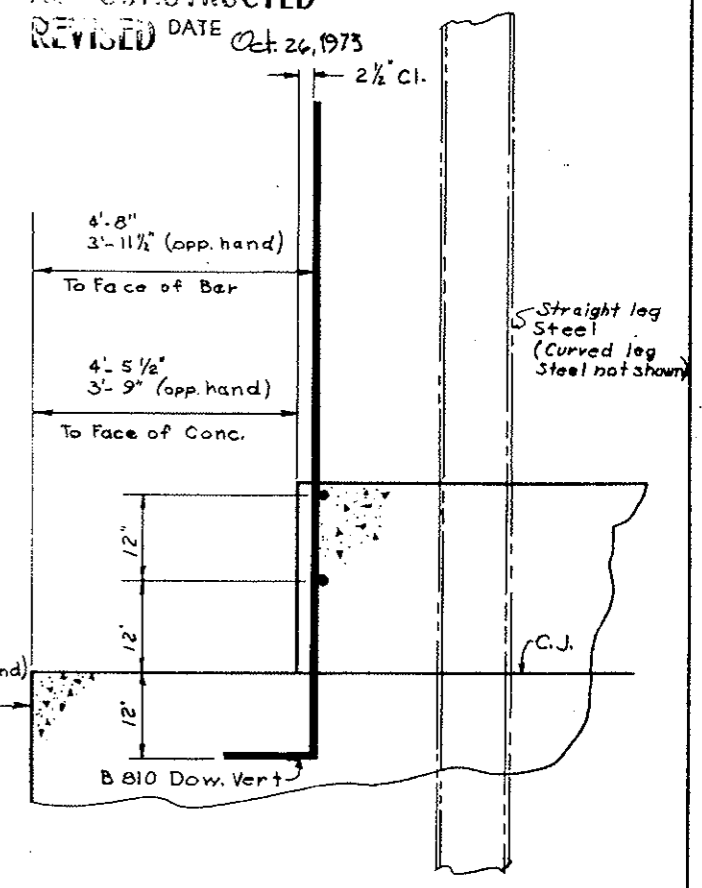
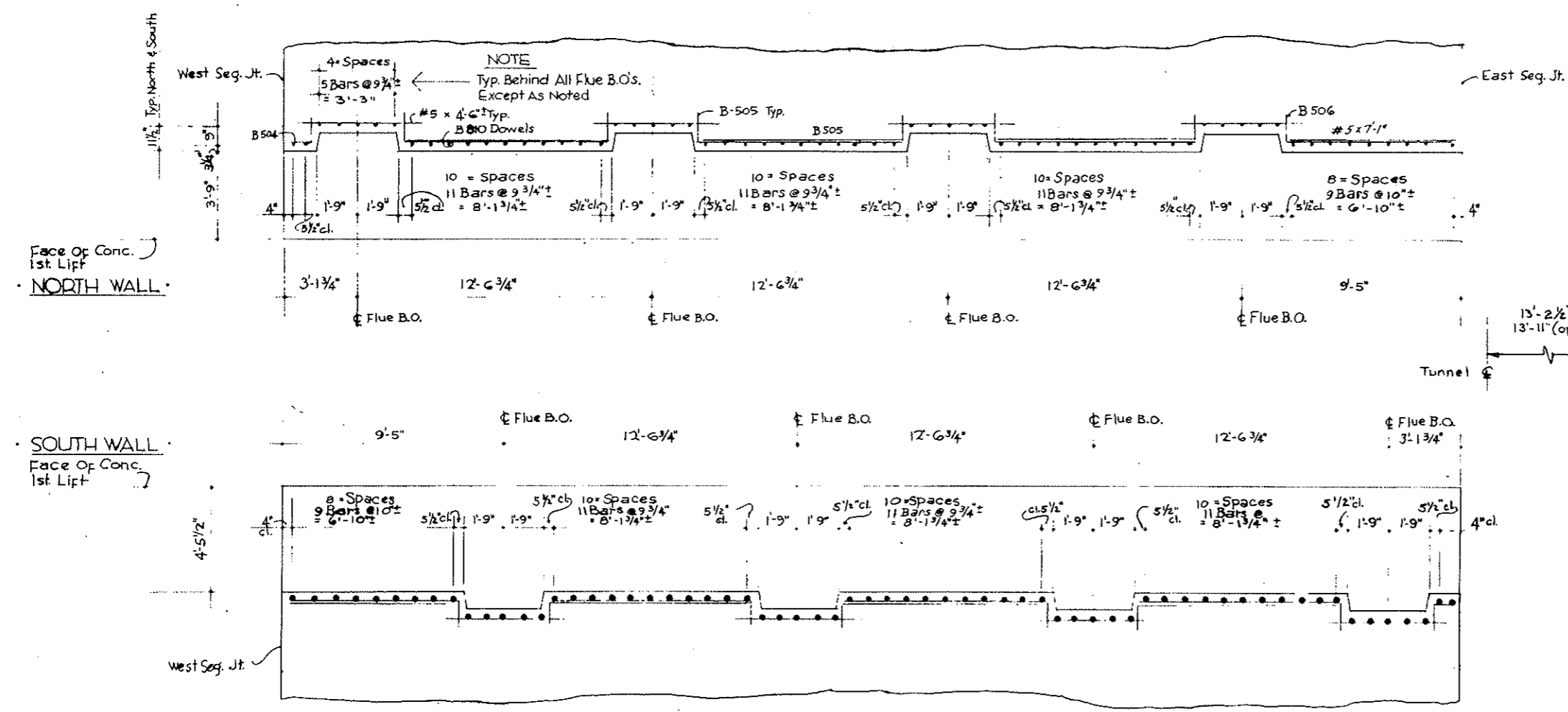


ZONE 1A - SEGMENT 82
 SCALE: 3/8" = 1'-0"

STATE OF COLORADO	
DIVISION OF HIGHWAYS	
AS NOTED	DRAWN BY WM. GIFFIN
CURB REBAR SEGMENT N82	
DATE 4-3-72	DRAWING NUMBER C2-107D

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(34)220	RP 38EX	112

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973



SOUTH WALL SECTION
 NORTH WALL (OPP. HAND)
 SCALE: 1" = 1'-0"

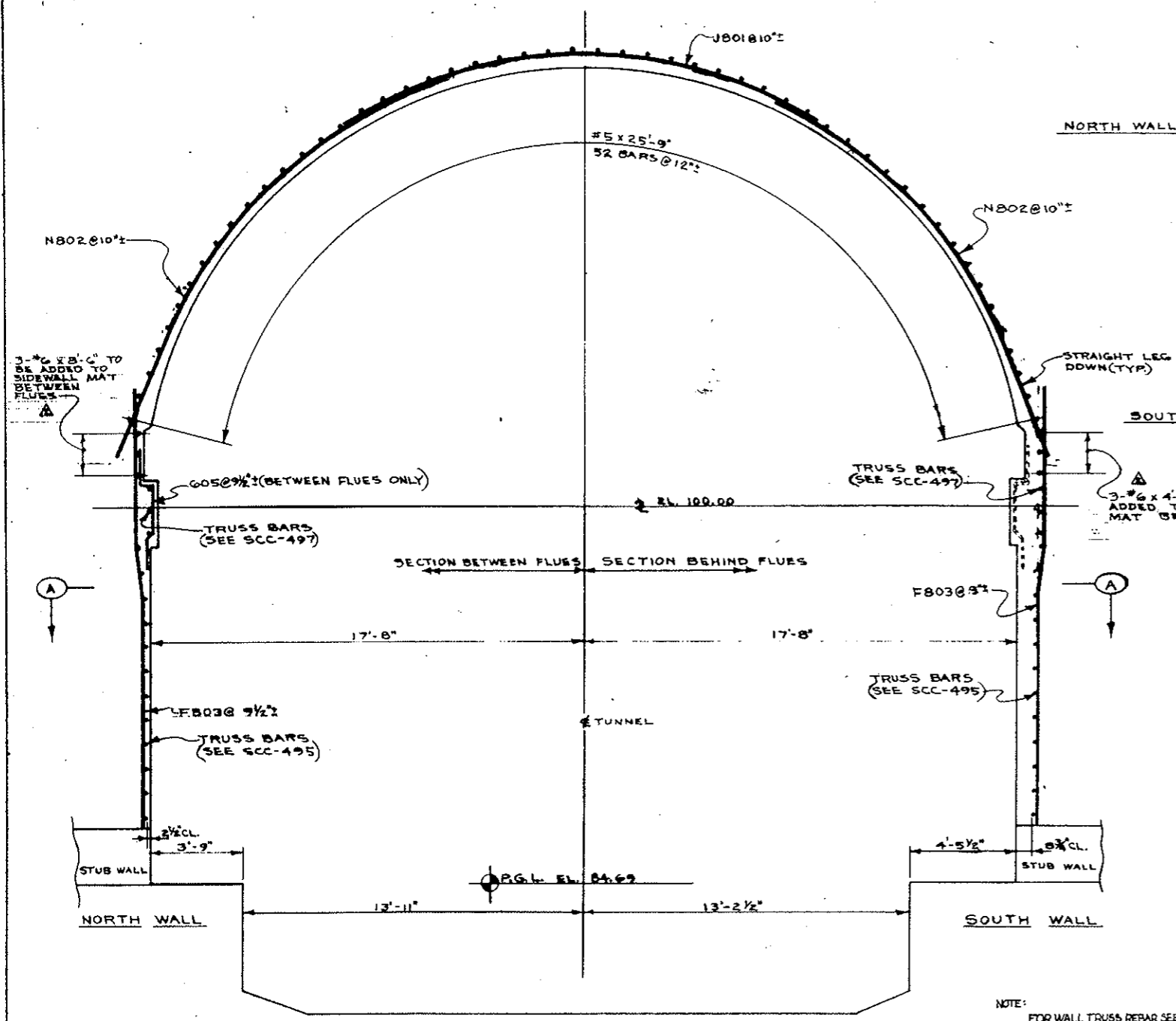
Zone Ia
 Seg. N83, N84 & N85

Notes:
 For Seg. N81 See C2-107C
 For Seg. N82 See C2-107D

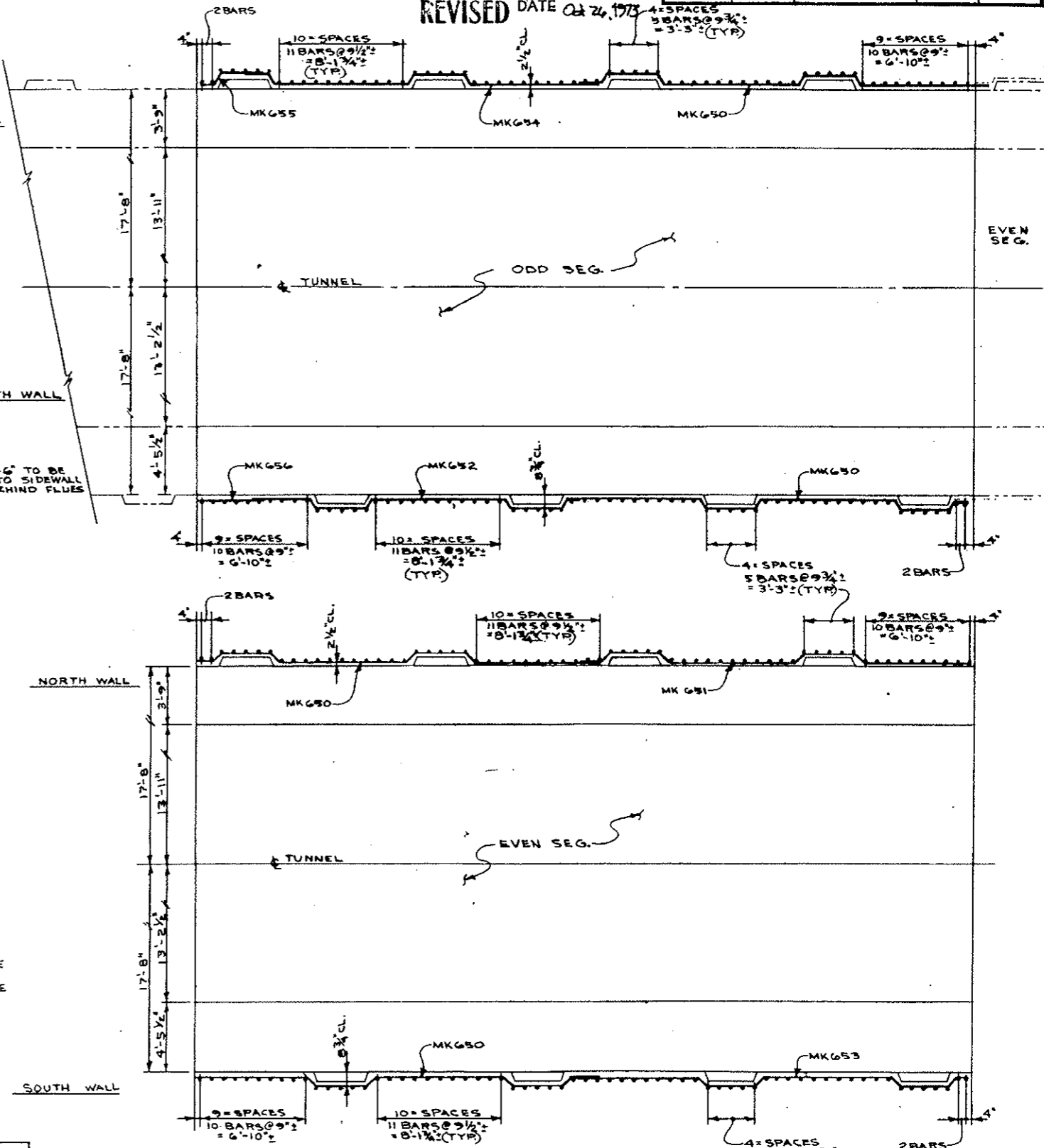
STATE OF COLORADO	
DIVISION OF HIGHWAYS	
CURB REBAR LAYOUT SEGMENTS N83-N85	
3/24/72	C2-107E

AS CONSTRUCTED
REVISED DATE Oct 24, 1973

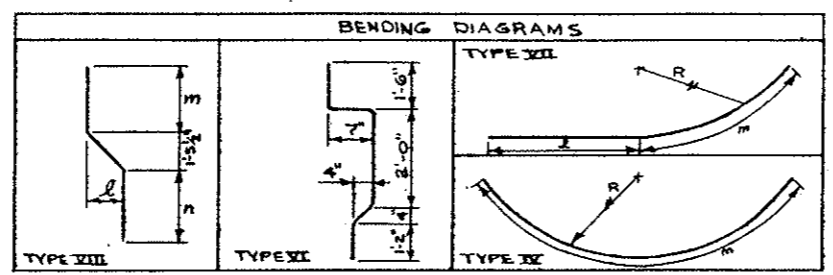
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(34)220	RP 38 FX	112



TUNNEL SECTION LOOKING EAST
SCALE: 3/8"=1'-0"

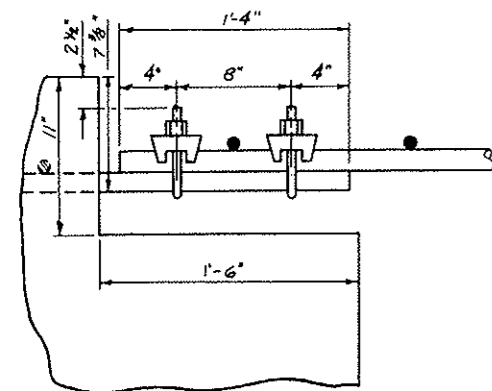


ZONE IA REBAR SCHEDULE								
MARK NO.	SIZE	TYPE	LENGTH	DIMENSIONS			NO. PER SEG.	LOCATION OF REBAR
J801	#8	IV	22'-4"	28-10"	17'-6"		60	CROWN
N802	#8	VII	18'-9"	5'-3"	13'-6"	18'-3"	120	ARCH SIDE
F803	#8	VIII	18'-0"	3'-6"	9'-11"		130	SIDEWALL
G05	#6	VI	5'-9"				90	VERT. SOFFIT
	#5	STR.	25'-9"				104	LONG. ARCH

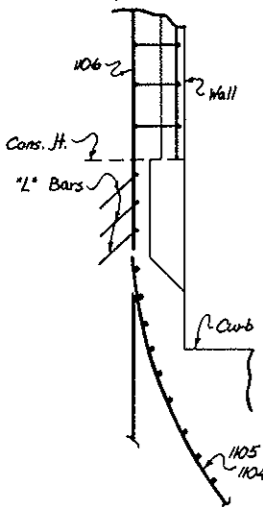


STATE OF COLORADO	
DIVISION OF HIGHWAYS	
DATE	NOTED
5-4-72	W. GIFFIN
ARCH REBAR SEGMENTS N81-N85	
SCC-574	C2-107F

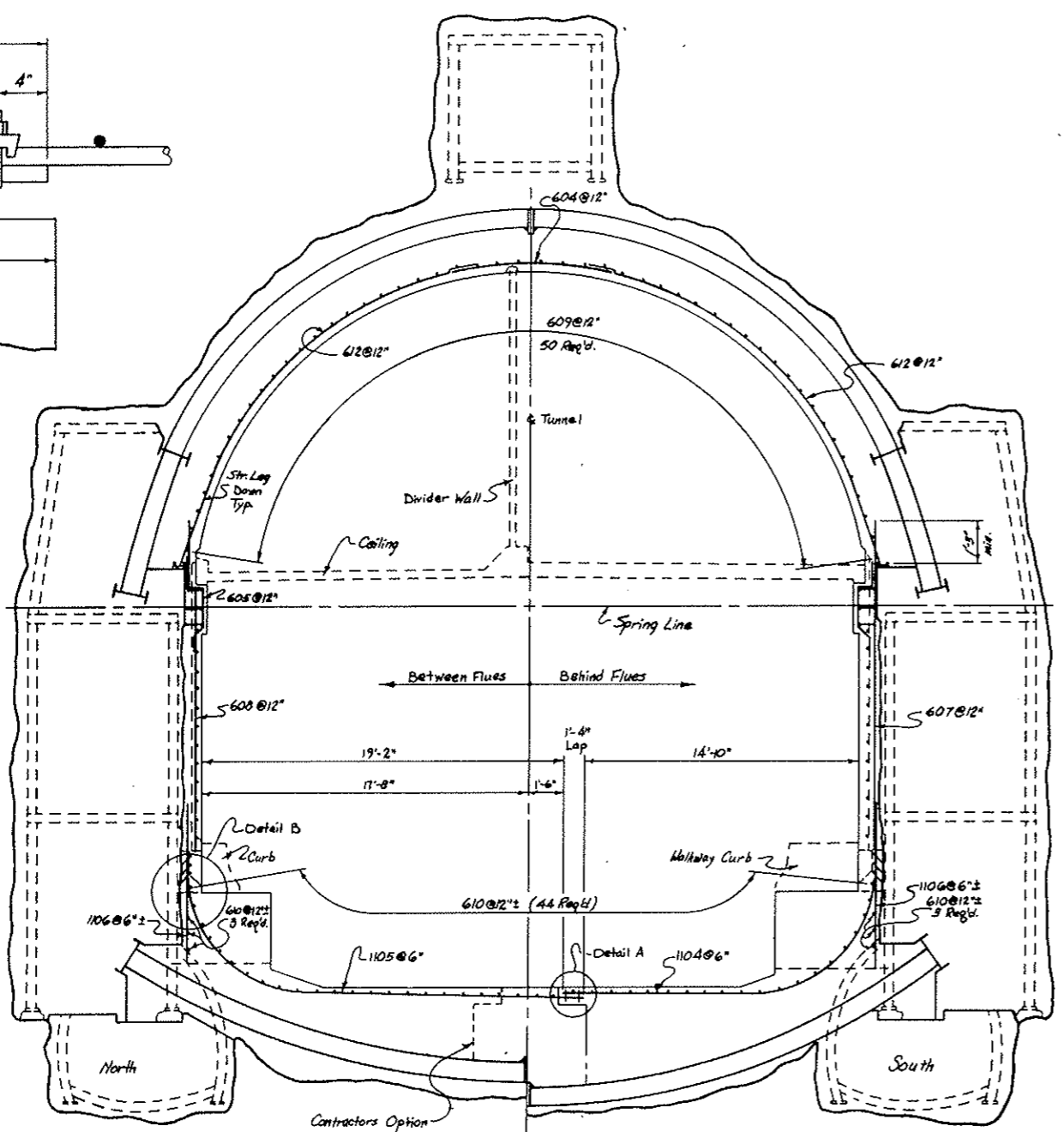
Oct 26, 1973



DETAIL - A
#11 Rebar Splice
w/ 1/2" Cable Clamps
Scale 2"=1'-0"

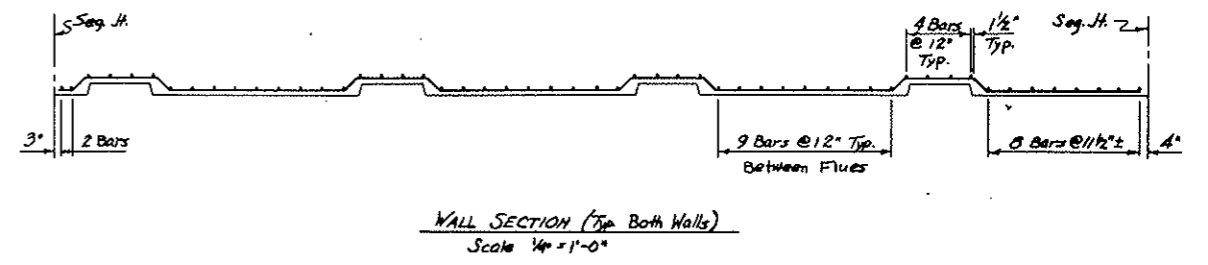


Detail B
M.T.S.

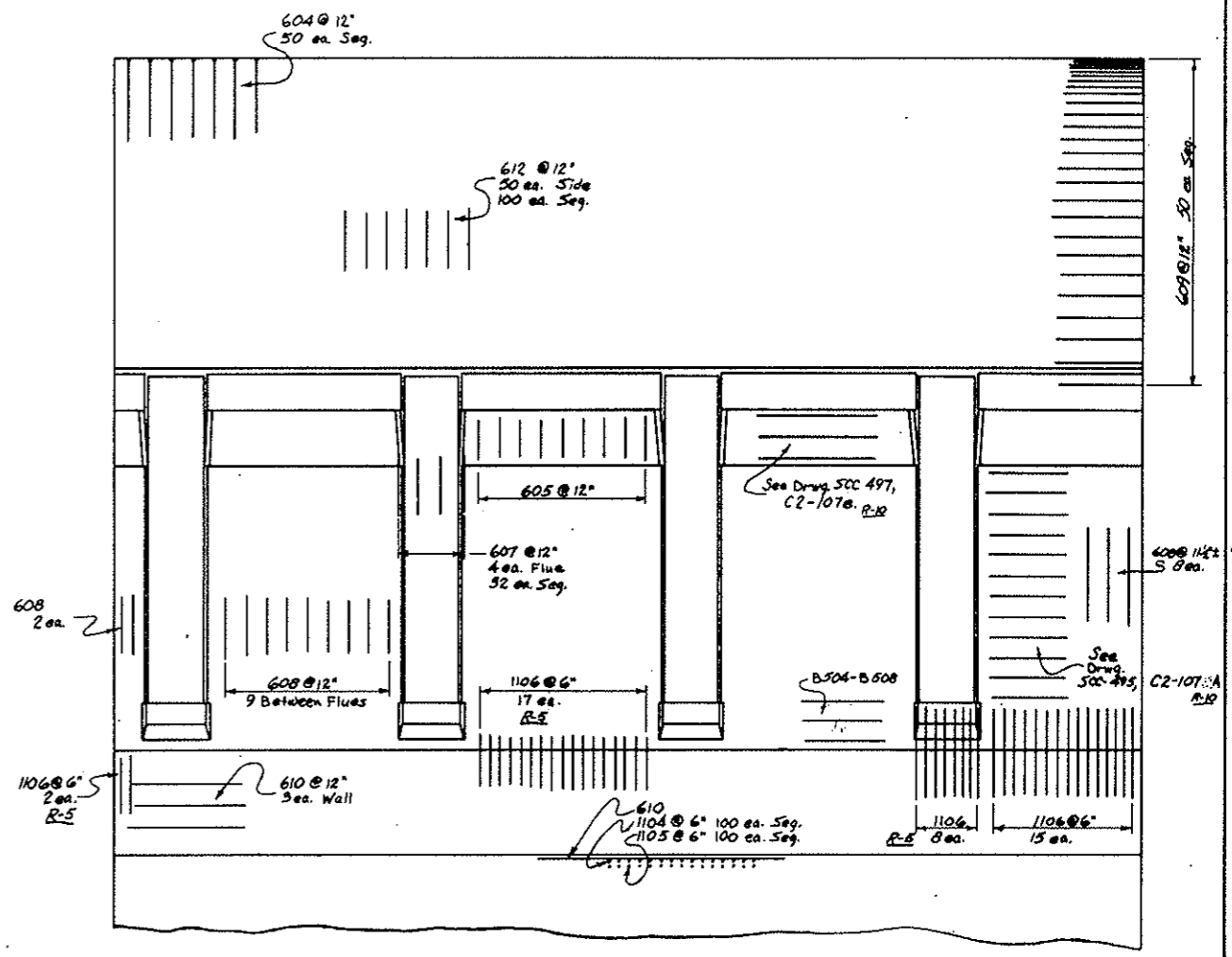


Scale 1/4"=1'-0"

Note:
For Wall Truss Rebar See
Drwg. C2-107A
For Ledge Truss Rebar See
Drwg. C2-107B

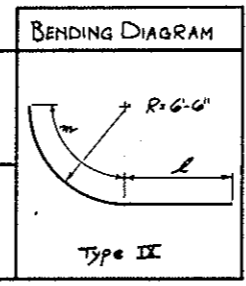
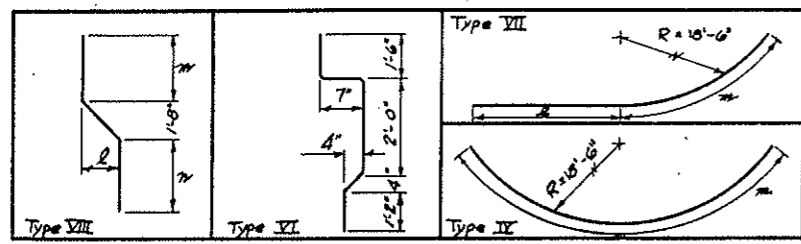


WALL SECTION (Typ Both Walls)
Scale 1/4"=1'-0"



Zone 2 Bar List				
Mark No.	Size Type Length	Dimensions	Ab. Per Seg.	Location of Rebar
610	6 Str. 14'-8"		200	Lg. Inv.
604	6 IX 9'-6"	9'-6"	50	Crown
605	6 VII 3'-9"		74	Vert. Soffit
612	6 VIII 25'-0"	4'-0" 19'-0"	100	Arch. Sd.
607	6 Str. 18'-2"		32	Wall Bn. F.
608	6 VIII 18'-4"	4" 4'-0" 12'-6"	74	Wall Bn. F.
609	6 Str. 26'-0"		100	Lg. Arch.
1104	11 IX 20'-9"	10'-7" 10'-2"	100	Invert
1105	11 IX 25'-5"	15'-1" 10'-2"	100	Invert
1106	11 Str. 8'-4"		200	Low Wall

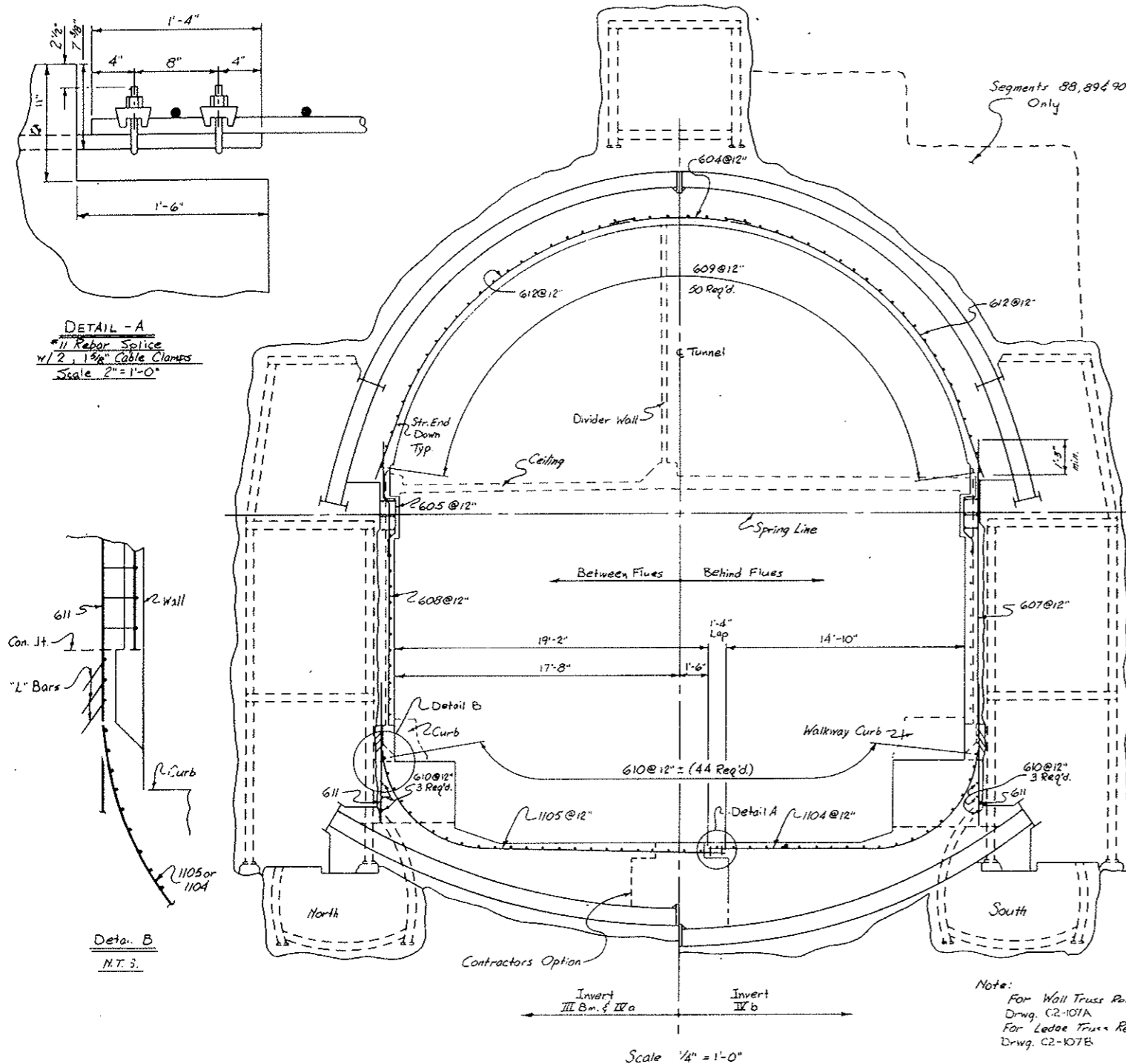
NOTE:
Turn 608 @ Full Boxes.
Station 81+36.83 Thru 82+37.93



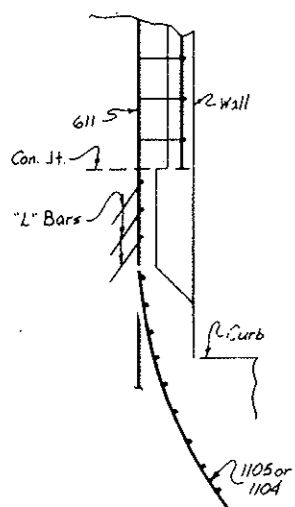
STATE OF COLORADO DIVISION OF HIGHWAYS	
Prepared By Straight Creek Constructors	Checked By Noted
9 DRIFTS REBAR SEGMENTS N86+N87	
DATE 1-22-72	APPROVED BY DAH. Date 4-21-72 By D.S. AS, SEC-512
DRAWING NUMBER C2-107G	

Use also B504 Thru B508 In Stub Wall (On Hand)
Use 200 ea. 1/8" Cable Clamps.

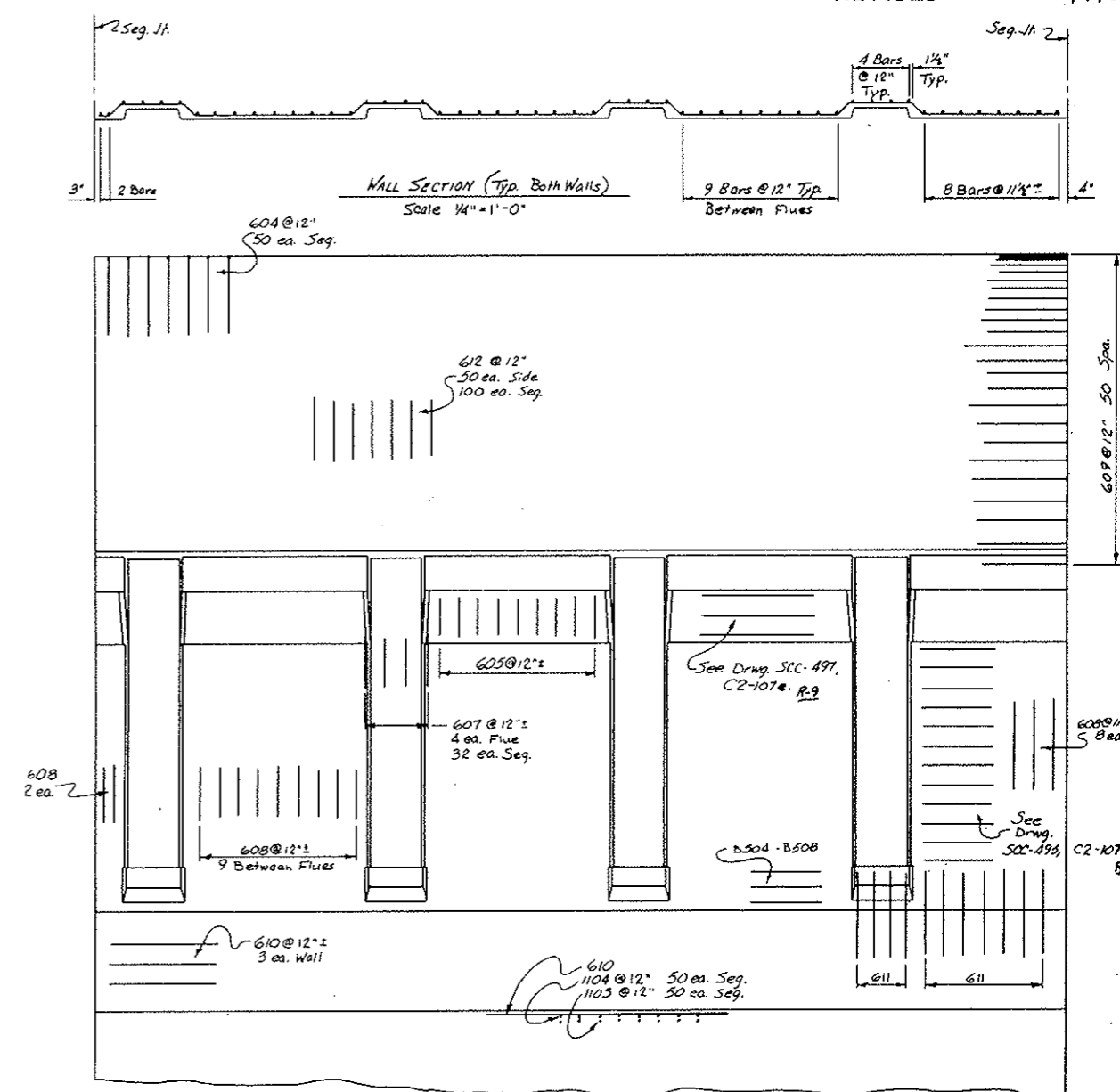
AS CONSTRUCTED
REVISED DATE Oct 26, 1975



DETAIL - A
 #11 Rebar Splice
 w/ 2, 1/2" Cable Clamps
 Scale 2" = 1'-0"



Detail B
 N.T.S.

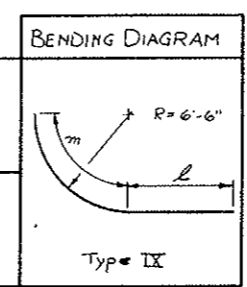
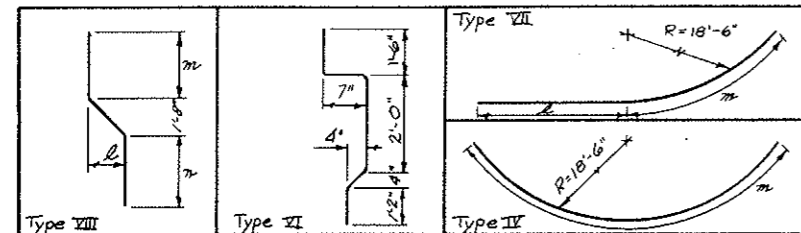


Note:
 For Wall Truss Rebar See
 Drwg. C2-107A
 For Ledger Truss Rebar See
 Drwg. C2-107B

ZONE 2. BAR LIST

Mark No.	Size	Type	Length	Dimensions		No. Per Seg.	Location of Rebar
				L	W		
610	6	Str.	14'-3"			200	Lg. Inv.
604	6	IX	9'-6"	9'-6"		50	Crown
605	6	VII	5'-9"			74	Vert. Soffit
612	6	VIII	23'-0"	4'-0"	19'-0"	100	Arch. Sd.
607	6	Str.	18'-2"			32	Wall Bn. F.
608	6	VIII	18'-4"	4"	4'-0"	74	Wall Bn. F.
609	6	Str.	26'-0"			100	Lg. Arch.
611	6	Str.	8'-4"			106	Low Wall
1104	11	IX	20'-9"	10'-7"	10'-2"	50	Invert
1105	11	IX	25'-3"	15'-1"	10'-2"	50	Invert

Stations 82+37.33 thru 85+38.83

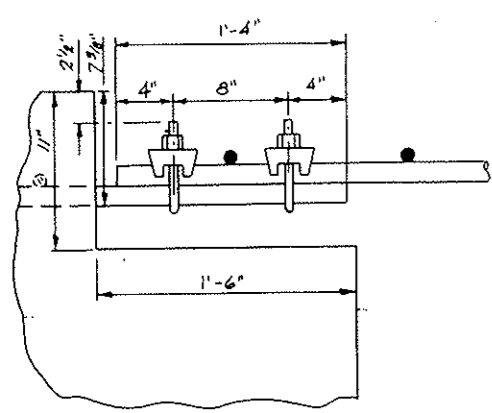


Use also B504 thru B508 In Stub Wall (On Hand).
 Use 100 ea. 1/2" Cable Clamps.

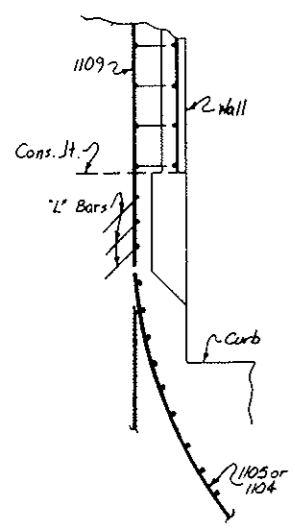
STATE OF COLORADO
 DIVISION OF HIGHWAYS
 Prepared By
 Straight Creek Constructors
 9 AND 13 DRIFTS, REBAR SEGMENTS N88-N93
 DATE 1-22-72 APPROVED BY D.A.H. Date 4-21-72 DRAWING NUMBER C2-107H
 By D.S. As SCC-513

AS CONSTRUCTED
REVISED DATE Oct 24, 1975

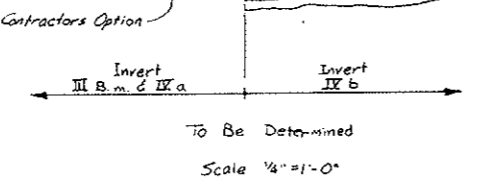
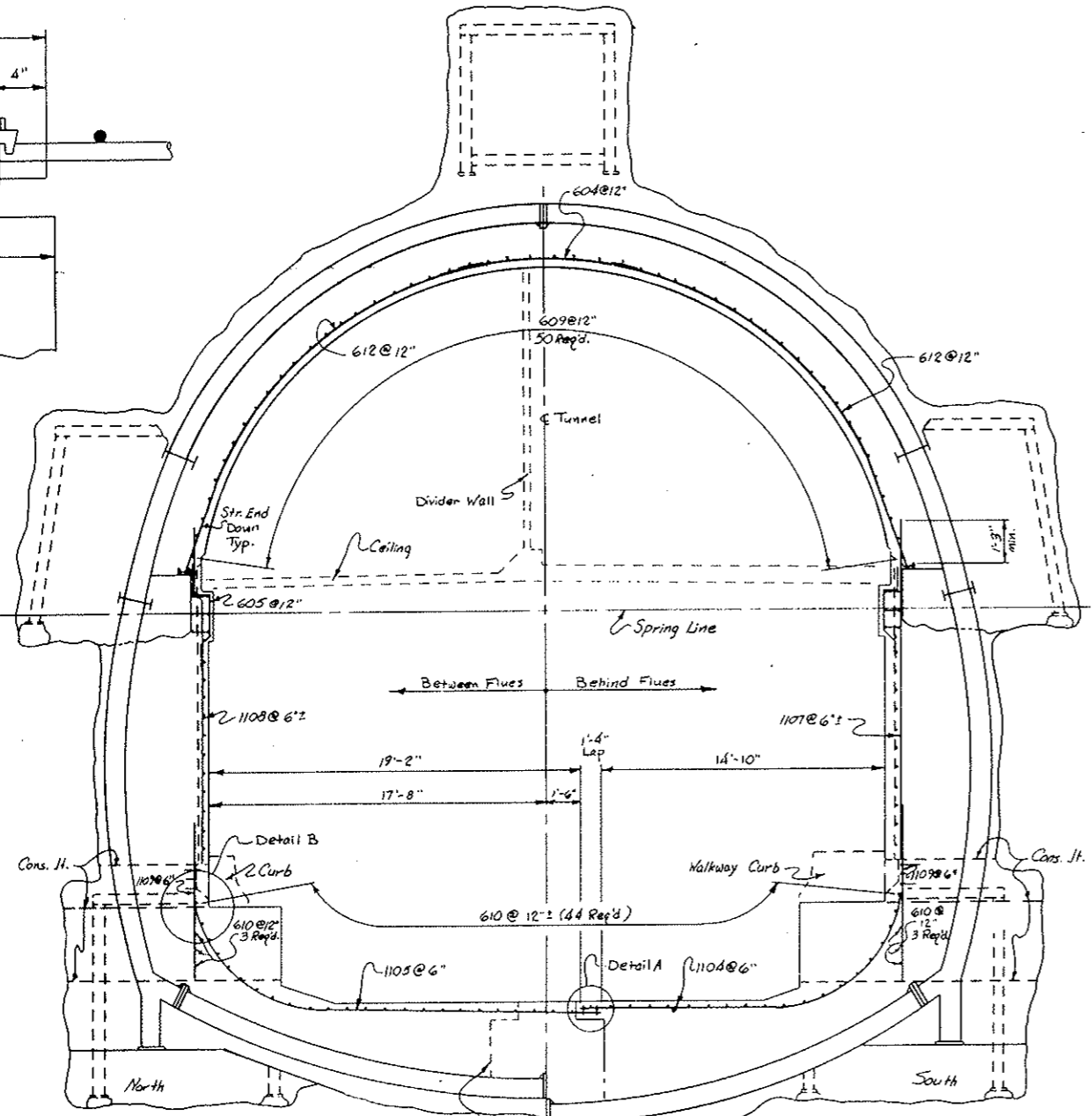
FEDERAL ROAD DISTRICT	PROJECT NO.	DATE	SCALE
9 COLORADO	1 70 3(54)229	RP 381X	1/2



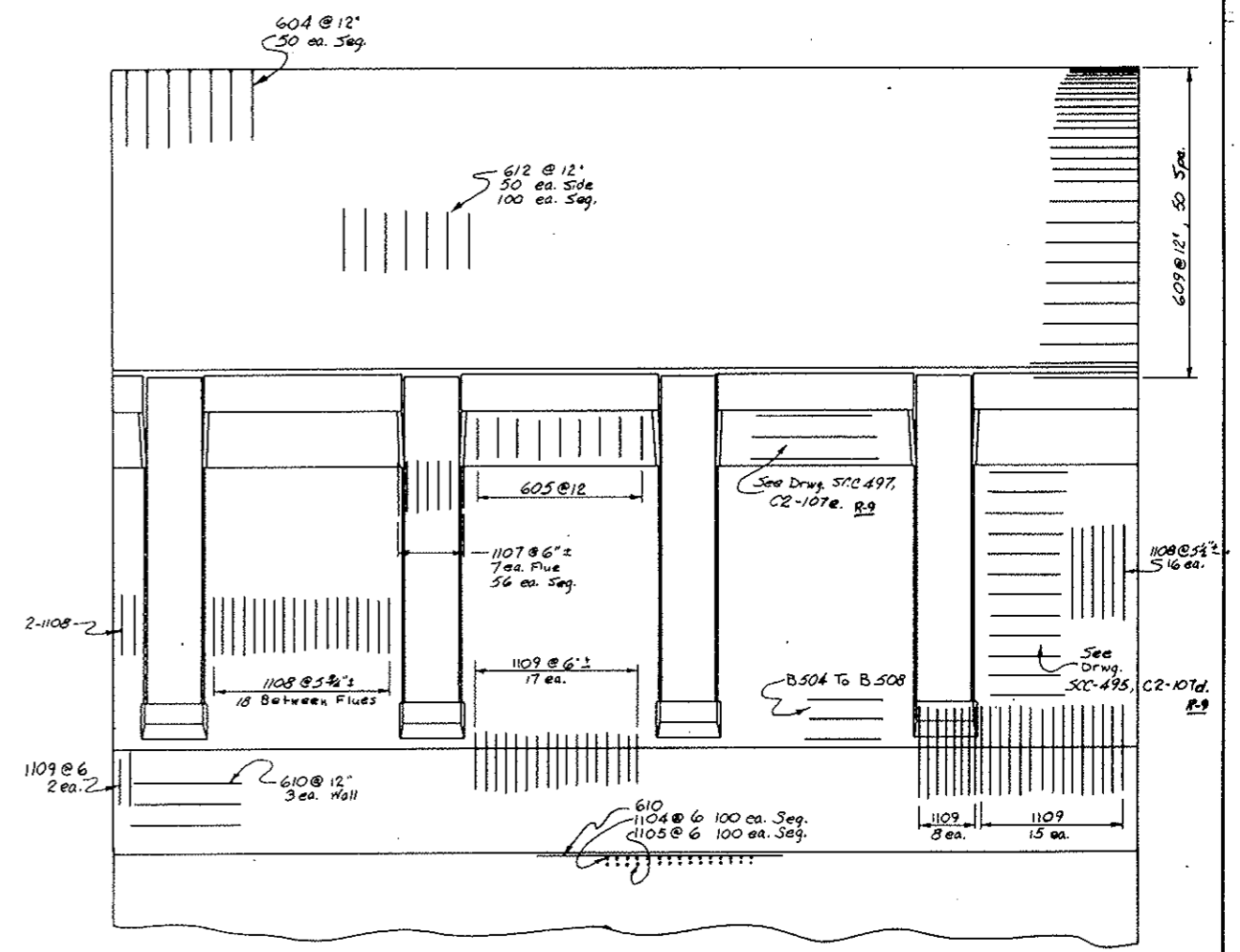
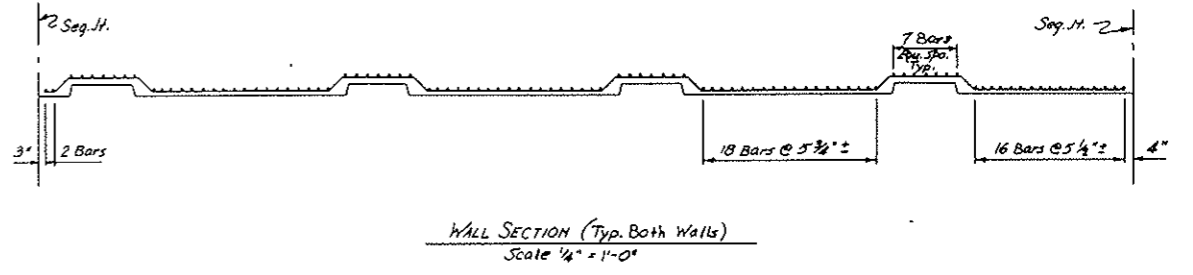
DETAIL - A
#1 Rebar Splice
w/ 2 1/8" Cable Clamps
Scale: 2" = 1'-0"



Detail B
N.T.S.

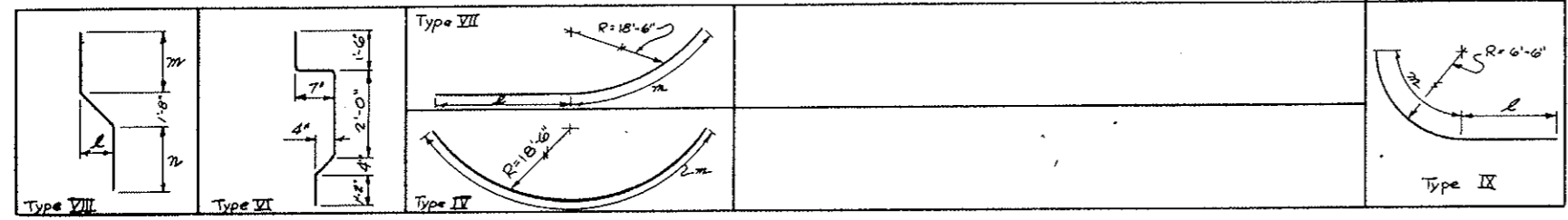


Note:
For Wall Truss Rebar See
Drwg. C2-107A
For Ledge Truss Rebar See
Drwg. C2-107B



Mark No.	Size	Type	Length	Dimensions			# Per Seg.	Location of Rebar
				l	m	n		
610	6	Str.	14'-3"				200	Lg. Inv.
604	6	IV	9'-6"	9'-6"			50	Crown
605	6	VI	5'-9"				74	Vert. Support
612	6	VII	23'-0"	4'-0"	19'-0"		100	Arch. Sp.
1107	11	Str.	18'-2"				56	Wall Br. F.
1108	11	VIII	18'-4"	4"	4'-0"	12'-6"	144	Wall Br. F.
609	6	Str.	26'-0"				100	Lg. Arch.
1104	11	II	20'-9"	10'-7"	10'-2"		100	Invert
1105	11	II	25'-5"	15'-1"	10'-2"		100	Invert
1109	11	Str.	10'-8"				200	Low. Wall

NOTE:
Turn 1108 @ Pull Boxes
Stations: 85+38.83 TO 100+46.33

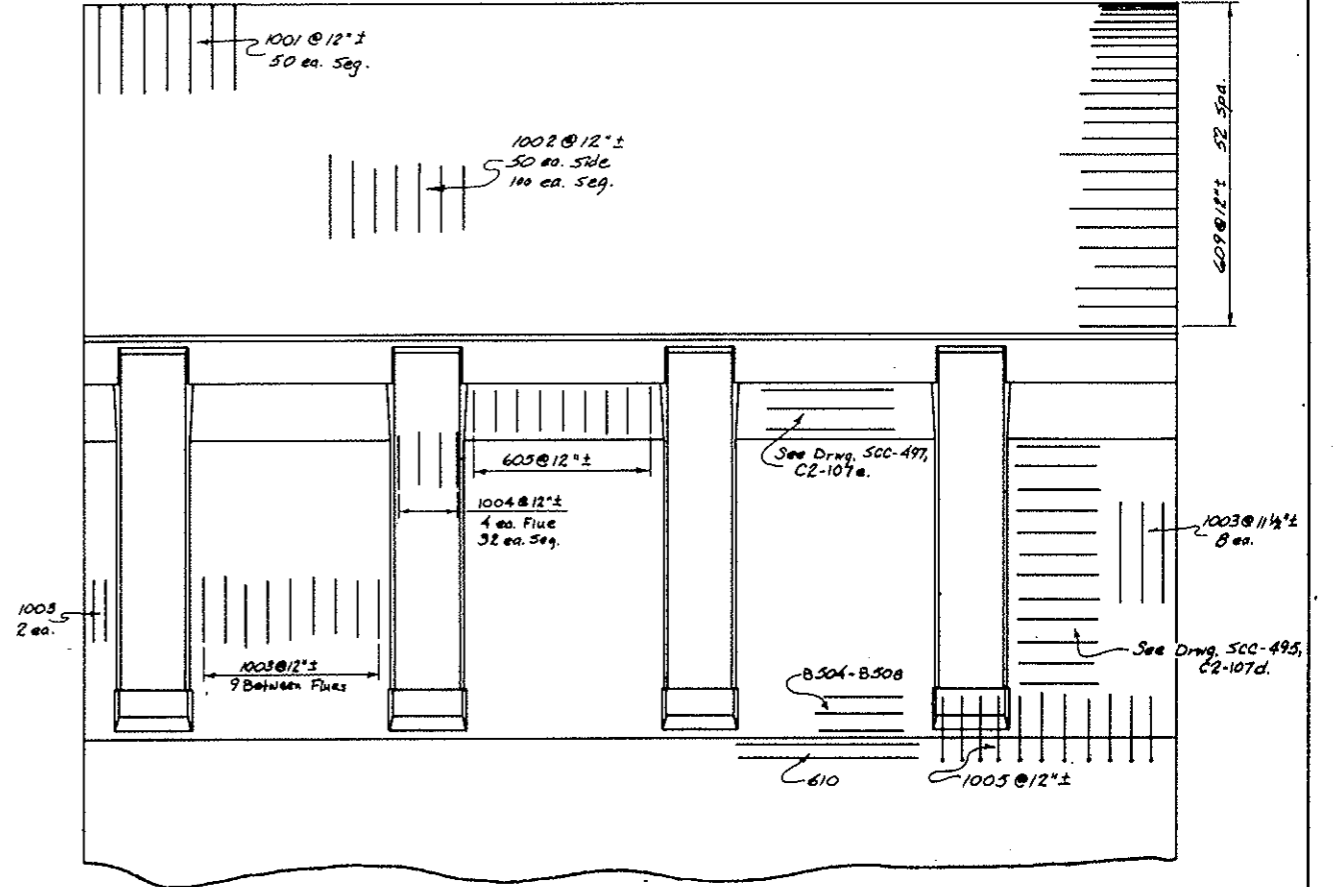
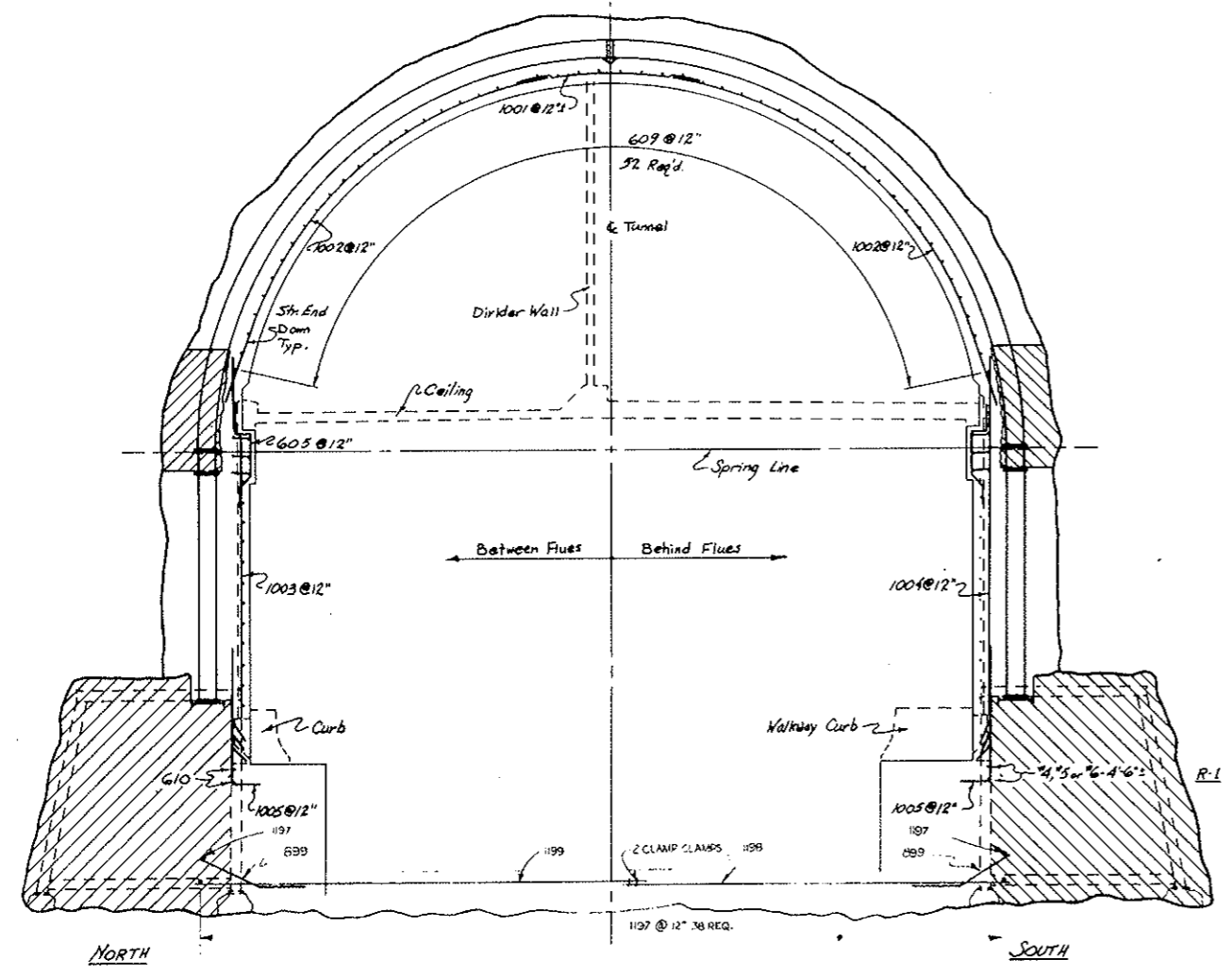
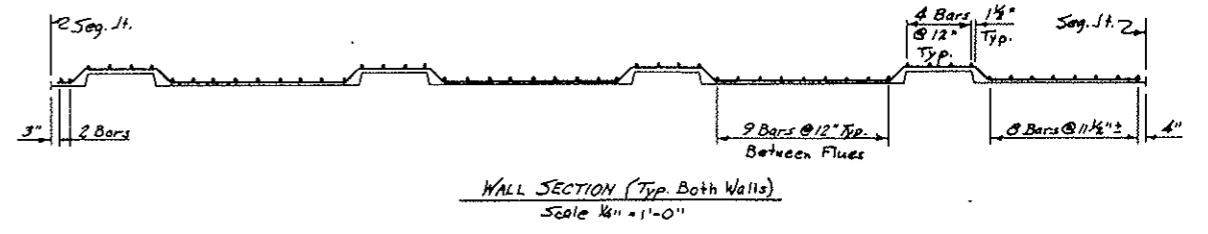


Use also B504 thru B508 in Stub Wall
Use 200 ea. 1 3/8" Cable Clamps.

STATE OF COLORADO DIVISION OF HIGHWAYS			
Prepared By Straight Creek Constructors	SCALE None	DRAWN BY S. J. [Signature]	REVIEWED BY R. M. [Signature]
5 DRIFTS, REBAR SEGMENTS N94-N123			
DATE 1-22-72	APPROVED BY D.A.H. DATE 4-21-72 By D.S. At SEC-511	DRAWING NUMBER C2-107E	

AS CONSTRUCTED
REVISED DATE Oct 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	RP-381X	112



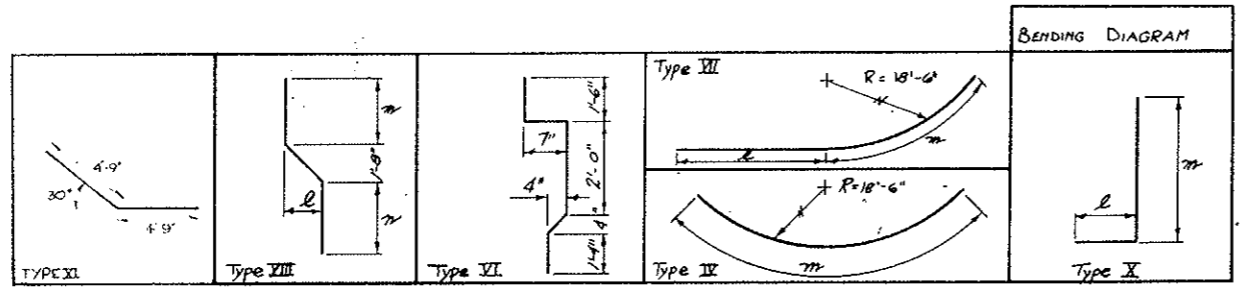
SECTION - ZONE 3
Scale 1/4" = 1'-0"

NOTE:
For Wall Truss Rebar See
Drawg. C2-107A
For Ledge Truss Rebar See
Drawg. C2-107B
FOR ROCK BOLTS LOCATIONS
+ SIZES IN INVERT SEE DWG. C2-13J

ZONE 3, BAR LIST

Mark No.	Size	Type	Length	Dimensions			# Per Seg.	Location Of Rebar
				L	m	n		
605	6	VI	5'-9"				74	Wrt. Soffit
609	6	Str.	26'-0"				104	Lg. Arch
610	6	Str.	14'-3"				16	Lg. Low Wall
880	8	II	9'-6"				100	INVERT
1001	10	IV	12'-10"				50	Crown
1002	10	VII	23'-0"	4'-0"	19'-0"		100	Arch Side
1003	10	VIII	18'-4"	4"	4'-0"	12'-6"	74	Wall Bth. F.
1004	10	Str.	18'-2"				32	Wall Bth. F.
1005	10	IX	8'-0"	1'-4"	6'-8"		106	Low Wall
1199	II	STR	23'-2"				50	INVERT FL
1198	II	STR	18'-8"				50	INVERT-R
1197	II	STR	28'-0"				80	INVERT

Stations ~~109+4.99~~ to ~~109+00.58~~



Use B.504-B.508 In Stub Wall PER DRAWING C2-104-C2-105
LENGTH + NUMBER OF BARS MAY VARY WITH FIELD
CONDITIONS AND LOCATIONS OF GROUTED REBAR ANCHORS.

ZONE 3

STATE OF COLORADO
DIVISION OF HIGHWAYS

Prepared By
Straight Creek Constructors

SCALE
1/4" = 1'-0"

DRAWN BY
R.M. GAITHER

REVISIONS

SEGMENTS N124-N140 REBAR PATTERN

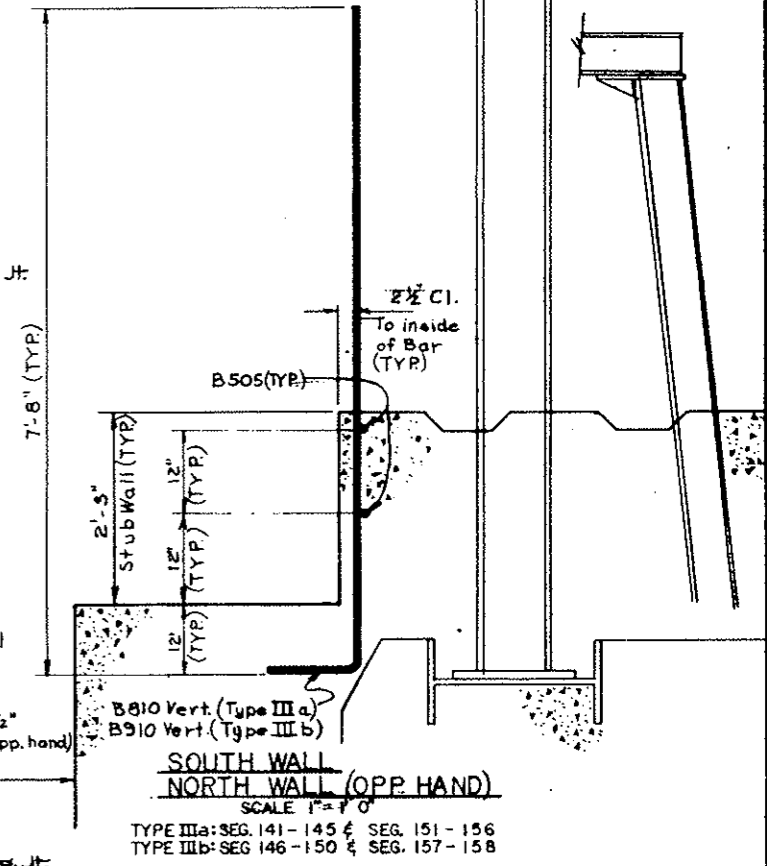
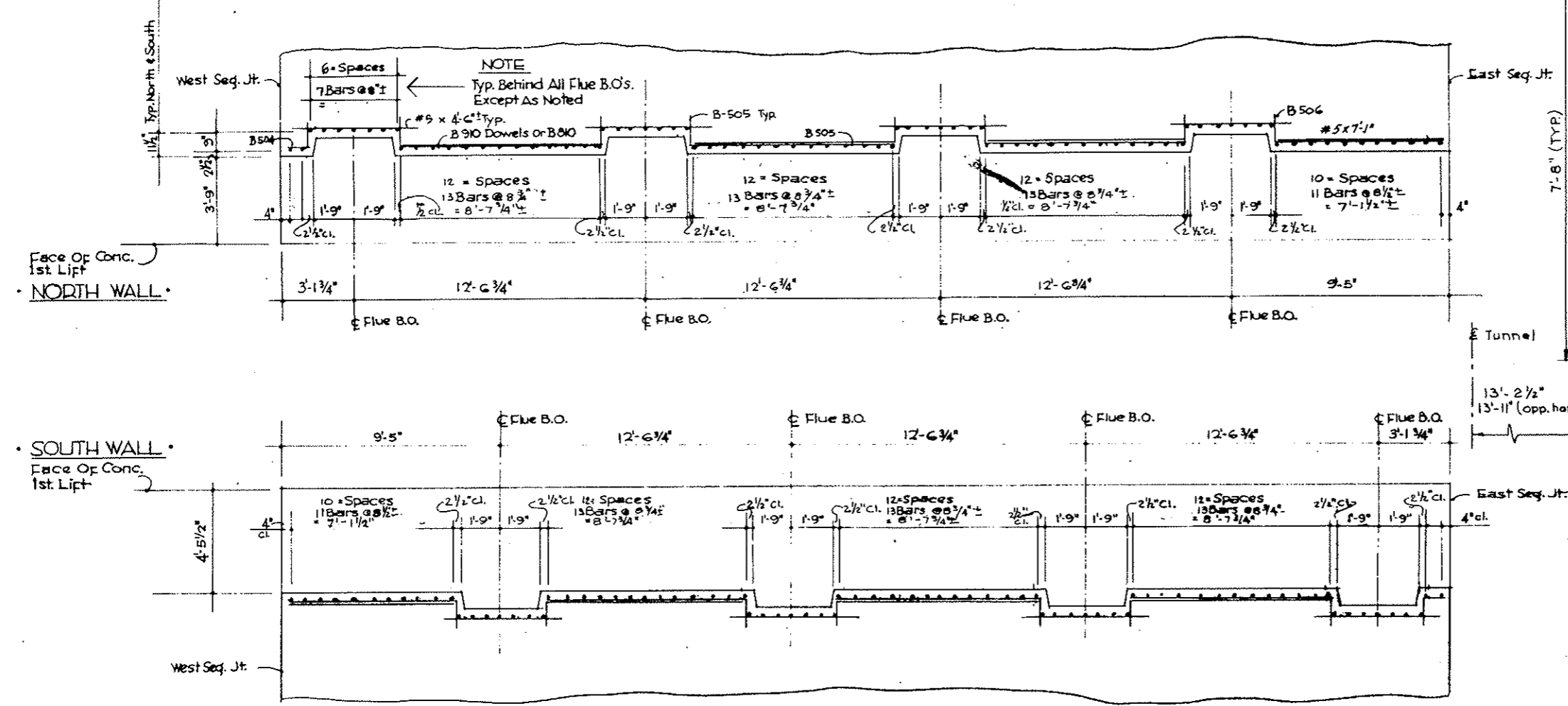
DATE
4-18-72

APPROVED BY
DOH, Date 4-24-72
By D.S.

DRAWING NUMBER
C2-107J

SECTION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3134220	RP 58 KX	112

AS CONSTRUCTED
REVISED DATE Oct 26, 1975



NOTES

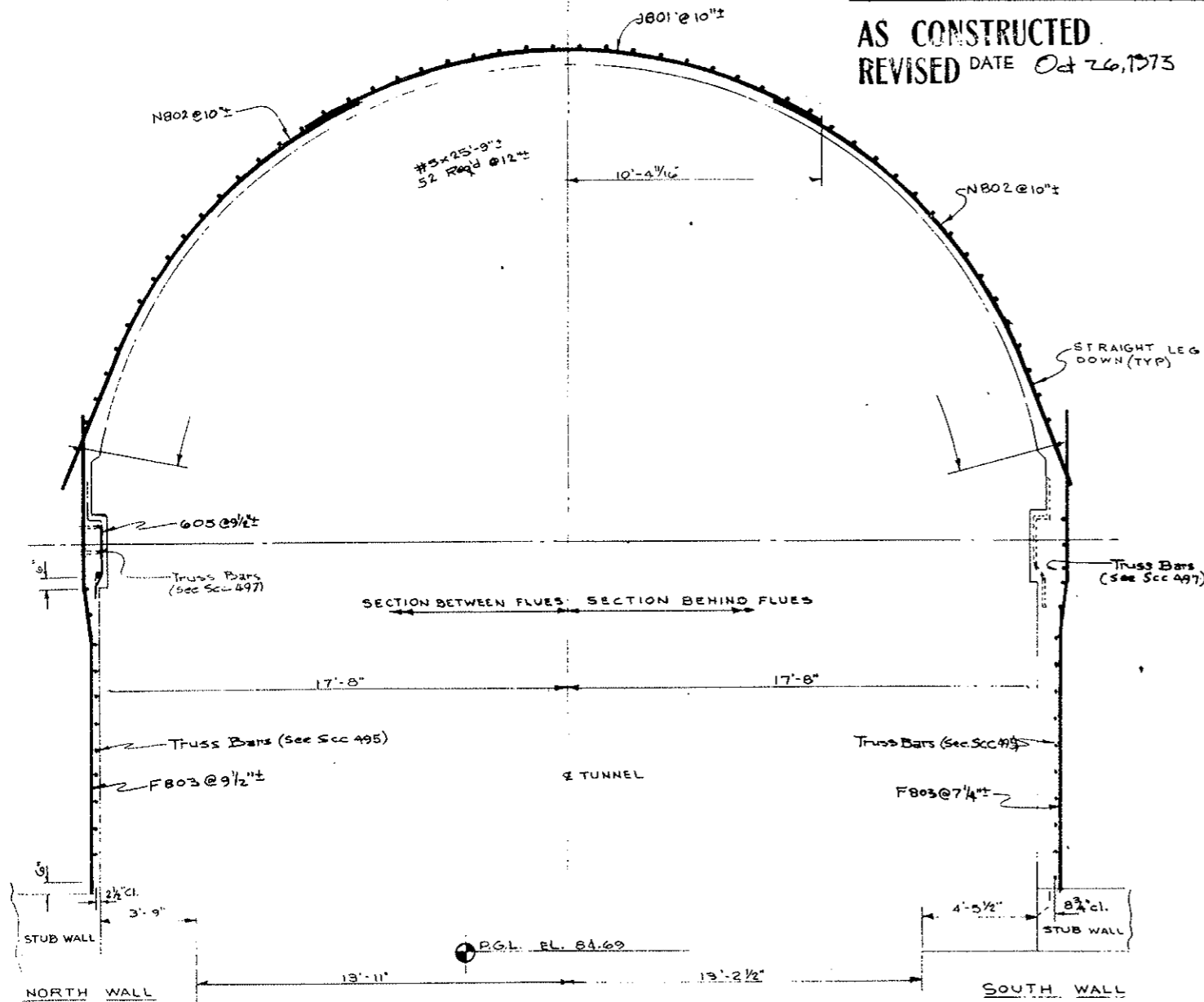
- Rebar Behind Flue Shown In III b Section For III a Sect. Change Fr. 6 = Spaces To 4 = Spaces & Use B-810 Verts (#8)
- In III a & III b Sect. Verts Along Face Are Spaced Same, Except Use B910 (#9) In III b Sect. & B810 In III a Sect.
- Straight #5's x 4'-6" Shown, B505's, B511's #5 x 7'-3" Are In 2nd Curb Lift.
- 9'-2" Leg Of B505 To Be Cut To 8'-8" To Allow For Added Flue B.O. Width.
- #5 Bar 7'-3" / Cut To 7'-1"
- B504, Leg Cut To 10"
- B506, Leg Cut To 7'-1"
- For #4 Dowels x 1'-6" See SCC 437 For Location

ZONE 4

STATE OF COLORADO	
DIVISION OF HIGHWAYS	
SCALE	DRAWN BY
7/8"=1'-0"	JOC/TK
SEGMENTS N141-N158 CURB REBAR LAYOUT	
DATE	APPROVED BY
1/4/72	SCC-471
DESIGNED BY	
C2-107K	

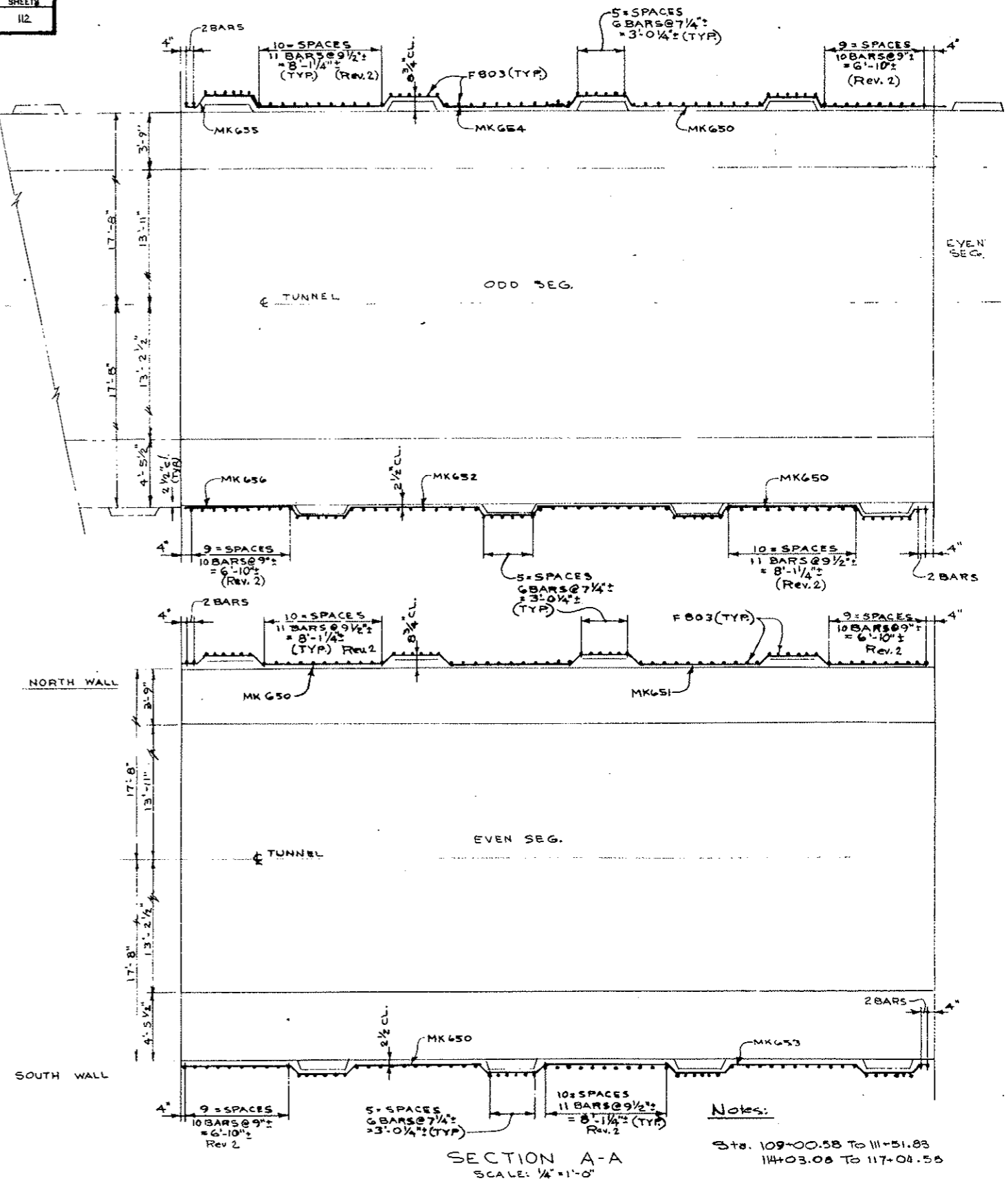
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(34)220	RP 381X	112

AS CONSTRUCTED
 REVISED DATE Oct 26, 1973



TUNNEL SECTION LOOKING EAST
 SCALE: 3/8" = 1'-0"

NOTE:
 FOR WALL TRUSS REBAR SEE
 DWG C2-107A
 FOR LEDGE TRUSS REBAR SEE
 DWG C2-107B.

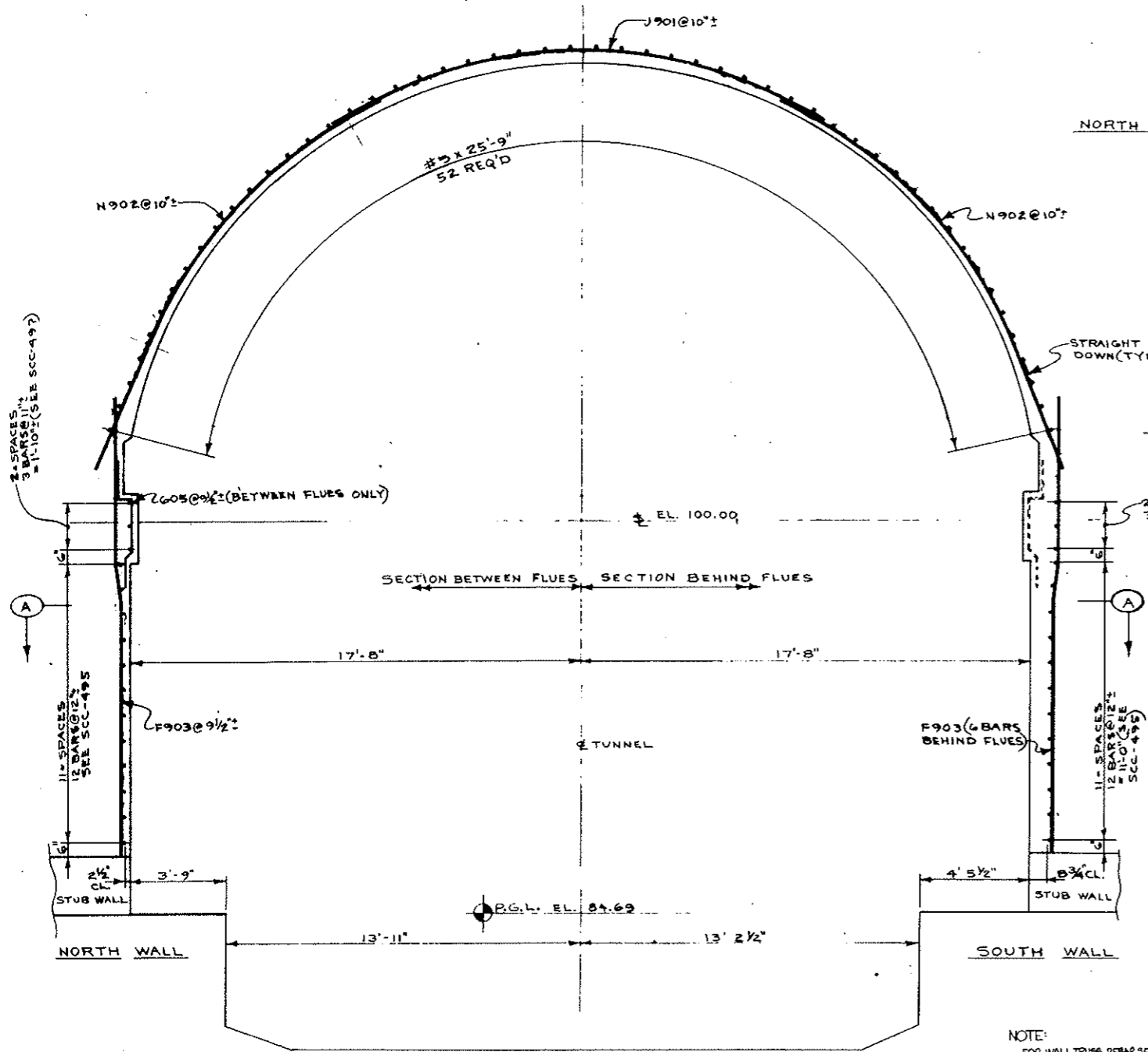


Notes:
 Sta. 109+00.58 To 111+51.83
 114+03.08 To 117+04.58

ZONE 4		
STATE OF COLORADO		
DIVISION OF HIGHWAYS		
TYPE IIIa	NOTED	2/3/73
ARCH & SIDEWALL REBAR - SEG. N41-N45-N51-N56		
4-28-72	SCC 556	C2-107L

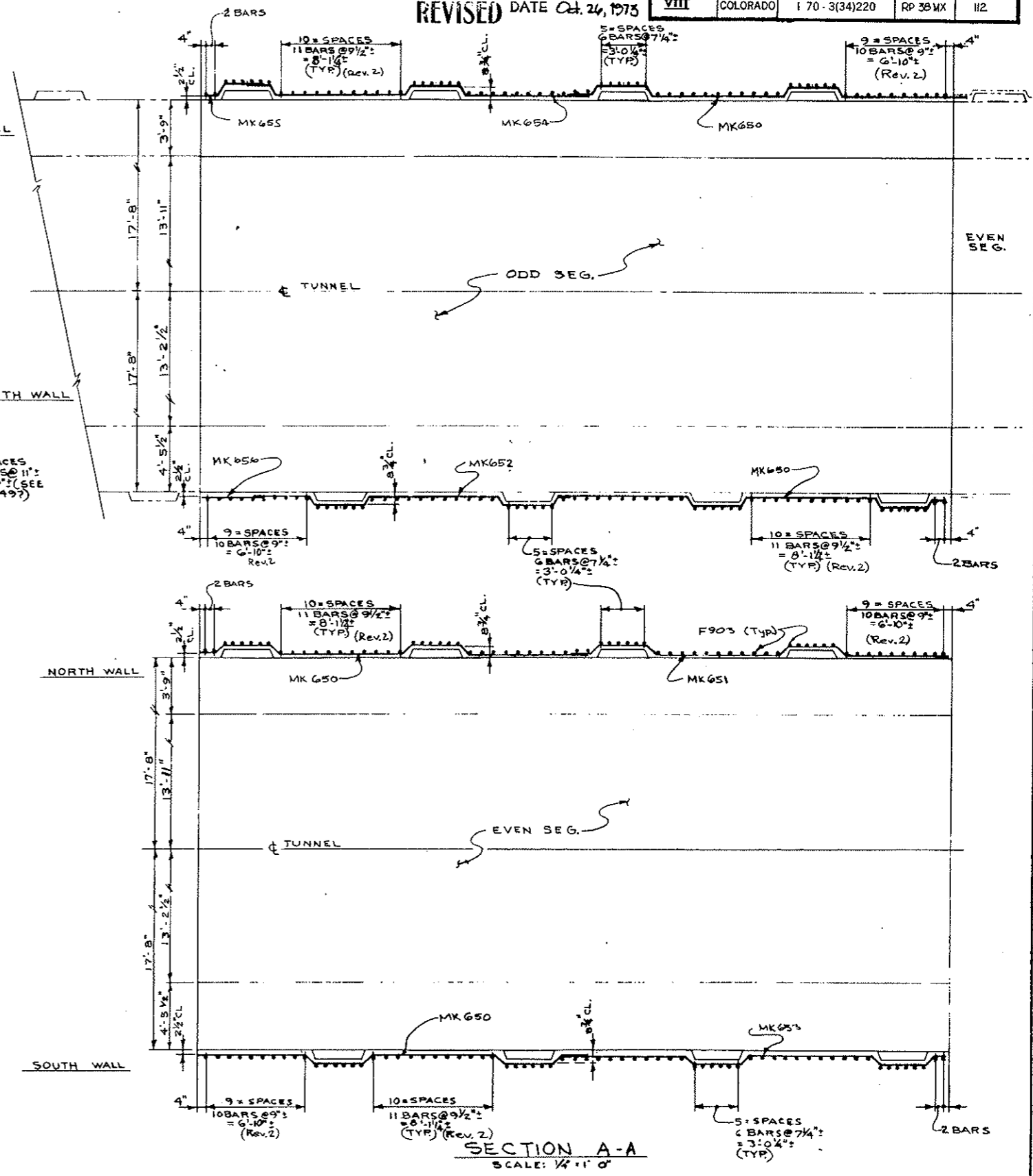
AS CONSTRUCTED
REVISED DATE Oct. 24, 1975

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(34)220	RP 38 MX	112



TUNNEL SECTION LOOKING EAST
SCALE: 3/8" = 1'-0"

NOTE:
FOR WALL TRUSS REBAR SEE
DWG. C2-107A
FOR LEDGE TRUSS REBAR SEE
DWG. C2-107B

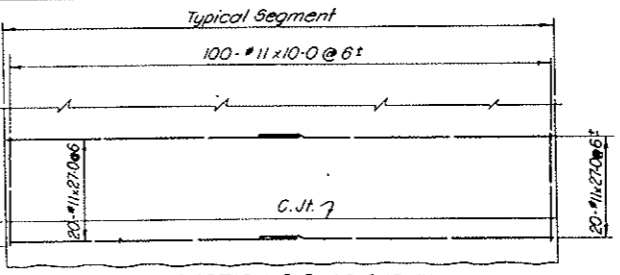
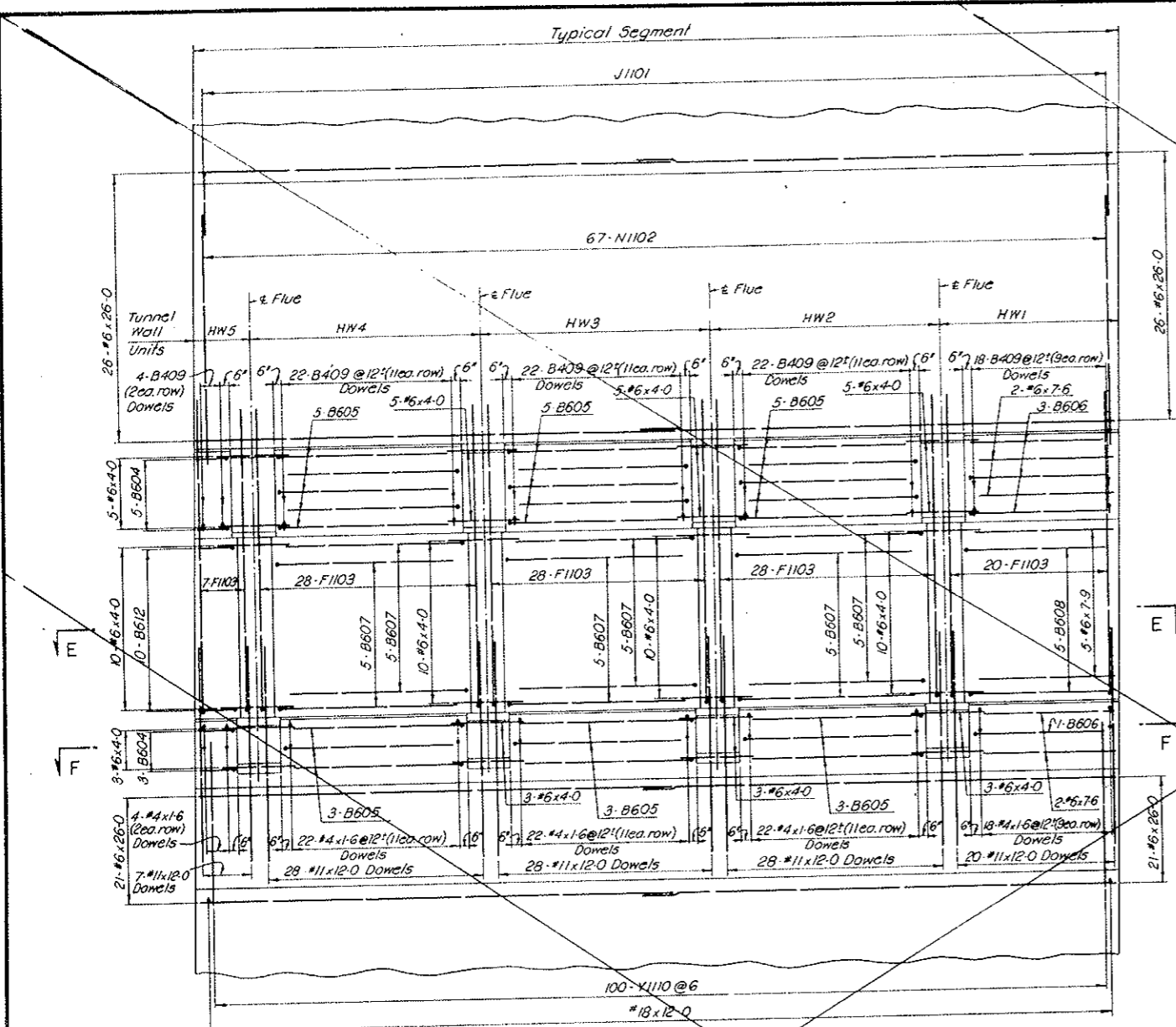


SECTION A-A
SCALE: 1/4" = 1'-0"

ZONE 4

STATE OF COLORADO	
DIVISION OF HIGHWAYS	
TYPE IIIb	SCALE NOTED
ARCH & SIDEWALL REBAR	
SEGMENTS N146-N150-N157-N158	
DATE 4-28-72	APPROVED BY SCC-561
DRAWING NUMBER C2-107M	

VOID
BY CONSTRUCTION
Oct 26, 1973



REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS

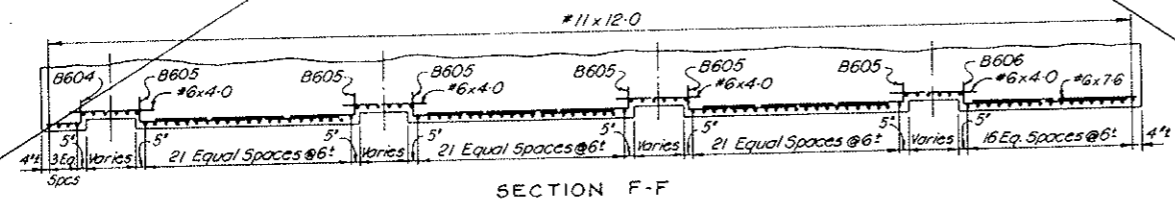
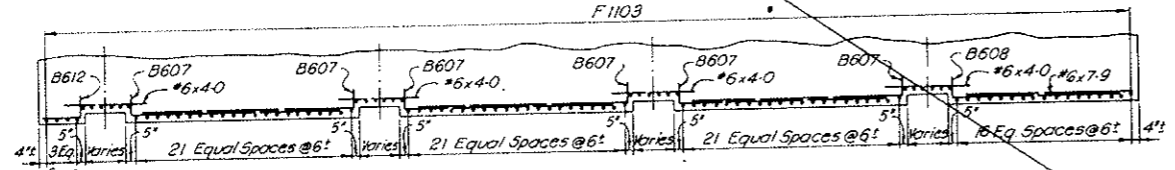
DIMENSIONS

BAR MARK	NO.	REQ'D	BAR SIZE	BAR LENGTH	B	C	D	E	H	R	R'
INVERT											
Y1110	200	#11	20-10	4-0	4-4	12-6			37-9	0-6	
ARCH											
J1101	67	#11	23-4		21-7			3-9	17-6		
N1102	134	#11	19-6	5-8	13-0				18-3		
LW1											
F1103	7	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B604	8	#6	2-9	1-0	1-9						
B612	10	#6	3-0	1-0	2-0						
B409	4	#4	1-10	0-4	1-6						
LW2											
F1103	28	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B605	8	#6	10-2	1-0	9-2						
B607	10	#6	10-8	1-0	9-8						
B409	22	#4	1-10	0-4	1-6						
LW3											
F1103	28	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B605	8	#6	10-2	1-0	9-2						
B607	10	#6	10-8	1-0	9-8						
B409	22	#4	1-10	0-4	1-6						
LW4											
F1103	28	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B605	8	#6	10-2	1-0	9-2						
B607	10	#6	10-8	1-0	9-8						
B409	22	#4	1-10	0-4	1-6						
LW5											
F1103	20	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B606	4	#6	8-6	1-0	7-6						
B608	5	#6	8-9	1-0	7-9						
B409	18	#4	1-10	0-4	1-6						
HW1											
F1103	20	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B606	4	#6	8-6	1-0	7-6						
B608	5	#6	8-9	1-0	7-9						
B409	18	#4	1-10	0-4	1-6						
HW2											
F1103	28	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B-605	8	#6	10-2	1-0	9-2						
B-607	10	#6	10-8	1-0	9-8						
B-409	22	#4	1-10	0-4	1-6						
HW3											
F1103	28	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B-605	8	#6	10-2	1-0	9-2						
B-607	10	#6	10-8	1-0	9-8						
B-409	22	#4	1-10	0-4	1-6						
HW4											
F1103	28	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B-605	8	#6	10-2	1-0	9-2						
B-607	10	#6	10-8	1-0	9-8						
B-409	22	#4	1-10	0-4	1-6						
HW5											
F1103	7	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B-604	8	#6	2-9	1-0	1-9						
B-612	10	#6	3-0	1-0	2-0						
B-409	4	#4	1-10	0-4	1-6						

REINFORCEMENT SCHEDULE - STRAIGHT BARS

NO. REQ'D	BAR SIZE	BAR LENGTH
OUTSIDE FACE		
80	#11	27-0
200	#11	10-0
INVERT		
75	#18	12-0
84	#6	26-0
ARCH		
104	#6	26-0
LW1		
7	#11	12-0
18	#6	4-0
4	#4	1-6
LW2		
28	#11	12-0
18	#6	4-0
22	#4	1-6
LW3		
28	#11	12-0
18	#6	4-0
22	#4	1-6
LW4		
20	#11	12-0
5	#6	7-9
4	#6	7-6
18	#4	1-6
HW1		
20	#11	12-0
5	#6	7-9
4	#6	7-6
18	#4	1-6
HW2		
28	#11	12-0
18	#6	4-0
22	#4	1-6
HW3		
28	#11	12-0
18	#6	4-0
22	#4	1-6
HW4		
28	#11	12-0
18	#6	4-0
22	#4	1-6
HW5		
7	#11	12-0
18	#6	4-0
4	#4	1-6

SECTION B-B
(INSIDE ELEVATION - HIGH WALKWAY SIDE)



NOTES:
For notes see Dwg. C2-107

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL - TUNNEL REINFORCEMENT
STANDARD SEGMENT
TUNNEL SECTION TYPE IIIa
LINING - INSIDE FACE - SHEET 2 OF 2

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: H.F.M.C.
DRAWN: R.B.
CHECKED: R.B.A.
SUBMITTED: [Signature]
[Signature]
NEW YORK, N. Y.

RECOMMENDED: [Signature]
[Signature]
[Signature]
NEW YORK, N. Y.

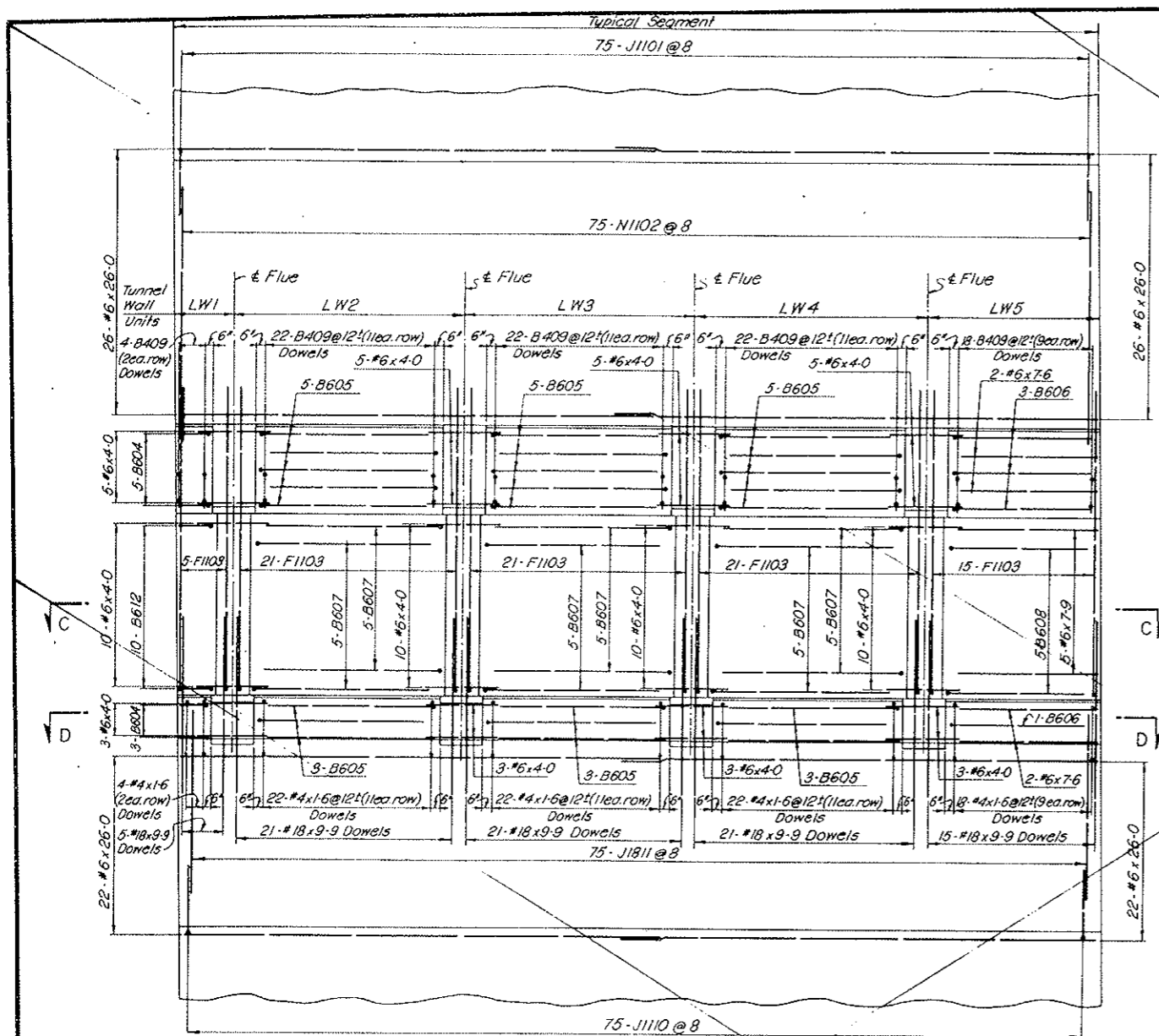
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DATE: NOV. 1967

DRAWING NO. C2-108

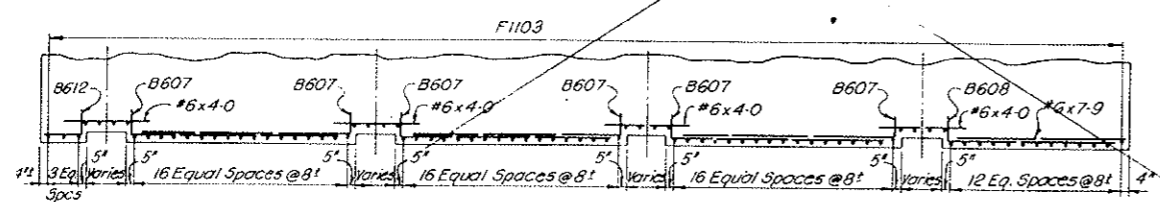
All bent bar marks to be prefixed by No. C2-107

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-40	112

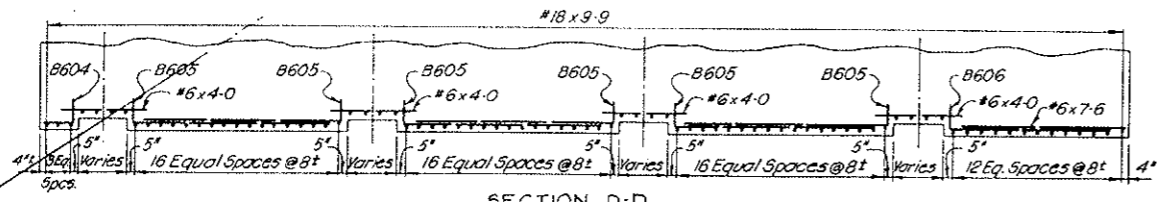
VOID
BY CONSTRUCTION
0.7 26, 1973



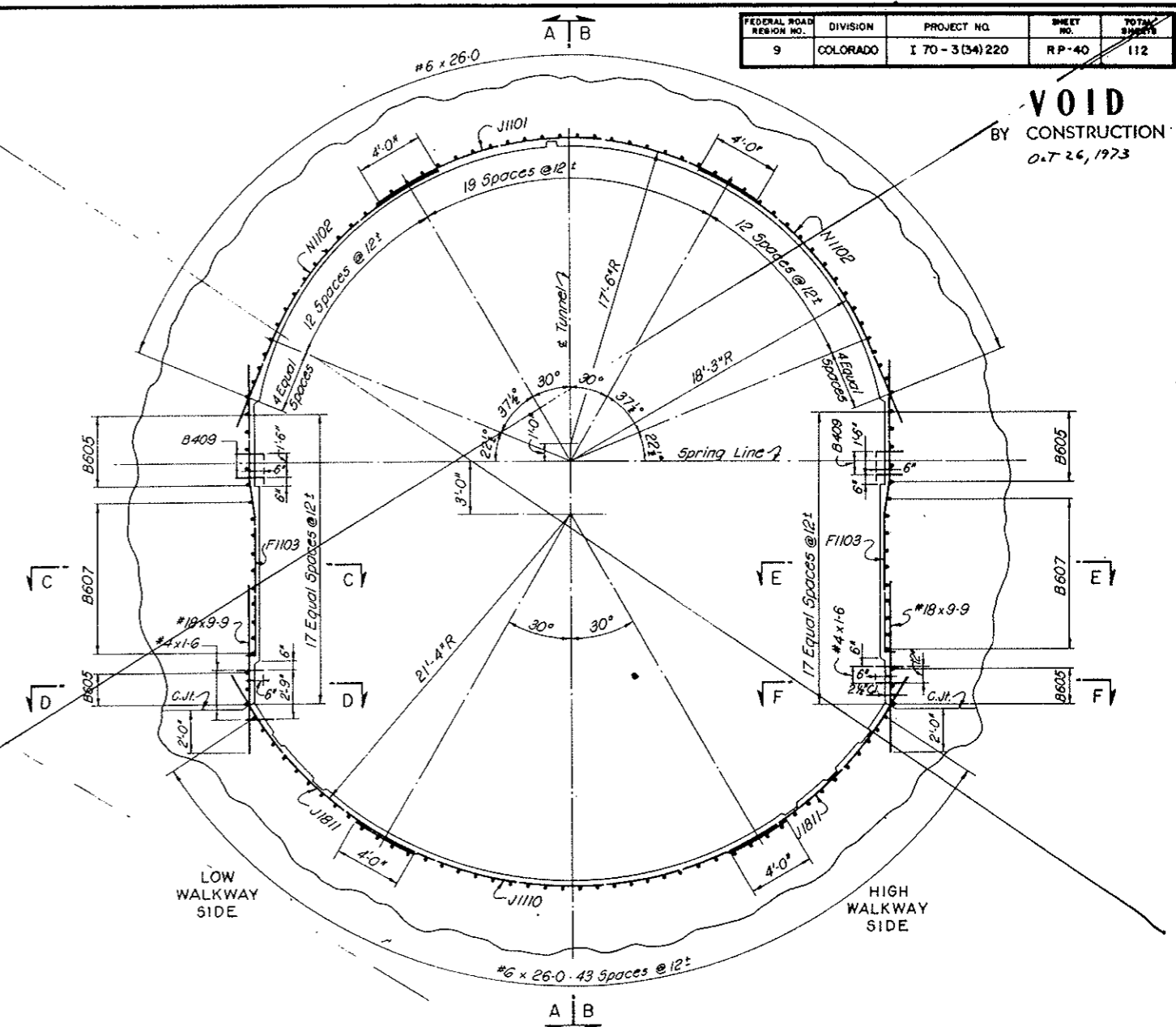
SECTION A-A
(INSIDE ELEVATION - LOW WALKWAY SIDE)



SECTION C-C



SECTION D-D

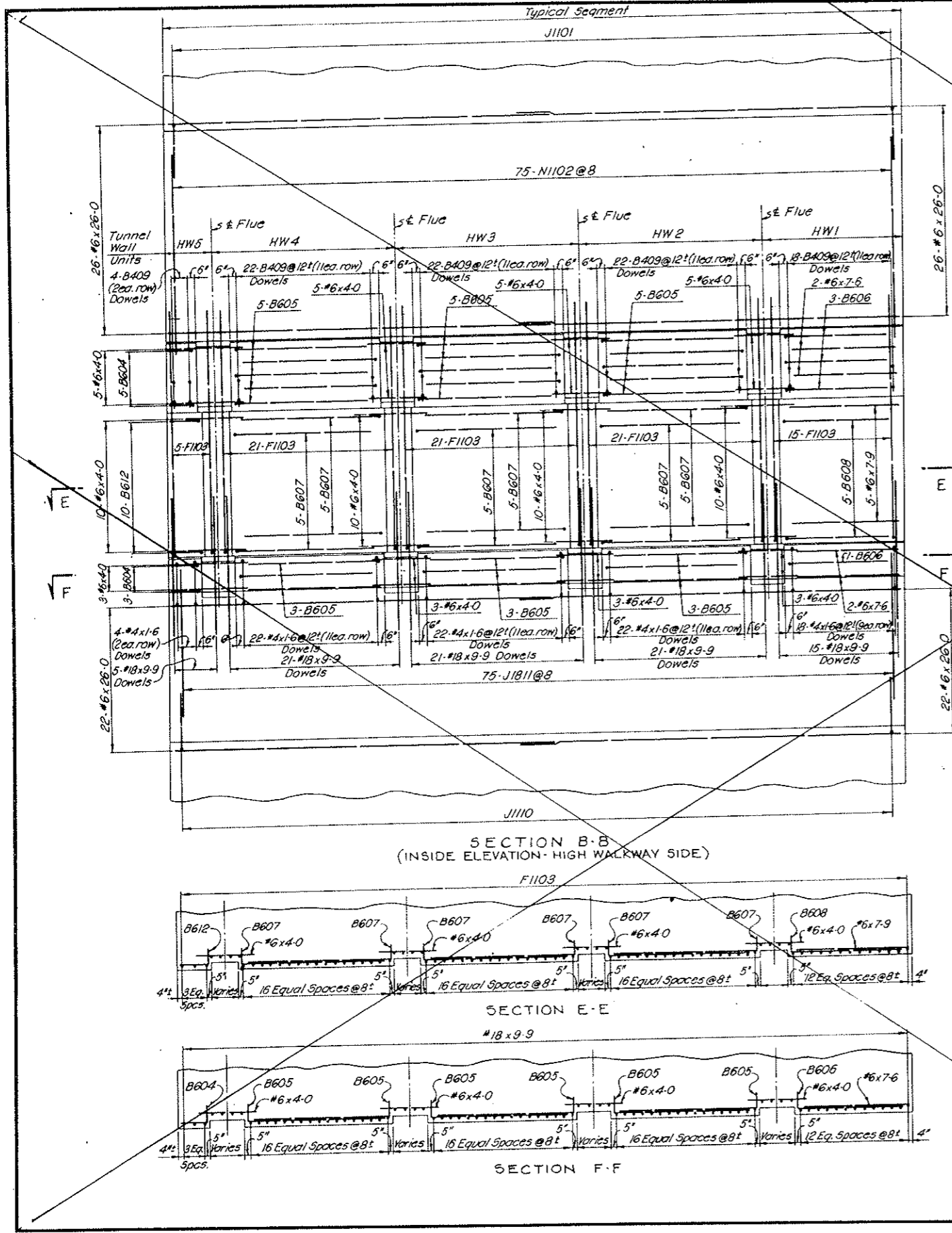


TYPICAL TRANSVERSE SECTION - LOOKING EAST
NORTH TUNNEL AS SHOWN - SOUTH TUNNEL OPPOSITE HAND
(TAKEN BETWEEN FLUES)

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-14.
For General Reinforcement Notes see Dwg. C2-103.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - TUNNEL REINFORCEMENT STANDARD SEGMENT TUNNEL SECTION TYPE IIb - STA. WB 80 TO WB 97 LINING - INSIDE FACE - SHEET 1 OF 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. McC.	RECOMMENDED: R.B.				
DRAWN: R.B.A.	CHECKED: R.B.A.				
SUBMITTED: [Signature]	APPROVED: [Signature]				
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"	DATE: NOV. 1967		
					DRAWING NO. C2-109

VOID
BY CONSTRUCTION
OCT 26, 1973



REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS

BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS							
				B	C	D	E	H	R		
INVERT											
J1811	150	#18	15-0				14-8			1-4	21-4
J1110	75	#11	26-4				24-8			3-11	21-4
ARCH											
J1101	75	#11	22-4				20-2			3-5	17-6
N1102	150	#11	19-6	5-8			13-10				18-3
LW1											
F1103	5	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B604	8	#6	2-9	1-0	1-9						
B612	10	#6	3-0	1-0	2-0						
B409	4	#4	1-10	0-4	1-6						
LW2											
F1103	21	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B605	8	#6	10-2	1-0	9-2						
B607	10	#6	10-8	1-0	9-8						
B409	22	#4	1-10	0-4	1-6						
LW3											
F1103	21	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B605	8	#6	10-2	1-0	9-2						
B607	10	#6	10-8	1-0	9-8						
B409	22	#4	1-10	0-4	1-6						
LW4											
F1103	21	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B605	8	#6	10-2	1-0	9-2						
B607	10	#6	10-8	1-0	9-8						
B409	22	#4	1-10	0-4	1-6						
LW5											
F1103	15	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B606	4	#6	8-6	1-0	7-6						
B608	5	#6	8-9	1-0	7-9						
B409	18	#4	1-10	0-4	1-6						
HW1											
F1103	15	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B606	4	#6	8-6	1-0	7-6						
B608	5	#6	8-9	1-0	7-9						
B409	18	#4	1-10	0-4	1-6						
HW2											
F1103	21	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B605	8	#6	10-2	1-0	9-2						
B607	10	#6	10-8	1-0	9-8						
B409	22	#4	1-10	0-4	1-6						
HW3											
F1103	21	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B605	8	#6	10-2	1-0	9-2						
B607	10	#6	10-8	1-0	9-8						
B409	22	#4	1-10	0-4	1-6						
HW4											
F1103	21	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B605	8	#6	10-2	1-0	9-2						
B607	10	#6	10-8	1-0	9-8						
B409	22	#4	1-10	0-4	1-6						
HW5											
F1103	5	#11	17-4	0-6	8-3	1-6	7-1	0-3			
B604	8	#6	2-9	1-0	1-9						
B612	10	#6	3-0	1-0	2-0						
B409	4	#4	1-10	0-4	1-6						

REINFORCEMENT SCHEDULE

STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
88	#6	26-0
INVERT		
104	#6	26-0
ARCH		
LW1		
5	#18	9-9
18	#6	4-0
4	#4	1-6
LW2		
21	#18	9-9
18	#6	4-0
22	#4	1-6
LW3		
21	#18	9-9
18	#6	4-0
22	#4	1-6
LW4		
21	#18	9-9
18	#6	4-0
22	#4	1-6
LW5		
15	#18	9-9
5	#6	7-9
4	#6	7-6
18	#4	1-6
HW1		
15	#18	9-9
5	#6	7-9
4	#6	7-6
18	#4	1-6
HW2		
21	#18	9-9
18	#6	4-0
22	#4	1-6
HW3		
21	#18	9-9
18	#6	4-0
22	#4	1-6
HW4		
21	#18	9-9
18	#6	4-0
22	#4	1-6
HW5		
5	#18	9-9
18	#6	4-0
4	#4	1-6

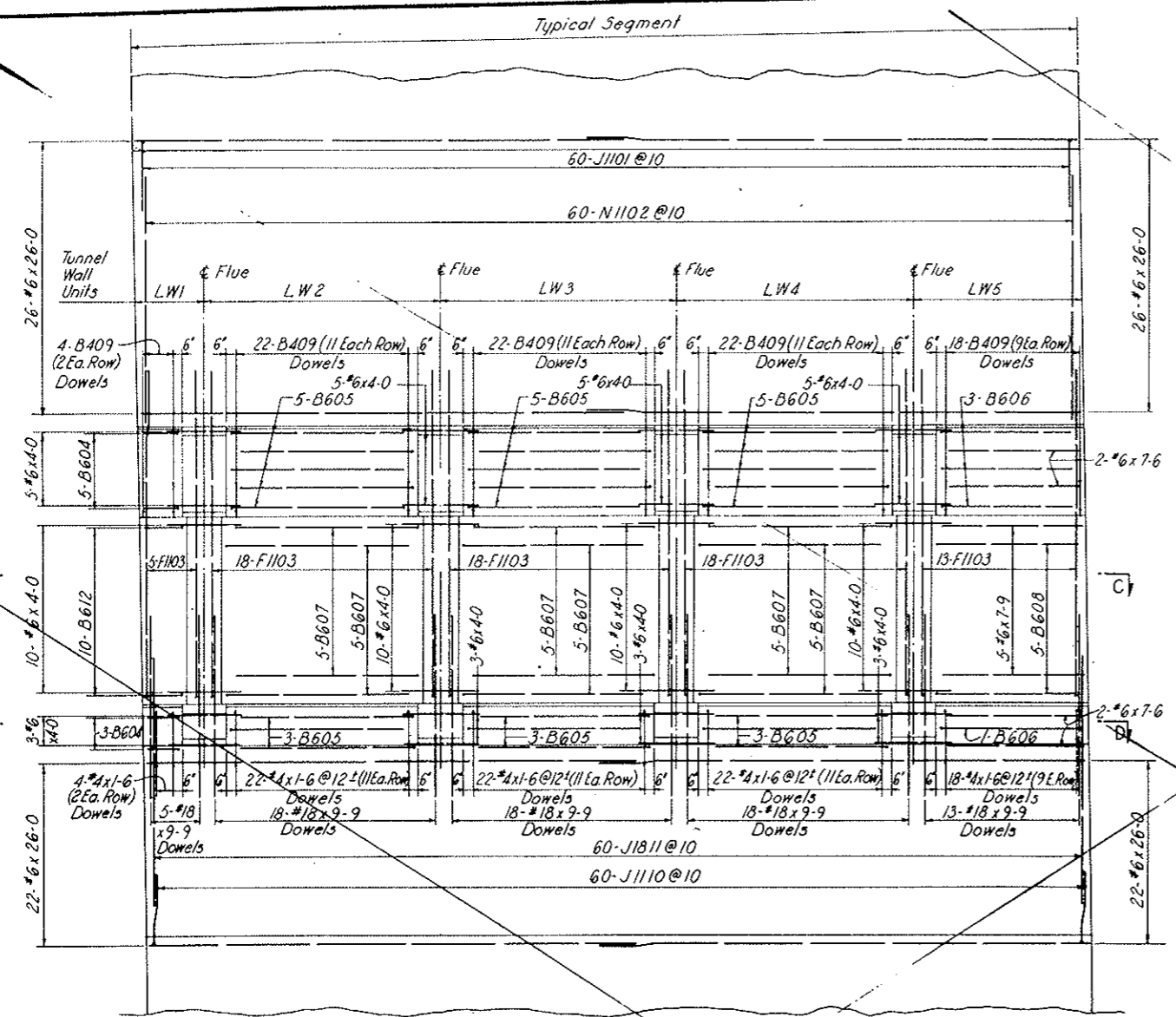
NOTES:
For notes see Dwg. C2-109.

All bent bar marks to be prefixed by No. C2-109

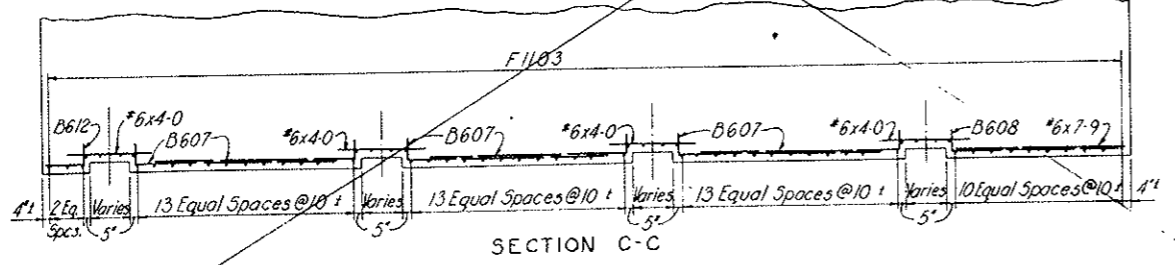
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT STANDARD SEGMENT TUNNEL SECTION TYPE II b - STA. WB.80 TO WB. 97 LINING - INSIDE FACE - SHEET 2 OF 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H. F. MCC.	RECOMMENDED:	<i>Robert J. ...</i>	DRAWING NO.	C2-110
DRAWN:	R. B.	CHECKED:	R. B. A.	DATE:	NOV. 1967
SUBMITTED:	<i>...</i>	APPROVED:	<i>...</i>	SCALE:	1/4" = 1'-0"
NEW YORK, N. Y.					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	R P-42	112

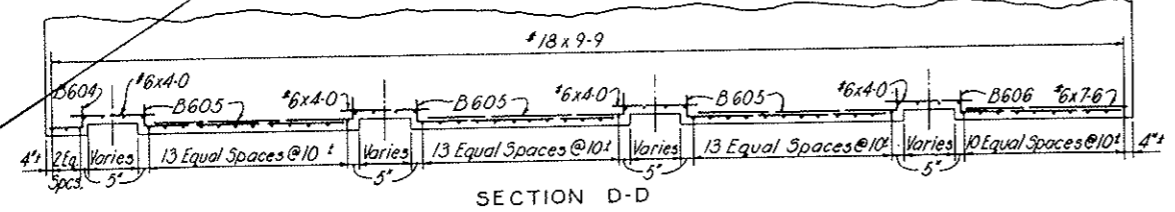
VOID BY CONSTRUCTION
Oct 26, 1973



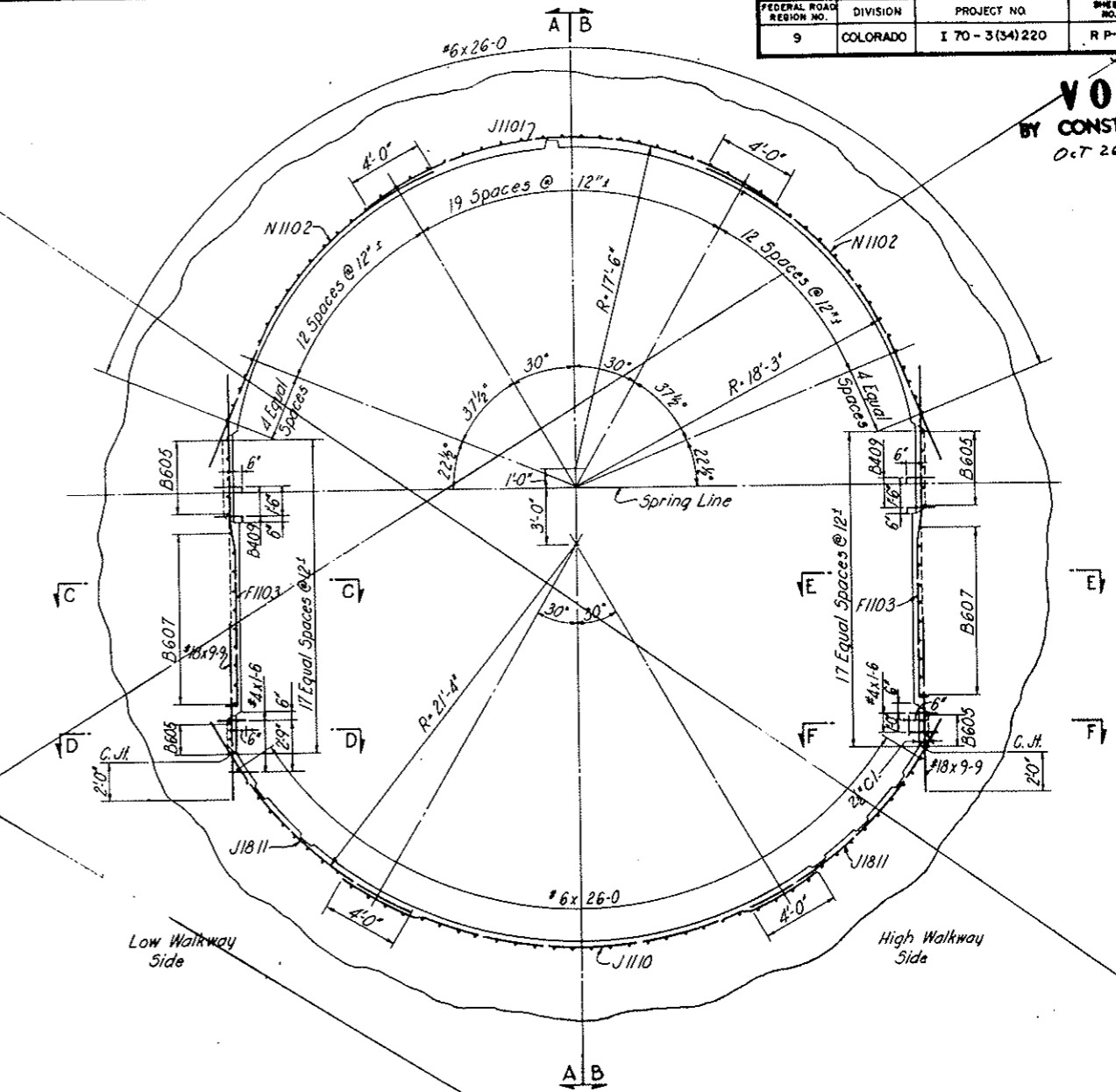
SECTION A-A
(INSIDE ELEVATION-LOW WALKWAY SIDE)



SECTION C-C



SECTION D-D



TYPICAL TRANSVERSE SECTION - LOOKING EAST NORTH TUNNEL AS SHOWN - SOUTH TUNNEL OPPOSITE HAND (TAKEN BETWEEN FLUES)

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-14.
For General Reinforcement Notes see Dwg. C2-10.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT STANDARD SEGMENT					
TUNNEL SECTION TYPE 12b - STA WB. 97 TO WB. 100 LINING - INSIDE FACE - SHEET 1 OF 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	H.F. McC.	RECOMMENDED			
DRAWN	J.E.G.	CHECKED			
CHECKED	R.B.A.	APPROVED			
SUBMITTED					
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"	DATE: NOV. 1967		DRAWING NO.
					C2-111

VOID
BY CONSTRUCTION
Oct 26, 1967

REINFORCEMENT SCHEDULE - BENT BARS

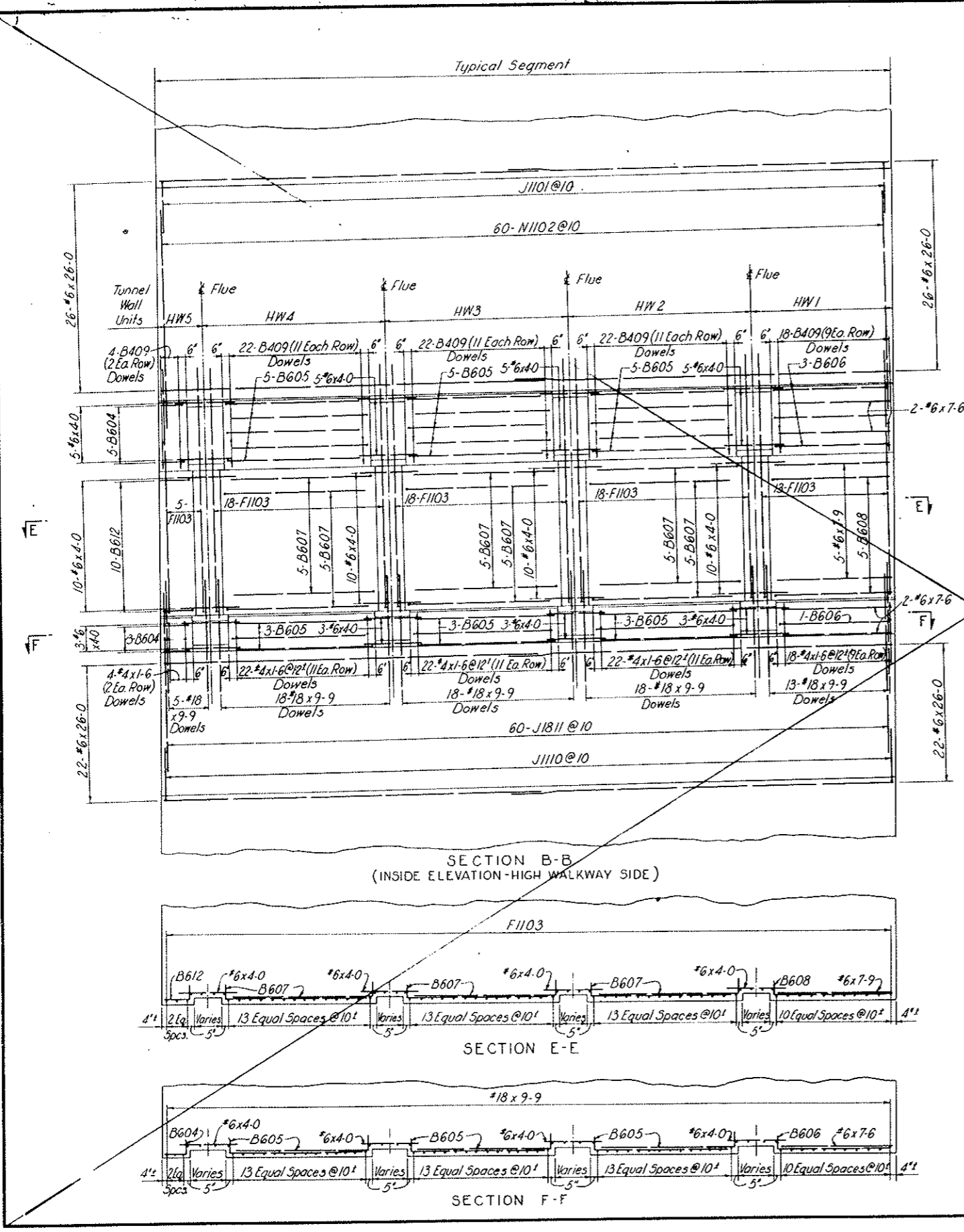
BENDING DIAGRAMS

BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS					
				B	C	D	E	H	R
INVERT									
J1811	120	#18	15-0		14-8			1-4	21-4
J1110	60	#11	26-4		24-8			3-11	21-4
ARCH									
J1101	60	#11	23-4		21-7			3-9	17-6
N1102	120	#11	19-6	5-8	13-10				18-3
L W 1									
F1103	5	#11	17-4	0-6	8-3	1-6	7-1	0-3	
B604	8	#6	2-9	1-0	1-9				
B612	10	#6	3-0	1-0	2-0				
B409	4	#4	1-10	0-4	1-6				
L W 2									
F1103	18	#11	17-4	0-6	8-3	1-6	7-1	0-3	
B605	8	#6	10-2	1-0	9-2				
B607	10	#6	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
L W 3									
F1103	18	#11	17-4	0-6	8-3	1-6	7-1	0-3	
B605	8	#6	10-2	1-0	9-2				
B607	10	#6	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
L W 4									
F1103	18	#11	17-4	0-6	8-3	1-6	7-1	0-3	
B605	8	#6	10-2	1-0	9-2				
B607	10	#6	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
L W 5									
F1103	13	#11	17-4	0-6	8-3	1-6	7-1	0-3	
B606	4	#6	8-6	1-0	7-6				
B608	5	#6	8-9	1-0	7-9				
B409	18	#4	1-10	0-4	1-6				
H W 1									
F1103	13	#11	17-4	0-6	8-3	1-6	7-1	0-3	
B606	4	#6	8-6	1-0	7-6				
B608	5	#6	8-9	1-0	7-9				
B409	18	#4	1-10	0-4	1-6				
H W 2									
F1103	18	#11	17-4	0-6	8-3	1-6	7-1	0-3	
B605	8	#6	10-2	1-0	9-2				
B607	10	#6	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
H W 3									
F1103	18	#11	17-4	0-6	8-3	1-6	7-1	0-3	
B605	8	#6	10-2	1-0	9-2				
B607	10	#6	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
H W 4									
F1103	18	#11	17-4	0-6	8-3	1-6	7-1	0-3	
B605	8	#6	10-2	1-0	9-2				
B607	10	#6	10-8	1-0	9-8				
B409	22	#4	1-10	0-4	1-6				
H W 5									
F1103	5	#11	17-4	0-6	8-3	1-6	7-1	0-3	
B604	8	#6	2-9	1-0	1-9				
B612	10	#6	3-0	1-0	2-0				
B409	4	#4	1-10	0-4	1-6				

All bent bar marks to be prefixed by No. C2-111

STRAIGHT BARS

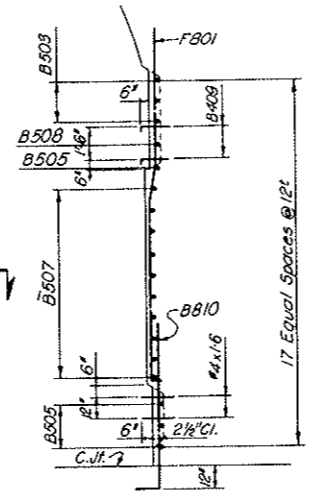
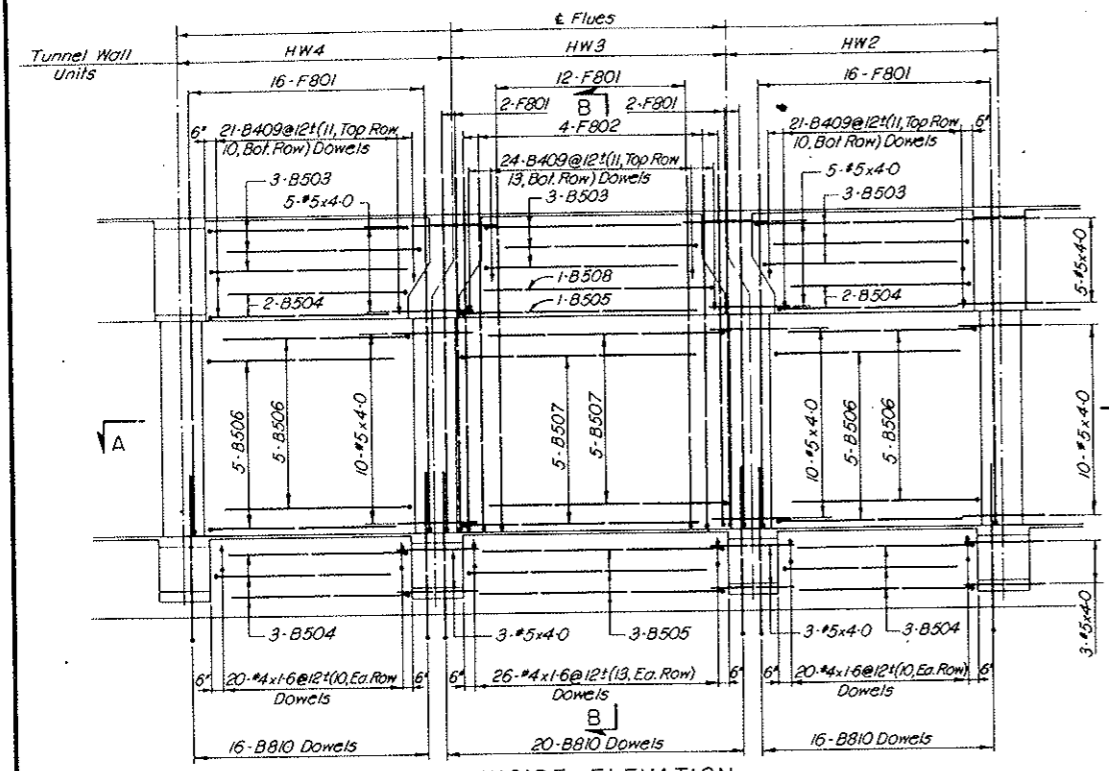
NO. REQ'D	BAR SIZE	BAR LENGTH
INVERT		
88	#6	26-0
ARCH		
104	#6	26-0
L W 1		
5	#18	9-9
18	#6	4-0
4	#4	1-6
L W 2		
18	#18	9-9
18	#6	4-0
22	#4	1-6
L W 3		
18	#18	9-9
18	#6	4-0
22	#4	1-6
L W 4		
18	#18	9-9
18	#6	4-0
22	#4	1-6
L W 5		
13	#18	9-9
5	#6	7-9
4	#6	7-6
18	#4	1-6
H W 1		
13	#18	9-9
5	#6	7-9
4	#6	7-6
18	#4	1-6
H W 2		
18	#18	9-9
18	#6	4-0
22	#4	1-6
H W 3		
18	#18	9-9
18	#6	4-0
22	#4	1-6
H W 4		
18	#18	9-9
18	#6	4-0
22	#4	1-6
H W 5		
18	#18	9-9
5	#6	7-9
18	#6	4-0
4	#4	1-6



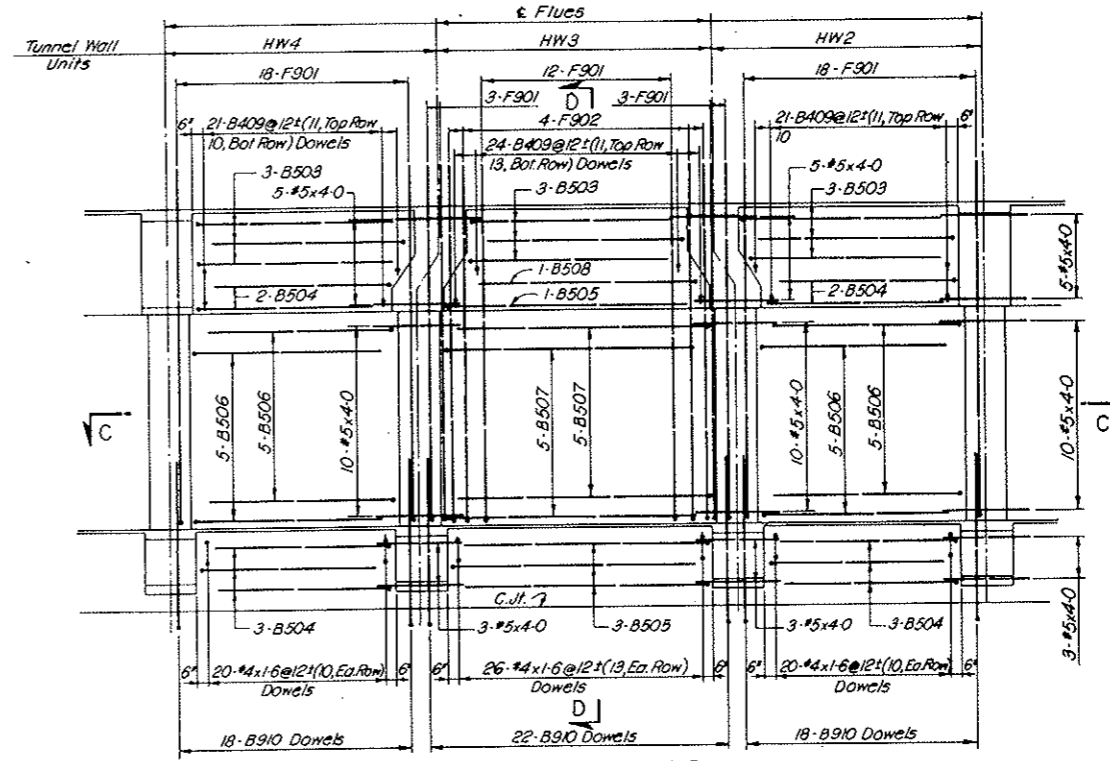
NOTES:
For notes see Dwg. C2-111.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT STANDARD SEGMENT					
TUNNEL SECTION TYPE IVb - STA. WB. 97 TO WB. 100 LINING-INSIDE FACE-SHEET 2 OF 2					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. MCC.	RECOMMENDED: <i>James M. ...</i>				
DRAWN: J.E.G.	CHECKED: R.B.A.				
SUBMITTED: <i>...</i>	APPROVED: <i>Frank Kelly</i>				
NEW YORK, N.Y.		SCALE: 1/4" = 1'-0"	DATE: NOV. 1967	DRAWING NO. C2-112	

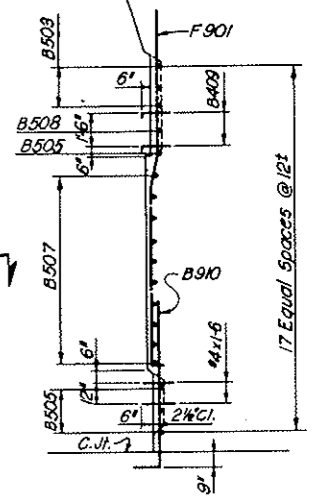
AS CONSTRUCTED
 REVISED DATE Oct. 26, 1975



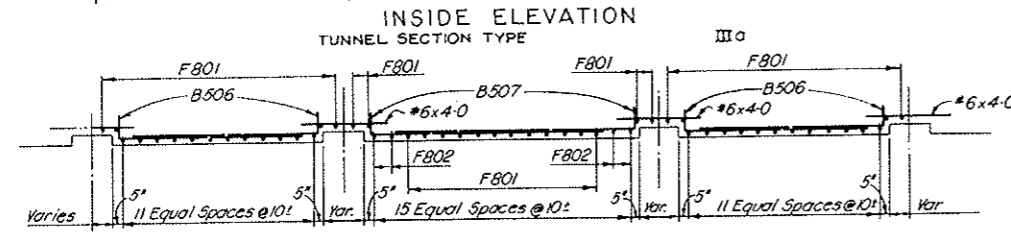
SECTION B-B



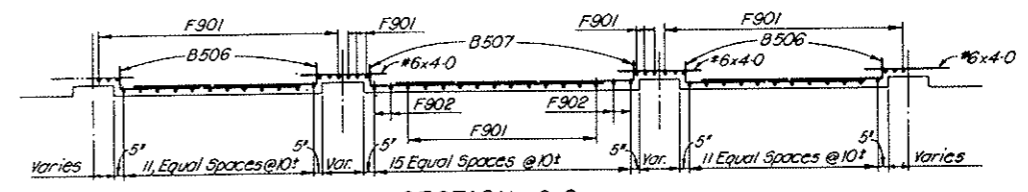
INSIDE ELEVATION
TUNNEL SECTION TYPE IIIb



SECTION D-D



SECTION A-A



SECTION C-C

REINFORCEMENT SCHEDULE - BENT BARS									
TUNNEL SECTION TYPE IIIa									
BENDING DIAGRAMS									
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS					
				B	C	D	E	H	
F801	48	#8	16-10	0-6	8-3	1-6	6-7	0-3	
F802	4	#8	17-0	0-6	8-3	1-8	6-7	0-9	
B810	52	#8	8-10	1-2	7-8				
B503	9	#5	10-2	1-0	9-2				
B504	10	#5	9-2	1-0	8-2				
B505	4	#5	12-2	1-0	11-2				
B506	20	#5	9-8	1-0	8-8				
B507	10	#5	12-8	1-0	11-8				
B508	1	#5	11-2	1-0	10-2				
B409	66	#4	1-10	0-4	1-6				

All bent bar marks to be prefixed by No. C2-113

TUNNEL SECTION TYPE IIIa		
REINFORCEMENT SCHEDULE - STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
54	#5	4-0
66	#4	1-6

REINFORCEMENT SCHEDULE - BENT BARS									
TUNNEL SECTION TYPE IIIb									
BENDING DIAGRAMS									
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS					
				B	C	D	E	H	
F901	54	#9	17-0	0-6	8-3	1-6	6-9	0-3	
F902	4	#9	17-2	0-6	8-3	1-8	6-9	0-9	
B910	58	#9	9-1	1-4	7-9				
B503	9	#5	10-2	1-0	9-2				
B504	10	#5	9-2	1-0	8-2				
B505	4	#5	12-2	1-0	11-2				
B506	20	#5	9-8	1-0	8-8				
B507	10	#5	12-8	1-0	11-8				
B508	1	#5	11-2	1-0	10-2				
B409	66	#4	1-10	0-4	1-6				

All bent bar marks to be prefixed by No. C2-113

TUNNEL SECTION TYPE IIIb		
REINFORCEMENT SCHEDULE - STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
54	#5	4-0
66	#4	1-6

NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwg. C2-10, C2-11, C2-12 and C2-21.
 For General Reinforcement Notes see Dwg. C2-103.
 For location and number of segments with Modified Flues see listing on Dwg. C2-101.
 For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS					
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT					
MODIFIED FLUES					
TUNNEL SECTION TYPES IIIa AND IIIb					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R.B.A.	RECOMMENDED: R.B.A.				
DRAWN: R.B.A.	CHECKED: R.B.A.				
SUBMITTED: R.B.A.	APPROVED: R.B.A.				
DRAWING NO. C2-113		SCALE: 1/4" = 1'-0" DATE: NOV. 1967			

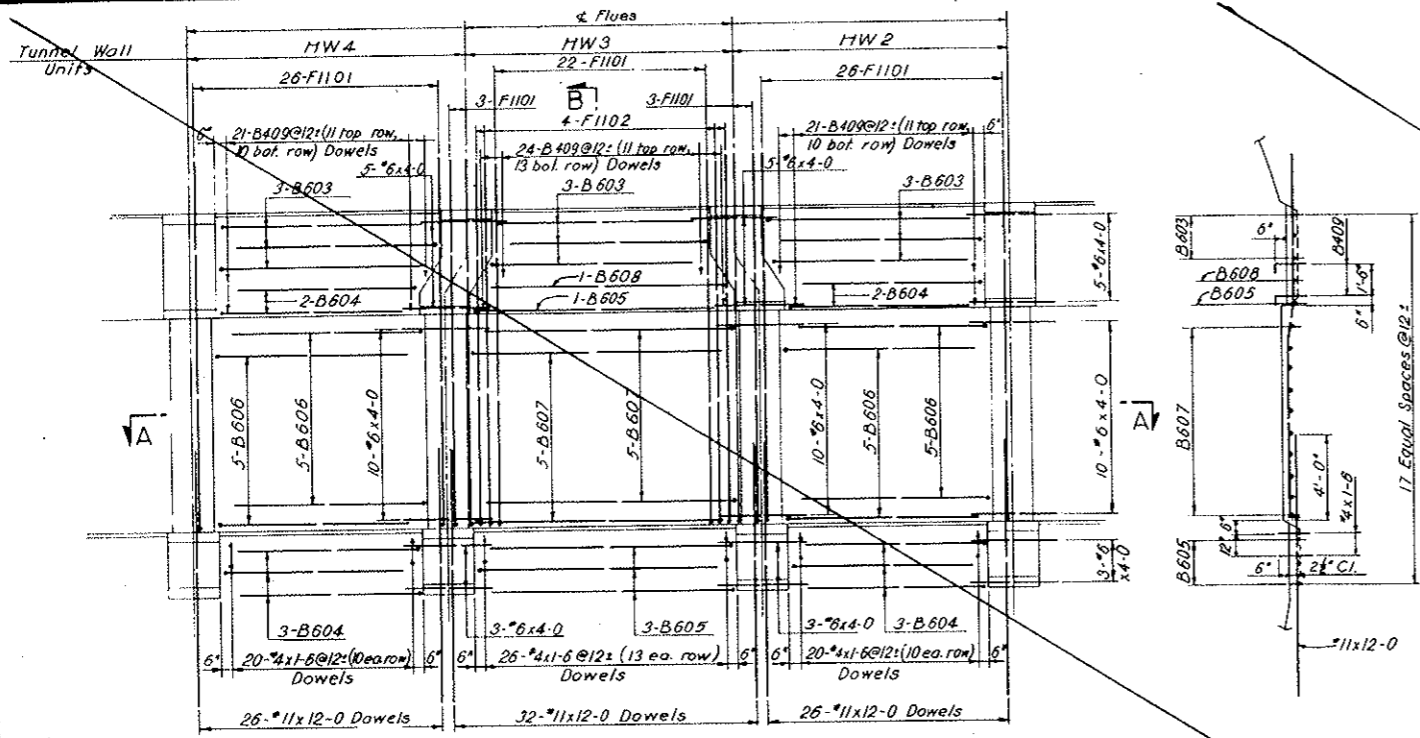
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-45	112

NO. REQ'D	SIZE	BAR LENGTH
84	#11	12-0
54	#6	4-0
66	#4	1-6

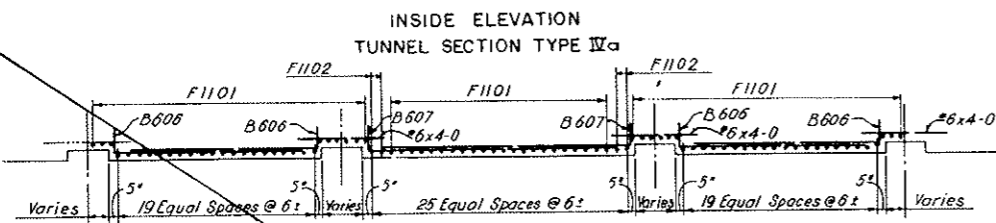
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS					
				A	B	C	D	E	H
F1101	80	#11	17-4	0-6	8-3	1-6	7-1	0-3	
F1102	4	#11	17-6	0-8	8-3	1-8	7-1	0-9	
B603	9	#6	10-2	1-0	9-2				
B604	10	#6	9-2	1-0	8-2				
B605	4	#6	12-2	1-0	11-2				
B606	20	#6	9-8	1-0	8-8				
B607	10	#6	12-8	1-0	11-8				
B608	7	#6	11-2	1-0	10-2				
B409	66	#4	1-10	0-4	1-6				

All bent bar marks to be prefixed by No. C2-114.

VOID
BY CONSTRUCTION
ON 26, 1973



SECTION B-B

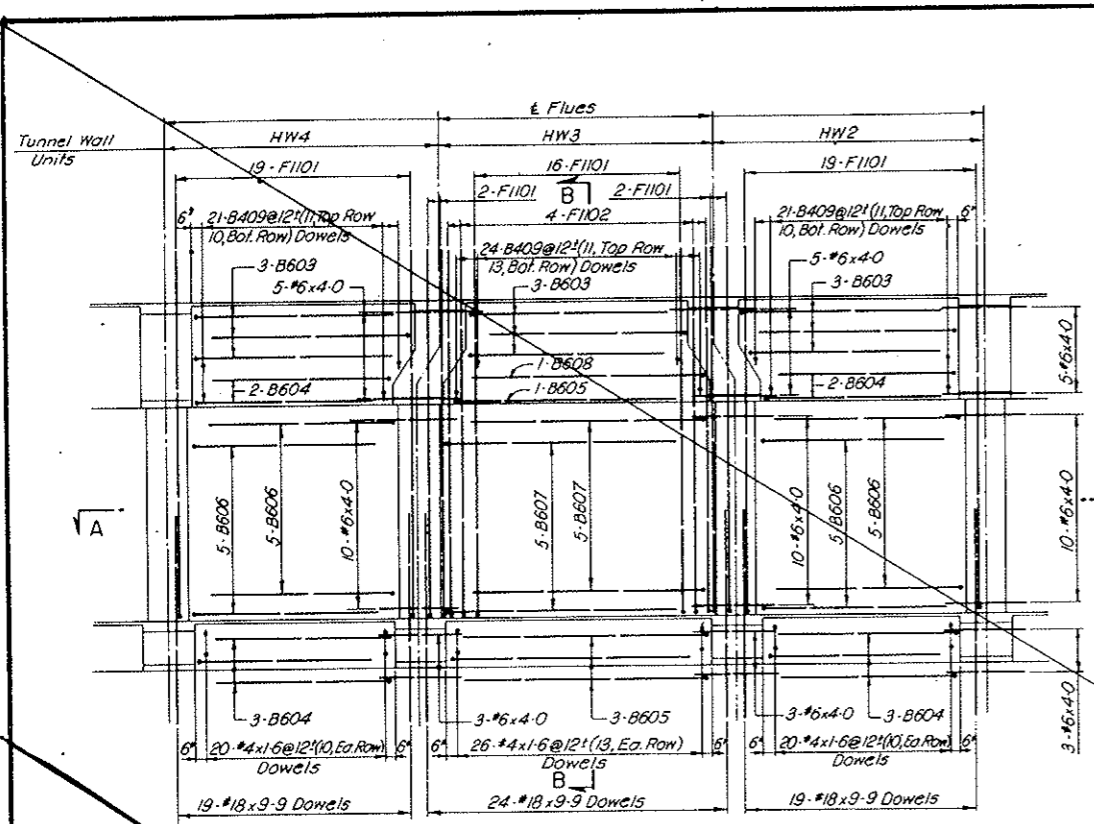


SECTION A-A

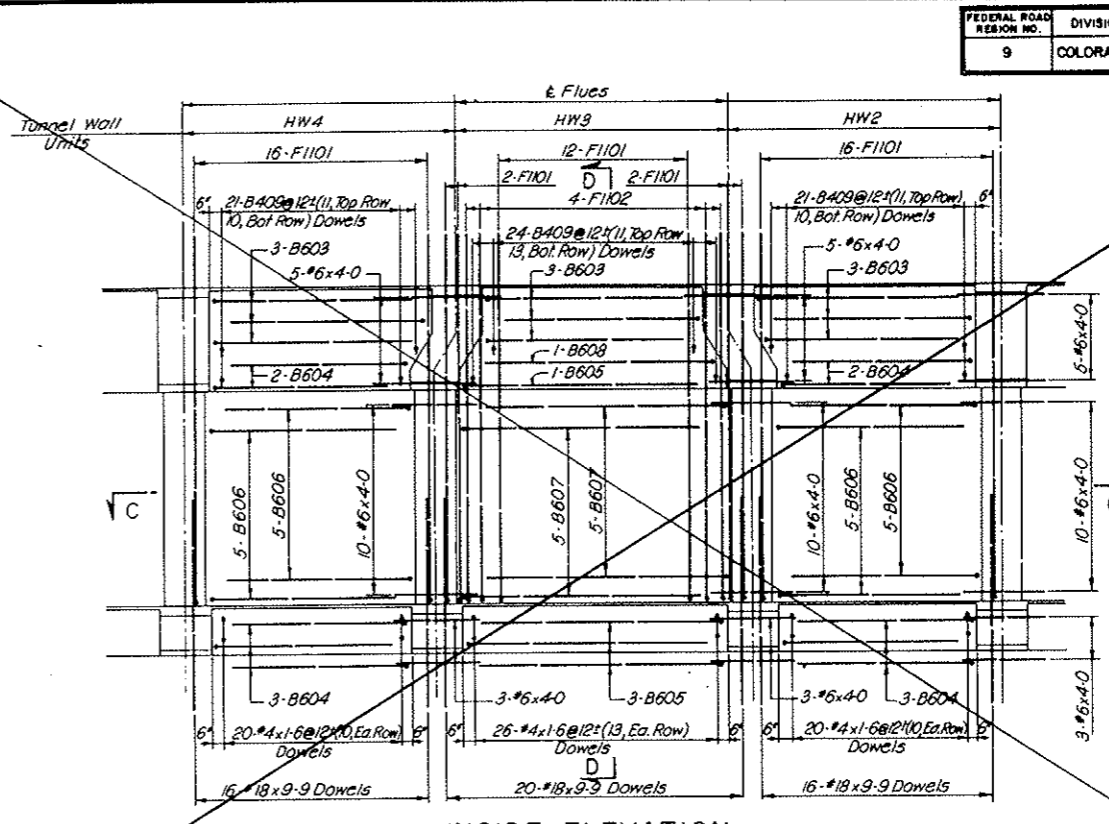
NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwg. C2-13 and C2-21.
 For General Reinforcement Notes see Dwg. C2-103.
 For location and number of segments with Modified Flues see listing on Dwg. C2-101.
 For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT MODIFIED FLUES TUNNEL SECTION TYPE IVa					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R. B. A.	RECOMMENDED: <i>Kenneth R. ...</i>				
DRAWN: R. B. A.	CHECKED: R. B. A.				
SUBMITTED: <i>...</i>	APPROVED: <i>Frank ...</i>				
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"	DATE: NOV 1967	DRAWING NO. C2-114	

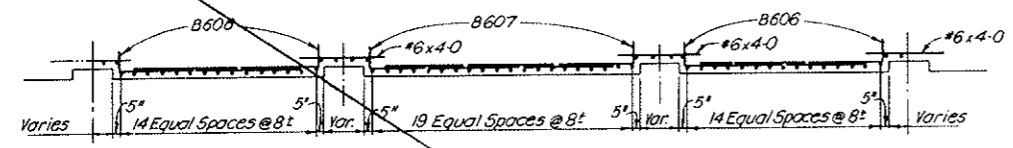
VOID BY CONSTRUCTION
Oct 26, 1973



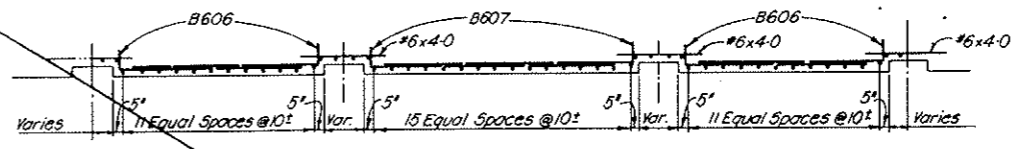
INSIDE ELEVATION
STA. W.B. 80+00 TO W.B. 97+00



INSIDE ELEVATION
STA. W.B. 97+00 TO W.B. 100+00



SECTION A-A



SECTION C-C

REINFORCEMENT SCHEDULE - BENT BARS							
STA. W.B. 80+00 TO 97+00							
BENDING DIAGRAMS							
		B		C		D	
		E		F		G	
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	D	E
F1101	58	#11	17.4	0.6	8.3	1.6	7.1
F1102	4	#11	17.6	0.6	8.3	1.8	7.1
B603	9	#6	10.2	1.0	9.2		
B604	10	#6	9.2	1.0	8.2		
B605	4	#6	12.2	1.0	11.2		
B606	20	#6	9.8	1.0	8.8		
B607	10	#6	12.8	1.0	11.8		
B608	1	#6	1.2	1.0	10.2		
B409	66	#4	1.10	0.4	1.6		

All bent bar marks to be prefixed by No. C2-115

STA. W.B. 80+00 TO 97+00		
REINFORCEMENT SCHEDULE - STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
62	#8	9.9
54	#6	4.0
66	#4	1.6

REINFORCEMENT SCHEDULE - BENT BARS							
STA. W.B. 97+00 TO W.B. 100+00							
BENDING DIAGRAMS							
		B		C		D	
		E		F		G	
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	D	E
F1101	48	#11	17.4	0.6	8.3	1.6	7.1
F1102	4	#11	17.6	0.6	8.3	1.8	7.1
B603	9	#6	10.2	1.0	9.2		
B604	10	#6	9.2	1.0	8.2		
B605	4	#6	12.2	1.0	11.2		
B606	20	#6	9.8	1.0	8.8		
B607	10	#6	12.8	1.0	11.8		
B608	1	#6	11.2	1.0	10.2		
B409	66	#4	1.10	0.4	1.6		

All bent bar marks to be prefixed by No. C2-115

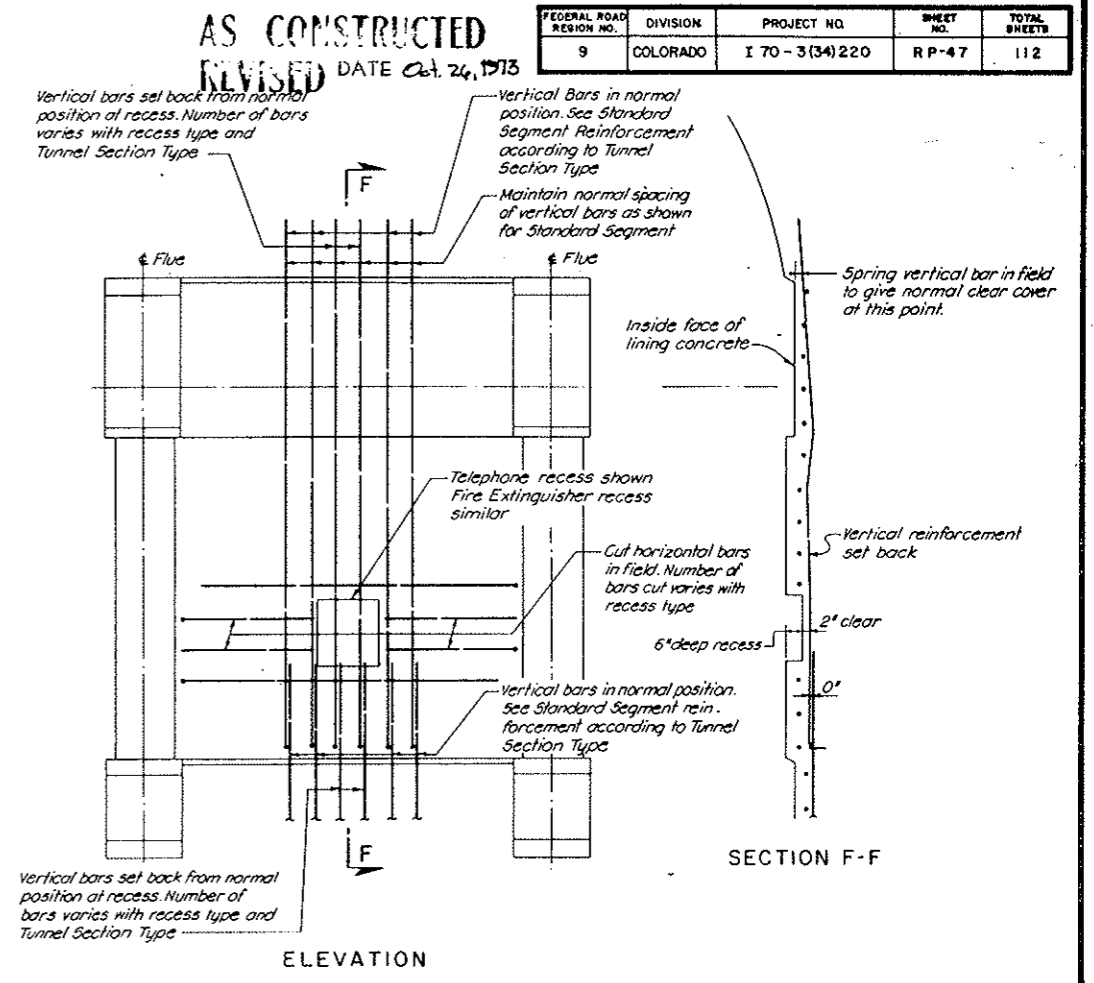
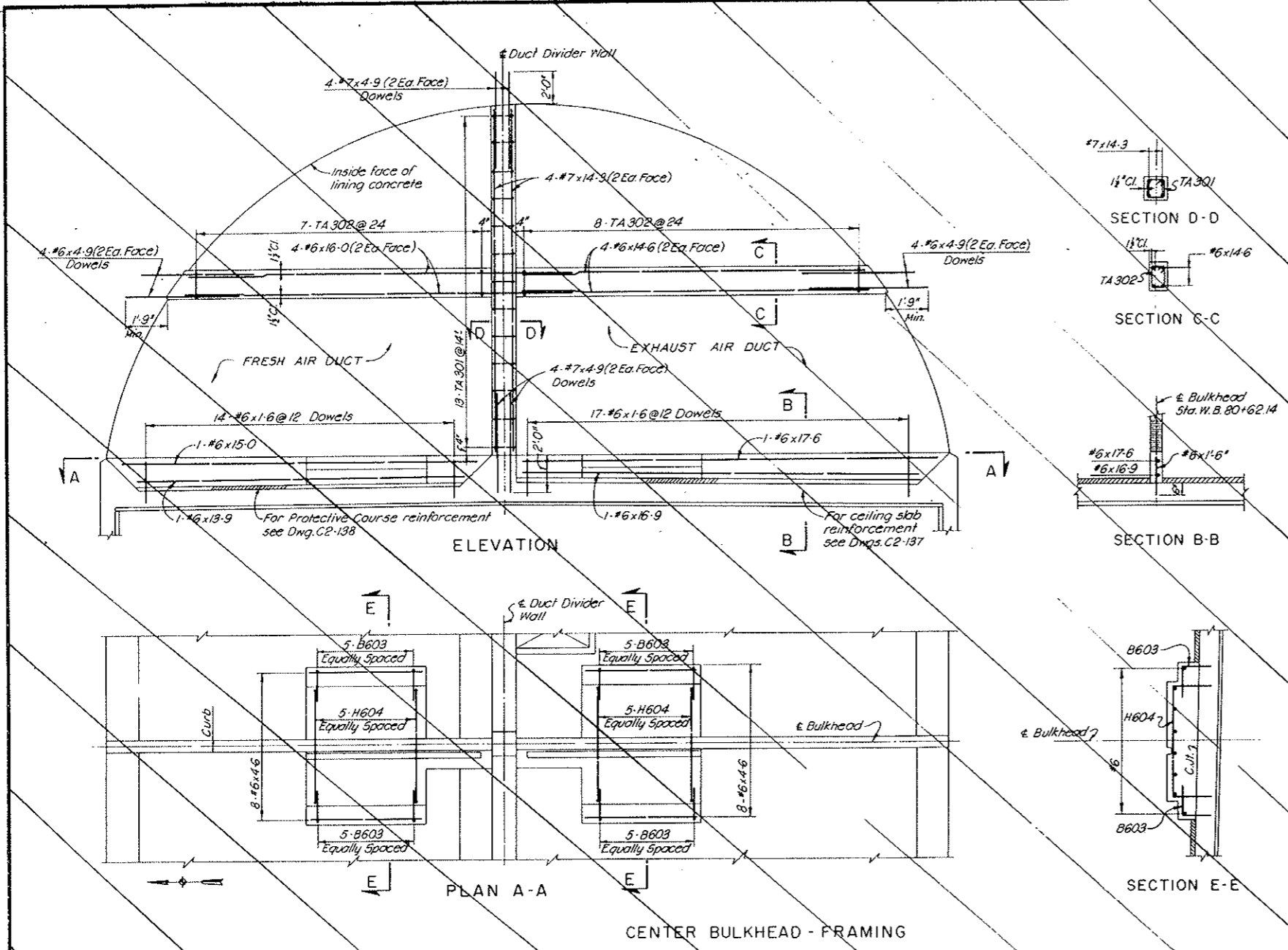
STA. W.B. 97+00 TO 100+00		
REINFORCEMENT SCHEDULE - STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
32	#8	9.9
54	#6	4.0
66	#4	1.6

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-14 and C2-21.
For General Reinforcement Notes see Dwg. C2-103.
For location and number of segments with Modified Flues see listing on Dwg. C2-101.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT MODIFIED FLUES TUNNEL SECTION TYPE IXd					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R.B.A.	RECOMMENDED: <i>Harvey L. ...</i>	DRAWING NO. C2-115			
DRAWN: R.B.A.	CHECKED: R.B.A.	SCALE 3/8" = 1'-0"			
SUBMITTED: <i>...</i>	DATE: NOV 1967				

AS CONSTRUCTED
REVISED DATE Oct. 24, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-47	112



REINFORCEMENT PLACEMENT AT TELEPHONE & FIRE EXTINGUISHER RECESSES

NOTES:
 For General Concrete Details see Dwg. C2-11.
 For concrete details see Dwg. C2-20.
 For General Reinforcement Notes see Dwg. C2-103.
 For location and number of segments with Telephone and Fire Extinguisher Recesses see listing on Dwg. C2-101.
 For Segments N1-N80-N165-N167 only

REINFORCEMENT SCHEDULE - BENT BARS										
BENDING DIAGRAMS										
[Bending diagrams showing bar shapes with dimensions A, B, C, D, E, G, H, TA]										
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	A	B	C	D	E	G	H
TA301	13	#3	3-8	0-4	0-9	0-9	0-9	0-9	0-4	
TA302	15	#3	3-9	0-4	0-6 1/2	1-0	0-6 1/2	1-0	0-4	
B603	20	#6	2-6		1-3	1-3				
H604	10	#6	7-10		1-8	4-6	1-8			

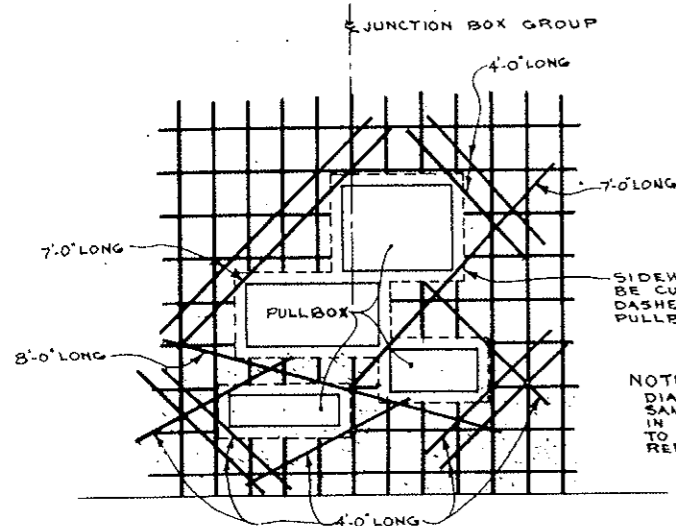
REINF SCHEDULE STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
4	#7	14-3
8	#7	4-9
1	#6	17-6
1	#6	16-9
4	#6	16-0
1	#6	15-0
4	#6	14-6
1	#6	13-9
8	#6	4-9
16	#6	4-6
31	#6	1-6

All bent bar marks to be prefixed by No. C2-116

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT TELEPHONE, FIRE EXTINGUISHER RECESSES					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R.B.A.-S.M.R.	RECOMMENDED:				
DRAWN: R.B.	CHECKED: R.B.A.	[Signatures]			
SUBMITTED: [Signature]	APPROVED: [Signature]	DRAWING NO. C2-116			
NEW YORK, N.Y.		SCALE: 3/8" = 1'-0"		DATE: NOV. 1967	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	1 70-3(34)220	RP-47AX	112

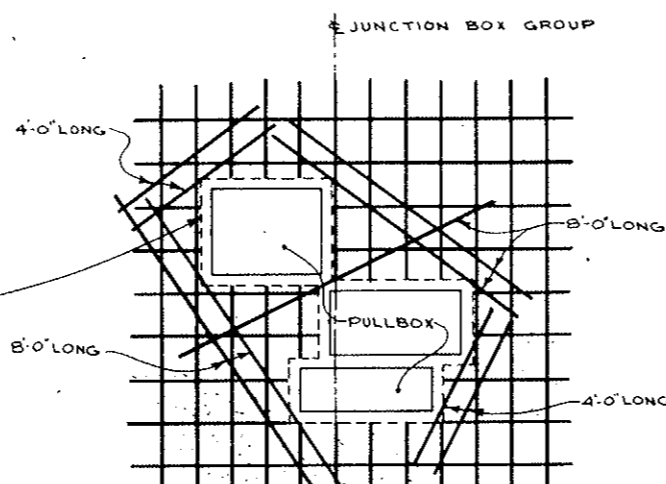
AS CONSTRUCTED
REVISED DATE Oct. 2, 1975



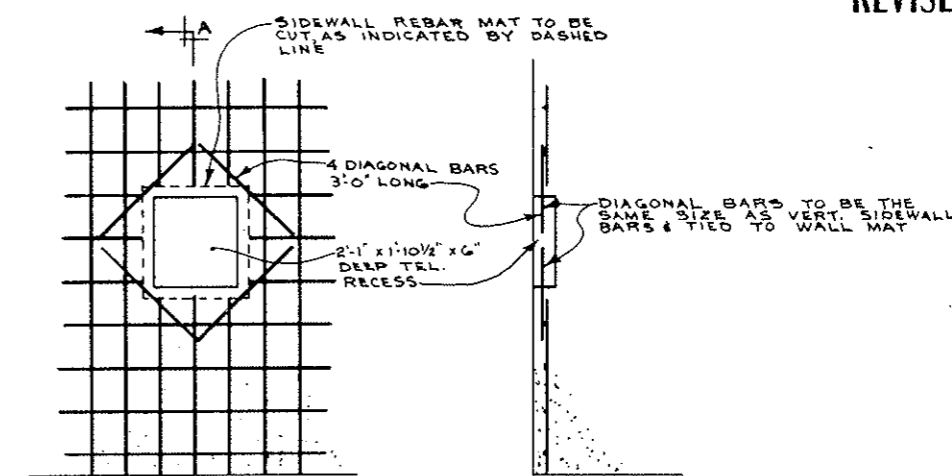
ELEVATION OF SOUTH WALL SHOWING REBAR AROUND PULLBOXES
SCALE: 1/2" = 1'-0"

SIDEWALL REBAR MAT TO BE CUT, AS INDICATED BY DASHED LINE TO ALLOW FOR PULLBOXES (TYP)

NOTE: DIAGONAL BARS TO BE THE SAME SIZE AS VERT. BARS IN SIDEWALL. DIAGONAL BARS TO BE TIED TO SIDEWALL REBAR MAT.



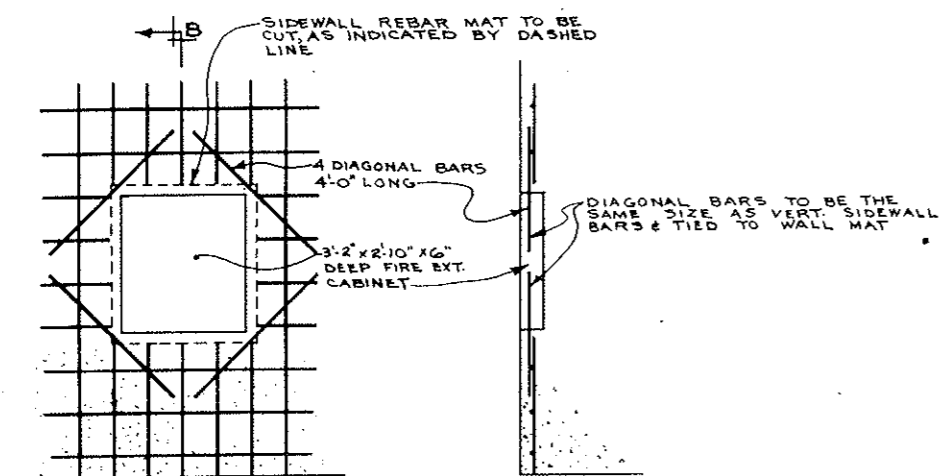
ELEVATION OF NORTH WALL SHOWING REBAR AROUND PULLBOXES
SCALE: 1/2" = 1'-0"



ELEVATION

SECTION A-A

TELEPHONE RECESS DETAIL
SCALE: 1/2" = 1'-0"

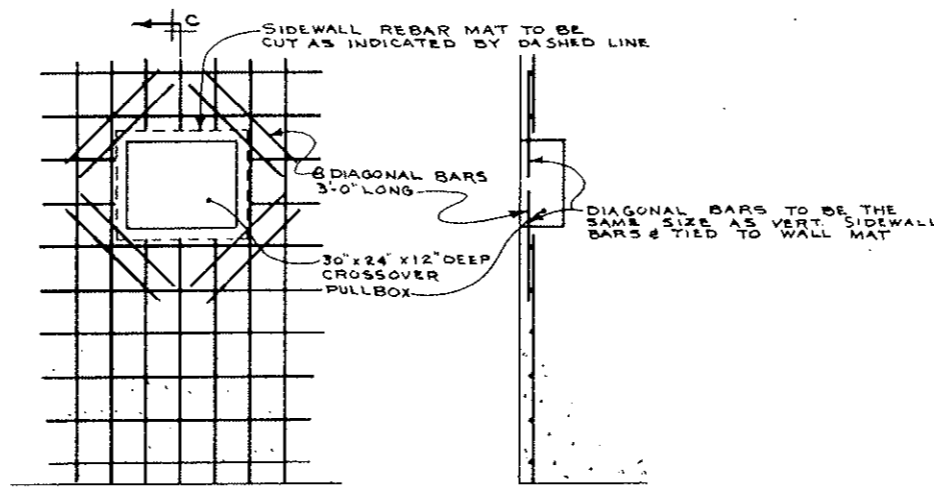


ELEVATION

SECTION B-B

FIRE EXTINGUISHER CABINET DETAIL
SCALE: 1/2" = 1'-0"

DIAGONAL BARS TO BE THE SAME SIZE AS VERT. SIDEWALL BARS & TIED TO WALL MAT



ELEVATION

SECTION C-C

CROSSOVER PULLBOX DETAIL
SCALE: 1/2" = 1'-0"

DIAGONAL BARS TO BE THE SAME SIZE AS VERT. SIDEWALL BARS & TIED TO WALL MAT

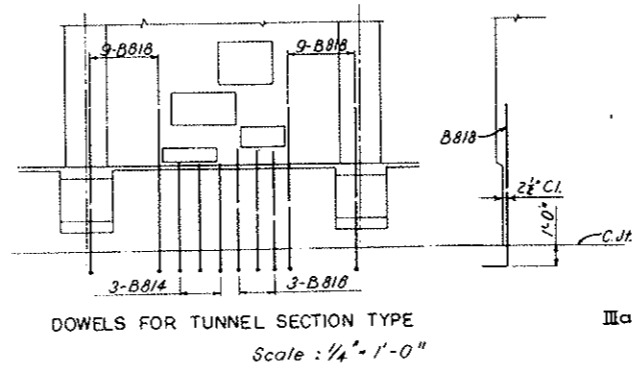
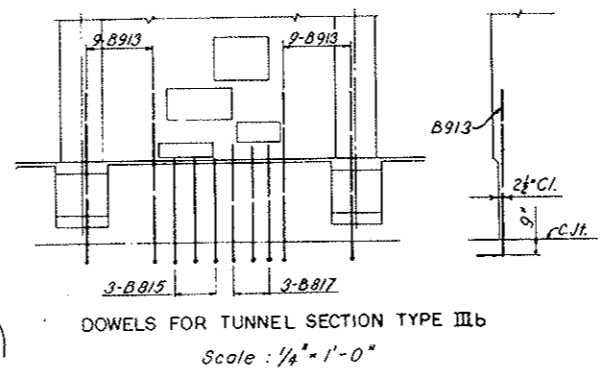
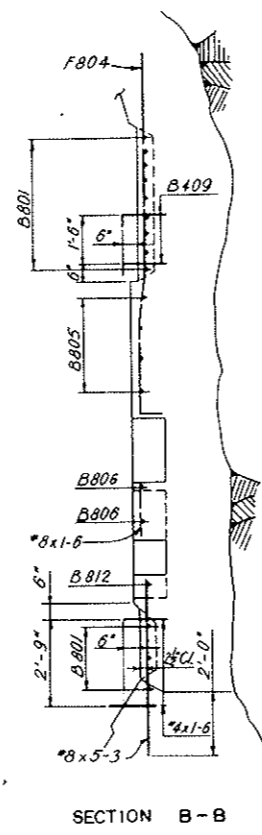
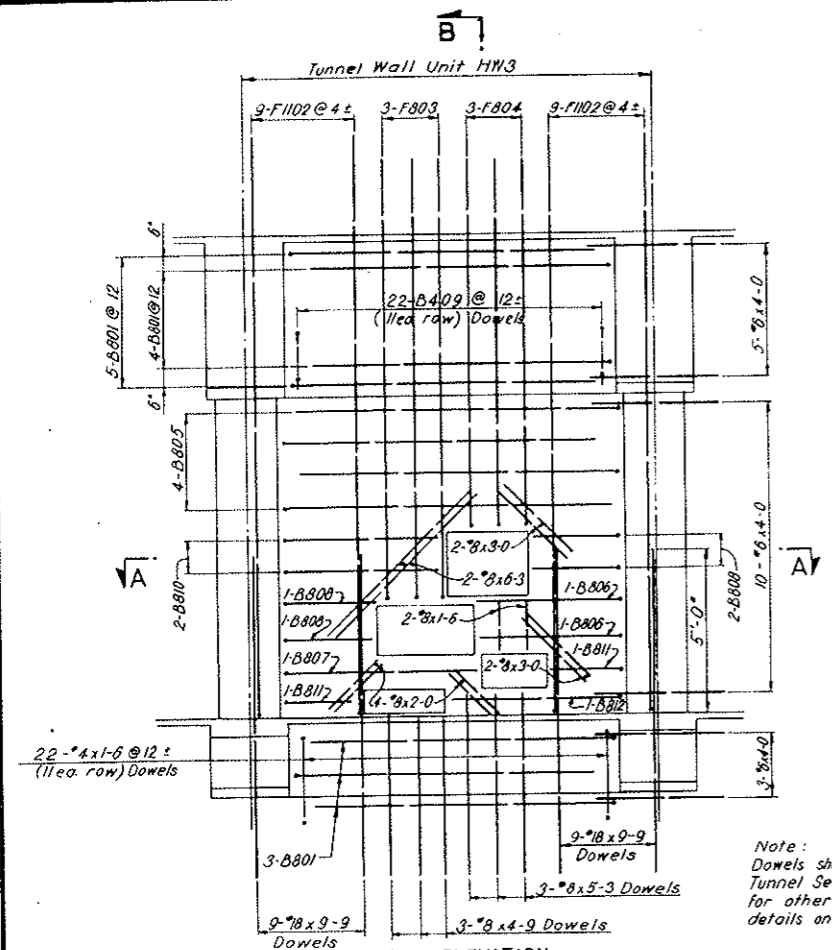
STATE OF COLORADO DIVISION OF HIGHWAYS		
DATE	APPROVED BY	DRAWING NUMBER
5-22-72	SCC-585	C2-16A

MISC. REBAR DETAILS

NOTED BY GIFFIN

AS CONSTRUCTED
REVISED DATE Oct. 26, 1975

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-4B	112



REINFORCEMENT SCHEDULE BENT BARS

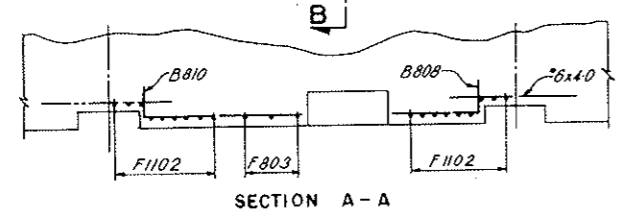
BENDING DIAGRAMS

BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS							
				B	C	D	E	F	G	H	
WALL											
B801	12	#8	10-2	1-0	9-2						
F1102	18	#11	17-4	0-8	8-3	1-6	7-1	0-3			
F803	3	#8	13-4	0-8	4-9	1-6	6-7	0-3			
F804	3	#8	11-1	0-8	2-6	1-6	6-7	0-3			
B805	4	#8	10-8	1-0	9-8						
B806	2	#8	5-8	1-0	4-8						
B807	1	#8	7-0	1-0	6-0						
B808	4	#8	3-10	1-0	2-10						
B409	22	#4	1-10	0-4	1-6						
B810	2	#8	6-0	1-0	5-0						
B811	2	#8	3-3	1-0	2-3						
B812	1	#8	6-6	1-0	5-6						
DOWELS TUN. SECT. TYPE III b.											
B913	18	#9	9-1	1-4	7-9						
B815	3	#8	6-1	1-4	4-9						
B817	3	#8	6-7	1-4	5-3						
DOWELS TUN. SECT. TYPE III a.											
B818	18	#8	8-10	1-2	7-8						
B814	3	#8	6-2	1-2	5-0						
B816	3	#8	6-8	1-2	5-6						

All bent bar marks to be prefixed by No. C2-117.

STRAIGHT BARS

NO. REQ'D	SIZE	BAR LENGTH
WALL		
2	#8	6-3
4	#8	3-0
4	#8	2-0
2	#8	1-6
18	#6	4-0
22	#4	1-0



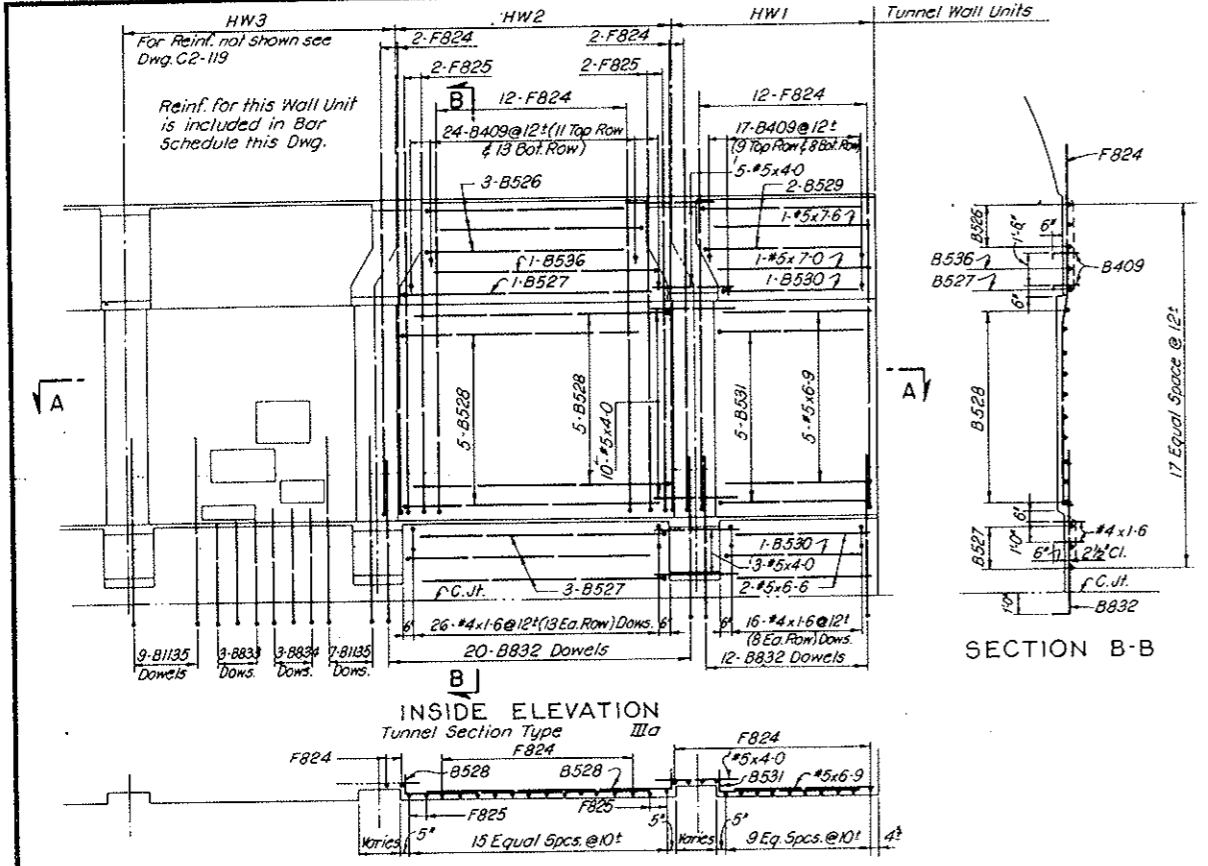
PULLBOX DISTRIBUTION STATION-HIGH WALKWAY ALL TUNNEL SECTION TYPES
Scale: 3/8" = 1'-0"

For Segments NI-NB0-N165-N167 only

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-27.
For General Reinforcement Notes see Dwg. C2-103.
For location and number of segments with Pullbox Station in High Walkway Wall see listing on Dwg. C2-101.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO-DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT PULLBOX STATION IN HIGH WALKWAY WALL NORMAL FLUES					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R. B. A.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO.			
DRAWN: P. F. L.	CHECKED: H. F. Mc C.	C2-117			
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	SCALE: AS NOTED DATE: NOV. 1967			
NEW YORK, N. Y.					

AS CONSTRUCTED
REVISED DATE Oct. 26, 1975



REINFORCEMENT SCHEDULE - BENT BARS
TUNNEL SECTION TYPE IIIa

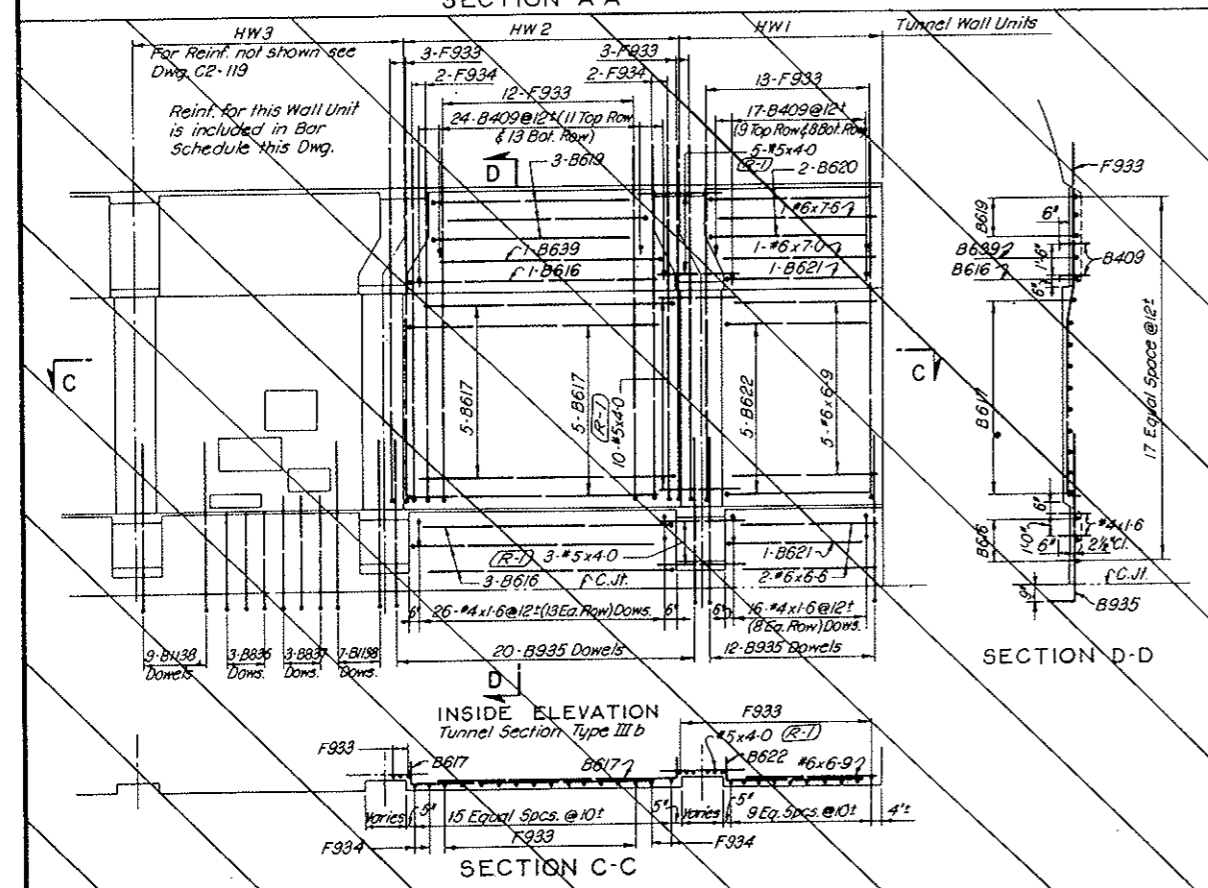
BENDING DIAGRAMS

BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS					
				B	C	D	E	H	
F1101	16	#11	17.4	0.6	8.3	1.6	7.1	0.3	
F1102	3	#11	13.11	0.6	4.10	1.6	7.1	0.3	
F1103	3	#11	11.9	0.6	2.8	1.6	7.1	0.3	
B804	7	#8	10.2	1.0	9.2				
B805	5	#8	9.2	1.0	8.2				
B806	4	#8	9.8	1.0	8.8				
B807	2	#8	5.6	1.0	4.6				
B808	2	#8	3.6	1.0	2.6				
B409	62	#4	1.10	0.4	1.6				
B810	1	#8	6.8	1.0	5.8				
B811	1	#8	3.0	1.0	2.0				
B812	2	#8	2.6	1.0	1.6				
B813	2	#8	4.3	1.0	3.3				
B814	1	#8	2.0	1.0	1.0				
B818	1	#8	5.0	1.0	4.0				
F824	28	#8	16.10	0.6	8.3	1.6	6.7	0.3	
F825	4	#8	17.0	0.6	8.3	1.8	6.7	0.9	
B526	3	#5	10.2	1.0	9.2				
B527	4	#5	12.2	1.0	11.2				
B528	10	#5	12.8	1.0	11.8				
B529	2	#5	8.6	1.0	7.6				
B530	2	#5	7.6	1.0	6.6				
B531	5	#5	7.9	1.0	6.9				
B832	32	#8	8.10	1.2	7.8				
B833	3	#8	5.11	1.2	4.9				
B834	3	#8	6.5	1.2	5.3				
B1135	16	#11	9.11	1.2	8.9				
B536	1	#5	11.2	1.0	10.2				

SECTION TYPE IIIa
REINFORCEMENT SCHEDULE
STRAIGHT BARS

NO. REQ'D	BAR SIZE	BAR LENGTH
2	#8	6.3
4	#8	3.0
4	#8	2.0
3	#8	1.6
36	#5	4.0
1	#5	7.6
1	#5	7.0
5	#5	6.3
2	#5	6.6
62	#4	1.6

All bent bar marks to be prefixed by No. C2-118



REINFORCEMENT SCHEDULE - BENT BARS
TUNNEL SECTION TYPE IIIb

BENDING DIAGRAMS

BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS					
				B	C	D	E	H	
F1101	16	#11	17.4	0.6	8.3	1.6	7.1	0.3	
F1102	3	#11	13.11	0.6	4.10	1.6	7.1	0.3	
F1103	3	#11	11.9	0.6	2.8	1.6	7.1	0.3	
B804	7	#8	10.2	1.0	9.2				
B805	5	#8	9.2	1.0	8.2				
B806	4	#8	9.8	1.0	8.8				
B807	2	#8	5.6	1.0	4.6				
B808	2	#8	3.6	1.0	2.6				
B409	62	#4	1.10	0.4	1.6				
B810	1	#8	6.8	1.0	5.8				
B811	1	#8	3.0	1.0	2.0				
B812	2	#8	2.6	1.0	1.6				
B813	2	#8	4.3	1.0	3.3				
B814	1	#8	2.0	1.0	1.0				
B616	4	#6	12.2	1.0	11.2				
B617	10	#6	12.8	1.0	11.8				
B818	1	#8	5.0	1.0	4.0				
B619	3	#6	10.2	1.0	9.2				
B620	2	#6	8.6	1.0	7.6				
B621	2	#6	7.6	1.0	6.6				
B622	5	#6	7.9	1.0	6.9				
F933	31	#9	17.0	0.6	8.3	1.6	6.9	0.3	
F934	4	#9	17.2	0.6	8.3	1.8	6.9	0.9	
B935	32	#9	9.1	1.4	7.9				
B836	3	#8	5.11	1.2	4.9				
B837	3	#8	6.5	1.2	5.3				
B1138	16	#11	9.11	1.4	8.6				
B639	1	#6	11.2	1.0	10.2				

SECTION TYPE IIIb
REINFORCEMENT SCHEDULE
STRAIGHT BARS

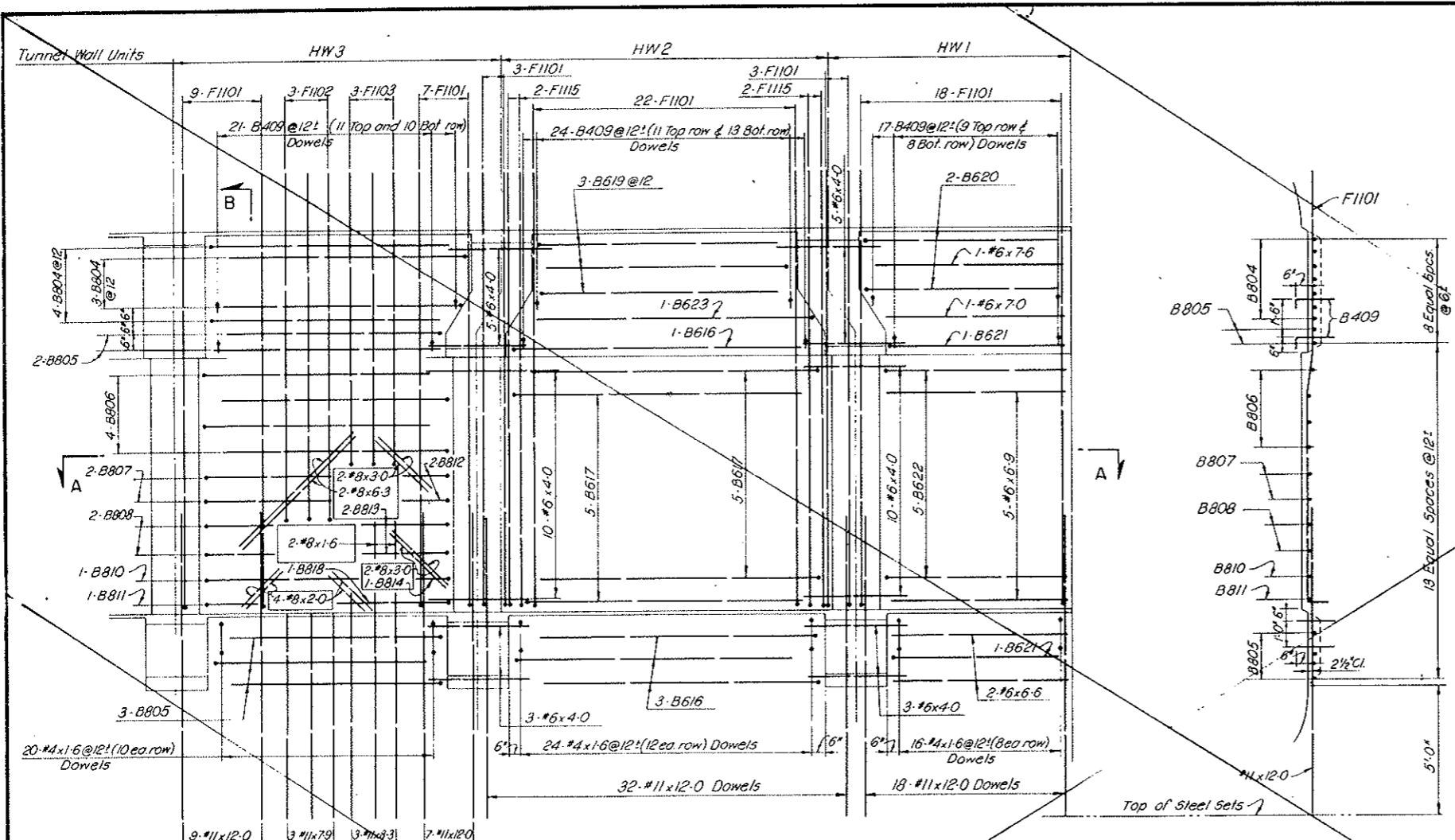
NO. REQ'D	BAR SIZE	BAR LENGTH
2	#8	6.3
4	#8	3.0
4	#8	2.0
3	#8	1.6
1	#6	7.6
1	#6	7.0
5	#6	6.3
2	#6	6.6
36	#5	4.0
62	#4	1.6

All bent bar marks to be prefixed by No. C2-118

NOTES:
For concrete details see Dwg. C2-10, C2-11, C2-12 and C2-27.
For General Concrete Notes see Dwg. C2-11.
For General Reinforcement Notes see Dwg. C2-103.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - TUNNEL REINFORCEMENT PULLBOX STATION IN HIGH WALKWAY WALL MODIFIED FLUES-SEGMENT N44 TUNNEL SECTION TYPE IIIa					
DESIGNED: R.B.A. DRAWN: R.B.A. CHECKED: R.B.A. SUBMITTED: [Signature] NEW YORK, N.Y.					
RECOMMENDED: [Signature] [Signature] NEW YORK, N.Y.					
DRAWING NO. C2-118 SCALE: 1/4" = 1'-0" DATE: NOV. 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-50	112



REINFORCEMENT SCHEDULE - STRAIGHT BARS

NO. REQ'D	BAR SIZE	BAR LENGTH
66	#11	12-0
3	#11	8-3
3	#11	7-9
2	#8	6-3
4	#8	3-0
4	#8	2-0
2	#8	1-6
1	#6	7-6
1	#6	7-0
5	#6	6-9
2	#6	6-6
36	#6	4-0
60	#4	1-6

REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS

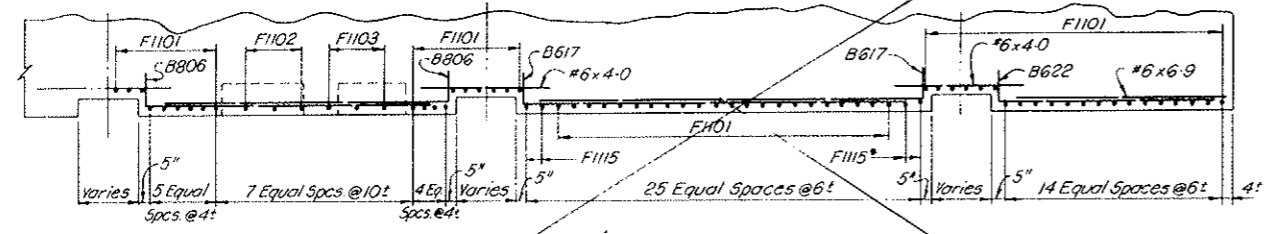
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	D	E	H
F1101	62	#11	17-4	0-6	8-3	1-6	7-1	0-3
F1102	3	#11	13-11	0-6	4-10	1-6	7-1	0-3
F1103	3	#11	11-9	0-6	2-8	1-6	7-1	0-3
B804	7	#8	10-2	1-0	9-2			
B805	5	#8	9-2	1-0	8-2			
B806	4	#8	9-8	1-0	8-8			
B807	2	#8	6-0	1-0	5-0			
B808	2	#8	3-10	1-0	2-10			
B409	62	#4	1-10	0-4	1-6			
B810	1	#8	7-2	1-0	6-2			
B811	1	#8	3-6	1-0	2-6			
B812	2	#8	2-10	1-0	1-10			
B813	2	#8	4-8	1-0	3-8			
B814	1	#8	2-6	1-0	1-6			
F115	4	#11	17-6	0-6	8-3	1-8	7-1	0-9
B616	4	#6	12-2	1-0	11-2			
B617	10	#6	12-8	1-0	11-8			
B618	1	#8	5-6	1-0	4-6			
B619	3	#6	10-2	1-0	9-2			
B620	2	#6	8-6	1-0	7-6			
B621	2	#6	7-6	1-0	6-6			
B622	5	#6	7-9	1-0	6-9			
B623	1	#6	11-2	1-0	10-2			

All bent bar marks to be prefixed by No.C2-119

VOID BY CONSTRUCTION
Oct 26, 1973

INSIDE ELEVATION

SECTION B-B

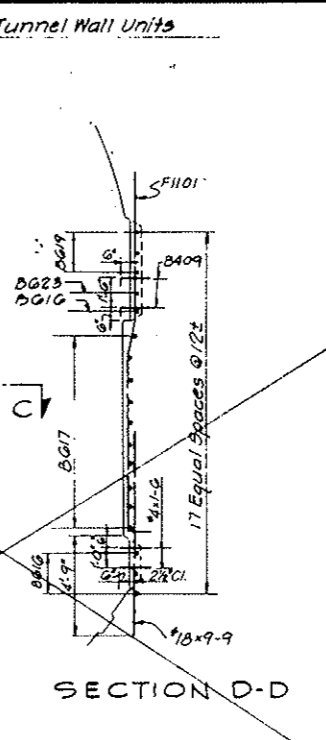
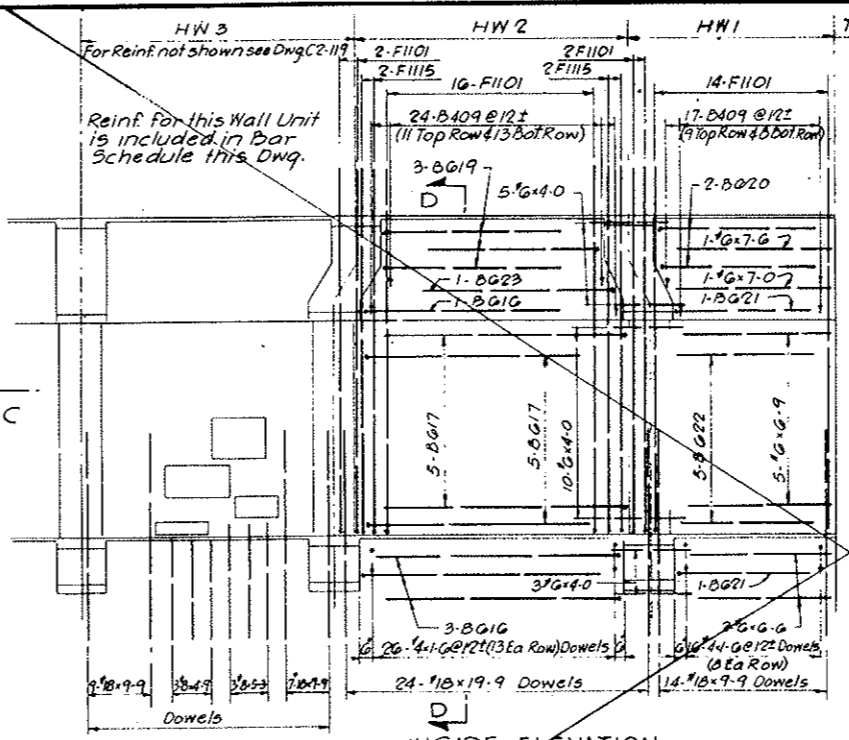
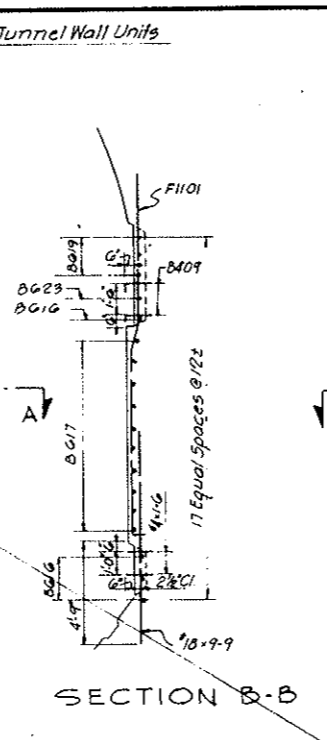
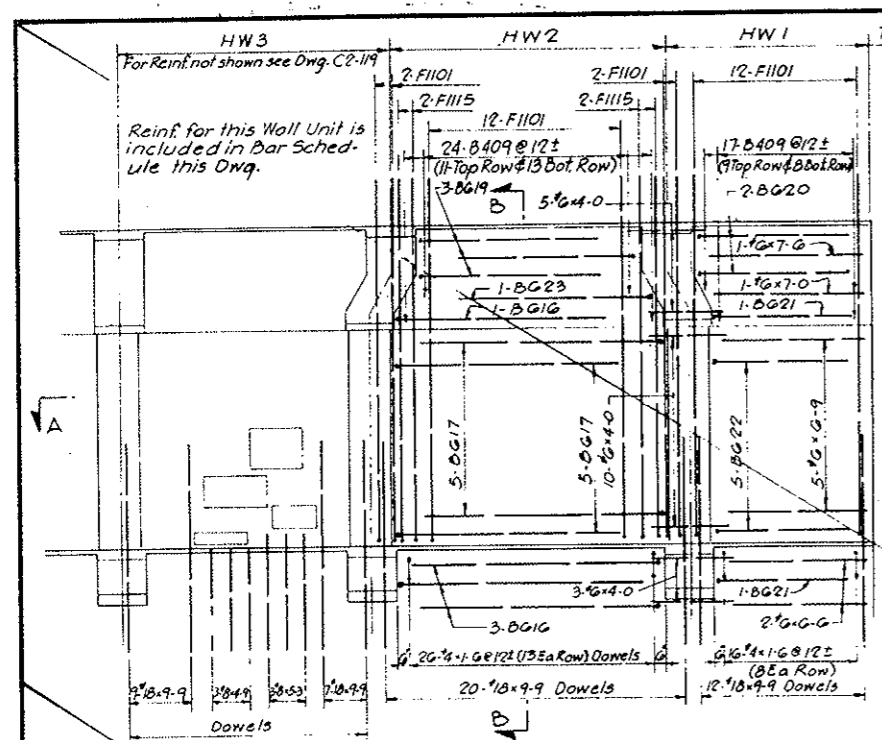


SECTION A-A

NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwgs. C2-13 and C2-27.
 For General Reinforcement Notes see Dwg. C2-103.
 For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT					
PULL BOX STATION IN HIGH WALKWAY WALL MODIFIED FLUES-SEGMENTS N44, N84 & N92 TUNNEL SECTION TYPE IVa					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R.B.A.	RECOMMENDED:				
DRAWN: R.B.A.	Checked: <i>[Signature]</i>				
CHECKED: R.B.A.	Approved: <i>[Signature]</i>				
SUBMITTED: <i>[Signature]</i>					
					DRAWING NO.
					C2-119
NEW YORK, N. Y.					SCALE: 3/8" = 1'-0" DATE: NOV. 1967

VOID
BY CONSTRUCTION
OCT 26, 1973

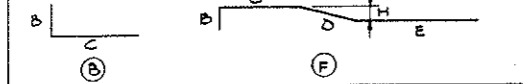


INSIDE ELEVATION
Tunnel Section Type IX b
Sta. W.B. 97+00 to Sta. W.B. 100+00

INSIDE ELEVATION
Tunnel Section Type IX b
Sta. W.B. 80+00 to Sta. W.B. 97+00

REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS - STA. W.B. 97+00 TO STA. W.B. 100+00

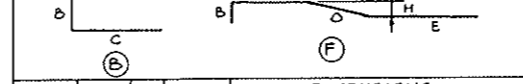


BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS				
				B	C	D	E	H
F1101	44	#11	17-4	0-0	8-3	1-0	7-1	0-3
F1102	3	#11	13-11	0-0	4-10	1-0	7-1	0-3
F1103	3	#11	11-9	0-0	2-8	1-0	7-1	0-3
B004	7	#8	10-2	1-0	9-2			
B005	5	#8	9-2	1-0	8-2			
B006	4	#8	9-3	1-0	8-8			
B007	2	#8	5-6	1-0	4-6			
B008	2	#8	3-6	1-0	2-6			
B409	62	#4	1-10	0-4	1-6			
B810	1	#8	6-8	1-0	5-8			
B811	1	#8	3-0	1-0	2-0			
B812	2	#8	2-6	1-0	1-6			
B813	2	#8	4-3	1-0	3-3			
B814	1	#8	2-0	1-0	1-0			
F1115	4	#11	17-6	0-0	8-3	1-8	7-1	0-9
B016	4	#6	12-2	1-0	11-2			
B017	10	#6	12-8	1-0	11-8			
B818	1	#8	5-0	1-0	4-0			
B019	3	#6	10-2	1-0	9-2			
B020	2	#6	8-6	1-0	7-6			
B021	2	#6	7-6	1-0	6-6			
B022	5	#6	7-9	1-0	6-9			
B023	1	#6	11-2	1-0	10-2			

All bent bar marks to be prefixed by No. C2-120

REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS - STA. W.B. 80+00 TO STA. W.B. 97+00



BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS				
				B	C	D	E	H
F1101	50	#11	17-4	0-0	8-3	1-0	7-1	0-3
F1102	3	#11	13-11	0-0	4-10	1-0	7-1	0-3
F1103	3	#11	11-9	0-0	2-8	1-0	7-1	0-3
B804	7	#8	10-2	1-0	9-2			
B805	5	#8	9-2	1-0	8-2			
B806	4	#8	9-3	1-0	8-8			
B807	2	#8	5-6	1-0	4-6			
B808	2	#8	3-6	1-0	2-6			
B409	62	#4	1-10	0-4	1-6			
B810	1	#8	6-8	1-0	5-8			
B811	1	#8	3-0	1-0	2-0			
B812	2	#8	2-6	1-0	1-6			
B813	2	#8	4-3	1-0	3-3			
B814	1	#8	2-0	1-0	1-0			
F1115	4	#11	17-6	0-0	8-3	1-8	7-1	0-9
B016	4	#6	12-2	1-0	11-2			
B017	10	#6	12-8	1-0	11-8			
B818	1	#8	5-0	1-0	4-0			
B019	3	#6	10-2	1-0	9-2			
B020	2	#6	8-6	1-0	7-6			
B021	2	#6	7-6	1-0	6-6			
B022	5	#6	7-9	1-0	6-9			
B023	1	#6	11-2	1-0	10-2			

All bent bar marks to be prefixed by No. C2-120

STA. W.B. 80+00 TO STA. W.B. 97+00

STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
54	#8	9-9
2	#8	6-3
3	#8	5-3
3	#8	4-9
4	#8	3-0
4	#8	2-0
3	#8	1-6
1	#6	7-6
1	#8	7-0
5	#8	6-9
2	#8	6-6
36	#6	4-0
62	#4	1-6

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwgs. C2-14 and C2-27.
For General Reinforcement Notes see Dwg. C2-103.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

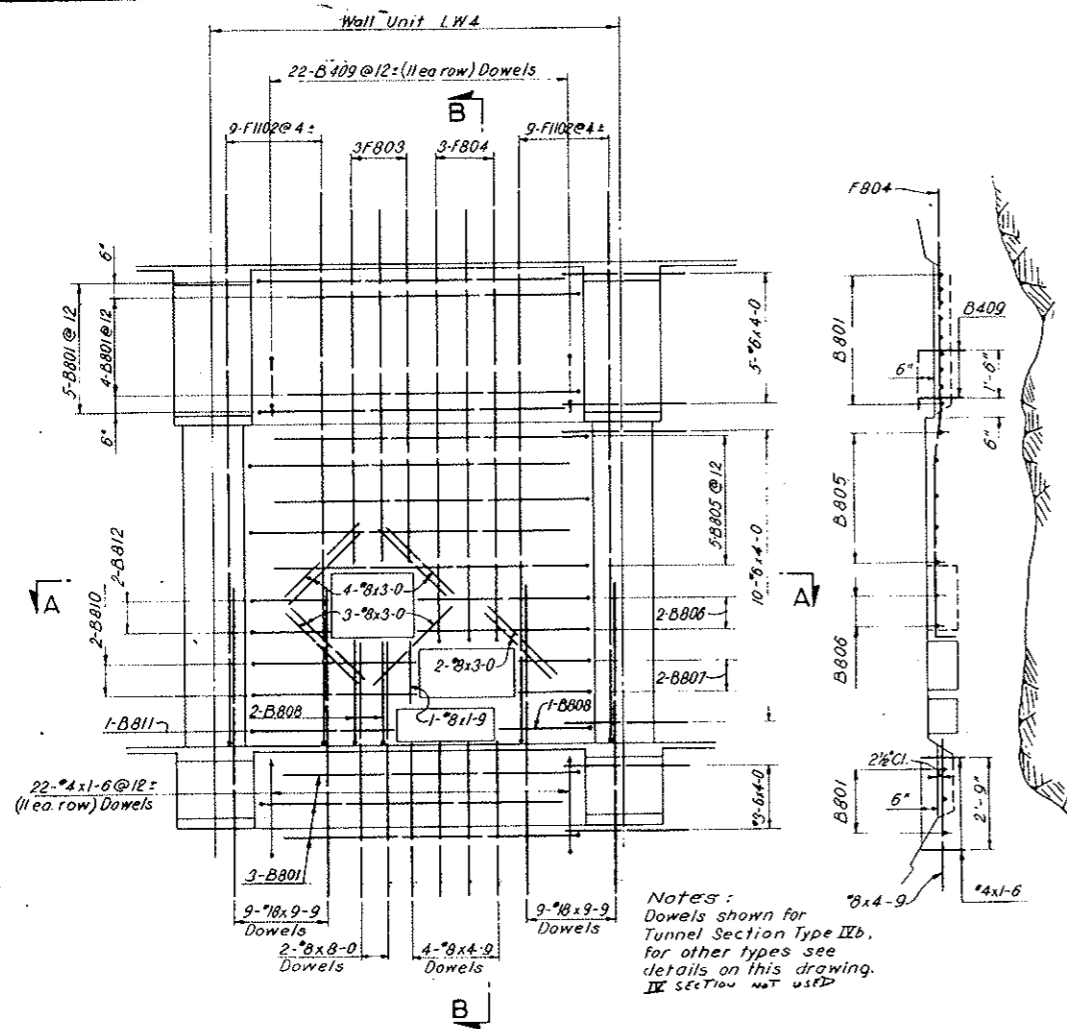
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT					
PULLBOX STATION IN HIGH WALKWAY WALL MODIFIED FLUES - SEGMENTS N44, N84 & N92 TUNNEL SECTION TYPE IX b					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R.B.A. DRAWN: M.F. CHECKED: R.B.A. SUBMITTED: <i>[Signature]</i>	RECOMMENDED: <i>[Signature]</i> APPROVED: <i>[Signature]</i>	DRAWING NO. C2-120			
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"	DATE: NOV. 1967		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-52	112

AS CONSTRUCTED
REVISED DATE Oct 26, 1975

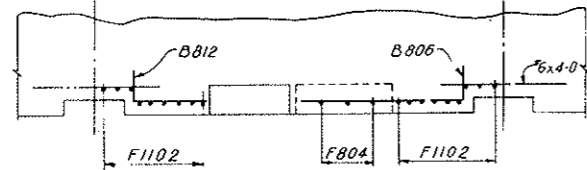
REINFORCEMENT SCHEDULE WORK SHEET									
BENDING DIAGRAMS									
DIMENSIONS									
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	W A L L					
				B	C	D	E	H	
B801	12	#3	10-2	1-0	9-2				
F1102	18	#11	17-4	0-6	8-3	1-6	7-1	0-3	
F803	3	#8	11-5	0-6	2-10	1-6	6-7	0-3	
F804	3	#8	13-9	0-6	5-2	1-8	6-7	0-3	
B805	5	#8	10-8	1-0	9-8				
B806	2	#8	6-6	1-0	5-6				
B807	2	#8	3-3	1-0	2-3				
B808	3	#8	4-0	1-0	3-0				
B409	22	#4	1-10	0-4	1-6				
B810	2	#8	6-0	1-0	5-0				
B811	1	#8	5-6	1-0	4-6				
B812	2	#8	3-3	1-0	2-3				
DOWELS TUN. SECT. TYPE IIIb									
B918	18	#9	9-1	1-4	7-9				
B814	4	#8	5-9	1-2	4-7				
B815	2	#8	9-0	1-2	7-10				
DOWELS TUN. SECT. TYPE IIIa									
B816	20	#8	8-10	1-2	7-8				
B817	4	#8	6-0	1-2	4-10				

All bent bar marks to be prefixed by No. C2-121.



INSIDE ELEVATION

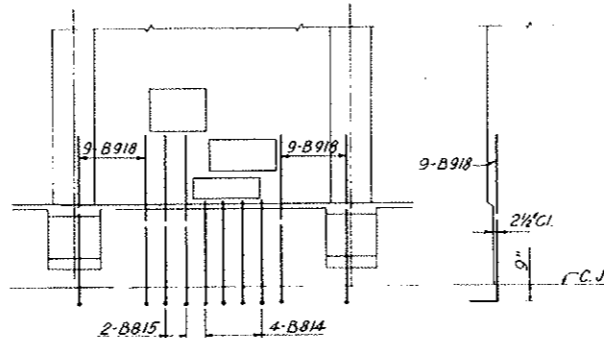
SECTION B-B



SECTION A-A

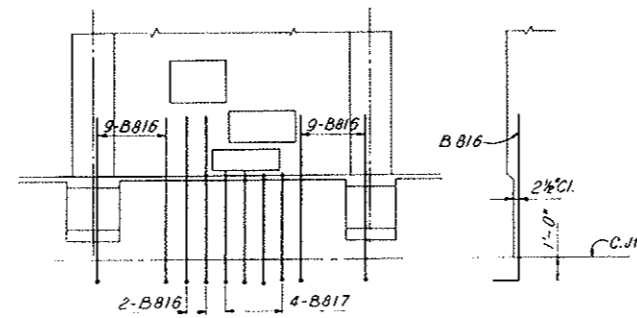
PULLBOX DISTRIBUTION STATION-LOW WALKWAY ALL TUNNEL SECTION TYPES
Scale: 3/8" = 1'-0"

Notes:
Dowels shown for Tunnel Section Type IIIb, for other types see details on this drawing. III section not used.



DOWELS FOR TUNNEL SECTION TYPE IIIb

Scale: 1/4" = 1'-0"



DOWELS FOR TUNNEL SECTION TYPE IIIa

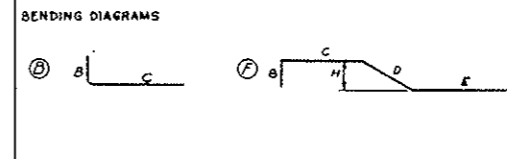
Scale: 1/4" = 1'-0"

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-27.
For General Reinforcement Notes see Dwg. C2-103.
For location and number of segments with Pullbox Station in Low Walkway Wall see listing on Dwg. C2-101.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.
For Segments NI-NB0-NB5-N167 only

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT PULLBOX STATION IN LOW WALKWAY WALL DISTRIBUTION STATION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R. B. A.	RECOMMENDED:				
DRAWN: P. E. M. C.	CHECKED: H. E. M. C.				
SUBMITTED: H. E. M. C.	APPROVED: [Signature]				
NEW YORK, N. Y.	SCALE: AS NOTED	DATE: NOV. 1967	DRAWING NO. C2-121		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-53	112

REINFORCEMENT SCHEDULE WORK SHEET



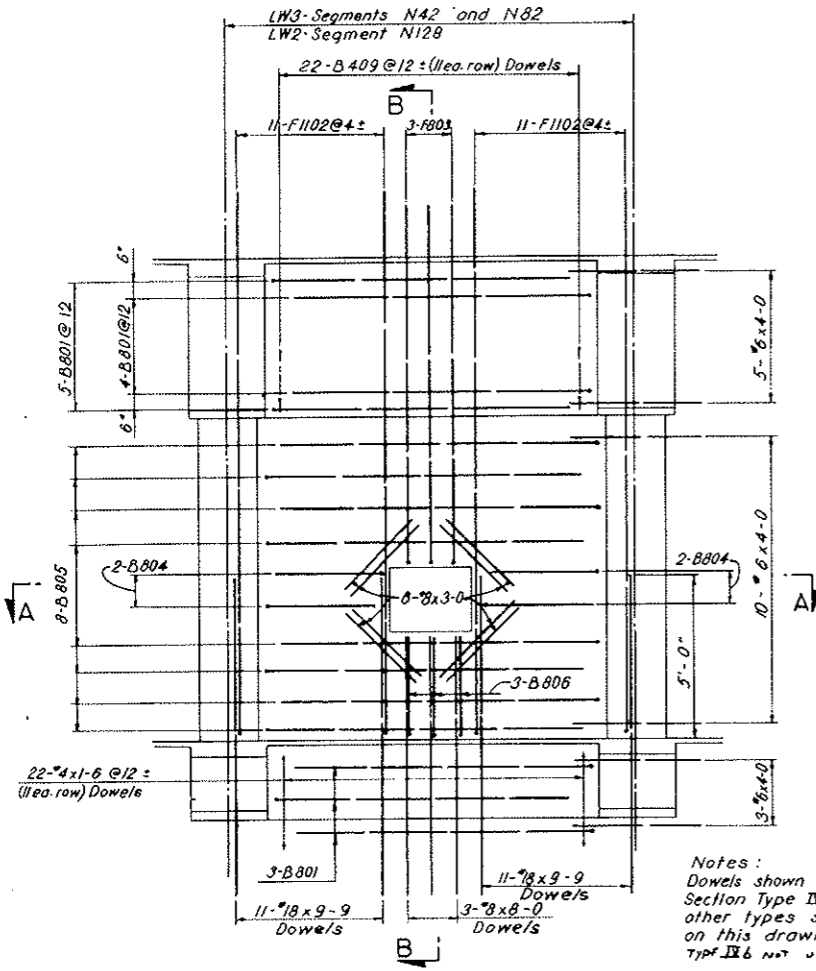
STRAIGHT BARS

NO. REQ'D	SIZE	BAR LENGTH
WALL		
8	#8	3-0
18	#6	4-0
22	#4	1-6

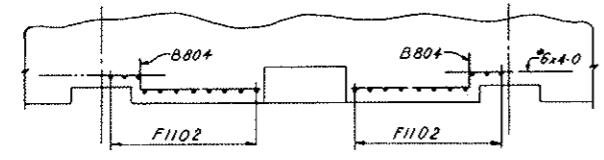
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS							
				B	C	D	E	H			
W A L L											
B801	12	#8	10-2	1-0	9-2						
F1102	22	#11	17-4	0-6	8-3	1-6	7-1	0-3			
F803	3	#8	11-5	0-6	2-10	1-6	8-7	0-3			
B804	4	#8	4-4	1-0	3-4						
B805	8	#8	10-8	1-0	9-8						
B806	3	#8	3-6	0-6	3-0						
B409	22	#4	1-10	0-4	1-6						
DOWELS TUN. SECT. TYPE IIIb											
B908	22	#9	9-1	1-4	7-9						
B811	3	#8	8-11	1-2	7-9						
DOWELS TUN. SECT. TYPE IIIa											
B810	25	#8	8-10	1-2	7-8						

All bent bar marks to be prefixed by No. C2-122

AS CONSTRUCTED
REVISED DATE Oct. 26, 1975

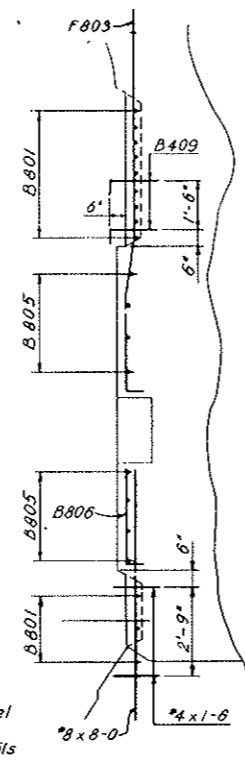


INSIDE ELEVATION

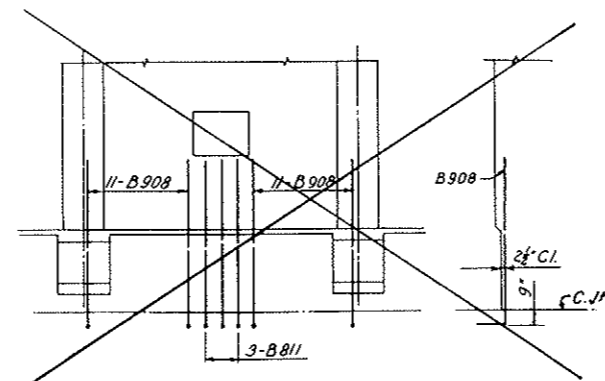


SECTION A A

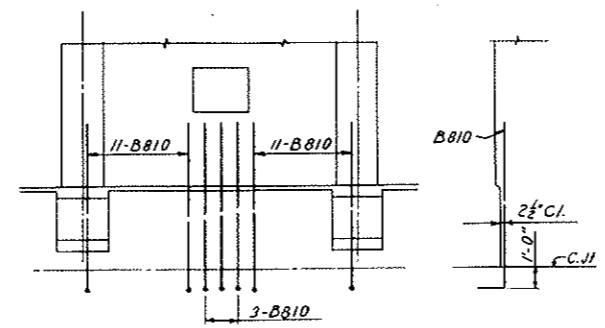
PULLBOX DISTRIBUTION STATION-LOW WALKWAY
ALL TUNNEL SECTION TYPES
Scale: 3/16" = 1'-0"



SECTION B-B



DOWELS FOR TUNNEL SECTION TYPE IIIb
Scale: 1/4" = 1'-0"



DOWELS FOR TUNNEL SECTION TYPE IIIa
Scale: 1/4" = 1'-0"

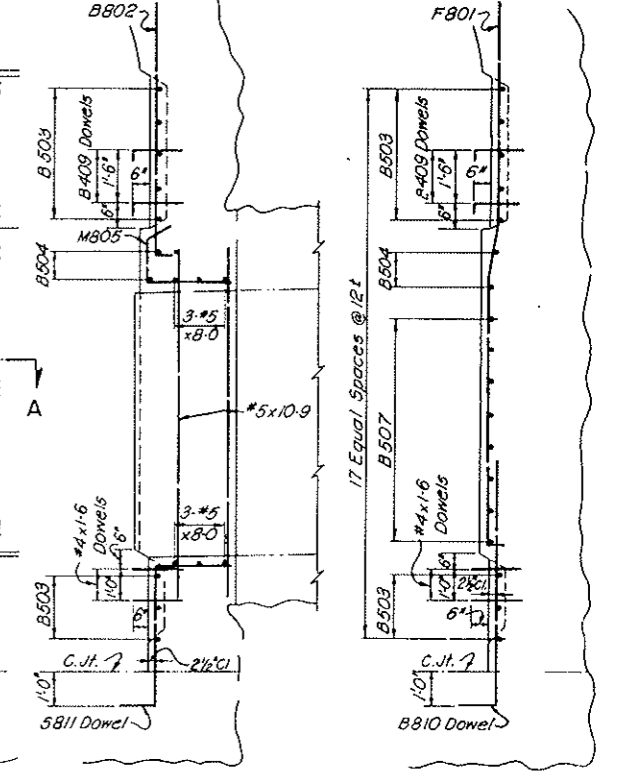
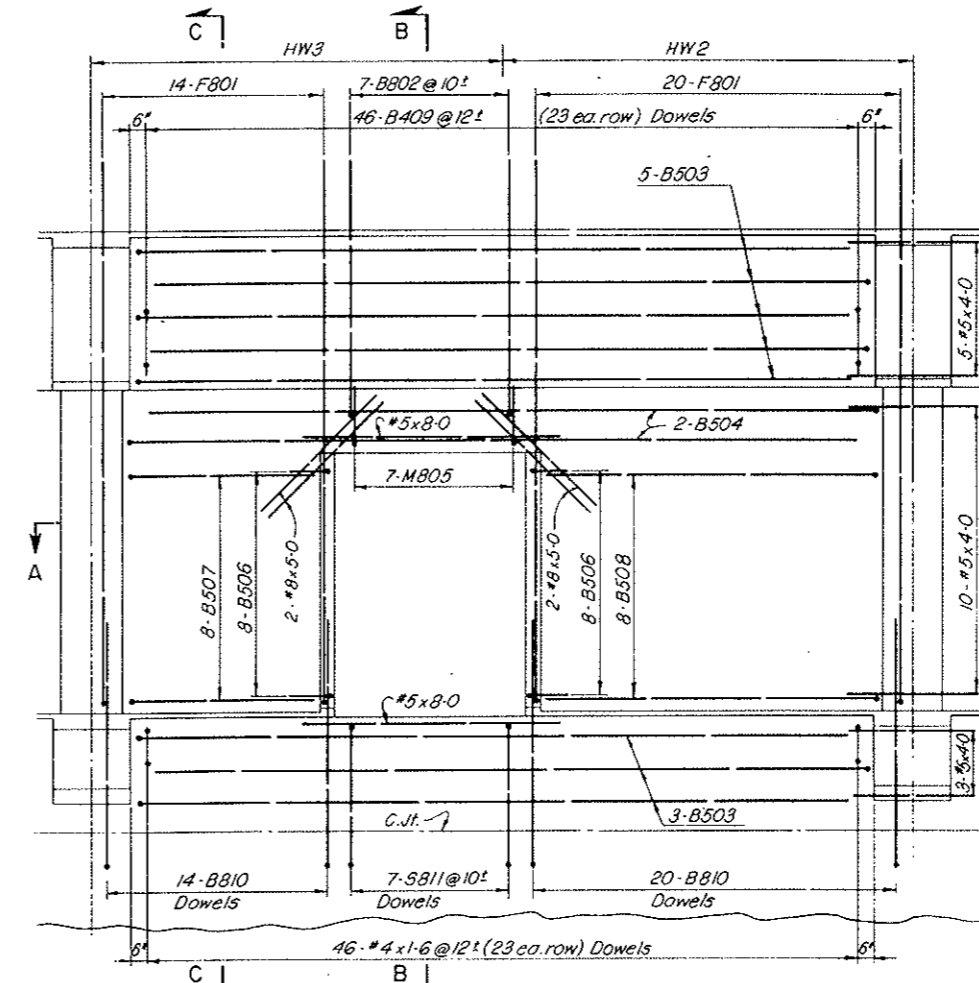
Notes:
Dowels shown for Tunnel Section Type IIIb, for other types see details on this drawing. Type IIIa not used.

NOTES:
For General Concrete Notes see Dwg. C2-11.
For Concrete details see Dwg. C2-27.
For General Reinforcing Notes see Dwg. C2-103.
For location and number of segments with Pullbox Station in Low Walkway Wall see listing on Dwg. C2-101.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.
For Segment N42 only

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT PULLBOX STATION IN LOW WALKWAY WALL CROSSOVER PULLBOX					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	R. B. A.	RECOMMENDED:	<i>[Signature]</i>		
DRAWN:	R. F. L.	CHECKED:	<i>[Signature]</i>		
SUBMITTED:	<i>[Signature]</i>	APPROVED:	<i>[Signature]</i>		
NEW YORK, N. Y.			SCALE: AS NOTED	DATE: NOV. 1967	DRAWING NO. C2-122

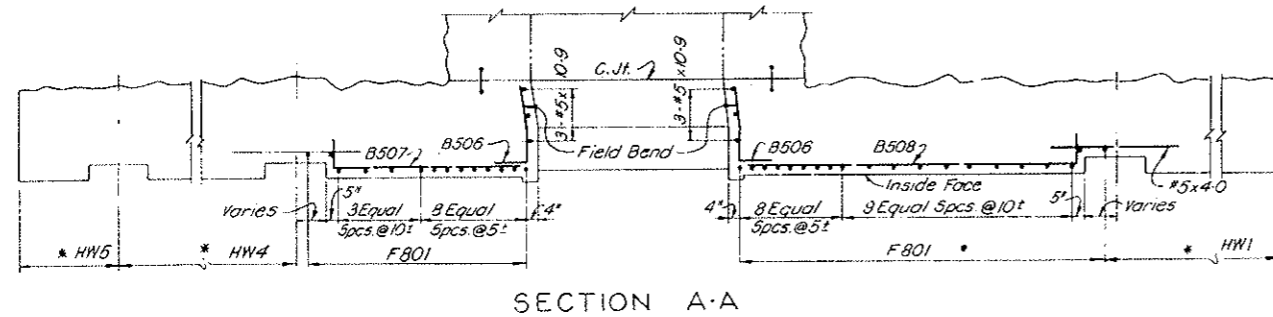
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-54	112

AS CONSTRUCTED
REVISED DATE Oct 26, 1973



INSIDE ELEVATION
Inside Face Reinforcement shown only

SECTION B-B SECTION C-C



SECTION A-A

* Use typical inside face reinforcement for corresponding tunnel section type

REIN. SCHEDULE, STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
4	#8	5-0
6	#5	10-9
6	#5	8-0
18	#5	4-0
46	#5	1-6

REINFORCEMENT SCHEDULE - BENT BARS										
BENDING DIAGRAMS										
DIMENSIONS										
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	D	E	H	K	
B802	7	#8	8-9	0-6	8-3					
B810	34	#8	8-10	1-2	7-8					
B503	8	#5	22-9	1-0	21-9					
B504	2	#5	23-3	1-0	22-3					
B506	16	#5	3-6	1-0	2-6					
B507	8	#5	6-9	1-0	5-9					
B508	8	#5	11-3	1-0	10-3					
B409	46	#4	1-10	0-4	1-6					
F801	34	#8	16-10	0-6	8-3	1-6	6-7	0-3		
M805	7	#8	5-0	2-6	1-6	1-0			0-10	
S811	7	#8	7-8	1-2	4-3	2-3				

All bent bar marks to be prefixed by No. C2-123

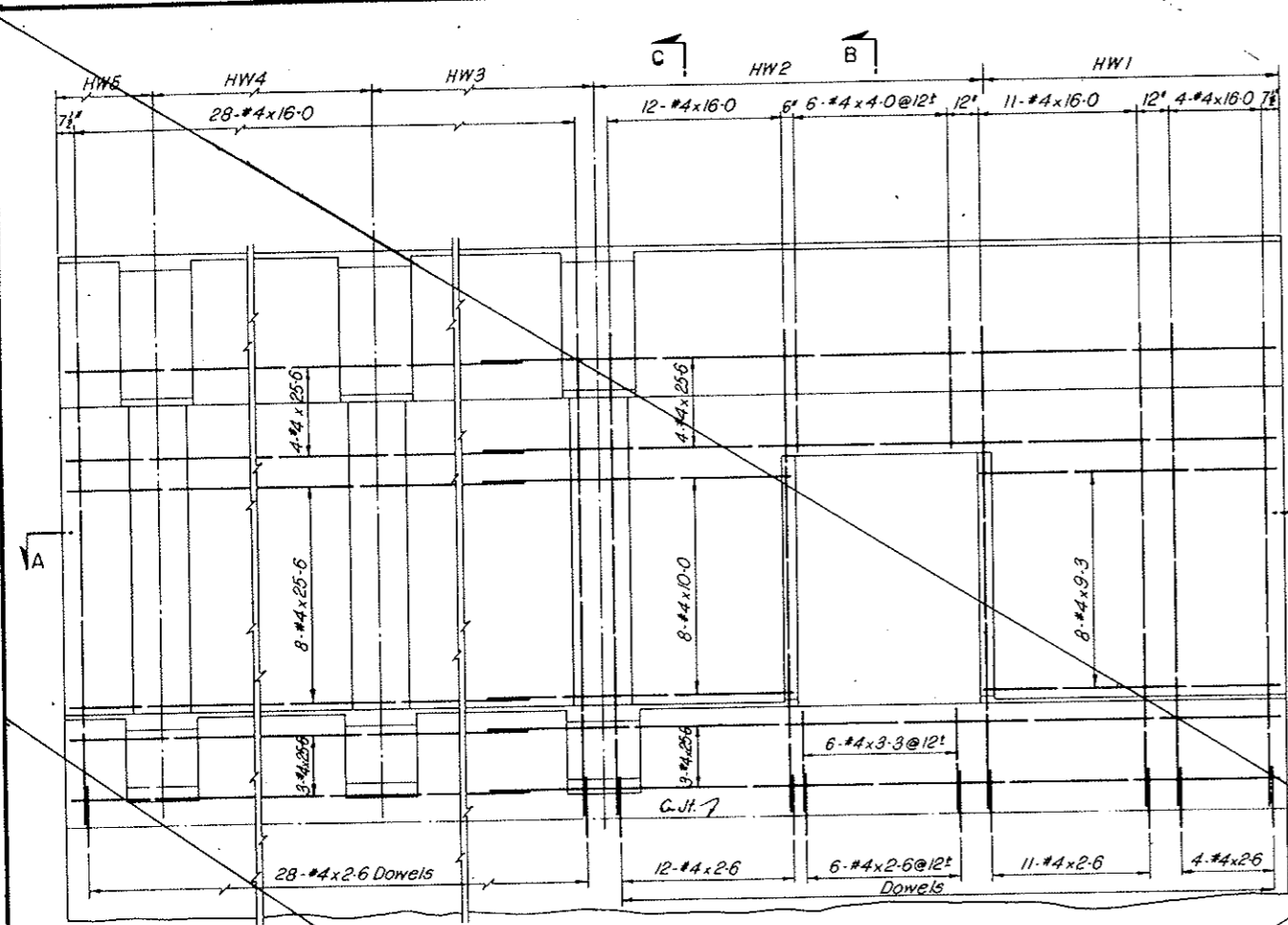
NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-32.

For General Reinforcement Notes see Dwg. C2-103.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

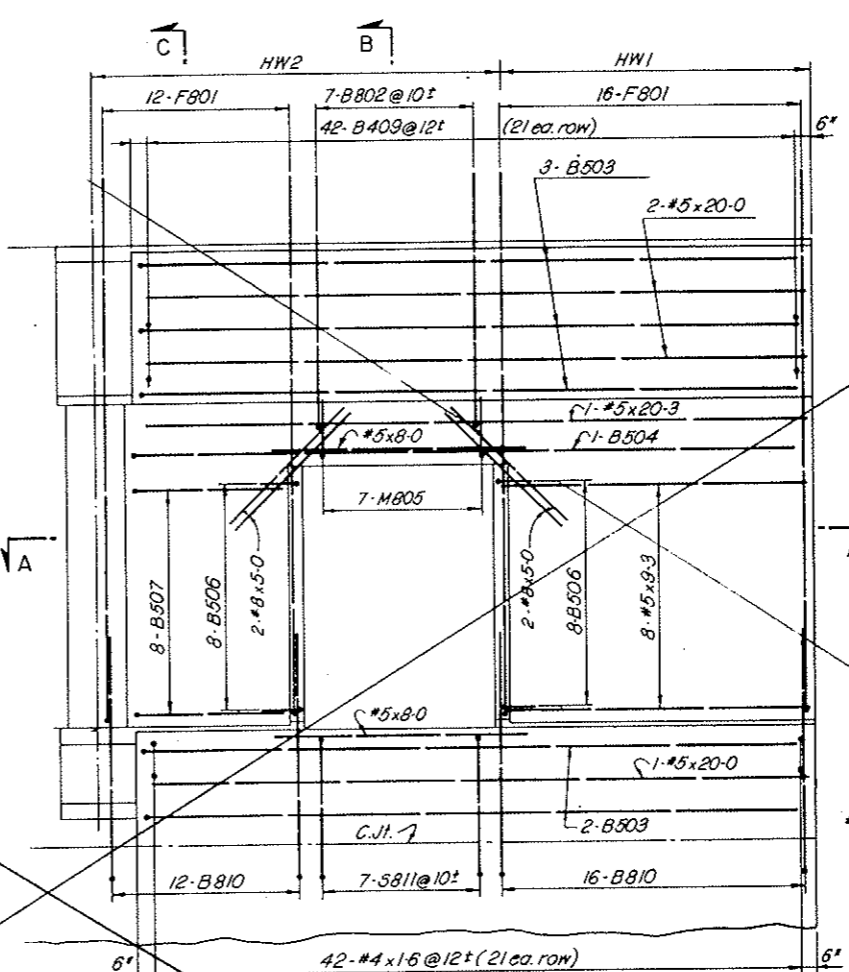
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT CROSS PASSAGEWAY OPENING SEGMENTS N42					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. McC	CHECKED: R.B.A.	RECOMMENDED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	DRAWING NO. C2-123	
SUBMITTED: <i>[Signature]</i>		APPROVED: <i>[Signature]</i>		SCALE: 3/8" = 1'-0"	
NEW YORK, N. Y.		DATE: NOV. 1967			

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	RP-55	112

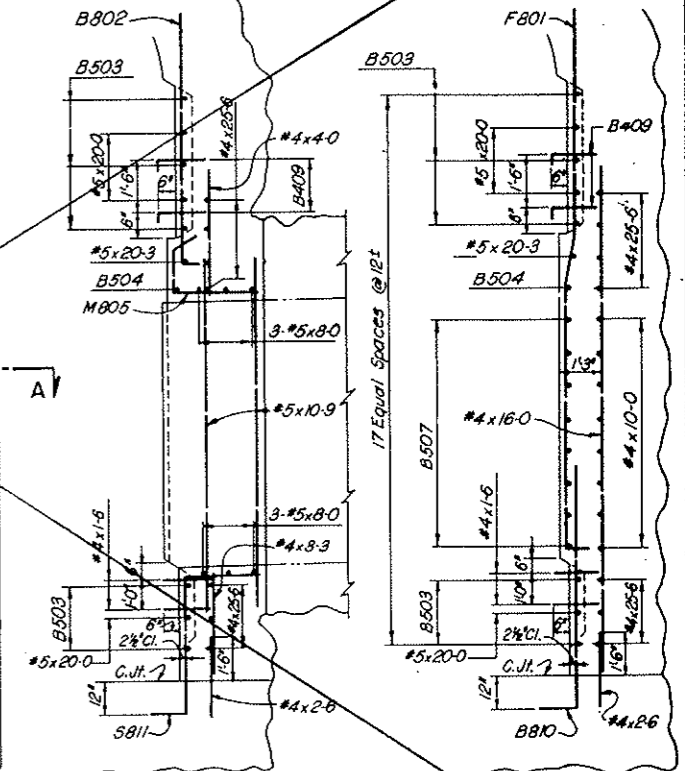
VOID
BY CONSTRUCTION
DET 26, 1973



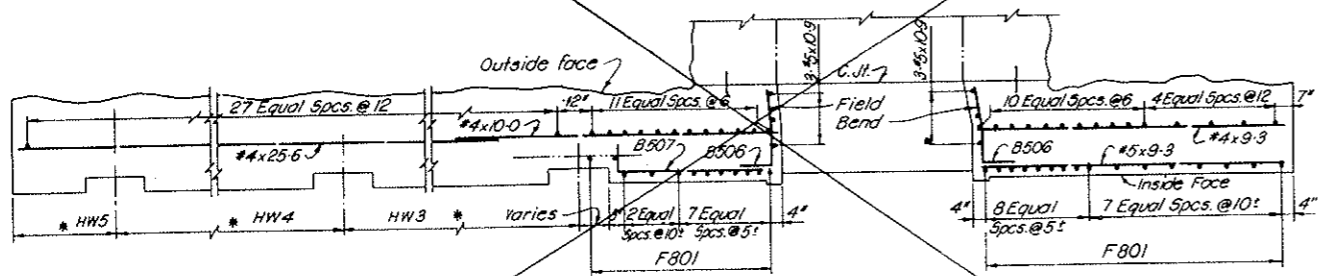
INSIDE ELEVATION
Outside Face Reinforcement shown only



INSIDE ELEVATION
Inside Face Reinforcement shown only



SECTION B-B SECTION C-C



SECTION A-A

* Use typical inside face reinforcement for corresponding Tunnel Section Type

REIN. SCHEDULE		
STRAIGHT BARS		
NO.	BAR SIZE	BAR LENGTH
OUTSIDE FACE		
22	#4	25-6
55	#4	16-0
8	#4	10-0
8	#4	9-3
6	#4	3-3
61	#4	2-6
INSIDE FACE		
4	#8	5-0
1	#5	20-3
3	#5	20-0
6	#5	10-3
8	#5	9-3
6	#5	8-0
42	#4	1-6

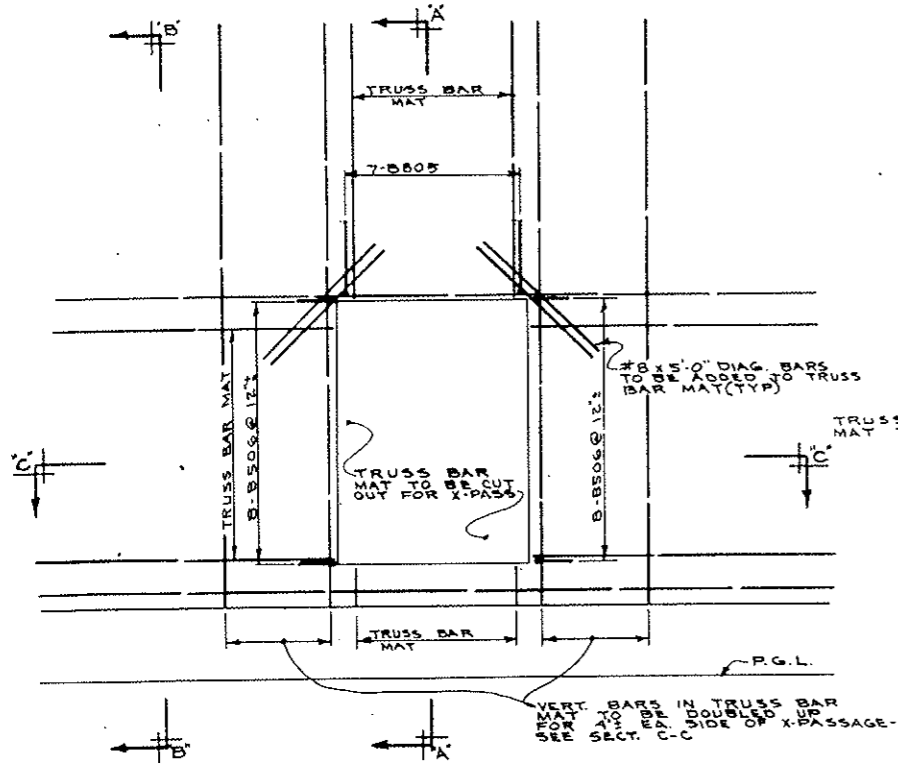
REINFORCEMENT SCHEDULE - BENT BARS										
BENDING DIAGRAMS										
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS						
				B	C	D	E	H	K	
B802	7	#8	8-9	0-6	8-3					
B810	28	#8	8-10	1-2	7-8					
B503	5	#5	21-0	1-0	20-0					
B504	1	#5	21-3	1-0	20-3					
B506	16	#5	3-6	1-0	2-6					
B507	8	#5	5-6	1-0	4-6					
B409	42	#4	1-10	0-4	1-6					
F801	28	#8	16-10	0-6	8-3	1-6	6-7	0-3		
M805	7	#8	5-0	2-6	1-6	1-0		0-10		
5811	7	#8	7-8	1-2	4-3	2-3				

All bent bar marks to be prefixed by No. C2-124

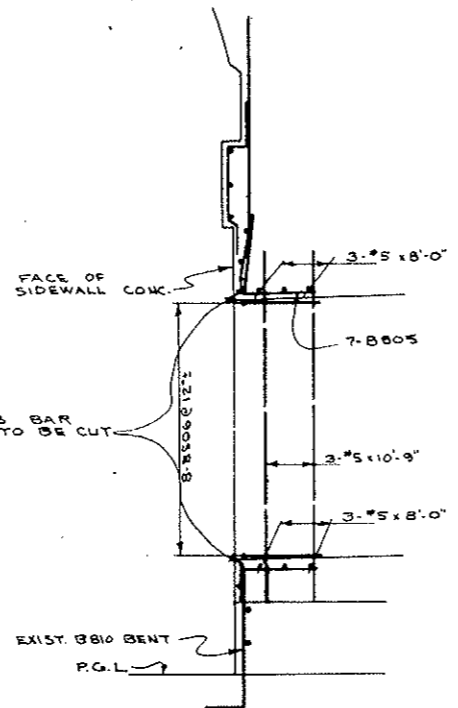
NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-32.
Outside face reinforcement required only if Cross Passageway locations are in rock requiring Tunnel Section Type Ia.
For General Reinforcement Notes see Dwg. C2-103.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT					
CROSS PASSAGEWAY OPENING SEGMENT N128					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R.B.A.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: R.B.	CHECKED: H.E. McC.				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
NEW YORK, N. Y.	SCALE: 3/8" = 1'-0"	DATE: NOV. 1967	DRAWING NO. C2-124		

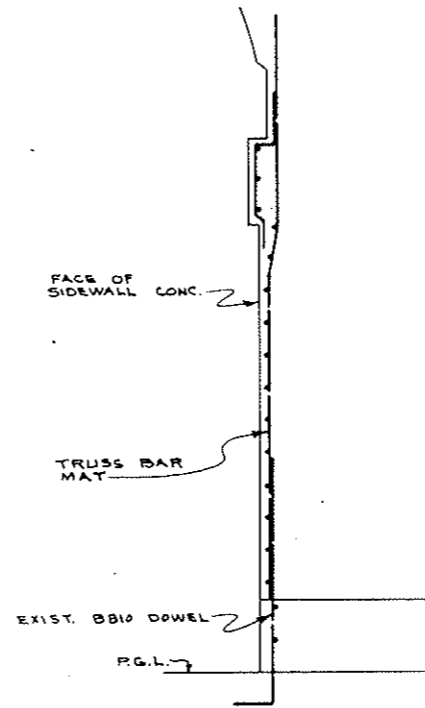
AS CONSTRUCTED
REVISED DATE Oct. 24, 1973



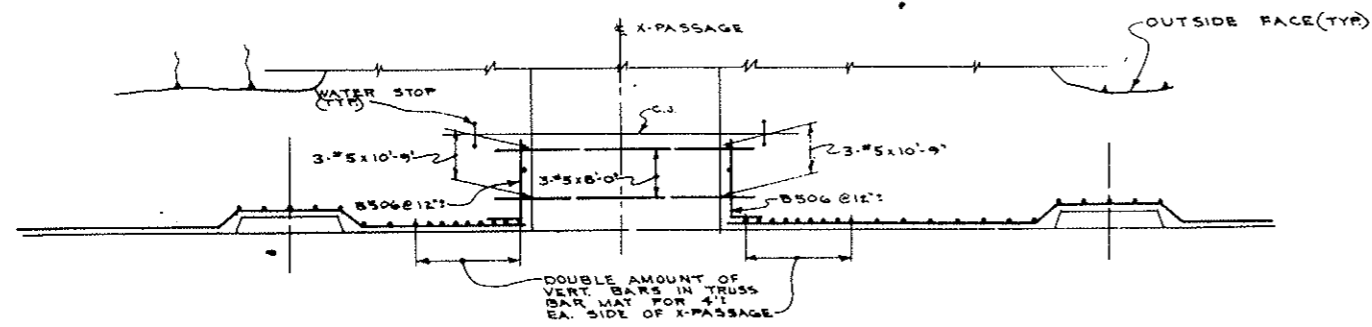
ELEVATION LOOKING FROM ϕ TUNNEL
SCALE: $\frac{3}{8}$ " = 1'-0"



SECTION A-A
SCALE: $\frac{3}{8}$ " = 1'-0"



SECTION B-B
SCALE: $\frac{3}{8}$ " = 1'-0"



SECTION C-C
SCALE: $\frac{3}{8}$ " = 1'-0"

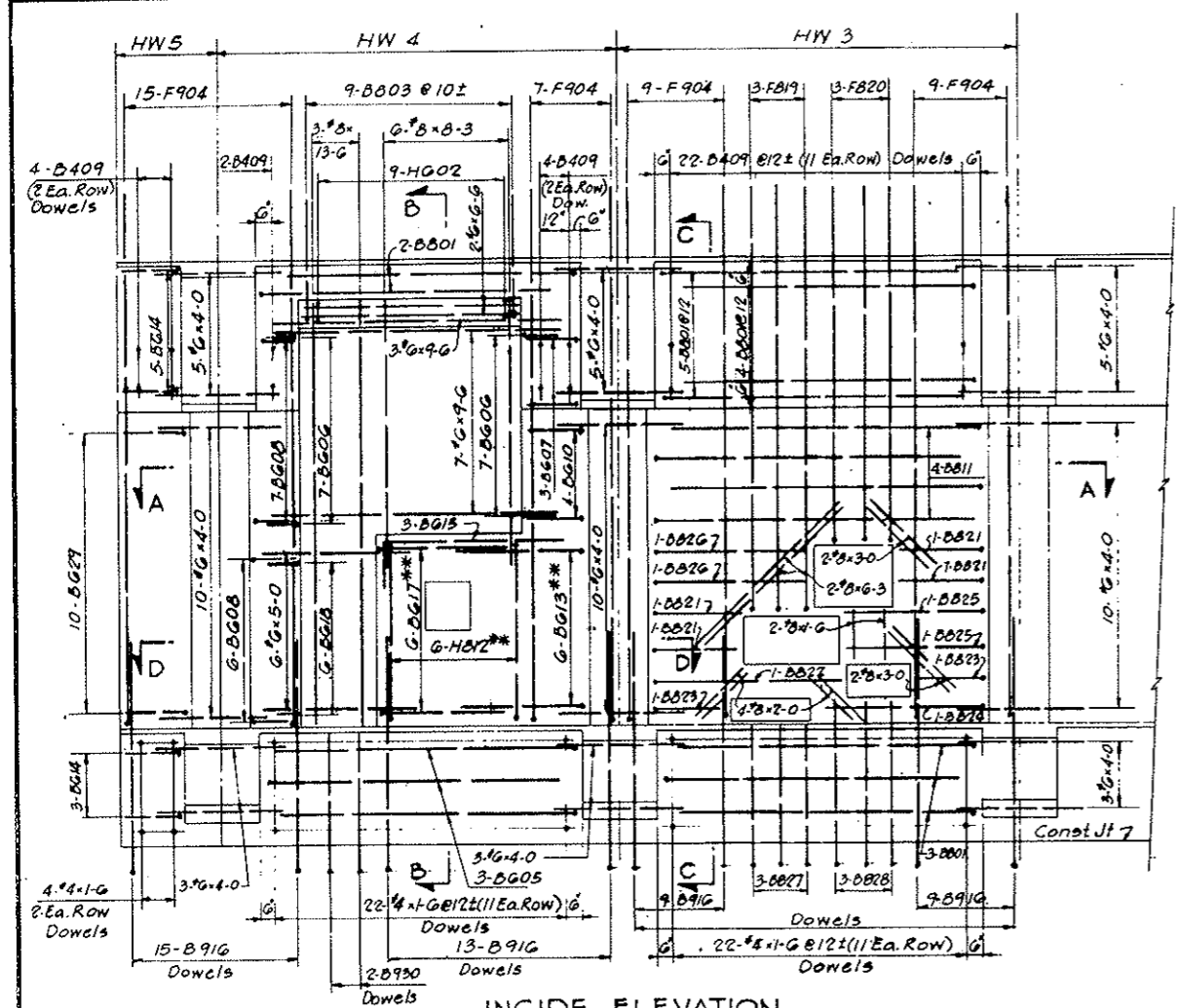
REBAR SCHEDULE								
MARK NO.	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS				REMARKS
				B	C	D	F	
B506	16	#5	3'-6"	30"	12"			TYPE B
B805	7	#8	5'-0"	30"	30"			TYPE B
FB03	8	#8	18'-0"			9'-11"	6'-7"	ADD TO TRUSS BAR MAT
	6	#5	8'-0"					STRAIGHT BARS
	6	#5	10'-9"					STRAIGHT BARS
	4	#8	5'-0"					DIAG. BARS

SCHEDULE DOES NOT INCLUDE TRUSS BAR MAT.
BAR NOS ON THIS SCHEDULE INDICATES THE MIN. SIZE OF BAR WHICH COULD BE USED.

STATE OF COLORADO DEPARTMENT OF HIGHWAYS			
PREPARED BY: STRAIGHT CREEK CONSTRUCTORS	SCALE NOTED	DRAWN BY: W.M. GLENN	DATE: 8-3-72
CENTER ϕ EAST X-PASSAGEWAY REBAR DETAILS			
DATE: 8-3-72	APPROVED BY:	PROJECT NUMBER: C2-124A	

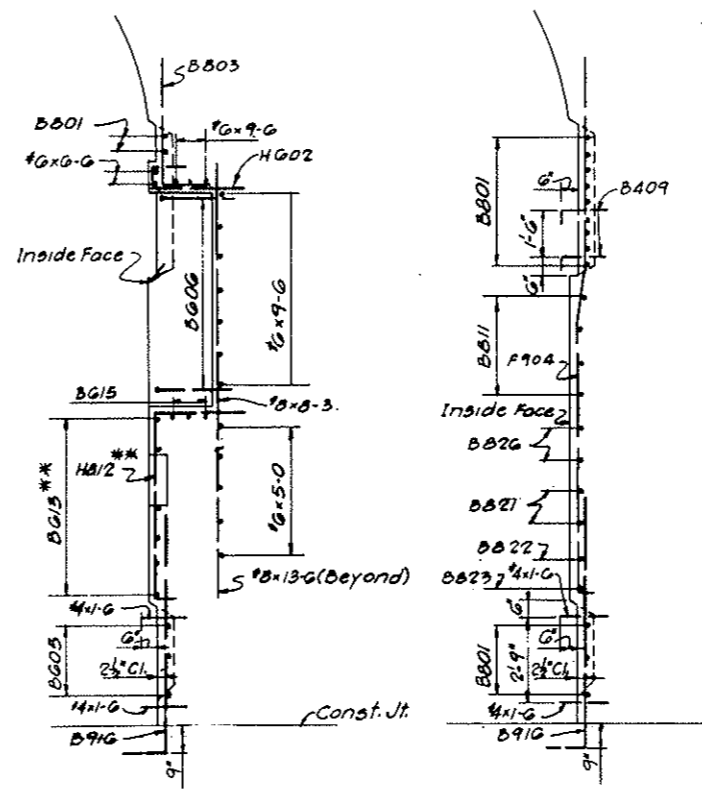
AS CONSTRUCTED
REVISED DATE 04.26.1975

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-56	112



INSIDE ELEVATION

Scale: 3/8" = 1'-0" ** Spread to clear niche



SECTION B-B
Scale: 3/8" = 1'-0"

SECTION C-C
Scale: 3/8" = 1'-0"

STRAIGHT BARS

NO.	BAR REQ'D	BAR SIZE	BAR LENGTH
3	#8	13-0	
6	#8	8-3	
2	#8	6-3	
4	#8	5-0	
4	#8	2-0	
2	#8	1-0	
10	#6	9-0	
2	#8	6-0	
6	#8	5-0	
34	#6	4-0	
48	#4	1-0	

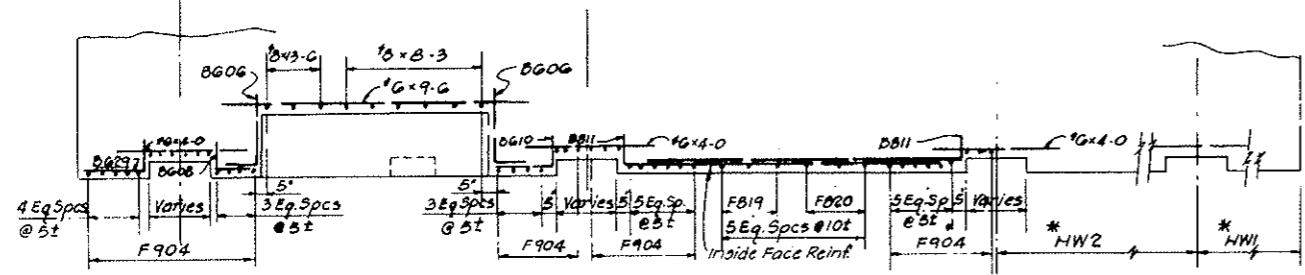
REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS

BAR MARK	REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS					
				B	C	D	E	H	
B801	14	#8	10-2	1-0	9-2				
H802	9	#8	4-5	1-0	0-8	2-9			
B803	9	#8	5-0	1-0	4-0				
F904	40	#9	17-0	0-6	8-3	1-0	6-9	0-3	
B805	3	#6	10-2	1-0	9-2				
B806	14	#6	3-3	1-0	2-3				
B807	3	#6	2-0	1-0	1-0				
B808	13	#6	2-0	1-0	1-0				
B809	32	#4	1-10	0-4	1-0				
B810	4	#6	2-9	1-0	1-9				
B811	4	#8	10-8	1-0	9-8				
H812	6	#8	9-0	2-9	5-9	0-6			
B813	6	#6	5-3	1-0	4-3				
B814	3	#6	2-9	1-0	1-9				
B815	3	#6	6-9	1-0	5-9				
B816	46	#9	9-1	1-4	7-9				
B817	6	#6	7-0	2-9	4-3				
B818	6	#6	3-9	1-0	2-9				
F819	5	#8	13-4	0-6	4-9	1-0	6-7	0-3	
F820	3	#8	11-1	0-6	2-0	1-0	6-7	0-3	
B821	4	#8	3-10	1-0	2-10				
B822	1	#8	7-0	1-0	6-0				
B823	2	#8	5-3	1-0	2-3				
B824	1	#8	6-0	1-0	5-0				
B825	2	#8	5-8	1-0	4-8				
B826	2	#8	6-0	1-0	5-0				
B827	3	#8	6-1	1-4	4-9				
B828	3	#8	6-7	1-4	5-3				
B829	10	#6	3-0	1-0	2-0				
B830	2	#9	5-10	1-4	4-6				

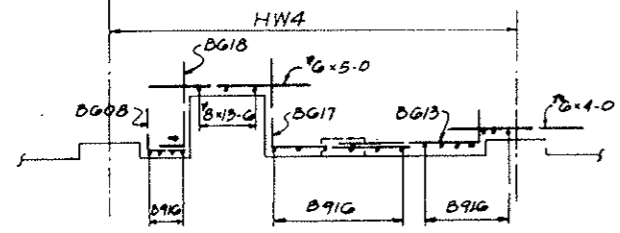
All bent bar marks to be prefixed by No. C2-125. There are no bent bars in outside face reinforcement.

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-23 and C2-27.
For General Reinforcement Notes see Dwg. C2-103.
For location and number of segments with Traffic Control Pulpits see listing on Dwg. C2-101.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.



SECTION A-A

* Use typical inside face reinforcement for corresponding tunnel section type.

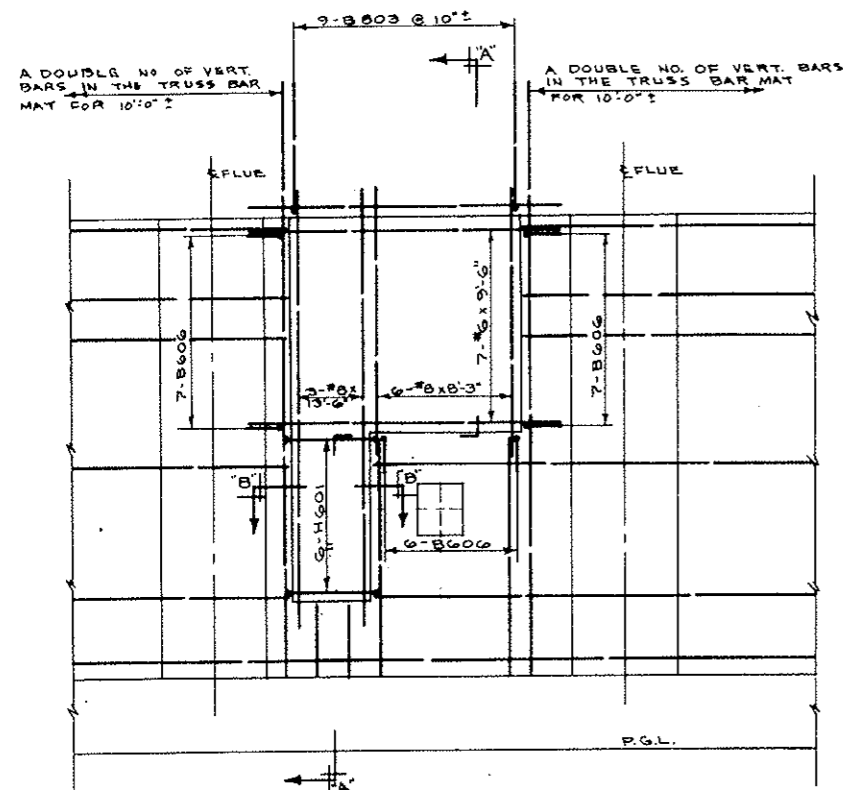


SECTION D-D

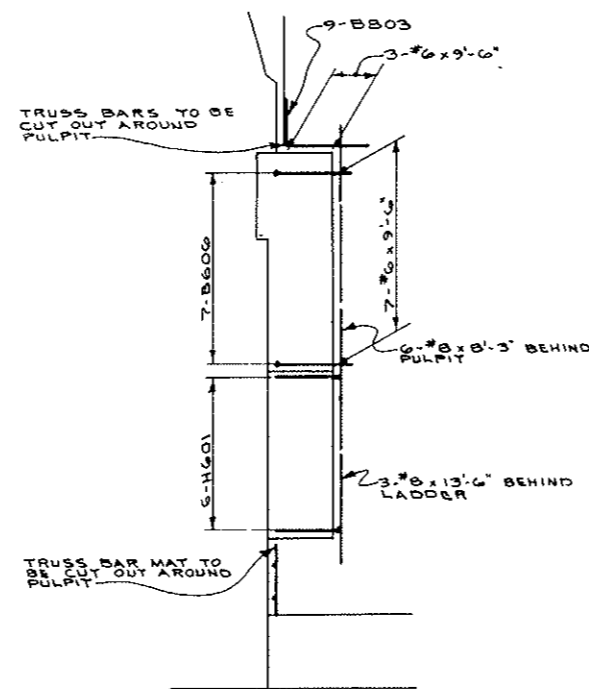
Scale: 3/8" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT TRAFFIC CONTROL PULPIT HIGH WALKWAY WALL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H. F. McC.	RECOMMENDED:	H. F. McC.		
DRAWN:	M. E.	CHECKED:	R. B. A.		
SUBMITTED:		APPROVED:			
NEW YORK, N. Y.			SCALE: AS NOTED	DATE: NOV. 1967	DRAWING NO. C2-125

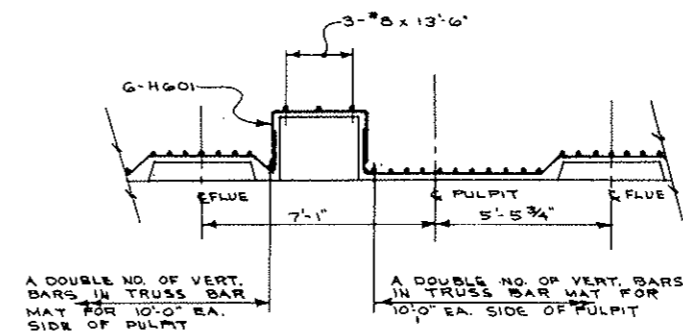
AS CONSTRUCTED
 REVISED DATE Oct 24, 1973



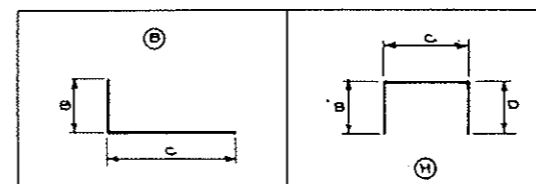
ELEV. LOOKING FROM \perp TUNNEL
 SCALE: $\frac{3}{8}$ "=1'-0"



SECTION A-A
 SCALE: $\frac{3}{8}$ "=1'-0"



SECTION B-B
 SCALE: $\frac{3}{8}$ "=1'-0"



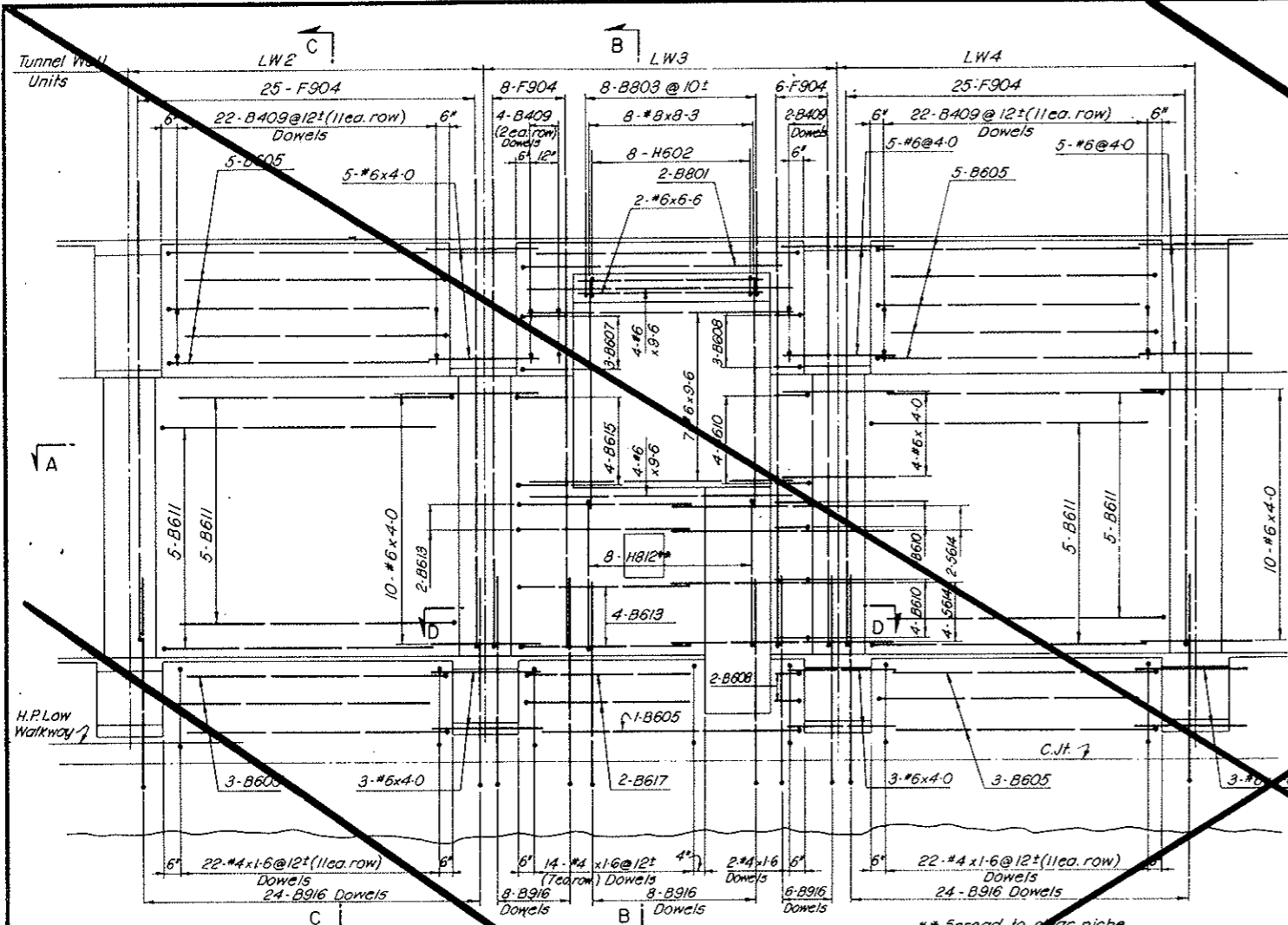
MARK NO.	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS			REMARKS
				B	C	D	
B606	20	#6	3'-3"	1'-0"	2'-3"		
B803	9	#8	4'-0"	1'-6"	2'-6"		
H601	6	#6	6'-7"	1'-11"	2'-11"	1'-11"	
	6	#8	8'-3"				STRAIGHT BAR
	3	#8	13'-6"				STRAIGHT BAR
	10	#6	9'-6"				STRAIGHT BAR

SCHEDULE DOES NOT INCLUDE TRUSS BAR MAT. SEE DRAWING C2-107A

FOR SEGMENTS N108-N159

STATE OF COLORADO
 DEPARTMENT OF HIGHWAYS
 PREPARED BY: STRAIGHT CREEK CONSTRUCTORS
 HIGH WALKWAY PULPIT REBAR
 DETAILS - SOUTH WALL
 DATE: 8-14-72 APPROVED BY: SCC-654 DRAWING NUMBER: C2-125A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-57	112



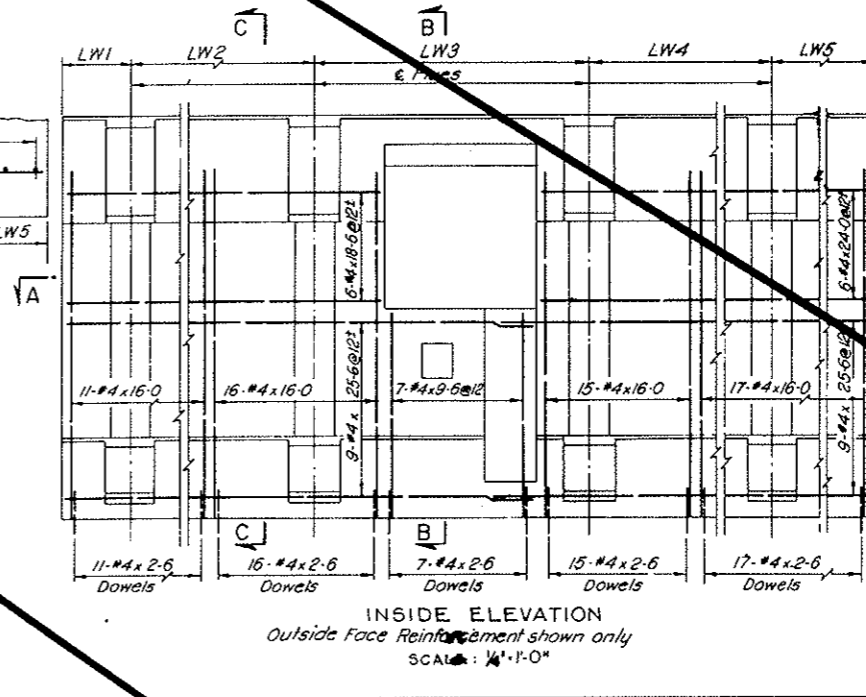
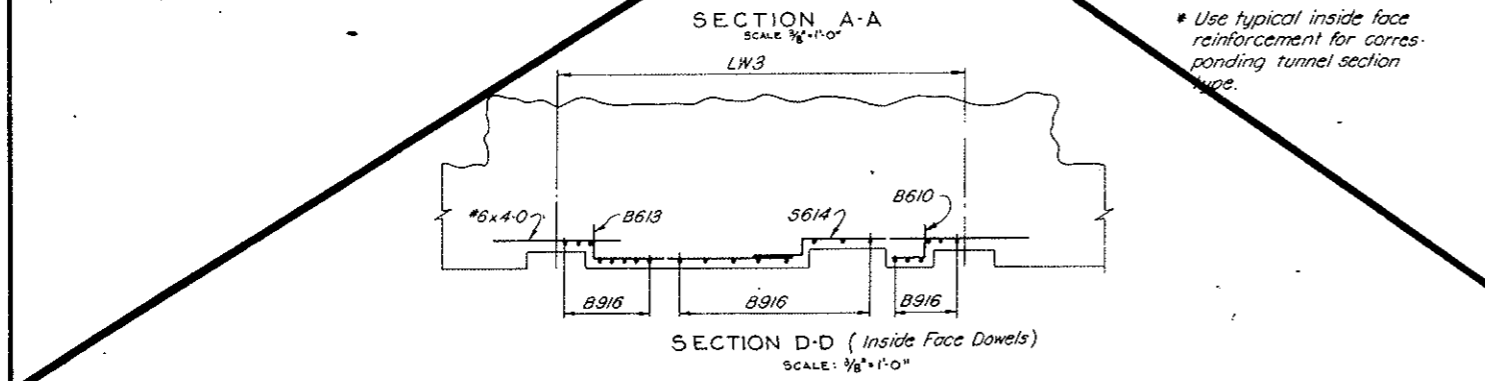
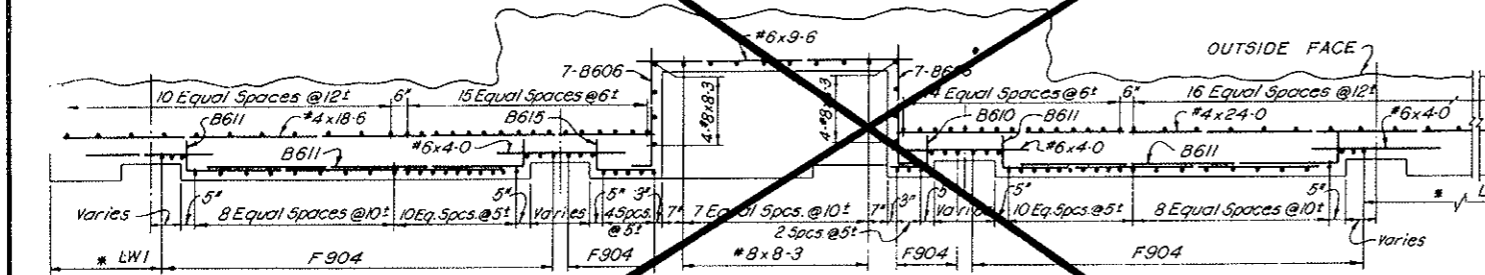
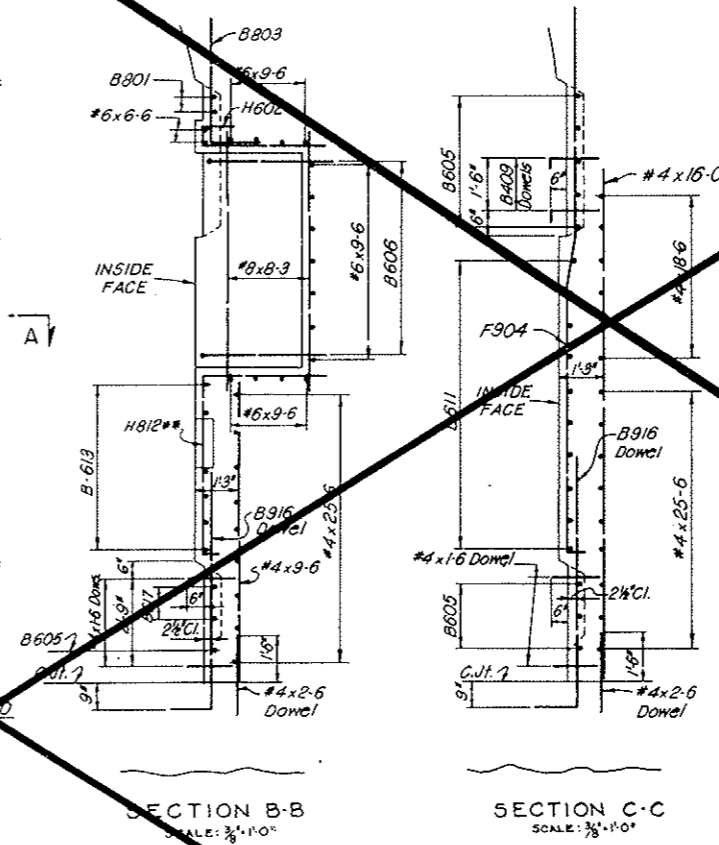
REINFC SCHEDULE
STRAIGHT BARS

NO.	BAR REQ'D	SIZE	BAR LENGTH
INSIDE FACE			
18	#8	8-3	
15	#6	9-6	
2	#6	6-6	
48	#6	4-0	
OUTSIDE FACE			
60	#4	1-6	
18	#4	25-6	
6	#4	24-0	
6	#4	18-6	
59	#4	16-0	
7	#4	9-6	
66	#4	2-6	

REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS

MARK	NO.	BAR REQ'D	SIZE	BAR LENGTH	DIMENSIONS			
					B	C	D	H
B916	70	#9	9-1	1-9	7-4			
B801	2	#8	10-2	1-0	9-2			
B803	8	#8	5-6	1-6	4-0			
B605	17	#6	10-2	1-0	9-2			
B606	14	#6	4-9	0-9	4-0			
B607	3	#6	2-9	1-0	1-9			
B608	5	#6	2-0	1-0	1-0			
B610	10	#6	2-3	1-0	1-3			
B611	20	#6	10-8	1-0	9-8			
B613	6	#6	7-3	1-0	6-3			
B615	4	#6	3-0	1-0	2-0			
B617	2	#6	6-10	1-0	5-0			
B409	50	#4	1-10	0-4	1-6			
F904	64	#9	17-0	0-6	8-3	1-6	6-9	0-3
H812	8	#8	10-0	0-6	5-6	4-0		
H602	9	#8	5-8	1-0	0-8	4-0		
S614	6	#8	9-0	1-6	0-6	7-0		



All bent bar marks to be prefixed by No. C2-126. There are no bent bars in outside face reinforcement.

VOID BY CONSTRUCTION
OCT 26, 1973

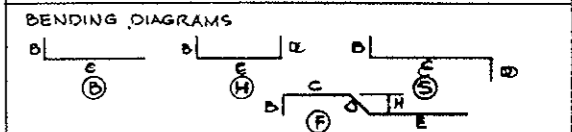
NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-27.
For General Reinforcement Notes see Dwg. C2-103.
For location and number of segments with Traffic Control Pulpits see listing on Dwg. C2-101.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT					
TRAFFIC CONTROL PULPIT LOW WALKWAY WALL SEGMENT U33					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	R. B. A.	CHECKED BY	H. E. McC.	APPROVED BY	H. E. McC.
DRAWN BY	R. B. A.	RECOMMENDED BY	H. E. McC.	DATE	NOV. 1967
SUBMITTED BY	H. E. McC.	APPROVED BY	H. E. McC.	DRAWING NO.	C2-126
SCALE	AS NOTED	DATE	NOV. 1967		

AS CONSTRUCTED
REVISED DATE Oct. 24, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-58	112

REINFORCEMENT SCHEDULE - BENT BARS



BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS					
				B	C	D	E	H	
B801	14	#8	10-2	1-0	9-2				
HG02	8	#6	5-8	1-0	0-8	4-0			
B803	8	#8	5-6	1-0	6-0				
F904	39	#9	17-0	0-6	8-3	1-6	6-9	0-3	
B805	8	#6	10-2	1-0	9-2				
B806	14	#6	4-9	0-9	4-0				
B807	3	#6	2-9	1-0	1-9				
B808	3	#6	2-0	1-0	1-0				
B409	50	#4	1-10	0-9	1-6				
B810	10	#6	2-6	1-5	1-8				
B811	10	#6	10-8	1-0	9-8				
H812	8	#8	10-0	0-6	5-6	4-0			
B813	6	#6	7-3	1-0	6-3				
B814	6	#6	9-0	1-6	0-6	7-0			
B815	4	#6	3-0	1-0	2-0				
B916	40	#9	9-1	1-4	7-9				
F1118	18	#11	17-4	0-6	8-3	1-6	7-1	0-3	
F819	3	#8	11-6	0-6	2-11	1-6	6-7	0-3	
F820	3	#8	13-10	0-6	5-3	1-6	6-7	0-3	
B821	5	#8	10-8	1-0	9-8				
B822	2	#8	6-6	1-0	5-6				
B823	4	#8	3-3	1-0	2-3				
B824	3	#8	4-0	1-0	3-0				
B825	1	#8	5-6	1-0	4-6				
B826	2	#8	6-0	1-0	5-0				
B827	2	#8	9-0	1-2	7-10				
B1128	18	#11	10-2	1-8	8-6				
B829	4	#8	5-9	1-2	4-7				

All bent bar marks to be prefixed by No. C2-127

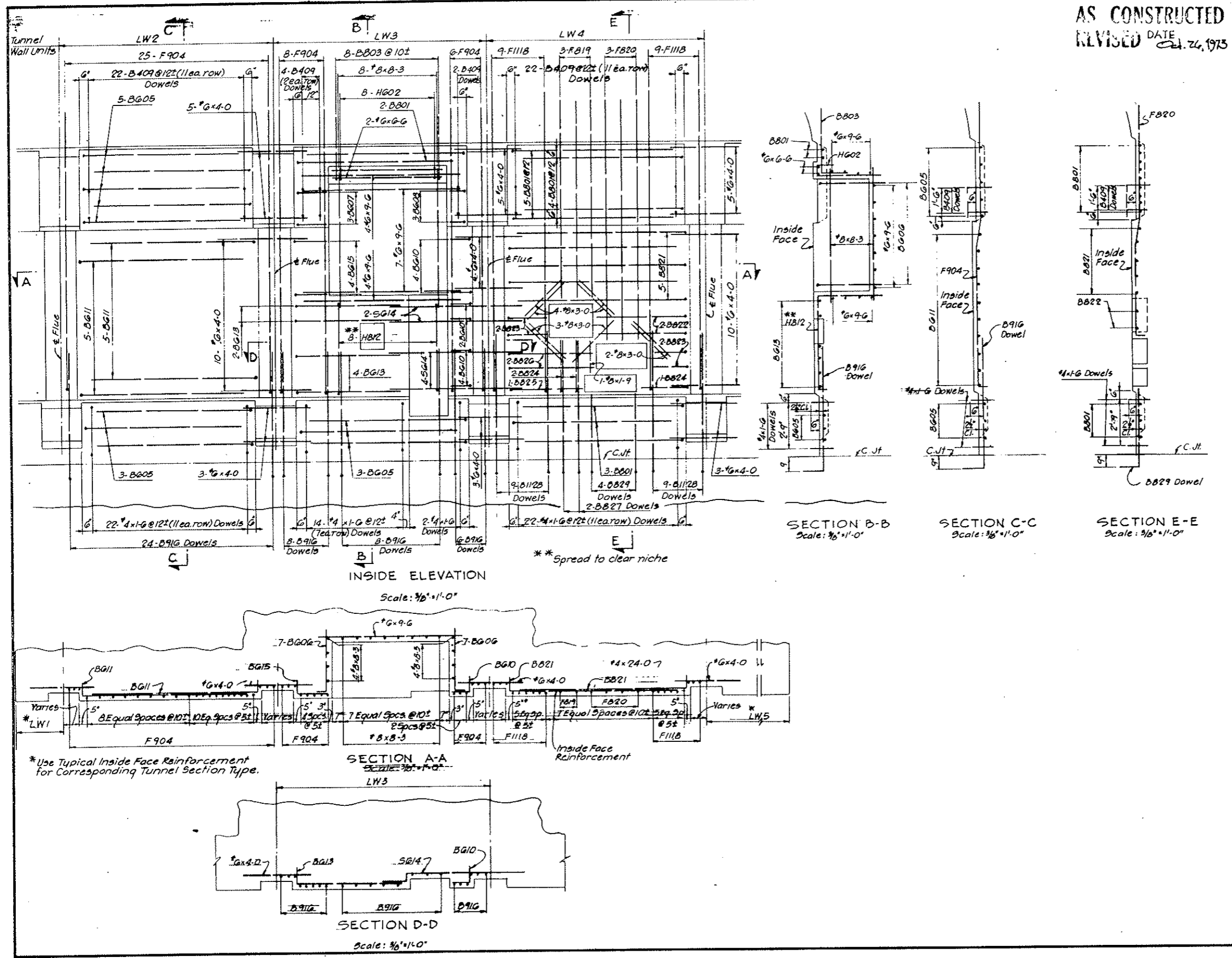
REINFORCEMENT SCHEDULE - STRAIGHT BARS

NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH
16	#8	5-3			
9	#8	3-0			
1	#8	1-9			
15	#6	9-6			
2	#6	6-6			
48	#6	4-0	60	#4	1-6

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-27.

For General Reinforcement Notes see Dwg. C2-103.
For method of incorporating Reinforcement Schedules on this drawing into Standard Segment Reinforcement Schedules see Dwg. C2-101.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - TUNNEL REINFORCEMENT TRAFFIC CONTROL PULPIT LOW WALKWAY WALL SEGMENT N36 TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	R. B. A.	CHECKED	M. F. A.	SUBMITTED	
APPROVED		APPROVED			
DATE	NOV. 1967	SCALE	AS SHOWN	DATE	NOV. 1967



INSIDE ELEVATION
Scale: 3/8" = 1'-0"

SECTION B-B
Scale: 3/8" = 1'-0"

SECTION C-C
Scale: 3/8" = 1'-0"

SECTION E-E
Scale: 3/8" = 1'-0"

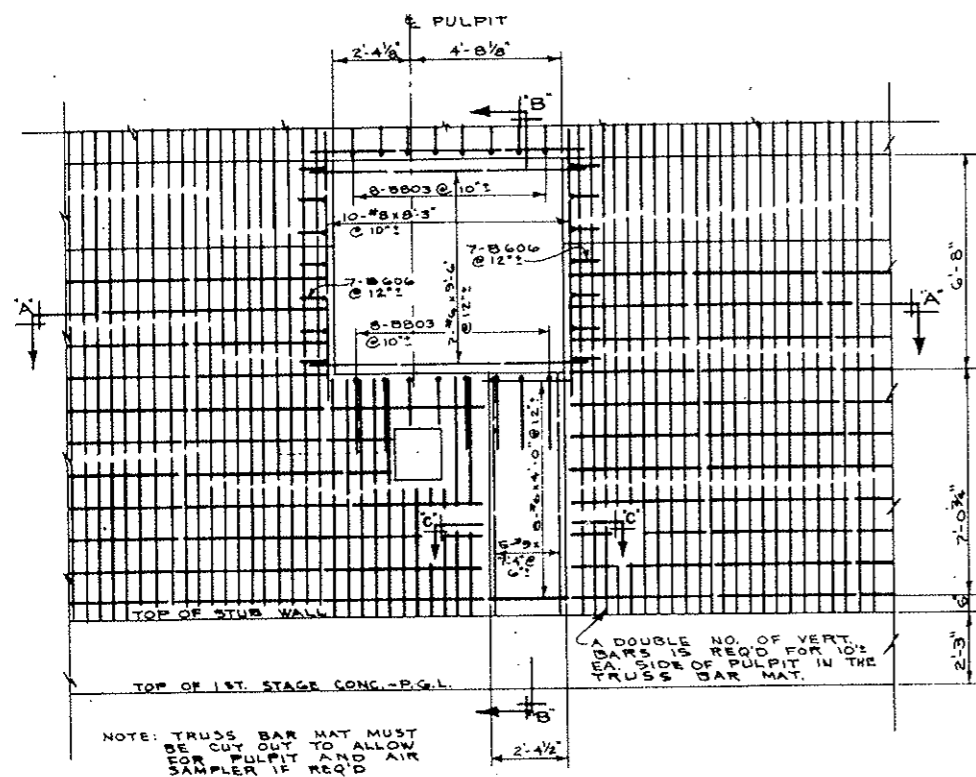
SECTION A-A
Scale: 3/8" = 1'-0"

SECTION D-D
Scale: 3/8" = 1'-0"

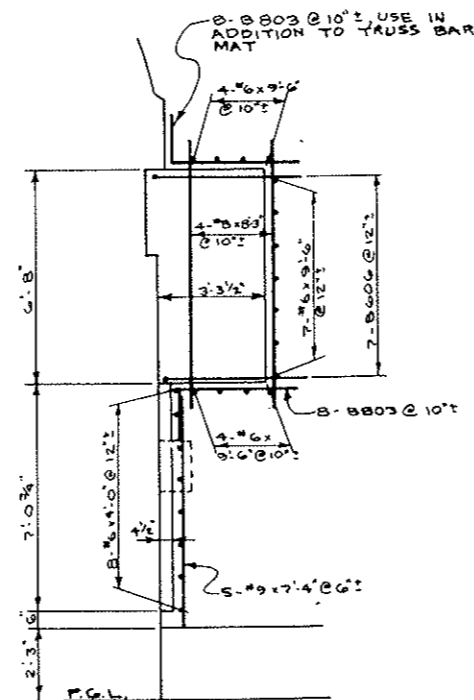
** Spread to clear niche

* Use Typical Inside Face Reinforcement for Corresponding Tunnel Section Type.

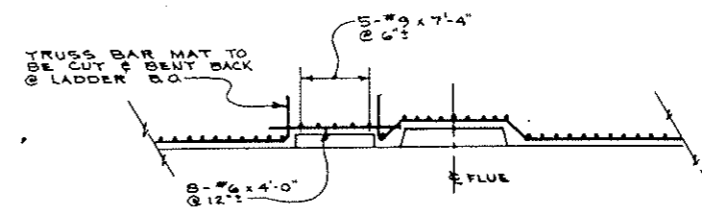
AS CONSTRUCTED
 REVISED DATE *Ed. 26, 1975*



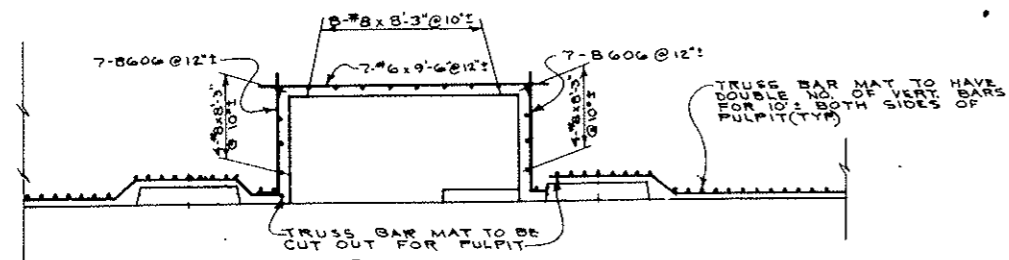
ELEVATION LOOKING FROM & TUNNEL
 SCALE: 3/8" = 1'-0"



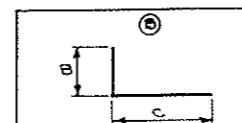
SECTION B-B
 SCALE: 3/8" = 1'-0"



SECTION C-C
 SCALE: 3/8" = 1'-0"



SECTION A-A
 SCALE: 3/8" = 1'-0"



MARK NO.	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS		REMARKS
				B	C	
B803	16	#8	5'-6"	1'-6"	4'-0"	BENT BAR
B606	14	#6	4'-9"	9"	4'-0"	BENT BAR
	15	#6	9'-6"			STRAIGHT BAR
	8	#6	4'-0"			STRAIGHT BAR
	16	#8	8'-3"			STRAIGHT BAR
	5	#9	7'-4"			STRAIGHT BAR

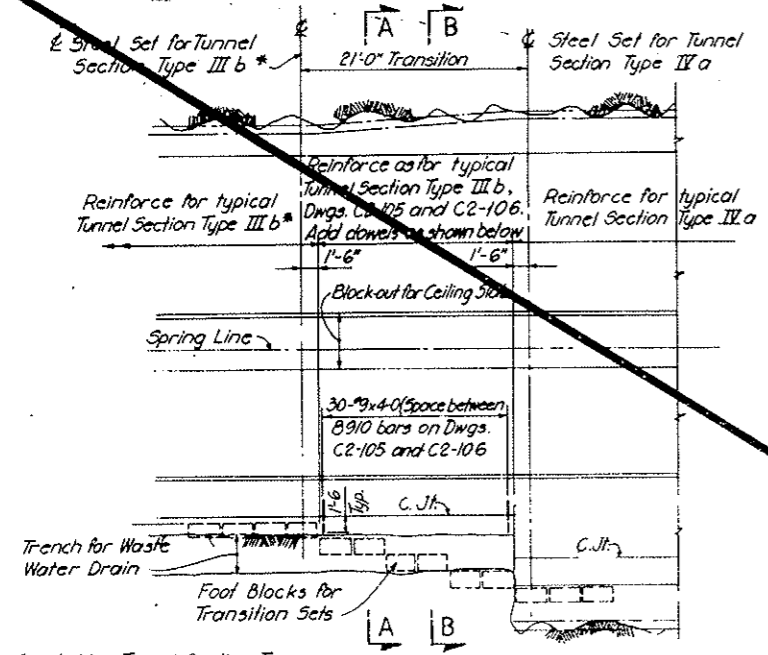
SCHEDULE DOES NOT INCLUDE TRUSS BAR MAT. SEE DRAWING C2-107A

SEGMENTS N 84 AND N 135
 STATE OF COLORADO
 DEPARTMENT OF HIGHWAYS
 PREPARED BY: STRAIGHT CREEK CONSTRUCTORS
 NOTED BY: W.M. GIFFIN
 DATE: 8-1-72
 DRAWING NUMBER: C2-27A

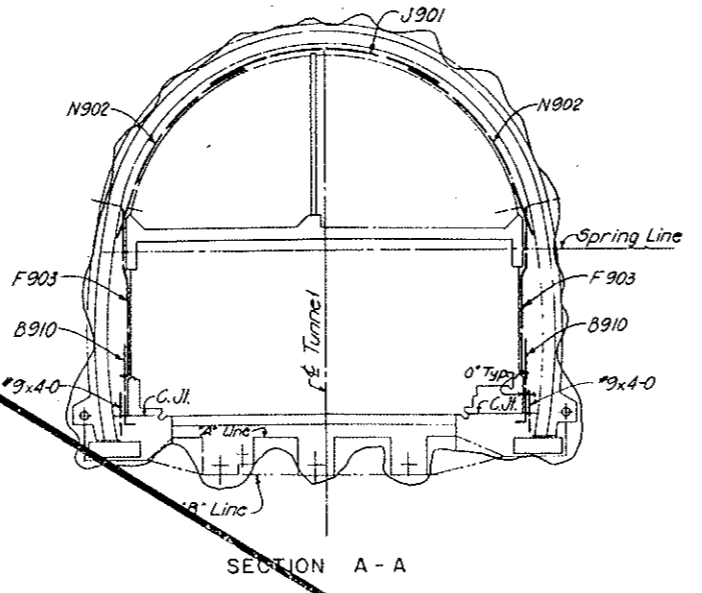
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RP-59	112

VOID
BY CONSTRUCTION
D.T. 26, 1973

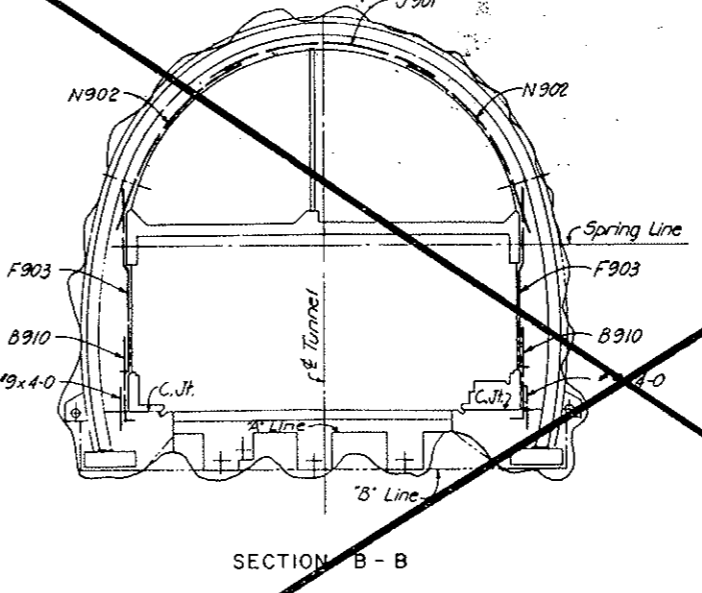
REINF. SCHEDULE			
STRAIGHT BARS			
NO.	BAR	SPACING	LENGTH
60	#9	4'-0"	
Trans. Tunnel Section Type III b to IV a			
76	#9	4'-0"	
Trans. Tunnel Section Type III b to IV b			



LONGITUDINAL SECTIONAL ELEVATION
TAKEN AT TUNNEL \mathcal{C}

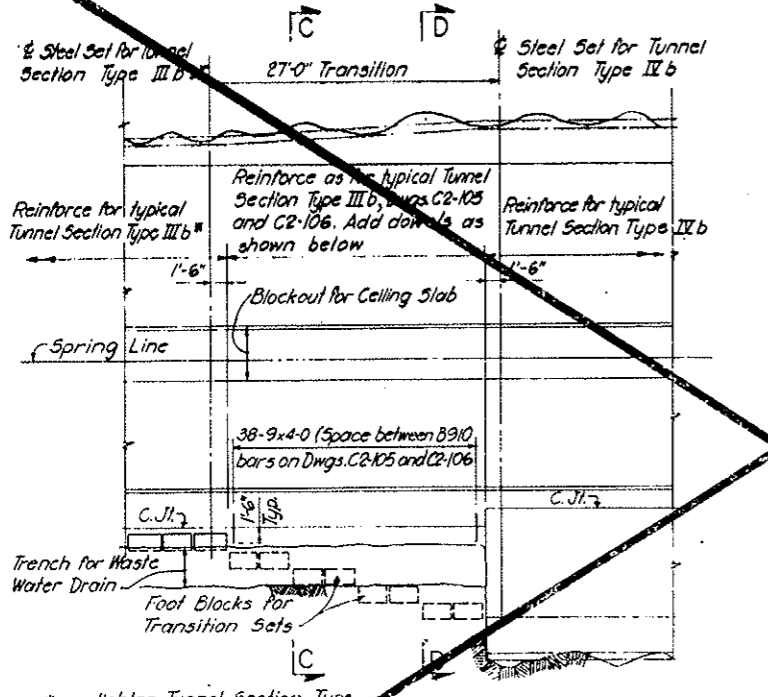


SECTION A - A

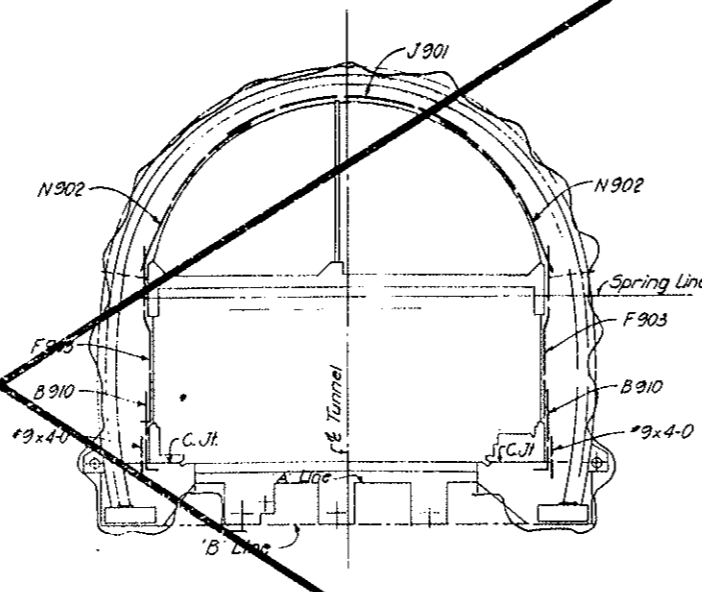


SECTION B - B

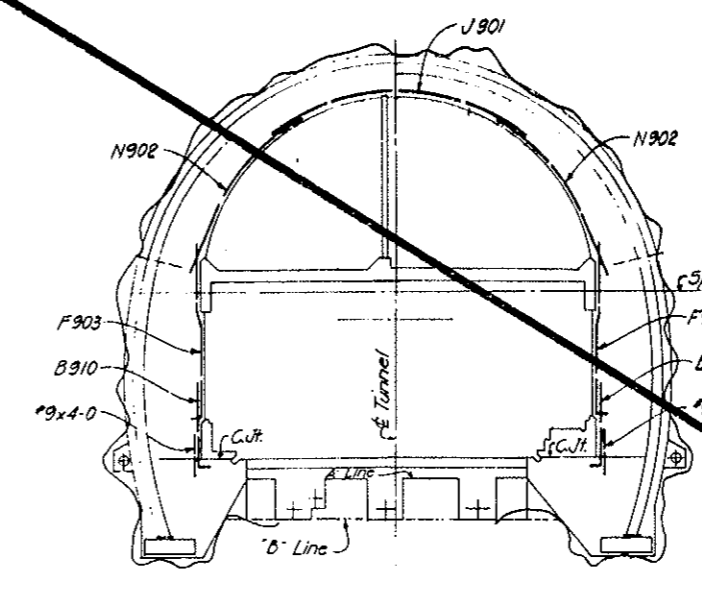
TRANSITION FROM TUNNEL SECTION TYPE III b TO IV a



LONGITUDINAL SECTIONAL ELEVATION
TAKEN AT TUNNEL \mathcal{C}



SECTION C - C



SECTION D - D

TRANSITION FROM TUNNEL SECTION TYPE III b TO IV b

NOTES:
Bar marks on Cross Sections refer to Reinforcement Schedule on Dwg. C2-106.
For General Concrete Notes see Dwg. C2-11.
For General Reinforcement Notes See Dwg. C2-103.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - TUNNEL REINFORCEMENT TRANSITION FROM TUNNEL SECTION TYPE III b TO IV a AND IV b LINING-ADDITIONAL REINFORCEMENT TIPPETTS ABBETT MCCARTHY STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	S. H. R.	RECOMMENDED:	[Signature]		
DRAWN:	S. S.	CHECKED:	R. F. McC.	APPROVED:	[Signature]
SUBMITTED:	[Signature]	DRAWING NO. C2-128			
NEW YORK, N. Y.		SCALE: 1/8" = 1'-0"	DATE: NOV. 1967		

AS CONSTRUCTED
REVISED DATE Oct. 24, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP - 60	112

REINFORCEMENT SCHEDULE

BENDING DIAGRAMS



STRAIGHT BARS	NO. REQ'D	BAR SIZE	BAR LENGTH	BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS																			
								A	B	C	D	E	F	G	H	K	R										
UNIT L51 TYP																											
2	#4	3-9																									
3	#4	1-0																									
UNIT L52 TYP																											
2	#4	14-0																									
13	#4	1-0																									
UNITS L53 & L54 SAME AS L52																											
UNIT L55 TYP																											
2	#4	10-0																									
10	#4	1-0																									
UNIT H51 TYP																											
2	#4	10-0																									
10	#4	1-0																									
UNIT H52 TYP																											
2	#4	14-0																									
13	#4	1-0																									
UNITS H53 & H54 SAME AS H52																											
UNIT H55 TYP																											
2	#4	14-0																									
3	#4	1-0																									
FIRE HYDRANT LS3-F																											
2	#4	14-0																									
13	#4	1-0																									
UNIT H55 TYP																											
3	#4	2-5																									
FIRE HYDRANT LS3-F																											
2	#4	14-0																									
13	#4	1-0																									
UNIT H55 TYP																											
3	#4	2-5																									

All bent bars to be prefixed by No. C2-129.

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-1.
Work this sheet with Dwg. C2-130.
For General Reinforcement Notes see Dwg. C2-103.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.

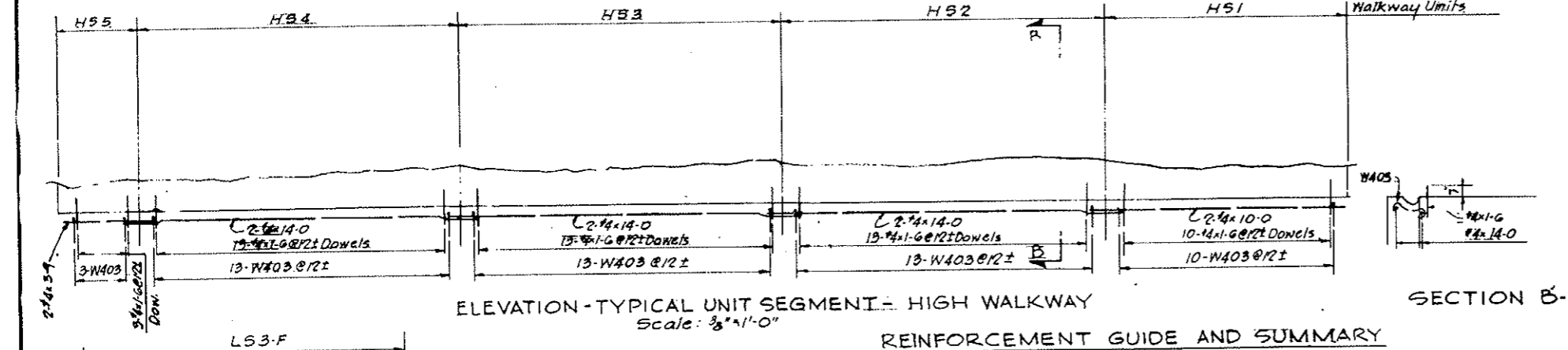
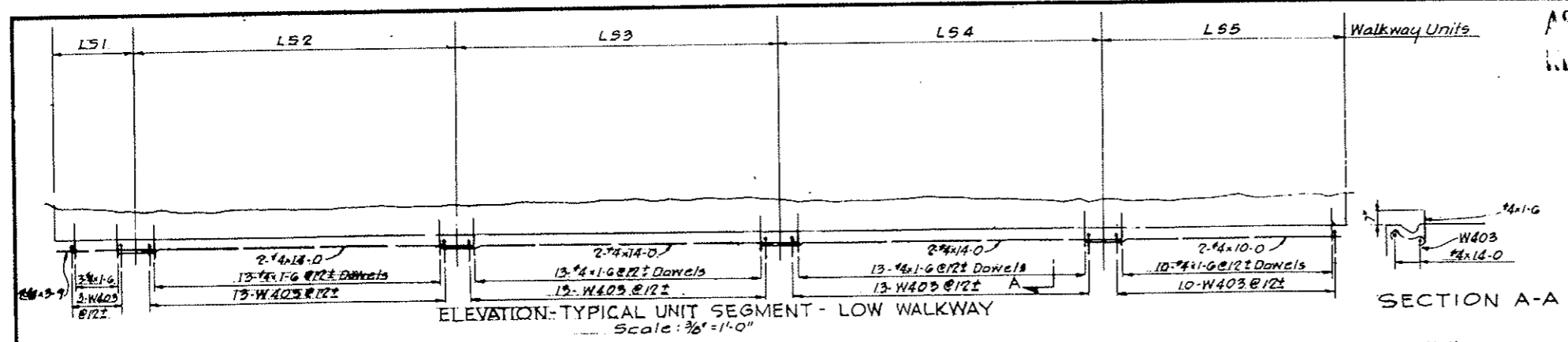
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
CIVIL - TUNNEL AND CONDUIT SEGMENTS
REINFORCEMENT
LOW AND HIGH WALKWAYS
STANDARD SEGMENT
AND DETAILS AT FIRE HYDRANT
TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: H.F.M.C.
DRAWN: M.E.
CHECKED: H.F.M.C.
SUBMITTED: [Signature]
APPROVED: [Signature]

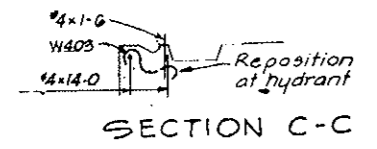
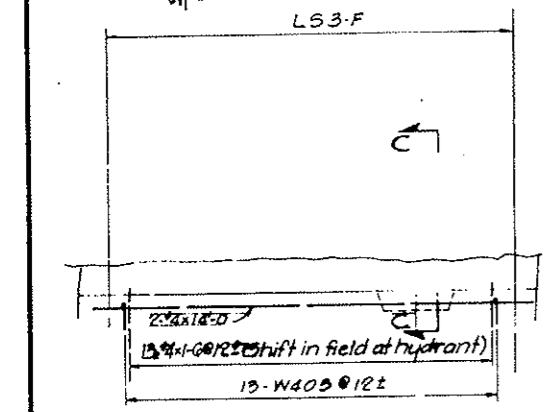
RECOMMENDED: [Signature]
APPROVED: [Signature]

DRAWING NO. C2-129
SCALE: 3/8" = 1'-0" DATE: NOV. 1967
NEW YORK, N. Y.

FOR SEGMENTS N1 - N80 ONLY



REINFORCEMENT GUIDE AND SUMMARY



FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-62	112

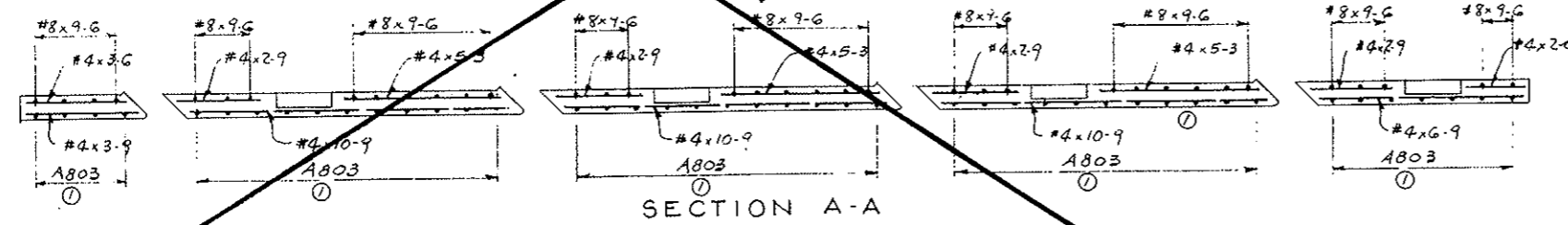
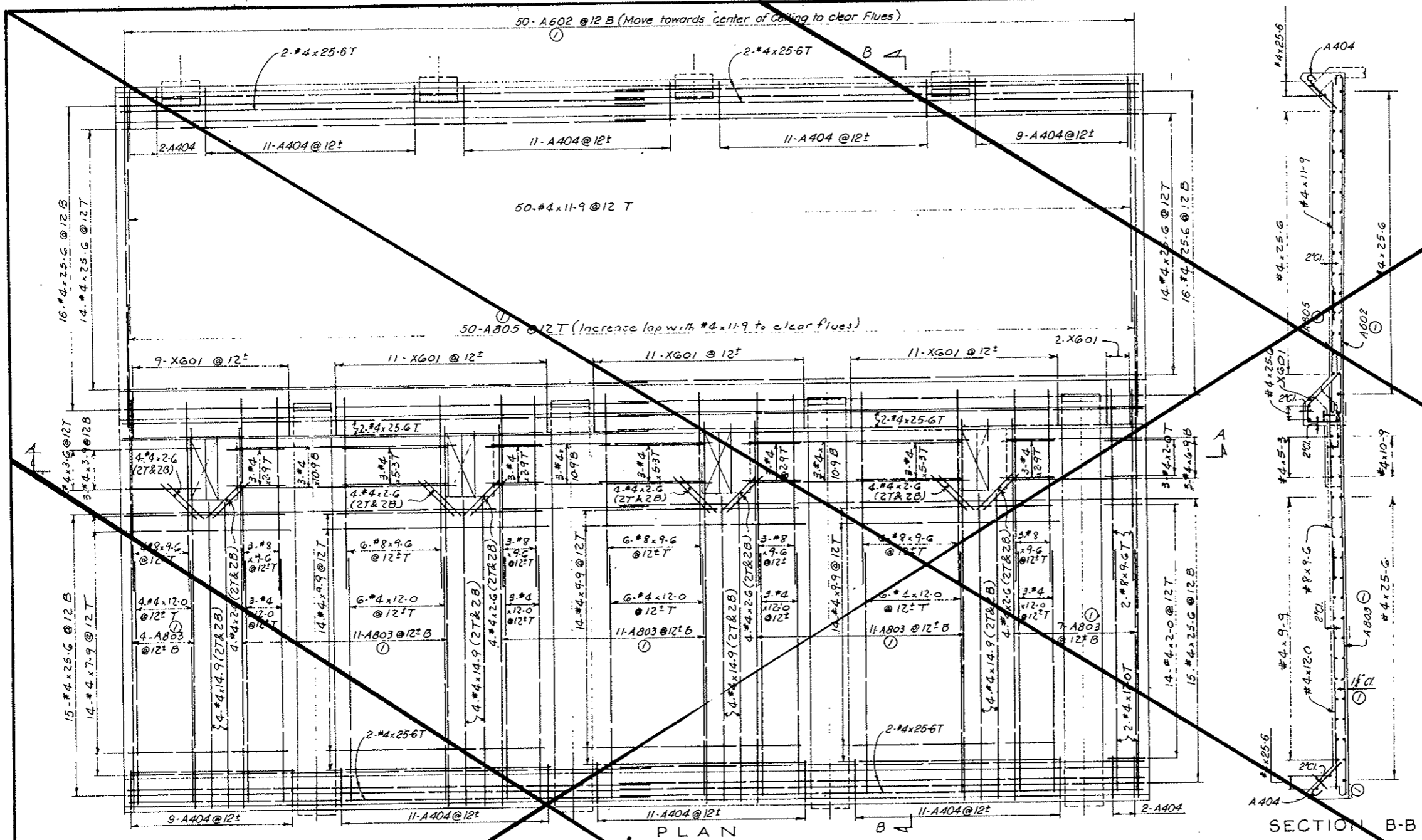
REINFORCEMENT SCHEDULE - BENT BARS										
BENDING DIAGRAMS										
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS						
				A	B	C	D	E	F	
① A803	2	#8	19-9	1-0	18-9					
① A802	50	#8	7-0	1-0	6-0					
① A802	50	#6	17-6	0-9	16-9					
① X601	44	#6	6-5	0-9	1-7	0-10	2-3	1-7	1-0	
A404	88	#4	2-9	0-6	2-3					

All bent bar marks to be prefixed by No. C2-131

VOID
BY CONSTRUCTION
Oct 24, 1973

REIN. SCHEDULE		
STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
36	#8	9-6
102	#4	25-6
16		14-9
36		12-0
50		11-9
9		10-9
42		9-9
14		7-9
3		6-9
9		5-3
3		3-9
3		3-6
2		2-9
32		2-6
17		2-0

NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwg. C2-15.
 For General Reinforcement Notes see Dwg. C2-103.
 Ceiling details shown are applicable to segments N39 to N83 inclusive, except N42 and N82.
 For reinforcement modifications at access Hatch opening in ceiling slab in segments N54 and N74 see Dwg. C2-139.



DESIGNED: H.F. McC.	RECOMMENDED: <i>Henry J. Moore</i>	BY: J.E.G. PBA/SNR
DRAWN: H.F. McC.	APPROVED: <i>Frank P. Baker</i>	CH: APP
CHECKED: R.B.A.		
SUBMITTED: <i>Robert G. ...</i>		
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS		
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT		
CIVIL - TUNNEL REINFORCEMENT CEILING SLAB		
STANDARD SEGMENT - WEST OF BULKHEAD EXHAUST PORTS AT 12' - 6 1/4" C.C.		
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.		
SCALE: 3/8" = 1'-0"	DATE: NOV. 1967	DRAWING NO. C2-131

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	R P-63	112

REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS

BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS								
				A	B	C	D	E	H	F		
ⓐ A803	8	#8	19-9	1-0	18-9							
ⓑ A803	50	#8	7-0	1-0	6-0							
ⓒ A802	50	#6	17-6	0-3	16-9							
ⓓ X601	44	#6	6-5	0-9	1-7	0-10	2-3	1-7	1-0			
A404	88	#4	2-9	0-6	2-3							

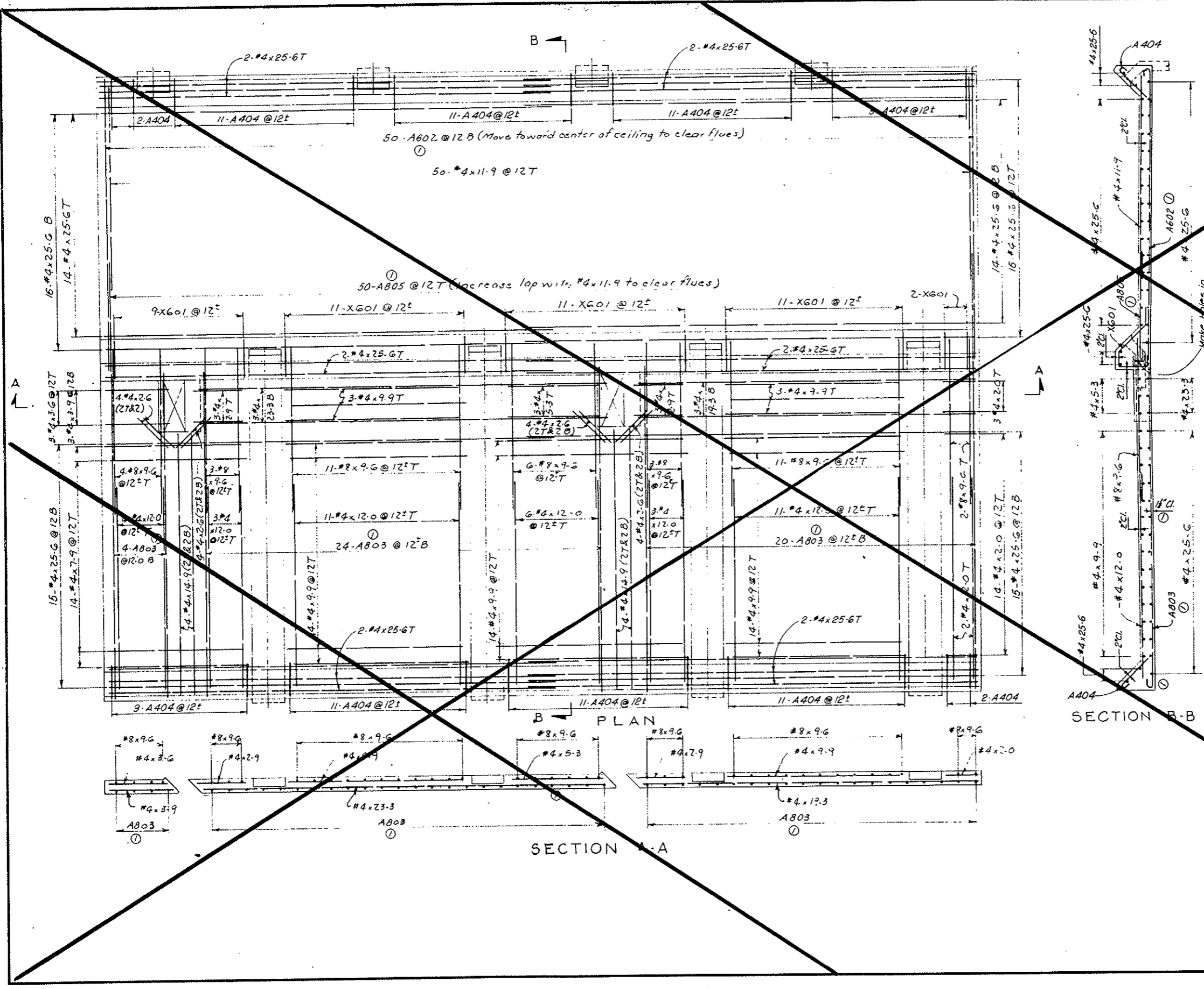
All bent bar marks to be prefixed by No. C2-132

VOID
BY CONSTRUCTION
Oct 26, 1973

REINFORCEMENT SCHEDULE

STRAIGHT BARS

NO. REQ'D	BAR SIZE	BAR LENGTH
40	#8	9-6
102	#4	25-6
3		23-3
3		19-3
8		14-9
40		12-0
50		11-9
48		9-9
14		7-9
3		5-3
3		3-9
3		3-6
6		2-9
16		2-6
17	#4	2-0



NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For Concrete details see Dwg. C2-15.
 For General Reinforcement Notes see Dwg. C2-103.
 Ceiling details shown are applicable to segments N1 to N38 inclusive.
 For reinforcement modifications at access Hatch opening in ceiling slab in segments N14 and N34 see Dwg. C2-139.

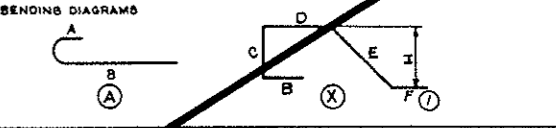
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Reinforcing Details Revised, Title Deleted	JEG	R.B.A.	S.M.R.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
 CIVIL - TUNNEL AND WEST CONDUIT SEGMENTS
 REINFORCEMENT
 CEILING SLAB
 STANDARD SEGMENT - WEST OF BULKHEAD
 EXHAUST PORTS AT 25'-1 1/2" C.C.
 TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS - NEW YORK, N.Y.

DESIGNED: H.F.M.C.
 DRAWN: H.F.M.C.
 CHECKED: R.B.A.
 SUBMITTED: [Signature]
 RECOMMENDED: [Signature]
 APPROVED: [Signature]
 NEW YORK, N.Y. SCALE: 3/8" = 1'-0" DATE: NOV 1987 DRAWING NO. C2-132

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-64	112

REINFORCEMENT SCHEDULE - BENT BARS



BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS								
				A	B	C	D	E	H	F		
⓪ A803	4	#8	19-9	1-0	18-9							
⓪ A804	50	#8	7-0	1-0	6-0							
⓪ A802	50	#6	17-6	0-9	16-9							
⓪ X601	44	#6	6-5	0-9	1-7	0-10	2-3	1-7	1-0			
A404	88	#4	2-9	0-6	2-3							

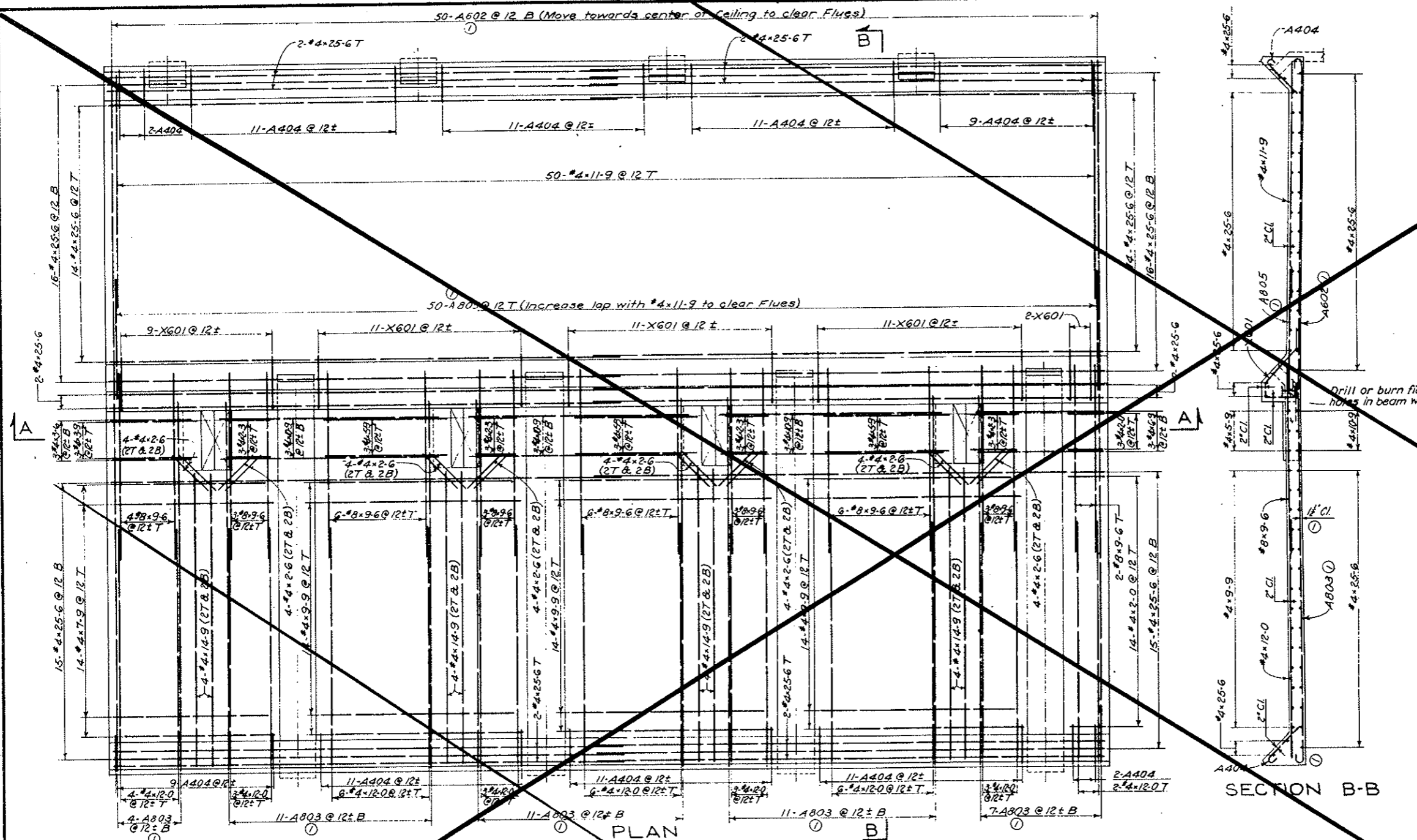
All bent bar marks to be prefixed by No. C2-133

VOID
BY CONSTRUCTION
Oct 26, 1972

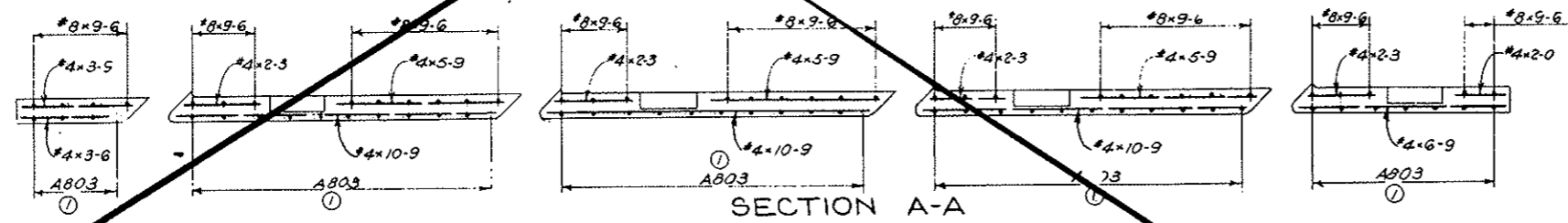
REINF. SCHEDULE
STRAIGHT BARS

NO.	BAR REQ'D	BAR SIZE	BAR LENGTH
36	#8	9-6	
102	#4	25-6	
16	#4	14-9	
36	#4	12-0	
50	#4	11-9	
9	#4	10-9	
42	#4	9-9	
14	#4	7-9	
3	#4	6-9	
9	#4	5-9	
3	#4	3-9	
3	#4	3-6	
32	#4	2-6	
12	#4	2-3	
7	#4	2-0	

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-15.
For General Reinforcement Notes see Dwg. C2-103.
Ceiling details shown are applicable to segments N85 to N129 inclusive, except segment N128, see Dwg. C2-136.
For reinforcement modifications at Access Hatch openings in ceiling slab in segments N94 and N114 see Dwg. C2-139.



SECTION B-B



SECTION A-A

DESIGNED: R. B. A.	CHECKED: H. F. MCC	RECOMMENDED: [Signature]	DATE: [Blank]
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT		LEG. E. B. A. S. M. P.	
CIVIL - TUNNEL REINFORCEMENT		BY: [Blank] CH: [Blank] APP: [Blank]	
STANDARD SEGMENT, EAST OF BULKHEAD EXHAUST PORTS AT 12'-6 3/4" C. C.		DRAWING NO. C2-133	
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.		SCALE: 3/8" = 1'-0" DATE: NOV 1967	

REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS

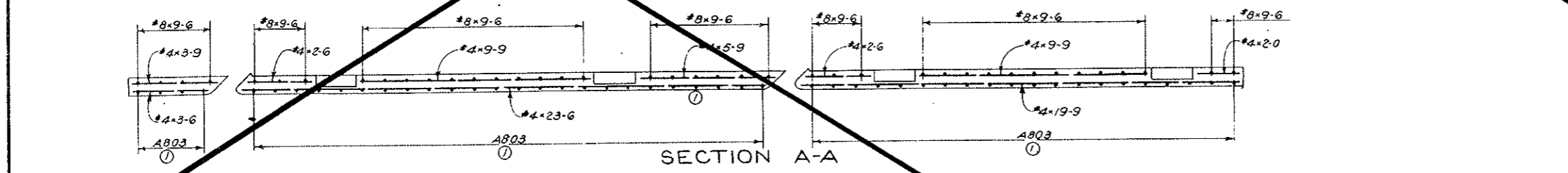
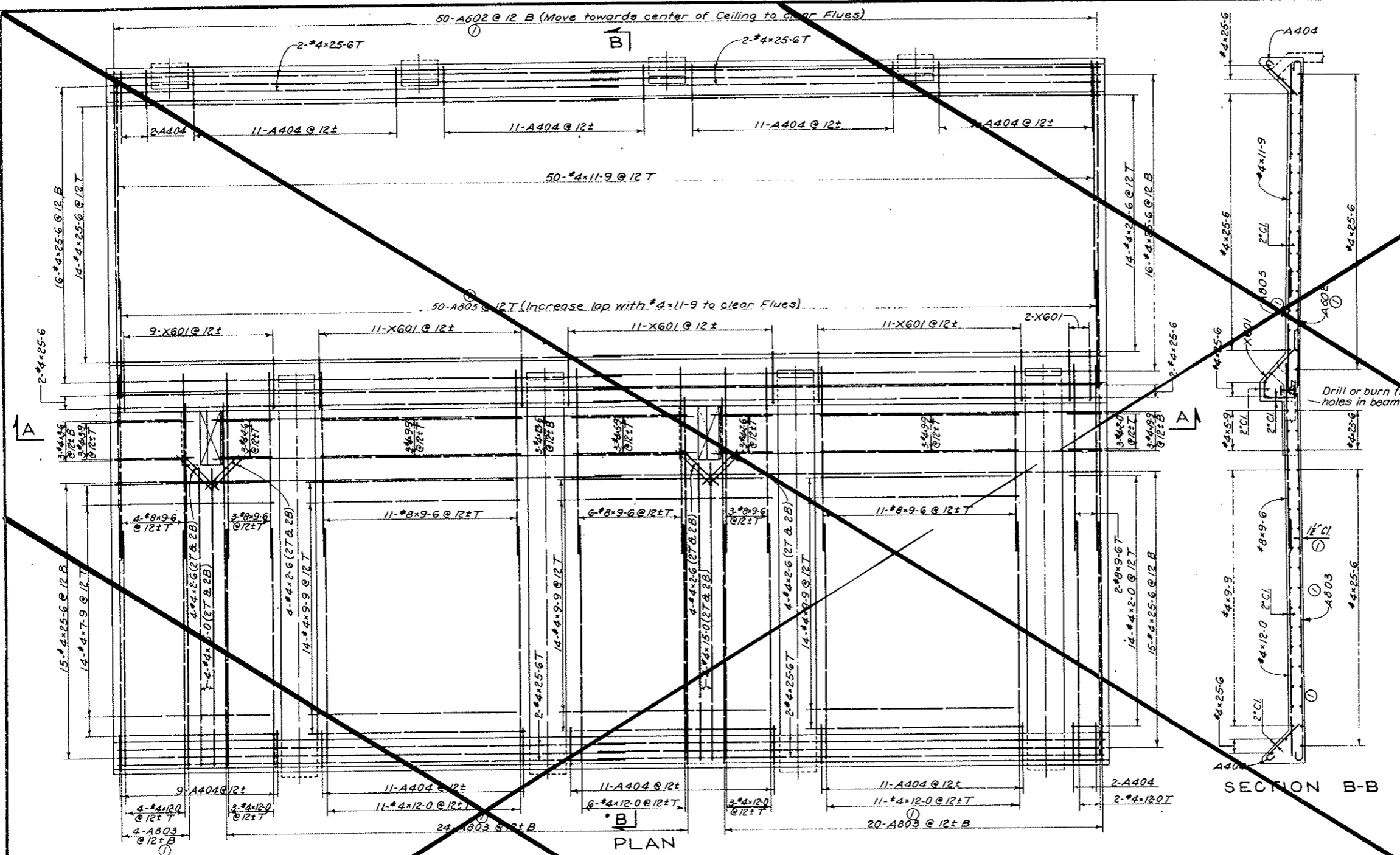
BAR MARK	NO. REQ'D.	BAR SIZE	BAR LENGTH	DIMENSIONS								
				A	B	C	D	E	H	F		
ⓐ A803	25	#8	19-9	1-0	18-9							
ⓑ A802	50	#8	7-0	1-0	6-0							
ⓒ X601	44	#6	6-5	0-9	1-7	0-10	2-3	1-7	1-0			
A404	88	#4	2-9	0-6	2-3							

All bent bar marks to be prefixed by No. C2-134

VOID BY CONSTRUCTION
Oct 26, 1973

REINFORCEMENT SCHEDULE - STRAIGHT BARS

NO. REQ'D.	BAR SIZE	BAR LENGTH
40	#8	9-6
102	#4	25-6
3		23-6
3		19-9
8		15-0
40		12-0
50		11-9
48		9-9
14		7-9
3		5-9
3		3-9
3		3-6
22		2-6
17	#4	2-0



SECTION B-B

NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwg. C2-15.
 For General Reinforcement Notes see Dwg. C2-103.
 Ceiling details shown are applicable to Segments N130 to N167 inclusive.
 For reinforcement modifications at Access Hatch opening in ceiling slab in Segments N134 and N154 see Dwg. C2-139.

DESIGNED: R. E. A.	RECOMMENDED: <i>[Signature]</i>	DATE: NOV 1967
DRAWN: R. E. A.	CHECKED: X. F. Mc G.	SCALE: 3/8" = 1'-0"
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	DATE: NOV 1967
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIT CREEK VEHICULAR TUNNEL PROJECT CIVIL - TUNNEL AND EAST CONDUIT SEGMENTS REINFORCEMENT CEILING SLAB STANDARD SEGMENT - EAST OF BULKHEAD EXHAUST PORTS AT 25'-1 1/2" C.C. TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.		
DRAWING NO. C2-134		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-66	112

REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS

BAR MARK	NO. REQD.	BAR SIZE	BAR LENGTH	DIMENSIONS							
				A	B	C	D	E	H	F	
⓪ A803	2	#8	19-9	1-0	18-9						
⓪ A807	50	#8	7-0	1-0	6-0						
⓪ A802	50	#6	17-6	0-9	16-9						
⓪ X601	46	#6	6-5	0-9	1-7	0-10	2-3	1-7	1-0		
A404	90	#4	2-9	0-6	2-3						

All bent bar marks to be prefixed by No.C2-135

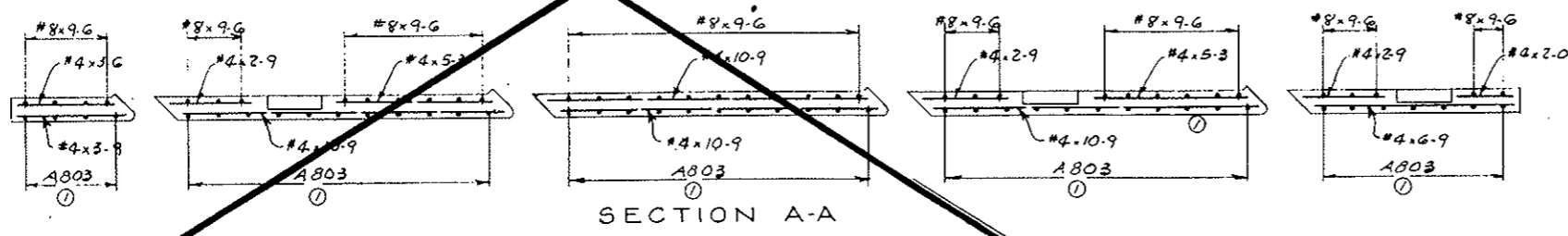
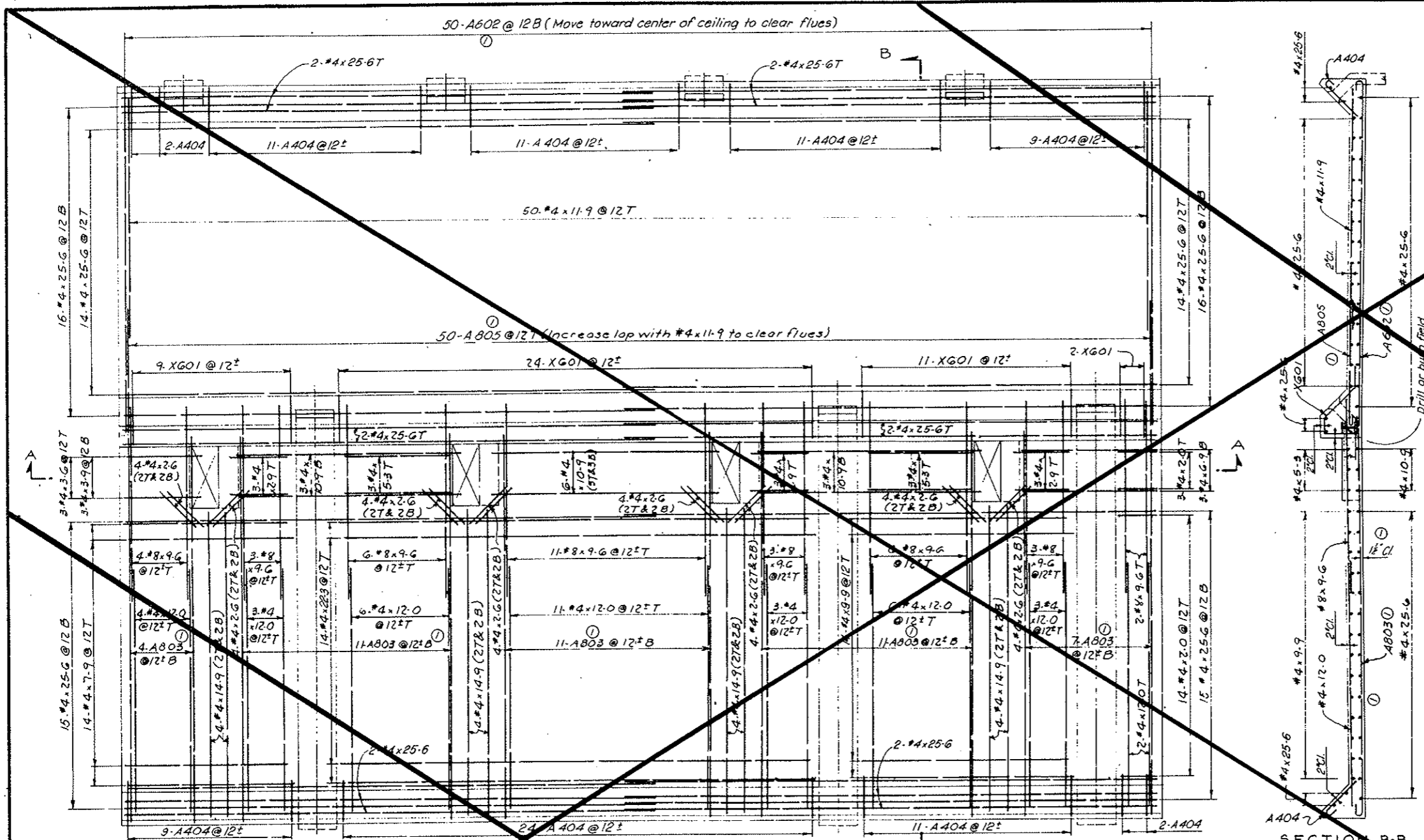
VOID
BY CONSTRUCTION
Oct 26, 1973

REINF. SCHEDULE

STRAIGHT BARS

NO. REQD.	BAR SIZE	BAR LENGTH
38	#8	9-6
102	#4	25-6
14		22-3
16		14-9
38		12-0
50		11-9
12		10-9
14		9-9
14		7-9
3		6-9
3		5-9
3		3-9
3		3-6
9		2-9
32		2-6
17	#4	2-0

NOTES:
For General Concrete Notes see Dwg.C2-11.
For concrete details see Dwg.C2-15.
Bar Lists are for one segment only.
For General Reinforcement Notes see Dwg.C2-103.



STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL - TUNNEL
REINFORCEMENT
CEILING SLAB
DETAILS FOR SEGMENTS N42 AND N82

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED BY: H. F. Mc C. DRAWN BY: H. F. Mc C. CHECKED BY: R. B. A. SUBMITTED BY: [Signature] APPROVED BY: [Signature]

SCALE: 3/8" = 1'-0" DATE: NOV. 1967

DRAWING NO. **C2-135**

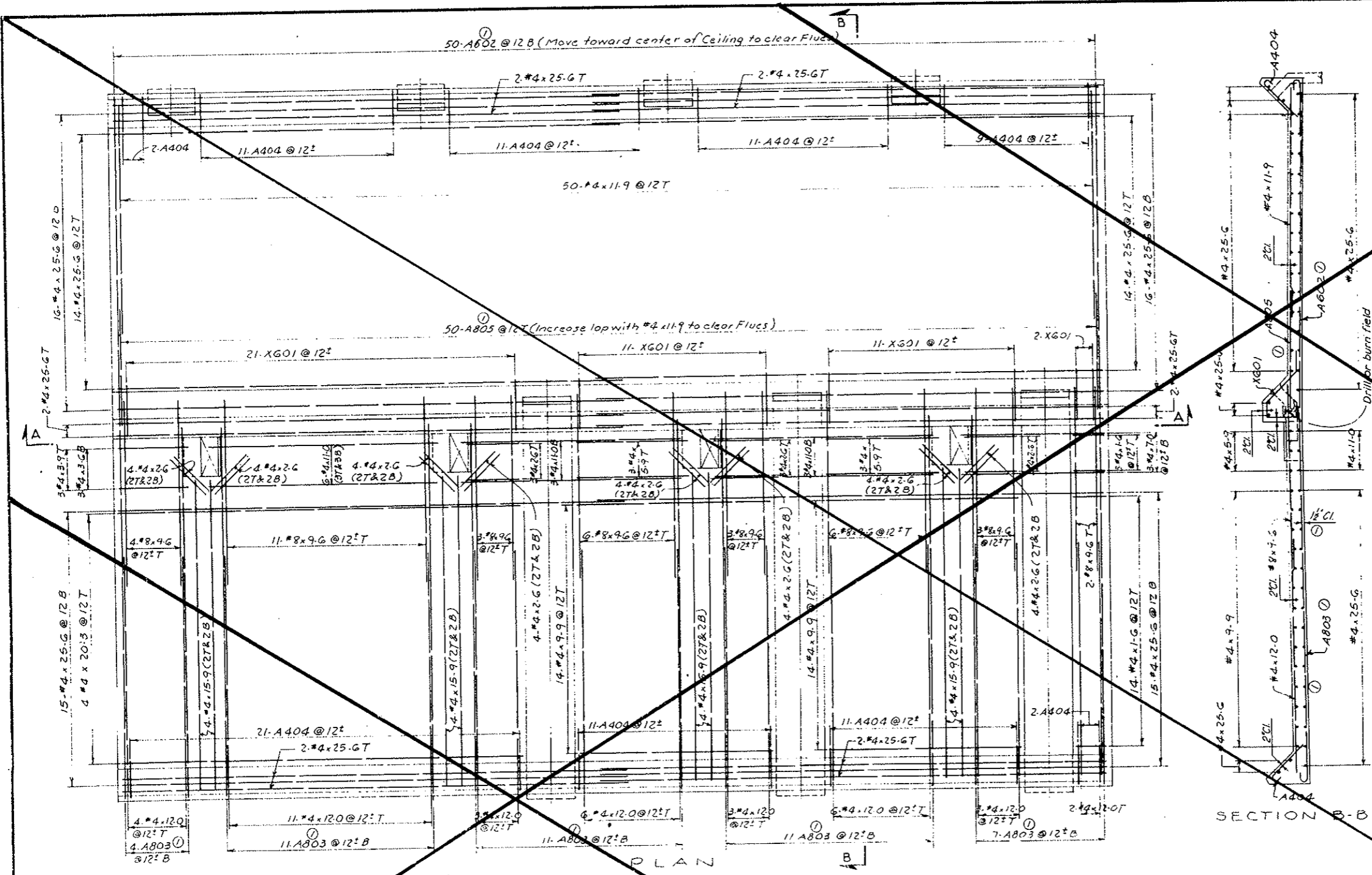
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RP-67	112

REINFORCEMENT SCHEDULE - BENT BARS										
BENDING DIAGRAMS										
DIMENSIONS										
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	A	B	C	D	E	H	F
⓪ A803	4	#8	19.9	1.0	10.9					
⓪ A805	50	#8	7.0	1.0	6.0					
⓪ A602	50	#6	17.6	0.9	16.9					
⓪ X601	45	#6	6.5	0.9	1.7	0.10	2.3	1.7	1.0	
A404	89	#4	2.9	0.6	2.3					

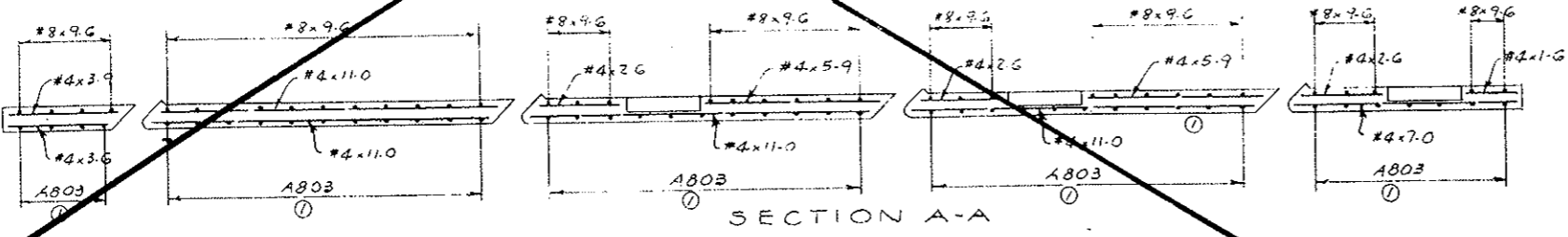
All bent bar marks to be prefixed by No. C2-136

VOID BY CONSTRUCTION
OCT 26, 1973

REIN. SCHEDULE		
STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
38	#8	9.6
102	#4	25.6
14	#4	20.3
16	#4	15.9
38	#4	12.0
50	#4	11.9
12	#4	11.0
28	#4	9.9
3	#4	7.0
6	#4	5.9
3	#4	3.9
3	#4	3.6
4	#4	2.6
17	#4	1.6



SECTION B-B



SECTION A-A

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-15.
For General Reinforcement Notes see Dwg. C2-103.

Reinforcing Details Revised. Title Deleted

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
-----	------	-------------------------	----	------	------

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL - TUNNEL REINFORCEMENT
CEILING SLAB
DETAILS FOR SEGMENT N128

TIPPETTS-ABBETT-McCARTHY STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: H. F. McC. CHECKED: R. B. A. SUBMITTED: [Signature] DRAWING NO. C2-136

RECOMMENDED: [Signature] APPROVED: [Signature]

SCALE: 3/8" = 1'-0" DATE: NOV. 1967

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-68	112

REINFORCEMENT SCHEDULE - BENT BARS

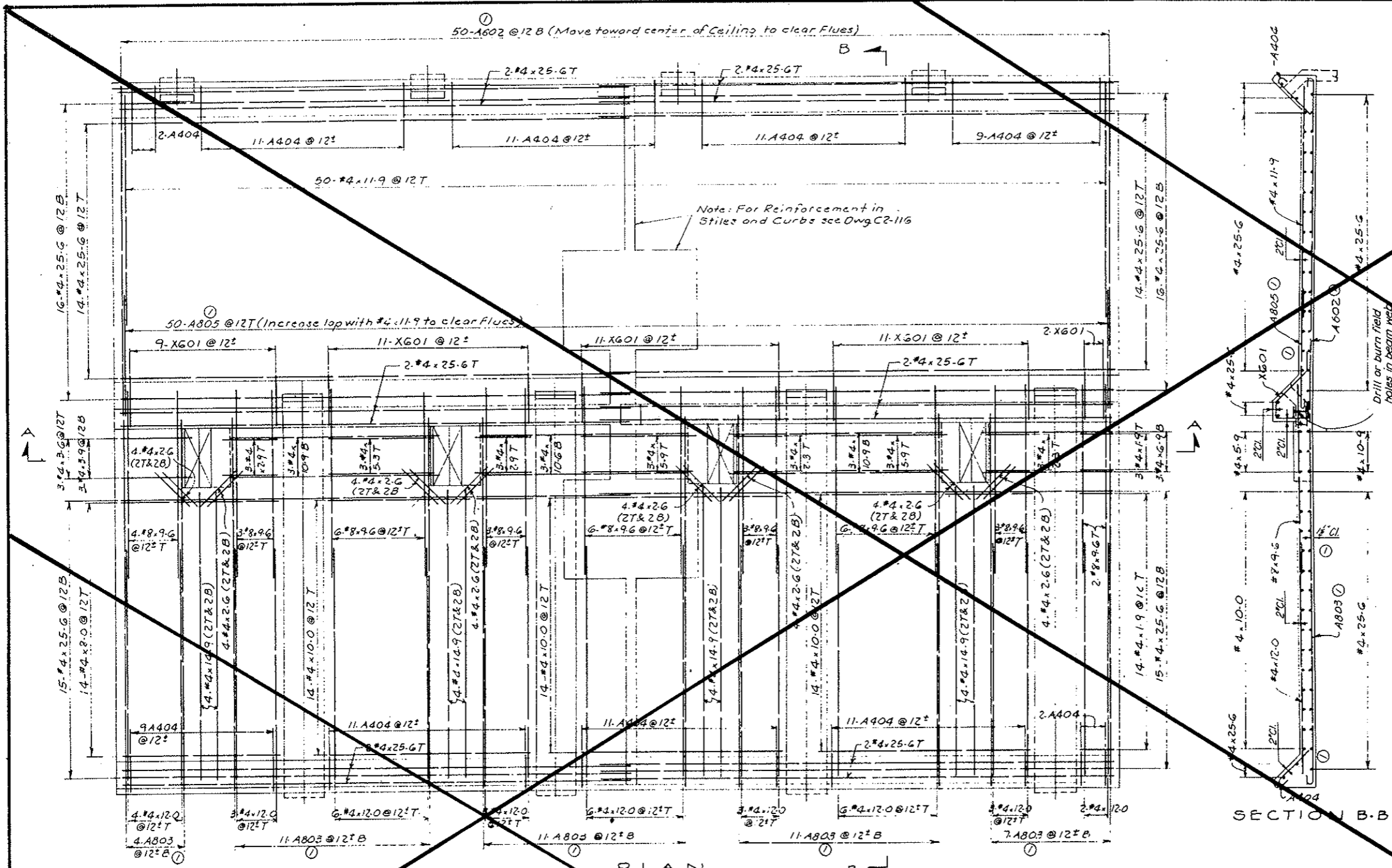
BENDING DIAGRAMS

BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	A	B	C	D	E	H	F
① AB03	7	#8	19.9	1.0	18.9					
① AB05	50	#8	7.0	1.0	6.0					
① AB02	50	#6	17.6	0.9	16.9					
① X601	44	#6	6.5	0.9	1.7	0.10	2.3	1.7	1.0	
A404	88	#4	2.9	0.6	2.3					

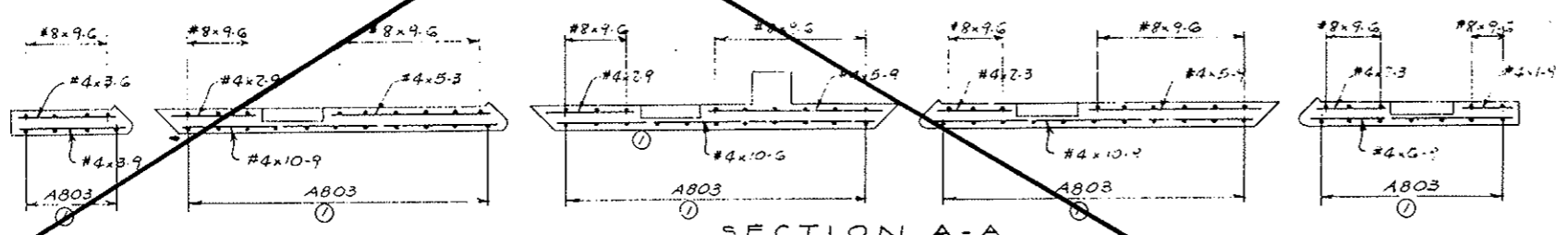
All bent bar marks to be prefixed by No. C2-137

VOID
BY CONSTRUCTION
Oct 24, 1973

REINFORCEMENT SCHEDULE - STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
36	#8	9.6
102	#4	25.6
16		14.9
36		12.0
50		11.9
6		10.9
3		10.6
42		10.0
14		9.0
3		6.5
6		5.9
3		5.3
3		3.9
3		3.6
6		2.9
32		2.6
6		2.3
17	#4	1.9



SECTION B-B



SECTION A-A

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-15.
For General Reinforcement Notes see Dwg. C2-103.

NO. DATE	DESCRIPTION OF REVISION	BY	CHK. APPR.
	Reinforcing Details Revised. Title Deleted	JEG	P.R.A.S.M.C.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
CIVIL - TUNNEL REINFORCEMENT CEILING SLAB DETAILS FOR SEGMENT N84			
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.			
DESIGNED: J. F. McC.	RECOMMENDED: <i>[Signature]</i>	CHECKED: R. B. A.	APPROVED: <i>[Signature]</i>
DRAWN: H. E. McC.	SUBMITTED: <i>[Signature]</i>	DATE: NOV. 1967	DRAWING NO. C2-137

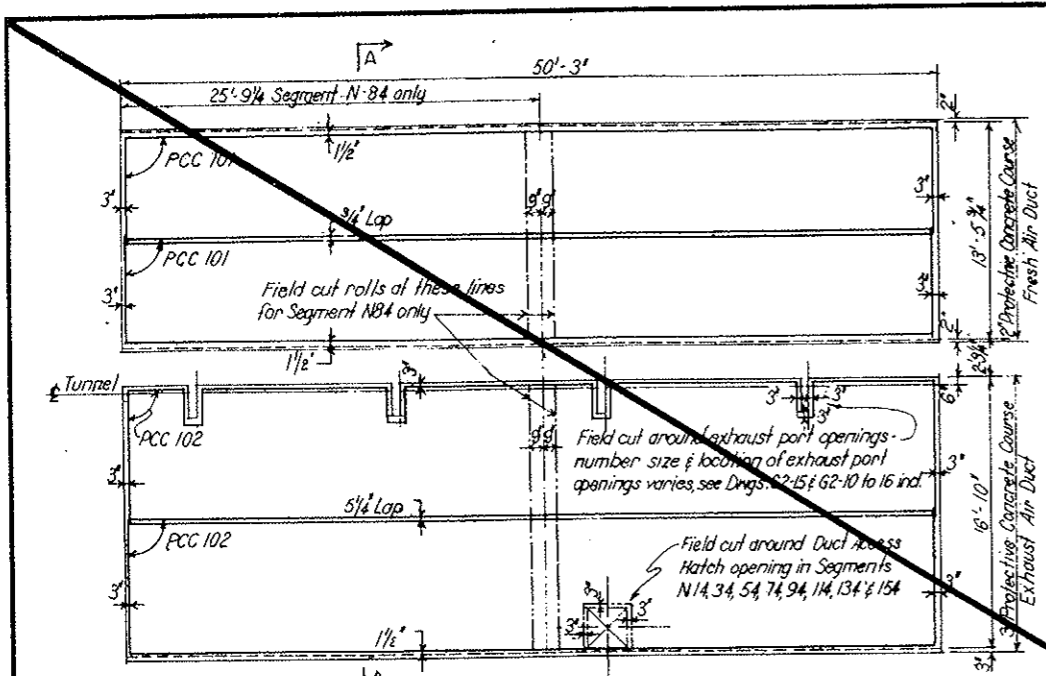
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54) 22D	R P-69	112

PROTECTIVE CONCRETE COURSE SCHEDULE OF WELDED WIRE FABRIC ROLLS ALL FABRIC STYLE 3x3-10/10

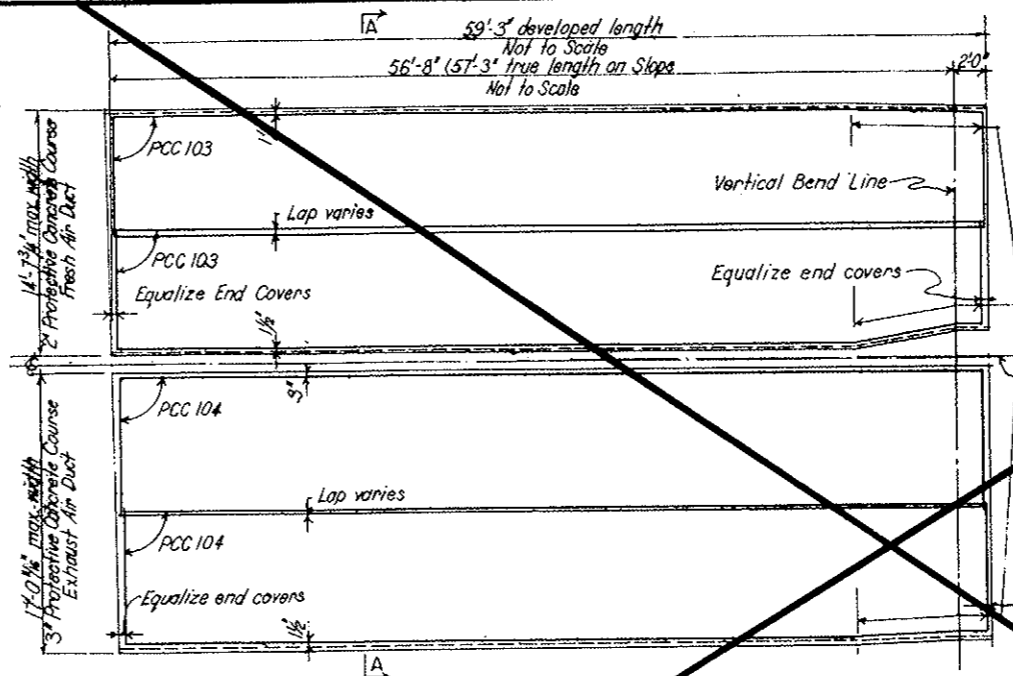
Mk.	Length Ft.	Width Ft.	Number Req'd
PCC 101	49-9	6-9	334
PCC 102	49-9	8-6	334
PCC 103	59-0	7-6	2
PCC 104	58-9	8-6	2
PCC 105	56-6	7-6	1
PCC 106	58-0	7-6	1
PCC 107	59-3	8-6	1
PCC 108	60-0	8-6	1

VOID
BY CONSTRUCTION
D.C.T. 26, 1973

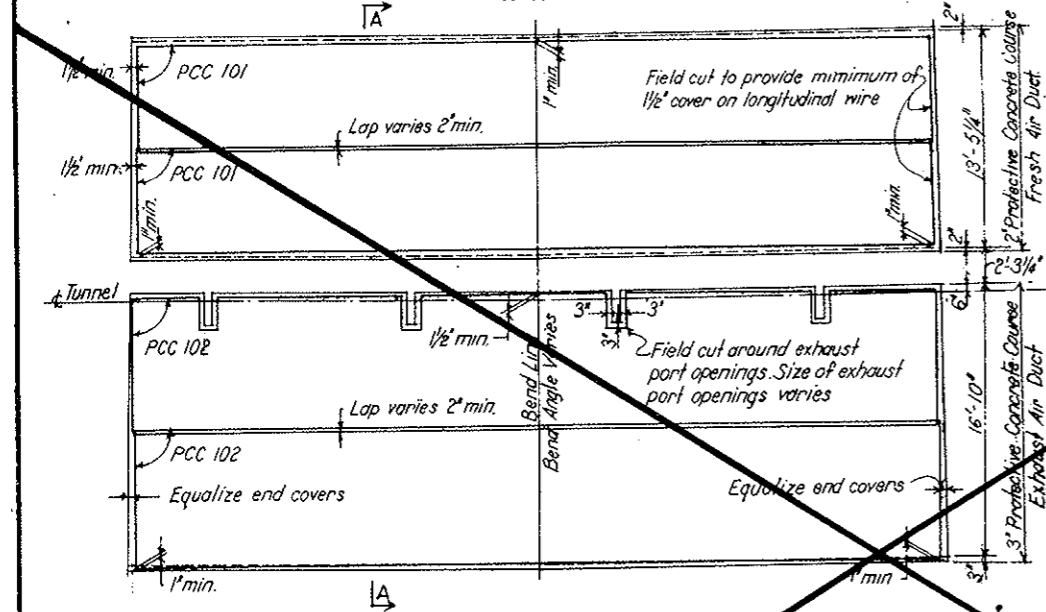
NOTES:
For concrete outlines and dimensions of protective concrete course see the following drawings:
Segments N1 to N162 - C2-15, C2-16
Segments N163 to N167 - C2-15, C2-16, C3-1, C3-2
West Transition Segment - C1-1, C1-3
East Transition Segment - C3-5, C3-7
Welded Wire fabric shall conform to the requirement of AASHTO designation M55-65, Welded Steel Wire Fabric for Concrete Reinforcement.
For General Reinforcement Notes see Dwg. C2-103



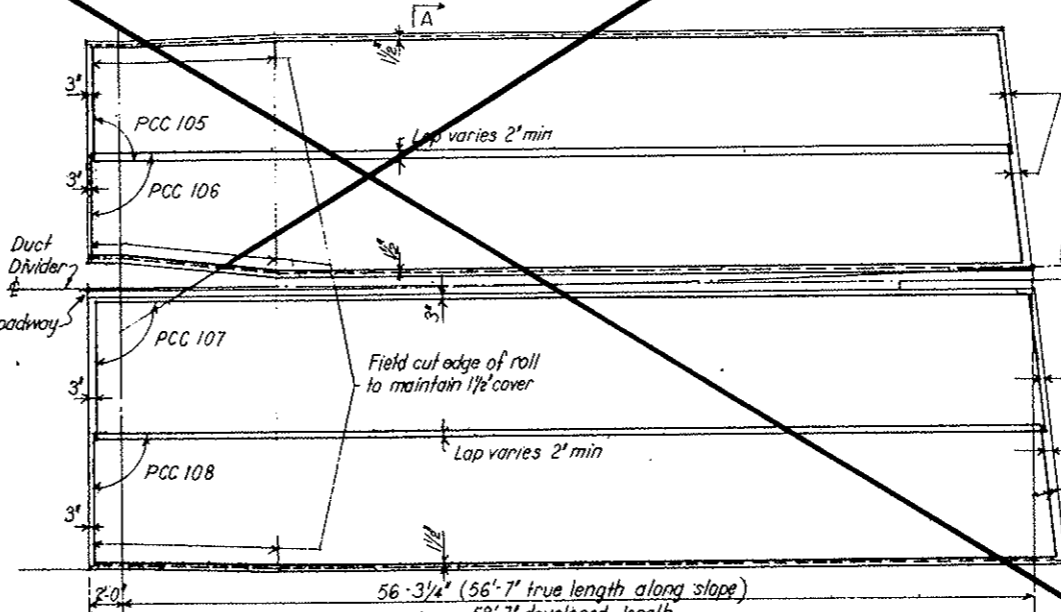
PLAN - SEGMENTS N1 to N62 incl
SCALE: 3/16" = 1'-0"



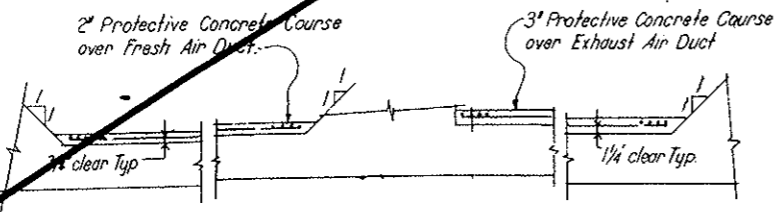
PLAN - WEST TRANSITION SEGMENT
SCALE: 3/16" = 1'-0"



PLAN - SEGMENTS N63 to N67 incl
SCALE: 3/16" = 1'-0"



PLAN EAST TRANSITION SEGMENT
SCALE: 3/16" = 1'-0"

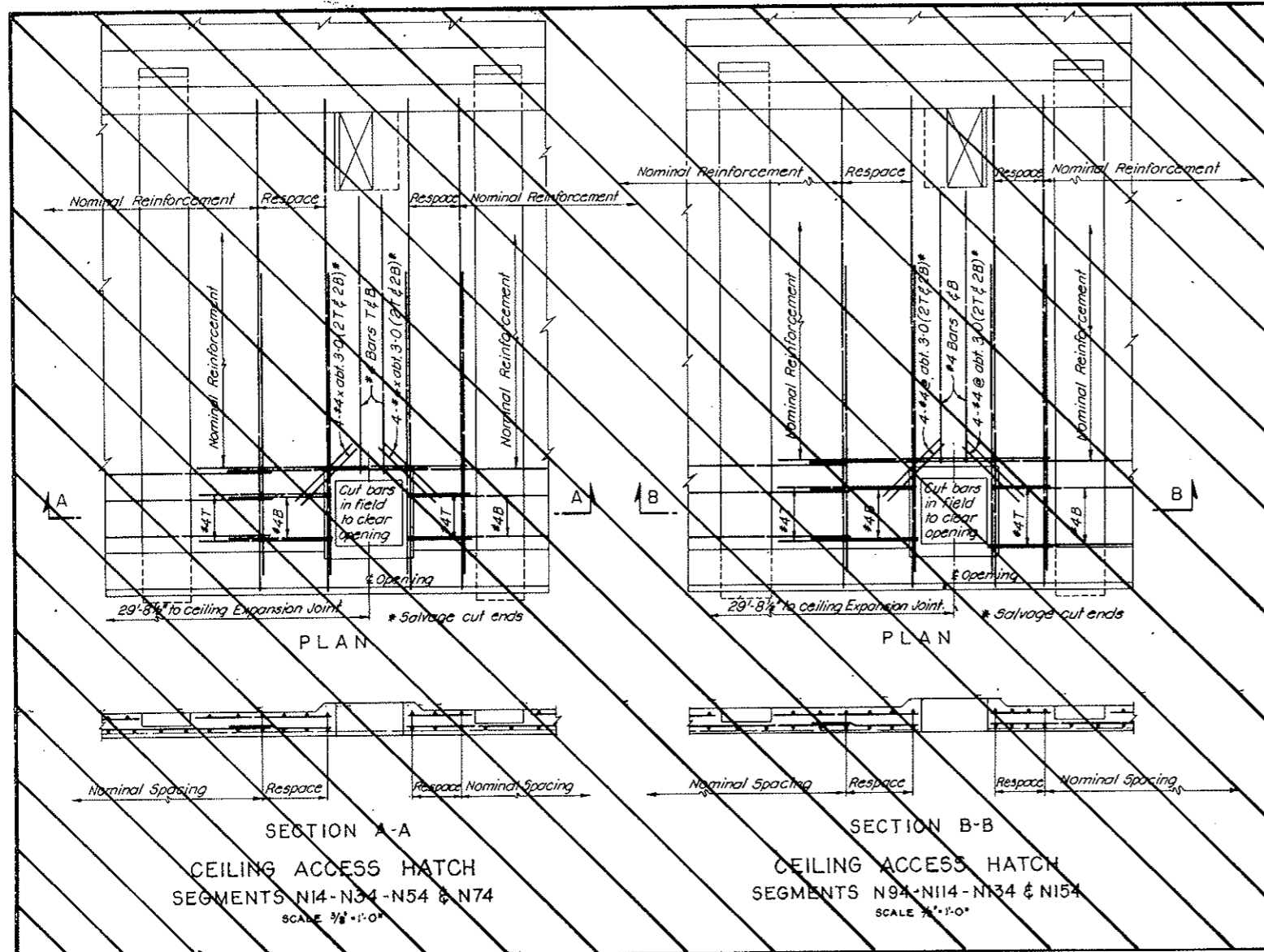


SECTION A - A
SCALE: 3/8" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS					
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL AND PORTAL SECTIONS					
REINFORCEMENT					
CEILING SLAB					
PROTECTIVE COURSE DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: S. M. R.	RECOMMENDED:	DRAWING NO.			
DRAWN: S. M. R.	Checked: H. F.	C2-138			
CHECKED: H. F.	APPROVED: Frank L. Litch	SCALE: AS SHOWN DATE: NOV. 1967			
SUBMITTED:					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-70	112

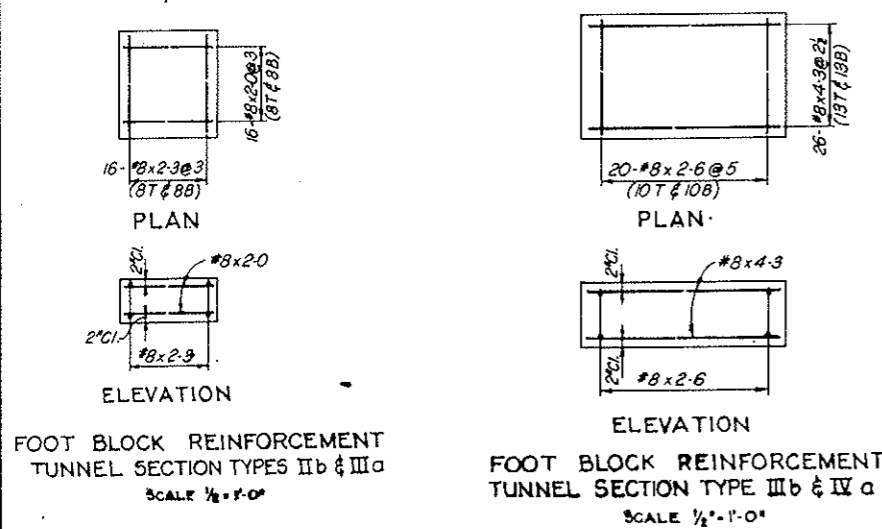
AS CONSTRUCTED
REVISED DATE Oct. 26, 1975



SECTION A-A
CEILING ACCESS HATCH
SEGMENTS N14-N34-N54 & N74
SCALE 3/8" = 1'-0"

SECTION B-B
CEILING ACCESS HATCH
SEGMENTS N94-N114-N134 & N154
SCALE 3/8" = 1'-0"

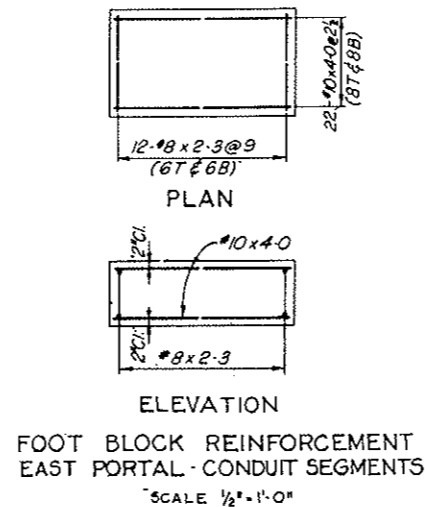
NOTES:
For General Concrete Notes see Dwg. C2-11.
For Footing Concrete Details see Dwg. C2-5.
For General Reinforcement Notes see Dwg. C2-103.



FOOT BLOCK REINFORCEMENT
TUNNEL SECTION TYPES IIb & IIIa
SCALE 1/2" = 1'-0"

FOOT BLOCK REINFORCEMENT
TUNNEL SECTION TYPE IIIb & IVa
SCALE 1/2" = 1'-0"

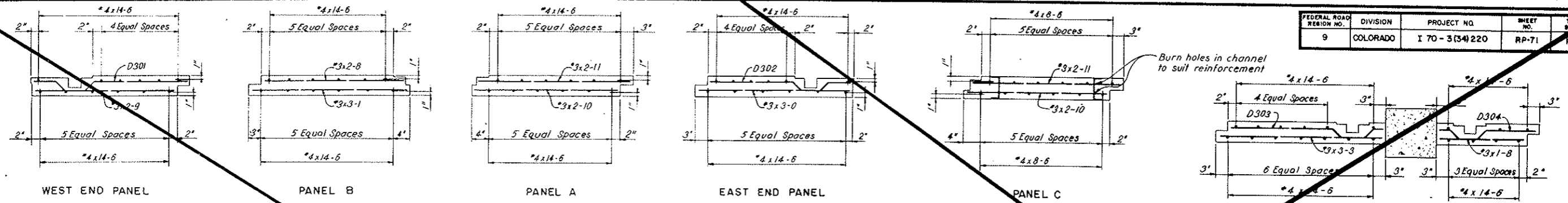
FOOTINGS		
REINF. SCHEDULE		
STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
ONE FOOTING TYPE IIIa		
16	#8	2-3
16	#8	2-0
ONE FOOTING TYPE IIIb		
26	#8	4-3
20	#8	2-6
ONE FOOTING EAST PORTAL-CONDUIT		
22	#10	4-0
12	#8	2-3



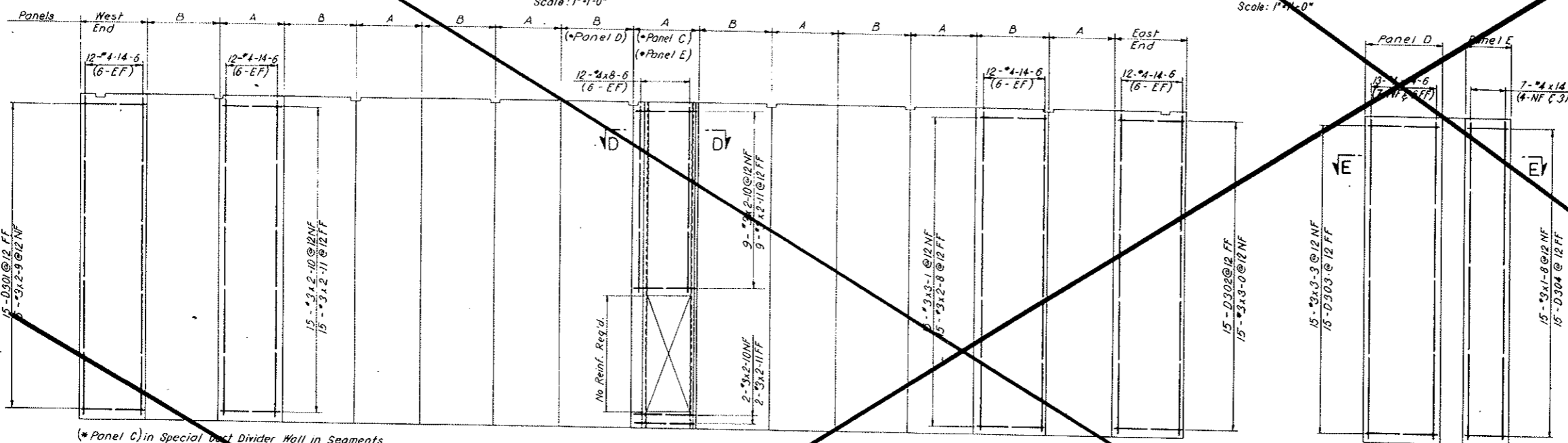
FOOT BLOCK REINFORCEMENT
EAST PORTAL-CONDUIT SEGMENTS
SCALE 1/2" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL AND CONDUIT SEGMENTS REINFORCEMENT					
FOOT BLOCKS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. MCC.	RECOMMENDED:				
DRAWN: R.B.	APPROVED:				
CHECKED: R.B.A.	APPROVED:				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
NEW YORK, N. Y.	SCALE: AS NOTED	DATE: NOV. 1967	DRAWING NO. C2-139		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-71	112



VOID
BY CONSTRUCTION
Oct 26, 1973



ELEVATION-EXHAUST AIR SIDE
TYPICAL DUCT DIVIDER WALL
ONE 50'-3" TUNNEL SEGMENT
Scale: 1/8"=1'-0"

SPECIAL PANELS
IN TUNNEL SEGMENT N 84

TYPICAL DUCT DIVIDER WALL
1-West End Panel
7-'A' Panels
7-'B' Panels
1-East End Panel

SPECIAL DUCT DIVIDER WALL
SEGMENTS N14, N34, N54, N74, N94,
N114, N134, AND N154
1-West End Panel
6-'A' Panels
1-'C' Panel
7-'B' Panels
1-East End Panel

SPECIAL DUCT DIVIDER WALL
SEGMENT N84
1-West End Panel
6-'A' Panels
8-'B' Panels
1-'D' Panel
1-'E' Panel
1-East End Panel

REINFORCEMENT SCHEDULE BENT BARS									
BENDING DIAGRAMS									
DIMENSIONS									
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	C	D	E	F	H	K
TYPICAL DIVIDER WALL 50'-3" LONG									
D301	15	#3	3-3	0-5	0-3 1/2	0-5	0-5 1/2	0-2 1/2	1-10
D302	15	#3	3-0	0-5	0-3 1/2	0-5	0-3 1/2	0-2 1/2	1-7
DIVIDER WALL WITH 'C' PANEL									
D301	15	#3	3-3	0-5	0-3 1/2	0-5	0-3 1/2	0-2 1/2	1-10
D302	15	#3	3-0	0-5	0-3 1/2	0-5	0-3 1/2	0-2 1/2	1-7
DIVIDER WALL WITH 'D' AND 'E' PANELS									
D301	15	#3	3-3	0-5	0-3 1/2	0-5	0-3 1/2	0-2 1/2	1-10
D302	15	#3	3-0	0-5	0-3 1/2	0-5	0-3 1/2	0-2 1/2	1-7
D303	15	#3	3-2	0-2	0-3 1/2	0-5	0-3 1/2	0-2 1/2	2-0
D304	15	#3	2-2	0-2	0-3 1/2	0-5	0-3 1/2	0-2 1/2	1-0

All bent bar marks to be prefixed by No C2-140.

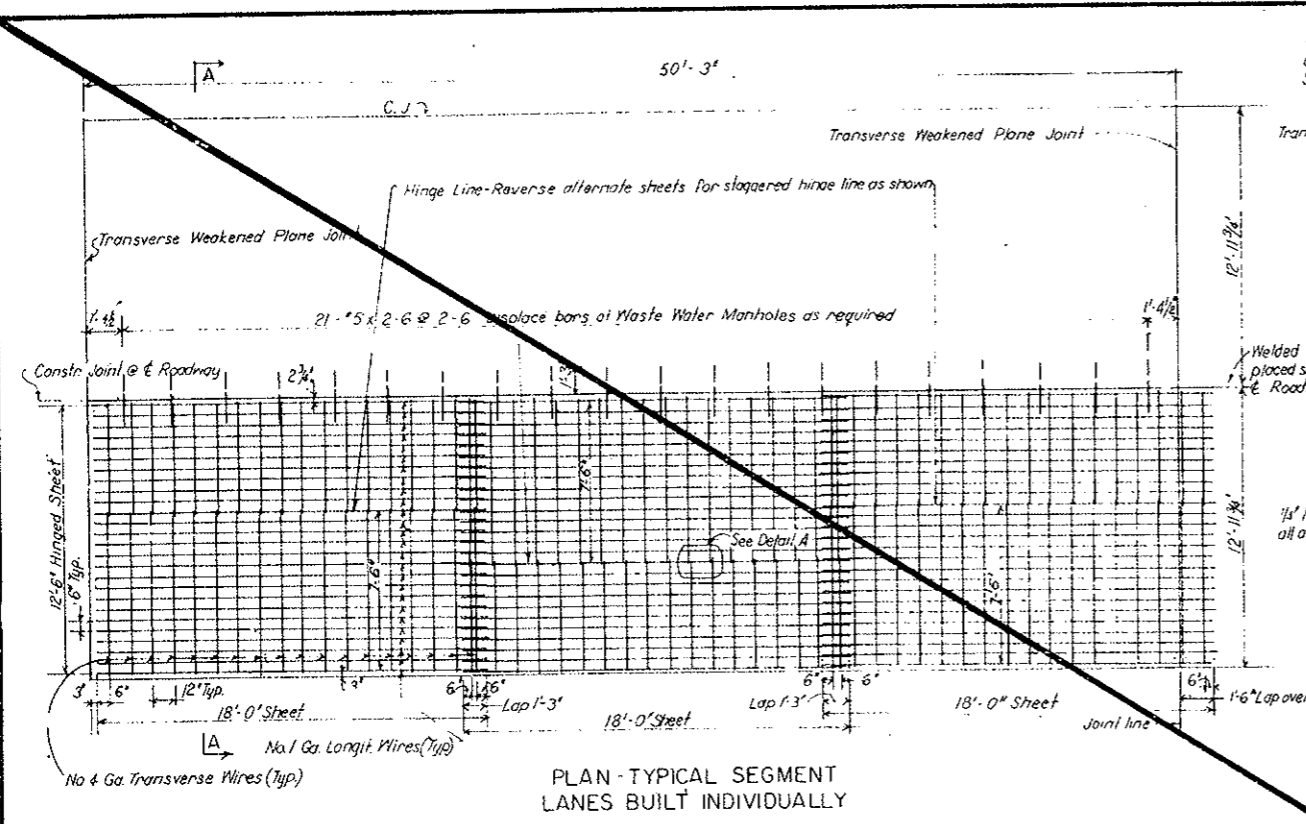
5" STRAIGHT BARS		
NO. REQ'D	SIZE	BAR LENGTH
TYPICAL DIVIDER WALL 50'-3" LONG		
192	#4	14-6
105	#3	3-1
15	#3	3-0
105	#3	2-11
105	#3	2-10
15	#3	2-9
105	#3	2-8
DIVIDER WALL WITH 'C' PANEL		
180	#4	14-6
12	#4	7-6
105	#3	3-1
15	#3	3-0
101	#3	2-11
101	#3	2-10
15	#3	2-9
105	#3	2-8

STRAIGHT BARS		
NO. REQ'D	SIZE	BAR LENGTH
DIVIDER WALL WITH 'D', 'E' PANELS		
188	#4	14-6
15	#3	3-3
90	#3	3-1
15	#3	3-0
90	#3	2-11
90	#3	2-10
15	#3	2-9
90	#3	2-8
15	#3	1-8

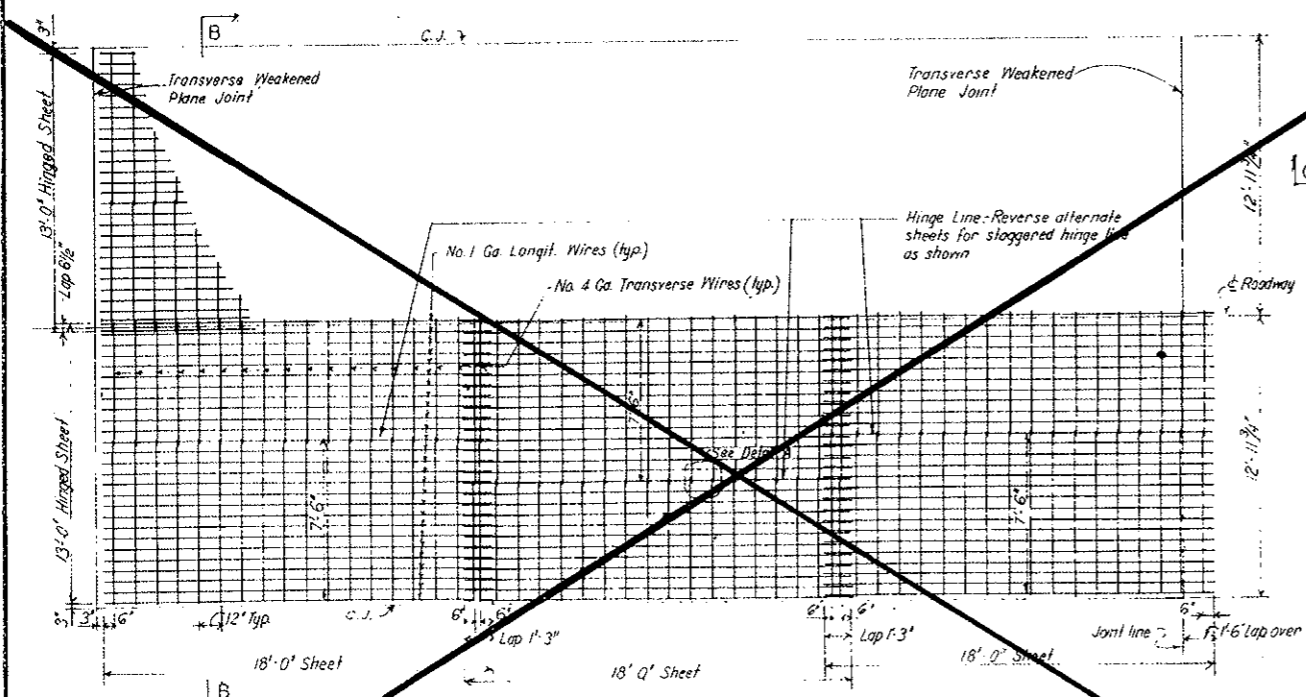
NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-17.
For concrete details in Tunnel Segment N84 see Dwg. C2-20.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO-DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT DUCT DIVIDER WALLS					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. McC.	CHECKED: P. E. L.		RECOMMENDED: <i>[Signature]</i>	DRAWING NO. C2-140	
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>		SCALE: AS NOTED DATE: NOV. 1967		

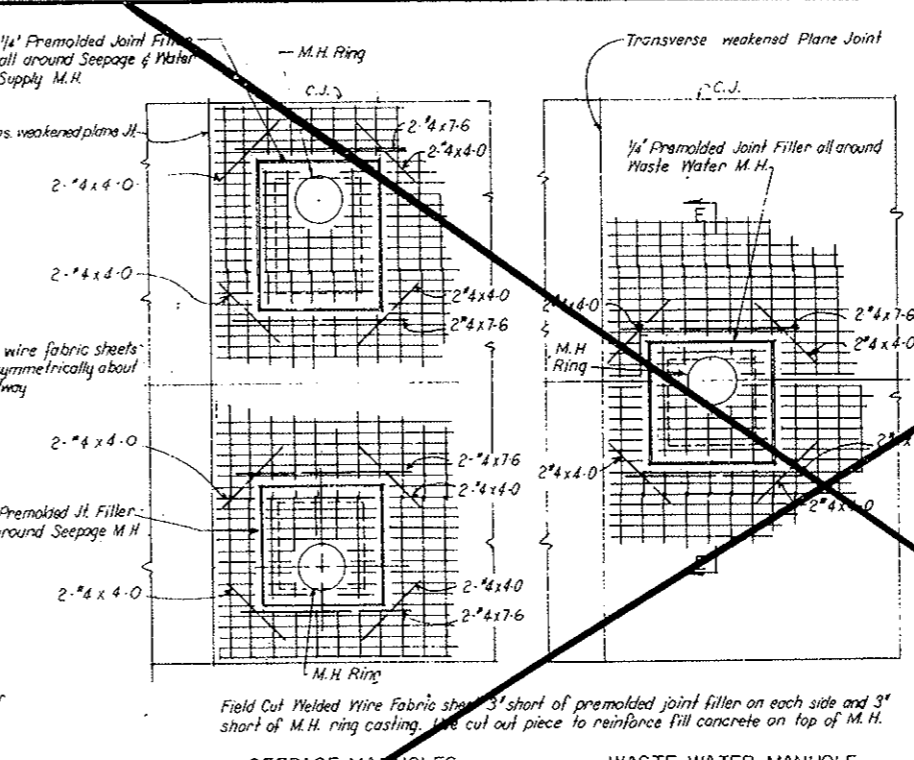
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-72	112



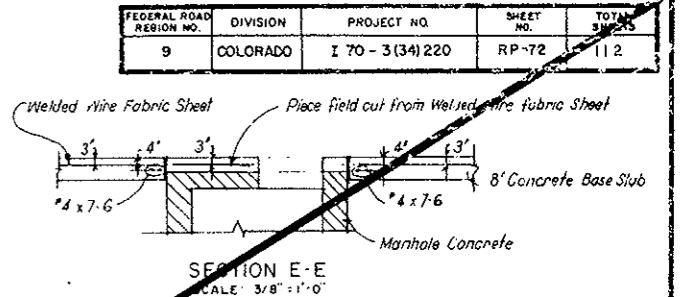
PLAN-TYPICAL SEGMENT LANES BUILT INDIVIDUALLY



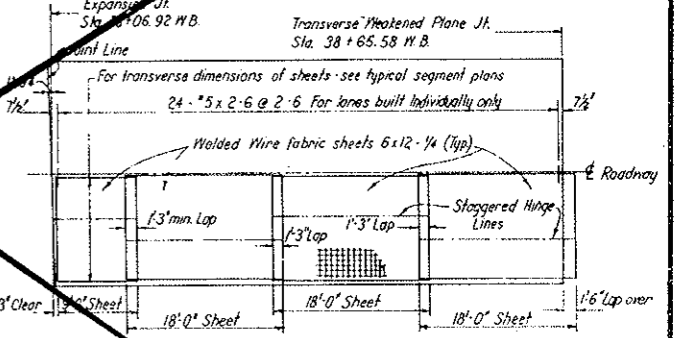
PLAN-TYPICAL SEGMENT LANES BUILT SIMULTANEOUSLY



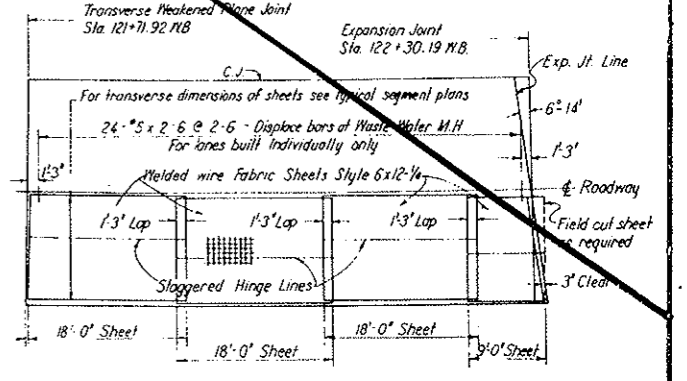
SEEPAGE MANHOLES DETAILS AT MANHOLES IN ROADWAY



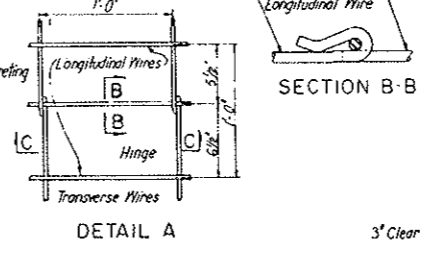
SECTION E-E SCALE: 3/8" = 1'-0"



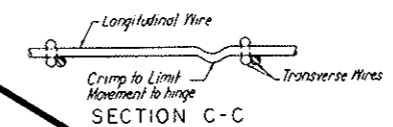
WEST TRANSITION SEGMENT SCALE: 1" = 10'



EAST TRANSITION SEGMENT SCALE: 1" = 10'



DETAIL A



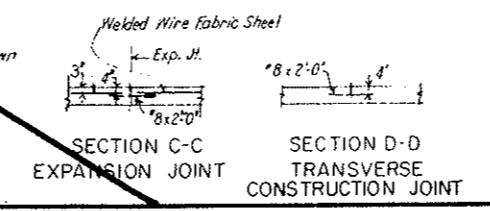
SECTION C-C

Segment	Size of Sheet		No. Req'd. per Segment	Total No. Req'd.
	Lanes Built Individually	Lanes Built Simultaneously		
West Transition	12'-6" (Hinged) x 18'-0"	13'-0" (Hinged) x 18'-0"	6	6
	12'-6" (Hinged) x 9'-0"	13'-0" (Hinged) x 9'-0"	2	2
N1 to N167 incl	12'-6" (Hinged) x 18'-0"	13'-0" (Hinged) x 18'-0"	6	1002
East Transition	12'-6" (Hinged) x 18'-0"	13'-0" (Hinged) x 18'-0"	6	6
	12'-6" (Hinged) x 9'-0"	13'-0" (Hinged) x 9'-0"	2	2

NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For Concrete Details see Dwg. C2-10.
 For General Reinforcement Notes see Dwg. C2-103.
 Welded Wire Fabric shall conform to the requirements of AASHTO designation M55-65 Welded Steel Wire Fabric for Concrete Reinforcement.

VOID BY CONSTRUCTION
 Oct 24, 1967
 SCALE: 1/4" = 1'-0" UNLESS OTHERWISE NOTED

Location	No. Req'd.	Size	Length	Total No. of bars req'd.	Remark
At Manholes	4	# 4	7-6	256	(6 x MH)
do	4	# 4	4-0	256	
Long. Jt. of E Individually placed Lanes	21	# 5	2-6	2004	Segments N1 to 167
Expansion Joint	24	# 5	2-6	48	E & W Trans. Segment
Transverse Constr. Joint	18	# 8	2-0	36	Fill with expansion caps
	18	# 8	2-0		As req'd. by concrete operations



SECTION B-B SECTION C-C EXPANSION JOINT SECTION D-D TRANSVERSE CONSTRUCTION JOINT

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL-TUNNEL AND PORTAL SECTIONS REINFORCEMENT ROADWAY CONCRETE BASE SLAB					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: S.M.R.	RECOMMENDED: <i>Frank J. Sullivan</i>	DRAWING NO. C2-141			
DRAWN: S.M.R.	APPROVED: <i>Frank J. Sullivan</i>	SCALE: 1/4" = 1'-0" DATE: NOV. 1967			
CHECKED: M.F.					
SUBMITTED: <i>Frank J. Sullivan</i>					

BENT BAR SCHEDULE						
BENDING DIAGRAMS						
		B		C		D
		B		C		D
DIMENSIONS						
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	A	B	C
LIST MC-N						
B401	6	#4	5-0	0-9	4-3	
B402	6	#4	1-6	0-9	0-9	
B403	24	#4	4-6	1-0	3-6	
H404	8	#4	7-2	1-0	5-2	1-0
LIST MC-S						
B401	6	#4	5-0	0-9	4-3	
B402	6	#4	1-6	0-9	0-9	
B403	24	#4	4-3	1-0	3-3	
H404	8	#4	7-2	1-0	5-2	1-0
LIST MW-N BMS-N						
B405	6	#4	1-6	0-9	0-9	
B406	6	#4	3-6	0-9	2-9	
B407	20	#4	4-6	1-0	3-6	
H408	8	#4	7-2	1-0	5-2	1-0
LIST MW-D						
B405	6	#4	1-6	0-9	0-9	
B406	6	#4	3-6	0-9	2-9	
B407	6	#4	5-6	1-0	4-6	
H408	8	#4	7-2	1-0	5-2	1-0
LIST MS-D						
B405	6	#4	1-6	0-9	0-9	
B406	6	#4	3-6	0-9	2-9	
B407	6	#4	4-10	1-0	3-10	
H408	8	#4	7-2	1-0	5-2	1-0

STRAIGHT BARS		
NO. REQ'D	SIZE	BAR LENGTH
34	#4	6-3
14	#4	5-3
23	#4	5-0
4	#4	4-0
20	#4	3-6
6	#4	3-0
44	#4	1-9
2	#4	3-9
LIST MC-S		
34	#4	6-3
14	#4	5-3
23	#4	5-0
4	#4	4-0
20	#4	3-3
6	#4	3-0
44	#4	1-9
2	#4	3-9
LIST MW-N BMS-N		
40	#4	5-3
12	#4	5-0
4	#4	4-0
16	#4	3-6
6	#4	3-0
4	#4	2-6
36	#4	1-9
LIST MW-D		
40	#4	5-3
12	#4	5-0
4	#4	4-0
16	#4	3-9
6	#4	3-0
4	#4	2-6
36	#4	1-9
LIST MS-D		
46	#4	5-3
12	#4	5-0
4	#4	4-0
16	#4	3-9
6	#4	3-0
4	#4	2-6
36	#4	1-9

NOTES FOR SHALLOW SEEPAGE & WATER SUPPLY MANHOLE

- (A) Replace bars shown with same number of #4x3-3 @ 12 I.F.
- (B) Respace horizontal bars to suit shallower dimension

NOTES FOR DEEP WASTE WATER MANHOLE

- (C) Replace bars shown with same number of #4x4-6 @ 12 I.F.
- (D) Respace horizontal bars to suit deeper manhole

NOTES FOR DEEP SEEPAGE DRAIN MANHOLE

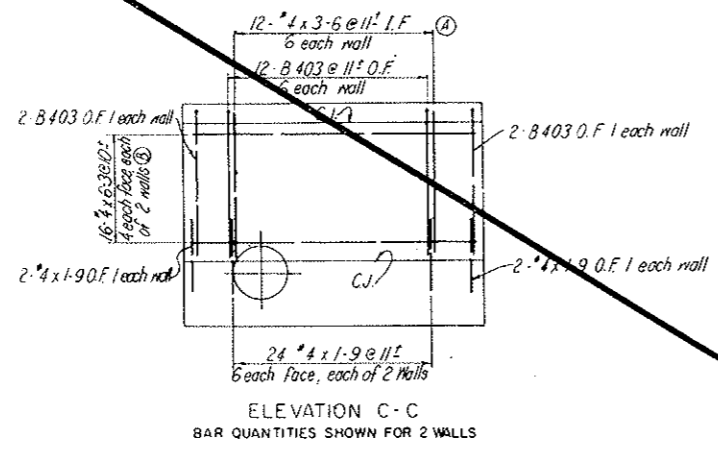
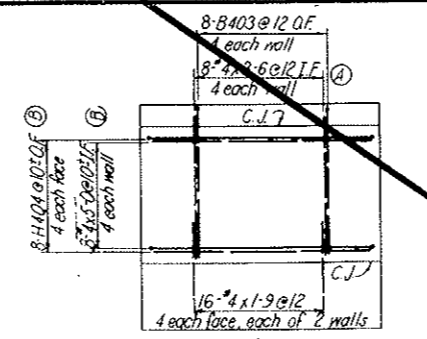
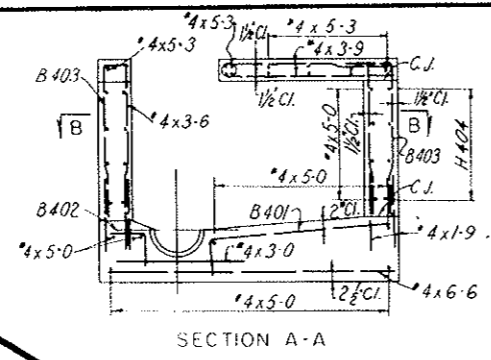
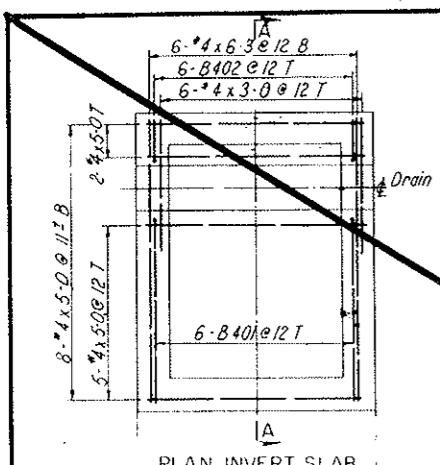
- (E) Replace bars shown with same number of #4x3-9 @ 12 I.F.
- (F) Respace horizontal bars to suit deeper manhole

All bent bar marks to be prefixed by No. C2-142, List # * To correspond with List above

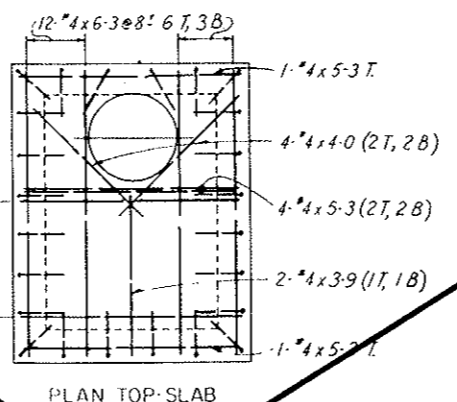
VOID BY CONSTRUCTION
OCT 26, 1973

NOTES:
For General Concrete Notes see Dwg C2-11.
For location of manholes see Dwg G2-10 to G2-16 inclusive.
For details of Seepage Drain and Water Supply Manhole and Seepage Drain Manhole see Dwg C2-38 & 39.
For details of Waste Water Manhole see Dwg C2-40 & C2-41.
For General Reinforcement notes see Dwg C2-103

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT MANHOLES IN NORTH TUNNEL ROADWAY					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: M. E. SMR	RECOMMENDED: H. N. HARRIS				
DRAWN: H. N.	CHECKED: H. N.				
SUBMITTED: H. N.	APPROVED: Frank Sullivan				
DRAWING NO. C2-142					
NEW YORK, N. Y.		SCALE: 1/2" = 1'-0"		DATE: NOV 1967	

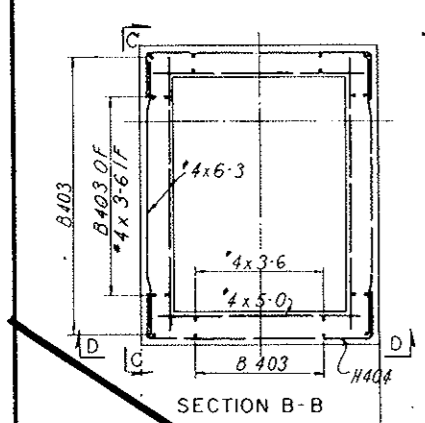


WALL ELEVATION D-D
BAR QUANTITIES SHOWN FOR 2 WALLS

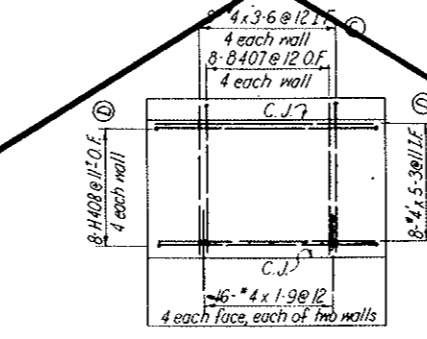
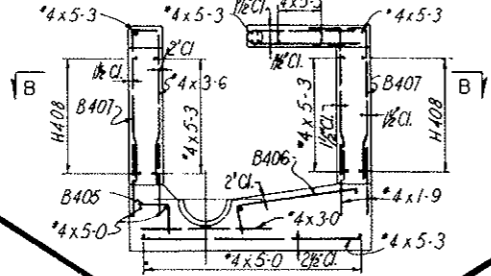
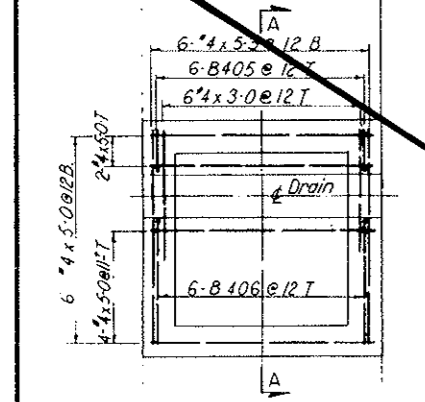


PLAN TOP SLAB

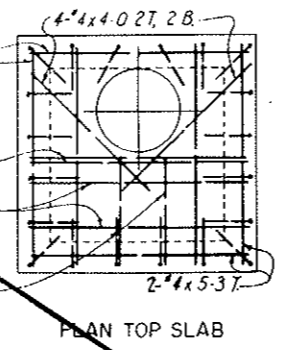
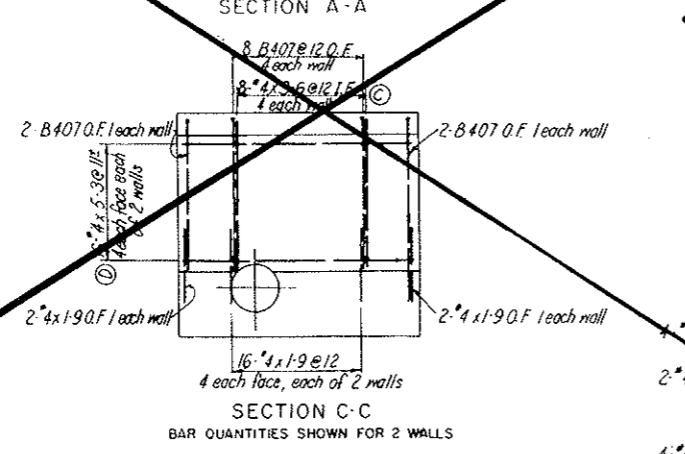
SEEPAGE DRAIN AND WATER SUPPLY MANHOLE
NUMBER REQ'D. 20 AS SHOWN BAR LIST MC-N
1-3 INCHES SHALLOWER AS NOTED BAR LIST MC-S



SECTION B-B

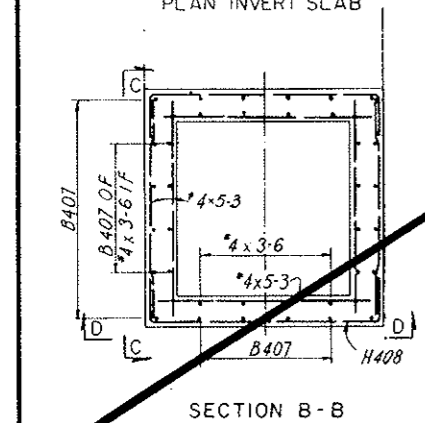


SECTION D-D
BAR QUANTITIES SHOWN FOR 2 WALLS



PLAN TOP SLAB

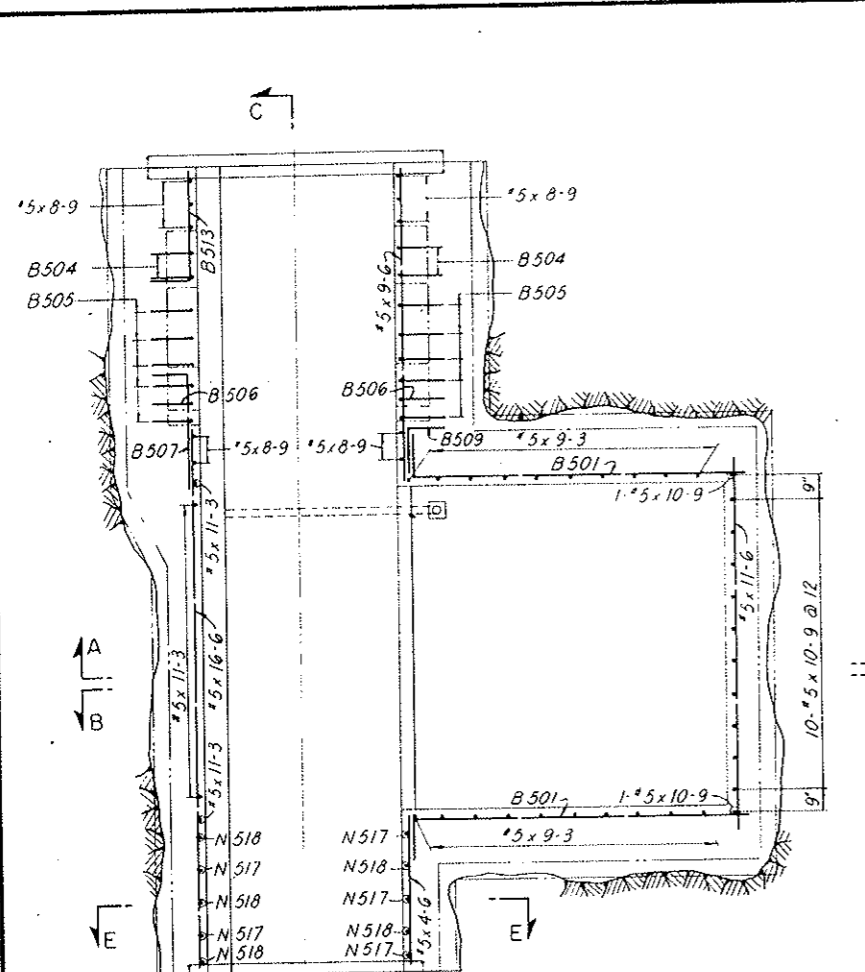
WASTE WATER DRAIN MANHOLE
NUMBER REQ'D. 21 AS SHOWN LIST MW-N
1' 12" DEEPER AS NOTED LIST MW-D



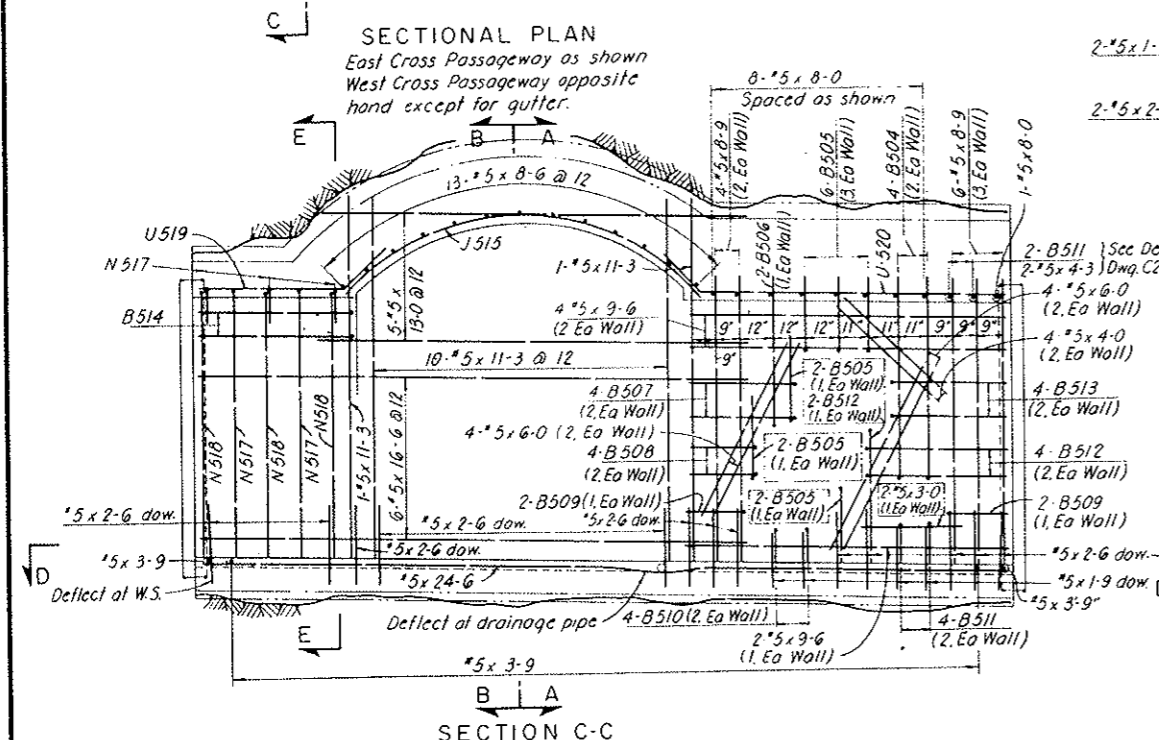
SECTION B-B

SEEPAGE DRAIN MANHOLE
NUMBER REQ'D. 21 OPPOSITE HAND LIST MS-N
1-0 OPPOSITE HAND, 4" DEEPER, AS NOTED LIST MS-D

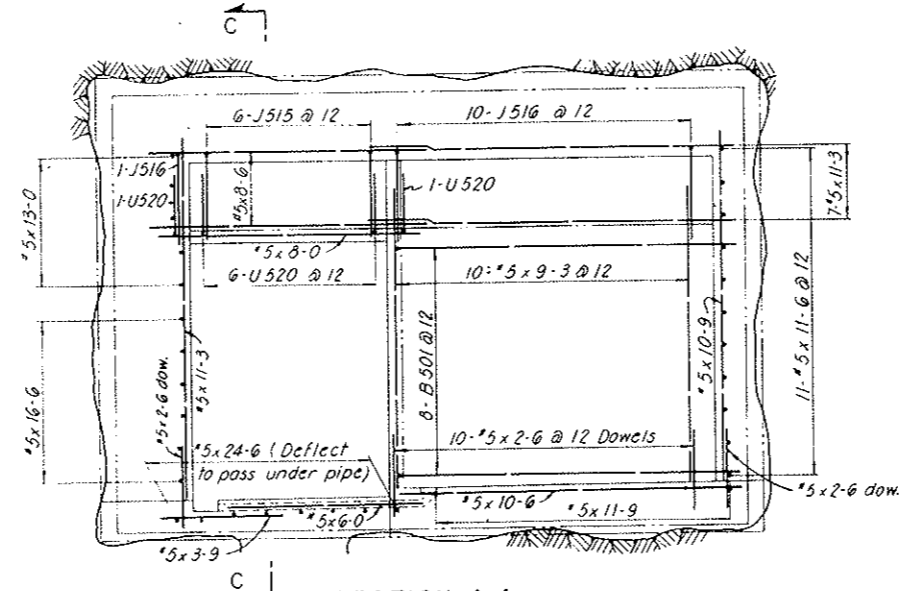
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-74	112



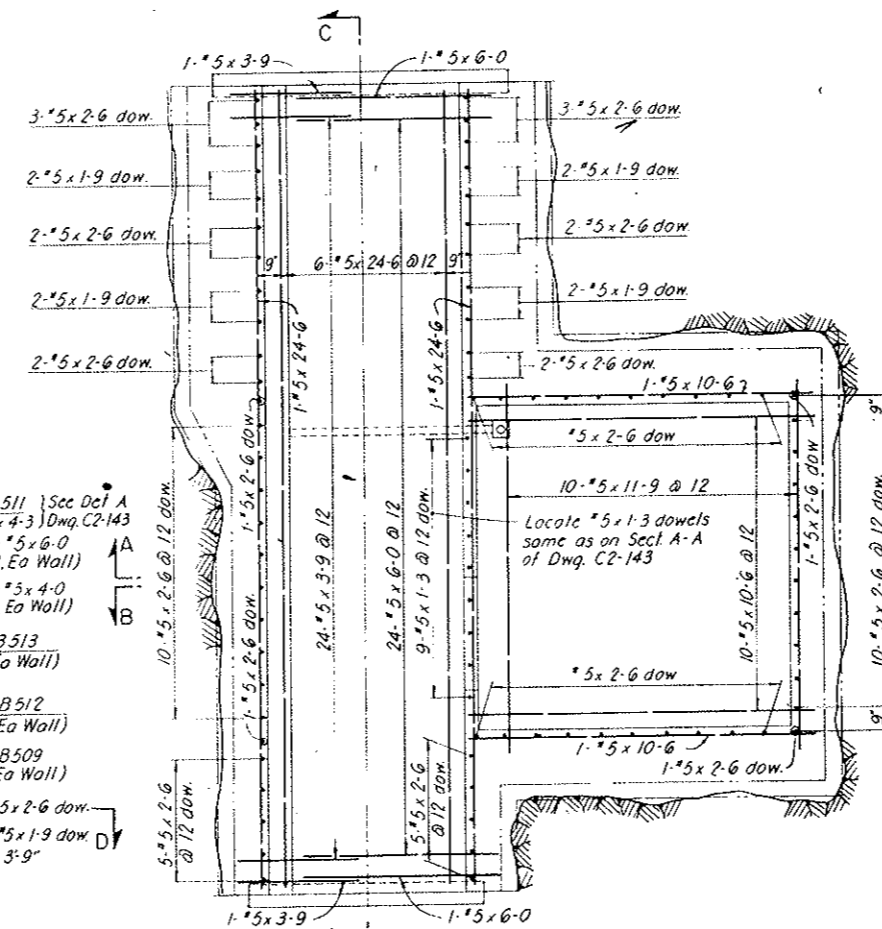
SECTIONAL PLAN
East Cross Passageway as shown
West Cross Passageway opposite
hand except for gutter.



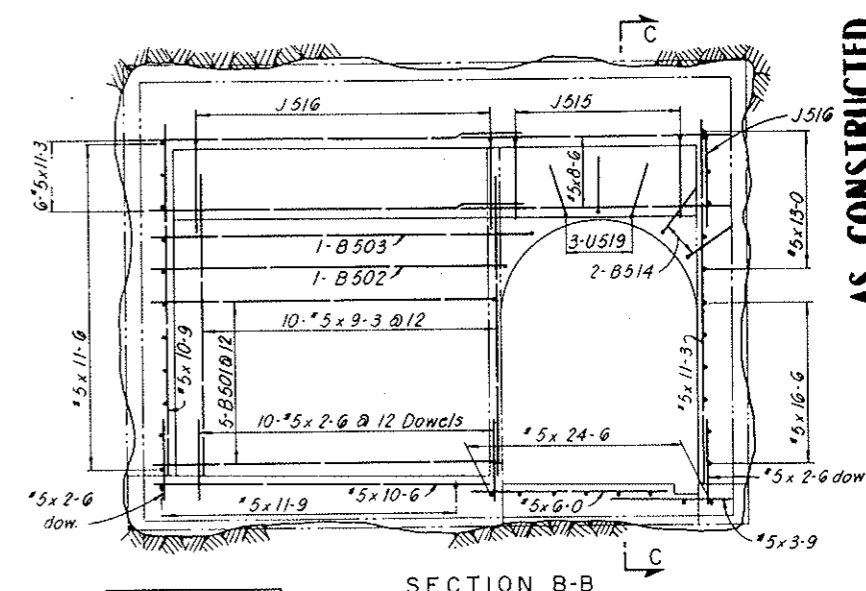
SECTION C-C



SECTION A-A

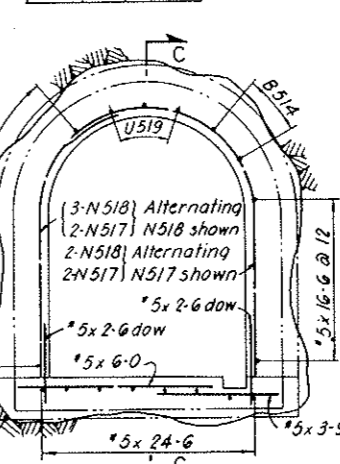


SECTION D-D



SECTION B-B

NO.	REQ'D	BAR SIZE	BAR LENGTH
8	#5	24-6	
6		16-6	
5		13-0	
10		11-9	
11		11-6	
25		11-3	
12		10-9	
12		10-6	
6		9-6	
20		9-3	
10		8-9	
13		8-6	
9		8-0	
34		6-0	
8		4-6	
2		4-3	
4		4-0	
26		3-9	
2		3-0	
68		2-6	
8		1-9	
9	#5	1-3	



SECTION E-E

REINFORCEMENT SCHEDULE - BENT BARS						
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	DIMENSIONS		
				B	C	H
B501	13	#5	11-9	1-3	10-6	
B502	1		12-3	1-3	11-0	
B503	1		12-9	1-3	11-6	
B504	4		7-6	1-3	6-3	
B505	12		3-9	1-3	2-6	
B506	2		6-0	1-3	4-9	
B507	4		4-6	1-3	3-3	
B508	4		3-3	1-3	2-0	
B509	4		3-0	1-3	1-9	
B510	4		2-3	1-3	1-0	
B511	6		2-6	1-3	1-3	
B512	6		5-6	1-3	4-3	
B513	4		4-9	1-3	3-6	
B514	2		6-3	1-9	4-6	
J515	6		12-3	10-9	2-6	7-2 1/2
J516	11		13-9	11-9	3-0	7-2 1/2
N517	5		12-6	5-0	7-6	3-2 1/2
N518	5		9-6	5-0	4-6	3-2 1/2
U519	3		6-3	1-9	4-6	1-3
U520	8	#5	11-3	1-9	9-6	1-3

Notes:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwg. C2-22, 23 and 24.
 All reinforcement to have 1/4" clear concrete cover.
 For General Reinforcement Notes see Dwg. C2-103.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

CIVIL - TUNNEL
 REINFORCEMENT
WEST AND EAST CROSS PASSAGeways
 TRANSFORMER VAULT

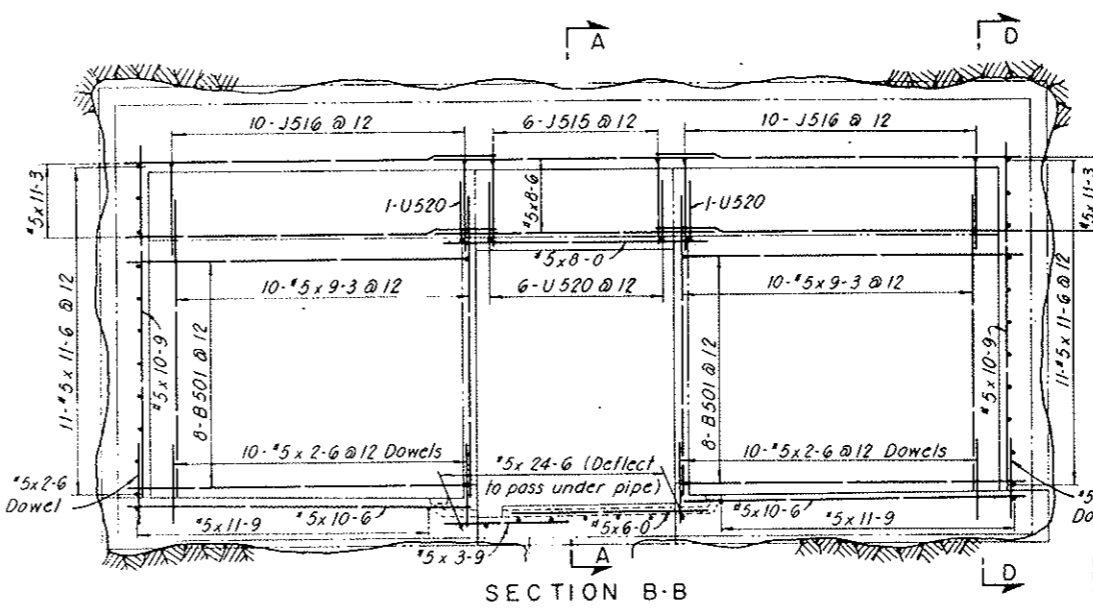
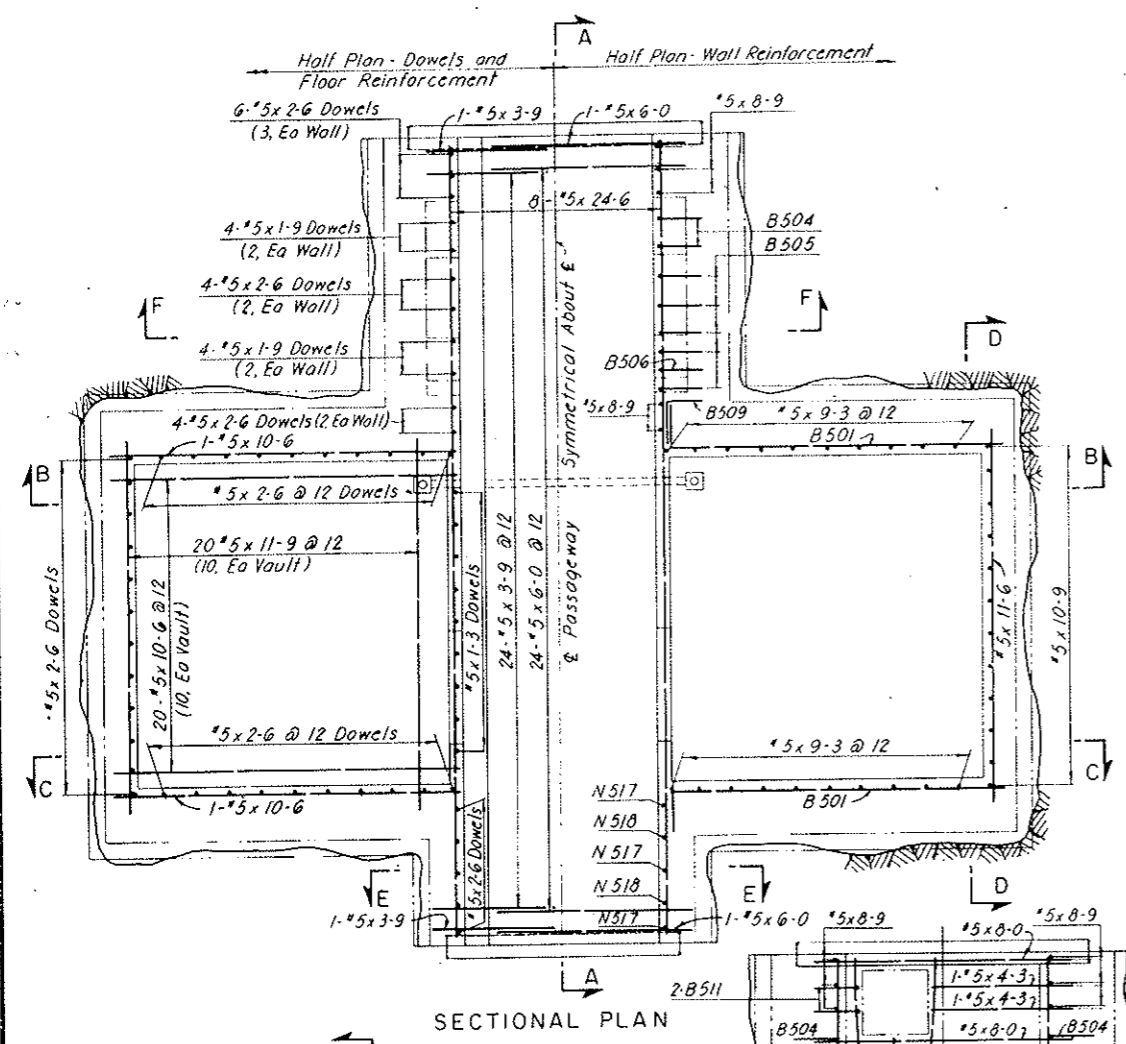
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: S.M.R. DRAWN: E.G.P. CHECKED: H.F.M.C.C. SUBMITTED: H.C.M.C. APPROVED: J.P.H. DATE: NOV. 1967

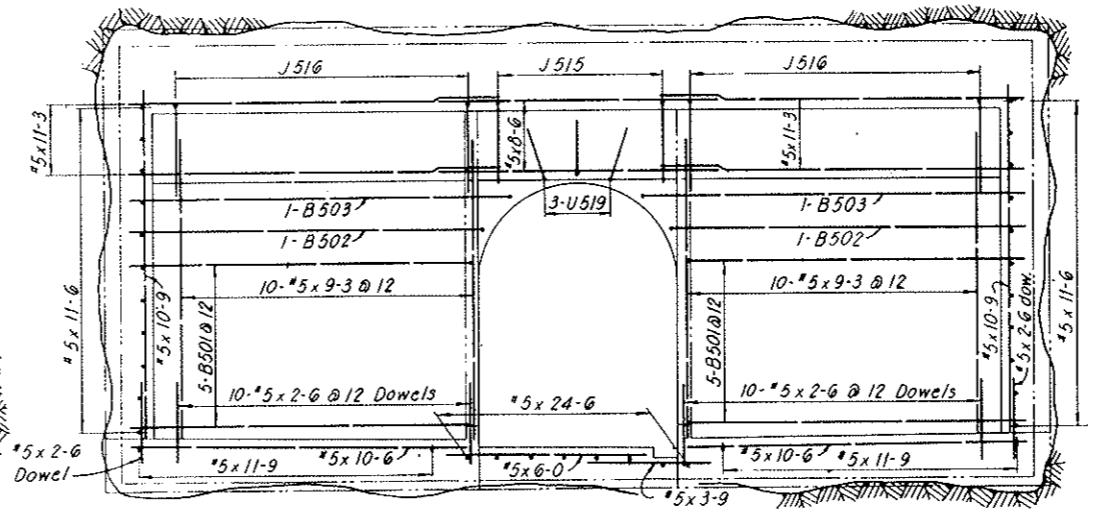
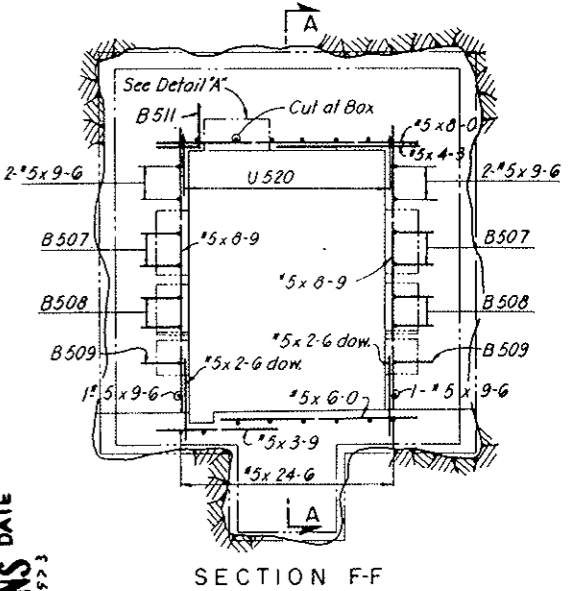
SCALE: 3/8" = 1'-0" DRAWING NO. **C2-143**

AS CONSTRUCTED
 NO REVISIONS
 DATE OCT 26, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-75	112

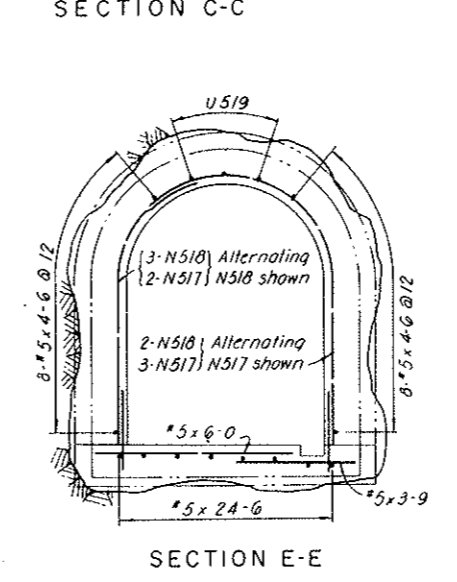
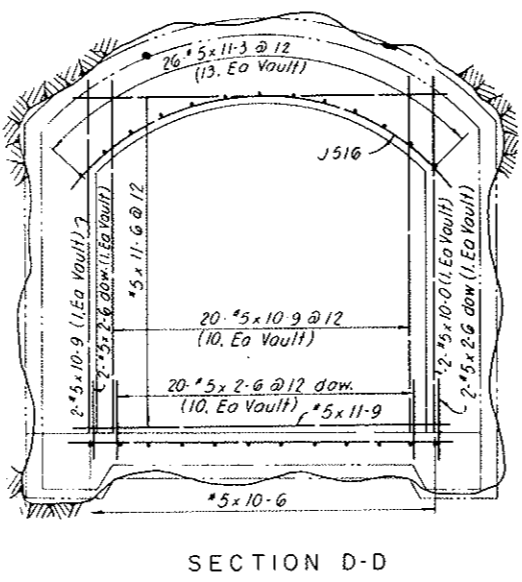
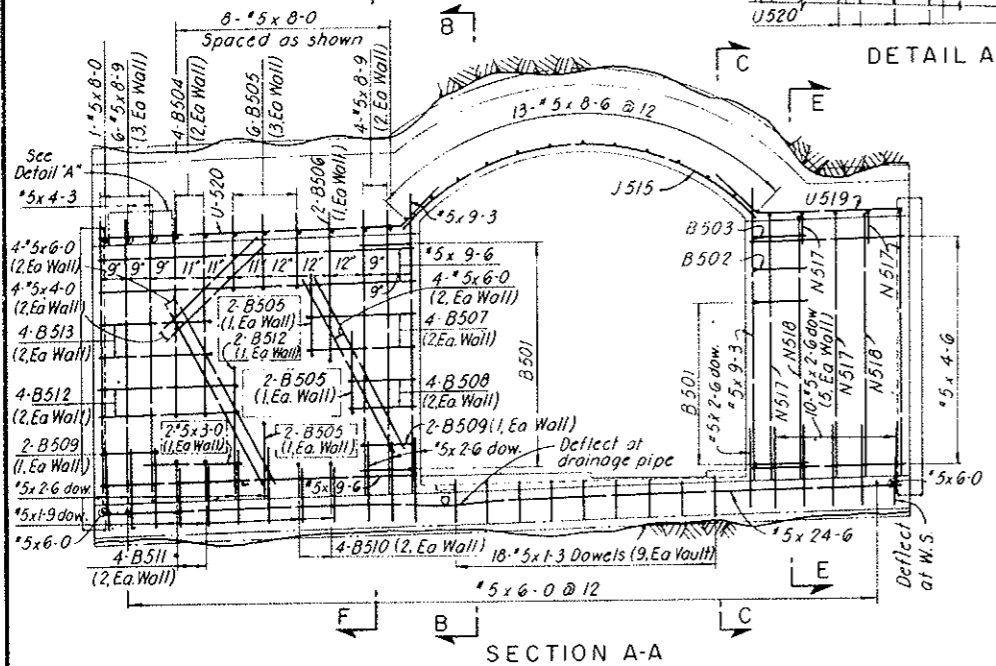


AS CONSTRUCTED
NO REVISIONS
 DATE
 OCT 26, 1973



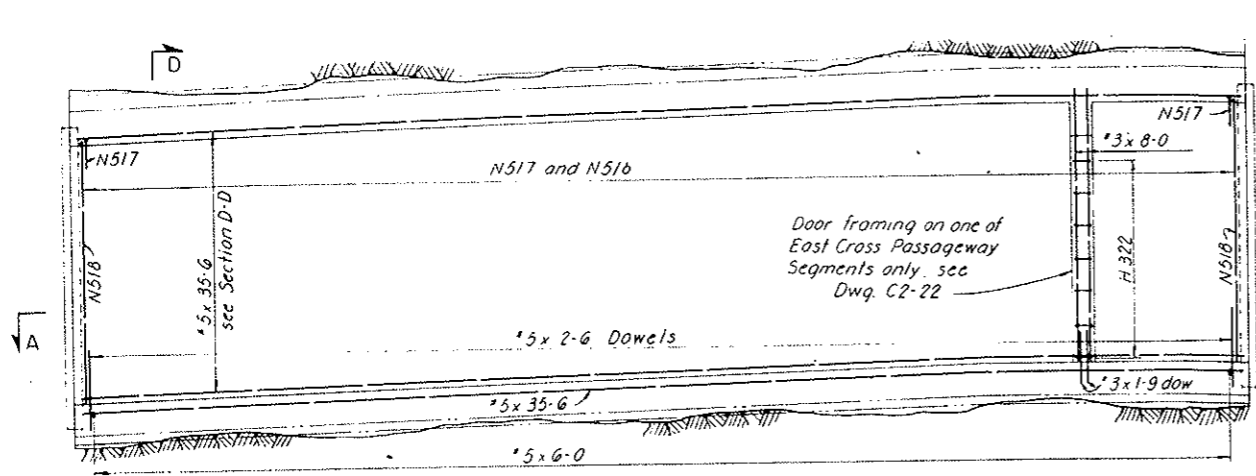
REINFORCEMENT SCHEDULE - BENT BARS									
BENDING DIAGRAMS									
		B		C		D		E	
		H		H		H		H	
		C		C		C		C	
		C		C		C		C	
		C		C		C		C	
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	B	C	H	R		
B501	26	#5	11-9	1-3	10-6				
B502	2		12-3	1-3	11-0				
B503	2		12-9	1-3	11-6				
B504	4		7-6	1-3	6-3				
B505	12		3-9	1-3	2-6				
B506	2		6-0	1-3	4-9				
B507	4		4-6	1-3	3-3				
B508	4		3-3	1-3	2-0				
B509	4		3-0	1-3	1-9				
B510	4		2-3	1-3	1-0				
B511	6		2-6	1-3	1-3				
B512	6		5-6	1-3	4-3				
B513	4		4-9	1-3	3-6				
J515	6		12-3	10-9	2-6	7-2 1/2			
J516	20		13-9	11-9	3-0	7-2 1/2			
N517	5		12-6	5-0	7-6	3-2 1/2			
N518	5		9-6	5-0	4-6	3-2 1/2			
U519	3		6-3	1-9	4-6	1-3			
U520	8	#5	11-3	1-9	9-6	1-3			

All bent bar marks to be prefixed by No. C2-144
NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwgs. C2-22, 23 and 24.
 All reinforcement to have 1/4" clear concrete cover.
 For General Reinforcement notes see Dwg. C2-103.

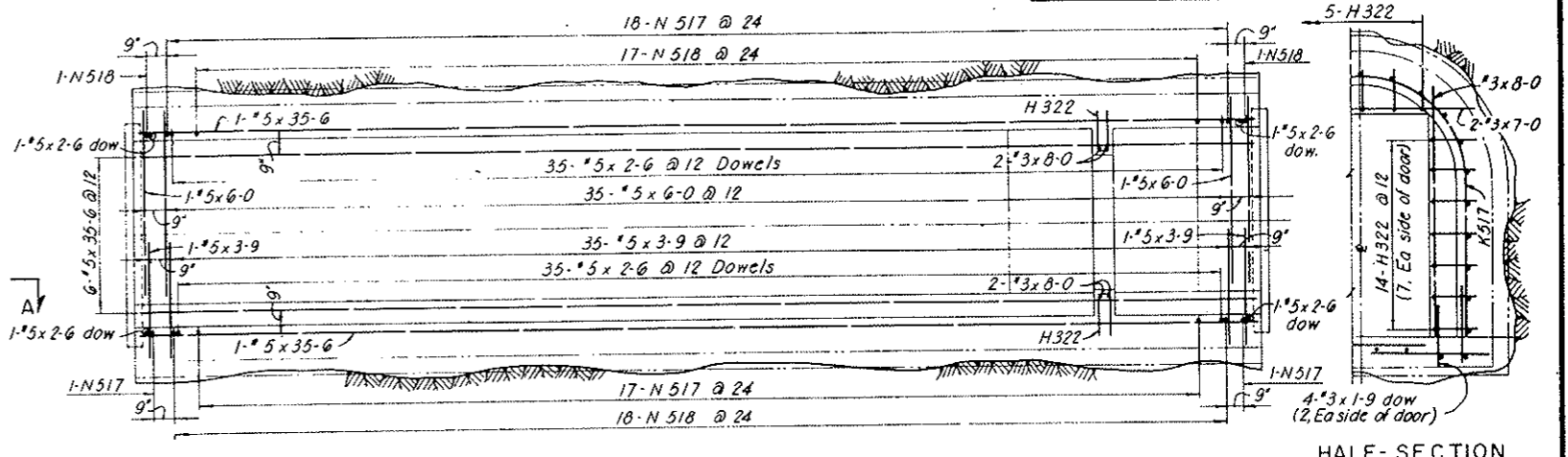


REINFORCEMENT SCHEDULE - STRAIGHT BARS			
NO. REQ'D	BAR SIZE	BAR LENGTH	
8	#5	24-6	
20		11-9	
22		11-6	
26		11-3	
24		10-9	
24		10-6	
6		9-6	
40		9-3	
10		8-9	
13		8-6	
9		8-0	
34		6-0	
16		4-6	
2		4-3	
4		4-0	
26		3-9	
2		3-0	
88		2-6	
8		1-9	
18	#5	1-3	

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT CENTER CROSS PASSAGWAY TRANSFORMER VAULTS					
TIPPETTS · ABBETT · MCCARTHY · STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: S.M.R.	DRAWN: E.G.P.	CHECKED: H.F.M.C.	APPROVED: [Signature]	DRAWING NO. C2-144	
SUBMITTED: [Signature]			SCALE: 3/8" = 1'-0" DATE: NOV. 1967		



CROSS PASSAGEWAY SEGMENT 36'-0" LONG - LONGITUDINAL SECTION
 Two required for East Cross Passageway
 Two required for Center Cross Passageway
 One required for West Cross Passageway



SECTION A-A

HALF-SECTION (At door)

**AS CONSTRUCTED
 NO REVISIONS DATE
 Oct 26, 1973**

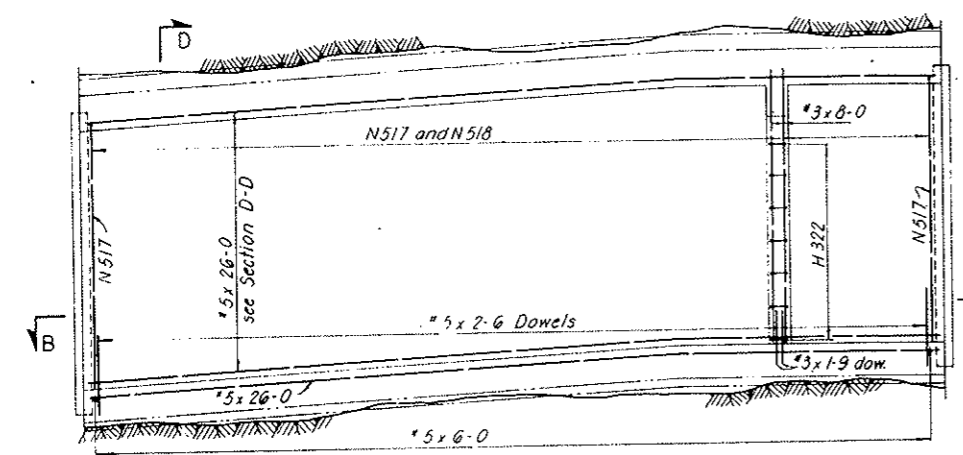
REINFORCEMENT SCHEDULE - BENT BARS						
BENDING DIAGRAMS						
BAR MARK	NO.	REQ'D SIZE	BAR LENGTH	B	C	D R
WEST CROSS PASSAGEWAY 2 SEGMENTS REQ'D (36'-0" & 26'-5" LONG)						
H 322	19	#3	3-0	1-4	0-4	1-4
N 517	64	#5	12-6	5-0	7-6	3-2 1/2
N 518	64	#5	9-6	5-0	4-6	3-2 1/2
CENTER CROSS PASSAGEWAY 3 SEGMENTS REQ'D (2-36'-0" & 1-22'-0" LONG)						
H 322	19	#3	3-0	1-4	0-4	1-4
N 517	97	#5	12-6	5-0	7-6	3-2 1/2
N 518	97	#5	9-6	5-0	4-6	3-2 1/2
EAST CROSS PASSAGEWAY 2 SEGMENTS REQ'D (2-36'-0" LONG)						
H 322	19	#3	3-0	1-4	0-4	1-4
N 517	74	#5	12-6	5-0	7-6	3-2 1/2
N 518	74	#5	9-6	5-0	4-6	3-2 1/2

All bent bar marks to be prefixed by No. C2-145

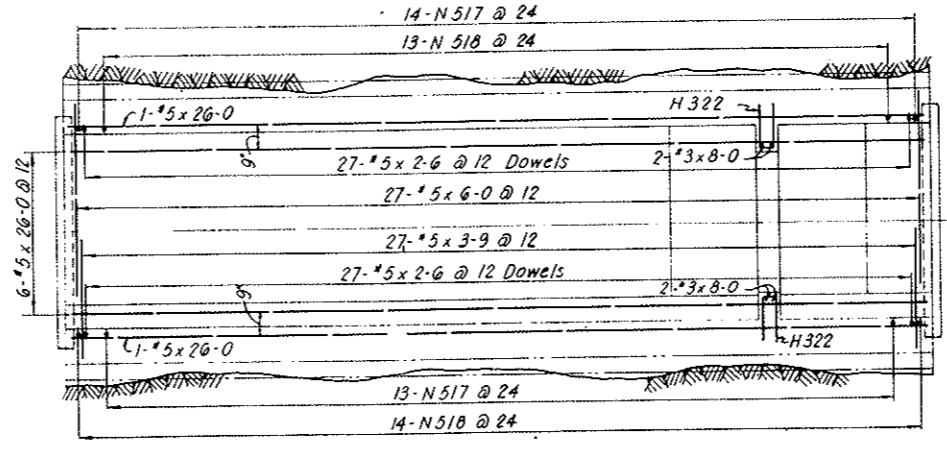
WEST CROSS PASSAGEWAY (36'-0" & 26'-5")			CENTER CROSS PASSAGEWAY (36'-0" & 22'-0")			EAST CROSS PASSAGEWAY (36'-0" & 36'-0")		
NO.	REQ'D SIZE	BAR LENGTH	NO.	REQ'D SIZE	BAR LENGTH	NO.	REQ'D SIZE	BAR LENGTH
4	#3	8-0	4	#3	8-0	4	#3	8-0
2	#3	7-0	2	#3	7-0	2	#3	7-0
4	#3	1-9	4	#3	1-9	4	#3	1-9
29	#5	35-6	58	#5	35-6	58	#5	35-6
29	#5	26-0	29	#5	21-6	74	#5	6-0
64	#5	6-0	97	#5	6-0	74	#5	3-9
64	#5	3-9	97	#5	3-9	148	#5	2-6
120	#5	2-6	194	#5	2-6			

NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwgs. C2-22, 23 and 24.
 All reinforcement to have 1/2" clear concrete cover.
 For General Reinforcement notes see Dwg. C2-103.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - TUNNEL REINFORCEMENT CROSS PASSAGEWAYS MISCELLANEOUS DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: S.M.R.	DRAWN: E.S.P.		RECOMMENDED: Henry J. Jones	APPROVED: Frank R. Kelly	
CHECKED: H.F. McC.	SUBMITTED: [Signature]		DRAWING NO. C2-145		
SCALE: 3/8" = 1'-0"			DATE: NOV. 1967		

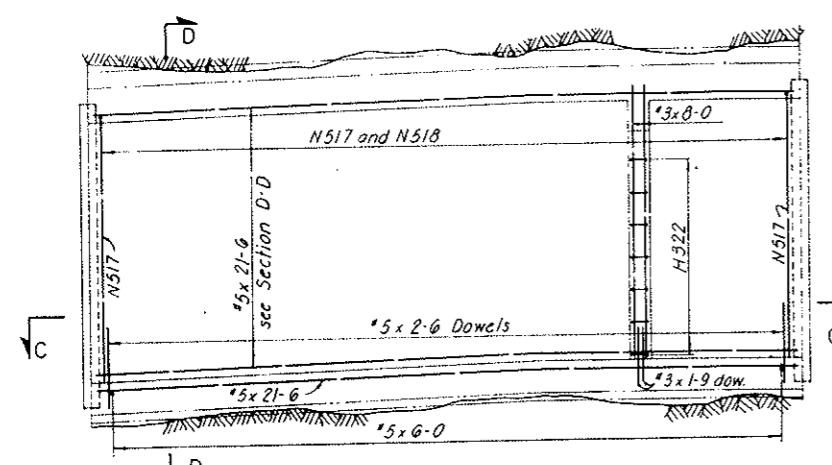


CROSS PASSAGEWAY SEGMENT 26'-5" LONG - LONGITUDINAL SECTION
 One required for West Cross Passageway

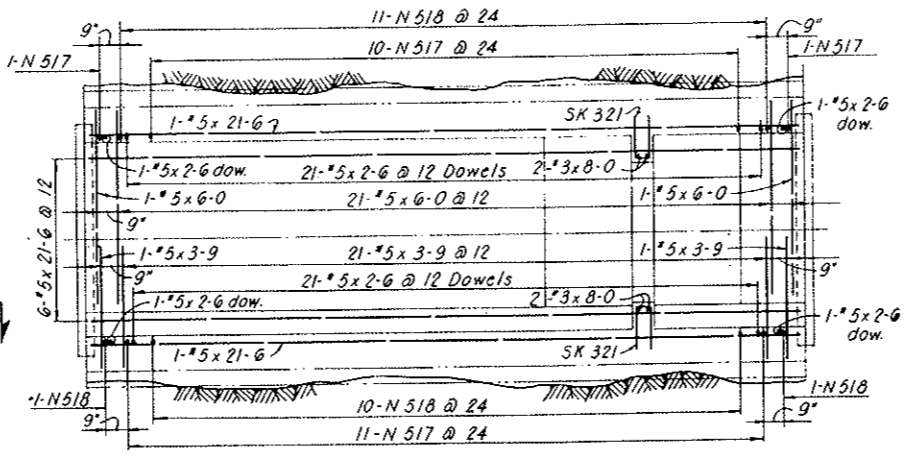


SECTION B-B

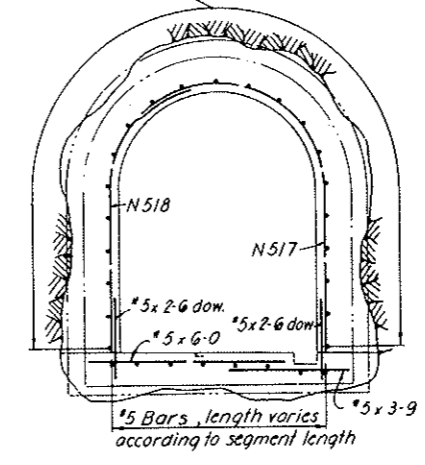
21-#5x35-6 @ 12 (Cross Passageway 36'-0" long segments)
 21-#5x26-0 @ 12 (Cross Passageway 26'-5" long segment)
 21-#5x21-6 @ 12 (Cross Passageway 22'-0" long segment)



CROSS PASSAGEWAY SEGMENT 22'-0" LONG - LONGITUDINAL SECTION
 One required for Center Cross Passageway



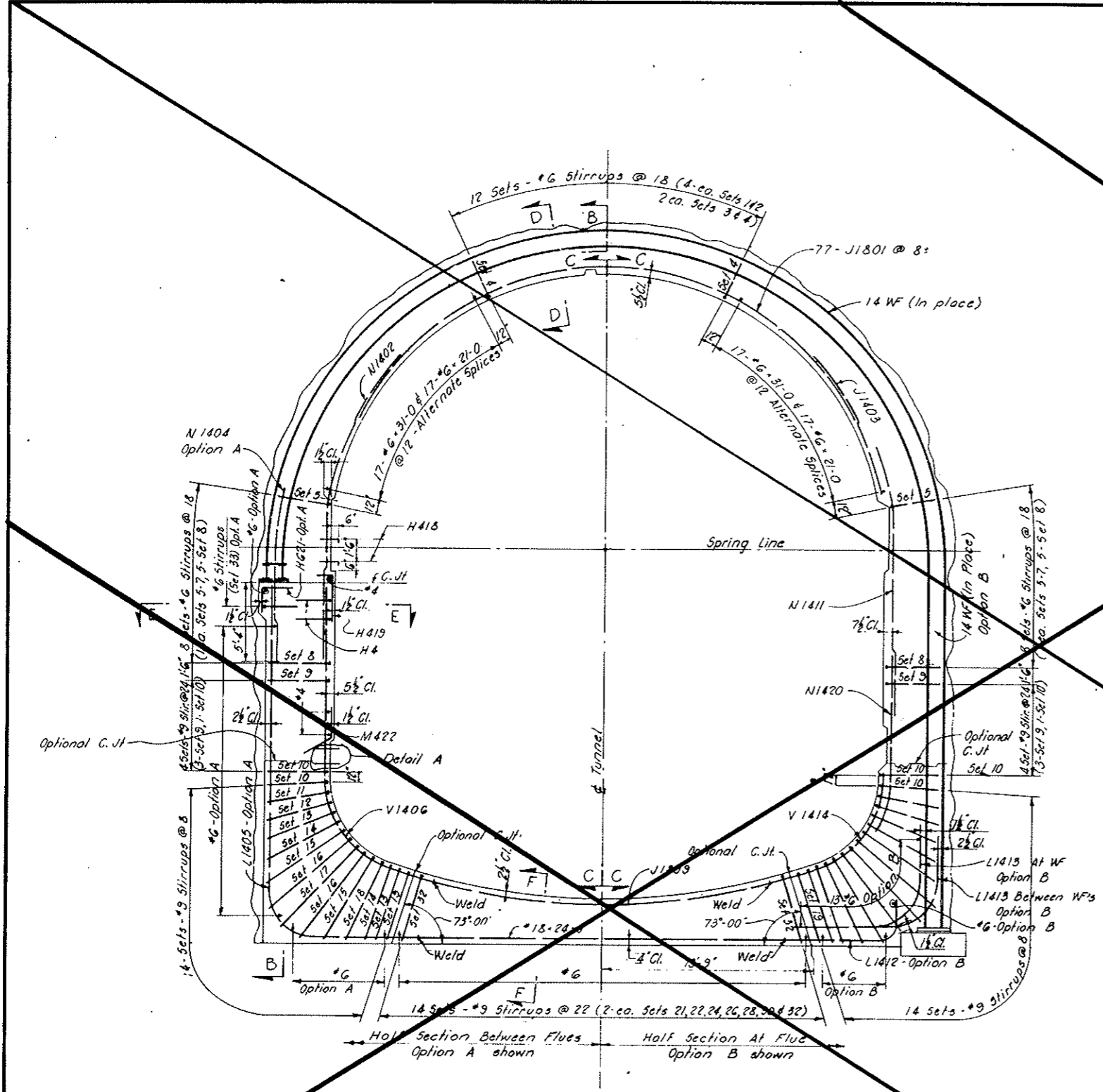
SECTION C-C



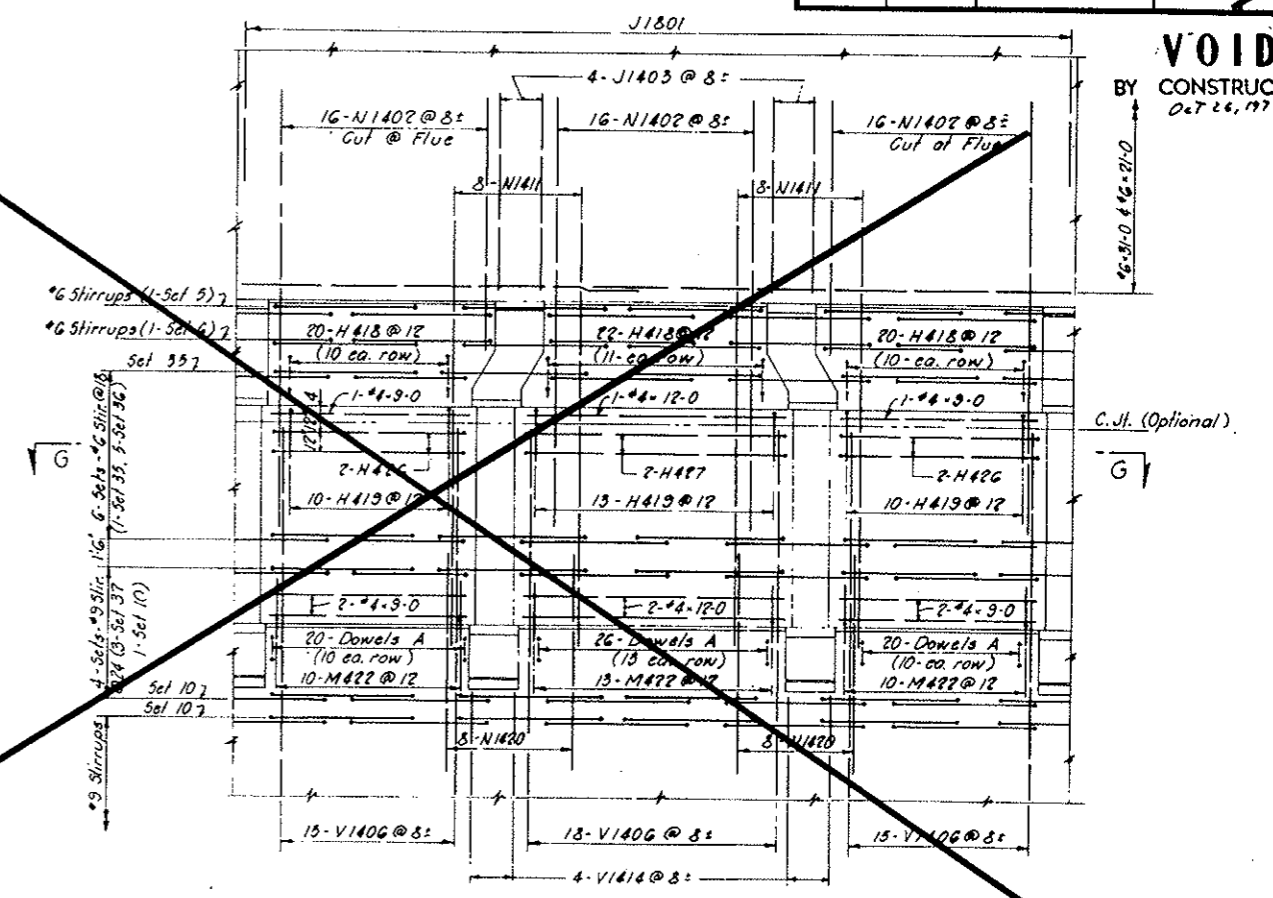
SECTION D-D

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-77	112

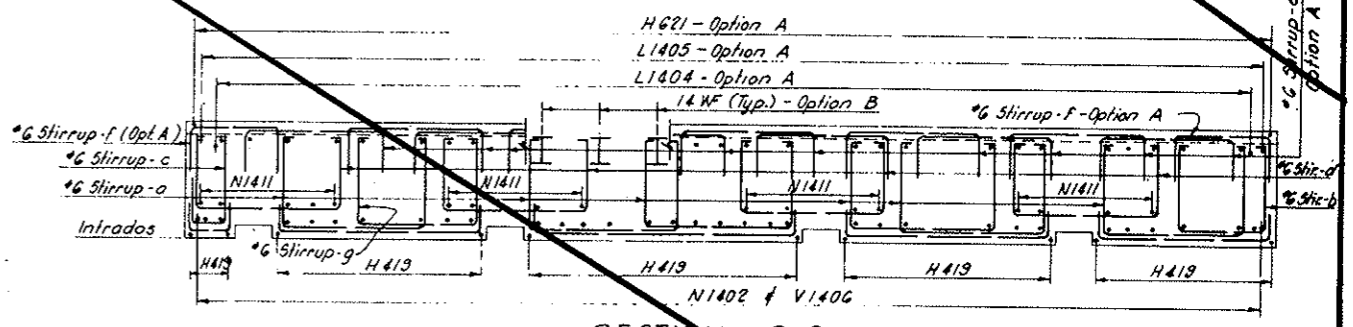
VOID
BY CONSTRUCTION
D.T. 26, 1973



SECTION A-A
LOOKING EAST



Note: In conformity with the concrete outline drawings, this reinforcement at modified flues is detailed for tunneled conduit segment only.
DETAIL ABOVE MANHOLE DISTRIBUTION STATION IN WALKWAY

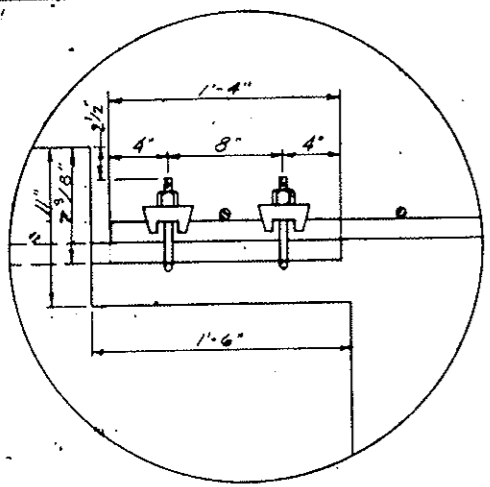


SECTION G-G

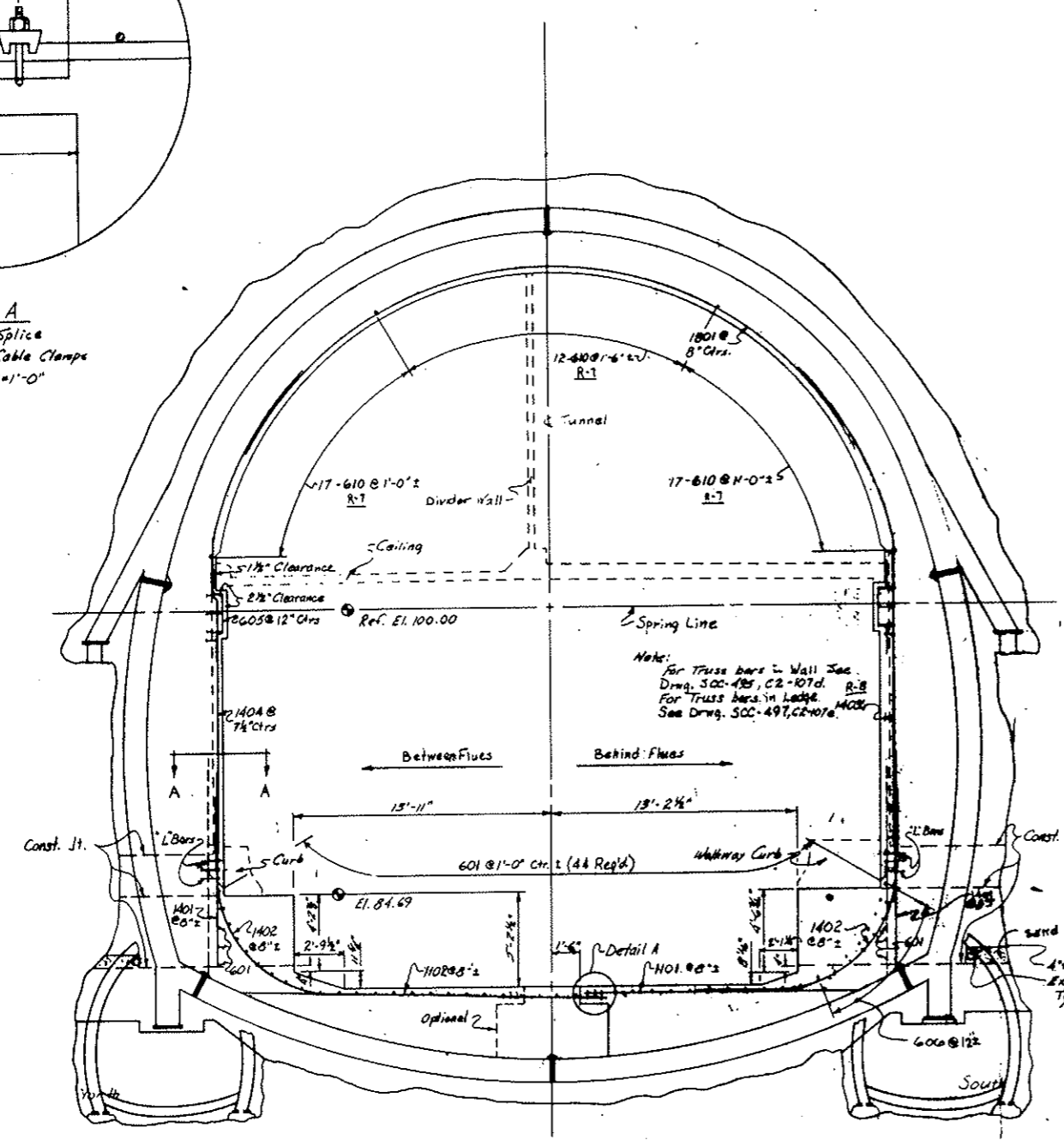
NOTES:
Work this drawing with Dwg. C3-102, C3-103 and C3-104.
For Reinforcement Notes see Dwg. C2-103.
For General Concrete Notes see Dwg. C2-11.
For concrete outlines see Dwg. C3-1.
All stirrup spacing is to be measured along the inside face of concrete.
Options: Each segment will be built under one of the following options, as approved by the Engineer.
Option A - Structural steel supports at arch only.
Option B - Complete structural steel sets.
Clear cover for outside face reinforcement is measured from the 'A' Line.
For Reinforcement in Second Stage Concrete see Dwg. C2-129, C2-130 and C2-134.
For Reinforcement in Precast Concrete see Dwg. C2-139 & C2-140.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL EAST PORTAL SECTION REINFORCEMENT					
NORTH CONDUIT SEGMENTS - TUNNELED CROSS SECTION AND DETAILS					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: W.T.H.	RECOMMENDED:				
CHECKED: A.W.-W.T.H.	APPROVED:				
DRAWN: [Signature]	APPROVED: [Signature]				
SCALE: 1/4" = 1'-0" DATE: NOV. 1967					
C3-101					

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973
 By [Signature]

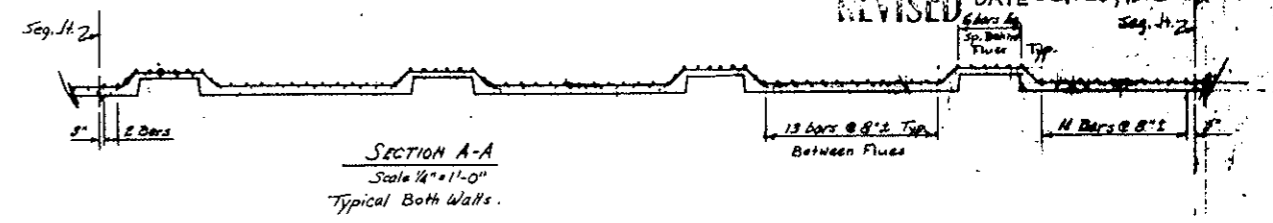


DETAIL A
 #11 Rebar Splice
 1/2-1 1/4" Cable Clamps
 Scale 2"=1'-0"

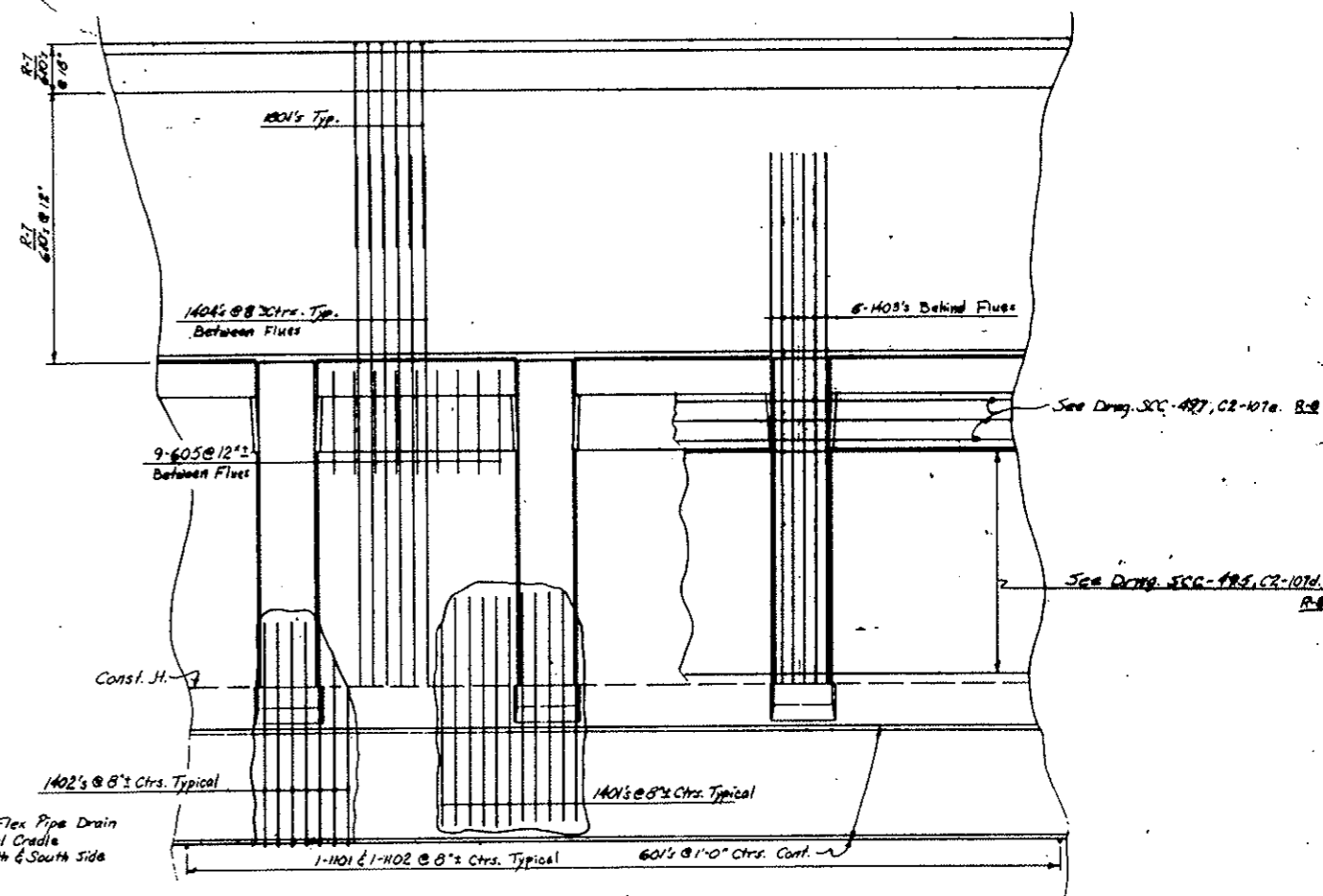


ZONE 5 - TUNNEL SECTION
 Scale 1/4"=1'-0"

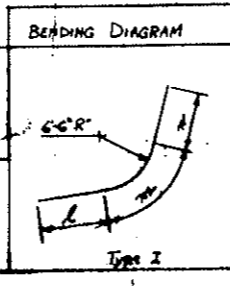
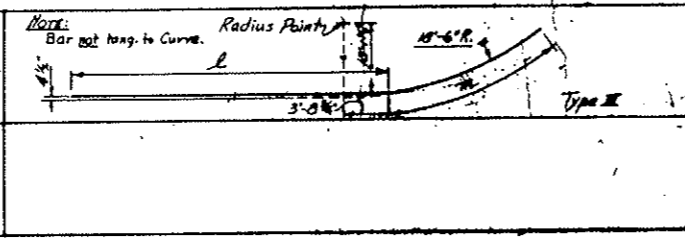
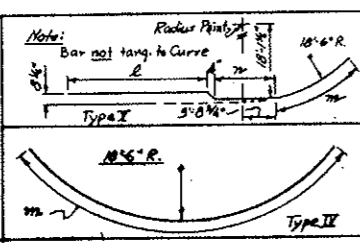
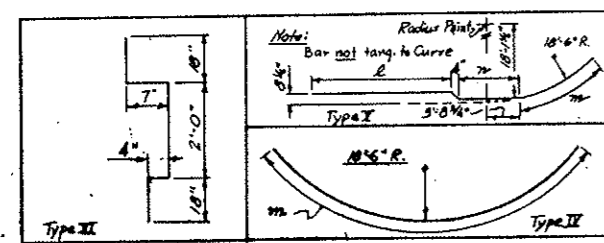
Note: Spacing of #1's, #4's & #5's to be @ 8" Centers.
 #2 Bars in stage I canal are on hand & were ordered for zone 4, they will be used in this location in remaining tunnel.



SECTION A-A
 Scale 1/4"=1'-0"
 Typical Both Walls.



TYPICAL WALL ELEVATION
 Scale 1/4"=1'-0"



ZONE 5 - BAR LIST

Mark No.	Size	Type	Length	Dimensions	No.	LOC.
601	6	Str.	40'-0"		58	Long. Pieces (Invert)
610	6	Str.	14'-3"		184	Long. Pieces (Invert)
605	6	II	5'-11"		72	Vert. Wall
606	6	Str.	4'-6"		68	Behind Flue
1101	11	Str.	14'-9"		76	Invert
1102	11	Str.	19'-9"		76	Invert
1401	14	Str.	11'-5"		152	Vert. Wall
1402	14	I	10'-0"	8'-4" 10'-2" 6'-4"	152	Invert
1403	14	III	27'-9"	14'-9" 11'-0"	48	Vert. Wall
1404	14	I	27'-9"	13'-10" 11'-0" 2'-7"	184	Vert. Wall
1401	18	II	40'-0"	40'-0"	76	Chassis

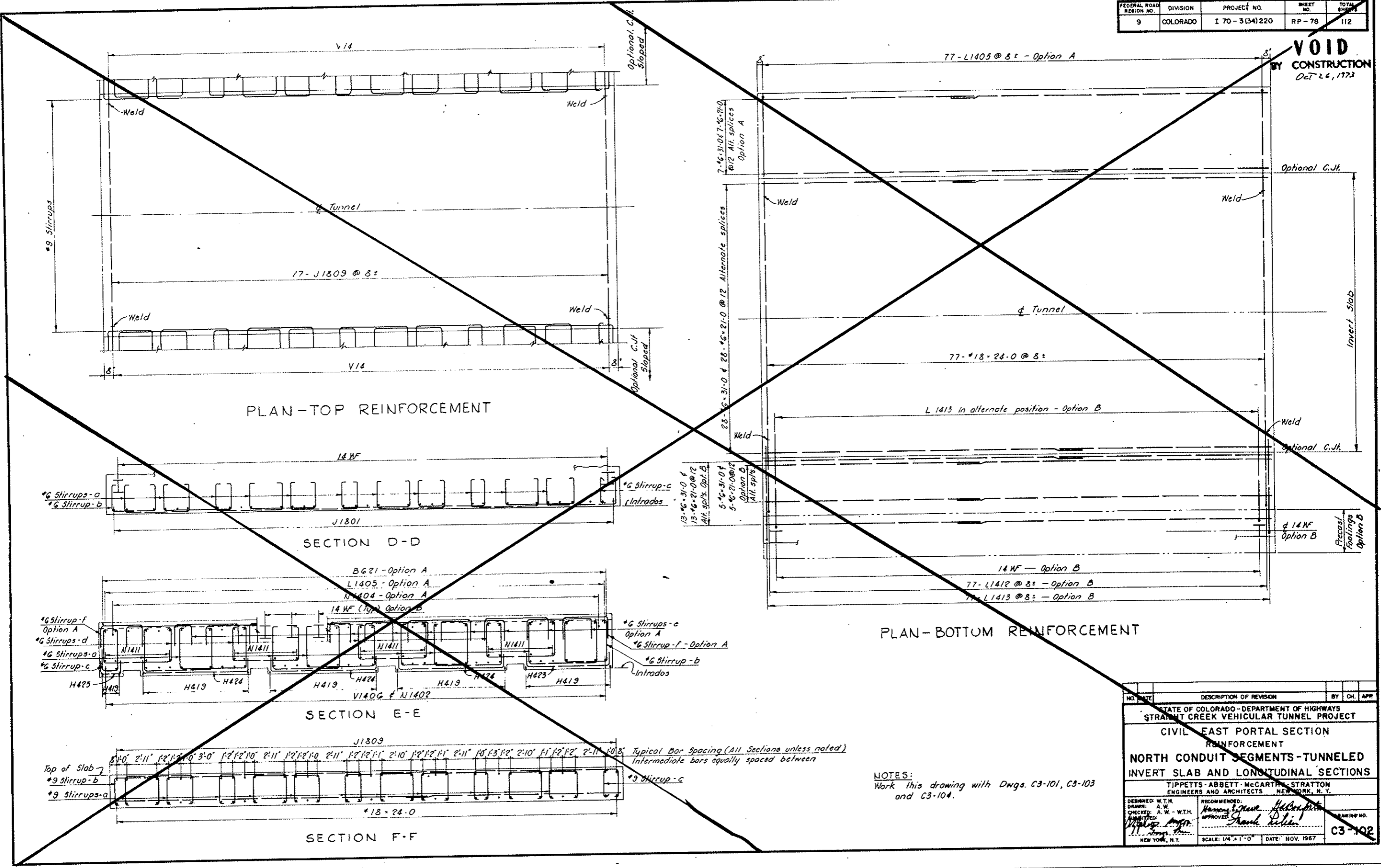
Note: No. Height is per Segment.

NOTE: FOR SEGMENTS N159-N164 ONLY

STATE OF COLORADO
 DIVISION OF HIGHWAYS
 Prepared By: Straight Creek Constructors, Inc.
 NORTH CONDUIT SEGMENTS - TUNNEL
 12-15-71
 C-3-101A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-78	112

VOID
BY CONSTRUCTION
Oct 26, 1973



PLAN-TOP REINFORCEMENT

SECTION D-D

SECTION E-E

SECTION F-F

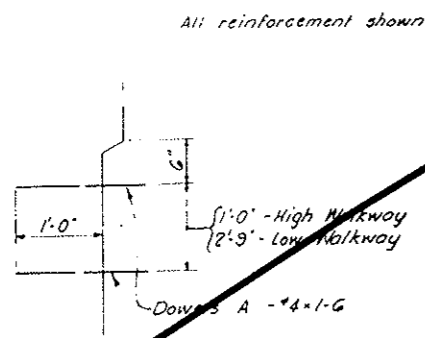
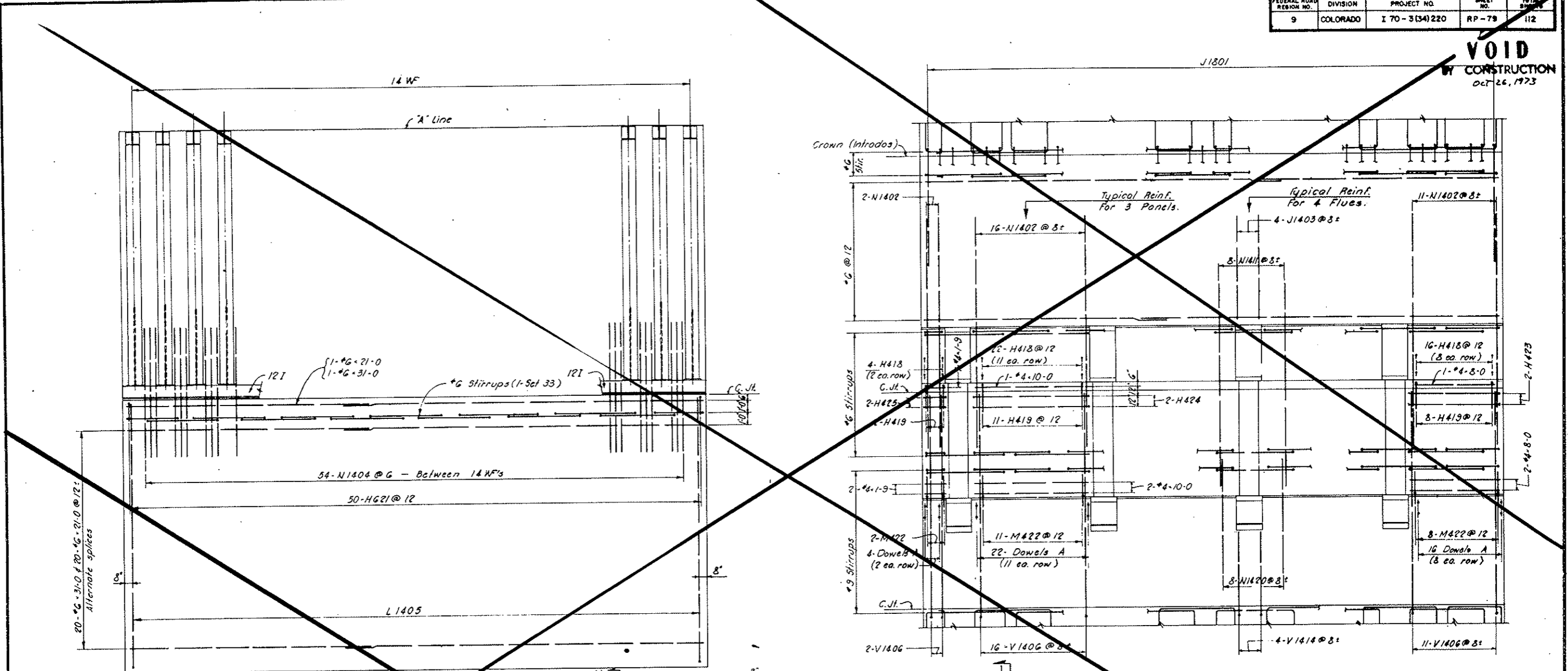
PLAN-BOTTOM REINFORCEMENT

Typical Bar Spacing (All Sections unless noted)
Intermediate bars equally spaced between

NOTES:
Work this drawing with Dwg. C3-101, C3-103
and C3-104.

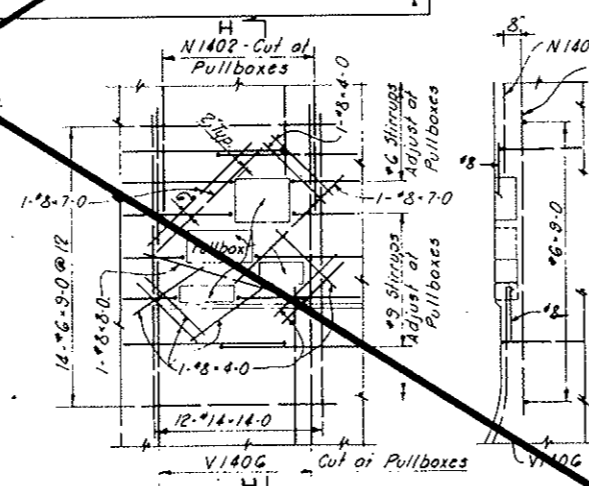
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION					
REINFORCEMENT					
NORTH CONDUIT SEGMENTS - TUNNELED					
INVERT SLAB AND LONGITUDINAL SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS - NEW YORK, N. Y.					
DESIGNED: W.T.H.	RECOMMENDED:	DRAWN: A.W.			
CHECKED: A.W. - W.T.H.	APPROVED:	DATE: NOV. 1967			
DATE: 11/1/67	SCALE: 1/4" = 1'-0"	DRAWING NO. C3-102			

VOID
BY CONSTRUCTION
Oct 26, 1973



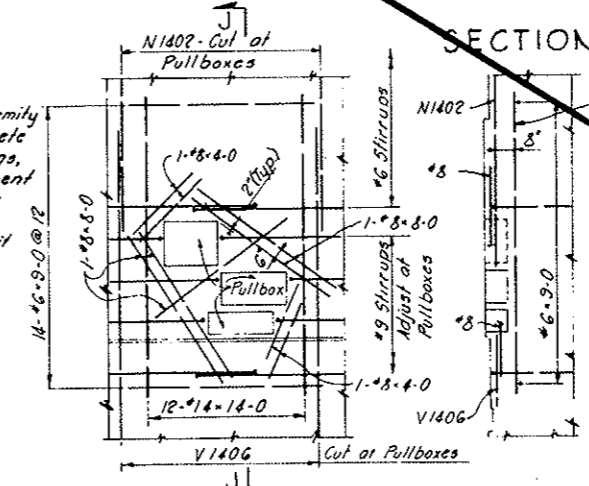
DETAIL A
NOT TO SCALE
(North Wall - As Shown)
(South Wall - Opposite Hand)

All reinforcement shown in this view is for Section A only.
SECTION B-B



ELEVATION SECTION H-H
DETAIL AT PULLBOXES - HIGH WALKWAY

Note: In conformity with the concrete outline drawings, this reinforcement at pullboxes is detailed for tunneled conduit segment only.



ELEVATION SECTION J-J
DETAIL AT PULLBOXES - LOW WALKWAY

SECTION C-C

NOTES:
Work this drawing with Dwg. C3-101, C3-102 and C3-104.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL EAST PORTAL SECTION REINFORCEMENT NORTH CONDUIT SEGMENTS - TUNNELED WALL ELEVATIONS AND DETAILS TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	W.T.H.	RECOMMENDED BY	Henry L. ...		
DRAWN BY	A.W.	CHECKED BY	A.W. ...		
SCALE	1/4" = 1'-0"	DATE	NOV. 1967		
DRAWING NO.					C3-103

REINFORCEMENT SCHEDULE - STIRRUPS

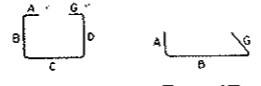
BENDING DIAGRAMS



SET NO	BAR MARK	PER SET	NUMBER REQUIRED	BAR SIZE	BAR LENGTH	DIMENSIONS				
						A	B	C	D	G
1	a SF630	11	44	*6	12-6	0-6	2-5	6-8	2-5	0-6
	b SF631	1	4	*6	10-0	0-5	2-5	4-4	2-5	0-6
	c SF632	1	4	*6	3-6	0-6	2-5			0-7
2	a SF633	11	44	*6	12-6	0-5	2-6	6-8	2-6	0-6
	b SF634	1	4	*6	10-3	0-5	2-6	4-4	2-6	0-6
	c SF635	1	4	*6	3-6	0-5	2-6			0-7
3	a SF636	11	22	*6	12-9	0-5	2-7	6-8	2-7	0-6
	b SF637	1	2	*6	10-6	0-6	2-7	4-4	2-7	0-6
	c SF638	1	2	*6	3-6	0-5	2-7			0-6
4	a SF639	11	22	*6	13-0	0-5	2-8	6-8	2-8	0-6
	b SF640	1	2	*6	10-6	0-5	2-8	4-4	2-8	0-5
	c SF641	1	2	*6	3-9	0-6	2-8			0-6
5	a SF642	7	14	*6	14-6	0-6	3-5	6-8	3-5	0-6
	b SF643	1	2	*6	12-0	0-5	3-5	4-4	3-5	0-5
	c SF644	1	2	*6	7-6	0-5	3-5	1-5	2-3	0
6	a SF645	4	8	*6	13-9	0-6	2-9	6-8	2-9	0-7
	b SF646	7	14	*6	15-0	0-5	3-9	6-8	3-9	0-5
	c SF647	1	2	*6	12-9	0-5	3-9	4-4	3-9	0-6
7	a SF648	1	2	*6	7-9	0-5	3-9	1-5	2-2	0
	b SF649	4	8	*6	13-9	0-5	3-1	6-8	3-1	0-6
	c SF650	7	14	*6	15-3	0-6	3-10	6-8	3-10	0-6
8	a SF651	1	2	*6	13-0	0-6	3-10	4-4	3-10	0-6
	b SF652	1	2	*6	7-9	0-5	3-10	1-5	2-1	0
	c SF653	4	8	*6	14-0	0-6	3-2	6-8	3-2	0-6
9	a SF654	7	70	*6	15-6	0-5	4-0	6-8	4-0	0-5
	b SF655	1	10	*6	13-3	0-5	4-0	4-4	4-0	0-6
	c SF656	1	10	*6	8-0	0-5	4-0	1-5	2-2	0
10	a SF657	4	40	*6	14-3	0-5	3-4	6-8	3-4	0-6
	b SF658	7	42	*9	16-0	0-8	4-0	6-8	4-0	0-8
	c SF659	1	6	*9	13-9	0-8	4-0	4-4	4-0	0-9
11	a SF660	1	6	*9	8-3	0-9	4-0	1-5	2-1	0
	b SF661	4	24	*9	14-9	0-8	3-4	6-8	3-4	0-9
	c SF662	11	44	*9	16-0	0-8	4-0	6-8	4-0	0-8
12	a SF663	1	4	*9	13-9	0-8	4-0	4-4	4-0	0-9
	b SF664	1	4	*9	5-6	0-8	4-0			0-10
	c SF665	11	22	*9	15-9	0-9	4-1	6-8	4-1	0-10
13	a SF666	1	2	*9	14-0	0-9	4-1	4-4	4-1	0-9
	b SF667	1	2	*9	5-9	0-9	4-1			0-11
	c SF668	11	22	*9	16-9	0-8	4-4	6-8	4-4	0-9
14	a SF669	1	2	*9	14-6	0-9	4-4	4-4	4-4	0-9
	b SF670	1	2	*9	8-0	0-9	4-4			0-11
	c SF671	11	44	*9	17-6	0-8	4-9	6-8	4-9	0-8
15	a SF672	1	4	*9	15-3	0-8	4-9	4-4	4-9	0-9
	b SF673	1	4	*9	8-3	0-8	4-9			0-10
	c SF674	11	44	*9	18-6	0-8	5-3	6-8	5-3	0-8
16	a SF675	1	4	*9	16-3	0-8	5-3	4-4	5-3	0-9
	b SF676	1	4	*9	6-9	0-8	5-3			0-10
	c SF677	11	44	*9	19-6	0-8	6-1	6-8	6-1	0-8
17	a SF678	1	4	*9	18-0	0-9	6-1	4-4	6-1	0-9
	b SF679	1	4	*9	7-9	0-9	6-1			0-11
	c SF680	11	44	*9	22-0	0-8	7-0	6-8	7-0	0-8
18	a SF681	1	4	*9	19-9	0-8	7-0	4-4	7-0	0-9
	b SF682	1	4	*9	8-6	0-8	7-0			0-9
	c SF683	11	22	*9	22-6	0-8	7-3	6-8	7-3	0-8
19	a SF684	1	2	*9	20-3	0-8	7-3	4-4	7-3	0-9
	b SF685	1	2	*9	8-9	0-8	7-3			0-10
	c SF686	1	2	*9						

REINFORCEMENT SCHEDULE - STIRRUPS

BENDING DIAGRAMS

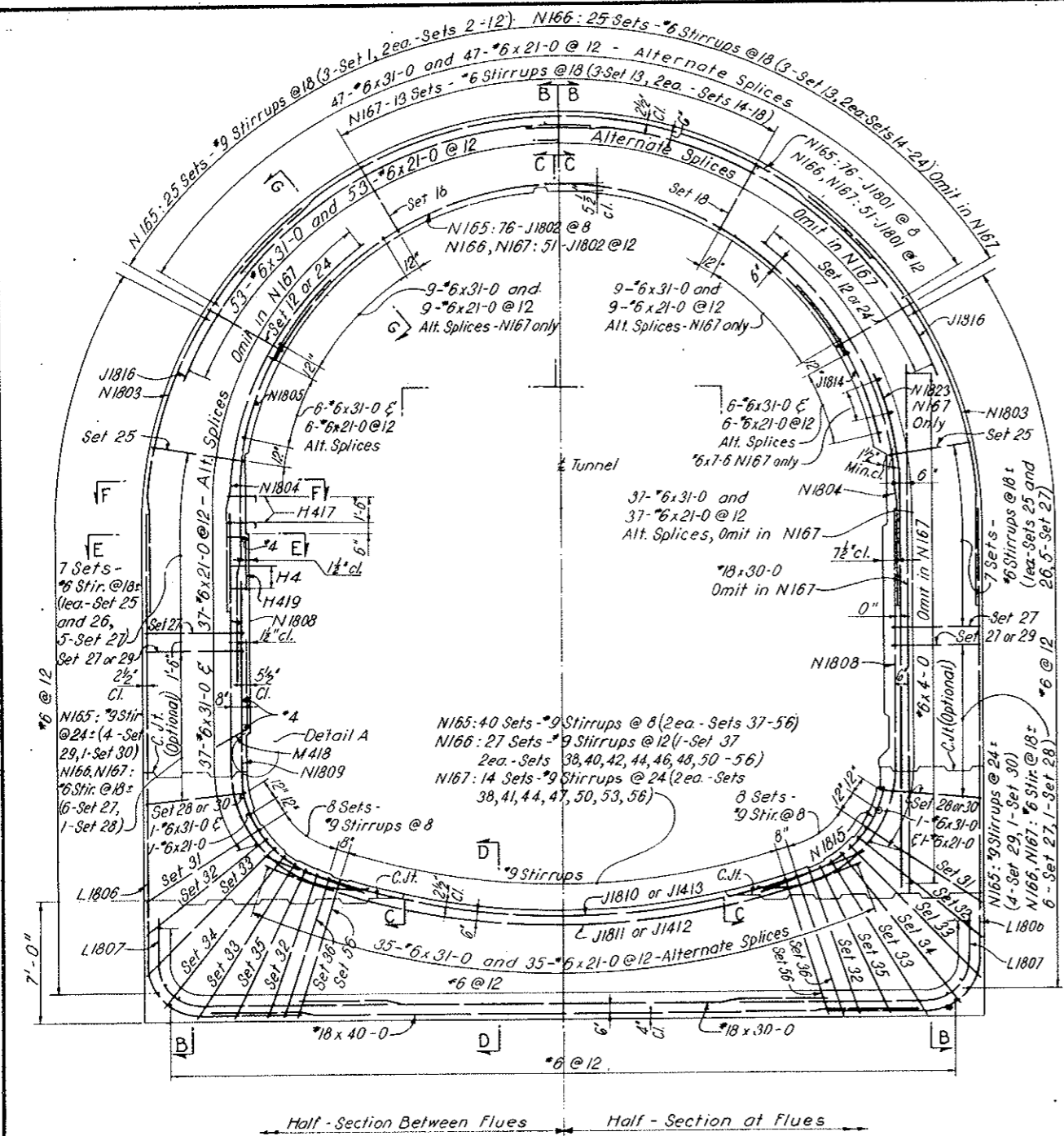


SET NO	BAR MARK	PER SET	NUMBER REQUIRED	BAR SIZE	BAR LENGTH	DIMENSIONS				
						A	B	C	D	G
18	a SF986	11	22	*9	19-6	0-8	5-9	6-8	5-9	0-8
	b SF987	1	2	*9	17-3	0-8	5-9	4-4	5-9	0-9
	c SF988	1	2	*9	7-3	0-8	5-9			0-10
19	a SF989	11	22	*9	17-6	0-8	4-9	6-8	4-9	0-8
	b SF990	1	2	*9	15-3	0-8	4-9	4-4	4-9	0-9
	c SF991	1	2	*9	8-3	0-8	4-9			0-10
20	a SF992	11	22	*9	13-6	0-9	2-8	6-8	2-8	0-9
	b SF993	1	2	*9	11-0	0-8	2-8	4-4	2-8	0-8
	c SF994	1	2	*9	4-3	0-8	2-8			0-11
21	a SF995	11	22	*9	11-6	0-8	2-9	4-8	2-9	0-8
	b SF996	1	2	*9	4-3	0-8	2-9			0-10
	c SF997	1	2	*9	4-3	0-8	2-9			0-10
22	a SF998	11	22	*9	14-0	0-9	2-11	6-8	2-11	0-9
	b SF999	1	2	*9	11-3	0-8	2-9	4-4	2-9	0-9
	c SF1000	1	2	*9	4-3	0-8	2-9			0-10
23	a SF1001	11	22	*9	14-6	0-9	3-2	6-8	3-2	0-9
	b SF1002	1	2	*9	11-6	0-8	2-11	4-4	2-11	0-8
	c SF1003	1	2	*9	4-6	0-8	2-11			0-11
24	a SF1004	11	22	*9	14-6	0-9	3-2	6-8	3-2	0-9
	b SF1005	1	2	*9	12-0	0-9	3-2	4-4	3-2	0-9
	c SF1006	1	2	*9	4-9	0-8	3-2			0-11
25	a SF1007	11	22	*9	15-0	0-8	3-6	6-8	3-6	0-8
	b SF1008	1	2	*9	12-9	0-8	3-6	4-4	3-6	0-9
	c SF1009	1	2	*9	5-0	0-8	3-6			0-10
26	a SF1010	11	22	*9	15-9	0-8	3-10	6-8	3-10	0-9
	b SF1011	1	2	*9	13-6	0-9	3-10	4-4	3-10	0-9
	c SF1012	1	2	*9	5-6	0-9	3-10			0-11
27	a SF1013	11	22	*9	17-3	0-9	4-6	6-8	4-6	0-10
	b SF1014	1	2	*9	15-0	0-9	4-6	4-4	4-6	0-11
	c SF1015	1	2	*9	8-0	0-9	4-6			0-9
28	a SF1016	11	22	*9	10-6	0-9	2-2	6-2	2-2	0
	b SF1017	1	2	*9	8-6	0-9	2-2	4-2	2-2	0
	c SF1018	2	4	*9	15-9	0-5	3-10	6-8	3-10	0-6
29	a SF1019	1	1	*9	13-0	0-8	3-10	4-4	3-10	0-6
	b SF1020	1	1	*9	7-9	0-5	3-10	1-5	2-1	0
	c SF1021	1	1	*9	14-0	0-6	3-2	6-8	3-2	0-6
30	a SF1022	11	22	*9	14-0	0-6	3-2	6-8	3-2	0-6
	b SF1023	1	2	*9	5-6	0-9	3-10			0-11
	c SF1024	1	2	*9	17-3	0-9	4-6	6-8	4-6	0-10
31	a SF1025	11	22	*9	15-0	0-9	4-6	4-4	4-6	0-11
	b SF1026	1	2	*9	8-0	0-9	4-6			0-9
	c SF1027	1	2	*9	10-6	0-9	2-2	6-2	2-2	0
32	a SF1028	11	22	*9	15-9	0-9	4-6	4-4	4-6	0-11
	b SF1029	1	2	*9	8-0	0-9	4-6			0-9
	c SF1030	1	2	*9	10-6	0-9	2-2	6-2	2-2	0
33	a SF1031	11	22	*9	15-9	0-9	4-6	4-4	4-6	0-11
	b SF1032	1	2	*9	8-0	0-9	4-6			0-9
	c SF1033	1	2	*9	10-6	0-9	2-2	6-2	2-2	0
34	a SF1034	6	6	*6	15-9	0-5	3-10	6-8	3-10	0-6
	b SF1035	1	1	*6	13-0	0-6	3-10	4-4	3-10	0-6
	c SF1036	1	1	*6	7-9	0-5	3-10	1-5	2-1	0
35	a SF1037	4	4	*6	14-0	0-6	3-2	6-8	3-2	0-6
	b SF1038	1	1	*6	7-9	0-5	3-10	1-5	2-1	0
	c SF1039	4	4	*6	14-0	0-6	3-2	6-8	3-2	0-6
36	a SF1040	1	1	*6	14-3	0-5	3-10	5-3	3-10	0-6
	b SF1041	6	30	*6	15-6	0-5	4-0	6-8	4-0	0-5
	c SF1042	1	5	*6	13-3	0-5	4-0	4-4	4-0	0-6
37	a SF1043	1	5	*6	8-0	0-5	4-0	1-5	2-2	0
	b SF1044	4	20	*6	14-6	0-5	4-0	5-8	4-0	0-5
	c SF1045	1	5	*6	14-6	0-5	4-0	5-8	4-0	0-5
38	a SF1046	6	18	*9	16-0	0-8	4-0	6-8	4-0	0-8
	b SF1047	1	3	*9	13-9	0-8	4-0	4-4	4-0	0-9
	c SF1048	1	3	*9	8-3	0-9	4-0	1-5	2-1	0
39	a SF1049	4	12	*9	14-9	0-8	3-4	6-8	3-4	0-9
	b SF1050	1	3	*9	15-0	0-8	4-0	5-8	4-0	0-8
	c SF1051	1	3	*9						

REINFORCEMENT SCHEDULE - STIRRUPS

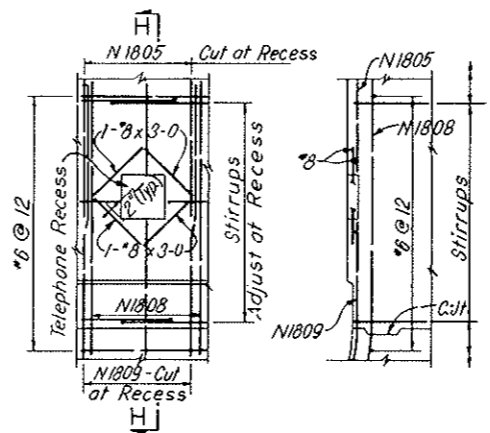
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RP-81	112

AS CONSTRUCTED
REVISED DATE Oct. 24, 1973

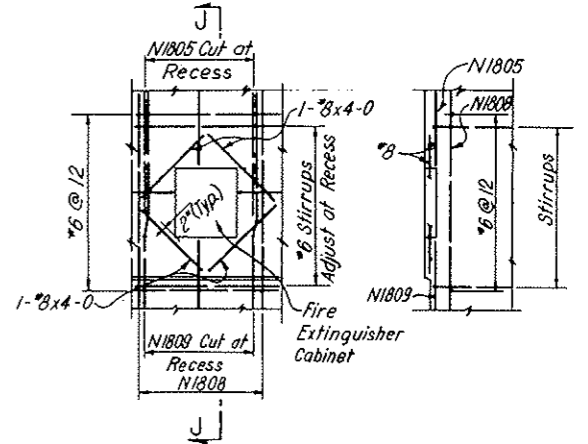


Half-Section Between Flues Half-Section at Flues

SECTION A-A
LOOKING EAST

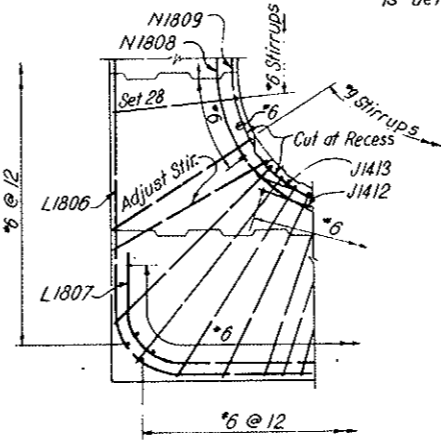


ELEVATION SECTION H-H
DETAIL AT TELEPHONE RECESS

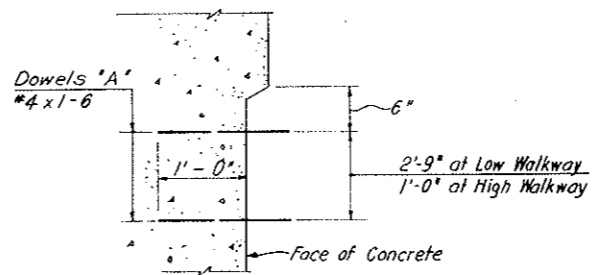


ELEVATION SECTION J-J
DETAIL AT FIRE EXTINGUISHER CABINET

Note: In conformity with the concrete outline drawings this reinforcement at telephone and fire extinguisher recesses is detailed for cut-and-cover conduit segments only.



DETAIL AT RECESS BELOW FLUSH TYPE FIRE HYDRANT



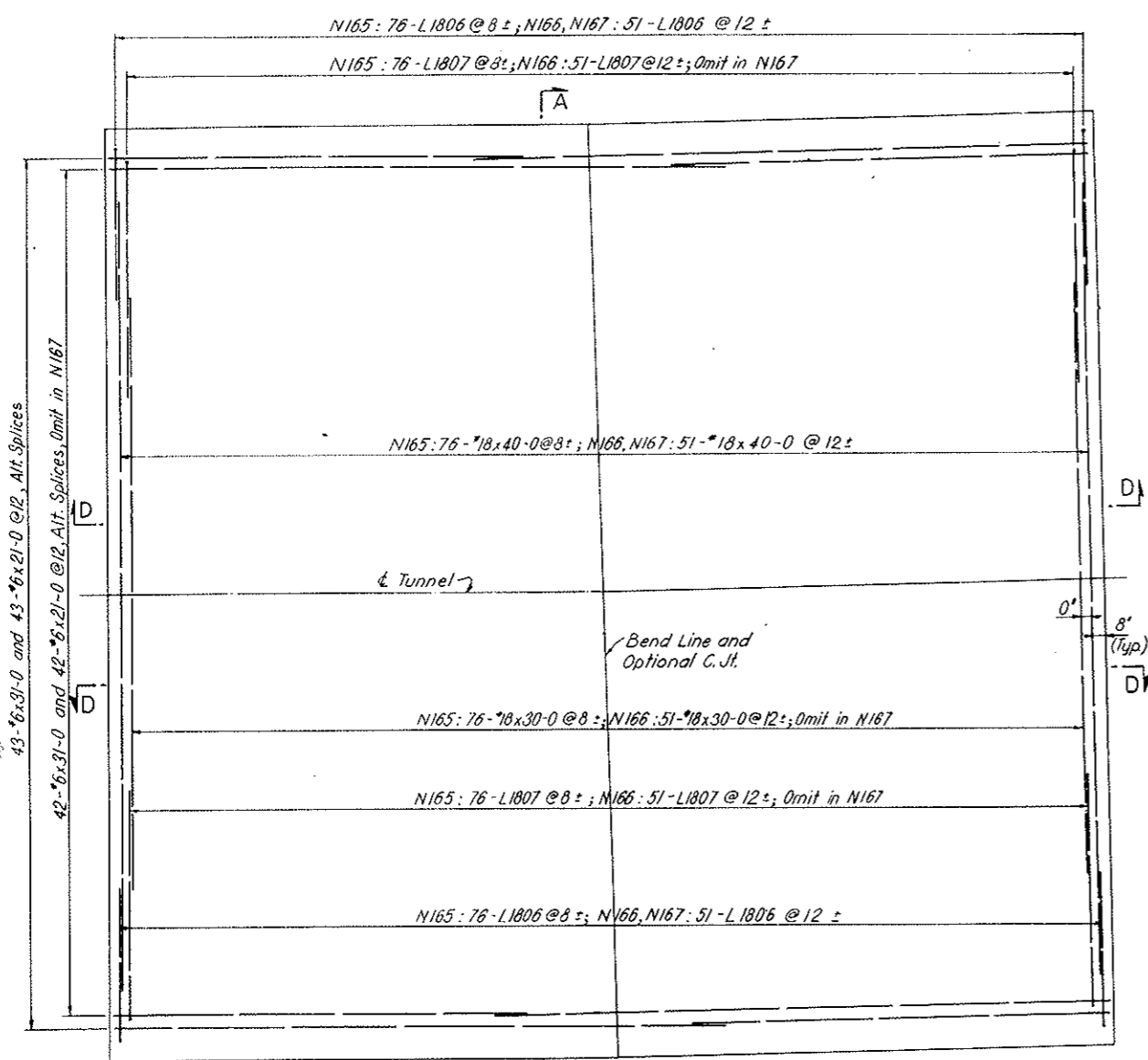
DETAIL A
NORTH WALL-AS SHOWN
SOUTH WALL-OPPOSITE HAND
Not to Scale

NOTES:
Work this drawing with Dwg. C3-106, C3-107 and C3-108.
For General Reinforcement Notes see Dwg. C2-103.
For General Concrete Notes see Dwg. C2-11.
For Concrete Outlines see Dwg. C3-2 and C3-4.
All stirrup spacing is to be measured along the inside face of concrete.
Clear cover for outside face reinforcement is from neat concrete surface or the "A" Line.
For Reinforcement in Second Stage Concrete see Dwg. C2-129, C2-130 and C2-134.
For Reinforcement in Precast Concrete see Dwg. C2-139 and C2-140.
For Segments N165-N167 only

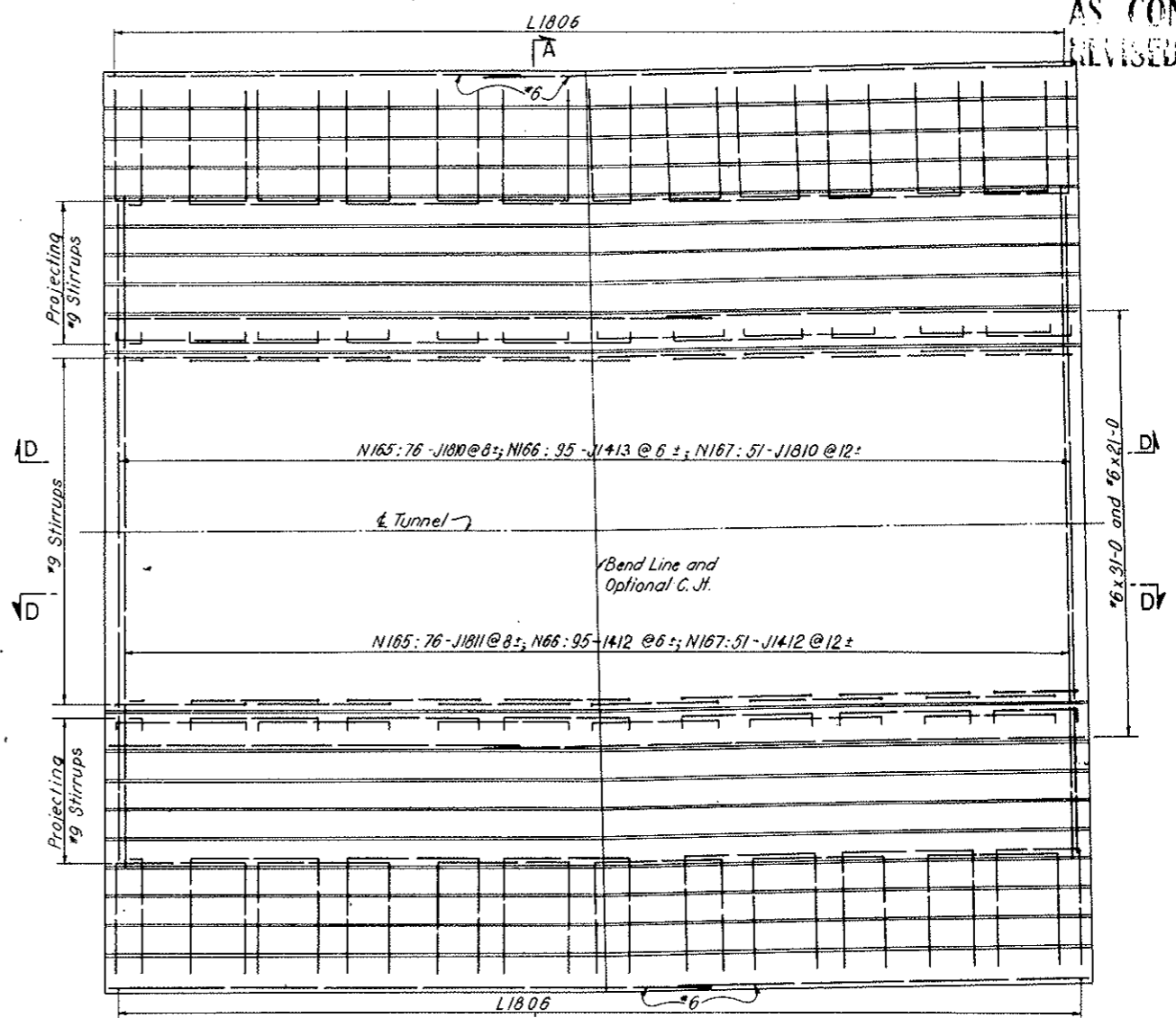
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT					
NORTH CONDUIT SEGMENTS - CUT AND COVER CROSS SECTION AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: W.T.H. DRAWN: J.E.G.-P.F.L. CHECKED: P.F.L.-W.T.H. IN CHARGE: W.T.H.		RECOMMENDED: <i>Edward J. McCarthy</i> APPROVED: <i>Frank L. Stratton</i>		DRAWING NO. C3-105	
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"		DATE: NOV. 1967	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-82	112

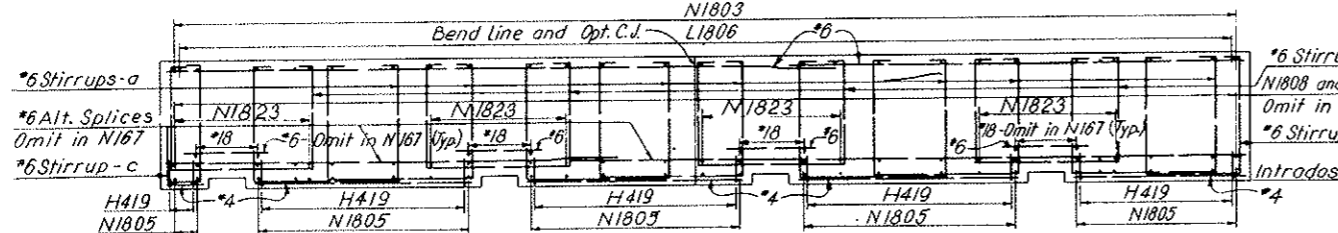
AS CONSTRUCTED
REVISED DATE 04.24.1975



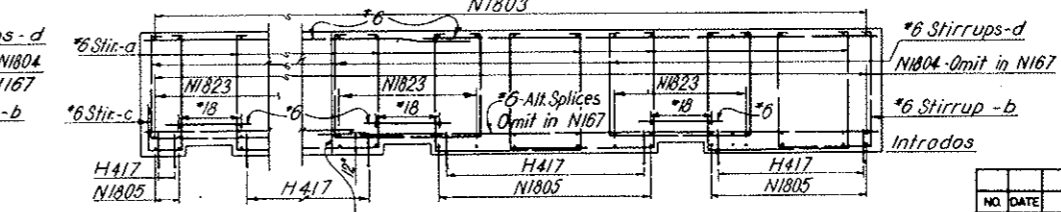
PLAN-BOTTOM REINFORCEMENT



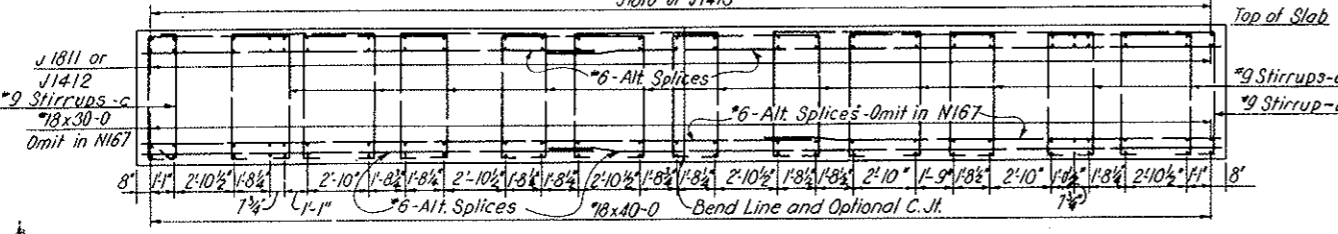
PLAN-TOP REINFORCEMENT



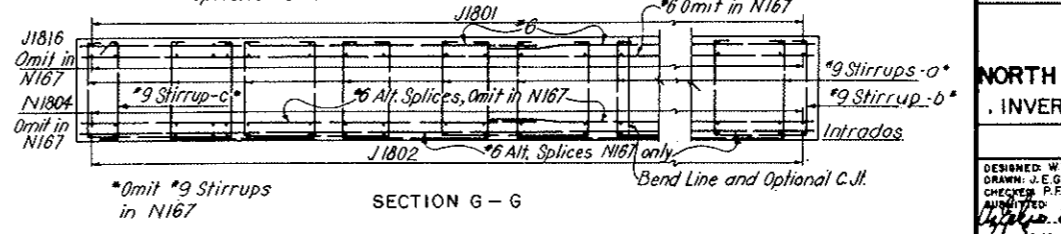
SECTION E-E



SECTION F-F



SECTION D-D



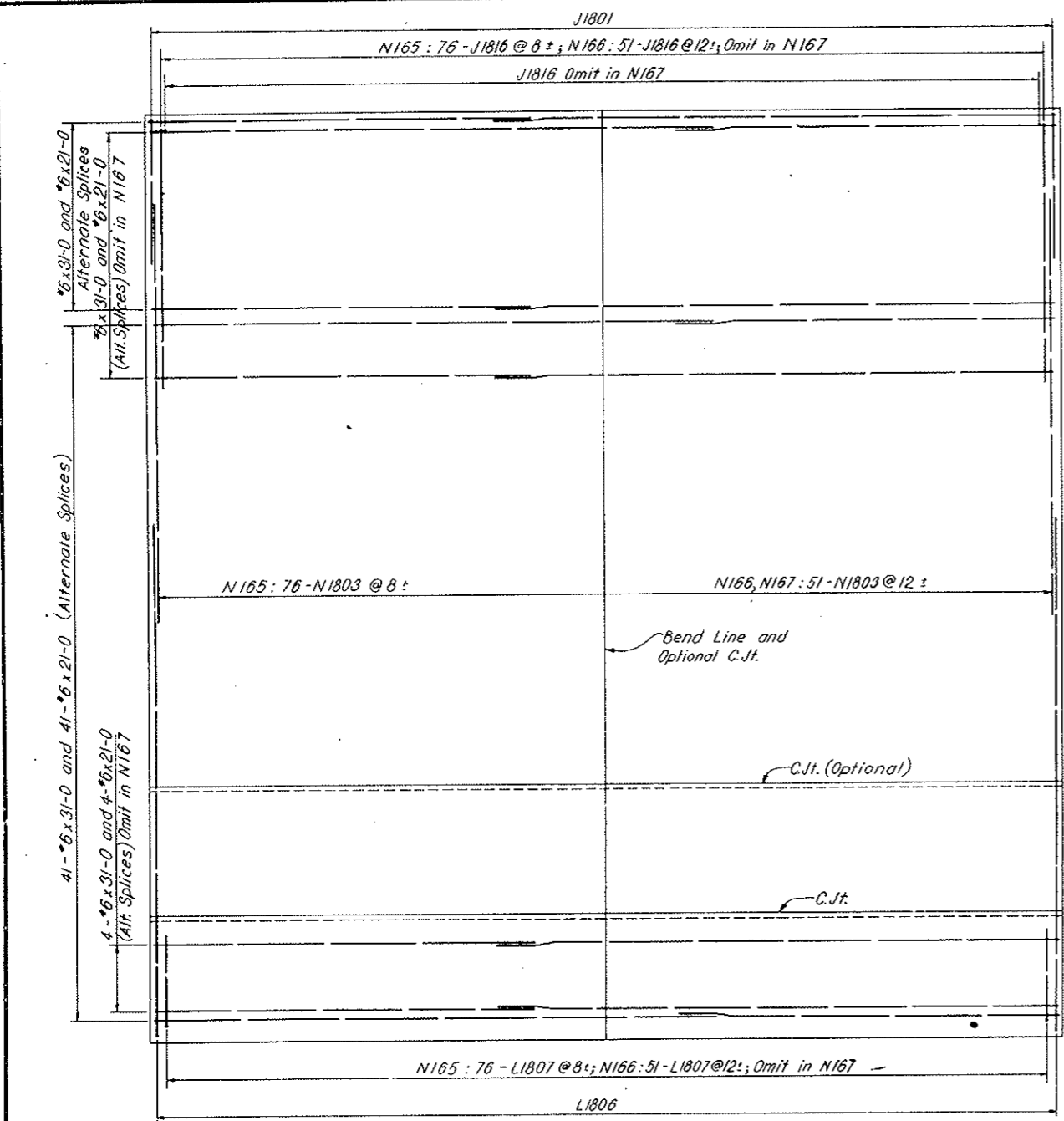
SECTION G-G

NOTES:
Work this drawing with Dwgs. C3-105, C3-107 and C3-108, For Segments N165-N167 only

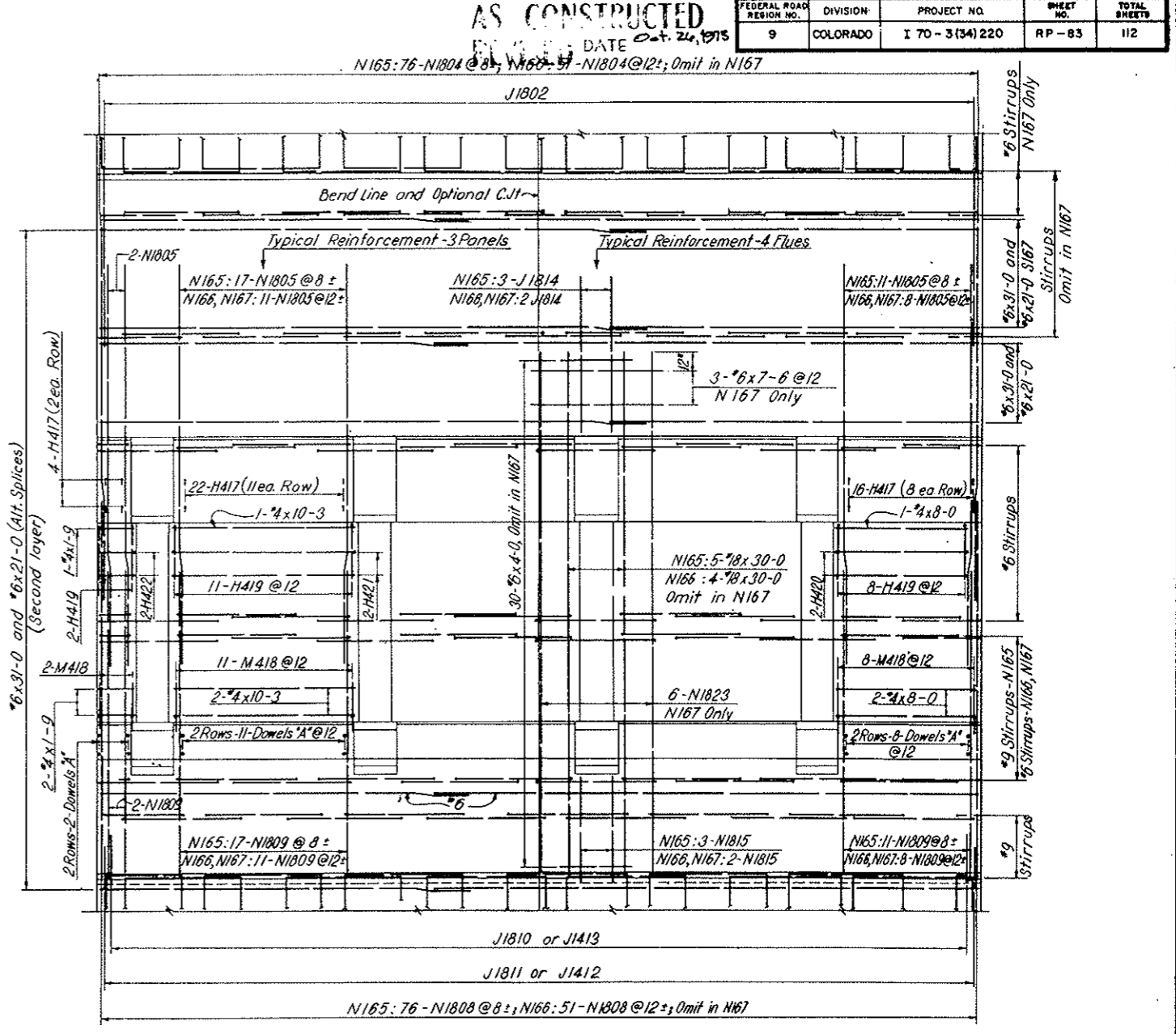
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO-DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - EAST PORTAL SECTION REINFORCEMENT NORTH CONDUIT SEGMENTS-CUT AND COVER INVERT SLAB AND LONGITUDINAL SECTIONS TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: W.T.H. DRAWN: J.E.G.-P.F.L. CHECKED: P.F.L.-W.T.H. APPROVED: [Signature]		RECOMMENDED: [Signature] APPROVED: [Signature]		DRAWING NO. C3-106	
SCALE: 1/4" = 1'-0"		DATE: NOV. 1967			

AS CONSTRUCTED
DATE Oct. 24, 1975

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-83	112



SECTION B - B



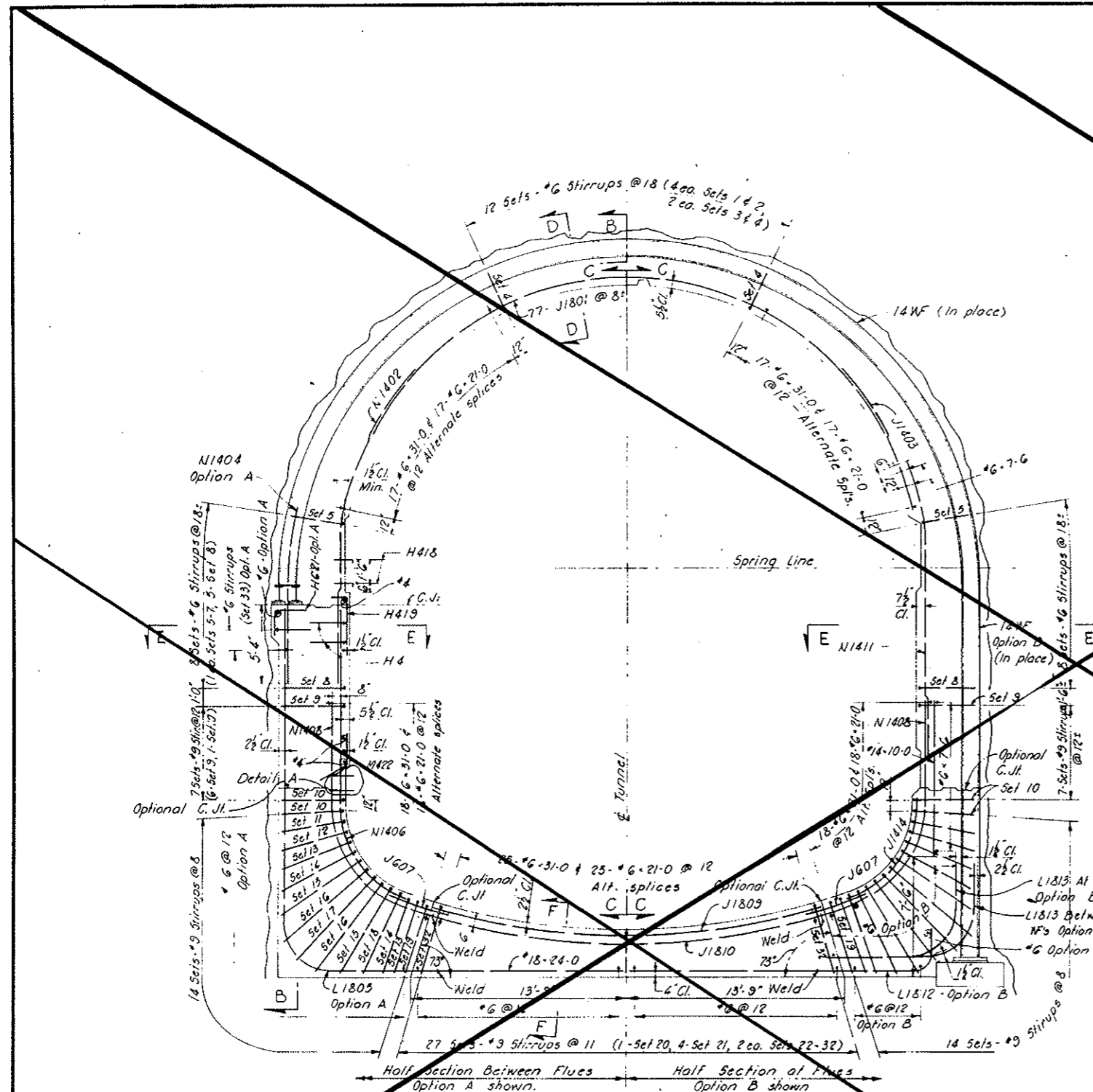
SECTION C - C

NOTES:
Work this drawing with Dmgs. C3-105, C3-106 and C3-108.
For Segments N165-N167 only

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT					
NORTH CONDUIT SEGMENTS - CUT AND COVER WALL ELEVATIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: W.T.H.	RECOMMENDED: Henry J. New				
DRAWN: J.E.G. - P.E.L.	APPROVED: Frank R. Blum				
CHECKED: P.F.L.					
DATE: 10/24/75					
SCALE: 1/4" = 1'-0"	DATE: NOV. 1967				
					DRAWING NO. C3-107

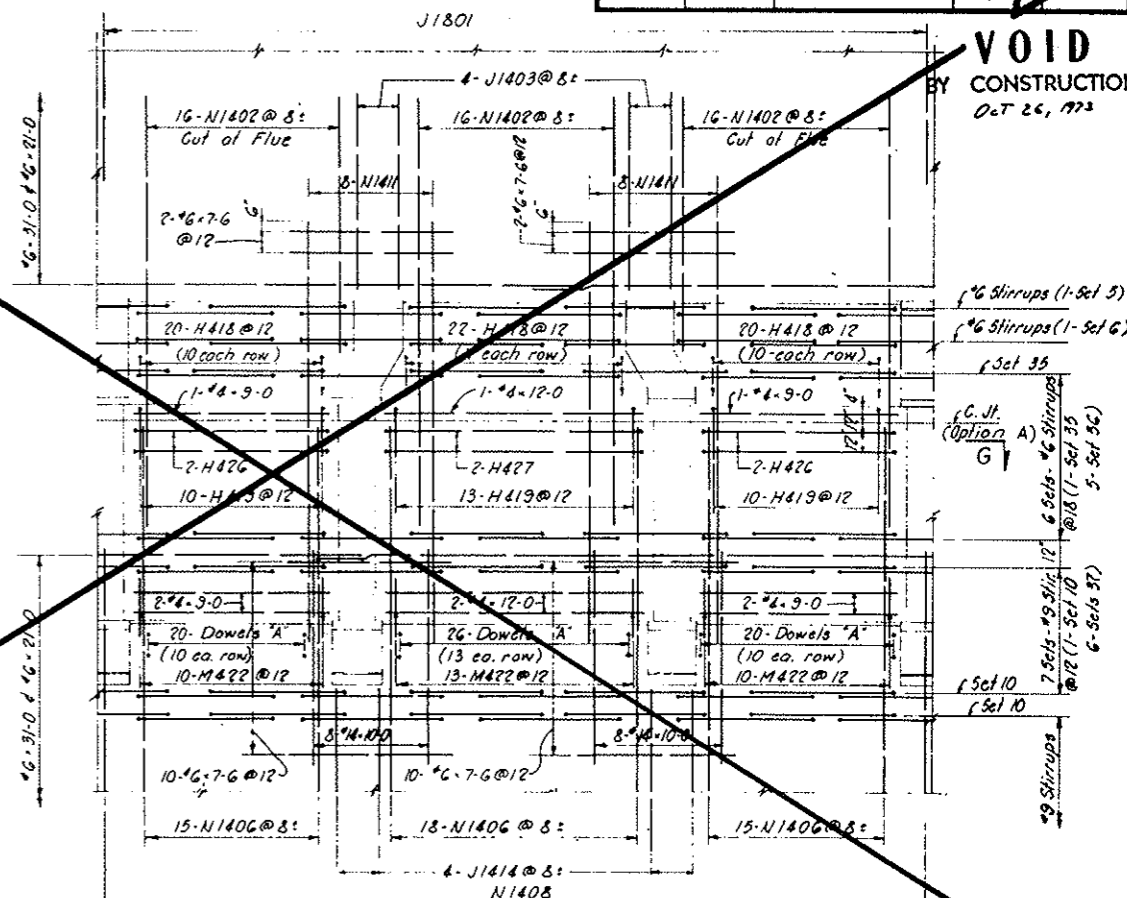
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-85	112

VOID BY CONSTRUCTION
Oct 26, 1973

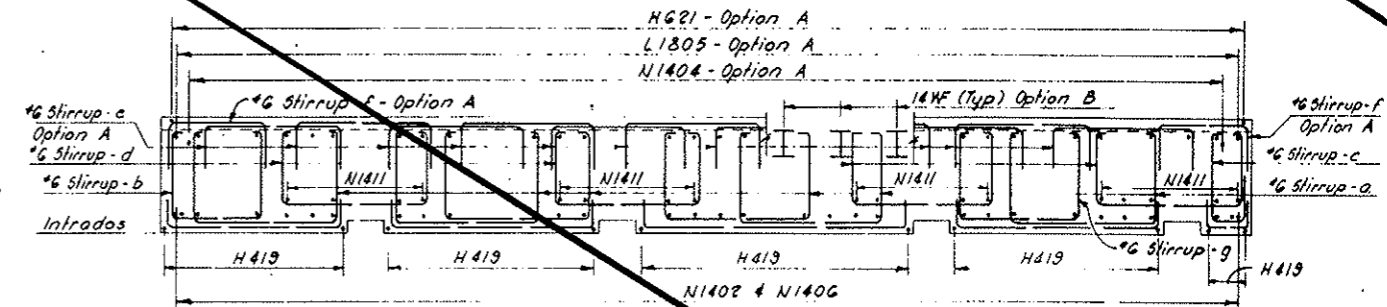


**SECTION A-A
LOOKING EAST**

Note 'A'



Note: In conformity with the concrete outline drawings, this reinforcement at modified flues is detailed for tunneled conduit segment only.
DETAIL ABOVE MANHOLE DISTRIBUTION STATION IN WALKWAY



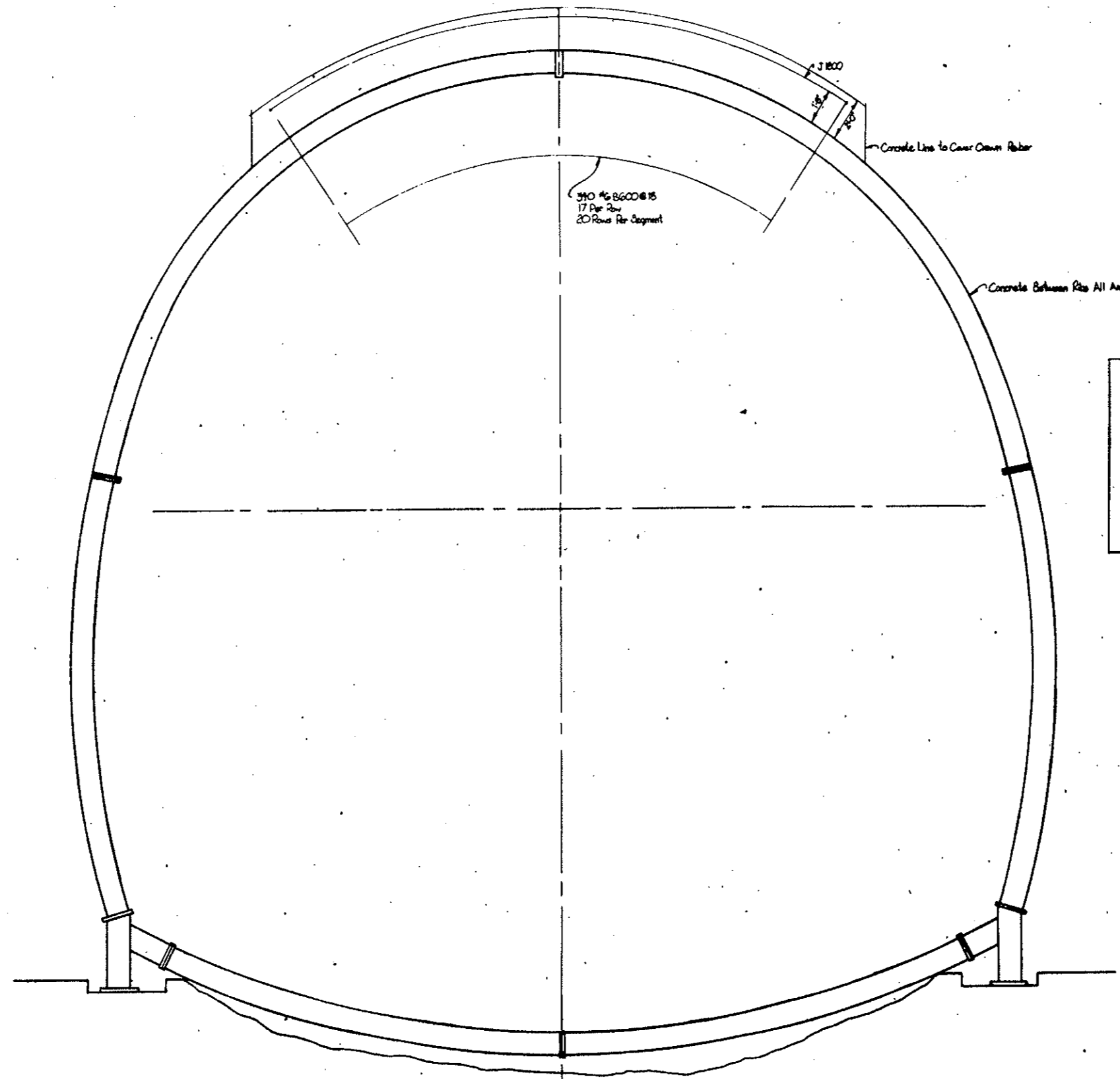
SECTION G-G

NOTES:
Work this drawing with Dwg. C3-110, C3-111 and C3-112.
For General Reinforcement Notes see Dwg. C2-103.
For General Concrete Notes see Dwg. C2-11.
For concrete outlines see Dwg. C3-3.
All stirrup spacing is to be measured along the inside face of concrete.
Options: Each segment will be built under one of the following options, as approved by the Engineer:
Option A - Structural steel supports at arch only.
Option B - Complete structural steel sets.
Clear cover for outside face reinforcement is measured from the 'A' Line.
For Reinforcement in Second Stage Concrete see Dwg. C2-129, C2-130 and C2-134.
For Reinforcement in Precast Concrete see Dwg. C2-139 and C2-140.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT					
SOUTH CONDUIT SEGMENTS-TUNNELED CROSS SECTION AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: W.T.H.	RECOMMENDED: Henry I. Stone	DRAWING NO. C3-109			
DRAWN: A.W.	CHECKED: A.W.	APPROVED: Frank Keller	SCALE: 1/4" = 1'-0"		
DATE: NOV 1967					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	RF-85A	10

AS CONSTRUCTED
REVISED DATE Oct 24, 1973



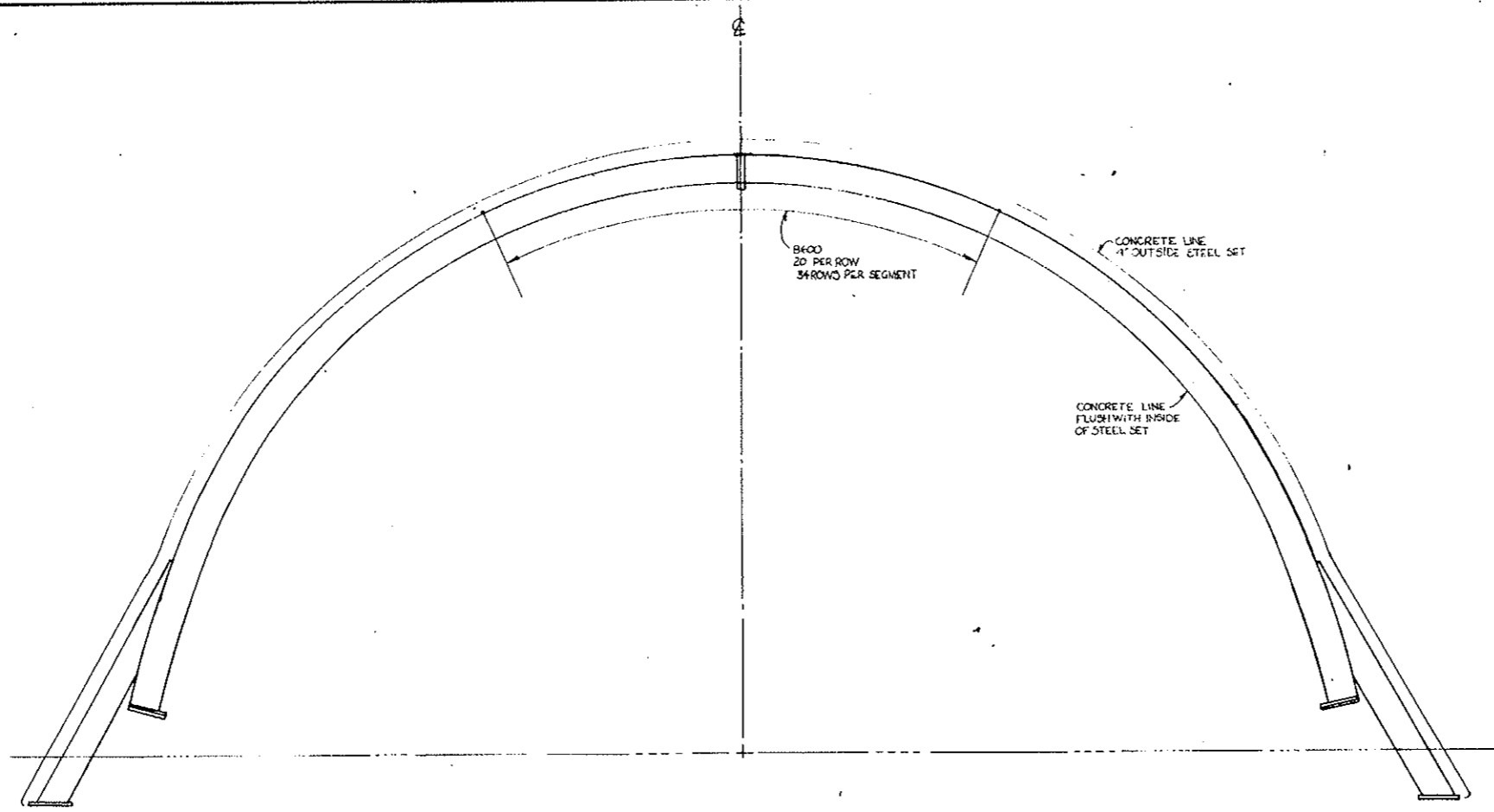
BAR MARK	NR. REQ.	BAR DIA.	BAR LENGTH	DIMENSIONS				
				B	C	D	H	R
B 600	390	#6	5'-0"	0'-6"	4'-6"			
J B600	20	#6	25'-0"		25'-0"		4'-3"	25'-8"

SECTION
SCALE 3/8" = 1'-0"

STATE OF COLORADO DIVISION OF HIGHWAYS		
DESIGNED BY	APPROVED BY	DATE
REBAR SOUTH CONDUIT SEGMENT, 8.10		
DRAWING NO.		CS-109A

PROJECT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170 31.4.723	RP-85 BX	12

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

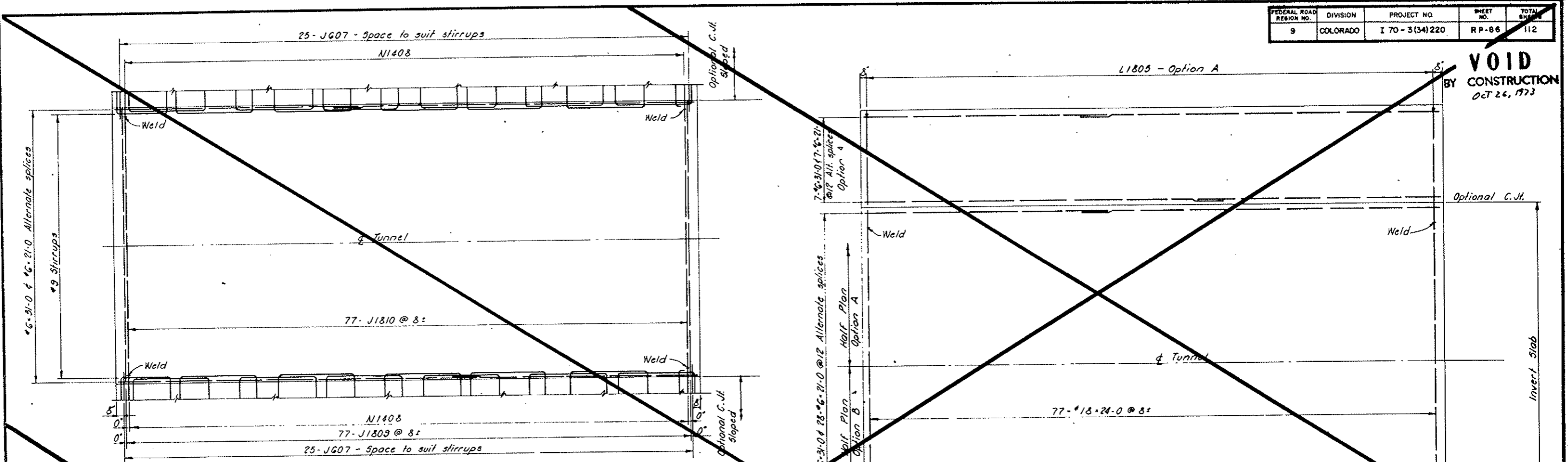


B		C		TYPE B	
BAR MARK	NR REQ	BAR SIZE	BAR LENGTH	DIMENSIONS	
B600	680	#6	5'-0"	0'-6"	4'-6"

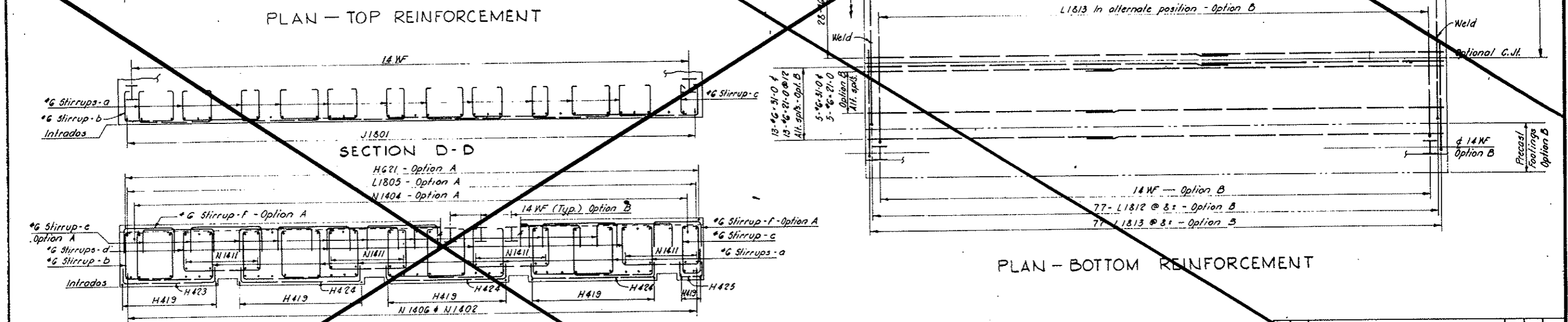
STATE OF COLORADO DIVISION OF HIGHWAYS		
SCALE: 3/8" = 1'	APPROVED BY:	DRAWN BY: L. TAGUE
DATE:	APPROVED SIGNATURE:	REVISIONS:
REBAR SOUTH CONDUIT SEGMENT S163		
DRAWING NUMBER:		C3-109B

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	RP-88	112

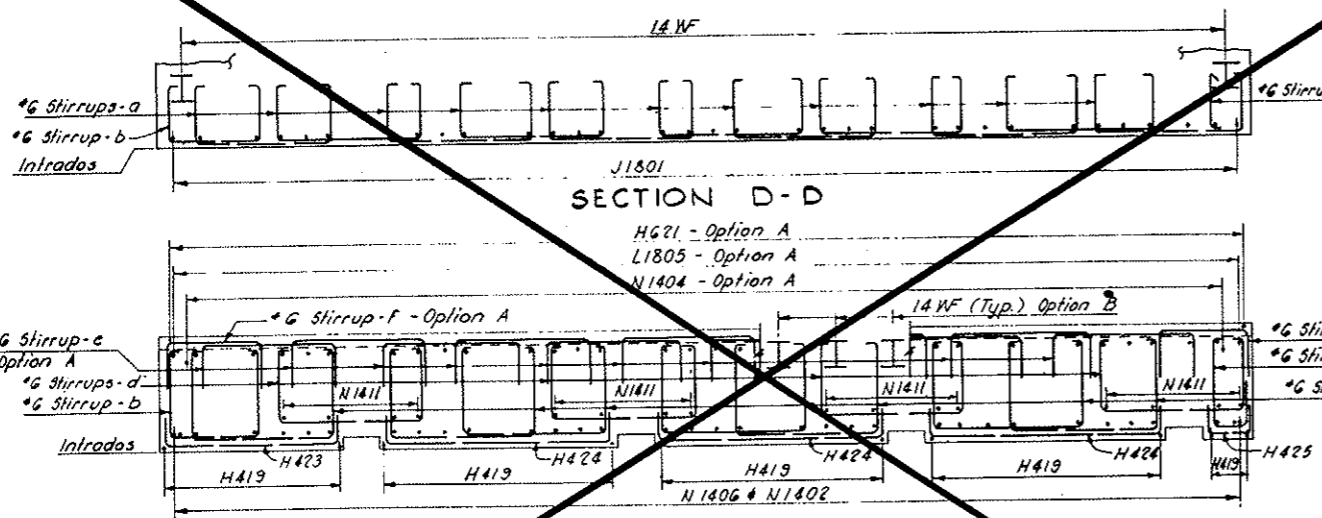
VOID
BY CONSTRUCTION
OCT 26, 1973



PLAN - TOP REINFORCEMENT

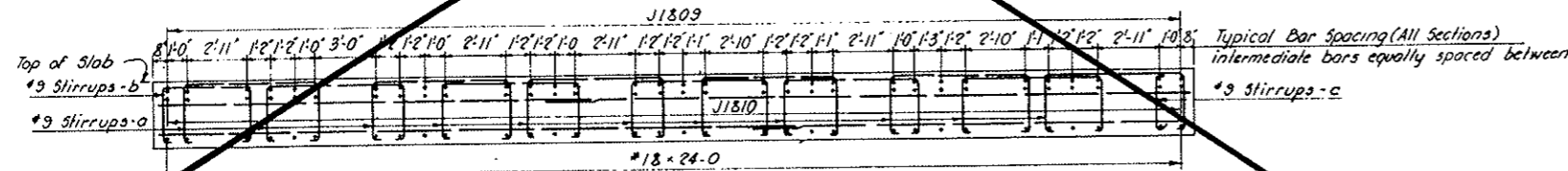


PLAN - BOTTOM REINFORCEMENT



SECTION D-D

SECTION E-E



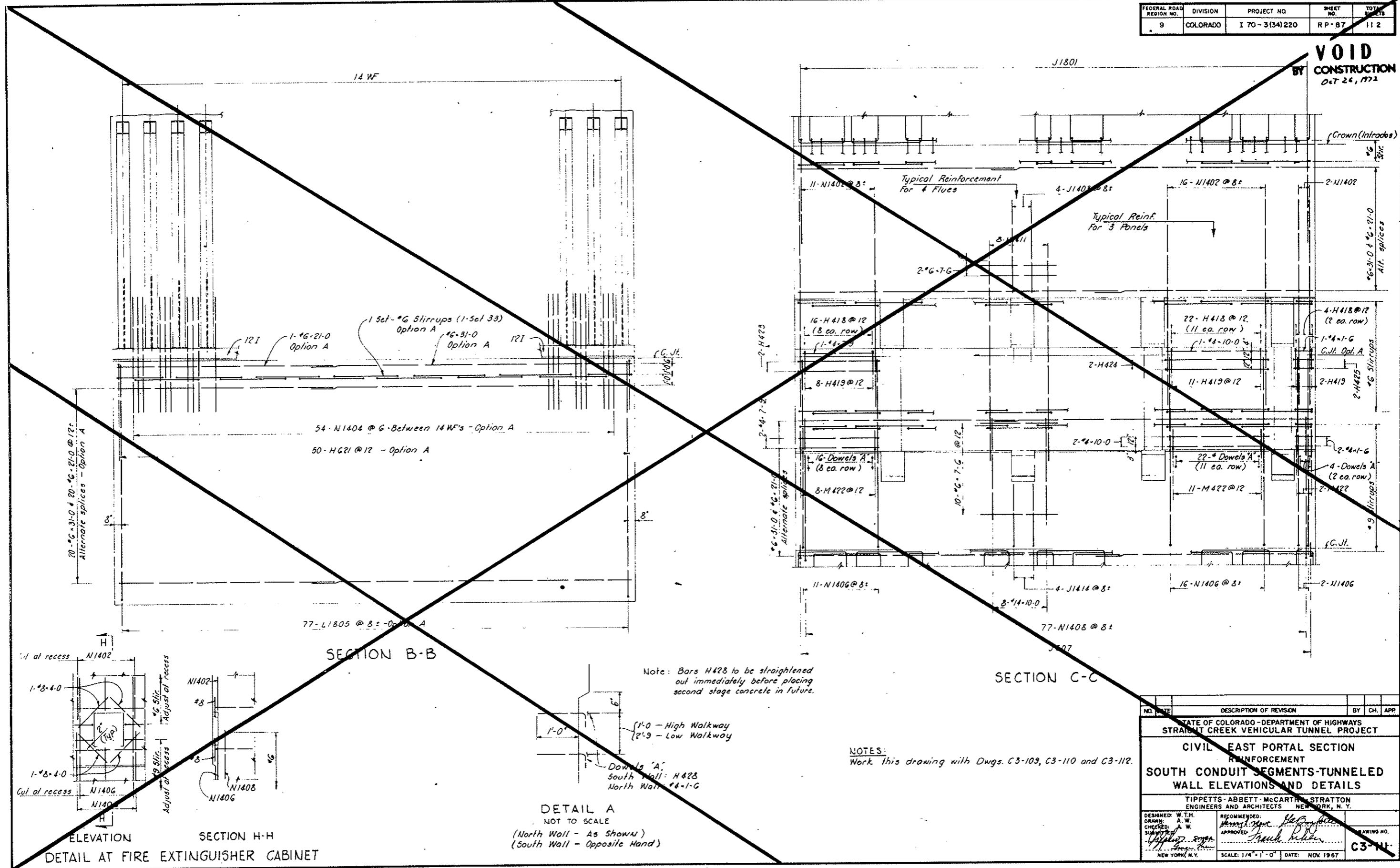
SECTION F-F

NOTES:
Work this drawing with Dwg. C3-109, C3-111 and C3-112

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT					
SOUTH CONDUIT SEGMENTS-TUNNELED INVERT SLAB AND LONGITUDINAL SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED WITH DRAWN: A.W. CHECKED: A.W. SUBMITTED: [Signature]	RECOMMENDED: [Signature] APPROVED: [Signature]	DRAWING NO. C3-110			
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"	DATE: NOV. 1967		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-87	112

VOID
BY CONSTRUCTION
Oct 26, 1972



Note: Bars H428 to be straightened out immediately before placing second stage concrete in future.

NOTES:
Work this drawing with Dwgs. C3-109, C3-110 and C3-112.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT					
SOUTH CONDUIT SEGMENTS-TUNNELED WALL ELEVATIONS AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: W.T.H.	RECOMMENDED:	DRAWING NO.			
CHECKED: A.W.	APPROVED:	C3-112			
SUBMITTED:	DATE:	NOV 1967			
NEW YORK, N. Y.					

VOID
BY CONSTRUCTION
Oct 24, 1973

REINFORCEMENT SCHEDULE - STIRRUPS

BENDING DIAGRAMS
Type SF
Type ST

SET NO	BAR MARK	NUMBER REQUIRED	BAR SIZE	BAR LENGTH	A	B	C	D	G
1	a SF630	11 44 44	#6	12-6	0-6	2-5	6-8	2-5	0-6
	b SF631	1 4 4	#6	10-0	0-5	2-5	4-4	2-5	0-5
	c ST632	1 4 4	#6	3-6	0-6	2-5			0-7
2	a SF633	11 44 44	#6	12-6	0-5	2-6	6-8	2-6	0-5
	b SF634	1 44 44	#6	10-0	0-5	2-6	4-4	2-6	0-6
	c ST635	1 4 4	#6	3-6	0-5	2-6			0-7
3	a SF636	11 22 22	#6	12-9	0-6	2-7	6-8	2-7	0-6
	b SF637	1 2 2	#6	10-6	0-6	2-7	4-4	2-7	0-6
	c ST638	1 2 2	#6	3-6	0-5	2-7			0-8
4	a SF639	11 22 22	#6	13-0	0-6	2-8	6-8	2-8	0-6
	b SF640	1 2 2	#6	10-6	0-5	2-8	4-4	2-8	0-5
	c ST641	1 2 2	#6	3-9	0-6	2-8			0-5
5	a SF642	7 14 14	#6	14-6	0-6	3-5	6-8	3-5	0-6
	b SF643	1 2 2	#6	12-0	0-5	3-5	4-4	3-5	0-5
	c ST644	1 2 2	#6	7-6	0-5	3-5	1-5	2-3	0
	d SF645	4 8 8	#6	13-3	0-6	2-9	6-8	2-9	0-7
	e SF646	7 14 14	#6	15-0	0-5	3-9	6-8	3-9	0-5
6	a SF647	1 2 2	#6	12-9	0-5	3-9	4-4	3-9	0-6
	b SF648	1 2 2	#6	7-9	0-5	3-9	1-5	2-2	0
	c ST649	4 8 8	#6	13-9	0-5	3-1	6-8	3-1	0-6
7	a SF650	7 14 14	#6	15-3	0-5	3-10	6-8	3-10	0-6
	b SF651	1 2 2	#6	13-0	0-6	3-10	4-4	3-10	0-8
	c ST652	1 2 2	#6	7-9	0-5	3-10	1-5	2-1	0
8	a SF653	4 8 8	#6	14-0	0-6	3-2	6-8	3-2	0-6
	b SF654	7 14 14	#6	15-6	0-5	4-0	6-8	4-0	0-5
	c ST655	7 10 10	#6	13-3	0-5	4-0	4-4	1-0	0-6
	d SF656	1 10 10	#6	8-0	0-5	4-0	1-5	2-2	0
	e SF657	4 40 40	#6	14-3	0-5	3-4	6-8	3-4	0-6
9	a SF658	7 84 84	#9	16-0	0-8	4-0	6-8	4-0	0-8
	b SF659	1 12 12	#9	13-9	0-8	4-0	4-4	4-0	0-9
	c ST660	1 12 12	#9	8-3	0-9	4-0	1-5	2-1	0
	d SF661	4 48 48	#9	14-9	0-8	3-4	6-8	3-4	0-9
	e SF662	11 44 44	#9	16-0	0-8	4-0	6-8	4-0	0-8
	f SF663	1 4 4	#9	13-9	0-8	4-0	4-4	4-0	0-9
	g ST664	1 4 4	#9	5-6	0-8	4-0			0-10
	h SF665	11 22 22	#9	16-3	0-8	4-1	6-8	4-1	0-9
	i SF666	1 2 2	#9	14-0	0-9	4-1	4-4	4-1	0-9
	j ST667	1 2 2	#9	5-6	0-8	4-1			0-9
	k SF668	11 22 22	#9	16-9	0-8	4-1	6-8	4-1	0-9
	l SF669	1 2 2	#9	14-6	0-9	4-1	4-4	4-1	0-9
	m ST670	1 2 2	#9	6-0	0-9	4-1			0-11
	n SF671	11 44 44	#9	17-6	0-8	4-9	6-8	4-9	0-8
	o SF672	1 4 4	#9	15-3	0-8	4-9	4-4	4-9	0-9
	p ST673	1 4 4	#9	6-3	0-8	4-9			0-10
	q SF674	11 44 44	#9	18-6	0-8	5-3	6-8	5-3	0-8
	r SF675	1 4 4	#9	16-3	0-8	5-3	4-4	5-3	0-9
	s ST676	1 4 4	#9	6-9	0-8	5-3			0-10
	t SF677	11 44 14	#9	20-3	0-8	6-1	6-8	6-1	0-9
	u SF678	1 4 4	#9	18-0	0-9	6-1	4-4	6-1	0-9
	v ST679	1 4 4	#9	7-9	0-9	6-1			0-11
	w SF680	11 44 44	#9	22-0	0-8	7-0	6-8	7-0	0-8
	x SF681	1 4 4	#9	19-9	0-8	7-0	4-4	7-0	0-9
	y ST682	1 4 4	#9	8-6	0-8	7-0			0-10
	z SF683	11 22 22	#9	22-6	0-8	7-3	6-8	7-3	0-8
	aa SF684	1 2 2	#9	20-3	0-8	7-3	4-4	7-3	0-9
	ab ST685	1 2 2	#9	8-9	0-8	7-3			0-10
	ac SF686	11 22 22	#9	19-6	0-8	7-3	6-8	7-3	0-8
	ad SF687	1 2 2	#9	17-3	0-8	7-3	4-4	7-3	0-9
	ae ST688	1 2 2	#9	7-3	0-8	7-3			0-10
	af SF689	11 22 22	#9	17-6	0-8	7-9	6-8	7-9	0-8
	ag SF690	1 2 2	#9	15-3	0-8	7-9	4-4	7-9	0-9
	ah ST691	1 2 2	#9	6-3	0-8	7-9			0-10
	ai SF692	11 11 11	#9	13-3	0-8	2-7	6-8	2-7	0-9
	aj SF693	1 1 1	#9	11-0	0-9	2-7	4-4	2-7	0-9
	ak ST694	1 1 1	#9	4-3	0-9	2-7			0-11

REINFORCEMENT SCHEDULE - STIRRUPS

BENDING DIAGRAMS
Type SF
Type ST

SET NO	BAR MARK	NUMBER REQUIRED	BAR SIZE	BAR LENGTH	A	B	C	D	G
21	a SF995	11 44 44	#9	13-6	0-9	2-8	6-8	2-8	0-9
	b SF996	1 4 4	#9	11-0	0-8	2-8	4-4	2-8	0-8
	c ST997	1 4 4	#9	4-3	0-8	2-8			0-11
22	a SF998	11 22 22	#9	11-6	0-8	2-9	4-8	2-9	0-8
	b SF999	1 2 2	#9	11-3	0-8	2-9	4-4	2-9	0-9
	c ST9100	1 2 2	#9	4-3	0-8	2-9			0-10
	d SF9101	11 22 22	#9	13-9	0-8	2-10	6-8	2-10	0-9
	e SF9102	1 2 2	#9	11-6	0-9	2-10	4-4	2-10	0-9
	f ST9103	1 2 2	#9	4-6	0-9	2-10			0-11
	g SF9104	11 22 22	#9	14-0	0-9	2-11	6-8	2-11	0-9
	h SF9105	1 2 2	#9	11-6	0-8	2-11	4-4	2-11	0-8
	i ST9106	1 2 2	#9	4-6	0-8	2-11			0-11
	j SF9107	11 22 22	#9	14-0	0-8	3-0	6-8	3-0	0-8
	k SF9108	1 2 2	#9	11-9	0-8	3-0	4-4	3-0	0-9
	l ST9109	1 2 2	#9	4-6	0-8	3-0			0-10
	m SF9110	11 22 22	#9	14-6	0-9	3-2	6-8	3-2	0-9
	n SF9111	1 2 2	#9	12-0	0-8	3-2	4-4	3-2	0-8
	o ST9112	1 2 2	#9	4-9	0-8	3-2			0-11
	p SF9113	11 22 22	#9	14-9	0-8	3-4	6-8	3-4	0-9
	q SF9114	1 2 2	#9	12-6	0-9	3-4	4-4	3-4	0-9
	r ST9115	1 2 2	#9	5-0	0-9	3-4			0-11
	s SF9116	11 22 22	#9	15-0	0-8	3-6	6-8	3-6	0-8
	t SF9117	1 2 2	#9	12-9	0-8	3-6	4-4	3-6	0-9
	u ST9118	1 2 2	#9	5-0	0-8	3-6			0-10
	v SF9119	11 22 22	#9	15-6	0-9	3-8	6-8	3-8	0-9
	w SF9120	1 2 2	#9	12-6	0-8	3-8	4-4	3-8	0-8
	x ST9121	1 2 2	#9	5-0	0-8	3-8			0-11
	y SF9122	11 22 22	#9	15-9	0-8	3-10	6-8	3-10	0-9
	z SF9123	1 2 2	#9	13-6	0-9	4-10	4-4	3-10	0-9
	aa ST9124	1 2 2	#9	5-6	0-9	3-10			0-11
	ab SF9125	11 22 22	#9	16-3	0-8	4-1	6-8	4-1	0-9
	ac SF9126	1 2 2	#9	14-0	0-9	4-1	4-4	4-1	0-9
	ad ST9127	1 2 2	#9	5-9	0-9	4-1			0-11
	ae SF9128	11 22 22	#9	17-0	0-8	4-6	6-8	4-6	0-8
	af SF9129	1 2 2	#9	14-9	0-8	4-6	4-4	4-6	0-9
	ag ST9130	1 2 2	#9	6-0	0-8	4-6			0-10
	ah SF9131	11 22 22	#6	10-6	0-8	2-2	6-2	2-2	0
	ai SF9132	2 4 4	#6	8-0	0-8	2-2	4-2	2-2	0
	aj SF9133	8 12 12	#6	13-3	0-5	3-10	6-8	3-10	0-6
	ak SF9134	1 2 2	#6	13-0	0-6	3-10	4-4	3-10	0-6
	al SF9135	1 2 2	#6	7-9	0-5	3-10	1-5	2-1	0
	am SF9136	4 8 8	#6	14-0	0-6	3-2	6-8	3-2	0-6
	an SF9137	1 2 2	#6	14-3	0-5	3-10	5-8	3-10	0-8
	ao SF9138	6 60 60	#6	15-6	0-5	4-0	6-8	4-0	0-5
	ap SF9139	1 10 10	#6	13-3	0-5	4-0	4-4	4-0	0-6
	aq SF9140	1 10 10	#6	8-0	0-5	4-0	1-5	2-2	0
	ar SF9141	1 40 40	#6	14-3	0-5	3-4	6-8	3-4	0-6
	as SF9142	1 10 10	#6	18-6	0-5	4-0	5-8	4-0	0-5
	at SF9143	6 72 72	#9	16-0	0-8	4-0	6-8	4-0	0-8
	au SF9144	1 12 12	#9	13-9	0-8	4-0	4-4	4-0	0-9
	av SF9145	1 12 12	#9	8-3	0-9	4-0	1-5	2-1	0
	aw SF9146	4 48 48	#9	14-9	0-8	3-4	6-8	3-4	0-9
	ax SF9147	1 12 12	#9	15-0	0-8	4-0	5-8	4-0	0-8
	ay SF9148	1 12 12	#9	14-9	0-8	3-4	6-8	3-4	0-9
	az SF9149	4 48 48	#9	15-0	0-8	4-0	5-8	4-0	0-8

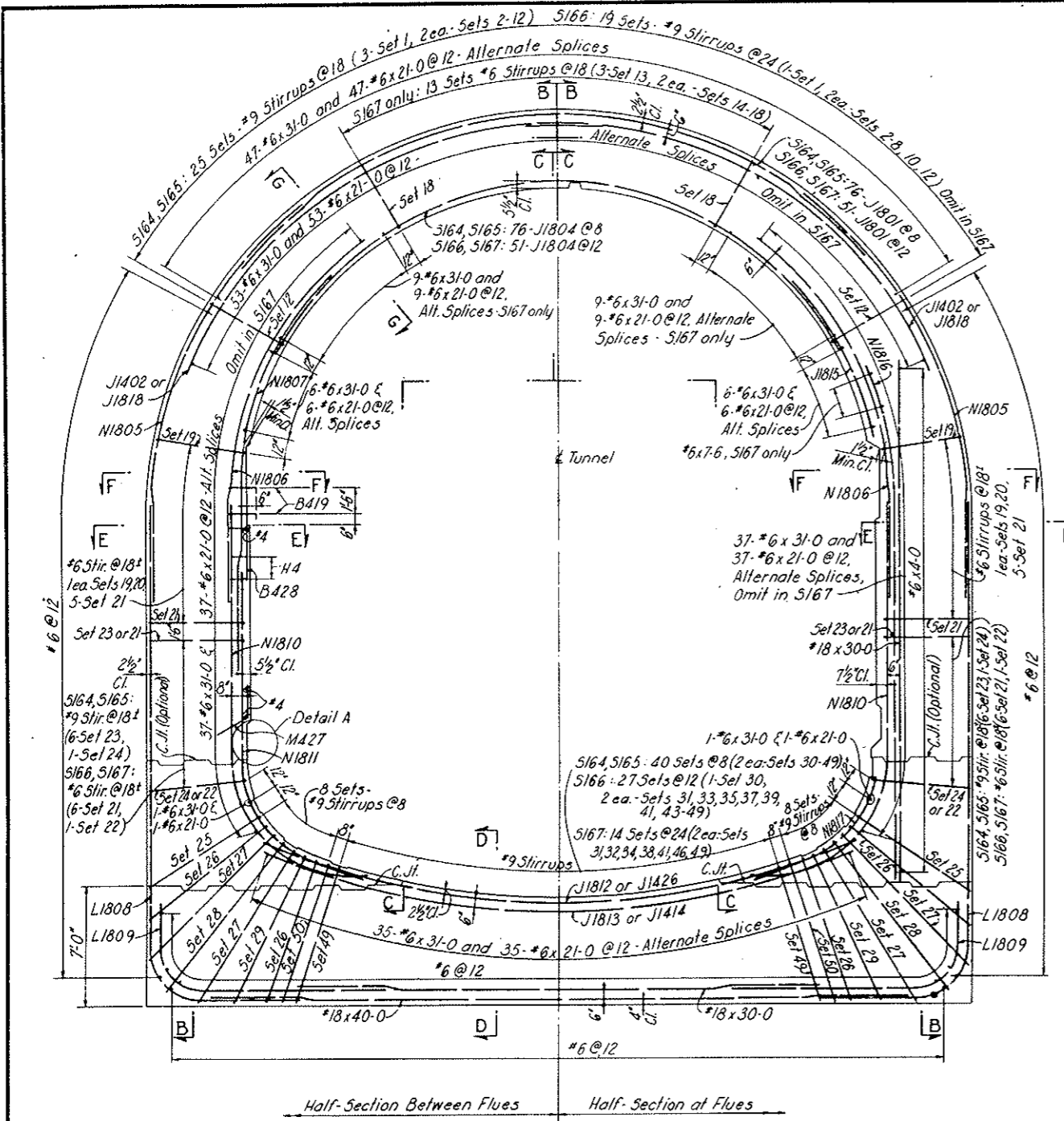
REINFORCEMENT SCHEDULE - STIRRUPS

BENDING DIAGRAMS

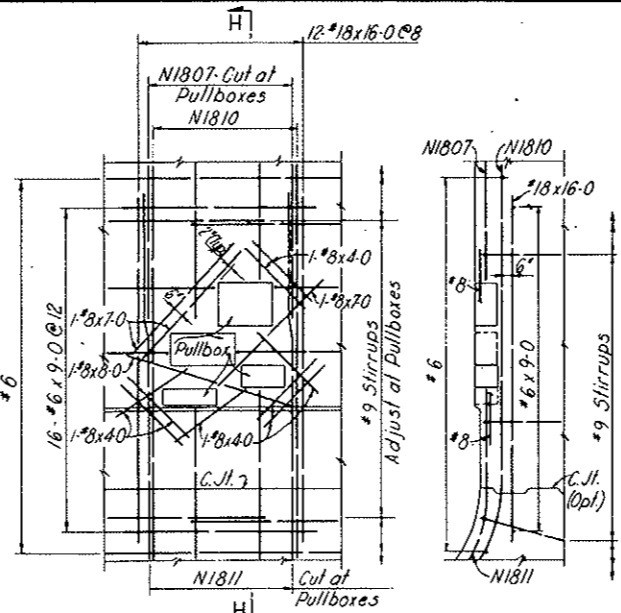
SET NO	BAR MARK	NUMBER REQUIRED	BAR SIZE	BAR LENGTH	A	B	C	D	G
23	a SF9101	11 22 22	#9	13-9	0-8	2-10	6-8	2-10	0-9
	b SF9102	1 2 2	#9	11-6	0-9	2-10	4-4	2-10	0-9
	c ST9103	1 2 2	#9	4-6	0-9	2-10			0-11
	d SF9104	11 22 22	#9	14-0	0-9	2-11	6-8	2-11	0-9
	e SF9105	1 2 2	#9	11-6	0-8	2-11	4-4	2-11	0-8
	f ST9106	1 2 2	#9	4-6	0-8	2-11			0-11
	g SF9107	11 22 22	#9	14-0	0-8	3-0	6-8	3-0	0-8
	h SF9108	1 2 2	#9	11-9	0-8	3-0	4-4	3-0	0-9
	i ST9109	1 2 2	#9	4-6	0-8	3-0			0-10
	j SF9110	11 22 22	#9	14-6	0-9	3-2	6-8	3-2	0-9
	k SF9111	1 2 2	#9	12-0	0-8	3-2	4-4	3-2	0-8
	l ST9112	1 2 2	#9	4-9	0-8	3-2			0-11
	m SF9113	11 22 22	#9	14-9	0-8	3-4	6-8	3-4	0-9
	n SF9114	1 2 2	#9	12-6	0-9	3-4	4-4	3-4	0-9
	o ST9115	1 2 2	#9	5-0	0-9	3-4			0-11
	p SF9116	11 22 22	#9	15-0	0-8	3-6	6-8	3-6	0-8
	q SF9117	1 2 2	#9	12-9	0-8	3-6	4-4	3-6	0-9
	r ST9118	1 2 2	#9	5-0	0-8	3-6			0-10
	s SF9119	11 22 22	#9	15-6	0-9	3-8	6-8	3-8	0-9
	t SF9120	1 2 2	#9	12-6	0-8	3-8	4-4	3-8	0-8
	u ST9121	1 2 2							

AS CONSTRUCTED
REVISED DATE Oct. 24, 1975

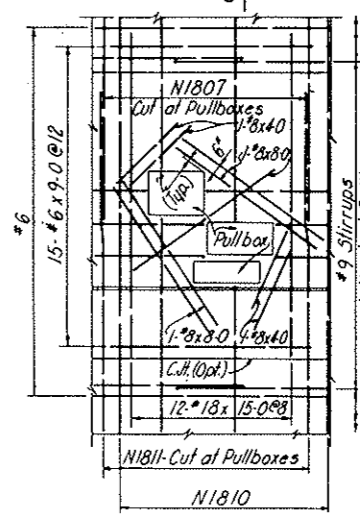
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	RP-89	112



SECTION A-A
LOOKING EAST

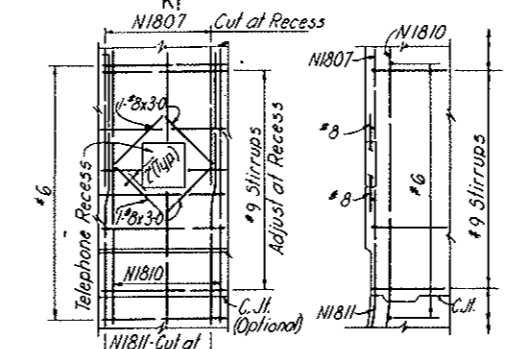


ELEVATION
DETAIL AT PULLBOXES - HIGH WALKWAY

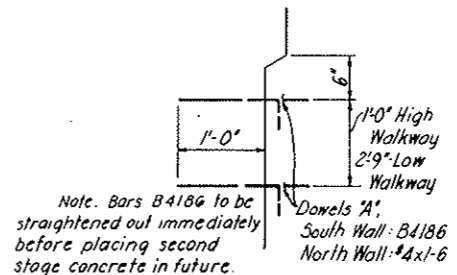


ELEVATION
DETAIL AT PULLBOXES - LOW WALKWAY

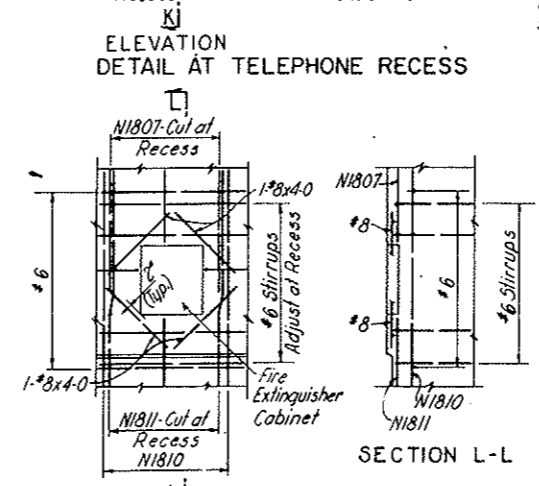
Note: In conformity with the concrete outlining drawings this reinforcement at pullboxes, telephone recess, and fire extinguisher cabinet is detailed for cut and cover segment only.



ELEVATION
DETAIL AT TELEPHONE RECESS



DETAIL A
NOT TO SCALE
(North Wall - As Shown)
(South Wall - Opposite Hand)



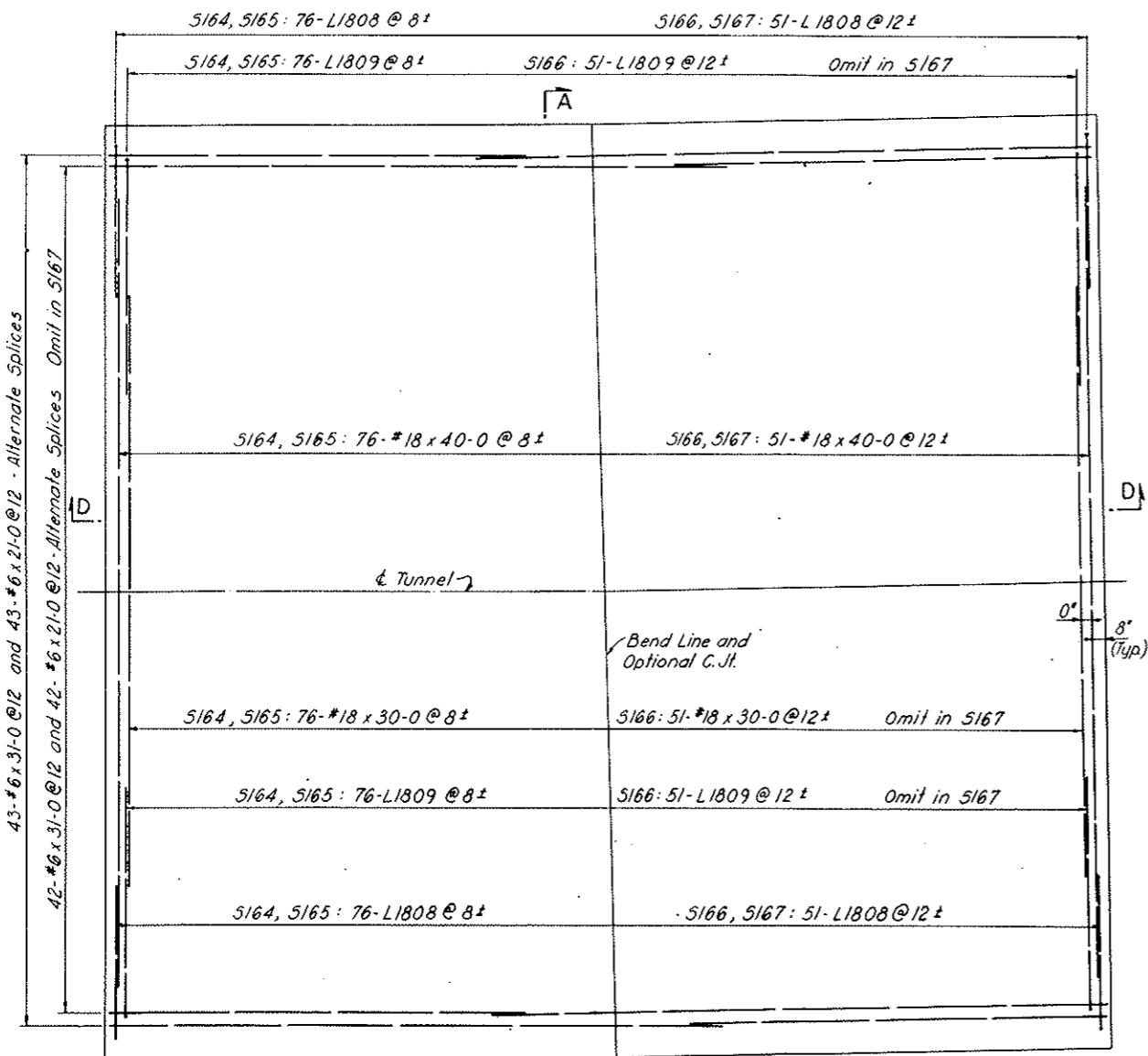
ELEVATION
DETAIL AT FIRE EXTINGUISHER CABINET

NOTES:
Work this drawing with Dwg. C3-114, C3-115 and C3-116
For General Reinforcement Notes see Dwg. C2-103
For General Concrete Notes see Dwg. C2-11.
For concrete outlines see Dwg. C3-3 and C3-4.
All stirrup spacing is to be measured along the inside face of concrete.
Clear cover for outside face reinforcement is from neat concrete surface or the "A" Line.
For Reinforcement in Second Stage Concrete see Dwg. C2-129, C2-130 and C2-134.
For Reinforcement in Precast Concrete see Dwg. C2-139 and C2-140.
For Segments S165-S167 only

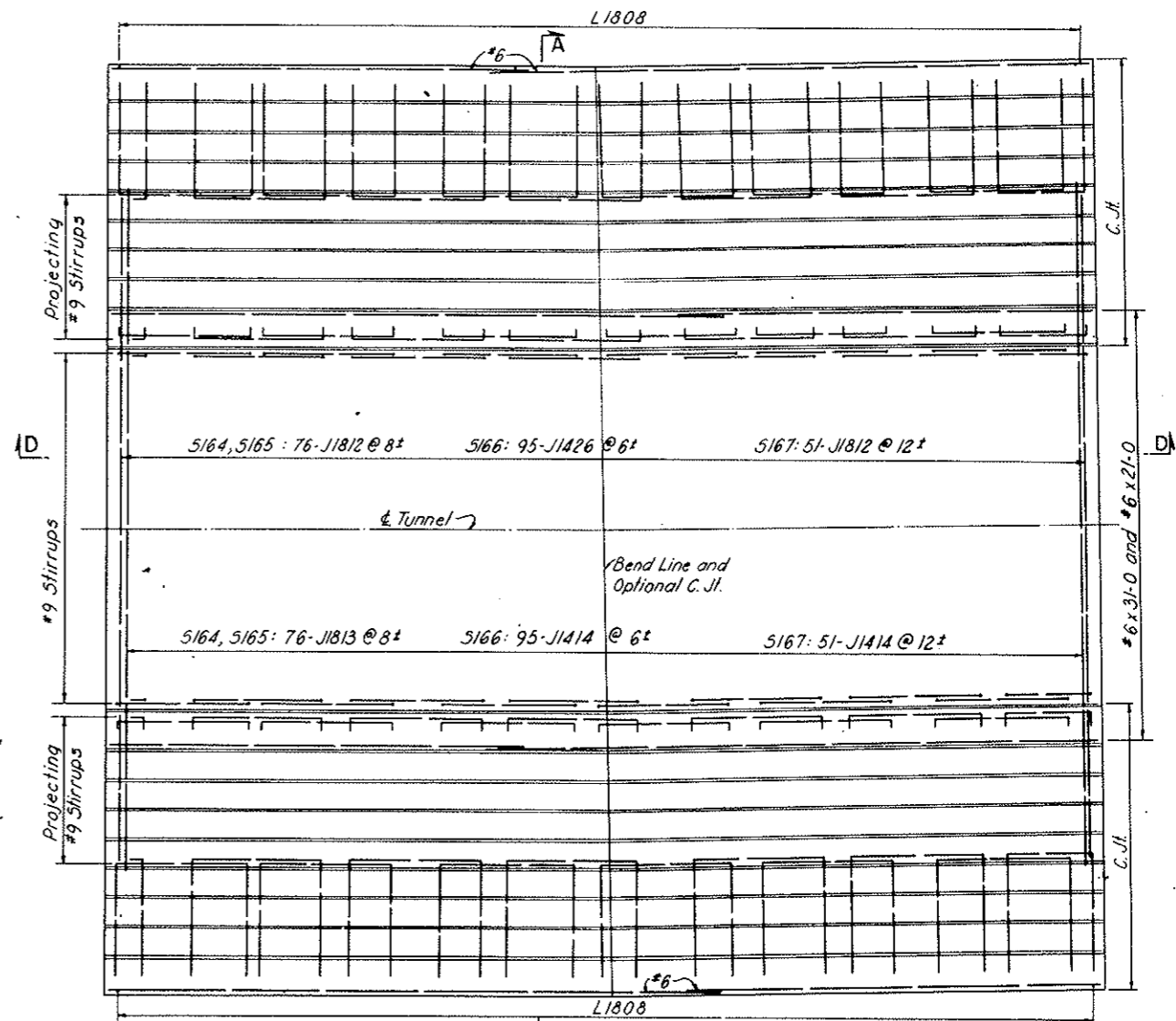
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT					
SOUTH CONDUIT SEGMENTS - CUT AND COVER CROSS SECTION AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: W.T.H.	RECOMMENDED:				
DRAWN: J.E.G.	APPROVED: <i>[Signature]</i>				
CHECKED: J.S.G.-W.T.H.	APPROVED: <i>[Signature]</i>				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
					DRAWING NO. C3-113
NEW YORK, N.Y.					SCALE: 1/4" = 1'-0" DATE: NOV. 1987

AS CONSTRUCTED
REVISED DATE Oct. 26, 1975

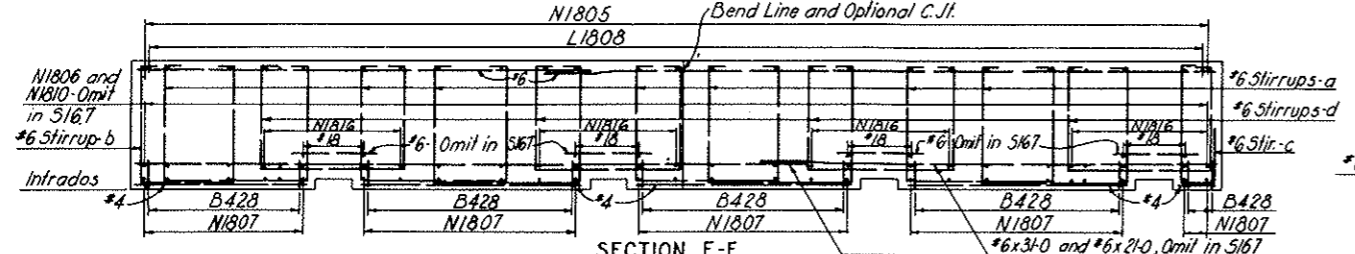
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-90	112



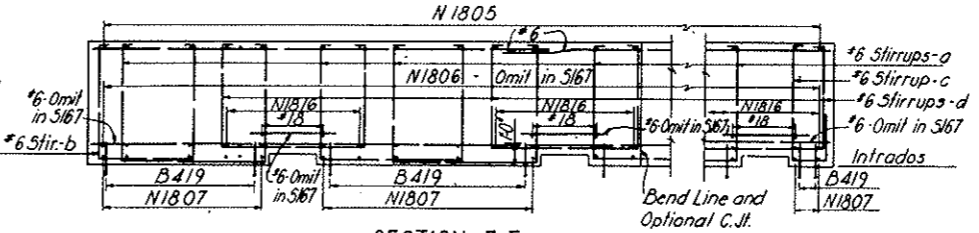
PLAN-BOTTOM REINFORCEMENT



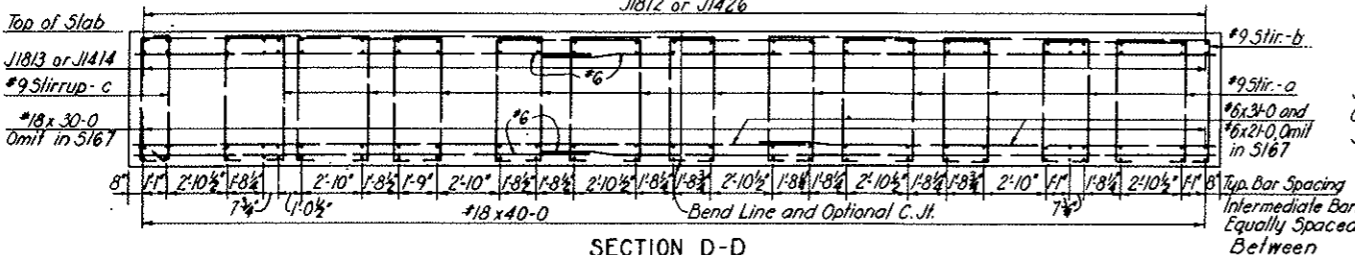
PLAN-TOP REINFORCEMENT



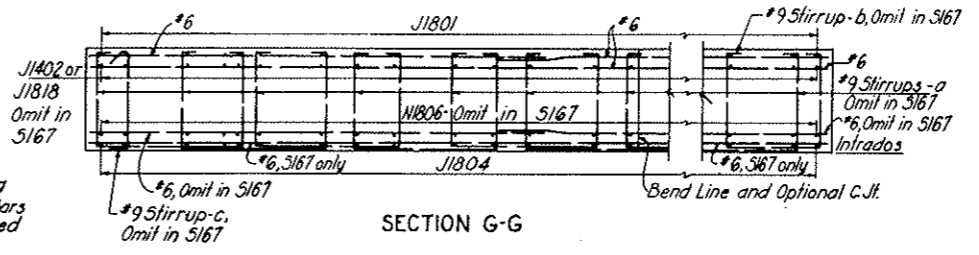
SECTION E-E



SECTION F-F



SECTION D-D



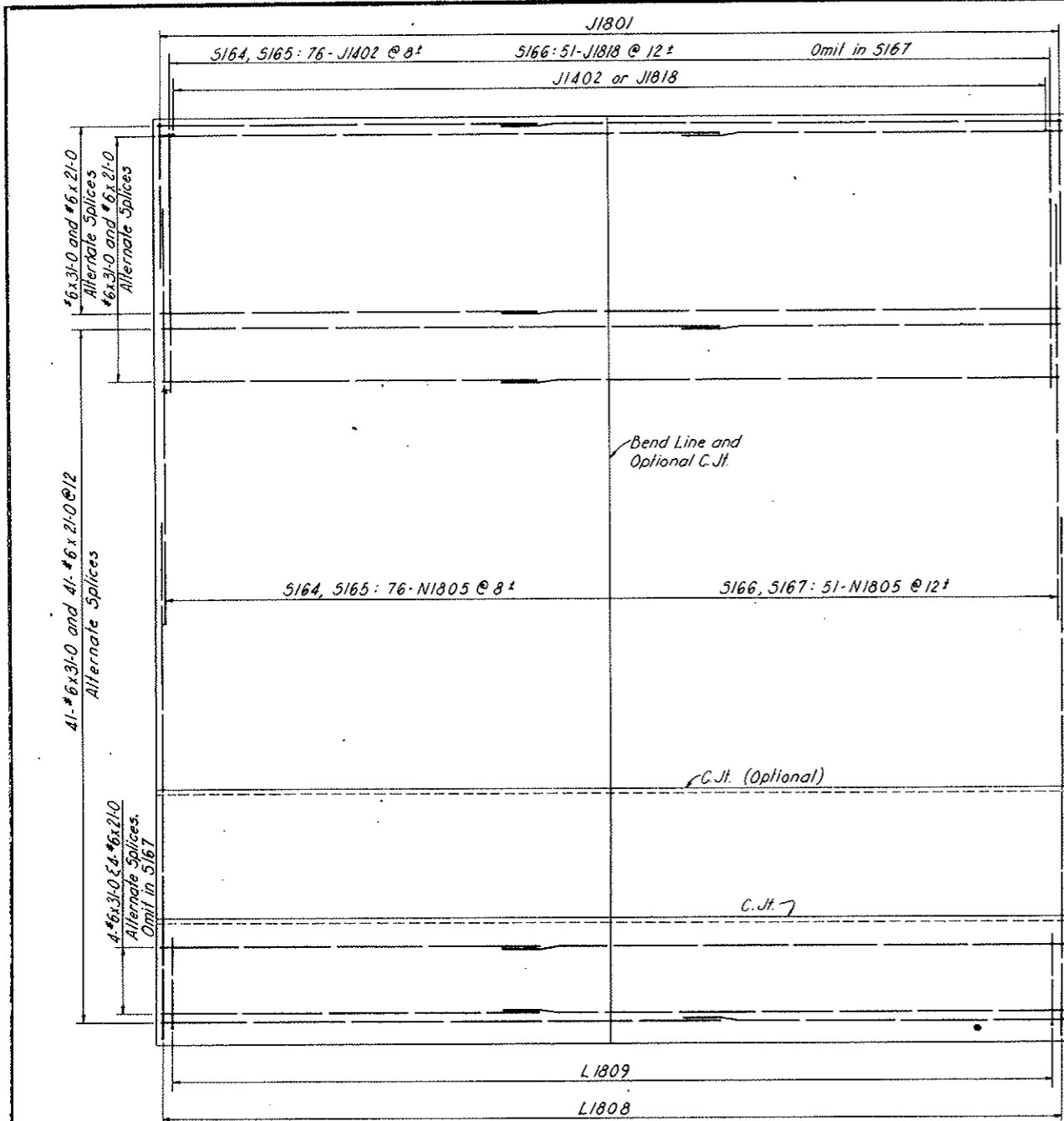
SECTION G-G

NOTES:
Work this drawing with Dwg. C3-113, C3-115 and C3-116.
For Segments 5165-5167 only

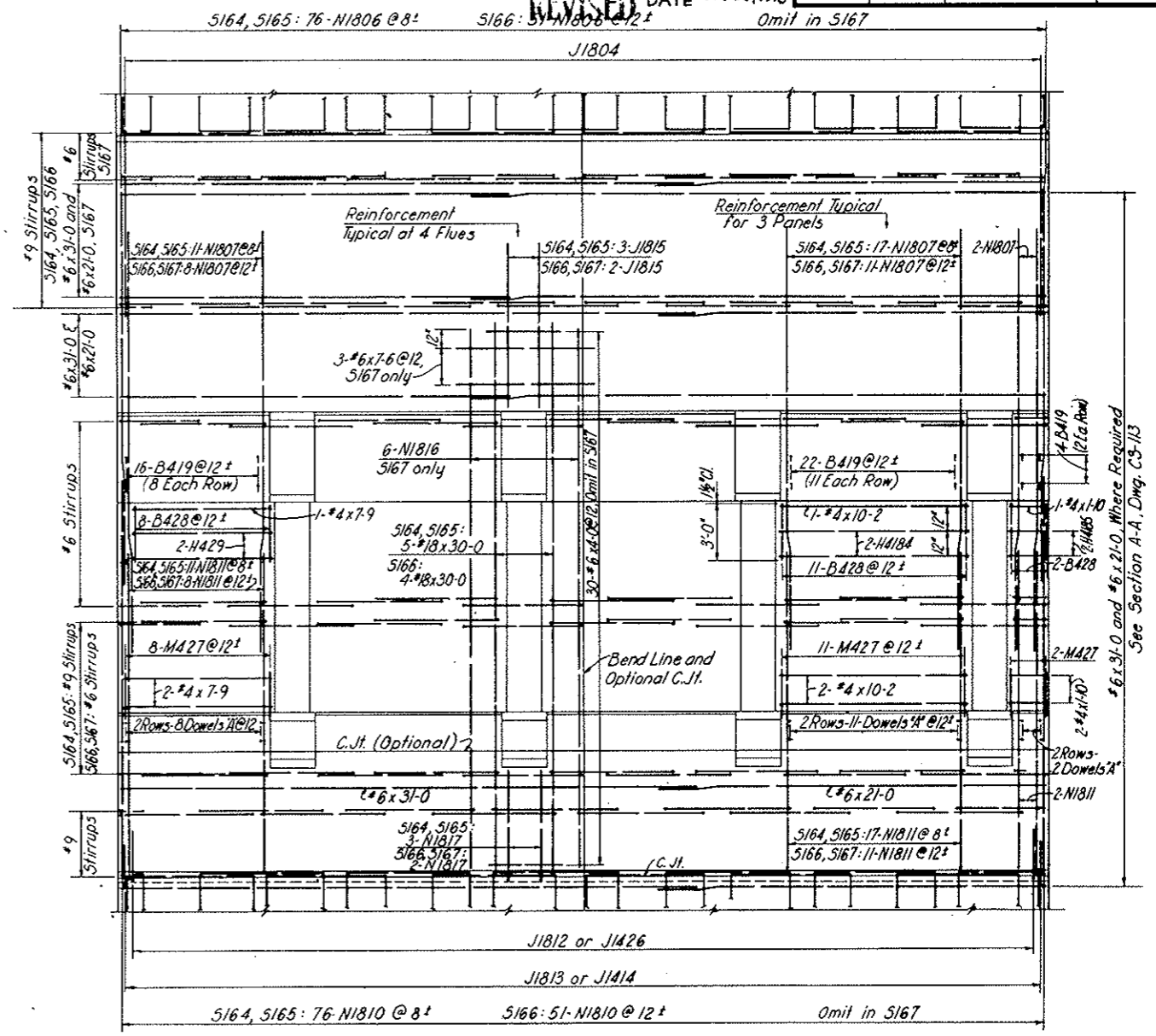
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT					
SOUTH CONDUIT SEGMENTS-CUT AND COVER INVERT SLAB AND LONGITUDINAL SECTIONS					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: W.T.H.	RECOMMENDED: <i>Harold Kane</i>				
DRAWN: J.E.G.	CHECKED: <i>J.E.G.-W.T.H.</i>				
SUBMITTED: <i>W.T.H.</i>	APPROVED: <i>Frank Miller</i>				
NEW YORK, N. Y.			SCALE: 1/4" = 1'-0"	DATE: NOV. 1967	DRAWING NO. C3-114

AS CONSTRUCTED
REVISED DATE Oct. 24, 1935

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-91	112



SECTION B-B



SECTION C-C

NOTES:
Work this drawing with Dwg. C3-113, C3-114 and C3-116.
For Segments 5165-5167 only

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT SOUTH CONDUIT SEGMENTS - CUT AND COVER WALL ELEVATIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	W.T.H.	RECOMMENDED:			
DRAWN:	A.E.G.	APPROVED:	<i>Handwritten Signature</i>		
CHECKED:	J.E.G.-W.T.H.	DATE:	NOV. 1937		
SUBMITTED:	<i>Handwritten</i>	SCALE:	1/4" = 1'-0"		
DRAWING NO. C3-115					

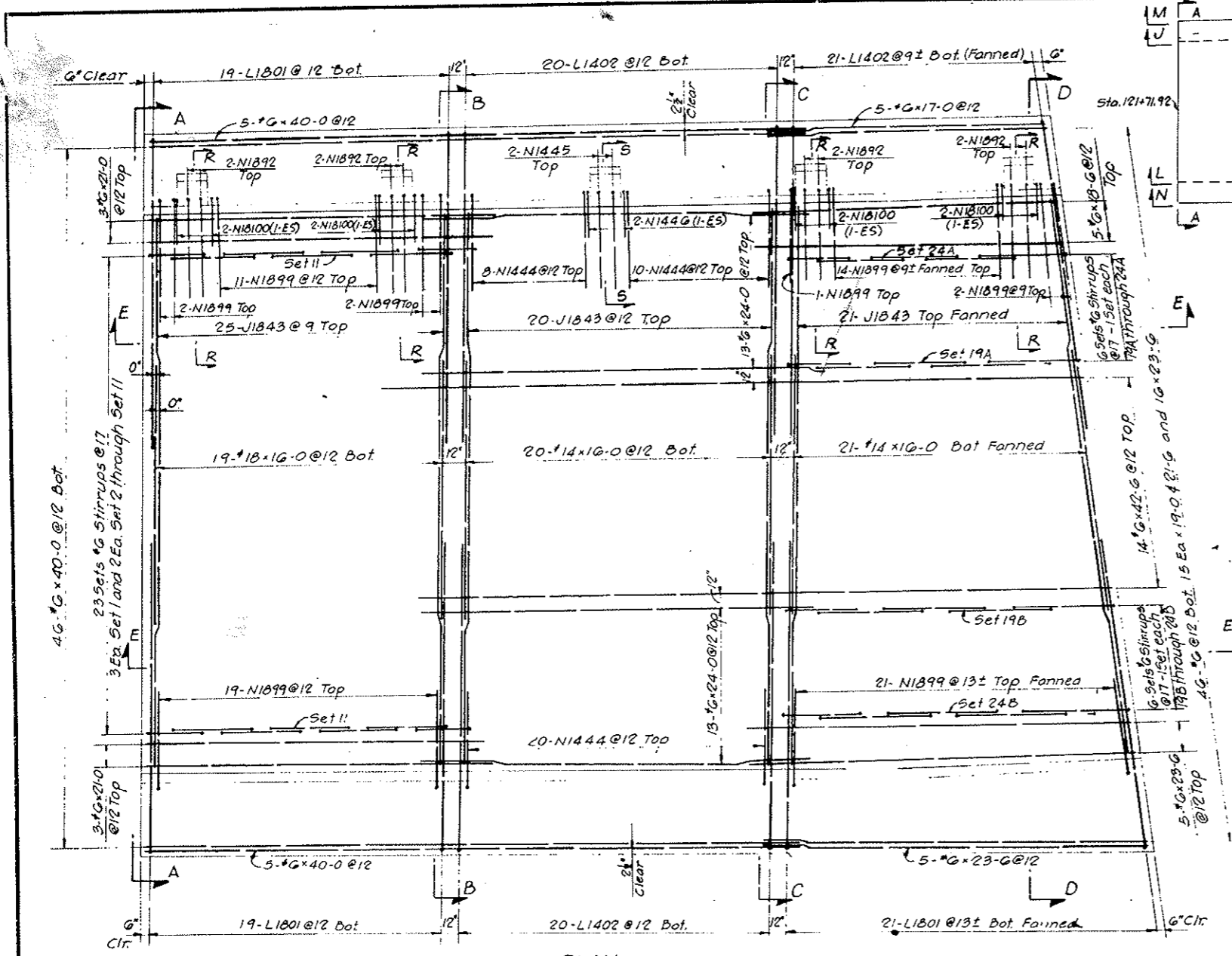
AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

REINFORCEMENT SCHEDULE - STIRRUPS												
BENDING DIAGRAMS												
Type SF Type ST												
SET NO.	BAR MARK	PER SET	NUMBER REQUIRED				BAR SIZE	BAR LENGTH	DIMENSIONS			
			S164	S165	S166	S167		A	B	C	D	G
1	a SF930	11	33	33	11	-	*9	16-0	0-8	4-0	4-4	0-8
	b SF931	1	3	3	1	-	*9	13-9	0-8	4-0	4-4	0-8
	c ST932	1	3	3	1	-	*9	5-9	0-10	4-0	-	0-11
2	a SF933	11	22	22	22	-	*9	16-3	0-8	4-1	6-8	4-1
	b SF934	1	2	2	2	-	*9	14-0	0-9	4-1	4-4	4-1
	c ST935	1	2	2	2	-	*9	5-9	0-10	4-1	-	0-10
3	a SF936	11	22	22	22	-	*9	16-6	0-9	4-2	6-8	4-2
	b SF937	1	2	2	2	-	*9	14-0	0-8	4-2	4-4	4-2
	c ST938	1	2	2	2	-	*9	5-9	0-9	4-2	-	0-10
4	a SF939	11	22	22	22	-	*9	16-6	0-8	4-3	6-8	4-3
	b SF940	1	2	2	2	-	*9	14-3	0-8	4-3	4-4	4-3
	c ST941	1	2	2	2	-	*9	6-0	0-10	4-3	-	0-11
5	a SF942	11	22	22	22	-	*9	16-9	0-8	4-4	6-8	4-4
	b SF943	1	2	2	2	-	*9	14-6	0-9	4-4	4-4	4-4
	c ST944	1	2	2	2	-	*9	6-0	0-10	4-4	-	0-10
6	a SF945	11	22	22	22	-	*9	17-0	0-9	4-5	6-8	4-5
	b SF946	1	2	2	2	-	*9	14-6	0-8	4-5	4-4	4-5
	c ST947	1	2	2	2	-	*9	6-0	0-9	4-5	-	0-10
7	a SF948	11	22	22	22	-	*9	17-0	0-8	4-6	6-8	4-6
	b SF949	1	2	2	2	-	*9	14-9	0-8	4-6	4-4	4-6
	c ST950	1	2	2	2	-	*9	6-3	0-10	4-6	-	0-11
8	a SF951	11	22	22	22	-	*9	17-3	0-8	4-7	6-8	4-7
	b SF952	1	2	2	2	-	*9	15-0	0-9	4-7	4-4	4-7
	c ST953	1	2	2	2	-	*9	6-3	0-10	4-7	-	0-10
9	a SF954	11	22	22	-	-	*9	17-6	0-9	4-8	6-8	4-8
	b SF955	1	2	2	-	-	*9	15-0	0-8	4-8	4-4	4-8
	c ST956	1	2	2	-	-	*9	6-3	0-9	4-8	-	0-10
10	a SF957	11	22	22	-	-	*9	17-6	0-8	4-9	6-8	4-9
	b SF958	1	2	2	-	-	*9	15-3	0-8	4-9	4-4	4-9
	c ST959	1	2	2	-	-	*9	6-6	0-10	4-9	-	0-11
11	a SF960	11	22	22	-	-	*9	17-9	0-8	4-10	6-8	4-10
	b SF961	1	2	2	-	-	*9	15-6	0-9	4-10	4-4	4-10
	c ST962	1	2	2	-	-	*9	6-6	0-10	4-10	-	0-10
12	a SF963	11	22	22	-	-	*9	18-0	0-9	4-11	6-8	4-11
	b SF964	1	2	2	-	-	*9	14-6	0-8	4-11	4-4	4-11
	c ST965	1	2	2	-	-	*9	6-6	0-9	4-11	-	0-10
13	a SF666	11	-	-	-	33	*6	16-0	0-5	4-0	6-8	4-0
	b SF667	1	-	-	-	3	*6	13-3	0-5	4-0	4-4	4-0
	c ST668	1	-	-	-	3	*6	5-0	0-6	4-0	-	0-6
14	a SF669	11	-	-	-	22	*6	15-9	0-6	4-1	6-8	4-0
	b SF670	1	-	-	-	2	*6	13-6	0-6	4-1	4-4	4-1
	c ST671	1	-	-	-	2	*6	5-3	0-7	4-1	-	0-7
15	a SF672	11	-	-	-	22	*6	16-0	0-6	4-2	6-8	4-2
	b SF673	1	-	-	-	2	*6	13-6	0-5	4-2	4-4	4-2
	c ST674	1	-	-	-	2	*6	5-3	0-6	4-2	-	0-7
16	a SF675	11	-	-	-	22	*6	16-0	0-5	4-3	6-8	4-3
	b SF676	1	-	-	-	2	*6	13-9	0-5	4-3	4-4	4-3
	c ST677	1	-	-	-	2	*6	5-3	0-6	4-3	-	0-6
17	a SF678	11	-	-	-	22	*6	16-3	0-5	4-4	6-8	4-4
	b SF679	1	-	-	-	2	*6	14-0	0-6	4-4	4-4	4-4
	c ST680	1	-	-	-	2	*6	5-6	0-7	4-4	-	0-7
18	a SF681	11	-	-	-	22	*6	16-6	0-6	4-5	6-8	4-5
	b SF682	1	-	-	-	2	*6	14-0	0-5	4-5	4-4	4-5
	c ST683	1	-	-	-	2	*6	5-6	0-6	4-5	-	0-7
19	a SF684	7	14	14	14	14	*6	18-0	0-6	5-2	6-8	5-2
	b SF685	1	2	2	2	2	*6	15-6	0-5	5-2	4-4	5-2
	c SF686	1	2	2	2	2	*6	9-3	0-5	5-2	1-6	2-2
20	a SF687	4	8	8	8	8	*6	16-6	0-5	4-6	6-8	4-6
	b SF688	7	14	14	14	14	*6	18-3	0-5	5-4	6-8	5-4
	c SF689	1	2	2	2	2	*6	16-0	0-6	5-4	4-4	5-4
21	a SF690	1	2	2	2	2	*6	9-6	0-5	5-4	1-6	2-3
	b SF691	4	8	8	8	8	*6	17-0	0-6	4-8	6-8	4-8
	c SF692	7	10	10	10	10	*6	18-6	0-5	5-6	6-8	5-6
22	a SF693	1	10	10	22	22	*6	16-3	0-5	5-6	4-4	5-6
	b SF694	1	10	10	22	22	*6	9-6	0-5	5-6	1-6	2-1
	c SF695	4	40	40	88	88	*6	17-3	0-5	4-10	6-8	4-10
23	a SF696	11	-	-	-	-	*6	19-0	0-6	5-8	6-8	5-8
	b SF697	1	-	-	-	-	*6	16-6	0-5	5-8	4-4	5-8
	c ST698	1	-	-	-	-	*6	6-9	0-6	5-8	-	0-7

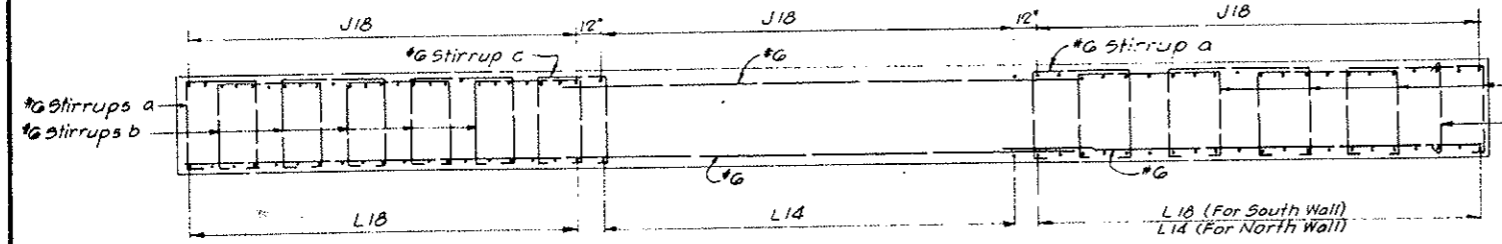
REINFORCEMENT SCHEDULE - STIRRUPS												
BENDING DIAGRAMS												
Type SF Type ST												
SET NO.	BAR MARK	PER SET	NUMBER REQUIRED				BAR SIZE	BAR LENGTH	DIMENSIONS			
			S164	S165	S166	S167		A	B	C	D	G
23	a SF999	7	84	84	-	-	*9	19-0	0-8	5-6	6-8	5-6
	b SF9100	1	12	12	-	-	*9	16-9	0-8	5-6	4-4	5-6
	c SF9101	1	12	12	-	-	*9	10-0	0-8	5-6	1-6	2-3
24	a SF9102	4	48	48	-	-	*9	18-9	0-8	4-10	6-8	4-10
	b SF9103	11	22	22	-	-	*9	19-6	0-9	5-8	6-8	5-8
	c SF9104	1	2	2	-	-	*9	17-0	0-8	5-8	4-4	5-8
25	a SF9105	1	2	2	-	-	*9	7-3	0-8	5-8	-	0-8
	b SF9106	11	22	22	22	22	*9	23-6	0-8	7-9	6-8	7-9
	c SF9107	1	2	2	2	2	*9	21-3	0-8	7-9	4-4	7-9
26	a SF9108	1	2	2	2	2	*9	9-3	0-8	7-9	-	0-10
	b SF9109	11	44	44	44	44	*9	25-6	0-8	8-9	6-8	8-9
	c SF9110	1	4	4	4	4	*9	23-3	0-8	8-9	4-4	8-9
27	a SF9111	1	4	4	4	4	*9	10-3	0-8	8-9	-	0-10
	b SF9112	11	44	44	44	44	*9	29-0	0-8	10-6	6-8	10-6
	c SF9113	1	4	4	4	4	*9	26-9	0-8	10-6	4-4	10-6
28	a SF9114	1	4	4	4	4	*9	12-0	0-8	10-6	-	0-10
	b SF9115	11	22	22	22	22	*9	29-5	0-8	10-10	6-8	10-10
	c SF9116	1	2	2	2	2	*9	27-6	0-9	10-10	4-4	10-10
29	a SF9117	1	2	2	2	2	*9	12-6	0-10	10-10	-	0-10
	b SF9118	11	22	22	22	22	*9	27-0	0-8	9-6	6-8	9-6
	c SF9119	1	2	2	2	2	*9	24-9	0-8	9-6	4-4	9-6
30	a SF9120	1	2	2	2	2	*9	11-0	0-8	9-6	-	0-10
	b SF9121	11	22	22	11	-	*9	18-9	0-8	5-10	6-8	5-10
	c SF9122	1	2	2	1	-	*9	17-6	0-9	5-10	4-4	5-10
31	a SF9123	1	2	2	1	-	*9	7-6	0-10	5-10	-	0-10
	b SF9124	11	22	22	22	22	*9	20-0	0-9	5-11	6-8	5-11
	c SF9125	1	2	2	2	2	*9	17-6	0-8	5-11	4-4	5-11
32	a SF9126	1	2	2	2	2	*9	7-6	0-9	5-11	-	0-10
	b SF9127	11	22	22	-	22	*9	20-0	0-8	6-0	6-8	6-0
	c SF9128	1	2	2	-	2	*9	17-9	0-8	6-0	4-4	6-0
33	a SF9129	1	2	2	-	2	*9	7-6	0-8	6-0	-	0-10
	b SF9130	11	22	22	22	-	*9	20-3	0-8	6-1	6-8	6-1
	c SF9131	1	2	2	2	-	*9	18-0	0-9	6-1	4-4	6-1
34	a SF9132	1	2	2	2	-	*9	7-9	0-9	6-1	-	0-11
	b SF9133	11	22	22	-	22	*9	20-6	0-9	6-2	6-8	6-2
	c SF9134	1	2	2	-	2	*9	18-3	0-9	6-2	4-4	6-2
35	a SF9135	1	2	2	-	2	*9	7-9	0-9	6-2	-	0-10
	b SF9136	11	22	22	22	-	*9	20-6	0-8	6-3	6-8	6-3
	c SF9137	1	2	2	2	-	*9	22-3	0-8	6-3	4-4	6-3
36	a SF9138	1	2	2	2	-	*9	7-9	0-8	6-3	-	0-10
	b SF9139	11	22	22	-	-	*9	20-9	0-8	6-4	6-8	6-4
	c SF9140	1	2	2	-	-	*9	18-9	0-9	6-4	4-4	6-4
37	a SF9141	1	2	2	-	-	*9	8-0	0-10	6-4	-	0-10
	b SF9142	11	22	22	22	-	*9	21-0	0-9	6-5	6-8	6-5
	c SF9143	1	2	2	2	-	*9	18-6	0-8	6-5	4-4	6-5
38	a SF9144	1	2	2	2	-	*9	8-0	0-9	6-5	-	0-10
	b SF9145	11	22	22	-	22	*9	21-0	0-8	6-6	6-8	6-6
	c SF9146	1	2	2	-	2	*9	18-9	0-8	6-6	4-4	6-6
39	a SF9147	1	2	2	-	2	*9	8-0	0-8	6-6	-	0-10
	b SF9148	11	22	22	22	-	*9	21-3	0-8	6-7	6-8	6-7
	c SF9149	1	2	2	2	-	*9	19-0	0-9	6-7	4-4	6-7
40	a SF9150	1	2	2	2	-	*9	8-3	0-10	6-7	-	0-10
	b SF											

FEDERAL ROAD RES NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-93	112

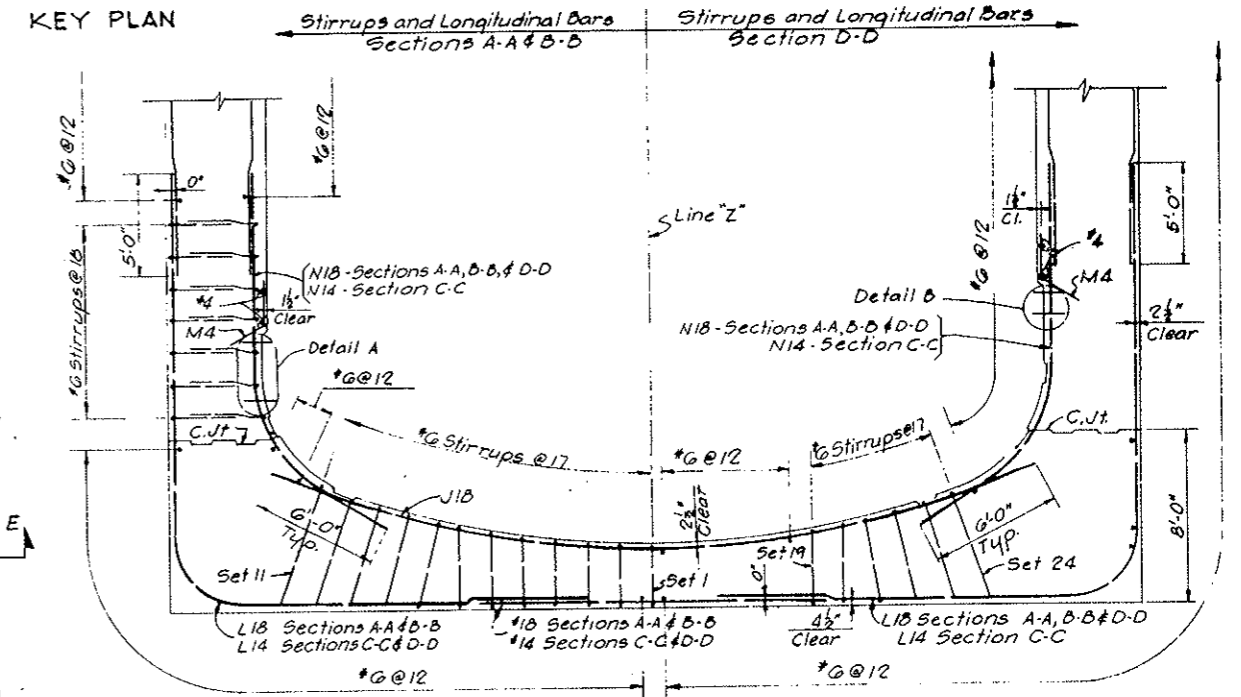
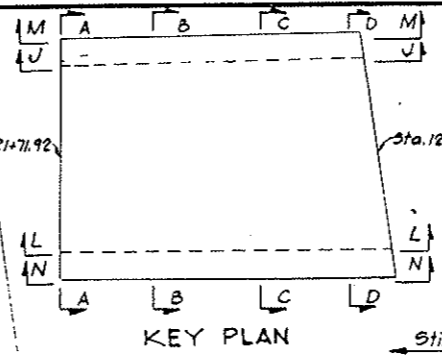
AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



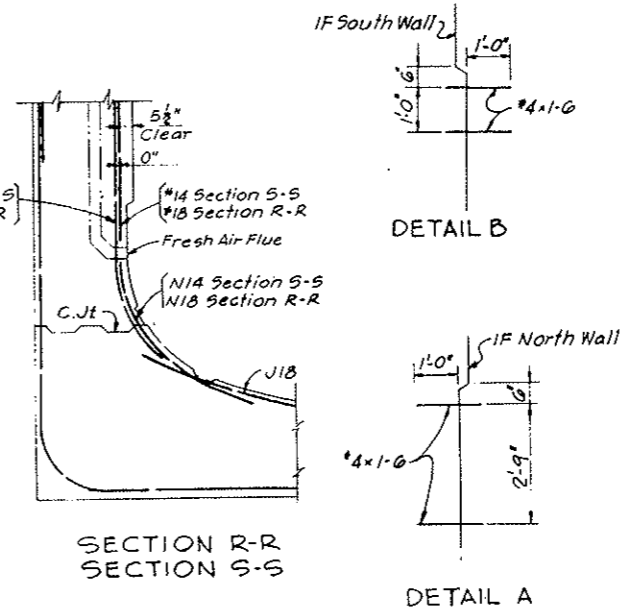
PLAN



SECTION E-E



SECTION A-A
 SECTION B-B
 SECTION C-C
 SECTION D-D



SECTION R-R
 SECTION S-S

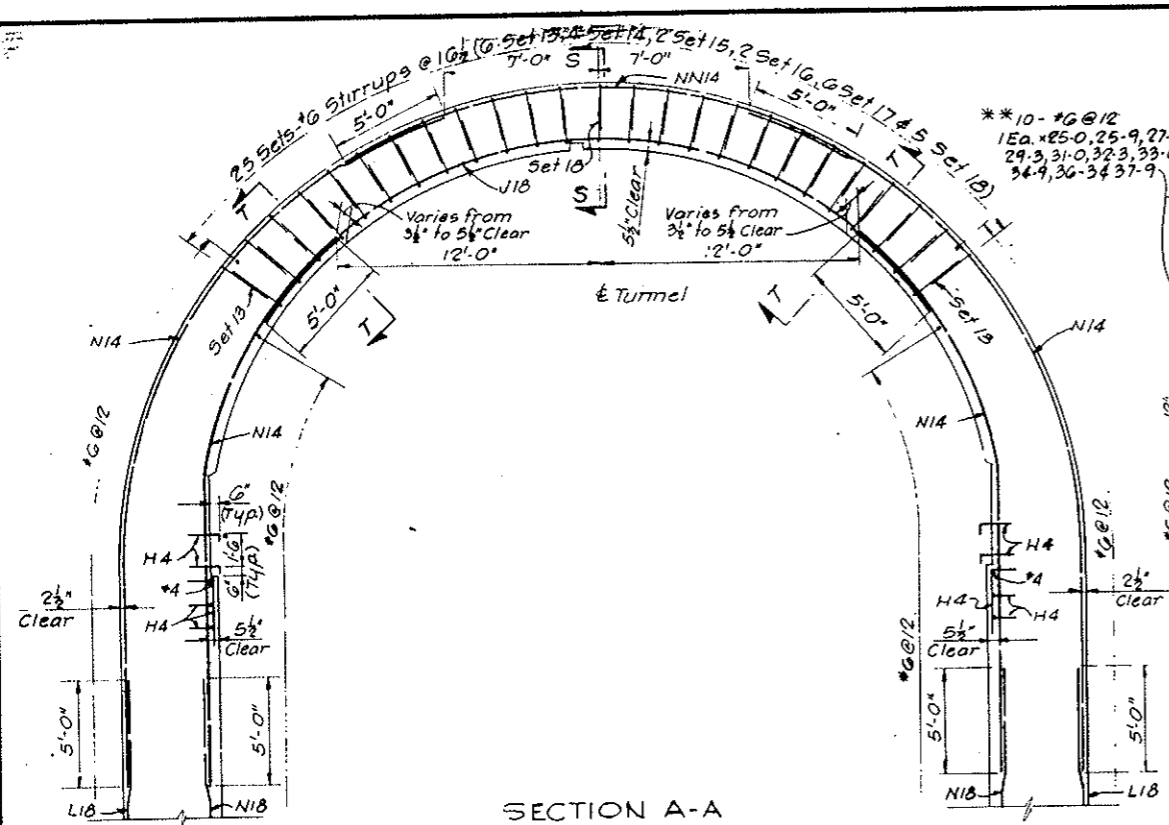
DETAIL A

NOTES:
 Work this drawing with Dwg. C3-110 through C3-124.
 For General Reinforcement Notes see Dwg. C2-103.
 For General Concrete Notes see Dwg. C2-11.
 For concrete outlines see Dwg. C3-5, C3-6 & C3-7.
 All stirrup spacing to be measured along inside face of concrete.
 Clear cover for outside face reinforcement is from neat concrete surface or the 'A' Line.
 Drape or hickey longitudinal bars or stirrups as required.
 Alternate splices of longitudinal bars wherever possible.

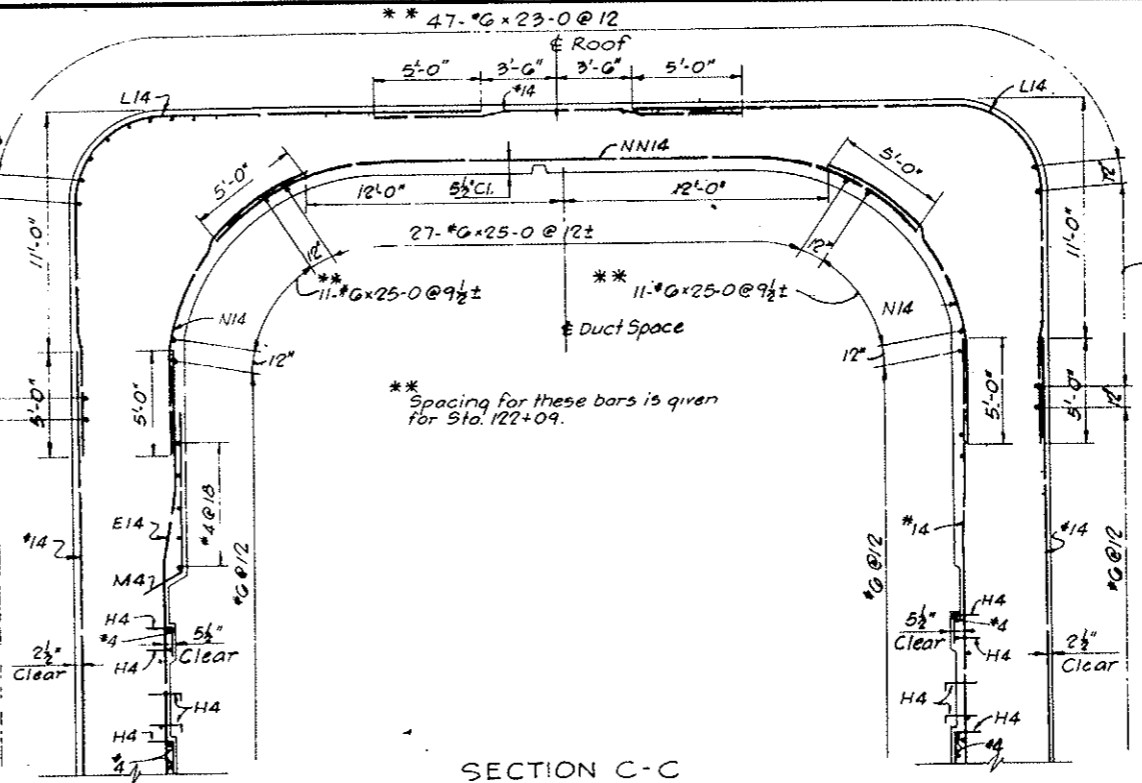
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - EAST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT BASE SLAB - PLAN AND SECTION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: D.A.	RECOMMENDED: M.F.	 APPROVED:			
CHECKED: D.A. - M.F.	DRAWN: M.F.				
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"	DATE: NOV. 1967		DRAWING NO. C3-117

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-94	112

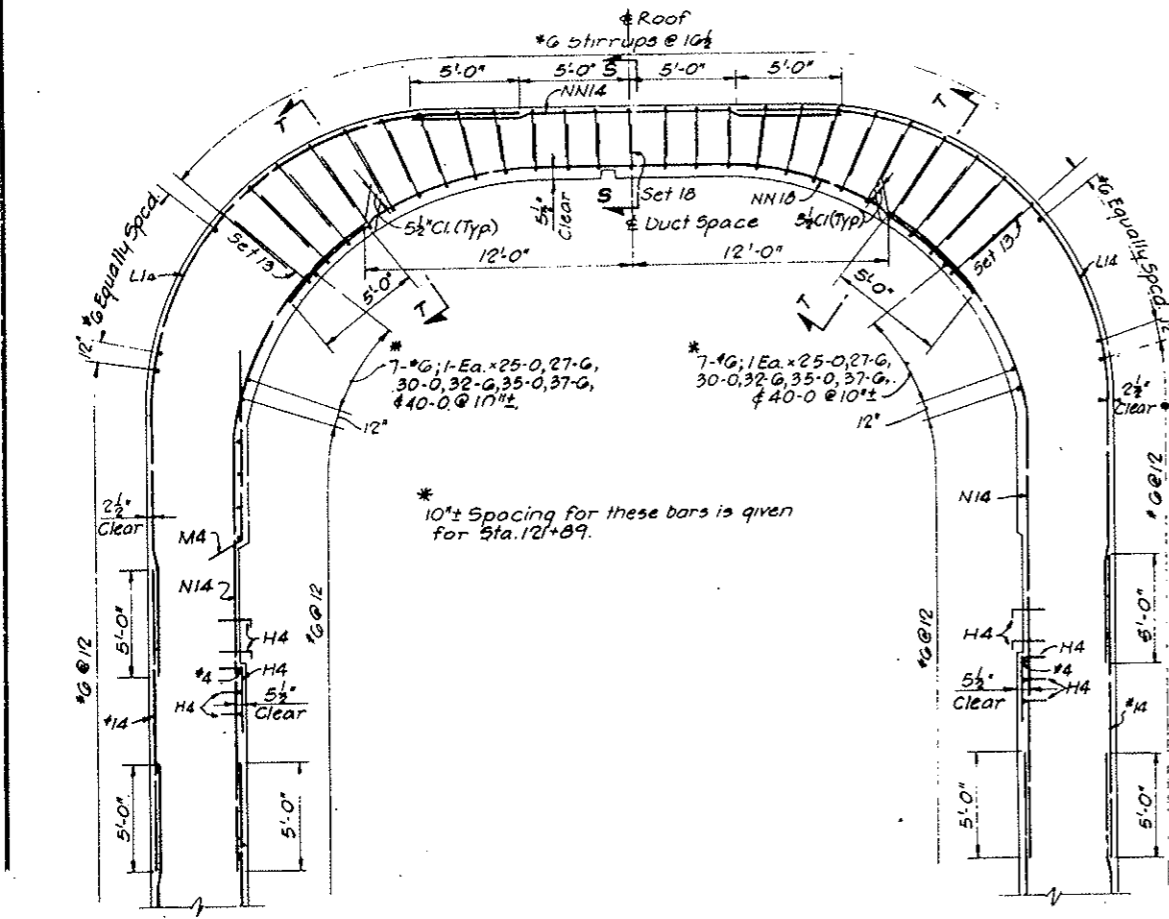
AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



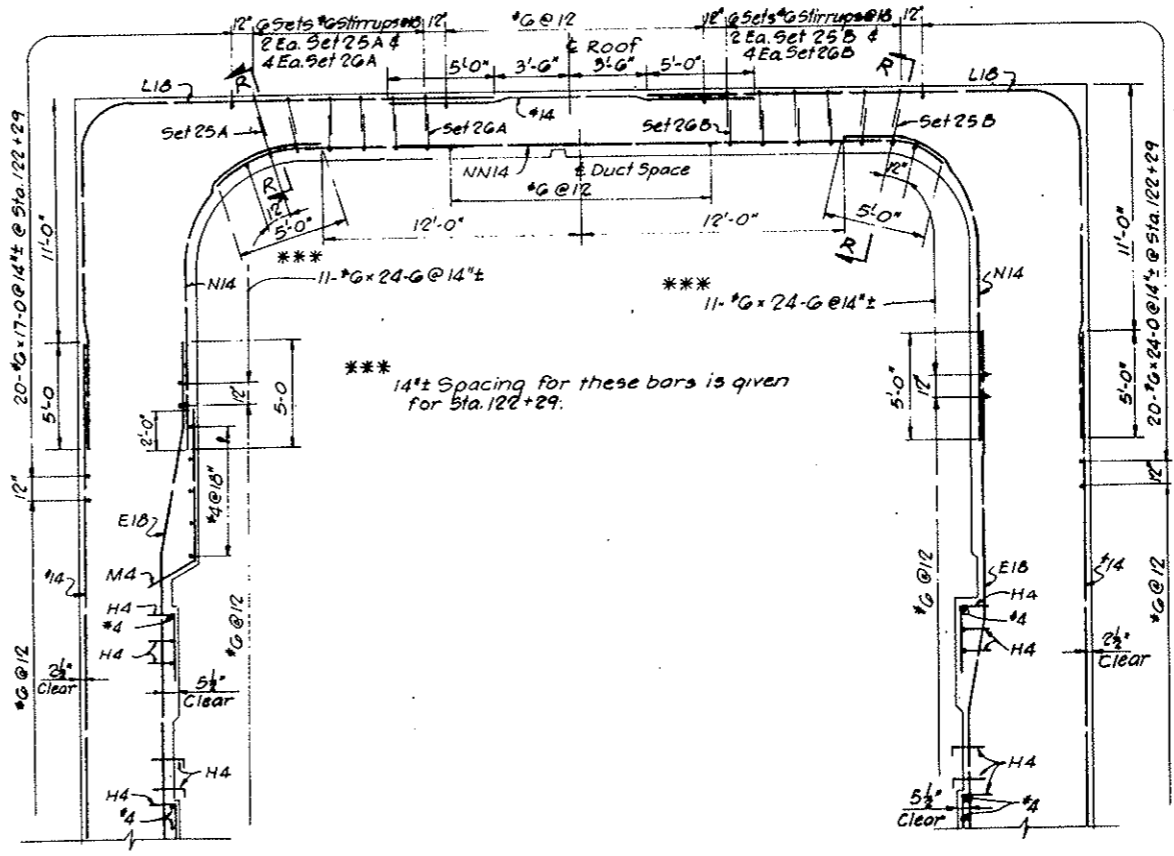
SECTION A-A



SECTION C-C



SECTION B-B



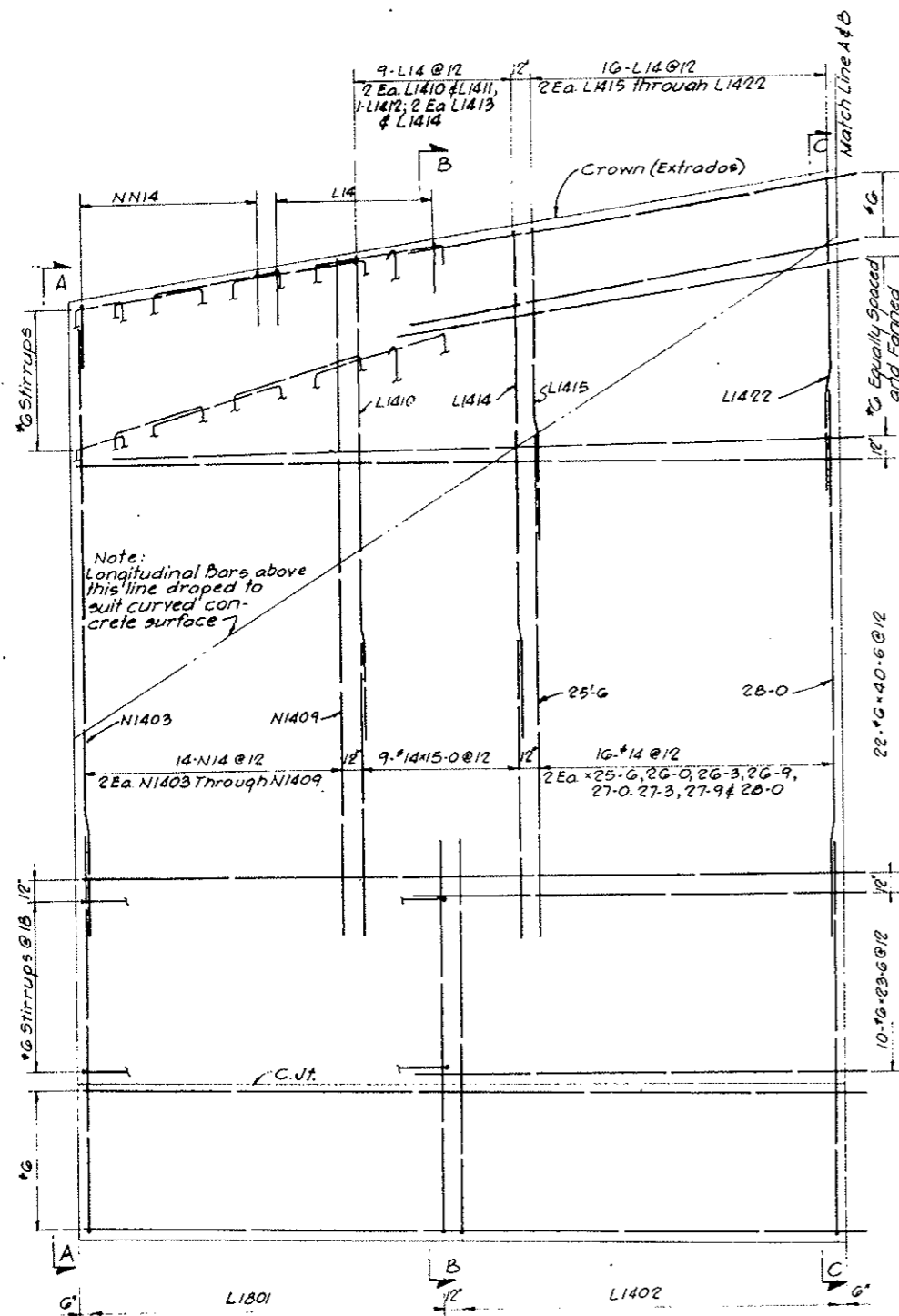
SECTION D-D

NOTES:
 Work this drawing with Dwg. C3-117 and Dwg. C3-119 through C3-124.
 All lap lengths specified on the drawings are minimum values.
 5K 4 ties for E14 and E18 bars not shown, see Detail H, Dwg. C3-120 and Detail K, Dwg. C3-121.

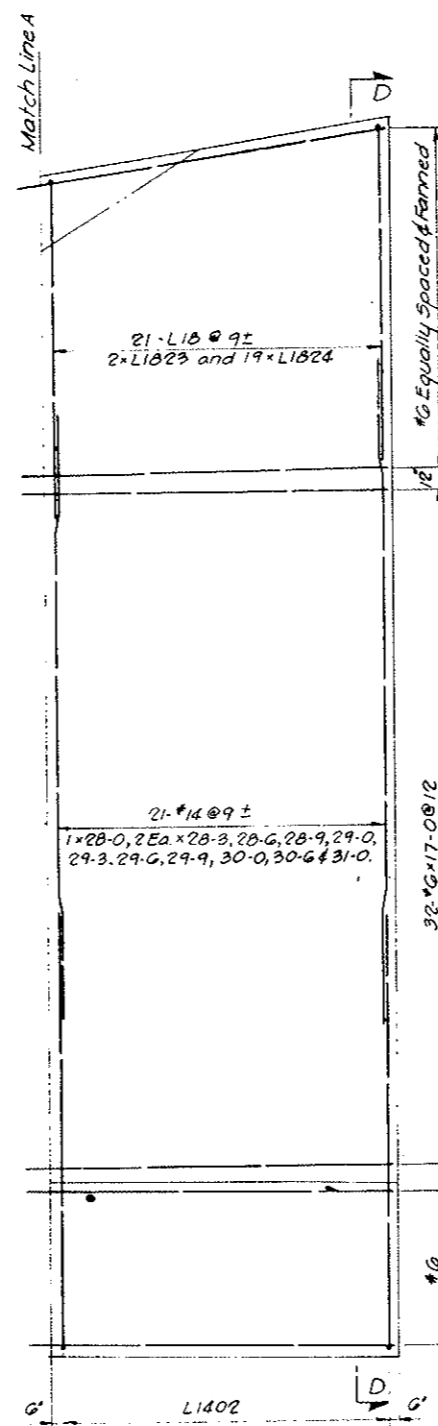
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - EAST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT CROSS SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	D.A.	RECOMMENDED	[Signature]		
DRAWN	M.F.	CHECKED	[Signature]		
CHECKED	D.A. - M.F.	APPROVED	[Signature]		
DATE	NOV. 1967	SCALE	1/4" = 1'-0"	DATE	NOV. 1967
					DRAWING NO. C3-118

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-95	112

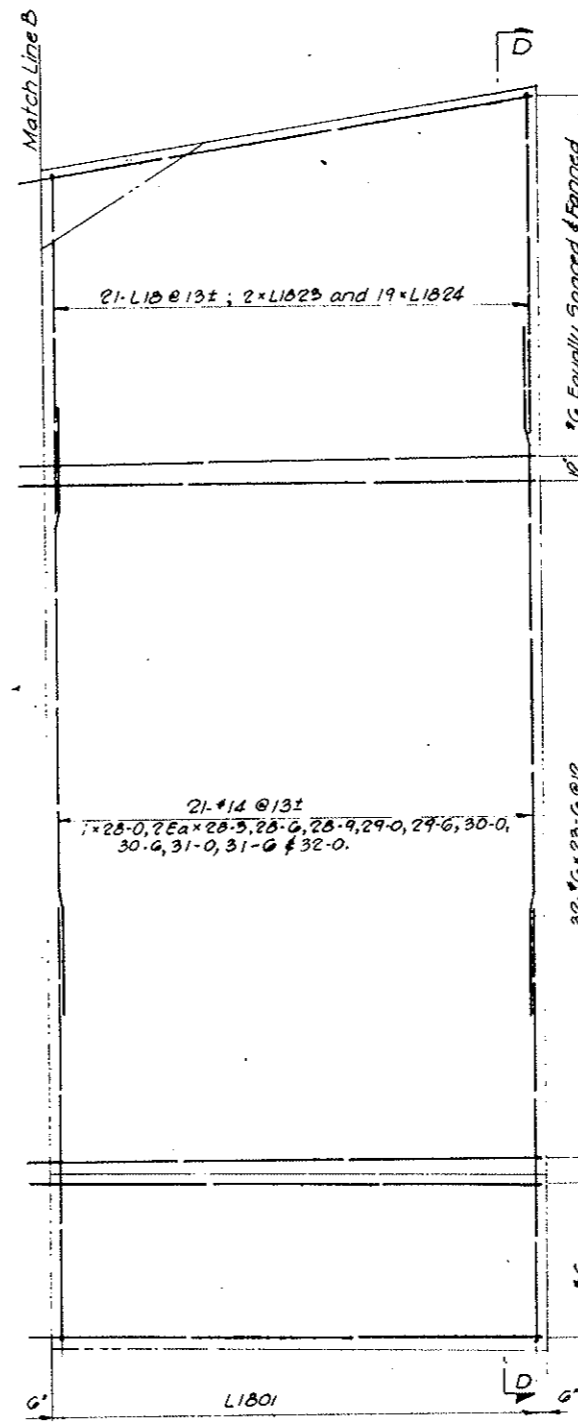
AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



SECTION M-M
SECTION N-N



SECTION M-M

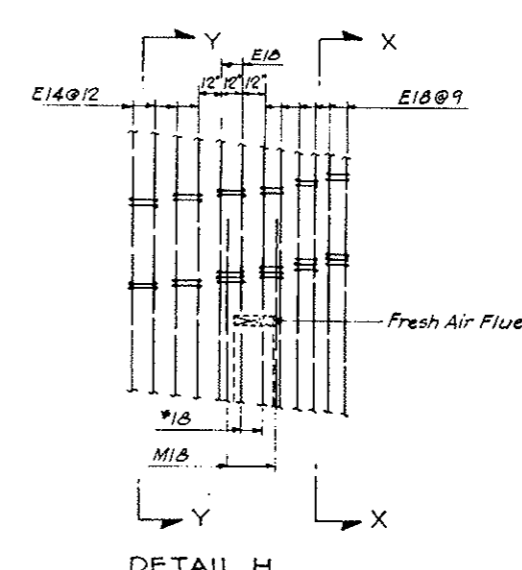
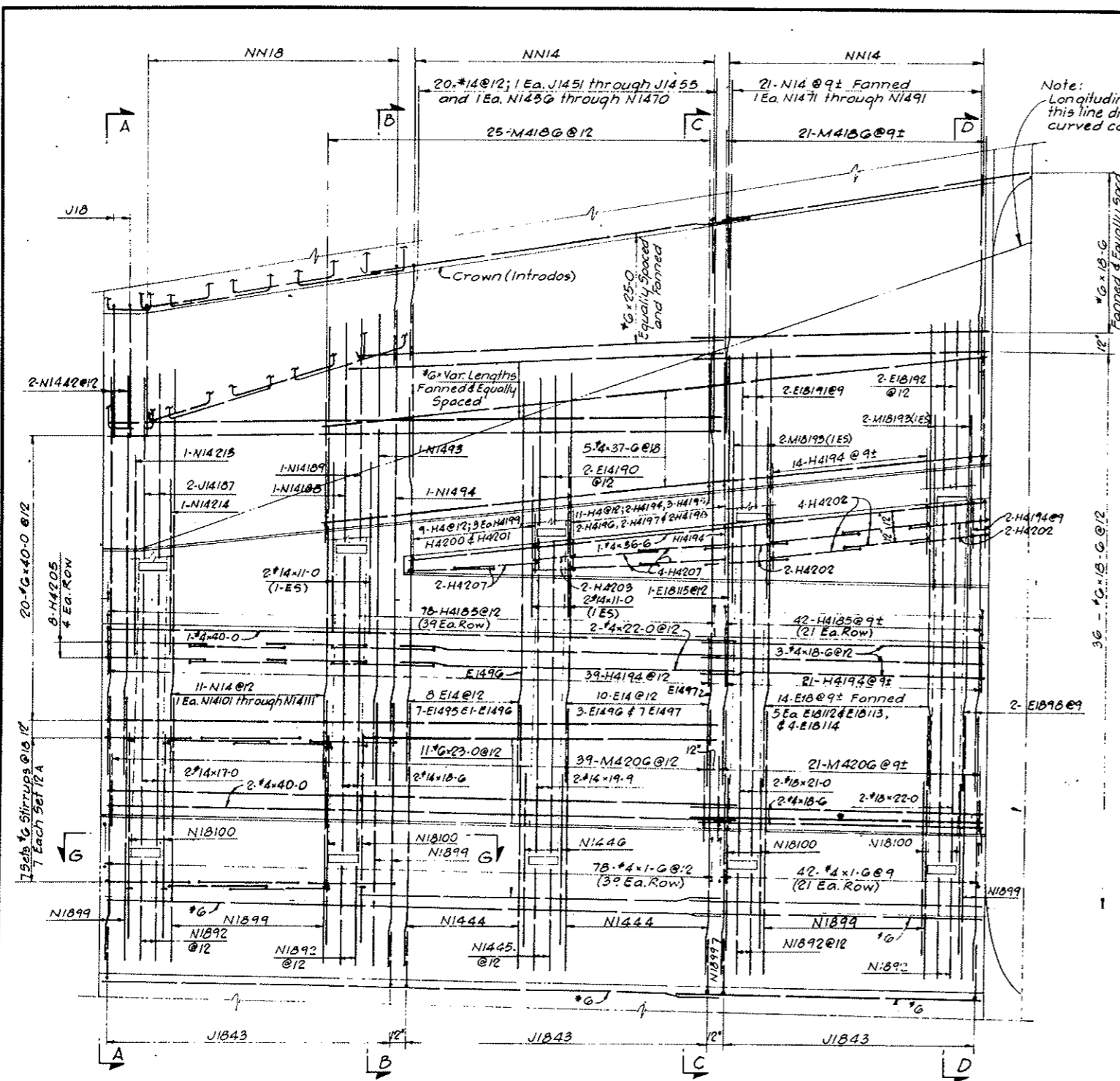


SECTION N-N

NOTES:
 Work this drawing with Dwg. C3-117, C3-118 and C3-120 through C3-124.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT					
NORTH TRANSITION SEGMENT NORTH AND SOUTH WALLS - OUTSIDE FACE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: D.A.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: M.F.	CHECKED: D.A. - M.F.				
APPROVED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
NEW YORK, N. Y.					SCALE: 1/4" = 1'-0" DATE: NOV. 1967
					DRAWING NO. C3-119

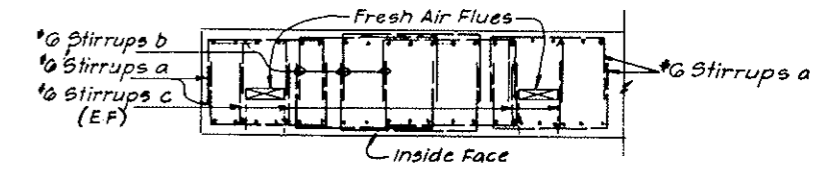
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-96	112



SECTION X-X
50 SK4210 Req'd.
5 SK4211 Req'd.

SECTION Y-Y
40 SK4211 Req'd.

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973

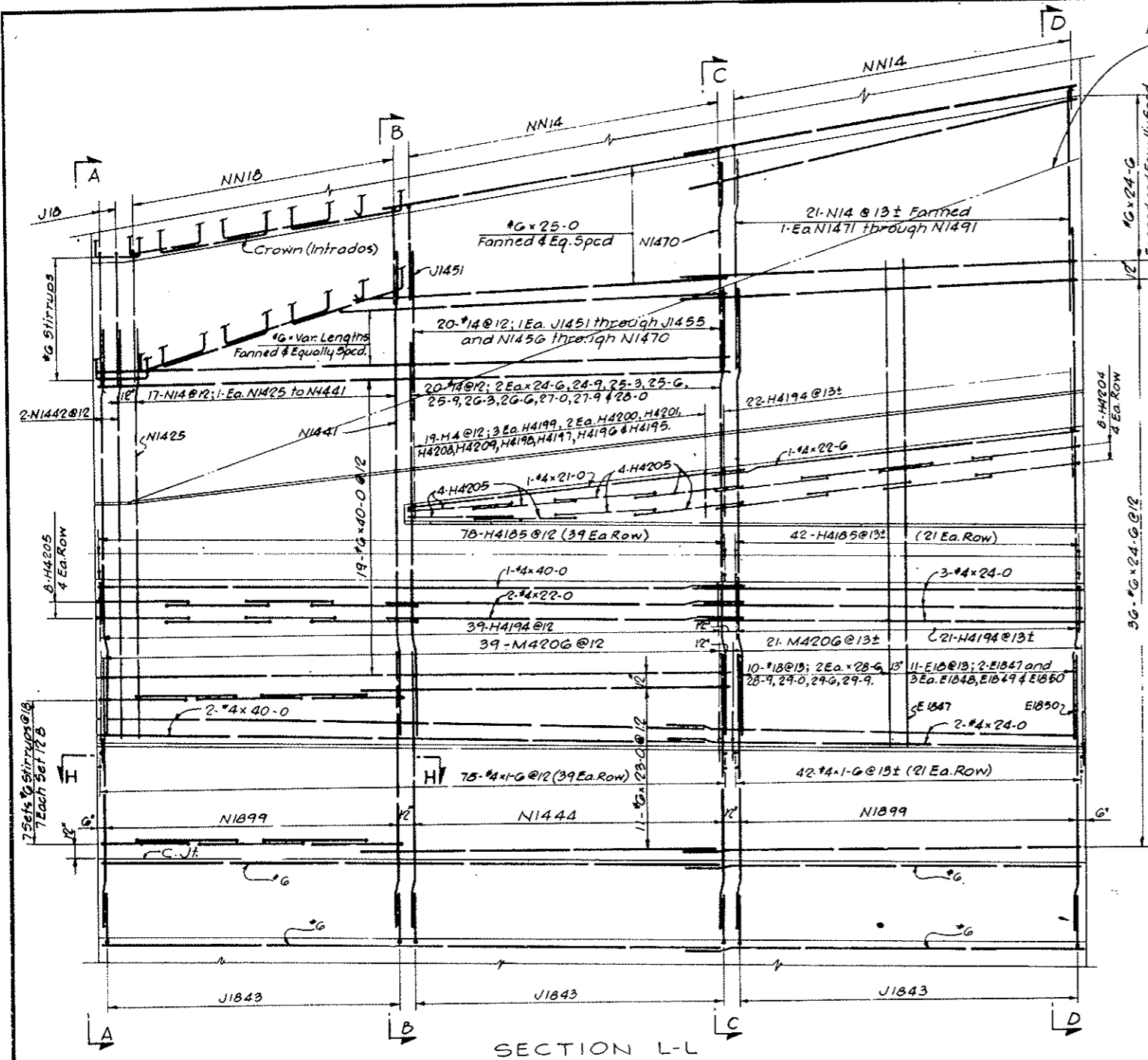


NOTES:
Work this drawing with Dwg. C3-117 through C3-119 and C3-121 through C3-124.

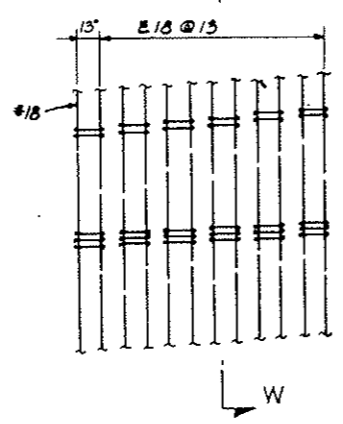
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT NORTH WALL - INSIDE FACE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: O. A. DUMMI	CHECKED: M. F. DUMMI	APPROVED: [Signature]	DRAWING NO.		
DATE: 11/1/72	SCALE: 1/4" = 1'-0"	DATE: NOV. 1967	C3-120		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-97	112

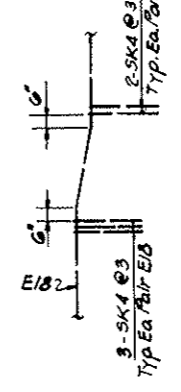
AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



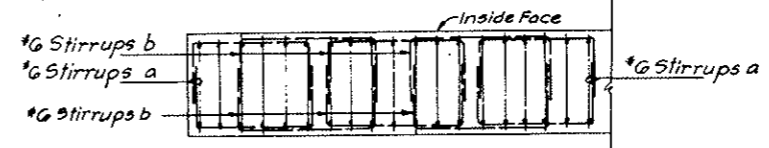
Note:
 Longitudinal bars above
 this line draped to suit
 curved concrete surface.



DETAIL K
 Typical Arrangement of E Bars
 with 5K4 Ties. For Location
 see Section L-L.



SECTION W-W
 30-5K4212 Req'd.



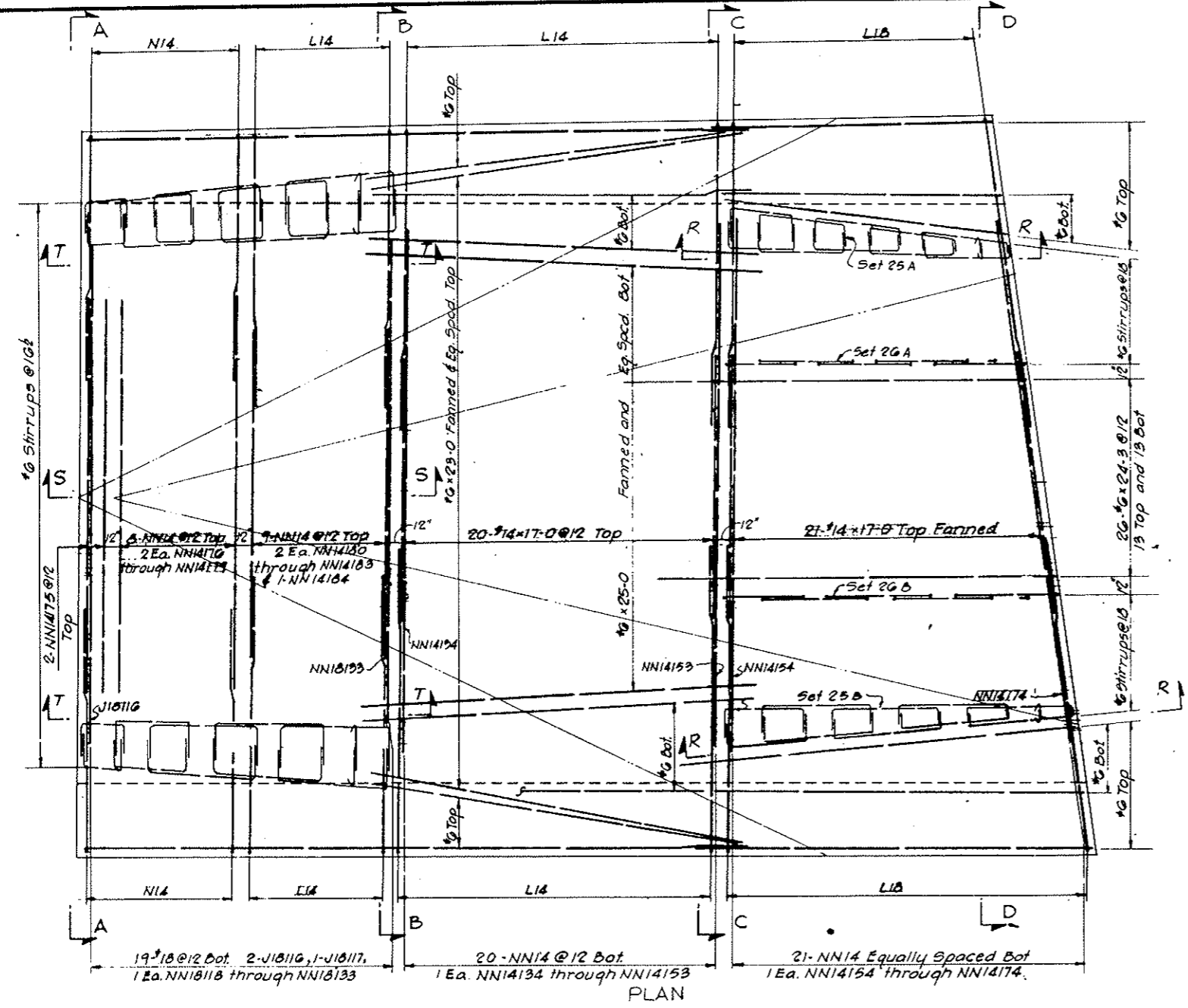
SECTION H-H

NOTES:
 Work this drawing with Dwg. C3-117 through C3-120
 and C3-122 through C3-124.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - EAST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT SOUTH WALL - INSIDE FACE TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	D.A.	RECOMMENDED	[Signature]		
DRAWN	M.F.	APPROVED	[Signature]		
CHECKED	D.A. - M.F.	DATE	NOV. 1967		
SCALE	1/4" = 1'-0"		DATE	NOV. 1967	
DRAWING NO.					C3-121

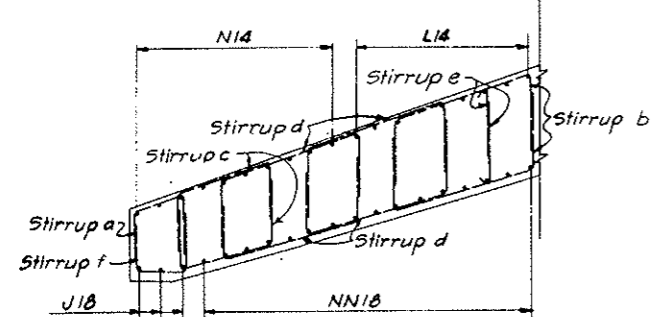
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP - 98	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973

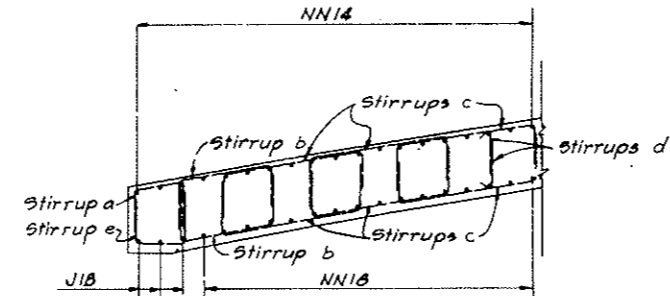


PLAN

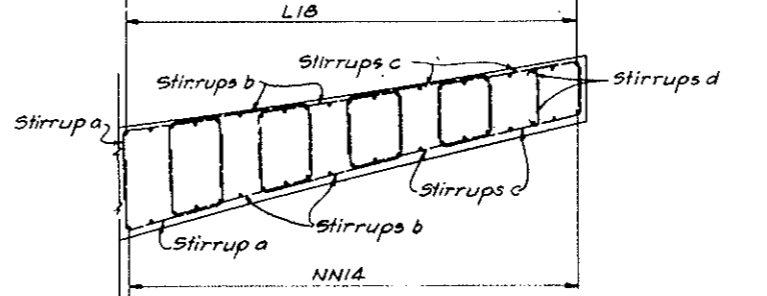
NOTES:
 Work this drawing with Dmgs. C3-117 through C3-121 and C3-123 and C3-124.



SECTION T-T
 Arrangement of Stirrups for Sets 13 and 14



SECTION S-S
 Arrangement of Stirrups for Sets 15 through 18
 Note: Drape or hickey stirrups as required.



SECTION R-R
 Arrangement of Stirrups for Sets 25A, 25B, 26A and 26B

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT ROOF SLAB AND ARCH					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: D.A.	DRWN: M.F.	CHECKED: D.A. - R.B.A.	APPROVED: [Signature]	DATE: NOV. 1967	SCALE: 1/4" = 1'-0"
					DRAWING NO. C3-122

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-99	112

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973

NOTES:
All bar marks to be prefixed by number C3-117.
Work this drawing with C3-117 through C3-122
and C3-124.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO-DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION. REINFORCEMENT NORTH TRANSITION SEGMENT REINFORCEMENT SCHEDULES I					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	A. Z. E. R. B. A.	DRAWN:	P. E. L.	CHECKED:	A. Z. E. R. B. A.
APPROVED:	<i>[Signature]</i>	APPROVED:	<i>[Signature]</i>	DRAWING NO.	
NEW YORK, N. Y.				SCALE: NO SCALE	DATE: NOV. 1967
					C3-123

REINFORCEMENT SCHEDULE - STIRRUPS

BENDING DIAGRAMS

TYPE SY TYPE SX

SET	BAR	NUMBER REQ'D	BAR	BAR	DIMENSIONS						
NO.	MARK	PER SET	TOTAL	SIZE	LENGTH	A	B	C	D	G	H
25B	a SYG399	2	4	6	11-0		3-2	4-8	3-2		0-7 1/2
	b SYG400	4	8	6	12-10		3-0	6-10	3-0		0-7
	c SYG401	4	8	6	11-10		2-6	6-10	2-6		0-6
	d SXG398	2	4	6	2-10	0-7	2-3				0-0
26A	a SYG402	2	8	6	8-8		2-4	4-0	2-4		0-4 1/2
	b SYG403	4	16	6	10-3		2-3	5-9	2-3		0-4 1/2
	c SYG404	4	16	6	9-11		2-1	5-9	2-1		0-4
	d SXG405	2	8	6	2-7	0-7	2-0				0-0
26B	a SYG406	2	8	6	9-2		2-4	4-6	2-4		0-4 1/2
	b SYG407	4	16	6	11-2		2-3	6-8	2-3		0-4 1/2
	c SYG408	4	16	6	10-10		2-1	6-8	2-1		0-4
	d SXG405	2	8	6	2-7	0-7	2-0				0-0

REINF. SCHEDULE
STRAIGHT BARS

NO.	BAR	BAR
REQ'D.	SIZE	LENGTH
2	18	29-9
2	18	29-6
2	18	29-0
2	18	28-9
2	18	28-6
2	18	22-0
2	18	21-0
19	18	16-0
2	14	32-0
2	14	31-6
4	14	31-0
4	14	30-6
4	14	30-0
4	14	30-0
4	14	29-9
4	14	29-3
4	14	29-0
4	14	28-9
4	14	28-6
4	14	28-3
8	14	28-0
6	14	27-9
4	14	27-3
6	14	27-0
4	14	26-9
2	14	26-6
6	14	26-3
4	14	26-0
2	14	25-9
6	14	25-6
2	14	25-3
2	14	24-9
2	14	24-6
2	14	19-9

REINF. SCHEDULE
STRAIGHT BARS

NO.	BAR	BAR
REQ'D.	SIZE	LENGTH
6	14	18-6
43	14	17-0
41	14	16-0
5	4	24-0
1	4	22-6
4	4	22-0
1	4	21-0
5	4	18-6
240	4	1-6
97	6	40-0
2	6	37-9
2	6	37-6
2	6	36-3
2	6	35-0
2	6	34-9
2	6	33-6
2	6	32-6
2	6	32-3
2	6	31-0
2	6	30-0
2	6	29-9
2	6	29-3
4	6	27-6
2	6	25-9
53	6	25-0
58	6	24-6
26	6	24-3
46	6	24-0
78	6	23-6
69	6	23-0
15	6	21-6
6	6	21-0
15	6	19-0
41	6	18-6
57	6	17-0

REINF. SCHEDULE
STRAIGHT BARS

NO.	BAR	BAR
REQ'D.	SIZE	LENGTH
6	4	40-0
5	4	37-6
1	4	36-6
5	4	24-0
1	4	22-6
4	4	22-0
1	4	21-0
5	4	18-6
240	4	1-6
97	6	40-0
2	6	37-9
2	6	37-6
2	6	36-3
2	6	35-0
2	6	34-9
2	6	33-6
2	6	32-6
2	6	32-3
2	6	31-0
2	6	30-0
2	6	29-9
2	6	29-3
4	6	27-6
2	6	25-9
53	6	25-0
58	6	24-6
26	6	24-3
46	6	24-0
78	6	23-6
69	6	23-0
15	6	21-6
6	6	21-0
15	6	19-0
41	6	18-6
57	6	17-0

REINFORCEMENT SCHEDULE - STIRRUPS

BENDING DIAGRAMS

TYPE SF TYPE SK TYPE SY TYPE SX

SET	BAR	NUMBER REQ'D	BAR	BAR	DIMENSIONS						
NO.	MARK	PER SET	TOTAL	SIZE	LENGTH	A	B	C	D	G	H
16	a SYG353	1	2	6	7-4		2-5	2-6	2-5		0-7
	b SYG354	2	4	6	9-10		2-7	4-8	2-7		0-7 1/2
	c SYG355	6	12	6	12-1		2-8	6-9	2-8		0-8
	d SXG356	2	4	6	3-3	0-7	2-8				0-0
	e SXG348	1	2	6	7-2		2-4	2-6	2-4		
17	a SYG353	1	6	6	7-4		2-5	2-6	2-5		0-7
	b SYG357	2	12	6	9-7		2-6	4-7	2-6		0-7
	c SYG358	6	36	6	11-8		2-6	6-8	2-6		0-7
	d SXG359	2	12	6	3-0	0-7	2-5				0-0
	e SXG360	1	6	6	7-0		2-3	2-6	2-3		
18	a SYG361	1	5	6	7-0		2-3	2-6	2-3		0-4 1/2
	b SYG362	2	10	6	9-0		2-3	4-6	2-3		0-4 1/2
	c SYG363	6	30	6	11-1		2-3	6-7	2-3		0-4 1/2
	d SXG364	2	10	6	2-10	0-7	2-3				0-0
	e SXG360	1	5	6	7-0		2-3	2-6	2-3		
19A	a SYG365	1	1	6	11-2	0-5	3-3	3-10	3-3		0-5
	b SYG366	4	4	6	12-11	0-5	3-3	5-7	3-3		0-5
	c SXG367	1	1	6	4-5	0-7	3-3				0-7
19B	a SYG368	1	1	6	11-11	0-5	3-3	4-7	3-3		0-5
	b SYG369	4	4	6	14-0	0-5	3-3	6-8	3-3		0-5
	c SXG367	1	1	6	4-5	0-7	3-3				0-7
20A	a SYG370	1	1	6	11-10	0-5	3-7	3-10	3-7		0-5
	b SYG371	4	4	6	13-7	0-5	3-7	5-7	3-7		0-5
	c SXG372	1	1	6	4-9	0-7	3-7				0-7
20B	a SYG373	1	1	6	12-7	0-5	3-7	4-7	3-7		0-5
	b SYG374	4	4	6	14-8	0-5	3-7	6-8	3-7		0-5
	c SXG372	1	1	6	4-9	0-7	3-7				0-7
21A	a SYG375	1	1	6	12-6	0-5	3-11	3-10	3-11		0-5
	b SYG376	4	4	6	14-3	0-5	3-11	5-7	3-11		0-5
	c SXG377	1	1	6	5-1	0-7	3-11				0-7
21B	a SYG378	1	1	6	13-3	0-5	3-11	4-7	3-11		0-5
	b SYG379	4	4	6	15-4	0-5	3-11	6-8	3-11		0-5
	c SXG377	1	1	6	5-1	0-7	3-11				0-7
22A	a SXG380	1	1	6	12-6		4-4	3-10	4-4		
	b SXG381	4	4	6	14-3		4-4	5-7	4-4		
	c SXG382	1	1	6	5-6	0-7	4-4				0-7
22B	a SXG383	1	1	6	13-3		4-4	4-7	4-4		
	b SXG384	4	4	6	15-4		4-4	6-8	4-4		
	c SXG382	1	1	6	5-6	0-7	4-4				0-7
23A	a SXG385	1	1	6	13-4		4-9	3-10	4-9		
	b SXG386	4	4	6	15-1		4-9	5-7	4-9		
	c SXG387	1	1	6	5-11	0-7	4-9				0-7
23B	a SXG388	1	1	6	14-1		4-9	4-7	4-9		
	b SXG389	4	4	6	16-2		4-9	6-8	4-9		
	c SXG387	1	1	6	5-11	0-7	4-9				0-7
24A	a SXG390	1	1	6	14-4		5-3	3-10	5-3		
	b SXG391	4	4	6	16-1		5-3	5-7	5-3		
	c SXG392	1	1	6	6-5	0-7	5-3				0-7
24B	a SXG393	1	1	6	15-1		5-3	4-7	5-3		
	b SXG394	4	4	6	17-2		5-3	6-8	5-3		
	c SXG392	1	1	6	6-5	0-7	5-3				0-7
25A	a SYG395	2	4	6	10-2		3-2	3-10	3-2		0-7 1/2
	b SYG396	4	8	6	11-7		3-0	5-7	3-0		0-7 1/2
	c SYG397	4	8	6	10-7		2-6	5-7	2-6		0-6
	d SXG398	2	4	6	2-10	0-7	2-3				0-0

REINFORCEMENT SCHEDULE - STIRRUPS

BENDING DIAGRAMS

TYPE SF TYPE SK TYPE SY TYPE SX

SET	BAR	NUMBER REQ'D	BAR	BAR	DIMENSIONS						
NO.	MARK	PER SET	TOTAL	SIZE	LENGTH	A	B	C	D	G	H
1	a SFG301	1	3	6	9-4	0-5	2-7	3-4	2-7		0-5
	b SFG302	5	15	6	10-10	0-5	2-7	4-10	2-7		0-5
	c SFG303	1	3	6	8-10	0-5	2-7	2-10	2-7		0-5
2	a SFG304	1	2	6	9-6	0-5	2-8	3-4	2-8		0-5
	b SFG305	5	10	6	11-0	0-5	2-8	4-10	2-8		0-5
	c SFG306	1	2	6	9-0	0-5	2-8	2-10	2-8		0-5
3	a SFG307	1	2	6	9-10	0-5	2-10	3-4	2-10		0-5
	b SFG308	5	10	6	11-4	0-5	2-10	4-10	2-10		0-5
	c SFG309	1	2	6	9-4	0-5	2-10	2-10	2-10		0-5
4	a SFG310	1	2	6	10-2	0-5	3-0	3-4	3-0		0-5
	b SFG311	5	10	6	11-8	0-5	3-0	4-10	3-0		0-5
	c SFG312	1	2	6	9-8	0-5	3-0	2-10	3-0		0-5
5	a SFG313	1	2	6	10-8	0-5	3-3	3-4	3-3		0-5
	b SFG314	5	10	6	12-2	0-5	3-3	4-10	3-3		0-5
	c SFG315	1	2	6	10-2	0-5	3-3	2-10	3-3		0-5
6	a SFG316	1	2	6	11-4	0-5	3-7	3-4	3-7		0-5
	b SFG317	5	10	6	12-10	0-5	3-7	4-10	3-7		0-5
	c SFG318	1	2	6	10-10	0-5	3-7	2-10	3-7		0-5
7	a SFG319	1	2	6	12-0	0-5	3-11	3-4	3-11		0-5
	b SFG320	5	10	6	13-6	0-5	3-11	4-10	3-11		0-5
	c SFG321	1	2	6	11-6	0-5	3-11	2-10	3-11		0-5
8	a SXG322	1	2								

REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS
TYPE E, TYPE H, TYPE J, TYPE L

BAR MARK	NO.	REQ'D	SIZE	LENGTH	B	C	D	H	R
E1047	2	10	30-5	13-3	2-6	14-0	0-5		
E1048	3	1	30-10	13-4	3-6	14-0	0-7		
E1049	3	1	31-3	13-6	4-0	13-9	0-8		
E1050	3	1	31-9	13-9	4-6	13-6	0-9		
E1098	2	1	31-1	1-9	7-4	22-0	1-2		
E10112	5	1	28-2	4-0	4-8	19-0	0-9		
E10113	5	1	29-4	4-6	5-4	19-0	0-0		
E10114	4	1	30-7	3-0	6-1	21-0	0-14		
E10116	1	1	28-0	6-3	3-0	18-9	0-6		
E10191	2	1	11-2	4-0	4-8	2-6	0-9		
E10192	2	10	11-9	2-6	6-9	2-6	1-14		
E1495	7	14	25-9	4-6	3-0	18-3	0-4		
E1496	4	14	26-9	4-9	3-0	19-0	0-5		
E1497	7	14	28-0	5-3	3-0	19-9	0-6		
E1490	2	14	10-0	4-9	5-0	2-3	0-5		
H4185	240	4	1-10	0-4	1-6	0			
H4194	160	1	4-3	1-3	5-0				
H4195	5	1	4-0	1-3	2-9				
H4196	4	1	3-9	1-3	2-6				
H4197	4	1	3-6	1-3	2-3				
H4198	4	1	3-5	1-3	2-0				
H4199	6	1	2-1	0-10	1-3				
H4200	5	1	2-4	1-1	1-3				
H4201	5	1	2-6	1-3	1-3	0			
H4202	8	1	8-0	1-3	5-6	1-3			
H4203	2	1	5-8	1-3	3-2	1-3			
H4204	8	1	9-2	1-3	6-8	1-3			
H4205	24	1	8-10	1-3	6-4	1-3			
H4207	6	1	7-9	1-3	5-3	1-3			
H4208	2	1	2-9	1-3	1-6	0			
H4209	2	4	3-0	1-3	1-9	0			
J1843	66	18	36-6	35-6	4-0	42-8			
J18116	2	18	36-1	30-6	8-0	18-8			
J18117	1	18	36-1	30-6	8-2	18-5			
J1451	2	14	13-6	12-11	1-7	14-3			
J1452	2	1	13-6	13-1	1-8	14-0			
J1453	2	1	13-6	13-2	1-8	13-9			
J1454	2	1	13-6	13-2	1-8	13-6			
J1455	2	1	13-10	13-3	1-9	13-3			
J14187	2	14	13-3	12-9	1-5	15-9			
L1801	59	18	38-1	17-1	4-8	16-3	3-0		
L1823	4	18	33-8	13-1	4-4	16-3	2-9		
L1824	38	18	35-0	13-6	3-6	18-0	2-3		
L1402	61	14	38-1	17-1	4-8	16-3	3-0		
L1410	4	1	35-7	2-4	23-5	10-0	14-10		
L1411	4	1	37-3	4-6	21-9	11-0	12-11		
L1412	2	1	37-10	5-6	20-4	12-0	12-3		
L1413	4	1	39-0	6-3	19-6	13-3	11-6		
L1414	4	1	39-7	7-3	17-10	14-6	10-6		
L1415	4	1	29-9	8-3	16-6	5-0	9-6		
L1416	4	1	30-2	9-3	14-11	6-0	8-7		
L1417	4	1	30-10	10-4	13-6	7-0	7-7		
L1418	4	1	31-2	11-3	11-11	8-0	6-7		
L1419	4	1	31-10	12-3	10-4	9-3	5-8		
L1420	4	1	32-5	13-3	8-11	10-3	4-8		
L1421	4	1	32-10	14-3	7-4	11-3	3-9		
L1422	4	14	33-5	15-3	5-11	12-3	2-9		

REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS
TYPE N, TYPE M

BAR MARK	NO.	REQ'D	SIZE	LENGTH	B	C	D	H	K	R
M18193	4	18	11-0		8-6	2-6		0-5		
M4186	46	4	10-0		7-6	2-6		1-3		
M4208	120	4	4-0		2-0	2-0		1-0		
N1892	8	18	9-6	0	7-0	2-6	6-1	6-5		
N1899	72	18	19-7	9-3	7-10	2-6	6-1	6-5		
N18100	8	18	18-0	0	8-6	6-6	2-0	6-5		
N1403	4	14	37-9	0	27-3	10-6	20-10	21-7		
N1404	4	1	38-6	1	27-0	11-6	20-1	20-8		
N1405	4	1	39-4	1	26-4	13-0	19-3	19-8		
N1406	4	1	40-4	1	25-10	14-6	18-6	18-9		
N1407	4	1	41-3	1	25-3	16-0	17-6	17-9		
N1408	4	1	42-6	1	25-0	17-6	16-8	16-9		
N1409	4	1	43-2	1	24-2	19-0	6-5	15-10		
N1425	1	1	27-0	1	14-1	12-11	6-5	15-8		
N1426	1	1	27-6	1	14-1	13-5	6-5	14-11		
N1427	1	1	28-0	1	14-0	13-6	6-5	15-7		
N1428	1	1	28-4	1	14-5	13-11	6-5	15-5		
N1429	1	1	28-7	1	14-2	14-5	6-5	15-3		
N1430	1	1	29-0	1	14-3	14-9	6-5	14-8		
N1431	1	1	29-5	1	14-3	15-2	6-4	14-11		
N1432	1	1	29-8	1	14-4	15-4	6-4	15-2		
N1433	1	1	29-7	1	13-10	15-9	6-4	15-0		
N1434	1	1	30-4	1	14-1	16-3	6-4	14-8		
N1435	1	1	30-9	1	14-3	16-6	6-4	14-10		
N1436	1	1	31-1	1	14-1	17-0	6-4	14-8		
N1437	1	1	31-0	1	13-8	17-4	6-3	14-10		
N1438	1	1	31-3	1	14-1	17-2	6-3	15-6		
N1439	1	1	31-10	1	14-4	17-6	6-3	15-6		
N1440	1	1	32-4	1	14-4	18-0	6-3	15-1		
N1441	1	1	32-6	1	14-3	18-3	6-3	14-10		
N1442	4	1	27-2	0	14-5	12-9	6-5	15-11		
N1444	38	1	19-10	9-6	7-10	2-6	6-1	6-5		
N1445	2	1	9-6	0	7-0	2-6	6-1	6-5		
N1446	2	1	12-0	1	5-6	6-6	2-0	6-5		
N1456	2	1	13-8	1	13-2	0-6	6-3	13-0		
N1457	2	1	14-0	1	13-3	0-9	6-3	12-9		
N1458	2	1	14-0	1	13-0	1-0	6-4	12-6		
N1459	2	1	14-4	1	13-1	1-3	6-4	12-3		
N1460	2	1	14-4	1	12-10	1-6	6-4	12-0		
N1461	2	1	14-7	1	12-10	1-9	6-4	11-9		
N1462	2	1	14-9	1	12-9	2-0	6-4	11-6		
N1463	2	1	14-11	1	12-8	2-3	6-7	11-3		
N1464	2	1	15-1	1	12-7	2-6	6-7	11-0		
N1465	2	1	15-3	1	12-6	2-9	6-8	10-9		
N1466	2	1	15-5	1	12-5	3-0	6-8	10-6		
N1467	2	1	15-5	1	12-2	3-3	6-8	10-3		
N1468	2	1	15-6	1	12-0	3-6	6-6	10-0		
N1469	2	1	15-6	1	11-9	3-9	6-5	9-10		
N1470	2	1	15-6	1	11-6	4-0	6-4	9-6		
N1471	2	1	15-6	1	11-4	4-2	6-3	9-4		
N1472	2	1	15-7	1	11-3	4-4	6-3	9-0		
N1473	2	1	15-9	1	11-2	4-7	6-3	8-10		
N1474	2	1	16-0	1	11-1	4-11	6-4	8-7		
N1475	2	1	16-0	1	10-11	5-1	6-4	8-4		
N1476	2	1	16-1	1	10-9	5-4	6-4	8-1		
N1477	2	1	16-3	1	10-7	5-8	6-4	7-10		
N1478	2	1	16-4	1	10-6	5-10	6-4	7-7		
N1479	2	1	16-5	1	10-4	6-1	6-3	7-4		
N1480	2	1	16-5	1	10-2	6-3	6-4	7-1		
N1481	2	1	16-5	1	9-11	6-6	6-4	6-10		
N1482	2	1	17-0	1	10-3	6-9	6-9	6-7		
N1483	2	1	16-10	1	9-11	6-11	6-8	6-4		
N1484	2	1	16-7	1	9-6	7-1	6-5	6-1		
N1485	2	14	16-5	1	9-2	7-3	6-2	5-10		
N1486	2	14	16-2	0	8-9	7-5	5-11	5-7		

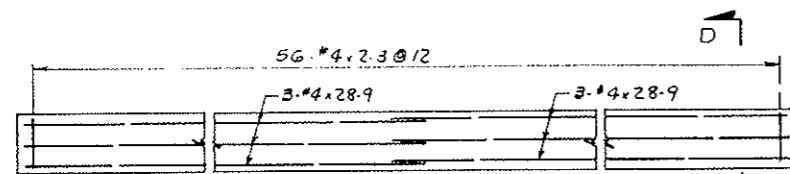
REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAMS
TYPE N, TYPE NN

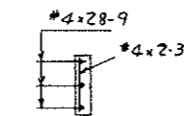
BAR MARK	NO.	REQ'D	SIZE	LENGTH	B	C	D	H	R	
N1487	2	14	16-0	0	8-5	7-7	5-9	5-4		
N1488	2	1	15-9	1	8-0	7-9	5-3	5-1		
N1489	2	1	15-6	1	7-7	7-11	5-2	4-10		
N1490	2	1	15-5	1	7-4	8-1	5-0	4-7		
N1491	2	1	15-1	1	6-10	8-3	4-9	4-4		
N1493	1	1	31-6	1	14-0	17-6	6-2	14-2		
N1494	1	1	32-3	1	14-6	17-9	6-3	14-10		
N14101	1	1	27-8	1	14-8	13-0	6-1	16-1		
N14102	1	1	28-0	1	14-6	13-6	6-0	15-10		
N14103	1	1	28-5	1	14-8	13-9	6-1	16-0		
N14104	1	1	28-4	1	14-4	14-0	6-2	15-8		
N14105	1	1	29-0	1	14-9	14-3	6-2	16-2		
N14106	1	1	29-3	1	14-9	14-6	6-2	16-2		
N14107	1	1	29-8	1	14-11	14-9	6-3	16-4		
N14108	1	1	29-11	1	14-11	15-0	6-3	16-4		
N14109	1	1	30-5	1	15-2	15-3	6-4	16-7		
N14110	1	1	30-9	1	15-3	15-6	6-5	16-7		
N14111	1	1	31-1	1	15-4	15-9	6-5	16-8		
N14188	1	1	15-9	1	15-0	0-9	6-5	16-7		
N14189	1	1	16-3	1	15-0	1-3	6-6	16-6		
N14213	1	1	11-0	1	4-6	6-6	1-3	16-0		
N14214	1	14	11-0	0	4-3	6-9	1-3	16-2		
NN1818	1	18	36-11	18-1	0-9	18-1	8-3	18-2		
NN1819	1	1	36-11	17-10	1-3	17-10	7-10	17-11		
NN1820	1	1	37-0	17-8	1-8	17-8	8-2	17-9		
NN1821	1	1	36-8	17-3	2-2	17-3	7-9	17-4		
NN1822	1	1	36-8							

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-101	112

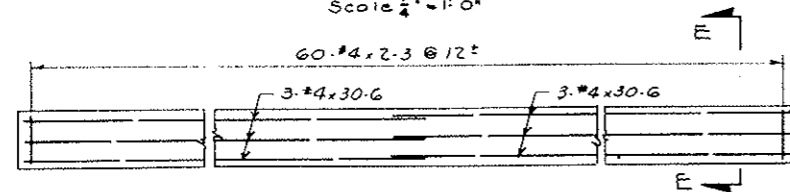
AS CONSTRUCTED
 REVISED DATE



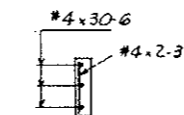
SECOND STAGE UPPER WALL CONCRETE
 LOW WALKWAY SIDE
 Scale $\frac{1}{4}'' = 1'-0''$



SECT. D-D



SECOND STAGE UPPER WALL CONCRETE
 HIGH WALKWAY SIDE
 Scale $\frac{1}{4}'' = 1'-0''$



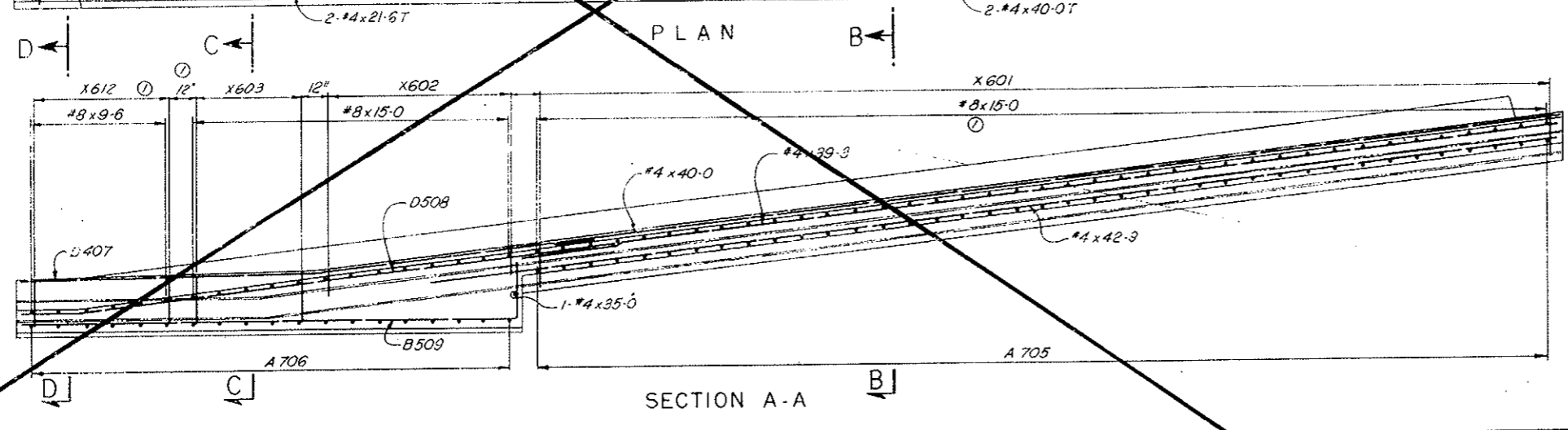
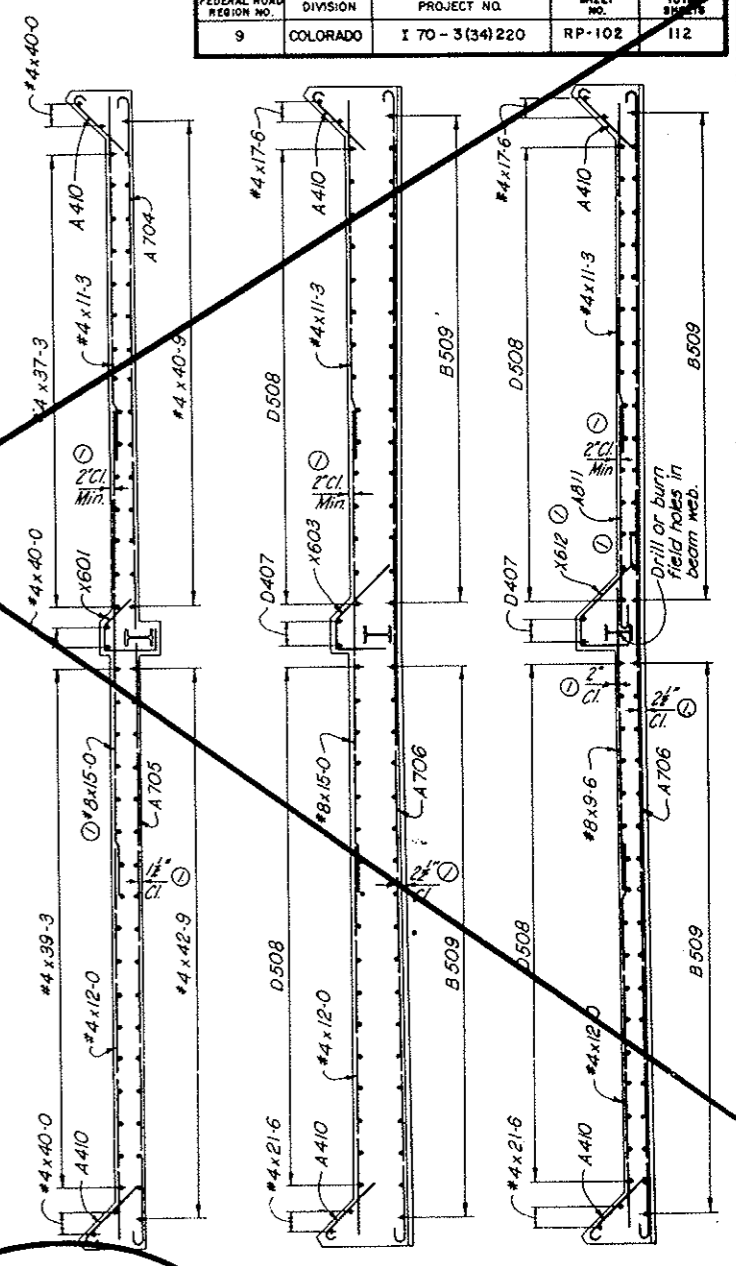
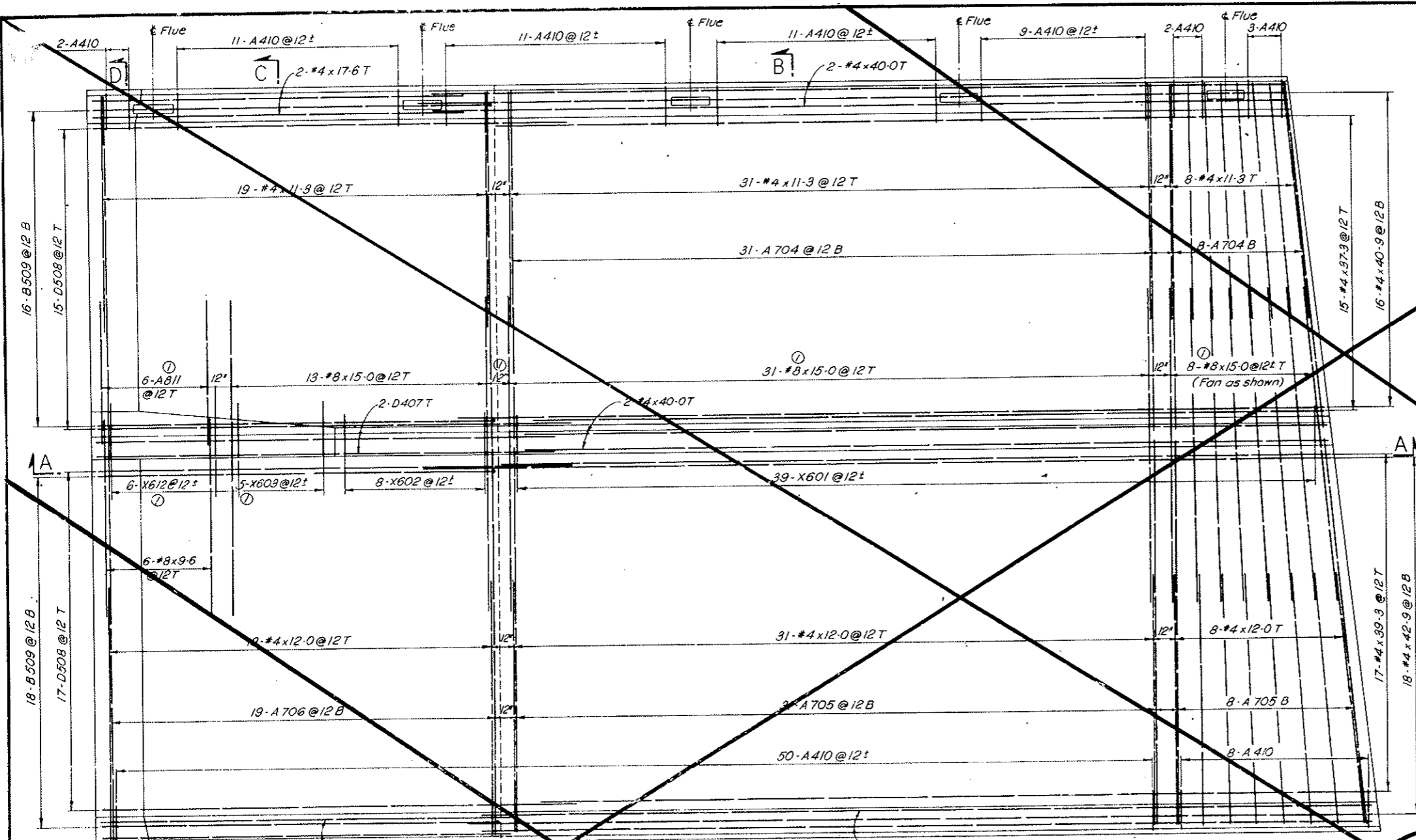
SECT. E-E

UPPER WALL L.W. SIDE		
G	#4	28-9
5G	#4	2-3
UPPER WALL H.W. SIDE		
G	#4	30-6
6G	#4	2-3

NOTES:
 For General Concrete Notes see Dwg. C2-11.
 For concrete details see Dwg. C3-6.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - EAST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT UPPER WALL SECOND STAGE CONCRETE TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H. F. MCC.	RECOMMENDED:	<i>[Signature]</i>	DRAWING NO.	
DRAWN:	H. F. MCC.	CHECKED:	R. B. A.	APPROVED:	<i>[Signature]</i>
SUBMITTED:	<i>[Signature]</i>	DATE:		SCALE:	AS NOTED
NEW YORK, N. Y.				DATE:	
					C3-125

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-102	112



VOID
BY CONSTRUCTION
OCT 26, 1977

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C3-5.
For Bar List see Dwg. C3-127.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
1		Reinforcing Details Revised	J.E.G.	R.B.A.	S.M.R.

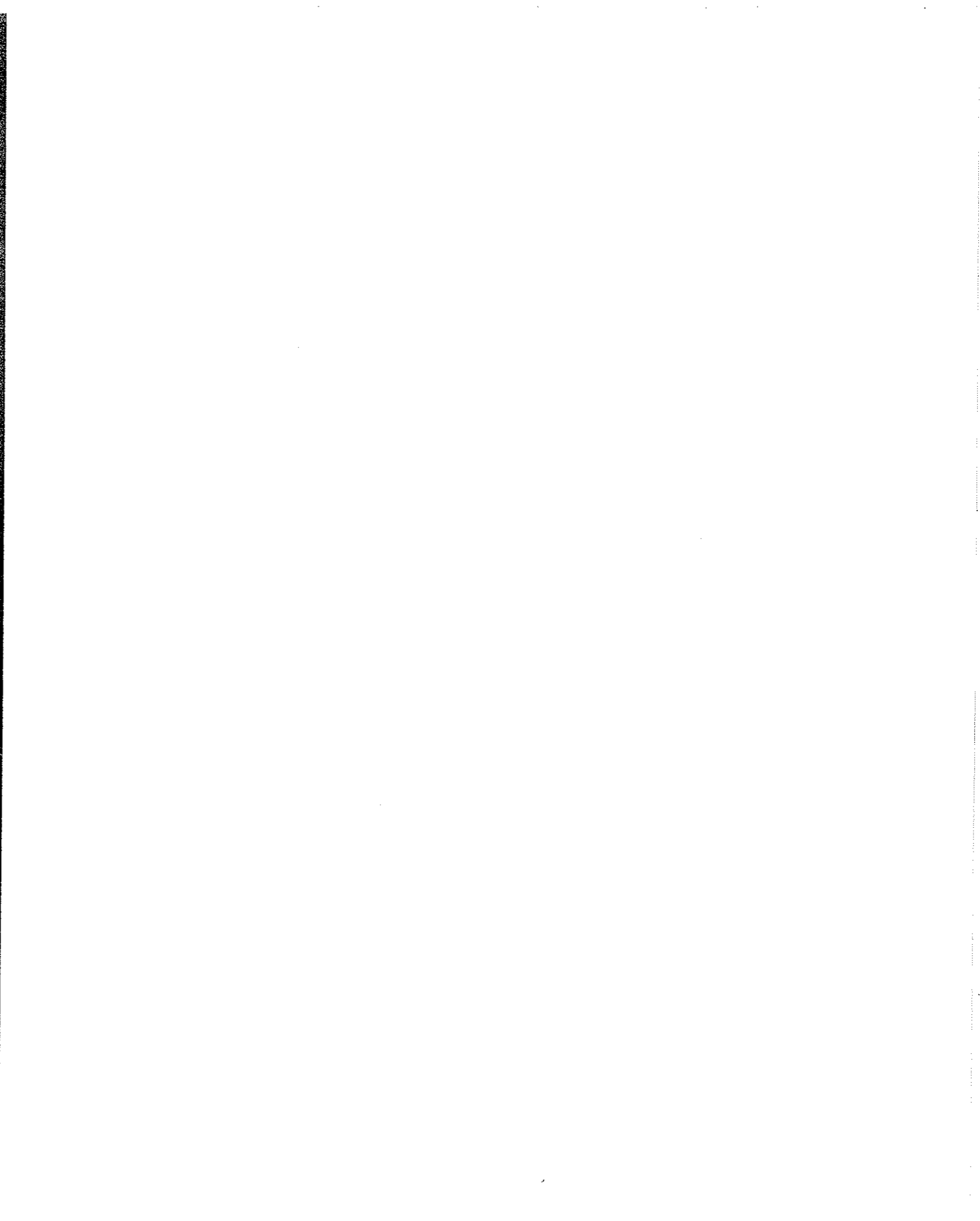
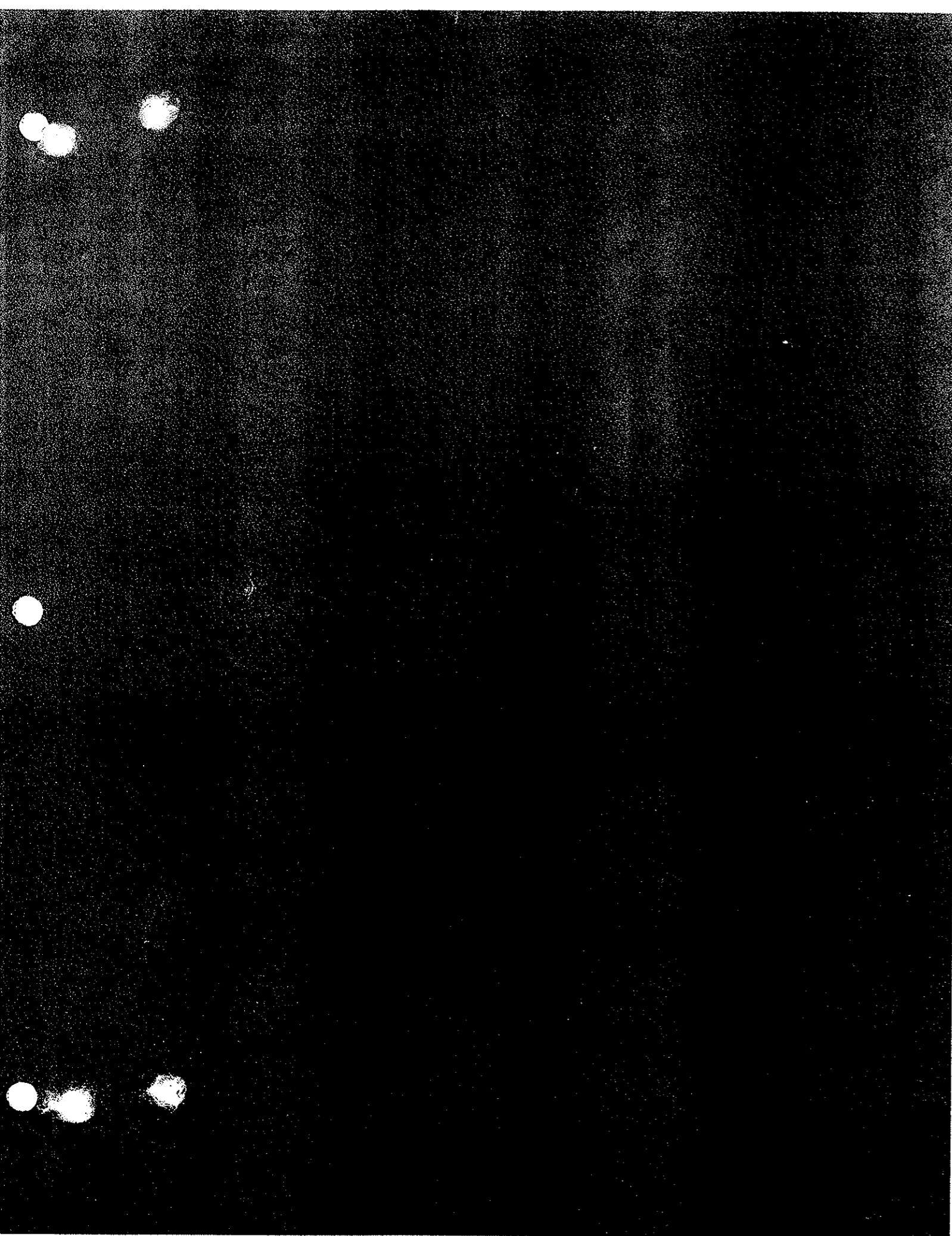
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
CIVIL - EAST PORTAL SECTION
REINFORCEMENT
NORTH TRANSITION SEGMENT
DUCT FLOOR AND PRECAST CEILING PANELS
SHEET 1 OF 2

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

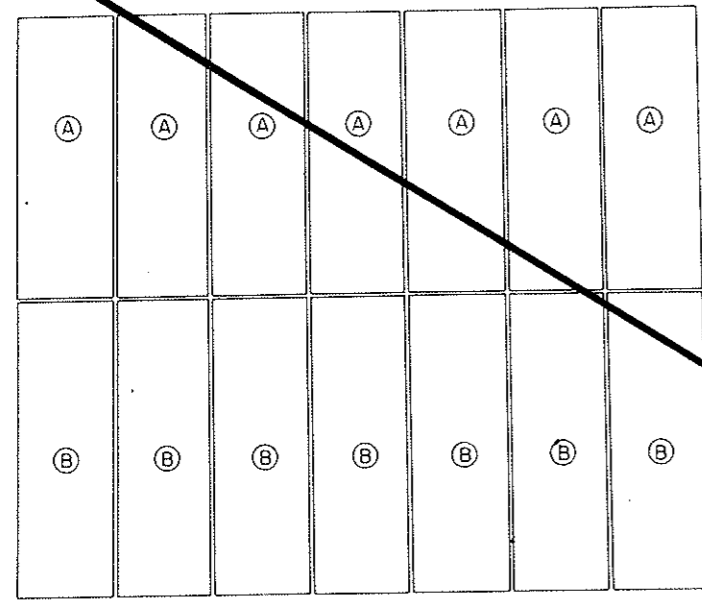
DRAWN: H.F.M.C.
CHECKED: R.B.A.
SUBMITTED: [Signature]

RECOMMENDED: [Signature]
APPROVED: [Signature]

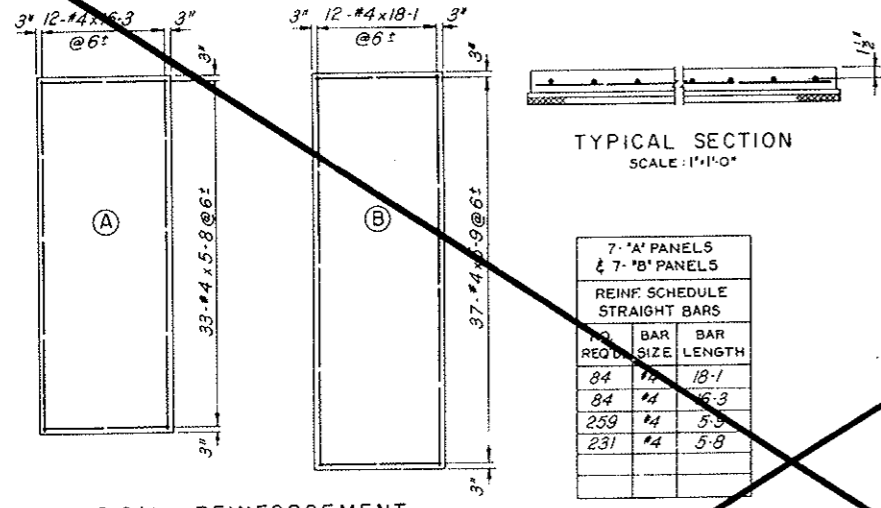
SCALE: 3/8" = 1'-0" DATE: C3-126
NEW YORK, N.Y.



FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-103	112



PLAN
SCALE: 3/8" = 1'-0"



TYPICAL REINFORCEMENT
SCALE: 1/4" = 1'-0"

PRECAST CEILING PANELS

7'-0" 'A' PANELS & 7'-0" 'B' PANELS		
REINF. SCHEDULE		
STRAIGHT BARS		
NO. REQ'D	BAR SIZE	BAR LENGTH
84	#4	18-1
84	#4	16-3
259	#4	5-3
231	#4	5-8

DUCT FLOOR REINFORCEMENT											
STRAIGHT BARS			BENT BARS								
NO. REQ'D	BAR SIZE	BAR LENGTH	BENDING DIAGRAMS								
52	#8	15-0									
13	#8	15-0									
8	#8	9-6									
6	#8	7-0									
18	#4	42-9									
16	#4	40-9									
6	#8	16-0									
17	#4	39-3									
15	#4	37-3									
1	#4	35-0									
2	#4	21-6									
2	#4	17-6									
58	#4	12-0									
58	#4	11-3									
BAR MARK	NO. REQ'D	BAR SIZE	BAR LENGTH	A	B	C	D	E	G	H	F
A 704	39	#7	17-3	0-9	16-6				0		
A 705	39	#7	19-3	0-9	18-6				0		
A 706	19	#7	36-9	0-9	35-3				0-9		
A 811	6	#8	8-0	1-0	7-0				0		
X 601	39	#6	4-5	0-9	1-7	0-10	1-3			1-0	0
X 602	8	#6	4-1	0	1-0	0-10	2-3			1-7	0
X 603	8	#6	4-8	0	1-7	0-10	2-3			1-7	0
X 612	3	#6	5-8	0	1-7	0-10	2-3			1-7	1-0
D 508	32	#5	22-6			2-0	20-6			0-3	
B 509	34	#5	20-9		2-3	18-6					
D 407	2	#4	21-9				10-6	11-3		1-0	
A 410	107	#4	2-9	0-6	2-3						

All bent bar marks to be prefixed by No. C3-126

VOID
BY CONSTRUCTION
OCT 26, 1972

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C3-7.

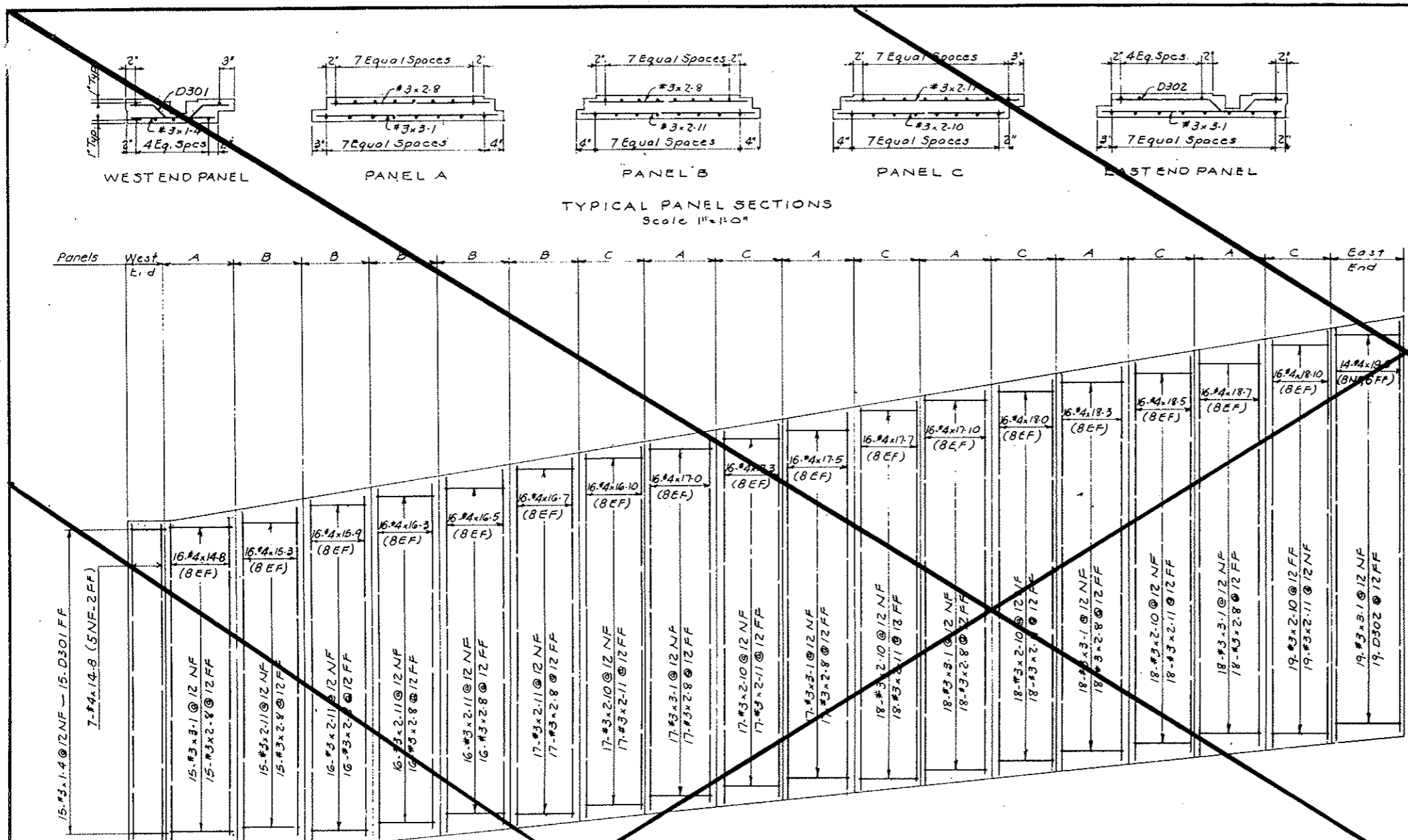
Reinforcement Schedules Revised		JEG	RBA	S.M.C.
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK. APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
CIVIL - EAST PORTAL SECTION				
REINFORCEMENT				
NORTH TRANSITION SEGMENT				
DUCT FLOOR AND PRECAST CEILING PANELS				
SHEET 2 OF 2				
TIPPETTS - ABBETT - MCCARTHY - STRATTON				
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED: H. F. M. C. M.	RECOMMENDED: D	BY: <i>[Signature]</i>		
DRAWN: R. B.	CHECKED: R. B. A.	APPROVED: <i>[Signature]</i>	DRAWING NO. C3-127	
SUBMITTED: <i>[Signature]</i>	DATE: <i>[Signature]</i>	SCALE: AS NOTED DATE:		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-104	112

REINFORCEMENT SCHEDULE - BENT BARS

BENDING DIAGRAM

BAR NO.	NO. MAIN REQ'D	SIZE	BAR LENGTH	DIMENSIONS						
				L	C	D	E	F	H	K
D301	15	#3	1-11	0-5	0-3 1/2	0-5	0-3 1/2	0-2 1/2	0-6	
D302	19	#3	3-1	1-8	0-3 1/2	0-5	0-3 1/2	0-2 1/2	0-6	



ELEVATION
Scale: 3/8" = 1'-0"

STRAIGHT BARS

NO. REQ'D	SIZE	BAR LENGTH
14	#4	19.0
16	#4	18.10
16	#4	18.7
16	#4	18.5
16	#4	18.3
16	#4	18.0
16	#4	17.10
16	#4	17.7
16	#4	17.5
16	#4	17.0
16	#4	16.10

STRAIGHT BARS

NO. REQ'D	SIZE	BAR LENGTH
16	#4	16.7
16	#4	16.5
16	#4	16.3
16	#4	15.9
16	#4	15.3
23	#4	14.8
122	#3	3.1
187	#3	2.11
107	#3	2.10
183	#3	2.8
15	#3	1.4

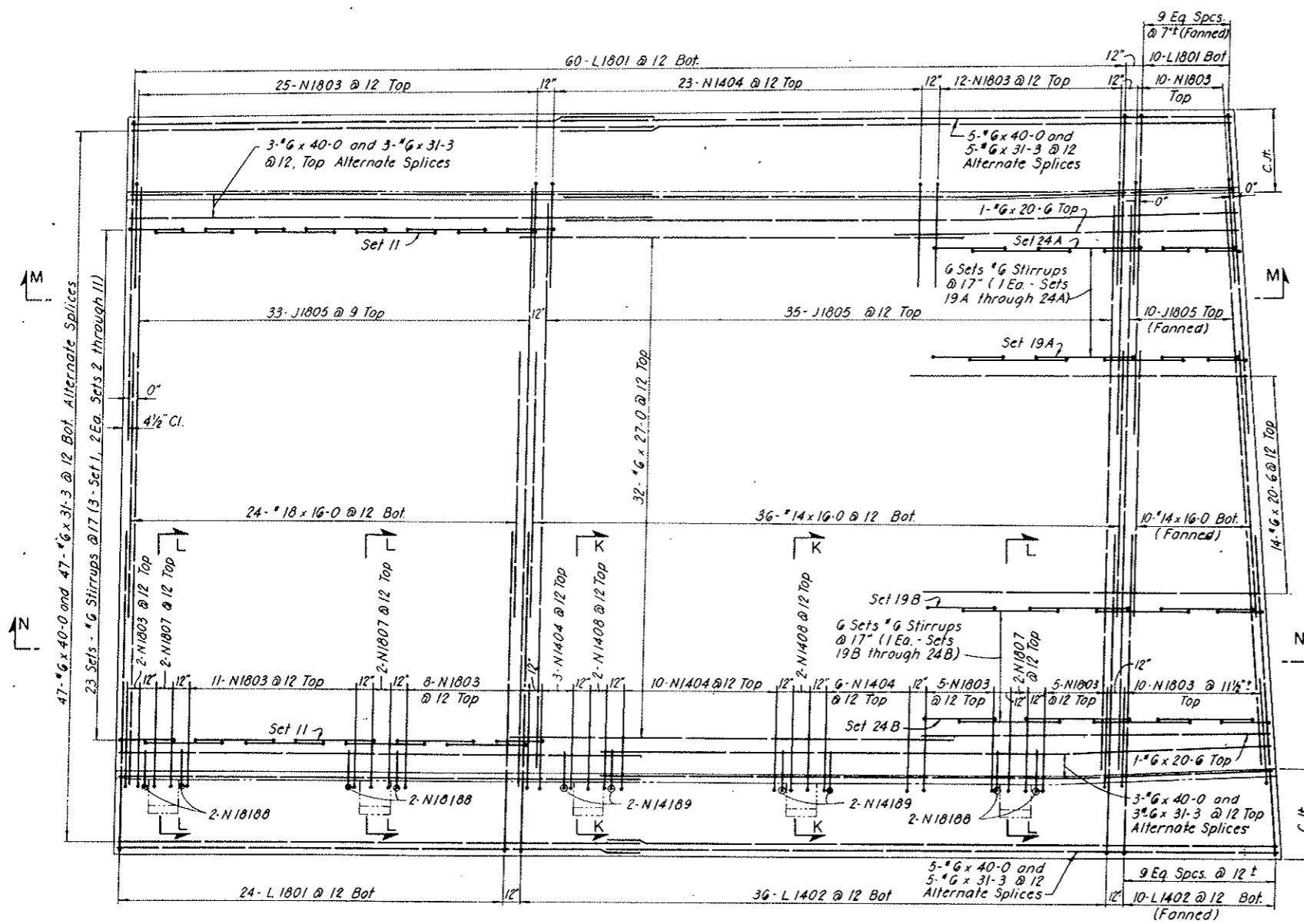
VOID
BY CONSTRUCTION
OCT 26, 1973

NOTES:
For General Concrete Notes see Dwg. C2-11.
For concrete details see Dwg. C2-19.

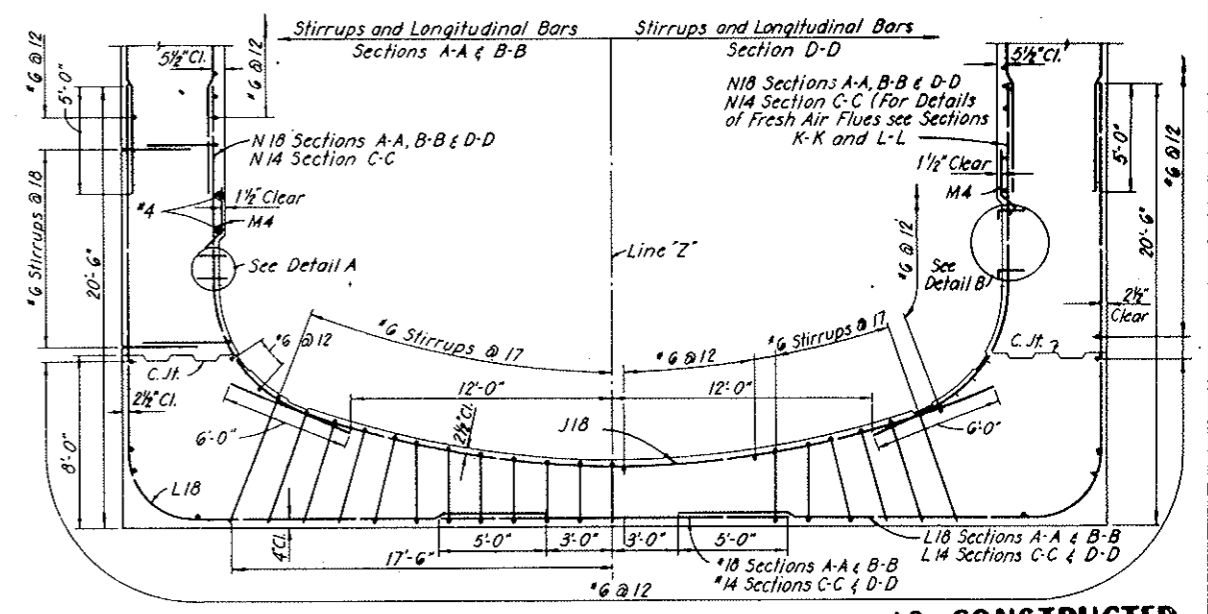
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT NORTH TRANSITION SEGMENT DUCT DIVIDER WALL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.F. McC	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. C3-128			
DRAWN: H.F. McC	CHECKED: R.B.A.	APPROVED: <i>[Signature]</i>	SCALE: AS NOTED		
SUBMITTED: <i>[Signature]</i>	DATE:				

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RP-106	112

Note: For top part of Sections see Dwg. C3-130.



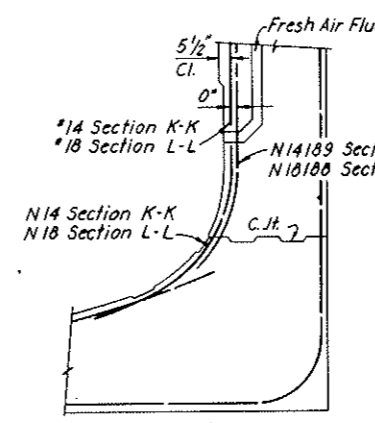
PLAN



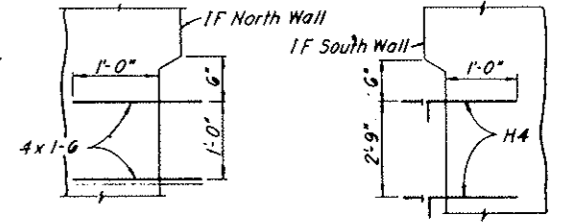
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973

Note: Bars H4 to be straightened out immediately before placing second stage concrete in future.

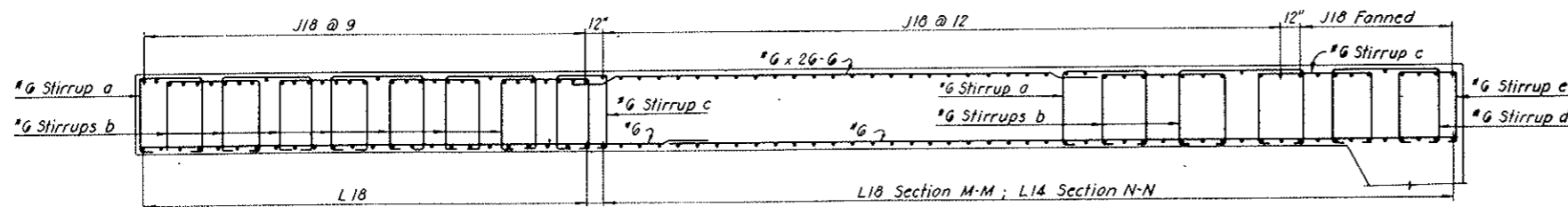


SECTION K-K
SECTION L-L

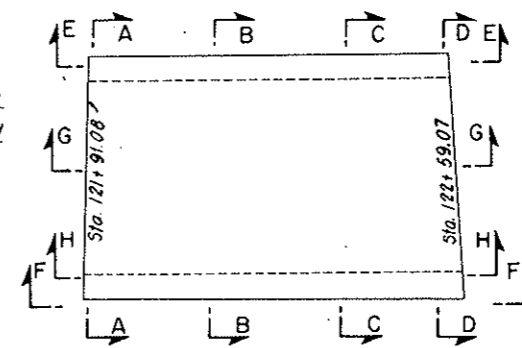


DETAIL A
Not to scale
DETAIL B
Not to scale

NOTES:
Work this drawing with Dwg. C3-130 through C3-136
For General Reinforcement Notes see Dwg. C2-105
For General Concrete Notes see Dwg. C2-11
For concrete outlines see Dwg. C3-8 and C3-9
All stirrup spacing to be measured along inside face of concrete.
Clear cover for outside face reinforcement is from neat concrete surface or the 'K' Line.
Drape or hickey longitudinal bars or stirrups as required.



SECTION M-M
SECTION N-N

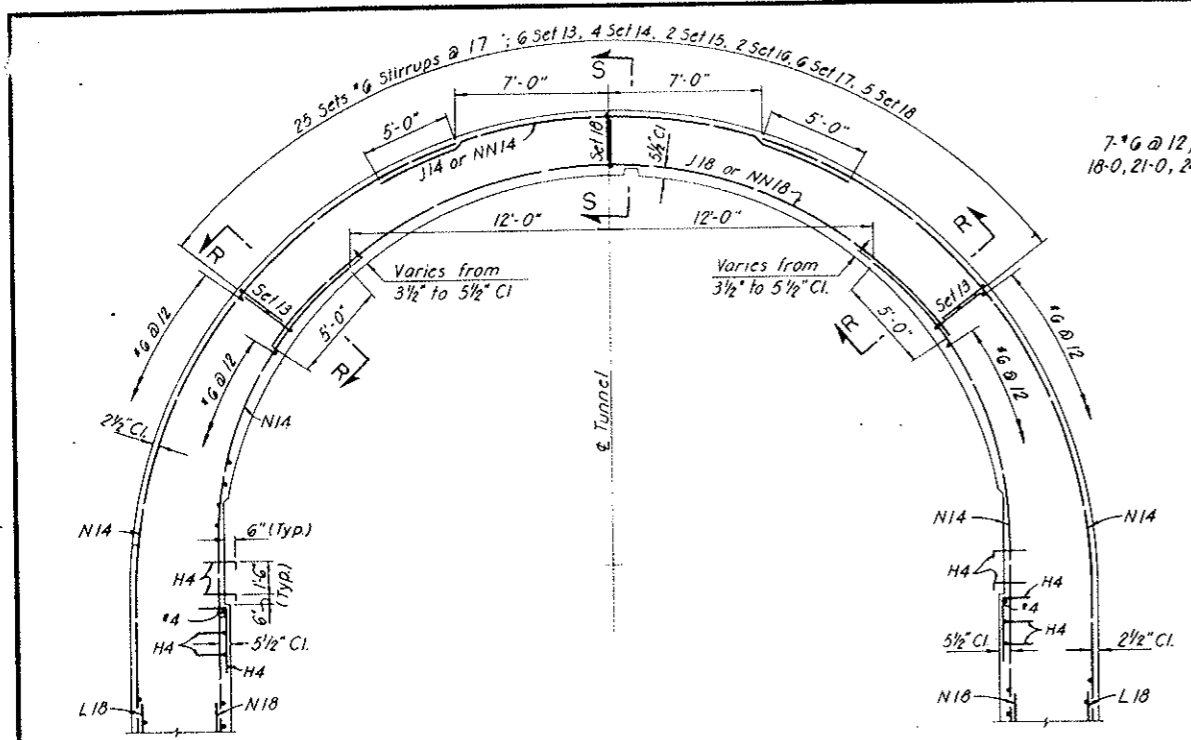


KEY PLAN
Scale: 1/16"=1'-0"

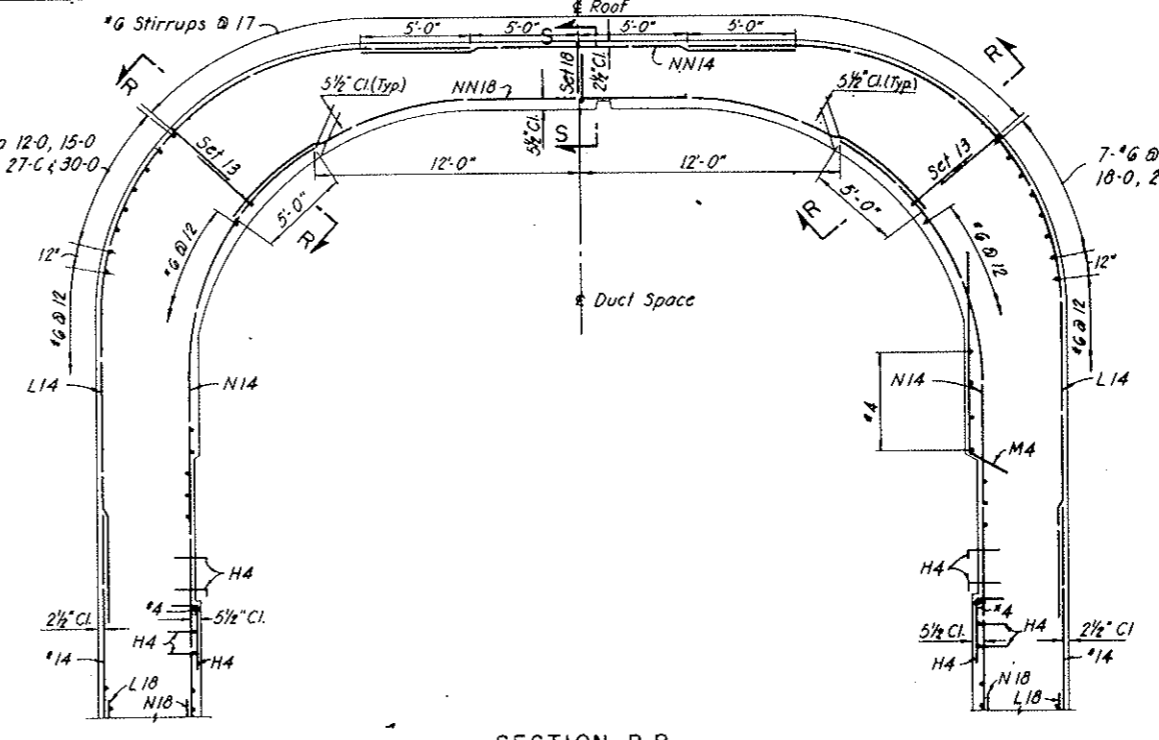
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - EAST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT BASE SLAB - PLAN AND SECTION					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	E. G. P.	CHECKED	E. G. P.	APPROVED	[Signature]
DRAWN	E. G. P.	CHECKED	D. A. - R.S.A.	APPROVED	[Signature]
SCALE	1/16"=1'-0"	DATE	NOV. 1967	DRAWING NO.	C3-129

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-106	112

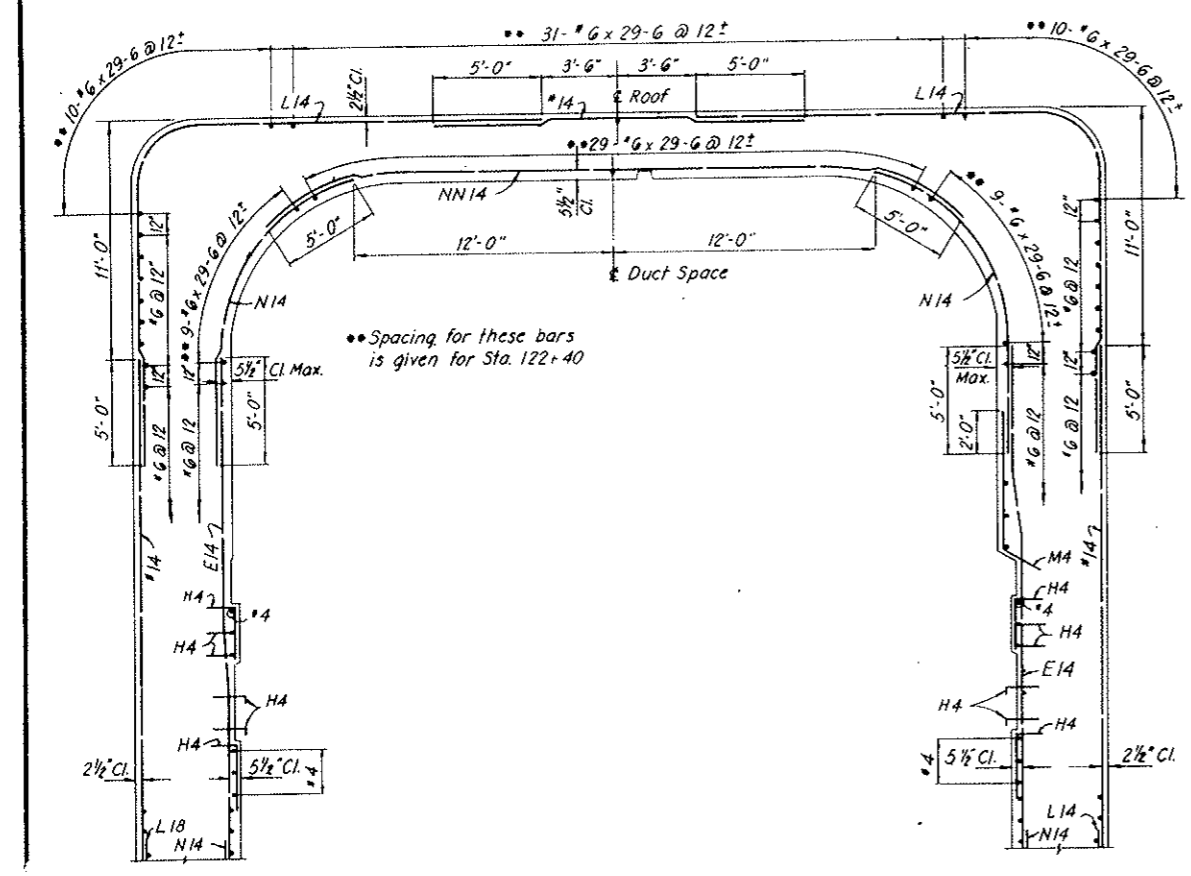
AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



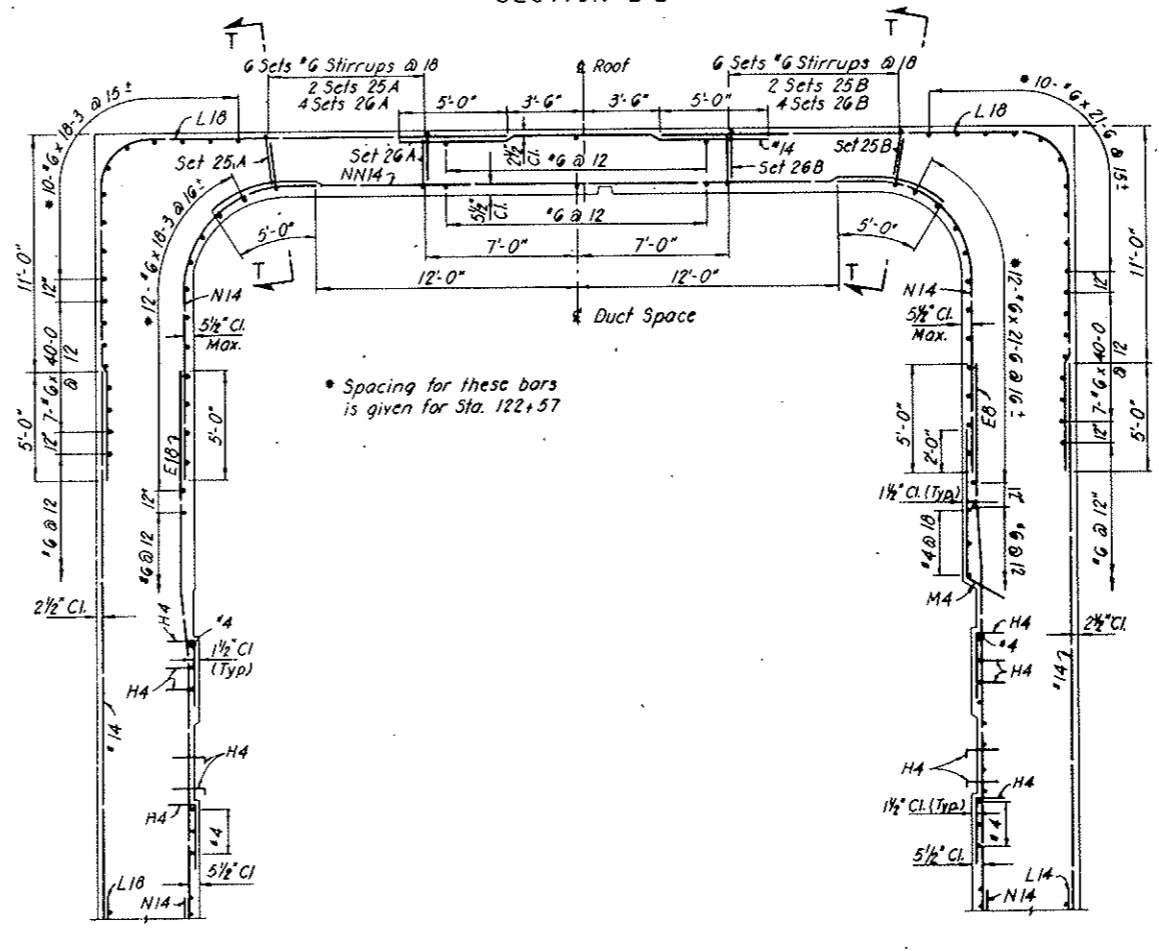
SECTION A-A



SECTION B-B



SECTION C-C



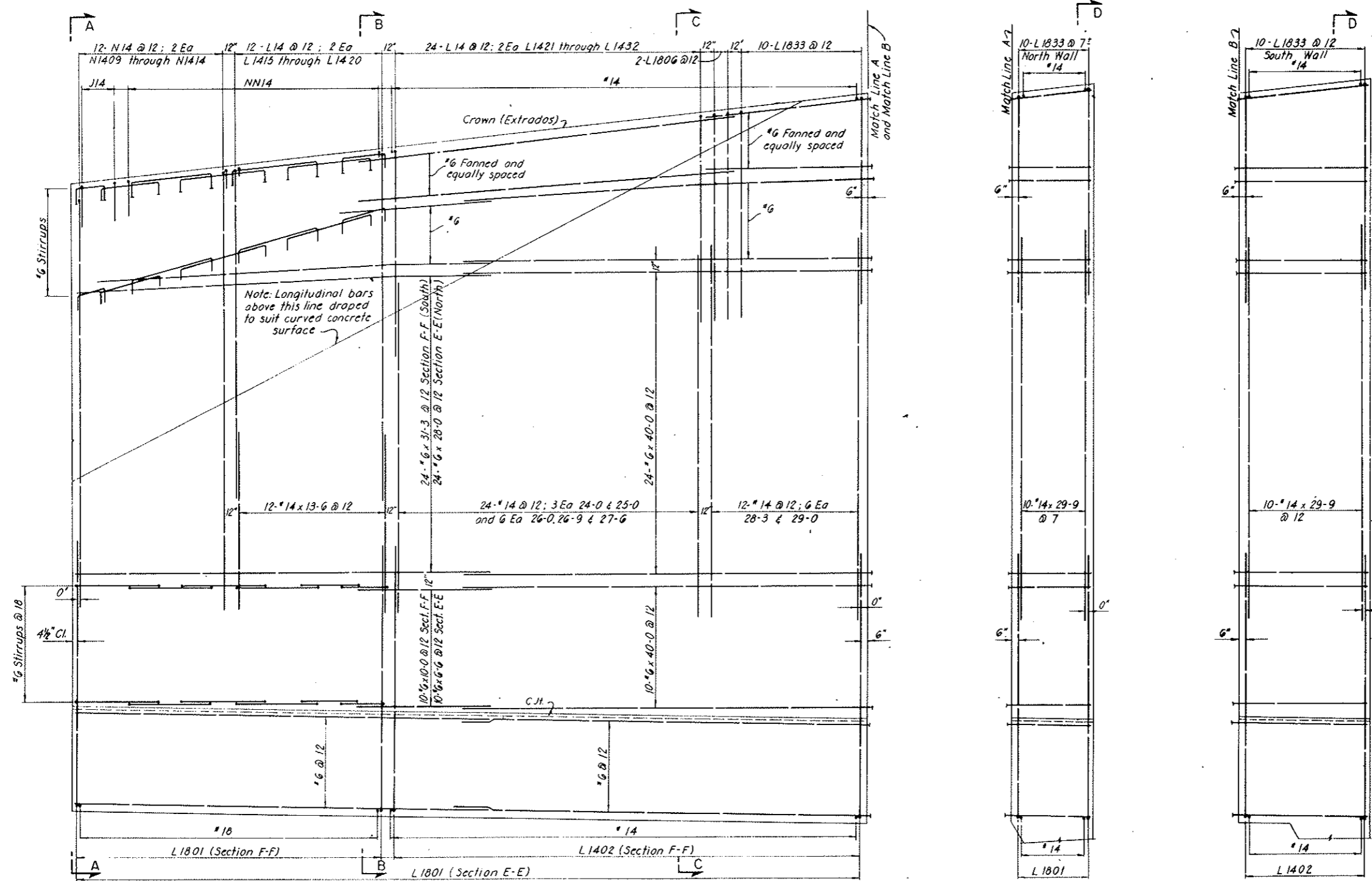
SECTION D-D

NOTES:
 Work this drawing with Dwg. C3-129 and C3-131 through C3-136.
 All lap lengths specified on the drawings are minimum values.
 SK4 ties for E14 and E18 bars not shown, see Detail C-Dwg. C3-132 and Detail D Dwg. C3-133.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT CROSS SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	E.S.P.	RECOMMENDED			
DRAWN	E.G.P.	APPROVED			
CHECKED	D.A.	DATE			
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"	DATE: NOV. 1967		DRAWING NO. C3-130

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-107	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



Note: Alternate splices of longitudinal bars where possible.

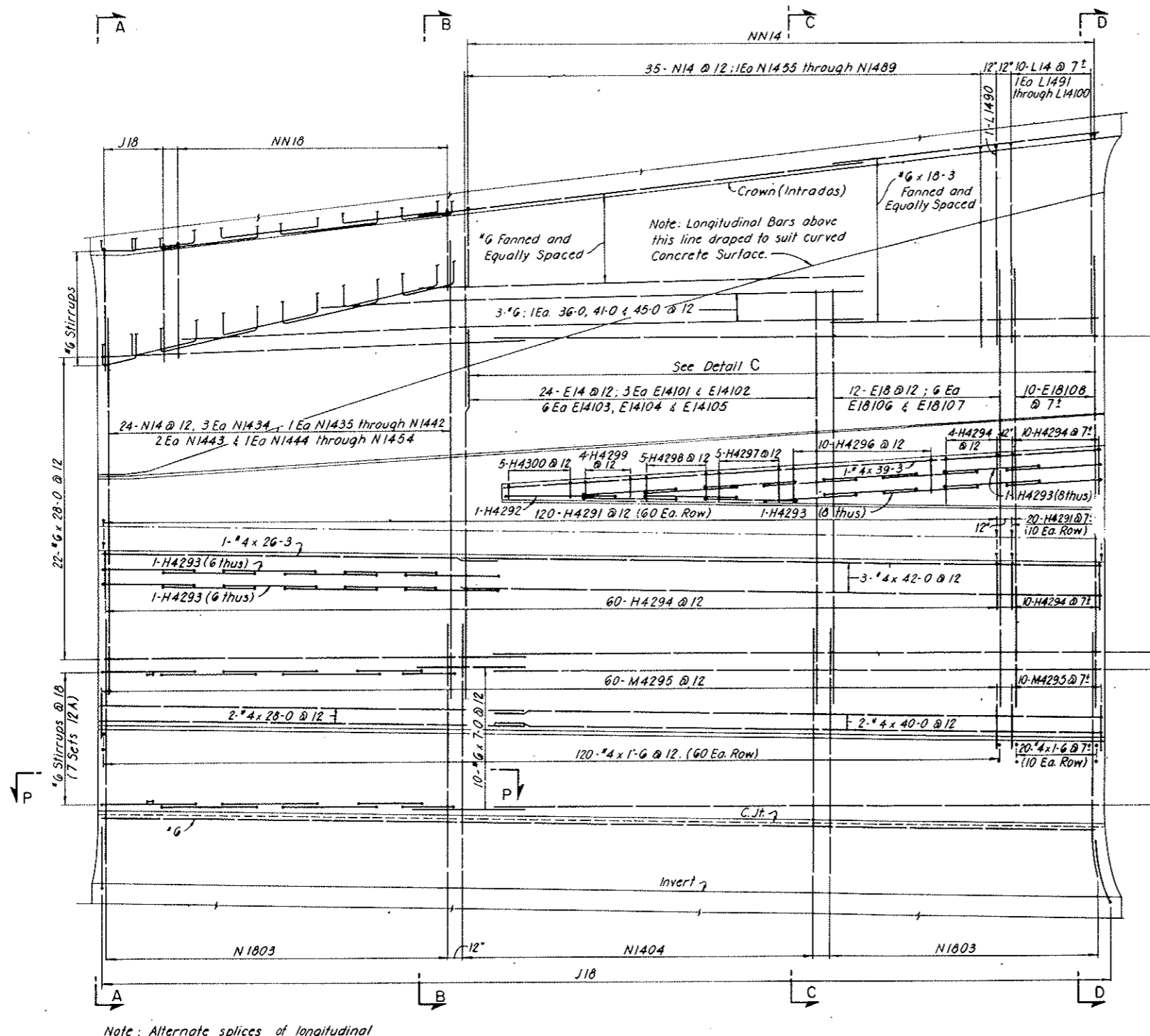
SECTION E-E (NORTH WALL)
 SECTION F-F (SOUTH WALL)

NOTES:
 Work this drawing with Dwg. C3-129 and C3-130
 and with Dwg. C3-132 through C3-136.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - EAST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT NORTH AND SOUTH WALLS - OUTSIDE FACE TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	E.G.P.	RECOMMENDED	J.P. [Signature]		
DRAWN	E.G.P.	CHECKED	D.A. [Signature]		
CHECKED	D.A.	APPROVED	[Signature]		
DATE	NOV. 1967	SCALE	1/4" = 1'-0"	DATE	NOV. 1967
					DRAWING NO. C3-131

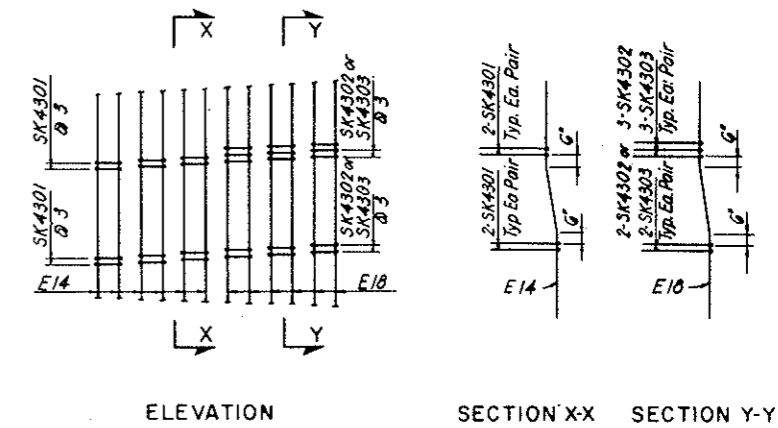
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-108	112

AS CONSTRUCTED
NO REVISIONS DATE
 Dec 26, 1973



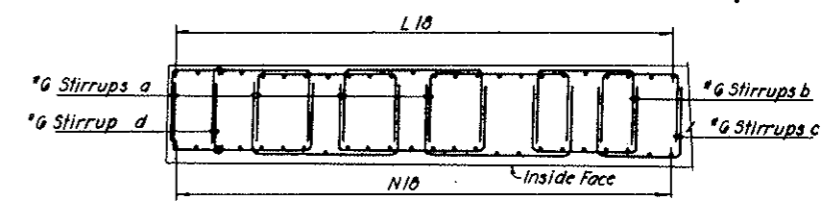
Note: Alternate splices of longitudinal bars where possible.

SECTION G-G



ELEVATION SECTION X-X SECTION Y-Y

DETAIL C
 Typical Arrangement of E Bars with SK4 Ties. For location see Section G-G
 48 - SK4301 Req'd.
 30 - SK4302 Req'd.
 25 - SK4303 Req'd.

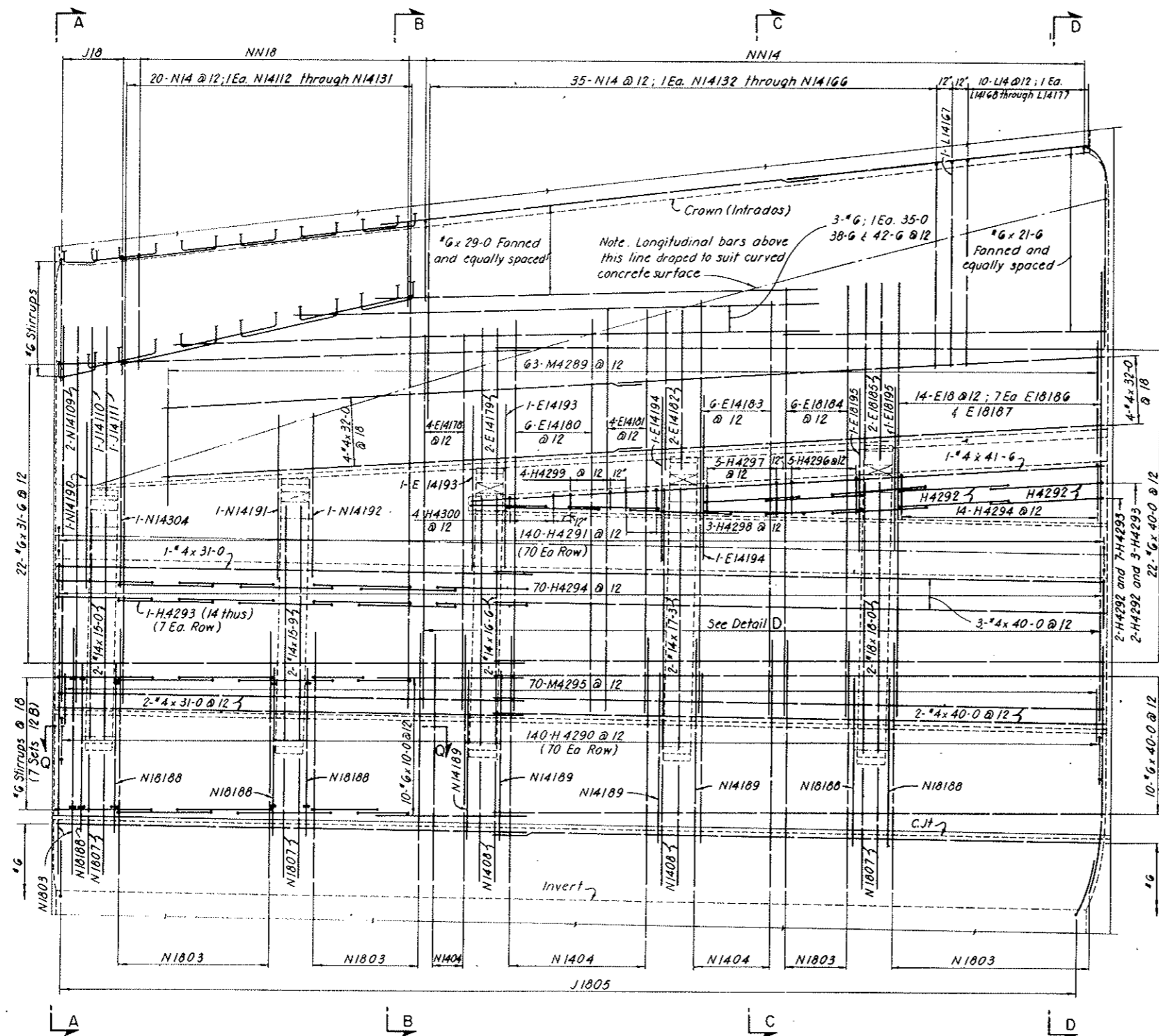


SECTION P-P

NOTES:
 Work this drawing with Dwgs. C3-129 through C3-131 and with Dwgs C3-133 through C3-136.

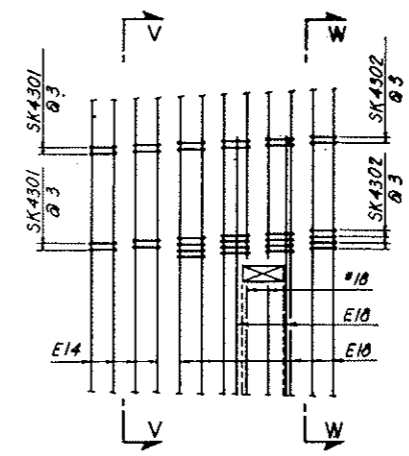
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - EAST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT NORTH WALL - INSIDE FACE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS - NEW YORK, N. Y.					
DESIGNED: E.G.P.	DRAWN: E.G.P.	CHECKED: D.A.	APPROVED: [Signature]	DRAWING NO. C3-132	
SCALE: 1/4" = 1'-0" DATE: NOV. 1973					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-109	112

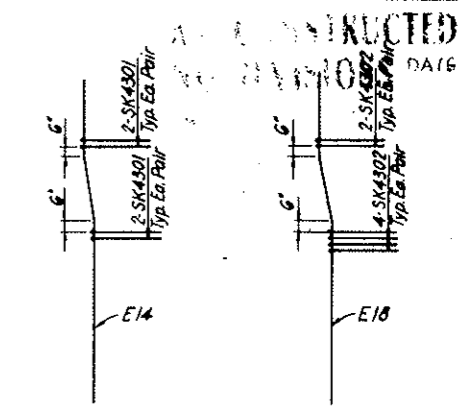


Note: Alternate splices of longitudinal bars where possible.

SECTION H-H



ELEVATION

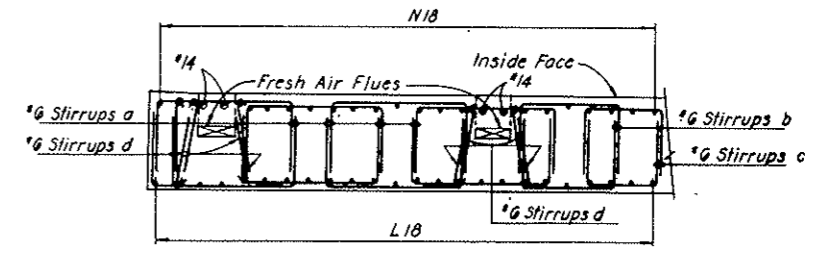


SECTION V-V

SECTION W-W

DETAIL D
 Typical Arrangement of E Bars with SK4 Ties. For location see Section H-H.
 48-SK4301 Req'd.
 66-SK4302 Req'd.

AS CONSTRUCTED
 NO REVISIONS DATE
 OCT 26, 1973



SECTION Q-Q

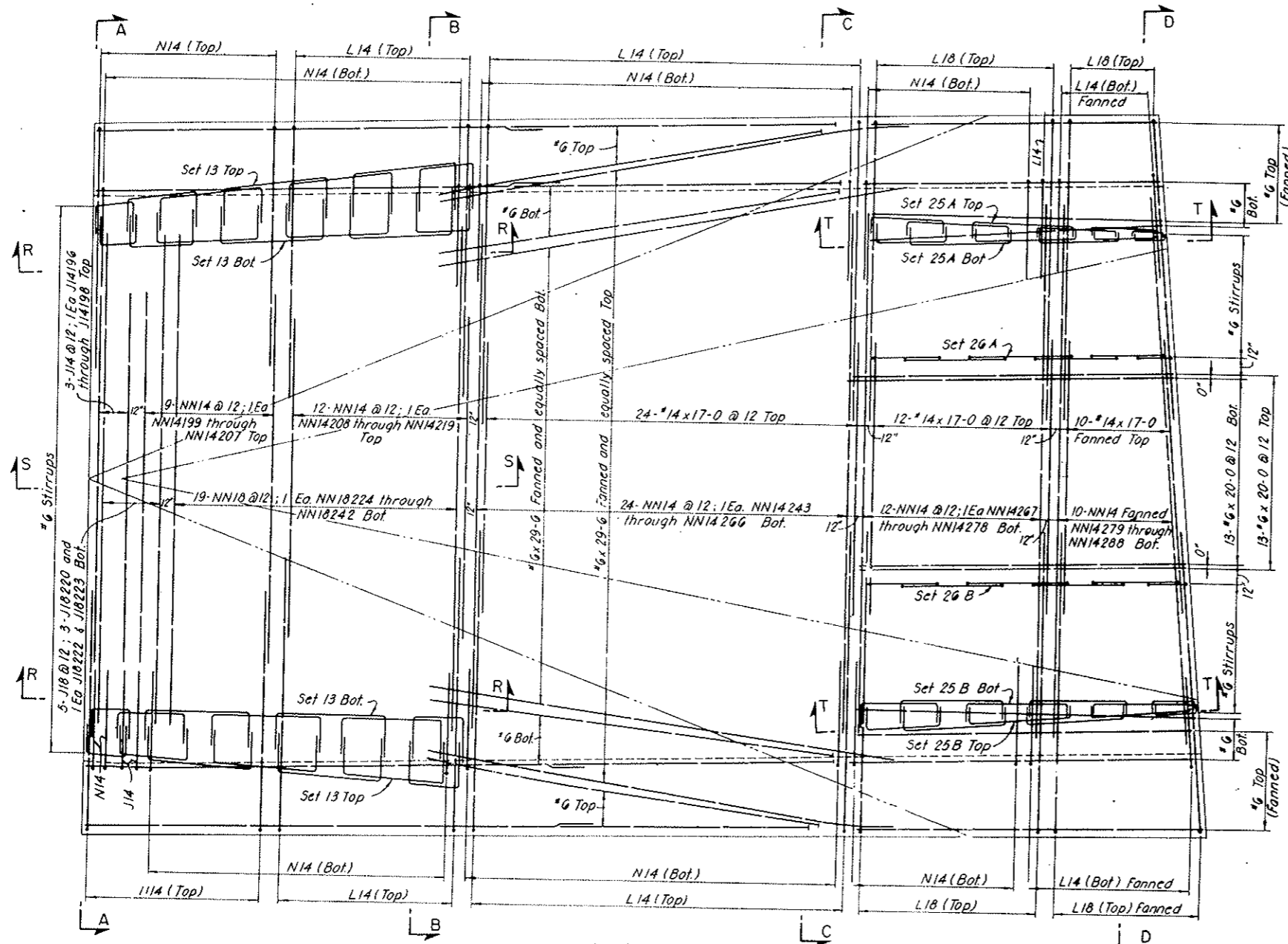
NOTES:

Work this drawing with Dwg. C3-129 through C3-132 and with Dwg. C3-134 through C3-136

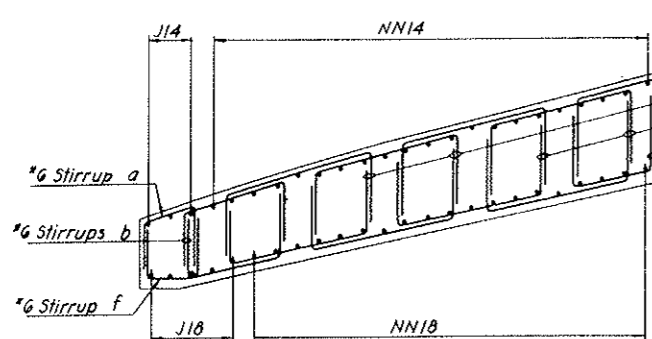
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT CIVIL - EAST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT SOUTH WALL - INSIDE FACE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	E. G. P.	REVISIONS BY			
DRAWN BY	E. G. P.	APPROVED BY			
CHECKED BY	D. A.	DATE			
SCALE	1/4" = 1'-0"	DATE	NOV. 1967		
DRAWING NO.	C3-133				

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-110	112

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973

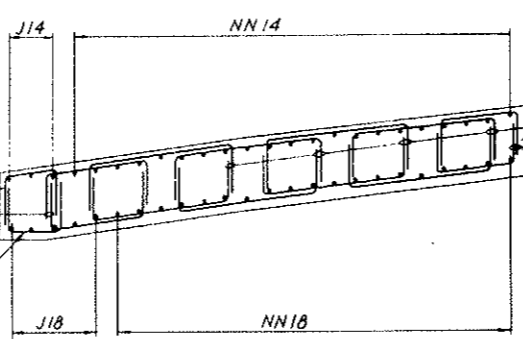


PLAN

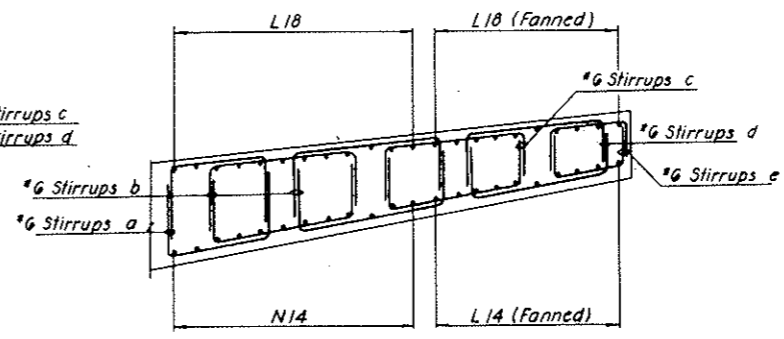


SECTION R-R
 Arrangement of Stirrups for Sets 13 and 14

Note: Drape or hickey stirrups as required



SECTION S-S
 Arrangement of Stirrups for Sets 15 through 18



SECTION T-T
 Arrangement of Stirrups for Sets 25A, 26A, 25B and 26B

NOTES:
 Work this drawing with Dwgs. C3-129 through C3-133 and Dwgs. C3-135 and C3-136.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT SOUTH TRANSITION SEGMENT ROOF SLAB AND ARCH					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E.G.P.	RECOMMENDED: [Signature]	DRAWING NO. C3-134			
DRAWN: E.G.P.	APPROVED: [Signature]	SCALE: 1/4" = 1'-0"			
CHECKED: D.A.	DATE: NOV. 1967				

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RP-111	112

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973

REINFORCEMENT SCHEDULE - STIRRUPS

BENDING DIAGRAMS

SET NO.	BAR MARK	NUMBER REQ'D PER SET	BAR SIZE	BAR LENGTH	DIMENSIONS						
					A	B	C	D	G	H	
1	a SFG401	1	3	6	9-4	0-5	2-7	3-4	2-7	0-5	
	b SFG402	7	21	6	10-10	0-5	2-7	4-10	2-7	0-5	
	c SFG403	1	3	6	8-10	0-5	2-7	2-10	2-7	0-5	
2	a SFG404	1	2	6	9-6	0-5	2-8	3-4	2-8	0-5	
	b SFG405	7	14	6	11-0	0-5	2-8	4-10	2-8	0-5	
	c SFG406	1	2	6	9-0	0-5	2-8	2-10	2-8	0-5	
3	a SFG407	1	2	6	9-10	0-5	2-10	3-4	2-10	0-5	
	b SFG408	7	14	6	11-4	0-5	2-10	4-10	2-10	0-5	
	c SFG409	1	2	6	9-4	0-5	2-10	2-10	2-10	0-5	
4	a SFG410	1	2	6	10-2	0-5	3-0	3-4	3-0	0-5	
	b SFG411	7	14	6	11-8	0-5	3-0	4-10	3-0	0-5	
	c SFG412	1	2	6	9-8	0-5	3-0	2-10	3-0	0-5	
5	a SFG413	1	2	6	10-8	0-5	3-3	3-4	3-3	0-5	
	b SFG414	7	14	6	12-2	0-5	3-3	4-10	3-3	0-5	
	c SFG415	1	2	6	10-2	0-5	3-3	2-10	3-3	0-5	
6	a SFG416	1	2	6	11-4	0-5	3-7	3-4	3-7	0-5	
	b SFG417	7	14	6	12-10	0-5	3-7	4-10	3-7	0-5	
	c SFG418	1	2	6	10-10	0-5	3-7	2-10	3-7	0-5	
7	a SFG419	1	2	6	12-0	0-5	3-11	3-4	3-11	0-5	
	b SFG420	7	14	6	13-6	0-5	3-11	4-10	3-11	0-5	
	c SFG421	1	2	6	11-6	0-5	3-11	2-10	3-11	0-5	
8	a SFG422	1	2	6	12-0		4-4	3-4	4-4		
	b SFG423	7	14	6	13-6		4-4	4-10	4-4		
	c SFG424	1	2	6	11-6		4-4	2-10	4-4		
9	a SFG425	1	2	6	12-10		4-9	3-4	4-9		
	b SFG426	7	14	6	14-4		4-9	4-10	4-9		
	c SFG427	1	2	6	12-4		4-9	2-10	4-9		
10	a SFG428	1	2	6	13-10		5-3	3-4	5-3		
	b SFG429	7	14	6	15-4		5-3	4-10	5-3		
	c SFG430	1	2	6	13-4		5-3	2-10	5-3		
11	a SFG431	1	2	6	15-4		6-0	3-4	6-0		
	b SFG432	7	14	6	16-10		6-0	4-10	6-0		
	c SFG433	1	2	6	14-10		6-0	2-10	6-0		
12A	a SFG434	8	56	6	12-10		3-3	6-4	3-3		
	b SFG435	2	14	6	10-10		3-3	4-4	3-3		
	c SFG436	2	14	6	9-10		3-3	3-4	3-3		
	d SFG437	2	14	6	3-10	0-7	3-3				
12B	a SFG438	8	56	6	12-10		3-3	6-4	3-3		
	b SFG439	2	14	6	10-10		3-3	4-4	3-3		
	c SFG440	2	14	6	9-10		3-3	3-4	3-3		
	d SFG441	10	70	6	3-10	0-7	3-3				
13	a SFG442	1	6	6	7-6		2-6	2-6	2-6	0-8	
	b SFG443	2	12	6	10-3		2-10	4-7	2-10	0-9	
	c SFG444	4	24	6	12-8		3-0	6-8	3-0	0-9	
	d SFG445	4	24	6	13-2		3-3	6-8	3-3	0-10	
	e SFG446	2	12	6	10-1		3-3	3-7	3-3	0-10	
	f SFG447	1	6	6	7-6		2-6	2-6	2-6		
14	a SFG448	1	4	6	7-6		2-6	2-6	2-6	0-7 1/2	
	b SFG449	2	8	6	9-11		2-8	4-7	2-8	0-7 1/2	
	c SFG450	4	16	6	12-4		2-10	6-8	2-10	0-8	
	d SFG451	4	16	6	12-8		3-0	6-8	3-0	0-8 1/2	
	e SFG452	2	8	6	9-6		3-0	3-6	3-0	0-8 1/2	
	f SFG453	1	4	6	7-6		2-6	2-6	2-6		
15	a SFG454	1	2	6	7-6		2-6	2-6	2-6	0-6 1/2	
	b SFG455	2	4	6	9-9		2-7	4-7	2-7	0-6	
	c SFG456	8	16	6	12-2		2-9	6-8	2-9	0-6 1/2	
	d SFG457	2	4	6	9-0		2-9	3-6	2-9	0-6 1/2	
	e SFG458	1	2	6	7-6		2-6	2-6	2-6		
	f SFG459	1	2	6	7-6		2-6	2-6	2-6		

REINFORCEMENT SCHEDULE - STIRRUPS

BENDING DIAGRAMS

SET NO.	BAR MARK	NUMBER REQ'D PER SET	BAR SIZE	BAR LENGTH	DIMENSIONS						
					A	B	C	D	G	H	
16	a SYG455	1	2	6	7-4		2-5	2-6	2-5		0-6
	b SYG456	2	4	6	9-6		2-6	4-6	2-6		0-5 1/2
	c SYG457	8	16	6	11-9		2-7	6-7	2-7		0-5 1/2
	d SYG458	2	4	6	8-6		2-6	3-6	2-6		0-5 1/2
	e SYG459	1	2	6	7-4		2-5	2-6	2-5		
17	a SYG460	1	6	6	7-4		2-5	2-6	2-5		0-5 1/2
	b SYG461	2	12	6	9-4		2-5	4-6	2-5		0-5
	c SYG462	8	48	6	11-7		2-6	6-7	2-6		0-5
18	a SYG463	2	12	6	8-0		2-3	3-6	2-3		0-4 1/2
	b SYG464	1	6	6	7-4		2-5	2-6	2-5		
	c SYG465	1	5	6	6-10		2-3	2-4	2-3		0-3
	d SYG466	2	10	6	9-0		2-3	4-6	2-3		0-3
	e SYG467	8	40	6	11-0		2-3	6-6	2-3		0-3
19A	a SYG468	2	10	6	8-0		2-3	3-6	2-3		0-3
	b SYG469	1	5	6	7-0		2-3	2-6	2-3		
	c SYG470	1	1	6	11-8	0-5	3-3	4-4	3-3	0-5	
	d SYG471	2	2	6	13-8	0-5	3-3	6-4	3-3	0-5	
	e SYG472	1	1	6	12-7	0-5	3-3	5-3	3-3	0-5	
19B	a SYG473	1	1	6	12-0	0-5	3-3	4-8	3-3	0-5	
	b SYG474	1	1	6	9-11	0-5	3-3	2-7	3-3	0-5	
	c SYG475	1	1	6	11-8	0-5	3-3	4-4	3-3	0-5	
	d SYG476	2	2	6	13-8	0-5	3-3	6-4	3-3	0-5	
	e SYG477	1	1	6	13-4	0-5	3-3	6-0	3-3	0-5	
20A	a SYG478	1	1	6	13-2	0-5	3-3	5-10	3-3	0-5	
	b SYG479	1	1	6	10-5	0-5	3-3	3-1	3-3	0-5	
	c SYG480	1	1	6	12-4	0-5	3-7	4-4	3-7	0-5	
	d SYG481	2	2	6	14-4	0-5	3-7	6-4	3-7	0-5	
	e SYG482	1	1	6	13-3	0-5	3-7	5-3	3-7	0-5	
20B	a SYG483	1	1	6	12-8	0-5	3-7	4-8	3-7	0-5	
	b SYG484	1	1	6	10-7	0-5	3-7	2-7	3-7	0-5	
	c SYG485	1	1	6	12-4	0-5	3-7	4-4	3-7	0-5	
	d SYG486	2	2	6	14-4	0-5	3-7	6-4	3-7	0-5	
	e SYG487	1	1	6	13-0	0-5	3-7	6-0	3-7	0-5	
21A	a SYG488	1	1	6	14-0	0-5	3-7	6-0	3-7	0-5	
	b SYG489	1	1	6	13-11	0-5	3-11	5-3	3-11	0-5	
	c SYG490	1	1	6	13-4	0-5	3-11	4-8	3-11	0-5	
	d SYG491	1	1	6	11-3	0-5	3-11	2-7	3-11	0-5	
	e SYG492	1	1	6	13-0	0-5	3-11	4-4	3-11	0-5	
21B	a SYG493	2	2	6	15-0	0-5	3-11	6-4	3-11	0-5	
	b SYG494	1	1	6	14-8	0-5	3-11	6-0	3-11	0-5	
	c SYG495	1	1	6	14-6	0-5	3-11	5-10	3-11	0-5	
	d SYG496	1	1	6	11-9	0-5	3-11	3-1	3-11	0-5	
	e SYG497	1	1	6	13-0	0-5	3-11	4-4	3-11	0-5	
22A	a SYG498	1	1	6	13-0		4-4	4-4	4-4		
	b SYG499	2	2	6	15-0		4-4	6-4	4-4		
	c SYG500	1	1	6	13-11		4-4	5-3	4-4		
	d SYG501	1	1	6	13-4		4-4	4-8	4-4		
	e SYG502	1	1	6	11-3		4-4	2-7	4-4		
22B	a SYG503	1	1	6	13-0		4-4	4-4	4-4		
	b SYG504	2	2	6	15-0		4-4	6-4	4-4		
	c SYG505	1	1	6	14-8		4-4	6-0	4-4		
	d SYG506	1	1	6	14-6		4-4	5-10	4-4		
	e SYG507	1	1	6	11-9		4-4	3-1	4-4		
23A	a SYG508	1	1	6	13-10		4-9	4-4	4-9		
	b SYG509	2	2	6	15-10		4-9	6-4	4-9		
	c SYG510	1	1	6	14-9		4-9	5-3	4-9		
	d SYG511	1	1	6	14-2		4-9	4-8	4-9		
	e SYG512	1	1	6	12-1		4-9	2-7	4-9		

REINFORCEMENT SCHEDULE - STIRRUPS

BENDING DIAGRAMS

SET NO.	BAR MARK	NUMBER REQ'D PER SET	BAR SIZE	BAR LENGTH	DIMENSIONS						
					A	B	C	D	G	H	
23B	a SKG502	1	1	6	13-10		4-9	4-4	4-9		
	b SKG503	2	2	6	15-10		4-9	6-4	4-9		
	c SKG504	1	1	6	15-8		4-9	6-0	4-9		
	d SKG505	1	1	6	15-4		4-9	5-10	4-9		
	e SKG506	1	1	6	12-7		4-9	3-1	4-9		
24A	a SKG510	1	1	6	14-10		5-3	4-4	5-3		
	b SKG511	2	2	6	16-10		5-3	6-4	5-3		
	c SKG512	1	1	6	15-9		5-3	5-3	5-3		
	d SKG513	1	1	6	15-2		5-3	4-8	5-3		
	e SKG514	1	1	6	13-1		5-3	2-7	5-3		
24B	a SKG510	1	1	6	14-10		5-3	4-4	5-3		
	b SKG511	2	2	6	16-10		5-3	6-4	5-3		
	c SKG512	1	1	6	16-6		5-3	6-0	5-3		
	d SKG516	1	1	6	16-4		5-3	5-10	5-3		
	e SKG517	1	1	6	13-7		5-3	3-1	5-3		
25A	a SYG518	2	4	6	10-2		2-10	4-6	2-10		0-4 1/2
	b SYG519	4	8	6	12-0		2-9	6-6	2-9		0-4 1/2
	c SYG520	2	4	6	1						

REINFORCEMENT SCHEDULE - BENT BARS										
C-E TYPE NN TYPE JK										
BAR MARK	NO.	REQ'D	SIZE	LENGTH	B	C	D	H	O	R
NN4202	1	14	23-11	9-0	5-3	2-5				19-6
NN4203	1	14	24-1	9-0	6-1	2-2				19-1
NN4204	1	14	24-3	8-0	6-11	2-0				18-8
NN4205	1	14	24-2	8-3	7-8	1-11				18-3
NN4206	1	14	24-4	7-11	8-6	1-9				17-10
NN4207	1	14	24-2	7-5	9-4	1-8				17-5
NN4208	1	14	20-2	5-0	10-1	0-9				17-1
NN4209	1	14	20-3	4-3	10-11	0-9				16-8
NN4210	1	14	20-3	4-3	11-9	0-8				16-3
NN4211	1	14	20-3	3-10	12-7	0-6				15-10
NN4212	1	14	20-2	3-4	13-5	0-6				15-3
NN4213	1	14	20-0	2-10	14-3	0-6				15-1
NN4214	1	14	19-10	2-5	15-0	0-4				14-8
NN4215	1	14	19-8	1-11	15-9	0-3				14-3
NN4216	1	14	19-2	1-7	16-6	0-2				13-10
NN4217	1	14	19-10	1-3	17-4	0-2				13-5
NN4218	1	14	19-10	0-10	18-2	0-1				13-0
NN4219	1	14	20-0	0-6	19-0	0-1				12-8
NN4220	1	14	35-2	12-10	9-6	5-7				13-8
NN4221	1	14	35-1	12-7	9-11	5-6				13-6
NN4222	1	14	35-1	12-4	10-5	5-4				13-4
NN4223	1	14	34-10	12-0	10-10	5-3				13-1
NN4224	1	14	34-9	11-9	11-3	5-1				12-10
NN4225	1	14	34-8	11-6	11-8	5-0				12-7
NN4226	1	14	34-7	11-3	12-1	4-11				12-5
NN4227	1	14	34-7	11-0	12-6	4-10				12-2
NN4228	1	14	34-8	10-10	13-0	4-8				12-0
NN4229	1	14	34-8	10-7	13-5	4-7				11-9
NN4230	1	14	34-10	10-6	13-10	4-6				11-6
NN4231	1	14	34-9	10-3	14-3	4-5				11-4
NN4232	1	14	34-8	10-0	14-8	4-4				11-1
NN4233	1	14	34-7	9-9	15-1	4-3				10-10
NN4234	1	14	34-8	9-7	15-6	4-1				10-8
NN4235	1	14	34-7	9-4	15-11	4-0				10-5
NN4236	1	14	34-7	9-1	16-5	3-11				10-2
NN4237	1	14	34-8	8-11	16-10	3-9				10-0
NN4238	1	14	34-10	8-9	17-4	3-8				9-10
NN4239	1	14	34-9	8-6	17-9	3-7				9-6
NN4240	1	14	34-10	8-4	18-2	3-6				9-4
NN4241	1	14	34-9	8-1	18-7	3-4				9-1
NN4242	1	14	34-8	7-11	19-0	3-3				8-11
NN4243	1	14	34-9	7-8	19-5	3-2				8-8
NN4244	1	14	34-6	7-4	19-10	3-0				8-5
NN4245	1	14	34-5	7-1	20-3	2-11				8-3
NN4246	1	14	34-4	6-10	20-8	2-9				8-0
NN4247	1	14	34-6	6-8	21-2	2-8				7-10
NN4248	1	14	34-5	6-5	21-7	2-7				7-7
NN4249	1	14	34-4	6-2	22-0	2-6				7-4
NN4250	1	14	34-5	6-0	22-5	2-6				7-2
NN4251	1	14	34-4	5-9	22-10	2-5				6-11
NN4252	1	14	34-5	5-7	23-3	2-3				6-8
NN4253	1	14	34-4	5-4	23-8	2-2				6-6
NN4254	1	14	34-3	5-1	24-1	2-0				6-3
NN4255	1	14	34-2	4-10	24-6	1-11				6-1
NN4256	1	14	34-2	4-8	24-10	1-9				5-11
NN4257	1	14	34-2	4-6	25-2	1-8				5-9
NN4258	1	14	34-2	4-4	25-6	1-7				5-7
NN4259	1	14	34-0	4-1	25-10	1-6				5-5
NN4260	1	14	34-0	3-11	26-2	1-5				5-3
NN4261	1	14	33-10	3-8	26-6	1-4				5-1
NN4262	1	14	33-8	3-5	26-10	1-3				4-11
NN4263	1	14	33-8	3-3	27-2	1-2				4-9
NN4264	1	14	33-7	3-0	27-7	1-1				4-7

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1967

NOTES:
All bar marks to be prefixed by number C3-129
Work this drawing with Dwg. C3-129
through C3-135.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
CIVIL - EAST PORTAL SECTION REINFORCEMENT					
SOUTH TRANSITION SEGMENT REINFORCEMENT SCHEDULES II					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	E.P.P.	CHECKED	P.F.L.	DATE	NOV. 1967
APPROVED	[Signature]	APPROVED	[Signature]		
					C3-136
					SCALE: NO SCALE DATE: NOV. 1967

REINFORCEMENT SCHEDULE - BENT BARS										
BENDING DIAGRAMS										
TYPE E TYPE H TYPE J TYPE L										
BAR MARK	NO.	REQ'D	SIZE	LENGTH	B	C	D	H	O	R
EB106	6	18	27-8	12-8	3-0	12-0	0-6			
EB107	6	18	29-0	13-3	3-0	12-9	0-6			
EB108	10	18	29-1	13-2	3-0	12-11	0-5			
EB108	6	18	29-0	6-7	3-0	19-5	0-9			
EB185	2	18	11-6	6-7	3-0	3-11	0-9			
EB186	7	18	29-3	7-4	3-0	18-11	0-8			
EB187	7	18	30-0	7-0	3-0	20-0	0-7			
EB195	2	18	11-6	6-9	3-0	1-9	0-8			
EH401	3	14	24-5	5-0	3-0	16-5	0-3			
EH402	3	14	25-0	8-6	3-0	13-6	0-4			
EH403	6	14	26-0	12-0	3-0	11-0	0-4			
EH404	6	14	28-9	12-6	3-0	11-3	0-4			
EH405	6	14	27-6	12-6	3-0	12-0	0-4			
EH478	4	14	25-0	4-0	3-0	18-0	0-7			
EH479	2	14	10-0	4-0	3-0	3-0	0-7			
EH480	6	14	26-0	5-0	3-0	18-0	0-8			
EH481	4	14	26-9	5-9	3-0	18-0	0-8			
EH482	2	14	10-6	5-9	3-0	1-9	0-8			
EH483	6	14	27-6	5-9	3-0	18-9	0-9			
EH493	2	14	11-0	0-0	3-0	8-0	0-7			
EH494	2	14	11-0	0-0	3-0	8-0	0-7			
H4290	140	4	1-6	0-4	1-2	0-0				
H4291	280	4	1-10	0-4	1-6	0-0				
H4292	5	4	9-8	1-3	7-2	1-3				
H4293	52	4	8-8	1-3	6-2	1-3				
H4294	168	4	4-3	1-3	3-0	0-0				
H4295	15	4	3-6	1-3	2-3	0-0				
H4297	10	4	3-3	1-3	2-0	0-0				
H4298	8	4	2-9	1-3	1-6	0-0				
H4299	8	4	2-6	1-3	1-3	0-0				
H4300	9	4	2-3	1-3	1-0	0-0				
J1805	78	18	36-10	35-6	4-0					42-5
J18220	3	18	36-3	30-9	8-3					18-8
J18222	1	18	37-7	31-2	8-5					18-6
J18223	1	18	35-10	30-9	7-10					19-0
J18110	1	14	13-6	13-0	1-6					15-10
J18111	1	14	14-2	13-0	1-6					17-1
J18196	1	14	24-3	23-0	3-3					21-0
J18197	1	14	24-2	23-0	3-0					22-9
J18198	1	14	24-0	23-0	2-10					23-6
L1801	94	18	38-4	17-2	4-8	16-5				3-0
L1806	4	18	31-7	14-4	4-0	13-2				2-6
L1833	40	18	31-9	14-8	3-6	13-6				2-3
L1402	4	14	38-4	17-2	4-8	16-5				3-0
L1415	4	14	35-10	0-6	26-9	8-7				17-0
L1416	4	14	36-4	1-3	25-6	9-7				16-2
L1417	4	14	37-1	2-1	24-3	10-9				15-5
L1418	4	14	38-0	3-0	23-0	12-0				14-7
L1419	4	14	38-8	3-10	21-8	13-2				13-10
L1420	4	14	39-8	5-0	20-5	14-3				13-0
L1421	4	14	30-0	7-2	19-2	3-8				12-2
L1422	4	14	30-1	7-10	17-11	4-4				11-5
L1423	4	14	30-3	8-6	16-8	5-1				10-7
L1424	4	14	30-7	9-2	15-4	6-0				9-9
L1425	4	14	30-9	9-10	14-2	6-9				9-0
L1426	4	14	31-7	11-1	12-10	7-8				8-2

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-00	

INDEX OF DRAWINGS

STRUCTURAL REINFORCEMENT VENTILATION BUILDINGS

AS CONSTRUCTED
REVISED DATE 10-26-73

Sheet No.	Drawing No.	WEST VENTILATION BUILDING	Sheet No.	Drawing No.	EAST VENTILATION BUILDING	Sheet No.	Drawing No.	WEST AND EAST VENTILATION BUILDINGS
RS-00	S-G100	INDEX OF DRAWINGS	RS-47	S-E101	INTERIOR FOOTINGS AND PEDESTALS - ROADWAY LEVEL	RS-108	S-WE101	VEHICLE FITS - VOID
RS-1	S-W101	INTERIOR FOOTINGS AND PEDESTALS - ROADWAY LEVEL	RS-48	S-E102	BASEMENT FOOTINGS - SHEET 1	RS-109	S-WE102	MANHOLES
RS-2	S-W102	FOOTING - NORTH WALL	RS-49	S-E103	BASEMENT FOOTINGS - SHEET 2	RS-110	S-WE103	MISCELLANEOUS DETAILS - SHEET 1
RS-3	S-W103	NORTH WALL - SHEET 1	RS-50	S-E104	BASEMENT SLAB - SHEET 1	RS-111	S-WE104	MISCELLANEOUS DETAILS - SHEET 2
RS-4	S-W104	NORTH WALL - SHEET 2	RS-51	S-E105	BASEMENT SLAB - SHEET 2			
RS-5	S-W105	NORTH WALL - COUNTERFORTS	RS-52	S-E106	BASEMENT SLAB - SHEET 3			
RS-6	S-W106	NORTH AND SOUTH WALLS - SCHEDULES	RS-53	S-E107	BASEMENT - EXTERIOR WALLS - SHEET 1			
RS-7	S-W107	FRONT WALLS	RS-54	S-E108	BASEMENT - EXTERIOR WALLS - SHEET 2			
RS-8	S-W108	FOOTING - SOUTH WALL	RS-55	S-E109	BASEMENT - INTERIOR WALLS - SHEET 1			
RS-9	S-W109	SOUTH WALL	RS-56	S-E110	BASEMENT - INTERIOR WALLS - SHEET 2			
RS-10	S-W110	SOUTH WALL - COUNTERFORTS	RS-57	S-E111	BASEMENT - INTERIOR WALLS - SHEET 3			
RS-11	S-W111	FOOTING - EAST WALL - SHEET 1	RS-58	S-E112	ROADWAY FLOOR SLAB OVER BASEMENT - BEAMS			
RS-12	S-W112	FOOTING - EAST WALL - SHEET 2	RS-59	S-E113	ROADWAY FLOOR SLAB OVER BASEMENT - BOTTOM BARS			
RS-13	S-W113	EAST WALL - SHEET 1	RS-60	S-E114	ROADWAY FLOOR SLAB OVER BASEMENT - TOP BARS			
RS-14	S-W114	EAST WALL - SHEET 2	RS-61	S-E115	ROADWAY FLOOR SLAB OVER BASEMENT - SCHEDULE			
RS-15	S-W115	EAST WALL - COUNTERFORTS	RS-62	S-E116	FRONT WALL			
RS-16	S-W116	EAST WALL - SECTIONS AND DETAILS	RS-63	S-E117	FOOTING - NORTH WALL			
RS-17	S-W117	EAST WALL - SCHEDULE	RS-64	S-E118	NORTH WALL			
RS-18	S-W118	SOUTH TRANSITION - NORTH WALL	RS-65	S-E119	FOOTING - SOUTH WALL			
RS-19	S-W119	SOUTH TRANSITION - SOUTH WALL	RS-66	S-E120	SOUTH WALL			
RS-20	S-W120	NORTH TRANSITION - NORTH AND SOUTH WALLS	RS-67	S-E121	COUNTERFORTS - NORTH AND SOUTH WALLS			
RS-21	S-W121	TRANSITION WALLS - SECTIONS AND SCHEDULE	RS-68	S-E122	NORTH AND SOUTH WALLS - SECTIONS AND DETAILS			
RS-22	S-W122	TRANSITIONS - ROOF SLABS	RS-69	S-E123	NORTH AND SOUTH WALLS - SCHEDULES			
RS-23	S-W123	NORTH TRANSITION - DUCT FLOOR, DUCT DIVIDER AND TUNNEL CEILING - VOID	RS-70	S-E124	FOOTING - WEST WALL - SHEET 1			
RS-24	S-W124	FAN ROOM FLOOR SLAB - NORTH - BOTTOM BARS	RS-71	S-E125	FOOTING - WEST WALL - SHEET 2			
RS-25	S-W125	FAN ROOM FLOOR SLAB - SOUTH - BOTTOM BARS	RS-72	S-E126	WEST WALL - SHEET 1			
RS-26	S-W126	FAN ROOM FLOOR SLABS - NORTH AND SOUTH - SCHEDULE - BOTTOM BARS	RS-73	S-E127	WEST WALL - SHEET 2			
RS-27	S-W127	FAN ROOM FLOOR SLAB NORTH - TOP BARS	RS-74	S-E128	WEST WALL - COUNTERFORTS			
RS-28	S-W128	FAN ROOM FLOOR SLAB SOUTH - TOP BARS	RS-75	S-E129	WEST WALL - SECTIONS AND DETAILS			
RS-29	S-W129	FAN ROOM FLOOR SLABS - NORTH AND SOUTH - SCHEDULE - TOP BARS	RS-76	S-E130	WEST WALL - SCHEDULE			
RS-30	S-W130	FAN ROOM BEAMS - FIREPROOFING - NORTH	RS-77	S-E131	SOUTH TRANSITION - NORTH AND SOUTH WALLS			
RS-31	S-W131	FAN ROOM BEAMS - FIREPROOFING - SOUTH	RS-78	S-E132	NORTH TRANSITION - NORTH AND SOUTH WALLS			
RS-32	S-W132	FAN ROOM BEAMS - FIREPROOFING - NORTH AND SOUTH - SCHEDULE	RS-79	S-E133	TRANSITION WALLS - SECTIONS AND SCHEDULE			
RS-33	S-W133	DUCT DIVIDER WALLS - NORTH AND SOUTH	RS-80	S-E134	TRANSITIONS - ROOF SLABS			
RS-34	S-W134	ROOF SLAB - NORTH - BOTTOM BARS	RS-81	S-E135	NORTH TRANSITION - DUCT FLOOR, DUCT DIVIDER AND TUNNEL CEILING - VOID			
RS-35	S-W135	ROOF SLAB - SOUTH - BOTTOM BARS	RS-82	S-E136	FAN ROOM FLOOR SLAB - NORTH - BOTTOM BARS			
RS-36	S-W136	ROOF SLAB - NORTH AND SOUTH - SCHEDULE - BOTTOM BARS	RS-83	S-E137	FAN ROOM FLOOR SLAB - SOUTH - BOTTOM BARS			
RS-37	S-W137	ROOF SLAB - NORTH - TOP BARS	RS-84	S-E138	FAN ROOM FLOOR SLABS - NORTH AND SOUTH - SCHEDULE - BOTTOM BARS			
RS-38	S-W138	ROOF SLAB - SOUTH - TOP BARS	RS-85	S-E139	FAN ROOM FLOOR SLAB - NORTH - TOP BARS			
RS-39	S-W139	ROOF SLAB - NORTH AND SOUTH - SCHEDULE - TOP BARS	RS-86	S-E140	FAN ROOM FLOOR SLAB - SOUTH - TOP BARS			
RS-40	S-W140	ROOF BEAMS - FIREPROOFING - NORTH	RS-87	S-E141	FAN ROOM FLOOR SLABS - NORTH AND SOUTH - SCHEDULE - TOP BARS			
RS-41	S-W141	ROOF BEAMS - FIREPROOFING - SOUTH	RS-88	S-E142	FAN ROOM FLOOR - FIREPROOFING - NORTH			
RS-42	S-W142	ROOF BEAMS - FIREPROOFING - NORTH AND SOUTH - SCHEDULE	RS-89	S-E143	FAN ROOM FLOOR - FIREPROOFING - SOUTH			
RS-43	S-W143	INTERIOR ROOMS - CEILING SLABS - SHEET 1	RS-90	S-E144	FAN ROOM FLOOR - FIREPROOFING - SCHEDULE - NORTH AND SOUTH			
RS-44	S-W144	INTERIOR ROOMS - CEILING SLABS - SHEET 2	RS-91	S-E145	DUCT DIVIDER WALL - NORTH			
RS-45	S-W145	WALKWAYS - VOID	RS-92	S-E146	DUCT DIVIDER WALL - SOUTH			
RS-46	S-W146	MISCELLANEOUS DETAILS	RS-93	S-E147	CONTROL ROOM CEILING			
			RS-94	S-E148	ROOF SLAB - NORTH - BOTTOM BARS			
			RS-95	S-E149	ROOF SLAB - SOUTH - BOTTOM BARS			
			RS-96	S-E150	ROOF SLAB - NORTH AND SOUTH - SCHEDULE - BOTTOM BARS			
			RS-97	S-E151	ROOF SLAB - NORTH - TOP BARS			
			RS-98	S-E152	ROOF SLAB - SOUTH - TOP BARS			
			RS-99	S-E153	ROOF SLAB - NORTH AND SOUTH - SCHEDULE - TOP BARS			
			RS-100	S-E154	ROOF BEAMS - FIREPROOFING - NORTH			
			RS-101	S-E155	ROOF BEAMS - FIREPROOFING - SOUTH			
			RS-102	S-E156	ROOF BEAMS - FIREPROOFING - NORTH AND SOUTH - SCHEDULE			
			RS-103	S-E157	FAN ROOM FLOOR SLAB AND ROOF - CURBS AROUND FLOOR OPENINGS			
			RS-104	S-E158	INTERIOR ROOMS - CEILING SLABS - SHEET 1			
			RS-105	S-E159	INTERIOR ROOMS - CEILING SLABS - SHEET 2			
			RS-106	S-E160	WALKWAYS - VOID			
			RS-107	S-E161	MISCELLANEOUS DETAILS			

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL REINFORCEMENT INDEX OF REINFORCEMENT DRAWINGS VENTILATION BUILDINGS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: S.A.B.	RECOMMENDED:	<i>H.G. Condit</i>			
CHECKED: R.E.	APPROVED:	<i>Frank DeLeon</i>			
DRAWN: <i>Frank DeLeon</i>		DRAWING NO. 38-100			
NEW YORK, N. Y.		SCALE:	DATE: JAN. 1968		

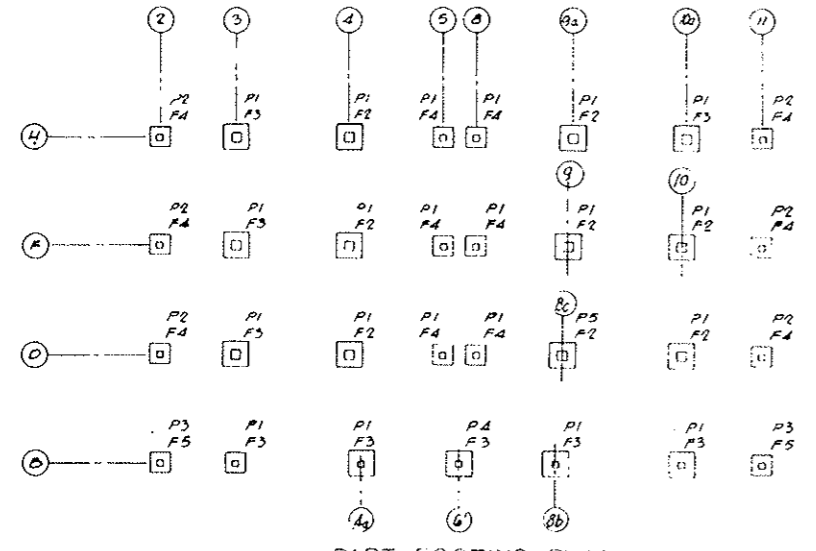
INTERIOR FOOTING SCHEDULE			
MARK	NO.	SIZE	REINF. LEV. BOT.
F2	8	10'-0" x 10'-0" x 3'-0"	32'-0" x 3'-0"
F3	9	9'-0" x 9'-0" x 3'-0"	20'-0" x 3'-0"
F4	12	8'-0" x 8'-0" x 2'-0"	24'-0" x 7'-0"
F5	2	7'-0" x 7'-0" x 2'-0"	22'-0" x 7'-0"

AS CONSTRUCTED
REVISED DATE 10-26-73

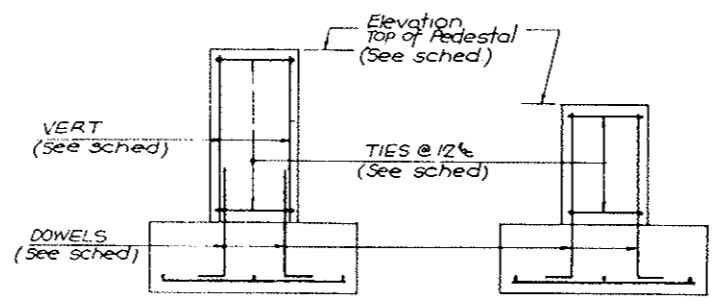
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RS-1	

BENDING DETAILS														
NO.	SIZE	LGTH.	MARK	TYPE	A	B	C	D	E	F	G	H	K	J
96	8	6-3	P 2	17		1-0	4-9							
120	8	9-3	3	17		1-0	7-9							
16	8	9-9	4	17		1-0	5-3							
12	3	9-4	5	17	4	2-2	2-2	2-2	2-2					
12	3	6-10	P 0	17	4	1-6	1-6	1-6	1-6					
40	3	11-4	7	17	4	2-8	2-8	2-8	2-8					
40	3	8-4	8	17	4	1-11	1-11	1-11	1-11					
G	3	15-4	9	17	4	3-8	3-8	3-8	3-8					
G	3	11-2	10	17	4	2-7	2-7	2-7	2-7					
128	3	13-4	P 11	17	4	5-2	5-2	3-2	3-2					
128	3	9-8	12	17	4	2-3	2-3	2-3	2-3					
16	8	8-9	13	17		1-6	7-3							
G	3	13-4	14	17	4	2-8	3-8	2-8	3-8					
G	3	9-9	15	17	4	2-3	2-3	2-3	2-3					

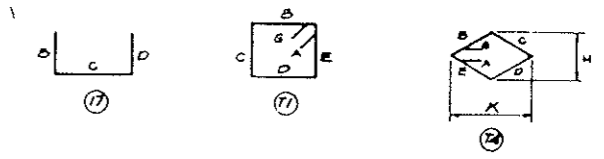
All dimensions are out to out



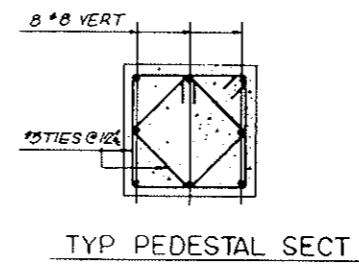
PART FOOTING PLAN



SKETCH I SKETCH II
 TYP FOOTING & PEDESTAL



PEDESTAL SCHEDULE (WEST BUILDING)												
COLUMN NOS.	NO. REQD.	FOOTG. MARK	PEDESTAL			ELEVATIONS			REINFORCING			SK
			TYPE	SIZE	HEIGHT	BOTT. FTG.	TOP FTG.	TOP PEDESTAL	DOWELS	VERTICALS	TIES @ 12"	
2-B	1	F5	P3	2'-6" x 2'-6"	5'-8"	11149.0	11151.5	11157.17	8'-8" P2	8'-8" 5-G	6'-3" P5	I
2-D	1	F4	P2	3'-0" x 3'-0"	5'-8"	11149.0	11151.5	11157.17	8'-8" P2	8'-8" 5-G	6'-3" P7	I
2-F, 2-H	2	F4	P2	3'-0" x 3'-0"	7'-2"	11149.0	11151.5	11158.67	8'-8" P2	8'-8" 7-0	8'-3" P8	I
3-B, 3-D	2	F3	P1	3'-6" x 3'-6"	5'-2"	11149.0	11152.0	11157.17	8'-8" P3	SEE DOWELS	6'-3" P11	II
3-F, 3-H	2	F3	P1	3'-6" x 3'-6"	6'-8"	11149.0	11152.0	11158.67	8'-8" P4	8'-8" 6-6	7'-3" P11	I
4-D, 4-F, 4-H	5	F2	P1	3'-6" x 3'-6"	5'-2"	11149.5	11149.5	11154.67	8'-8" P3	SEE DOWELS	6'-3" P12	II
4a-B, 8b-B	2	F3	P1	3'-6" x 3'-6"	5'-2"	11149.5	11149.5	11154.67	8'-8" P3	SEE DOWELS	6'-3" P12	II
5-D, 5-F, 5-H	6	F4	P1	3'-6" x 3'-6"	5'-8"	11149.5	11149.0	11154.67	8'-8" P2	8'-8" 5-G	6'-3" P11	I
8-D, 8-F, 8-H	6	F4	P1	3'-6" x 3'-6"	5'-8"	11149.5	11149.0	11154.67	8'-8" P2	8'-8" 5-G	6'-3" P12	I
6-B	1	F3	P4	3'-0" x 4'-0"	5'-2"	11149.5	11149.5	11154.67	8'-8" P3	SEE DOWELS	6'-3" P14	II
8c-D	1	F2	P5	4'-0" x 4'-0"	5'-2"	11149.5	11149.5	11154.67	8'-8" P3	SEE DOWELS	6'-3" P10	II
10-B	1	F3	P1	3'-6" x 3'-6"	5'-2"	11144.5	11147.5	11152.67	8'-8" P3	SEE DOWELS	6'-3" P11	II
10-D	1	F2	P1	3'-6" x 3'-6"	5'-2"	11144.5	11147.5	11152.67	8'-8" P3	SEE DOWELS	6'-3" P12	II
10-F	1	F2	P1	3'-6" x 3'-6"	5'-2"	11146.0	11149.0	11154.17	8'-8" P3	SEE DOWELS	6'-3" P11	II
10a-H	1	F3	P1	3'-6" x 3'-6"	5'-2"	11146.0	11149.0	11154.17	8'-8" P3	SEE DOWELS	6'-3" P12	II
11-B	1	F5	P3	2'-6" x 2'-6"	5'-8"	11144.5	11147.0	11152.67	8'-8" P2	8'-8" 5-G	6'-3" P5	I
11-D	1	F4	P2	3'-0" x 3'-0"	5'-8"	11144.5	11147.0	11152.67	8'-8" P2	8'-8" 5-G	6'-3" P7	I
11-F, 11-H	2	F4	P2	3'-0" x 3'-0"	5'-2"	11145.0	11147.5	11152.67	8'-8" P3	SEE DOWELS	6'-3" P7	II



STRAIGHT BAR LIST		
NO.	SIZE	LGTH.
256	#9	9-6
234	#8	8-6
288	#7	7-6
16	#7	7-0
16	#6	6-6
80	#8	5-6
44	#7	6-6

NOTES:
 Prefix all bent bars with letter "W"

See sheet NO. 140 AX for additional footing details.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
 STRUCTURAL - REINFORCEMENT
 WEST VENTILATION BUILDING
 INTERIOR FOOTINGS AND PEDESTALS
 ROADWAY LEVEL

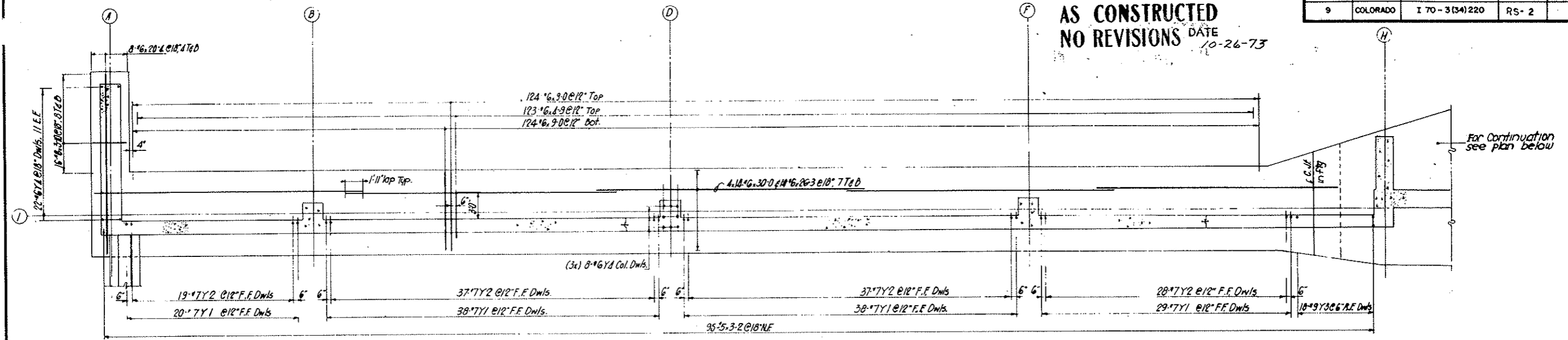
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS
 NEW YORK, N. Y.

DESIGNED: E. H. ...
 DRAWN: R. E. ...
 CHECKED: P. B. ...
 SUBMITTED: ...
 APPROVED: ...
 SCALE: NO SCALE DATE: DEC. 1967

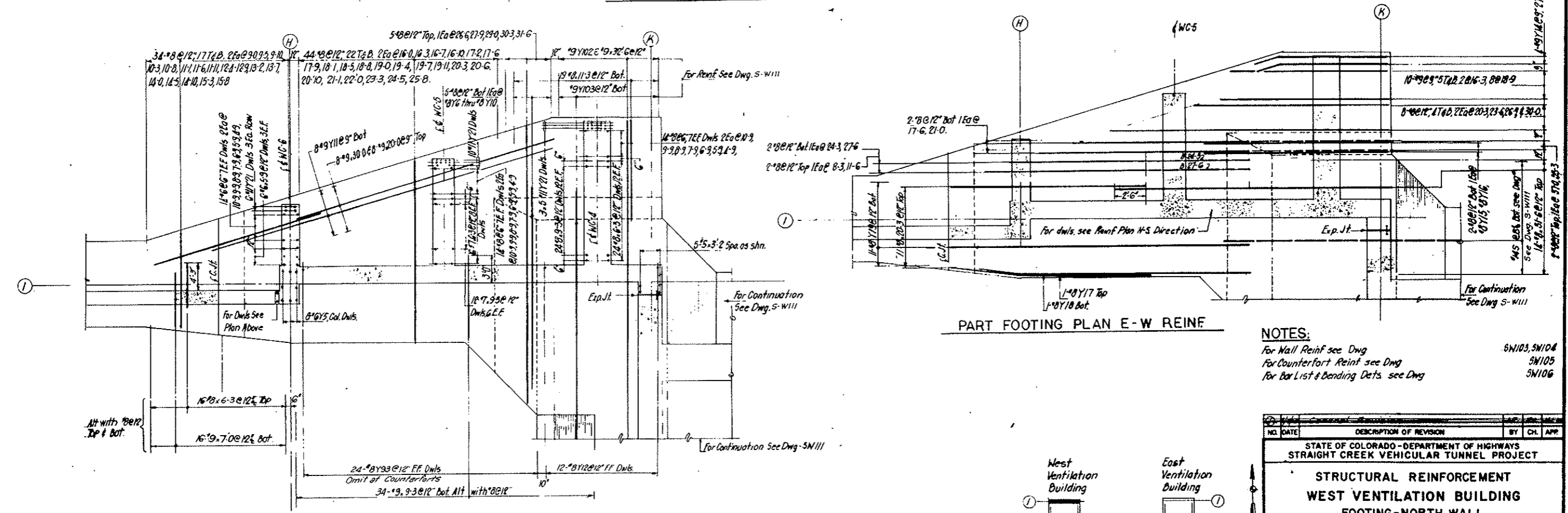
DRAWING NO. S-W101

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RS-2	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



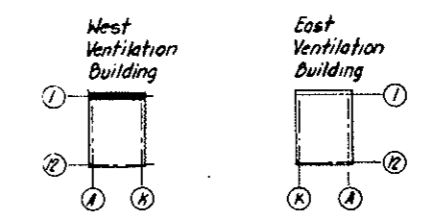
PART FOOTING PLAN



PART FOOTING PLAN E-W REINF

PART FOOTING PLAN N-S REINF

- NOTES:
- For Wall Reinf see Dwg S-W103, S-W104
 - For Counterfort Reinf see Dwg S-W105
 - For Bar List & Bending Dets see Dwg S-W106

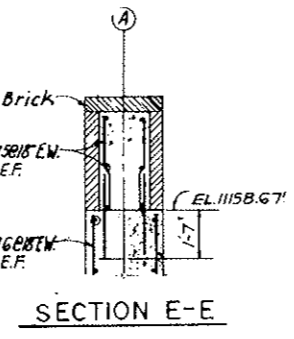
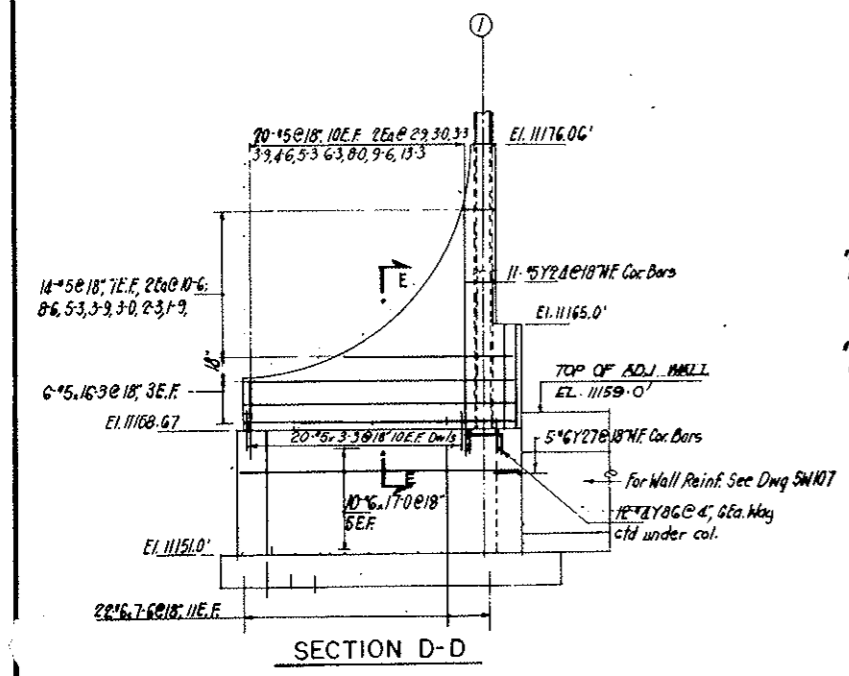
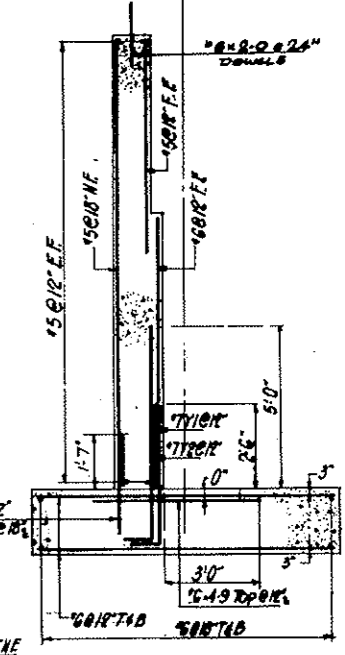
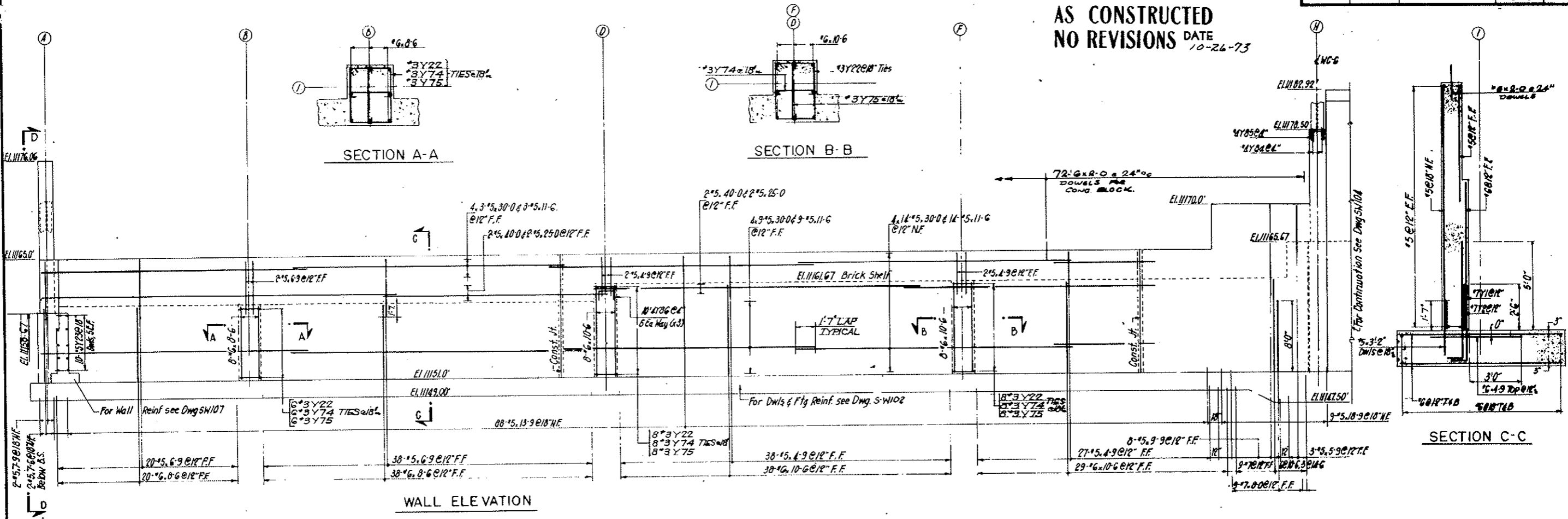


KEY PLAN

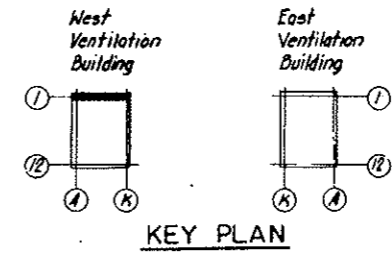
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL REINFORCEMENT WEST VENTILATION BUILDING FOOTING-NORTH WALL					
TIPPETTS · ABBETT · MCCARTHY · STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J. V.	CHECKED: P. B.	APPROVED: <i>Shaul Rubin</i>		DRAWING NO. S-W102	
DRAWN: J. V.		SCALE: 1/8" = 1'-0"		DATE: DEC. 1967	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-3	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



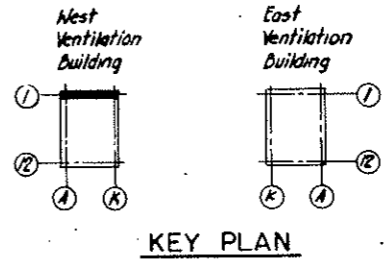
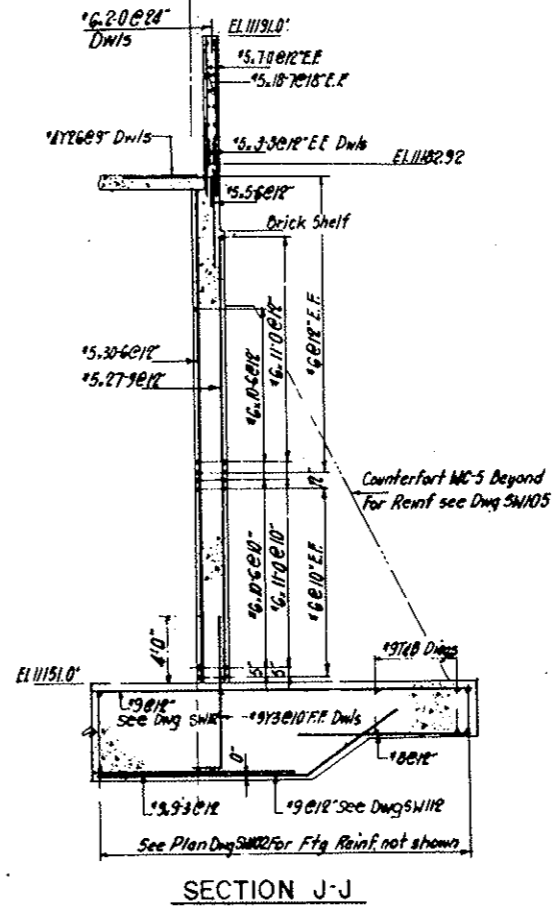
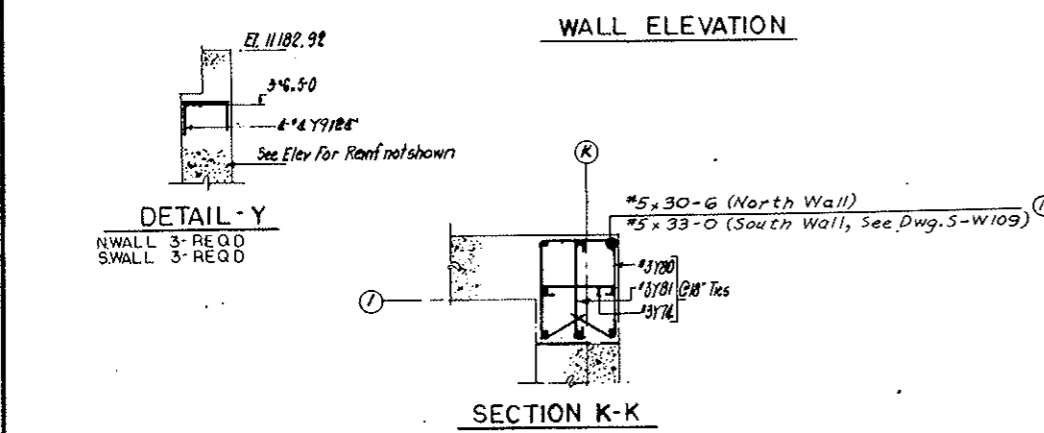
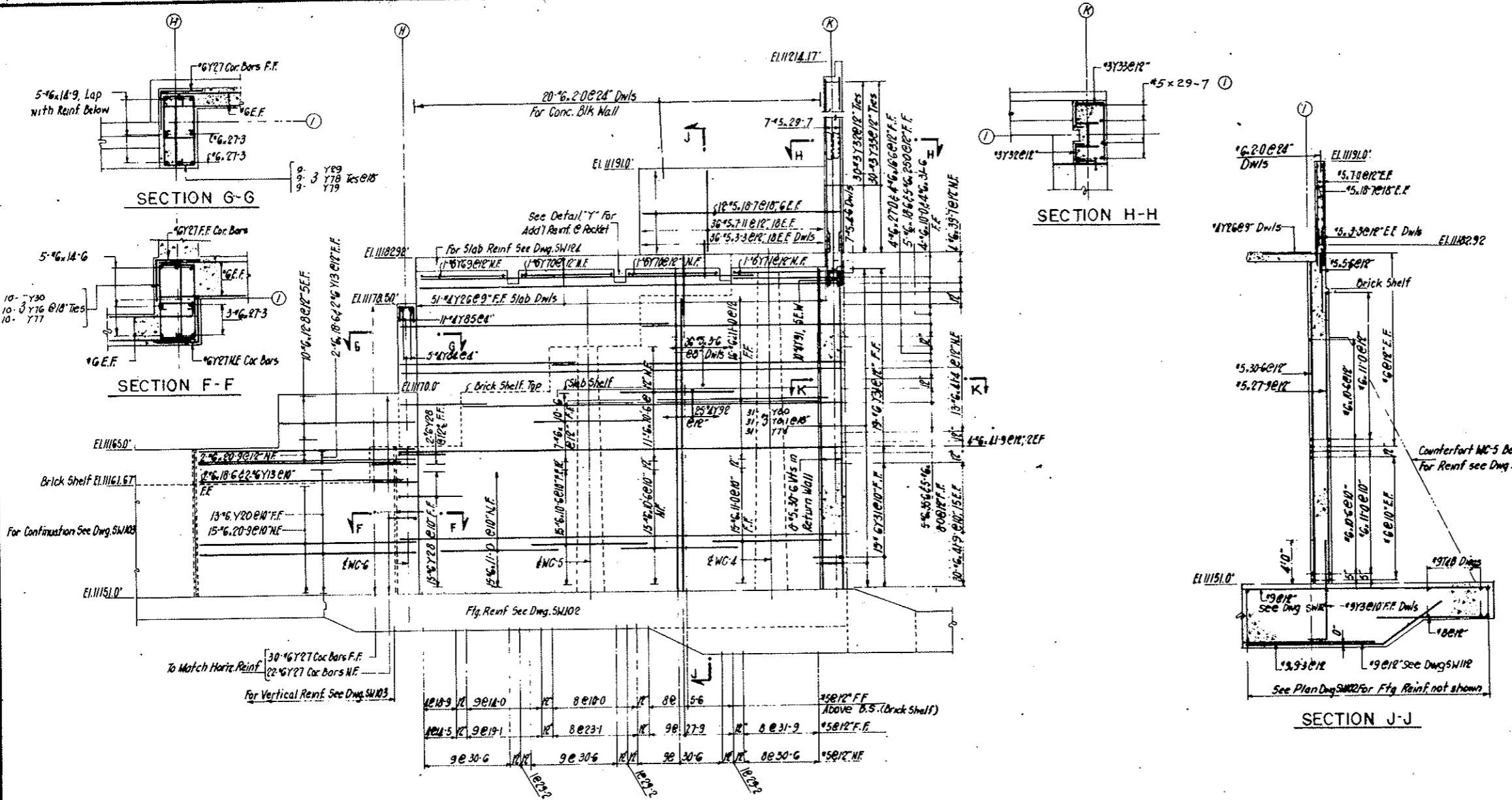
- NOTES:
1. For Footing and Vertical wall Dowels see Dwg No SW102
 2. For Counterfort wall Reinforcing see Dwg SW105
 3. For Bending Dets & Bar Lists see Dwg SW106
 4. For Balance of North wall Reinf. see Dwg No SW104



NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL REINFORCEMENT WEST VENTILATION BUILDING NORTH WALL SHEET 1					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	J. V.	RECOMMENDED BY			
DRAWN BY	J. V.	CHECKED BY			
SUBMITTED BY	P. B.	APPROVED BY			
DATE	DEC. 1967	SCALE	3/8" = 1'-0"	DATE	DEC. 1967
					DRAWING NO. S-W103

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-4	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NOTES:
 For Dending Details & Bar Lists SW106
 For Foundation Slab & Dws see Dwg. SW107
 For continuation of Wall see Dwg. SW109
 For Fan Rm Slab see Dwg. SW124
 For Counterfort Reinf see Dwg. SW105

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Section K-K-H-H Revised			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL REINFORCEMENT
WEST VENTILATION BUILDING
NORTH WALL
 SHEET 2

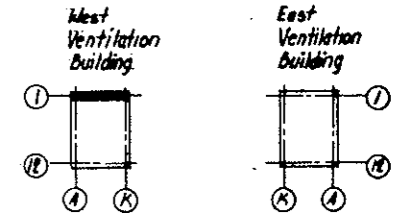
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: J. V.
 DRAWN: J. V.
 CHECKED: E. M.
 SUBMITTED: J. V.
 NEW YORK, N. Y.

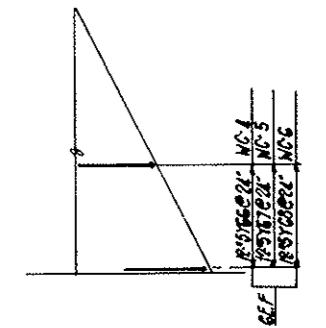
RECOMMENDED: J. V.
 APPROVED: J. V.
 DATE: DEC. 1967

DRAWING NO. SW104

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	RS - 5	

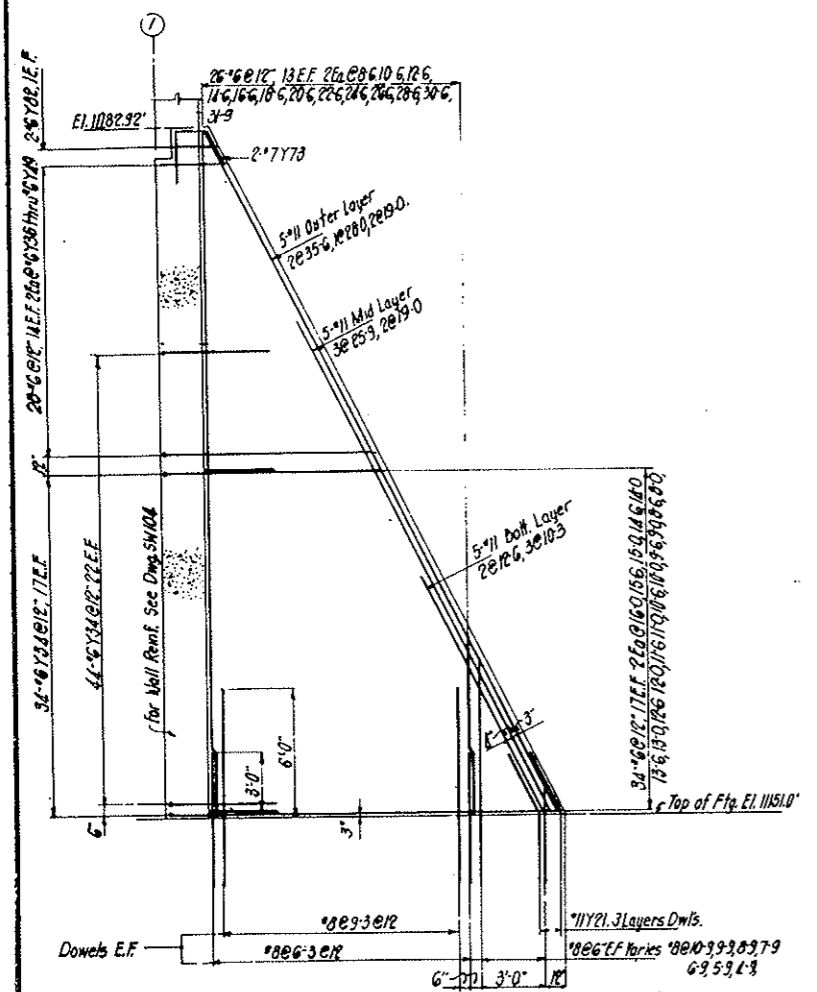


KEY PLAN
AS CONSTRUCTED
 DATE 10-26-73

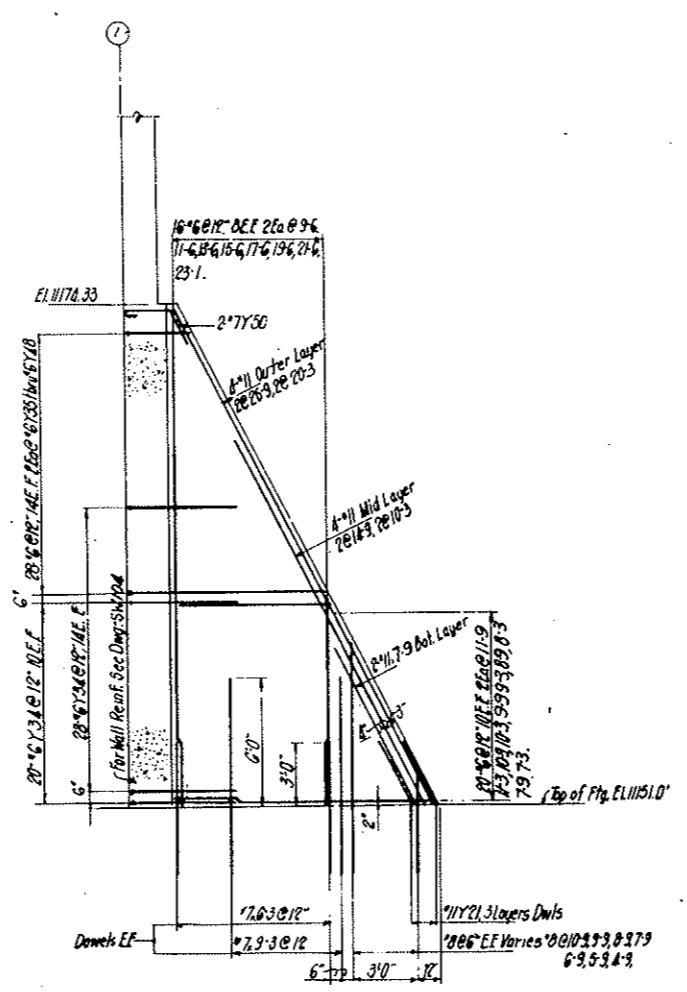


ADDL REINF WC4,5,6

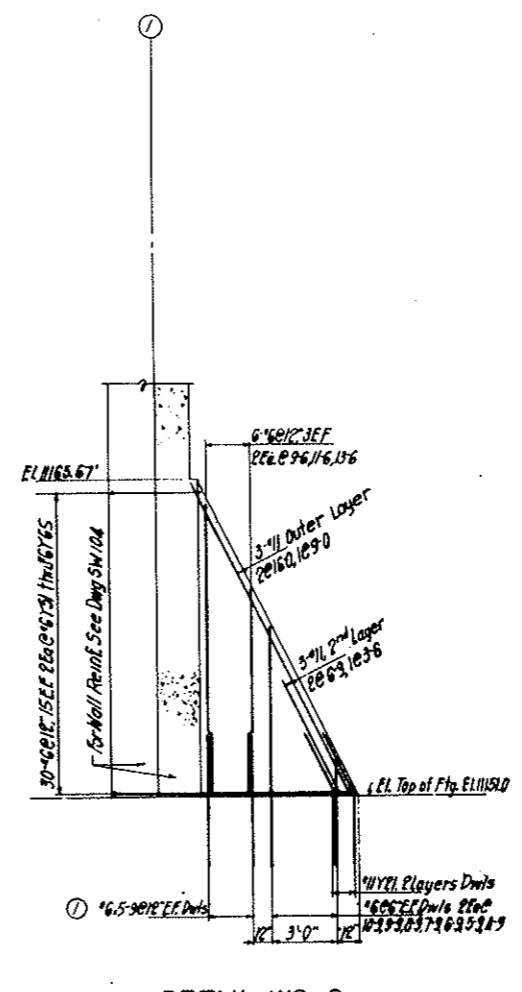
NOTES:
 For Flg Reinf see Dwg SW101, SW102
 For Wall Reinf see Dwg SW103, SW104
 For Bonding Dets & Bar Lists see Dwg SW106



DETAIL WC-4



DETAIL WC-5



DETAIL WC-6

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL REINFORCEMENT WEST VENTILATION BUILDING NORTH WALL COUNTERFORTS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	J.V.	RECORDED	 APPROVED: <i>[Signature]</i> DATE: DEC. 1973		
DRAWN	J.V.	CHECKED			
CHECKED	E.M.	APPROVED			
SUBMITTED	J.P. Radtke	APPROVED			
DRAWING NO.		SCALE: 1/4" = 1'-0"			
S-W105		DATE: DEC. 1973			

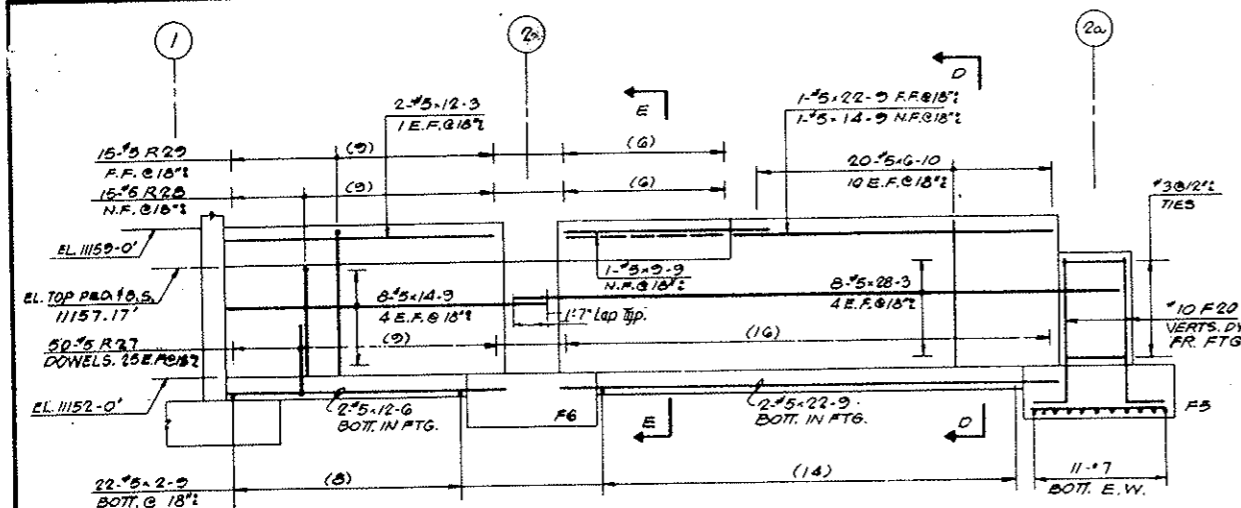
BENDING																
N	S	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
125	5	17	5-3	Y	1	17	1.0	4-3								
121	4	17	7-9	2	17	1.0	6-9									
18	29	19	8-7	3	17	1.4	7-3									
46	54	16	4-6	4	17	0.10	3-8									
8	16	6-0	Y	5	17	0.10	5-2									
1	18	21-7	6	4		2.10	18-9						2.0	2.0		
1	18	22-9	7	4		3.6	19-3						2.6	2.6		
1	18	24-0	8	4		4.3	19-9						3.0	3.0		
1	18	25-3	9	4		5.0	20-3						3.6	3.6		
1	18	26-5	Y	10	4	5.8	20-9						4.0	4.0		
8	19	42-6	11	4		6.3	36-3						7.9	5.8		
12	18	11-1	12	17		1.4	9-9									
4	16	5-0	13	17		0.10	4-2									
4	16	14-6	14	4		3.0	11-6						0.10	2.10		
1	18	20-9	Y	15	4	4.3	16-6						1.3	4.1		
1	18	21-0	16	4		6.6	14-6						1.0	6.3		
1	18	20-3	17	4		8.0	12-3						0.11	7.11		
1	18	30-0	18	4		5.0	25-0						0.7	4.12		
11	18	36-0	19	4		6.0	30-0						2.9	5.4		
13	16	21-7	Y	20	17	0.10	20-9									
31	31	11	8-6	21	4	1.8	3-3	3-7								
22	20	13	11-2	22	17	0.4	3-1	2-2	3-1	2-2	0.4					
10	10	5	3-9	23	17	0.9	3-0									
11	12	5	3-2	24	17	1.7	1-7									
112	16	6-7	Y	25	17	0.10	5-9									
51	51	14	8-10	26	17	2.0	6-10									
57	60	16	4-0	27	17	2.0	2.0									
17	20	16	8-0	28	17	2.0	6.0									
9	9	13	10-6	Y	29	17	0.4	1-3	3-3	1-3	3-3	0.4				
10	12	13	12-0	Y	30	17	0.4	1-10	3-10	1-10	3-10	0.4				
34	33	16	4-8	31	17	2.0	2-8									
30	30	13	1-11	32	17	0.5	0.8	0.10								
30	30	13	5-2	33	17	0.5	0.10	1.3	2.7							
126	146	16	5-7	34	17	0.10	4.9									
2	2	16	3-1	Y	35	17	0.10	2.3								
4	4	16	3-7	36	17	0.10	2.9									
4	4	16	4-1	37	17	0.10	3.3									
4	4	16	4-7	38	17	0.10	3.9									
4	4	16	5-1	39	17	0.10	4.3									
4	4	16	5-7	Y	40	17	0.10	4.9								
4	4	16	6-1	41	17	0.10	5.3									
4	4	16	6-7	42	17	0.10	5.9									
4	4	16	7-1	43	17	0.10	6.3									
4	4	16	7-7	44	17	0.10	6.9									
4	4	16	8-1	Y	45	17	0.10	7.3								
4	4	16	8-7	46	17	0.10	7.9									
4	4	16	9-1	47	17	0.10	8.3									
4	4	16	9-7	48	17	0.10	8.9									
2	2	16	10-1	49	17	0.10	9.3									
2	2	17	5-0	Y	50	3	0.9	2.0	2.3					1.0	2.0	
2	2	16	4-10	51	17	0.10	4.0									
2	2	16	5-4	52	17	0.10	4.6									
2	2	16	5-10	53	17	0.10	5.0									
2	2	16	6-4	54	17	0.10	5.6									
2	2	16	6-10	Y	55	17	0.10	6.0								
2	2	16	7-4	56	17	0.10	6.6									
2	2	16	7-10	57	17	0.10	7.0									
2	2	16	8-4	Y	58	17	0.10	7.6								

DETAILS																
N	S	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
2	2	16	8-10	Y	59	17	0.10	8.0								
2	2	16	9-4	60	17	0.10	8.6									
2	2	16	9-10	61	17	0.10	9.0									
2	2	16	10-4	62	17	0.10	9.6									
2	2	16	10-10	63	17	0.10	10.0									
2	2	16	11-4	64	17	0.10	10.6									
2	2	16	11-10	Y	65	17	0.10	11.0								
12	14	15	4-6	66	17	2.6	2.0									
12	14	15	4-0	67	17	2.0	2.0									
12	14	15	3-6	68	17	1.6	2.0									
1	1	16	9-8	69	17	0.10	8.0					0.10				
2	2	16	10-2	Y	70	17	0.10	8.6				0.10				
1	1	16	11-4	71	17	0.10	10.0									
6	6	16	7-9	72	17	0.10	6.11									
2	2	17	6-0	73	4	2.4	1.5	2.3						1.0	2.0	
53	53	13	3-0	74	1	0.5	2.2						0.5			
22	20	13	3-11	Y	75	1	0.5	3.1					0.5			
10	12	13	2.8	76	1	0.5	1.10						0.5			
10	12	13	4-0	77	1	0.5	3.10						0.5			
9	9	13	2.3	78	1	0.5	1.58						0.5			
9	9	13	4.3	79	1	0.5	3.58						0.5			
31	33	13	11-0	Y	80	31	1.10	2.2	3.0	2.2			1.0	1.0		
31	33	13	3-10	81	1	0.5	3.0						0.5			
2	2	16	2-6	82	17	0.10	1.0									
115	16	4-6	83	17	0.10	3.8										
5	5	14	5-5	84	17	1.0	3.5	1.0								
11	11	14	3-5	Y	85	17	1.0	1.5	1.0							
42	30	14	4-0	86	17	1.0	2.0	1.0								
8	19	12-6	87	4		7.0	35.6						3.0	6.3		
2	16	16-0	88	4		2.0	14.0						0.6	1.11		
5	8	13-3	89	4		6.9	6.6						3.0	6.0		
7	8	41-9	Y	90	4	6.9	35.0						3.0	6.0		
84	10	4	3-3	91	17	1.0	1.3	1.0								
25	4	6-5	92	4		2.6	0.4	3.7						2.6	2.6	
24	36	18	8-7	Y	93	17	1.4	7.3								

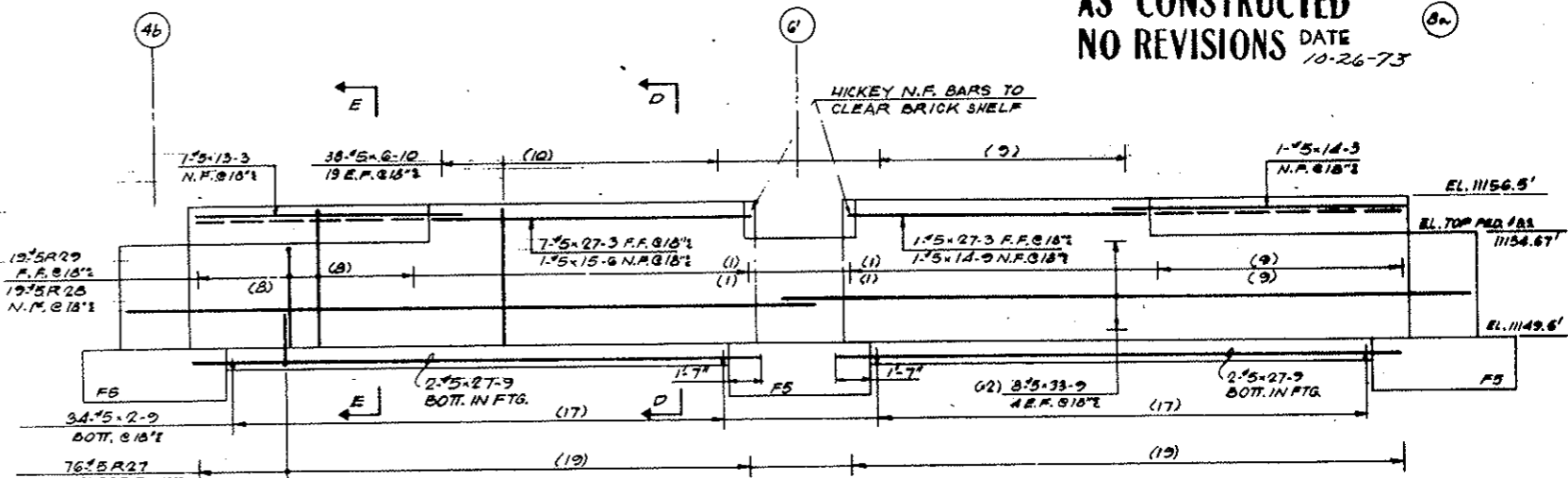
SOUTH WALL STRAIGHT BAR LIST											
NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH
2	11	38-0	2	18	23-3	2	18	9-6			
1		30-9	2		22-4	2		22-6			
5		28-6	2		22-4	4		8-9			
2		23-0	2		22-3	4		7-9			
4		21-9	2		22-0	4		6-9			
2		18-9	2		21-9	17		6-3			
2		17-3	2		21-5	4		5-9			
2		15-0	2		21-2	4	18	4-9			
2		12-9	2		21-0	2	18	10-5			
3		12-6	2		20-10						
1		11-9	2		20-7	3	17	17.0			
2		10-9	2		20-3	5		14.6			
2		9-6	2		20-0	1		13.9			
1	11	6-3	2		19.8	1		13.2			
			2		19.5	2		13.0			
			2		19.1	3		10.0			
8	19	30.0	2		18.9	18		9.3			
8		24.0	2		18.5	14		8.0			
8		15.3	2		18.2	18	17	6.3			
10		14.6	12		18.0						
35		9.3	2		17.0						
19	19	7.0	2		17.7	42	16	41.9			
			2		17.3	12		41.4			
			2		16.11	4		39.7			
4	18	47.6	2		16.8	4		35.6			
2		46.6	2		16.4	2		34.3			
2		45.6	2		16.0	2		32.6			
2		44.6	2		15.9	4		31.6			
2		43.6	2		15.5	2		30.6			
2		42.6	2		15.1	56		30.0			
2		40.6	2		14.10	3		29.9			
7</											

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-7	

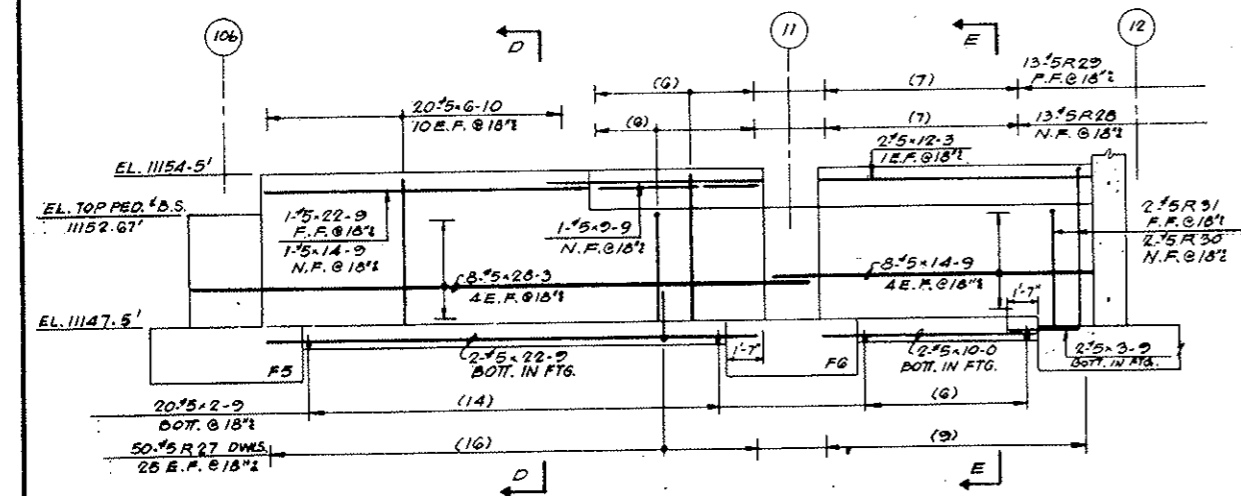
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PART ELEVATION ON COL. LINE A

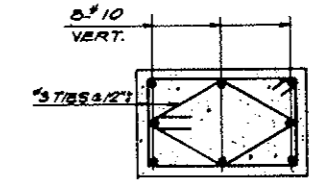


PART ELEVATION ON COL. LINE A



PART ELEVATION ON COL. LINE A

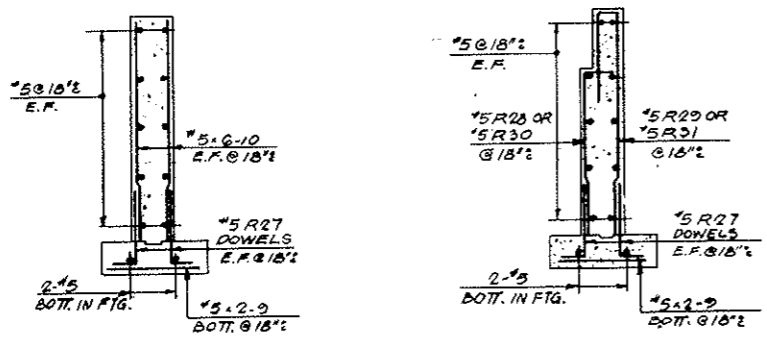
MARK	NO.	SIZE	REIN. 1/2 W. BOT.
F5	5	7'-0" x 7'-0" x 2'-6"	22#7-G-G
F6	2	6'-0" x 6'-0" x 2'-6"	14#6 x 6-G



TYPICAL PEDESTAL SECT.

110#7 x 6-G
28#6 x 5-G
4#5 x 33-9
4#4 x 28-3
4#4 x 27-9
2#4 x 27-3
6#4 x 22-9
1#4 x 15-6
7#5 x 14-9
1#5 x 14-3
1#5 x 13-6
2#5 x 12-6
4#5 x 11-0
2#5 x 9-9
7#5 x 6-10
2#5 x 5-9

COLUMN NOS.	NO. REQD.	FOOTING MARK	PEDESTAL		ELEVATIONS			REINFORCING	
			SIZE	HEIGHT	BOT. FTG.	TOP FTG.	TOP PED.	VERTICALS DOWNED FROM FOOTINGS	TIES @ 1/2"
2-A	1	F6	2'-6" x 3'-8"	5'-2"	1149.5'	1152.0'	1157.17'	6#5 F21 6#3 F22	
2a-A	1	F5	3'-4" x 3'-10"	5'-2"	1149.5'	1152.0'	1157.17'	8#5 F20 6#3 F23	
4b-A	2	F5	3'-4" x 3'-10"	5'-2"	1147.0'	1149.5'	1154.67'	8#5 F20 6#3 F24	
6-A	1	F5	4'-4" x 3'-8"	5'-2"	1147.0'	1149.5'	1154.67'	8#5 F20 6#3 F25	
10b-A	1	F5	3'-4" x 3'-10"	5'-2"	1145.0'	1147.5'	1152.67'	6#5 F21 6#3 F24	
11-A	1	F6	2'-6" x 3'-8"	5'-2"	1145.0'	1147.5'	1152.67'	6#5 F21 6#3 F22	



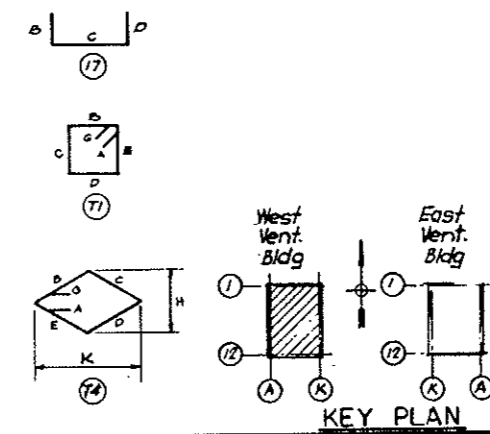
SECTION D-D

SECTION E-E

SEE DWG. S-W-10 FOR REINFORCING FOR WEST BLDG

NO.	SIZE	LNTH.	MARK	TYPE	A	B	C	D	E	F	G	H	K	L	J
18	#10	8-0	*F 20	T1		1-6	7-3								
12	3	11-8	*F 21	T1	4	2-2	3-4	2-2	3-4		4				
12	3	8-8	*F 22	T4	4	2-0	2-0	2-0	2-0		4	2-2	3-4		
24	3	13-8	*F 23	T1	4	3-0	3-6	3-0	3-6		4				
24	3	10-0	*F 24	T4	4	2-4	2-4	2-4	2-4		4	3-0	3-6		
6	3	95-4	*F 25	T1	4	3-4	4-0	3-4	4-0		4				
6	3	11-1	*F 26	T4	4	2-7/4	2-7/4	2-7/4	2-7/4		4	3-4	4-0		
17	5	6-0	*R 28	T1		1-0	5-0								
47	5	10-3	*R 29	T1		2-9	0-8	2-10							
2	5	6-6	*R 30	T1		1-0	5-6								
2	5	10-9	*R 31	T1		2-9	0-8	7-4							

NOTE: All dimensions are out to out



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CL.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**STRUCTURAL - REINFORCEMENT
WEST VENTILATION BUILDING
FRONT WALLS**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E. W. DUBIN
CHECKED: J. V. SUBMITTED: J. V. APPROVED: [Signature]
NEW YORK, N. Y.

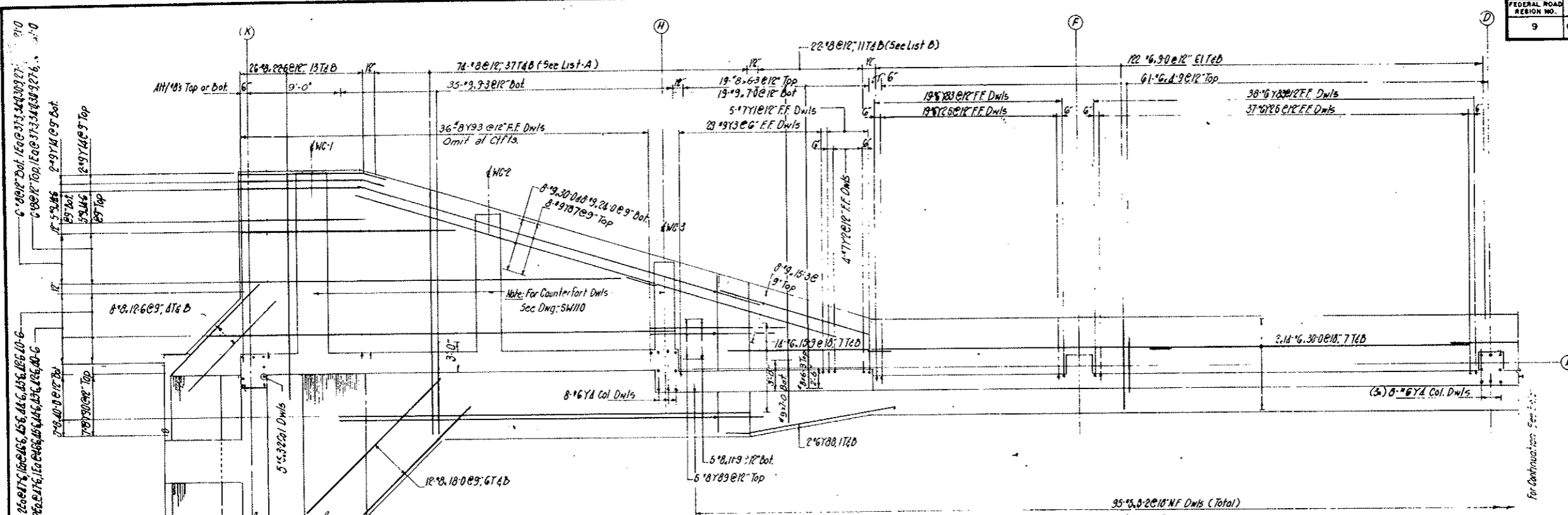
SCALE: 1/4" = 1'-0" DATE: DEC. 1967

DRAWING NO. S-W107

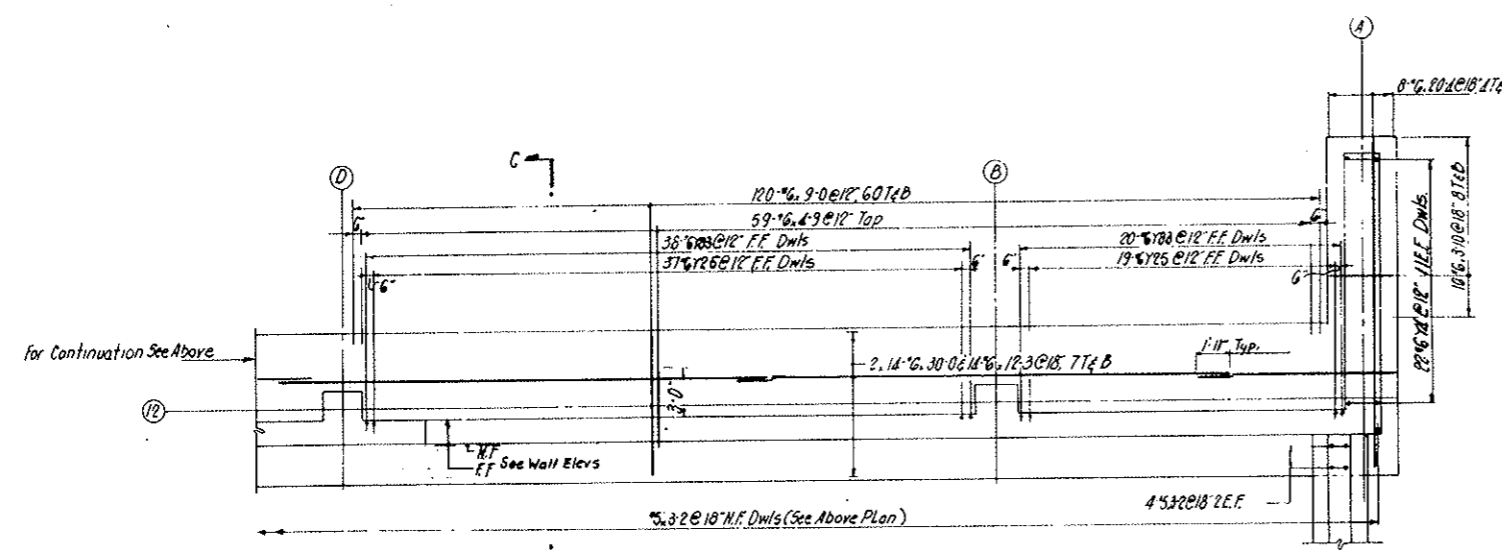
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-8	

LIST-A		LIST-B	
2'-8.22-3	2'-8.21-5	2'-8.17-7	2'-8.14-4
33-6	21-2	17-7	13-7
38-8	20-10	17-3	13-2
31-0	20-7	16-11	12-9
29-4	20-3	16-8	12-4
28-6	20-0	16-4	11-11
27-3	19-8	16-0	
26-0	19-5	15-9	
24-6	19-1	15-5	
23-3	18-9	15-1	
22-4	18-5	14-10	
22-0	18-2	14-6	
21-9			

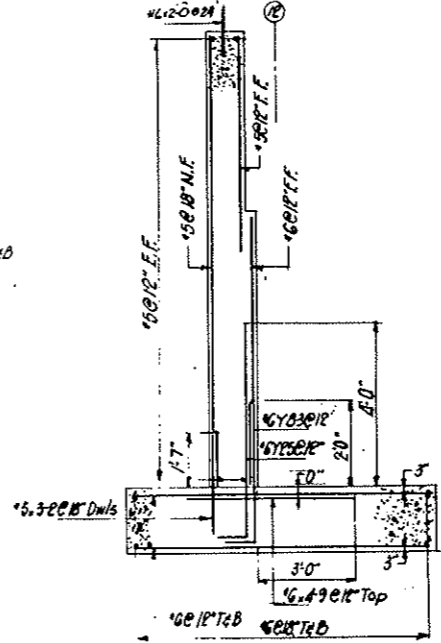
AS CONSTRUCTED
NO REVISIONS DATE 10-24-73



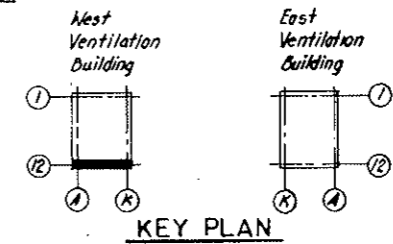
PART PLAN



PART PLAN



SECTION C-C



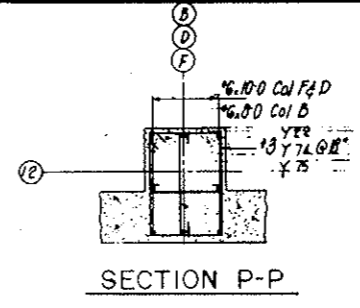
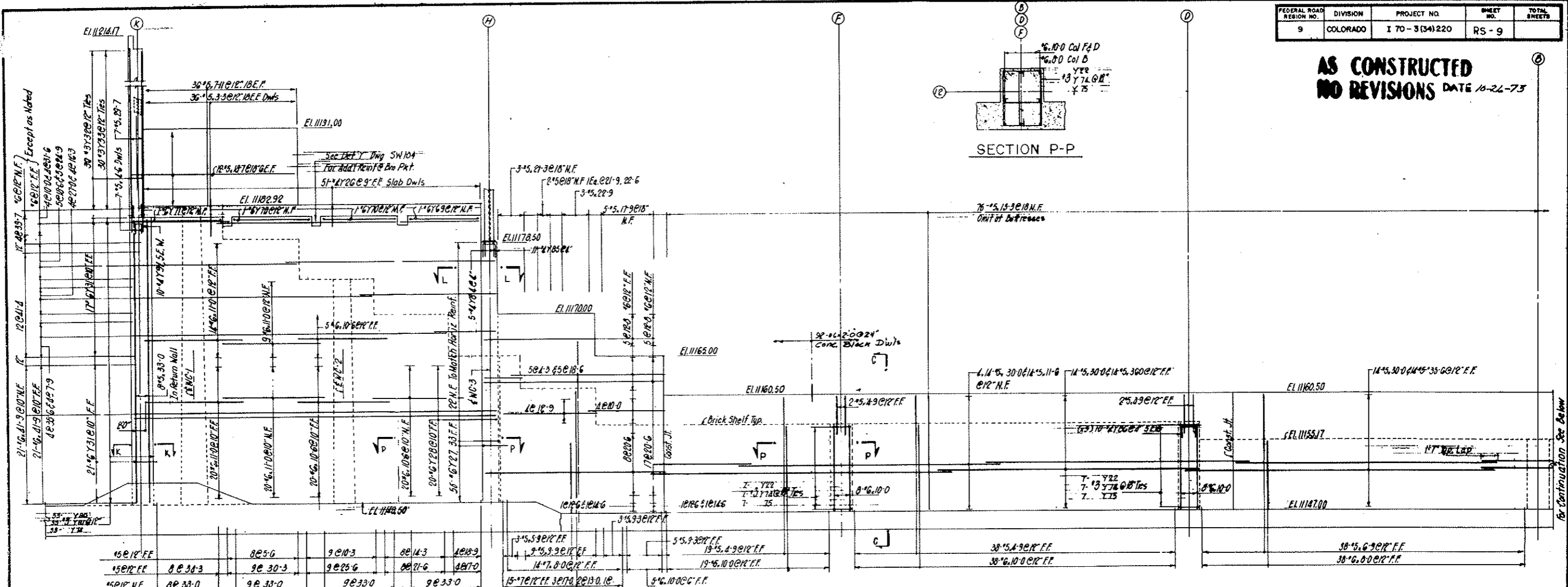
KEY PLAN

NOTES:
 For Wall Reinf see Dwg SW109
 For Counterfort Reinf see Dwg SW110
 For Bar List & Bending Dets see Dwg SW106

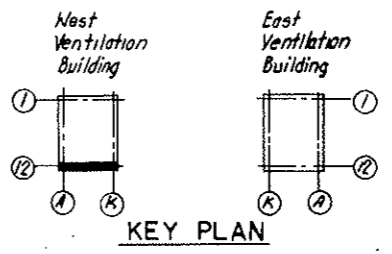
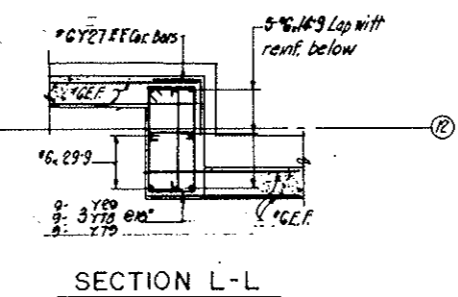
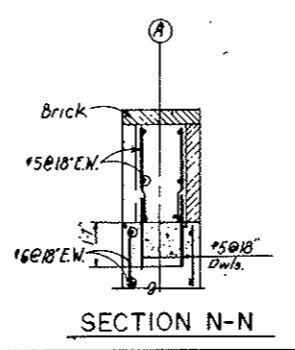
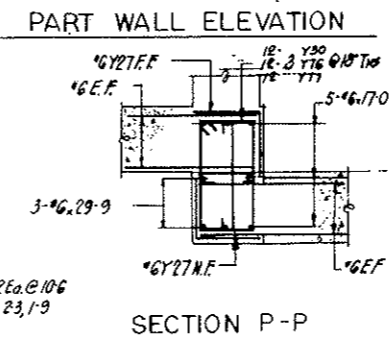
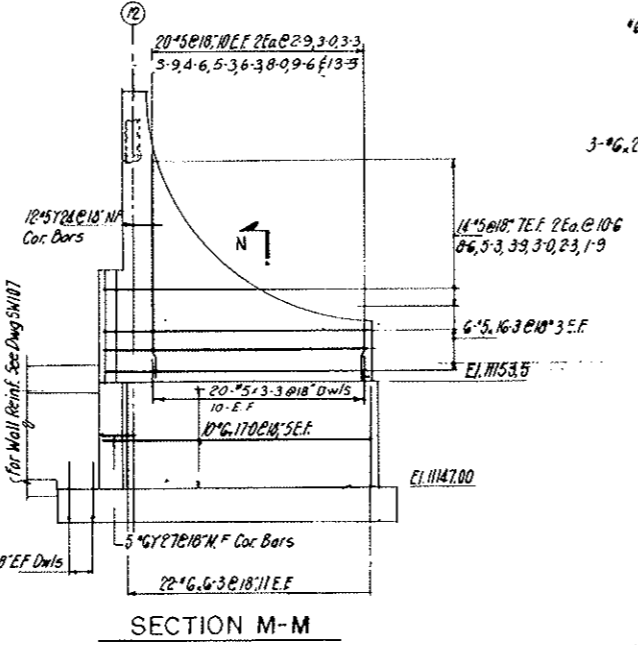
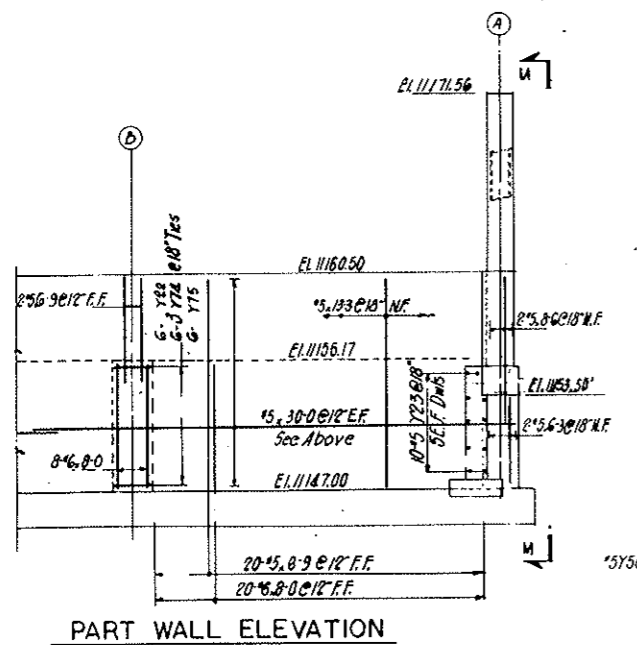
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL REINFORCEMENT WEST VENTILATION BUILDING FOOTING - SOUTH WALL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS - NEW YORK, N. Y.					
DESIGNED: J. V.	RECOMMENDED: <i>[Signature]</i>		DRAWING NO. S-W108		
DRAWN: J. V.	APPROVED: <i>[Signature]</i>				
CHECKED: R. B.	DATE: DEC. 1967				
SUBMITTED: <i>[Signature]</i>	SCALE: 3/8" = 1'-0"				
NEW YORK, N. Y.					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-9	

**AS CONSTRUCTED
NO REVISIONS** DATE 10-26-73



15@12' FF	8@5'-6"	9@10'-3"	8@14'-3"	10@18'-9"	3*5.5@12' FF	5*5.5@12' FF	19*5.4@12' FF	38*5.6@12' FF	38*6.0@12' FF
15@12' NF	8@33'-0"	9@33'-0"	9@33'-0"	9@33'-0"	14*7.8@12' FF	19*6.10@12' FF	38*6.10@12' FF	38*6.10@12' FF	38*6.0@12' FF

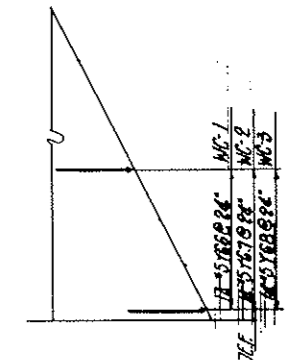
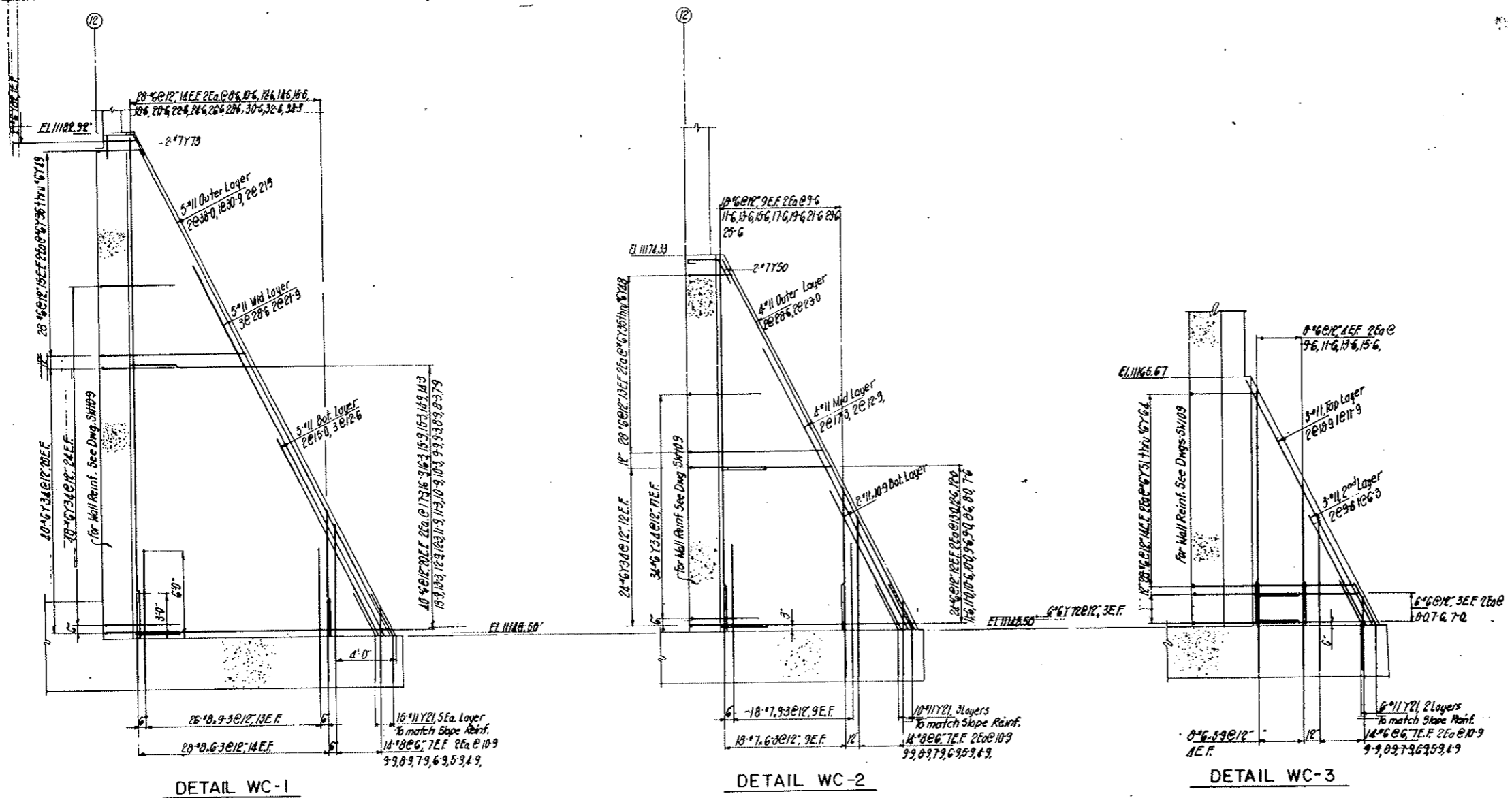


- NOTES:**
- For Fig 4 Dwl Reinf. see Dwg SW 108
 - For Counterfort Reinf. see Dwg SW 110
 - For Bar Lists & Bending Dets. see Dwg SW 106
 - For Det 'Y' of Section K-K see Dwg SW 104
 - For Section C-C see Dwg SW 108

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL REINFORCEMENT WEST VENTILATION BUILDING SOUTH WALL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J. V.	RECOMMENDED: <i>[Signature]</i>		DRAWING NO. SW109		
DRAWN: J. V.	CHECKED: E. M.		SCALE: 3/8" = 1'-0"		
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>		DATE: DEC. 1967		
NEW YORK, N.Y.					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-10	

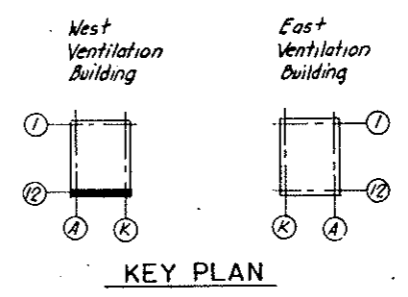
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



ADDL REINF WC-1,2,3

NOTES:
 For Fly Reinf. see Dwg SW108
 For Wall Reinf. see Dwg SW109
 For Bonding Dets see Dwg SW706

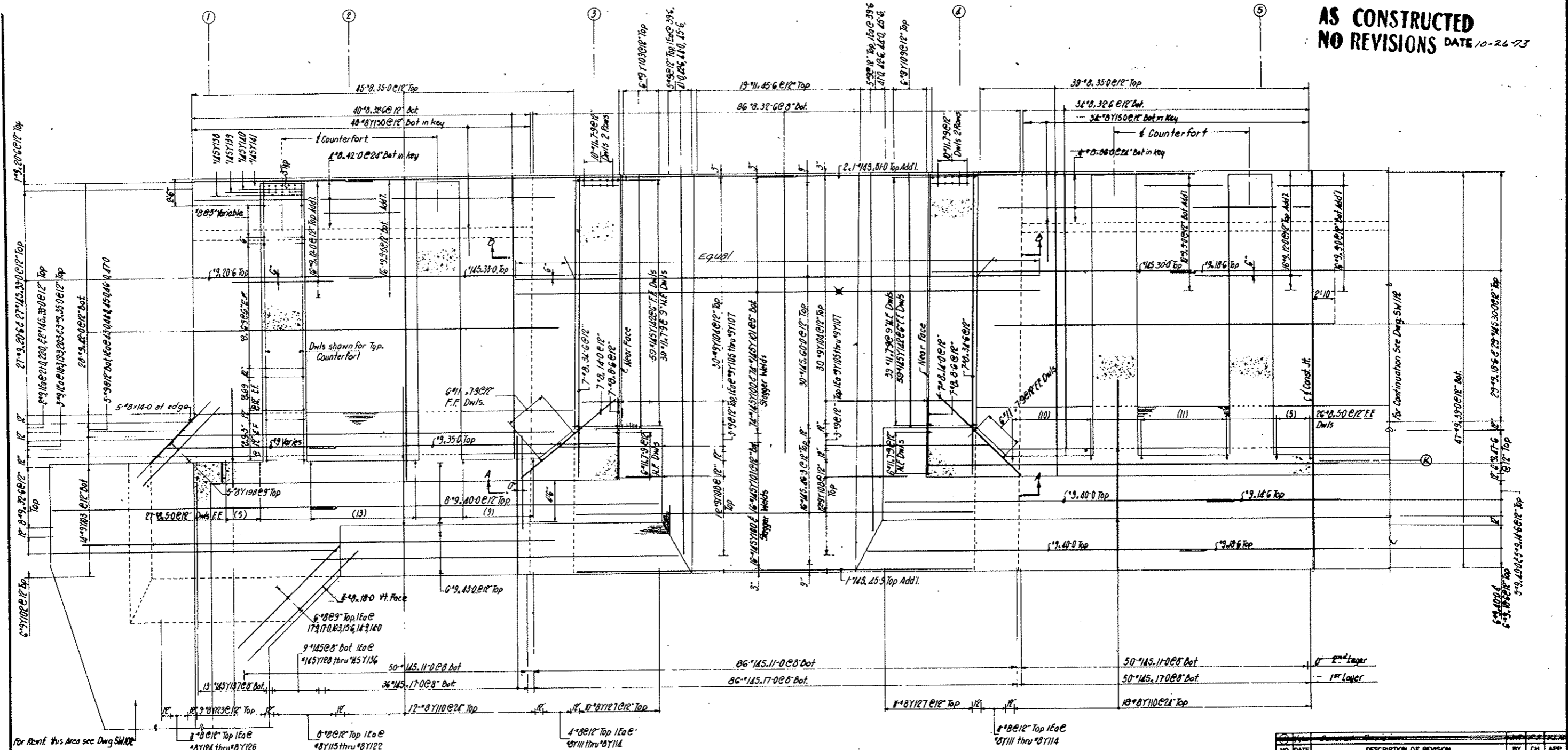
SW108
 SW109
 SW706



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL REINFORCEMENT WEST VENTILATION BUILDING SOUTH WALL COUNTERFORTS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.V.	RECOMMENDED: J.V.	DRAWING NO. S-1110			
DRAWN: J.V.	CHECKED: E.W.	APPROVED: <i>[Signature]</i>			
SUBMITTED: J.A. Riedinger	APPROVED: <i>[Signature]</i>	DATE: DEC. 1967			
NEW YORK, N. Y.		SCALE: 1/4" = 1'-0"		DATE: DEC. 1967	

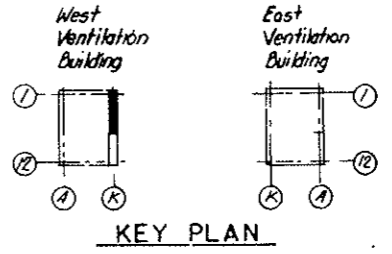
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-11	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PART PLAN

- NOTES:**
- For Continuation of Flg see Dwg SW112
 - For Wall Reinf. see Dwg SW113, SW114
 - For Counterfort Reinf. see Dwg SW115
 - For Sections see Dwg SW116
 - For Bar List & Bending Data see Dwg SW117



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
STRUCTURAL - REINFORCEMENT
WEST VENTILATION BUILDING
FOOTING - EAST WALL
SHEET 1

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: JUV
 DRAWING: JUV
 CHECKED: EM
 SUBMITTED: Paul R. Smith
 NEW YORK, N. Y.

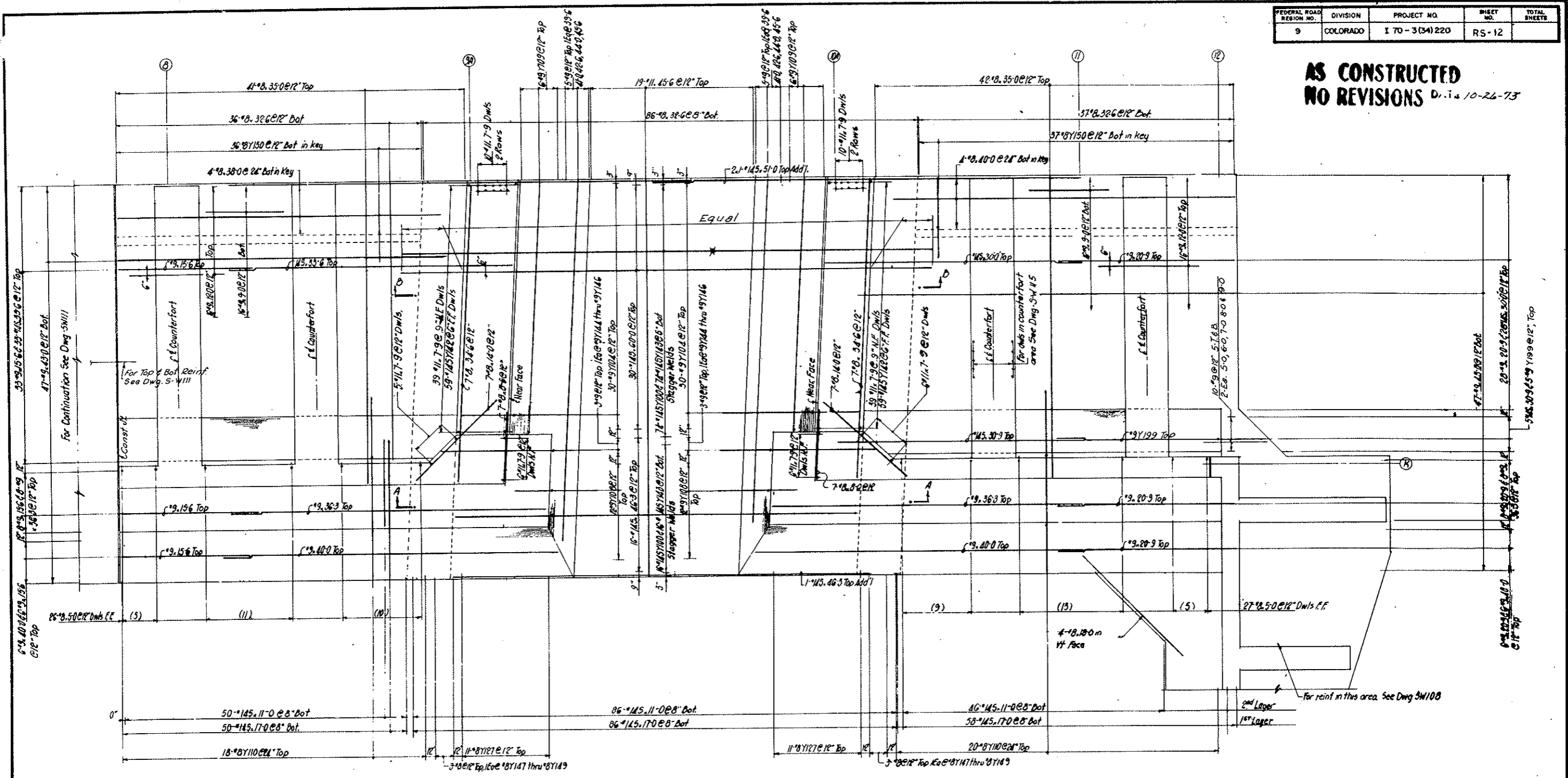
RECOMMENDED: [Signature]
 APPROVED: [Signature]

SCALE: 3/16"=1'-0" DATE: DEC. 1967

DRAWING NO. S-W1111

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	RS-12	

AS CONSTRUCTED
NO REVISIONS D. 10-26-73

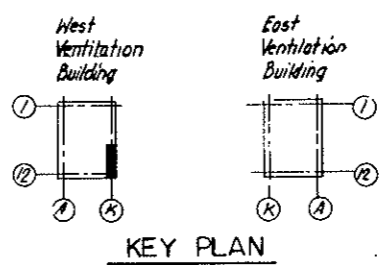


PART PLAN

NOTES:

For Continuation of Ftg. see Dwg
 For Wall Reinf see Dwg
 For Counterfort Reinf. see Dwg
 For Sections see Dwg
 For Bar Lists & Bending Dets see Dwg

- SW111
- SW113, SW114
- SW115
- SW116
- SW117

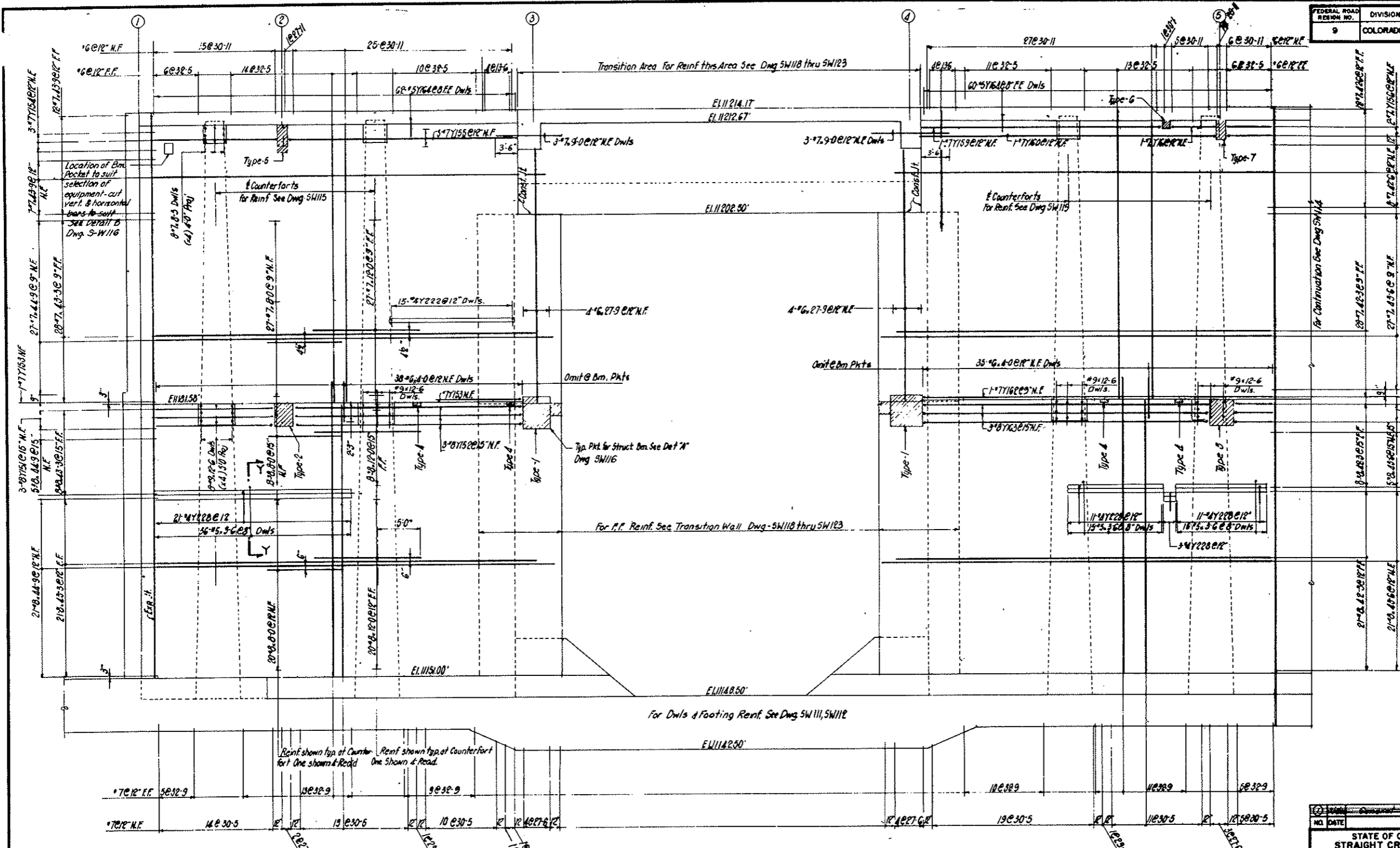


KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING FOOTING - EAST WALL SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: JJV	RECOMMENDED:	APPROVED: <i>[Signature]</i>			
DRAWN: JJV	CHECKED: EM	DRAWING NO. SW112			
SUBMITTED:	APPROVED: <i>[Signature]</i>	SCALE: 3/8" = 1'-0" DATE: DEC. 1967			

FEDERAL ROAD DESIGN NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-13	

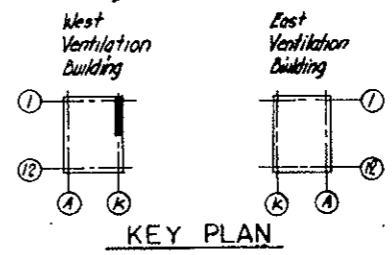
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PART WALL ELEVATION

NOTES:
For Ftg. Reinf see Dwg
For Continuation of Wall see Dwg
For Sects & Dets see Dwg
For Counterfort Reinf see Dwg
For Bar Lists & Bending Dets see Dwg

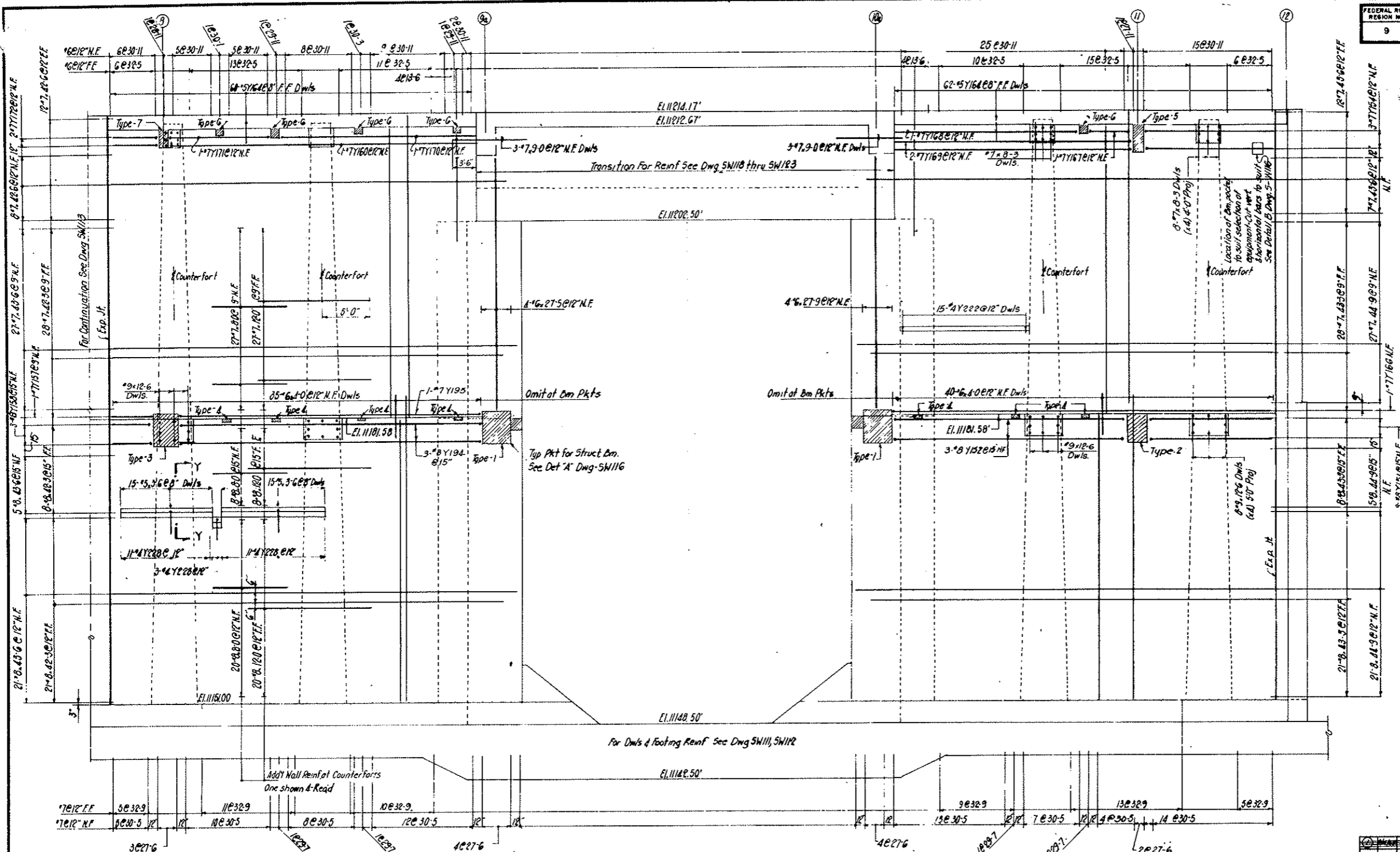
SW118, SW112
SW114
SW116
SW115
SW117



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT					
WEST VENTILATION BUILDING					
EAST WALL					
SHEET 1					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.V.V.	CHECKED: J.V.V.	DRAWN: EM	APPROVED: [Signature]	DRAWING NO.	
[Signature]			[Signature]		S-W 113
NEW YORK, N. Y.			SCALE: 3/8" = 1'-0"	DATE: DEC. 1967	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-14	

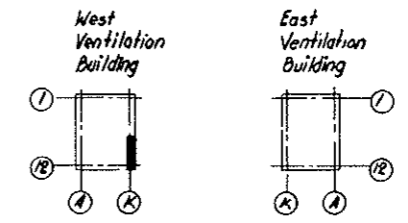
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PART WALL ELEVATION

NOTES:

- For Fly Reinf. see Dwg SW111, SW112
- For Continuation of Wall see Dwg SW113
- For Sects & Dets see Dwg SW116
- For Counterfort Reinf SW115
- For Bar Lists & Bending Dets see Dwg SW117

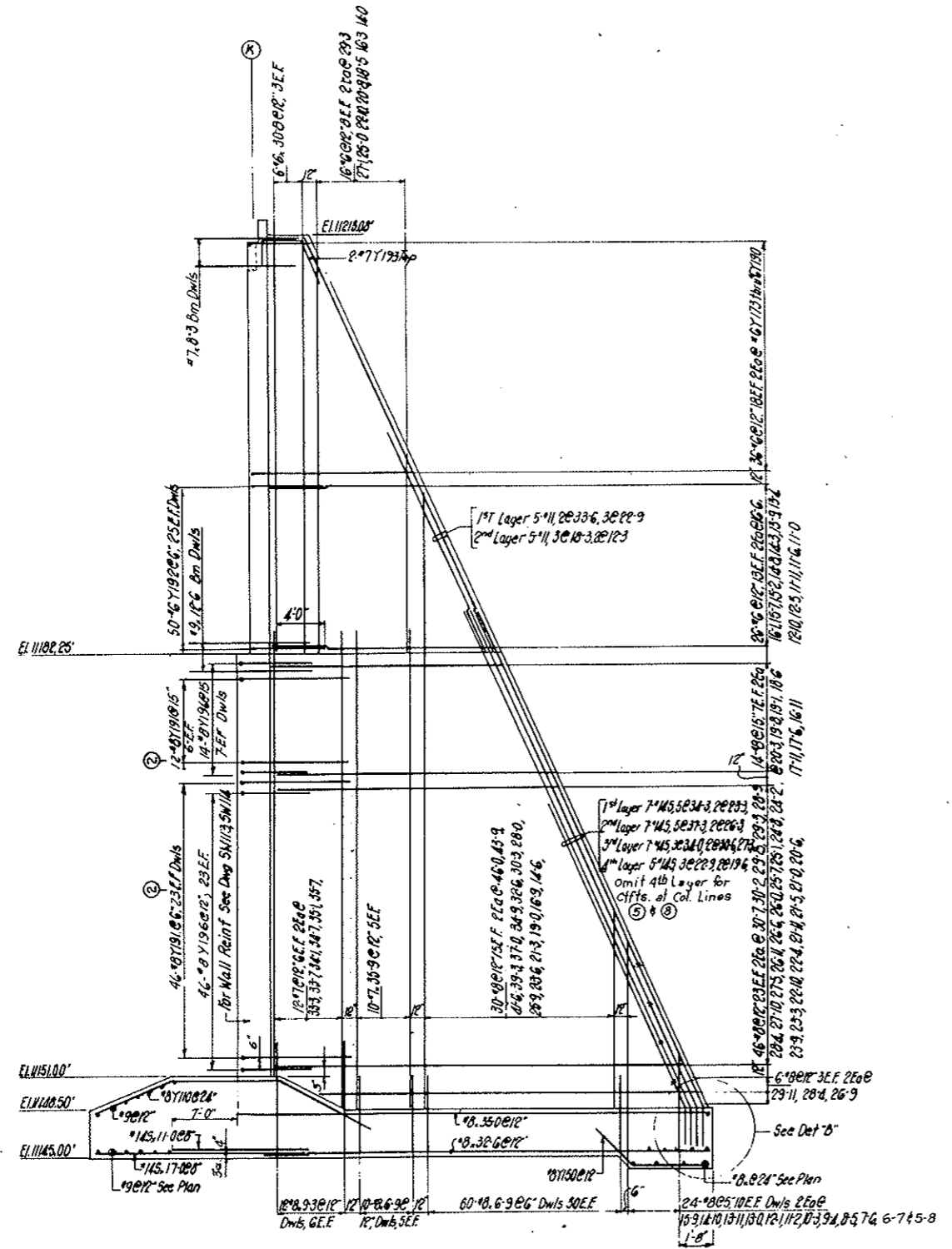


KEY PLAN

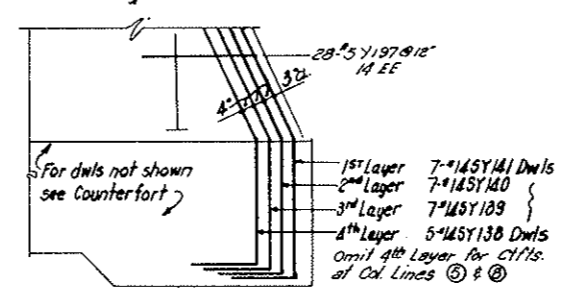
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING EAST WALL SHEET 2 TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: JVV	RECOMMENDED BY: <i>[Signature]</i>		DRAWING NO. S-W114		
DRAWN: JVV	APPROVED: <i>[Signature]</i>		SCALE: 3/16" = 1'-0"		
CHECKED: EM	DATE: DEC. 1967				
SUBMITTED: <i>[Signature]</i>					
NEW YORK, N. Y.					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RS-15	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

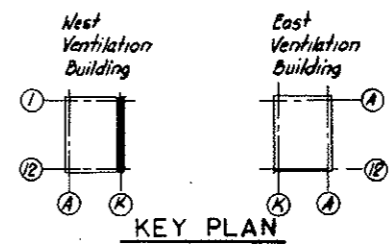


COUNTERFORT- DETAIL
 8-REQD
 (Typical except as noted)



DETAIL- B
 8-REQD.
 (Typical except as noted.)

NOTES:
 For Fdn Slab Reinf. see Dwg 5W11, 5W12
 For Wall Elevations see Dwg 5W13, 5W14
 For Bar Lists & Bending Data see Dwg 5W17



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Counterfort Detail Revised	J.P.V.	R.W.M.	

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

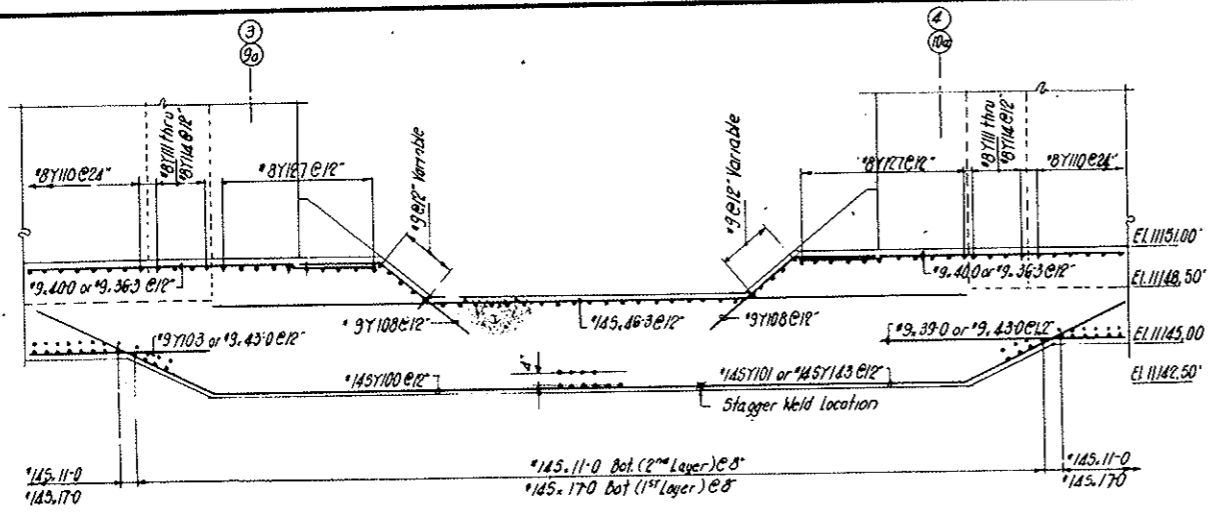
STRUCTURAL - REINFORCEMENT
WEST VENTILATION BUILDING
EAST WALL
COUNTERFORTS

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

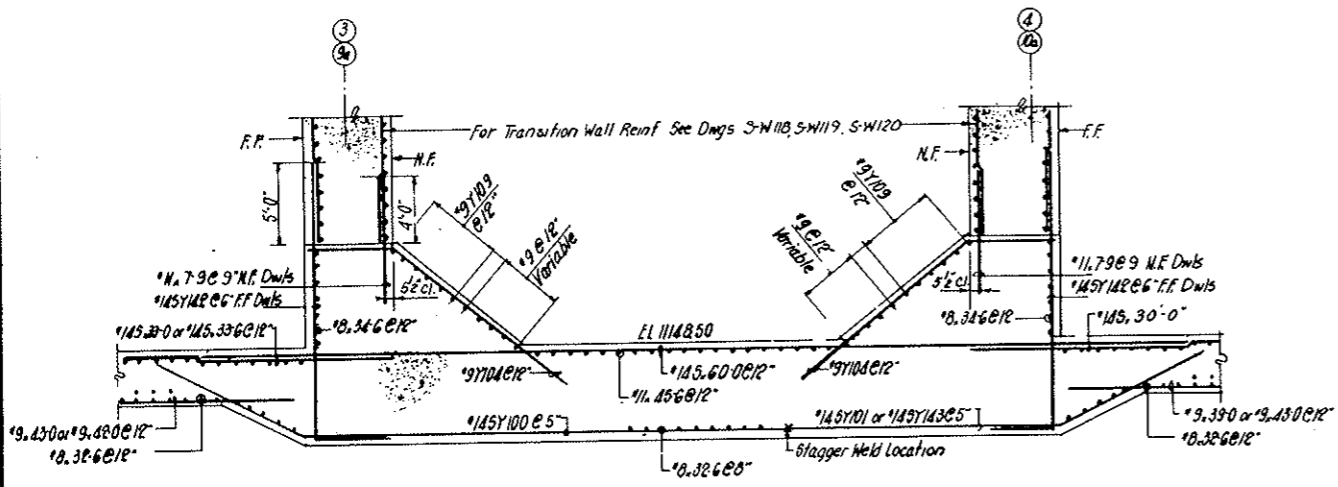
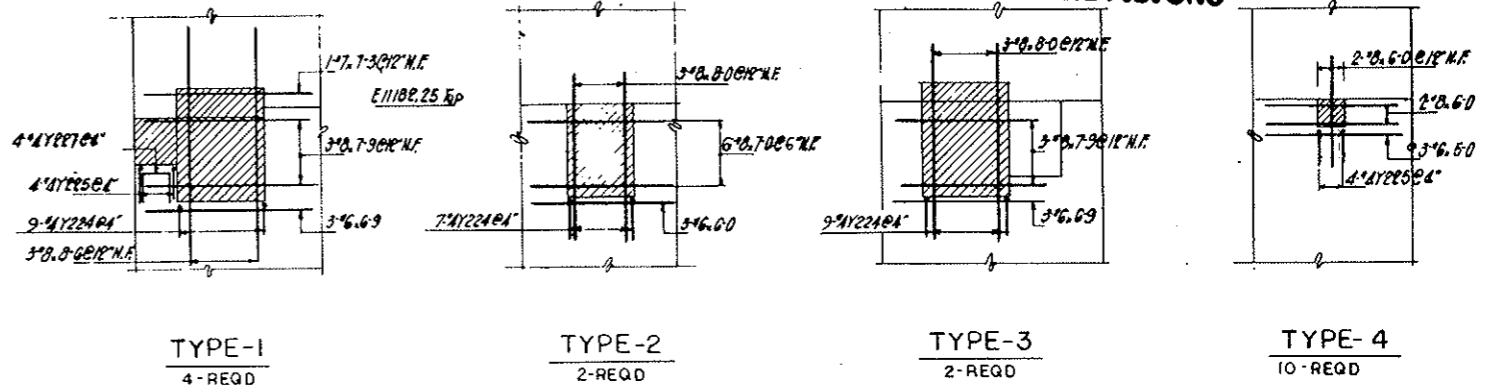
DESIGNED: JJV	RECOMMENDED: J.P.V.	DRAWING NO. 5W115
DRAWN: JJV	CHECKED: EM	
SUBMITTED: JJV	APPROVED: Paul Stahl	
NEW YORK, N.Y.	DATE: DEC. 1967	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-16	

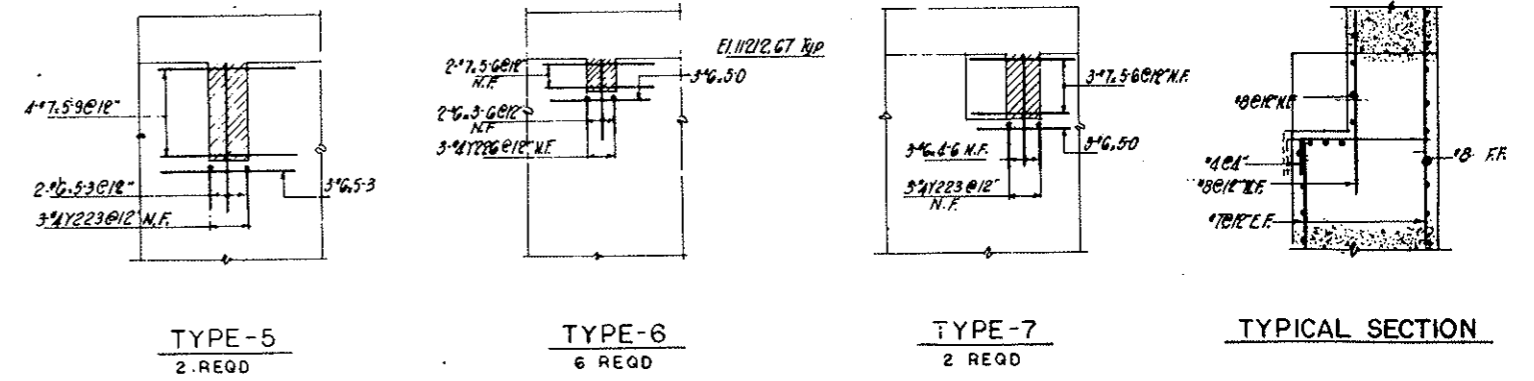
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



SECTION A-A



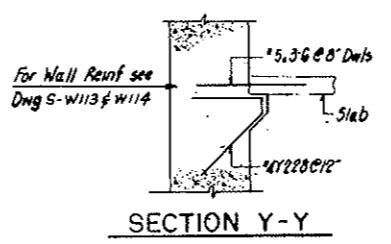
SECTION B-B



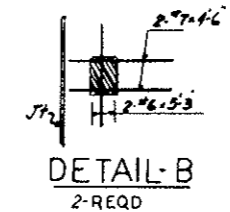
DETAIL - A
Not to Scale

NOTES.

- For Slab Reinf. See Dngs SW111, SW112
- For Transition Wall See Dngs SW113 thru SW120
- For Wall Reinf. See Dngs SW114, SW115
- For Bar Lists SW117



SECTION Y-Y



DETAIL - B
2-REQD

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING EAST WALL SECTIONS AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. V.	RECOMMENDED: J. V.	DRAWING NO. S-W116			
DRAWN: J. V.	CHECKED: E. M.	DATE: DEC. 1967			
APPROVED: Paul Strickland	APPROVED: [Signature]	SCALE: 3/4" = 1'-0"			

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-17	

**AS CONSTRUCTED
NO REVISIONS DATE 10-26-75**

BENDING DETAILS

No	SIZE	LNTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
100	#4S	39-3	Y 100	4			9-3	30-0					2-2	8-3	
90	#4S	26-0	101	4			9-3	15-9					4-2	8-3	
6	#9	37-6	102	17			5-0	32-6							
14	#9	53-7	103	4			7-1	46-6					5-0	5-0	
120	#9	16-9	104	4			3-6	13-3					2-3	2-8	
2	#9	17-9	Y 105	4			7-0	10-9					4-4	5-3	
2	#9	18-9	106	4			7-0	11-9					4-4	5-3	
2	#9	19-9	107	4			7-0	12-9					4-4	5-3	
2	#9	10-0	108	4			7-0	3-0					4-4	5-3	
2	#9	35-3	109	17			6-6	28-9							
2	#8	21-10	Y 110	30	6-0	8-0	7-10	2-4	5-6	3-6	7-0				
2	#8	21-9	111	30	6-0	8-4	7-5	2-4	5-6	3-6	6-6				
2	#8	21-7	112	30	6-0	9-2	6-5	2-4	5-6	3-6	5-4				
2	#8	21-5	113	30	6-0	10-0	5-5	2-4	5-6	3-6	4-2				
2	#8	21-6	114	30	6-0	10-10	4-8	2-4	5-6	3-6	3-1				
1	#8	21-10	Y 115	4			7-10	14-0				3-6	7-0		
1	#8	22-10	116	4			7-10	15-0				3-6	7-0		
1	#8	23-10	117	4			7-10	16-0				3-6	7-0		
1	#8	24-10	118	4			7-10	17-0				3-6	7-0		
1	#8	25-10	119	4			7-10	18-0				3-6	7-0		
1	#8	26-10	Y 120	4			7-10	19-0				3-6	7-0		
1	#8	27-10	121	4			7-10	20-0				3-6	7-0		
1	#8	28-10	122	4			7-10	21-0				3-6	7-0		
3	#8	10-10	123	4			7-10	3-0				3-6	7-0		
1	#8	4-2	124	4			1-2	3-0				0-6	1-0		
1	#8	5-3	Y 125	4			2-3	3-0				1-0	2-0		
1	#8	6-4	126	4			3-4	3-0				1-6	3-0		
43	#8	19-0	127	4			6-0	13-0				2-4	5-6		
1	#4S	18-3	128	4			2-3	16-0				1-0	2-0		
1	#4S	19-0	129	4			2-0	16-0				1-4	2-8		
1	#4S	19-9	Y 130	4			3-9	16-0				1-8	3-4		
1	#4S	20-6	131	4			4-6	16-0				2-0	4-0		
1	#4S	21-3	132	4			5-3	16-0				2-4	4-8		
1	#4S	22-0	133	4			6-0	16-0				2-8	5-4		
1	#4S	22-9	134	4			6-9	16-0				3-0	6-0		
1	#4S	23-6	Y 135	4			7-6	16-0				3-4	6-8		
1	#4S	24-3	136	4			8-3	16-0				3-8	7-4		
13	#4S	28-4	137	4			12-4	16-0				5-6	11-0		
30	#4S	8-4	138	4	2-1	4-3	2-0					0-10	1-0		
56	#4S	11-5	139	4	2-1	4-3	5-1					2-1	4-8		
56	#4S	14-6	Y 140	4	2-1	4-3	8-2					3-4	7-5		
56	#4S	17-7	141	4	2-1	4-3	11-3					4-7	10-4		
236	#4S	22-3	142	17			5-0	17-3							
90	#4S	25-6	143	4			9-3	16-3				4-2	8-3		
2	#9	18-1	144	4			6-10	11-3				4-4	5-3		
2	#9	19-1	Y 145	4			6-10	12-3				4-4	5-3		
2	#9	20-1	146	4			6-10	13-3				4-4	5-3		
2	#8	21-10	147	30	6-0	8-0	7-10	2-4	5-6	3-6	7-0				
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2	#8	23-10	149	30	6-0	10-0	7-10	2-4	5-6	3-6	7-0				
147	#8	10-0	Y 150	4			4-3	5-9				3-0	3-0		
6	#8	15-4	151	17			2-0	13-4							
6	#8	27-4	152	17			2-0	25-4							
1	#7	42-0	153	17			1-0	41-0							
6	#7	14-9	154	17			1-0	13-9							
3	#7	26-3	Y 155	17			1-0	25-3							
2	#7	6-2	156	17			1-0	5-2							
2	#7	5-3	157	17			1-0	4-3							
6	#8	6-3	158	17			2-0	4-3							
1	#7	27-3	159	17			1-0	26-3							
2	#7	35-3	Y 160	17			1-0	32-3							
1	#7	6-8	161	17			1-0	4-8	1-0						
1	#7	39-9	162	17			1-0	38-9							
3	#8	35-6	163	17			2-0	31-6	2-0						

No	SIZE	LNTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
244	#5	3-9	Y 164	17			0-9	3-0							
1	#7	41-9	166	17			1-0	40-9							
1	#7	6-6	167	17			1-0	4-6	1-0						
1	#7	20-6	168	17			1-0	19-6							
2	#7	26-3	169	17			1-0	25-3							
1	#7	22-0	Y 170	17			1-0	21-0							
1	#7	11-9	171	17			1-0	9-9	1-0						
16	#6	18-1	173	17			0-10	18-3							
16	#6	12-8	174	17			0-10	11-10							
16	#6	12-2	Y 175	17			0-10	11-4							
16	#6	11-9	176	17			0-10	10-11							
16	#6	11-3	177	17			0-10	10-5							
16	#6	10-10	178	17			0-10	10-0							
16	#6	10-4	179	17			0-10	9-6							
16	#6	9-11	Y 180	17			0-10	8-1							
16	#6	9-5	181	17			0-10	8-7							
16	#6	9-0	182	17			0-10	8-2							
16	#6	8-6	183	17			0-10	7-8							
16	#6	8-1	184	17			0-10	7-3							
16	#6	7-7	Y 185	17			0-10	6-9							
16	#6	7-2	186	17			0-10	6-4							
16	#6	6-8	187	17			0-10	5-10							
16	#6	6-3	188	17			0-10	5-5							
16	#6	5-9	189	17			0-10	4-11							
16	#6	5-4	Y 190	17			0-10	4-6							
464	#8	9-5	191	17			1-2	8-3							
400	#6	6-1	192	17			0-10	5-3							
16	#7	7-4	193	4	1-6		3-4	2-4						1-2	
3	#8	35-6	194	17			2-0	31-6	2-0						
1	#7	33-6	Y 195	17			1-0	31-6	1-0						
180	#8	6-3	196	17			1-2	5-1							
224	#5	6-0	197	17			3-0	3-0							
5	#8	13-6	198	4			10-6	3-0				3-4	10-0		
5	#9	22-6	199	17			3-6	19-0							

30	#4	4-0	Y 222	17			1-0	3-0							
12	#4	2-6	223	17			1-0	1-6							
68	#4	3-6	224	17			1-0	2-6							
56	#4	3-3	Y 225	17			1-3	2-0							
18	#4	2-3	226	17			1-3	1-0							
16	#4	2-11	227	17			1-0	0-11	1-0						
71	#4	6-5	Y 228	4	2-6		0-4	3-7						2-6	2-6

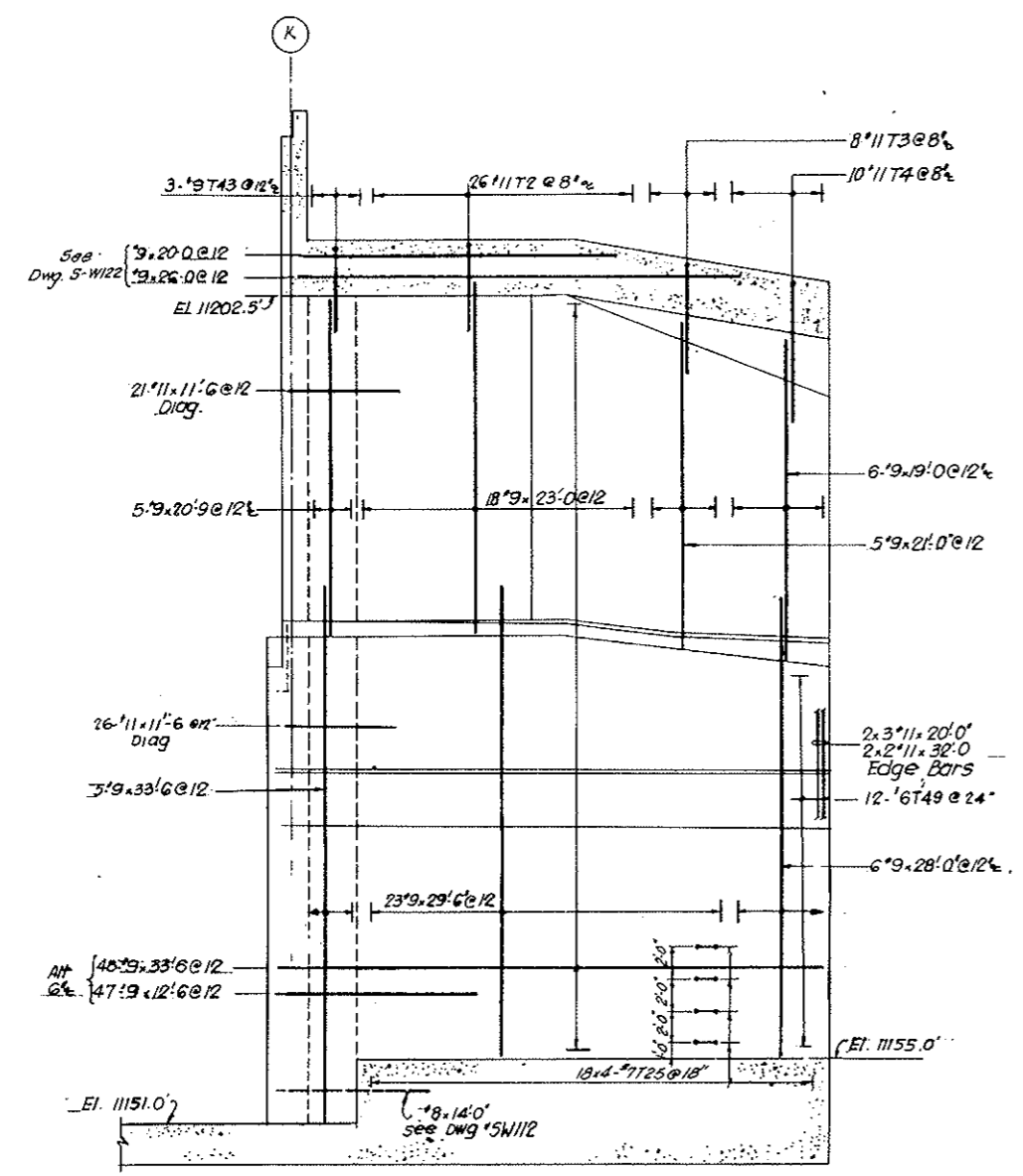
Dimensions are out to out.

STRAIGHT BAR LIST

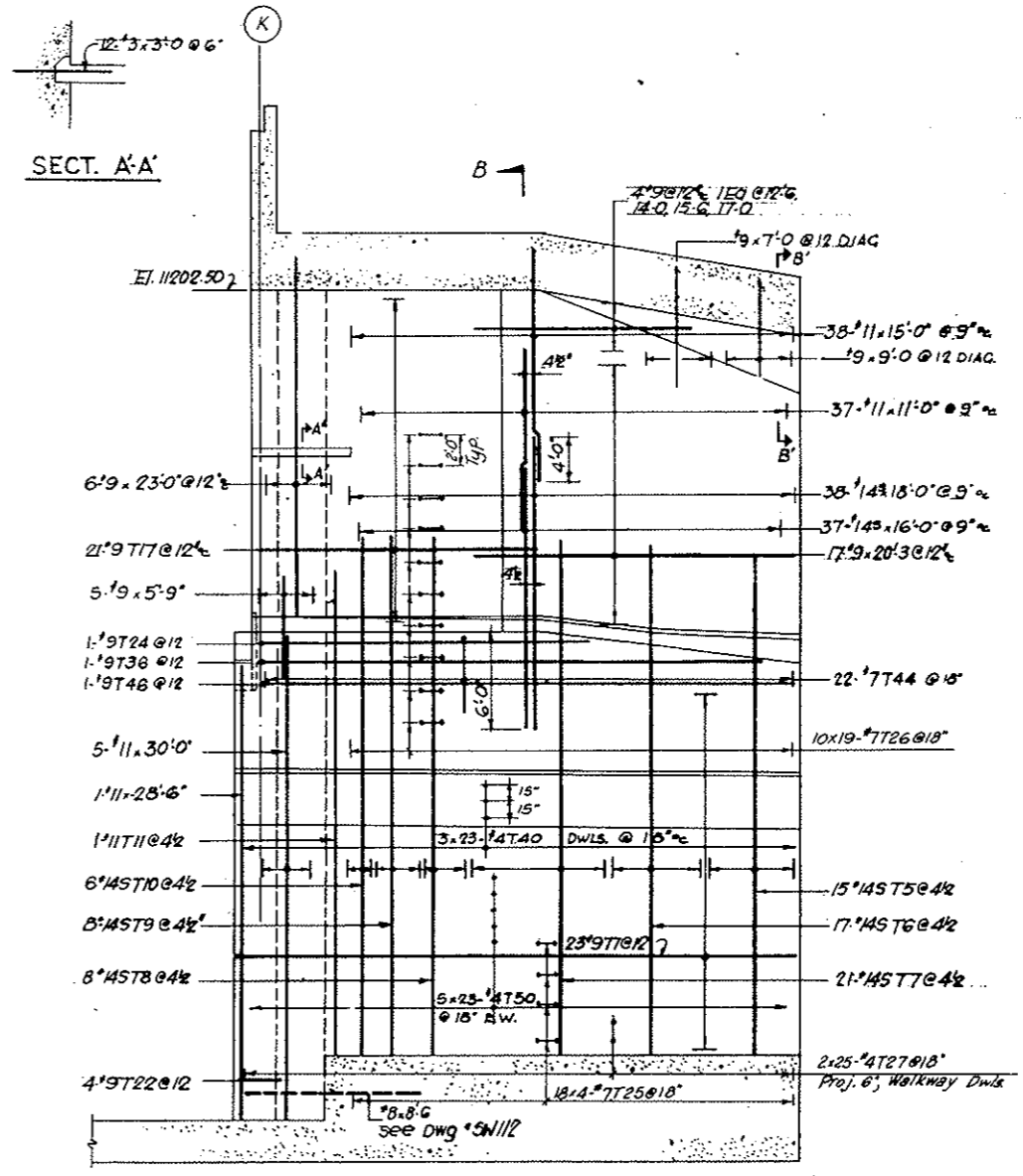
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4		51-0	5	#9	14-6	16	#8	19-1	12		9-0
33		46-3	2		8-0	16	#8	19-0	8		5-9
1		45-9	2		7-0	16	#8	18-6	*18		5-6
40		37-3	64		12-6	8		18-0	*4	#7	4-6
40		34-3	2		6-0	16		17-11			
24		34-0	64		12-0	1		17-9			
33		33-6	2		5-0	16		17-6	121	#6	32-8
29		33-0	*82	#9	9-0	1		17-0	153		30-11
5		30-9				16		16-11	48		30-8
16		30-6				16		16-9	1		30-3
57		30-0	16	#8	46-0	1		16-3	2		30-1
16		27-3	16		43-9	*		16	16	</	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RS-18	

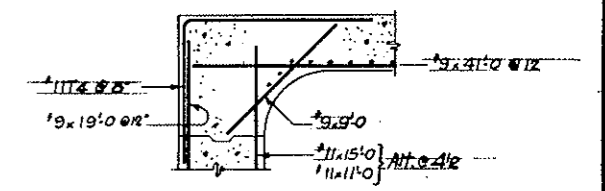
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



FAR FACE REINF

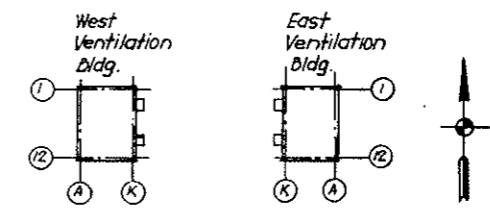


NEAR FACE REINF



SECT. B-B'

NOTES:
For bending Details see DWG NO 5W121
For Wall Sections see DWG NO 5W121
For South Wall see DWG NO 5W119

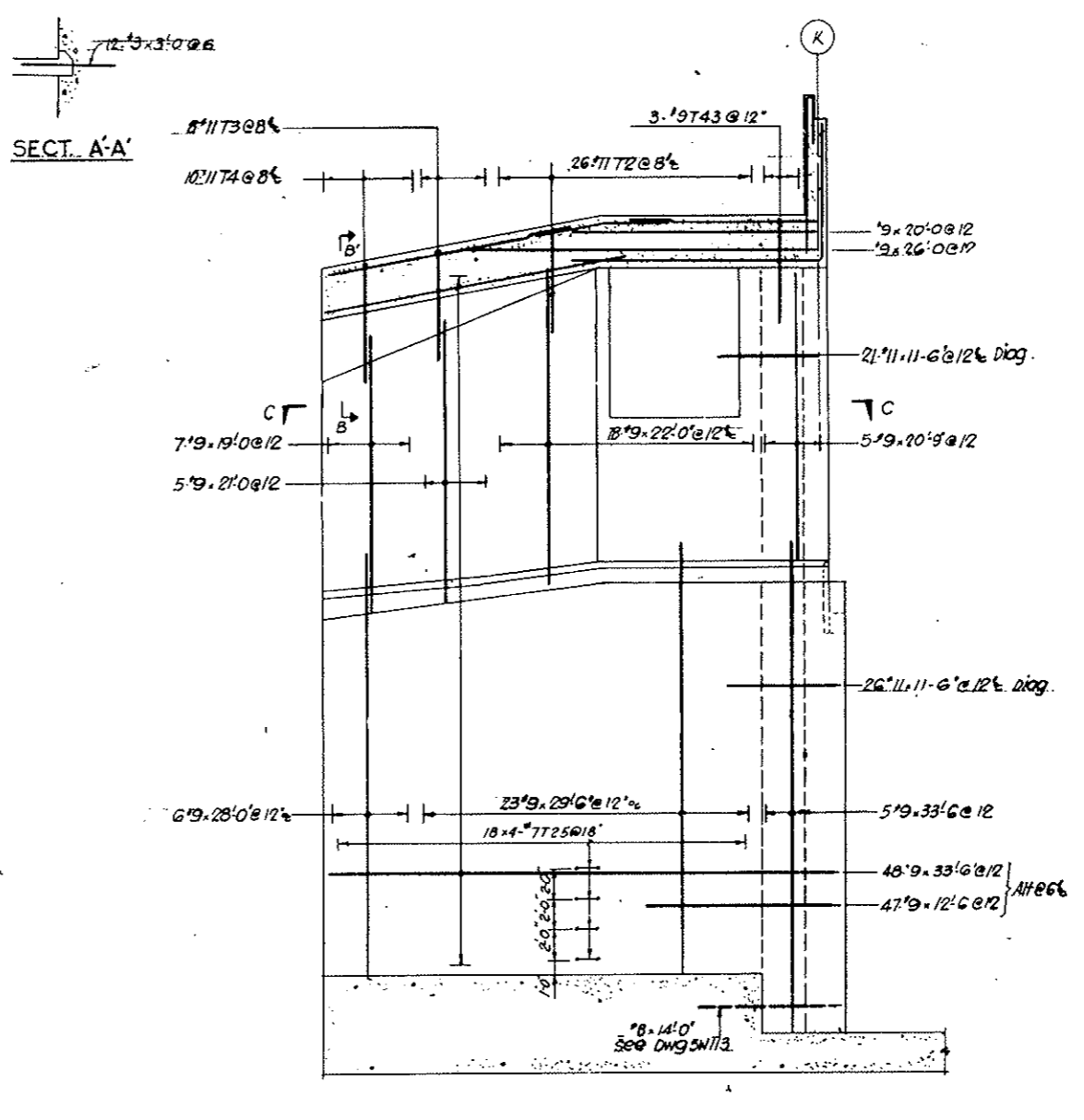
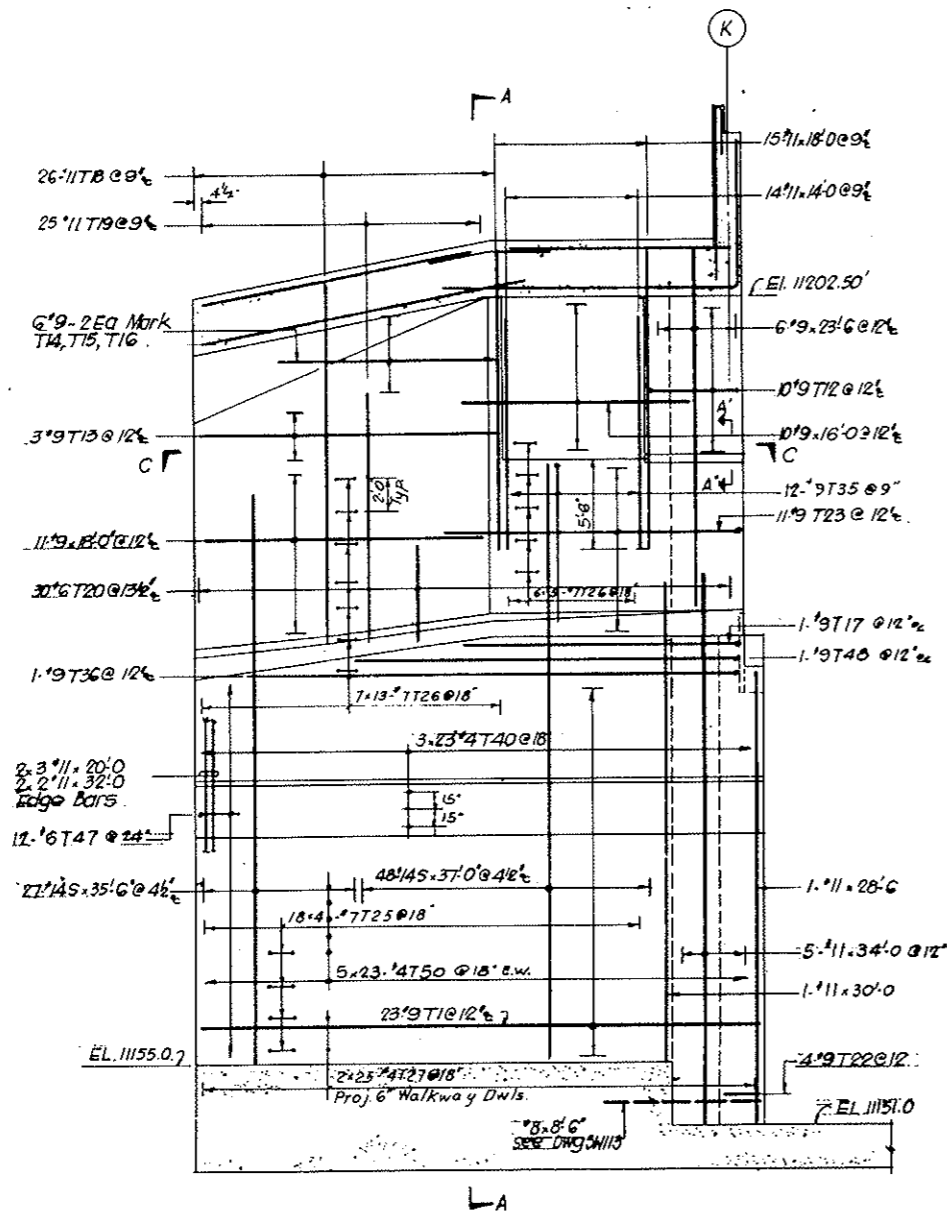


KEY PLAN

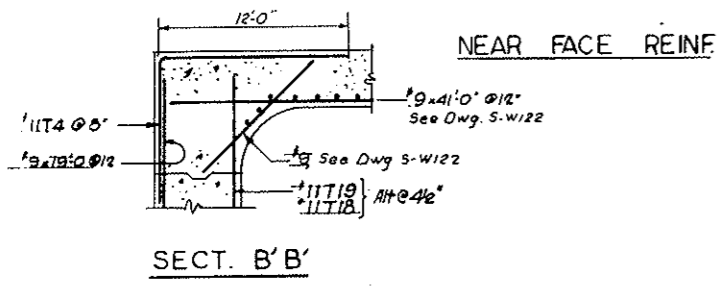
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL REINFORCEMENT WEST VENTILATION BUILDING SOUTH TRANSITION NORTH WALL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY MOB	CHECKED BY EM	RECOMMENDED BY J. J. McCarthy, J. J. Conroy	APPROVED BY Paul Rubin	DRAWING NO. 5-W-118	
NEW YORK, N. Y. SCALE: 3/16" = 1'-0" DATE: DEC. 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-19	

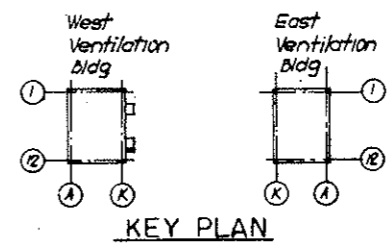
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NOTES:
 For Bending Details see Dwg. No. S-W121
 For Wall Sections see Dwg. No. S-W121
 For North Wall see Dwg. No. S-W118
 For Transition Roof Slab Reinf. see Dwg. No. S-W122



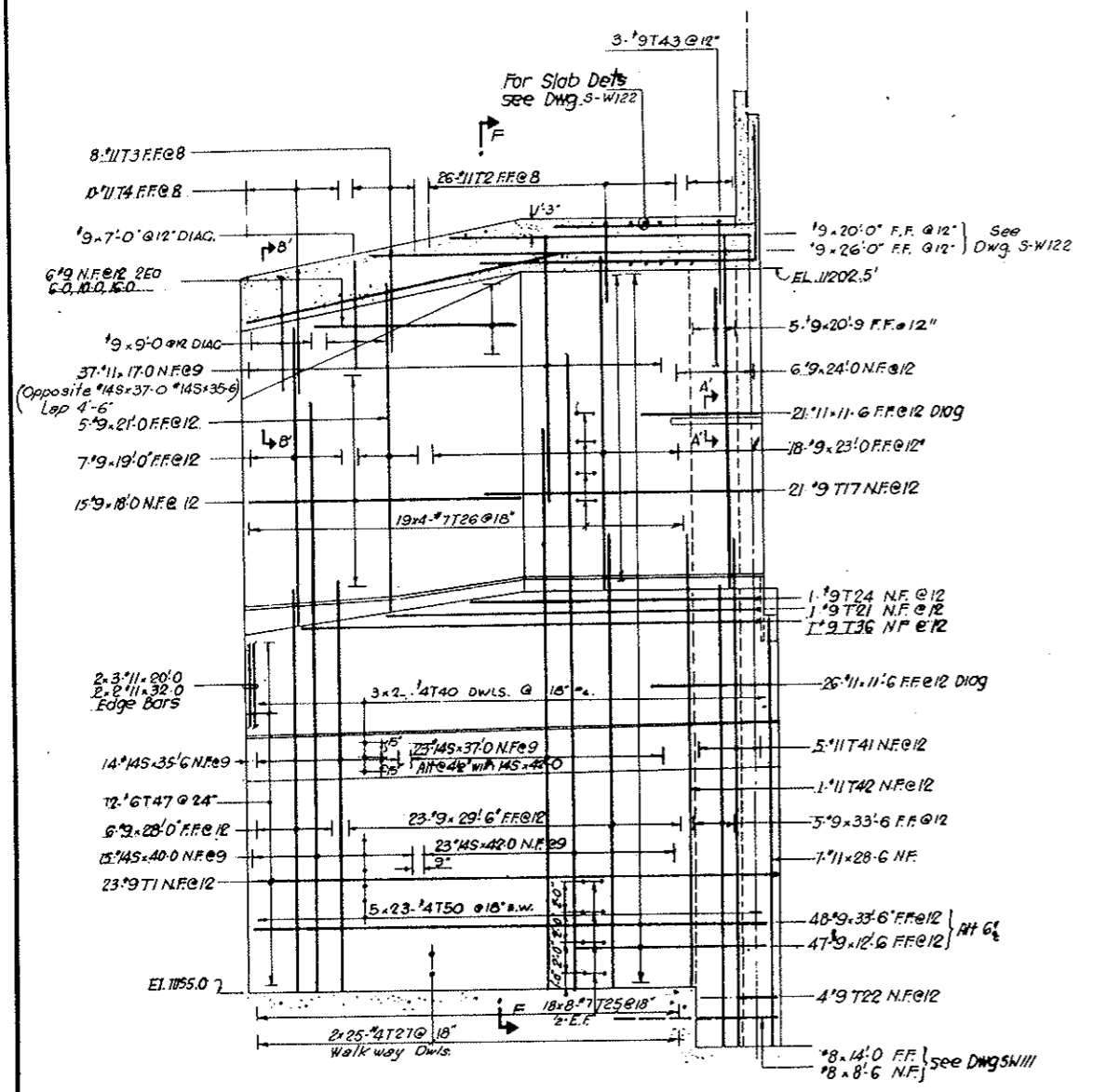
FAR FACE REINF.



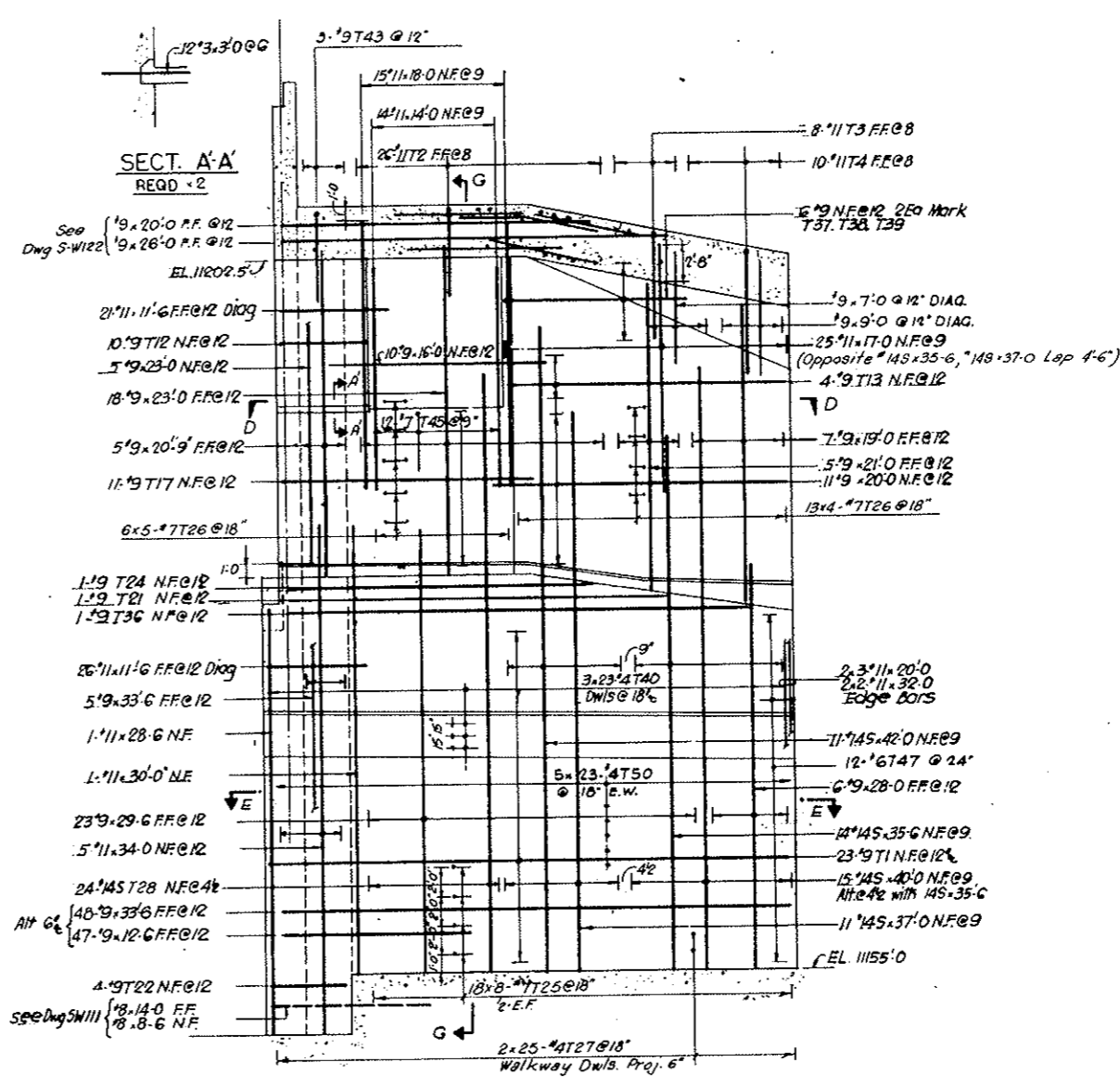
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL REINFORCEMENT WEST VENTILATION BUILDING SOUTH TRANSITION SOUTH WALL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: A.M.	RECOMMENDED:	DRAWN: M.O.		CHECKED: E.M.	
CHECKED: E.M.	APPROVED: Frank Sullivan	DRAWING NO. S-W119		DATE: DEC. 1967	
SCALE: 3/8" = 1'-0" NEW YORK, N. Y.					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-20	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

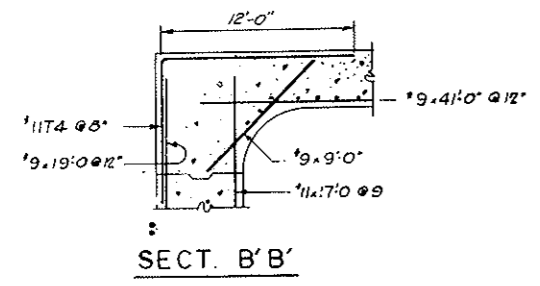


SOUTH WALL

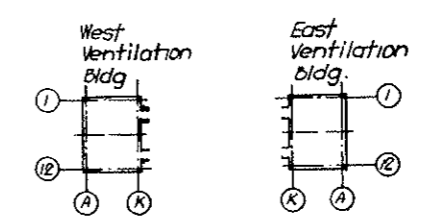


NORTH WALL

NOTES.
For Bending Details see Dwg. No. SW121
For Wall Sections see Dwg. No. SW121



SECT. B-B'

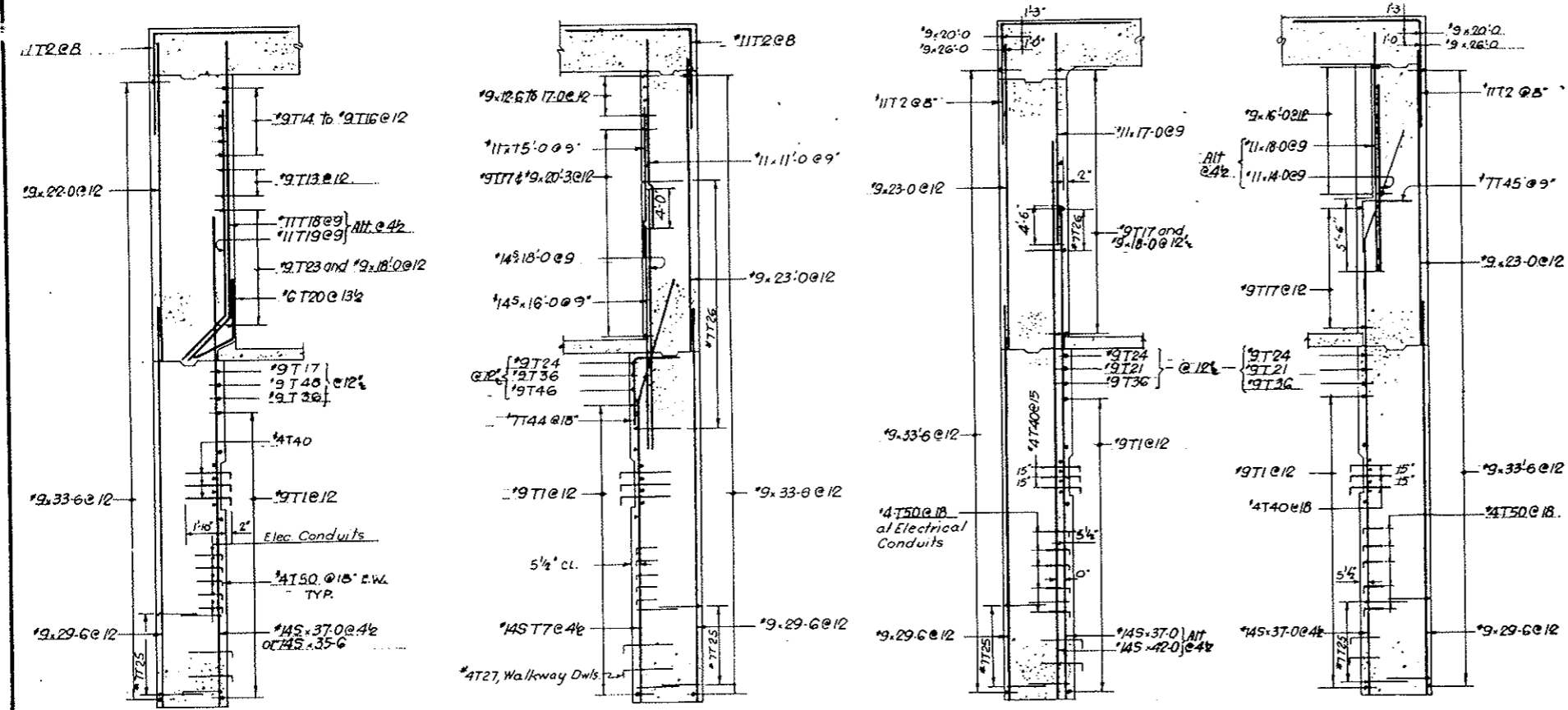


KEY PLAN

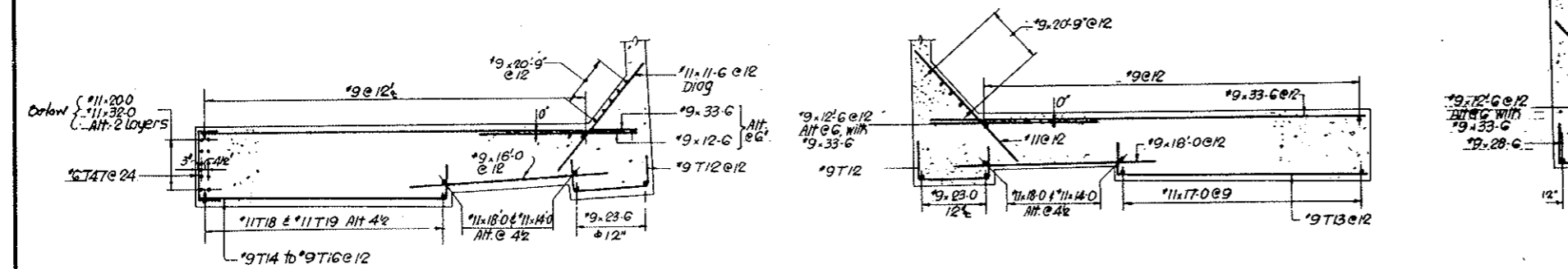
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING NORTH TRANSITION NORTH AND SOUTH WALLS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY A. N. MOB	CHECKED BY E. M. RUPPIN		APPROVED BY Frank DeLano	DRAWING NO. SW120	
SCALE: 3/8" = 1'-0"			DATE: DEC. 1967		

BENDING DETAILS														
NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	J
92	9	37-4	T 1	17	2-10	34-6								
104	11	17-6	2	17	5-6	12-0								
32	11	19-0	3	17	7-0	12-0								
40	11	21-0	4	17	9-0	12-0								
15	145	30-9	5	19	8-0	22-9						3-7	7-2	
17		31-6	T 6		8-0	23-6						3-7	7-2	
21		32-0	7		8-0	24-0						3-7	7-2	
8		32-6	8		8-0	24-6						3-7	7-2	
8		32-6	9		8-0	24-6						3-7	7-2	
6	145	32-6	10		7-9	24-9						3-6	6-11	
1	11	36-0	T 11	19	5-6	30-6						1-3	5-4	
20	9	11-4	12	17	3-0	5-6	2-10							
7	9	21-0	13	40	3-0	18-0							0-4	
2	9	20-0	14	40	3-0	17-0							0-4	
2	9	15-0	15	40	3-0	12-0							0-4	
2	9	10-0	T 16	40	3-0	7-0							0-4	
54	9	20-4	17	17	2-10	17-6								
26	11	24-0	18	19	5-0	19-0						4-0	3-0	
85	11	19-0	19	19	4-3	18-0						4-0	3-0	
30	6	7-0	20	19	3-0	4-0						2-11	10	
2	9	27-4	T 21	17	2-10	24-6						2-4	2-11	
16	9	5-8	22	17	2-10	2-10								
11	9	20-2	23	16	2-10	15-4	2-0						0-3	
3	9	21-10	24	17	2-10	19-0								
576	7	9-0	25	17	3-9	1-6	3-9							
469	7	10-0	T 26	17	4-3	1-6	4-3							
200	4	2-1	27	17	0-7	1-6								
24	145	41-0	28	19	6-0	35-0						2-8	5-4	
12	9	16-1	35	16	3-6	9-3	3-4					3-0	1-6	
4	9	32-10	T 36	17	2-10	30-0								
2	9	9-0	37	17	3-0	6-0								
2	9	14-6	38	17	3-0	11-6								
2	9	20-0	39	17	3-0	17-0								
276	4	2-6	40	17	6	2-0								
5	11	34-1	41	19	5-1	29-0						10	5-0	
1	11	30-1	42	19	5-1	25-0						10	3-0	
12	9	17-6	43	17	5-6	12-0								
22	7	9-7	44	17	3-7	6-0								
12	7	7-0	45	17	3-0	4-0								
1	9	35-10	46	17	2-10	33-0								
36	8	6-9	47	17	1-0	4-9	1-0							
1	9	28-10	48	17	2-10	24-0								
12	6	7-6	49	17	1-0	5-6	1-0							
460	4	3-8	T 50	17	8	3-0								

AS CONSTRUCTED
 NO REVISIONS DATE 10-26-73



SECTION A-A SECTION B-B SECTION F-F SECTION G-G



SECTION C-C

SECTION D-D

SECTION E-E

STRAIGHT BAR LIST											
NO*	SIZE	LGTH	NO*	SIZE	LGTH	NO*	SIZE	LGTH	NO*	SIZE	LGTH
34	145	42-0	10	11	34-0	188	11	11-6	6	9	23-6
30		40-0	16		32-0	37	11	11-0	65		23-0
32		37-0	7		30-0	18		22-0	1		15-6
55		35-6	4		28-6	20		21-0	1		14-0
38		18-0	24		20-0	212	9	33-6	20	20-9	12-6
37	145	16-0	30		18-0	92		29-6	17		20-3
			62		17-0	24		28-0	11		20-0
			38		15-0	*		27			19-0
			28	11	14-0	6	9	24-0	26	9	18-0
									2	9	6-0

* = Rev. ③

NOTES:
For Location of Sections see Drawing NO. SW118 thru SW120

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**STRUCTURAL - REINFORCEMENT
 WEST VENTILATION BUILDING
 TRANSITION WALLS
 SECTIONS AND SCHEDULE**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

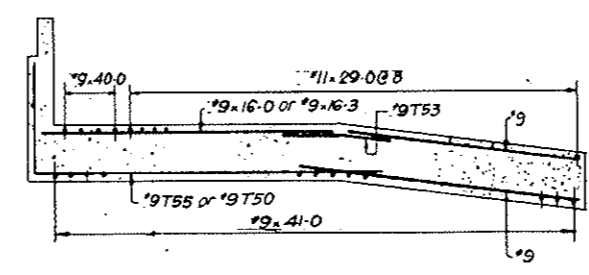
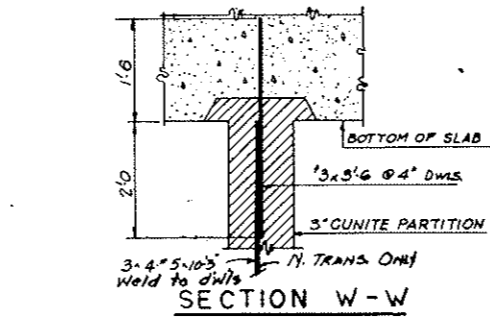
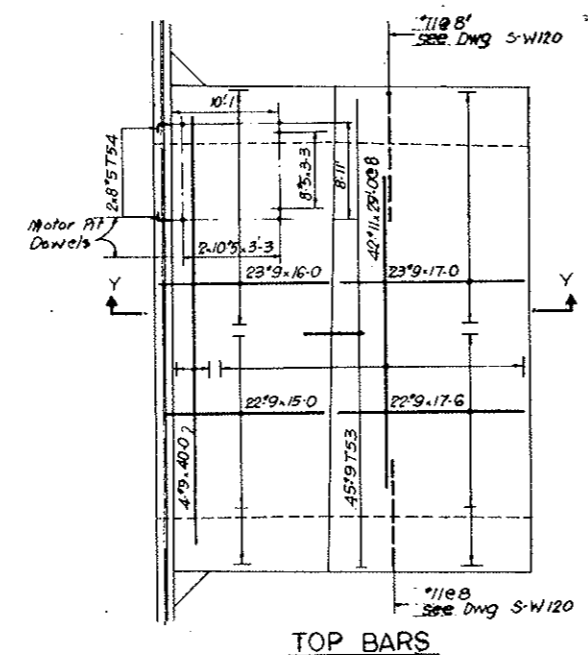
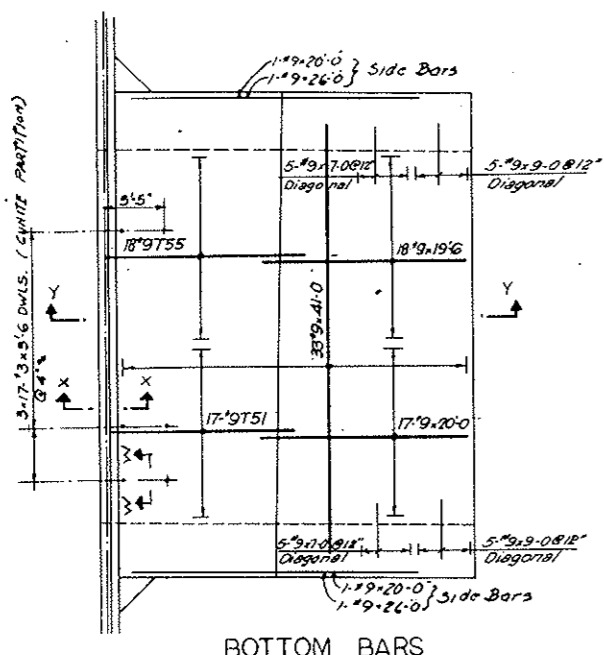
DESIGNED: A.M. CHECKED: M.O.B.
 DRAWN: E.M. SUBMITTED: APPROVED: Frank J. ...
 Scale: 3/16" = 1'-0" DATE: DEC. 1967

DRAWING NO. SW121

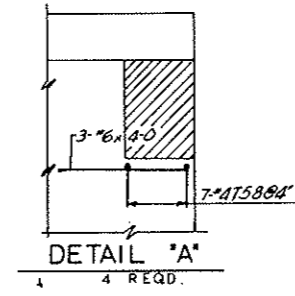
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-22	

BENDING DETAILS															
NO	SIZE	LNGT	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
18	9	28-6	7 50	17		9-6	19-0								
34	9	27-6	51	17		9-6	18-0								
92	7	15-0	52	17		11-2	0-4	3-6							
90	9	8-0	53	19		4-0	4-0					0-9			
32	5	3-3	54	17		0-10	4-3								
18	9	28-0	55	17		9-6	18-6								
138	5	3-9	56	17		0-9	3-0								
6	7	41-9	57	17		1-0	39-9	1-0							
28	4	2-6	58	17		1-0	1-6								

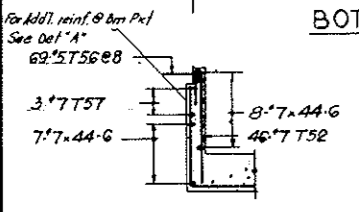
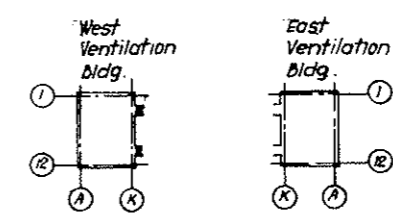
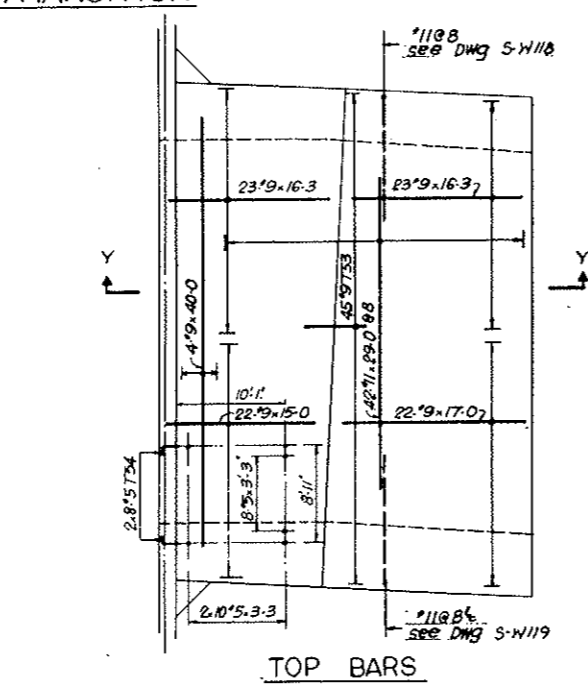
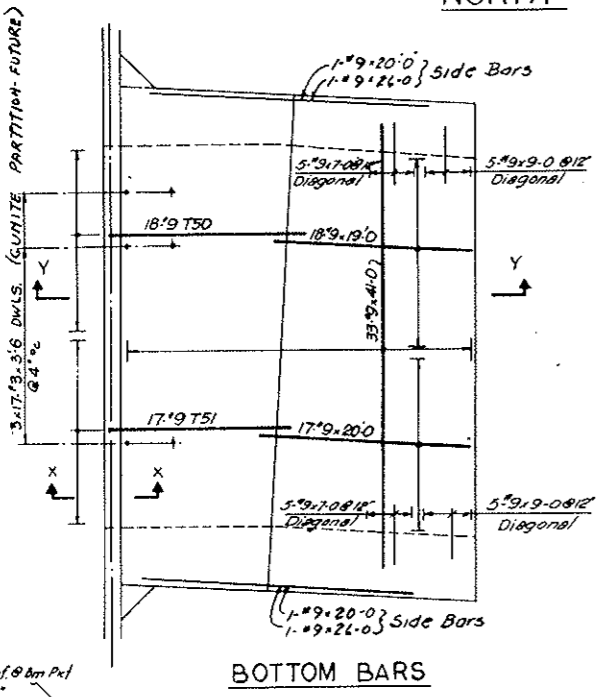
All Dims Out to Out.
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



STRAIGHT BAR LIST		
NO	SIZE	LNGT
84	#11	29-0
66	#9	41-0
8	#9	40-0
4	#9	26-0
38	#9	20-0
18	#9	19-6
18	#9	19-0
22	#9	17-6
43	#9	17-0
46	#9	16-3
23	#9	16-0
44	#9	15-0
20	#9	9-0
20	#9	7-0
30	#7	44-6
12	#6	4-0
12	#5	10-3
56	#5	3-3
102	#3	3-6



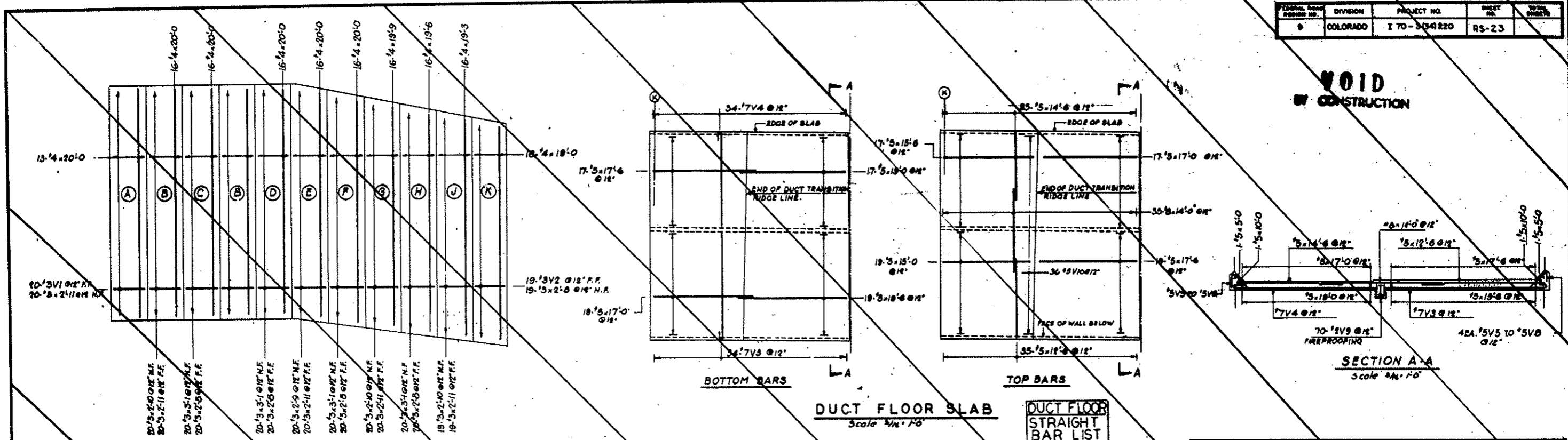
NOTES:
 For Transition Walls see Drawings SW118 thru SW120
 All Reinforcing in this Drawing spaced 12" unless otherwise noted



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING TRANSITIONS ROOF SLABS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: A. M.	CHECKED: E. M.	APPROVED: Frank Rubin	DRAWING NO. S-W 122		
SCALE: 3/16" = 1'-0"		DATE: DEC. 1967			

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-334220	RS-23	

VOID
BY CONSTRUCTION



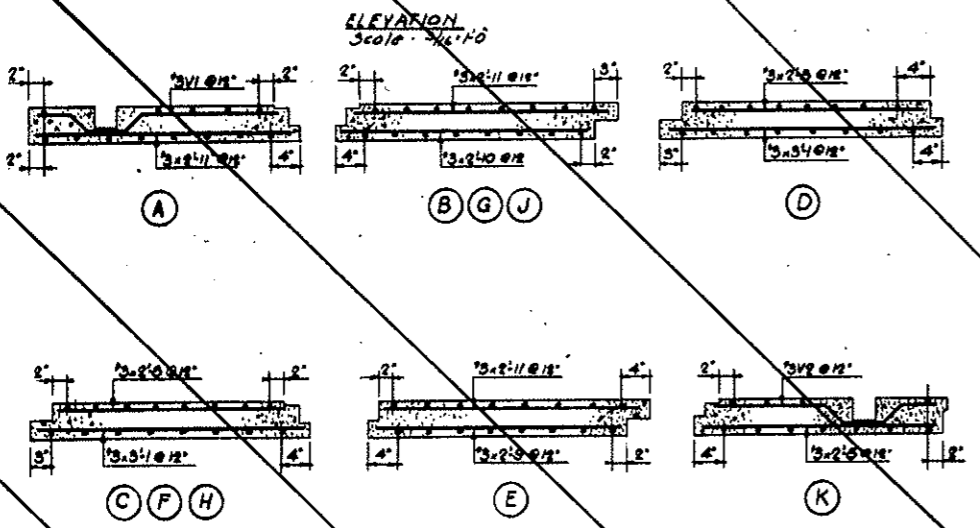
DUCT FLOOR SLAB
Scale 3/8" = 1'-0"

DUCT FLOOR STRAIGHT BAR LIST

NO.	SIZE	LGTH
25	#6	14'-0"
19	#5	19'-6"
17	#5	19'-0"
34	#7	17'-6"
36	#7	17'-0"
17	#5	15'-6"
19	#5	15'-0"
35	#5	16'-6"
35	#5	15'-6"
2	#2	10'-0"
2	#2	5'-0"

BENDING DETAILS

NO.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
20	3	13'-0"	V1	4	0-8	0-3 1/2	0-8	0-3 1/2	1-7	0-2 1/2					
19	3	12'-9"	2	4	0-5	0-2 1/2	0-5	0-3 1/2	1-4	0-2 1/2					
34	7	17'-7"	3	1	0-10	18-8									0-7
4	5	3'-2"	5	40	1-0	2-2					0-8 1/2	0-8 1/2			
4	5	2'-11"	6	40	1-0	1-11					0-8 1/2	0-8 1/2			
4	5	2'-8"	7	40	1-0	1-8					0-8 1/2	0-8 1/2			
4	5	2'-8"	8	40	1-0	1-8					0-8 1/2	0-8 1/2			
70	2	1-11"	9	17	0-8	1-5									
36	3	3'-6"	V10	1					1-9	1-9	0-3				

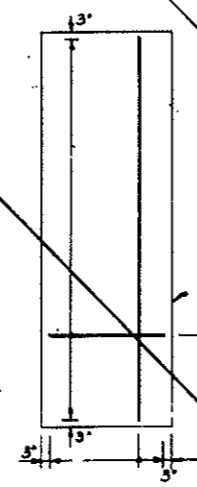


PANEL SECTIONS
Scale 1" = 1'-0"

DUCT DIVIDER WALL

STRAIGHT BAR LIST

NO.	SIZE	LGTH
16	#4	19'-9"
16	#4	19'-6"
16	#4	19'-3"
16	#4	19'-0"
20	#3	3'-7"
* 99	#3	2'-11"
* 59	#3	2'-10"
20	#3	2'-9"
* 99	#3	2'-8"



TYPICAL SECTION

PRECAST CEILING PANELS
Not to Scale

EXHAUST = 37'-4.5'-0" @ 62
FRESH AIR = 33'-4.5'-0" @ 62

EXHAUST = 12'-4.18'-1"
FRESH AIR = 12'-4.18'-3"

NOTE: DETAIL LENGTH OF BARS TO BE VERIFIED AFTER EXACT DIMS. OF PRECAST CEILING PANEL ARE DETERMINED.

PRECAST CEILING PANELS SCHEDULE

6 EXHAUST PANELS
6 FRESH AIR PANELS

STRAIGHT BARS

NO.	BAR	BAR
72	#4	18'-1"
72	#4	16'-3"
222	#4	8'-0"
136	#4	8'-0"

* (U) This Discrepancies on Bar Schedules Corrected. J.P. L.R. H.L.M.
NO. DATE DESCRIPTION OF REVISION BY CAL APP

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL - REINFORCEMENT
WEST VENTILATION BUILDING
NORTH TRANSITION
DUCT FLOOR, DUCT DIVIDER AND TUNNEL CEILING

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

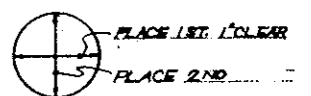
DESIGNED BY: J.P. L.R. H.L.M.
CHECKED BY: J.P. L.R. H.L.M.
APPROVED BY: J.P. L.R. H.L.M.

SCALE: AS NOTED DATE: DEC. 1967

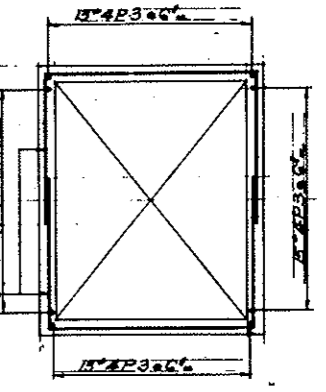
DRAWING NO. **SW123**

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-24	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

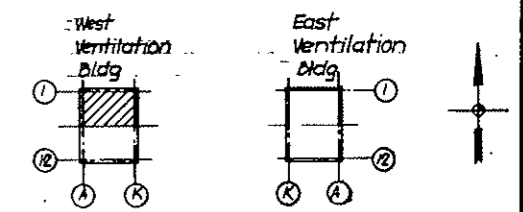


PLACING SEQUENCE OF BOTTOM BARS

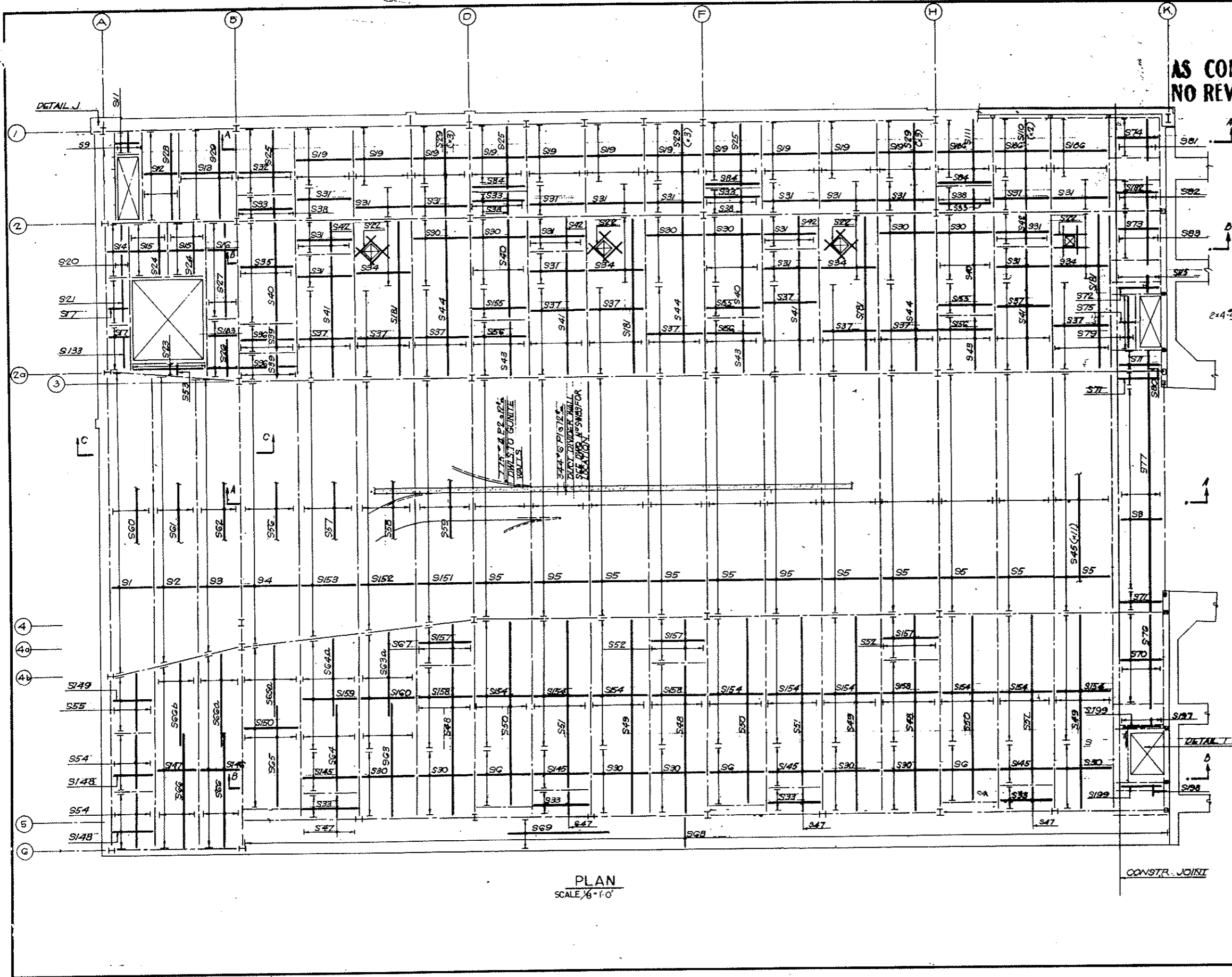


DETAIL - I
 SCALE 3/8" = 1'-0"

NOTES:
 For Bottom bar Schedules and bending Details see Dwg. No S-W126
 For Sections A-A, B-B, C-C, See Dwg. No S-W129



KEY PLAN



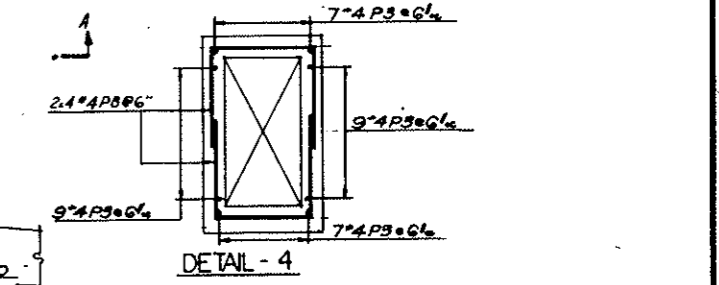
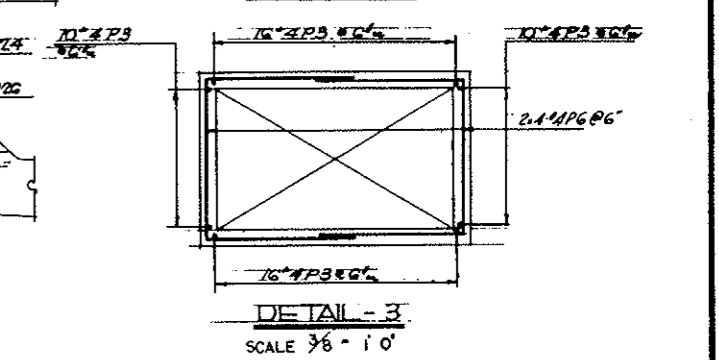
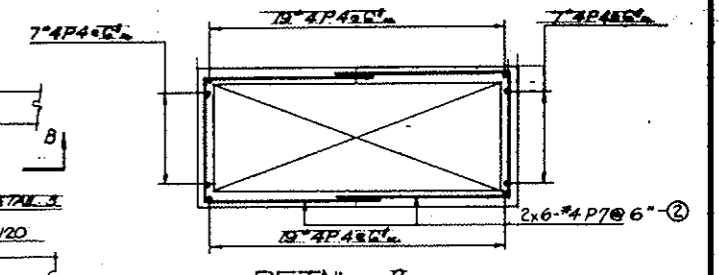
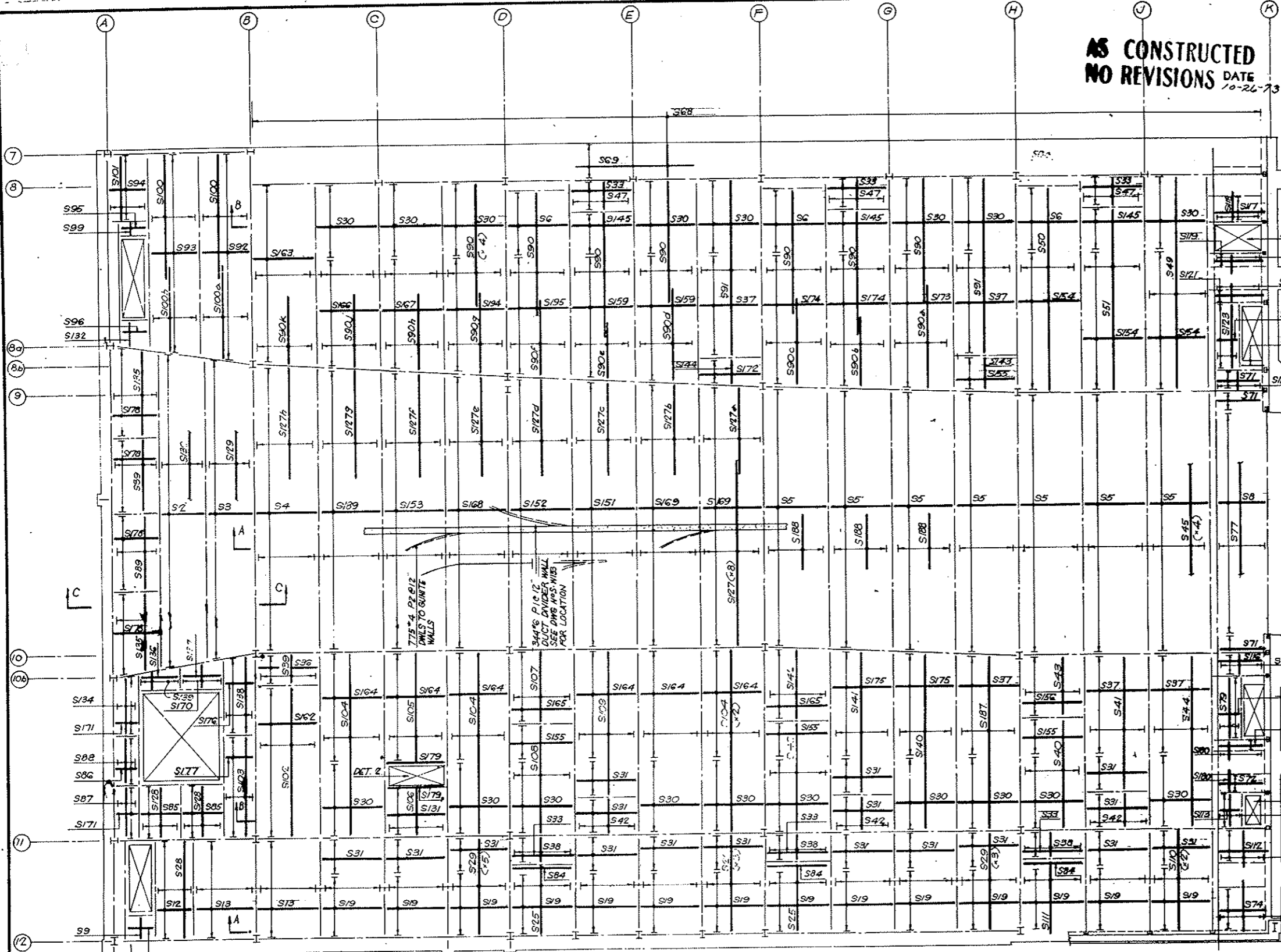
PLAN
 SCALE 3/8" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING PAN ROOM FLOOR SLAB - NORTH BOTTOM BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	H. R.	RECOMMENDED BY	[Signature]		
DRAWN BY	H. R.	CHECKED BY	[Signature]		
SCALE AS NOTED	DATE: DEC. 1967	DRAWING NO. S-W124			

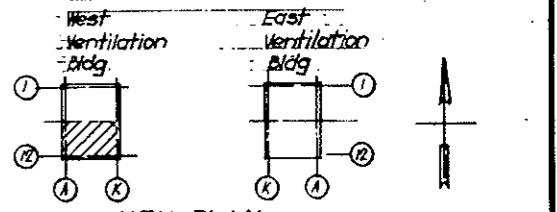
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(3A)220	RS-25	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

PLACING SEQUENCE OF BOTTOM BARS



For slab schedules see Dwg. No. S-W126
 For Top Bars see Dwg. No. S-W127, S-W128, S-W129



PLAN
 SCALE 1/8" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING FAN ROOM FLOOR SLAB - SOUTH BOTTOM BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	H. R.	RECOMMENDED:	L. J. [Signature]		
DRAWN:	H. R.	CHECKED:	E. M. [Signature]		
SUBMITTED:	[Signature]	APPROVED:	Frank [Signature]		
DRAWING NO. S-W125					SCALE: AS NOTED DATE: DEC. 1967

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.

SLAB SCHEDULE - BOTTOM BARS

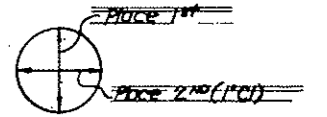
MARK	NOS	REINF	SPAC	REMARKS	MARK	NOS	REINF	SPAC	REMARKS	MARK	NOS	REINF	SPAC	REMARKS	MARK	NOS	REINF	SPAC	REMARKS					
S1	1	105"4x7.3	6"		S65a	1	7"4x12.6	18"	Stagg Laps	S126	1	3"4x4.0	6"		S171	2	15"4x4.3	7 1/2"						
2	2	101"4x7.3	6"		66	2	5"4x20.0	18"	Stagg Laps	127	8	7"4x30.0	18"	Stagg Laps	172	1	8"5x9.9	7 1/2"						
3	2	97"4x7.3	6"		66a	1	5"4x16.6	18"	Stagg Laps	127a	1	7"4x13.0	18"		173	1	36"5x9.9	7 1/2"						
4	2	92"5x9.9	6"		66b	1	5"4x14.9	18"	Stagg Laps	127b	1	7"4x13.6	18"		174	2	35"5x9.9	7 1/2"						
5	18	87"5x9.9	7 1/2"		67	1	7"4 1EA 6.10.6, 11.7 7.3, 7.5, 7.7 7.9	18"		127c	1	7"4x14.0	18"		175	2	27"5x9.9	7 1/2"						
6	6	21"5x9.9	6"		68	2	160"4x5.8	12"	NOT FROM MOST LAYER	127d	1	7"4x14.6	18"		176	1	21"4x4.3	7 1/2"						
8	2	72"5x8.0	6"		69	2	5"4x30.0 4"4x16.0	18"	Stagg Laps	127e	1	7"4x15.3	18"		177	1	27"4x4.3	7 1/2"						
9	2	9"4x3.9	6"		S70	1	32"5x8.3	6"		127f	1	7"4x16.0	18"		178	4	27"4x7.3	6"						
11	2	8"4x4.3	6"		71	6	6"5x8.3	6"		127g	1	7"4x16.6	18"		179	2	2"5x9.9	6"						
12	2	32"4x5.9	6"		72	3	5"5x8.3	6"		127h	1	7"4x17.0	18"	Stagg Laps	S180	2	6"4x2.9	18"						
13	3	32"5x9.9	6"		73	1	17"5x8.3	6"		128	2	5"4x8.9	18"		181	4	7"4x27.9	18"	CUT OFFING					
14	1	16"4x4.6	7 1/2"		74	2	14"5x8.3	6"		129	1	5"4x30.0 5"4x19.3	18"	Stagg Laps	182	1	11"5x8.3	6"						
15	2	20"4x6.3	6"		75	2	21"4x4.0	6"		S130	1	5"4x30.0 5"4x21.6	18"	Stagg Laps	183	1	18"4x4.6	7 1/2"						
16	1	28"4x4.6	7 1/2"		76	1	6"4x16.3	18"		131	1	16"5x9.9	6"											
17	2	13"4x4.6	7 1/2"		77	2	8"4x12.9	18"	Stagg Laps	132	1	9"4 1EA 4.1, 4.2, 4.3 4.4, 4.5, 4.6 4.7, 4.8, 4.9	6"		186	3	17"5x9.9	7 1/2"						
19	25	16"5x9.9	7 1/2"		79	2	3"4x10.3	18"		133	1	3"4 1EA 7.9, 8.0, 8.3	18"		187	1	7"4	18"						
S20	1	3"4x9.6	18"		S80	2	6"4x2.6	18"		134	1	4"4 1EA 8.3, 8.6, 8.9 9.0	18"		S788	3	7"4x7.9	18"	Stagg Laps					
21	1	3"4x8.0	18"		81	2	6"4x7.6	18"		135	2	5"4 1EA 12.0, 12.3, 12.6 2"12.9	18"		189	1	73"5x9.9	7 1/2"						
22	4	4"5x6.0	18"	1EA SIDE	82	2	6"4x6.0	18"		136	1	3"4x6.3	18"											
23	1	2"4x13.0	18"		83	1	6"4x8.9	18"		137	1	4"4x6.3	18"		192	1	31"5x9.9	7 1/2"						
24	2	5"4x9.6	18"		84	6	3"5x9.9	6"		138	1	4"4 1EA 12.0, 12.3, 12.6 12.9	18"		195	1	32"5x9.9	7 1/2"						
25	5	7"4x11.3	18"		85	2	18"4x6.3	6"		139	1	11"4 1EA 2.8, 2.9, 2.10 2.11, 3.0, 3.1 3.2, 3.3, 3.4 3.5, 3.6	7 1/2"	BOTTOM MOST LAYER	197	1	6"4x2.3	18"						
26	1	1"4x10.6 1"4x10.3 1"4x10.0	18"		86	1	14"4x4.3	7 1/2"		S140	1	7"4 1.28-A 2.28-3 2.28-2 2.28-1	18"		198	1	6"4x2.0	18"						
27	1	3"4x16.9	18"		87	1	4"4x8.9	18"		141	1	7"4 1.62.9 2.22.8 2.22.7 2.22.6	18"		199	2	4"5x8.3	6"						
28	2	5"4x15.9	18"		88	1	4"4x8.3	18"		142	1	7"4 1.11.1 2.11.0 2.10.11.2, 10.10	18"											
29	21	7"4x15.9	18"		89	2	5"4x13.0	18"		143	1	14"4 7"5.6 7"5.9	9"											
S30	31	24"5x9.9	6"		S90	10	7"4x20.0	18"	Stagg Laps	144	1	14"4 7"4.0 7"4.3	9"											
31	36	12"5x9.9	6"		90a	1	7"4x15.3	18"		145	7	15"5x9.9	6"											
32	1	23"5x9.9	6"		90b	1	7"4x10.3	18"		146	1	71"4x7.3	6"											
33	14	9"5x9.9	6"		90c	1	7"4x13.0	18"		147	1	68"4x7.3	6"											
S4	4	24"5x9.9	6"	CUT OFFING	90d	1	7"4x13.9	18"		148	2	21"4x7.3	6"											
35	1	36"5x9.9	6"		90e	1	7"4x8.9	18"		149	1	24"4x7.3	6"											
36	3	10"5x9.9	6"		90f	1	7"4x11.3	18"		S150	1	60"5x9.9	6"											
37	16	26"5x9.9	7 1/2"		90g	1	7"4x12.3	18"		151	2	69"5x9.9	7 1/2"											
38	7	14"4x4.3	9"		90h	1	7"4x11.6	18"		152	2	70"5x9.9	7 1/2"											
39	3	7"4x4.9	18"		90i	1	7"4x11.0	18"		153	2	72"5x9.9	7 1/2"											
S40	6	7"4x17.9	18"		90j	1	7"4x10.3	18"	Stagg Laps	154	12	36"5x9.9	7 1/2"											
41	5	7"4x21.9	18"		90k	1	7"4x10.3	18"	Stagg Laps	155	7	10"5x9.9	7 1/2"											
42	7	14"4x5.9	9"		91	2	7"4x28.3	18"		156	4	16"5x9.9	7 1/2"											
43	4	7"4x9.9	18"		92	1	68"5x7.9	6"		157	3	13"5x9.9	7 1/2"											
44	4	7"4x27.9	18"		93	1	66"5x7.9	6"		158	3	23"5x9.9	7 1/2"											
45	15	7"4x17.9	18"	STAGG LAPS	94	1	21"4x6.0	6"		159	3	33"5x9.9	7 1/2"											
47	7	14"4x4.3	9"		95	1	6"4x4.8	6"		S160	1	34"5x9.9	7 1/2"											
48	3	7"4x26.3	18"		96	1	10"4x4.3	6"		162	1	49"5x9.9	6"											
49	4	7"4x34.3	18"		99	1	3"4x2.6	18"		163	1	39"5x9.9	6"											
S50	4	7"4x32.3	18"		S100	2	6"4x20.0	18"	Stagg Laps	164	6	28"5x9.9	7 1/2"											
51	4	7"4x29.9	18"		100a	1	6"4x14.9	18"	Stagg Laps	165	2	18"5x9.9	7 1/2"											
52	2	7"4x7.9	18"		100b	1	6"4x13.9	18"	Stagg Laps	166	1	29"5x9.9	7 1/2"											
53	1	21"4 1EA 1.7, 1.8, 1.9 1.9, 1.10, 1.11 1.11, 2.0, 2.1 2.2, 2.2, 2.3 2.4, 2.4, 2.5 2.5, 2.6, 2.7 2.8, 2.8, 2.9	7 1/2"		101	1	5"4x10.0	18"		167	1	30"5x9.9	7 1/2"											
54	2	5"4x10.0	18"		102	1	7"4x24.3	18"		168	1	71"5x9.9	7 1/2"											
55	1	5"4 1EA 10.0, 10.6, 10.9 11.3, 11.6	18"		103	1	4"4x16.3	18"		169	1	169"5x9.9	7 1/2"											
56	1	7"4x30.0 7"4x17.0	18"	Stagg Laps	104	4	7"4x29.3	18"		170	3	23"5x9.9	7 1/2"											
57	1	7"4x30.0 7"4x16.0	18"		105	1	7"4x17.9	18"		171	1	22"5x9.9	7 1/2"											
58	1	7"4x30.0 7"4x15.0	18"		106	1	7"4x7.9	18"		172	1	22"5x9.9	7 1/2"											
59	1	7"4x30.0 7"4x14.0	18"		107	1	7"4x11.3	18"		173	1	22"5x9.9	7 1/2"											
S60	1	5"4x30.0 5"4x24.0	18"		108	1	7"4x17.9	18"		174	1	22"5x9.9	7 1/2"											
61	1	5"4x30.0 5"4x21.6	18"		109	1	7"4x23.3	18"		175	1	22"5x9.9	7 1/2"											
62	1	5"4x30.0 5"4x19.4	18"		S110	4	7"4x16.3	18"		176	1	22"5x9.9	7 1/2"											
63	1	7"4x20.0	18"		111	2	7"4x11.9	18"		177	1	22"5x9.9	7 1/2"											
64	1	7"4x14.6	18"		112	1	11"5x8.3	6"		178	1	22"5x9.9	7 1/2"											
65	1	7"4x15.6	18"		113	1	12"4x4.9	6"		179	1	22"5x9.9	7 1/2"											
66	1	7"4x13.6	18"		114	1	4"4x5.6	18"		180	1	22"5x9.9	7 1/2"											
65	1	7"4x18.6	18"	Stagg Laps	115	2	6"4x2.9	18"		181	1	22"5x9.9	7 1/2"											
					116	1	6"5x8.3	6"		182	1	22"5x9.9	7 1/2"											
					117	1	8"5x8.3	6"		183	1	22"5x9.9	7 1/2"											
					118	1	6"4x4.6	18"		184	1	22"5x9.9	7 1/2"											
					119	1	6"5x8.3	6"		185	1	22"5x9.9	7 1/2"											
					S120	1	6"4x3.6	18"		186	1	22"5x9.9	7 1/2"											
					121	1	4"5x8.3	6"		187	1	22"5x9.9	7 1/2"											
					122	1	6"4x2.6	18"		188	1	22"5x9.9	7 1/2"											
					123	1	3"4x10.3	18"		189	2	68"5x9.9	7 1/2"											
					124	1	21"4x4.0	6"		S170	1	11"4 1EA 5.8, 3.9, 3.10, 3.11 4.0, 4.1, 4.2, 4.3 4.4, 4.5, 4.6	7 1/2"	BOTTOM MOST LAYER										

BENDING DETAILS

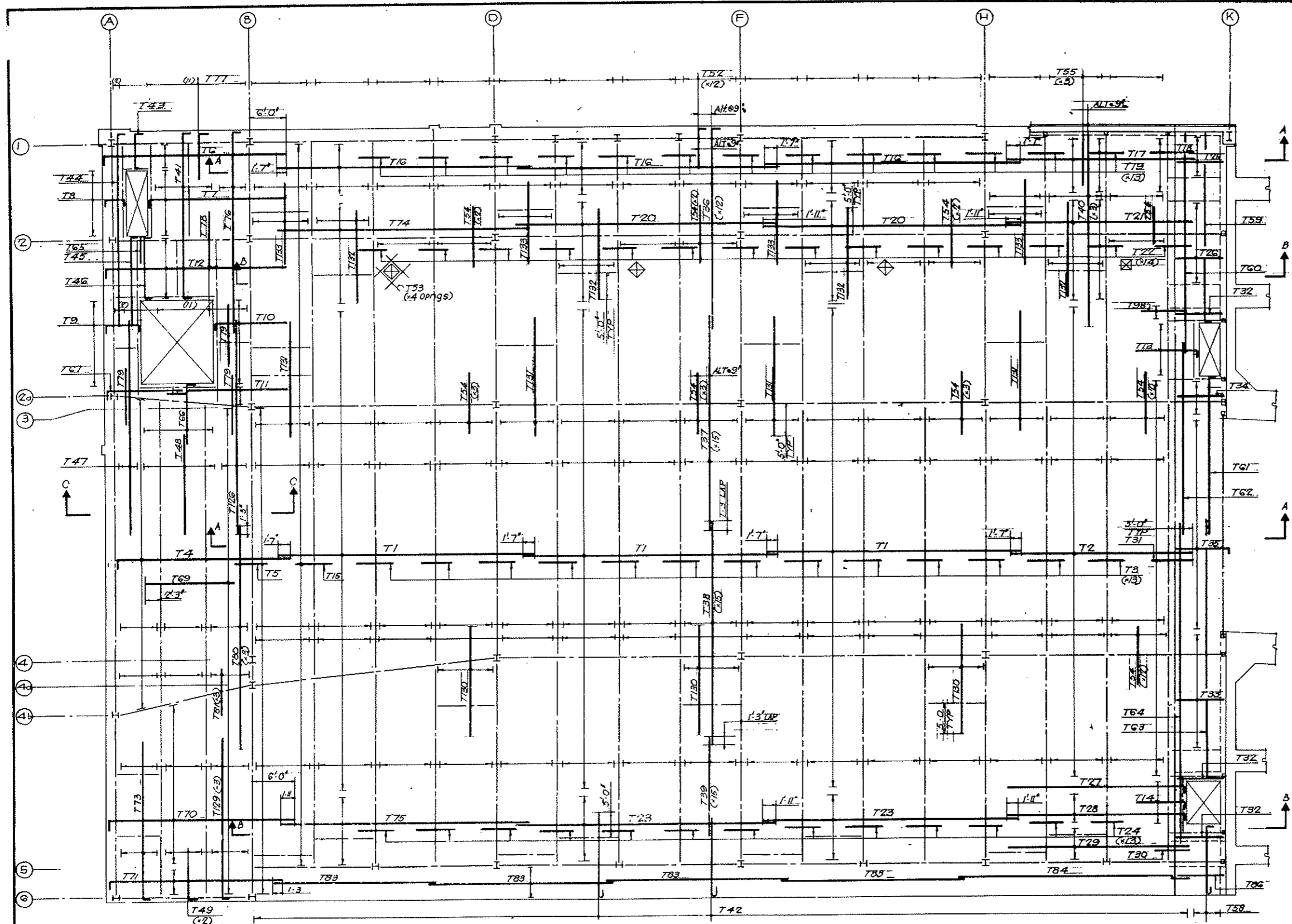
NO.	SIZE	LGTH	MARK	TYPE	A	B	C	D	E
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FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-27	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



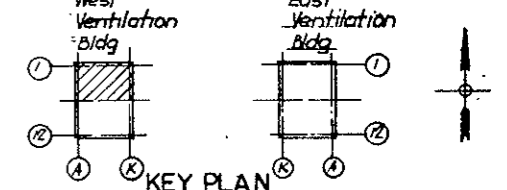
PLACING SEQUENCE
OF TOP SLAB BARS



PLAN

NOTES:

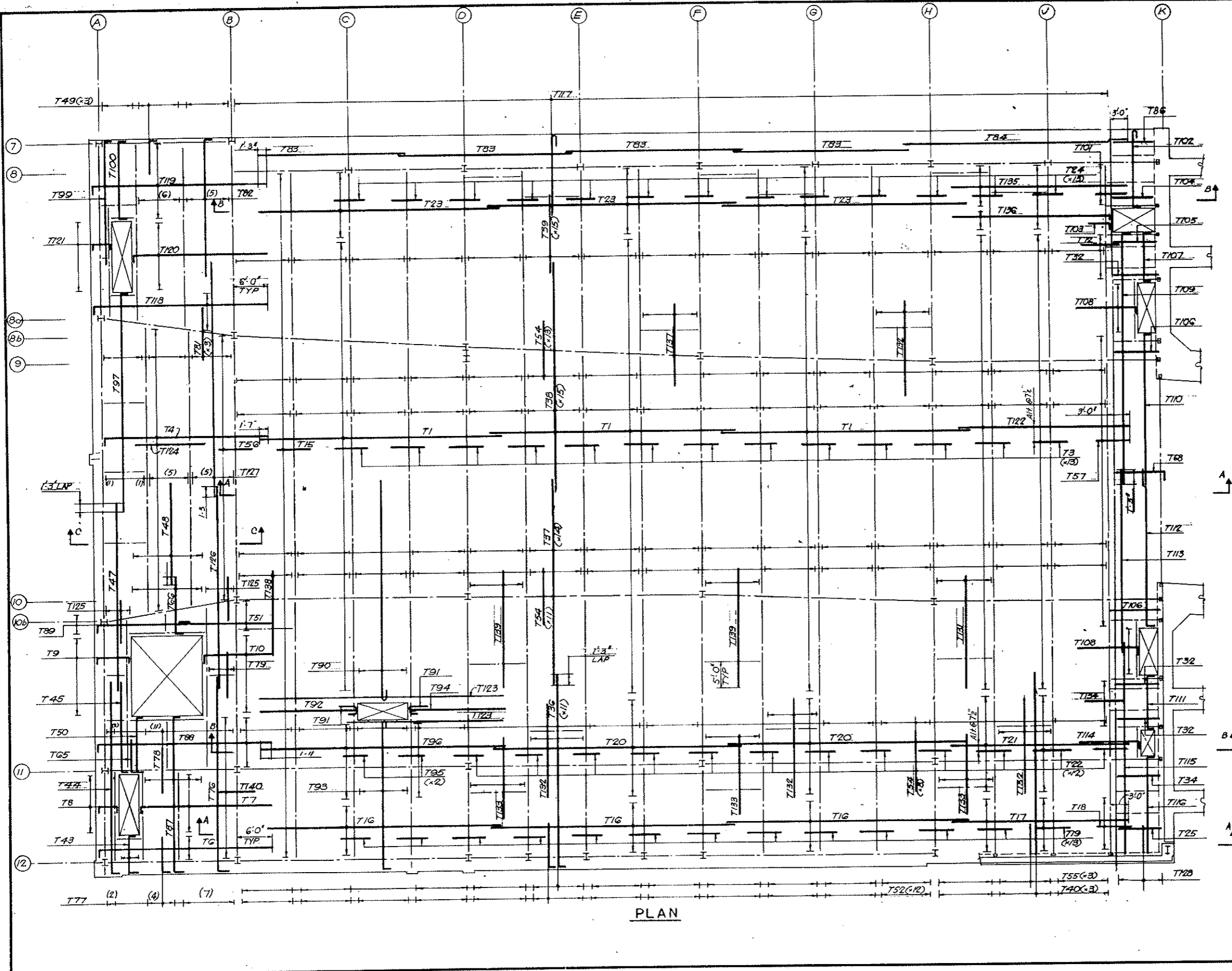
- 1 For Top Bar Schedules and Bending Details see Dwg No S-W123, S-W129
- 2 For Bottom Bars see Dwg No S-W124, S-W125, S-W126
- 3 For Sections A-A, B-B & C-C, see Dwg. No S-W129



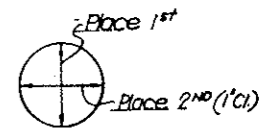
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING FAN ROOM FLOOR SLAB NORTH TOP BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. R.	RECOMMENDED: H. R.				
DRAWN: H. R.	CHECKED: E. M.				
SUBMITTED: <i>Paul Rubin</i>	APPROVED: <i>Frank Rubin</i>				
NEW YORK, N. Y.	SCALE: 1/8" = 1'-0"	DATE: DEC. 1967	DRAWING NO. S-W127		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-28	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

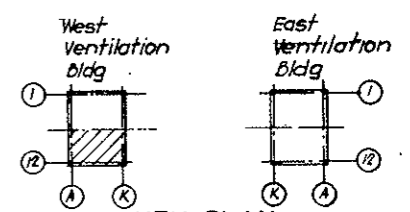


PLAN



PLACING SEQUENCE OF TOP SLAB BARS

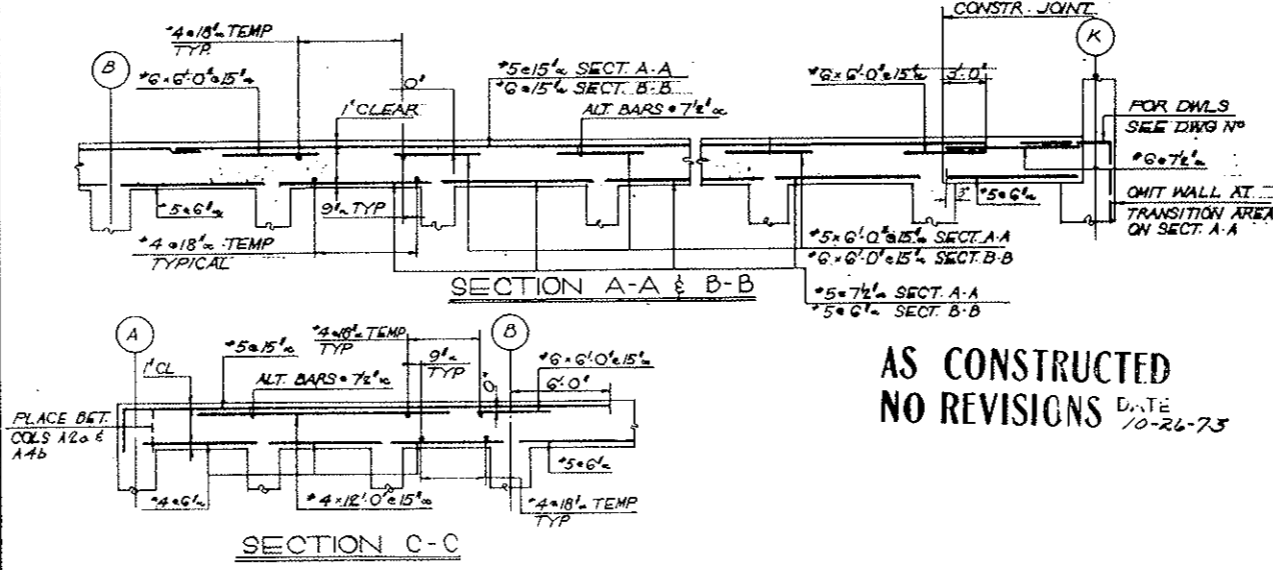
NOTES:
 For Top Bar Schedules and Bending Details see drawing SW129
 For Bottom Bars see DWG NO SW124, SW126, SW128



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING FAN ROOM FLOOR SLAB SOUTH TOP BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.R.	RECOMMENDED: H.R.				
DRAWN: H.R.	CHECKED: E.M.				
SUBMITTED: Paul Radwin	APPROVED: Frank L. ...				
NEW YORK, N.Y.	SCALE: 1/8" = 1'-0"	DATE: DEC. 1967	DRAWING NO. S-W128		

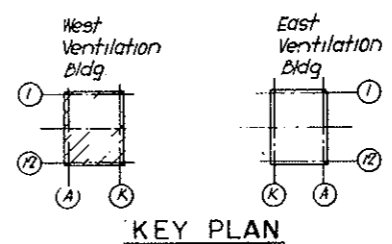
SLAB SCHEDULE				TOP BARS					
MARK	NO	REINF.	SPAC.	REMARKS	MARK	NO	REINF.	SPAC.	REMARKS
T 1	G	64'5" x 41'-6"	15		T 71	1	5'5" R28	15	
2	1	63'5" x 28'-9"	15		72	1	7'6" x 6'-0"	15	
3	2G	64'5" x 6'-0"	15		73	1	5'4" R50	18	ALT WITH 7/8" x 3/4"
4	2	43'5" R1	15		74	1	15'6" x 41'-6"	15	Cut of opng
5	1	66'6" x 6'-0"	15		75	1	10'6" x 41'-6"	15	
T 6	2	10'5" R2	5		T 76	2	4'4" R12	18	
7	2	29'5" R3	5		77	2	13'4" R11	18	See plan
8	2	12'4" R4	12		78	2	13'4" x 10'-0"	18	
9	2	24'4" R5	7 1/2		79	4	3'4" x 10'-0"	18	
10	2	36'5" R6	5		80	3	5'4" x 39'-6"	18	
T 11	1	9'5" x 8'-0"	5		T 81	G	5'4" x 10'-0"	18	
12	1	24'5" R2	5		82	1	11'4" R30	18	See plan
13	1	25'5" R43	5		83	8	4'4" x 30'-0"	18	
14	1	18'5" R8	5		84	2	4'4" x 35'-6"	18	
15	2	36'6" x 6'-0"	15		T 86	2	4'4" x 8'-3"	18	
T 16	G	8'5" x 41'-6"	15		87	1	8'4" R32	18	
17	2	8'5" x 28'-9"	15		88	1	22'5" R2	5	
18	2	8'6" x 6'-0"	15		89	1	4'4" R51	7 1/2	
19	2G	8'5" x 6'-0"	15		90	1	7'4" R33	18	
20	4	15'6" x 42'-0"	15	cut of opng	T 91	2	3'6" R34	15	
T 21	2	15'6" x 29'-0"	15		92	1	2'6" R35	15	
22	2G	14'6" x 6'-0"	15		93	1	7'4" R36	18	
23	5	10'6" x 42'-0"	15		94	1	2'6" R37	15	
24	2G	10'6" x 6'-0"	15		95	2	11'6" x 6'-0"	15	
25	2	12'6" x 8'-3"	7 1/2		T 96	1	12'6" x 41'-6"	15	
T 26	1	22'6" x 8'-3"	7 1/2		97	1	3'4" R39	18	
27	1	1'5" R9	15		98	1	2'6" x 6'-0"	15	
28	1	6'6" R10	15		99	1	1'4" R30	18	
29	1	4'6" x 29'-0"	15		100	1	3'4" R38	18	
30	1	4'6" x 6'-0"	15		T 101	1	6'6" x 6'-0"	15	
T 31	1	44'6" x 6'-0"	15		102	1	12'5" R40	8	
32	G	4'6" x 8'-3"	7 1/2		103	1	4'6" R41	15	
33	1	31'6" x 8'-3"	7 1/2		104	1	6'6" x 8'-3"	7 1/2	
34	2	9'6" x 8'-3"	7 1/2		105	1	5'6" x 8'-3"	7 1/2	
35	1	58'6" R18	7 1/2		T 106	2	8'6" x 8'-3"	7 1/2	
T 36	23	7'4" R12	18		107	1	2'4" R42	18	
37	29	7'4" x 36'-3"	18		108	2	21'5" R43	5	
38	30	7'4" x 39'-6"	18		109	1	4'4" R44	18	
39	30	7'4" x 13'-3"	18		110	1	2'4" R45	18	
40	G	7'4" x 31'-3"	18		T 111	1	2'4" R47	18	
T 41	1	8'4" R13	18		112	1	2'4" R46	18	
42	1	230'5" R14	8		113	1	4'4" x 30'-3"	18	
43	2	5'4" R15	9		114	1	11'5" R7	5	
44	2	2'4" R49	18		115	1	4'4" x 37'-3"	18	
45	2	1'4" R16	18		T 116	1	2'4" R48	18	
T 46	1	1'4" R17	18		117	1	223'5" R14	8	
47	2	3'4" x 33'-9"	18		118	1	12'5" R2	5	
48	2	8'4" x 16'-9"	18		119	1	32'5" R2	5	
49	5	5'4" R19	18		120	1	32'5" R3	5	
50	1	1'4" R31	18		T 121	1	22'5" R4	7 1/2	
T 51	1	12'5" x 14'-9"	5		122	1	64'5" x 28'-9"	15	
52	24	7'4" R11	18		123	2	1'6" x 41'-6"		AT OPNG.
53	4	4'5" x 6'-0"		150 side	124	1	40'4" x 12'-0"	15	ALT WITH 7/8" x 3/4"
54	G2	7'4" x 10'-0"	18		125	2	3'4" x 10'-0"	18	
55	G	7'4" x 5'-6"	18		126	2	4'4" x 36'-3"	18	
56	1	39'6" x 6'-0"	15		127	1	12'4" x 39'-6"	18	See plan
57	1	40'6" x 6'-0"	15		128	1	6'4" x 5'-6"	18	
58	1	9'5" R20	8		129	3	5'4" R30	18	
59	1	2'4" R21	18		130	3	7'4" x 18'-0"	18	
60	1	3'4" x 37'-0"	18		T 131	5	7'4" x 20'-0"	18	
T 61	1	2'4" R22	18		132	8	7'4" x 16'-0"	18	
62	1	3'4" x 40'-0"	18		133	7	7'4" x 14'-6"	18	
63	1	4'4" R23	18		134	1	8'6" x 6'-0"	15	
64	1	1'4" x 47'-0"	18		135	1	6'6" x 28'-9"	15	
65	2	3'4" R24	18		136	1	4'6" R29	15	
T 66	2	20'4" R26	7 1/2		137	1	7'4" x 14'-9"	18	
67	1	3'4" R25	7 1/2		138	1	7'4" x 15'-0"	18	
68	1	58'6" R18	7 1/2		139	2	7'4" x 21'-6"	18	
69	1	66'4" x 12'-0"	15		140	1	20'6" x 6'-0"	15	
70	1	20'5" R27	15						



STRAIGHT BAR LIST		
NO	SIZE	LNGET
110	6	42-0
39	6	41-6
34	6	29-0
6	6	28-9
*156	6	8-3
*1090	6	6-0
432	15	41-6
143	15	28-9
9	15	18-0
12	15	14-9
1888	15	6-0
1	14	47-0
3	14	40-0
237	14	39-6
4	14	37-3
3	14	37-0
211	14	36-3
8	14	35-6
6	14	33-9
42	14	31-3
4	14	30-3
32	14	30-0
14	14	21-6
35	14	20-0
21	14	18-0
16	14	16-9
56	14	16-0
7	14	15-0
7	14	14-9
*49	14	14-6
210	14	13-3
106	14	12-0
308	14	10-0
8	14	8-3
48	14	5-6

BENDING DETAILS															
NO	SIZE	LNGET	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
86	5	29-0	R 1	2	0-9	28-3									
110	5	30-3	2	2	0-9	29-6									
90	5	23-3	3	2	0-9	22-6									
46	4	4-2	4	2	0-7	3-0							0-7		
48	4	7-3	5	2	0-7	6-1							0-7		
78	5	11-9	R 6	2	0-9	11-0									
11	5	12-9	7	2	0-9	12-0									
18	5	9-3	8	2	0-9	8-6									
7	5	29-0	9	2	0-9	28-3									
6	6	29-3	10	2	0-10	28-5									
194	4	7-3	R 11	2	0-7	6-8									
169	4	32-3	12	2	0-7	32-2									
8	4	28-9	13	2	0-7	27-7								0-7	
453	5	15-11	14	1	0-7	15-4									
10	4	7-0	15	2	0-7	5-10								0-7	
2	4	15-3	R 16	2	0-7	14-8									
1	4	11-7	17	2	0-7	10-5								0-7	
116	6	10-6	18	2	1-11	8-7									
25	4	6-3	19	2	0-7	5-8									
9	5	12-0	20	12	0-7	10-8	0-9								
2	4	32-0	R 21	2	0-7	31-5									
2	4	25-3	22	1	0-7	24-8									
4	4	44-0	23	1	0-7	43-5									
6	4	6-0	24	2	0-7	5-5									
3	4	14-0	25	2	0-7	13-5									
40	4	10-9	R 26	2	0-7	10-2									
20	5	30-3	27	2	9	29-6									
5	5	26-6	28	2	9	25-9									
4	6	26-9	29	2	0-10	25-11									
27	4	24-3	30	2	0-7	23-8									
1	4	10-11	R 31	2	0-7	9-9								0-7	
8	4	28-1	32	2	0-7	26-11								0-7	
7	4	38-6	33	1	0-6	38-0									
6	6	4-2	34	1	0-8	3-6									
2	6	16-9	35	1	0-8	16-1									
7	4	26-6	R 36	12	0-6	25-5	0-7								
2	6	17-0	37	1	0-8	16-4									
3	4	14-9	38	2	0-7	13-7								0-7	
3	4	39-7	39	2	0-7	38-0									
12	5	14-0	40	12	0-7	12-8	0-9								
4	6	4-9	R 41	2	0-10	3-11									
2	4	10-8	42	2	0-7	9-6								0-7	
67	5	12-0	43	2	9	11-3									
4	4	41-9	44	2	0-7	41-2									
2	4	24-3	45	2	0-7	23-8									
2	4	27-6	R 46	2	0-7	26-11									
2	4	10-2	47	2	0-7	9-0								0-7	
2	4	17-9	48	2	0-7	17-2									
4	4	36-4	49	2	0-7	35-9									
5	4	26-9	50	2	0-7	26-2									
4	4	17-6	51	2	0-7	16-11									

NOTE:
For location of Top Bars see
Drawings No S-W127, S-W128

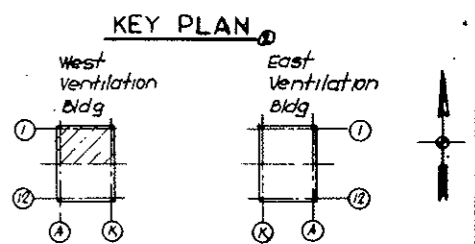
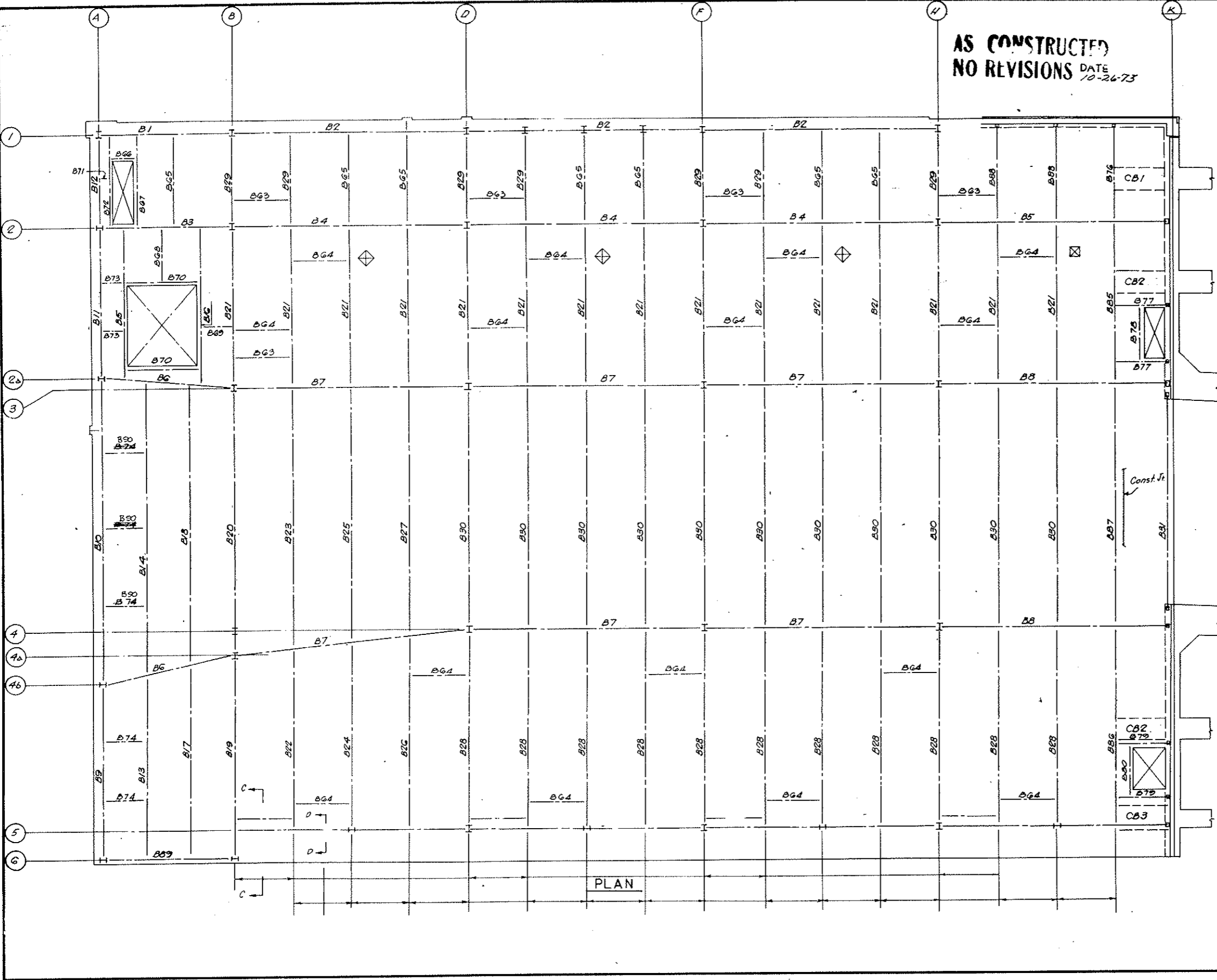


FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-30	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

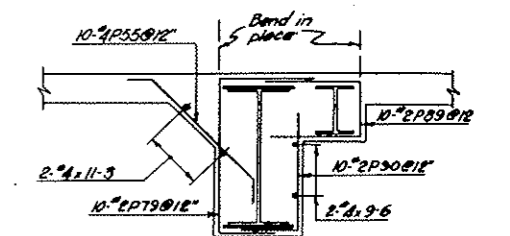
STRAIGHT BAR LIST			STRAIGHT BAR LIST		
NOS	SIZE	LGTH	NOS	SIZE	LGTH
64	*9	8-3	20	*4	17-9
24	*9	7-0	28		28-0
24	*9	13-3	10		28-6
			4		28-9
			4		29-0
8	*4	4-3	12		29-3
2		5-6	8		29-6
2		8-0	16		30-3
22		9-0	4		30-9
6		10-3	10		31-3
8		12-9	8		31-9
20		15-9	4		32-0
12		16-3	8		32-3
2		20-0	4		31-6
32		21-3	60		33-0
160		21-6	4		33-3
32		21-9	8		33-6
16		22-0	4		33-9
20		22-3	28		34-3
8		22-6	8		
8		22-9	8		36-6
16		23-0	24		38-9
8		23-3	108	*4	39-9
16		23-6	24		14-6
16		24-9	12		20-9
28		25-9	60		11-3
C		26-0	60	*4	9-6
78		26-6			
24		27-0			
C	*4	27-3			

- NOTES:
- For Fan Room Beams South half see DWG NO 5W131.
 - For Beam reinforcing and Bending Details see DWG NO 5W132.

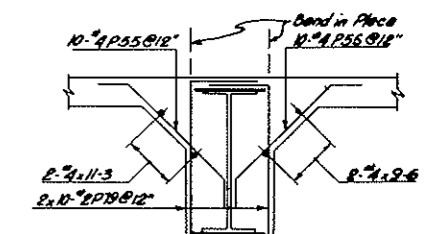


NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO-DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL REINFORCEMENT WEST VENTILATION BUILDING FAN ROOM BEAMS FIREPROOFING-NORTH					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. R.	RECOMMENDED:	DRAWN: H. R.			
CHECKED: E. M.	APPROVED:	SUBMITTED: J. P. [Signature]			
PAUL STRATTON	NEW YORK, N. Y.	SCALE: 1/8" = 1'-0"	DATE: DEC. 1967	DRAWING NO. 5-W130	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I. 70-3(34)220	RS-31	



SECTION C-C
7 REQ'D

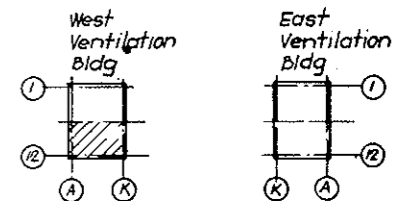


SECTION D-D
23 REQ'D

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

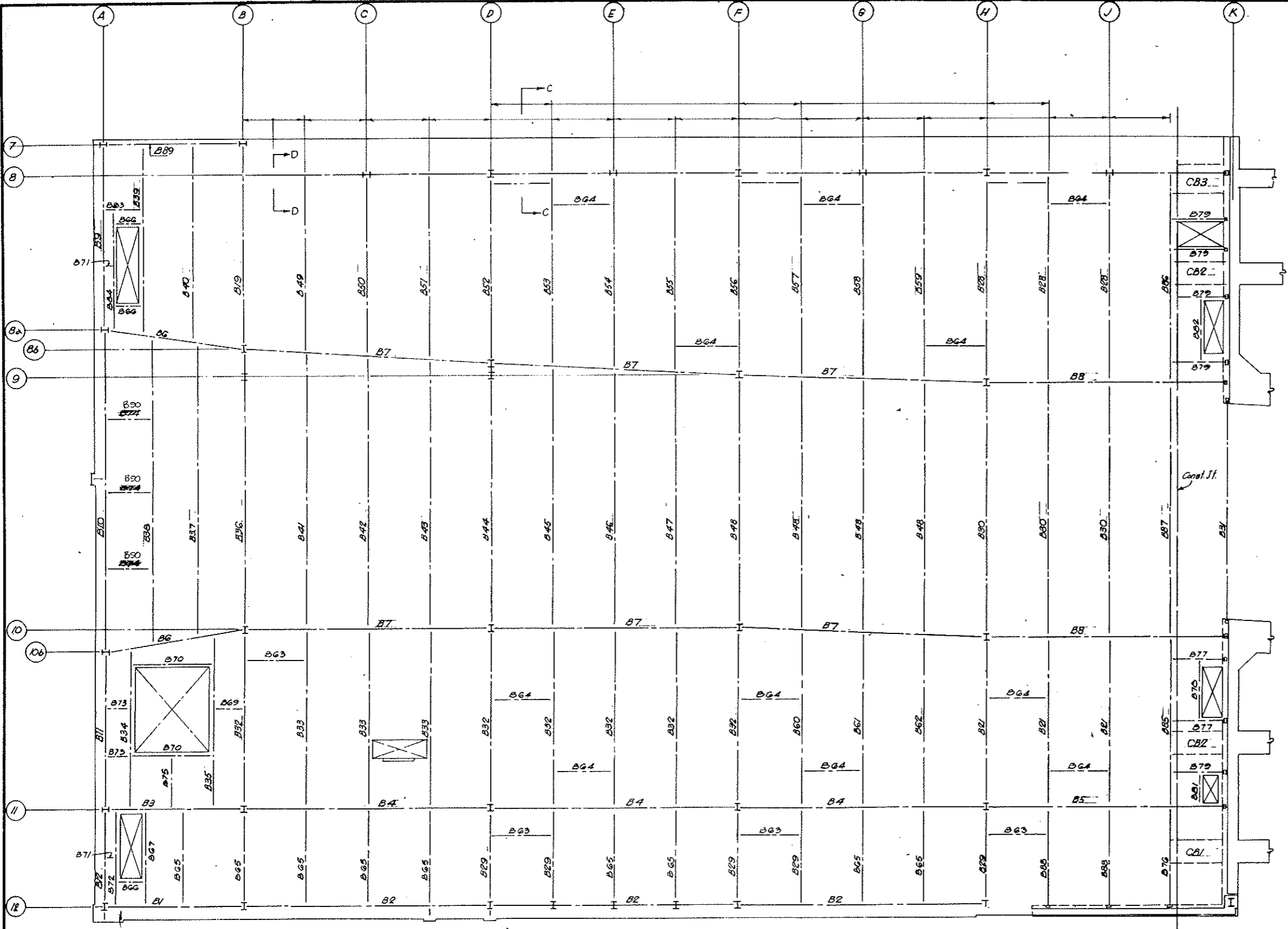
NOTES:
For fan Room Beams No. Half see Dwg
For beam Reinf. & Bending Dets see Dwg

5W130
5W132



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT					
WEST VENTILATION BUILDING					
FAN ROOM BEAMS FIREPROOFING - SOUTH					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. R.	RECOMMENDED:				
DRAWN: H. R.	APPROVED:				
CHECKED: E. M.	DATE:				
SUBMITTED:	SCALE: 1/8" = 1'-0"	DATE: DEC. 1967	DRAWING NO. S-W131		

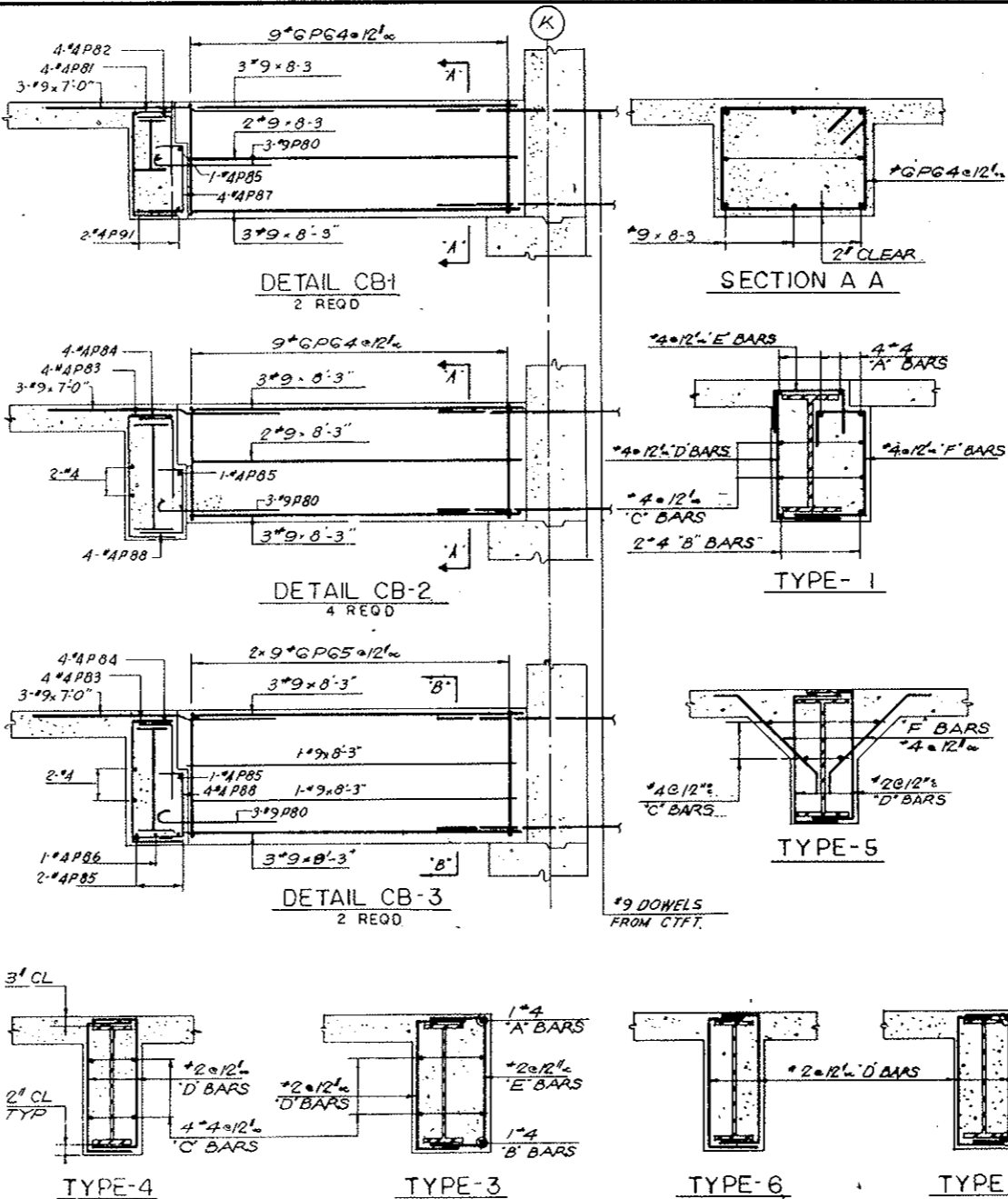


PLAN

AS CONSTRUCTED
NO REVISIONS DATE
 10-26-73

SCHEDULE OF FIREPROOFING

MARK	NO.	SIZE	A BARS	B BARS	C BARS @ 12"	D BARS @ 12"	E BARS @ 12"	F BARS @ 12"	TYPE
B 1	2	37 1/2 x 31	1" x 4-22-3	1" x 4-22-3	4" x 4-22-3	23" x 2 P50	23" x 2 P51		3
2	6	37 1/2 x 31	1" x 4-39-9	1" x 4-39-9	4" x 4-39-9	40" x 2 P50	40" x 2 P51		3
3	2	35" x 14 1/2			4" x 4-21-9	2" x 23" x 2 P52			4
4	6	41" x 20 1/2			4" x 4-39-9	2" x 40" x 2 P53			4
5	2	41" x 20 1/2			4" x 4-38-9	2" x 39" x 2 P53			4
B 6	4	41" x 16			4" x 4-21-9	2" x 23" x 2 P54			4
7	12	42 1/2 x 23			4" x 4-39-9	2" x 40" x 2 P63	2" x 40" x 4 P55		5
8	4	42 1/2 x 23			4" x 4-38-9	2" x 39" x 2 P63	2" x 39" x 4 P55		5
9	2	37 1/2 x 24	1" x 4-30-3	1" x 4-30-3	4" x 4-30-3	30" x 2 P51			3
10	2	45 1/2 x 24	2" x 4-27-0	2" x 4-27-0	2" x 4-27-0	53" x 2 P58	53" x 2 P57		3
B 11	2	37 1/2 x 24	1" x 4-25-9	1" x 4-25-9	4" x 4-25-9	26" x 2 P51	26" x 2 P56		3
12	2	37 1/2 x 24	1" x 4-15-9	1" x 4-15-9	4" x 4-15-9	16" x 2 P51	16" x 2 P56		3
13	1	35" x 14 1/2			4" x 4-31-9	2" x 32" x 2 P59			4
14	1	41" x 16			2" x 4-25-9	2" x 50" x 2 P54			4
15	1	32" x 14	1" x 4-26-0	1" x 4-26-0	4" x 4-26-0	2" x 26" x 2 P60			3
B 16	1	32" x 14	1" x 4-27-3	1" x 4-27-3	4" x 4-27-3	2" x 27" x 2 P60			3
17	1	35" x 14 1/2			4" x 4-33-6	2" x 34" x 2 P59			4
18	1	41" x 16			2" x 4-24-9	2" x 47" x 2 P54			4
19	2	41" x 20 1/2			4" x 4-34-3	2" x 36" x 2 P53			4
20	1	41" x 20 1/2			2" x 4-23-6	2" x 45" x 2 P53			4
B 21	18	41" x 16			4" x 4-26-6	2" x 28" x 2 P54			4
22	1	41" x 16			4" x 4-30-9	2" x 30" x 2 P54			4
23	1	41" x 16			2" x 4-23-0	2" x 44" x 2 P54			4
24	1	41" x 16			4" x 4-32-0	2" x 32" x 2 P54			4
25	1	41" x 16			2" x 4-27-6	2" x 43" x 2 P54			4
B 26	1	41" x 16			4" x 4-33-0	2" x 33" x 2 P54			4
27	1	41" x 16			2" x 4-28-0	2" x 42" x 2 P54			4
28	14	41" x 16			4" x 4-33-0	2" x 34" x 2 P54			4
29	12	26" x 12 1/2			2" x 4-14-6	2" x 16" x 2 P61			4
30	14	41" x 16			2" x 4-21-6	2" x 41" x 2 P54			4
B 31	2	29" x 12 1/2	1" x 4-36-6	1" x 4-36-6	2" x 4-36-6	31" x 2 P62	31" x 2 P62		3
32	6	41" x 16			4" x 4-28-0	2" x 29" x 2 P54			4
33	3	32" x 14			4" x 4-29-3	2" x 30" x 2 P60			4
34	1	32" x 14	1" x 4-26-6	1" x 4-26-6	4" x 4-26-6	2" x 27" x 2 P60			3
35	1	32" x 14	1" x 4-28-6	1" x 4-28-6	4" x 4-28-6	2" x 29" x 2 P60			3
B 36	1	41" x 20 1/2			2" x 4-23-6	2" x 46" x 2 P53			4
37	1	41" x 16			2" x 4-24-9	2" x 48" x 2 P54			4
38	1	41" x 16			2" x 4-25-9	2" x 51" x 2 P54			4
39	1	35" x 14 1/2	1" x 4-31-3	1" x 4-31-3	4" x 4-31-3	2" x 31" x 2 P59			3
40	1	35" x 14 1/2			4" x 4-32-3	2" x 32" x 2 P59			4
B 41	1	41" x 16			2" x 4-23-3	2" x 45" x 2 P54			4
42	1	41" x 16			2" x 4-23-0	2" x 44" x 2 P54			4
43	1	41" x 16			2" x 4-22-9	2" x 44" x 2 P54			4
44	1	41" x 20 1/2			2" x 4-22-3	2" x 43" x 2 P53			4
45	1	41" x 16			2" x 4-22-0	2" x 43" x 2 P54			4
B 46	1	41" x 16			2" x 4-21-9	2" x 42" x 2 P54			4
47	1	41" x 16			2" x 4-21-6	2" x 42" x 2 P54			4
48	4	41" x 16			2" x 4-21-3	2" x 42" x 2 P54			4
49	1	35" x 14 1/2			4" x 4-29-0	2" x 29" x 2 P59			4
50	1	35" x 14 1/2			4" x 4-29-6	2" x 30" x 2 P59			4
B 51	1	35" x 14 1/2			4" x 4-30-3	2" x 30" x 2 P59			4
52	1	41" x 16			4" x 4-29-6	2" x 31" x 2 P54			4
53	1	41" x 16			4" x 4-31-3	2" x 32" x 2 P54			4
54	1	41" x 16			4" x 4-31-9	2" x 32" x 2 P54			4
55	1	41" x 16			4" x 4-32-3	2" x 33" x 2 P54			4
B 56	1	41" x 16			4" x 4-31-6	2" x 33" x 2 P54			4
57	1	41" x 16			4" x 4-33-3	2" x 33" x 2 P54			4
58	1	41" x 16			4" x 4-33-6	2" x 34" x 2 P54			4
59	1	41" x 16			4" x 4-33-9	2" x 34" x 2 P54			4
60	1	41" x 16			4" x 4-28-9	2" x 29" x 2 P54			4
B 61	1	41" x 16			4" x 4-28-6	2" x 29" x 2 P54			4
62	1	41" x 16			4" x 4-28-0	2" x 28" x 2 P54			4
63	9	18 1/2 x 16 1/2			2" x 10" x 2 P66				7
64	16	23" x 11 1/2			2" x 10" x 2 P67				7
65	16	23" x 11 1/2			2" x 16" x 2 P67				7
B 66	4	17" x 10 1/2	1" x 4-1-3	1" x 4-1-3		2" x 5" x 2 P68			7
67	2	17" x 14	1" x 4-15-9	1" x 4-15-9		2" x 16" x 2 P69			7
68	1	17" x 10 1/2				2" x 10" x 2 P68			7
69	2	17" x 10 1/2				2" x 5" x 2 P68			7
70	4	21" x 11	1" x 4-12-9	1" x 4-12-9		2" x 14" x 2 P70			7
B 71	3	23" x 11 1/2				2" x 2" x 2 P67			7
72	2	23" x 10	1" x 4-15-9	1" x 4-15-9		2" x 16" x 2 P67			7
73	4	23" x 10				2" x 5" x 2 P67			7
74	2	23" x 10				2" x 8" x 2 P67			7
75	1	17" x 10 1/2				2" x 9" x 2 P68			7



BENDING DETAILS

NO	SIZE	LGHT	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
286	#2	7'-0"	P 50	17		2'-0"	5'-0"								
476	#2	5'-3"	51	17		1'-3"	4'-0"								
138	#2	4'-9"	52	17		1'-0"	3'-9"								
1048	#2	5'-3"	53	17		1'-1"	4'-2"								
1802	#2	5'-0"	54	17		0'-11"	4'-1"								
144	#2	5'-6"	56	17		1'-4"	4'-2"								
106	#2	6'-3"	57	17		1'-4"	4'-11"								
106	#2	5'-9"	58	17		1'-3"	4'-6"								
436	#2	4'-3"	59	17		0'-10"	3'-5"								
388	#2	4'-0"	P 60	17		0'-10"	3'-2"								
384	#2	3'-6"	G 1	17		0'-9"	2'-9"								
148	#2	3'-8"	G 2	17		0'-10"	2'-0"								
1872	#2	5'-9"	G 3	17		1'-3"	4'-6"								
54	#2	13'-9"	G 4	17	G 2	3'-8"	2'-8"	3'-8"	2'-8"						G 4
36	#2	6'-3"	P 65	17		1'-6"	3'-3"	1'-6"							
180	#2	3'-1"	G 6	17		0'-11"	2'-2"								
1330	#2	3'-0"	G 7	17		0'-8"	2'-4"								
274	#2	2'-6"	G 8	17		0'-8"	1'-10"								
64	#2	2'-10"	G 9	17		0'-10"	2'-0"								
112	#2	2'-10"	P 70	17		0'-8"	2'-2"								
128	#2	3'-2"	G 11	17		0'-9"	2'-5"								
116	#2	2'-0"	G 12	17		0'-7"	1'-3"								
210	#2	4'-3"	G 13	17		1'-1"	3'-2"								
210	#2	4'-3"	G 14	17		1'-3"	1'-2"	1'-3"							
210	#2	4'-5-0"	P 75	G 6		1'-3"	2'-6"	0'-9"							0'-6"
68	#2	2'-6"	G 16	17		0'-10"	1'-8"								
34	#2	3'-5"	G 17	17		1'-3"	0'-11"	1'-3"							
34	#2	3'-4"	G 18	G 6		1'-1"	1'-0"	0'-9"							0'-6"
530	#2	6'-0"	G 19	17		1'-3"	4'-9"								
24	#2	5'-0"	P 80	17	1-3	3'-9"									
8	#2	4'-8"	G 21	17		0'-10"	2'-8"	1'-2"							
8	#2	4'-2"	G 22	17		0'-10"	1'-6"								
24	#2	5'-2"	G 23	17		0'-10"	3'-2"	1'-2"							
24	#2	3'-4"	G 24	17		0'-10"	2'-6"								
12	#2	4'-5-8"	P 85	17		1'-0"	3'-8"	1'-0"							0'-8"
2	#2	4'-11"	G 26	17	0-7	3'-8"									
8	#2	3'-5"	G 27	17		0'-7"	1'-8"	1'-2"							
24	#2	2'-11"	G 28	17		0'-7"	1'-2"	1'-2"							
70	#2	3'-1"	G 29	17		0'-11"	2'-2"								
70	#2	4'-6"	G 30	17		1'-6"	3'-0"								
4	#2	7'-8"	G 31	17		2'-0"	3'-8"	2'-0"							

MARK	NO.	SIZE	A BARS	B BARS	C BARS @ 12"	D BARS @ 12"	E BARS @ 12"	F BARS @ 12"	TYPE
B 76	2	23" x 16 1/2	4" x 4-16-3	2" x 4-16-3		2" x 17" x 4 P76	17" x 4 P77	17" x 4 P78	1
77	4	13" x 10 1/2	1" x 4-9-0	1" x 4-9-0		2" x 5" x 2 P72			7
78	2	13" x 10 1/2	1" x 4-10-3	1" x 4-10-3		2" x 11" x 2 P72			7
79	7	17" x 10 1/2	1" x 4-9-0	1" x 4-9-0		2" x 9" x 2 P68			7
80	1	17" x 10 1/2	1" x 4-8-0	1" x 4-8-0		2" x 8" x 2 P68			7
B 81	1	17" x 10 1/2	1" x 4-5-6	1" x 4-5-6		2" x 6" x 2 P68			7
82	1	17" x 10 1/2	1" x 4-10-3	1" x 4-10-3		2"			

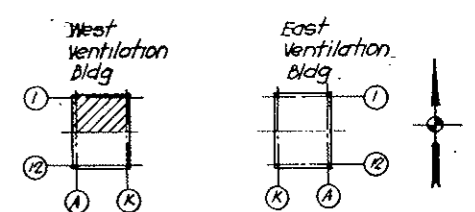
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-34	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

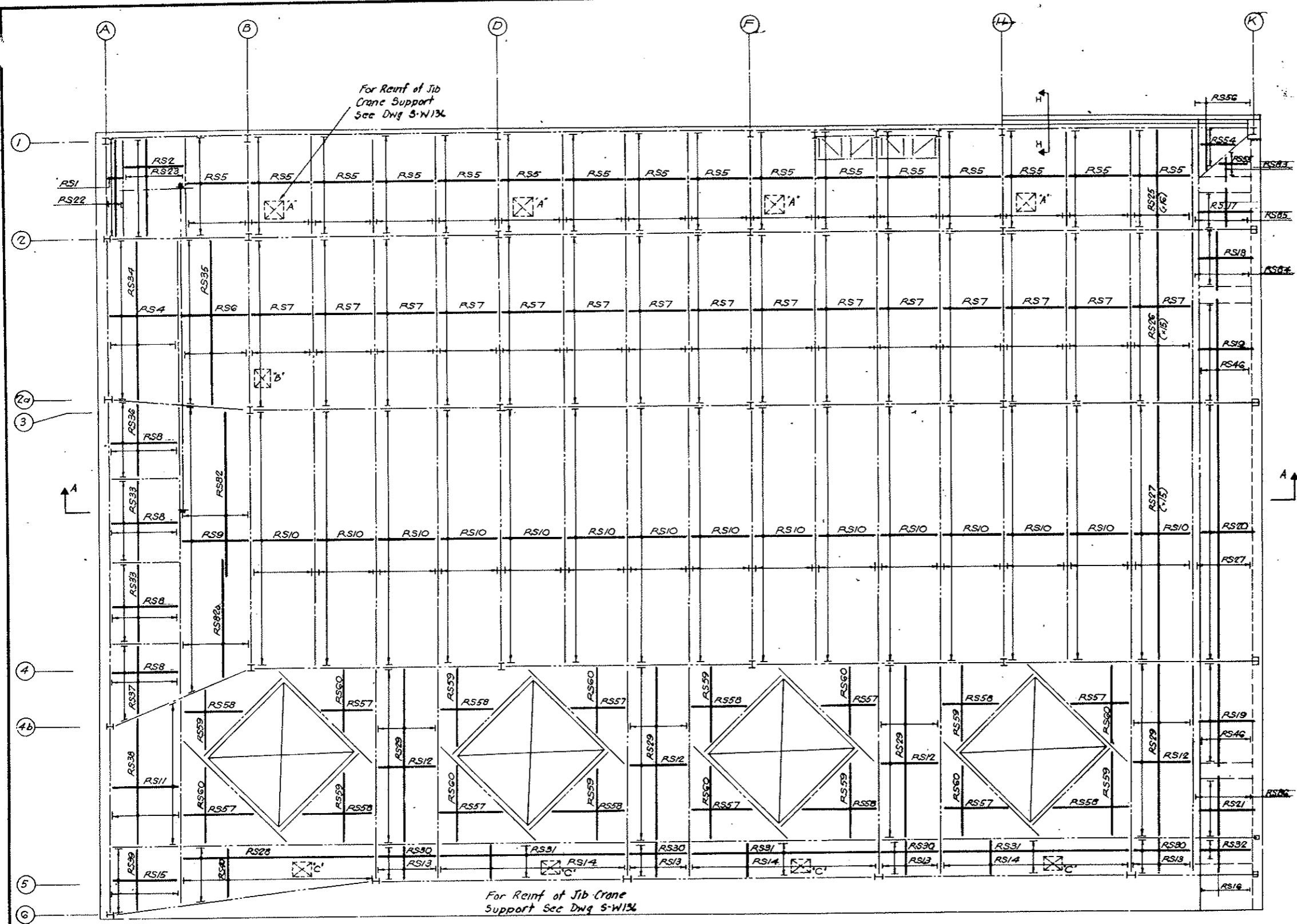


PLACING SEQUENCE
 OF BOT. SLAB BARS

NOTES:
 For Roof Bottom bars South Half see Div. No S-WB2
 For Schedule of Bottom Bars and
 Bending Details see DWG NO S-W136
 For Sect A-A see DWG No S-W 136
 For Sect H-H see DWG No S-W 136



KEY PLAN



PLAN

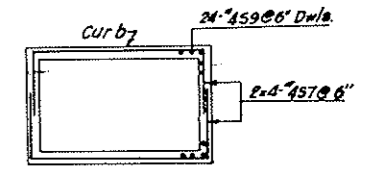
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING ROOF SLAB - NORTH BOTTOM BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. R.	DRAWN: H. R.		RECOMMENDED BY: <i>H. R. Tippetts</i>		
CHECKED: E. M.	SUBMITTED: <i>E. M. Tippetts</i>		APPROVED: <i>Frank Tellen</i>		
NEW YORK, N. Y.			SCALE: 1/8" = 1'-0"	DATE: DEC. 1967	DRAWING NO. S-W134

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-35	

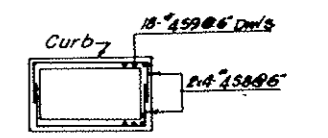
AS CONSTRUCTED
NO REVISIONS DATE 10-26-77



PLACING SEQUENCE OF BOTTOM SLAB BARS

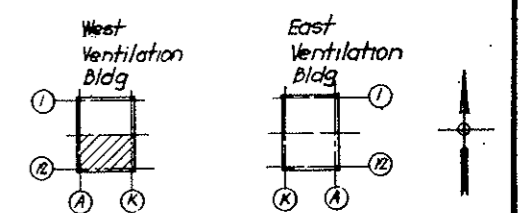


DETAIL - 1

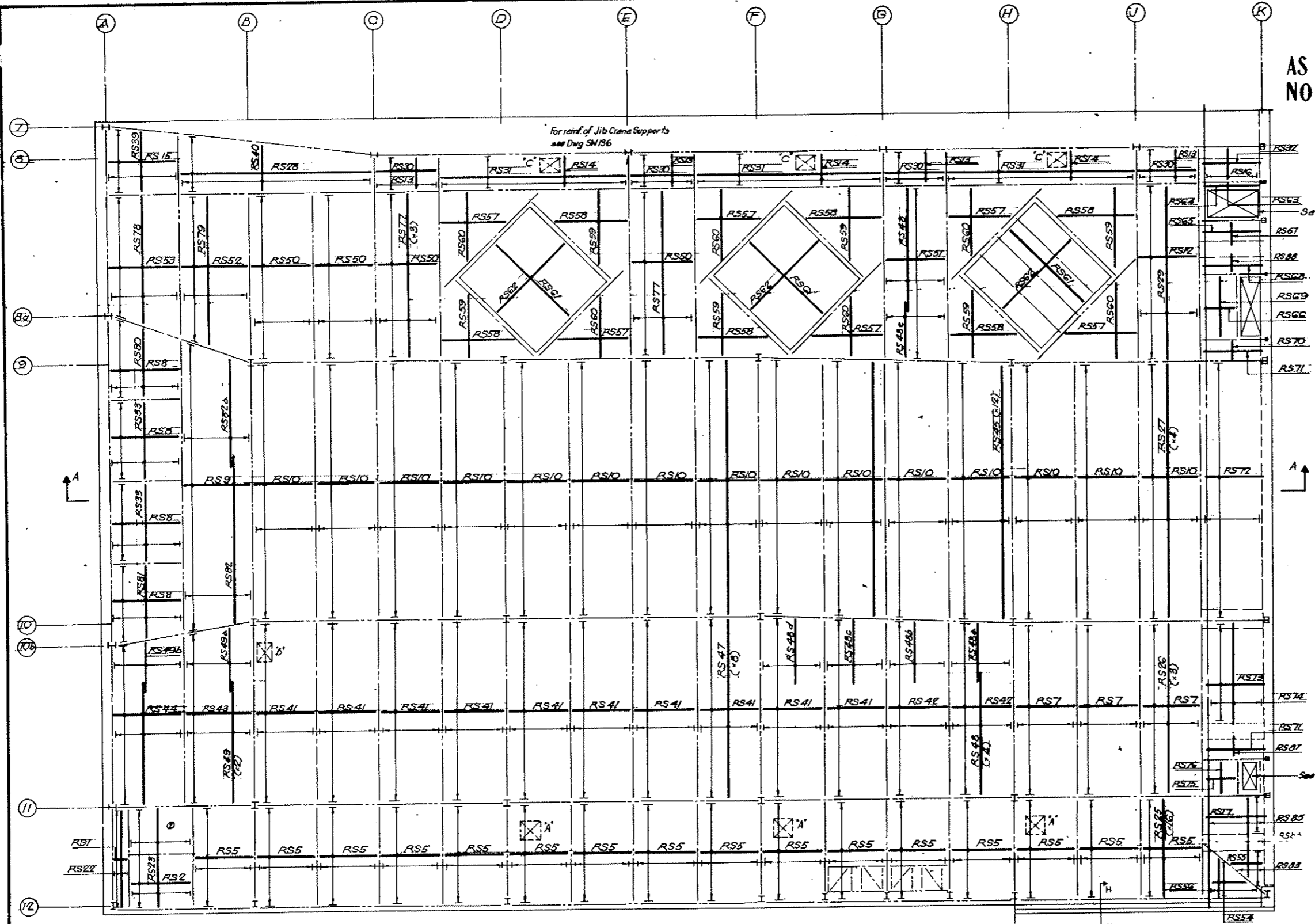


DETAIL - 2

NOTES:
For bottom bars North Half see Dwg No SW134
For Schedule of bottom Bars and Bending Details see Dwg No SW139



KEY PLAN



PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING ROOF SLAB - SOUTH BOTTOM BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: R.E.	CHECKED: S.M.	APPROVED: <i>[Signature]</i>	DRAWING NO. SW135		
SCALE: 1/8" = 1'-0"		DATE: DEC. 1967			

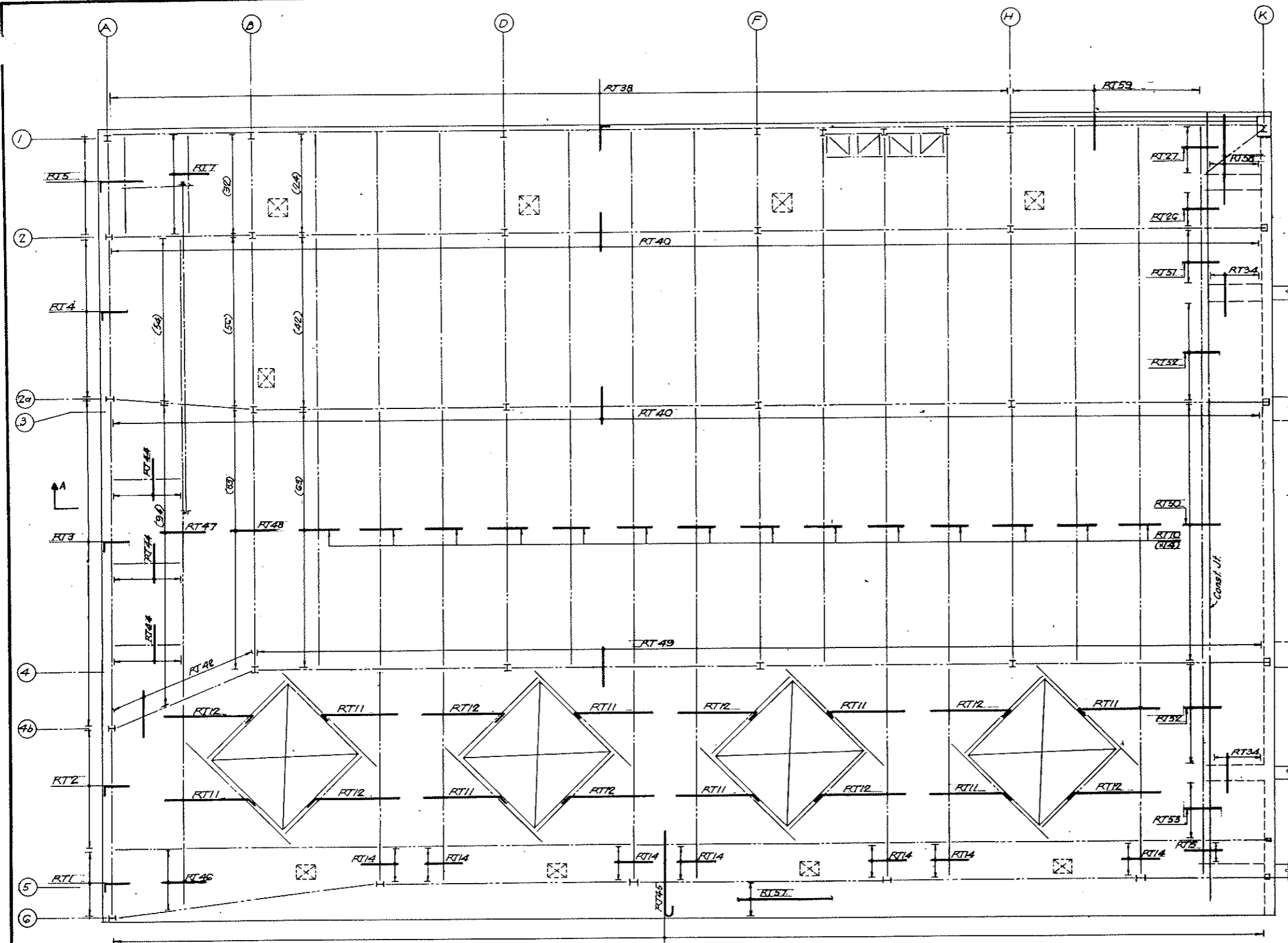
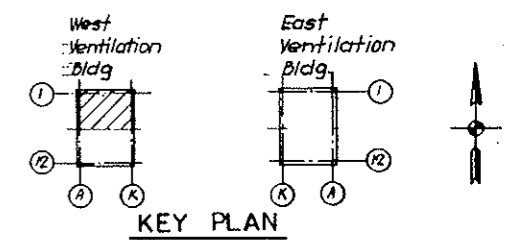
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	RS-37	



PLACING SEQUENCE OF TOP SLAB BARS

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

NOTES:
For Roof Top Bars South Half see Dwg. No. SW138
For Schedule of Top Bars and Bending Details see Dwg. No. SW139
For Additional Reinforcement at Const. Jt. see Dwg. S-W142.



PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING ROOF SLAB - NORTH TOP BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	H. R.	RECOMMENDED	J. J. [Signature]		
DRAWN	H. R.	CHECKED	E. M. [Signature]		
SUBMITTED	[Signature]	APPROVED	[Signature]		
NEW YORK, N. Y.		SCALE: 1/8" = 1'-0"	DATE: DEC. 1967		DRAWING NO. S-W137

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-38	

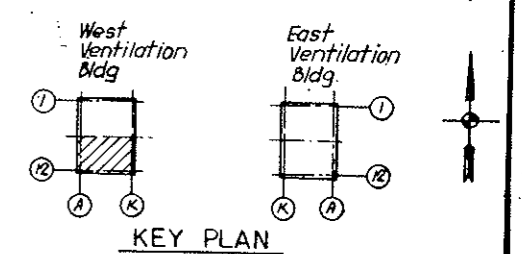


PLACING SEQUENCE OF TOP SLAB BARS

AS CONSTRUCTED
NO REVISIONS DATE 10-26-75

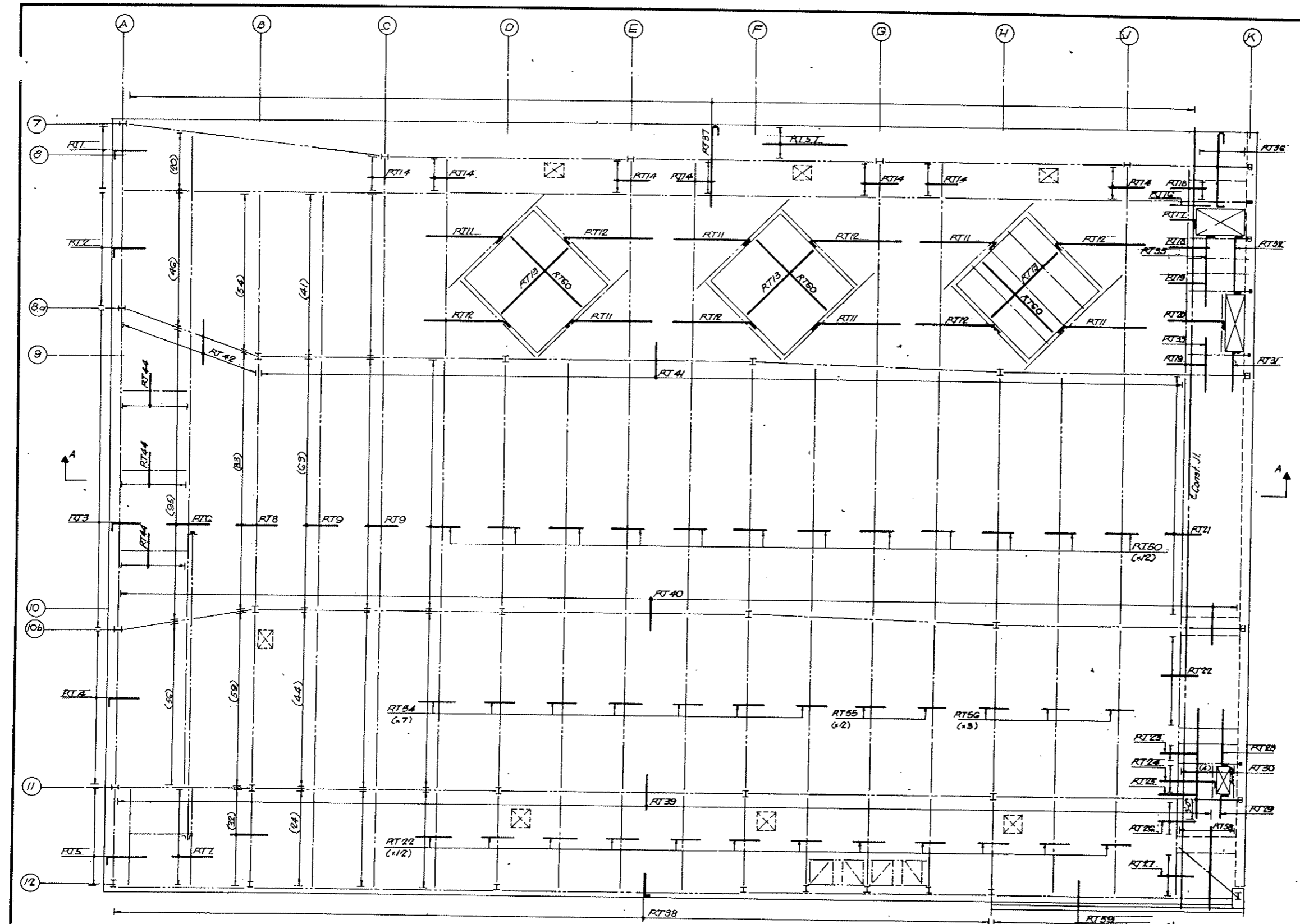
NOTES.

For Roof Top Bars North Half see Dwg. No. SW137
 For Schedule of Top Bars and Bending
 Details see Dwg. No. SW138
 For Additional Reinforcement at Const. Jt. see
 Dwg. S-W142.



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING ROOF SLAB - SOUTH TOP BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. R.	RECOMMENDED: H. R.				
DRAWN: H. R.	CHECKED: E. M.				
SUBMITTED: Paul Stein	APPROVED: Frank L. Latta				
NEW YORK, N. Y.		SCALE: 1/8" = 1'-0"	DATE: DEC. 1967		
					DRAWING NO. SW138



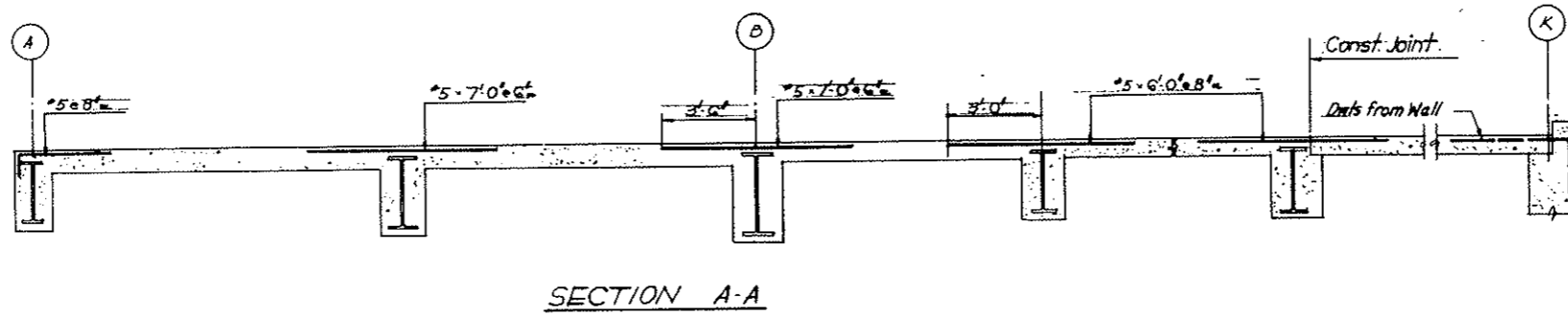
PLAN

SLAB SCHEDULE TOP BARS

MARK	NO.	REINF.	SPAC.	REMARKS
RT 1	2	17-5 S50	8"	
2	2	29-5 S50	8"	
3	2	80-5 S50	8"	
4	2	39-5 S50	8"	
5	2	24-5 S104	8"	
RT 6	1	217-5-7-0	6"	
7	2	24-5-7-0	8"	
8	1	228-5-7-0	6"	
9	2	172-5-6-0	8"	
10	14	129-5-6-0	8"	
RT 11	14	24-5 1EA 551 TO 566 583 TO 590	8"	*
RT 12	14	24-5 1EA 567 TO 582 580 TO 597	8"	*
13	3	21-4-20-0	12"	*
14	14	5-4-6-0	15"	
15	1	3-4-6-0	15"	
RT 16	1	2-5-6-0	8"	
17	1	7-5 S94	8"	
18	2	6-5-6-0	8"	
19	2	5-5-6-0	8"	
20	1	16-5 S95	8"	
RT 21	1	60-5-6-0	8"	
22	13	24-5-6-0	8"	
23	1	5-5-6-0	8"	
24	1	8-5 S96	8"	
25	1	1-5-6-0	8"	
RT 26	2	10-5-6-0	8"	
27	2	12-5-6-0	8"	
28	1	2-4 S97	15"	
29	1	2-4 S98	15"	
30	1	5-4-17-6	15"	
RT 31	1	3-4 S99	15"	
32	1	3-4 S100	15"	
33	1	5-4-9-2	15"	
34	2	8-4-8-6	15"	
35	1	5-4 S98	15"	
RT 36	1	19-5 S101	6"	
37	1	346-5 S102	6"	
38	2	115-4 S103	15"	
39	1	139-4-6-0	15"	
40	3	146-4-6-0	15"	
RT 41	1	121-4-6-0	15"	
42	2	18-4-6-0	15"	
44	6	2-4-6-0	15"	
45	1	364-5 S102	6"	
RT 46	1	20-5-7-0	6"	
47	1	148-5-7-0	6"	
48	1	171-5-7-0	6"	
49	1	128-4-6-0	15"	
50	13	63-5-6-0	8"	
RT 51	1	14-5-6-0	8"	
52	2	25-5-6-0	8"	
53	1	15-5-6-0	8"	
54	7	44-5-6-0	8"	
55	2	43-5-6-0	8"	
RT 56	3	42-5-6-0	8"	
57	2	6-6-4-30-0 6-4-10-0	12"	
58	2	8-4-15-0	15"	
59	2	29-4-4-6	15"	
60	3	17-4-21-0	15"	

* Verify dimensions in field and adjust length of bars to suit.
* Cut or Eliminate bars to suit size of opening.

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



STRAIGHT BAR LIST

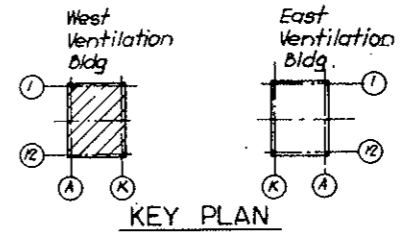
NOS	SIZE	LGTH	NOS	SIZE	LGTH
4014	5	6-0	989	4	6-0
832	5	7-0	16	4	8-6
			5		9-2
			5		17-6
			63	4	20-0
			16	4	15-0
			46	4	4-6
			72	4	30-0
			12	4	10-0
			51	4	21-0

BENDING DETAILS

NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
390	5	4-4	S50	2	0-9	3-7									
14		10-5	51	2	0-9	9-8									
14		11-1	52	2	0-9	10-4									
14		11-9	53	2	0-9	11-0									
14		12-5	54	2	0-9	11-8									
14	5	13-1	S55	2	0-9	12-4									
14		13-9	56	2	0-9	13-0									
14		14-5	57	2	0-9	13-8									
14		15-1	58	2	0-9	14-4									
14		15-9	59	2	0-9	15-0									
14	5	16-5	S60	2	0-9	15-8									
14		17-1	61	2	0-9	16-4									
14		17-9	62	2	0-9	17-0									
14		18-5	63	2	0-9	17-8									
14		19-1	64	2	0-9	18-4									
14	5	19-9	S65	2	0-9	19-0									
14		20-5	66	2	0-9	19-8									
14		19-11	67	2	0-9	19-2									
14		20-7	68	2	0-9	20-0									
14		11-3	69	2	0-9	10-6									
14	5	11-11	S70	2	0-9	11-2									
14		12-7	71	2	0-9	11-10									
14		13-3	72	2	0-9	12-6									
14		13-11	73	2	0-9	13-2									
14		14-7	74	2	0-9	13-10									
14	5	15-3	S75	2	0-9	14-6									
14		15-11	76	2	0-9	15-2									
14		16-7	77	2	0-9	15-10									
14		17-3	78	2	0-9	16-6									
14		17-11	79	2	0-9	17-2									
14	5	18-7	S80	2	0-9	17-10									
14		19-3	81	2	0-9	18-6									
14	5	19-11	82	2	0-9	19-2									
14		21-1	83	2	0-9	20-4									
14		21-9	84	2	0-9	21-0									
14		22-5	85	2	0-9	21-8									
14		23-1	86	2	0-9	22-4									
14		23-9	87	2	0-9	23-0									
14		24-5	88	2	0-9	23-8									
14		25-1	89	2	0-9	24-4									
14		25-9	90	2	0-9	25-0									
14		20-7	91	2	0-9	19-0									
14	5	21-3	92	2	0-9	20-6									
5	4	12-9	93	2	0-7	12-2									
7	5	2-70	94	2	0-9	4-1									
16	5	9-8	S95	2	0-9	8-11									
8	5	9-3	96	2	0-9	8-6									
2	4	9-6	97	2	0-7	8-11									
2	4	4-4	98	2	0-7	5-9									
3	4	7-1	99	2	0-7	6-6									
3	4	10-6	S100	2	0-7	2-4								0-7	
19	5	14-0	101	12	0-7	12-8	0-9								
710	5	14-4	102	1	0-7	13-9									
230	4	3-2	103	2	0-8	2-6									
48	5	4-10	104	2	0-9	6-1									

NOTES:
For Roof Top bars North Half see Dwg. No. SW/132
For Roof Top bars South Half see Dwg. No. SW/138
For Wall on Col Line K see Dwg. SW/136/5W/114

All Dims. Are out. to out.



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL - REINFORCEMENT
WEST VENTILATION BUILDING
ROOF SLAB - NORTH AND SOUTH
SCHEDULE - TOP BARS

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED: H.R.
DRAWN: R.E.
CHECKED: E.M.
SUBMITTED: J.P. Reddy
Karl. Seidl
NEW YORK, N. Y.

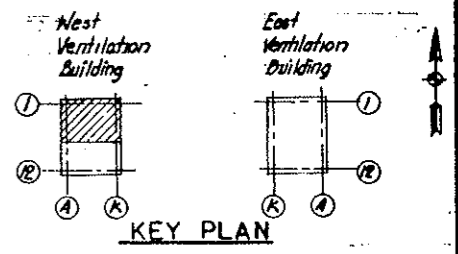
RECOMMENDED:
APPROVED: Frank L. Seidl
NEW YORK, N. Y.

DRAWING NO. S-W139

SCALE: NO. SCALE DATE: DEC. 1967

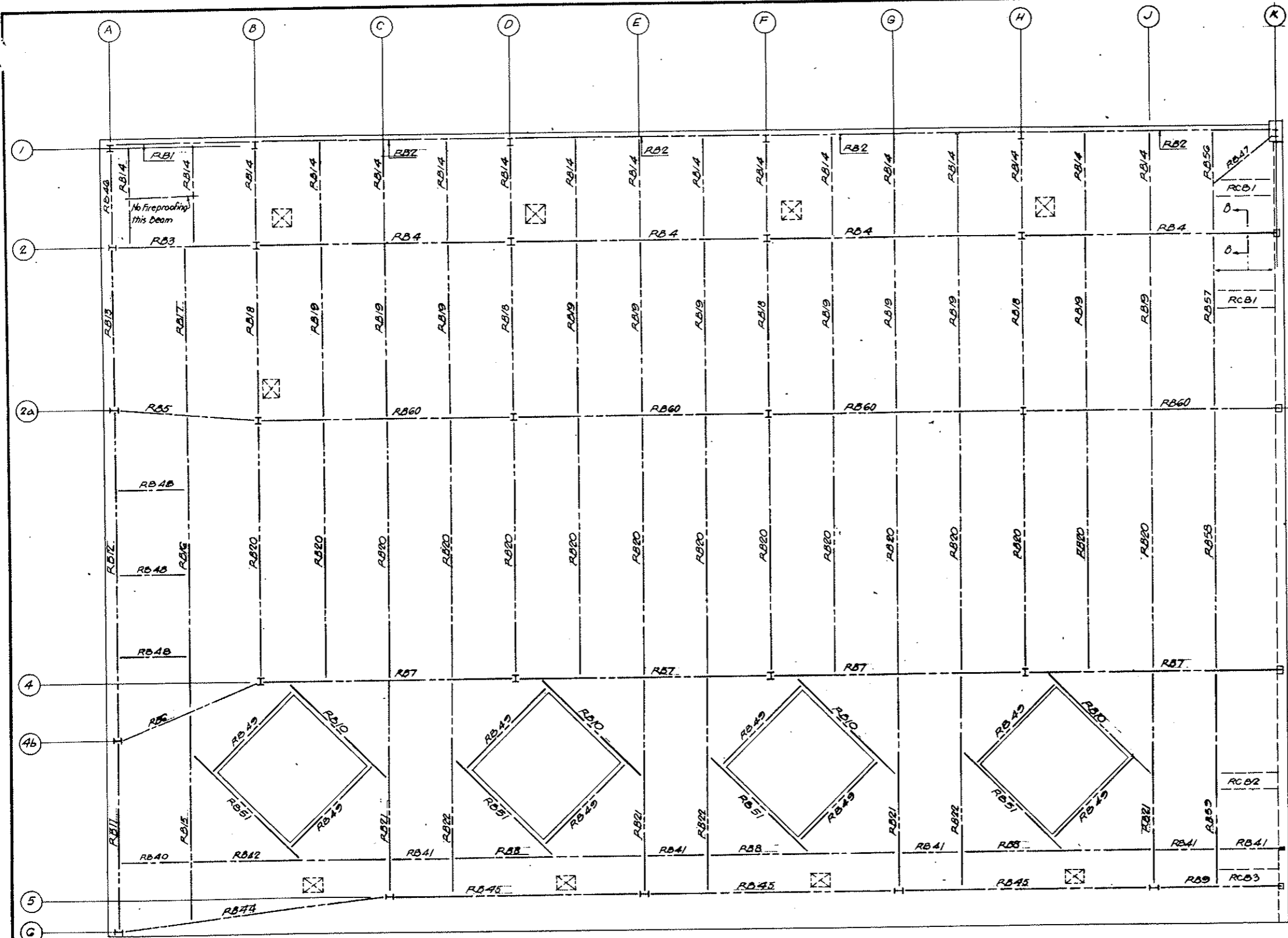
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-40	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



STRAIGHT BAR LIST					
NO.	SIZE	LOTN	NO.	SIZE	LOTN
50	#7	9-0	12	#4	29-9
24	#7	5-9	14		30-3
			20		32-9
23	#4	9-9	4		33-3
4	#4	5-6	4		33-6
6	#4	5-6	4		33-9
18	#4	9-0	43		34-3
18		10-5	12		38-6
18		15-9	10		39-9
			10		26-6
170		21-6	16		17-0
44		22-0	8		11-3
8		22-3	4		10-6
4		23-6	176		9-6
16		24-3	12	#4	9-3
14		25-9			
42		26-0			
6		26-9			
24		27-0	160	#2	9-9
2		27-6			
42		27-9			
8		28-0			
2		28-6			
2		28-9			
24	#4	29-3			

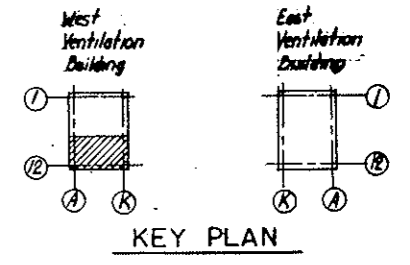
NOTES:
For Roof Beam Fireproofing - South see Dwg SW141
For Roof Sched. No of So. & Bending Data See Dwg SW142
For Section B-B, See Dwg SW142



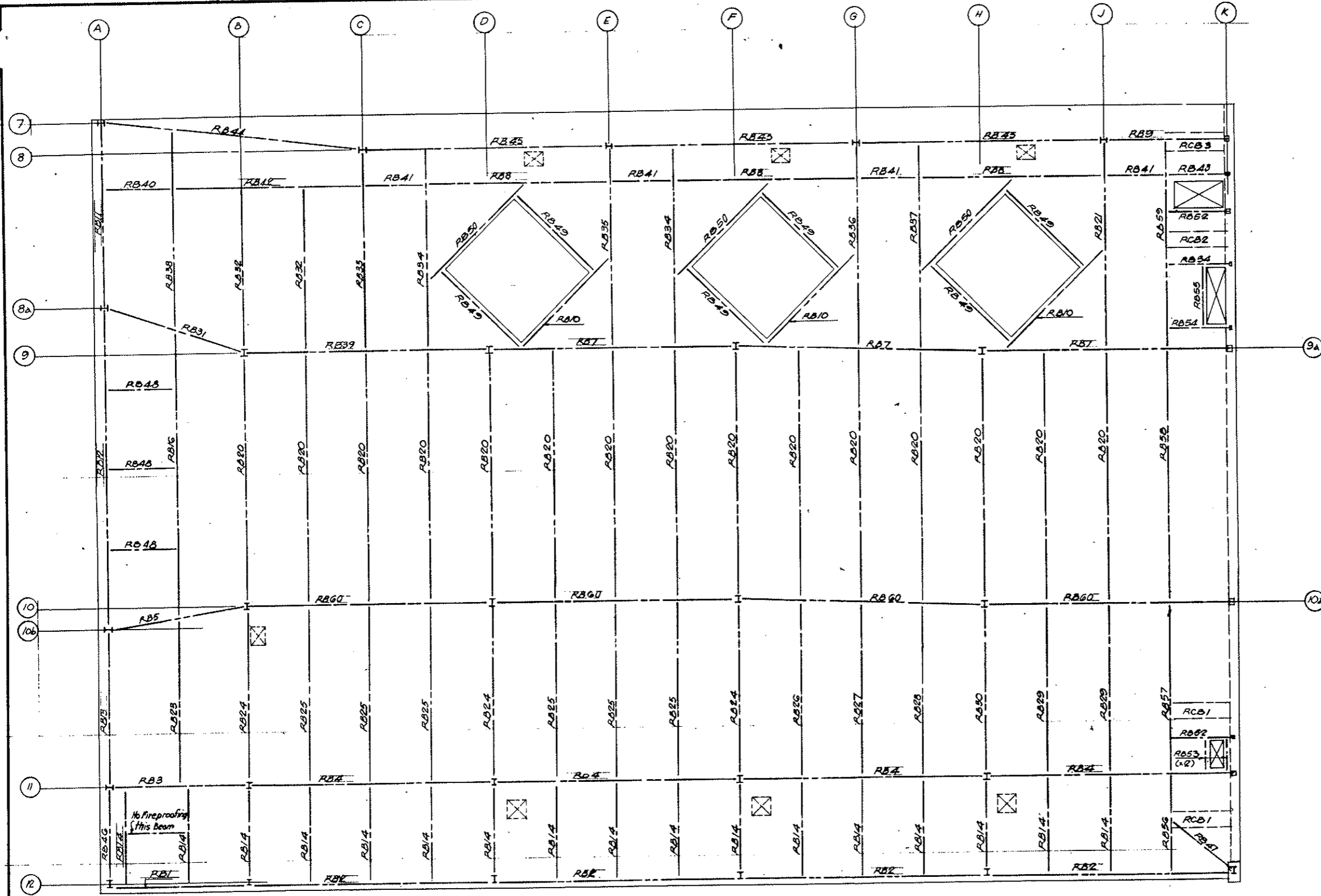
PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING ROOF BEAMS FIREPROOFING - NORTH					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H. R.	RECOMMENDED: R. J. [Signature]				
DRAWN: J. R.	CHECKED: E. M.				
SUBMITTED: [Signature]	APPROVED: [Signature]				
NEW YORK, N. Y.	SCALE: 1/8" = 1'-0"	DATE: DEC. 1967	DRAWING NO. S-W 140		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-41	



AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



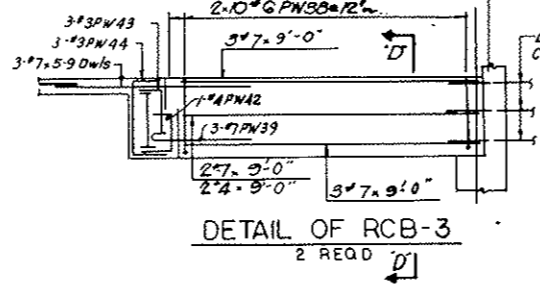
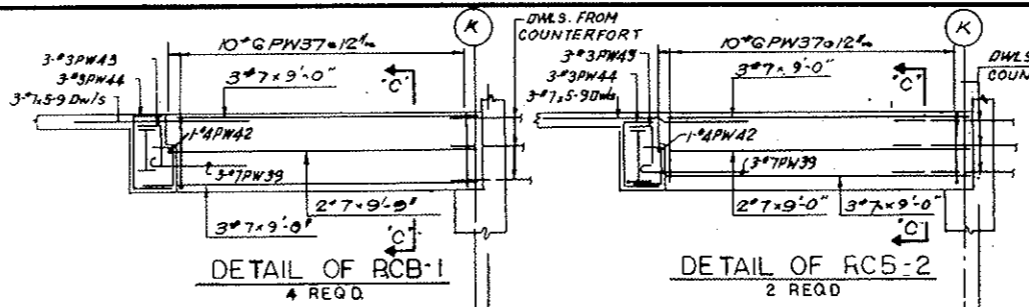
NOTES:
 For Roof Beam Fireproofing North see Dwg SW140
 For Roof Sched. No 45a, & Bending Defs see Dwg SW142

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING ROOF BEAMS FIREPROOFING - SOUTH					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.R.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO.			
DRAWN: H.R.	CHECKED: E.M.	SW141			
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	SCALE: 1/8" = 1'-0" DATE: DEC. 1967			

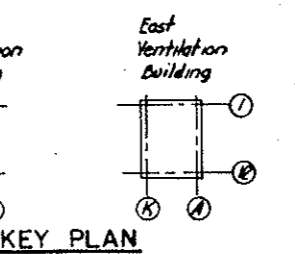
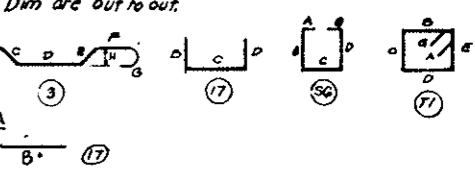
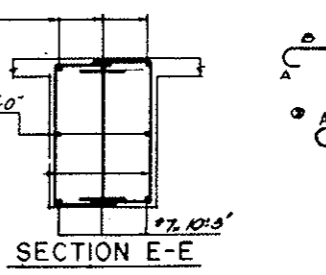
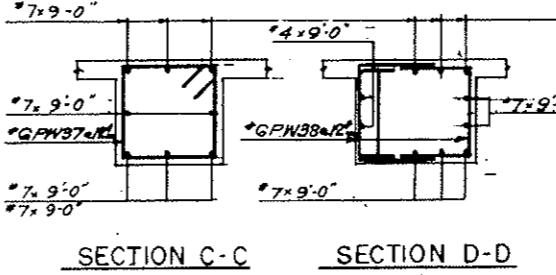
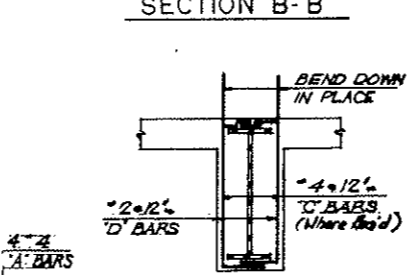
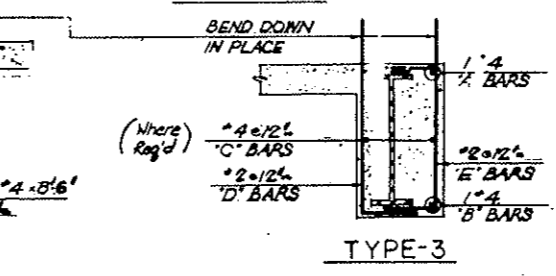
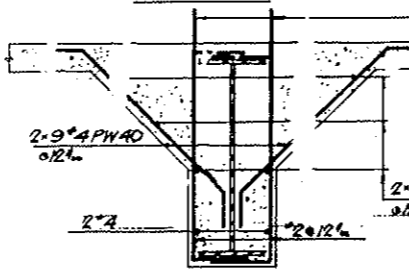
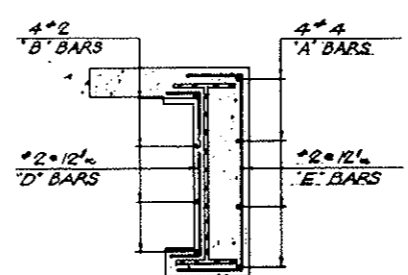
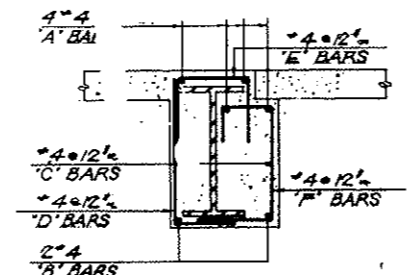
SCHEDULE OF FIREPROOFING

MARK	NO	SIZE	A' BARS	B' BARS	C' BARS @ 12"	D' BARS @ 12"	E' BARS @ 12"	F' BARS @ 12"	TYPE
RB1	2	38x15 1/2	4-#4-22-3	4-#4-22-3		23-#2-PW1	23-#2-PW2		2
2	8	38x15 1/2	4-#4-22-3	4-#4-22-3		40-#2-PW1	40-#2-PW2		2
3	2	29x13			2-#4-26-0	2-#2-2-PW3			4
4	8	41x16			2-#4-26-0	2-#2-2-PW4			4
5	2	35x14 1/2			2-#4-26-0	2-#2-2-PW5			4
RB6	1	38x15 1/2			2-#4-26-0	2-#2-2-PW6			4
7	7	41x20 1/2			2-#4-26-0	2-#2-2-PW7			4
8	6	32x14			2-#4-26-0	2-#2-2-PW8			4
9	1	29x13			2-#4-26-0	2-#2-2-PW9			4
10	7	32x14	1-#4-26-0	1-#4-26-0	2-#4-26-0	26-#2-PW8	26-#2-PW8		3
RB11	Z	38x18	4-#4-22-3	3-#4-22-3		30-#4-PW9	30-#4-PW9		5
12	Z	38x18	2-#4-27-0	2-#4-27-0	2-#4-27-0	53-#2-PW11	53-#2-PW11		3
13	Z	38x18	4-#4-25-9	3-#4-25-9		26-#4-PW9	26-#4-PW9		5
14	3A	25x11 1/2			2-#4-14-6	2-#2-2-PW13			4
15	1	38x15 1/2			4-#4-33-3	2-#3-2-PW6			4
RB16	Z	38x18			2-#4-24-3	2-#2-2-PW5			4
17	1	26x12 1/2			2-#4-26-9	2-#2-2-PW10			4
18	A	29x13			2-#4-26-6	2-#2-2-PW3			4
19	11	26x12 1/2			2-#4-27-9	2-#2-2-PW10			4
20	30	32x14			2-#4-27-0	2-#2-2-PW8			4
RB21	5	41x16			4-#4-34-3	2-#3-2-PW4			4
22	3	38x15 1/2			4-#4-34-3	2-#3-2-PW6			4
23	1	26x12 1/2			2-#4-27-6	2-#2-2-PW10			4
24	3	29x13			2-#4-28-0	2-#2-2-PW3			4
25	G	26x12 1/2			2-#4-29-3	2-#2-2-PW10			4
RB26	1	26x12 1/2			2-#4-28-9	2-#2-2-PW10			4
27	1	26x12 1/2			2-#4-28-6	2-#2-2-PW10			4
28	1	26x12 1/2			2-#4-28-0	2-#2-2-PW10			4
29	2	26x12 1/2			2-#4-27-9	2-#2-2-PW10			4
30	1	29x13			2-#4-26-6	2-#2-2-PW3			4
RB31	1	38x15 1/2			4-#4-23-6	2-#2-2-PW6			4
32	2	26x12 1/2			2-#4-26-9	2-#2-2-PW10			4
33	1	35x14 1/2			4-#4-33-9	2-#3-2-PW5			4
34	2	38x15 1/2			4-#4-34-0	2-#3-2-PW6			4
35	1	41x16			4-#4-32-9	2-#3-2-PW4			4
RB36	1	41x16			4-#4-33-6	2-#3-2-PW4			4
37	1	38x15 1/2			4-#4-33-9	2-#3-2-PW6			4
38	1	35x14 1/2			4-#4-32-9	2-#3-2-PW6			4
39	1	38x15 1/2			4-#4-31-9	2-#4-0-2-PW4			4
40	2	15x9 1/2				2-#1-2-PW15			4
RB41	9	15x9 1/2				2-#1-2-PW15			4
42	2	32x14			2-#4-27-0	2-#2-2-PW8			4
43	1	15x11	1-#4-9-0	1-#4-9-0		10-#2-PW16	10-#2-PW17		3
44	E	40x16			2-#4-22-0	2-#4-2-PW6			4
45	G	40x16			2-#4-22-0	2-#4-2-PW6			4
RB46	2	38x18	4-#4-15-9	3-#4-15-9		16-#4-PW9	16-#4-PW9		5
47	E	116x10				2-#2-2-PW20			4
48	G	27x9 1/2				2-#1-2-PW21			4
49	14	17x10 1/2	1-#4-22-0	1-#4-22-0		22-#2-PW22	22-#2-PW22		3
50	3	21x11	1-#4-26-0	1-#4-26-0		26-#2-PW23	26-#2-PW23		3
RB51	A	17x10 1/2	1-#4-26-0	1-#4-26-0		26-#2-PW22	26-#2-PW22		3
52	2	17x10 1/2	1-#4-26-0	1-#4-26-0		26-#2-PW24			3
53	E	17x10 1/2	1-#4-26-0	1-#4-26-0		26-#2-PW24			3
54	2	13x10 1/2	1-#4-26-0	1-#4-26-0		2-#1-2-PW25			3
55	1	13x10 1/2	1-#4-26-0	1-#4-26-0		2-#1-2-PW25			3
RB56	2	23x18 1/2	4-#4-15-9	2-#4-15-9	2-#4-15-9	16-#4-PW26	16-#4-PW27	16-#4-PW28	1
57	2	26x16 1/2	4-#4-27-9	2-#4-27-9	2-#4-27-9	28-#4-PW29	28-#4-PW30	28-#4-PW31	1
58	2	32x18	4-#4-27-0	2-#4-27-0	2-#4-27-0	42-#4-PW32	42-#4-PW33		1
59	2	29x17	4-#4-34-3	2-#4-34-3	2-#4-34-3	34-#4-PW34	34-#4-PW35	34-#4-PW36	1
60	8	41x16			4-#4-34-9	2-#4-0-2-PW6			4

* Cut Reinf. to suit field conditions



**AS CONSTRUCTED
NO REVISIONS DATE
10-26-73**



NOTES:

For Roof Beam Fireproofing No. see Dwg SW140
For Roof Beam Fireproofing Sa. see Dwg SW141
For Straight Bar List See Dwg SW140

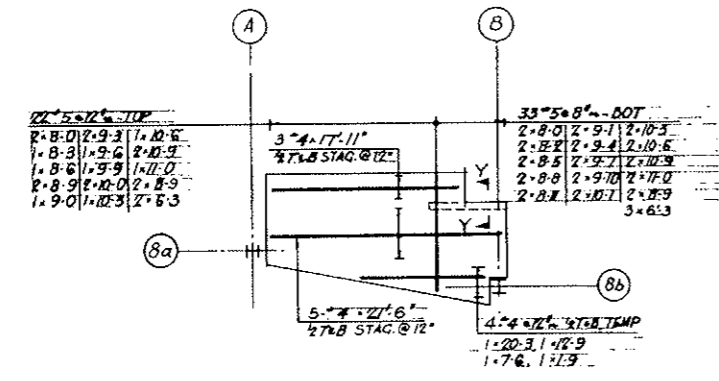
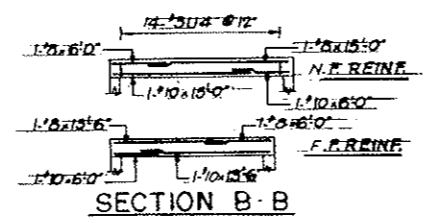
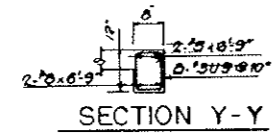
BENDING DETAILS

NO	SIZE	LNTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
366	2	3-8	PW1	17			5	2-6	3						
366	2	4-11	2	17			1-0	2-11	1-0						
586	2	3-9	3	17			10	2-11							
2810	2	5-0	4	17			11	4-1							
346	2	4-4	5	17			10	3-6							
628	2	4-9	PW6	17			11	3-10							
560	2	5-6	7	17			1-2	4-4							
4368	2	4-0	8	17			10	3-2							
228	4	5-5	9	17			1-3	4-2							
1462	2	3-5	10	17			9	2-8							
212	2	3-5	PW11	17			1-3	4-2							
1088	2	3-2	15	17			9	2-5							
80	2	5-3	14	17			1-3	4-0							
286	2	2-2	15	17			7	1-7							
10	2	2-6	PW18	17			9	1-9							
10	2	3-3	17	17			1-2	2-1							
48	2	1-9	20	17			7	1-2							
132	2	2-6	PW21	17			6	2-0							
324	2	2-8	22	17			8	2-0							
186	2	2-10	23	17			8	2-2							
68	2	2-6	24	17			8	1-10							
68	2	2-0	25	17			7	1-5							
32	4	2-8	PW26	17			1-0	1-8							
38	4	3-3	27	17			1-3	9	1-9						
38	4	3-3	28	SG			1-0	1-3							5
56	4	3-0	29	17			1-1	1-11							
56	4	3-4	30	17			1-5	10	1-3						
84	4	3-9	PW31	17			1-4	2-5							
84	4	3-6	32	17			1-3	1-0	1-3						
84	4	4-6	33	SG			1-3	2-0	0						7
68	4	3-3	34	17			1-1	2-2							
68	4	3-5	35	17			1-3	1-1	1-3						
68	4	4-0	PW36	SG			1-2	1-9	0						5
60	G	9-7	37	T1	G4		2-2	2-1	2-2	2-1					6
20	G	6-6	38	17			2-2	2-2	2-2						
24	7	4-1	PW39	1	O10		3-3								
18	4	4-0	40	3			6	3-0	G						4
56	4	3-9	41	SG			1-1	1-7	7						6
8	4	4-8	42	17			1-1	2-6	1-1						
24	4	2-3	PW43	17			0-9	1-6							
24	4	4-1	44	17			0-9	2-1	1-3						

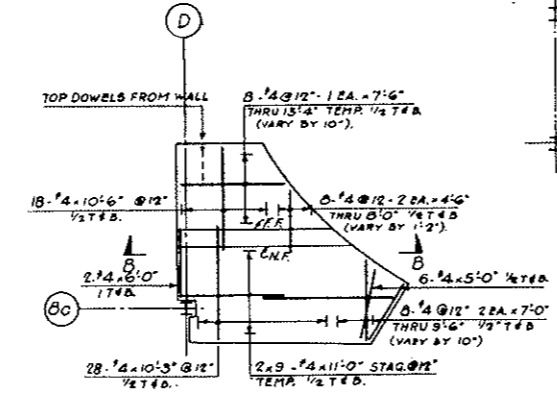
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING ROOF BEAMS FIREPROOFING-NORTH AND SOUTH SCHEDULE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.R.	CHECKED: S.W.	QUANTITIES:	APPROVED:	DRAWING NO. S-W142	
SCALE: NO SCALE DATE: DEC. 1967					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220.	RS 43	

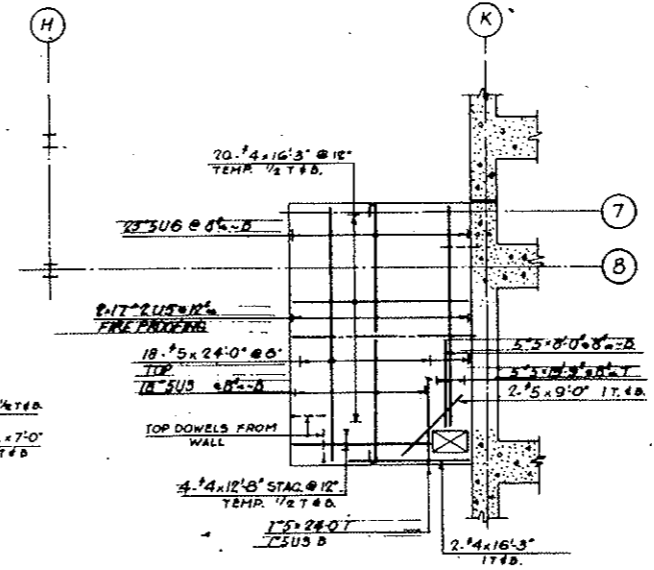
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PORTAL ATTENDANTS BOOTH & MENS REST RM.

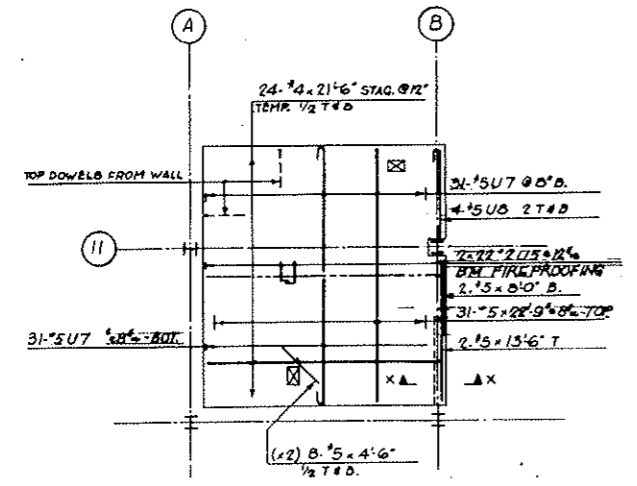


WALKWALK CAR ENCLOSURE

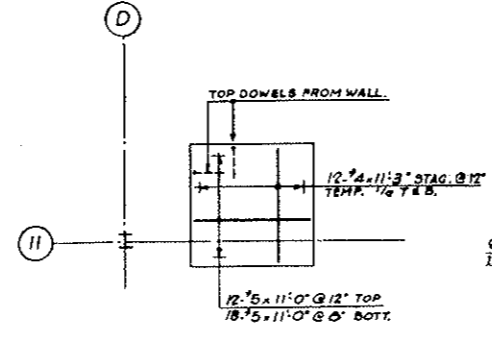


TRANSFORMER ROOM

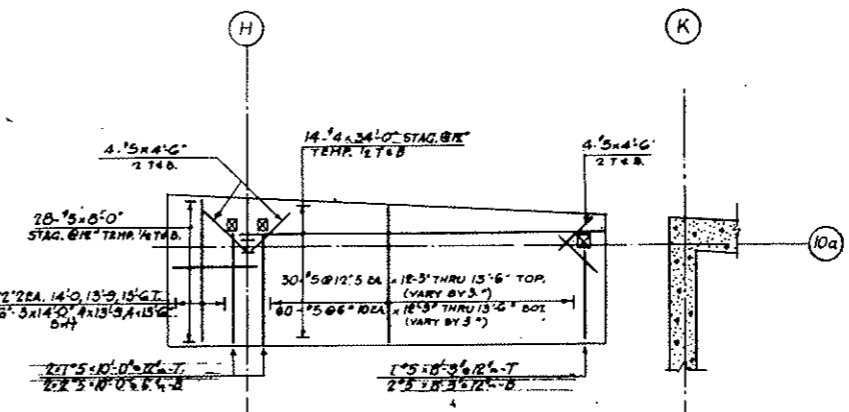
NOTES
For bending Details and Straight Bar List see DWG-5W144



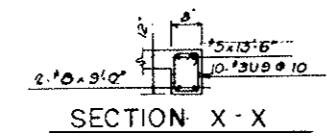
MEN & WOMEN'S REST ROOM



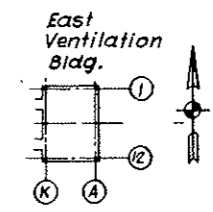
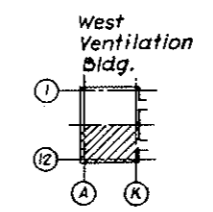
GAS METER ROOM



BATTERY ROOM

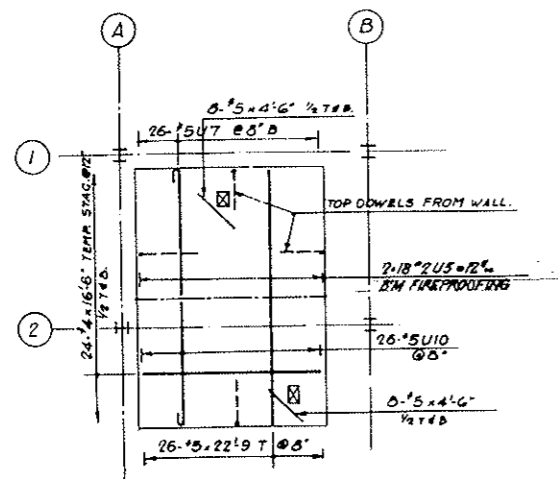


SECTION X-X

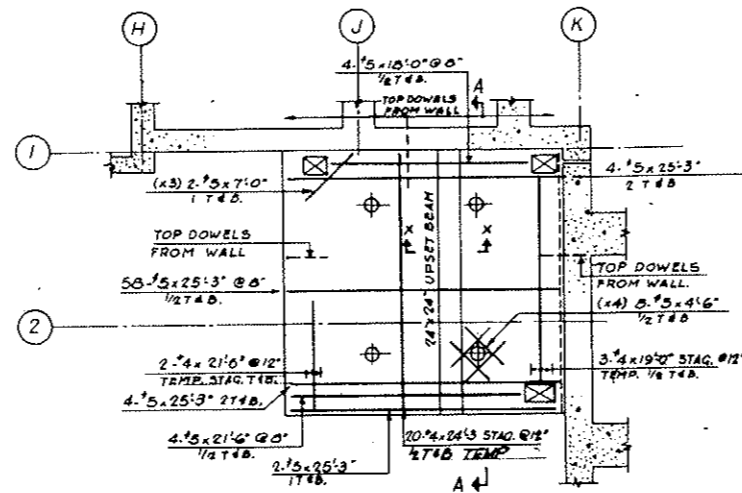


NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING INTERIOR ROOMS - CEILING SLABS SHEET 1					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: P.S.	CHECKED: A.N.		RECOMMENDED: J. J. [Signature]		DRAWING NO. S-W143
DRAWN: [Signature]	SUBMITTED: [Signature]		APPROVED: [Signature]		
NEW YORK, N. Y.					
SCALE: 1/8" = 1'-0"					DATE: JAN 1968

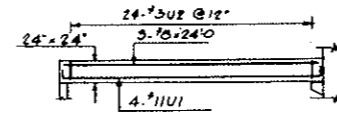
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS 44	



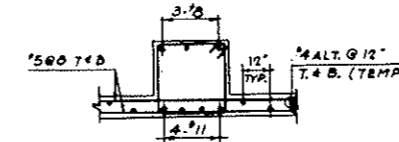
MEN & WOMEN'S REST ROOM



STATE PATROL EQUIPMENT ROOM

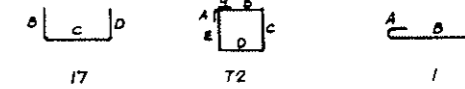


SECTION A-A

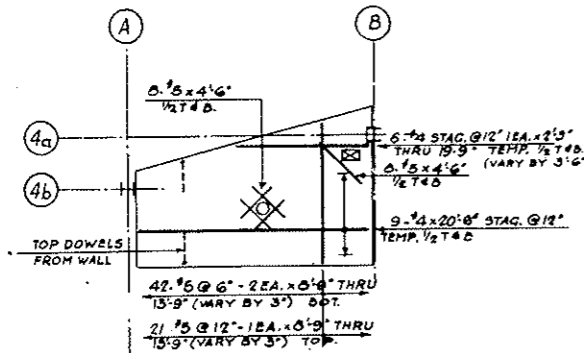


SECTION X-X

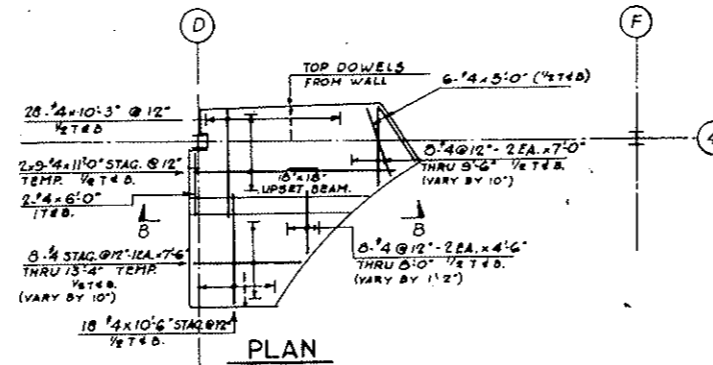
BENDING DETAILS												
NO.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H
4	11	27-3	U1	17	1-6	24-3	1-6					
24	3	7-4	2	T2	4	1-8	1-8	1-8				4
35	3	12-5	3	1	5	12-0						
20	3	5-4	4	T2	4	1-2	1-2	1-2	1-2			4
148	2	8-4	5	17	4	7	1-9					
43	5	12-0	6	1	5	11-7						
26	5	11-8	7	1	5	11-3						
4	5	7-11	8	1	5	7-6						
18	3	3-3	9	T2	4	4	1 1/2	4	1 1/2			4
26	5	11-5	U10	1	5	11-0						



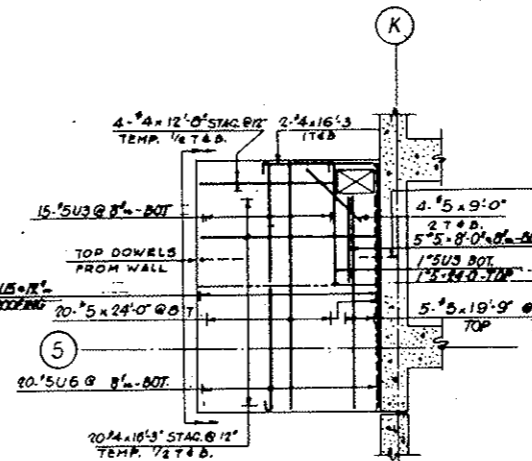
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



ELECTRIC METER ROOM



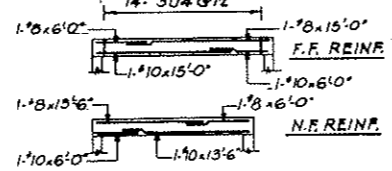
WALKWAY CAR ENCLOSURE ROOF



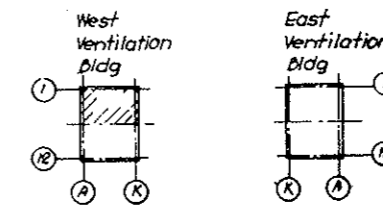
TRANSFORMER ROOM

NOTES
Use this drawing in conjunction with drawing SW143

STRAIGHT				BAR LIST			
NO.	SIZE	LGTH	NO.	SIZE	LGTH	NO.	SIZE
2	10	15-0	18	15	12-3	2	15
4	10	6-0				36	14
2	9-0	13-6	3		12-0	4	8-3
3	8	24-0	3		11-9	2	10-10
2		15-0				2	8-2
2		13-6	3		11-6	36	8-0
2		9-0	3		11-3	56	10-3
2		6-9	36		11-0	6	7-0
4	8	6-0	7		10-9	4	9-6
			6		10-6	2	9-2
68	15	25-3	6		10-3	2	8-8
40		24-0	2		10-1	4	8-4
57		22-9	11		10-0	4	8-0
4		21-6	2		9-10	4	7-10
10		19-9	4		9-9	4	7-6
4		18-0	2		9-7	3	7-6
5		14-0	4		9-6	3	7-0
9		13-9	2		9-4	24	7-0
26		13-6	5		9-3	45	6-10
			2		9-1	12	6-0
18		13-3	10		9-0	2	5-9
18		13-0	2		8-11	8	5-8
			9		8-9	2	5-0
18		12-9	2		8-8	2	4-6
18		12-6	1		8-6	14	4-6
			12		8-5	1	2-3
			12		8-4	1	1-9



SECTION B-B



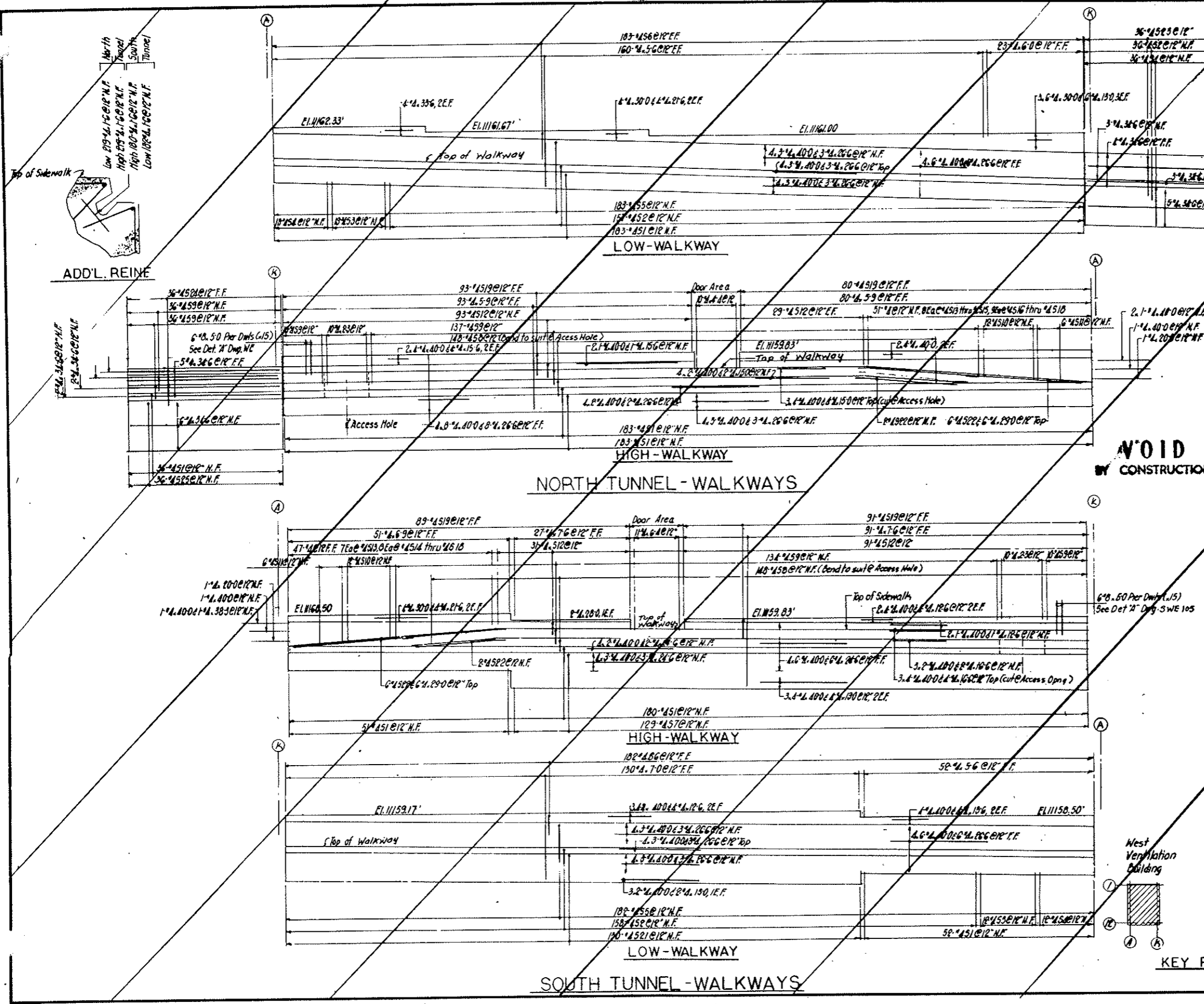
KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING INTERIOR ROOMS - CEILING SLABS SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: A.N.	RECOMMENDED: J.P. McLaughlin	DRAWING NO. S-W144			
DRAWN: A.N.	CHECKED: E.M.	APPROVED: Frank Liban	SCALE: 1/8"=1'-0"		
SUBMITTED: Paul R. Smith	DATE: JAN 1968				

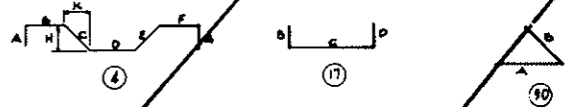
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS 45	

STRAIGHT BAR LIST					
NO.	SIZE	LGTH.	NO.	SIZE	LGTH.
180	#8	5-0	11	#4	24-6
			10	#4	4-4
			5	#4	15-6
			20	#4	2-3
321	#4	40-0	8	#4	15-0
			800	#4	1-6
1	#4	38-3	4	#4	18-6
30	#4	38-6	9	#4	18-6
4	#4	19-6	118	#4	7-6
26	#4	30-0	150	#4	7-0
12	#4	29-0	81	#4	6-9
8	#4	28-0	11	#4	6-4
43	#4	26-6	23	#4	6-0
8	#4	21-6	12	#4	15-0
2	#4	20-0	173	#4	5-9
6	#4	16-6	212	#4	5-6
20	#4	10-0	70	#4	8-3

BENDING DETAILS												
NO.	SIZE	LGTH.	MARK	TYPE	A	B	C	D	E	F	G	H
168	#4	3-3	9	1	30	1-9	1-6					0-8
351	#4	4-9	2	30	3-3	1-6						0-8
25	#4	5-3	3	30	3-9	1-6						0-8
61	#4	5-9	4	30	4-3	1-6						0-8
245	#4	5-0	5	5	17	1-0	4-9					
345	#4	5-7	6	17	2-6	4-7	2-6					
129	#4	5-3	7	30	3-9	1-6						0-8
296	#4	2-6	8	17	1-0	1-6						
363	#4	5-11	9	4	2-3	2-5	1-3					0-6 1-4
24	#4	6-8	10	4	3-2	1-3						0-6 1-4
12	#4	7-5	11	4	2-3	3-11	1-3					0-6 1-4
244	#4	3-3	12	7	1-3	2-0						
15	#4	4-9	13	17	1-3	3-6						
16	#4	5-0	14	17	1-3	3-9						
16	#4	5-5	15	17	1-3	4-0						
17	#4	5-6	16	17	1-3	4-3						
17	#4	5-9	17	17	1-3	4-6						
17	#4	6-0	18	17	1-3	4-9						
353	#4	5-11	19	17	2-6	0-11	2-6					
130	#4	4-6	21	30	3-0	1-6						0-8
16	#4	2-6	22	4	1-6	20-0						0-5
36	#4	9-7	23	17	4-3	1-1	1-6					
36	#4	6-8	24	17	3-9	0-11	1-0					0-8
36	#4	6-6	25	30	5-0	1-6						
36	#4	3-3	26	1								
36	#4	4-9	27	1								
36	#4	5-9	28	1								
36	#4	6-6	29	1								



VOID BY CONSTRUCTION



NOTES:
 Contractor to adjust hangers at door opening FF only.
 For Sections & Details see Dwg S-W105
 See sheets 65AX Thru 65IX for Walkway plans

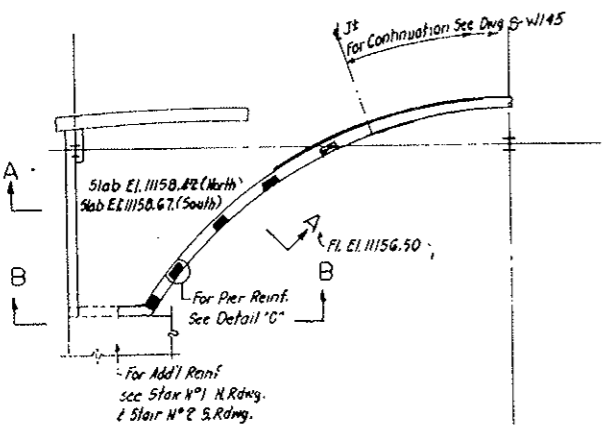
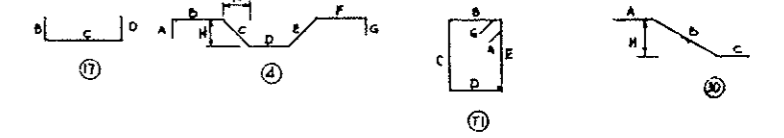
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT		
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING WALKWAYS		
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.		
DESIGNED: JJV	RECOMMENDED: JJV	DRAWING NO. S-W145
DRAWN: JJV	CHECKED: EM	APPROVED: <i>[Signature]</i>
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	DATE: JAN 1968
NEW YORK, N. Y.	SCALE: NONE	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

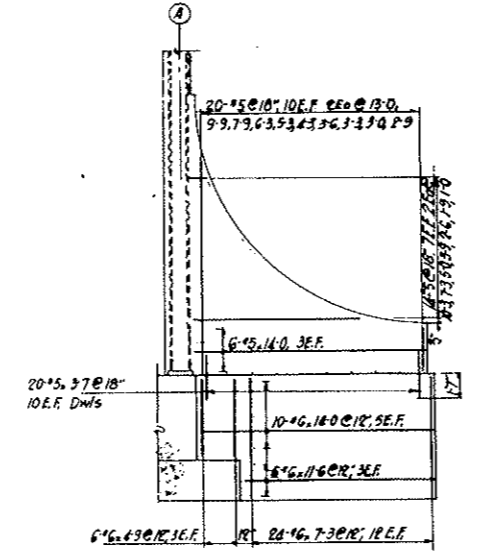
FEDERAL ROAD DISTRICT	DAVIS	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)212	RS 46	

BENDING DETAILS															
NO	SIZE	LNTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
182	#4	4-1	7	1	17	0-7	3-6								
118	#4	4-4	2	17	0-7	3-9									
64	#4	3-10	3	17	0-7	3-3									
20	#4	3-1	4	17	0-7	2-6									
8	#4	3-4	7	5	17	0-7	2-9								
18	#4	6-6	6	4	5-0	1-6								1-0	
8	#4	4-11	7	4	3-5	1-6								1-4	
14	#4	8-3	8	30	2-0	4-3	2-0							2-6	
5	#4	11-6	9	17	1-6	10-0									
3	#4	6-8	7	10	1-0	4-8	1-0								
10	#4	5-2	11	17	1-6	3-8									
5	#4	8-6	12	30	2-0	4-6	2-0							2-6	
40	#3	3-6	13	71	0-5	1-0	0-5	1-0						0-4	
60	#8	7-9	14	17	1-3	6-6									
12	#4	14-2	7	15	4-3	5-8	4-3								
8	#4	12-7	16	17	3-6	5-7	3-6								
12	#4	6-6	7	17	5-0	1-6									

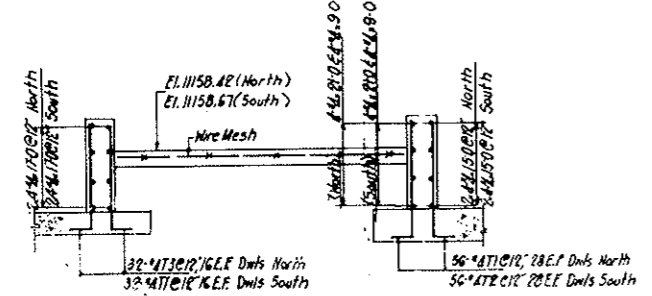
Dimensions are out to out



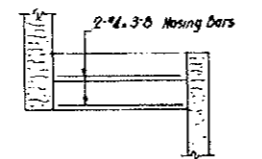
PLAN CAR ENCLOSURE SLAB
WEST VENTILATION BLDG (x 2)



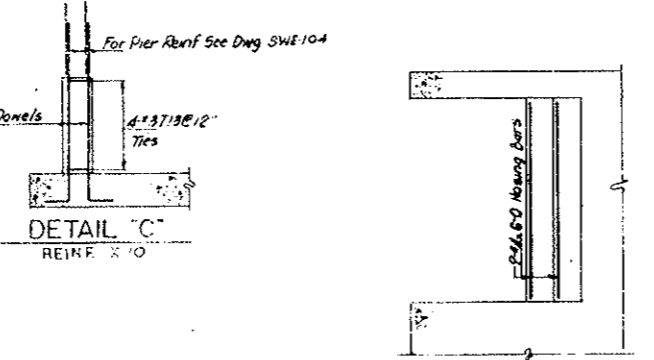
PORTAL BUTTRESS
4 REOD



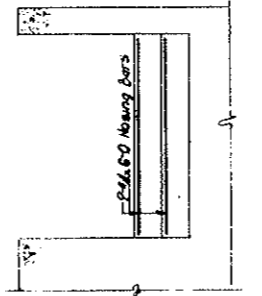
SECTION A-A



STAIR NO SW

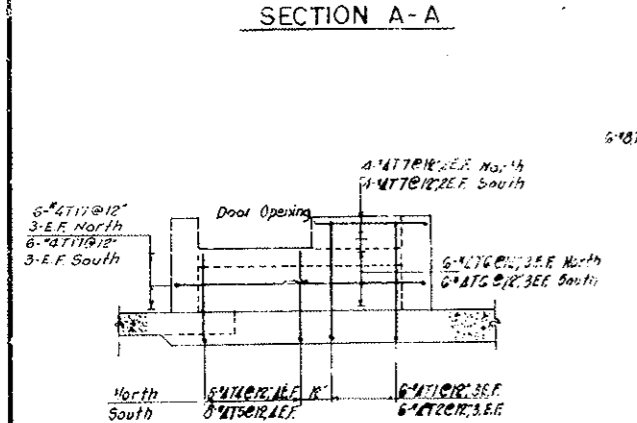


DETAIL C
REIN. X 10

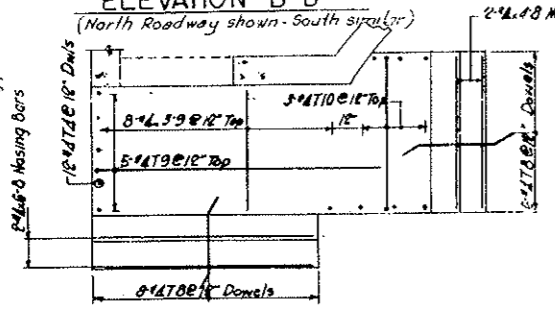


STAIR NO IW

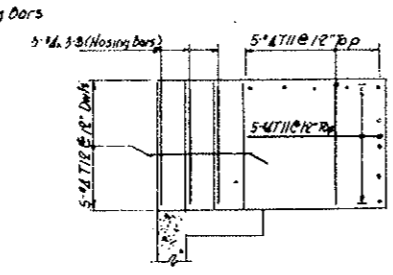
STRAIGHT BARS											
NO	SIZE	LNTH	NO	SIZE	LNTH	NO	SIZE	LNTH	NO	SIZE	LNTH
40	#6	14-0	8	#5	3-6	7	#4	15-0			
24		11-6	8		3-3	2		6-8			
96		7-3	8		3-0	2		6-0			
24	#6	4-9	8		2-9	2		4-8			
			8		2-6	8		3-9			
			8		1-9	5	#4	3-8			
			8	#5	1-0	16	#4	17-0			
24	#5	14-0				8	#4	9-0			
8		13-0				8	#4	21-0			
8		10-3									
8		9-9									
8		7-9									
8		7-3									
8		6-3									
8		5-3									
8		5-0									
8		4-3									
8		3-9									
80	#5	3-7									



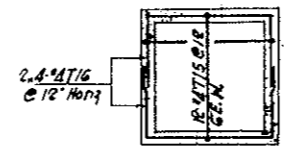
ELEVATION B-B
(North Roadway shown - South similar)



DETAIL STAIR NO 1



DETAIL STAIR NO 2



PLAN PIT, ELECT.
EQUIPMENT ROOM
See Sec L-L, Dwg S-WE 11

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST VENTILATION BUILDING MISCELLANEOUS DETAILS					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: JUV	RECOMMENDED: JUV	APPROVED: <i>[Signature]</i>		DRAWING NO. S-W 146	
DRAWN: JUV	CHECKED: PS	APPROVED: <i>[Signature]</i>			
SUBMITTED: <i>[Signature]</i>		APPROVED: <i>[Signature]</i>			
NEW YORK, N. Y.	SCALE: NONE	DATE: JAN. 1968			

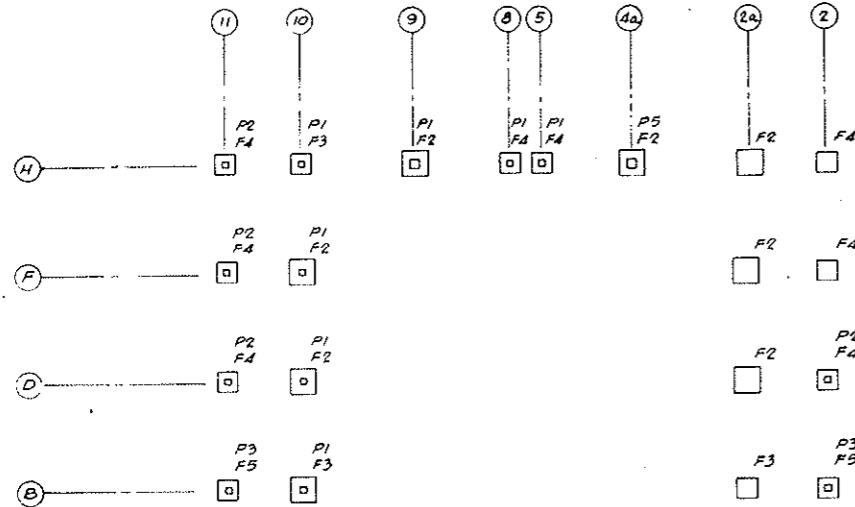
INTERIOR FOOTING SCHEDULE			
MARK	NO.	SIZE	REINFC. & W. BOT.
F2	7	10'-0" x 10'-0" x 3'-0"	32-#9 x 9-G
F3	3	9'-0" x 9'-0" x 3'-0"	26-#8 x 8-G
F4	8	8'-0" x 8'-0" x 2'-6"	24-#8 x 7-G
F5	2	7'-0" x 7'-0" x 2'-6"	22-#7 x 6-G

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

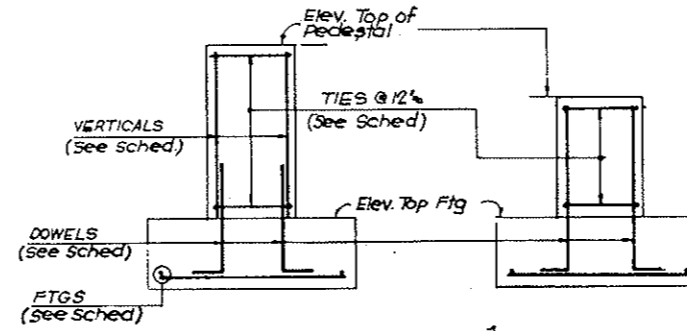
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-47	

BENDING DETAILS															
NO.	SIZE	LGTH.	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
8	#8	7-3	P1	17		1-6	5-9								
56	#8	6-3	2	17		1-6	4-9								
32	#8	9-3	3	17		1-6	7-9								
16	#8	6-9	4	17		1-6	5-3								
26	#8	9-4	5	T1	0-4	2-2	2-2	2-2	2-2			0-4			
26	#8	6-10	P2	T1	0-4	1-6	1-6	1-6	1-6			0-4			
36	#8	11-4	7	T1	0-4	2-8	2-8	2-8	2-8			0-4			
36	#8	8-4	8	T1	0-4	1-11	1-11	1-11	1-11			0-4			
6	#8	15-4	9	T1	0-4	3-8	3-8	3-8	3-8			0-4			
6	#8	11-2	10	T1	0-4	2-7	2-7	2-7	2-7			0-4			
48	#8	13-4	P1	T1	0-4	3-2	3-2	3-2	3-2			0-4			
48	#8	9-8	12	T1	0-4	2-3	2-3	2-3	2-3			0-4			

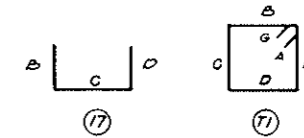
All Dims Out to Out.



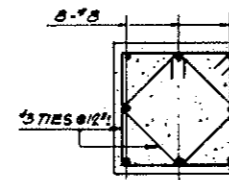
PART FOOTING PLAN



SKETCH - I
 SKETCH - II
 TYPICAL FOOTING AND PEDESTAL DETAIL



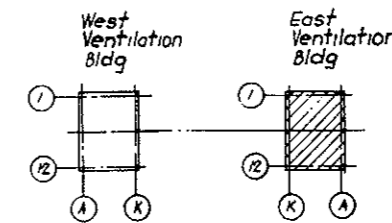
PEDESTAL SCHEDULE												
FOOTG. MARK	COLUMN NOS.	NO. REQD.	PEDESTAL			ELEVATIONS			REINFORCING			SK
			TYPE	SIZE	HEIGHT	BOTT. FTG.	TOP FTG.	TOP PEDESTAL	DOWELS	VERTICALS	TIES @ 12"	
F5	2-B	1	P3	2'-6" x 2'-6"	3'-8"	11002.5	11005.0	11008.67	8-#8 P1	SEE DOWELS	4-#8 P5 4-#8 P6	II
F4	2-D	1	P2	3'-0" x 3'-0"	6'-8"	11001.0	11003.5	11010.17	8-#8 P2	8-#8 x 6-G	7-#8 P7 7-#8 P8	I
F2	4a-H	1	P5	4'-0" x 4'-0"	5'-2"	11003.0	11006.0	11011.17	8-#8 P3	SEE DOWELS	6-#8 P9 6-#8 P10	II
F4	5-H, 8-H	2	P1	3'-6" x 3'-6"	5'-8"	11003.0	11005.5	11011.17	8-#8 P2	8-#8 x 5-2	6-#8 P11 6-#8 P12	I
F2	9-H	1	P1	3'-6" x 3'-6"	5'-2"	11003.0	11006.0	11011.17	8-#8 P3	SEE DOWELS	6-#8 P11 6-#8 P12	II
F3	10-B	1	P1	3'-6" x 3'-6"	11'-0"	11000.0	11003.0	11014.0	8-#8 P4	8-#8 x 10-10	11-#8 P11 11-#8 P12	I
F2	10-D	1	P1	3'-6" x 3'-6"	6'-8"	11005.5	11008.5	11015.17	8-#8 P4	8-#8 x 6-G	7-#8 P11 7-#8 P12	I
F2	10-F	1	P1	3'-6" x 3'-6"	5'-2"	11007.0	11010.0	11015.17	8-#8 P3	SEE DOWELS	6-#8 P11 6-#8 P12	II
F3	10-H	1	P1	3'-6" x 3'-6"	5'-2"	11007.0	11010.0	11015.17	8-#8 P3	SEE DOWELS	6-#8 P11 6-#8 P12	II
F5	11-B	1	P3	2'-6" x 2'-6"	21'-6"	10990.0	10992.5	11014.0	8-#8 P2	8-#8 x 21-4	22-#8 P3 22-#8 P6	I
F4	11-D	1	P2	3'-0" x 3'-0"	10'-8"	11002.0	11004.5	11015.17	8-#8 P2	8-#8 x 10-G	11-#8 P7 11-#8 P8	I
F4	11-F, 11-H	2	P2	3'-0" x 3'-0"	8'-8"	11004.0	11006.5	11015.17	8-#8 P2	8-#8 x 8-G	9-#8 P7 9-#8 P8	I



TYP. PEDESTAL SECT.

NOTES

STRAIGHT BAR LIST		
NO.	SIZE	LGTH.
224	#9	9-G
8	#8	21-4
8	#8	10-10
8	#8	10-G
94	#8	8-G
192	#8	7-G
16	#8	6-G
16	#8	5-2
44	#7	6-G

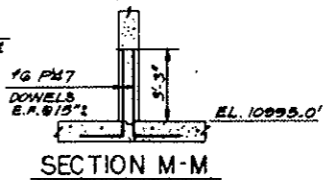
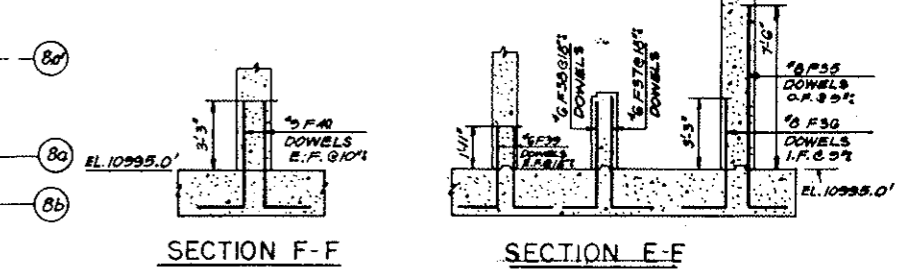
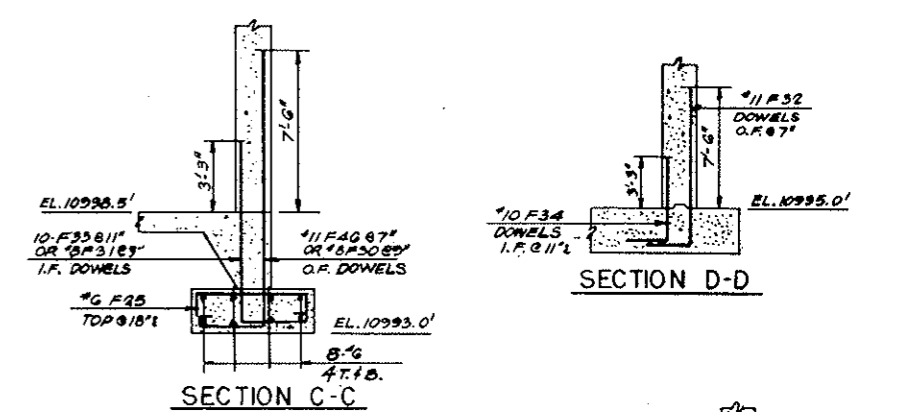
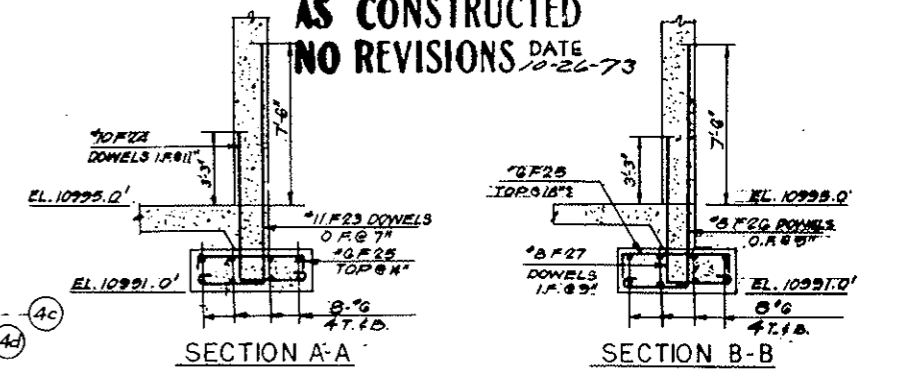
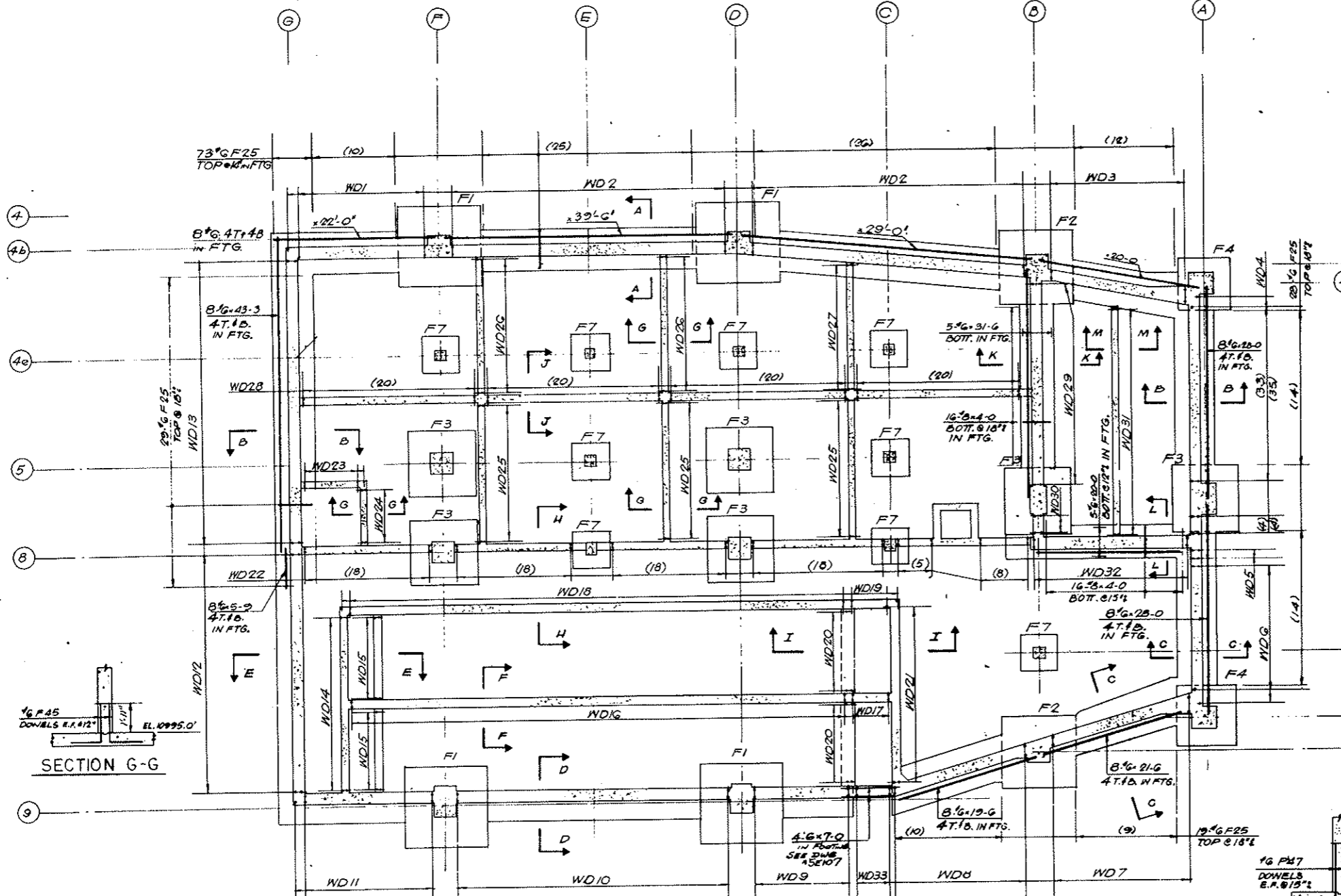


KEY PLAN

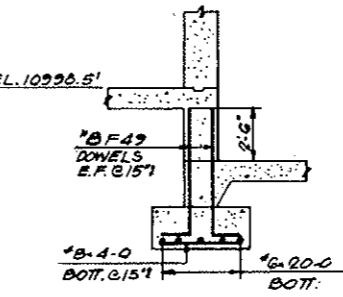
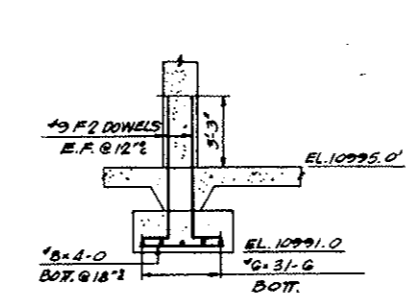
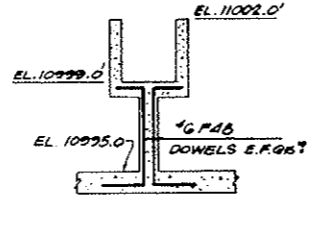
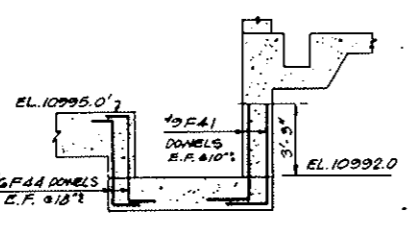
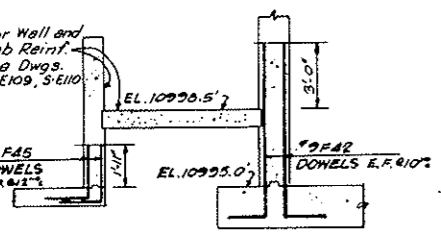
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING INTERIOR FOOTINGS AND PEDESTALS ROADWAY LEVEL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E. H.	DRAWN: R. E.		RECOMMENDED: <i>Y. B. Fort</i>		
CHECKED: S. M.	SUBMITTED: <i>Paul Stebb</i>		APPROVED: <i>Paul Stebb</i>		
DRAWING NO. S-E101					SCALE: NO SCALE DATE: JAN 1968

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-48	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NOTES
For schedules of Footings, Bending Details, and Column Buttress & Wall Dowels see Drawing SE 103



SECTION H-H

SECTION I-I

SECTION J-J

SECTION K-K

SECTION L-L

PLAN

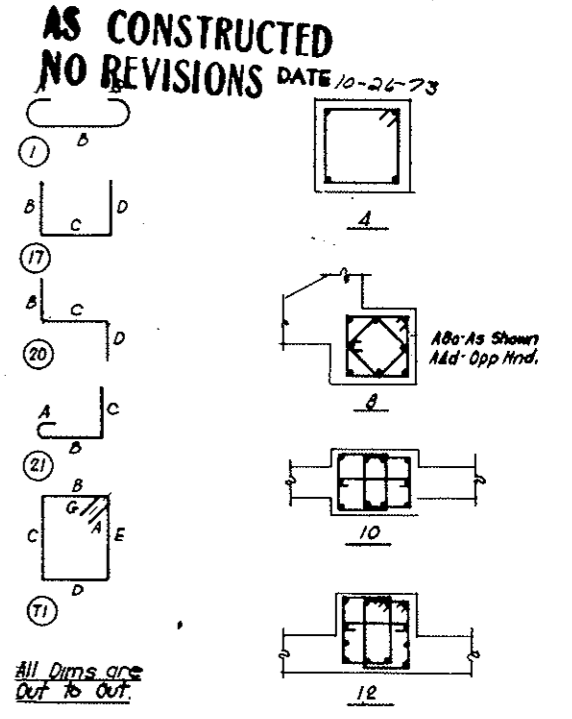
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING BASEMENT FOOTINGS SHEET 1					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E. W.	DRAWN: R. E.	CHECKED: P. B.	SUBMITTED: J. S.	RECOMMENDED: J. S.	APPROVED: J. S.
DRAWING NO. S-E102				SCALE: 1/2"=1'-0" DATE: JAN 1968	

SCHEDULE OF BUTTRESS & COLUMN DOWELS							
COL. NO	FTG.	SIZE	N ^o REIN.	VERT. REIN.	TIES 1/8"	SKETCH	DWL TYPE
A4d	F4	46x40	1	8-#9 F1	2-#3 F9 2-#3 F10	B	A
B4c	F2	38x42	1	12-#9 F5	2-#3 F11 2-#3 F13	12	A
D4b	F1	44x42	1	12-#10 F3	2-#3 F12 2-#3 F21	12	A
F4b	F1	44x42	1	12-#10 F3	2-#3 F12 2-#3 F21	12	A
C4e	F7	18x18	1	4-#9 F2	2-#3 F14	4	A
D4e	F7	18x18	1	4-#9 F2	2-#3 F14	4	A
E4e	F7	18x18	1	4-#9 F2	2-#3 F14	4	A
F4e	F7	18x18	1	4-#9 F2	2-#3 F14	4	A
C5	F7	18x18	1	4-#9 F2	2-#3 F14	4	A
D5	F3	42x42	1	12-#10 F3	2-#3 F15 2-#3 F22	12B	A
E5	F7	18x18	1	4-#9 F2	2-#3 F14	4	A
F5	F3	42x42	1	12-#10 F3	2-#3 F15 2-#3 F22	12B	A
AG1	F3	44x52	1	16-#9 F5	3-#2 F16 2-#3 F17	16	A
B61	F3	36x48	1	10-#10 F3	2-#3 F18 2-#3 F19	10	A
C6	F7	18x18	1	4-#9 F2	2-#3 F14	4	A
D6	F3	42x42	1	12-#10 F3	2-#3 F15 2-#3 F22	12B	A
E6	F7	18x18	1	4-#9 F2	2-#3 F14	4	A
F6	F3	42x42	1	12-#10 F3	2-#3 F15 2-#3 F22	12B	A
B8a	F7	18x18	1	4-#9 F2	2-#3 F14	4	B
A8a	F4	46x40	1	8-#9 F6	3-#3 F20 2-#3 F21	8	A
B8b	F2	38x42	1	10-#9 F7	2-#3 F11 3-#3 F13	10	A
D9	F1	44x48	1	12-#10 F3	—	12A	C
F9	F1	44x48	1	12-#10 F3	—	12A	C

FOOTING SCHEDULE			
MARK	NO.	SIZE	REINFC & E.W. BOTT.
F1	4	11'-0" x 11'-0" x 3'-0"	36-#9 x 10-G
F2	2	10'-0" x 10'-0" x 3'-0"	32-#9 x 9-G
F3	6	9'-0" x 9'-0" x 3'-0"	26-#8 x 8-G
F4	2	8'-0" x 8'-0" x 2'-6"	24-#8 x 7-G
F7	9	5'-0" x 5'-0" x 2'-0"	10-#6 x 4-6

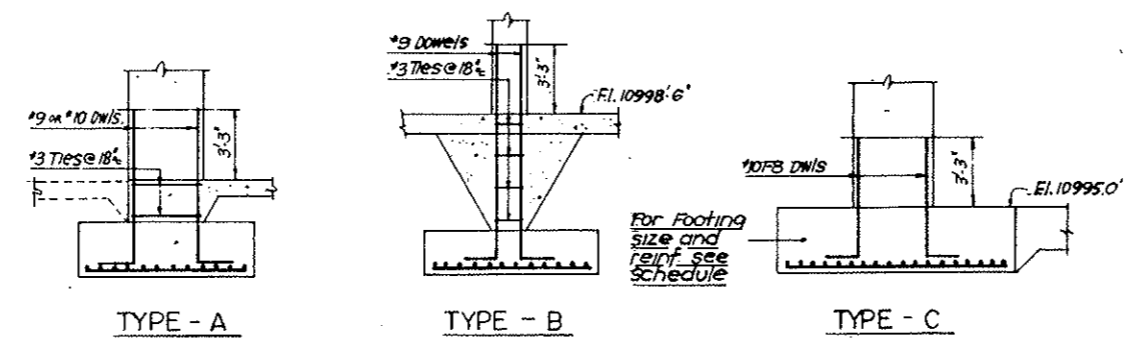
SCHEDULE OF WALL DOWELS					
MARK	N ^o REQD	REINFC	LOCATION	SPAC.	REMARKS
WD1	1	32-#11 F23 19-#10 F24	O.F.	7-6	
WD2	2	63-#11 F23 40-#10 F24	O.F.	7	
WD3	1	30-#11 F23 19-#10 F24	O.F.	7	
WD4	1	39-#8 F26 31-#8 F27	O.F.	9	
WD5	1	2-#8 F28 2-#8 F29	O.F.	9	
WD6	1	29-#6 F30 27-#6 F31	O.F.	9	
WD7	1	35-#11 F23 21-#10 F24	O.F.	7	
WD8	1	32-#11 F23 18-#10 F24	O.F.	7	
WD9	1	22-#11 F23 14-#10 F24	O.F.	7	
WD10	1	63-#11 F23 40-#10 F24	O.F.	7	
WD11	1	32-#11 F23 19-#10 F24	O.F.	7	
WD12	1	44-#8 F35 44-#8 F36	O.F.	9	
WD13	1	53-#8 F26 53-#8 F27	O.F.	9	
WD14	1	17-#8 F37 17-#8 F38	O.F.	8	
WD15	2	16-#6 F39	8E.F.	18	
WD16	1	150-#9 F40	75E.F.	10	
WD17	1	12-#9 F41	6E.F.	10	
WD18	1	105-#9 F42	830E.F.	10	
WD19	1	14-#9 F43	80E.F.	10	
WD20	2	16-#6 F44	8E.F.	18	
WD21	1	58-#9 F41	29E.F.	10	
WD22	1	170-#8 F45	85E.F.	12	
WD23	1	17-#6 F45	90E.F.	12	
WD24	1	16-#6 F45	8E.F.	12	
WD25	3	40-#6 F45	20E.F.	12	
WD26	2	38-#6 F45	19E.F.	12	
WD27	1	36-#6 F45	18E.F.	12	
WD28	1	160-#6 F48	80E.F.	15	SEE PLAN
WD29	1	44-#9 F5 14-#9 F2	1E.F.	12	*9F5 DOWELS FR. COL. FTGS.
WD30	1	8-#9 F5	4E.F.	12	
WD31	1	50-#6 F47	25E.F.	15	
WD32	1	36-#6 F49	18E.F.	15	
WD33	1	9-#11 F50 6-#10 F4	O.F.	7	

BENDING DETAILS															
NOS	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
8	#9	8-10	F1	17		1-4	7-6								
16	#9	8-4	2	17		1-4	7-0								
82	#10	9-6	3	17		1-6	8-0								
6	#10	6-6	4	17		2-0	4-6								
50	#9	9-4	5	17		1-4	8-0								
8	#9	10-4	F6	17		1-4	9-0								
10	#9	10-10	7	17		1-4	9-6								
24	#10	7-6	8	17		1-6	6-0								
5	#9	12-8	9	T1	4	3-0	3-0	3-0	3-0						4
5	#9	9-2	10	T1	4	2-1/2	2-1/2	2-1/2	2-1/2						4
10	#9	11-0	F11	T1	4	2-0	3-2	2-0	3-2						4
8	#9	11-8	12	T1	4	2-4	3-2	2-4	3-2						4
5	#9	3-8	13	1	5	2-10									5
20	#9	5-4	14	T1	4	1-2	1-2	1-2	1-2						4
16	#9	9-5	15	T1	4	1-2/3	3-2	1-2/3	3-2						4
6	#9	11-7	F16	T1	4	2-1/2	3-4	2-1/2	3-4						4
2	#9	10-8	17	T1	4	1-0	4-0	1-0	4-0						4
4	#9	11-1	18	T1	4	2-8	2-6	2-8	2-6						4
2	#9	4-6	19	1	5	3-8									5
4	#9	11-10	20	17		1-4	10-6								
4	#9	4-2	F21	1	5	3-4									5
8	#9	13-4	22	T1	4	3-2	3-2	3-2	3-2						4
188	#11	15-6	23	21	1-2	3-1	11-3								
118	#10	11-2	24	21	1-1	3-1	7-0								
149	#8	8-0	25	17		1-6	5-0	1-6							
92	#8	15-2	F26	21	10	3-1	11-3								
90	#8	10-11	27	21	10	3-1	7-0								
2	#8	19-6	28	21	10	3-11	14-9								
2	#8	15-3	29	21	10	3-11	10-6								
29	#8	17-6	30	21	10	3-11	12-9								
27	#8	12-5	F31	21	10	3-1	8-6								
117	#11	11-3	32	17		2-0	9-3								
39	#10	12-8	33	21	1-1	3-1	8-6								
73	#10	7-0	34	17		2-0	5-0								
44	#8	11-2	35	17		1-11	9-3								
44	#8	7-0	F36	17		2-0	5-0								
17	#6	7-1	37	17		2-0	5-1								
17	#6	6-11	38	17		2-0	4-11								
32	#6	5-8	39	17		2-0	3-8								
150	#9	7-0	40	17		2-0	5-0								
70	#9	6-6	F41	17		2-0	4-6								
165	#9	10-2	42	17		1-11	8-3								
14	#9	12-9	43	17		2-0	10-9								
32	#6	5-9	44	20		10	4-1	10							
435	#6	4-7	45	17		2-0	2-7								
65	#11	17-0	F46	21	1-2	3-1	12-9								
50	#6	6-0	47	17		2-0	4-0								
160	#6	7-9	48	17		2-0	4-6	1-3							
36	#8	7-5	49	17		1-2	6-3								
9	#11	10-9	50	17		2-0	8-9								

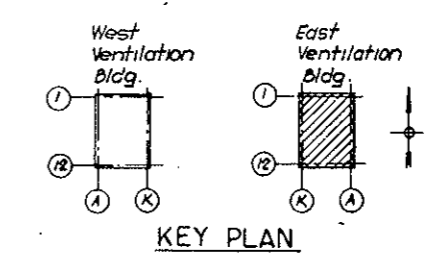


STRAIGHT BAR LIST		
N ^o	SIZE	LGTH
144	#9	10-6
64	#9	9-6
156	#8	8-6
48	#8	7-6
32	#8	4-0
8	#6	43-3
8	#4	39-6
5	#4	31-6
8	#4	29-0
16	#4	28-0
8	#4	22-0
8	#4	21-6
13	#4	20-0
8	#4	19-6
8	#4	5-9
90	#4	4-6
4	#6	7-0

NOTES
For Location of Wall Dowels see DWG NO SE102



BUTTRESS OR COLUMN DOWEL DETAIL.



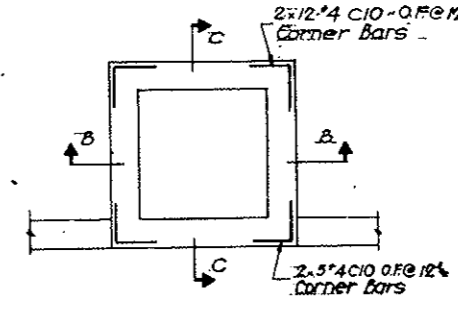
KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING BASEMENT FOOTINGS SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E.H.	CHECKED: P.E.	RECOMMENDED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	DRAWING NO. S-E103	
DRAWN: <i>[Signature]</i>		SUBMITTED: <i>[Signature]</i>		SCALE: AS SHOWN DATE: JAN. 1968	

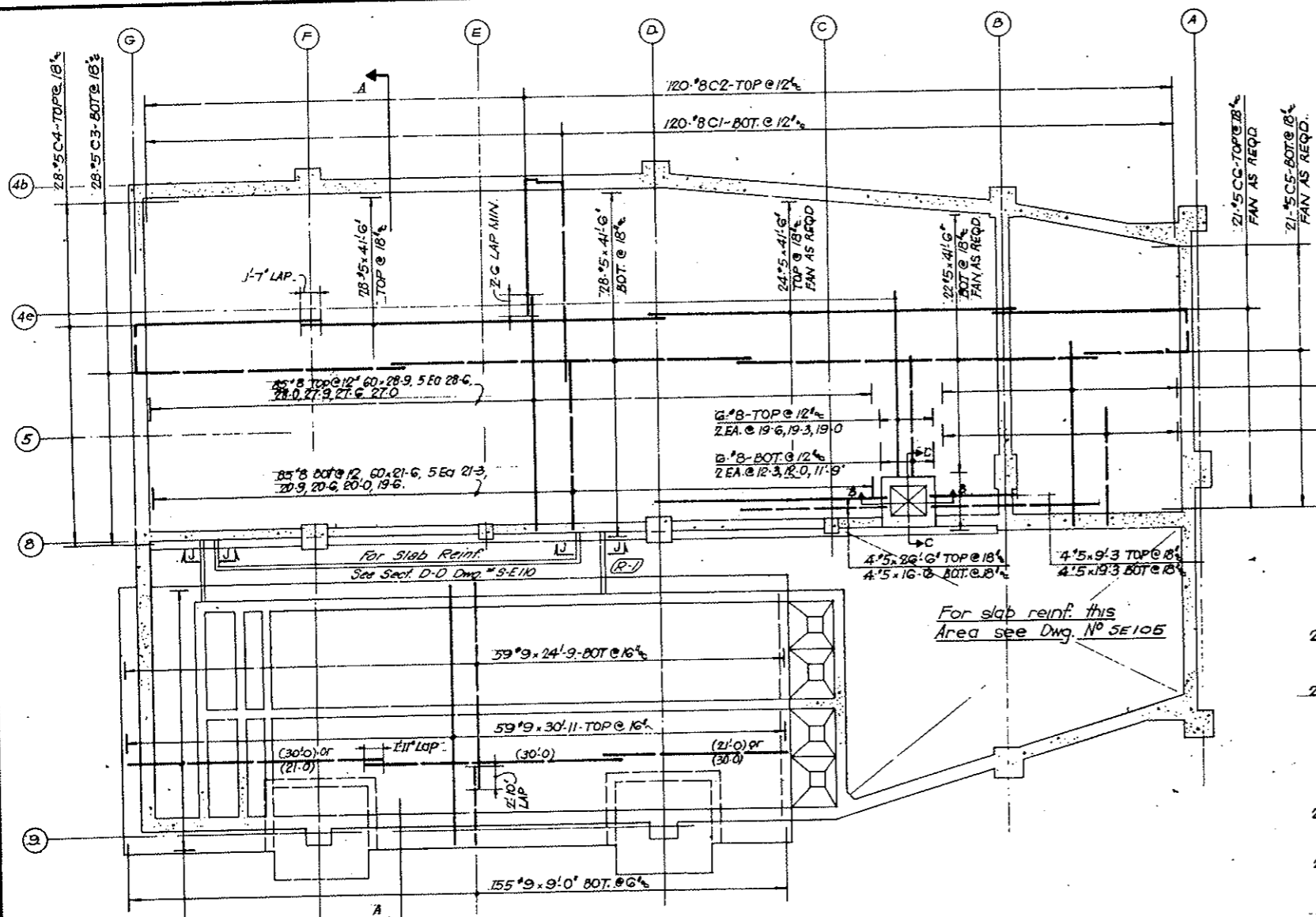
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RS-50	

(R-1) Rev. 5-31-69 CDH Added Pipe Trench NO. 14093

BENDING DETAILS											
N ^o	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G
120	8	26-6	C 1	17	3-2	23-4					
120	8	17-3	2	17	1-2	16-1					
28	5	33-6	3	17	2-2	31-4					
28	5	22-0	4	17	9	21-3					
21	5	14-9	C 5	17	2-2	12-7					
21	5	23-6	6	17	9	22-9					
12	6	10-8	7	17	2-8	5-4	2-8				
20	6	3-8	8	17	10	2-8					
41	4	6-8	C 9	17	8	5-4	8				
34	4	2-6	10	17	1-3	1-3					
16	5	4-0	11	17	1-7	2-5					
12	8	5-9	12	17	2-6	3-3					
14	4	6-0	13	17	8	5-4					



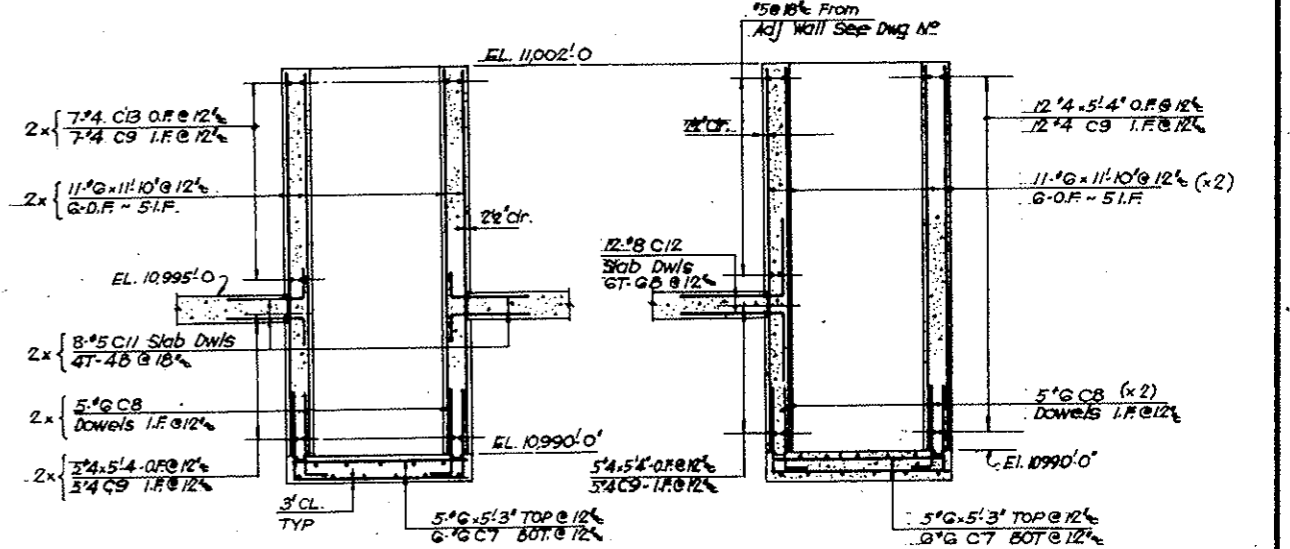
PLAN OF PIT
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PLAN OF MAT AT ELEV. 10995'-0"

29#8-TOP @ 12"
 4x26'-0, 3@25'-9,
 4EACH @ 25'-0, 24'-6,
 24'-0, 23'-6, 23'-0
 2EACH @ 22'-6.

29#8-BOT @ 12"
 4x18'-9, 3@18'-6,
 4EACH @ 17'-9, 17'-3,
 16'-9, 16'-3, 15'-9,
 2EACH @ 15'-0.



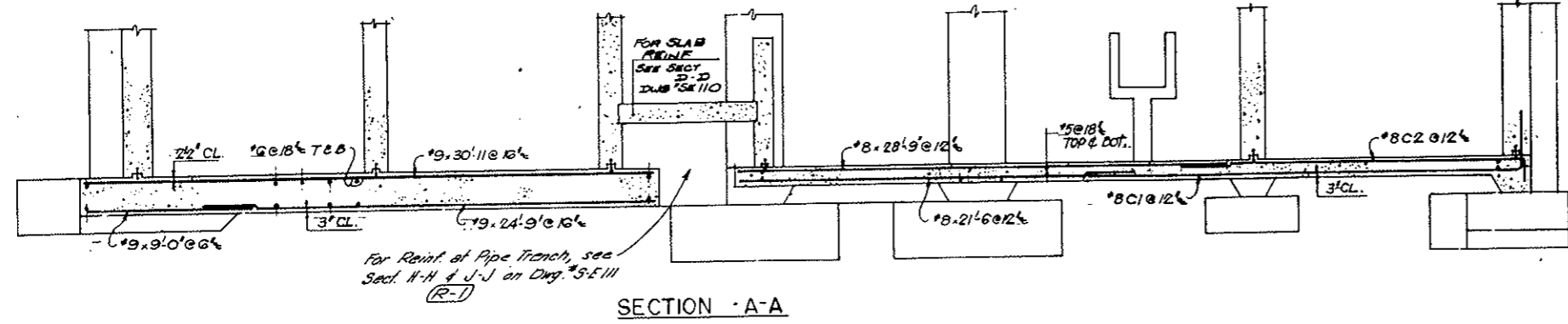
SECTION B-B

SECTION C-C

STRAIGHT BAR LIST											
N ^o	SIZE	LGTH	N ^o	SIZE	LGTH	N ^o	SIZE	LGTH	N ^o	SIZE	LGTH
59	19	30-11	5	10	20-9	44	10	11-10			
59	19	24-9	5	10	20-6	10	6	5-3			
155	9	9-0	5	10	20-0						
			7	19-6	102	15	4-6				
60	18	28-9	2	19-3	4	19-3					
5	1	28-6	2	19-0	4	19-3					
5	1	28-0	4	18-9	4	18-6					
5	1	27-9	3	18-6	4	15	9-3				
5	1	27-6	4	17-9							
5	1	27-0	4	17-3	27	14	5-4				
4	1	26-0	4	16-9							
3	1	25-9	4	16-3							
4	1	25-0	4	15-9							
4	1	24-6	2	15-0							
4	1	24-0	2	12-3							
4	1	23-6	2	12-0							
4	1	23-0	2	11-9							
2	1	22-6									
60	1	21-6	88	16	30-0						
5	18	21-3	44	16	21-0						

NOTES
 1. For Vertical wall dowels and buttress dowels from mat. see Drawing N^o 5E102 & 5E103
 2. For balance of foundation mat Reinforcing see Drawing N^o 5E105

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING BASEMENT SLAB SHEET 1 TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	E. W. ORR	CHECKED BY	P. E. RYAN	APPROVED BY	Frank Keller
DRAWING NO.	S-E104				
SCALE	1" = 1'-0"				
DATE	JAN. 1968				

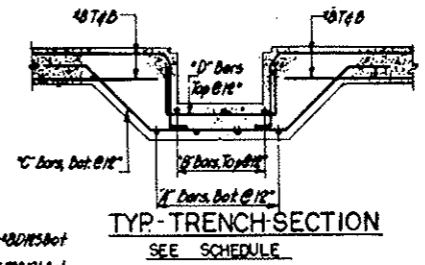
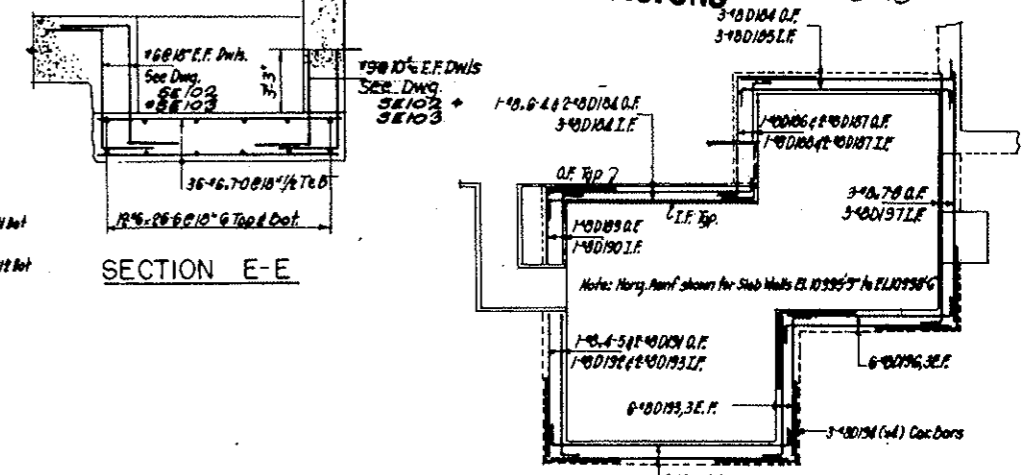
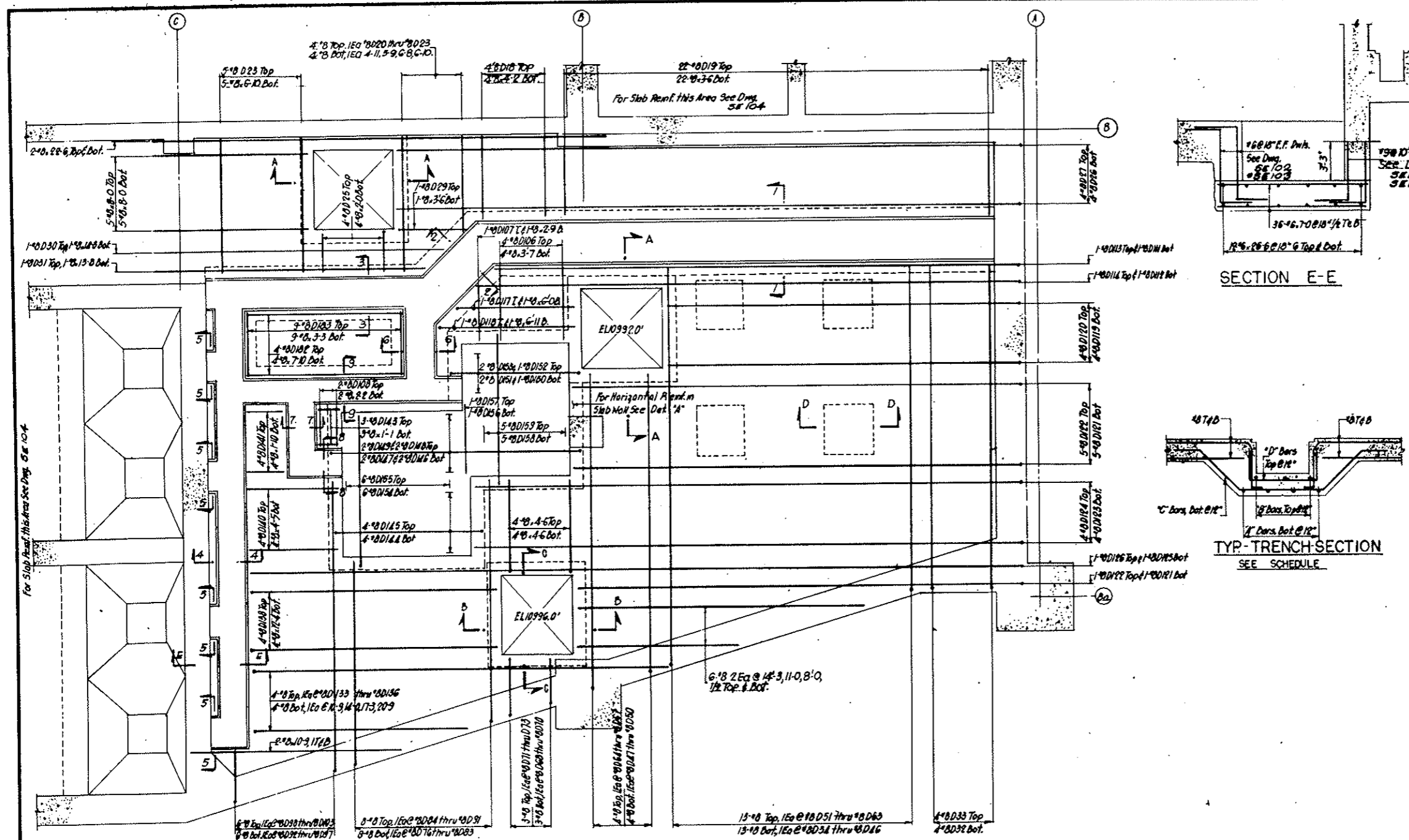


SECTION A-A

For Reinf. of Pipe Trench, see Sect. H-H & J-J on Dwg. N^o 5E111 (R-1)

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	OF THE SHEETS
9	COLORADO	I 70 - 3(54) 220	RS-54	

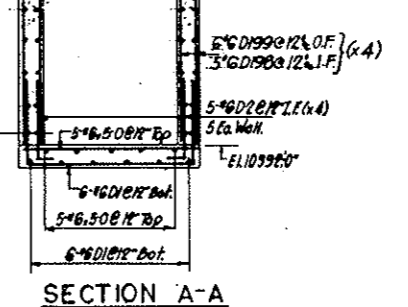
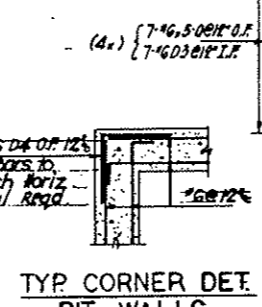
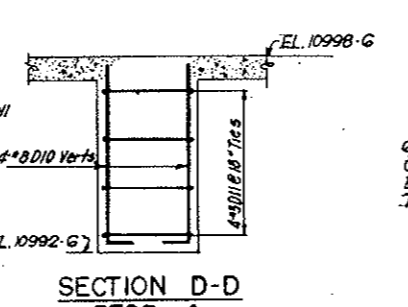
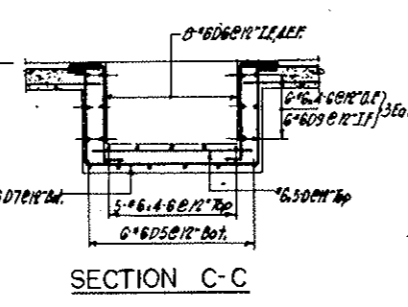
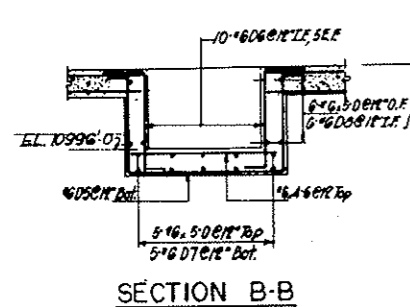
**AS CONSTRUCTED
NO REVISIONS** DATE 10-26-73



SECTION NO.	"A" BARS	"B" BARS	"C" BARS	"D" BARS	REMARKS
1-1	2#8-25-6	3#8-25-6	2#8D160	2#8D161	
2-2	2#8-5-5	3#8-5-5	5#8D160	5#8D161	
3-3	3#8-12-0	2#8-16-0	3#8D162	3#8D163	*
4-4	3#8D164	2#8D165	17#8D166	17#8D167	*
5-5 (4)	3#8D168	2#8D169	1#8D170	1#8D171	
6-6	3#8D172	2#8D173	3#8D162	3#8D163	
7-7	3#8D176	2#8D177	4#8D166	4#8D167	*
8-8	3#8D170	2#8D179	2#8D166	4#8D167	*
9-9	3#8D180	2#8D181	10#8D166	10#8D167	*

* for lateral Reinf. at openings, see adjacent section

- NOTES**
- For Bending Details see Dwg. SE 106
 - All Reinforcing at 12" unless otherwise noted



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
BASEMENT SLAB
SHEET 2**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E. H. ...
DRAWN: J. V. ...
CHECKED: P. B. ...
APPROVED: Frank ...

SCALE: 3/8" = 1'-0" DATE: JAN. 1968

DRAWING NO. S-E105

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	RS-52	

BENDING DETAILS

NO.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
24	#6	10-1	D	17		2-8	5-0	2-8							
40		3-6		17		0-10	2-8								
56		6-8		17		0-10	5-0	0-10							
68		3-10		17		1-11	1-11				0-10				
6		12-2	D	54	10	3-0	4-6	3-0							
18		5-9		20		0-10	3-0	1-11							
5		12-8		7	54	10	3-0	5-0	3-0			0-10			
6		6-8		8	17		0-10	5-0	0-10						
6	#6	6-2		9	17		0-10	4-6	0-10						
16	#8	6-9	D	10	17		1-2	5-7							
16	#3	9-0		11	71	0-4	2-1	2-1	2-1		0-4				
4	#8	6-8		18	25		4-1	0-3/4	1-8			0-8	0-2		
22		6-0		19	25		3-5	0-3/4	1-8			0-8	0-2		
1		7-5	D	20	25		4-10	0-3/4	1-8			0-8	0-2		
1		8-3		21	25		5-8	0-3/4	1-8			0-8	0-2		
1		9-2		22	25		6-7	0-3/4	1-8			0-8	0-2		
6		9-4		23	25		6-9	0-3/4	1-8			0-8	0-2		
4	#8	4-6	D	25	25		1-11	0-3/4	1-8			0-8	0-2		
4		33-11		26	17		3-2	30-9							
4		32-7		27	17		1-10	30-9							
1		6-2		29	25		3-7	0-3/4	1-8			0-8	0-2		
1	#8	17-2	D	30	25		14-7	0-3/4	1-8			0-8	0-2		
4		16-2		31	25		13-7	0-3/4	1-8			0-8	0-2		
4		19-7		32	17		3-3	16-4							
4		19-11		33	25	1-2	16-2	0-3/4	1-8			0-8	0-2		
1		19-8		34	17		3-3	16-5							
1	#8	20-0	D	35	17		3-3	16-9							
1		20-3		36	17		3-3	17-0							
1		20-6		37	17		3-3	17-3							
1		20-10		38	17		3-3	17-7							
1		21-1		39	17		3-3	17-10							
1	#8	21-5	D	40	17		3-3	18-2							
1		21-9		41	17		3-3	18-6							
1		22-0		42	17		3-3	18-9							
1		22-3		43	17		3-3	19-0							
1		22-7		44	17		3-3	19-4							
1	#8	22-11	D	45	17		3-3	19-8							
1		23-3		46	17		3-3	20-0							
1		18-3		47	17		3-3	15-0							
1		18-6		48	17		3-3	15-3							
1		18-10		49	17		3-3	15-7							
1	#8	19-1	D	50	17		3-3	15-10							
1		20-0		51	25	1-2	16-3	0-3/4	1-8			0-8	0-2		
1		20-4		52	25	1-2	16-7	0-3/4	1-8			0-8	0-2		
1		20-7		53	25	1-2	16-10	0-3/4	1-8			0-8	0-2		
1		20-10		54	25	1-2	17-1	0-3/4	1-8			0-8	0-2		
1	#8	21-2	D	55	25	1-2	17-5	0-3/4	1-8			0-8	0-2		
1		21-5		56	25	1-2	17-8	0-3/4	1-8			0-8	0-2		
1		21-9		57	25	1-2	18-0	0-3/4	1-8			0-8	0-2		
1		22-1		58	25	1-2	18-4	0-3/4	1-8			0-8	0-2		
1		22-4		59	25	1-2	18-7	0-3/4	1-8			0-8	0-2		
1	#8	22-7	D	60	25	1-2	18-10	0-3/4	1-8			0-8	0-2		
1		22-11		61	25	1-2	19-2	0-3/4	1-8			0-8	0-2		
1		23-3		62	25	1-2	19-6	0-3/4	1-8			0-8	0-2		
1		23-7		63	25	1-2	19-10	0-3/4	1-8			0-8	0-2		
1		16-11		64	17		1-11	15-0							
1	#8	17-2	D	65	17		1-11	15-3							
1		17-6		66	17		1-11	15-7							
1		17-9		67	17		1-11	15-10							
1		5-6		68	17		3-3	2-3							
1		5-9		69	17		3-3	2-6							
1	#8	6-7	D	70	17		3-3	2-10							
1		4-2		71	17		1-11	2-3							
1		4-5		72	17		1-11	2-6							
1	#8	4-9		73	17		1-11	2-10							
1	#8	15-4		76	17		3-3	12-7							
1		11-7		77	17		3-3	8-4							
1		11-10		78	17		3-3	8-7							
1		12-2		79	17		3-3	8-11							
1	#8	12-5	D	80	17		3-3	9-2							

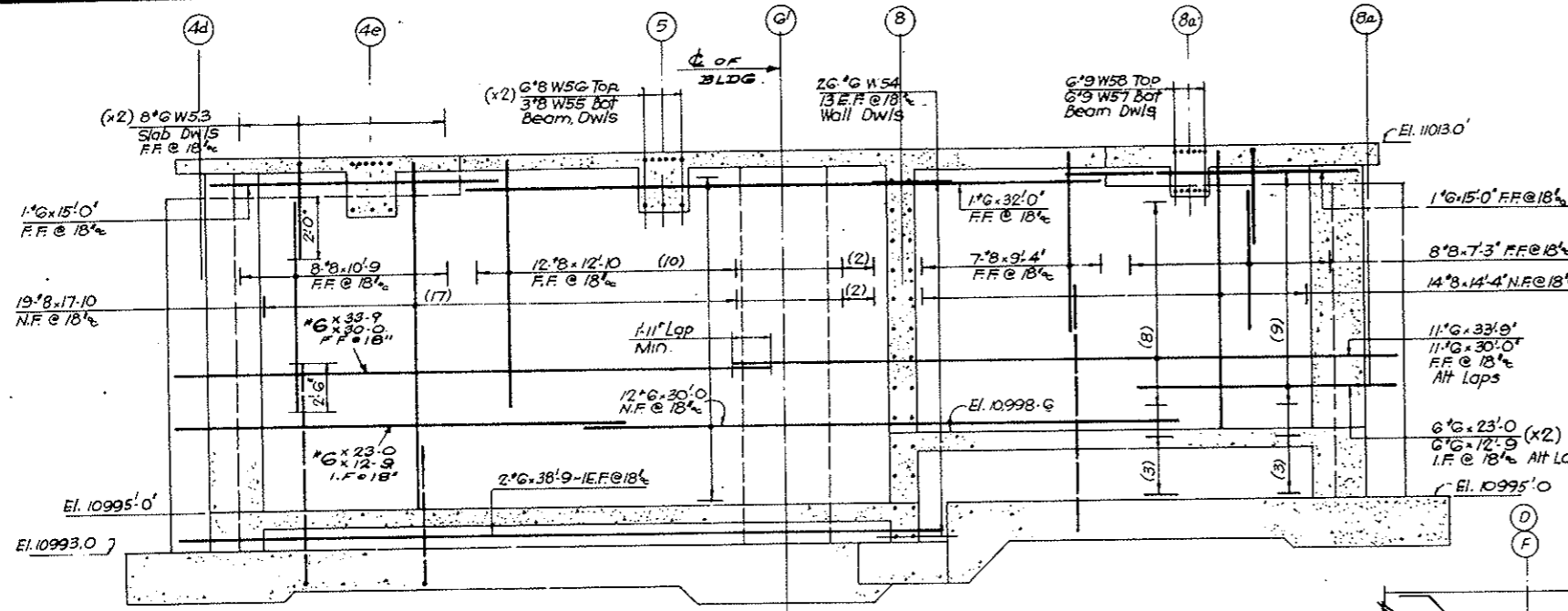
NO.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
1	#8	12-9	D	81	17		3-3	9-6							
1		13-1		82	17		3-3	9-10							
1		13-4		83	17		3-3	10-1							
1		14-0		84	17		1-11	12-1							
1	#8	10-3	D	85	17		1-11	8-4							
1		10-6		86	17		1-11	8-7							
1		10-10		87	17		1-11	8-11							
1		11-1		88	17		1-11	9-2							
1	#8	11-5	D	89	17		1-11	9-6							
1	#8	11-9	D	90	17		1-11	9-10							
1		12-0		91	17		1-11	10-1							
1		17-10		92	17		3-3	14-7							
1		18-1		93	17		3-3	14-10							
1		18-4		94	17		3-3	15-1							
1	#8	22-5	D	95	17		3-3	19-2							
1		22-8		96	17		3-3	19-5							
1		5-10		97	17		3-3	2-7							
1		18-2		98	25	1-2	14-5	0-3/4	1-8			0-8	0-2		
1		18-5		99	25	1-2	14-8	0-3/4	1-8			0-8	0-2		
1	#8	18-8	D	100	25	1-2	14-11	0-3/4	1-8			0-8	0-2		
1		22-9		101	25	1-2	19-0	0-3/4	1-8			0-8	0-2		
1		23-0		102	25	1-2	19-3	0-3/4	1-8			0-8	0-2		
1	#8	6-2		103	25	1-2	2-5	0-3/4	1-8			0-8	0-2		
4	#8	6-0		106	25		3-5	0-3/4	1-8			0-8	0-2		
1	#8	5-2		107	25		2-7	0-3/4	1-8			0-8	0-2		
2	#8	7-1		108	26	0-8	1-8	0-3/4	1-10	0-3/4	1-8	0-8	0-2		
1	#8	29-2		111	17		3-2	26-0							
1		30-0		112	17		3-2	26-10							
1		29-6		113	25	1-2	25-10	0-3/4	1-7			0-8	0-2		
1	#8	30-4		114	25	1-2	26-8	0-3/4	1-7			0-8	0-2		
1	#8	8-4		117	25		5-10	0-3/4	1-7			0-8	0-2		
1		9-3		118	25		6-9	0-3/4	1-7			0-8	0-2		
4		20-9		119	17		3-2	17-7							
4		18-9	D	120	17		3-2	17-7	1-2						
6	#8	25-4		121	17		3-2	22-2							
6		23-4		122	17		3-2	22-2	1-2						
4		30-3		123	17		3-2	27-1							
4		28-3		124	17		2-1	1-2							
1		41-7	D	125	17		3-2	38-5							
1	#8	41-11	D	126	25	1-2	38-3	0-3/4	1-7			0-8	0-2		
1	#8	13-3		133	25		10-9	0-3/4	1-7			0-8	0-2		
1		16-6		134	25		14-0	0-3/4	1-7			0-8	0-2		
1		19-9	D	135	25		17-3	0-3/4	1-7			0-8	0-2		
1	#8	23-3		136	25		20-9	0-3/4	1-7			0-8	0-2		
4	#8	14-8		138	25		12-2	0-3/4	1-7			0-8	0-2		
4	#8	6-9	D	140	25		4-3	0-3/4	1-7			0-8	0-2		
4	#8	6-6		141	26	0-8	1-7	0-3/4	1-5	0-3/4	1-7	0-8	0-2		
3	#8	3-4		143	25		0-10	0-3/4	1-7			0-8	0-2		
4	#8	16-4		144	S4	1-2	3-3	7-6	3-3			1-2			
4	#8	17-6	D	145	S4	2-6	2-9	7-0	2-9			2-6			
2															

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-55	

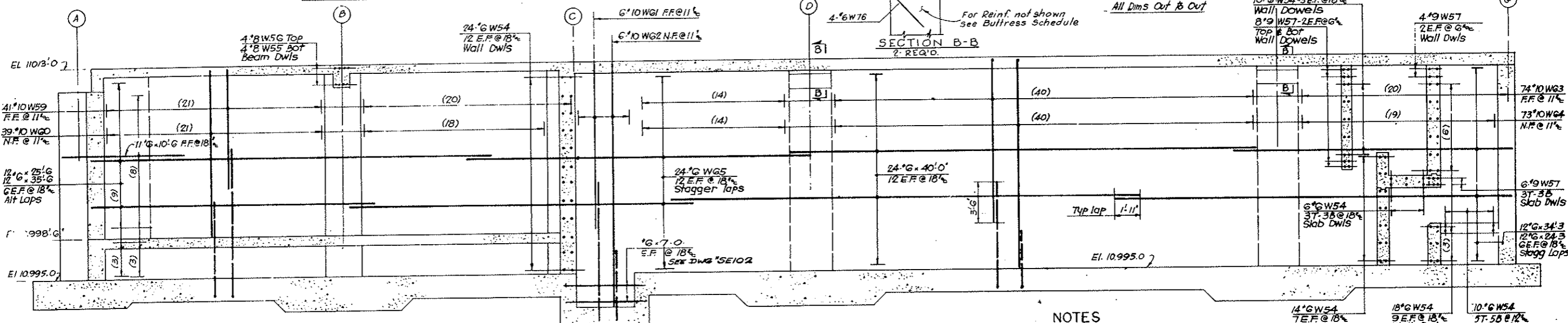
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

NO.	SIZE	LGTH	
16	19	17.3	
8	17	15.10	
10	17	13.6	
8	19	12.4	
19	18	17.10	
14	14	14.4	
12	12	12.10	
8	10	10.9	
7	9	9.4	
8	18	7.3	
24	16	10.0	
2	38	9	
12	35	6	
12	34	3	
11	33	9	
1	32	0	
23	30	0	
12	25	6	
12	24	3	
12	23	0	
2	15	0	
12	12	9	
11	16	10	6

BENDING DETAILS															
NO.	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
16	19	17.3													
108	6	4-3	54	17	2-0	3-9									
10	8	5-0	55	17	1-2	3-10									
16	8	10-0	56	17	3-2	6-10									
24	19	5-6	57	17	1-4	4-2									
6	9	10-7	58	17	3-5	7-2									
41	10	12-4	59	17	2-0	10-4									
39	10	16-4	60	17	2-0	14-4									
6	10	18-10	61	17	2-0	16-10									
6	10	22-10	62	17	2-0	20-10									
74	10	15-10	63	17	2-0	15-10									
73	10	19-10	64	17	2-0	17-10									
24	6	30-0	65	4	20-0	10-0							3-0		
16	6	5-1	66	17	2-0	3-1									
34	6	5-4	67	17	2-0	3-4									
20	3	12-8	68	17	4	3-0	3-0	3-0	3-0				4		
20	3	9-2	69	17	4	2-1/2	2-1/2	2-1/2	2-1/2				4		
36	3	11-7	70	17	4	2-1/2	3-4	2-1/2	3-4				4		
12	3	10-8	71	17	4	1-0	4-0	1-0	4-0				4		
20	3	11-0	72	17	4	2-0	3-2	2-0	3-2				4		
10	3	3-8	73	17	5	2-10							5		
48	3	12-9	74	17	4	2-4	3-8	2-4	3-8				4		
24	3	4-2	75	17	5	3-4							5		
8	16	6-3	76	4	5-3	1-0							0-8	0-8	

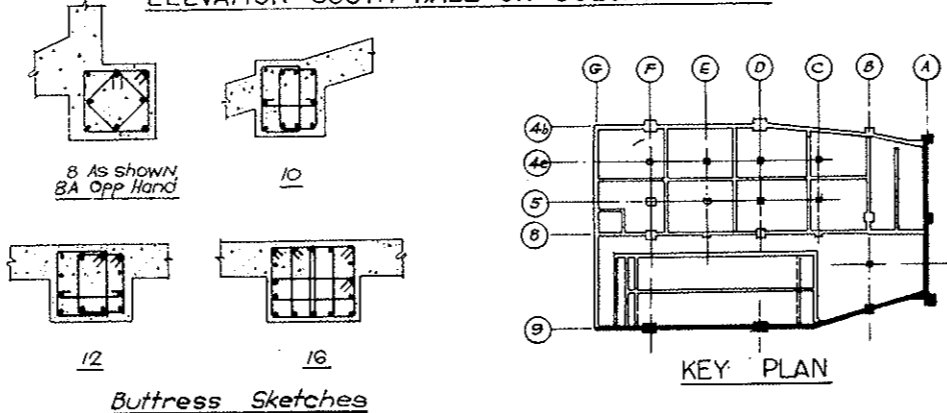


ELEVATION EAST WALL ON COLUMN LINE - A



ELEVATION SOUTH WALL ON COLUMN LINE - 9

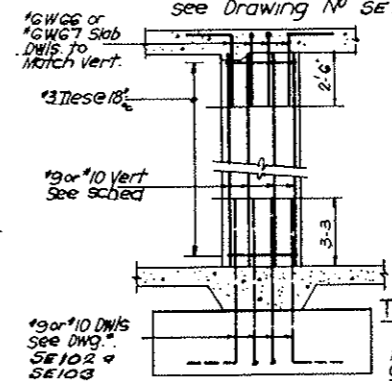
BUTTRESS SCHEDULE						
Column No	A4d	AG	A8a	B8b	D9	F9
Elev. Top	11011'-0"	11012'-5"	11011'-0"	11012'-5"	11012'-5"	11012'-5"
Top DWLS	16" W6	16" W6	16" W6	16" W6	16" W6	16" W6
Verticals	8" x 15' 10"	16" x 17' 3"	8" x 17' 4"	10" x 13' 6"	12" x 10' 17' 0"	12" x 10' 17' 0"
Ties @ 18"	11" x 3 W68	3 x 12" W70	9" x 3 W68	2 x 10" W72	2 x 12" W74	2 x 12" W74
Sketch	8A	1G	B	10	12	12
Size	46" x 40"	44" x 52"	46" x 40"	38" x 42"	44" x 48"	44" x 48"
Vert start	10,995'-0"	10,995'-0"	10,998'-0"	10,998'-0"	10,995'-0"	10,995'-0"



Buttress Sketches

KEY PLAN

- NOTES**
- For North & West Exterior Walls see Drawing No SE108
 - For Buttress & Vertical Wall Dowels see Drawing No SE102 & SE103



TYPICAL BUTTRESS DETAIL

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL REINFORCEMENT
EAST VENTILATION BUILDING
BASEMENT-EXTERIOR WALLS
SHEET 1

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

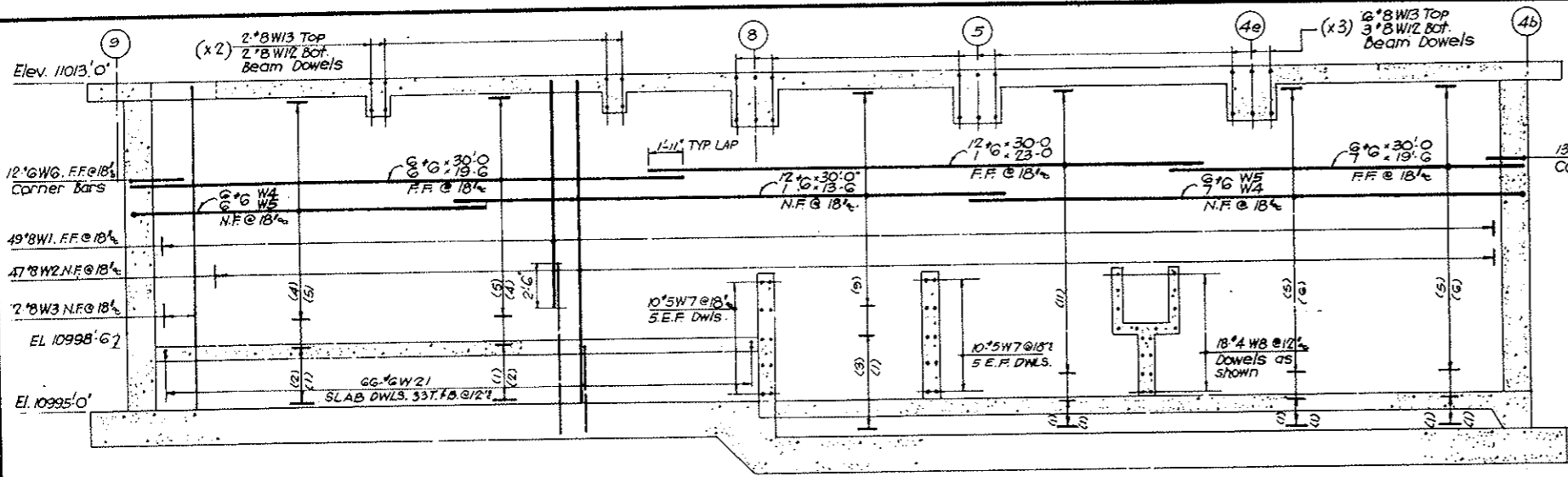
DESIGNED: E. M.
DRAWN: M. S.
CHECKED: S. M.
SUBMITTED: J. R.
APPROVED: J. R.
DATE: JAN. 1968

DRAWING NO. S-E107

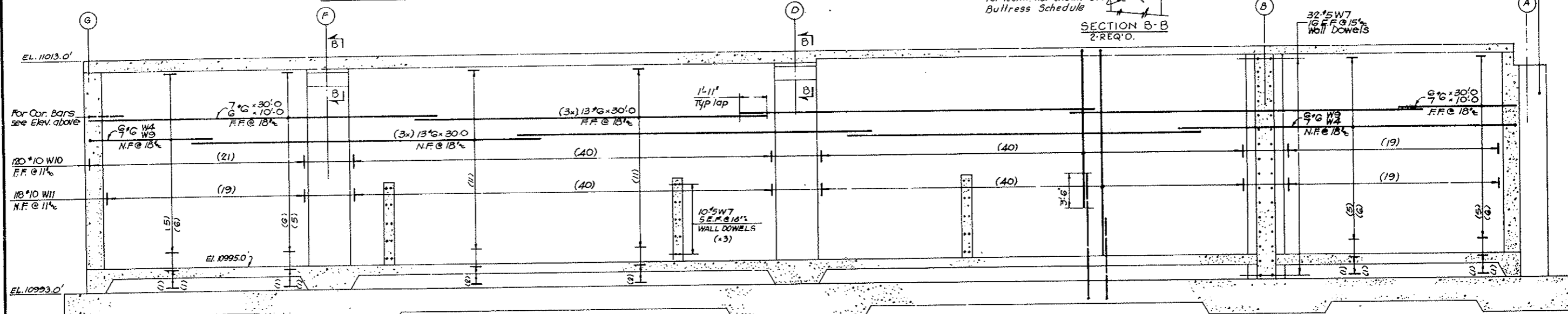
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-54	

AS CONSTRUCTED
REVISED DATE 10-26-73

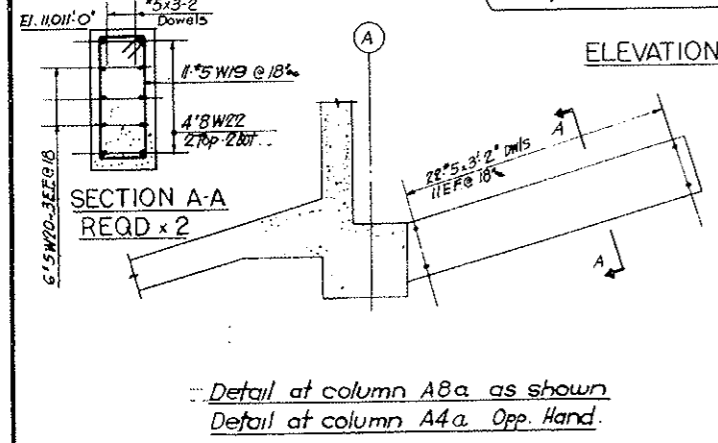
Column No	F4b	D4b	B4c	A4d
Elev. Top	11012'-5"	11012'-5"	11012'-5"	
Top Dowels	12 #6 W14	12 #6 W14	12 #6 W14	
Verticals	12 #10 x 17'-0"	12 #10 x 17'-0"	12 #9 x 17'-0"	
Ties @ 12"	2 #12 #3 W15 12 #3 W16	2 #12 #3 W15 12 #3 W16	2 #12 #3 W17 12 #3 W18	SEE DWG # SE 107
Sketch	12	12	12	
Size	44 x 42	44 x 42	38 x 42	
Vert. Start	10995'-0"	10995'-0"	10995'-0"	



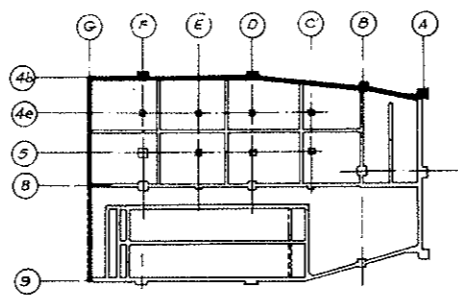
ELEVATION WEST WALL ON COLUMN LINE - G



ELEVATION NORTH WALL ON COLUMN LINE 4b



Detail at column A8a as shown
 Detail at column A4a Opp. Hand.

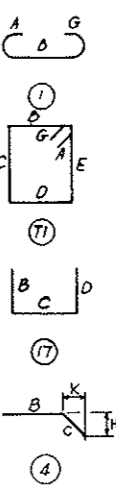


KEY PLAN.

NO	SIZE	LGTH
24	#10	17'-0"
12	#9	17'-0"
127	#6	30'-0"
1		23'-0"
13	#6	19'-6"
1	#6	13'-6"
13	#6	10'-0"
22	#5	3'-2"

All Dims out to out.

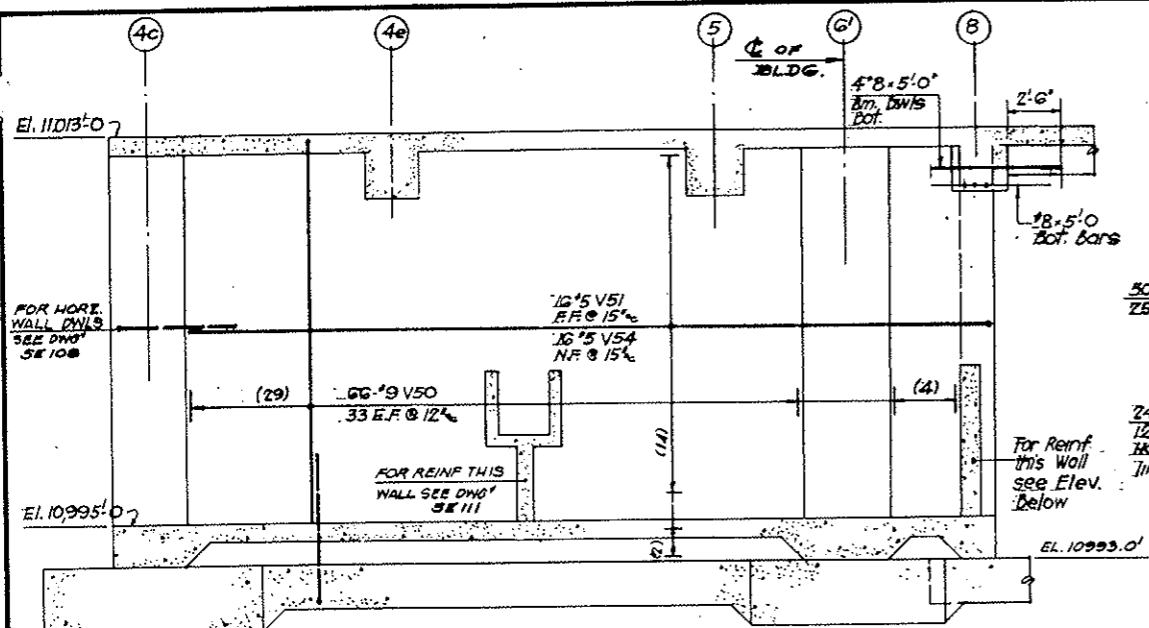
BENDING DETAILS															
No	Size	Lgth	Mark	Type	A	B	C	D	E	F	G	H	K	O	J
49	#8	14-10	W 1	17		2-0	12-10								
47	#8	19-10	2	17		2-0	17-10								
2	#8	18-10	3	17		1-0	17-10								
26	#6	30-0	4	17		0-10	29-2								
12	#6	21-0	W 5	17		0-10	20-2								
25	#6	4-0	6	17		2-0	2-0								
22	#5	3-9	7	17		0-9	3-0								
18	#4	3-3	8	17		0-7	2-8								
13	#6	11-6	W 9	17		0-10	10-8								
120	#10	19-10	10	17		2-0	17-10								
110	#10	15-10	11	17		2-0	13-10								
13	#8	5-0	12	17		1-2	3-10								
22	#8	10-0	W 13	17		3-2	6-10								
36	#6	5-4	14	17		2-0	3-4								
48	#3	11-8	15	T1	0.4	2-4	3-2	2-4	3-2		0.4				
24	#3	4-2	16	1	0.5	3-4					0.5				
24	#3	11-0	W 17	T1	0.4	2-0	3-2	2-0	3-2		0.4				
12	#3	3-8	18	1	0.5	2-10					0.5				
22	#5	16-10	19	T1	0.5	2-4	5-8	2-4	5-8		0.5				
12	#5	17-3	20	17		0.9	16-6								
66	#6	4-3	W 21	17		0-10	3-5								
8	#8	17-9	22	17		1-2	16-7								
8	#6	6-3	23	4		5-3	1-0				0-8	0-8			



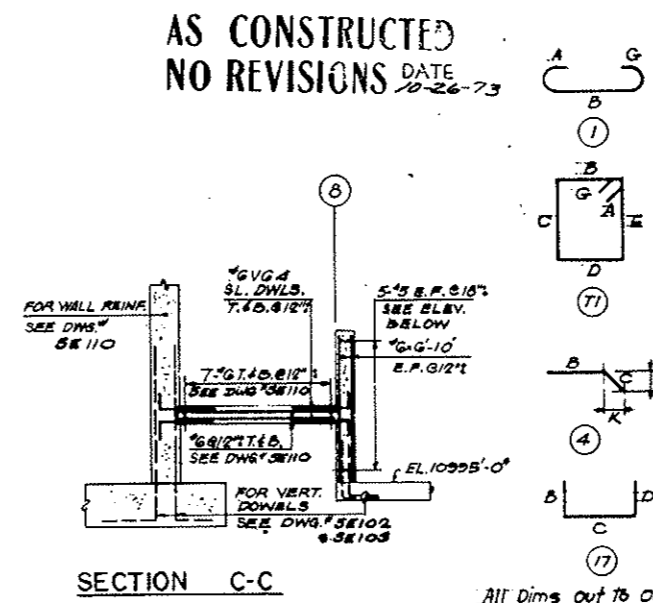
- NOTES**
- For Buttress and Vertical wall dowels see Drawing No SE 102 & SE 103
 - For South and East Exterior walls see Drawing No SE 107

NO	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL REINFORCEMENT EAST VENTILATION BUILDING BASEMENT-EXTERIOR WALLS					
SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E. M.	RECOMMENDED: J. S. Sullivan	DRAWN: R. E.			
CHECKED: S. W.	APPROVED: Frank Keller	SUBMITTED: Joe Rydman			
NEW YORK, N. Y.		SCALE: 3/8" = 1'-0"		DATE: JAN. 1968	
					DRAWING NO. S-E-108

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	RS-56	

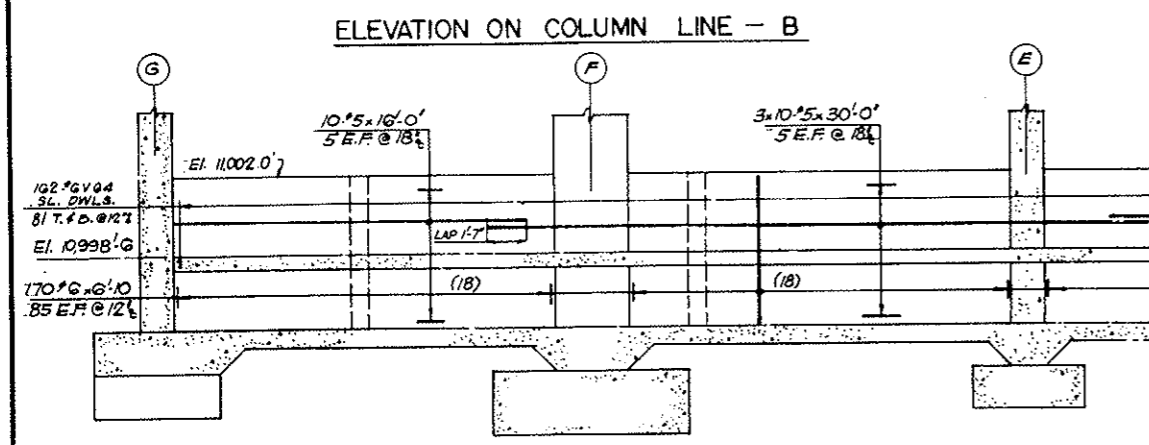


SECTION B-B

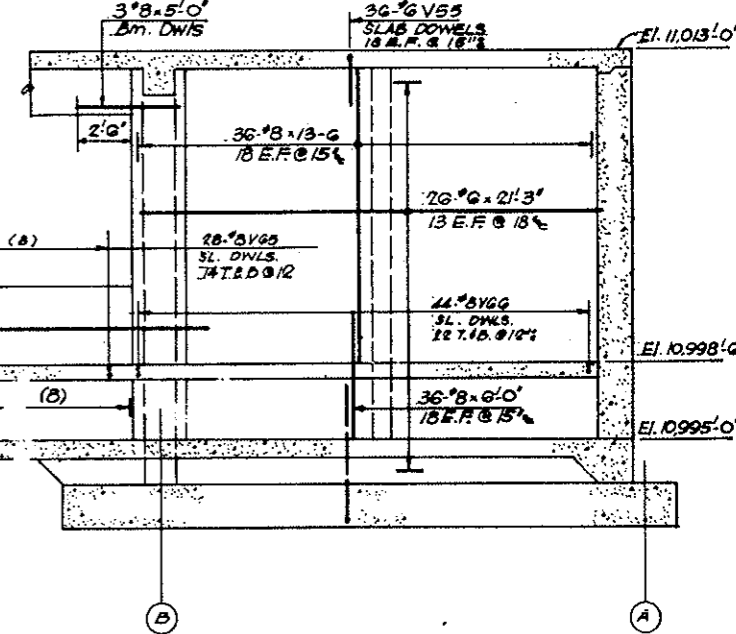


SECTION C-C

BENDING DETAILS														
No	Size	lgth	Mark	Type	A	B	C	D	E	F	G	H	K	J
66	9	19-10	V 50	17		2-0	17-10							
16	5	37-3	51	17		9	36-8							
50	6	19-10	52	17		2-0	17-10							
24	6	33-1	53	17		9	32-4							
19	5	36-3	V 54	17		1-7	36-8							
36	6	5-4	55	17		2-0	3-4							
22	6	5-1	56	17		2-0	3-1							
97	3	5-4	57	17	4	1-2	1-2	1-2	1-2			4		
39	6	5-4	V 58	17		2-0	3-4							
32	6	6-3	59	4		5-3	1-0					8	8	
44	3	13-4	60	17	4	3-2	3-2	3-2	3-2			4		
66	3	9-5	61	17	4	1-2	3-2	1-2	3-2			4		
22	3	11-1	V 62	17	4	2-6	2-8	2-6	2-8			4		
11	3	4-0	63	1	5	3-8						5		
182	6	3-6	64	17		10	2-8							
28	8	4-6	65	17		1-2	3-4							
44	8	5-2	66	17		1-2	4-0							



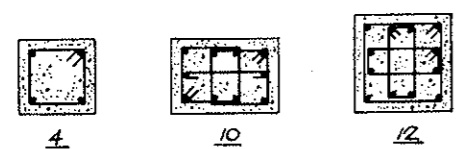
ELEVATION ON COLUMN LINE - 8



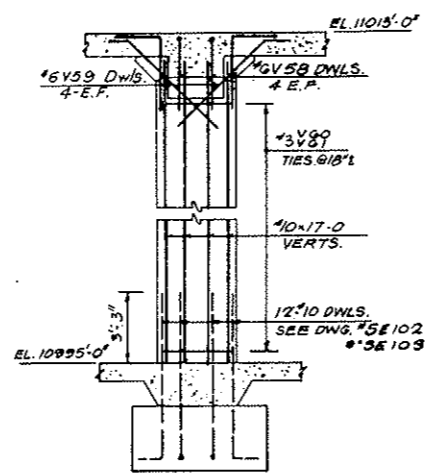
All Dims out to out.

STRAIGHT BAR LIST					
NO	SIZE	LGTH	NO	SIZE	LGTH
10	#10	7-3	26	#	21-3
48	#10	7-0	170	#	6-10
12	#9	17-3	30	#	30-0
20	#9	17-0	10	#3	16-0
4	#9	13-6			
36	#8	13-6			
36	#8	6-0			
7	#8	5-0			

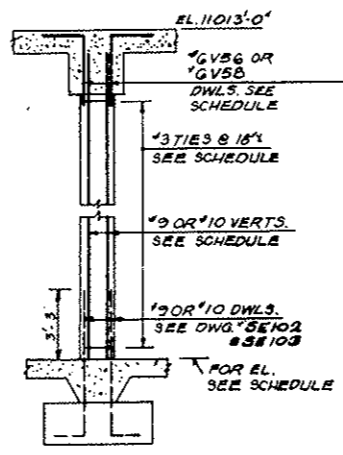
INTERIOR BUTTRESS AND COLUMN SCHEDULE						
Column Nos	C4e, C5 CB.	D4e, E4e, F4e, E5, E8	D5, F5	D8, F8	B6'	B8a.
No Reqd.	3	5	2	2	1	1
Elev. Top	11,012'-3	11,012'-0	11,012'-0	11,012'-0	11,012'-3	11,012'-0
Butt. Size	18x18 (CB)	18x18 (CB)	42x42	42x42	36x48	18x18
Column Size	18x18 (CB)	18x18 (CB)	42x42	42x42	36x48	18x18
Dwls to slab	4#G V56	4#G V58	8#G V58	8#G V58	10#G V56	4#G V58
Verticals	4#9 V17-3	4#9 V17-0	12#10 V17-0	12#10 V17-0	10#10 V17-3	4#9 V13-6
Ties @ 18"	11#3 V57	11#3 V57	2#11 V61	2#11 V61	2#11 V62	9#3 V57
Sketch	4	4	12	12	10	4
Color Butt Start	10,995'-0	10,995'-0	10,995'-0	10,995'-0	10,995'-0	10,998'-6



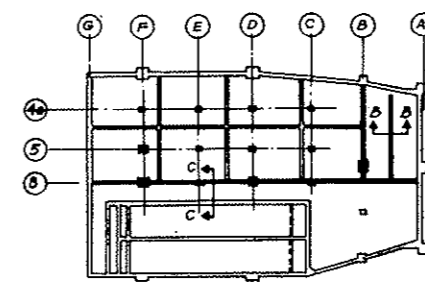
Buttress or Column Sketches



DETAIL AT COLS D5, F5, D8, F8.



TYPICAL BUTTRESS OR COLUMN DETAIL



KEY PLAN

NOTE
1. For Dowels from Basement slab see DWG NO SE 102 & SE 103
For balance of interior walls see DWG NO SE 110 & SE 111

NO	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

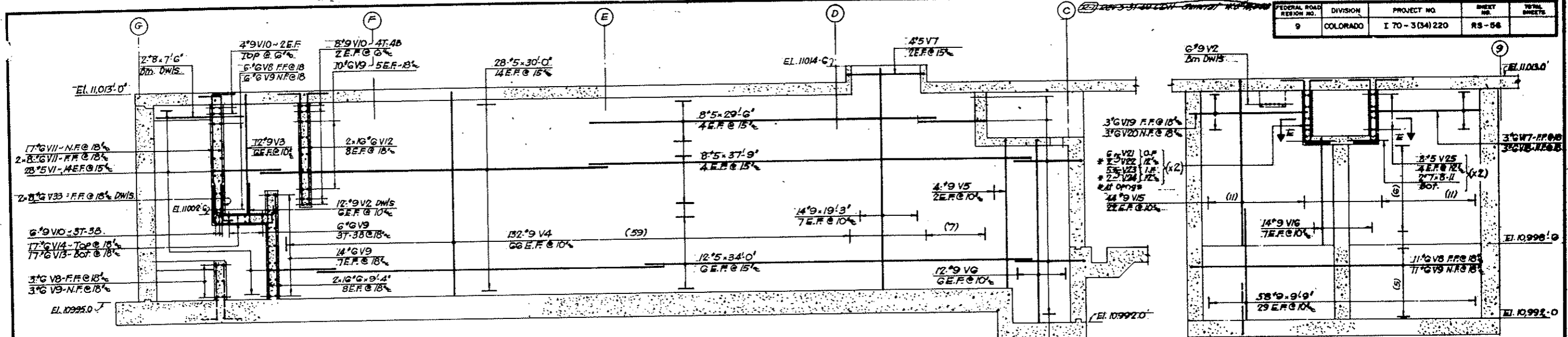
STRUCTURAL REINFORCEMENT
EAST VENTILATION BUILDING
BASEMENT-INTERIOR WALLS
SHEET I

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

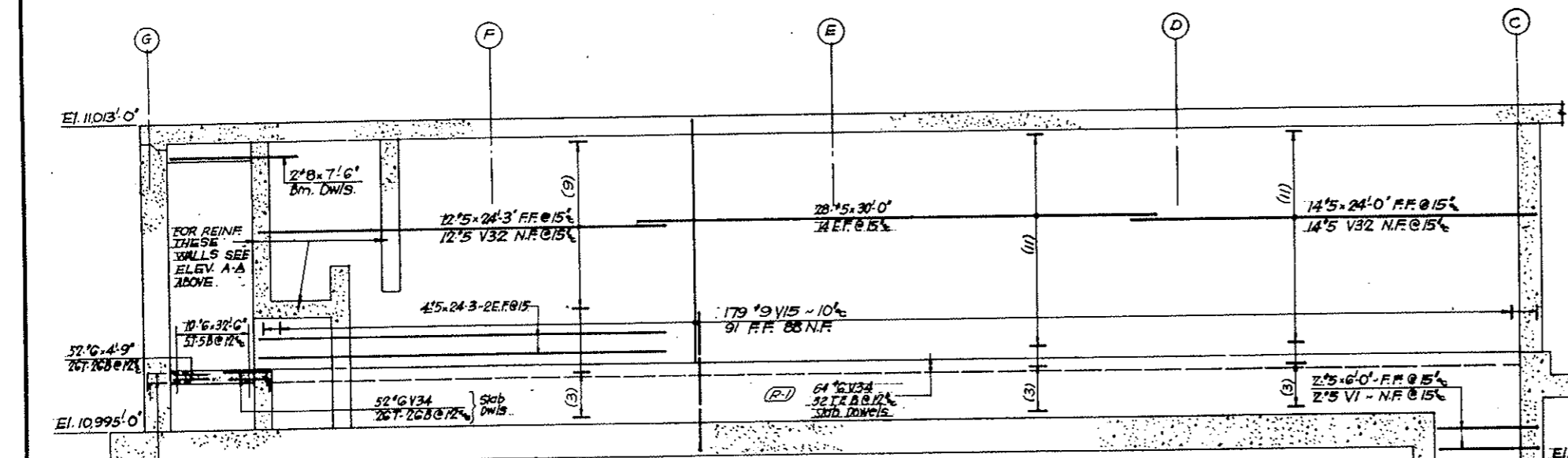
DESIGNED: E. N.
DRAWN: M. B.
CHECKED: F. K.
SUBMITTED: J. R.
APPROVED: J. R.

SCALE: 1/4" = 1'-0"
DATE: JAN. 1968

DRAWING NO. S-E109



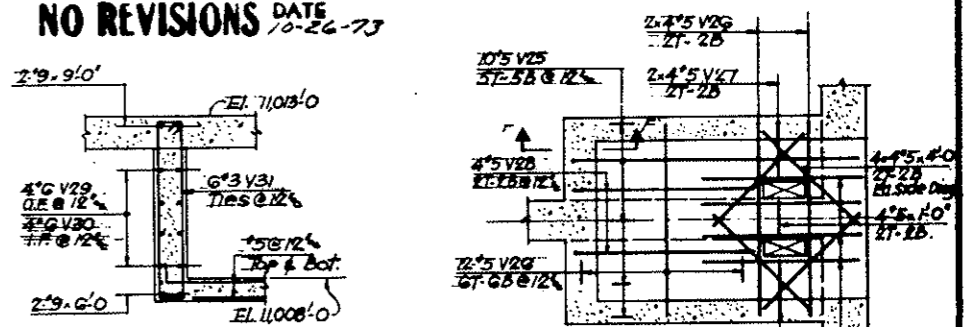
ELEVATION A-A



ELEVATION C-C

**AS CONSTRUCTED
NO REVISIONS** DATE 10-26-73

ELEVATION B-B



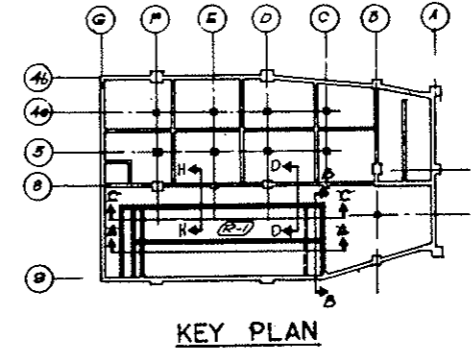
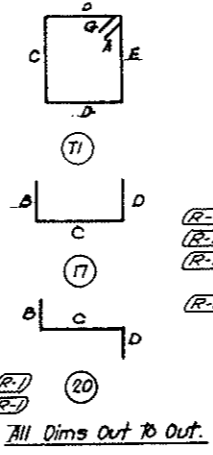
SECTION F-F

PLAN SECTION E-E
SLAB AT ELEV. 11008'0"

- NOTES**
1. For Dowels from Basement slab see Dwg No. SE-102 & SE-103
 2. For Balance of Interior walls - see Drawing No. SE-100 & SE-111
 3. For Sect. H-H & Pipe Trench Details see Dwg. #5-E-111 (R-7)

BENDING DETAILS										
No	Size	Length	Mark	Type	A	B	C	D	E	F
22	5	6-9	V 1	17		9	6-0			
18	9	5-6	2	17	1-4	4-2				
12	9	12-4	3	17	2-0	10-4				
132	9	19-10	4	17	2-0	17-10				
4	9	14-10	V 5	17	2-0	12-10				
12	9	17-10	G	17	2-0	15-10				
4	5	8-2	7	17	0-9	6-8	0-9			
20	G	27-2	8	17	1-11	25-3				
50	G	26-1	V 9	17	0-10	25-3				
18	9	26-7	10	17	1-4	25-3				
33	G	12-4	11	17	2-0	10-4				
32	G	11-8	12	17	2-0	9-8				
17	G	9-6	V 13	17	3-4	5-2	1-0			
17	G	7-2	14	17	1-0	5-2	1-0			
13	9	16-4	15	17	2-0	14-4				
14	9	11-4	16	17	2-0	9-4				
3	G	11-4	V 17	17	1-11	9-5				
3	G	10-3	18	17	0-10	9-5				
3	G	14-5	19	17	1-11	10-7	1-11			

STRAIGHT BAR LIST										
No	Size	Length	Mark	Type	A	B	C	D	E	F
3	6	12-3	V 20	17	0-10	10-7	0-10			
14	9	19-3			2-0	5-4	2-0			
58		9-9			2		6-0			
2	9	9-0			16		4-0			
2	9	6-0			16		4-0			
4	8	7-6			4	5	1-0			
4	7	8-11			16	6	24-0			
24	6	32-6			5	5	1-9			
5	5	3-0			8	5	3-10			
32		9-4			6	5	5-0			
64		7-0			8	5	6-10			
52	6	4-9								
8	5	37-9								
12		34-0								
56		30-0								
8		29-6								
16	5	24-3								



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
BASEMENT INTERIOR WALLS**

SHEET 2

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E. M. GRADY, P. E.
CHECKED: R. E. BURDETTE, P. E.
SUBMITTED: Paul R. Kelly

RECOMMENDED: J. J. Kelly
APPROVED: Paul R. Kelly

SCALE: 3/8" = 1'-0" DATE: JAN. 1968

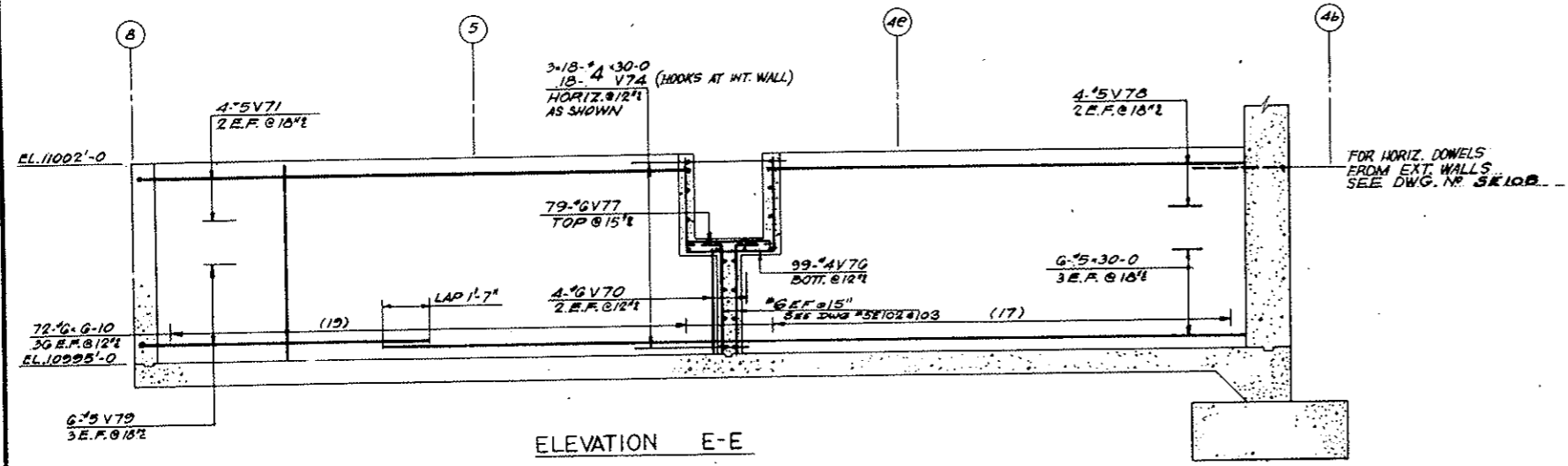
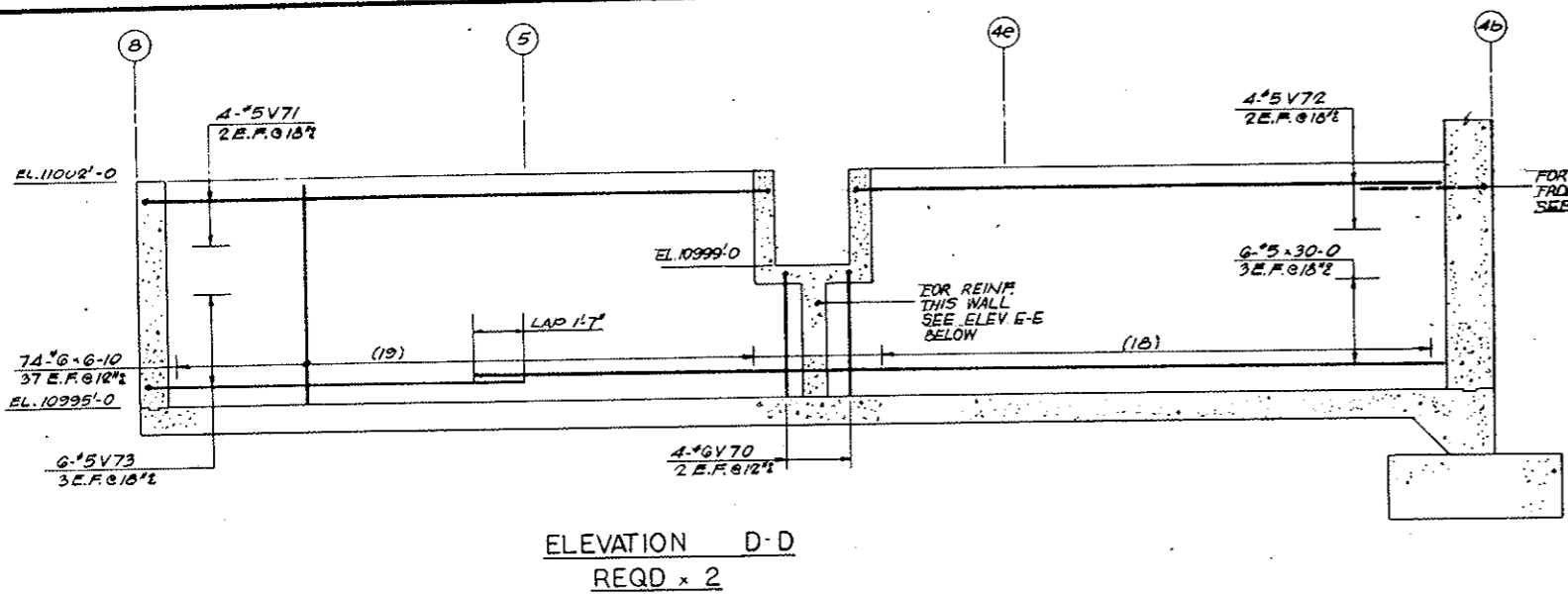
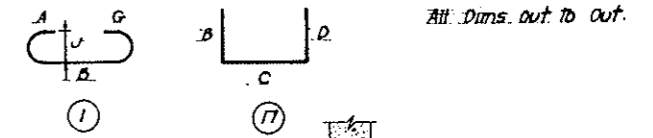
DRAWING NO. S-E-110

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

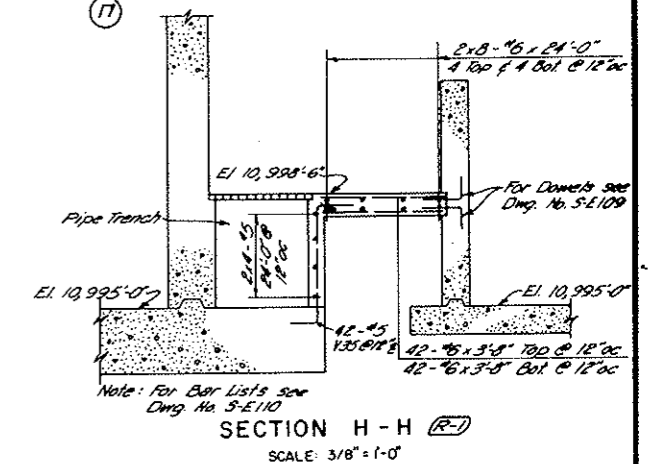
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-57	

(R-1) Rev. 5-31-69 CDH Added Sect. N-N & J-J W.D. #10493

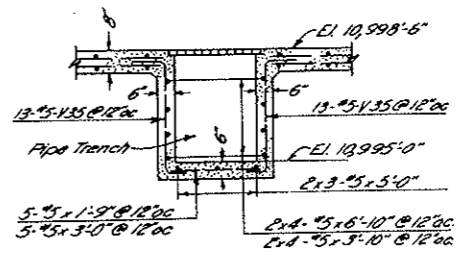
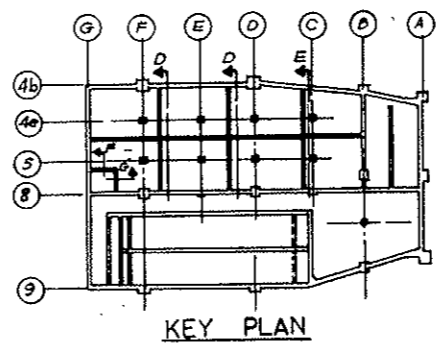
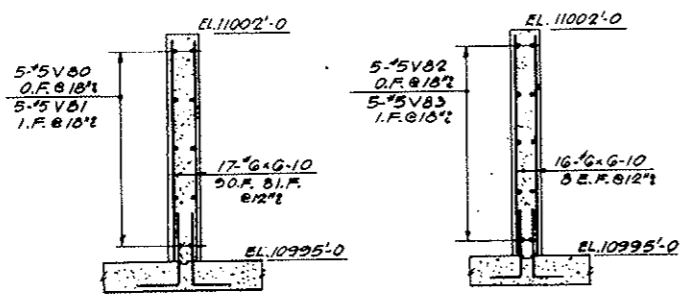
BENDING DETAILS															
NO.	SIZE	LGTH.	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
12	1/2	5-10	V70	17		2-0	3-10								
12	5	20-9	71	17		9	12-3	9							
8	5	13-8	72	17		9	17-11								
12	5	12-6	73	17		9	11-9								
18	4	13-6	74	17		7	12-11								
99	4	9-7	V76	17		3-3	3-1	3-3							
79	6	4-6	72	1	5	3-2									4
4	5	17-2	76	17		9	16-5								
6	5	11-0	79	17		9	10-3								
5	5	10-2	V80	17		1-7	8-7								
5	5	9-4	81	17		9	8-7								
5	5	10-1	82	17		9	9-4								
5	5	10-10	83	17		9	9-4	9							



STRAIGHT BAR LIST		
NO.	SIZE	LGTH.
253	#6	6-10
18	#5	30-0
34	#4	30-0



- NOTES:
- For Dowels from Basement slab see DWG. NO SE102 & SE103
 - For Balance of Interior walls see DWG. NO SE109 & SE110



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL REINFORCEMENT
EAST VENTILATION BUILDING
BASEMENT-INTERIOR WALLS
 SHEET 3

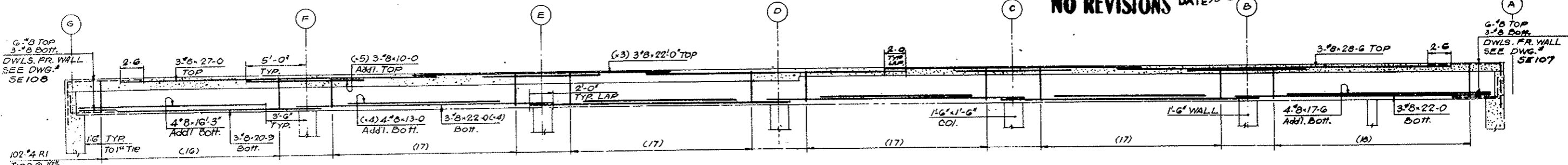
TIPPETTS-ABBETT-McCARTHY-STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E. M.
 DRAWN: R. E.
 CHECKED: S. M.
 SUBMITTED: P. M.
 APPROVED: Frank H. Kelly
 SCALE: 3/8" = 1'-0" DATE: JAN. 1968

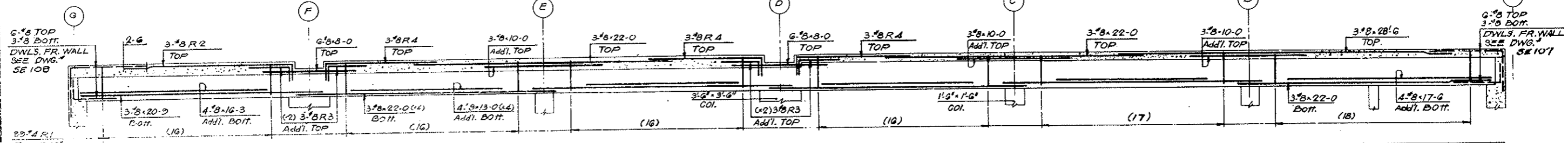
DRAWING NO. S-E111

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-58	

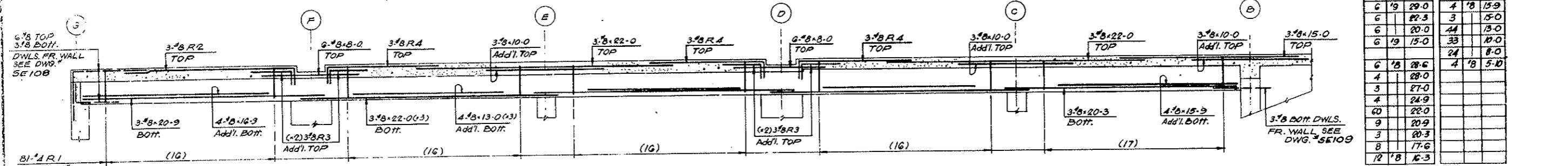
AS CONSTRUCTED
NO REVISIONS DATE 10-24-73



ELEVATION OF 30x36 BEAM B1 (Along column line 4e)

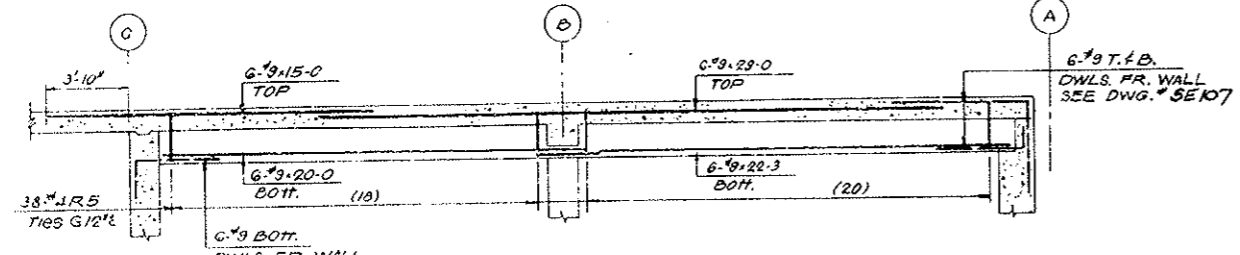


ELEVATION OF 30x36 BEAM B1a (Along column line 5)

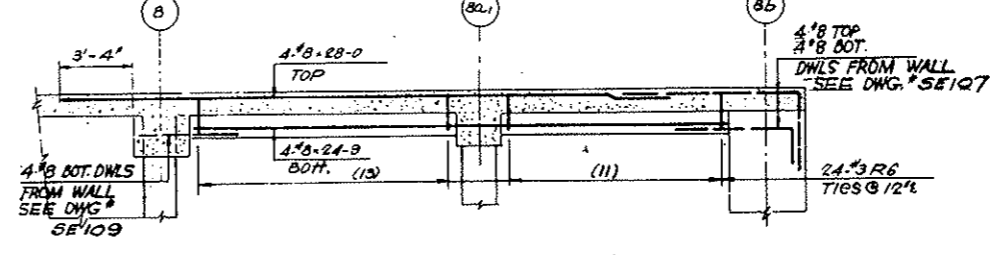


ELEVATION OF 30x36 BEAM B1b (Along column line 8)

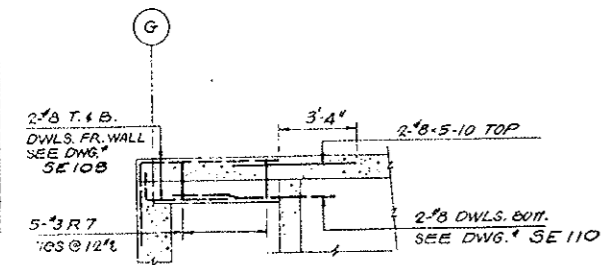
NO.	SIZE	LGTH	NO.	SIZE	LGTH
6	#9	29-0	4	#8	15-9
6	#9	27-3	3	#8	15-0
6	#9	20-0	44	#8	13-0
6	#9	15-0	33	#8	10-0
6	#8	28-6	24	#8	8-0
4	#8	28-0			
3	#8	27-0			
4	#8	24-9			
60	#8	22-0			
9	#8	20-9			
3	#8	20-3			
8	#8	17-6			
12	#8	16-3			



ELEVATION OF 24x30 BEAM B2 (Along column line 8a')



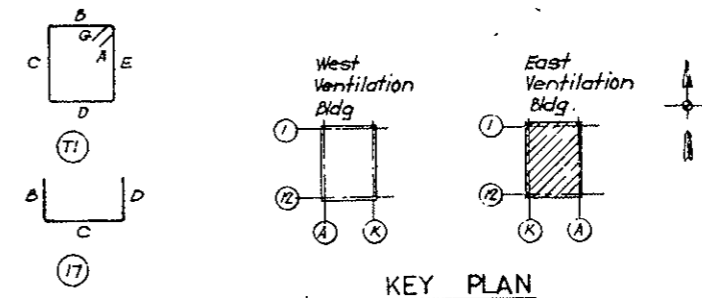
ELEVATION OF 18x24 BEAM B3 (Along col. line B)



ELEV. OF 15x24 BEAM B4
 REGD x 2

NOS	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	L	J
282	#4	10-9	R1	T1	4	2-3	2-9	2-3	2-9		4				
6	#8	16-0	2	T1		1-5	14-7								
24	#8	5-0	3	T1		1-5	3-7								
18	#8	11-0	4	T1		1-5	9-7								
38	#4	8-9	5	T1	4	1-9	2-3	1-9	2-3		4				
24	#3	6-8	6	T1	4	1-3	1-9	1-3	1-9		4				
10	#3	6-2	7	T1	4	1-0	1-9	1-0	1-9		4				

All dims out to out



- NOTES**
- For Roadway Slab bottom Bars see Drawing No SE113
 - For Roadway Slab Top Bars see Drawing No SE114 & SE115

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING ROADWAY FLOOR SLAB OVER BASEMENT BEAMS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E.M.	RECOMMENDED: H.R. Meyer	DRAWING NO. S-E112			
DRAWN: R.E.	CHECKED: S.M.	SCALE: 1/4" = 1'-0"			
SUBMITTED: Paul Radym	APPROVED: Frank Kelly	DATE: JAN 1968			
NEW YORK, N. Y.					

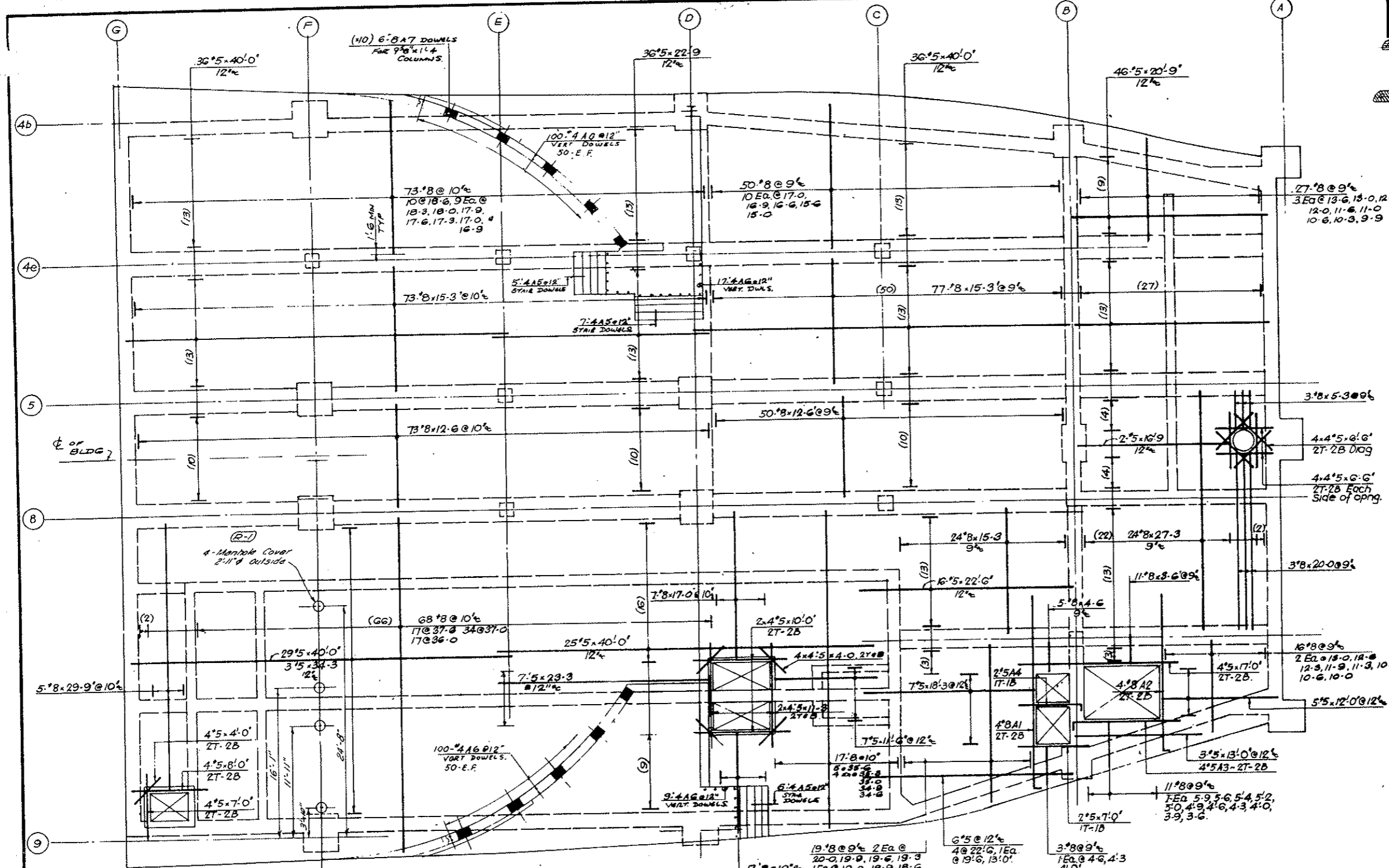
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	RS-59	

STRAIGHT BAR LIST

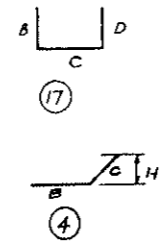
NO#	SIZE	LGTH	NO#	SIZE	LGTH	NO#	SIZE	LGTH
19	7/8	37-6	128	1/8	12-6	46	1/2	20-9
34		37-0	2	1	12-3	7	1	18-3
17		36-0	3		12-0	4		17-0
5		35-6	2		11-9	2		16-9
4		35-3	3		11-6	4		15-0
4		35-0	6		11-3	5		12-0
4		34-9	6		11-0	7		11-6
4		34-6	2		10-9	8		11-3
5		29-9	5		10-6	8		10-0
24		27-3	3		10-3	4		8-0
5		20-0	2		10-0	6		7-0
2		19-9	3		9-9	32		6-6
2		19-6	1		5-9	20		4-0
2		19-3	1		5-6	1	5	19-6
1		18-0	1		5-4	11	15	18-0
1		18-9	1		5-2	9	15	19-0
11		18-6	1		5-0	2	15	13-3
10		18-3	1		4-9	36	15	5-0
10		18-0	7		4-6	4	15	8-0
11		17-9	2		4-3	2	11	5-6
10		17-6	2		4-0	2	18	6-0
10		17-3	1		3-9	2	18	8-6
27		17-0	12		3-6			
20		16-9	3	1/8	5-3			
10		16-6						
10		15-6	3	1/2	34-3			
10		15-0	126		40-0			
174		15-3	7		23-3			
3		13-6	36		22-9			
5	1/8	13-0	20	1/2	22-6			

AS CONSTRUCTED
NO REVISIONS DATE 11-26-73

- NOTES**
- For Roadway Slab Beams see Drawing No SE 112
 - For Roadway Slab Top Bars see Drawing No SE 114 + SE 115
 - For Car Enclosure walls and stairs see Dwg. S-161.



BENDING		DETAILS									
NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	H
4	8	22-0	A1	17	1-0	21-0					
4	8	18-0	2	17	1-0	17-0					
4	5	12-3	3	17	9	11-6					
2	5	7-6	4	17	9	6-9					
18	4	3-6	5	4	2-6	1-0					
226	4	2-9	A6	17	7	2-2					
60	8	4-7	7	17	1-2	3-5					



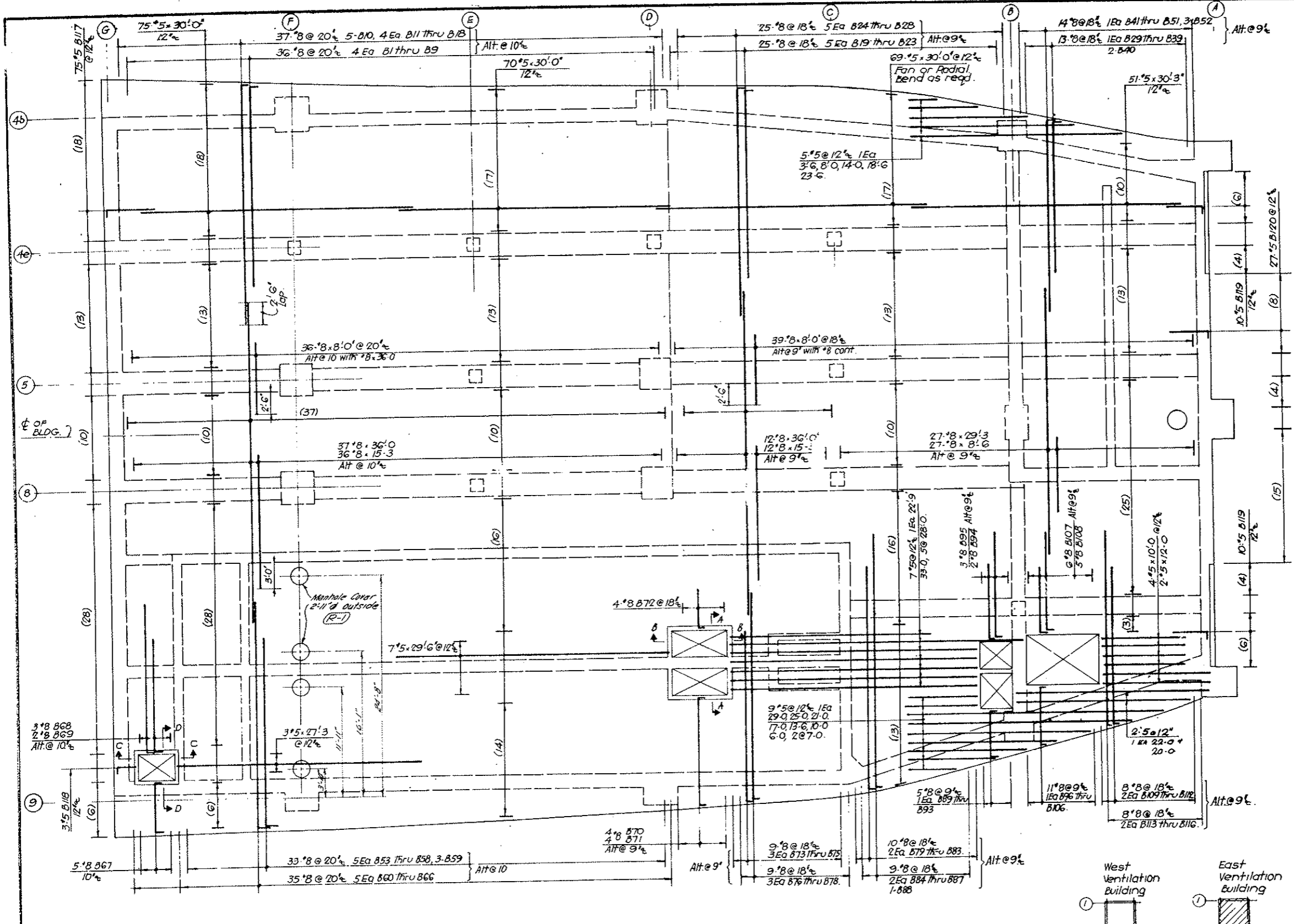
PLAN OF BOTTOM BARS ROADWAY SLAB OVER BSMT.

All Dims out to out.

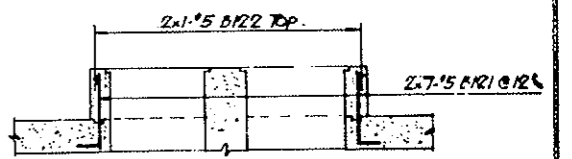
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING ROADWAY FLOOR SLAB OVER BASEMENT BOTTOM BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	E. M.	CHECKED BY	R. E.	APPROVED BY	<i>[Signature]</i>
SUBMITTED BY	<i>[Signature]</i>	APPROVED BY	<i>[Signature]</i>	DATE	JAN 1968
				SCALE	3/16" = 1'-0"
				DATE	JAN 1968
					DRAWING NO. S-E113

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RS-60	

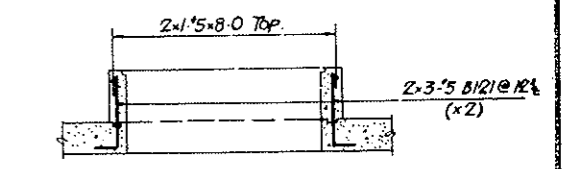
(R-1) 5-31-69 CDH Added Manholes W/O 10/105



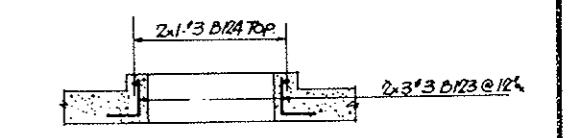
PLAN OF TOP BARS ROADWAY SLAB OVER BSMT.



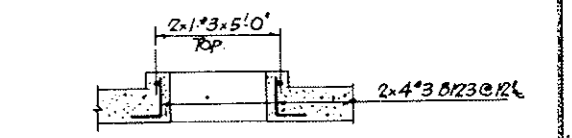
SECTION A-A



SECTION B-B



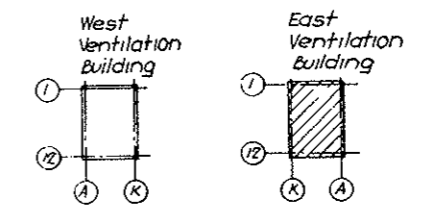
SECTION C-C



SECTION D-D

- NOTES
- For Bottom bars, and additional Top and Bottom bars at openings see Drawing No SE113
 - For Bending Details and straight Bar List see Drawing No SE115
 - For Beams see Drawing No SE112

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING ROADWAY FLOOR SLAB OVER BASEMENT TOP BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E.M.	DRAWN: A.E.		CHECKED: S.M.		
SUBMITTED: Paul S. ...		APPROVED: Frank ...		DRAWING NO. S-E114	
NEW YORK, N. Y.		SCALE: 3/8" = 1'-0"		DATE: JAN 1968	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-61	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

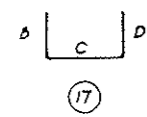
BENDING DETAILS

NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
4	#8	24-8	B 1	17		1-2	23-6								
4		24-5	2			1-2	23-3								
4		24-1	3			1-2	22-11								
4		23-10	4			1-2	22-8								
4		23-6	5			1-2	22-4								
4	#8	23-3	B 6			1-2	22-1								
4		23-1	7			1-2	21-11								
4		23-0	8			1-2	21-10								
4		22-10	9			1-2	21-8								
5		22-2	10			1-2	20-8								
4	#8	22-11	B 11	17		1-2	21-9								
4		22-7	12			1-2	21-5								
4		22-4	13			1-2	21-2								
4		22-0	14			1-2	20-10								
4		21-9	15			1-2	20-7								
4	#8	21-7	B 16			1-2	20-5								
4		21-6	17			1-2	20-4								
4		21-4	18			1-2	20-2								
5		22-11	19			1-2	21-9								
5		22-8	20			1-2	21-6								
5	#8	22-6	B 21	17		1-2	21-4								
5		21-11	22			1-2	20-9								
5		20-11	23			1-2	19-9								
5		21-5	24			1-2	20-3								
5		21-2	25			1-2	20-0								
5	#8	21-0	B 26			1-2	20-10								
5		20-5	27			1-2	20-3								
5		20-5	28			1-2	20-3								
1		19-2	29			1-2	18-0								
1		18-10	30			1-2	17-8								
1	#8	18-7	B 31	17		1-2	17-5								
1		18-4	32			1-2	17-2								
1		18-0	33			1-2	16-10								
1		17-8	34			1-2	16-6								
1		17-5	35			1-2	16-3								
1	#8	17-2	B 36			1-2	16-0								
1		16-10	37			1-2	15-8								
1		16-6	38			1-2	15-4								
1		16-2	39			1-2	15-0								
2		15-11	40			1-2	14-9								
1	#8	23-8	B 41	17		1-2	22-6								
1		23-4	42			1-2	22-2								
1		23-1	43			1-2	21-11								
1		22-10	44			1-2	21-8								
1		22-6	45			1-2	21-4								
1	#8	22-2	B 46			1-2	21-0								
1		21-11	47			1-2	20-9								
1		21-8	48			1-2	20-6								
1		21-4	49			1-2	20-2								
1		21-0	50			1-2	19-10								
1	#8	20-8	B 51	17		1-2	19-6								
3		20-5	52			1-2	19-3								
5		23-0	53			1-2	21-10								
2		22-10	54			1-2	21-8								
5		22-8	55			1-2	21-6								
5	#8	22-5	B 56			1-2	21-3								
5		22-2	57			1-2	21-0								
5		21-10	58			1-2	20-8								
3		21-5	59			1-2	20-3								
5		21-0	60			1-2	20-0								
10	#8	26-10	B 61			1-2	25-8								
5		26-8	62			1-2	25-6								
5		26-5	63			1-2	25-3								
5		26-2	64			1-2	25-0								
5	#8	25-10	B 65	17		1-2	24-8								

STRAIGHT BAR LIST

NO	SIZE	LGTH
48	#8	36-0
27		29-3
47		15-3
27		8-6
75	#8	8-0
1	#5	33-0
51		30-3
205		30-0
7		29-6
1		29-0
5		28-0
1		27-3
1		25-0
1		23-6
1		22-9
1		21-0
1		20-0
1		18-6
1		17-0
1		14-0
1		13-6
5		10-0
3		8-0
2		7-0
1		6-0
1		3-6
1		22-0
2	#5	12-0
2	#3	5-0

NOTE:
 Use This Drawing in conjunction with DWG #SE114

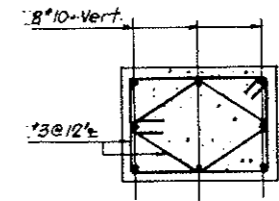


NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING ROADWAY FLOOR SLAB OVER BASEMENT SCHEDULE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E. M. DUBIN, P. E.	CHECKED: S. M. [Signature]		RECOMMENDED: [Signature]		
SUBMITTED: [Signature]	APPROVED: [Signature]		DRAWING NO. S-E 115		
NEW YORK, N. Y.		SCALE: NO SCALE		DATE: JAN. 1968	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	RS-62	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

MARK	NO REQD	SIZE	REINF. 1/2 E.W
F5	2	7.0 x 7.0 x 2'6"	22 #7 x 6'6"
F6	2	6.0 x 6.0 x 2'6"	14 #6 x 5'6"

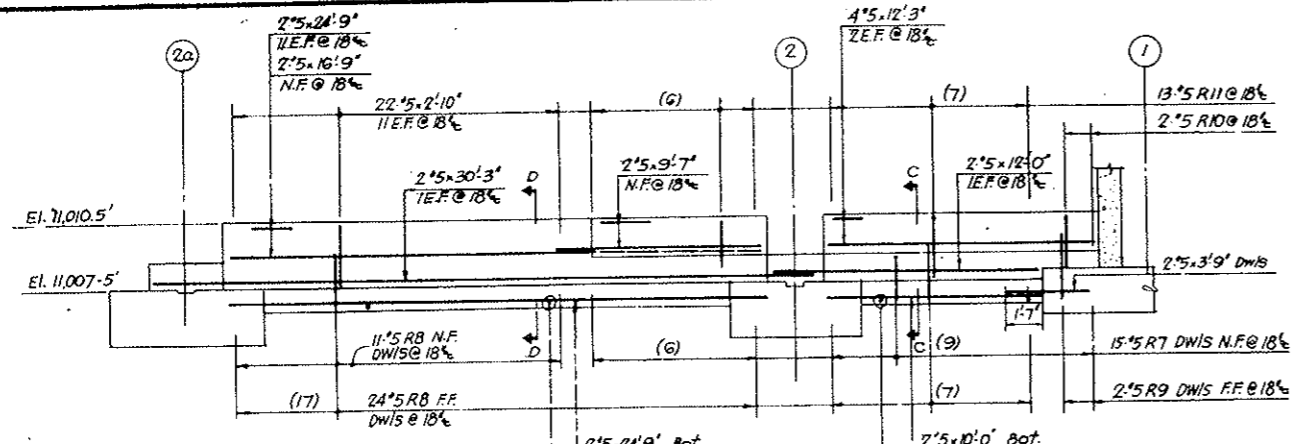


TYP PEDESTAL SECT.

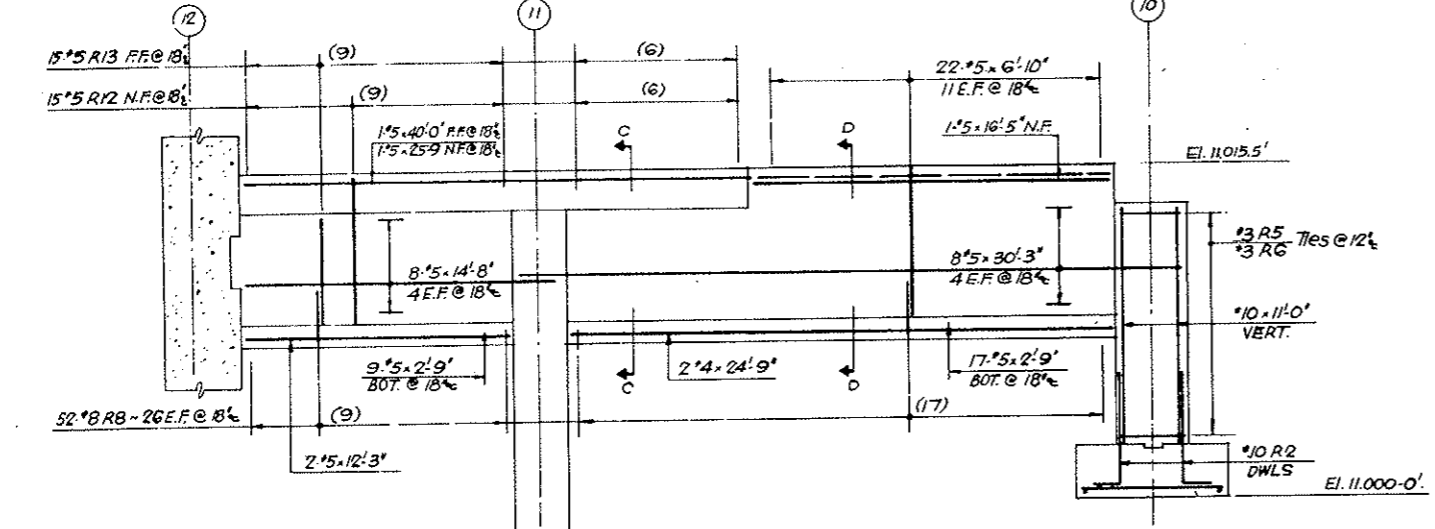
COLUMN NO	FOOTING MARK	PEDESTAL		ELEVATIONS			REINFORCING		
		SIZE	HEIGHT	BOT. FTG	TOP FTG	TOP PED	DOWELS	VERTICALS	TIES @ 12"
2A	F6	2'6" x 3'8"	1'2"	11,005.0'	11,007.5'	11,008.67'	8 #10 R1	FROM DWLS	2 #3 R3 2 #3 R4
2a.A	F5	3'4" x 3'10"	1'2"	11,005.0'	11,007.5'	11,008.67'	8 #10 R1	FROM DWLS	2 #3 R5 2 #3 R6
10-A	F5	3'4" x 3'10"	1'2"	11,000.0	11,002.5'	11,013.67'	8 #10 R2	8 #10 x 11'0"	12 #3 R5 12 #3 R6
11-A	F6	2'6" x 3'8"	2'1"2"	10,990.0	10,992.5'	11,013.67'	8 #10 R2	8 #10 x 21'0"	22 #3 R3 22 #3 R4

STRAIGHT BAR LIST

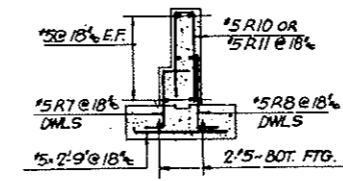
NO	SIZE	LGTH
8	#10	21-0
8	#10	11-0
44	#7	6-6
28	#6	5-6
1	#5	40-0
10	#5	30-3
1	#5	25-9
4	#5	24-9
2	#5	16-9
1	#5	16-5
8	#5	14-8
6	#5	12-3
2	#5	12-0
2	#5	10-0
2	#5	9-7
22	#5	6-10
2	#5	3-9
22	#5	2-10
47	#5	2-9
2	#4	24-9



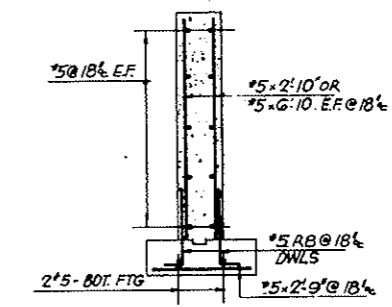
PART ELEVATION ON COL. LINE - A



PART ELEVATION ON COL. LINE - A

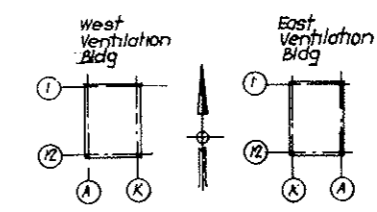
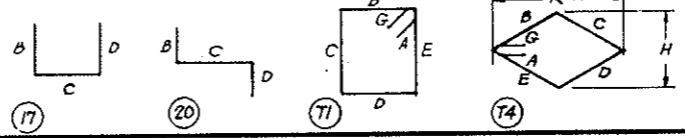


SECTION C-C



SECTION D-D

NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	Q	J
16	#10	4-9	R 1	17		1-6	3-3								
16	#10	7-0	2	17		1-6	5-6								
24	#3	11-8	3	T1	4	2-2	3-4	2-2	3-4		4				
24	#3	8-8	4	T4	4	2-0	2-0	2-0	2-0		4	2-2	3-4		
44	#3	13-8	5	T1	4	3-0	3-6	3-0	3-6		4				
14	#3	10-0	R 6	T4	4	2-4	2-4	2-4	2-4		4	3-0	3-6		
15	#5	3-6	7	20		9	1-9	1-0							
87	#5	3-0	8	17		9	2-3								
2	#5	3-6	9	17		9	2-9								
2	#5	5-3	10	17		2-4	7	2-4							
13	#5	6-1	R 11	17		2-8	7	2-10							
15	#5	6-0	12	17		1-0	5-0								
15	#5	10-1	13	17		2-8	7	6-10							



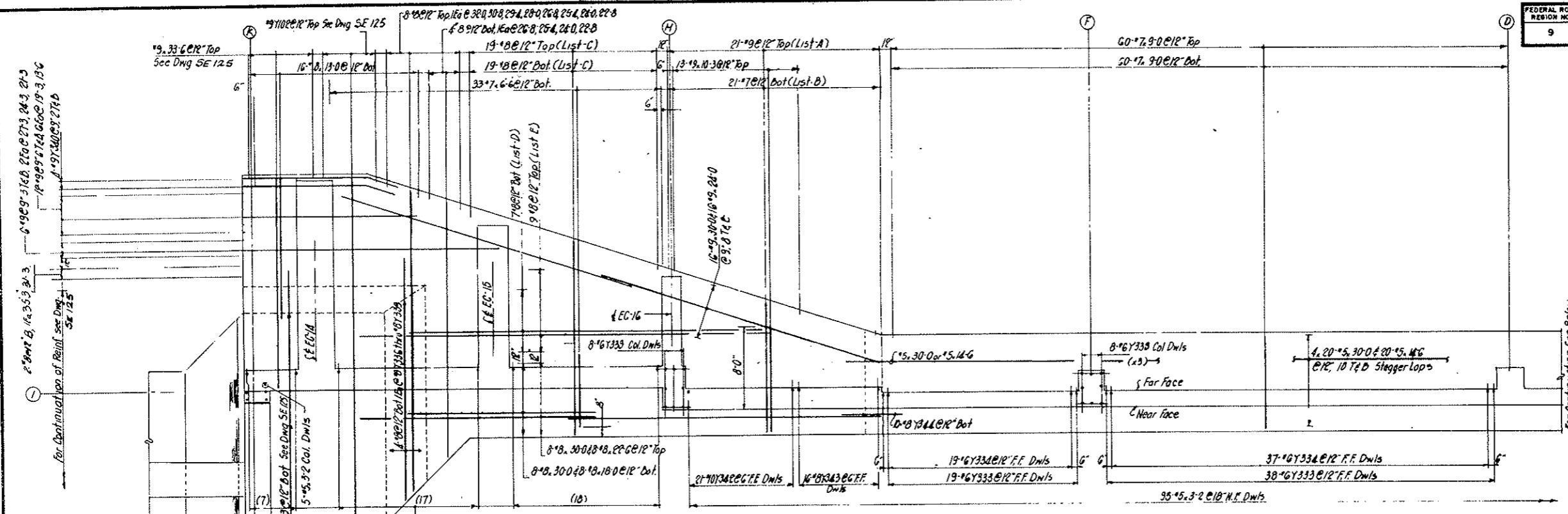
KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL REINFORCEMENT EAST VENTILATION BUILDING FRONT WALL TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	E. M.	RECOMMENDED BY	[Signature]		
DRAWN BY	M. S.	CHECKED BY	[Signature]		
SUBMITTED BY	[Signature]	APPROVED BY	[Signature]		
DRAWING NO.		S-E 116			
SCALE: 3/8" = 1'-0"		DATE: JAN 1968			

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RS-63	

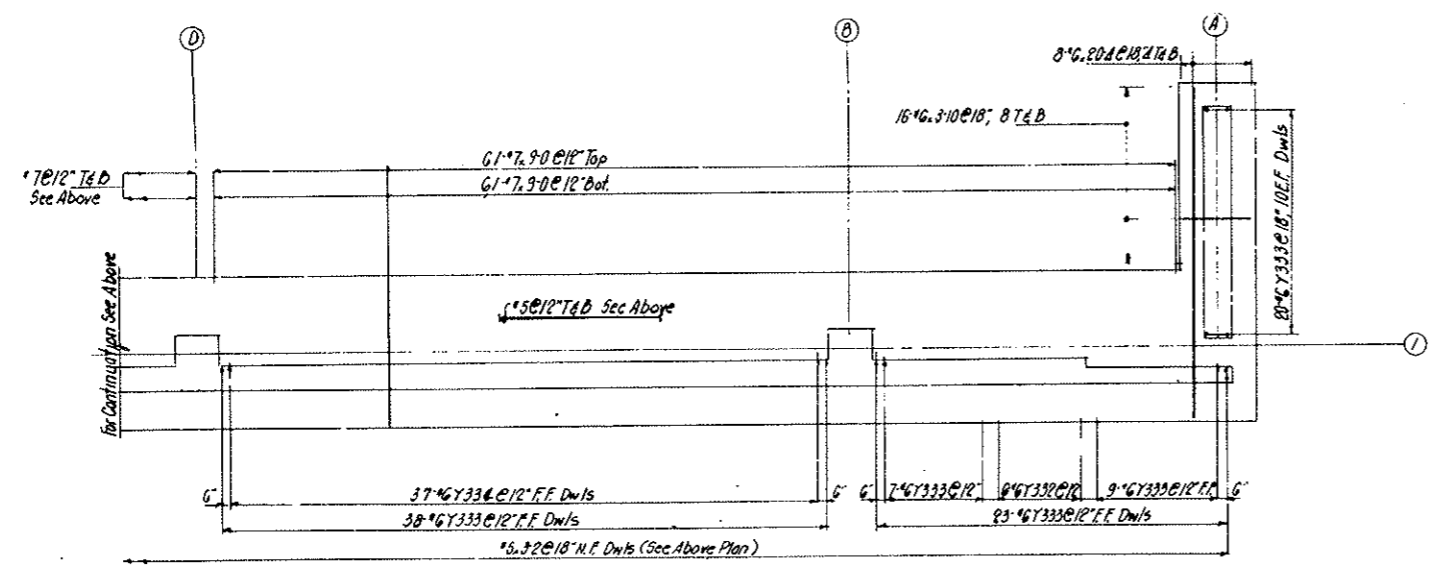
LIST-A	LIST-B	LIST-C	LIST-D	LIST-E
1-9, 15-5	1-7, 15-5	1-8, 21-9	1-8, 40-0	1-8, 44-6
15-1	15-1	21-5	36-6	41-0
14-9	14-9	21-1	33-0	37-6
14-5	14-5	20-9	29-6	34-0
14-1	14-1	20-5	26-0	30-6
13-9	13-9	20-1	22-0	27-0
13-6	13-6	19-9	1-8, 19-0	23-6
13-2	13-2	19-5		1-8, 20-0
12-10	12-10	19-1		1-8, 16-6
12-6	12-6	18-9		
12-2	12-2	18-5		
11-11	11-11	18-1		
11-7	11-7	17-9		
11-3	11-3	17-5		
10-11	10-11	17-1		
10-7	10-7	16-9		
10-4	10-4	16-5		
10-0	10-0	16-1		
9-8	9-8	1-8, 15-9		
9-4	9-4			
1-9, 9-0	1-7, 9-0			

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

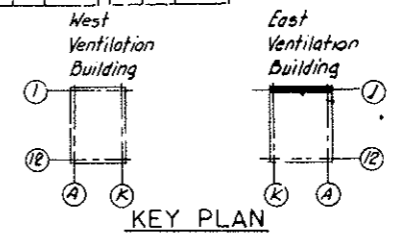


PART PLAN

STRAIGHT BAR LIST					
NO	SIZE	LGTH	NO	SIZE	LGTH
16	#9	30-0	2	#8	26-8
2		27-3	2		25-4
2		24-3	2		24-0
16		24-0	2		22-8
2		21-3	2		21-9
6		19-3	1	#8	44-6
1		15-5	1		41-0
1		15-1	1		40-0
1		14-9	1		37-6
1		14-5	1		36-6
1		14-1	1		34-0
1		13-9	1		33-0
7		13-6	1		30-6
1		13-2	16		30-0
1		12-10	1		29-6
1		12-6	1		27-0
1		12-2	1		26-0
1		11-11	1		23-6
1		11-7	9		22-6
1		11-3	1		20-0
1		10-11	1		19-0
1		10-7	8		18-0
1		10-4	1		16-6
13		10-3	16		13-0
1			1		35-3
1			1		32-0
1			1		31-3
1			1		30-8
1			1		29-4
1			1		28-0
1			1		13-6



PART PLAN



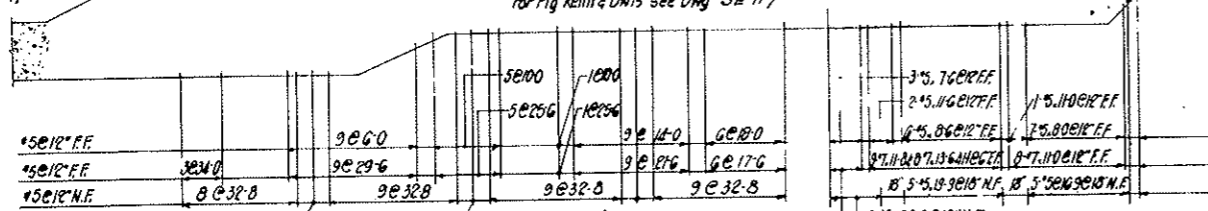
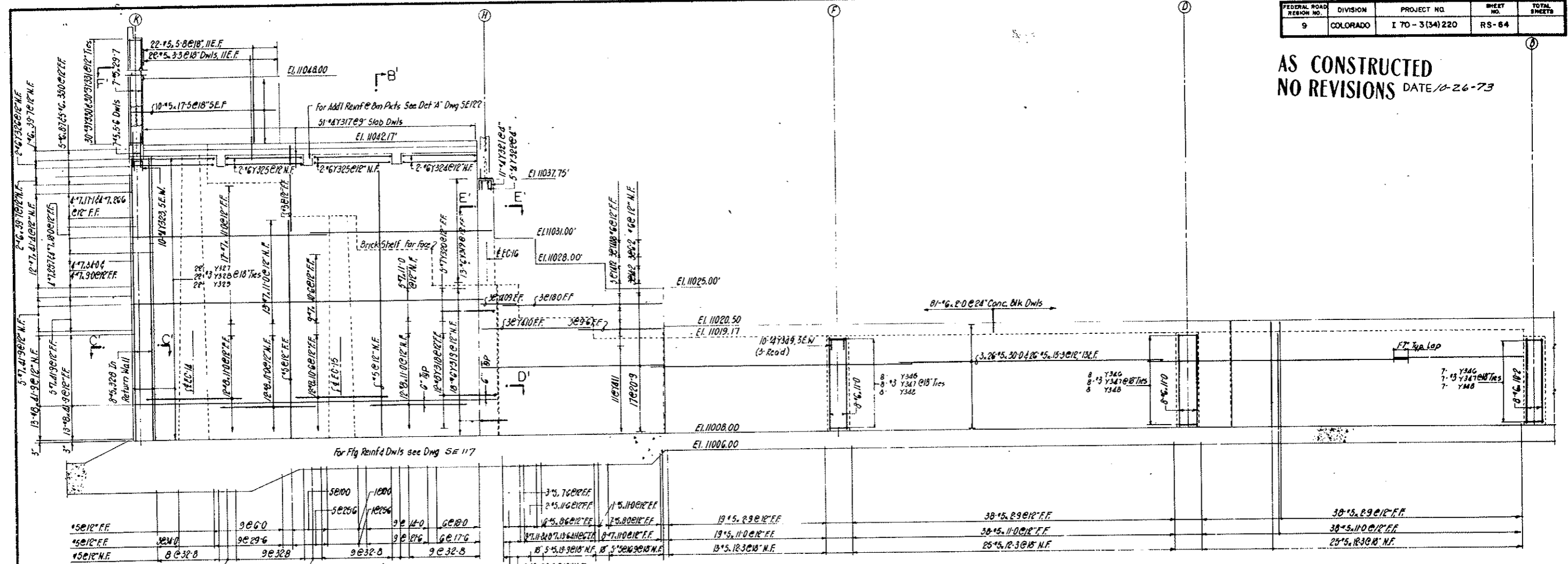
KEY PLAN

NOTES:
 For Wall Reinf. see Dwg. SE 110
 For Counterfort Reinf. see Dwg. SE 121
 For Flg. along Col. Line K see Dwg. SE 125
 For Wall & Flg. along Col. Line A see Dwg. SE 116
 For Bending Details SE 123

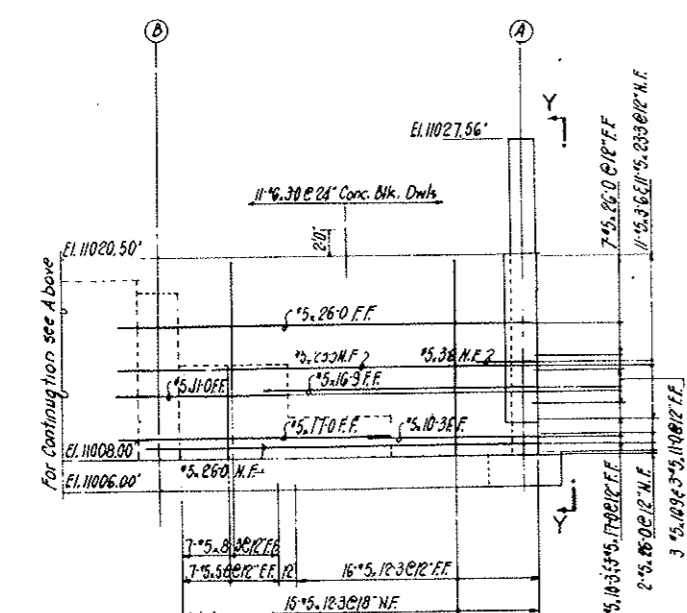
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING FOOTING - NORTH WALL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	J.V.	RECOMMENDED:	[Signature]		
CHECKED:	E.M.	APPROVED:	[Signature]		
SUBMITTED:	[Signature]				
DRAWING NO. SE 117					
SCALE: 3/16" = 1'-0" DATE: JAN. 1968					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-64	

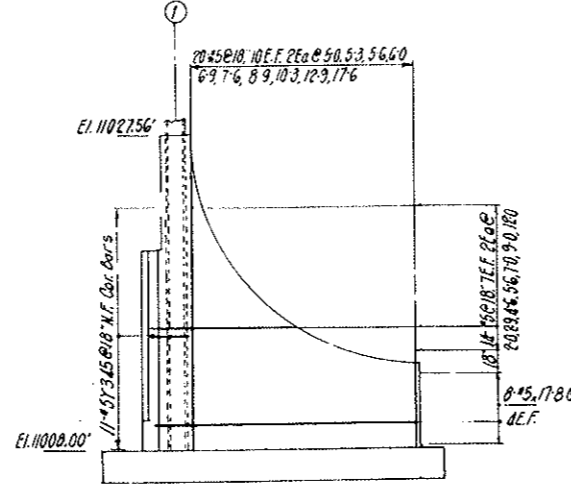
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PART ELEVATION

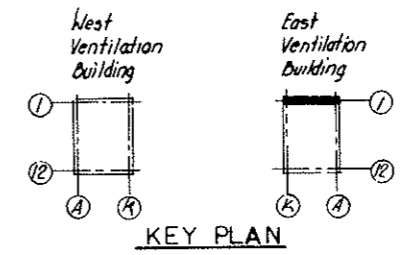


PART ELEVATION



ELEVATION Y-Y

STRAIGHT BAR LIST					
NO.	SIZE	LGTH	NO.	SIZE	LGTH
26	#8	41-9	3	#5	34-0
36	#8	11-0	13	#8	32-8
12	#8	10-6	3	#8	31-5
			78	#8	30-0
10	#7	41-9	7	#7	29-7
12	#7	41-4	9	#7	29-6
4	#8	34-0	9	#8	26-0
4	#8	26-6	6	#8	25-6
4	#8	25-7	11	#8	23-3
4	#8	18-0	3	#8	22-9
3	#7	17-6	9	#7	21-6
4	#7	17-1	2	#7	11-6
8	#8	13-6	5	#8	19-9
11	#8	11-8	6	#8	18-0
43	#8	11-0	8	#8	17-8
9	#8	10-6	16	#8	17-6
4	#7	9-0	10	#7	17-5
			3	#7	17-0
17	#6	20-9	8	#6	16-9
6	#6	14-2	26	#6	15-3
6	#6	6-2	6	#6	8-6
3	#6	39-7	9	#6	14-0
5	#6	35-0	8	#6	13-9
16	#6	11-0	2	#6	12-9
8	#6	10-2			
5	#6	8-7	24	#6	12-3
9	#5	5-0	2	#5	12-0
11	#5	3-0	99	#5	11-0
81	#6	2-0	5	#5	10-3



KEY PLAN

NOTES:
For Fig Reinf & Dws see Dwg SE 117
For Sections & Details see Dwg SE 122
For Banding Details see Dwg SE 123
For Counterfort Reinf. see Dwg SE 121

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
NORTH WALL**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: J.V.
DRAWN: J.V.
CHECKED: E.M.
SUBMITTED: Paul J. Skellern
NEW YORK, N. Y.

RECOMMENDED: H. J. Wagon
APPROVED: Paul J. Skellern

SCALE: 3/16" = 1'-0" DATE JAN. 1968

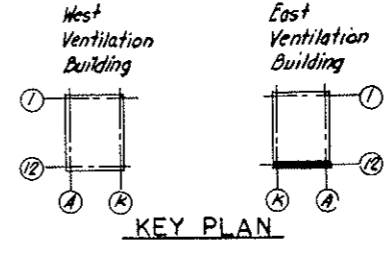
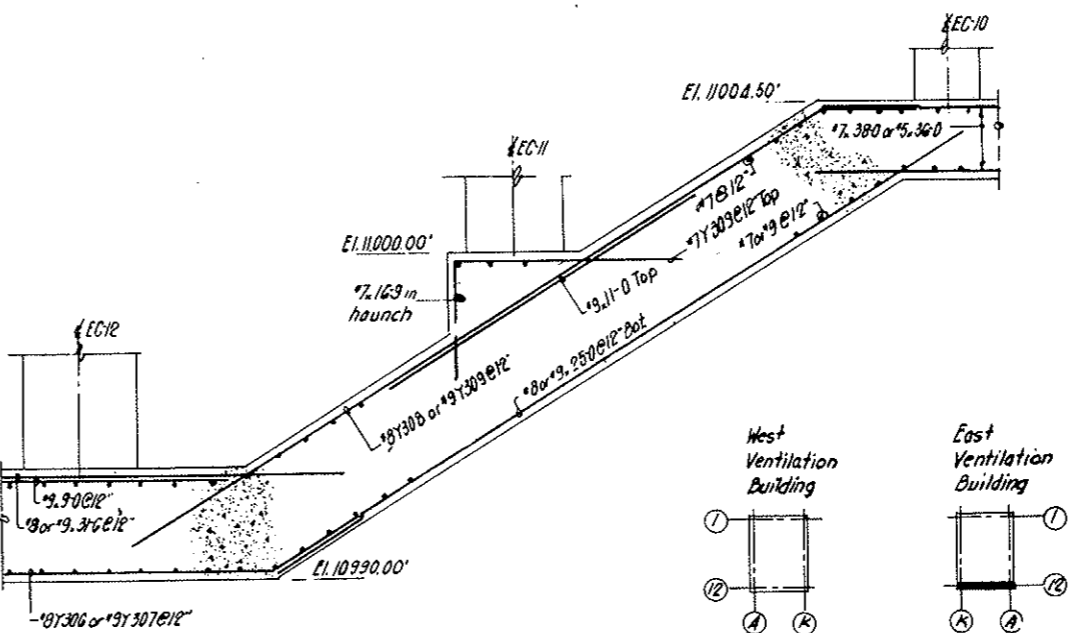
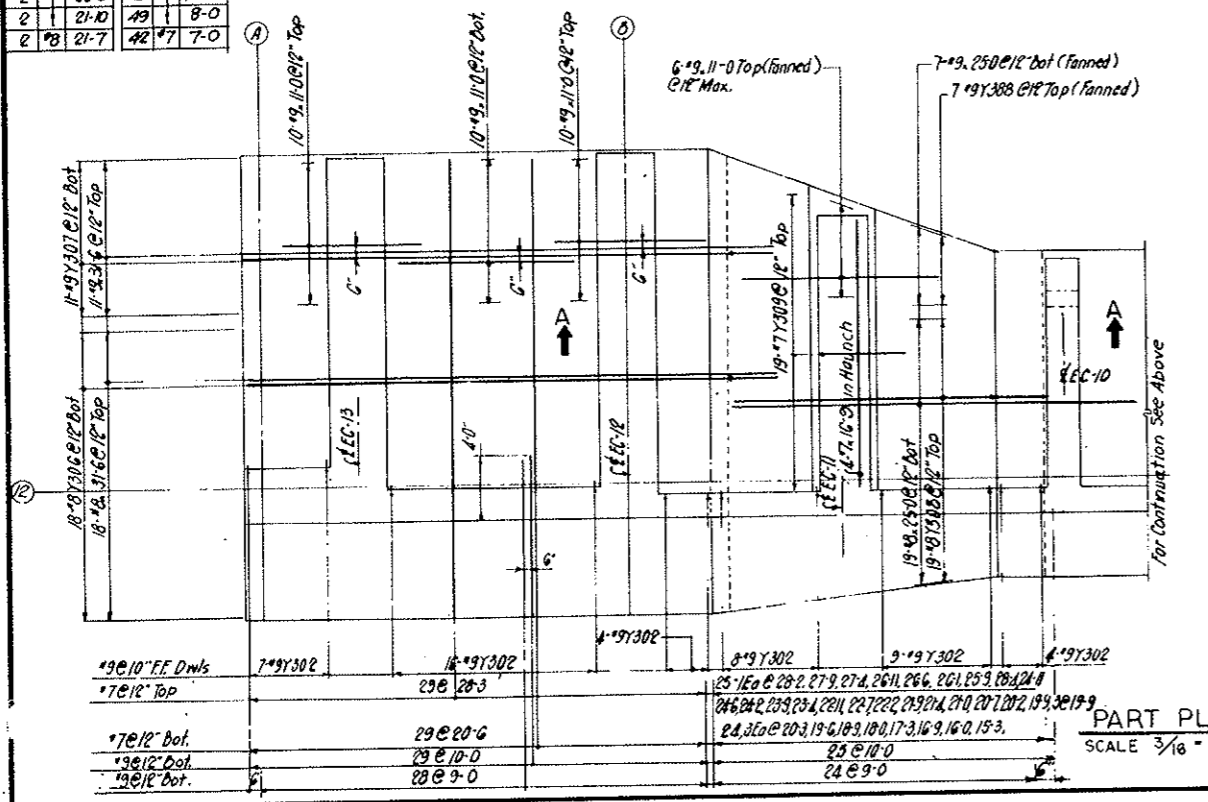
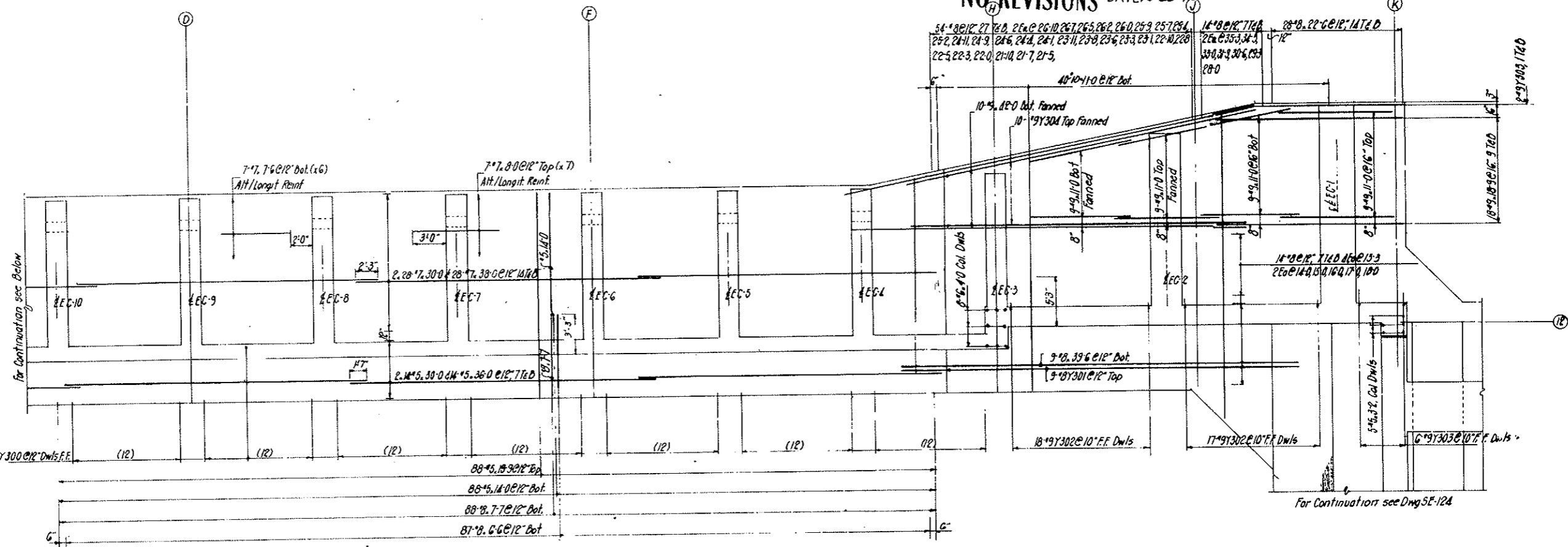
DRAWING NO. S-E 118

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS 65	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

STRAIGHT BAR LIST

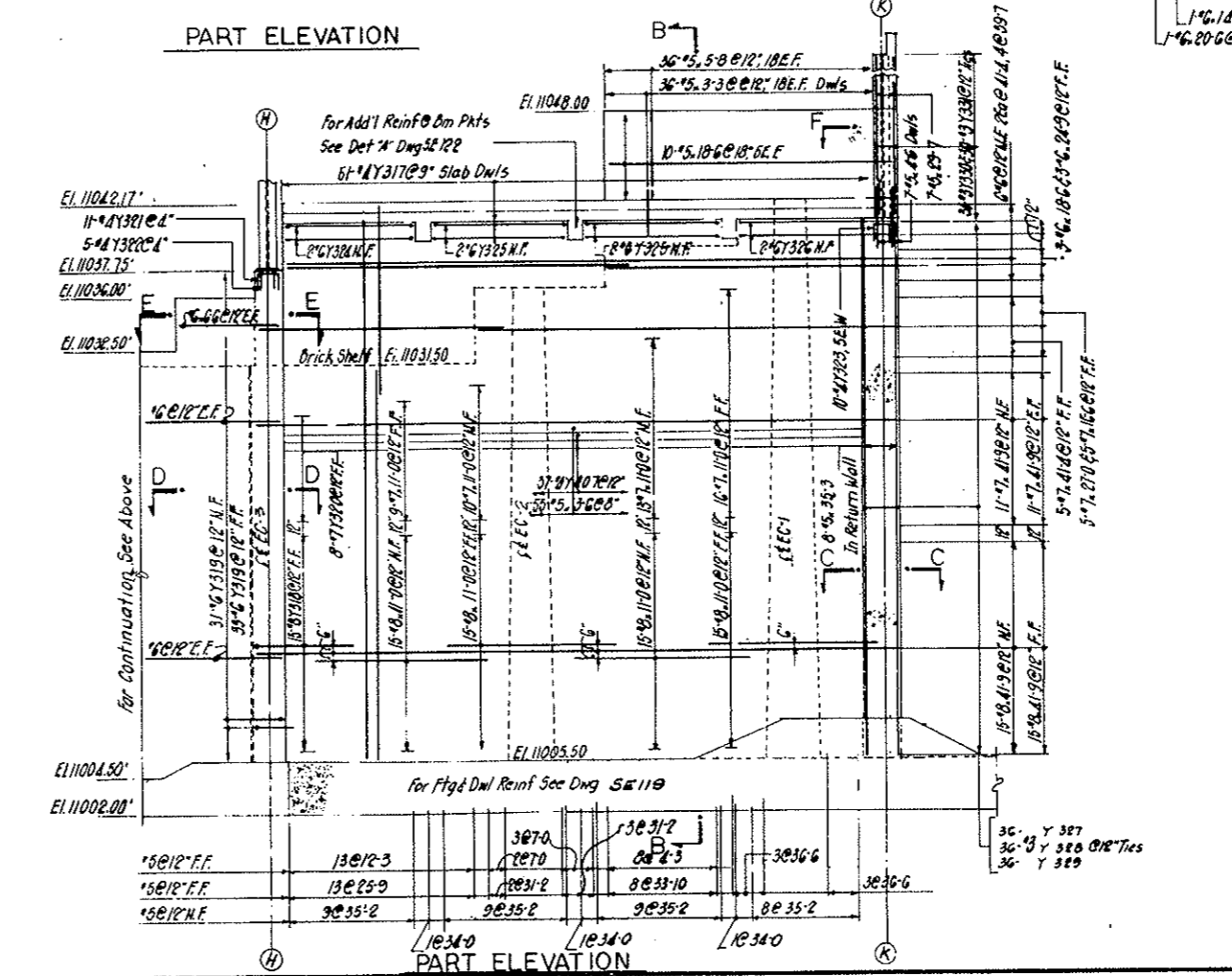
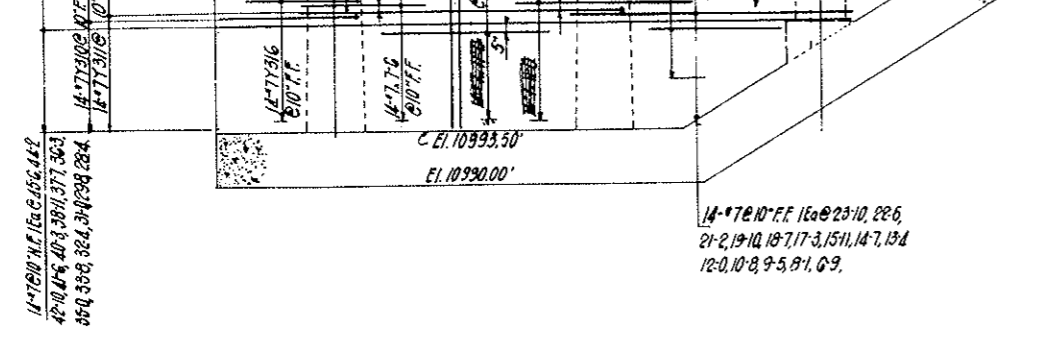
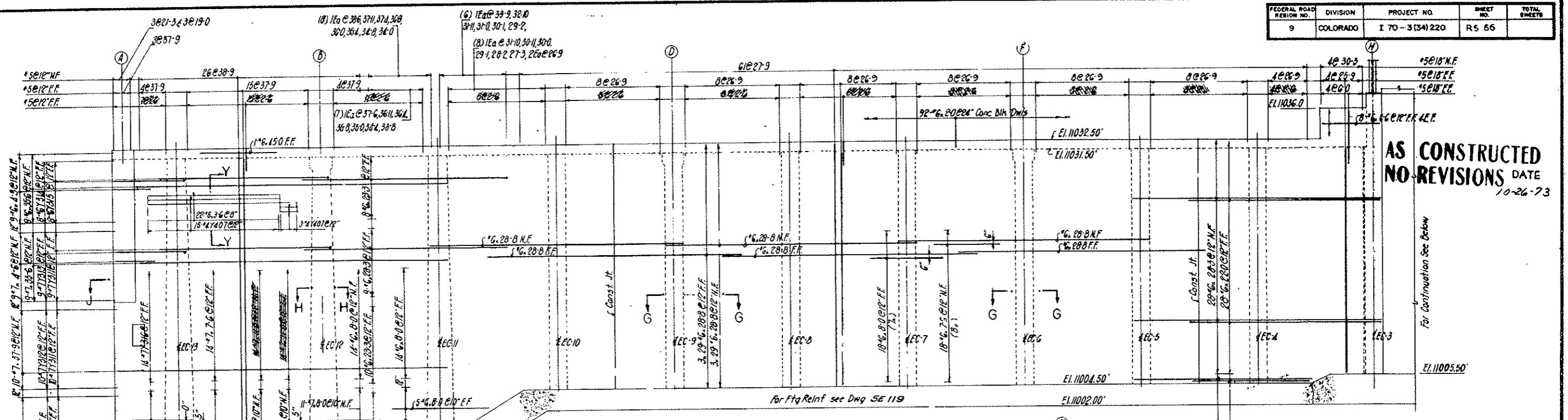
NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH
11	11-0	2	18	18-0				
7	23-0	2	14	36-0				
18	18-9	2	28	30-0				
112	11-0	2	14	36-0				
54	10-0	4	88	14-0				
52	9-0	88	5	5	3-2			
			87	8	6-6			
9	18	39-6						
2		35-3	28	17	30-0			
2		34-3	56		30-0			
2		33-0			28-4			
2		31-9	29		28-3			
18		31-6			28-2			
2		30-6			27-9			
2		29-3			27-4			
2		28-0			26-11			
2		26-10			26-6			
2		26-7			26-1			
2		26-5			25-9			
2		26-2			24-11			
2		26-0			24-6			
2		25-9			24-2			
2		25-7			23-9			
2		25-4			23-4			
2		25-2			22-11			
19		25-0			22-7			
2		24-11			22-2			
2		24-9			21-9			
2		24-6			21-4			
2		24-4			21-0			
2		24-1			20-7			
2		23-11	29		20-6			
2		23-8	3		20-3			
2		23-6	1		20-2			
2		23-3	4		19-9			
2		23-1	3		19-6			
2		22-10	3		18-9			
2		22-8	3		18-0			
28		22-6	3		17-3			
2		22-5	7		16-9			
2		22-3	3		16-0			
2		22-0	3		15-3			
2		21-10	49		8-0			
2		21-7	42		7-0			



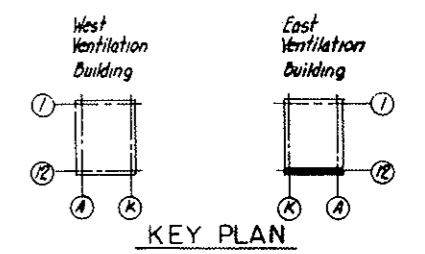
- NOTES:**
- For Wall Reinf see Dwg SE 120
 - For Counterfort Reinf see Dwg SE 121
 - For Ftg along Col Line K see Dwg SE 122
 - For Wall & Ftg along Col Line A see Dwg SE 116
 - For Bending Details See Dwg SE 123

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING FOOTING - SOUTH WALL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	J.V.	RECOMMENDED:	J.V.		
DRAWN:	J.V.	CHECKED:	J.V.		
SUBMITTED:	J.V.	APPROVED:	J.V.		
Paul Rudin			Paul Rudin		
NEW YORK, N. Y.			NEW YORK, N. Y.		
SCALE: AS SHOWN			DATE: JAN. 1968		
				DRAWING NO.	S-E 119

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	R 5 66	



NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH
30	#8	41-9	1	#7	18-7	1	#5	33-8	36	#5	3-3
60	#8	11-0	1	#7	17-3	159	#8	8-0	1	#5	32-10
			5	#6	16-6	144	#8	7-6	1	#5	31-11
			1	#6	15-11	8	#8	6-6	1	#5	31-10
			1	#6	14-7	9	#8	5-0	5	#5	31-2
1	#7	45-6	1	#6	13-4	9	#6	4-3	1	#5	31-0
1	#7	44-2	1	#6	12-0	92	#6	2-0	1	#5	30-11
22	#7	42-10	104	#6	11-0	26	#5	38-9	4	#5	30-3
1	#7	41-9	1	#6	10-8	1	#5	38-6	1	#5	30-1
1	#7	41-6	1	#6	10-8	26	#5	37-9	1	#5	30-0
5	#7	41-4	1	#6	9-5	1	#5	37-11	7	#5	29-7
1	#7	40-3	1	#6	8-1	1	#5	37-6	1	#5	29-2
1	#7	38-11	28	#6	7-6	1	#5	37-4	1	#5	29-1
10	#7	37-9	1	#6	6-9	1	#5	36-11	1	#5	28-2
1	#7	37-7	9	#7	4-6	1	#5	36-8	61	#5	27-9
1	#7	36-3	6	#6	36-6	1	#5	27-3	1	#5	27-3
9	#7	35-6	1	#6	45-0	1	#5	36-4	34	#5	26-9
1	#7	35-0	2	#6	41-4	1	#5	36-0	25	#5	25-9
1	#7	33-8	4	#6	39-7	1	#5	35-8	3	#5	21-3
1	#7	32-4	9	#6	35-6	1	#5	35-4	3	#5	19-0
1	#7	31-0	174	#6	28-8	8	#5	35-3	10	#5	18-6
1	#7	29-8	28	#6	28-3	35	#5	35-2	13	#5	12-3
1	#7	28-4	3	#6	24-9	1	#5	35-0	8	#5	8-0
5	#7	27-0	27	#6	23-3	1	#5	34-8	5	#5	7-0
1	#7	23-10	28	#6	22-0	1	#5	34-4	4	#5	6-0
1	#7	22-6	1	#6	20-6	4	#5	34-0	36	#5	5-8
1	#7	21-2	3	#6	18-6	8	#5	33-10	7	#5	4-6
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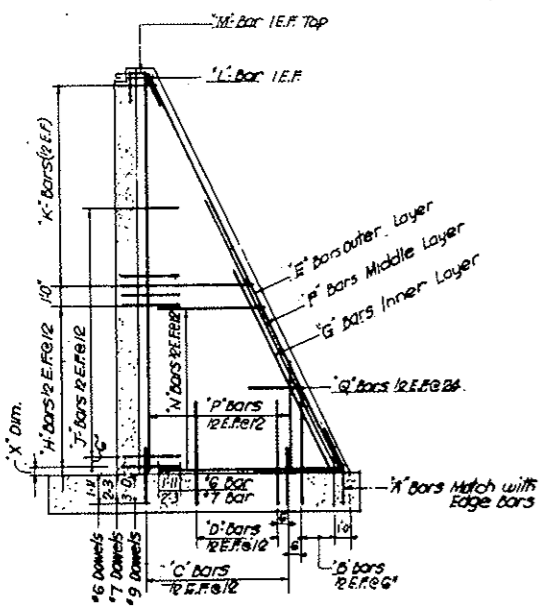


NOTES
 For Fty Reinf see Dwg SE 119
 For Sections & Details see Dwg SE 122
 For Bending Details see Dwg SE 123
 For Counterfort Reinf see Dwg SE 121

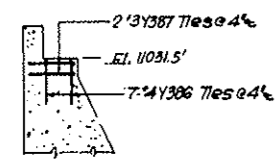
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING SOUTH WALL					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	J.V.	RECOMMENDED	J.V.		
DRAWN	J.V.	CHECKED	J.V.		
SUBMITTED	E.M.	APPROVED	J.V.		
NEW YORK, N. Y.		SCALE: 3/16" = 1'-0" DATE: JAN. 1968			

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

WALL MARK	NO REQD	SCHEDULE OF COUNTERFORT WALL REINFORCING										WALL REINFORCING					
		VERTICAL DOWELS				INCLINED BARS			X DIMS	HORIZONTAL WALL DOWELS			N' BARS	P' BARS	Q BARS		
		A' BARS	B' BARS	C' BARS	D' BARS	E' BARS	F' BARS	G' BARS		H' BARS	J' BARS	K' BARS	L' BARS	M' BARS			
EC1	1	21" 11Y351	14" 9-2EQ 4-6.5-6.6-6 7-6.8-6.9-6 10-6	32" 9-6-0	30" 9-9-0	2" 11-40-9 3" 11-36-3 2" 11-16-3	2" 11-28-6 3" 11-25-3 2" 11-16-3	5" 11-21-9 2" 11-16-3	1'	34" 7Y353	14" 6Y354 34" 7Y353	38" 6-2EQ Y355 thru Y375	2" 6Y379	2" 7Y578	34" 7-2EQ 9-9 to 17-9 (Vary by 2") 4 x 36-4	32" 7-2EQ 8-6 to 34-6 (Vary by 2") 2 x 36-4	12" 5Y383
EC2	1	15" 11Y351	14" 9-2EQ 4-6.5-6.6-6 7-6.8-6.9-6 10-6	26" 9-6-0	26" 9-9-0	2" 11-34-9 3" 11-27-3 2" 11-11-9	2" 11-20-9 3" 11-18-6 2" 11-11-9	3" 11-15-3 2" 11-11-9	9'	22" 7Y353	14" 6Y354 22" 7Y353	40" 6-2EQ Y355 thru Y374	-	2" 7Y380	22" 7-2EQ 9-9 to 14-9 (Vary by 6") 2 x 31-0	26" 7-2EQ 8-6 to 30-6 (Vary by 2") 2 x 31-0	12" 5Y384
EC3	1	8" 11Y351	14" 7-2EQ 3-9-4-9-5-9 6-9-7-9-8-9 9-9	18" 7-5-3	10" 7-8-3	2" 11-28-9 2" 11-20-9	-	2" 11-15-3 2" 11-11-9	10'	14" 6Y376	36" 6Y376	36" 6-2EQ Y355 thru Y372	-	2" 7Y381	14" 6-2EQ 8-3 to 11-3 (Vary by 6") (Vary by 2")	18" 6-2EQ 8-6 to 24-6 (Vary by 2")	12" 5Y385
EC4	7	8" 11Y351	14" 7-2EQ 3-9-4-9-5-9 6-9-7-9-8-9 9-9	22" 6-4-11	6" 6-4-11	2" 11-29-9 2" 11-20-9	-	2" 11-16-3 2" 11-13-0	1'	14" 7Y377	-	40" 6-2EQ Y356 thru Y375	-	2" 7Y382	14" 7-2EQ 9-9 to 12-3 (Vary by 6") (Vary by 2")	22" 5-2EQ 8-6 to 24-6 (Vary by 2") 4 x 26-6	12" 5Y385
EC10																	
EC11	1	12" 11Y351	14" 7-2EQ 3-9-4-9-5-9 6-9-7-9-8-9 9-9	26" 7-5-3	14" 7-5-3	2" 11-34-9 3" 11-25-9	2" 11-19-0 3" 11-16-9	2" 11-11-3	6'	22" 7Y377	-	40" 6-2EQ Y355 thru Y375	-	2" 7Y382	22" 7-2EQ 9-9 to 14-9 (Vary by 6") (Vary by 2")	26" 7-2EQ 8-6 to 30-6 (Vary by 2") 2 x 31-3	12" 5Y384
EC12	1	21" 11Y351	14" 9-2EQ 4-6.5-6.6-6 7-6.8-6.9-6 10-6	32" 7-5-3	14" 7-5-3	2" 11-40-9 3" 11-34-0 2" 11-16-3	2" 11-27-3 2" 11-24-0 2" 11-16-3	5" 11-21-9 2" 11-16-3	1'	42" 7Y377	30" 7Y377	30" 6-2EQ Y361 thru Y375	-	2" 7Y382	42" 7-2EQ 8-3 to 18-3 (Vary by 6") (Vary by 2")	32" 7-2EQ 8-6 to 36-6 (Vary by 2") 2 x 37-9	12" 5Y383
EC13	1	21" 11Y351	14" 9-2EQ 4-6.5-6.6-6 7-6.8-6.9-6 10-6	32" 9-6-0	32" 9-9-0	2" 11-42-0 3" 11-37-0 2" 11-18-0	2" 11-30-3 3" 11-26-9 2" 11-18-0	5" 11-23-6 2" 11-18-0	4'	36" 7Y353	14" 6Y354 36" 7Y353	40" 6-2EQ Y355 thru Y374	-	2" 7Y380	36" 7-2EQ 9-9 to 17-9 (Vary by 6") (Vary by 2")	32" 7-2EQ 8-6 to 36-6 (Vary by 2") 2 x 37-9	12" 5Y383
EC14	1	21" 11Y352	14" 9-2EQ 4-6.5-6.6-6 7-6.8-6.9-6 10-6	30" 9-6-0	28" 9-9-0	2" 11-38-0 2" 11-32-6 2" 11-13-6	2" 11-25-9 3" 11-22-3 2" 11-13-6	5" 11-19-0 2" 11-13-6	7'	28" 7Y353	14" 6Y354 24" 7Y353	38" 6-2EQ Y355 thru Y373	2" 6Y379	2" 7Y378	28" 7-2EQ 9-9 to 16-3 (Vary by 6") (Vary by 2")	30" 7-2EQ 8-6 to 32-6 (Vary by 2") 4 x 33-11	12" 5Y383
EC15	1	12" 11Y351	14" 9-2EQ 4-6.5-6.6-6 7-6.8-6.9-6 10-6	20" 9-6-0	20" 9-9-0	2" 11-28-3 3" 11-23-6	2" 11-18-0 3" 11-14-6	2" 11-11-3	1'	12" 7Y353	14" 6Y354 12" 7Y353	38" 6-2EQ Y355 thru Y373	2" 6Y379	2" 7Y378	12" 7-2EQ 9-9 to 12-3 (Vary by 6") (Vary by 2")	20" 7-2EQ 8-6 to 24-6 (Vary by 2") 2 x 25-5	12" 5Y384
EC16	1	6" 11Y351	14" 7-2EQ 3-9-4-9-5-9 6-9-7-9-8-9 9-9	10" 7-5-3	6" 7-8-3	2" 11-19-6 1" 11-14-6	-	2" 11-11-3 1" 11-6-3	6"	SEE 'K' BARS	18" 6Y376	34" 6-2EQ Y356 thru Y372	-	2" 7Y381	SEE 'K' BARS	10" 6-2EQ 8-6 to 16-6 (Vary by 2")	12" 5Y385



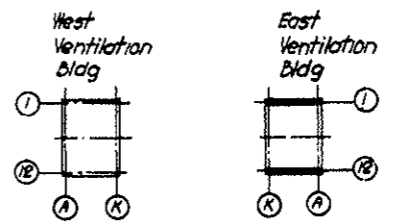
TYP COUNTERFORT ELEV.



DETAIL AT TOP OF COUNTERFORTS EC6 EC9 EC12. REINF REQD x 3.

STRAIGHT BAR LIST

SOUTH WALL				NORTH WALL				
NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH
4	11	42-0	2	11	11-3	4	7	18-3
2	1	40-9	6	1	17-9	18	1	6-9
3	37-0	8	9	10-6	6	17-3	18	5-9
3	36-3	8	9-6	6	16-9	18	4-3	5-3
4	34-9	8	9-0	10	16-6	18	4-9	4-9
3	34-0	8	8-6	6	16-3	18	7	3-9
2	30-3	8	7-6	6	15-9	14	12-6	2
14	29-9	8	6-6	6	15-3	2	10-6	14
2	28-9	90	6-0	10	14-9	2	10-6	14
2	28-6	8	5-6	10	14-6	2	10-6	14
5	27-3	8	4-6	10	14-3	2	10-6	14
3	26-9	10	13-9	2	16-6			
3	25-9	4	7	10	13-3	2	14-6	
3	25-3	4	36-4	18	12-9	2	12-6	
2	24-0	4	36-4	10	12-6	2	11-3	
5	23-6	6	34-6	24	12-3	2	10-9	
10	21-9	6	32-6	24	11-9	2	10-6	
18	20-9	2	31-3	24	11-3	2	10-3	
2	19-0	2	31-0	24	10-9	2	9-9	
3	18-6	10	30-6	10	10-6	2	9-3	
6	18-0	10	29-6	24	10-3	2	8-9	
3	16-9	10	26-6	42	9-9	2	8-6	
26	16-3	10	24-6	2	9-3	2	8-3	
3	15-3	10	22-6	20	8-9	196	10	4-11
14	13-0	10	20-6	10	8-6			
4	11-9	10	18-6	18	8-3	34	15	26-6



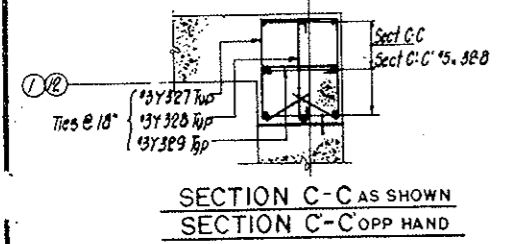
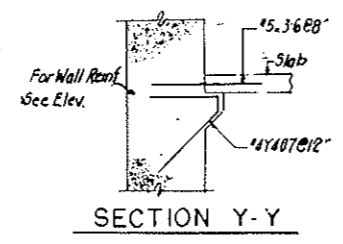
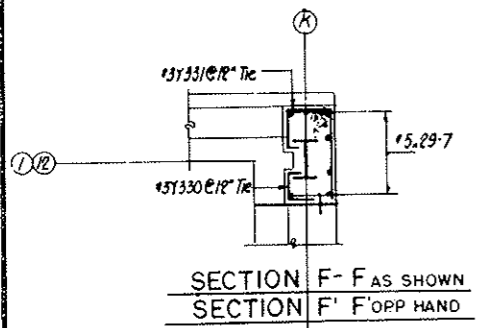
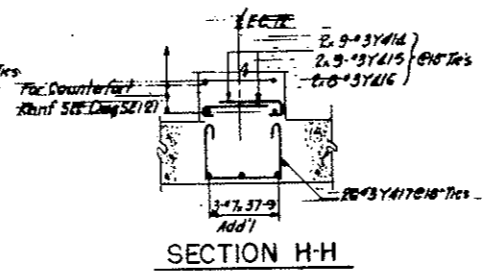
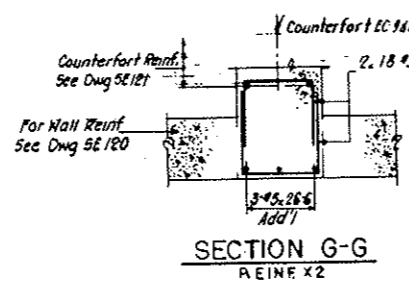
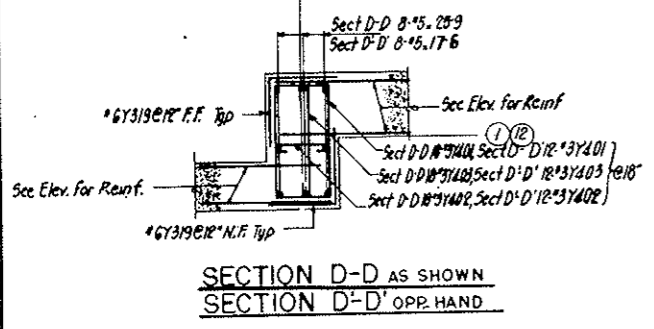
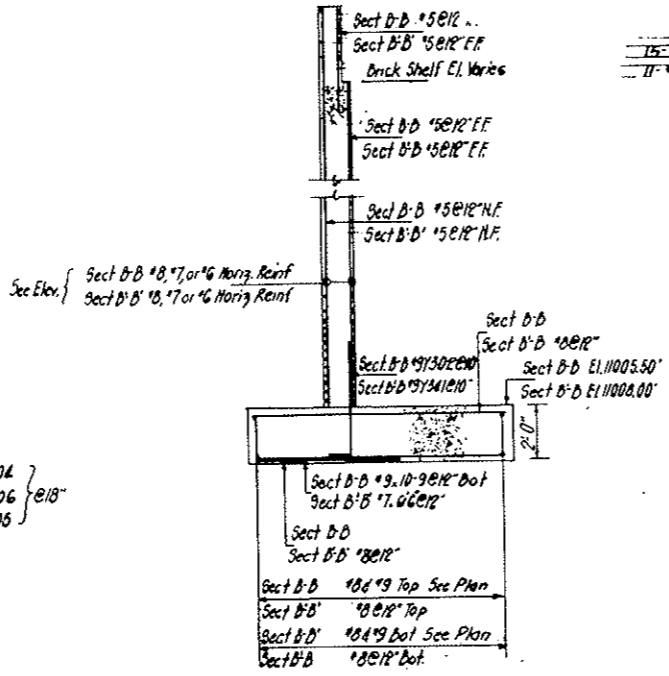
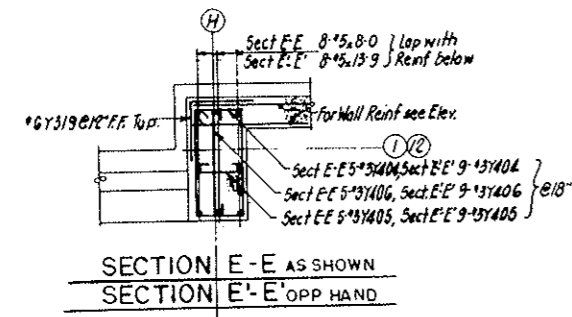
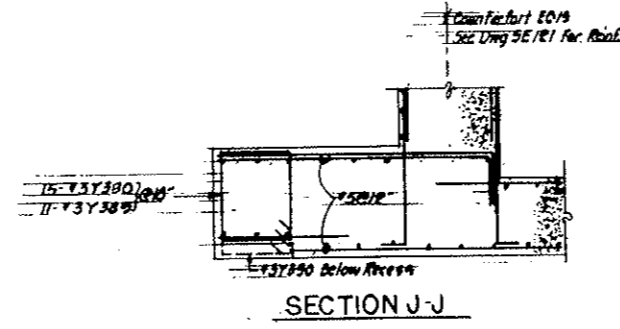
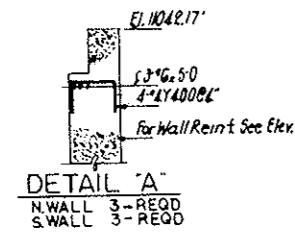
KEY PLAN

NOTES:
 For North Wall Reinf. see Dwg. S-E117, S-E118
 For South Wall Reinf. see Dwg. S-E119, S-E120
 For Bar List & Bending Data see Dwg. S-E123

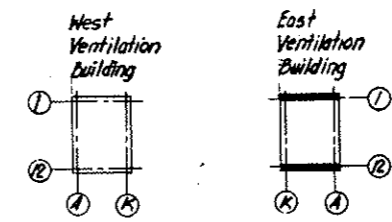
NO	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING COUNTERFORTS - NORTH AND SOUTH WALLS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED E.M. DRAWN E.M. CHECKED J.V. SUPERVISOR G.P. Radwin Paul Smith NEW YORK, N.Y.	RECOMMENDED APPROVED DATE	DRAWING NO. S-E 121			

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS68	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



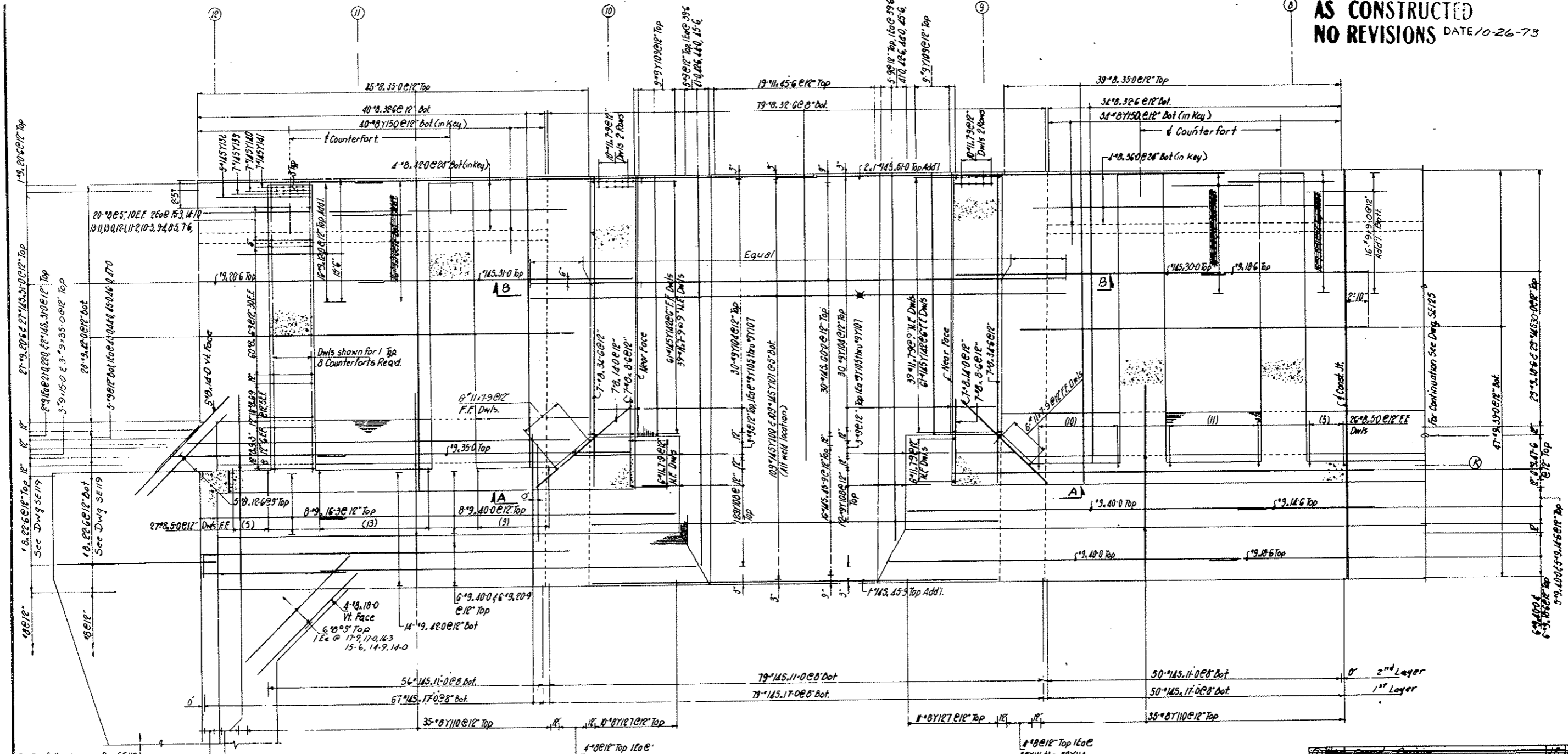
NOTES:
 For North Wall Reinf See Dwg SE 116
 For South Wall Reinf See Dwg SE 120
 For Bonding Details See Dwg SE 123



NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING NORTH AND SOUTH WALLS SECTIONS AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.V.	CHECKED: E.M.		RECOMMENDED: <i>[Signature]</i>		
DRAWN: J.V.	APPROVED: <i>[Signature]</i>		DRAWING NO. S-E 122		
NEW YORK, N. Y.		SCALE: 3/8" = 1'-0"		DATE: JAN. 1968	

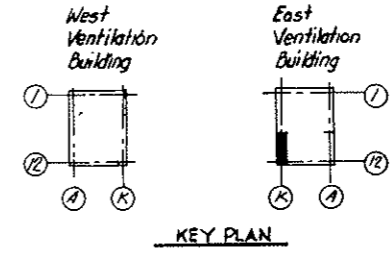
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-70	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PART PLAN

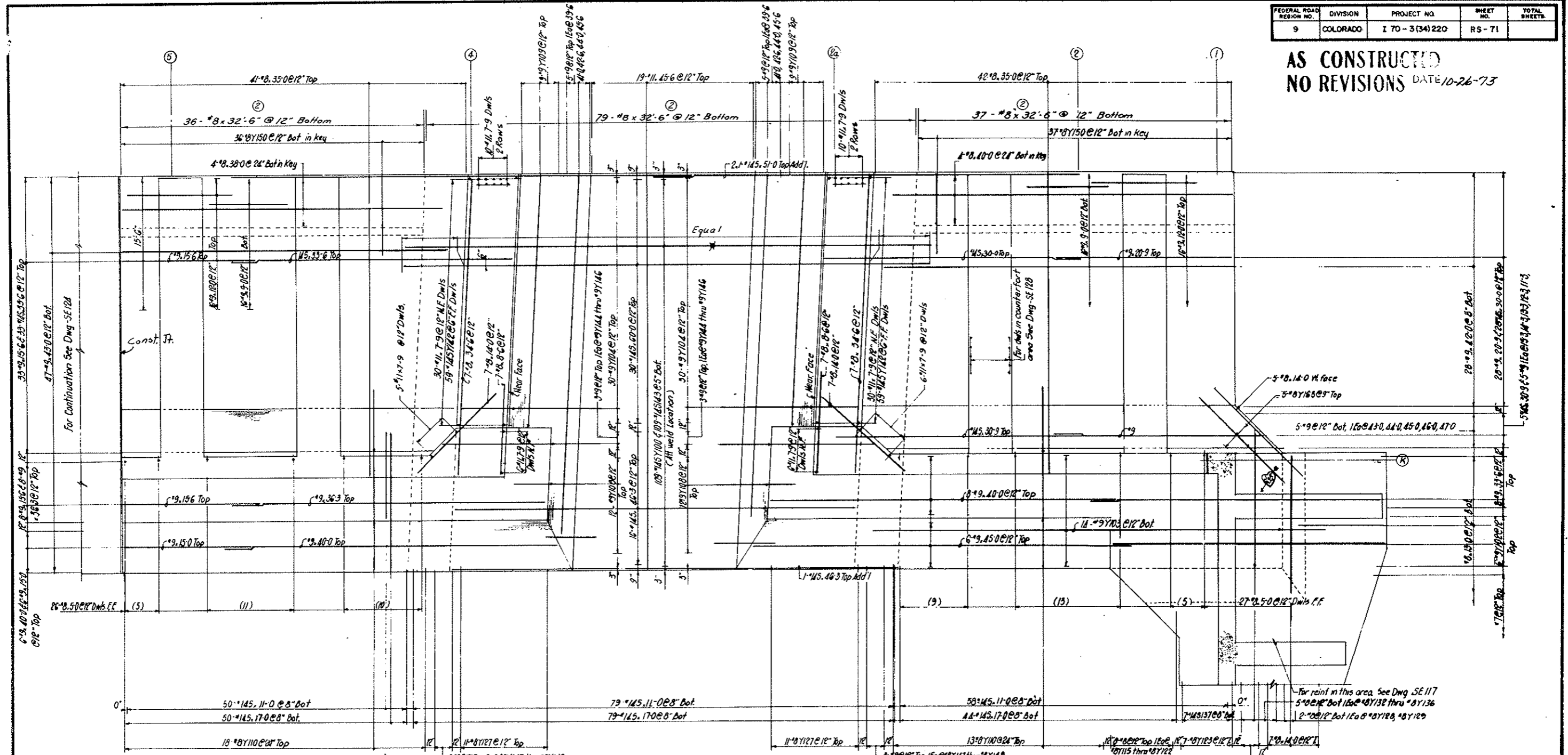
NOTES:
 For Continuation of Flg see Dwg SE 125
 For Wall Reinf. see Dwg SE 126
 For Counterfort Reinf. see Dwg SE 128
 For Sects & Dets see Dwg SE 129
 For Bar Lists & bending Dets see Dwg SE 130



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING FOOTING - WEST WALL SHEET 1					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.V.	RECOMMENDED: J.V.		DRAWING NO. S-E 124		
DRAWN: J.V.	CHECKED: E.M.		APPROVED: Paul Ruda		
SUBMITTED: Paul Ruda	DATE: JAN. 1968		SCALE: 3/16" = 1'-0"		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-71	

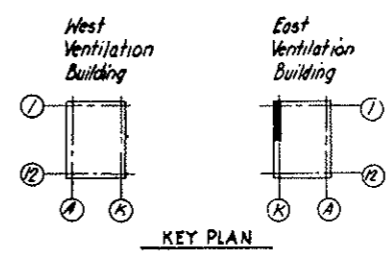
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PART PLAN

NOTES:
 For Continuation of Fig see Dwg
 For Wall Reinf see Dwg
 For Counterfort Reinf. see Dwg
 For Sections & Details see Dwg
 For Bar Bar Lists & Bending Defs see Dwg

SE124
 SE127
 SE128
 SE129
 SE130



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
 STRUCTURAL - REINFORCEMENT
 EAST VENTILATION BUILDING
 FOOTING - WEST WALL
 SHEET 2

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS
 NEW YORK, N. Y.

DESIGNED: E.M.
 DRAWN: R.E.
 CHECKED: P.B.
 SUBMITTED: J. Paul Smith

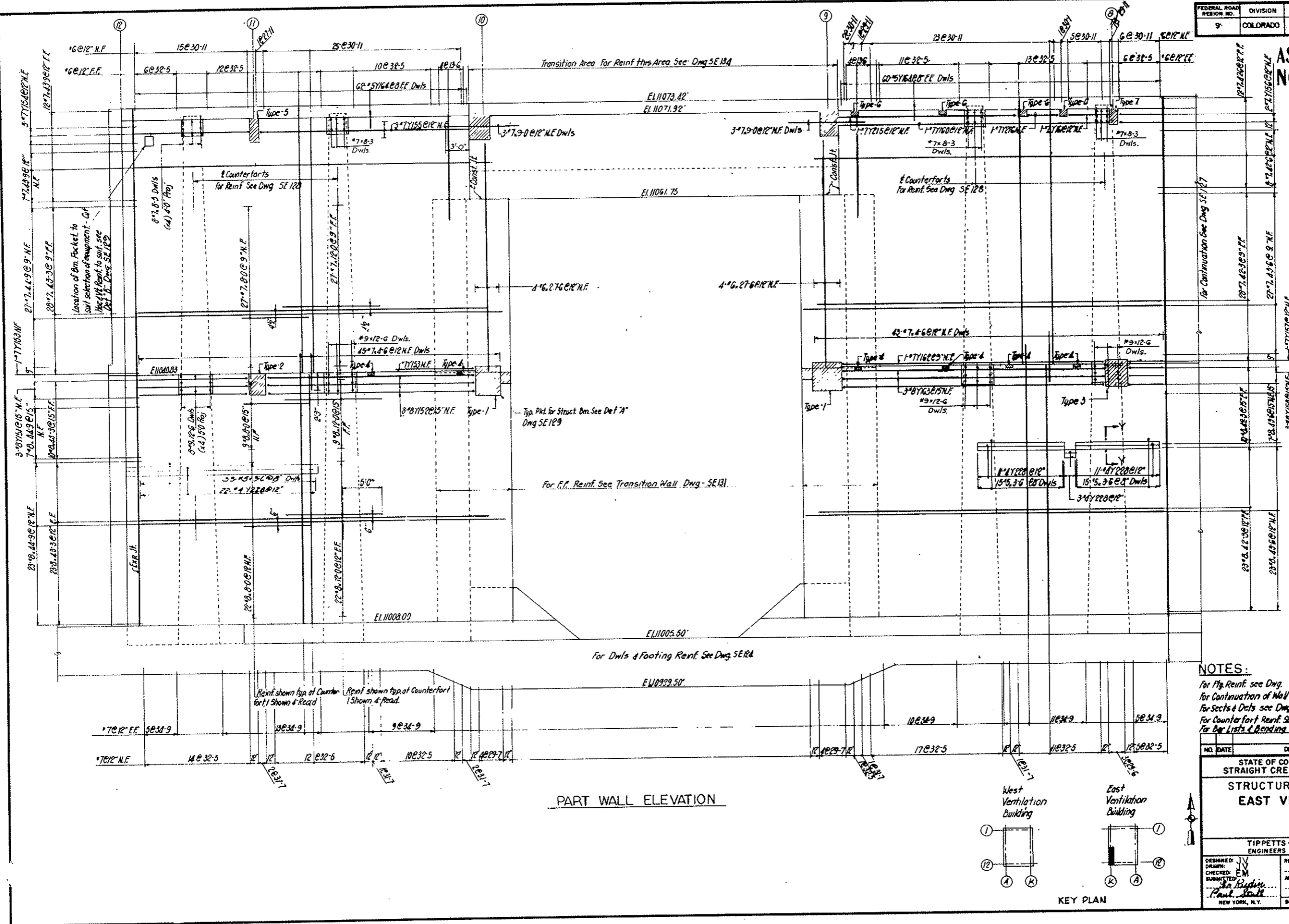
RECOMMENDED: J. Paul Smith
 APPROVED: J. Paul Smith

DATE: JAN. 1968
 SCALE: 3/16" = 1'-0"

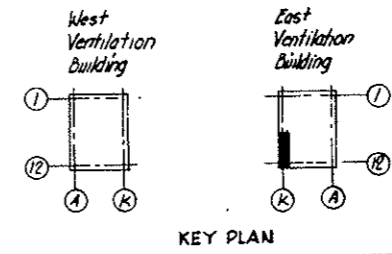
DRAWING NO. S-E125

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	RS-72	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PART WALL ELEVATION



NOTES:

- For Fly Reinf. see Dwg. SE 124
- For Continuation of Wall see Dwg. SE 127
- For Sects & Dets see Dwg. SE 129
- For Counterfort Reinf. See Dwg. SE 128
- For Bar Lists & Bending Dets See Dwg. SE 130

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
WEST WALL
SHEET 1

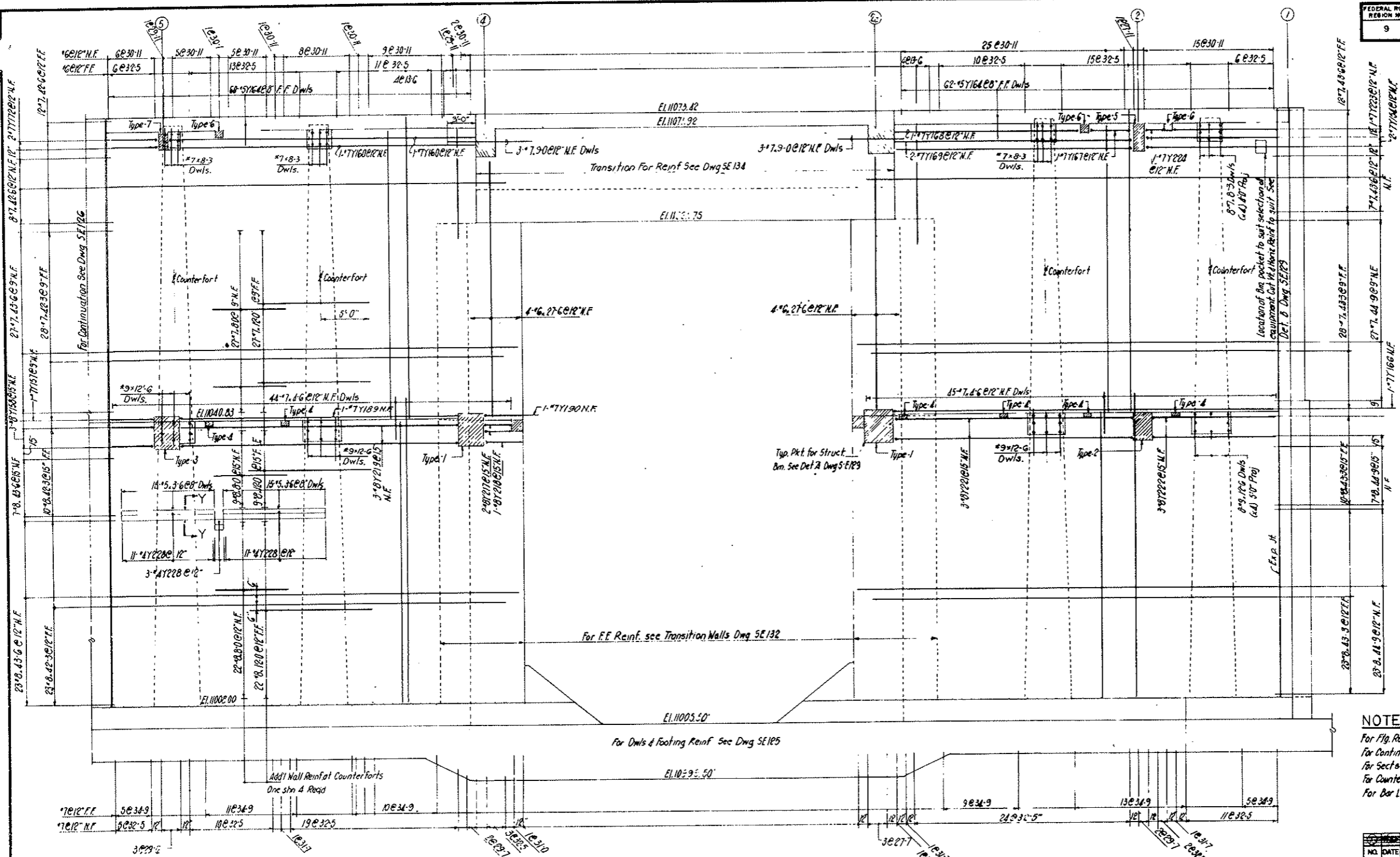
TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED BY J.V.	RECOMMENDED BY E.M.	DRAWING NO. S-E126
CHECKED BY E.M.	APPROVED BY Frank White	
SUBMITTED BY Paul Stahl		

SCALE: 3/8" = 1'-0" DATE: JAN. 1968

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3 (34) 220	RS-73	

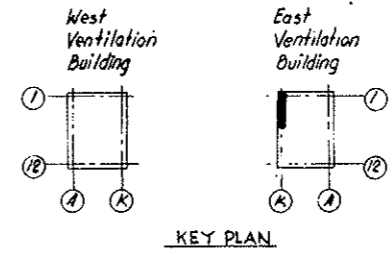
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PART WALL ELEVATION

NOTES:

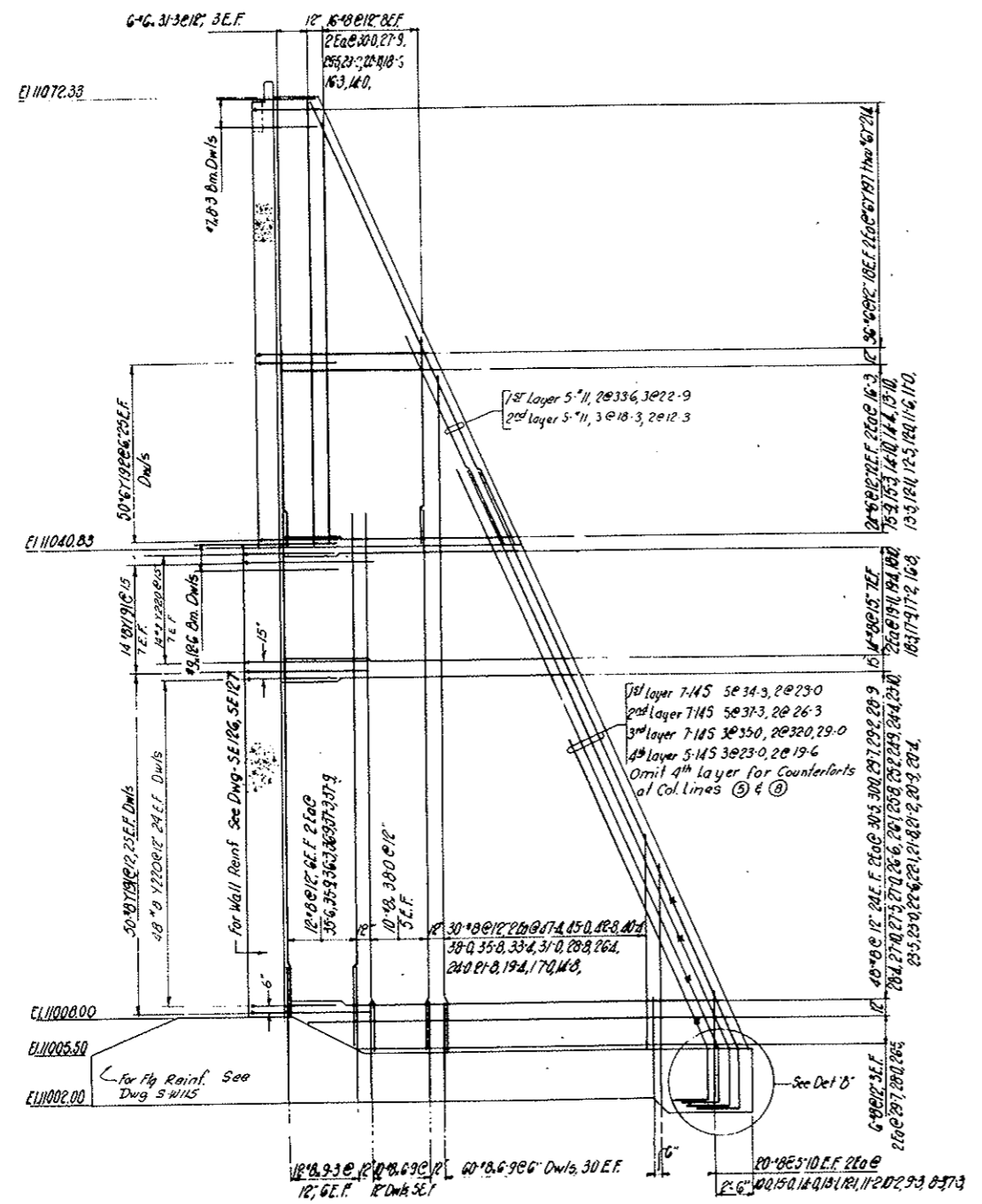
- For Fly. Reinf. see Dwg SE 125
- For Continuation of Wall see Dwg SE 126
- For Sects & Dets see Dwg SE 129
- For Counterfort Reinf. see Dwg SE 128
- For Bar Lists & Bending Dets see Dwg SE 130



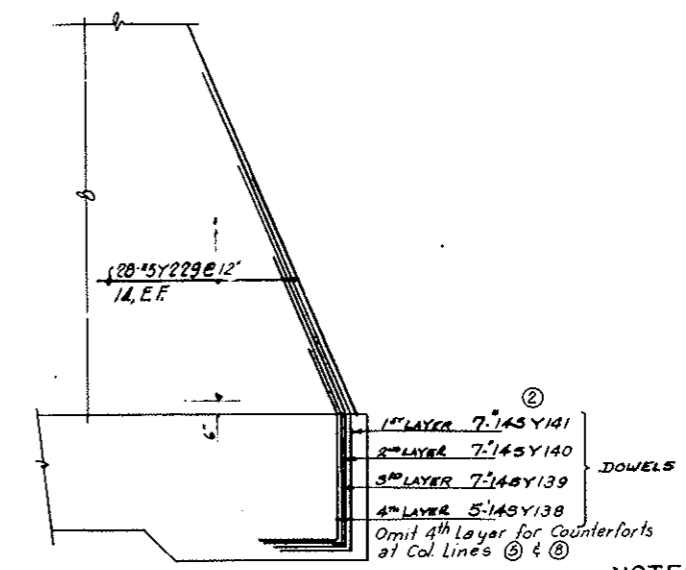
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING WEST WALL SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.V.	RECOMMENDED: J.P.				
CHECKED: E.M.	APPROVED: J.P.				
SUBMITTED: J.P.	DATE: JAN 1968				
DRAWING NO. SE127					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-74	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

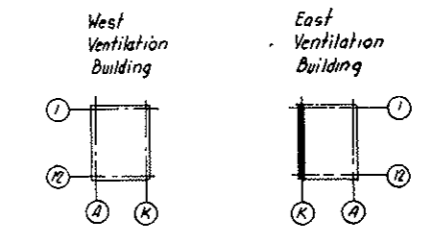


COUNTERFORT EAST VENTILATION BUILDING
 8 REQD
 (Typical except as noted)



DETAIL 'B'
 8 REQD
 (Typical except as noted)

NOTES:
 For West Wall Elevations see Dwg SE 126, SE 127
 For Bending Dets & Bar List see Dwg SE 130



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP

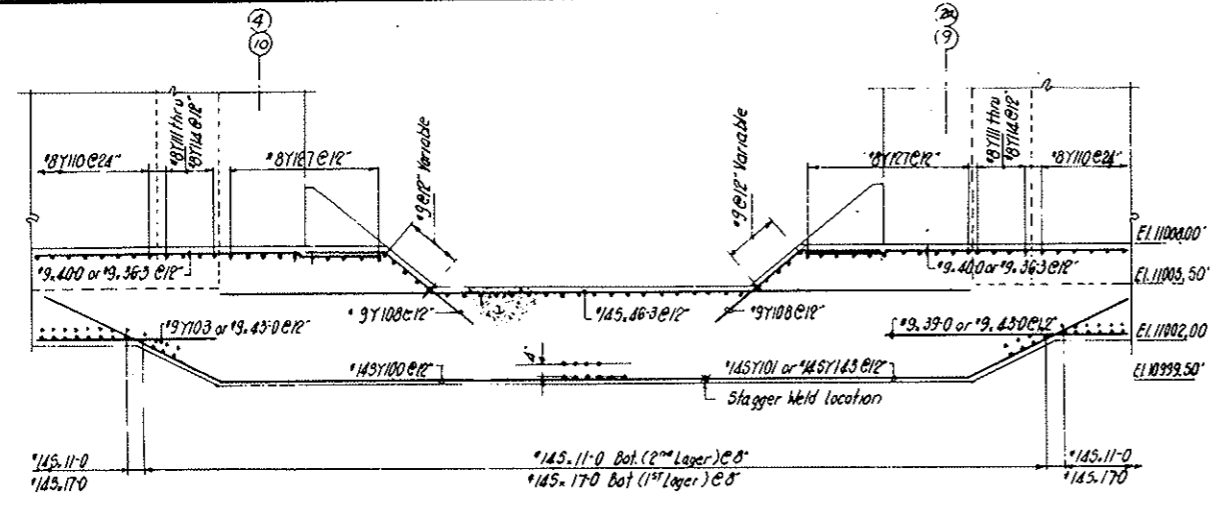
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
 WEST WALL
 COUNTERFORTS

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

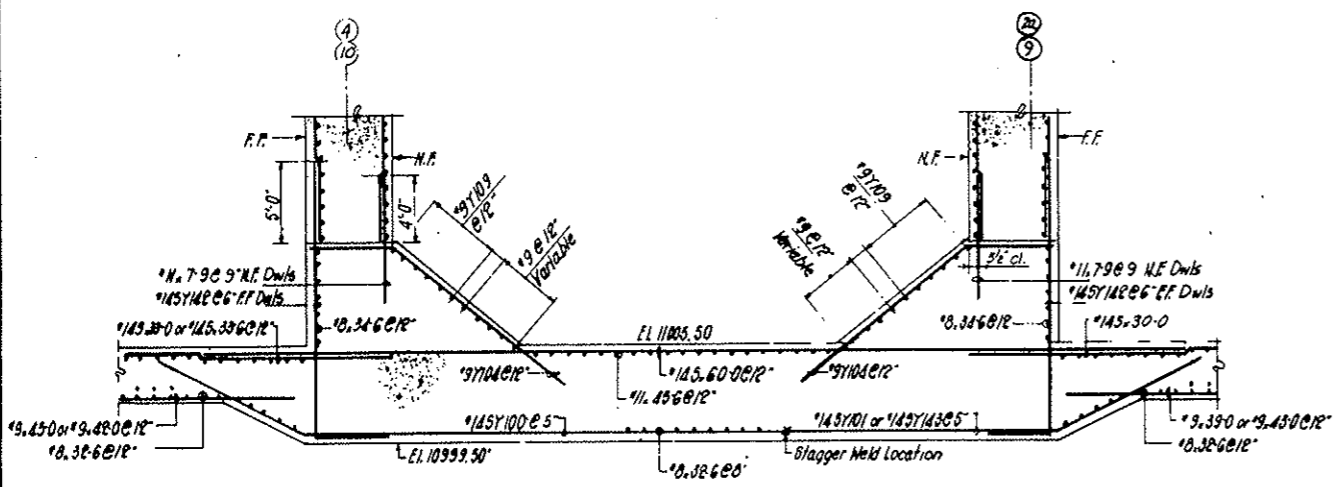
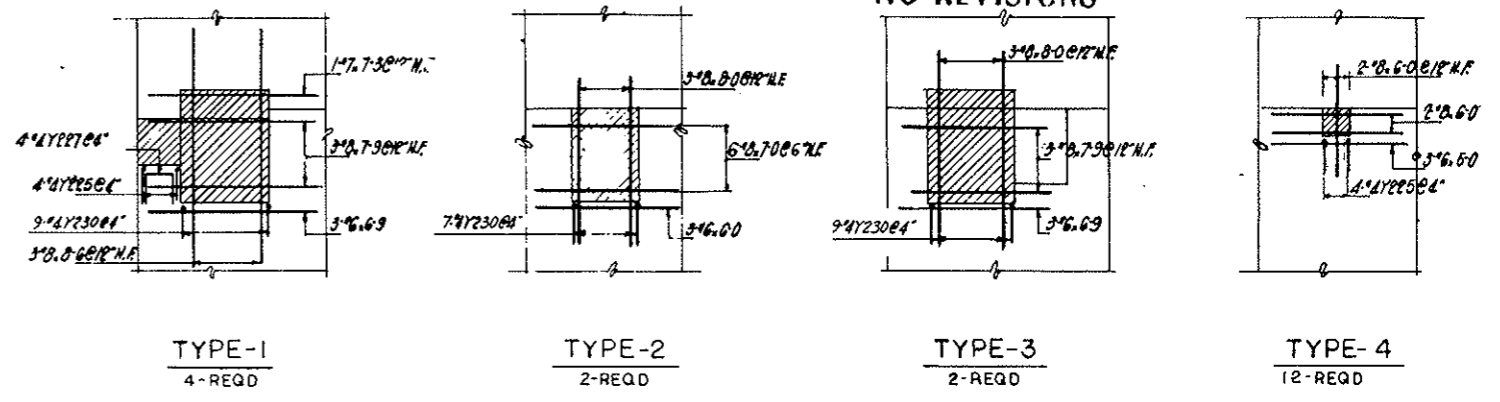
DESIGNED BY J.V.	RECOMMENDED BY H. J. W. [Signature]	DRAWING NO. S-E 128
CHECKED BY E.M.	APPROVED BY [Signature]	
SUBMITTED BY Paul Rydman	DATE JAN. 1968	
SCALE 1/2" = 1'-0"		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RS-75	

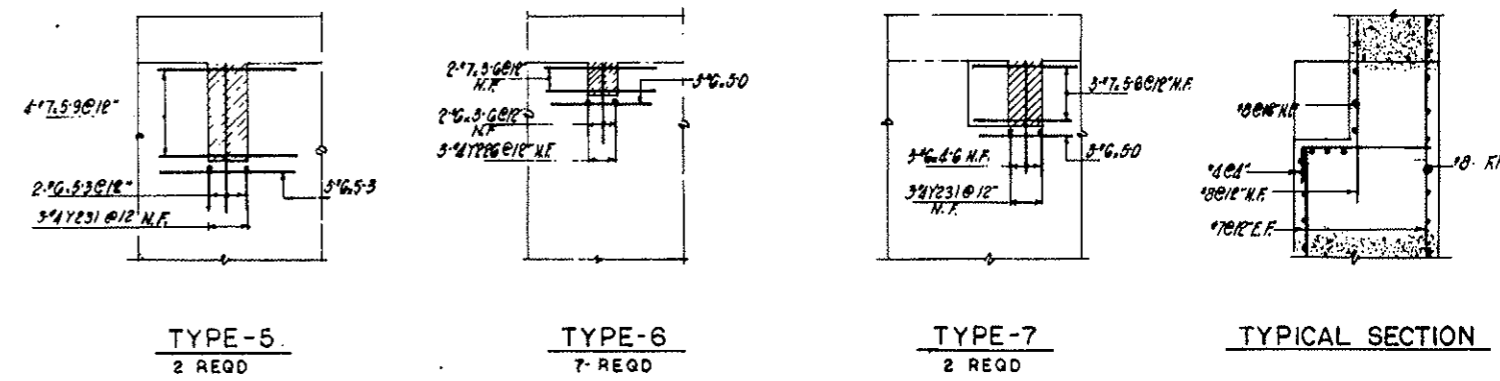
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



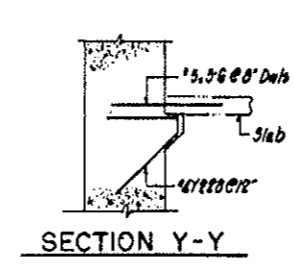
SECTION A-A



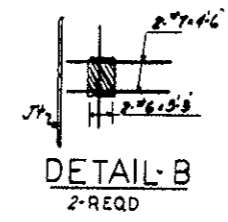
SECTION B-B



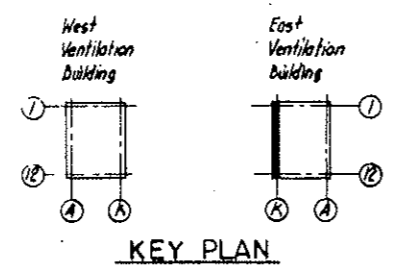
DETAIL - A
Not to Scale



SECTION Y-Y



DETAIL - B
2-REQD



KEY PLAN

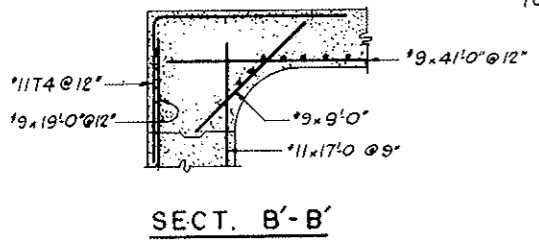
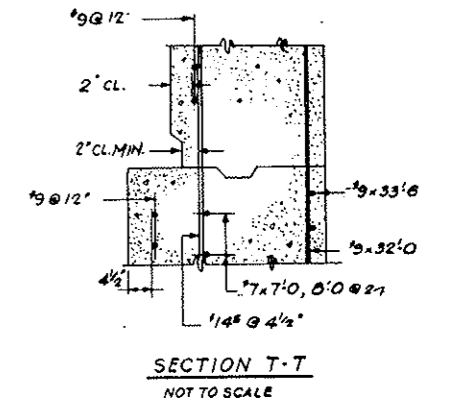
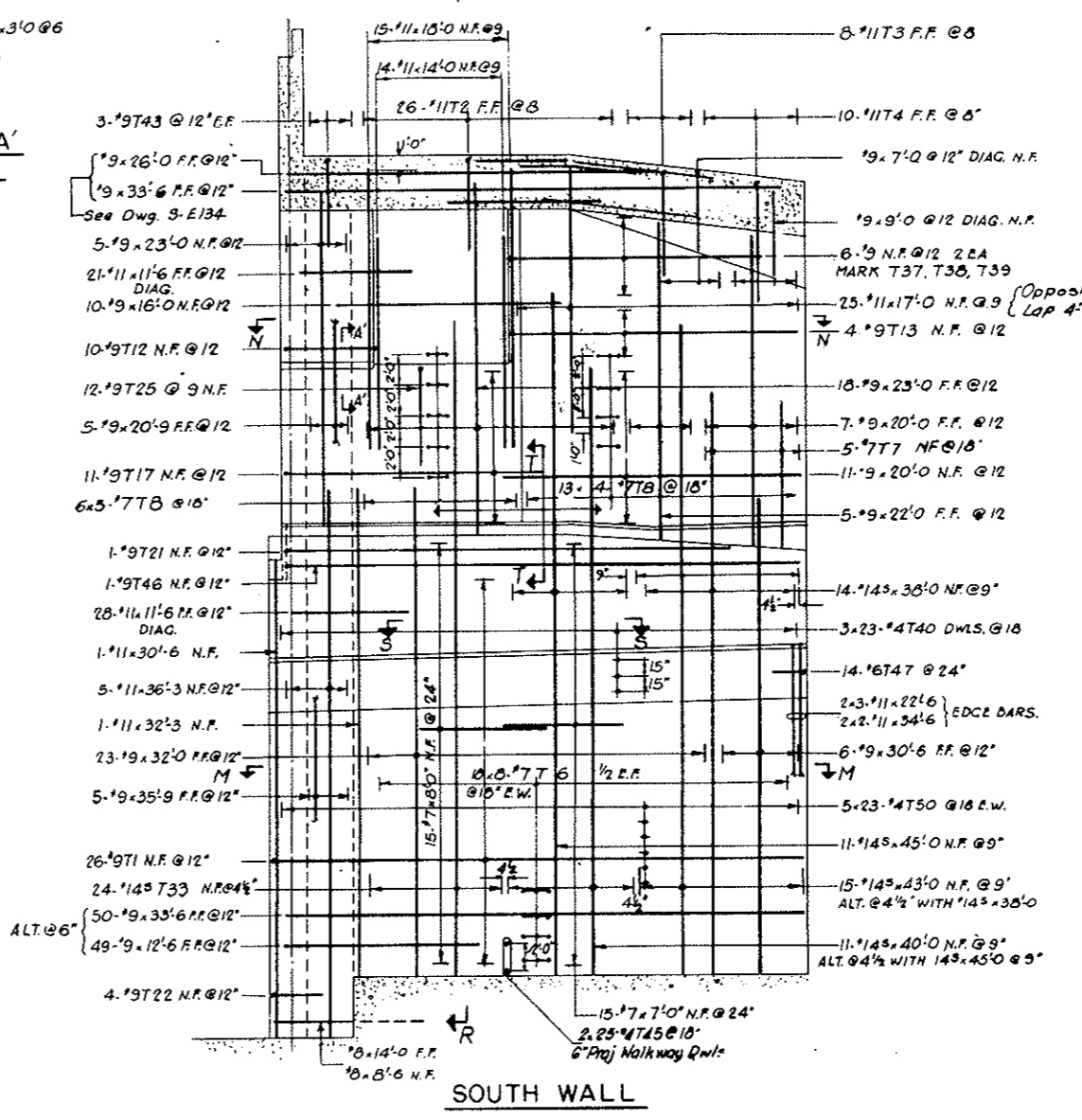
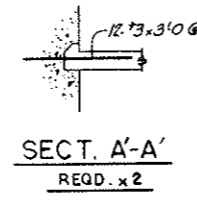
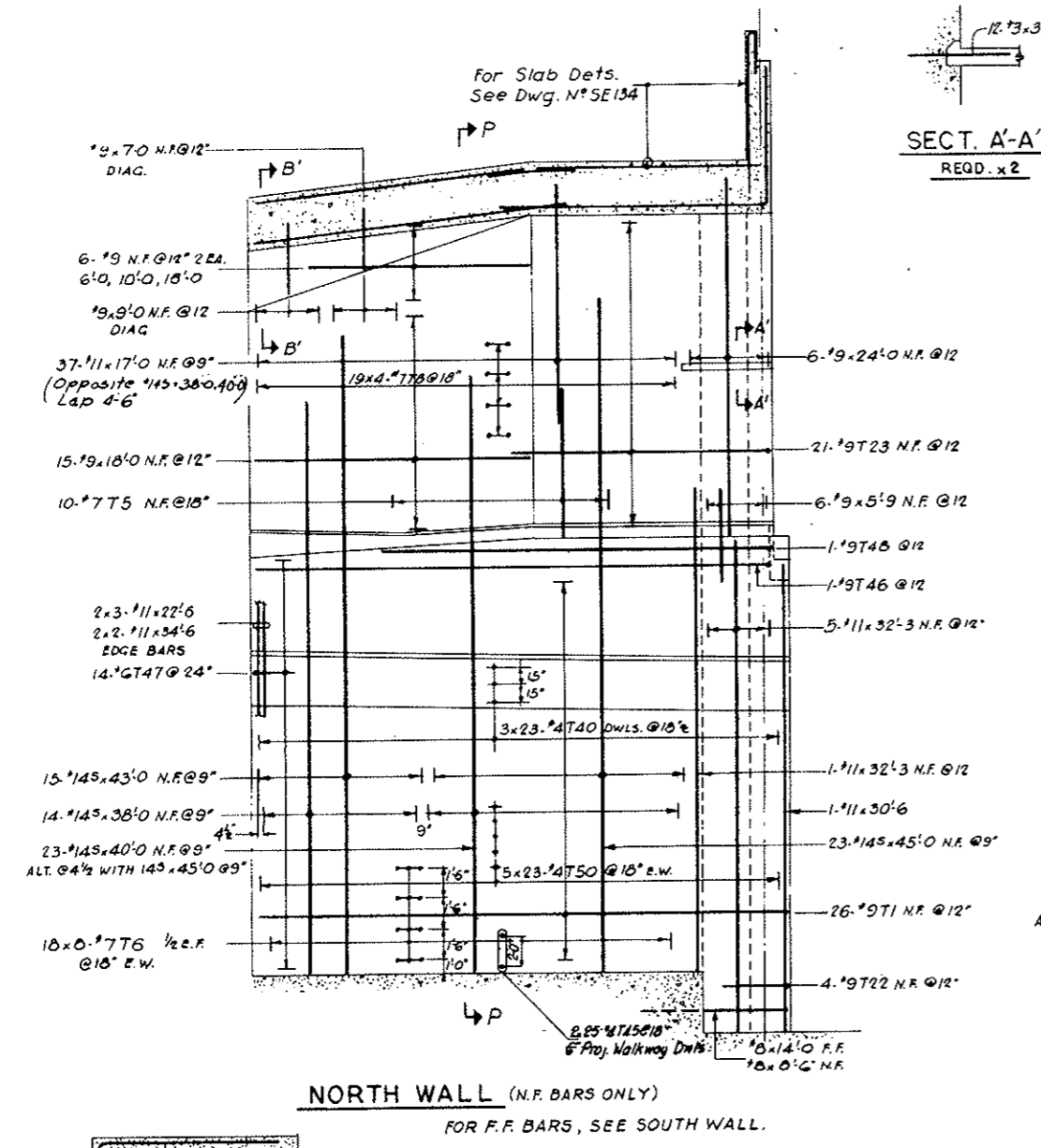
NOTES:
For Slab Reinf. See Dwg. SE-124, SE-125
For Transition Wall See Dwg. SE-131, SE-132
For Wall Reinf. See Dwg. SE-126, SE-127
For Bar Lists & Bending Data see Dwg. SE-130.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING WEST WALL SECTIONS AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	H. V.	RECOMMENDED			
DRAWN	J. K.	CHECKED			
SUBMITTED		APPROVED			
NEW YORK, N. Y.		SCALE: 3/16" = 1'-0"		DATE: JAN. 1968	

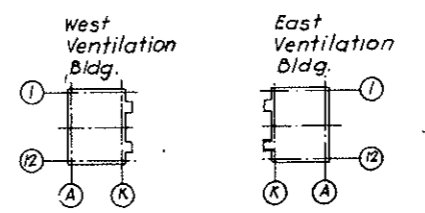
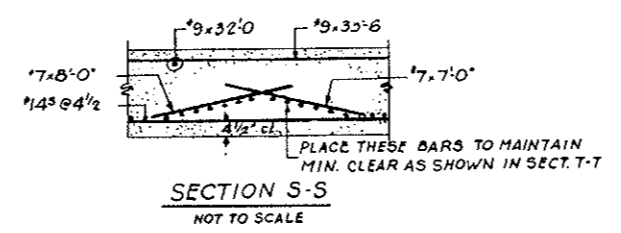
DRAWING NO. S-E 129

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	R5 77	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



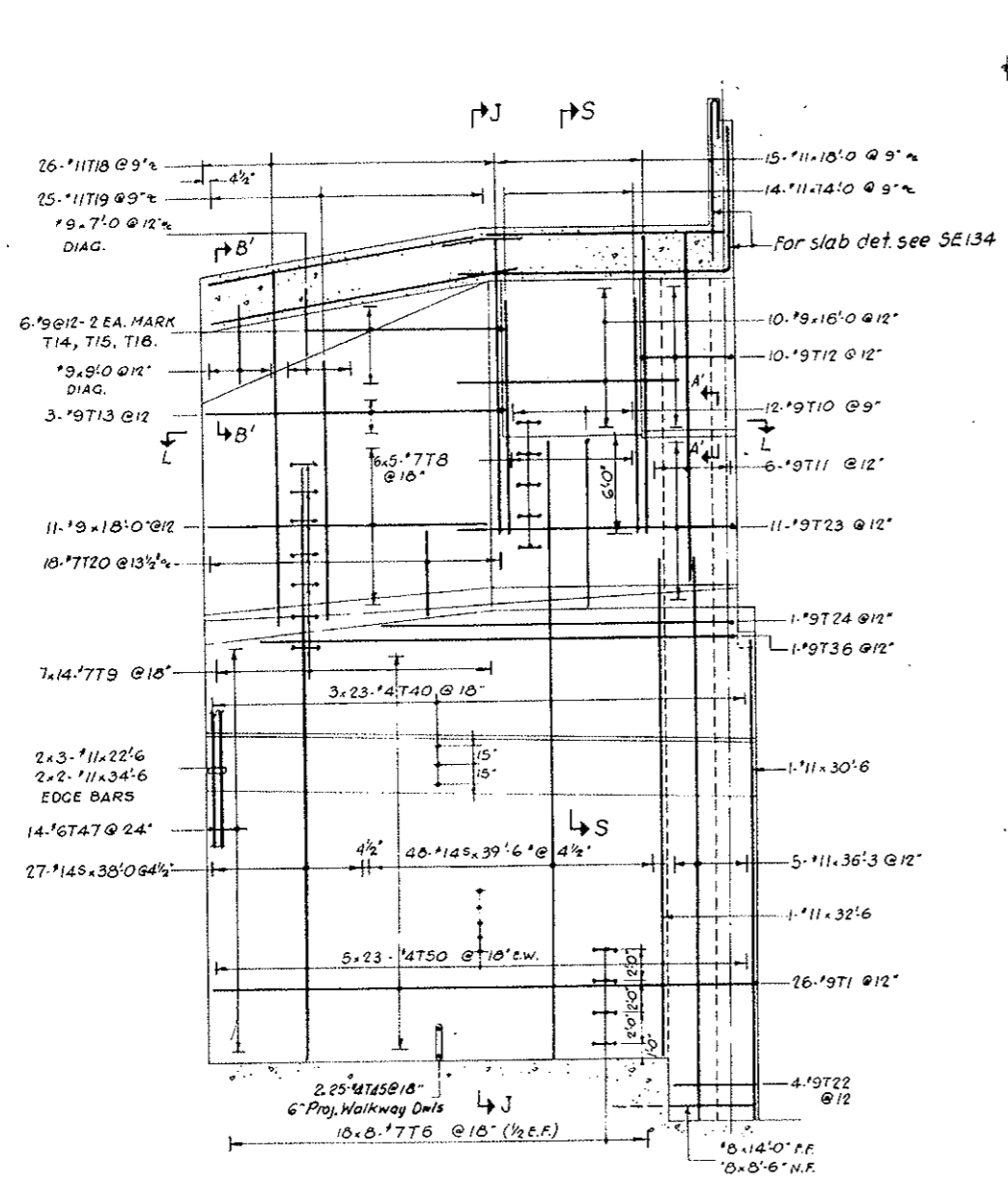
ELEVATION OF SOUTH EAST TRANSITION WALLS



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING SOUTH TRANSITION NORTH & SOUTH WALLS TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	AN	RECOMMENDED BY	[Signature]		
DRAWN BY	EM	CHECKED BY	[Signature]		
SUBMITTED BY	[Signature]	APPROVED BY	[Signature]		
NEW YORK, N. Y.	SCALE: 3/8" = 1'-0"	DATE: JAN 1968	DRAWING NO. S-E 131		

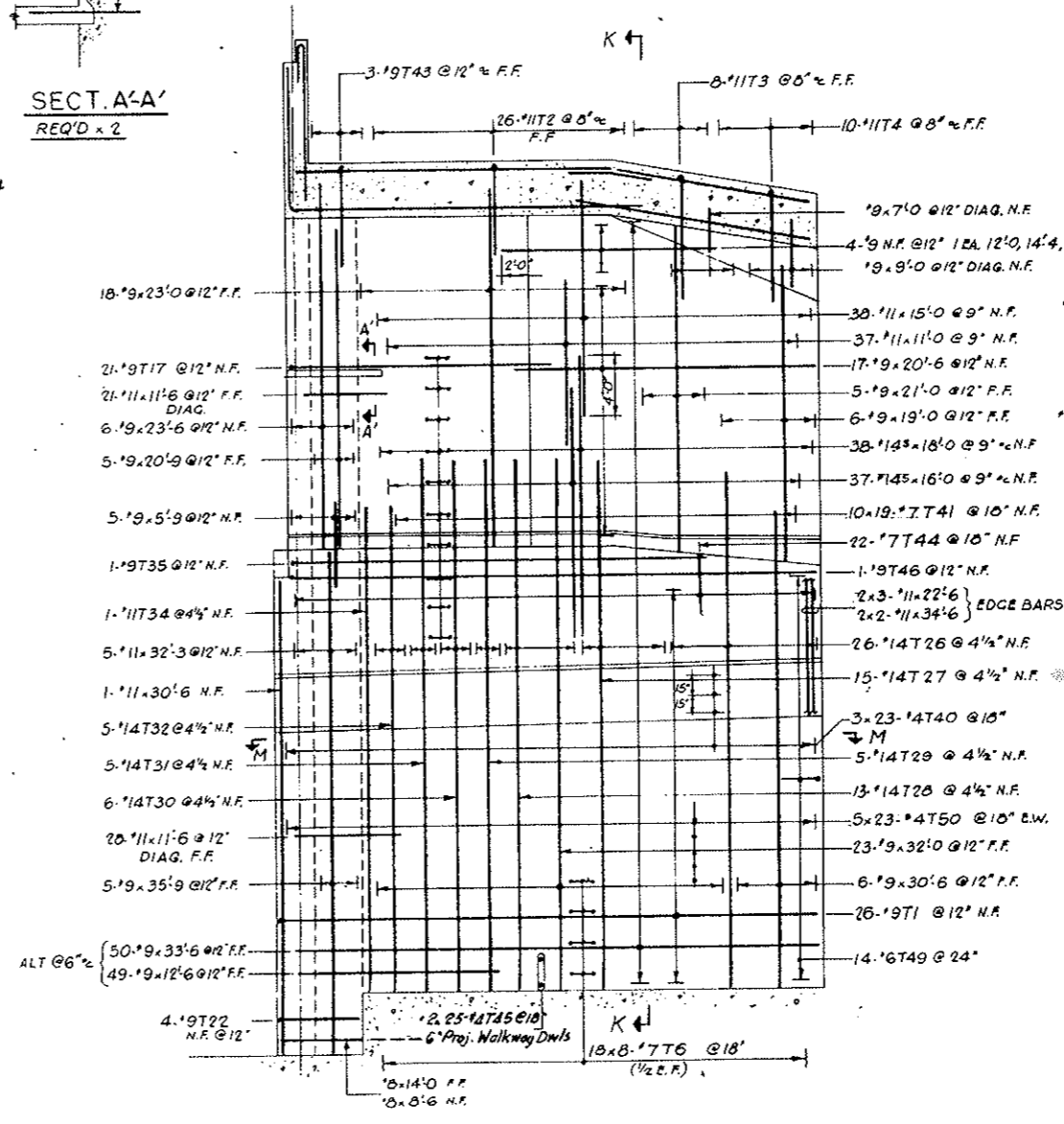
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS 78	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



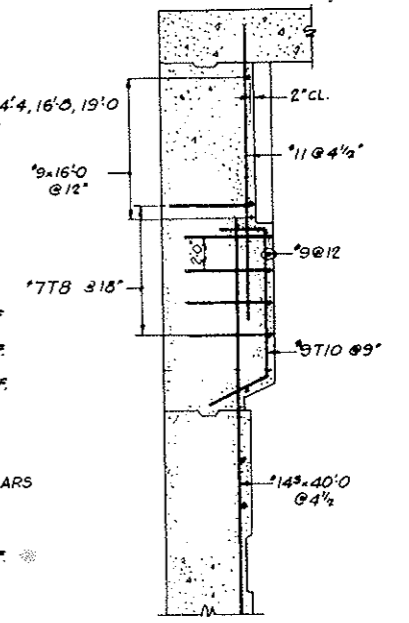
NORTH WALL N.F. BARS ONLY
 FOR F.F. BARS SEE SOUTH WALL

SECT. A-A'
 REQ'D x 2

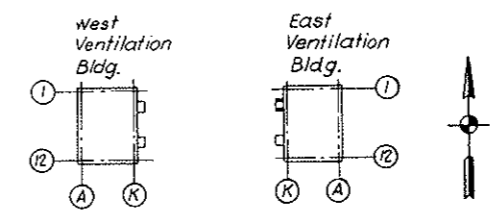


SOUTH WALL

ELEVATION OF NORTH EAST TRANSITION WALLS



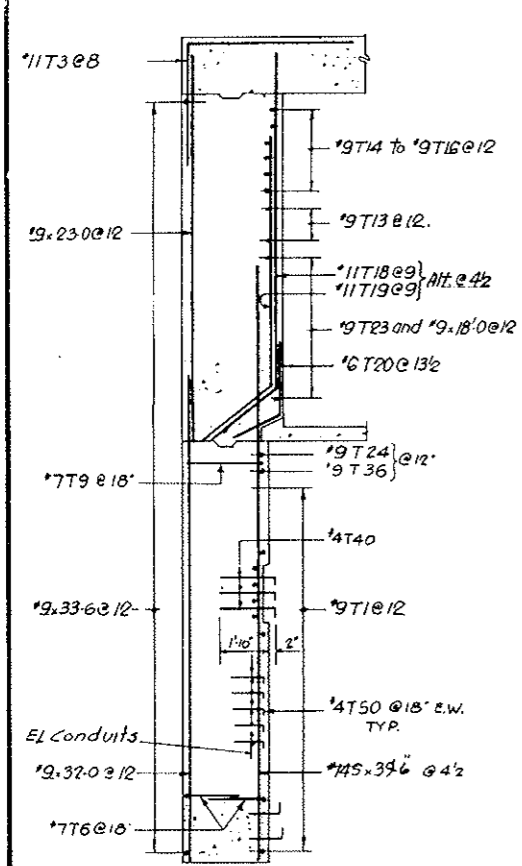
SECTION S-S



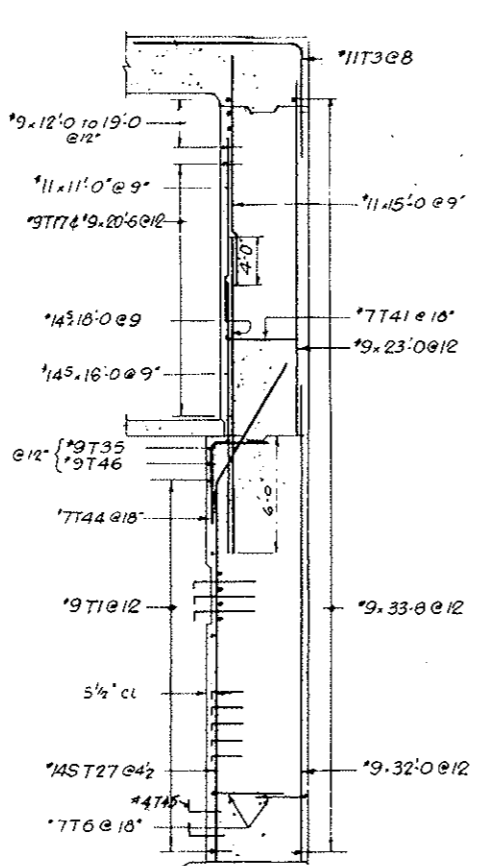
KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT					
EAST VENTILATION BUILDING					
NORTH TRANSITION					
NORTH & SOUTH WALLS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: AN	RECOMMENDED:	APPROVED: <i>Paul Saul</i>			
DRAWN: AN	CHECKED: E M	APPROVED: <i>Paul Saul</i>			
SUBMITTED: <i>Paul Saul</i>	APPROVED: <i>Paul Saul</i>	DRAWING NO. S E132			
NEW YORK, N. Y.		SCALE: 3/16" = 1'-0"	DATE: JAN 1968		

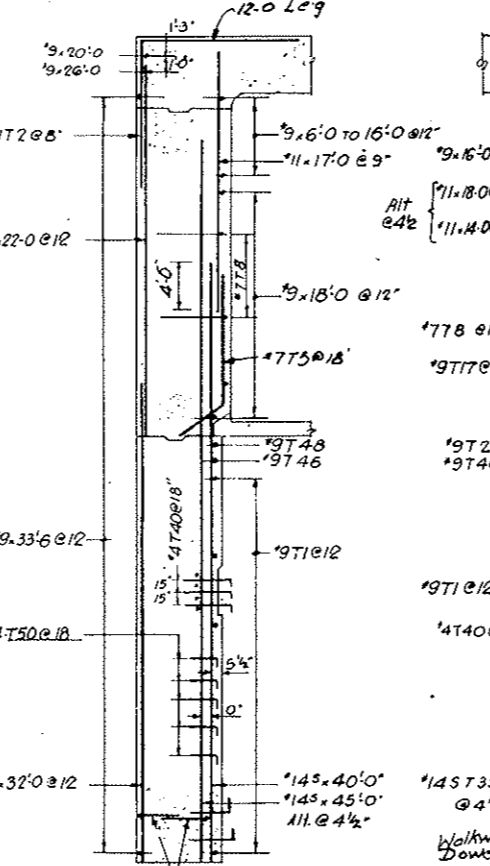
BENDING DETAILS														
NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	I	J
104	9	37-4	T 1	17		2-10	34-6							
104	11	17-6	2	17		5-6	12-0							
32	11	19-0	3	17		7-0	12-0							
40	11	21-0	4	17		9-0	12-0							
10	7	10-7	5	19		2-7	8-0					2-4	1-2	
576	7	9-6	6	17		4-0	1-6	4-0						
5	7	14-0	7	19		5-0	9-0					4-6	2-3	
188	7	10-2	8	S9	0-4	4-0	1-6	4-0				0-4		
90	7	10-3	9	S9	0-4	4-3	1-6	4-3				0-4		
12	9	16-1	T 10	16		3-6	9-3	3-4				3-0	1-6	
6	9	24-10	11	19		3-4	21-6					3-0	1-6	
20	9	11-4	12	17		3-0	5-6	2-10						
7	9	21-0	13	40		3-0	18-0					0-4		
2	9	20-0	14	40		3-0	17-0					0-4		
2	9	15-0	15	40		3-0	12-0					0-4		
2	9	10-0	T 16	40		3-0	7-0					0-4		
32	9	20-4	17	17		2-10	17-6							
26	11	24-0	18	19		5-0	19-0					4-0	3-0	
25	11	19-0	19	19		5-0	14-0					4-0	3-0	
18	7	7-0	20	19		3-0	4-0					2-11	10	
1	9	27-4	T 21	17		2-10	24-6					2-16	2-16	
16	9	5-8	22	17		2-10	2-10							
32	9	20-2	23	16		2-10	15-4	2-0				0-3		
1	9	21-10	24	17		2-10	19-0							
12	9	8-0	25	17		4-0	4-0							
26	14 ⁵	34-3	T 26	19		8-9	25-6					3-11	7-10	
15	14 ⁵	34-3	27	19		8-9	25-6					3-11	7-10	
13	14 ⁵	34-3	28	19		9-3	25-0					4-2	8-4	
5	14 ⁵	34-3	29	19		8-6	25-9					3-10	7-8	
6	14 ⁵	35-0	T 30	19		9-0	26-0					4-1	8-2	
5	14 ⁵	35-0	31	19		8-9	26-3					3-11	7-10	
5	14 ⁵	35-0	32	19		8-3	26-9					3-9	7-6	
24	14 ⁵	43-0	33	19		6-0	37-0					2-8	5-4	
1	11	34-3	34	19		6-6	27-9					1-6	6-3	
1	9	28-10	35	17		2-10	26-0							
1	9	32-10	36	17		2-10	30-0							
2	9	9-0	37	17		3-0	6-0							
2	9	14-6	38	17		3-0	11-6							
2	9	20-0	39	17		3-0	17-0							
276	4	2-6	T 40	17		0-6	2-0							
190	7	10-2	41	S9	0-4	4-0	1-6	4-0				0-4		
12	9	17-6	43	17		5-6	12-0							
22	7	8-7	44	17		3-7	5-0							
200	4	2-1	45			0-7	1-6							
3	9	35-10	46	17		2-10	33-0							
42	6	6-9	47	17		1-0	4-9	1-0						
1	9	26-10	48	17		2-10	24-0							
14	6	7-9	49	17		1-0	5-9	1-0						
460	4	3-8	T 50	17		8	3-0							



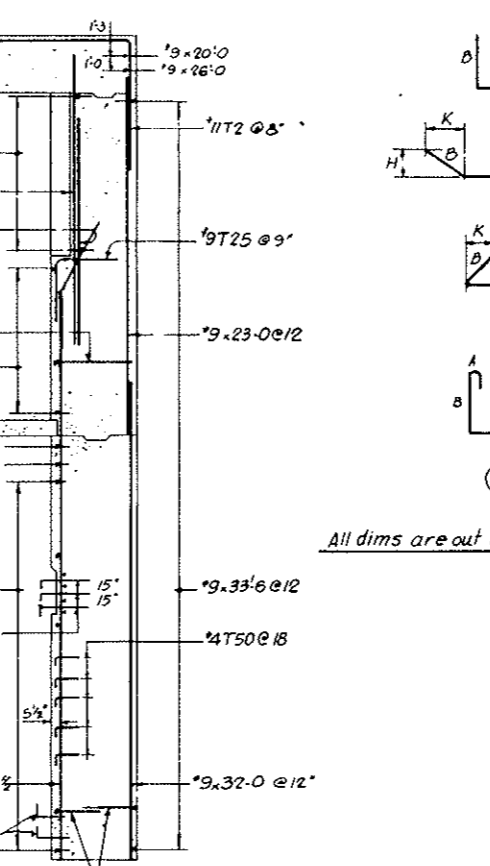
SECTION J-J



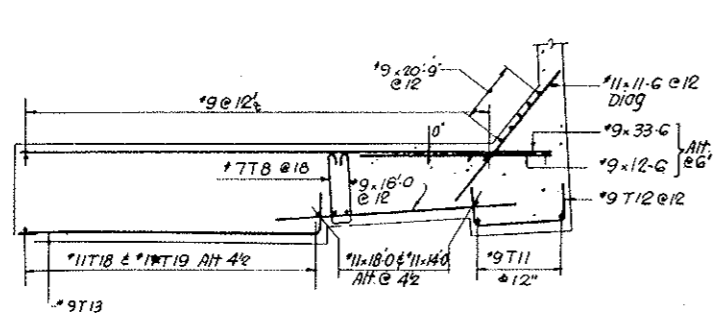
SECTION K-K



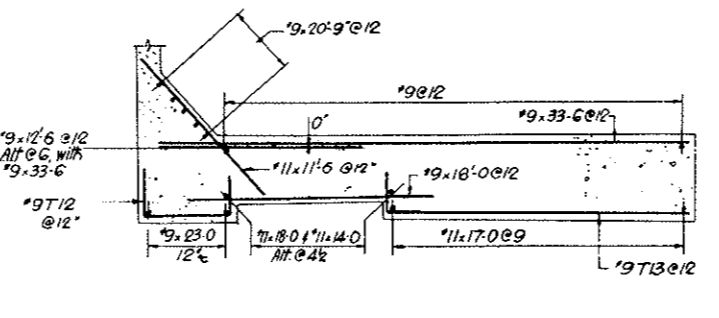
SECTION P-P



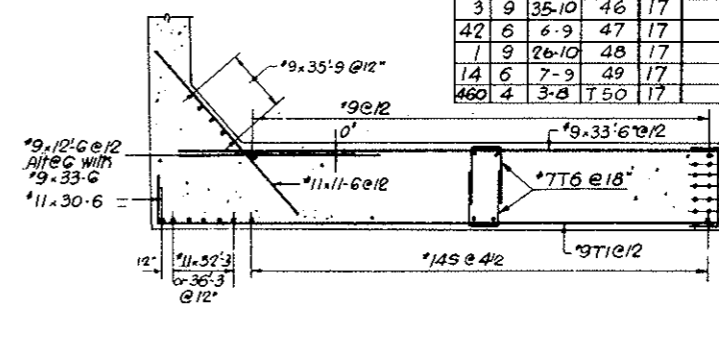
SECTION R-R



SECTION L-L



SECTION N-N



SECTION M-M

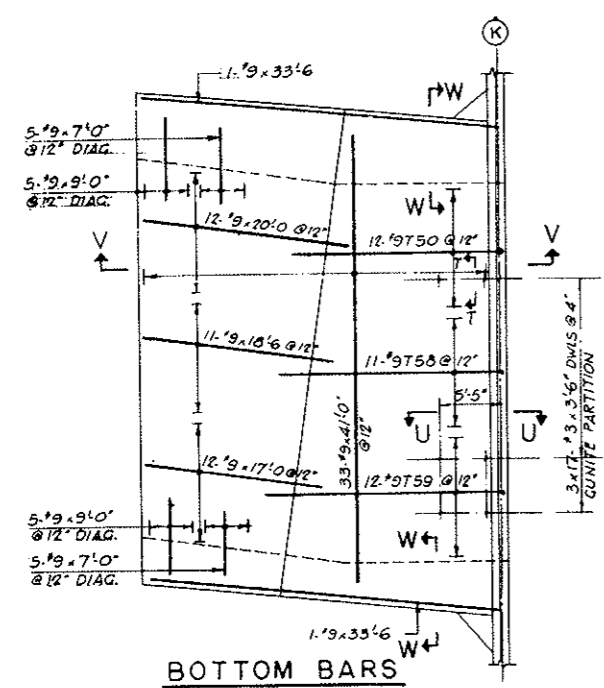
STRAIGHT BAR LIST														
NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH
34	14 ⁵	45-0	10	#11	36-3	28	#11	14-0	6	#9	23-6	15	#7	8-0
30	14 ⁵	43-0	16	#11	34-6	196	#11	11-6	77	#11	16-0	15	#7	7-0
34	14 ⁵	40-0	1	#11	32-6	37	#11	11-0	10	#11	22-0	1	#11	14-4
48	14 ⁵	39-6	12	#11	32-3	10	#11	12-6	10	#11	21-6	48	#3	30-0
55	14 ⁵	38-0	4	#11	30-6	20	#9	35-9	20	#9	20-9	1	#11	12-0
38	14 ⁵	18-0	24	#11	22-6	200	#11	33-6	17	#11	20-6	2	#11	10-0
37	14 ⁵	16-0	30	#11	18-0	92	#11	32-0	25	#11	20-0	2	#11	6-0
			62	#11	17-0	24	#11	30-6	14	#11	19-0	11	#9	5-9
			38	#11	15-0	6	#9	24-0	26	#9	18-0			

NOTES:
For Location of sections see Drawing Nos SE131 & SE132

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

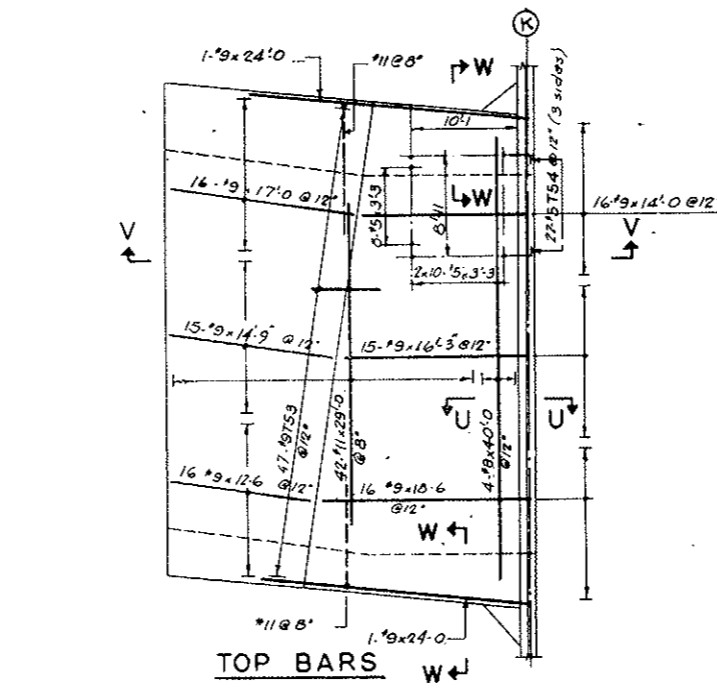
DESIGNED BY A.N.	CHECKED BY M.O.B.	RECOMMENDED BY E.M.	APPROVED BY Paul Wilson
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING TRANSITION WALLS SECTIONS AND SCHEDULE			
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.			
DRAWING NO. S-E 133			DATE JAN 1968

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS 80	



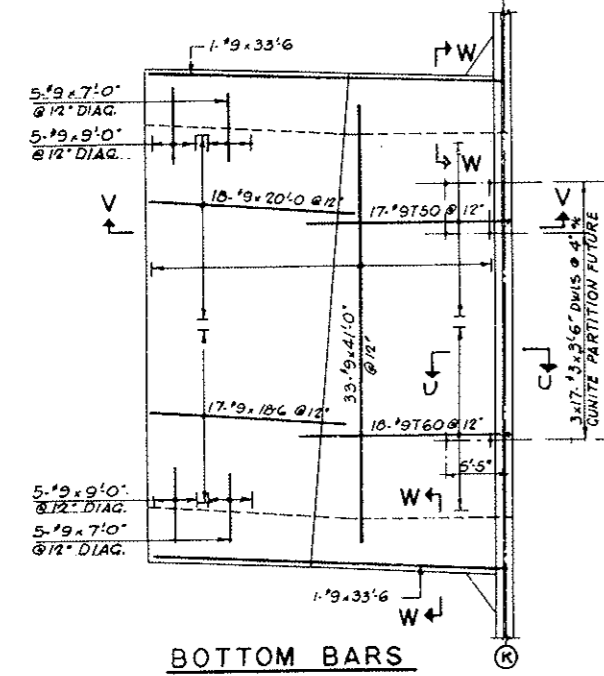
BOTTOM BARS

NORTH



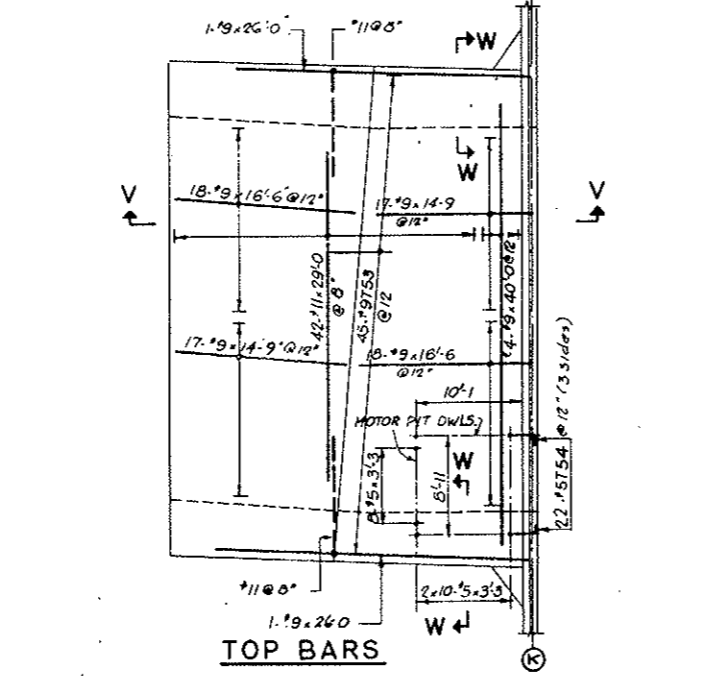
TOP BARS

TRANSITION



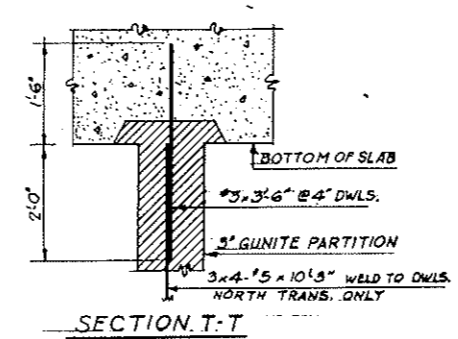
BOTTOM BARS

SOUTH

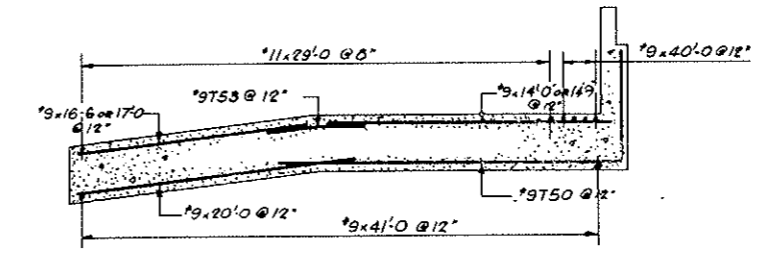


TOP BARS

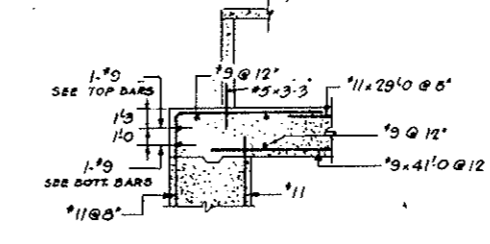
TRANSITION



SECTION T-T

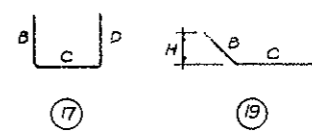


SECTION V-V



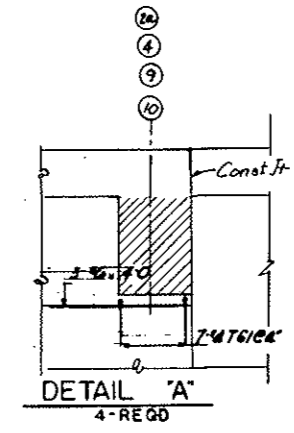
SECTION W-W

NO	SIZE	LNGT	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
29	9	20-6	T50	17	9-6	19-0									
92	9	15-0	52	17	11-2	0-4	3-6								
92	9	8-0	53	18	4-0	4-0						0-9			
44	5	5-3	54	17	0-10	4-5									
138	9	3-9	56	17	0-9	3-0									
6	9	41-9	57	17	1-0	39-9	1-0								
11	9	30-6	58	17	9-6	21-0									
12	9	31-6	59	17	9-6	22-6									
18	9	29-6	T60	17	9-5	20-0									
28	4	2-2	T61	17	1-0	1-2									



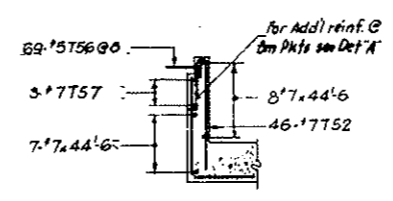
All Dims Out to Out
AS CONSTRUCTED
NO REVISIONS DATE 10-26-75

NO	SIZE	LENGTH
89	#11	29-0
66	#9	41-0
8	#	40-0
4	#	33-6
2	#	26-0
2	#	24-0
30	#	20-0
14	#	18-6
28	#	17-0
36	#	16-6
15	#	16-3
49	#	14-9
16	#	14-0
16	#	12-6
20	#	9-0
20	#	7-0
30	#7	44-6
12	#6	4-0
56	#5	3-3
12	#5	10-3
102	#3	3-6

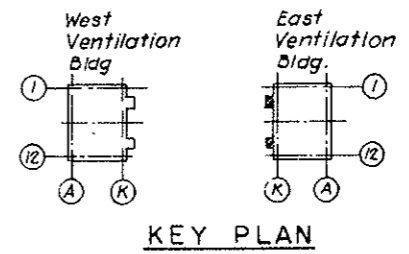


DETAIL 'A'
4-REGD

NOTES
 1. For Motor Pit Reinforcement see Dwg S-WE10A
 2. For Motor Pit Masonry see Dwg S-E23



SECTION U-U
REQD. x 2



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
TRANSITIONS
ROOF SLABS

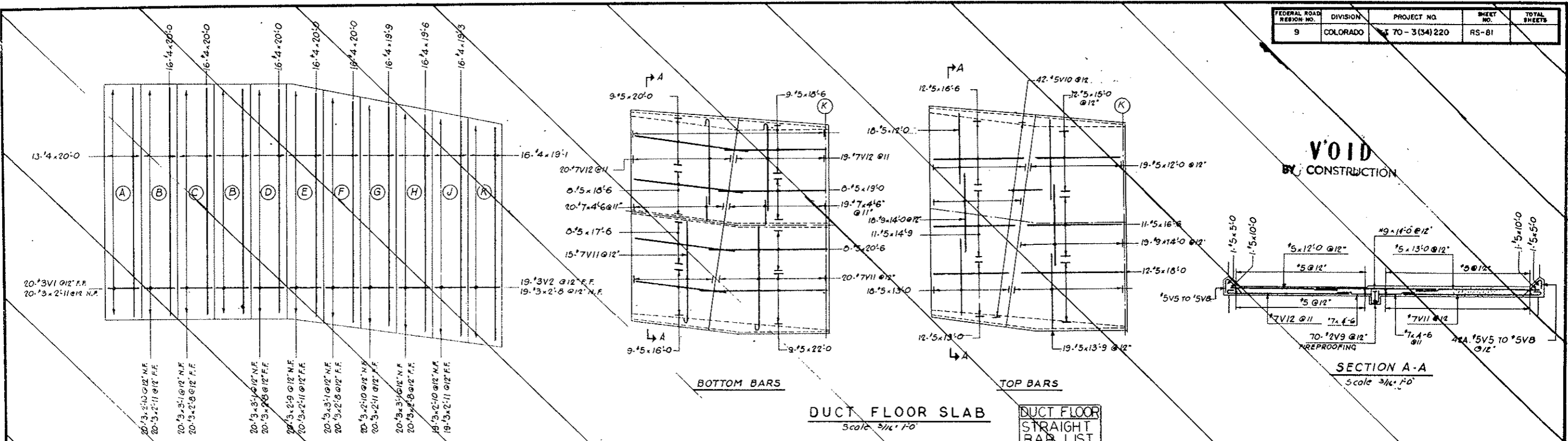
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED BY: AN
 DRAWN BY: AN
 CHECKED BY: EM
 SUBMITTED BY: [Signature]
 APPROVED BY: [Signature]
 SCALE: 1/8" = 1'-0" DATE: JAN 1968

DRAWING NO. S-E134

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	70-3(34)220	RS-81	

VOID BY CONSTRUCTION



DUCT FLOOR SLAB
Scale 3/16" = 1'-0"

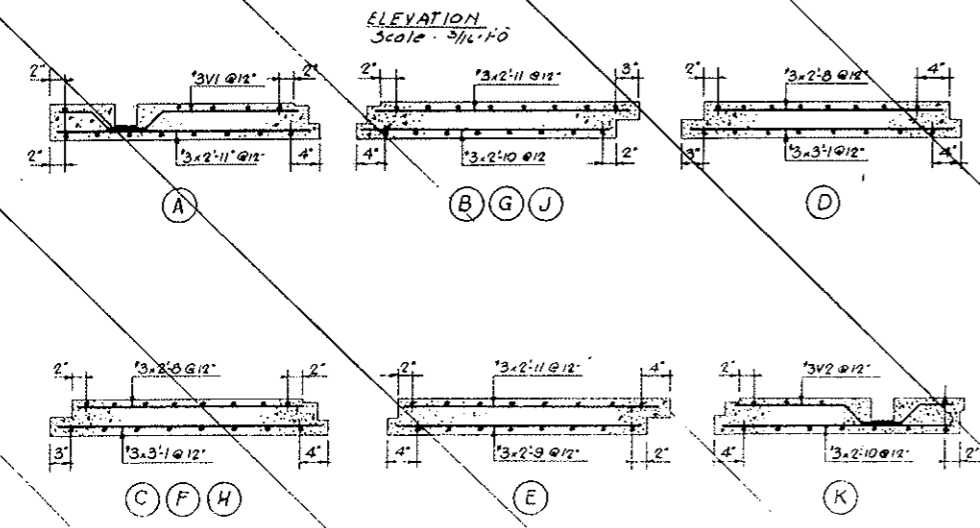
SECTION A-A
Scale 3/16" = 1'-0"

DUCT FLOOR STRAIGHT BAR LIST

NO.	SIZE	LENGTH
37	#9	7'-0"
35	#7	4'-6"
9	#5	22'-0"
8		20'-6"
9		20'-0"
34	7	17'-7"
4	5	3'-2"
4	5	2'-11"
4	5	2'-8"
4	5	2'-5"
70	2	1'-11"
42	5	6'-0"
37	7	19'-4"
39	7	16'-10"
9		16'-0"
11		14'-9"
56		14'-0"
19		13'-9"
24		13'-0"
2		10'-0"
2		5'-0"

BENDING DETAILS

NO.	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
20	3	2'-10"	V1	4		0-5	0-3 1/2	0-5	0-3 1/2	1-7		0-2 1/2			
20	3	2'-9"	2	4		0-5	0-3 1/2	0-5	0-3 1/2	1-6		0-2 1/2			
9		22'-0"			0-10	18-9									0-7
34	7	17'-7"	4		0-10	18-8									0-7
4	5	3'-2"	5	40	1-0	2-2					0-8 1/2	0-8 1/2			
4	5	2'-11"	6	40	1-0	1-11					0-8 1/2	0-8 1/2			
4	5	2'-8"	7	40	1-0	1-8					0-8 1/2	0-8 1/2			
4	5	2'-5"	8	40	1-0	1-5					0-8 1/2	0-8 1/2			
70	2	1'-11"	9	17	0-6	1-5									
42	5	6'-0"	10	4				3-0	3-0						
37	7	19'-4"	11	1	0-10	18-6									
39	7	16'-10"	12	1	0-10	16-0									

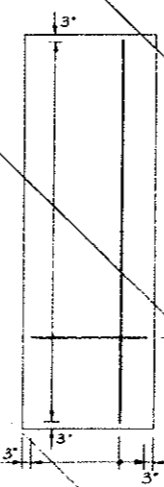


PANEL SECTIONS

DUCT DIVIDER WALL

STRAIGHT BAR LIST

NO.	SIZE	LGTH.
109	#4	20'-0"
16		19'-9"
16		19'-6"
16		19'-3"
16	#9	19'-1"
80	#9	3'-1"
100		2'-11"
160		2'-10"
20		2'-9"



TYPICAL SECTION

PRECAST CEILING PANELS
Not to Scale

NOTE: DETAIL LENGTH OF BARS TO BE VERIFIED AFTER EXACT DIMS. OF PRECAST CEILING PANEL ARE DETERMINED.

PRECAST CEILING PANELS SCHEDULE

6 EXHAUST PANELS	6 FRESH AIR PANELS
------------------	--------------------

STRAIGHT BARS

NO.	BAR REQD.	SIZE	BAR LENGTH
72	#4	18'-1"	
72	#4	16'-3"	
222	#4	5'-9"	
195	#4	5'-8"	

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
NORTH TRANSITION
DUCT FLOOR, DUCT DIVIDER AND TUNNEL CEILING

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED: A. H.
DRAWN: A. H.
CHECKED: E. M.
SUBMITTED: Paul Pedini
NEW YORK, N. Y.

RECOMMENDED: [Signature]
APPROVED: [Signature]

DRAWING NO. S-E135

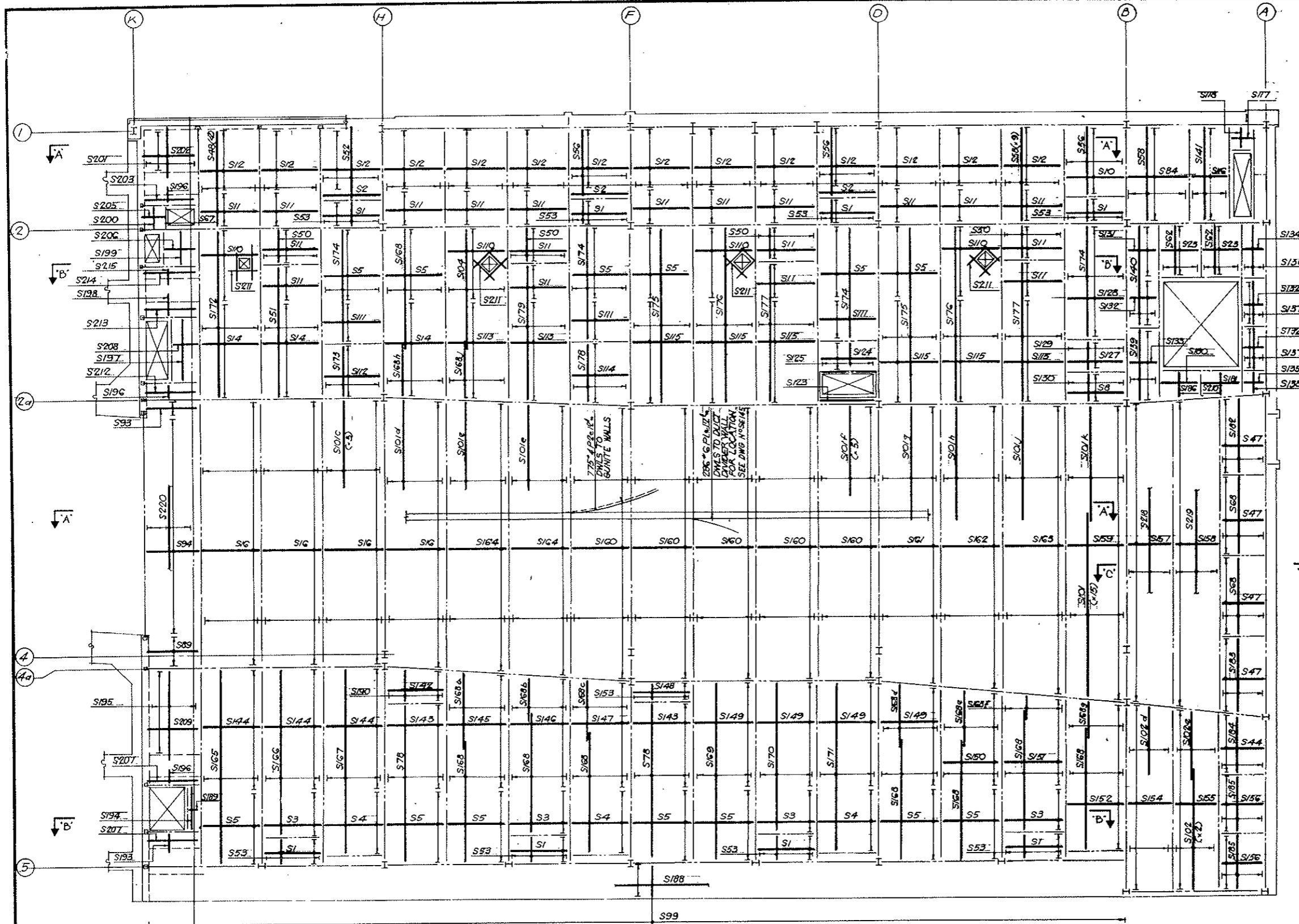
SCALE: AS NOTED DATE: JAN 1968

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	RS-82	

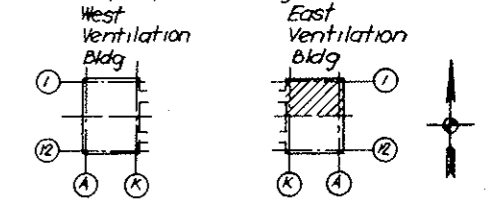


PLACING SEQUENCE OF BOTTOM SLAB BARS

AS CONSTRUCTED
NO REVISIONS - DATE 10-26-73



NOTES
For Fan Room Bottom Bars South Half See Dwg SE-137
For Schedule of Reinf. See Dwg SE-138
For Sections A-A, B-B, C-C see Dwg No SE-141

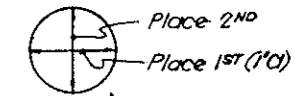


KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING FAN ROOM FLOOR SLAB-NORTH BOTTOM BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: HR	RECOMMENDED:				
DRAWN: HFB	APPROVED:				
CHECKED: ER	APPROVED:				
SUBMITTED:	APPROVED:				
Paul Rubin	APPROVED:				
Paul Rubin	APPROVED:				
NEW YORK, N.Y.	SCALE: 1/8" = 1'-0"	DATE: JAN. 1968	DRAWING NO. S-E136		

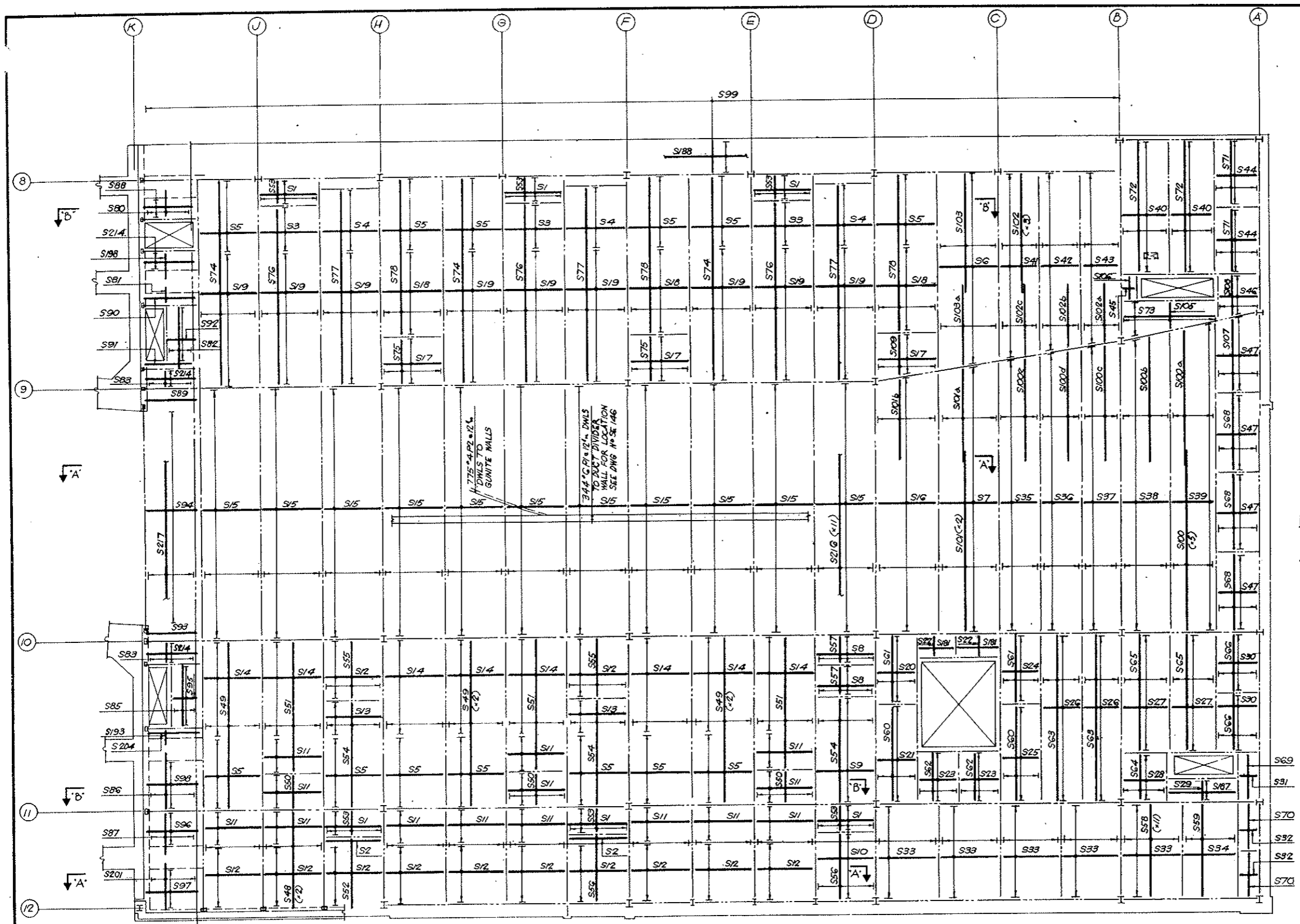
PLAN

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-83	

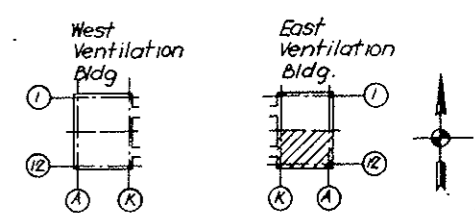


PLACING SEQUENCE OF BOTTOM SLAB BARS

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NOTES
 For Fan Room Bottom Bars North Half See Dwg No SE-136
 For Schedule of Reinf See Dwg No SE-138
 For Section AA, B-B See Dwg No SE-141



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING FAN ROOM FLOOR SLAB - SOUTH BOTTOM BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.R.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: H.R.	CHECKED: E.M.				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
NEW YORK, N. Y.		SCALE: 1/8" = 1'-0"	DATE: JAN 1968		
					DRAWING NO. S-E137

PLAN

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	RS-84	

SLAB SCHEDULE - BOTTOM BARS

MARK	NO	REINF.	SPAC.	REMARKS	MARK	NO	REINF.	SPAC.	REMARKS	MARK	NO	REINF.	SPAC.	REMARKS	MARK	NO	REINF.	SPAC.	REMARKS	
S1	14	9"5x9-9	6"		S76	3	7"4x29-9	18"		S110	4	24"5x9-9	6"	CUT AT OPNG	S174	4	7"4x18-9	18"		
2	5	3"5x9-9	6"		77	3	7"4x32-3	18"		111	3	11"5x9-9	7"		175	2	7"4x29-3	18"	CUT AT OPNG	
3	7	15"5x9-9	6"		70	5	7"4x26-3	18"		112	1	15"5x9-9	7"		176	2	7"4x29-3	18"	CUT AT OPNG	
4	6	21"5x9-9	6"		80	1	6"4x4-0	18"		113	2	27"5x9-9	7"		177	2	7"4x23-3	18"		
5	26	24"5x9-9	6"		S81	1	6"4x2-6	18"		114	1	17"5x9-9	7"		178	1	7"4 1EA	18"		
S6	1	6"4x5x9-9	6"		82	1	4"4x10-3	18"		115	6	28"5x9-9	7"				9-9 10-0 10-3			
7	1	87"5x9-9	6"		83	2	6"4x2-9	18"		116	1	32"4x5-9	6"				9-10 10-1			
8	3	10"5x9-9	6"		84	1	32"5x9-9	6"		117	1	8"4x4-3	6"				9-11 10-2			
9	1	35"5x9-9	6"		85	1	4"4x10-6	18"		118	1	9"4x3-9	6"		179	1	7"4 1EA	18"		
10	2	22"5x9-9	6"		S86	1	6"4x8-9	18"									22-9 22-6 22-3			
S11	33	12"5x9-9	6"		87	1	6"4x6-0	18"							S180	1	4"4x6-3"	18"		
12	26	15"5x9-9	7"		88	1	7"5x8-5	6"		124	1	8"5x9-9	7"		181	3	3"4x6-3	18"		
13	2	10"5x9-9	7"		89	2	10"5x8-5	6"		125	1	14"4x5-0	9"		182	1	5"4 1EA	18"		
14	11	25"5x9-9	7"		90	1	4"5x8-5	6"		S123	1	2"3x9-9		AT OPNG			12-9 12-8 12-11			
15	11	65"5x9-9	7"		S91	1	3"5x8-5	6"		127	1	11"5x9-9	6"		183	1	5"4 1EA	18"		
S16	5	70"5x9-9	7"		92	1	21"4x4-0	6"		128	1	38"5x9-9	6"				12-1 12-6 12-10			
17	3	13"5x9-9	7"		93	2	5"5x8-5	6"		129	1	14"4x5-3	9"		184	1	5"4 1EA	18"		
18	3	23"5x9-9	7"		94	2	71"5x8-0	6"		S130	1	14"4x4-9	9"				9-3 9-8 10-1			
19	9	26"5x9-9	7"		95	1	22"5x4-0	6"		131	1	18"4x4-3	6"		185	2	5"4x9-3	18"		
20	1	21"4x6-6	6"		S96	1	11"5x8-5	6"		132	3	12"4x4-3	7"		186	1	13"4	6"	BOTT MOST LAYER	
S21	1	31"4x6-6	6"		97	1	13"5x8-5	6"		133	1	21"4x4-3	7"				6"4x9			
22	2	11"4x3-9	7"	BOTT MOST LAYER	98	1	16"5x8-5	6"		134	1	15"4x4-3	7"		187	1	3"4x11-6	18"		
23	4	18"4x6-3	6"		99	2	160"4x5-6	12"	STAGG LAPS	135	1	7"4x4-3	7"		188	2	5"4x4-30-0	18"	STAGG LAPS	
24	1	21"4x6-3	6"		100	5	5"4x30-0	18"		136	1	3"4x8-9	18"		189	1	16"5x1-9	6"		
25	1	31"4x6-3	6"		S100a	1	5"4x22-3	18"		137	2	3"4x7-0	18"		S190	1	14"4 2EA	8"		
S26	2	54"4x6-6	6"		100b	1	5"4x20-9	18"		138	1	3"4 1EA	18"				5-0 5-5			
27	2	39"4x7-3	6"		100c	1	5"4x19-3	18"		139	1	3"4 1EA	18"				5-1 5-7			
28	1	12"4x6-3	9"		100d	1	5"4x18-3	18"		140	1	3"4 1EA	18"				5-2 5-8			
29	1	19"4x3-6	7"	BOTT MOST LAYER	100e	1	5"4x17-0	18"		141	1	4"4x15-9	18"				5-4			
30	2	19"4x7-3	6"		S101	17	7"4x30-0	18"		142	1	10"5x9-9	7"							
S31	1	14"4x3-6	7"		101a	1	7"4x16-0	18"		143	2	23"5x9-9	7"							
32	2	13"4x3-6	7"		101b	1	7"4x14-6	18"		144	3	33"5x9-9	7"							
33	5	37"5x9-9	5"		101c	3	7"4x15-0	18"	STAGG LAPS	145	1	32"5x9-9	7"							
34	1	37"5x8-3	5"		101d	1	7"4x15-3	18"		146	1	31"5x9-9	7"							
35	1	90"4x6-3	6"		S101e	2	7"4x15-9	18"		147	1	30"5x9-9	7"							
S36	1	92"4x6-6	6"		101f	5	7"4x16-3	18"		148	1	5"5x9-9	7"							
37	1	94"4x6-6	6"		101g	1	7"4x17-3	18"		149	4	28"5x9-9	7"							
38	1	97"4x7-3	6"		101h	1	7"4x18-3	18"		S150	1	27"5x9-9	7"							
39	1	101"4x7-3	6"		101i	1	7"4x19-0	18"		151	1	26"5x9-9	7"							
40	2	42"4x7-3	6"		S101k	1	7"4x20-0	18"		152	1	51"5x9-9	6"							
S41	1	72"4x6-3	5"		101j	1	7"4x20-0	18"		153	1	14"4x3-0	9"							
42	1	69"4x6-6	5"		102	5	5"4x20-0	18"		154	1	62"4x7-3	6"							
43	1	67"4x6-6	5"		102a	1	5"4x10-0	18"		155	1	60"4x7-3	6"							
44	3	21"4x7-3	6"		102b	1	5"4x11-0	18"		156	2	19"4x7-3	6"							
45	1	9"4x2-0	6"		102c	1	5"4x12-3	18"		157	1	100"4x7-3	6"							
S46	1	11"4x7-0	9"		S102d	1	5"4x12-0	18"		158	1	103"4x7-3	6"							
47	8	26"4x7-3	6"		102e	1	5"4x11-3	18"		159	1	97"5x9-9	6"							
48	4	7"4x16-3	18"		103	1	7"4x20-0	18"		S160	5	72"5x9-9	7"							
49	5	7"4x27-9	18"		103a	1	7"4x14-0	18"	STAGG LAPS	161	1	73"5x9-9	7"							
50	7	14"4x5-9	9"		104	1	7"4x20-0	18"	CUT AT OPNG	162	1	75"5x9-9	7"							
S51	4	7"4x21-9	18"		S105	1	31"5 1EA	6"	BOTT MOST LAYER	163	1	76"5x9-9	7"							
52	2	7"4x11-9	18"				7-2, 7-1, 7-0			164	2	71"5x9-9	7"							
53	14	14"4x4-3	9"				6-11, 6-10, 6-8			165	1	7"4x32-3	18"							
54	3	7"4x17-9	18"				6-7, 6-6, 6-5			166	1	7"4x27-9	18"							
55	2	7"4x9-9	18"				6-4, 6-2, 6-1			167	1	7"4x30-3	18"							
S56	5	7"4x11-3	18"				6-0, 5-11, 5-10			168	8	7"4x20-0	18"	STAGG LAPS						
57	2	13"4x3-9	9"				5-8, 5-7, 5-6			168a	1	7"4x13-0	18"							
58	21	7"4x15-9	18"				5-5, 5-4, 5-2			168b	1	7"4x8-0	18"							
59	1	6"4x15-9	18"				5-1, 5-0, 4-11			168c	1	7"4x10-3	18"							
60	2	5"4x16-3	18"				4-10, 4-8, 4-7			168d	1	7"4x11-0	18"							
S61	2	5"4x11-3	18"				4-6, 4-5, 4-4			168e	1	7"4x10-0	18"							
62	4	5"4x8-9	18"				4-2			168f	1	7"4x4-6	18"							
63	2	5"4x27-9	18"		106	1	2"4x4-3	18"		168g	1	7"4x6-9	18"							
64	1	9"4x8-0	9"		107	1	5"4 1EA	18"		168h	1	7"4x9-6	18"							
65	2	5"4x19-3	18"				12-10, 12-6, 12-2			168i	1	7"4x10-0	18"	STAGG LAPS						
S66	2	5"4x9-9	18"				11-10, 11-6			169	1	7"4x29-6	18"							
67	1	1"5x3-3		AT OPNG	108	1	10"4 1EA	9"		S170	1	7"4x25-0	18"							
68	5	5"4x12-9	18"				8-9, 7-11			171	1	7"4x27-6	18"	CUT AT OPNG						
69	1	3"4x8-0	18"				8-7, 7-9			172	1	7"4x27-9	18"							
70	2	3"4x7-9	18"				8-5, 7-7			173	1	7"4x8-9	18"							
S71	2	5"4x10-3	18"				8-3, 7-5													
72	2	5"4x20-9	18"	CUT AT OPNG	109	1	7"4 1EA	18"												
73	1	5"4x15-0	18"	FAN BARS			7-9, 7-5, 7-2													
74	3	7"4x34-3	18"				6-11, 6-8, 6-4													
75	2	7"4x7-9	18"				6-1													

BENDING DETAILS

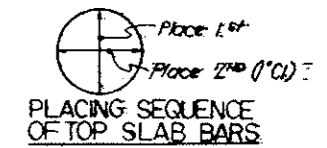
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630	6	3-0	P1	17		1-0	2-0					
550	4	2-8	2	17		8-2	0					


AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

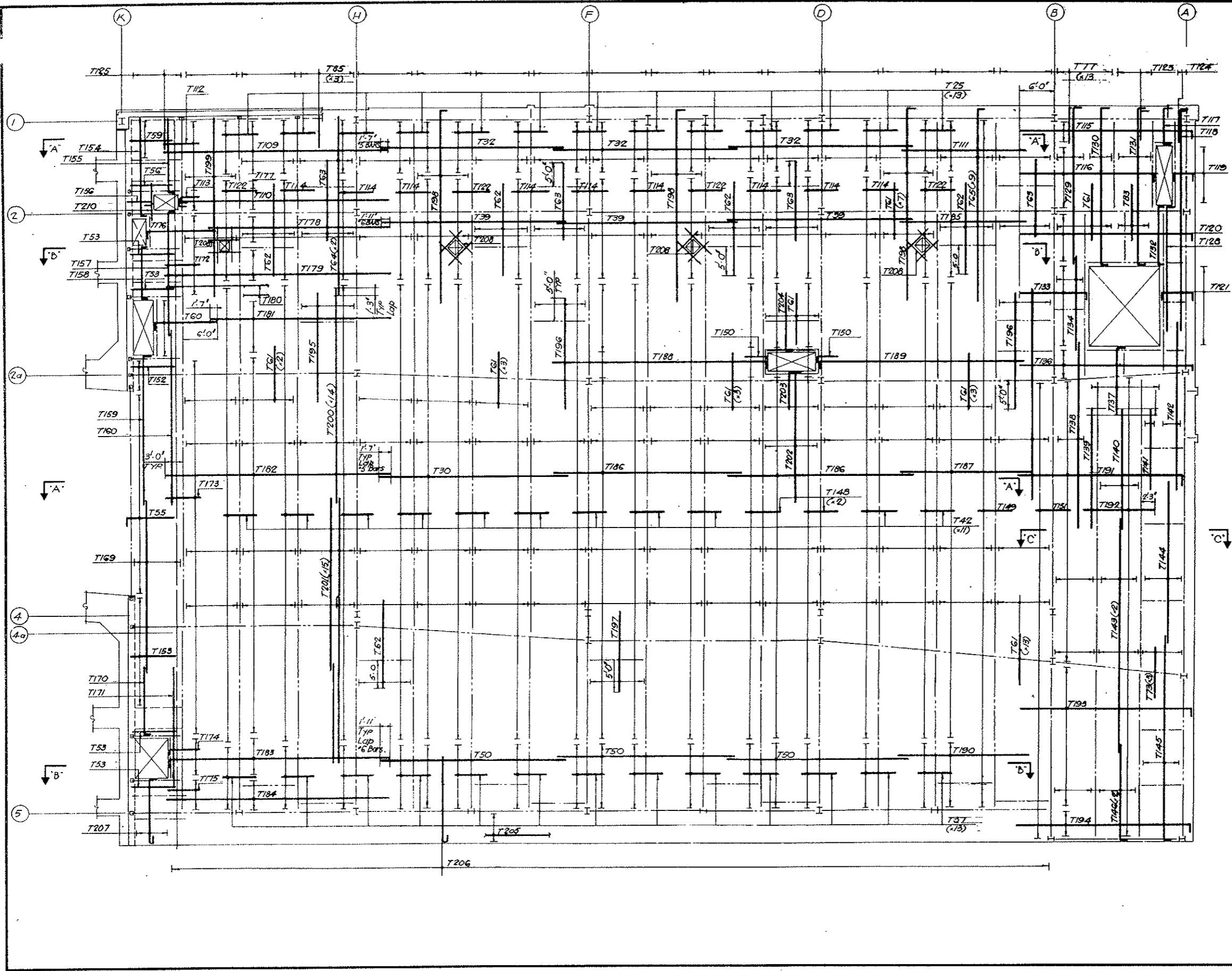
STRAIGHT BAR LIST

NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH
578A	5	9-9	7	4	25-0	20	4	10-0	26	4	3-0
67	8-3	14	23-3	1	9-11	12	1	2-9			
142	8-0	1	22-9	2	9-10	18	1	2-6			
1	7-2	1	22-8	15	9-9	21	1	2-0			
1	7-1	1	22-7	1	9-8	16	1	1-9			
1	7-0	6	22-6	17	9-6	6	1	14-9			
1	6-11	1	22-5	1	9-5						
1	6-10	1	22-4	11	9-3						
1	6-8	6	22-3	37	8-9						
1	6-7	28	21-9	1	8-7						
1	6-6	5	21-0	1	8-5						
1	6-5										

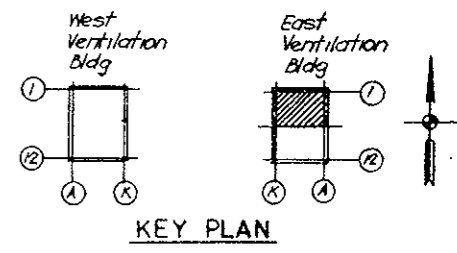
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	RS-85	



AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

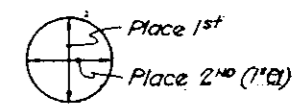


NOTES
 For Top Bars South Half See Dwg SE 140
 For Schedule and Bending Details See Dwg SE 141



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT					
EAST VENTILATION BUILDING					
FAN ROOM FLOOR SLAB-NORTH					
TOP BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.R.	RECOMMENDED: <i>[Signature]</i>		DRAWING NO. S-E139		
DRAWN: H.R.	APPROVED: <i>[Signature]</i>		DATE: JAN 1968		
CHECKED: E.M.	SCALE: 1/8" = 1'-0"				
SUBMITTED: <i>[Signature]</i>					
<i>[Signature]</i>					

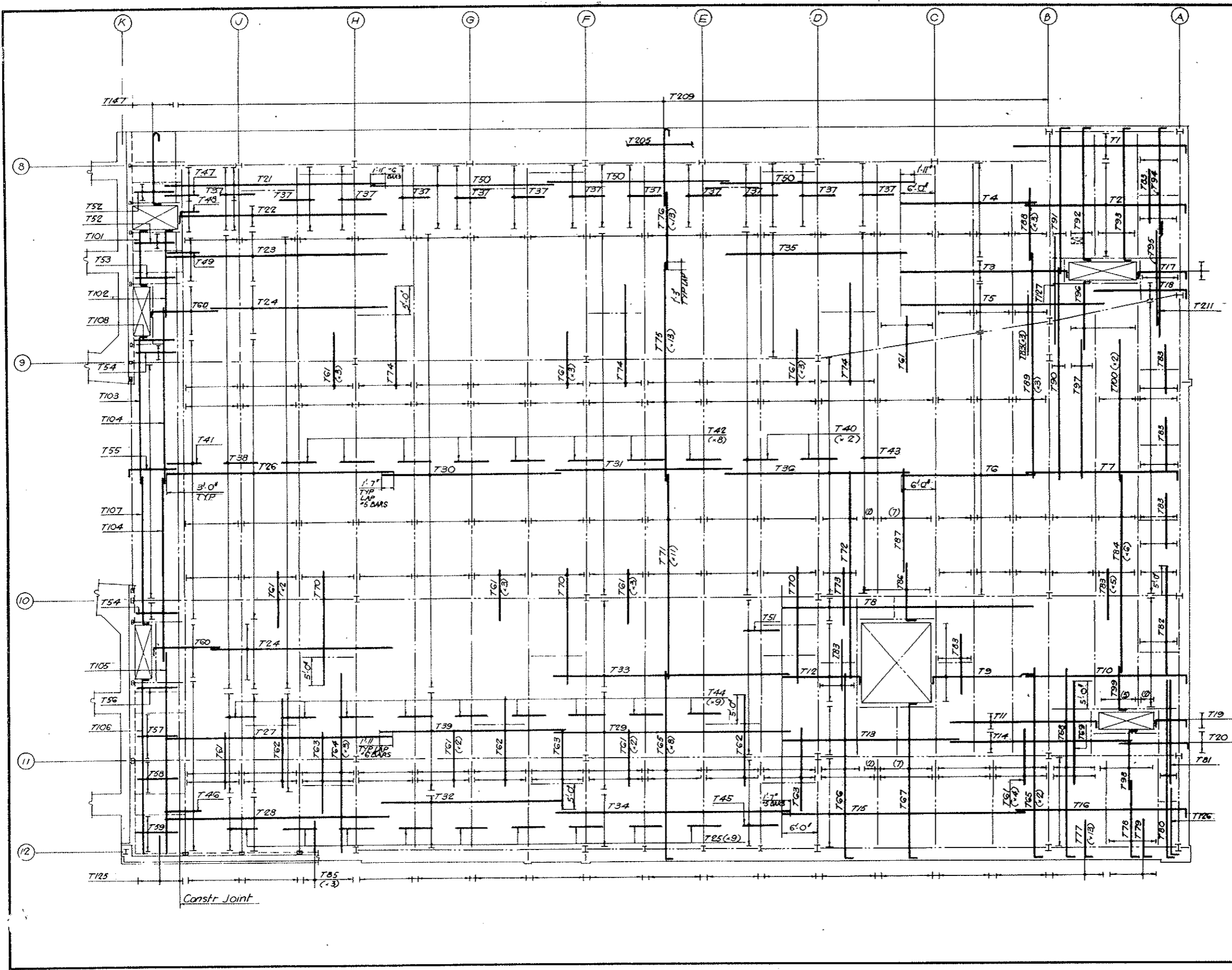
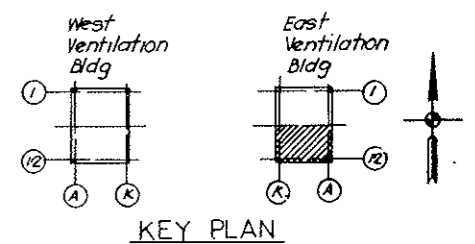
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-86	



PLACING SEQUENCE OF TOP SLAB BARS

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

NOTES
 For Top Bars North Half See Dwg S-E-139
 For Schedule and Bending Details See Dwg S-E-141



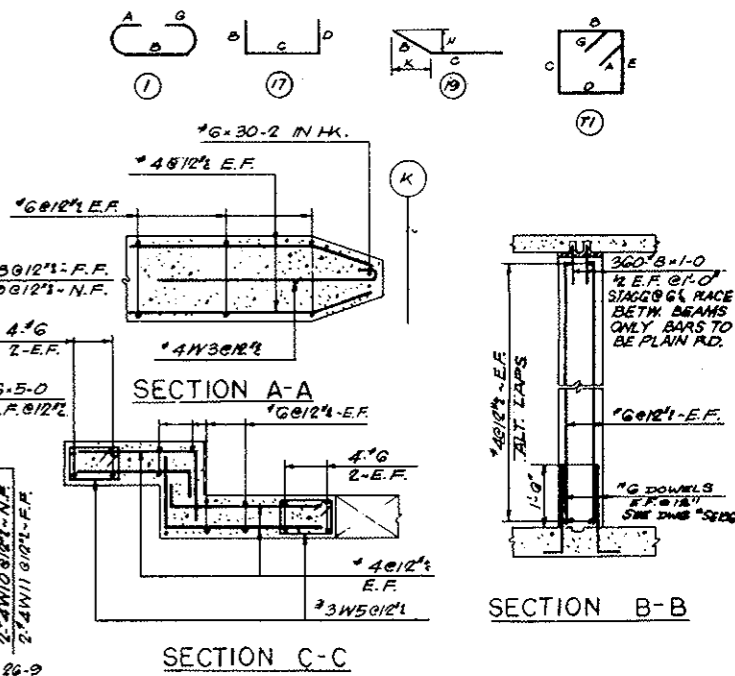
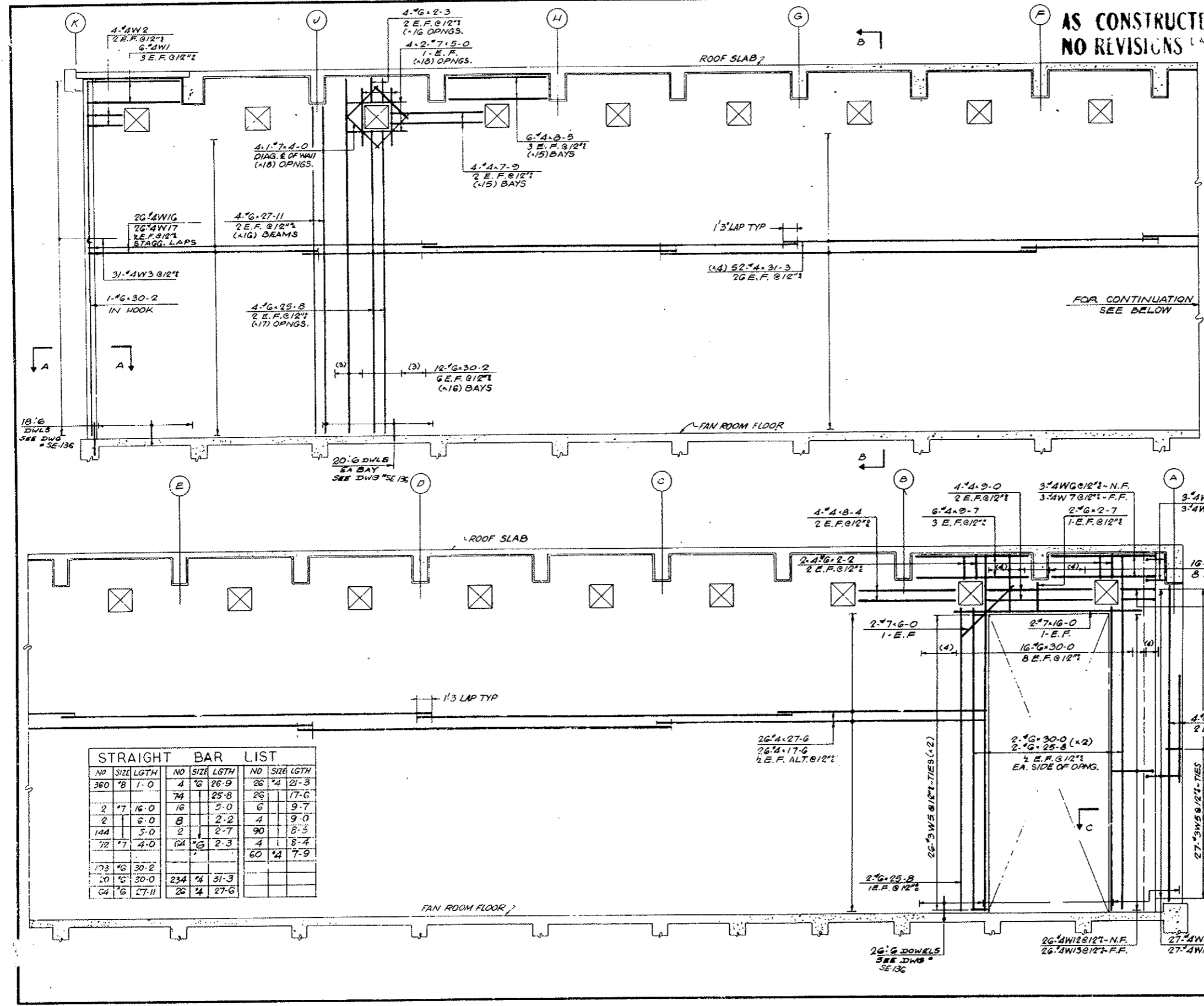
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT					
EAST VENTILATION BUILDING					
FAN ROOM FLOOR SLAB - SOUTH					
TOP BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.A.	RECOMMENDED: H.A.				
DRAWN: H.R.	CHECKED: E.M.				
SUBMITTED: G. Rydon	APPROVED: Frank Wilkes				
Paul Sall					
NEW YORK, N. Y.	SCALE: 1/8" = 1'-0"	DATE: JAN 1968	DRAWING NO. S-E-140		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-91	

**AS CONSTRUCTED
NO REVISIONS** (DATE) 10-26-75

BENDING DETAILS															
NO.	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	V
6	#4	8-0	W1	19	0-9	7-3							0-34	0-9	
4	#4	3-0	2	19	0-9	2-3							0-34	0-9	
31	#4	3-0	3	1	0-6	2-6									0-3
79	#3	4-6	5	71	0-4	0-9	1-2	0-9	1-2		0-4				
3	#4	10-10	WG	17	2-0	8-10									
3	#4	9-5	7	17	0-7	8-10									
3	#4	3-5	8	17	2-0	1-9									
3	#4	2-0	9	17	0-7	1-5									
2	#4	4-10	10	17	2-0	2-10									
2	#4	3-5	11	17	0-7	2-10									
26	#4	5-9	12	17	2-0	3-9									
26	#4	4-4	13	17	0-7	3-9									
27	#4	4-11	14	17	2-0	2-11									
27	#4	3-6	15	17	0-7	2-11									
26	#4	22-0	WG	19	0-9	19-3							34	0-9	
26	#4	30-0	17	19	0-9	29-3							34	0-9	

All Dims Out to Out.



STRAIGHT BAR LIST							
NO	SIZE	LGTH	NO	SIZE	LGTH		
360	#8	1-0	4	#6	26-9		
			74	#1	25-8		
2	#7	16-0	16	#5	5-0		
2	#1	6-0	8	#2	2-2		
144	#5	5-0	2	#2	2-7		
72	#7	4-0	64	#6	2-3		
					60	#4	7-9
173	#6	30-2					
20	#5	30-0	234	#4	31-3		
64	#6	27-11	26	#4	27-6		

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
DUCT DIVIDER WALL
NORTH

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED: H.R.
DRAWN: R.E.
CHECKED: E.W.
SUBMITTED: J. Paul Still
NEW YORK, N. Y.

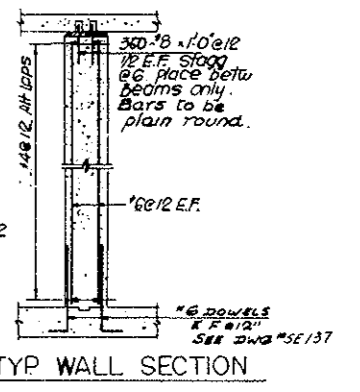
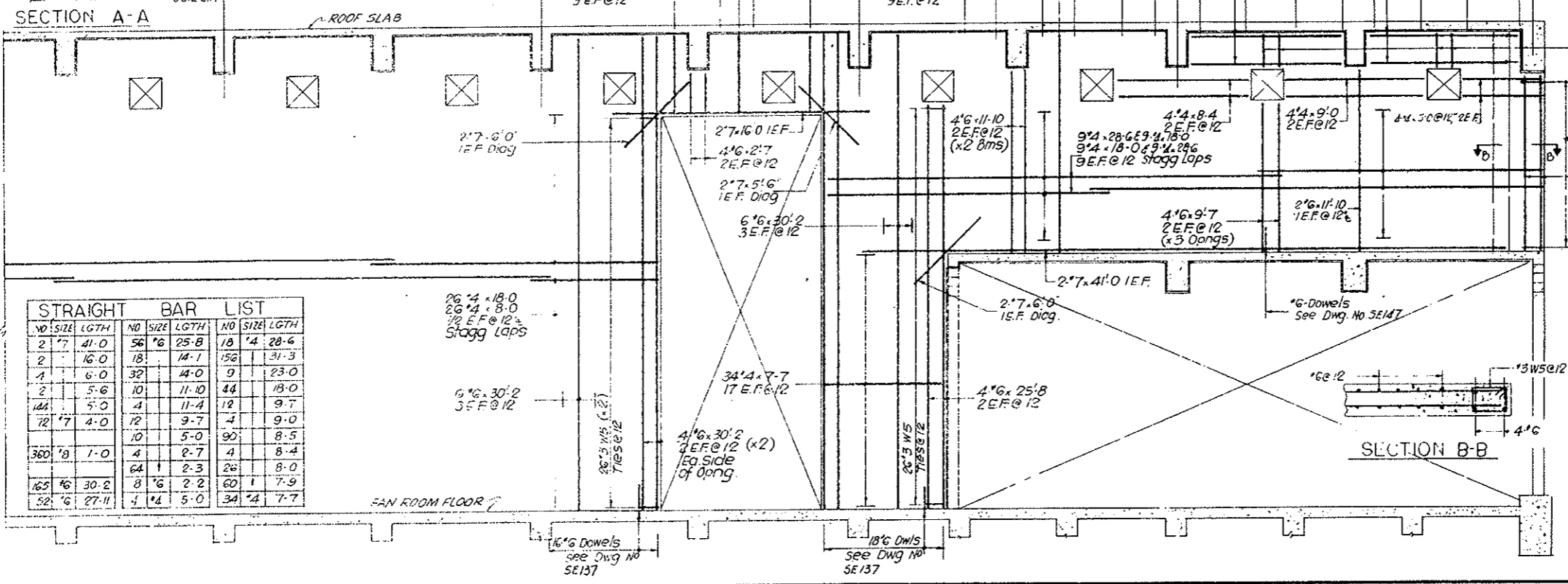
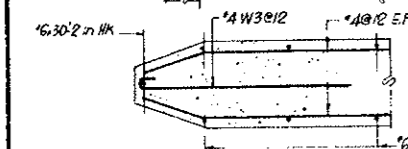
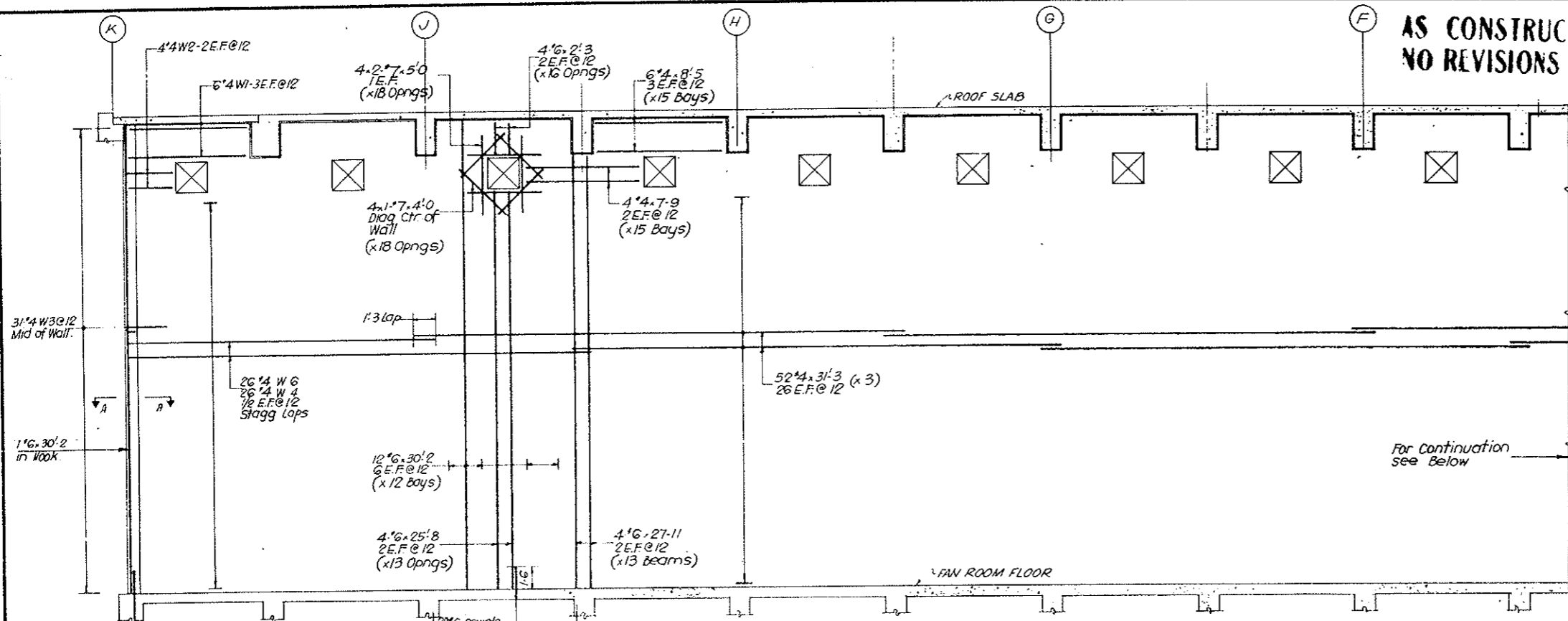
RECOMMENDED:
APPROVED: J. Paul Still
DATE: JAN 1968

DRAWING NO. S-E145

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-92	

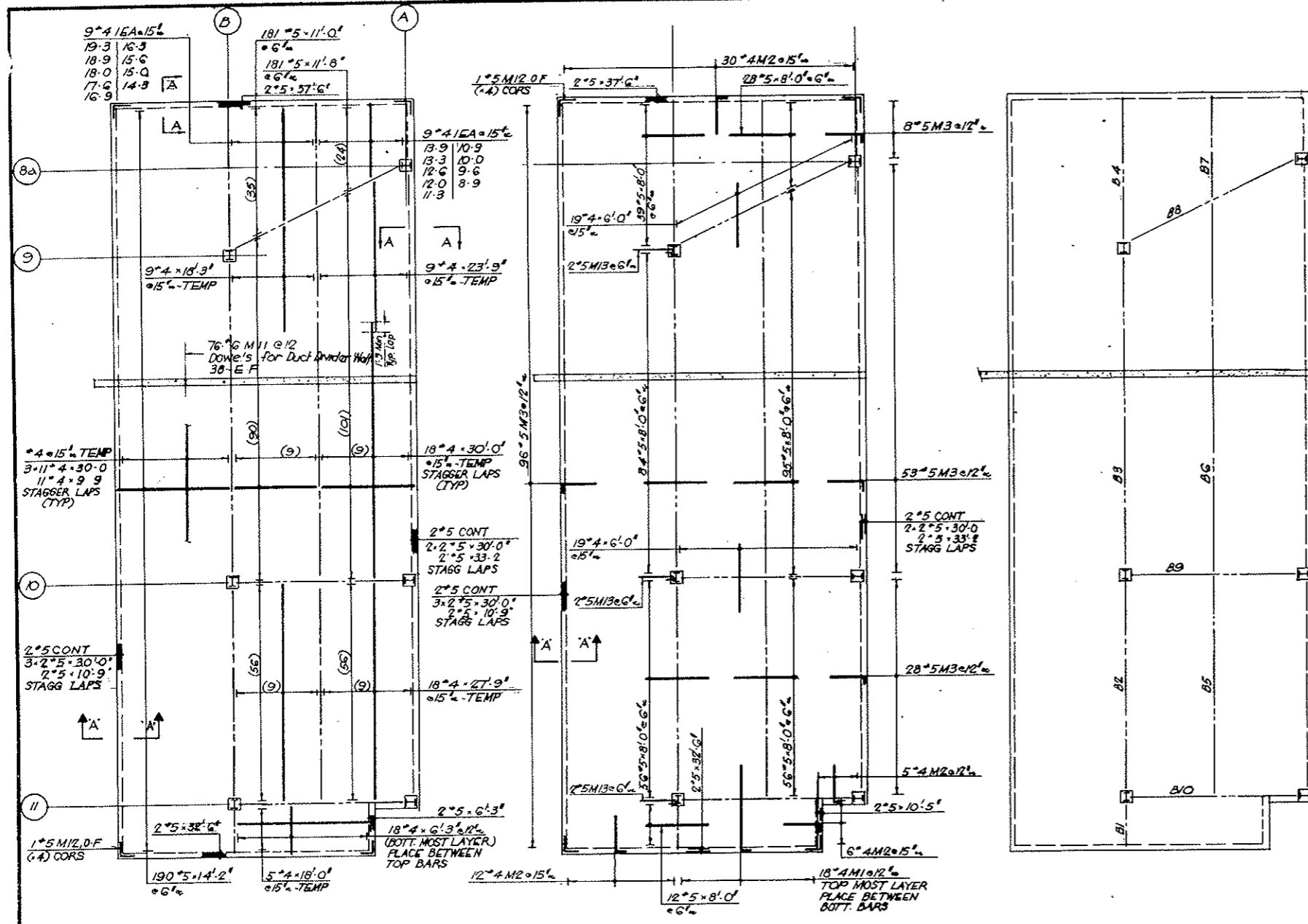
BENDING DETAILS														
NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	J
1	4	8-0	W 1	19	0-9	7-3							0-34	0-9
2	4	3-0	2	19	0-9	2-3							0-34	0-9
3	4	3-0	3	1	0-6	2-6								0-9
4	4	30-0	4	19	0-9	29-3							0-34	0-9
5	3	4-6	5	71	0-4	0-9	1-2	0-9	1-2	0-4				
6	4	20-0	WG	19	0-9	18-3							0-34	0-9



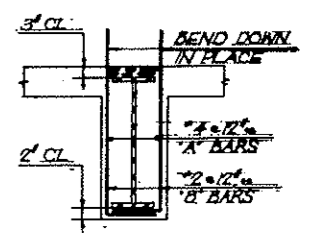
STRAIGHT BAR LIST					
NO	SIZE	LGTH	NO	SIZE	LGTH
2	7	41-0	56	#6	25-8
2	7	16-0	18	#6	14-1
1	4	6-0	32	#6	44-0
2	7	5-6	10	#6	11-10
144	#4	5-0	4	#4	11-4
12	7	4-0	12	#4	9-7
			10	#4	5-0
360	#8	1-0	4	#4	2-7
165	#6	30-2	8	#6	2-2
52	#6	27-11	4	#4	5-0
			34	#4	7-7

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING DUCT DIVIDER WALL SOUTH					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: E.M.	RECOMMENDED: J.S. W. Heimbach				
CHECKED: R.F.	APPROVED: Frank L. ...				
SUBMITTED: Paul Rubin	DATE: JAN 1968				
DRAWING NO. S-E146					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-93	

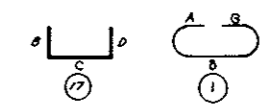


SCHEDULE OF FIREPROOFING					
MARK	NOS	SIZE	A BARS @ 12"	B BARS @ 12"	
B 1	1	13-9/4		2-6" 2M 5	
2	1	24-1/8	2-4-26-6	2-27-2M 5	
3	1	29-1/8	2-2-4-20-3	2-41-2M 6	
4	1	15-9/8		2-19-2M 7	
5	1	21-1/11	2-4-27-9	2-28-2M 8	
B 6	1	29-1/8	2-2-4-24-0	2-48-2M 9	
7	1	15-9/8		2-15-2M 7	
8	1	29-1/8	2-4-12-3	2-24-2M 10	
9	1	29-1/8	2-4-11-9	2-23-2M 10	
10	1	21-1/11	1-4-10-4	2-23-2M 8	



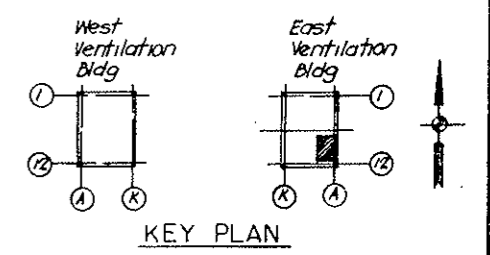
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

BENDING DETAILS															
NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
18	4	11-0	M 1	17			7	10-5							
56	4	5-1	2	17			7	4-6							
191	5	5-1	3	17			7	4-6							
12	2	1-9	4	17			6	1-3							
54	2	2-10	5	17			8	2-2							
82	2	4-0	6	17			11	3-1							
68	2	2-0	7	17			6	1-6							
108	2	2-9	8	17			8	2-1							
96	2	4-2	9	17			1-0	3-2							
94	2	3-8	10	17			10	2-10							
76	6	3-3	11	17			1-0	2-3							
8	5	3-2	12	17			1-7	1-7							
6	5	4-7	13	1	7	4-0									

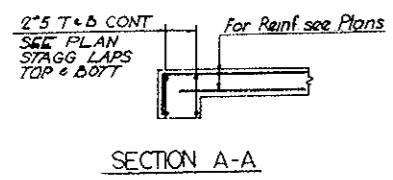


All Dims Out to Out.

NOTE
 For Reinf of Duct Divider Wall
 See Dwg SE 146



STRAIGHT BAR LIST								
NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH
4	#5	37-6	1	#4	17-6	2	#4	10-0
4	#4	33-2	1	#4	16-9	1	#4	10-0
4	#4	32-6	1	#4	16-3	11	#4	9-9
25	#4	30-0	51	#4	30-0	1	#4	15-6
190	#4	14-2	20	#4	27-9	1	#4	15-0
181	#4	11-8	2	#4	26-6	1	#4	14-3
181	#4	11-0	4	#4	24-0	1	#4	13-9
4	#4	10-9	9	#4	23-9	1	#4	13-3
2	#4	10-5	1	#4	22-3	1	#4	12-6
370	#4	8-0	4	#4	20-9	2	#4	12-3
2	#4	6-3	1	#4	19-3	1	#4	12-0
			1	#4	18-9	2	#4	11-9
			9	#4	18-3	1	#4	11-3
			1	#4	18-0	3	#4	11-0
			5	#4	17-8	1	#4	10-8



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
CONTROL ROOM CEILING

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

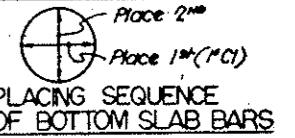
DESIGNED: H.R.
 DRAWING: H.R.
 CHECKED: E.P.
 SUBMITTED: J. Paul Smith

RECOMMENDED:
 APPROVED: J. Paul Smith

DRAWING NO. S-EI 47

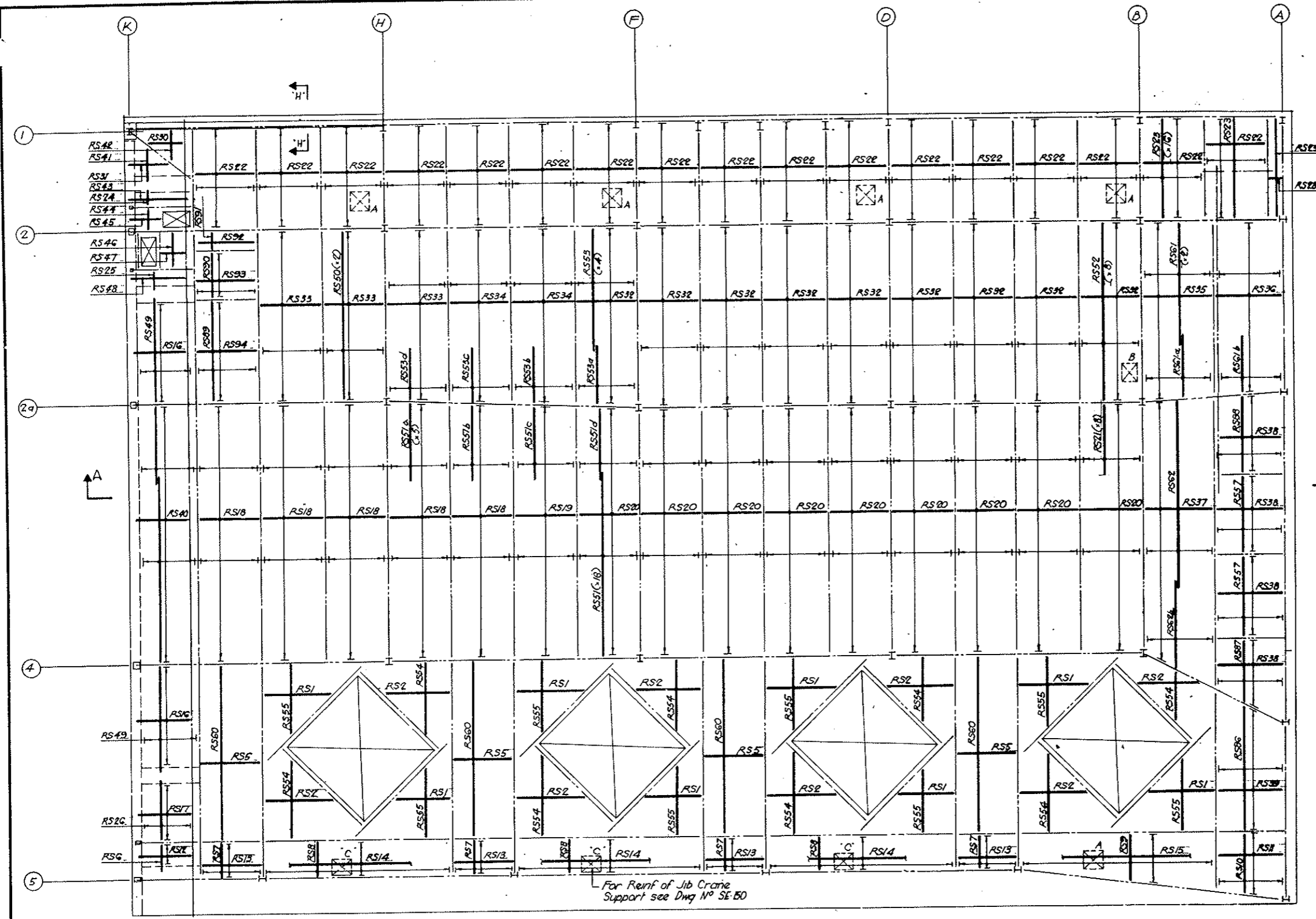
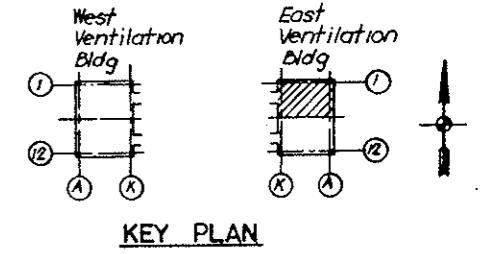
SCALE: 1/8" = 1'-0" DATE: JAN 1968

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-94	



**AS CONSTRUCTED
NO REVISIONS** DATE 10-26-73

NOTES
 For Roof Bottom Bars South Half See Dwg No SE-149
 For Schedule of Reinf See Dwg No SE-150
 For Section A-A See Dwg No SE-150
 For Section H-H See Dwg No SE-150



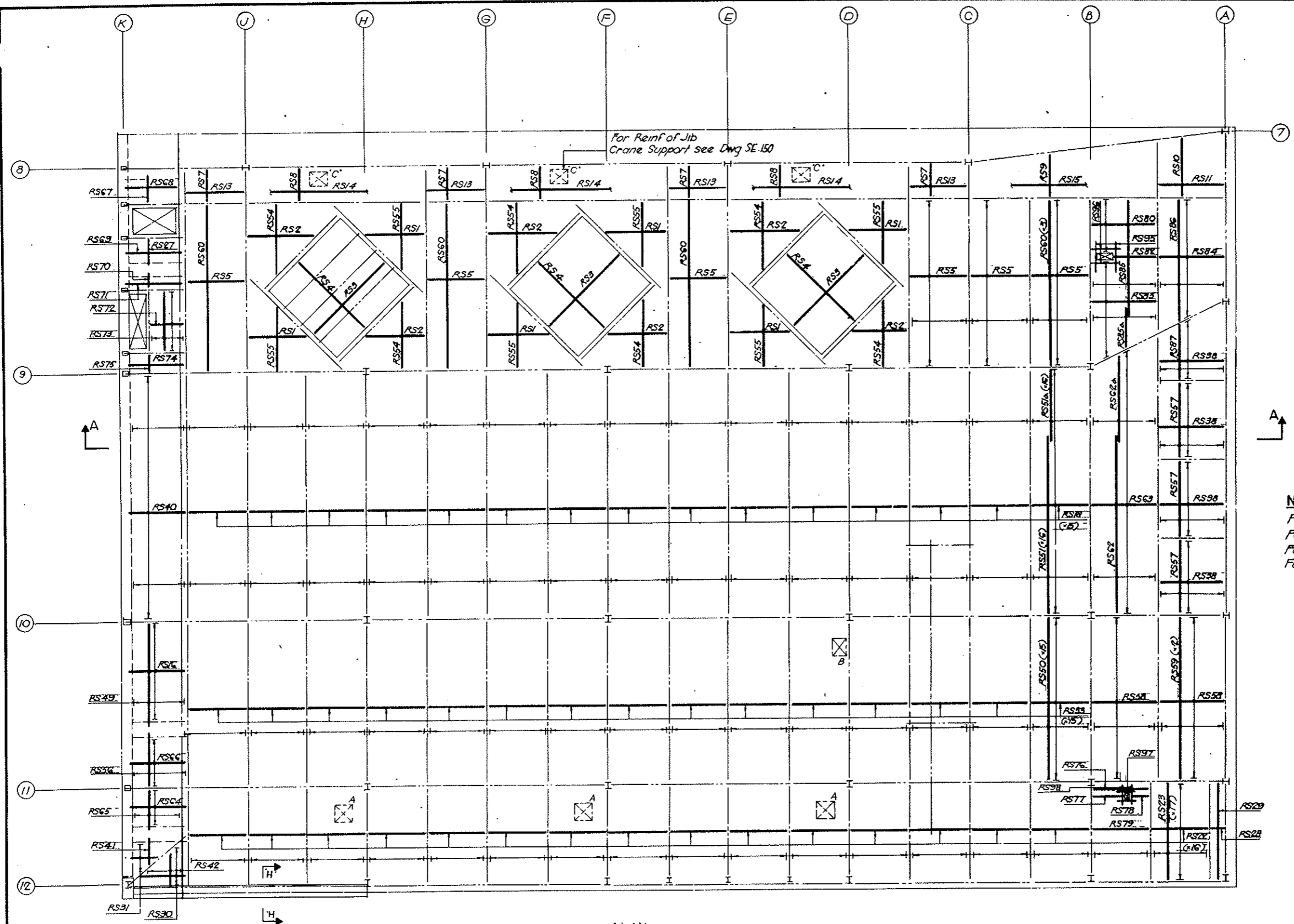
PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT					
EAST VENTILATION BUILDING					
ROOF SLAB - NORTH BOTTOM BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.P.	RECOMMENDED: H.P.	DRAWN: H.P.			
CHECKED: E.M.	APPROVED: H.P.	SUBMITTED: H.P.			
Paul Radu	Paul Radu	DATE: JAN 1968			
NEW YORK, N. Y.		SCALE: 1/8" = 1'-0"	DRAWING NO. S-EI48		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-95	

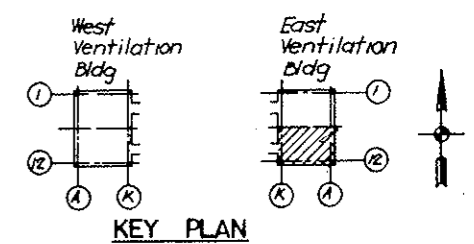


AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PLAN

NOTES
 For Roof Bottom Bar North Half See Dwg No SE-148
 For Schedule of Roof See Dwg No SE-150
 For Section A-A See Dwg No SE-150
 For Section H-H See Dwg No SE-150



KEY PLAN

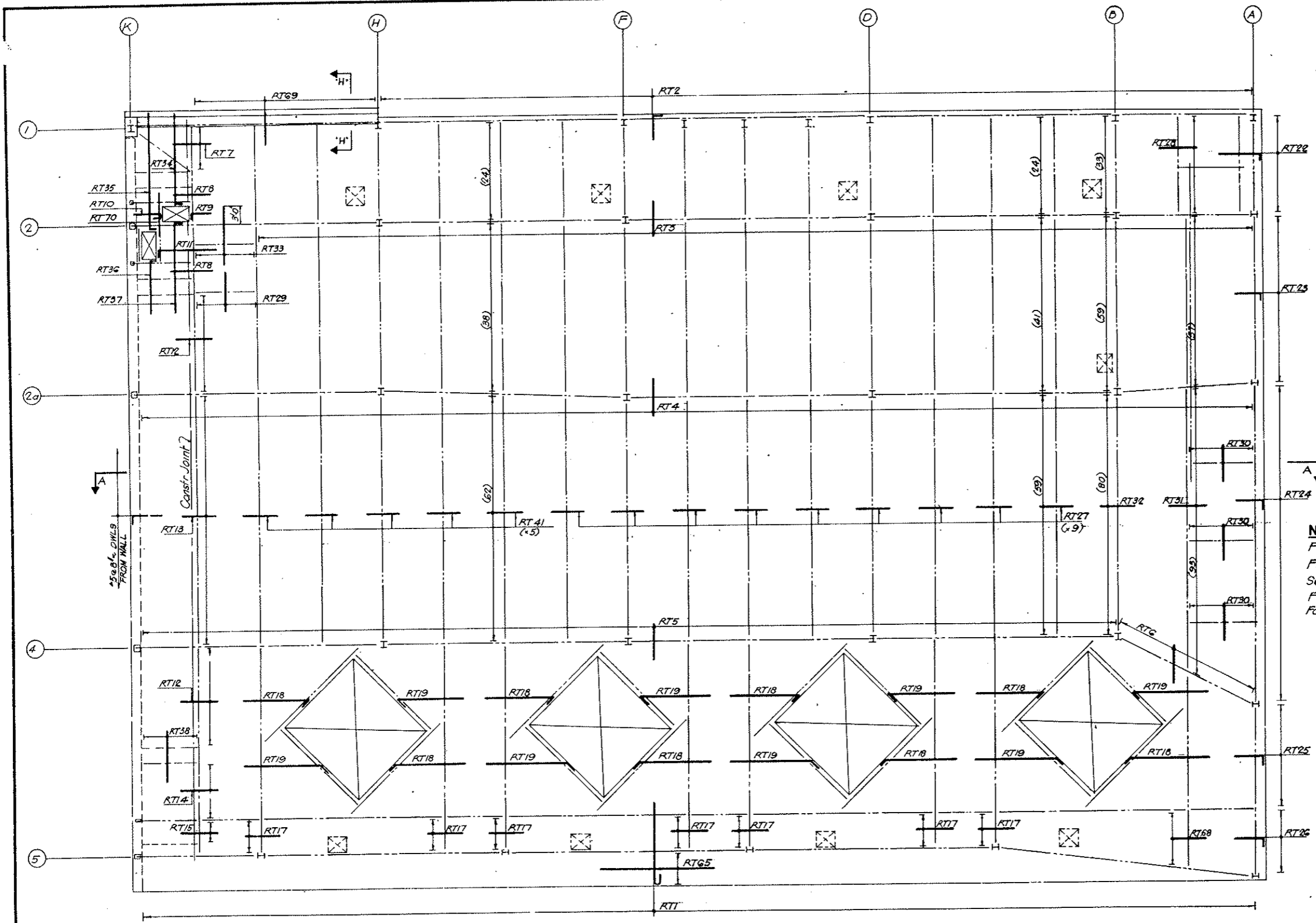
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT					
EAST VENTILATION BUILDING					
ROOF SLAB - SOUTH					
BOTTOM BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.H.	RECOMMENDED: H.H.	DRAWING NO.			
DRAWN: H.H.	APPROVED: Paul R. Smith	S-E149			
CHECKED: E.M.	DATE: JAN 1968	SCALE: 1/8" = 1'-0"			
SUBMITTED: Paul R. Smith					

SLAB SCHEDULE - BOTTOM BARS

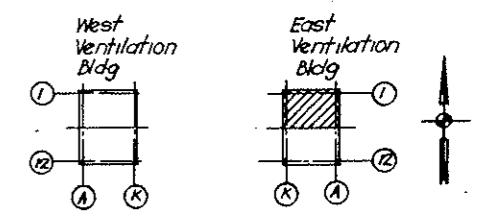
MARK	NOS	REINF	SPAC	REMARKS	MARK	NOS	REINF	SPAC	REMARKS	MARK	NOS	REINF	SPAC	REMARKS
RS1	14	25*5 IEA	8"	*	RS2	9	49*5-9-9	8"		RS77	1	2*5-5-3	8"	
		19-0	10-4				33	41*5-9-9	8"					
		17-8	9-0				34	42*5-9-9	8"					
		17-0	8-4				35	57*5-11-0	6"					
		16-4	7-8				36	56*5-11-0	6"					
		15-8	7-0				37	93*5-11-0	6"					
		15-0	6-4				38	26*5-11-0	6"					
		14-4	5-8				39	46*5-11-0	6"					
		13-8	5-0				40	98*5-9-3	5"					
		13-0	4-4				RS41	2	8*4 IEA	15				
		12-4	3-8					4-8	8-6					
		11-8	3-0					5-8	9-6					
		11-0						6-6	10-6					
								7-6	11-8					
RS2	14	20*5 IEA	8"	*	RS42	2	7*4 IEA	15		RS77	1	2*5-5-3	8"	
		3-0	14-4				1-3	5-0						
		4-4	15-0				2-0	6-0						
		5-8	14-8				3-0	7-3						
		7-0	14-0				4-0	7-3						
		8-4	13-4											
		9-8	12-8											
		11-0	12-0											
		12-4	11-4											
		13-0	10-8											
		13-8	10-0											
RS3	3	16*4-21-0	15	*	RS43	1	6*5-9-3	5		RS78	1	2*5-3-3	8"	
		22*4-20-0	12	*			4-4	4-3-3	15					
		42*5-9-9	8				4-5	5-0	5					
		14*5-4-9	8				4-6	5-6	15					
		15*5-5-9	8	Bot Mat Layer			4-7	6-0	6					
		45*5-5-9	8	Bot Mat Layer			4-8	6-6	5					
		14*5-4-9	8	Bot Mat Layer			4-9	7-0	5					
		5-9	7-9				4-9	7-6	15					
		5-11	7-11				5-0	8-0	15					
		6-1	8-1				5-1	8-6	15					
		6-3	8-3				5-2	9-0	15					
		6-5	8-5				5-3	9-6	15					
		6-7	8-7				5-4	10-0	15					
		6-9	8-9				5-5	10-6	15					
		6-11	8-11				5-6	11-0	15					
		7-1	9-1				5-7	11-6	15					
		7-3	9-3				5-8	12-0	15					
		7-5	9-5				5-9	12-6	15					
		7-7	9-6				5-10	13-0	15					
RS10	2	17*5-2-9-6	8"	*	RS44	1	4*4-3-3	15		RS79	1	20*5-9-9	8"	
		9-7	10-3				4-5	4-3	5					
		9-8	10-4				4-6	5-0	5					
		9-9	10-5				4-7	5-6	5					
		9-10	10-6				4-8	6-0	5					
		9-11	10-7				4-9	6-6	5					
		10-1	10-8				4-10	7-0	5					
		10-2	10-9				4-11	7-6	5					
RS11	2	17*5-11-0	8		RS45	1	6*5-9-3	5		RS80	1	8*4-17-3	15	*
		12	9*5-9-3	5			6-6	10-0	15					
		13	5*4-9-9	15			6-7	10-6	15					
		14	3*4-8-9	15			6-8	11-0	15					
		15	2*4-7-9	15			6-9	11-6	15					
		16	3*4-8-9	15			6-10	12-0	15					
		17	2*4-7-9	15			6-11	12-6	15					
		18	2*4-7-9	15			6-12	13-0	15					
		19	1*4-6-9	15			6-13	13-6	15					
		20	9*5-9-9	8			6-14	14-0	15					
		21	5*5-9-9	8			6-15	14-6	15					
		22	3*4-16-3	15			6-16	15-0	15					
		23	3*4-16-3	15			6-17	15-6	15					
		24	8*4-3-0	15			6-18	16-0	15					
		25	8*4-3-0	15			6-19	16-6	15					
		26	8*4-3-0	15			6-20	17-0	15					
		27	8*4-3-0	15			6-21	17-6	15					
		28	25*5-2-3	8			6-22	18-0	15					
		29	2*4-16-3	15			6-23	18-6	15					
		30	2*4-16-3	15			6-24	19-0	15					
							6-25	19-6	15					
							6-26	20-0	15					
							6-27	20-6	15					
							6-28	21-0	15					
							6-29	21-6	15					
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							6-31	22-6	15					
							6-32	23-0	15					
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							6-40	27-0	15					
							6-41	27-6	15					
							6-42	28-0	15					
							6-43	28-6	15					
							6-44	29-0	15					
							6-45	29-6	15					
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							6-67	40-6	15					
							6-68	41-0	15					
							6-69	41-6	15					
							6-70	42-0	15					
							6-71	42-6	15</					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-97	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-75



NOTES
 For Roof Top Bars South Half See Dwg No SE-152
 For Schedule of Top Bars and Bending Details See Dwg No SE-153
 For Section A-A See Dwg No SE-154
 For Section H-H See Dwg No SE-150



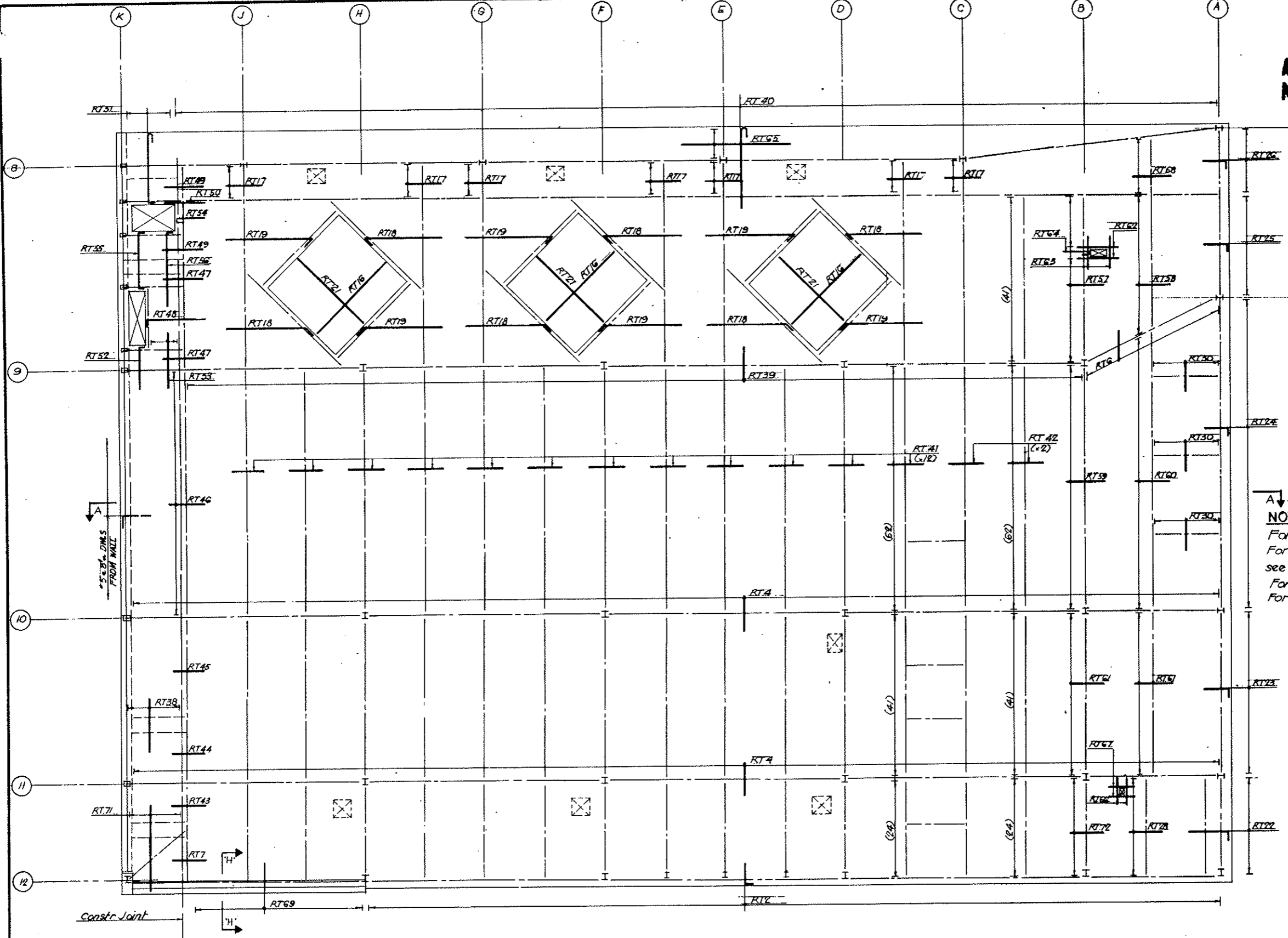
KEY PLAN

PLAN

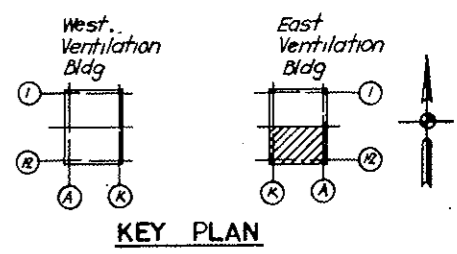
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING ROOF SLAB - NORTH TOP BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.R.	RECOMMENDED:				
DRAWN: H.R.	H.R. [Signature]				
CHECKED: E.M.	APPROVED: [Signature]				
SUBMITTED: [Signature]	[Signature]				
[Signature]	[Signature]				
NEW YORK, N. Y.	SCALE: 1/8" = 1'-0"	DATE: JAN 1968	DRAWING NO. S-E151		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3 (34) 220	RS-98	

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NOTES
 For Roof Top Bars North Half See Dwg No SE-151
 For Top Bars Schedule and Bending Details see Dwg No SE-153
 For Section A-A see Dwg No SE-153
 For Section H-H see Dwg No SE-150

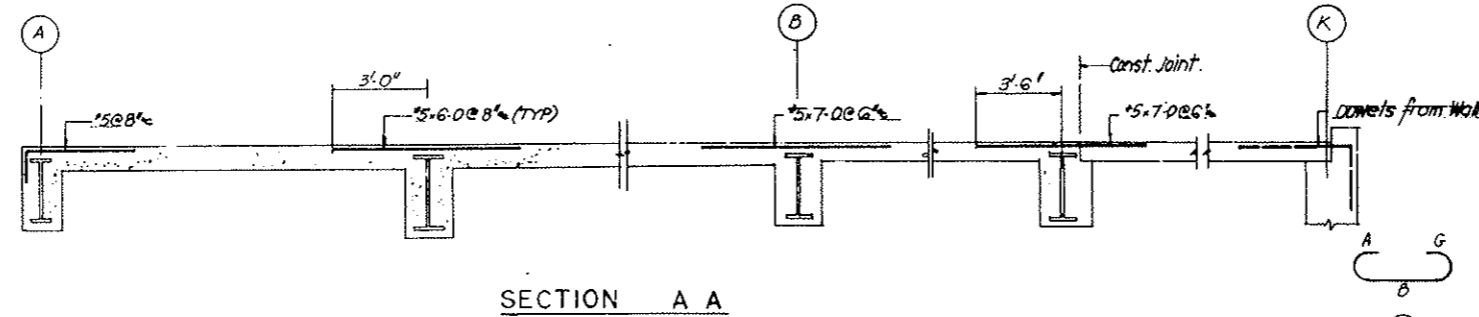


NO.	DATE	DESCRIPTION OF REVISION	BY	CL	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING ROOF SLAB - SOUTH TOP BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.A.	RECOMMENDED: <i>[Signature]</i>		DRAWING NO. S-E 152		
DRAWN: H.P.	APPROVED: <i>[Signature]</i>		SCALE: 1/8" = 1'-0"		
CHECKED: E.M.	DATE: JAN 1968				
SUBMITTED: <i>[Signature]</i>					
NEW YORK, N.Y.					

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-99	

SLAB SCHEDULE TOP BARS				
MARK	NO'S	REINF	SPAC	REMARKS
RT 1	1	364 #5 S50	6	Top Most Layer
2	2	115 #4 S51	15	
3	1	130 #4 x 6-0	15	
4	3	146 #4 x 6-0	15	
5	1	128 #4 x 6-0	15	
RT 6	2	18 #4 x 6-0	15	
7	2	12 #5 x 6-0	8	
8	2	5 #5 x 6-0	8	
9	1	4 #5 S52	8	
10	1	4 #5 S53	8	
RT 11	1	9 #5 S92	8	
12	2	25 #5 x 6-0	8	
13	1	63 #5 x 6-0	8	
14	1	15 #5 x 6-0	8	
15	1	3 #4 x 6-0	15	
RT 16	3	16 #4 x 21-0	15	*
17	14	5 #4 x 6-0	15	
18	14	24 #5 (S55) S57 S100 to S107	8	*
19	14	24 #5 (S57) S56 S58 to S105	8	*
RT 21	3	21 #4 x 20-0	12	*
22	2	24 #5 S91	8	
23	2	41 #5 S87	8	
24	2	80 #5 S87	8	
25	2	27 #5 S87	8	
RT 26	2	17 #5 S87	8	
27	9	124 #5 x 6-0	8	
28	2	25 #5 x 6-0	8	
29	1	8 #4 x 6-0	15	
30	6	9 #4 x 6-0	15	
RT 31	1	150 #5 x 7-0	6	
32	1	172 #5 x 7-0	6	
33	1	8 #4 x 10-6	15	
34	1	4 #4 S88	15	
35	1	4 #4 S89	15	
RT 36	1	3 #4 S54	15	
37	1	5 #4 S90	15	
38	2	9 #4 x 8-6	15	
39	1	120 #4 x 6-0	15	
40	1	346 #5 S50	6	Top Most Layer
RT 41	17	124 #5 x 6-0	8	
42	2	168 #5 x 6-0	8	
43	1	10 #5 x 6-0	8	
44	1	14 #5 x 6-0	8	
45	1	25 #5 x 6-0	8	
RT 46	1	62 #5 x 6-0	8	
47	2	5 #5 x 6-0	8	
48	1	16 #5 S99	8	
49	2	6 #5 x 6-0	8	
50	1	2 #5 x 6-0	8	
RT 51	1	19 #5 S93	6	
52	1	3 #4 S94	15	
53	1	5 #4 x 9-6	15	
54	1	7 #5 S95	8	
55	1	3 #4 S96	15	
RT 56	1	5 #4 S97	15	
57	1	54 #5 x 7-0	6	
58	1	45 #5 x 7-0	6	
59	1	83 #5 x 7-0	6	
60	1	95 #5 x 7-0	6	
RT 61	2	56 #5 x 7-0	6	
62	1	2 #5 x 6-0		1/2" Side Opng
63	1	2 #5 x 4-6		1/2" Side Opng
64	1	3 #5 S98	6"	AT Opng
RT 65	2	6 #6 x 4'-30-0 6 #4 x 10-9	12"	Slopy Laps
66	1	2 #5 x 4-6		1/2" Side Opng
67	1	2 #5 x 4-0		1/2" Side Opng
68	2	20 #5 x 7-0	6"	
69	2	24 #4 x 4-6	15"	AT OPNG
RT 70	1	1 #5 x 5-6		
71	1	9 #4 x 15-6	15"	
72	1	33 #5 x 7-0	6"	



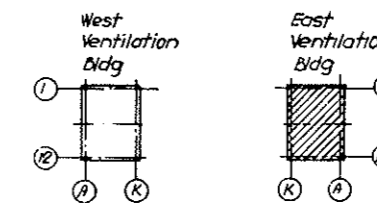
BENDING DETAILS															
NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
710	#5	15-1	S 50	1	0-7	14-6									
230	#4	3-2	51	2	0-8	2-6									
4	#5	4-1	52	2	0-9	3-4									
4	#5	3-1	53	1	0-7	2-6									
3	#4	9-6	54	2	0-7	8-11									
14	#5	10-5	S 55	1	0-9	9-8									
14	#5	11-1	56	1	0-9	10-4									
14	#5	11-9	57	1	0-9	11-0									
14	#5	12-5	58	1	0-9	11-8									
14	#5	13-1	59	1	0-9	12-4									
14	#5	13-9	S 60	1	0-9	13-0									
14	#5	14-5	61	1	0-9	13-6									
14	#5	15-1	62	1	0-9	14-4									
14	#5	15-9	63	1	0-9	15-0									
14	#5	16-5	64	1	0-9	15-8									
14	#5	17-1	S 65	1	0-9	16-4									
14	#5	17-9	66	1	0-9	17-0									
14	#5	18-5	67	1	0-9	17-8									
14	#5	19-1	68	1	0-9	18-4									
14	#5	19-9	69	1	0-9	19-0									
14	#5	20-5	S 70	1	0-9	19-8									
14	#5	19-11	71	1	0-9	19-2									
14	#5	10-7	72	1	0-9	9-10									
14	#5	11-3	73	1	0-9	10-6									
14	#5	11-11	74	1	0-9	11-2									
14	#5	12-7	S 75	1	0-9	11-10									
14	#5	13-3	76	1	0-9	12-6									
14	#5	13-11	77	1	0-9	13-2									
14	#5	14-7	78	1	0-9	13-10									
14	#5	15-3	79	1	0-9	14-6									
14	#5	15-11	S 80	1	0-9	15-2									
14	#5	16-7	81	1	0-9	15-10									
14	#5	17-3	82	1	0-9	16-6									
14	#5	17-11	83	1	0-9	17-2									
14	#5	18-7	84	1	0-9	17-10									
14	#5	19-3	S 85	1	0-9	18-6									
14	#5	19-11	86	1	0-9	19-2									
330	#5	4-4	87	1	0-9	3-7									
4	#4	15-5	88	1	0-7	14-10									
4	#4	19-5	89	1	0-7	18-10									
5	#4	15-9	S 90	1	0-7	15-2									
48	#5	6-10	91	1	0-9	6-1									
9	#5	9-8	92	2	0-9	8-11									
19	#5	14-0	93	12	0-7	12-8	0-9								
3	#4	7-0	94	2	0-7	6-5									
7	#5	4-8	S 95	2	0-9	3-11									
3	#4	10-8	96	2	0-7	9-6									0-7
5	#4	12-11	97	2	0-7	12-4									
3	#5	4-11	98	1	0-7	4-4									
16	#5	10-1	99	2	0-9	9-4									
14	#5	21-1	S 100	1	0-9	20-4									
14	#5	21-9	101	1	0-9	21-0									
14	#5	22-5	102	1	0-9	21-8									
14	#5	23-1	103	1	0-9	22-4									
14	#5	23-9	104	1	0-9	23-0									
14	#5	24-5	105	1	0-9	23-8									
14	#5	25-1	106	2	0-9	24-4									

STRAIGHT BAR LIST		
NO	SIZE	LGTH
784	#5	7-0
594	#5	6-0
4	#4	4-6
2	#5	4-0
1	#5	5-6
72	#4	30-0
48	#4	21-0
63	#4	20-0
12	#4	10-9
8	#4	10-6
5	#4	9-6
18	#4	8-6
987	#4	6-0
24	#4	4-6
3	#4	15-6

CONT BENDING DETAILS															
NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
14	#5	25-9	S 107	2	0-9	25-0									
14	#5	20-7	108	1	0-9	19-10									
14	#5	21-3	109	1	0-9	20-6									
14	#5	21-11	S 110	1	0-9	21-2									
14	#5	22-7	111	1	0-9	21-10									
14	#5	23-3	112	1	0-9	22-6									
14	#5	23-11	113	1	0-9	23-2									
14	#5	24-7	114	1	0-9	23-10									
14	#5	25-3	115	2	0-9	24-6									

NOTES
All Dims Out to Out
For Roof Top Bars North Half see Dwg No SE-151
For Roof Top Bars South Half see Dwg No SE-152

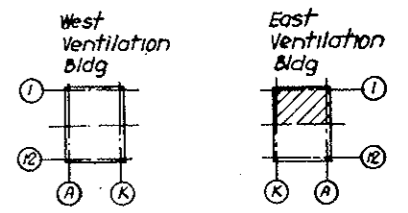
* Verify dimensions in field and adjust length of bars to suit



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING ROOF SLAB NORTH AND SOUTH SCHEDULE TOP BARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.R.	CHECKED: H.R.	APPROVED: <i>Frank L. ...</i>	DRAWING NO. S-E153		
DRAWN: H.R.	CHECKED: E.M.	APPROVED: <i>Paul ...</i>	SCALE: NO SCALE DATE: JAN 1968		
SUBMITTED: <i>Paul ...</i>					

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-100	

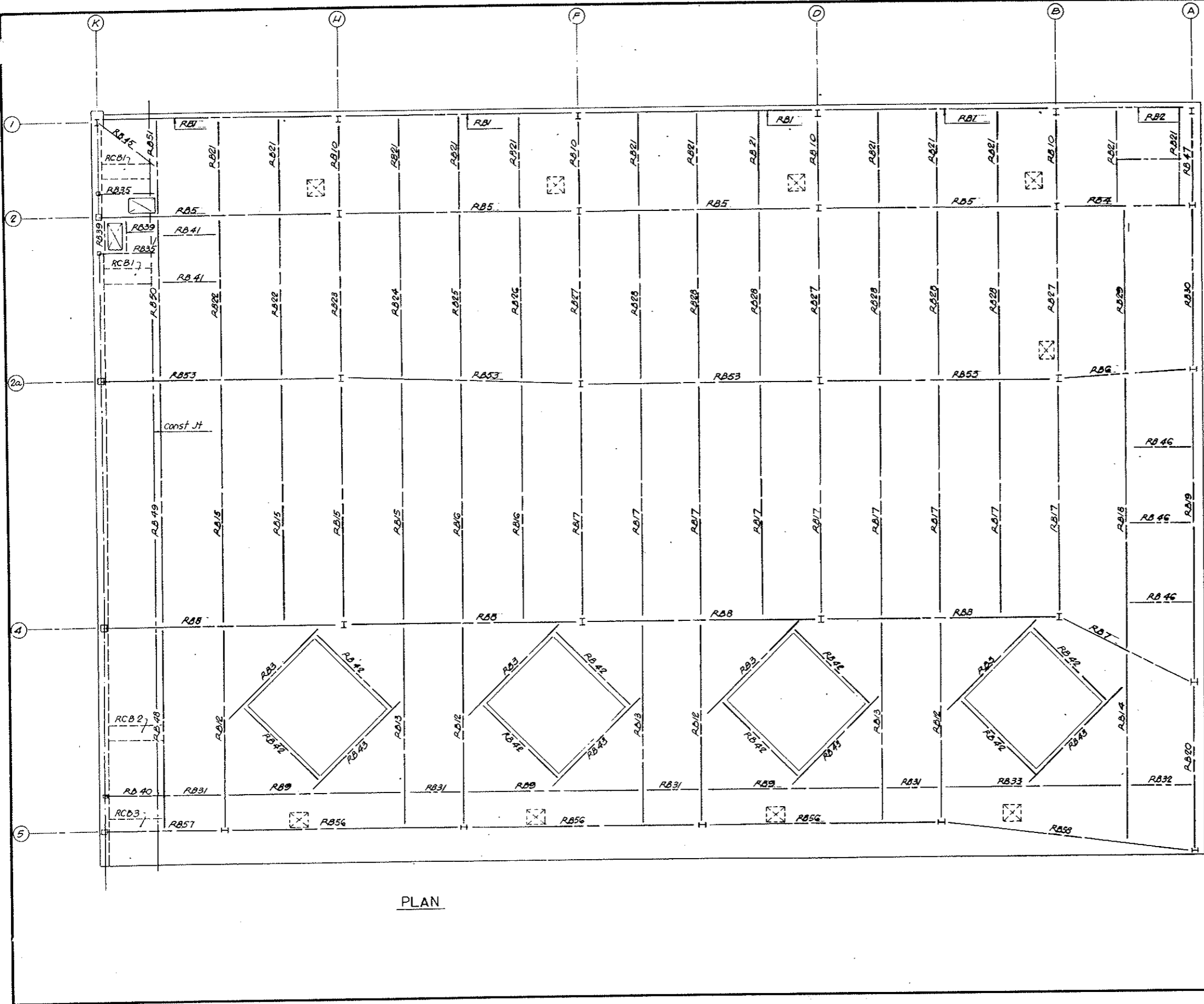


KEY PLAN

STRAIGHT BAR LIST			
NOS	SIZE	LGTH	
64	*7	9-0	8 *4 22-3
24	*7	5-9	8 22-0
			8 21-9
			108 21-6
			8 21-0
32	*4	39-9	72 15-9
12		38-6	12 14-6
72		34-3	16 11-6
4		32-0	20 11-0
8		31-0	4 10-4
4		30-6	2 10-3
12		29-9	384 9-6
12		29-3	30 9-3
2		28-9	6 8-3
4		28-6	4 *4 5-6
12		28-3	4 *4 15-0
8		28-0	36 *4 20-6
52		27-9	2 *4 18-3
24		27-0	
10		26-6	
42		26-0	32 *2 39-9
16	*4	24-6	8 *2 22-3

NOTES:
 For Roof Beams South... see Drawing NOSE158
 For Schedules of Reinforcing see DWG NOSE156

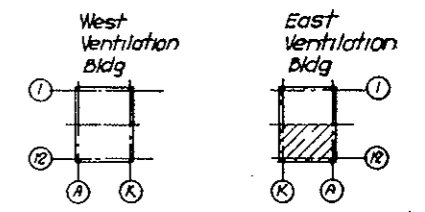
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING ROOF BEAMS FIREPROOFING - NORTH					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.R.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: H.R.	CHECKED: <i>[Signature]</i>				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
DRAWING NO. S-E154		SCALE: 3/8" = 1'-0" DATE: JAN 1968			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34)220	RS-101	

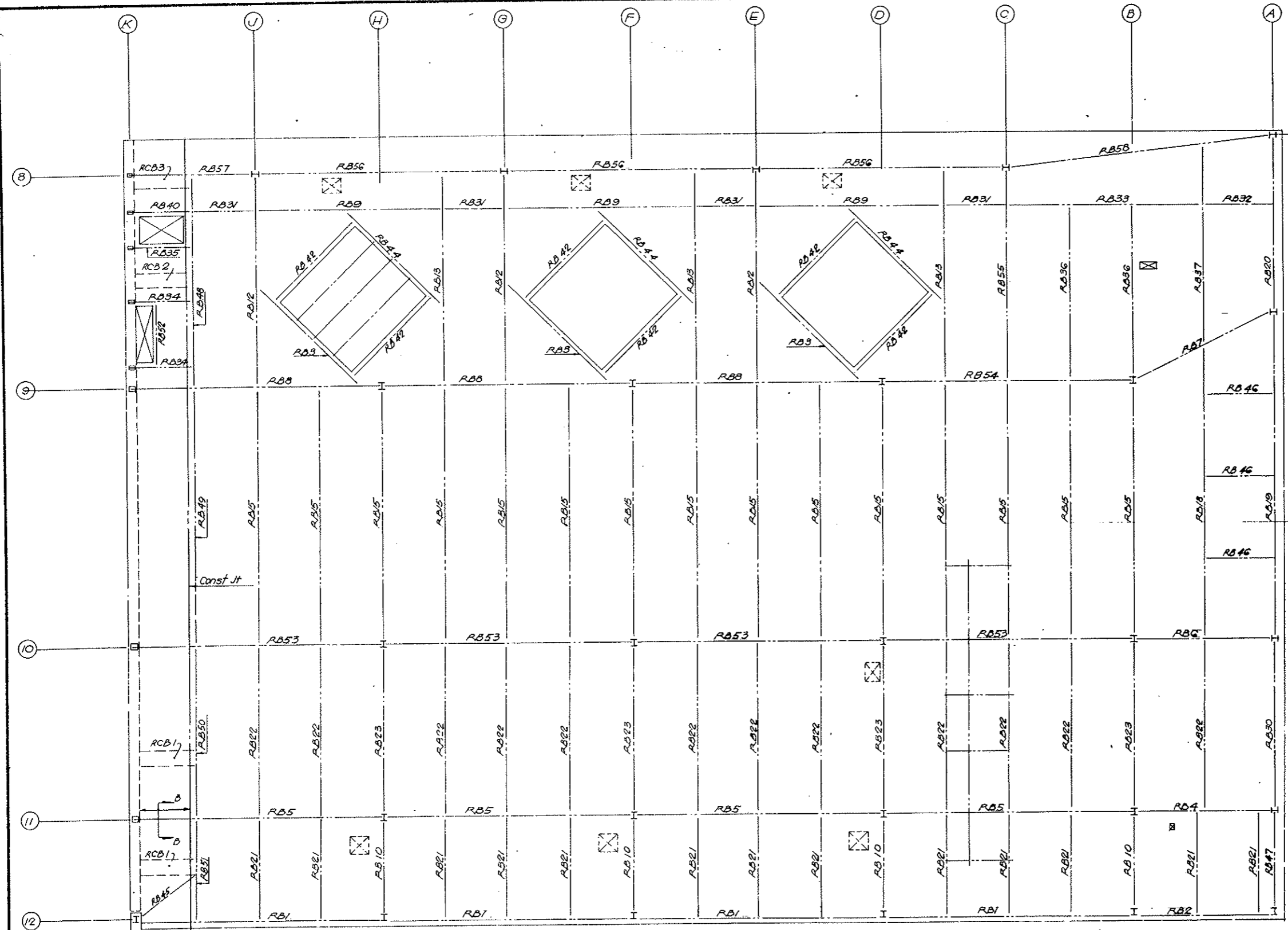


KEY PLAN

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

NOTES

For Roof Beams North see Dwg. No 5E154
 For Schedules of Reinforcing see Dwg. No 5E154, 156
 For Section B-B see Dwg. No 5E156



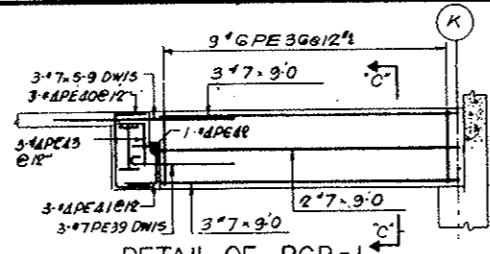
PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING ROOF BEAMS FIREPROOFING - SOUTH					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.P.	RECOMMENDED: H.P.	DRAWING NO. S-E155			
DRAWN: H.P.	CHECKED: E.M.	APPROVED: [Signature]	DATE: JAN 1968		
SUBMITTED: [Signature]	APPROVED: [Signature]	SCALE: 1/8" = 1'-0"			
NEW YORK, N. Y.					

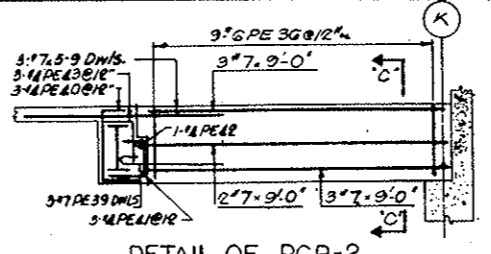
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-102	

SCHEDULE OF FIREPROOFING

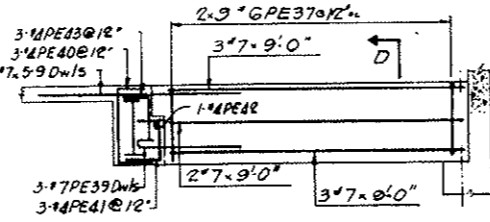
MARK	NO.	SIZE	A' BARS	B' BARS	C' BARS @ 12"	D' BARS @ 12"	E' BARS @ 12"	F' BARS @ 12"	TYPE
RB 1	8	38-15 1/2	4-4-39-9	4-2-39-9		40-2 PE1	40-2 PE2		2
2	2	38-15 1/2	4-4-22-3	4-2-22-3		22-2 PE1	22-2 PE2		2
3	7	32-14	1-4-26-0	1-4-26-0		2-4-26-0	2-26-2 PE3		3
4	2	29-13				2-4-26-0	2-22-2 PE4		4
5	8	41-16				4-4-9-6	2-40-2 PE5		4
RB 6	2	35-14 1/2				2-4-11-0	2-23-2 PE6		4
7	2	38-15 1/2				2-4-11-6	2-25-2 PE7		4
8	7	41-20 1/2				4-4-9-6	2-40-2 PE8		4
9	6	32-14				2-4-29-9	2-30-2 PE9		4
10	6	23-11 1/2				2-4-14-6	2-15-2 PE10		4
RB 12	7	41-16				4-4-34-3	2-34-2 PE11		4
13	6	38-15 1/2				4-4-34-3	2-34-2 PE7		4
14	1	38-15 1/2				4-4-30-6	2-32-2 PE7		4
15	19	32-14				2-2-4-21-6	2-42-2 PE4		4
RB 16	2	32-14				2-2-4-21-0	2-41-2 PE4		4
17	9	32-14				2-2-4-20-6	2-40-2 PE4		4
18	2	38-14 1/2				2-4-14-6	2-47-2 PE6		4
19	2	38-14 1/2	2-1-4-27-0	2-1-4-27-0	2-4-27-0	53-2 PE10	53-2 PE9		3
20	2	26-15 1/2	1-4-28-3	1-4-28-3	2-4-28-3	28-2 PE12	28-2 PE11		3
RB 21	28	23-11 1/2				2-4-15-9	2-16-2 PE13		4
22	14	26-12 1/2				2-4-27-9	2-27-2 PE12		4
23	5	29-13				2-4-26-6	2-27-2 PE4		4
24	1	26-12 1/2				2-4-28-0	2-28-2 PE12		4
25	1	25-12 1/2				2-4-28-2	2-29-2 PE12		4
RB 26	1	26-12 1/2				2-4-28-9	2-29-2 PE12		4
27	3	29-13				2-4-28-0	2-29-2 PE4		4
28	6	26-12 1/2				2-4-28-3	2-29-2 PE12		4
29	1	26-12 1/2				2-4-28-6	2-29-2 PE12		4
30	2	26-15 1/2	1-4-27-9	1-4-27-9	2-4-27-9	28-2 PE12	28-2 PE11		3
RB 31	8	15-9 3/4				2-10-2 PE14			5
32	2	15-9 3/4				2-11-2 PE14			5
33	2	32-14				2-4-31-0	2-31-2 PE3		4
34	2	13-10 1/2	1-4-9-3	1-4-9-3		2-10-2 PE15			6
35	3	17-10 1/2	1-4-9-3	1-4-9-3		2-10-2 PE16			6
RB 36	2	23-11 1/2				2-4-28-3	2-29-2 PE13		4
37	1	35-14 1/2				4-4-32-0	2-32-2 PE6		4
39	2	17-10 1/2	1-4-5-6	1-4-5-6		2-6-2 PE16			6
40	2	15-9 3/4	1-4-9-3	1-4-9-3		2-10-2 PE14			5
RB 41	2	15-11				2-10-2 PE17			5
42	14	19-10 1/2	1-4-22-0	1-4-22-0		2-22-2 PE18			3
43	4	19-10 1/2	1-4-26-0	1-4-26-0		2-26-2 PE18			3
44	3	21-11	1-4-26-0	1-4-26-0		2-26-2 PE19			3
45	2	11-2 x 10				2-12-2 PE20			5
46	6	21-9 1/2				2-12-2 PE21			5
47	2	19-14 3/4	1-4-15-0	1-4-15-0		16-2 PE18	16-2 PE22		3
48	2	29-17	4-4-34-3	2-4-34-3	2-4-34-3	35-4 PE23	35-4 PE24	35-4 PE25	1
49	2	32-18	2-4-4-21-6	2-4-4-21-6	2-2-4-21-6	42-4 PE26	42-4 PE27	42-4 PE28	1
50	2	26-16	4-4-27-9	2-4-27-9	2-4-27-9	28-4 PE29	28-4 PE30	28-4 PE31	1
51	2	23-15	4-4-15-9	2-4-15-9	2-4-15-9	16-4 PE32	16-4 PE33	16-4 PE34	1
52	1	13-10 1/2	1-4-10-3	1-4-10-3		2-11-2 PE15			6
53	8	41-16				4-4-9-6	2-40-2 PE5		4
54	1	38-15 1/2				4-4-9-6	2-40-2 PE8		4
55	1	34-14 1/2				4-4-34-3	2-34-2 PE6		4
56	6	40-16				2-4-38-6	2-40-2 PE5		4
						2-4-19-3			
						2-4-9-3			
57	2	29-13				1-4-18-3	2-20-2 PE4		4
						2-4-9-3			
58	2	40-16				2-4-21-9	2-42-2 PE5		4
						2-4-10-4			
						2-4-31-0			



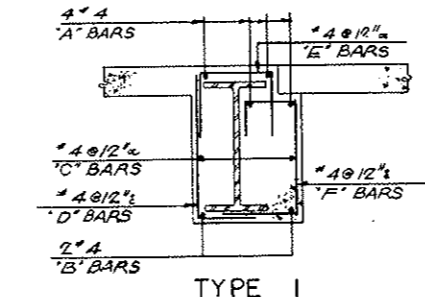
DETAIL OF RCB-1
REQD x 4



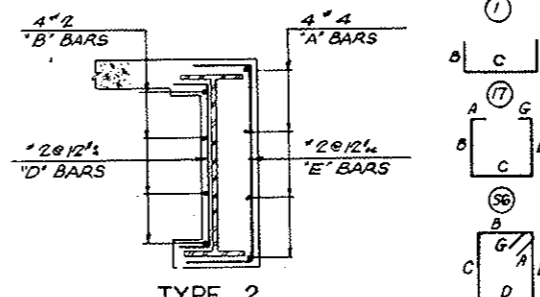
DETAIL OF RCB-2
REQD x 2



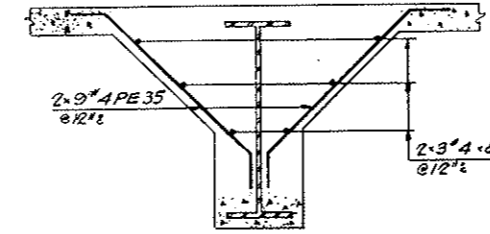
DETAIL OF RCB-3
REQD x 2



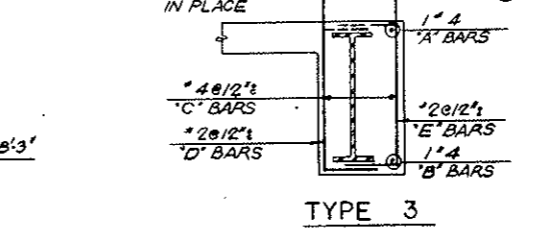
TYPE 1



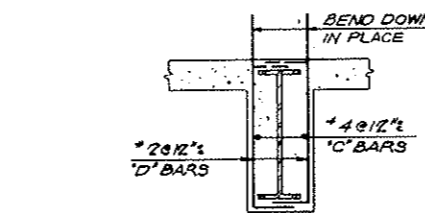
TYPE 2



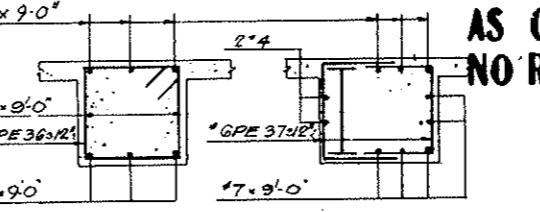
SECTION B-B



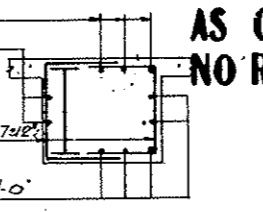
TYPE 3



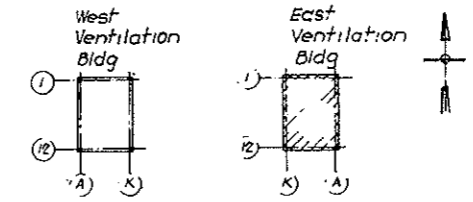
TYPE-4



SECTION C-C



SECTION D-D



KEY PLAN

BENDING DETAILS ALL DIMS OUT TO OUT

NO.	SIZE	LNGET	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
364	2	3-2	PE1	17			4	2-6	4						
364	2	4-11	2	17			1-0	2-11	1-0						
848	2	4-1	3	17			10	3-3							
3092	2	3-10	4	17			10	3-0							
2404	2	5-0	5	17			11	4-1							
688	2	4-4	PE6	17			10	3-6							
452	2	4-9	7	17			11	3-10							
560	2	5-4	8	17			1-1	4-3							
106	2	4-11	9	17			1-0	3-11							
106	2	4-9	10	17			11	3-10							
112	2	3-11	PE11	17			1-0	2-11							
1446	2	3-5	12	17			9	2-8							
1204	2	3-1	13	17			9	2-4							
244	2	2-2	14	17			7	1-7							
62	2	1-11	15	17			7	1-4							
84	2	2-4	PE16	17			7	1-9							
40	2	2-4	17	17			9	1-7							
856	2	2-8	18	17			8	2-0							
156	2	2-10	19	17			8	2-2							
48	2	2-0	20	17			8	1-4							
144	2	2-8	PE21	17			7	2-1							
32	2	3-2	22	17			11	2-3							
70	4	3-3	23	17			1-1	2-2							
70	4	5-5	24	17			1-3	1-3							
70	4	4-0	25	17			1-1	1-9	7						
84	4	3-6	PE26	17			1-1	2-5							
84	4	3-6	27	17			1-3	1-0	1-3						
84	4	4-3	28	17			1-1	2-0	8						
56	4	3-0	29	17			1-1	1-4							
56	4	3-4	30	17			1-3	1-0	1-3						
56	4	3-6	PE31	17			1-1	1-6	6						
32	4	2-8	32	17			1-0	1-8							
32	4	3-3	33	17			1-3	0-9	1-3						
32	4	3-3	34	17			1-0	1-3	6						
18	4	4-0	35	17			0-6	3-0	0-6					0-4	0-4
54	6	9-7	PE36	17	0-6		2-2	2-1	2-2	2-1				0-6	
36	6	6-5	37	17			2-2	2-1	2-2						
80	2	5-3	38	17			1-3	4-0							
24	7	4-1	39	17	0-10		3-3								
24	4	4-1	40	17			0-9	2-1	1-3						
24	4	2-11	PE41	17			0-7	1-1	1-3						
8	4	4-8	42	17			1-1	2-6	1-1						
24	4	2-3	43	17			0-9	1-6							

NOTES

For Roof Beams North see DWG NO SE154
 For Roof Beams South see DWG NO SE155
 For Straight Bar List see DWG NO SE154

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING ROOF BEAMS FIREPROOFING - NORTH & SOUTH SCHEDULE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY H.R.	CHECKED BY R.E.	RECOMMENDED BY J.P. Sullivan	APPROVED BY Frank P. Sullivan	DRAWING NO. S-E156	
SUBMITTED BY Paul Sullivan		SCALE: NO SCALE		DATE: JAN. 1968	

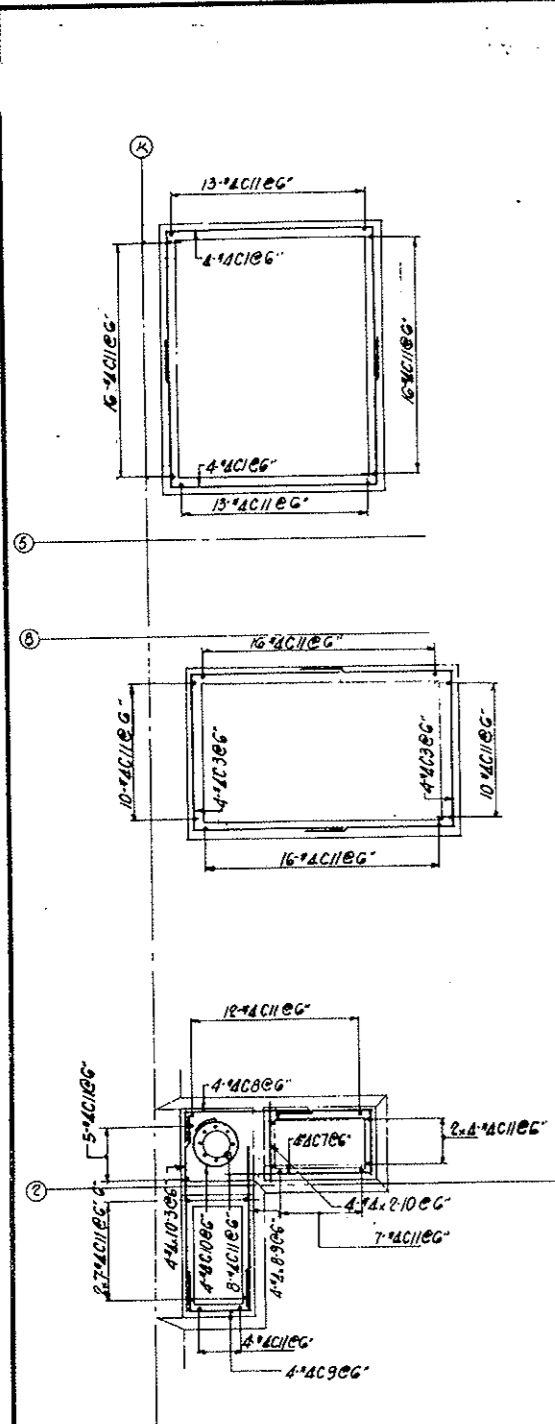
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)212	RS 103	

BENDING DETAILS															
NO.	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
8	#4	15-4	C	1	17	4-6	6-4	4-6							
12	#4	13-9		2	17	2-3	9-3	2-3							
8	#4	13-10		3	17	4-6	4-10	4-6							
8	#4	13-10		4	17	4-6	4-10	4-6							
4	#4	10-8		5	17	0-6	3-2	1-8	3-2	1-8	0-6				
4	#4	7-8		6	17	0-6	1-10	1-6	1-10	1-6	0-6				
8	#4	14-0		7	17	4-5	2-10	6-9							
8	#4	6-4		8	17	1-2	5-2								
8	#4	5-2		9	17	1-2	2-10	1-2							
8	#4	5-2		10	17	1-0									1-4
160	#4	2-5		11	17	0-5	2-0								
56	#4	3-5		12	17	0-5	3-0								
100	#4	2-2		13	17	0-5	1-9								

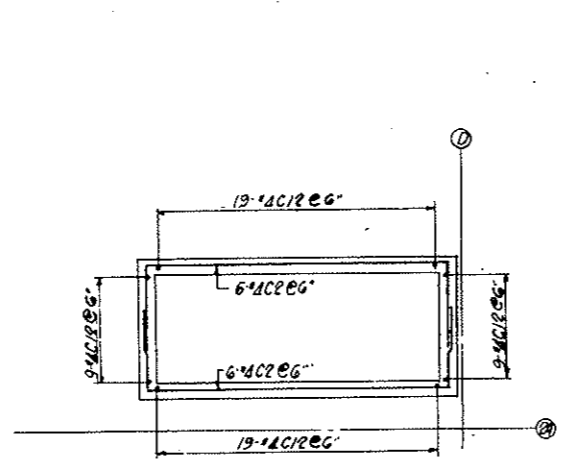
Dimensions are out to out

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

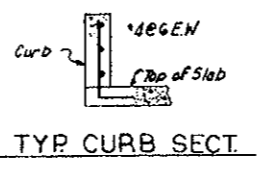
STR BARS		
NO.	SIZE	LGTH
8	#4	10-3
8	#4	8-9
8	#4	2-10



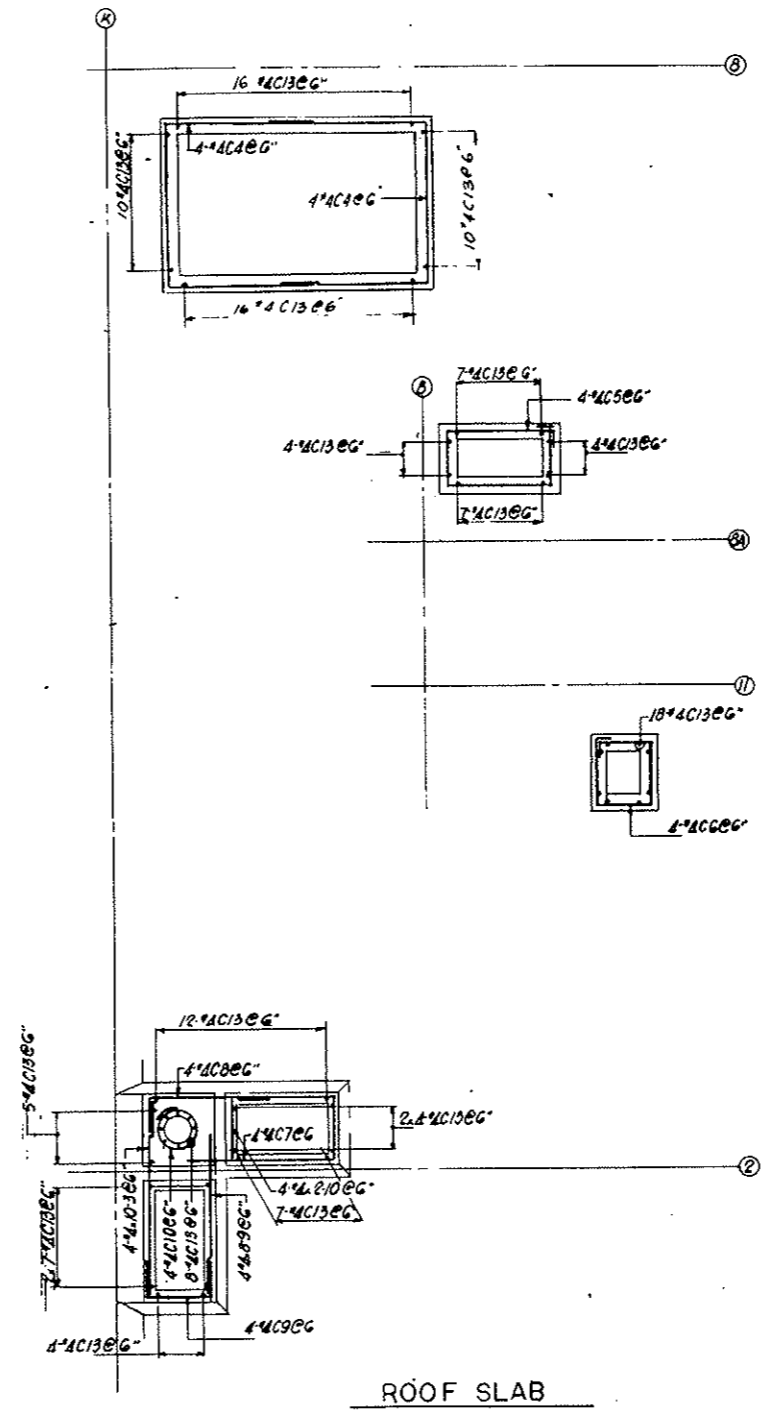
FAN ROOM FLOOR



CURB DETAILS



TYP. CURB SECT.



ROOF SLAB

NOTES:
For Fan Room Slab reinf see Dwg. SE136 thru SE141
For Roof Slab reinf, see Dwg. SE142 thru SE153
Work this dwg with Dwg AE'd thru AE-7

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
FAN ROOM FLOOR SLAB AND ROOF
CURBS AROUND FLOOR OPENINGS

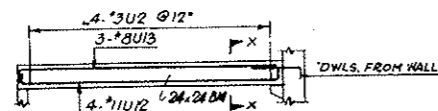
TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: JUV	RECOMMENDED: <i>[Signature]</i>
CHECKED: PS	APPROVED: <i>[Signature]</i>
SUBMITTED: <i>[Signature]</i>	

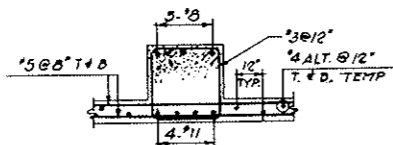
SCALE: NONE DATE: JAN 1968 DRAWING NO. S-E157

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-104	

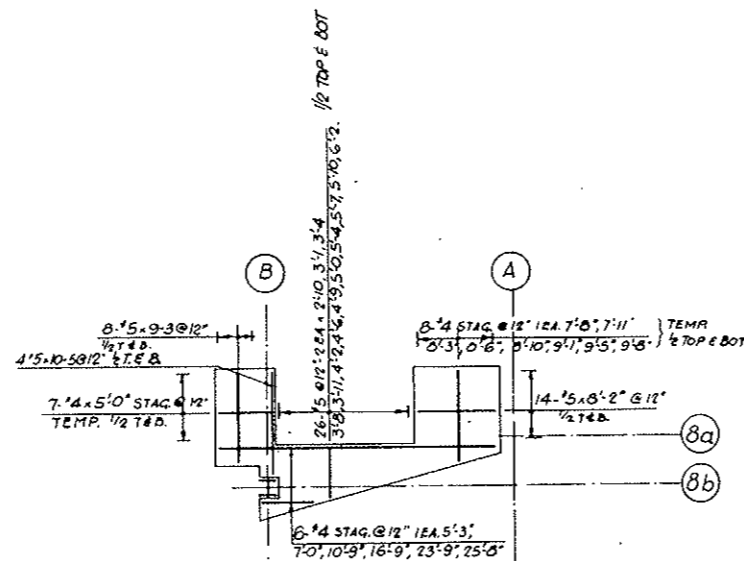
AS CONSTRUCTED
NO REVISIONS DATE 10-26-75



SECTION A-A
2 REOD



SECTION X-X

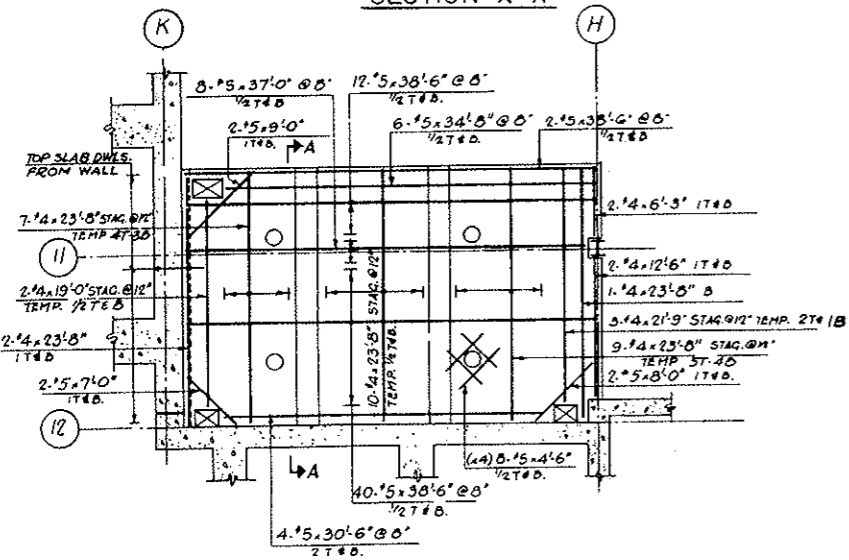


ELECTRIC METER & REST ROOM

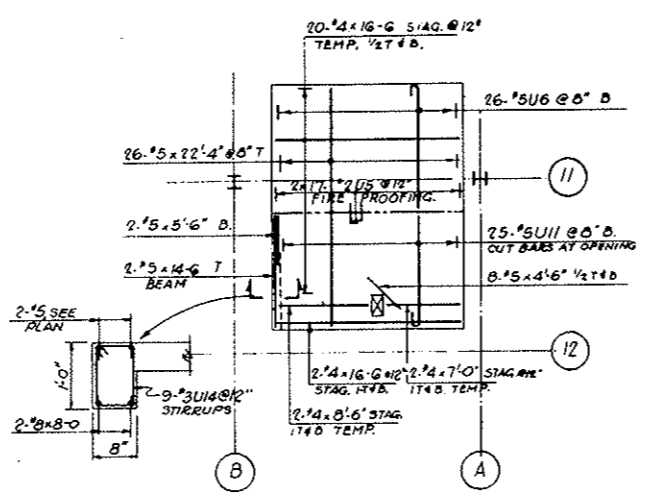
NOTES

For Bending Details see Drawing No 5E159

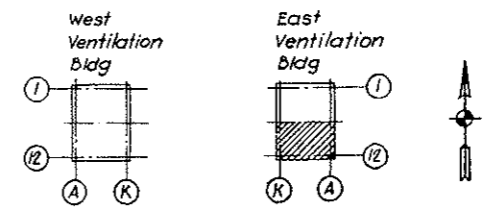
STRAIGHT BAR LIST											
NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH	NO	SIZE	LGTH
2	#10	15-0	15	#15	13-9	2	#5	8-6	3	#4	21-9
4	#10	6-0	17	#13	6	24	#1	21-6	4	#4	8-8
2	#10	13-6	15	#13	3	38	#1	8-0	3	#1	8-6
			3	#12	10	2	#7	7-0	2	#8	8-4
			8	#12	8	23	#17	7-0	4	#8	8-0
			2	#12	6	1	#16	9	1	#7	11
2	#8	15-0	4	#12	2	22	#16	3	4	#7	10
2	#10	13-6	2	#11	10	2	#13	4	1	#7	8
2	#10	9-0	2	#11	8	4	#12	8	2	#7	6
4	#8	6-0	2	#11	6	4	#12	6	8	#7	0
2	#8	8-0	4	#11	2	1	#12	0	4	#6	10
			32	#11	0	2	#4	9	2	#11	8
54	#5	38-6	2	#10	10	54	#4	6	12	#11	3
8	#1	37-0	2	#10	8	2	#4	2	36	#11	0
6	#1	34-8	2	#10	6	2	#3	11	2	#10	10
4	#1	30-6	4	#10	2	2	#3	8	1	#10	9
19	#1	24-0	6	#10	0	2	#3	4	36	#10	6
31	#1	22-9	2	#10	0	2	#3	1	56	#10	3
26	#1	22-4	2	#9	8	2	#5	2	2	#10	0
5	#1	19-9	6	#9	6	4	#5	10	1	#9	8
5	#1	15-6	7	#9	3	4	#9	6	4	#5	15
2	#1	14-9	4	#9	2	15	#4	34	1	#9	5
19	#1	14-6	4	#9	0	1	#1	25	2	#9	2
15	#1	14-3	2	#8	10	1	#1	23	1	#9	1
15	#1	14-0	10	#5	8-8	29	#4	23	1	#4	8-10



STATE PATROL EQUIPMENT ROOM



MEN'S & WOMEN'S REST ROOM



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
STRUCTURAL - REINFORCEMENT
EAST VENTILATION BUILDING
INTERIOR ROOMS - CEILING SLABS
SHEET 1

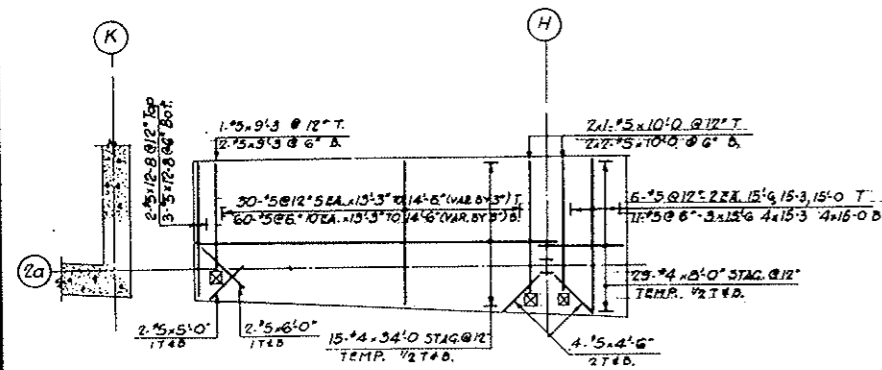
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: A.N.
 DRAWING: A.N.
 CHECKED: P.M.
 SUBMITTED: Paul Rubin
 APPROVED: Paul Rubin
 DATE: JAN 1968

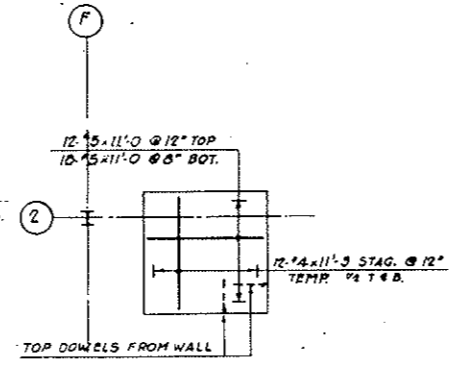
DRAWING NO. S-E 158

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-106	

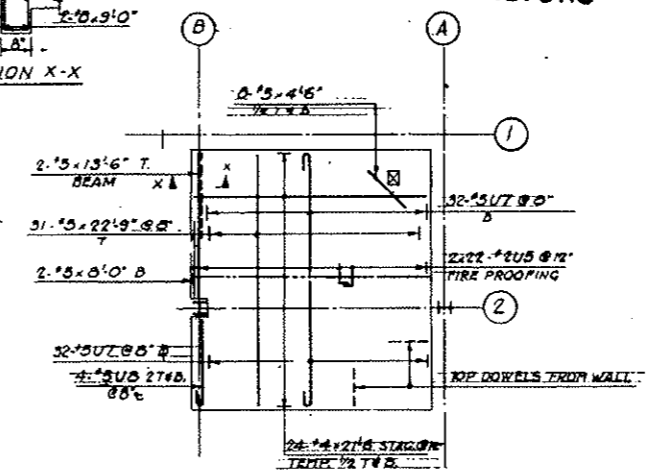
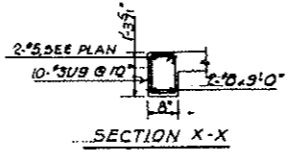
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



BATTERY ROOM

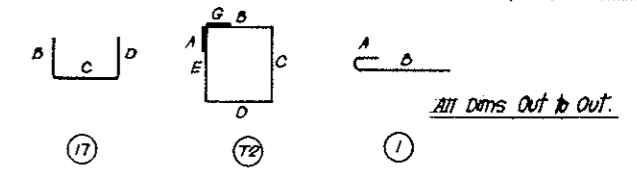


GAS METER ROOM



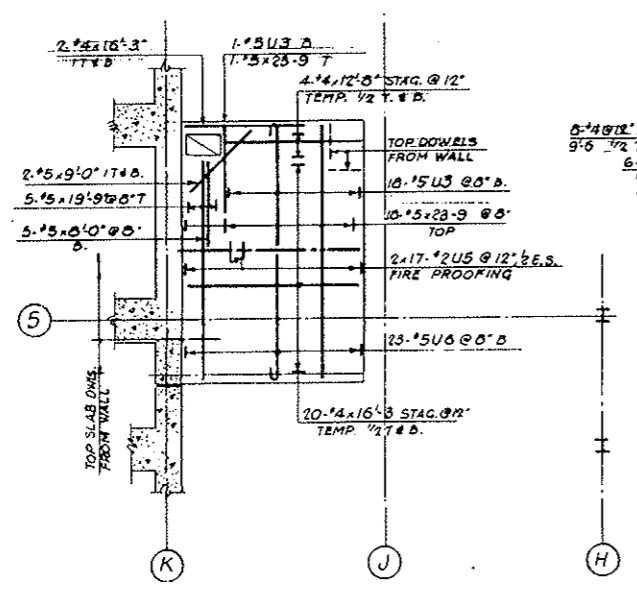
MEN'S & WOMEN'S REST ROOM

BENDING DETAILS															
N ^o	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
48	3	7-4	U2	T2	0-4	1-8	1-8	1-8	1-8		0-4				
19	5	12-5	3	1	0-5	12-0									
28	3	5-4	4	T2	0-4	1-2	1-2	1-2	1-2		0-4				
112	2	2-4	5	17	0-7	1-9									
49	5	12-0	6	1	0-5	11-7									
64	5	11-8	7	1	0-5	11-3									
4	5	7-11	8	1	0-5	7-6									
10	3	3-3	9	T2	0-4	0-4	0-11	0-4	0-11		0-4				
25	5	10-11	11	1	0-5	10-6									
8	11	26-9	12	17	1-6	25-9	1-6								
6	8	24-9	13	17	1-3	23-6	1-6								
9	3	3-0	14	T2	0-4	0-5	0-9	0-5	0-9	0-5	0-4				

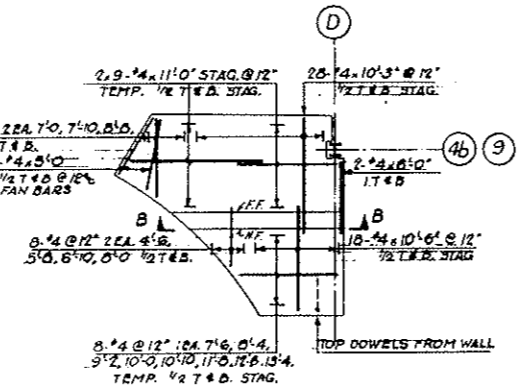


NOTES

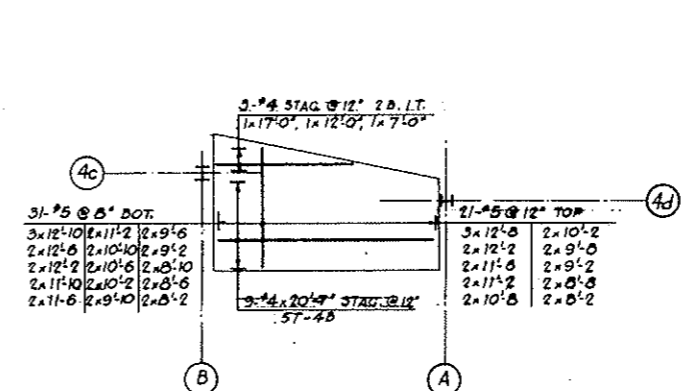
For Straight bar List see Drawing NO 3-E158



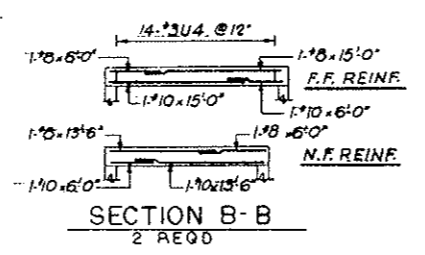
TRANSFORMER ROOM



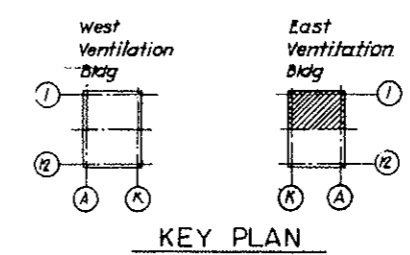
WALKWAY CAR ENCLOSURE
 1 REQD AS SHOWN
 1 REQD OPP HAND



PATROL ATTENDANTS BOOTH & MENS REST RM.



SECTION B-B
 2 REQD



KEY PLAN

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING INTERIOR ROOMS - CEILING SLABS SHEET 2					
TIPPETTS ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: A.N.	RECOMMENDED: H. J. ...		DRAWN: E.M.		DRAWING NO. S E159
CHECKED: E.M.	APPROVED: Frank ...		SUBMITTED: Paul ...		
NEW YORK, N. Y.			SCALE: 1/8" = 1'-0"		DATE: JAN 1968

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	RS-106	

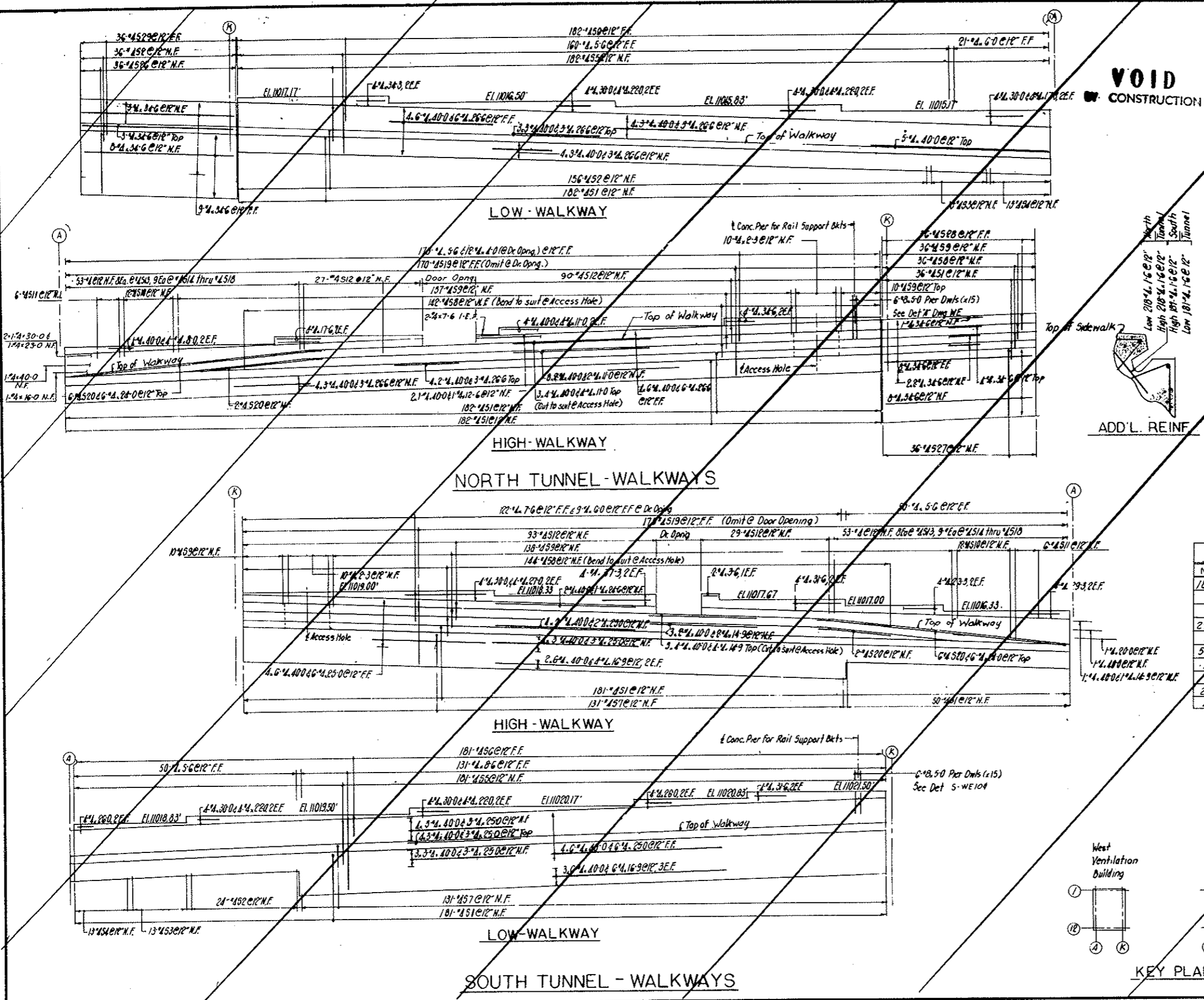
BENDING DETAILS												
NO.	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H
994	#4	3-3	5	1	30	1-9	1-6					0-0
216	#4	4-0		2	30	3-9	1-6					0-0
26	#3	3-0	3-9	1-6								0-0
26	#3	4-0	2-3	1-6								0-0
363	#5	5-0	5	5	17	1-0	4-0					
322	#5	3	6	17	2-6	0-7	2-6					
322	#5	3	7	30	3-9	1-6						
322	#5	2-6	8	17	1-0	1-6						
331	#5	5-11	9	4	2-3	2-3	1-3					0-6 1-4
24	#8	5	10	4	2-3	3-2	1-3					0-6 1-4
12	#5	7-5	11	4	2-3	3-11	3					0-6 1-4
239	#3	3-3	12	17	1-3	2-0						
16	#3	4-9	13	17	1-9	3-6						
18	#5	5-0	14	17	1-3	3-9						
18	#5	5-3	5	15	17	1-3	4-0					
18	#5	5-6	16	17	1-3	4-3						
18	#5	5-9	17	17	1-3	4-6						
18	#5	6-0	18	17	1-3	4-9						
345	#5	5-11	19	17	2-6	0-11	2-6					
16	#3	3-6	5	20	4	1-6	30-0					0-3
36	#9	9-9	26	30	8-3	1-6						0-3
36	#9	9-3	27	30	7-9	1-6						0-3
36	#5	28	17	6-9	0-11	1-9						
36	#4	13-1	5	29	17	8-6	1-1	3-6				



STRAIGHT BAR LIST											
NO.	SIZE	LGTH	NO.	SIZE	LGTH	NO.	SIZE	LGTH	NO.	SIZE	LGTH
180	#8	5-0	1	#4	20-0	430	#4	5-6			
4	#4	32-6	4	#4	27-0			180			5-0
1	#4	23-0	27	26-G	4			17-3	12		4-0
298	#4	10-0	8	26-0	10			16-9	2		3-6
4		37-3	26	25-0	7			14-9	20		2-3
52		34-6	1	24-G	10			11-0	198	#4	1-6
4		34-3	12	24-0	131			8-6	1	#4	16-0
8		31-6	4	23-3	4			8-0	1	#4	12-6
26		30-0	16	#4	220	124		7-6			
4	#4	29-3			30	#4	6-0				

NOTES:
 Contractor to adjust horizontal reinf of door opening FF only for Typ Sections & Details see Dwg S-WE 104
 See Sheets 65AX Thru 65IX for Walkway Details

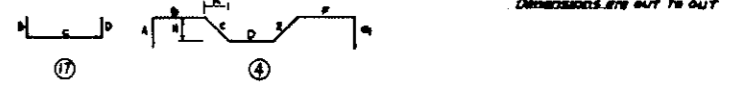
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING WALKWAYS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: PS	CHECKED: JUV	RECOMMENDED: <i>Paul Kelly</i>	APPROVED: <i>Paul Kelly</i>	DRAWING NO. S-E160	
SUBMITTED: <i>Paul Kelly</i>	SCALE: 3/8" = 1'-0"		DATE: JAN 1968		



FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(4)212	RS 107	

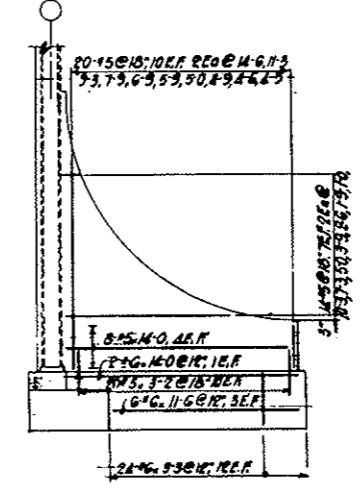
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

BENDING DETAILS															
NO	SIZE	LNTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	O	J
133	1/4	3-8	5	1	17		1-0	2-8							
18	1/4	10-6	2	4	1-6	7-6	1-6						1-4		
18	1/4	6-2	3	4	1-2		5-0						0-8		
3	1/4	7-4	4	17	1-6	4-4	1-6								
5	1/4	12-4	5	5	17	1-6	10-10								
2	1/4	5-0	6	4		1-6	3-6						1-4		
4	1/4	8-0	7	17	1-6	6-6									
12	1/4	14-2	8	17	4-3	5-8	4-3								
3	1/4	12-7	5	9	17	3-6	5-7	3-6							

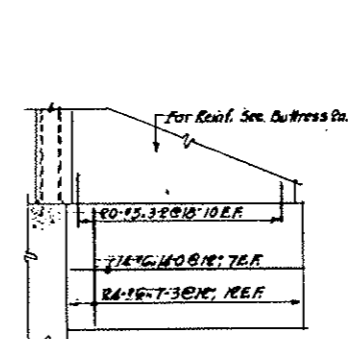


STRAIGHT BARS											
NO	SIZE	LNTH	NO	SIZE	LNTH	NO	SIZE	LNTH	NO	SIZE	LNTH
2	17	25-0	2	17	6-9	4	15	6-9	9	1/4	4-6
2		22-6	2		6-0	8		5-9	13		4-4
2		20-3	2		5-3	12		5-0	130		4-2
2		18-6	2		4-0	8		4-9	6		3-8
2	17	18-3	2	17	3-6	4	15	4-6	24		3-0
2		16-9	2		3-0	4		4-3	130	1/4	2-6
2		16-0	2		2-6	12		3-9			
2		15-6	2	17	2-0	10		3-2			
2		14-9				4		3-0			
2	17	14-3				4	15	2-9			
2		13-6				12		2-6			
2		13-3	16	16	14-0	4		2-3			
4		12-3	6		11-6	8		1-9			
14		12-0	24		7-3	8	15	1-9			
2	17	11-3	24	16	3-3						
2		11-0									
2		10-3									
2		10-0	4	15	11-6	16	1/4	15-0			
2		9-6	20		14-0	16		10-0			
2	17	9-3	4		12-6	18		9-0			
2		8-9	4		11-3	1		7-11			
2		8-6	8	15	10-3	1	1/4	7-1			
2		7-9	8		9-3	4		6-8			
2		7-6	4		7-9	4		6-0			
16	17	7-0	12	15	7-3	1	1/4	5-5			

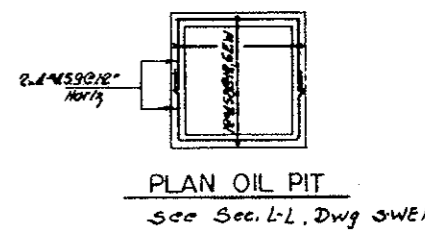
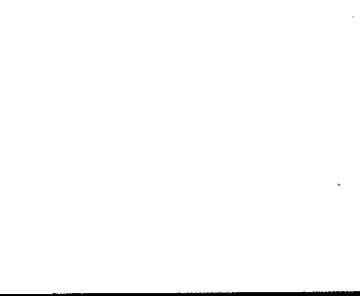
PORTAL BUTTRESS 8A & 4D
REINF X2



PORTAL BUTTRESS 2A



PORTAL BUTTRESS 10



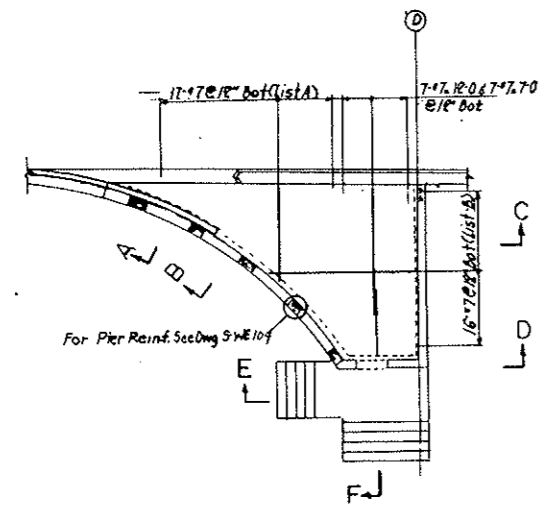
PLAN OIL PIT
See Sec. L-L, Dwg SWE11

LIST-A

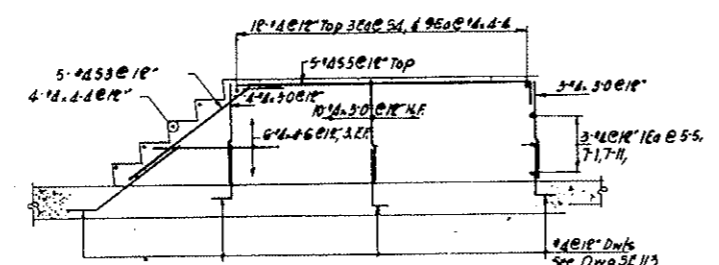
1-17,16,1-17,2-0
149 6-0
136 5-3
123 4-0
110 3-6
100 3-0
9-3 2-6
86 17,2-0
147,4-7-6

LIST-B

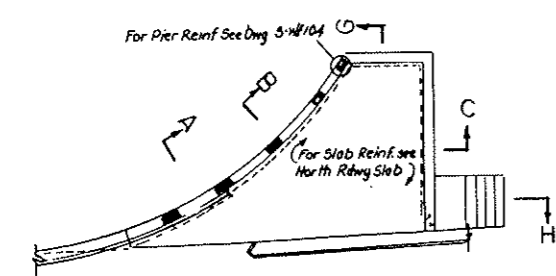
1-17,25,1-17,13-3
226 12-3
203 11-3
186 10-3
183 9-6
169 8-9
156 7-9
147,14-3 147,7-0



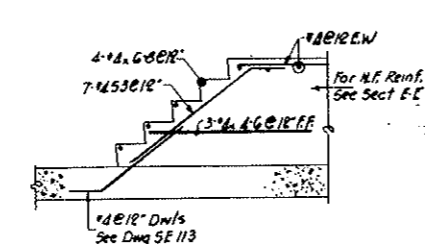
PLAN CAR ENCLOSURE SLAB
NORTH-RDWY



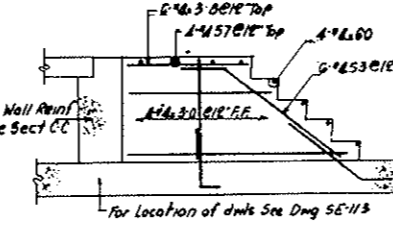
SECTION E-E



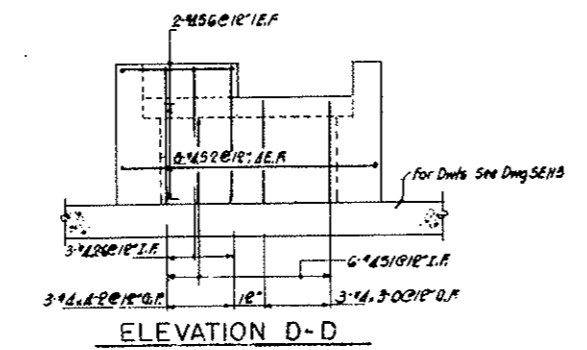
PLAN CAR ENCLOSURE SLAB
SOUTH-RDWY



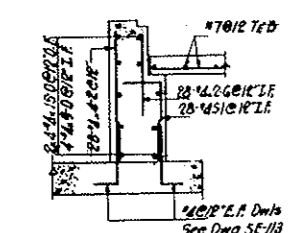
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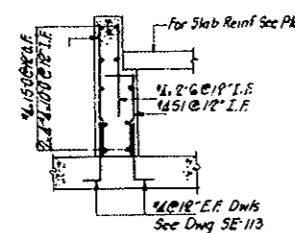
SECTION H-H



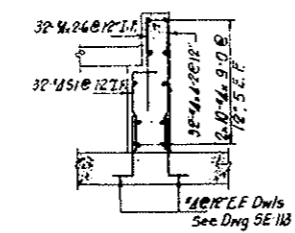
ELEVATION D-D



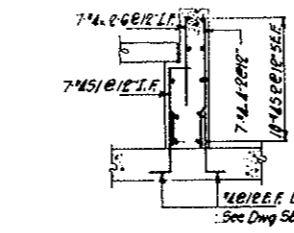
SECTION A-A
REINF X2



SECTION B-B
REINF X2

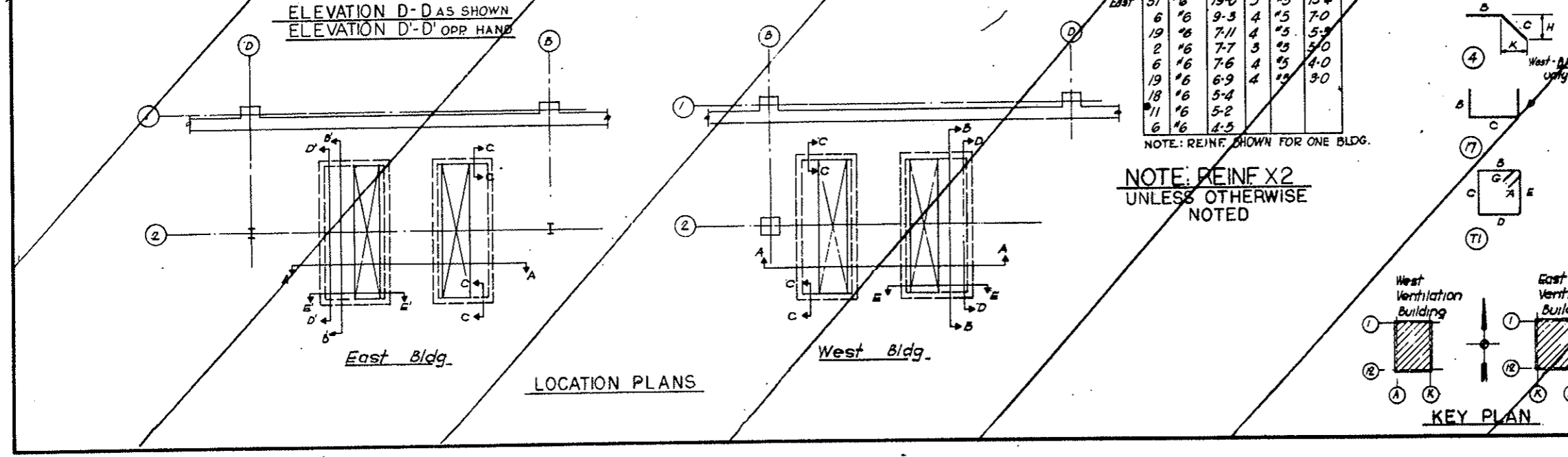
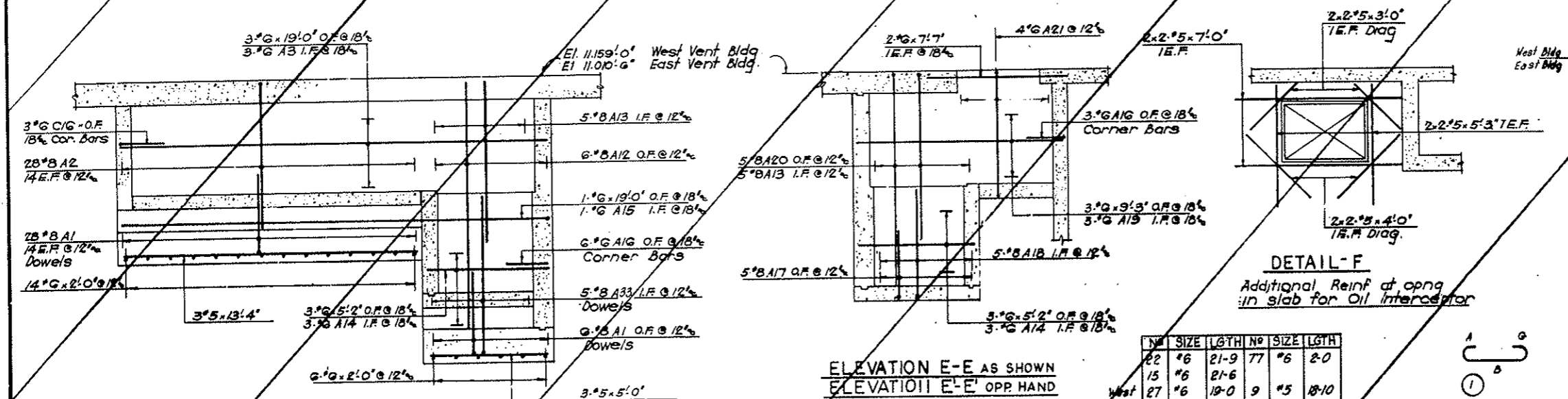
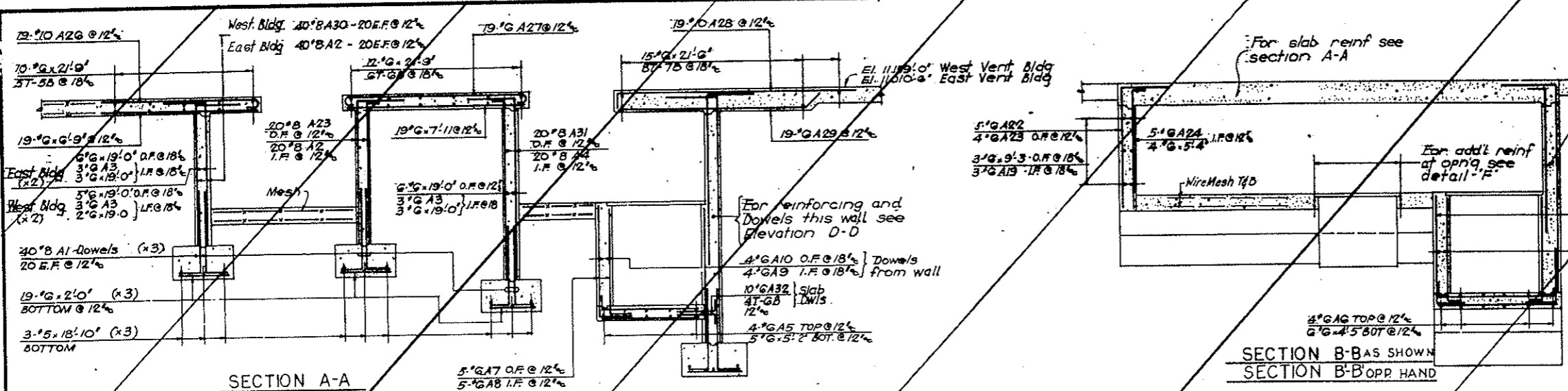


SECTION C-C
REINF X2



SECTION G-G

NO.	DATE	DESCRIPTION OF REVISION	BY	CL	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT EAST VENTILATION BUILDING MISCELLANEOUS DETAILS					
TIPPETTS - ABBETT - McARTHUR - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	JJV	CHECKED	JJV	APPROVED	<i>[Signature]</i>
DRAWN	JJV	SUBMITTED	<i>[Signature]</i>	DATE	JAN 1968
DRAWING NO.					S-E 161



BENDING DETAILS

NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K
15A	#8	4'-0"	A	1	17		9	3-9					
22	#8	8'-0"	2				2-0	6-6					
12	#8	10'-8"	3				10	19-0	10				
20	#8	10'-1"	4				2-0	8-7					
4	#8	6'-10"	A	5			10	5-2	10				
4	#8	5'-3"	C				10	4-5					
10	#8	7'-0"	7				2-0	5-0					
10	#8	5'-8"	8				10	4-10					
8	#8	8'-10"	A	9			10	5-2	10				
4	#8	8'-0"	10				10	5-2	7-0				
4	#8	9'-11"	11				9	5-2					
10	#8	13'-1"	12				2-0	1-1					
10	#8	9'-4"	A	13			2-0	7-4					
6	#8	6'-0"	14				10	5-2					
7	#8	19'-10"	15				10	19-0					
24	#8	3'-10"	16				1-11	1-11					
5	#8	5'-0"	A	17			2-0	3-0					
8	#8	6'-1"	18				4-11	1-2					
8	#8	10'-11"	19				10	9-3	10				
8	#8	11'-5"	20				2-0	9-5					
4	#8	12'-2"	21				4	5-4	5	5-4			4
11	#8	7'-4"	22				2-0	5-4					
24	#8	7'-0"	23				1-2	6-6					
11	#8	6'-2"	24				10	5-4					
6	#8	9'-2"	A	25			10	7-6	10				
19	#8	7'-10"	26				1-1	6-9					
16	#8	9'-3"	27				8	7-11					
19	#8	11'-3"	28				9	10-6					
10	#8	8'-11"	A	29			4	7-9	1-2				10
40	#8	10'-4"	30				17	2-0	8-4				
20	#8	9'-3"	31				17	1-2	8-1				
10	#8	3'-3"	32				17	10	2-7				
5	#8	8'-0"	33				17	8	7-3				

NO	SIZE	LGTH	NO	SIZE	LGTH
22	#6	21-9	77	#6	2-0
15	#6	21-6			
27	#6	19-0	9	#5	18-10
31	#6	19-0	5	#5	13-4
6	#6	9-3	4	#5	7-0
19	#6	7-11	4	#5	5-3
2	#6	7-7	3	#5	5-0
6	#6	7-6	4	#5	4-0
19	#6	6-9	4	#5	3-0
18	#6	5-4			
11	#6	5-2			
6	#6	4-5			

NOTE: REINF SHOWN FOR ONE BLDG.

NOTE: REINF X2 UNLESS OTHERWISE NOTED

NOTE: REINF SHOWN FOR ONE BLDG.

NOTE: All dims out to out

DESIGNED BY	REVISIONS	DATE
DRAWN BY	APPROVED	
CHECKED BY		
SUBMITTED BY		

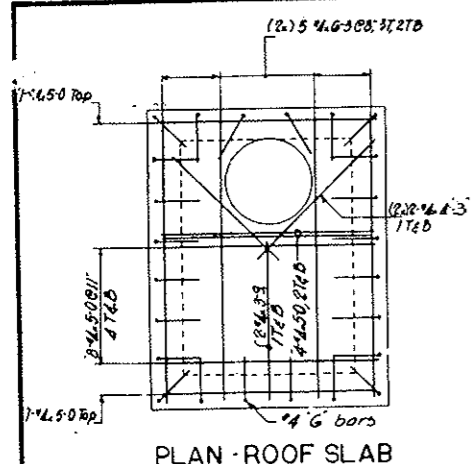
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
STRUCTURAL - REINFORCEMENT
WEST AND EAST VENTILATION BUILDINGS
VEHICLE PITS

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

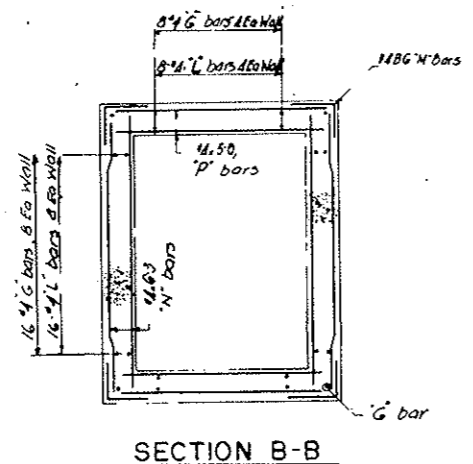
SCALE: 3/8" = 1'-0" DATE: JAN 1968

DRAWING NO. SWE101

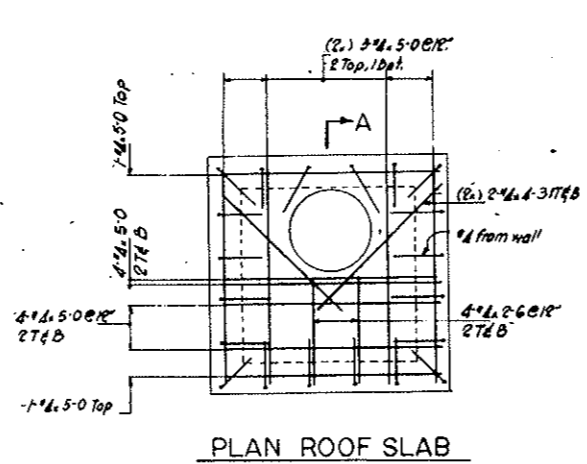
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	R510B	



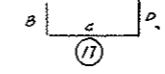
PLAN - ROOF SLAB



SECTION B-B

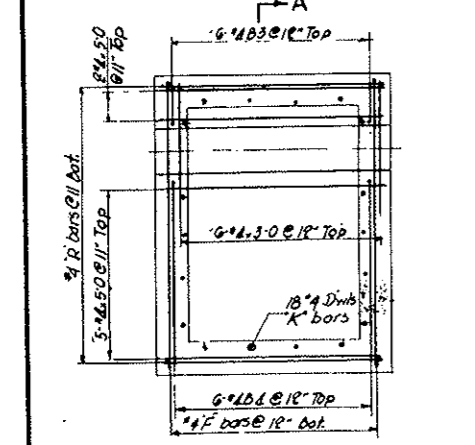


PLAN ROOF SLAB

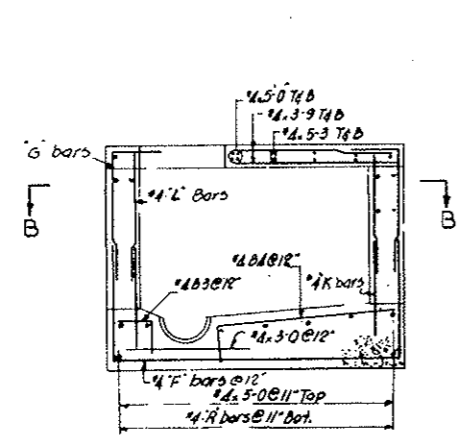


STR BARS	NO	SIZE	LGTH	MARK	TYPE
130	4	6-3			
847		5-0			
10		4-9			
45		4-6			
72		4-3			
10		3-9			
218		3-6			
108		3-0			
104		2-9			
180		2-6			
32	4	2-0			
48	4	4-0			

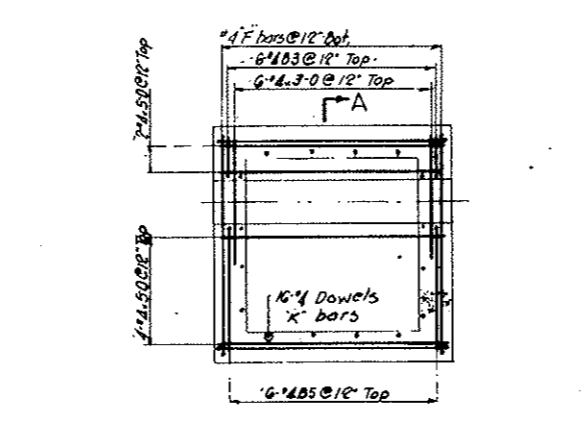
BENDING DETAILS															
NO	SIZE	LGTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	J	O
96	4	3-9	B	1	17		1-0	2-9							
24		3-9	B	17			1-0	4-9							
108		2-0	3	17			1-0	1-0							
30		5-3	4	17			1-0	4-3							
78	4	3-9	B	5	17		1-0	2-9							
272		2-6	6	17			1-3	1-3							
136		12-0	7	17			3-6	5-0	3-6						
160	4	3-6	8	17			1-0	2-6							
24		10-6	9	17			2-9	5-0	2-9						
40		3-0	B	10	17		1-0	2-0							
36		14-6	11	17			4-9	5-0	4-9						
60		5-0	12	17			1-0	1-0							
30	4	13-3	13	17			3-6	6-3	5-6						



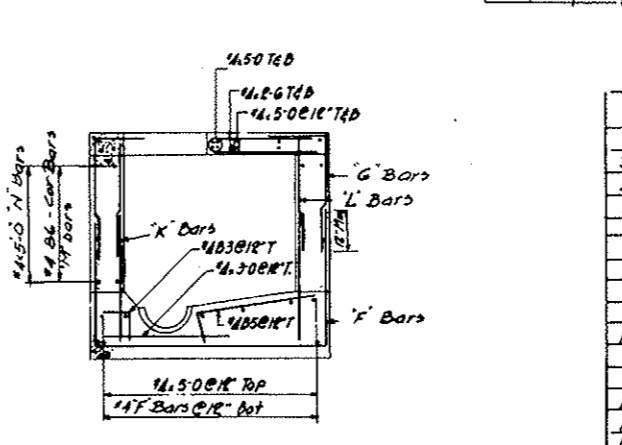
PLAN BASE SLAB



SECTION A-A



PLAN BASE SLAB



SECTION A-A

SEEPAGE DRAIN & WTR SUPPLY M.H.

WEST BLDG 3 REQD.
EAST BLDG 2 REQD.

WASTE WATER & SEEPAGE DRAIN MANHOLE

WEST BLDG 9 REQD
EAST BLDG 4 REQD

REINFORCING SCHEDULE										
WASTE WATER AND SEEPAGE DRAIN M.H.										
Sta	Blks	Rdwy	E bars	G bars	K bars	L bars	M bars	N bars	P bars	R bars
35178	W	N	12B7	20B2	K4424	K4424	12-06	12-06		
35196	W	N								
37245	W	N								
37246	W	N								
36160	W	S								
37261	W	S								
37265	W	S								
12221	E	N	12B7	20B2	K4424	K4424	12-06	12-06		
35192	W	S	12B9	20B2	K4424	K4424	8-06	12-06		
36100	W	S	12B9	20B2	K4424	K4424	8-06	12-06		
12407	E	N	12B11	20B12	K4424	K4424	24-06	12-06		
12357	E	S	12B11	20B12	K4424	K4424	24-06	12-06		
12426	E	S	12B11	20B12	K4424	K4424	24-06	12-06		

SEEPAGE DRAIN AND WATER SUPPLY M.H.										
Sta	Blks	Rdwy	E bars	G bars	K bars	L bars	M bars	N bars	P bars	R bars
35196	W	N	12B13	24B1	12-06	12-06	12-06	12-06	12-06	12-06
37246	W	N								
37266	W	S								
12328	E	N	12B13	24B1	12-06	12-06	12-06	12-06	12-06	12-06
12357	E	S	12B13	24B1	12-06	12-06	12-06	12-06	12-06	12-06

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

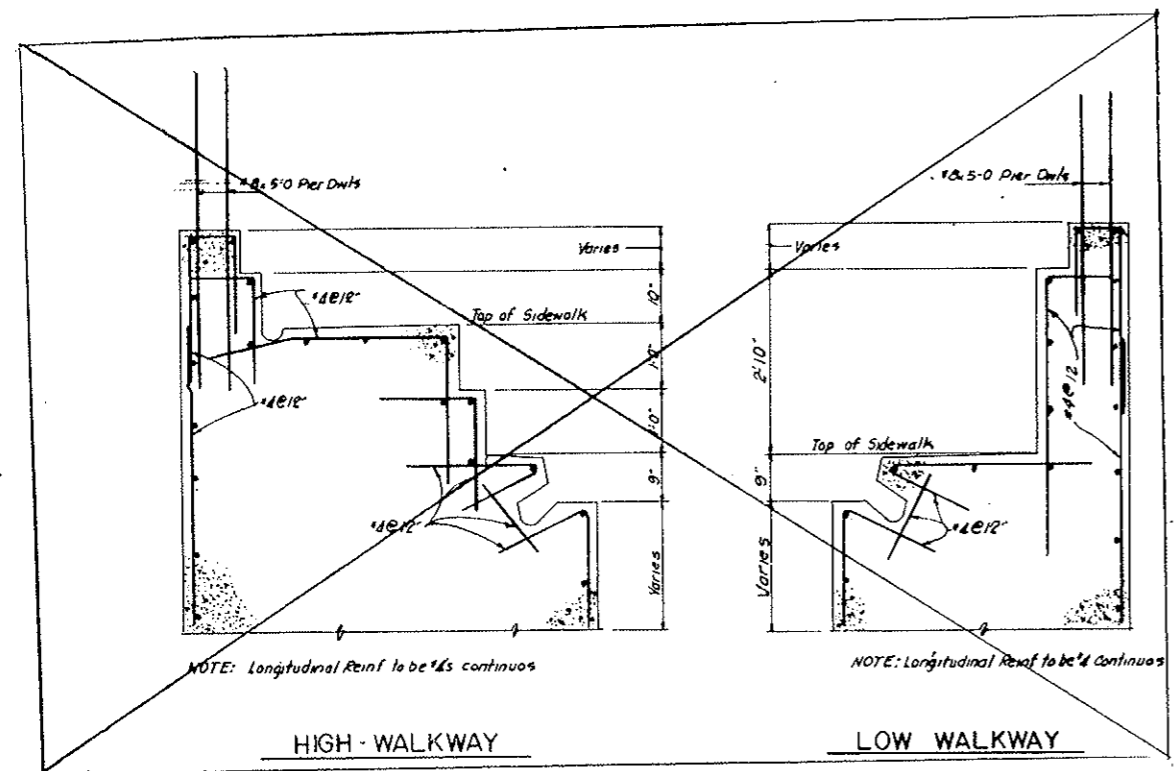
NO	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
STRUCTURAL - REINFORCEMENT WEST AND EAST VENTILATION BUILDINGS MANHOLES					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.V.	CHECKED: P.S.	SUBMITTED: Paul Rubin	RECOMMENDED: Paul Rubin	APPROVED: Paul Rubin	DRAWING NO. SWE102
NEW YORK, N. Y.			SCALE: NONE		DATE: JAN 1968

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	R5-111	

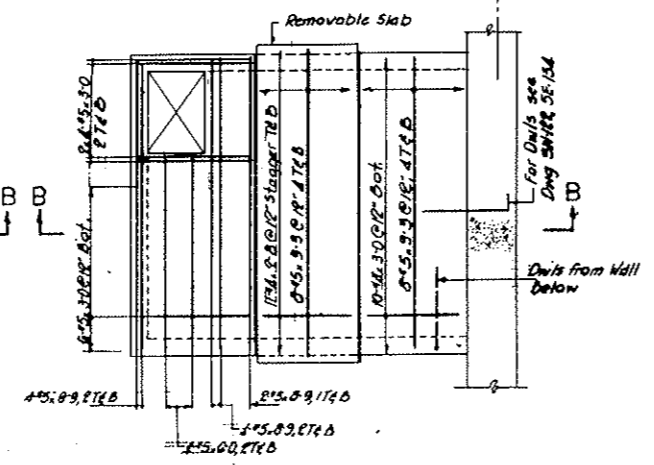
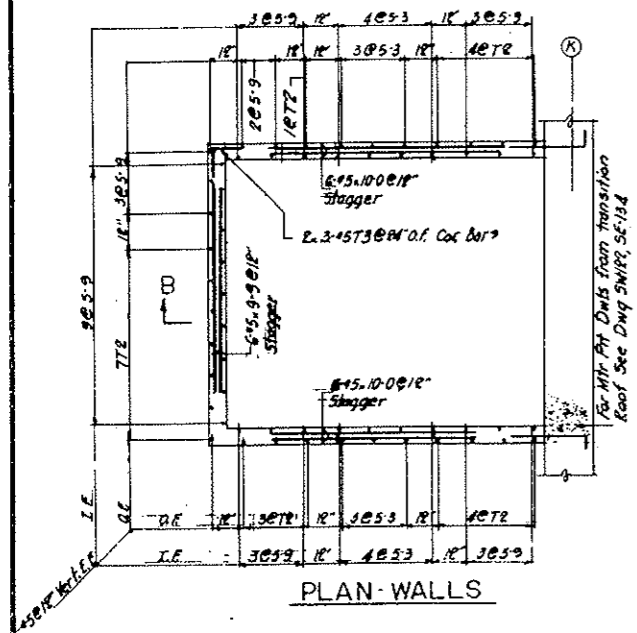
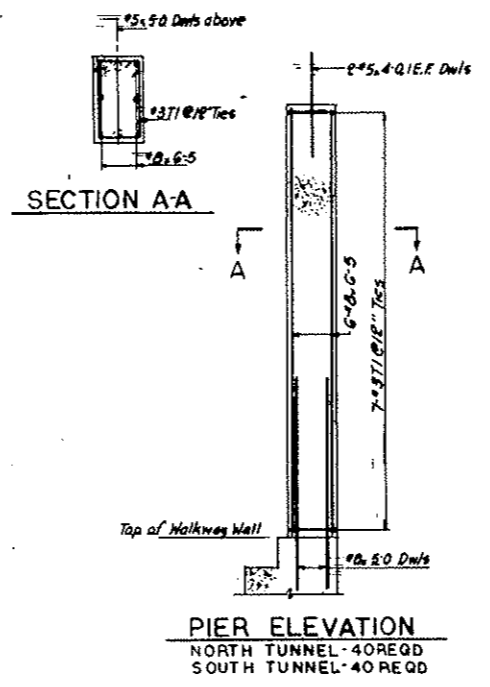
BENDING DETAILS															
NO.	SIZE	LNTH	MARK	TYPE	A	B	C	D	E	F	G	H	K	J	O
1	5/8	3-7	T	1	7	0-4	0-5	7-0	0-5	7-0					
2	1/2	3-2	T	2	17		3-5	5-9							
3	1/2	4-0	T	3	17		2-0	2-0							

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

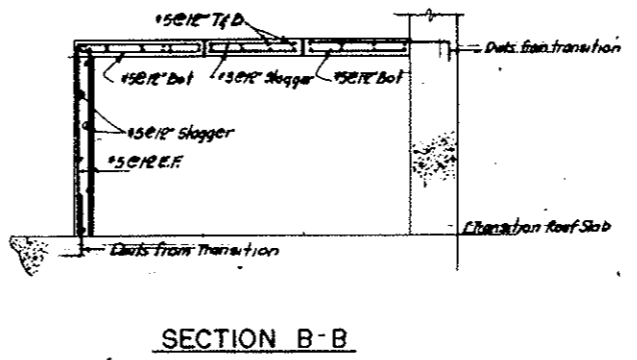
STR-BARS		
NO.	SIZE	LGTH
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48	#5	10-0
24	#4	9-9
64	#4	9-3
40	#4	8-9
16	#4	6-0
104	#4	5-9
56	#4	5-3
160	#4	4-0
56	#5	3-0
40	#4	3-0
44	#4	2-8



WALKWAY DETAILS See Civil Drawings



MOTOR PIT DETAILS
WEST BLDG 2 REQD
EAST BLDG 2 REQD

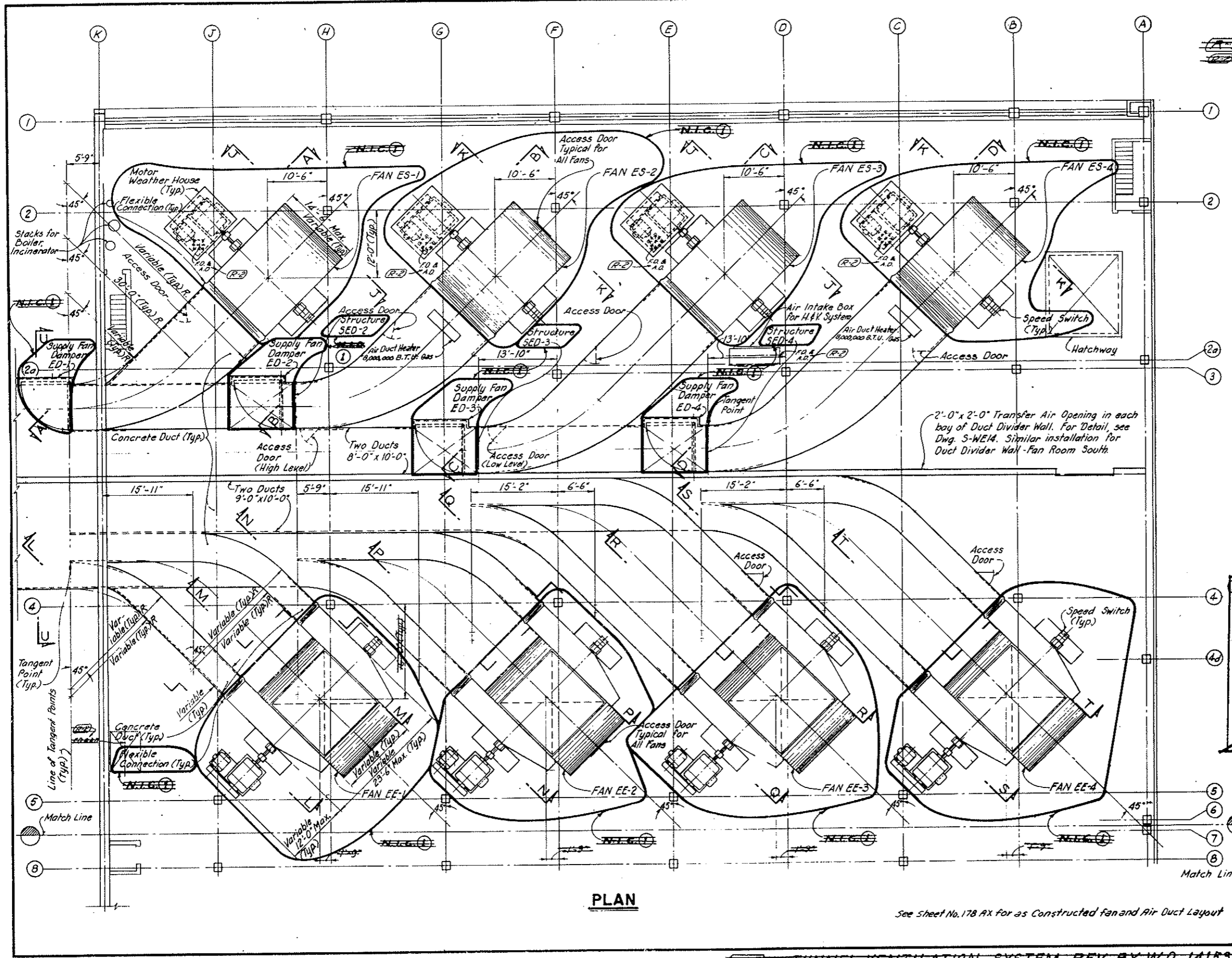
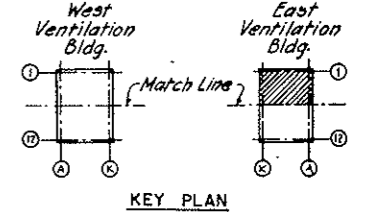


NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT STRUCTURAL - REINFORCEMENT WEST AND EAST VENTILATION BUILDINGS MISCELLANEOUS DETAILS SHEET 2 TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: JVV	CHECKED: JVV	APPROVED: <i>Paul Stull</i>	DATE: JAN 1966	DRAWING NO. SWE104	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	197	326

Rev. 11-6-67 C.O.H. Add note on bottom
 Rev. 11-6-67 C.O.H. Add note on bottom

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



- NOTES:-**
- All sections are shown on Dwg. M-3, M-4 & M-5
 - Dimensions of Supply & Exhaust Fans, Fan Motors, Supply Fan Motor House, Pedestals and Supply & Exhaust Fan Duct Connections are shown for bidding purposes only. Fan Manufacturer shall furnish correct details & dimensions through General Contractor for approval by Engineer.
 - For location and Details of Storm Bulkhead and Supply Air Louvers see Dwg. M-7, M-8 & M-9
 - For Details of Concrete Ducts, see Structural Dwg.
 - For Details of Access Doors, see Architectural Dwg.
 - For Supply Fan Damper operators see Dwg. M-12, M-13, M-14 & M-15.
 - Fan disassembly and assembly during maintenance and repair will be accomplished by use of the Jib Crane. Refer to Structural Floor Plans for Jib Crane location and to Dwg. M-10 for Jib Crane dimensions. The Fan Manufacturer shall coordinate Fan and Drive Assembly and Disassembly Details to permit the use of the Jib Crane.
- (D)** Tunnel Ventilation System (Bid Item 165) revised. See W.O. 14153 & Spec. 17A. N.I.C. Items are: Tunnel Ventilation Fans with Motors, Housings & Transmissions; Flexible Connections; Speed Switches; Supply Fan Dampers; Evasse Stacks with Weather Hood & Dampers. All Concrete Work, Supports of Equipment, Grouting & related, although enclosed within the N.I.C. limit lines, remain in this Contract. Construction of Evasse Stack Roof Frame, Concrete Duct Work within the Ventilation Building, Fan & Motor Concrete Bases and Anchor Bolts shall be executed according to Details furnished by the Fan Manufacturer under separate Contract.

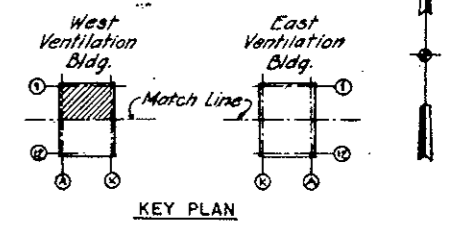
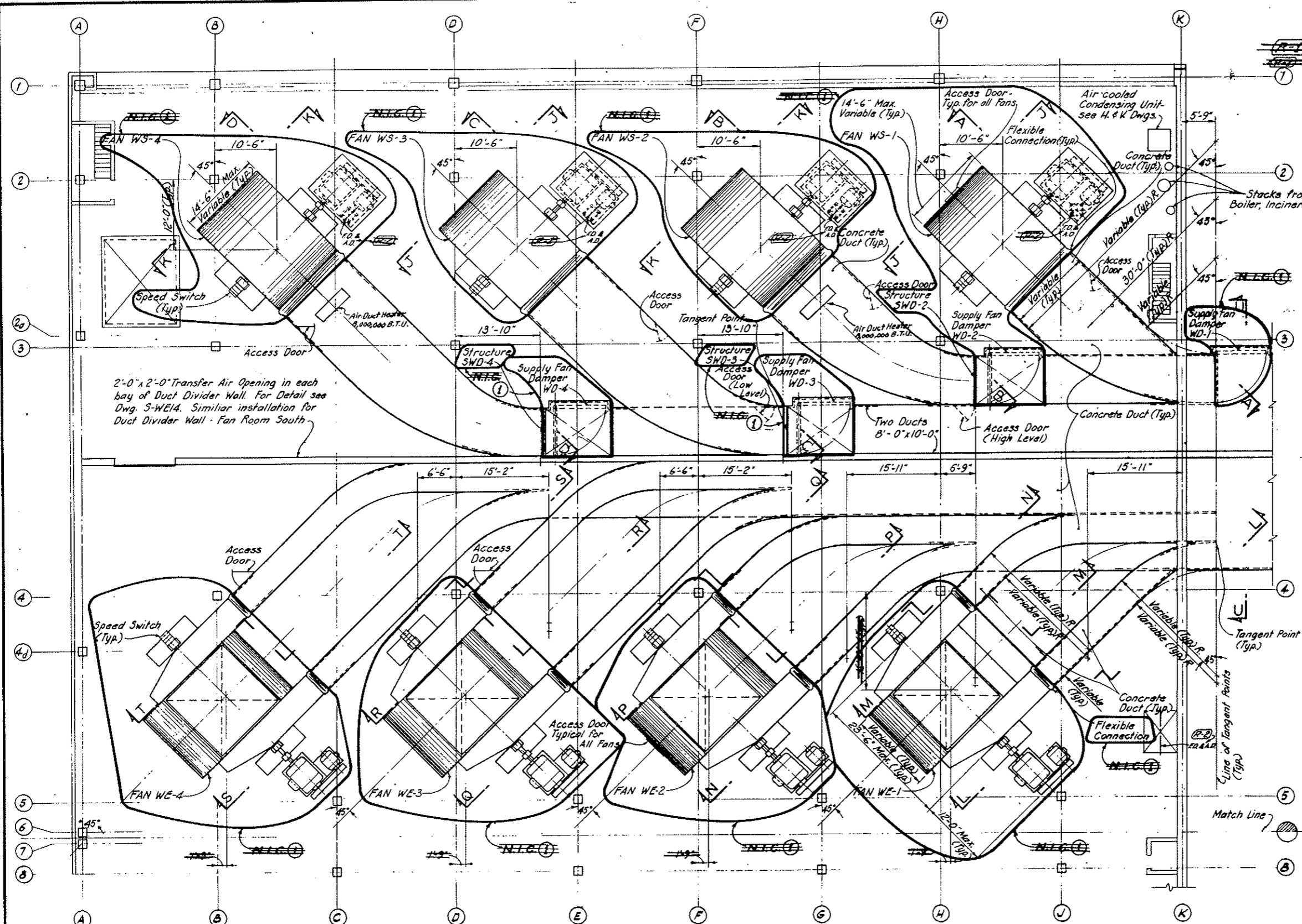
See Sheet No. 178 AX for as Constructed fan and Air Duct Layout

NO.	DATE	DESCRIPTION OF REVISION	BY	CH	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL EAST VENTILATION BUILDING FAN ROOM NORTH FAN ARRANGEMENT					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	U.D.B.	RECOMMENDED:	[Signature]		
DRAWN:	L.H.	CHECKED:	[Signature]		
QUANTITY:	A.F.S.	APPROVED:	[Signature]		
DATE:	8/1/73	SCALE:	1/8" = 1' FT		
DATE:	AUGUST 1967	DATE:	AUGUST 1967		
					DRAWING NO. M-1

~~(R-1) TUNNEL VENTILATION SYSTEM REV BY W.O. 14153, SEE SPEC # 17A~~

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	198	326

Rev. 11-6-67 C.D.H. Add note at bottom
 AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973



- NOTES:-**
- All sections are shown on Dwg.s M-3, M-4 & M-5, and are opposite hand.
 - Dimensions of Supply & Exhaust Fans, Fan Motors, Supply Fan Motor House, Pedestals and Supply & Exhaust Fan Duct Connections are shown for bidding purposes only. Fan Manufacturer shall furnish correct details & dimensions thru General Contractor for approval by Engineer.
 - For location and Details of Storm Bulkhead and Supply Air Louvers see Dwg.s M-7, M-8 & M-9.
 - For Details of Concrete Duct, see Structural Dwg.s.
 - For Supply Fan Damper operators see Dwg.s M-12, M-13, M-14 & M-15.
 - Fan disassembly and assembly during maintenance and repair will be accomplished by use of the Jib Crane. Refer to Structural Floor Plans for Jib Crane location and to Dwg. M-10 for Jib Crane dimensions. The Fan Manufacturer shall coordinate Fan and Drive Assembly and Disassembly Details to permit the use of the Jib Crane.

~~(A) Tunnel Ventilation System (Bid Item 165) revised. See M.O. 14153 & Spec. 17A. N.I.C. Items are Tunnel Ventilation Fans with Motors, Housings & Transmissions, Flexible Connections, Speed Switches, Supply Fan Dampers; Evase Stacks with Weather Hood & Dampers. All Concrete Work, Supports of Equipment, Grouting & related, although enclosed within the N.I.C. limit lines, remain in this Contract. Construction of Evase Stack Roof Frame, Concrete Duct Work within the Ventilation Building, Fan & Motor Concrete Bases and Anchor Bolts shall be executed according to Details furnished by the Fan Manufacturer under separate Contract.~~

PLAN

See Sheet No. 148 AX for as Constructed Fan and Air Duct layout

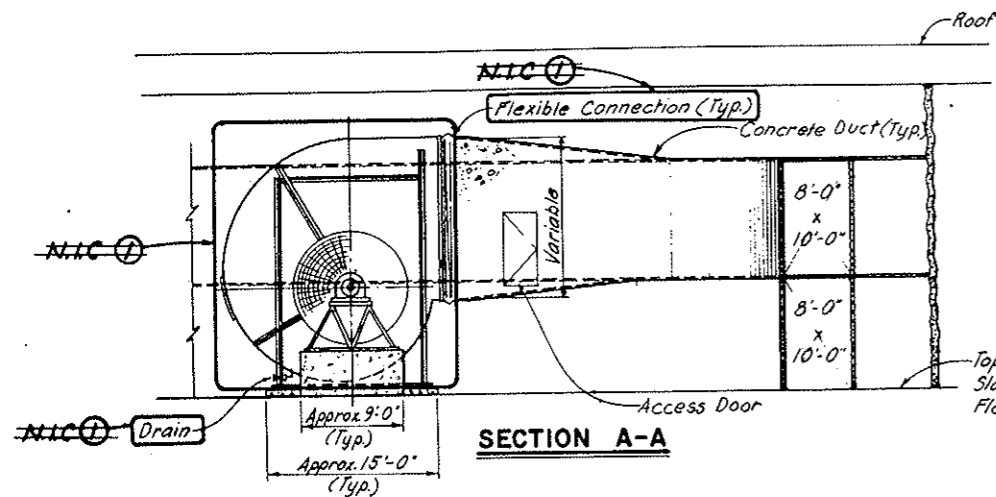
NO. DATE		DESCRIPTION OF REVISION	BY	CHK. APPR.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
MECHANICAL WEST VENTILATION BUILDING FAN ROOM NORTH FAN ARRANGEMENT				
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED BY	U. D. B.	RECOMMENDED BY	[Signature]	
CHECKED BY	L. H. H.	APPROVED BY	[Signature]	
SUBMITTED BY	A. E. S.	DATE	AUGUST 1967	
DRAWING NO.		M-2		

(A-1) REV. 5 TUNNEL VENTILATION SYSTEM W.O. 14153, SEE SPEC. # 17A

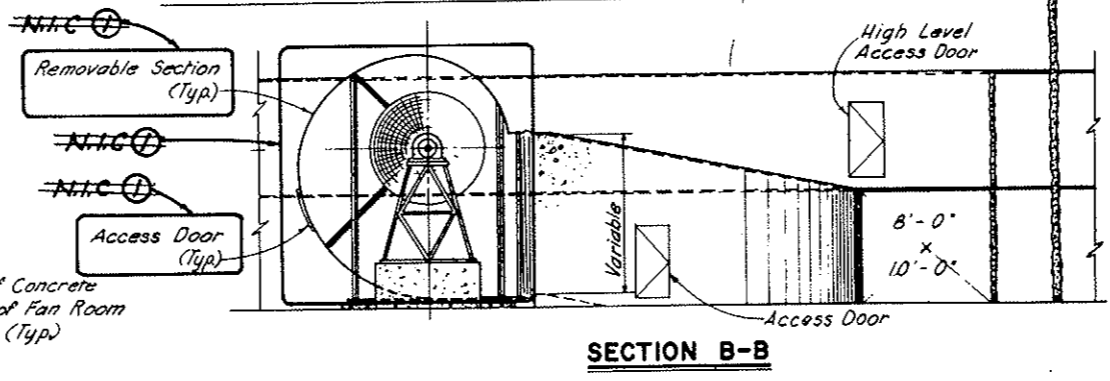
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	199	326

(R-1) Rev. 11-6-67 C.D.H. Add note at bottom

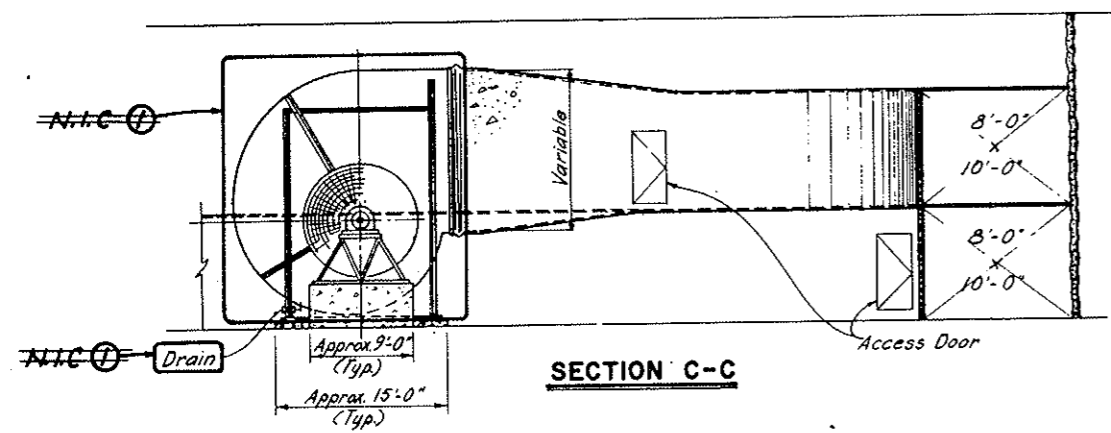
AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



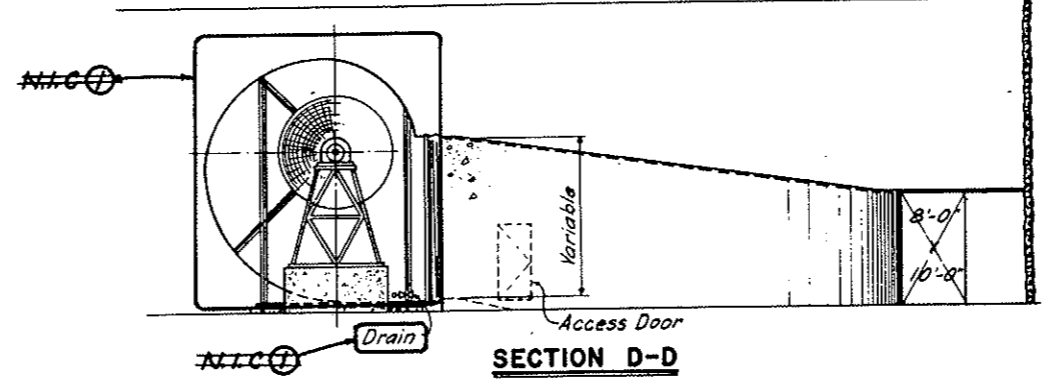
SECTION A-A



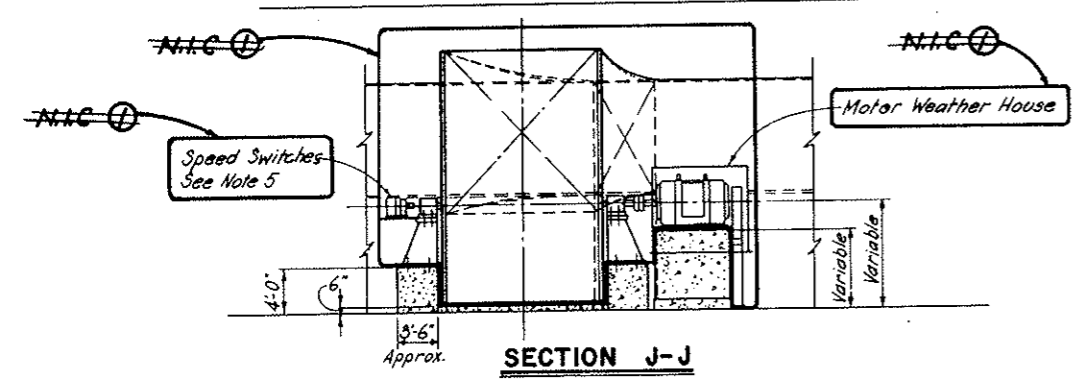
SECTION B-B



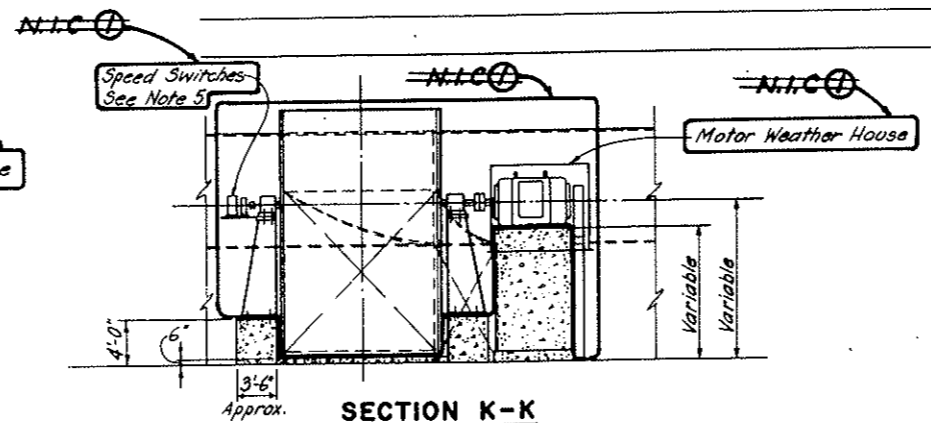
SECTION C-C



SECTION D-D



SECTION J-J



SECTION K-K

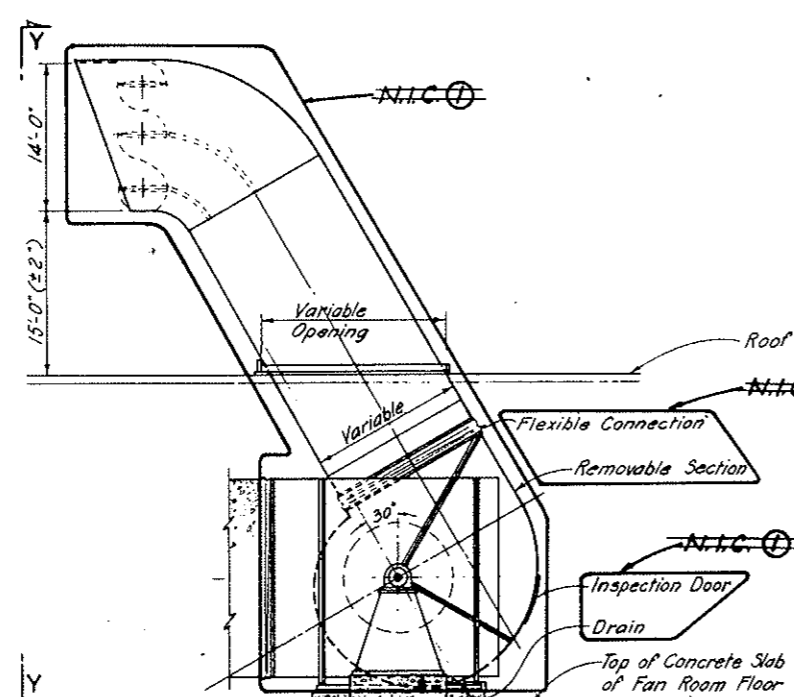
- NOTES:**
- Sections shown in this drawing are taken in the East Bldg.; sections for West Bldg. are opposite hand.
 - Anchor Bolts for Fan Housing, Pedestal & Motors shall be installed by General Contractor according to approved instructions of Fan Manufacturer; Fan Manufacturer shall also supply to General Contractor approved template & detail dimensions.
 - Maximum weight of Large Motor shall not exceed about 10,000 lbs. Maximum weight of two-speed motor shall not exceed about 2,000 lbs. For vibration reduction, concrete supports at Supply Fans, exclusive of 8" Foundation, shall weigh approximately 35,000 lbs. Detail of Motor Base shall be supplied to General Contractor by Fan Manufacturer and approved by Resident Engineer.
 - Weight of all Supply Fans completely assembled (including bearings, pedestals, housing, wheel, shaft, etc.) shall be limited to approximately 35,000 lbs. each, to avoid excessive load on Support Structure.
 - Speed Switch Assembly, covered by metal housing shall be furnished for each fan. Assembly shall include switch, coupling and 1:5 geared speed increaser. See Electrical Section of Specifications. Supply of Switches shall be by Electrical Contractor.

~~(R-1) Tunnel Ventilation System (Bid Item 165) revised. See W.O. 14153 & Spec. 17A. N.I.C. Items are: Tunnel Ventilation Fans with Motors, Housings & Transmissions; Flexible Connections; Speed Switches; Supply Fan Dampers; Evasé Stacks with Weather Hood & Dampers. All Concrete Work, Supports of Equipment, Grouting & related, although enclosed within the N.I.C. limit lines, remain in this Contract. Construction of Evasé Stack Roof Frame, Concrete Duct Work within the Ventilation Bonding, Fan & Motor Concrete Bases and Anchor Bolts shall be executed according to Details furnished by the Fan Manufacturer under separate Contract.~~

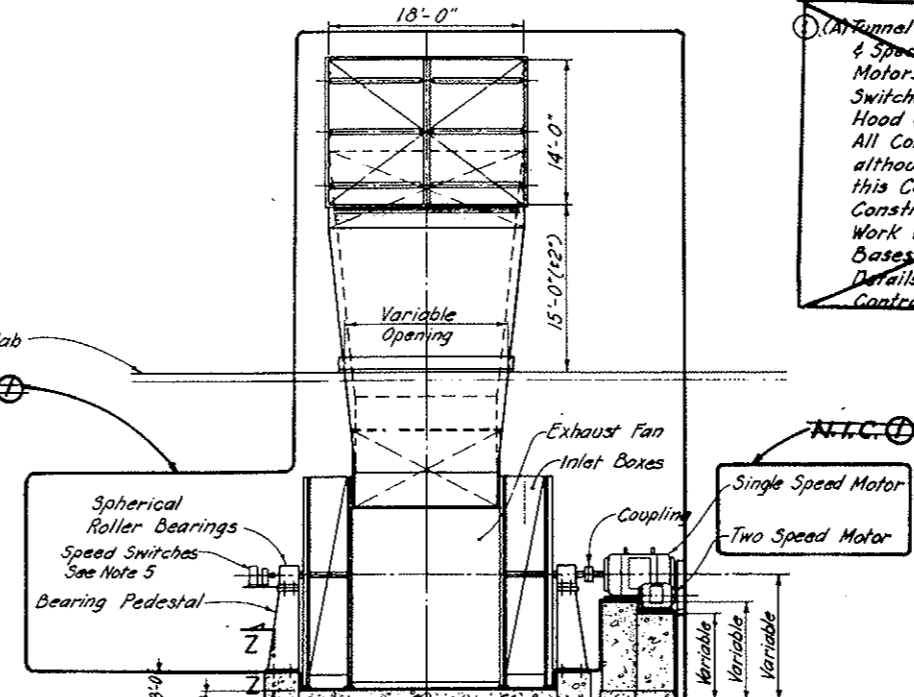
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL EAST AND WEST VENTILATION BUILDINGS SUPPLY FANS SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	U. D. B.	RECOMMENDED:			
DRAWN:	L. H. S.	CHECKED:			
SUBMITTED:	A. F. S.	APPROVED:			
A. B. S.		J. P. M.		J. P. M.	
NEW YORK, N. Y.		SCALE: 1/8" IN. = 1' FT.		DATE: AUGUST 1967	
					M-3

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	200	326

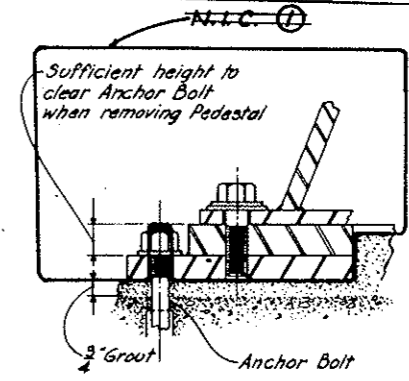
(R-1) Rev 11-6-69 C.D.H. Add note at bottom



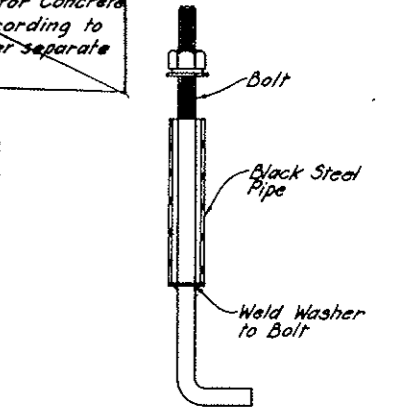
TYPICAL ELEVATION OF EXHAUST FAN WITH EVASE STACK AND WEATHER HOOD



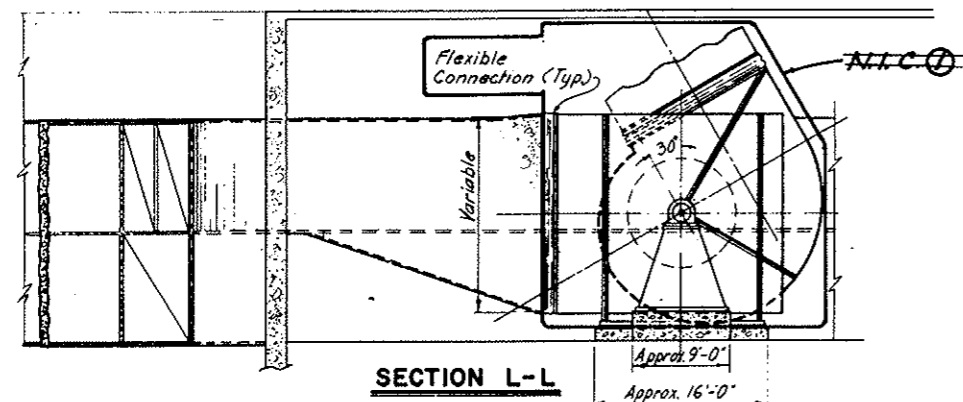
SECTION Y-Y (TYPICAL)



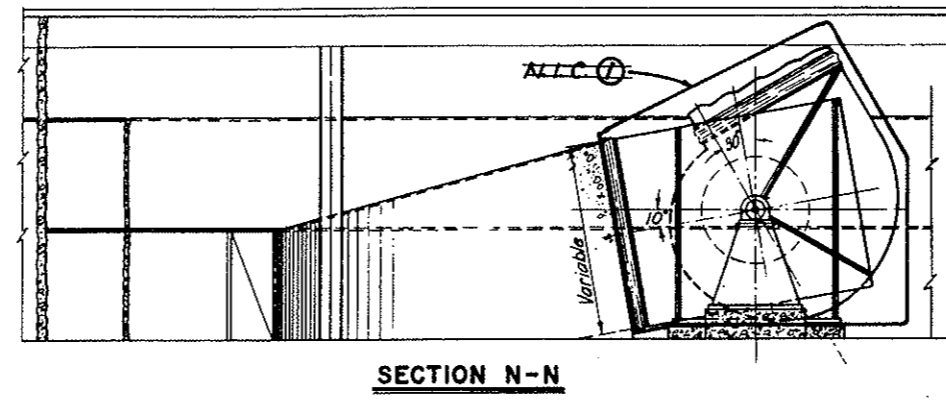
SECTION Z-Z
TYPICAL FOR SUPPLY & EXHAUST FANS
NOT TO SCALE



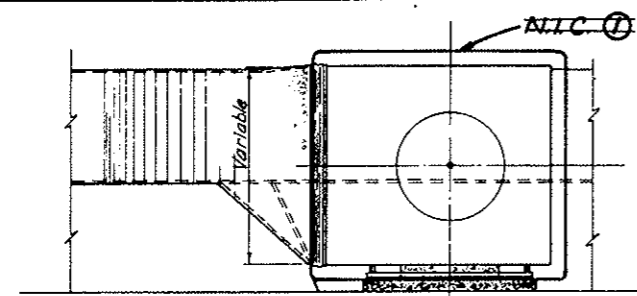
TYPICAL ANCHOR BOLT
DETAIL
FOR BEARING PEDESTAL,
MOTORS & HOUSING SUPPORTS
NOT TO SCALE



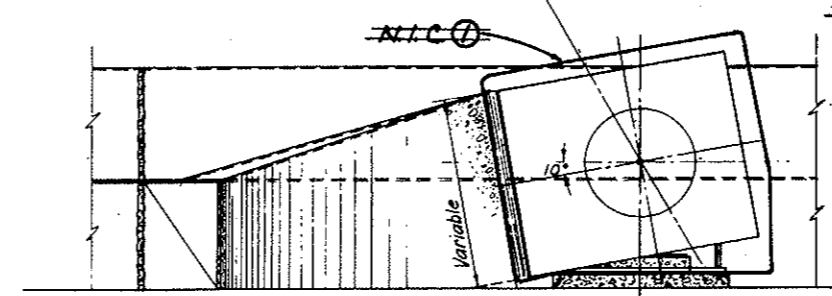
SECTION L-L



SECTION N-N



SECTION M-M



SECTION P-P

NOTES:

1. (A) Tunnel Ventilation System (Bid Item 165) revised. See W.O. 14163 & Spec 17A. N.I.C. Items are: Tunnel Ventilation Fans with Motors, Housings & Transmissions; Flexible Connections; Speed Switches; Supply Fan Dampers; Evase Stacks with Weather Hood & Dampers. All Concrete Work, Supports of Equipment, Grouting & related, although enclosed within the N.I.C. limit lines, remain in this Contract. Construction of Evase Stack Roof Frame, Concrete Duct Work within the Ventilation Building, Fan & Motor Concrete Bases and Anchor Bolts shall be executed according to Details furnished by the Fan Manufacturer under separate Contract.

NOTES:

- Sections shown in this Dwg. are taken in the East Bldg; Sections for West Bldg. are opposite hand.
- Anchor Bolts for Fan Housing, Pedestals & Motors shall be installed by General Contractor according to approved instructions of Fan Manufacturer. Fan Manufacturer shall also supply to General Contractor approved template & detail dimensions.
- Maximum weight of large Motor shall not exceed about 10,000 lbs. Maximum weight of two-speed Motor shall not exceed about 2,000 lbs. For vibration reduction, concrete supports, exclusive of 8" Foundation, shall weigh approximately 3,000 lbs. Detail of Motor Base shall be supplied to General Contractor by Fan Manufacturer and approved by Resident Engineer.
- Weight of all Exhaust Fans completely assembled (including bearings, pedestals, wheel, shaft, inlet boxes, etc.) shall be limited to approximately 55,000 lbs. each to avoid excessive load on Support Structure.
- Speed Switch Assembly, covered by metal housing shall be furnished for each Fan Assembly shall include switch, coupling & 1:5 geared speed increaser. See Electrical Section of Specifications. Supply of Switches shall be by Electrical Contractor.

speed increaser. See Electrical Section of Specifications. Supply of Switches shall be by Electrical Contractor.

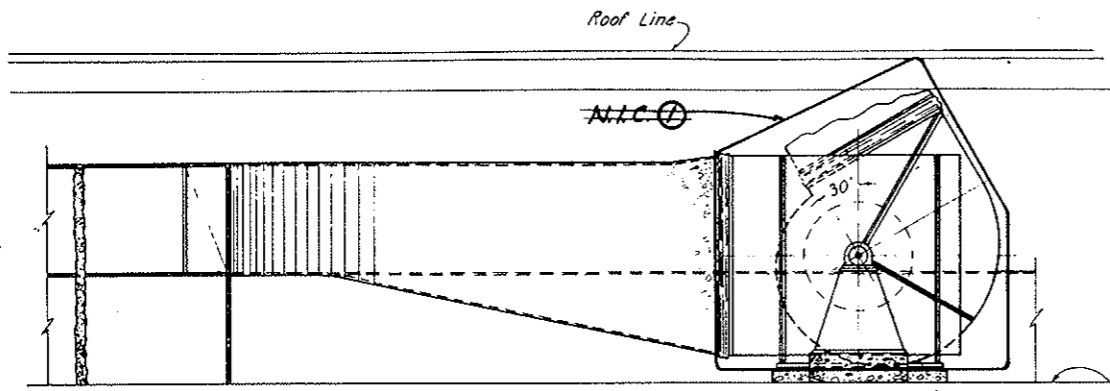
NO. DATE		DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL EAST AND WEST VENTILATION BUILDINGS EXHAUST FANS SECTIONS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS, NEW YORK, N. Y.					
DESIGNED: U. D. B.	DRAWN: L. M.	CHECKED: A. F. S.	RECOMMENDED: C. B. Miller, J. H. Conforti		
SUBMITTED: William H. S. S. S.		APPROVED: G. P. Sullivan		DRAWING NO. M-4	
NEW YORK, N. Y. SCALE: 1/8" = 1' FT. DATE: AUGUST 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	201	326

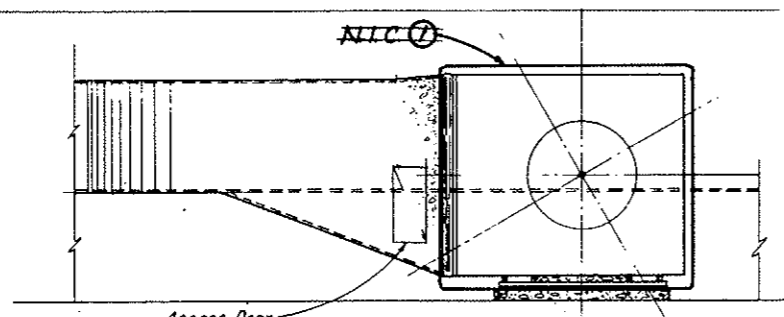
~~(2-D) Rev 11-6-67 C.D.H. - ADDED NOTE BELOW~~
~~(2-F) Rev 8-29-68 C.D.H. Dim Change Section U-U - Please File 2-2-69~~
~~(10-B) Rev 1-22-71 C.D.H. at 2-11-71 - Change 1-18-71~~

AS CONSTRUCTED
REVISED DATE Oct 26, 1973

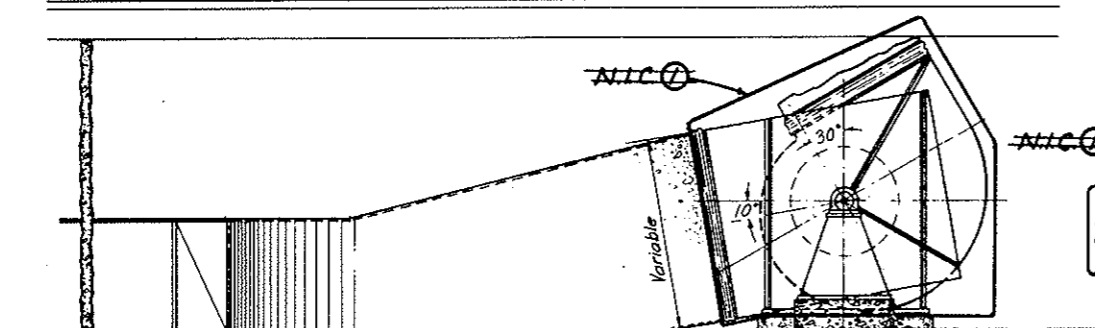
- NOTES:-**
1. Details & Dimensions of Motors and Motor Weather Housing are typical and are shown for bidding purposes only. Fan Manufacturer shall furnish correct details & dimensions through General Contractor for approval by Engineer.
 2. Motor Weather Housing shall be installed on Supply Fan Motors only, shall be removable and shall be of 1/2" Plate, using 1 1/2" x 1 1/2" x 3/16" Angles & 1/2" φ Bolts for assembly. Fixed plate shall be 1/4" with Plate & Angle Brackets for support from Concrete Pedestal.
 3. For anchorage of Foundation Pad to Structural Slab, see Structural Dwg.
 4. Sections shown in this Dwg. are taken in the East Bldg.; Sections at West Bldg. are opposite hand.
 5. Section U-U shows basic interior dimensions. For Outside Wall and Top Slab thickness, see Structural Dwg.



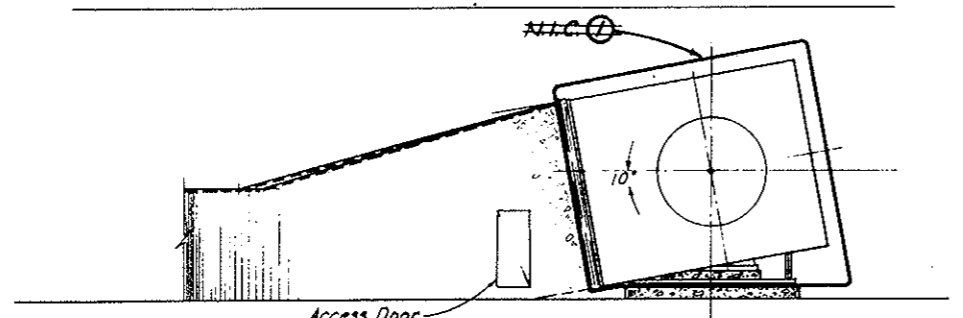
SECTION Q-Q



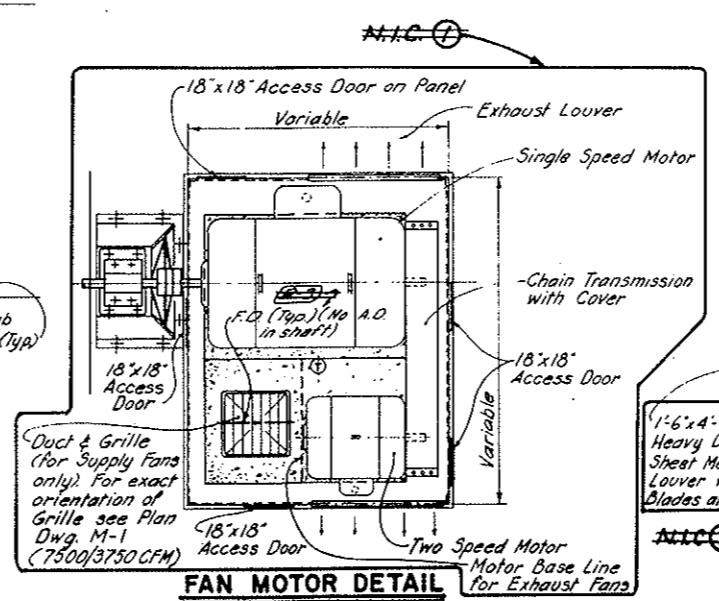
SECTION R-R



SECTION S-S

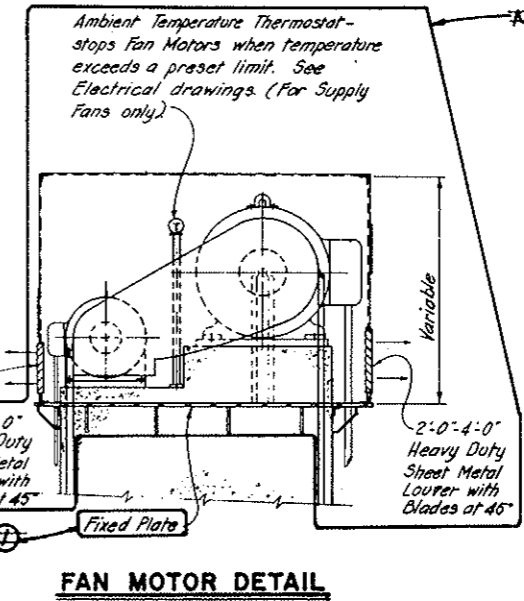


SECTION T-T



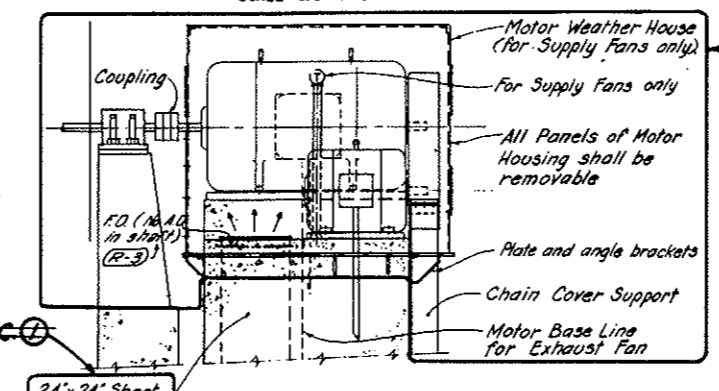
FAN MOTOR DETAIL

PLAN WITHOUT TOP PANEL
 SCALE: 3/8" = 1'-0"



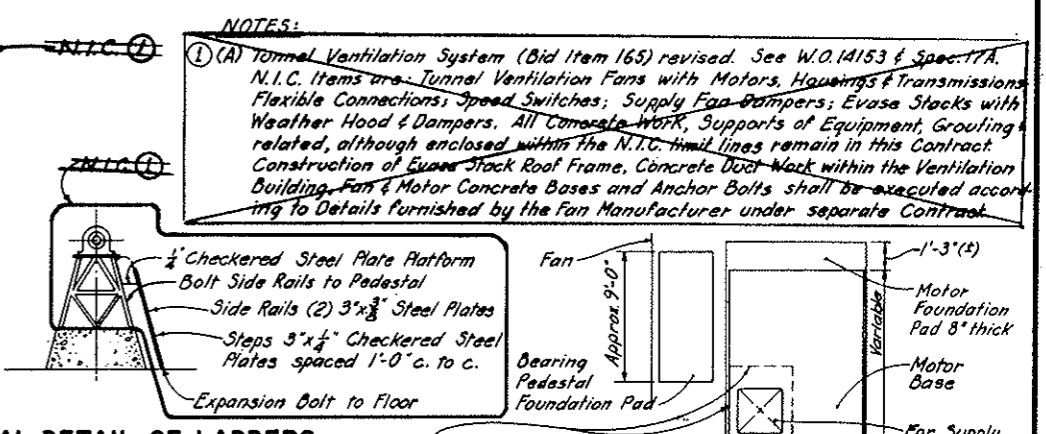
FAN MOTOR DETAIL

SIDE VIEW WITHOUT SIDE PANEL
 SCALE: 3/8" = 1'-0"

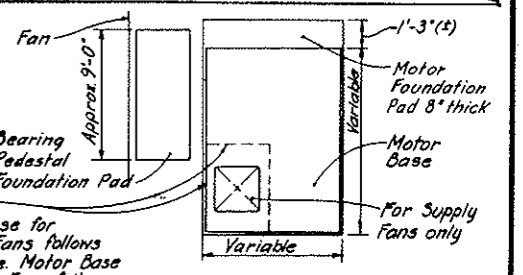


FAN MOTOR DETAIL

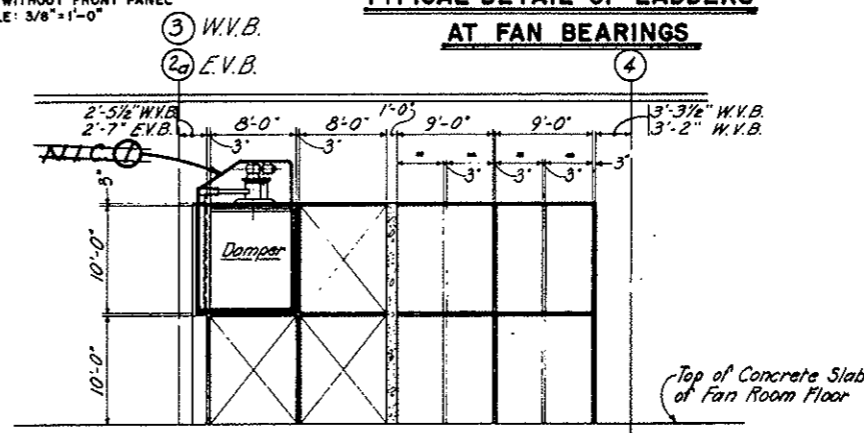
FRONT VIEW WITHOUT FRONT PANEL
 SCALE: 3/8" = 1'-0"



TYPICAL DETAIL OF LADDERS AT FAN BEARINGS



PLAN OF FOUNDATIONS FOR MOTOR BASE AND BEARING PEDESTAL



SECTION U-U

(R-2)

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Contract Limit Deleted, see Note 4			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

MECHANICAL EAST AND WEST VENTILATION BUILDINGS EXHAUST FANS SECTIONS AND DETAILS

TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: U. D. B.
 DRAWN: L. H.
 CHECKED: A. F. S.
 SUBMITTED: [Signature]
 APPROVED: [Signature]
 NEW YORK, N. Y.

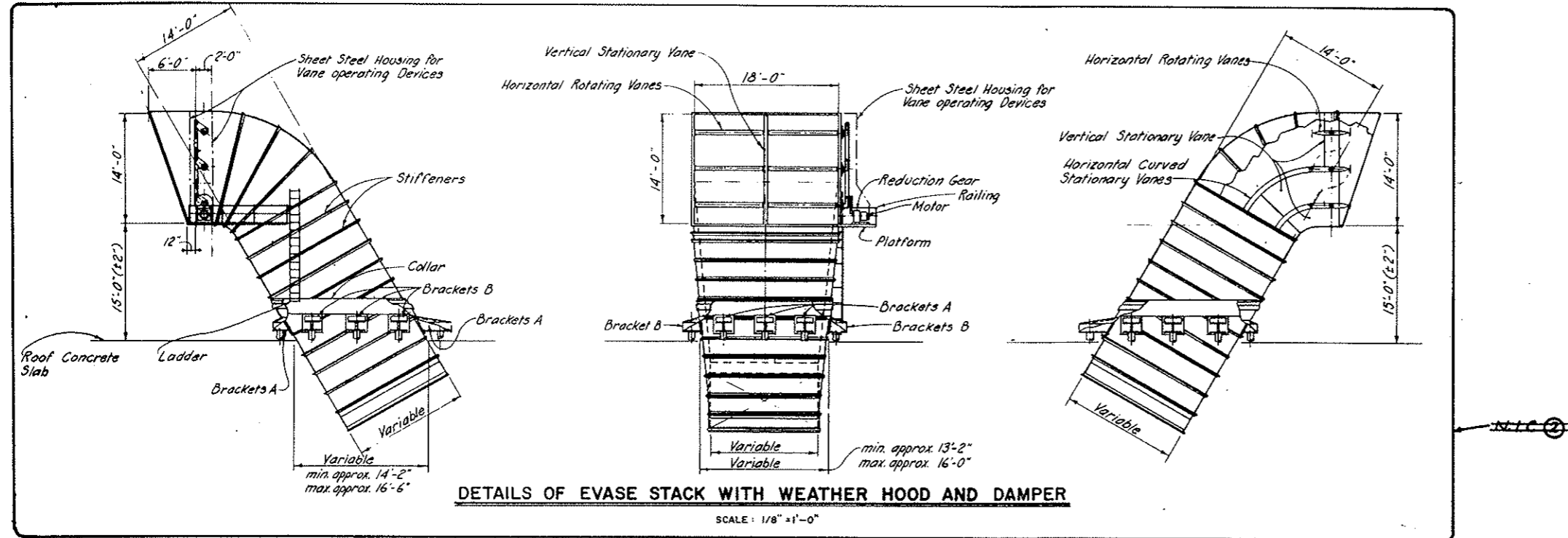
RECOMMENDED: [Signature]
 APPROVED: [Signature]
 NEW YORK, N. Y.

SCALE: 1/8" IN. = 1' FT. DATE: AUGUST 1967

DRAWING NO. **M-5**

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	202	326

~~REV. 11-6-67 C.R.M. ADDED NOTE BELOW~~
AS CONSTRUCTED
 REVISED DATE **OCT. 26, 1973**

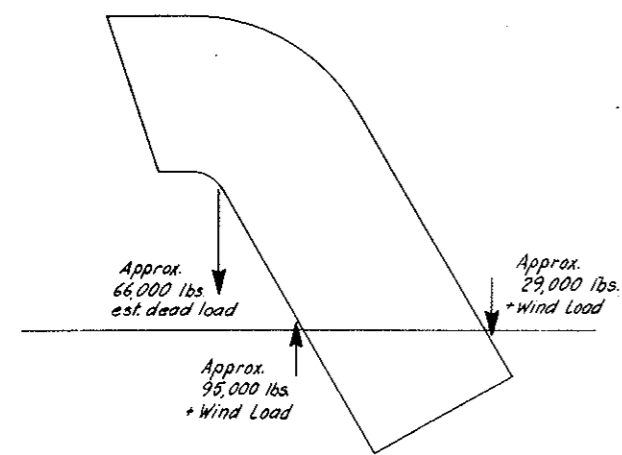


DETAILS OF EVASE STACK WITH WEATHER HOOD AND DAMPER

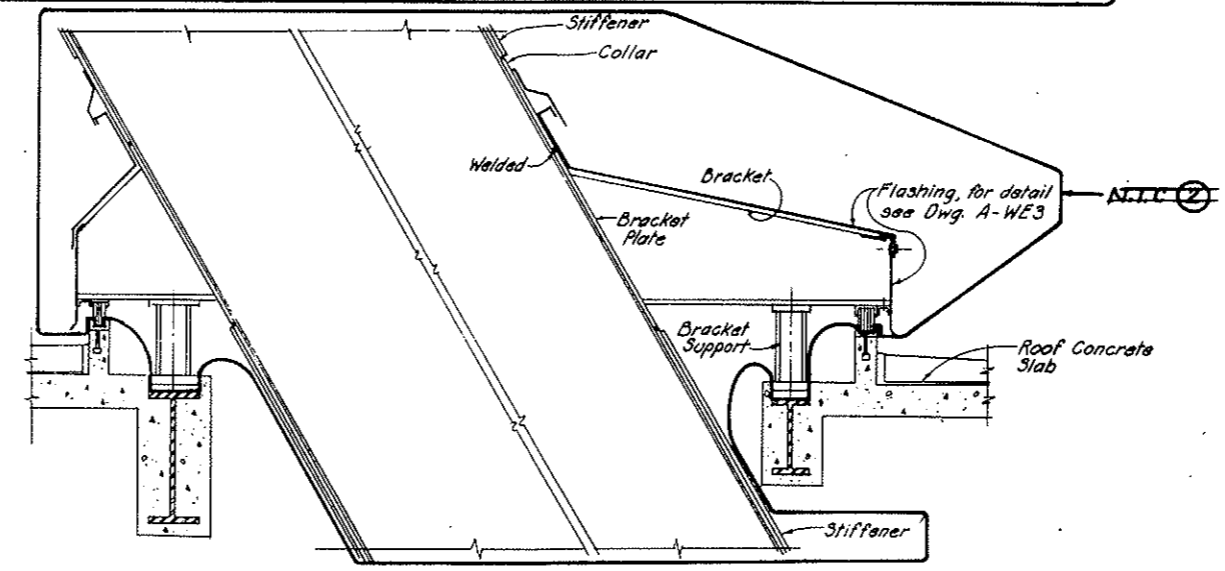
SCALE: 1/8" = 1'-0"

- NOTES:**
1. Details refer to East Bldg. West Bldg. Details are opposite hand.
 2. Details of Evase Stack with Weather Hood & Damper and Supports are typical and are shown for bidding purposes only. Fan Manufacturer shall furnish correct details & dimensions thru General Contractor for approval by Engineer.
 3. The entire load of Evase Stack, Weather Hood and Damper shall be supported by Brackets "A". Brackets "B" shall keep Evase Stack in place.
 4. The wind reactions shall be computed on the basis of 30 psf on projected area, in any direction.

(A) Tunnel Ventilation System (Bid Item 165) revised See W.O. 14153 & Spec. 17A. N.I.C. Items are: Tunnel Ventilation Fans with Motors, Housings & Transmissions; Flexible Connections; Speed Switches; Supply Fan Dampers; Evase stacks with Weather Hood & Dampers. All Concrete Work, Supports of Equipment, Grouting & related, although enclosed within the N.I.C. limit lines, remain in this Contract. Construction of Evase Stack Roof Frame, Concrete Duct Work within the Ventilation Building, Fan & Motor Concrete Bases and Anchor Bolts shall be executed according to Details furnished by the Fan Manufacturer under separate Contract.



SCHEMATIC OF LOAD DISTRIBUTION OF EVASE STACK



DETAIL OF EVASE STACK SUPPORTS

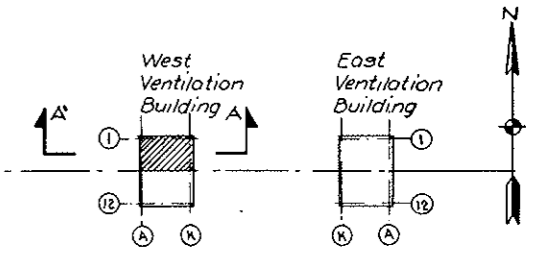
SCALE: 3/4" = 1'-0"

DESIGNED: U.D.B.	RECOMMENDED: <i>John J. Miller</i>	DATE: AUGUST 1967
DRAWN: L.H.	CHECKED: <i>A.F.S.</i>	APPROVED: <i>John J. Miller</i>
SUBMITTED: <i>John J. Miller</i>	APPROVED: <i>John J. Miller</i>	DATE: AUGUST 1967
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT MECHANICAL EAST AND WEST VENTILATION BUILDINGS EXHAUST FANS EVASE STACKS, DAMPERS AND SUPPORTS TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.		
NO. DATE DESCRIPTION OF REVISION BY CHL. APP.		DRAWING NO. M-6

~~REV. TUNNEL VENTILATION SYSTEM REV W.O. 14153 SEE SPEC. 17A~~

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	203	326

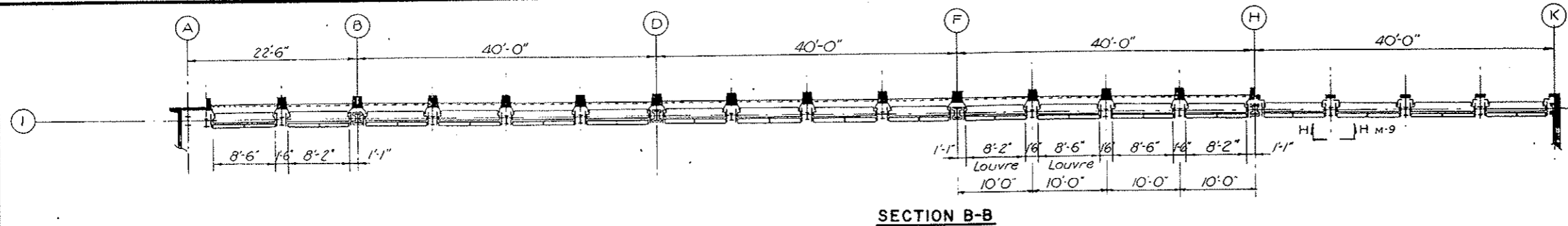
Rev 9/20/67 C.D.H.



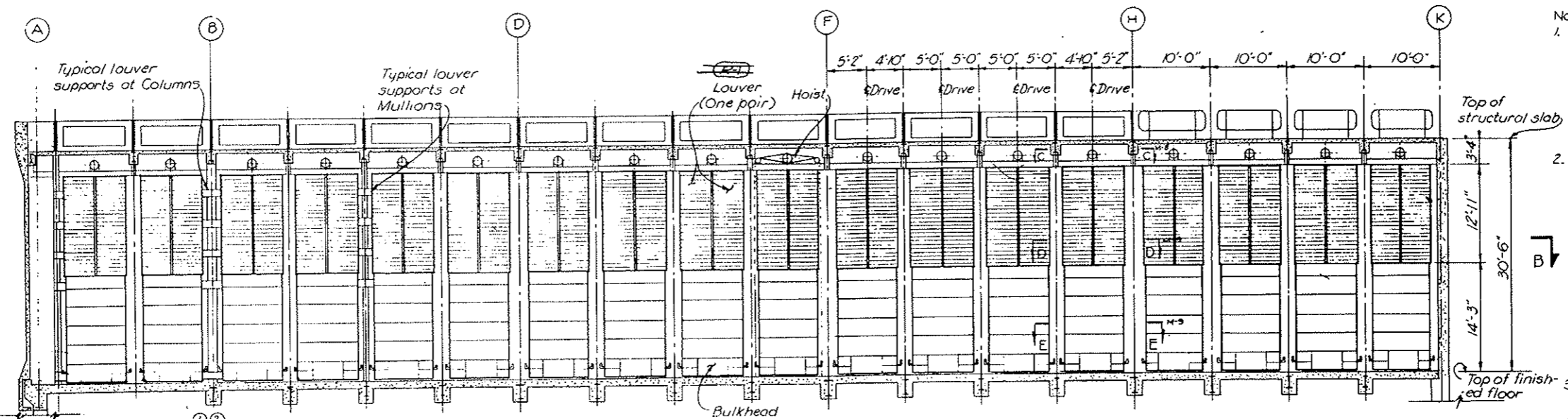
**KEY PLAN
AS CONSTRUCTURED**

DATE Oct 26, 1973

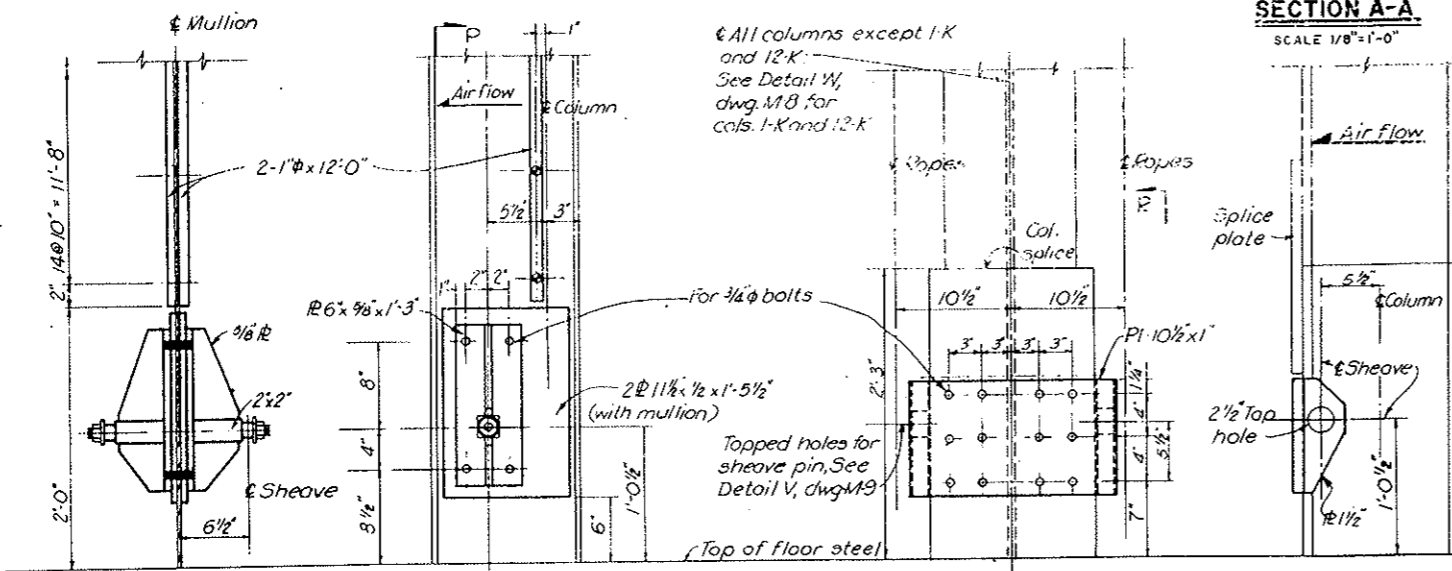
- Notes:
1. Bulkheads, bulkhead hoists and louvers to be installed for full length of north and south walls of east and west ventilation buildings. The arrangement shown applies to the north wall of the west building and the south wall of the east building. Views for north and south walls of east and west buildings would be opposite hand.
 2. For each wall, contractor shall furnish and install 18 bulkheads, 18 hoists and 18 pairs of louvers. Bulkheads when fully open will rest on the fan room floor. To close, they will be raised 12'-4 1/2". Reeving provides two pairs of ropes per hoist drum, driving bulkhead downward, by connection on each side, as well as upward. Hoists will be supported on structural steel platforms below roof steel. Guides for lower ends of bulkheads are supported by column and mullion webs. Guides for upper ends of bulkheads are attached to louver support steel.
 3. Louver support steel and louver sill will close the aperture around louvers and bulkhead slots.
- Reference Drawings:
Louvers, Bulkheads and Hoists; Sub-Assembly - Sheet 1 Dwg. M-8
- Sheet 2 Dwg. M-9



SECTION B-B

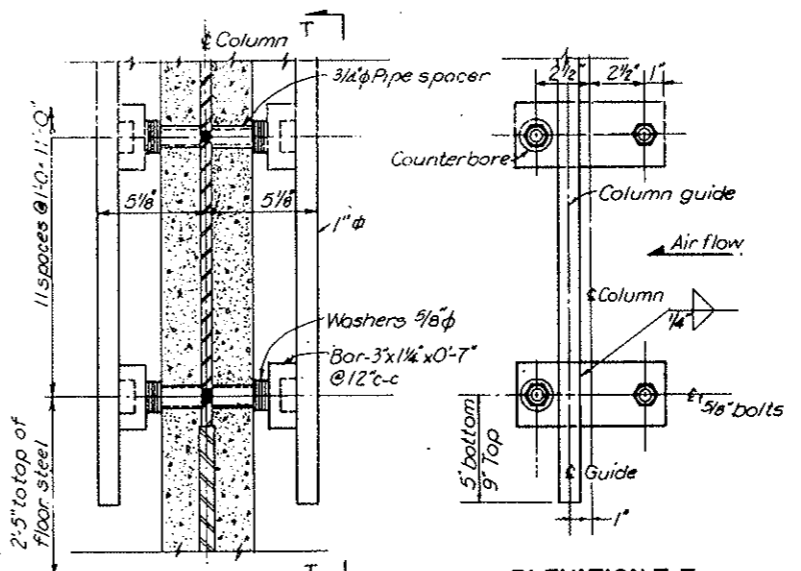


SECTION A-A



**SECTION P-P
MULLION SHEAVE BRACKET**
SCALE 1 1/2" = 1'-0"

**ELEVATION R-R
COLUMN SHEAVE BRACKET**
SCALE 1 1/2" = 1'-0"



**SECTION S-S
COLUMN GUIDES**
SCALE 3" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
2		Remove Ref. to Detail IV			A.F.S. M.G.
1		Refer to Detail W, Sect. S-S			A.F.S. M.G.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**MECHANICAL
EAST AND WEST VENTILATION BUILDINGS
LOUVERS, BULKHEADS AND HOISTS
GENERAL ARRANGEMENT**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: A.F.S.
DRAWN: J.R.B.V.S.
CHECKED: J.S.B.
SUBMITTED: C.D.H.

RECOMMENDED: [Signature]
APPROVED: [Signature]

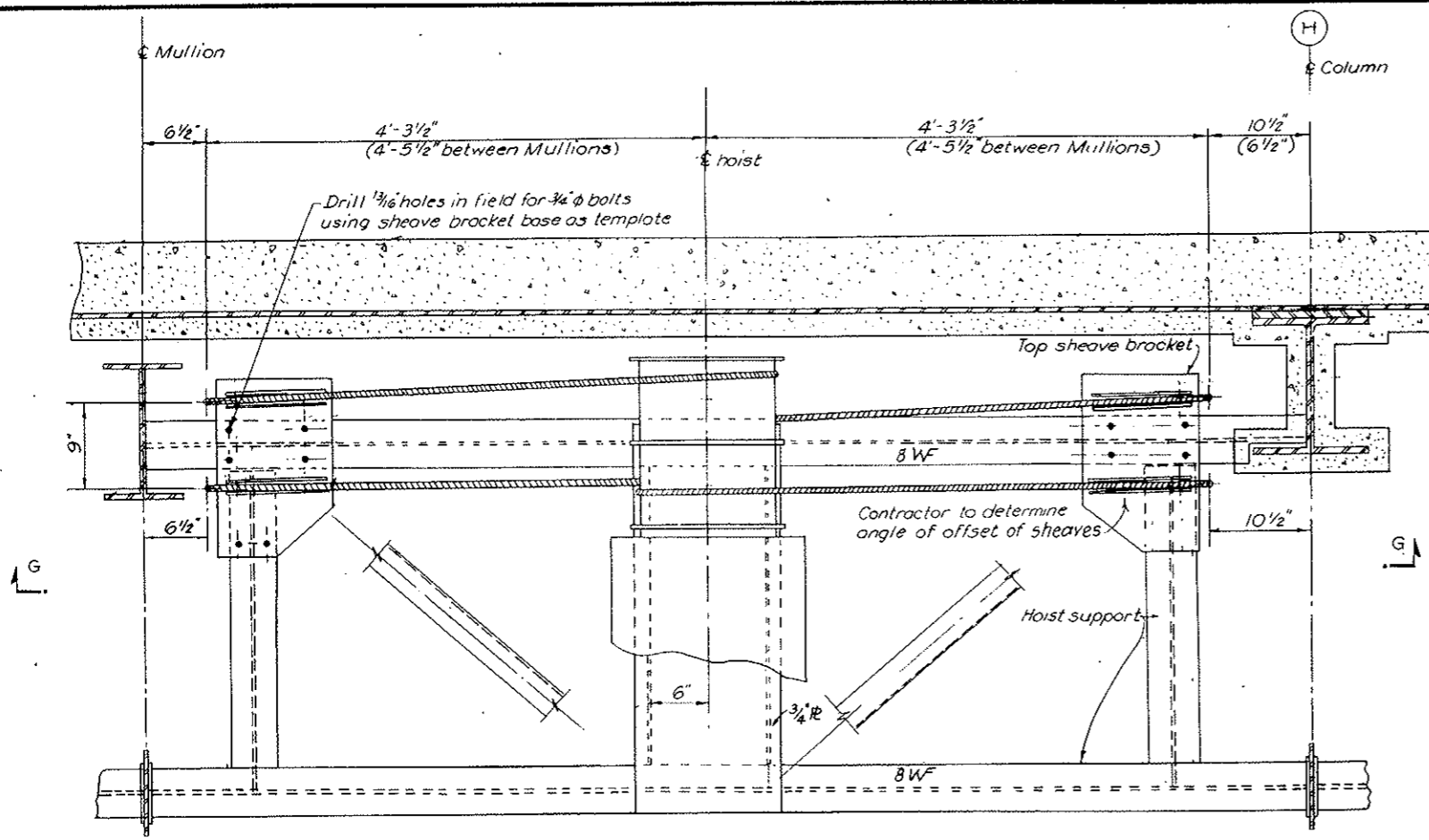
NEW YORK, N.Y. SCALE: AS NOTED DATE: AUGUST 1967

DRAWING NO. **M-7**

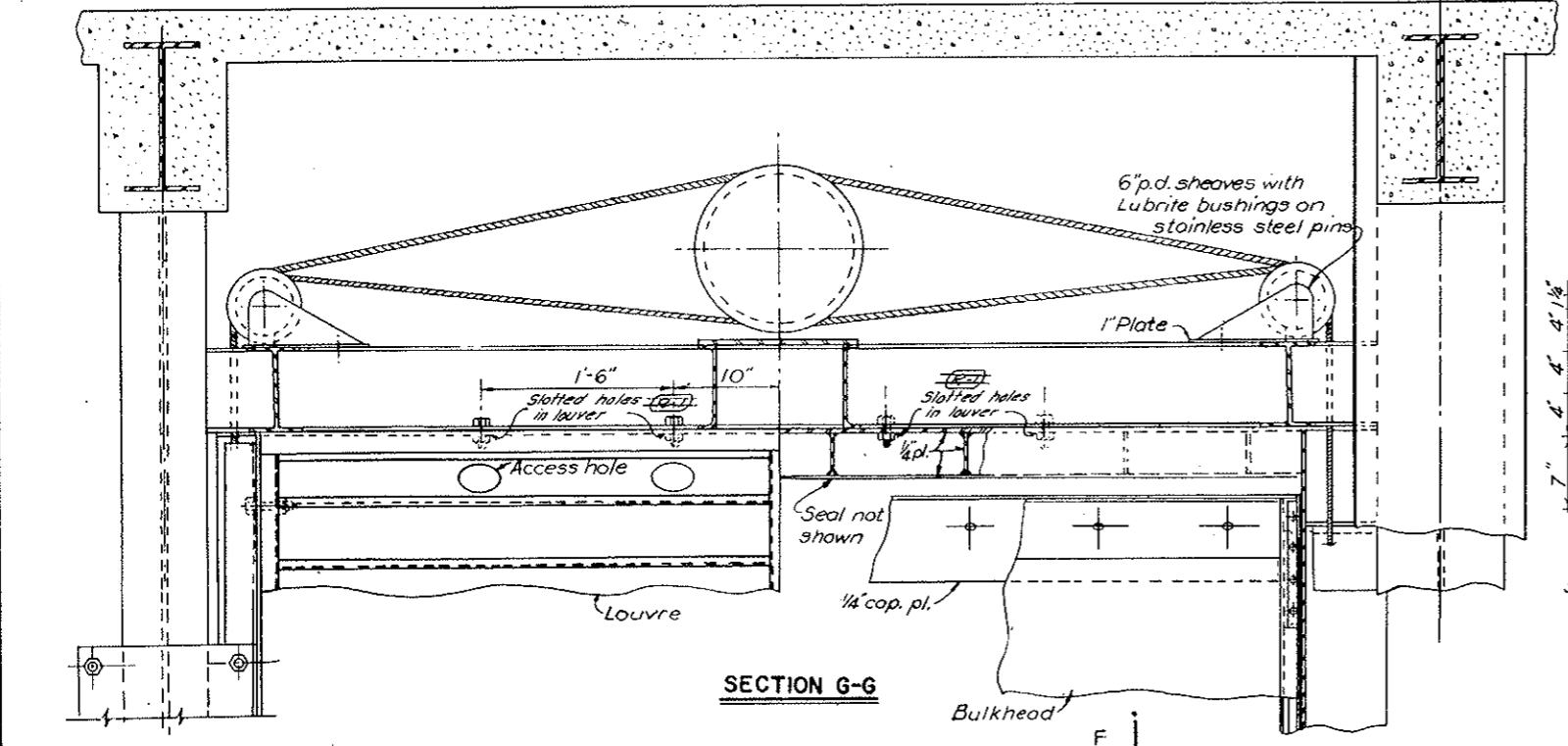
10-3-31-69 LDW Added Slotted Hoist Holes
 Subject to Dept. approval

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	204	326

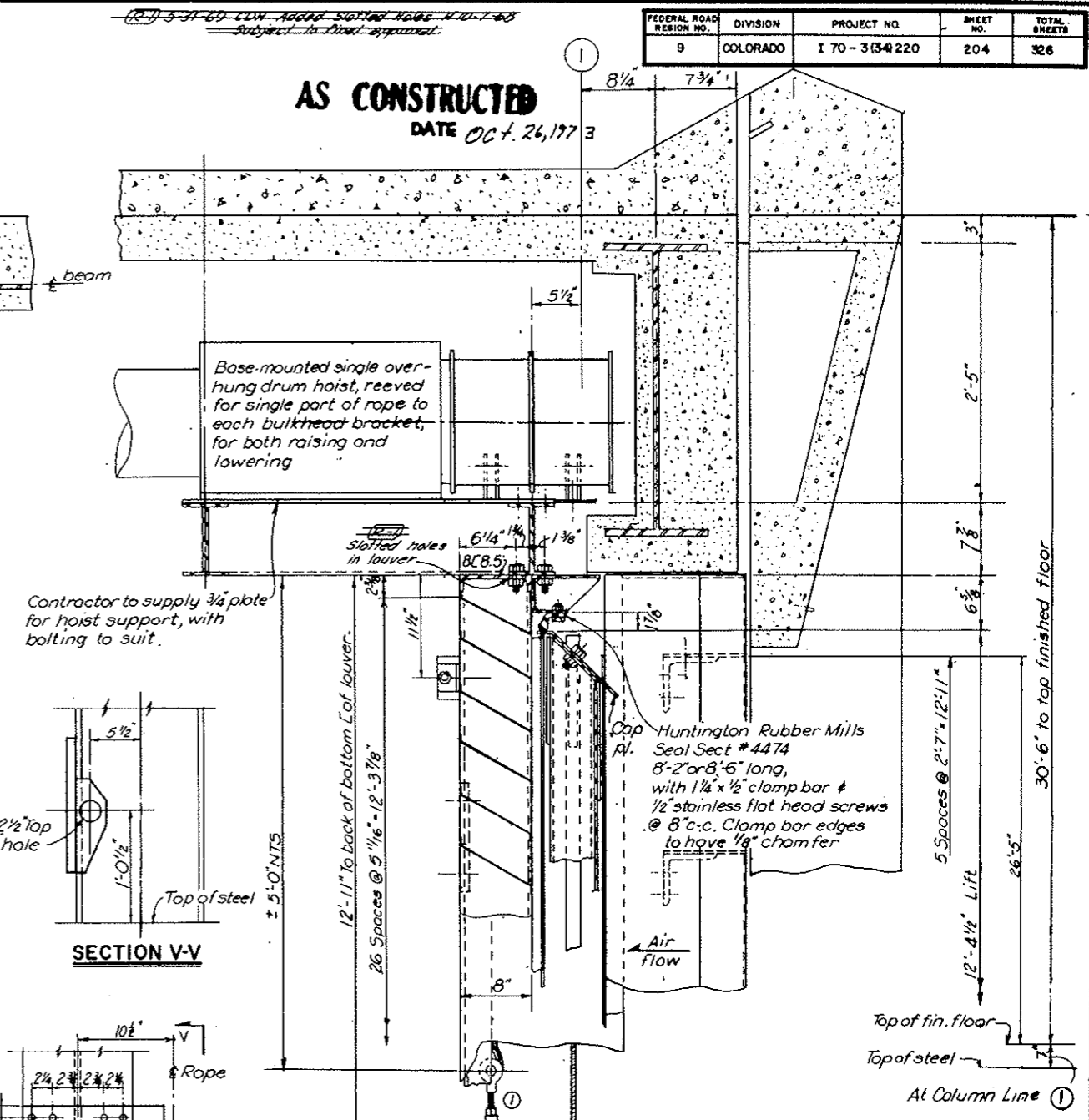
AS CONSTRUCTED
 DATE *Oct. 26, 1973*



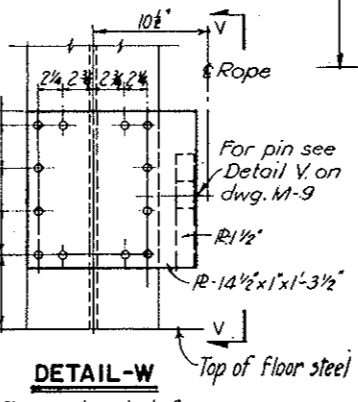
**SECTION C-C
 AT HOIST LEVEL**
 SCALE 1/2"=1'-0"



SECTION G-G



SECTION V-V



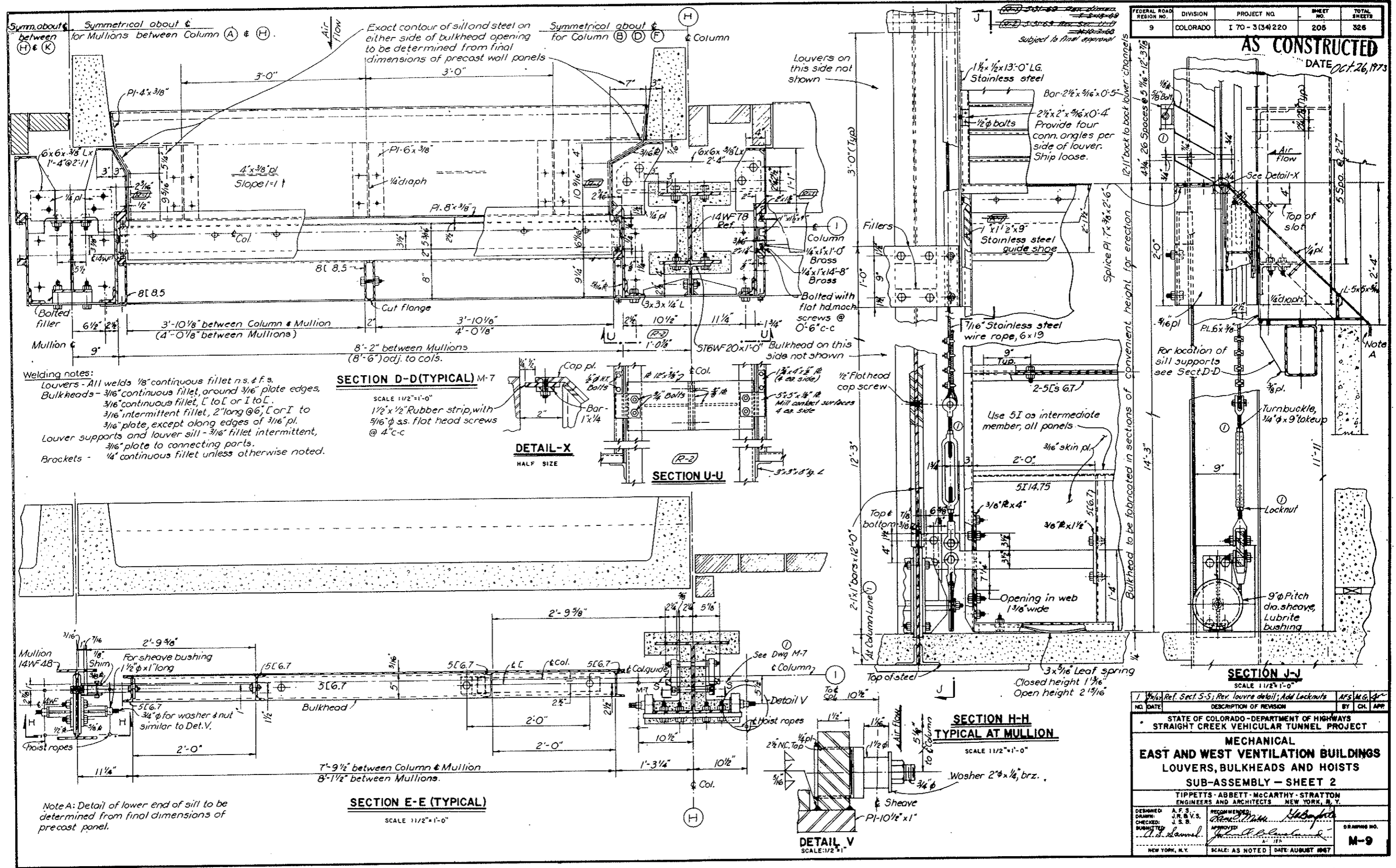
DETAIL-W
 Sheave bracket for
 Cols. K-1 & K-12

SECTION F-F

2	Revise note at Def. W	A.F.S. M.G.
1	Reference, Def. W; Turnbuckle Locknut	M.F.S. M.G.
NO. DATE	DESCRIPTION OF REVISION	BY CL APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT		
MECHANICAL		
EAST AND WEST VENTILATION BUILDINGS LOUVERES, BULKHEADS AND HOISTS		
SUB-ASSEMBLY - SHEET I		
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.		
DESIGNED: A.F.S.	RECOMMENDED: A.F.S.	DRAWING NO. M-8
DRAWN: J.R.B.V.S.	CHECKED: J.S.B.	
SUBMITTED: A.S.	APPROVED: A.S.	SCALE: 1/2"=1'-0" DATE: AUGUST 1967

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	205	325

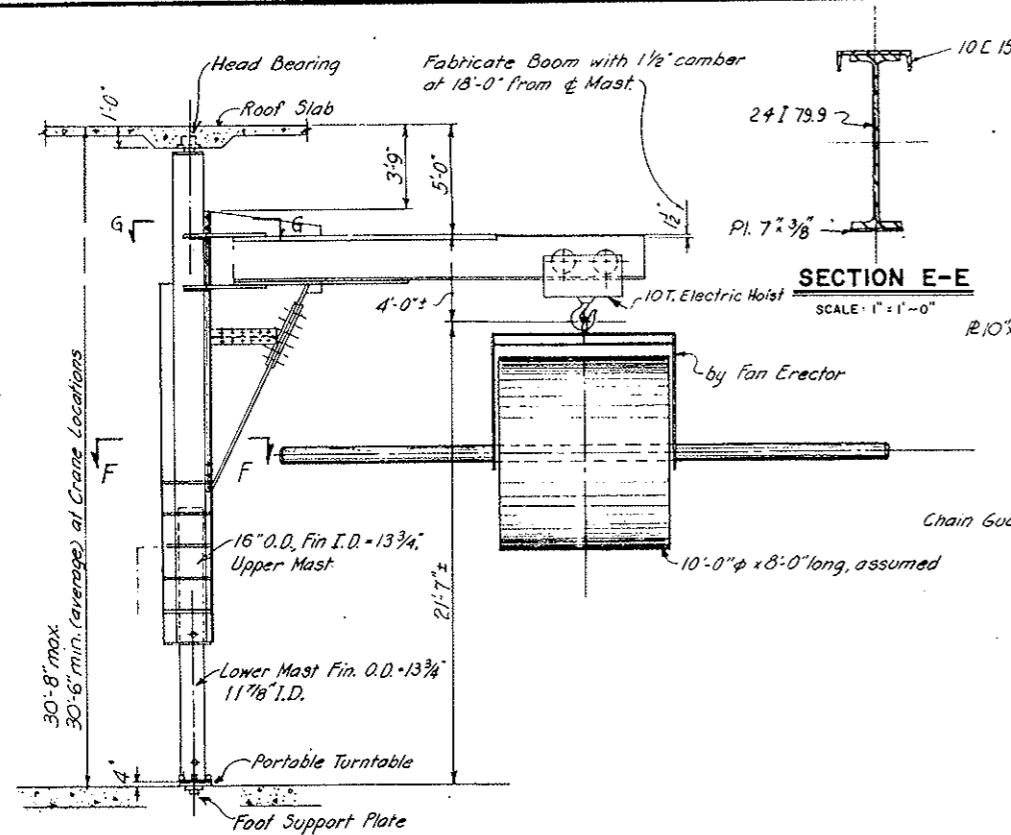
AS CONSTRUCTED
DATE *Oct. 26, 1973*



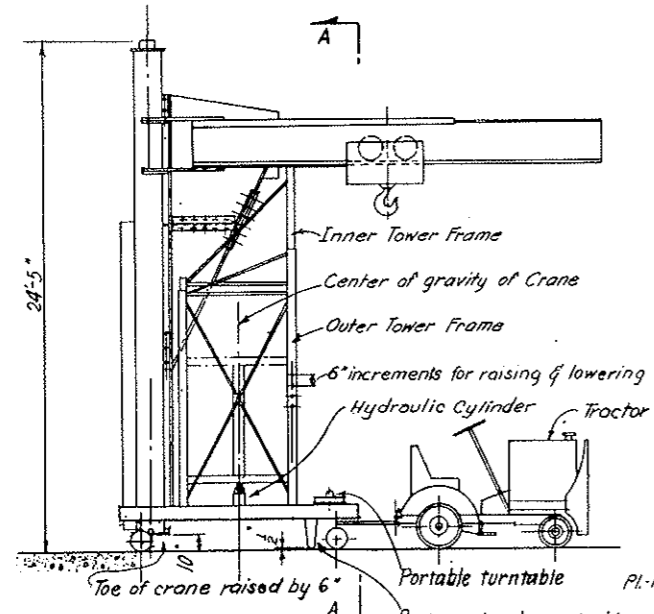
1 1/2" Ref. Sect. S-5; Rev. louvre detail; Add Locknuts		APR 1974
NO.	DATE	DESCRIPTION OF REVISION
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT		
MECHANICAL EAST AND WEST VENTILATION BUILDINGS LOUVERS, BULKHEADS AND HOISTS SUB-ASSEMBLY - SHEET 2		
TIPPLETT'S - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.		
DESIGNED:	A. F. S.	RECOMMENDED:
DRAWN:	J. R. V. S.	APPROVED:
CHECKED:	J. S. B.	DATE:
REVISIONS:		SCALE: AS NOTED
NEW YORK, N. Y.		DATE: AUGUST 1967

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	206	326

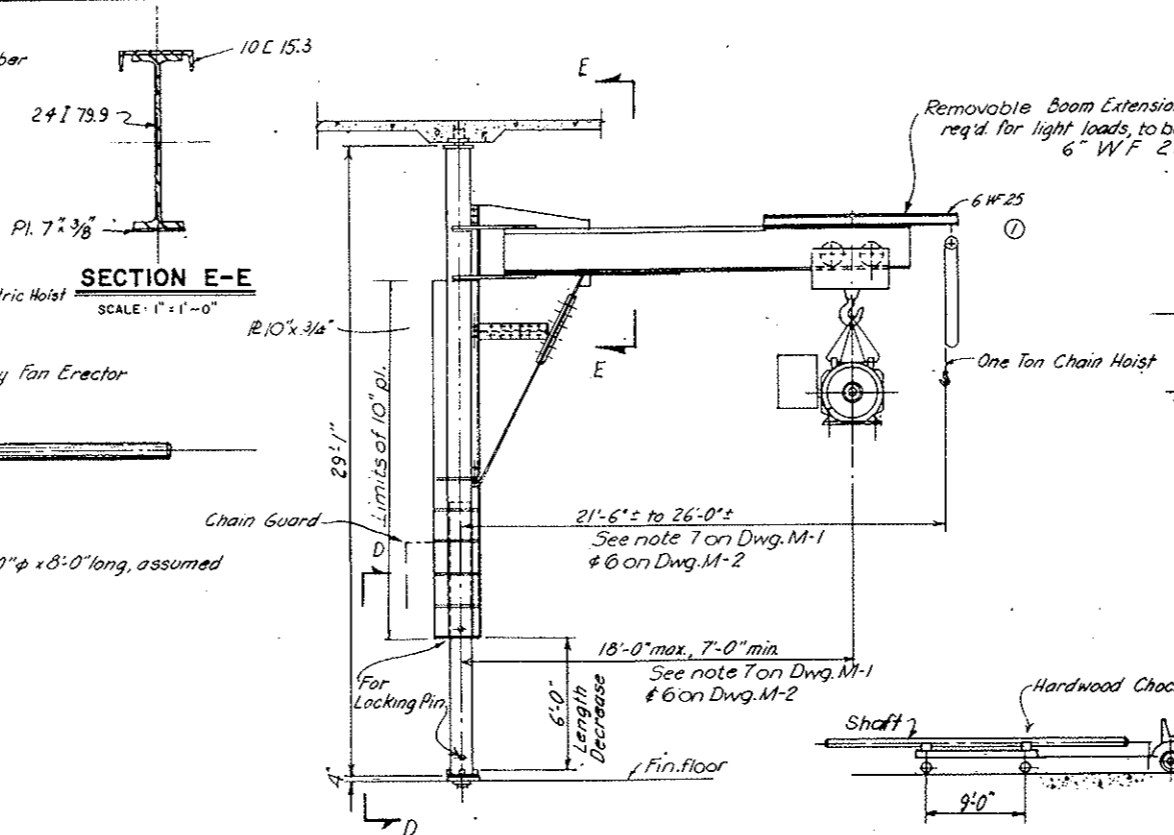
AS CONSTRUCTED
REVISED DATE Oct 26, 1973



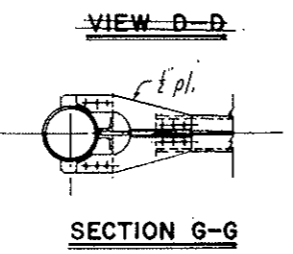
JIB CRANE WITH EXHAUST FAN WHEEL AND SHAFT
(ONE CRANE REQ'D)
SCALE: 1/4" = 1'-0"



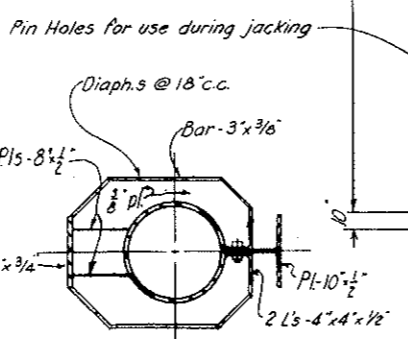
JIB TRANSFER CAR
(SHOWING CRANE SUPPORTED ON CAR)
(ONE TRANSFER CAR REQ'D)
SCALE: 1/4" = 1'-0"



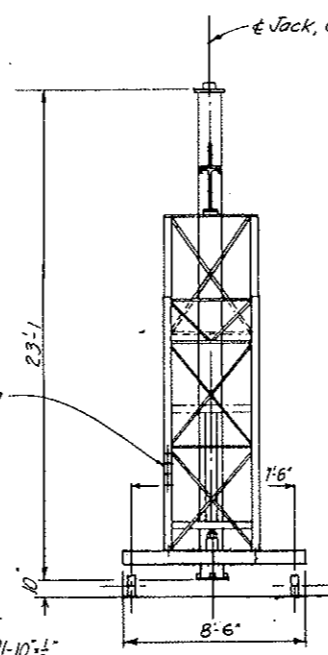
JIB CRANE WITH MOTOR
SCALE: 1/4" = 1'-0"



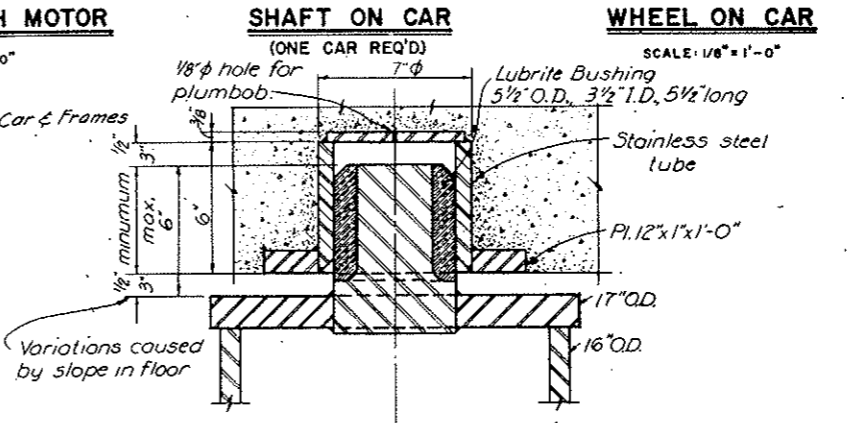
SECTION G-G



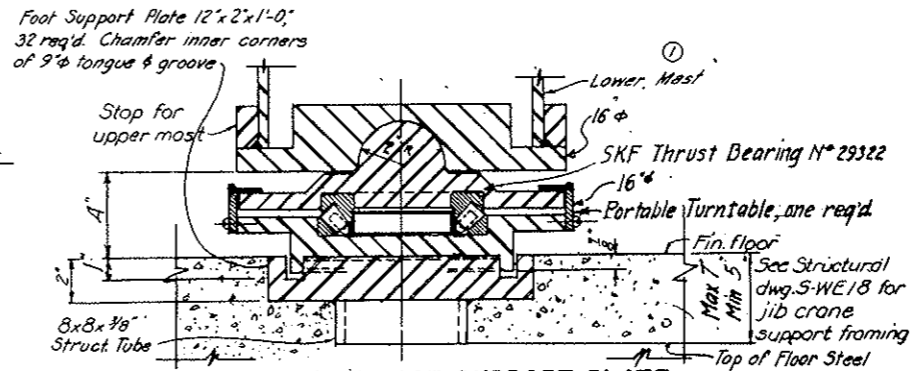
SECTION F-F
SCALE: 1" = 1'-0"



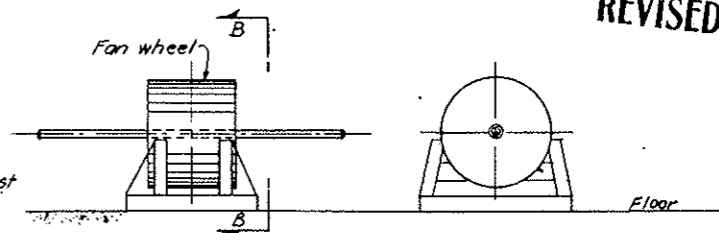
SECTION A-A
SCALE: 1/4" = 1'-0"



SECTION AT HEAD BEARING
(32 HEAD BEARINGS REQ'D)
SCALE: 3" = 1'-0"

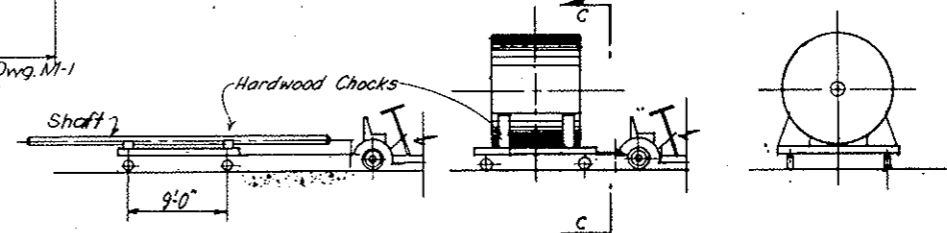


SECTION AT FOOT SUPPORT PLATE
SCALE: 3" = 1'-0"



TIMBER CRADLE FOR WHEEL SUPPORT
SCALE: 1/8" = 1'-0"

Cradle to be used temporarily for removal of shaft from wheel. Shaft and wheel combination not to be set on car which is designed for max load of 15,000 lbs. and with max reaction of each wheel on floor of 5,000 lbs. Cradle by Fan Erector.



WHEEL ON CAR
SCALE: 1/8" = 1'-0"

VIEW C-C

NOTES:

- Crane, Cars & Tractor are to be raised & lowered as required through hatches in Fan Room floors.
- For this purpose, as well as to assist in assembling & dismantling Crane & Transfer Car, hand hoists are provided on Runway Rails under Roof Beams over hatches.
- Maximum vertical reaction under Crane handling 25k load = 40k. Maximum simultaneous horizontal reaction at floor or ceiling = 17.2k.
- Max. wheel load = 5k under any car.
- The Hydraulic Cylinder in the Transfer Car is used to lower the jib by 6 feet. After lower mast of crane column is pinned to the upper mast, the jack is used to raise the entire crane by 6 inches to clear the floor. Crane to be pinned to Transfer Car for security during travel.
- Exact lengths of 8x8" struct tubing under foot support plates to be furnished later. Tubing to be field welded to floor steel.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1	10/26/73	6" WF 25 Boom ext., Note 6, 8x8" tubing	AFS	M.B.	gpc
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL EAST AND WEST VENTILATION BUILDINGS JIB CRANE AND TRANSFER CARS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DRAWN:	A. F. S.	RECOMMENDED:			
CHECKED:	M. S. B.	APPROVED:			
SUBMITTED:	J. S. B.	DATE:			
A. S. Samuel		DATE: AUGUST 1967		DRAWING NO. M-10	
NEW YORK, N. Y.		SCALE: AS NOTED			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	207	326

PARTS LIST				
PK	Item	Specification (See Note 1)	Qty	Unit
1	Gasoline Engine	Wisconsin Motor Co. Model A6ND 12.3 HP @ 3200 RPM with Manual Clutch, 12 V Starter-Gen., 5 Gal. Tank & Manual Speed Regulator.	1	
2	Automatic Clutch	Mercury Clutch Div. Model GA 23-55 2 Groove Pulley, PD = 3.4"	1	
3	2-Speed Transmission	Drive-All Mfg. Co. Series LAU 326 Class 1 Service	1	
4	Coupling	Flexible Link Belt RC5016 or equal for 1 1/2" Shaft	1	
5	Brake System	Wagner Electric Corp. Type HM Combination Service & Parking Brake (2 Brakes, 1 Control Cylinder)	1	
6	Ball Bearing Pillow Block	Link Belt Co. Series PE 300 and P-300 self-aligning	1 ea.	
7	Flange Bearing	Dodge 1 1/2" Bore	1	
8	V-Belt Sheave	Link Belt Co. 2 Groove PD = 12.4"	1	
9	V-Belt Sheave	Link Belt Co. 2 Groove PD = 6.2"	1	
10	V-Belt Sheave	Link Belt Co. Single Groove PD = 10.5"	2	
11	Car Wheels	Stephens Adamson Mfg. Co. Part No. 6940, Style No 2, Single Flange Straight face Chilled Tread Face $\phi = 8"$, Flg $\phi = 9 1/2"$	2	
12	Guide Wheels	McMaster-Carr Supply Co. No 23Y-3612 Semi-Pneumatic Tired Wheels, Tire Size 8 x 2.50, Axle Size 3/8" with Roller Bearings	2	
13	Guide Wheels	Link Belt Co. Part. 53095, Roller $\phi = 8"$, Tread 1 1/2", with tapered Roller Bearings, Axle Size 3/8"	2	
14	Swing-Arm Seat	McMaster-Carr Supply Co. No. 481714 or 481715	2	
15	Emergency Car Light	McMaster-Carr Supply Co. No. 583575 12 Volt.	1	
16	Sealed Beam Floodlight Assy.	Lightarms Electronics Corp. Model ELF-605-12 Volt	2	

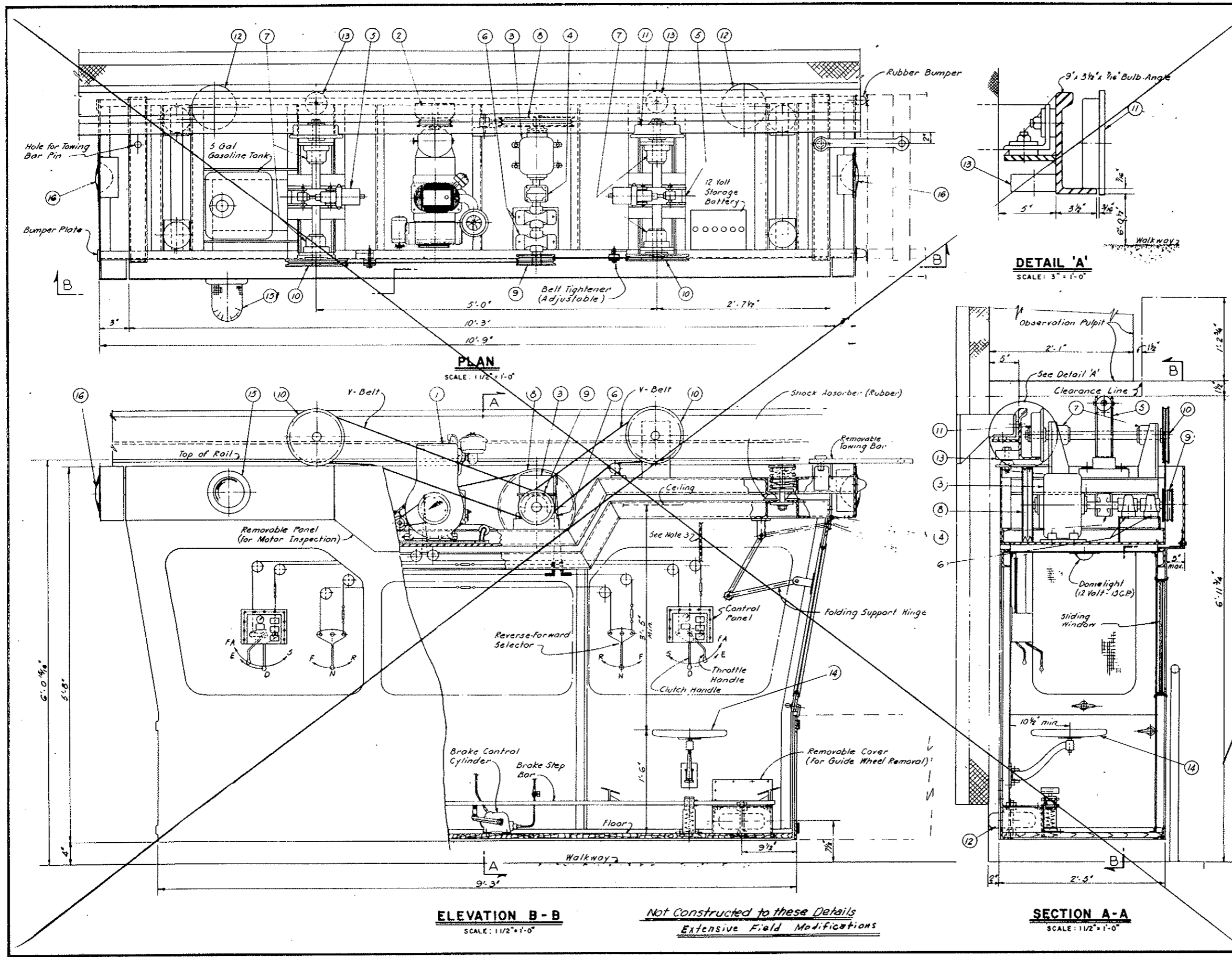
REFERENCE DRAWING:
For rail and support details, see Dwg C2-38.

ABBREVIATIONS:
R = Reverse, S = Slow, E = Engaged, N = Neutral, F = Forward, FA = Fast, D = Disengaged.

NOTES:

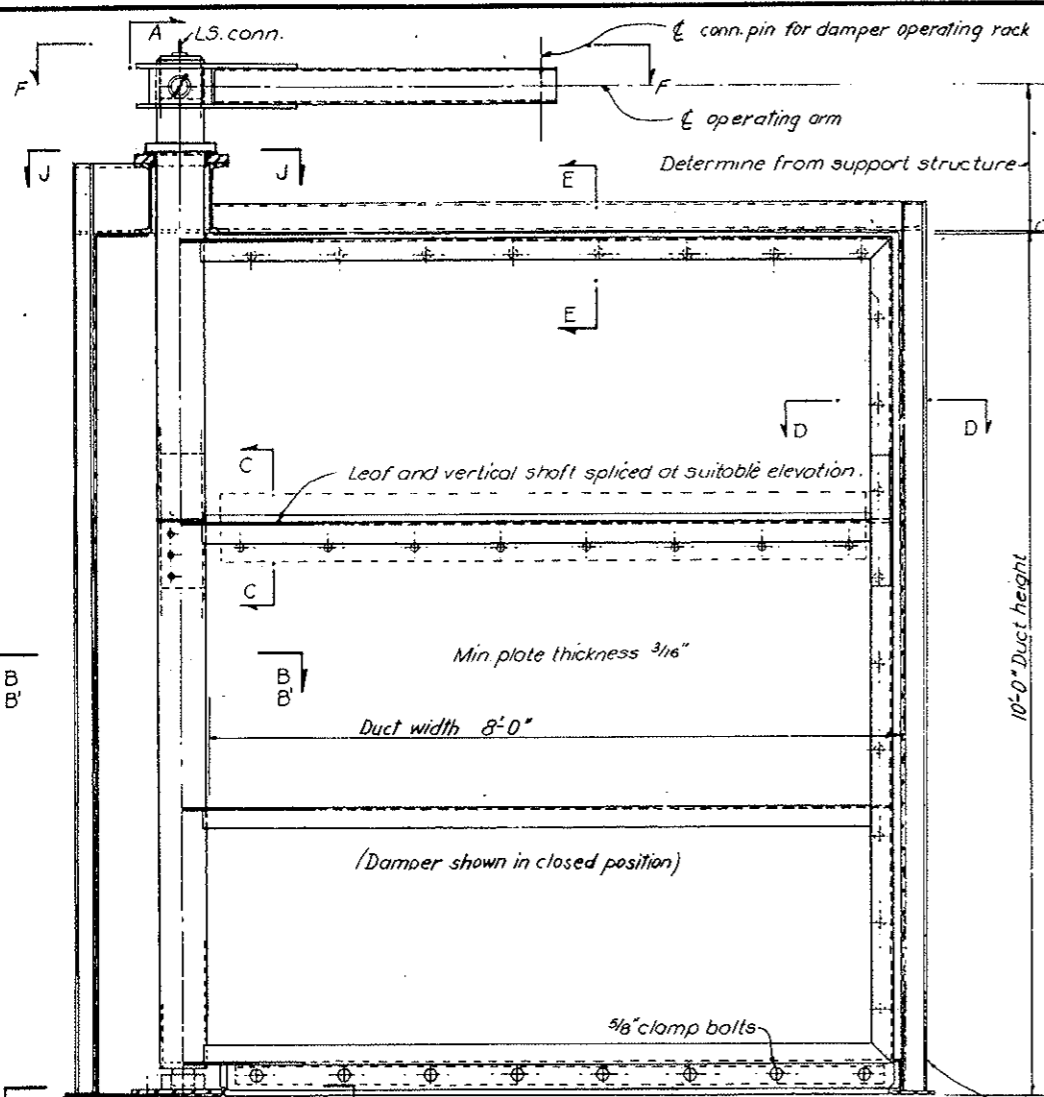
- The fabricator shall supply items as specified or "Approved Equal," subject to approval of the Engineers.
- Guide wheel (13) shall be provided with adjustable mounting to set car wheel flange clearance.
- Push and pull type control cable (for throttle).
- All glass to be shatter proof.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL TUNNEL WALKWAY CAR ASSEMBLY					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: A.G.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: M.W.	APPROVED: <i>[Signature]</i>				
CHECKED: E.I.					
SUBMITTED: <i>[Signature]</i>					
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967	DRAWING NO. M-11	

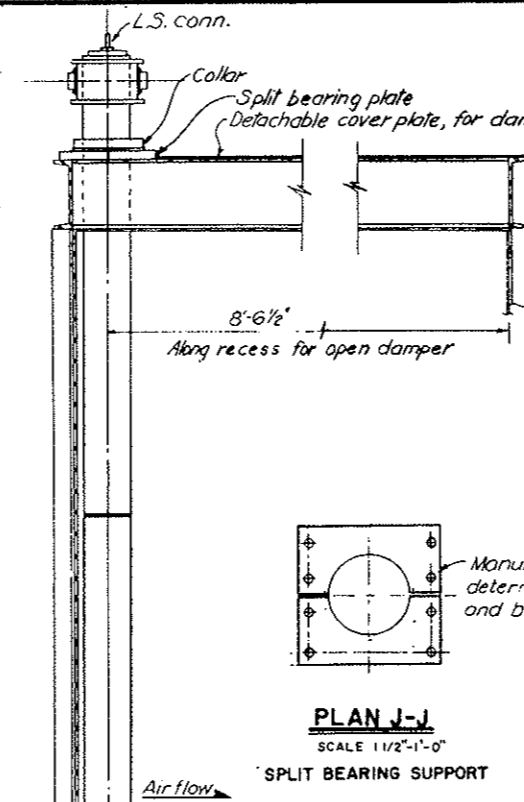


FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	208	326

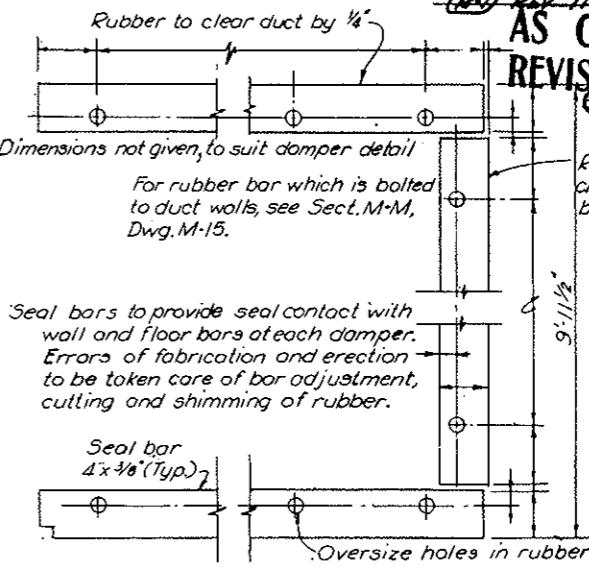
AS CONSTRUCTED
 REVISED DATE _____
 (REV) ~~REVISED~~ ~~CONTRACT~~ ~~NOTE~~ ~~BELOW~~
 In this contract



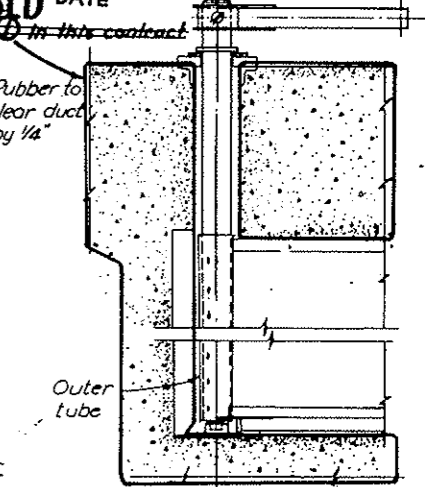
ELEVATION OF DAMPER
 SCALE 1"=1'-0"
 See Note A.



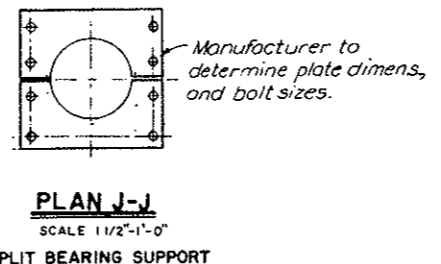
SECTION A-A
 SCALE 1 1/2"=1'-0"



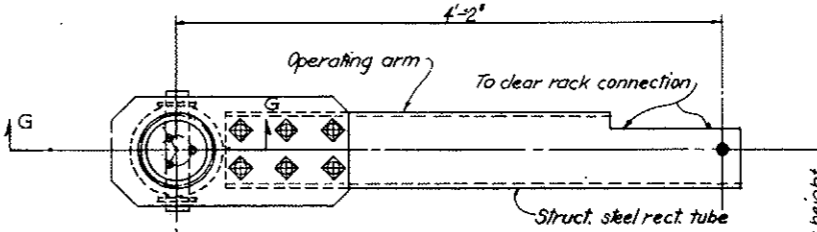
ADJUSTABLE RUBBER SEAL BARS
 SCALE 1 1/2"=1'-0"



ELEVATION OF DAMPER
 SCALE 1/2"=1'-0"

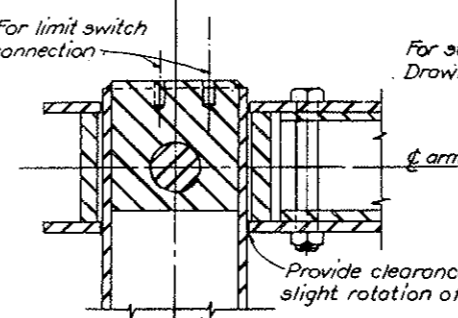


PLAN J-J
 SCALE 1 1/2"=1'-0"
 SPLIT BEARING SUPPORT

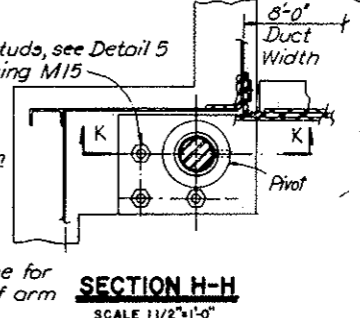


PLAN F-F
 SCALE 1 1/2"=1'-0"

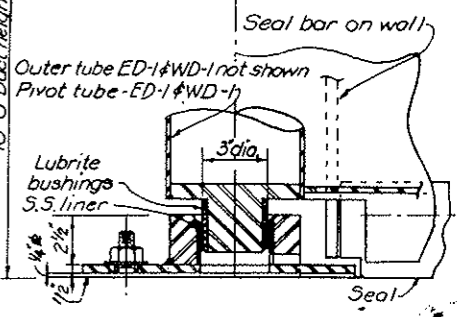
FOR FANS ES1 AND WS1
 As shown in closed position for ED-1
 Opp. hand in closed position for WD-1



SECTION G-G
 SCALE 3"=1'-0"

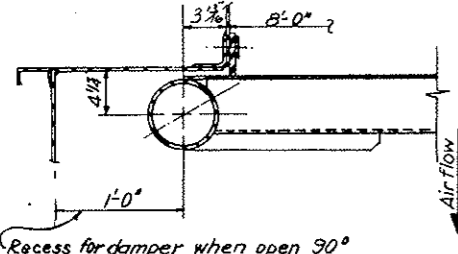


SECTION H-H
 SCALE 1 1/2"=1'-0"

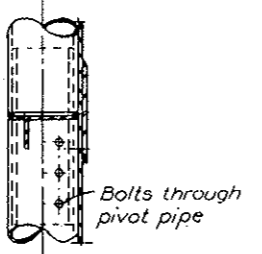


SECTION K-K
 SCALE 3"=1'-0"

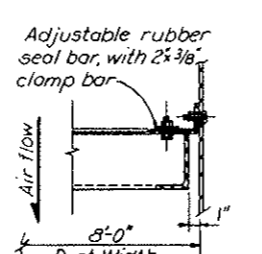
SIMILARLY FOR ED-1 AND WD-1



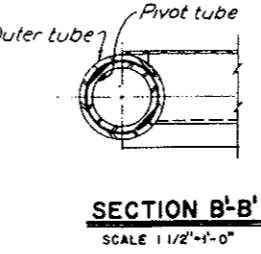
TYPICAL SECTION B-B
 SCALE 1 1/2"=1'-0"



TYPICAL SECTION C-C
 SCALE 1 1/2"=1'-0"



TYPICAL SECTION D-D
 SCALE 1 1/2"=1'-0"



SECTION B'-B'
 SCALE 1 1/2"=1'-0"
 SHOWING DAMPER CONSTRUCTION FOR ED-1 AND WD-1

Notes:
 A. Damper as shown is for fans ES-2,3,4. For WS-2,3,4, opp. hand. For fans ES1 and WS1 the dampers are to be spliced as shown but with pivot pipe in one piece to be removed through 12x12" hole. Dampers for fans ES2,3,4 and WS-2,3,4, are to be removed via slot in roof of steel support structure. Dampers for fans ES1 & WS1 are to be removed or installed in sections, carried through doors in duct walls.

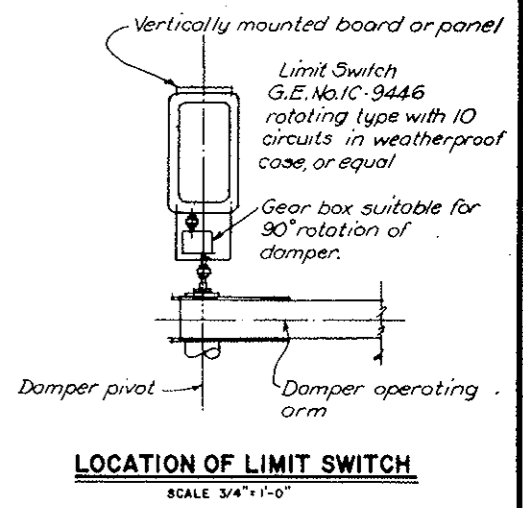
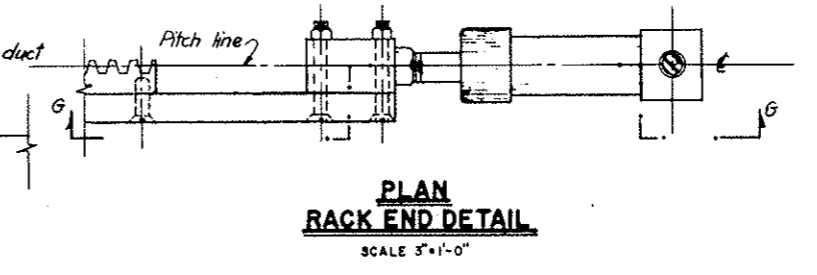
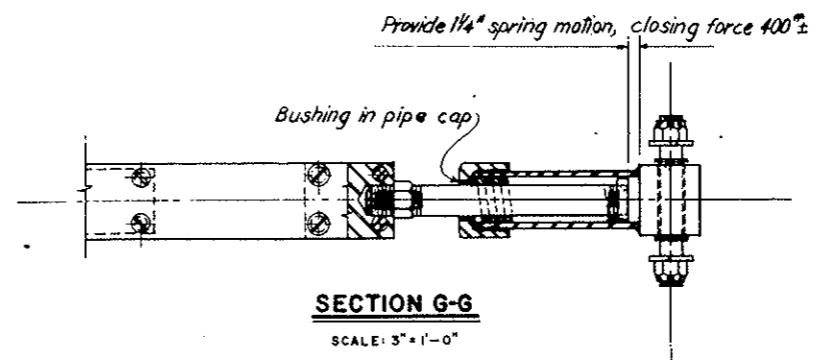
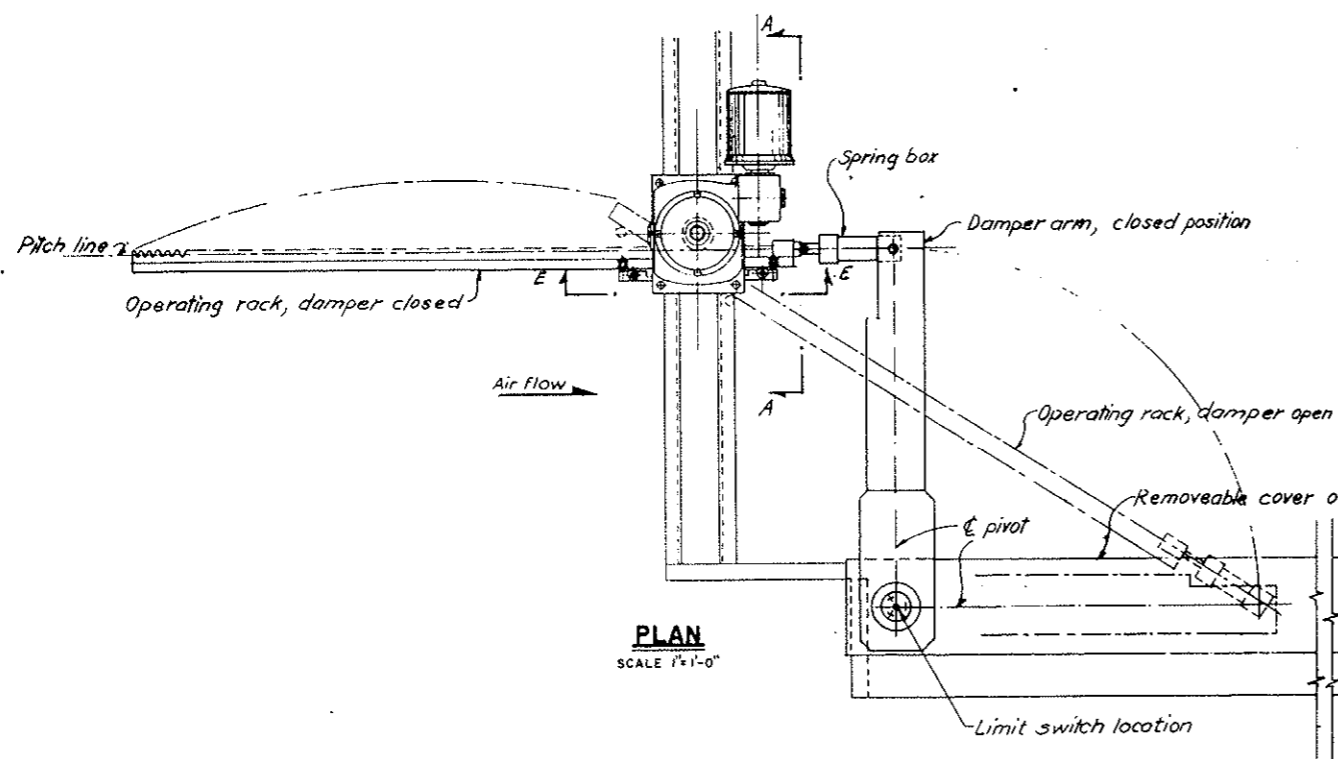
NOTE B
 Tunnel Ventilation System (Bid Item 165) revised. See W.O. 14153 & Spec. 17A. All items & details shown on this drawing are not in this contract except as noted. Concrete duct work around support structure of damper & grouting shall remain in this contract and shall be coordinated with details furnished by the fan manufacturer under separate contract.

- Notes:**
1. Three dampers req'd as shown marked ED2, ED3, & ED4.
 2. Three dampers req'd opp. hand, marked WD2, WD3 & WD4.
 3. One damper req'd as noted & shown, marked ED1.
 4. One damper req'd opp. hand, marked WD1.
 5. All dampers to be complete with operating arms, upper & lower bearings & supports.
 6. Contractor to locate damper and pivot splice so that damper pieces will clear roof beams at installation & assembly. See drawing M-13 for damper operator.

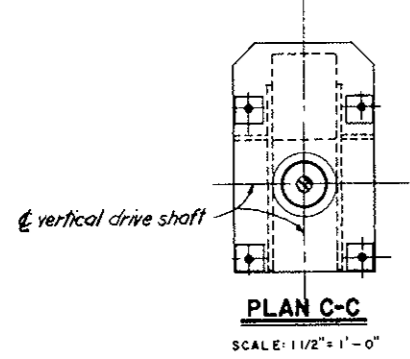
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL EAST AND WEST VENTILATION BUILDINGS SUPPLY FAN DAMPERS DAMPER LEAF					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	A. F. S.	RECOMMENDED:	M. G. S.		
DRAWN:	J. S. B.	CHECKED:	J. S. B.		
SUBMITTED:	A. H. Slavelle	APPROVED:	J. S. B.		
NEW YORK, N. Y.			SCALE: AS NOTED DATE: AUGUST 1967		

(R-1) Rev 11-8-67 CDK - Access Above Below

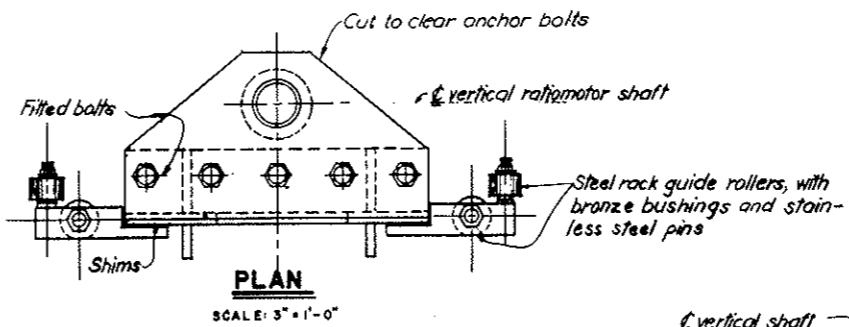
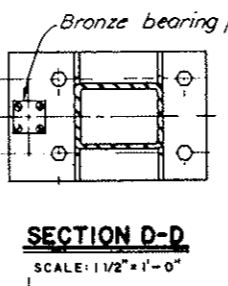
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	209	326



AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

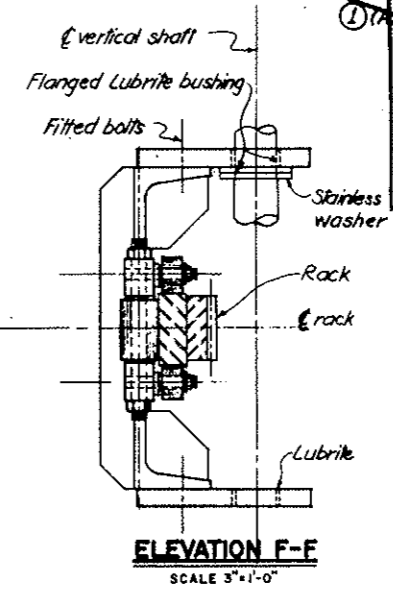
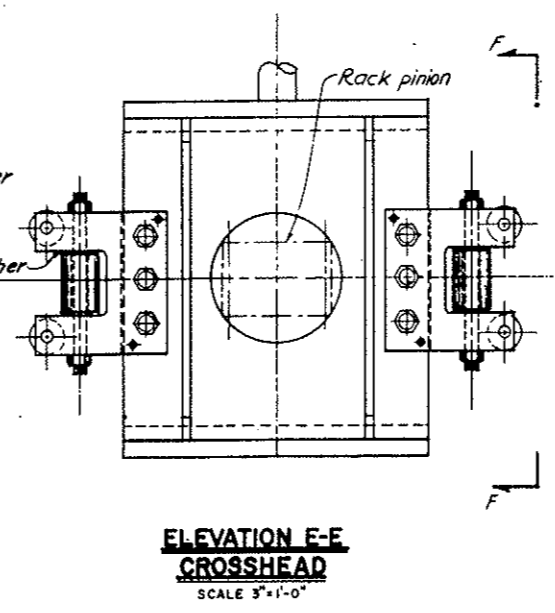
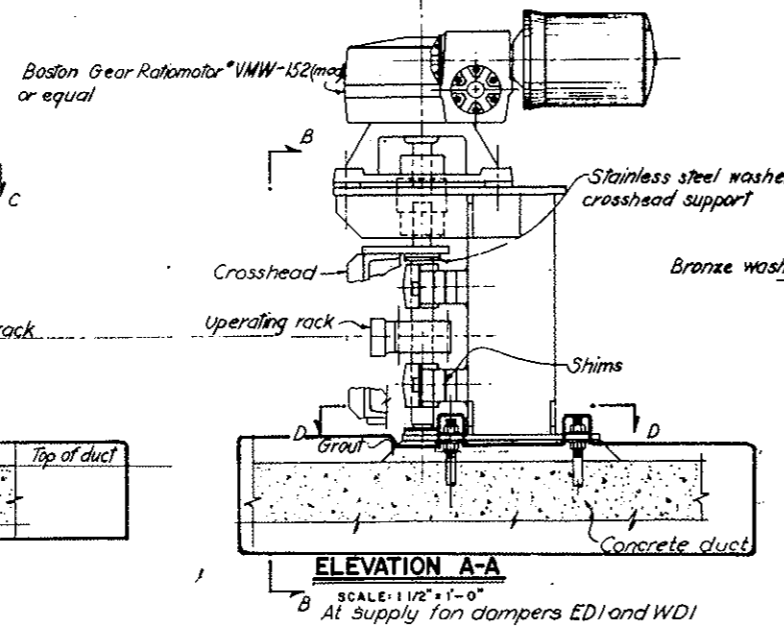
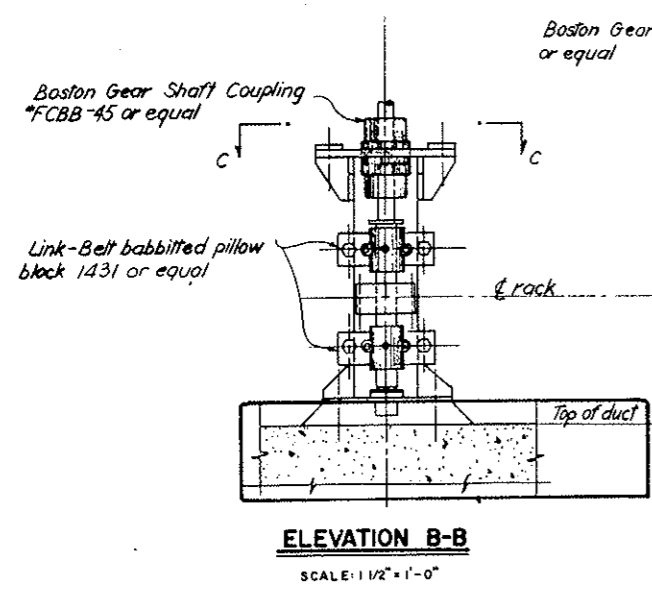


Operator as shown for ED2, ED3, ED4. Opposite hand for WD2, WD3, WD4. Operator for ED1 arranged as shown but mounted on concrete duct. Operator opposite hand for WD1.



- Notes:**
- Four damper operators req'd arranged as shown.
 - Four damper operators req'd arranged opp. hand.
 - Erector shall shim mechanical parts as necessary to prevent binding of operating mechanism.
 - A limit switch shall be located to stop damper at either end of 90 degrees of motion. In closed position, spring shall not be fully compressed.
 - See drawing M-12 for damper.

~~1) Tunnel Ventilation System (Bid Item 165) revised. See W.O. 14153 & Spec. 17A. All items & details shown in this drawing are not in this contract except as noted. Concrete ductwork around support structure of damper & grouting shall remain in this contract and shall be coordinated with details furnished by the fan manufacturer under separate contract.~~

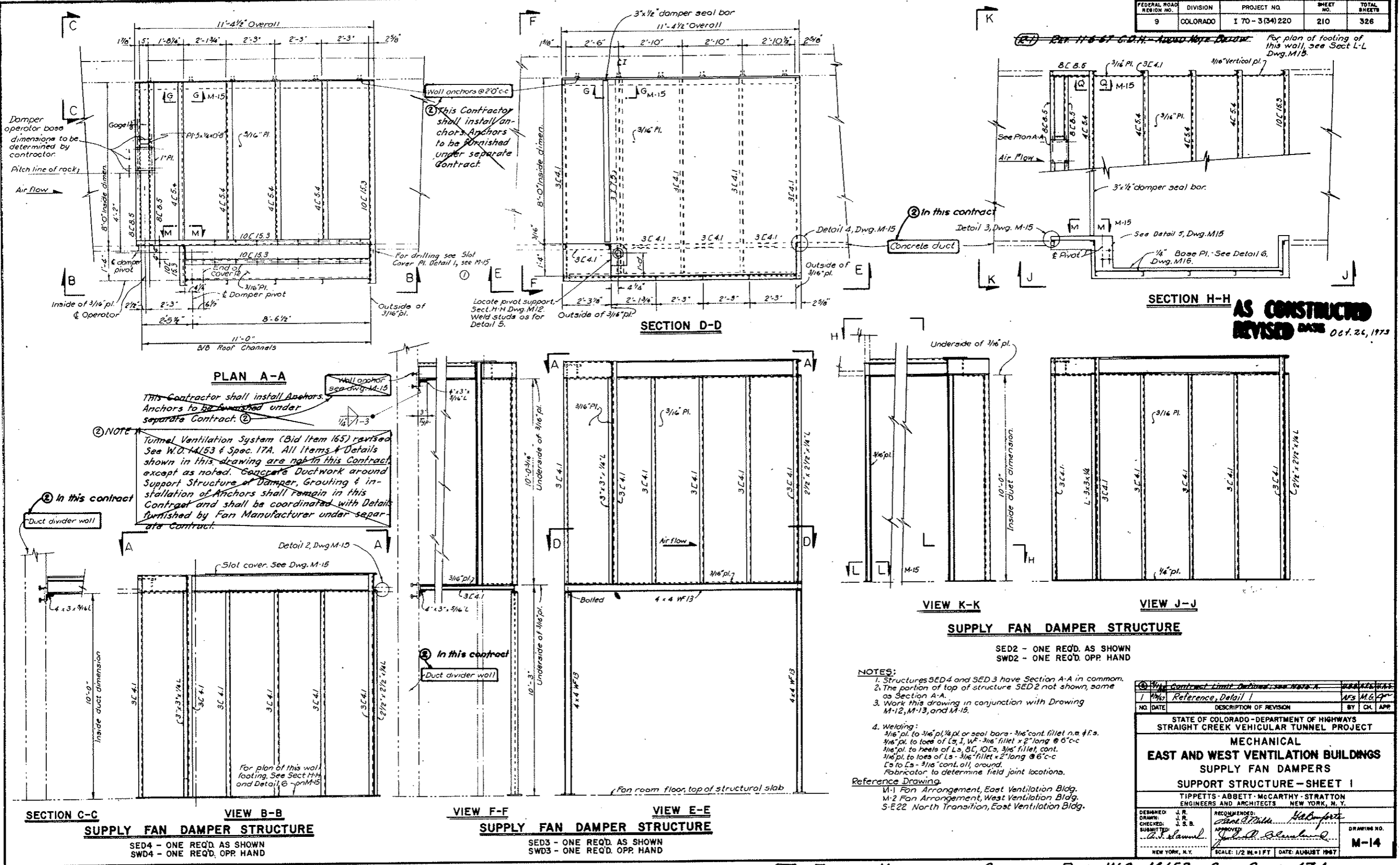


NO.	DATE	DESCRIPTION OF REVISION	BY	CHK. APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT MECHANICAL EAST AND WEST VENTILATION BUILDINGS SUPPLY FAN DAMPERS OPERATING MECHANISM TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED:	A. F. S.	RECOMMENDED:	[Signature]	
DRAWN:	M. G.	CHECKED:	[Signature]	
SUBMITTED:	J. S. B.	APPROVED:	[Signature]	
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967	

(R-1) TUNNEL VENTILATION SYSTEM REV W.O. 14153 SEE SPEC. 17A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	210	326

REV 11-8-67 G.D.H. August 1967
 For plan of footing of this wall, see Sect L-L Dwg. M-15



SECTION H-H AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

SUPPLY FAN DAMPER STRUCTURE
 SED2 - ONE REQ'D. AS SHOWN
 SWD2 - ONE REQ'D. OPP. HAND

- NOTES:**
- Structures SED4 and SED3 have Section A-A in common. The portion of top of structure SED2 not shown, same as Section A-A.
 - Work this drawing in conjunction with Drawing M-12, M-13, and M-15.
 - Welding:
 3/16" pl. to 3/16" pl. or seal bars - 3/16" cont. fillet on all f.s.
 3/16" pl. to toes of L's, I's, W's - 3/16" fillet x 2" long @ 6" c-c
 3/16" pl. to heels of L's, C's, I's, W's - 3/16" fillet, cont.
 L's to L's - 3/16" cont. all around.
 Fabricator to determine field joint locations.
- Reference Drawing:
 M-1 Fan Arrangement, East Ventilation Bldg.
 M-2 Fan Arrangement, West Ventilation Bldg.
 S-E22 North Transition, East Ventilation Bldg.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Reference, Detail 1			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
MECHANICAL
 EAST AND WEST VENTILATION BUILDINGS
 SUPPLY FAN DAMPERS
 SUPPORT STRUCTURE - SHEET 1

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

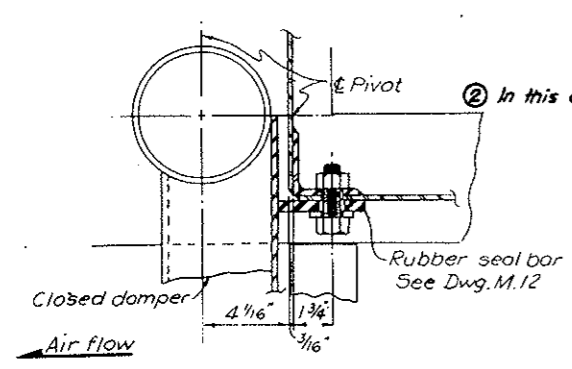
DEMANDED: J. R. RECOMMENDED: J. R.
 DRAWN: J. R. CHECKED: J. S. B.
 SUBMITTED: J. S. B. APPROVED: J. S. B.
 J. S. B. J. S. B.

SCALE: 1/2" = 1' FT. DATE: AUGUST 1967
 DRAWING NO. M-14

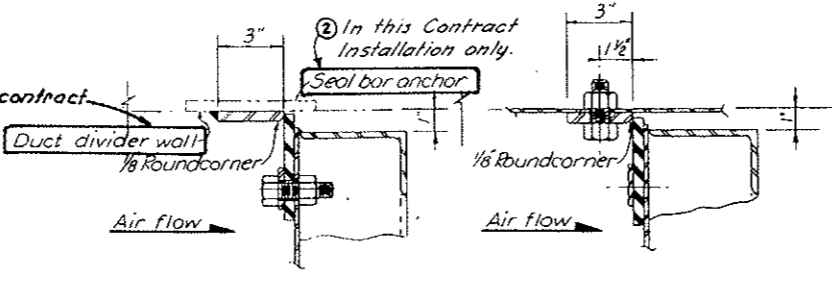
(R-1) TUNNEL VENTILATION SYSTEM REV. W.O. 11153 SEE SPEC. 17A

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	211	326

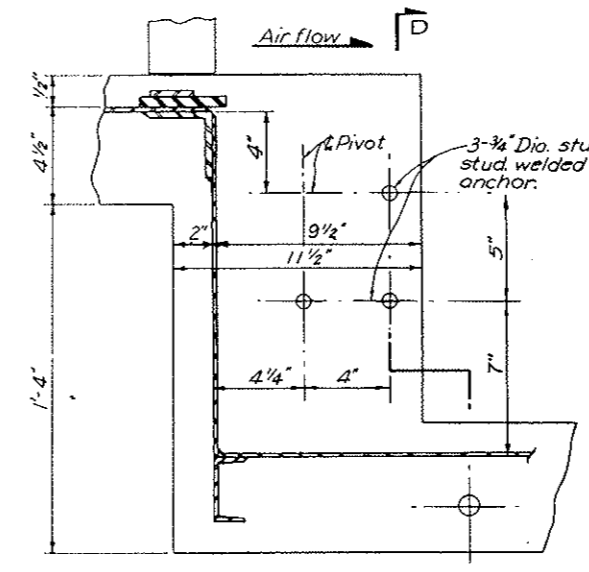
REV. 11-6-67 C.A.R. - ADDED NOTE BELOW



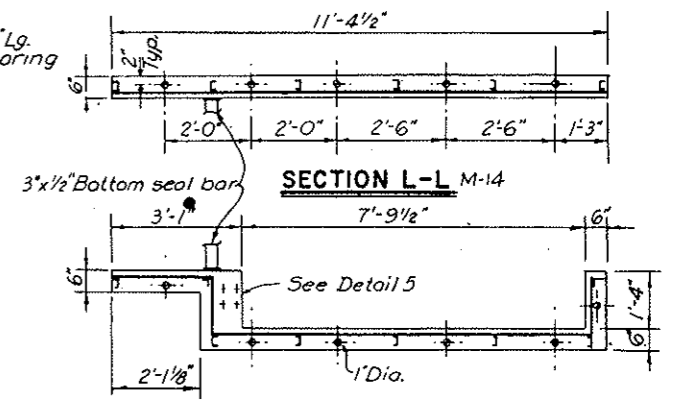
SECTION N-N
SCALE 3"=1'-0"



SECTION P-P SCALE 3"=1'-0"
SECTION R-R SCALE 3"=1'-0"

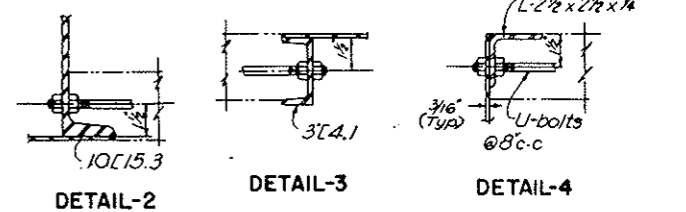


DETAIL-5 M14
SCALE 3"=1'-0"

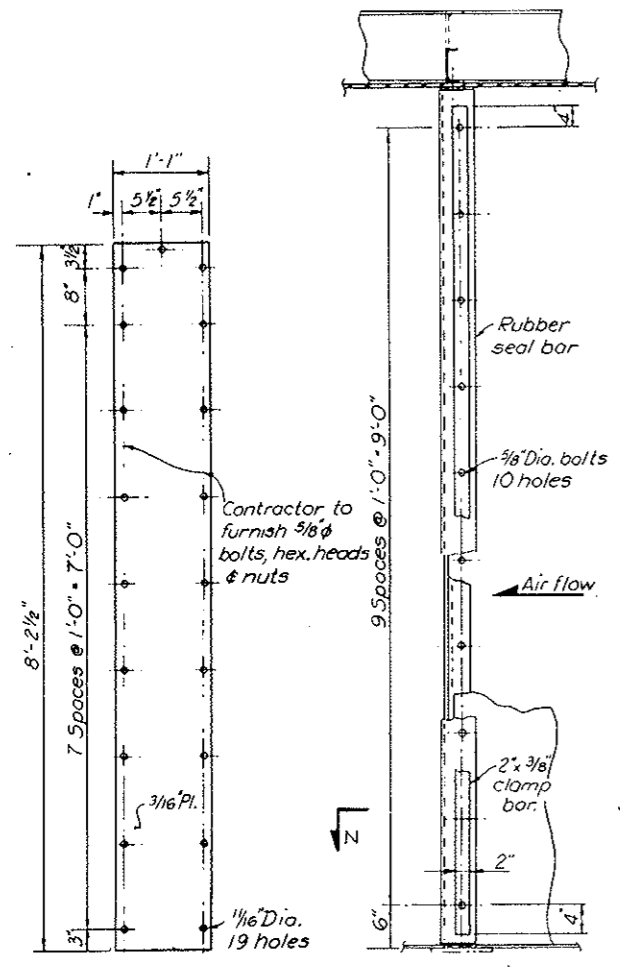


DETAIL-6 M-14
SCALE 1/2"=1'-0"

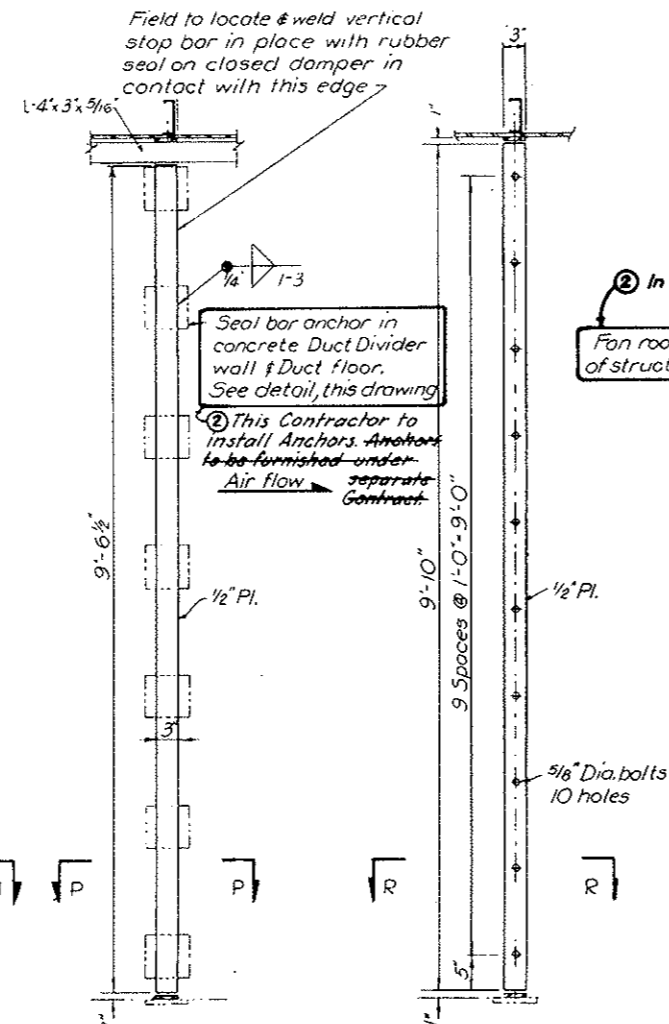
NOTE A
Tunnel Ventilation System (Bid Item 165) revised. See H.O. 14153 & Spec. 17A. All items & details shown in this drawing are not in this Contract except as noted. Concrete ductwork around support structure of damper, grouting & installation of anchors shall remain in this Contract and shall be coordinated with details furnished by fan manufacturer under separate Contract.



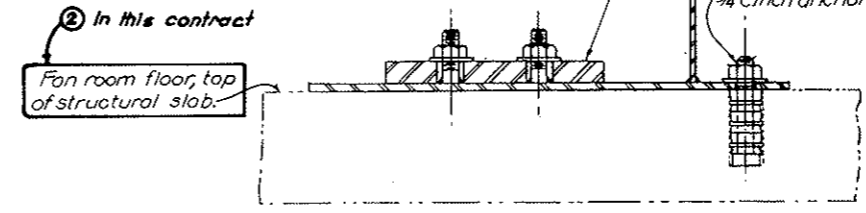
TYPICAL CONNECTIONS
CONCRETE DUCT TO STEEL
SCALE 3"=1'-0"



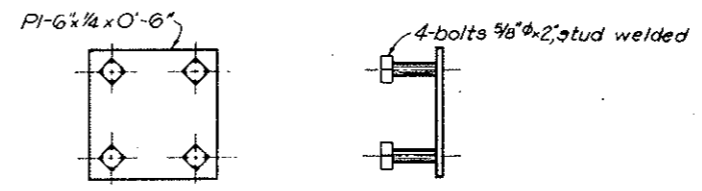
DETAIL-1 M-14
SCALE 1"=1'-0"
DAMPER SLOT COVER SIX REQ'D
SECTION M-M M-14
SCALE 1"=1'-0"
SHOWING DAMPER SEAL



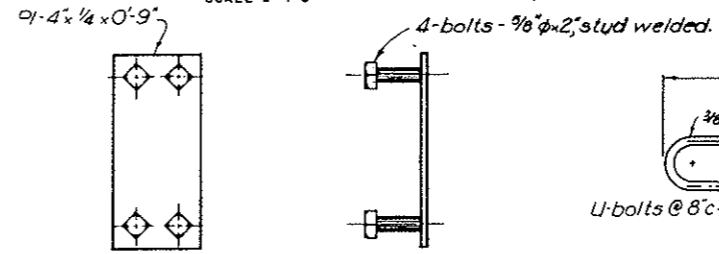
SECTION G-G M-14
SCALE 1"=1'-0"
SHOWING DAMPER SEAL BAR ON DUCT DIVIDER WALL.
SECTION Q-Q M-14
SCALE 1"=1'-0"
SHOWING DAMPER SEAL BAR ON DUCT DIVIDER WALL.



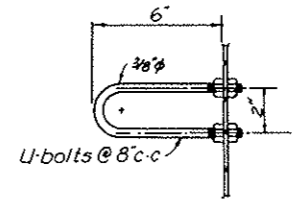
SECTION D-D
SCALE 3"=1'-0"



SEAL BAR ANCHOR
SCALE 3"=1'-0"



WALL ANCHOR
SCALE 3"=1'-0"



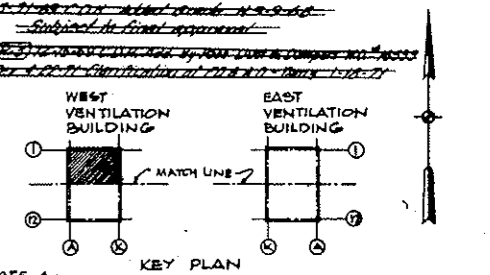
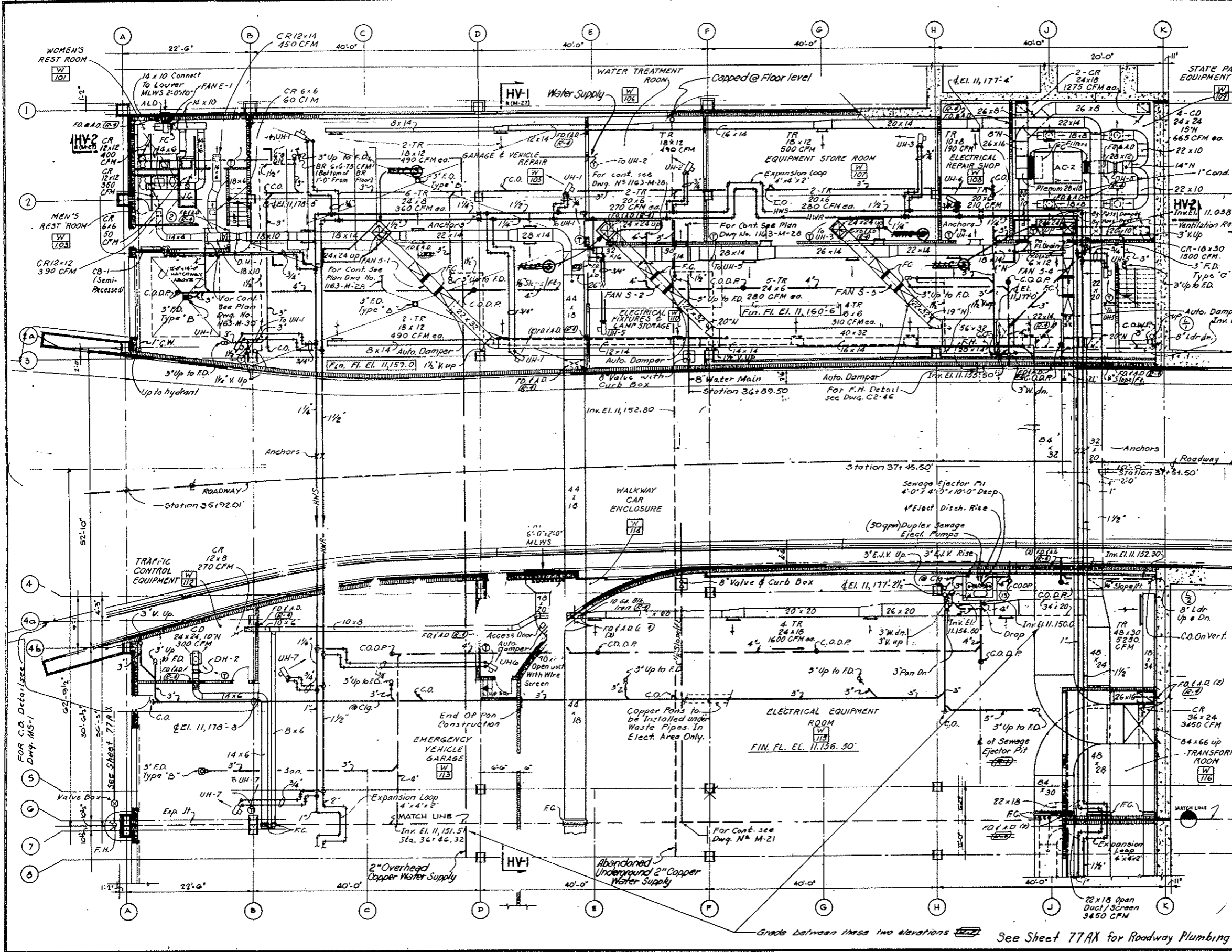
U-BOLT
SCALE 3"=1'-0"

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

NOTES:
1. Refer to notes on Dwg. M-14
2. Contractor to furnish and erect seal bar anchors and wall anchors in south portions of east and west ventilation buildings as required for installation of future dampers and their support structures. For arrangement of south damper structures see Dwg. Nos AW-4 & AE-5.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1	8-27-73	References - Dets. 1 & 5	AFS	M.G.	2
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL EAST AND WEST VENTILATION BUILDINGS SUPPORT STRUCTURE - SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	J. R.	RECOMMENDED:	John P. Belmont		
DRAWN:	J. S. B.	CHECKED:	J. S. B.		
SUBMITTED:	A. T. Samuel	APPROVED:	John P. Belmont		
NEW YORK, N. Y.			SCALE: AS NOTED DATE: AUGUST 1967		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	212	326



NOTE A:
 Revised Ventilation System (Bid Item 165) revised. See W.O. 14153 & Spec. 17A.
 Weather Housing down below Fan Room Floor and including the Upswing Elbow. All Concrete Work, although enclosed within the N.I.C. limit lines, remains in this Contract. Final termination of Metal Duct to be connected with Metal Duct N.I.C. shall be coordinated with Details furnished by the Fan Manufacturer under separate Contract.

AS CONSTRUCTED
REVISED DATE OCT 26, 1973

- NOTES:**
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details see drawing M-44
 - For key to symbols, flow and control diagrams see drawing M-45 & M-46
 - For building dimensions, layouts, type of partitions & ceiling heights see Architectural drawings.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Revised Duct Work & Registers	V.S.	APB	CY
2		Revised note No. 3	cm	2	APB

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

MECHANICAL
WEST VENTILATION BUILDING
ROADWAY FLOOR PLAN-NORTH
HEATING, VENTILATING AND PLUMBING

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E.P. & R.J.R.
 DRAWN: D.P.
 CHECKED: A.S. & U.D.B.
 SUBMITTED: [Signature]
 APPROVED: [Signature]

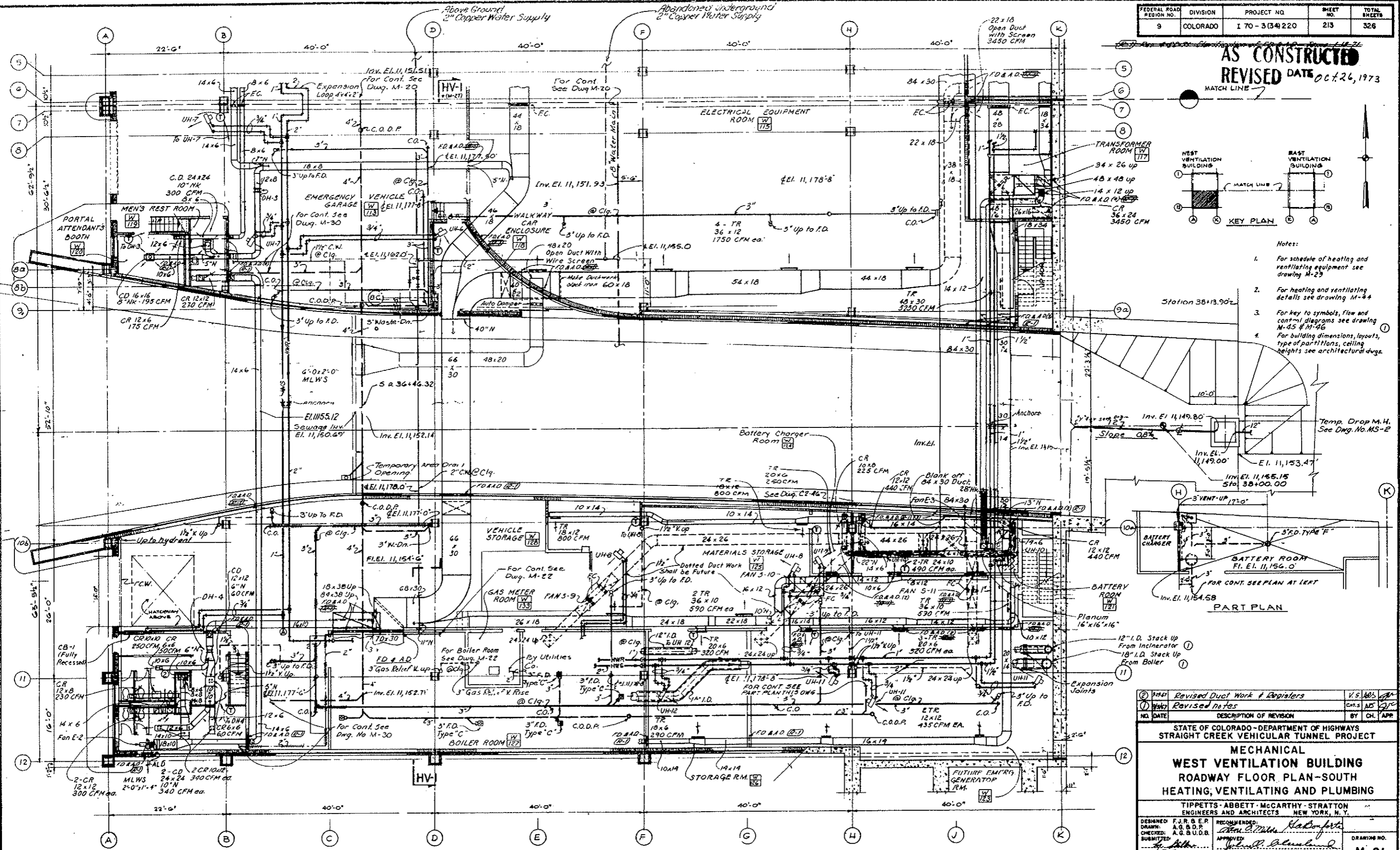
SCALE: 1/8" = 1'-0" DATE: AUGUST 1967

DRAWING NO. **M-20**

See Sheet 77A for Roadway Plumbing

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	213	326

AS CONSTRUCTED
REVISED DATE *Oct. 26, 1973*



- Notes:
1. For schedule of heating and ventilating equipment see drawing M-23
 2. For heating and ventilating details see drawing M-34
 3. For key to symbols, flow and control diagrams see drawing M-45 & M-46
 4. For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Revised Duct Work & Registers			
2		Revised notes			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

MECHANICAL
WEST VENTILATION BUILDING
ROADWAY FLOOR PLAN - SOUTH
HEATING, VENTILATING AND PLUMBING

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N.Y.

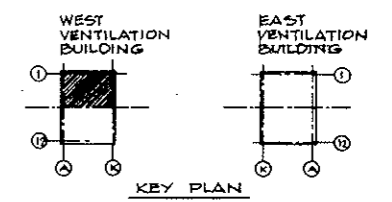
DESIGNED: F. J. R. B. P.
 DRAWN: A. G. B. D. B.
 CHECKED: A. G. B. D. B.
 SUBMITTED: *[Signature]*
 APPROVED: *[Signature]*
 NEW YORK, N.Y.

SCALE: 1/8" = 1' FT DATE: AUGUST 1967

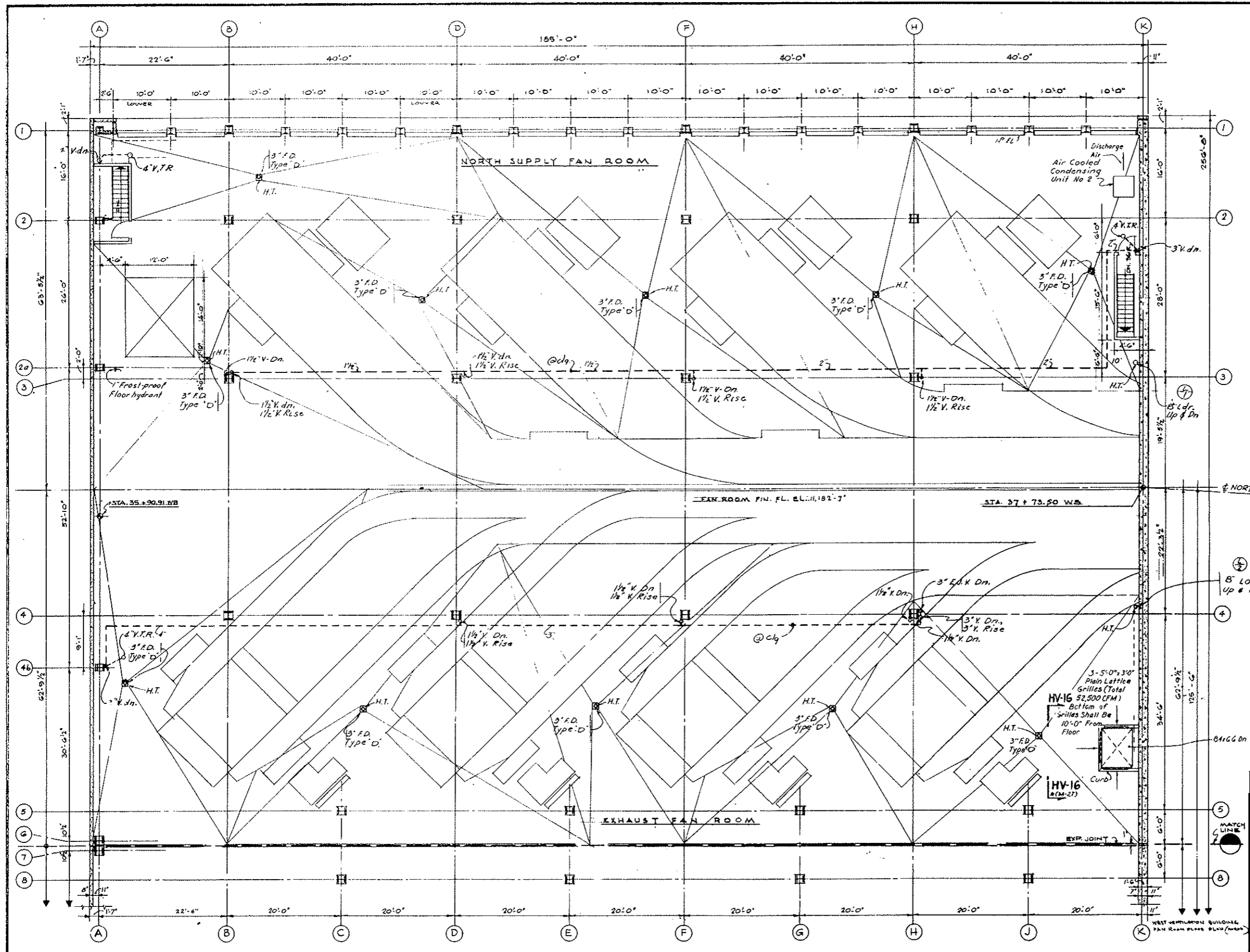
DRAWING NO. **M-21**

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	215	326

AS CONSTRUCTED
NO REVISIONS
 OCT 26, 1973



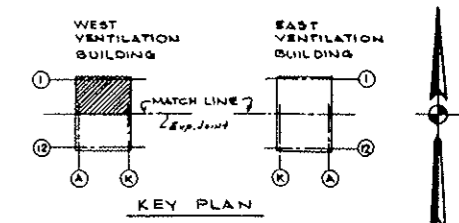
- NOTES:
1. For schedule of heating and ventilating equipment see drawing M-29
 2. For heating and ventilating details see drawing M-44
 3. For key to symbols, flow and control diagrams see drawing M-45 & M-46
 4. For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings
 - 5.



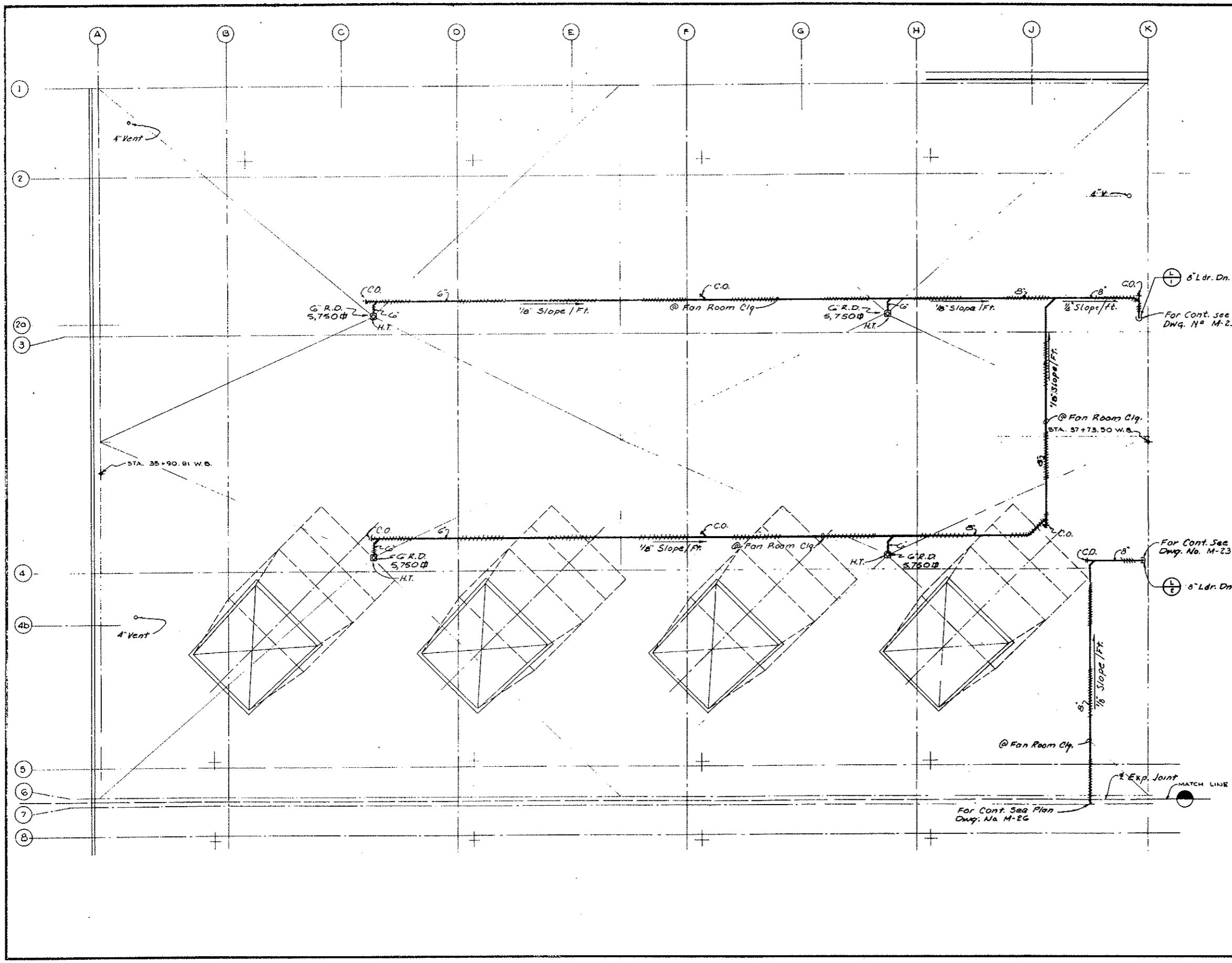
(1) Revised notes NO. DATE DESCRIPTION OF REVISION BY CL APP.	
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT	
MECHANICAL WEST VENTILATION BUILDING FAN ROOM FLOOR PLAN-NORTH HEATING, VENTILATING AND PLUMBING	
TIPPETTS-ABBETT-MCCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.	
DESIGNED: E.J.R. B.E.P. DRAWN: A.G.B.D.P. CHECKED: A.G.B.U.D.P. SUBMITTED:	RECOMMENDED: [Signature] APPROVED: [Signature] NEW YORK, N.Y.
SCALE: 1/8" IN. = 1' FT. DATE: AUGUST 1967	

DRAWING NO.
M-23

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	217	326



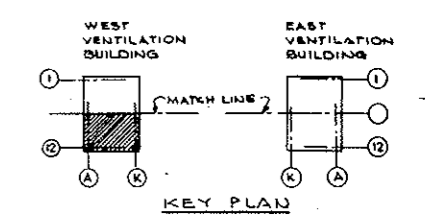
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL WEST VENTILATION BUILDING ROOF PLAN-NORTH HEATING, VENTILATING AND PLUMBING					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	F. J. R.	RECOMMENDED:	[Signature]		
DRAWN:	A. G.	CHECKED:	[Signature]		
CHECKED:	A. G.	APPROVED:	[Signature]		
SUBMITTED:	[Signature]				
NEW YORK, N. Y.		SCALE: 1/8" = 1' FT.	DATE: AUGUST 1967		DRAWING NO. M-25

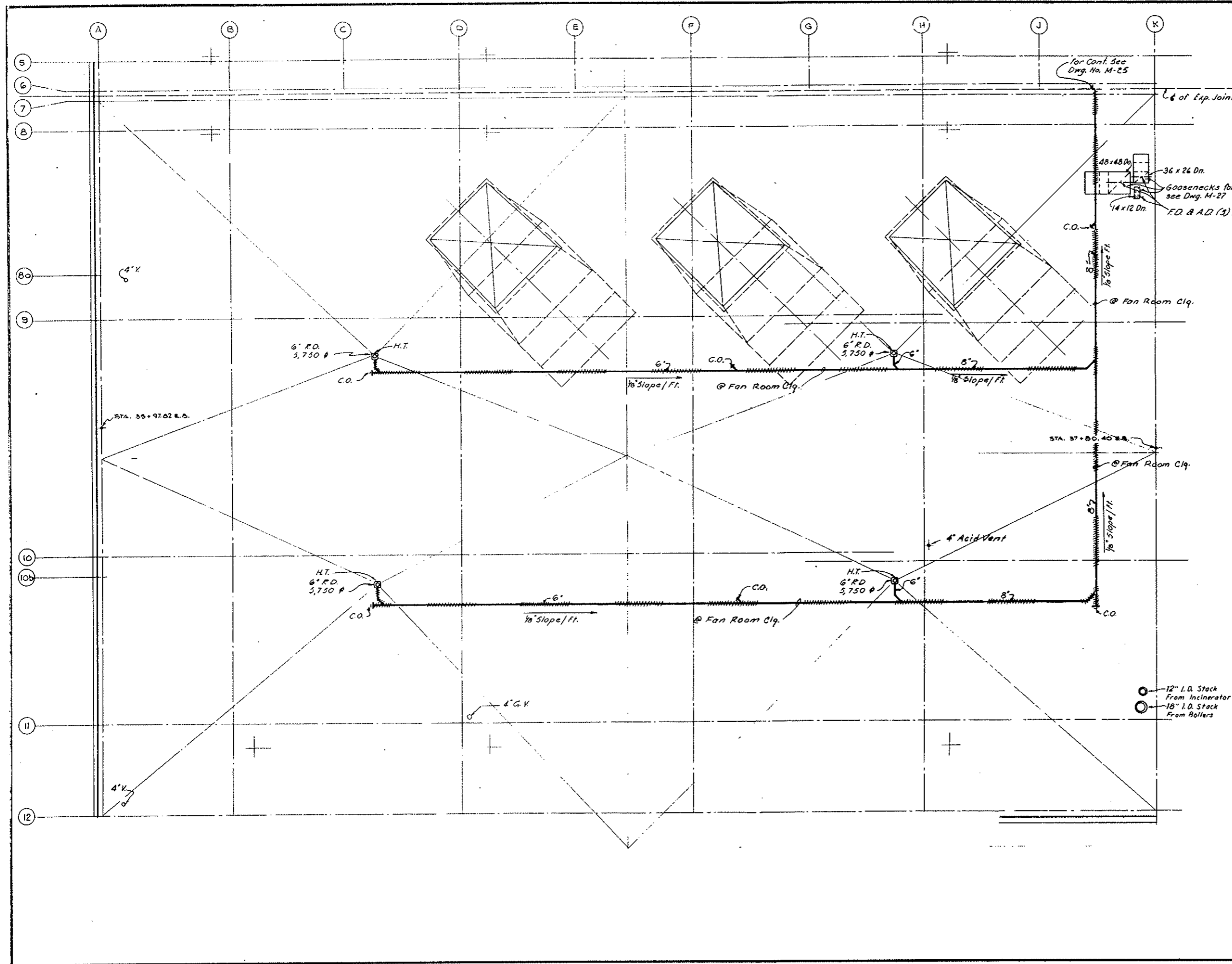
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	218	328

For Cont. See Dwg. No. M-25



AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

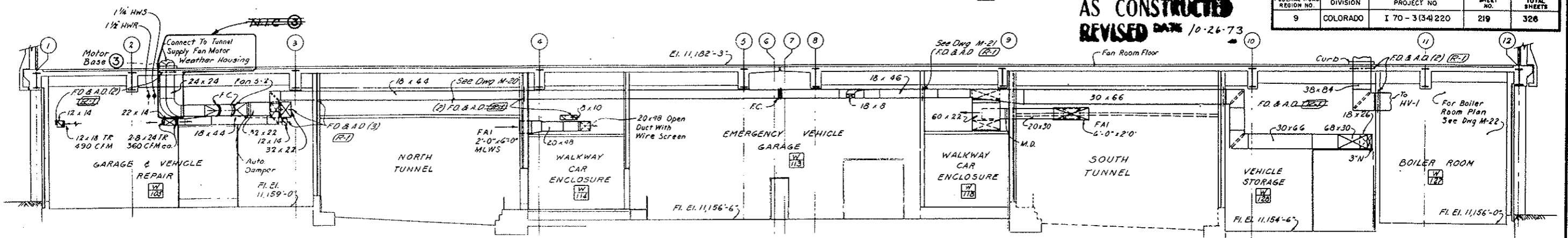
- NOTES:
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details see drawing M-44
 - For key to symbols, flow and control diagrams see drawing M-45 & M-46
 - For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings



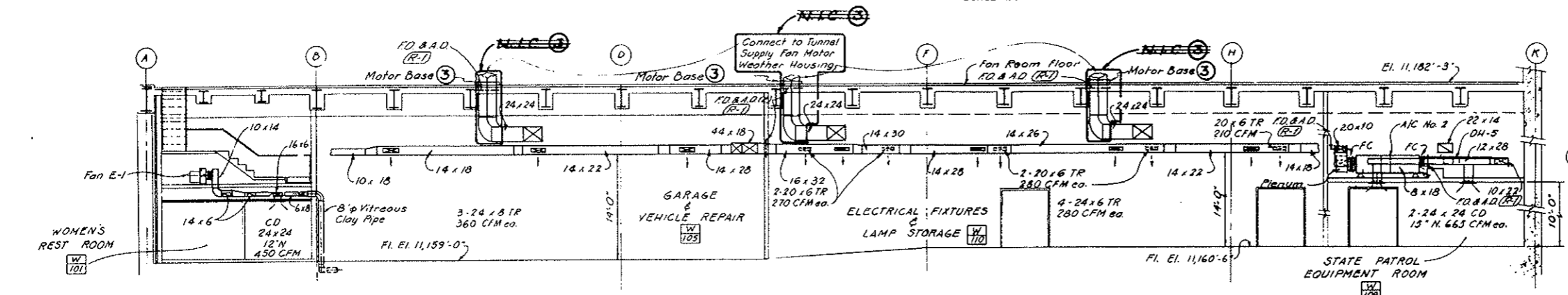
1	1/24/73	Revised notes	CHK. AWA	APP. JPL
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK. APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
MECHANICAL WEST VENTILATION BUILDING ROOF PLAN-SOUTH HEATING, VENTILATING AND PLUMBING				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED: F. J. R. E. P.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. M-26		
DRAWN: A. S. S. D. P.	CHECKED: U. D. B.	SCALE: 1/8" = 1' FT. DATE: AUGUST 1967		
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>			

AS CONSTRUCTED
REVISED DATE 10-26-73

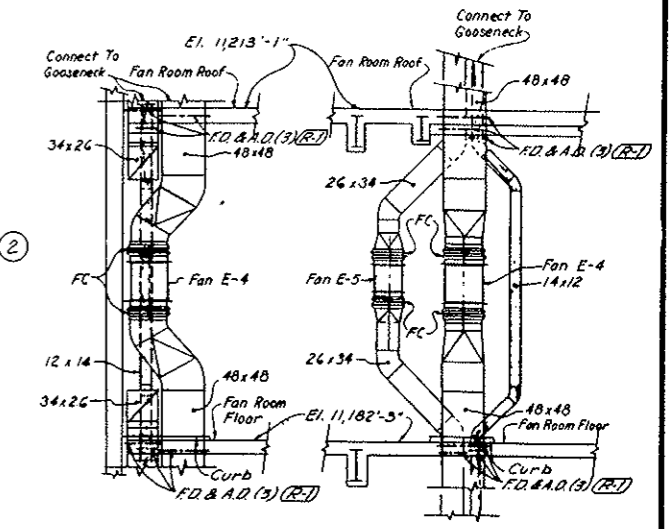
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	219	326



SECTION HV-1 (M-20) 1
 SCALE 1/8"=1'-0"



SECTION HV-2 (M-20) 1
 SCALE 1/8"=1'-0"

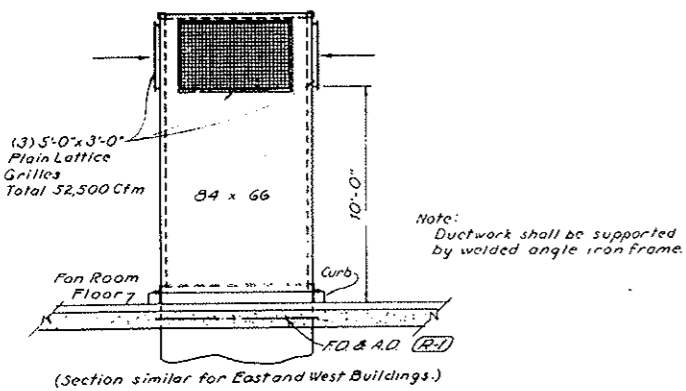


SECTION HV-5 (M-24) 1
 SCALE 1/8"=1'-0"

SECTION HV-6 (M-24) 1
 SCALE 1/8"=1'-0"

NOTE A:
 Tunnel Ventilation System (Bid Item 165) revised. See W.D. 14133 & Spec. 17A. N.I.C. Items are: 24" x 24" Metal Duct from Motor Weather Housing down below Fan Room Floor and including the Upswing Elbow. All Concrete Work, although enclosed within the N.I.C. limit lines, remains in this Contract. Final termination of Metal Duct to be connected with Metal Duct N.I.C. shall be coordinated with details furnished by the Fan Manufacturer under separate Contract.

- NOTES:**
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details see drawing M-44
 - For key to symbols, flow and control diagrams see drawing M-46
 - For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings



SECTION HV-16 (M-23) 1
 SCALE 1/4"=1'-0"

③ 9/1/68	Contract Limit defined: see Note A.	UDB/ARS/VA.3			
② 9/1/66	Revised Duct Work	V.S./A.B./J.R.			
① 9/5/67	Added Ref. Nos. & Revised Notes	V.S./A.B./J.R.			
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

MECHANICAL WEST VENTILATION BUILDING SECTIONS HEATING AND VENTILATING

TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E. P. DRAWN: D. P. CHECKED: U. D. R. SUBMITTED: [Signature]

RECOMMENDED: [Signature] APPROVED: [Signature]

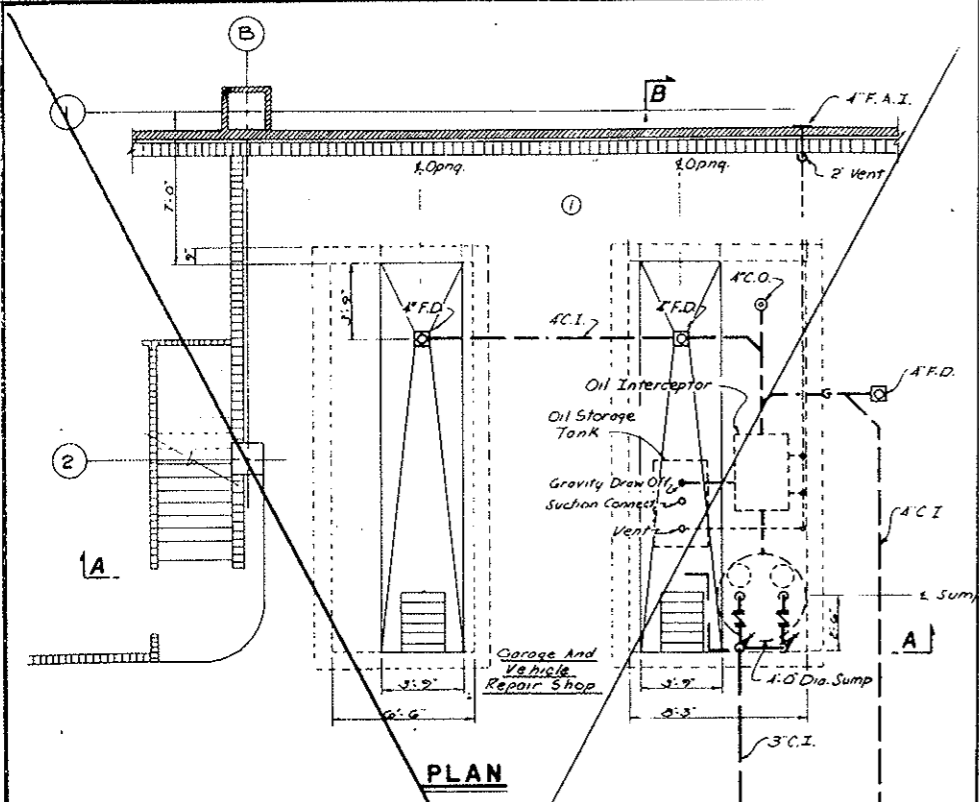
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1967

DRAWING NO. **M-27**

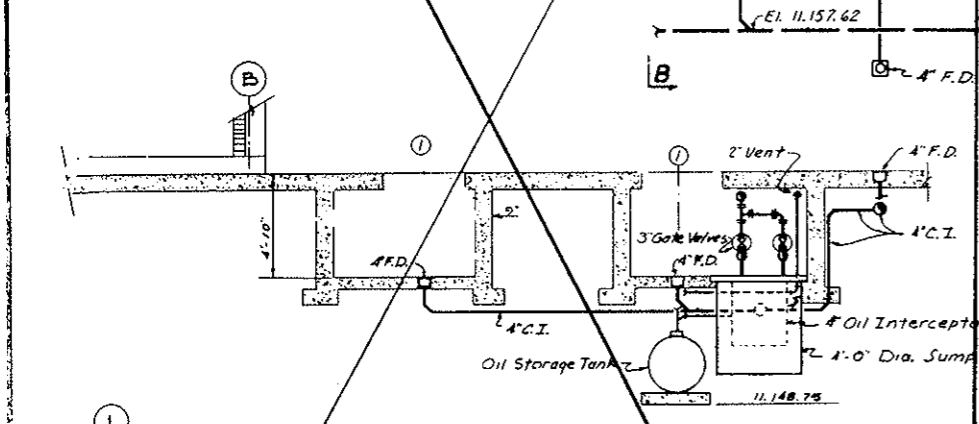
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	220	326

AS CONSTRUCTED
REVISED DATE 10-26-73

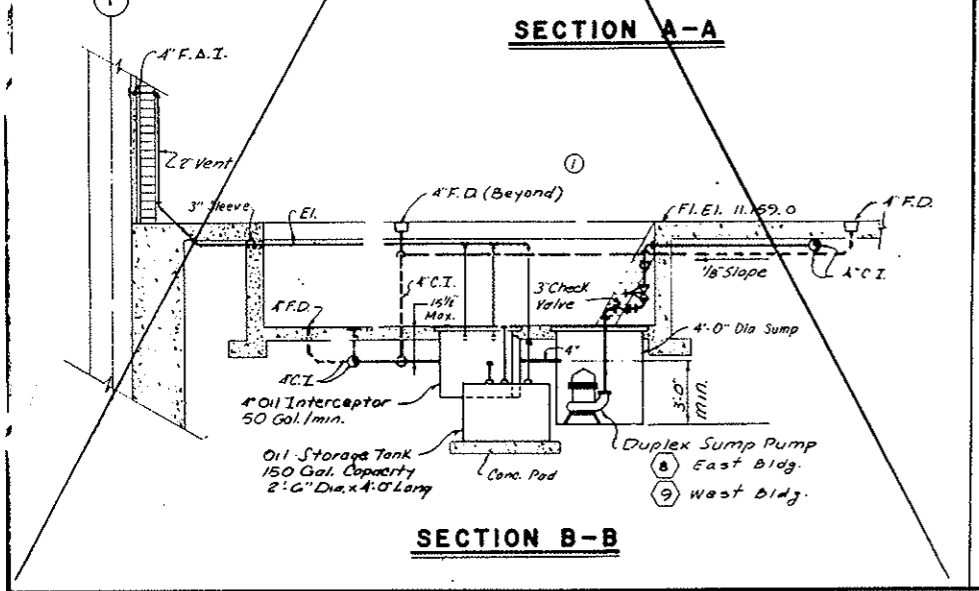
NOTE
 ① For Plumbing legend, general notes, and details see Dwg. No. 445



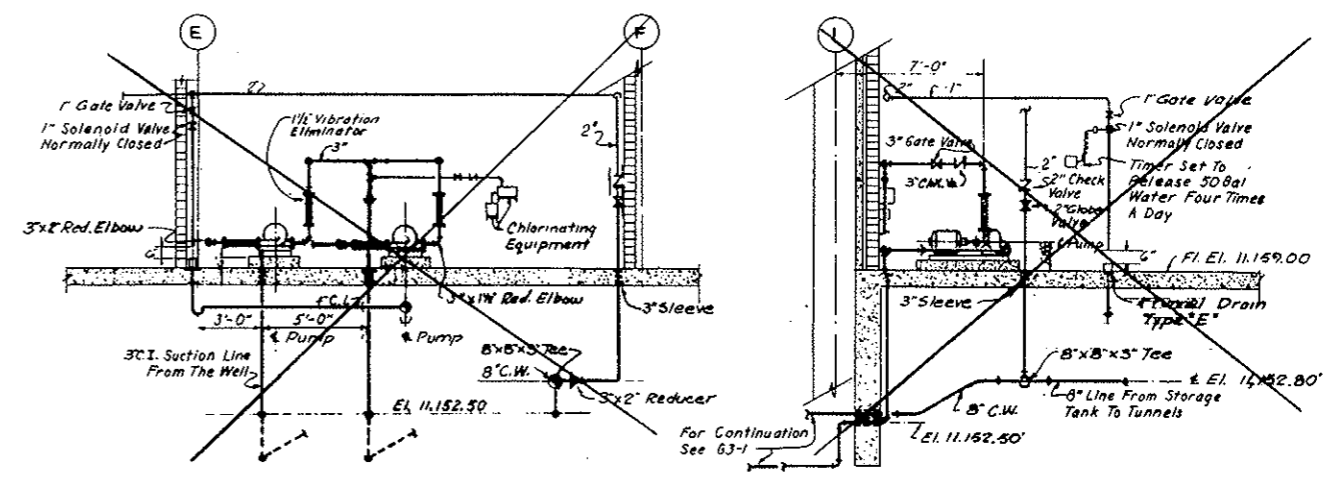
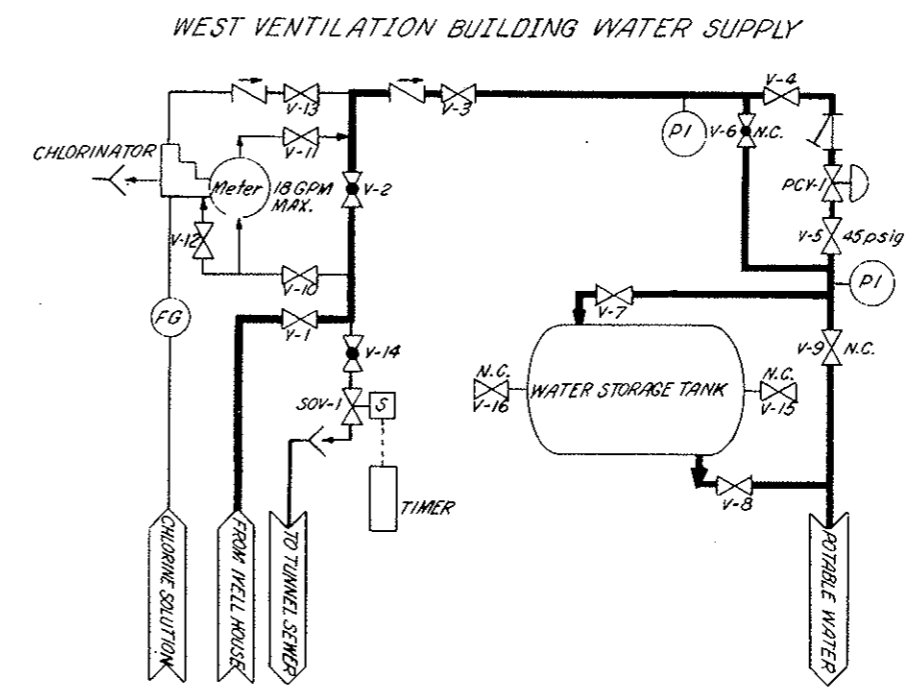
PLAN



SECTION A-A



SECTION B-B



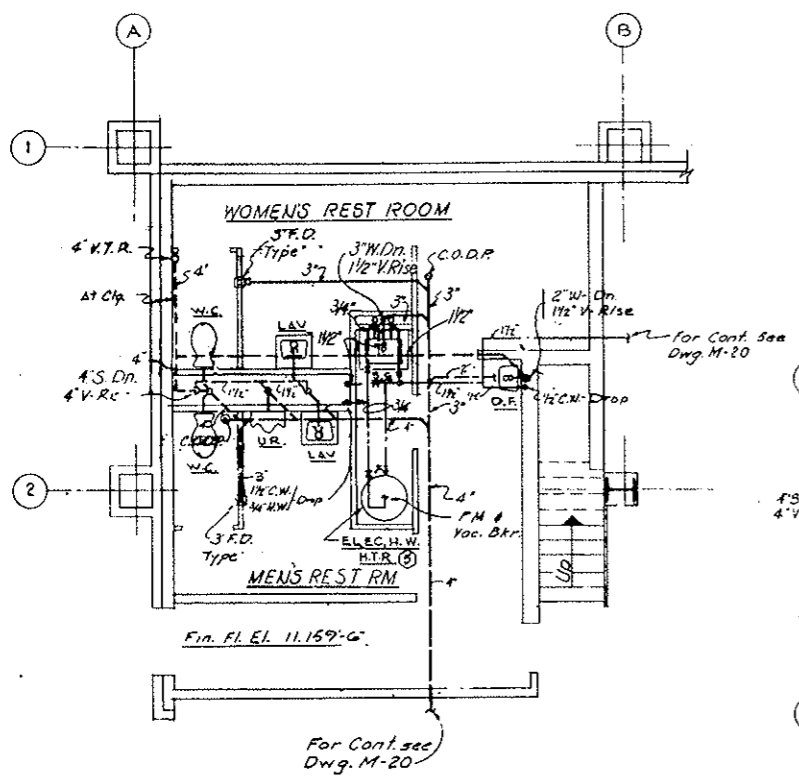
SECTION A-A

SECTION B-B

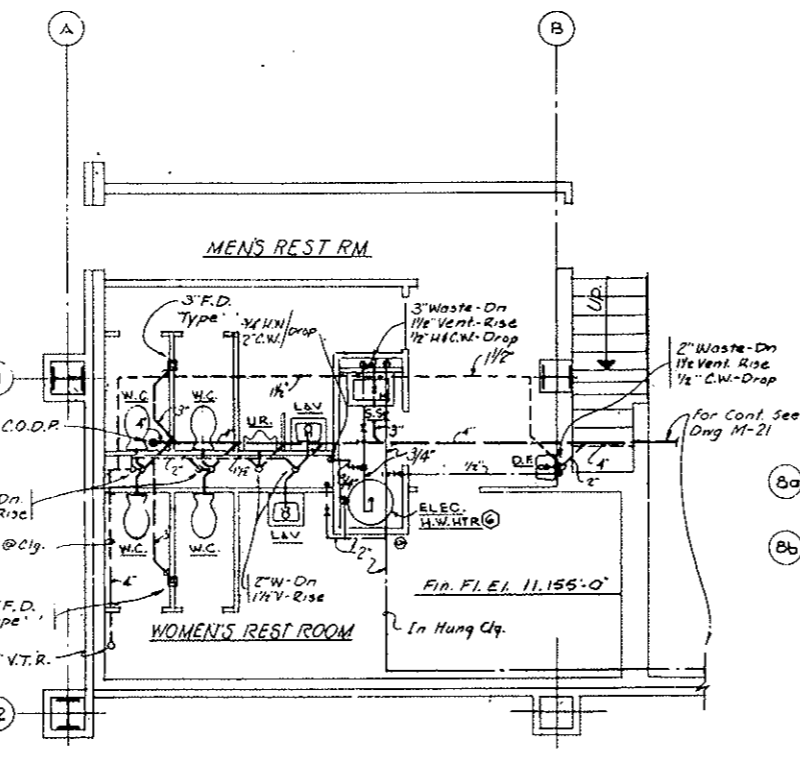
1	1/26/66	Added note and deleted dimensions.	CMS	ARC	QV
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL WEST VENTILATION BUILDING PLANS AND SECTIONS PLUMBING					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	A. G.	RECOMMENDED:	A. G. Miller, H. K. Smith		
DRAWN:	C. S.	CHECKED:	A. G.		
SUBMITTED:	H. K. Smith	APPROVED:	A. G.		
NEW YORK, N. Y.		SCALE:	DATE:		AUGUST 1967
					M-28

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	222	326

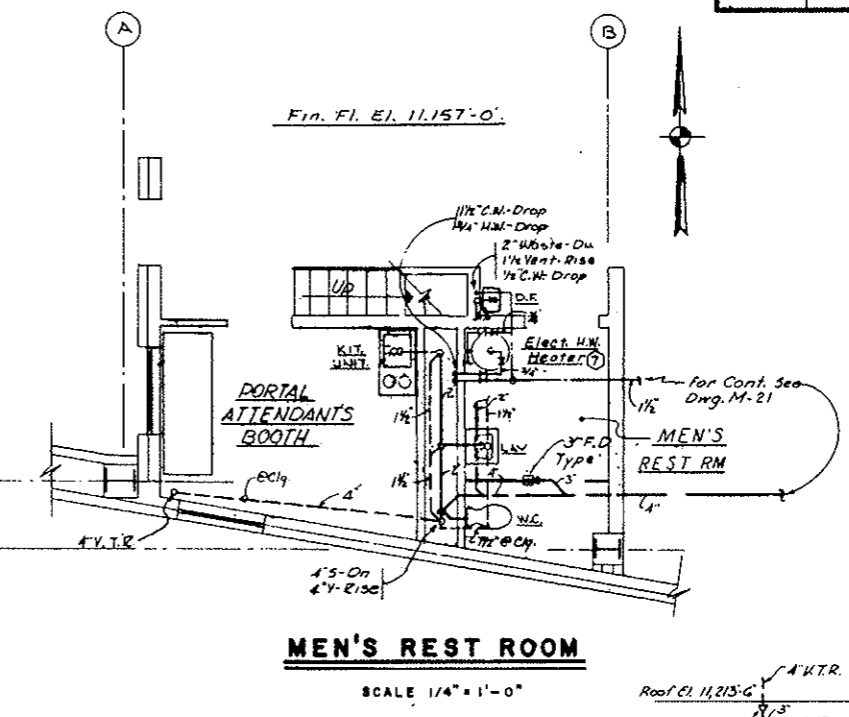
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



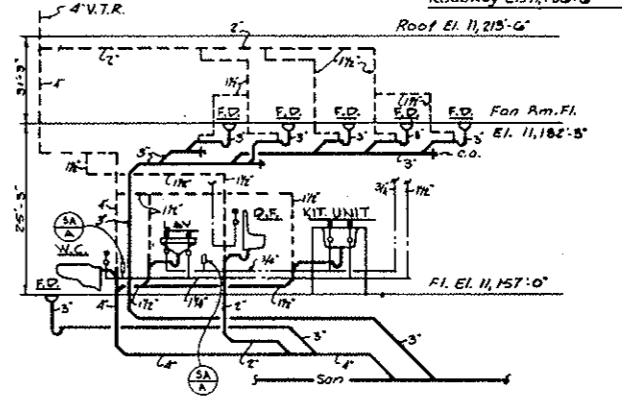
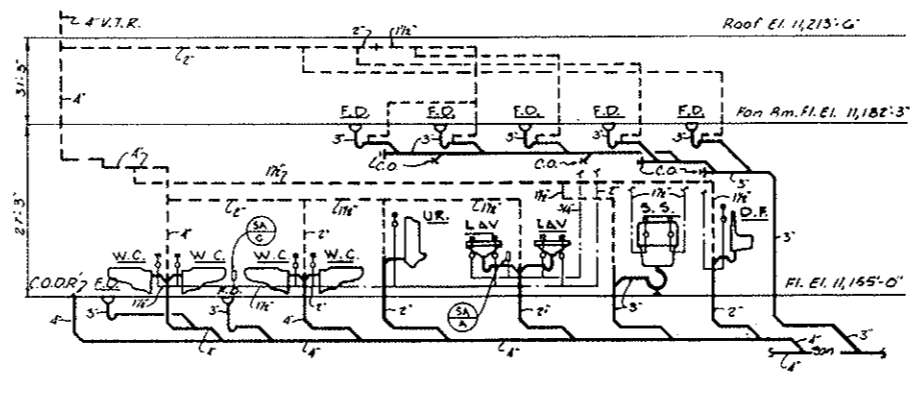
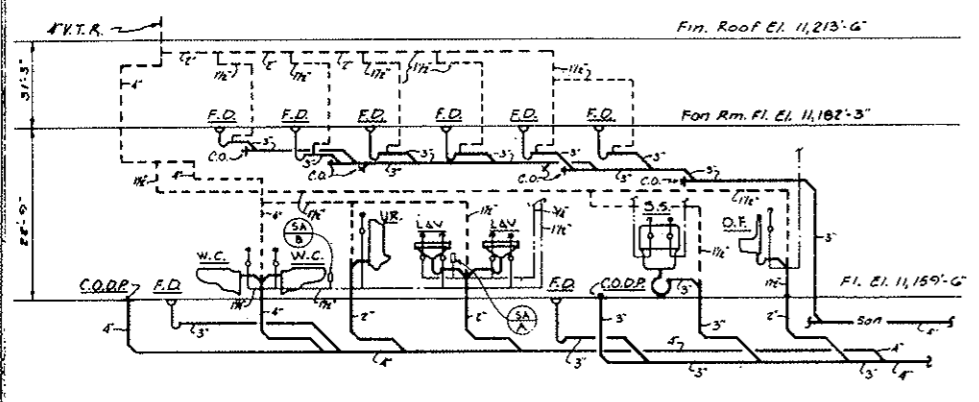
MEN'S & WOMEN'S REST ROOMS
 SCALE 1/4" = 1'-0"



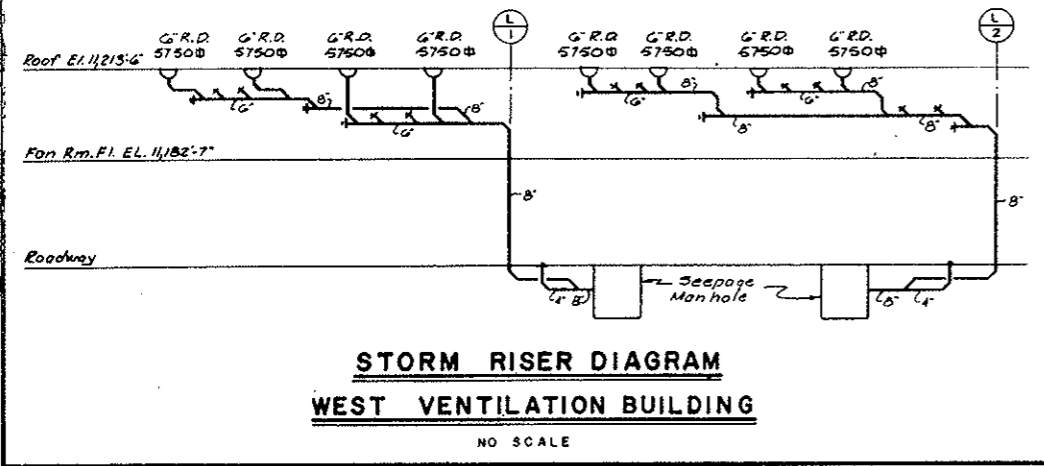
MEN'S & WOMEN'S REST ROOMS
 SCALE 1/4" = 1'-0"



MEN'S REST ROOM
 SCALE 1/4" = 1'-0"



SANITARY RISER DIAGRAMS
 NO SCALE



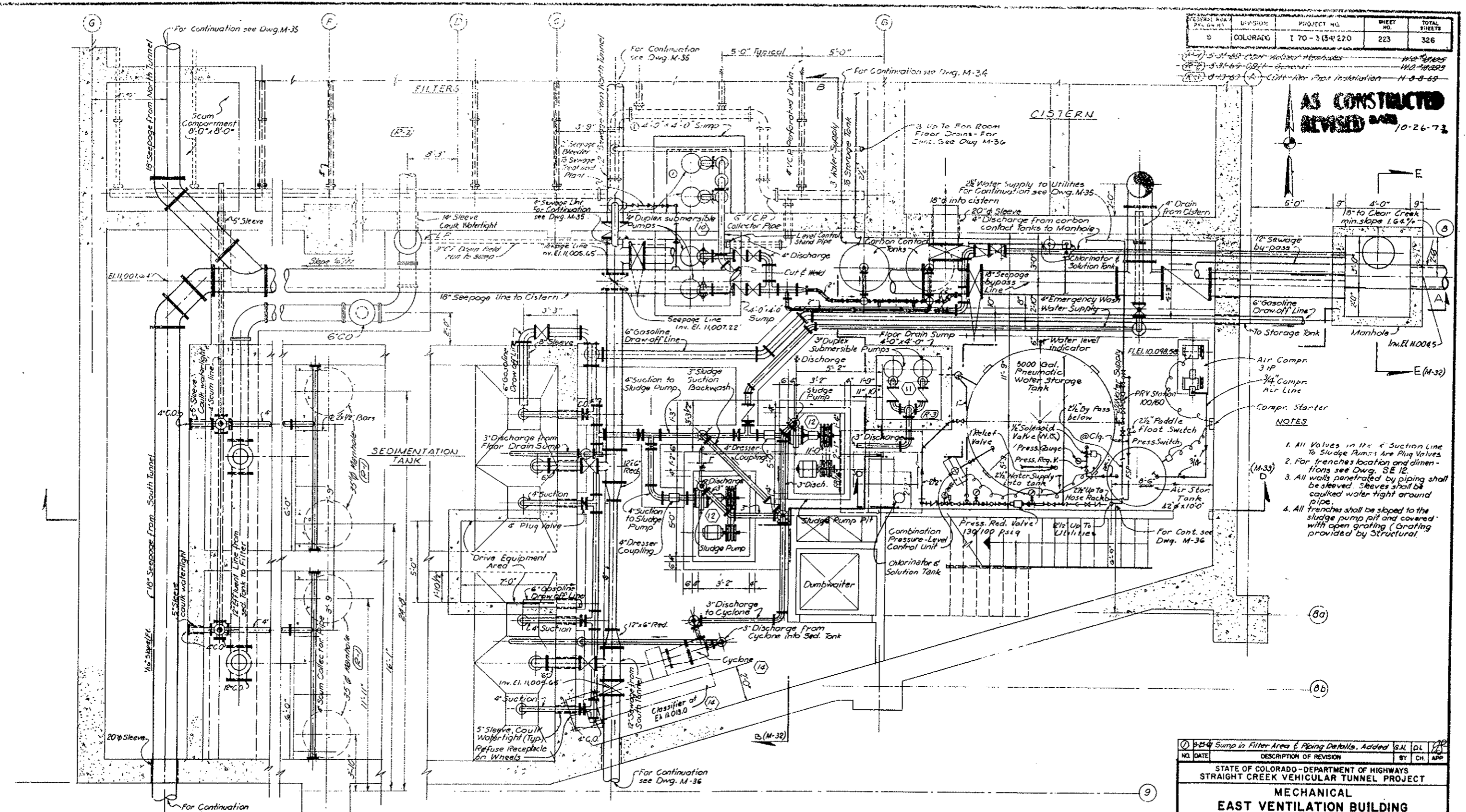
STORM RISER DIAGRAM
WEST VENTILATION BUILDING
 NO SCALE

- NOTES:
1. For Schematic Piping Diagram Of Electric Hot Water Heaters See Dwg. N2 M-45.
 2. For Schedules, Legend And Details See Dwg. N2 M-45.
 3. For Building Dimensions, Layouts, Ceiling Heights, And Exact Fixture Locations, See Architectural Dwg.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL WEST VENTILATION BUILDING PLANS AND RISER DIAGRAMS PLUMBING					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	F. J. R.	RECOMMENDED:	<i>[Signature]</i>	DRAWING NO. M-30	
DRAWN:	A. G.	CHECKED:	<i>[Signature]</i>		
CHECKED:	S. M.	SUBMITTED:	<i>[Signature]</i>		
NEW YORK, N. Y.			SCALE: AS NOTED	DATE: AUGUST 1967	

SHEET NO.	DIVISION	PROJECT NO.	TOTAL SHEETS
223	COLORADO	I 70-3 (34) 220	326

AS CONSTRUCTED
REVISED 10-26-73



PART PLAN
SCALE 3/8" = 1'-0"

- NOTES**
1. All Valves in the 4" Suction Line to Sludge Pumps are Plug Valves.
 2. For trenches location and dimensions see Dwg. SE 12.
 3. All walls penetrated by piping shall be sleeved. Sleeves shall be caulked water tight around pipe.
 4. All trenches shall be sloped to the sludge pump pit and covered with open grating (Grating provided by Structural).

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1	8-25-74	Sump in Filter Area & Piping Details. Added	S.J.L.	C.L.	[Signature]

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**MECHANICAL
EAST VENTILATION BUILDING
BASEMENT PLAN
PLUMBING**

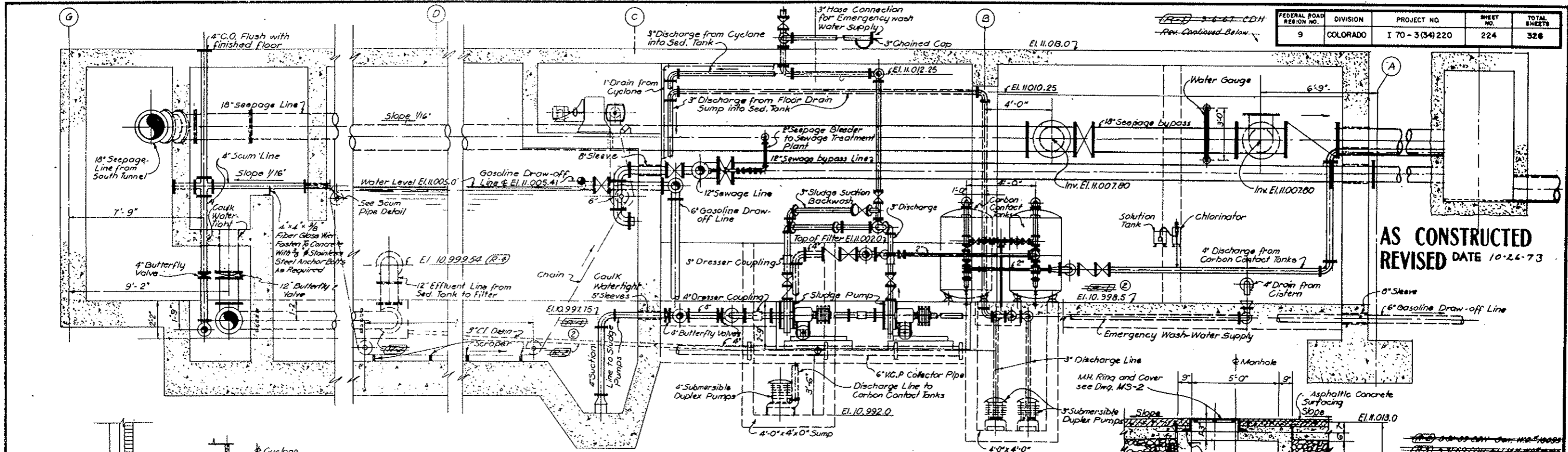
TIPPETTS-ABBETT-McCARTHY-STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: A. G.	RECOMMENDED: [Signature]
DRAWN: C. S.	[Signature]
CHECKED: M. S. B. L.	[Signature]
SUBMITTED: [Signature]	[Signature]
[Signature]	[Signature]

SCALE: 3/8" = 1' 0" DATE: AUGUST 1967

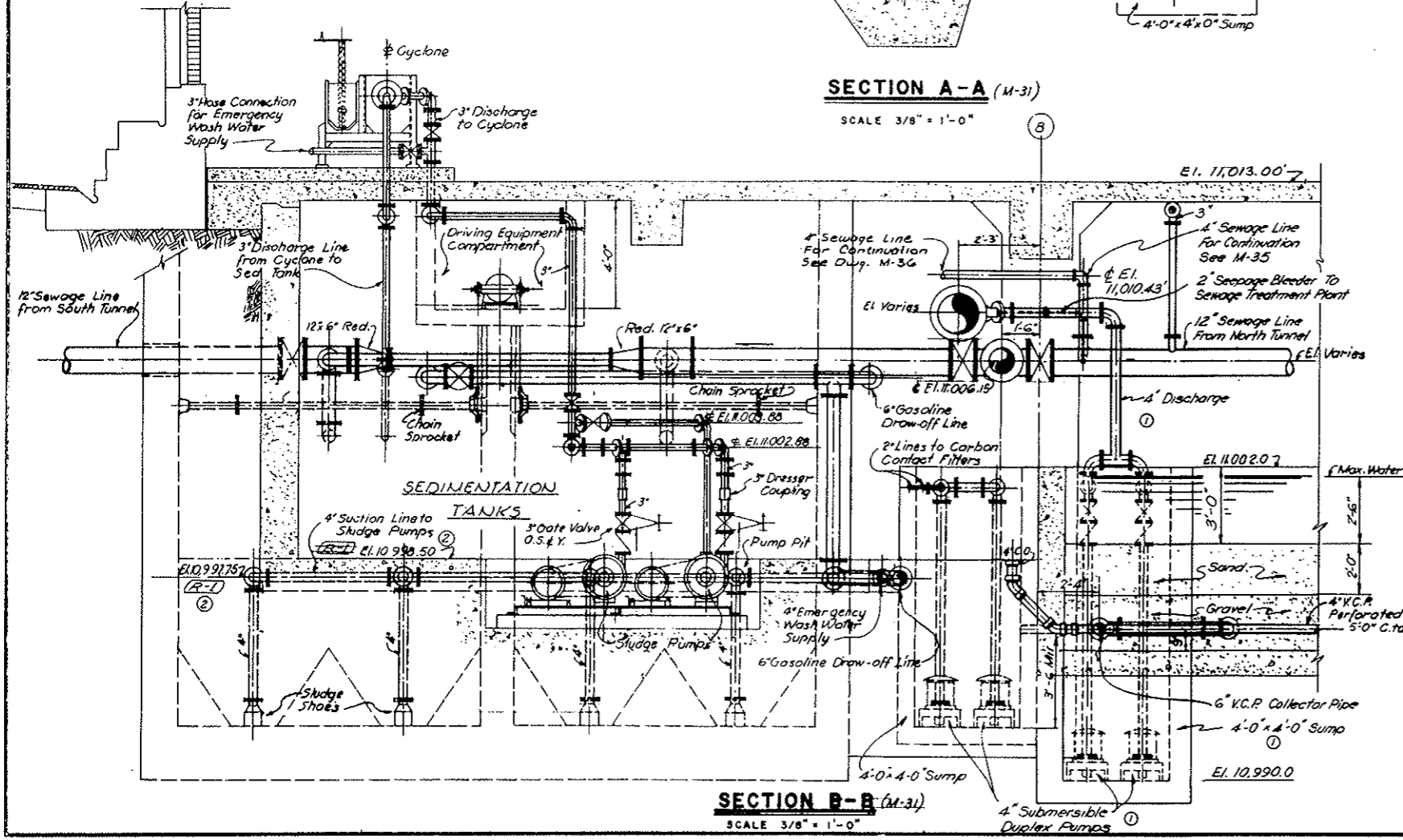
DRAWING NO. **M-31**

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54) 220	224	326

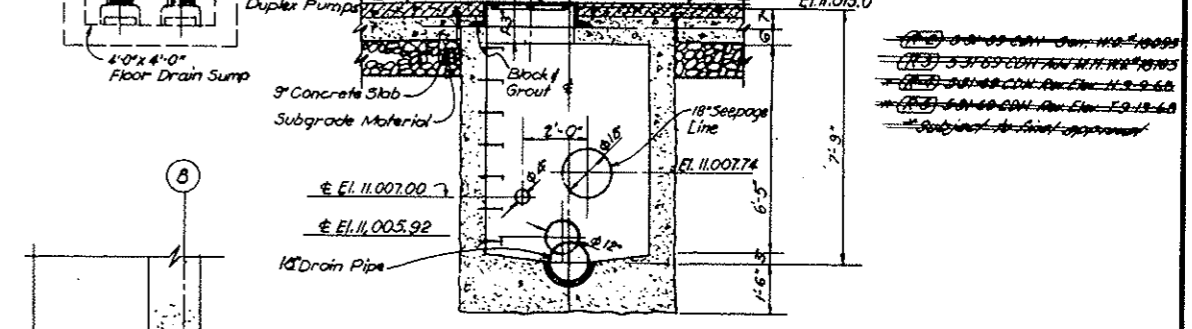


**AS CONSTRUCTED
REVISED DATE 10-26-73**

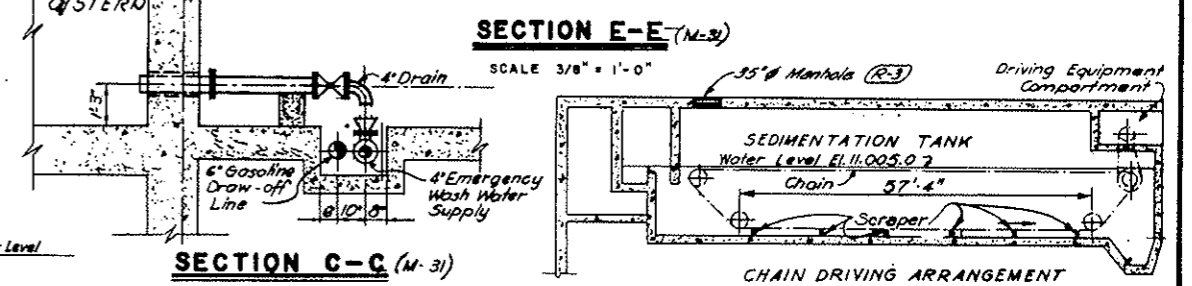
SECTION A-A (M-31)
SCALE 3/8" = 1'-0"



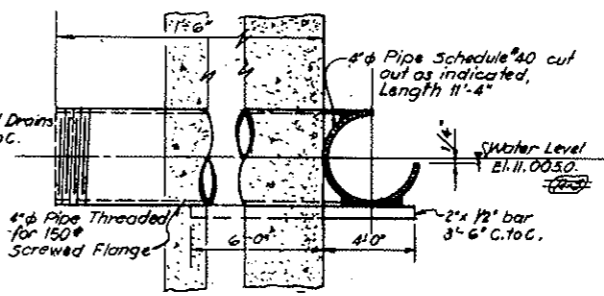
SECTION B-B (M-31)
SCALE 3/8" = 1'-0"



SECTION C-C (M-31)
SCALE 3/8" = 1'-0"



SECTION E-E (M-31)
SCALE 3/8" = 1'-0"



SCUM PIPE DETAIL
SCALE 1/4" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
①		Water Corrected Elevations			
②		Pump, pumps & piping details in Sec. B-B. Addendum			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**MECHANICAL
EAST VENTILATION BUILDING
BASEMENT SECTIONS
PLUMBING**

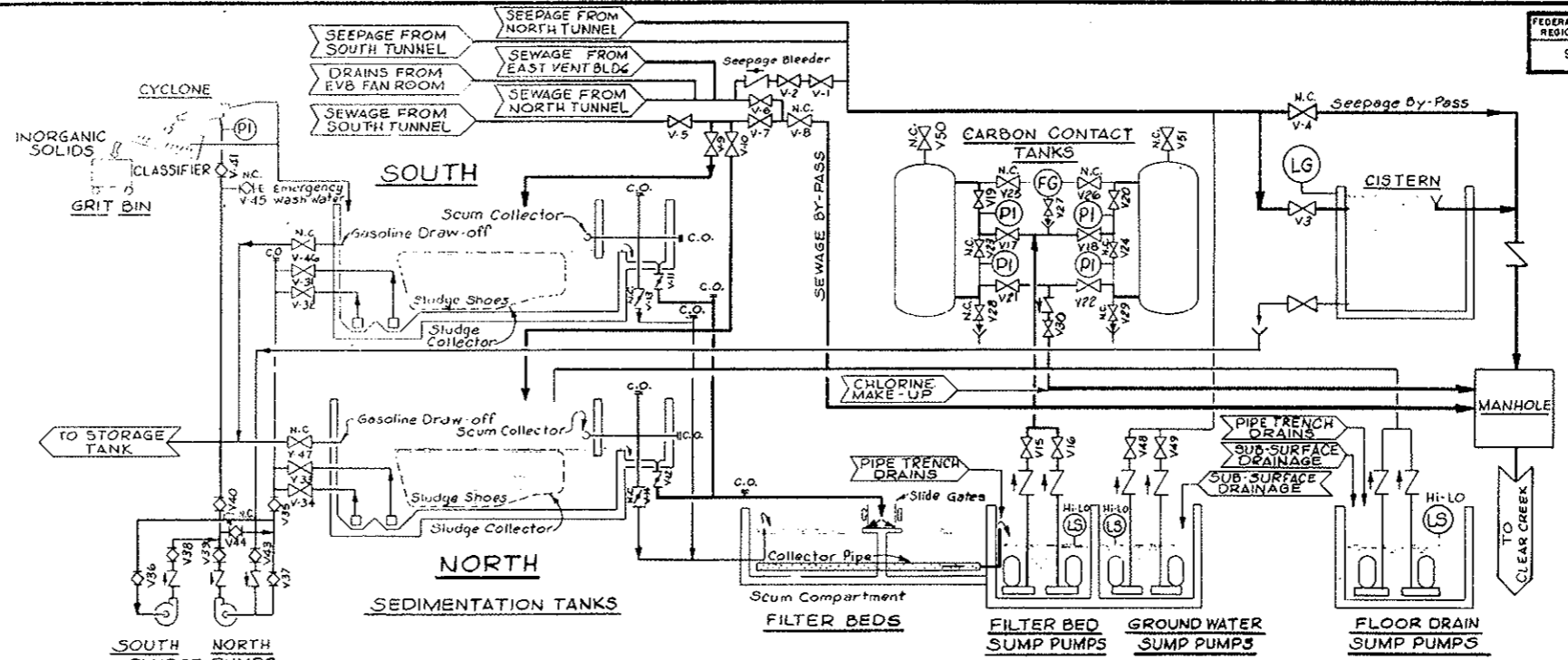
TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED: A. G. C. S.
CHECKED: D. L. B. M. S.
SUBMITTED: [Signature]
APPROVED: [Signature]

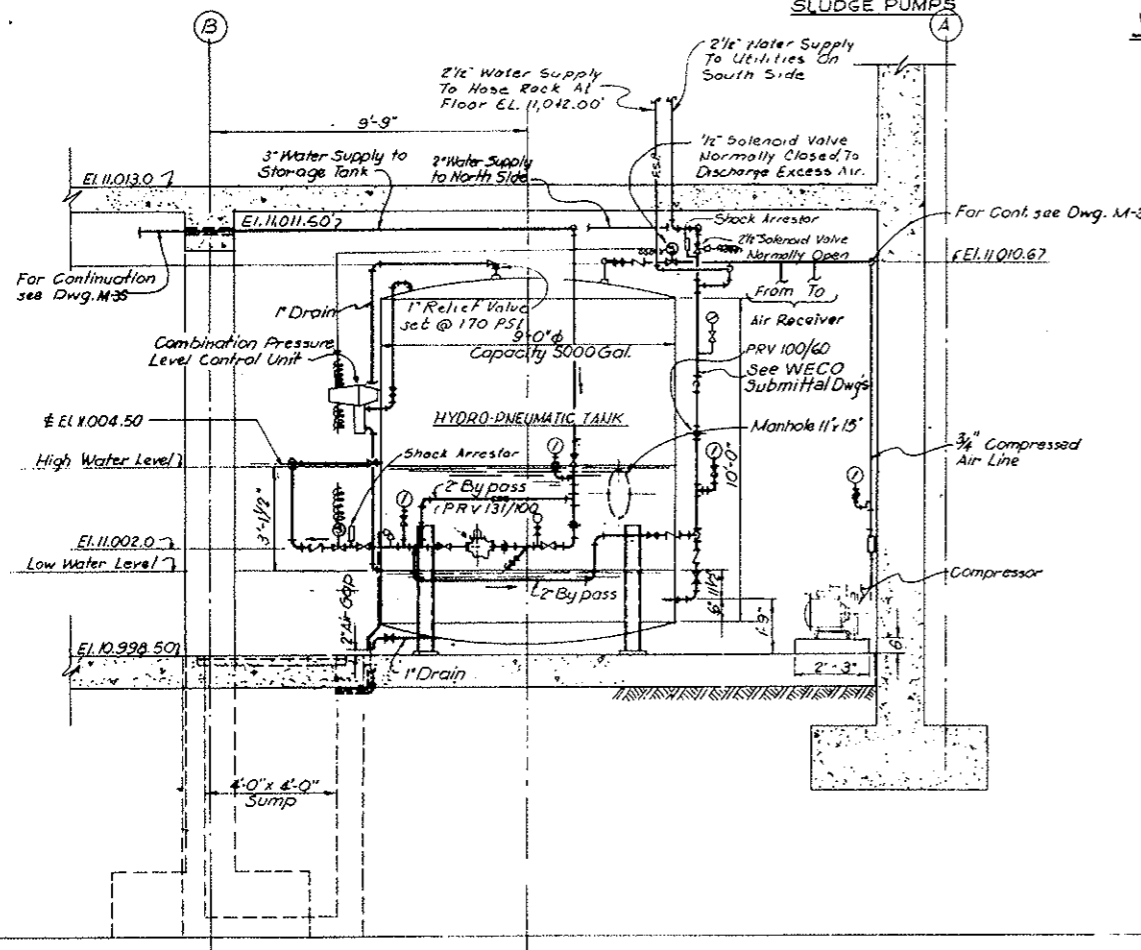
SCALE: AS NOTED
DATE: AUGUST 1967
DRAWING NO. **M-32**

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	225	326

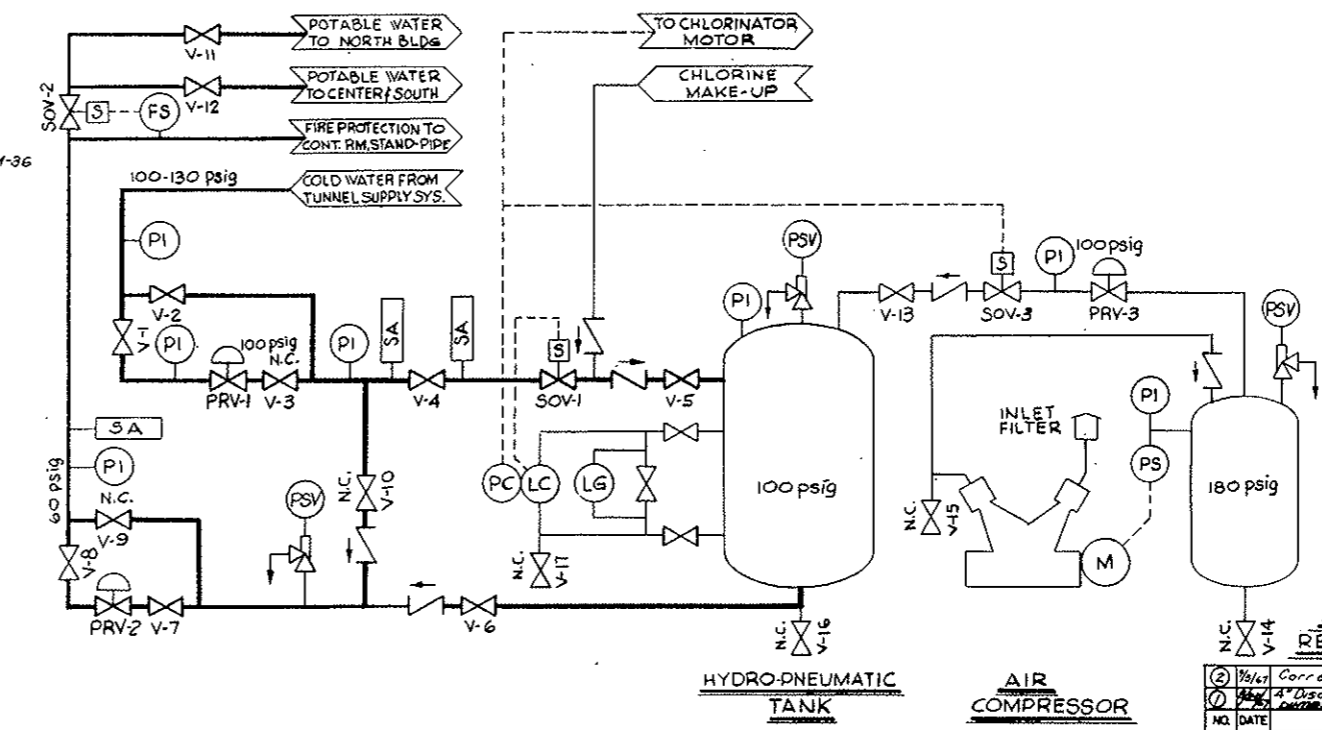
AS CONSTRUCTED
REVISED DATE 10-26-73



WATER SUPPLY FLOW DIAGRAM FROM STORAGE TANK



SECTION D-D
SCALE 3/8" = 1'-0"



FLOW DIAGRAM OF SEWAGE TREATMENT PLANT

②	Value Corrected Elevations	cms	MS	DL	
①	Max 4" Discharge from basement drainage sump	BP	DL	DL	
①	7-25, change to Floor Drain, Add 1/2"				
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL - PROJECT

**MECHANICAL
EAST VENTILATION BUILDING
BASEMENT SECTIONS AND FLOW DIAGRAMS
PLUMBING**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

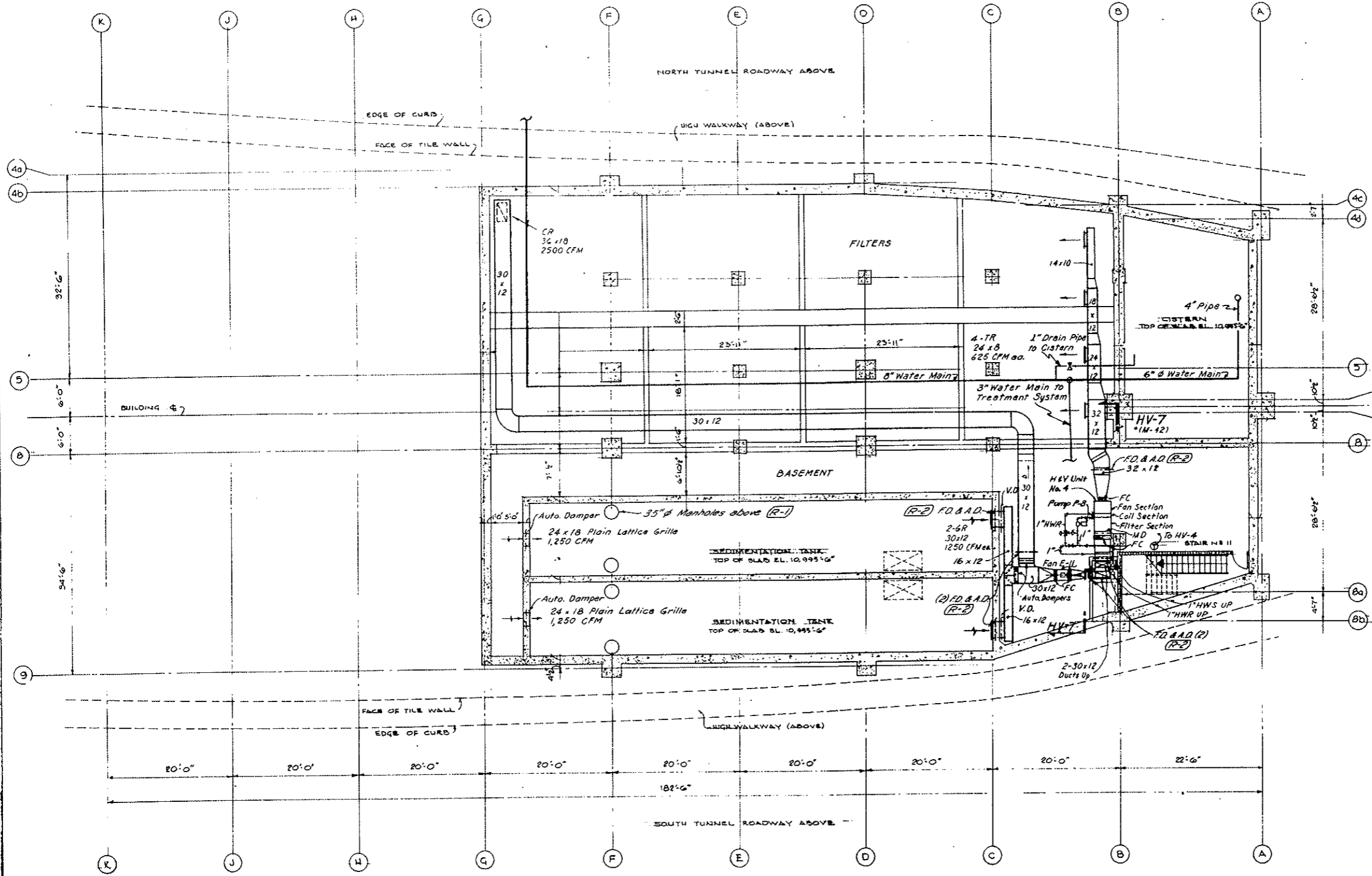
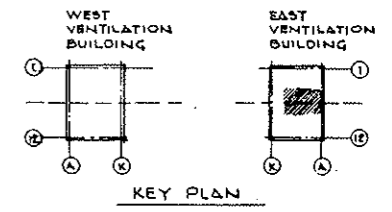
DESIGNED: A. G.	RECOMMENDED: <i>[Signature]</i>
DRAWN: C. S.	CHECKED: <i>[Signature]</i>
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>

NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1967

DRAWING NO. **M-33**

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	226	326

AS CONSTRUCTED
REVISED DATE 10-26-73

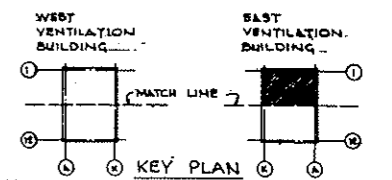


- NOTES:
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details see drawing M-44
 - For key to symbols, flow and control diagrams see drawing M-46
 - For building dimensions, layouts type of partitions, ceiling heights see architectural drawings

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL EAST VENTILATION BUILDING BASEMENT PLAN HEATING AND VENTILATING					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	E. P.	RECOMMENDED:	<i>[Signature]</i>		
DRAWN:	D. P.	CHECKED:	<i>[Signature]</i>		
CHECKED:	U. D. B.	SUBMITTED:	<i>[Signature]</i>		
NEW YORK, N. Y.		SCALE:	1/8 IN. = 1 FT.	DATE:	AUGUST 1967
					DRAWING NO. M-34

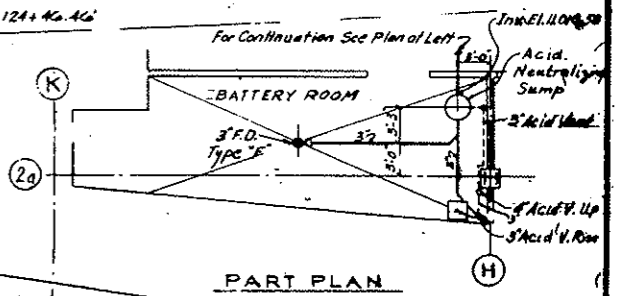
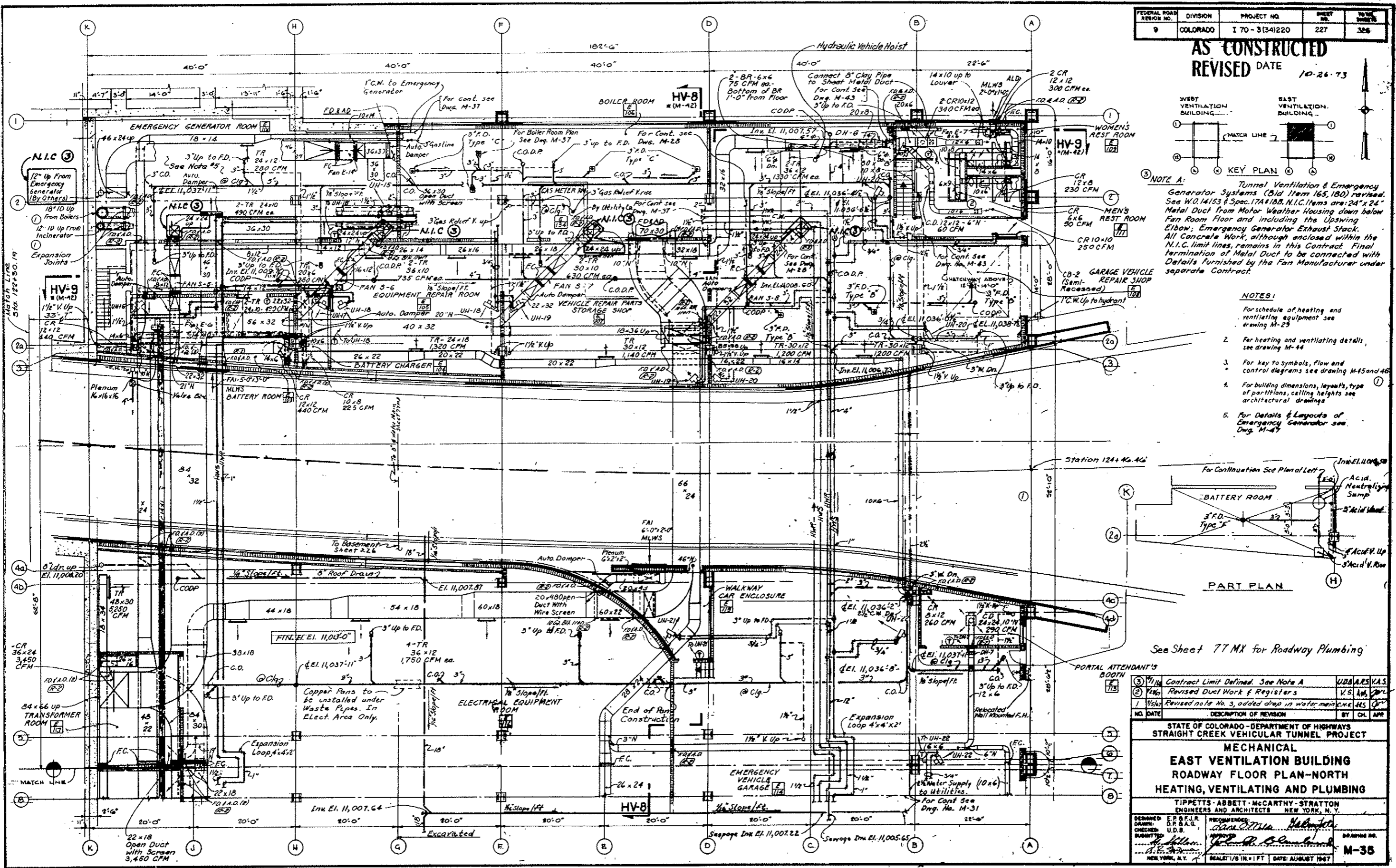
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	227	326

AS CONSTRUCTED
REVISED DATE 10-26-73



NOTE A: Tunnel Ventilation & Emergency Generator Systems (Bid Item 165, 180) revised. See W.O. 14153 & Spec. 17A11B. N.I.C. Items are 24" x 24" Metal Duct from Motor Weather Housing down below Fan Room Floor and including the Upstaging Elbow; Emergency Generator Exhaust Stack. All Concrete Work, although enclosed within the N.I.C. limit lines, remains in this Contract. Final termination of Metal Duct to be connected with Details furnished by the Fan Manufacturer under separate Contract.

- NOTES:**
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details, see drawing M-44
 - For key to symbols, flow and control diagrams see drawing M-45 and 46
 - For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings
 - For Details & Layouts of Emergency Generator see Dwg. M-47



See Sheet 77 MX for Roadway Plumbing

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1	1/14/73	Contract Limit Defined. See Note A	UDB	ARS	V.A.S.
2	1/26/73	Revised Duct Work & Registers	V.S.	AM	W.L.
3	1/26/73	Revised note No. 3, added drop in water main lines	AKS	CP	

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

MECHANICAL
EAST VENTILATION BUILDING
ROADWAY FLOOR PLAN-NORTH
HEATING, VENTILATING AND PLUMBING

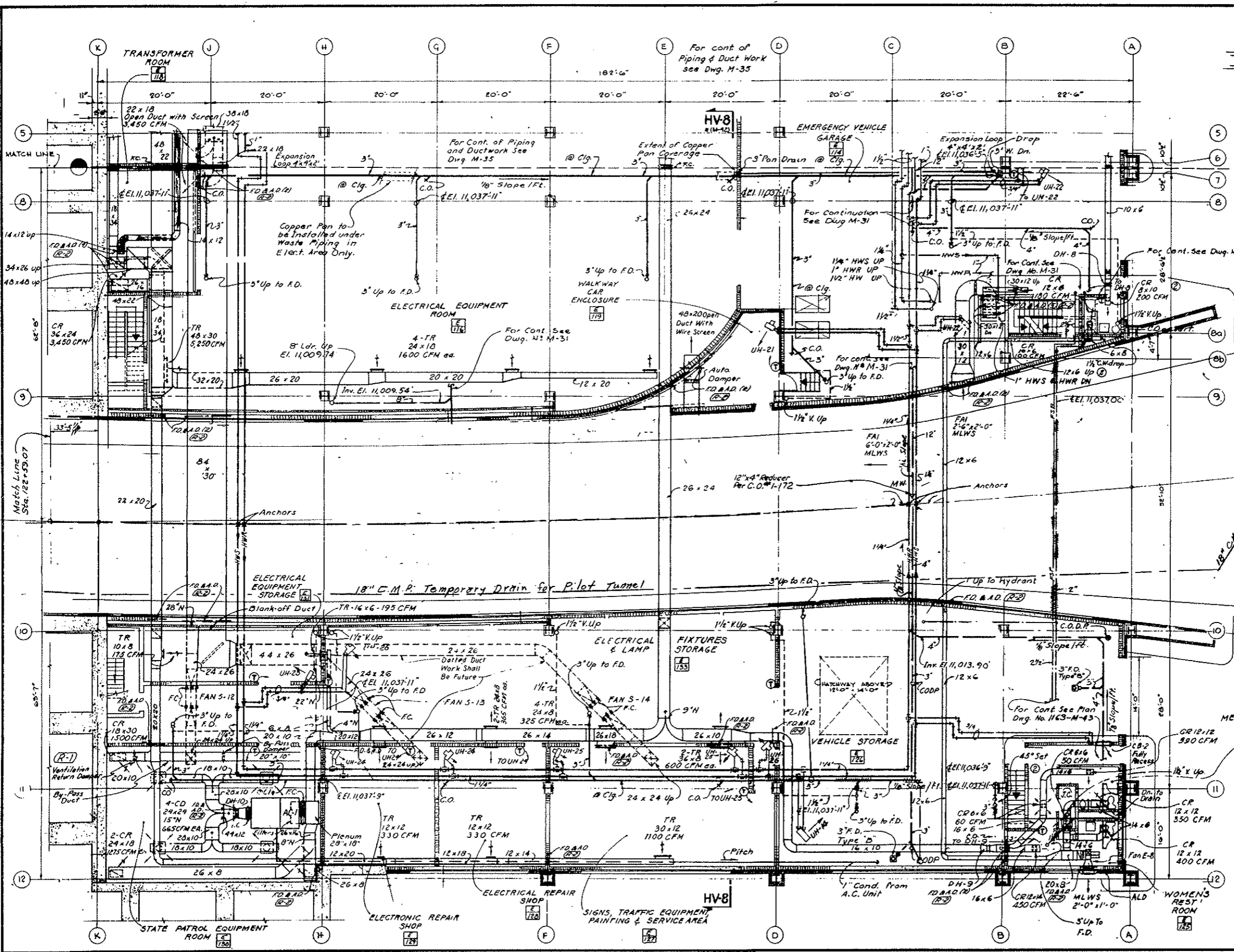
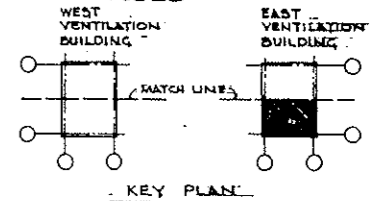
TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS
NEW YORK, N. Y.

DESIGNED BY: E.P.B.R. CHECKED BY: U.D.B. DRAWN BY: J. H. H. REVISIONS BY: J. H. H. DATE: AUGUST 1967

M-35

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	228	326

AS CONSTRUCTED
REVISED DATE 10-26-73



- NOTES:
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details see drawing M-44
 - For key to symbols, flow and control diagrams see drawing M-45 and 46
 - For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings

①	Revised Duct Work & Register	V.S. [Signature]			
②	Revised Note 3	V.S. [Signature]			
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
MECHANICAL
EAST VENTILATION BUILDING
ROADWAY FLOOR PLAN-SOUTH
HEATING, VENTILATING AND PLUMBING

TIPPETTS, ABBETT-McCARTHY-STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N.Y.

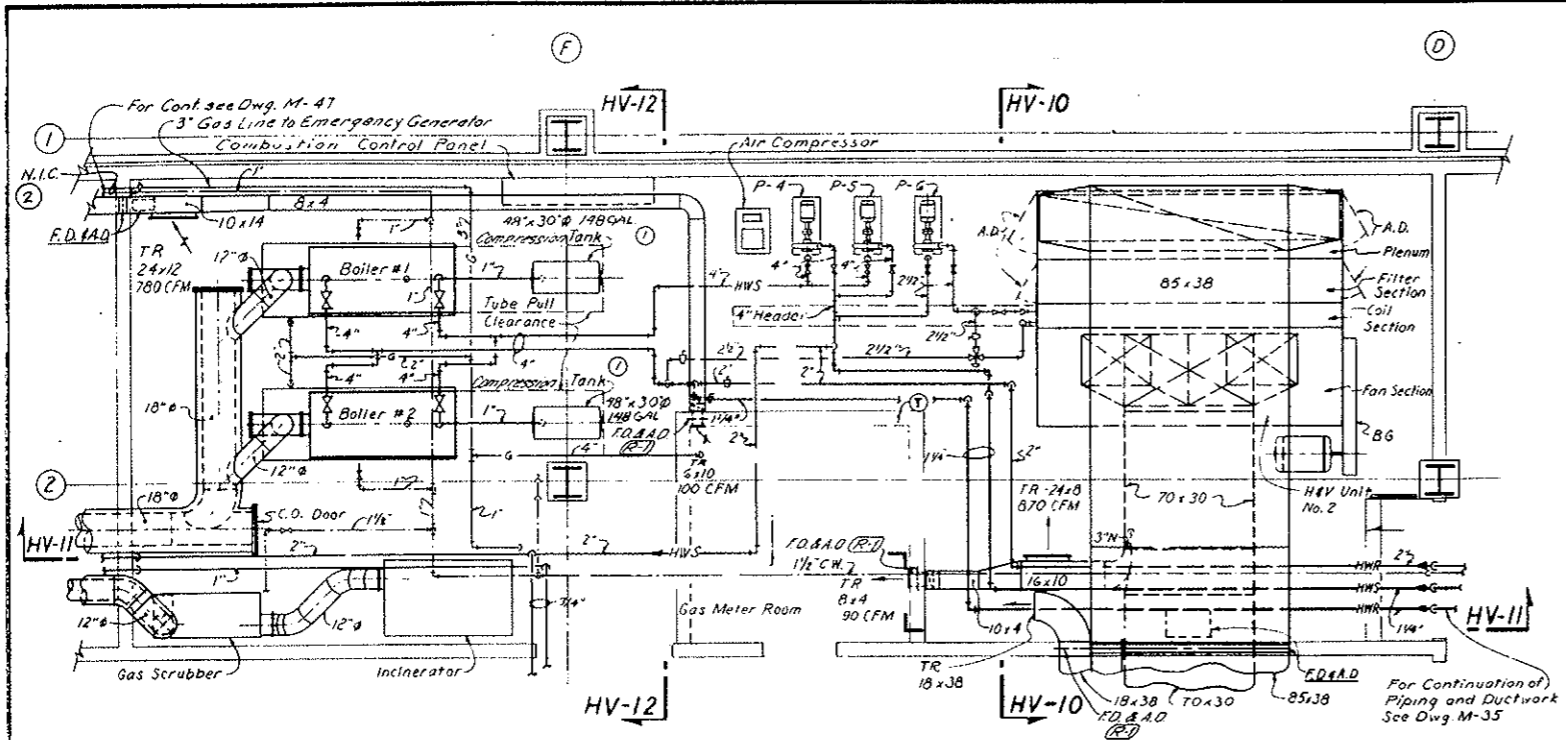
DESIGNED: E.P.F.J.R.
 DRAWN: D.P.
 CHECKED: U.D.B.A.G.
 SUBMITTED: [Signature]
 NEW YORK, N.Y.

RECOMMENDED: [Signature]
 APPROVED: [Signature]
 DATE: AUGUST 1967

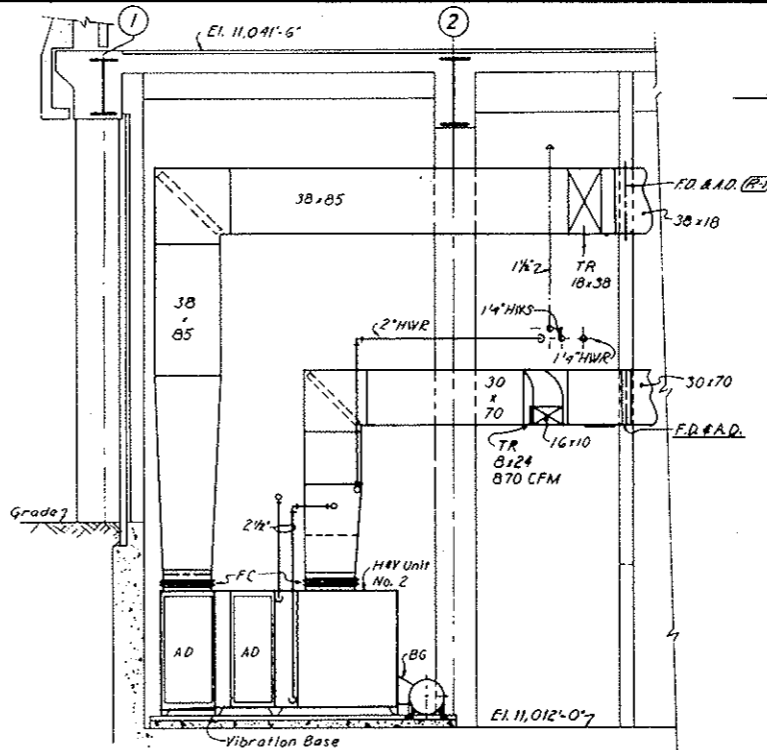
DRAWING NO. **M-36**

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	229	326

AS CONSTRUCTED
DATE 7-26-57

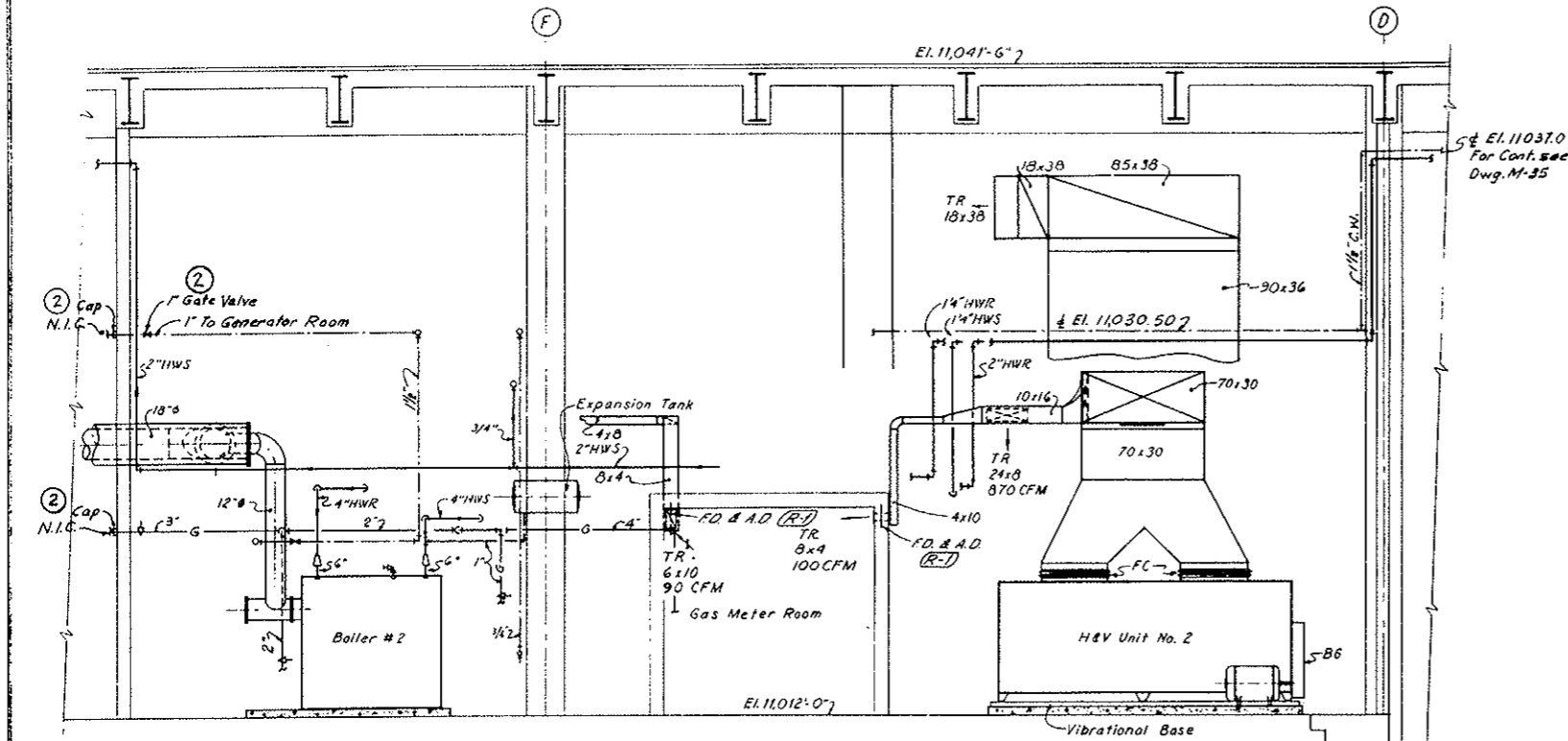


BOILER ROOM PLAN

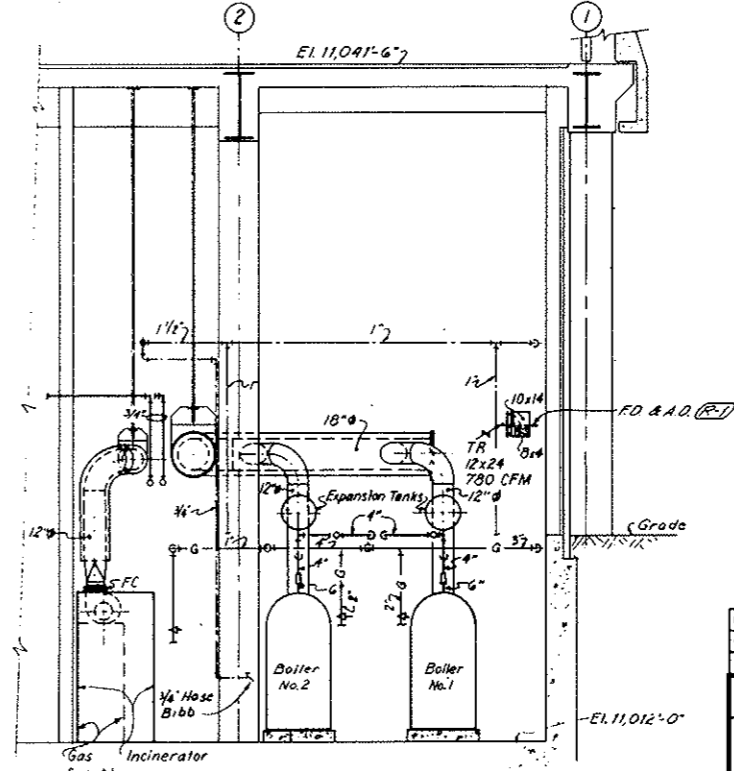


SECTION HV-10

Note A
Emergency Generator System (Bid Item 130)
Revised - See W.O. 1155 & Spec. 10B
N.I.C. Item is: 1" C.W. & 3" Gas
piping inside Emergency Generator
Room.
Add Item is: 1" C.W. & 3" Gas
Caps; 1" C.W. Gate Valve.



SECTION HV-II

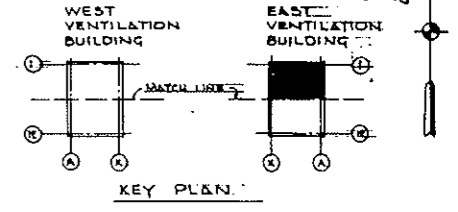


SECTION HV-12

② 1/4" Contract Limit defined. See Note A	S.M. M.S. V.A.3
① 1/4" Revised Expansion to Compression Tank	V.S. A.S. 1/2"
NO. DATE	DESCRIPTION OF REVISION
	BY CH. APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT	
MECHANICAL	
EAST VENTILATION BUILDING	
BOILER ROOM	
HEATING, VENTILATING AND PLUMBING	
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.	
DESIGNED: A.G.B.E.P.	RECOMMENDED: <i>John A. Brennan</i>
DRAWN: D.P.	CHECKED: U.O.B.
SUBMITTED: <i>A.R. Sullivan</i>	APPROVED: <i>John A. Brennan</i>
NEW YORK, N.Y.	SCALE: 1/4" IN. = 1' FT. DATE: AUGUST 1967
	DRAWING NO. M-37

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3134220	230	326

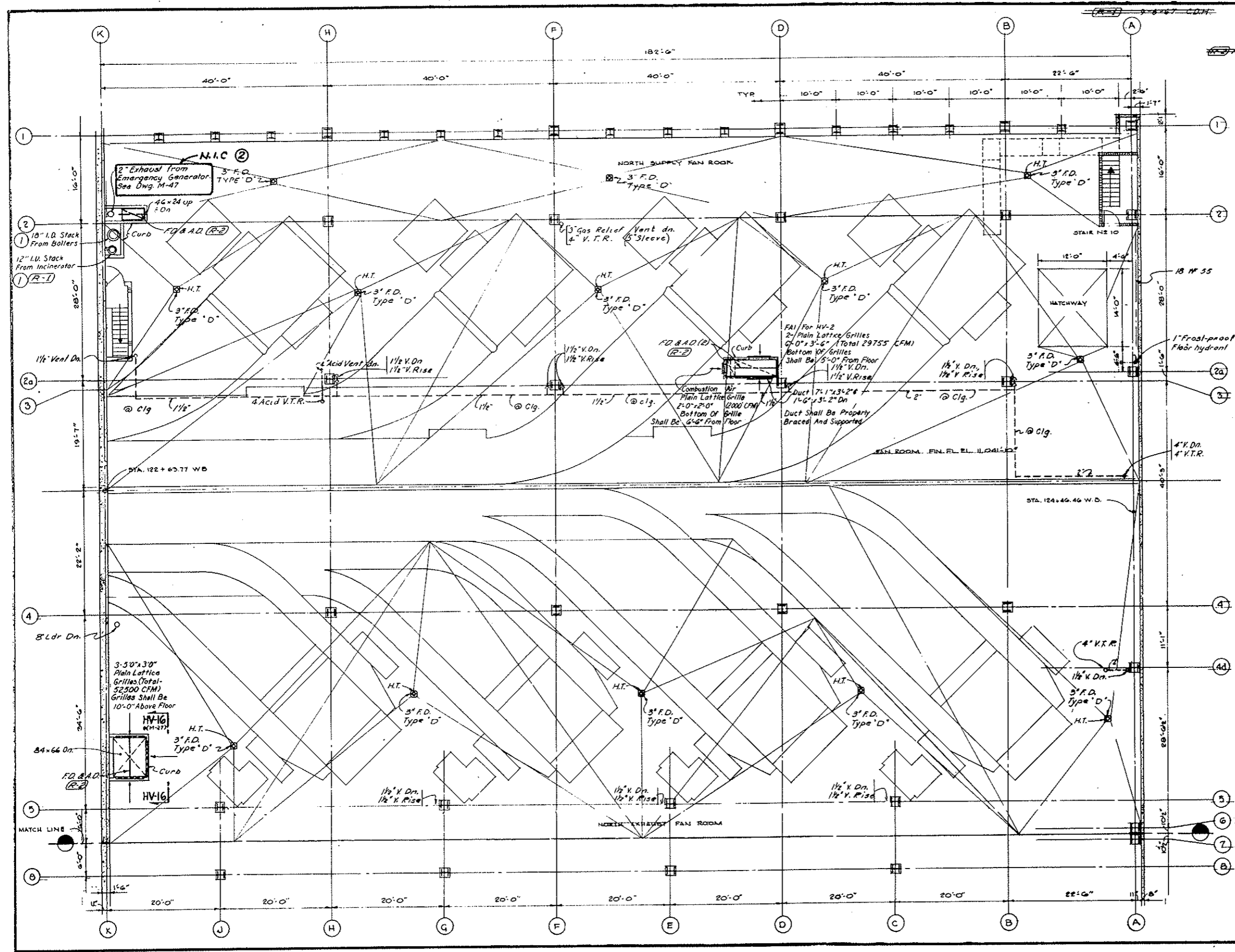
**AS CONSTRUCTED
NO REVISIONS** DATE 10-26-73



- NOTES:
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details see drawing M-44
 - For key to symbols, flow and control diagrams see drawing M-45 and 46
 - For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings

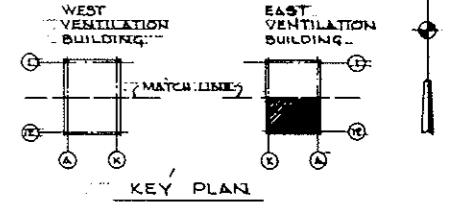
(2) (A) Emergency Generator System (Bid Item 100) revised. See H.O. 14/53 & Spec. 78B. N.I.C. Item 10 - Emergency Generator Exhaust Stack.

② 1/15/68	Contract Limit Defined. See Note A	UOA	ARS	VA.3
1/9/68	Revised Notes	V.S.	NS	CL
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK. APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
MECHANICAL EAST VENTILATION BUILDING FAN ROOM FLOOR PLAN-NORTH HEATING, VENTILATING AND PLUMBING				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED:	E. P. & J. R.	RECOMMENDED:	San D. Smith	DATE:
DRAWN:	D. R. & A. G.	CHECKED:	U. D. S.	APPROVED:
SUBMITTED:	A. B. S.	DATE:	AUGUST 1967	SCALE:
NEW YORK, N. Y.				SCALE: 1/8 IN. = 1 FT. DATE: AUGUST 1967

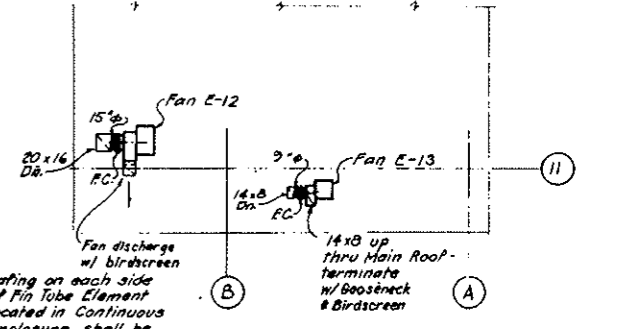
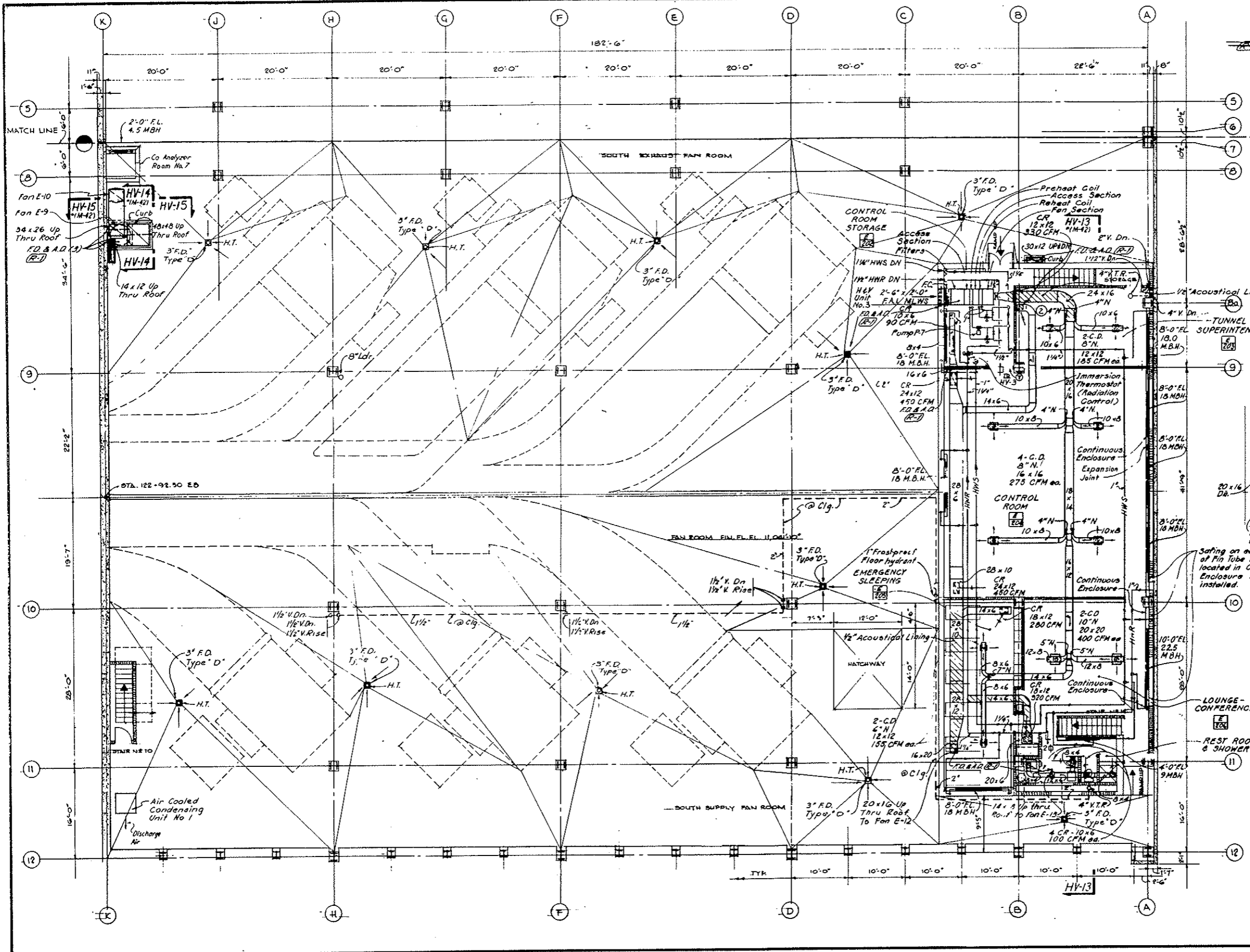


FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	231	326

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73



- NOTES:
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details see drawing M-45 and 46
 - For key to symbols, flow and control diagrams see drawing M-46
 - For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings



REVISIONS

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1	9/26	Revised CR Location	VS	MS	CV
2	9/26	Revised Notes	VS	MS	CV

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

MECHANICAL
EAST VENTILATION BUILDING
FAN ROOM FLOOR PLAN-SOUTH
HEATING, VENTILATING AND PLUMBING

TIPPETTS-ABBETT-McCARTHY-STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

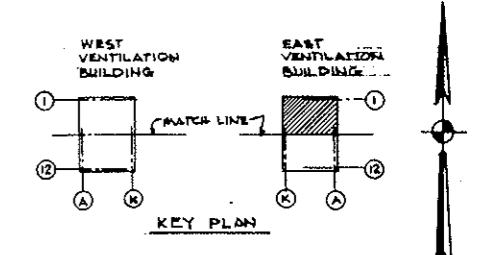
DESIGNED: F.J.R., B.E.P.
DRAWN: A.G.B., D.P.
CHECKED: U.D.B.
SUBMITTED: [Signature]
APPROVED: [Signature]
NEW YORK, N. Y.

RECOMMENDED: [Signature]
APPROVED: [Signature]
SCALE: 1/8 IN. = 1 FT. DATE: AUGUST 1967

DRAWING NO. **M-39**

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	232	326

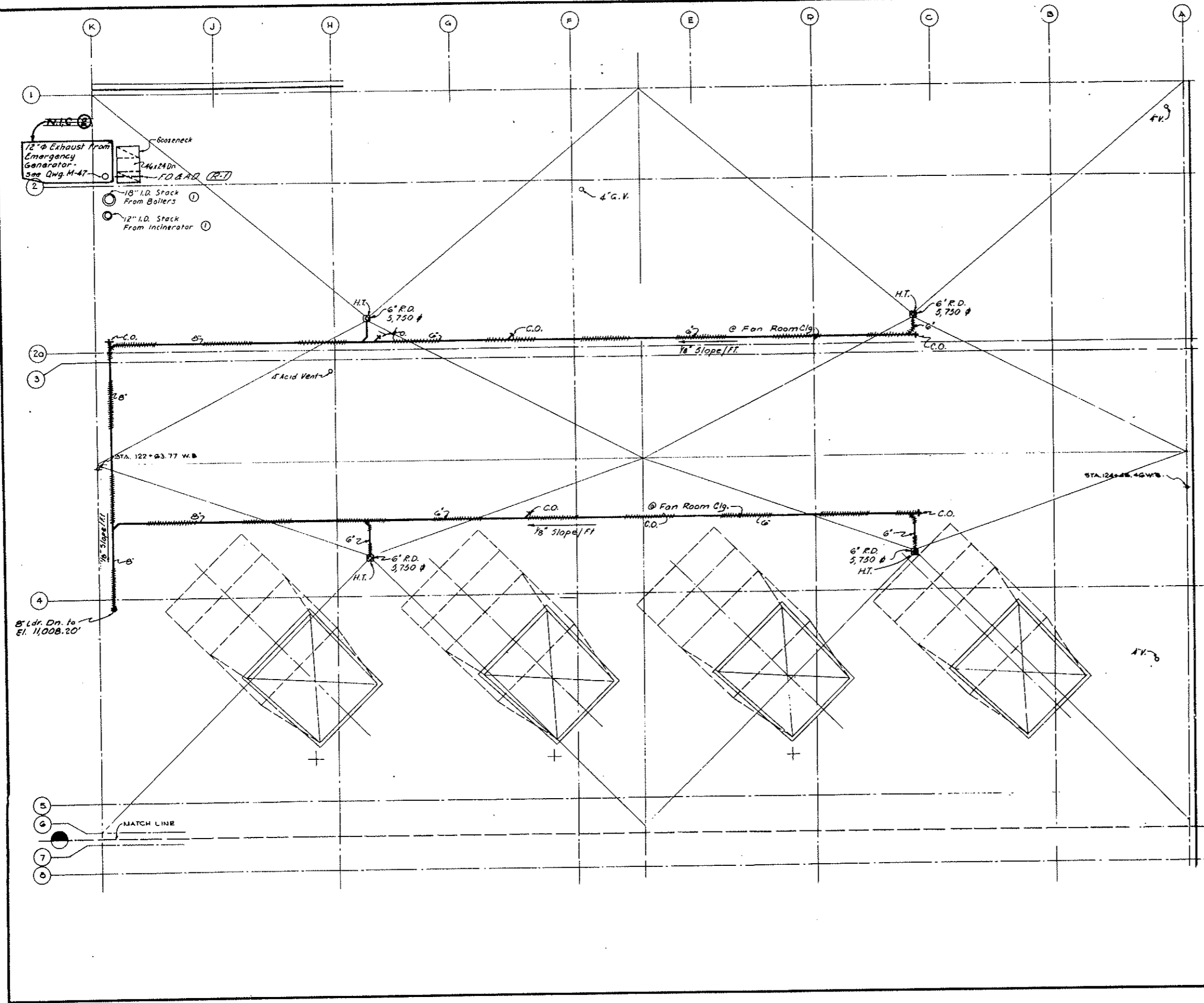
~~See Rev. 10-26-73 for Modification of I-70-3(34) 220-1-18-71~~



AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

NOTES:

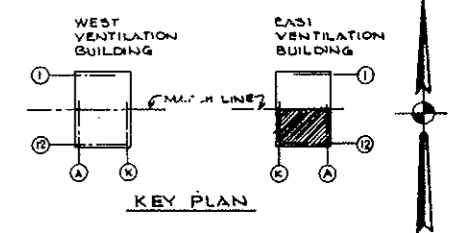
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details see drawing M-44
 - For key to symbols, flow and control diagrams see drawing M-45 and 46
 - For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings
- ② (A) Emergency Generator System (Old Item 100) revised. See M.O. 14153 & Spec. 10B. N.I.C. Item is Emergency Generator Exhaust Stack.



② 11/83	Contract Limit Defined. See Note A	J.D.A.R.C.V.A.S.	
① 10/18	Revised Notes	V.S. H.P.S. Q.P.	
NO.	DATE	DESCRIPTION OF REVISION	
		BY	
STATE OF COLORADO-DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
MECHANICAL EAST VENTILATION BUILDING ROOF PLAN-NORTH HEATING, VENTILATING AND PLUMBING			
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.			
DESIGNED: F.J.R. & E.P.	RECOMMENDED: <i>Frank B. Miller</i>	DRAWING NO. M-40	
DRAWN: A.G.B.D.P.	APPROVED: <i>John P. Blum</i>		
CHECKED: A.G.B.U.D.B.			
SUBMITTED: <i>H. Hutton</i>			
NEW YORK, N. Y.		SCALE: 1/8" IN. = 1 FT.	DATE: AUGUST 1967

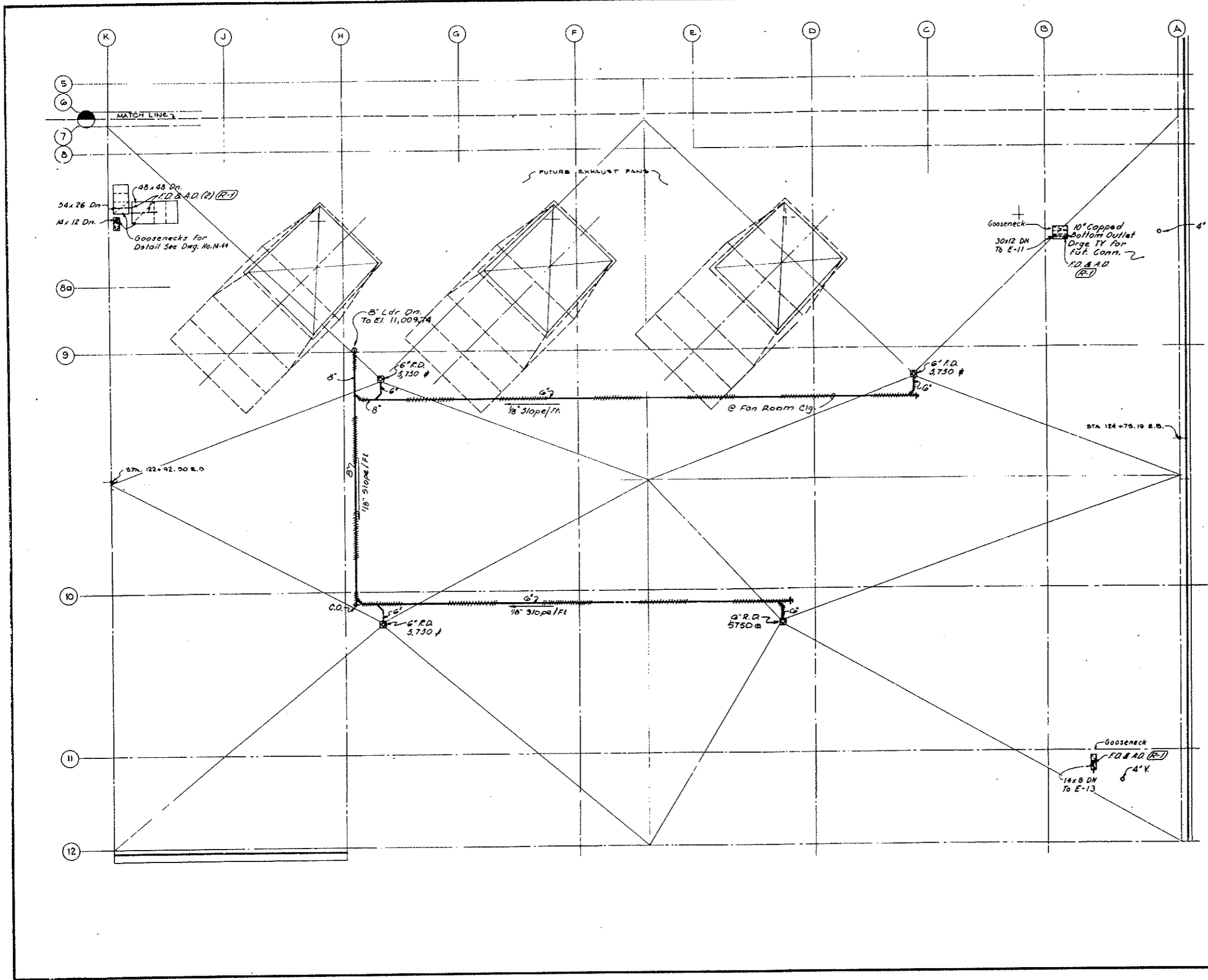
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	233	326

REVISED PLAN FOR THE MECHANICAL TUNNEL PROJECT



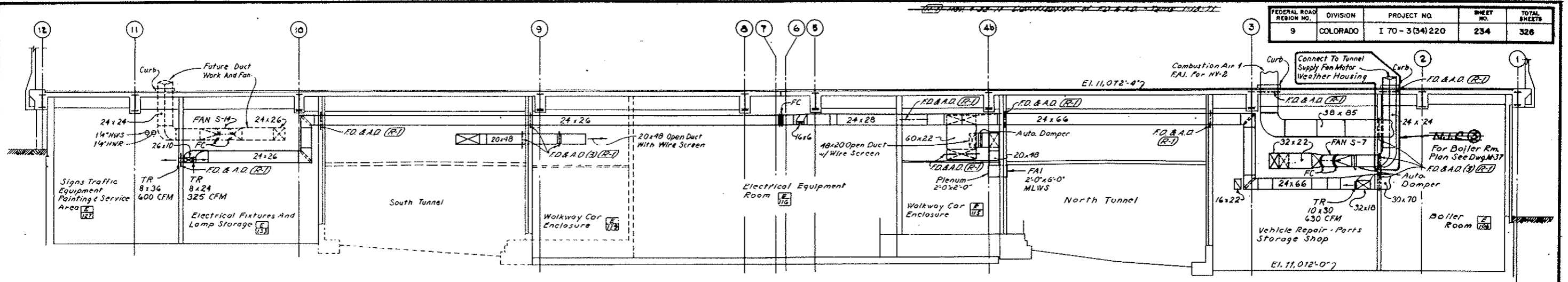
AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

- NOTES:
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details see drawing M-44
 - For key to symbols, flow and control diagrams see drawing M-46
 - For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings



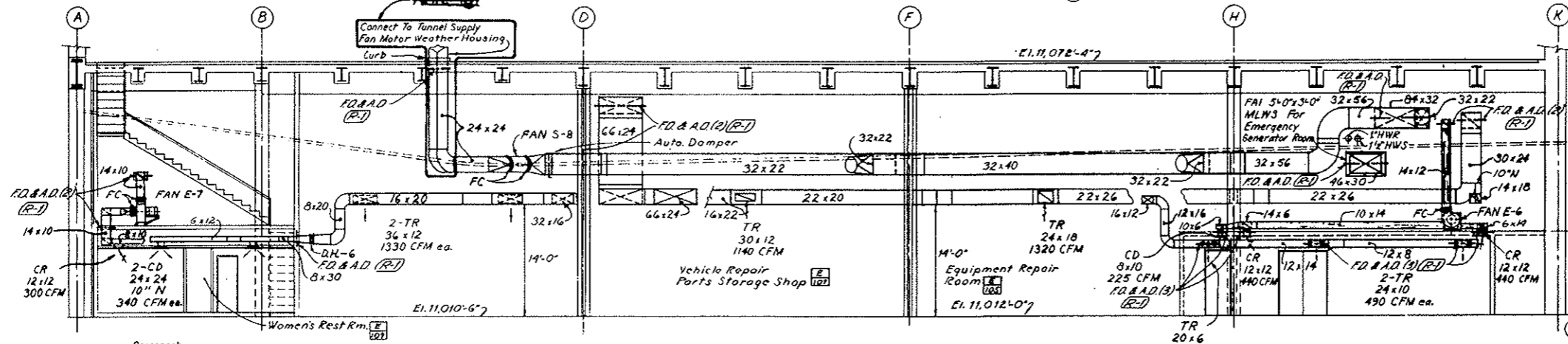
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL EAST VENTILATION BUILDING ROOF PLAN - SOUTH HEATING, VENTILATING AND PLUMBING					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	F.J.R. & E.P.	RECOMMENDED:	<i>Handwritten signatures</i>		
DRAWN:	A.G.D.P.	CHECKED:	<i>Handwritten signature</i>		
SUBMITTED:	A.G.D.P.	APPROVED:	<i>Handwritten signature</i>		
NEW YORK, N. Y.		SCALE:	1/8 IN. = 1 FT.	DATE:	AUGUST 1967
					DRAWING NO. M-41

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(5) 220	254	326

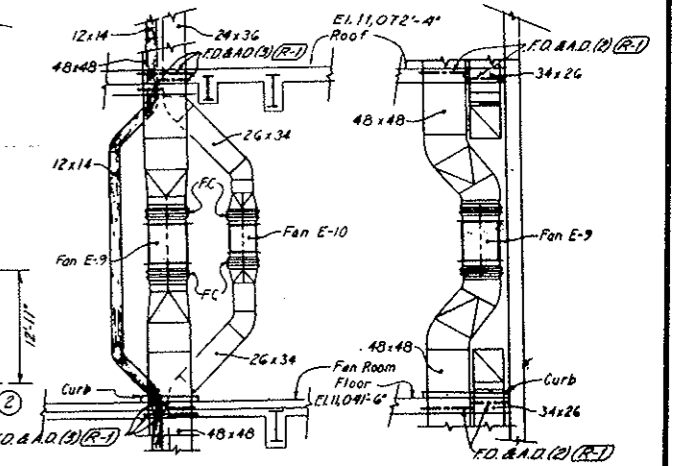


SECTION HV-8 (M-35)
SCALE 1/8" = 1'-0"

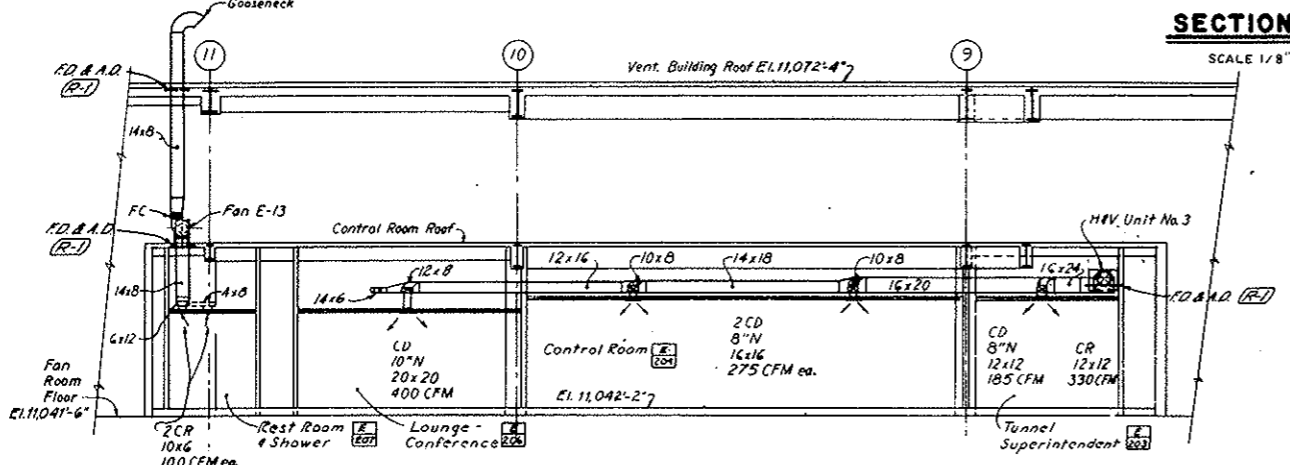
AS CONSTRUCTED
REVISED DATE 10-26-73



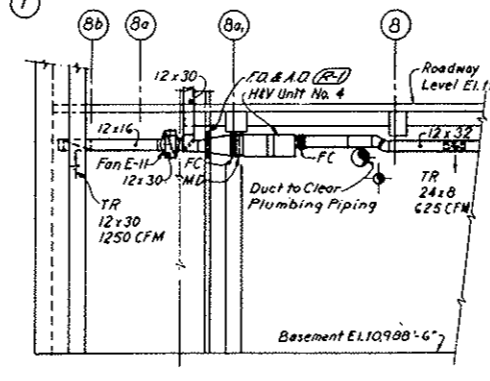
SECTION HV-9 (M-35)
SCALE 1/8" = 1'-0"



SECTION HV-14 (M-39) SCALE 1/8" = 1'-0"
SECTION HV-15 (M-39) SCALE 1/8" = 1'-0"



SECTION HV-13 (M-39)
SCALE 1/8" = 1'-0"



SECTION HV-7 (M-34)
SCALE 1/8" = 1'-0"

NOTE A:
Tunnel Ventilation System (Bid Item 160) revised. See W.G. 14153 & Spec. 17A. N.I.C. Hams are 24" x 24" Metal Duct from Motor Weather Housing down below Fan Room Floor and including the Upswing Elbow. All Concrete Work, although enclosed within the N.I.C. Unit lines remains in this Contract. Final termination of Metal Duct to be with Metal Duct N.I.C. shall be coordinated with Details Furnished by the Fan Manufacturer under separate Contract.

- NOTES:**
- For schedule of heating and ventilating equipment see drawing M-29
 - For heating and ventilating details see drawing M-44
 - For key to symbols, flow and control diagrams see drawing M-46
 - For building dimensions, layouts, type of partitions, ceiling heights see architectural drawings

③	1/14	Contract Limit defined. See Note	U.D.B.	V.A.S.
②	1/10	Section HV-13 & HV-9	Y.S.	AD
①	1/10	Added Scales & Ref. Dwg & Revised Notes	V.S.	AD
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK. APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**MECHANICAL
EAST VENTILATION BUILDING
SECTIONS
HEATING AND VENTILATING**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

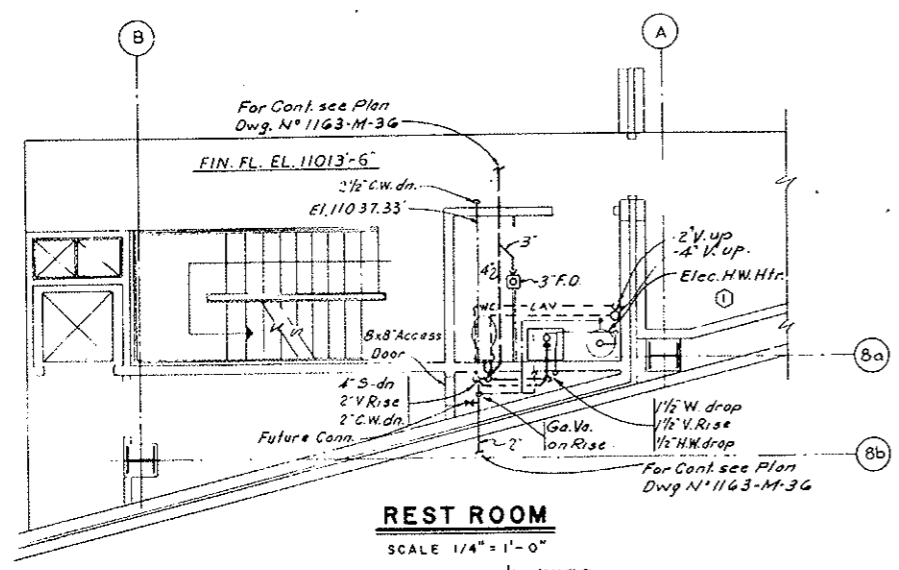
DESIGNED: E.P.
DRAWN: D.P.
CHECKED: O.D.B.
SUBMITTED: A.E.

RECOMMENDED: [Signature]
APPROVED: [Signature]

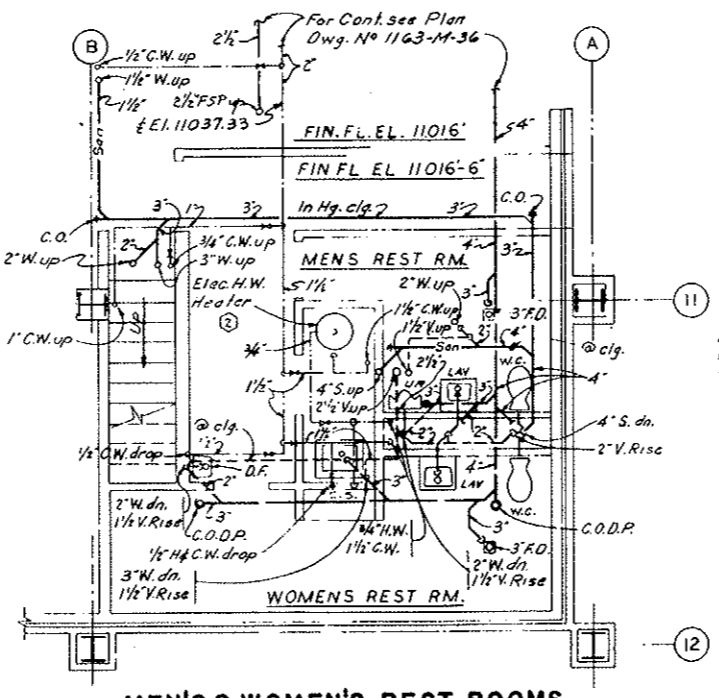
DATE: AUGUST 1967

DRAWING NO. **M-42**

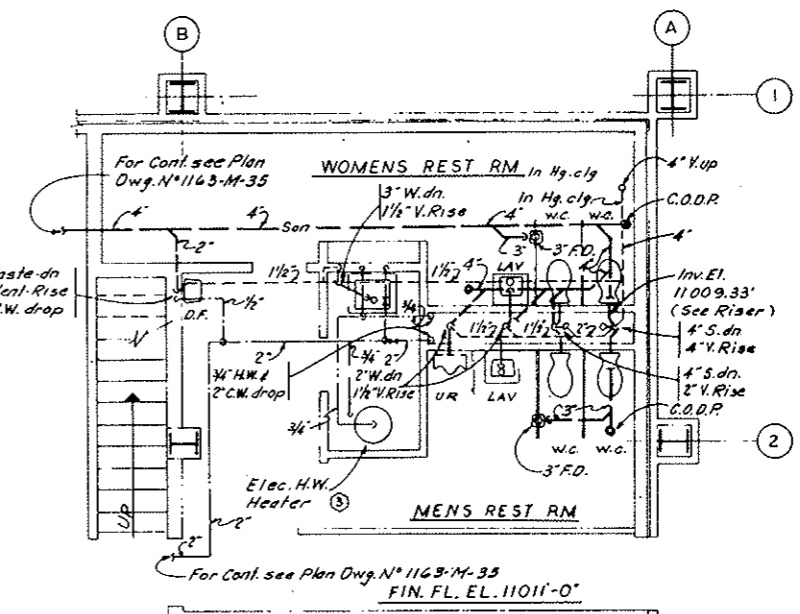
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	235	326



REST ROOM
SCALE 1/4" = 1'-0"



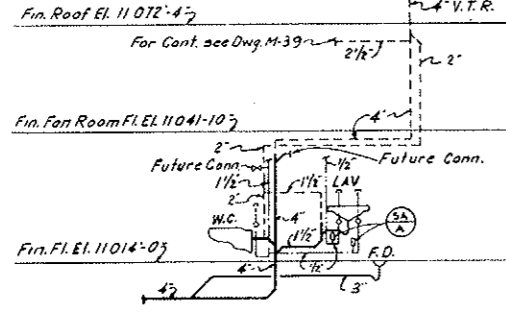
MEN'S & WOMEN'S REST ROOMS
SCALE 1/4" = 1'-0"



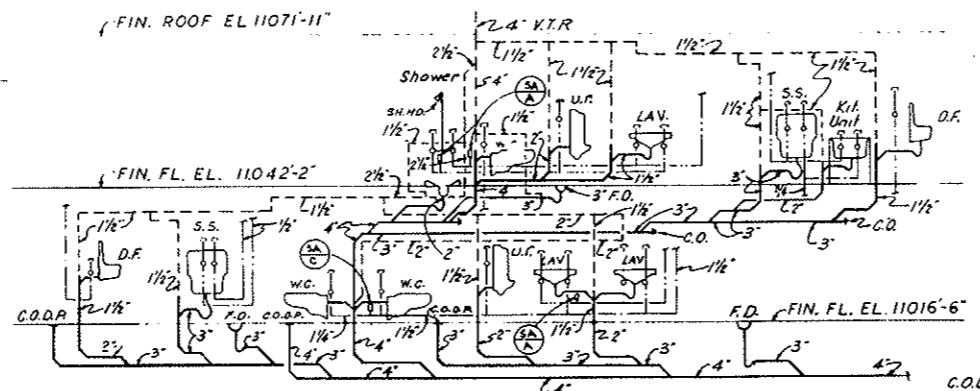
MEN'S & WOMEN'S REST ROOMS
SCALE 1/4" = 1'-0"

AS CONSTRUCTED
NO REVISIONS DATE 10-26-73

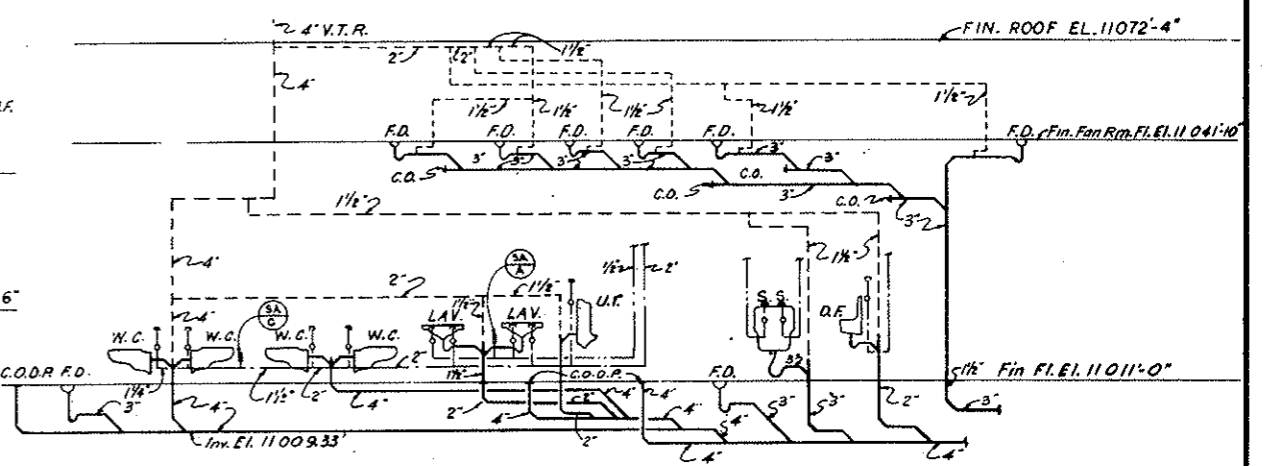
- NOTES**
1. For schematic Piping Diagram, Elec. H.W. Heaters see Dwg. N° M-45
 2. For schedules, legend and details see Dwg. N° M-45
 3. For Building dimensions, layouts, Ceiling heights and exact fixture locations see Architectural Dwg.



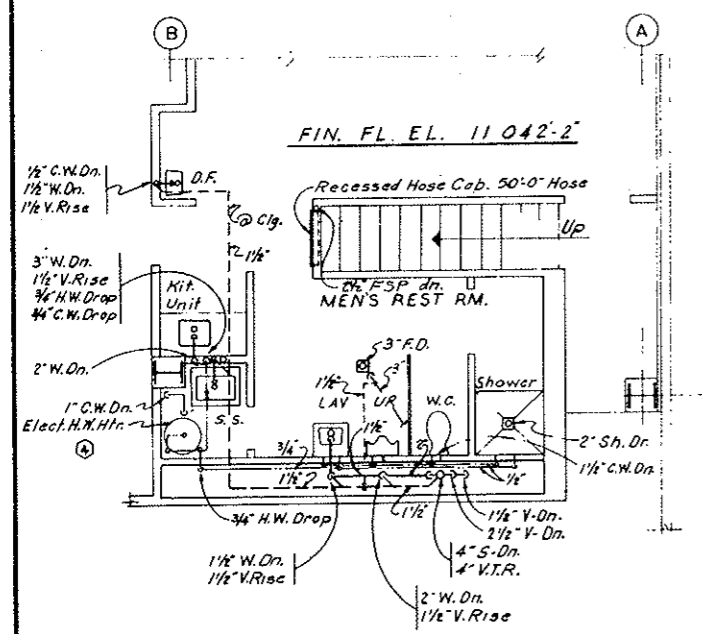
SANITARY RISER DIAGRAM



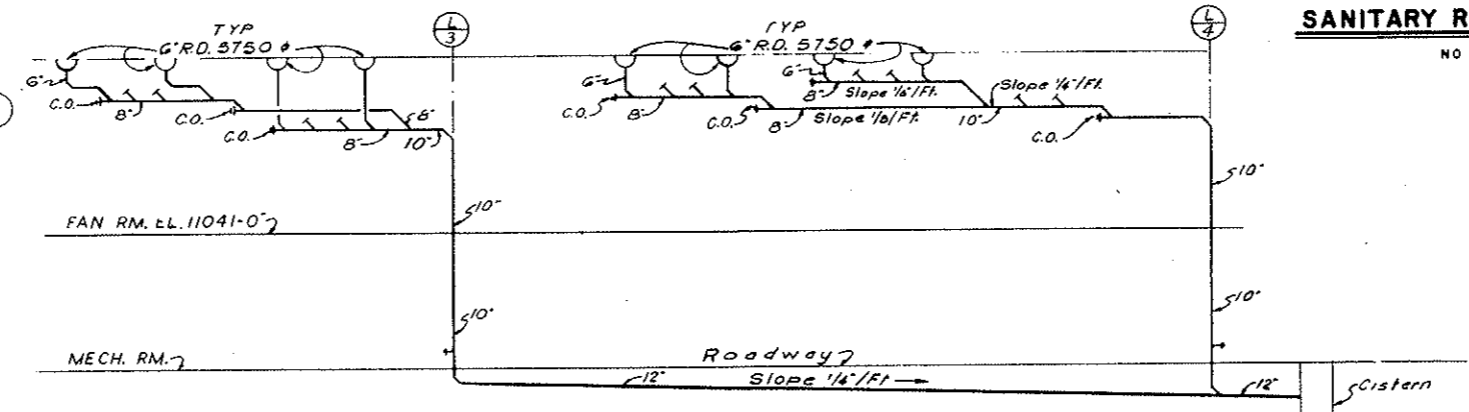
SANITARY RISER DIAGRAM
NO SCALE



SANITARY RISER DIAGRAM
NO SCALE



MEN'S REST ROOM
SCALE 1/4" = 1'-0"



STORM RISER DIAGRAM
NO SCALE

NO.	DATE	Added Title	DESCRIPTION OF REVISION	V.S.	MS	GR

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**MECHANICAL
EAST VENTILATION BUILDING
PLANS AND RISER DIAGRAMS
PLUMBING**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: F. J. R.
DRAWN: C. M. S.
CHECKED: S. M.
SUBMITTED: A. Haller

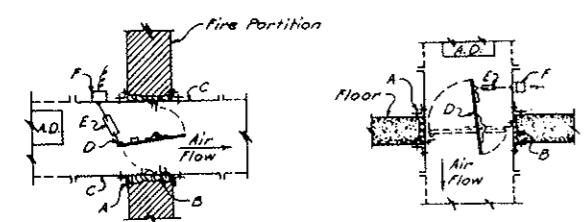
RECOMMENDED: [Signature]
APPROVED: [Signature]

DRAWING NO. **M-43**

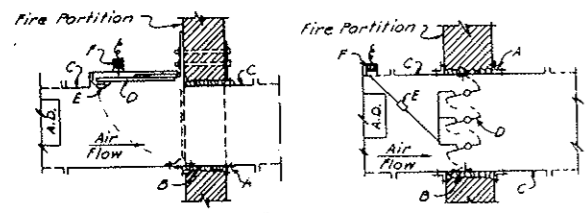
SCALE: AS NOTED DATE: AUGUST 1967

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-334 220	236	326

AS CONSTRUCTED
NO REVISIONS DATE 10-26-72



DAMPER AT PARTITION **DAMPER AT FLOOR**
(Reverse Damper with up-flowing Air)

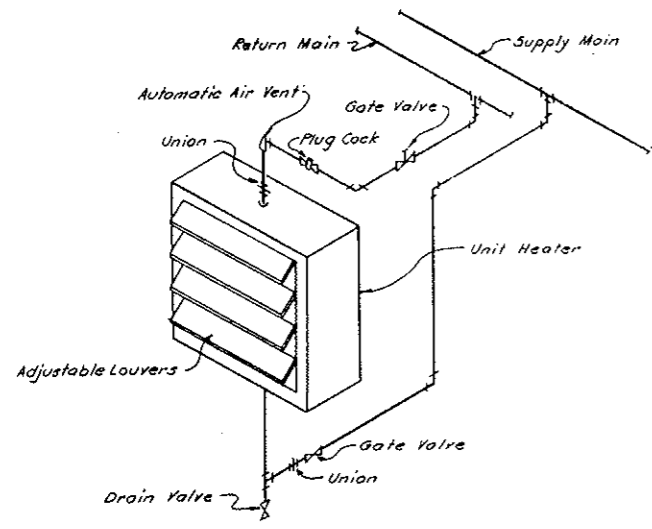


HINGED DAMPER AT PARTITION **LOUVER TYPE DAMPER**

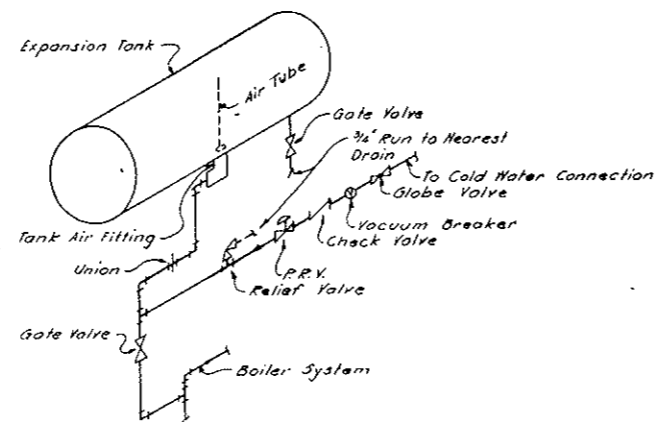
LEGEND

- A - Galvanized Angles 1 1/2" x 1 1/2" x 1/8" (Min. Size) Entire Perimeter of Duct Bolted to Duct and Wall on Both Sides of Fire Partition.
 - B - Asbestos or Mineral Wool Chaulking.
 - C - #10 GA. Galvanized Sleeve Extended 6" Beyond Fire Partition.
 - D - Automatic Damper, Hinged Off-Center, Weighted and with 1" Angle Stop on all Sides and Spring Catch. Corrosion Resistant Bearings, Springs and Hinge Pins.
 - E - Fusible Link with Temperature Rating of 30°F Above Duct Operating Temperature.
 - F - Electrical Limit Switch to Stop Fan When Damper Closes.
- NOTE:** In Ducts Over 18" in Depth, Use Louver Type Damper. Dampers Shall be Installed with 6" Max. Width of Formed Edge Blades. All Dampers Shall Meet Underwriters Requirements Including Painting. Use Galv. Iron Dampers up to 18"; No. 16 GA. 19" to 36"; No. 12 GA. 37" and Up, No. 7 GA.

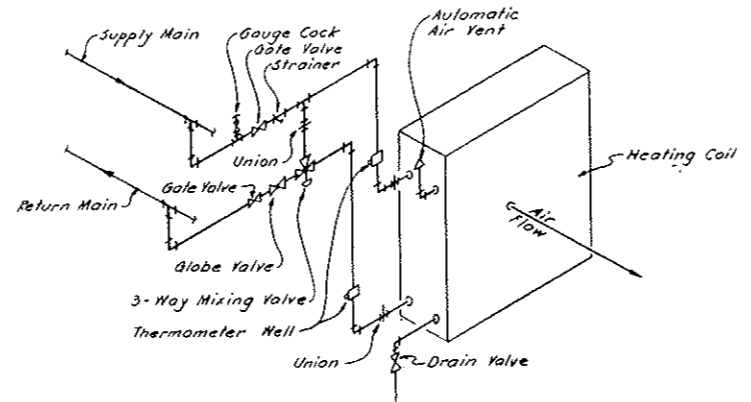
TYPICAL FIRE DAMPER DETAILS



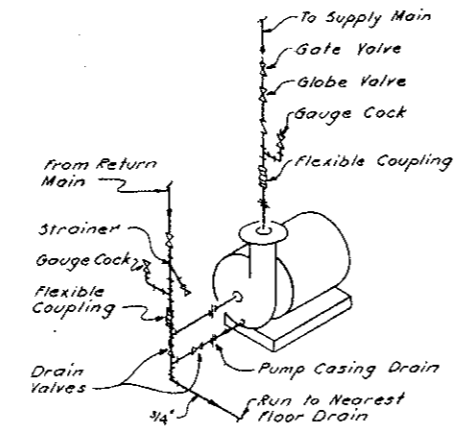
TYPICAL UNIT HEATER PIPING CONNECTION



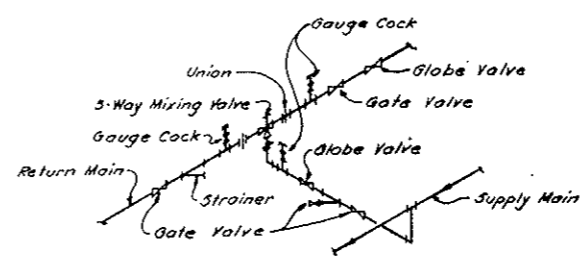
TYPICAL PIPING CONNECTION FOR EXPANSION TANK



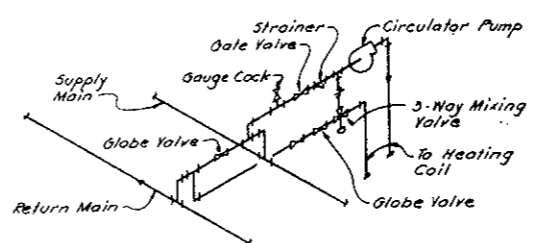
TYPICAL PIPING CONNECTION FOR REHEAT COILS



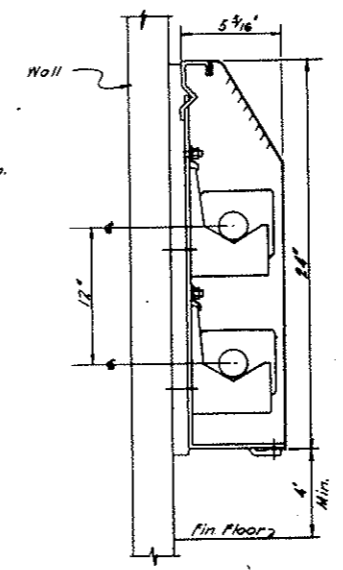
TYPICAL PIPING CONNECTION FOR PUMPS



TYPICAL PIPING CONNECTION FOR RADIATION ZONE CONTROL

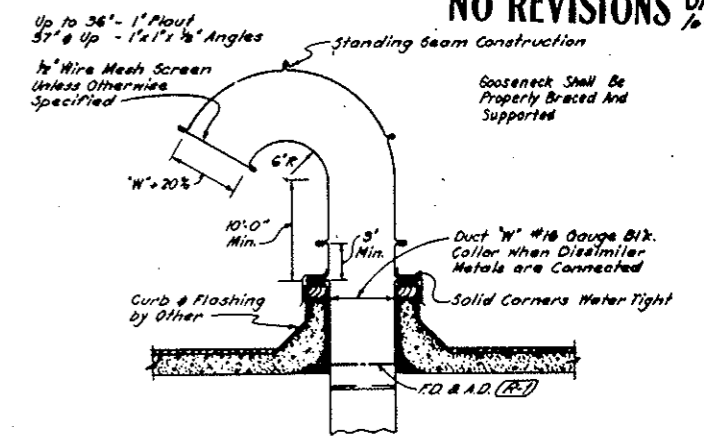


TYPICAL PIPING CONNECTION FOR HEATING AND VENTILATING UNITS

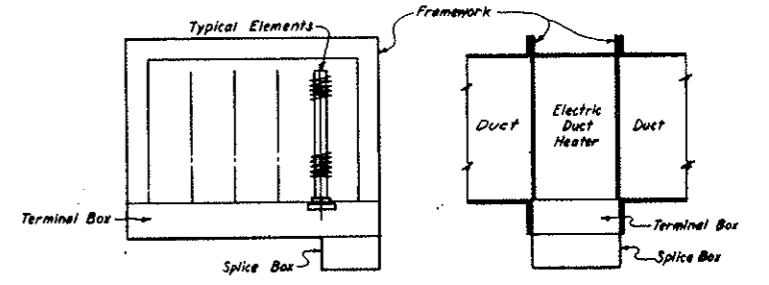


DETAIL OF FIN TUBE RADIATION

NOTE: Siding on each Side of Fin Tube Element Located in Continuous Enclosure Shall be Installed.



DETAIL OF GOOSENECK



ELECTRIC DUCT HEATER DETAIL

Fin Tube Radiation
 1 1/2" I.P.S. - 4 1/4" x 4 1/4" Fin
 .020 Fin Thickness
 40 Fins Per Foot
 (2) Two Row Element
 2250 BTU/Hr/Ft

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT MECHANICAL EAST VENTILATION BUILDING DETAILS HEATING AND VENTILATING TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	E. P.	RECOMMENDED BY			
DRAWN BY	M. M.	CHECKED BY			
CHECKED BY	U. D. B.	SUBMITTED BY			
NEW YORK, N. Y.		SCALE: NO SCALE	DATE: AUGUST 1967		DRAWING NO. M-44

AS CONSTRUCTED
NO REVISIONS DATE 10-21-73

GENERAL NOTES

- Final location of all plumbing fixtures & equipment shall be as indicated or dimensioned on arch. drawings.
- All work shall be installed in accordance with the requirements of the Denver Building Code & shall meet the approval of any town or county agency having jurisdiction. Where required, the work installed shall meet the approval of the local Gas Co. Servicing the project.
- All storm & sanitary house drains & sewers shall be pitched a minimum of 1/8 per ft. & branches @ 1/4".
- All piping shall be run concealed in hung ceilings, pipe space, furred out space or wall unless indicated otherwise.
- Pitch all horizontal waterlines down in the direction of proper drainage to drain cocks at the minimum rate of 1" in 40'-0".
- Cleanouts for all horizontal drainage piping 4" or less shall be spaced 50'-0" max. Cleanouts for all horizontal drainage piping 5" and greater shall be spaced 100'-0" max.
- All indirect wastes shall terminate 1" min. above waste receptor.
- Final location of all gas, hot, cold & waste connections for equipment and plumbing fixtures, shall be co-ordinated with manufacturers furnishing the equipment.
- Unless otherwise indicated or noted all hot and cold water branches serving more than (2) fixtures shall be run full size to last fixture.
- Contractor shall secure all permits & approvals necessary & required to perform the work indicated.
- Contractor shall co-ordinate his work with the work of other trades to avoid interferences & shall obtain final location of all water, waste & gas outlets required by other trades for their equip.
- Contractor shall prepare shop drawings indicating location & elevation of all piping passing thru beams. Shop drawing shall be submitted for approval before commencing any work. This work shall be co-ordinated with the sleeves & holes req'd. by other trades so that no interferences occur.
- Provide vacuum breaker on all water lines where hose bibbs, incinerators, boilers, etc. are connected.
- All work shall be co-ordinated so that all lines entering a leaving building will be properly co-ordinated as to location & elevation.
- Provide a cleanout of the base of all storm & sanitary stacks.
- Architectural dimensions shown on all plumbing dngs. are not to be used for construction. Contractor shall refer to architectural drawings for same.
- All piping in areas or spaces which are accessible to servicemen shall be run to allow clear passage for servicing.
- Provide a shock arrester on each water line controlled by a solenoid valve, sized in accordance with manufacturers instructions.

PLUMBING EQUIPMENT SCHEDULE												
No.	EQUIPMENT	LOCATION	G.P.M.	H.D.	H.P.	R.R.M.	CYCLES	VOLTS	PHASE	STOR. GAL.	RECON. G.P.M.	REMARKS
1	Elect. H.W. Stor. Htr.	East Building El. 11,013'-6"						120	1	6	5	1 2500 Watts
2		East Building El. 11,013'-6"						120	1	6	10	1 2500 Watts
3		East Building El. 11,013'-6"						120	1	6	10	1 2500 Watts
4		East Building El. 11,013'-6"						20B	1	40	20	2 Upper 2000 Watts Lower 3000 Watts
5		West Building El. 11,013'-6"						120	1	6	10	1 2500 Watts
6		West Building El. 11,157'-0"						120	1	6	10	1 2500 Watts
7		West Building El. 11,157'-0"						120	1	6	10	1 2500 Watts
8	3" Submersible Duplex Pumps	Garage Pit East	50	13	1/2	1750	60	440	3			
9	3" Submersible Duplex Pumps	Garage Pit West	50	13	1/2	1750	60	440	3			
10	4" Submersible Duplex Pumps	Basement East	50	35	2	1750	60	440	3			
11	Submersible Duplex Pumps	Basement East	50	25	1 1/2	1750	60	440	3			
12	Sludge Pumps	Basement East	100	50	10	Shrocks	60	440	3			
13	Fresh Water Pumps	Roadway West	20	110	3	1750	60	440	3			
14	Cyclone Classifier	Vehicle Storage East			1	1750	60	440	3			
15	Sewage Ejector Duplex Pumps	Elect. Equip. Rm	50	15	3/4	1750	60	440	3			
16	Sludge Collector	Basement East			1/2	1750	60	440	3			
17	4 Submersible Duplex Pumps	Basement East	50	35	2	1750	60	440	3			Basement Drainage Sump Pumps

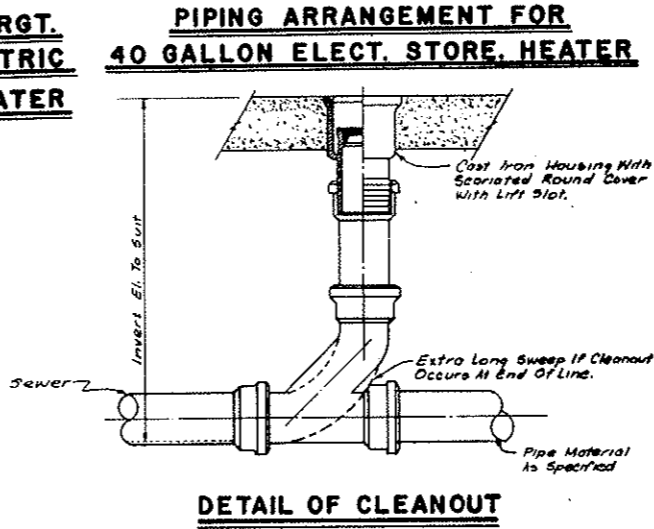
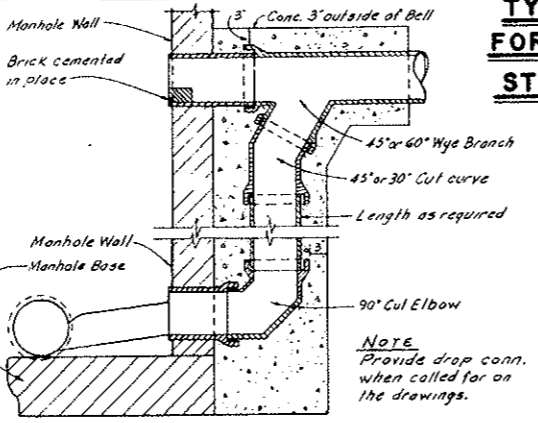
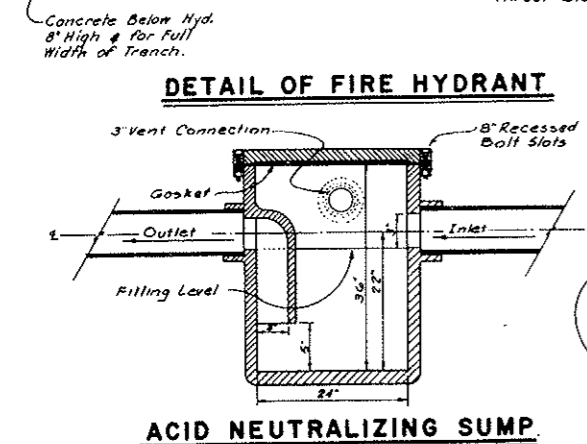
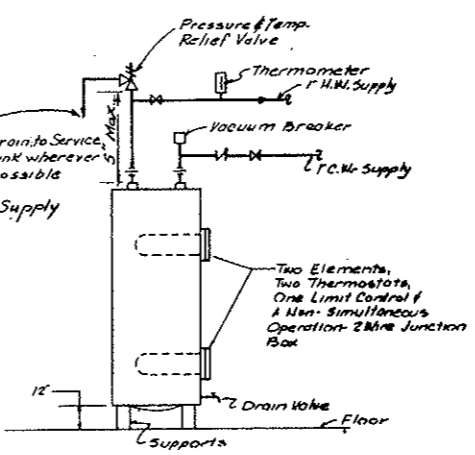
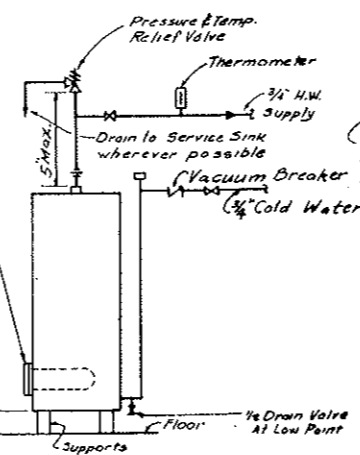
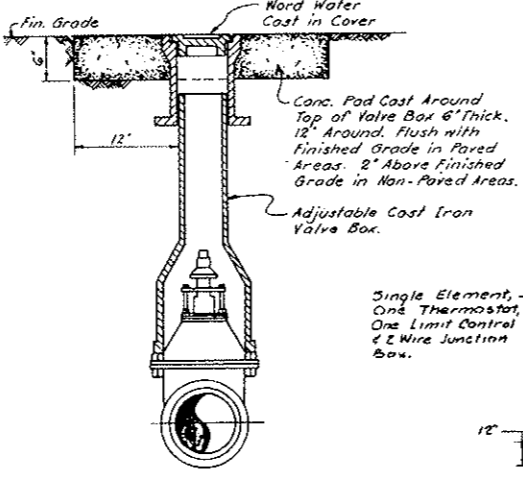
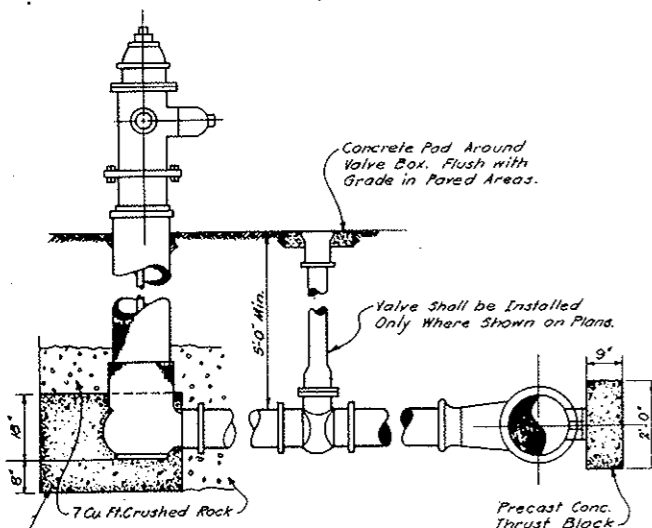
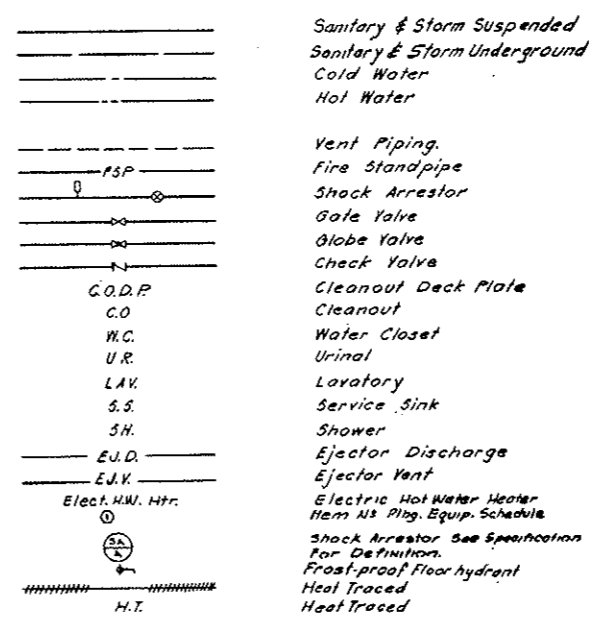
Note: A Total of four 4-inch submersible sump pumps shall be installed as shown on dwg. no. M-31 and specified in section 17C of the Specifications. This includes the two 4-inch pumps called for in 17C-02n(6)(a) [Line no. 10 above] plus the two described in Line No. 17 above.

SCHEDULE OF PLUMBING PIPE SIZES					
FIXTURE	SOIL	WASTE	VENT	HOT	COLD
Water Closet	4"	-	1 1/2"	-	1"
Urinal	-	2"	1 1/2"	-	3/4"
Lavatory	-	1 1/2"	1 1/2"	1/2"	1/2"
Service Sink	-	3"	1 1/2"	1/2"	1/2"
Shower	-	2"	1 1/2"	1/2"	1/2"
Drink Fountain	-	1 1/2"	1 1/2"	-	1/2"
Floor Drain	-	3"	-	-	-
Hose Bibb	-	-	-	-	3/4"

TUNNEL NOTES

- For details of fire hydrants in tunnel see Dwg. No. C2-46 - FH
- For details of seepage drain manholes see Dwg. No. C2-39 - MS
- For details of waste water manholes see Dwg. No. C2-41 - MW
- For details of catch basins in tunnel see Dwg. No. C2-41 - CB
- For details of catch basins at portal see Dwg. No. MS-1

LEGEND



NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
1		PLUMBING EQUIP. SCHEDULE - ADDED ITEM NO. 17			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

MECHANICAL VENTILATION BUILDINGS DETAILS AND SCHEDULES PLUMBING

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: A.G.S.M.
 DRAWN: C.S.M.W.
 CHECKED: S.M.
 SUBMITTED: [Signature]

RECOMMENDED: [Signature]
 APPROVED: [Signature]

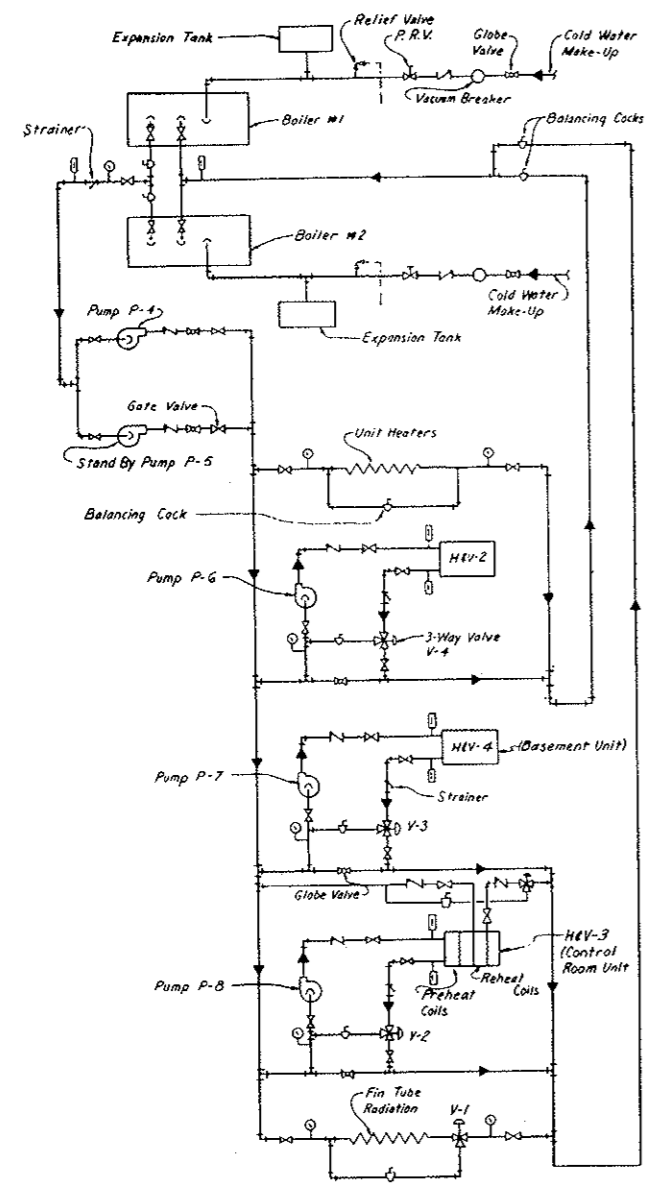
SCALE: NO SCALE | DATE: AUGUST 1967 | DRAWING NO. M-45

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	236	326

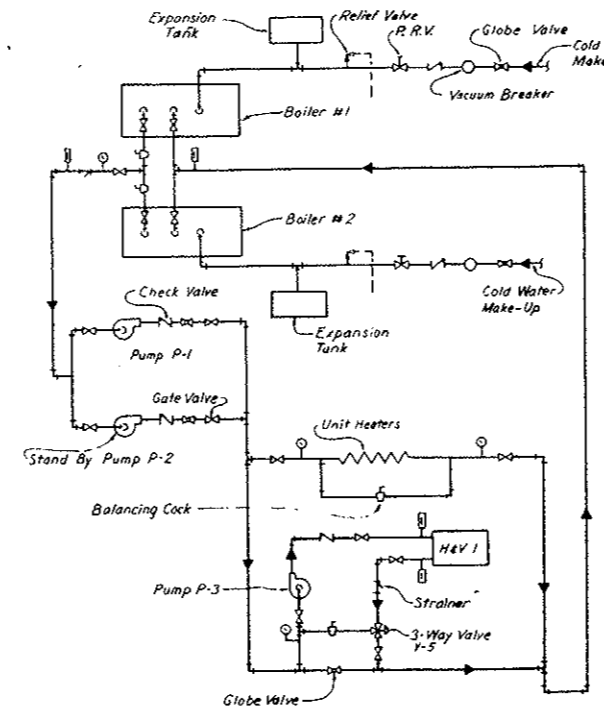
AS CONSTRUCTED
REVISED DATE 10-26-73

SYMBOL LIST

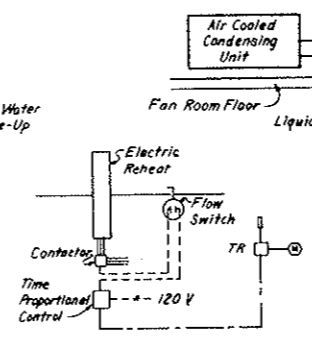
- HWS — HOT WATER HEATING SUPPLY
- HWR — HOT WATER HEATING RETURN
- - - V - - - VENT OR AIR RELIEF
- - - D - - - DRAIN
- G — GATE VALVE
- G — GLOBE VALVE
- B — BALANCING VALVE
- A — AUTOMATIC CONTROL VALVE
- S — AUTOMATIC 3-WAY CONTROL VALVE
- C — CHECK VALVE
- S — STRAINER
- A — AUTOMATIC AIR VENT
- V — VACUUM BREAKER
- J — PIPE EXPANSION JOINT
- T — THERMOMETER
- P — PRESSURE GAUGE
- U — UNION
- T — PRESSURE GAUGE TEST CONNECTION
- F — FLEXIBLE DUCT CONNECTION
- A — ACCESS DOOR
- M — MANUAL DAMPER
- A — AUTOMATIC DAMPER
- S — SPLITTER DAMPER
- F — FIRE DAMPER
- L — LOUVERED DOOR
- U — UNDERCUT DOOR
- N — BRANCH DUCT NECK
- TR — TOP REGISTER
- BR — BOTTOM REGISTER
- CR — CEILING REGISTER
- CD — CEILING DIFFUSER
- MLWS — METAL LOUVER WITH WIRE SCREEN (ALD)
- S — SUPPLY DUCT
- E — EXHAUST OR RETURN DUCT
- T — THERMOSTAT
- T — THERMOMETER
- I — INCLINED RISE WITH RESPECT TO AIR FLOW
- D — INCLINED DROP WITH RESPECT TO AIR FLOW
- FL — FIN LENGTH
- NC — NORMALLY CLOSED
- NO — NORMALLY OPEN
- M — MOTOR (COMPRESSED) AIR
- P — PNEUMATIC-ELECTRIC SWITCH
- E — ELECTRIC-PNEUMATIC SWITCH
- T — THERMOSTAT (CONTROL DIAGRAM)
- S — STARTER
- O.A. — OUTSIDE AIR
- P — PUSH BUTTON
- R — RELAY
- V — VALVE
- S — STAINLESS STEEL DUCTWORK (SHADED DUCT)
- C — CONTROL WIRING
- P — PNEUMATIC CONTROL PIPING
- UH — UNIT HEATER
- CB — CABINET HEATER



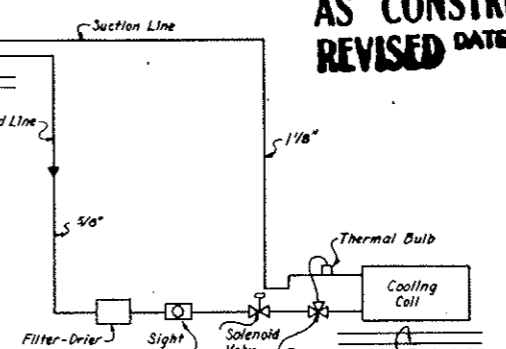
FLOW DIAGRAM EAST BUILDING



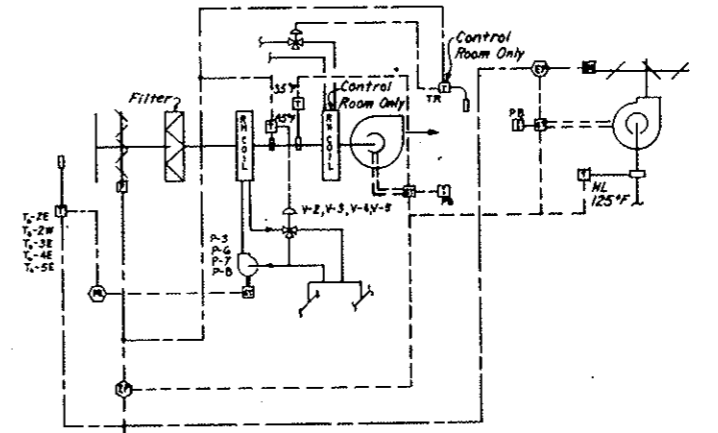
FLOW DIAGRAM WEST BUILDING



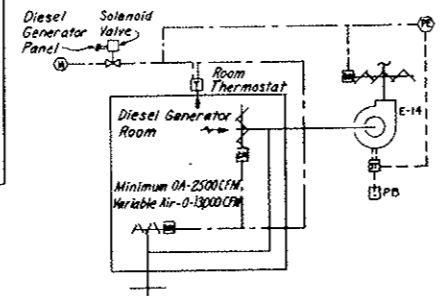
TYPICAL ELECTRICAL REHEAT COIL CONTROL DIAGRAM



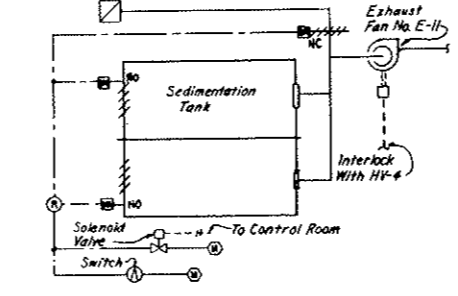
REFRIGERANT DIAGRAM



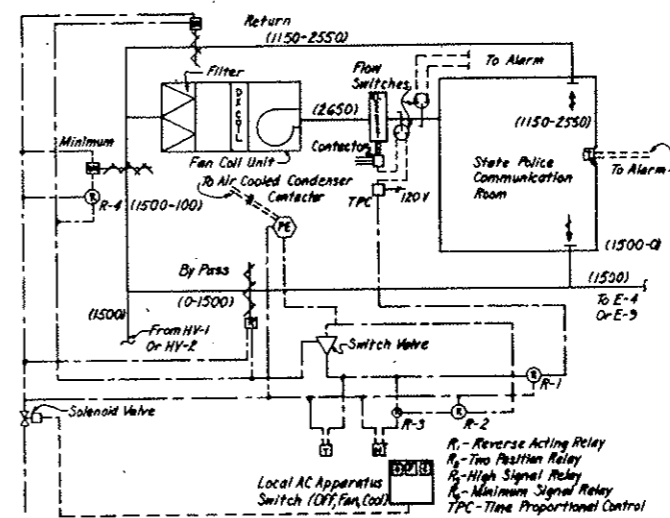
TYPICAL H&V SYSTEM CONTROL DIAGRAM



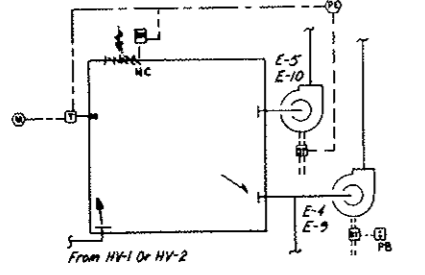
DIESEL GENERATOR VENTILATION CONTROL DIAGRAM



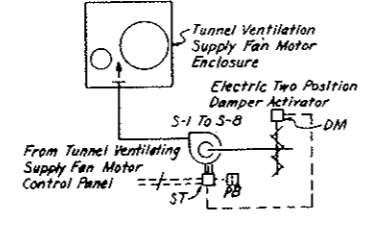
SEWAGE TREATMENT VENTILATION CONTROL DIAGRAM



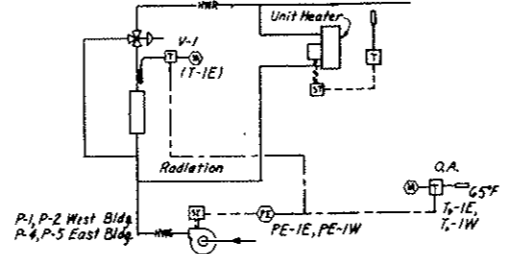
STATE POLICE COMMUNICATION ROOM AIR CONDITIONING CONTROL DIAGRAM



ELECTRICAL SWITCHGEAR VENTILATION CONTROL DIAGRAM



TUNNEL VENTILATION SUPPLY FAN MOTOR ENCLOSURE VENTILATION CONTROL DIAGRAM



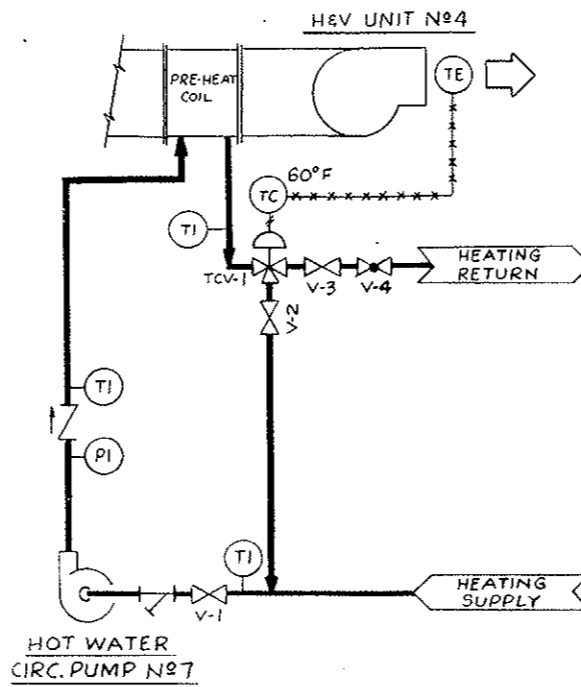
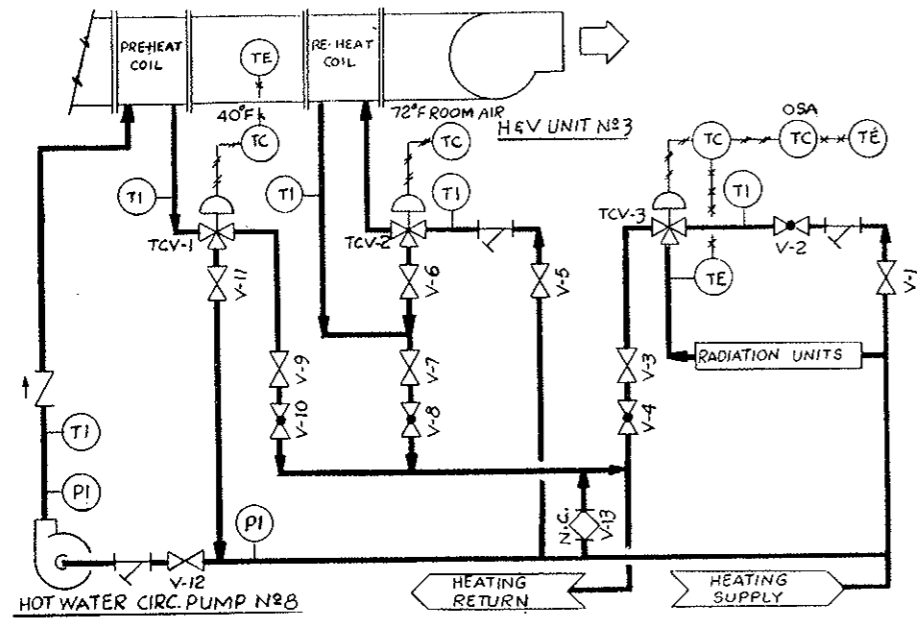
BUILDING HEATING CONTROL DIAGRAM

① 1/26/66 Added to Symbol List		Y.S.	16	07
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
MECHANICAL FLOW AND CONTROL DIAGRAMS KEY TO SYMBOLS HEATING AND VENTILATING				
TIPPETT'S ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED:	E. P.	RECOMMENDED:	John R. Blum	
CHECKED:	R. R. L. H.	U. D. B.		
DRAWN:				
SCALE:	NO SCALE DATE: AUGUST 1967			
				DRWING NO. M-46

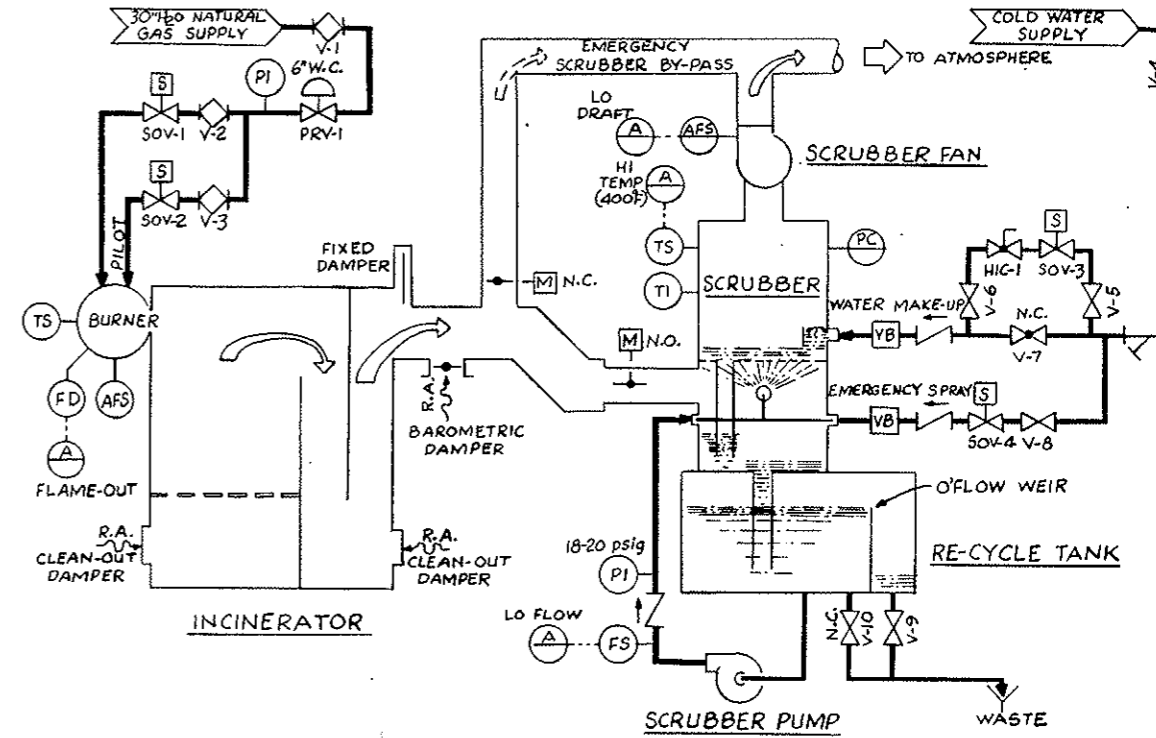
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	238 AX	

AS CONSTRUCTED
REVISED DATE 10-26-73

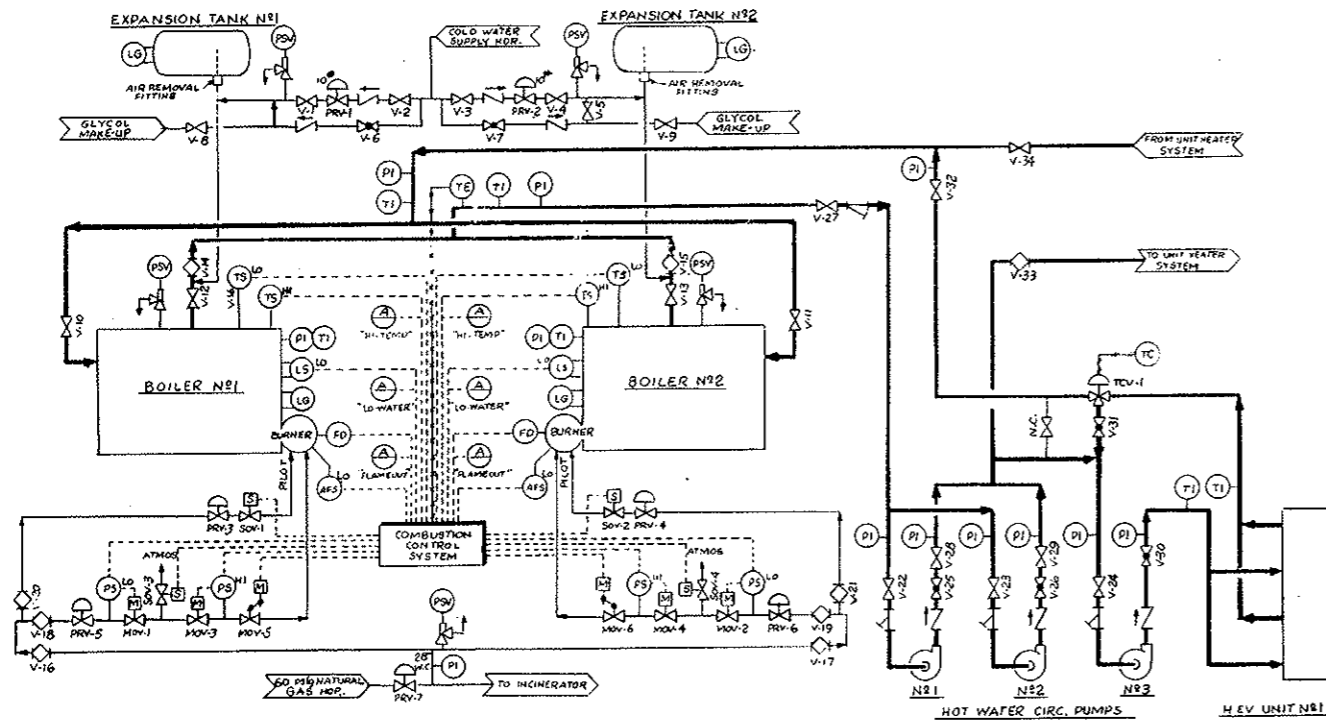
CONTROL ROOM HEATING SYSTEM



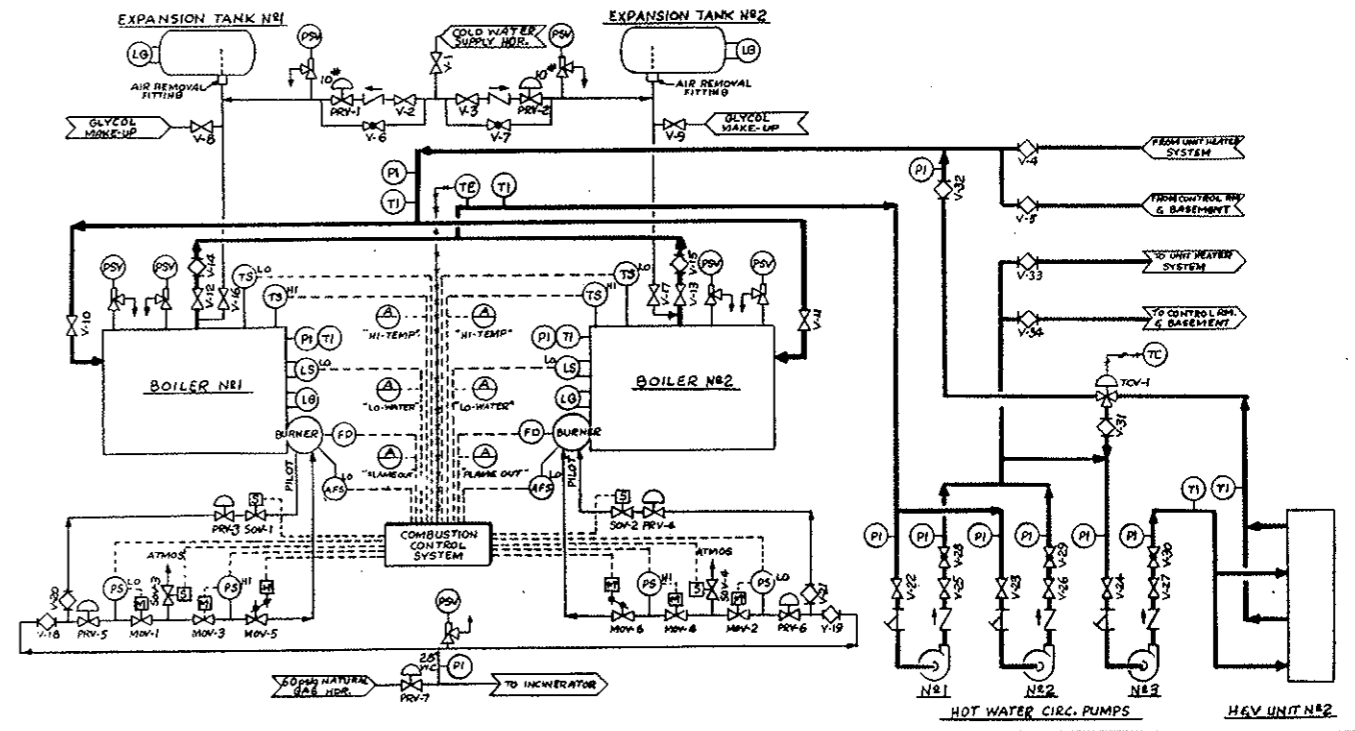
BASEMENT HEATING SYSTEM



INCINERATOR-SCRUBBER SYSTEM



WEST BUILDING HOT WATER HEATING SYSTEM



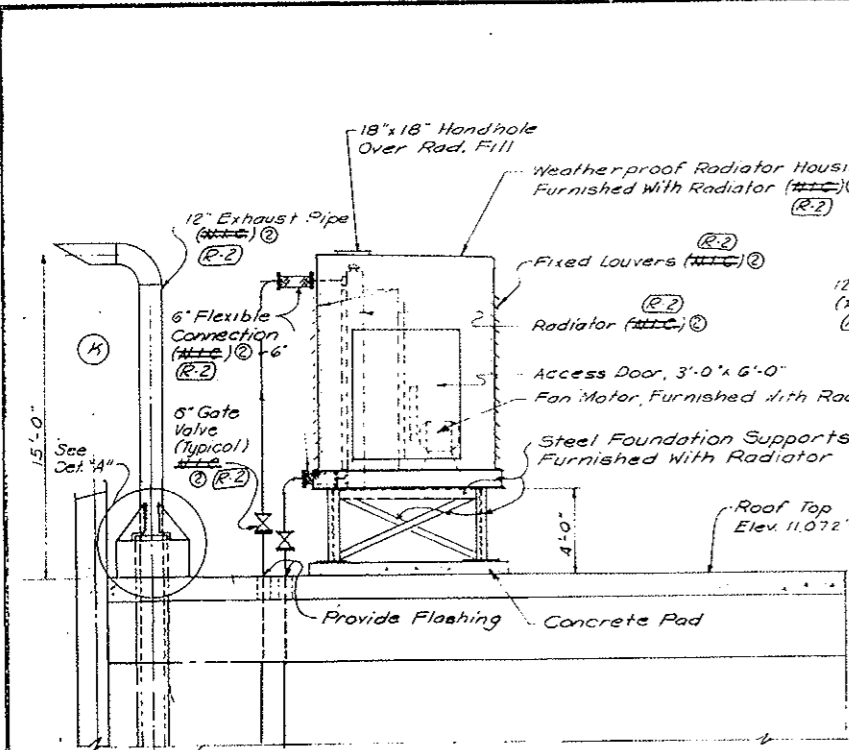
EAST BUILDING HOT WATER HEATING SYSTEM

MECHANICAL
 FLOW AND CONTROL DIAGRAMS
 HEATING AND VENTILATING M-46 A

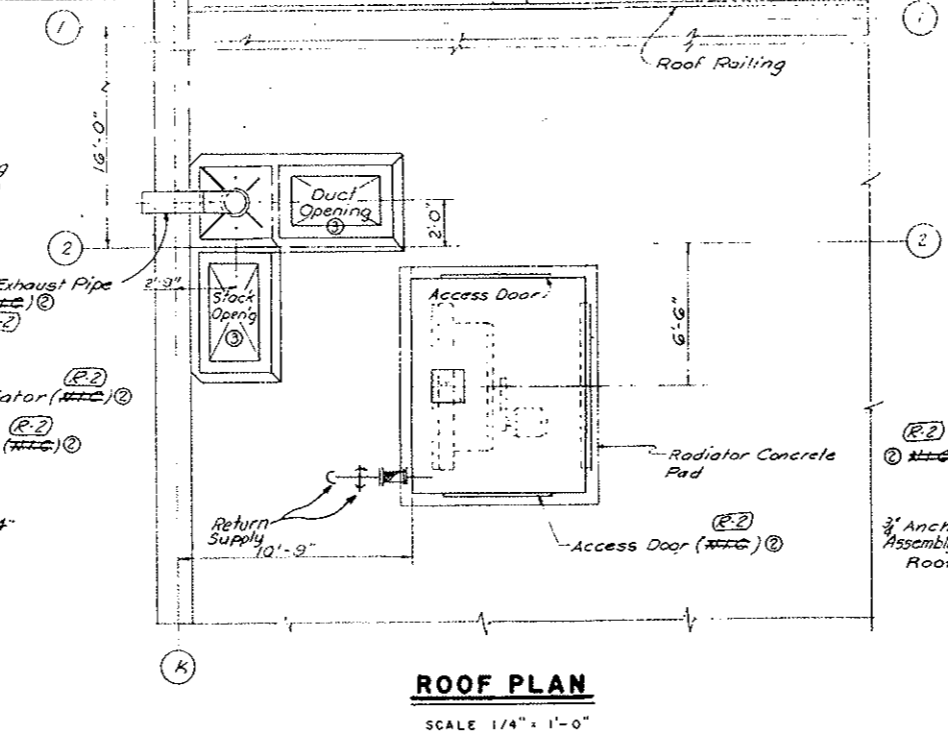
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	239	326

~~REVISION 1-1-67 CRN - ADDED NOTE BELOW~~
~~REVISION 2-15-71 L. J. STRATTON - ADDED NOTE~~

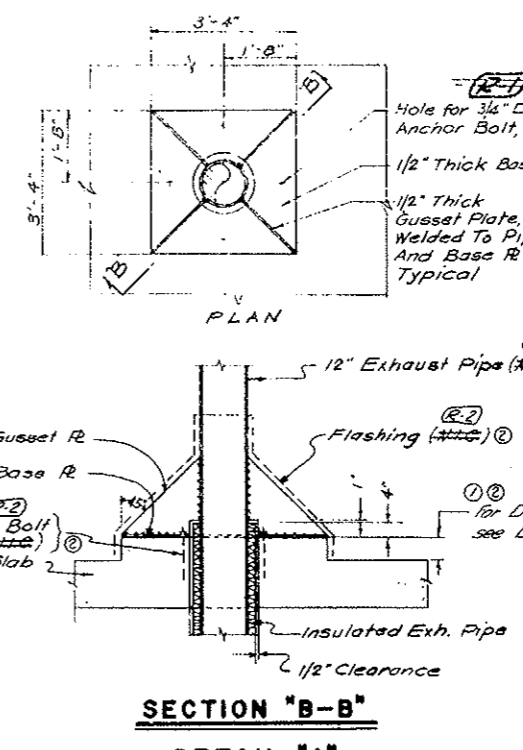
AS CONSTRUCTED
REVISED DATE 10-26-73



ELEVATION "A-A"
 SCALE 1/4" = 1'-0"



ROOF PLAN
 SCALE 1/4" = 1'-0"

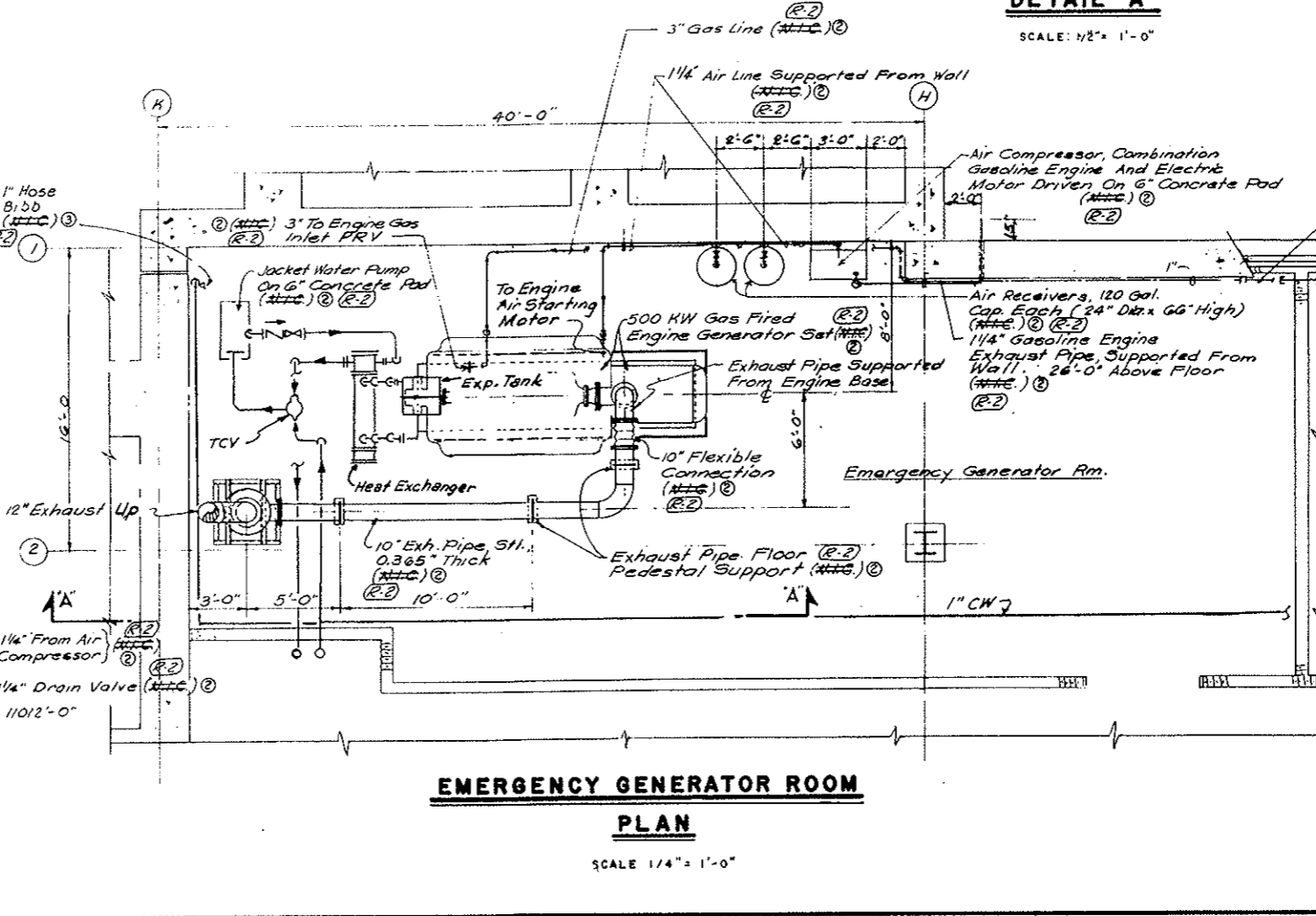
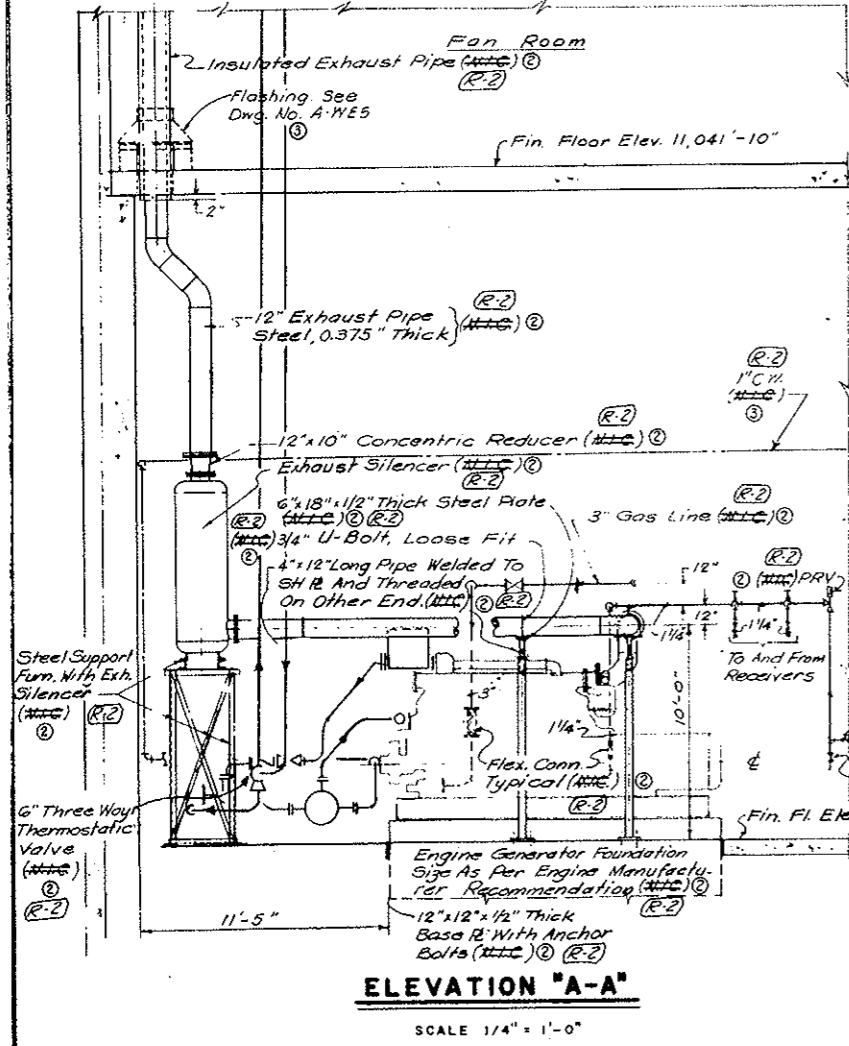


SECTION "B-B"
DETAIL "A"
 SCALE: 1/2" = 1'-0"

SYMBOL
 * Indicates Location of Pipe Hanger.

NOTES

- The installation of the Emergency Gas Fired Engine shall be in accordance with the National Fire Code, NFPA No. 37 latest edition, titled, "Standard for the Installation and use of Combustion Engines and Gas Turbines."
- For flashing details of all roof penetrations, see Architectural Drawings



EMERGENCY GENERATOR ROOM
PLAN
 SCALE 1/4" = 1'-0"

①	Rerouted Cooling Water Piping, Exhaust pipe curb and 1" CW Line shown.	BP	VE	J.S.	
②	3" Gas Main Extended	J.H.	VE	J.S.	
③	Limit of Contract Defined				
④	Revised Curb Details & Added Rev. Notes	V.S.	J.S.	J.S.	
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

MECHANICAL
EMERGENCY GENERATOR

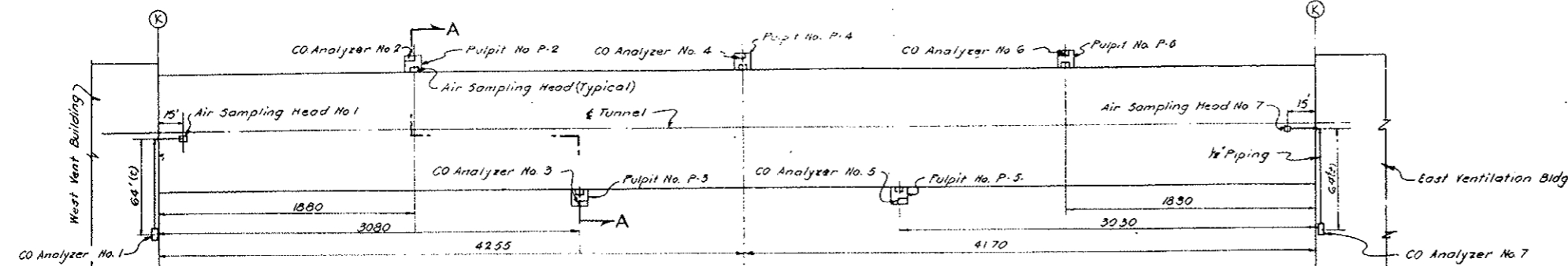
TIPPETTS-ABBETT-McCARTHY-STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: V.F.E.	RECOMMENDED: J.S.	DRAWING NO. M-47
DRAWN: V.F.E.	CHECKED: J.S.	
SUBMITTED: Joseph Siegel	APPROVED: Joseph Siegel	SCALE: AS NOTED DATE: AUGUST 1967

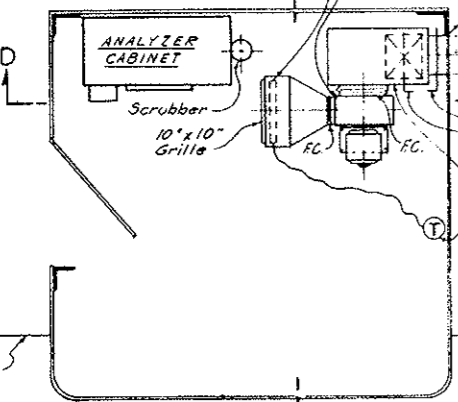
~~(R-2) (R-2) EMERGENCY ELECTRIC GENERATOR DELETED W/O 14153 SEE SPEC 10B~~

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
5	COLORADO	I 70-3(34)220	240	326

AS CONSTRUCTED
REVISED DATE 10-26-72

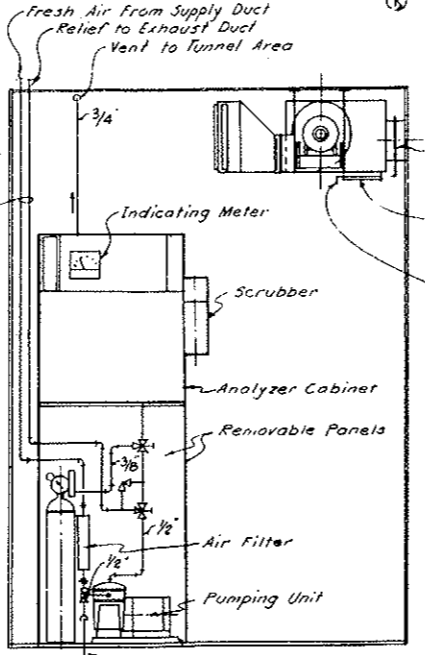
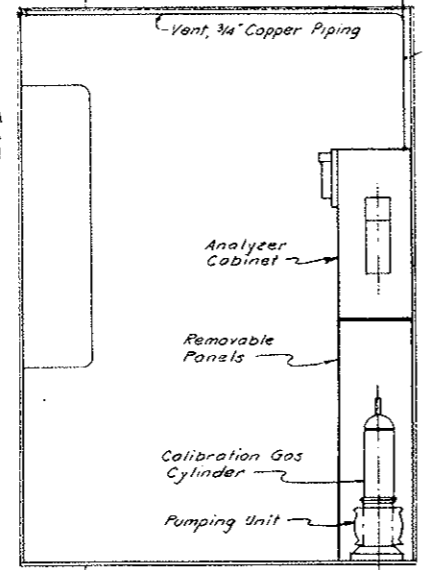


Centrifugal Fan Baby Vent Set Buffalo Size B, or similar approved 200 CFM @ 18" SP @ 0.055 Air Density, 1725 RPM, 1770 o.v., 1/20 HP, 115V, 60 cy., 1 φ
Electric Strip Heater 112kw @ 240V with High Limit Thermal Cutout
Connect to 5"x5" Duct provided in another part of the Specifications See Dwg. No. C2-24 & C2-25.

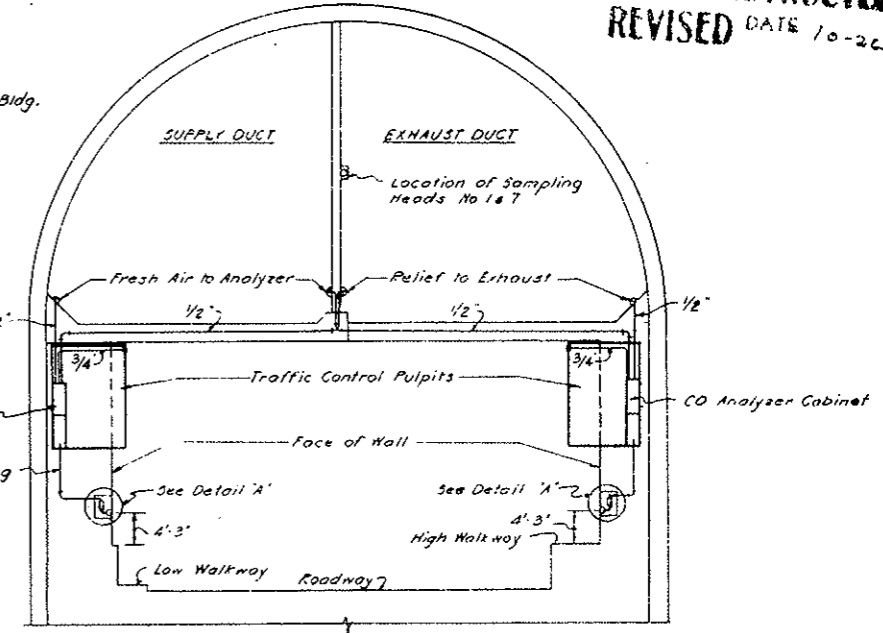


PLAN

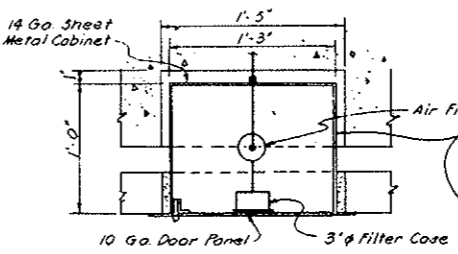
Set Manual Damper A @ 60 CFM and Manual Damper B @ 140 CFM. This performance shall occur when air supply into the tunnel is at minimum (one fan in operation @ lowest speed).



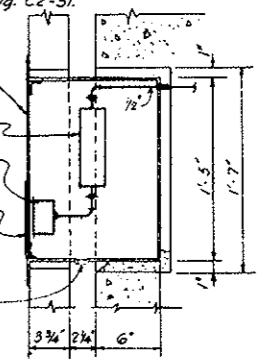
SECTION C-C
CO ANALYZER ASSEMBLY IN PULPITS No. 2 THRU No. 6 ALSO TYPICAL FOR ANALYZERS Nos. 1 AND 7
SCALE: 1" = 1'-0"



NOTE: Heater shown in Pulpits No. 2 thru No. 6 is typical for all 7 Pulpits. See also Dwg. No. C2-24 & C2-25.

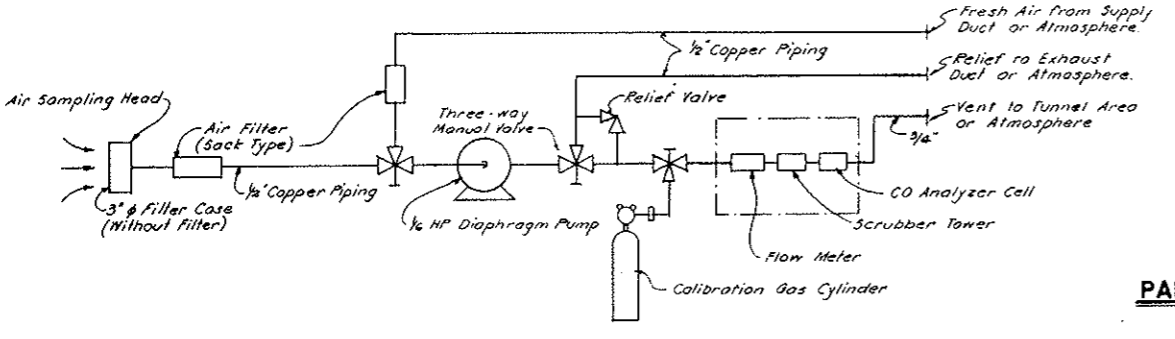


PLAN E-E

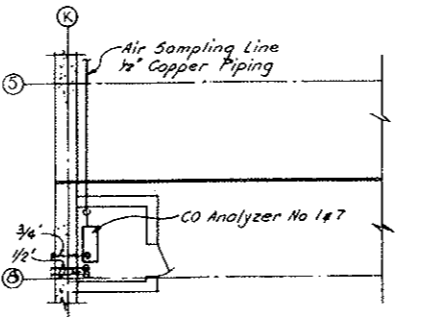


SECTION F-F

DETAIL A
AIR SAMPLING HEAD
FRONT ELEVATION
SCALE: 1/2" = 1'-0"



HOPCALITE CO DETECTION SYSTEM
AIR SAMPLE FLOW DIAGRAM
NO SCALE



PART PLAN OF EAST AND WEST VENT BUILDING
FAN ROOM FLOOR
CO ANALYZERS Nos. 1 AND 7
SCALE: 3/16" = 1'-0"

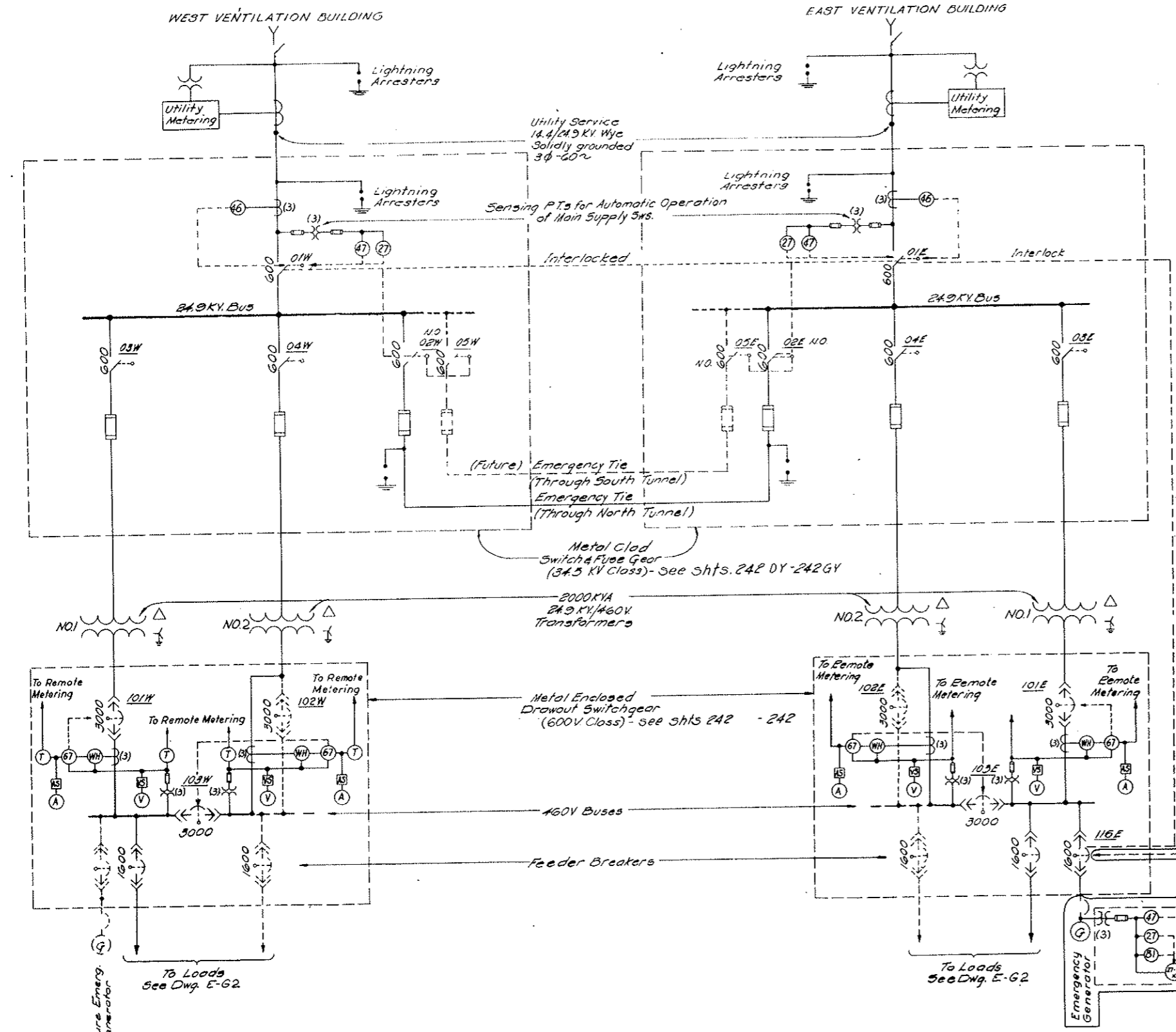
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MECHANICAL CARBON MONOXIDE SAMPLING, ANALYZING AND RECORDING SYSTEM					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: SUBMITTED:	U. D. R. R. T. U. D. B. A. B. S.	RECOMMENDED: APPROVED:			
DRAWING NO.					M-48
NEW YORK, N. Y.					SCALE: AS NOTED DATE: AUGUST 1967

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	241	326

AS CONSTRUCTED
NO REVISIONS DATE
OCT. 26 1973

LEGEND

- Electrically Operated Drawout Low Voltage Power Air Circuit Breaker
Dual Magnetic Trip
Frame Size as Indicated
- Fuse
- Electrically Operated Load Break Switch
- Initial Connections
- Future Connections
- Reverse Phase Voltage Relay
- Reverse Power Relay
- Teleducors or Transducers for Remote Telemetry
- UV Relay
- Current Balance Relay (For Single Phasing Protection)
- Frequency Relay
- Frequency & Undervoltage Aux. Relay



- NOTES:**
- On the 24.9 KV Switchgear, Sws. # 01W, 02W, 01E and 02E are Interlocked to permit closure of only 3 Switches at one time (For Present Installation)
 - All Main Electrical Switches and Circuit Breakers are operated from respective Building Battery Supply.

(R-1)
NOTE A:
Emerg. Gen. System (Bid Item 180) Deleted see W.O. 14153 & Spec. 18B. Equipment & Wiring N.I.C., but Conduit for Wiring is in this Contract (Bid Item 187).

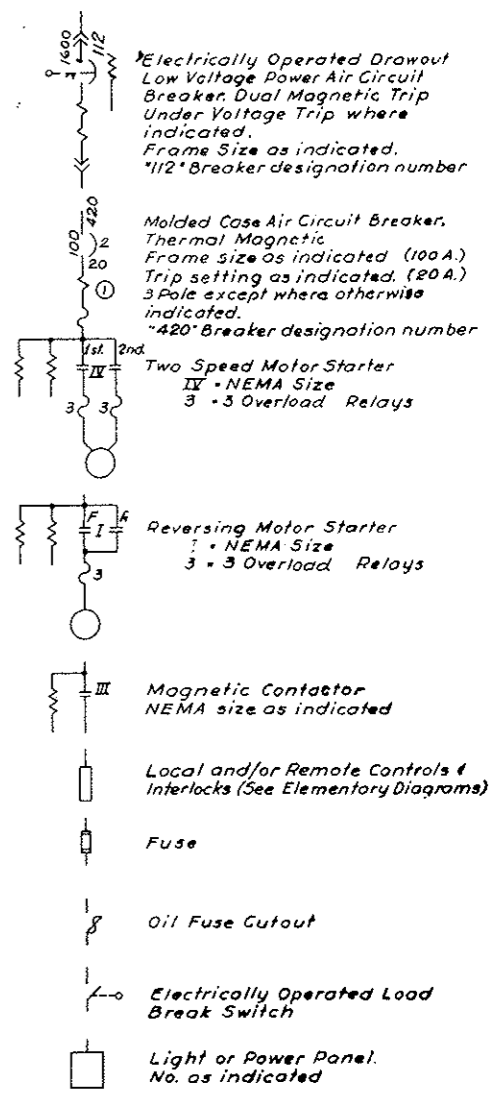
W.G. Contract Limits Defined - See Note A.		E.A. SHEETS	
NO. DATE	DESCRIPTION OF REVISION	BY	CHK. APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
ELECTRICAL POWER SUPPLY SINGLE LINE DIAGRAM GENERAL ARRANGEMENT			
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.			
DESIGNED: D.H.D.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. E-61	
DRAWN: R.D.S.-E.A.N.	APPROVED: <i>[Signature]</i>		
CHECKED: N.A.C.	DATE: AUG. 1967	SCALE: NONE	
SUBMITTED: <i>[Signature]</i>	NEW YORK, N. Y.		

3-3-69 Diff Rev Trans Voltage
 (R-2) Rev 2-1-71 Reinstated Items W.O. # 16527

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	242	326

AS CONSTRUCTED
NO REVISIONS DATE Oct. 26 1973

LEGEND



NOTE:
 All cables are 600V. insulation unless noted otherwise.
 Motor Control Center Details Dwg 242AX Thru 242WY
 High Voltage Switch Gear Details Shts 242XX Thru 242YF
 Low Voltage Switch Gear Details Shts 242

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Connections as indicated			S.A. DHO/M.A.S.
2		Contract Limits Defined (See Note A)			S.A. DHO/M.A.S.
3		Motor Control Center Details			S.A. DHO/M.A.S.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**ELECTRICAL
 POWER DISTRIBUTION
 DETAILED SINGLE LINE DIAGRAM
 (TYPICAL PER BUILDING)**

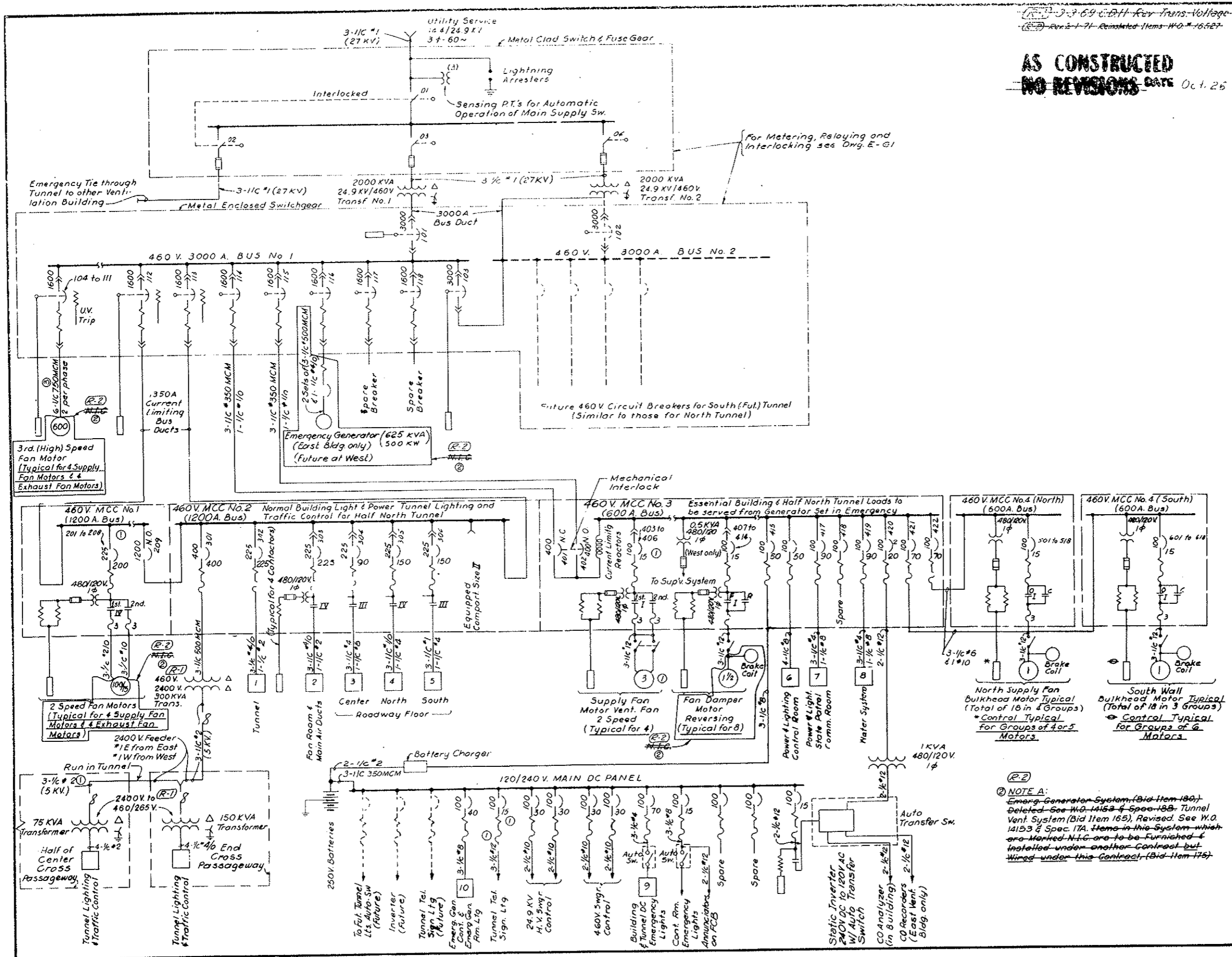
TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: J.H.D.
 DRAWN: E.A.N.
 CHECKED: H.A.C.
 SUBMITTED: [Signature]
 APPROVED: [Signature]
 NEW YORK, N. Y.

RECOMMENDED: [Signature]
 APPROVED: [Signature]

DRAWING NO. **E-G2**

SCALE: NONE DATE: AUG. 1967



(R-2) NOTE A:
 Emergency Generator System (Bid Item 180) Deleted - See H.O. 14153 & Specs 188. Tunnel Vent. System (Bid Item 165), Revised. See W.O. 14153 & Spec. 17A. Items in this system which are marked N.T.C. are to be furnished & installed under another contract but wired under this contract. (Bid Item 178)

UNLESS OTHERWISE SPECIFIED DECIMAL DIMS. TO BE
 FRACTIONAL DIMS. TO BE
 ANGLES TO BE
 CAST DIMS. TO BE

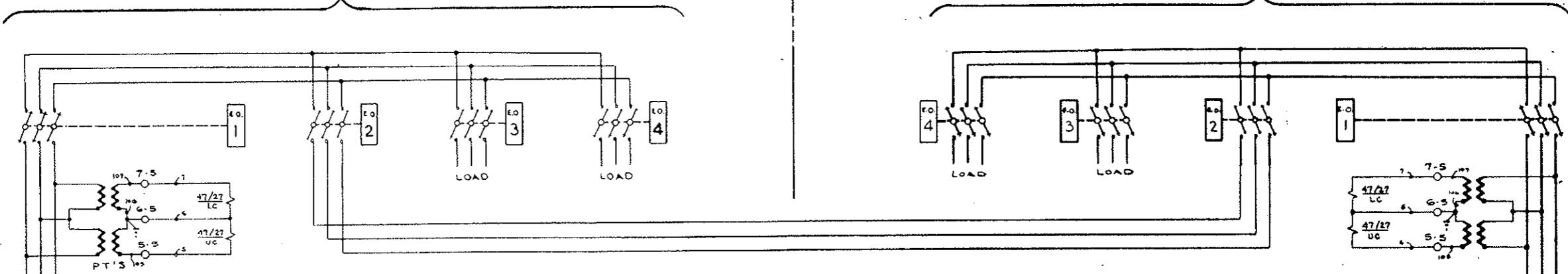
REV.	DATE	BY	REVISIONS
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FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	170-31341220	242XX	

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

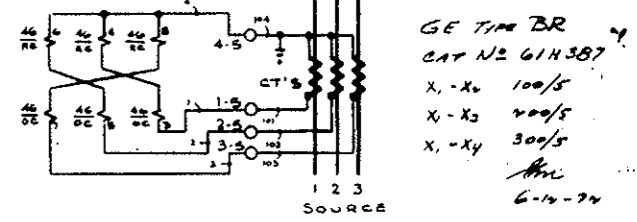
CD-112794

CD-112804

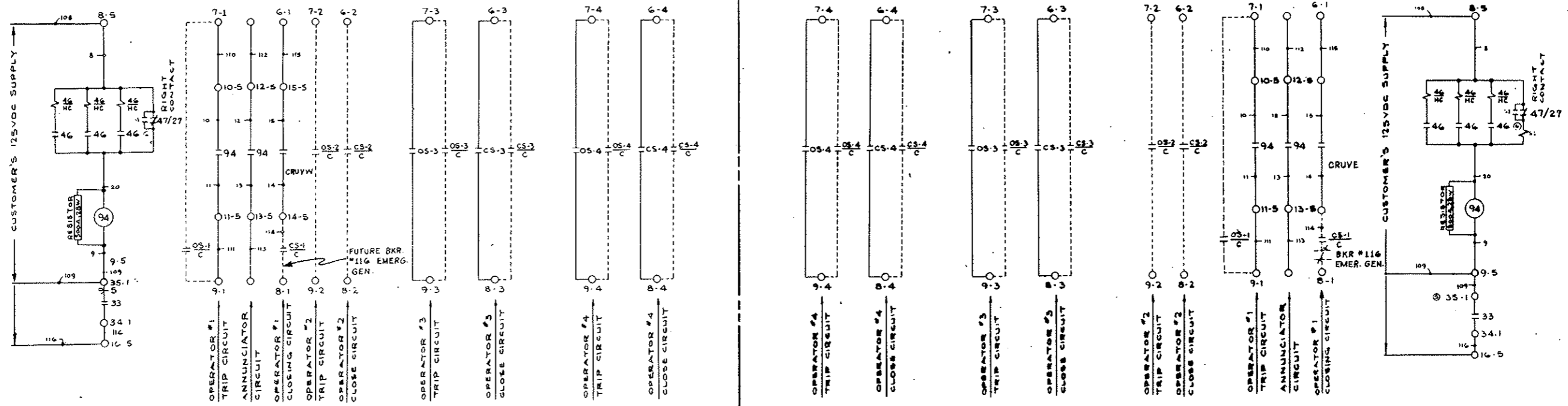


GL Type BR
 CAT No. 61H387
 X₁-X₂ 100/5
 X₁-X₃ 200/5
 X₁-X₄ 300/5
 6-12-72

- EXPLANATION OF DEVICE DESIGNATIONS
- 46 BALANCED-CURRENT RELAY (G.E. #121UC5164A)
 - 47/27 PHASE-SEQUENCE RELAY (G.E. #121CR 53A1A)
 - 94 AUXILIARY "TRIP" RELAY (P.A.S. #KAP 110)
 - OS, CS OPEN-CLOSE CONTROL SWITCH ON RESPECTIVE OPERATORS.
 - OS, CS/C CUSTOMER'S OPEN-CLOSE CONTROL SWITCH (SHOWN DOTTED)
 - TERMINAL POINT ON:
 - 1 (OPERATOR NO. 1)
 - 2 (" NO. 2)
 - 3 (" NO. 3)
 - 4 (" NO. 4)
 - 5 RELAY PANEL



GE Type BR
 CAT No. 61H387
 X₁-X₂ 100/5
 X₁-X₃ 200/5
 X₁-X₄ 300/5
 6-12-72



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DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE

USED ON

FINISH: DESCRIPTION: S & C SPEC. NO.

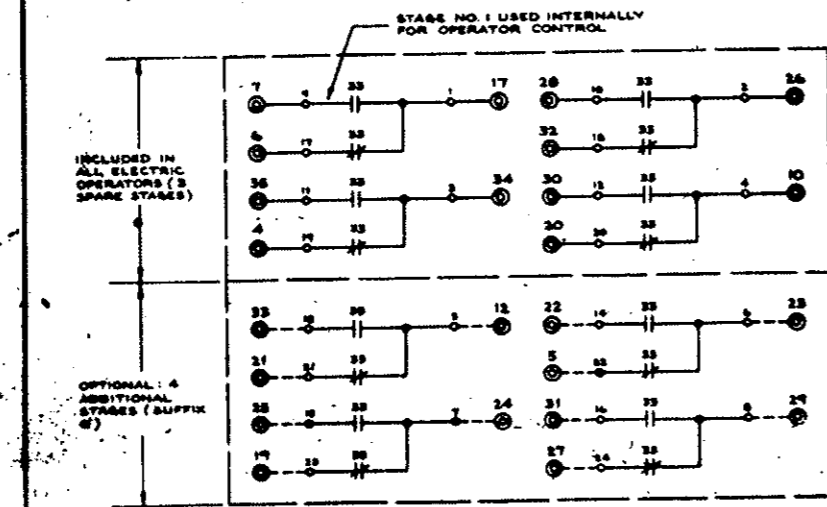
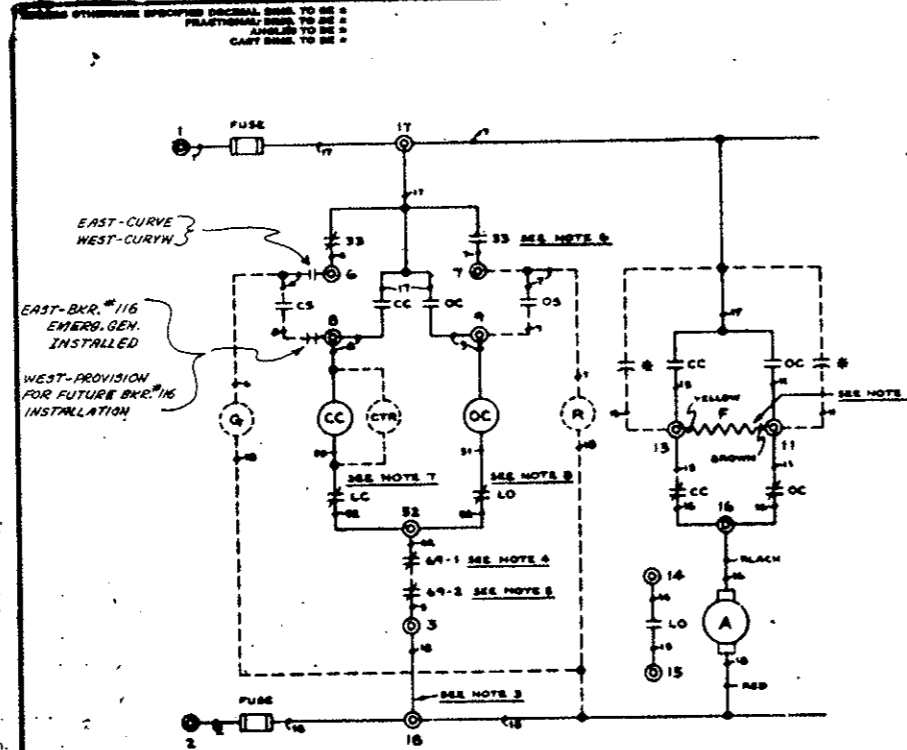
SAC ELECTRIC COMPANY - CHICAGO
 Specialists in High-Voltage Circuit Interruption

SCHEMATIC WIRING DIAGRAM CDR 2688

REF: COR 707 S.D. SCHEMATIC W.D.

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XII	COLORADO	I 70-3(BA)220	242BY	

AS CONSTRUCTED
REVISED DATE Oct. 26, 1979



- LEGEND**
- CC CLOSING CONTACTOR COIL
 - OC OPENING CONTACTOR COIL
 - A ARMATURE OF REVERSIBLE MOTOR
 - F SERIES FIELD OF REVERSIBLE MOTOR
 - CS CLOSING SWITCH
 - OS OPENING SWITCH
 - CTR OPERATION COUNTER
 - G GREEN INDICATING LIGHT (LOAD INTERRUPTER OPEN)
 - R RED INDICATING LIGHT (LOAD INTERRUPTER CLOSED)
 - X OPERATOR AUXILIARY SWITCH (SEE NOTE 6)
 - 69-1 MANUAL OPERATOR INTERLOCK
 - 69-2 KEY INTERLOCK SWITCH - OR - MECHANICAL INTERLOCK SWITCH
 - LC CLOSING CIRCUIT LIMIT SWITCH
 - LO OPENING CIRCUIT LIMIT SWITCH
 - ⊙ TERMINAL POINT ON OPERATOR UNIT
 - TERMINAL POINT ON OPERATOR AUXILIARY SWITCH
 - CAPACITOR USED ON SUFFIX A, B, & C ONLY
- SUFFIX**
- J
 - J
 - K
 - K
 - Q
 - X OR Y

- NOTES**
1. BROKEN LINES INDICATE WIRING OF OPTIONAL ITEMS.
 2. REVERSE FIELD LEADS FOR OPPOSITE ROTATION AS REQUIRED FOR APPLICATION ON INVERTED SWITCHES. (SUFFIX-R)
 3. JUMPER BETWEEN 18 AND 3 REMOVED FOR INSERTION OF EXTERNAL INTERLOCKS IF APPLIED. SEE INTERCONNECTION WIRING DIAGRAM FOR DETAILS.
 4. 69-1 SHOWN WITH MANUAL ACCESS COVER CLOSED.
 5. 69-2 SHOWN IN UNLOCKED POSITION.
 6. SNAP ACTION AT END OF OPENING AND CLOSING OPERATIONS. (SHOWN IN THE OPERATOR OPEN POSITION)
 7. LC SHOWN IN UNACTUATED POSITION - ACTUATED ONLY IN FULLY CLOSED POSITION.
 8. LO SHOWN IN UNACTUATED POSITION - ACTUATED ONLY IN FULLY OPEN POSITION.

SUFFIX	VOLTAGE	FUSING RATING
A	48 VDC	FRN 2 1/2 A
B	125 VDC	FRN 2 A
C	250 VDC	FRN 1 1/2 A
D	120 VAC	FRN 4 A
E	240 VAC	FRN 2 A
V	24 VDC	FRN 10 A

MATERIAL DESCRIPTION: _____ QUANTITY: _____
 PART NO. _____

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY - CHICAGO
 SYNCHRONOUS MOTOR DIVISION

SYNCHRONOUS MOTOR OPERATOR SWITCH OPERATOR

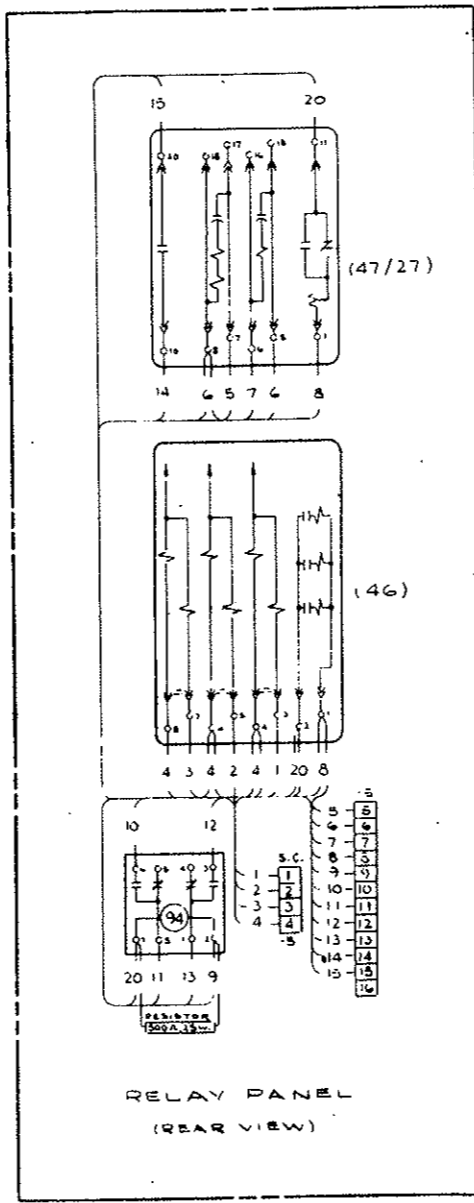
PROGRAM FROM DRAWING DATED 2-3-62

CDR-707

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(34)220	242YX	

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

UNLESS OTHERWISE SPECIFIED DECIMAL DIMS. TO BE *
 FRACTIONAL DIMS. TO BE *
 ANGLES TO BE *
 CAST DIMS. TO BE *



NO.	DATE	ISSUED BY
REVISIONS		
CDR 2688-1		

REF. CDR 2688 SCHEMATIC W.D

RELAY PANEL
 (REAR VIEW)

MATERIAL: _____ DESCRIPTION: _____
 S & C SPEC. NO. _____ FINISH: _____
 S & C SPEC. NO. _____

PROPRIETARY STATEMENT
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DATE	BY	REASON
8-29-69	APB	USED ON

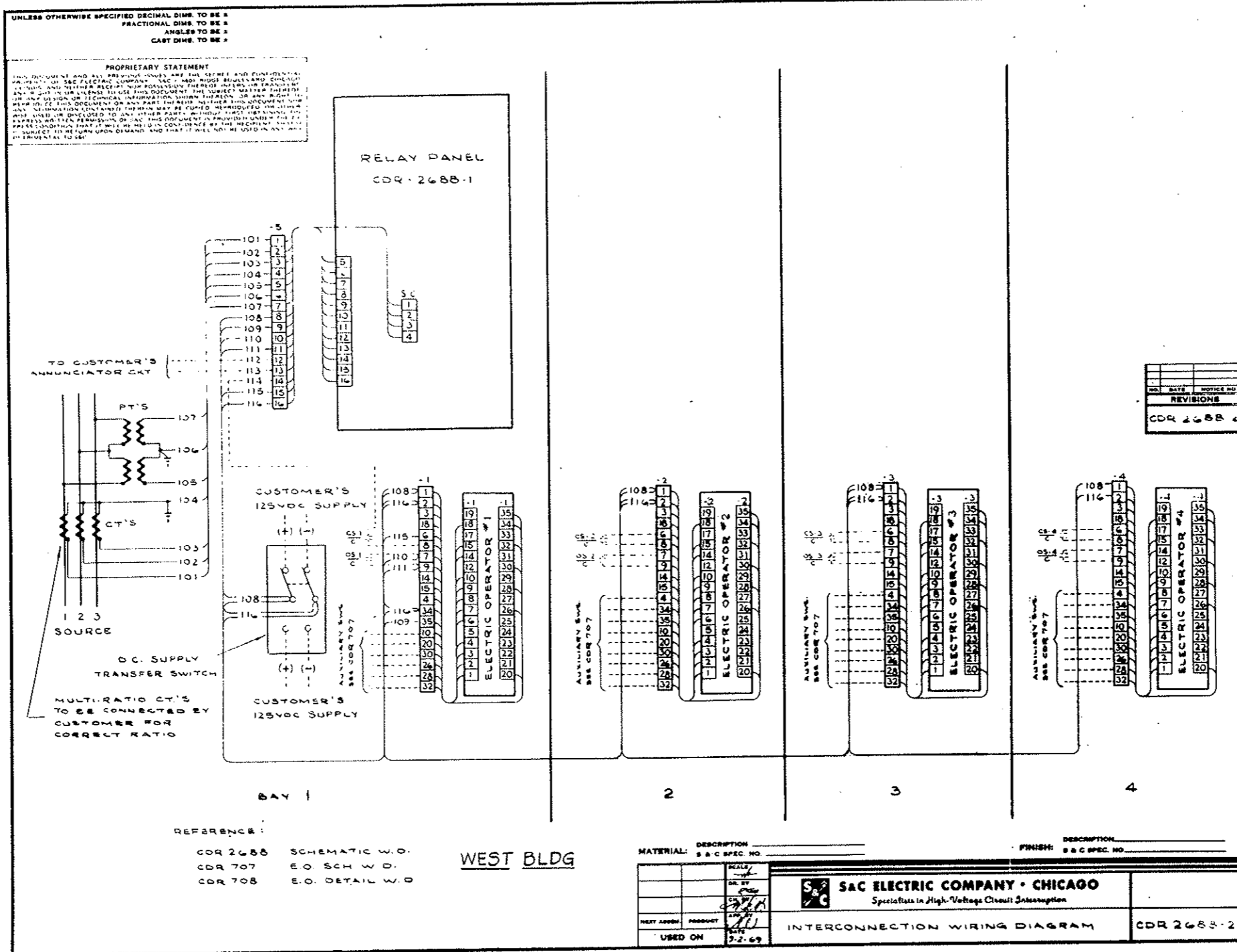
SAC ELECTRIC COMPANY - CHICAGO
 Specialists in High-Voltage Circuit Interruption

DETAIL WIRING DIAGRAM

CDR 2688-1

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	I 70-3(34)220	242EX	

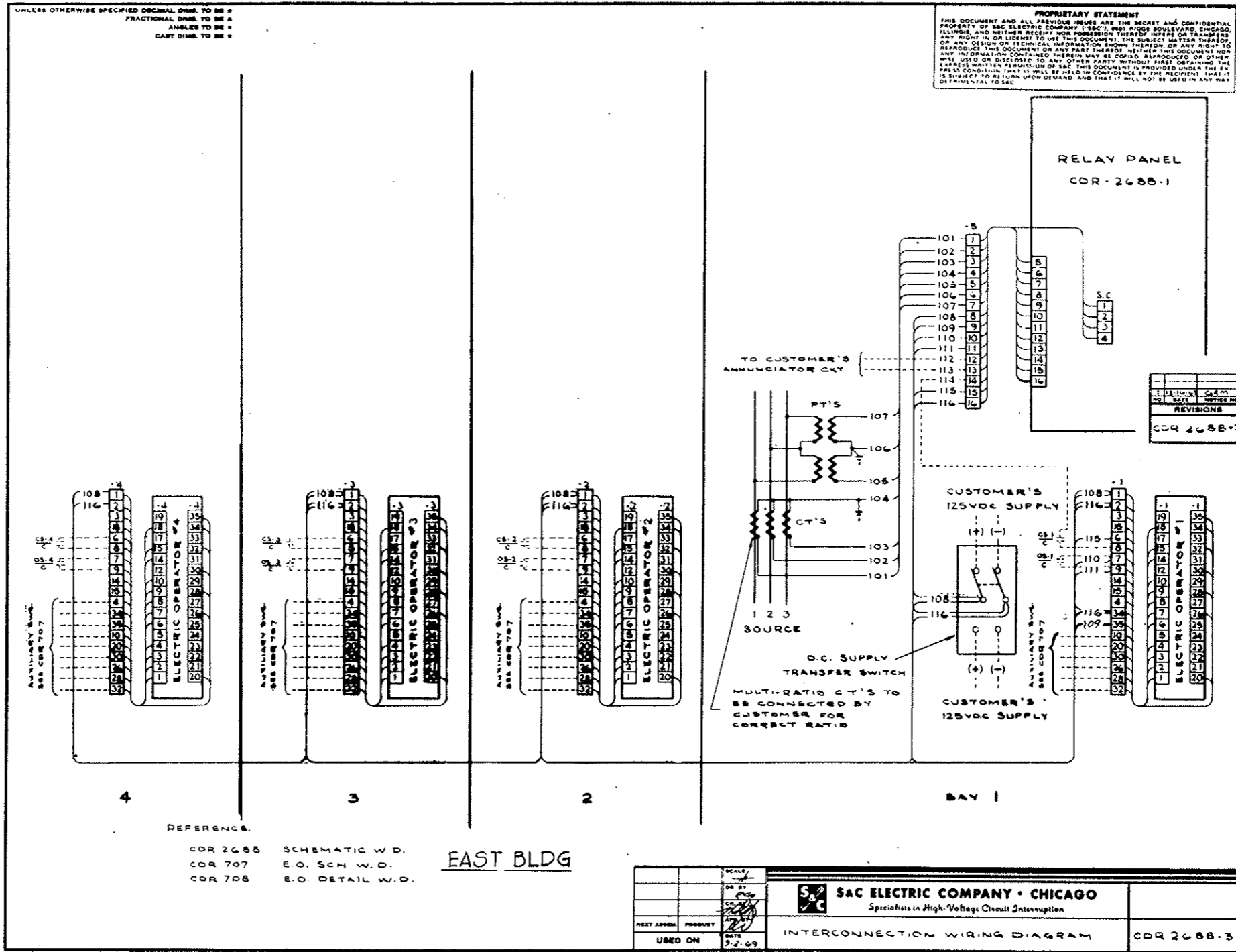
AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



S & C FORM NO. 126 (8-69)

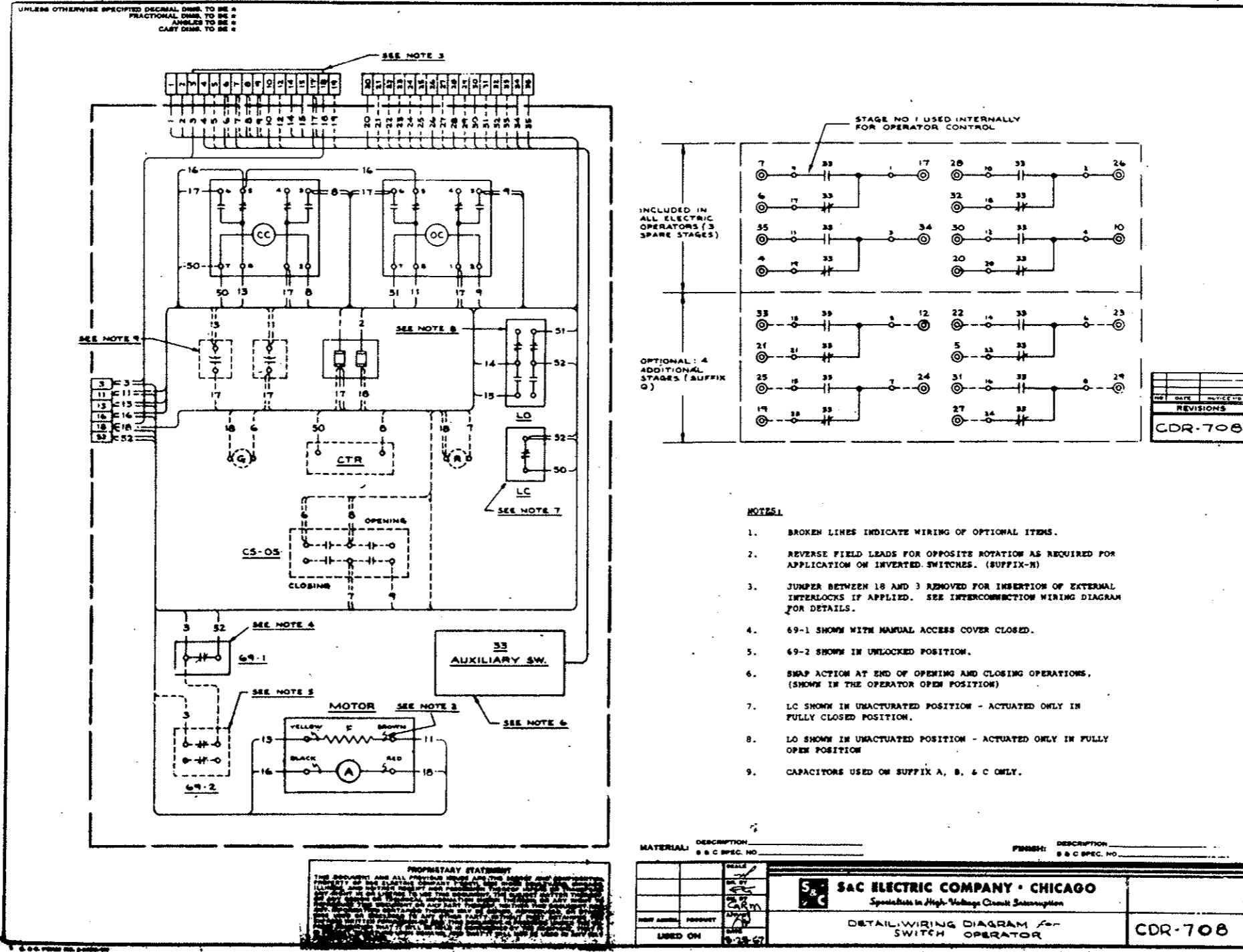
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	170-31341220	242AY	

AS CONSTRUCTED
REVISED DATE *Oct. 26, 1973*



FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	170-3(34)220	242CY	

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

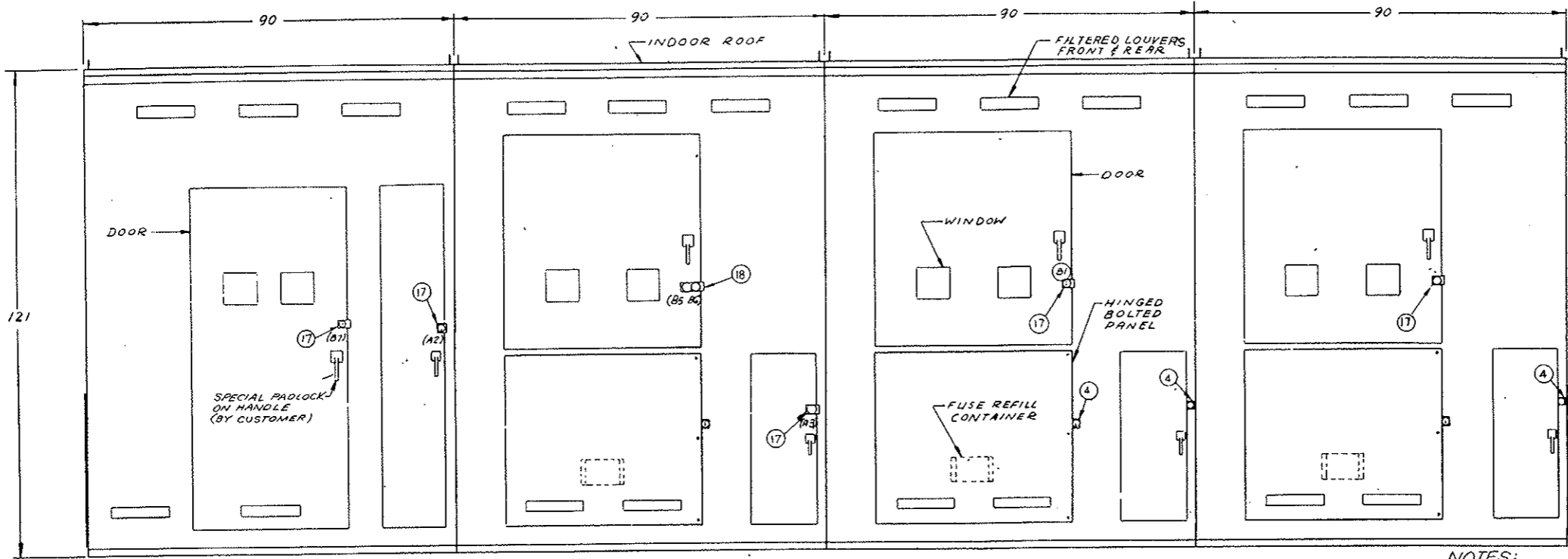


UNLESS OTHERWISE SPECIFIED DECIMAL DIMS. TO BE 1/16" FRACTIONAL DIMS. TO BE 1/32" ANGLES TO BE 1/8" CAST DIMS. TO BE 1/2"

REVISIONS
 CD-112794
 SHEET 1 OF 2

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(34)220	2420Y	

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



BAY-1 (INCOMING) BAY-2 (TIE) BAY-3 (TRANSF. #2) BAY-4 (TRANSF. #1)
FRONT VIEW

BILL OF MATERIAL

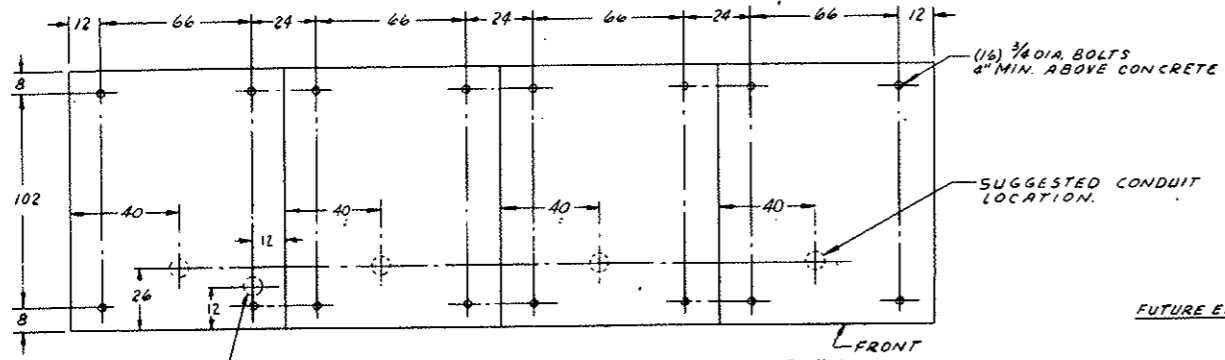
ITEM NO.	REQD.	PART NO.	DESCRIPTION
1	4	32030AR9	INTERRUPTER SWITCH 3 POLE HVX DUTY 600A
2	9	8757PP2-S103	SM-5 POWER FUSE LIVE PARTS 300A
3	9	8681AQ100	SM-5S FUSE HOLDER NON DISC.
4	5	QDA-1500-1	KEY OPER. SNAPLOCK
5	2	38760-B8JUMH	ELECTRIC OPERATOR 125VDC
6	2	38760-B8JUMH	ELECTRIC OPERATOR 125VDC
7	2	JVT-150	POT. TRMFR 24,000VAC V.G.E. (24,000V)
8	3		BUSHING CURRENT TRMFR GE TYPE BR 300V/200V/100-5A
9	1	TC10323WP2	SEL. SWT. 125 VDC. G.E.
10	1	QCDA-3558	RELAY PANEL
11			
12	4	136303-F	KIRK KEY INTERLOCK
13	2	4742	CABLE CONN #2-500MCM
14	5	211758	OB LIGHTNING ARR. 24 KV TYPE - MP24
15		9785	LAPP BUS SUPPORT
16	16	QCD-1805	ANCHOR BRACKET
17	7	TYPE-D	KIRK KEY INTERLOCK
18	1	TYPE-M20	KIRK KEY INTERLOCK
19	12	NT-1924IR	G&W 1/2-PH. W/SB 250 MCM MAX.
20	3PR.		G&W PORCELAIN BLOCKS WITH ADAPTER

NOTES:
 1. RATINGS: 600 AMP CONTINUOUS VOLTAGE 34.5 KV NOM. 200 KV BIL. SH. CIRG. INT. 1000 MVA 3 PHASE SYM MOMENTARY 40,000 AMP RMS ASYM 4 SEC. 25,000 AMP RMS SYM.

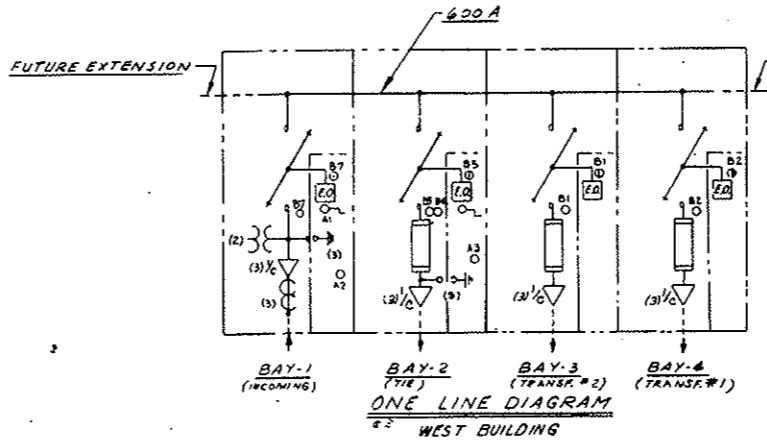
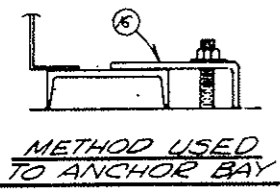
2. ALL HANDLES HAVE PROVISIONS FOR PADLOCKING.
 3. KEY INTERLOCKS A1 (5 KEYS AVAILABLE) PREVENT ACCESS TO MANUAL HAND-CRANK HUB ON ELECTRIC OPERATOR UNLESS REMOTE CONTROL IS LOCKED OPEN AT P.C.B. IN CONTROL ROOM.
 KEY INTERLOCKS A2, A3, A4, A5 PREVENT OPENING DOOR ON ELECTRIC OPERATOR COMPARTMENT UNLESS REMOTE CONTROL IS LOCKED OPEN, RELEASING ASSOCIATED KEY A2, A3, A4 OR A5.
 KEY INTERLOCKS B1 THRU B6 PREVENT ACCESS TO FUSE COMPARTMENT UNLESS FUSES ARE DE-ENERGIZED.
 KEY INTERLOCKS B7 & B8 WILL BE USED IN ADDITION TO SPECIAL PADLOCKS FOR ACCESS TO INTERRUPTER SWITCH IN BAY 1s.

4. EACH BAY TO BE SHIPPED SEPARATELY.
 6. ITEMS 5, 6, 7, 8, 9 & 10 FURNISHED, INSTALLED AND WIRED BY S&C PER:
 CDR-2688 SCHEMATIC W.D.
 CDR-2688-1 DETAIL W.D.
 CDR-2688-2 INTERCONNECTION W.D.
 CDR-707 E.O. SCHEMATIC W.D.
 CDR-708 E.O. DETAIL W.D.

7. HIGH VOLTAGE CABLE TERMINATION BY OTHERS. THE CABLE SHIELDING GROUND LEAD MUST BE BROUGHT BACK THROUGH THE WINDOW TYPE C.T. BEFORE CONNECTING TO THE GROUND BUS.



BAY-1 BAY-2 BAY-3 BAY-4
ANCHOR BOLT PLAN
 (ALL BAYS HAVE OPEN BOTTOMS)



BUS MAT'L: ALUMINUM
BAY MAT'L: #11GAL#19 REINF. SHEET STEEL
WEST VENTILATION BLDG.
 FINISH: LIGHT GRAY SUPER DURABAKE 75A-67
 S & C SPEC. NO. DB-601

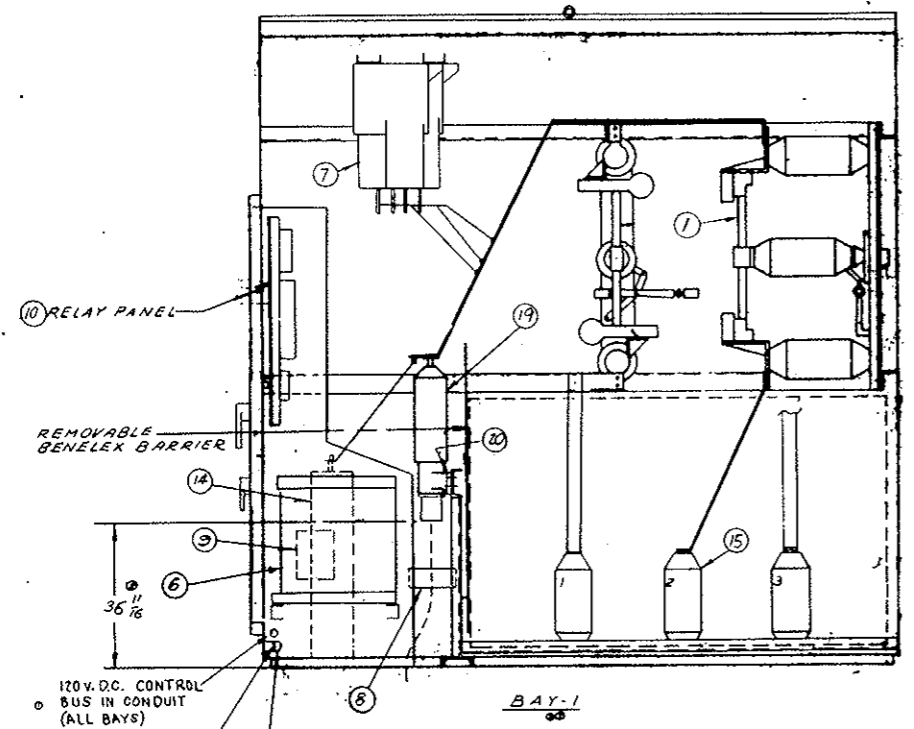
SCALE	1/4" = 1'-0"	S & C ELECTRIC COMPANY - CHICAGO Specialists in High-Voltage Circuit Interruption	SHEET 1 OF 2
DATE	12-19-68		
USED ON	12-19-68	34.5KV - 4 BAY - INDOOR - METAL ENCLOSED SWITCHGEAR	CD -112794

UNLESS OTHERWISE SPECIFIED DECIMAL DIMS. TO BE 3/16
 FRACTIONAL DIMS. TO BE 3/16
 ANGLES TO BE 30°
 CAST DIMS. TO BE 3/16

NO.	DATE	REVISIONS
1	10/27/73	REVISED
2	11/20/73	REVISED
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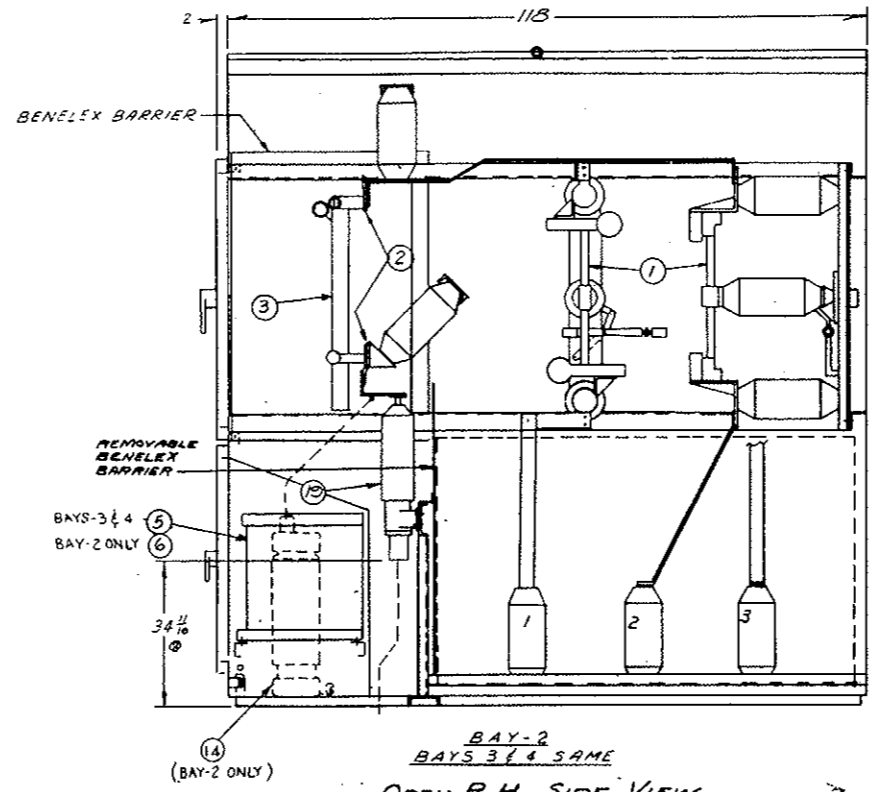
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	170-3(54)220	242 EY	

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



BAY-1
 OPEN P. H. SIDE VIEW

- 120V. D.C. CONTROL BUS IN CONDUIT (ALL BAYS)
- CONTINUOUS GROUND BUS 600A. (1/4 x 2 1/2 ALUM.)
- GROUND CONNECTOR ONE AT BOTH ENDS OF SWITCHGEAR



BAY-2
 BAYS 3 & 4 SAME
 OPEN P. H. SIDE VIEW

WEST VENTILATION BLDG.

FINISH: SEE SHEET 1 OF 2
 S & C SPEC. NO.

DESIGNED BY	DATE	SCALE	34.5 KV - 4 BAY - INDOOR - METAL ENCLOSED SWITCHGEAR
CHECKED BY	DATE	SCALE	
USED ON	DATE	SCALE	

SAC ELECTRIC COMPANY - CHICAGO
 Specialists in High Voltage Circuit Interruption

SHEET 2 OF 2

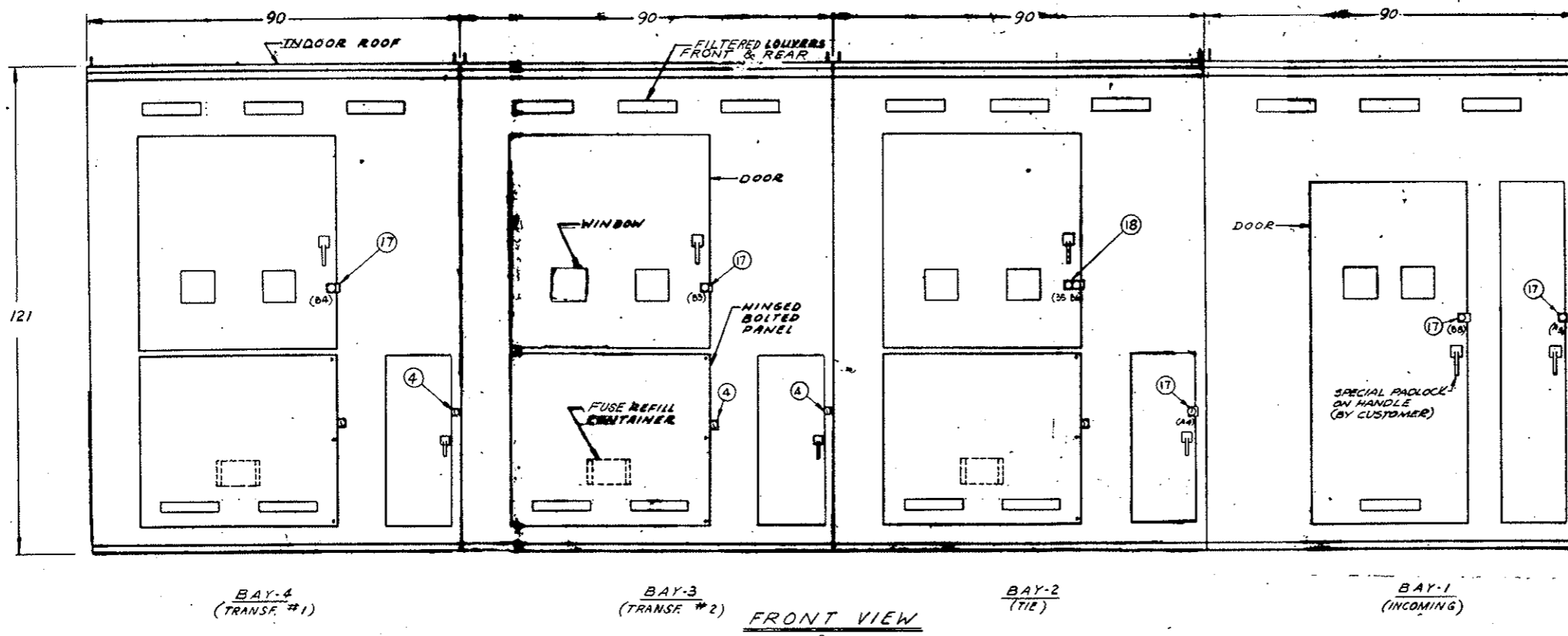
CD -112794

UNLESS SPECIFIED DECIMAL DIMS. TO BE FRACTIONAL DIMS. TO BE ANGLES TO BE CAST DIMS. TO BE

REVISIONS
CD-112804

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	170-31341220	242FY	

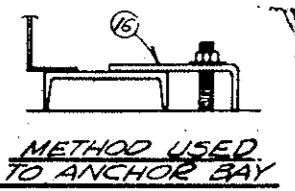
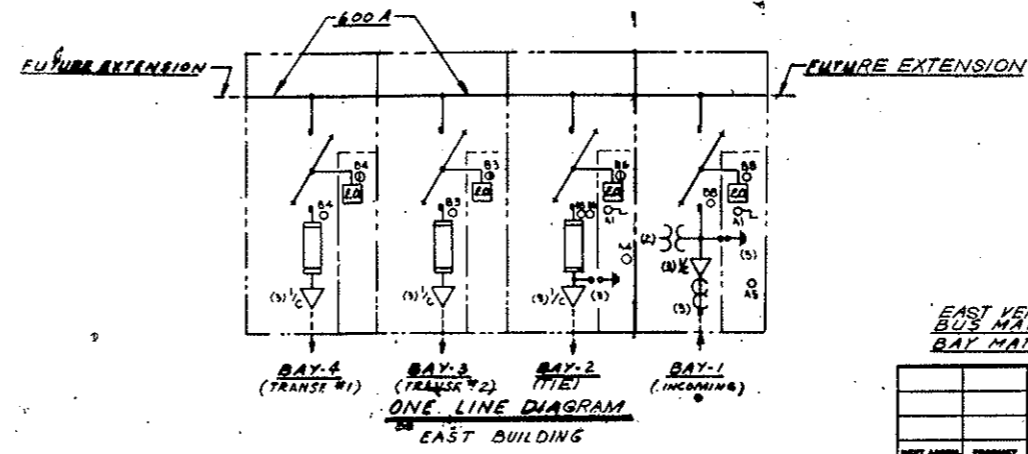
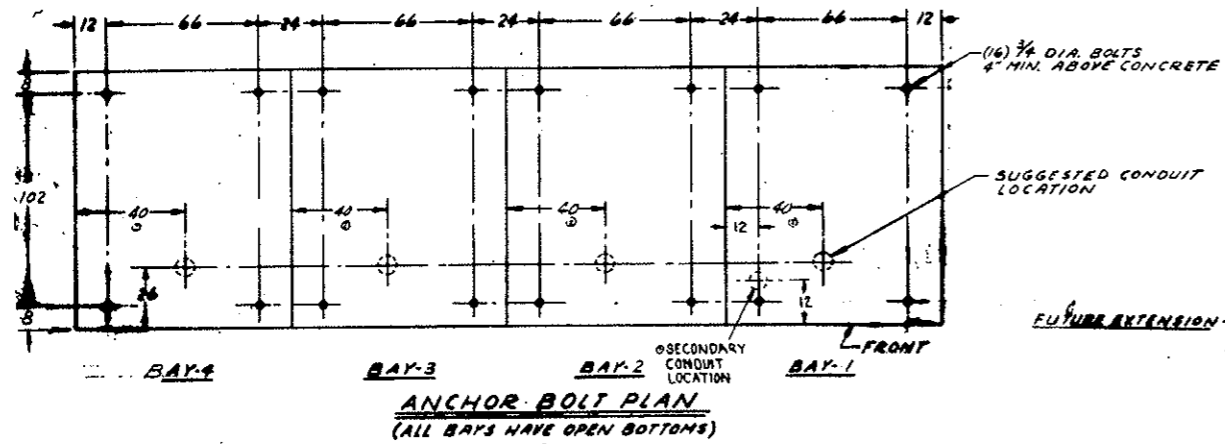
AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



BILL OF MATERIAL

ITEM NO.	REQD.	PART NO.	DESCRIPTION
1	4	45304R9	INTERRUPTER SWITCH 3 POLE HVY DUTY 600A
2	9	87509RE-S103	SM-5 POWER FUSE LIVE PARTS 300A
3	9	8881AQ100	SM-5S FUSE HOLDER NON DISC.
4	5	CDA-1600-1	KEY OPER. SNAPLOCK
5	2	38760 BGLMLH	ELECTRIC OPERATOR 125VDC
6	2	38760-BGLMMH	ELECTRIC OPERATOR 125VDC
7	2	JVT-150	POT. TRMFR 24000/120V GE (200K V. BIL.)
8	3		BUSHING CURRENT TRMFR G.E. TYPE BR 300/200/100-5A
9	1	TC10323WPE	SEL. SWT. 125 VDC G.E.
10	1	QCDA-3658	RELAY PANEL
11			
12	4	136303-F	KIRK KEY INTERLOCK
13	2	4742	CABLE CONN #2-500MCM
14	6	211758	OB LIGHTNING ARR. 24 KV TYPE MP-24
15		9785	LAPP BUS SUPPORT
16	16	QCD-1805	ANCHOR BRACKET
17	7	TYPE -D	KIRK KEY INTERLOCK
18	1	TYPE M2D	KIRK KEY INTERLOCK
19	12	NT-19241R	G & W/ PH. W/ SB 250 MOM MAX. G&W PORCELAIN BLOCKS WITH ADAPTER
20	3PR		

- NOTES:**
- RATINGS: 600 AMP CONTINUOUS VOLTAGE 34.5 KV NOM. 200 KV BIL. SH. CIRC. INT. 1000 MVA 3 PHASE SYM MOMENTARY 40,000 AMP RMS ASYM 4 SEC. 25,000 AMP RMS. SYM
 - ALL HANDLES HAVE PROVISIONS FOR PADLOCKING.
 - KEY INTERLOCKS A1 (3 KEYS AVAILABLE) PREVENT ACCESS TO MANUAL HAND CRANK HUB ON ELECTRIC OPERATOR UNLESS REMOTE CONTROL IS LOCKED OPEN AT P.C.B. IN CONTROL ROOM.
KEY INTERLOCKS A2, A3, A4, A5 PREVENT OPENING DOOR ON ELECTRIC OPERATOR COMPARTMENT UNLESS REMOTE CONTROL IS LOCKED OPEN, RELEASING ASSOCIATED KEY A2, A3, A4 OR A5.
KEY INTERLOCKS B1 THRU B6 PREVENT ACCESS TO FUSE COMPARTMENT UNLESS FUSES ARE DE-ENERGIZED.
KEY INTERLOCKS B7 & B8 WILL BE USED IN ADDITION TO SPECIAL PADLOCKS FOR ACCESS TO INTERRUPTER SWITCHES IN BAY 1s.
 - EACH BAY TO BE SHIPPED SEPARATELY.
5,6,7,8,9 & 10 FURNISHED, INSTALLED BY SAC PER: CDR-2688-1 SCHEMATIC W.D., CDR-2688-1 DETAIL W.D., CDR-2688-3 INTERCONNECTION W.D., CDR-708 E.O. SCHEMATIC W.D., CDR-708 E.O. DETAIL W.D.
 - HIGH VOLTAGE CABLE TERMINATION BY OTHERS. THE CABLE SHIELDING GROUND LEAD MUST BE BROUGHT BACK THROUGH THE WINDOW TYPE C.T. BEFORE CONNECTING TO THE GROUND BUS.



EAST VENTILATION BLDG.
BUS MATL: ALUMINUM
BAY MATL: #11GA(119) REINF. SHEET STEEL

DESCRIPTION: DURABRAKE 4504
S & C SPEC. NO. 28-801

SAC ELECTRIC COMPANY - CHICAGO
Specialists in High Voltage Circuit Interruption

34.5 KV - 4 BAY - INDOOR - METAL ENCLOSED SWITCHGEAR

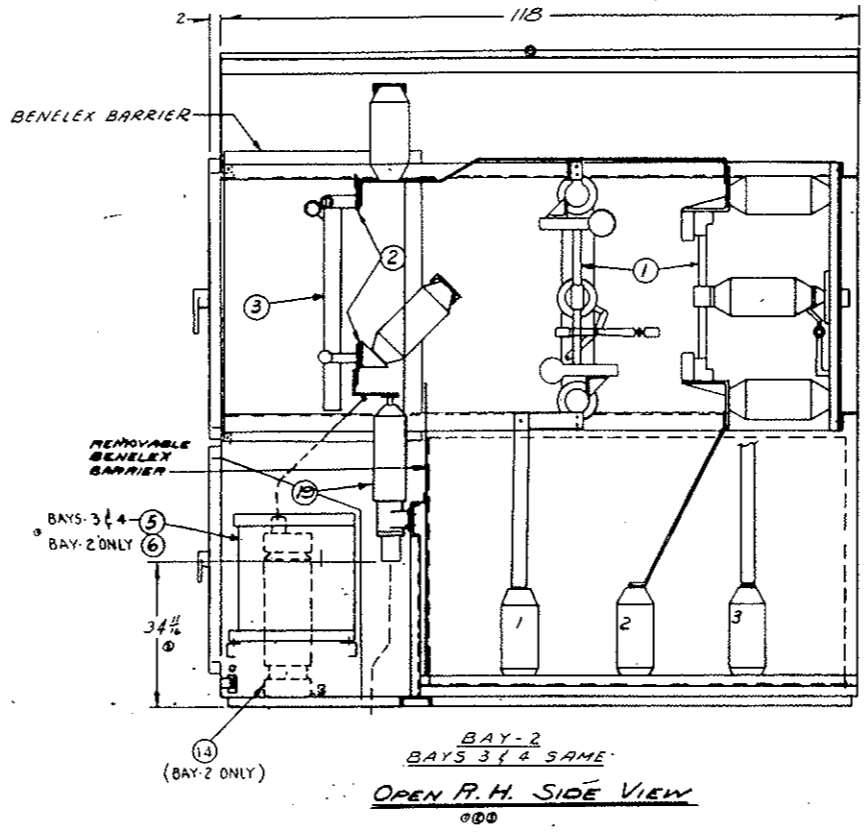
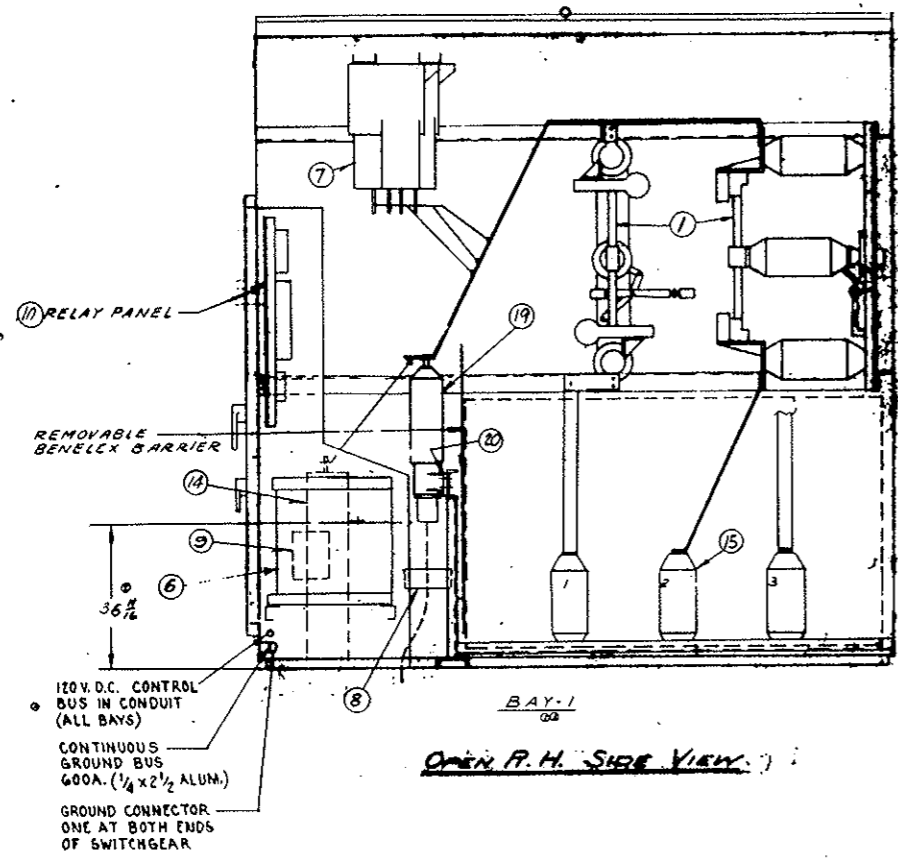
SHEET 10 of 2
CD-112804

UNLESS OTHERWISE SPECIFIED DIMS. TO BE:
 FRACTIONAL DIMS. TO BE:
 ANGLES TO BE:
 CAST DIMS. TO BE:

CD - 112804
 SHEET 2 OF 2

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I 70-31341220	2426Y	

AS CONSTRUCTED
REVISED DATE **Oct. 26, 1973**



EAST VENTILATION BLDG.

FINISH: SEE SHEET 1 OF 2
 DESCRIPTION: SEE SHEET 1 OF 2
 S & C SPEC. NO.

SCALE	3/16" = 1"	SAC ELECTRIC COMPANY - CHICAGO Specialists in High-Voltage Circuit Interruption	SHEET 2 OF 2 34.5 KV - 4 BAY - INDOOR - METAL ENCLOSED SWITCHGEAR	CD - 112804
DESIGNED BY	JN			
CHECKED BY	JN			
DATE	12-19-68			

LEGEND

BC1, BC2, BC3 - Bulkheads 1 to 5 closing starter coil
 BC4, BC5 - Bulkheads 1 to 5 opening starter coil
 CR-B - Bulkheads pos. ind. light aux relay
 CR-ED - Damper pos. ind. aux relay (East)
 CR-ESI - Supply Fan 1 mot. failure ind. aux relay (East)
 CR-ST - Fan motor stop aux. relay
 CR-UVe - Main power undervoltage aux. relay (East)
 CR-UVw - Main power undervoltage aux. relay (West)
 CR-WD - Damper pos. ind. aux relay (West)
 CR-WSE - Supply, Exh. Fans failure ind. aux. relay (West)
 D-C - Damper closing starter coil
 DL1, DL2, DL3 - Damper limit switches
 DL4, DL5, DL6 - (SEE DEVELOPMENT)
 DL7, DL8, DL9 - (SEE DEVELOPMENT)
 D-O - Damper opening starter coil
 FCB - Fan Control Board (In Control Room)
 H - Control switch contact (Fan high speed)
 I - Control switch contact (Fan inter. speed)
 IH - Interposing relay (Fan high speed)
 IL - Interposing relay (Fan intermediate sp.)
 II - Interposing relay (Fan low speed)
 IST - Interposing relay (For Stopping)
 L - Control switch contact (Fan low speed)
 LCB - Local Control Board (In Elect. Equip. Room)
 LOC1, LOC2, LOC3 - Bulkheads 1 to 5 interlocks (See Development)
 LOC4, LOC5 - (SEE DEVELOPMENT)
 M-C - Bulkheads closing aux. relay
 M-I - Fan intermediate speed starter relay
 M-L - Fan low speed starter relay
 M-O - Bulkheads opening aux. relay
 OL - Overload relay
 SS-1A, SS-1B - Fan speed switches
 SS-2, SS-3 - (SEE DEVELOPMENT)
 SS-4, SS-5 - (SEE DEVELOPMENT)
 SS-6 - (SEE DEVELOPMENT)
 N.I.C. - Not In Circuit

Contacts	Automatic	Manual
1-2	X	
3-4	X	
5-6		X
7-8		X

X Contact closed (Maintained contacts)

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

ST - Control switch contact (Fan stop)
 V-H - Supply Fan mot. vent fan high sp. starter
 V-L - Supply Fan mot. vent fan low sp. starter
 UVe - Main power undervoltage relay (East)
 UVw - Main power undervoltage relay (West)
 S2 - AC Circuit Breaker
 S2a - Aux. switch - Open when breaker is open
 S2b - Aux. switch - Open when breaker is closed
 S2C - Breaker closing relay
 S2T - Trip coil
 TDC - Time delay closing
 LCI - Bulkhead's closed (1 in 3 in) See
 LCO - Bulkhead's open (1 in 3 in) See
 (G) - Indicating Light G-Green, R-Red, W-White
 Local - At Fan Floor
 47 - Reverse Phase Voltage Relay
 46 - Current Balance Relay (For single Phasing Protection)

NOTES:

- Circuits shown with all relay contacts in deenergized position, all fans at rest, dampers & bulkheads fully closed.
- Circuits are drawn for East Supply Fan #1 (ES-1), other East Supply Fans similar except number of bulkheads varies. For all Exhaust Fans omit Motor Vent Fan, Bulkheads & Interlock as indicated on Dwg. Control for Fans at West is basically similar except CS (FCB) Contacts and Transfer Switch Contacts are Simulated at the West over Supervisory Control System.
- Circuits showing quindar source are for West Side Only.
- See G.E. drawings for correct schematics.

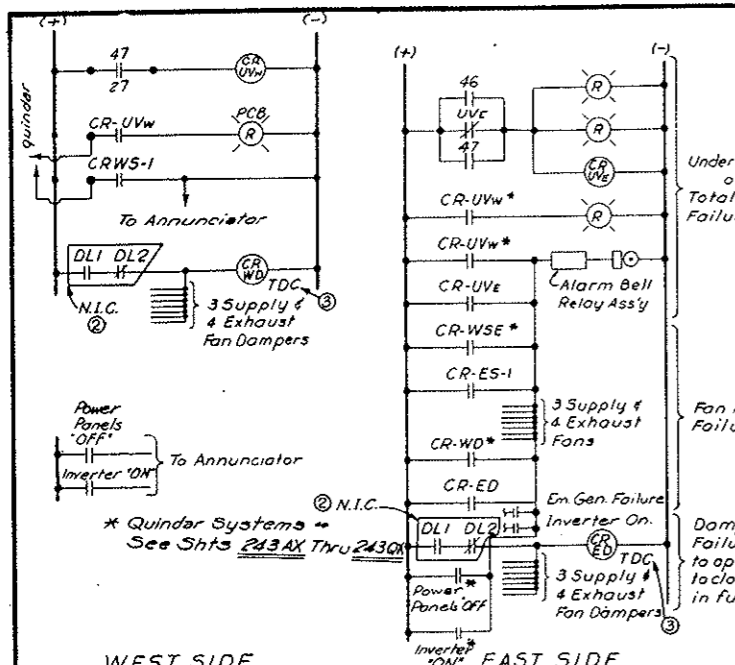
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

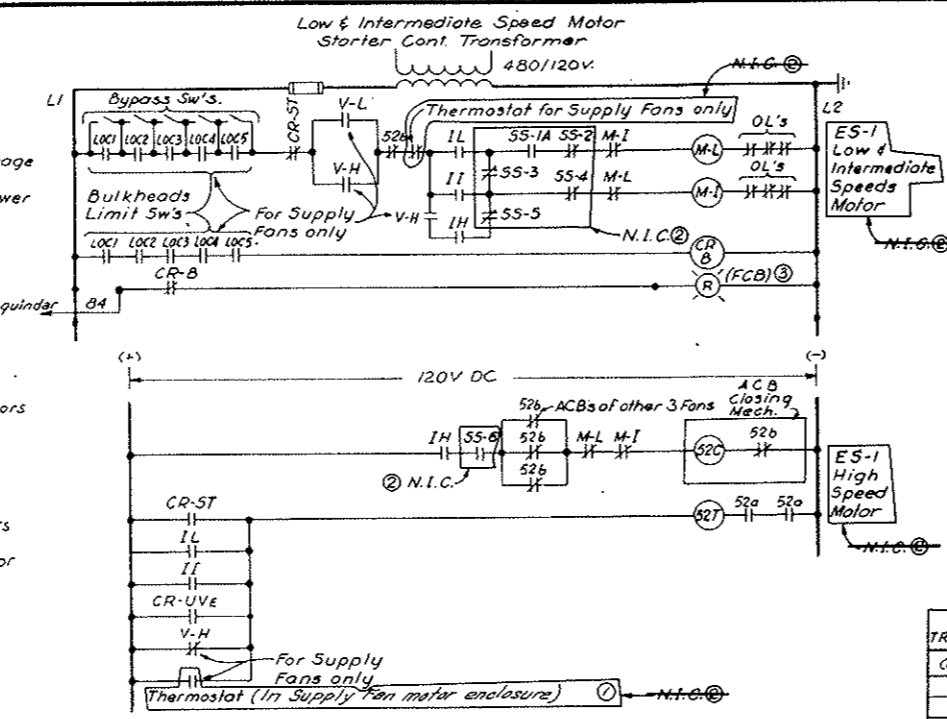
ELECTRICAL FAN CONTROL ELEMENTARY DIAGRAM

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N.Y.

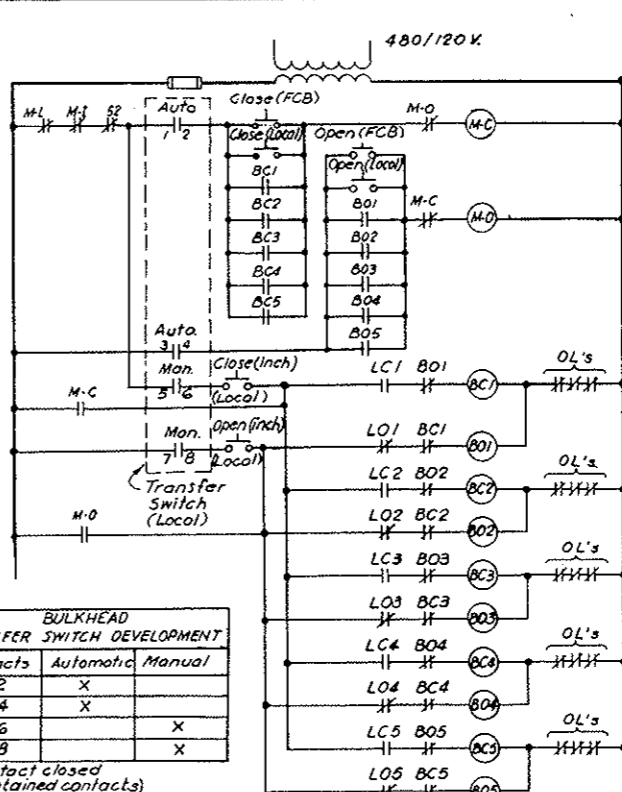
DESIGNED: N.A.C.
 DRAWN: E.A.N.
 CHECKED: D.H.D.
 APPROVED: [Signature]
 SUBMITTED: [Signature]
 NEW YORK, N.Y. SCALE: NONE DATE: AUG. 1967 DRAWING NO. **E-63**



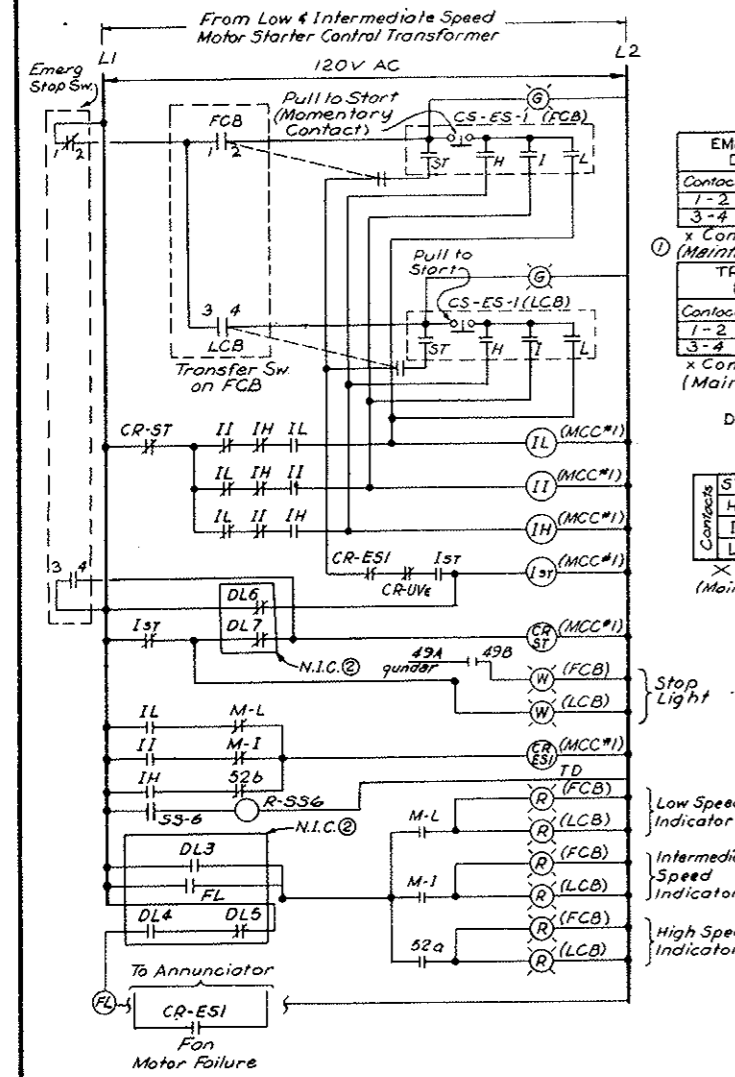
WEST SIDE GENERAL ANNUNCIATION & ALARM



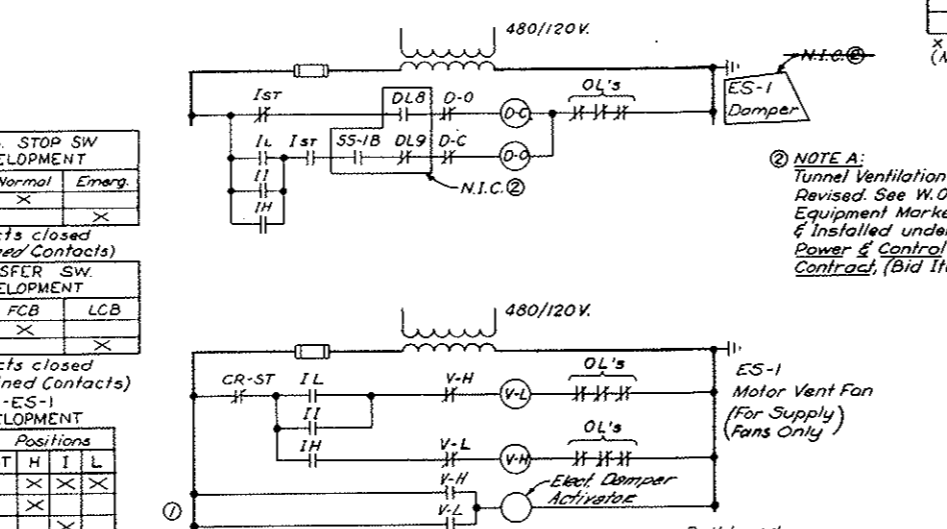
Low & Intermediate Speed Motor Starter Cont. Transformer



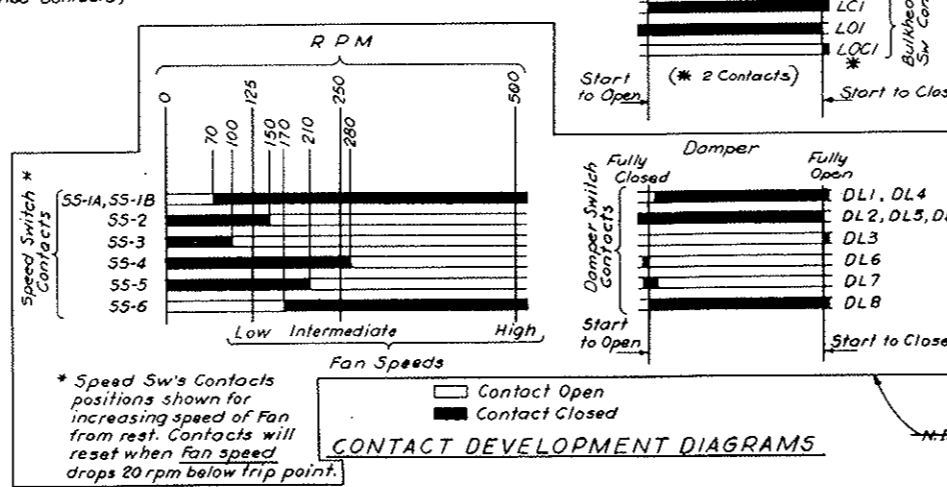
BULKHEADS CONTROL



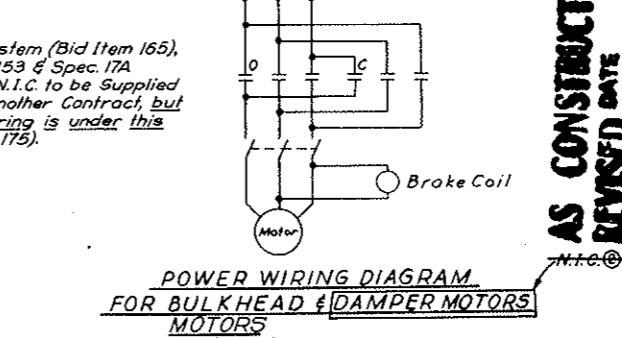
EAST SIDE GENERAL ANNUNCIATION & ALARM



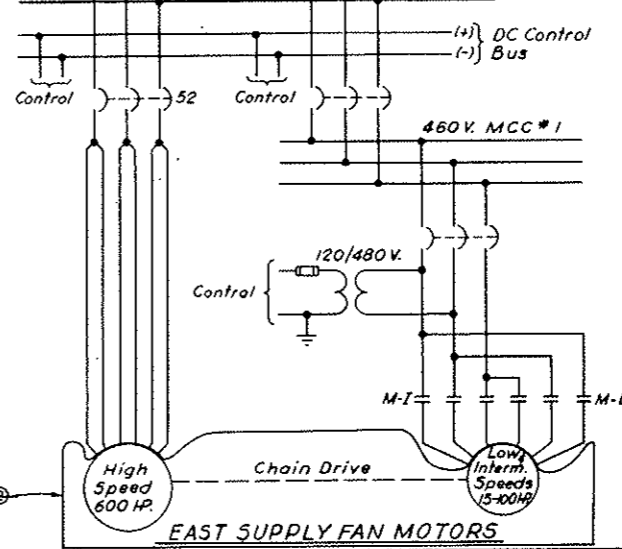
MOTOR VENT FAN (FOR SUPPLY FANS ONLY)



CONTACT DEVELOPMENT DIAGRAMS



POWER WIRING DIAGRAM FOR BULKHEAD & DAMPER MOTORS

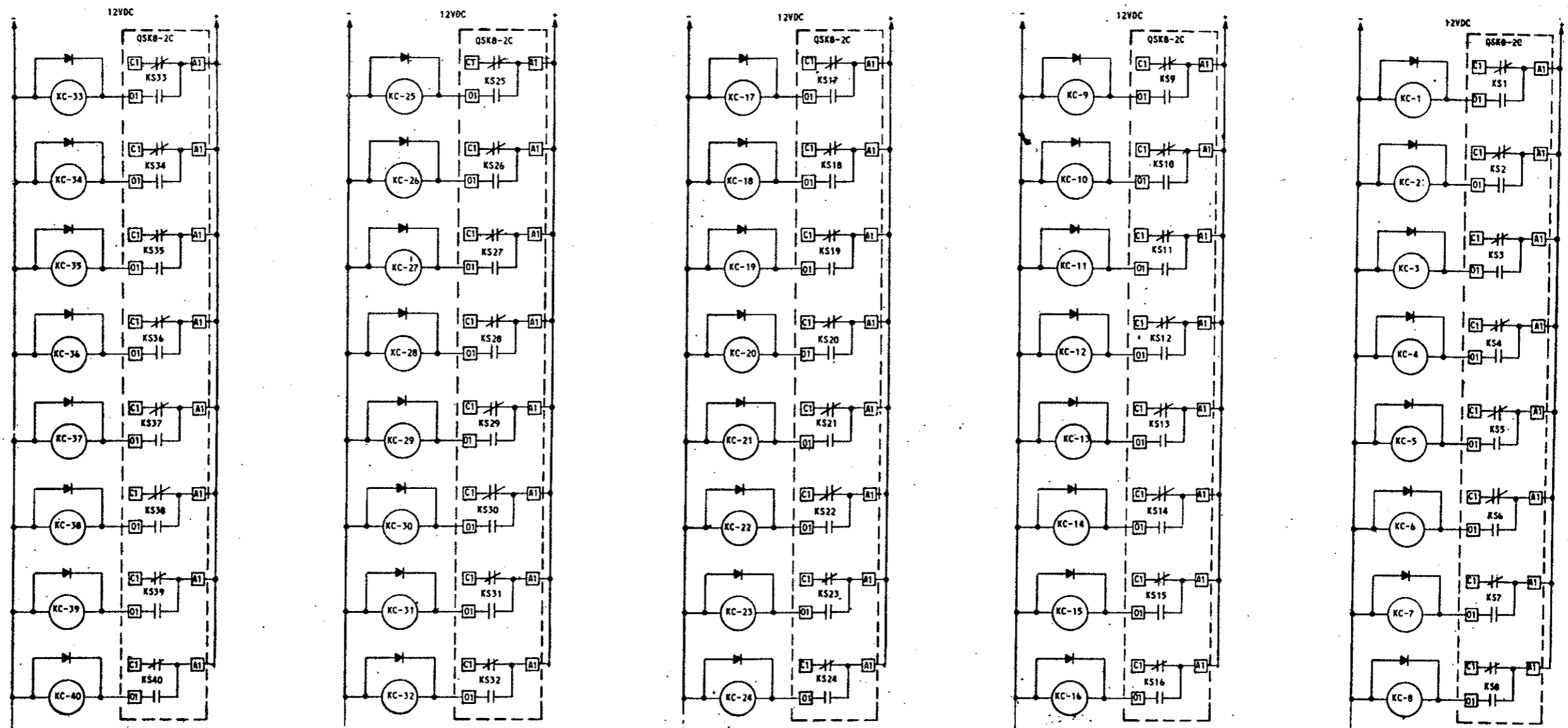
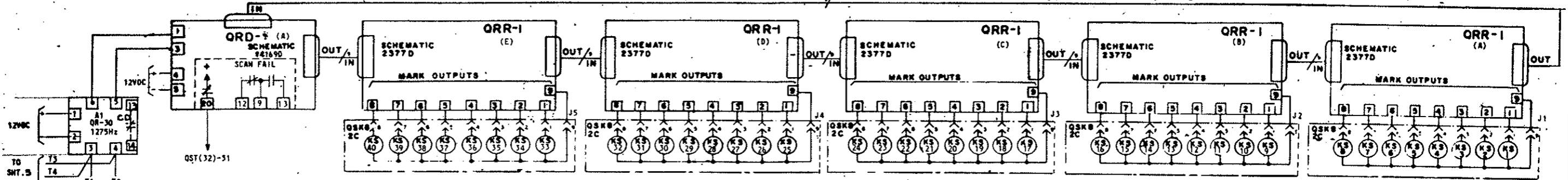


EAST SUPPLY FAN MOTORS

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
33X	COLORADO	170-3(34)220	243 HX	

DOUBLE SCAN SCANNER

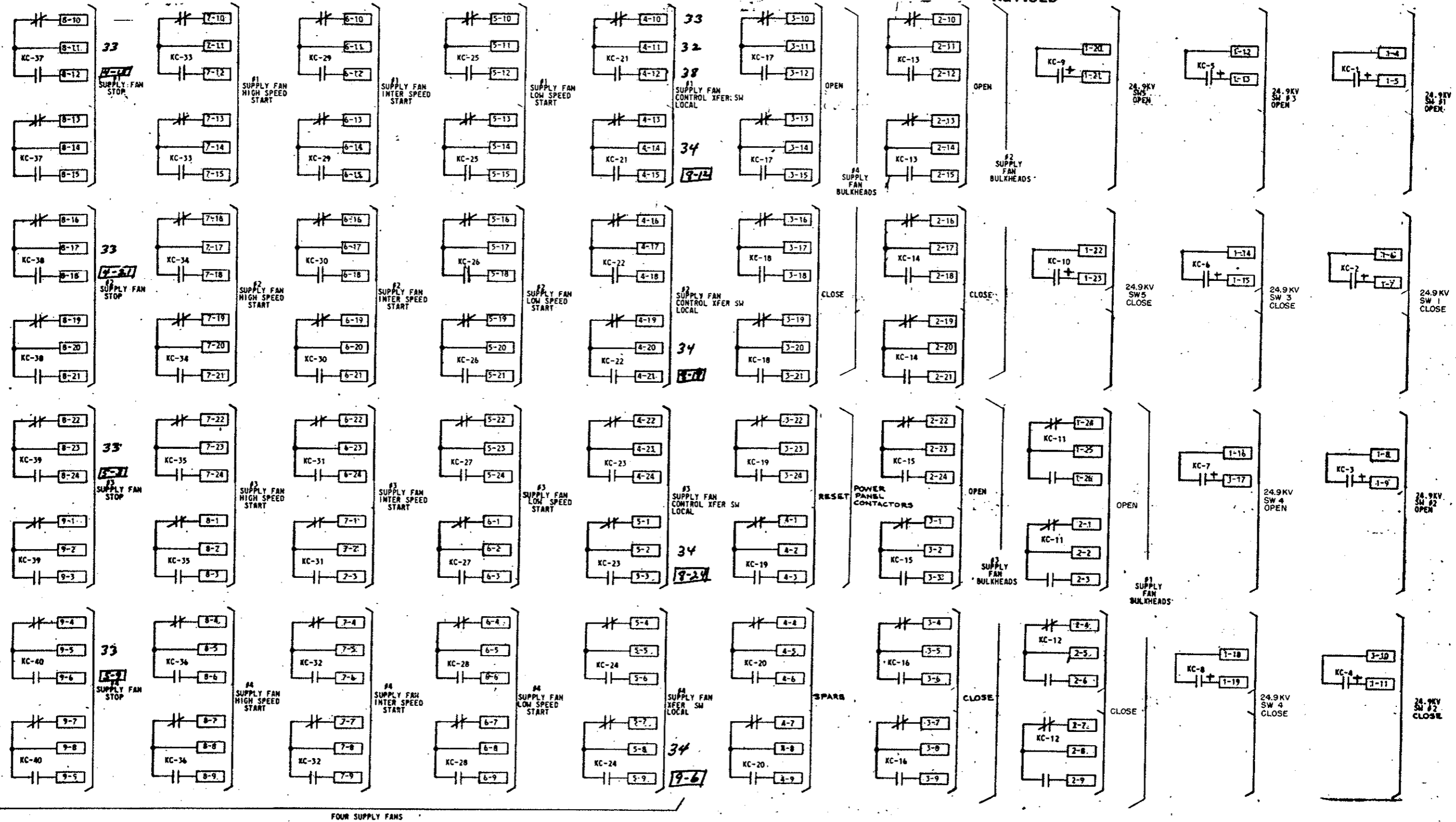


NOTE: INTERPOSE RELAYS KC1 THRU KC10
 ARE PR 30 MG. ALL OTHERS ARE PR 11 DY.
 ALL DIODES ARE 1N2069

DETAILS OF QUINDAR SYSTEM
 (Remote Fan Control)

AS CONSTRUCTED
REVISED DATE Oct 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	I70-3(34)220	249 IX	



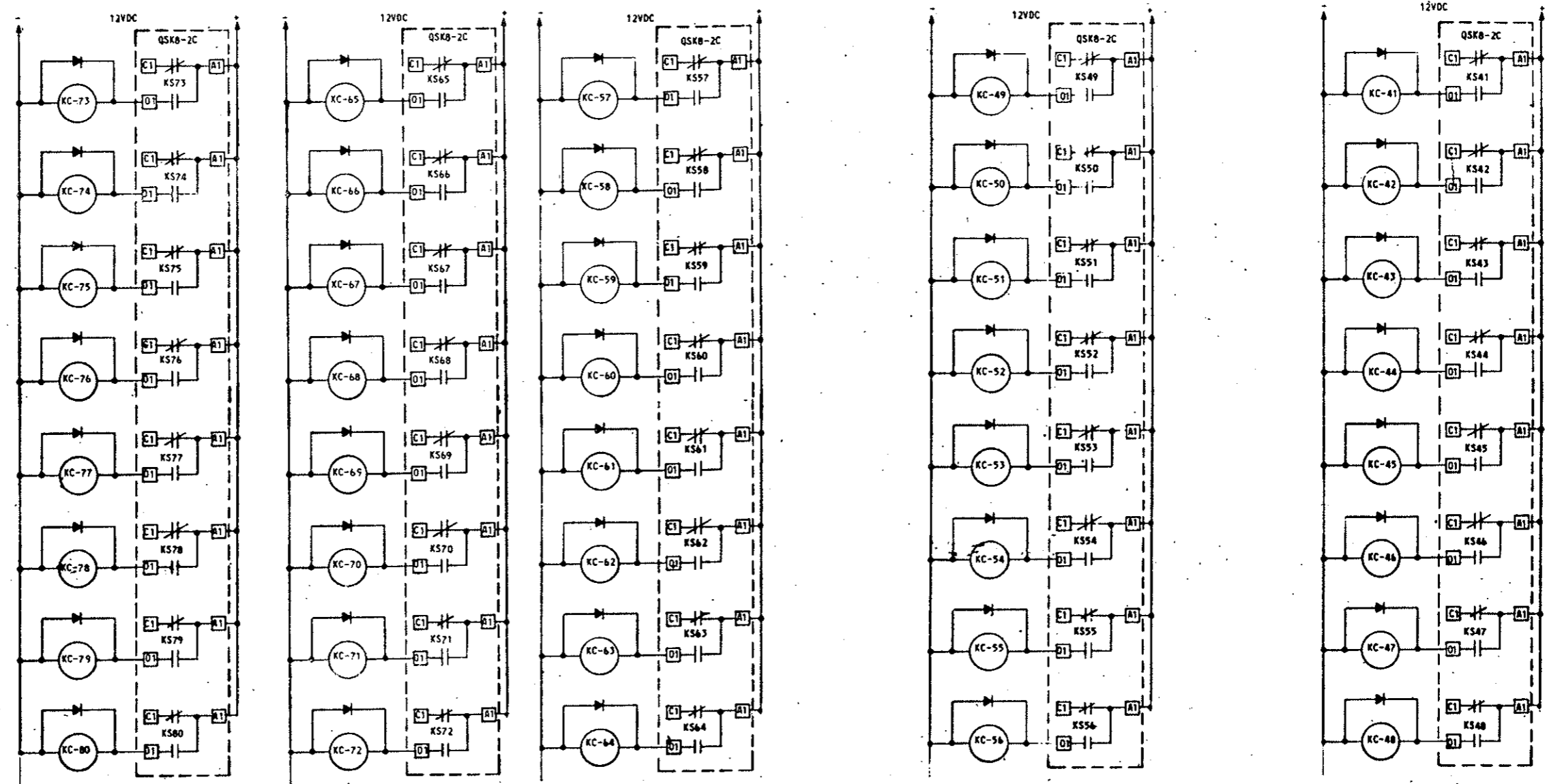
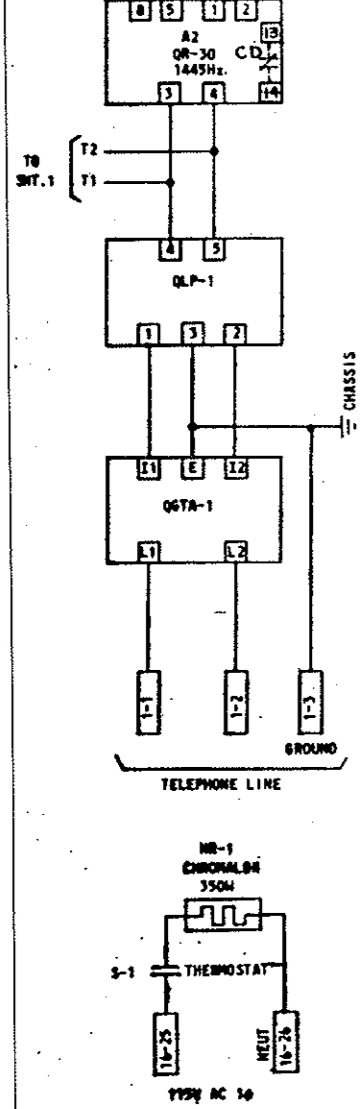
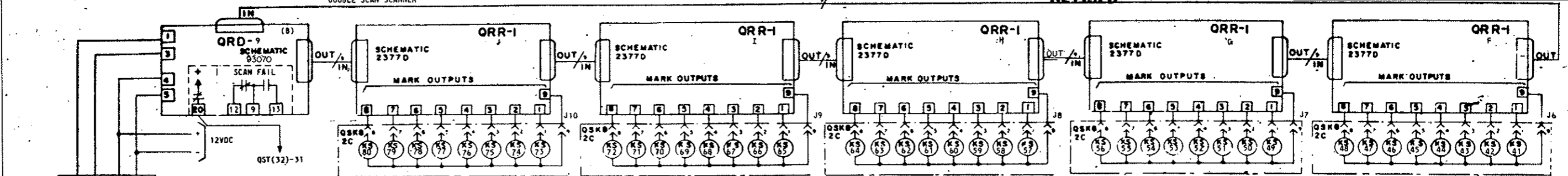
FOUR SUPPLY FANS

DETAILS OF QUINDAR SYSTEM
(Remote Fan Control)

AS-CONSTRUCTED
REVISED DATE Oct 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
2XL	COLORADO	I 70-3(34) 220	243 JX	

DOUBLE SCAN SCANNER

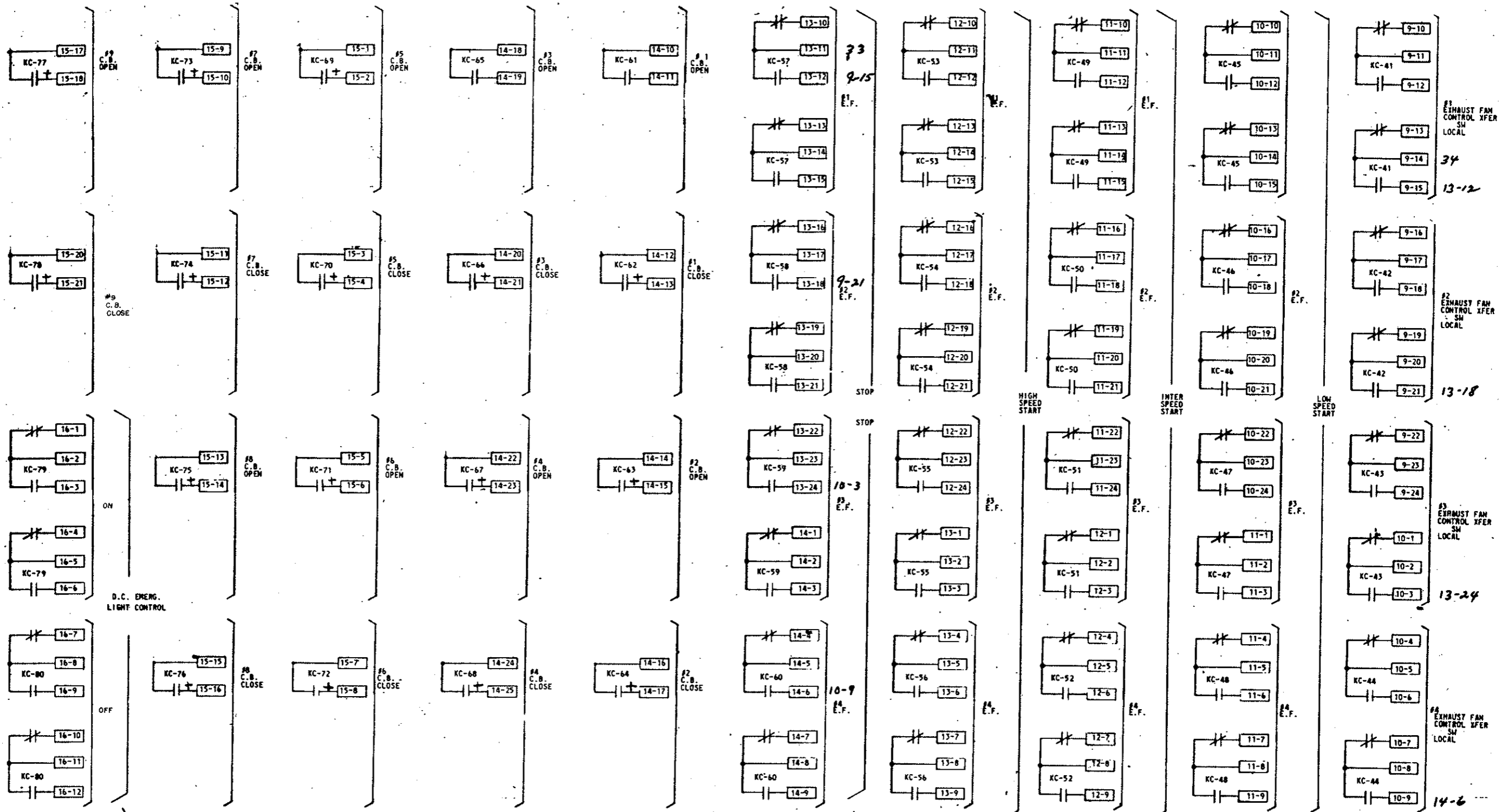


NOTE: INTERPOSING RELAYS, KC-61 THRU KC-70 ARE PR 3D MG ALL OTHERS ARE PR 11 OY.

DETAILS OF QUINDAR SYSTEM
(Remote Fan Control)

AS CONSTRUCTED
REVISED DATE Oct 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
33E	COLORADO	I 70-3(34) 220	243 KX	

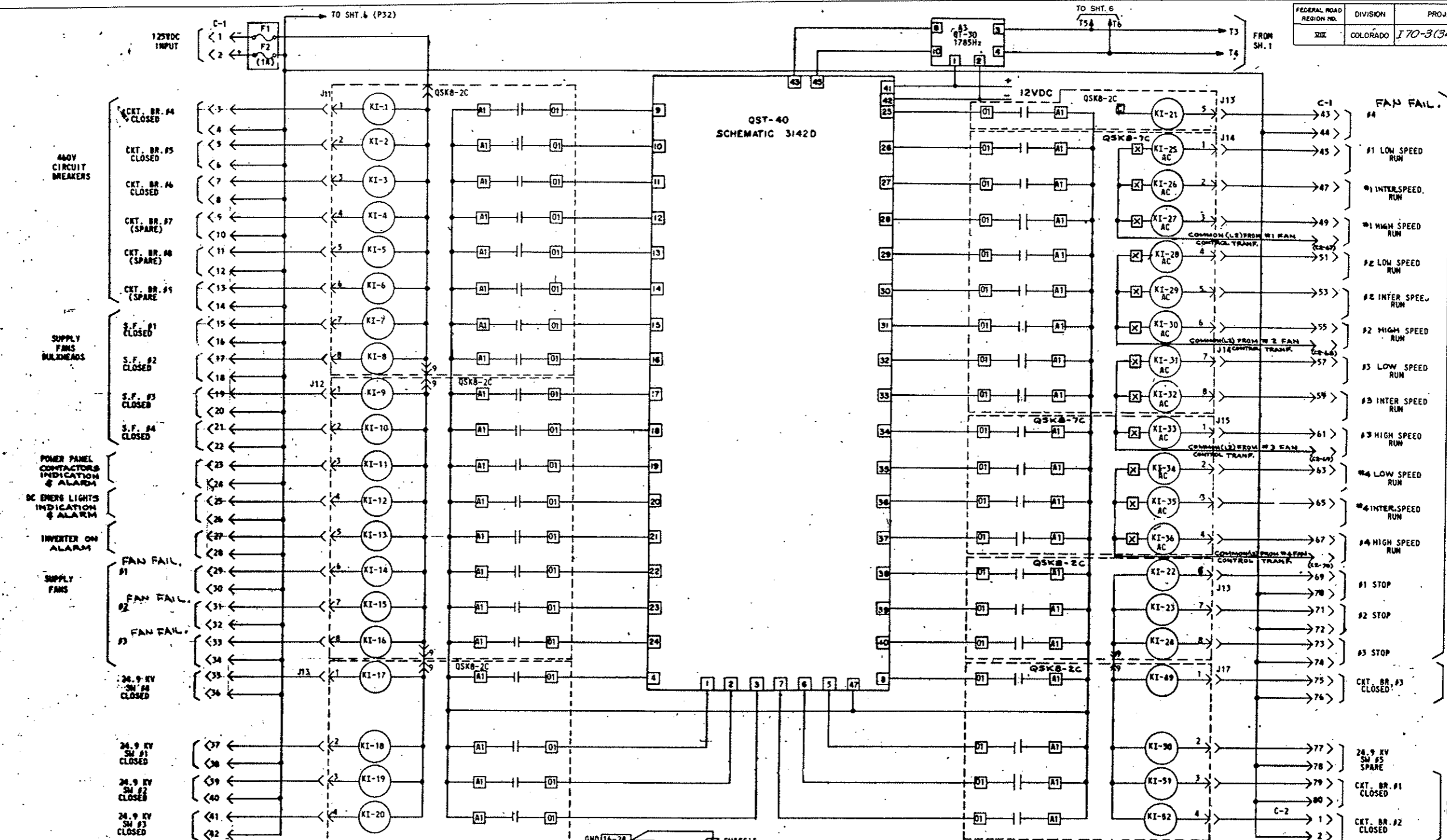


460V CIRCUIT BREAKERS

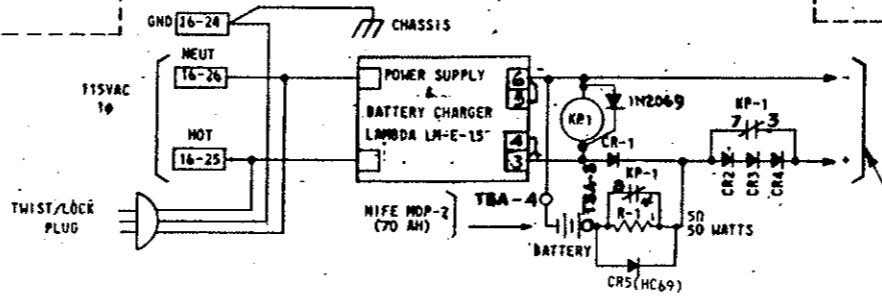
FOUR EXHAUST FANS

DETAILS OF QUINDAR SYSTEM
 (Remote Fan Control)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XXX	COLORADO	I70-3(34)220	243 LX	

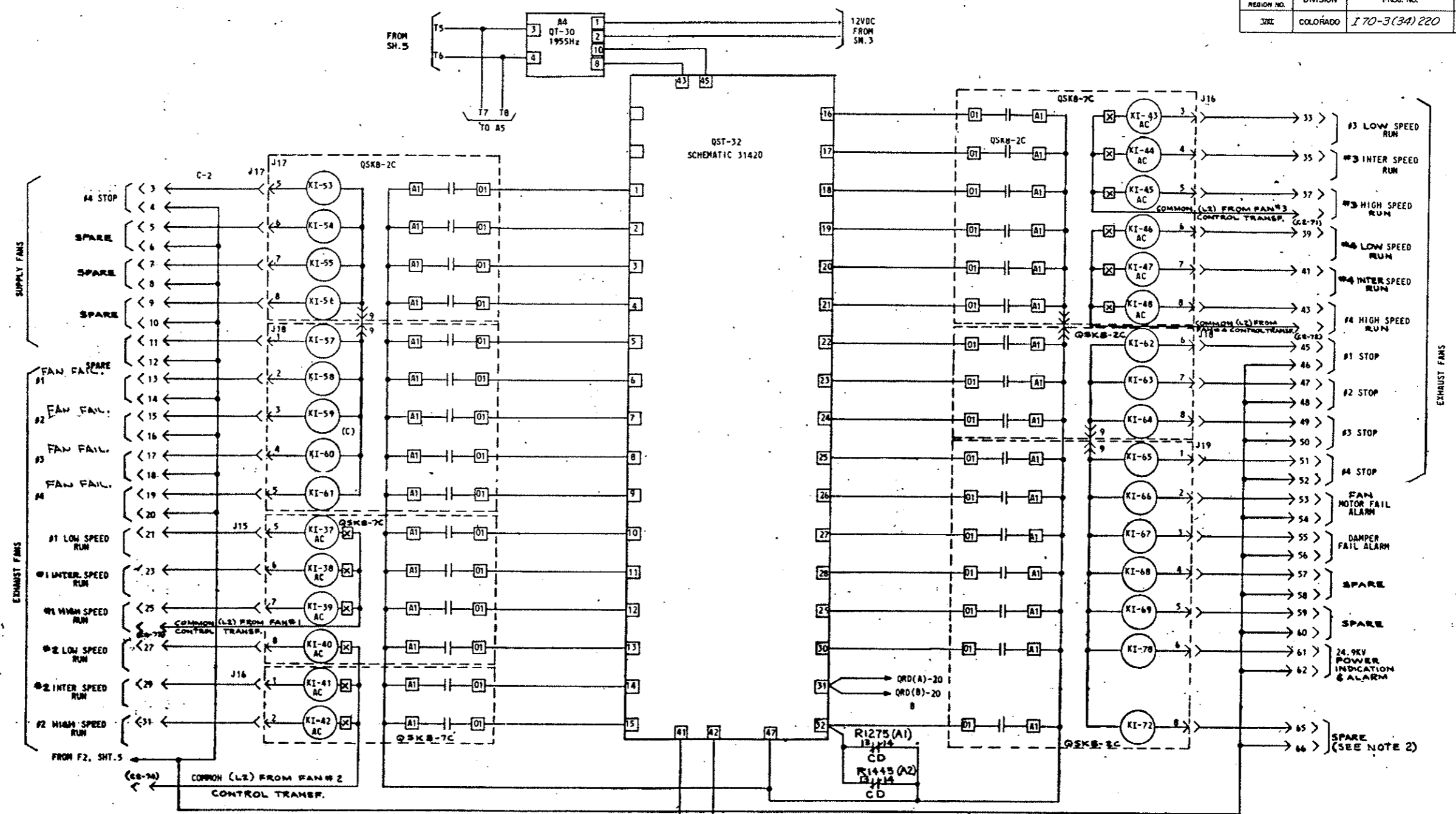


AS CONSTRUCTED
REVISED Oct. 26, 1973

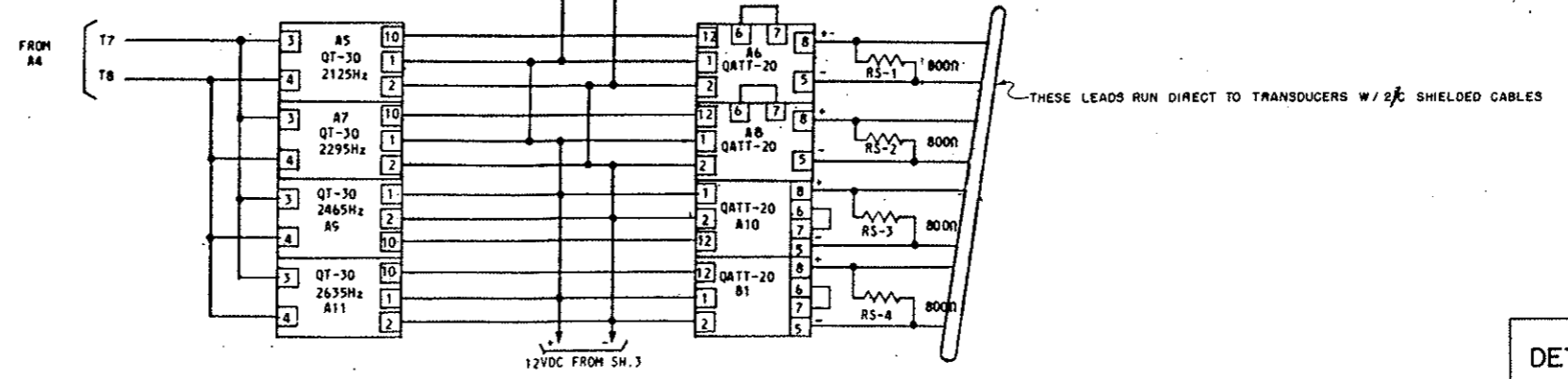


DETAILS OF QUINDAR SYSTEM
 (Remote Fan Control)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XXX	COLORADO	I 70-3(34) 220	243 MX	

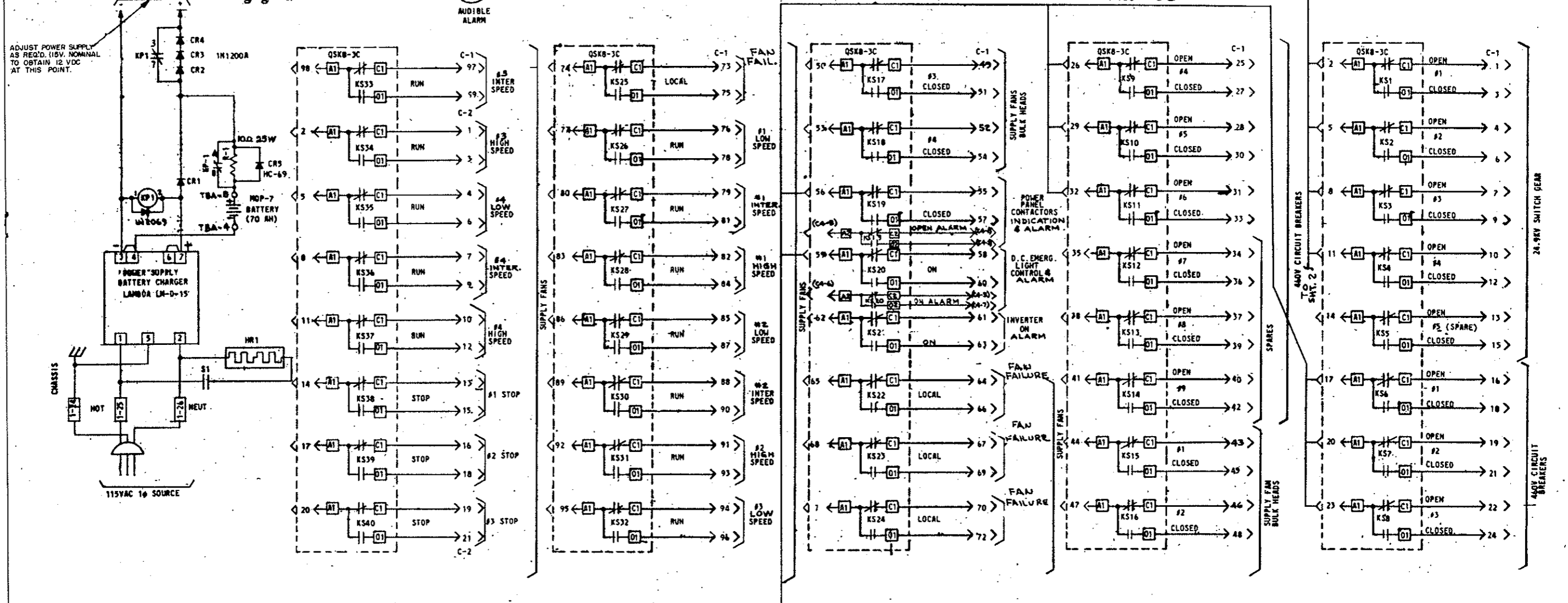
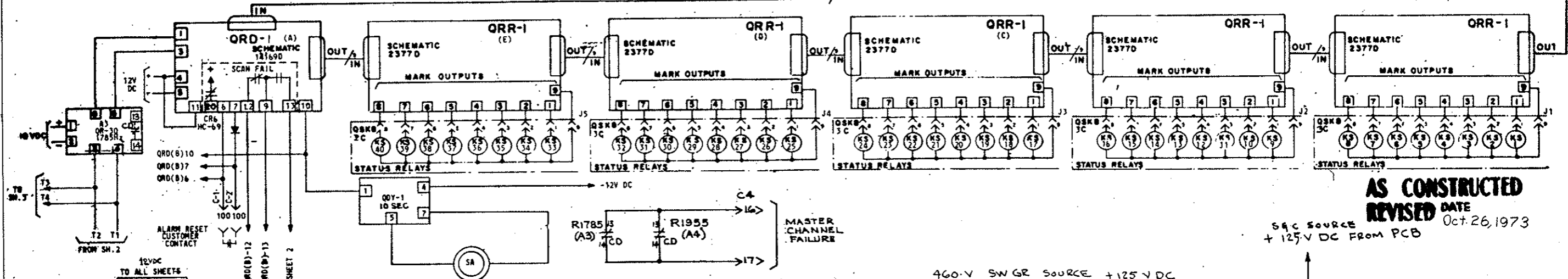


- NOTES:
1. CD IND. CARRIER DETECTOR SEE SH.1 & SH.3 FOR RECEIVER LOCATION
 2. SPARE ALARM ONLY IF CARRIER DET. IS NOT USED.



AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

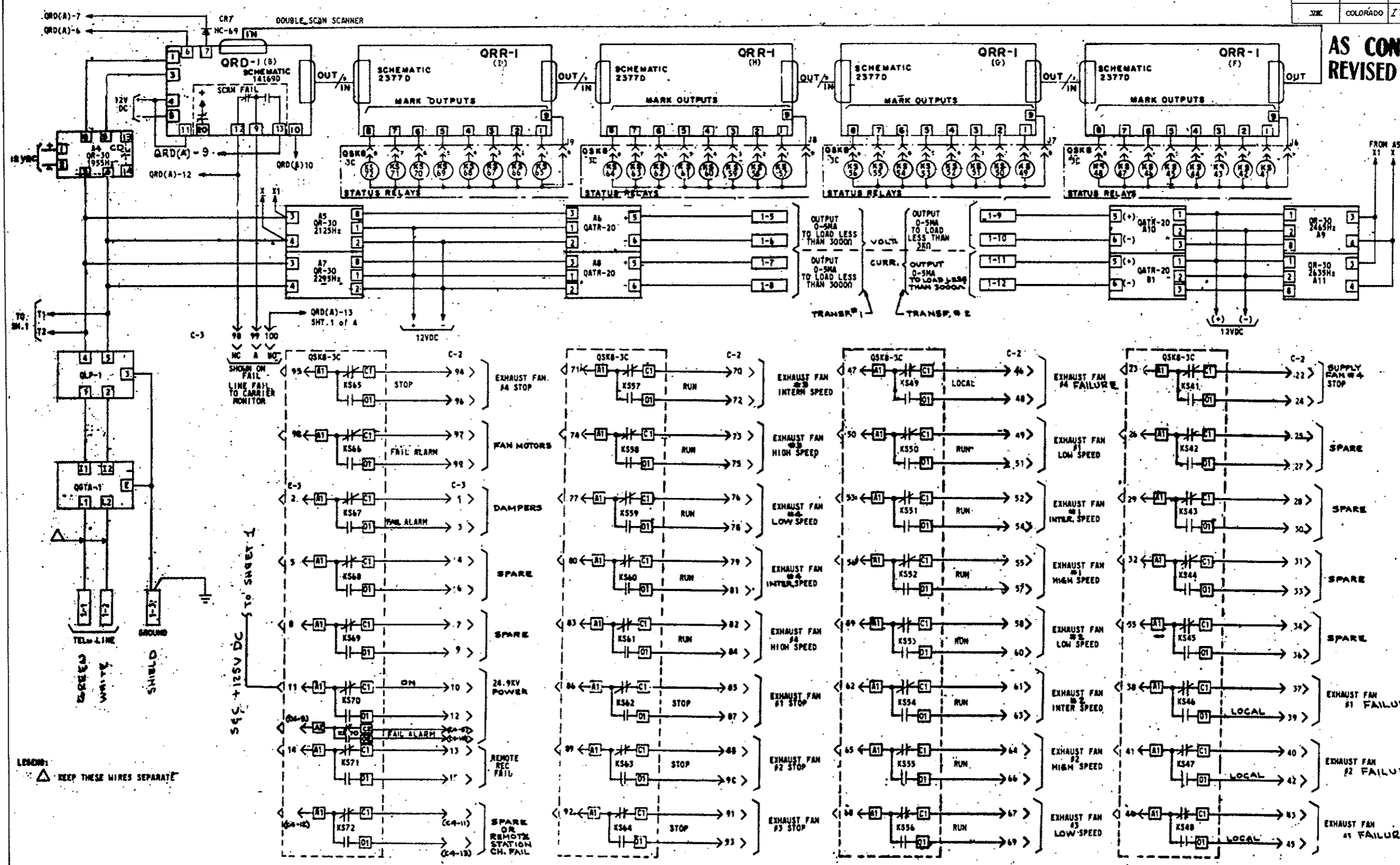
DETAILS OF QUINDAR SYSTEM
(Remote Fan Control)



NOTE: CR1 THRU CR4 ARE 1N1200A.
R1 100 25 WATTS

DETAILS OF QUINDAR SYSTEM
(Remote Fan Control)

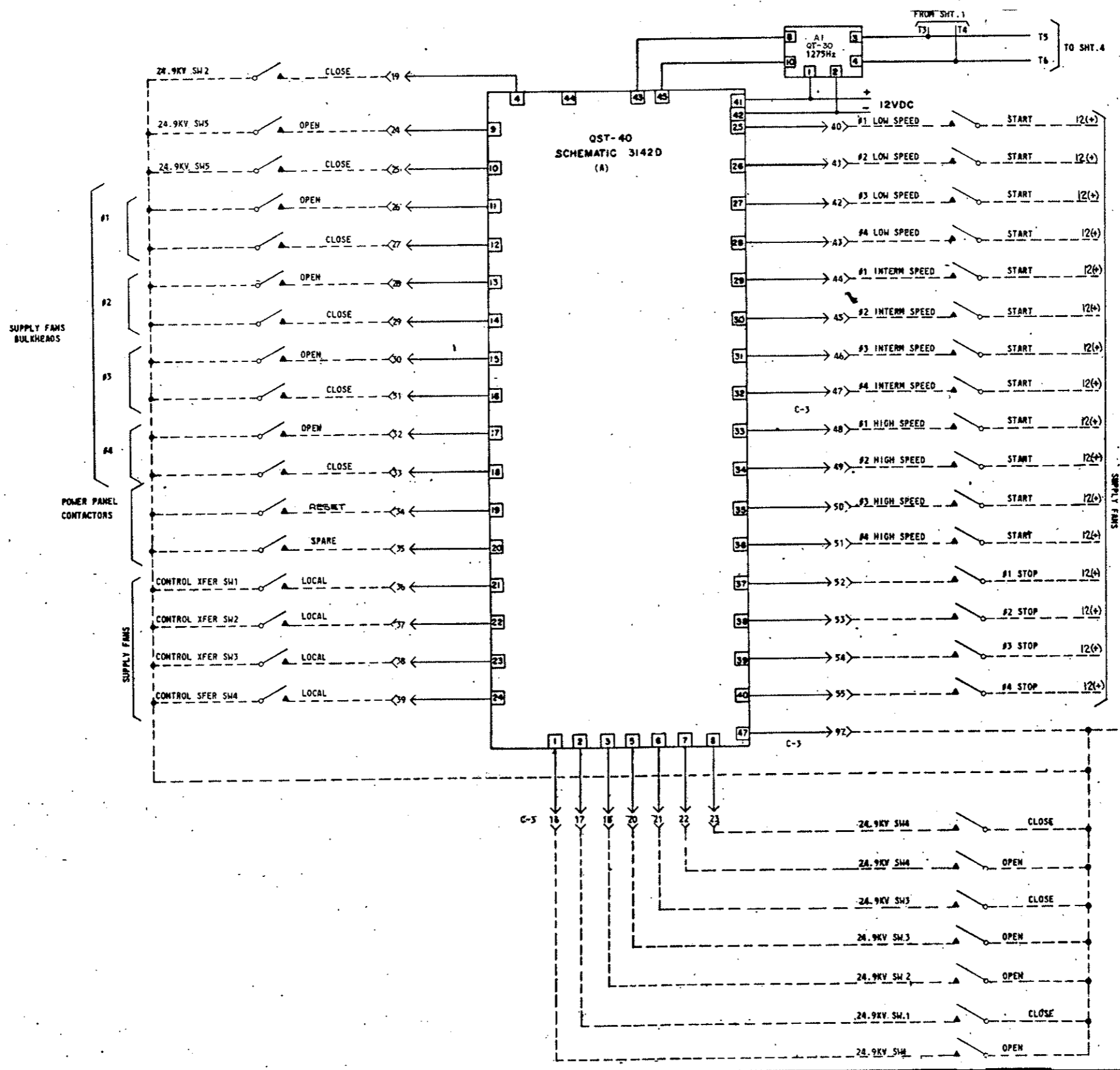
AS CONSTRUCTED
REVISED DATE *Oct. 26, 1973*



DETAILS OF QUINDAR SYSTEM
 (Remote Fan Control)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
336	COLORADO	170-3(34)220	243 PK	

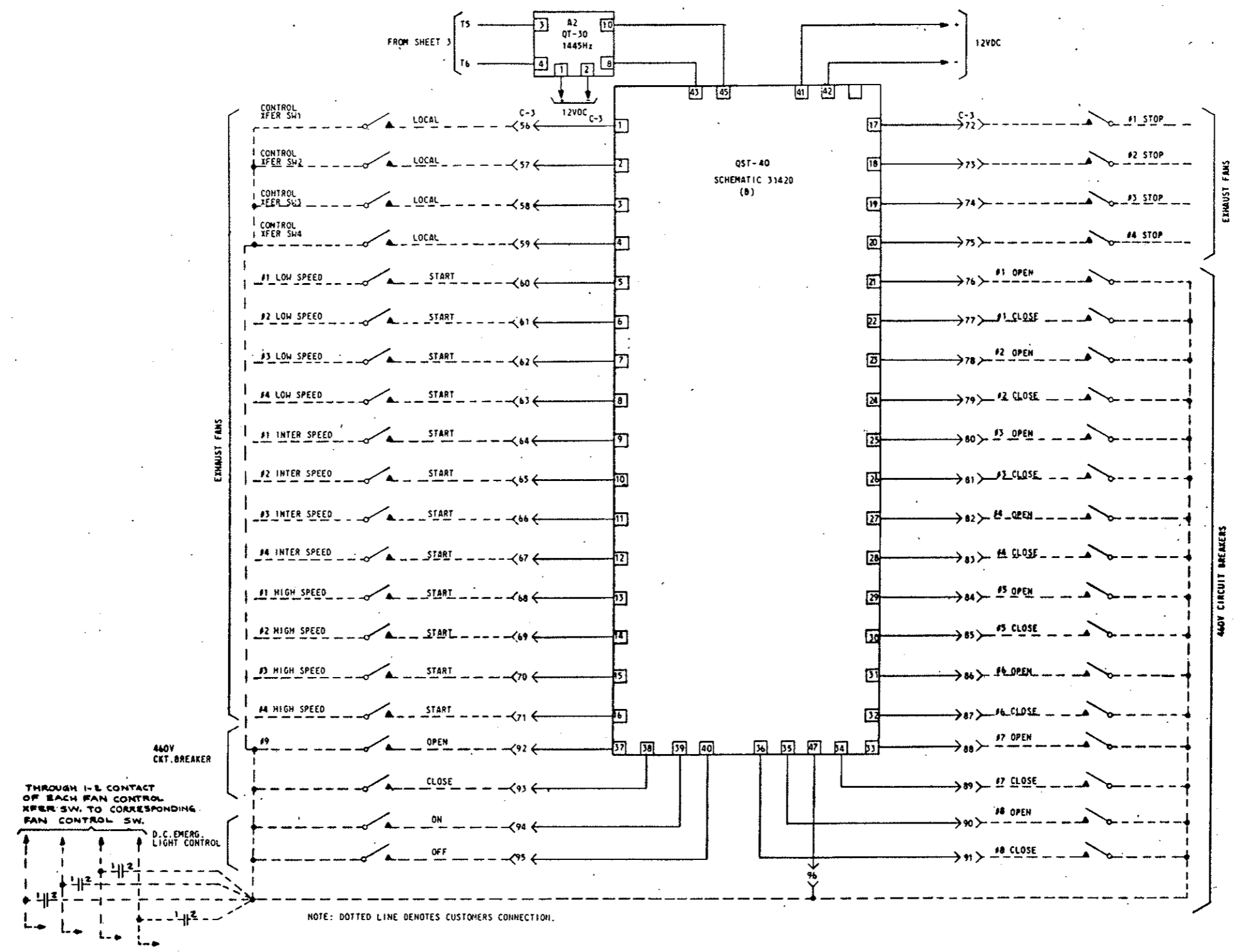
AS CONSTRUCTED
REVISED DATE *Oct. 26, 1973*



DETAILS OF QUINDAR SYSTEM
 (Remote Fan Control)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
70C	COLORADO	170-3(34)220	243 QX	

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



DETAILS OF QUINDAR SYSTEM
 (Remote Fan Control)

PURCHASER GESCO/JELGO INC.
LOCATION STRAIGHT CREEK TUNNEL, 13 MILES WEST OF GEORGETOWN COLO.
STATION EAST VENTILATION & WEST VENTILATION BUILDINGS
EQUIPMENT AKD-5 POWERMASTER SWITCH GEAR

REV. No.
0165B8182
 CONT ON SHEET 2 SH NO 1

TITLE
ELEMENTARY DIAGRAM
 FIRST MADE FOR REG. 433-20323 S.O. 9/22/77

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973
AS CONSTRUCTED
 REVISED DATE

209A1005	SUMMARY
168R067D	FRONT VIEW
168R0671	

NOTES

- - SYMBOL INDICATES SWITCHES AND/OR DEVICES USED ON THIS SHOP ORDER.
- ⊕ - PURCHASER TO MAKE THESE CONNECTIONS
- * - REMOTE FROM SWITCHGEAR
- ⊙ - PURCHASER TO REMOVE THESE JUMPERS WHEN METERING IS COMPLETED.
- △PS - POSITION SWITCH (PS) SHOWN WITH BREAKER IN OPERATING POSITION. CONTACTS REVERSED IN TEST AND WITHDRAWN POSITION.
- STB2 - DENOTES SHIPPING TERMINAL BLOCK 2, STUD 1, UNIT 4
- OTB2 - DENOTES OUTGOING TERMINAL BLOCK 2, STUD 1, UNIT 4
- ⚡ - DEVICES LOCATED AT POWER TRANSFORMER

INTERNAL DEVICE DIAGRAMS (SHOWN B.V. UNLESS OTHERWISE NOTED)

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NOTE: FOR SWITCHGEAR DIAGRAM INSTRUCTIONS, STANDARD DEVICE FUNCTION NUMBERS AND ABBREVIATIONS SEE ATTACHED GEK-7317

MADE BY
 C.W. Lewis 7-2-70
 ISSUED OCT 6 70

APPROVALS
 LOW VOLTAGE SWITCHGEAR DEPARTMENT
 PHILADELPHIA

0165B8182
 CONT ON SHEET 2 SH NO 1

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(34)220	243 SA	

EQUIPMENT AKD-5 POWERMASTER

0165B8182

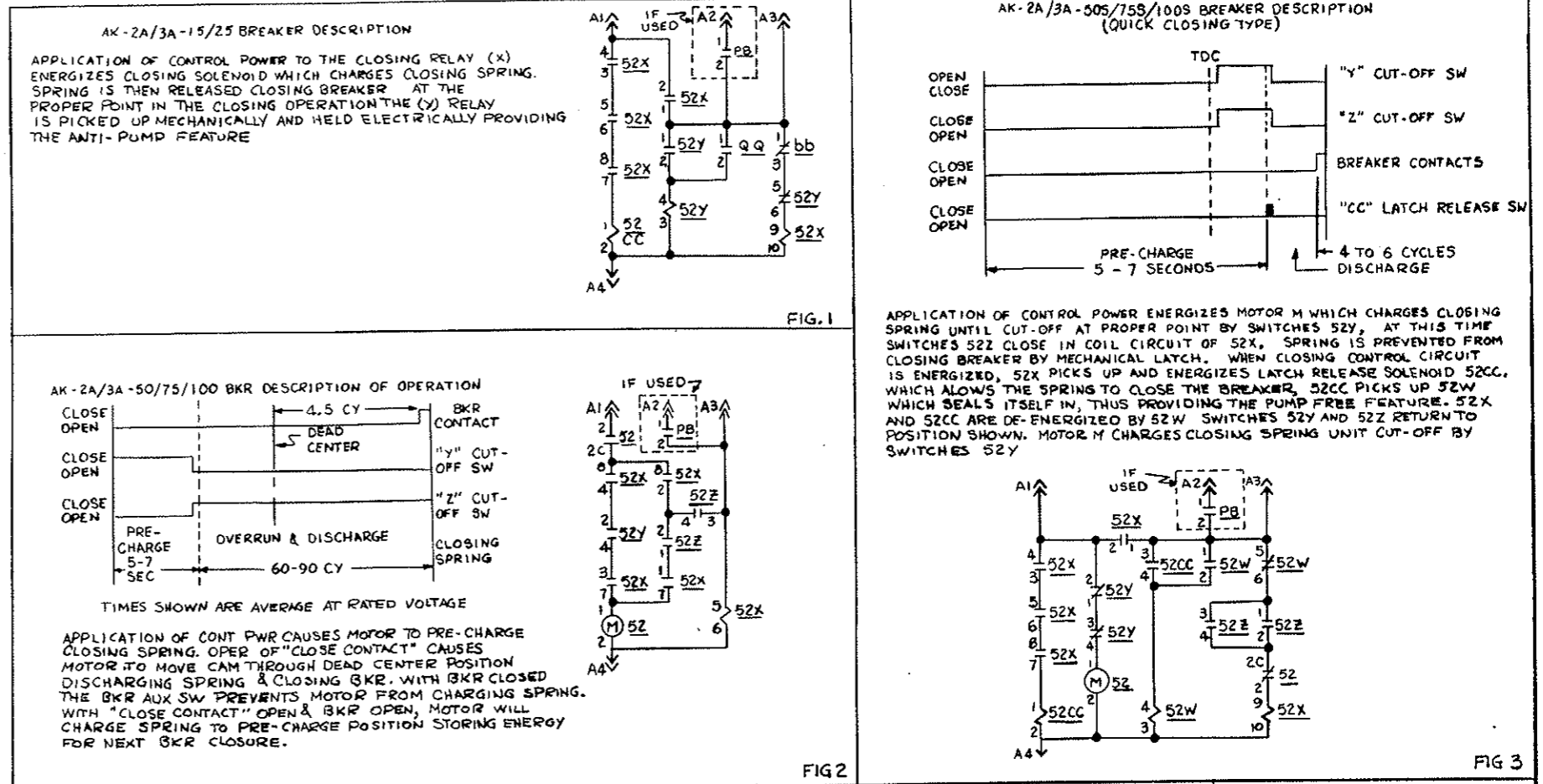
ELEMENTARY DIAGRAM

CONT. ON SHEET 3 SH NO 2

FIRST MADE FOR REQ 433-20323 S.O. 912277

0209A1005	SUMMARY
168 R0670	FRONT VIEW
168 R0671	

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



MADE BY
RLZ CW Lewis 7-2-70
ISSUED OCT. 5, 70

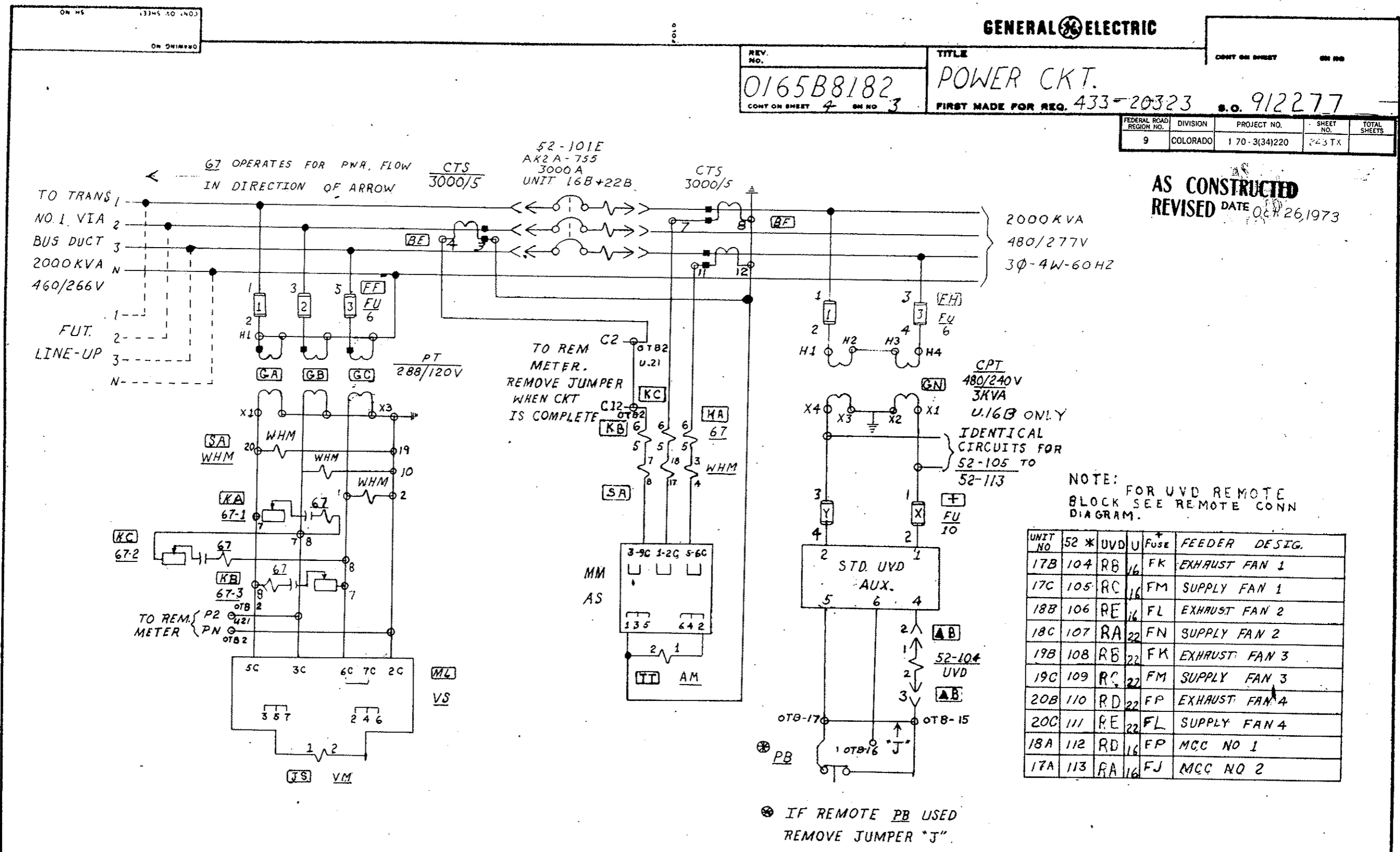
0165B8182
CONT. ON SHEET 3 SH NO 2

REV. NO. 0165B8182
CONT ON SHEET 4 SHE NO 3

TITLE POWER CKT.
FIRST MADE FOR REQ. 433-20323 S.O. 912277

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 TX	

AS CONSTRUCTED
REVISED DATE OCT 26, 1973



UNIT NO	52 * UVD	U	Fuse	FEEDER DESIG.
17B	104	RB	16 FK	EXHAUST FAN 1
17C	105	RC	16 FM	SUPPLY FAN 1
18B	106	RE	16 FL	EXHAUST FAN 2
18C	107	RA	22 FN	SUPPLY FAN 2
19B	108	RB	22 FK	EXHAUST FAN 3
19C	109	RC	22 FM	SUPPLY FAN 3
20B	110	RD	22 FP	EXHAUST FAN 4
20C	111	RE	22 FL	SUPPLY FAN 4
18A	112	RD	16 FP	MCC NO 1
17A	113	RA	16 FJ	MCC NO 2

⊗ IF REMOTE PB USED REMOVE JUMPER "J"

67 CKT / TABLE	OCT 6 9-30-70	1			
	AKZ/KE				

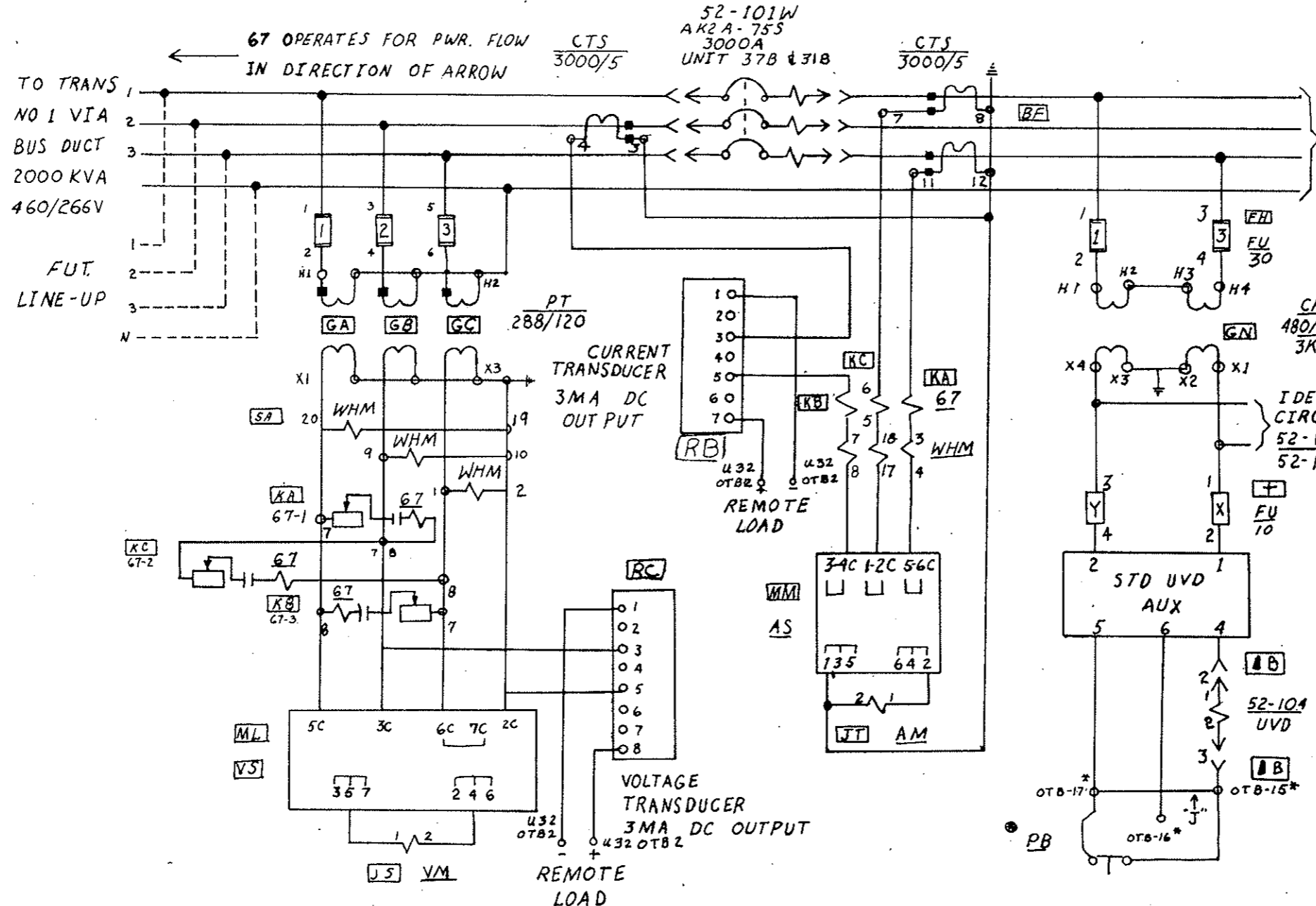
MADE BY 6/30/70
ISSUED OCT 6 '70

APPROVALS
LOW VOLTAGE SWITCHGEAR DEPARTMENT PHILADELPHIA

0165B8182
CONT ON SHEET 4 SHE NO 3

0165B8182 POWER CKT. FIRST MADE FOR REQ. 433-20323 912277

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 Ux	



AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

UNIT NO	52-*	UVD	U	FUSE	FEEDER	DESIG.
36B	104	RD	37	FK	EXHAUST FAN 1	
36C	105	RE	37	FM	SUPPLY FAN 1	
35B	106	RG	37	FL	EXHAUST FAN 2	
35C	107	RA	31	FL	SUPPLY FAN 2	
34B	108	RD	31	FK	EXHAUST FAN 3	
34C	109	RE	31	FM	SUPPLY FAN 3	
33B	110	RF	31	FP	EXHAUST FAN 4	
33C	111	RG	31	FN	SUPPLY FAN 4	
35A	112	RF	37	FP	MCC NO 1	
36A	113	RA	37	FJ	MCC NO 2	

IF REMOTE PB USED REMOVE JUMPER "J"

67 CRT #	TABLE	RLZIKE	1			
----------	-------	--------	---	--	--	--

MADE BY	APPROVALS	LOW VOLTAGE: SWITCHGEAR DEPARTMENT PHILADELPHIA	0165B8182
ISSUED 10-6-70			

REV. No. 12
0165B8182
 CONT ON SHEET 6 ON NO 5

TITLE
BKR. CONTROL CKT
 FIRST MADE FOR REQ. 433-20323 S.O. 912277

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

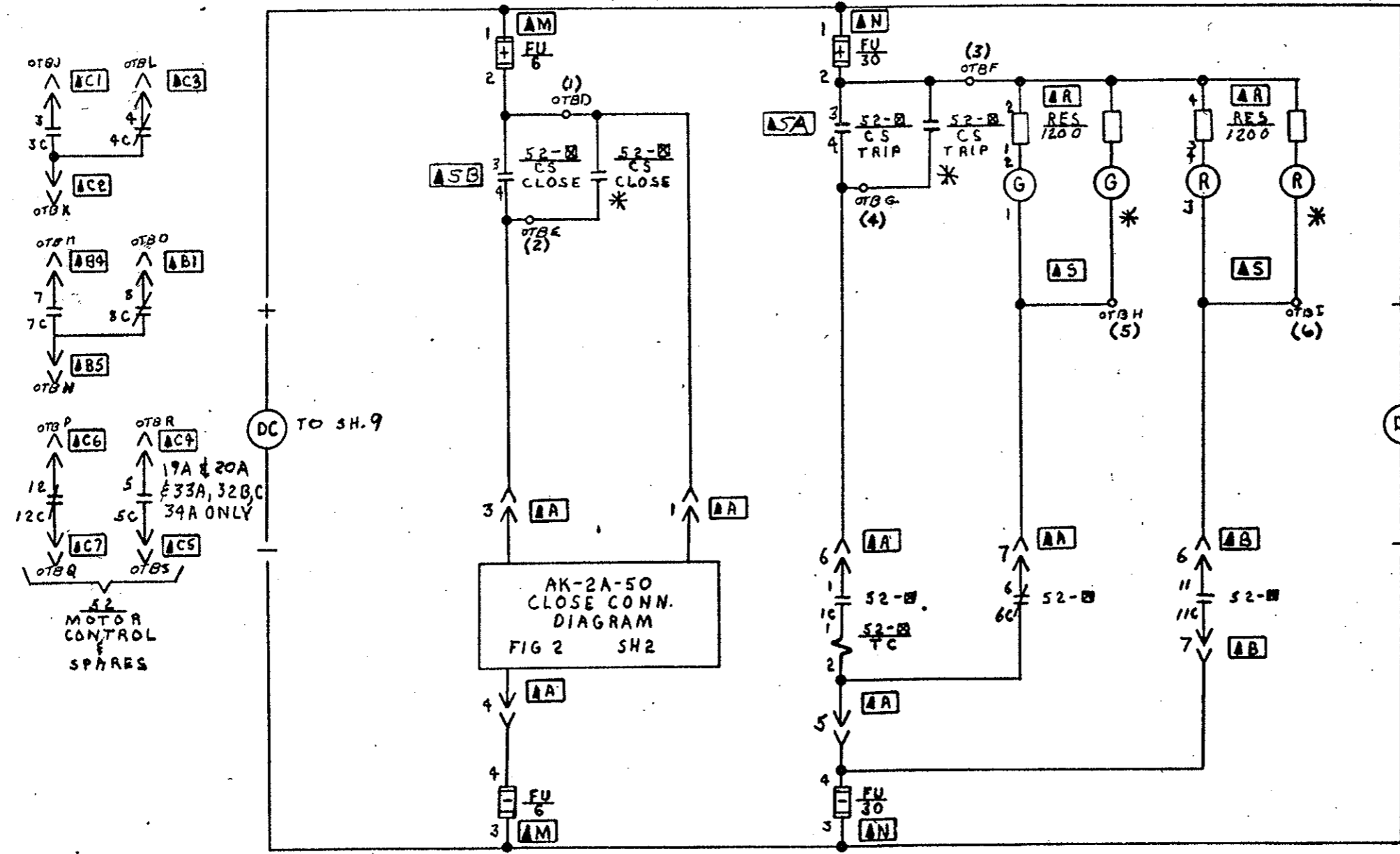


TABLE A

EAST VENTILATION

52-□	UNIT NO.	MCC.
112	018A	#1
113	017A	#2
114	019A	#3
115	020A	#3
117	021B	SPARE
118	021C	SPARE

WEST VENTILATION

52-□	UNIT NO.	MCC.
112	035A	#1
113	036A	#2
114	034A	#3
115	033A	#3
117	032B	SPARE
118	032C	SPARE

▲ - SAME AS COMPT DESIGNATION

NOTE: SEE REM. CONN. DIAGRAM FOR OTB POINTS (D THRU S)

RES. STAFF	OFF. NO.			
CS CONT	RLZIKE	1		
FIELD CHG.	CW LEWIS	2		

MADE BY
 712 CWJ 6-29-77
 ISSUED OCT 6 78

APPROVALS

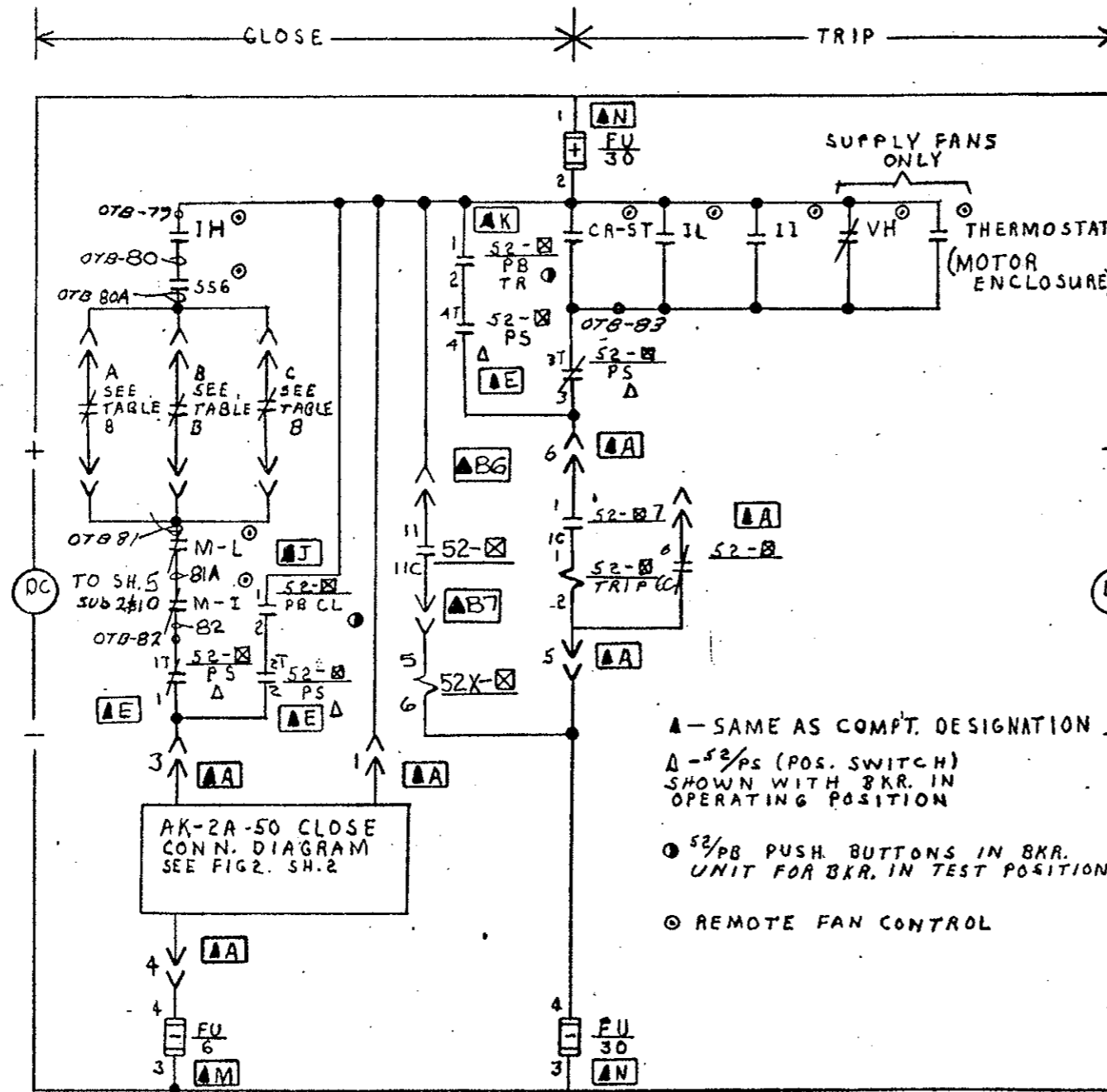
LOW VOLTAGE SWITCHGEAR DEPARTMENT
 PHILADELPHIA

0165B8182
 CONT ON SHEET 6 ON NO 5

REV. NO. 1
 0165B8182
 CONT ON SHEET 7 ON NO 6

TITLE
BKR. CONTROL CKT.
 FIRST MADE FOR REQ. 433-20323 S.O. 9/2277

NOTE: SEE REMOTE CONN. DIAGRAM FOR POINTS (79 THRU 83)



▲ - SAME AS COMPT. DESIGNATION
 Δ - 52/PS (POS. SWITCH) SHOWN WITH BKR. IN OPERATING POSITION
 ● 52/PB PUSH BUTTONS IN BKR. UNIT FOR BKR. IN TEST POSITION
 ⊙ REMOTE FAN CONTROL

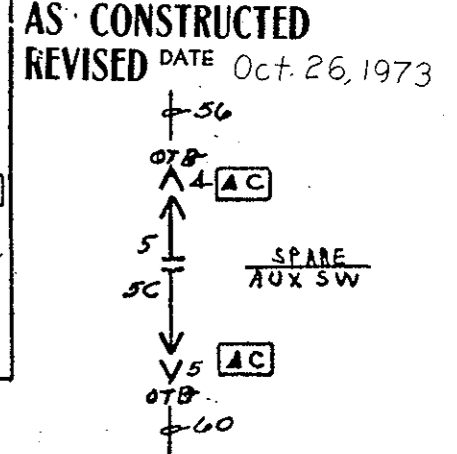
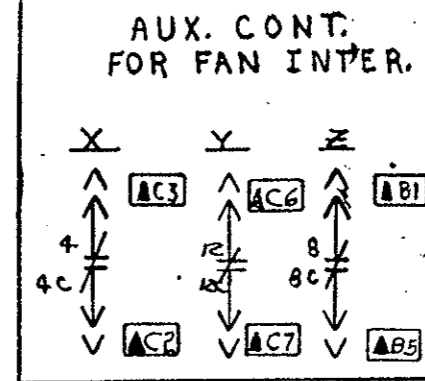
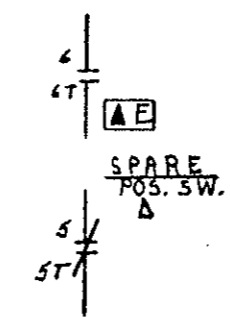


TABLE B

52-UNIT NO.	FAN	FAN INTERLOCK			PREFX TO WIRE NO. ⊙	52 RELAYS UNIT DEV
		A AUX CONT	B AUX CONT	C AUX CONT		
EAST VENT.						
104	017B EXHAUST 1	52-106X	52-108X	52-110X	5E-16	RH
105	017C SUPPLY 1	52-107X	52-109X	52-111X	1E-16	RI
106	018B EXHAUST 2	52-104X	52-108Y	52-110Y	6E-16	RJ
107	018C SUPPLY 2	52-105X	52-109Y	52-111Y	2E-16	RK
108	019B EXHAUST 3	52-104Y	52-106Y	52-110Z	7E-20	RH
109	019C SUPPLY 3	52-105Y	52-107Y	52-111Z	3E-20	RI
110	020B EXHAUST 4	52-104Z	52-106Z	52-108Z	8E-20	RJ
111	020C SUPPLY 4	52-105Z	52-107Z	52-109Z	4E-20	RK
WEST VENT.						
104	036B EXHAUST 1	52-104X	52-108X	52-110X	5W 37	RH
105	036C SUPPLY 1	52-107X	52-109X	52-111X	1W 37	RI
106	035B EXHAUST 2	52-104X	52-108Y	52-110Y	6W 37	RJ
107	035C SUPPLY 2	52-105X	52-109Y	52-111Y	2W 37	RK
108	034B EXHAUST 3	52-104Y	52-106Y	52-110Z	7W 31	RH
109	034C SUPPLY 3	52-105Y	52-107Y	52-111Z	3W 31	RI
110	033B EXHAUST 4	52-104Z	52-106Z	52-108Z	8W 31	RJ
111	033C SUPPLY 4	52-105Z	52-107Z	52-109Z	4W 31	RK

⊙ EXAMPLE - 5E-79, 5E-80, 5E-81 ETC.

- EXH & SUP. FAN EAST & WEST No. ⊙
 #1 - 1103
 #2 - 1133
 #3 - 1203
 #4 - 1233

NOTES	DATE	BY	REV.
FIELD CHG.	9/2/72	C.W. LEWIS	2

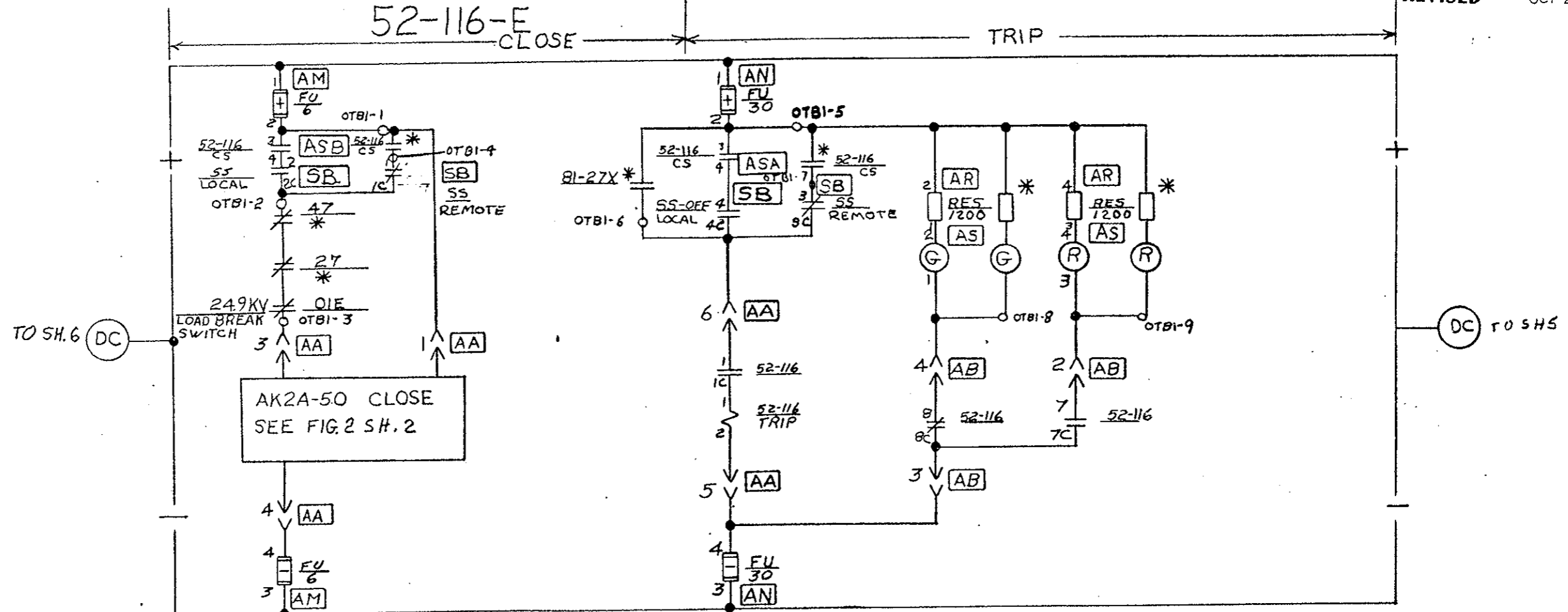
MADE BY R.L. CW (6-29-70)
 ISSUED OCT 6 70
 APPROVALS
 LOW VOLTAGE SWITCHGEAR DEPARTMENT PHILADELPHIA
 0165B8182
 CONT ON SHEET 7 ON NO 6

REV. No. 123
0165B8182
CONT ON SHEET 8 SH NO 7

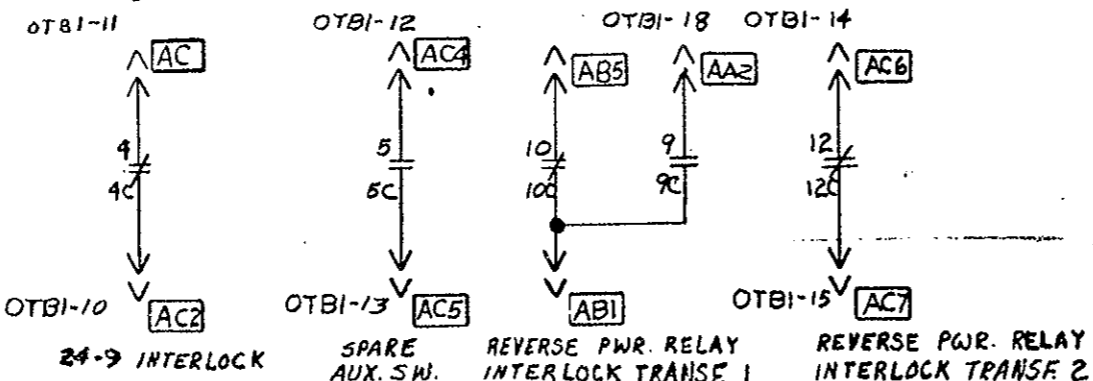
TITLE
BREAKER CONTROL CKT.
FIRST MADE FOR REQ. 433-20323
S.O. 912277

**UNIT 21A
EMERGENCY GENERATOR
52-116-E**

AS CONSTRUCTED
REVISED DATE Oct 26, 1978.



⊙ KEY REMOVABLE WITH SWITCH IN "REMOTE POSITION."



24-9 INTERLOCK

SPARE AUX. SW.

REVERSE PWR. RELAY INTERLOCK TRANSF. 1

REVERSE PWR. RELAY INTERLOCK TRANSF. 2

RES.	DCP 570-20	1	FIELD CHG.	3-21-73	3
SPARE SW.	R. Z. I. K. E.			C.W. LEWIS	
FIELD CHG.	C.W. LEWIS	2			

MADE BY C.W. LEWIS 6-24-70
ISSUED OCT 6 70

APPROVALS

LOW VOLTAGE SWITCHGEAR DEPARTMENT
PHILADELPHIA

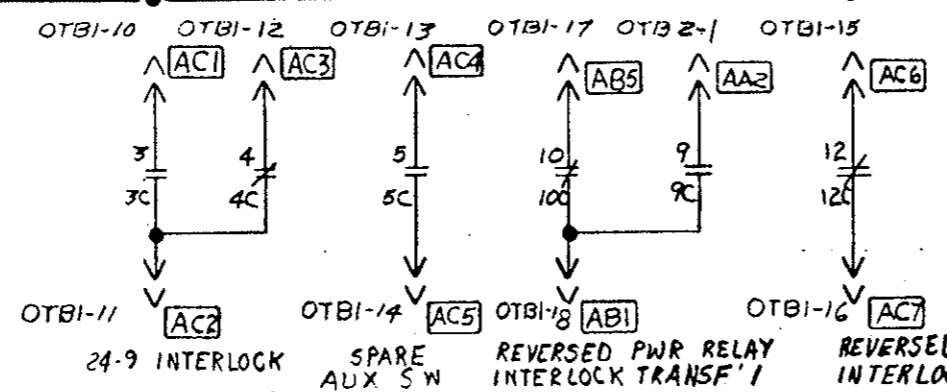
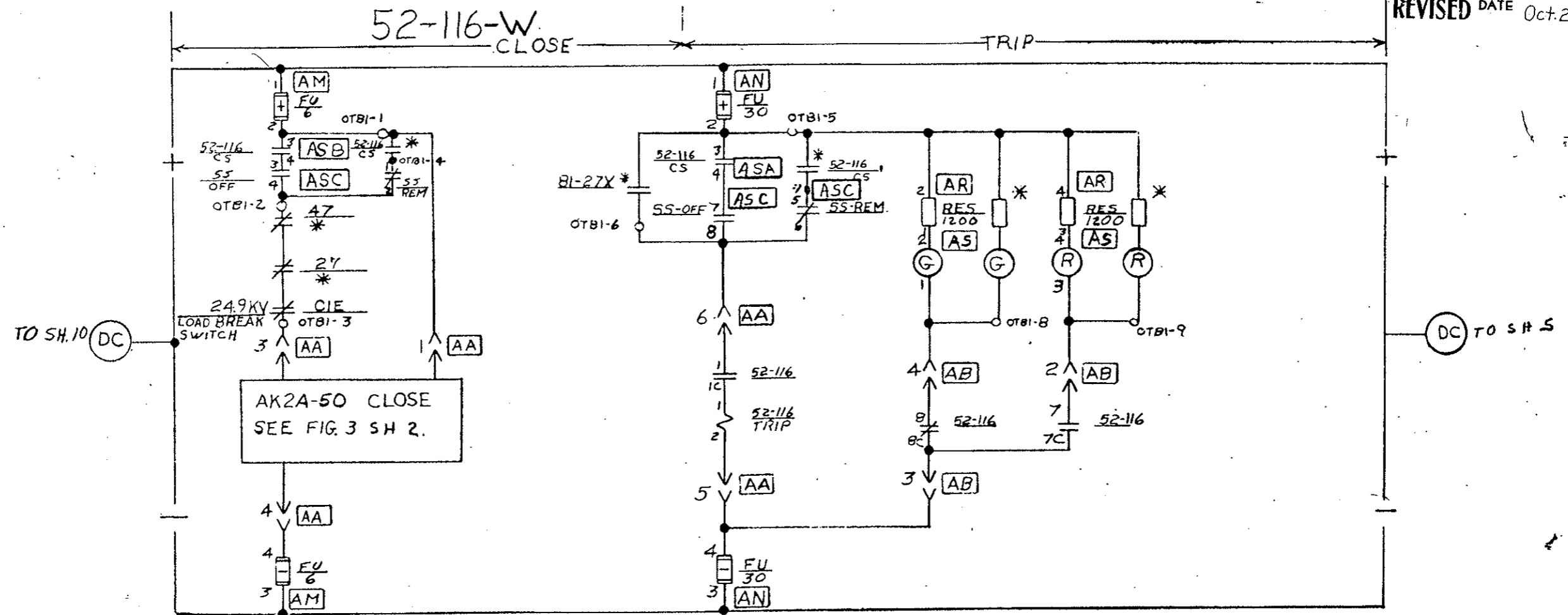
0165B8182
CONT ON SHEET 8 SH NO 2

REV. NO. 12
0165B8182
CONT ON SHEET 9 SH NO 8

TITLE BREAKER CONTROL CKT.
FIRST MADE FOR REQ. 433-20323
S.O. 912277

UNIT 32A (FUTURE)
EMERGENCY GENERATOR

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



24-9 INTERLOCK
SPARE AUX SW
REVERSED PWR RELAY INTERLOCK TRANSF. 1
REVERSED PWR RELAY INTERLOCK TRANSF. 2

RES. SIZE	10-6-70		
ASA, ASE, ASC	RLZIKE	1	
FIELD CHG.	C.W. LEWIS	2	

MADE BY C.W. LEWIS 6-29-70
ISSUED 10-6-70

APPROVALS

LOW VOLTAGE SWITCHGEAR DEPARTMENT
PHILADELPHIA

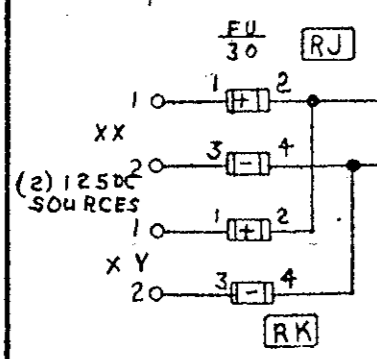
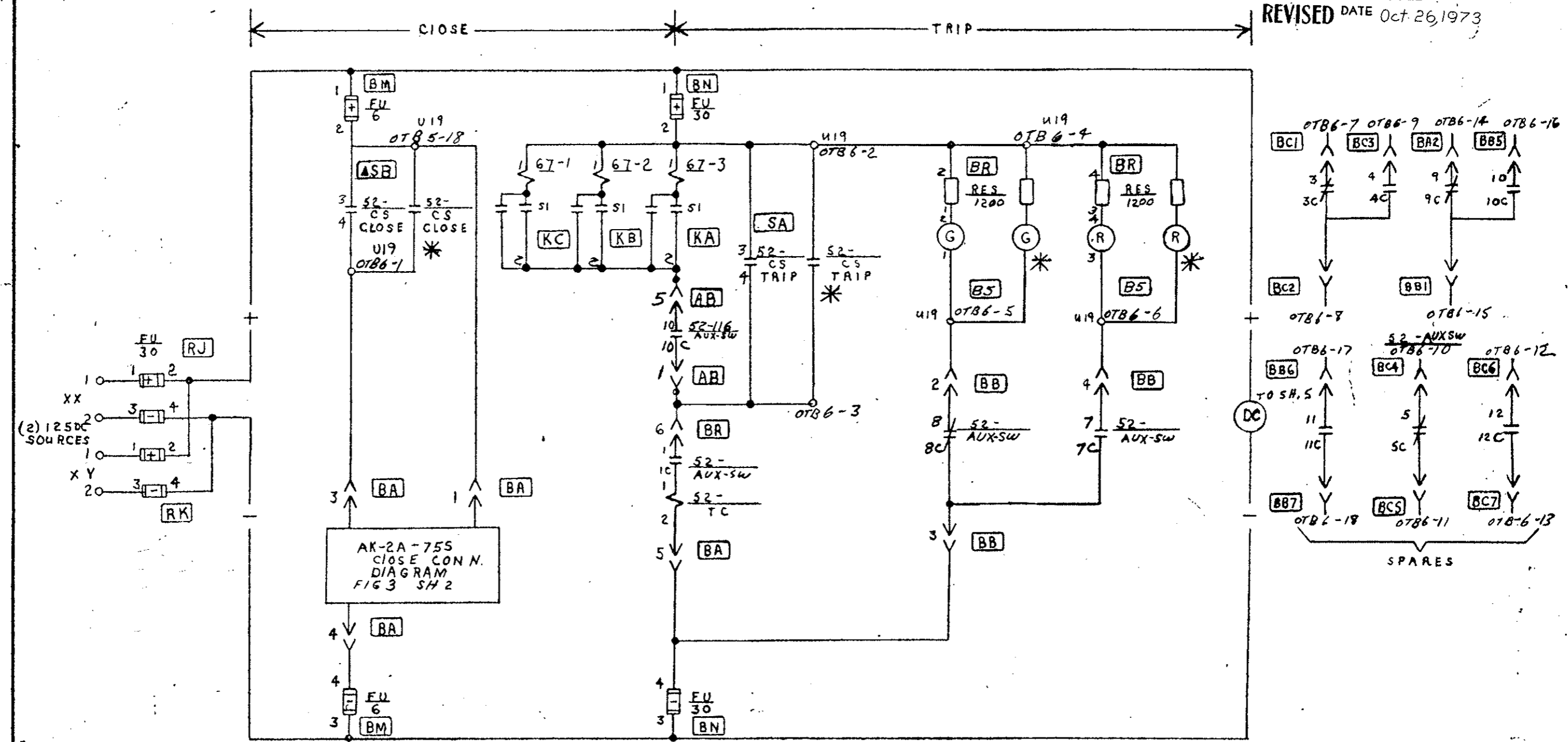
0165B8182
CONT ON SHEET 9 SH NO 8

REV. NO. 12
 0165B8182
 CONT ON SHEET 10 SH NO 9

TITLE
BKR CONTROL CKT
 FIRST MADE FOR REQ. 433-20323 S.O. 9/2277

52-101E (UNIT 016B)

AS CONSTRUCTED
 REVISED DATE Oct 26, 1973



AK-2A-755
 CLOSE CON N.
 DIAGRAM
 FIG 3 SH 2

RES SIZE	10-6-70			
CS CONT UNITS	RLZ 1K5	1		
FIELD CHG	B-21-73 C.W. LEWIS	2		

MADE BY
 ISSUED 10-6-70

APPROVALS

LOW VOLTAGE
 SWITCHGEAR DEPARTMENT
 PHILADELPHIA

0165B8182
 CONT ON SHEET 10 SH NO 9

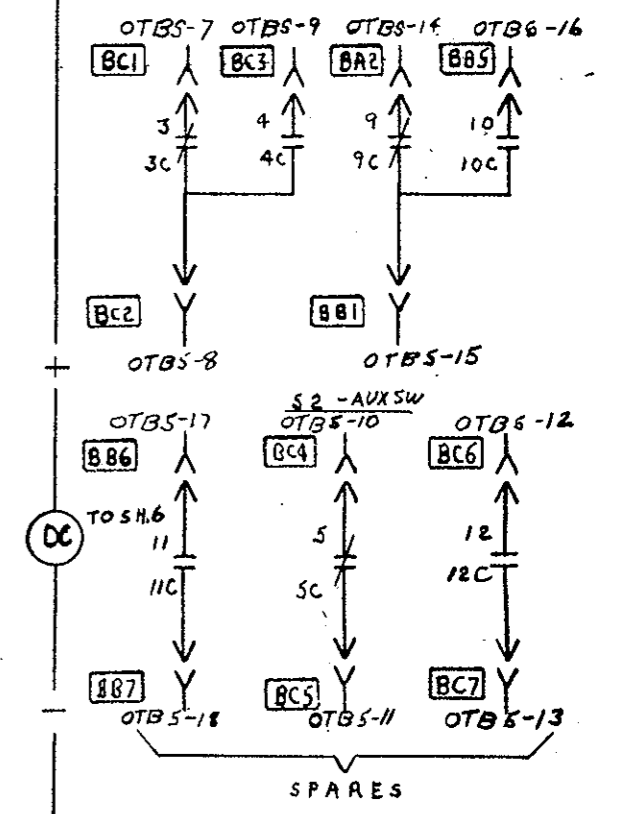
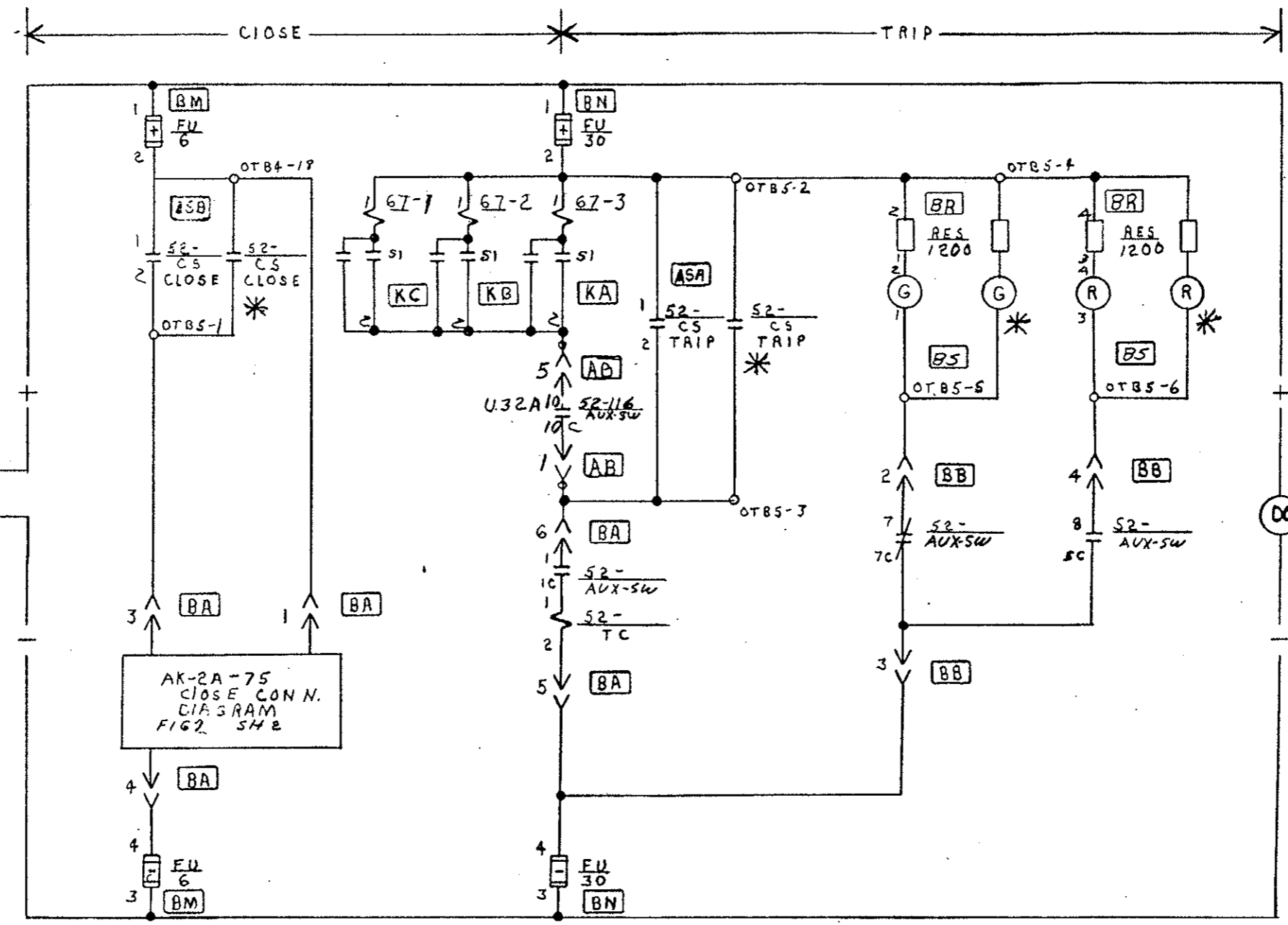
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243AY	

REV. NO. **x2**
0165B8182
 CONT ON SHEET // SN NO 10

TITLE
BKR. CONTROL CKT
 FIRST MADE FOR REG. 433-20323 S.O. 9/2277

52-103W (UNIT 031B)

AS CONSTRUCTED
 REVISED DATE Oct 26, 1973



MS. SIZE	OCT 6 '70			
UNIT 32A (AB)	REWORK	1		
FIELD CHG	8-21-73	2		
	CW LEWIS			

MADE BY
C.W. Lewis
 ISSUED OCT 4 '70

APPROVALS

LOW VOLTAGE
 SWITCHGEAR DEPARTMENT
 PHILADELPHIA

0165B8182
 CONT ON SHEET // SN NO 10

REV. NO. **12**
0165B8182
 CONT ON SHEET **PC1** SH NO **11**

TITLE
BKR. CONTROL CKT
 FIRST MADE FOR REQ. **433-20323** S.O. **9/2277**

52-101E (UNIT 22B)
 52-103W (UNIT 37B)

AS CONSTRUCTED
 REVISED DATE **Oct. 26, 1973**

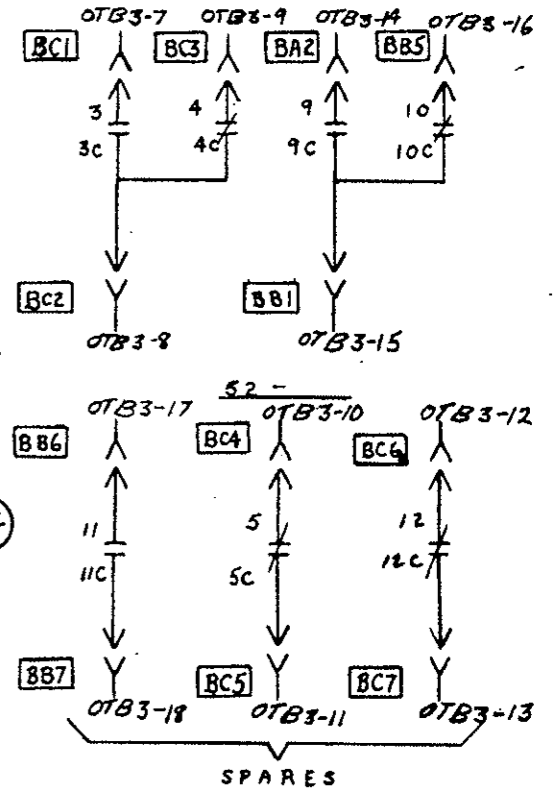
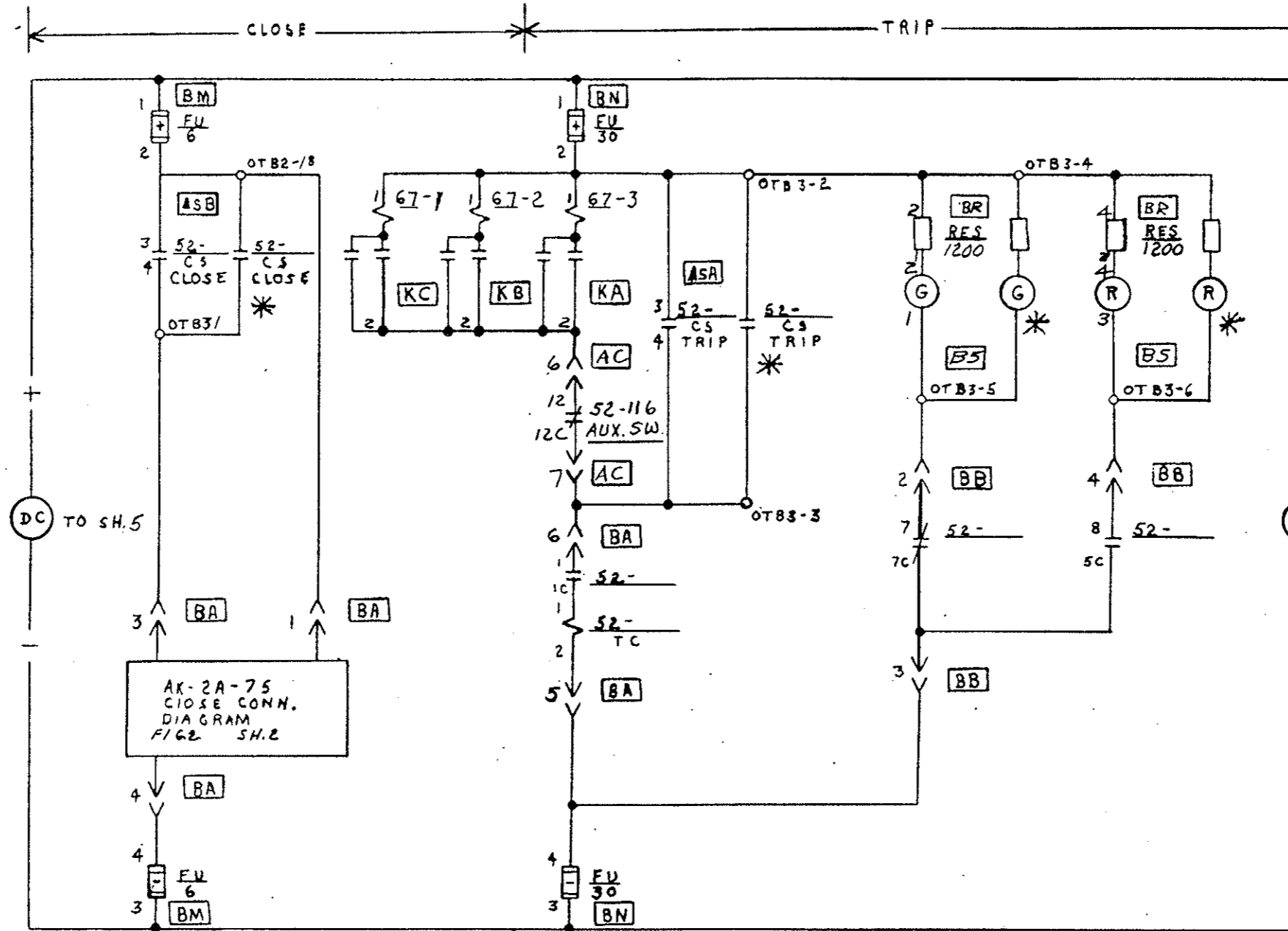


FIG. SIZE	10-6-70	1					
AUX. F.C.S. CNT	REZIK						
FIELD CHG	8-21-73 CW LEWIS	2					

MADE BY
R.E. C.W. Lewis 6-2970
 ISSUED
10-6-70

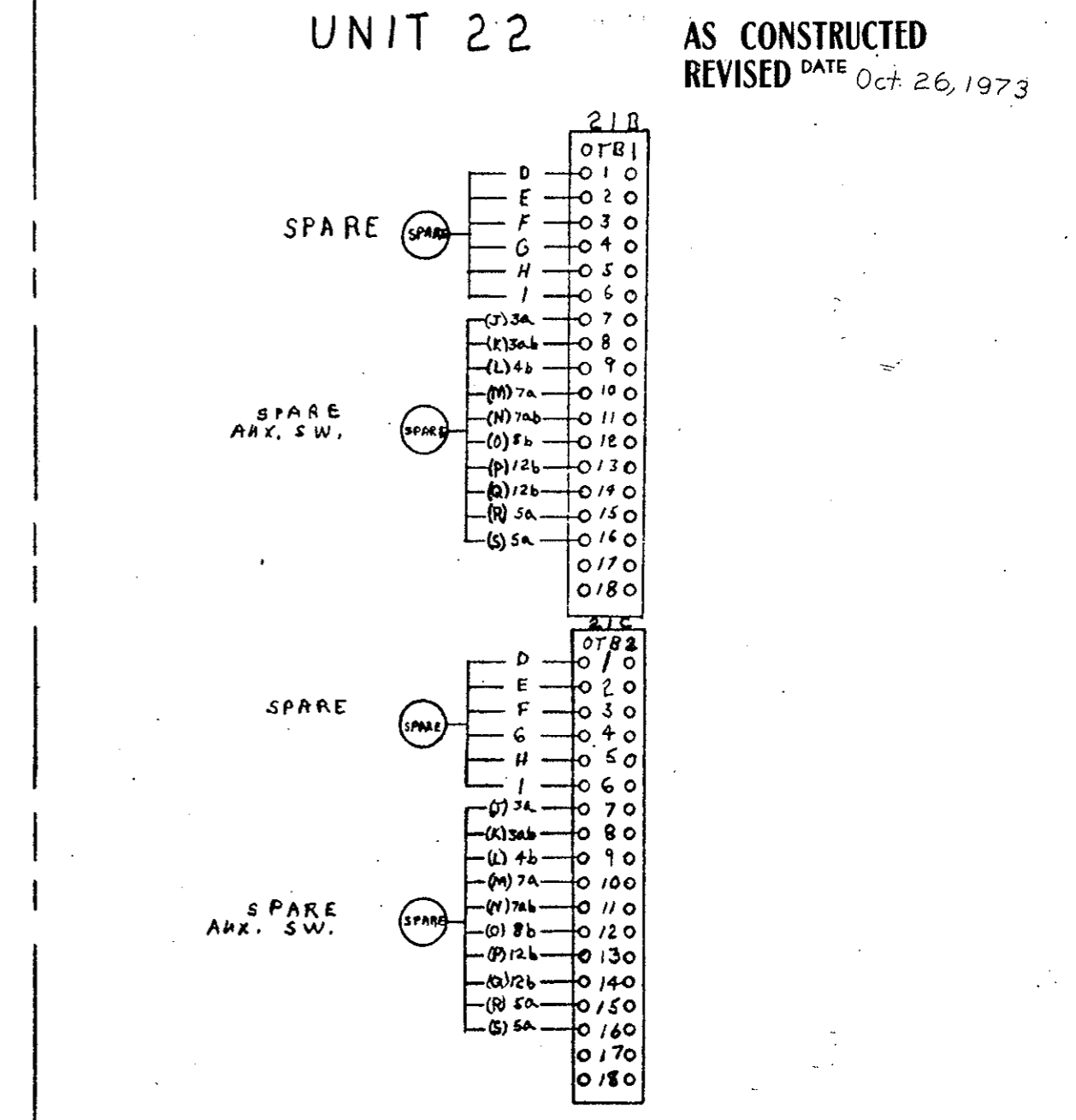
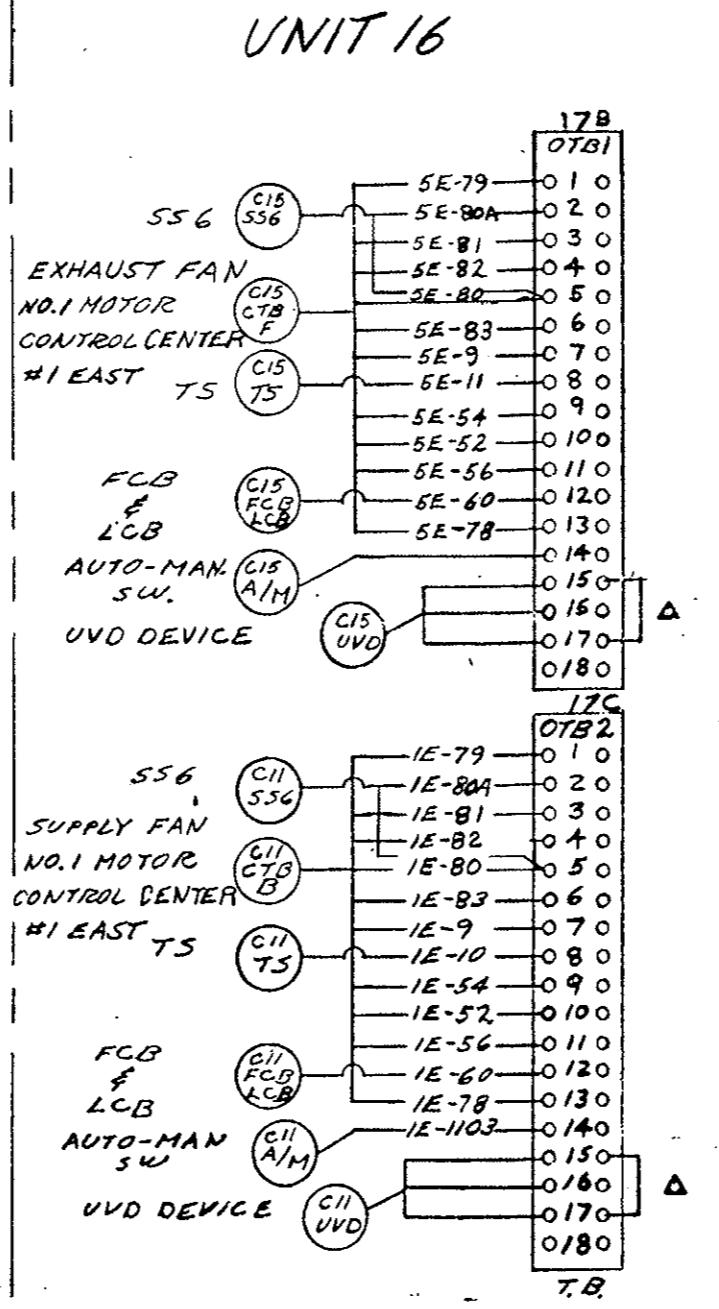
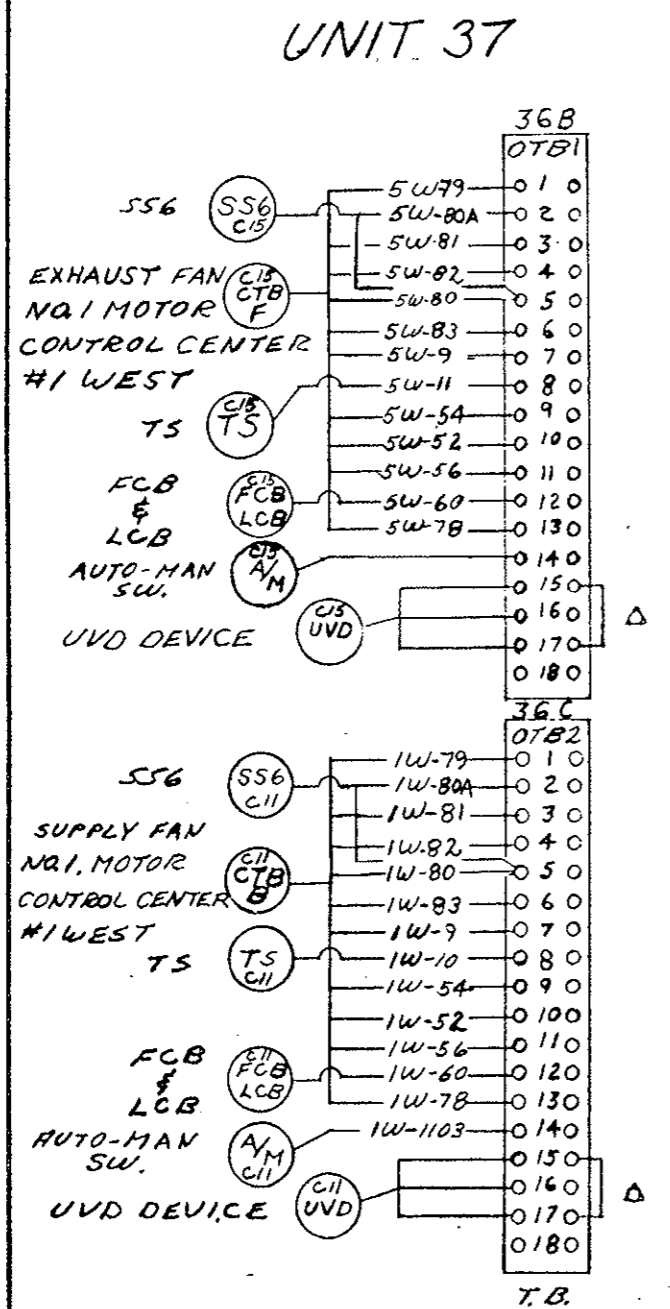
APPROVALS

LOW VOLTAGE
 SWITCHGEAR DEPARTMENT
 PHILADELPHIA

0165B8182
 CONT ON SHEET **PC1** SH NO **11**

0165B8182
CONT ON SHEET PC2 ON NO PC1

REMOTE CONN.
FIRST MADE FOR REG. 433-20323 S.O. 912277



AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

FIELD CHK. 9/15/73 C.W. LEWIS 1

MADE BY 462 C.W. LEWIS 10-6-70
ISSUED 10-6-70

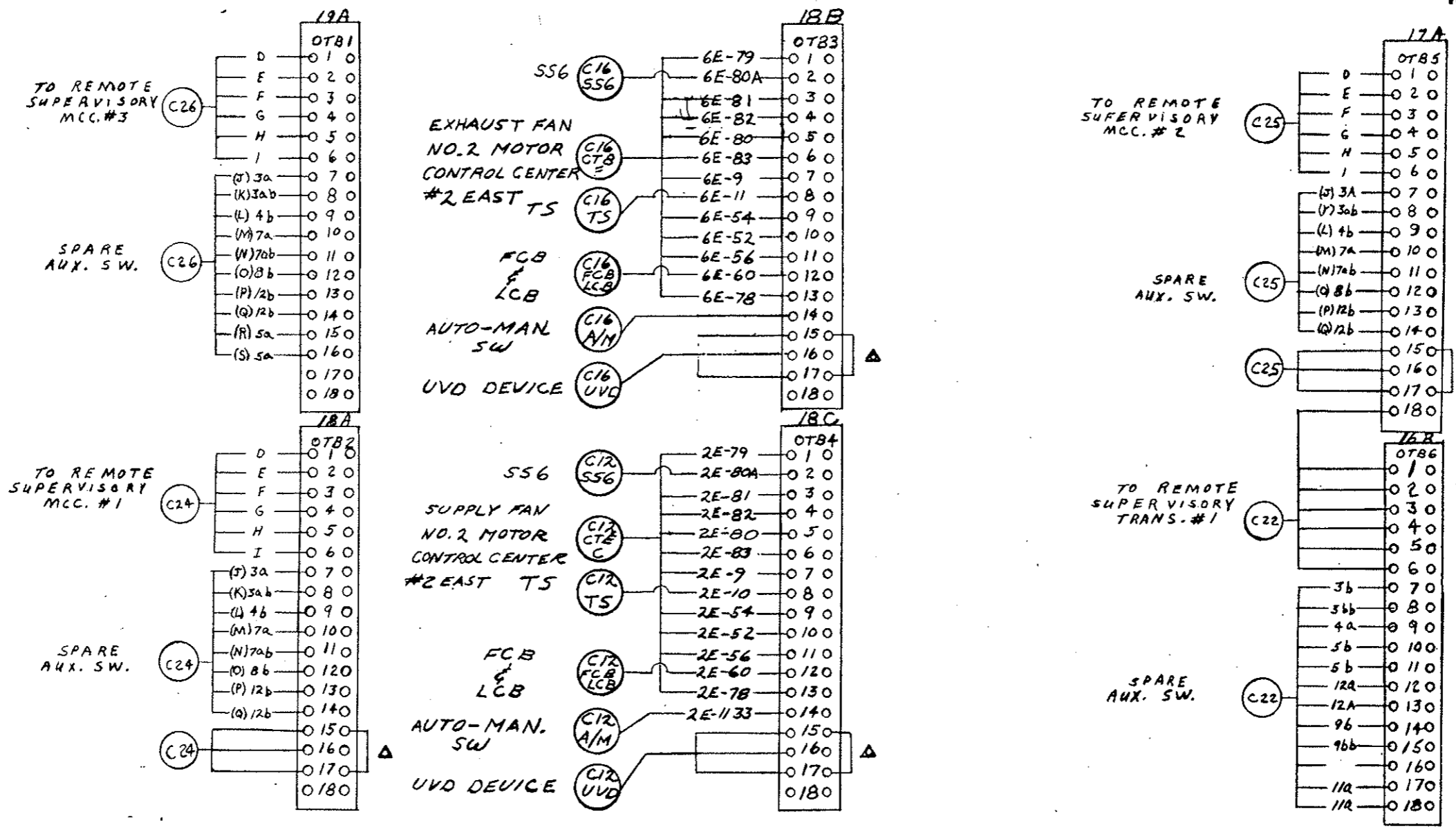
APPROVALS
LOW VOLTAGE SWITCHGEAR DEPARTMENT PHILADELPHIA

0165B8182
CONT ON SHEET PC2 ON NO PC1

UNIT 19

0165B8182
 CONT ON SHEET RC3 SH NO RC2
REMOTE CONN.
 FIRST MADE FOR REQ. 433-20323 S.O. 912277

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



FLD CHG	CWL 9-18-71	MADE BY	APPROVALS	LOW VOLTAGE SWITCHGEAR DEPARTMENT PHILADELPHIA	0165B8182
		ISSUED 10-6-70			CONT ON SHEET RC3 SH NO RC2

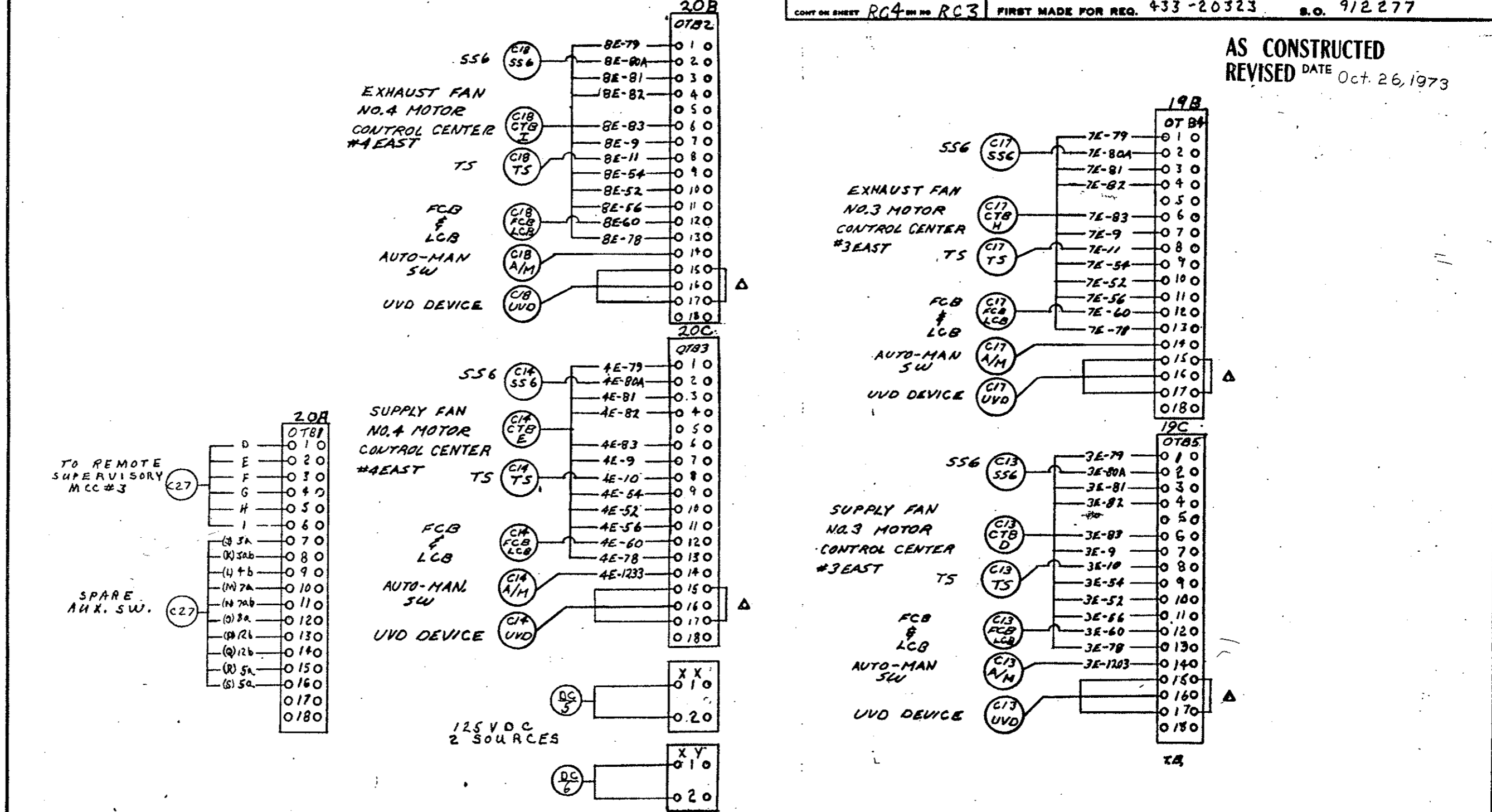
GENERAL ELECTRIC

ON MS 133HS AD 1403
ON DELAYED

REV. No.	TITLE	CONT ON SHEET	ON NO.
0165B8182	REMOTE CONN.	RC4 ON NO RC3	
FIRST MADE FOR REG. 433-20323		S.O. 912277	

UNIT 20

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



FLD GHG	CW LEWIS	1
	9-18-72	

MADE BY
RLZ, CWT, J... 7-2-70
ISSUED
10-6-70

APPROVALS
LOW VOLTAGE SWITCHGEAR DEPARTMENT
PHILADELPHIA

0165B8182
CONT ON SHEET RC4 ON NO RC3

REV. NO. 1
0165B8182
CONT ON SHEET RC5 OR NO. RC4

TITLE
REMOTE CONN.
FIRST MADE FOR REG. 433-20323

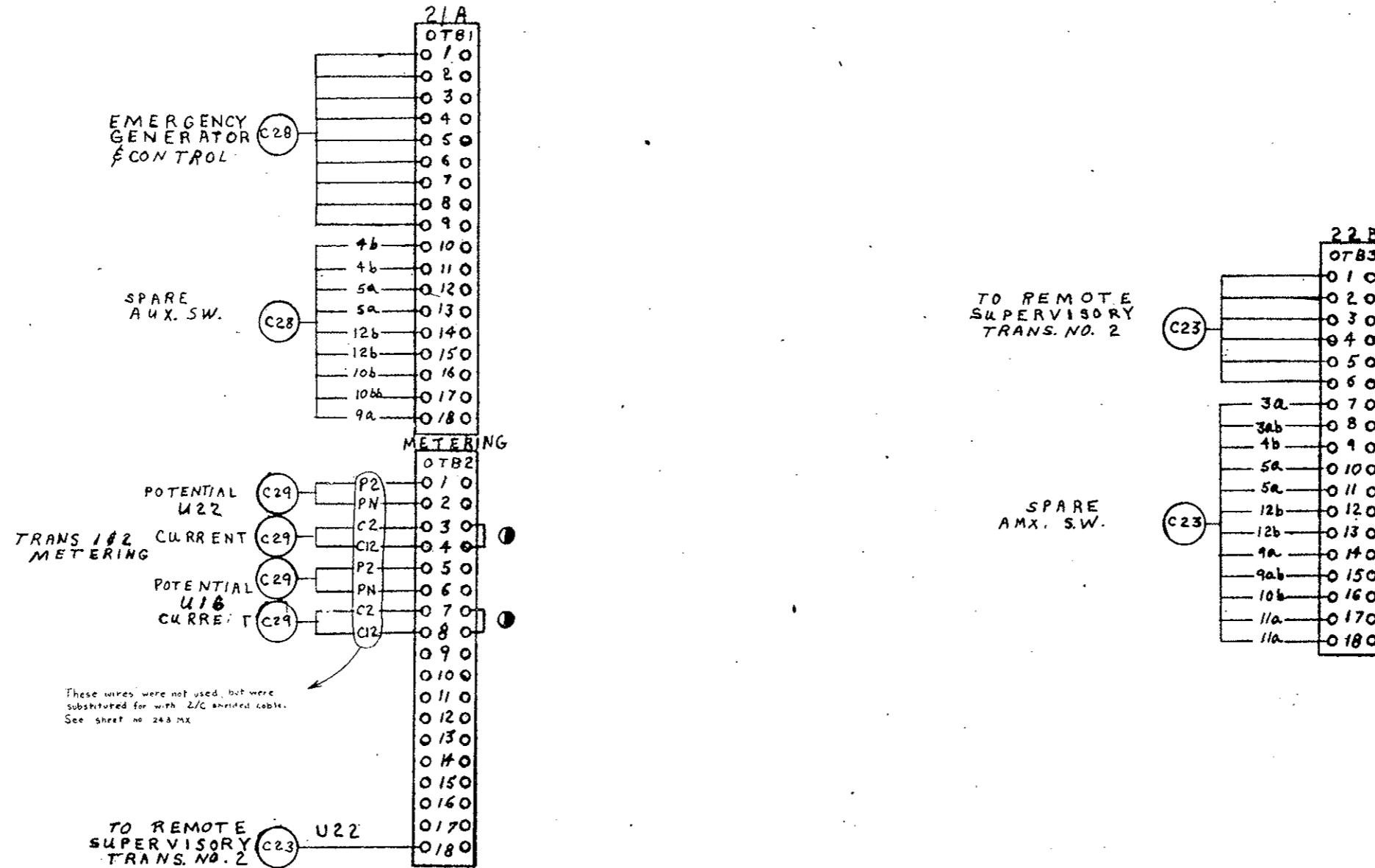
CONT ON SHEET OR NO.

S.O. 9/22/77

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243FY	

UNIT 21

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



CHANGE CONT	BY	DATE	REASON
ALZ	ALZ	7-6-70	

MADE BY ALZ CW Series 7-6-70
ISSUED 10-6-70

APPROVALS

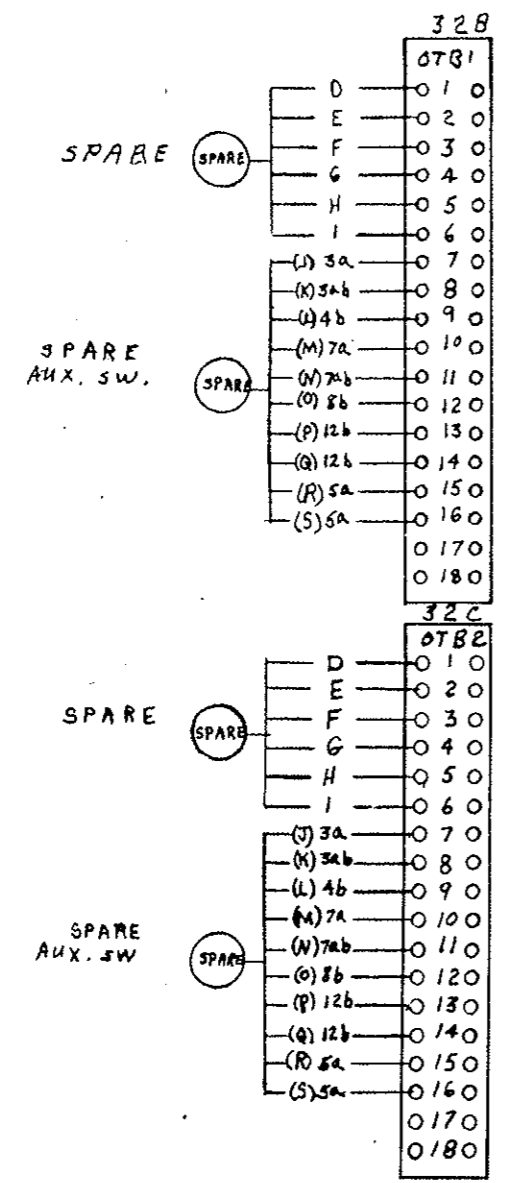
LOW VOLTAGE SWITCHGEAR DEPARTMENT PHILADELPHIA

0165B8182
CONT ON SHEET RC5 OR NO. RC4

REV. NO. 12
0165B8182
CONT ON SHEET RC6 OR NO. RCS

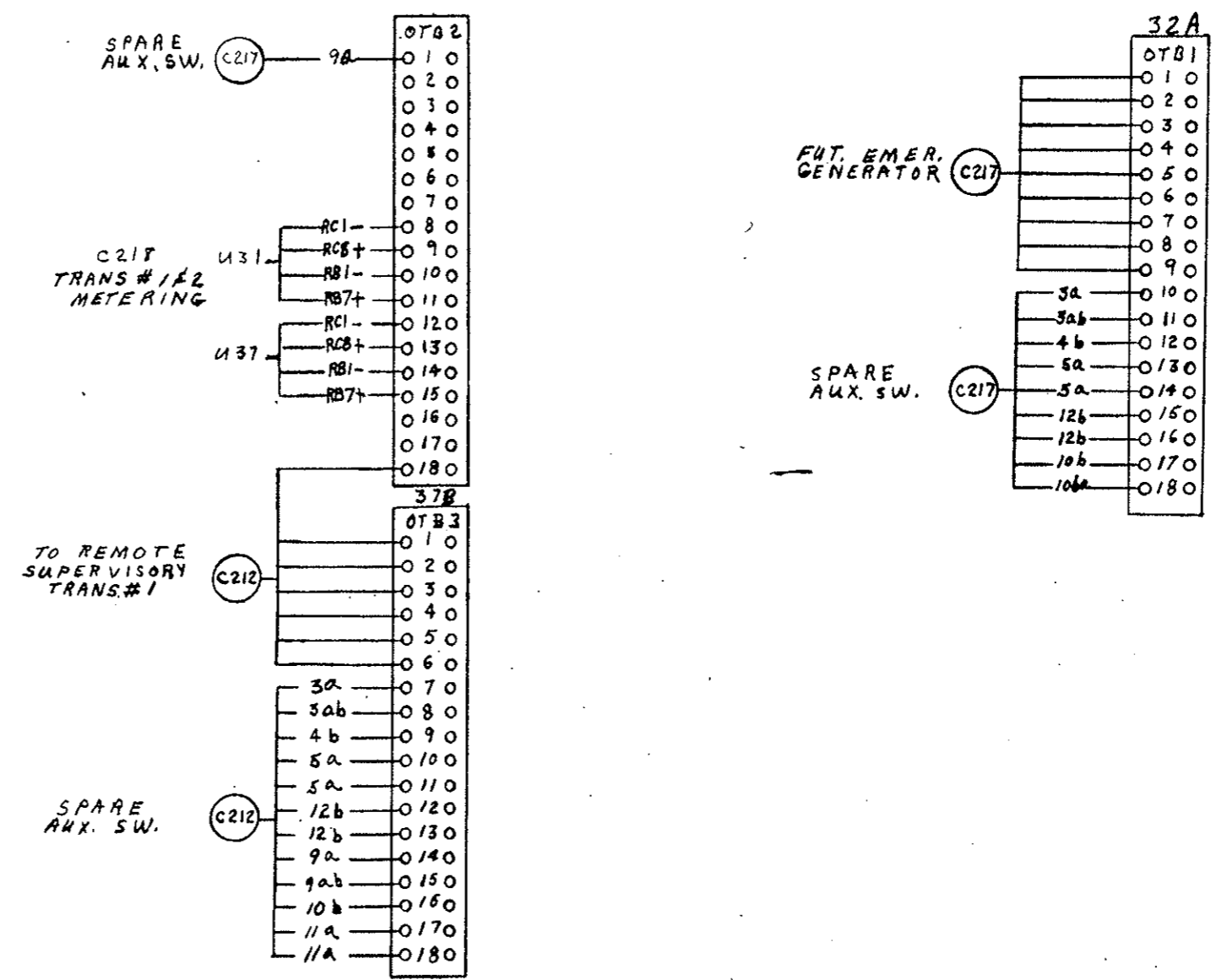
TITLE
REMOTE CONN.
FIRST MADE FOR REQ. 433-20323
S.O. 912277

UNIT 31



UNIT 32

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



CHANGE CONT	10-6-70			
132.0TR123	ALZINE	1		
FIELD CHG	C.W. LEWIS	2		

MADE BY
4-6-70
ISSUED
10-6-70

APPROVALS
LOW VOLTAGE SWITCHGEAR DEPARTMENT
PHILADELPHIA

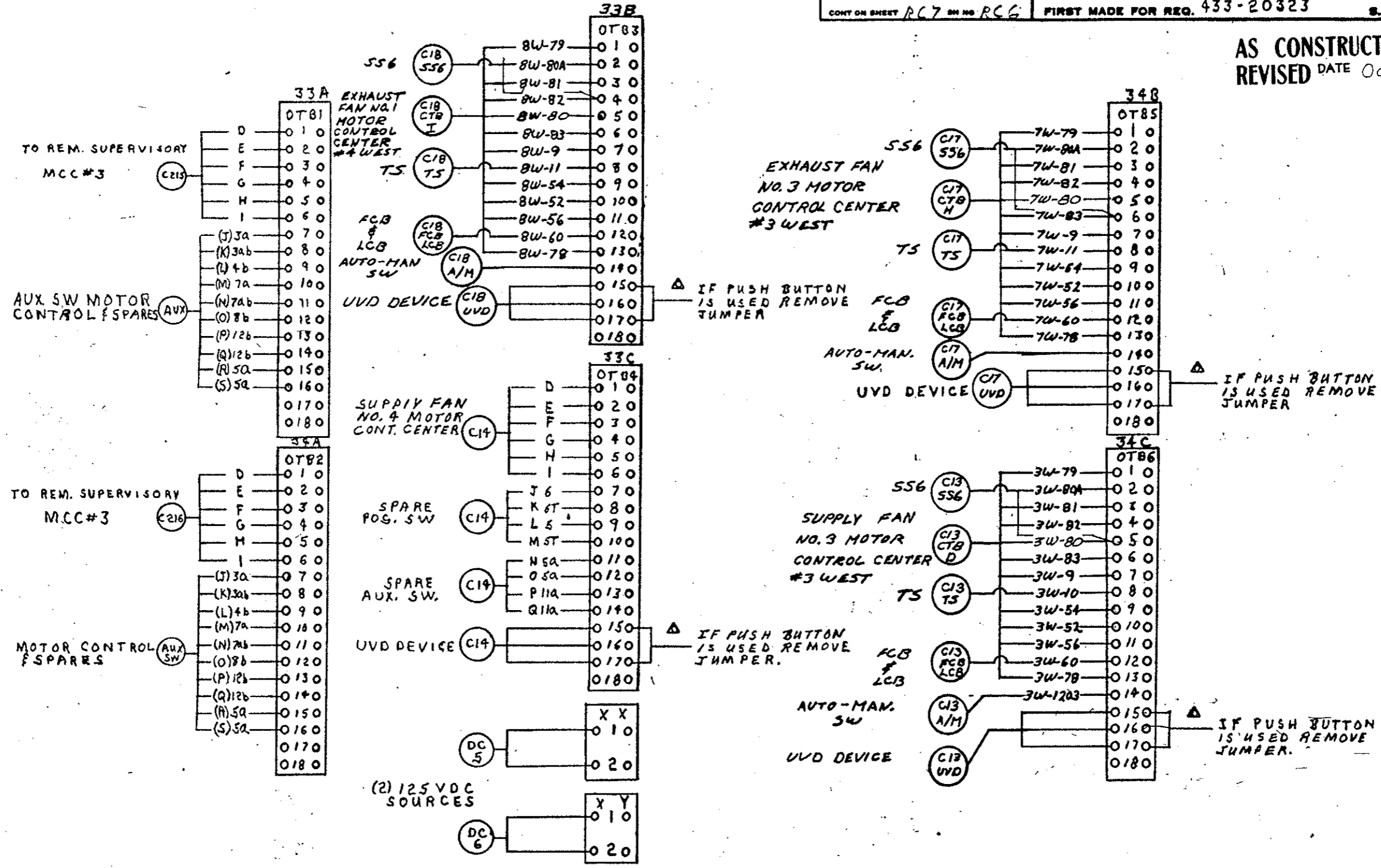
0165B8182
CONT ON SHEET RC6 OR NO. RCS

UNIT 33

REV. NO. 0165B8182
CONT. ON SHEET R67 ON NO. R66

TITLE REMOTE CONN.
FIRST MADE FOR REG. 433-20323 S.O. 912277

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



FID CNG	C.W. LEWIS	9-18-72	1
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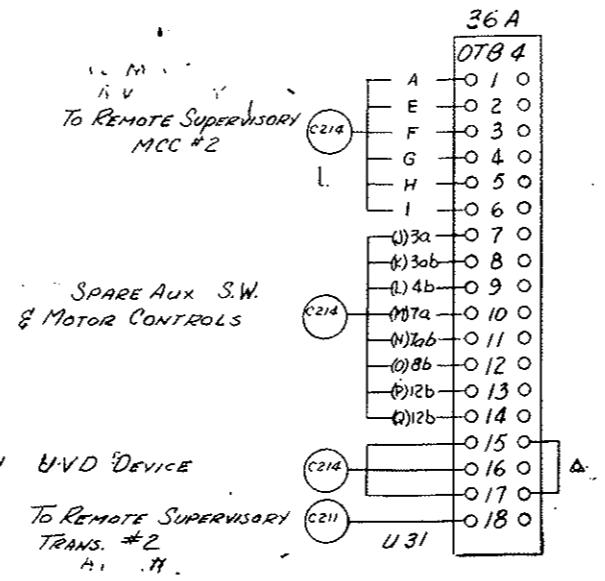
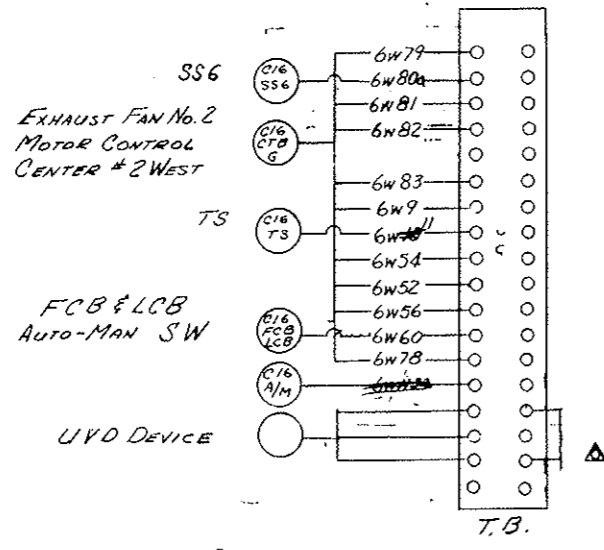
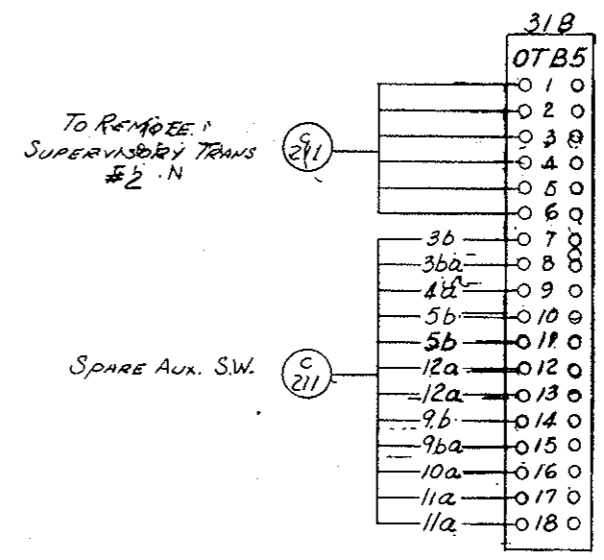
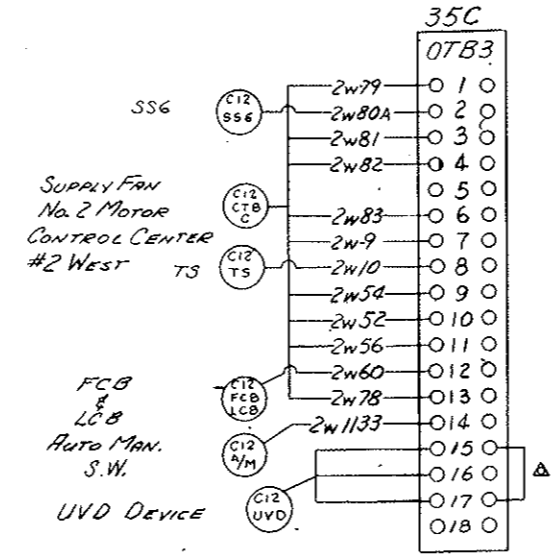
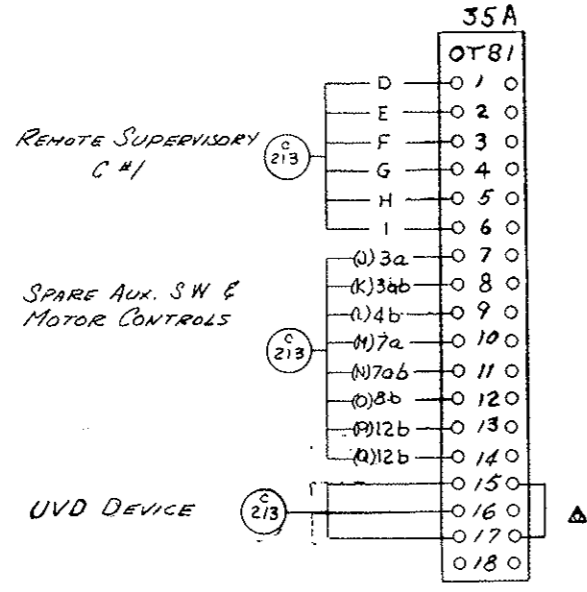
MADE BY R67, C.W. Lewis
ISSUED OCT 6 70

APPROVALS
LOW VOLTAGE SWITCHGEAR DEPARTMENT PHILADELPHIA

0165B8182
CONT. ON SHEET R67 ON NO. R66

UNIT 34

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



AS CONSTRUCTED
REVISED DATE

FLD CHG	C.W. LEWIS	1	MADE BY	ALZ C.W. LEWIS	7-2-70	APPROVALS	LOW VOLTAGE SWITCHGEAR DEPARTMENT PHILA	016588182
FIELD CHG	C.W. LEWIS	2	ISSUED	10-6-70				CONTRACT NO. 170-3(34)220

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170 3(34)220	243JY	

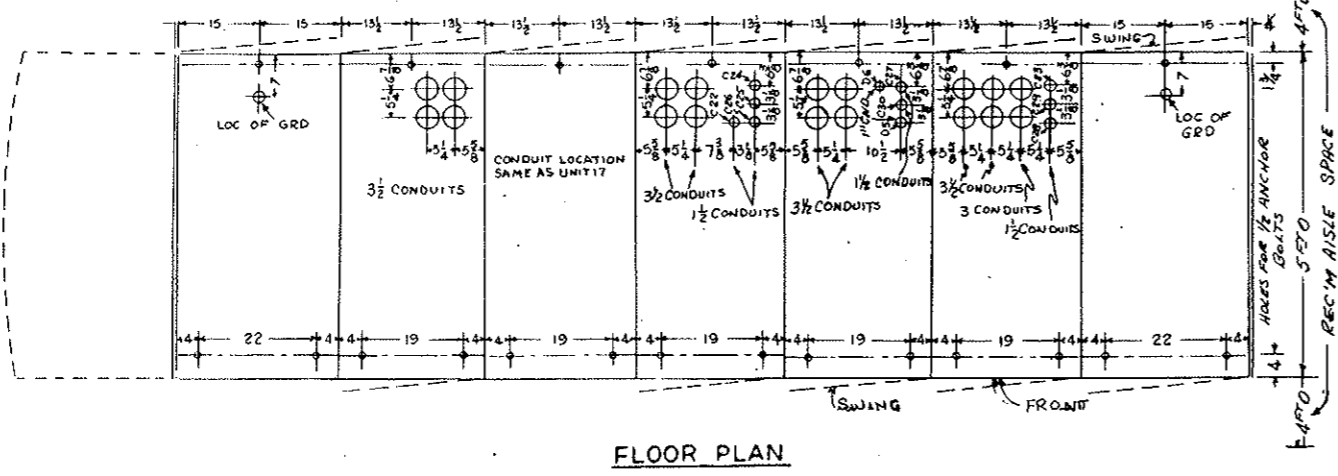
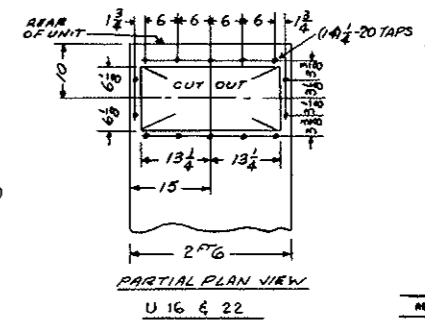
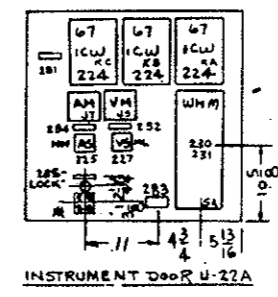
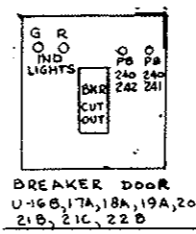
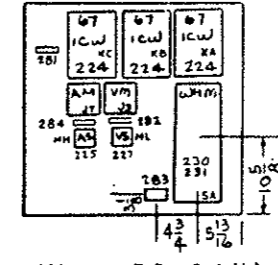
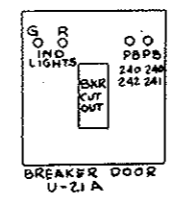
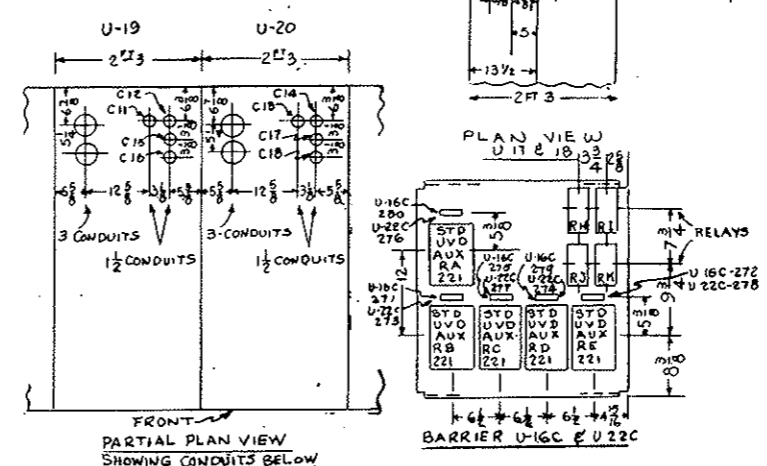
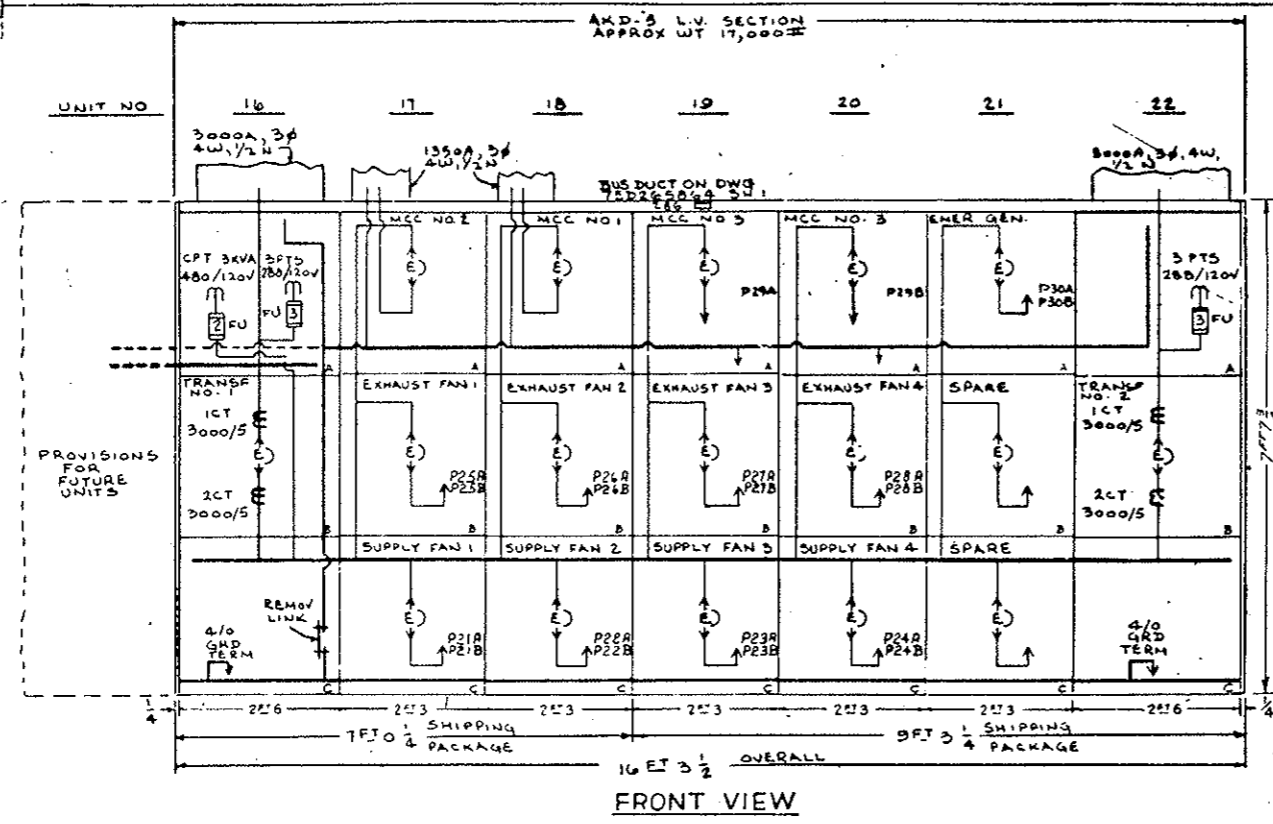
AKD-5 POWERMASTER INDOOR SWGR		
GESCO/JELCO INC/STRAIGHT		
BEST MADE FOR CREEK TUNNEL		
REQ. NO.	SHOP ORDER	SUMMARY
435-20323	912277	0209A1005

CUST ORDER NO. 5788
GESCO ORDER NO. 7544-3257-D

EAST VENTILATION BUILDING

BREAKER DATA					
UNIT COMP.	BREAKER NO.	BKR. TYPE	RATING	PHASE	NEUTRAL
16B	0209A1005-201	AK-2A-50	3000A	BUS DUCT	
17A	202	AK-2A-50	200A	BUS DUCT	
17B	204		1000A	2-750MCM	
17C	204		1000A	2-750MCM	
18A	202		200A	BUS DUCT	
18B	204		1000A	2-750MCM	
18C	204		1000A	2-750MCM	
19A	203		600A	2-350MCM	1-1/0
19B	204		1000A	2-750MCM	
19C	204		1000A	2-750MCM	
20A	203		600A	2-350MCM	1-1/0
20B	204		1000A	2-750MCM	
20C	204	AK-2A-50	1000A	2-750MCM	
21A	205	AK-2A-50S	1200A	2-750MCM	2-4/0
21B	206	AK-2A-50	1000A	FUTURE	
21C	206	AK-2A-50	1000A	FUTURE	
22D	0209A1005-201	AK-2A-50	3000A	BUS DUCT	

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



KEY INTERLOCKED KEY REMOVABLE WHEN SELECTOR SWITCH TURNED TO REMOTE POSITION

NOTE: FOR METHOD OF ANCHORING AND INSTALLATION OF EQUIPMENT SEE DRAWING 0673D0500, SH 002

REVISIONS	PHOTO
1. REVISED TO SHOW (SEE LIST) TO BE REV. U-16C & U-22C (REMOV. LINK 5- (245 & 244) & N.P. (228) FROM DOOR U-21A INSTR. DOOR U-22A (245 & 244) (245 & 244) WITH N.P. (228))	

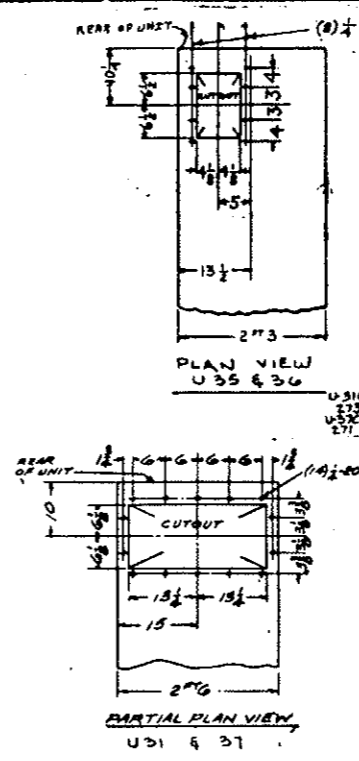
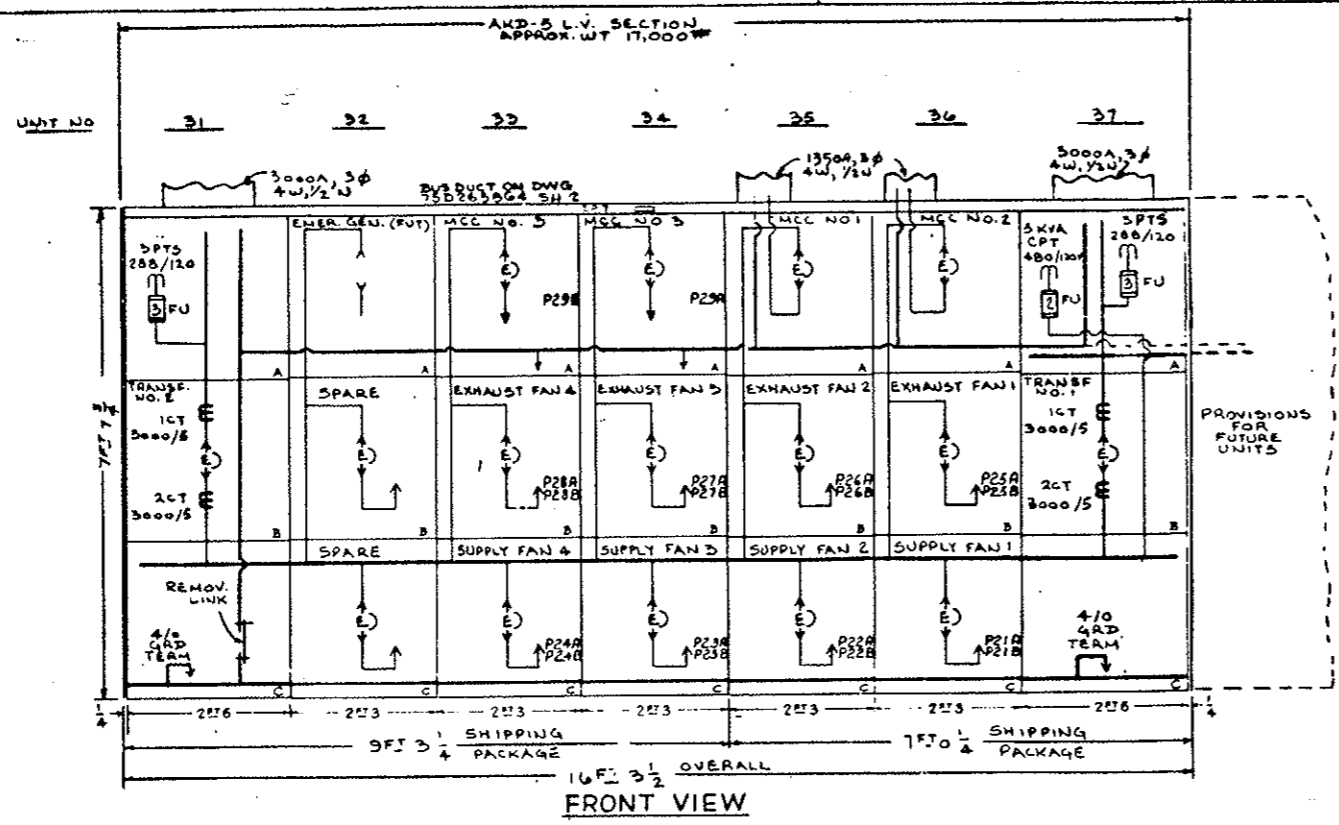
6-16-70

LY. SWGR PHILA. 0168RD670

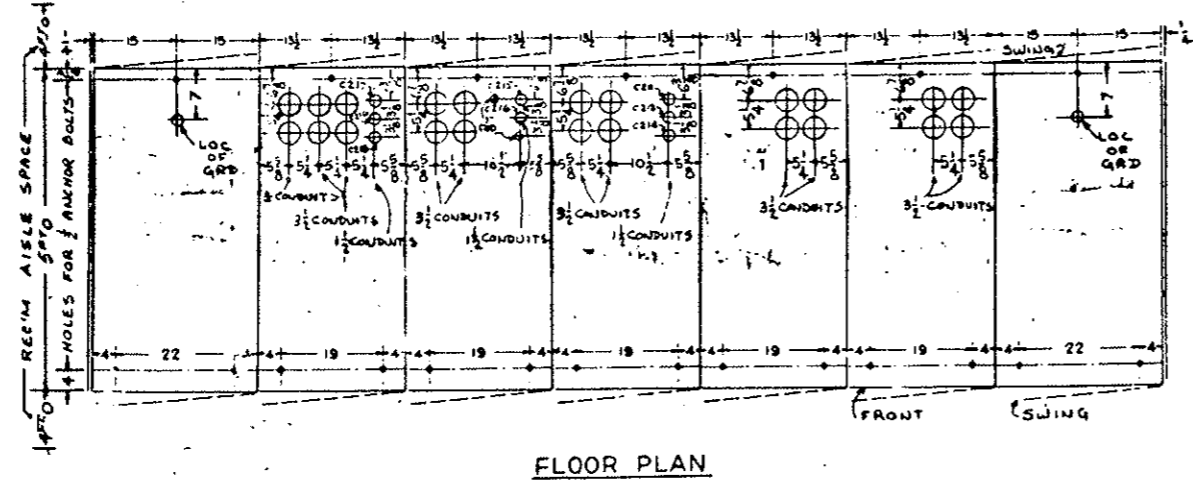
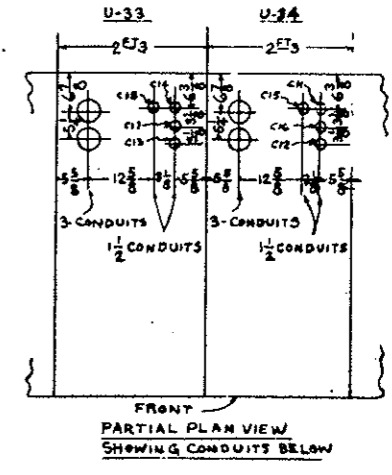
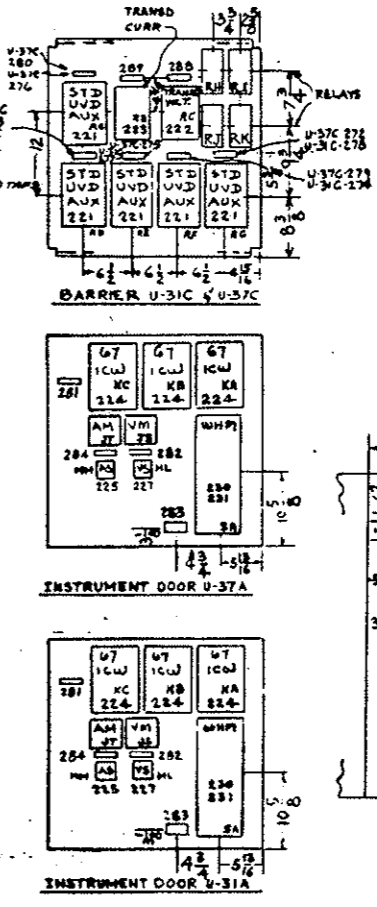
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9.	COLORADO	170-3(34)220	243KY	

GENERAL ELECTRIC 0168R067
 INDOOR SWGR
 WEST VENTILATION BUILDING
 REVISION SUMMARY
 433-20325 91227 0209A1005

AS CONSTRUCTED
 REVISED DATE Oct 26, 1973



UNIT	BREAKER NO.	BREAKER TYPE	TRIP RATING	TERMINALS
31B	0209A1005-201	AK-2A-50	3000A	BUS DUCT
32A	FUTURE			
32B	0209A1005-204	AK-2A-50	1000A	FUTURE
32C	206		1000A	FUTURE
33A	203		600A	1-1/2"
33B	204		1000A	2-7/8"
33C	204		1000A	2-7/8"
34A	203		600A	1-1/2"
34B	204		1000A	2-7/8"
34C	204		1000A	2-7/8"
35A	202		1200A	BUS DUCT
35B	204		1000A	2-7/8"
35C	204		1000A	2-7/8"
36A	202		1200A	BUS DUCT
36B	203		1000A	2-7/8"
36C	204		1000A	2-7/8"
37B	0209A1005-201	AK-2A-50	3000A	BUS DUCT



NOTE:
 FOR METHOD OF ANCHORING AND INSTALLATION OF EQUIPMENT SEE DRAWING 0673D0500 SH.002

6-16-70
 LX SWGR PHILA 0168R0671
 303

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:			
APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS	
		FRACTIONS	DECIMALS
✓	✓	±	±

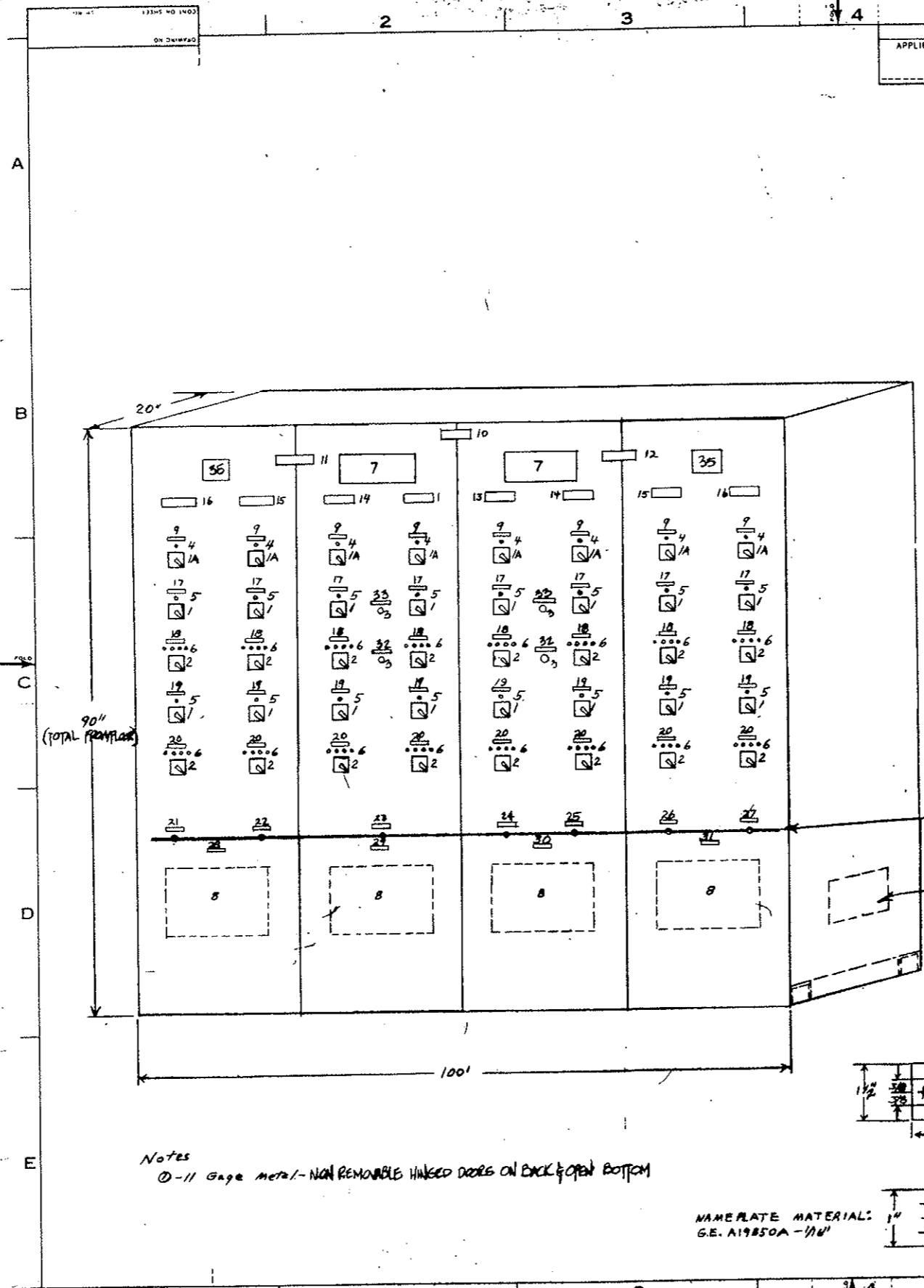
TITLE
OUTLINE - FAN CONTROL BOARD
 FIRST MADE FOR CR143ND213 STRAIGHT CREEK TUNNEL
 GESCD - JELCO

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 LY	

AS CONSTRUCTED

REVISED DATE 06/26/97

REVISED

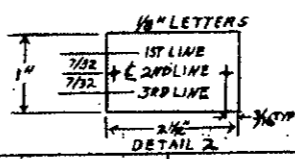
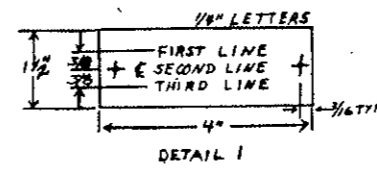


- 1. SWITCH TYPE S01 1STAGE ES105205 P5
- 2. SWITCH TYPE S02 1STAGE ES105205 P2
- 3. PUSH BUTTON TYPE CR2940UAQ02B
- 4. INDICATING LIGHTS TYPE ET-16 RED
- 5. INDICATING LIGHTS TYPE ET-16 GREEN
- 6. INDICATING LIGHTS TYPE ET-16 WHITE-3 RED
- 7. ANNUNCIATOR, PANALARM, MODEL 50-A1, SEQUENCE AP
- 8. SPACE ONLY FOR CO. INDICATING RECORDER (20" X 20" FREE PANEL AREA), TO BE FURNISHED & INSTALLED BY OTHERS. NAME PLATE SCHEDULE

	FIRST LINE	SECOND LINE	THIRD LINE	DETAIL
9.	SUPPLY FAN	BULBHEADS	CONTROL	2
10.	FAN	CONTROL BOARD	NORTH TUNNEL	1
11.	WEST FANS	CONTROL		1
12.	EAST FANS	CONTROL		1
13.	FAN 1			1
14.	FAN 2			1
15.	FAN 3			1
16.	FAN 4			1
17.	SUPPLY FAN	CONTROL	TRANSFER	2
18.	SUPPLY FAN	CONTROL		2
19.	EXHAUST FAN	CONTROL	TRANSFER	2
20.	EXHAUST FAN	CONTROL		2
21.	CO	ANALYZER 1		2
22.	CO	ANALYZER 2		2
23.	CO	ANALYZER 3		2
24.	CO	ANALYZER 4		2
25.	CO	ANALYZER 5		2
26.	CO	ANALYZER 6		2
27.	CO	ANALYZER 7		2
28.	ANALYZER	1&2	RECORDER	2
29.	ANALYZER	3	RECORDER	2
30.	ANALYZER	4&5	RECORDER	2
31.	ANALYZER	6&7	RECORDER	2
32.	ALARM	SILENCE		2
35.	ANNUNCIATOR	LAMP TEST		2

MINI BUS 5/8" WIDE X 1/16" DEEP GREEN LAMINATED PLASTIC

SPACE BOTH SIDES FOR PURSE WIREWAY 6x6"



Notes
 ① - 1/16 Gage Metal - NON REMOVABLE HINGED DOORS ON BACK & OPEN BOTTOM

NAMEPLATE MATERIAL:
 G.E. A19850A - 1/16"

34 TERMINAL BOARDS (NOT SHOWN), TYPE CR151626
 35 PANALARM MODEL VSD BELL

CONNECTION DIAGRAM: 55-760607

REVISIONS	DATE	BY	REASON	PRINTS TO
1	8/24/70	JAN	1-1-70	
2	9-23-70	
3	Sept 23, 1970	

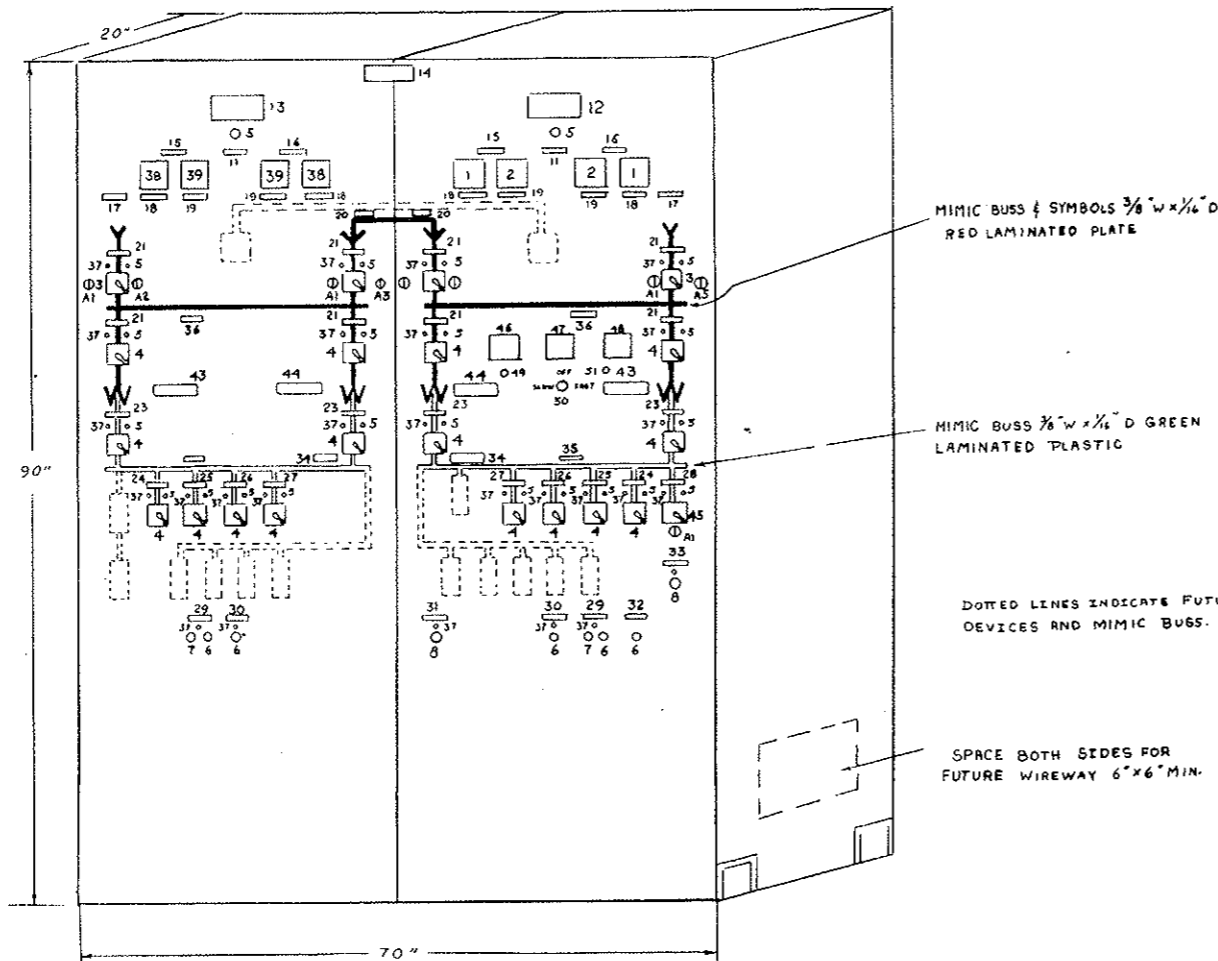
MADE BY August 2, 1968	APPROVALS CSC	NO. HOLLYWOOD	55-660253
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FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	170-3(34)220	243MY	
GENERAL ELECTRIC			55-660254	
TITLE				
OUTLINE - POWER CONTROL BOARD.				
FIRST MADE FOR GRI43N01214 STRAIGHT CREEK TUNNEL				
GESCO- JELCO				

CONTRACT NO 7544-3257D
BID ITEM 177
ITEM GI

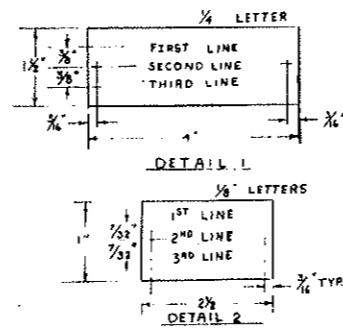
AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

NOTE: 'A' PREFIX NOS ARE KIRK KEY DESIGNATIONS PER T.A.M.S. SK 116-3-69-E1 AND DRAWING 55-195419



NOTE: NON-REMOVABLE DOORS ON BACK OPEN BOTTOM

NAME PLATE MATERIAL
G.E. A19858A-1116



1. AMMETER TYPE 171-141-LSVJ AC 0-3000 AMP
 2. VOLTMETER TYPE 171-031-SJSJ AC 0-600 VOLTS
 3. SWITCH TYPE SBI 2 STAGE WITH KIRK KEYLOCK, 55-185285P3
 4. SWITCH TYPE SBI 2 STAGE 55-185285P4
 5. INDICATING LIGHTS, TYPE ET16, RED 125 V.D.C.
 6. CR2940UA202 B PUSH BUTTON.
 7. CR2940UA202 C PUSH BUTTON.
 8. CR2940UB202 A SELECTOR SWITCH
- | NAME PLATE SCHEDULE | | | |
|---------------------|----------------|---------------|--------------|
| FIRST LINE | SECOND LINE | THIRD LINE | DETAIL |
| 11. | POWER | ON | 2 |
| 12. | EAST | BUILDING | 1 |
| 13. | WEST | BUILDING | 1 |
| 14. | POWER | CONTROL BOARD | 1 |
| 15. | TRANSFORMER | NO. 2 | SECONDARY 2 |
| 16. | TRANSFORMER | NO. 1 | SECONDARY 2 |
| 17. | PUBLIC SERVICE | INCOMING | LINE 2 |
| 18. | AMMETER | | 2 |
| 19. | VOLTMETER | | 2 |
| 20. | 24.9 K.V. | EMERGENCY | TIE 2 |
| 21. | LOAD | BREAK | SWITCH 2 |
| 23. | AIR | CIRCUIT | BREAKER 2 |
| 24. | MCC #1 | FEEDER | BREAKER 2 |
| 25. | MCC #2 | FEEDER | BREAKER 2 |
| 26. | MCC #3 | FEEDER | BREAKER A 2 |
| 27. | MCC #3 | FEEDER | BREAKER B 2 |
| 28. | EMERGENCY | GENERATOR | BREAKER 2 |
| 29. | TUNNEL & BLDG. | NORMAL LIGHTS | RESET 2 |
| 30. | BUILDING | POWER PANELS | RESET 2 |
| 31. | SEDIMENTATION | TANKS | EMERG VENT 2 |
| 32. | TUNNEL & BLDG. | NORMAL LIGHTS | RESET 2 |
| 33. | EMERGENCY | GENERATOR | CONTROL 2 |
| 34. | 460 V. BUSS | TIE | BREAKER 2 |
| 35. | 460 V. BUSS | | 2 |
| 36. | 24.9 KV | BUSS | 2 |
37. INDICATING LIGHT, TYPE ET-16 GREEN 125 V. D.C.
 38. 0-5 MILLIAMMETER, TYPE 171-111-FXFX WITH 0-3000 AMP SCALE
 39. 0-5 MILLIAMMETER, TYPE 171-111-FXFX WITH 0-600 VOLT SCALE
 42. TERMINAL BOARD, (NOT SHOWN) CR151B26
 - CONNECTION DIAGRAM: 55-760614 -
 43. TRANSFORMER #1
 44. TRANSFORMER #2
 45. SWITCH, TYPE SBI, WITH KIRK KEY LOCK, 55-185285P4

- ADDED EMERGENCY GENERATOR METERING PER C.O. # 198
- * 46. AMP METER
- * 47. HERTZ METER
- * 48. VOLT METER
- * 49. APPROACH LOW OIL PRESSURE LIGHT
- 50. GOVERNOR CONTROL
- * 51. APPROACH HIGH WATER TEMPERATURE

* NOTE: REVISED 11/14 1973

NO.	REVISIONS	DATE
1	As Constructed	Jan 23, 1974
2	Revised	Dec 12, 1973
3	Revised	Sept 27, 1972

DESIGNED BY	DATE	CHECKED BY	DATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
J. J. Miller	August 2, 1968	CSC		G.P.C.	55-660254	
NO HOLLYWOOD			G.E. A19858A-1116			

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

APPLIED PRACTICES	SURFACE	TOLERANCES UNLESS OTHERWISE SPECIFIED	FINISHES UNLESS OTHERWISE SPECIFIED
	✓	±	±

TITLE
OUTLINE-LOCAL CONTROL BOARD
FIRST MADE FOR CR143N01215 STRAIGHT CREEK TUNNEL
GE500-J.E.L.C.O.

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 NY	

AS CONSTRUCTED
REVISED DATE Oct 26, 1979

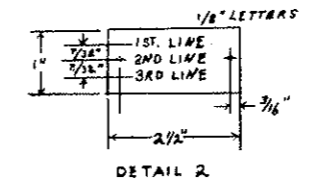
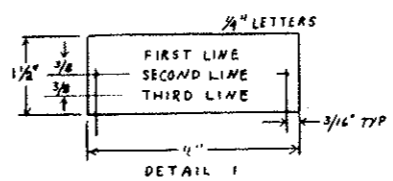
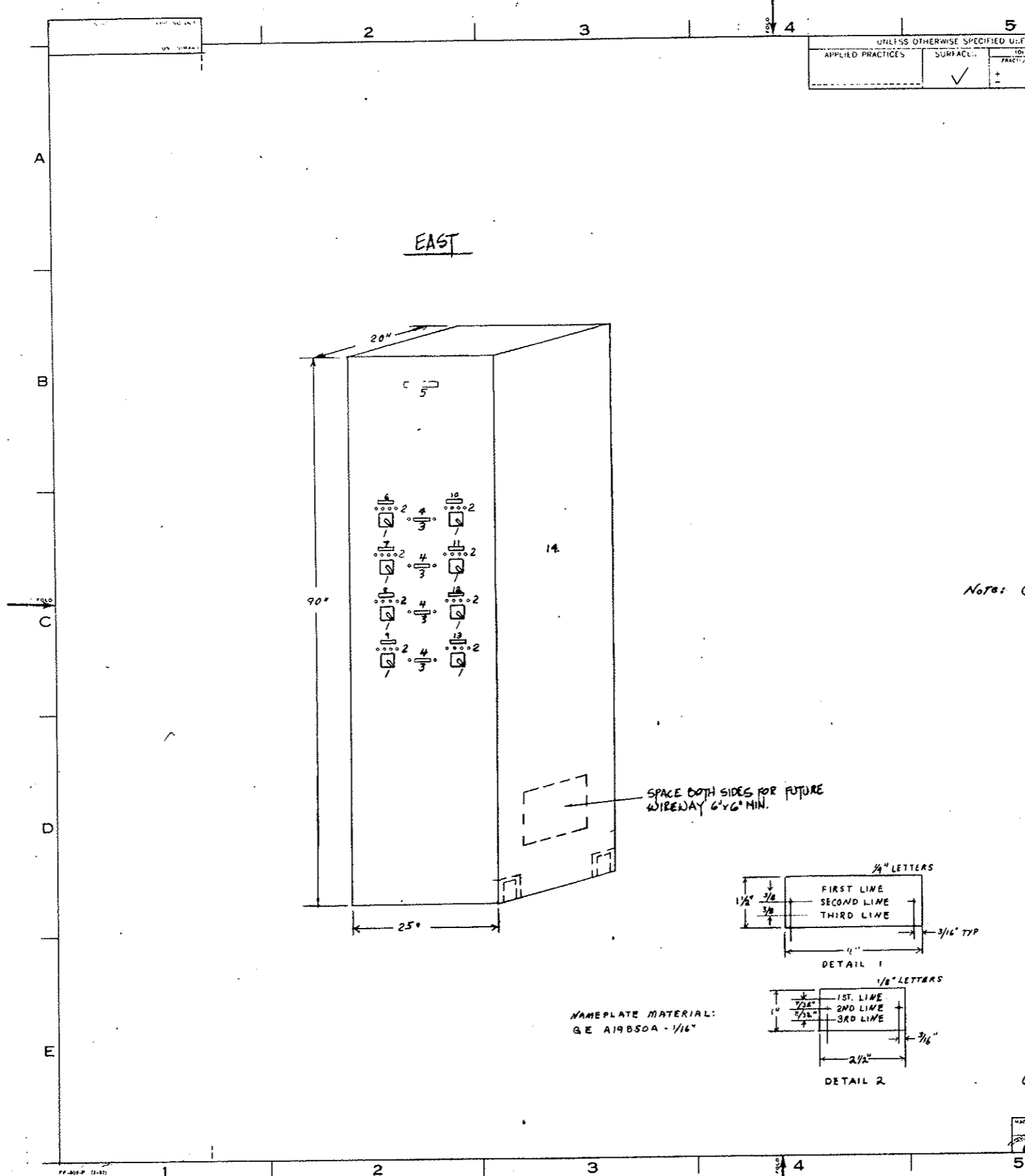
1. SWITCH TYPE SB102 STAGE, PULL TO START, 55-185883
2. INDICATING LIGHTS - 1 WHITE-3 RED TYPE ET-16
3. INDICATING LIGHTS - GREEN TYPE ET-16

NAMEPLATE SCHEDULE

	FIRST LINE	SECOND LINE	DETAIL
4	CONTROL	AVAILABLE	2
5	LOCAL	CONTROL BOARD	1
6	SUPPLY FAN 1	CONTROL	2
7	SUPPLY FAN 2	CONTROL	2
8	SUPPLY FAN 3	CONTROL	2
9	SUPPLY FAN 4	CONTROL	2
10	EXHAUST FAN 1	CONTROL	2
11	EXHAUST FAN 2	CONTROL	2
12	EXHAUST FAN 3	CONTROL	2
13	EXHAUST FAN 4	CONTROL	2

- Notes: ① 14. G.E. TYPE AV SWITCH BOARD, PAINTED ASA-11 LIGHT GRAY - Note ①
15. 1 3/8" X 2 1/2" STEEL FLOOR SILL
16. TERMINAL BOARD (NOT SHOWN), CR151826
17. FLASHERS FL-1 TO FL-8 Inclusive - NOT SHOWN - A.B. McMahon Model 22-01

NOTE:
11 GAGE METAL WILL BE USED
NON-REMOVABLE HINGED DOORS ON BACK
CLOSED BOTTOM

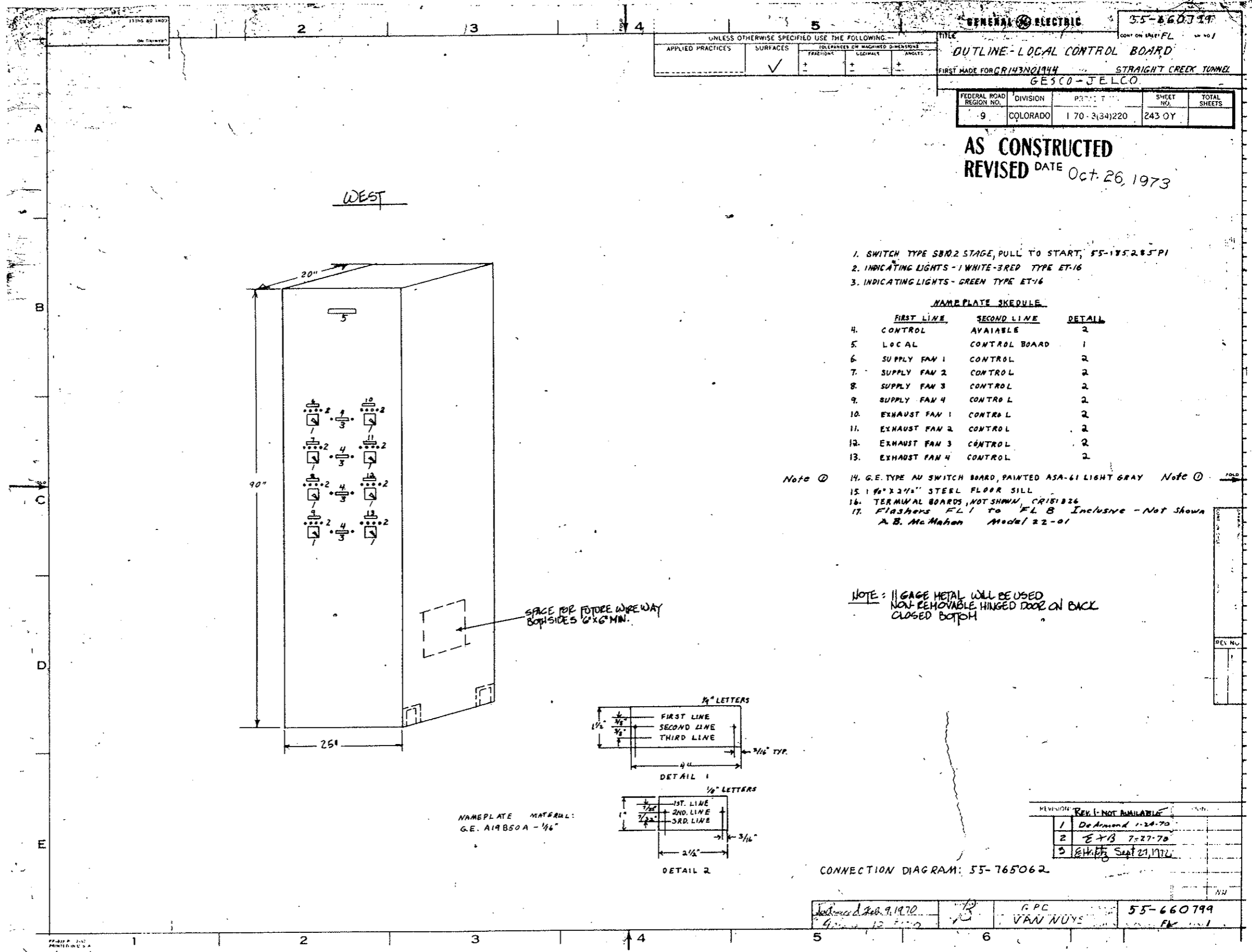


NAMEPLATE MATERIAL:
GE A19B50A - 1/16"

CONNECTION DIAGRAM: 55-760 615

REVISION	BY	DATE	PRINTS TO
1	Dr. Demand	Jan 29, 1970	
2	E. J. B.	7/27/70	
3	Chetty	Sept 21, 1970	

DATE: August 2, 1968	APPROVED: CSC	BY: GPC	NO. HOLLYWOOD	55-660255
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GENERAL ELECTRIC 55-660799

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING--

APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS	COLLARS	KEYWAYS	ANGLES
	✓				

TITLE: **OUTLINE-LOCAL CONTROL BOARD**

FIRST MADE FOR: GR143N01944 STRAIGHT CREEK TUNNEL
GESCO-JELCO

FEDERAL ROAD REGION NO.	DIVISION	PROJECT	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 OY	

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

1. SWITCH TYPE SB10.2 STAGE, PULL TO START, 55-185.2.85 P1
2. INDICATING LIGHTS - 1 WHITE-3 RED TYPE ET-16
3. INDICATING LIGHTS - GREEN TYPE ET-16

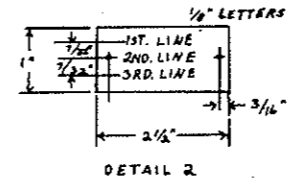
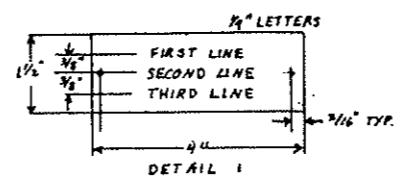
NAMEPLATE SCHEDULE

	FIRST LINE	SECOND LINE	DETAIL
4.	CONTROL	AVAILABLE	2
5.	LOCAL	CONTROL BOARD	1
6.	SUPPLY FAN 1	CONTROL	2
7.	SUPPLY FAN 2	CONTROL	2
8.	SUPPLY FAN 3	CONTROL	2
9.	SUPPLY FAN 4	CONTROL	2
10.	EXHAUST FAN 1	CONTROL	2
11.	EXHAUST FAN 2	CONTROL	2
12.	EXHAUST FAN 3	CONTROL	2
13.	EXHAUST FAN 4	CONTROL	2

- Note ① 14. G.E. TYPE AN SWITCH BOARD, PAINTED ASA-61 LIGHT GRAY Note ①
15. 1 1/2" X 2 1/2" STEEL FLOOR SILL
16. TERMINAL BOARDS, NOT SHOWN, CR151826
17. Flashers FL1 to FL8 Inclusive - Not Shown
A. B. McMahon Model 22-01

NOTE: 11 GAGE METAL WILL BE USED
 NON-REMOVABLE HINGED DOOR ON BACK
 CLOSED BOTTOM

SPACE FOR FUTURE WIREWAY
 BOTH SIDES 6" X 6" MIN.



NAMEPLATE MATERIAL:
 G.E. A19B50A - 1/16"

REVISION: REV. 1 - NOT AVAILABLE

1	De Armond 1-24-70
2	EJB 7-27-70
3	EHK Sept 27, 1972

CONNECTION DIAGRAM: 55-765062

Designed & Drawn: Feb. 9, 1970	Checked: 12-1-70	APC	55-660799
		VAN NUYS	FL

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING	
APPLIED PRACTICES	SURFACES
✓	+

CONNECTION DIAGRAM - FAN CONTROL BOARD
 FEDERAL REGISTER NO. 132
 GESCO/NECC/STANWY CALA TRADE

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 PY	

WEST

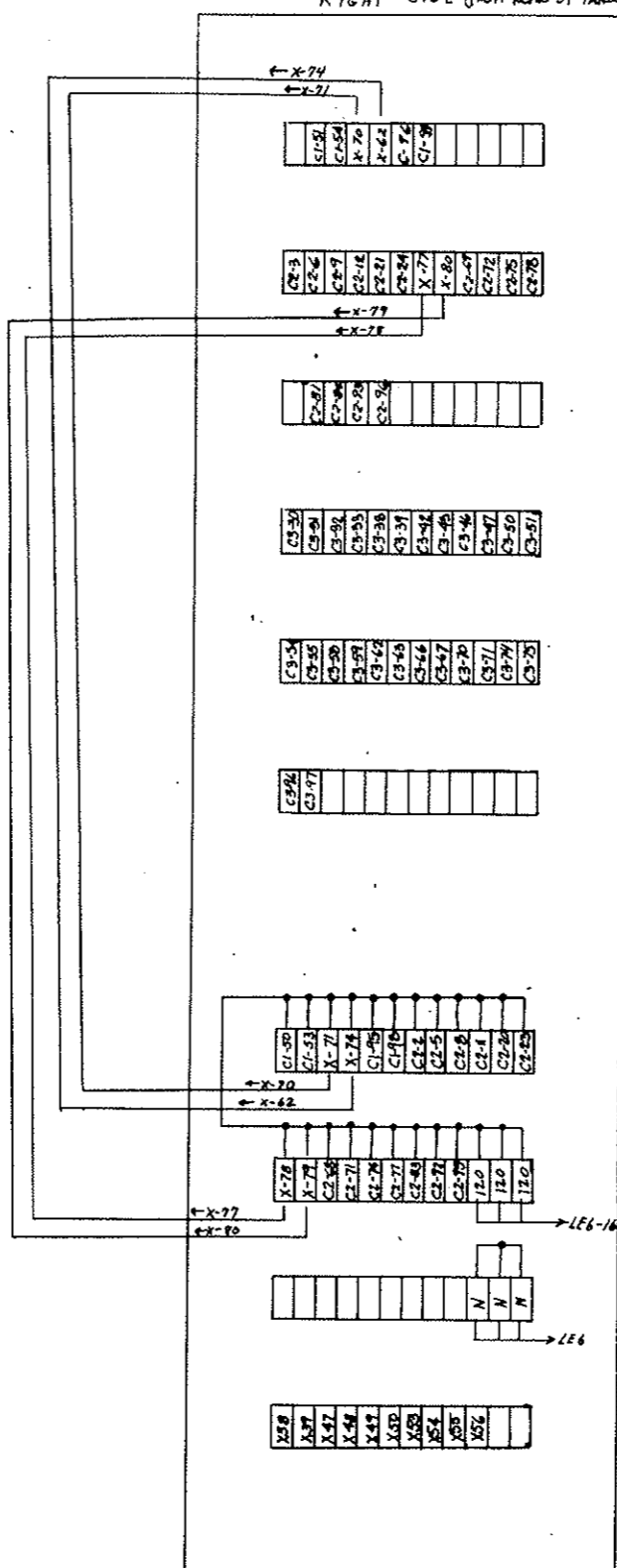
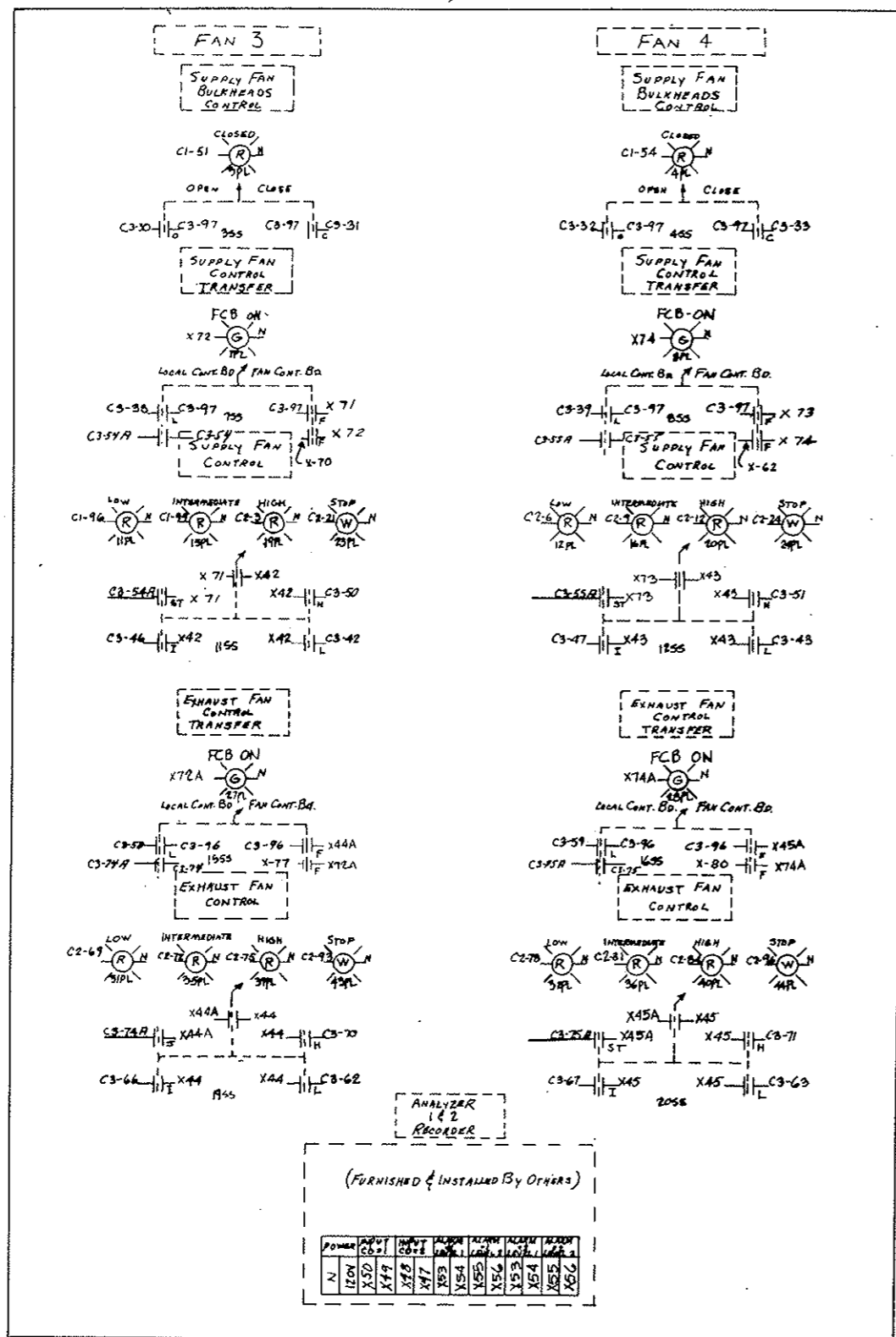
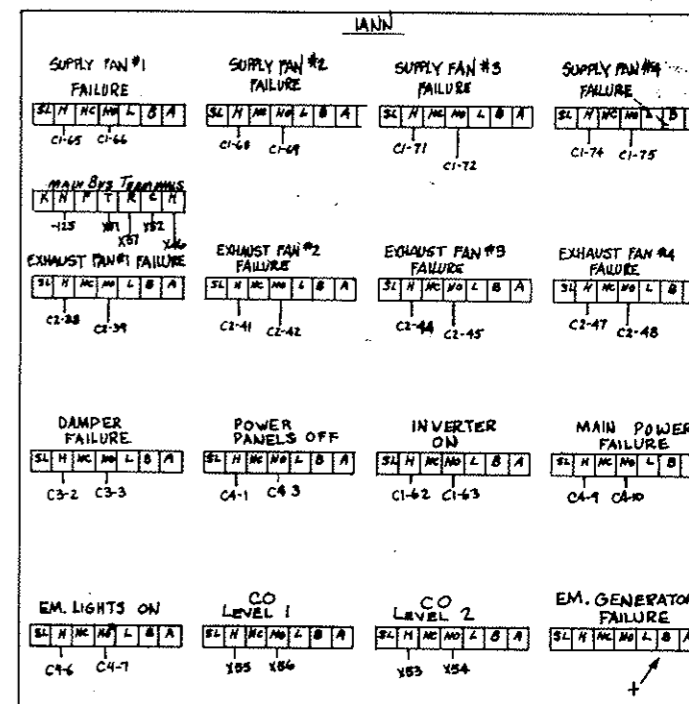
#1 FRONT PANEL (REAR VIEW)

RIGHT SIDE (FROM REAR OF PANEL)

#1 ALARM BELL



ANNUNCIATOR (REAR VIEW)



- NOTE**
- NUMBERS HAVING 'C' PREFIX REFER TO QVINDAR ELECTRONICS INC. DRAWING NO 153950
 - NUMBERS WITH 'X' PREFIX REFER TO THIS PANEL ONLY
 - 'N' AND '120' DESIGNATE LOCAL 120 VOLT, 60 HZ POWER SOURCE
 - FOR FUTURE USE.

1	Check 9-24-70	NH
2	Check 10-14-71	
3	Check 11-14-71	

UNLESS OTHERWISE SPECIFIED, FOLLOW THE APPLIED PRACTICES

CONNECTION DIAGRAM - FAN CONTROL BOARD
CR-143-101213

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 QY	

AS CONSTRUCTED
REVISED DATE Oct 26, 1973

A

B

C

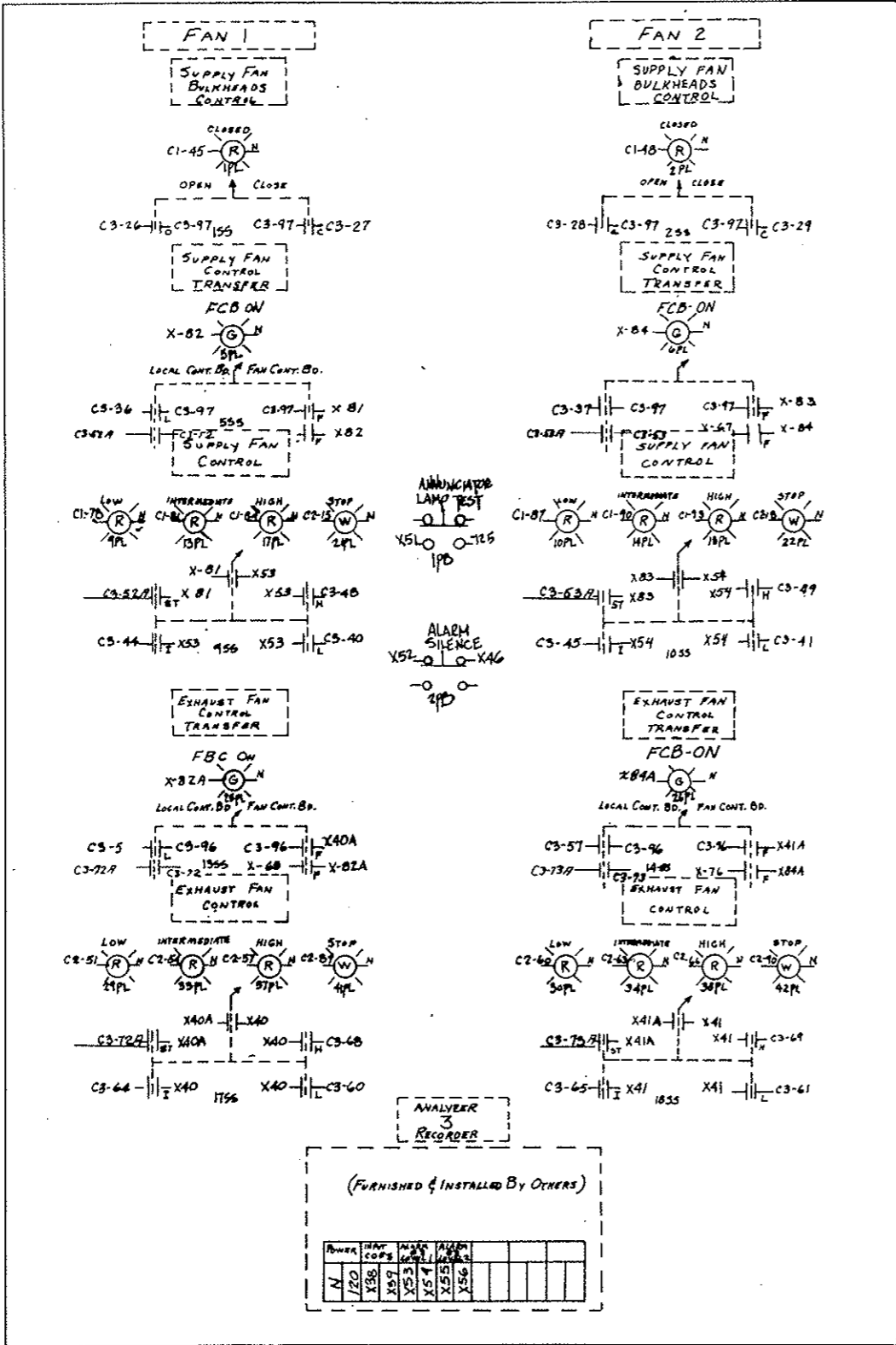
D

E

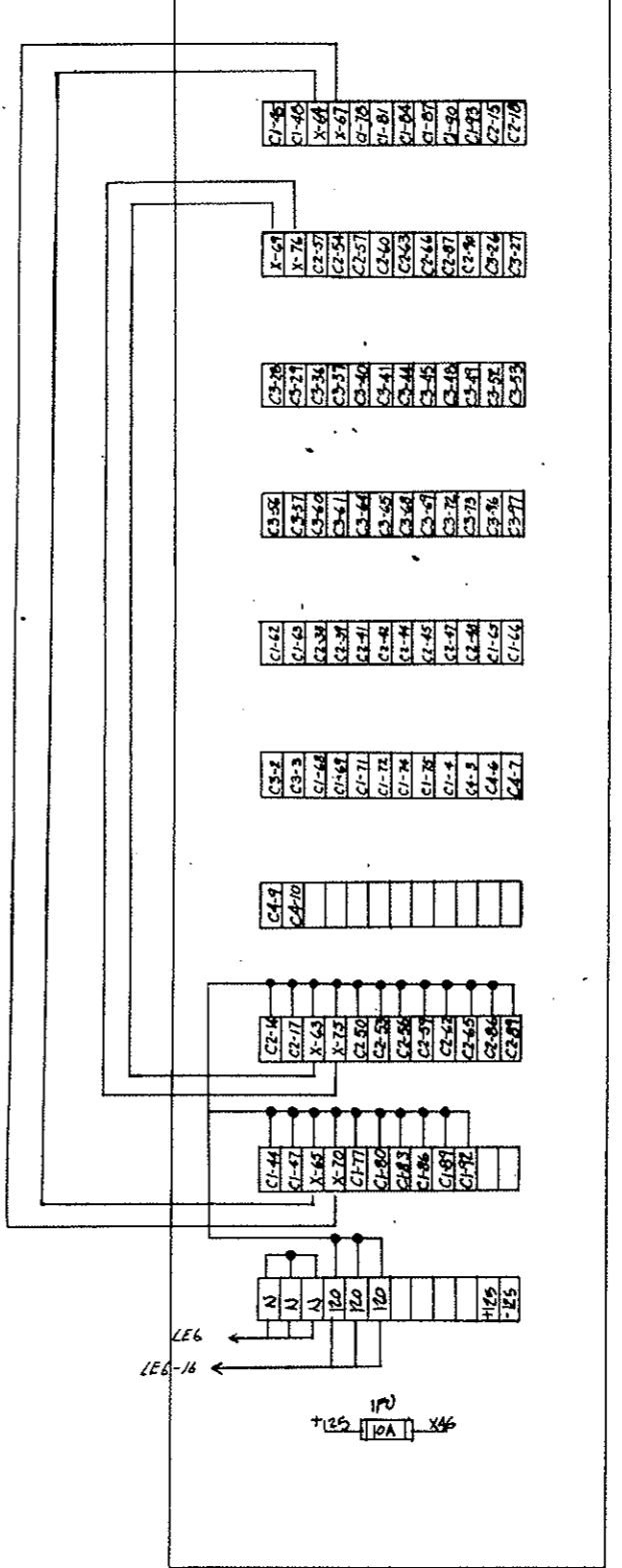
F

H

*2 FRONT PANEL (REAR VIEW)



CENTER RIGHT (FROM REAR OF ENCLOSURE)



- NOTE
- 1. NUMBERS HAVING 'C' PREFIX REFER TO QUINDAR ELECTRONICS INC. DRAWING No. 16395D
 - 2. NUMBERS WITH 'X' PREFIX REFER TO THIS PANEL ONLY
 - 3. 'N' AND '120' DESIGNATE LOCAL 120 VOLT, 60 HZ POWER SOURCE

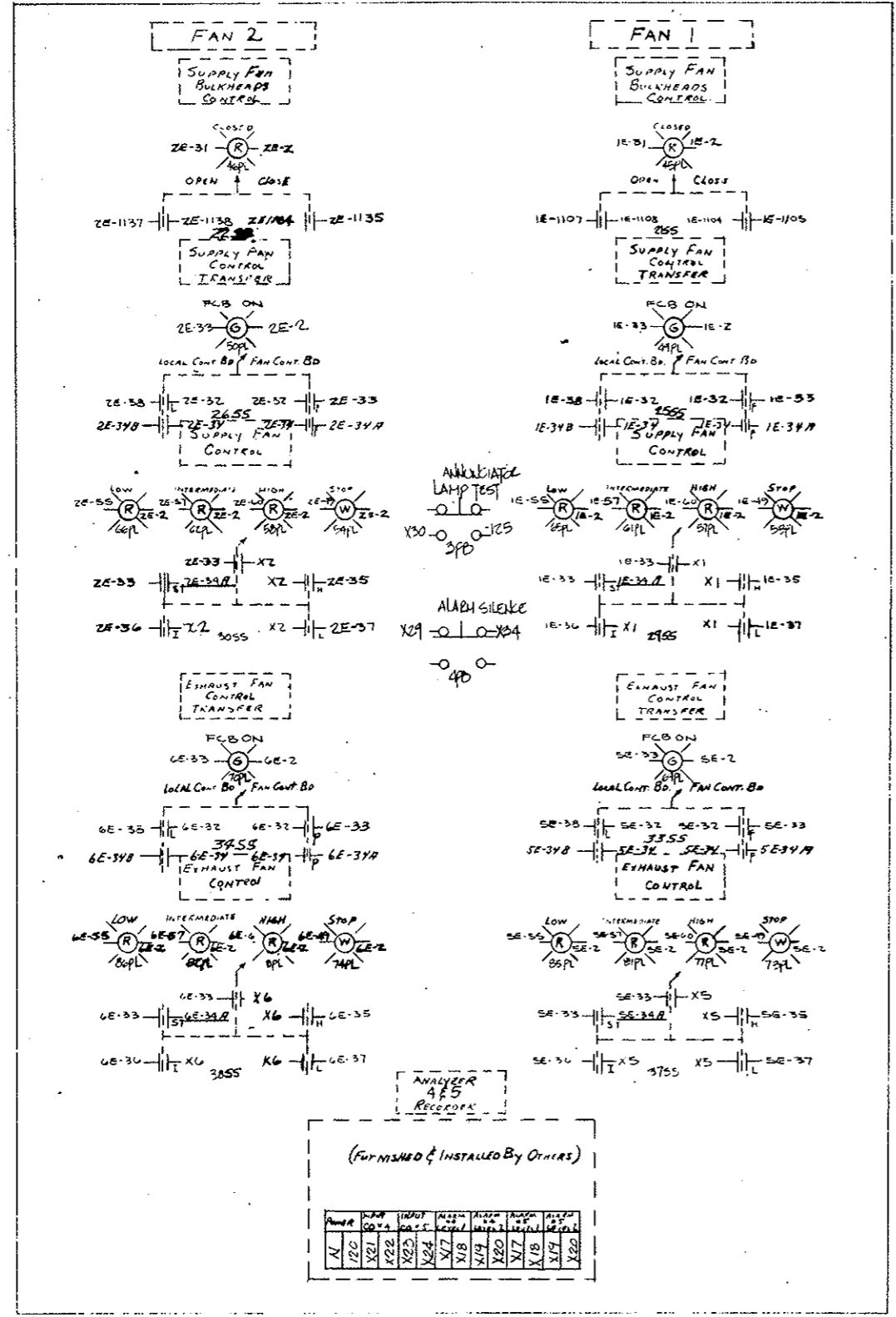
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:			
APPLIED PRACTICES	SURFACES	TOLERANCES OR DIMENSIONS UNLESS OTHERWISE SPECIFIED	FINISHES
	✓		

TITLE
CONNECTION DIAGRAM - FAN CONTROL BOARD
UNLESS MADE FOR IDENTIFICATION

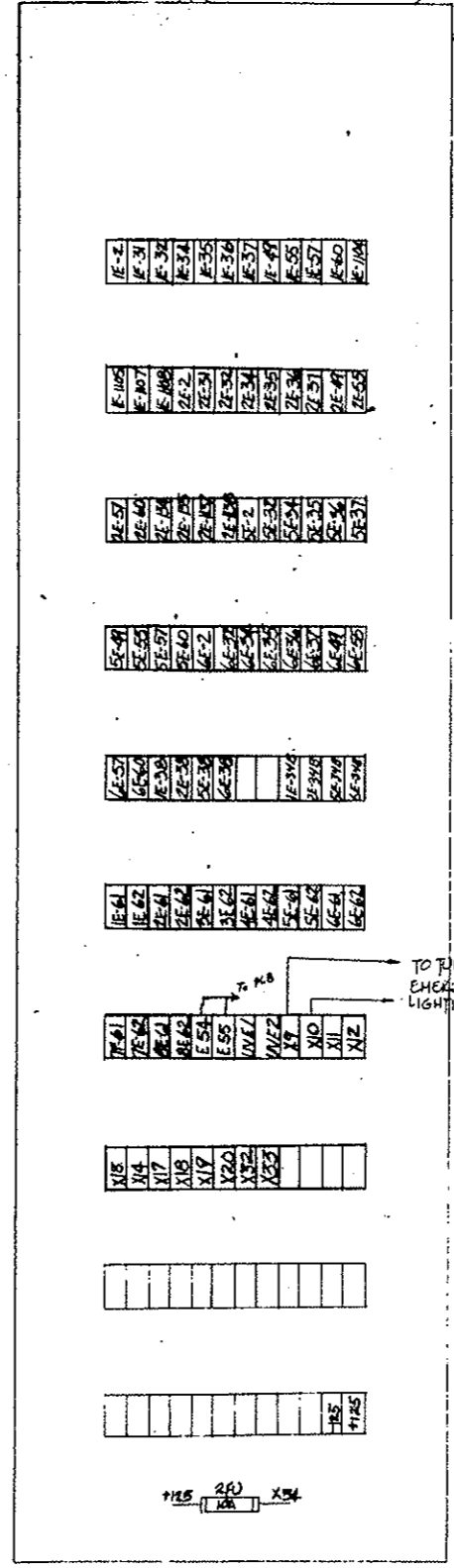
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243RY	

EAST

*3 FRONT PANEL (REAR VIEW)



CENTER LEFT (FROM REAR OF ENCLOSURE)



AS CONSTRUCTED
REVISED DATE Oct-26, 1973

- NOTE ~
1. NUMBERS HAVING NUMERICAL PREFIX, REFER TO GENERAL ELECTRIC CO. INDUSTRY CONTROL DEPT. DRAWING NO. 973D560.
 2. NUMBERS WITH "X" PREFIX REFER TO THIS PANEL ONLY.
 3. "N" AND "120" DESIGNATE LOCAL 120 VOLT, 60 HZ, POWER SOURCE

REVISIONS	DATE	BY
1. REVISED 9-23-70		MLL
2. REVISED 10-26-73		

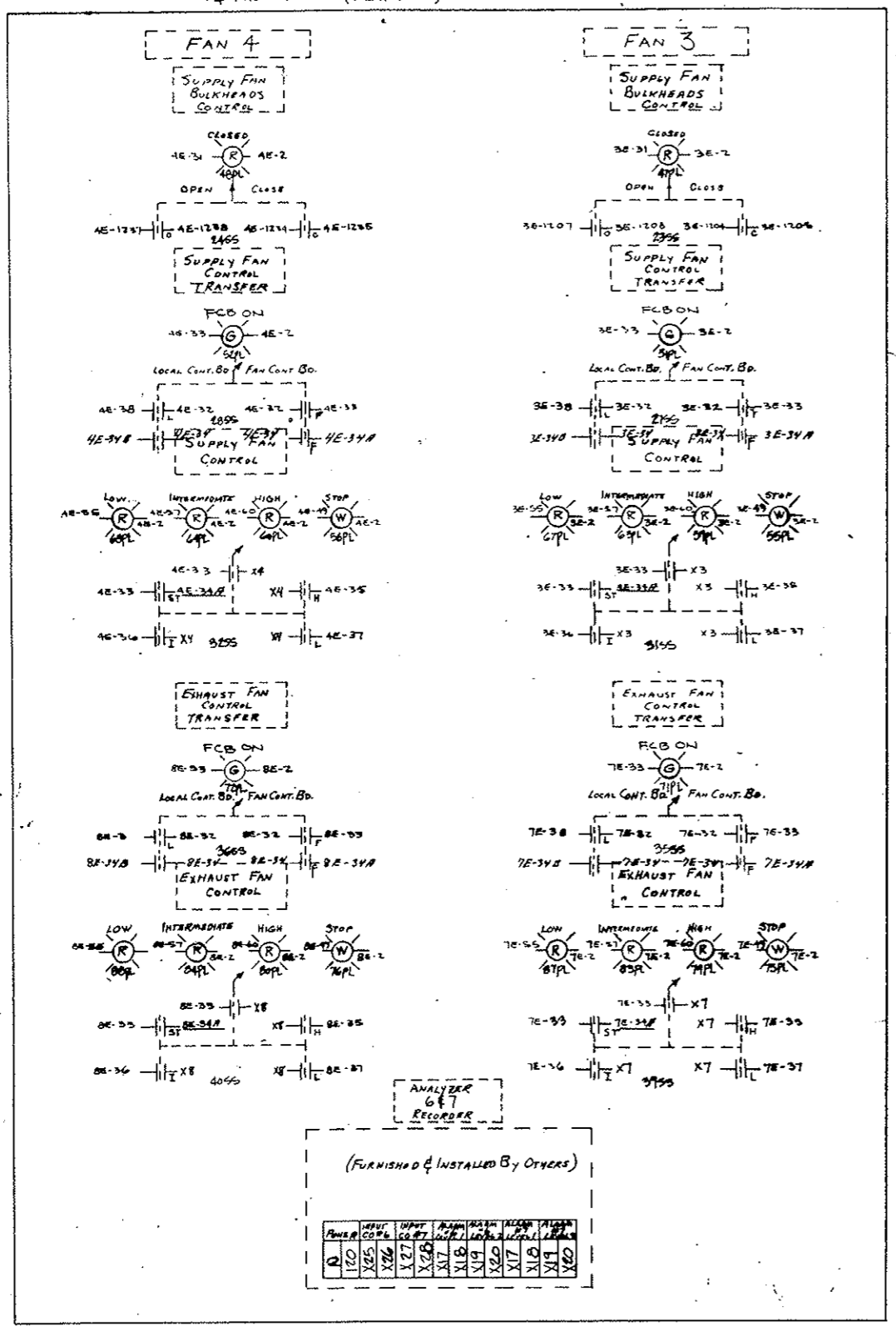
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:	
APPLIED PRACTICES	SURFACES
✓	✓

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 SY	

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

EAST

#4 FRONT PANEL (REAR VIEW)

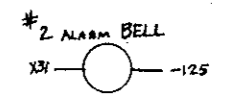
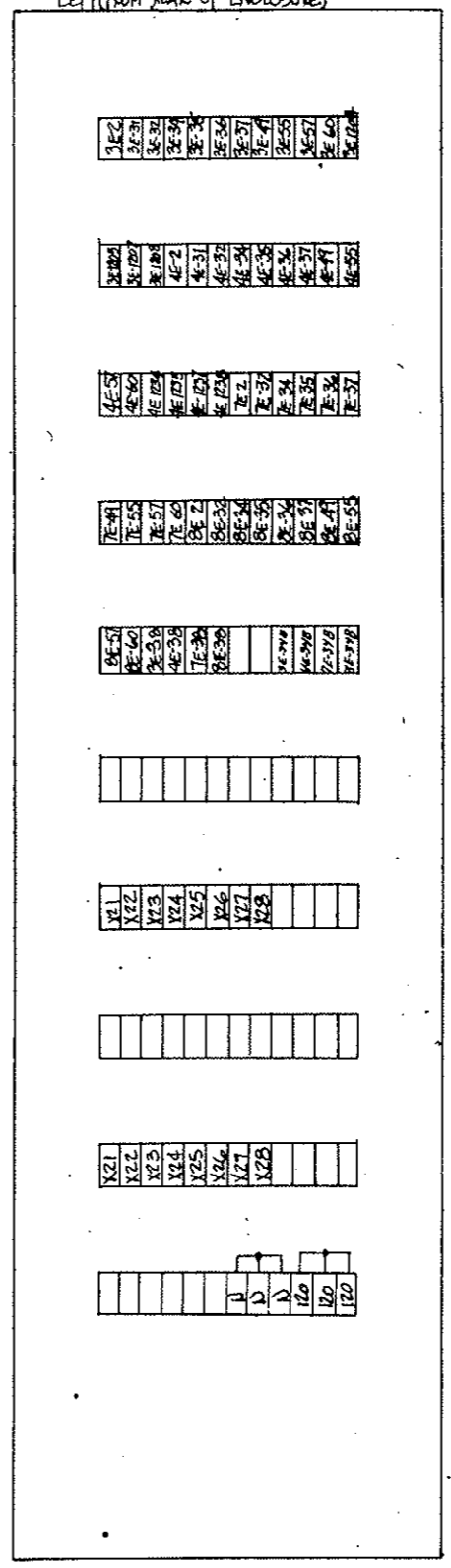


ANALYZER GFT RECORDER

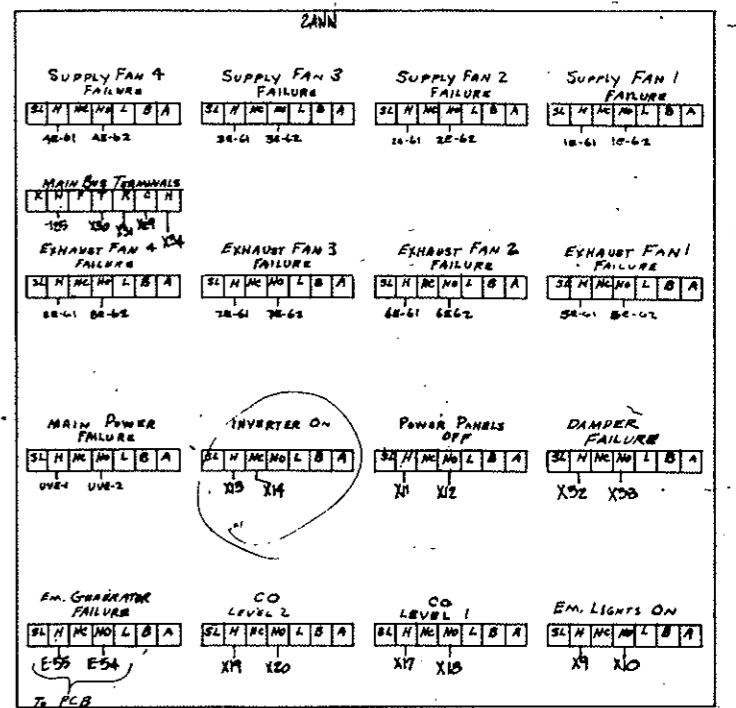
(FURNISHED & INSTALLED BY OTHERS)

POWER SUPPLY	INVERTER	CO LEVEL 2	CO LEVEL 1	EM LIGHTS ON	EM GUARANTEE FAILURE	MAIN POWER FAILURE	EXHAUST FAN 1 FAILURE	EXHAUST FAN 2 FAILURE	EXHAUST FAN 3 FAILURE	EXHAUST FAN 4 FAILURE	MAIN BUS TERMINALS	SUPPLY FAN 1 FAILURE	SUPPLY FAN 2 FAILURE	SUPPLY FAN 3 FAILURE	SUPPLY FAN 4 FAILURE
X20	X19	X18	X17	X16	X15	X14	X13	X12	X11	X10	X9	X8	X7	X6	X5

LEFT (FROM REAR OF ENCLOSURE)



ANNUNCIATOR (REAR VIEW)



- NOTE
- NUMBERS HAVING NUMERICAL PREFIX REFER TO GENERAL ELECTRIC CO. INDUSTRY CONTROL DEPT. DRAWING NO. 973D500
 - NUMBERS WITH "X" PREFIX REFER TO THIS PANEL ONLY.
 - "N" AND "120" DESIGNATE LOCAL 120 VOLT, 60 HZ. POWER SOURCE
 - NUMBERS WITH "E" PREFIX REFER TO EMERGENCY GENERATOR CONTROL PANEL.

DATE	BY	CHKD BY	APPROVED BY
10/26/73	J. VAN NUYS		

55-760607

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

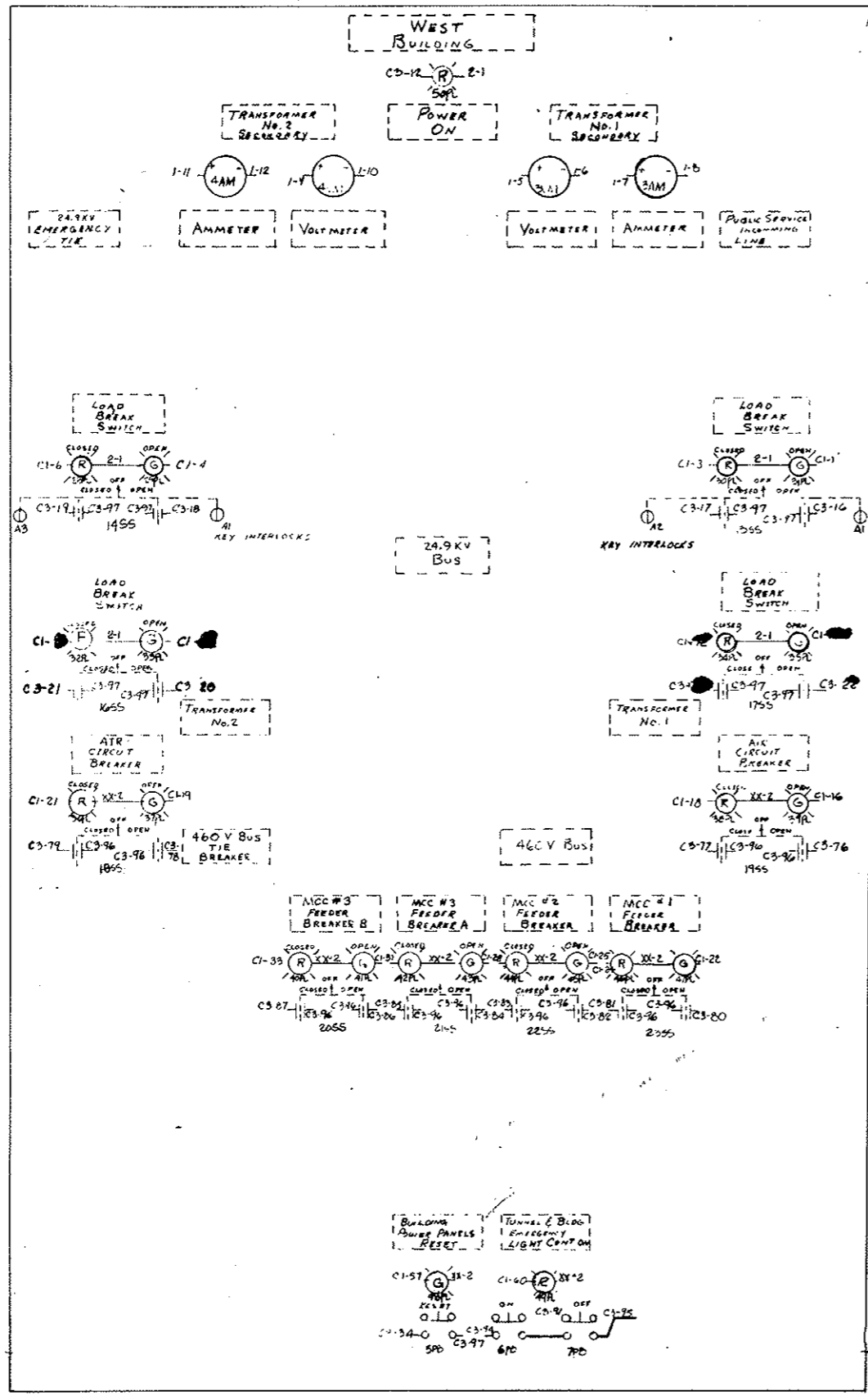
APPLIED PRACTICES	SURFACES	TERMINALS	WIRING
✓	✓	✓	✓

CONNECTION DIAGRAM POWER CONTROL BOARD

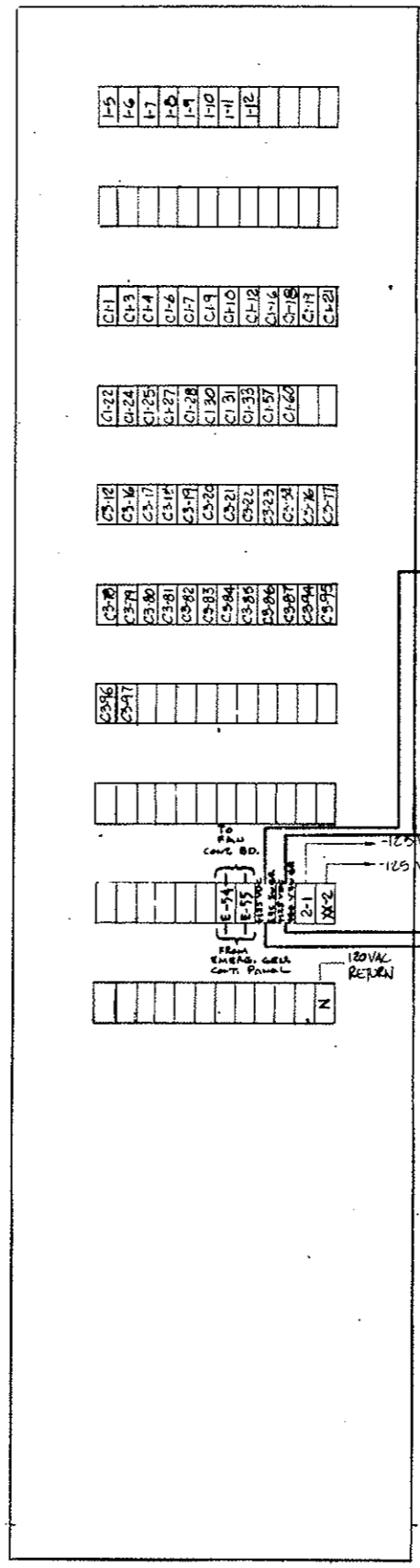
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243TY	

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

FRONT PANEL (REAR VIEW)



RIGHT SIDE



+125VDC FROM 57C SWGR TO QUNDRAR COMMON TO PIS C1-2, C1-5, C1-8, C1-11

+125VDC FROM 460V SWGR TO QUNDRAR COMMON TO PIS C1-17, C1-20, C1-23, C1-26, C1-29, C1-32, C1-36, C1-37, C2-12, C3-11

-125VDC FROM (57C SWGR)

-125VDC FROM (460V SWGR)

FROM 460 V SW GR FROM 57C SW GR

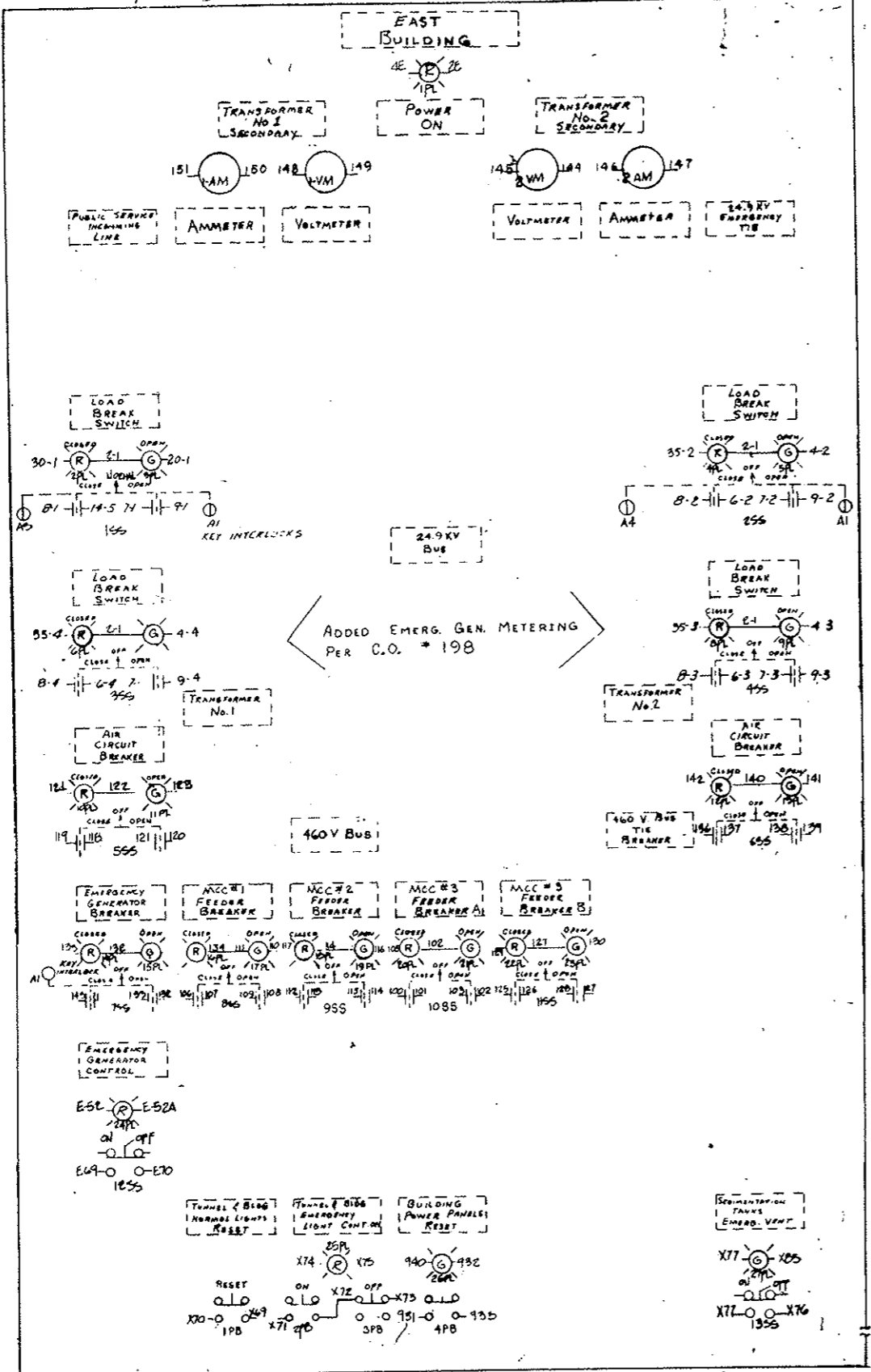
NOTES
 1. NUMBERS WITH 'C' OR 'I' PREFIX REFER TO QUNDRAR ELECTRONICS DRAWING 16395D

NO.	REVISION	DATE	BY
1	REVISED		NH
2	REVISED		
3	REVISED		

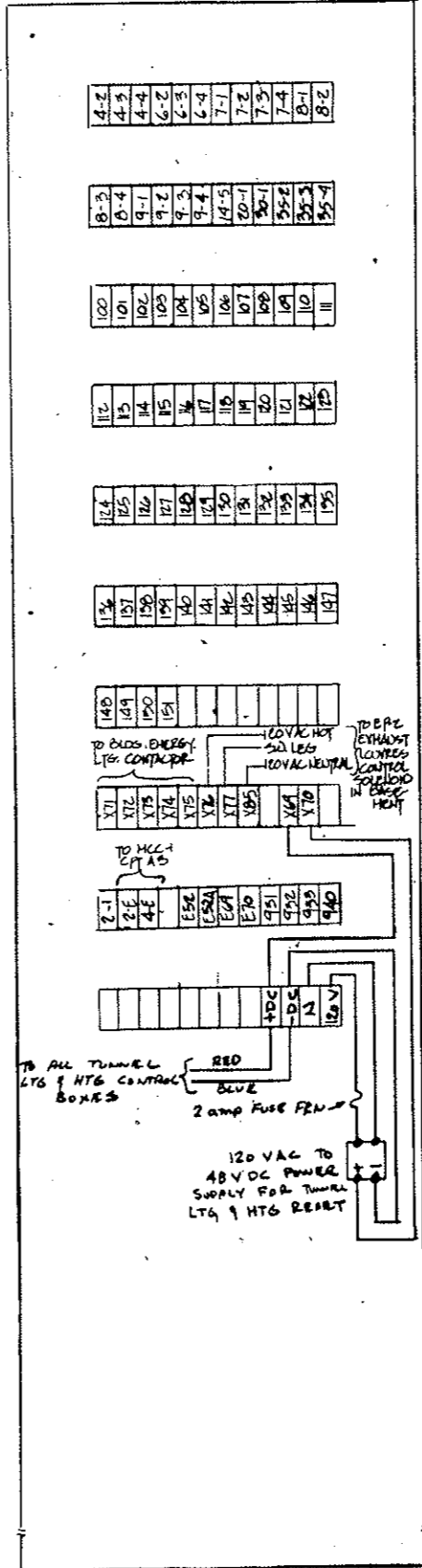
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING—
 APPLIED PRACTICES SURFACES

TITLE
 CONNECTION DIAGRAM - POWER C.
 FIRST MADE FOR R.I. TUNNELS
 GESCO/HECLA/STANANT CREEK

#2 FRONT PANEL (REAR VIEW)



Left Side



WIRE #	REF. DRAWING
100	19-OTB-1
101	19-OTB-2
102	19-OTB-3
103	19-OTB-4
104	19-OTB-5
105	19-OTB-6
106	19-OTB-1
107	19-OTB-2
108	19-OTB-3
109	19-OTB-4
110	19-OTB-5
111	19-OTB-6
112	19-OTB-1
113	19-OTB-2
114	19-OTB-3
115	19-OTB-4
116	19-OTB-5
117	19-OTB-6
118	19-OTB-1
119	19-OTB-2
120	19-OTB-3
121	19-OTB-4
122	19-OTB-5
123	19-OTB-6
124	19-OTB-1
125	20-OTB-1
126	20-OTB-2
127	20-OTB-3
128	20-OTB-4
129	20-OTB-5
130	20-OTB-6
131	21-OTB-1
132	21-OTB-2
133	21-OTB-3
134	21-OTB-4
135	21-OTB-5
136	21-OTB-6
137	21-OTB-7
138	21-OTB-8
139	21-OTB-9
140	21-OTB-10
141	21-OTB-11
142	21-OTB-12
143	21-OTB-13
144	21-OTB-14
145	21-OTB-15
146	21-OTB-16
147	21-OTB-17
148	21-OTB-18
149	21-OTB-19
150	21-OTB-20
151	21-OTB-21

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 UY	

WIRE #	FUNCTION
X69	TUNNEL DLDG NORMAL LIGHTS PUSH BUTTON
X70	
X71	DLDG EMERGENCY LIGHTS CONTROL ON
X72	
X73	COMMON
X74	OFF
X75	DLDG POWER PANELS RESET PUSH BUTTON
X76	
X77	SEGMENTATION TANKS EMERGENCY VENT ON
X78	
X79	HEAVY DC DLDG EMER. LTB. PILOT LIGHT
X80	HEAVY DC
X81	SEGMENTATION TANKS EMER. VENT PILOT LIGHT
X82	
X83	CONTROL ON
X84	COMMON
X85	OFF
X86	PILOT LIGHT CONTROL ON
X87	
X88	RETURN

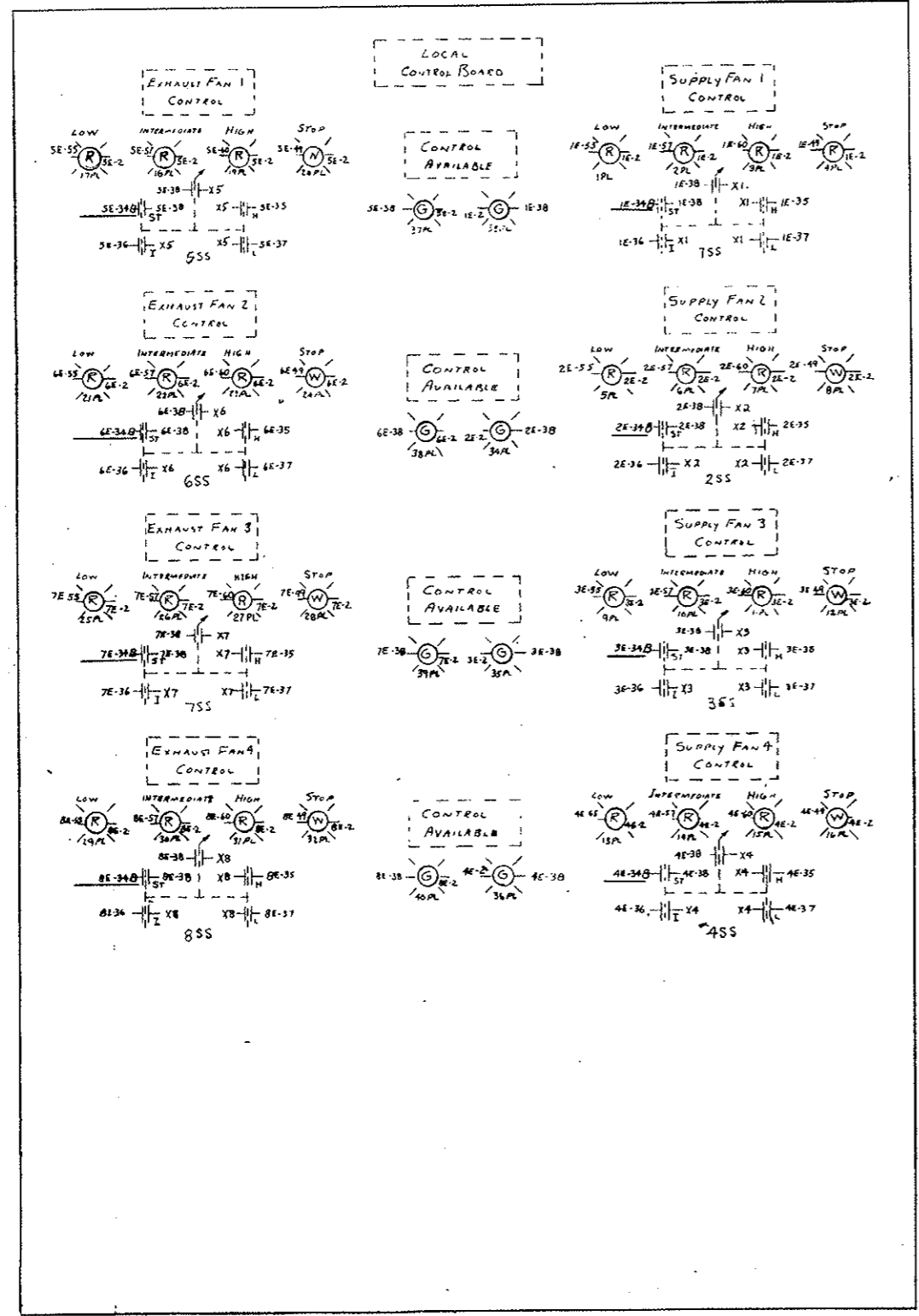
NOTE:
 1-NUMBERS WITH NUMERICAL PREFIX REFER TO SFC ELECTRICAL CO. CROSS CUES TO 1 & 2 COR 2508
 2-NUMBERS WITH 'X' PREFIX REFER TO THE DUG ONLY
 3-NUMBERS WITH DC, E, B, & 19 PREFIXES REFER TO G.E. ADV. P. 466 B, 518C NUMBERS WITH 'E' PREFIX REFER TO EMERGENCY GEL CONTROL PANEL.

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING	
APPLIED PRACTICES	✓
SURFACES	✓

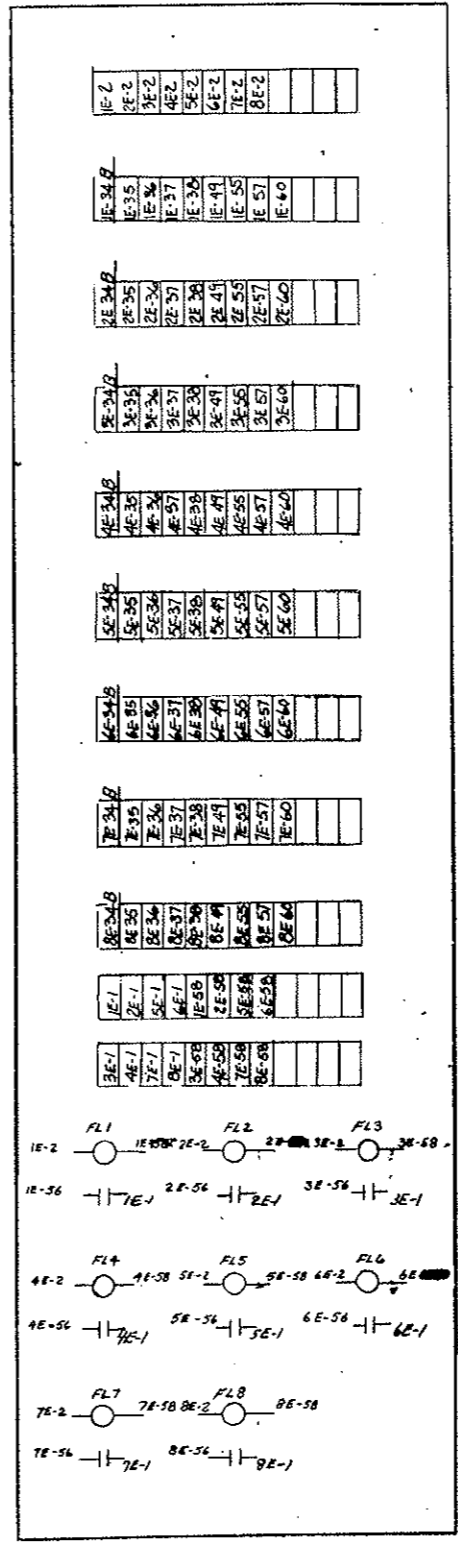
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 VV	

EAST

FRONT PANEL (REAR VIEW)



RIGHT SIDE



AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

NOTE -
 1. NUMBERS HAVING NUMERICAL PREFIX REFER TO GENERAL ELECTRIC CO. INDUSTRY CONTROL DEPT. DWG. 973 D580.
 2. NUMBERS HAVING 'X' PREFIX REFER TO THIS PANEL ONLY.

REVISIONS	PRINTS TO
1 EJB 9-25-70	NH
2 JLB 7-11-71	
3 JLB 9/1/72	

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:

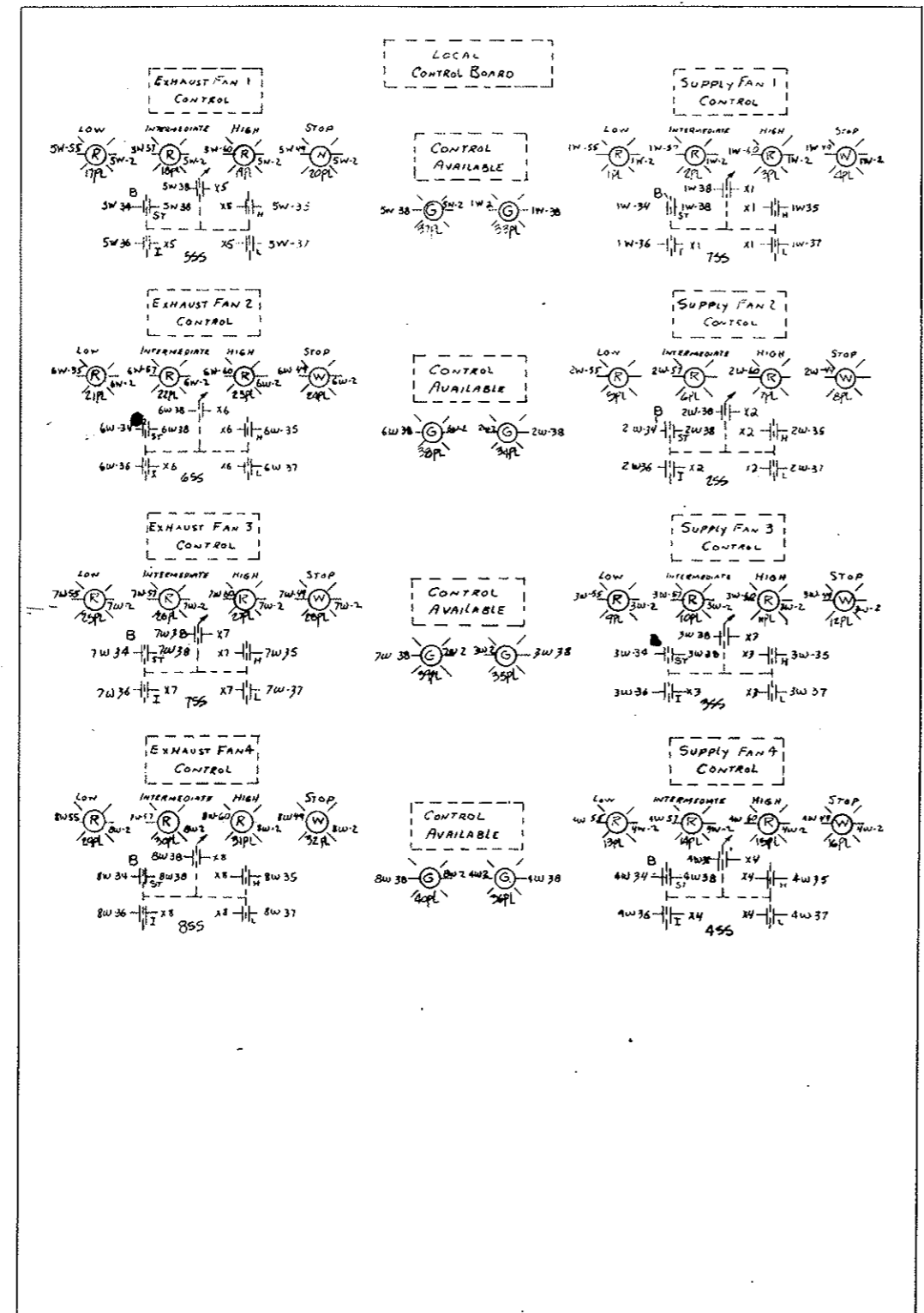
APPLIED PRACTICES	SURFACES	TERMINALS	WIRING	SYMBOLS
	✓			

CONNECTION DIAGRAM - LOCAL CONTROL BOARD
 GASSO LEICA / STEAMY CREEK TUNNEL

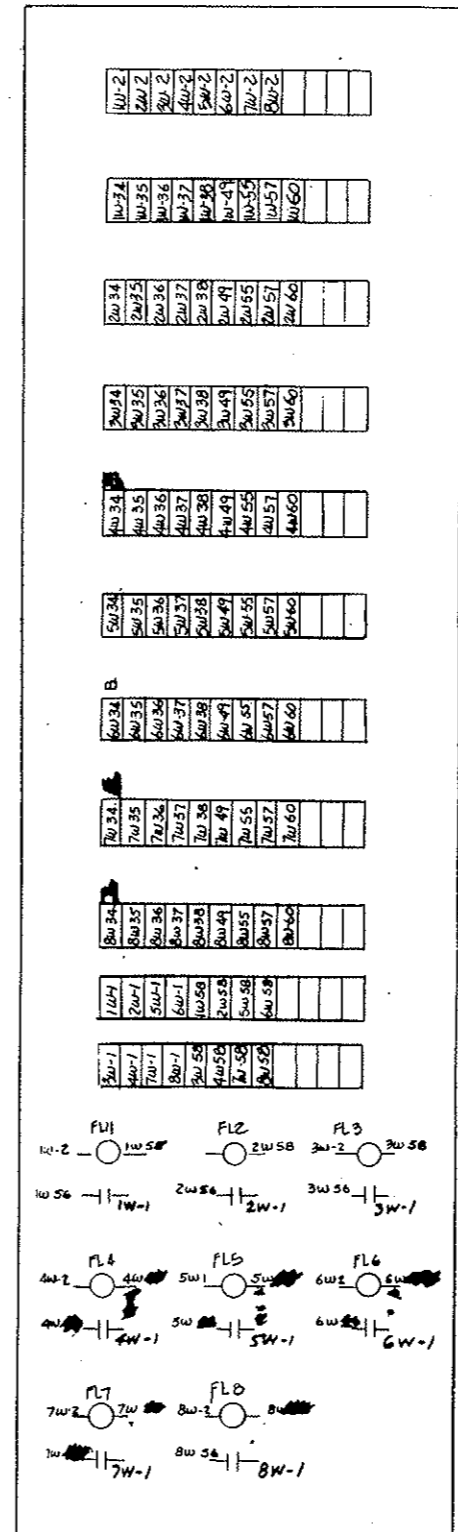
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(34)220	243 WY	

WEST

FRONT PANEL (REAR VIEW)



RIGHT SIDE

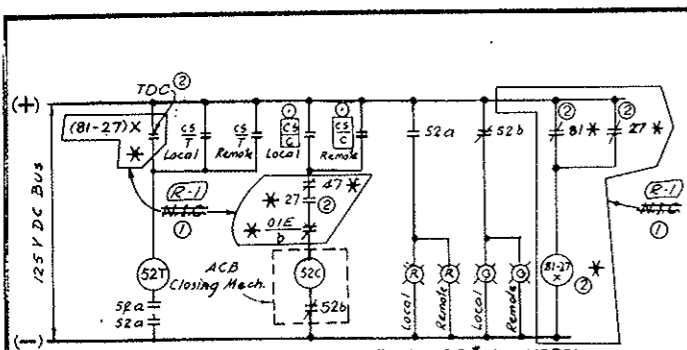


AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

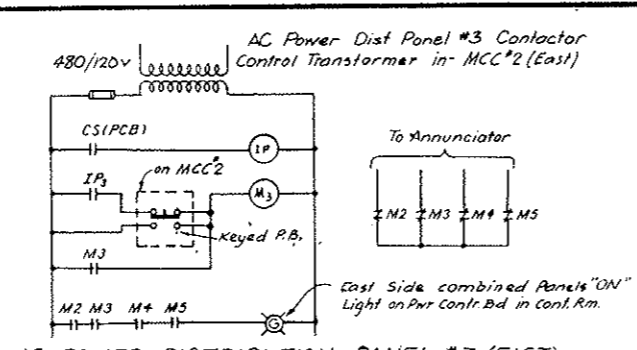
NOTE -
 1. NUMBERS HAVING NUMERICAL PREFIX REFER TO GENERAL ELECTRIC CO. INDUSTRIAL CONTROL DEPT. DWG. 9750580
 2. NUMBERS HAVING X PREFIX REFER TO THIS PANEL ONLY

REVISION	DATE	PRINTS TO
1	EYS 9-25-70	NH
2	W... 7-19-71	
3	... 9-9-72	

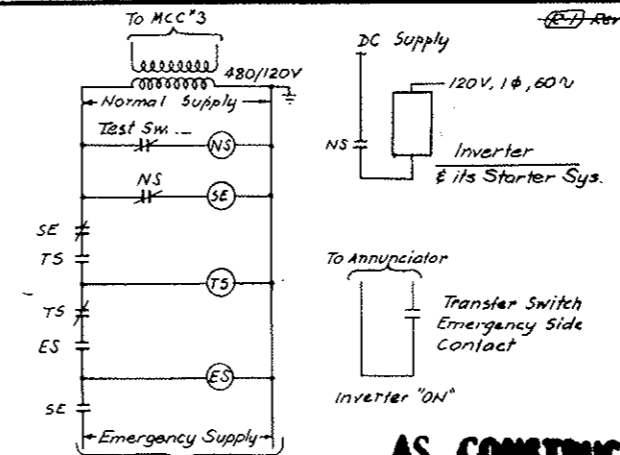
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(3)220	244	326



EMERGENCY GENERATOR 480V BREAKER #116 CONTROL
 Typical for breaker #12, #13, #14, #15, #17 & #18
 Except omit relays or contacts marked *, they are only for Emergency Generator Breaker #118, 47, 27, 81 & 81-27x are located in Emergency Generator Control Board.
 Key interlock switches only for breaker #118.



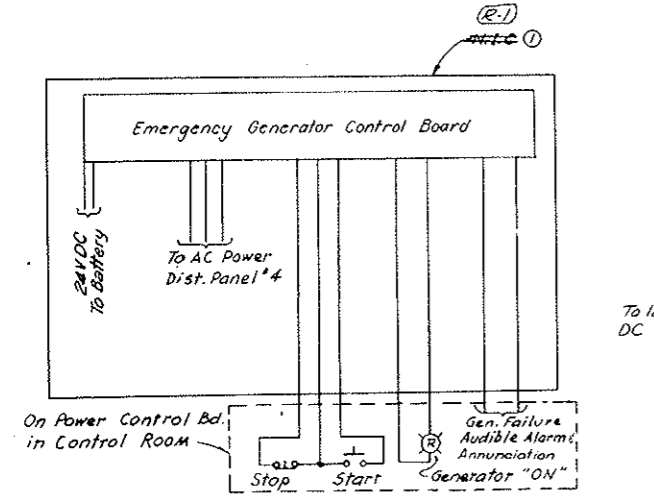
AC POWER DISTRIBUTION PANEL #3 (EAST) RESET SYSTEM & COMBINED IND. LIGHT
 (Typical for Panels #2, #4 & #5)
 Similar Control for West Panels Except Remote Control & Indication over Sup'v. Equip't



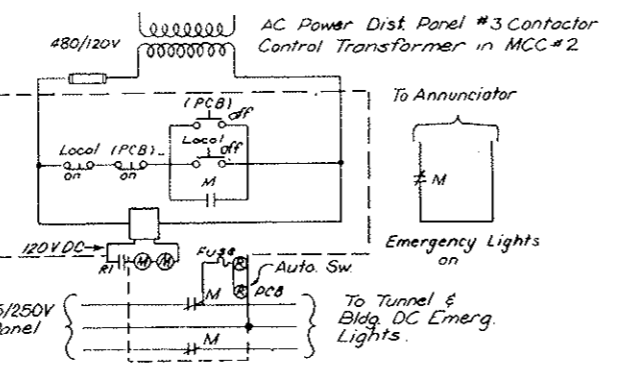
CO SYSTEM NORMAL EMERG. AUTO TRANSFER SWITCH
 (Mechanically Held)
 Circuit Shown as Normal Supply on

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

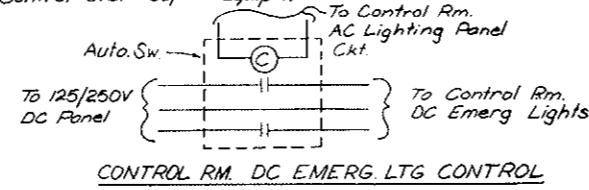
- LEGEND:**
- 27 - Undervoltage Relay
 - 47 - Reverse Phase Relay
 - 52 - AC Circuit Breaker
 - 52a - Aux. Sw. - Open when breaker is open
 - 52b - Aux. Sw. - Close when breaker is open
 - 81 - Frequency Relay
 - (81-27)X - Aux. Relay for 27 & 81 (Time delay closing)
 - CS - Control Switch
 - CS-C - Control Switch (Closing)
 - CS-T - Control Switch (Tripping)
 - CS-C - Control Switch with Key
 - IP - Panel interposing Relay with 4 Contacts each one on one Panel Reset Circuit.
 - M2, M3 - Contactors for Panels #2, #3, #4 & #5
 - ES - Emergency Source Supervising Relay
 - NS - Normal Source Supervising Relay
 - SE - Source Selector Relay
 - TS - Transfer Switch Operating Solenoid
 - Local - On MCC or on the board containing the equipment.
 - Remote - On "Power Control Board" in Control Room
 - 67 - AC Directional overcurrent Relay
 - 52C - Breaker Closing Relay
 - 52T - Trip Coil
 - PCB - Power Control Board in Control Room



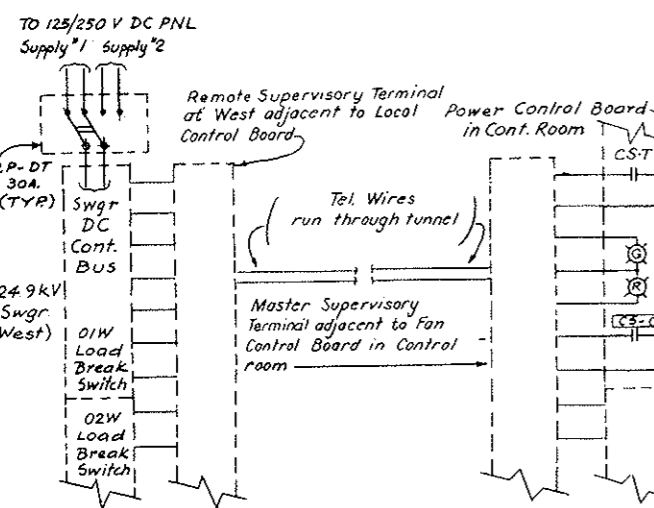
EMERGENCY GENERATOR AC-DC PWR SUPPLIES CONTROL & INDICATION



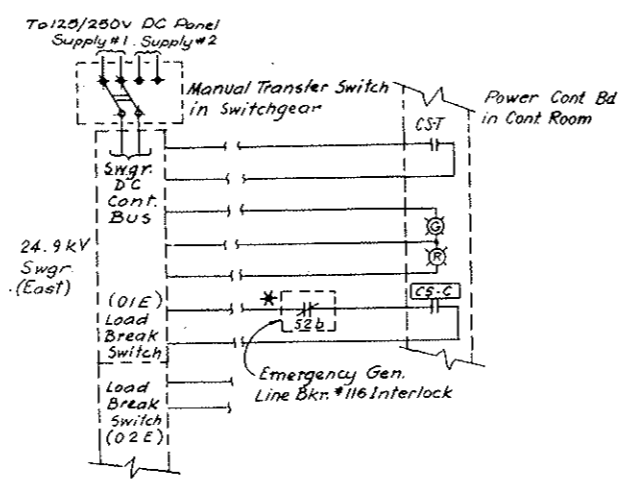
EAST BUILDING & HALF TUNNEL DC EMERGENCY LIGHTING CONTROL
 (Similar for West Bldg. & the other Half of the Tunnel, except Remote Control over Sup'v. Equip't)



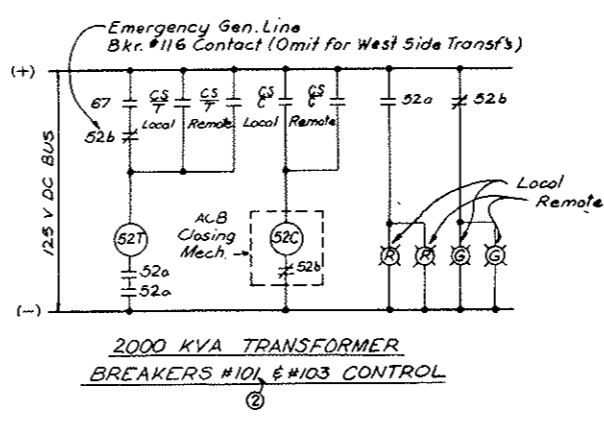
CONTROL RM. DC EMERG. LTG. CONTROL



(01W) LOAD BREAK SWITCH CONTROL
 (02W), (03W) & (04W) Load Break Sw Control Similar



(01E) LOAD BREAK SWITCH CONTROL
 (02E), (03E), (04E) Load Break Sw Control Similar
 * Except: Omit 52b



2000 KVA TRANSFORMER BREAKERS #101 & #103 CONTROL

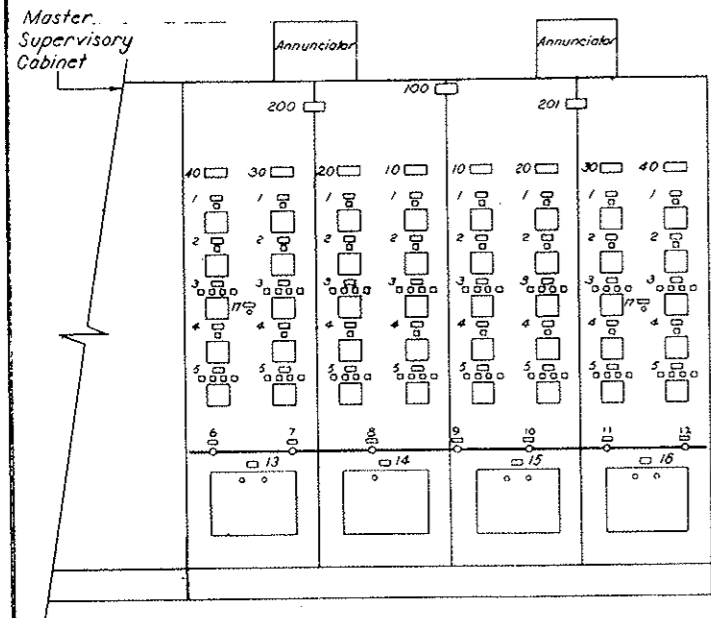
NOTE A:
 Emergency Generator System, (Bid Item 100) Deleted, see W.O. M159-G Spec. 100-
 Emerg. Gen. Wiring N.I.G. but Conduit for Wiring is in this Contract, (Bid Item 107)

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT	
ELECTRICAL MISCELLANEOUS CONTROL & ELEMENTARY DIAGRAMS	
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.	
DESIGNED: N.A.S. DRAWN: S.J.E. CHECKED: D.H.D. SUBMITTED: [Signature]	RECOMMENDED: [Signature] APPROVED: [Signature]
NEW YORK, N. Y.	SCALE: NONE DATE: AUG. 1967

E-65

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

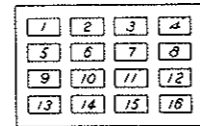
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	245	326



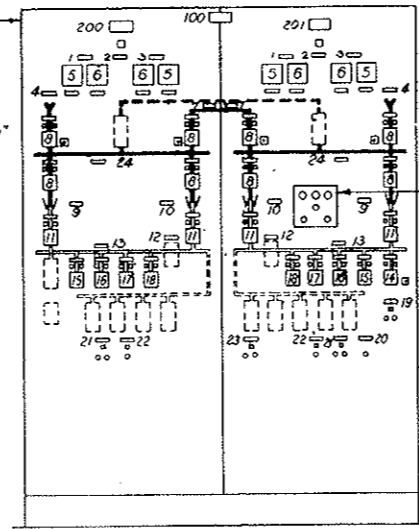
FAN CONTROL BOARD
(In Control Room)

Mimic Bus Legend
 24.9 KV Bus - Red
 460 V Bus - Green

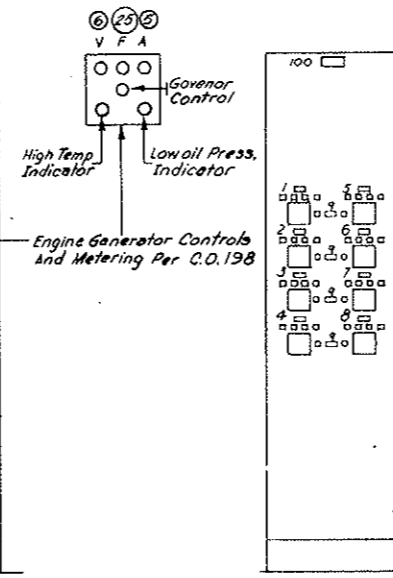
Key Interlock -
 Key Removable with
 Control Switch in "open"
 position only.
 (3 Keys - 5 Switches)



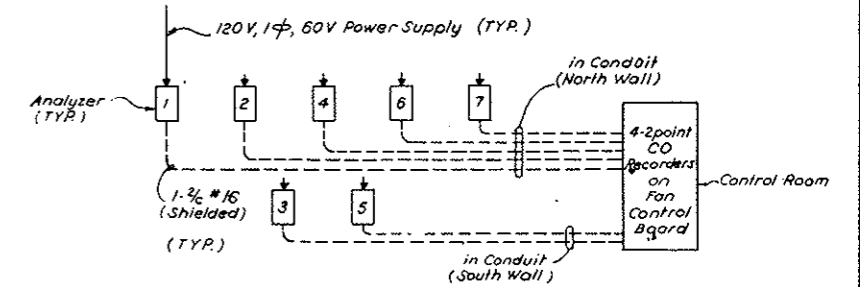
FAN CONTROL BOARD
 EAST SIDE ANNUNCIATOR
 -N.T.S.-
 Similar for West Side
 except Opposite Hand



POWER CONTROL BOARD
(In Control Room)



LOCAL CONTROL BOARDS
(In Electrical Rooms)



ANALYZER NO.	LOCATION
1	WEST FAN ROOM
2	PULPIT P-2
3	PULPIT P-3
4	PULPIT P-4
5	PULPIT P-5
6	PULPIT P-6
7	EAST FAN ROOM

CARBON MONOXIDE ANALYZER OUTPUT WIRING DIAGRAM

NAME PLATE ENGRAVING SCHEDULE				
REF.	FIRST LINE	SECOND LINE	THIRD LINE	DET.
FAN CONTROL BOARD (NORTH)				
100	FAN	CONTROL BOARD	NORTH TUNNEL	1
200	WEST FANS	CONTROL		1
201	EAST FANS	CONTROL		1
10	FAN 1			1
20	FAN 2			1
30	FAN 3			1
40	FAN 4			1
1	SUPPLY FAN	BULKHEADS	CONTROL	2
2	SUPPLY FAN	CONTROL	TRANSFER	2
3	SUPPLY FAN	CONTROL		2
4	EXHAUST FAN	CONTROL	TRANSFER	2
5	EXHAUST FAN	CONTROL		2
6	CO	ANALYZER 1		2
7	CO	ANALYZER 2		2
8	CO	ANALYZER 3		2
9	CO	ANALYZER 4		2
10	CO	ANALYZER 5		2
11	CO	ANALYZER 6		2
12	CO	ANALYZER 7		2
13	ANALYZER	1 & 2	RECORDER	2
14	ANALYZER	3	RECORDER	2
15	ANALYZER	4 & 5	RECORDER	2
16	ANALYZER	6 & 7	RECORDER	2
17	ALARM	SILENCER		

ANN. PANEL WINDOW ENGRAVING		
WINDOW NO.	FIRST LINE	SECOND LINE
1	SUPPLY FAN 1	FAILURE
2	SUPPLY FAN 2	FAILURE
3	SUPPLY FAN 3	FAILURE
4	SUPPLY FAN 4	FAILURE
5	EXHAUST FAN 1	FAILURE
6	EXHAUST FAN 2	FAILURE
7	EXHAUST FAN 3	FAILURE
8	EXHAUST FAN 4	FAILURE
9		
10	POWER PANELS	OFF
11	INVERTER ON	
12	MAIN POWER	FAILURE
13	EMERG LIGHTS	ON
14	CO	LEVEL 1
15	CO	LEVEL 2
16	EMERGENCY GEN	FAILURE

NAME PLATE ENGRAVING SCHEDULE				
REF.	FIRST LINE	SECOND LINE	THIRD LINE	DET.
POWER CONTROL BOARD				
100	POWER	CONTROL	BOARD	1
200	WEST	BUILDING		1
201	EAST	BUILDING		1
1	TRANSFORMER	NO. 1	SECONDARY	2
2	POWER	ON		2
3	TRANSFORMER	NO. 2	SECONDARY	2
4	PUBLIC SERVICE	INCOMING	LINE	2
5	AMMETER			2
6	VOLTMETER			2
7	24.9 KV	EMERGENCY	TIE	2
8	LOAD	BREAK	SWITCH	2
9	TRANSFORMER	NO. 1		2
10	TRANSFORMER	NO. 2		2
11	AIR	CIRCUIT	BREAKER	2
12	460 V. BUS	TIE	BREAKER	2
13	460 V. BUS			2
14	EMERGENCY	GENERATOR	BREAKER	2
15	MCC #1	FEEDER	BREAKER	2
16	MCC #2	FEEDER	BREAKER	2
17	MCC #3	FEEDER	BREAKER	2
18	MCC #3	FEEDER	BREAKER	2
19	EMERGENCY	GENERATOR	CONTROL	2
20	TUNNEL & BLDG.	NORMAL LIGHTS	RESET	2
21	TUNNEL & BLDG.	EMERGENCY	LIGHT CONT.	2
22	BUILDING	POWER PANELS	RESET	2
23	SEDIMENTATION	TANKS	EMERG. VENT.	2
24	24.9 KV	BUS		2
25	FREQUENCY			2

NAME PLATE ENGRAVING SCHEDULE				
REF.	FIRST LINE	SECOND LINE	THIRD LINE	DET.
LOCAL CONTROL BOARD				
100	LOCAL	CONTROL BOARD		1
1	SUPPLY FAN 1	CONTROL		2
2	SUPPLY FAN 2	CONTROL		2
3	SUPPLY FAN 3	CONTROL		2
4	SUPPLY FAN 4	CONTROL		2
5	EXHAUST FAN 1	CONTROL		2
6	EXHAUST FAN 2	CONTROL		2
7	EXHAUST FAN 3	CONTROL		2
8	EXHAUST FAN 4	CONTROL		2
9	CONTROL	AVAILABLE		2

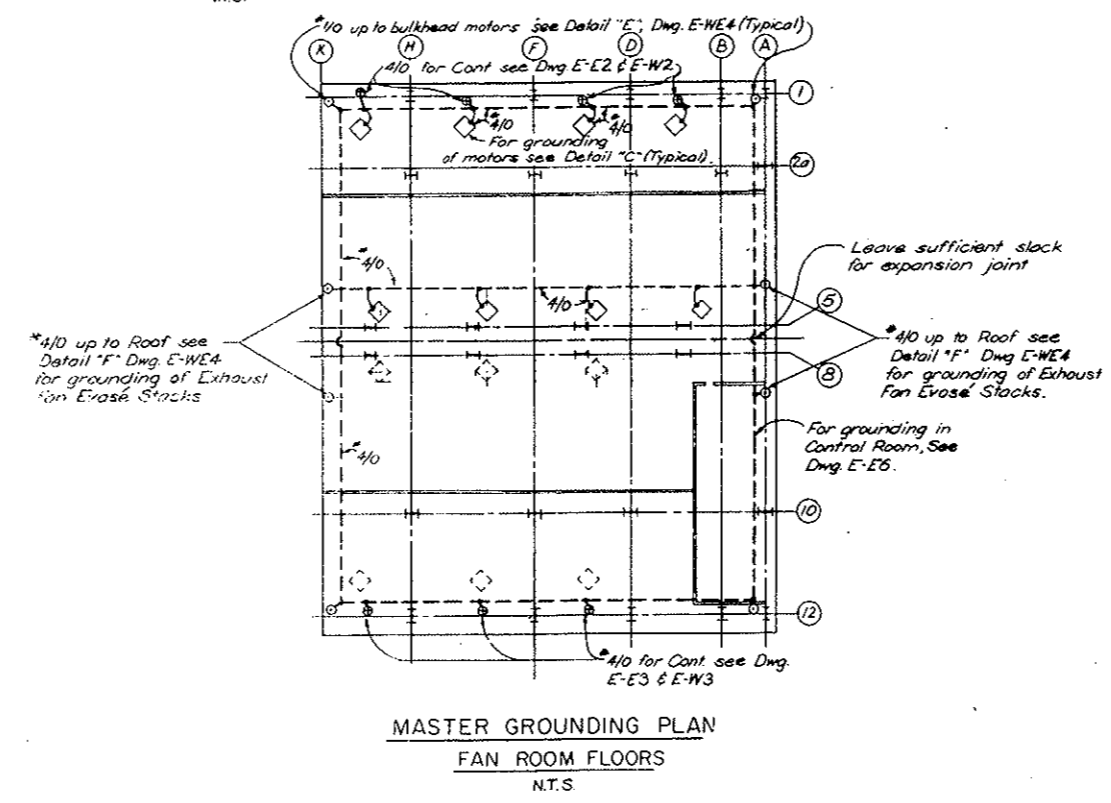
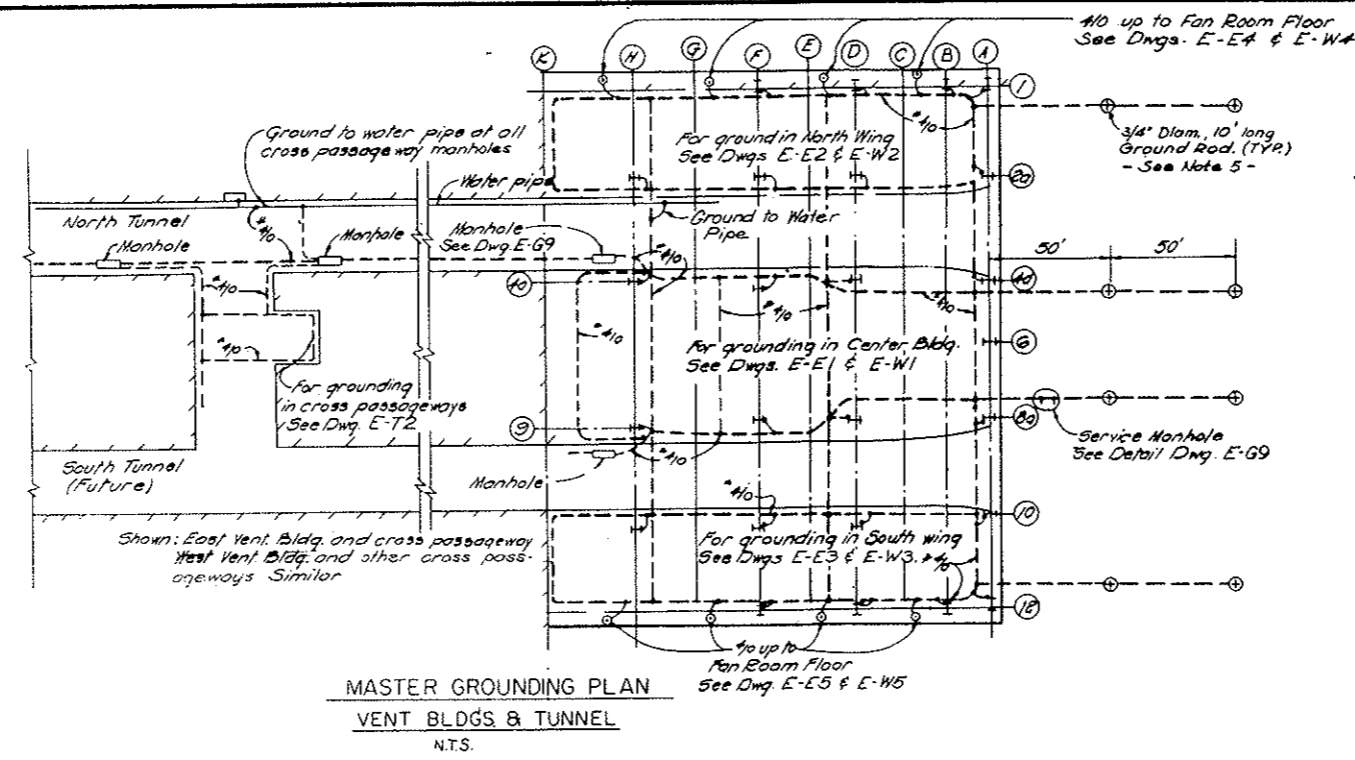
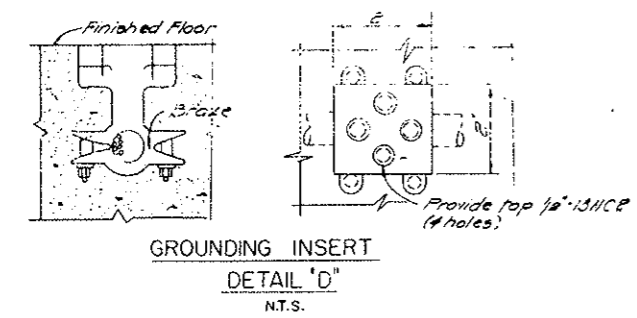
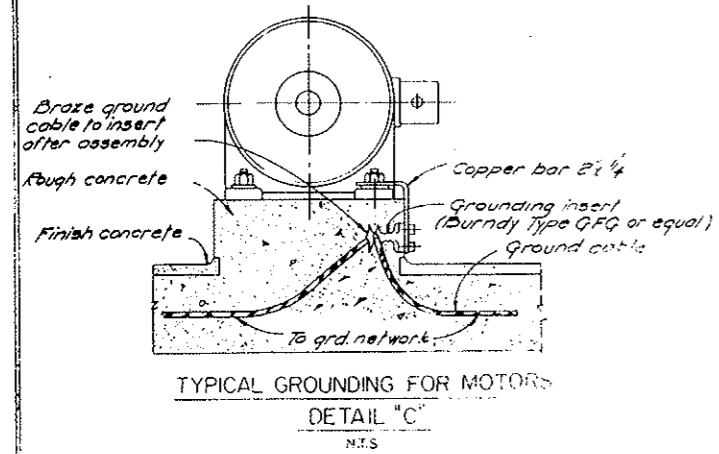
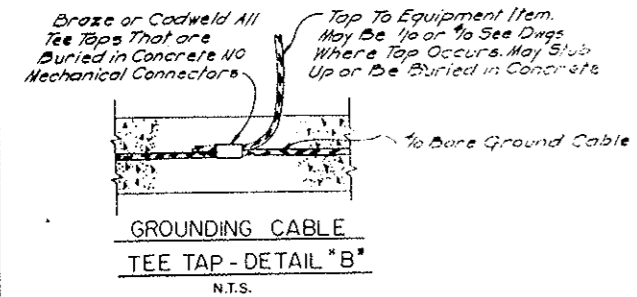
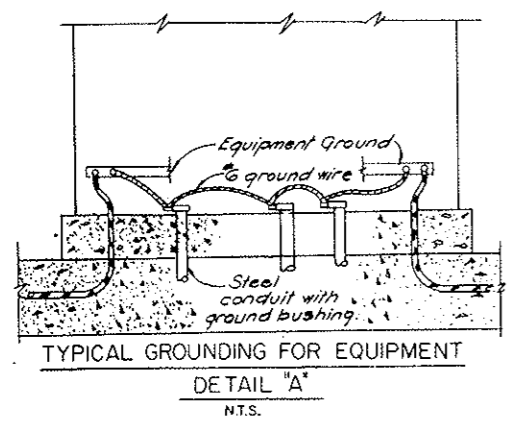
NOTES:
 1-For nameplate engraving schedule details see
 dwg. E-WE1.

See Shts 245AX Thru 245LX for correct details.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL					
CONTROL BOARDS & PANELS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: N. A. C.	RECOMMENDED:				
DRAWN: E. A. N.	CHECKED: D. H. D.				
SUBMITTED:	APPROVED:				
NEW YORK, N. Y.	SCALE: 3/4" = 1'-0"	DATE: AUG. 1967	DRAWING NO. E-66		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)22D	246	326

AS CONSTRUCTED
REVISED Oct. 26, 1973



- NOTES:
1. All wire for grounding of equipment to be soft drawn bare stranded copper conductor.
 2. Ground wire run exposed to be fastened to structure in an approved manner.
 3. All electrical equipment to be grounded.
 4. Conduits to be grounded through grounding bushing whenever not properly grounded elsewhere.
 5. A sufficient number of ground rods to be driven into ground to reduce the resistance from main grid to ground to 5 ohms or less.
 6. All ground wire run outside building to be buried at least 18" below grade.

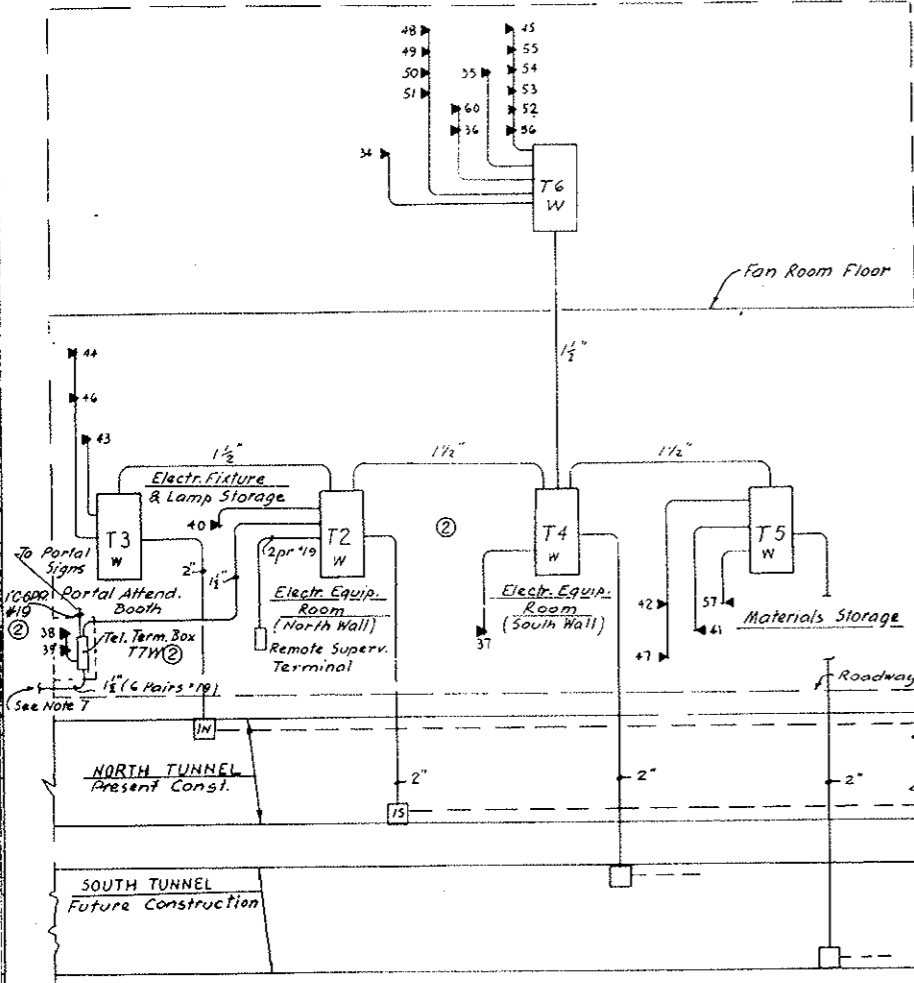
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL GROUNDING PLAN & TYPICAL DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.A.G.	RECOMMENDED:				
DRAWN: R.D.S.	CHECKED: D.H.O.				
SUBMITTED:	APPROVED:				
					DRAWING NO. E-67
NEW YORK, N. Y.					SCALE: AS NOTED DATE: AUG. 1967

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

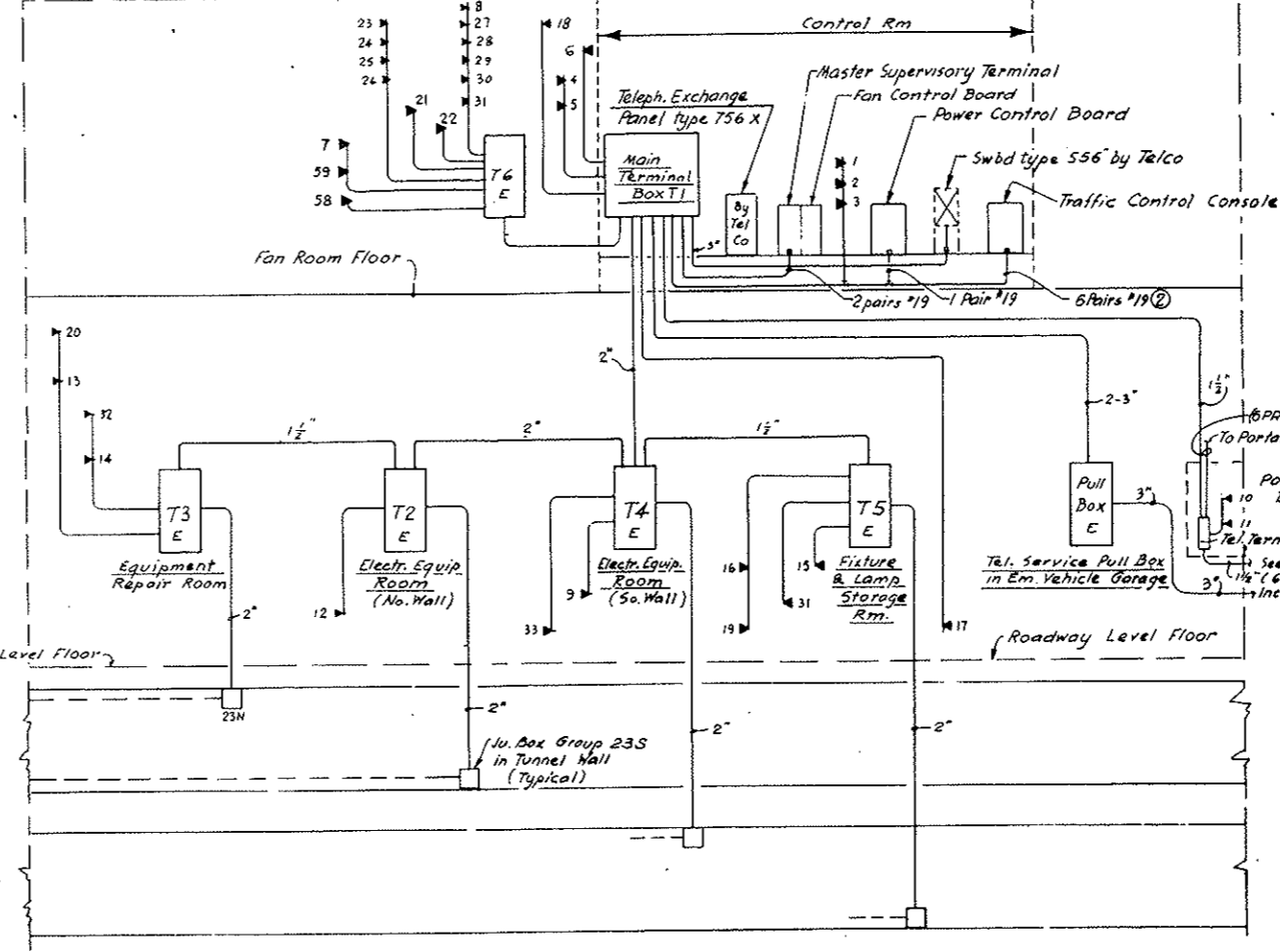
- NOTES:**
- All Conduit shall be 3/4" Rigid Steel Galvanized unless otherwise noted.
 - For physical Location of Telephone Terminal Boxes & Telephone Outlets see Lighting Drawings.
 - Telephone wiring & Equipment will be furnished & installed by Telephone Company, unless otherw. indicated.
 - For Continuation of Conduits in Tunnel see Dwg E-T1
 - Where a Horn is indicated, Electrical Contractor shall provide for a 110 Volt AC Supply from the nearest Ltg circuit.
 - Teleph. Terminal Boxes to have wooden backboards and hinged doors mounted 5' Center above the finished floor
 - Continue as shown on Dwg. GA-1 (For West Bldg) or on Dwg GA-2 (For East Bldg)
 - Where Telephone Poles are specified, they shall be furnished & installed by Contractor.
- LEGEND**
- Telephone Outlet Box with Cover
 - See Table below for Number Identification.

- REFERENCE DRAWINGS**
- Control Room & Basement Plan Dwg E-66
 - For Service Pull Box, T4E & T5E " E-28
 - For Location of Tel. Term. Boxes T2E & T3E " E-27
 - For Location of Tel. Term. Boxes T1 & T6E " E-25
 - For Location of Tel. Term. Boxes T2W & T3W " E-W6
 - For Location of Tel. Term. Boxes T4W & T5W " E-W7
 - For Location of West Ventil. Bldg Tel. Term. Box T6W " E-W5
 - For Loc. of Tunnel Tel. Ju. Boxes see Cross Section " E-73

WEST VENTILATION BUILDING



EAST VENTILATION BUILDING



EAST VENTILATION BUILDING

Outlet No	LOCATION	TYPE	PURPOSE
1	Control Room	Fan Desk	For Office Desk Telephone
2	"	"	"
3	"	"	"
4	Tunnel Superintendent Office	Desk	"
5	"	"	"
6	Emergency Sleeping Quarters	Wall	For Telephone Conn.
7	Fan Room near Col. Line A/2	"	"
8	CO Analyzer Room	"	"
9	Electrical Equipment Room	"	"
10	Portal Attendant Booth	Desk or Wall	For Teleph & Loudspeaker Connect.
11	"	Built-in	Comes with 400 P.A. type Panel
12	Emergency Vehicle Garage	Wall	For Teleph & Loudspeaker Connect.
13	Garage Vehicle Repair Shop	"	Telephone Connection
14	Equipment Repair Room	"	For Telephone & Signal Horn #14H
15	Electrical Fixture & Lamp Storage	"	For Telephone & Loudsp. Connection
16	South Vehicle Storage	"	For future Telephone Installation
17	Sewage Treatment Plant	Exp. prof.	For Teleph Install in Hazard Area
18	Lounge	Wall	Telephone
19	South Tunnel Rest Room	Coinless	Public Telephone Service
20	North Tunnel Rest Room	"	"
21	Fan Room East near Col. 3/F	Horn	Signal Service from Control Room
22	" West 10/F	"	"
23	Fan Rm Fl. Emerg. Stop Switch @ Col. K/2	Tel. Jack	Portable Telephone Connection
24	" " " " " " " " " "	H/2	"
25	" " " " " " " " " "	F/2	"
26	" " " " " " " " " "	D/2	"
27	" " " " " " " " " "	3/5	"
28	" " " " " " " " " "	G/5	"
29	" " " " " " " " " "	E/5	"
30	" " " " " " " " " "	C/5	"
31	State Patrol Equipment Room	Wall	Future Teleph. Conn.

WEST VENTILATION BUILDING

Outlet No	LOCATION	TYPE	PURPOSE
34	North Supply Fan Room @ Col. 2/A	Wall	Outdoor Type Tel. Connection
35	" " " " " " " " " "	Horn	Signal Service from Control Room
36	South Supply Fan Room @ Col. F/10	Horn	"
37	Electrical Equipment Room	Wall	For Telephone Connection
38	Portal Attendant Booth	Desk	For Telephone & Loudspeaker Conn.
39	"	Built-in	Supplied with 400 Push Button Panel
40	Emergency Vehicle Garage	Wall	For Telephone & Loudspeaker Conn.
41	South Vehicle Storage	"	"
42	"	"	For future Telephone installation
43	Electrical Fixture & Lamp Storage	"	For Telephone & Loudspeaker Conn.
44	Garage & Vehicle Repair	Wall	For future Telephone Installation
45	CO Analyzer Room	"	For Telephone Connection
46	North Tunnel Rest Room @ Col. B/2	Coinless	Public Telephone Service
47	South Tunnel Rest Room @ Col. B/11	"	"
48	North Suppl. Fan Rm. Emerg. Stop Sw. @ D/2	Tel. Jack	Portable Telephone Connection
49	" " " " " " " " " "	F/2	"
50	" " " " " " " " " "	H/2	"
51	" " " " " " " " " "	K/2	"
52	North Exh. Fan Rm. " " " " " "	C/5	"
53	" " " " " " " " " "	E/5	"
54	" " " " " " " " " "	G/5	"
55	" " " " " " " " " "	J/5	"
56	" " " " " " " " " "	Col. Outlet @ Col. A/5	Wall For future Teleph. Installation
57	Materials Storage	"	"
60	South Supply Fan Rm. Tel. Outlet Col. A/11	"	"

EAST VENTILATION BLDG. (Continuation)

32	Emergency Generator Room	Wall	Future Telephone Installation
33	" Vehicle Garage	Wall	"
58	South Supply Fan Room @ Col. G/11	"	"
59	South Exhaust Fan Rm. @ Col. A/7	"	"

Area	TEL. BOX	LOCATION	DIMENSIONS	FUNCTION
EAST VENTIL. BLDG.	Pull Box E	Em. Veh. Garage	36" x 48" x 12" D	Tel. Service Box
	T1	Control Room	48" x 60" x 10" D	Tel. Term. Main Box
	T2E	El. Equip. Room	12" x 30" x 4" D	Teleph. Term. Box
	T3E	Equip. Repair Rm.		
	T4E	Electr. Equip. Rm.		
	T5E	Electr. Fixture & Lamp Storage		
	T6E	Fan Room Fl.		
T7E	Portal Attendant's Booth			
WEST VENTIL. BLDG.	T2W	El. Equip. Room		
	T3W	Electr. Fixture & Lamp Storage		
	T4W	El. Equip. Room		
	T5W	Material Stor.		
T6W	South Exh. Fan Rm.			
T7W	Portal Attendant's Booth			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**ELECTRICAL
 TELEPHONE RISER DIAGRAMS**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: G.Z.
 DRAWN: G.Z.
 CHECKED: D.D.
 SUBMITTED: [Signature]

RECOMMENDED: [Signature]
 APPROVED: [Signature]

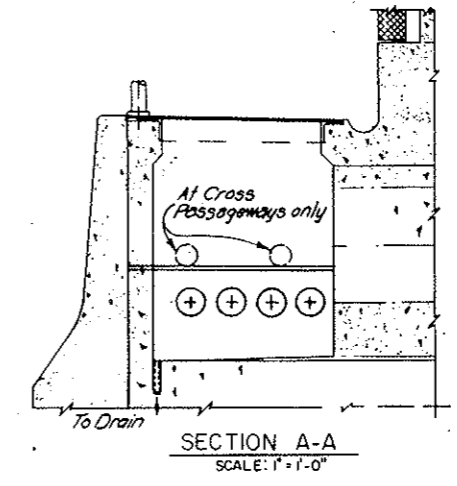
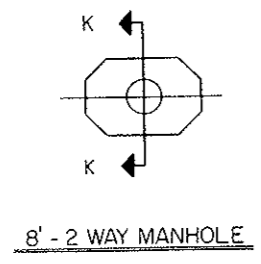
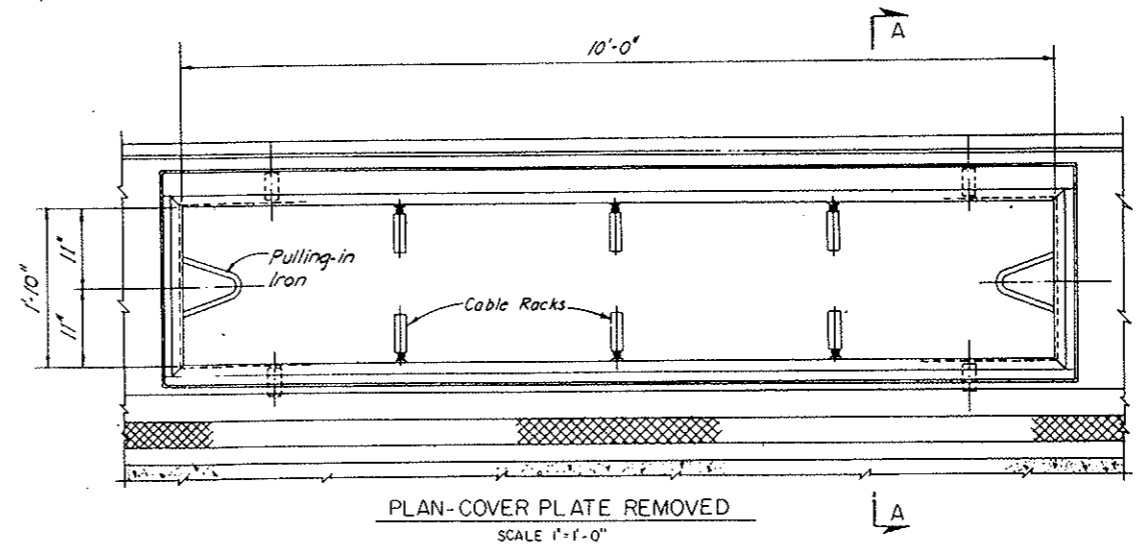
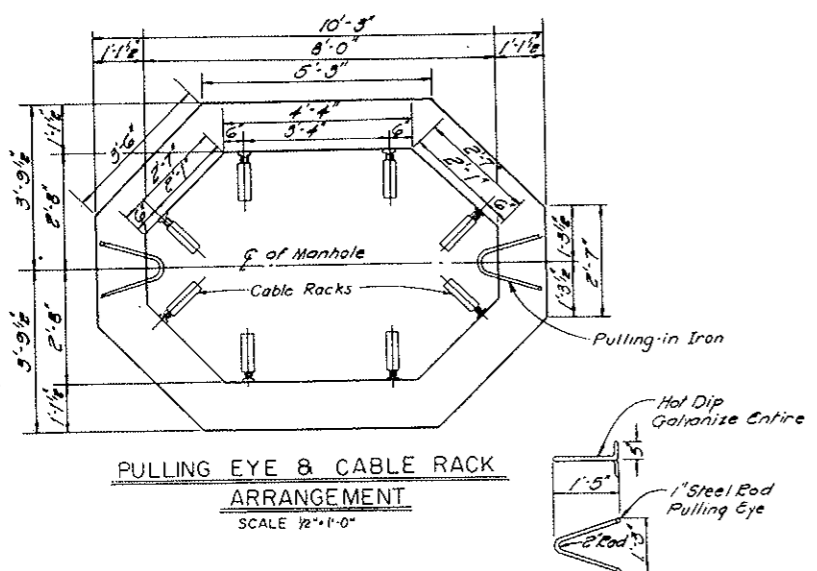
DATE: AUG. 1967

SCALE: NONE

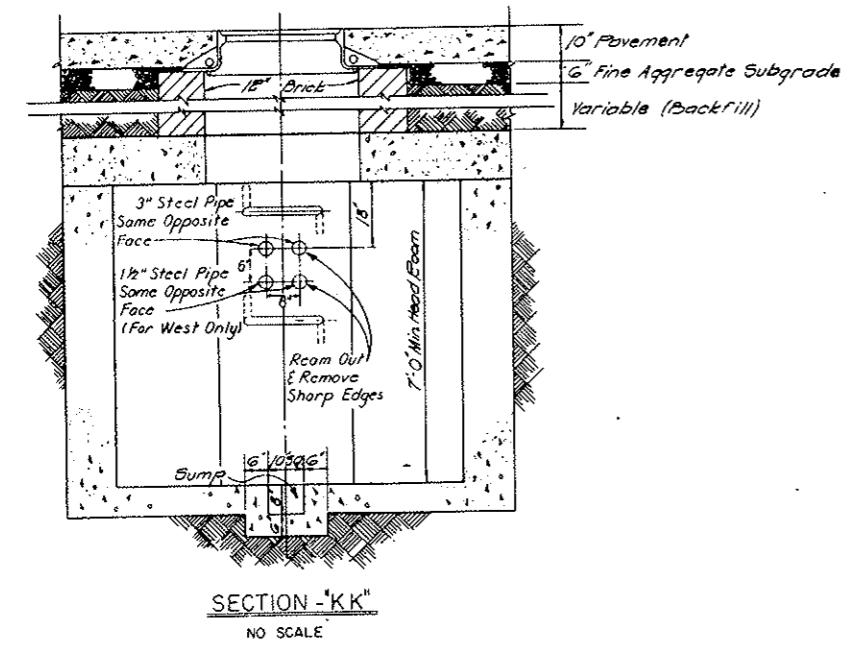
DRAWING NO. **E-68**

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	248	328

AS CONSTRUCTED
REVISED *DATE* Oct. 26, 1973



TYPICAL TUNNEL ELECTRICAL MANHOLE



TYPICAL PLAZA MANHOLE

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL TUNNEL AND PORTAL PLAZAS MISCELLANEOUS DETAILS					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J. A. S.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: R. D. S.	CHECKED: N. A. C.				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUG. 1967	DRAWING NO. E-69	

REV. 8-5-70 Identification of Plans H-P-170
REV. 2-1-71 Reinstated Items H-C-10327

REV. 8-31-69 GCM Lighting Panel Schedule 11-3-69
Subject to Final Approval

REVISIONS
OCT. 26, 1973

AC POWER DISTR. PANEL NO. 1 (EAST)
LOCATION: ELEC. EQUIP. ROOM ONE LINE DIAG. NO. E-G2

CKT NO.	DESCRIPTION	AMP LOAD			BKR. AMP. TRIP	CONDUIT SIZE	WIRE NO. AND SIZE
		A	B	C			
1	INT. ZONE NORTH LTG. FDR. #1	20	20	20	30	1/2"	4#10
2	" SOUTH " #1	20	20	20	30	1/2"	4#10
3	WATER MAIN PIPE HTG.	12	12	12	15	1/2"	4#12
4	DRAIN PIPE HTG.	25	25	25	30	1/2"	3#10
5	SPARE BKR.				30	1/2"	
6	MESSAGE BOARDS	11	11	11	20	3/4"	3#12 (R-3)
7	PORTAL TV'S	0.2	0.2	0.2	15	1/2"	3#12
8	TV #1	0.2	0.2	0.2	15	1/2"	3#12
9	LTG. & HTG. CONT. TRANS.	1	1	1	15	1/2"	3#12
10	PLAZA LTG.	25	25	25	30	1/2"	
11	INT. ZONE NORTH LTG. FDR. #2	20	20	20	30	1/2"	4#10
12	" SOUTH " #2	20	20	20	30	1/2"	4#10
13	" NORTH " #3	20	20	20	30	1/2"	4#10
14	" SOUTH " #3	20	20	20	30	1/2"	4#10
15	SPARE BKR.				15	1/2"	
16	SPARE BKR.				15	1/2"	
PHASE LOAD		183.4	193.4	194.0			

* CONDUIT ONLY, TERMINATE CONDUIT 5 FT. OUTSIDE BLDG - 2 FT. BELOW GRADE

AC POWER DISTR. PANEL NO. 1 (WEST)
LOCATION: ELEC. EQUIP. ROOM ONE LINE DIAG. NO. E-G2

CKT NO.	DESCRIPTION	AMP LOAD			BKR. AMP. TRIP	CONDUIT SIZE	WIRE NO. AND SIZE
		A	B	C			
1	INT. ZONE NORTH LTG. FDR. #1	20	20	20	30	1/2"	4#10
2	" SOUTH " #1	20	20	20	30	1/2"	4#10
3	WATER MAIN PIPE HTG.	12	12	12	15	1/2"	4#12
4	DRAIN PIPE HTG.	40	40	40	50	1/2"	3#12
5	SPARE BKR.				30	1/2"	
6	MESSAGE BO.	11	11	11	20	3/4"	4#12 (R-3)
7	PORTAL TV'S	2	2	2	15	1/2"	3#12
8	TV #1	2	2	2	15	1/2"	3#12
9	LTG. & HTG. CONT. TRANS.	1	1	1	15	1/2"	3#12
10	PLAZA LTG.	25	25	25	30	1/2"	
11	INT. ZONE NORTH LTG. FDR. #2	20	20	20	30	1/2"	4#10
12	" SOUTH " #2	20	20	20	30	1/2"	4#10
13	" NORTH " #3	20	20	20	30	1/2"	4#10
14	" SOUTH " #3	20	20	20	30	1/2"	4#10
15	SPARE BKR.				15	1/2"	
16	SPARE BKR.				15	1/2"	
PHASE LOAD		202.4	208.4	198.0			

* CONDUIT ONLY, TERMINATE CONDUIT 5 FT. OUTSIDE BLDG - 2 FT. BELOW GRADE

AC POWER DISTR. PANEL NO. 4 (EAST)
LOCATION: EAST VENT BLDG. ROADWAY FL. NORTH ONE LINE DIAG. NO. E-G2

CKT NO.	DESCRIPTION	AMP LOAD			BKR. AMP. TRIP	CONDUIT SIZE	WIRE NO. AND SIZE
		A	B	C			
1	E-6 FAN	1	1	1	15	1/2"	3#12
2	P-4 PUMP	7.5	7.5	7.5	15	1/2"	3#12
3	P-5 PUMP	7.5	7.5	7.5	15	1/2"	3#12
4	P-6 PUMP	7.5	7.5	7.5	15	1/2"	3#12
5	HV UNIT NO. 2	20	20	20	30	1/2"	3#10
6	DH-6 DUCT HEATER	16.3	16.3	16.3	20	1/2"	3#10
7	LTG. TRANS. TE-4	27	27	27	30	1/2"	3#10
8	SUMP PUMP #1	1.0	1.0	1.0	15	1/2"	3#12
9	" #2	1.0	1.0	1.0	15	1/2"	3#12
10	F-1A FAN	7	7	7	15	1/2"	3#12
11	INCINERATOR	1.8	1.8	1.8	15	1/2"	3#12
12	BOILER NO. 1	4.5	4.5	4.5	15	1/2"	3#12
13	" #2	4.5	4.5	4.5	15	1/2"	3#12
14	E-9 FAN	1.4	1.4	1.4	15	1/2"	3#12
15	E-10 FAN	4.5	4.5	4.5	15	1/2"	3#12
16	OVERHEAD DOOR (FRONT E-10)	3.3	3.3	3.3	15	1/2"	3#12 (R-1)
17	ENERG. GEN. CONTROL BD.	12.0	12.0	12.0	15	1/2"	3#12 (R-1)
18-19	SPARE BKR'S.				15	1/2"	
20	OVERHEAD DOOR (E-108)	1.8	1.8	1.8	15	1/2"	3#12
PHASE LOAD		134.5	134.5	134.5			

* CONDUIT ONLY, TERMINATE CONDUIT 5 FT. OUTSIDE BLDG - 2 FT. BELOW GRADE

AC POWER DISTR. PANEL NO. 2 (EAST)
LOCATION: FAN RM. EAST ONE LINE DIAG. NO. E-G2

CKT NO.	DESCRIPTION	AMP LOAD			BKR. AMP. TRIP	CONDUIT SIZE	WIRE NO. AND SIZE
		A	B	C			
1	LTG. TRANS. TE-2A	32	32	32	40	1/2"	3#8
2	TE-2B	49	49	49	70	1/2"	3#6
3	TE-2C	33	33	33	40	1/2"	3#8
4	POWER RECS. AT COLLIER	30	30	30	40	1/2"	3#8
5	"	30	30	30	40	1/2"	3#8
6	"	30	30	30	40	1/2"	3#8
7	ROOF DRAINAGE HTG.	6	6	6	15	1/2"	3#12
8	"	6	6	6	15	1/2"	3#12
9	"	6	6	6	15	1/2"	3#12
10	FAN ROOM DRAINS HTG.	6	6	6	15	1/2"	3#12
11	"	6	6	6	15	1/2"	3#12
12	"	6	6	6	15	1/2"	3#12
13	SPARE BKR.				15	1/2"	
14	"				15	1/2"	
15	"				15	1/2"	
16	SPACE						
PHASE LOAD		216.0	216.0	216.0			

* CONDUIT ONLY, TERMINATE CONDUIT 5 FT. OUTSIDE BLDG - 2 FT. BELOW GRADE

AC POWER DISTR. PANEL NO. 2 (WEST)
LOCATION: FAN RM. WEST ONE LINE DIAG. NO. E-G2

CKT NO.	DESCRIPTION	AMP LOAD			BKR. AMP. TRIP	CONDUIT SIZE	WIRE NO. AND SIZE
		A	B	C			
1	LTG. TRANS. TW-2A	30	30	30	40	1/2"	3#8
2	TW-2B	46	46	46	70	1/2"	3#6
3	TW-2C	30	30	30	40	1/2"	3#8
4	POWER RECS. AT COLLIER	30	30	30	40	1/2"	3#8
5	"	30	30	30	40	1/2"	3#8
6	"	30	30	30	40	1/2"	3#8
7	ROOF DRAINAGE HTG.	6	6	6	15	1/2"	3#12
8	"	6	6	6	15	1/2"	3#12
9	"	6	6	6	15	1/2"	3#12
10	FAN ROOM DRAINS HTG.	6	6	6	15	1/2"	3#12
11	"	6	6	6	15	1/2"	3#12
12	"	6	6	6	15	1/2"	3#12
13	SPARE BKR.				15	1/2"	
14	"				15	1/2"	
15	"				15	1/2"	
16	SPACE						
PHASE LOAD		208.0	208.0	208.0			

* CONDUIT ONLY, TERMINATE CONDUIT 5 FT. OUTSIDE BLDG - 2 FT. BELOW GRADE

AC POWER DISTR. PANEL NO. 4 (WEST)
LOCATION: WEST VENT BLDG. ROADWAY FL. NORTH ONE LINE DIAG. NO. E-G2

CKT NO.	DESCRIPTION	AMP LOAD			BKR. AMP. TRIP	CONDUIT SIZE	WIRE NO. AND SIZE
		A	B	C			
1	DH-7 DUCT HEATER	13	13	13	20	1/2"	3#12
2	DH-5 DUCT HEATER	16.3	16.3	16.3	20	1/2"	3#10
3	LTG. TRANS. TW-4	25	25	25	30	1/2"	3#10
4	OVERHEAD DOOR (W-106)	3.3	3.3	3.3	15	1/2"	3#12
5	SPARE BKR.				15	1/2"	
6	"				15	1/2"	
7	OVERHEAD DOOR (W-107)	1.8	1.8	1.8	15	1/2"	3#12
8	SPACE						
9	SUMP PUMP #1	1.0	1.0	1.0	15	1/2"	3#12
10	" #2	1.0	1.0	1.0	15	1/2"	3#12
PHASE LOAD		61.6	61.6	61.6			

* CONDUIT ONLY, TERMINATE CONDUIT 5 FT. OUTSIDE BLDG - 2 FT. BELOW GRADE

AC POWER DISTR. PANEL NO. 3 (EAST)
LOCATION: ELEC. EQUIP. RM. ONE LINE DIAG. NO. E-G2

CKT NO.	DESCRIPTION	AMP LOAD			BKR. AMP. TRIP	CONDUIT SIZE	WIRE NO. AND SIZE
		A	B	C			
1	OVERHEAD DOOR (FRONT E-11)	3.3	3.3	3.3	15	1/2"	3#12
2	OVERHEAD DOOR (FRONT E-12)	3.3	3.3	3.3	15	1/2"	3#12
3	DH-7 DUCT HEATER	8	8	8	15	1/2"	3#12
4	DH-8 DUCT HEATER	5	5	5	15	1/2"	3#12
5	LTG. TRANS. TE-3	43	43	43	50	1/2"	3#8
6	DRAIN PIPE HTG. VEHICLE STOR.	3	3	3	15	1/2"	3#12
7	"	3	3	3	15	1/2"	3#12
8	"	3	3	3	15	1/2"	3#12
9	SPARE BKR.				15	1/2"	
10	BI-FOLD DOOR (E-12)	0.4	0.4	0.4	15	1/2"	3#12
11	BI-FOLD DOOR (E-12)	0.4	0.4	0.4	15	1/2"	3#12
12	SPARE BKR.				15	1/2"	
13	SPARE BKR.				15	1/2"	
14	OVERHEAD DOOR (E-126)	1.8	1.8	1.8	15	1/2"	3#12
15	SPACE						
PHASE LOAD		68.2	68.2	68.2			

* CONDUIT ONLY, TERMINATE CONDUIT 5 FT. OUTSIDE BLDG - 2 FT. BELOW GRADE

AC POWER DISTR. PANEL NO. 3 (WEST)
LOCATION: ELEC. EQUIP. RM. ONE LINE DIAG. NO. E-G2

CKT NO.	DESCRIPTION	AMP LOAD			BKR. AMP. TRIP	CONDUIT SIZE	WIRE NO. AND SIZE
		A	B	C			
1	OVERHEAD DOOR (FRONT W-1)	3.3	3.3	3.3	15	1/2"	3#12
2	OVERHEAD DOOR (FRONT W-2)	3.3	3.3	3.3	15	1/2"	3#12
3	DH-2 DUCT HEATER	6.6	6.6	6.6	15	1/2"	3#12
4	DH-3 DUCT HEATER	12	12	12	20	1/2"	3#12
5	LTG. TRANS. TW-3	32	32	32	40	1/2"	3#8
6	DRAIN PIPE HTG. VEHICLE STOR.	3	3	3	15	1/2"	3#12
7	"	3	3	3	15	1/2"	3#12
8	"	3	3	3	15	1/2"	3#12
9	SEWAGE EJECTOR PUMP	1.4	1.4	1.4	15	1/2"	3#12
10	"	1.4	1.4	1.4	15	1/2"	3#12
11	BI-FOLD DOOR (W-11)	0.4	0.4	0.4	15	1/2"	3#12
12	BI-FOLD DOOR (W-12)	0.4	0.4	0.4	15	1/2"	3#12
13	SPARE BKR.				15	1/2"	
14	"				15	1/2"	
15	OVERHEAD DOOR (W-145)	1.8	1.8	1.8	15	1/2"	3#12
16	SPACE						
PHASE LOAD		65.6	65.6	65.6			

* CONDUIT ONLY, TERMINATE CONDUIT 5 FT. OUTSIDE BLDG - 2 FT. BELOW GRADE

AC POWER DISTR. PANEL
LOCATION: CENTER CROSS PASSAGEWAY - WEST TRANSF. RM. ONE LINE DIAG. NO. E-G2

CKT NO.	DESCRIPTION	AMP LOAD			BKR. AMP. TRIP	CONDUIT SIZE	WIRE NO. AND SIZE
		A	B	C			
1	TUNNEL NORTH SIDE LTG. FDR. #1	22	22	22	30	1/2"	4#4
2	" SOUTH SIDE " #1	22	22	22	30	1/2"	4#4
3	" NORTH SIDE " #2	22	22	22	30	1/2"	4#4
4	" SOUTH SIDE " #2	22	22	22	30	1/2"	4#4
5	MESSAGE BOARDS	10	10	10	20	3/4"	3#12 (R-3)
6	TV CAMERA	3	3	3	15	1/2"	3#12
7	PULPIT	5	5	5	15	1/2"	3#12
8	CROSS PASSAGEWAY LTG. TRANS.	5	5	5	15	1/2"	3#12
9	TUNNEL LTG. CONT. TRANS.	1	1	1	15	1/2"	3#12
10	WATER MAIN PIPE HTG.	6	6	6	15	1/2"	4#8
11	SPARE BKR.				15	1/2"	
12	"				15	1/2"	
13	"				15	1/2"	
14	"				15	1/2"	
PHASE LOAD		114.3	110.3	110.3			

* CONDUIT ONLY, TERMINATE CONDUIT 5 FT. OUTSIDE BLDG - 2 FT. BELOW GRADE

LIGHTING PANEL

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	250	326

AC POWER DISTR. PANEL NO. 5 (EAST)
 EAST VENT BLDG
 LOCATION: ROADWAY FL - SOUTH ONE LINE DIAG. NO. E-62

POWER SUPPLY: 460 VOLTS, 3 PHASE, 4 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 3-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 100 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		A	B	C			
1	DH-9 DUCT HEATER	13.2	13.2	13.2	20	100	1" 3#12
2	DH-10 DUCT HEATER	16.5	16.5	16.5	20	100	1" 3#12
3	LIG TRANS. T.E-5	23	23	23	30	100	1" 3#10
4	OVERHEAD DOOR (FRONT E-140)	3.3	3.3	3.3	15	100	1" 3#12
5	FAN E-B	1	1	1	15	100	1" 3#12
6	SPARE BKR				15	100	
7	OVERHEAD DOOR (E-140)	1.8	1.8	1.8	15	100	3/4" 3#12
PHASE LOAD		58.8	58.8	58.8			

AC POWER DISTR. PANEL NO. 5 (WEST)
 WEST VENT BLDG
 LOCATION: ROADWAY FL - SOUTH ONE LINE DIAG. NO. E-62

POWER SUPPLY: 460 VOLTS, 3 PHASE, 4 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 3-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 200 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		A	B	C			
1	OVERHEAD DOOR (FRONT W-143)	3.3	3.3	3.3	15	100	1" 3#12
2	P-1 PUMP	7	7	7	15	100	1" 3#12
3	P-2 PUMP	7	7	7	15	100	1" 3#12
4	P-3 PUMP	1.4	1.4	1.4	15	100	1" 3#12
5	HV UNIT NO. 1	2.0	2.0	2.0	30	100	1" 3#10
6	DH-4 DUCT HEATER	16.5	16.5	16.5	20	100	1" 3#12
7	LIG TRANS. T.W-5	22	22	22	30	100	1" 3#10
8	E-3 FAN	1	1	1	15	100	1" 3#12
9	INCINERATOR	1.8	1.8	1.8	15	100	1" 3#12
10	BOILER NO. 1	4.5	4.5	4.5	15	100	1" 3#12
11	" 2	4.5	4.5	4.5	15	100	1" 3#12
12	E-4 FAN	1.4	1.4	1.4	30	100	1" 3#10
13	E-5 FAN	4.5	4.5	4.5	15	100	1" 3#12
14	SPARE BKR				15	100	
15	OVERHEAD DOOR (W-135)	1.8	1.8	1.8	15	100	3/4" 3#12
16	SPACE						
17	SPACE						
18	SPACE						
PHASE LOAD		106.6	106.6	106.6			

AC POWER DISTR. PANEL NO. 6
 LOCATION: CONTROL RM ONE LINE DIAG. NO. E-62

POWER SUPPLY: 460 VOLTS, 3 PHASE, 4 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 4-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 100 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		A	B	C			
1	HV UNIT NO. 3	3.3	3.3	3.3	15	100	1" 3#12
2	LIG TRANS. T.E-6	20.0	20.0	20.0	30	100	1" 3#10
3	SPARE BKR				15	100	
4	"				15	100	
5	"				15	100	
6	SPACE						
7	"						
8	"						
PHASE LOAD		23.3	23.3	23.3			

AC POWER DISTR. PANEL
 LOCATION: WEST END CROSS PASSAGEWAY ONE LINE DIAG. NO. E-62

POWER SUPPLY: 460 VOLTS, 3 PHASE, 4 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 4-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 225 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		A	B	C			
1	TUNNEL NORTH SIDE LIG FOR N1	42	42	42	70	100	2" 4#4
2	" SOUTH " " " " " S1	42	42	42	70	100	2" 4#4
3	" NORTH " " " " " N3	42	42	42	70	100	2" 4#4
4	" SOUTH " " " " " S3	42	42	42	70	100	2" 4#4
5	MESSAGE BD	20	20	20	30	100	1 1/2" 3#4
6	TV CAMERA	3	3	3	15	100	1 1/2" 13#12
7	PULPITS	11	11	11	15	100	1 1/2" 3#6
8	CROSS PASSAGEWAY LIG TRANS.	5	5	5	15	100	3/4" 2#12
9	TUNNEL LIG CONTR. TRANS.	1	1	1	15	100	3/4" 2#12
10	WATER MAIN PIPE HTG	18	18	18	30	100	1 1/2" 4#3
11	SPARE BKR				30	100	
12	"				15	100	
13	"				15	100	
14	SPACE						
PHASE LOAD		222.3	222.3	222.3			

AS CONSTRUCTED
 REVISION
 DATE
 Oct. 26, 1973

AC POWER DISTR. PANEL NO. 7 (EAST)
 LOCATION: STATE PATROL EQUIP RM - EAST ONE LINE DIAG. NO. E-62

POWER SUPPLY: 460 VOLTS, 3 PHASE, 4 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 3-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 100 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		A	B	C			
1	LIG TRANS. T.E-7	20	20	20	30	100	1" 3#10
2	AC AIR HANDLING UNIT	4.5	4.5	4.5	15	100	1" 3#12
3	CONDENSING UNIT	20	20	20	30	100	1" 3#10
4	HEATING UNIT	20	20	20	30	100	1" 3#10
5	SPARE BKR				15	100	
6	"				15	100	
7	"				15	100	
8	SPACE						
PHASE LOAD		64.5	64.5	64.5			

AC POWER DISTR. PANEL NO. 7 (WEST)
 LOCATION: STATE PATROL EQUIP RM - WEST ONE LINE DIAG. NO. E-62

POWER SUPPLY: 460 VOLTS, 3 PHASE, 4 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 3-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 100 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		A	B	C			
1	LIG TRANS. T.W-7	32	32	32	40	100	1" 3#10 (R-2)
2	AC AIR HANDLING UNIT	4.5	4.5	4.5	15	100	1" 3#12
3	CONDENSING UNIT	20	20	20	30	100	1" 3#10
4	HEATING UNIT	20	20	20	30	100	1" 3#10
5	SPARE BKR				15	100	
6	"				15	100	
7	"				15	100	
8	SPACE						
PHASE LOAD		76.5	76.5	76.5			

MAIN DC POWER DISTR. PANEL (EAST & WEST)
 LOCATION: BATTERY CHARGER RM - ONE LINE DIAG. NO. E-62

POWER SUPPLY: 120/240 VOLT DC 3 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 3-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 200 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		+	-	0			
1	MAIN D.C. AUTO SW.	50	50	70	100	1 1/2" 3#4	
2	DC PANEL NO. 10 - FEED	30	30	40	100	1" 3#8	
3	24.9 KV SWGR CONTROL	15	15	30	100	1" 2#10	
4	24.9 KV SWGR CONTROL	15	15	30	100	1" 2#10	
5	460V SWGR CONTROL	15	15	30	100	1" 2#10	
6	460V SWGR CONTROL	15	15	30	100	1" 2#10	
7	TUNNEL TEL. SIGN LIG	5	5	15	100	1" 3#12	
8	CONTR. EMERG. AUTO SW.	6	6	15	100	1" 3#8	
9	INVERTER MOTOR	8.5	8.5	15	100	1" 2#12	
10	SPARE BKR				15	100	
11	"				15	100	
12	"				15	100	
13	SPACE						
14	"						
15	"						
16	"						
TOTAL		129.5	129.5				

* FOR EAST BLDG ONLY

DC POWER DISTR. PANEL NO. 9
 LOCATION: ELECTRICAL EQUIP RM ONE LINE DIAG. NO. E-62

POWER SUPPLY: 120/240 VOLT DC 3 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 3-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 100 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		+	-	0			
1	LIGHTING CIRCUIT	6			20	100	3/4" 3#10
3	"	6			20	100	3/4" 3#10
5	"	7.5			20	100	3/4" 3#10
7	"	7.5			20	100	3/4" 3#10
9	"	3			20	100	3/4" 2#10
11	SPARE BKR				20	100	
2	LIGHTING CIRCUIT	5			20	100	3/4" 3#10
4	"	4			20	100	3/4" 3#10
6	"	6			20	100	3/4" 3#10
8	"	7			20	100	3/4" 3#10
10	SPARE BKR				20	100	
11	TUNNEL EMERG. LIG	21			30	100	3/4" 3#10
12	SPARE BKR				20	100	
TOTAL		48.5	45.5				

NO.	DESCRIPTION OF REVISION	BY	CHK.	APP.
1	ADDED CORRECTIONS AS INDICATED			
2	ADDED CORRECTIONS AS INDICATED			
3	ADDED CORRECTIONS AS INDICATED			
4	ADDED CORRECTIONS AS INDICATED			
5	ADDED CORRECTIONS AS INDICATED			
6	ADDED CORRECTIONS AS INDICATED			
7	ADDED CORRECTIONS AS INDICATED			
8	ADDED CORRECTIONS AS INDICATED			
9	ADDED CORRECTIONS AS INDICATED			
10	ADDED CORRECTIONS AS INDICATED			
11	ADDED CORRECTIONS AS INDICATED			
12	ADDED CORRECTIONS AS INDICATED			

WEST BLDG
 EAST BLDG

AC POWER DISTR. PANEL NO. 8 (EAST)
 EAST VENT. BLDG
 LOCATION: ROADWAY FL. CENTER FRONT ONE LINE DIAG. NO. E-62

POWER SUPPLY: 460 VOLTS, 3 PHASE, 4 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 3-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 100 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		A	B	C			
1	E-11 FAN	1.8	1.8	1.8	15	100	1" 3#12
2	PORTAL SIGNS	2	2	2	15	100	3/4" 3#12
3	HV UNIT NO. 4	3.3	3.3	3.3	15	100	1" 3#12
4	TRANSFER PUMP #1	3.3	3.3	3.3	15	100	1" 3#12
5	" #2	3.3	3.3	3.3	15	100	1" 3#12
6	SLUDGE PUMP #1	1.4	1.4	1.4	40	100	1" 3#12
7	" #2	1.4	1.4	1.4	40	100	1" 3#12
8	SUMP PUMP #1	2.5	2.5	2.5	15	100	1" 3#12
9	" #2	2.5	2.5	2.5	15	100	1" 3#12
10	AIR COMPRESSOR	4.5	4.5	4.5	15	100	1" 3#12
11	SLUDGE COLLECTOR	1.0	1.0	1.0	15	100	1" 3#12
12	CLASSIFIER MOTOR	1.8	1.8	1.8	15	100	1" 3#12
13	PORTAL VEHICLE SIGNS	1.5	1.5	1.5	15	100	1 1/2" 4#6
14	WATER CONTROLS	2.0	2.0	2.0	15	100	1 1/2" 4#6
15	WATER CONTROLS	3.3	3.3	3.3	15	100	1" 3#12
16	WATER CONTROLS	3.3	3.3	3.3	15	100	1" 3#12
17	DUMBWAITER	1.4	1.4	1.4	15	100	3/4" 3#12
18	TO 20 SPARE BKRS.				15	100	
PHASE LOAD		77.0	77.0	77.0			

AC POWER DISTR. PANEL NO. 8 (WEST)
 WEST VENT. BLDG
 LOCATION: ROADWAY FL. NORTH ONE LINE DIAG. NO. E-62

POWER SUPPLY: 460 VOLTS, 3 PHASE, 4 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 3-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 100 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		A	B	C			
1	FRESH WATER PUMP #1	4.5	4.5	4.5	15	100	1" 3#12
2	" #2	4.5	4.5	4.5	15	100	1" 3#12
3	SUMP PUMP #1	1.4	1.4	1.4	15	100	1" 3#12
4	" #2	1.4	1.4	1.4	15	100	1" 3#12
5	WATER SYST. CONT. TRANS.	2.3	2.3	2.3	15	100	3/4" 2#12
6	OVERHEIGHT VEHICLE SIGNS, DETECTORS & SIREN	15	15	15	30	100	1 1/2" 4#6
7	PORTAL SIGNS	2	2	2	15	100	3/4" 3#12
8	SPARE BKR				15	100	
9	"				15	100	
10	"				15	100	
11	SPACE						
12	"						
PHASE LOAD		29.1	31.1	33.4			

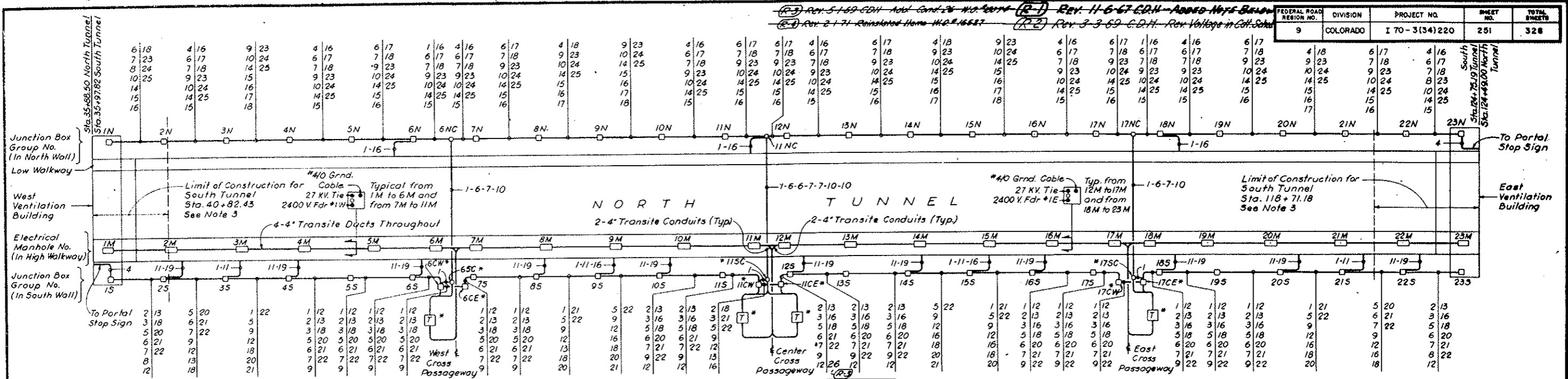
DC POWER DISTR. PANEL NO. 10
 LOCATION: EMERG. GENERATOR RM - ONE LINE DIAG. NO. E-62

POWER SUPPLY: 120/240 VOLT DC 3 WIRES
 MAIN BKR PROV: FRAME A, TRIP A
 INCOMING CABLE: 3-1/2" ENTRANCE: TOP X BOTTOM
 MAIN BUS 100 A NEUT. BUS REQ'D X GND BUS REQ'D

CKT NO.	DESCRIPTION	AMP LOAD			BKR TRIP	AMP COND. FRAME SIZE	WIRE NO. AND SIZE
		+	-	0			
1	LIGHTING CIRCUIT	15			20	100	3/4" 2#12
2	LIGHTING CIRCUIT	10			15	100	

(R-3) Rev. 5-1-69 CDH Add Cond. to No. 20 (R-1) Rev. 11-6-67 CDH - Added Note Below
 (R-2) Rev. 2-1-71 Reinstated Home W.G. 14557 (R-2) Rev. 3-3-69 C.D.H. Rev. Voltage in Coll. Sigs

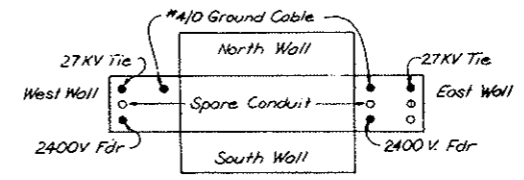
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	251	326



LEGEND:

- Transformer in Cross Passageway
- Galvanized Steel Conduits between Junction Box Groups in Walls. Numbers indicate Size & Purpose. See Schedule at right. See Dwg. E-74 to E-77 incl for cables required in conduits. See Dwg. E-73 for Junction Box arrangement & further details.

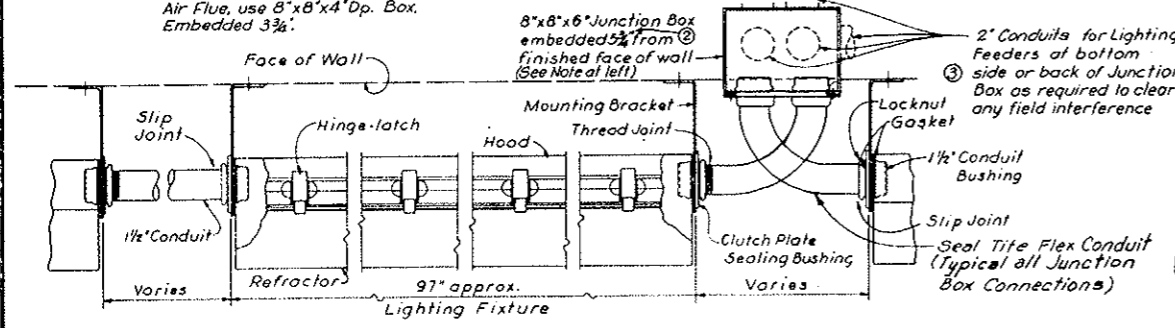
CONDUIT SCHEDULE		CONDUIT SCHEDULE	
Cdt. No.	Size & Purpose	Cdt. No.	Size & Purpose
1	1 1/2" C Pulpit Feeder	14	2" C Telephone & Supervisory Control *
2	1" C T.V. Camera Feeder (See Note A)	15	2" C Spare
3	1 1/2" C Traffic Signs Feeder	16	1" C CO Signal
4	1" C Stop Signal Feeder	17	1" C Loop Detector & Traffic Control *
5	1 1/2" C Spare	18	1 1/2" C Spare
6	2" C 460 V. AC Lighting Feeder #1	19	1" C Telephone Recess DC Light
7	2" C 460 V. AC Lighting Feeder #2	20	3" C 250 V. DC Emergency Feeder
8	2" C 460 V. AC Lighting Feeder #3	21	2" C Spare
9	2" C Spare	22	3" C T.V. Coaxial Cable (See Note A)
10	2" C Hydrant Heating Feeder	23	2" C State Patrol Communication
11	1" C Telephone Recess *	24	2" C State Patrol Communication
12	2" C Emerg. Telephone & Control *	25	2" C Spare
13	1" C Local Telephone *	26	1" C 250 V. DC Emergency Lighting



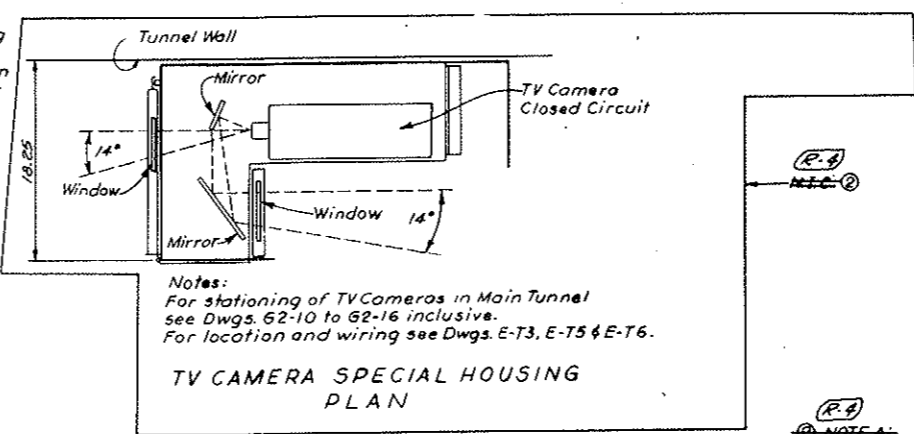
- NOTES:**
- For Stationing of Electrical Manholes, Junction Box Groups, Traffic Control Pulpits & Electrical Equipment in Main Tunnel see Dwg. G2-10 to G2-16 inclusive. Symbols used in these drawings for Electrical Manholes & Boxes are as follows:
 - D. Manhole
 - B. Junction Box Group South Wall
 - C. Junction Box Group North Wall
 - CO. Junction Box North Side opposite Cross Passageway
 - Asterisk * denotes located in Cross Passageways. For details see Dwg. E-72.
 - Repeat Junction Box Groups and related conduit work as shown for North Tunnel, except Electrical Manholes with corresponding ducts, between Limits of Construction for South Tunnel at both ends.

NOTE:
 If Box falls in front of Fresh Air Flue, use 8"x8"x4" Dp. Box. Embedded 3 3/4".

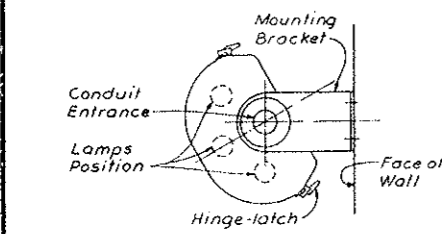
SCHMATIC ARRANGEMENT PLAN - TUNNEL DISTRIBUTION FACILITIES



Notes:
 For stationing of Lighting Fixtures in Main Tunnel, location, typical spacing and wiring diagrams see Dwg. E-T3, E-T4 & E-T5.



Notes:
 For stationing of TV Cameras in Main Tunnel see Dwg. G2-10 to G2-16 inclusive. For location and wiring see Dwg. E-T3, E-T5 & E-T6.



Use upper, middle & lower lamps for lighting at Intensive Zones I & II.
 Use middle & lower lamps for lighting at Intensive Zone III.
 Use upper & lower lamps for lighting at Normal Zone

FIXTURE CROSS SECTION

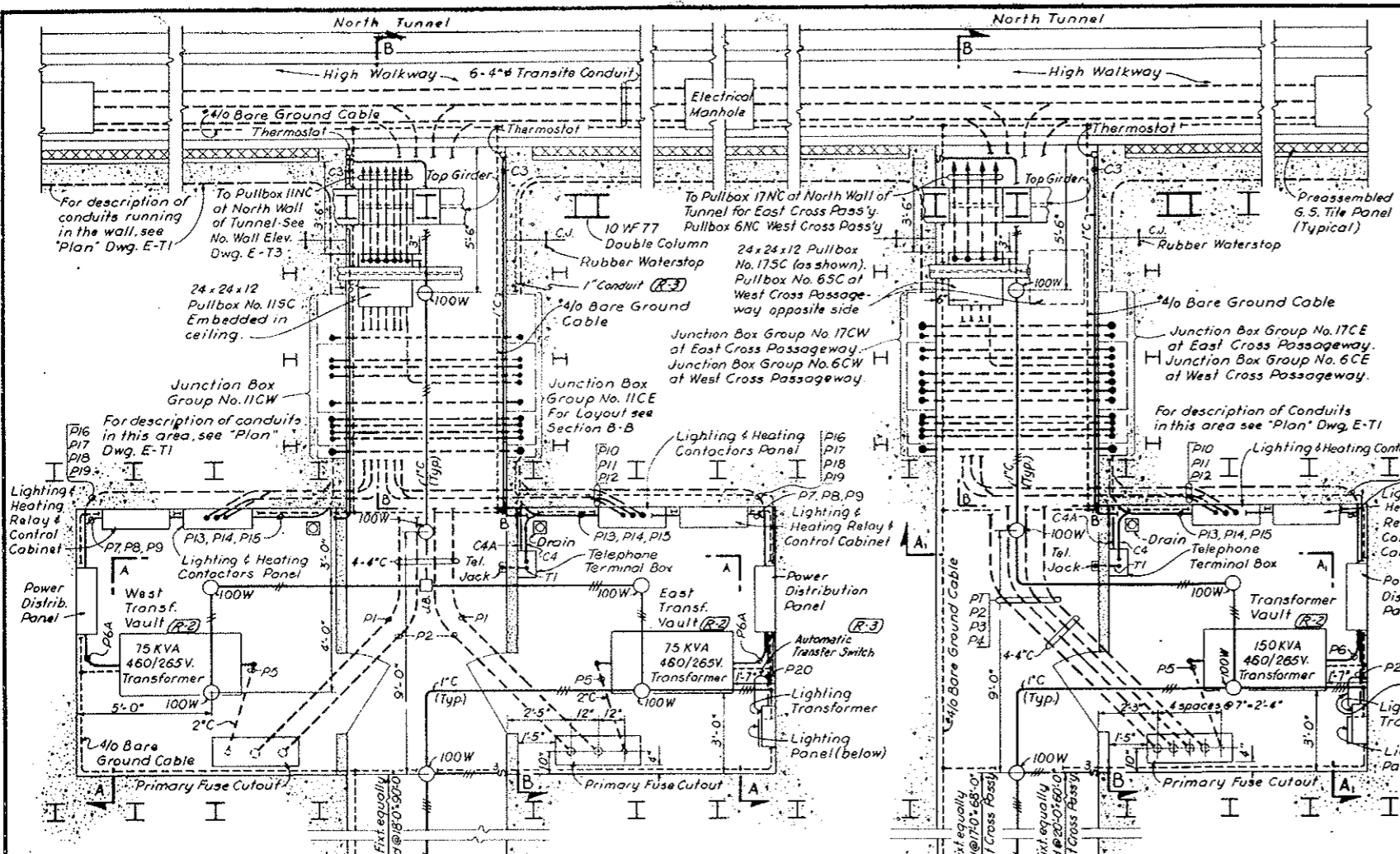
NOTE A:
 TV Surveillance System (Bid Item 100) Deleted. See W.G. 14153 & Spec. 1811-TV Camera Factor Cables & Coaxial Cable are not in this Contract, but all Conduit Base, etc. items are in this Contract. (Bid Item 106).

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

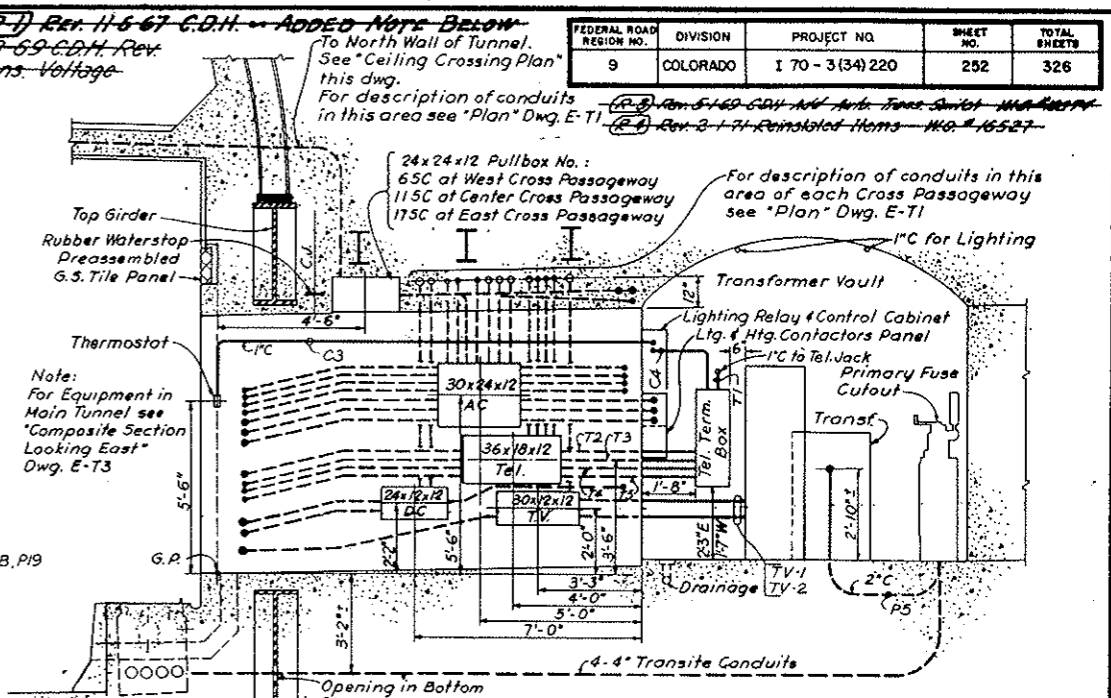
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS		STRAIGHT CREEK VEHICULAR TUNNEL PROJECT	
ELECTRICAL TUNNEL PLANS, SECTIONS & DETAILS			
SHEET I			
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.			
DESIGNED: E. A. N.	CHECKED: D. H. D.	RECOMMENDED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>
DRAWING NO. E-T1		DATE: AUG. 1967	

(R-4) ~~(R-2) TV SURVEILLANCE SYSTEM DELETED W.G. 14153 SEE SPEC. 1811~~

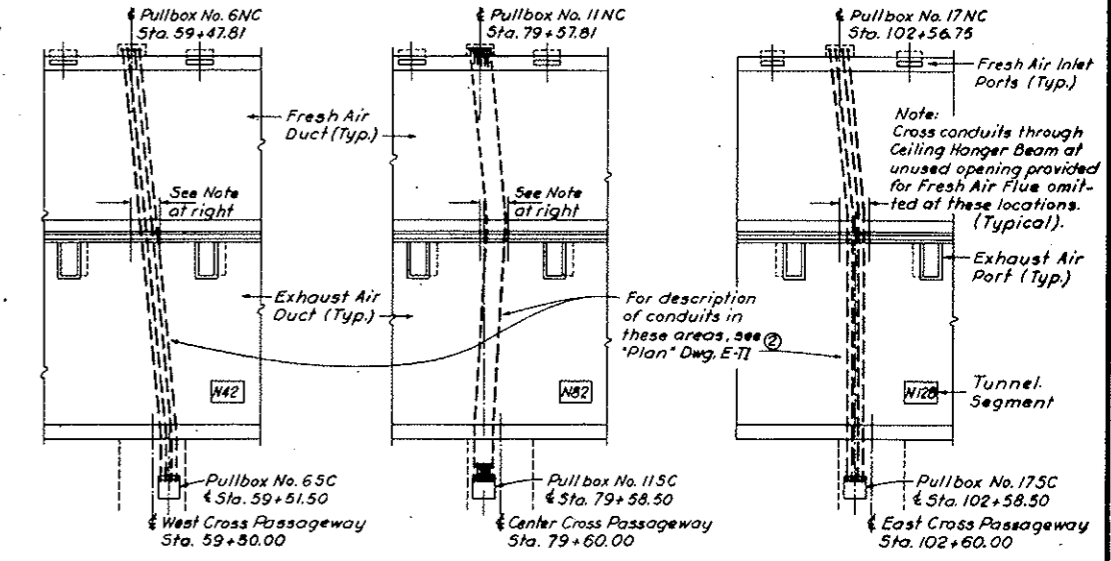
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(34) 220	292	326



AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973



SECTION B - B
 As shown for East & Center Cross Passageway, Junction Box Group to be mirror image of West Wall. Mirror image for West Cross Passageway. Junction Box Group as shown for East Wall.



- NOTES:**
- 1/0 Bare Copper Ground Cable to be buried in concrete.
 - Stub up & protect Ground Cable of the end of Cross Passageway Lined portions (See Specifications).
 - Ground every piece of equipment to nearest grounding loop. See Dwg. E-67 for typical grounding details.
 - Work this drawing with Conduit & Cable Schedule Dwg. E-77

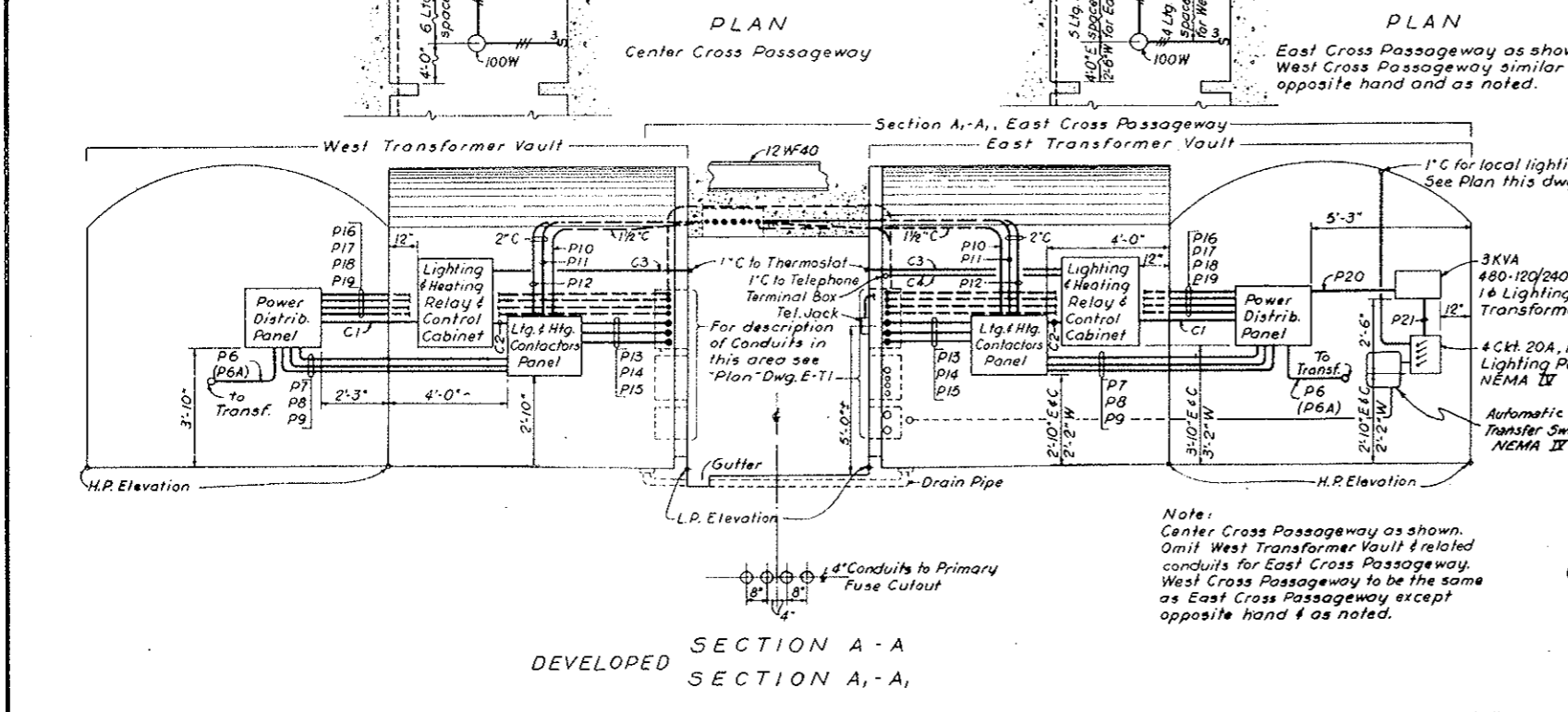
CORRECTIONS AS INDICATED		BY	CHK.	APP.
NO.	DATE	DESCRIPTION OF REVISION		

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ELECTRICAL TUNNEL PLANS, SECTIONS & DETAILS SHEET 2

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E.A.N.	RECOMMENDED: [Signature]	DRAWING NO.
CHECKED: N.A.C.	APPROVED: [Signature]	E-T2
SUBMITTED: [Signature]	DATE: AUG. 1967	



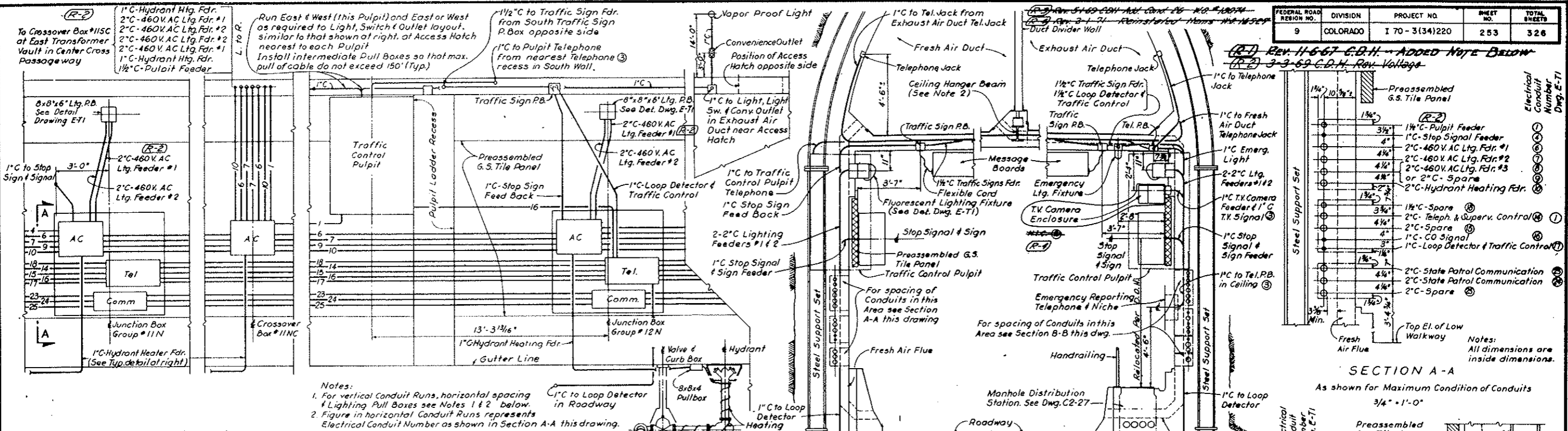
Note:
 Center Cross Passageway as shown. Omit West Transformer Vault & related conduits for East Cross Passageway. West Cross Passageway to be the same as East Cross Passageway except opposite hand & as noted.

NOTE: TV Surveillance System (Bid Item 190) deleted. See W.O. 14153 & Spec. 18H. TV Equipment shown is not in this Contract, but all conduit, boxes etc. are in this Contract. (Bid Item 186)

~~(R-4) (R-2) TV SURVEILLANCE SYSTEM DELETED W.O. 14153 See Spec. 18H~~

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3(134)220	253	326

Rev. 11-6-67 C.D.H. - ADDED NOTE BELOW
 Rev. 3-3-69 C.D.H. - Rev. Voltage



Electrical Conduit Number	Destination
1	1/2\"/>

Notes: All dimensions are inside dimensions.

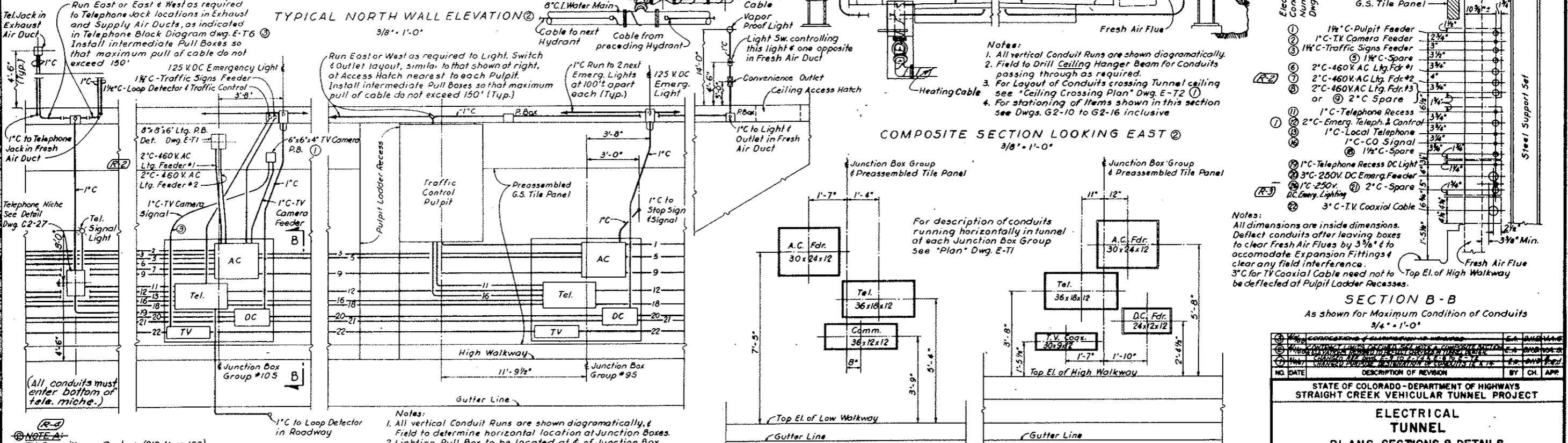
SECTION A-A
 As shown for Maximum Condition of Conduits
 3/4\"/>

Electrical Conduit Number	Destination
1	1/2\"/>

Notes: All dimensions are inside dimensions. Deflect conduits after leaving boxes to clear Fresh Air Flues by 3/8\"/>

SECTION B-B
 As shown for Maximum Condition of Conduits
 3/4\"/>

DESIGNED BY: E.A.N.	CHECKED BY: N.A.C.	DATE: AUG. 1967
DRAWN BY: E.A.N.	APPROVED BY: [Signature]	SCALE: AS NOTED
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT		
ELECTRICAL TUNNEL PLANS, SECTIONS, & DETAILS SHEET 3		
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.		
NO. DATE	DESCRIPTION OF REVISION	BY CH. APP.
DRAWING NO. E-T3		



Notes: 1. All vertical Conduit Runs are shown diagrammatically, & field to determine horizontal location at Junction Boxes. 2. Lighting Pull Box to be located at & of Junction Box Group, except as noted in Dwg. E-T4. 3. Figure in Horizontal Conduit Runs represents Electrical Conduit Number as shown in Section B-B this drawing.

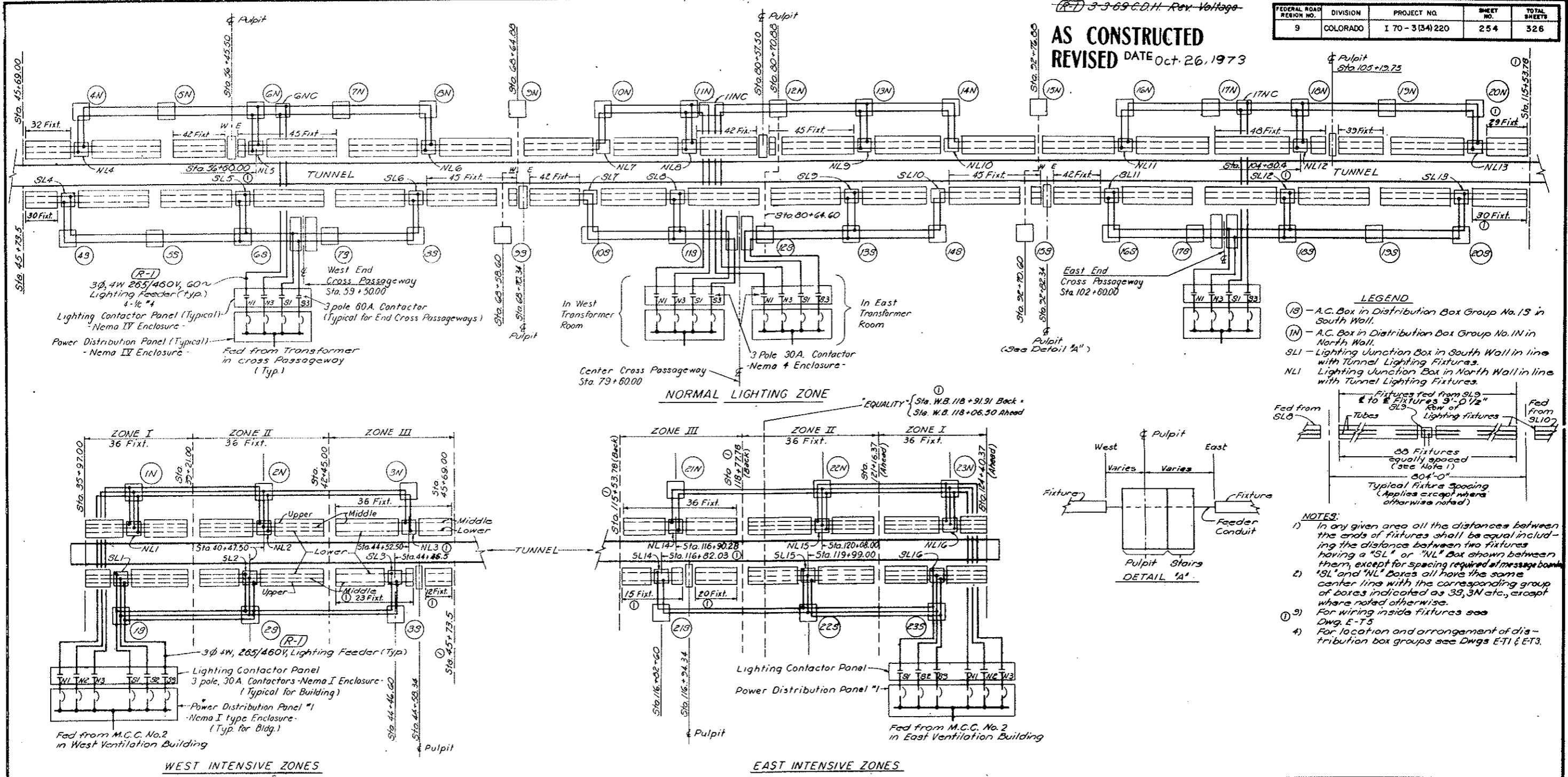


AS CONSTRUCTED REVISED DATE Oct. 26, 1973
 NORTH WALL SOUTH WALL
 Note: All box dimensions are inside dimensions.

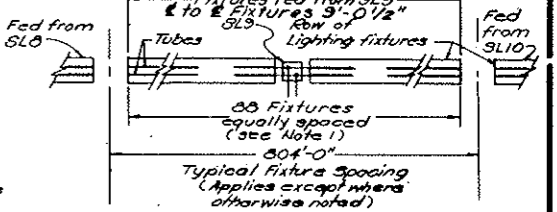
(R-1) 3-3-65 C.D.H. Rev. Voltage

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

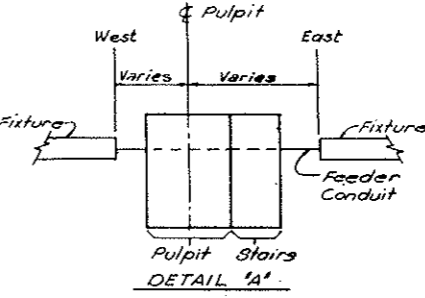
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70 - 3 (34) 220	254	326



- LEGEND**
- (18) - A.C. Box in Distribution Box Group No. 18 in South Wall.
 - (1N) - A.C. Box in Distribution Box Group No. 1N in North Wall.
 - SLI - Lighting Junction Box in South Wall in line with Tunnel Lighting Fixtures.
 - NLI - Lighting Junction Box in North Wall in line with Tunnel Lighting Fixtures.



- NOTES:**
- 1) In any given area all the distances between the ends of fixtures shall be equal including the distance between two fixtures having a "SL" or "NL" Box shown between them, except for spacing required at message boards.
 - 2) "SL" and "NL" Boxes all have the same center line with the corresponding group of boxes indicated as 3S, 3N etc., except where noted otherwise.
 - 3) For wiring inside fixtures see Dwg. E-T5.
 - 4) For location and arrangement of distribution box groups see Dwg. E-T1 & E-T3.



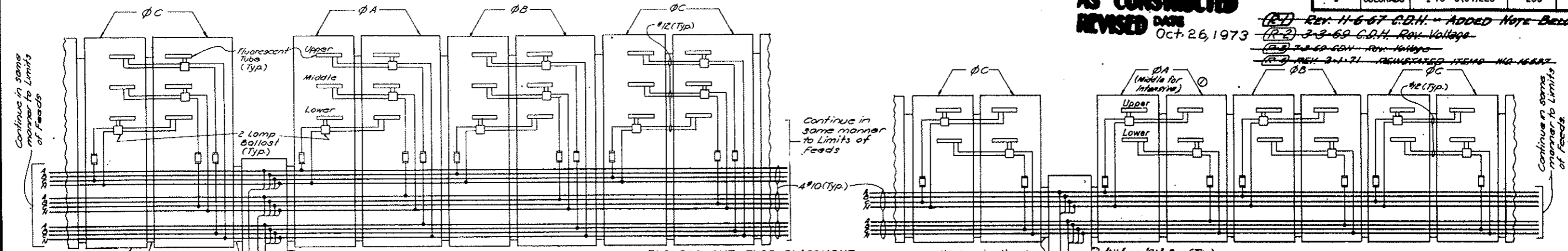
TUNNEL LIGHTING - SCHEMATIC ARRANGEMENTS SHOWING ZONING & LIMITATIONS OF FEEDS

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL TUNNEL WIRING DIAGRAMS SHEET I					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.A.C.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: E.A.N.	CHECKED: D.H.D.				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
					DRAWING NO. E-T4
NEW YORK, N.Y.					SCALE: NONE DATE: AUG. 1967

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	255	328

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

(R-1) REV. 11-6-67 C.D.H. - ADDED NOTE BELOW
 (R-2) 3-3-69 C.D.H. Rev. Voltage
 (R-3) 2-2-69 C.D.H. Rev. Voltage
 (R-4) REV. 3-1-71 RECALCULATED ITEMS - NO. 1688Z



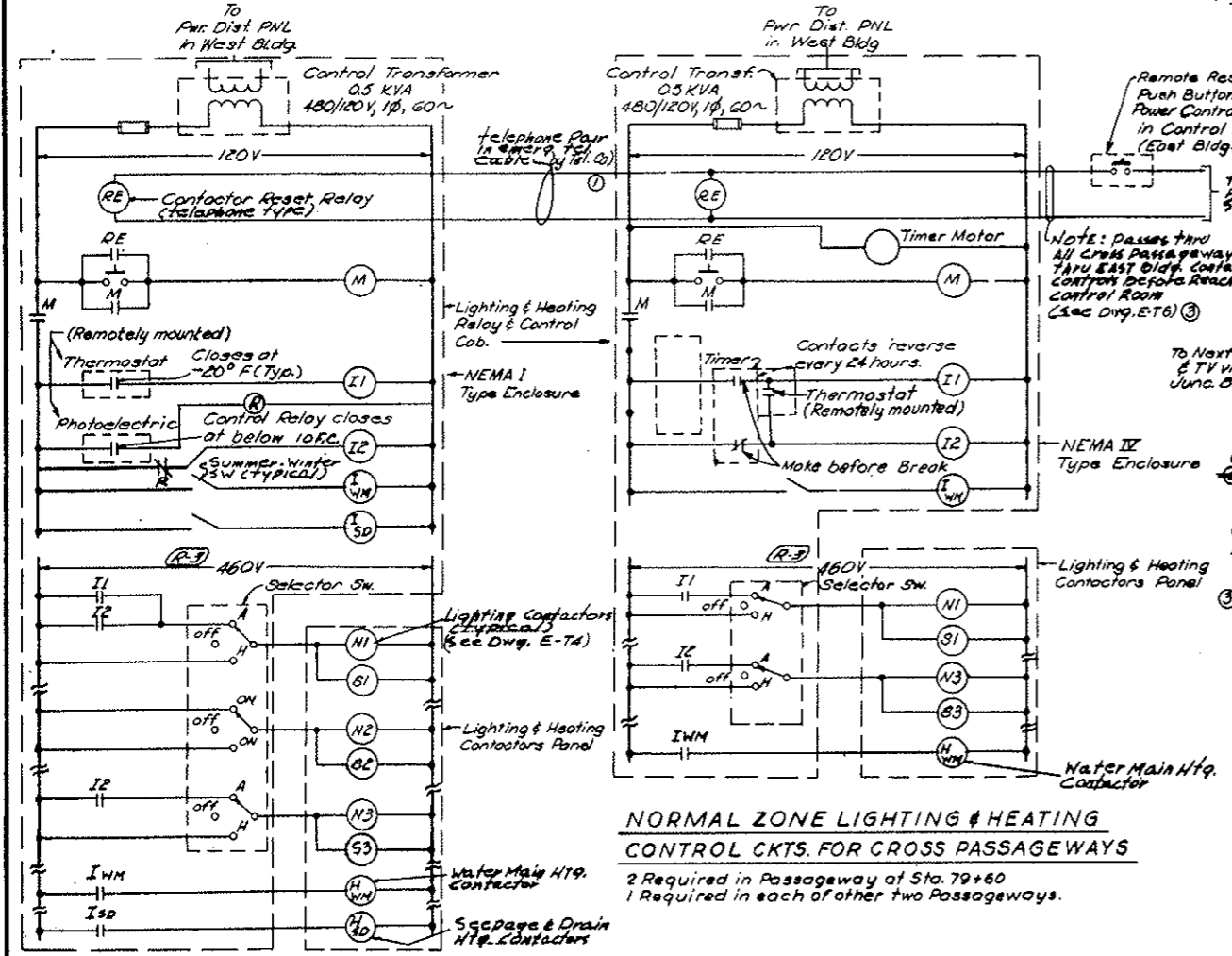
FLOURESCENT TUBE PLACEMENT

CONTACTORS	TUBE	INTENSIVE			NORMAL ZONE
		ZONE 1	ZONE 2	ZONE 3	
S1	NI	L.O.	H.O.	H.O.	H.O.
S2	N2	H.O.	H.O.	H.O.	H.O.
S3	N3	L.O.	H.O.	H.O.	H.O.

LIGHTING FIXTURE WIRING
 (Typical for Both Sides)

INTENSIVE ZONE 3 & NORMAL ZONE

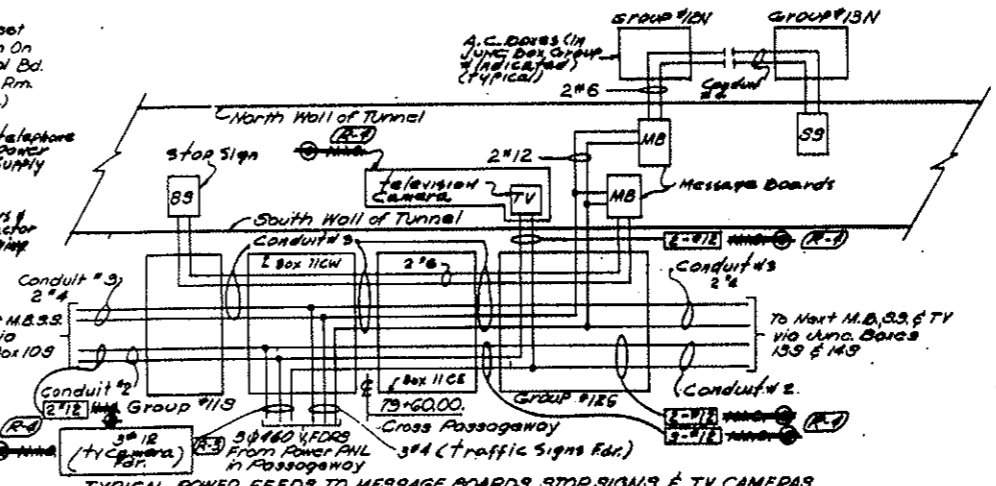
SPECIAL FIXTURE
 (2 Ballasts required where Pulpit interrupts typical spacing & wiring)
 * Connect each ballast to phase A, B, or C, of its feeder as required to maintain typical staggering of tubes on the 3 phases.



NORMAL ZONE LIGHTING & HEATING CONTROL CKTS. FOR CROSS PASSAGEWAYS

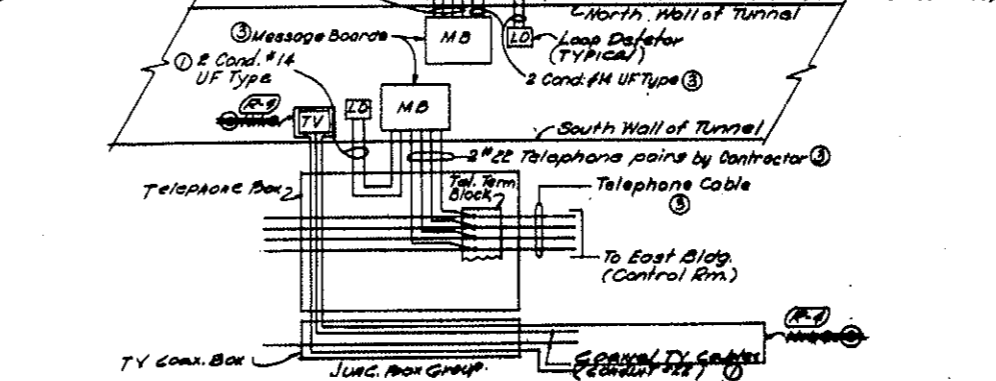
2 Required in Passageway at Sta. 79+60
 1 Required in each of other two Passageways.

WEST INTENSIVE ZONES LIGHTING & HEATING CONTROL CIRCUITS
 Similar for East Intensive Zones



TYPICAL POWER FEEDS TO MESSAGE BOARDS STOP SIGNS & TV CAMERAS

(Shown for those fed from Cross Passageways at 79+60. Similar for other Passageways)
 Note: - 6 Message Boards & 3 TV's fed from each Passageway. 2 Message Boards and 2 TV's fed from each Ventilation Bldg. (See Power Panel Schedules for feeds from Bldg's)
 3) 2# 22 Telephone pairs by Contractor



TYPICAL M.B. CONTROL, L.D. SIGNAL & TV CAMERA OUTPUT CONNECTIONS

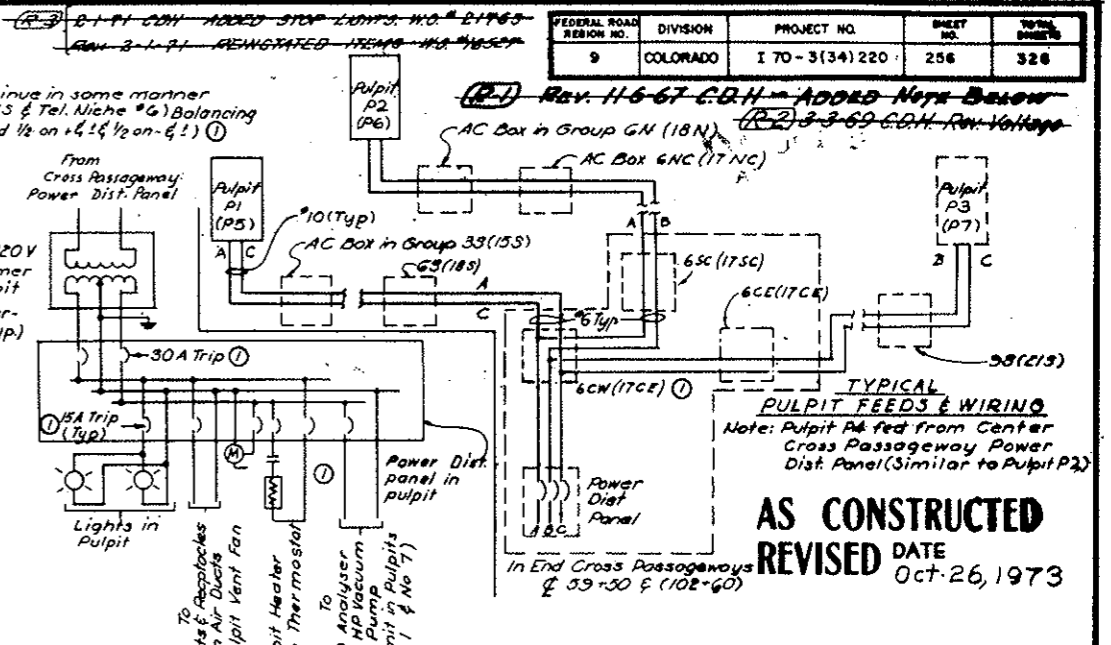
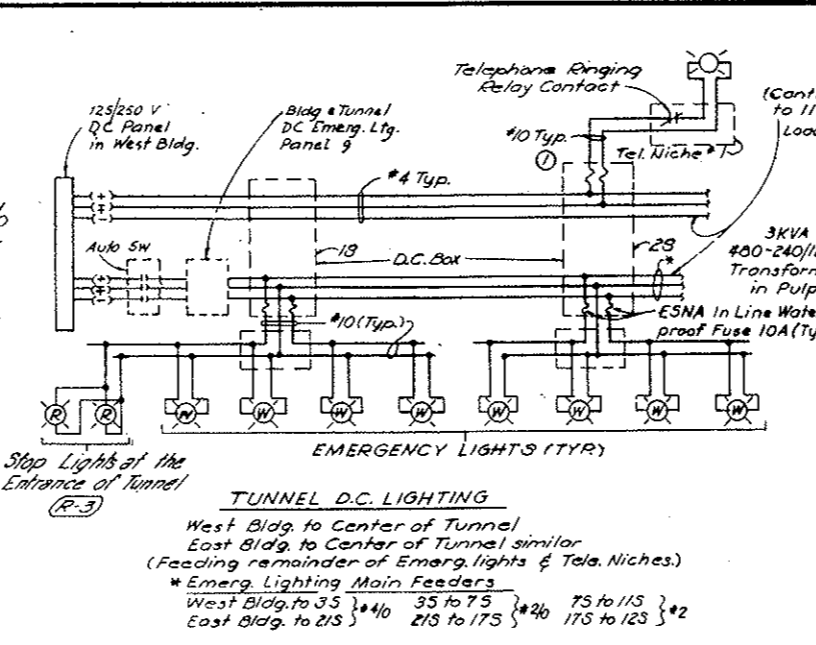
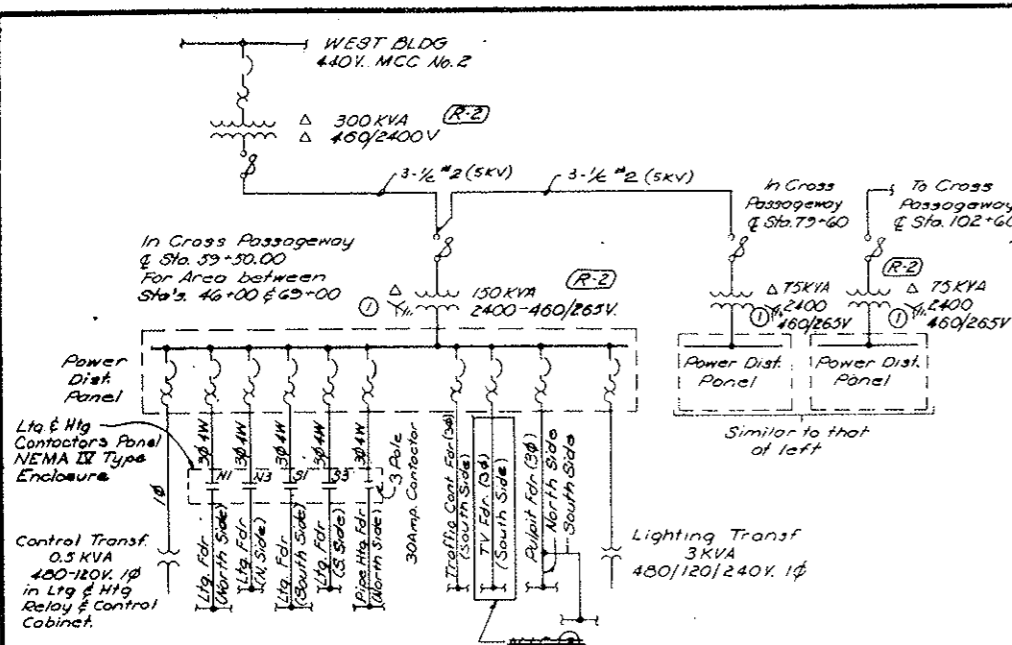
(See dwg. # E-76 for conduit nos. refer to dwg. E-T1)

(R-5) NOTE: TV Surveillance System (Bid Item 100) Deleted. See MO-14153 for spec. 100. TV camera feeds cables & control cables attached, but all control boxes etc. are in this contract (Bid Item 100)

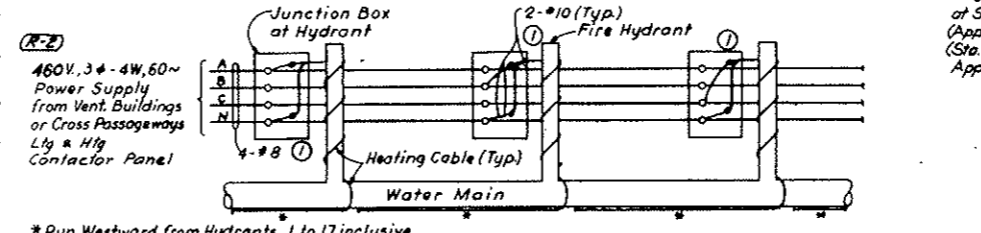
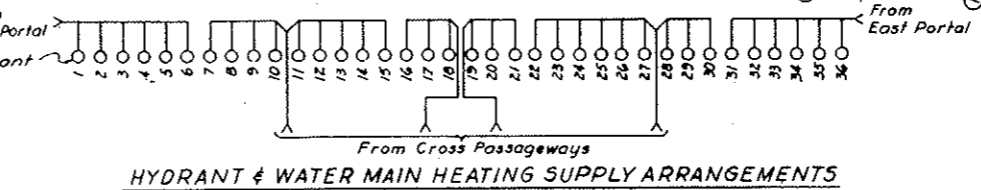
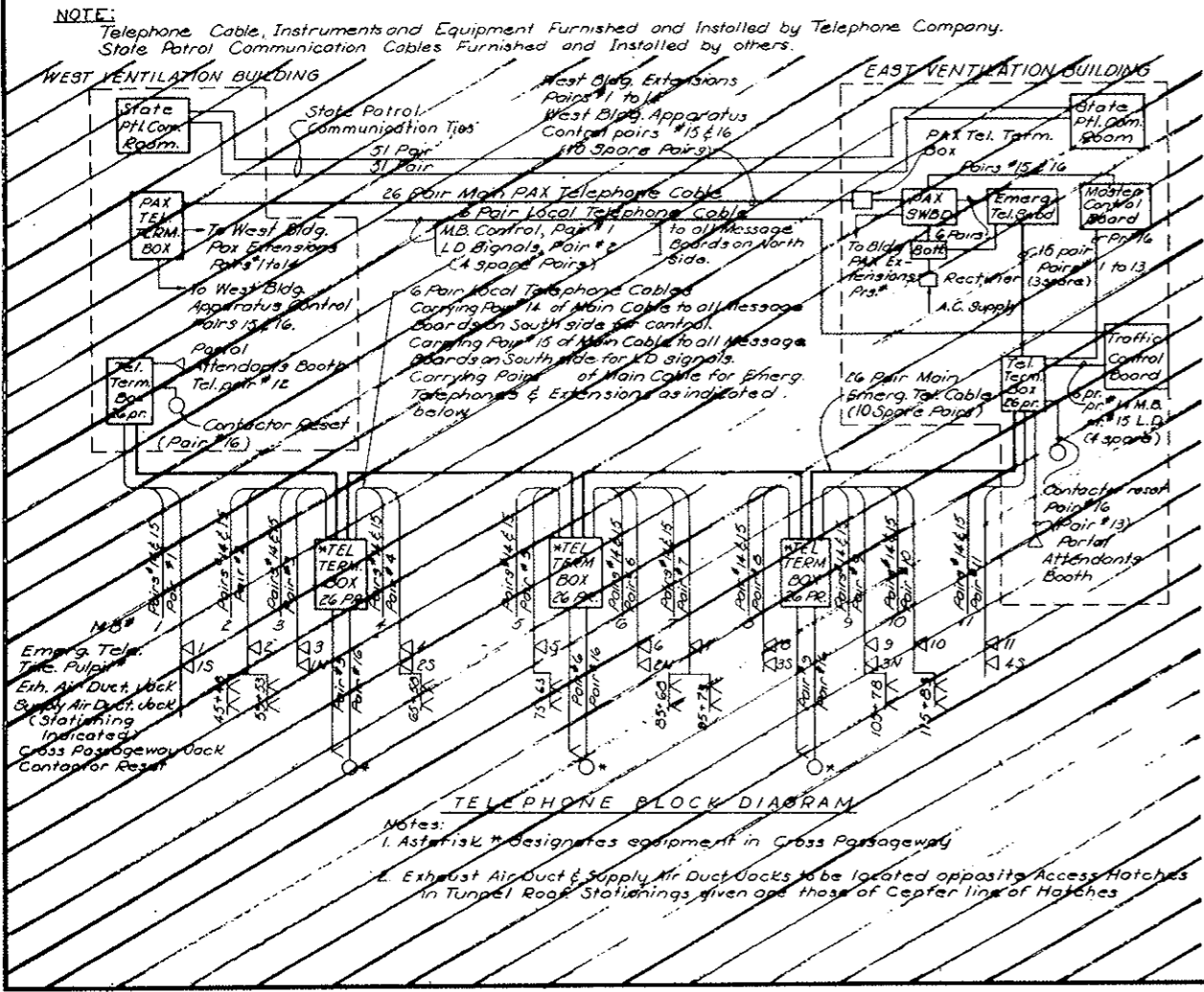
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL TUNNEL WIRING DIAGRAMS SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY C.D.H.	CHECKED BY D.H.D.	APPROVED BY [Signature]	DATE AUG 1967	SCALE NONE	DRAWING NO. E-75

(R-6) (R-7) ~~TV SURVEILLANCE SYSTEM DELETED - MO-14153 - SEE SPEC 100~~

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	256	328

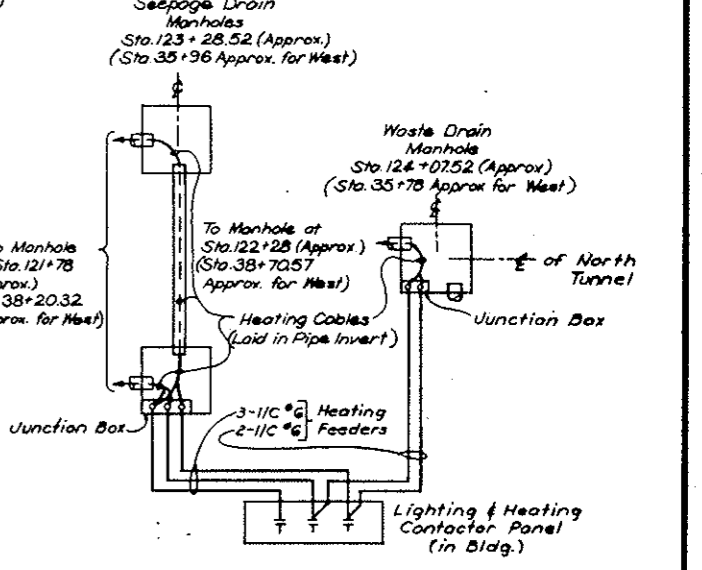
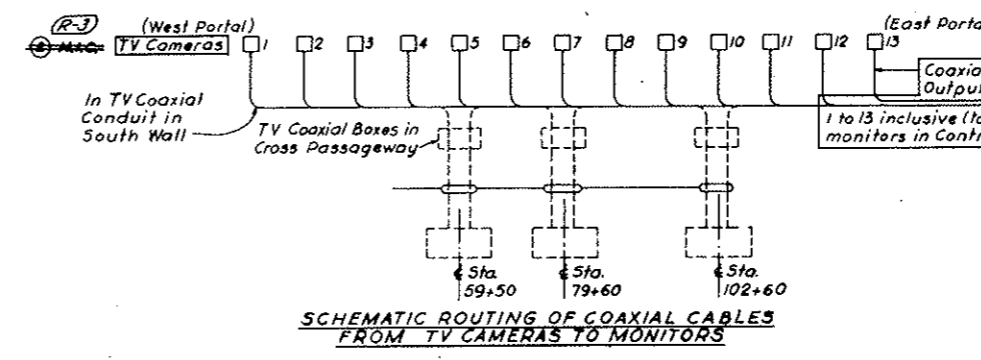


AS CONSTRUCTED
REVISED DATE
 Oct 26, 1973



* Run Westward from Hydrants 1 to 17 inclusive
 Run Eastward from Hydrants 18 to 34 inclusive
 For Water Main between Hydrants 17 & 18 use separate Heating Cable fed from Junction Box at Hydrant 17 or 18.

NOTE A:
 TV Surveillance System (Bid Item 190) deleted. See W.O. 14153 and Spec. 18H. TV Equipment & cables N.I.C. as indicated. Circuit breakers & conduit, boxes etc. are in this contract. (Bid Items 196, 196, 197 & 198)



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		Control limits Deleted. See Note 1			
2		TV SURVEILLANCE SYSTEM DELETED W.O. 14153 SEE SPEC. 18H			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ELECTRICAL TUNNEL WIRING DIAGRAMS
 SHEET 3

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: H.A.C.
 DRAWN: E.M.E.A.N.
 CHECKED: D.H.D.
 SUBMITTED: D.H.D.

RECOMMENDED: [Signature]
 APPROVED: [Signature]

NEW YORK, N. Y. SCALE: NONE DATE: AUG. 1967 DRAWING NO. E-T6

~~(R-3) (R-1) TV SURVEILLANCE SYSTEM DELETED W.O. 14153 SEE SPEC. 18H~~

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	257	326

~~(R-2) REV 11-6-67 G.D.H. - ADDED 1/2" COAXIAL~~
~~(R-2) REV 3-1-71 G.D.H. - REVISED ITEMS W.G. 14153~~

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

NOTES:

- 1- This schedule lists conduit & cable for East End Cross passageway. It must be duplicated once for West End & twice for Center Cross Passageway.
- 2- For General Notes see Conduit & Cable Schedule E-WE5.
- 3- Conduits marked (#) are for center cross passageways only.

NOTE #1

TV Surveillance System (Bid Item 100) Deleted. See W.G. 14153 & Spec 1811. Wires & Cables N.T.G. as noted. All conduit etc. is in this Contract. (Bid Item 186).

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE		FROM	TO	FUNCTION
			SIZE & TYPE				
EAST END CROSS PASSAGEWAY							
P5	2"	3	1/C #2 (5KV)		OIL FUSE CUTOUT	(1) TRANSF. PRIMARY	FEEDER
P6	3"	4	1/C #4/0		150 KVA TRANSF. SECONDARY	POWER DISTRIBUTION PANEL	
P6A(1)	2"	4	1/C #2		75 KVA FOR CENTER CROSS P'WAY		
P7	2"	4	1/C #4		POWER DISTRIBUTION PANEL	LTG. & HTG. CONTACTOR PANEL	TUNNEL NORTH SIDE LTG. FDR. N1 TUNNEL SOUTH SIDE LTG. FDR. S1
P8	2"	4	1/C #4				TUNNEL NORTH SIDE LTG. FDR. N3 TUNNEL SOUTH SIDE LTG. FDR. S3
P9	1 1/2"	4	1/C #8				WATER MAIN & FIRE HYDRANTS HTG. FDR.
P10	1 1/2"	4	1/C #4		LTG. & HTG. CONTACTOR PANEL	JUNCT. BOX 17 SC	TUNNEL NORTH SIDE LTG. FDR. N1
P11	2"	4	1/C #4				N3
P12	2"	4	1/C #8				WATER MAIN & FIRE HYDRANTS HTG. FDR.
P13	1 1/2"	4	1/C #4			JUNCT. BOX 17 CE	TUNNEL SOUTH SIDE LTG. FDR. S1
P14	1 1/2"	4	1/C #4				S3
P15	1 1/2"						SPARE CONDUIT
P16	1 1/2"	3	1/C #4		POWER DIST. PANEL		MESSAGE BD FEEDER
P17	1 1/2"	3	1/C #12				TV CAMERA FEEDER
P18	1 1/2"	3	1/C #6				PULPIT FEEDER
P19	1 1/2"						SPARE CONDUIT
P20	1"	3	1/C #12			CROSS PASSAGEWAY LTG. TRANSF. PRI.	FEEDER
P21	1"	3	1/C #12		CROSS PASSAGEWAY LTG. TRANSF. SEC.	CROSS PASSAGEWAY LTG. PANEL	
C1	1"	2	1/C #12		POWER DISTRIBUTION PANEL	LTG. & HTG. RELAY & CONTROL CAB.	0.5KVA CONTROL TRANSF. FEEDER
C2	1"	8	1/C #12		LTG. & HTG. CONTACTOR PANEL		CONTROL
C3	1"	2	1/C #12		LTG. & HTG. RELAY & CONTROL CAB.	THERMOSTAT	
C4	1"		(CABLE BY TEL. CO.)			TELEPHONE TERM. BOX	TUNNEL LTG. RESET SYSTEM
T1	1"	1	PAIR (BY TEL. CO.)		TELEPHONE TERMINAL BOX	TELEPHONE JACK	COMMUNICATION
T2	2"	26				TEL. JUNCT. BOX IN GROUP BOX 17CE	COMMUNICATION & CONTROL
T3	2"	26					
T4	1"	6					
T5	1"	6					
TV-1	3"		TV COAXIAL CABLE		TV BOX IN JUNCT. BOX GROUP	TO TRANSFORMER ROOM	TV IN LINE AMPLIFIER #
TV-2	3"						(* IF REQUIRED)

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE		FROM	TO	FUNCTION
			SIZE & TYPE				
P1	4"	3	1/C #2 (5KV)		MANHOLE 18M (8M FOR WEST CROSS PASSAGEWAY)	OIL FUSE CUTOUT	TRANSFORMER FEEDER
P2	4"				MANHOLE 18M (8M FOR WEST CROSS PASSAGEWAY)		SPARE CONDUIT
P3	4"	3	1/C #2 (5KV)		OIL FUSE CUTOUT	MANHOLE 17M (7M FOR WEST CROSS PASSAGEWAY)	TRANSFORMER FEEDER
P4	4"				MANHOLE 17M (7M FOR WEST CROSS PASSAGEWAY)		SPARE CONDUIT
P1(*)	4"	3	1/C #2 (5KV)		MH 12 M FOR CENTER CROSS PASSAGEWAY EAST SIDE (MH 11 M FOR CENTER CROSS PASSAGEWAY WEST SIDE)	OIL FUSE CUTOUT	TRANSFORMER FEEDER
P2(*)	4"				MH 12 M FOR CENTER CROSS PASSAGEWAY EAST SIDE (MH 11 M FOR CENTER CROSS PASSAGEWAY WEST SIDE)		SPARE CONDUIT

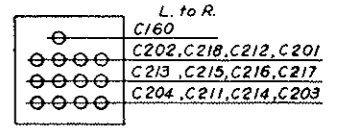
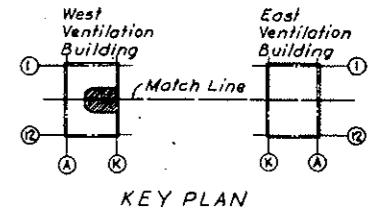
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL TUNNEL CROSS PASSAGEWAYS CONDUIT & CABLE SCHEDULE					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.A.C.	RECOMMENDED: <i>[Signature]</i>				
DRAWN: D.S.G.	CHECKED: D.H.D.				
SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>				
NEW YORK, N.Y.	SCALE: NONE	DATE: AUG. 1967	DRAWING NO. E-T7		

~~(R-2) (R-1) TV SURVEILLANCE SYSTEM DELETED W.G. #14153 SEE SPEC. 1811~~

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	258	328

(R-1) Rev. 11-6-67 E.S.H. - ADDO HOPE BELOW
 (R-2) Rev. 4-2-70 C.S.H. - Rev. Conduits No. 21007
 (R-3) Rev. 2-1-71 - Reinstated Items No. 10507

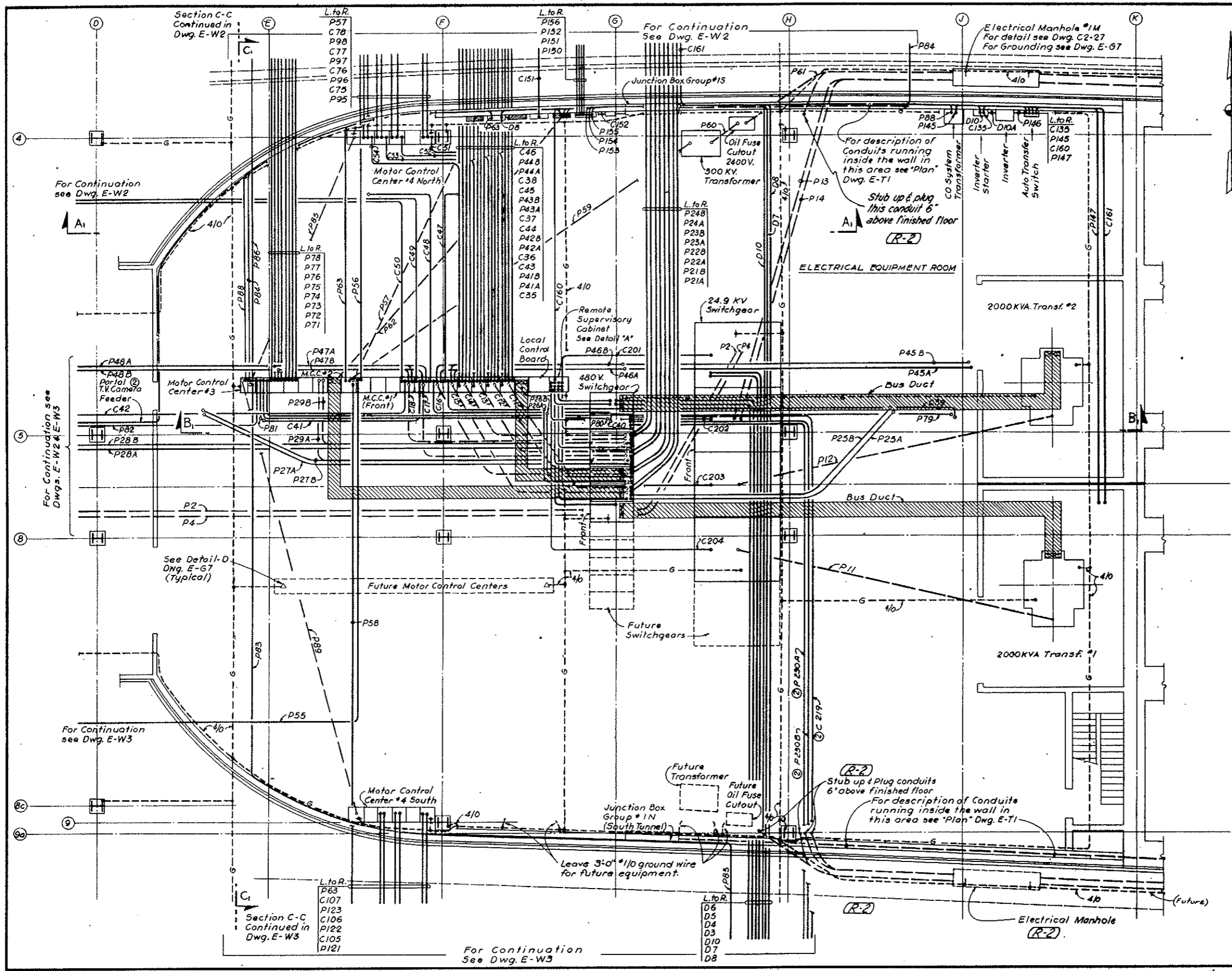
AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



DETAIL "A" - PLAN
 Remote Supervisory Cabinet
 Conduit Layout

(R-3) **NOTE A:** Tunnel Ventilation System, (Bid Item 105), revised. Emergency Generation (Bid Item 107), & TV Surveillance System, (Bid Item 190), deleted. See W.O. #153 & Spec. Sections 17A, 105 & 107. All electrical work shown on this Dwg. remains in-situ. See referenced Dwg. for effects of changes noted above.

- NOTES:**
1. For Telephone Riser Diagram see Dwg. E-68
 2. For Symbol Legend see Dwg. E-E4 & E-E5
 3. For Conduit & Cable runs from Power Panels see Panel Schedule Dwg. E-810 & E-811
 4. For Conduit & Cable Schedule see Dwg. E-W63 to E-W69 inclusive and Dwg. E-W8
 5. Exact routing of Conduits to be determined by Field.
 6. For Conduits or Equipment not shown or identified and for Sections see Dwg. E-W63.

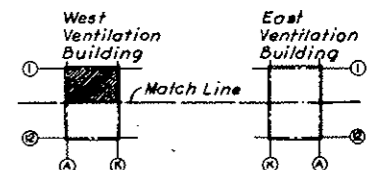


CORRECTIONS AS INDICATED		BY	CHK.	APP.
NO.	DATE	DESCRIPTION OF REVISION		
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
ELECTRICAL WEST VENTILATION BUILDING ELECTRICAL EQUIPMENT ROOM POWER & CONTROL - PLAN				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED: E. A. H.	CHECKED: N. A. C.	SUBMITTED: R. H. H.	APPROVED: W. A. Staudach	DRAWING NO. E-WI
NEW YORK, N. Y.		SCALE: 3/16" = 1'-0"	DATE: AUG 1967	

(R-3) (R-1) TV SURVEILLANCE SYSTEM DELETED W.O. #1153 SEE SPEC. 18H

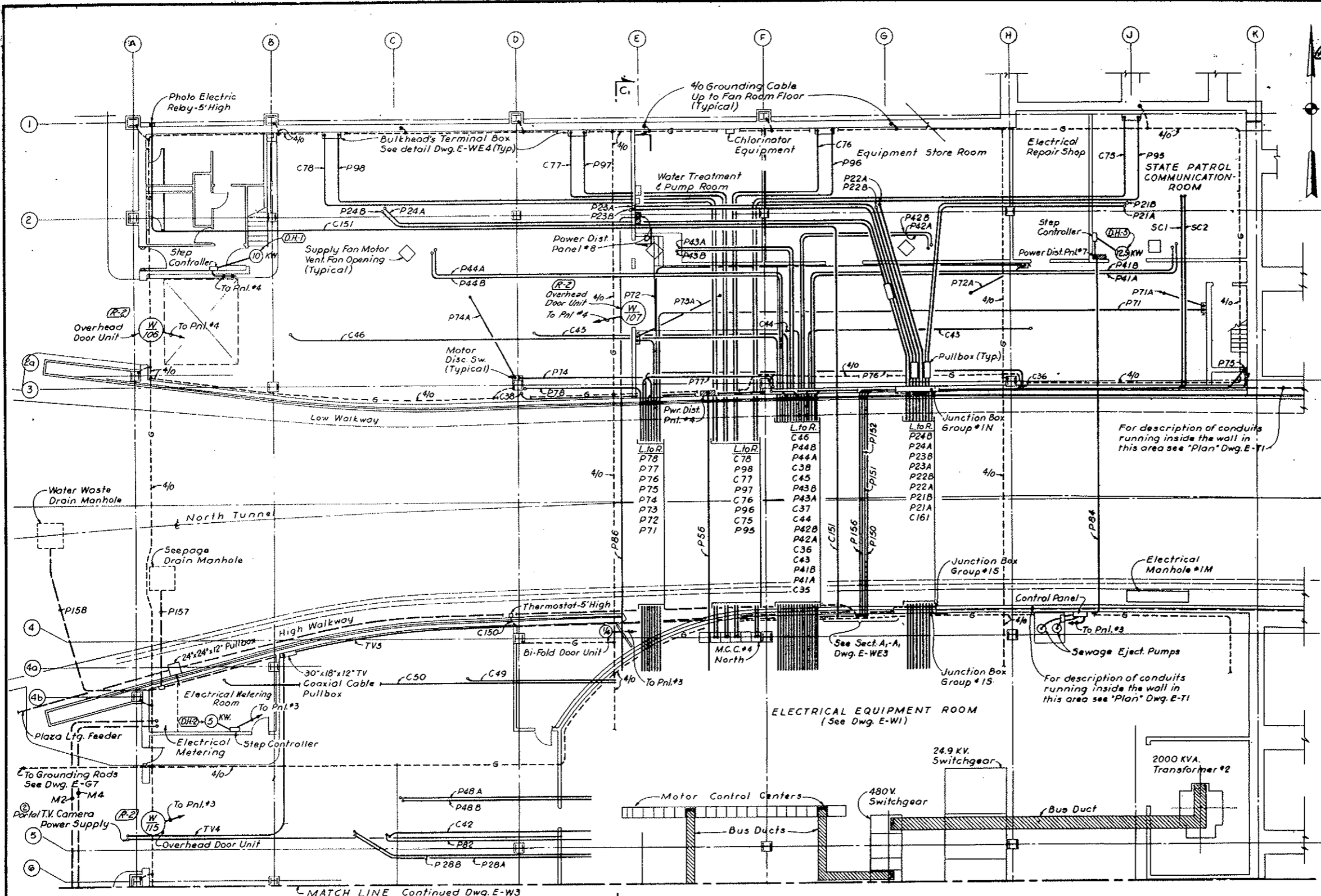
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	259	326

(R-1) REV. 11-6-67 GRH - ADDED NOTE BELOW
 (R-2) REV. 8-5-70 Clarification of Plans 11-7-21-70
 (R-3) REV. 3-1-71 Reinstated Items 11-6-67



KEY PLAN

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



For description of conduits running inside the wall in this area see 'Plan' Dwg. E-71

SECTION D-D
 Fresh Water Supply Arrangement
 N.T.S.

NOTE:
 1. For Notes see Dwg. E-W1

(R-3) NOTE A - See Note A on Dwg. E-W1

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		As connections as noted	GM	LDW	W.S.
2		CONTRACT LIMITS DEFINED SEE NOTE A	EM	DWD	W.S.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ELECTRICAL BUILDING
 ROADWAY FLOOR - NORTH
 POWER & CONTROL - PLAN

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N.Y.

DESIGNED: E. A. H.
 DRAWN: E. A. H.
 CHECKED: H. A. C.
 SUBMITTED: [Signature]
 NEW YORK, N.Y.

RECOMMENDED: [Signature]
 APPROVED: [Signature]
 SCALE: 1/8" = 1'-0"
 DATE: AUG. 1967

DRAWING NO. **E-W2**

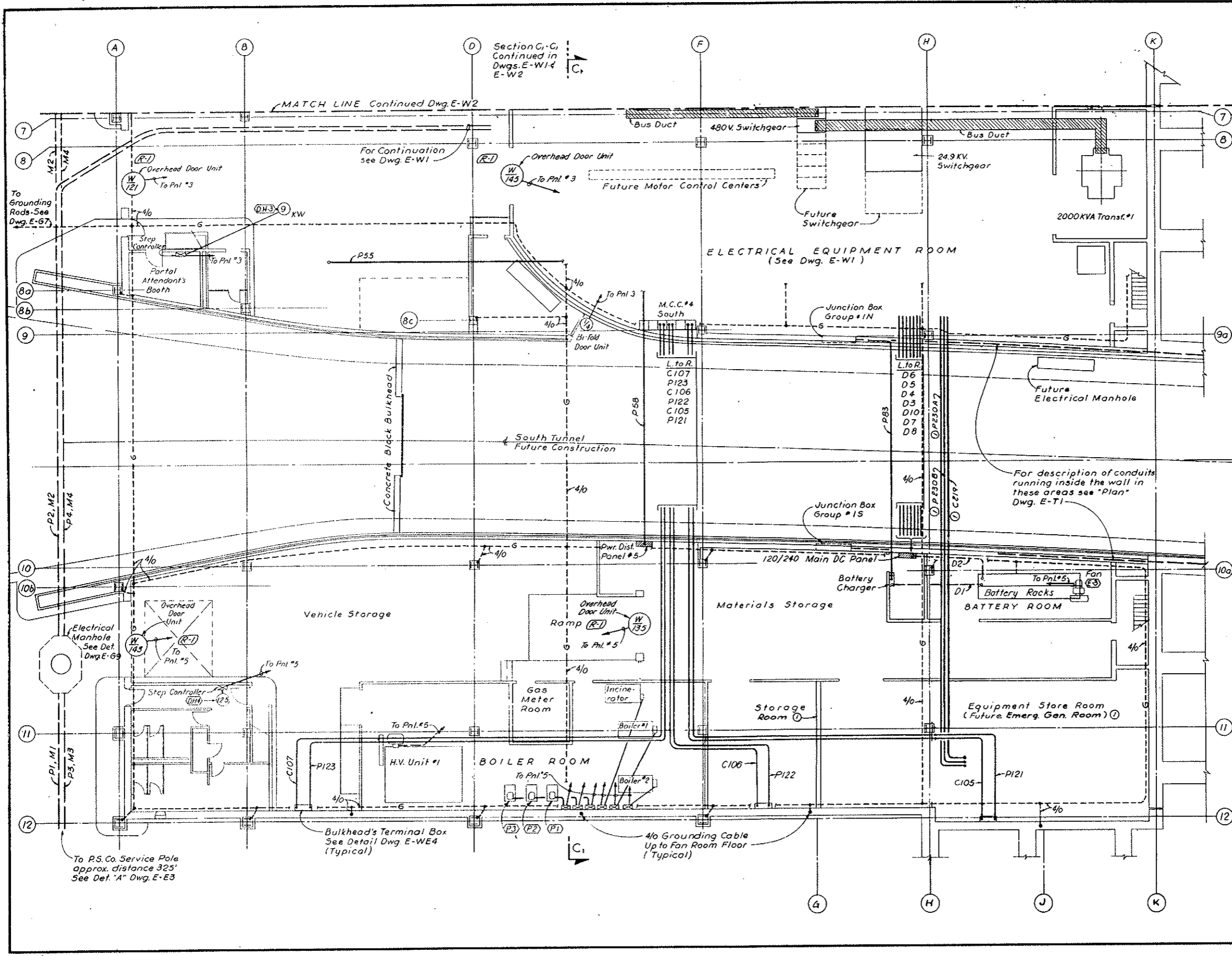
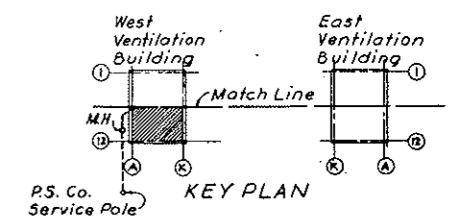
MATCH LINE Continued Dwg. E-W3
 Section C1-C1
 Continued in
 Dwg. E-W1 &
 E-W3

(R-3) (R-1) F.V. SURVEILLANCE SYSTEM DELETED W/O #14153 SEE SPEC. 18H

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	260	328

Rev. 0-3-70 Clarification of Plans N-7-E-10

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



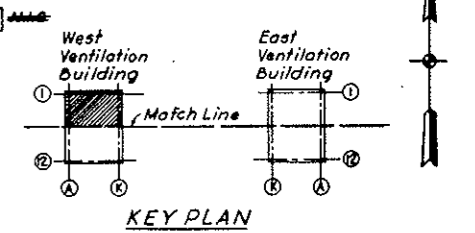
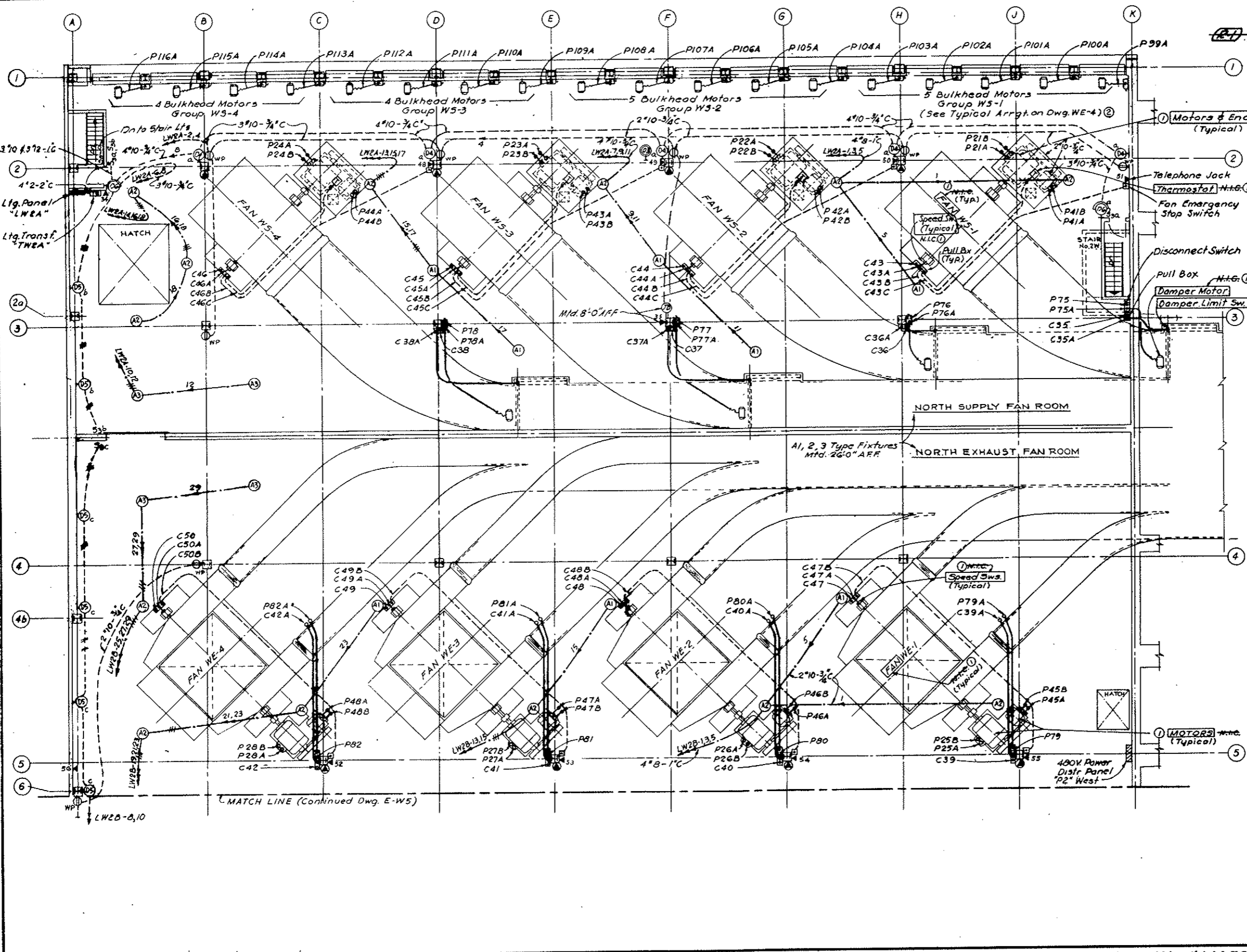
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL WEST VENTILATION BUILDING ROADWAY FLOOR - SOUTH POWER & CONTROL - PLAN					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED	E.A.N.	RECOMMENDED			
DRAWN	E.A.N.	CHECKED			
SUBMITTED	E. Berman	APPROVED			
		DATE			
		SCALE			
		DATE			
		NEW YORK, N. Y.			

DRAWING NO.
E-W3

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	261	326

Rev. 11-6-67 G.R.H. - ADDED NOTE BELOW

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



NOTE A: - Tunnel Ventilation System, (Bid Item 165) revised. See W.O. 14153 & Spec. 17A. Main Equip. Items N.I.C. as marked. Other Equip. shown remains in this contract. Conduits, Boxes etc., and Lighting Power & Control wiring, including connections, remain in this contract. (Bid Items 188, 175, 184 & 185). Final Terminations of conduit and wiring for N.I.C. items must be coordinated with the actual Equip. (to be furnished & installed under another contract).
 N.I.C. markings are typical [i.e. FAN WS-1 means that all 4 Fans (WS-1, WS-2, WS-3 & WS-4) are N.I.C.] etc.

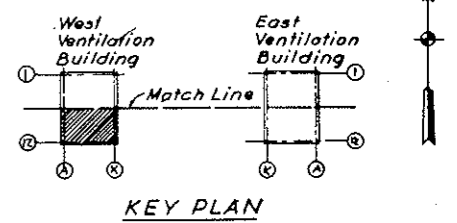
GENERAL NOTES:
 1. Mark this Dwg. with Conduit & Cable Schedules E-WE3 & E-WE4.
 2. For Telephone Ciser Diagram See Dwg. No. E-G8.
 3. For Symbol Legend See Dwg. E-E4, E-E5.
 4. For Lighting System Notes See Dwg. No. E-W7.

DESIGNED: J.A.B. E.M.M.	RECOMMENDED: [Signature]	DATE: []
DRAWN: S.M.P.	CHECKED: N.A.G.	DATE: []
SUBMITTED: [Signature]	APPROVED: [Signature]	DATE: []
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT		
ELECTRICAL WEST VENTILATION BUILDING FAN FLOOR-NORTH POWER, CONTROL AND LIGHTING-PLAN		
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.		
DESIGNED: J.A.B. E.M.M.	RECOMMENDED: [Signature]	DATE: []
DRAWN: S.M.P.	CHECKED: N.A.G.	DATE: []
SUBMITTED: [Signature]	APPROVED: [Signature]	DATE: []
NEW YORK, N.Y.	SCALE: 1/8" = 1'-0"	DATE: AUG. 1967

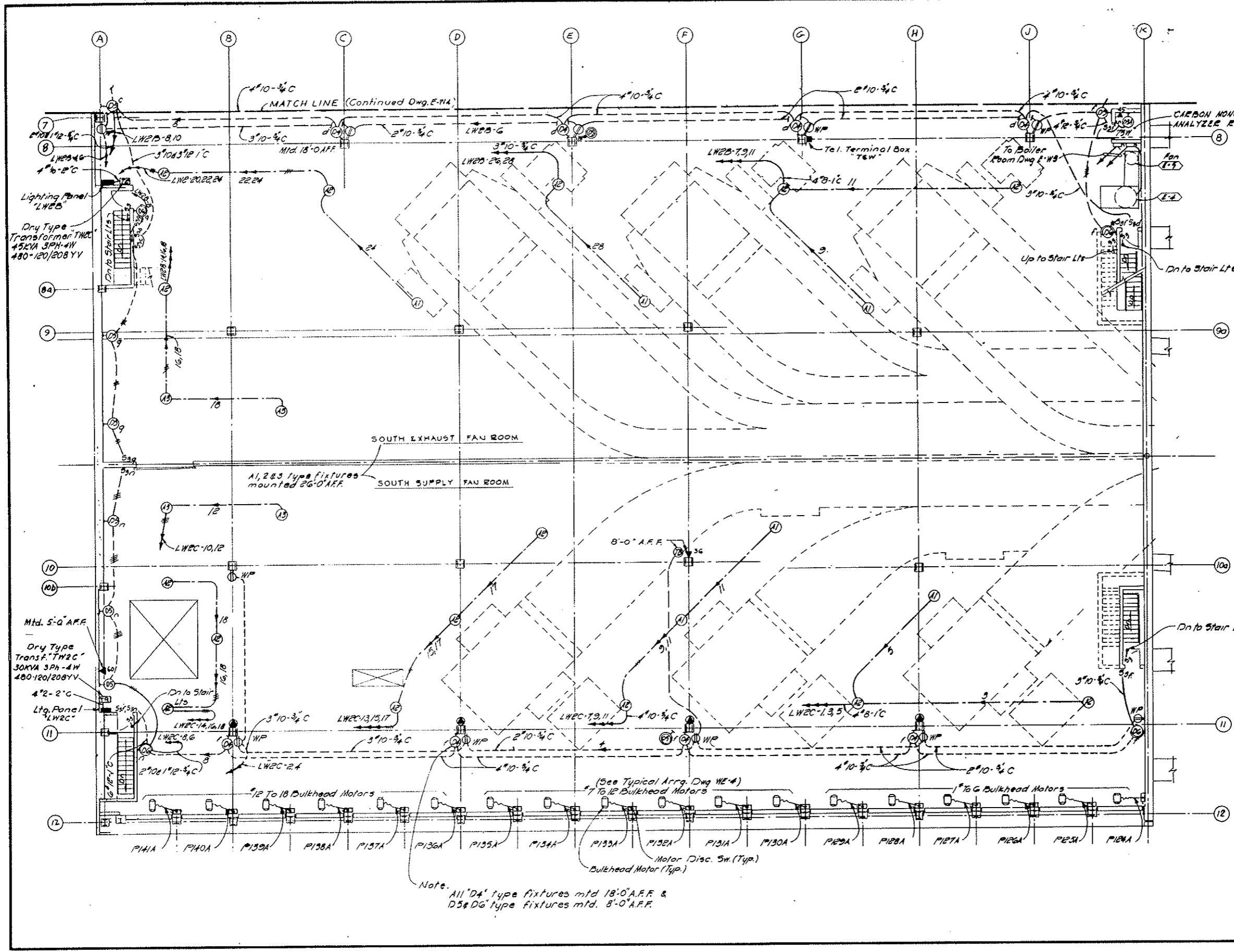
(R-1) TUNNEL VENTILATION SYSTEM REV. W.O. 14153 SEE SPEC. 17A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	282	328

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



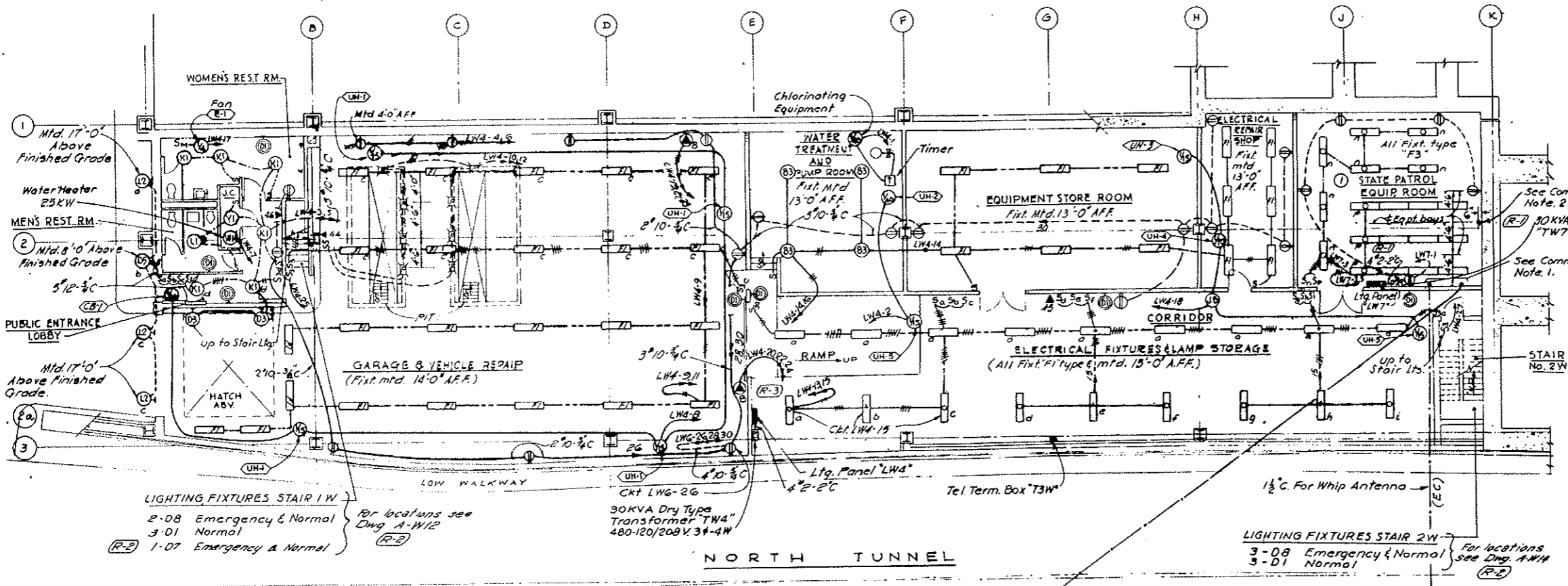
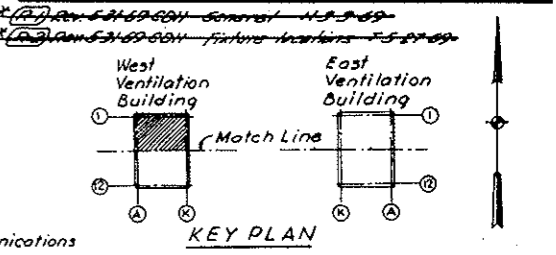
- GENERAL NOTES:**
1. For Telephone Riser Diagram See Dwg E-98
 2. For Symbol Legend See Dwg Nos E-44 & E-45
 3. For Lighting Systems Notes See Dwg. No E-47
 4. Work this Dwg with Conduit & Cable Schedules E-WE3 to E-WE6 included & E-20.



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL WEST VENTILATION BUILDING FAN FLOOR-SOUTH- POWER, CONTROL & LIGHTING PLAN					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.R.	RECOMMENDED:				
DRAWN: R.D.S.	APPROVED:				
CHECKED: N.A.C.	SUBMITTED:				
DATE: 8/1/73	DATE: 8/1/73				
NEW YORK, N.Y.	SCALE: 1/8" = 1'-0"	DATE: AUG. 1973	DRAWING NO. E-W5		

Rev. 0-5-70 Identification of Plans 11-7-70 Subject to final approval

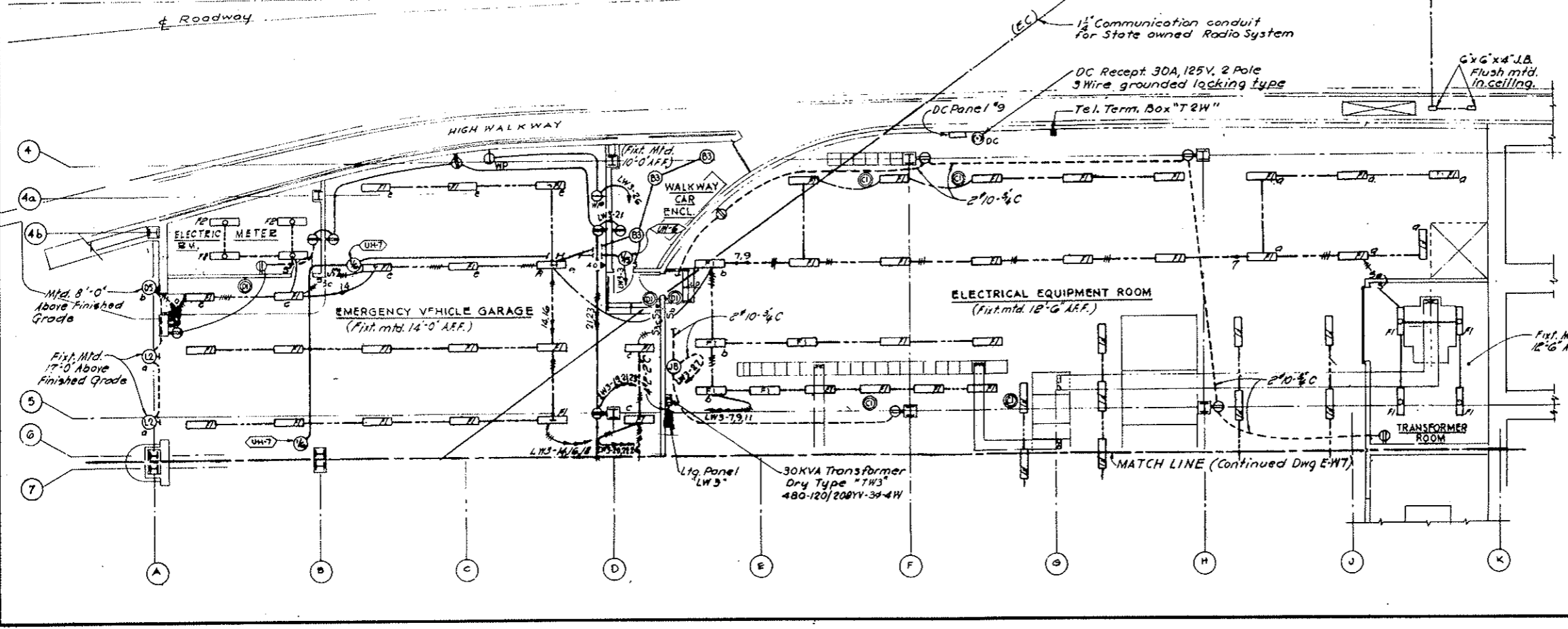
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	263	326



**AS CONSTRUCTED
REVISED
Oct. 26, 1973**

GENERAL NOTES:
 1. For Telephone Riser Diagram See Dwg. No. E-08
 2. For Symbol Legend See Dwg. No. E-24 & E-25
 3. For Lighting Systems Notes See Dwg. No. E-17

COMMUNICATIONS NOTES:
 1. All conduits to be stubbed up into room with threaded ends to accept coupling.
 2. Stub out 6" (empty) rigid conduit 6" above roof & extend down to 9'-0" A.F.F. Cap both ends. Highway Patrol Communications cables to be installed by others.



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**ELECTRICAL
 WEST VENTILATION BUILDING
 ROADWAY FLOOR - NORTH
 LIGHTING PLAN**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E. N. M.
 DRAWN: S. W. P.
 CHECKED: M. A. S.
 SUBMITTED: *[Signature]*

RECOMMENDED: *[Signature]*
 APPROVED: *[Signature]*

NEW YORK, N. Y. SCALE: NONE DATE: AUG. 1967

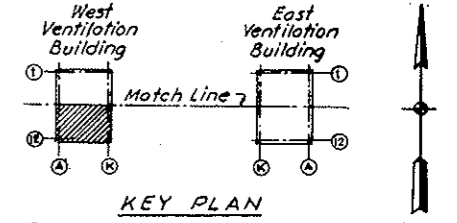
DRAWING NO. **E-W6**

GENERAL NOTES

1. For Telephone Riser Diagram See Dwg. E-G8
2. For Symbol Legend See Dwg. No. E-E4 & E-E5
3. For Lighting Systems Notes See Dwg. No. E-W7

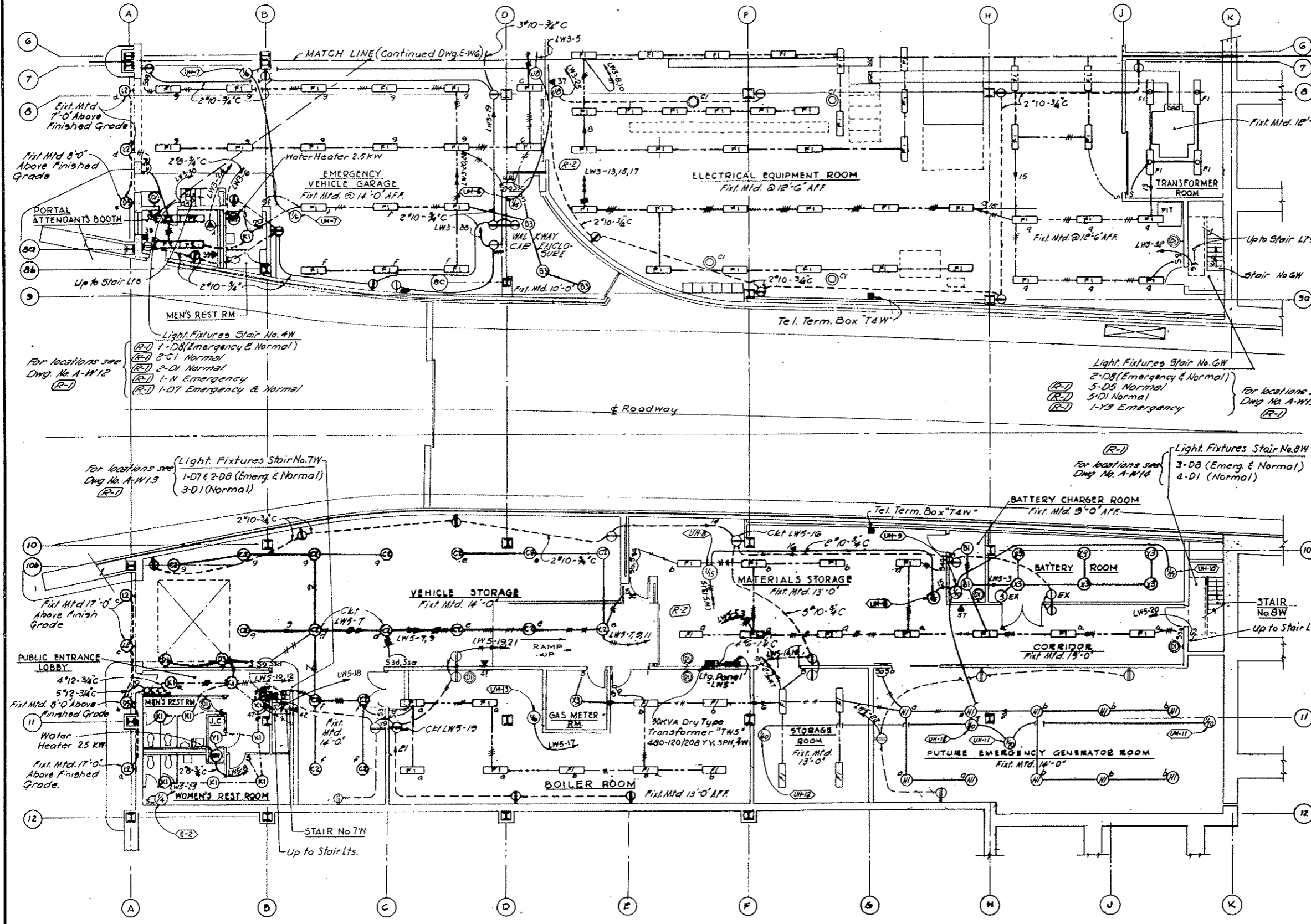
Rev. 5-31-68 Add'l Fixture Locations Feb 27-69
 Subject to final approval
 Rev. 9-9-70 Elimination of Panels 11-21-70

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	264	326



AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973
LIGHTING SYSTEMS NOTES:

1. Trade names, types and catalog numbers indicate a standard item of manufacturer. Other manufacturer's products of approved equal may be substituted.
2. Emergency lighting circuits shall be 120 volts, 2 wire DC or 120/240 volts 3 wire.
3. All wiring in conduit shall be 2" in 3/4" conduit unless otherwise indicated. 3 to 5 tick marks on conduit symbol indicate 3 to 5 1/2 wires in 3/4", 6 to 8 tick marks indicate 6 to 8 1/2 wires in 1" conduit.
4. All lighting switches shall be mounted 4'-6" above finished floor.
5. Mounting heights of lighting fixtures, where shown are to the bottom of fixtures except for wall mounted fixtures where height of outlet box is indicated.
6. (a) For Lighting Panel Schedule see Dwg. No. E-510 Sh. I.
 (b) For Lighting Fixture Schedule see Dwg. Nos. E-E7 & E-E8.
7. (a) In the East and West Ventilation Buildings, the electrical installation, on the roadway floor from the partition at or near column line "D" to column line "A" shall conform to article 511 of the 1965 edition of the National Electrical Code. Within these column lines in Vehicle or Garage areas convenience receptacles shall be located 4'-0" above finished floor. In non vehicle or garage areas shall be located a minimum of 2'-0" above finished floor.
 (b) Unless otherwise indicated, in the Fan Room Floor East, mount convenience receptacles 1'-6" above finished floor in the Tunnel Superintendent Rm., Control Rm., Lounge, Emerg. Sleeping Rm. & Control Rm. Storage.
 (c) In all other areas unless otherwise indicated all convenience receptacles shall be mounted 4'-0" above finished floor.
8. Electrical installation in the Gas Meter Rm., Signs Traffic Equipment Painting and Service Area, and all of the Basement Level shall conform to the requirements of Article 500 of the National Electrical Code for Class I Division 1 hazardous locations.
9. Wiring for Unit Heaters shall include selector switch, thermostat & disconnect switch as required by Sec. 17B the specifications.



NO.	DATE	DESCRIPTION OF REVISION	BY	CL.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL WEST VENTILATION BUILDING ROADWAY FLOOR - SOUTH LIGHTING PLAN					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	E. N. M.	RECOMMENDED:	<i>[Signature]</i>		
DRAWN:	E. N. M.	CHECKED:	M. A. S.		
SUBMITTED:	<i>[Signature]</i>	APPROVED:	<i>[Signature]</i>		
				DATE:	AUG. 1967
				SCALE:	NONE
				DRAWING NO.	E-W7

(R-1) REV. 11-6-67 GRN - ADDED NOTE BELOW
 (R-2) REV. 2-1-71 REINSTATED ITEMS W/4-1967

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE		FROM	TO	FUNCTION
			SIZE & TYPE				
24.9 KV HIGH TENSION SWITCHGEAR							
C201	1 1/2"	6	1/c # 12(25p)		24.9 KV SWGR MAIN FOR CUBICLE	REMOTE SUPERVISORY TERMINAL	MAIN FDR LOAD BREAKING SW CONT. & POS. INDICATION
C202	1 1/2"	6	1/c # 12(25p)		24.9 KV SWGR TIE CUBICLE		TIE LOAD BREAKING SW CONT. & POS. INDICATION
C203	1 1/2"	6	1/c # 12(25p)		24.9 KV SWGR TRANSF #2 CUBICLE		2000 KVA TRANSF #2 PRIMARY LOAD BKG SW CONT. & POS. INDICATION
C204	1 1/2"	6	1/c # 12(25p)		24.9 KV SWGR TRANSF #1 CUBICLE		2000 KVA TRANSF #2 PRIMARY LOAD BKG SW CONT. & POS. INDICATION
460 V. LOW TENSION SWITCHGEAR							
C211	1 1/2"	6	1/c # 12(25p)		460 V SWGR COMP'T FI	REMOTE SUPERVISORY TERMINAL	2000 KVA TRANSF #1 SECONDARY BKR CONTROL & POSITION INDICATION
C212	1 1/2"	6	1/c # 12(25p)			LI	2000 KVA TRANSF #2 SECONDARY BKR CONTROL & POSITION INDICATION
C213	1 1/2"	6	1/c # 12(25p)			HI	MCC #1 FEEDER BREAKER CONTROL & POSITION INDICATION
C214	1 1/2"	6	1/c # 12(25p)			GI	MCC #2 FEEDER BREAKER CONTROL & POSITION INDICATION
C215	1 1/2"	6	1/c # 12(25p)			II	MCC #3 FEEDER #1 BREAKER CONTROL & POSITION INDICATION
C216	1 1/2"	6	1/c # 12(25p)			JI	MCC #3 FEEDER #2 BREAKER CONTROL & POSITION INDICATION
C217	1 1/2"		NONE			KI	FUTURE EMERG GENERATOR BKR CONTROL & POSITION INDICATION
C218	1 1/2"	6	1/c # 12(25p)			FI	2000 KVA TRANSFORMERS 1&2 METERING
C219	1"		NONE			KI	FUT. EMERG GEN. CONT BOARD FUT. EMERG GEN. INTERLOCK
P230A	3"		NONE			KI	FUT. EMERG GENERATOR FEEDER
P230B	3"		NONE			KI	FUT. EMERG GENERATOR FEEDER
CO SYSTEM							
C160	1"	2	1/c # 12		CO SYS AUTO-TRANSFER SW.	REMOTE SUPERVISORY TERMINAL	M-G SET "ON" IND. ON FAN CONT. BD
C161	1"	1	2/c # 16 (Shielded)		CO ANALYZER	GROUP BOX 'IN' TEL. BOX	ANALYZER OUTPUT TRANSMISSION TO RECORDER ON FAN CONT. BD.
							(FOR CONTINUATION IN TUNNEL SEE DWG. # E-1)

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE		FROM	TO	FUNCTION
			SIZE & TYPE				
TELEVISION CAMERA OUTPUT SYSTEM							
TV-4	1 1/2"		TV Coaxial Cable		WEST PORTAL TV CAMERA	PULL BOX 4a-B	CAMERA OUTPUT
TV-5	1 1/2"				PULL BOX 4a-B	GROUP IS TV BOX	(FOR CONTINUATION IN TUNNEL SEE DWG. E-1)
24.9 KV SERVICE							
M1	1 1/2"	7	1/c # 10		PUBLIC SERVICE CO. POLE	ELECT. MANHOLE AT WEST PLAZA	PUBLIC SERVICE METERING
M2	1 1/2"	7	1/c # 10		ELECT. MANHOLE AT WEST PLAZA	PUBLIC SERVICE CO. METERING RM	
M3	1 1/2"				PUBLIC SERVICE CO. POLE	ELECT. MANHOLE AT WEST PLAZA	SPARE CONDUIT
M4	1 1/2"				ELECT. MANHOLE AT WEST PLAZA	PUBLIC SERVICE CO. METERING RM	

NOTES
 For "General Notes" see Conduit & Cable schedule E-WES

(R-2)
 NOTE A:
 TV Surveillance System (Bid Item 100) Deleted. See W.O. 14153 & Spec. 18H. M.L.C. markings apply to Wire or Cable only. Conduit remains in this Contract (Bid Items 106, 107 & 108).

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ELECTRICAL
WEST VENTILATION BUILDING
CONDUIT & CABLE SCHEDULE

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

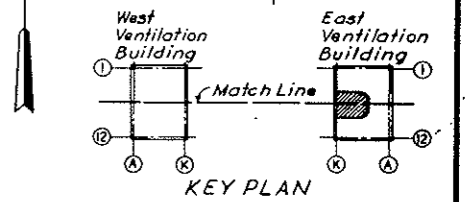
DESIGNED: N.A.C.	RECOMMENDED: <i>W.B. Strickland</i>	DRAWING NO. E-W8
DRAWN: F.E.J.	APPROVED: <i>W.B. Strickland</i>	
CHECKED: D.H.D.	DATE: AUG. 1967	

NEW YORK, N. Y. SCALE: NONE DATE: AUG. 1967

(R-2) (R-1) ~~F.V. SURVEILLANCE SYSTEM DELETED W.O. 14153 SEE SPEC. 18H~~

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	266	326

~~(R-1) REV. 11-6-67 C.D.H. - ADDS MORE BELOW~~
~~(R-2) 5-1-68 C.D.H. - ADDS MORE BELOW~~
~~(R-3) 4-27-70 C.D.H. - REV. CONDUITS - NO. 18105~~
~~(R-4) 2-1-71 C.D.H. - REMOVED ITEMS - NO. 18106~~



AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973

- NOTES:
1. For Telephone Riser Diagram see Dwg. E-68.
 2. For Symbol Legend see Dwg. E-4 & E-5.
 3. For Conduit & Cable runs from Power Panels see Panel Schedule Dwg. E-610 & E-611.
 4. For Conduit & Cable Schedule see Dwg. E-WE5 to E-WE9 inclusive, E-E9 & E-T7.
 5. Exact routing of conduits to be determined by Field.
 6. For Conduits or Equipment not shown or identified and for Sections see Dwg. E-WE3.

~~(R-4)~~
 NOTE A: - Tunnel Ventilation System, (Bid Item 163) revised, Emerg. Generator, (Bid Item 180) & TV Surveillance System (Bid Item 180) deleted. See W.O. 14153 & Spec. Sections 17A, 18B & 18H. All Electrical work shown on this Dwg. remains in contract. See referenced Dwg. for effects of changes listed above.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
C71					
C70					
C62					
C61					
C60					
C59					
C58					
C57					
P148					

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

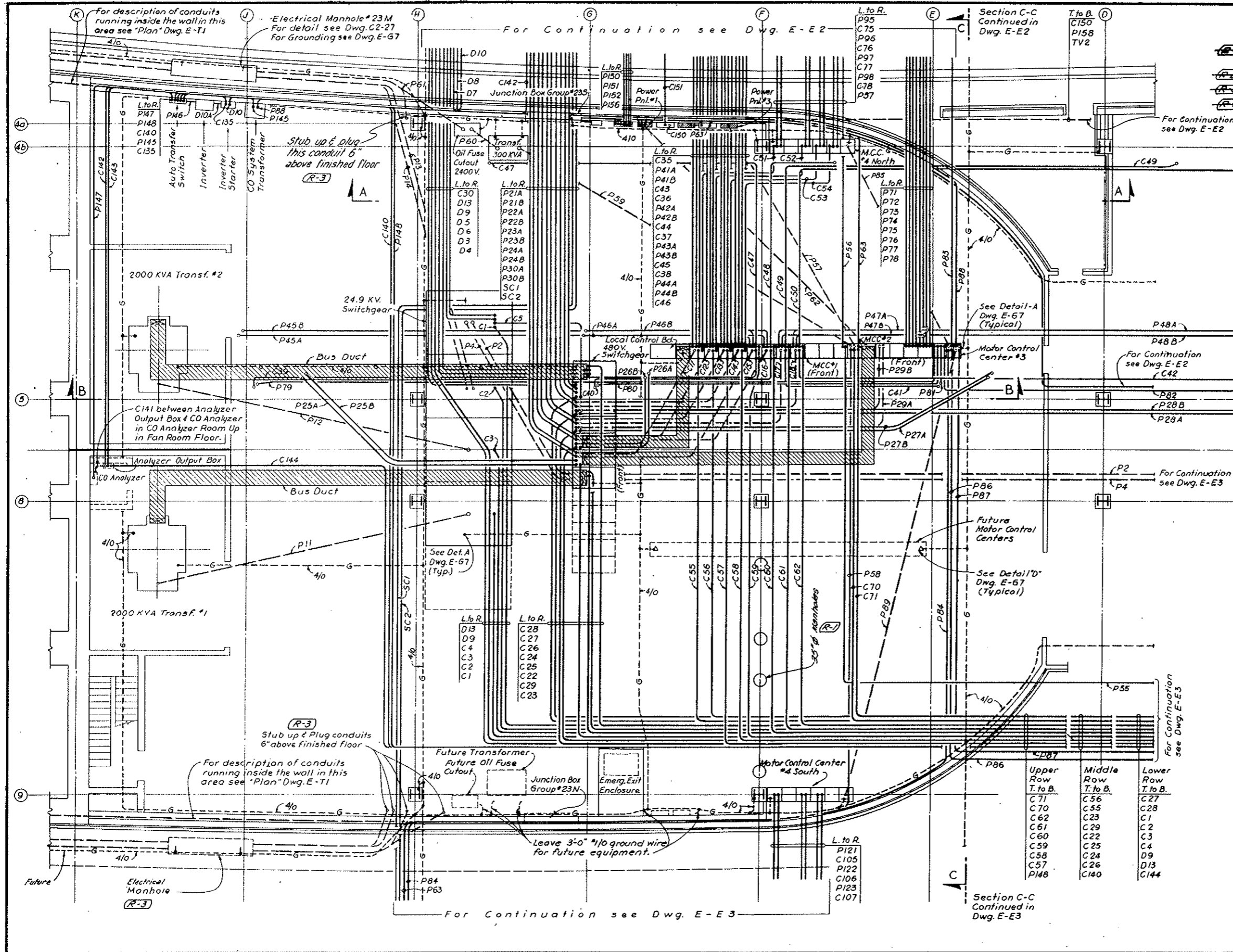
**ELECTRICAL
 EAST VENTILATION BUILDING
 ELECTRICAL EQUIPMENT ROOM
 POWER & CONTROL - PLAN**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E. A. H.
 DRAWN: E. A. H.
 CHECKED: N. A. C.
 SUBMITTED: [Signature]
 NEW YORK, N. Y.

RECOMMENDED: [Signature]
 APPROVED: [Signature]
 SCALE: 3/16" = 1'-0" DATE: AUG. 1967

DRAWING NO. E-E1



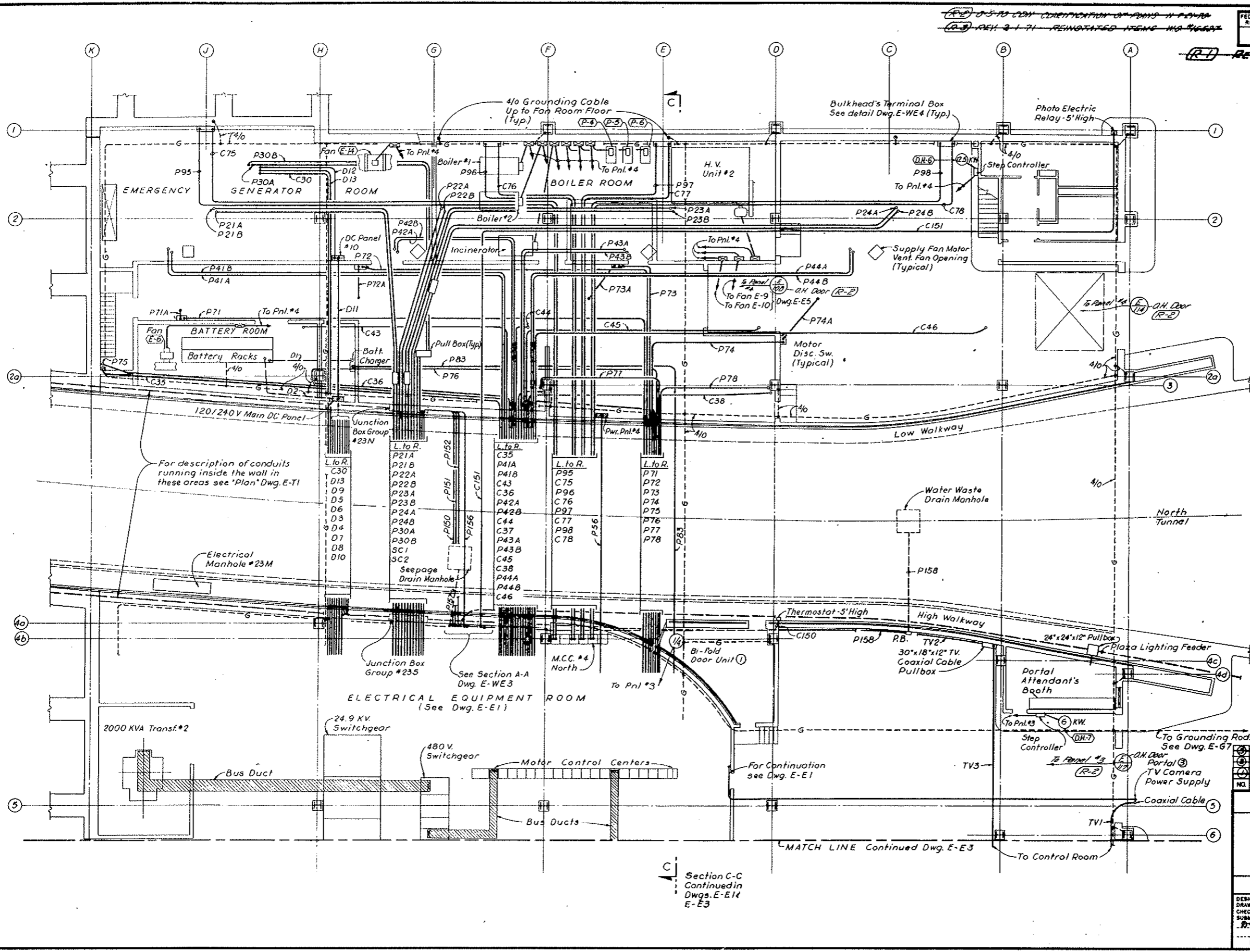
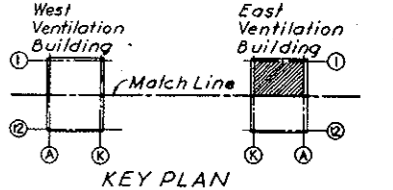
~~(R-4) (R-1) TV SURVEILLANCE SYSTEM DELETED W.O. 14153 SEE SPEC. 18H~~

(R-2) 3-5-73 CON. CLARIFICATION OF PANS 11 P-170
 (R-3) 10-1-71 REINSTATED ITEMS WA #4422

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	267	328

(R-1) Rev. 11-6-67 C.D.H. - Added Note Below

AS CONSTRUCTED
REVISED ~~DATE~~ Oct. 26, 1973



NOTE:
 1. For Notes see Dwg. E-E1

(R-3) NOTE A: See Note A on Dwg. E-E1

Section C-C
 Continued in
 Dwg. E-E1 &
 E-E3

MATCH LINE Continued Dwg. E-E3

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
1		CONTRACT LIMITS DEFINED - SEE NOTE A			
2		Added Bi-Fold Door			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**ELECTRICAL
 ROADWAY FLOOR NORTH
 POWER AND CONTROL PLAN**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: E.A.N.
 DRAWN: E.A.N.
 CHECKED: N.A.C.
 SUBMITTED: R. J. ...

RECOMMENDED: [Signature]
 APPROVED: [Signature]

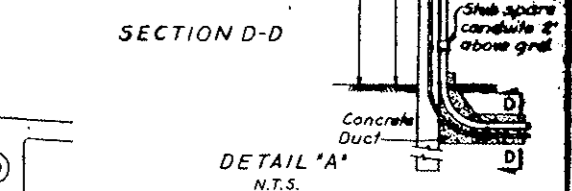
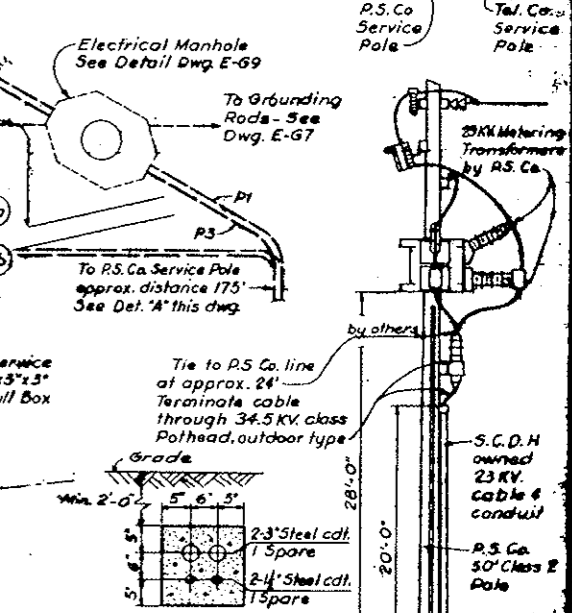
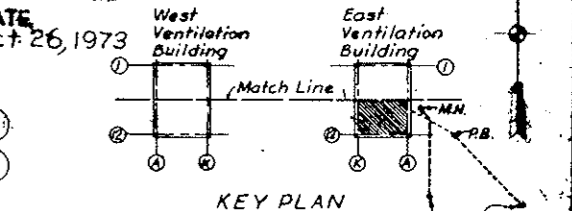
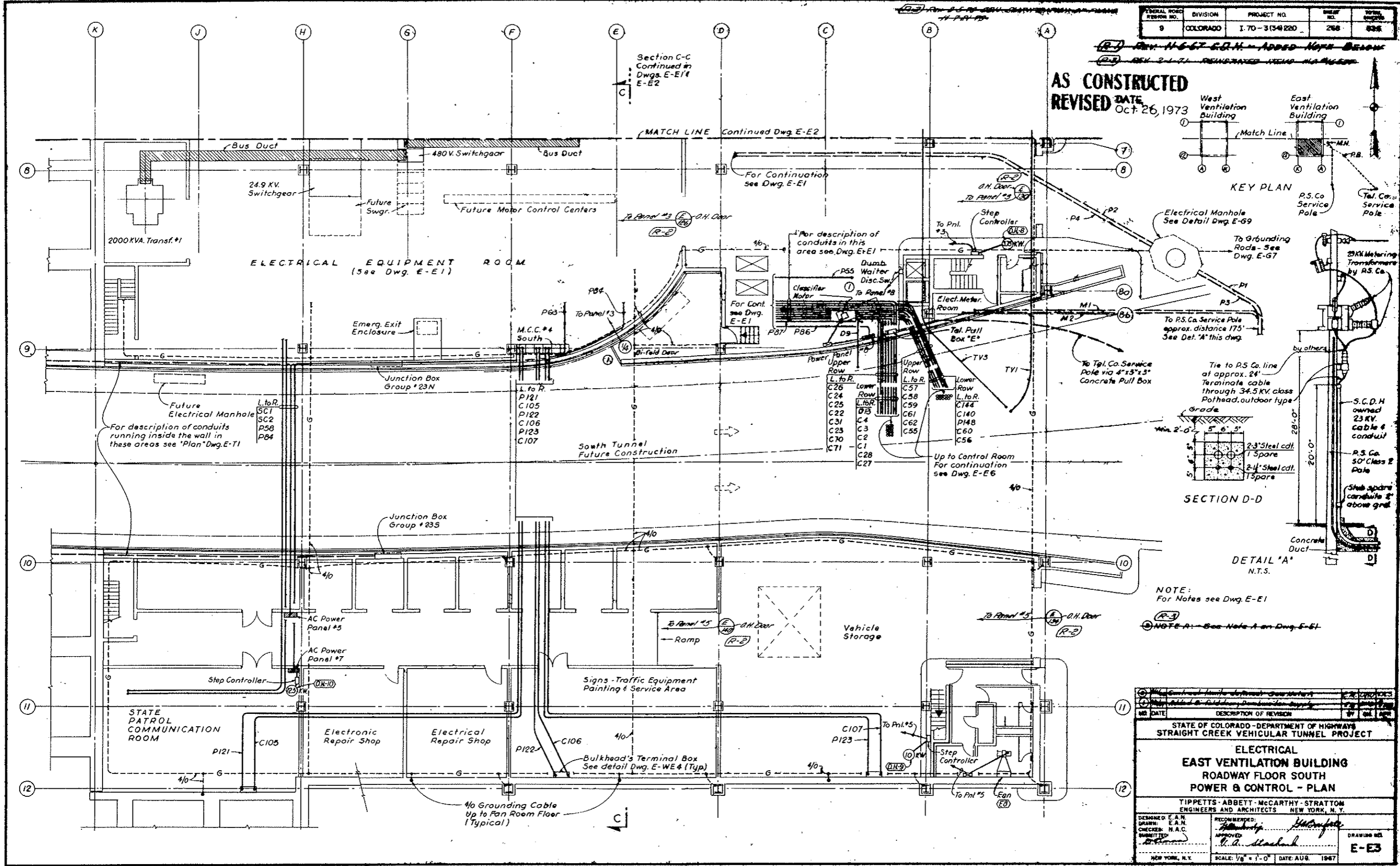
NEW YORK, N. Y. SCALE: 1/8" = 1'-0" DATE: AUG. 1967

DRAWING NO. **E-E2**

(R-3) (R-1) TV SURVEILLANCE SYSTEM DELETED WA #4153 SEE SPEC. 184

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I. 70-3(34) 220	268	838

AS CONSTRUCTED
 REVISED DATE Oct 26, 1973



NOTE:
 For Notes see Dwg. E-E1
 NOTE A - See Note A on Dwg. E-61

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**ELECTRICAL
 EAST VENTILATION BUILDING
 ROADWAY FLOOR SOUTH
 POWER & CONTROL - PLAN**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS
 NEW YORK, N. Y.

DESIGNED: E. A. N.
 DRAWN: E. A. N.
 CHECKED: H. A. C.
 SUBMITTED: [Signature]

RECOMMENDED: [Signature]
 APPROVED: [Signature]

SCALE: 1/8" = 1'-0"
 DATE: AUG. 1967

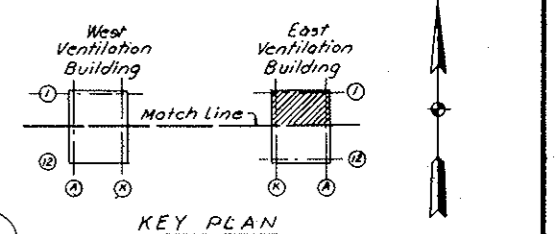
DRAWING NO. **E-E3**

~~(R-3) (R-1) F.V. SURVEILLANCE SYSTEM DELETED W/O. #1153 SEE SPEC. 18A~~

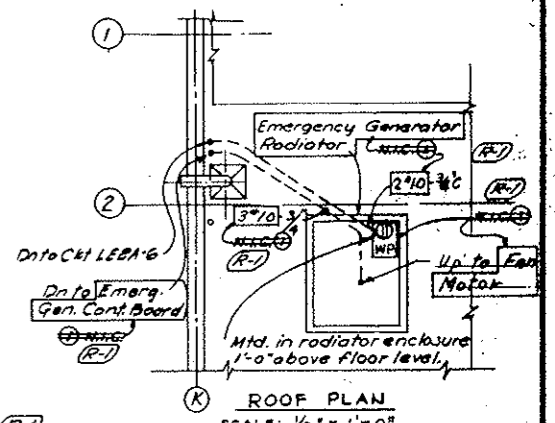
(REV) REV 2-1-71 REVISED ITEMS 140-145

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(4)220	269	326



- SYMBOLS & LEGEND (cont'd)**
(Continued From Dwg. E-E5)
- EC; AFF; WP Empty conduit; Above finished floor; Weatherproof.
 - EX Explosion proof
 - S₁ Switch Single Pole Single Throw, Subscript indicates outlet controlled.
 - S_{3c} Switch 3 way
 - S_{4d} Switch 4 way
 - SM Snap Switch Motor Disconnect
 - ⊖ Dimmer
 - △ Ground Insert
 - ⊕ Telephone Outlet Box, Subscript "5" indicates Schedule Number see Dwg. E-G8.
 - ⊕ Incand. Bracket Fixt. & Outlet - Emergency
 - ⊕ Incand. Bracket Fixt. & Outlet - Emergency & Normal.



NOTE A: Tunnel Vent. System, (Bid Item 165), Revised Emerg. Gen. System (Bid Item 180) deleted. See N.O. 14153 & Spec. Sections 17A & 18B. Main Equip. Home N.T.C. as marked. Other Equip. shown remaining in this Contract. Conduits, Boxes, etc., and Lighting Power & Control wiring, including connections, remain in this Contract. (Bid Items 187, 175, 194 & 195). Final Terminations of conduit & wiring for N.T.C. items must be coordinated with the actual Equip. (to be furnished & installed under another contract).

NOTE B: N.T.C. Markings are Typical (in E.A.N. E-5) Locations that all 4 Fans (E-1, E-2, E-3 & E-4) are N.T.C. etc.

NO.	DATE	DESCRIPTION OF REVISION	BY	DL	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

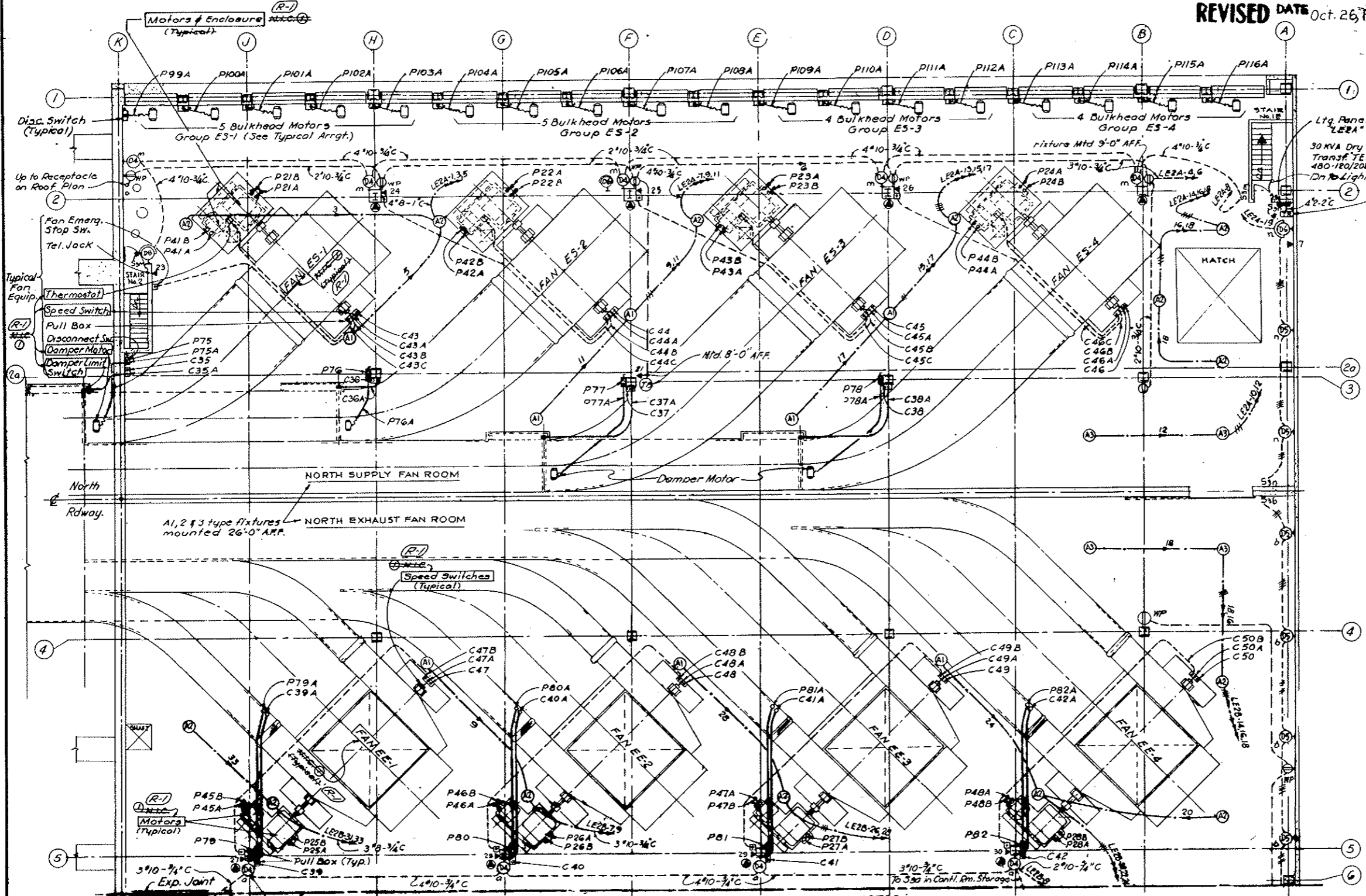
**ELECTRICAL
EAST VENTILATION BUILDING
FAN ROOM - NORTH
POWER, CONTROL AND LIGHTING - PLAN**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: J.A.G. E.N.M.
DRAWN: S.W.F.
CHECKED: W.A.C.
SUBMITTED: [Signature]
APPROVED: [Signature]
NEW YORK, N.Y.

RECOMMENDED: [Signature]
APPROVED: [Signature]
SCALE: 1/8" = 1'-0" DATE: AUG. 1967

DRAWING NO. **E-E4**



- GENERAL NOTES**
- For Telephone Riser Diagram See Dwg. E-G8
 - For Lighting System Notes See Dwg. No. E-W7
 - Work this Dwg. with Conduit & Cable Schedules E-WES to E-WE9

MATCH LINE (Continued Dwg. E-E5)

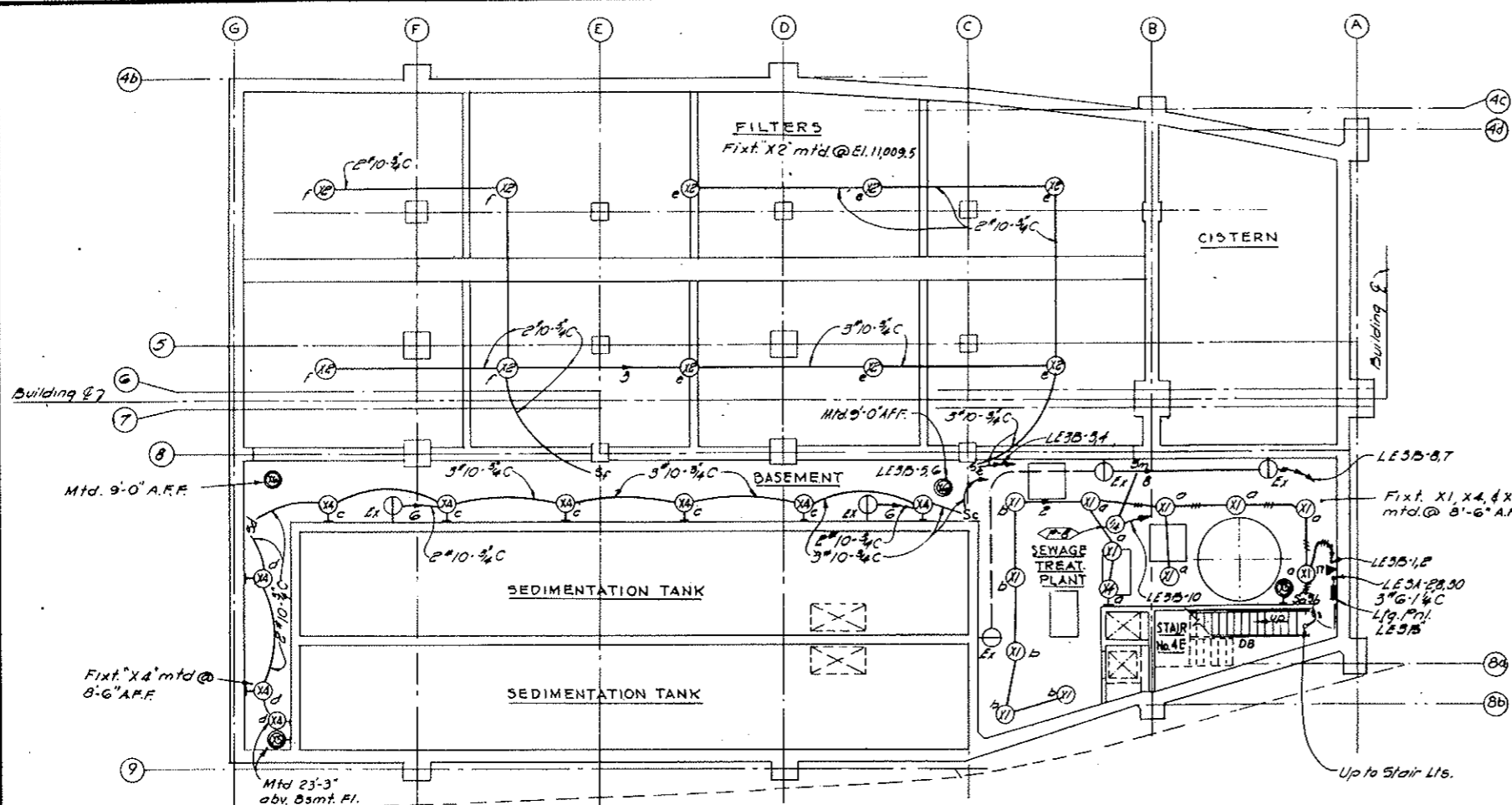
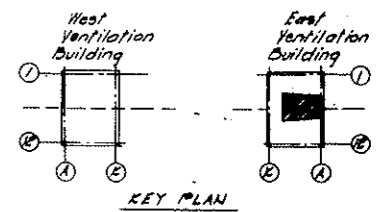
Note: All "D4" Type fixtures mtd. 18'-0" AFF.
"D5" & "D6" Type fixtures mtd. 0'-0" AFF.

To S30 on outside wall of Carbon Monoxide Analyzer Rm.

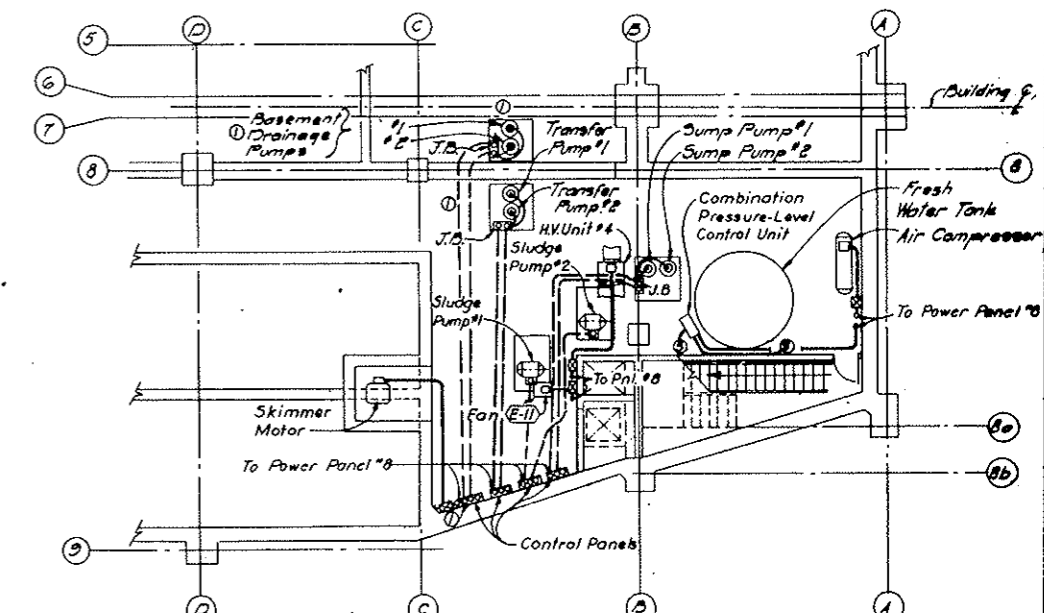
AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	271	326

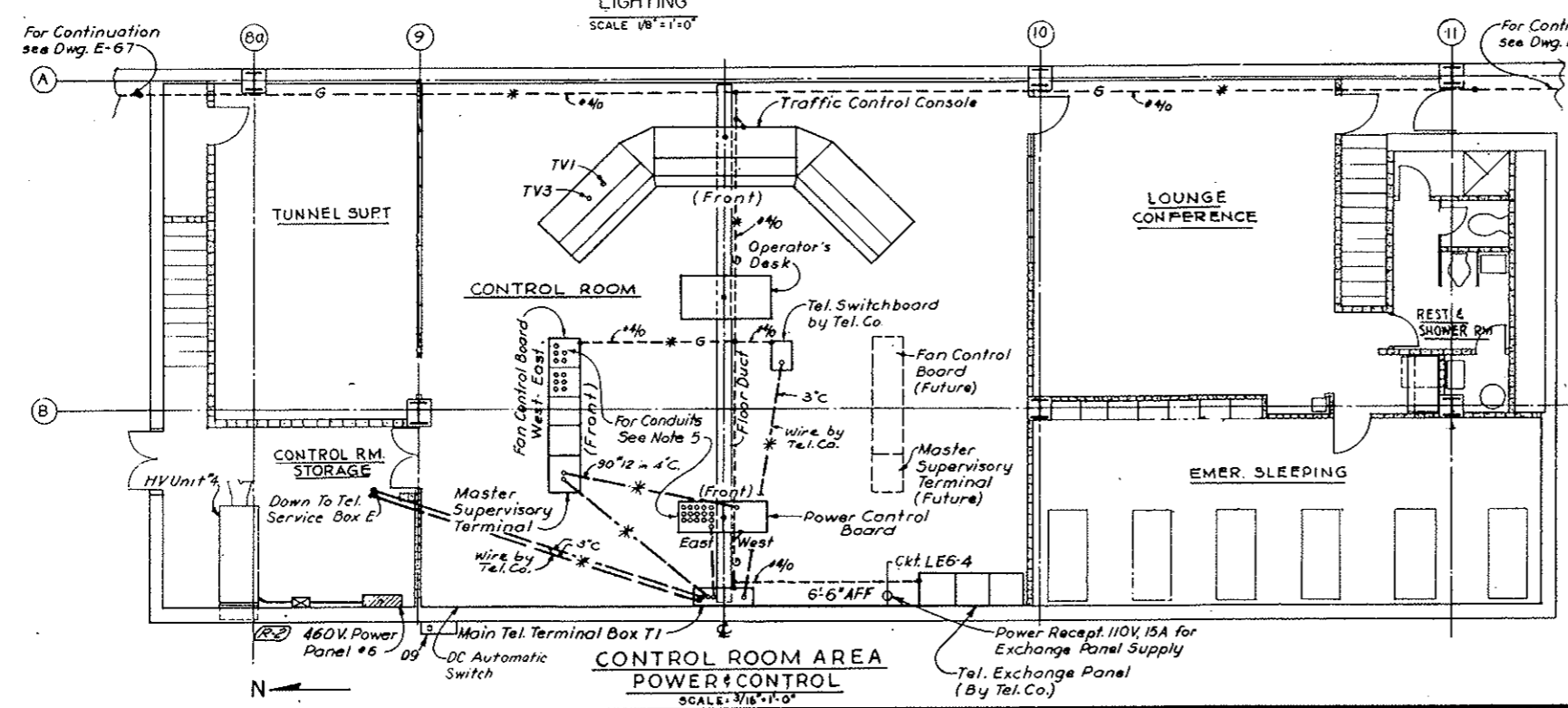
~~(R-1) Rev. 11-6-67 CBH - Add Note Below~~
~~(R-2) 1-3-69 CBH - Rev. 10/1/69~~
~~(R-3) Rev. 8-1-71 - REMOVES ITEMS NOT SHOWN~~



PLAN - BASEMENT
 LIGHTING
 SCALE: 1/8" = 1'-0"



PART PLAN - BASEMENT
 POWER & CONTROL
 SCALE: 1/8" = 1'-0"



CONTROL ROOM AREA
 POWER & CONTROL
 SCALE: 3/16" = 1'-0"

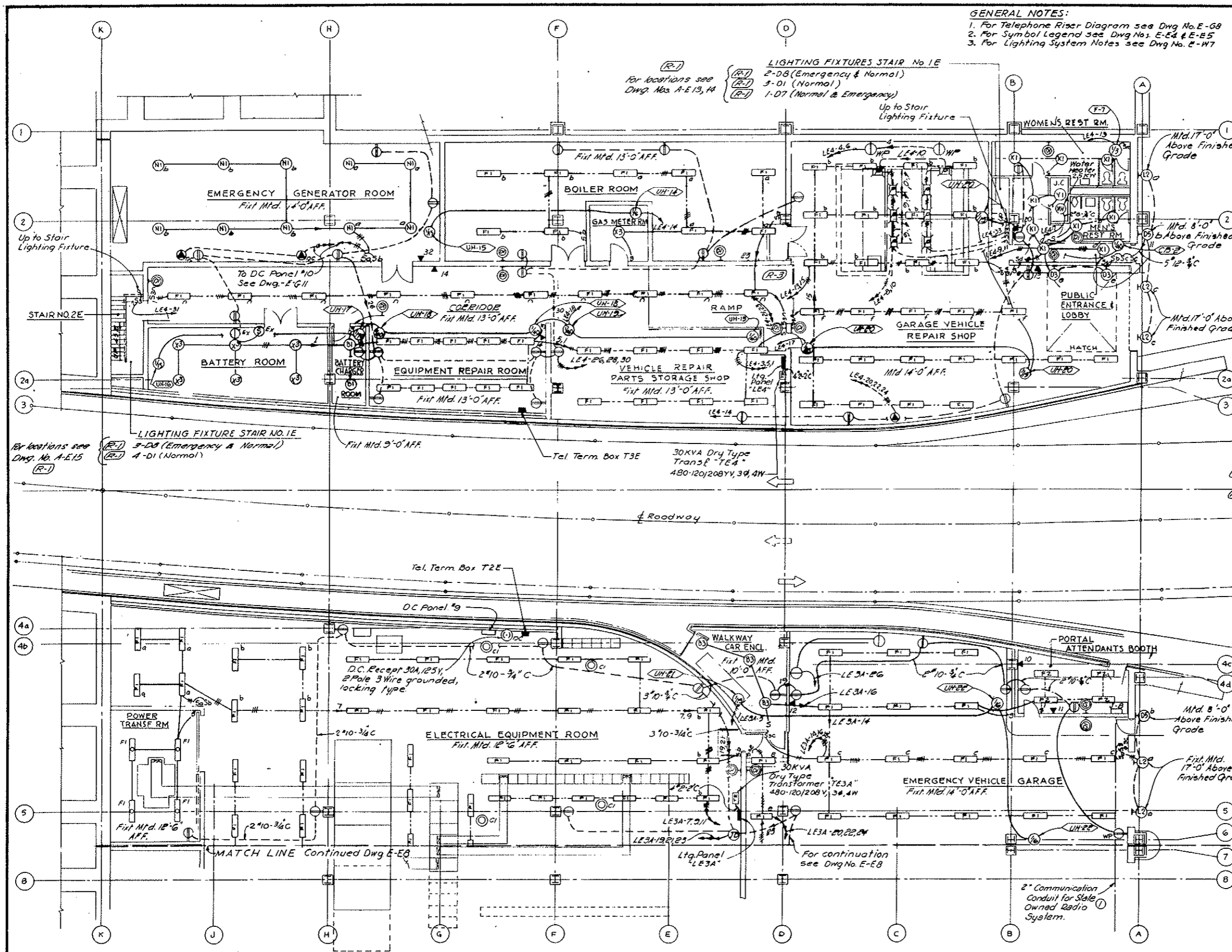
GENERAL NOTES

1. Electrical installation in the Basement Level shall conform to Article 500 of the National Electrical Code for Class I Division 1 hazardous locations.
2. For Symbol Legend See Dwg Nos. E-44 & E-45.
3. For Telephone System Riser Diagram See Dwg No. E-98.
4. For Lighting System Notes See Dwg No. E-17.
5. For identification of Conduits at Fan Control Board & Power Control Board See Dwg E-E-3.
6. Conduits & Ground Cables marked thus * are to be run immediately below Fan Floor.

NOTES
 TV Surveillance System (Bid Item 100) Deleted. See W.O. 14153 & Spec. 184.11.1. Cameras, Feeder Cables, Conduit, Cables, and Monitors are not in this contract, but all work shown on this Dwg is in this contract.

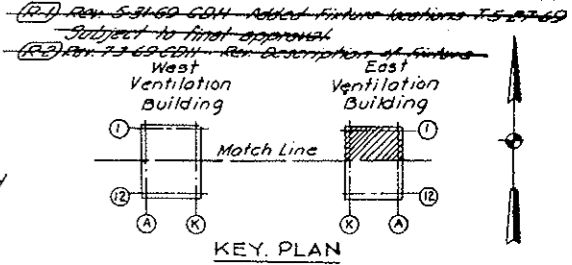
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL EAST VENTILATION BUILDING CONTROL ROOM & BASEMENT POWER, CONTROL & LIGHTING PLAN					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J. A. C.	RECOMMENDED: [Signature]				
DRAWN: R. D. S.	CHECKED: M. A. C.				
SUBMITTED: [Signature]	APPROVED: [Signature]				
NEW YORK, N. Y.	SCALE: AS NOTED	DATE: AUG 1967	DRAWING NO. E-E-6		

~~(R-3) (R-1) TV SURVEILLANCE SYSTEM DELETED W.O. 14153 SEE SPEC. 184~~



GENERAL NOTES:
 1. For Telephone Riser Diagram see Dwg No. E-68
 2. For Symbol Legend see Dwg Nos. E-64 & E-65
 3. For Lighting System Notes see Dwg No. E-67

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	272	326



FIXTURE SCHEDULE

FIXT. NO.	WATTS	DESCRIPTION	CAT. NO.
A1	1500	Incond. Hi Bay Narrow Beam	Holophane 690-AL-N5
A2	1500	Incond. Hi Bay Medium Beam	Holophane 691-AL-N5
A3	1500	Incond. Hi Bay Wide Beam	Holophane 692-AL-N5
B1	150	Glassteel Diffuser, Ceiling mtd.	Appleton 6-23518
B2	200	Dome Reflector, Vaportight, Ceiling mtd.	Benjamin 6352
B3	300	Glassteel Diffuser, Pendant mtd.	Appleton 6-23220
C1	150	Dome Reflector, Pendant mtd.	Benjamin 7642
C2	200	Dome Reflector, Pendant mtd.	Benjamin 7643
D1	100	Incond. Wall Bracket	McPhlben 43-40
D2	150	Incond. Wall Bracket	McPhlben 43-50
D3	200	Interior Wall Bracket	McPhlben 43-50
D4	200	Incond. Asymmetric Bracket	Holophane 423
D5	100	Incond. Wall Bkt - Weatherproof	McPhlben 43-40YT
D6	100	Incond. Wall Bkt - Weatherproof with two opal globes.	McPhlben 43-41YT
D7	150	Interior Wall Bracket with two glass globes	McPhlben 43-51
D8	100	Incond. Wall Bkt with two glass globes	McPhlben 43-41
K1	100	Square Recessed Downlight	McPhlben 68-814
K2	150	White Molded Glass Diffuser	McPhlben 68-814
L2	200	Wall Mounted Luminaires	Holophane 405
N	150	Standard Dome Reflector Ceiling mtd.	Benjamin 9642
N1	300	Pendant Dome Reflector	Benjamin 7644
N2	150	Recessed Downlight with low night light	McPhlben 68-111L

(R-3) Rev. 8-5-70 CDW CLARIFICATION OF PLANS H 7-7-70

AS CONSTRUCTED
REVISED Oct. 26, 1973

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
1		Added N-10 Communication Conduit			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

**ELECTRICAL
 EAST VENTILATION BUILDING
 ROADWAY FLOOR - NORTH
 LIGHTING PLAN**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS
 NEW YORK, N. Y.

DESIGNED: E. N. M.	RECOMMENDED: [Signature]	DRAWING NO. E-E7
DRAWN: R. O. S.	CHECKED: [Signature]	
SUBMITTED: M. A. S.	APPROVED: [Signature]	
BY: [Signature]	DATE: AUG. 1967	

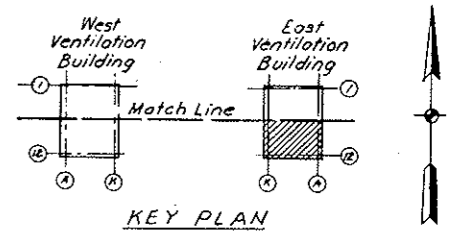
SCALE: 1/8" = 1'-0" DATE: AUG. 1967

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	273	326

GENERAL NOTES:

- 1 For Telephone Riser Diagram See Dwg E-60
- 2 For Symbol Legend See Dwg Nos E-14 & E-15
- 3 For Lighting System Notes See Dwg No E-17
- 4 For Communications Notes See Dwg No E-16

REVISED BY: S.W.P. & R.D.S. DATE: 10-26-73
 REVISION: 1. CHANGED LIGHT FIXTURE SYMBOLS AS INDICATED IN REVISION LOG.
 2. CHANGED LIGHT FIXTURE SYMBOLS AS INDICATED IN REVISION LOG.



FIXTURE SCHEDULE (CONTINUED)

FIXT. NO.	WATTS	DESCRIPTION	CAT. NO.
R1	60	Bed Light	Daybrite 312
T1	100	Recessed Weatherproof	Art Metal 33574
V2	150 Par 38/SP	Recessed Multigroove Baffle	Lightolier A46 H16
V1	150	Recessed Lenslite	Lightolier A46 H16
Y1	75	Porcelain Lamp Receptacle	Alabax AL 3140
Y2	100	Porcelain Lamp Receptacle	Alabax AL 3140
Y3	100	Incandescent Ceiling unit with glass globe	McPhibben 43-45
Z1	75	Ceiling mtd Vaportight	Crouse Hinds GS 8200
X5	100	Explosionproof Bracket without guard	Crouse Hinds EYBX 284
X1	150	Explosionproof pendant with reflector; without guard	Crouse Hinds EYA-2011
X2	200	Explosionproof pendant with guard	Crouse Hinds EYA-205
X3	300	Explosionproof Ceiling Mtd with guard	Crouse Hinds EYCX-2201
X4	150	Explosionproof Bracket without guard	Crouse Hinds EYBX 201
X6	100	Explosionproof Pendant without guard	Crouse Hinds EYA-204
F1	2-40	Industrial Fluorescent with 10% upward component	Benjamin FL-1024-4
F2	2-40	Frameless Troffer Fluorescent	CurTis-Electr. GTF 6160-240
F3	2-40	Surface ceiling mtd. Fluorescent	Benjamin CA 2224-4
F5	2-40	Vertical Surface Fluorescent with 100% Incand. socket	Holophone 901E-4
F6	2-40	Fluorescent Troffer Extruded Louver Pins	CurTis-Electr. 5662-208-14

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ELECTRICAL EAST VENTILATION BUILDING ROADWAY FLOOR - SOUTH LIGHTING PLAN

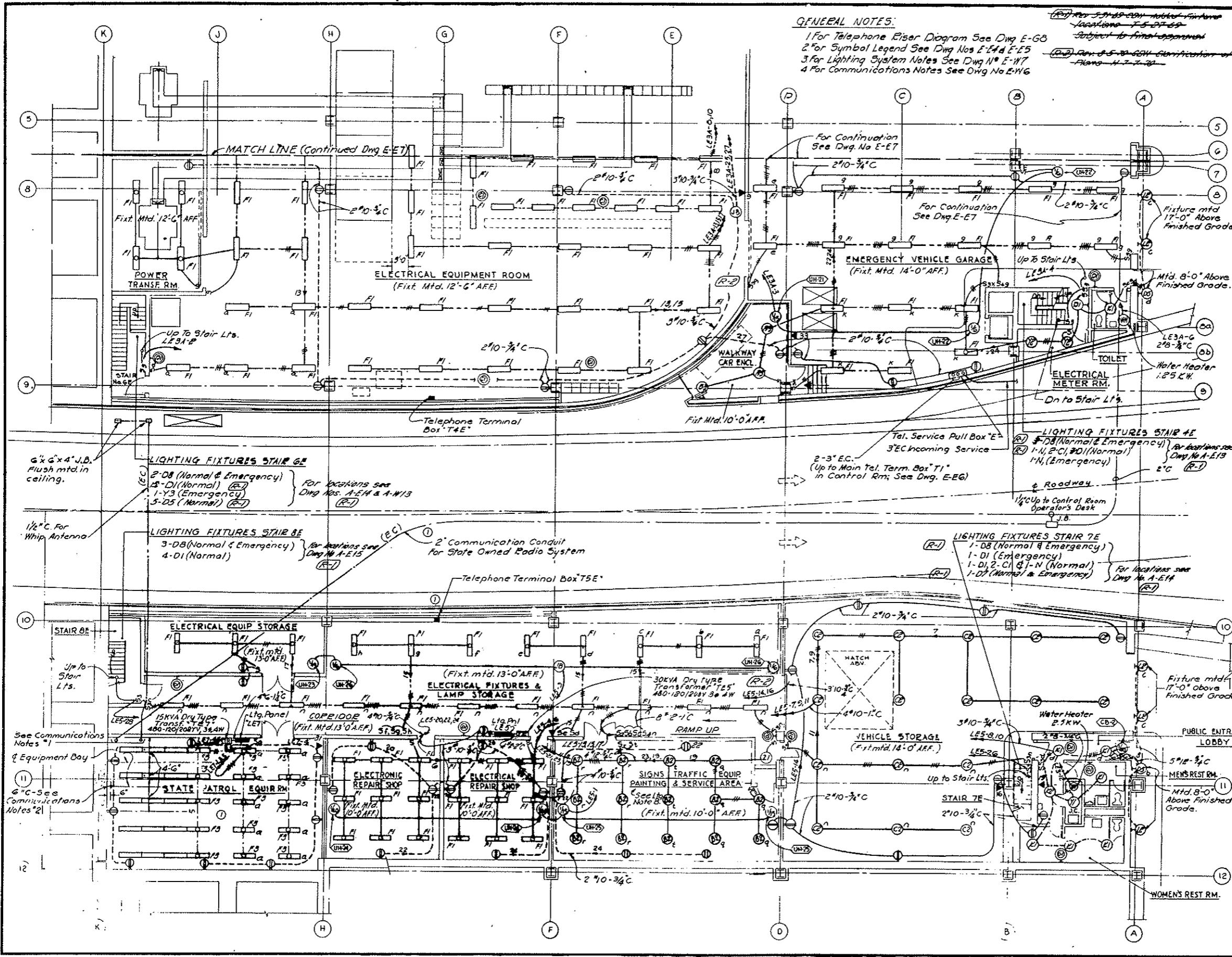
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED BY: E. N. M.
 DRAWN BY: S. W. P. & R. D. S.
 CHECKED BY: M. A. S.
 SUBMITTED BY: P. S. [Signature]

RECOMMENDED BY: [Signature]
 APPROVED BY: [Signature]

SCALE: 1/8" = 1'-0"
 DATE: AUG. 1967

DRAWING NO. **E-E8**



~~REV 11-6-67 CRH - ADDED NOTE BELOW~~
~~REV 3-71 REINSTATED ITEMS W.O. 4153~~

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

NOTES:
 For "General Notes" see Conduit & Cable schedule E-WES

NOTE A:
 Emergency Generator System, (Bid Item 190), & TV Surveillance System, (Bid Item 190), Deleted. See W.O. 4153 & Spec. Sections 100 & 104. N.E.G. Markings Relate to Wire & Cable only. Conduits are in this Contract, (Bid Items 196, 197 & 198).

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ELECTRICAL
EAST VENTILATION BUILDING
CONDUIT & CABLE SCHEDULE

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS - NEW YORK, N. Y.

DESIGNED BY: N.A.C.
 DRAWN BY: N.V.K.
 CHECKED BY: D.H.D.
 QUANTITY: *B. Renner*

APPROVED BY: *W.D. Stachnik*

SCALE: NONE DATE: AUG. 1967

DRAWING NO. **E - E9**

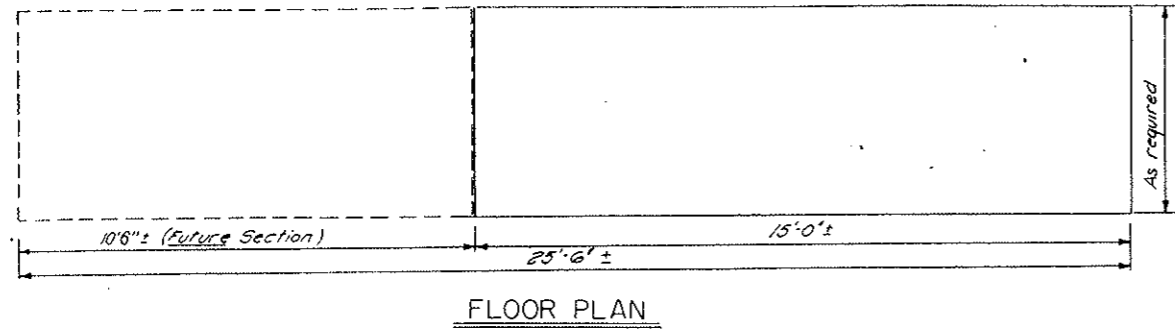
CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
24.9 KV HIGH TENSION SWITCHGEAR						
C1	1 1/2"	8	1/C # 12 (2 Sp)	24.9 KV SWGR. COMPT #1	POWER CONT. BD. IN CONT. RM.	MAIN FDR LOAD BREAKING SW. CONT. & POSITION INDICATION
C2	1 1/2"	8	1/C # 12 (2 Sp)	24.9 KV SWGR. COMPT #2		TIE LOAD BREAKING SW. CONT. & POSITION INDICATION
C3	1 1/2"	8	1/C # 12 (2 Sp)	24.9 KV SWGR. COMPT #3		2000 KVA TRANSF. #2 PRIMARY LOAD BKS. SW. CONT. & POSITION INDICATION
C4	1 1/2"	8	1/C # 12 (2 Sp)	24.9 KV SWGR. COMPT #4		2000 KVA TRANSF. #1 PRIMARY LOAD BKS. SW. CONT. & POSITION INDICATION
C5	1"	9	1/6 # 12 (2 Sp)	24.9 KV SWGR. COMPT #1	460 V SWGR. COMPT KI	EMERG. GEN. INTERLOCK
460 V. LOW TENSION SWITCHGEAR						
P30A	3"	3	500 MCM	460 V SWGR. COMPT KI	EMERG. GENERATOR	FEEDER
		1	1/6 # 4/0			
P30B	3"	3	500 MCM			
		1	1/6 # 4/0			
C22	1 1/2"	8	1/C # 12 (2 Sp)	F1	POWER CONT. BD. IN CONTROL RM.	2000 KVA. TRANSF. #2 SECONDARY BKR. CONTROL & INDICATION
C23	1 1/2"	8	1/C # 12 (2 Sp)	L1		2000 KVA. TRANSF. #2 SECONDARY BKR. CONTROL & INDICATION
C24	1 1/2"	8	1/C # 12 (2 Sp)	H1		MCC #1 FDR BKR. CONT. & INDICATION
C25	1 1/2"	8	1/C # 12 (2 Sp)	G1		MCC #2 FDR
C26	1 1/2"	8	1/C # 12 (2 Sp)	I1		MCC #3 FDR #1
C27	1 1/2"	8	1/C # 12 (2 Sp)	J1		MCC #3 FDR #2
C28	1 1/2"	8	1/C # 12 (2 Sp)	K1		EMERG. GEN. LINE BKR. CONT. & IND.
C29	1 1/2"	8	1/6 # 12 (2 Sp)	F1		2000 KVA TRANSFORMERS 1 & 2 METERING
		6	1/6 # 12 (2 Sp)			
C30	1"	5	1/6 # 12	K1	EMERG. GEN. CONT. BOARD	EMERG. GEN. INTERLOCK
MOTOR CONTROL CENTER NO. 1 - NORTH						
C55	1 1/2"	18	1/C # 12 (3 Sp)	MOTOR CONTROL CENTER COMPT B1	FAN CONTROL BD. IN CONTROL RM.	SUPPLY FAN & BULKHEADS CONT. & IND.
C56	1 1/2"	18	1/C # 12 (3 Sp)		C1	SUPPLY FAN 2
C57	1 1/2"	18	1/C # 12 (3 Sp)		D1	SUPPLY FAN 3
C58	1 1/2"	18	1/C # 12 (3 Sp)		E1	SUPPLY FAN 4
C59	1 1/2"	18	1/C # 12 (3 Sp)		F1	EXH. FAN 1 COND. & IND.
C60	1 1/2"	18	1/C # 12 (3 Sp)		G1	EXH. FAN 2
C61	1 1/2"	18	1/C # 12 (3 Sp)		H1	EXH. FAN 3
C62	1 1/2"	18	1/C # 12 (3 Sp)		I1	EXH. FAN 4
		5	1/C # 12		I1	GEN. ALARM & ANNUNCIATION
24.9 KV SERVICE						
M1	1 1/2"	7	1/6 # 10	PUBLIC SERVICE CO. POLE	PUBLIC SERVICE CO. METERING RM.	PUBLIC SERVICE METERING
M2	1 1/2"	-	-			SPARE CONDUIT

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
MOTOR CONTROL CENTER NO. 2 - NORTH						
C70	1"	8	1/C # 12 (2 Sp)	MOTOR CONTROL CENTER #2 COMPT B1	POWER CONTROL BD. IN CONTROL RM.	AC POWER DIST. PANELS #2, 3, 4 & 5 RESET & INDICATIONS
C71	1 1/2"	9	1/C # 12 (2 Sp)			DC EMERG. PAN. AUTO SW. CONT.
MOTOR CONTROL CENTER NO. 3 - NORTH						
P87	1"	4	1/6 # 8	MOTOR CONT. CENTER #3 COMPT FIB	AC POWER DIST. PANEL #8	FEEDER
CO SYSTEM						
C140	1"	2	1/6 # 12	CO SYS. AUTO-TRANSFER SW.	TO ANN. CAB. ON FAN CONT. BD.	M-G SET "ON" INDICATION
C141	1"	1	2/C # 16 SHIELDED	CO ANALYZER IN EAST BLDG.	ANALYZER OUTPUT BOX	ANALYZER OUTPUT TRANSMISSION
C142	1 1/4"	4	2/C # 16 SHIELDED	GROUP BOX 23N TEL. BOX		
C143	1"	2	2/C # 16 SHIELDED	GROUP BOX 23S TEL. BOX		
C144	1 1/2"	7	2/C # 16 SHIELDED	ANALYZERS OUTPUT BOX	CO RECORDERS ON FAN CONT. BD.	
P148	1"	2	1/6 # 12	CO SYS. AUTO-TRANSFER SW.		FEEDER
120/240V. MAIN DC PANEL						
D9	1"	3	1/6 # 8	MAIN DC PANEL	CONTROL RM. EMERG. LTG. AUTO. SW.	FEEDER
D11	1"	3	1/6 # 8		DC POWER DIST. PANEL #10	
D12	1"	2	1/6 # 12	DC POWER DIST. PANEL #10	EMERG. GEN. CONTROL BOARD	CONTROL
		2	1/6 # 12			
D13	1"	2	1/6 # 12	EMERG. GEN. CONT. BOARD	POWER CONT. BD. IN CONT. RM.	
TELEVISION CAMERAS OUTPUT SYSTEM						
TV-1	1 1/2"	1	TV COAXIAL CABLE	EAST PORTAL TV CAMERA #13	CONTROL RM. TV MONITOR BOARD	CAMERA #13 OUTPUT
TV-2	3"	1/2		GROUP BOX 23S TV BOX	PULLBOX NEAR COL. 4C-B	
TV-3	3"	1/2		PULLBOX NEAR COL. 4C-B	CONTROL RM. TV MONITOR BOARD	CAMERAS #1 TO #12 OUTPUTS (FOR CONTINUATION IN TUNNEL SEE DWG. E-71)

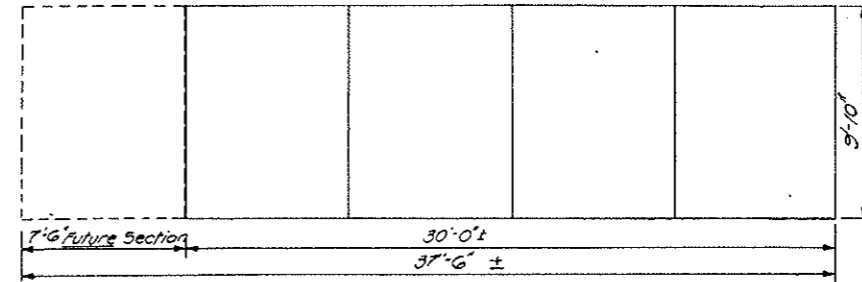
~~(R-2) (R-1) TV SURVEILLANCE SYSTEM DELETED W.O. 4153 SEE SPEC. 18H~~

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

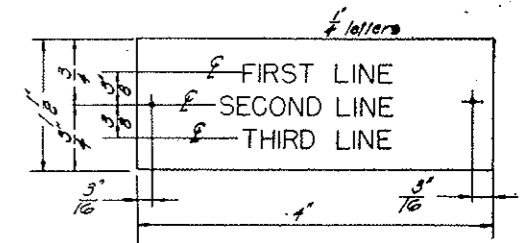
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	275	328



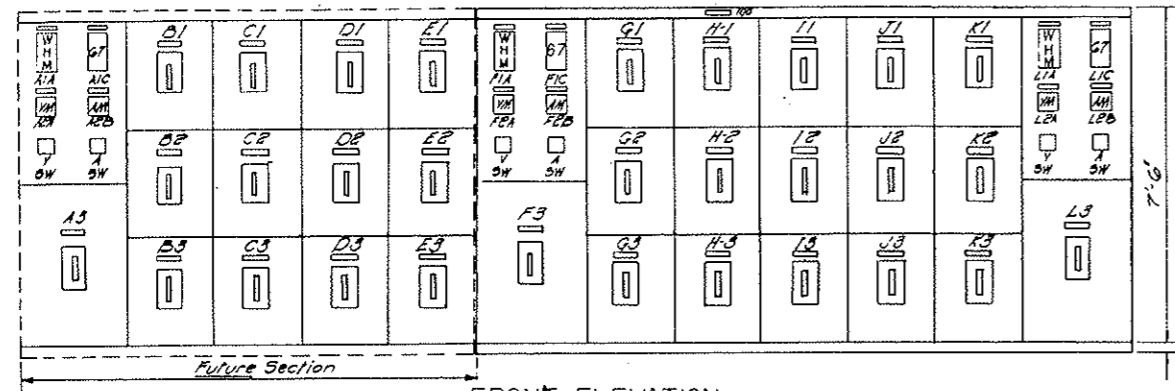
FLOOR PLAN



FLOOR PLAN

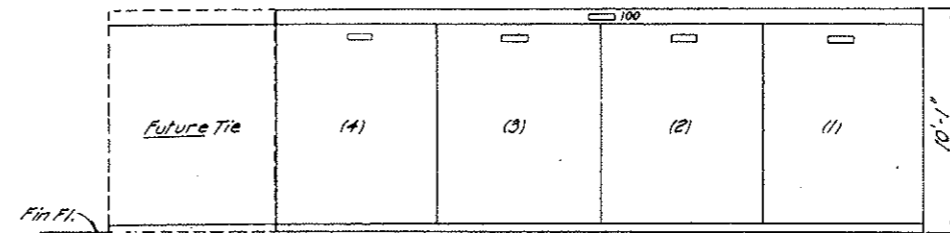


DETAIL 1



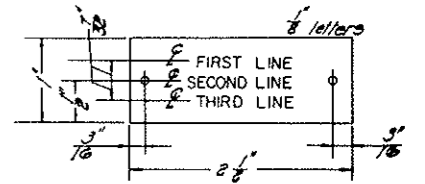
FRONT ELEVATION

SCALE 1/2" = 1'-0"

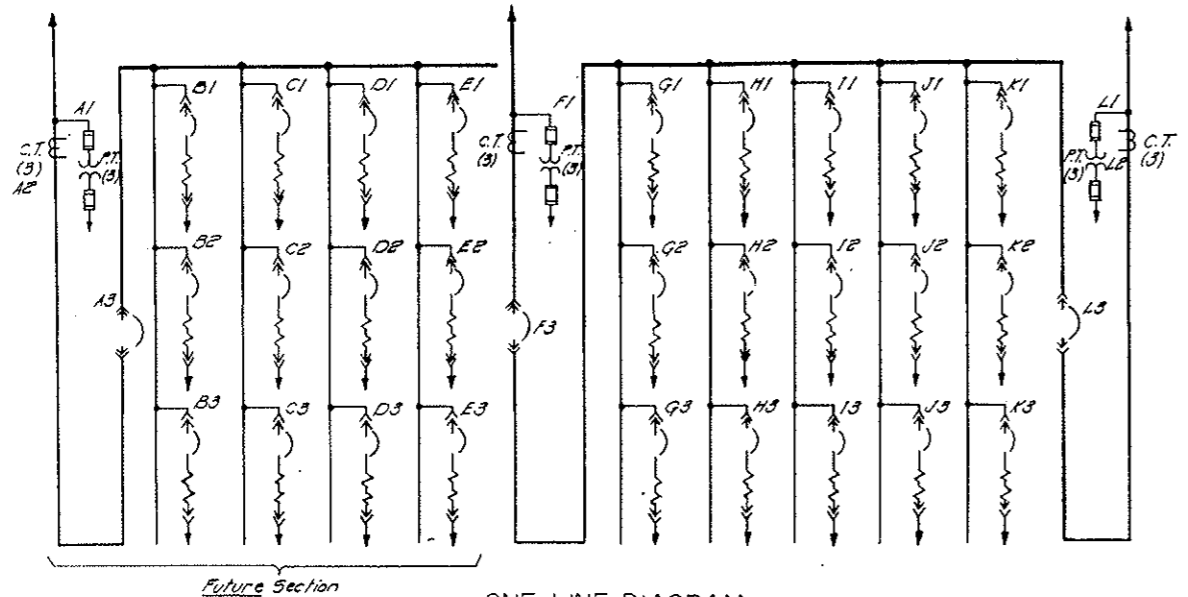


FRONT ELEVATION

SCALE 1/4" = 1'-0"

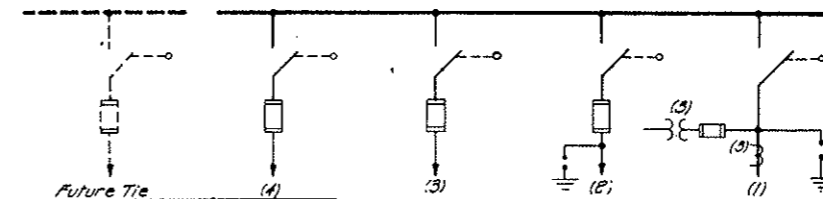


DETAIL 2



ONE LINE DIAGRAM
 460V SWITCHGEAR

(See Dwg. E-1111 for further details)



ONE LINE DIAGRAM
 24.9 KV SWITCHGEAR

See Dwg E-1 for further details

ENGRAVING SCHEDULE				
REF	FIRST LINE	SECOND LINE	THIRD LINE	DET
460V Switchgear				
100	460 volt	Switchgear	East *	1
F1A	Watt hour	Meter		2
F1C	Reverse	Power	Relay	2
F2A	Voltmeter			2
F2B	Ammeter			2
F3	Transformer	N#1		2
G1	Motor Control	Center 2	Feeder	2
Q2	Exhaust Fan 1	High Speed		2
Q3	Supply Fan 1	High Speed		2
H1	Motor Control	Center 1	Feeder	2
H2	Exhaust Fan 2	High Speed		2
H3	Supply Fan 2	High Speed		2
I1	Motor Control	Center 3	Feeder 1	2
I2	Exhaust Fan 3	High Speed		2
I3	Supply Fan 3	High Speed		2
J1	Motor Control	Center 3	Feeder 2	2
J2	Exhaust Fan 4	High Speed		2
J3	Supply Fan 4	High Speed		2
K1	Emergency	Generator	Incoming	2
K2	Spare	Equipped	Compartment	2
K3	Spare	Equipped	Compartment	2
L1A	Watt hour	Meter		2
L1C	Reverse	Power	Relay	2
L2A	Voltmeter			2
L2B	Ammeter			2
L3	Transformer	N#2		2

ENGRAVING SCHEDULE				
REF	FIRST LINE	SECOND LINE	THIRD LINE	DET
24.9KV Switchgear				
100	24.9KV	Switchgear	East *	1
1	24.9KV	Incoming	Feeder	2
2	24.9KV	Tie		2
3	24.9KV	Transformer	N#2	2
4	24.9KV	Transformer	N#1	2

*Substitute West for West Bldg. Switchgear.

Notes

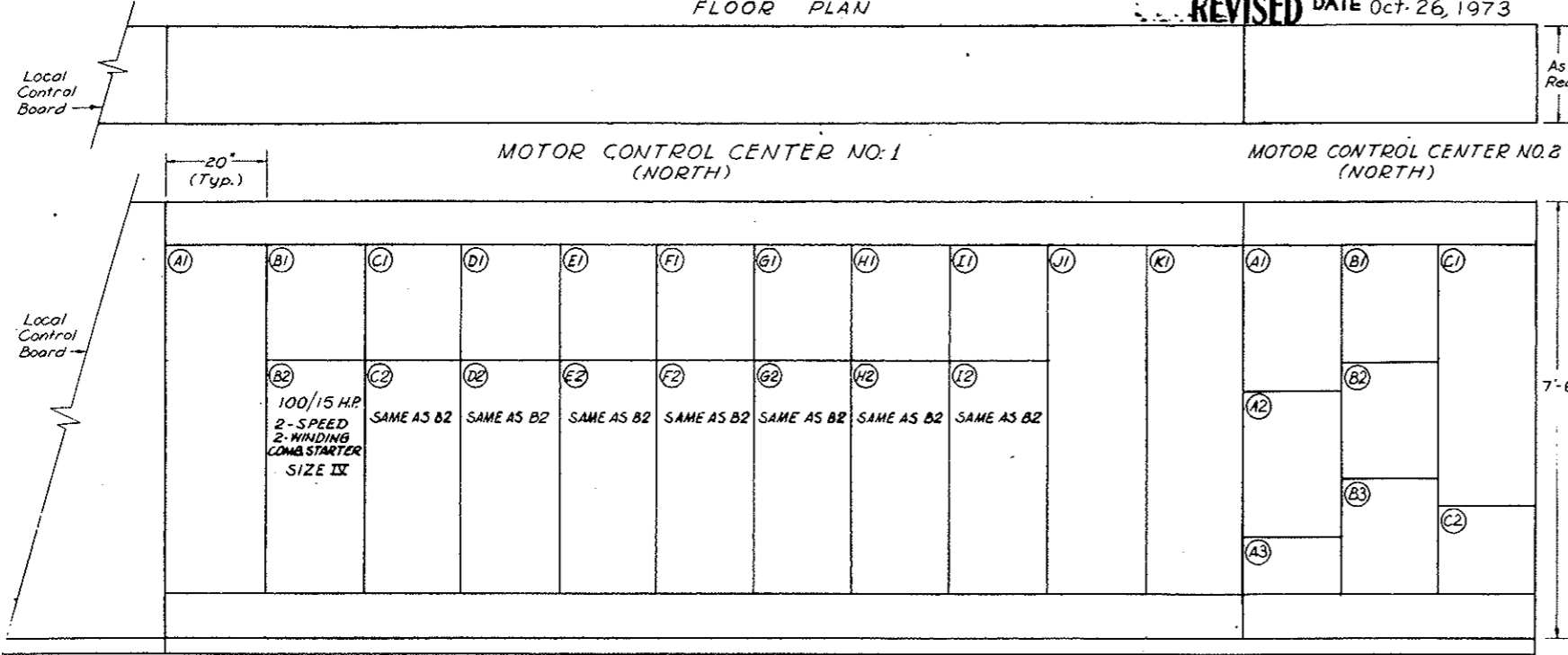
1. For general notes and legend see Dwg E-G1 & E-G2 & shown for East Vent. Bldg. Opposite hand for West Vent. Bldg.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL WEST & EAST VENTILATION BUILDINGS 24.9 KV & 460V SWITCHGEAR					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.A.G.	RECOMMENDED: R.D.S.	APPROVED: <i>[Signature]</i>			
DRAWN: R.D.S.	CHECKED: D.H.D.	SUBMITTED: <i>[Signature]</i>			
NEW YORK, N.Y.		SCALE: AS NOTED	DATE: AUG. 1967	DRAWING NO. E-WEI	

AS CONSTRUCTED

REVISED DATE Oct. 26, 1973

FLOOR PLAN



FRONT ELEVATION

ENGRAVING SCHEDULE				
REF	FIRST LINE	SECOND LINE	THIRD LINE	DET
460V. Motor Control Center No. 3 North				
100	480 Volt	MCC No. 3	North	1
A1	Incoming	Feeder No. 1		2
A2	Incoming	Feeder No. 2		2
A3	Space			2
B1	Current	Limiting	Reactors	2
C1	Vent. Fan	For	SF-1	2
C2	Vent. Fan	For	SF-2	2
C3	Vent. Fan	For	SF-3	2
C4	Vent. Fan	For	SF-4	2
D1	Damper	For	SF-1	2
D2	Damper	For	SF-2	2
D3	Damper	For	SF-3	2
D4	Damper	For	SF-4	2
E1	Damper	For	EF-1	2
E2	Damper	For	EF-2	2
E3	Damper	For	EF-3	2
E4	Damper	For	EF-4	2
F1A	Battery	Charger		2
F2A	State	Communication	Room	2
F3A	Motor Control	Center No. 4	North	2
F4A	Water System	Power Dist.	Panel	2
F1B	Control Rm.	Power Dist.	Panel	2
F2B	CO System			2
F3B	Motor Control	Center No. 4	South	2
F4B	100 Amp	Breaker	Spars	2

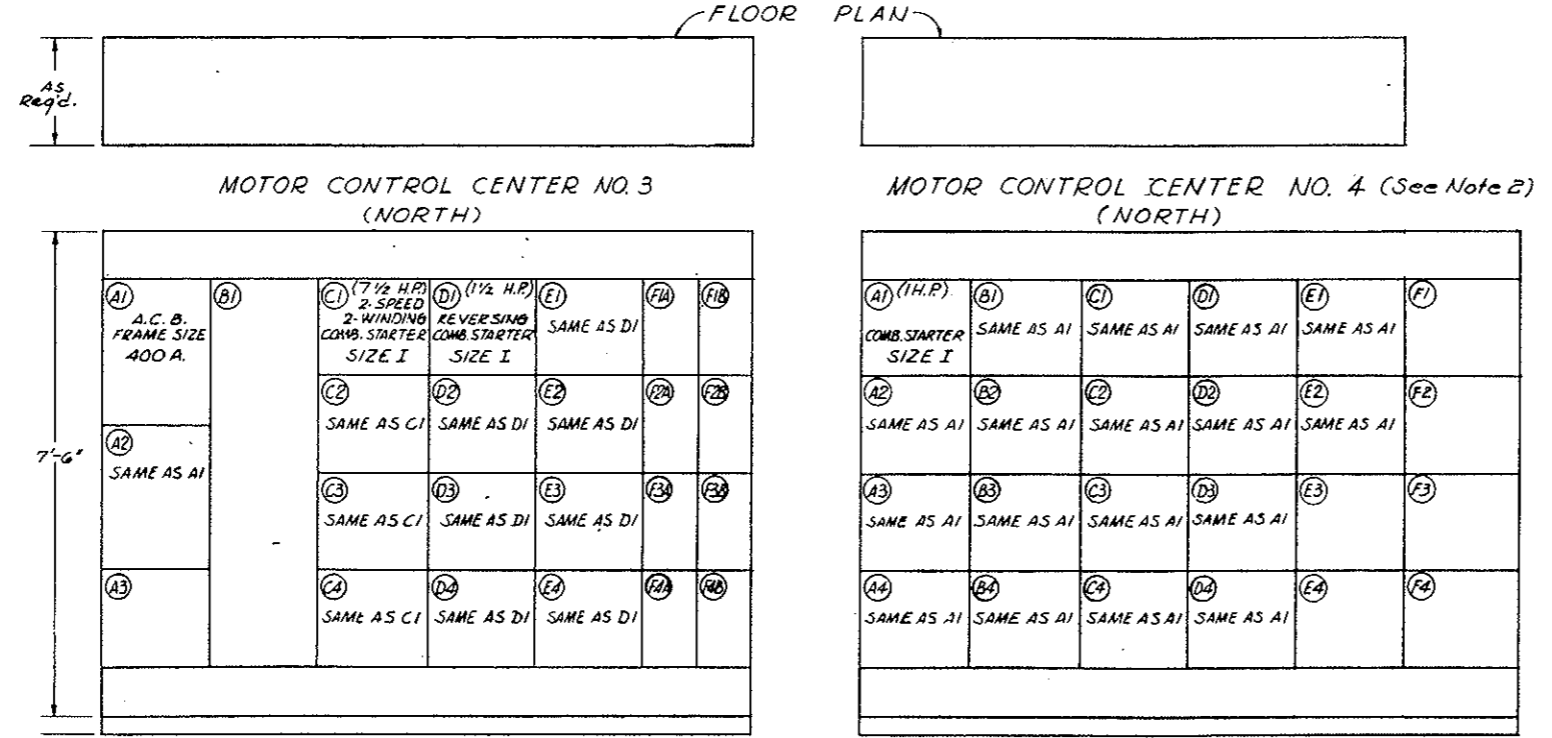
* For Motor Control Center #3 North of West End this Comp't contains 480/120V. Power Control Transformer for Supervisory Remote Control Equipment

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	278	328

ENGRAVING SCHEDULE				
REF	FIRST LINE	SECOND LINE	THIRD LINE	DET
460V. Motor Control Center No. 1 North				
100	480 Volt	MCC No. 1	North	1
A1	Incoming	Feeder Bus		2
B1	Control	Relays	SF-1	2
B2	Supply Fan 1	Intermediate	& Low Speed	2
C1	Control	Relays	SF-2	2
C2	Supply Fan 2	Intermediate	& Low Speed	2
D1	Control	Relays	SF-3	2
D2	Supply Fan 3	Intermediate	& Low Speed	2
E1	Control	Relays	SF-4	2
E2	Supply Fan 4	Intermediate	& Low Speed	2
F1	Control	Relays	EF-1	2
F2	Exhaust Fan 1	Intermediate	& Low Speed	2
G1	Control	Relays	EF-2	2
G2	Exhaust Fan 2	Intermediate	& Low Speed	2
H1	Control	Relays	EF-3	2
H2	Exhaust Fan 3	Intermediate	& Low Speed	2
I1	Control	Relays	EF-4	2
I2	Exhaust Fan 4	Intermediate	& Low Speed	2
J1	Tie	Breaker	MCC No. 2	2
K1	Bus	Transition	Section	2

ENGRAVING SCHEDULE				
REF	FIRST LINE	SECOND LINE	THIRD LINE	DET
460V. Motor Control Center No. 2 North				
100	460 Volt	MCC No. 2	North	1
A1	Fan Room	Power Dist.	Panel No. 2	2
A2	North Bldg.	Power Dist.	Panel No. 4	2
A3	Equipped Space	for Starter	Size II	2
B1	Center Bldg.	Power Dist.	Panel No. 3	2
B2	South Bldg.	Power Dist.	Panel No. 5	2
B3	300 KVA	Transformer	Primary	2
C1	Incoming	Feeder Bus		2
C2	Tunnel Supply	Power Dist.	Panel No. 1	2

- NOTES
- This Dwg. shows Motor Control Centers in East and Motor Control Centers in West are similar except opposite hand.
 - Motor Control Centers No. 4 North & South are similar, except in South a group of six bulkheads will be associated with each Supply Fan.
 - All combination starters shall be circuit breaker type & these circuit breakers shall have thermo-magnetic trip elements.
 - Circuit breakers in MCC #1 & MCC #2 to be 35,000 Amps Symmetrical Interrupting Capacity Westinghouse "Mark 75" or equal.
 - For Nameplate details see Dwg # E-W-1.
- REF. DWGS
E-62 Single Line Diagram
E-63 Fan Control Elem. Diag.



FRONT ELEVATION

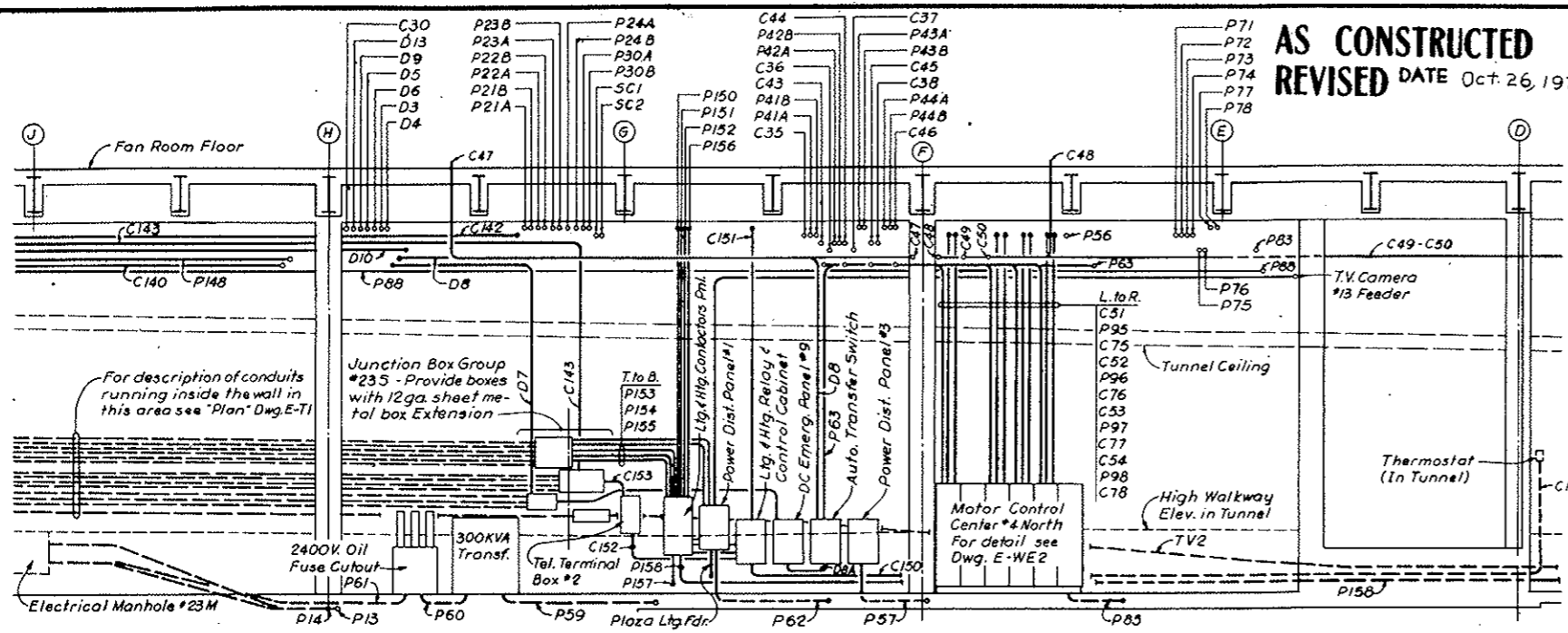
ENGRAVING SCHEDULE				
REF	FIRST LINE	SECOND LINE	THIRD LINE	DET
460V. Motor Control Center No. 4 North				
100	480 Volt	MCC No. 4	North	1
A1	Bulkhead 1	For	SF-1	2
A2	Bulkhead 2	For	SF-1	2
A3	Bulkhead 3	For	SF-1	2
A4	Bulkhead 4	For	SF-1	2
B1	Bulkhead 5	For	SF-1	2
B2	Bulkhead 1	For	SF-2	2
B3	Bulkhead 2	For	SF-2	2
B4	Bulkhead 3	For	SF-2	2
C1	Bulkhead 4	For	SF-2	2
C2	Bulkhead 5	For	SF-2	2
C3	Bulkhead 1	For	SF-3	2
C4	Bulkhead 2	For	SF-3	2
D1	Bulkhead 3	For	SF-3	2
D2	Bulkhead 4	For	SF-3	2
D3	Bulkhead 1	For	SF-4	2
D4	Bulkhead 2	For	SF-4	2
E1	Bulkhead 3	For	SF-4	2
E2	Bulkhead 4	For	SF-4	2
E3	Cont. Transf.'s	For SF-1, SF-2	Bulkheads	2
E4	Cont. Transf.'s	For SF-3, SF-4	Bulkheads	2
F1	Equipped Space	For Starter	Size II	2
F2	Equipped Space	For Starter	Size II	2
F3	Space			2
F4	Incoming	Feeder		2

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL					
WEST AND EAST VENTILATION BUILDINGS					
MOTOR CONTROL CENTERS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.A.C.	WORKING DRAWING:	DRAWN: E.M.			
CHECKED: D.H.D.	APPROVED:	SUBMITTED: <i>[Signature]</i>			
DATE: 10/26/73	SCALE: 3/4" = 1'-0"	DATE: AUG. 1972	DRAWING NO. E-WE2		

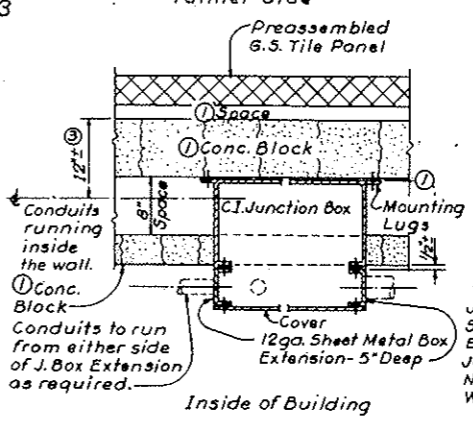
AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

~~(R-1) REV. 11-6-67 C.D.H. - ADDED NOTE BELOW~~
~~(R-2) REV. 2-1-71 REINSTATED ITEMS W.O. #14587~~

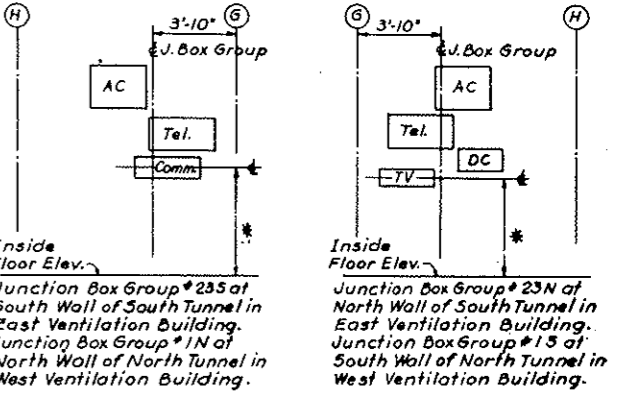
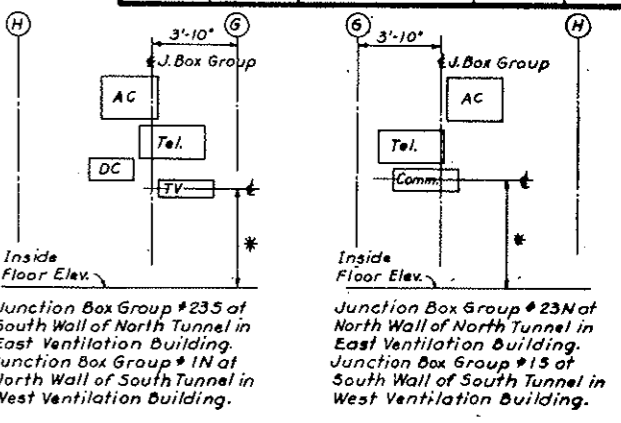
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	277	326



SECTION A-A As shown for East Ventilation Building SECTION A₁-A₁ Similar for West Ventilation Building

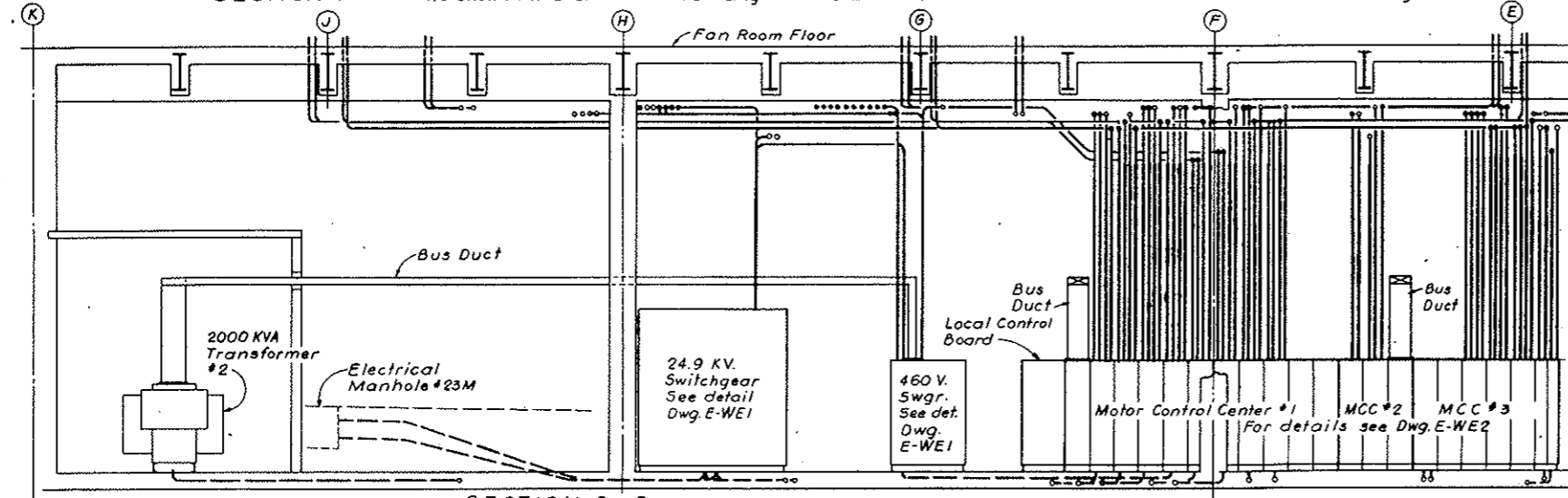


DETAIL "A" - PLAN
 Typical for all boxes in Junction Box Groups located at East & West Ventilation Bldgs.



N.T.S.
 Note:
 For sizes and dimensions between boxes see "Junction Box Group Elevations" Dwg. E-T3
 * As required to maintain conduit runs, (from Building boxes to corresponding Tunnel boxes) as level as possible.

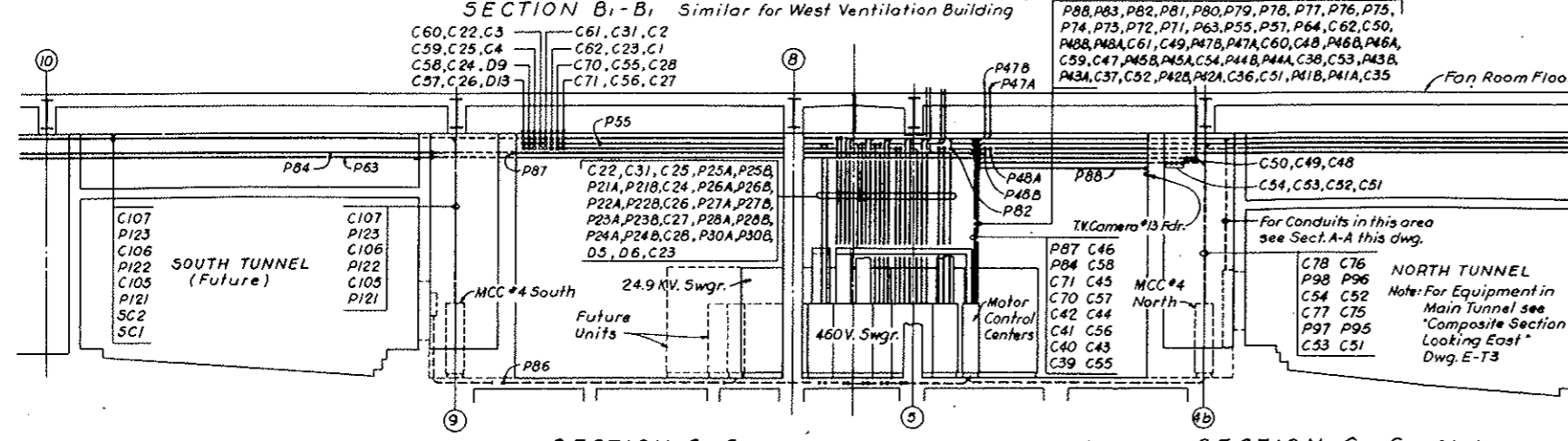
JUNCTION BOX GROUP ARRANGEMENT IN BUILDINGS
 All box openings & covers looking to the inside of Bldg.-See Detail "A"
 N.T.S.



SECTION B-B As shown for East Ventilation Building SECTION B₁-B₁ Similar for West Ventilation Building

~~(R-2) NOTE A:~~
 Tunnel Ventilation System (Bid Item 165) Revised - Emergency Generator (Bid Item 180) & T.V. Surveillance System (Bid Item 190) Deleted - See W.O. 14153 Spec. Sections 17A, 18B & 19H. All Electrical Work shown on this Dwg. Remains in Contract - See Referenced Dwg. for effects of changes listed above.

- NOTES:
- For Telephone Riser Diagram see Dwg. E-68
 - For Symbol Legend see Dwgs. E-E4 & E-E5
 - For Conduit & Cable runs from Power Panels see Panel Schedule Dwg. E-610 & E-611
 - For Conduit & Cable Schedule see Dwg. E-W5 to E-W9 incl. and E-E9 or E-W8 (West Bldg.)
 - Exact routing of conduits to be determined by Field.
 - For Conduits or Equipment not shown or identified refer to Conduit & Cable Schedule Drawings and/or Roadway Floor Plan - Dwg. E-E1, E-E2 & E-E3 or Dwg. E-W1, E-W2 & E-W3 (West Bldg.)
 - For Grounding of Equipment & Notes see Dwg. E-67



SECTION C-C As shown for East Ventilation Building SECTION C₁-C₁ Similar for West Ventilation Building
 Scale: 1/8 in. = 1 Ft.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

ELECTRICAL
WEST & EAST VENTILATION BUILDINGS
CONDUIT SECTIONS & DETAILS
 SHEET 1

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N.Y.

DESIGNED: E.A.H.
 DRAWN: E.A.H.
 CHECKED: R.A.C.
 SUBMITTED: [Signature]

SCALE: 3/16" = 1'-0" DATE: AUG. 1967

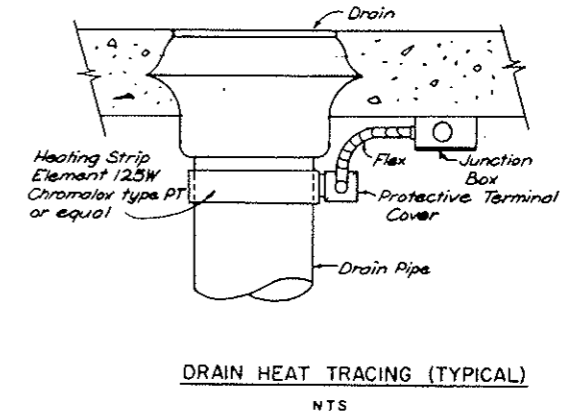
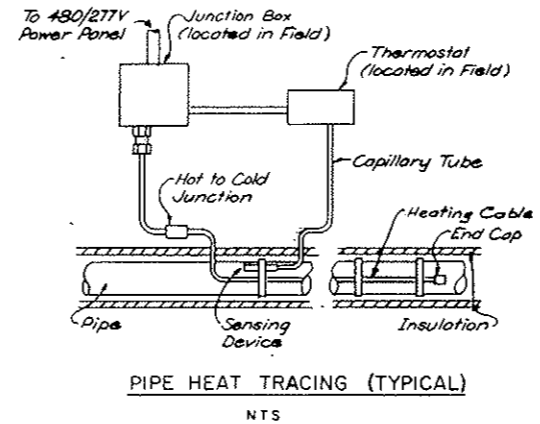
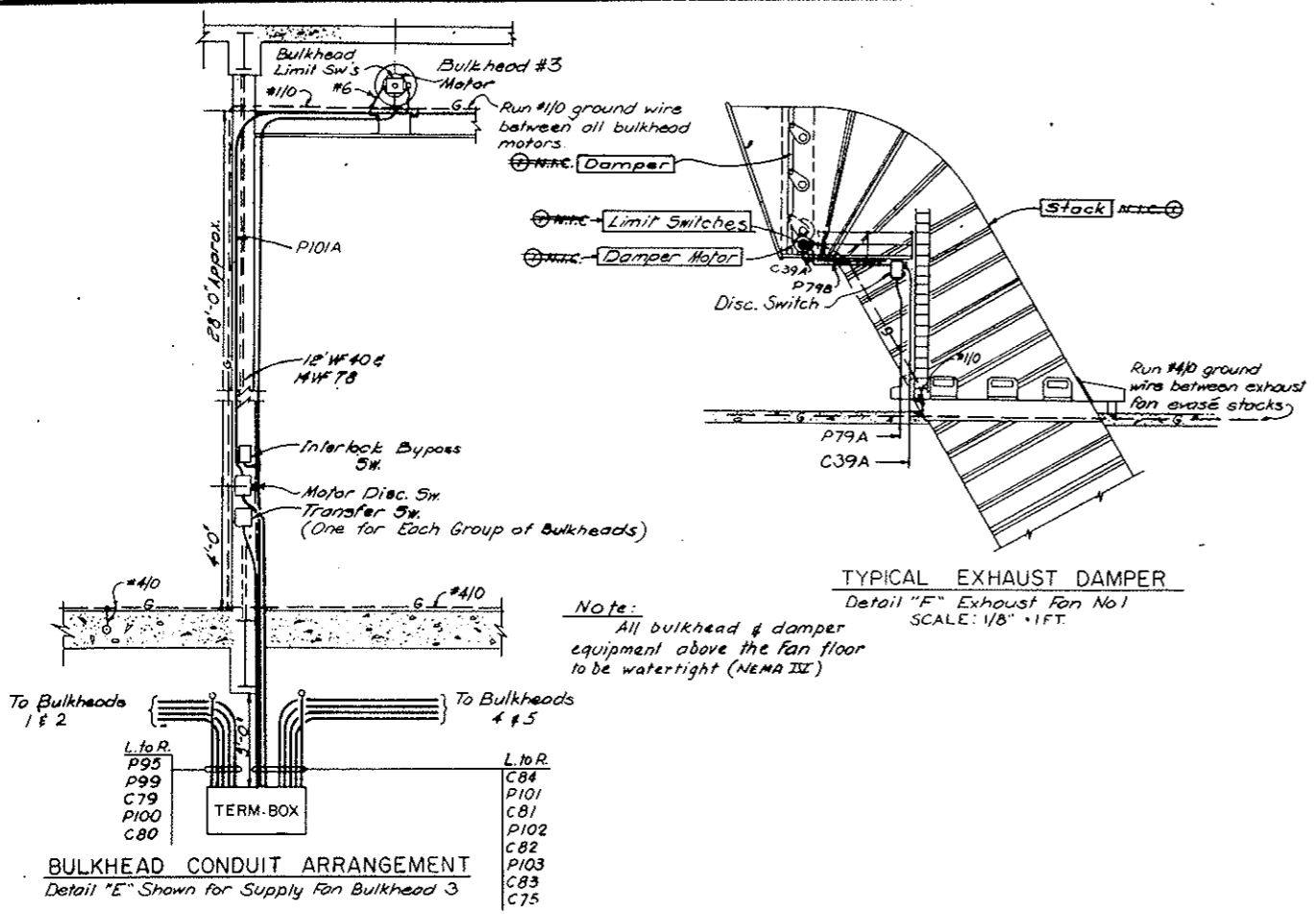
E-WES

~~(R-2) (R-1) T.V. SURVEILLANCE SYSTEM DELETED W.O. #14153 SEE SPEC 18H~~

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	278	328

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

(R-1) REV. 11-6-67 C.B.H. - ADDED NOTE BELOW



Note A: - Tunnel Ventilation System, (Bid Item 155), revised. See W.O. 14153 & Spec. 17A Equip. Items N.I.C. as marked. Other Equipment shown remains in this contract. Conduit, Boxes, etc. & Power & Control wiring, including connections, remain in this contract, (Bid Items 181, 182 & 175). Final Termination of Conduit & wiring for N.I.C. Items must be coordinated with the actual Equipment, (to be furnished & installed under another contract).

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL WEST & EAST VENTILATION BUILDINGS CONDUIT SECTIONS & DETAILS SHEET 2					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: J.P. - J.A.G.	RECOMMENDED:				
DRAWN: J.P. - S.S.	CHECKED: H.A.C.				
SUBMITTED:	APPROVED:				
NEW YORK, N.Y.	SCALE: AS NOTED	DATE: AUG. 1967			
					DRAWING NO. E-WE4

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	279	326

AS CONSTRUCTED
 REVISION 1 OF 8, 1973
 DATE

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
24.9 KV SERVICE LINES						
P1	3"	3	1/C #1 (27KV)	PUBLIC SERVICE CO. POLE	ELECT. MANHOLE AT PLAZA	PUBLIC SERVICE POWER SUPPLY
P2	3"	3	1/C #1 (27KV)	ELECT. MANHOLE AT PLAZA	24.9 KV SWGR. COMPT 1	
P3	3"	-	-	PUBLIC SERVICE CO. POLE	ELECT. MANHOLE AT PLAZA	SPARE CONDUIT
P4	3"	-	-	ELECT. MANHOLE AT PLAZA	24.9 KV SWGR. COMPT 1	
24.9 KV HIGH TENSION SWITCHGEAR						
P11	3"	3	1/C #1 (27KV)	24.9 KV SWGR. COMPT 4	2000 KVA TRANSF. #1	FEEDER
P12	3"	3	1/C #1 (27KV)	COMPT 3	2000 KVA TRANSF. #2	
P13	4"	3	1/C #1 (27KV)	COMPT 2	MANHOLE #23M (MANHOLE #M FOR WEST)	TIE BETW. EAST & WEST 24.9KV SWGR'S (FOR CONTINUATION IN TUNNEL SEE DWG # E-T1) ①
P14	4"	-	-	24.9 KV SWGR. COMPT 2	MANHOLE #23M (MANHOLE #M FOR WEST)	SPARE COND. FOR TIE BETWEEN (FOR CONTINUATION IN TUNNEL SEE DWG # E-T1)
460 V LOW TENSION SWITCHGEAR						
P21A	3 1/2"	3	750 MCM ①	460 V SWGR. COMPT 63	SUPPLY FAN 1 HIGH SPEED MOTOR	FEEDER
P21B	3 1/2"	3		63	1	
P22A	3 1/2"	3		H3	2	
P22B	3 1/2"	3		H3	2	
P23A	3 1/2"	3		I3	3	
P23B	3 1/2"	3		I3	3	
P24A	3 1/2"	3		J3	4	
P24B	3 1/2"	3		J3	4	
P25A	3 1/2"	3		G1	EXHAUST FAN 1	
P25B	3 1/2"	3		G1	1	
P26A	3 1/2"	3		H1	2	
P26B	3 1/2"	3		H1	2	
P27A	3 1/2"	3		I1	3	
P27B	3 1/2"	3		I1	3	
P28A	3 1/2"	3		J1	4	
P28B	3 1/2"	3		J1	4	
P29A	3"	3	350 MCM	I1	MOTOR CONT. CENTER #3 (NORTH)	FEEDER 1
		1	1/C #1/0	I1		
P29B	3"	3	350 MCM	J1		FEEDER 2
		1	1/C #1/0	J1		

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
460 V LOW TENSION SWITCHGEAR - CONTINUED -						
C11	1 1/2"	12	1/C #12 (3Sp)	460 V SWGR. COMPT 63	MOTOR CONT. CENTER #1 COMPT B2	SUPPLY FAN 1 HIGH SPEED CONT. & IND.
C12	1 1/2"	12	1/C #12 (3Sp)		H3	C2 SUPPLY FAN 2
C13	1 1/2"	12	1/C #12 (3Sp)		I3	D2 SUPPLY FAN 3
C14	1 1/2"	12	1/C #12 (3Sp)		J3	E2 SUPPLY FAN 4
C15	1 1/2"	10	1/C #12 (3Sp)		G3	F2 EXH. FAN 1
C16	1 1/2"	10	1/C #12 (3Sp)		H3	G2 EXH. FAN 2
C17	1 1/2"	10	1/C #12 (3Sp)		I3	H2 EXH. FAN 3
C18	1 1/2"	10	1/C #12 (3Sp)		J3	I2 EXH. FAN 4
MOTOR CONTROL CENTER NO. 1 NORTH						
P41A	2"	3	1/C #2/0	MOTOR CONT. CENTER #1 COMPT B1	SUPPLY FAN 1 LOW & INTER. SP. MOTOR	INTERM. SPEED MOTOR FEEDER
P41B	1"	3	1/C #10	B1	SUPPLY FAN 1	LOW
P42A	2"	3	1/C #2/0	C1	SUPPLY FAN 2	INTERM.
P42B	1"	3	1/C #10	C1	SUPPLY FAN 2	LOW
P43A	2"	3	1/C #2/0	D1	SUPPLY FAN 3	INTERM.
P43B	1"	3	1/C #10	D1	SUPPLY FAN 3	LOW
P44A	2"	3	1/C #2/0	E1	SUPPLY FAN 4	INTERM.
P44B	1"	3	1/C #10	E1	SUPPLY FAN 4	LOW
P45A	2"	3	1/C #2/0	F1	EXH. FAN 1	INTERM.
P45B	1"	3	1/C #10	F1	EXH. FAN 1	LOW
P46A	2"	3	1/C #2/0	G1	EXH. FAN 2	INTERM.
P46B	1"	3	1/C #10	G1	EXH. FAN 2	LOW
P47A	2"	3	1/C #2/0	H1	EXH. FAN 3	INTERM.
P47B	1"	3	1/C #10	H1	EXH. FAN 3	LOW
P48A	2"	3	1/C #2/0	I1	EXH. FAN 4	INTERM.
P48B	1"	3	1/C #10	I1	EXH. FAN 4	LOW
CONTROL						
C35	1 1/2"	18	1/C #12	MOTOR CONT. CENTER #1 COMPT B1	SUPPLY FAN 1 DAMPER LIM. SW'S. JUNCT. BOX	
C35A	1 1/2"	18	1/C #12	JUNCT. BOX	DAMPER LIM. SW'S.	
C36	1 1/2"	18	1/C #12	MOTOR CONT. CENTER #1 COMPT C1	SUPPLY FAN 2 DAMPER LIM. SW'S. JUNCT. BOX	
C36A	1 1/2"	18	1/C #12	JUNCT. BOX	DAMPER LIM. SW'S.	

GENERAL NOTES

- Schedules having drawing numbers prefixed "WE" list conduit & cable for East Building. These must be duplicated in the West Building.
- Schedules having drawing numbers prefixed "E" or "W" apply to the "East" or "West" Building resp.
- In general these Conduit & Cable Schedules do not include branch circuits from "AC" & "DC" power distribution panels. For information on these, see Power & Lighting Panel Schedules, conduit layouts & lighting drawings.
- For continuation in the tunnel of certain circuits shown on these schedules as entering boxes in Junction Box groups in Tunnel Wall, see tunnel drawings & wiring diagrams (having drawing numbers prefixed by "T").

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL WEST & EAST VENTILATION BUILDINGS CONDUIT & CABLE SCHEDULE SHEET 1					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: H.A.C.	RECOMMENDED:				
DRAWN: E.M.	APPROVED:				
CHECKED: D.H.O.	DATE:				
SUBMITTED:	SCALE: NONE				
					DRAWING NO. E-WE5
NEW YORK, N. Y.					DATE: AUG. 1967

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	280	326

AS COMPLETED
REVISED DATE: Oct. 26, 1973

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE		FROM	TO	FUNCTION
			SIZE & TYPE				
MOTOR CONTROL CENTER NO. 1-NORTH (CONTINUED)							
C37	1 1/2"	18	1/C #12		MOTOR CONTROL CENTER #1 COMPT D1	SUPPLY FAN 3 DAMPER LIM. SW'S JUNC. BOX	CONTROL
C37A	1 1/2"	18	1/C #12		JUNCTION BOX	DAMPER LIMIT SW'S	
C38	1 1/2"	18	1/C #12		MOTOR CONTROL CENTER #1 COMPT E1	SUPPLY FAN 4 DAMPER LIM. SW'S JUNC. BOX	
C38A	1 1/2"	18	1/C #12		JUNCTION BOX	DAMPER LIMIT SW'S	
C39	1 1/2"	18	1/C #12		MOTOR CONTROL CENTER #1 COMPT F1	EXH. FAN 1 DAMPER LIMIT SW'S JUNC. BOX	
C39A	1 1/2"	18	1/C #12		JUNCTION BOX	DAMPER LIMIT SW'S	
C40	1 1/2"	18	1/C #12		MOTOR CONTROL CENTER #1 COMPT G1	EXH. FAN 2 DAMPER LIMIT SW'S JUNC. BOX	
C40A	1 1/2"	18	1/C #12		JUNCTION BOX	DAMPER LIMIT SW'S	
C41	1 1/2"	18	1/C #12		MOTOR CONTROL CENTER #1 COMPT H1	EXH. FAN 3 DAMPER LIMIT SW'S JUNC. BOX	
C41A	1 1/2"	18	1/C #12		JUNCTION BOX	DAMPER LIMIT SW'S	
C42	1 1/2"	18	1/C #12		MOTOR CONTROL CENTER #1 COMPT I1	EXH. FAN 4 DAMPER LIMIT SW'S JUNC. BOX	
C42A	1 1/2"	18	1/C #12		JUNCTION BOX	DAMPER LIMIT SW'S	
C43	1 1/2"	21	1/C #12		MOTOR CONTROL CENTER #1 COMPT B1	SUPPLY FAN 1 SPEED SW'S JUNC. BOX	SPEED SW'S EM. STOP SW. & THERMOST. CONTROL
C43A	1 1/2"	14	1/C #12		JUNCTION BOX	SPEED SW'S	FAN EMERGENCY STOP
C43B	1"	3	1/C #12			EMERGENCY STOP SW.	THERMOST. CONTROL
C43C	1"	4	1/C #12			SUPPLY FAN 1 MOT. ENCLOSURE THERMOST.	THERMOST. CONTROL
C44	1 1/2"	21	1/C #12		MOTOR CONTROL CENTER #1 COMPT C1	SUPPLY FAN 2 SPEED SW'S JUNC. BOX	SPEED SW'S EM. STOP SW. & THERMOST. CONTROL
C44A	1 1/2"	14	1/C #12		JUNCTION BOX	SPEED SW'S	SPEED SW'S CONTROL
C44B	1"	3	1/C #12			EMERGENCY STOP SW.	FAN EMERGENCY STOP
C44C	1"	4	1/C #12			SUPPLY FAN 2 MOT. ENCLOSURE THERMOST.	THERMOST. CONTROL
C45	1 1/2"	21	1/C #12		MOTOR CONTROL CENTER #1 COMPT D1	SUPPLY FAN 3 SPEED SW'S JUNC. BOX	SPEED SW'S EM. STOP SW. & THERMOST. CONTROL
C45A	1 1/2"	14	1/C #12		JUNCTION BOX	SPEED SW'S	SPEED SW CONTROL
C45B	1"	3	1/C #12			EMERGENCY STOP SW.	FAN EMERGENCY STOP
C45C	1"	4	1/C #12			SUPPLY FAN 3 MOT. ENCLOSURE THERMOST.	THERMOST. CONTROL
C46	1 1/2"	21	1/C #12		MOTOR CONTROL CENTER #1 COMPT E1	SUPPLY FAN 4 SPEED SW'S JUNC. BOX	SPEED SW'S EM. STOP SW. & THERMOST. CONTROL
C46A	1 1/2"	14	1/C #12		JUNCTION BOX	SPEED SW'S	SPEED SW CONTROL
C46B	1"	3	1/C #12			EMERGENCY STOP SW.	FAN EMERGENCY STOP
C46C	1"	4	1/C #12			SUPPLY FAN 4 MOT. ENCLOSURE THERMOST.	THERMOST. CONTROL
C47	1 1/2"	17	1/C #12		MOTOR CONTROL CENTER #1 COMPT F1	EXH. FAN 1 SPEED SW'S JUNC. BOX	SPEED SW'S EM. STOP SW.
C47A	1 1/2"	14	1/C #12		JUNCTION BOX	SPEED SW'S	SPEED SW. CONTROL
C47B	1"	3	1/C #12			EMERGENCY STOP SW.	FAN EMERGENCY STOP
C48	1 1/2"	17	1/C #12		MOTOR CONTROL CENTER #1 COMPT G1	EXH. FAN 2 SPEED SW'S JUNC. BOX	SPEED SW'S EM. STOP SW.
C48A	1 1/2"	14	1/C #12		JUNCTION BOX	SPEED SW'S	SPEED SW. CONTROL
C48B	1"	3	1/C #12			EMERGENCY STOP SW.	FAN EMERGENCY STOP
C49	1 1/2"	17	1/C #12		MOTOR CONTROL CENTER #1 COMPT H1	EXH. FAN 3 SPEED SW'S JUNC. BOX	SPEED SW'S EM. STOP SW.
C49A	1 1/2"	14	1/C #12		JUNCTION BOX	SPEED SW'S	SPEED SW. CONTROL
C49B	1"	3	1/C #12			EMERGENCY STOP SW.	FAN EMERGENCY STOP
C50	1 1/2"	17	1/C #12		MOTOR CONTROL CENTER #1 COMPT I1	EXH. FAN 4 SPEED SW'S JUNC. BOX	SPEED SW'S EM. STOP SW.
C50A	1 1/2"	14	1/C #12		JUNCTION BOX	SPEED SW'S	SPEED SW. CONTROL
C50B	1"	3	1/C #12			EMERGENCY STOP SW.	FAN EMERGENCY STOP
C51	1 1/2"	12	1/C #12 (3 SP)		MOTOR CONTROL CENTER #1 COMPT B1	MOTOR CONTROL CENTER #4 COMPT A1	SUPPLY FAN 1 BULKHEADS CONT. & POS. IND.
C52	1 1/2"	12	1/C #12 (3 SP)			C1	C1 SUPPLY FAN 2
C53	1 1/2"	12	1/C #12 (3 SP)			D1	D1 SUPPLY FAN 3
C54	1 1/2"	12	1/C #12 (3 SP)			E1	E1 SUPPLY FAN 4
MOTOR CONTROL CENTER NO. 2-NORTH							
P55	1 1/2"	3	1/C #10		MOTOR CONTROL CENTER #2 COMPT A1	AC POWER DIST. PANEL NO. 2	FEEDER
P56	1 1/2"	3	1/C #10			A1	NO. 4
P57	1 1/2"	3	1/C #10			B3	NO. 3
P58	1 1/2"	3	1/C #10			B1	NO. 5
P59	3"	3	500 MCM		MOTOR CONTROL CENTER #2 COMPT B3	300 KYA TRANSF. PRIMARY	FEEDER
P60	1 1/2"	3	1/C #2 (5KV)			300 KYA TRANSF. SECONDARY	OIL FUSE CUTOUT
P61	1 1/2"	3	1/C #2 (5KV)			OIL FUSE CUTOUT	MANHOLE 23M. (MANHOLE 1M. FOR WEST)
(FOR CONTINUATION IN TUNNEL SEE DWG. E-T1)							
P62	2"	3	1/C #4/0		MOTOR CONTROL CENTER #2 COMPT C2	AC POWER DIST. PANEL No. 1	

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE		FROM	TO	FUNCTION
			SIZE & TYPE				
MOTOR CONTROL CENTER NO. 2-NORTH (CONTINUED)							
P63	1"	5	1/C #12		MOTOR CONTROL CENTER #2	COMPT B1 CONT. TRANSF. SECOND. BLDG. & TUNNEL EMERG. LT'S AUTO SW.	CONTROL (Power Failure Sensing)
MOTOR CONTROL CENTER NO. 3-NORTH							
P71	1"	8	1/C #12		MOTOR CONTROL CENTER #3 COMPT C1	SUPPLY FAN 1 VENT. FAN MOT. DISC. SW.	FEEDERS-(2 SPEED MOTORS & ASSOCIATED DAMPER ACTIVATORS)
P71A	1"	8	1/C #12			DISC. SW.	VENT. FAN MOTOR & DAMPER
P72	1"	8	1/C #12		MOTOR CONTROL CENTER #3 COMPT C1	SUPPLY FAN 2 VENT. FAN MOT. DISC. SW.	
P72A	1"	8	1/C #12			DISC. SW.	VENT. FAN MOTOR & DAMPER
P73	1"	8	1/C #12		MOTOR CONTROL CENTER #3 COMPT C1	SUPPLY FAN 3 VENT. FAN MOT. DISC. SW.	
P73A	1"	8	1/C #12			DISC. SW.	VENT. FAN MOTOR & DAMPER
P74	1"	8	1/C #12		MOTOR CONTROL CENTER #3 COMPT C1	SUPPLY FAN 4 VENT. FAN MOT. DISC. SW.	
P74A	1"	8	1/C #12			DISC. SW.	VENT. FAN MOTOR & DAMPER
P75	1"	3	1/C #12		MOTOR CONTROL CENTER #3 COMPT D1	SUPPLY FAN 1 DAMPER MOT. DISC. SW.	FEEDER
P75A	1"	3	1/C #12			DISC. SW.	DAMPER MOTOR
P76	1"	3	1/C #12		MOTOR CONTROL CENTER #3 COMPT D1	SUPPLY FAN 2 DAMPER MOT. DISC. SW.	
P76A	1"	3	1/C #12			DISC. SW.	DAMPER MOTOR
P77	1"	3	1/C #12		MOTOR CONTROL CENTER #3 COMPT D1	SUPPLY FAN 3 DAMPER MOT. DISC. SW.	
P77A	1"	3	1/C #12			DISC. SW.	DAMPER MOTOR
P78	1"	3	1/C #12		MOTOR CONTROL CENTER #3 COMPT D1	SUPPLY FAN 4 DAMPER MOT. DISC. SW.	
P78A	1"	3	1/C #12			DISC. SW.	DAMPER MOTOR
P79	1"	3	1/C #12		MOTOR CONTROL CENTER #3 COMPT E1	EXH. FAN 1 DAMPER MOT. JUNCT. BOX	
P79A	1"	3	1/C #12		JUNCTION BOX	DISC. SW.	EXH. FAN 1 DAMPER MOT. DISC. SW. DAMPER MOTOR
P79B	1"	3	1/C #12			DISC. SW.	EXH. FAN 2 DAMPER MOT. JUNCT. BOX
P80	1"	3	1/C #12		MOTOR CONTROL CENTER #3 COMPT E1	EXH. FAN 2 DAMPER MOT. DISC. SW.	
P80A	1"	3	1/C #12		JUNCTION BOX	DISC. SW.	DAMPER MOTOR
P80B	1"	3	1/C #12			DISC. SW.	EXH. FAN 3 DAMPER MOT. JUNCT. BOX
P81	1"	3	1/C #12		MOTOR CONTROL CENTER #3 COMPT E1	EXH. FAN 3 DAMPER MOT. DISC. SW.	
P81A	1"	3	1/C #12		JUNCTION BOX	DISC. SW.	DAMPER MOTOR
P81B	1"	3	1/C #12			DISC. SW.	EXH. FAN 4 DAMPER MOT. JUNCT. BOX
P82	1"	3	1/C #12		MOTOR CONTROL CENTER #3 COMPT E1	EXH. FAN 4 DAMPER MOT. DISC. SW.	
P82A	1"	3	1/C #12		JUNCTION BOX	DISC. SW.	DAMPER MOTOR
P82B	1"	3	1/C #12			DISC. SW.	BATTERY CHARGER
P83	1"	3	1/C #8		MOTOR CONTROL CENTER #3 COMPT F1A		
P84	1 1/2"	3	1/C #4			F1A	AC POWER DIST. PANEL 7
P85	1 1/2"	3	1/C #8			F4A	MOTOR CONTROL CENTER #4 NORTH
P86	1 1/2"	3	1/C #4			F4A	AC POWER DIST. PANEL 8
P87	1"	2	1/C #12		MOTOR CONTROL CENTER #3 COMPT F1B	CO SYSTEM TRANSFORMER	FEEDER
P88	1 1/2"	3	1/C #6			F4B	MOTOR CONTROL CENTER #4 (SOUTH)

NOTES:
 For "General Notes" see Conduit & Cable schedule E-WE5

STATE OF COLORADO-DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
ELECTRICAL WEST & EAST VENTILATION BUILDINGS CONDUIT & CABLE SCHEDULE SHEET 2			
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.			
DESIGNED: H.A.C. DRAWN: O.S.G. CHECKED: D.H.D. APPROVED: [Signature] DATE: [Blank]	RECOMMENDED: [Signature] APPROVED: [Signature] DATE: [Blank]	DRAWING NO. E-WE5	SCALE: NONE DATE: AUG. 1967

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE		FROM	TO	FUNCTION
			SIZE & TYPE				
MOTOR CONTROL CENTER NO. 4-NORTH							
P95	1 1/2"	15	1/C # 12		MOTOR CONTROL CENTER #4 COMPT A1	SUPPLY FAN 1 BULKHEADS JUNCT BOX	FEEDER
P96	1 1/2"	15	1/C # 12			C1 SUPPLY FAN 2 BULKHEADS JUNCT BOX	
P97	1 1/2"	12	1/C # 12			D1 SUPPLY FAN 3 BULKHEADS JUNCT BOX	
P98	1 1/2"	12	1/C # 12			E1 SUPPLY FAN 4 BULKHEADS JUNCT BOX	
P99	1"	3	1/C # 12		SUPPLY FAN 1 BULKHEADS JUNCT BOX	SUPPLY FAN 1 BULKHEAD 1 MOT DISC SW	FEEDER
P99A	1"	3	1/C # 12		DISC SW	BULKHEAD 1 MOTOR	
P100	1"	3	1/C # 12		SUPPLY FAN 1 BULKHEADS JUNCT BOX	SUPPLY FAN 1 BULKHEAD 2 MOT DISC SW	
P100A	1"	3	1/C # 12		DISC SW	BULKHEAD 2 MOTOR	
P101	1"	3	1/C # 12		SUPPLY FAN 1 BULKHEADS JUNCT BOX	SUPPLY FAN 1 BULKHEAD 3 MOT DISC SW	
P101A	1"	3	1/C # 12		DISC SW	BULKHEAD 3 MOTOR	
P102	1"	3	1/C # 12		SUPPLY FAN 1 BULKHEADS JUNCT BOX	SUPPLY FAN 1 BULKHEAD 4 MOT DISC SW	
P102A	1"	3	1/C # 12		DISC SW	BULKHEAD 4 MOTOR	
P103	1"	3	1/C # 12		SUPPLY FAN 1 BULKHEADS JUNCT BOX	SUPPLY FAN 1 BULKHEAD 5 MOT DISC SW	
P103A	1"	3	1/C # 12		DISC SW	BULKHEAD 5 MOTOR	
P104	1"	3	1/C # 12		SUPPLY FAN 2 BULKHEADS JUNCT BOX	SUPPLY FAN 2 BULKHEAD 1 MOT DISC SW	
P104A	1"	3	1/C # 12		DISC SW	BULKHEAD 1 MOTOR	
P105	1"	3	1/C # 12		SUPPLY FAN 2 BULKHEADS JUNCT BOX	SUPPLY FAN 2 BULKHEAD 2 MOT DISC SW	
P105A	1"	3	1/C # 12		DISC SW	BULKHEAD 2 MOTOR	
P106	1"	3	1/C # 12		SUPPLY FAN 2 BULKHEADS JUNCT BOX	SUPPLY FAN 2 BULKHEAD 3 MOT DISC SW	
P106A	1"	3	1/C # 12		DISC SW	BULKHEAD 3 MOTOR	
P107	1"	3	1/C # 12		SUPPLY FAN 2 BULKHEADS JUNCT BOX	SUPPLY FAN 2 BULKHEAD 4 MOT DISC SW	
P107A	1"	3	1/C # 12		DISC SW	BULKHEAD 4 MOTOR	
P108	1"	3	1/C # 12		SUPPLY FAN 2 BULKHEADS JUNCT BOX	SUPPLY FAN 2 BULKHEAD 5 MOT DISC SW	
P108A	1"	3	1/C # 12		DISC SW	BULKHEAD 5 MOTOR	
P109	1"	3	1/C # 12		SUPPLY FAN 3 BULKHEADS JUNCT BOX	SUPPLY FAN 3 BULKHEAD 1 MOT DISC SW	
P109A	1"	3	1/C # 12		DISC SW	BULKHEAD 1 MOTOR	
P110	1"	3	1/C # 12		SUPPLY FAN 3 BULKHEADS JUNCT BOX	SUPPLY FAN 3 BULKHEAD 2 MOT DISC SW	
P110A	1"	3	1/C # 12		DISC SW	BULKHEAD 2 MOTOR	
P111	1"	3	1/C # 12		SUPPLY FAN 3 BULKHEADS JUNCT BOX	SUPPLY FAN 3 BULKHEAD 3 MOT DISC SW	
P111A	1"	3	1/C # 12		DISC SW	BULKHEAD 3 MOTOR	
P112	1"	3	1/C # 12		SUPPLY FAN 3 BULKHEADS JUNCT BOX	SUPPLY FAN 3 BULKHEAD 4 MOT DISC SW	
P112A	1"	3	1/C # 12		DISC SW	BULKHEAD 4 MOTOR	
P113	1"	3	1/C # 12		SUPPLY FAN 4 BULKHEADS JUNCT BOX	SUPPLY FAN 4 BULKHEAD 1 MOT DISC SW	
P113A	1"	3	1/C # 12		DISC SW	BULKHEAD 1 MOTOR	
P114	1"	3	1/C # 12		SUPPLY FAN 4 BULKHEADS JUNCT BOX	SUPPLY FAN 4 BULKHEAD 2 MOT DISC SW	
P114A	1"	3	1/C # 12		DISC SW	BULKHEAD 2 MOTOR	
P115	1"	3	1/C # 12		SUPPLY FAN 4 BULKHEADS JUNCT BOX	SUPPLY FAN 4 BULKHEAD 3 MOT DISC SW	
P115A	1"	3	1/C # 12		DISC SW	BULKHEAD 3 MOTOR	
P116	1"	3	1/C # 12		SUPPLY FAN 4 BULKHEADS JUNCT BOX	SUPPLY FAN 4 BULKHEAD 4 MOT DISC SW	
P116A	1"	3	1/C # 12		DISC SW	BULKHEAD 4 MOTOR	

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE		FROM	TO	FUNCTION
			SIZE & TYPE				
MOTOR CONTROL CENTER NO. 4-NORTH (CONTINUED)							
C 75	2"	25	1/C # 12 (3Sp)		MOTOR CONTROL CENTER #4 COMPT A1	SUPPLY FAN 1 BULKHEADS JUNCT BOX	CONTROL
C 76	2"	25	1/C # 12 (3Sp)			C1 SUPPLY FAN 2 BULKHEADS JUNCT BOX	
C 77	2"	25	1/C # 12 (3Sp)			D1 SUPPLY FAN 3 BULKHEADS JUNCT BOX	
C 78	2"	25	1/C # 12 (3Sp)			E1 SUPPLY FAN 4 BULKHEADS JUNCT BOX	
C 79	1 1/2"	8	1/C # 12		SUPPLY FAN 1 BULKHEADS JUNCT BOX	BULKHEAD 1 LIM SW'S	
		2	1/C # 12			BULKHEAD 1 BYPASS SW	
C 80	1 1/2"	8	1/C # 12			BULKHEAD 2 LIM SW'S	
		2	1/C # 12			BULKHEAD 2 BYPASS SW	
C 81	1 1/2"	8	1/C # 12			BULKHEAD 3 LIM SW'S	
		2	1/C # 12			BULKHEAD 3 BYPASS SW	
C 82	1 1/2"	8	1/C # 12			BULKHEAD 4 LIM SW'S	
		2	1/C # 12			BULKHEAD 4 BYPASS SW	
C 83	1 1/2"	8	1/C # 12			BULKHEAD 5 LIM SW'S	
		2	1/C # 12			BULKHEAD 5 BYPASS SW	
C 84	1 1/2"	10	1/C # 12			SUPPLY FAN 1 BULKHEADS TRANSF SW	
						& OPEN CLOSE INCHING P.B. SW'S	
C 85	1 1/2"	8	1/C # 12		SUPPLY FAN 2 BULKHEADS JUNCT BOX	BULKHEAD 1 LIM SW'S	
		2	1/C # 12			BULKHEAD 1 BYPASS SW	
C 86	1 1/2"	8	1/C # 12			BULKHEAD 2 LIM SW'S	
		2	1/C # 12			BULKHEAD 2 BYPASS SW	
C 87	1 1/2"	8	1/C # 12			BULKHEAD 3 LIM SW'S	
		2	1/C # 12			BULKHEAD 3 BYPASS SW	
C 88	1 1/2"	8	1/C # 12			BULKHEAD 4 LIM SW'S	
		2	1/C # 12			BULKHEAD 4 BYPASS SW	
C 89	1 1/2"	8	1/C # 12			BULKHEAD 5 LIM SW'S	
		2	1/C # 12			BULKHEAD 5 BYPASS SW	
C 90	1 1/2"	10	1/C # 12			SUPPLY FAN 2 BULKHEADS TRANSF SW	
						& OPEN CLOSE INCHING P.B. SW'S	
C 91	1 1/2"	8	1/C # 12		SUPPLY FAN 3 BULKHEADS JUNCT BOX	BULKHEAD 1 LIM SW'S	
		2	1/C # 12			BULKHEAD 1 BYPASS SW	
C 92	1 1/2"	8	1/C # 12		SUPPLY FAN 3 BULKHEADS JUNCT BOX	BULKHEAD 2 LIM SW'S	
		2	1/C # 12			BULKHEAD 2 BYPASS SW	

NOTES
 For 'General Notes' see Conduit & Cable schedule E-WES

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL WEST & EAST VENTILATION BUILDINGS CONDUIT & CABLE SCHEDULE SHEET 3					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: N. A. C.	CHECKED: F. E. J.	APPROVED: <i>[Signature]</i>	DATE: <i>[Date]</i>	DRAWING NO. E-WET	
CHECKED: D. H. B.	APPROVED: <i>[Signature]</i>	DATE: <i>[Date]</i>	SCALE: NONE		
NEW YORK, N. Y.			DATE: AUG. 1967		

AS CORRECTED
REVISED **DATE** Oct. 26, 1973

NOTES
 For "General Notes" see Conduit & Cable schedule E-WES

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL					
WEST & EAST VENTILATION BUILDINGS					
CONDUIT & CABLE SCHEDULE					
SHEET 4					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: N.A.C.	RECOMMENDED:				
DRAWN: E.M.	Checked: <i>M. J. [Signature]</i>				
CHECKED: D.H.D.	APPROVED: <i>[Signature]</i>				
SUBMITTED:	BY: <i>[Signature]</i>				
NEW YORK, N.Y.		SCALE: NONE	DATE: AUG. 1967	DRAWING NO. E-WES	

CONDUIT NO.	WIRE OR CABLE		FROM	TO	FUNCTION
	SIZE & KIND	QUANTITY			
MOTOR CONTROL CENTER NO. 4-NORTH (CONTINUED)					
C93	1/2"	8	SUPPLY FAN 3 BULKHEADS JUNCT. BOX	BULKHEAD 3 LIM. SW'S BYPASS SW.	CONTROL
		2			
C94	1/2"	8		BULKHEAD 4 LIM. SW'S BYPASS SW.	
		2			
C95	1/2"	10	SUPPLY FAN 3 BULKHEADS TRANSF SW & OPEN CLOSE INCHING P.B. SW'S		
C96	1/2"	8	SUPPLY FAN 4 BULKHEADS JUNCT BOX	BULKHEAD 1 LIM. SW'S BYPASS SW.	
		2			
C97	1/2"	8		BULKHEAD 2 LIM. SW'S BYPASS SW.	
		2			
C98	1/2"	8		BULKHEAD 3 LIM. SW'S BYPASS SW.	
		2			
C99	1/2"	8		BULKHEAD 4 LIM. SW'S BYPASS SW.	
		2			
C100	1/2"	10	SUPPLY FAN 4 BULKHEADS TRANSF SW & OPEN CLOSE INCHING P.B. SW'S		
MOTOR CONTROL CENTER NO. 4-SOUTH					
PI21	1 1/2"	18	MOTOR CONTR. CENTER*4 COMPT AI	BULKHEADS 1 TO 6 JUNCT. BOX	FEEDER
PI22	1 1/2"	18	MOTOR CONTR. CENTER*4 COMPT CI	BULKHEADS 7 TO 12 JUNCT. BOX	
PI23	1 1/2"	18	MOTOR CONTR. CENTER*4 COMPT DI	BULKHEADS 13 TO 18 JUNCT. BOX	
PI24	1"	3	BULKHEAD 1 TO 6 JUNCT. BOX	BULKHEAD 1 DISC. SW. BULKHEAD 1 MOTOR	
PI24A	1"	3			
PI25	1"	3	BULKHEAD 1 TO 6 JUNCT. BOX	BULKHEAD 2 DISC. SW. BULKHEAD 2 MOTOR	
PI25A	1"	3			
PI26	1"	3	BULKHEAD 1 TO 6 JUNCT. BOX	BULKHEAD 3 DISC. SW. BULKHEAD 3 MOTOR	
PI26A	1"	3			
PI27	1"	3	BULKHEAD 1 TO 6 JUNCT. BOX	BULKHEAD 4 DISC. SW. BULKHEAD 4 MOTOR	
PI27A	1"	3			
PI28	1"	3	BULKHEAD 1 TO 6 JUNCT. BOX	BULKHEAD 5 DISC. SW. BULKHEAD 5 MOTOR	
PI28A	1"	3			
PI29	1"	3	BULKHEAD 1 TO 6 JUNCT. BOX	BULKHEAD 6 DISC. SW. BULKHEAD 6 MOTOR	
PI29A	1"	3			
PI30	1"	3	BULKHEAD 7 TO 12 JUNCT. BOX	BULKHEAD 7 DISC. SW. BULKHEAD 7 MOTOR	
PI30A	1"	3			
PI31	1"	3	BULKHEAD 7 TO 12 JUNCT. BOX	BULKHEAD 8 DISC. SW. BULKHEAD 8 MOTOR	
PI31A	1"	3			
PI32	1"	3	BULKHEAD 7 TO 12 JUNCT. BOX	BULKHEAD 9 DISC. SW. BULKHEAD 9 MOTOR	
PI32A	1"	3			
PI33	1"	3	BULKHEAD 7 TO 12 JUNCT. BOX	BULKHEAD 10 DISC. SW. BULKHEAD 10 MOTOR	
PI33A	1"	3			
PI34	1"	3	BULKHEAD 7 TO 12 JUNCT. BOX	BULKHEAD 11 DISC. SW. BULKHEAD 11 MOTOR	
PI34A	1"	3			

CONDUIT NO.	WIRE OR CABLE		FROM	TO	FUNCTION
	SIZE & KIND	QUANTITY			
MOTOR CONTROL CENTER NO. 4-SOUTH (CONTINUED)					
PI35	1"	3	BULKHEAD 7 TO 12 JUNCT. BOX	BULKHEAD 12 DISC. SW. BULKHEAD 12 MOTOR	FEEDER
PI35A	1"	3			
PI36	1"	3	BULKHEAD 13 TO 18 JUNCT. BOX	BULKHEAD 13 DISC. SW. BULKHEAD 13 MOTOR	
PI36A	1"	3			
PI37	1"	3	BULKHEAD 13 TO 18 JUNCT. BOX	BULKHEAD 14 DISC. SW. BULKHEAD 14 MOTOR	
PI37A	1"	3			
PI38	1"	3	BULKHEAD 13 TO 18 JUNCT. BOX	BULKHEAD 15 DISC. SW. BULKHEAD 15 MOTOR	
PI38A	1"	3			
PI39	1"	3	BULKHEAD 13 TO 18 JUNCT. BOX	BULKHEAD 16 DISC. SW. BULKHEAD 16 MOTOR	
PI39A	1"	3			
PI40	1"	3	BULKHEAD 13 TO 18 JUNCT. BOX	BULKHEAD 17 DISC. SW. BULKHEAD 17 MOTOR	
PI40A	1"	3			
PI41	1"	3	BULKHEAD 13 TO 18 JUNCT. BOX	BULKHEAD 18 DISC. SW. BULKHEAD 18 MOTOR	
PI41A	1"	3			
C105	2"	27	MOTOR CONTR. CENTER*4 COMPT AI	BULKHEADS 1 TO 6 JUNCT. BOX	CONTROL
C106	2"	27		CI BULKHEADS 7 TO 12 JUNCT. BOX	
C107	2"	27		DI BULKHEADS 13 TO 18 JUNCT. BOX	
C108	1 1/2"	8	BULKHEADS 1 TO 6 JUNCT. BOX	BULKHEAD 1 LIM. SW'S BYPASS SW.	
		2			
C109	1 1/2"	8		BULKHEAD 2 LIM. SW'S BYPASS SW.	
		2			
C110	1 1/2"	8		BULKHEAD 3 LIM. SW'S BYPASS SW.	
		2			
C111	1 1/2"	8		BULKHEAD 4 LIM. SW'S BYPASS SW.	
		2			
C112	1 1/2"	8		BULKHEAD 5 LIM. SW'S BYPASS SW.	
		2			
C113	1 1/2"	8		BULKHEAD 6 LIM. SW'S BYPASS SW.	
		2			
C114	1 1/2"	10		BULKHEADS 1 TO 6 TRANSF. SW. & OPEN, CLOSE INCHING P.B. SW'S	
C115	1 1/2"	8	BULKHEADS 7 TO 12 JUNCT. BOX	BULKHEAD 7 LIM. SW'S BYPASS SW.	
		2			
C116	1 1/2"	8		BULKHEAD 8 LIM. SW'S BYPASS SW.	
		2			
C117	1 1/2"	8		BULKHEAD 9 LIM. SW'S BYPASS SW.	
		2			
C118	1 1/2"	8		BULKHEAD 10 LIM. SW'S BYPASS SW.	
		2			

AS CONSTRUCTED
REVISED DATE Oct 26, 1973

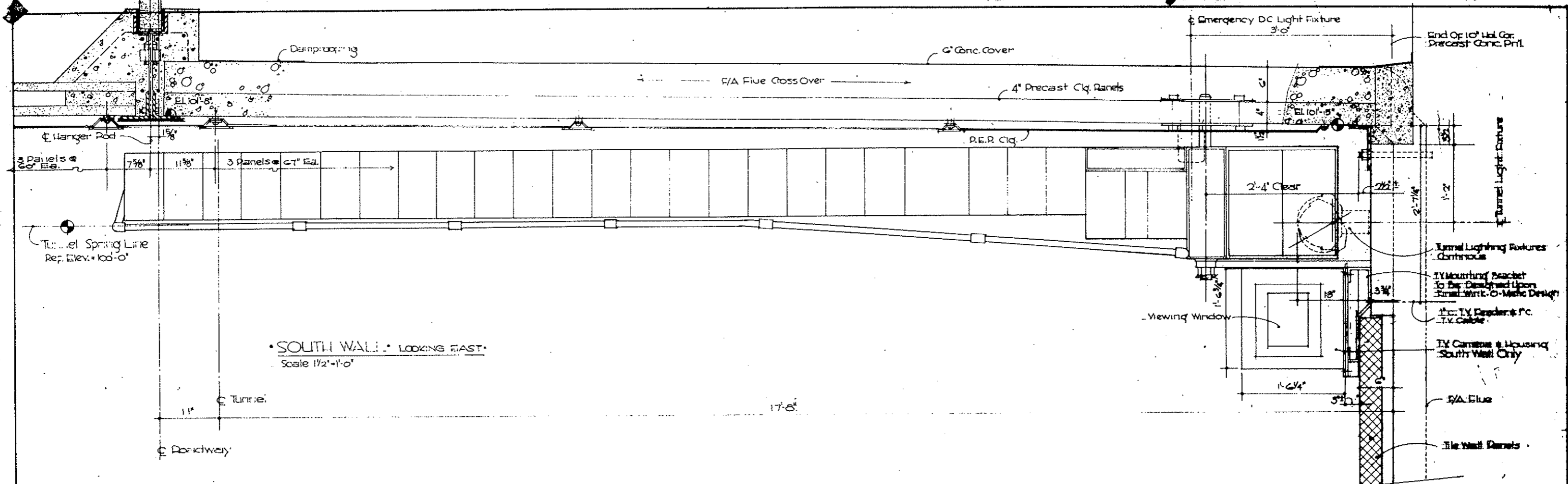
CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE		FROM	TO	FUNCTION
			SIZE & TYPE				
MOTOR CONTROL CENTER NO. 4 SOUTH (CONTINUED)							
C119	1 1/2"	8	1/C #12		BULKHEADS 7 TO 12 JUNCT BOX	BULKHEAD 11 LIM. SW'S	CONTROL
		2	1/C #12			BULKHEAD 11 BYPASS SW	
C120	1 1/2"	8	1/C #12			BULKHEAD 12 LIM. SW'S	
		2	1/C #12			BULKHEAD 12 BYPASS SW	
C121	1 1/2"	10	1/C #12			BULKHEADS 7 TO 12 TRANSF SW & OPEN CLOSE INCHING PB SW'S	
C122	1 1/2"	8	1/C #12		BULKHEADS 12 TO 18 JUNCT BOX	BULKHEAD 13 LIM. SW'S	
		2	1/C #12			BULKHEAD 13 BYPASS SW	
C123	1 1/2"	8	1/C #12			BULKHEAD 14 LIM. SW'S	
		2	1/C #12			BULKHEAD 14 BYPASS SW	
C124	1 1/2"	8	1/C #12			BULKHEAD 15 LIM. SW'S	
		2	1/C #12			BULKHEAD 15 BYPASS SW	
C125	1 1/2"	8	1/C #12			BULKHEAD 16 LIM. SW'S	
		2	1/C #12			BULKHEAD 16 BYPASS SW	
C126	1 1/2"	8	1/C #12			BULKHEAD 17 LIM. SW'S	
		2	1/C #12			BULKHEAD 17 BYPASS SW	
C127	1 1/2"	8	1/C #12			BULKHEAD 18 LIM. SW'S	
		2	1/C #12			BULKHEAD 18 BYPASS SW	
C128	1 1/2"	10	1/C #12		BULKHEADS 13 TO 18 TRANSFER SW & OPEN, CLOSE INCHING PB SW'S		
120V/240 V MAIN DC PANEL							
D1	1 1/2"	2	1/C #2		BATTERY CHARGER	BATTERY	FEEDER
D2	3"	3	350 MCM		BATTERY	MAIN DC PANEL	
D3	1"	2	1/C #10		MAIN DC PANEL	24.9 KV HIGH TENSION SWGR	DC CONTROL SUPPLY 1
D4	1"	2	1/C #10			24.9 KV HIGH TENSION SWGR	2
D5	1"	2	1/C #10			460V. LOW TENSION SWGR	1
D6	1"	2	1/C #10			460V. LOW TENSION SWGR	2
D7	1"	3	1/C #10			GROUP 235 DC BOX (1S FOR WEST)	TUNNEL TEL SIGN LTG POWER SUPPLY
						(FOR CONTINUATION SEE DWG E-WE3)	
D8	1 1/2"	3	1/C #4			BLDG & TUNNEL EMERG. LTG AUTO SW	FEEDER
D8A	1 1/2"	3	1/C #4		AUTO SW.	DC POWER DIST PANEL 8	
D10	1"	2	1/C #12		MAIN DC PANEL	CO.SYS. INVERTER STARTER	CONTROL
D10A	1"	2	1/C #12		CO.SYS. INVERTER STARTER	CO.SYS. INVERTER	

CONDUIT NO.	SIZE & KIND	QUANTITY	WIRE OR CABLE		FROM	TO	FUNCTION
			SIZE & TYPE				
CO SYSTEM							
P145	1"	2	1/2" #12		CO.SYS. AUTO-TRANSFER SW.	CO.SYS. 480/200V TRANSF	POWER SUPPLY
P146	1"	2	1/2" #12			CO.SYS. INVERTER	
P147	1"	2	1/2" #12			CO ANALYZER	
C135	1"	2	1/2" #12			INVERTER STARTER	CONTROL
TUNNEL LIGHTING & PIPE HEATING POWER SUPPLY & CONTROL *							
P150	1 1/2"	4	1/C #6		LTG & HTG CONTACTORS PANEL	GROUP BOX 23N AC BOX (IN FOR WEST)	INTENSIVE ZONES NORTH SIDE LTG FOR N1
P151	1 1/2"	4	1/C #6				N2
P152	1 1/2"	4	1/C #6				N3
P153	1 1/2"	4	1/C #6			GROUP BOX 23S AC BOX (IS FOR WEST)	INTENSIVE ZONES SOUTH SIDE LTG FOR S1
P154	1 1/2"	4	1/C #6				S2
P155	1 1/2"	4	1/C #6				S3
P156	1"	4	1/C #8			GROUP BOX 23N AC BOX (IN FOR WEST)	WATER MAIN & FIRE HYDRANTS HTG FOR
P157	1"	3	1/C #6			J.B. IN SEEPAGE DRAIN MANHOLE SOUTH STA. 123+28.52 (FOR WEST STA. 35+96)	SEEPAGE DRAIN PIPES HTG. FDR
P158	1"	2	1/C #6			J.B. IN WASTE DRAIN MANHOLE STA. 124+07.52 (FOR WEST STA. 35+78)	WASTE DRAIN PIPE HTG. FDR.
C150	1"	2	1/C #12		LTG & HTG RELAY & CONTROL CAB	THERMOSTAT	CONTROL
C151	1"	2	1/C #12			PHOTOELECTRIC CELL	CONTROL
C152	1"	2	1/C #12			TELEPHONE TERM BOX T2	TUNNEL NORMAL LTG. RESET SYS.
C153	2"		CABLES BY TEL.CO		TELEPHONE TERM BOX	GROUP BOX 23S TEL. JUNCT. BOX (FOR WEST IS)	
						(FOR CONTINUATION IN TUNNEL SEE DWG. E-T1)	
STATE PATROL COMMUNICATION SYSTEM							
SC-1	2"	*			STATE PATROL COMMUNICAT. R.M	GROUP BOX 23N COMM. BOX (FOR WEST IN)	COMMUNICATION
SC-2	2"	*					
						(FOR CONTINUATION IN TUNNEL SEE DWG. E-T1)	
						* CABLES BY STATE PATROL	

* For the remainder of Tunnel Ltg & Pipe heating refer to Cond. & Cable Schedule E-T7

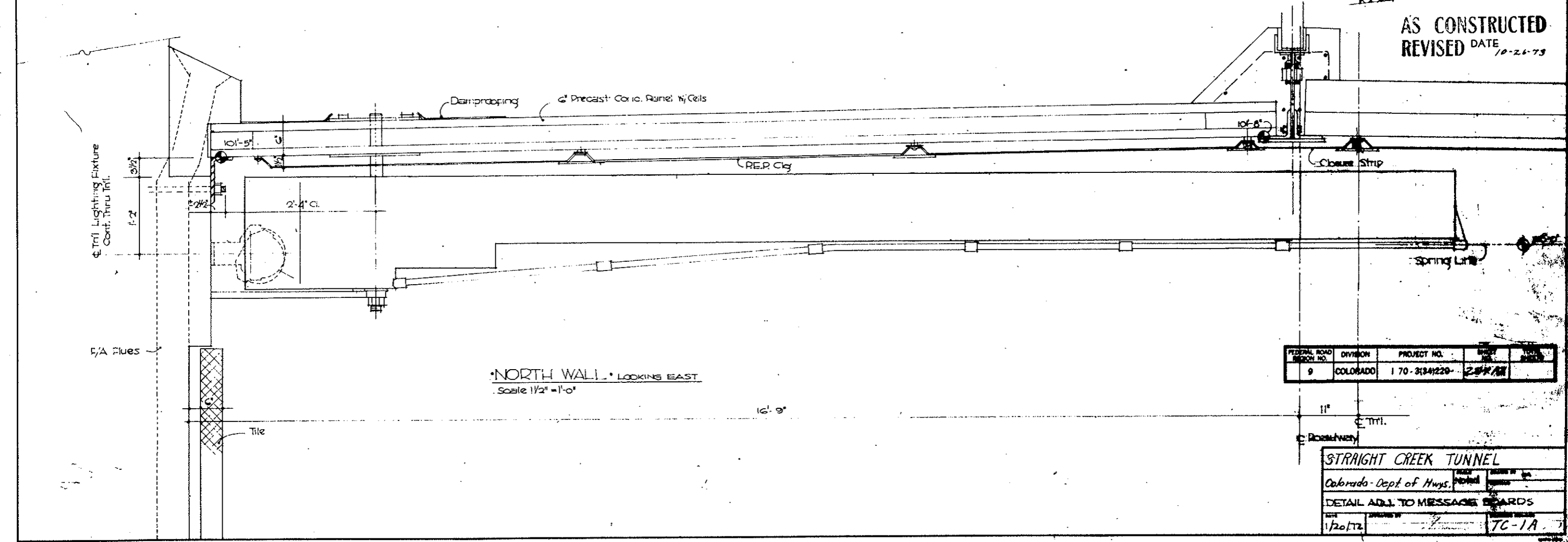
NOTES
 For "General Notes" see Conduit & Cable schedule E-WE5

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
ELECTRICAL WEST & EAST VENTILATION BUILDINGS CONDUIT & CABLE SCHEDULE SHEET 5					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: N. A. C.	RECOMMENDED: <i>[Signature]</i>	DRAWING NO. E-WE9			
DRAWN: F. E. J.	APPROVED: <i>[Signature]</i>				
CHECKED: D. H. O.					
SUBMITTED: <i>[Signature]</i>					
NEW YORK, N.Y.	SCALE: NONE	DATE: AUG. 1967			



• SOUTH WALL • LOOKING EAST •
Scale 1/2" = 1'-0"

AS CONSTRUCTED
REVISED DATE 10-26-79



• NORTH WALL • LOOKING EAST •
Scale 1/2" = 1'-0"

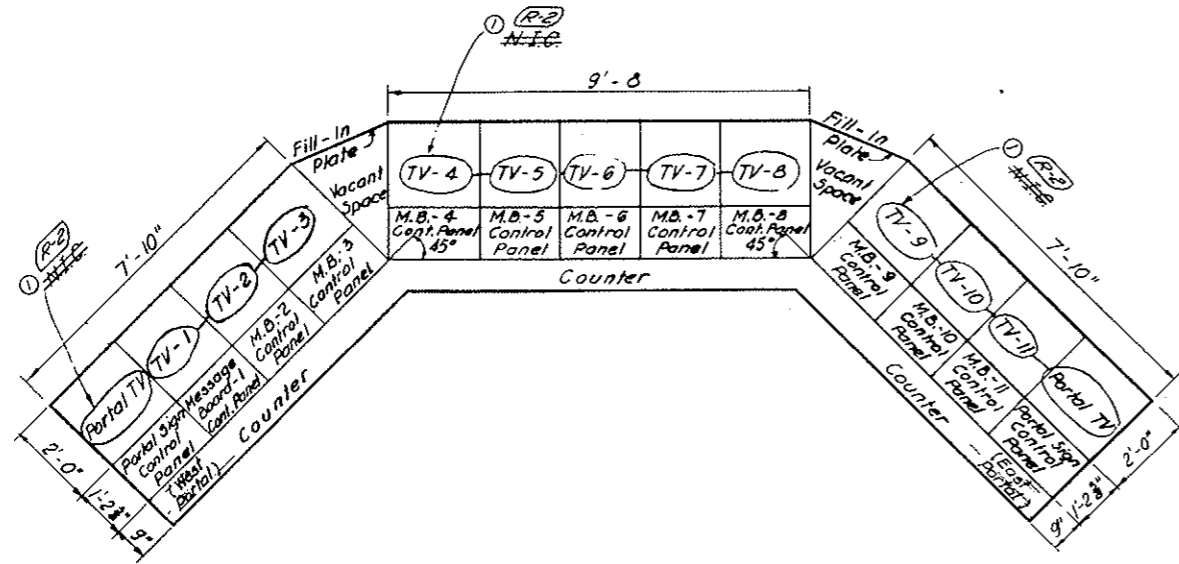
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	DATE	BY
9	COLORADO	170-3(34)220-	2/27/72	

STRAIGHT CREEK TUNNEL	
Colorado Dept. of Hwys.	NOTED
DETAIL ADD. TO MESSAGE BOARDS	
DATE 1/20/72	TC-1A

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	285	326

AS CONSTRUCTED
REVISED ~~DATE~~ Oct. 26, 1973

~~(R-1) REV. 11-6-67 G.D.H. - ADDS WORK BELOW~~
~~(R-2) REV. 3-1-71 REINSTATED ITEMS NOT LISTED~~

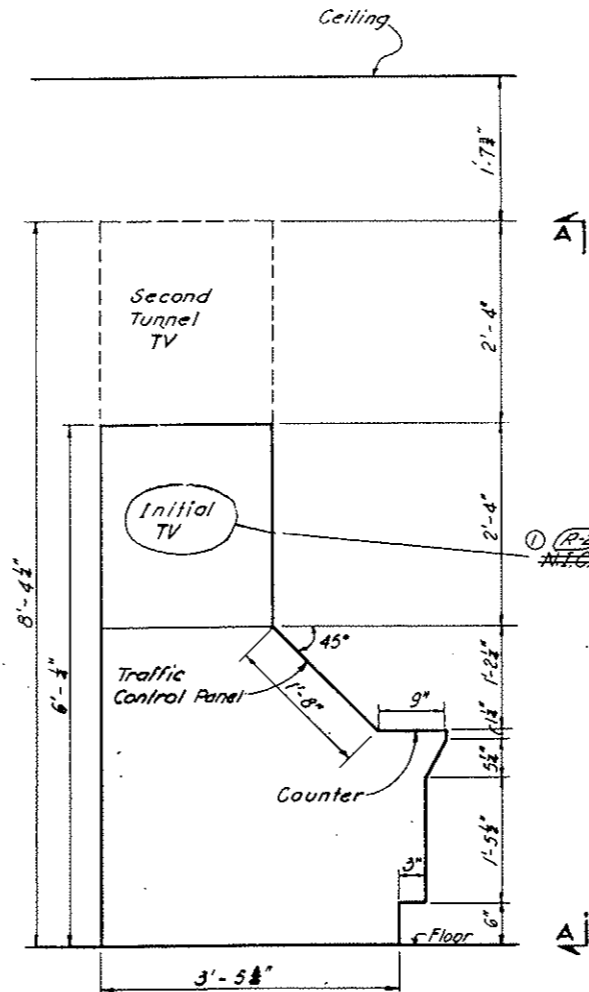


Tunnel Lighting Controls
Fan Board
C.O. Recorders

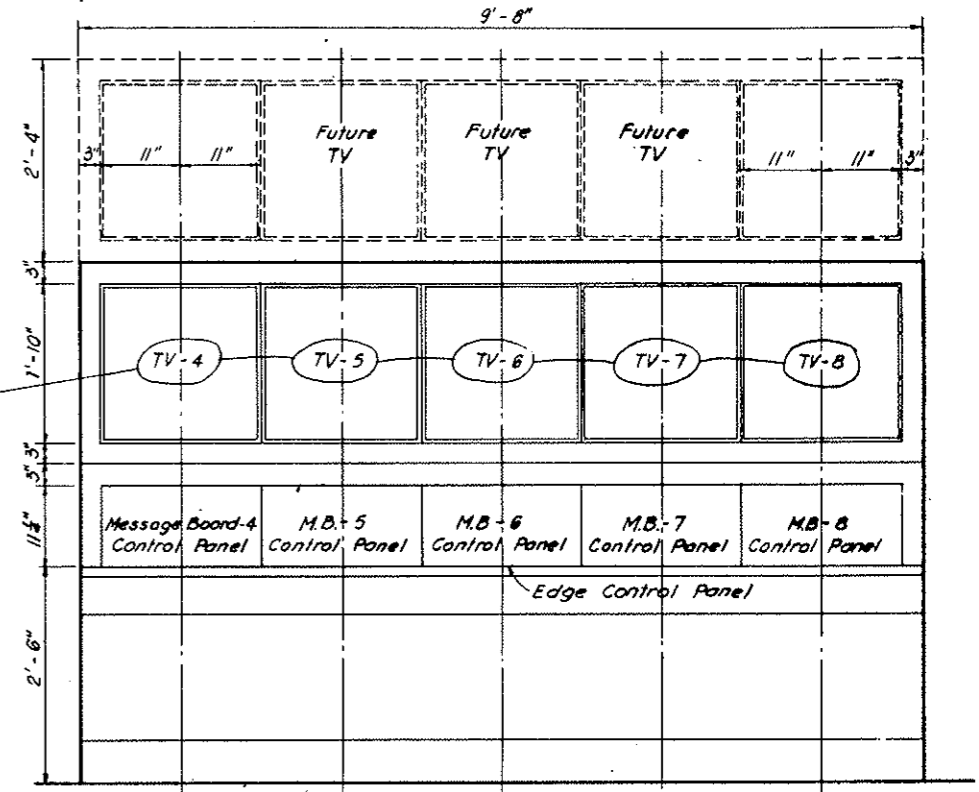


LAYOUT
SCALE: 1/2"=1'-0"

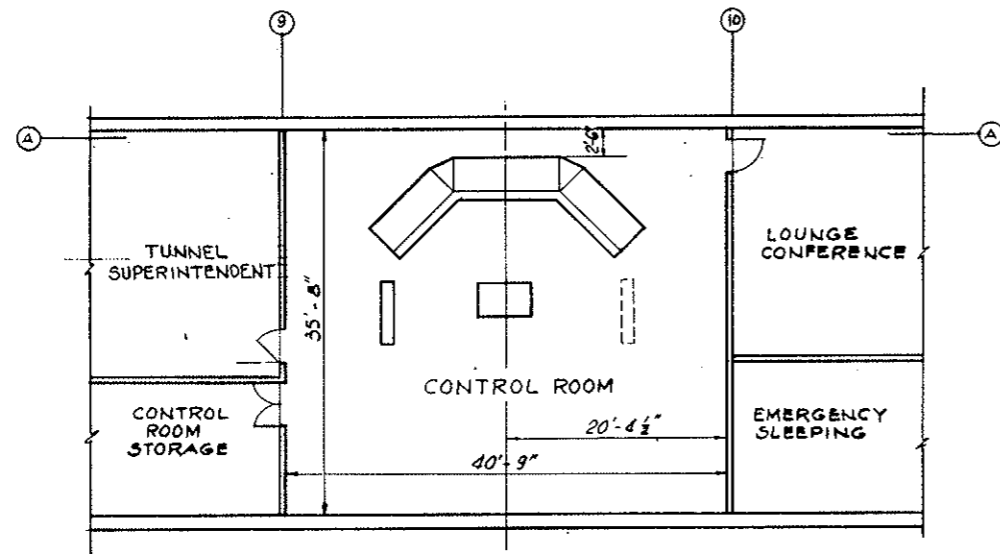
Future Controls



CABINET END SECTION
SCALE: 1"=1'-0"



SECTION A-A
CONTROL PANEL DETAIL
SCALE: 1"=1'-0"



LOCATION IN EAST VENTILATION BUILDING
SCALE: 1/8"=1'-0"

TRAFFIC CONTROL CABINETS

NOTE A
TV Surveillance System (Bid Item 190) deleted. See W.O. 14153 & Spec. 18H. TV Monitors not in this contract, but required Mounting Facilities & Outlets for Mounting Monitors, (to be furnished & installed under another contract), must be provided in Traffic Control Console. Also, Console must provide space for entry of coaxial cables & their connection to monitors.

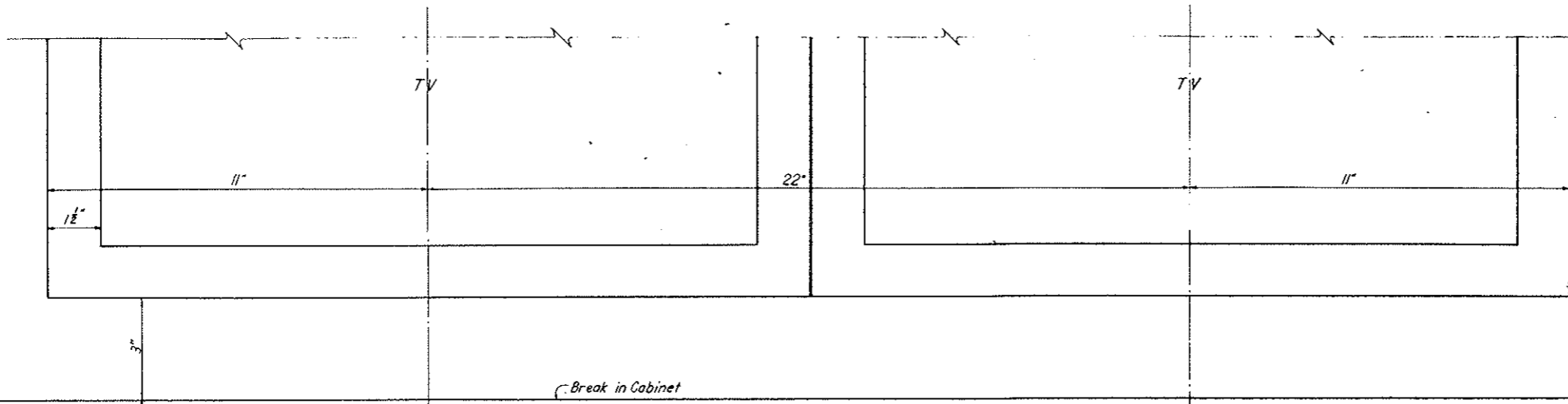
Contract limits Defined See Note A		BY	CHK	APP
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
TRAFFIC CONTROL SYSTEM EAST VENTILATION BUILDING TRAFFIC CONTROL DEVICES TRAFFIC CONTROL CONSOLE				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED: D.T.M.	INFORMED:	APPROVED: <i>Robert A. Boyer</i>		
DRAWN: J.E.C.	CHECKED: D.T.M.	APPROVED: <i>Frank Rubin</i>		
SUBMITTED: <i>John J. Dwyer</i>	DATE: AUG. 1967	DRAWING NO. TC-2		
NEW YORK, N. Y.				

~~(R-2) (R-1) TV SURVEILLANCE SYSTEM DELETED W.O. 14153 SEE SPEC. 18H~~

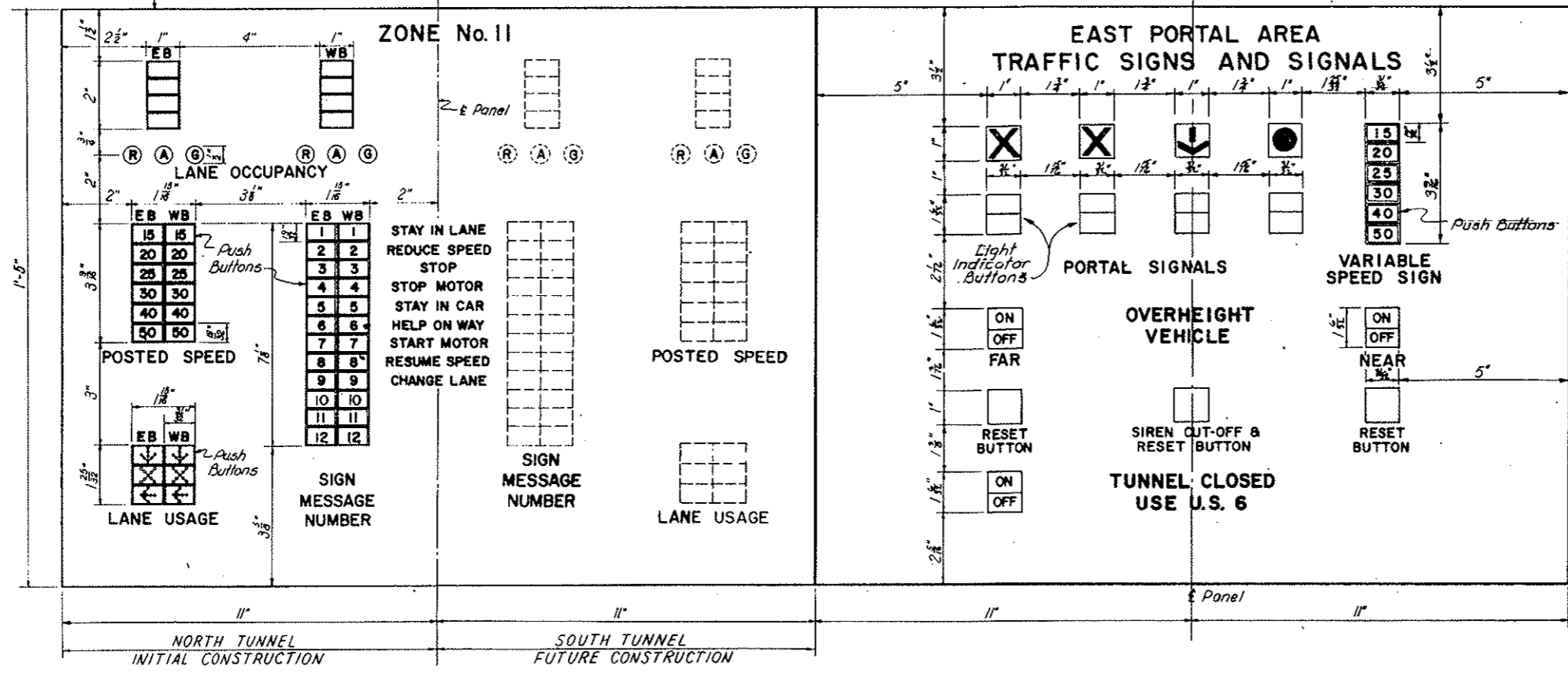
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	286	326

(R-1) REV 11-6-67 G.D.H. - ADDED NOTE BELOW
 (R-2) REV 2-1-71 REINSTATED ITEMS NO. 14153

AS CONSTRUCTED
 REVISED DATE Oct. 26, 1973



Note: West Portal Area Control Panel is Identical.



(R-2) Note A
 Overheight Vehicle Detectors, Signs & Sirens (Bid Items 185 & 190) deleted. See H.O. 12.153 f Spec 18E. However, all controls, wiring, and other provisions required for incorporating these into the overall Traffic Control System are to be furnished under this Contract.

CONTROL ZONES I TO II

EAST AND WEST PORTAL AREA TRAFFIC SIGN AND SIGNAL CONTROL

LAYOUT OF TYPICAL SECTION OF TRAFFIC CONTROL CONSOLE

SCALE: 6" = 1'-0"

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
TRAFFIC CONTROL SYSTEM EAST VENTILATION BUILDING TRAFFIC CONTROL DEVICES AND CONSOLE DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: D.T.M.	RECOMMENDED:	APPROVED:		DRAWING NO.	
DRAWN: A.J.Z.	BY: Albert G. B...	Checked: D.T.M.		TC-3	
SUBMITTED:	DATE: 10/26/73	SCALE: 6 IN. = 1 FT.		DATE: AUG. 1967	

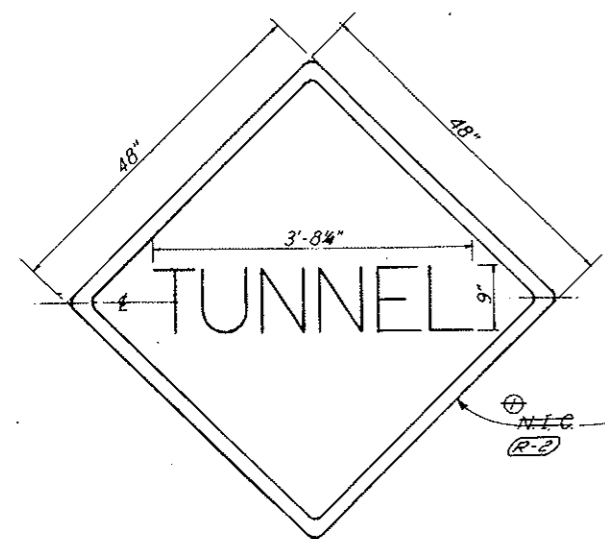
(R-2) (R-1) OVERHEIGHT DETECTOR SIGN - OUTDOOR SIREN DELETE NO. 14153 SEE SPEC. 18E

(R-2) REV 2-1-71 REINSTATED ITEMS W/O 1452A

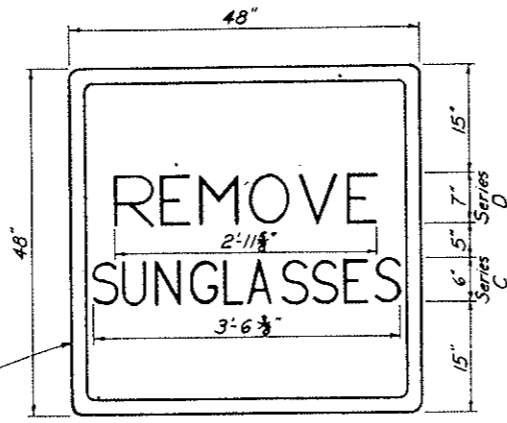
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34220)	287	328

(R-1) REV. 11-6-67 G.M. - ADDED NOTE BELOW

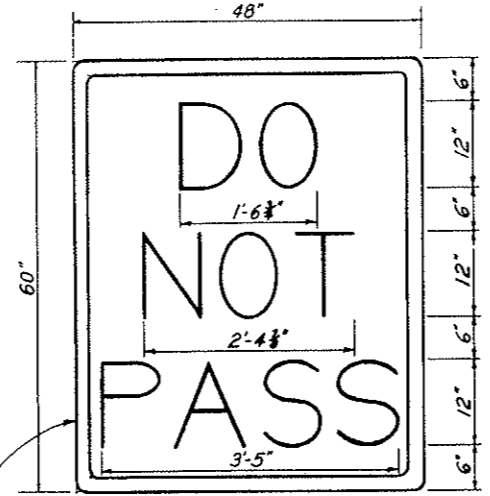
AS CONSTRUCTED
REVISED ~~DATE~~ Oct 26, 1973



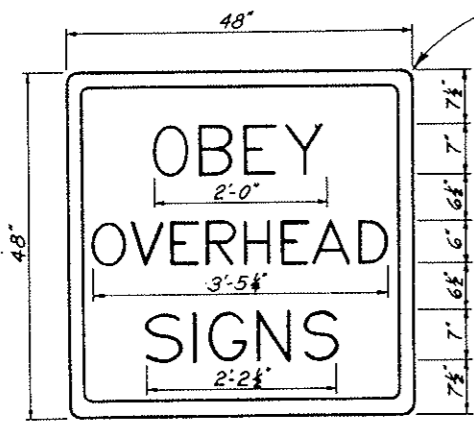
CODE NO. 2
 (C.D.H. - XW 12-4)



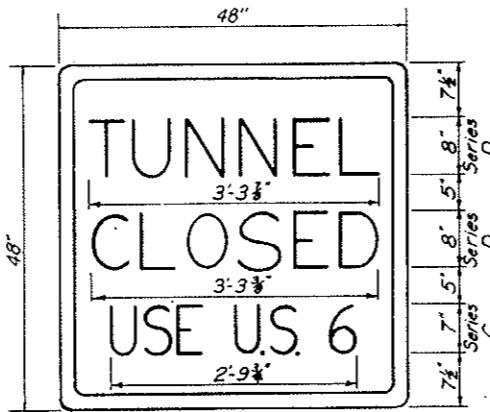
CODE NO. 4



CODE NO. 5



CODE NO. 3



CODE NO. 6

CODE NUMBER	LEGEND	SIGN SIZE	LETTER SIZE	MARGIN	BORDER	CORNER RADIUS	COLORS		TYPE R=REFLECTORIZED B=BLANK OUT	TOTAL SIGNS	REFERENCE
							BACKGROUND	MESSAGE AND BORDER			
1 1/2	SPEED (VARIABLE)	36" x 30"	8" SERIES-C						B	2	Drawing No. TC-5
2 1/2	TUNNEL	48" x 48"	9" SERIES-D	3/4"	1/4"	3"	YELLOW	BLACK	R	2	
3 1/2	OBEY OVERHEAD SIGNS	48" x 48"	6"-7" SERIES-D	3/4"	1/4"	3"	WHITE	BLACK	R	2	
4 1/2	REMOVE SUNGLASSES	48" x 48"	6"-7" SERIES-C-D	3/4"	1/4"	3"	WHITE	BLACK	R	2	
5 1/2	DO NOT PASS	48" x 60"	12" SERIES-D	3/4"	1/4"	3"	WHITE	BLACK	R	2	
6 1/2	TUNNEL CLOSED USE U.S. 6	48" x 48"	7"-8" SERIES-C-D	3/4"	1/4"	3"		RED NEON	B	2	
7 1/2	OVERHEIGHT VEHICLE EXIT HERE	54" x 48"	6" SERIES-C					RED NEON	B	2	Drawing No. TC-5
8 1/2	OVERHEIGHT VEHICLE PARK HERE	54" x 48"	6" SERIES-C					RED NEON	B	2	Drawing No. TC-5
9	STOP HERE ON RED	36" x 18"	3"-4"-6" SERIES-C					RED NEON	B	20	Drawing No. TC-1

Note A
 Fixed legend ReflectORIZED Signs (Bid Item 196) & Overheight Vehicle Signs (Bid Item 196), deleted. See W.O. 14153 & Spec. 10-F.

Contract Limits Defined, See Note A		BY	CHK	APP.
NO.	DATE	DESCRIPTION OF REVISION		
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT				
TRAFFIC CONTROL SYSTEM TUNNEL APPROACH SIGNING				
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.				
DESIGNED BY D.T.M.	CHECKED BY A.T.M.	RECOMMENDED BY [Signature]	APPROVED BY [Signature]	DRAWING NO. TC-4
NEW YORK, N. Y.		SCALE: 1 IN. = 1 FT.	DATE: AUG. 1967	

(R-2) (R-1) FIXED LEGEND REFLECTORIZED SIGN DELETE W/O 14153 SEE SPEC 10-F

NOTE

All Portal Traffic Signals and the Variable Speed Signs Shall be Provided with Sun Shades. Details to be Furnished by Signal and Sign Manufacturers.

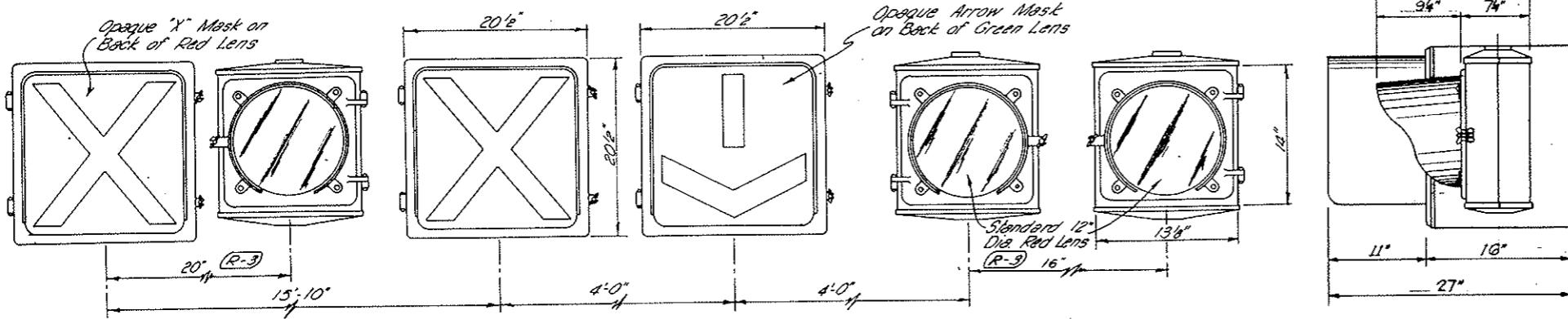
AS CONSTRUCTED
REVISED DATE Oct. 26, 1973

(R-3) 2-1-71 C.D.M. ADDED SIGNAL FACES
W.O. # 21743
REV 2-1-71 REINSTATED ITEMS
W.O. # 16557

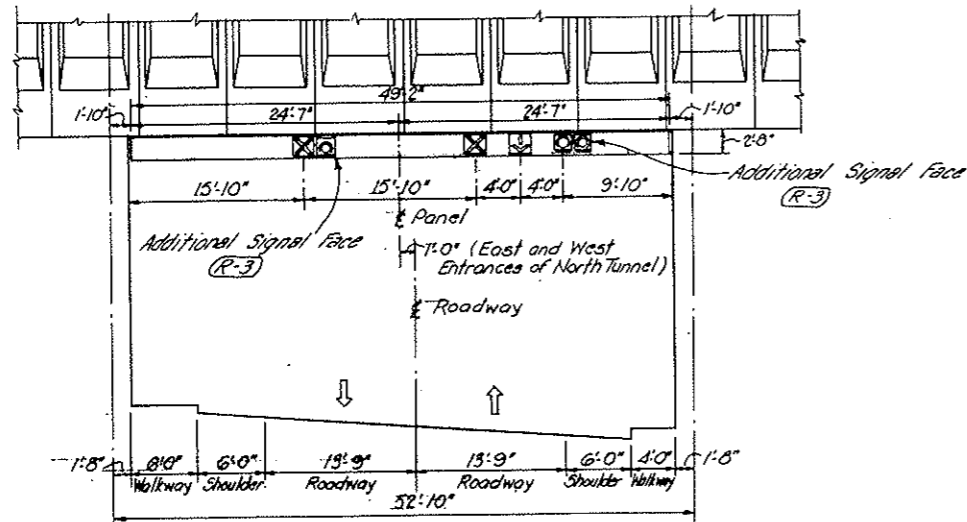
(R-1) 9-6-67 C.D.M.
6 Series "C" letters
(Bureau of Public Roads)

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	288	326

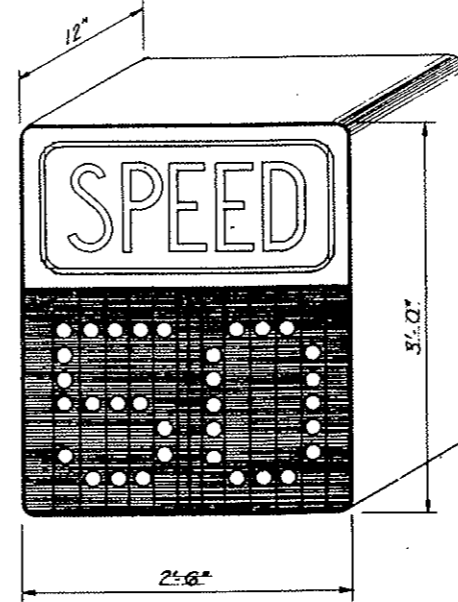
(R-2) 8-1-67 C.D.M. ADDED LETTERS
Standard Blankout Shade Screen



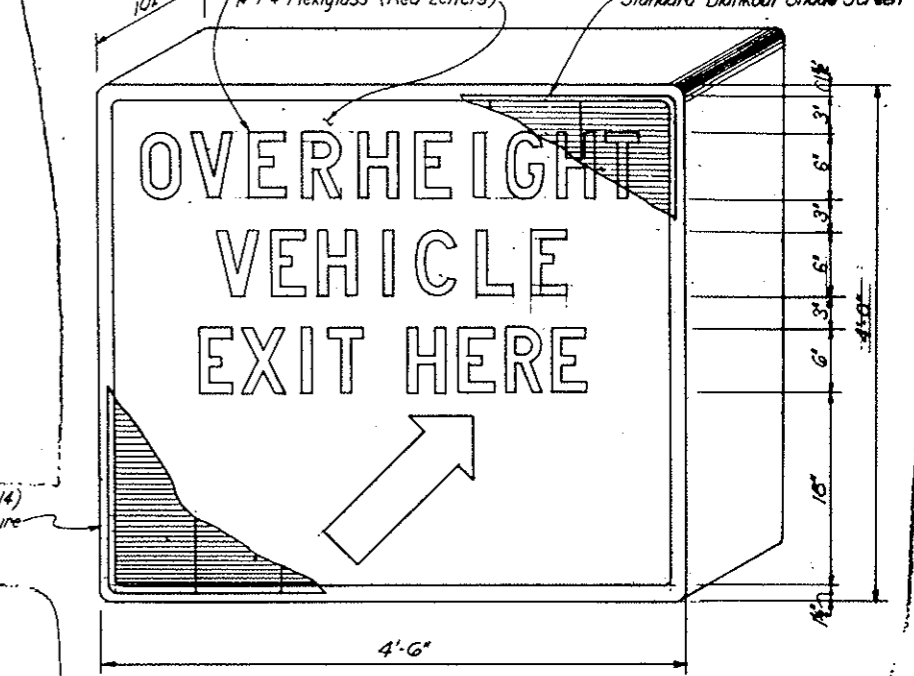
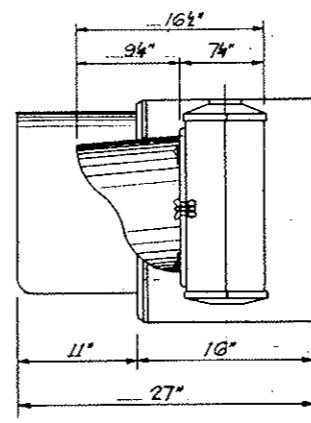
PORTAL TRAFFIC SIGNAL UNITS
SCALE: 1/2" = 1'-0"



LOCATION OF PORTAL TRAFFIC SIGNAL UNITS ON TUNNEL PORTALS
SCALE: 1/8" = 1'-0"

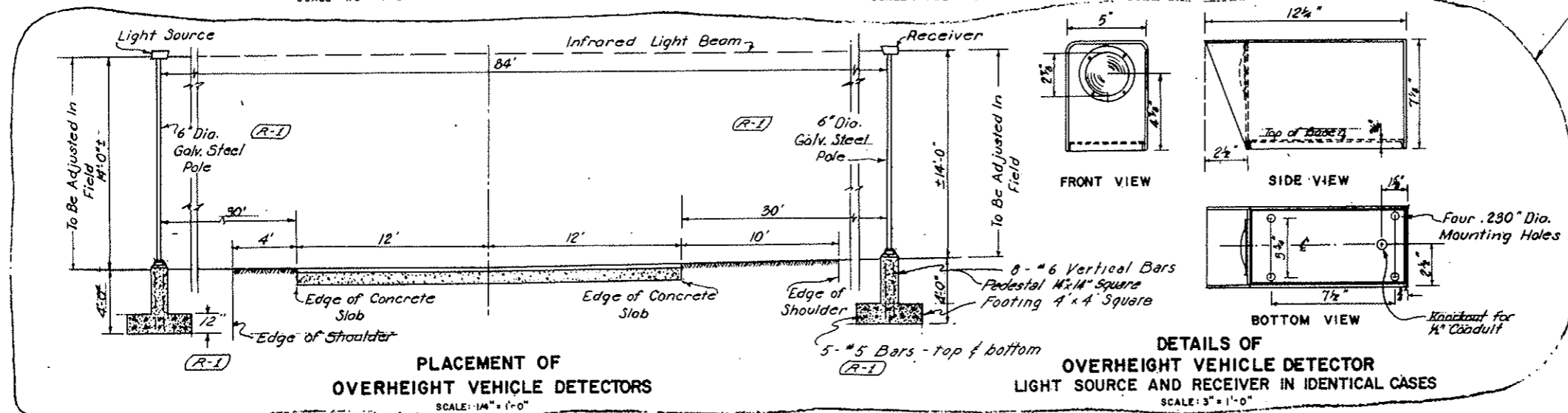


VARIABLE SPEED SIGN
CODE NO. 1
SCALE: 1/2" = 1'-0"



OVERHEIGHT VEHICLE SIGN
CODE NO. 7
SCALE: 1/2" = 1'-0"

NOTE:
Sign: "OVERHEIGHT VEHICLE-PARK HERE", Code No. 8 has Dimensions Identical to Those Shown Above, Except that the Arrow is Horizontal. (Sign) to be Placed Near this Sign.



PLACEMENT OF OVERHEIGHT VEHICLE DETECTORS
SCALE: 1/4" = 1'-0"

DETAILS OF OVERHEIGHT VEHICLE DETECTOR LIGHT SOURCE AND RECEIVER IN IDENTICAL CASES
SCALE: 3" = 1'-0"

NOTE A
G.H. Vehicle Detectors, Signs & Straps (Bid Items 195 & 199), deleted. See W.O. 14153 & Spec. 18E.

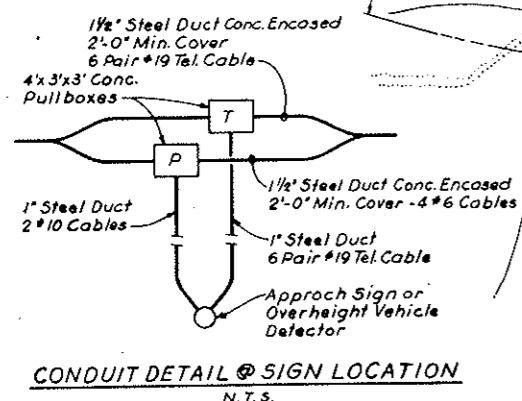
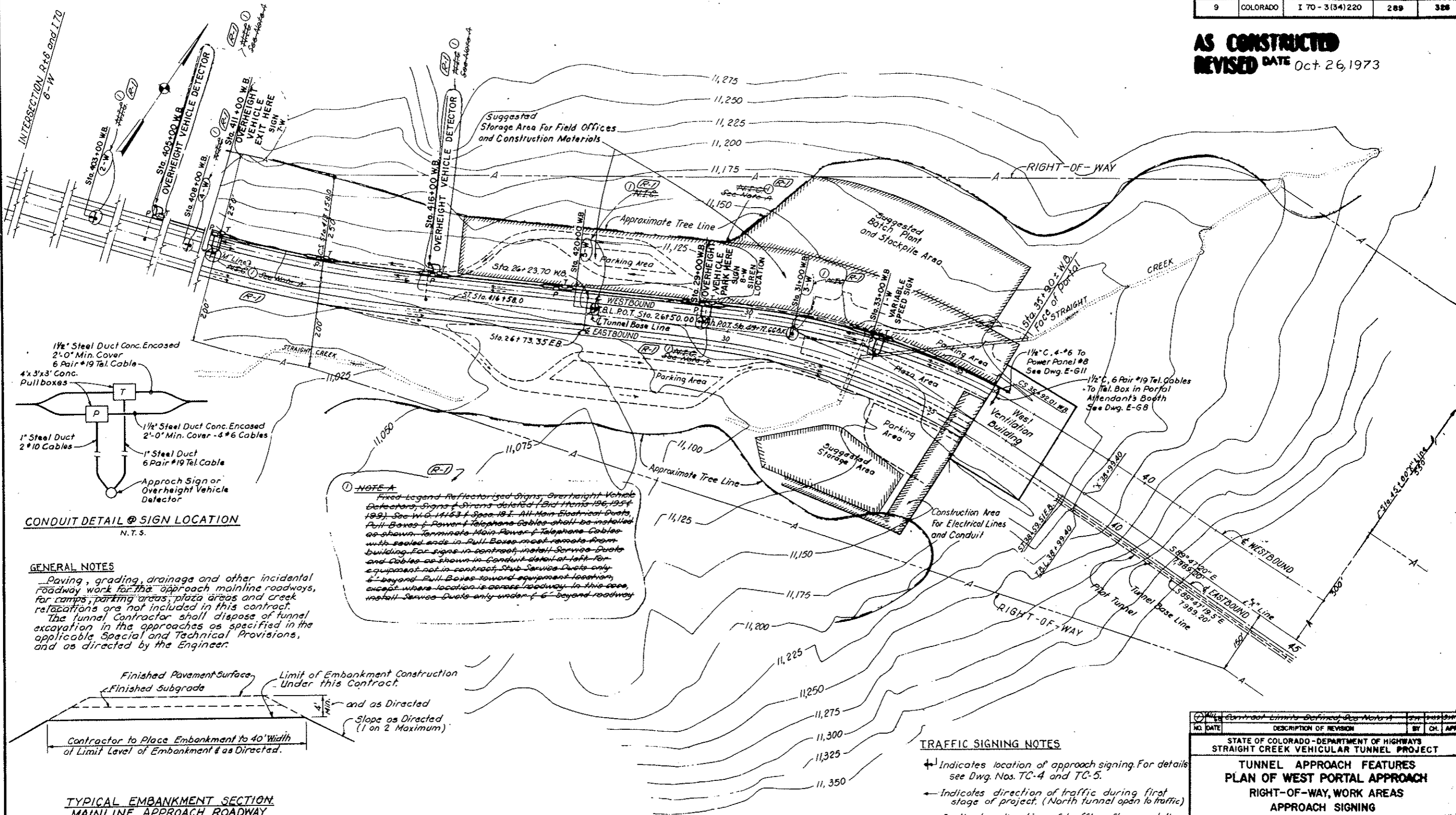
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
TRAFFIC CONTROL SYSTEM OVERHEIGHT VEHICLE DETECTORS PORTAL SIGNS					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: D.T.M.	RECOMMENDED:				
DRAWN: M.L.-L.A.V.	CHECKED: D.T.M.				
QUANTITY:	APPROVED:				
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUG. 1967					

(R-3) (R-2) OVERHEIGHT DETECTOR SIGN DELETE W.O. # 14153 SEE SPEC. 18E

(R-7) REV 2-1-71 REINSTATED ITEMS NO. 216521

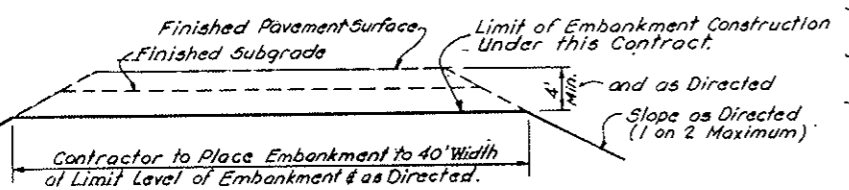
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	289	388

AS CONSTRUCTED
REVISED DATE Oct 26, 1973



NOTE-A
Fixed Legend ReflectORIZED Signs, Overheight Vehicle Detectors, Signs & Sirens deleted (Bid Items 196, 195 & 199). See W.O. 11153 f. Specs 19.1. All Main Electrical Ducts, Pull Boxes & Power & Telephone Cables shall be installed as shown. Terminate Main Power & Telephone Cables with sealed ends in Pull Boxes most remote from building. For signs in contract, install Service Ducts and Cables as shown in Conduit Detail at left. For equipment not in contract, stub Service Ducts only 6' beyond Pull Boxes toward equipment location, except where location is across roadway. In this case, install Service Ducts only under 6' beyond roadway.

GENERAL NOTES
Paving, grading, drainage and other incidental roadway work for the approach mainline roadways, for camps, parking areas, plaza areas and creek relocations are not included in this contract.
The tunnel Contractor shall dispose of tunnel excavation in the approaches as specified in the applicable Special and Technical Provisions, and as directed by the Engineer.



See Profiles on Drawing Nos 62-1, 62-2, 62-3 and 62-9 for Elevations of Approach Roadway Profile Grade Lines.

TRAFFIC SIGNING NOTES
 + Indicates location of approach signing. For details see Dwg. Nos. TC-4 and TC-5.
 - Indicates direction of traffic during first stage of project. (North tunnel open to traffic)
 - - Indicates direction of traffic after completion of project. (Both tunnels open to traffic)

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
**TUNNEL APPROACH FEATURES
 PLAN OF WEST PORTAL APPROACH
 RIGHT-OF-WAY, WORK AREAS
 APPROACH SIGNING**

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS, NEW YORK, N.Y.

DESIGNED: P.L.P.
 DRAWN: J.L.M.
 CHECKED: D.T.M.
 SUBMITTED: [Signature]
 NEW YORK, N.Y.

RECOMMENDED: [Signature]
 APPROVED: [Signature]
 NEW YORK, N.Y.

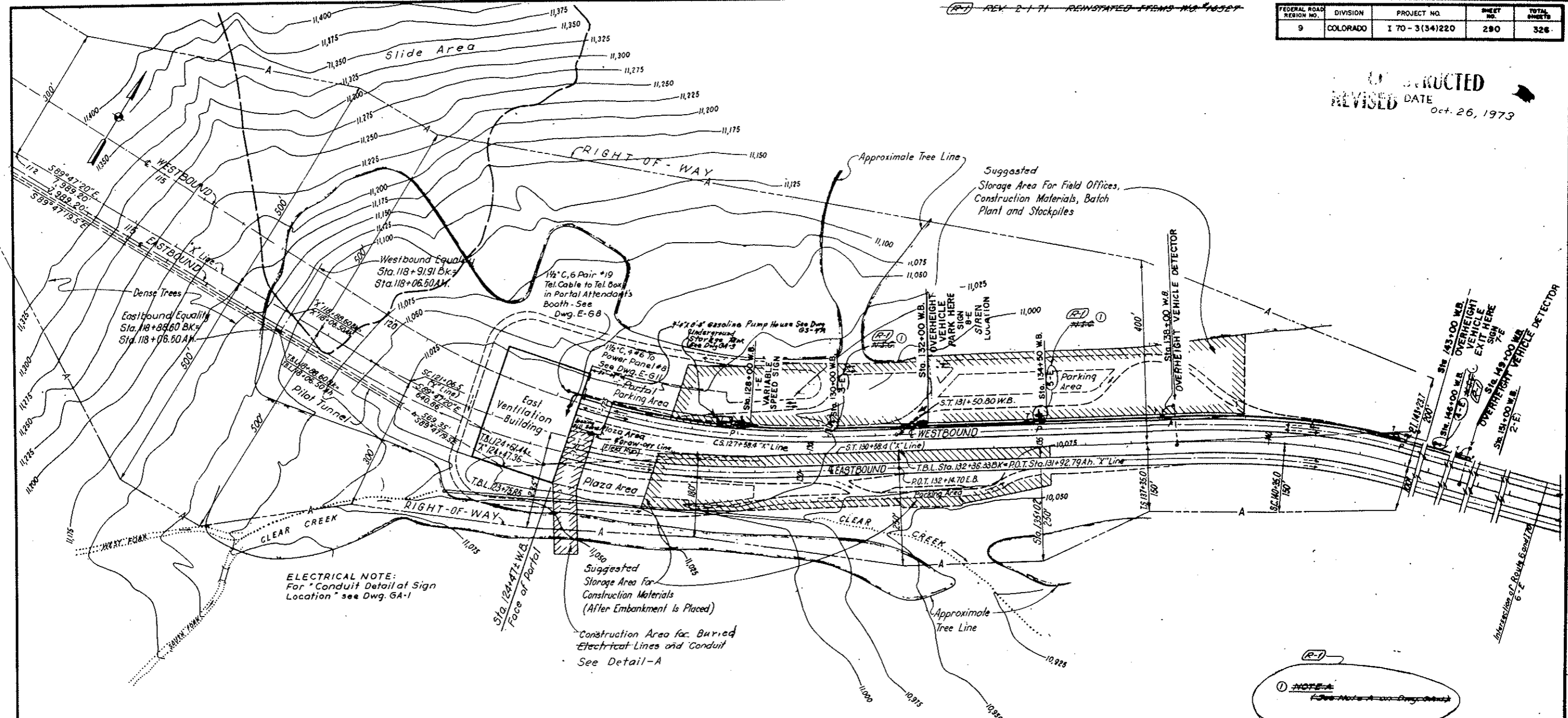
SCALE: 1 IN. = 100 FT. DATE: AUG. 1967

GA

REV. 2-1-71 REINSTATED ITEMS NO. 4052P

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	290	326

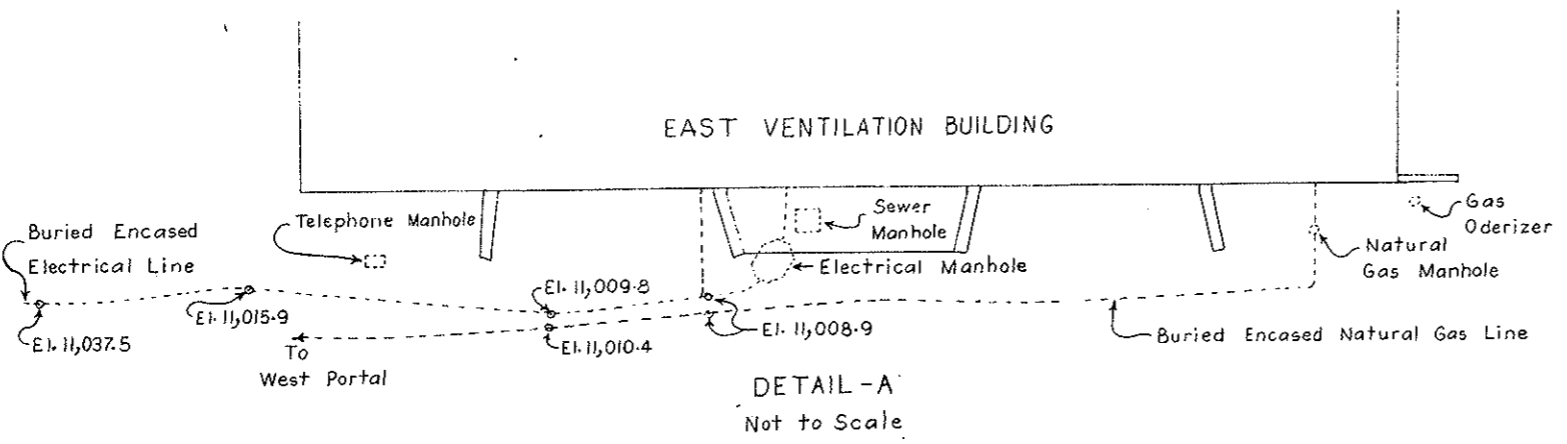
UNSTRUCTURED
REVISED DATE Oct. 26, 1973



ELECTRICAL NOTE:
For "Conduit Detail at Sign Location" see Dwg. GA-1

Suggested Storage Area For Construction Materials (After Embankment Is Placed)
Construction Area for Buried Electrical Lines and Conduit See Detail-A

NOTE:
See Note A on Dwg. GA-1

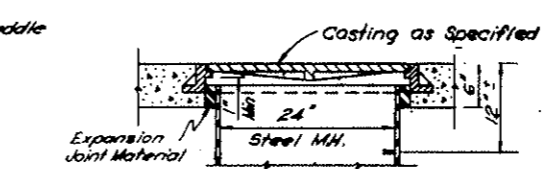
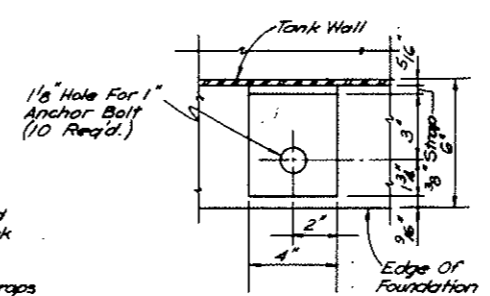
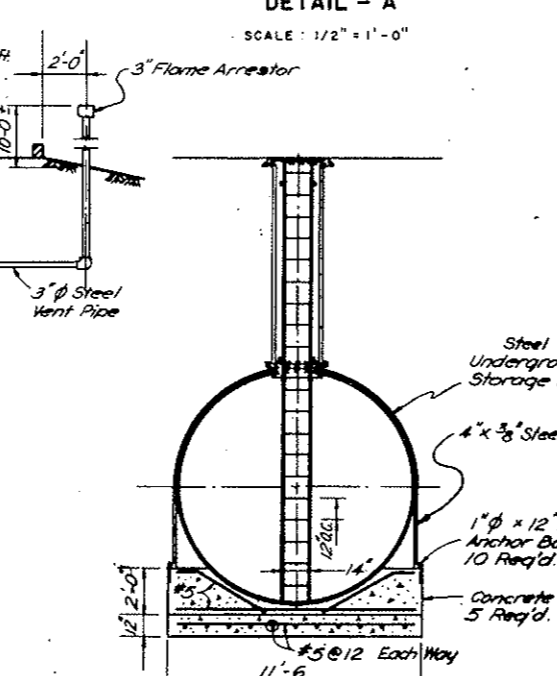
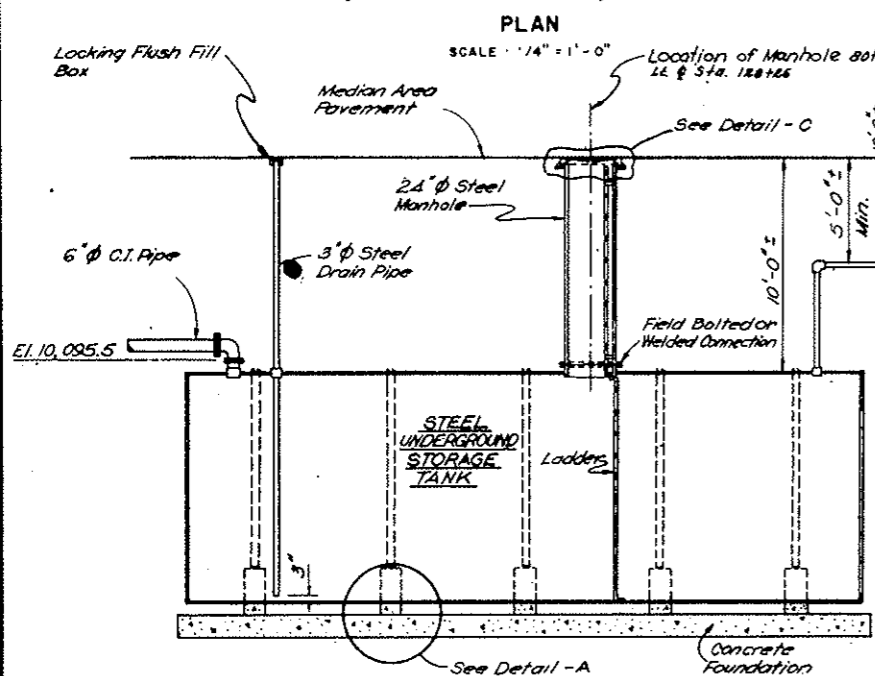
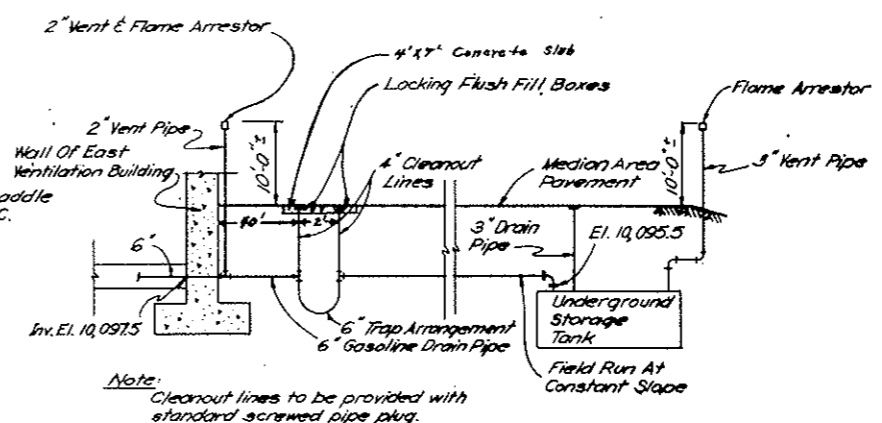
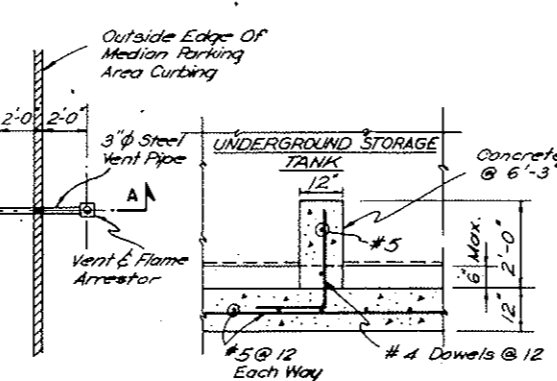
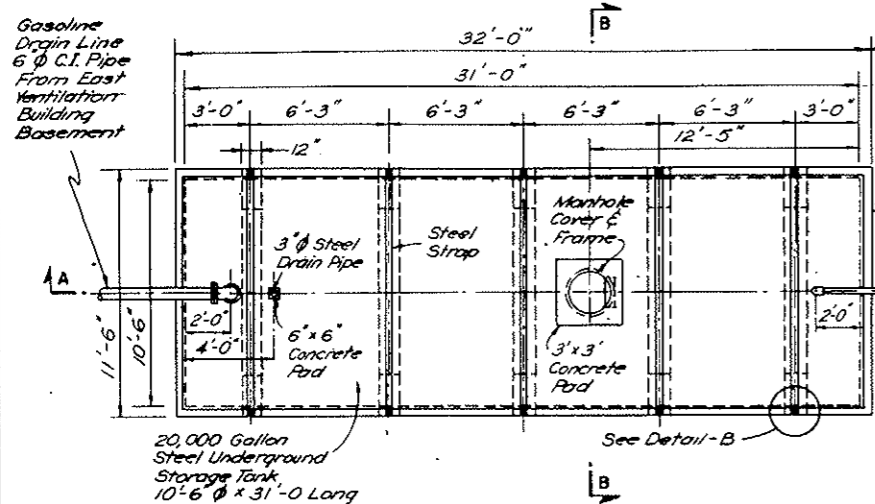


- TRAFFIC SIGNING NOTES**
- Indicates location of approach signing. For details, see Dwg. Nos. TC-4 and TC-5.
 - Indicates direction of traffic during first stage of project. (North tunnel open to traffic).
 - Indicates direction of traffic after completion of project. (Both tunnels open to traffic).

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
TUNNEL APPROACH FEATURES PLAN OF EAST PORTAL APPROACH RIGHT-OF-WAY, WORK AREAS APPROACH SIGNING					
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY R.L.P.	CHECKED BY J.L.	APPROVED BY [Signature]	DRAWING NO. GA-2		
DRAWN BY D.T.M.	APPROVED BY [Signature]	SCALE: 1" = 100 FT.		DATE: AUG. 1967	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I. 70 - 3(54)220	29	300

AS CONSTRUCTED
REVISED DATE Oct. 26, 1973



NOTE:
 For General Location at East Portal, See Dwg. No. GA-8.
 80' Lt. & Sta. 128+86

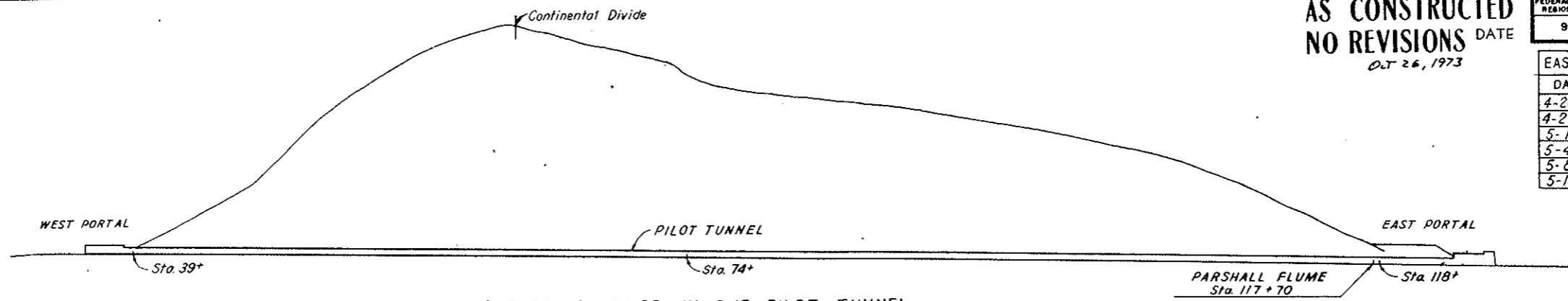
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
TUNNEL APPROACH FEATURES EAST PORTAL AREA UNDERGROUND STORAGE TANK PLAN, SECTION AND DETAILS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY	D. L.	CHECKED BY	J. N.	APPROVED BY	Donald A. Bryant
DRAWN BY	E. A. B.	CHECKED BY	E. A. B.	APPROVED BY	William C. Wright
SCALE	SCALE AS NOTED				
DATE	OCTOBER 1973				
					GA-3

**AS CONSTRUCTED
NO REVISIONS** DATE
OCT 26, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	293	326

DATE	FLOW(gpm)	DATE	FLOW(gpm)	DATE	FLOW(gpm)
4-26-67	4.4	5-12-67	3.4	6-27-67	7.1
4-27-67	3.8	5-18-67	3.8	7-7-67	6.5
5-1-67	3.5	5-29-67	5.2	7-12-67	6.1
5-4-67	3.6	6-5-67	6.0		
5-8-67	3.5	6-12-67	6.6		
5-10-67	3.6	6-19-67	6.7		

DATE	FLOW(gpm)
6-5-67	5.5
6-12-67	7.4



TEMPERATURE READINGS IN THE PILOT TUNNEL

Number of Days warmer than	JANUARY		FEBRUARY			MARCH			APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER																				
	Sta. 39+	Sta. 74+	Sta. 118+	Sta. 39+	Sta. 74+	Sta. 118+	Sta. 39+	Sta. 74+	Sta. 118+	Sta. 39+	Sta. 74+	Sta. 118+	Sta. 39+	Sta. 74+	Sta. 118+	Sta. 39+	Sta. 74+	Sta. 118+	Sta. 39+	Sta. 74+	Sta. 118+	Sta. 39+	Sta. 74+	Sta. 118+	Sta. 39+	Sta. 74+	Sta. 118+	Sta. 39+	Sta. 74+	Sta. 118+																							
	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967																					
25°	29	29	31	12	23	23	11	28	27	31	6	31	27	31	27	30	27	30	27	27	31	22	31	23	31	23	30	3	30	4	30	3	31	31	31	31	31	31	31	30	30	30	30	31	28	30	23	20	17	24			
30°	29	29	31	12	23	23	11	28	27	31	6	31	27	31	27	30	27	30	27	27	31	22	31	23	31	23	30	3	30	4	30	3	31	31	31	31	31	31	31	30	30	30	31	28	30	23	20	17	23				
35°	29	29	31	12	23	23	11	28	27	31	6	31	25	31	27	30	27	30	24	26	31	22	31	23	31	23	30	3	30	4	30	3	31	31	31	31	31	31	31	30	30	30	31	28	30	23	20	17	21				
40°	14	28	13	0	21	23	0	19	11	29	6	31	13	28	26	30	27	30	15	21	11	22	31	23	30	19	26	3	30	4	30	3	31	31	31	31	31	31	30	30	29	31	31	31	28	30	23	20	17	12			
45°	0	28	0	0	0	23	0	0	0	1	6	31	0	1	3	18	27	30	1	0	1	22	31	23	12	10	9	3	30	4	1	1	31	31	31	31	31	31	30	30	0	31	31	31	0	14	30	0	9	11	0		
50°	0	9	0	0	0	13	0	0	0	0	6	5	0	0	0	0	27	5	0	0	0	1	31	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0		
55°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0		
60°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total No of Readings Taken	0	29	0	29	0	31	12	23	0	23	11	28	27	31	6	31	27	31	27	30	27	30	27	27	31	22	31	23	31	23	30	3	30	4	30	3	31	31	31	31	31	31	31	30	30	30	31	28	30	23	20	17	24

LOCATION	TOTAL YEAR	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
DILLON	11,515	1,624	1,389	1,370	1,020	738	468	301	353	549	930	1,254	1,519

*Source - Public Service Company of Colorado

Number of Years of Rainfall	1931-40	1941-50	1951-60	1961-66
Trace to 0.50"	7	3	1	1
0.50" to 1.00"	8	9	1	7
1.00" to 1.50"	7	10	11	6
1.50" to 2.00"	6	8	11	5
2.00" to 2.50"	6	4	5	2
2.50" to 3.00"	1	0	3	3
3.00" to 3.50"	0	1	1	4
3.50" to 4.00"	0	0	2	1
4.00" to 4.50"	1	0	0	0
4.50" to 5.00"	0	0	1	0
Greater than 5.00"	0	1	0	1

**Source - U.S. Weather Bureau Records

DATE	FLUME(gpm)	WIND	DATE	FLUME(gpm)	WIND	DATE	FLUME(gpm)	WIND	DATE	FLUME(gpm)	WIND
1-11-65	99	WEST	7-6-65	552	EAST	7-18-66	139	EAST	4-24-67	49	WEST
1-21-65	90	WEST	8-6-65	291	EAST	10-3-66	72	EAST	5-8-67	49	WEST
2-3-65	85	WEST	9-15-65	130	EAST	10-30-66	63	EAST	5-22-67	49	WEST
2-10-65	72	WEST	12-9-65	67	WEST	11-7-66	63	EAST	5-29-67	153	WEST
2-17-65	72	WEST	1-4-66	64	WEST	11-21-66	63	EAST	6-5-67	251	WEST
3-4-65	72	WEST	1-26-66	63	EAST	12-4-66	54	WEST			
3-17-65	67	WEST	2-24-66	63	WEST	1-9-67	45	WEST			
4-1-65	67	WEST	3-14-66	45	EAST	1-23-67	49	WEST			
4-12-65	59	WEST	4-15-66	45	WEST	2-20-67	45	WEST			
4-29-65	67	VARIABLES	5-2-66	45	WEST	2-27-67	45	WEST			
5-11-65	67	WEST	5-23-66	175	WEST	3-13-67	45	WEST			
6-1-65	99	WEST	6-13-66	301	EAST	3-27-67	45	WEST			
6-16-65	242	WEST	7-4-66	188	EAST	4-10-67	40	WEST			

DATE	PREDOMINATE DIRECTION	AVER. VELOC. (mph)	DATE	PREDOMINATE DIRECTION	AVER. VELOC. (mph)	DATE	PREDOMINATE DIRECTION	AVER. VELOC. (mph)
1-4-67	SSE	4	1-17-67	SSE	8	3-2-67	SSE	12
1-5-67	SSE	8	1-18-67	SSE	9	3-3-67	SSE	11
1-6-67	Varies	8	1-19-67	SSE	9	3-4-67	SSE	8
1-7-67	Varies	7	1-20-67	SSE	9	3-5-67	ENE	11
1-8-67	NNE	6	1-21-67	SSE	14	3-6-67	Varies	6
1-9-67	NNE	8	1-22-67	SSE	10	3-20-67	Varies	6
1-10-67	Varies	7	1-23-67	SSE	7	3-21-67	Varies	8
1-11-67	NNE	7	1-24-67	SSE	6	3-22-67	NNE	8
1-12-67	Varies	9	1-25-67	SSE	6	3-23-67	SSE	8
1-13-67	SSW	7	1-26-67	NNE	9	3-24-67	SSE	9
1-14-67	Varies	12	1-27-67	NNE	7	3-25-67	Varies	8
1-15-67	Varies	11	1-28-67	SSE	7	3-26-67	Varies	10
1-16-67	SSE	8	3-1-67	SSE	8	3-27-67	Varies	2

DATE	FLUME(gpm)	DATE	FLUME(gpm)	DATE	FLUME(gpm)	DATE	FLUME(gpm)
10-1966	22.5 (1)	1-1967	6.7	4-1967	10.9		
11-1966	18.4	2-1967	3.6 (1)	5-1967	16.1		
12-1966	14.8 (1)	3-1967	8.7	6-1967	39.9 (1)		

(1) Based on less than 3 readings per month.

LOCATION	1964		1965		1966		1967 (part)	
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
WEST PORTAL	19.79	18.42	19.67	18.31	19.69	18.59	19.57	18.78
EAST PORTAL	19.17	18.86	19.98	18.81	19.87	18.67	19.70	18.72

NOTE:
See Notes 2 and 3 on Dwg. No. GD-1.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

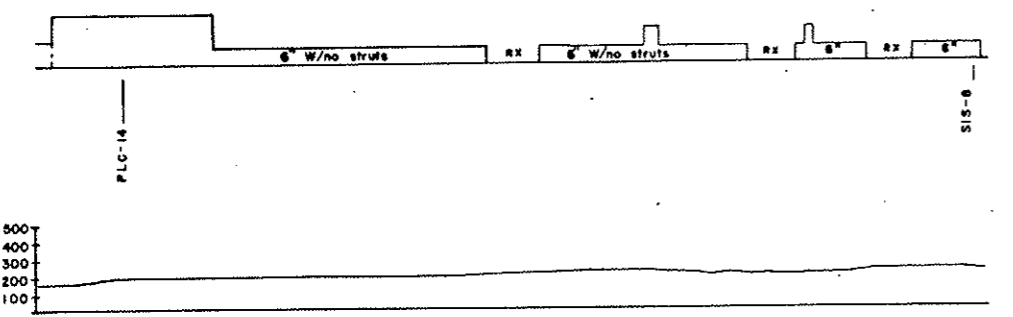
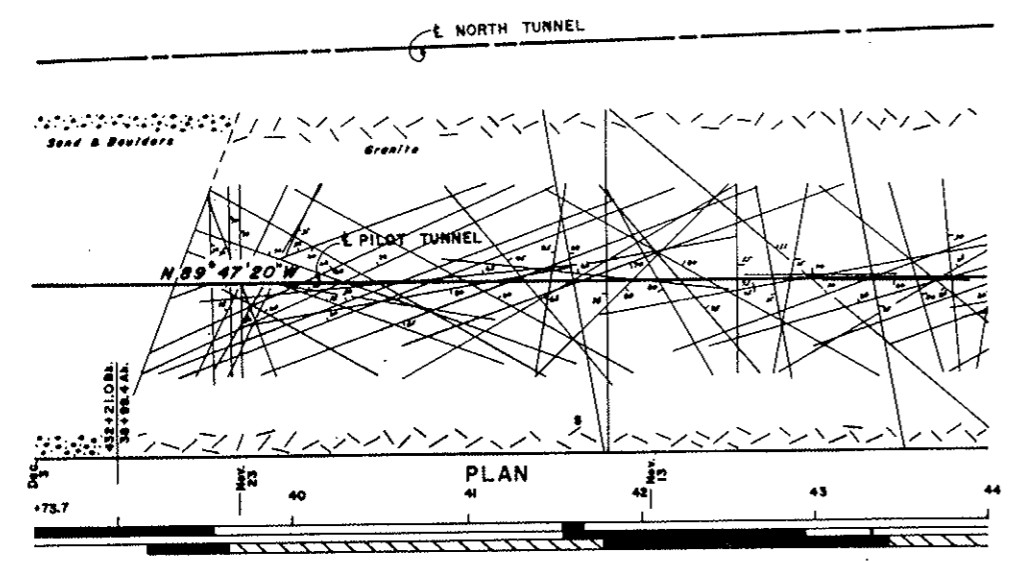
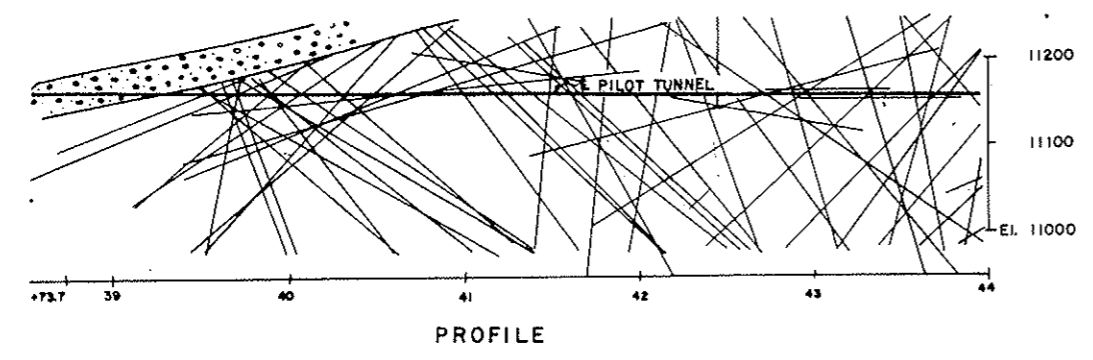
PHYSICAL DATA
TEMPERATURE SUMMARY-PILOT TUNNEL
DEGREE DAYS, RAINFALL,
PARSHALL FLUME AND WIND DATA

TIPPETTS - ABBETT - MCCARTHY - STRATTON
ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED BY P.L.P.	CHECKED BY A.T.P.	APPROVED BY P.L.P.	DATE AUGUST 1967
DRAWN BY K. B. ...	SCALE NO SCALE	DRAWING NO. 6D-2	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	294	328

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973



LEGEND

TYPE OF ROCK
 Granite rock Metamorphic rock
 Decomposed Slippery or slickensided joint surfaces

JOINT SPACINGS
 1' or more 0.5' to 1.0' 0.1' or less to 0.5'

PILOT TUNNEL SUPPORT
 Type of support and spacing in feet
 1' or Less 2' 3' 4' 6' 8' 10'

PI-3-B Instrumented station
RX Rock Section

Water Flow from portal and Initial Flow - Gallons per minute (GPM)

GENERAL NOTES:

The tunnel geology, record of support, joint spacing and alteration of rock, water bearing sections and flow were reproduced from the drawing entitled "Geologic plan and Profile Showing Progress and Special Operations", prepared by the Colorado Department of Highways upon completion of construction.

The geologic data shown on this plan and profile is presented as general information only and is not guaranteed by the Colorado Department of Highways.

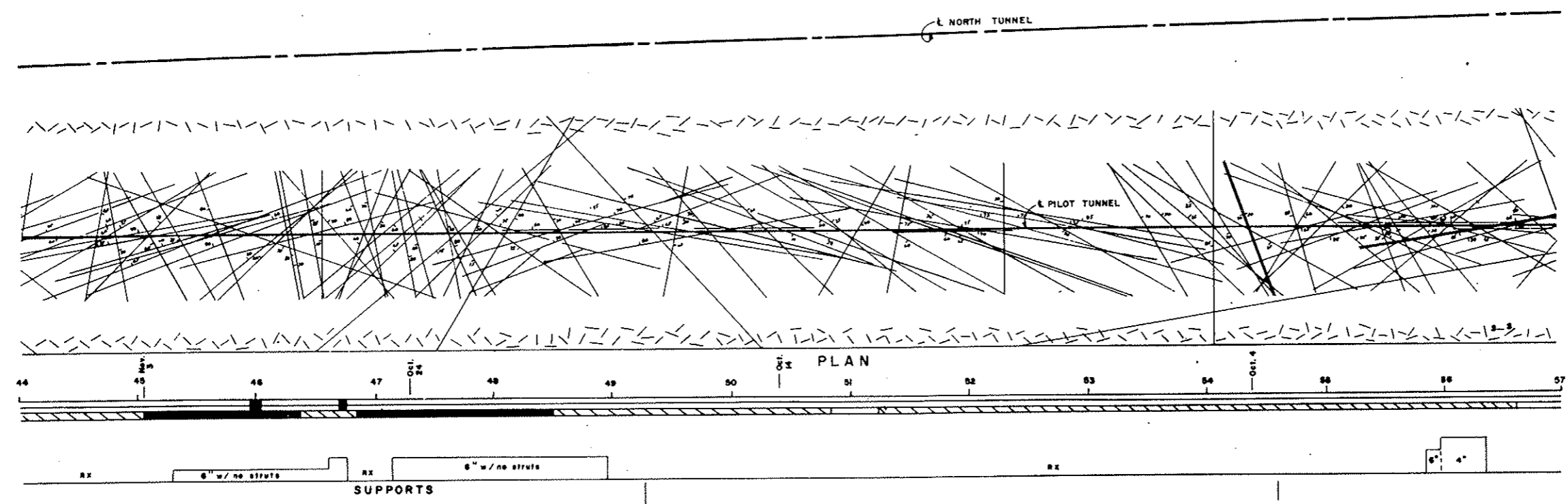
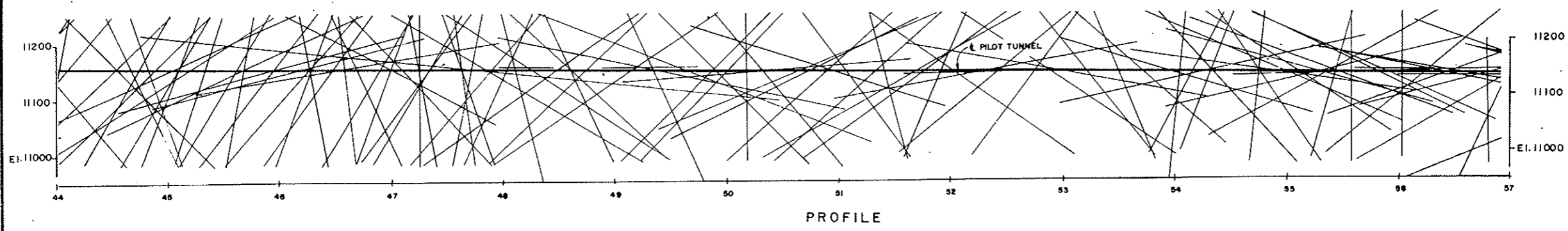
Any revisions of geological data, or changes of tunnel support subsequent to the end of construction are not recorded herein.

SCALE: HORIZ. 1 IN = 30 FT
VERT. 1 IN = 100 FT

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION PILOT TUNNEL DATA GEOLOGIC PLAN AND PROFILE T.B.L. STA. 38+73.7 TO T.B.L. STA. 44+00					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A. R. D. SUBMITTED: C. L. [Signature]	RECOMMENDED: APPROVED: [Signature] [Signature]	DRAWING NO. 60-1			
NEW YORK, N. Y. SCALE: AS NOTED DATE: AUGUST 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	295	326

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



LEGEND

TYPE OF ROCK

Granite rock	Metamorphic rock
Decomposed	
Slippery or slickensided joint surfaces	

JOINT SPACING

1' or more	0.5' to 1.0'	0.1' or less to 0.5'
------------	--------------	----------------------

72

Nightly fractured and altered
 Water bearing sections
 Joint spacing (Legend above)
 1 or Less
 2
 3
 4
 5
 6

PILOT TUNNEL SUPPORT
 Type of support and spacing in feet

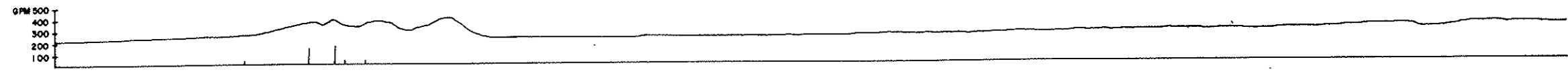
Instrumented station

RX Rock Section

500
 Water flow from partial and initial flow
 Gallons per minute

NOTE:
 For General Notes see Drawing No. 60-1

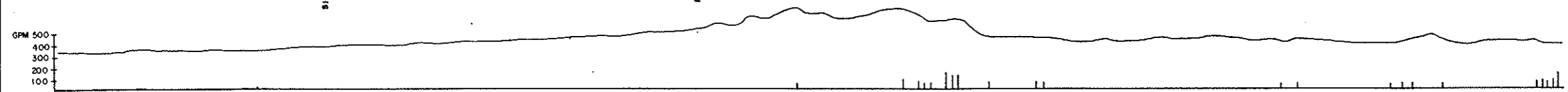
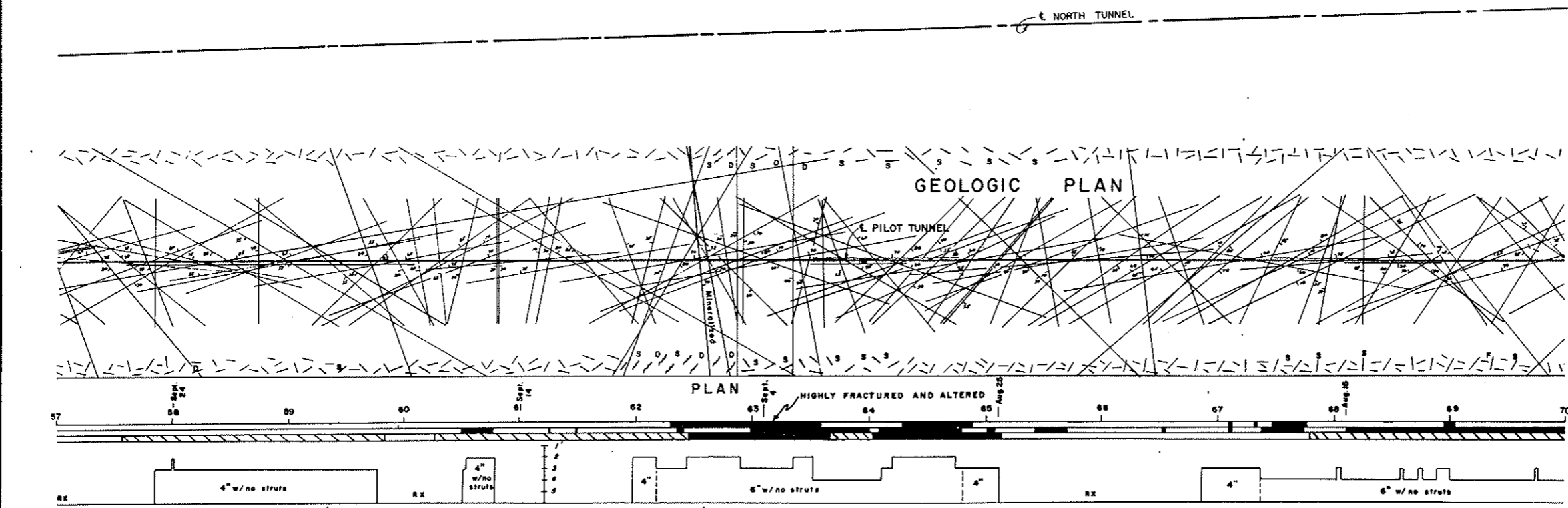
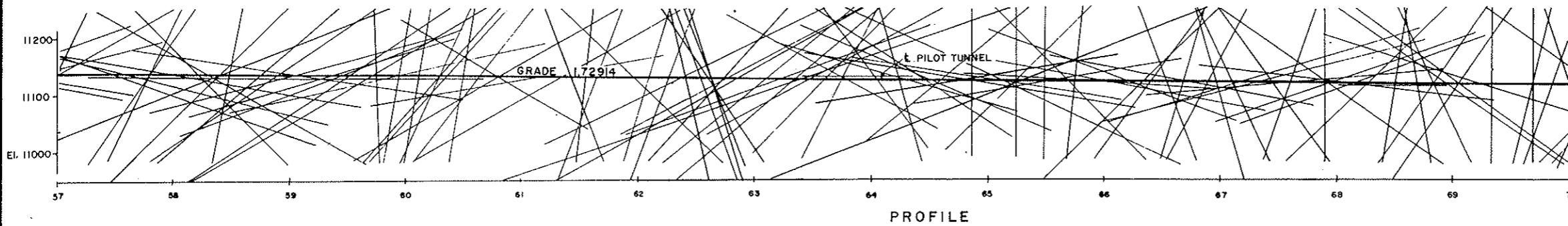
SCALE: HORIZ. 1 IN = 50 FT
 VERT. 1 IN = 100 FT



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT GENERAL SUBSURFACE INFORMATION PILOT TUNNEL DATA GEOLOGIC PLAN AND PROFILE T.B.L. STA. 44+00 TO T.B.L. STA. 57+00 TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A. R. D. SUBMITTED: <i>A. R. D.</i>	RECOMMENDED: <i>Robert Jones</i> APPROVED: <i>Albert A. Berggren</i>	DRAWING NO. 60-2			
NEW YORK, N. Y.		SCALE: AS NOTED		DATE: AUGUST 1967	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	296	326

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1972



LEGEND

TYPE OF ROCK
 Granite rock Metamorphic rock

Decomposed Slippery or slickensided joint surfaces

JOINT SPACING
 1' or more 0.5' to 1.0' 0.1' or less to 0.5'

PILOT TUNNEL SUPPORT:
 Type of support and spacing in feet
 1 Highly fractured and altered water bearing sections
 2 Joint spacing (Legend above) 1' or Less
 3 4" w/no struts
 4 6" w/no struts
 5
 6

Instrumented station
 PIS-18

Rock Section
 RX

Water Flow from portal and Initial Flow - Gallons per minute
 500
 0

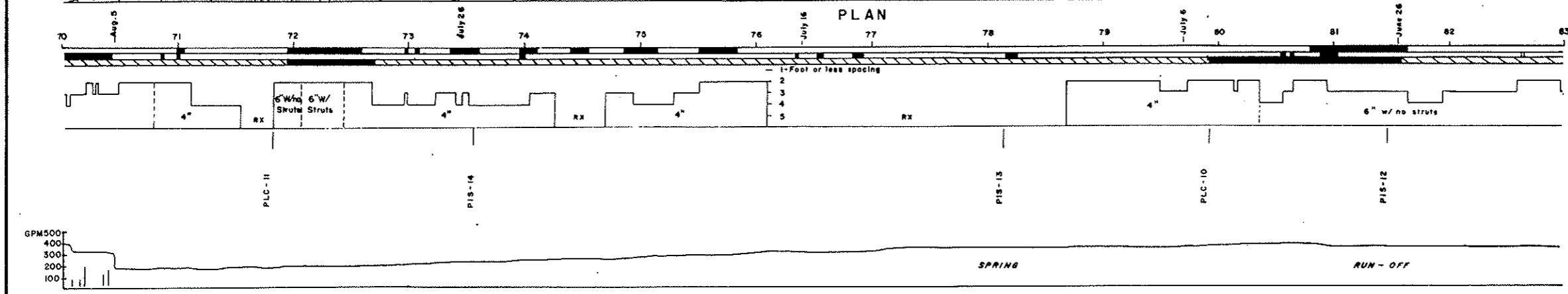
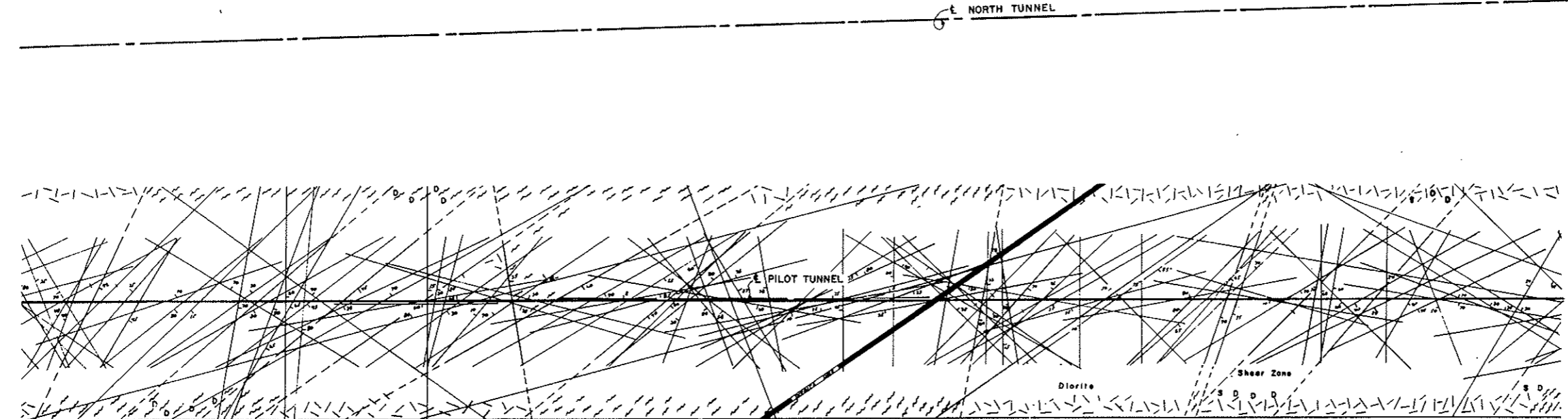
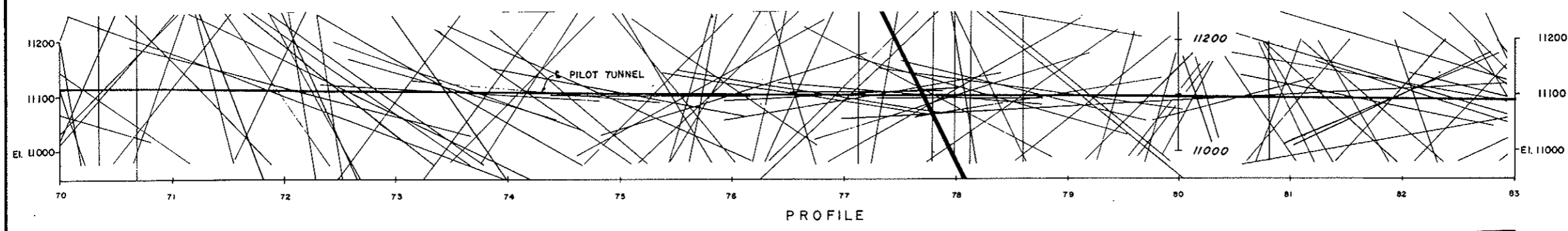
NOTE:
For General Notes see Drawing No. G 0-1

SCALE: HORIZ. 1 IN = 50 FT
VERT. 1 IN = 100 FT

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION PILOT TUNNEL DATA GEOLOGIC PLAN AND PROFILE T.B.L. STA. 57+00 TO T.B.L. STA. 70+00					
TIPPETTS - ABBETT - McCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: SUBMITTED:	RECOMMENDED: <i>Ernest J. ...</i>		APPROVED: <i>Robert C. ...</i>	DRAWING NO. GO-3	
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	297	328

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



LEGEND

TYPE OF ROCK

Granite rock	Metamorphic rock
Decomposed	
Slippery or slickensided joint surfaces	

JOINT SPACING

1' or more	0.5 to 1.0'	0.1' or less to 0.3'
------------	-------------	----------------------

PILOT TUNNEL SUPPORT
 Type of support and spacing in feet

1	Highly fractured and altered water bearing sections - Joint spacing (Legend above) 1' or Less
2	
3	
4	
5	
6	

Instrumented station
 RX **Rock Section**

Water Flow from partial and Initial Flow - Gallons per minute

500
 0

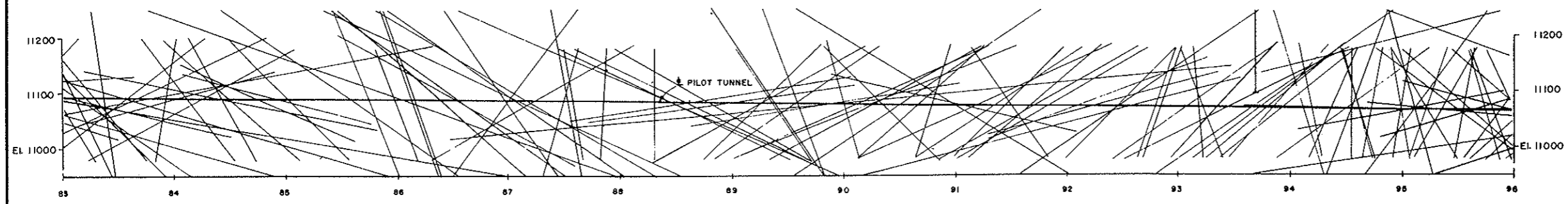
NOTE:
 For General Notes see Drawing No. 60-1

HORIZ. 1 IN = 50 FT
 SCALE: VERT. 1 IN = 100 FT

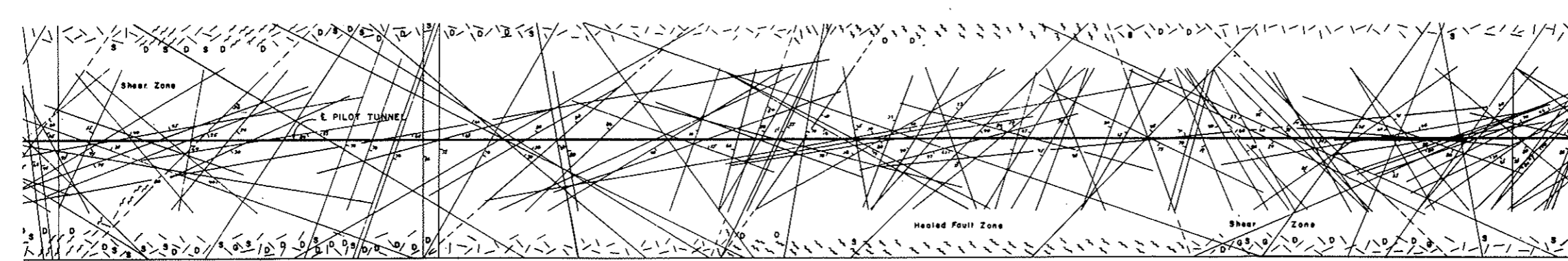
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION					
PILOT TUNNEL DATA					
GEOLOGIC PLAN AND PROFILE					
T.B.L. STA. 70+00 TO T.B.L. STA. 83+00					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A. R. D. SUBMITTED: <i>A. R. D.</i>	RECOMMENDED: <i>Robert Jones</i>	APPROVED: <i>Robert A. Bonfante</i>	DRAWING NO. 60-4		
NEW YORK, N. Y.		SCALE: AS NOTED	DATE: AUGUST 1967		

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	298	328

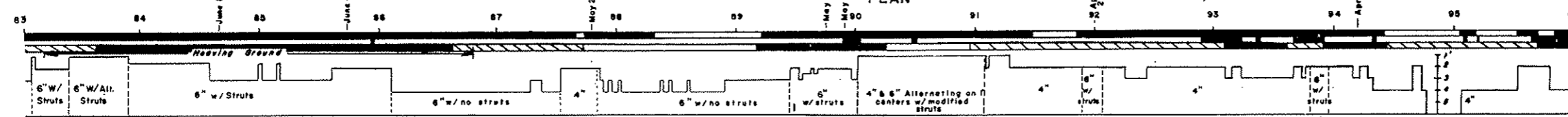
AS CONSTRUCTED
NO REVISIONS DATE
Oct 26, 1973



PROFILE NORTH TUNNEL

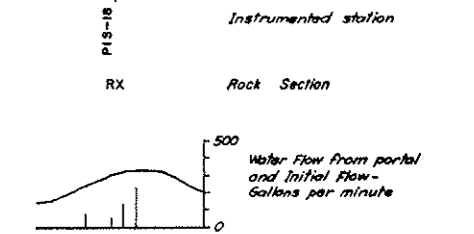
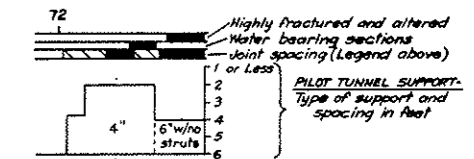


PLAN



LEGEND

TYPE OF ROCK	
	granite rock
	metamorphic rock
	Decomposed
	Slippery or slickensided joint surfaces
JOINT SPACING	
	1' or more
	0.5' to 1.0'
	0.1' or less to 0.5'



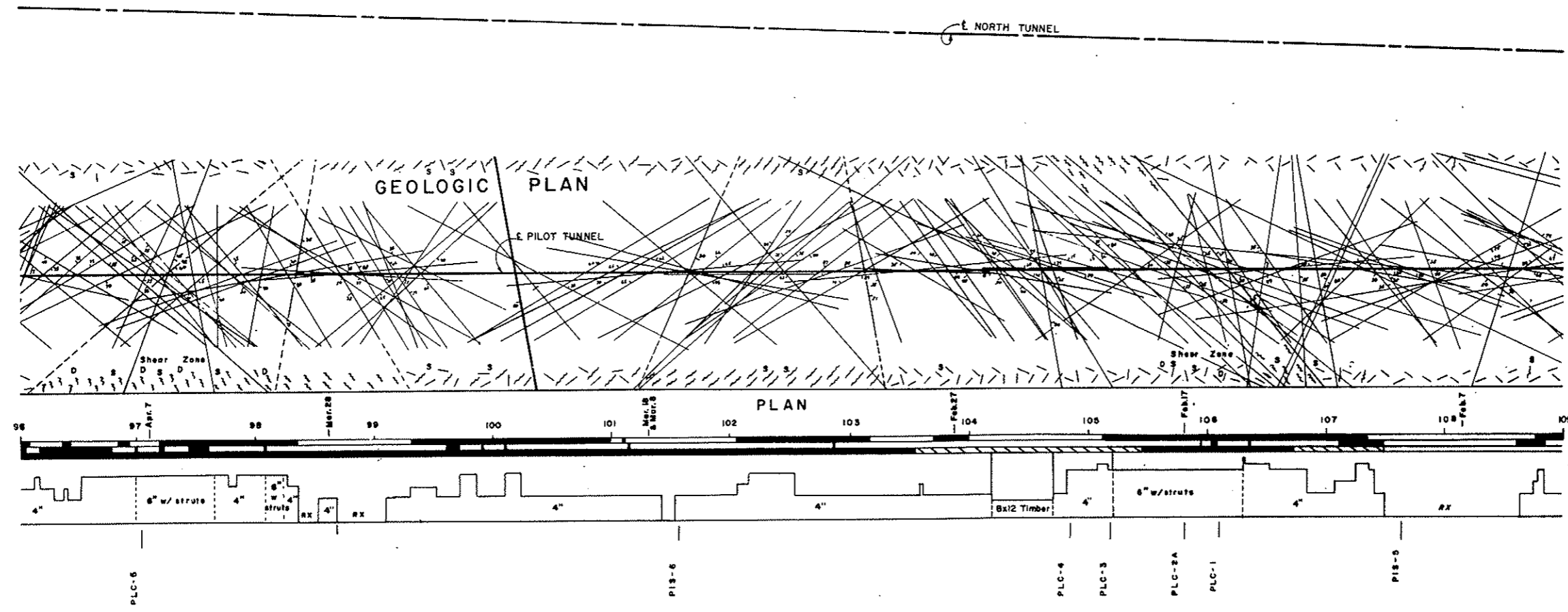
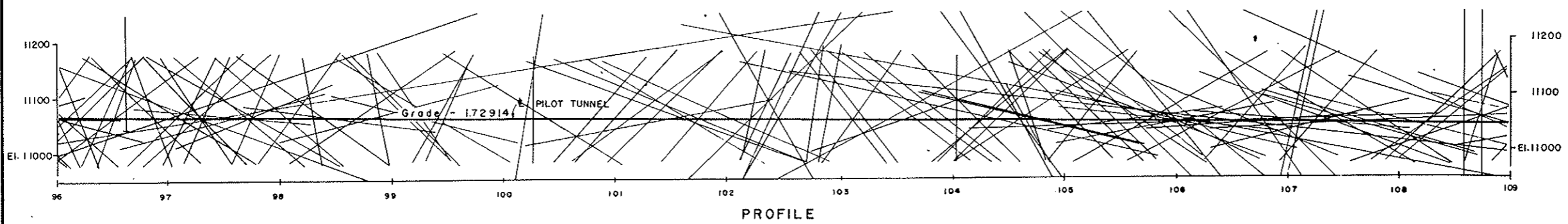
NOTE:
 For General Notes see Drawing No. 60-1

SCALE: HORIZ. 1 IN = 50 FT
 VERT. 1 IN = 100 FT

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION PILOT TUNNEL DATA GEOLOGIC PLAN AND PROFILE T.B.L. STA. 83+00 TO T.B.L. STA. 96+00					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A.R.D. SUBMITTED: <i>A.L. DeKrom</i>	RECOMMENDED: <i>Robert J. Jones</i> APPROVED: <i>Robert G. Bampton</i>	DRAWING NO. 60-5			
NEW YORK, N. Y.		SCALE: AS NOTED DATE: AUGUST 1967			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	299	326

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973



LEGEND

TYPE OF ROCK
 Granite rock (diagonal lines) Metamorphic rock (cross-hatch)
 Decomposed (dotted) Slippery or slickensided joint surfaces (wavy lines)

JOINT SPACING
 1' or more (horizontal lines) 0.5' to 1.0' (diagonal lines) 0.1' or less to 0.5' (vertical lines)

PILOT TUNNEL SUPPORT
 1 or Less (no support) 2 (4" struts) 3 (6" w/ struts) 4 (6" w/ struts) 5 (6" w/ struts) 6 (6" w/ struts)

Instrumented station (PIS-6)
Rock Section (RX)

Water Flow from portal and Initial Flow - Gallons per minute
 Scale 0 to 500 GPM

NOTE:
For General Notes see Drawing No. GO-1

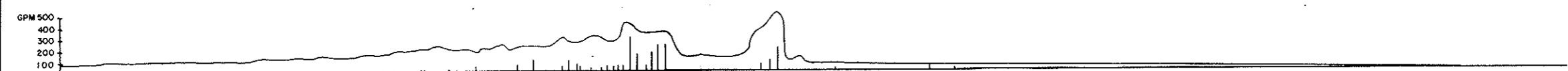
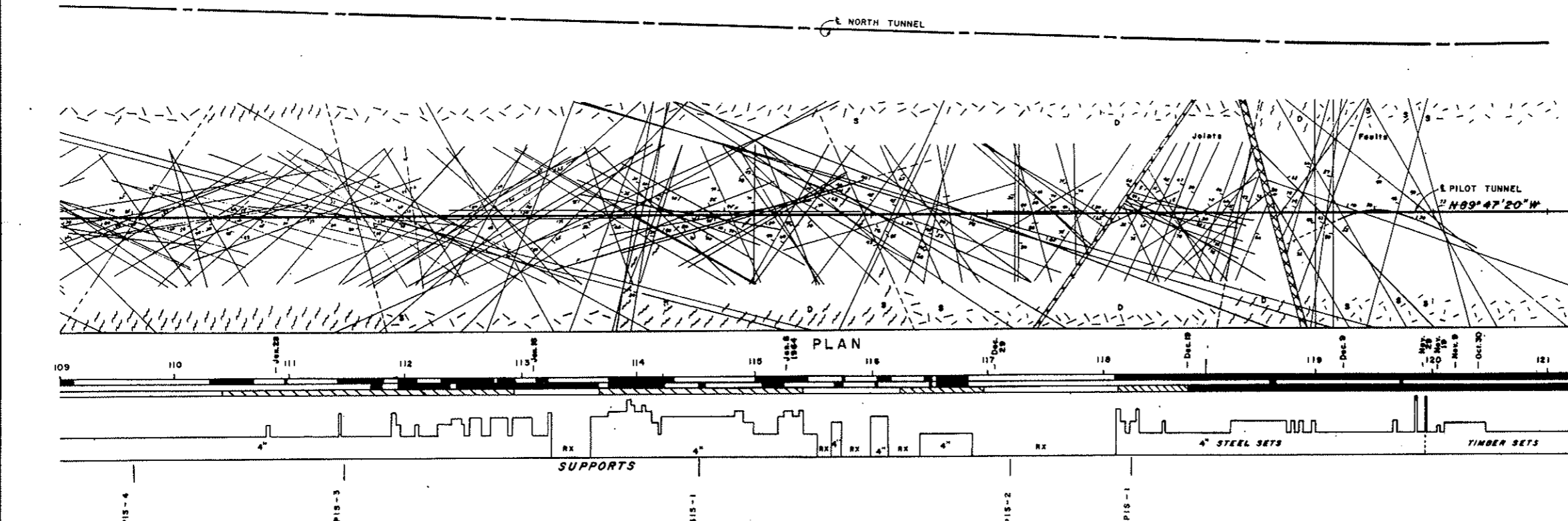
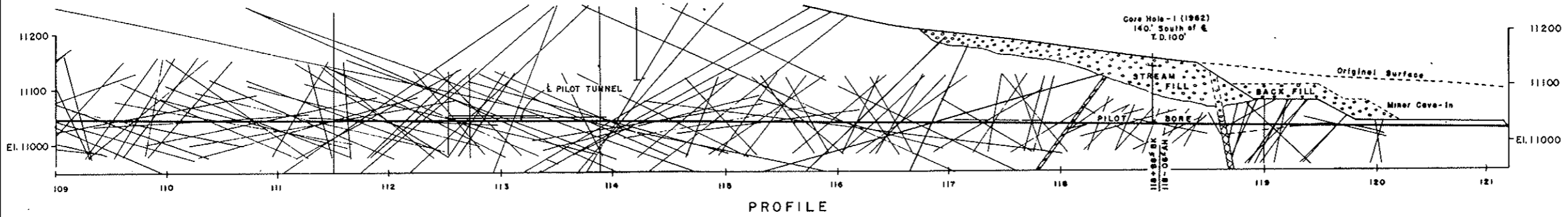
SCALE: HORIZ. 1 IN = 30 FT
VERT. 1 IN = 100 FT

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION PILOT TUNNEL DATA GEOLOGIC PLAN AND PROFILE T.B.L. STA. 96+00 TO T.B.L. STA. 109+00					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A.R.D. SUBMITTED: A.R. DeWitt	RECOMMENDED: APPROVED: A. R. DeWitt		DRAWING NO. 60-6		DATE: AUGUST 1967

GPM 500
400
300
200
100

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	300	328

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973



LEGEND

TYPE OF ROCK

- Granite rock
- Metamorphic rock
- Decomposed
- Slippery or slickensided joint surfaces

JOINT SPACING

- 1' or more
- 0.5' to 1.0'
- 0.1' or less to 0.5'

PILOT TUNNEL SUPPORT

- Highly fractured and altered water bearing sections - joint spacing (Legend above) 1' or Less
- 2
- 3
- 4
- 5
- 6

Instrumented station

Rock Section

Water Flow from portal and Initial Flow
 Gallons per minute

NOTE:
 For General Notes see Drawing No. G0-1

SCALE: HORIZ. 1 IN = 50 FT
 VERT. 1 IN = 100 FT

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION PILOT TUNNEL DATA GEOLOGIC PLAN AND PROFILE T.B.L. STA. 109+00 TO T.B.L. STA. 121+00					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A. R. D. SUBMITTED: <i>A. R. D.</i>	RECOMMENDED: <i>Robert Jones</i> APPROVED: <i>Albert A. Bonforte</i>	DRAWING NO. GO-7			
NEW YORK, N. Y.		SCALE: AS NOTED		DATE: AUGUST 1967	

**AS CONSTRUCTED
NO REVISIONS DATE**
OCT 26, 1973

Boring No. 4 Continued

Depth	Soil or Formation	Method of Drilling	Core Recovery (%)	Remarks
15'-17'	granite boulder			very, very tight
17'-21'	silt, sand, gravel			easy
21'-31'	silt, sand, boulders			
31'-48'				
48'-50'				very tight
50'-58'		BX Core Bit		easy
58'-60'	fractured granite			very tight
60'-62'	altered granite		(no core recovery)	easy
62'-70'	fractured granite		80%	0.05-0.4 Avg=0.1
70'-76'	badly fractured granite		80%	0.05-0.2 Avg=0.1
76'-80'	altered & fractured granite		20%	0.01-0.2 Avg=0.05
80'-81'			(no core recovery)	
81'-91'			80%	0.01-0.2 Avg=0.1
91'-95'	medium grained fractured granite	BX Core Bit		0.05-0.3 Avg=0.2
95'-96'	altered & badly fractured granite		50% core recovery	Fe stains & clay on joints 0.01-0.1' Avg=0.04
96'-101'	med grained granite			Fe stains & little clay on joints 0.1-0.5' Avg=0.3
101'-106'				Fe stains & more clay on joints 0.1-0.8' Avg=0.4
106'-107'	altered & badly fractured granite		80% core recovery	Fe stains & clay 0.01-0.1' Avg=0.03
107'-110'	med grained granite		80%	no Fe stains, some clay on joints 0.1-0.4' Avg=0.2
110'-111'	altered & badly fractured granite (darker col)		50%	more clay 0.01-0.1' Avg=0.05
111'-117'	hard fractured granite		90%	0.3'-0.6'
117'-119'	hard badly fractured granite		50%	0.05'-0.1'
119'-121'			90%	0.1'-0.2'
121'-125'			80%	0.05'-0.1'
125'-128'	mod'ly soft granite		30%	some clay 0.01'-0.05'
128'-131'	hard fractured granite		100%	0.1'-0.6'
131'-134'			90%	0.05'-0.4'

Note: NX casing set to 11 ft.
BX casing set to 60 ft.
Fe stains means iron stains.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION EAST PORTAL AREA SUBSURFACE INVESTIGATIONS BORING LOGS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A. R. D. SUBMITTED: A. R. D.	RECOMMENDED: APPROVED: A. R. D.		DRAWING NO. GS-1.		
NEW YORK, N. Y. SCALE: NO SCALE DATE: AUGUST 1967					

Boring No. 3 Continued

Depth	Soil or Formation	Method of Drilling	Core Recovery (%)	Remarks
58'-60'	clay, altered granite			no core recovery
60'-63'	pink & gray, medium-grained granite	BX Core Bit		badly fractured 0.05'-0.2' Ave=0.1
63'-71'				thin clay layers along some joints 0.05'-0.3' Ave=0.2
71'-82'				thin clay layers along most joints 0.1'-0.5' Ave=0.2
82'-91'	pink & greenish-grey med to coarse-grained granite			very little clay along joints 0.1'-0.6' Ave=0.4
91'-94'	greenish-grey, med-grained granite	BX Core Bit		thin clay layers bet joints 0.1'-0.5' Ave=0.2
94'-100'			(lost water @ 98')	iron stains bet joints 0.1'-0.4' Ave=0.2
100'-104'				thin clay layers bet joints 0.4'-0.4' Ave=0.3
104'-106'				badly fractured with iron stains @ joints 0.2'-0.2' Ave=0.1
106'-113'				iron stains & clay bet joints 0.1'-0.8' Ave=0.3
113'-121'				thin clay layers bet joints 0.1'-1.2' Ave=0.5
121'-130.5'	greenish-grey, med-grained granite (higher % of other class)			iron stains bet joints 0.1'-0.6' Ave=0.3
130.5'-135.5'				no stains or clay bet joints 0.1'-0.5' Ave=0.2
135.5'-140.5'				badly fractured 0.02'-0.2' Ave=0.1
140.5'-150'				thin clay layers bet joints 0.02'-0.2' Ave=0.1
150'-154'			(50% core recovery)	0.01'-0.1' Ave=0.04
154'-161'	altered greenish-grey med-grained granite			crumbly & higher % of clay 0.01'-0.2' Ave=0.05

COLORADO DEPARTMENT OF HIGHWAYS
FOUNDATION BORING LOG

Boring No. 4
Top Hole Elev. 11,151
Elev Water Table _____
Date: November 26, 1962

Station 118+35.65' Rt of G "M" Line
Engr-Geologist M. Berry
Drillers Northrop, Sweet & Eltreim Boyles Bros., Drilling Co.

Depth	Soil or Formation	Method of Drilling	Core Recovery (%)	Remarks
0'-7'	cobbles, silt, sand, gravel	4-1/2" Tri Cone Rock Bit		easy
7'-9'	altered granite			very tight
9'-11'	boulder			very, very tight
11'-12'	silt, sand, gravel			easy
12'-13'	granite boulder			very, very tight
13'-15'	silt, sand, gravel	NX Core Bit	(no core recovery)	easy

COLORADO DEPARTMENT OF HIGHWAYS
FOUNDATION BORING LOG

Boring No. 2
Top Hole Elev. 11,115.01
Elev Water Table _____
Date: November 5, 1962

Station 119+36.712' Rt "M" Line
Engr-Geologist Gard
Drillers Martin-More-Conlogue

Depth	Soil or Formation	Method of Drilling	Approx Moisture	Remarks
0-4.0	sand, gravel, boulders	4" Auger	moist	tight
4.0-10.0			wet	
10.0-12.0	boulder			very, very tight
12.0-19.0	silty sand, gravel			tight
19.0-21.0	silty sand, gravel cobbles			very tight
21.0-27.0				tight
27.0-30.0				very tight
30.0-37.0	fractured rock, granite			very, very tight
37.0-38.0	rock	NX Csq		0-37.0 NX Csq very, very tight
38.0-44.0	sand, rock			tight
44.0-51.0	thin rock layers			very, very tight
51.0-52.0	sand			easy
52.0-53.0	sand, rock			very, very tight
53.0-56.0	granite, rock	Double Core Barrel		
56.0-61.0	kaolinitic altered granite, sand rock			very tight
61.0-70.0		Skidmore		tight
70.0-71.0	fractured rock granite			very, very tight
71.0-78.0	kaolinitic, altered granite, sand rock			tight
78.0-90.0				very tight
90.0-91.0				easy

COLORADO DEPARTMENT OF HIGHWAYS
FOUNDATION BORING LOG

Boring No. 3
Top Hole Elev. 11,180
Elev Water Table _____
Date: November 9-23, 1962

Station 7.5 Lt Cent Line Std 117+70 "M" Line
Engr-Geologist K. Berry
Drillers Northrop & Sweet

Depth	Soil or Formation	Method of Drilling	Core Recovery (%)	Remarks
0'-9.5'	silt, sand, gravel	7-1/2" Rock Bit		very tight
9.5'-12'		4" Tri Cone Rock Bit		easy
12'-13'	sand, boulders			very tight
13'-16'	hard boulder granite			very, very tight
16'-20'	silt, sand, gravel			easy
20'-22'	granite boulder			very tight
22'-24'	silt, sand, gravel			easy
24'-30'				easy, losing some water
30'-31'	granite boulder			very tight
31'-42'	altered granite			easy
42'-45'	altered granite			very tight
45'-51'	fractured granite			very, very tight
51'-55'		NX Core Bit		
55'-58'				badly fractured

COLORADO DEPARTMENT OF HIGHWAYS
FOUNDATION BORING LOG

Boring No. Hole 1 Original Contract
Top Hole Elev. 11,130.1
Elev Water Table _____
Date: June 1962

Station 118+47.7-424.08 Rt Cox Line
Engr-Geologist _____
Drillers _____

Depth	Soil or Formation	Method of Drilling	Approx Moisture	Remarks
0-22	silt, sand, gravel, boulders	4-1/2" Tri Cone Rock Bit		
22-100	hard granite bedrock altered & fractured			

This is a drillers log. No cores were taken, formation logged from drill fallings. Granite is probably fractured, sheared and altered.
This hole was used as shot hole by seismic observers.

COLORADO DEPARTMENT OF HIGHWAYS
FOUNDATION BORING LOG

Boring No. Hole 1A Original Contract
Top Hole Elev. 11,104.6
Elev Water Table _____
Date: June 1962

Station 120+94.18-56.13' Rt Cox Line
Engr-Geologist F. A. Matte
Drillers Boyles Bros.

Depth	Soil or Formation	Method of Drilling	Approx Moisture	Remarks
0-47	silt, sand, gravel, boulders	4-1/2" Tri Cone Rock Bit		
47-62	hard granite bedrock altered & fractured			

This is a drillers log. Hole drilled for information only. No cores taken.

COLORADO DEPARTMENT OF HIGHWAYS
FOUNDATION BORING LOG

Boring No. 1
Top Hole Elev. 11,111.9
Elev Water Table 11,109.0
Date: October 25-31, 1962

Station 119+41.5 67.8' Lt "M" Line
Engr-Geologist Gard
Drillers Martin-More-Conlogue

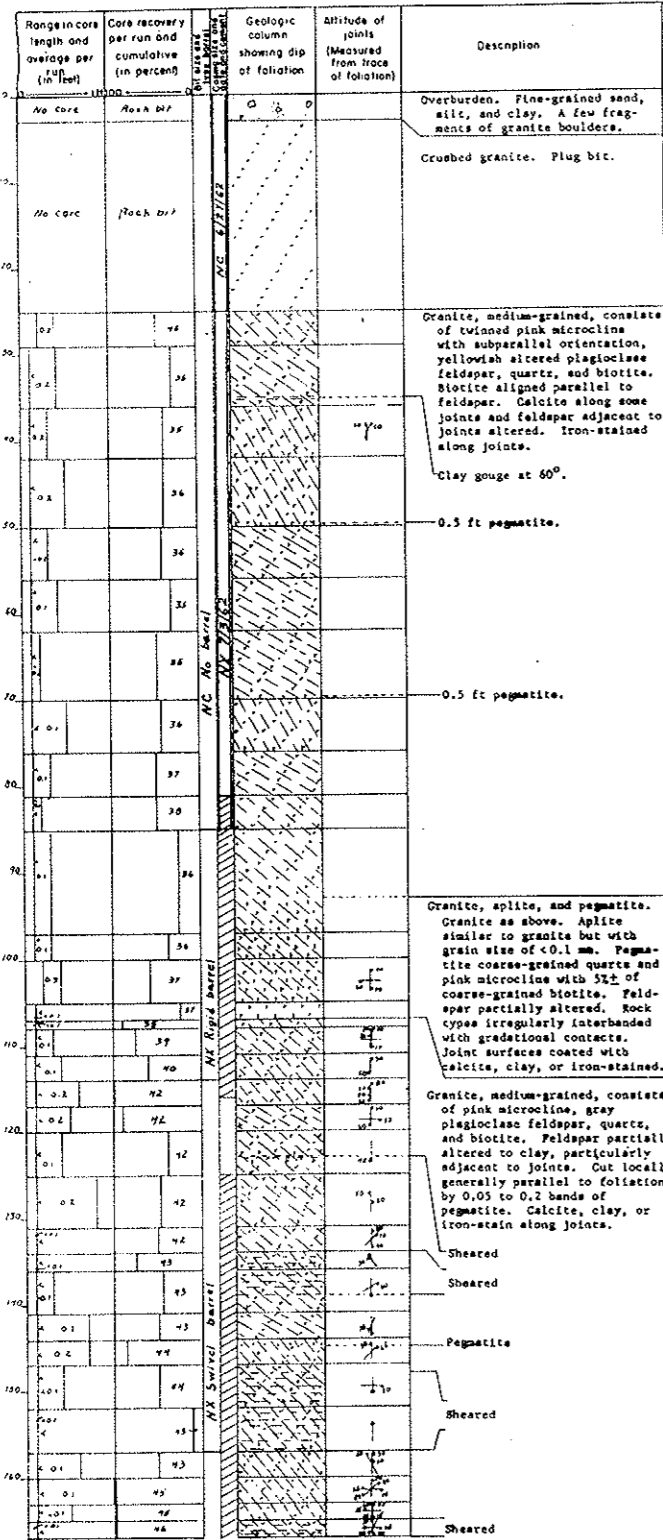
Depth	Soil or Formation	Method of Drilling	Approx Moisture	Remarks
0-6.0	sand, gravel, boulders	4" Auger	moist	easy
6.0-10.0	clayey, gravel, boulders			
10.0-11.5			wet	
11.5-13.0	silty sand, rock			tight
13.0-14.0	rock			very, very tight
14.0-17.0	silty sand, rock			tight
17.0-21.0			moist	easy
21.0-24.0			wet	
24.0-25.5	silty sand			
25.5-29.0	fractured rock			very, very tight
29.0-30.5	very fractured rock			very tight
30.5-34.0	clay, sand, rock			tight
34.0-39.0	fractured rock			very, very tight
39.0-46.0		2-1/8" Hawthorn		0-39.0-NX casing Incr flow H2O @ 43.0
46.0-58.0	clay, sand, little rock			very easy drlg
58.0-58.5	rock			very, very tight
58.5-69.0		Core Dbl		

NOTES:
1. Boring logs on this sheet were prepared by the Colorado Department of Highways
2. Location of borings is shown on Drawing No. G-4-2

Drill Hole No. 2

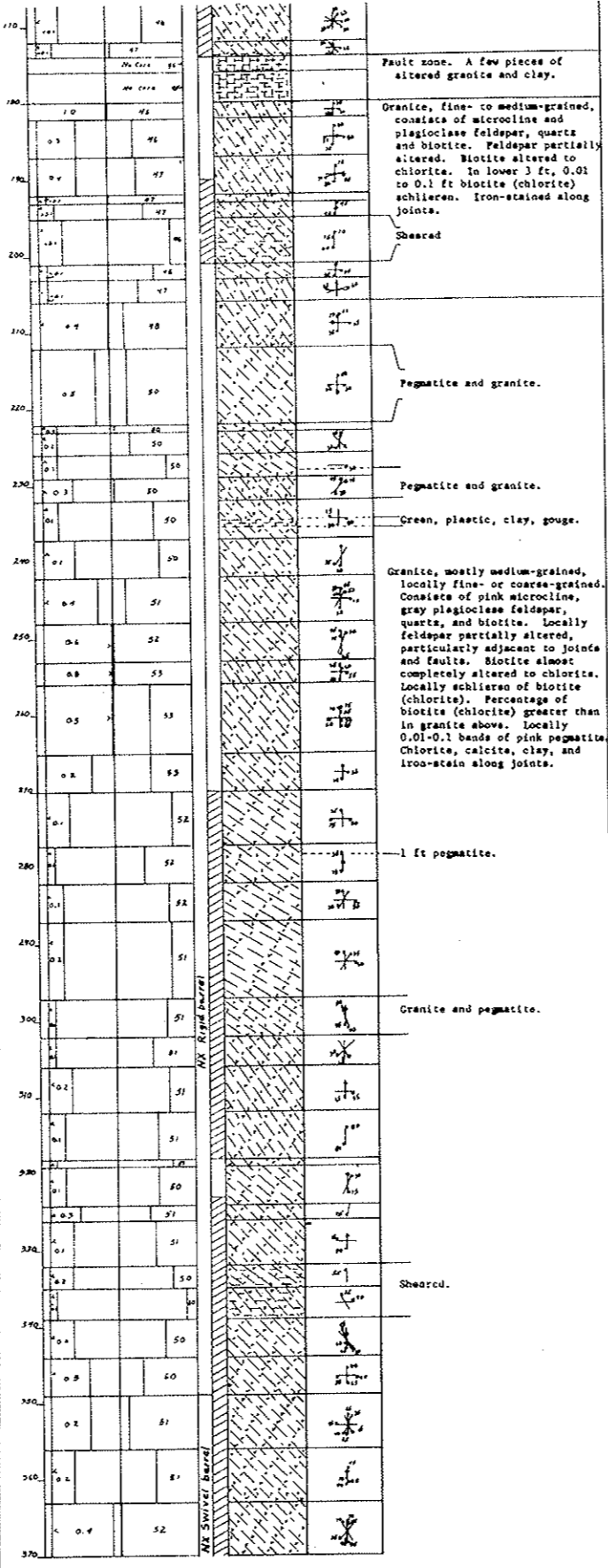
Altitude of collar: 11,919 ft
 Depth: 872 ft
 Logged by: C. S. Robinson and F. T. Lee, U. S. Geological Survey

Date started: 6/26/62
 Date completed: 8/21/62

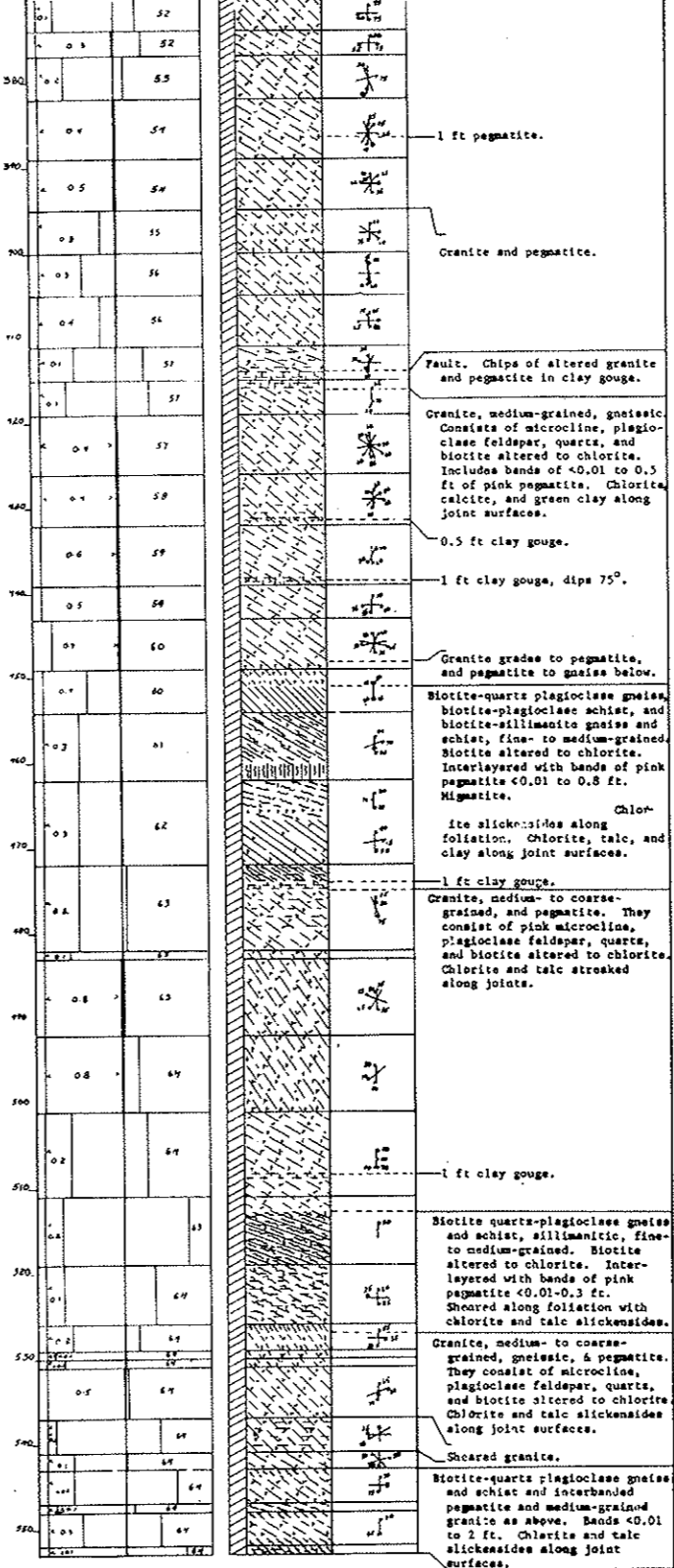


This map is preliminary and has not been edited or reviewed for conformity with U. S. Geological Survey standards and nomenclature.

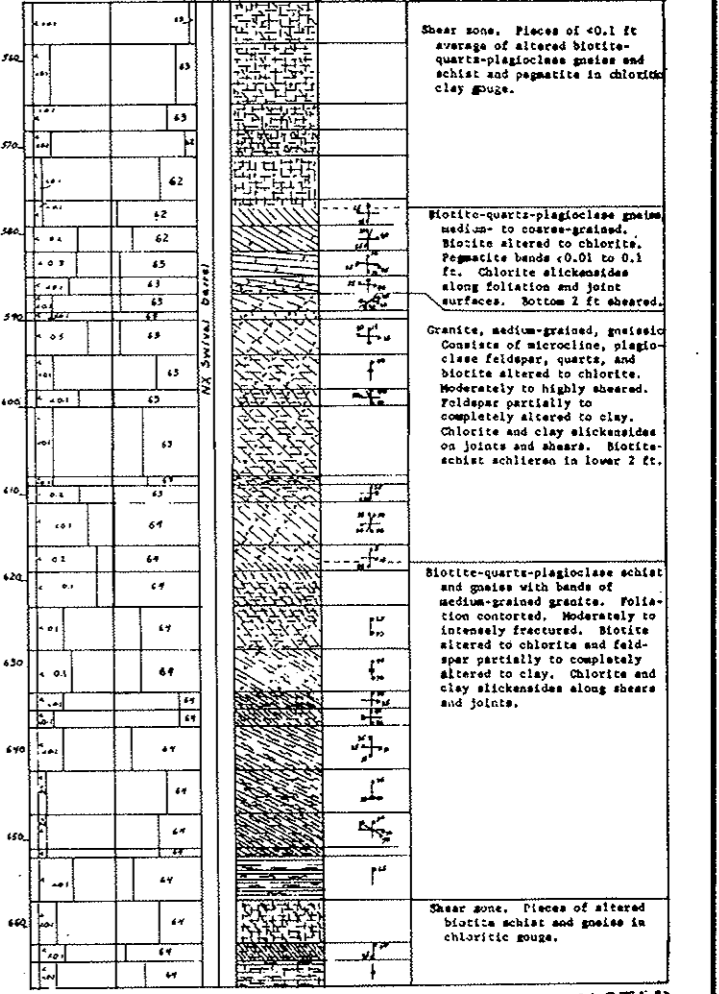
Drill Hole No. 2 Continued



Drill Hole No. 2 Continued



Drill Hole No. 2 Continued



**AS CONSTRUCTED
NO REVISIONS DATE**
 OCT 26, 1973

NOTES:
 For Continuation of Drill Hole No. 2 see Drawing No. GS-3
 Location of Drill Hole No. 2 is shown on Fig. 2A of the report on GEOLOGY OF THE STRAIGHT CREEK TUNNEL SITE, CLEAR CREEK AND SUMMIT COUNTIES, COLORADO AND ITS PREDICTED EFFECT ON TUNNEL CONSTRUCTION by C. S. Robinson and F. T. Lee Dec. 21, 1962

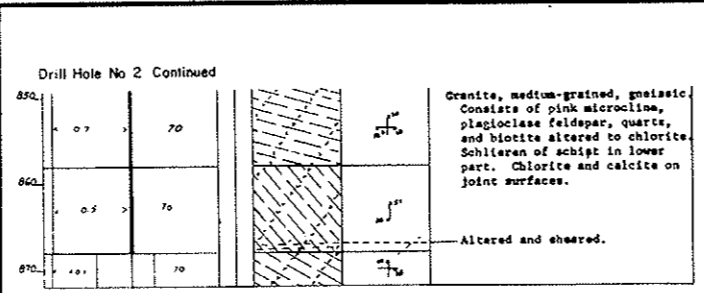
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION SUBSURFACE INVESTIGATIONS BORING LOGS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A. R. D. SUBMITTED: A. S. Robinson	RECOMMENDED: E. J. Jones APPROVED: A. S. Robinson	DRAWING NO. GS-2			
NEW YORK, N. Y. SCALE: NO SCALE DATE: AUGUST 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	303	326

AS CONSTRUCTED
NO REVISIONS DATE
D.T. 26, 1973

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION SUBSURFACE INVESTIGATIONS BORING LOGS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED:	CHECKED: A. R. B.		RECOMMENDED:	DRAWING NO.	
DRAWN:	SUBMITTED:		APPROVED:	GS-3	
NEW YORK, N. Y.			SCALE: NO SCALE	DATE: AUGUST 1967	

Drill Hole No. 2 Continued		Geologic column showing dip of foliation	Altitude of joints (Measured from base of foliation)	Description
Range in core length and average per (in feet)	Core recovery per run and cumulative (in percent)			
0.4	69		70	Granite, medium-grained, gneissic. Consists of microcline, plagioclase feldspar, quartz, and biotite altered to chlorite. Chlorite slickensides along joint surfaces.
0.3	65		660	Biotite-quartz-plagioclase gneiss and schist, fine- to medium-grained, with interlayered gneissic granite as above. Biotite altered to chlorite. Foliation contorted in schistose zones. Chlorite slickensides along foliation and joint surfaces.
0.1	65		690	Granite, medium-grained, gneissic. Similar to granites above. Grades into biotite-quartz-plagioclase gneiss bands. Biotite altered to chlorite. Chlorite slickensides along joint surfaces.
0.1	65		700	Biotite-quartz-plagioclase gneiss and schist, fine- to medium-grained. Biotite altered to chlorite and feldspar partially to completely altered to clay. Chlorite slickensides on joint surfaces.
0.1	67		710	Pegmatite
0.1	67		720	Sheared
0.2	67		730	Granite, medium-grained, gneissic. Similar to granite above. Biotite altered to chlorite.
0.1	68		740	Biotite-quartz-feldspar schist and gneiss. Biotite altered to chlorite, and feldspar partially to completely altered to clay. Chlorite slickensides along foliation and joints. Top 6 ft sheared.
0.1	68		750	Granite, medium-grained, gneissic, and pegmatite. Granite similar to those above. Biotite altered to chlorite. Chlorite slickensides on joints.
0.1	68		760	Biotite-quartz-plagioclase gneiss and schist. Biotite altered to chlorite.
0.2	68		770	Biotite (chlorite) schist.
0.1	68		780	Granite, medium-grained, gneissic. Massive with few joints. Biotite altered to chlorite.
0.2	67		790	Biotite-quartz-plagioclase schist and gneiss. Biotite altered to chlorite. Chlorite slickensides on joints.
0.2	70		800	Granite, medium- to coarse-grained gneissic, similar to granites above. Chlorite slickensides on joints. Top 1 ft sheared.
0.1	70		810	Biotite-plagioclase gneiss, medium-grained, only faintly foliated. Biotite altered to chlorite, and chlorite slickensides along joints.
0.1	70		820	



Drill Hole No.3

Altitude of Collar: 12,552 ft. Date started: 7/6/62
 Depth: 1258 ft. Date completed: 9/8/62
 Logged by: C. S. Robinson and F. T. Lee, U. S. Geological Survey

Range in core length and average per foot (in feet)	Core recovery per run and cumulative (in percent)	Geologic Column showing dip of foliation	Altitude of Joints (Measured from trace of foliation)	Description
0-100	22			Weathered granite.
100-200	28			Weathered granite, medium-grained iron-stained, consists of microcline, plagioclase, quartz and biotite. Feldspars partially altered to clay and biotite to chlorite. Orientation of feldspar and biotite gives rock a distinct foliation. Cut by 0.1 to 1 ft coarse-grained pegmatite dikes. At bottom 0.5 ft of fine- to medium-grained biotite-quartz-feldspar schist and gneiss. At contact between granite and gneiss 0.1 ft of white bull quartz.
200-300	37			Biotite-quartz-feldspar gneiss, medium-grained. At top 0.5 ft of coarse-grained pegmatite. Pegmatite, coarse-grained, fractured.
300-400	37			Crushed rock. Pieces consist of coarse-grained pegmatite, fine- to medium-grained biotite schist and gneiss, and medium-grained granite. Fragments from 0.1 ft to fine sand in chloritic clay matrix.
400-500	37			Granite, medium-grained, chloritic
500-600	37			No core. In cuttings a little biotite and quartz with abundant clay.
600-700	37			Biotite-quartz-feldspar schist and gneiss, fine- to medium-grained. Biotite altered to chlorite. Feldspar to clay.
700-800	37			Biotite-quartz-feldspar schist and gneiss. Foliation still recognizable, but entire interval altered to chlorite and clay. Top 0.5 and bottom 0.3 foot altered pegmatite.
800-900	37			Granite and pegmatite, sheared. Biotite completely altered to chlorite, feldspar altered to clay.
900-1000	37			Gneiss and granite, sheared and completely altered to chlorite and clay.
1000-1100	37			Granite, sheared and altered to chlorite and clay.
1100-1200	37			Granite gneiss, and pegmatite, altered to chlorite and clay.

Drill Hole No.3 Continued

1200	37			Clay gouge. Crains of quartz and feldspar in chloritic clay. A few pieces of 0.1 ft of altered biotite-quartz-feldspar schist and gneiss. At bottom 2.5 ft of fractured schist and gneiss.
1300	37			
1400	37			
1500	37			
1600	37			
1700	37			
1800	37			
1900	37			
2000	37			
2100	37			
2200	37			
2300	37			
2400	37			
2500	37			
2600	37			
2700	37			
2800	37			
2900	37			
3000	37			
3100	37			
3200	37			
3300	37			
3400	37			
3500	37			
3600	37			
3700	37			
3800	37			
3900	37			
4000	37			
4100	37			
4200	37			
4300	37			
4400	37			
4500	37			
4600	37			
4700	37			
4800	37			
4900	37			
5000	37			
5100	37			
5200	37			
5300	37			
5400	37			
5500	37			
5600	37			
5700	37			
5800	37			
5900	37			
6000	37			
6100	37			
6200	37			
6300	37			
6400	37			
6500	37			
6600	37			
6700	37			
6800	37			
6900	37			
7000	37			
7100	37			
7200	37			
7300	37			
7400	37			
7500	37			
7600	37			
7700	37			
7800	37			
7900	37			
8000	37			
8100	37			
8200	37			
8300	37			
8400	37			
8500	37			
8600	37			
8700	37			
8800	37			
8900	37			
9000	37			
9100	37			
9200	37			
9300	37			
9400	37			
9500	37			
9600	37			
9700	37			
9800	37			
9900	37			
10000	37			

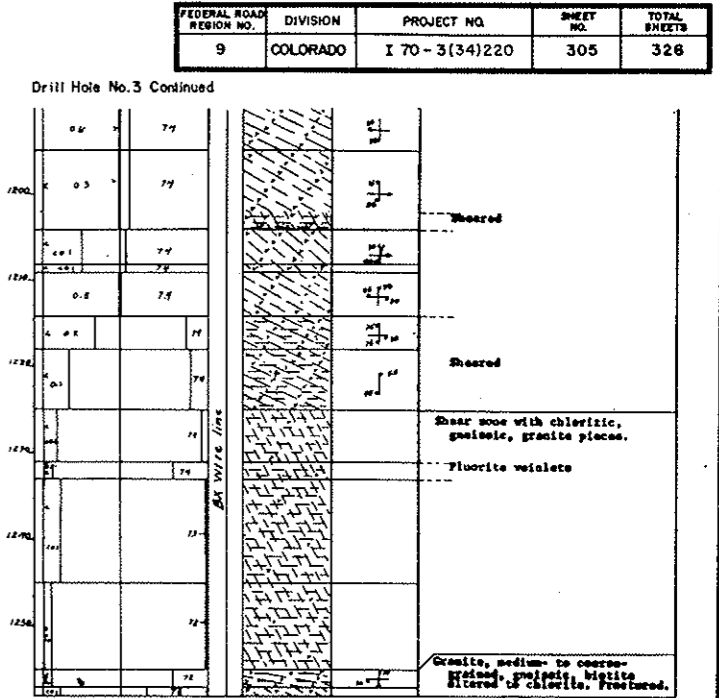
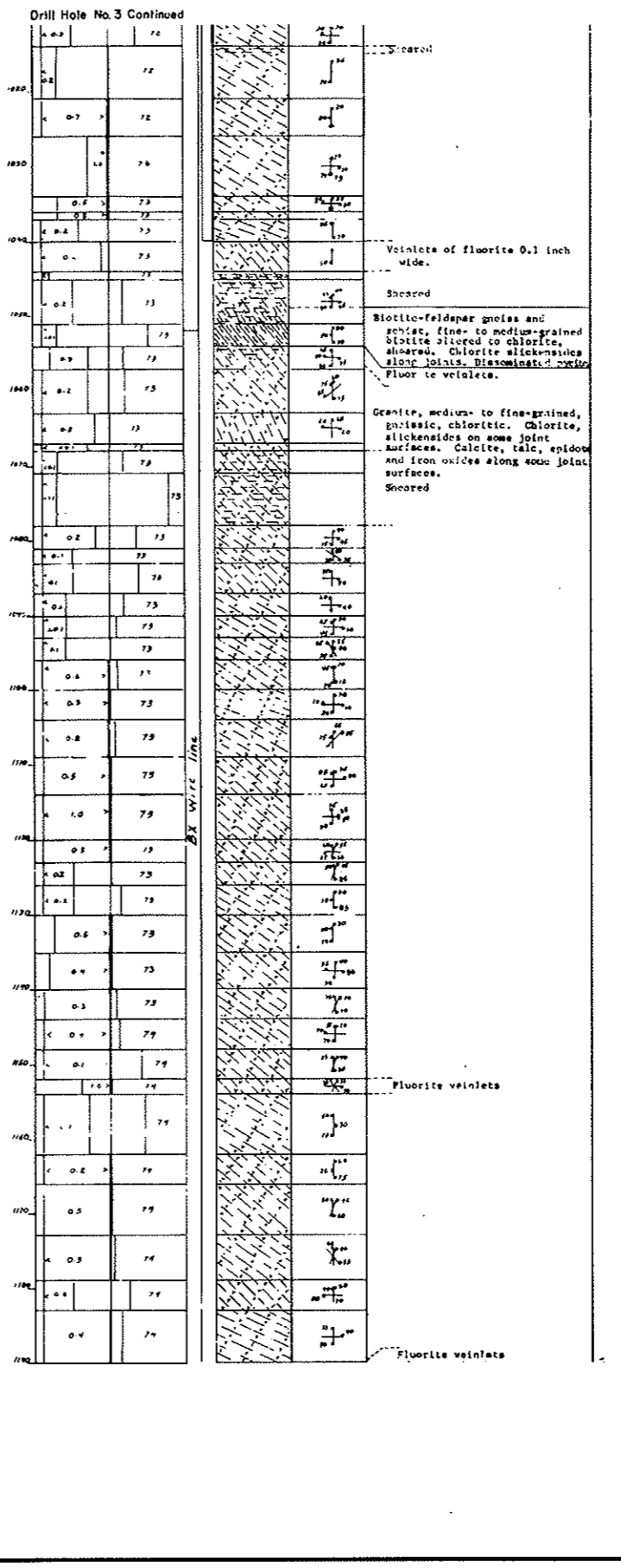
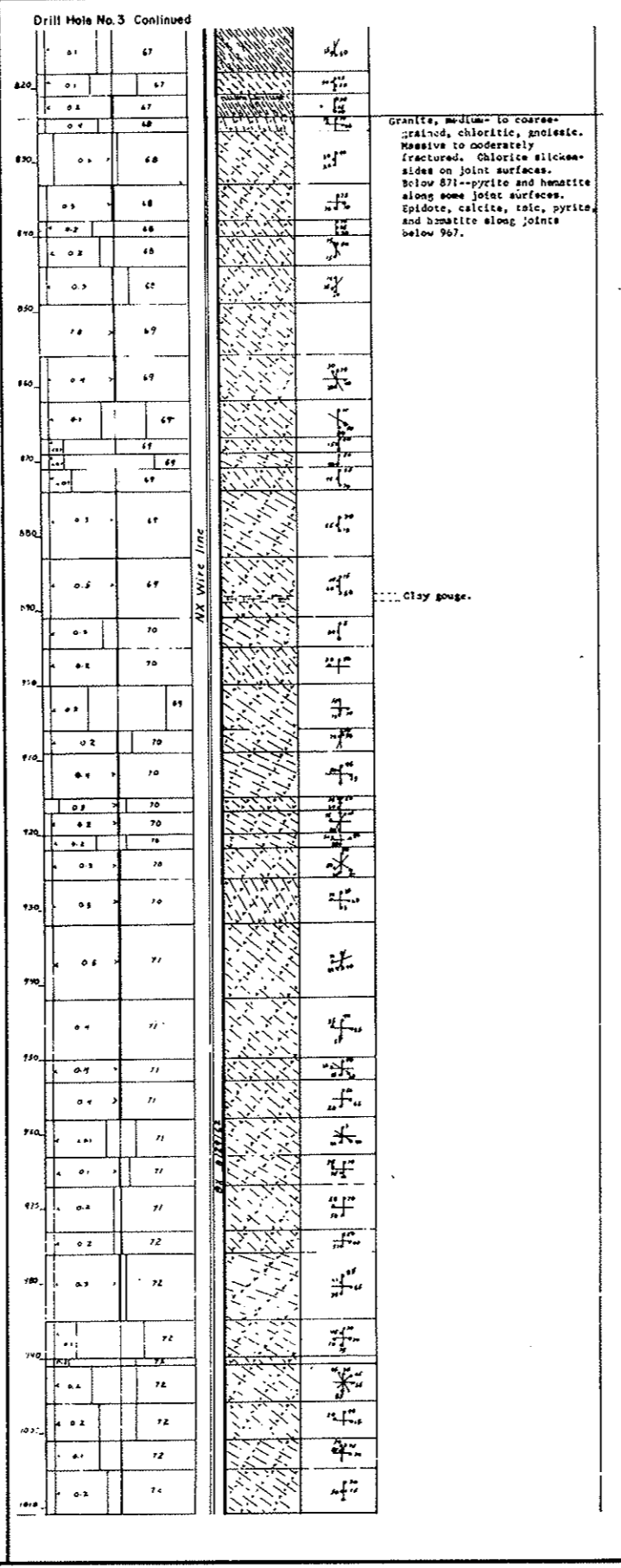
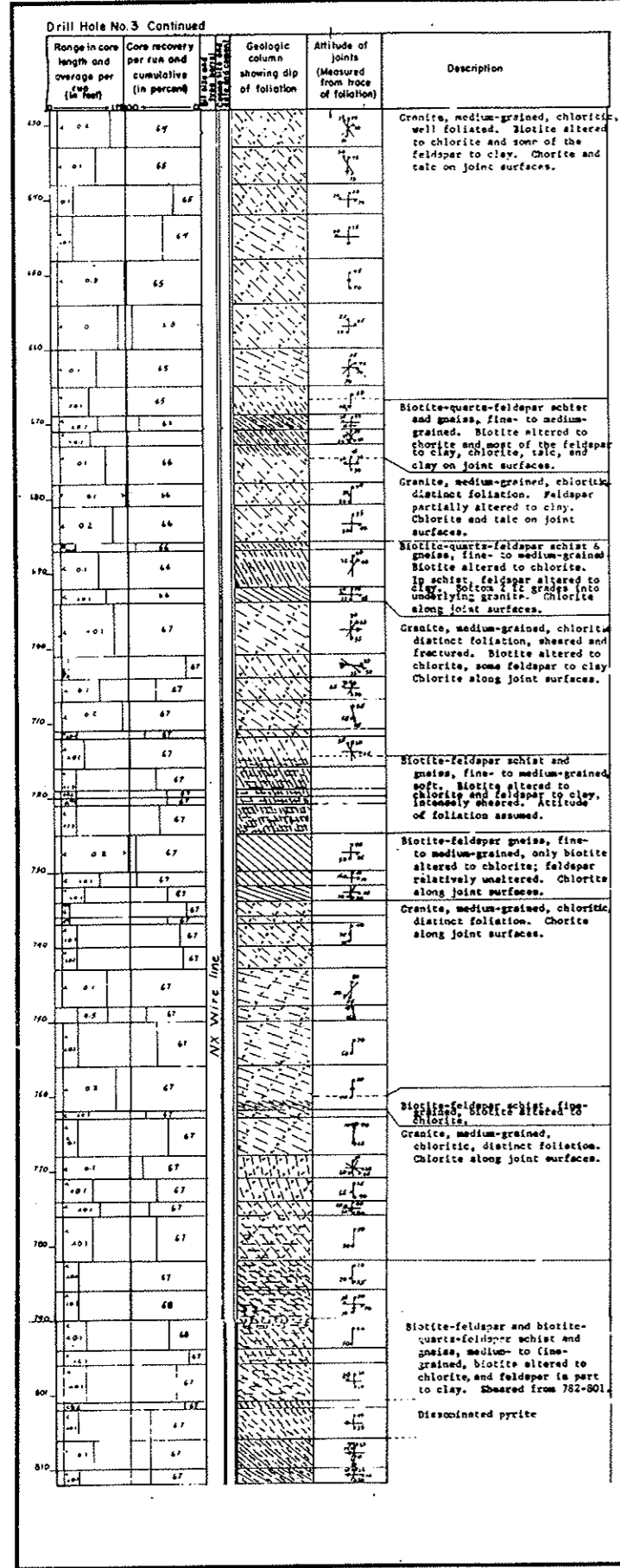
Drill Hole No.3 Continued

10100	37			
10200	37			
10300	37			
10400	37			
10500	37			
10600	37			
10700	37			
10800	37			
10900	37			
11000	37			
11100	37			
11200	37			
11300	37			
11400	37			
11500	37			
11600	37			
11700	37			
11800	37			
11900	37			
12000	37			
12100	37			
12200	37			
12300	37			
12400	37			
12500	37			
12600	37			
12700	37			
12800	37			
12900	37			
13000	37			
13100	37			
13200	37			
13300	37			
13400	37			
13500	37			
13600	37			
13700	37			
13800	37			
13900	37			
14000	37			
14100	37			
14200	37			
14300	37			
14400	37			
14500	37			
14600	37			
14700	37			
14800	37			
14900	37			
15000	37			
15100	37			
15200	37			
15300	37			
15400	37			
15500	37			
15600	37			
15700	37			
15800	37			
15900	37			
16000	37			
16100	37			
16200	37			
16300	37			
16400	37			
16500	37			
16600	37			
16700	37			
16800	37			
16900	37			
17000	37			
17100	37			
17200	37			
17300	37			
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17500	37			
17600	37			
17700	37			
17800	37			
17900	37			
18000	37			
18100	37			
18200	37			
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18400	37			
18500	37			
18600	37			
18700	37			
18800	37			
18900	37			
19000	37			
19100	37			
19200	37			
19300	37			
19400	37			
19500	37			
19600	37			
19700	37			
19800	37			
19900	37			
20000	37			

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	304	326

Drill Hole No.3 Continued

20100	37			
20200	37			
20300	37			
20400	37			
20500	37			
20600	37			
20700	37			
20800	37			
20900	37			
21000	37			
21100	37			
21200	37			
21300	37			
21400	37			
21500	37			
21600	37			
21700	37			
21800	37			
21900	37			
22000	37			
22100	37			
22200	37			
22300	37			
22400	37			
22500	37			
22600	37			
22700	37			
22800	37			
22900	37			
23000	37			
23100	37			
23200	37			
23300	37			
23400	37			
23500	37			
23600	37			
23700	37			
23800	37			
23900	37			
24000	37			
24100	37			
24200	37			
24300	37			
24400	37			
24500	37			
24600	37			
24700	37			
24800	37			
24900	37			
25000	37			
25100	37			
25200	37			
25300	37			
25400	37			
25500	37			
25600	37			
25700	37			
25800	37			
25900	37			
26000	37			
26100	37			
26200	37			
26300	37			
26400	37			
26500	37			
26600	37			
26700	37			
26800	37			
26900	37			
27000	37			
27100	37			
27200	37			
27300	37			
27400	37			



AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION SUBSURFACE INVESTIGATIONS BORING LOGS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A. R. D. SUBMITTED: <i>A. R. D.</i>	RECOMMENDED: <i>James</i> PROVED: <i>A. R. D.</i>	DRAWING NO. GS-5			
NEW YORK, N. Y.		SCALE: NO SCALE DATE: AUGUST 1967			

AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973

Hole No. 1 E Station 122 + 95.9 160'
 Top Hole Elev. 11,011.6
 Elev. Water Table. 11,006.3
 Casing 4" of 4" OD @ 2'
 Date Nov. 20, 1965

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,011.6					Overburden; sand, gravel, boulders and broken rock.	Drilled
4.0	11,007.6					2.3 Silver Plume Granite (SPG) 12° & 60° & 80° Fract. 0.1" FeO staining. Chloride alt. on 80° fracture	Good Rock
6.0	11,005.6	2.0	1.3	65%		3.5 SPG 12° & 60° & 80° Fract. 0.1" FeO on 12° & 60° Chloride alt. on 80° fracture	Good rock
7.5	11,002.1	3.5	3.5	100%		6.5 SPG 12° & 60° & 80° Fract. 0.1" FeO on 12° & 60° Fract. 0.1" FeO	Good rock
9.5	11,002.1	4.5	4.5	100%		2.0 SPG 12° & 60° & 80° Fract. 0.1" FeO. Some chloride alt. on 12°	Good rock
13.0	10,997.6					2.8 SPG 12° & 60° & 80° Fract. 0.1" FeO. Calcite & chloride alt. on 60° & 80°	Good rock
19.0	10,992.6	2.0	2.0	100%		1.7 SPG Same as above	Good rock
21.0	10,990.6	2.0	1.7	85%		2.5 SPG Same as above	Good rock
23.5	10,988.1	2.5	2.5	100%		3.5 SPG Same as above	Good rock
27.0	10,984.6	2.5	2.5	100%		1.0 SPG Same as above	Good rock
28.0	10,983.6	1.0	1.0	100%	30 min	2.0 SPG Same as above	Good rock
28.0	10,983.6	2.0	2.0	100%	45 min	2.0 SPG Top 1' same as above. Bottom 1' small frag. 12°, 60° & 80° Fract. 0.1" FeO	Good rock
30.0	10,981.6	2.0	2.0	100%	45 min	2.5 SPG Same as 28.0-30.0	Good rock
37.0	10,973.6	2.0	2.0	100%	1 hr. 05 min	1.5 SPG 12° & 60° & 80° Fract. 0.1" FeO. Heavy chloride alt. on 60° & 80°. Some slickenside. Some weathered	Good rock
39.0	10,972.6	3.0	1.5	50%	1 hr. 15 min	0.8 SPG 12° & 60° & 80° Fract. alt. heavy chloride alt. on 60° & 80°. Tr. slickenside	Good rock
40.0	10,971.6	1.0	0.8	80%	35 min	4.0 SPG 12° & 60° & 80° Fract. 0.1" Chloride	Good rock
43.0	10,967.6	3.0	3.0	100%	1 hr. 05 min	1.0 SPG 12° & 60° & 80° Fract. 0.1" FeO. Calcite & chloride alt. on 60° & 80°	Good rock
47.6	10,964.0	3.6	3.0	83%	40 min	1.0 SPG 12° & 60° & 80° Fract. 0.1" Chloride	Good rock
51.0	10,960.6	3.6	3.4	100%	50 min	1.0 SPG 12° & 60° & 80° Fract. 0.1" Chloride	Good rock
TD							

Hole No. 2E Station 124 + 45.9 190'
 Top Hole Elev. 11,009.4
 Elev. Water Table. 11,005.2
 Casing 2" of 4" OD @ 2' w/ 1 ex. cal. seal
 Date Nov. 30, 1965

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,009.4					Overburden; sand, gravel boulders and broken rock.	Drilled
10.0	10,999.4					1.8 SPG 12° fract. 0.1" 80° to vertical fract. w/ Calcite & FeO stains. Badly broken but not weathered	
13.0	10,996.4	3.0	1.8	60%	1 hr 30 min	1.4 SPG 12° fract. 0.1" FeO stain on both. Badly broken but not weathered.	
16.1	10,993.3	3.1	1.4	45%	45 min	1.5 SPG 12° & 80° fract. 0.1" FeO stains on 80°	
16.1	10,993.3					Badly broken but not weathered	
19.1	10,990.3	3.0	1.5	50%	30 min	1.0 SPG 12° & 80° fract. 0.1" FeO stained. Badly broken but not weathered	
22.5	10,986.9	3.4	1.0	29%	20 min	0.4 SPG 80° fract. FeO stained. Badly broken but not weathered.	
22.5	10,986.9					0.3 SPG Very badly broken but not weathered.	
24.5	10,984.9	2.0	0.4	20%	1 hr	1.0 SPG 12° & 80° fract. 0.1" FeO. Some Chloride alt. on vertical fract.	
24.5	10,984.9					1.4 SPG 12° & 80° fract. 0.1" FeO. Some chloride alt. on vertical fract.	
28.5	10,980.9	4.0	1.3	32%	1 hr. 15 min	1.5 SPG 12° & 80° fract. 0.1" FeO. Some chloride alt. on vertical fract.	
28.5	10,980.9					1.5 SPG 12° & 80° fract. 0.1" FeO. Some chloride alt. on vertical fract.	
32.5	10,976.9	4.0	2.4	60%	0 hr	1.5 SPG 12° & 80° fract. 0.1" FeO. Some chloride alt. on vertical fract.	
32.5	10,976.9					Some chloride alt. on vertical fract.	
50.0	10,959.4	17.5	1.5	9%	2 hr 50 min		
TD							

Hole No. 3E Station 122 + 89.0 61.5'
 Top Hole Elev. 11,016.6
 Elev. Water Table. 11,012.3
 Casing None
 Date Nov. 24, 1965

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,016.6					Overburden; sand, gravel, boulders and broken rock.	Drilled
17.0	10,977.6					0.3 SPG Silver Plume Granite fragments. 60° fract. Chloride alt. on fract.	
19.0	10,976.6					1.5 SPG 12° & 60° Fract. 0.1" Calcite & Chloride alt. on 60°	
22.0	10,994.6	3.0	0.3	1%	30 min	0.5 SPG fragments tr. slickenside. Some Chloride alt.	
22.0	10,994.6					1.2 SPG fragments 60° & 80° Fract. 0.1" FeO. Some Chloride alt.	
25.0	10,991.6	3.0	1.5	50%	1 hr 20 min	1.5 SPG Same as above	
28.0	10,988.6	3.0	0.5	17%	25 min	1.0 SPG fragments 60° & 80° Fract. 0.1" FeO. Some Chloride alt.	
28.0	10,988.6					1.0 SPG fragments 60° & 80° Fract. 0.1" FeO. Some Chloride alt.	
31.0	10,985.6	3.0	1.2	40%	50 min	1.5 SPG Same as above	
31.0	10,985.6					1.0 SPG fragments 60° & 80° Fract. 0.1" FeO. Some Chloride alt.	
34.0	10,982.6	3.0	1.5	50%	40 min	1.0 SPG fragments 60° & 80° Fract. 0.1" FeO. Some Chloride alt.	
34.0	10,982.6					0.5 SPG fragments vertical fract. Some chloride alt. on fract.	
37.0	10,979.6	3.0	1.0	33%	40 min	1.0 SPG fragments 60° & 80° Fract. 0.1" FeO. Some Chloride alt.	
37.0	10,979.6					0.5 SPG fragments vertical fract. Some chloride alt. on fract.	
40.0	10,976.6	3.0	0.5	17%	40 min	1.0 SPG fragments 60° & 80° Fract. 0.1" FeO. Some Chloride alt.	
40.0	10,976.6					1.5 SPG fragments. Badly weathered. Some to clay tr. slickenside alt.	
43.0	10,973.6	3.0			1 hr 15 min		
43.0	10,973.6						
50.0	10,966.6	7.0	1.5	21%	2 hr 30 min		
TD							

Hole No. 4E Station 126 + 65.9 75'
 Top Hole Elev. 11,015.7
 Elev. Water Table. 11,013.0
 Casing None
 Date Dec. 1, 1965

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,015.7					Overburden; sand gravel, boulders and broken rock.	Drilled
30.5	10,985.2					1.0 SPG Silver Plume Granite fragments w/ evidence of weathering.	
30.5	10,985.2					1.3 SPG 12° & 60° & 80° to vertical fract. 0.1" w/ prominent slickenside w/ Chloride alt.	
42.0	10,973.7	11.5	1.0	8%	8 hr 55 min		
42.0	10,973.7						
50.0	10,965.7	8.0	1.3	16%	2 hr 30 min		
TD							

Hole No. 5E Station 123 + 29.9 61'
 Top Hole Elev. 11,015.6
 Elev. Water Table. 11,012.8
 Casing None
 Date Dec. 6, 1965

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,015.6					Overburden; sand gravel, boulders and broken rock.	Drilled
10.0	11,005.6					0.3 SPG Silver Plume Granite 12°, 60° & 80° fract. 0.1" fragments weathered	
10.0	11,005.6					1.5 SPG 12°, 60° & 80° Fracture. 0.1" FeO. Some Chloride alt. on 50° & 80°	
13.0	11,002.6	3.0	0.8	26%	40 min	1.0 SPG 12° & 60° & 80° Fract. 0.1" FeO. Some Chloride alt. on 50° & 80°	
13.0	11,002.6					1.5 SPG 12°, 60° & 80° Fracture. 0.1" FeO. Some Chloride alt. on 50° & 80°	
16.0	10,999.6	3.0	1.5	50%	2 hr 10 min	1.0 SPG 12°, 60° & 80° Fract. 0.1" FeO. Some Chloride alt. on 50° & 80°	
16.0	10,999.6					1.5 SPG 12°, 60° & 80° Fract. 0.1" FeO. Some Chloride alt. on 50° & 80°	
19.0	10,996.6	3.0	1.0	33%	1 hr 15 min	1.0 SPG very small fragment weathered.	
19.0	10,996.6					1.0 SPG very small fragment weathered.	
22.0	10,993.6	3.0	1.0	33%	55 min	1.5 SPG 0.8° 12°, 60° & 80° Fract. 0.1" FeO. Some Chloride alt. on fract.	
22.0	10,993.6					0.7 SPG weathered to clay w/ few fragments.	
25.5	10,990.1	3.5	1.5	43%	30 min	1.5 SPG Same as above.	
25.5	10,990.1					Chloride alt. on 60°.	
29.0	10,986.6	3.5	1.5	43%	1 hr 20 min	1.0 SPG 12°, 60° & 80° Fract. 0.1" FeO. Some Chloride alt. on fract.	
29.0	10,986.6					1.0 SPG 12°, 60° & 80° Fract. 0.1" FeO. Some Chloride alt. on fract.	
43.0	10,972.6	13.0	1.0	7%	3 hr 30 min	0.5 of core weathered to clay	
43.0	10,972.6					0.5 SPG fragments 12°, 60° & 80° Fract. 0.1" FeO. Some Chloride alt. on fract.	
50.0	10,965.6	7.0	1.0	14%	2 hr 25 min	0.5 of core weathered to clay	
50.0	10,965.6					0.5 SPG fragments 12°, 60° & 80° Fract. 0.1" FeO. Some Chloride alt. on fract.	
55.0	10,960.6	5.0	0.5	10%	50 min	0.5 SPG fragments 12°, 60° & 80° Fract. 0.1" FeO. Some Chloride alt. on fract.	
55.0	10,960.6					0.5 SPG fragments 12°, 60° & 80° Fract. 0.1" FeO. Some Chloride alt. on fract.	
59.0	10,956.6	4.0	0.5	13%	45 min	0.8 SPG 12°, 60° & 80° Fract. Chloride alt. on 60° & 80°	
59.0	10,956.6					0.8 SPG 12°, 60° & 80° Fract. Chloride alt. on 60° & 80°	
65.0	10,950.6	6.0	0.8	13%	35 min	0.5 SPG 12°, 60° & 80° Fract. vary altered to Chloride. Some Chloride clay.	
65.0	10,950.6					0.5 SPG 12°, 60° & 80° Fract. vary altered to Chloride. Some Chloride clay.	
75.0	10,940.6	10.0	0.5	5%	1 hr 05 min		
TD							

NOTES:
 Borings on this sheet were supervised and Logs prepared by the Colorado Department of Highways.
 Location of borings is shown on Drawing No. G4-2

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION EAST PORTAL AREA SUBSURFACE INVESTIGATIONS BORING LOGS					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A. R. D. SUBMITTED: <i>A. R. D.</i>	RECOMMENDED: <i>K. J. J.</i> APPROVED: <i>Albert A. Bonforte</i>	DRAWING NO. GS-6			
NEW YORK, N. Y. SCALE: NO SCALE DATE: AUGUST 1967					

Hole No. 18 E drilled at 4th Station 118 + 03.0 127.5^m
 Top Hole Elev. 11,170.8
 Elev. Water Table. ---
 Casing ---
 Date January 7, 1966

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,170.8					Overburden; sand, gravel, boulders and broken rock	Drilled
26.0	11,153.1					0.8 Hornfel? No fract. No bedding	
31.0	11,149.7	5.0	1.0	20%	1 hr 30 min	2 SPG fragments	
34.0	11,147.6	3.0	0.2	7%	45 min	0.2 SPG fragments	
39.0	11,147.6					1.5 SPG fragments 120°, 60° & 80° fract. 0.1"+. Calcite on all fract. 2.6 SPG 12°, 60° & 80° fract. 0.1"+. Calcite on some tr. weathering or fault gouge	
41.0	11,142.8	7.0	4.5	64%	1 hr 30 min	0.4 SPG fragments	
41.0	11,142.8					0.8 SPG 12°, 60° & 80° fract. 0.1"+. 45% bedding tr. weathering or fault gouge at top	
45.0	11,140.1	4.0	3.5	88%	30 min	2.7 SPG some fragments 0.3 WEATHERED zone at base	
45.0	11,140.1					0.0 SPG same as above	
50.5	11,136.4	5.5	1.3	24%	1 hr	0.3 SPG some as bottom 2.7 above fragments	
50.5	11,136.4					No weathering or fault gouge	
56.0	11,132.6	5.5	4.0	73%	35 min	5.0 SPG 120°, 60° & 80° fract. 0.1"+. FeO & Calcite on some fract. Badly broken 3 12"	
56.0	11,132.6					5.0 SPG 12°, 60° & 80° fract. 0.1"+. Some FeO & Calcite	
61.0	11,129.2	5.0	5.0	100%	45 min	5.0 SPG 120°, 60° & 80° fract. 0.1"+. 1.5 from top vein of Pegmatite. bottom 1.0 has flat Quartzite veins	
61.0	11,129.2					5.0 SPG 12°, 60° & 80° fract. 0.1"+. Some FeO & Calcite	
66.0	11,125.8	5.0	5.0	100%	30 min	5.0 SPG 120°, 60° & 80° fract. 0.1"+. 1.5 from top vein of Pegmatite. bottom 1.0 has flat Quartzite veins	
66.0	11,125.8					5.0 SPG 120°, 60° & 80° fract. 0.1"+. 1.5 from top vein of Pegmatite. bottom 1.0 has flat Quartzite veins	
71.0	11,122.4	5.0	5.0	100%	25 min	FeO stained on all fract.	
71.0	11,122.4					1.0 SPG 120°, 60° & 80° fract. 0.1"+. FeO & Calcite on fract.	
76.0	11,119.0	5.0	5.0	100%	1 hr 30 min	4.0 SPG 120°, 60° & 80° fract. 0.1"+. FeO stain on fract. Bottom 0.5' grades to grey Hornfel.	
76.0	11,119.0					4.0 SPG 120°, 60° & 80° fract. 0.1"+. FeO stain on fract. Bottom 0.5' grades to grey Hornfel.	
80.0	11,116.3	4.0	4.0	100%	30 min	5.0 Hornfel grading to Gneiss. 120°, 60° & 80° fract. FeO staining of fract. Some Chalcopyrite	
80.0	11,116.3					5.0 Hornfel grading to Gneiss. 120°, 60° & 80° fract. FeO staining of fract. Some Chalcopyrite	
85.0	11,112.9	5.0	5.0	100%	1 hr	2.0 Gneiss 120°, 60° & 80° fract. 0.1"+. 0.5 Gneiss much Biotite. Some slickenslide & FeO on fract.	
85.0	11,112.9					2.0 Gneiss 120°, 60° & 80° fract. 0.1"+. 0.5 Gneiss much Biotite. Some slickenslide & FeO on fract.	
90.0	11,109.4	5.0	5.0	100%	25 min	0.2 vein Hornfel 0.5 Gneiss grading to Hornfel & Biotite fract. & some slickenslide.	
90.0	11,109.4					0.4 Hornfel 0.6 SPG 120°, 60° & 80° fract.	Good Rock
95.0	11,106.1	5.0	5.0	100%	35 min	4.5 SPG 12°, 60° & 80° fract. Many fract. Some slickenslide & FeO on fract.	
95.0	11,106.1					4.5 SPG 12°, 60° & 80° fract. Many fract. Some slickenslide & FeO on fract.	
99.5	11,103.0	4.5	4.5	100%	35 min	1.0 SPG 4.0 Hornfel 120° or less bedding some of Biotite Shist near top. 120°, 60° & 80° fract. 0.1"+ across bedding FeO fract.	
99.5	11,103.0					1.0 SPG 4.0 Hornfel 120° or less bedding some of Biotite Shist near top. 120°, 60° & 80° fract. 0.1"+ across bedding FeO fract.	
105.0	11,099.2	5.5	5.0	91%	25 min	1.0 Hornfel 120° bedding 120°, 60° & 80° fract. 0.1"+.	
105.0	11,099.2					1.0 Hornfel 120° bedding 120°, 60° & 80° fract. 0.1"+.	
106.0	11,098.5	1.0	1.0	100%	25 min	2.0 Hornfel 60° bedding 120°, 60° & 80° fract. 0.1"+. 12" has slickenslide. FeO & Chloride alt on other fract.	
106.0	11,098.5					2.0 Hornfel 60° bedding 120°, 60° & 80° fract. 0.1"+. 12" has slickenslide. FeO & Chloride alt on other fract.	
108.0	11,097.2	2.0	2.0	100%	40 min	4.0 Hornfel grading to 20° of Biotite shist back to Hornfel less than 120° bedding. 120°, 60° & 80° fract. 0.1"+. Some Calcite or fract.	
108.0	11,097.2					4.0 Hornfel grading to 20° of Biotite shist back to Hornfel less than 120° bedding. 120°, 60° & 80° fract. 0.1"+. Some Calcite or fract.	
112.5	11,094.1	4.5	4.0	91%	25 min	2.0 SPG 120°, 60° & 80° fract. FeO stained grading to ---	
112.5	11,094.1					2.0 SPG 120°, 60° & 80° fract. FeO stained grading to ---	
116.0	11,092.8	3.5	3.5	100%	20 min	1.5 Hornfel at bottom very micaceous & fract. 120° bedding	

Hole No. 18E Continued

116.0	11,092.8					5.0 SPG 120°, 60° & 80° fract. Some slickenslide on 120°.	Good Rock
121.0	11,088.3	5.0	5.0	100%	25 min	5.0 SPG 120°, 60° & 80° fract. 0.1"+	
121.0	11,088.3					5.0 SPG 120°, 60° & 80° fract. 0.1"+	
126.0	11,084.9	5.0	5.0	100%	30 min	1.0 Chloride shist grading from 120° to SPG.	
126.0	11,084.9					1.0 Chloride shist grading from 120° to SPG.	
131.0	11,081.4	5.0	5.0	100%	30 min	3.0 Hornfel grading to Gneiss back to Hornfel Badly fract.	
131.0	11,081.4					3.0 Hornfel grading to Gneiss back to Hornfel Badly fract.	
135.5	11,078.4	4.5	4.5	100%	35 min	0.5 Gneiss flat bedding 120°, 60° & 80° fract. 0.1"+.	
135.5	11,078.4					0.5 Gneiss flat bedding 120°, 60° & 80° fract. 0.1"+.	
140.5	11,075.0	5.0	4.5	90%	25 min	1.5 Gneiss as above. Badly fract & crumbly w/ few vein of SPG	
140.5	11,075.0					1.5 Gneiss as above. Badly fract & crumbly w/ few vein of SPG	
143.0	11,073.3	2.5	1.5	60%	20 min	1.5 Gneiss as above	
143.0	11,073.3					1.5 Gneiss as above	
149.0	11,073.3					2.0 Gneiss grading to Hornfel. Slickenslide on fract. Crumbly zones.	
146.0	11,071.3	3.0	2.0	66%	25 min	1.0 Gneiss tr. Slickenslide.	
146.0	11,071.3					1.0 Gneiss tr. Slickenslide.	
147.0	11,070.6	1.0	1.0	100%	10 min	1.0 Gneiss grading to ---	
147.0	11,070.6					1.0 Gneiss grading to ---	
149.0	11,070.6					1.0 Gneiss grading to ---	
152.0	11,067.0	5.0	5.0	100%	35 min	1.0 SPG 120°, 60° & 80° fract.	
152.0	11,067.0					1.0 SPG 120°, 60° & 80° fract.	
156.0	11,064.5	4.0	4.0	100%	20 min	4.0 SPG 120°, 60° & 80° fract. 0.1"+. Badly fract. 0 base. Some Chloride alt. on fract. tr. slickenslide.	
156.0	11,064.5					4.0 SPG 120°, 60° & 80° fract. 0.1"+. Badly fract. 0 base. Some Chloride alt. on fract. tr. slickenslide.	
160.6	11,061.4	4.5	4.5	100%	25 min	2.0 Gneiss grading to --- tr. FeO & slickenslide.	
160.6	11,061.4					2.0 Gneiss grading to --- tr. FeO & slickenslide.	
166.0	11,057.6	5.5	5.0	91%	40 min	1.0 massive flow material in Gneiss above slickenslide on fract.	
166.0	11,057.6					1.0 massive flow material in Gneiss above slickenslide on fract.	
170.5	11,054.5	4.5	4.5	100%	40 min	0.5 Same as bottom 120° above from massive to Gneiss flow directionally.	
170.5	11,054.5					0.5 Same as bottom 120° above from massive to Gneiss flow directionally.	
170.5	11,054.5					0.5 Same as above some slickenslide.	
175.5	11,051.1	5.0	5.0	100%	1 hr	1.5 SPG 1.5 Gneiss as above slickenslide.	
175.5	11,051.1					1.5 SPG 1.5 Gneiss as above slickenslide.	
178.0	11,049.5	2.5	1.5	60%	15 min	1.5 grade to SPG 45° bedding 120°, 60° & 80° fract. 0.1"+ across bedding. tr. Calcite on fract.	
178.0	11,049.5					1.5 grade to SPG 45° bedding 120°, 60° & 80° fract. 0.1"+ across bedding. tr. Calcite on fract.	
183.0	11,046.0	5.0	5.0	100%	30 min	5.0 SPG 120°, 60° & 80° fract. tr. Calcite on fract. tr. slickenslide	
183.0	11,046.0					5.0 SPG 120°, 60° & 80° fract. tr. Calcite on fract. tr. slickenslide	
183.0	11,046.0					5.0 SPG 120°, 60° & 80° fract. badly weathered near base. Chloride alt. & Biotite on some fract.	
186.0	11,043.9	3.0	3.0	100%	30 min	3.0 SPG 120°, 60° & 80° fract. badly fract. Chloride alt on fract.	
186.0	11,043.9					3.0 SPG 120°, 60° & 80° fract. badly fract. Chloride alt on fract.	
189.0	11,041.8	3.0	2.0	66%	45 min	1.0 SPG as above	
189.0	11,041.8					1.0 SPG as above	
189.0	11,041.8					2.0 SPG 120°, 60° & 80° fract. Chloride alt on fract.	
191.0	11,040.5	2.0	2.0	100%	35 min	5.0 SPG 120°, 60° & 80° fract.	Good Rock
191.0	11,040.5					5.0 SPG 120°, 60° & 80° fract.	
201.0	11,033.8	10.0	10.0	100%	45 min	5.0 Pegmatite very few fract. tr. Chloride alt on fract.	
201.0	11,033.8					5.0 Pegmatite very few fract. tr. Chloride alt on fract.	
211.0	11,026.8	10.0	10.0	100%	50 min	5.0 Pegmatite as above 1.0 SPG as above	
211.0	11,026.8					5.0 Pegmatite as above 1.0 SPG as above	
218.5	11,021.7	7.5	7.5	100%	50 min	2.5 Hornfel some fract. w/Calcite.	
218.5	11,021.7					2.5 Hornfel some fract. w/Calcite.	
219.5	11,020.2	1.0	1.0	100%	30 min	1.0 SPG as above	
219.5	11,020.2					1.0 SPG as above	
219.5	11,020.2					7.0 Pegmatite very few fract. 3.0 SPG as above. Very few fract.	Good Rock
229.5	11,014.3	10.0	10.0	100%	40 min	5.0 SPG as above	Good Rock
229.5	11,014.3					5.0 SPG as above	
229.5	11,014.3					2.0 Pegmatite as above 3.0 SPG as above all very few fract.	Good Rock
239.5	11,007.5	10.0	10.0	100%	1 hr 15 min	10.0 SPG 120°, 60° & 80° fract. Calcite on fract.	Fair Rock
239.5	11,007.5					10.0 SPG 120°, 60° & 80° fract. Calcite on fract.	

Hole No. 19 Station 36 + 92.8 431 South
 Top Hole Elev. 11,147.3
 Elev. Water Table. 11,116.4
 Casing 16" of 4" OD w/ 3 ex. 2 ex. cal. seal 1 ex. cement
 of 4" OD
 Date November 3, 1966

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,147.3					Overburden; sand, gravel, boulders and broken rock.	Drilled; hole washing badly losing around casing.
16.0'	11,131.3'					0.5' Idaho Springs Formation (I.S.P.) Gts. grey; some hornblende; fine textured; vertical fractured w/ some iron oxide stain. Fracture spacing 0.1'.	
16.0'	11,131.3'					0.4' I.S.P. Alteration of above w/ micaceous shist. 45' bedding. Vertical frac. w/ FeO 0.1'.	
19.0'	11,128.3'	3.0'	3.0'	100%	1 hr. 20'	1.2 I.S.P. Same as top 0.5' No. vert. frac. FeO on 45' frac. Frac. spacing 0.1'.	
19.0'	11,128.3'					0.9' ISF Hornfel Greenblk. w/ biotite. Very fine text. 45' bedding. Frac. 0.1'.	
22.0'	11,125.3'	3.0'	3.0'	100%	45 min.	2.0' ISF Hornfel w/ 45' to 80° veins of grey qtz. 0.5' ISF Grey qtz. FeO at upper contact.	
22.0'	11,125.3'					2.0' ISF Hornfel w/ 45' to 80° veins of grey qtz. 0.5' ISF Grey qtz. FeO at upper contact.	
25.0'	11,122.3'	3.0'	3.0'	100%	1 Hr.	3.0' ISF Hornfel w/ grey qtz. veins from 0.5' to 1.0' apt. Appr. 45' FeO on frac. 0.1'	
25.0'	11,122.3'					3.0' ISF Hornfel w/ grey qtz. veins from 0.5' to 1.0' apt. Appr. 45' FeO on frac. 0.1'	
28.0'	11,119.3'	3.0'	3.0'	100%	1 Hr. 15'	T.D.	

Hole No. 20 Station 36 + 94.8 149.5 North
 Top Hole Elev. 11,109.1
 Elev. Water Table. 11,128.1
 Casing 14" of 4" OD w/ 3 ex. 4 ex. cal seal

Date November 9, 1965

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,149.1					Overburden; sand, gravel, boulders and broken rock.	Drilled
13.5'	11,135.6'					2.0' Silver Plume Granite (SPG) Lt. Pink. Pink microcline, white qtz. tr. hornblende, tr. muscovite. tr. pyrite. Granitoid text. 60 & 80 to vert. frac. Frac. spacing 0.1' or more.	
13.5'	11,135.6'					1.0' ISF Hornfel. Greenblk. massive 45' frac. 0.1' w/ FeO. Vertical vein of SPG.	
16.5'	11,132.6'	3.0'	3.0'	100%	1 hr. 15'	0.5' ISF Hornfel as above. 1.5' SPG 60-80' frac. 0.1' w/ FeO.	
16.5'	11,132.6'					0.5' ISF Hornfel as above. 1.5' SPG 60-80' frac. 0.1' w/ FeO.	
19.5'	11,129.6'	3.0'	3.0'	100%	2 hrs.	0.4' ISF Hornfel. Micaceous 60' frac. 0.1' w/ FeO. 0.6' SPG w/ Chloride alter. on frac. w/ 0.1'.	
19.5'	11,129.6'					0.4' ISF Hornfel. Micaceous 60' frac. 0.1' w/ FeO. 0.6' SPG w/ Chloride alter. on frac. w/ 0.1'.	
19.5'	11,129.6'					2.0' SPG 45' frac. 0.1' w/ Chloride alt. Whole core very chlorite alt.	

Hole No. 8w Continued
 Depth Datum Cored Core Recovered Percent Recovery Coring Time Description Remarks

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
56.9'	11,097.8'					3.0' SPG, 12, 60 & 80 frac. some calcite on 60 fractures.	
61.9'	11,092.5'	5.0'	5.0'	100%	2 hr	2.0' ISF, Hornfel approx. 45' bedding, 45' 60' & 80' fractures, some qtz veins on 60' fractures, traces of hematite on some fractures.	

**AS CONSTRUCTED
NO REVISIONS DATE**
 Oct 26, 1967

NOTES:
 Borings on this sheet were supervised and Logs prepared by the Colorado Department of Highways.
 Location of borings is shown on Drawing No. G-4-2

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT GENERAL SUBSURFACE INFORMATION WEST PORTAL AREA SUBSURFACE INVESTIGATIONS BORING LOGS					
TIPPETTS-ABBETT-MCCARTHY-STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED BY DRAWN BY CHECKED BY SUBMITTED BY	RECOMMENDED BY APPROVED BY				DRAWING NO. GS-9
NEW YORK, N. Y. SCALE: NO SCALE DATE: AUGUST 1967					

Hole No. 77 Station 38 of 10.8' 56' North
 Top Hole Elev. 11,152.3'
 Elev. Water Table 11,152.3'
 Casing None

Date October 16, 1965

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0.0'	11,152.3'					Overburden; sand, gravel, boulders and broken rock.	Drilled
5.0'	11,147.3'					4.5' ISF (Idaho Spgs. from Hornfel 45' bedding, 45' to 60' quartz veins. Bottom 0.5' have siliceous, Red Iron stained.	
9.0'	11,143.3'	4.0'	4.0'	100%	4 hr 30'	4.0' Silver Plume Granite (SPG) fine crystalline to almost pegmatite. 45' frac. at base FeO stained.	
13.5'	11,138.8'	4.5'	4.2'	93%	2 hr 15'	5.0' SGT Pegmatite 25' frac. 5 base FeO stained.	
18.5'	11,133.8'	5.0'	5.0'	100%	5 hr 15'	1.7' ISF Gneiss grading to coarse crystalline. 0.8' SPG Pegmatite. 4.2' ISF Gneiss approx. 45' bedding w/60 qtz. vein.	
23.5'	11,128.8'	5.0'	5.0'	100%	1 hr 10'	ISF Gneiss w/pegmatite vein near top. Vertical fracture & qtz. vein.	
25.5'	11,126.8'	2.0'	1.4'	70%	?	1.7' ISF Gneiss grading to coarse crystalline. 0.3' SPG w/45' vein.	
30.0'	11,122.3'	4.5'	2.0'	44%	2 hr 15'	0.4' SPG as above. No vein.	
32.0'	11,120.3'	2.0'	1.5'	75%	1 hr 10'	1.1' Pegmatite. 2.5' SPG	
37.0'	11,115.3'	5.0'	4.0'	80%	2 hr 15'	1.5' Gneiss shist. flat-bedding w/some 45' qtz. vein.	
41.0'	11,111.3'	4.0'	4.0'	100%	2 hr 15'	4.0' ISF Gneiss w/some qtz. veins. 45' frac. & w/bedding. Some 60' fract. across bedding.	
42.0'	11,110.3'	1.0'	1.0'	100%	1 hr 30'	1.0' ISF Gneiss, 80' frac. Trace FeO stains.	

Hole No. 81 Station 37 of 51.8' 5'
 Top Hole Elev. 11,154.7'
 Elev. Water Table 11,153.6'
 Casing 7.5' of 4" OD 3 7/8"

Date October 15, 1965

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0.0'	11,154.7'					Overburden; sand, gravel, boulders and broken rock.	Drilled
7.0'	11,147.7'					3.2' Silver Plume Granite (SPG) 60 to 80 frac. 0.1' FeO stained.	
11.0'	11,143.7'	4.0'	3.2'	80%	7 hr 35'	1.3' SPG	
12.5'	11,142.2'	1.5'	1.3'	87%	2 hr 10'	12, 60, & 80 frac. 0.1' FeO stained.	
12.5'	11,142.2'	2.0'	2.0'	100%	2 hr 30'	2.0' SPG; same as above.	
14.5'	11,140.2'	1.5'	0.5'	33%	50'	0.5' SPG; same as above.	Loosing circul.
16.0'	11,138.7'					2.8' SPG; same as above. 12, 60 & 80 frac. 0.1', 45' bedding. Frac. across bedding. FeO stained.	Fair rock
19.0'	11,135.7'	3.0'	2.8'	93%	1 hr 10'	3.2' SPG; same as above.	
22.5'	11,132.2'	3.5'	3.2'	91%	50'	20' SPG approx. 45' bedding 45' frac. 0.1', calcite on fracture.	
30.5'	11,124.2'	8.0'	7.5'	94%	8 hr 40'	0.5' Pegmatite. 12 & 60' frac. calcite on fractures.	
31.7'	11,123.0'	1.2'	1.0'	83%	1 hr 20'	1.0' Pegmatite; same as above.	
31.7'	11,123.0'					No recovery.	
31.9'	11,122.8'	0.2'	0.0'	0%	3 hr 45'		
31.9'	11,122.8'						
34.9'	11,119.8'	3.0'	3.0'	100%	30'	3.0' SPG, trace pegmatite 0 top. 12, 60 & 80' frac. 0.1'. Some chlorite cit. on fractures.	
39.4'	11,115.3'	4.5'	4.5'	100%	1 hr 15'	4.5' SPG, 12, 45 & 60' fractures 0.1'. FeO stain.	
41.9'	11,112.8'	2.5'	2.4'	96%	?	2.4' SPG, badly fractured in 2 zones.	
41.9'	11,112.8'					1.4' SPG, 12 & 80' fracture.	
43.4'	11,111.3'	1.5'	1.4'	93%	?	5.0' SPG; 12, 45, 60 & 80' frac. 0.1'. FeO staining & calcite on frac.	

Hole No. 51 Station 36 of 96.8' 46' North
 Top Hole Elev. 11,152.3'
 Elev. Water Table 11,148.8'
 Casing 25' of 4" OD 3 7/8"

Date October 11, 1965

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,154.3'					Overburden; sand, gravel, boulders and broken rock.	Drilled
24.0'	11,130.3'					4.5' ISF (Idaho Spgs. from Hornfel 45' bedding, 45' to 60' quartz veins. Bottom 0.5' have siliceous, Red Iron stained.	
33.0'	11,121.3'	9.0'	5.0'	55%	5 hr. 30'	0.8' Silver Plume Granite (SPG) 60' fractures	
36.0'	11,118.3'	3.0'	2.3'	77%	5 hr.	1.5' ISF Hornfel flat bed. 60' across fractures.	
39.0'	11,115.3'	3.0'	3.0'	100%	7 hr. 20'	3.0' ISF flat bedding. 60' fractures.	
39.0'	11,115.3'					2.5' ISF Hornfel grading to SPG.	
43.0'	11,111.3'	4.0'	2.5'	62%	9 hr. 30'	30, 60, & 80' fractures. Some FeO stain on frac.	
43.0'	11,111.3'					Some calcite on fractures. SPG coarse crystalline. Flat to 45' bedding.	
54.0'	11,100.3'	11.0'	11.0'	100%	3 hr.	Good rock. 12 to 80' frac. 0.1'.	

Hole No. 6W Station 37 of 59.8' 92 North
 Top Hole Elev. 11,154.4'
 Elev. Water Table 11,153.5'
 Casing 20' of 4" OD 3 7/8"

Date October 14, 1965

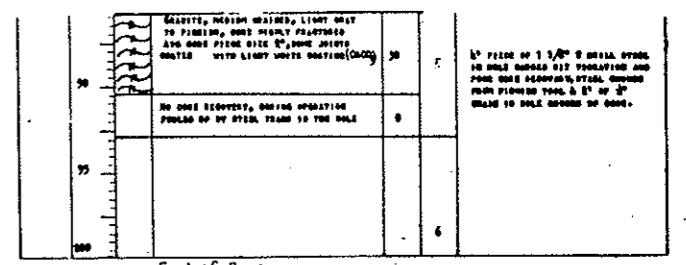
Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,154.4'					Overburden; sand, gravel, boulders and broken rock.	Drilled
19.0'	11,135.4'					0.3' Silver Plume Granite (SPG) 45' bedding.	Good rock
19.5'	11,134.9'	0.5'	0.3'	60%	40'	1.7' Pegmatite; pink, approx. 45' bedding, 45' fract. across bedding.	Good rock
19.5'	11,134.9'					0.8' (Idaho Sp. Para.) ISF Hornfel. Approx. 45' bedding 45' frac. across bedding. Some 80' qtz. veins. Some vertical fractures.	
22.0'	11,132.4'	2.5'	2.5'	100%	3 hr. 30'	0.7' ISF as above.	Good rock
22.0'	11,132.4'					1.0' Pegmatite; pink, approx. 45' bedding w/60-80' qtz. veins.	
26.5'	11,127.9'	4.5'	3.0'	66%	2 hr 30'	1.3' Horn hornfel, gray, than SPG altered w/some approx. 60' qtz. veins.	Good rock
26.5'	11,127.9'					1.0' Altered as above	
27.5'	11,126.9'	1.0'	1.0'	100%	40'	approx. 45' bedding, 80' frac.	Good rock
27.5'	11,126.9'					1.2' Altered as above grading to pink, 45' bedding, 45' frac. across bedding, calcite on fractures.	
32.0'	11,122.4'	4.5'	4.5'	100%	1 hr 40'	2.0' Gneiss w/flat qtz. veins	
32.0'	11,122.4'					1.3' Grades to 15' gray hornfels altered w/SPG.	Good rock
32.0'	11,122.4'					1.2' Same as bottom 1.3' above.	
37.0'	11,117.4'	5.0'	5.0'	100%	1 hr 25'	1.5' ISF Gneiss w/approx. 10 bedding & 10 qtz. vein.	Good rock
37.0'	11,117.4'					1.8' ISF Pegmatite w/0.1' ISF vein.	
42.0'	11,112.4'	5.0'	4.0'	80%	50'	0.5' ISF Gneiss w/approx. 10 bedding & 10 qtz. veins.	Good rock
42.0'	11,112.4'					4.0' Hornfel? Gneiss 45' bedding.	Good rock
47.0'	11,107.4'	5.0'	4.0'	80%	1 hr 10'	4.5' Same as above w/some 60 qtz. veins.	Good rock
47.0'	11,107.4'					2.0' Gneiss as above. No vert. veins.	Good rock
55.5'	10,098.9'	4.0'	4.0'	100%	1 hr 50'	2.0' Grades to Hornfel. Approx. flat bedding.	Good rock
55.5'	10,098.9'					3.0' As above bottom 2.0'	Good rock
60.0'	10,094.4'	4.5'	4.5'	100%	2 hr	1.5' Grades to Gneiss w/60 qtz. vein.	Good rock
60.0'	10,094.4'					1.0' SPG	Good rock
63.0'	10,091.9'	3.0'	3.0'	100%	3 hr 05'	2.0' ISF Gneiss, flat bedding, 45' qtz. vein.	

Hole No. 4U Station 38 of 17.8' 50 South
 Top Hole Elev. 11,149.4'
 Elev. Water Table
 Casing None

Date October 29, 1965

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,149.4'					Overburden; sand, gravel, boulders and broken rock.	Drilled, lost circul. & number of times losing circul.
11.0'	11,138.4'					0.9' ISF Hornfel weathered 45 & 80 frac. 0.1'. Some FeO stain.	
12.2'	11,137.2'	1.2'	1.2'	100%	1 hr. 55'	0.3' Hornfel 80' frac. FeO stained. 45' vein of qtz.	Loosing circul.
12.2'	11,137.2'					3.2' ISF Hornfel 45' bedding & frac. 0.1', 80' frac. 0.1' FeO stained 45 & 80' frac. FeO stained 0.5' in middle of SPG.	
15.4'	11,134.0'	3.2'	3.2'	100%	1 hr. 55'	3.6' ISF Hornfel light gray Top 0.2' broken Hornfel in qtz. vein.	Loosing circul.
15.4'	11,134.0'					45' bedding & frac. 0.1' 80' frac. 0.1' FeO staining on both 45 & 80' fractures.	
18.8'	11,130.6'	3.4'	3.0'	88%	1 hr. 10'	3.5' Hornfel, lt. gray 45' bedding & frac. 0.1', 80' frac. 0.1', FeO staining on fractures.	Loosing circul.
18.8'	11,130.6'					0.4' vein of SPG pegmatite 0.9' from bottom.	
22.3'	11,127.1'	3.5'	3.5'	100%	1 hr. 45'	0.2' Hornfel, dark gray 45 & 80' frac. 0.1' FeO stained on frac.	
22.3'	11,127.1'					0.5' SPG 45' frac. 0.1' 1.6' ISF Hornfel grades from SPG above 45 & 80' frac. 0.1' FeO stained on frac.	
25.7'	11,123.7'	3.4'	3.3'	97%	1 hr. 45'	1.0' grades from SPG above to SPG	
25.7'	11,123.7'					2.8' SPG 45' bedding & frac. 0.1'. Some 60' frac. 0.1' FeO stain on 45 & 60' frac.	
28.9'	11,120.5'	3.2'	2.8'	87%	1 hr. 45'	3.1' SPG 45' bedding & frac. 0.1' & 60 & 80' vert. frac. FeO stain on all fractures.	
28.9'	11,120.5'					1.0' SPG 45' bedding, 12' frac. 0.1' FeO stained	
32.0'	11,117.4'	3.1'	3.1'	100%	1 hr. 15'	1.5' Pegmatite, pink, 45' bedding & frac. 60' & 80' to vert. frac. 0.1', FeO stained.	
32.0'	11,117.4'					0.7' SPG 45' bedding 80' to vert. frac. FeO stained.	
35.2'	11,114.2'	3.2'	3.2'	100%	1 hr. 45'	0.1' SPG 45 & vert. frac. 0.1'	
35.2'	11,114.2'					0.3' ISF Hornfel. 2.1' Pegmatite. Badly frac. 12, 45, 60, 80 & vert. frac. FeO stained. Appears weathered.	
38.7'	11,110.7'	3.2'	3.0'	86%	2 hr. 45'	0.4' ISF Hornfel 30' bed. 0.8' SPG 30' bedding.	
38.7'	11,110.7'					0.7' ISF Hornfel 30' bed. some qtz. veins 30 & 60.	
41.7'	11,107.7'	3.0'	3.0'	100%	1 hr. 15'	1.1' SPG Badly frac. 12, 30, 60, & 80' frac. 0.1', FeO staining.	
41.7'	11,107.7'					0.3' SPG as 1.1' above. 0.2' ISF Hornfel 30' bed. 1.2' SPG 30-45' bedding 80' qtz. vein.	
44.7'	11,104.7'	3.0'	3.0'	100%	2 hr.	1.3' SPG grading to Hornfel.	
44.7'	11,104.7'					1.6' ISF Hornfel 45' bed. 0.5' from top fracture zone. FeO stained.	Loosing circul.
46.3'	11,103.1'	1.6'	1.6'	100%	1 hr. 30'	1.8' ISF Hornfel 45' bed. 80' qtz. vein.	

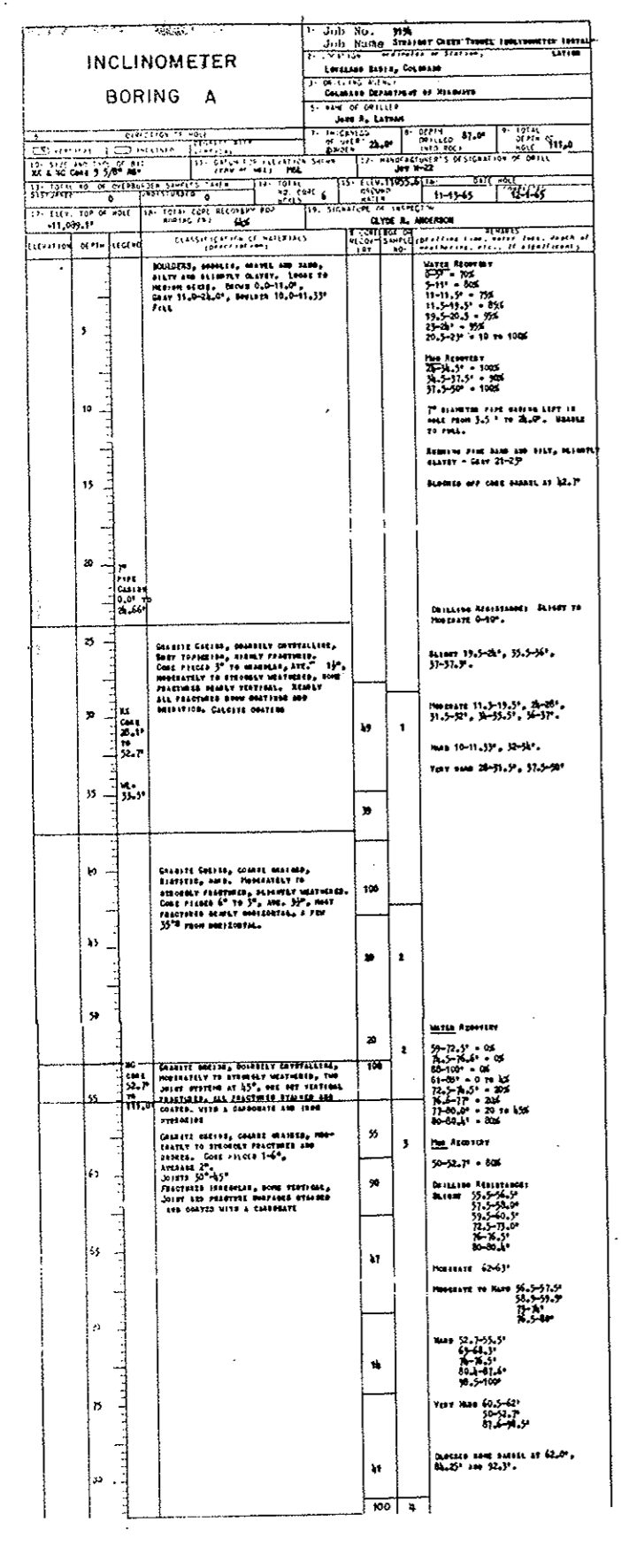
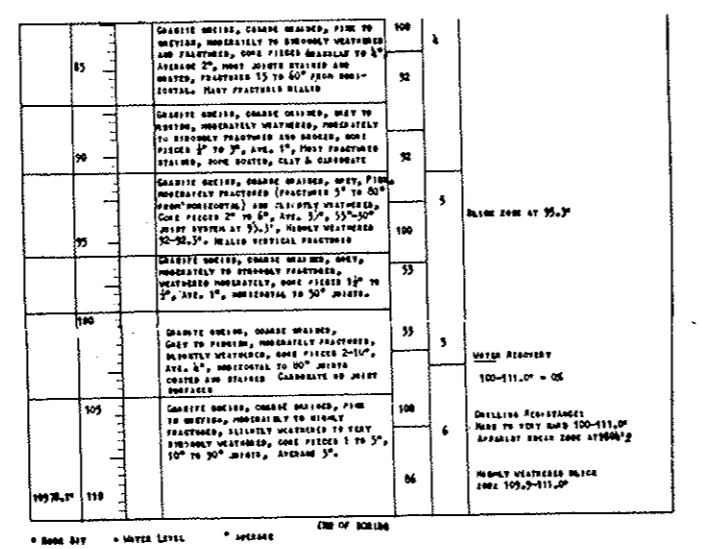
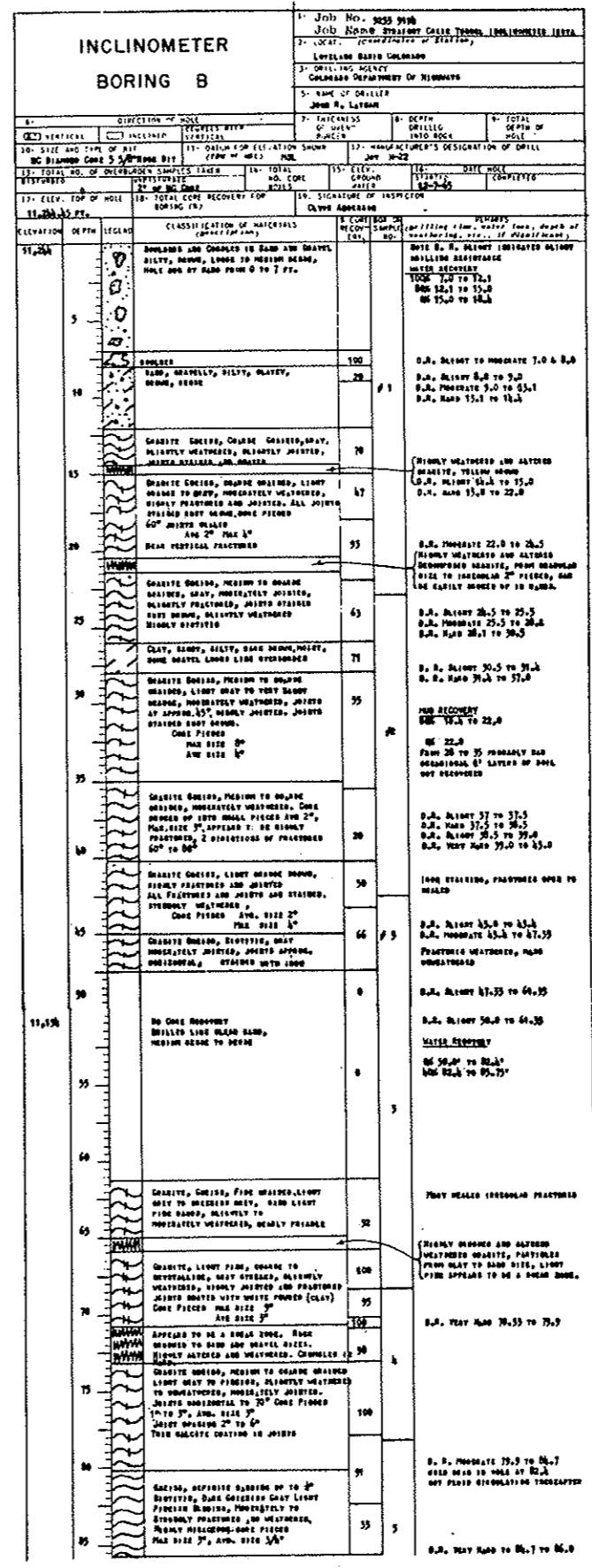
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	310	386



AS CONSTRUCTED
NO REVISIONS DATE
 OCT 26, 1973

GENERAL NOTES:
 Inclinator Borings A through E were supervised and boring logs prepared by Woodward-Clyde-Sherard and Associates, Denver, Colorado.
 Inclinator Borings F, G and H were supervised and the boring logs prepared by the Colorado Department of Highways.
 Location of Inclinator borings is shown on Drawing No. G4-2

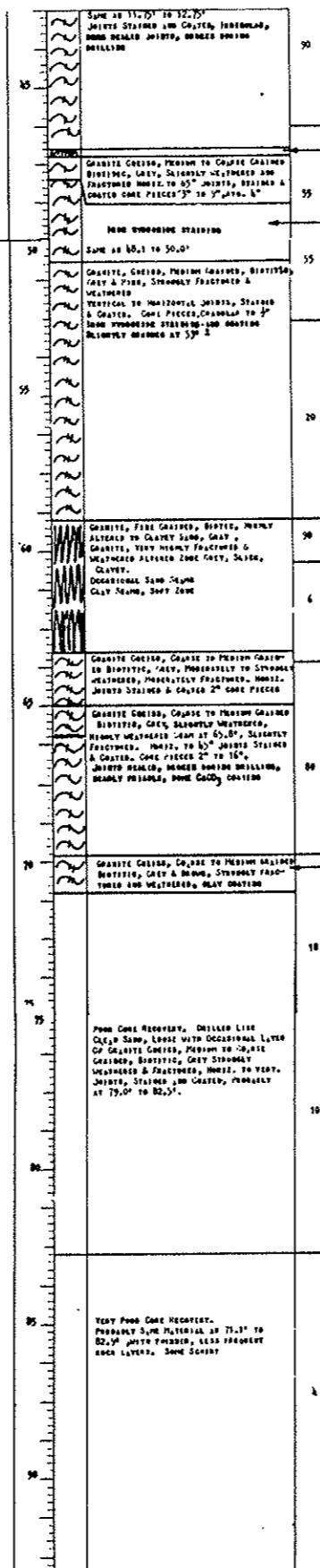
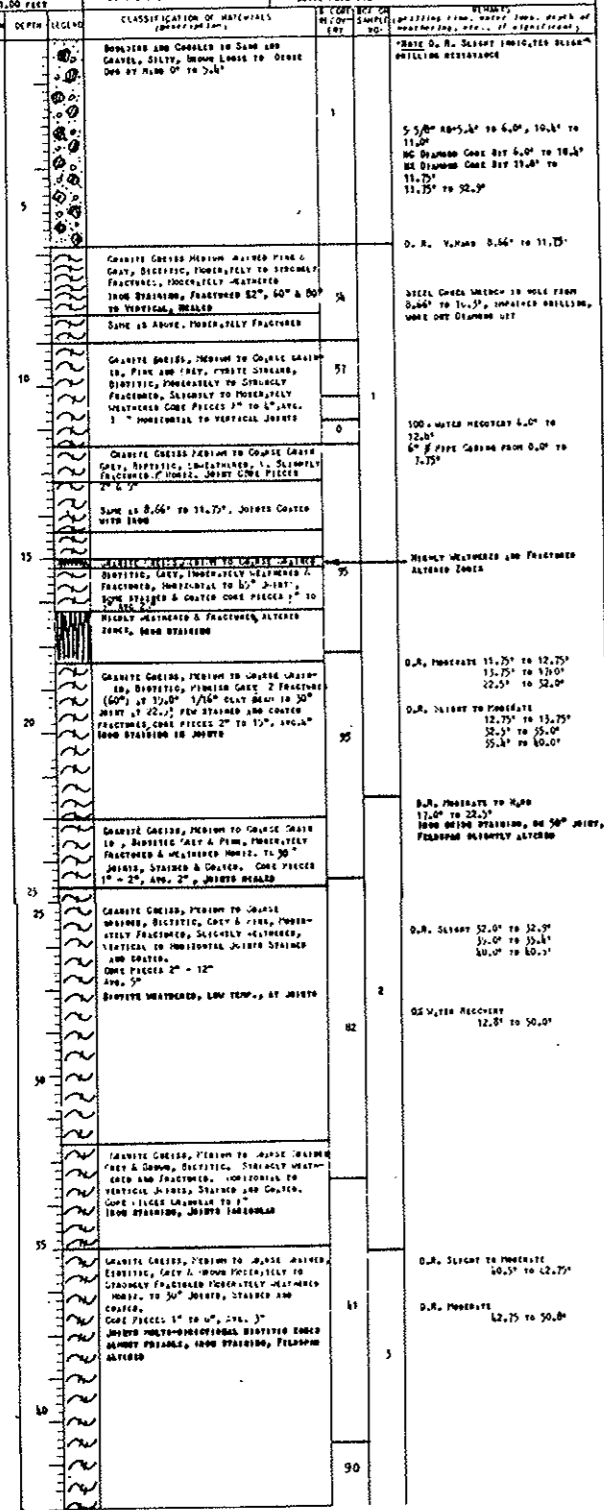
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION SUBSURFACE INVESTIGATIONS BORING LOGS INCLINOMETER HOLES					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N.Y.					
DESIGNED:	RECOMMENDED:				
DRAWN:	CHECKED:				
SUBMITTED:	APPROVED:				
					DRAWING NO. GS-10
					SCALE: NO SCALE DATE: AUGUST 1967



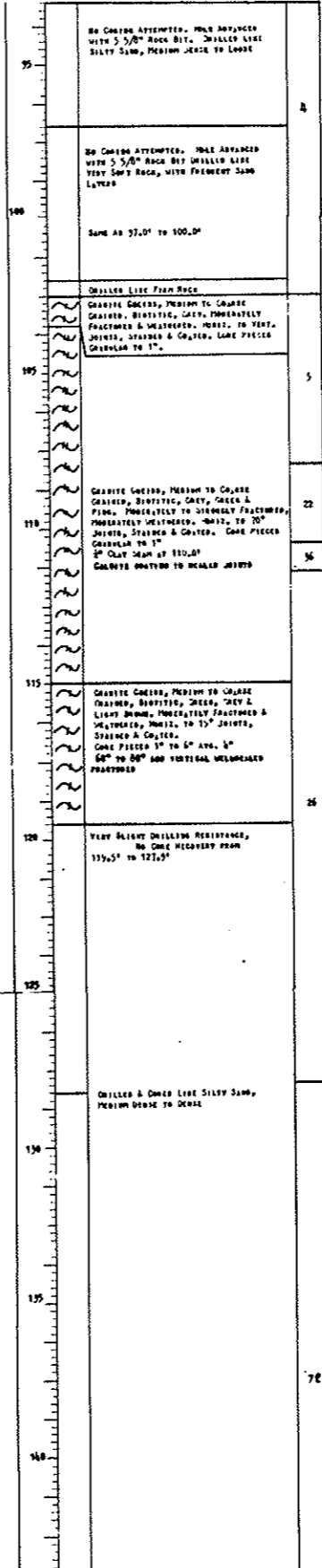
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	311	326

INCLINOMETER BORING C

1. Job No. 956
 2. Job Name: STRAIGHT CREEK VEHICULAR TUNNEL PROJECT
 3. LOCATION: COLORADO DEPARTMENT OF HIGHWAYS
 4. NAME OF DRILLER: JAMES R. LATHAM
 5. DIRECTION OF HOLE: VERTICAL
 6. DEPTH OF HOLE: 240.64 FEET
 7. DATE: JULY 1962
 8. ELEVATION OF HOLE: 11,253.00 FEET



ONE BARREL BLANCED OFF AT 11.75'
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NO CORE RECOVERY
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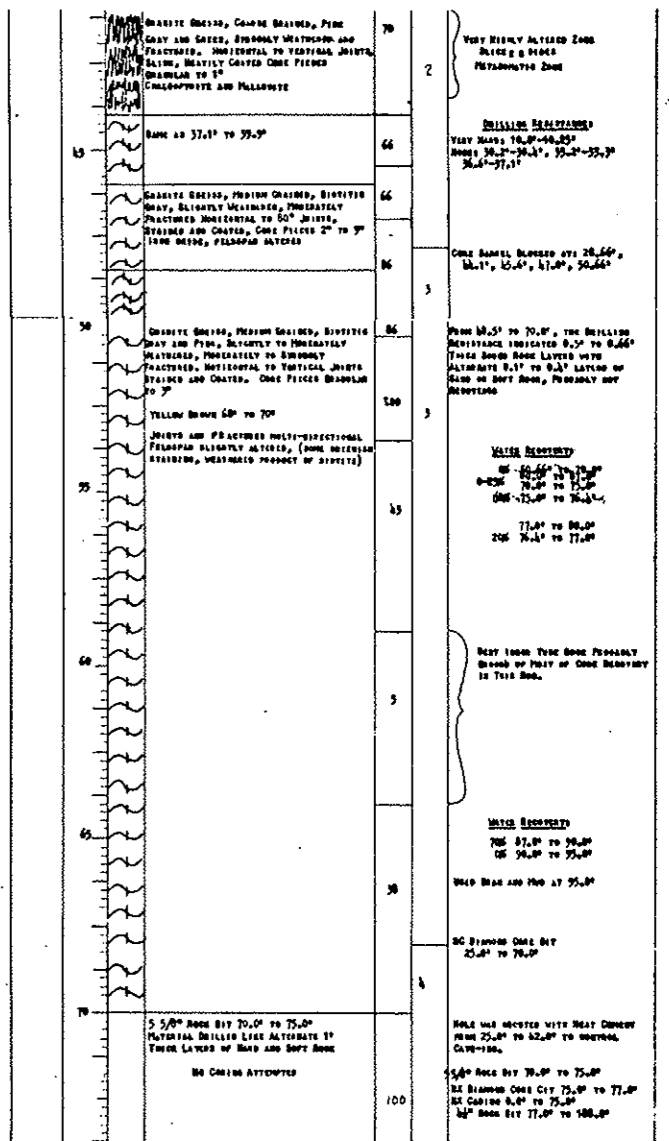
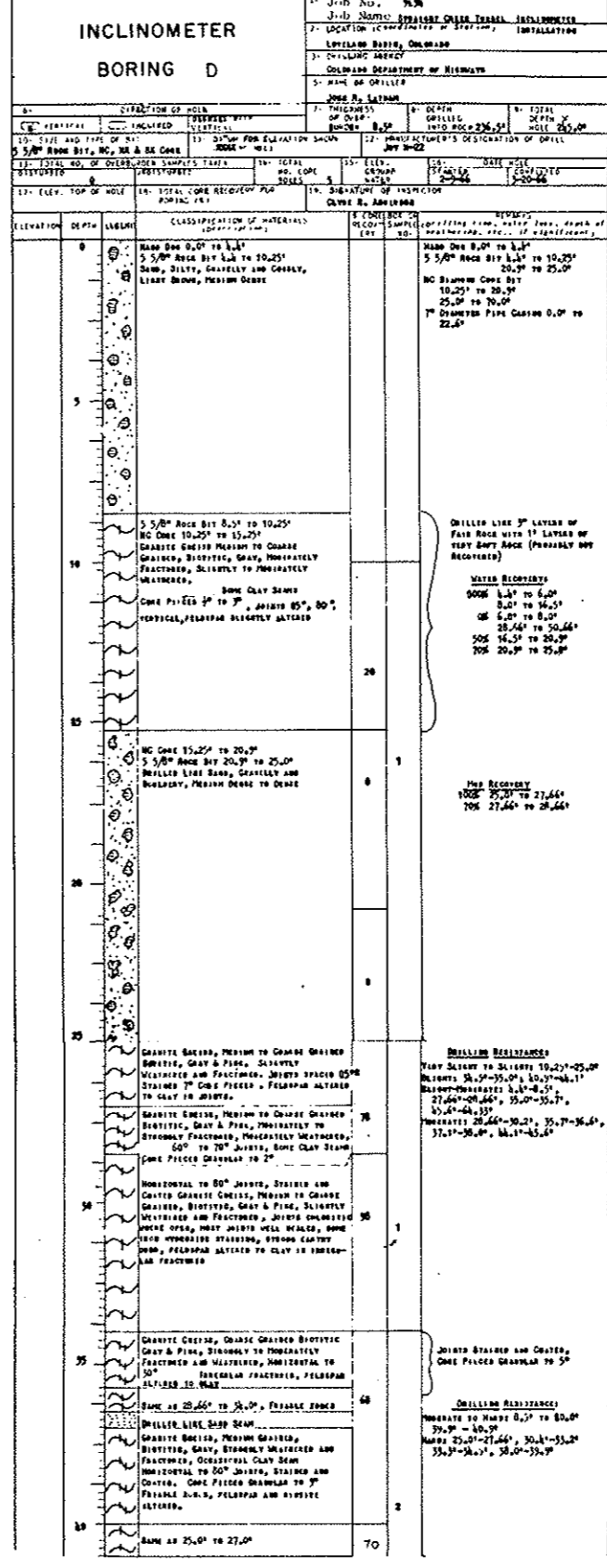
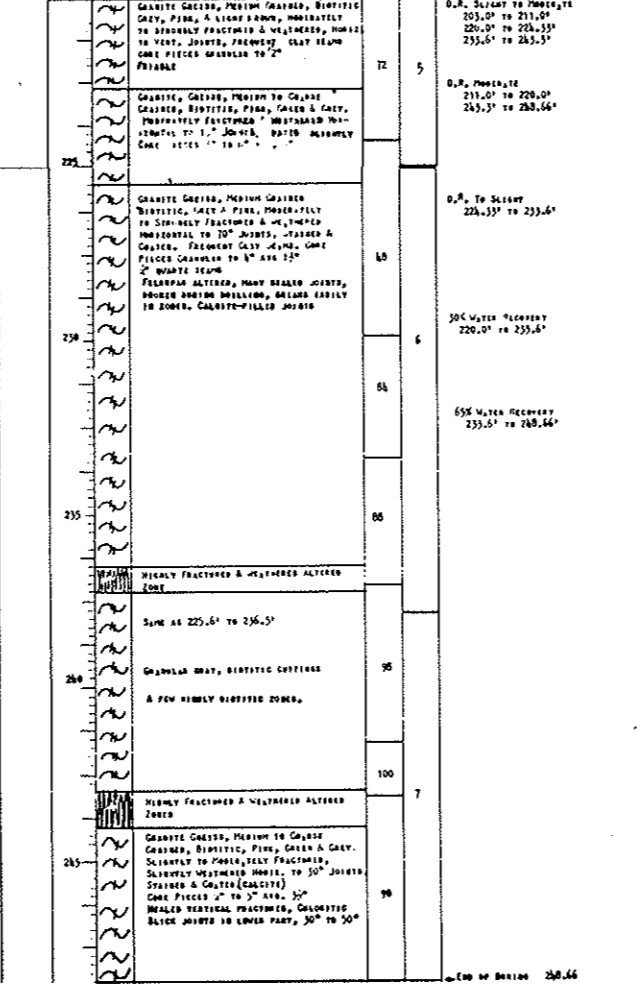
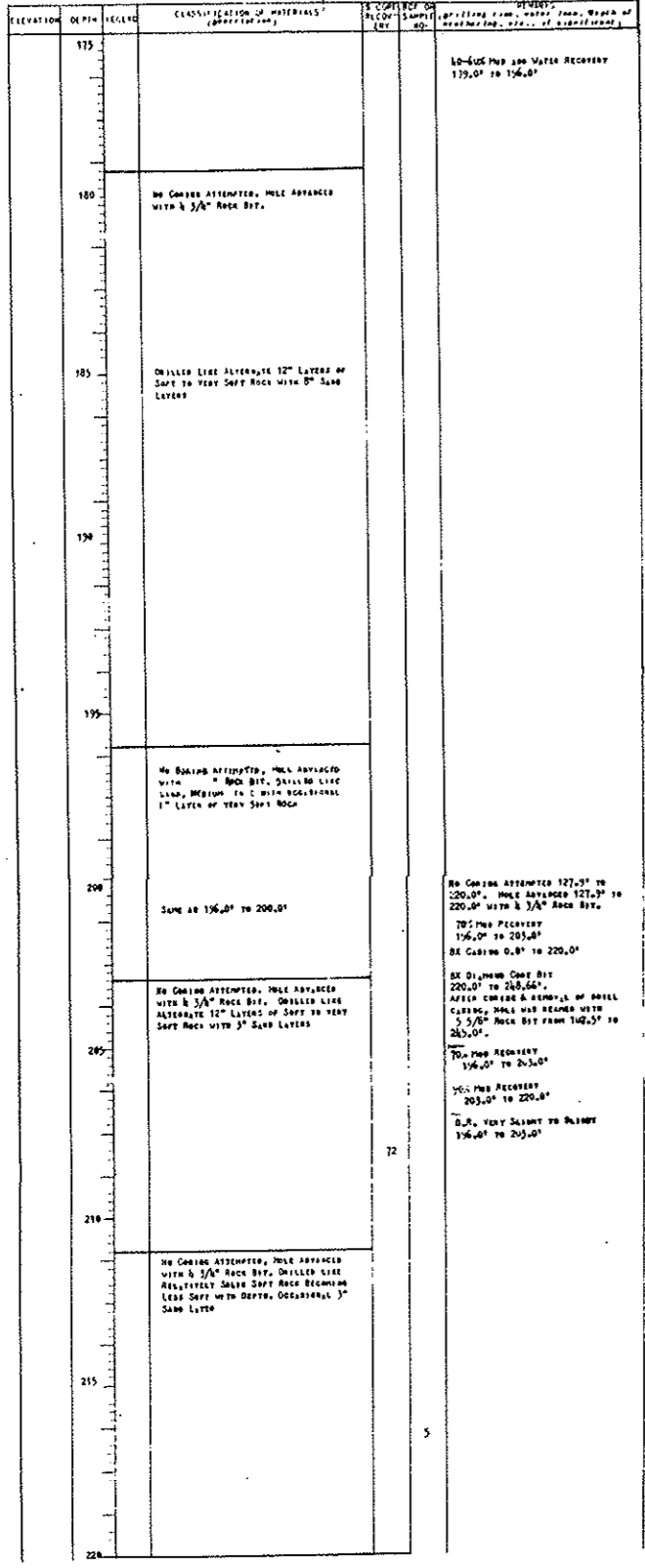
**AS CONSTRUCTED
NO REVISIONS DATE**
 OCT 26, 1973

NOTES:
 For Continuation of Inclinator Boring C see Drawing No. GS-12
 General Notes given on Drawing No. GS-10

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK	APP
1		STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT			
GENERAL SUBSURFACE INFORMATION					
SUBSURFACE INVESTIGATIONS					
BORING LOGS					
INCLINOMETER HOLES					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A. R. D. SUBMITTED: A. R. D.	RECOMMENDED: APPROVED: A. R. D.				
					DRAWING NO. GS-11
NEW YORK, N. Y. SCALE: NO SCALE DATE: AUGUST 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(14)220	312	328

Inclinometer Boring C Continued

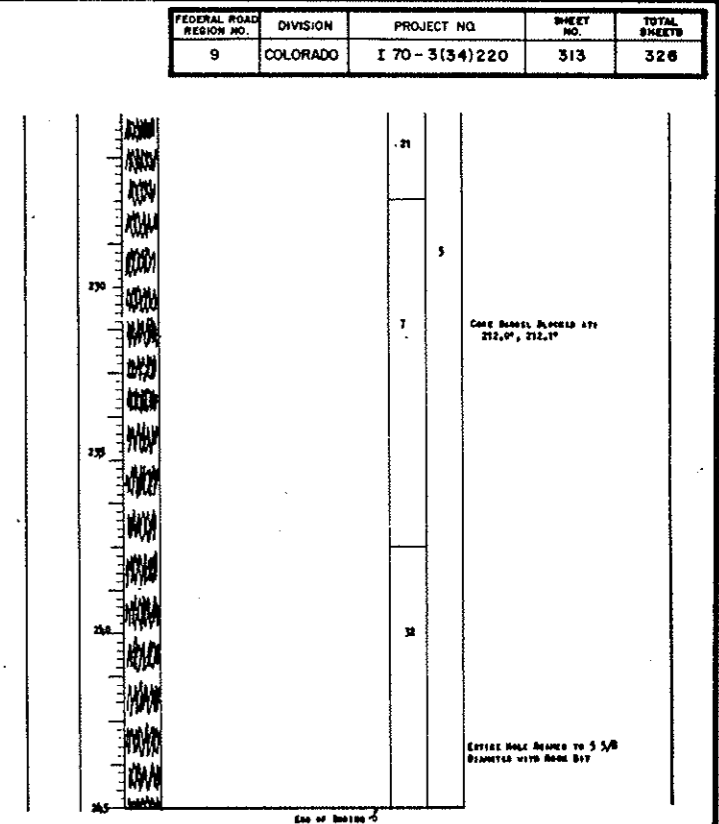
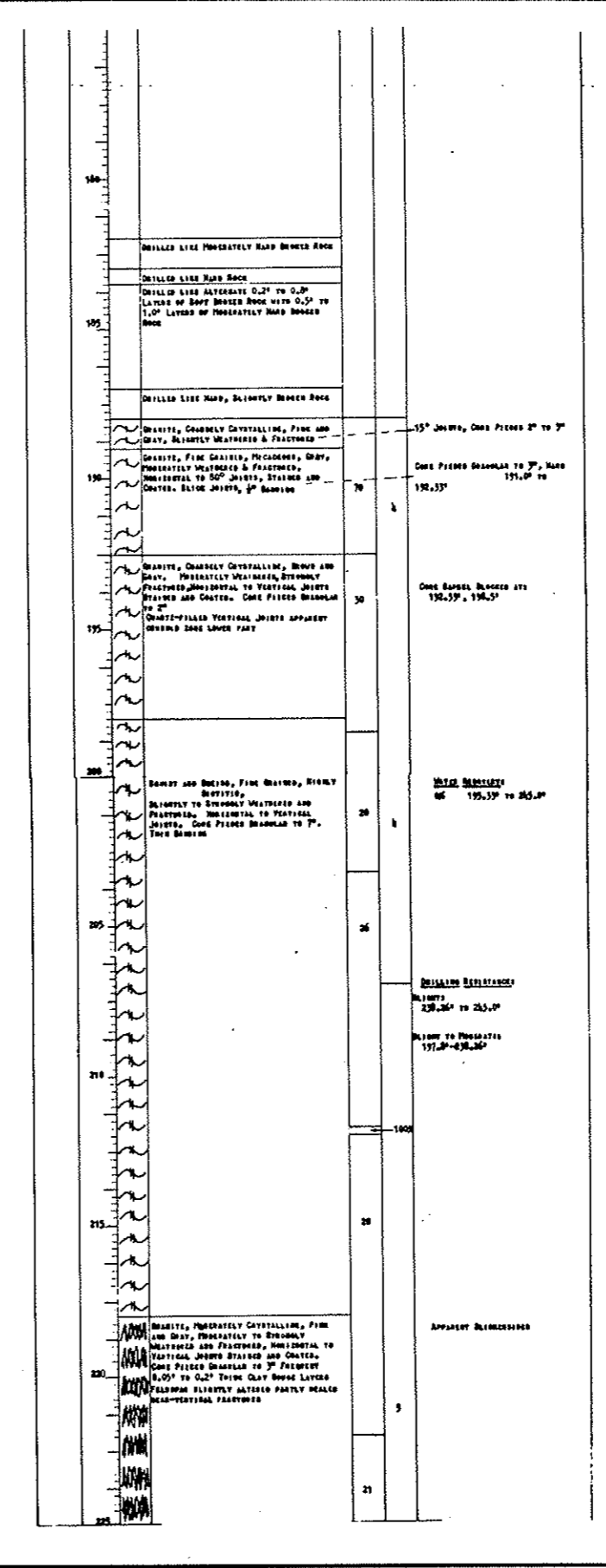
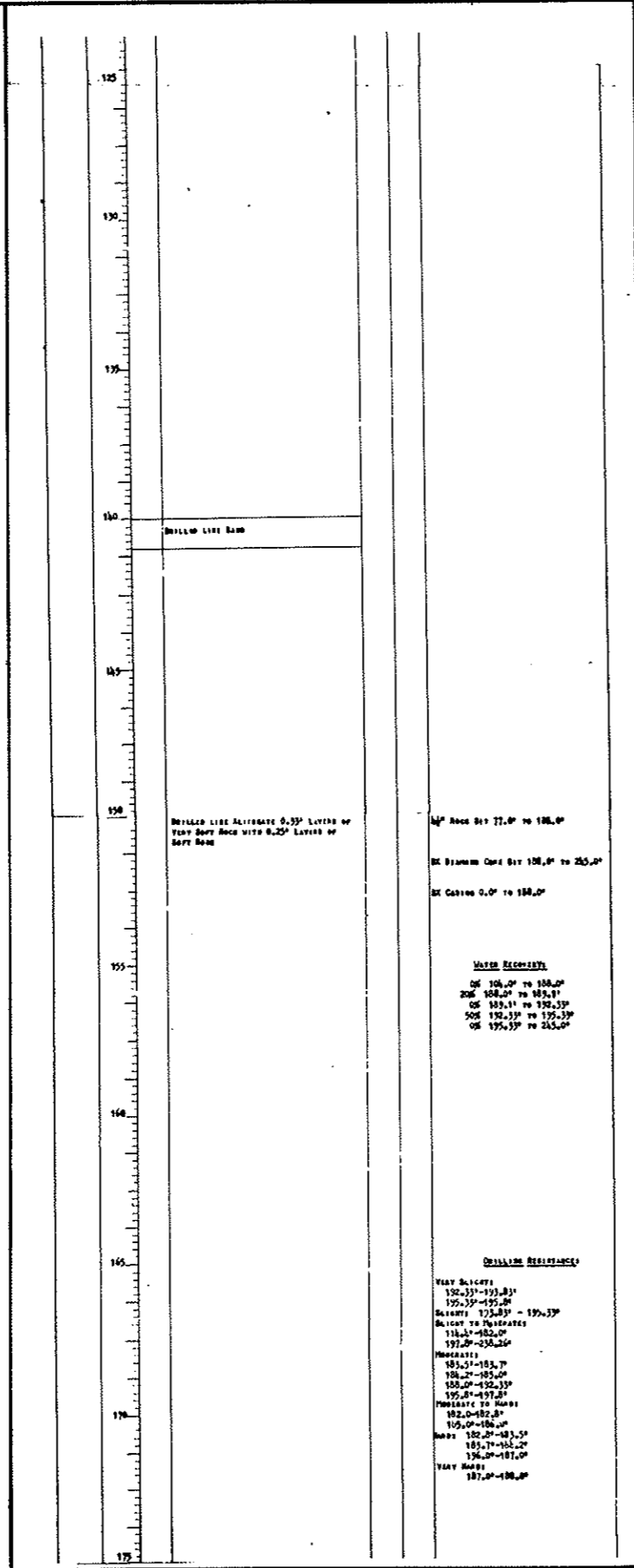
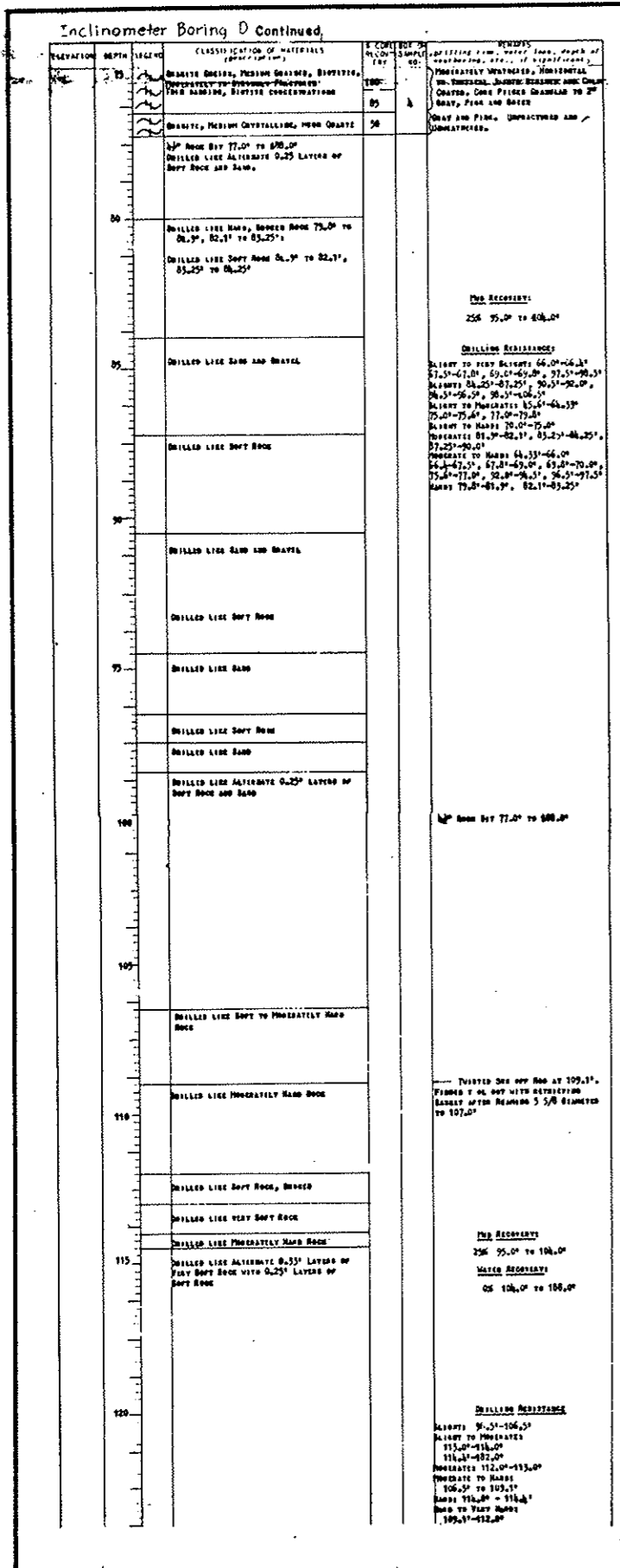


**AS CONSTRUCTED
NO REVISIONS DATE**
Oct 26, 1973

NOTES:
For Continuation of Inclinometer Boring D see Drawing No. GS-13
For General Notes see Drawing No. GS-10

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION					
SUBSURFACE INVESTIGATIONS					
BORING LOGS					
INCLINOMETER HOLES					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A.R.D. SUBMITTED: A.R. Robinson	RECOMMENDED: <i>Ernest Jones</i> APPROVED: <i>William G. Bonjura</i>	DRAWING NO. GS-12			
NEW YORK, N. Y. SCALE: NO SCALE DATE: AUGUST 1967					

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	313	326



NOTES:
For General Notes see Drawing No. GS-10

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION SUBSURFACE INVESTIGATIONS BORING LOGS INCLINOMETER HOLES					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A.R.D. SUBMITTED: A.B. Williams	RECOMMENDED: APPROVED: Robert A. Bampton	DRAWING NO. GS-13			
NEW YORK, N. Y.		SCALE: NO SCALE		DATE: AUGUST 1967	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	314	326

INCLINOMETER BORING E

Job No. 66-919
 Job Name: SULLY CREEK TUNNEL ENLIGHTENMENT INSTALLATION
 Location: LOVELAND BASIN, COLORADO
 Drilling Agency: COLORADO DEPARTMENT OF HIGHWAYS
 Name of Driller: JOHN R. LATRAN

1. DIRECTION OF HOLE: VERTICAL
 INCLINED

2. DATE FOR FLATTEST POSITION: JUL 18 66
 3. MANUFACTURE'S DESIGNATION OF DRILL: JIM 41-20

4. TOTAL DEPTH OF HOLE: 622.0
 5. TOTAL DEPTH OF CORE: 586.0
 6. DATE MADE: JUL 18 66

7. TOTAL CORE RECOVERY FOR BORING: 80%

8. SIGNATURE OF INSPECTOR: _____

LITHATION	DEPTH	LOGGING	CLASSIFICATION OF MATERIALS	REMARKS
	0-3		GRAVEL & SAND, DOMINANTLY GRAVEL & SAND, LIQUOR SAND, FINE SAND, SAND, SAND 0.5" to 3.0"	
	3-7		SOLID SAND, SLIGHTLY TO MODERATELY WEATHERED SAND	DESCRIPTION FROM DRILLING CHARACTERIZATION ONLY
	7-10		DRILLED LIQUOR SAND, MODERATELY WEATHERED SAND	NO. 10 DRILLED BY (25.10 CORN), 30 STROKES (CORN) 36.0" to 36.20"
	10-16		DRILLED LIQUOR SAND, MODERATELY WEATHERED SAND	WATER TABLE 100.0" to 115.0" (25.10 CORN) 20-30-15.66" to 16.3" CORN 11.8" to 16.3"
	16-19		DRILLED LIQUOR SAND, MODERATELY WEATHERED SAND	WATER TABLE 100.0" to 115.0" (25.10 CORN) 20-30-15.66" to 16.3" CORN 11.8" to 16.3"
	19-35		GRAVEL, SAND & FINE, BRITTLE, MEDIUM CRYSTALLINE, SLIGHTLY WEATHERED JOINTS, MODERATELY WEATHERED JOINTS, STAINED & OILY. ONE PIECE BRANDED TO 2"	GRAVEL RESISTANCE TO 32.0" TO 37.0" TO 7.0" 37.0" to 42.0" 42.0" to 47.0" 47.0" to 52.0" 52.0" to 57.0" 57.0" to 62.0" 62.0" to 67.0" 67.0" to 72.0" 72.0" to 77.0" 77.0" to 82.0" 82.0" to 87.0" 87.0" to 92.0" 92.0" to 97.0" 97.0" to 102.0" 102.0" to 107.0" 107.0" to 112.0" 112.0" to 117.0" 117.0" to 122.0" 122.0" to 127.0" 127.0" to 132.0" 132.0" to 137.0" 137.0" to 142.0" 142.0" to 147.0" 147.0" to 152.0" 152.0" to 157.0" 157.0" to 162.0" 162.0" to 167.0" 167.0" to 172.0" 172.0" to 177.0" 177.0" to 182.0" 182.0" to 187.0" 187.0" to 192.0" 192.0" to 197.0" 197.0" to 202.0" 202.0" to 207.0" 207.0" to 212.0" 212.0" to 217.0" 217.0" to 222.0" 222.0" to 227.0" 227.0" to 232.0" 232.0" to 237.0" 237.0" to 242.0" 242.0" to 247.0" 247.0" to 252.0" 252.0" to 257.0" 257.0" to 262.0" 262.0" to 267.0" 267.0" to 272.0" 272.0" to 277.0" 277.0" to 282.0" 282.0" to 287.0" 287.0" to 292.0" 292.0" to 297.0" 297.0" to 302.0" 302.0" to 307.0" 307.0" to 312.0" 312.0" to 317.0" 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FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	315	326

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973

Hole No. F Station 114 25.7 873.26 W
Top Hole Elev. 11,436.0
Elev. Water Table
Casing
Date May 26, 1966

Depth	Datum	Core	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0.0	11,436.0					Overburden; sand gravel, boulders & broken rock.	Drilled
35.0	11,401.0					1 1/2' Granite, pink, medium crystalline, w/12°, 45°, 60° & 80° to vertical fractures; heavy iron oxide stains on fractures.	New bit
36.5	11,399.5	1.5'	1.5'	100%	36' 6 min.		
36.5	11,399.5					Drilled while cleaning out hole	
37.5	11,398.5					5.5' Granite, pink, same as above. Lost circulation at 41'; vertical fractures at 41'.	
42.5	11,393.5	5.0'	5.0'	100%	7 min/ft.		
42.5	11,393.5					3.5' Granite, pink & grey, same as above.	
47.5	11,388.5	5.0'	5.0'	100%	7 min/ft.		
47.5	11,388.5					1.0' Granite, pink, medium crystalline, w/12°, 45°, & 60° fractures, iron stain on fracture.	
53.0	11,383.0	5.5'	4.0'	72%	47-48 6 min. 48-49 6 " 49-50 5 1/2 " 50-51 5 1/2 " 51-52 5 " 52-53 7 "		
53.0	11,383.0					1.5' Granite, pink, 40° fractures heavy iron stain	Lost circulation at 53' while cleaning hole.
57.0	11,379.0	4.0'	3.5'	87.5%	53-54 5 min 54-55 6 " 55-56 6 " 56-57 9 "		
57.0	11,379.0					2.0' Granite, grey to pink, 80° fractures iron stains, some 45° fractures	New bit
62.0	11,374.0	5.0'	5.0'	100%	7 min/ft.		
62.0	11,374.0					1.5' Granite, grey, vertical fractures and broken, heavy iron stains.	
65.0	11,371.0	3.0'	2.0'	66%	62-63 6 min 63-64 4 " 64-65 6 "		
65.0	11,371.0					0.5' Granite, pink, broken, no stain on fracture	
67.0	11,369.0	2.0'	1.5'	75%	10 min/ft.		
67.0	11,369.0					1.5' Granite, pink, 45°, 60° & 80° fractures, iron stain on fractures	
72.0	11,364.0	5.0'	5.0'	100%	10 min/ft.		
72.0	11,364.0					2.0' Granite, grey, 12° & 45° fractures, iron stain on fractures	
78.0	11,358.0	6.0'	6.0'	100%	72-73 3 min 73-74 2 " 74-75 4 " 75-76 5 " 76-77 5 " 77-78 5 "		
78.0	11,358.0					2.0' Granite, grey, 12° & 45° fractures, iron stain on fractures	
83.0	11,353.0	5.0'	5.0'	100%	78-79 4 min 79-80 4 " 80-81 5.5 " 81-82 5.5 " 82-83 5 "		
83.0	11,353.0					0.5' Granite, grey & pink, grading to pegmatite.	
88.0	11,348.0	5.0'	2.5'	50%	83-84 2 min 84-85 5 " 85-86 4 min 86-87 5 " 87-88 9 "		
88.0	11,348.0					3.0' Granite, pink, decomposed & fractured, crumbly, iron stains on fractures	Lost circulation at approx. 85' while reaming
93.0	11,343.0	5.0'	3.0'	60%	88-89 4 min 89-90 6 " 90-91 6 " 91-92 4 " 92-93 9 "		
93.0	11,343.0					3.0' Granite, pink & grey, badly fractured vertically, some crumbly, iron stains on fractures	

93.0	11,343.0					1.5' Granite, pink, badly fractured, decomposed in part, iron stain on fractures.	
98.0	11,338.0	5.0'	1.5'	30%	5.5 min/ft.		
98.0	11,338.0					1.5' Granite, grey, badly fractured, decomposed in part. One inch decomposed clay zone two inches from bottom of core.	
103.0	11,333.0	5.0'	3.5'	70%	8.5 min/ft.		
103.0	11,333.0					3.5' Fragments, Granite, pink, iron stains on fractures.	
105.0	11,331.0	2.0'	0.5'	25%	9 min / ft.		
105.0	11,331.0					1.0' Same as above, w/ some micaceous zones in fragments.	
108.0	11,328.0	3.0'	1.0'	33%	11 min/ft.		
108.0	11,328.0					1.0' Granite fragment of grey & pink, pink coarse crystalline, grey micaceous.	New bit
113.0	11,323.0	5.0'	4.0'	80%	108-109 2m 109-110 2m 110-111 3m 111-112 2m 112-113 4m		
113.0	11,323.0					0.5' Granite, grey, 80° fracture, micaceous, some iron stains.	
113.0	11,323.0					2.5' Granite, pink & grey, badly broken, one inch clay seam four inches in, four inch decomposed Granite to clay, one foot from bottom all decomposed in part, iron stained in part.	
116.0	11,320.0	3.0'	3.0'	100%	5 min/ft.		
116.0	11,320.0					3.0' Granite, grey, badly broken, partly decomposed.	regained circulation between 114-115' while reaming. Lost again completely at 115', reaming. Dir. spotty from 98-116' drilling cemented hole, no bit at 115' cemented hole.
119.0	11,317.0	3.0'	3.0'	100%	5 min/ft.		
119.0	11,317.0					1.0' Granite, pink & grey, fragments, pink is pegmatite.	
123.0	11,313.0	4.0'	3.5'	88%	3 min/ft.		
123.0	11,313.0					1.5' Granite, grey, 12°, 60° & 80° fractures, heavily iron stained.	
128.0	11,308.0	5.0'	3.0'	60%	23-24 4 min 24-25 4 " 25-26 7 " 26-27 3 " 27-28 4 "		
128.0	11,308.0					0.5' Granite, grey, fragments and grains.	
133.0	11,303.0	5.0'	1.0'	20%	28-29 4 min 29-30 7 " 30-31 4 " 31-32 4 " 32-33 4 "		
133.0	11,303.0					1.0' Granite, grey, 60° fracture, vertical fracture slight iron stain.	
138.0	11,298.0	5.0'	1.0'	20%	33-34 3 min 34-35 2 " 35-36 6 " 36-37 5 " 37-38 4 "		
138.0	11,298.0					0.5' Granite, grey, fragments of very coarse quartz grains.	
143.0	11,293.0	5.0'	4.0'	80%	38-39 3 min 39-40 3 " 40-41 3 " 41-42 4 " 42-43 4 "		
143.0	11,293.0					0.5' Granite, grey, decomposed to clay & grains.	
146.0	11,290.0	3.0'	2.0'	66%	43-44 6 min 44-45 6 " 45-46 8 "		
146.0	11,290.0					4.0' Grey green decomposed feldspar, decomposed to clay & grains, two inch piece at base only slightly decomposed, vertical fractures, w/ chlorite alteration on fracture.	
147.0	11,289.0	1.0'	1.0'	100%	2 min.		
147.0	11,289.0					1.0' Fractured granite, grey.	New bit
148.5	11,287.5	1.5'	0.0'	00%	1 min.		Lost circulation at 148.5', had to cement hole from 37' to 148.5'

148.5	11,287.5					2.0' Granite, grey & pink, 60° & 80° fractures, chloride alteration on fractures. Good rock.	
150.5	11,285.5	2.0'	2.0'	100%	20 min/ft.		
150.5	11,285.5					3.0' Granite, grey to pink, 80° fractures, chloride alteration on fractures. Good rock.	
153.5	11,282.5	3.0'	3.0'	100%	12 min/ft.		
153.5	11,282.5					2.0' Granite, grey to pink, 80° fractures, chloride alteration on fractures, some slickenslide on fracture, slickenslide vertical top foot, slickenslide horizontal bottom foot.	
155.5	11,280.5	2.0'	2.0'	100%	12 min/ft.		
155.5	11,280.5					1.0' Granite, grey to pink, 45° to 80° fractures, chloride alteration on fractures.	
158.5	11,277.5	3.0'	3.0'	100%	12 min/ft.		
158.5	11,277.5					1.0' Granite, pink, 80° to vertical fractures (recessed).	
163.5	11,272.5	5.0'	5.0'	100%	12 min/ft.		
163.5	11,272.5					3.0' Granite, grey, vertical fractures, heavily chlorite alteration on fractures.	
168.5	11,267.5	5.0'	5.0'	100%	10 min/ft.		
168.5	11,267.5					1.0' Granite, grey pink, coarse crystalline, 45° fractures, chloride alteration on fractures, chlorite alteration thru out.	
173.5	11,262.5	5.0'	5.0'	100%	8 1/2-9 1/2 min 9-10 12 " 10-11 8 " 11-12 8 " 12-13 11 "		
173.5	11,262.5					1.0' Granite, grey, 45° fractures, heavily iron stained on fracture	
178.6	11,257.4	5.1'	5.1'	100%	10 min/ft.		
178.6	11,257.4					5.1' Granite, grey pink, 45° fractures, 80° fractures, chloride alterations on both, 80° to vertical fractures are recessed. Good rock.	
180.0	11,256.0	1.4'	1.0'	71%			
180.0	11,256.0					1.0' Granite, pink grey, same as above.	cooring time no good, pump trouble
180.0	11,256.0					1.5' Granite, grey, 45° fractures to vertical, chloride alteration, recessed, badly fractured.	
183.5	11,252.5	3.5'	3.5'	100%	80-81 7 min 81-82 9 " 82-83 5 " 83-84 10 "		
183.5	11,252.5					0.3' Granite, grey, fragments.	
188.5	11,247.5	5.0'	5.0'	100%			
188.5	11,247.5					0.2' Granite, grey, decomposed to clay & grains.	
188.5	11,247.5					0.5' Granite, grey, decomposed to clay & grains.	
193.0	11,243.0	4.5'	4.5'	100%	30 min/ft.		
193.0	11,243.0					4.0' Grey green decomposed feldspar, decomposed to clay & quartz grains & biotite thru out, evidence of vertical fractures, 2 1/2" in. fractures plain may be altered calcite.	
193.0	11,243.0					2.0' Grey-green decomposed feldspar, decomposed to clay & grains, two inch piece at base only slightly decomposed, vertical fractures, w/ chlorite alteration on fracture.	
T.D.							

NOTE:

For General Notes, see Drawing No. GS-10
Location of borings is shown on Drawing No. G4-2

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
GENERAL SUBSURFACE INFORMATION SUBSURFACE INVESTIGATIONS BORING LOGS INCLINOMETER HOLES					
TIPPETTS - ABBETT - MCCARTHY - STRATTON ENGINEERS AND ARCHITECTS NEW YORK, N. Y.					
DESIGNED: DRAWN: CHECKED: A. R. D. SUBMITTED: <i>A. R. D.</i>	RECOMMENDED: <i>Ernest J. ...</i> APPROVED: <i>Ernest J. ...</i>	DRAWING NO. GS-15			
NEW YORK, N. Y. SCALE: NO SCALE DATE: AUGUST 1967					

Hole No. 9 Station 120 / 10 100' North
 Top Hole Elev. 11,052.55
 Elev. Water Table _____
 Casing 2" - 2 1/2"
 Date Dec. 6, 1966

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,052.55					Fill and broken weathered Silver Plume Granite	Drilled
28	11,024.55					Drill time 11' Silver Plume Granite pink-grey fine xlan; white qtz, pink microcline, biotite, reflect root hardness. 30° and 60° fractures, Iron stain on fractures.	Pump pressure 100# Pull down 100# @ 28'
34	11,018.55	6'	1 1/2'	25%		1 1/2' Silver Plume Granite fragments, some chloride alteration on fractures. No iron stain.	Pump pressure remained at 100# for remainder of coring. Pull down pressure remained at 250# for remainder of coring.
36	11,016.55	2'	3/4'	37%		1' Silver Plume Granite Some chloride alteration on fractures	
38	11,016.55	2'	1/2'	25%		1' Silver Plume Granite 30°, 45° and 60° fractures, 45° fracture appear to be altered by slip pressure	
41	11,011.55	3'	1'	33%		1' Silver Plume Granite 30°, 45° and 60° fractures, 45° fractures altered with some slickenslides.	
45	11,007.55	4'	4'	100%		1 1/2' Silver Plume Granite Badly fractured. No stain or alteration on fractures.	
48	11,004.55	3'	1 1/2'	42%		1' Silver Plume Granite Badly fractured. Some chloride alteration on 60° fractures.	
50	11,002.55	2'	1'	50%		1 1/2' Silver Plume Granite 30° and 45° fractures. Some chloride alteration on 30° fractures.	
52	11,000.55	2'	1 1/2'	75%		1' Silver Plume Granite 30°, 45°, 60° to 90° fractures chloride alteration on fractures. 1' Decomposed Silver Plume Granite. Highly chloride altered.	
57	10,995.55	5'	2'	40%		1-3/4' Silver Plume Granite 30°, 45° and 60° fractures chloride alteration on fractures. Good Rock.	
60	10,992.55	3'	1-3/4'	58%		1' Silver Plume Granite 30°, 45°, 60° to 90° fractures Some chloride alteration on 90° fractures.	
61	10,991.55	1'	1'	100%		1 1/2' Silver Plume Granite 30°, 45° and 60° fractures along and across bedding. Some chloride alteration on 60° fractures. 3 inches from top 1/2 inch vein of qtz at 60°, few fluoride crystals in qtz vein.	
63	10,989.55	2'	1 1/2'	63%		1 1/2' Silver Plume Granite 30°, 45° and 60° fractures. Some evidence of slipping on 60° fractures. Tr. vertical qtz vein.	
67	10,985.55	4'	4'	100%		1' Decomposed Silver Plume Granite. Thin fault gouge clay on 45° fracture. 2 inches Silver Plume Granite 45° and 60° fractures. Some evidence of slip on 60° fractures. Good Rock.	
67	10,985.55					5 inch Silver Plume Granite heavily chloride altered, but rock solid. 1 inch decomposed, chloride altered granite. Green, altered to clay. 3 inch fragments seen as top 5 inches.	

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
71	10,981.55					3 inch fragments as above bottom 3 inches.	
76	10,976.55	5'	3-3/4'	75%		1 1/2' Silver Plume Granite Pink medium xlan, hard; 45°, 60° to 90° fractures. Some 60° qtz veins. Tr. slick zones on 60° fract.	
76	10,976.55					1 1/2' Silver Plume Granite Same as above 1 1/2'.	
80	10,972.55	4'	4'	100%		1 1/2' Silver Plume Granite slight chloride alteration 30°, 60° to 90° fractures Tr. slip evidence on fract. 2 1/2' fragments. Heavily chloride altered; Some clay, evidence on slip on fragments.	
80	10,972.55					1 1/2' Silver Plume Granite Pink, fine xlan, hard. 45° fracture.	
84	10,968.55	4'	4'	100%		4' Silver Plume Granite Pink, fine xlan. 30°, 45°, 60° to 90° fractures. Some cross fractures. Tr. of slip evidence on some fractures. Hard Rock.	
84	10,968.55					7' Silver Plume Granite 30° to 45° fractures. Tr. of slip evidence on some fractures. Hard Rock. bedding appears to be 60°.	
91	10,961.55	7'	7'	100%		1' Same as above	
91	10,961.55					4' Silver Plume Granite Grey pink, fine xlan, dense, 60° bedding. 30° to 60° fractures. No evidence of movement.	
93	10,959.55	2'	1'	50%		1' Same as above	
93	10,959.55					4' Silver Plume Granite Grey pink, fine xlan, dense, 45° to 60°, some vertical fractures. Tr. very slight slip.	
101	10,951.55	4'	4'	100%		6' Silver Plume Granite 45° and 60° fractures. 60° bedding. Fractures along and across bedding. Dense Rock. Little or no evidence of slippage.	
101	10,951.55					1' Same as above	
107	10,945.55	6'	6'	100%		3' Silver Plume Granite Grey, fine xlan. 30° and 45° fractures. Very few fractures. Some evidence of movement on 45° fract. slickenslide and chloride alteration. Good Rock.	
108	10,944.55	1'	1'	100%		7' Silver Plume Granite Grey pink, fine xlan. 60° fractures. Good Rock.	
111	10,941.55	3'	3'	100%		1' Silver Plume Granite 12° & 60° fractures. Slight chloride alteration thru out. Some slickenslide on 80° fracture	
111	10,941.55					1 1/2' Silver Plume Granite 12° & 60° fractures. Some chloride alteration thru out. Trace slickenslide on 60° fractures.	
118	10,934.55	7'	7'	100%		1 1/2' Silver Plume Granite 12° & 60° fractures. Some chloride alteration thru out. Trace slickenslide on 60° fractures.	
122	10,930.55	4'	4'	100%		7' Silver Plume Granite Grey pink, fine xlan. 60° bedding, 60° fractures. 90° fractures in bottom 1'. Bottom 1' fractured 60° & 90° chloride altered.	
122	10,930.55					2' Silver Plume Granite as above.	
129	10,923.55	7'	7'	100%		1' Silver Plume Granite highly decomposed. Will crumble to coarse sand size. No clay. High chloride alt.	
129	10,923.55					2' Idaho Springs Formation Grey pink, medium xlan; 60° bedding. No evidence of movement. Good Rock.	
131	10,921.55	2'	2'	100%		2' Idaho Springs Formation Pink, coarse xlan. 60° bedding. No evidence of movement. Good Rock.	
131	10,921.55					1' Silver Plume Granite Pink to black, medium xlan. 60° bedding. Good Rock. No evidence of movement. Black color due to biotite and cloudy qtz.	

AS CONSTRUCTED
 NO REVISIONS DATE
 Oct 26, 1972

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
137	10,915.55					4' Same as above	
141	10,911.55	4'	4'	100%		1' Idaho Springs Formation 2' Pink, coarse xlan. 4' Idaho Springs Formation 60° bedding. No evidence of movement.	
148	10,904.55	7'	7'	100%		3' Idaho Springs Formation Grey, fine xlan, 12° bedding No evidence of movement.	
148	10,904.55					3' Idaho Springs Formation Grey, fine xlan, 12° bedding 2 inch band 5 inches from bottom, decomposed with vertical fractures. Water decomposition. No movement.	
151	10,901.55	3'	3'	100%		5' Idaho Springs Formation Grey, fine xlan, 12° bedding. 60° fractures. At base of core zone of micaceous silt with some evidence of movement.	
151	10,901.55					2' Idaho Springs Formation Grey, very fine xlan, micaceous and pyritic rocks. 12° bedding. 30° and 60° fractures. Slickenslide on fractures	
154	10,898.55	3'	3'	100%		2' Same as above	
154	10,898.55					Total Depth	

Hole No. 8 Station 121 / 32' 28.6' South
 Top Hole Elev. 11,019.5
 Elev. Water Table _____
 Casing 6" of 6" casing @ 5.5' pulled when hole was finished.
 Date Jan 10, 1967

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
0	11,019.5					Drill time did very little to reflect	Drilled with rotary bit, not cored.
10	11,009.5					Foot hardness	
10	11,009.5					1' Same as above	
12	11,007.5	2'	9"	38%		1' Silver Plume Granite badly broke. 12°, 60° & 80° fract. Slight chloride alteration on some fractures.	
12	11,007.5					1' Same as above. Not as badly broken.	
14	11,005.5	2'	1'	50%		2 1/2' Same as above. 1/2 zone in middle with heavy 80° fractures.	
20	10,999.5	6'	2 1/2'	42%		1' Silver Plume Granite 12° & 80° fractures. Slight chloride alteration thru out. Some slickenslide on 80° fracture	
20	10,999.5					1 1/2' Silver Plume Granite 12° & 60° fractures. Some chloride alteration thru out. Trace slickenslide on 60° fractures.	
25	10,994.5	5'	1'	20%		1 1/2' Silver Plume Granite 12° & 60° fractures. Some chloride alteration thru out. Trace slickenslide on 60° fractures.	
25	10,994.5					2' Silver Plume Granite as above.	
30	10,989.5	5'	1 1/2'	30%		1' Silver Plume Granite highly decomposed. Will crumble to coarse sand size. No clay. High chloride alt.	
30	10,989.5					2' Silver Plume Granite as above.	
35	10,984.5	5'	4'	80%		2' Silver Plume Granite 12° & 60° fractures. Some chloride alteration thru out. Chloride alter. on 60° & 80° fractures.	
40	10,979.5	5'	2'	40%		3' Same as above.	
45	10,974.5	5'	3'	60%		1' Silver Plume Granite 12° & 60° & 80° fractures. Very slight chloride alter. on 80° fracture.	
47	10,972.5	2'	1'	50%		3' Silver Plume Granite 12° & 60° & 80° fractures. Badly fractured but in lg. pieces. Some 60° fractures	
47	10,972.5					1' Same as above	
50	10,969.5	3'	2'	66%		1' Same as above	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	316	328

Depth	Datum	Cored	Core Recovered	Percent Recovery	Coring Time	Description	Remarks
50	10,969.5					3' Silver Plume Granite 12° & 60° fractures. Some chloride alteration on 60° fractures in top foot. Lower 2' very few fractures Zone at base of top foot slightly decomposed.	
55	10,964.5	5'	3'	60%		4' Silver Plume Granite 12°, 60° & 80° fractures. Trace slickenslide and chloride alteration on 60° fractures. Rock fractured but massive.	
59	10,960.5	4'	4'	100%		4' Silver Plume Granite 12° fracture. Chloride alteration on fracture.	
59	10,960.5					8' Silver Plume Granite 12°, 60° & 80° fractures. Heavy chloride altered and decomposed.	
62	10,957.5	3'	1'	33%		1' Silver Plume Granite 12°, 60° & 80° fractures. Chloride altered and slight decomposed. w/some slickenslide on 60° & 80° fract.	
62	10,957.5					1' Silver Plume Granite 12°, 60° & 80° fractures slightly decomposed. Bottom 5' heavily chloride altered w/ heavy iron stained zone top of bottom 5'.	
65	10,954.5	3'	2'	66%		1 1/2' Silver Plume Granite 12° & 60° fractures slightly decomposed.	
65	10,954.5					2' Silver Plume Granite 12° & 60° fractures. Good Rock.	
70	10,949.5	5'	3 1/2'	70%		5' Silver Plume Granite 12°, 60° & 80° fractures. Slight chloride alteration on some fractures. Good Rock.	
70	10,949.5					5' Silver Plume Granite 12°, 60° & 80° fractures. Slight alteration on some fractures. Good Rock.	
75	10,944.5	5'	5'	100%		6' Silver Plume Granite 12° & 60° fractures. Slight alteration on some fractures. Good Rock.	
75	10,944.5					4' Same As Above..	
81	10,938.5	6'	6'	100%		5' Silver Plume Granite 12°, 60° & 80° fractures. Chloride alteration on 80° fracture & some on 60° fracture. Slickenslide on 80° & on one 60° fract. Chloride alteration on some 12° fractures. Good Rock.	
85	10,934.5	4'	4'	100%		5' Silver Plume Granite 12° & 60° fractures. Some cross fractures. Trace slickenslide on one 60° fracture. Good Rock.	
90	10,929.5	5'	5'	100%		5' Silver Plume Granite 12° & 60° fractures. Some cross fractures. Trace slickenslide on one 60° fracture. Good Rock.	
90	10,929.5					3' Silver Plume Granite 12° & 60° fractures. Good Rock.	
95	10,924.5	3 1/2'	3'	100%		3' Silver Plume Granite. course crystalline. 12° & 60° fractures. Some cross fractures. Good Rock.	
95	10,924.5					1' Silver Plume Granite 12° & 60° fractures. Good Rock.	
102	10,917.5	7'	7'	100%		3' Same as Above bottom ft.	
102	10,917.5					3' Same as Above bottom ft.	
105	10,914.5	3'	3'	100%		1' Same as Above	
105	10,914.5					Circulation was not lost during the drilling of the entire hole.	

NOTE:
 For General Notes, see Drawing No. GS-10

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

GENERAL SURFACE INFORMATION
 SUBSURFACE INVESTIGATIONS
 BORING LOGS
 INCLINOMETER HOLES

TIPPETTS - ABBETT - MCCARTHY - STRATTON
 ENGINEERS AND ARCHITECTS NEW YORK, N. Y.

DESIGNED: _____
 DRAWN: _____
 CHECKED: A. R. D.
 SUBMITTED: _____

RECOMMENDED: _____
 APPROVED: _____

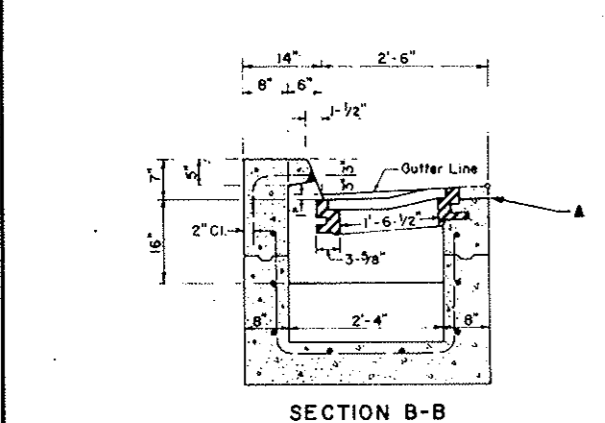
SCALE: NO SCALE DATE: AUGUST 1967

NEW YORK, N. Y.

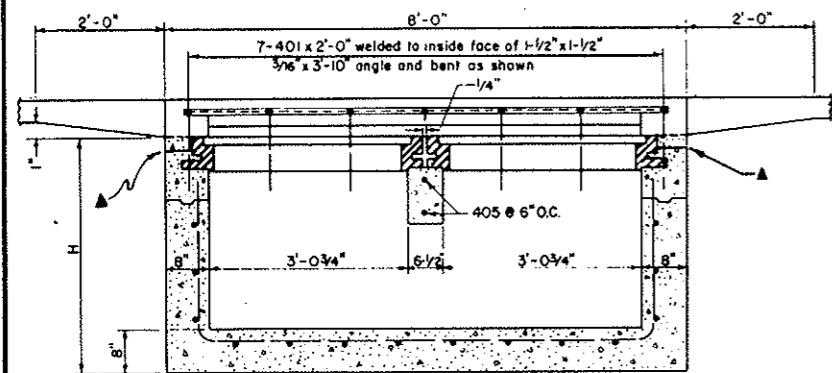
DRAWING NO. GS-16

AS CONSTRUCTED
NO REVISIONS DATE
O.T. 26, 1973

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(54)220	317	328

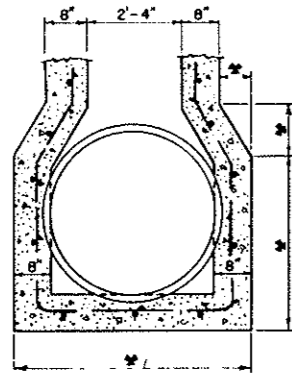


SECTION B-B



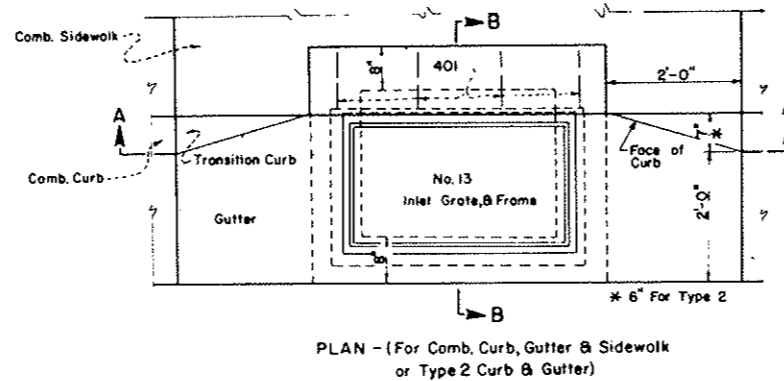
SECTION A-A
DOUBLE INLET
TYPE 3

DETAILS OF INLET ALTERATION
For Larger Size or Skewed Pipes

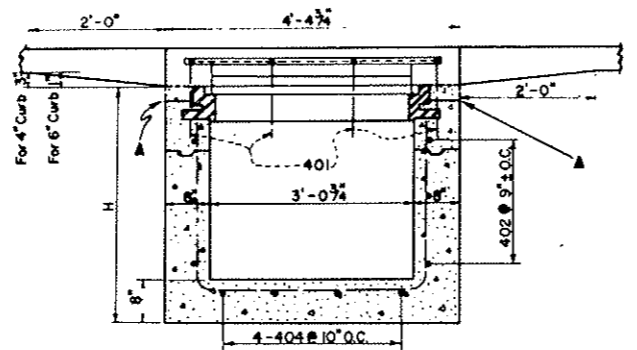


* Variable - to suit pipe size or skew angle.

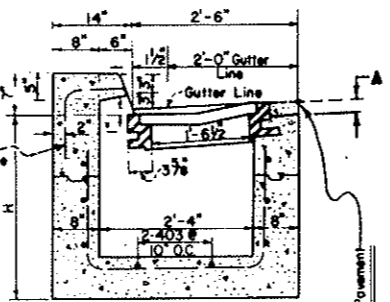
NOTE:
Vary steel shape and quantity as required.



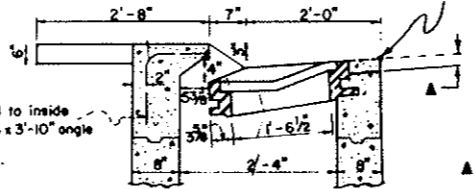
PLAN - (For Comb. Curb, Gutter & Sidewalk or Type 2 Curb & Gutter)



SECTION A-A (For Comb. Curb, Gutter, & Sidewalk or Type 2 Curb & Gutter)



SECTION B-B
Use with Type 2 Curb & Gutter



SECTION B-B
Use with Comb. Curb, Gutter, & Sidewalk

INLET TYPE 3

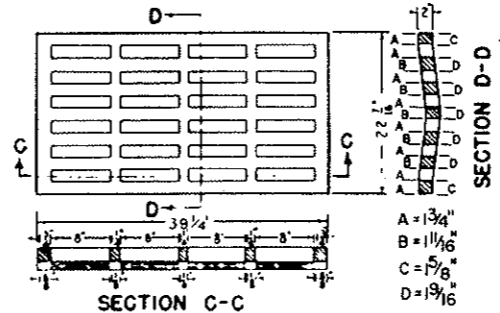
No. 13 Grate and Frame to be used with Type 3 Inlet.

A - When bituminous material is to extend to the edge of the grating frame, concrete may be depressed.

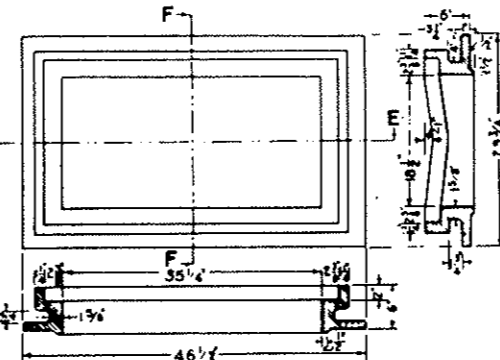
NOTE: Use steps for all inlets with H = 3'-6" or more. Start 2'-0" below gutter line and space equally at Minimum of 18".

Details of Steps on Drawing No. MS-2

NO. 13 GRATING & FRAMES
Approx. Weight 680 lbs.

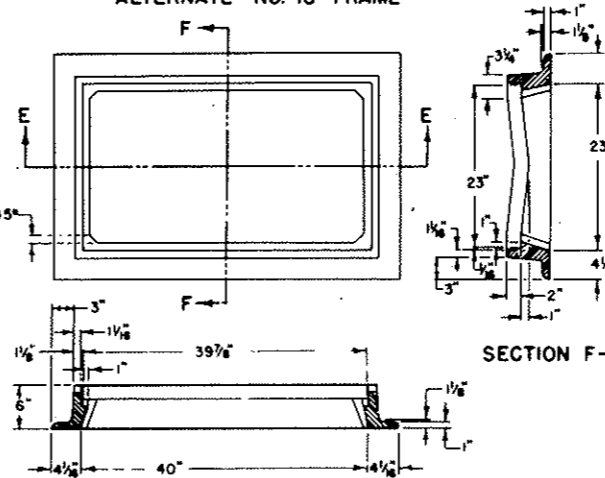


SECTION C-C



SECTION E-E

ALTERNATE NO. 13 FRAME



SECTION E-E

GENERAL NOTES

All work shall be done in accordance with the applicable requirements of the Department of Highways.

All concrete shall be class "A".
All concrete walls shall be formed on both sides.
All exposed concrete corners shall be beveled to a 1" face.
All reinforcing bars shall be deformed, of intermediate grade, and tagged with bar designation and station number.
All dimensions not shown as clear are to $\frac{1}{2}$ " of bar.
All gratings, rings and covers shall be cast iron.

QUANTITIES

H	NO. OF 402 BARS REQ'D	TYPE 3 INLET		TYPE 3 DOUBLE INLET	
		CLASS A CONCRETE CU. YD.	REINFORCING STEEL Φ LB.	CLASS A CONCRETE CU. YD.	REINFORCING STEEL Φ LB.
3'-0"	3	1.30	64.29	2.20	110.77
3'-6"	4	1.47	78.35	2.51	132.47
4'-0"	4	1.64	82.40	2.82	139.22
4'-6"	5	1.81	96.46	3.13	160.92
5'-0"	6	1.98	110.51	3.44	182.63
5'-6"	6	2.15	114.56	3.75	189.38
6'-0"	7	2.32	128.62	4.06	211.08
6'-6"	8	2.49	142.68	4.37	232.78
7'-0"	8	2.66	146.73	4.68	239.53
7'-6"	9	2.83	160.79	4.99	261.24
8'-0"	10	3.00	174.85	5.30	282.94
8'-6"	10	3.17	178.90	5.61	289.69
9'-0"	11	3.34	192.96	5.92	311.39
9'-6"	12	3.51	207.02	6.23	333.10
10'-0"	12	3.68	211.07	6.54	354.84

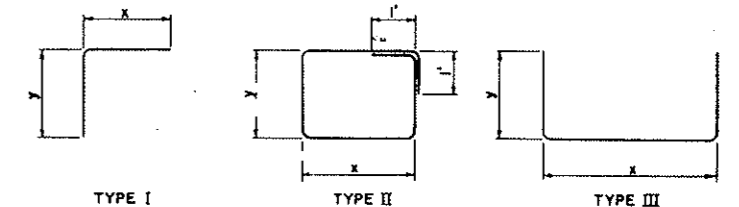
Φ Includes 1% for overrun.

BAR LIST FOR H = 3'-0"

MARK	TYPE	NO. REQ'D.	TYPE 3 INLET DIMENSIONS		LENGTH	NO. REQ'D.	TYPE 3 DOUBLE INLET DIMENSIONS		LENGTH
			x	y			x	y	
401	I	4	1'-0"	1'-0"	2'-0"	7	1'-0"	1'-0"	2'-0"
402	II	3	3'-7 1/4"	2'-10 1/2"	14'-11 1/2"	3	7'-2 1/2"	2'-10 1/2"	22'-2"
403	III	2	3'-5 3/4"	* 2'-0 1/2"	7'-6 3/4"	2	7'-1"	* 2'-0 1/2"	11'-2"
404	IV	4	2'-9"	* 2'-1"	6'-11"	8	2'-9"	* 2'-1"	8'-11"
405	STR.					2			3'-0"

* Add 6" to this dimension for each 6" increase in "H" above 3'-0".

BENDING DIAGRAM
All dimensions are out to out of bar.

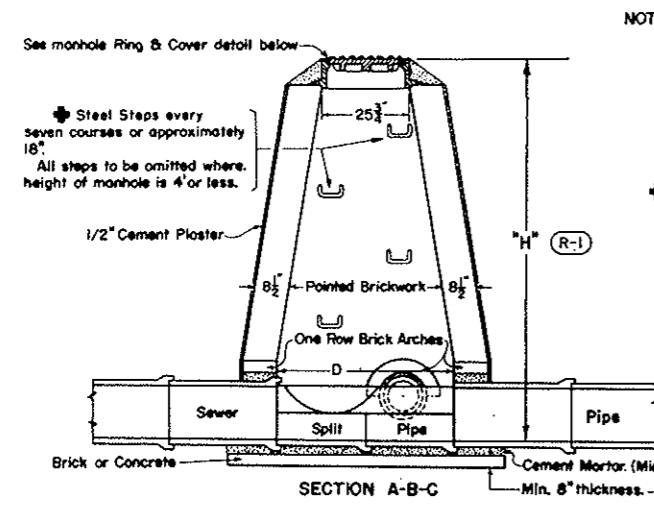


NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MISCELLANEOUS DRAWINGS CONCRETE INLETS TYPES 3 AND 3 DOUBLE					
Designed by: <i>MLA</i> Approved by: <i>JRB</i> Made by: <i>JRB</i> Staff Design Engr. Checked by: <i>MLA</i> Date: <i>APRIL 21, 1967</i>					
DRAWING NO.					MS-1

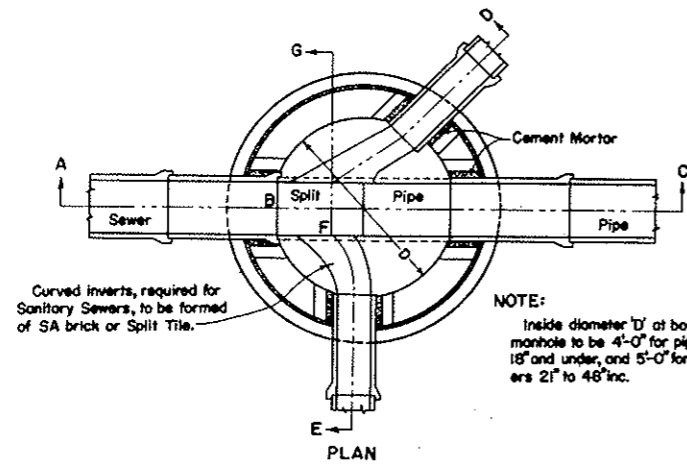
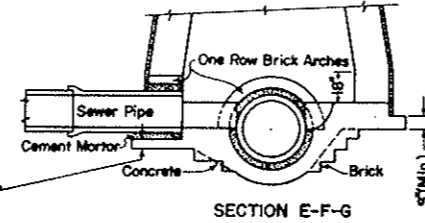
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34) 220	318	328

AS CONSTRUCTED
NO REVISIONS DATE Oct. 26, 1953

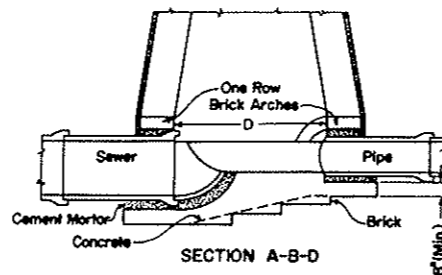
DETAILS OF MANHOLE Type I



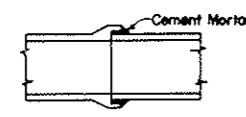
NOTE:
All brick in manholes to conform to requirements of A.A.S.H.O. Designation M-91.
Manhole bottoms may be either brick or concrete.
All reinforcing bars shall be deformed, of intermediate grade, and shall be tagged with bar designation and station number.
All gratings, rings and covers shall be cast iron.
Reinforced concrete, or alternate design manholes, may be used in lieu of standard masonry manhole. However, all departures from details shown hereon must be approved by the Department before being used.



NOTE:
Inside diameter 'D' at bottom of manhole to be 4'-0" for pipe sewers 18" and under, and 5'-0" for pipe sewers 21" to 48" inc.

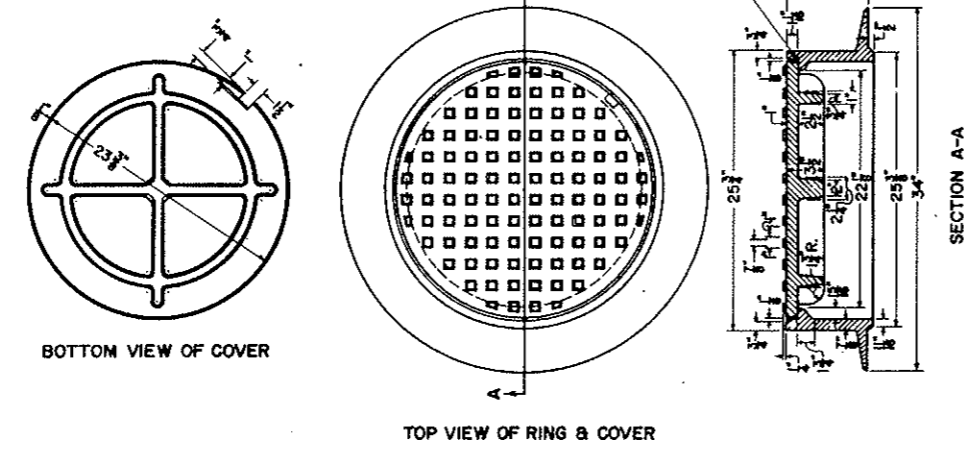


DETAIL OF JOINTS FOR SEWER PIPE

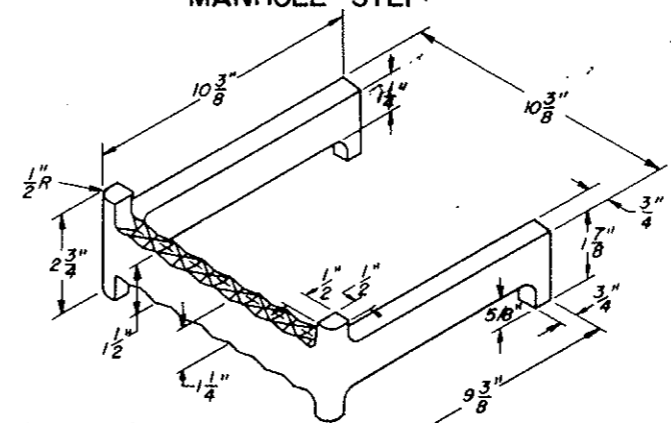


MANHOLE RING & COVER

Approx. Weight 400 lbs.

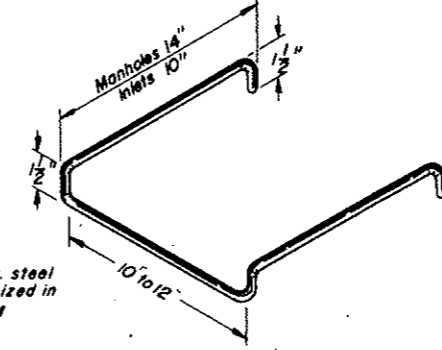


CAST IRON MANHOLE STEP



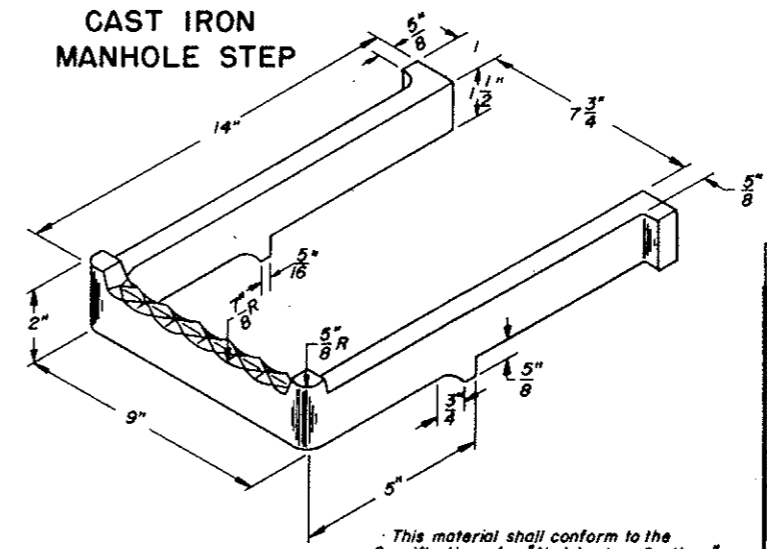
This material shall conform to the Specifications for "Nodular Iron Castings" ASTM Designation A 339 Grade 60-45-10

MILD STEEL MANHOLE OR INLET STEP



Step shall be 3/4 Dia. steel bars and shall be galvanized in accordance with ASTM Designation A 123.

CAST IRON MANHOLE STEP

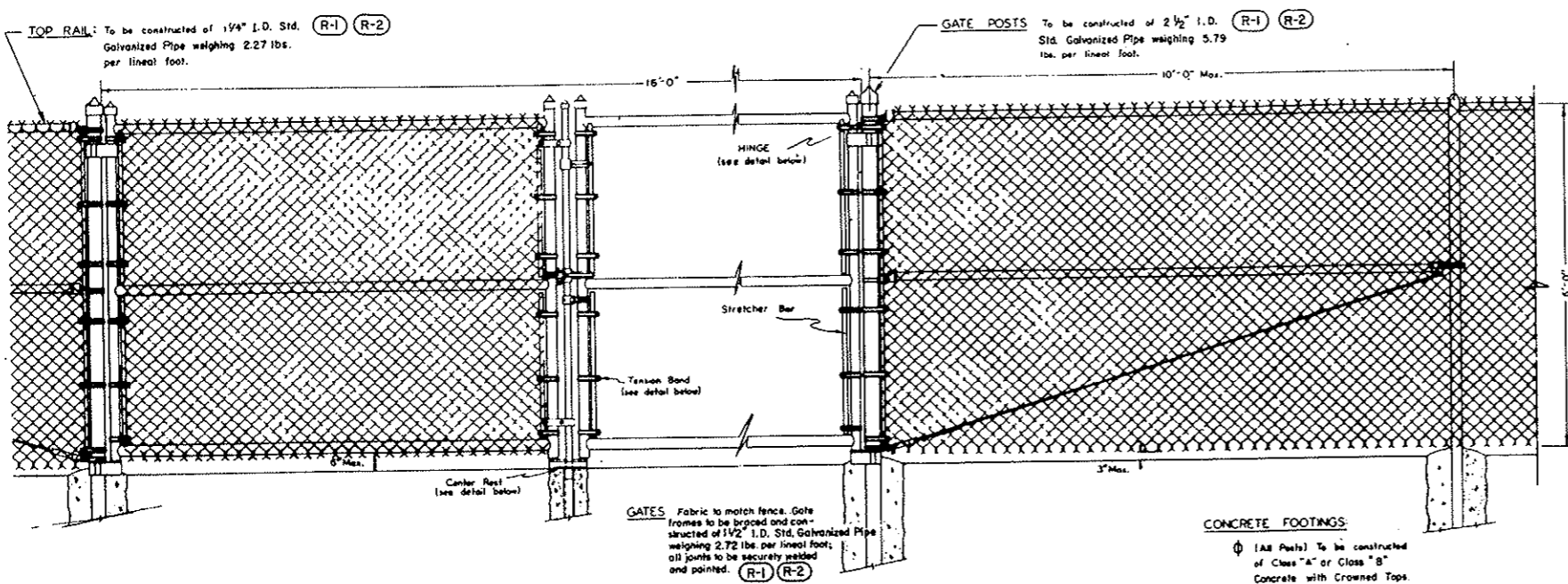


This material shall conform to the Specifications for "Nodular Iron Castings" ASTM Designation A 339 Grade 60-45-10.

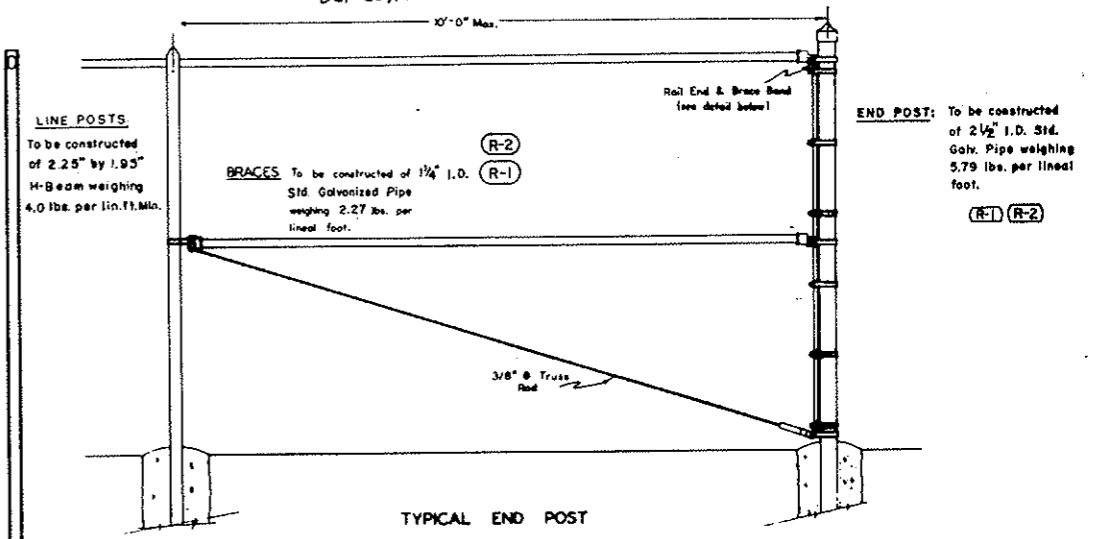
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MISCELLANEOUS DRAWINGS					
MANHOLE TYPE I 8 STEPS FOR MANHOLES AND INLETS					
Designed by	C.R.S.	Approved by	J.M.	DRAWING NO.	
Made by	R.M.	Staff Design Engr.		MS-2	
Checked by	J.R.M.	Date:	July 1, 1965		

**AS CONSTRUCTED
NO REVISIONS DATE**
OCT 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	319	326



TYPICAL DOUBLE DRIVEWAY GATE AND GATE POSTS
(R-3)



TYPICAL END POST

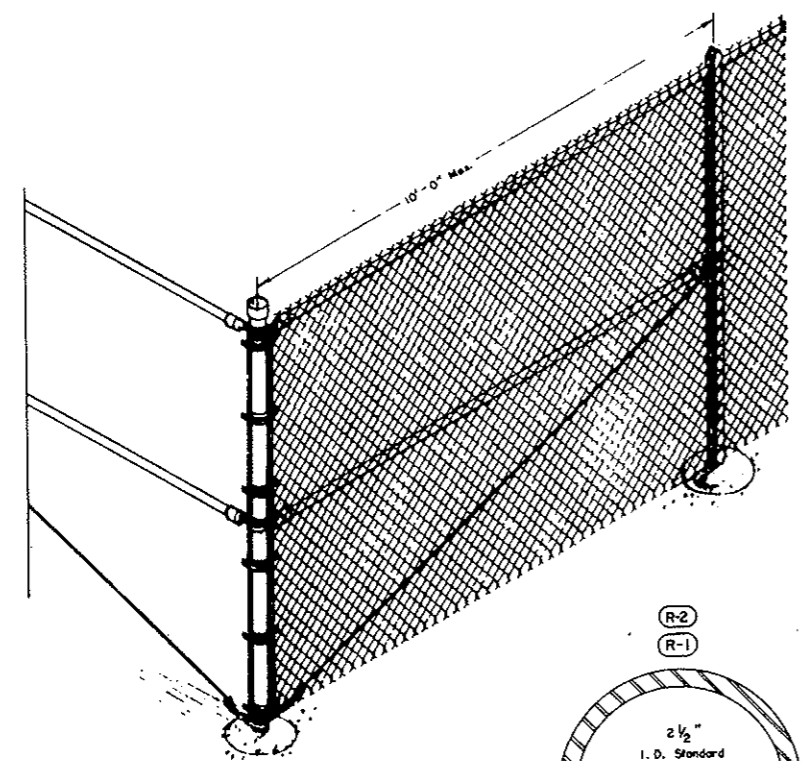
End Posts with Braces, stretcher bars and fittings, corresponding to details shown hereon for Typical Corner Section with End Posts and Braces, are to be used in fence of intervals of not more than four hundred (400) feet.

REVISION			
(R-1)	3-28-66	Pipe, Fence height & Gen'l. Notes	M.R.H.
(R-2)	4-7-66	Pipe diameters clarified	M.R.H.
(R-3)	2-6-67	Delete spec. No's.; add Gen. Notes	M.R.H.

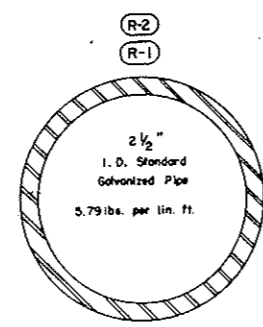
CONCRETE FOOTINGS:
Ø (All Posts) to be constructed of Class "A" or Class "B" Concrete with Crowned Tops.

TYPICAL BRACE PANEL

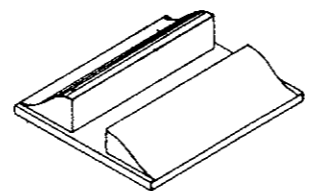
TYPICAL LINE POST



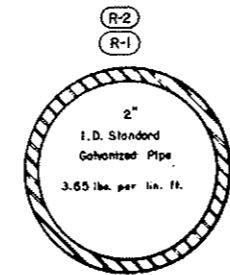
TYPICAL CORNER SECTION WITH POST & BRACES



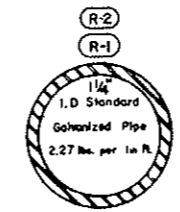
TERMINAL POSTS



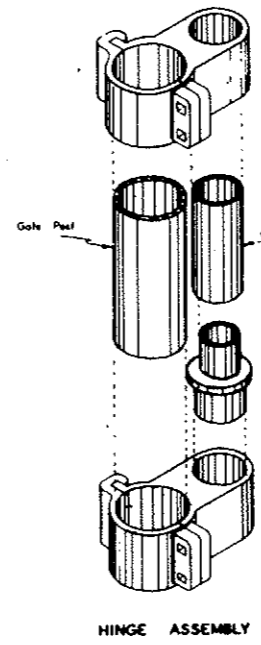
CENTER REST



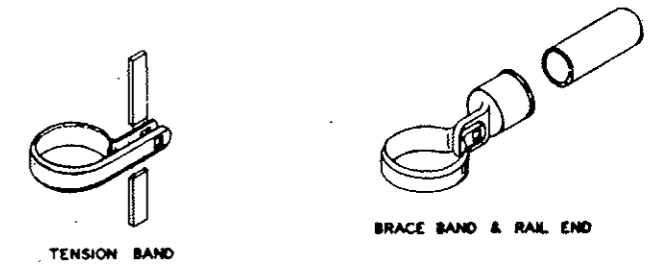
LINE POST



BRACE RAIL & TOP RAIL



HINGE ASSEMBLY



TENSION BAND

BRACE BAND & RAIL END

GENERAL NOTES

- All work shall be done in accordance with the applicable requirements of the Department.
- (R-1) Weights of pipe as shown are nominal for the diameter designated. Pipe for posts shall conform to ASTM Designation A 120.
- Alternate equivalent standard fittings, gates, posts, and rails other than as shown may be used subject to approval by the Engineer.
- Chain Link Fabric shall be No. 9 gage wire securely fastened to all Line Posts, rails and Braces with No. 7 (B&S) gage aluminum wire and/or No. 12 1/2 (W&M) gage galvanized steel wire spaced at a minimum of 6 per 10 feet horizontally and one per foot vertically. Suitable attachment bands shall be used on all gate posts, End Posts, Braces, and stretcher bars.
- Chain Link Fabric for use on rock slopes or in conjunction with rock bolts shall be No. 6 gage wire.
- (R-3) Maximum Line Post spacing shall be 10' (c to c).
- (R-3) Ø Light weight aggregate conforming to ASTM Designation C 330 will be allowed in concrete.

NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MISCELLANEOUS DRAWINGS					
CHAIN LINK FENCE					
Designed by: V.L.A.		Approved by: <i>[Signature]</i>		DRAWING NO.	
Made by: E.L.H.		Staff Design Engr.		MS-3	
Checked by:		Date: July 1, 1965			

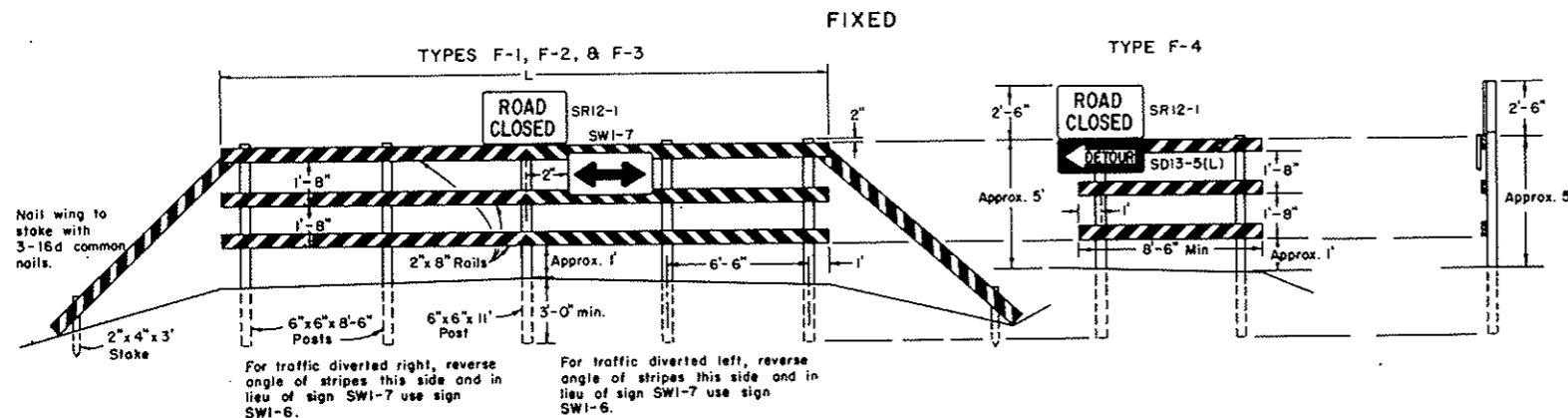
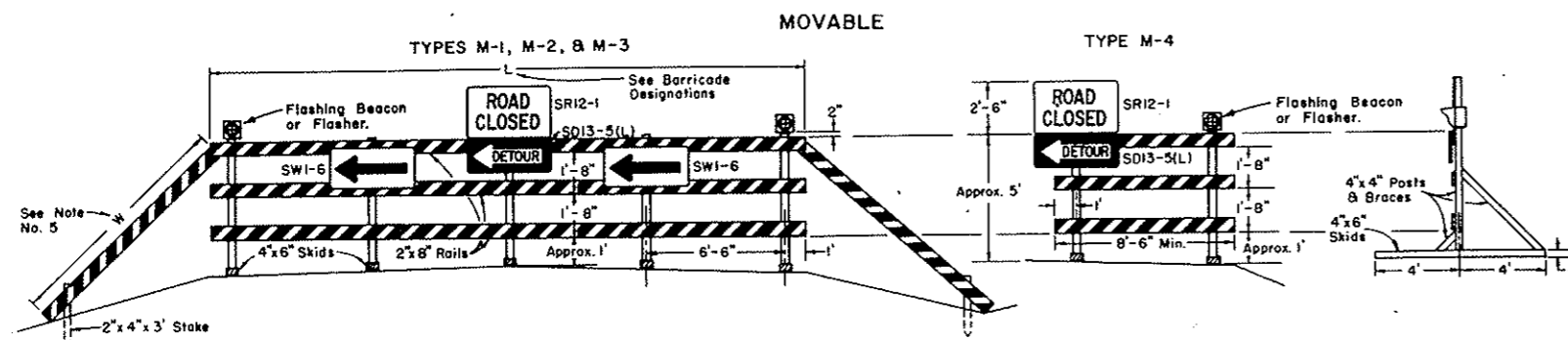
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	320	326

AS CONSTRUCTED
NO REVISIONS DATE
Oct 26, 1973

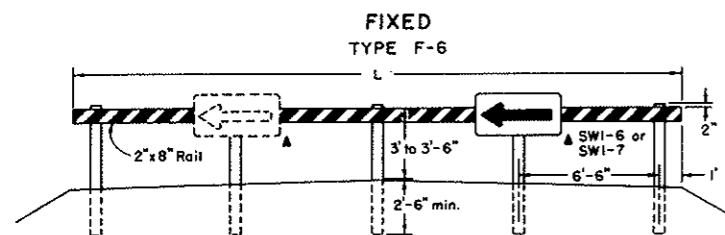
GENERAL NOTES

- All work shall be done in accordance with Section SP-33, Timber Barricades of the Special Provisions and the applicable requirements of the Department of Highways.
- All signs and sign materials shall conform to the standards set forth in the "Manual on Uniform Traffic Control Devices for All Classes of Streets and Highways" published by the Department of Highways.
- The various types and combinations of approved Signs and Beacons for Barricades required shall be governed by field conditions and subject to approval by the Engineer. All traffic controls shall be placed for best visibility and legibility and maintained in good condition at all times. Oversigning is to be avoided.
- Skid (bases) of movable barricades shall be weighted where necessary to provide stability.
- Detachable extension wings for bypassing of construction equipment are permitted. "W" is variable, length shall be adequate to provide closing of borrow pit and/or shoulder as required.
- Alternate materials or other reflective elements on Traffic Signs or Barricades will be permitted only after approval of such material by the Department.
- For additional general information on control of traffic, refer to the "Manual on Uniform Traffic Control Devices for Streets and Highway", Part V, published by the U.S. Department of Commerce, Bureau of Public Roads, June, 1961 (or latest revision).

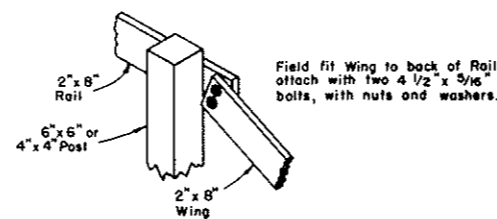
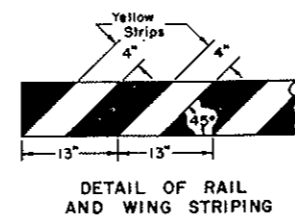
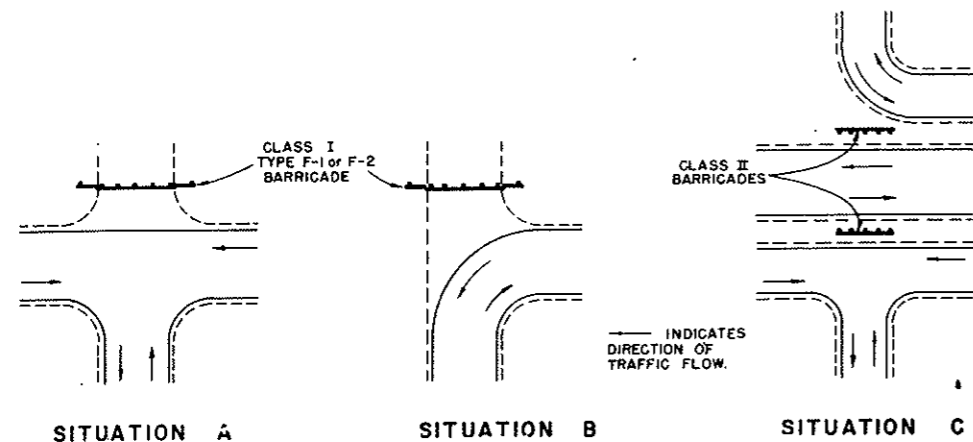
BARRICADE DESIGNATIONS					
Class	Type		Roadway Width	L	Description
	Movable	Fixed			
I	M-1	F-1	26'-34'	28'	Barricade complete with SR12-1 sign and SW1-6 or SW1-7 signs as required.
I	M-2	F-2	35'-44'	41'	Barricade complete with SR12-1 sign and SW1-6 or SW1-7 signs as required.
I	M-3	F-3	Variable	28'	Barricade (without extension wings) complete with SR12-1 sign and SW1-6 or SW1-7 signs as required.
I	M-4	F-4	Variable	Variable 8'-6" min.	Wing Barricade (signs only as appropriate).
II	-	F-6	Variable	28'	Barricade complete with appropriate signs.



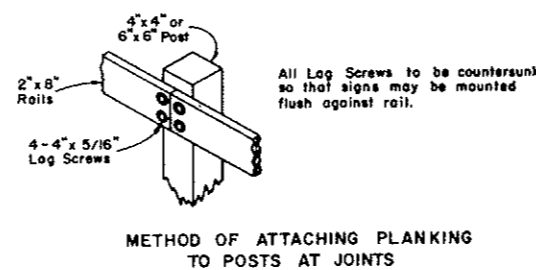
CLASS I BARRICADES (3 RAILS)



CLASS II BARRICADE (1 RAIL)



REAR VIEW OF BARRICADE SHOWING WING ATTACHED (See Note No. 5)

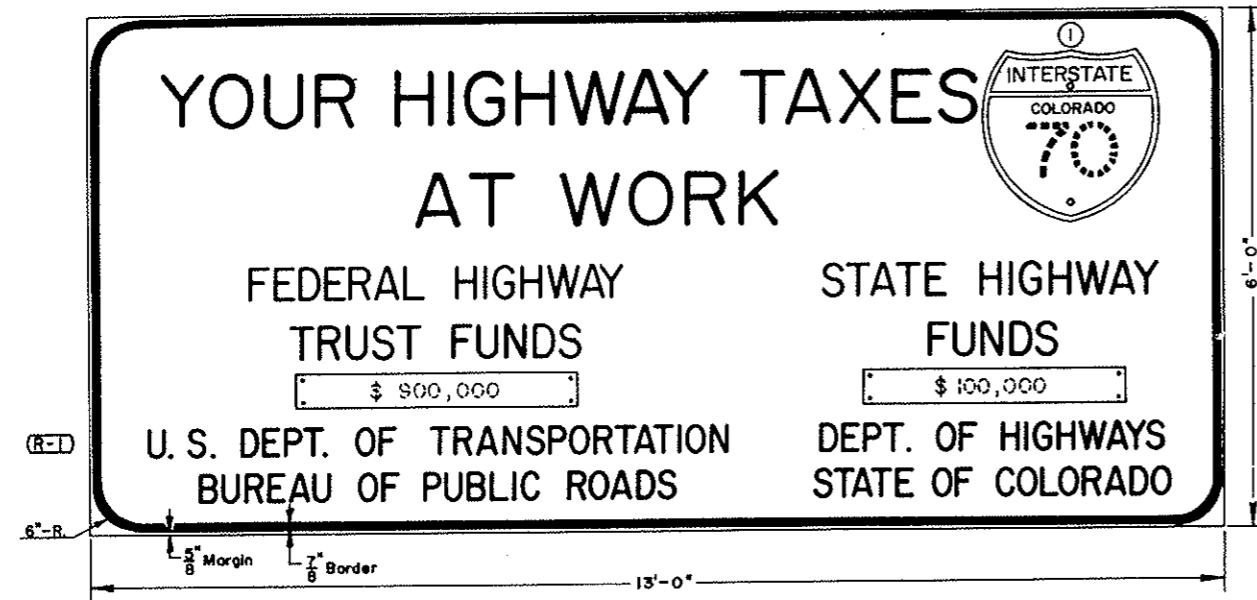


METHOD OF ATTACHING PLANKING TO POSTS AT JOINTS

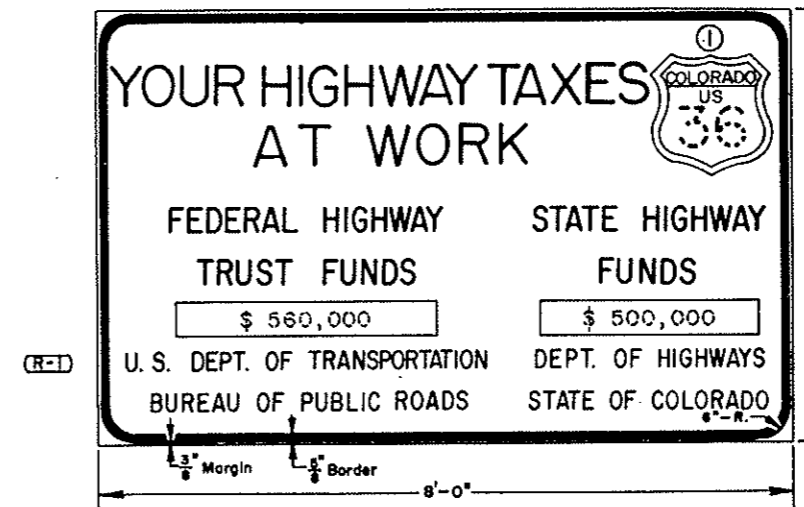
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MISCELLANEOUS DRAWINGS TIMBER BARRICADES					
Designed By: D.R.W.		Approved By: <i>[Signature]</i>		DRAWING NO.	
Made By: JLS		Date: JUL 1, 1973		MS - 4	
Checked By: J.B.					

TYPICAL SIGNS

INTERSTATE SYSTEM



PRIMARY & SECONDARY SYSTEM

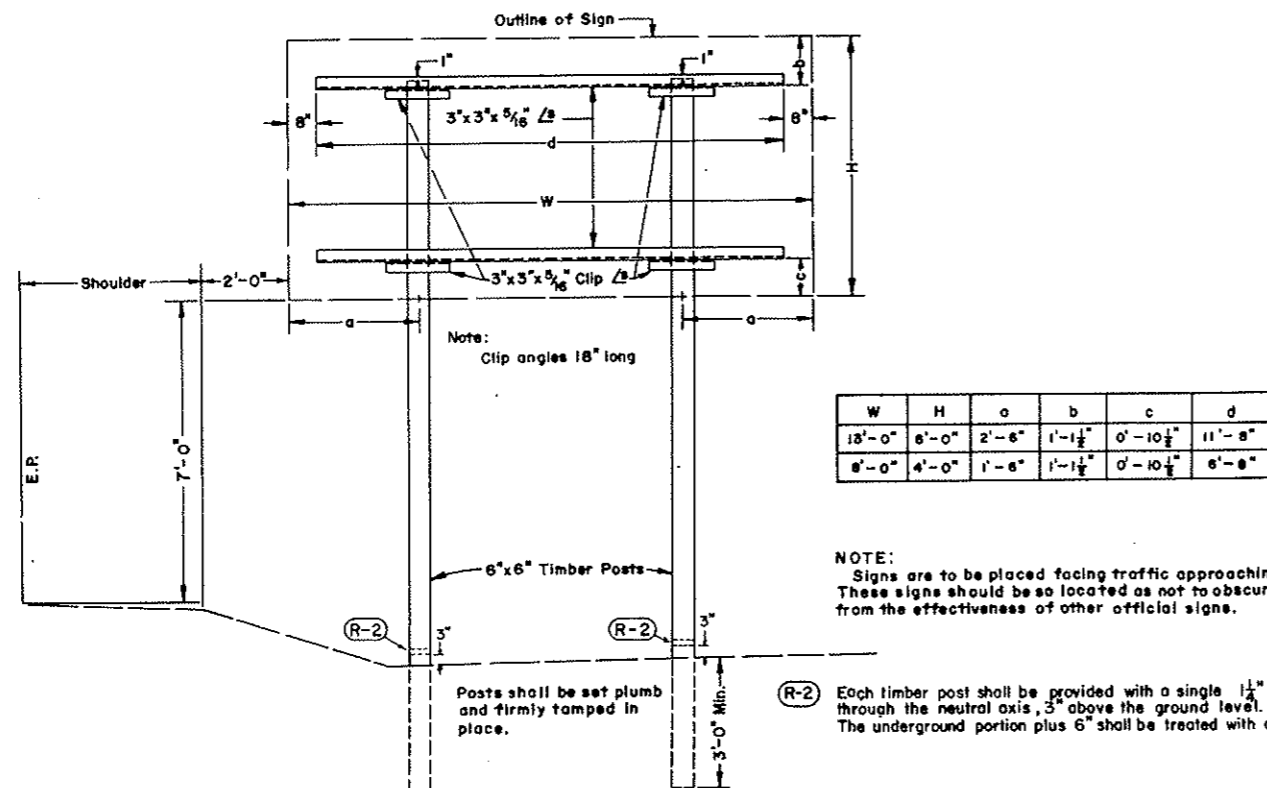


FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-5(34)220	321	326

REVISIONS			
(R-1)	5-25-67	Rev. Gen. Note & Sign Legend	G.W.F.
(R-2)	6-19-67	Note regarding timber posts	G.W.F.

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973

INSTALLATION DETAIL



GENERAL NOTES

Signs shall be made of 3/4" Plywood or other material approved by the Department.

When a third governmental agency is participating its official name should be included centrally in lines 6 and 7.

Posts shall be 6"X6" S4S timber or other material approved by the Department and shall be painted white.

Signs are to be non-reflectORIZED, black letters, numerals, and border on plain white background. Route Marker plaques to be the appropriate standard colors, non-reflectORIZED.

(R-1) Layout of signs will be furnished by the Department of Highways indicating the details as to letter size, symbols, spacing, figure for amount of funds, etc. which are required for these signs.

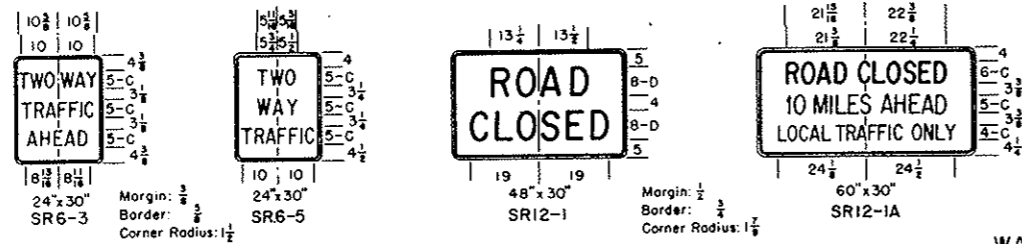
(1) Applicable Interstate, U.S. Shield or State Route Shield.

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO-DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MISCELLANEOUS DRAWINGS					
CONSTRUCTION IDENTIFICATION SIGNS					
Designed by B.F.R.		Approved by: <i>[Signature]</i>		DRAWING NO.	
Made by D.J.B.		Traffic Engineer		MS-5	
Checked by M.R.H.		Date: July 1, 1965			

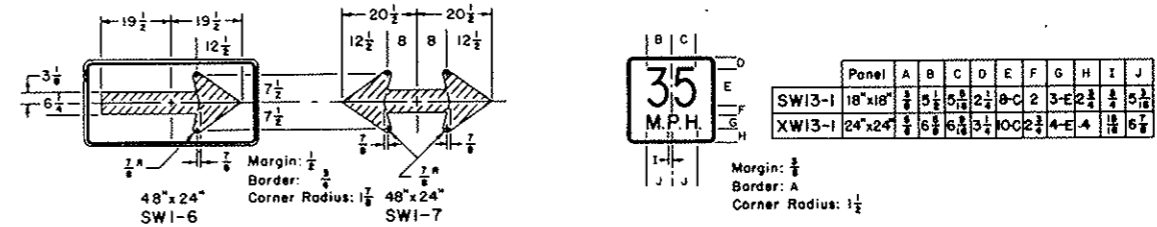
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(B4) 220	323	326

AS CONSTRUCTED
NO REVISIONS DATE
OCT 26, 1973

REGULATORY SIGNS
See Note No. 9



WARNING SIGNS
See Note No. 10



WARNING SIGNS
See Note No. 10

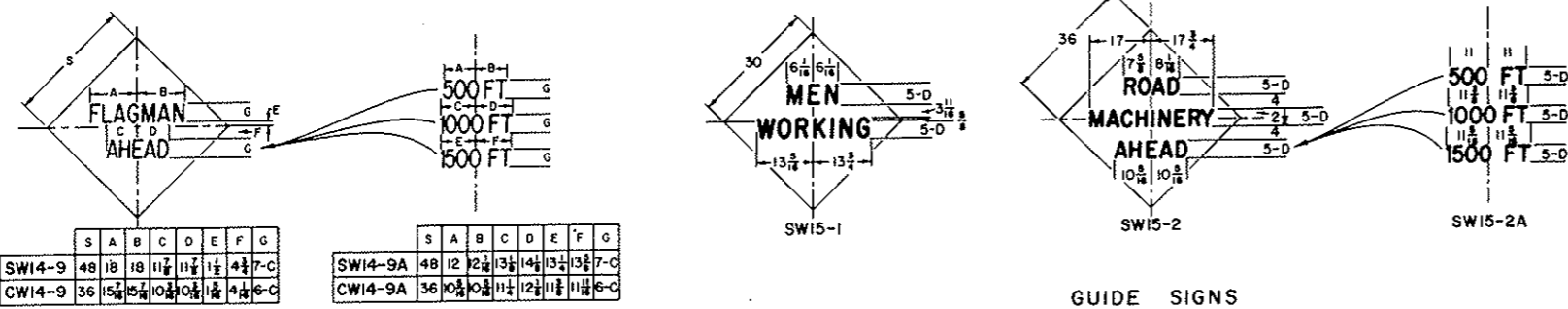
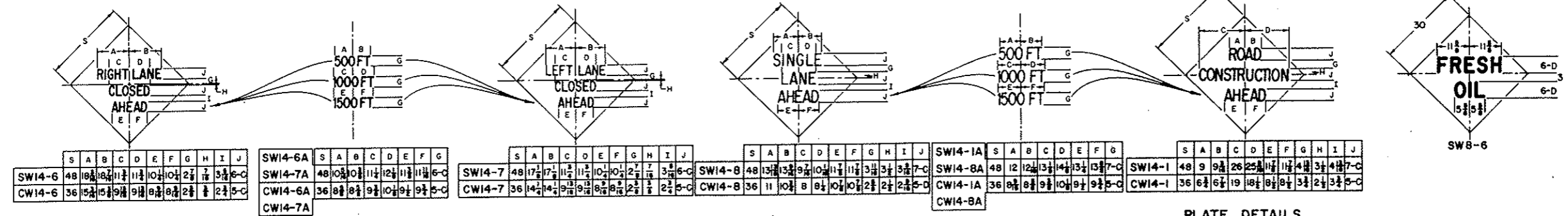
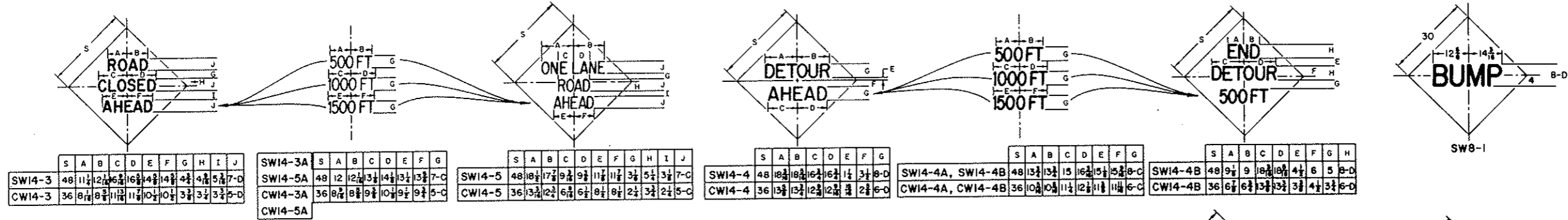
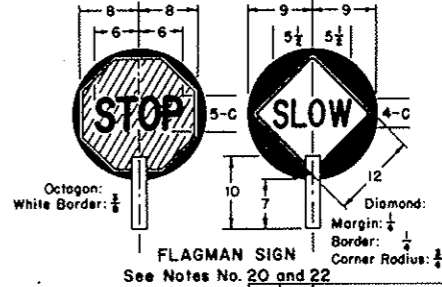
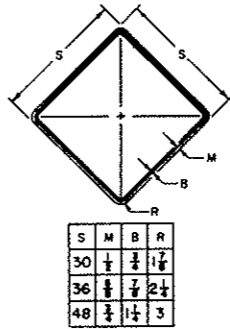
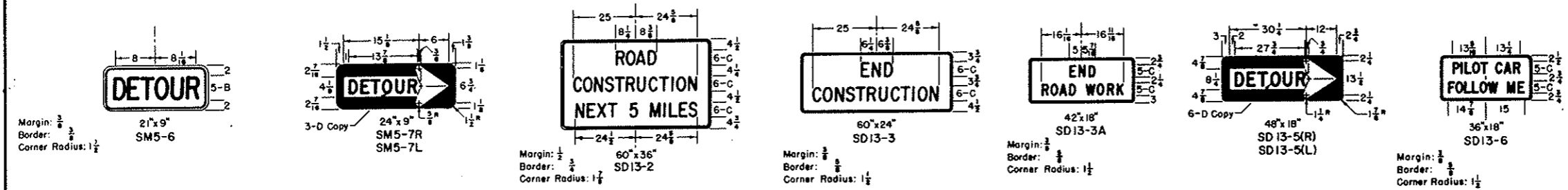


PLATE DETAILS



NOTES:
SEE SHEET 1 FOR TYPICAL SIGNING AND SIGN PLACEMENT.
SEE SHEET 3 FOR GENERAL NOTES APPLICABLE TO SHEETS 1 AND 2.
ALL DIMENSIONS THAT ARE NOT LABELED ARE IN INCHES.

GUIDE SIGNS
See Note No. 11



NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO—DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MISCELLANEOUS DRAWINGS					
TRAFFIC SIGNING FOR HIGHWAY CONSTRUCTION					
SHEET 2					
Designed By: D.R.W. Made By: H.B.D. Checked By: J.B.		Approved By: <i>[Signature]</i> Date: AUGUST 9, 1965		DRAWING NO. MS-7	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	324	326

AS CONSTRUCTED
NO REVISIONS DATE
Oct 26, 1973

GENERAL NOTES

- All work shall be done in accordance with: (a) the applicable requirements of the Department of Highways, and (b) the "Manual on Uniform Traffic Control Devices for all Classes of Streets and Highways" published by the Department.
- Where traffic is maintained through or over any part of the Project the Contractor shall be required to mark all hazards within the limits of the Project (including connecting roads) with well-maintained Barricades, Warning, and Guide Signs. All Barricades and Signs shall be moved, added to, changed or removed as required during the progress of construction and be removed entirely when the Project is completed.
- Where traffic is prohibited from the Project the Detour will be marked by the Department except that the Contractor shall provide, erect and maintain Barricades, complete (when required), at the ends of the Project, ends of the Detour and connecting roads. All U.S. or State Route Markers required for the Project will be furnished and installed by the Department. The location and positioning of Warning Signs, Barricades, and Regulatory Signs shall be as recommended by the appropriate District Engineering Forces of the Department.
- Work on the Project shall not be started until all required signs are in place and approved by the Engineer. Where speed control appears necessary, such speed control shall be requested from the Engineer by the Contractor. Control of speed through a construction zone may be achieved by Advisory Speed plates in conjunction with Warning Signs (SW13-1 for use with 30" Warning Signs and XW13-1 for use with 36" and 48" Warning Signs). The Advisory Speed plate is to be posted only at those locations where the safe speed is lower than the imposed Regulatory speed limit.
- All Signs and Barricades shall be placed for best visibility and legibility, maintained in good condition and kept clean and free of dirt at all times. Contractor's and Engineer's vehicles and equipment must be parked so that signs and barricades are visible to approaching traffic at all times.
- Where two identical signs are used for dual posting they are to be staggered on the two sides of the roadway for a minimum distance of 75' to avoid a tunneling effect.
- Examples for marking Projects, as shown on Sheet 1, are typical of signs required and are subject to alteration to fit actual conditions encountered in the field. Locations for control devices will be staked by the Engineer. In all cases Warning signs shall be placed well in advance of the hazard, the distance depending on topography and existing approach speeds. Additional markings and any special signs required for the guidance and protection of traffic shall be placed as required on the Project at the Contractor's expense.
- Desirable sizes for signs are shown on Sheet 1. Larger or smaller signs shall be used where warranted. Detailed dimensions for signs normally used in connection with construction are shown on Sheet 2 of this Standard. For information on standard roadway signs not detailed on Sheet 1 and 2, see the "Manual on Uniform Traffic Control Devices for all Classes of Streets and Highways" published by the Department.
- Signs with the prefix "R" in the sign code are Regulatory signs and as such impose legal compulsions or restrictions on drivers and shall only be used as authorized by the Engineer.
- Signs with the prefix "W" in the sign code are Warning signs and are used to alert traffic to existing or potentially hazardous conditions.
- Signs with the prefix "D" or "M" in the sign code are Guide signs. Those with the prefix "D" convey general information and those with the prefix "M" are used for marking the traffic route.
- All signs shall be reflectorized unless otherwise directed. Regulatory and Guide signs (unless otherwise directed shall have a screen processed black legend and border on a white flexible reflective sheeting, non-exposed lens background. The back side of Regulatory and Guide signs shall be painted with two coats of "Exterior Sign White Paint." Warning signs shall have a screen processed black legend and border on a highway yellow flexible reflective sheeting, non-exposed lens background. The back side of Warning signs shall be painted with two coats of "Federal Yellow Synthetic Sign Enamel."
- Painting for wood surfaces shall conform to the applicable requirements of the Department.
- Posts for regulatory, warning, and guide signs will normally be 4" x 4" or 6" x 6" and shall conform to the requirements of Section SP-33 of the Special Provisions. Timber shall conform to Construction grade Paragraph 123B or 125B of Standard No. 15 Grading & Dressing Rules for West Coast Douglas Fir (1956) or Dense Structural 58 and LL Structural 58 Paragraph 284 or 285 of 1956 Grading Rules for Southern Pine. Posts shall be painted with one coat of "White Wood Primer" and one coat of "Outside White Paint."
- Sign panels furnished by the Contractor for use only during construction may be fabricated from plywood, aluminum, steel or other suitable material and shall be stable and durable.
- All material shall be sound and durable. Barricades, signs, symbols, and lettering shall be of good workmanship. Uneven lettering will not be accepted.
- Alternate methods of processing signs or the substitution of symbols or other reflecting elements for painted symbols will be permitted only after approval by the Department.
- Torches and Lanterns shall be either of the fuel-burning or battery-powered type approved by the Department. Particular care shall be taken to protect all signs and barricades from smoke and smudge.
- Barricades, Flashing Beacons and Flashers - Refer to Drawing No MS-4, Timber Barricades for details and to Section SP-33, Timber Barricades of the Special Provisions.
- Flagman Sign - This sign shall have a black pointed background on both sides to form a contrast for the octagonal Stop sign and the diamond Warning sign. The "STOP" sign shall be fabricated by reverse screen process using transparent red paint on smooth surface silver reflective sheeting. The "SLOW" side of the Flagman Sign shall be black process paint on smooth surface yellow reflective sheeting. Handle to be grooved on one side to indicate reading of sign to Flagman.
- Sign "A": This is the first advance warning sign and shall be placed 1,500 feet ahead of Barricade or project terminal. Postings are required on both sides of the roadway on divided highways. Dual posting is required where warranted on two-lane, two-way highways.
Sign "B": This is the second advance warning sign and shall be placed 1,000 feet ahead of barricade or project terminal. Postings are required on both sides of the roadway on divided highways and singly on two-lane, two-way highways.
Sign "C": This is the third advance warning sign in cases where barricades are used and shall be placed 500 to 750 feet ahead of barricade or potentially hazardous condition. Postings are required on both sides of the roadway on divided highways and singly on two-lane, two-way highways.
Sign "D": SD13-2 - This sign shall be placed to mark the beginning of a Project of more than 2 miles in extent, where traffic is maintained through the project. It shall be placed singly and near the beginning of construction.
Sign "E": SD13-3 - This sign shall be placed to mark the end of the Project. It shall be placed singly and may be placed opposite barricade if desirable.
Notes: Construction identification signs shall be furnished and installed by the Contractor. These signs shall be located so as not to obscure or detract from the effectiveness of other official signs. Refer to Drawing No. MS-5, Construction Identification Signs for sign details.
Signs A through E will be furnished, installed and maintained by the Department.
- When Flags are used in lieu of the Flagman Sign, they shall be a minimum of 18"x18", made of a good grade of bright red material, and fastened securely to a staff of approximately 3 foot length. The free edge should be weighted to insure that the flag will hang vertically, even in heavy winds.

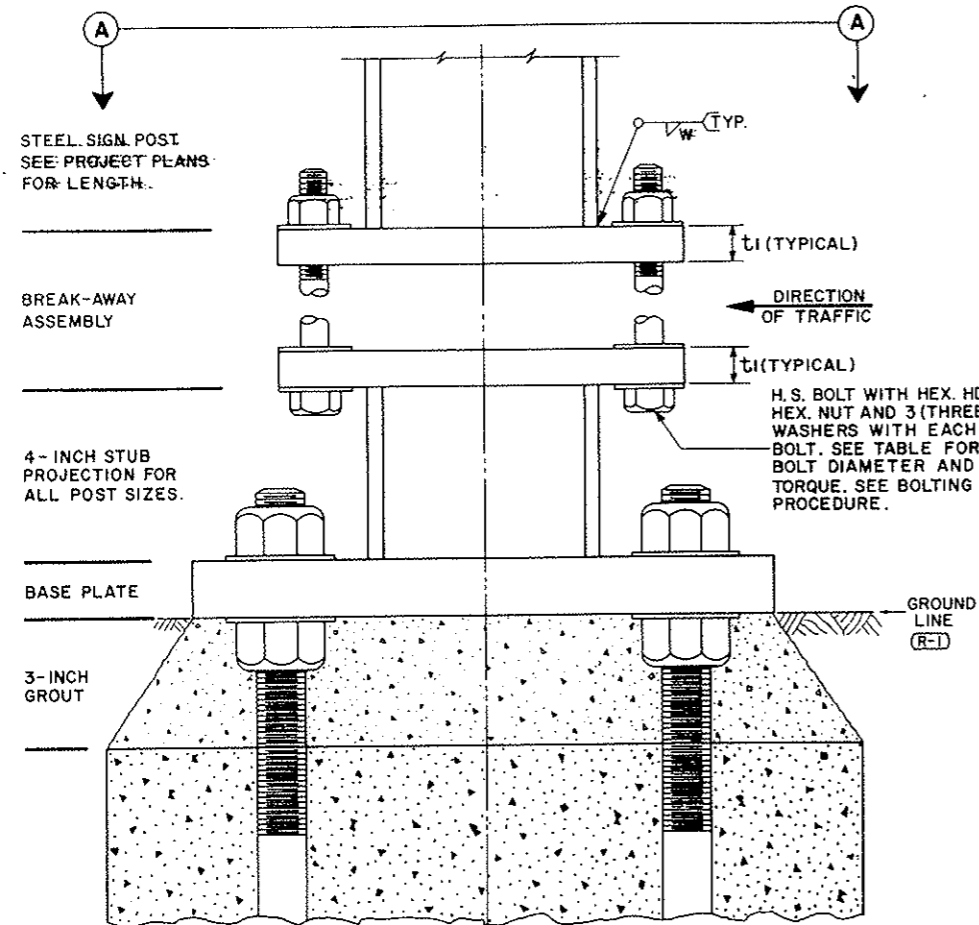
NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MISCELLANEOUS DRAWINGS					
TRAFFIC SIGNING FOR HIGHWAY CONSTRUCTION SHEET 3					
Designed By: D.R.W.		Approved By: <i>[Signature]</i>		DRAWING NO.	
Made By: J.L.S.		Date: AUGUST 9, 1972		MS-8	
Checked By: J.B.					

AS CONSTRUCTED
NO REVISIONS DATE
Oct 26, 1973

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	325	326

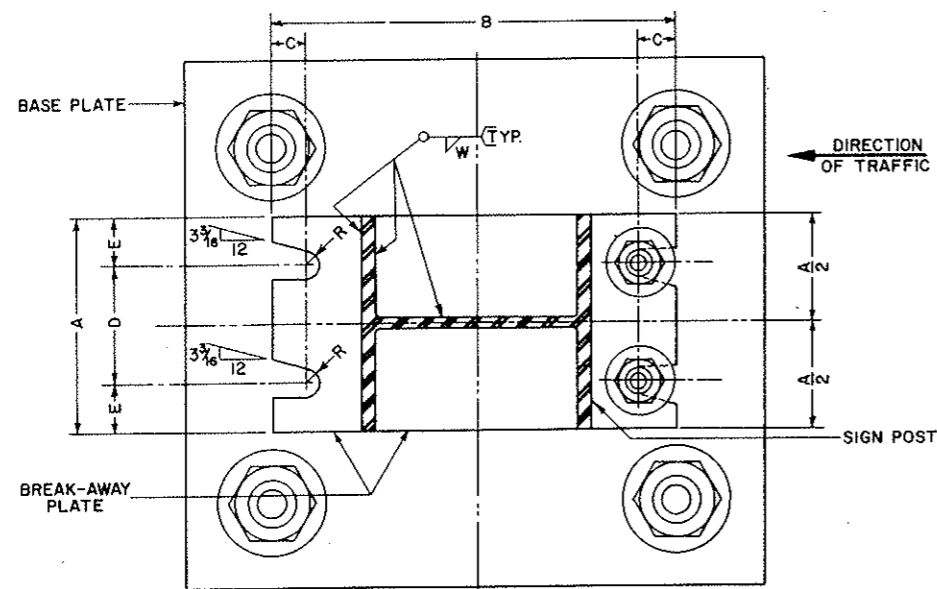
REVISIONS			
(R-1)	7-11-67	Rev. Ground line	A.R.P.

TYPICAL ELEVATION
STEEL POST ASSEMBLY



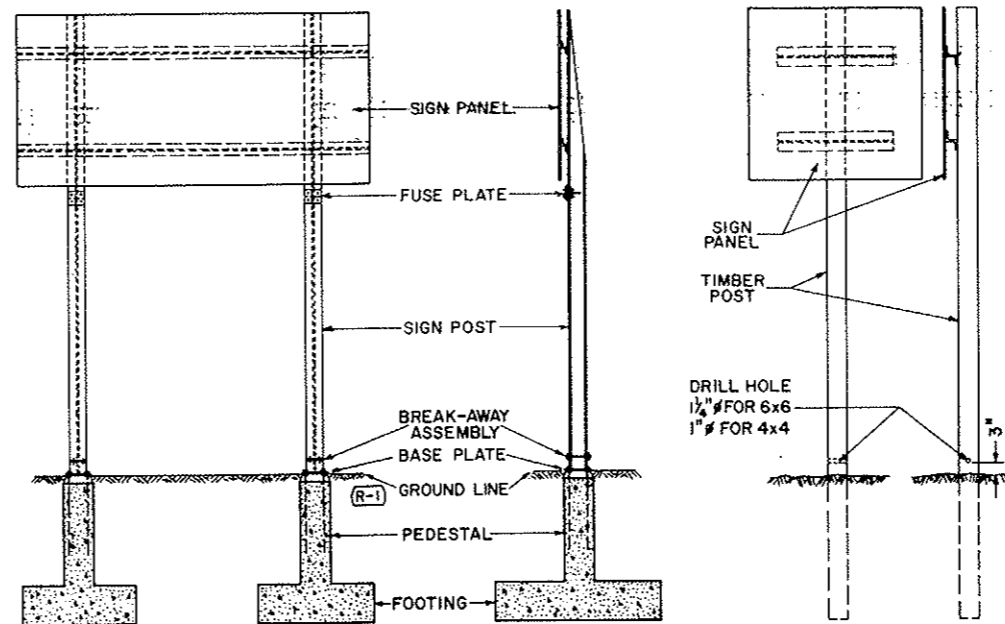
SECTION A-A
TYPICAL TOP VIEW

(SEE BREAK-AWAY PLATE DATA TABLE)

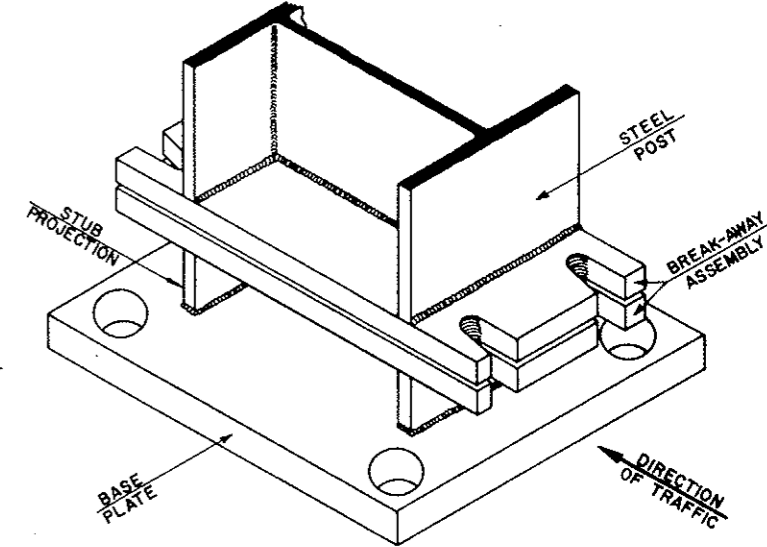


SECTION SHOWN IS FOR INSTALLATION ON RIGHT SHOULDER AND IN GORE. PLATE SLOT BEVELS ARE OPPOSITE HAND FROM THAT REQUIRED FOR INSTALLATION ON LEFT SHOULDER.

TYPICAL BREAK-AWAY SIGN SUPPORT INSTALLATIONS
FOR STEEL AND TIMBER POSTS



TYPICAL VIEW
STEEL POST ASSEMBLY



GENERAL NOTES

- All work shall be done in accordance with the applicable requirements of the Department.
- Design conforms with AASHTO specifications for the design and construction of Structural Supports for Highway Signs.
- All structural steel shall conform to ASTM Designation, A36.
- Notched steel fuse plates shall conform to the requirements of ASTM-A441.
- All high strength bolts, nuts, and washers shall conform to ASTM-A325.
- All bolts other than high strength bolts shall conform to ASTM-307, Class A.
- All bolts, nuts, and washers shall be galvanized or cadmium plated.
- All holes shall be drilled.
- All steel cuts shall preferably be saw cuts; however, flame cutting will be permitted, provided all edges are ground. Metal shall not project beyond the plane of the plate face.
- High strength bolts in the break-away assembly shall be tightened only to the torque shown in the table.
- The "STUB POST LENGTH" shown in the BREAK-AWAY PLATE DATA TABLE is considered part of the post.
- Timber posts shall be provided with a single drilled hole thru the neutral axis 3 inches above the ground level. This hole shall be 1 1/4" diameter for 6x6 posts and 1" diameter for 4x4 posts.
- All timber posts shall be provided with creosote treatment of underground portion plus 6 inches.
- For base plate and footing details, see Drawing No. MS-10.

BOLTING PROCEDURE FOR ASSEMBLY
OF BREAK-AWAY PLATES

- Assemble post to stub with bolts and with one flat washer on each bolt top, bottom, and between the break-away plates.
- Tighten all bolts to a "snug tight" condition with a 12" to 15" wrench to bed washers and to clean bolt threads, then loosen each bolt in turn and retighten in a systematic order to the prescribed torque. (See Break-Away Plate Data Table)
- Burr threads at junction with nut using a center punch to prevent nut loosening.

BREAK-AWAY PLATE DATA TABLE										
DIMENSION	BOLT SIZE AND TORQUE	A	B	C	D	E	t1	W	R	STUB POST LENGTH
12 WF 58	7/8" x 3 3/4" 1,135 In. Lb.	10"	19 1/4"	1 5/8"	5"	2 1/2"	1 1/4"	3/8"	15 1/32"	0'-4"
12 WF 50		8 1/2"	19 1/4"	1 5/8"	4"	2 1/4"	1 1/4"	3/8"	15 1/32"	0'-4"
12 WF 40	3/4" x 3 1/2" 750 In. Lb.	8"	19 1/4"	1 5/8"	4"	2"	1 1/4"	3/8"	15 1/32"	0'-4"
12 WF 31		6 1/2"	16 5/8"	7/8"	3 1/2"	1 1/2"	1"	5/16"	15 1/32"	0'-4"
10 WF 25	5/8" x 2 3/4" 450 In. Lb.	5 3/4"	14 5/8"	7/8"	2 3/4"	1 1/2"	1"	5/16"	15 1/32"	0'-4"
8 WF 20		5 1/4"	12 5/8"	7/8"	2 3/4"	1 1/4"	1"	5/16"	15 1/32"	0'-4"
6 WF 20		6"	10 1/4"	3/4"	3 1/2"	1 1/4"	3/4"	1/4"	1 1/2"	0'-4"

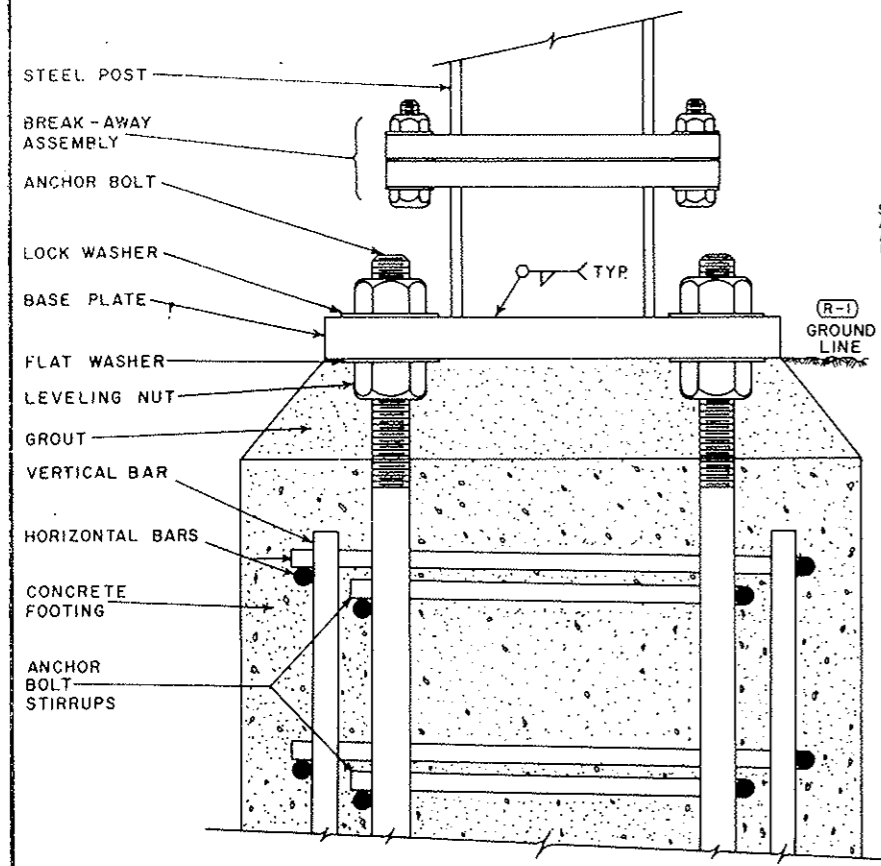
NO.	DATE	DESCRIPTION OF REVISION	BY	CH.	APP.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS STRAIGHT CREEK VEHICULAR TUNNEL PROJECT					
MISCELLANEOUS DRAWINGS					
BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS					
Designed By:	G.W.F.	Approved By:	<i>[Signature]</i>	DRAWING NO.	
Made By:	F.J.B.	Checked By:	G.W.F.	MS-9	
Date:	12/2/73				

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(34)220	328	328

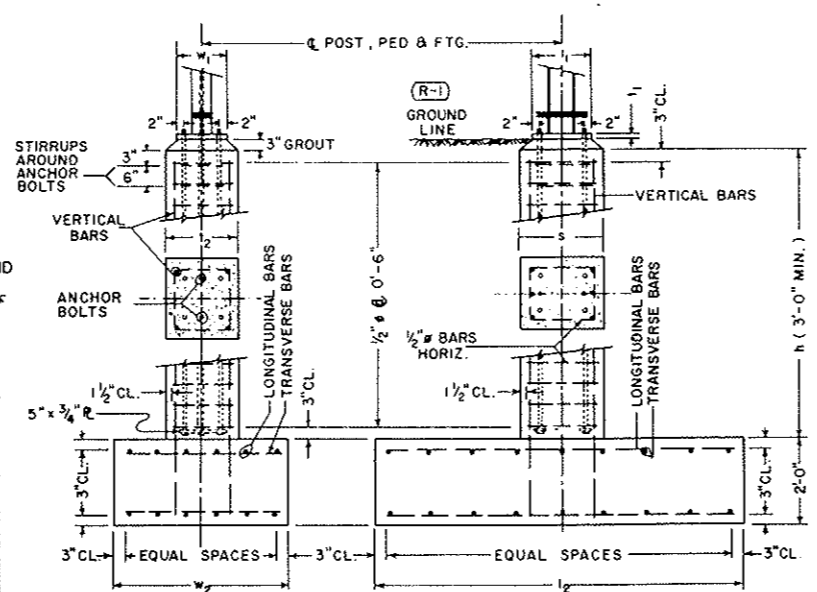
REVISIONS		
(R-1)	7-11-67	Rev. Ground Line A.R.P.

AS CONSTRUCTED
NO REVISIONS DATE: *OCT 26, 1973*

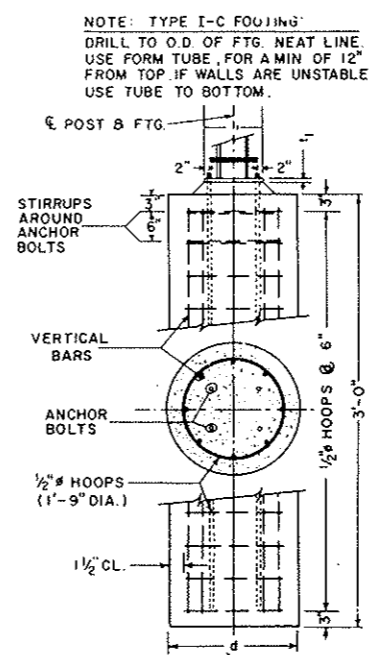
TYPICAL FOOTING ASSEMBLY



TYPICAL DETAIL TYPE I THRU VII FOOTINGS - PEDESTALS



DETAIL TYPE I-C FOOTING



NOTE: TYPE I-C FOOTING
 DRILL TO O.D. OF FTG. NEAT LINE. USE FORM TUBE, FOR A MIN OF 12" FROM TOP. IF WALLS ARE UNSTABLE USE TUBE TO BOTTOM.

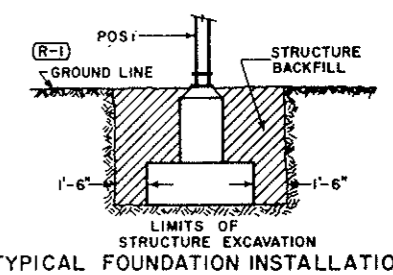
NOTES:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE DEPARTMENT OF HIGHWAYS.
- ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM DESIGNATION A36.
- WHEN FOOTINGS OVERLAP USE ONE FOOTING OF THE LENGTH SHOWN, AND OF WIDTH EQUAL TO THE DISTANCE BETWEEN POSTS PLUS THE WIDTH OF ONE FOOTING SHOWN IN "PEDESTALS AND FOOTINGS DATA TABLE".
- ANCHOR BOLT TO PROJECT ABOVE PEDESTAL 4" PLUS BASE PLATE THICKNESS PLUS BOLT DIAMETER. THREAD UPPER PORTION - PROJECTION PLUS 2" ±. GALVANIZE UPPER PORTION - PROJECTION PLUS 4" ±.
- ALL CONCRETE IS TO BE CLASS "A".
- WOOD POSTS SHALL BE FREE OF HEART CENTERS, COAST REGION, WEST COAST DOUGLAS FIR. ALL WOOD POSTS SHALL BE SELECT STRUCTURAL GRADE WITH A MINIMUM WORKING STRESS OF 1900 PSI ON THE EXTREME FIBERS WHEN SUBJECTED TO BENDING AND 1500 PSI WHEN SUBJECTED TO COMPRESSION PARALLEL TO THE GRAIN.

PEDESTALS AND FOOTINGS DATA TABLE

POST	MAXIMUM ALLOWABLE MOMENT	WELD POST TO BASE PL.	BASE PLATE			ANCHOR BOLTS	PEDESTAL		VERTICAL BARS IN PEDESTAL	FOOTINGS			LONGITUDINAL FOOTING BARS		TRANSVERSE FOOTING BARS		STIRRUPS AROUND ANCHOR BOLTS	
			l ₁	w ₁	t ₁		s	t ₂		TYPE	l ₂	w ₂	d	TOP	BOTTOM	TOP		BOTTOM
12 WF 58	112.3 ^k	5/8" FILLET	24 1/2"	18"	2 7/8"	6-1 1/2" # x 3'-5"	2'-7"	2'-0"	6-1 1/4" # x (h + 1'-8")	VII	12'-9"	8'-0"	—	12-5/8" # x 12'-3"	16-5/8" # x 12'-3"	7-1/2" # x 7'-6"	12-1/2" # x 7'-6"	2-1/2" #
12 WF 50	91.0 ^k	5/8" FILLET	23 1/2"	16"	2 5/8"	6-1 3/8" # x 3'-5"	2'-6"	1'-10"	6-1 1/8" # x (h + 1'-8")	VI	12'-6"	7'-0"	—	10-5/8" # x 12'-0"	14-5/8" # x 12'-0"	7-1/2" # x 6'-6"	9-1/2" # x 6'-6"	2-1/2" #
12 WF 40	73.0 ^k	1/2" FILLET	21 1/4"	16"	2 1/4"	6-1 1/4" # x 3'-5"	2'-4"	1'-10"	6-1" # x (h + 1'-8")	V	12'-3"	6'-3"	—	8-5/8" # x 11'-9"	12-5/8" # x 11'-9"	7-1/2" # x 5'-6"	7-1/2" # x 5'-6"	2-1/2" #
12 WF 31	53.4 ^k	7/16" FILLET	19 3/4"	14"	2"	4-1 3/8" # x 3'-5"	2'-2"	1'-8"	6-1" # x (h + 1'-8")	IV	11'-6"	5'-6"	—	7-5/8" # x 11'-0"	9-5/8" # x 11'-0"	6-1/2" # x 5'-6"	5-1/2" # x 5'-6"	2-1/2" #
10 WF 25	34.8 ^k	7/16" FILLET	16 1/4"	14"	1 5/8"	4-1 1/4" # x 3'-5"	1'-11"	1'-8"	6-7/8" # x (h + 1'-8")	III	10'-3"	4'-6"	—	5-5/8" # x 9'-9"	6-5/8" # x 9'-9"	6-1/2" # x 4'-0"	3-1/2" # x 4'-0"	2-1/2" #
8 WF 20	21.8 ^k	3/8" FILLET	13 1/4"	14"	1 3/8"	4-1 1/8" # x 3'-5"	1'-8"	1'-8"	6-3/4" # x (h + 1'-8")	II	8'-6"	4'-0"	—	3-5/8" # x 8'-0"	4-5/8" # x 8'-0"	5-1/2" # x 3'-6"	3-1/2" # x 3'-6"	2-1/2" #
6 WF 20	17.8 ^k	3/8" FILLET	12 1/4"	14"	1 3/8"	4-1 1/8" # x 3'-5"	1'-7"	1'-8"	6-3/4" # x (h + 1'-8")	I	8'-3"	3'-6"	—	3-5/8" # x 7'-9"	4-5/8" # x 7'-9"	5-1/2" # x 3'-0"	3-1/2" # x 3'-0"	2-1/2" #
	12.5 ^k	3/8" FILLET	12 1/4"	14"	1 3/8"	4-1 1/8" # x 3'-0"	—	—	8-3/4" # x 2'-6"	I-C	—	—	2'-0"	—	—	—	—	—

Timber Posts shall be set in drilled or excavated holes - depth shall be 5' for 6x6 post and 3' for 4x4 post. Posts shall be placed plumb, backfilled with excavated materials, and thoroughly tamped into place.



NO.	DATE	DESCRIPTION OF REVISION	BY	CHK.	APP.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 STRAIGHT CREEK VEHICULAR TUNNEL PROJECT

MISCELLANEOUS DRAWINGS
PEDESTALS, FOOTINGS AND SIGN ISLANDS FOR GROUND SIGNS

Designed By: G.W.F. Traffic Engineer
 Made By: B.H.B.
 Checked By: G.W.F. Date: *11-1-67*

APPROVED BY: *[Signature]*
 DATE: *11-1-67*

DRAWING NO. **MS-10**