

DEPARTMENT OF HIGHWAYS STATE OF COLORADO

FEDERAL AID SECTION NO.	DIVISION	PROJECT NO.	SHEET	TOTAL SHEETS
2711	COLORADO	I 70-3(83)220	1	

R.O.W. Acquired Under I 70-3(14)220
I 70-3(16)
I 70-3(26)
P.E. and Utilities under I 70-3(78)

PLAN AND PROFILE OF PROPOSED AS CONSTRUCTED FEDERAL AID PROJECT NO. I 70-3(83)220 STATE HIGHWAY NO. 70

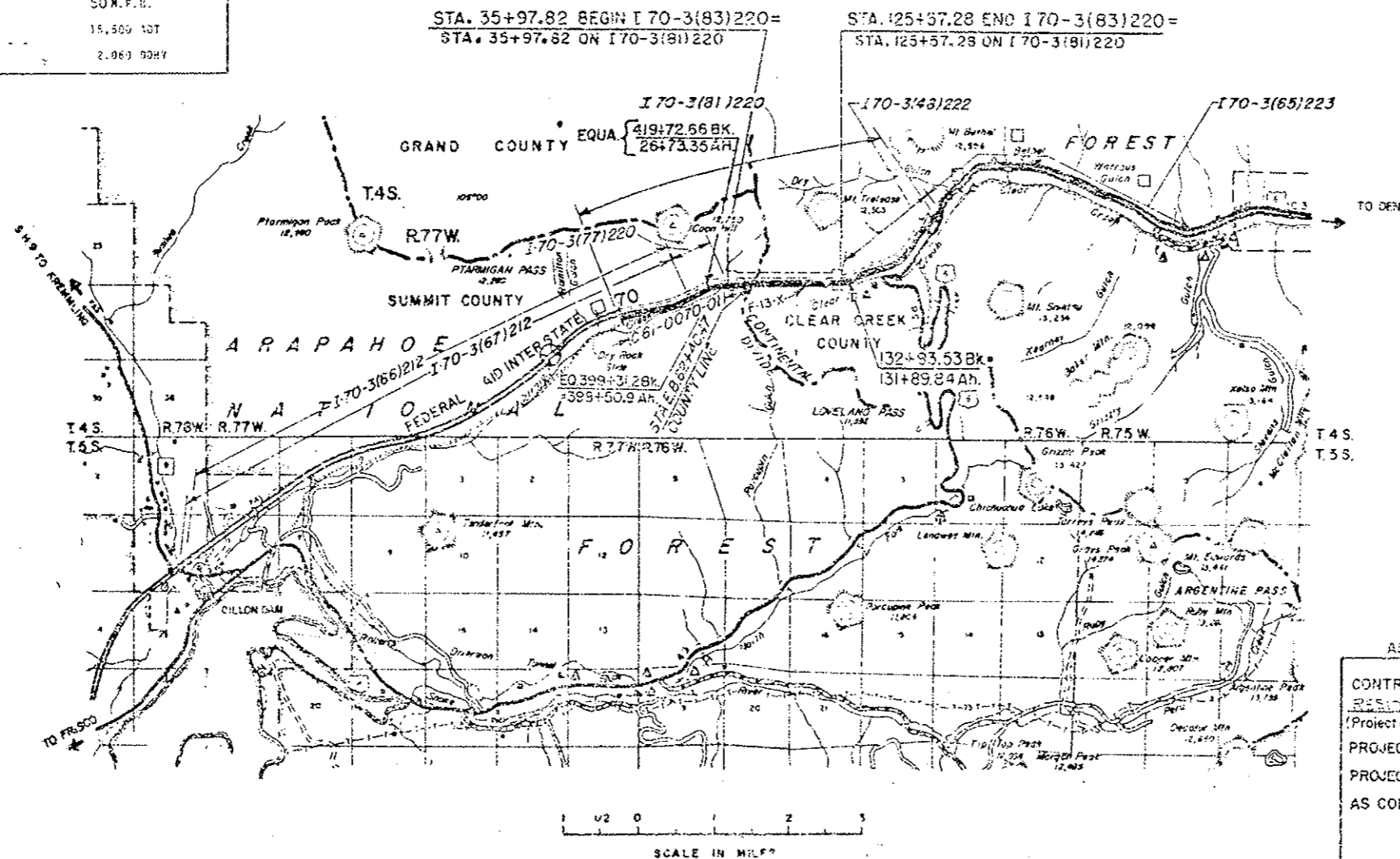
STATION	FOUNDED STRUCTURE NO. 24327	
	CLEAR OPENING IN FT.	CLEAR OPENING IN FT.
151+31.40 TO 15+97.82	2642.65	
15+97.82 BEGIN I 70-3(83)220 15+97.82 ON I 70-3(81)220		
62+43.47		8315.81
125+57.28 END I 70-3(83)220 125+57.28 ON I 70-3(81)220		
125+57.28 TO 215+70.59		8315.81
PROJECT TOTAL	2642.65	8315.81

SUMMARY	LN. FT.	MILES
SUMMIT COUNTY	2642.65	0.501
CLEAR CREEK COUNTY	8315.81	1.196
NET AND GROSS LENGTH	8959.46	1.697

DESIGN DATA	
MAXIMUM DEGREE OF CURVE	3° 30'
MAXIMUM GRADE	2.23%
MINIMUM SSD HORIZONTAL	350'
MINIMUM SSD VERTICAL	490'
MAXIMUM DESIGN SPEED	50 M.P.H.
1934 DESIGN TRAFFIC	15,500 ADT
	2.063 DDHY

SUMMIT AND CLEAR CREEK COUNTIES

SCALES OF ORIGINAL DRAWINGS
ON PLANS AS SHOWN
GROSS AND NET LENGTH OF PROJECT 8959.5 FEET = 1.697 MILES



ALL SCALES SHOWN ARE FOR ORIGINAL DRAWINGS.

INDEX OF SHEETS
(SEE SHEET 2 & 3)

AS CONSTRUCTED INFORMATION

CONTRACTOR WEAVER CONSTRUCTION
RESIDENT ENGINEER LARRY E. GAY
(Project or Resident)

PROJECT STARTED April 2, 1979
PROJECT COMPLETED March 1, 1980

AS CONSTRUCTED PLANS
APPROVED _____
TITLE _____ DATE _____

DIVISION OF HIGHWAYS

APPROVED: _____
DATE: _____

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____ DATE _____

DIVISION ENGINEER _____

(R-1) REVISED SHEET TITLED 10-17-78 N.E.B.

PROJECT SHEET NO.	SERIES SHEET NO.	GENERAL
1	G-1	TITLE SHEET AND SKETCH MAP AND TABULATION OF LENGTH AND SECTION DATA
2-3	G-2 TO G-3	INDEX OF SHEETS
4-6	G-4 TO G-6	SUMMARY OF APPROXIMATE QUANTITIES
7	G-7	PLAN AND PROFILE - KEY TO GENERAL ARRANGEMENT
8	G-8	GENERAL ARRANGEMENT WEST PORTAL TO STA. 45+34.68
9	G-9	GENERAL ARRANGEMENT STA. 45+34.68 TO STA. 56+90.43
10	G-10	GENERAL ARRANGEMENT STA. 56+90.43 TO STA. 68+96.43
11	G-11	GENERAL ARRANGEMENT STA. 68+96.43 TO STA. 81+02.43
12	G-12	GENERAL ARRANGEMENT STA. 81+02.43 TO STA. 93+08.43
13	G-13	GENERAL ARRANGEMENT STA. 93+08.43 TO STA. 105+14.43
14	G-14	GENERAL ARRANGEMENT STA. 105+14.43 TO STA. 117+20.43
15	G-15	GENERAL ARRANGEMENT STA. 117+20.43 TO EAST PORTAL
16	G-16	TYPICAL SECTION TUNNEL INTERIOR
17-19	G-17 TO G-19	CURB GRADE LINES IN TUNNEL
20-25	G-20 TO G-25	WEST PORTAL PARKING, STORAGE AND ACCESS AREAS
26-27	G-24 TO G-27	EAST PORTAL PARKING, STORAGE AND ACCESS AREAS

PROJECT SHEET NO.	SERIES SHEET NO.	DRAINAGE
56	D-1	GENERAL DRAINAGE PLAN
57	D-2	INLET DRAIN PIPING LOCATION - NORTH AND SOUTH CURB
58	D-3	INLET AND MANHOLE LOCATION PLAN - STATION 55+00 TO 65+00
59	D-4	INLET AND MANHOLE LOCATION PLAN - STATION 65+00 TO 85+00
60	D-5	INLET AND MANHOLE LOCATION PLAN - STATION 85+00 TO 125+00

WALKWAY, CURB, GUARD RAIL AND HAND RAIL

28	W-1	NORTH AND SOUTH CURBS TYPICAL SECTIONS
29	W-2	RAILING ARRANGEMENT AND DETAILS
30	W-3	PLAN AND ELEVATION OF TYPICAL SAFETY CURB AND HAND RAIL SPACING
(R-1) 31	W-4	WALKWAY ANGLE SUPPORT ASSEMBLY DETAILS
32	W-5	WALKWAY DETAILS
33	W-6	PRECAST SAFETY CURBS DETAIL
34	W-7	PLAN OF PRECAST CURB THRU WEST VENTILATION BUILDING SHEET NO. 1
35	W-8	PLAN OF PRECAST CURB THRU WEST VENTILATION BUILDING SHEET NO. 2
36	W-9	PLAN OF PRECAST CURB THRU WEST VENT BUILDING SHEET NO. 3
(R-1) 37	W-10	PLAN OF PRECAST CURB THRU EAST VENTILATION BUILDING
31 AX-EX		Walkway Erection Plans and Walkway Framing Details
32 AX-GX		Concrete Walkway Panels

WATER MAIN SYSTEM

38	FH-1	WATER MAIN SYSTEM TYPICAL DETAILS
39	FH-2	FIRE HYDRANT STATION
40	FH-3	FIRE HYDRANT STATION MAIN LINE SHUT OFF VALVE
41	FH-4	FIRE HYDRANT STATION WITH EXPANSION JOINT
42	FH-5	PRESSURE REDUCING STATION
43	FH-6	WATER MAIN SYSTEM WEST VENTILATION BUILDING PLAN AND SECTION
44	FH-7	WATER MAIN SYSTEM WEST TRANSITION THRU S17
45	FH-8	WATER MAIN SYSTEM PLAN SEGMENT S18 THRU S36
46	FH-9	WATER MAIN SYSTEM PLAN SEGMENT S36 THRU S53
47	FH-10	WATER MAIN SYSTEM PLAN SEGMENT S54 THRU S71
48	FH-11	WATER MAIN SYSTEM PLAN SEGMENT S72 THRU S89
49	FH-12	WATER MAIN SYSTEM PLAN SEGMENT S90 THRU S107
50	FH-13	WATER MAIN SYSTEM PLAN SEGMENT S108 THRU S125
51	FH-14	WATER MAIN SYSTEM PLAN SEGMENT S126 THRU S143
52	FH-15	WATER MAIN SYSTEM PLAN SEGMENT S144 THRU S161
53	FH-16	WATER MAIN SYSTEM PLAN SEGMENT S162 THRU EAST TRANSITION
54	FH-17	WATER MAIN SYSTEM EAST VENTILATION BUILDING SHEET NO. 1
55	FH-18	WATER MAIN SYSTEM EAST VENTILATION BUILDING SHEET NO. 2

61-62	WF-1 TO WF-2	WALL TILE ARRANGEMENT - NORTH AND SOUTH WALLS
63	WF-3	WALL TILE AND MOUNTING UNIT DETAILS
64	WF-4	WALL TILE AND MOUNTING UNIT DETAILS
65	WF-5	WALL TILE TYPICAL OUTGUT DETAILS
66-67	WF-6 TO WF-7	CABINETS TELEPHONE, FIRE EXTINGUISHER, AND CO ANALYZER
68	WF-8	INSTRUMENTATION CABINET
69	WF-9	WALL TILE DETAILS AT PULLBOX STATION STANDARD
70	WF-10	DETAILS OF PULLBOX STATION FRAME STANDARD
71	WF-11	WALL TILE DETAILS AT PULLBOX STATIONS 2N AND 2S
72	WF-12	DETAILS OF PULLBOX STATION FRAMES 2N AND 2S
73	WF-13	WALL TILE DETAILS AT PULLBOX STATION 3N, 26N, 3S AND 26S
74	WF-14	DETAILS OF PULLBOX STATION FRAMES 3N, 14N, 21N, 3N, 26N, 3S AND 26S
75	WF-15	DOOR DETAILS X-PASSAGEWAY, TRANSFORMER VAULT, AND PULLBOX STA.
76	WF-16	BASEMENT EMERGENCY AND WEST VENTILATION BUILDING DOORS
77	WF-17	NORTH WALL EXTENSIONS AND VENTILATION BUILDING DOORS
78	WF-18	MISCELLANEOUS SIGN DETAILS
79	WF-19	TUNNEL INTERIOR CABINET, DOOR AND HARDWARE SCHEDULE

BUILDINGS

80	B-1	PORTAL ATTENDANT BOOTH FLOOR PLAN AND ELEVATIONS
81	B-2	PORTAL ATTENDANT BOOTH WALL SECTIONS, ROOF PLAN AND FLAGPOLE DETAILS
82	B-3	PORTAL ATTENDANT BOOTH FOUNDATION AND STAIR DETAILS
83	B-4	PORTAL ATTENDANT BOOTH DOOR AND WINDOW SCHEDULE AND COUNTER CABINET DETAILS
84	B-5	PORTAL ATTENDANT BOOTH ELECTRIC AND HEATING PLAN
85	B-6-S	ARCHITECTURAL EAST AND WEST PORTAL GAS EQUIPMENT & ELECTRICAL PANEL BUILDINGS PLANS ELEVATIONS AND SECTIONS
81 AX		Flagpole Base

SOUTH TUNNEL

DIVISION OF HIGHWAYS	
INDEX OF SHEETS	
Designer C.D.O.H.	Structure
Detailer	Numbers
Drawing Number 6-2	of Drawings

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	3	

AS CONSTRUCTED

NO REVISIONS REVISED VOID

(R-1) Added Sheets to Index ~ 10-17-78 ~ E.B.

PROJECT SHEET NO.

SERIES SHEET NO.

CEILING AND RELATED COMPONENTS

86	C-1	TYPICAL SECTION CEILING SLABS AND DUCT DIVIDER WALL
87	C-2	CEILING SUPPORT DETAILS
88	C-3	CEILING SUPPORT DETAILS
89	C-4	DUCT DIVIDER WALL DETAILS AND CEILING SUPPORT DETAILS
90	C-5	SPLICE DETAILS FOR DUCT DIVIDER WALL SUPPORT AND PRECAST CEILING SUPPORT
91	C-6	4" SOLID PRESTRESSED DUCT DIVIDER WALL DETAILS
92	C-7	TYPICAL CEILING SLAB PLAN
93	C-8	6" HOLLOW CORE PRESTRESSED CEILING SLAB DETAILS
94	C-9	6" HOLLOW CORE PRESTRESSED CEILING SLAB DETAILS
95	C-10	PORT DAMPER ASSEMBLY DETAILS
96	C-11	DETAILS FOR ATTACHING PORCELAIN ENAMEL PANELS TO PRECAST CONCRETE CEILING SLABS
97	C-12	ELEVATION THRU SUSPENDED CEILING WEST VENTILATION BUILDING
98	C-13	DUCT WALL AND CEILING PROFILE WEST TRANSITION AREA 37+80.40 TO 39+81.43
99	C-14	DUCT WALL AND CEILING PROFILE WEST AREA 38+81.43 TO 39+81.93
100	C-15	DUCT WALL AND CEILING PROFILE WEST AREA 39+81.93 TO 40+82.43
101	C-16	DUCT WALL AND CEILING PROFILE WEST TRANSITION AREA 40+82.43 TO 41+82.93
102	C-17	WEST TRANSITION AREA SECTIONS
103	C-18	WEST TRANSITION AREA SECTIONS
(R-1) 104 & 104X	C-19 & C-19X	PLAN THRU SUSPENDED CEILING WEST VENTILATION BUILDING
104 AX-104		Suspended Ceiling in West Ventilation Building
105	C-20	DUCT WALL AND CEILING PROFILE EAST TRANSITION AREA 119+71.68 TO 120+72.18
106	C-21	DUCT WALL AND CEILING AREA EAST AREA 120+72.18 TO 121+72.68
107	C-22	DUCT WALL AND CEILING PROFILE EAST AREA 121+72.68 TO 122+73.18
108	C-23	DUCT WALL AND CEILING PROFILE EAST TRANSITION AREA 122+73.18 TO 123+74.60
109	C-24	ELEVATION THRU SUSPENDED CEILING EAST VENTILATION BUILDING
110	C-25	EAST TRANSITION AREA SECTIONS
111	C-26	EAST TRANSITION AREA SECTIONS
(R-1) 112 & 112X	C-27 & C-27X	PLAN THRU SUSPENDED CEILING EAST VENTILATION BUILDING
112 AX-112		Suspended Ceiling in East Ventilation Building
113 - 114	C-28 AND C-29	TRANSITION AREA DETAILS FOR THE SUSPENDED PORCELAIN ENAMEL CEILING AND SUPPORT SYSTEM FOR THE DUCT DIVIDER WALL AND PRECAST CEILING SLABS
113 AX-114		Hanger Rod Schedule and Elevations
115	C-30	TRANSITION AREA DETAILS FOR THE SUSPENDED PORCELAIN ENAMEL CEILING AND SUPPORT SYSTEM FOR THE DUCT DIVIDER WALL AND PRECAST CEILING SLABS
(R-1) 116	C-31	CEILING WATERPROOFING (MEMBRANE)
117	C-32	ACCESS HATCH, DUCT DIVIDER DOOR AND SAFETY SCREEN DETAILS
117 AX		Duct Access Hatch
118	C-33	CENTER AIR BULKHEAD STATION 80+77.50
119	C-34	CENTER AIR BULKHEAD DETAILS
120	C-35	DETAILS LIGHT FIXTURE BRACKET
121	C-36	DETAILS LIGHT FIXTURE BRACKET

TRAFFIC CONTROL SYSTEM

122	TC-15	TUNNEL SIGNING AND LOOP DETECTORS
123	TC-25	EAST VENTILATION BUILDING TRAFFIC CONTROL CONSOLE SHEET NO. 1
124	TC-35	EAST VENTILATION BUILDING TRAFFIC CONTROL CONSOLE SHEET NO. 2
125	TC-45	MESSAGE BOARD WALL SUPPORT BRACE DETAILS
126	TC-55	STOP LIGHT MOUNTING DETAILS
127	GA-15	WEST PORTAL AREA - APPROACH SIGNING AND MISCELLANEOUS DEVICES

PROJECT SHEET NO.

SERIES SHEET NO.

ELECTRICAL

128	E-G-25	GENERAL POWER DISTRIBUTION SINGLE LINE DIAGRAM
129	E-G-65	GENERAL FAN CONTROL BOARDS LAYOUT AND DETAILS
130	E-G-75	GENERAL GROUNDING PLANS & DETAILS
131	E-G-85	TELEPHONE RISER DIAGRAM
132	E-G-95	GENERAL POWER & LIGHTING PANEL SCHEDULES
133	E-W-15	WEST VENTILATION BUILDING ELECTRICAL EQUIPMENT ROOM POWER AND CONTROL PLAN
134	E-W-25	WEST VENTILATION BUILDING ROADWAY FLOOR POWER & CONTROL PLAN
135	E-W-35	WEST VENTILATION BUILDING FAN FLOOR POWER AND CONTROL PLAN
136	E-W-45	WEST VENTILATION BUILDING CONDUIT & CABLE SCHEDULE SHEET NO. 1
137	E-W-55	WEST VENTILATION BUILDING CONDUIT & CABLE SCHEDULE SHEET NO. 2
138	E-E-15	EAST VENTILATION BUILDING ELECTRICAL EQUIPMENT ROOM POWER & CONTROL PLAN
139	E-E-25	EAST VENTILATION BUILDING ROADWAY FLOOR POWER & CONTROL PLAN
140	E-E-35	EAST VENTILATION BUILDING FAN FLOOR POWER & CONTROL PLAN
141	E-E-45	EAST VENTILATION BUILDING CONTROL ROOM POWER & CONTROL PLAN
142	E-E-55	EAST VENTILATION BUILDING CONDUIT & CABLE SCHEDULE
143	E-WE-65	WEST & EAST VENTILATION BUILDINGS CONDUIT SECTIONS & DETAILS SHEET NO. 1
144	E-WE-65	WEST & EAST VENTILATION BUILDINGS CONDUIT SECTIONS & DETAILS SHEET NO. 2
145	E-WE-95	WEST & EAST VENTILATION BUILDINGS MISCELLANEOUS DETAILS SHEET NO. 1
145	E-WE-105	WEST & EAST VENTILATION BUILDINGS MISCELLANEOUS DETAILS SHEET NO. 2
147	E-WE-125	WEST & EAST VENTILATION BUILDINGS MISCELLANEOUS DETAILS SHEET NO. 3
148	E-T-15	TUNNEL POWER PLAN, SECTIONS & DETAILS SHEET NO. 1
149	E-T-25	TUNNEL POWER PLAN, SECTIONS & DETAILS SHEET NO. 2
150	E-T-35	TUNNEL POWER PLAN, SECTIONS & DETAILS SHEET NO. 3
151	E-T-45	TUNNEL POWER PLAN, SECTIONS & DETAILS SHEET NO. 4
152	E-T-55	TUNNEL LIGHTING PLAN AND DETAILS
153	E-T-65	TUNNEL WIRING DIAGRAMS SHEET NO. 1
154	E-T-75	TUNNEL WIRING DIAGRAMS SHEET NO. 2
155	E-T-85	TUNNEL WIRING DIAGRAMS SHEET NO. 3
156	E-T-95	TUNNEL WIRING DIAGRAMS SHEET NO. 4
157	E-T-105	TUNNEL CONDUIT AND CABLE SCHEDULE
158	E-T-115	NORTH TUNNEL TRAFFIC CONTROL MODIFICATIONS
159	E-T-125	TUNNEL VENTILATION DUCTS POWER AND LIGHTING, PLANS AND DETAILS

MECHANICAL

160	M-125	WEST VENTILATION BUILDING EMERGENCY GENERATOR ROOM PLAN ELEVATION AND DETAILS
161	M-135	CARBON MONOXIDE SAMPLING AND ANALYZING SYSTEM PLANS, SECTIONS AND DETAILS
162	M-185	EAST AND WEST STANDBY PROPANE SYSTEMS PLANS AND SCHEMATICS
163	M-195	EAST VENTILATION BUILDING EMERGENCY GENERATOR ROOM VENTILATION MODIFICATION PLAN AND SECTIONS
164	M-205	WEST VENTILATION BUILDING EMERGENCY GENERATOR ROOM VENTILATION MODIFICATION PLAN SECTIONS AND DETAIL

DIVISION OF HIGHWAYS

INDEX OF SHEETS

Designer	Structure
Detailer	Numbers
Drawing Number 3-5 of Drawings	

(R-2) Rev. Qty Item and Quantities ~ 11-14-78 ~ E.B. FINAL (R-1) Added Item and Rev. Quantity ~ 10-17-78 ~ E.B.

SUMMARY OF APPROXIMATE QUANTITIES

AS CONSTRUCTED

NO REVISIONS REVISED VOID

MATERIAL BOOK RECORD NO. DIVISION PROJ. NO. SHEET NO. TOTAL SHEETS

2221 COLORADO I 70-3(83)220 4

INDEX	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT							FINAL PROJECT TOTALS	DIFF.	%				PROJECT TOTALS		
Folder #1	202	Removal of Concrete	L.S.							1	0	100.0				1		
Folder #2	211	Threaded Rebar	Each							5,140	+5	100.0				5,135		
Folder #3	509	Structural Steel	Lb.							73,389	-1,916	97.0				75,305	(R-2)	
Folder #4	509	Structural Steel (Galvanized)	Lb.							1,357,316	0	100.0				1,357,316	(R-2)	
Folder #5	514	Hand Rail	Lin. Ft.							8415	-3	100.0				8,418		
Folder #6	515	Waterproofing (Membrane)	Sq. Yd.							2,422	-2	100.0				2,424		
Folder #7	515	Waterproofing (Duct Floor)	Sq. Yd.							33,234	+408	101.9				32,626	(R-1)	
Folder #8	601	Concrete Class T-1	Cu. Yd.							3,458	-82	98.0				3,540		
Folder #9	604	3 Inch Plastic Pipe Sewer (PVC)	Lin. Ft.							2,265	-105	95.6				2,570		
Folder #10	604	4 Inch Plastic Pipe Sewer (PVC)	Lin. Ft.							512	-102	82.6				620		
Folder #11	604	2 Inch Plastic Pipe Sewer (ABS)	Lin. Ft.							843	+23	102.8				820		
Folder #12	604	4 Inch Plastic Pipe Sewer (ABS)	Lin. Ft.							12,370	+240	102.0				12,130		
Folder #13	606	Guard Rail Type 4A Tunnel	Lin. Ft.							17,919	0	100.0				17,919		
Folder #14	607	Safety Screen (Deleted)	Each							0	-2	0				2		
Folder #15	614	Flagging	Hour							442.5	-1,557.5	22.1				2,000		
Folder #16	614	Traffic Control Supervision	Day							200.0	+20.0	111.0				180		
Folder #17	614	Security Guard	Hour							10,745.25	+745.25	107.4				10,000		
Folder #18	618	Prestressed Concrete Slab (9 Inch)	Sq. Ft.							99,766	-279	99.7				100,045		
Folder #19	618	Prestressed Concrete Slab (6 Inch)	Sq. Ft.							300,613	+1,113	100.4				299,500		
Folder #20	619	3 Inch Ductile Iron Pipe	Lin. Ft.							6	0	100.0				6		
Folder #21	619	4 Inch Ductile Iron Pipe	Lin. Ft.							120	0	100.0				120		
Folder #22	619	6 Inch Ductile Iron Pipe	Lin. Ft.							8	0	100.0				8		
Folder #23	619	8 Inch Ductile Iron Pipe	Lin. Ft.							8,830	0	100.0				8,830		
Folder #24	619	3 Inch Pressure Reducing Valve	Each							1	0	100.0				1		
Folder #25	619	6 Inch Pressure Reducing Valve	Each							1	0	100.0				1		
Folder #26	619	1/2 Inch Relief Valve	Each							5	0	100.0				5		
Folder #27	619	1/2 Inch Gate Valve	Each							11	0	100.0				11		
Folder #28	619	1 Inch Gate Valve	Each							6	0	100.0				6		
Folder #29	619	3 Inch Gate Valve	Each							2	0	100.0				2		
Folder #30	619	4 Inch Gate Valve	Each							34	0	100.0				34		
Folder #31	619	6 Inch Gate Valve	Each							2	0	100.0				2		
Folder #32	619	8 Inch Gate Valve	Each							7	0	100.0				7		
Folder #33	619	8 Inch Check Valve	Each							2	0	100.0				2		
Folder #34	619	4 1/4 Inch Fire Hydrant	Each							34	0	100.0				34		
Folder #35	619	8 Inch Expansion Joint (Single Slip)	Each							1	0	100.0				1		
Folder #36	619	8 Inch Expansion Joint (Double Slip)	Each							17	0	100.0				17		

FINAL (R-1) Rev. Quantity ~ 11-14-78 ~ E.B.
SUMMARY OF APPROXIMATE QUANTITIES

AS CONSTRUCTED

NO REVISIONS REVISED VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	5	

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	FINAL PROJECT TOTALS	DIFF.	%	PROJECT TOTALS
BOOK	PAGE	SHEET							
Folder #37			620	Janitorial Service	Month	7.75	-0.25	96.9	8
Folder #38			622	Cross Passageway Door	Each	3	0	100.0	3
Folder #39			622	Transformer Vault Door	Each	3	0	100.0	3
Folder #40			622	Ventilation Building Door	Each	2	0	100.0	2
Folder #41			622	Placing Basement Emergency Door	Each	1	0	100.0	1
Folder #42			622	Fire Extinguisher Cabinet	Each	34	0	100.0	34
Folder #43			622	Telephone Cabinet	Each	11	0	100.0	11
Folder #44			622	Instrumentation Cabinet	Each	45	0	100.0	45
Folder #45			622	Pullbox Station	Each	50	0	100.0	50
Folder #46			622	Duct Access Hatch Door	Each	8	0	100.0	8
Folder #47			622	Duct Divider Wall Door	Each	8	0	100.0	8
Folder #48			622	Sliding Bulkhead Door	Each	2	0	100.0	2
Folder #49			622	Porcelain Enamel Signs	L.S.	1	0	100.0	1
Folder #50			622	Port Damper	Each	1,049	0	100.0	1,049
Folder #51			622	Portal Attendant Booth	Each	2	0	100.0	2
Folder #52			622	Gas Equipment Building	Each	2	0	100.0	2
Folder #53			622	Electrical Panel Building	Each	2	0	100.0	2
Folder #54			622	Flagpole	Each	2	0	100.0	2
Folder #55			622	Fire Extinguisher	Each	34	0	100.0	34
Folder #56			626	Mobilization	L.S.	1	0	100.0	1
Folder #57			631	Tunnel Power Supply System	L.S.	1	0	100.0	1
Folder #58			631	Tunnel Lighting System	L.S.	1	0	100.0	1
Folder #59			632	Heat Tracing System	L.S.	1	0	100.0	1
Folder #60			632	TV Surveillance System South Tunnel	L.S.	1	0	100.0	1
Folder #61			632	Traffic Control System	L.S.	1	0	100.0	1
Folder #62			632	Emergency Radio System (Mobile)	L.S.	1	0	100.0	1
Folder #64			641	West Building Ventilation Modifications	L.S.	1	0	100.0	1
Folder #65			642	CO Sampling and Analyzing System	L.S.	1	0	100.0	1
Folder #67			643	Propane System Modifications	L.S.	1	0	100.0	1
Folder #68			651	8 Inch Concrete Masonry Block Wall	Sq. Ft.	230	0	100.0	230
Folder #69			651	12 Inch Concrete Masonry Block Wall	Sq. Ft.	410	0	100.0	410
Folder #70			651	Center Bulkhead	L.S.	1	0	100.0	1
Folder #71			654	Porcelain Enamel Ceiling Panels (Fixed)	Sq. Ft.	279,672	-664	99.8	280,336 (R-1)
Folder #72			654	Porcelain Enamel Ceiling Panels (Suspended)	Sq. Ft.	19,750	0	100.0	19,750
Folder #74			655	Glazed Structural Wall Tile	Sq. Ft.	229,230	0	100.0	229,230
Folder #76			656	Walkway	Lin. Ft.	8,769	0	100.0	8,769
			699	Fixed Fee	L.S.	1	0	100.0	1

FINAL ~~APPROXIMATE~~ QUANTITIES

(R-1) Deleted Item - 11-14-78 - E.B.

AS CONSTRUCTED
 NO REVISIONS REVISED VOID

FEDERAL ROAD DISTRICT NO. VIII COLORADO PROJ. NO. 170-3(23)220 SHEET NO. 6 TOTAL SHEETS

INDEX	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	FINAL PROJECT TOTALS	DIFF.	%	PROJECTED
							TOTALS AMOUNT
<u>FORCE ACCOUNT</u>							
	F/A01	On-the-Job Trainee	F.A. Each	\$5,287.60	-\$2,712.40	66	\$8,000.00 #
	F/A02	Erosion Control	F.A.	0	-\$20,000.00	0	\$20,000.00 #
	F/A03	Portal Attendant Booths Electric service and communication within the Ventilation Buildings	F.A.	\$6,757.10	+\$2,757.10	169	\$4,000.00 #
	F/A04	Minor Contract Revisions See Sheet 6A and 6B	F.A.				/
(R-1)	F/A05	Deleted					
	F/A06	Telephone Service (Work by Mtn. Bell) See Sheet 6A	F.A.				/
PROJECT TOTALS							
<u>NON-FEDERAL AID</u>							
Folder #62	632	Emergency Radio System (Portable)	L.S.	1	0	100.0	1
Folder #63	641	East Building Ventilation Modifications	L.S.	1	0	100.0	1
Folder #66	642	CO Sampling and Analyzing System (Furnish Only)	L.S.	1	0	100.0	1
Folder #73	654	Porcelain Enamel Ceiling Panels (Spare)	Sq. Ft.	421	0	100.0	421
Folder #75	655	Glazed Structural Wall Tile (Spare)	Sq. Ft.	1,802	0	100.0	1,802

DRAWING G-6

FINAL SUMMARY OF CONTRACT MODIFICATION ORDERS

C.M.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	P/N	REMARKS
F/A 01	ON THE JOB TRAINEE	\$8,000.00	\$5,287.60	P	
F/A 02	EROSION CONTROL	\$20,000.00	\$0.00	P	
F/A 03	PORTAL ATTENDANT BOOTHS ELECTRIC SERVICE AND COMMUNICATION WITHIN THE VENTILATION BUILDINGS	\$4,000.00	\$6,757.10	P	
F/A 04	MINOR CONTRACT REVISIONS;				
	LINE ITEM 1 : REMOVE EAST & WEST TRANSITIONS INSTALLED ON I 70-3(34)	\$2,500.00	\$5,000.00	F	
	LINE ITEM 2 : CHIPPING CURB FOR PLACEMENT OF CONDUIT FOR LOOP DETECTORS	\$3,000.00	\$5,000.00	P	
	LINE ITEM 3 : ADDITIONAL COST FOR FLAG POLES	\$330.00	\$330.00	P	
	LINE ITEM 4 : PROCUREMENT OF CEILING SUPPORT HANGER BOLTS FOR TRANSITION AREA.	\$3,000.00	\$1,984.19	P	
	LINE ITEM 5 : OVERRUN OF LINE ITEM 1	\$3,500.00	\$3,690.55	P	
	LINE ITEM 6 : OVERRUN OF LINE ITEM 2	\$4,000.00	\$3,077.50	P	
	LINE ITEM 7 : CONNECT EXISTING DRAINAGE TO I 70-3(23) DRAINAGE LINES	\$800.00	\$969.20	P	
	LINE ITEM 8 : CONCRETE REMOVAL IN CROWN OF W. TRANSITION AREA	\$2,000.00	\$3,323.61	P	
	LINE ITEM 9 : EXTENSION OF (T4) TELEPHONE TERMINAL BOX 6 INCHES	\$200.00	\$200.00	P	
	LINE ITEM 10 : INSTALL SIGNAL WIRING FROM E. VENT. BUILDING TO E. PROPANE SYSTEM	\$500.00	\$500.00	N	
	LINE ITEM 11 : EXTEND OVERHEIGHT DETECTOR CONDUIT AT STA. 416+00	\$500.00	\$696.08	P	
	LINE ITEM 12 : EXTEND 4/0 GROUNDING CABLE FROM TUNNEL TO VENT. BUILDINGS	\$500.00	\$683.50	P	
	LINE ITEM 13 : CUT HOLES IN CEILING STEEL FOR MIS-SET IMBEDS ON I 70-3(81)	\$5,000.00	CANCELLED BY C.M.O. 17	P	
	LINE ITEM 14 : INSTALL EXPANSION BOLT IN ANGLE SUPPORT FOR N. CURB WALKWAY	\$4,400.00	\$4,400.00	P	
	LINE ITEM 15 : MODIFY DUCT WORK FROM TUNNEL TO GENERATOR ROOM AT W. PORTAL	\$1,700.00	\$1,700.00	P	
	LINE ITEM 16 : PLACE CONDUIT UNDER LOOP ROADS FOR L.P. GAS AT E. & W. VENT. BUILDINGS	\$700.00	\$551.42	N	
	LINE ITEM 17 : PLACE ROCK BOLTS IN TOP STEEL AT EAST TRANSITION	\$4,000.00	\$5,301.32	P	
	LINE ITEM 18 : CLEAN MATERIAL FROM AROUND PORTAL ATT. BOOTHS FOR PAVING OPERATION	\$500.00	CANCELLED		
	LINE ITEM 19 : PROCURE & INSTALL GFI GROUND RECEPTACLE	\$2,000.00	\$2,000.00	P	
	LINE ITEM 20 : MODIFICATION OF TELEPHONE & D.C. PULL BOXES	\$200.00	CANCELLED		
	LINE ITEM 21 : EXTEND CONDUIT & CONDUCTOR FROM PORTAL LIGHT TO WINK-O-MATIC	\$500.00	\$1,075.59	P	
	LINE ITEM 22 : TELEPHONE BACKING PLYWOOD	\$200.00	\$408.40	P	
	LINE ITEM 23 : GROUND CABLE EXTENSION AT X-PASSAGE	\$1,000.00	\$1,000.00	P	
	LINE ITEM 24 : EXTEND CONDUITS AT 26N., 26S. & 3N.	\$5,000.00	\$6,490.14	P	
	LINE ITEM 25 : INSTALL CONDUITS & CONDUCTORS SC-9, SC-10 & SC-11	\$1,090.00	\$1,090.00	P	
	LINE ITEM 26 : REMOVE & REPLACE DUCT WORK IN EAST VENT. BUILDING	\$3,004.00	\$3,004.00	P	
	LINE ITEM 27 : C.O. ANALYZER BOTTLES	\$800.00	\$794.92	P	
	LINE ITEM 28 : ADDITIONAL CONDUCTOR FOR LOOP DETECTOR	\$500.00	\$399.50	P	
	LINE ITEM 29 : CUT REBAR FROM WALL IN E. STUB TUNNEL	\$500.00	\$501.43	P	
	LINE ITEM 30 : INSTALL CO-AX. CABLE FROM TV. CAMERA TO JUNCTION BOX	\$250.00	\$243.10	P	
	LINE ITEM 31 : EXTEND OVERHEIGHT DETECTOR AT STA. 405 +	\$1,000.00	\$975.76	P	
	LINE ITEM 32 : SUBSTITUTE 15 KVA TRANSFORMER FOR 7 1/2 KVA TRANSFORMER	\$3,000.00	\$2,742.85	P	
	LINE ITEM 33 : INSTALL SAND AROUND CONDUITS IN TRENCHES	\$2,500.00	\$2,178.75	N	
	LINE ITEM 34 : FABRICATE COVERS FOR PUMPS AT GAS BUILDINGS	\$500.00	\$544.38	P	
	LINE ITEM 35 : D.C. FEEDER CORRECTION FROM PREVIOUS CONTRACT	\$200.00	\$231.53	P	
	LINE ITEM 36 : MODIFY SAIL SWITCHES AND INSTALL PER CODE	\$5,000.00	\$2,034.59	N	
	LINE ITEM 37 : BLOW OUT LINES FOR STANDBY PROPANE SYSTEM	\$5,000.00	\$2,642.04	P	
	LINE ITEM 38 : SWABBING CONDUITS	\$1,500.00	\$2,675.47	N	
	LINE ITEM 39 : BREAK PKS BATCH PLANT FOUNDATION	\$2,500.00	\$2,569.22	P	
	LINE ITEM 40 : INSTALL GROUND WIRE IN TRENCHES FOR OVERHEIGHT VEHICLE DETECTOR	\$2,200.00	\$2,081.23	P	
	LINE ITEM 41 : RELOCATE "DISCONNECT SWITCH"	\$300.00	\$251.55	P	
	LINE ITEM 42 : REPAIR SEVERED GROUND WIRE AT E. VENT. BUILDING	\$375.00	\$356.10	P	
	LINE ITEM 43 : RETEST WATER LINE	\$2,000.00	\$2,834.74	P	
	LINE ITEM 44 : REPAIR BITUTHANE MEMBRANE	\$3,480.00	\$3,469.61	N	
	LINE ITEM 45 : INSTALL NEW O.H. DETECTOR BASE	\$2,325.00	\$2,325.35	N	
	LINE ITEM 46 : WATER BLAST TYPE 4A CURB	\$4,000.00	\$4,000.00	N	
	LINE ITEM 47 : SURFACE PREPARATION OF TYPE 4A CURB	\$4,133.00	\$3,054.37		
	LINE ITEM 48 : EPOXY REPAIR OF TYPE 4A CURB	\$5,216.00	\$4,071.09		
	LINE ITEM 49 : EXTEND CONDUIT AT EMERGENCY PULL BOXES	\$3,928.00	\$3,399.16		
	LINE ITEM 50 : USE TELEPHONE ELBOWS AT PULL BOXES	\$3,000.00	\$3,000.00		
	LINE ITEM 51 : L.P. SYSTEM (81) TEST	\$2,000.00	\$2,054.09		
	LINE ITEM 52 : RELOCATE O.H. DETECTOR	\$5,000.00	\$5,761.94		
	LINE ITEM 53 : WEST PORTAL L.P. CORRECTION	\$5,000.00	\$5,098.08		
	LINE ITEM 54 : EAST PORTAL L.P. CORRECTION	\$5,000.00	\$5,099.08		
	LINE ITEM 55 : MODIFY PUMP COVERS	\$1,175.00	\$1,166.86		

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	IT-3(63)220	68	

FINAL SUMMARY OF CONTRACT MODIFICATION ORDERS

AS CONSTRUCTED		
NO REVISIONS <input type="checkbox"/>	REVISED <input type="checkbox"/>	VOID <input type="checkbox"/>

C.M.O. NO.	DESCRIPTION	PLAN AMOUNT	FINAL AMOUNT	P/N	REMARKS
F/A 05	DELETED	—	—	P	
F/A 06	TELEPHONE SERVICE (WORK BY MOUNTAIN BELL)	\$7,000.00	—	P	
C.M.O. 7	PRICE REDUCTION ON MATERIALS	-\$1,424.00	-\$1,424.00	P	
C.M.O. 8	DELETE SAFETY SCREEN	-\$1,290.00	-\$91.00	P	
C.M.O. 9	INSTALL 4" ABS AND 4" PVC OFFSETS	\$900.00	\$705.10	P	
C.M.O. 10	ADDITIONAL DAYS	19 DAYS	19 DAYS	P	
C.M.O. 11	MOVE OUT - MOVE IN FOR PAVING OPERATION AND COMPLETE LOOP DETECTORS	\$25,000.00	\$80,063.50	P	
C.M.O. 12	MOVE CONSTRUCTION TRAILERS	\$17,000.00	\$16,219.70	P	
C.M.O. 13	INSTALLATION OF ELECTRICAL CONDUITS, STA 120+219 TO 121+22.4	\$11,633.56	\$11,633.56	P	
C.M.O. 14	NOT ISSUED	—	—	P	
C.M.O. 15	SHUT DOWN FOR HOLIDAYS AND MOVE OUT - MOVE IN DURING WEEKENDS	\$116,870.94	\$80,001.15	P	
C.M.O. 16	SWITCH TRAFFIC THROUGH CROSSOVERS FOR WEEKENDS	\$20,970.07	\$40,612.94	P	
C.M.O. 17	CUT HOLES IN CEILING SUPPORT STEEL	\$16,779.18	\$16,779.18	P	
C.M.O. 18	ESCROW ACCOUNT	0.00	0.00	P	
C.M.O. 19	FURNISH AND INSTALL EXPANSION FITTINGS IN VENTILATION DUCTWAYS	\$56,000.00	\$52,326.09	P	

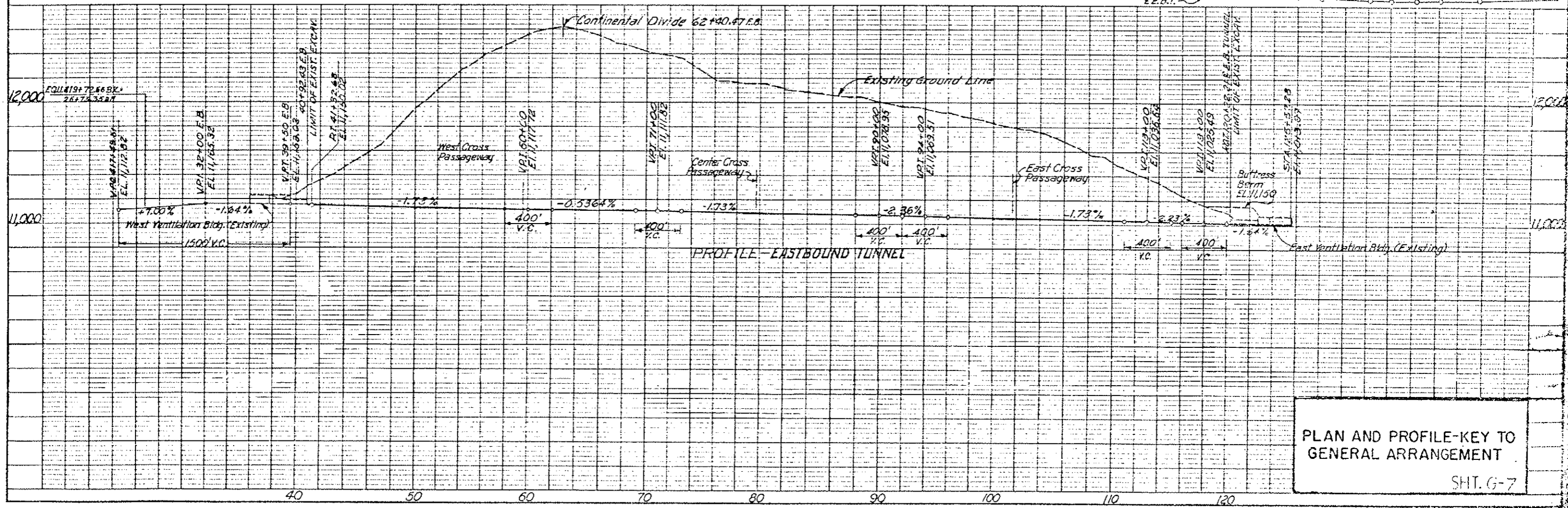
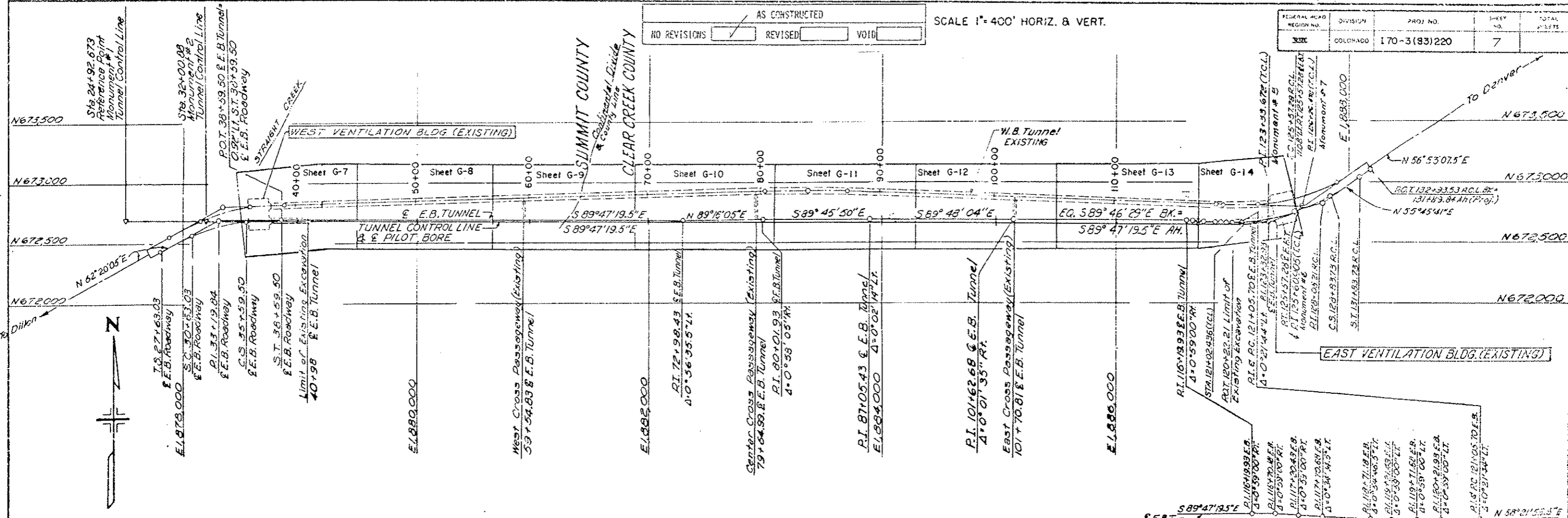
AS CONSTRUCTED
 NO REVISIONS REVISED VOID

SCALE 1" = 400' HORIZ. & VERT.

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
83	COLORADO	170-3(83)220	7	

PLAN	DATE	BY
NOTE BOOK		
BY		

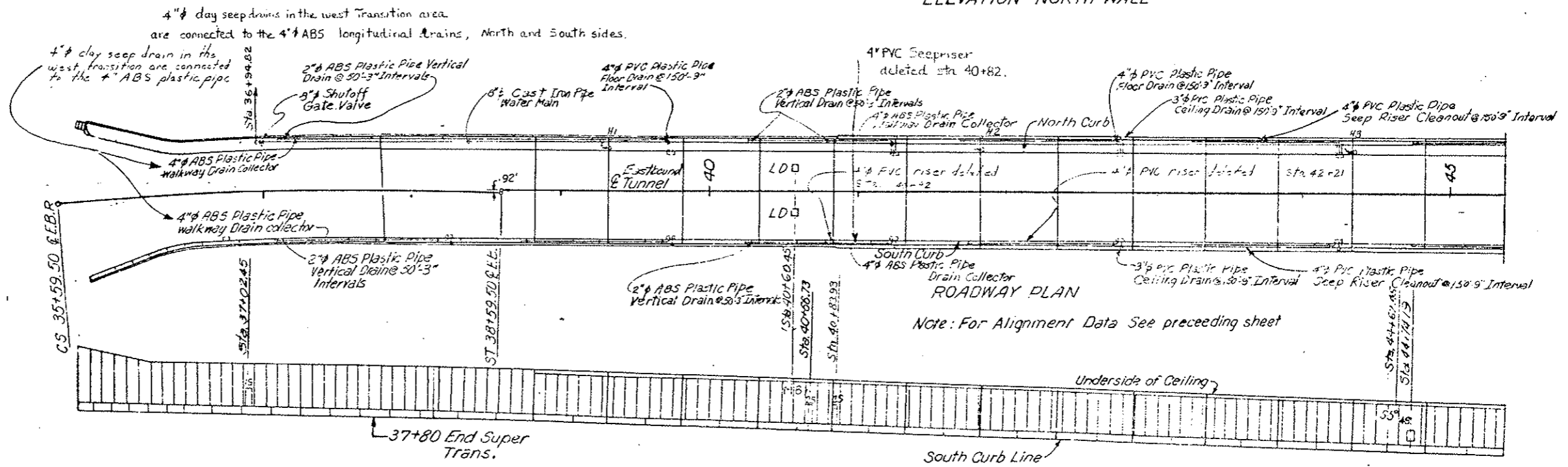
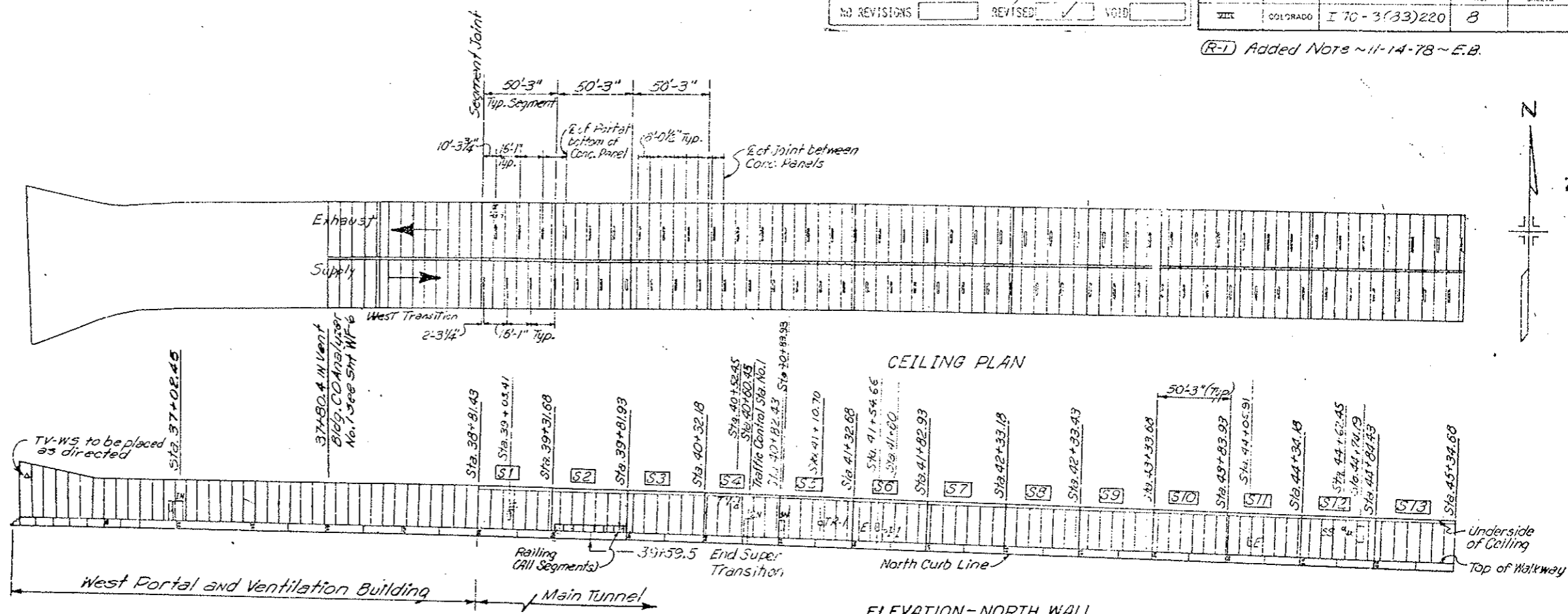
PROFILE	DATE	BY
NOTE BOOK		
BY		



PLAN AND PROFILE-KEY TO GENERAL ARRANGEMENT
 SHT. G-7

AS CONSTRUCTED		FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED	III	COLORADO	I 70-3(33)220	8	

(R-1) Added Note ~11-14-78~E.B.

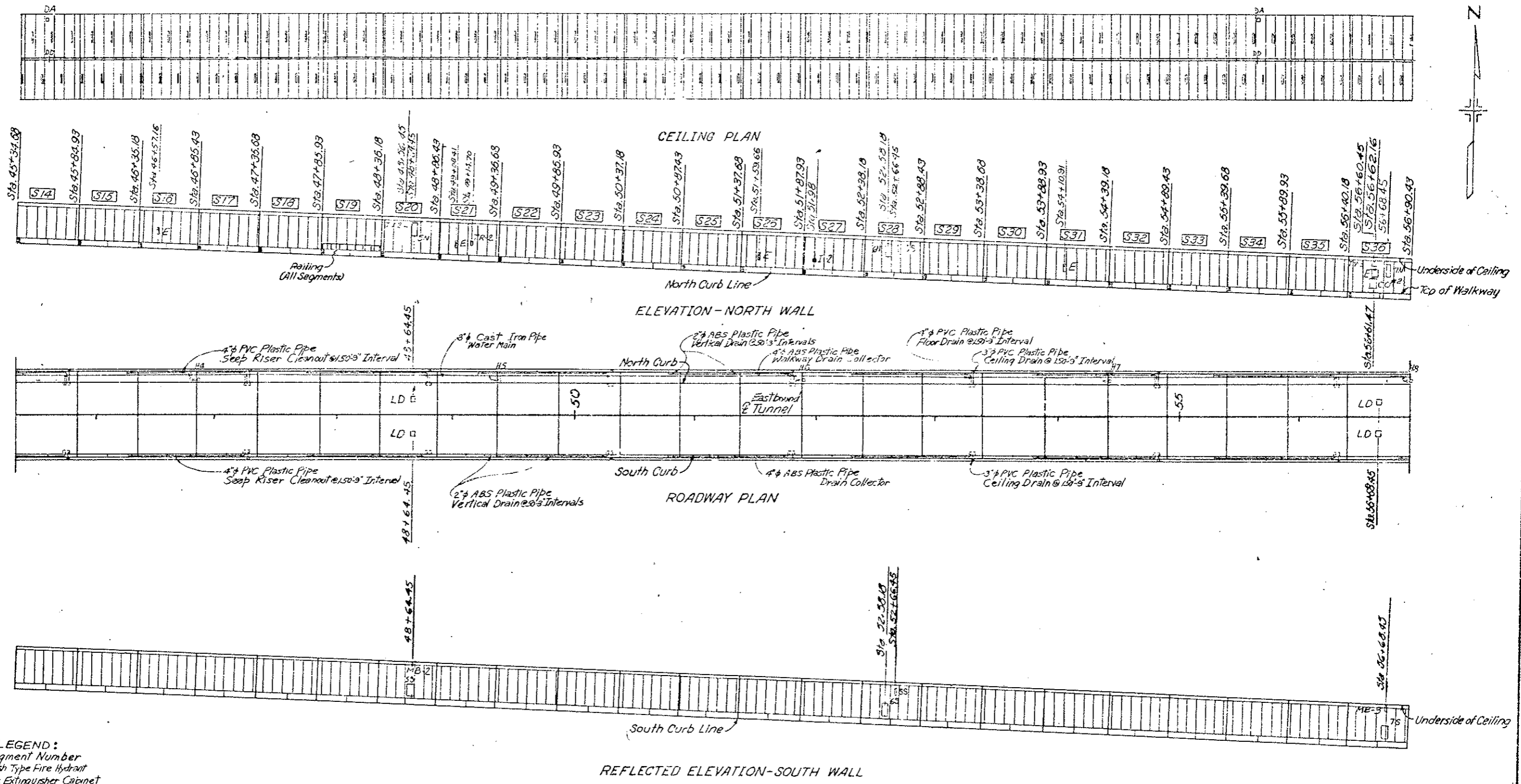
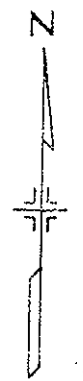


- LEGEND:**
- S Segment Number
 - H Flush Type Fire Hydrant
 - E Fire Extinguisher Cabinet
 - N Electrical Pullbox Cabinet - North Wall
 - S Electrical Pullbox Cabinet - South Wall
 - MB Message Board (Traffic Control System)
 - LD Loop Detector
 - TV Television Camera
 - SS Stop Signal
 - TR Tunnel Emergency Reporting Telephone Cabinet
 - ASH Air Sampling Head
 - CO Carbon Monoxide Analyzer Cabinet
 - PRS Pressure Reducing Station
 - DA Duct Access Hatch
 - I Instrumentation Cabinet
 - DD Duct Divider Door

(R-1) All reference to Cast Iron Pipe (Water Main) on the plans and specifications is hereby changed to Ductile Iron Pipe.

NOTES:
 All longitudinal dimensions are measured horizontally along the Roadway. Stationing given at ends of tunnel segments and general profile stations are taken along the centerline of roadway. Between ends of tunnel segments longitudinal dimensions are taken as the "Detail A" and are taken along the centerline of roadway. In curve segments longitudinal dimensions are taken along the centerline of roadway and projected transversely to radial lines.

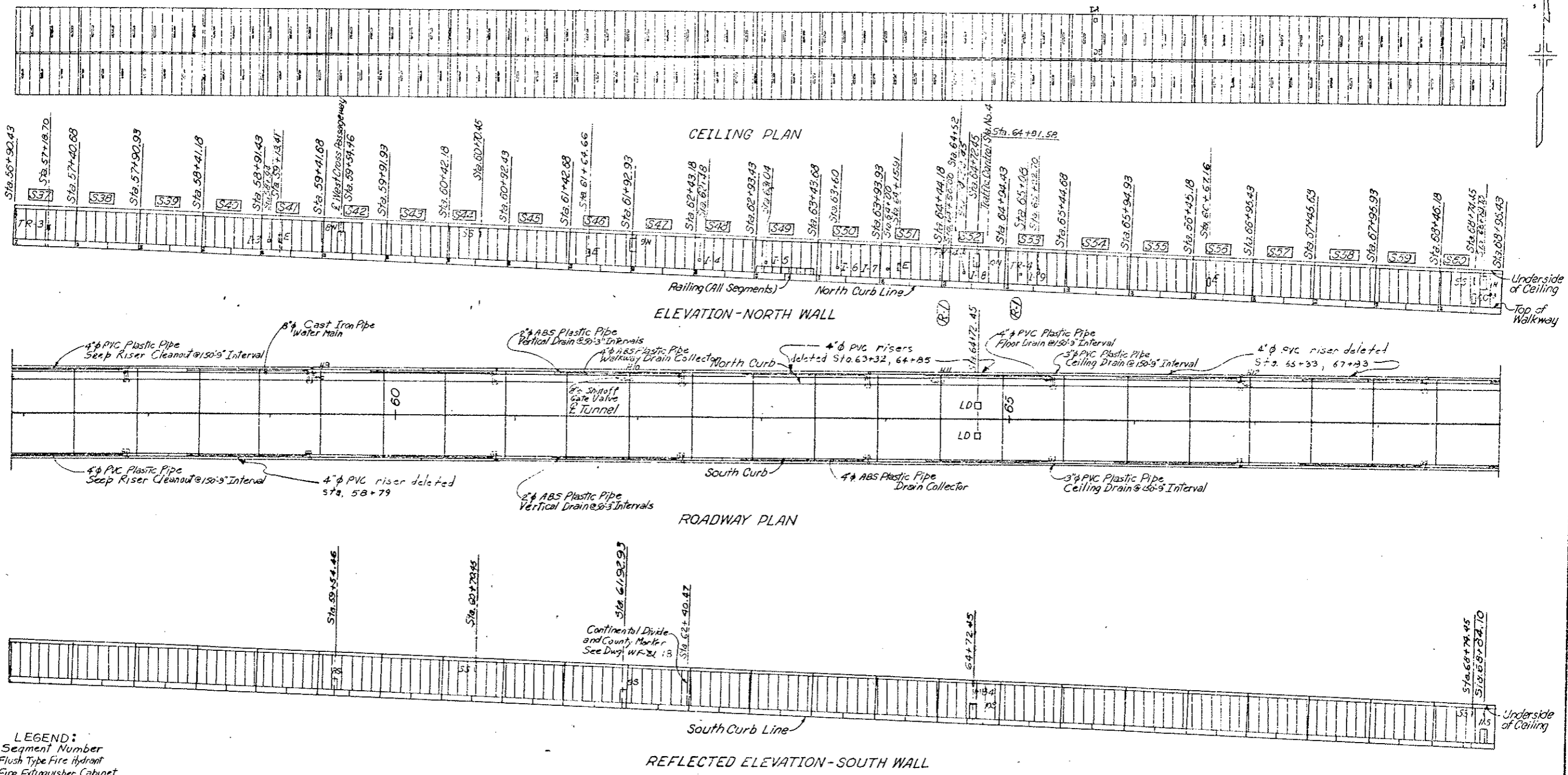
GENERAL ARRANGEMENT
 WEST PORTAL TO STA. 45+34.68



- LEGEND:**
- S Segment Number
 - H Flush Type Fire Hydrant
 - E Fire Extinguisher Cabinet
 - N Electrical Pullbox Cabinet-North Wall
 - S Electrical Pullbox Cabinet-South Wall
 - MB Message Board (Traffic Control System)
 - LD Loop Detector
 - TV Television Camera
 - SS Stop Signal
 - TR Tunnel Emergency Reporting Telephone Cabinet
 - ASH Air Sampling Head
 - CO Carbon Monoxide Analyzer Cabinet
 - PRS Pressure Reducing Station
 - DA Duct Access Hatch
 - I Instrumentation Cabinet
 - DD Duct Divider Door

GENERAL ARRANGEMENT
 STA. 45+34.68 TO STA. 56+90.43
 DWG. NO. G-3

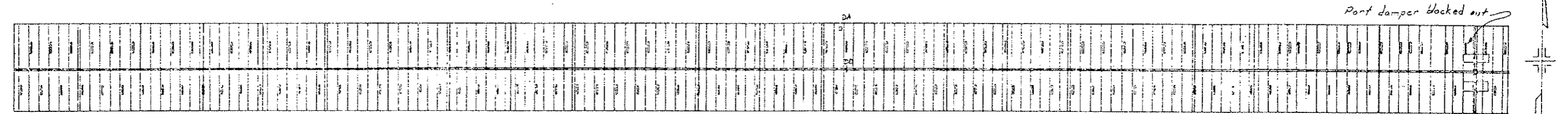
(R.D) Inst. Cab Locations ~ 11-3-78 ~ E.B.



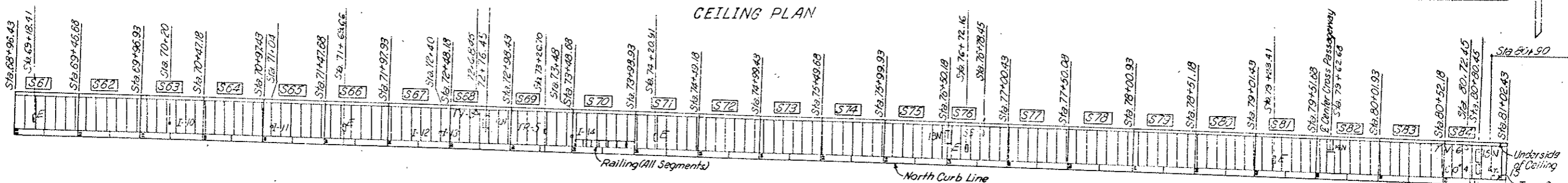
- LEGEND:**
- S Segment Number
 - H Flush Type Fire Hydrant
 - E Fire Extinguisher Cabinet
 - N Electrical Pullbox Cabinet-North Wall
 - S Electrical Pullbox Cabinet-South Wall
 - MB Message Board (Traffic Control System)
 - LD Loop Detector
 - TV Television Camera
 - SS Stop Signal
 - TR Emergency Reporting Telephone Cabinet
 - AS Sampling Head
 - CO Carbon Monoxide Analyzer Cabinet
 - PR Pressure Reducing Station
 - EA Electrical Access
 - IS Instrumentation Cabinet
 - DD Dust Divider

GENERAL ARRANGEMENT
STA. 56+90.43 TO STA. 68+96.43

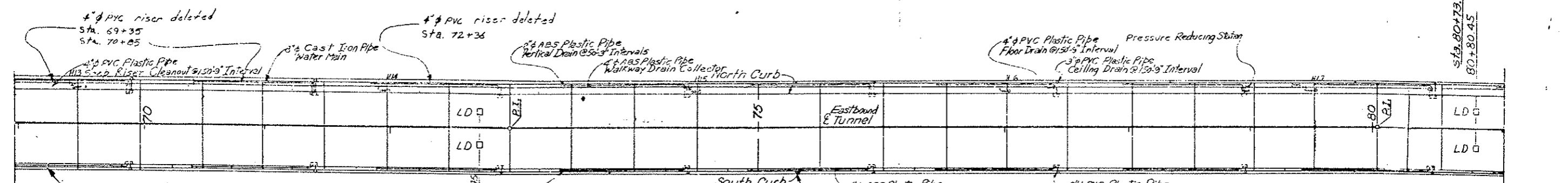
DWG. NO G-10



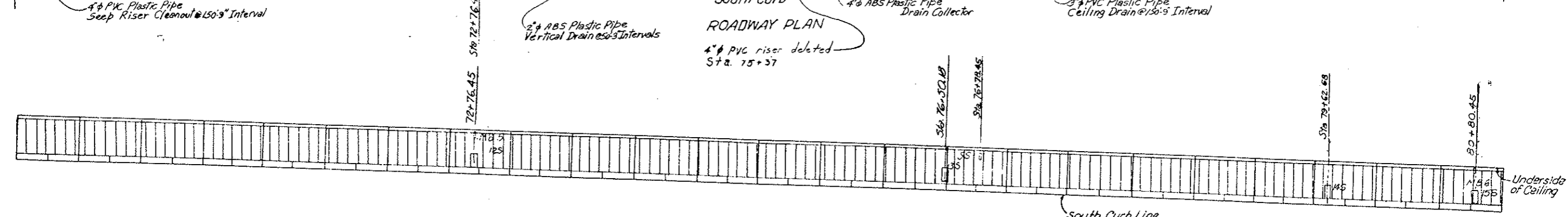
CEILING PLAN



ELEVATION-NORTH WALL



ROADWAY PLAN

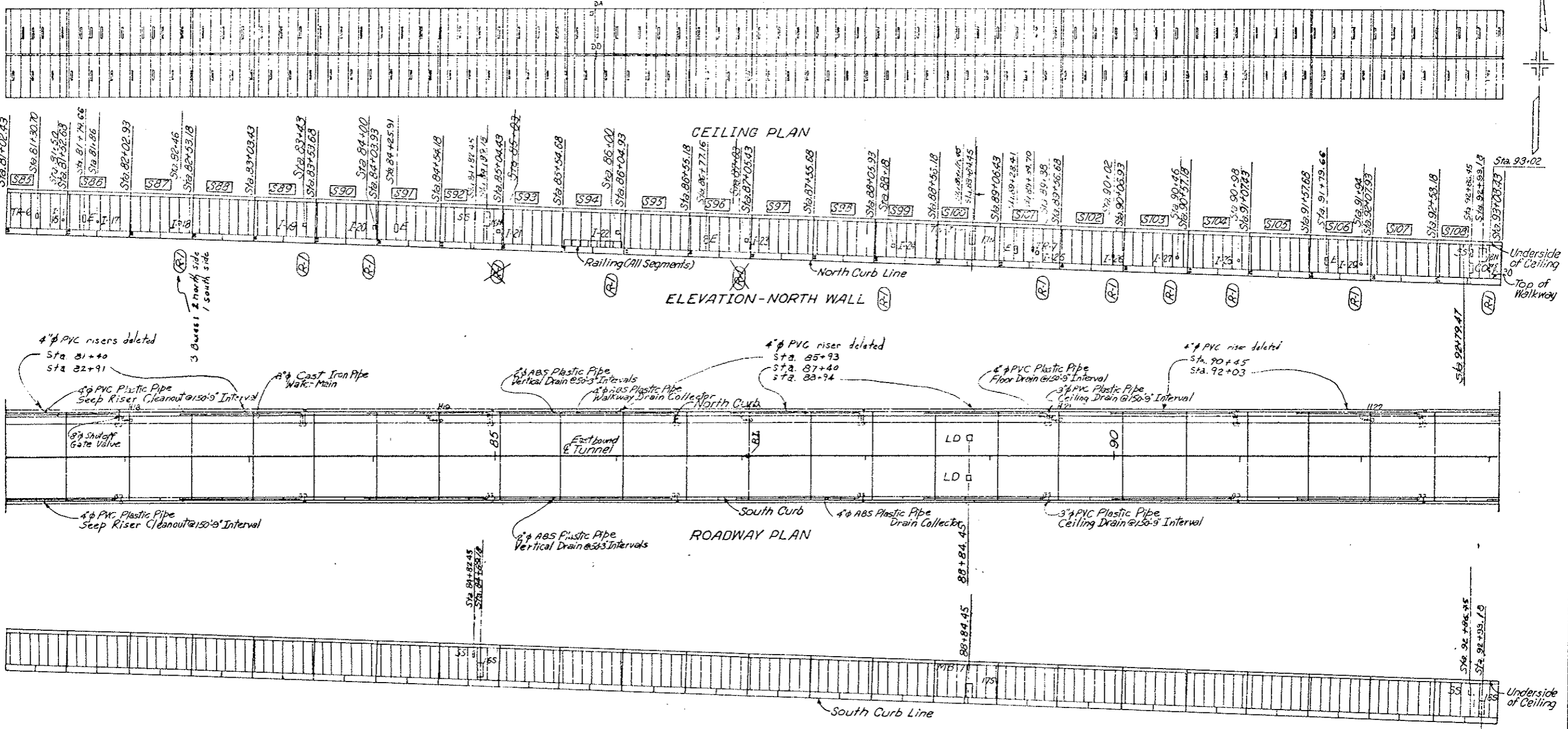


REFLECTED ELEVATION-SOUTH WALL

- LEGEND:**
- S Segment Number
 - H Flush Type Fire Hydrant
 - E Fire Extinguisher Cabinet
 - N Electrical Pullbox Cabinet-North Wall
 - S Electrical Pullbox Cabinet-South Wall
 - MB Message Board (Traffic Control System)
 - LD Loop Detector
 - TV Television Camera
 - SS Stop Signal
 - TR Tunnel Emergency Repeating Telephone Cabinet
 - ASH Air Sampling Head
 - CO Carbon Monoxide Analyzer Cabinet
 - PRS Pressure Reducing Station
 - DA Duct Access Hatch
 - I Instrumentation Cabinet
 - DD Duct Divider Door

GENERAL ARRANGEMENT
 STA. 68+96.43 TO STA. 81+02.43

(R-1) Inst. Cab Locations ~ 11-3-78 ~ E.B.

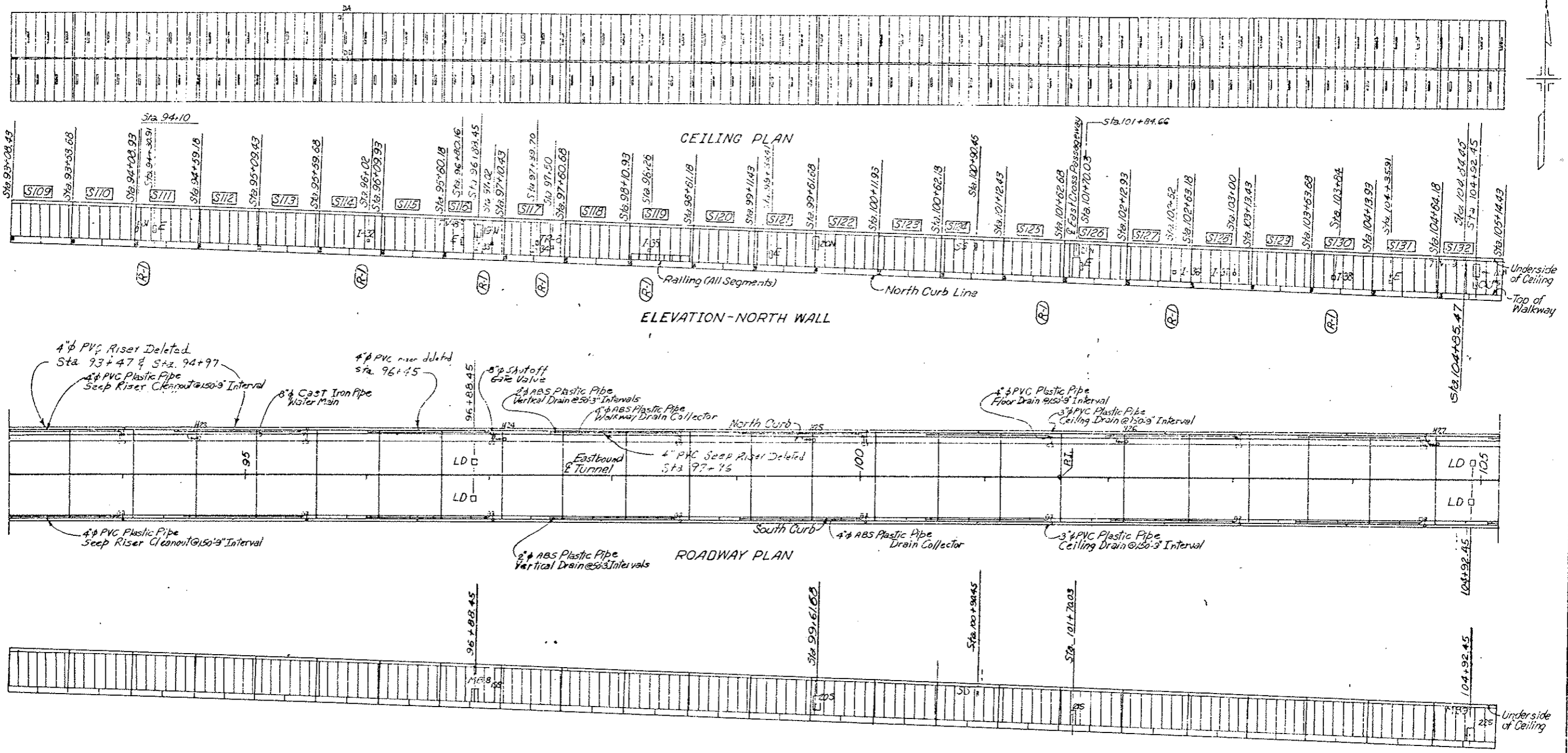


- LEGEND:**
- S Segment Number
 - H Flush Type Fire Hydrant
 - E Fire Extinguisher Cabinet
 - N Electrical Pullbox Cabinet-North Wall
 - S Electrical Pullbox Cabinet-South Wall
 - MB Message Board (Traffic Control System)
 - L.D. Loop Detector
 - T.V. Television Camera
 - SS Stop Signal
 - TR Tunnel Emergency Reporting Telephone Cabinet
 - ASH Air Sampling Head
 - CO Carbon Monoxide Analyzer Cabinet
 - PRS Pressure Reducing Station
 - DA Duct Access Hatch
 - I Instrumentation Cabinet
 - DD Duct Divider Door

Note: Instrumentation Cabinets 20-22 shall be at locations determined by the Engineer.

GENERAL ARRANGEMENT
 STA. 81+02.43 TO STA. 93+08.43
 DWG. N& G-12

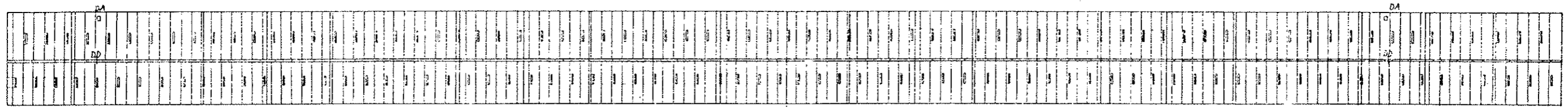
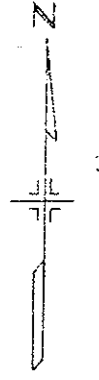
(R-1) Inst Cab Locations ~ 11-3-78 ~ EB.



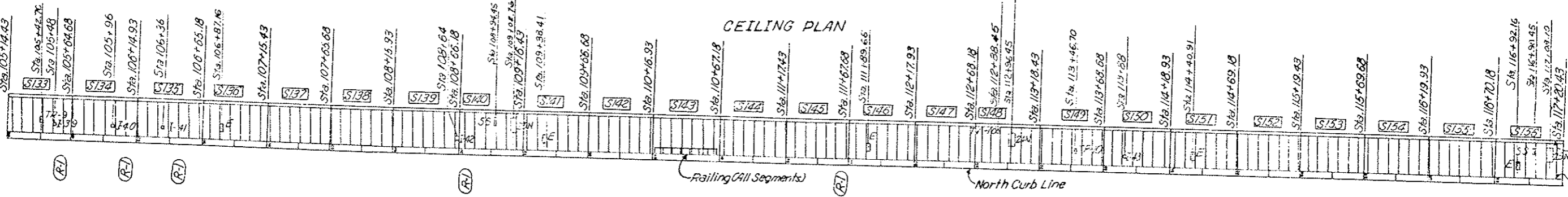
- LEGEND:**
- S Segment Number
 - H Flush Type Fire Hydrant
 - E Fire Extinguisher Cabinet
 - N Electrical Pullbox Cabinet-North Wall
 - S Electrical Pullbox Cabinet-South Wall
 - MB Message Board (Traffic Control System)
 - LD Loop Detector
 - TV Television Camera
 - SS Stop Signal
 - TR Tunnel Emergency Reporting Telephone Cabinet
 - ASH Air Sampling Head
 - CO Carbon Monoxide Analyzer Cabinet
 - PRS Pressure Reducing Station
 - DA Shaft Access Hatch
 - IC Instrumentation Cabinet
 - DD Duct Divider Door

GENERAL ARRANGEMENT
 STA. 93+08.43 TO STA. 105+14.43
 DWG. N2 G-13

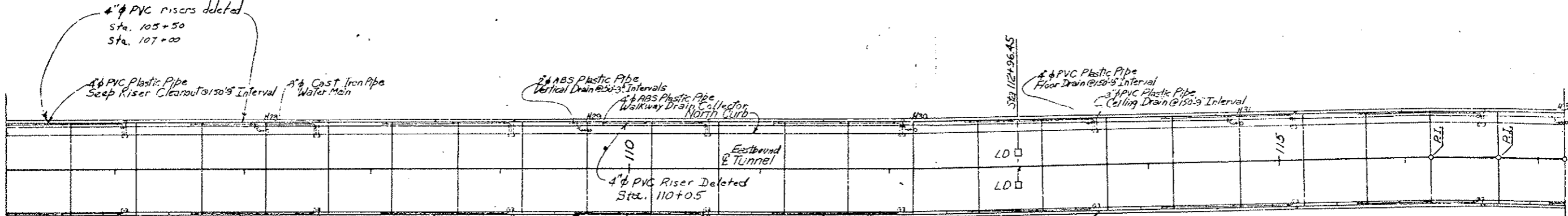
(R-1) Inst. Cab. Locations ~ 11-3-78 ~ E.B.



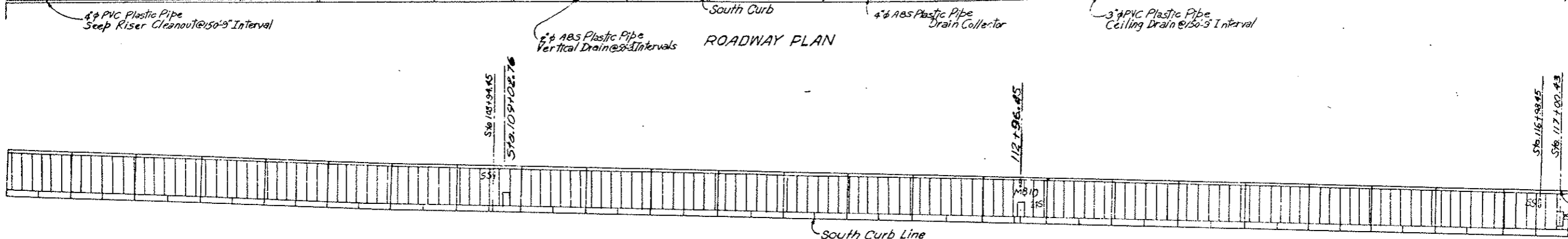
CEILING PLAN



ELEVATION-NORTH WALL



ROADWAY PLAN



REFLECTED ELEVATION-SOUTH WALL

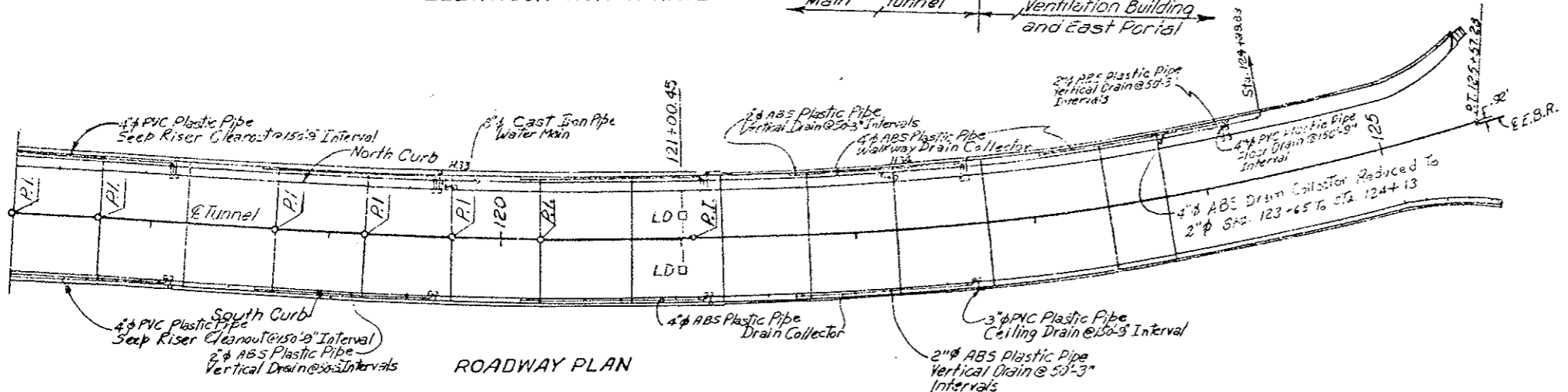
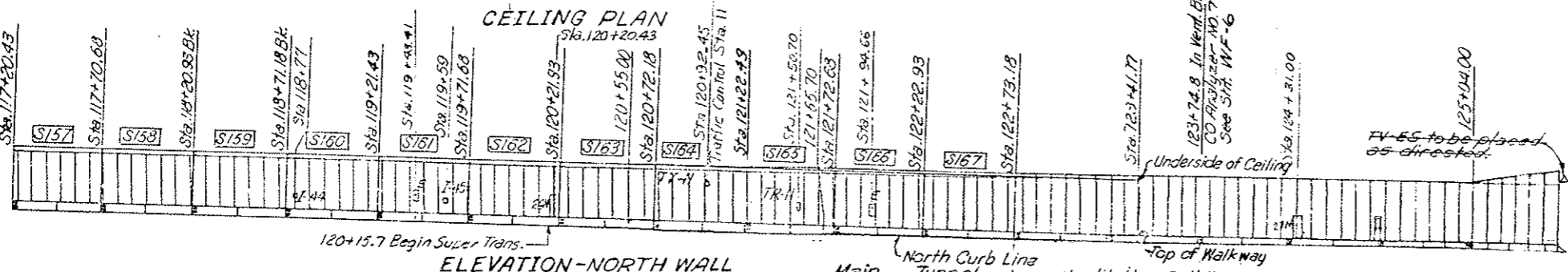
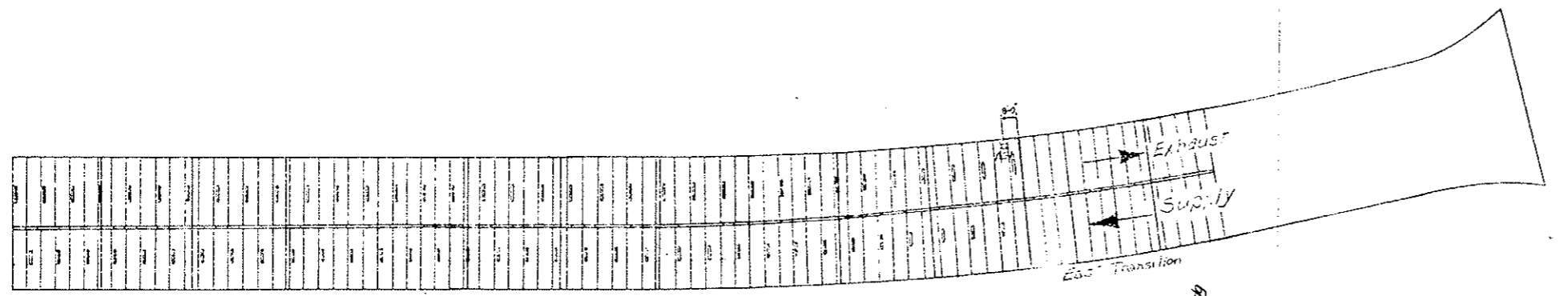
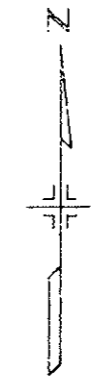
- LEGEND:**
- S Segment Number
 - H Flush Type Fire Hydrant
 - E Fire Extinguisher Cabinet
 - N Electrical Pullbox Cabinet-North Wall
 - S Electrical Pullbox Cabinet-South Wall
 - MS Messing Board (Traffic Control System)
 - LD Loop Detector
 - T Television Camera
 - SS 12\"/>
 - RE Road Emergency Reporting Telephone Cabinet
 - ASH Air Sampling Head
 - CO Carbon Monoxide Analyzer Cabinet
 - PRS Pressure Reducing Station
 - DA Duct Access Hatch
 - I Instrumentation Cabinet
 - DD Duct Divider Door

GENERAL ARRANGEMENT
 STA. 105+14.43 TO STA. 117+20.43
 DWG. NO. G-14

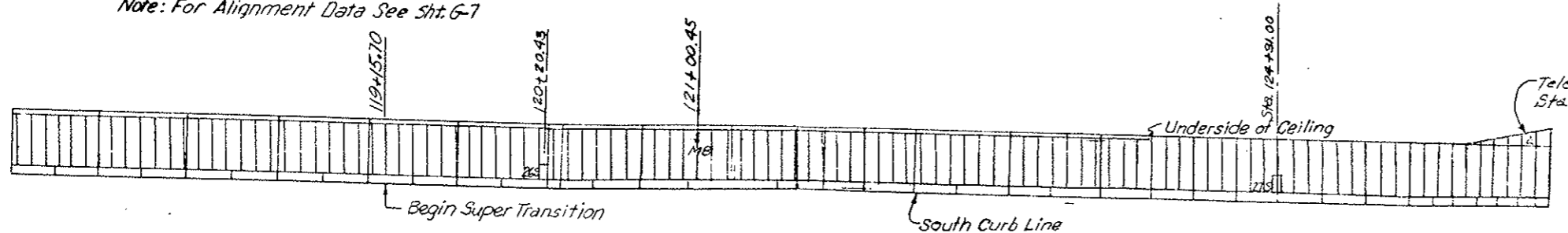
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
7TH	COLORADO	I 70-3(23)220	15	

AS CONSTRUCTED

NO REVISIONS REVISED VOID



Note: For Alignment Data See Sht. G-7



- LEGEND:**
- S Segment Number
 - H Flush Type Fire Hydrant
 - E Fire Extinguisher Cabinet
 - N Electrical Pullbox Cabinet-North Wall
 - S Electrical Pullbox Cabinet
 - MB Message Board (Traffic Control System)
 - LD Loop Detector
 - TV Television Camera
 - SS Stop Signal
 - TR Tunnel Emergency Reporting Telephone Cabinet
 - ASH Air Sampling Hood
 - CO Carbon Monoxide Analyzer Cabinet
 - PRS Pressure Relieving Station
 - DA Duct Access Station
 - I Instrumentation Cabinet
 - DD Duct Divider Door

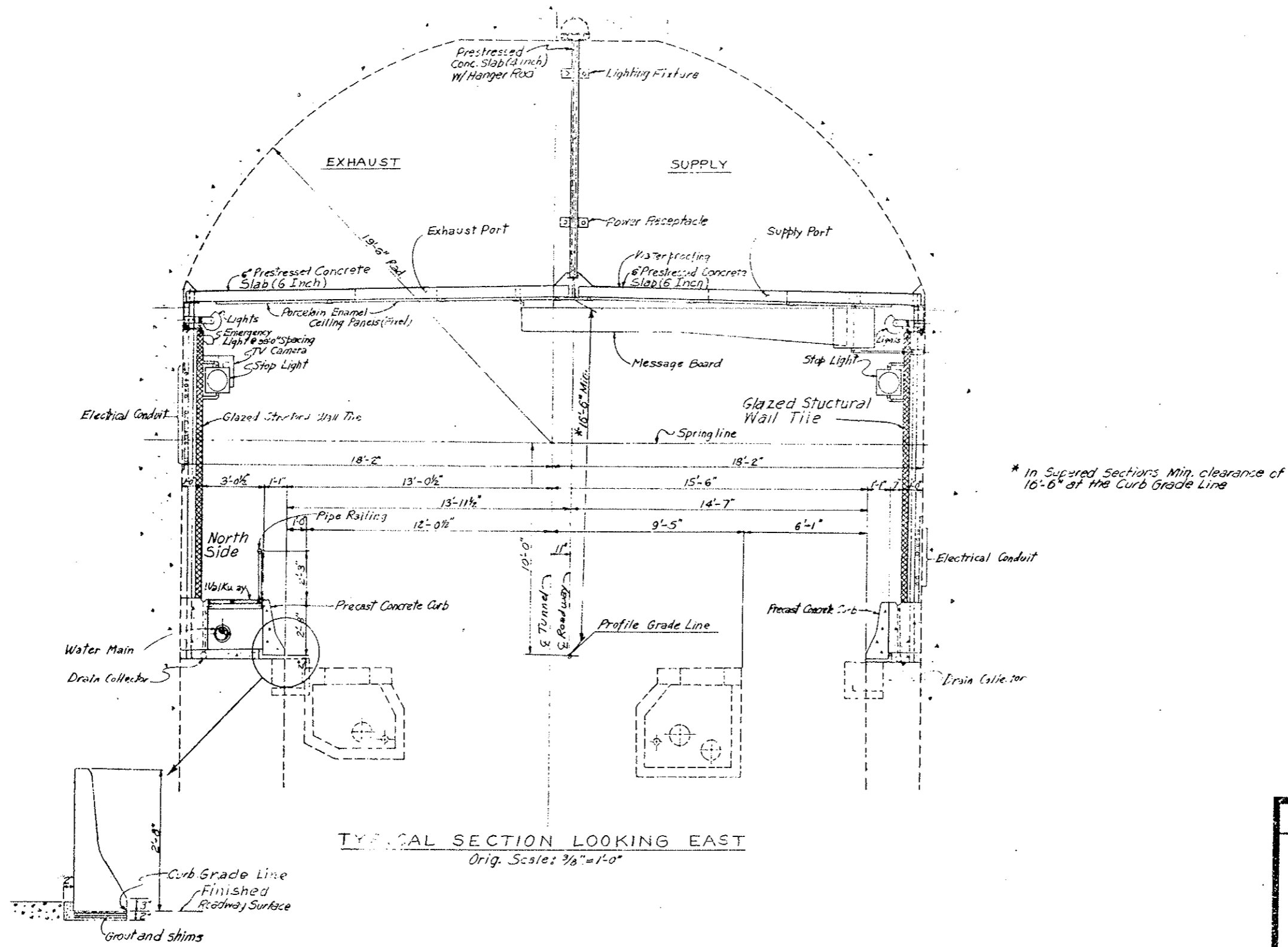
GENERAL ARRANGEMENT
 STA. 117+20.43 TO EAST PORTAL
 DWG. NO. G-15

AS CONSTRUCTED
NO REVISIONS REVISED VOID

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	CO: COLORADO	I 70-3(83)220	16	

REVISIONS	

INITIAL	DATE	CHECKED BY	QUANTITIES BY

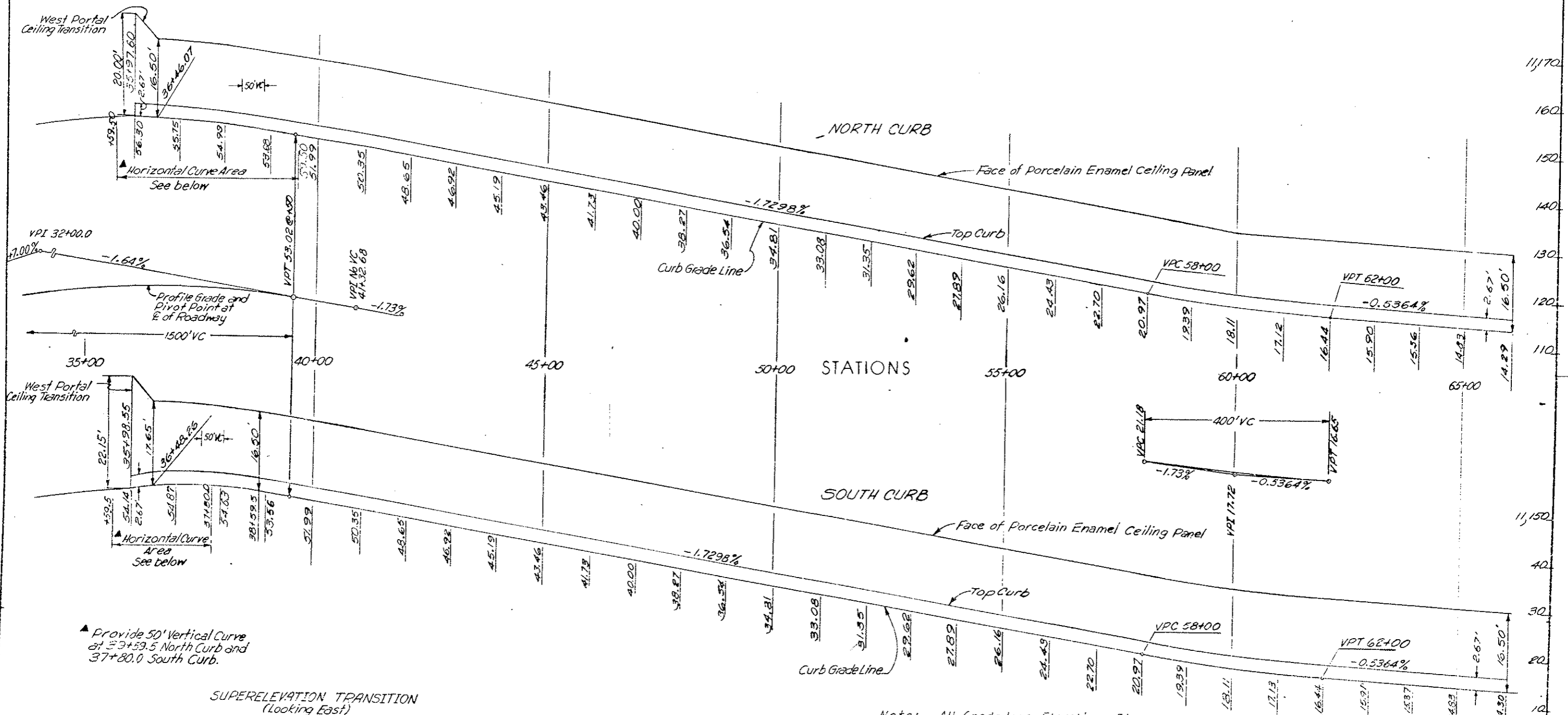


TYPICAL SECTION LOOKING EAST
Orig. Scale: 3/8" = 1'-0"

DIVISION OF HIGHWAYS	
TYPICAL SECTION TUNNEL INTERIOR	
Designer <i>CDOH</i>	Structure Numbers
Detailer <i>J. Letourneau</i>	of
Drawing Number <i>G-16</i>	Drawings

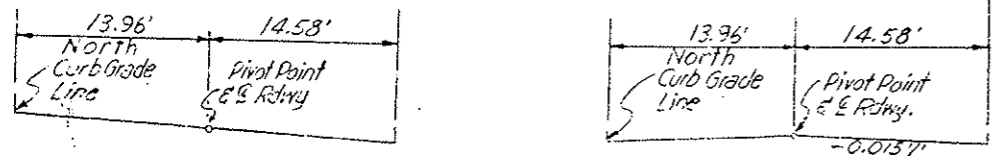
Revision Date: (Preliminary Stage Only)

FEDERAL ROAD REGION NO	DIVISION	PROJ NO	SHEET NO	TOTAL SHEETS
YIU	COLORADO	170-3(83)220	17	
AS CONSTRUCTED				
NO REVISIONS	REVIS	VOID		



▲ Provide 50' Vertical Curve at 33+59.5 North Curb and 37+80.0 South Curb.

SUPERELEVATION TRANSITION (Looking East)



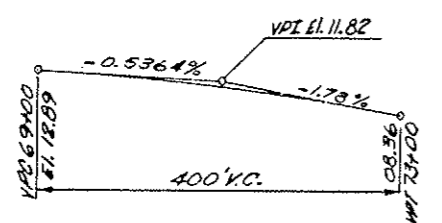
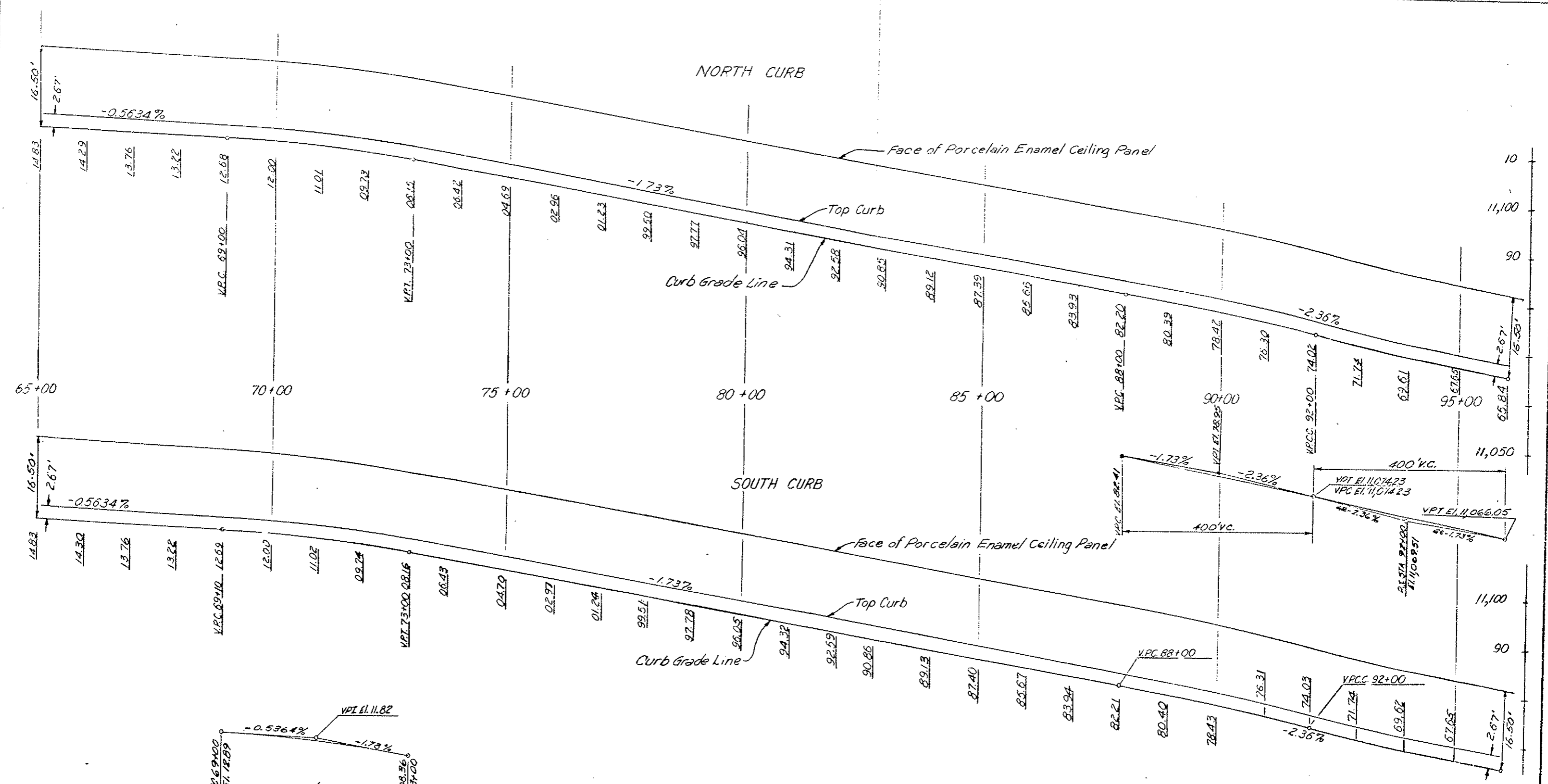
Full Super	35+59.5	0.0581' North and South
Super Transition	37+80.0	+0.0151' North, -0.0151' South
	38+59.0	0.000' North, -0.0151' South
Normal Section	39+59.5	-0.0141' North, 0.0151' South

Note: All Grade Line Elevations Shown Are At Even Stations Unless Otherwise Indicated

Orig. Scale: 1"=100' Horiz.
1"=10' Vert.

DIVISION OF HIGHWAYS	
CURB GRADE LINES IN TUNNEL	
Designer C.D.O.H.	Structure Number
Detailer	Number
Drawing Number 5-17	of Drawings

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	18	
AS CONSTRUCTED				
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID
				<input type="checkbox"/>

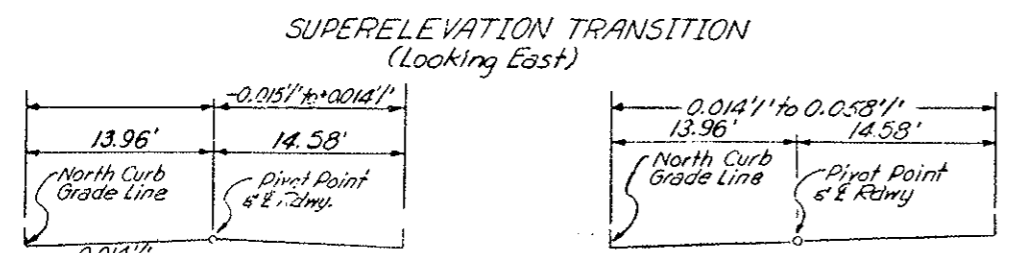
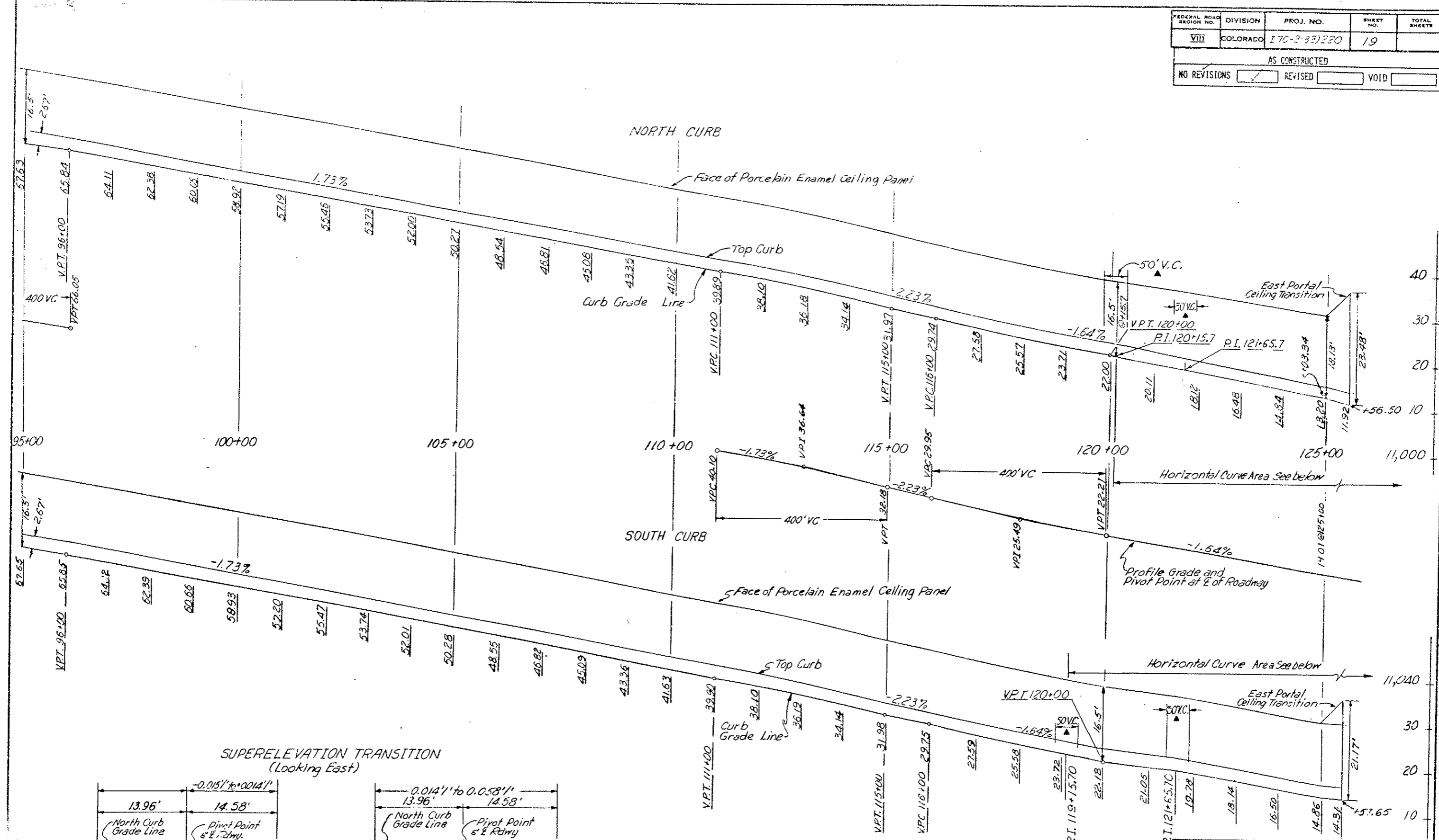


Scale: 1" = 100' - 1/2"
 1" = 10' - 1/2"

DIVISION OF HIGHWAYS		
CURB GRADE LINES IN TUNNEL		
Designer C.D.O.H.	Structure Number	
Detailer		
Drawing Number 5-12	of	Drawings

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(33)220	19	

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID



Transition Super-elevation on South Side of Roadway, from -0.0151' at Sta. 113+15.7 to 0.0081' at Sta. 120+15.7 to +0.0581' at Sta. 121+65.70

Transition Super-elevation on North Side of Roadway, from -0.0141' at Sta. 120+15.7 to -0.0581' at Sta. 121+65.7

Provide 50' Vertical Curve at Sta. 120+15.7 on North Curb and Sta. 119+15.7 on South Curb and Sta. 121+65.7 on both Curbs.

Scale: 1" = 100' Horiz.
1" = 10' Vert.

DIVISION OF HIGHWAYS	
CURB GRADE LINES IN TUNNEL	
Designer C.D.O.H.	Structure Number
Detailer	Number
Drawing Number G-19	of Drawings

WEST PORTAL AREA

AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VII	COLORADO	I70-3(33)220	20	

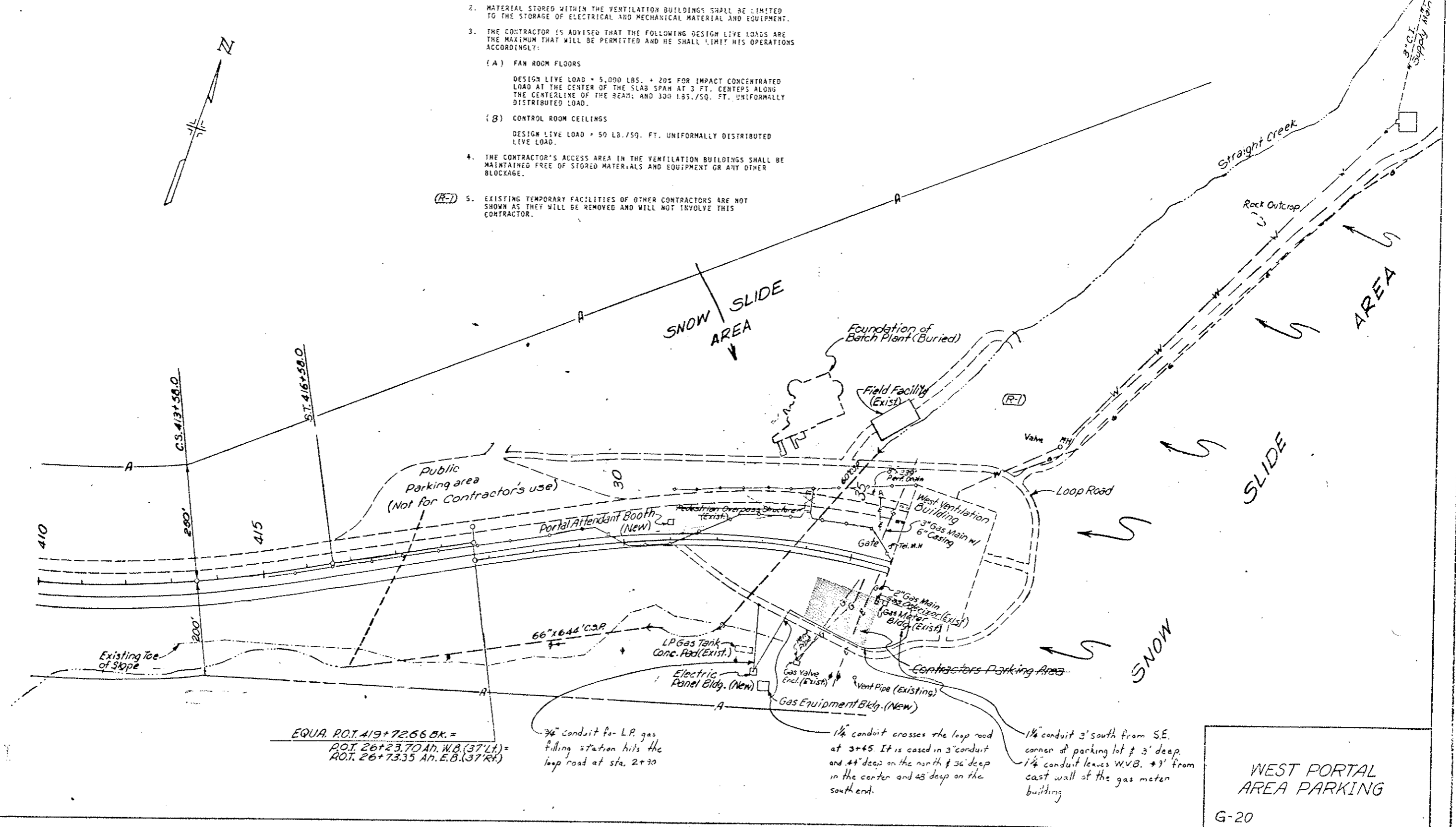
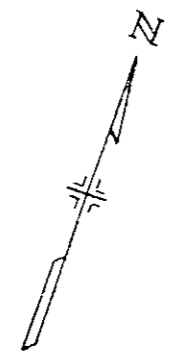
(R-1) Rev. Detail, Added Note ~10-17-78 ~E.B.

NOTES

- MATERIAL SHALL BE STORED SO THAT IT DOES NOT INTERFERE WITH THE NORTH TUNNEL MAINTENANCE OPERATIONS.
- MATERIAL STORED WITHIN THE VENTILATION BUILDINGS SHALL BE LIMITED TO THE STORAGE OF ELECTRICAL AND MECHANICAL MATERIAL AND EQUIPMENT.
- THE CONTRACTOR IS ADVISED THAT THE FOLLOWING DESIGN LIVE LOADS ARE THE MAXIMUM THAT WILL BE PERMITTED AND HE SHALL LIMIT HIS OPERATIONS ACCORDINGLY:
 - (A) FAN ROOM FLOORS
DESIGN LIVE LOAD = 5,000 LBS. + 20% FOR IMPACT CONCENTRATED LOAD AT THE CENTER OF THE SLAB SPAN AT 3 FT. CENTERS ALONG THE CENTERLINE OF THE BEAM; AND 300 LBS./SQ. FT. UNIFORMLY DISTRIBUTED LOAD.
 - (B) CONTROL ROOM CEILINGS
DESIGN LIVE LOAD = 50 LB./SQ. FT. UNIFORMLY DISTRIBUTED LIVE LOAD.
- THE CONTRACTOR'S ACCESS AREA IN THE VENTILATION BUILDINGS SHALL BE MAINTAINED FREE OF STORED MATERIALS AND EQUIPMENT OR ANY OTHER BLOCKAGE.
- (R-1) EXISTING TEMPORARY FACILITIES OF OTHER CONTRACTORS ARE NOT SHOWN AS THEY WILL BE REMOVED AND WILL NOT INVOLVE THIS CONTRACTOR.

LEGEND

Contractors Access Area	
Contractors Storage Area	
Contractors Parking Area	



EQUA. P.O.T. 419+72.66 BK. =
 P.O.T. 26+23.70 AN. W.B. (37' LT.) =
 P.O.T. 26+73.35 AN. E.B. (37' RT.) =

3/4" conduit for L.P. gas filling station hits the loop road at sta. 2+30

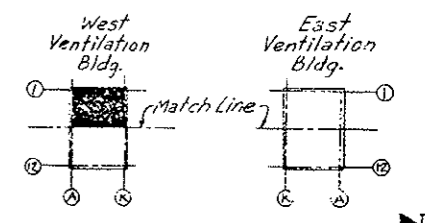
1 1/4" conduit crosses the loop road at 3+45. It is cased in 3" conduit and 44" deep on the north & 36" deep in the center and 48" deep on the south end.

1 1/4" conduit 3' south from S.E. corner of parking lot & 3' deep. 1 1/4" conduit leaves W.V.B. 43' from east wall of the gas meter building

WEST PORTAL AREA PARKING
 G-20

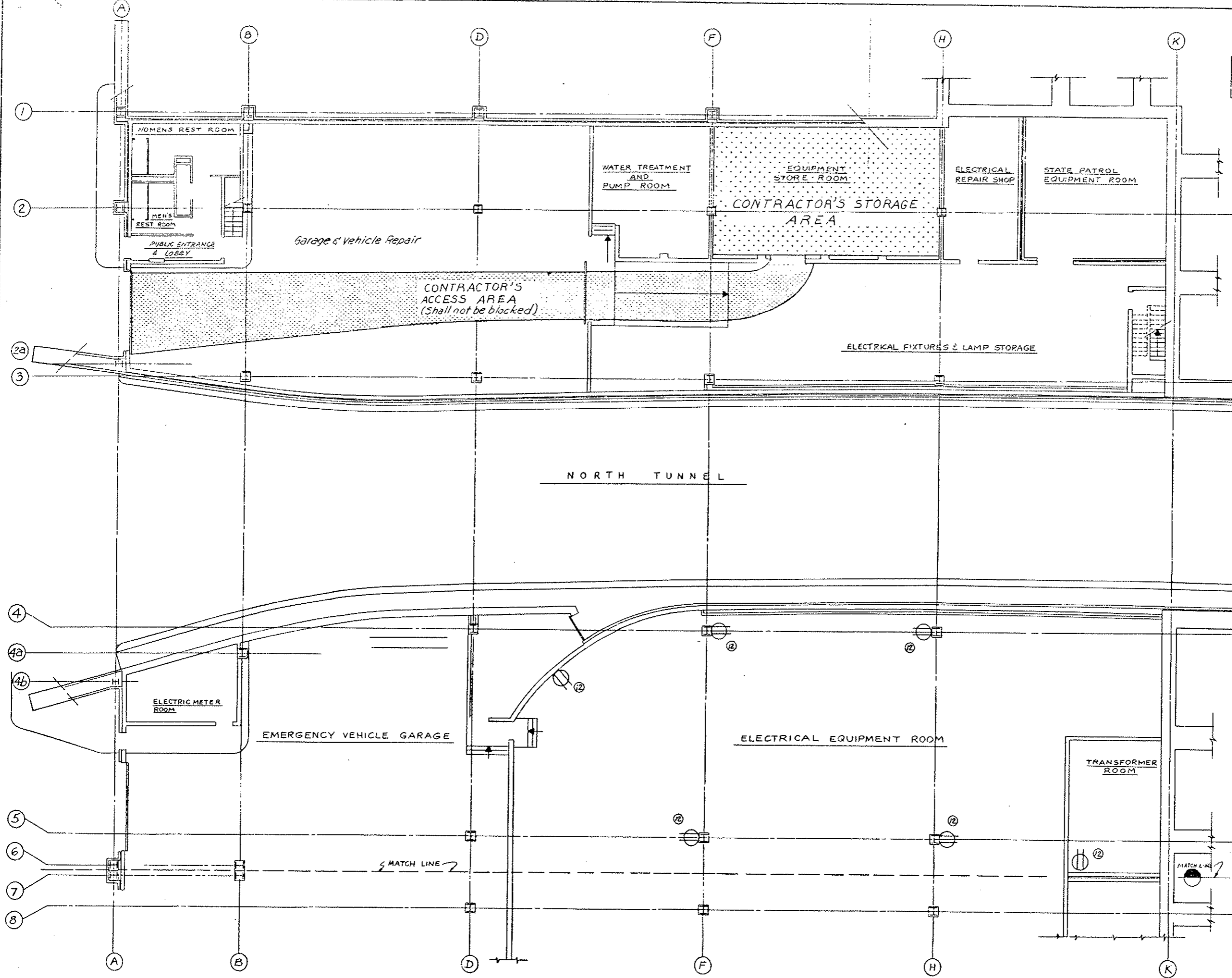
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(B3)220	21	

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID <input checked="" type="checkbox"/>



KEY PLAN

Note: For Legend and notes see sheet G-20



NORTH TUNNEL

Ⓜ - Duplex Receptacles - 120V-1 Phase

Reference No.	Voltage	Total Allowable Load	Panel	Circuit No.
Ⓜ	120	16A	LW-3	27

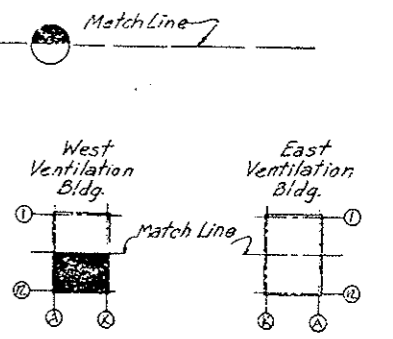
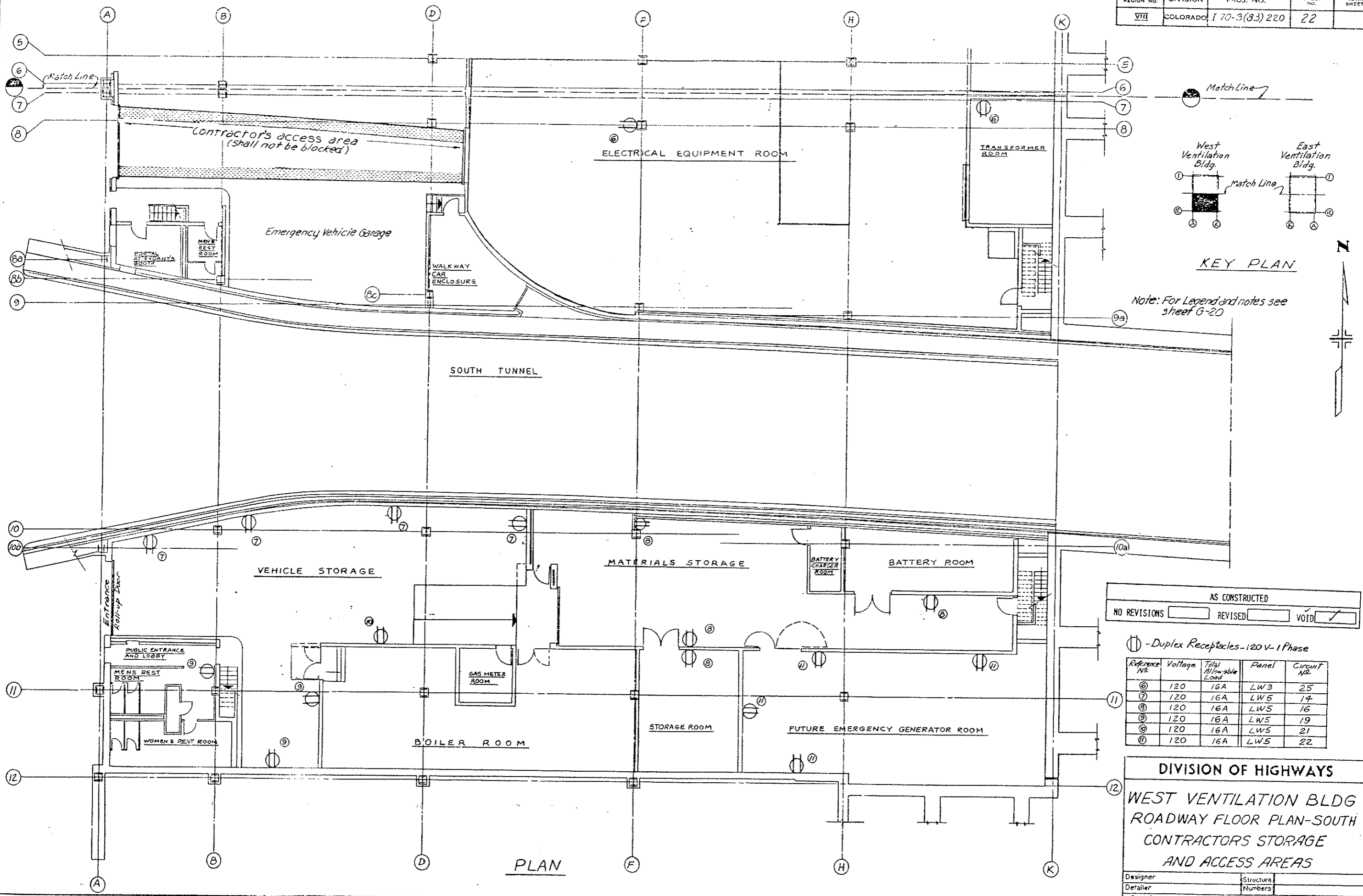
DIVISION OF HIGHWAYS

WEST VENTILATION BLDG
ROADWAY FLOOR PLAN-NORTH
CONTRACTORS STORAGE
AND ACCESS AREAS

Designer	Structure
Detailer	Numbers
Drawing Number G-21 of Drawings	

PLAN

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83) 220	22	



KEY PLAN

Note: For Legend and notes see sheet G-20

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID <input checked="" type="checkbox"/>

① - Duplex Receptacles - 120V - 1 Phase

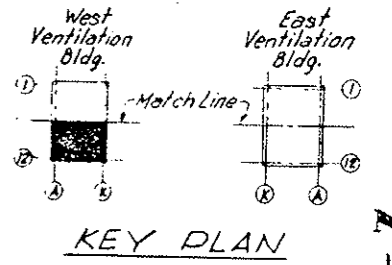
Reference No.	Voltage	Total Allowable Load	Panel	Circuit No.
⑥	120	16A	LW3	25
⑦	120	16A	LW5	14
⑧	120	16A	LW5	16
⑨	120	16A	LW5	19
⑩	120	16A	LW5	21
⑪	120	16A	LW5	22

DIVISION OF HIGHWAYS
 WEST VENTILATION BLDG
 ROADWAY FLOOR PLAN-SOUTH
 CONTRACTORS STORAGE
 AND ACCESS AREAS

Designer	Structure
Detailer	Numbers
Drawing Number G-22 of Drawings	

PLAN

REVISIONS	

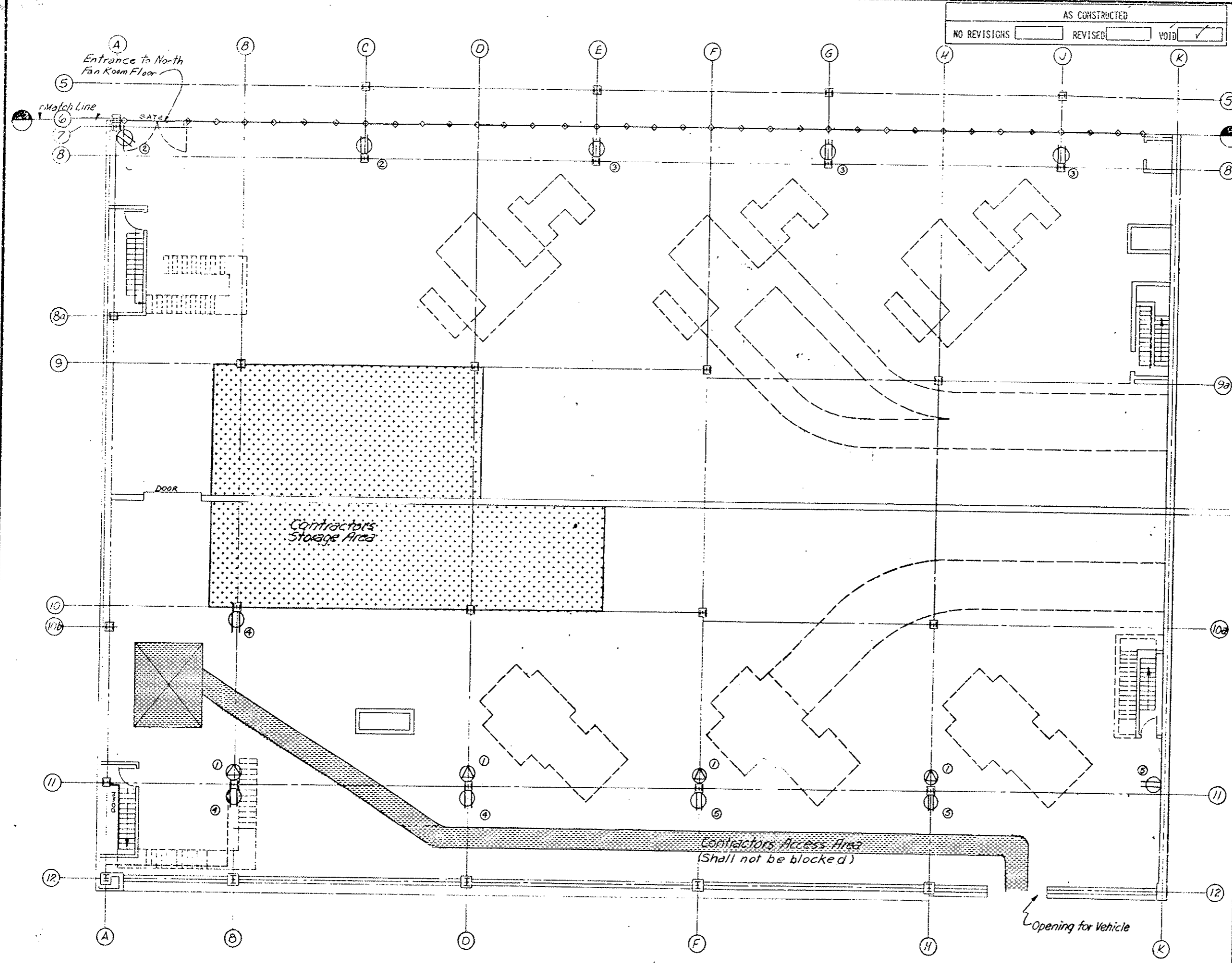


- ⊕ Duplex Receptacles-120V-1 Phase
- ⊗ 480V Receptacles 3Ph-4W-4P-30A

Reference No	Voltage	Total Receptacle Load	Panel	Circuit No
①	480	32A	P2	10
②	120	16A	LW2B	4
③	120	16A	LW2B	30
④	120	16A	LW2C	2
⑤	120	16A	LW2C	4

Note: For Legend and notes see sheet G-20

DATE	CHECKED BY	QUANTITIES BY



PLAN

DIVISION OF HIGHWAYS

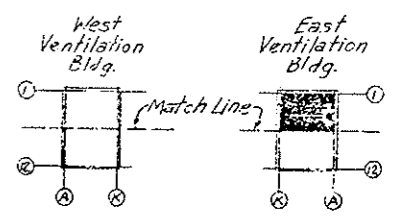
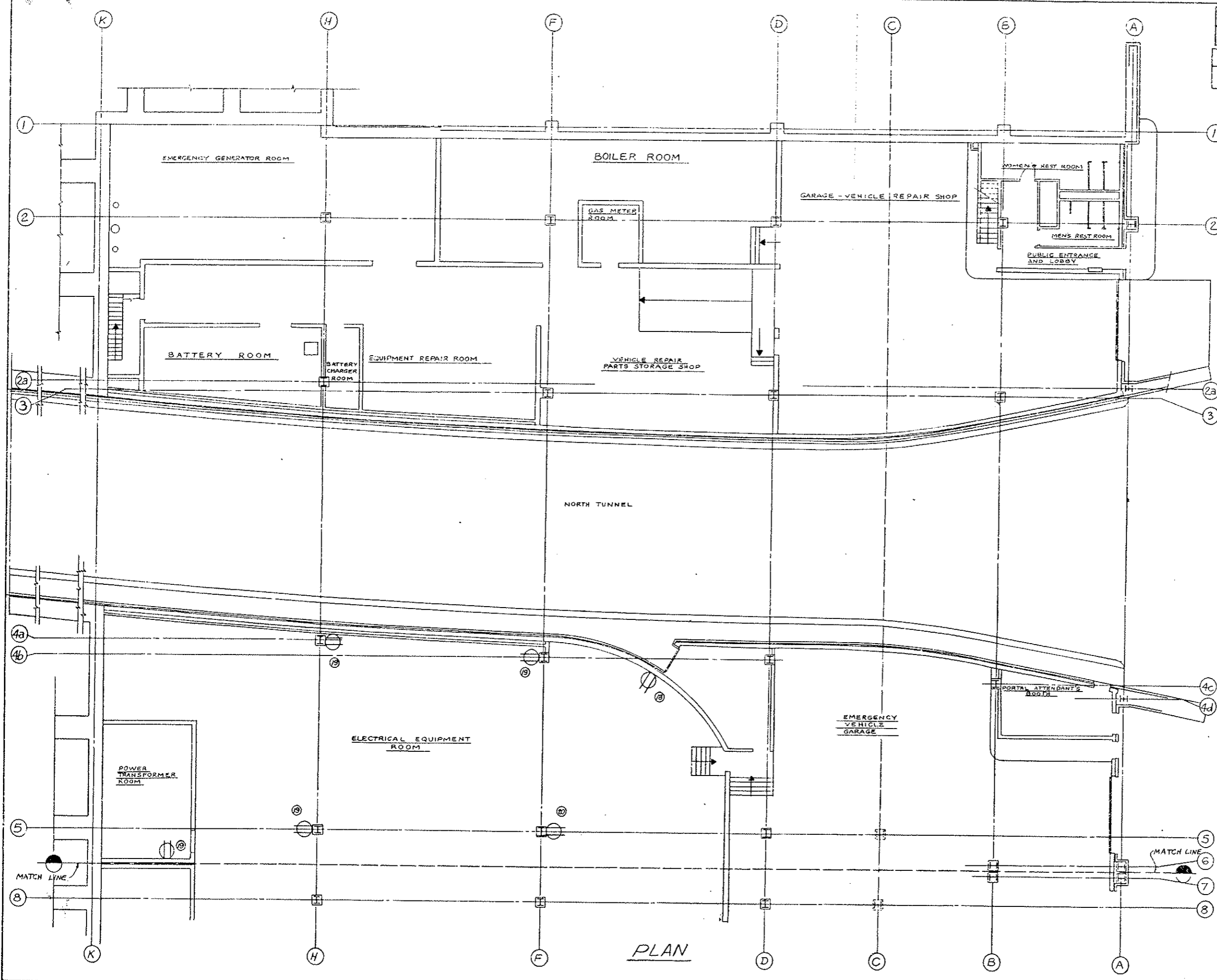
WEST VENTILATION BLDG
 FAN ROOM SOUTH
 CONTRACTORS STORAGE
 AND ACCESS AREAS

Designer	Structure
Detailer	Numbers
Drawing Number G-23	of Drawings

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	24	

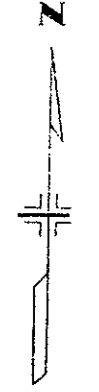
AS CONSTRUCTED

NO REVISIONS	REVISED	VOID
		<input checked="" type="checkbox"/>



KEY PLAN

Note: For Legend and notes see sheet G-20



⊕ - Duplex Receptacles - 120V - 1 Phase

Reference N's	Voltage	Total Allowable Load	Panel	Circuit No.
ⓐ	120	16A	LE 3A	19
ⓑ	120	16A	LE 3A	21
ⓒ	120	16A	LE 3A	23

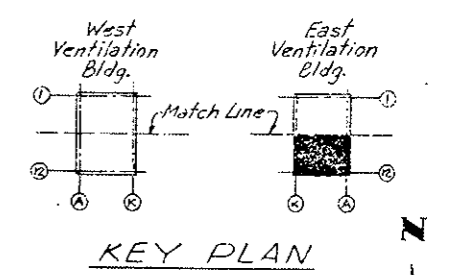
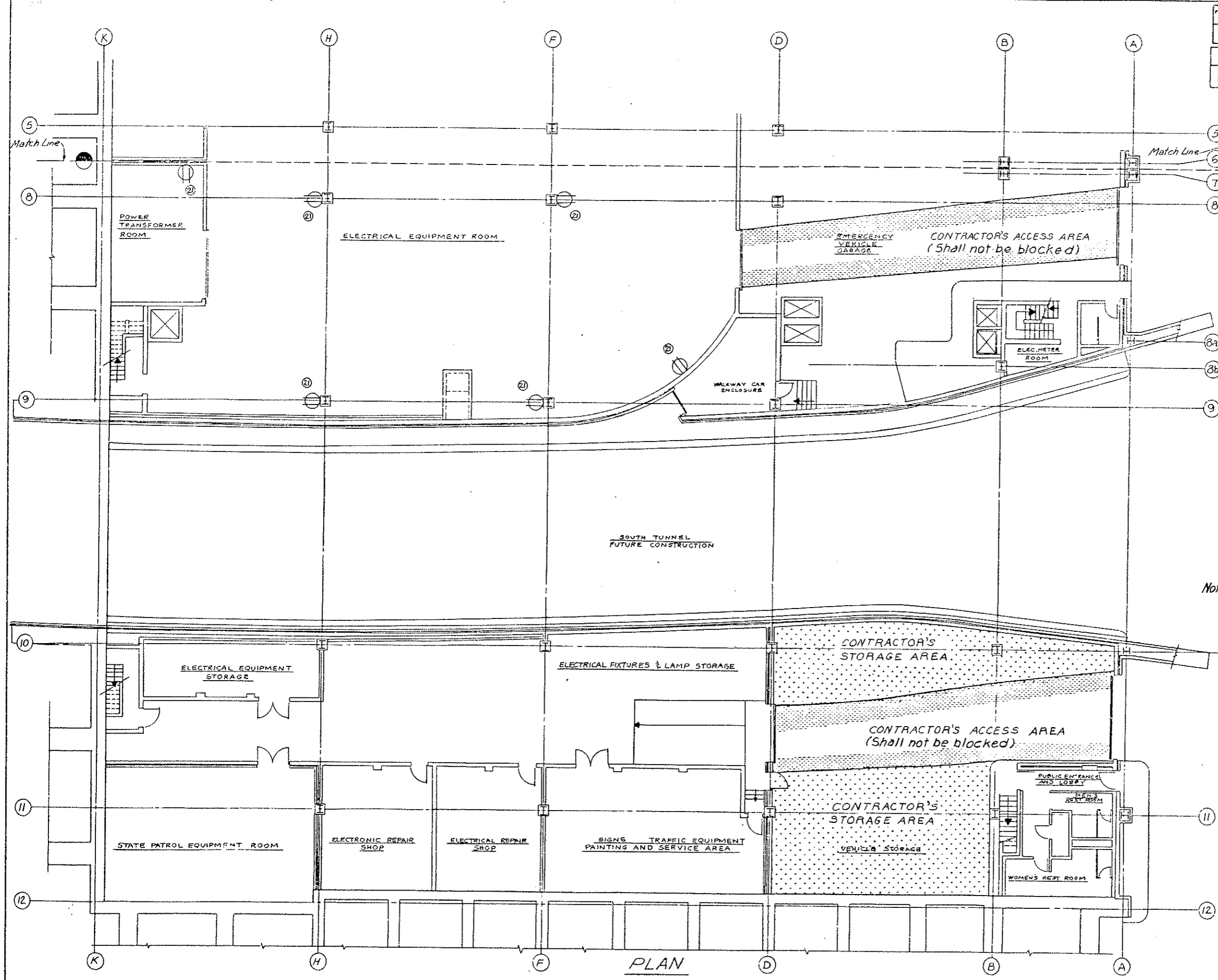
DIVISION OF HIGHWAYS

EAST VENTILATION BLDG
ROADWAY FLOOR PLAN-NORTH
CONTRACTORS STORAGE
AND ACCESS AREAS

Designer	Structure
Detailer	Numbers
Drawing Number G-24 of Drawings	

PLAN

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I. 70-3(83)220	25	
AS CONSTRUCTED				
NO REVISIONS	REVISED	VOID		



Note: For Legend and notes see sheet G-20

Ⓢ - Duplex Receptacle - 120V-1 Phase

Reference No.	Voltage	Total Allowable Load	Panel	Circuit No.
Ⓢ	120	16A	LE3A	25

DIVISION OF HIGHWAYS
EAST VENTILATION BLDG
ROADWAY FLOOR PLAN-SOUTH
CONTRACTORS STORAGE
AND ACCESS AREAS

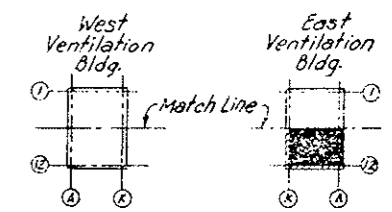
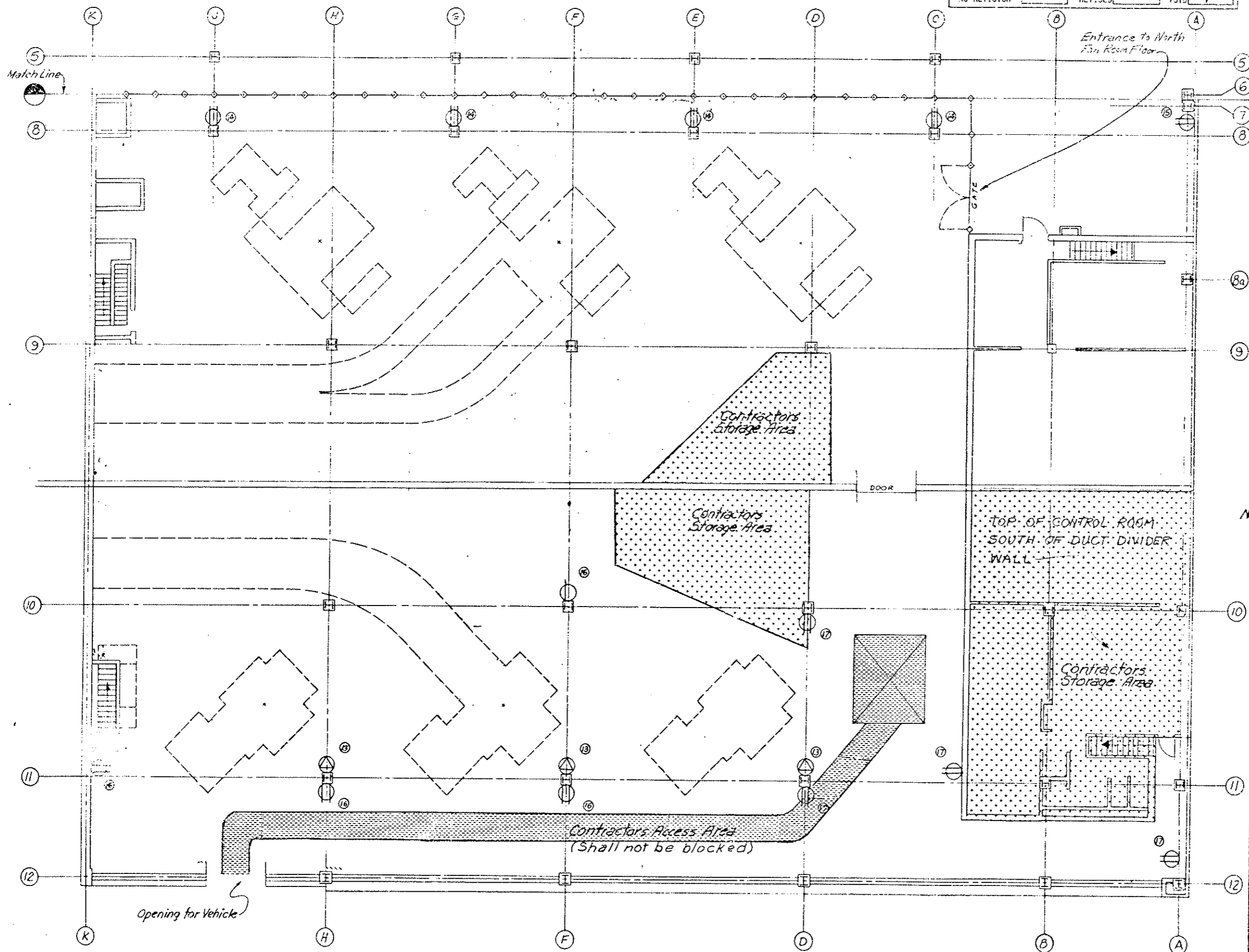
Designer	Structure
Detailer	Numbers
Drawing Number G-25 of Drawings	

PLAN

AS CONSTRUCTED
 NO REVISION REVISED VOID

FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XII-COLORADO	I70-3(83)220	26	

REVISIONS	



KEY PLAN

- Single Receptacle 120V-1 Phase
- ⊕ Duplex Receptacle 120V-1 Phase
- ⊕ 480V Receptacle 3 Phase-4P-4W-30A

Receptacle No.	Voltage	Total Allowable Load	Panel	Circuit No.
13	480	32A	P2	6
14	120	16A	LE2B	4
15	120	16A	LE2A	6
16	120	16A	LE2C	1E
17	120	16A	LE2C	1B

Note: For Legend and notes see sheet G-20

DESIGNED BY	CHECKED BY
CHECKED BY	QUANTITIES BY
DATE	CHECKED BY

PLAN

DIVISION OF HIGHWAYS

**EAST VENTILATION BLDG
 FAN ROOM SOUTH
 CONTRACTORS STORAGE
 AND ACCESS AREAS**

Designer	Structure Numbers
Detailer	
Drawing Number G-26 of Drawings	

EAST PORTAL AREA

1 1/4" conduit exits EVB. 15' from the west gas meter building 3' deep

1 1/4" conduit enters the ditch and starts running under it. It is 5' past the west end of the culvert and 2' to the north. It is even with the west end of it, sta. 321+76

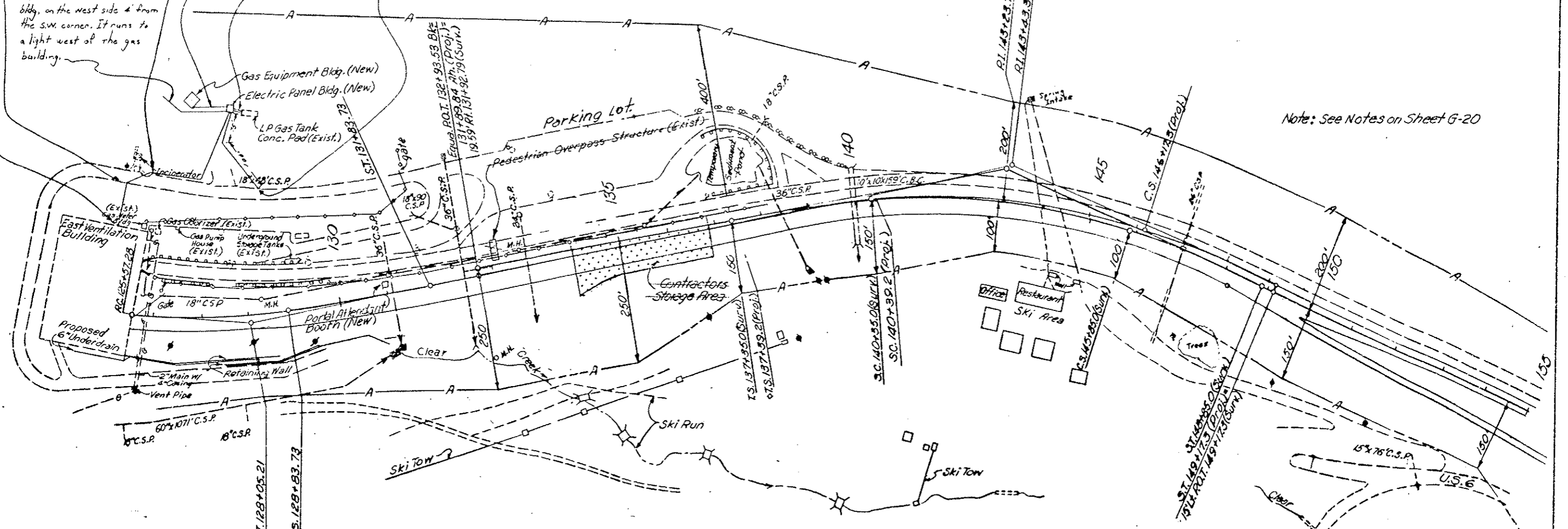
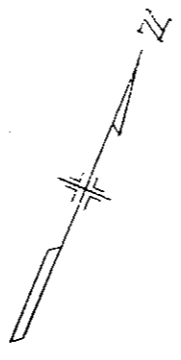
1 1/4" conduit 3' below subgrade across loop road sta. 321+00

3/4" conduit leaves the elect. bldg. on the west side 4' from the S.W. corner. It runs to a light west of the gas building.

1" conduit runs from the west side of from the S.W. corner of the elect. panel bldg to the east side of the gas equipment building 1 1/2' from SE corner # 3' deep.

2 - 3/4" conduits leave the east side of the elect. panel building 5' from the SE. corner, run to the L.P. gas tank. Depth approximately 2 feet.

L.P. gas filling station Light station 319+10



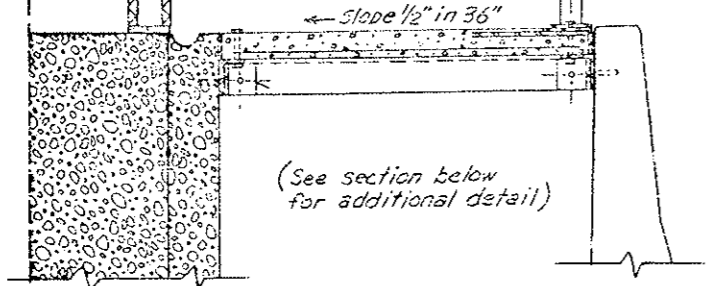
Note: See Notes on Sheet G-20

LEGEND

- Contractors Access Area
- Contractors Parking Area
- Contractors Storage Area

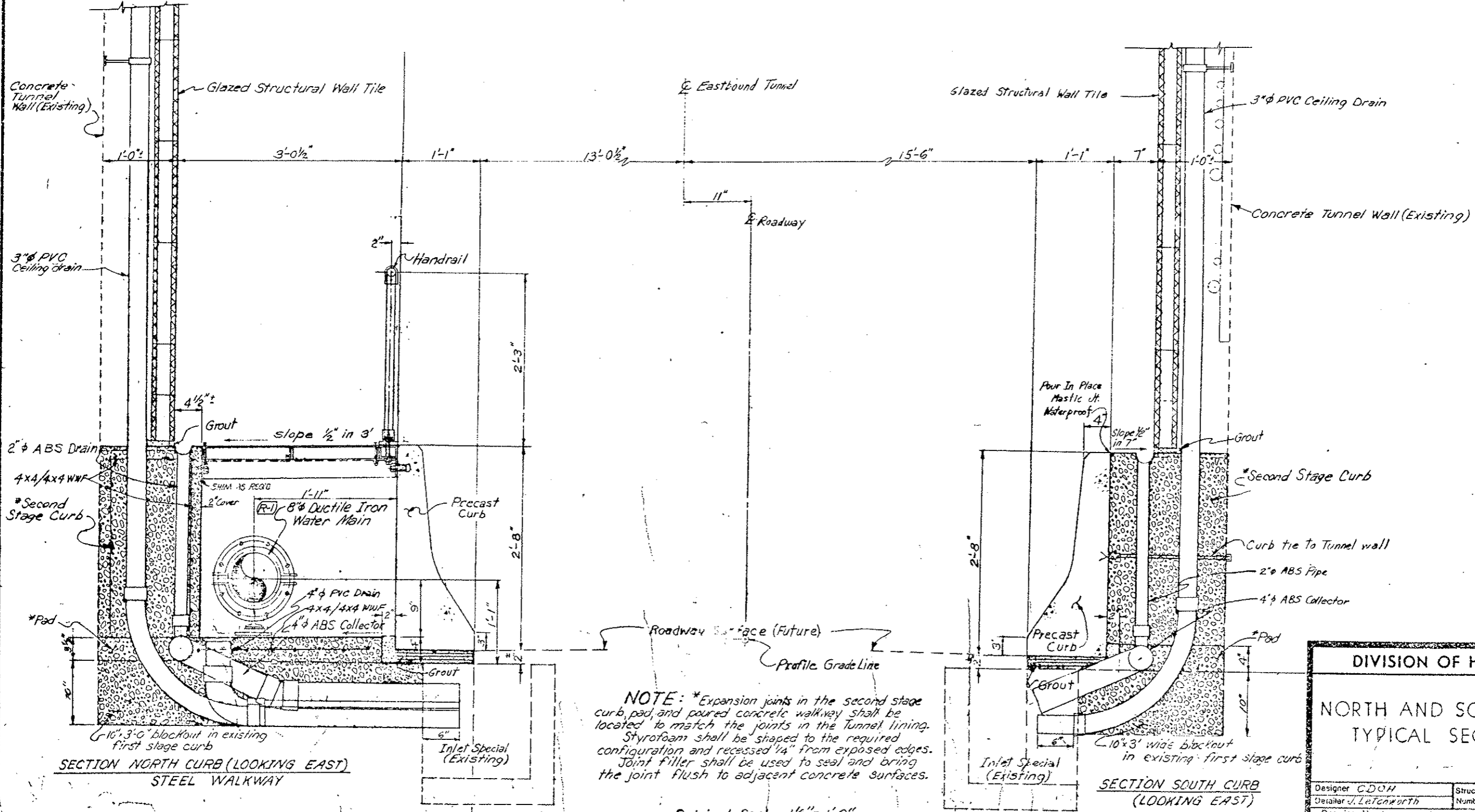
EAST PORTAL AREA PARKING
G-27

VII	COLORADO	I 70-3 23) 220	28
REVISIONS			
R-1	11-14-78	Water Main Material	E.B.
AS CONSTRUCTED			
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>
			VOID <input type="checkbox"/>



SECTION NORTH CURB (LOOKING EAST)
CONCRETE WALKWAY

DESIGNED BY	DATE	CHECKED BY	DATE
C.D.O.H.	8-29-78	C.D.O.H.	8-29-78
CHECKED BY	DATE	CHECKED BY	DATE



SECTION NORTH CURB (LOOKING EAST)
STEEL WALKWAY

SECTION SOUTH CURB
(LOOKING EAST)

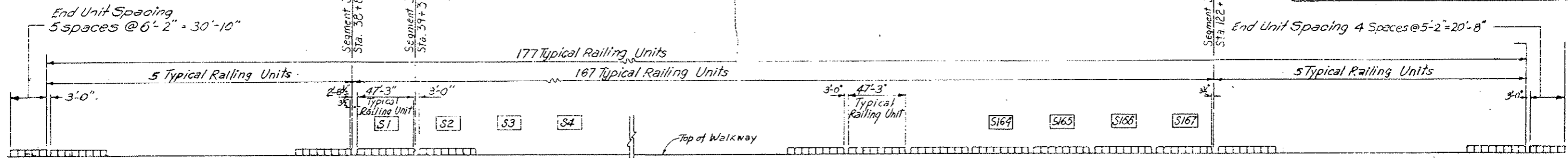
NOTE: *Expansion joints in the second stage curb, pad, and poured concrete walkway shall be located to match the joints in the tunnel lining. Styrofoam shall be shaped to the required configuration and recessed 1/4" from exposed edges. Joint filler shall be used to seal and bring the joint flush to adjacent concrete surfaces.

Original Scale: 1 1/2" = 1'-0"

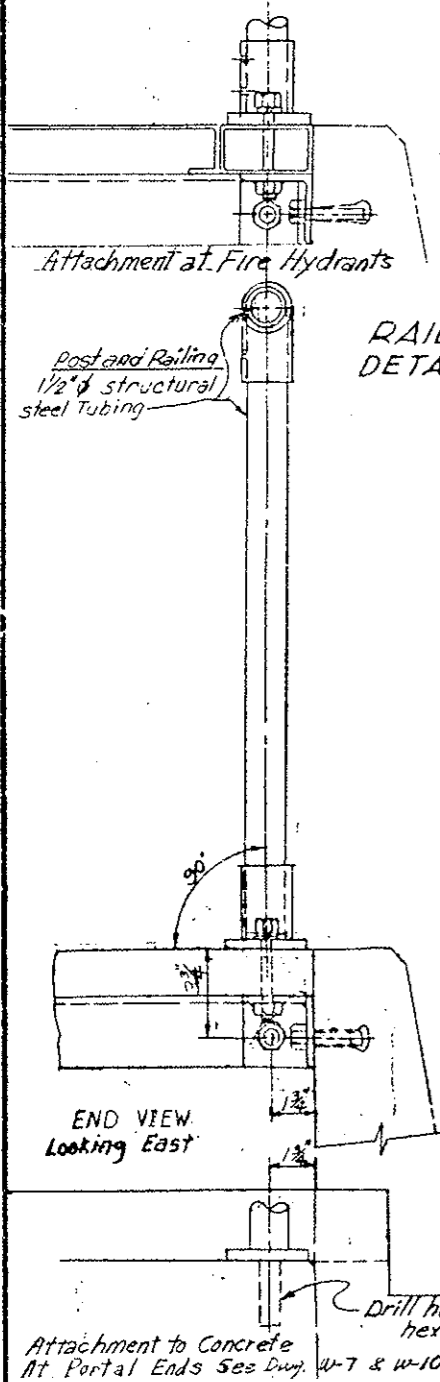
DIVISION OF HIGHWAYS	
NORTH AND SOUTH CURBS TYPICAL SECTIONS	
Designer C.D.O.H.	Structure
Detailer J. Lettoworth	Numbers
Drawing Number W-1	Drawings

VIII	COLORADO	I 70-3(83)220	29
REVISIONS			
AS CONSTRUCTED			
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	VOID

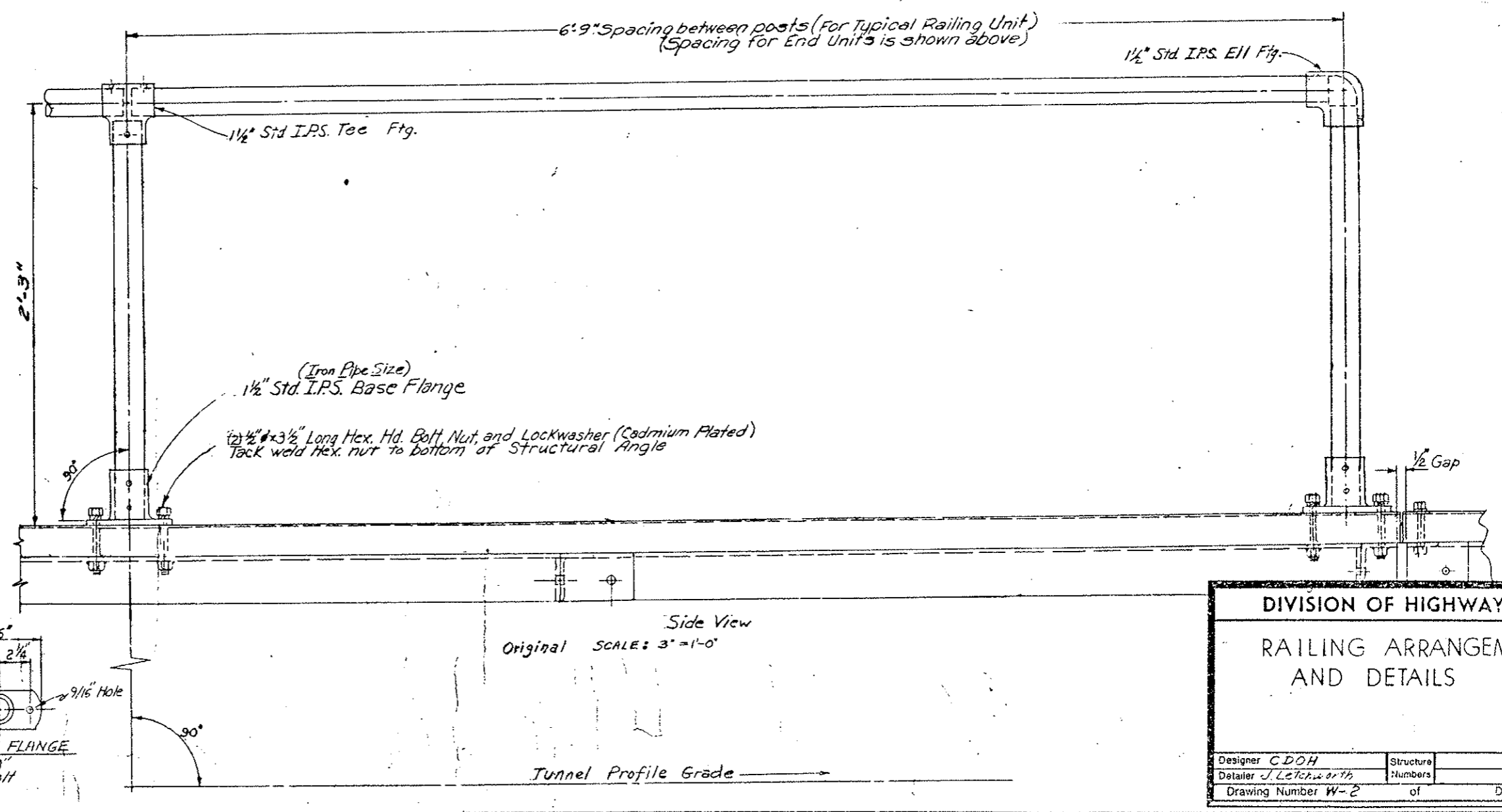
RAILING ARRANGEMENT



DESIGNED BY	C.D.O.H.
CHECKED BY	C.D.O.H.
DATE	7-9-75
QUANTITIES BY	C.D.O.H.
CHECKED BY	C.D.O.H.
DATE	7-9-75
DETAILS BY	C.D.O.H.



RAILING DETAILS



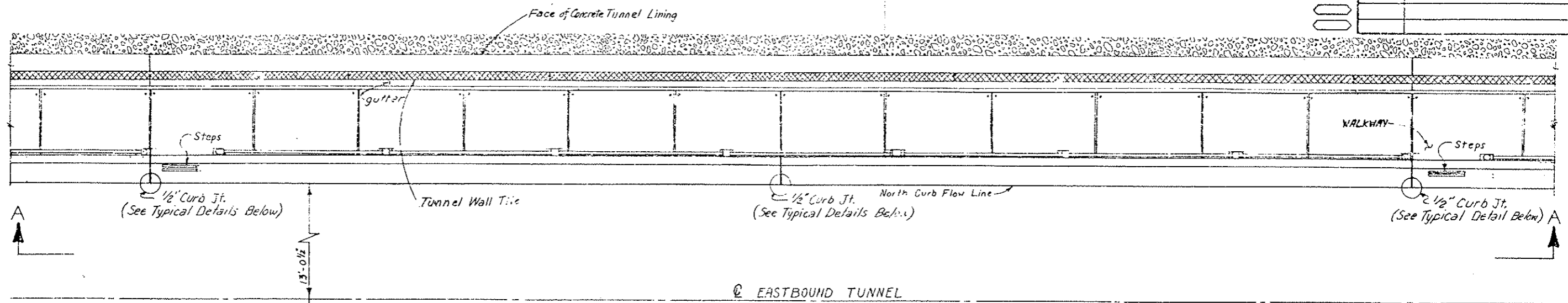
DIVISION OF HIGHWAYS	
RAILING ARRANGEMENT AND DETAILS	
Designer C.D.O.H.	Structure Numbers
Detailer J. L. Letchworth	of
Drawing Number W-2	Drawings

Side View
Original SCALE: 3" = 1'-0"

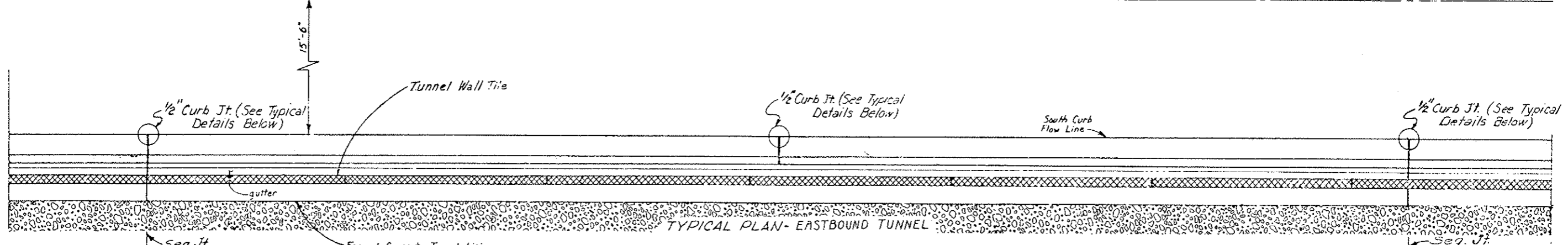
Tunnel Profile Grade

(R-1) Revised detail "B"

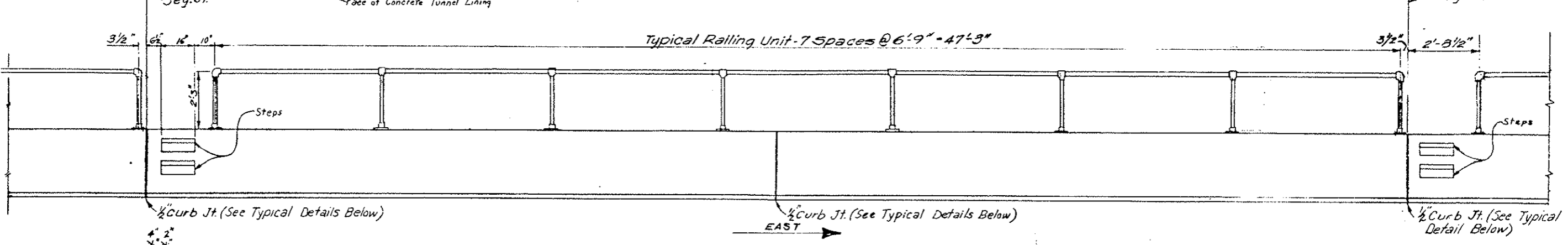
REVISIONS	



① EASTBOUND TUNNEL

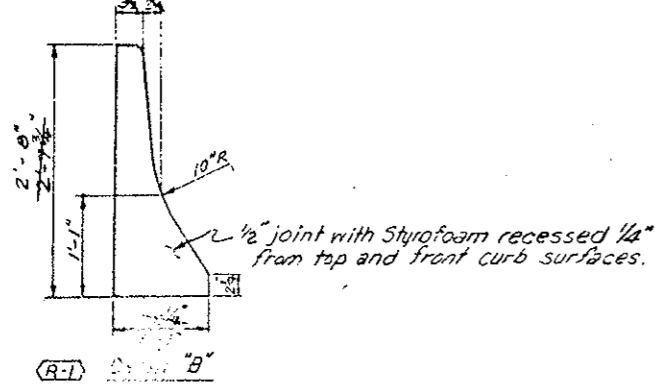


TYPICAL PLAN - EASTBOUND TUNNEL

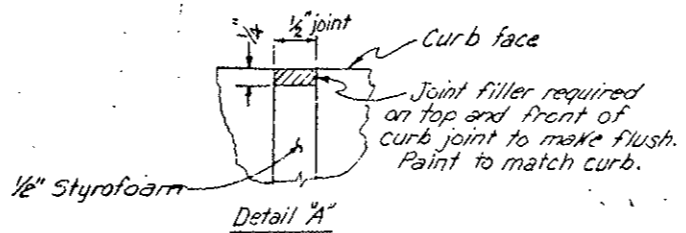


Typical Railing Unit - 7 Spaces @ 6'-9" = 47'-3"

INITIAL	DATE	CHECKED BY	QUANTITY BY
CDH	3-27-75		



VIEW A-A
TYPICAL ELEVATION - HANDRAIL AND CURB

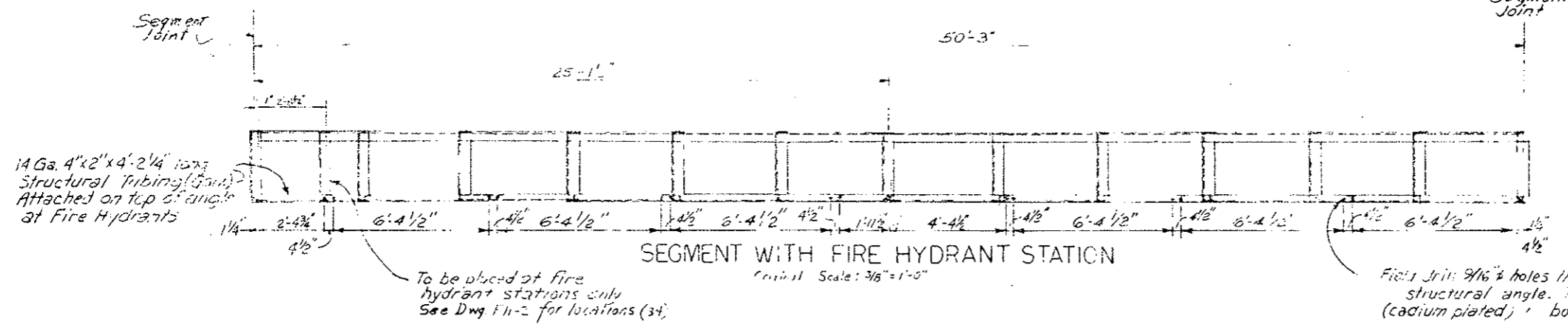


LEGEND
 Tunnel Wall Tile
 Precast Safety Curb
 Conc. Tunnel Lining

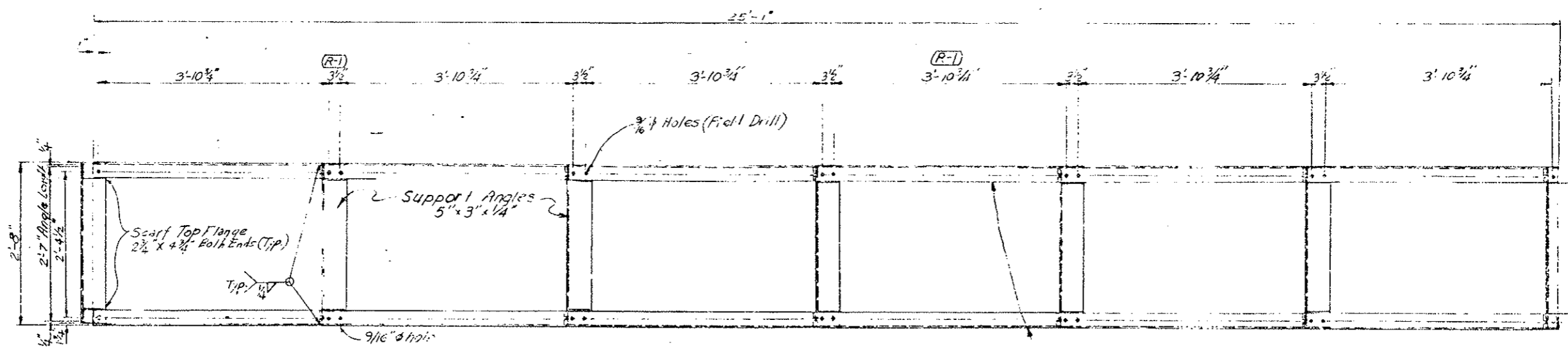
Original Scale: 1/2" = 1'-0"

DIVISION OF HIGHWAYS	
PLAN AND ELEVATION OF TYPICAL SAFETY CURB AND HANDRAIL SPACING	
Designer: CDH	Structure: <input type="checkbox"/>
Detailer: J. Lechner	Numbers: <input type="checkbox"/>
Drawing Number: W-3	of <input type="checkbox"/> Drawings

III	COLORADO	I 70-3(33)227	31
REVISIONS			
(R-1)	11-3-78	Bolt hole spacing	E.B.
AS CONSTRUCTED			
NO REVISION	REVISED	VOID	

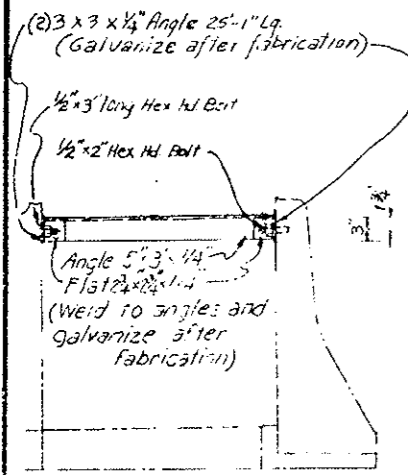


DESIGNED BY	CDJ
CHECKED BY	Y.P.
DATE	7-9-75
QUANTITIES BY	Y.P.
CHECKED BY	Y.P.

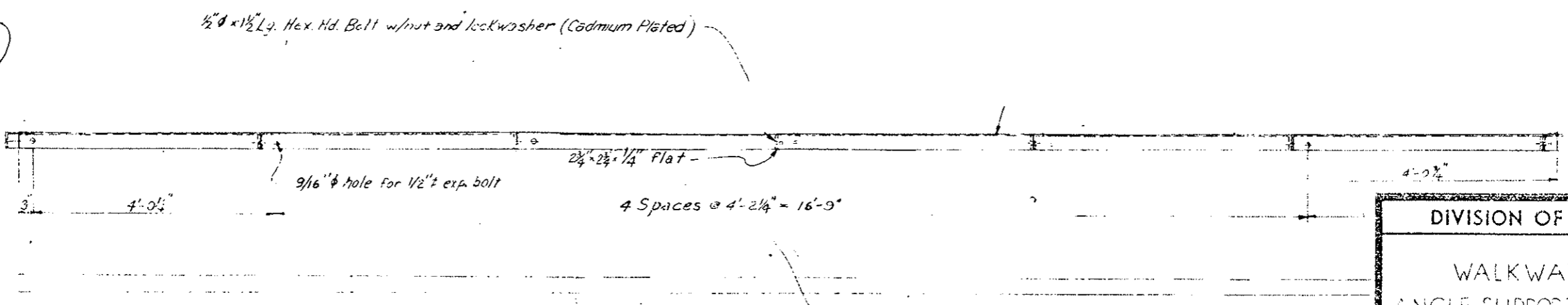


PLAN

Original Scale: 1"=1'-0"



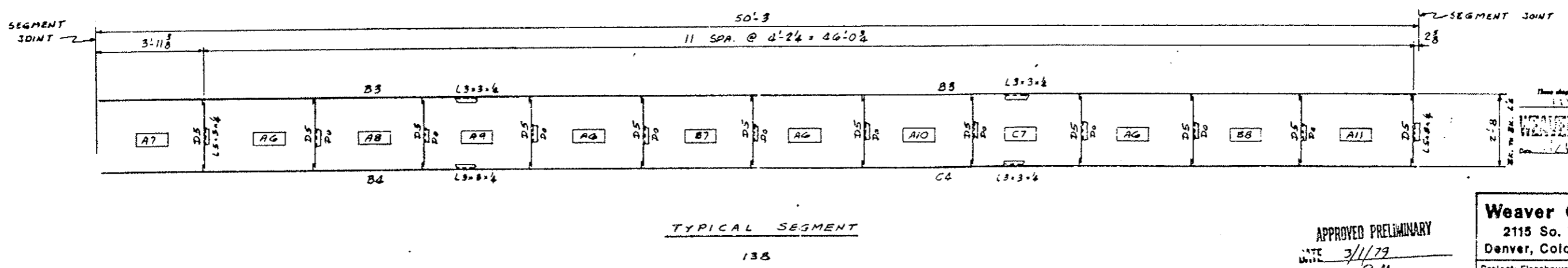
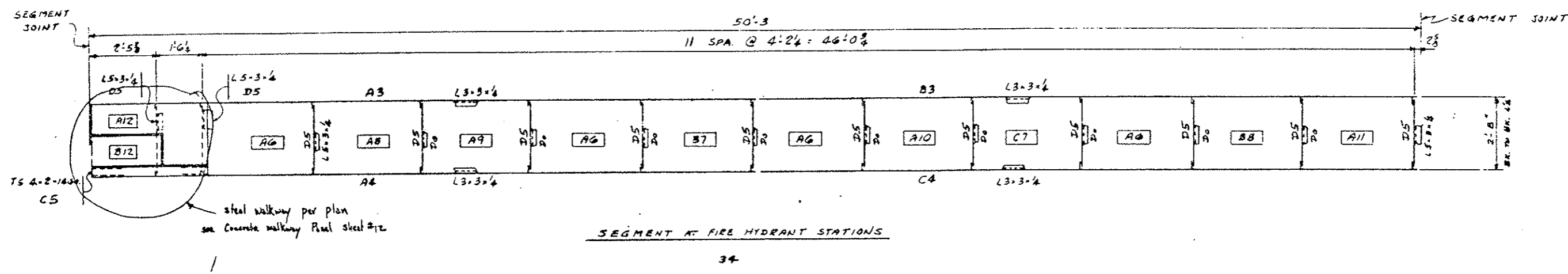
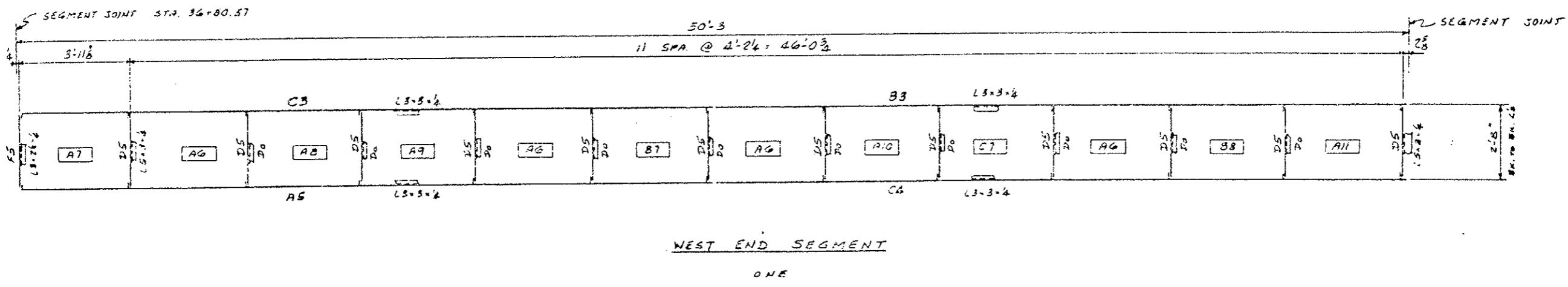
END VIEW



ELEVATION

Original Scale: 1"=1'-0"

DIVISION OF HIGHWAYS	
WALKWAY ANGLE SUPPORT ASSEMBLY DETAILS	
Designer CDJ	Structural
Detailer V. L. G. / J. R.	Numbers
Drawing Number W-4	of Drawings



LOCATION PLANS FOR PRECAST
CONCRETE WALKWAY FRAMING

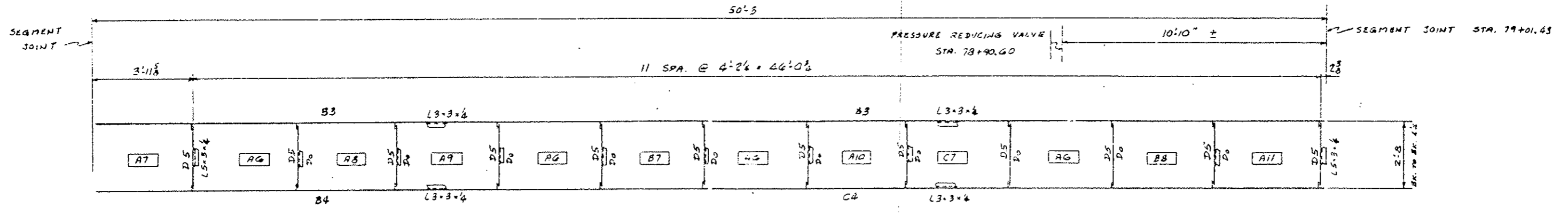
NOTE
SEE COLO. HWY. DEPT. DWGS.
SHEETS NO. 28 THRU 32 FOR
DETAILS & SECTIONS OF FRAMING.

INDICATES PRECAST
CONCRETE PANELS

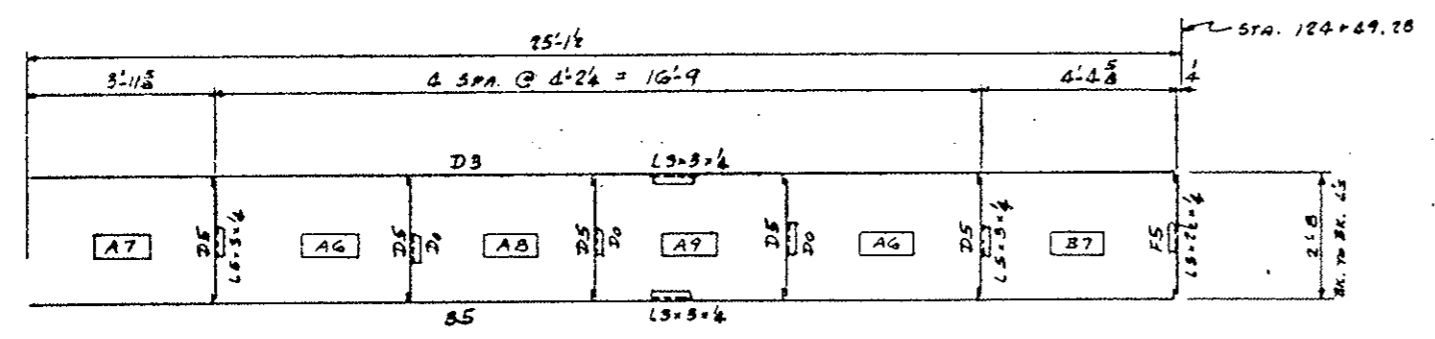
APPROVED PRELIMINARY
DATE 3/1/79
BY [Signature]

These shop drawings have been reviewed and returned by
[Signature] and are being returned for approval.
WEAVER CONSTRUCTION CO.
[Signature]

Weaver Construction Co.		
2115 So. Valentia Street		
Denver, Colo. 80231 (303) 755-1285		
Project: Eisenhower Tunnel Interior Finish Work		
2nd Bore - Summit & Clear Creek Counties		
Department of Highways, State of Colorado		
Project No. I 70-3(83)220		
Sheet Title: WALKWAY ERECTION PLAN		
Rev No.	Items	Date
Rev No.	Items	Date
Scale:	Drawn By: RHE	Shop
Date: 1-10-79	Checked By: ED	Dwg. No. 21



SEGMENT AT PRESSURE REDUCING STATION
ONE



EAST END SEGMENT
ONE

LOCATION PLANS FOR PRECAST
CONCRETE WALKWAY FRAMING



NOTE
SEE COLO. HWY. DEPT. DWGS.
SHEETS NO. 28 THRU 32 FOR
DETAIL & SECTIONS OF FRAMING

□ INDICATES PRECAST
CONCRETE PANELS

APPROVED PRELIMINARY
DATE 3/1/79
BY R. P. [Signature]

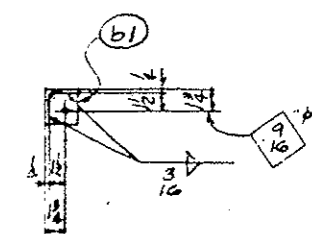
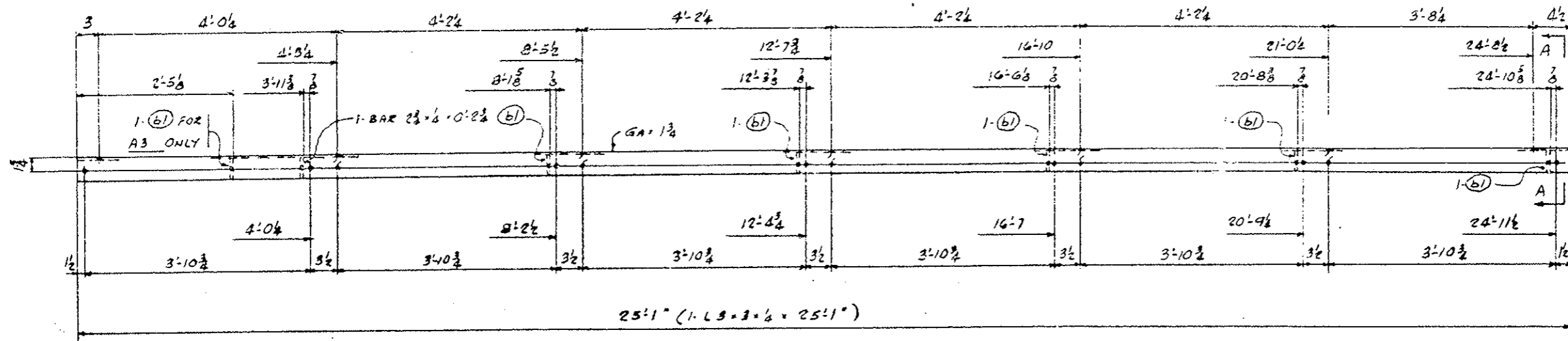
These shop drawings have been received and reviewed
and are being submitted for approval.
WEAVER CONSTRUCTION CO.

Weaver Construction Co.
2115 So. Valentia Street
Denver, Colo. 80231 303/755-1285

Project: Eisenhower Tunnel Interior Finish Work
2nd Bore - Summit & Clear Creek Counties
Department of Highways, State of Colorado
Project No.: I 70-3(83)220

Sheet Title: **WALKWAY ERECTION PLAN**

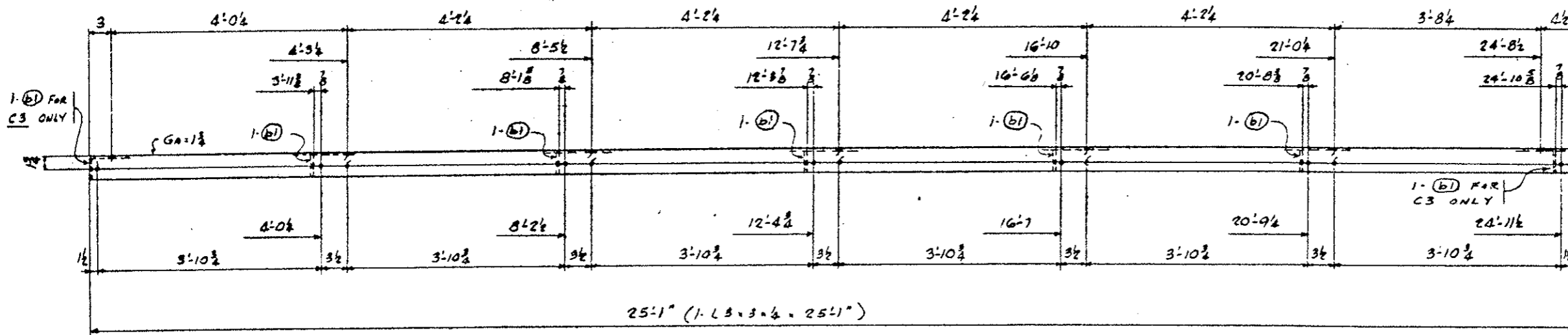
Rev. No.	Item	Date
Rev. No.	Item	Date
Scale	Drawn By: RND	Shop
Date: 1-18-79	Checked By: ED	DWG. No. E2



SECT. A-A

34 WALKWAY SUPPORT ANGLES - A3

315	D0	- B3
-----	----	------



1- (b1) FOR D3 ONLY

ONE WALKWAY SUPPORT ANGLE - C3

ONE	D0	- D3
-----	----	------

These shop drawings have been received and reviewed by _____ and are being submitted for approval.

WEAVER CONSTRUCTION CO.

APPROVED PRELIMINARY
 DATE 3/1/79
 BY R. Pujillo

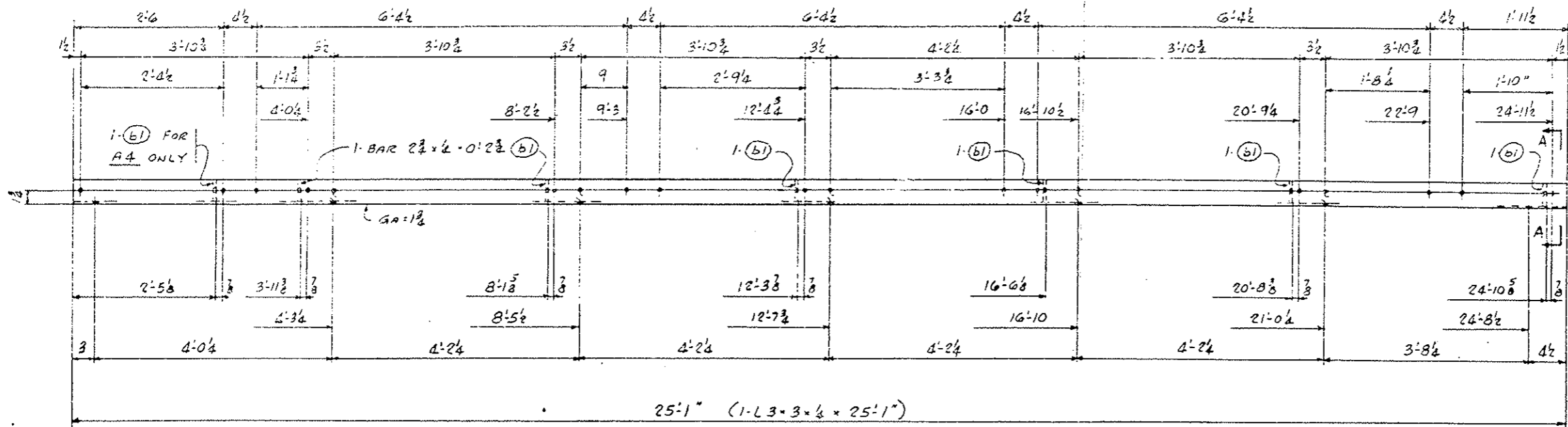
FINISH - GALVANIZE
 HOLES - 1/8" UNLESS NOTED

Weaver Construction Co.
 2115 So. Valentia Street
 Denver, Colo. 80231 (303) 755-1285

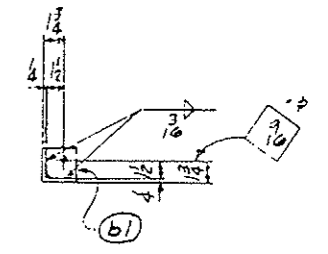
Project: Eisenhower Tunnel Interior Finish Work
 2nd Bore - Summit & Clear Creek Counties
 Department of Highways, State of Colorado
 Project No. I 70-3(83)220

Sheet Title: **WALKWAY FRAMING**

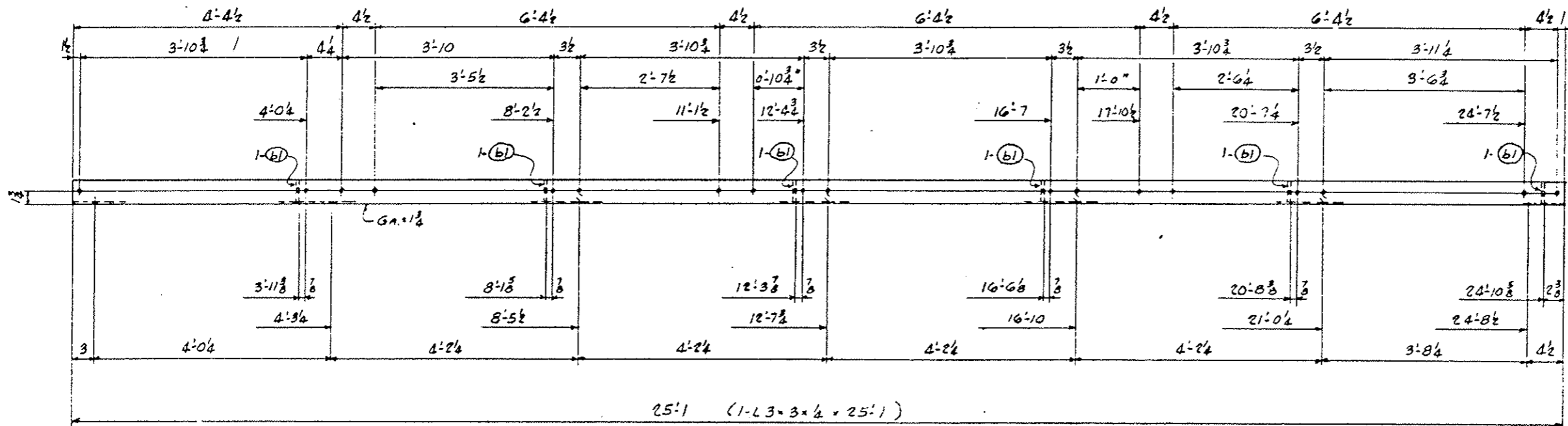
Rev. No.	Items	Date
Scale	Drawn By: R.H.G.	Shop
Date: 1-15-79	Checked By: ED	Dwg. No. 9



34 WALKWAY SUPPORT ANGLES - A4
139 Do - B4



SECT. A-A



174 WALKWAY SUPPORT ANGLES - C4

FINISH - GALVANIZE
HOLES 1/16" UNLESS NOTED

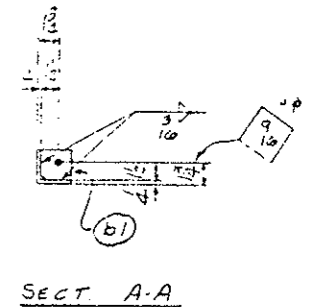
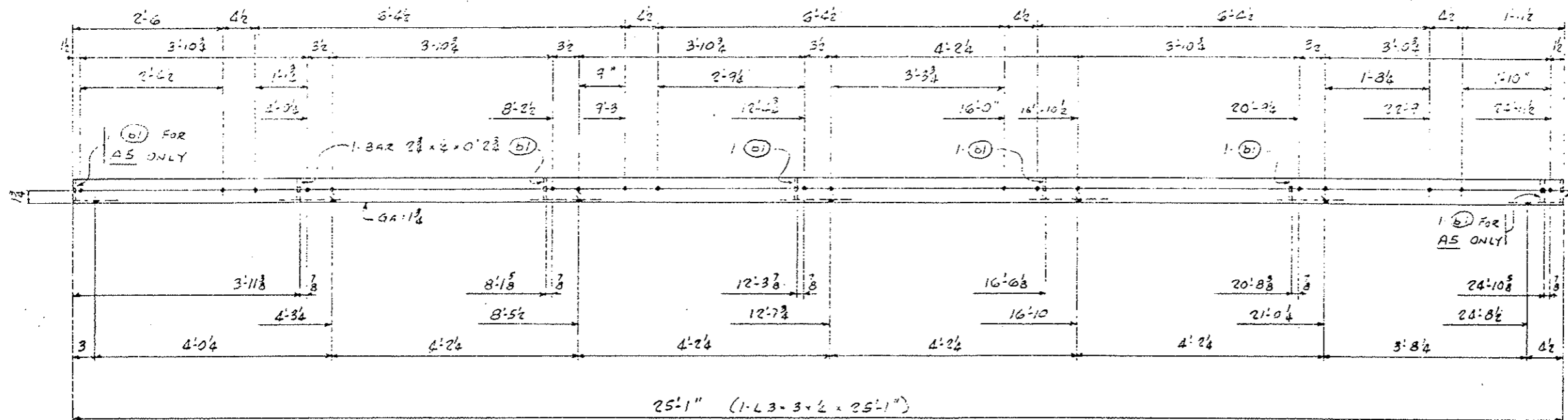
APPROVED PRELIMINARY
DATE _____
BY _____

Weaver Construction Co.
2115 So. Valentia Street
Denver, Colo. 80231 (303) 733-1285

Project: Eisenhower Tunnel Interchange
2nd Bore - Summit & Clear
Department of Highways, Colorado
Project No. E 70-8(83)220

Sheet Title: WALKWAY ARRANGING

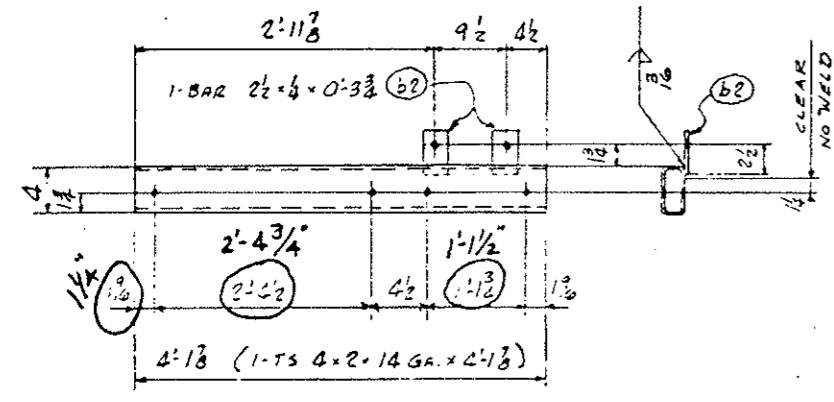
Des. No.	11004	Dist.	10
Rev. No.	1	Date	10/24/74
Drawn By	AKG	Checked By	EDM
Date	7-7-74	Drawn No.	11004



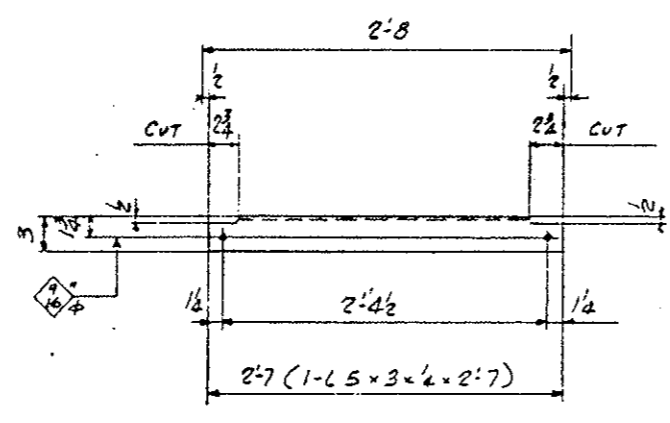
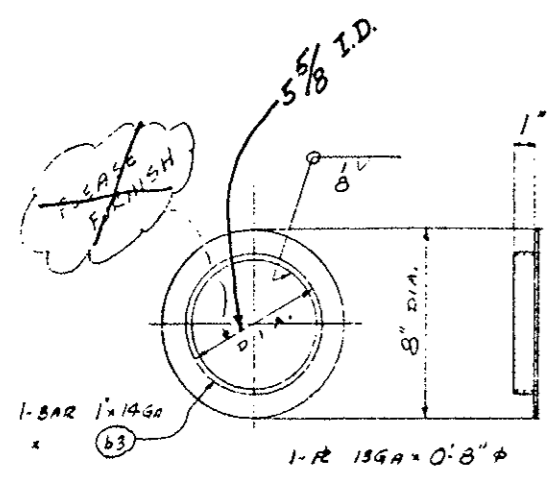
ONE WALKWAY SUPPORT ANGLE - A5
 ONE DO - B5

FIELD BOLTS FOR STEEL ONLY

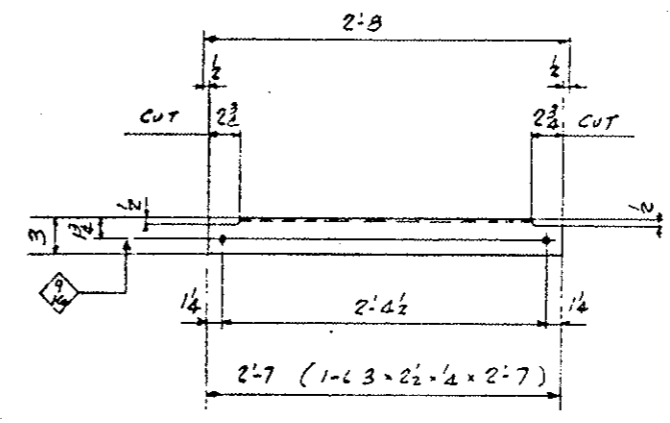
- 4350 - 1/2" ZINC PLATED
HEX. HD. MACH. BOLTS x 0'-1 1/2
- 2500 - 1/2" -13 UNC ZINC PLATED
HEX. HD. CAP SCREWS x 0'-2
- 2500 - 1/2" ZINC PLATED KWIK
BOLT EXPAN. ANCHORS x 0'-3 3/4



36 TUBES - C5



2127 ANGLES - D5



2 ANGLES - F5

FINISH - GALVANIZE
 HOLES - 1/8" UNLESS NOTED

APPROVED PRELIMINARY
 DATE 3/1/79
 BY Rich Fugillo

Weaver Construction Co.
 2115 So. Valentia Street
 Denver, Colo. 80231 (303) 755-1283

Project: Eisenhower Tunnel Interior Finish Work
 2nd Bore - Summit & Clear Creek Counties
 Department of Highways, State of Colorado
 Project No.: I 70-3(83)220

Sheet Title: WALKWAY FRAMING

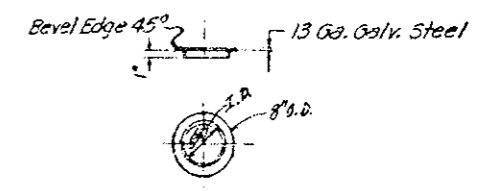
App. No.	DATE	BY
Rev. No.	DATE	BY
Scale	Drawn By: RNS	Check
Date: 1-18-79	Checked By: ED	Dwg. No.

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	32	

REVISIONS				
(R-1)	10/17/78	Rev dims, slab rainf, conc		
(R-1)		class, added notes.		HHH
(R-2)	11/3/78	Slab dims, Angle Size		E.E.

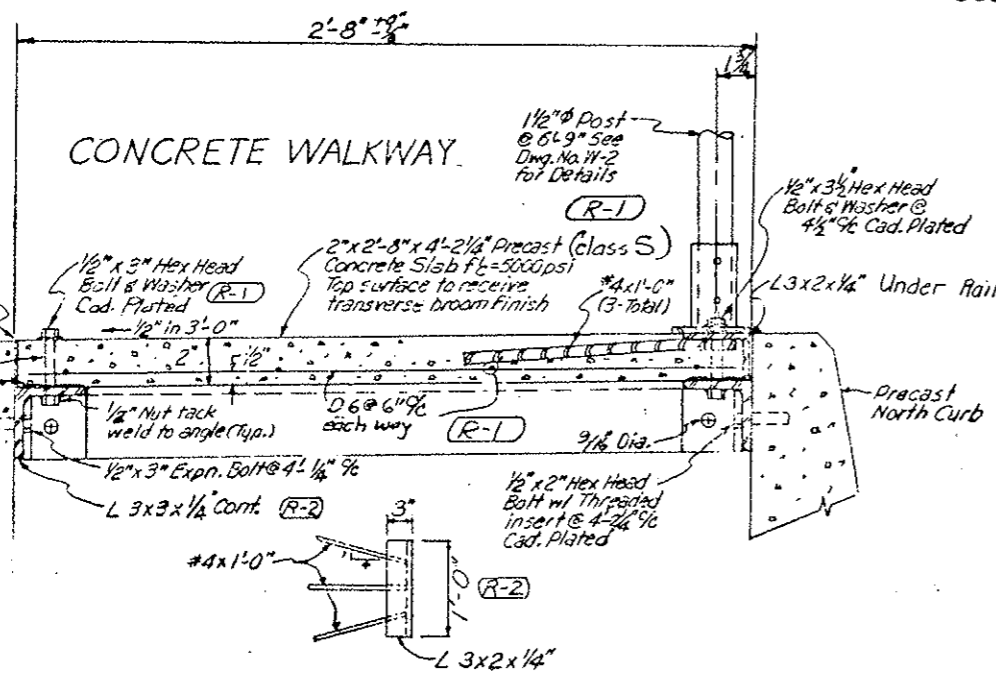
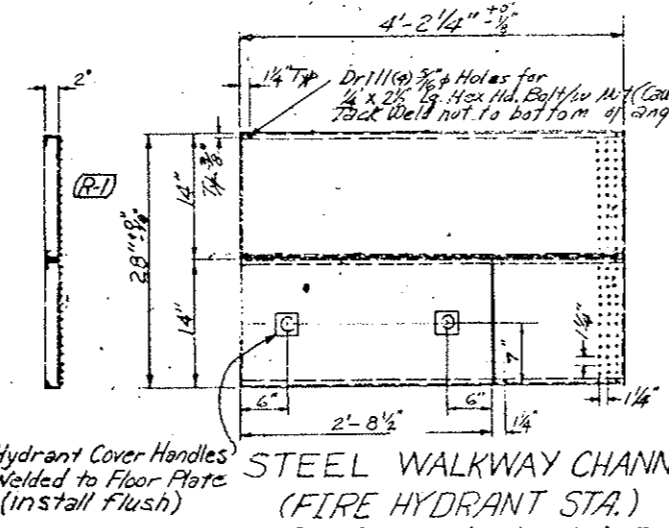
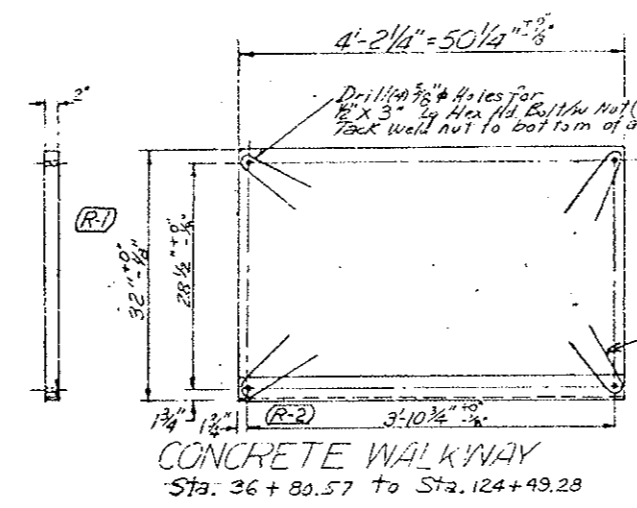
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID
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Notes:
 The Contractor shall field cut- (sawed & or punched not burned) 6" diameter holes in the concrete walkway channel directly over the stems of gate valves in the water main system. The holes shall be smooth-finished and large enough to accommodate the wrench that operates the valve. Provide friction caps on all valve openings.



Friction Cap (Typical)

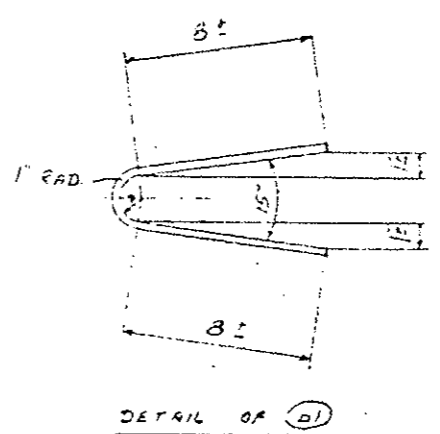
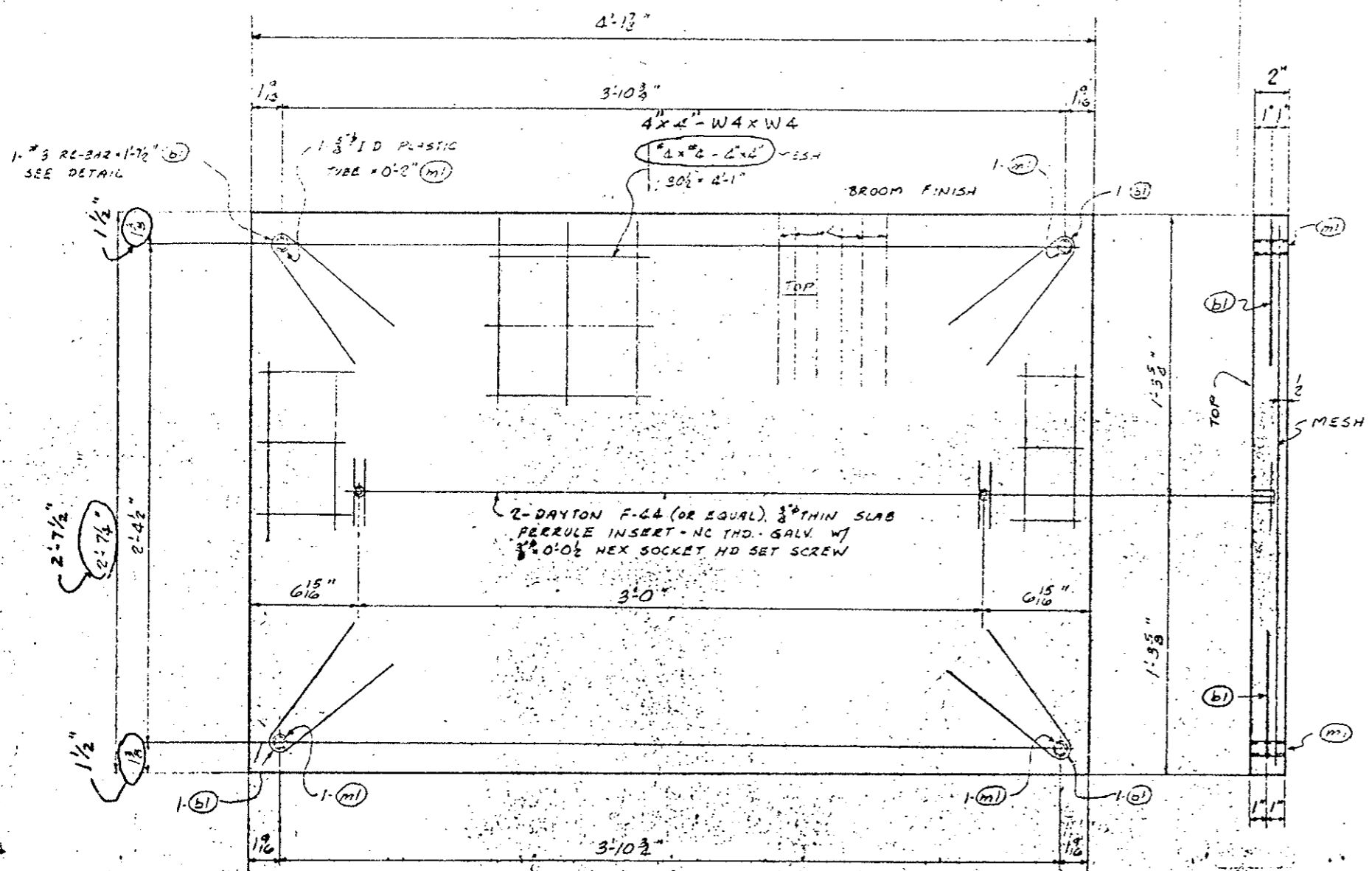
The 6" holes were cut in the face of the safety curbs at Sta. 61+89.2 and 87+01.2



NOTE: See Shop Drawings for Concrete Walkway Panels - Sheets No. 32 AX thru 32 GX, Direction Plan - Sheets No. 31 AX & 31 BX.

DIVISION OF HIGHWAYS			
WALKWAY DETAILS			
Designer CDOH	Structure		
Detailer J. Letchworth	Numbers		
Drawing Number W-5	of	Drawings	
Revision Dates		(Preliminary Stage Only)	

DESIGNED BY	DATE	CHECKED BY
CDOH	5/3/75	
CHECKED BY	DATE	QUANTITIES BY
	5/3/75	
DETAILS BY	DATE	CHECKED BY
	5/3/75	



FIELD BOLTS FOR CONG. PANELS

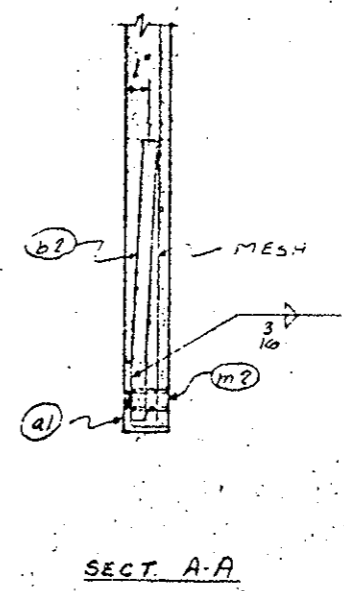
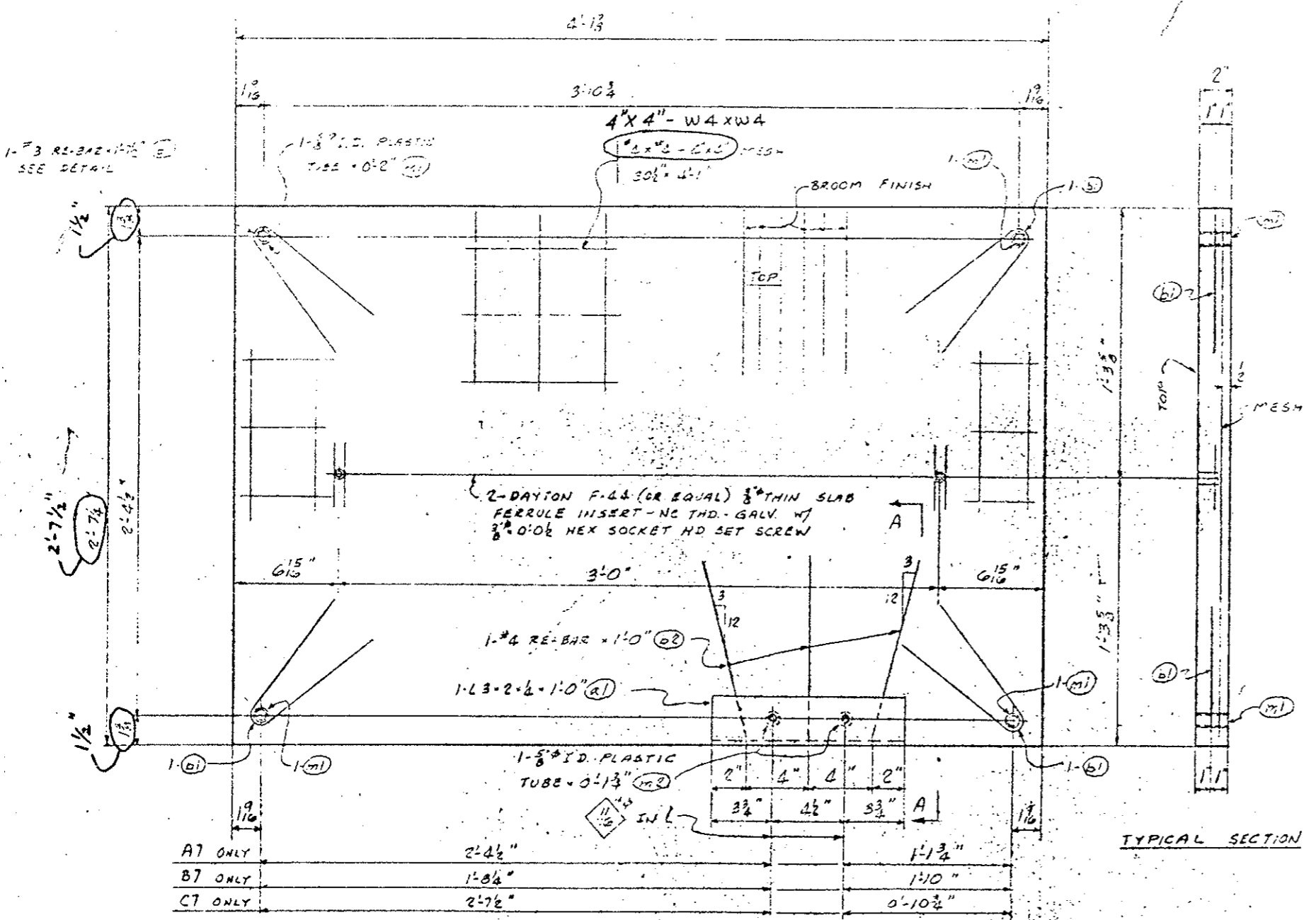
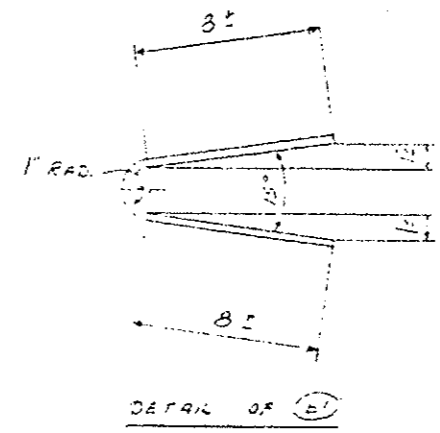
- 8000 - 1/2" Φ ZINC PLATED
HEX. HD. MACH. BOLTS x 0'-3"
- 8000 - 1/2" Φ ZINC PLATED CUT WASHERS

G98 CONCRETE WALKWAY PANELS - A6

CLASS S CONCRETE - FC=5000 PSI

APPROVED PRELIMINARY
DATE 3/1/79--
BY Rich Reynolds

Weaver Construction Co. 2115 So. Valentic Street Denver, Colo. 80231 303-755-1285		
Project: Eisenhower Tunnel Interior Floor Work 2nd Bore - Summit & Clear Creek Counties Department of Highways, State of Colorado Project No.: I 70-3(83)220		
Sheet Title: CONCRETE WALKWAY PANELS		
Rev. No.	Name	Date
Rev. No.	Name	Date
Scale:	Drawn By: R.H.G.	Check: G.C.S.
Date: 1-18-79	Checked By: ED	Draw. No: 6

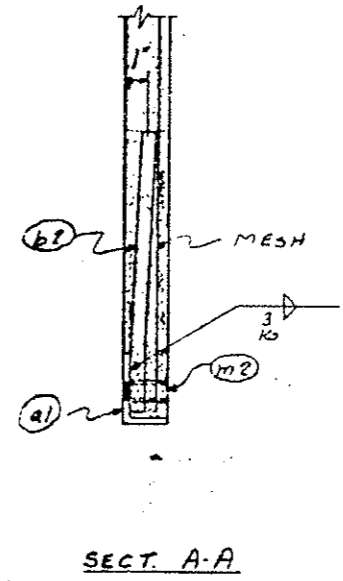
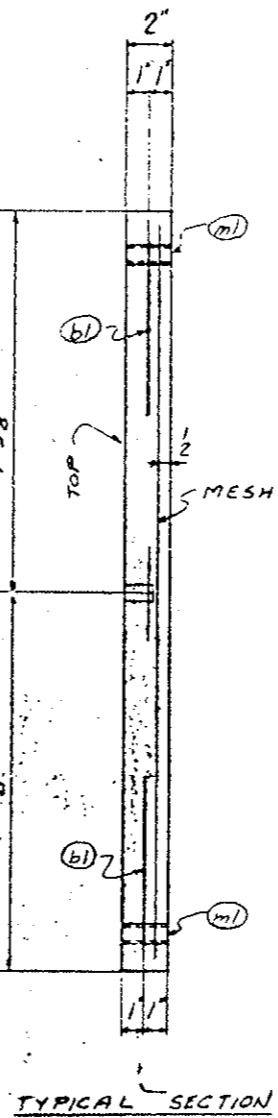
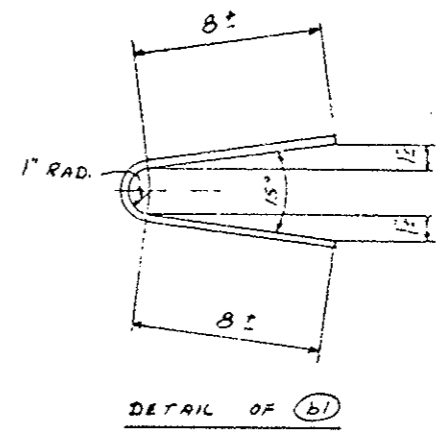
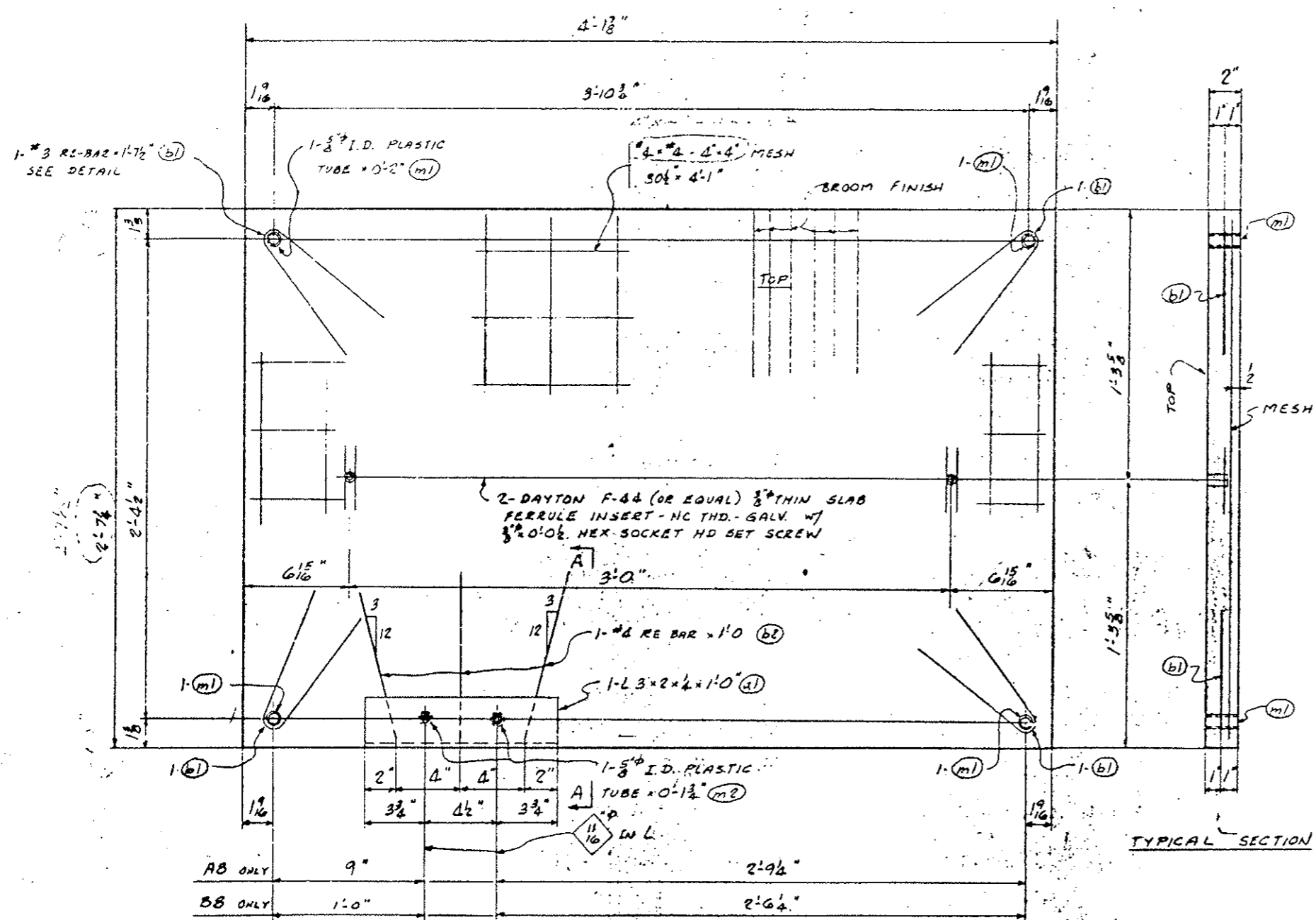


161	CONCRETE WALKWAY PANELS - A7	
175	Do	- 37
176	Do	- C7

CLASS 5 CONCRETS - FC-5000 PSI

APPROVED PRELIMINARY
 DATE 3/1/79
 BY Rick Trujillo

Weaver Construction Co.		
2115 So. Valentia Street		
Denver, Colo. 80231 (303) 755-1235		
Project: Eisenhower Tunnel Interior Finish Work		
2nd Bore - Summit & Clear Creek Counties		
Department of Highways, State of Colorado		
Project No.: 170-3(83)220		
Sheet Title: CONCRETE WALKWAY PANELS		
Rev No.	Name	Date
Rev No.	Name	Date
Scale	Drawn by R.H.G.	Shop
Date 1-19-79	Checked by E.D.	Dwg. No. 7



175 CONCRETE WALKWAY PANELS - A8
174 DO - BB

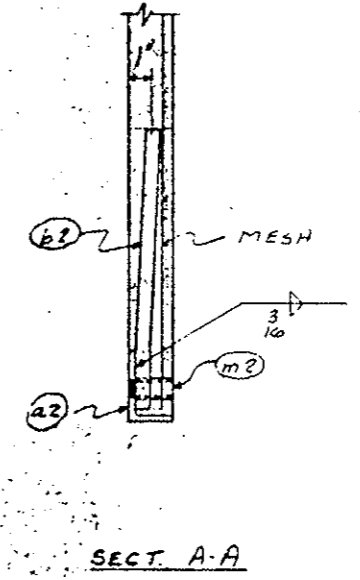
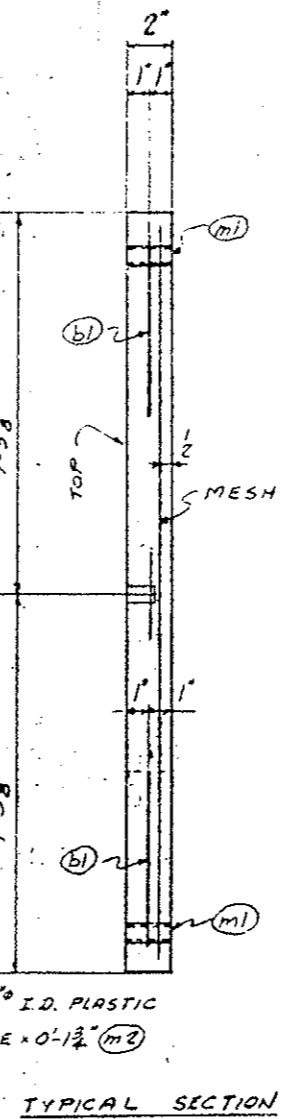
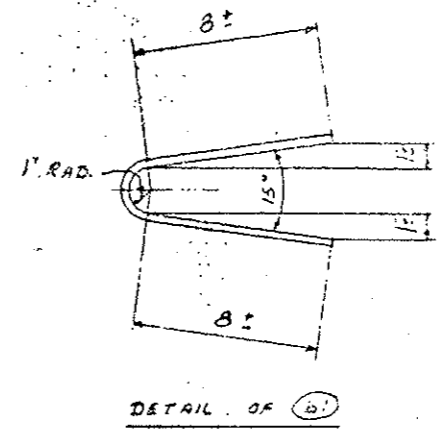
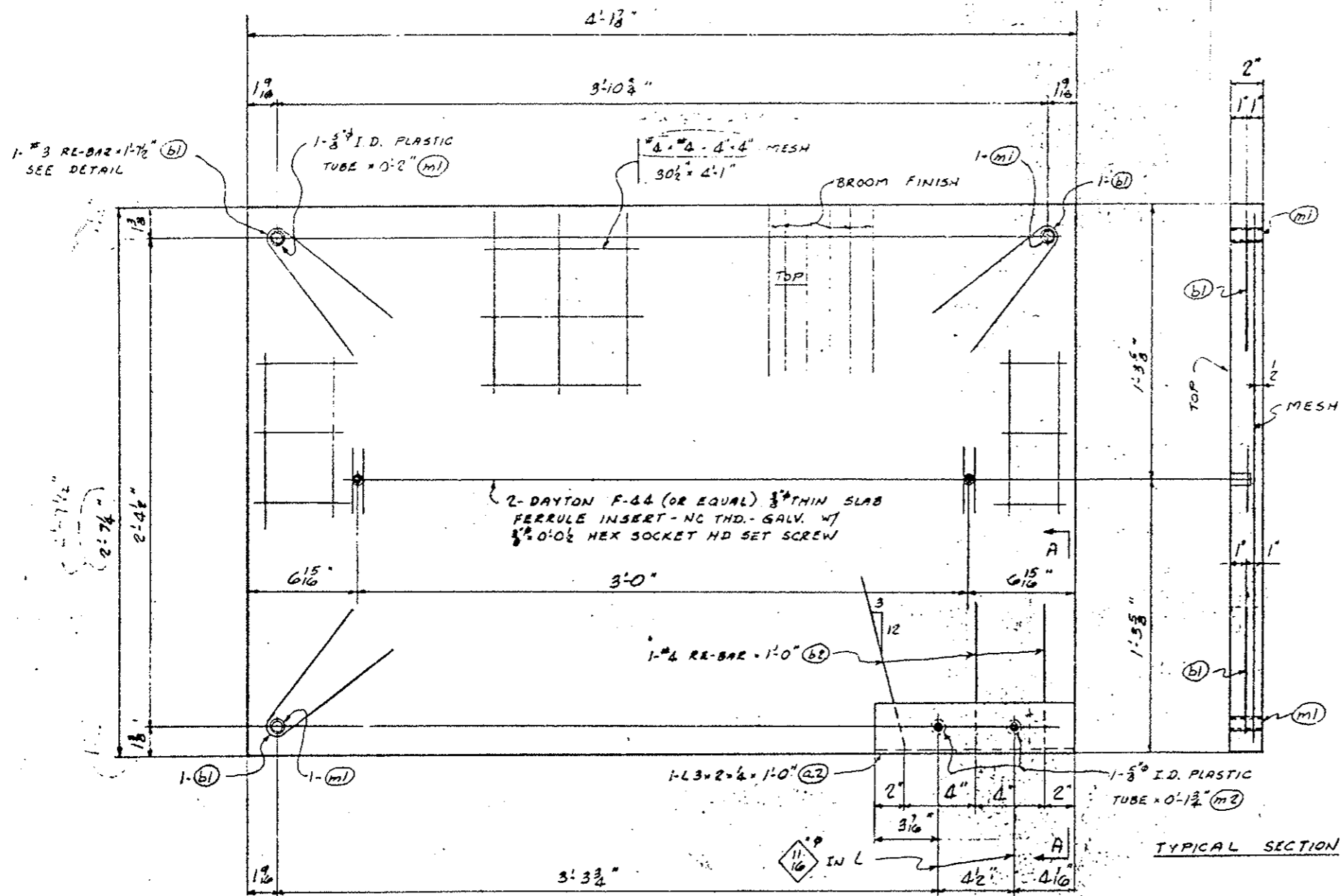
CLASS. S CONCRETE - F'C = 5000 PSI

Weaver Construction Co.
2115 So. Valentia Street
Denver, Colo. 80231 (303) 755-1285

Project: Eisenhower Tunnel Interior Finish Work
2nd Bore - Summit & Clear Creek Counties
Department of Highways, State of Colorado
Project No.: 270-3(83)220

Sheet Title: **CONCRETE WALKWAY PANELS**

Rev. No.	Issue	Date
Rev. No.	Issue	Date
Scale:	Drawn By: RHG	Shop
Date: 1-19-79	Checked By: ED	Dwg. No. 8

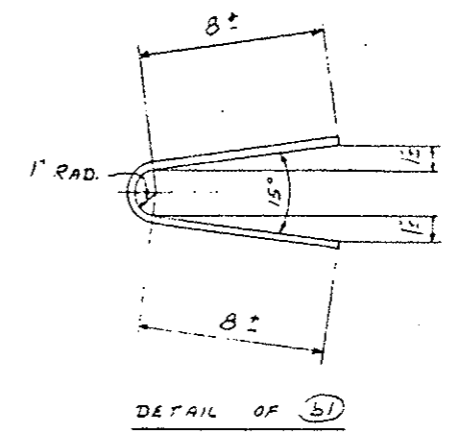
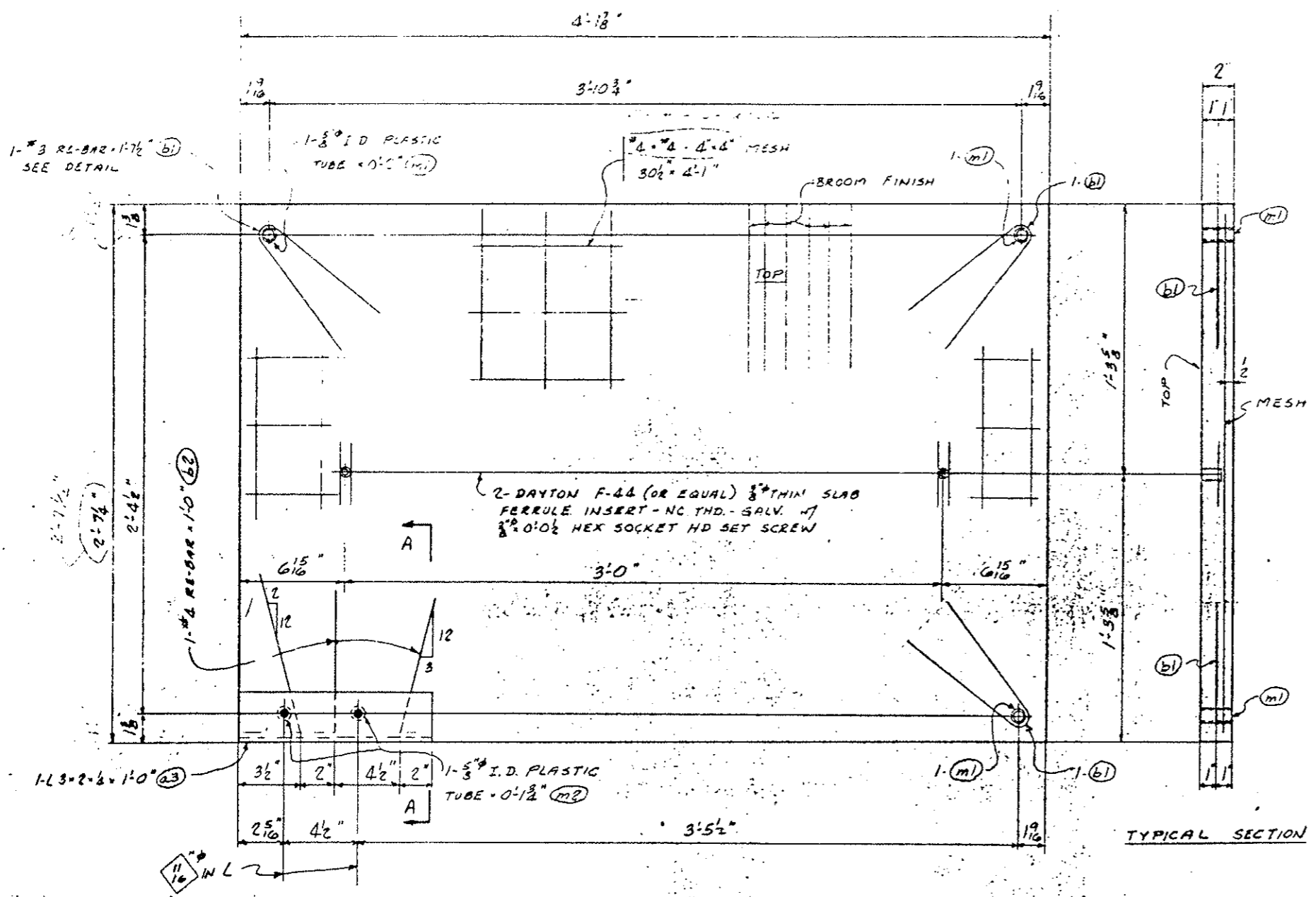


175 CONCRETE WALKWAY PANELS - A9

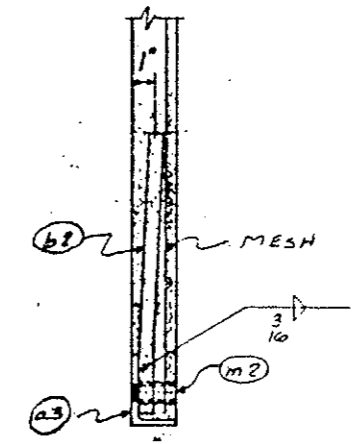
CLASS 3 CONCRETE - FC=5000 PSI

APPROVED - PRELIMINARY

Weaver Construction Co.			
2115 So. Valentia Street			
Denver, Colo. 80231 (303) 755-1285			
Project: Eisenhower Tunnel Interior Finish Work			
2nd Bore - Summit & Clear Creek Counties			
Department of Highways, State of Colorado			
Project No. I 70-3(83)220			
Sheet Title: CONCRETE WALKWAY PANELS			
Rev No.	Name	Date	
1	ED		
Scale	Drawn By: RHG	Shop	
Date: 1-19-78	Checked By: ED	Dwg. No. 9	



DETAIL OF (b1)

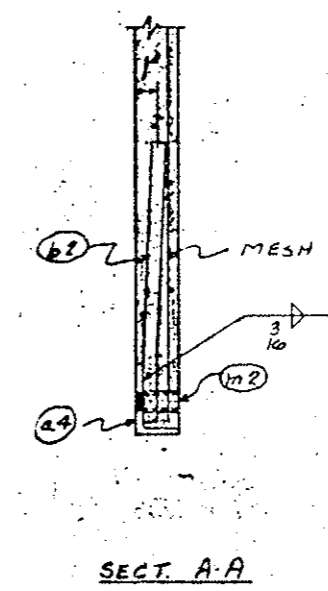
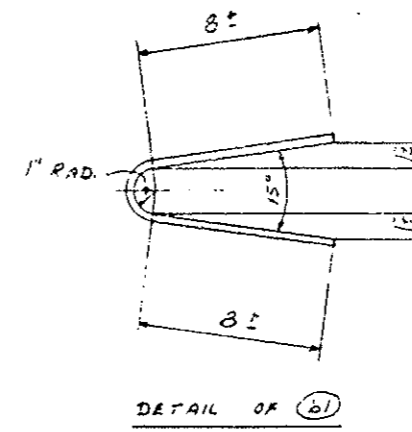
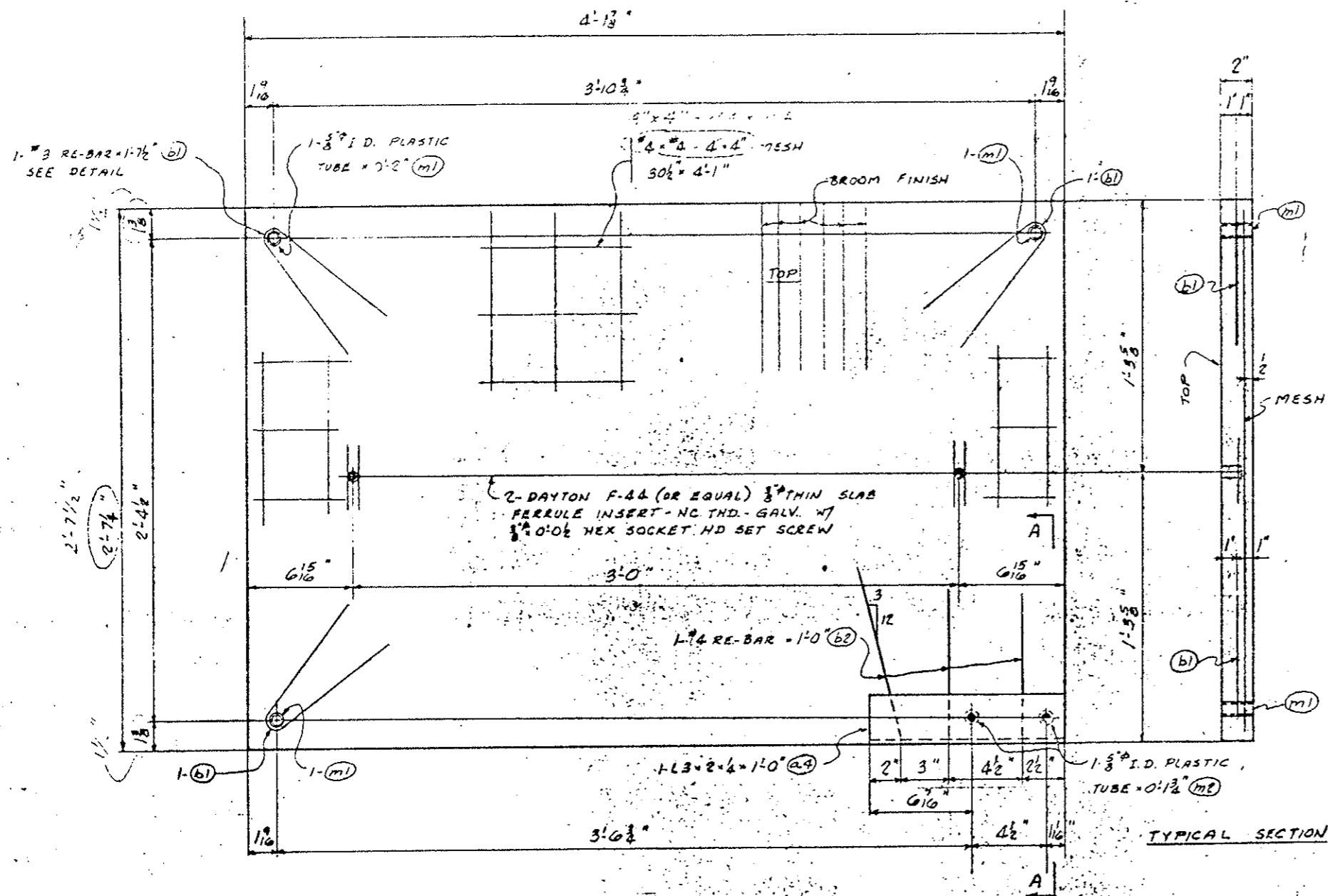


SECT. A-A

174 CONCRETE WALKWAY PANELS - A10

CLASS 5 CONCRETE - f'c = 5000 psi

Weaver Construction Co.		
2115 So. Valentia Street		
Denver, Colo. 80231 (303) 755-1285		
Project: Eisenhower Tunnel Interior Finish Work		
2nd Bore - Summit & Clear Creek Counties		
Department of Highways, State of Colorado		
Project No.: I 70-3(83)220		
Sheet Title: CONCRETE WALKWAY PANELS		
Rev. No.	Name	Date
1		
Scale	Drawn By: R.H.G.	Shop
Date: 1-19-77	Checked By: E.D.	Dwg. No. 10



174. CONCRETE WALKWAY PANELS - All

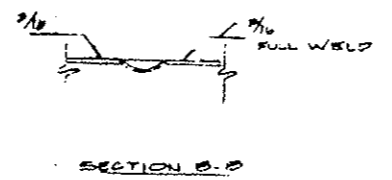
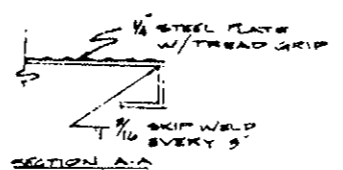
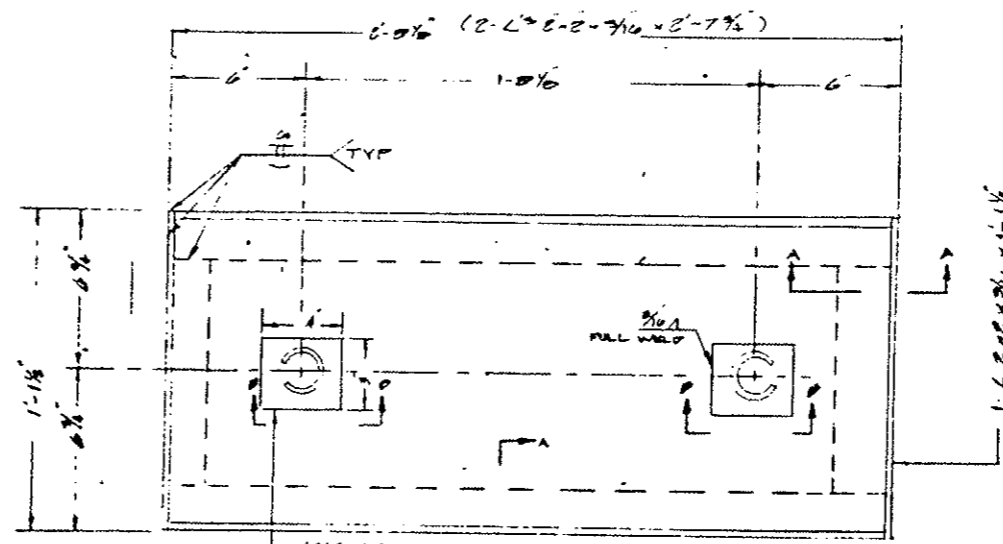
CLASS 5. CONCRETE - FC=5000 PSI

Weaver Construction Co.
 2115 So. Valentia Street
 Denver, Colo. 80231 (303) 755-1235

Project: Eisenhower Tunnel Interior Finish Work
 2nd Bore - Summit & Clear Creek Counties
 Department of Highways, State of Colorado
 Project No.: I 70-3(83)220

Equip Type: CONCRETE WALKWAY PANELS

Rev. No.	Issued	Date
Rev. No.	Issued	Date
Drawn By	Checked By	Shop
1-19-79	ED	11



1010 STANLEY RING FULL FLUSH MOUNTED GALVANIZED

3/8 REMOVABLE WALLWAY PANELS P.C. GALVANIZE AFTER FABRICATION

WEAVER CONSTRUCTION CO 8110 SA VALENTIA STREET DENVER COLORADO 80051		
PROJECT: EISENHOWER TUNNEL INTERIOR FINISH WORK 2 ND BORE SUMMIT & CLEAR CREEK COUNTIES 170-2(05)220		
SHEET TITLE: CONCRETE WALKWAY PANELS		
	REVISION	
1	QUOTED DIM	E.S.B.
DATE	DRAWN BY	NO. 16
8-22-79	JAH	

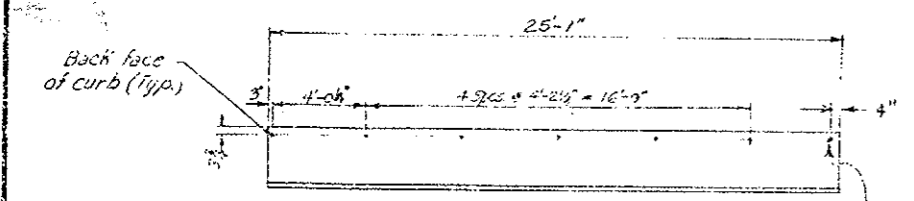
FEDERAL ROAD DESIGN NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
X01	COLORADO	I70-3.33(220)	33	

REVISIONS		
(R-1)	10-17-75	Curb Color

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

GENERAL NOTES
 GRADE 60 REINFORCING STEEL IS REQUIRED FOR #5 BARS AND LARGER. GRADE 40 MAY BE USED FOR BARS SMALLER THAN #5.
 THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR REINFORCING BARS:

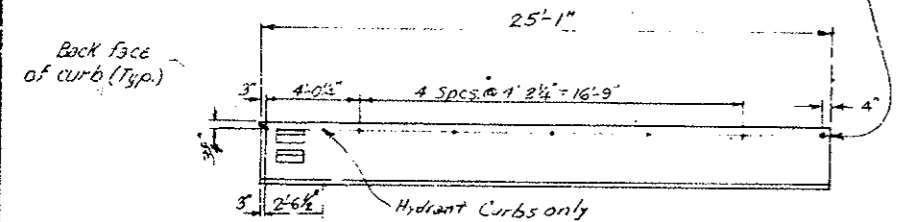
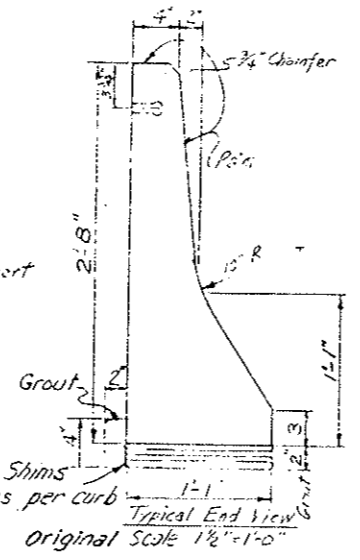
BAR SIZE	#3	#4	#5	#6	#7	#8
SPLICE LENGTH	1'-0"	1'-0"	1'-3"	1'-8"	2'-3"	3'-0"



- Curb ② Color-Green without expansion bolt insert
- Curb ③ Color-Green with expansion bolt insert
- Curb ④ Color-White without expansion bolt insert
- Curb ⑦ Color-White with expansion bolt insert

Without Steps

Additional Insert

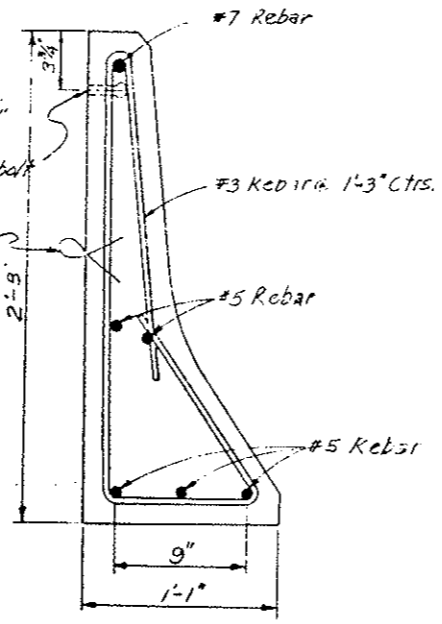


- Curb ① Color-Green with expansion bolt insert
- Curb ⑤ Color-White with expansion bolt insert
- Curb ⑥ Color-Green (R-1) without expansion bolt insert

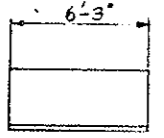
With Steps

Insert for 1/2" 13 NG x 2" long Cadmium plated bolt

2 Lifting Loops per panel

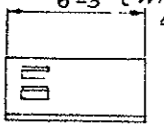


Typical Section
Original Scale: 2"=1'-0"



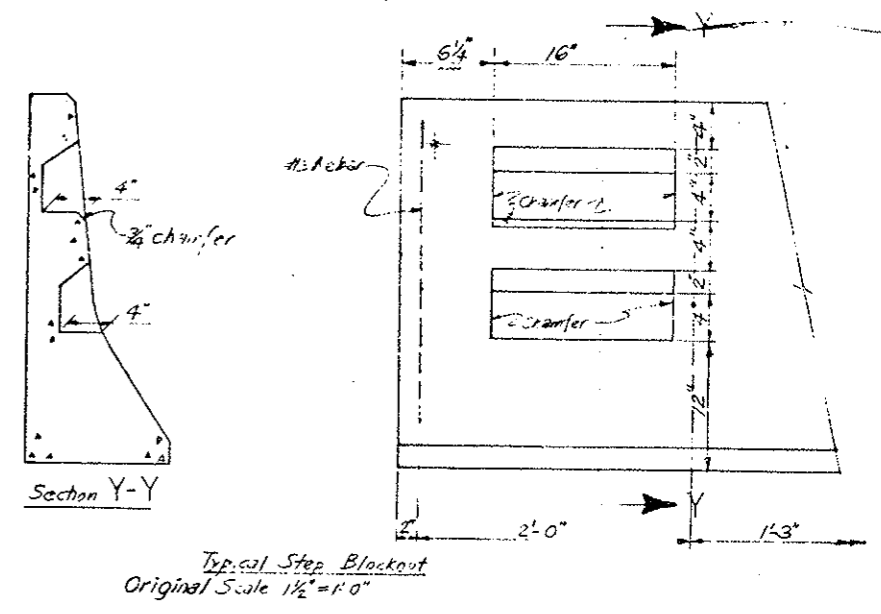
- Curb ⑥ Color-White without expansion bolt insert
- (R-1) Curb ⑩ Color-Green without expansion bolt insert

Without Steps



- Curb ⑧ Color-White without expansion bolt insert
- (R-1) Curb ⑪ Color-Green without expansion bolt insert

With Steps



Typical Step Blockout
Original Scale 1/2"=1'-0"

DESIGNED BY	CHECKED BY	DATE	QUANTITIES BY
		7-3-75	
DETAILED BY	CHECKED BY	DATE	QUANTITIES BY
		7-8-75	

DIVISION OF HIGHWAYS

PRECAST SAFETY CURBS DETAILS

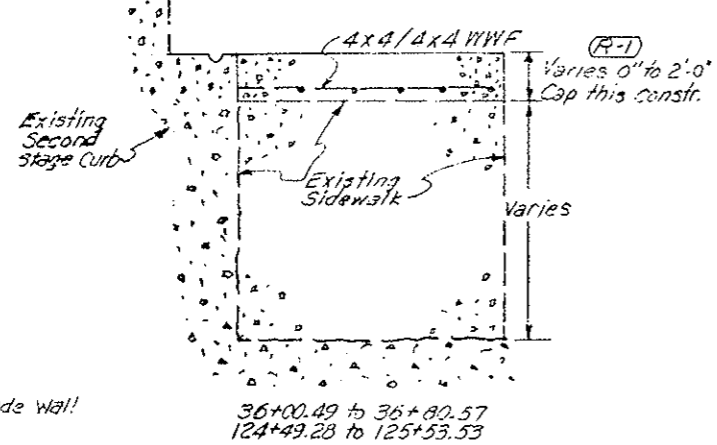
Designer C.D.H.	Structure
Detailer J. [unclear]	Numbers
Drawing Number W-5	of Drawings

FEDERAL AID REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I70-3(83)220	34	

REVISIONS		
(R-1)	11-3-78	Dimensions E.E.

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

DETAIL OF RAISE SIDEWALK (No Scale)

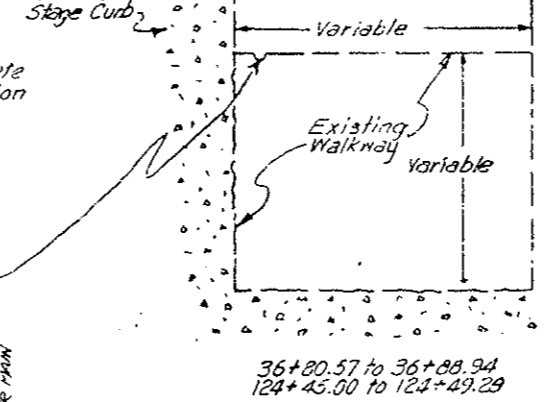


36+80.57 to 36+88.94 - Remove Concrete Walkway Lt. in accordance with Specification Section 202

36+00.49 to 35+80.57 - Raise existing Sidewalk Lt.

Gutter Drain Deleted on South Side from sta. 35+99.2 to sta. 37+80.2

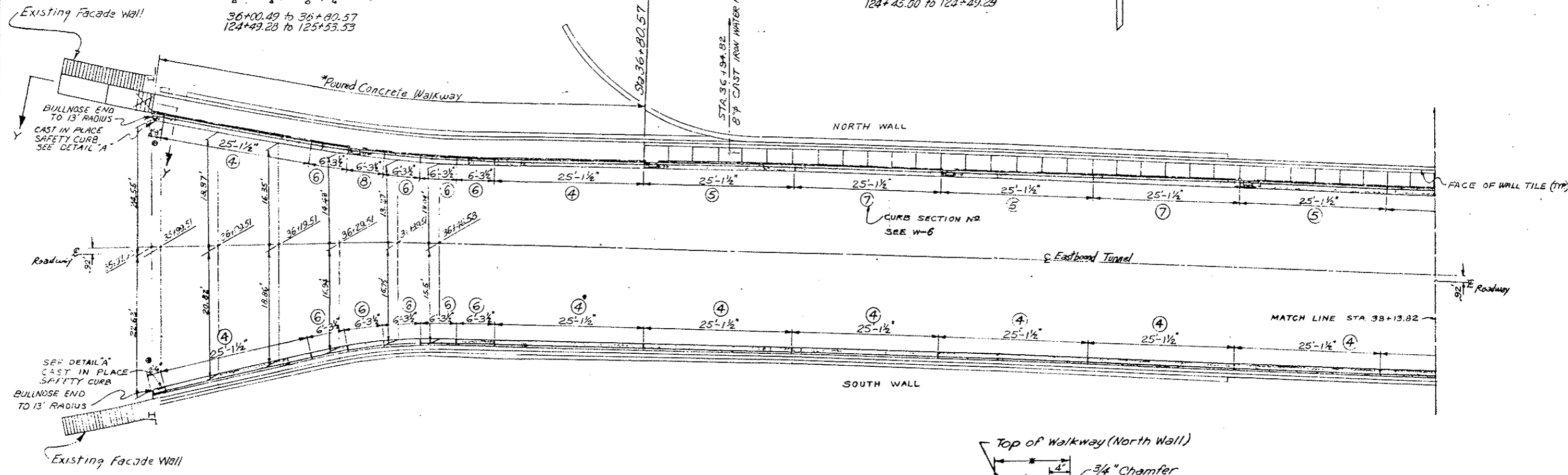
DETAIL OF WALKWAY TO BE REMOVED (No Scale)



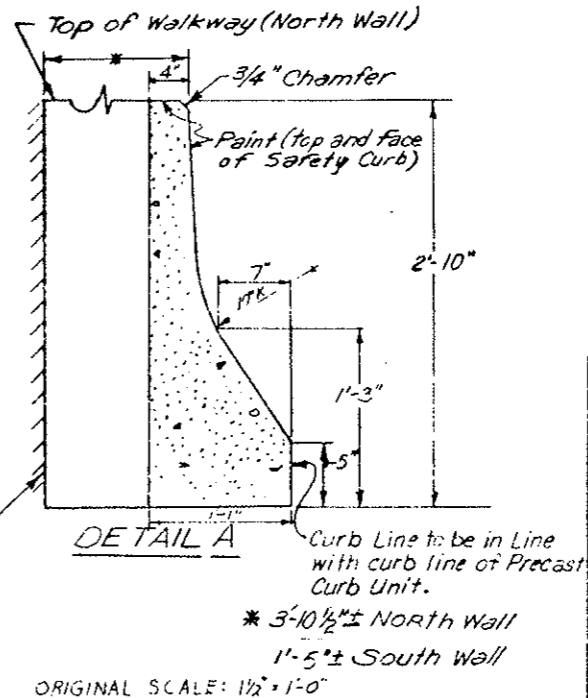
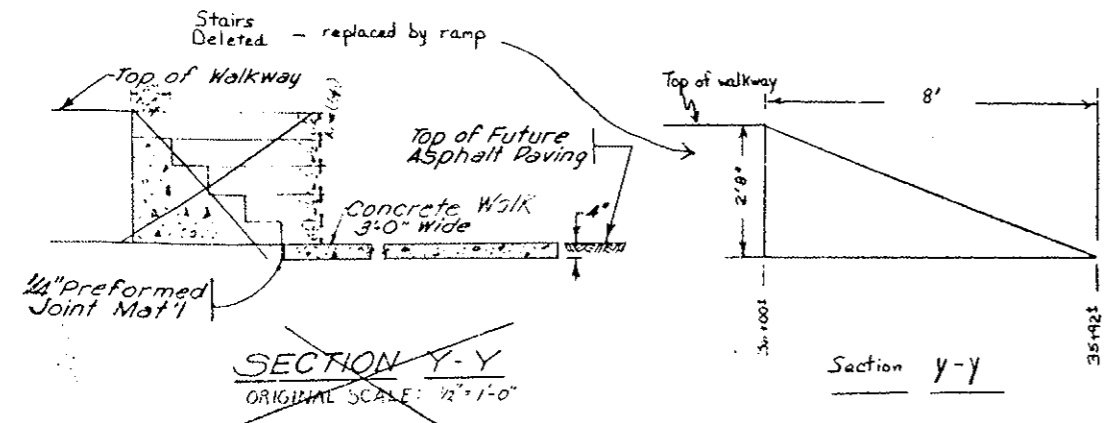
36+80.57 to 36+88.94
124+45.00 to 124+49.29



DESIGNED BY	C. DOY	CHECKED BY	
DATE	9-17-75	QUANTITIES BY	
DESIGNED BY	C. DOY	CHECKED BY	
DATE	9-17-75	QUANTITIES BY	



PLAN OF PRECAST CURB THRU WEST VENT BUILDING
ORIGINAL SCALE: 1/8" = 1'-0"



- NOTES:**
1. PRECAST CURB SECTIONS PAINTED WHITE THRU BUILDING.
 2. FOR CURB DETAILS - SEE W-6
 - * FIELD CHECK DIMENSION.
 - * FOR EXPANSION JOINTS - SEE NOTE ON W-1

DIVISION OF HIGHWAYS

PLAN OF PRECAST CURB THRU WEST VENT BUILDING SHEET NO. 1

Designer C. DOY	Structure
Detailer J. L. Schwaner	Numbers
Drawing Number W-7	of Drawings

ORIGINAL SCALE: 1/2" = 1'-0"

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(83)220	35	

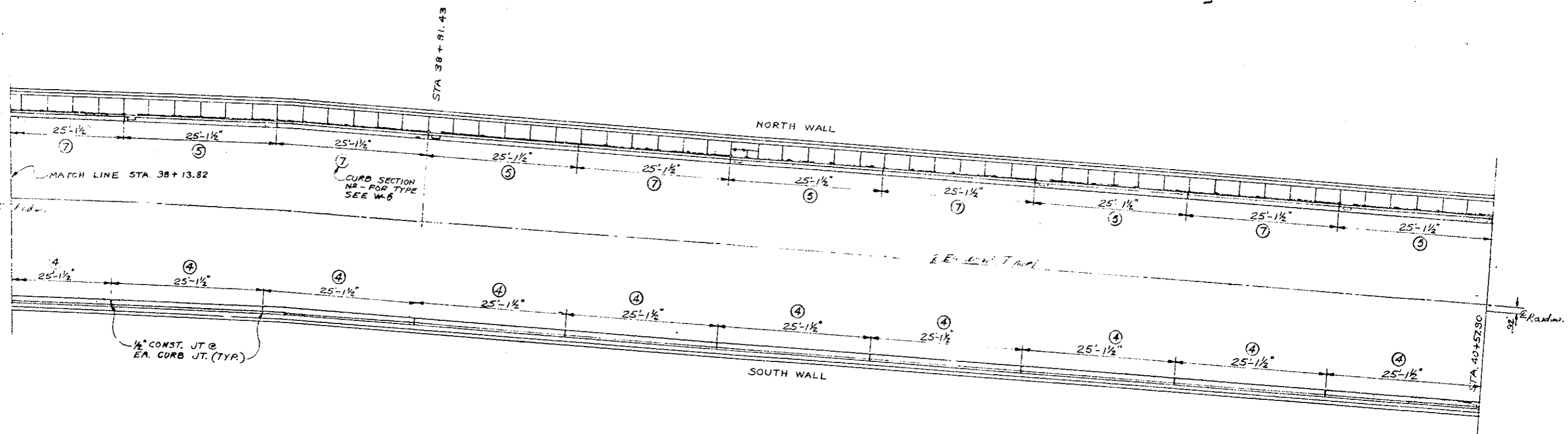
REVISIONS		

AS CONSTRUCTED

NO REVISIONS REVISED VOID



CHECKED BY	DATE	QUANTITIES BY	CHECKED BY
CDOH	9/17/72	CDOH	9/17/72
CDOH	9/17/72	CDOH	9/17/72
CDOH	9/17/72	CDOH	9/17/72



DIVISION OF HIGHWAYS

PLAN OF PRECAST CURB
THRU WEST VENT BUILDING
SHEET NO. 2

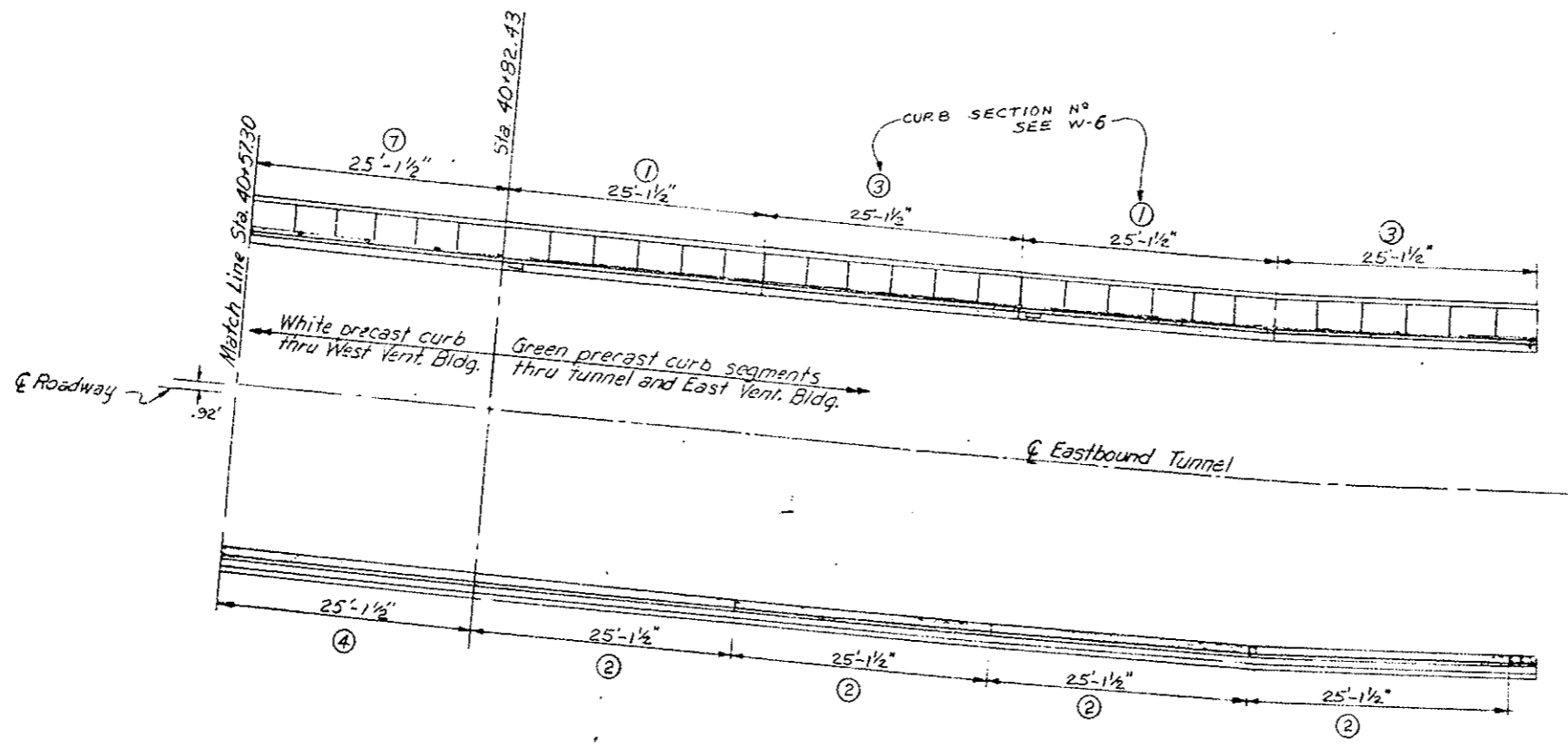
Designer CDOH	Structure
Detailer J. Leitchworth	Numbers
Drawing Number W-8	of Drawings

Revision Dates	(Preliminary Stage Only)
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FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(83)220	36	

REVISIONS	

AS CONSTRUCTED		
NO REVISIONS <input checked="" type="checkbox"/>	REVISED <input type="checkbox"/>	VOID <input type="checkbox"/>



PLAN OF PRECAST CURB
THRU WEST VENT. BUILDING
ORIGINAL SCALE: 1/8" = 1'-0"

NOTE:
1. FOR CURB DETAILS SEE W-6

DESIGNED BY	CHECKED BY
CHECKED BY	QUANTITIES BY
DATE	CHECKED BY
INITIAL	CHECKED BY

DIVISION OF HIGHWAYS	
PLAN OF PRECAST CURB THRU WEST VENT BUILDING SHEET NO. 3	
Designer <i>CDOH</i>	Structure Numbers
Detailer <i>J. Letchworth</i>	Numbers
Drawing Number <i>W-9</i>	of Drawings

Revision Dates	(Preliminary Stage Only)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I 70-3(83)220	37	

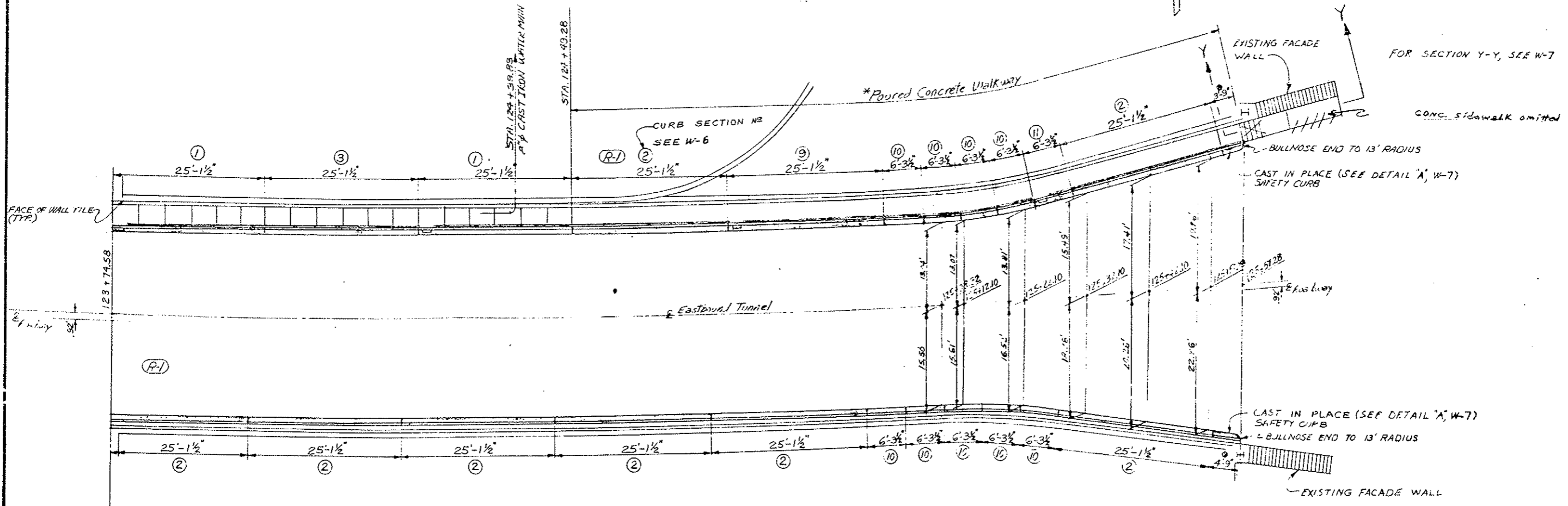
REVISIONS		
(R-1)	10-17-78	Curb Section No and Sheet Title E.B.

AS CONSTRUCTED		
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VOID <input type="checkbox"/>

124+45.00 to 124+49.28 - Remove Concrete Walkway L₁ in accordance with Specification Section 202 (Detail on Sh. W-7)

124+49.28 to 125+53.53 - Raise existing Sidewalk L₂ (Details on Sh. W-7)

CHECKED BY	DATE	CHECKED BY	DATE
QUANTITIES BY			
DETAILS BY			



PLAN OF PRECAST CURB
THRU EAST VENT BUILDING
ORIGINAL SCALE: 1/8" = 1'-0"

● FIELD CHECK DIMENSION

* FOR EXPANSION JOINTS - SEE NOTE ON W-1

- NOTE:
1. PRECAST CURB SECTIONS PAINTED WHITE THRU BUILDING.
 2. FOR CURB DETAILS - SEE W-6

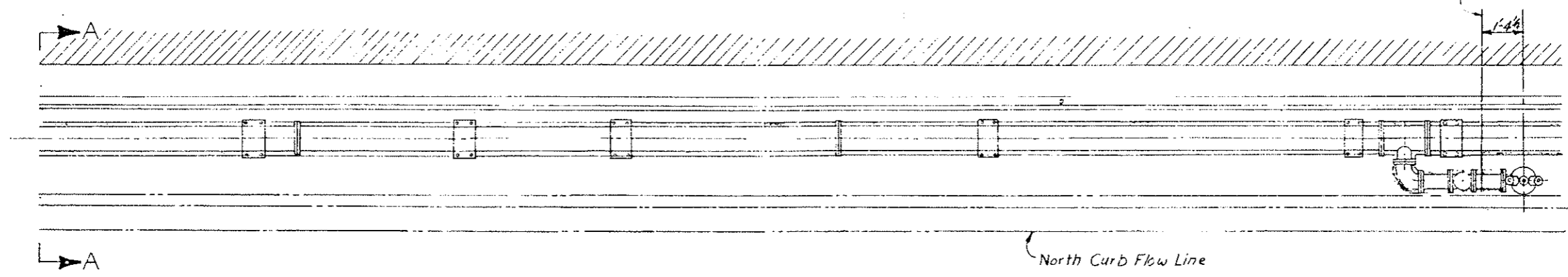
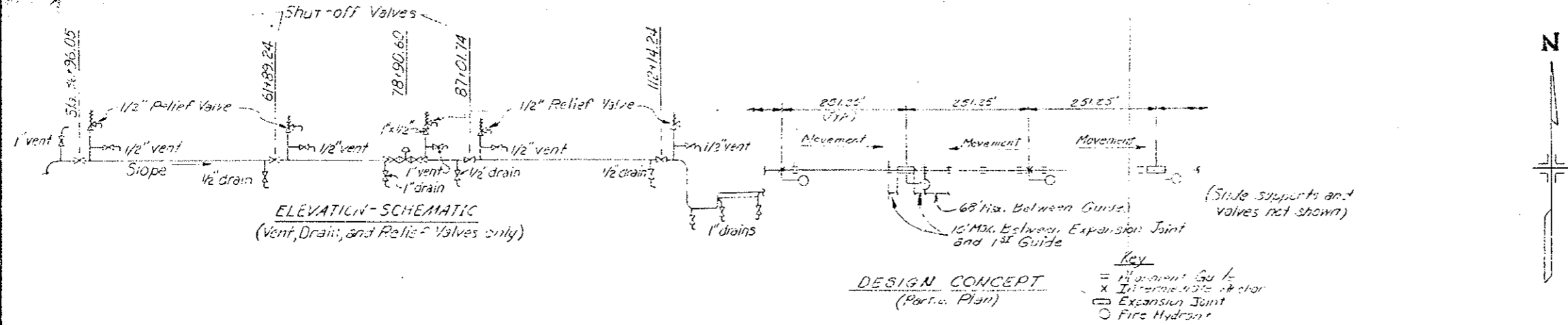
DIVISION OF HIGHWAYS	
PLAN OF PRECAST CURB THRU EAST VENT BUILDING (R-1)	
Designer C.D.O.H.	Structure
Detailer J. Letchworth	Numbers
Drawing Number W-10	of Drawings

Revision Dates (Preliminary Stage Only)

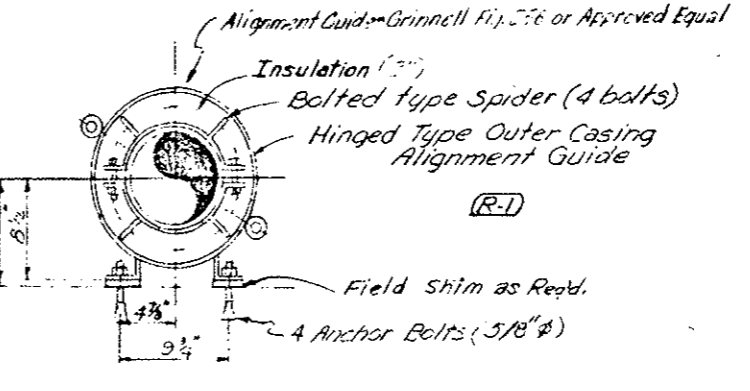
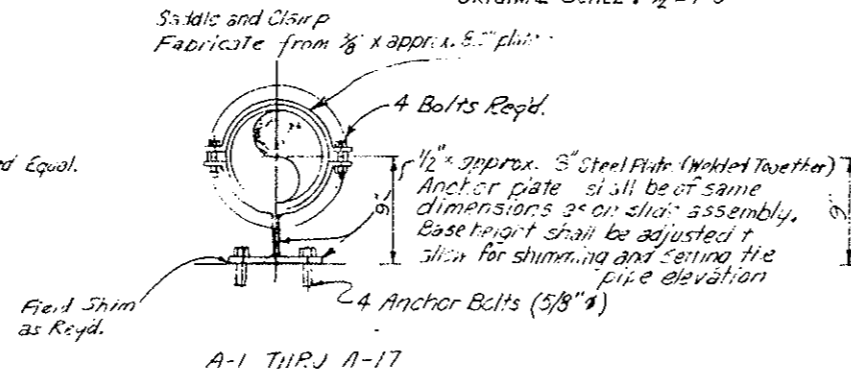
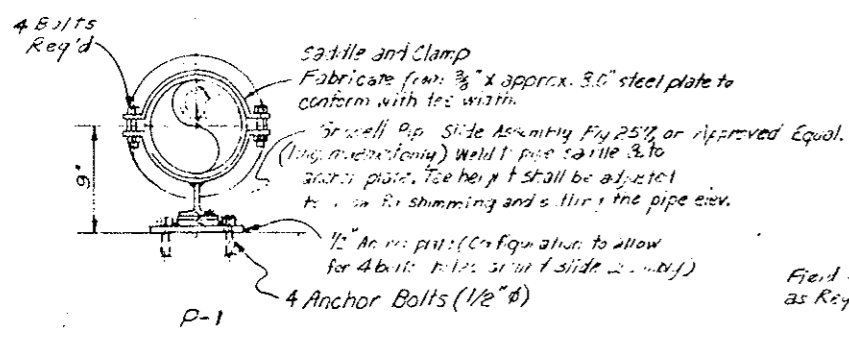
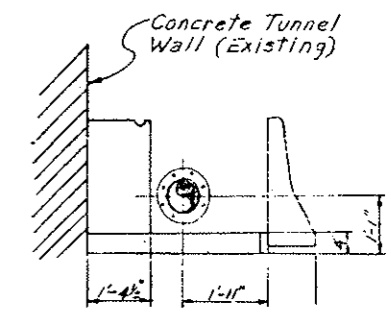
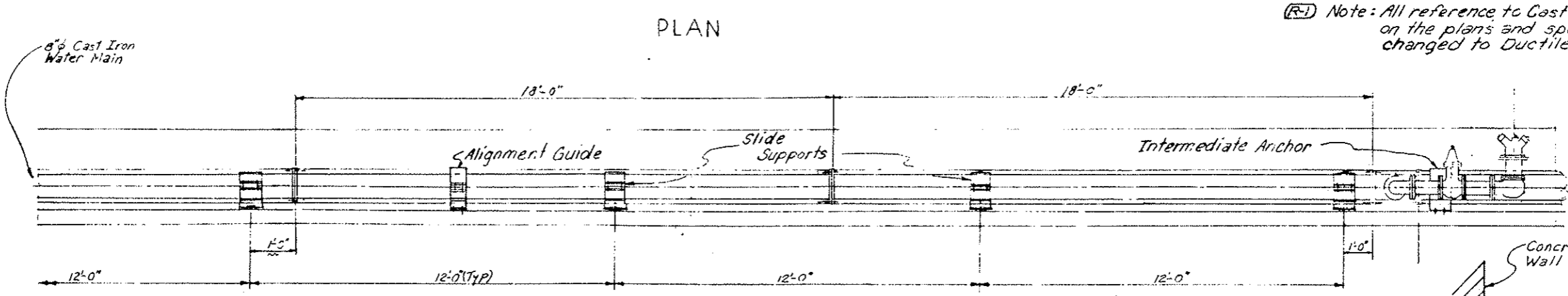
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	I 70-3(83)220	38	

REVISIONS		
(R-1)	11-14-78	Added note, deleted detail E.B.

AS CONSTRUCTED		
NO REVISIONS	REVISIED	VOID



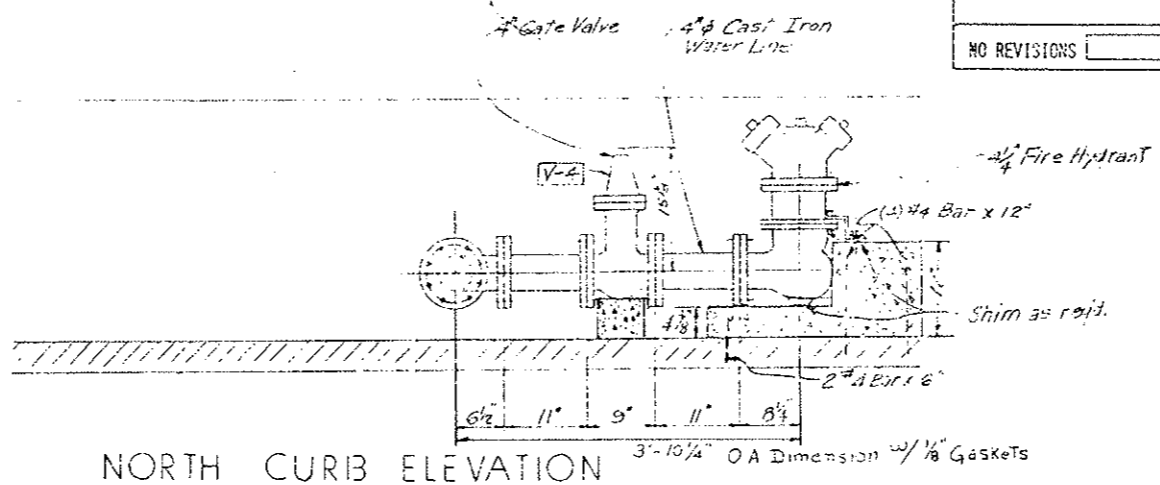
(R-1) Note: All reference to Cast Iron Pipe (Water Main) on the plans and specifications is hereby changed to Ductile Iron Pipe.



DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
TYPICAL DETAILS	
Designer C.D.H.	Structure
Detailer U. Letchworth	Numbers
Drawing Number 11-1	of Drawings
Revision Dates (Preliminary Stage Only)	

INITIAL	DATE	CHECKED BY	QUANTITIES BY
	9-78		
	10-78		

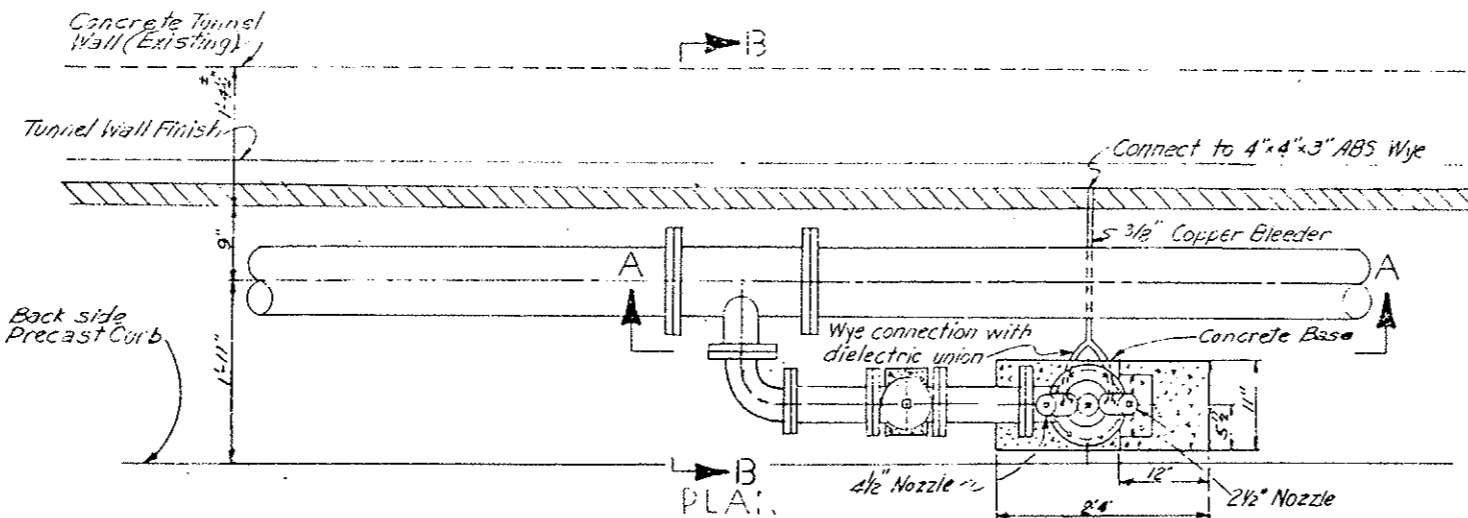
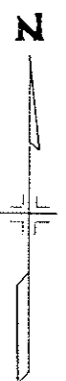
Valve Size and Type	Symbol on Plans
9" Gate (Non Rising Stem)	V-1
8" Gate (Outside Screw and Yoke)	V-2
6" Gate (Non Rising Stem)	V-3
4" Gate (Non Rising Stem)	V-4
3" Gate (Non Rising Stem)	V-5
1" Gate (Rising Stem)	V-6
1/2" Gate (Rising Stem)	V-7
8" Check	V-8
1/2" Relief	V-9



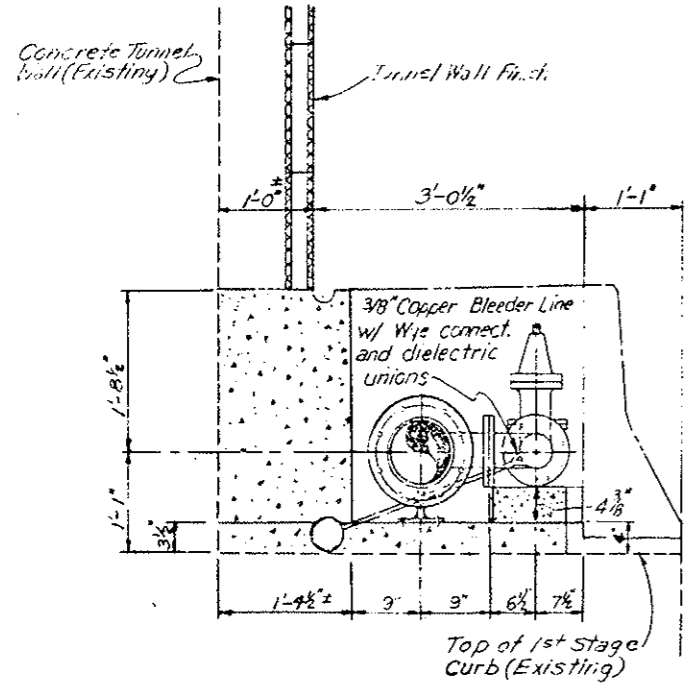
REVISIONS	

Fire Hydrant Locations

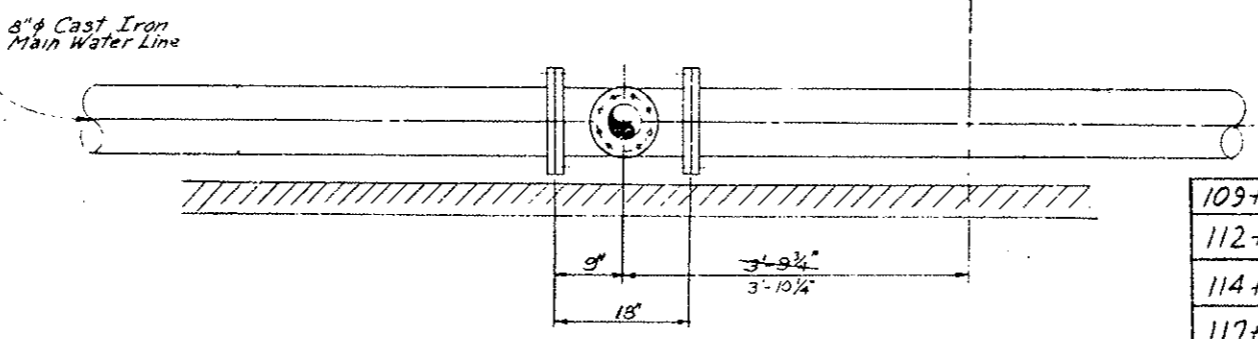
H-No.	Station	Station
H-1	39+33.03	39+33.93
H-2	41+84.28	41+85.18
H-3	44+35.53	44+36.43
H-4	46+86.78	46+87.68
H-5	49+38.03	49+38.93
H-6	51+89.28	51+90.18
H-7	54+40.53	54+41.43
H-8	56+91.78	56+92.68
H-9	59+43.03	59+43.93
H-10	61+94.28	61+95.18
H-11	64+45.53	64+46.43
H-12	66+96.78	66+97.68
H-13	69+48.03	69+48.93
H-14	71+99.28	72+00.18
H-15	74+50.53	74+51.43
H-16	77+01.78	77+02.68
H-17	79+53.03	79+53.93
H-18	82+04.28	82+05.18
H-19	84+55.53	84+56.43
H-20	87+06.78	87+07.68
H-21	89+58.03	89+58.93
H-22	92+09.28	92+10.18
H-23	94+60.53	94+61.43
H-24	97+11.78	97+12.68
H-25	99+63.03	99+63.93
H-26	102+14.28	102+15.18
H-27	104+65.53	104+66.43
H-28	107+16.78	107+17.68
H-29	109+68.93	109+68.03
H-30	112+20.18	112+19.28
H-31	114+71.43	114+70.53
H-32	117+22.68	117+21.78
H-33	119+73.93	119+73.03
H-34	122+25.18	122+24.28



CHECKED BY	DATE	CHECKED BY	DATE
QUANTITIES BY	DATE	QUANTITIES BY	DATE
DESIGNED BY	DATE	DESIGNED BY	DATE
CHECKED BY	DATE	CHECKED BY	DATE



SECTION B-B



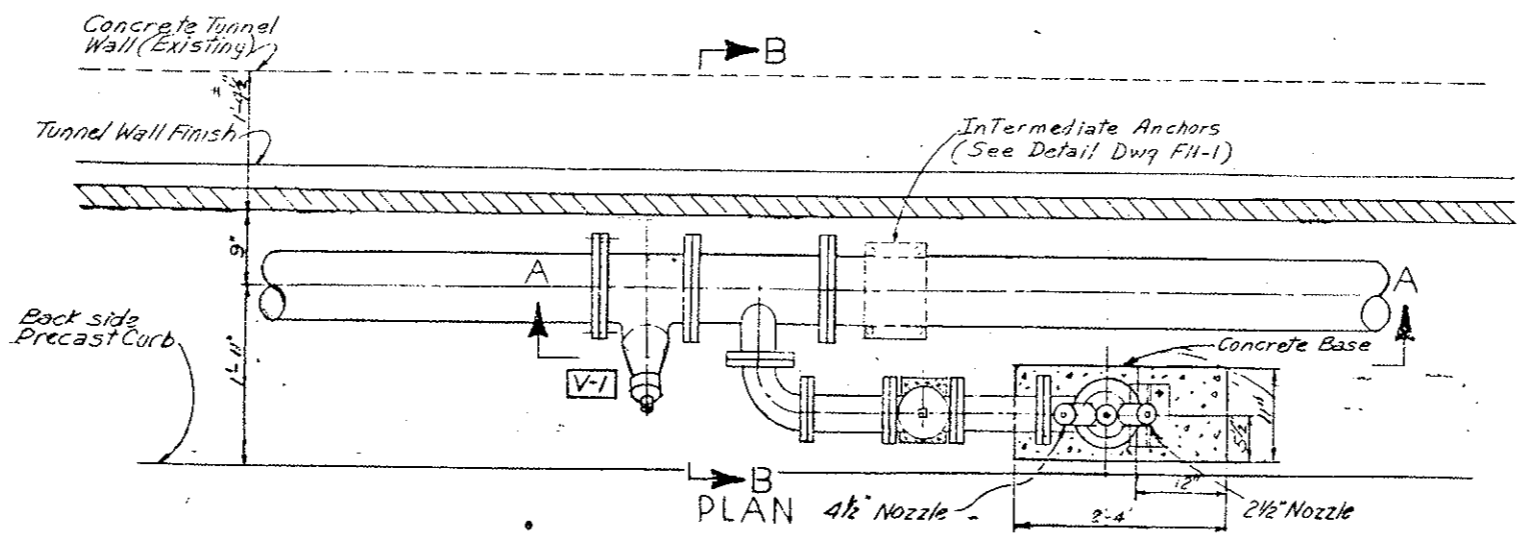
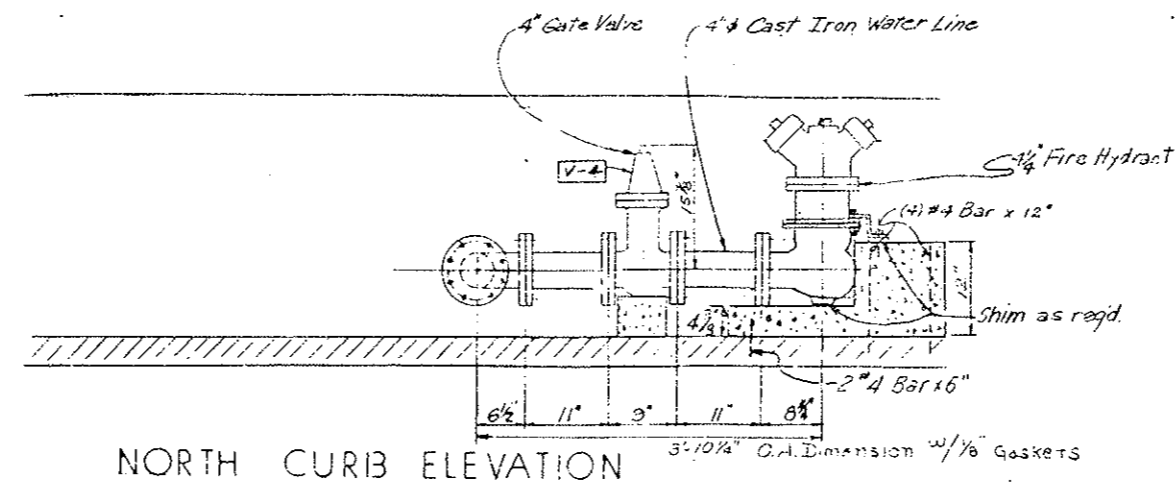
SECTION A-A
Original Scale: 1"=1'-0"

DIVISION OF HIGHWAYS	
FIRE HYDRANT STATION	
Designer CDOH	Structure
Detailer J. Letzworth	Numbers
Drawing Number FH-2	of Drawings
Revision Dates	(Preliminary Stage Only)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I 70-3 (83) 220	40	

REVISIONS		
NO.	DESCRIPTION	DATE

AS CONSTRUCTED		
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VOTED <input type="checkbox"/>

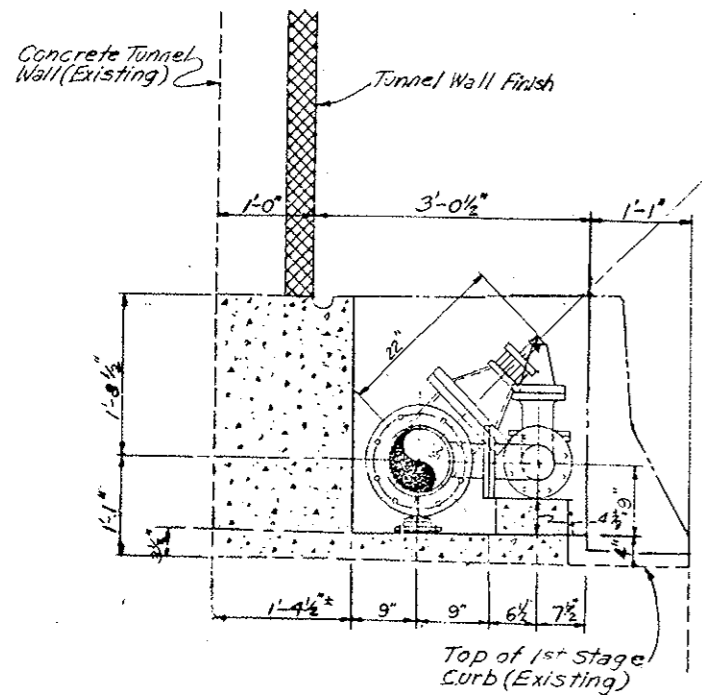


Shut-Off Valve (8" Gate) Locations

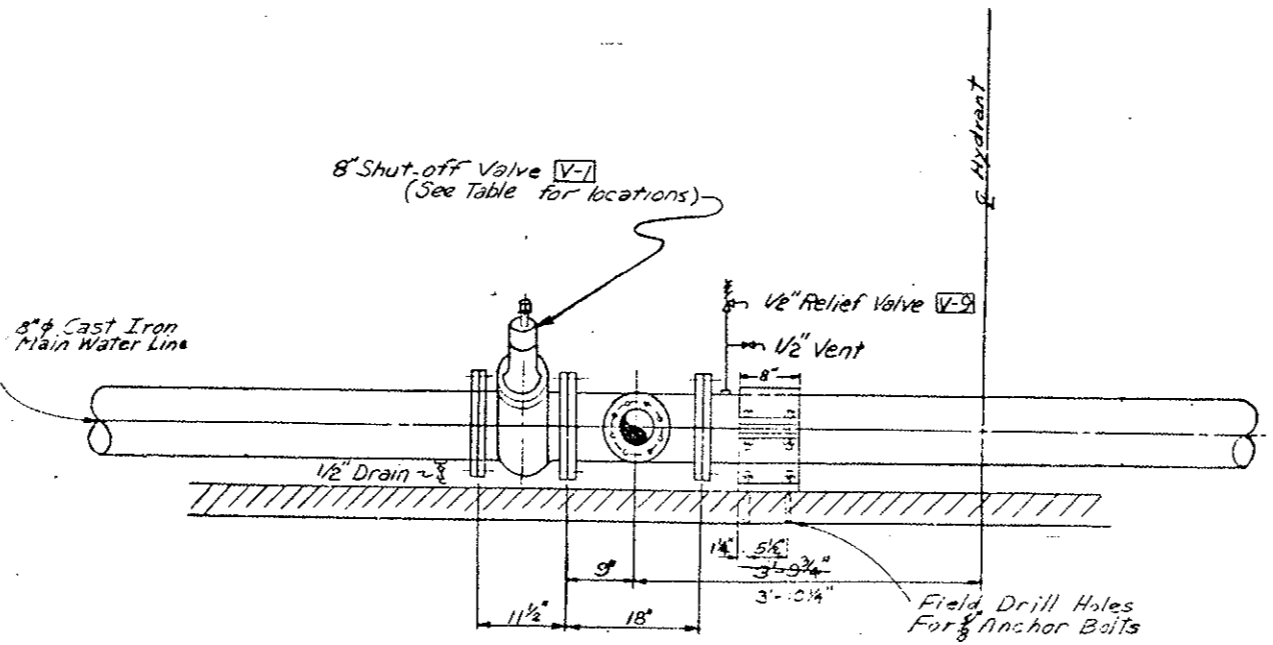
No.	Station	
1	36+96.05	
2	61+89.84	61+90.09
3	87+01.74	87+02.59
4	112+14.24	112+15.09

Remaining 8" Gate Valves are located in the East Ventilation Building (see FH-1B).

DESIGNED BY	CDOH
CHECKED BY	CDOH
DATE	2-15-75
QUANTITIES BY	CDOH
CHECKED BY	CDOH
DATE	2-15-75



SECTION B-B



SECTION A-A
Original Scale 1"=1'-0"

DIVISION OF HIGHWAYS

**FIRE HYDRANT STATION
MAIN LINE SHUT-OFF VALVE**

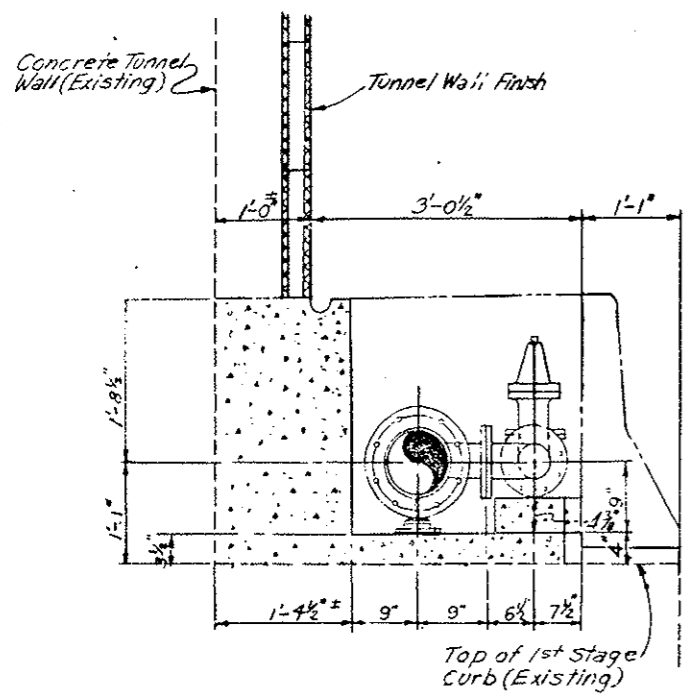
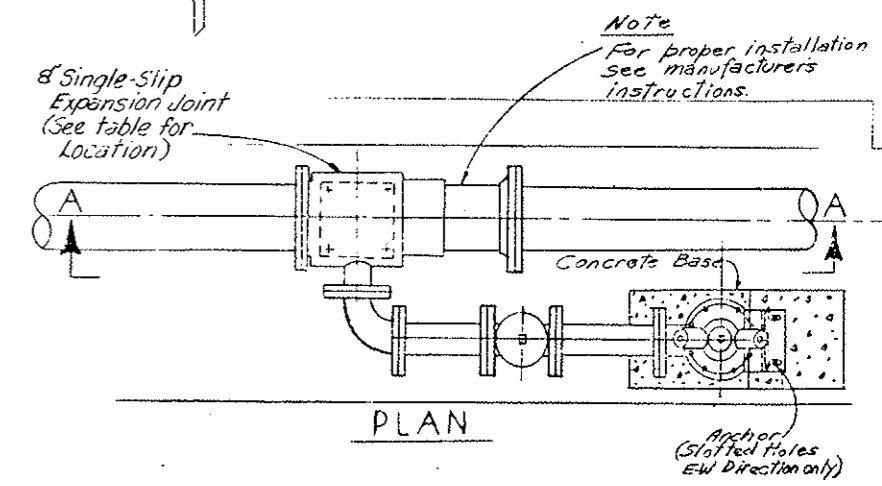
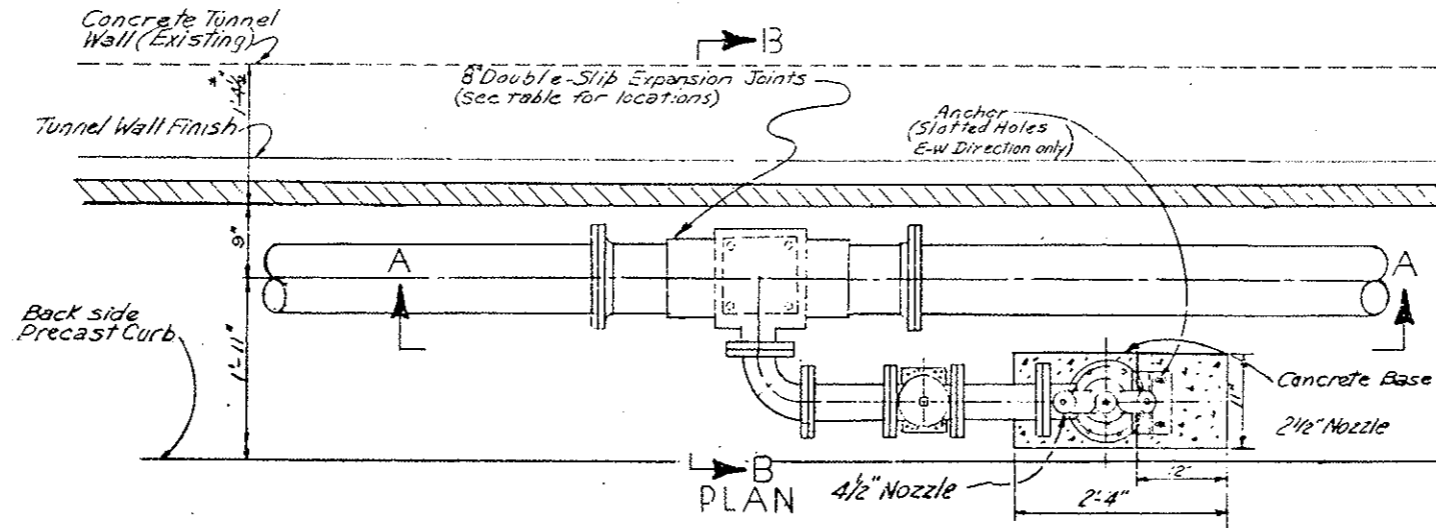
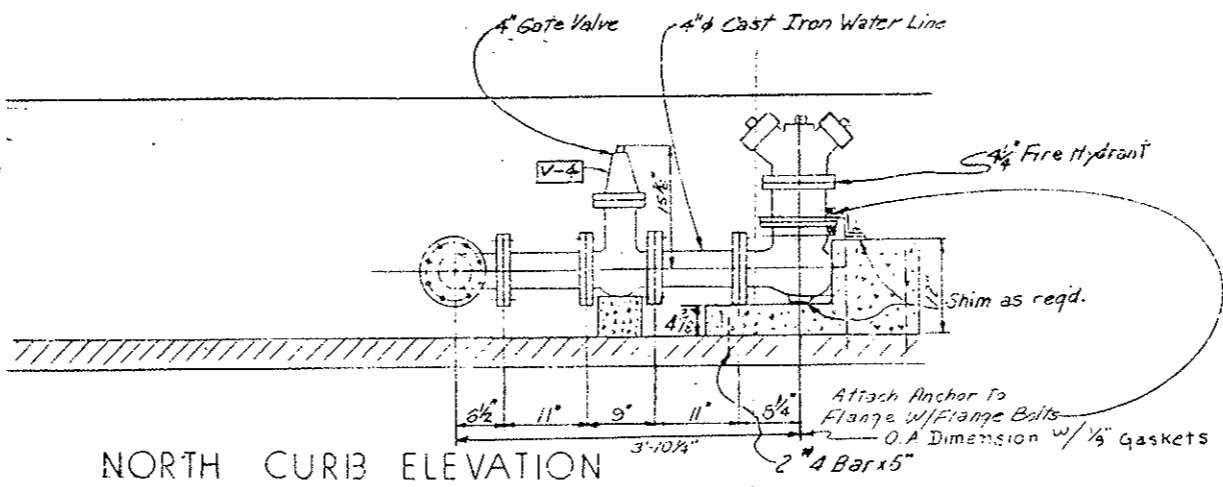
Designer CDOH	Structure
Detailer J. Leitchworth	Numbers
Drawing Number FH-3	of Drawings

Revision Dates	(Preliminary Stage Only)

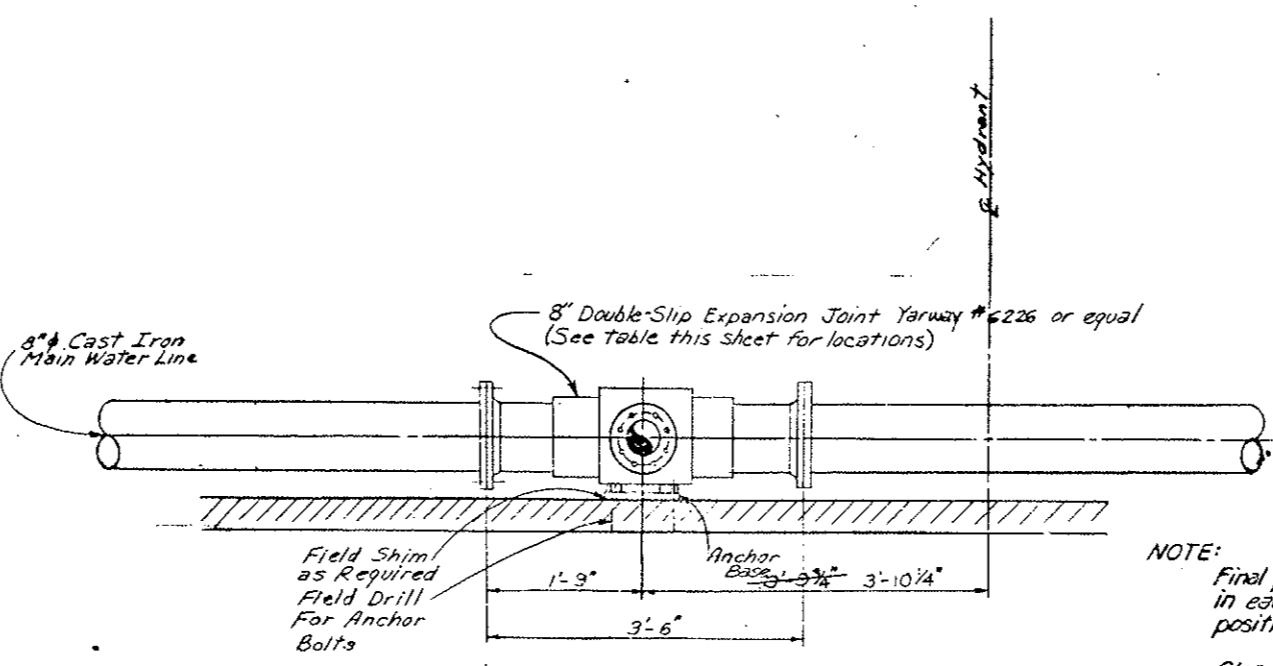
8 Inch Expansion Joint Locations

Expansion Joint	Station	Station
Double-Slip 1	39+29.22	39+30.08
" 2	44+31.72	44+32.58
" 3	49+34.22	49+35.08
" 4	54+36.72	54+37.58
" 5	59+39.22	59+40.08
" 6	64+41.72	64+42.58
" 7	69+44.22	69+45.08
" 8	74+46.72	74+47.58
" 9	79+49.22	79+50.08
" 10	84+51.72	84+52.58
" 11	89+54.22	89+55.08
" 12	94+56.72	94+57.58
" 13	99+59.22	99+60.08
" 14	104+61.72	104+62.58
" 15	109+64.22	109+65.08
" 16	114+66.72	114+67.58
Double-Slip 17	119+69.22	119+70.08
Single-Slip 1	122+20.47	122+21.33

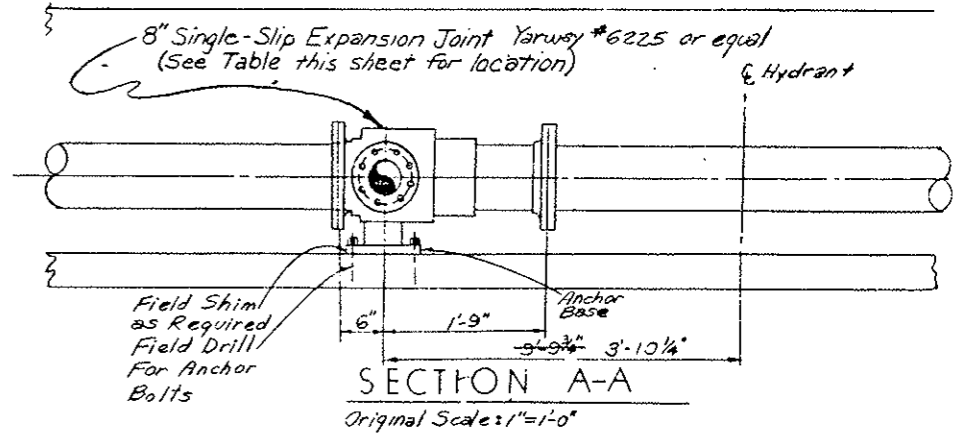
DESIGNED BY	CHECKED BY	DATE	QUANTITY BY	CHECKED BY	DATE
C.D.O.H.	C.D.O.H.	2/15/75	C.D.O.H.	C.D.O.H.	2/15/75



SECTION B-B



SECTION A-A
Original Scale: 1"=1'-0"



SECTION A-A
Original Scale: 1"=1'-0"

NOTE:
Final pipe fit shall allow 1 1/2" min. travel in each direction from an installation position corresponding to 60° temp.
Clearance between slip and sleeve to be in accordance with the manufacturer's recommendation.

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	41	

REVISIONS		

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

DIVISION OF HIGHWAYS

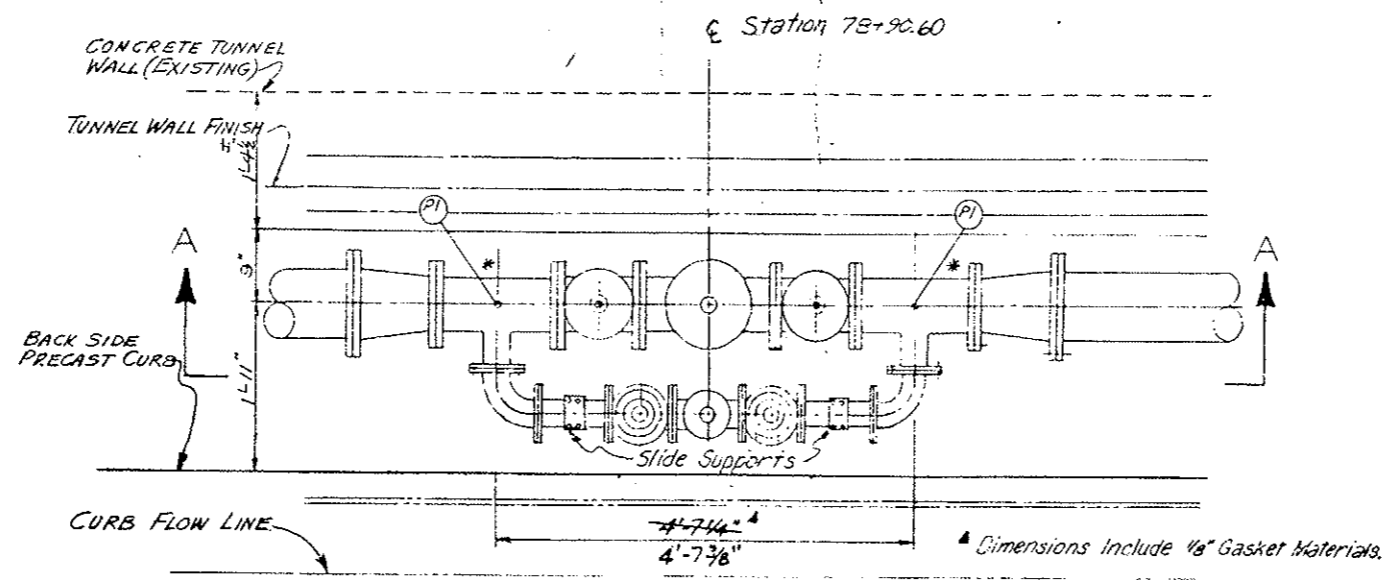
FIRE HYDRANT STATION WITH EXPANSION JOINT

Designer C.D.O.H.	Structure
Detailer J. Lettsworth	Numbers
Drawing Number FH-4	of Drawings

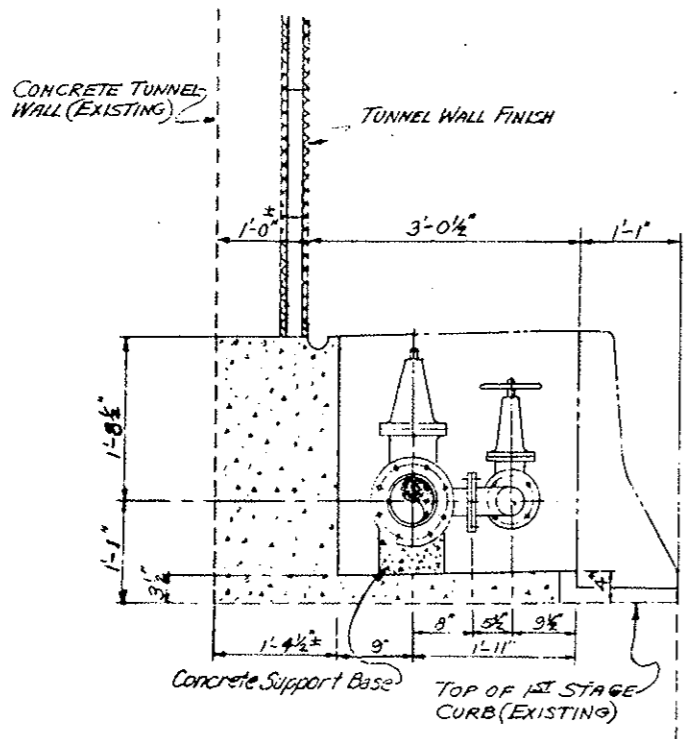
Revision Date: _____ (Preliminary Stage Only)

DESIGNED BY	CDOH	CHECKED BY	
CHECKED BY		QUANTITIES BY	
DATE	12/1/78	DATE	12/1/78
INITIAL		INITIAL	
DESIGNED BY	CDOH	CHECKED BY	
CHECKED BY		QUANTITIES BY	
DATE	12/1/78	DATE	12/1/78
INITIAL		INITIAL	

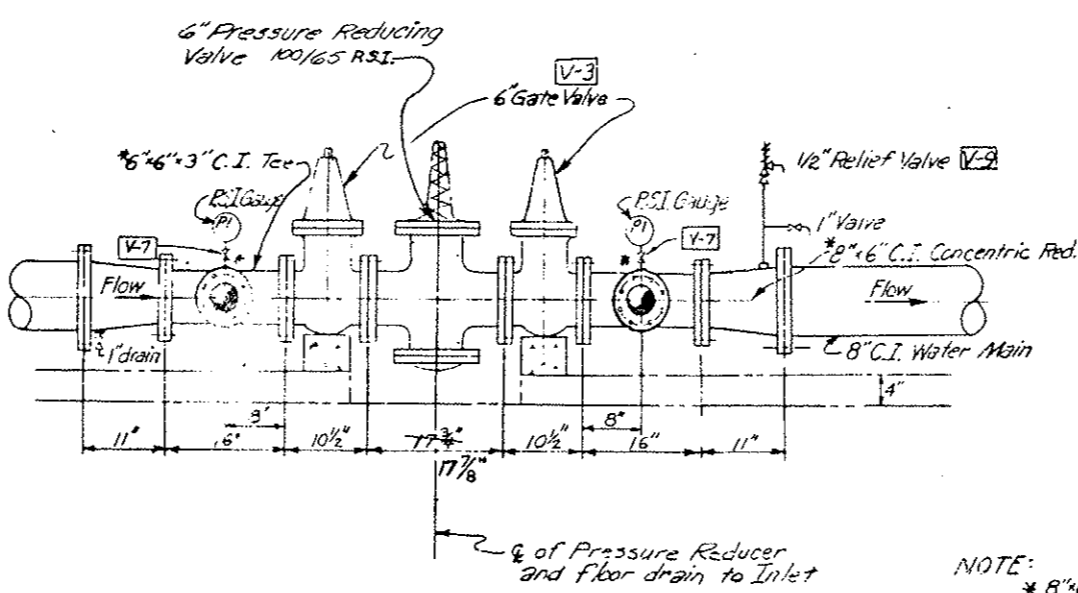
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	42	
REVISIONS				
AS CONSTRUCTED				
NO. REVISIONS		REVISED	<input checked="" type="checkbox"/>	VOID



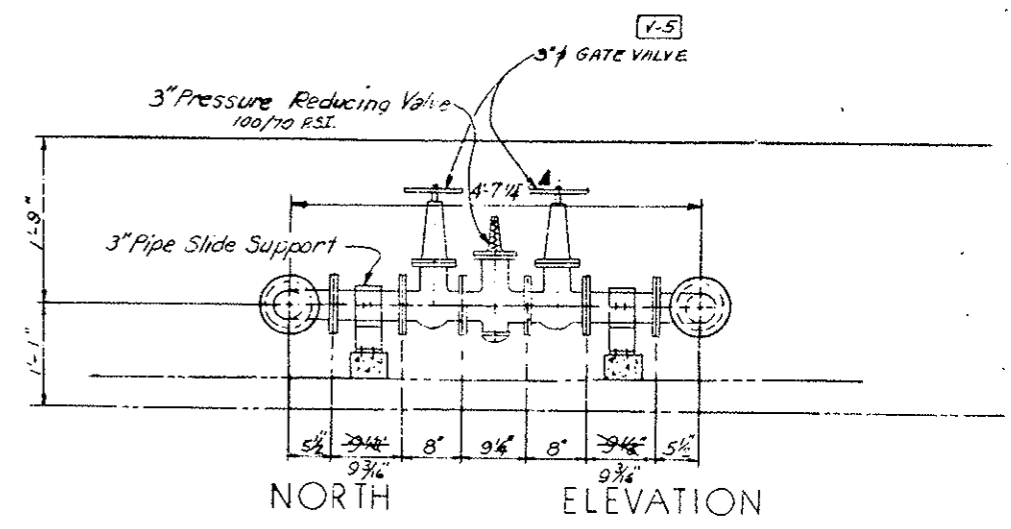
PLAN



WEST ELEVATION



SECTION A-A



NORTH ELEVATION

NOTE:
 * 8"x6" Reducers shall be ordered with 1" tapped holes near the large end for drain and vent.
 Tees shall be ordered with 1/2" tapped holes for the gauges.

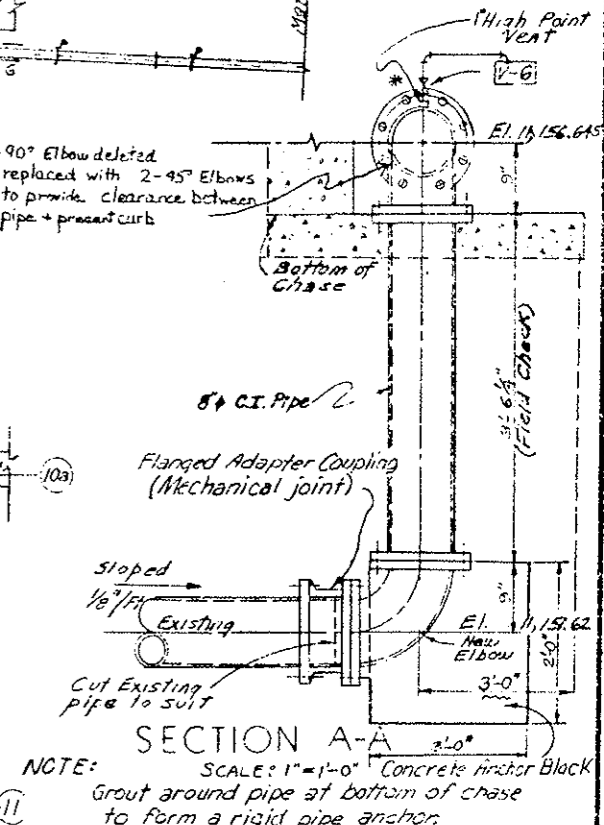
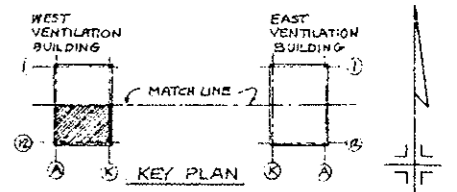
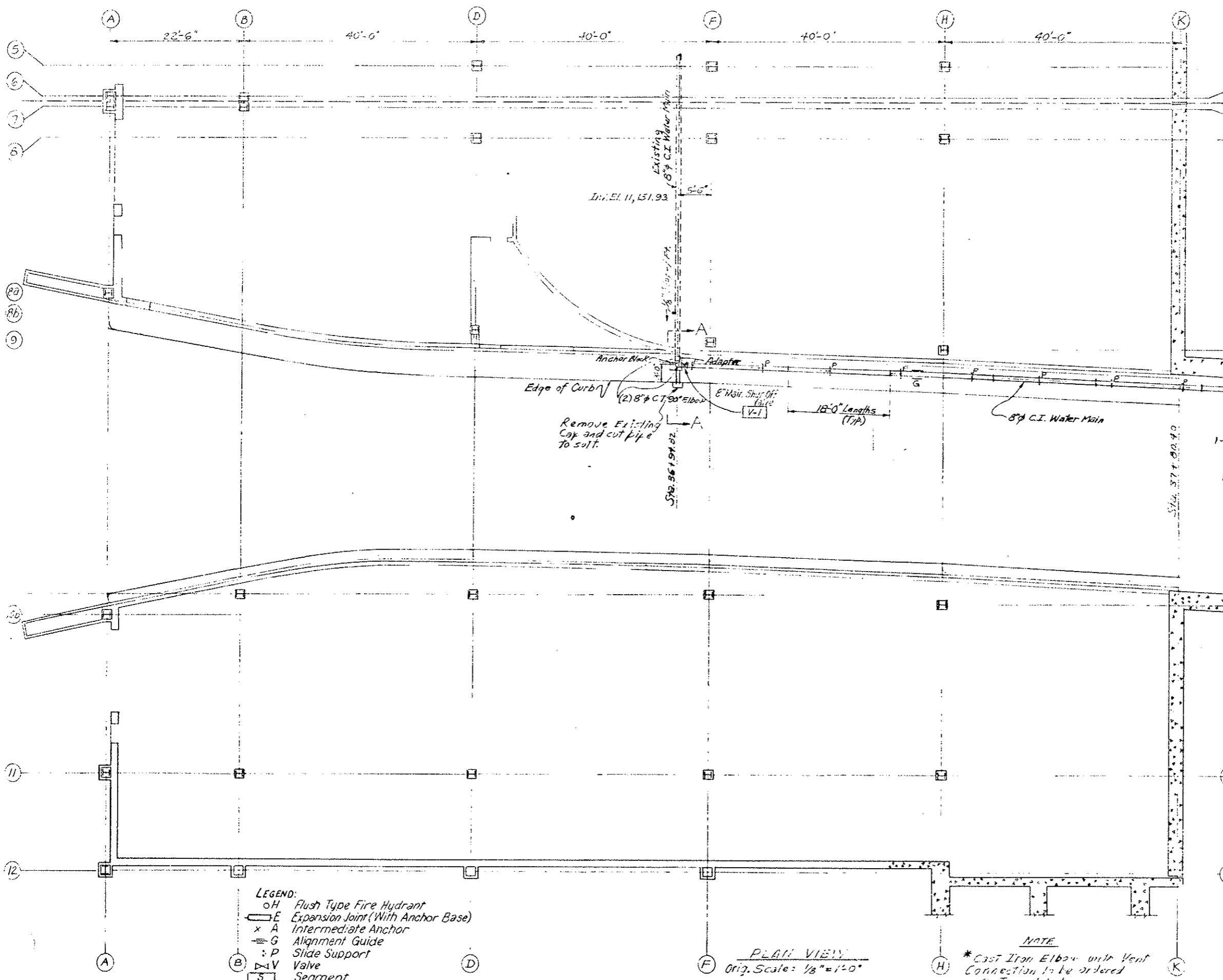
ORIGINAL SCALE: 1"=1'-0"

DIVISION OF HIGHWAYS	
PRESSURE REDUCING STATION	
Designer <i>CDOH</i>	Structure Numbers
Detailer <i>J. Letchworth</i>	
Drawing Number <i>FH-5</i>	of Drawings

Revision Dates	(Preliminary Stage Only)

FEDERAL ROAD DIST. OR NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIG	COLORADO	I 70-3(33)220	43	

REVISIONS	
5	
6	
7	
8	



DESIGNED BY	DATE	CHECKED BY
CHECKED BY		QUANTITIES BY
		CHECKED BY

- LEGEND:**
- o H Flush Type Fire Hydrant
 - E Expansion Joint (With Anchor Base)
 - x A Intermediate Anchor
 - G Alignment Guide
 - : P Slide Support
 - ∇ V Valve
 - S Segment
 - Inlet Special (Existing)

PLAN VIEW
Orig. Scale: 1/8" = 1'-0"

NOTE
* Cast Iron Elbow with Vent Connection to be ordered with Towal hole.

AS CONSTRUCTED		
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VOID <input type="checkbox"/>

DIVISION OF HIGHWAYS

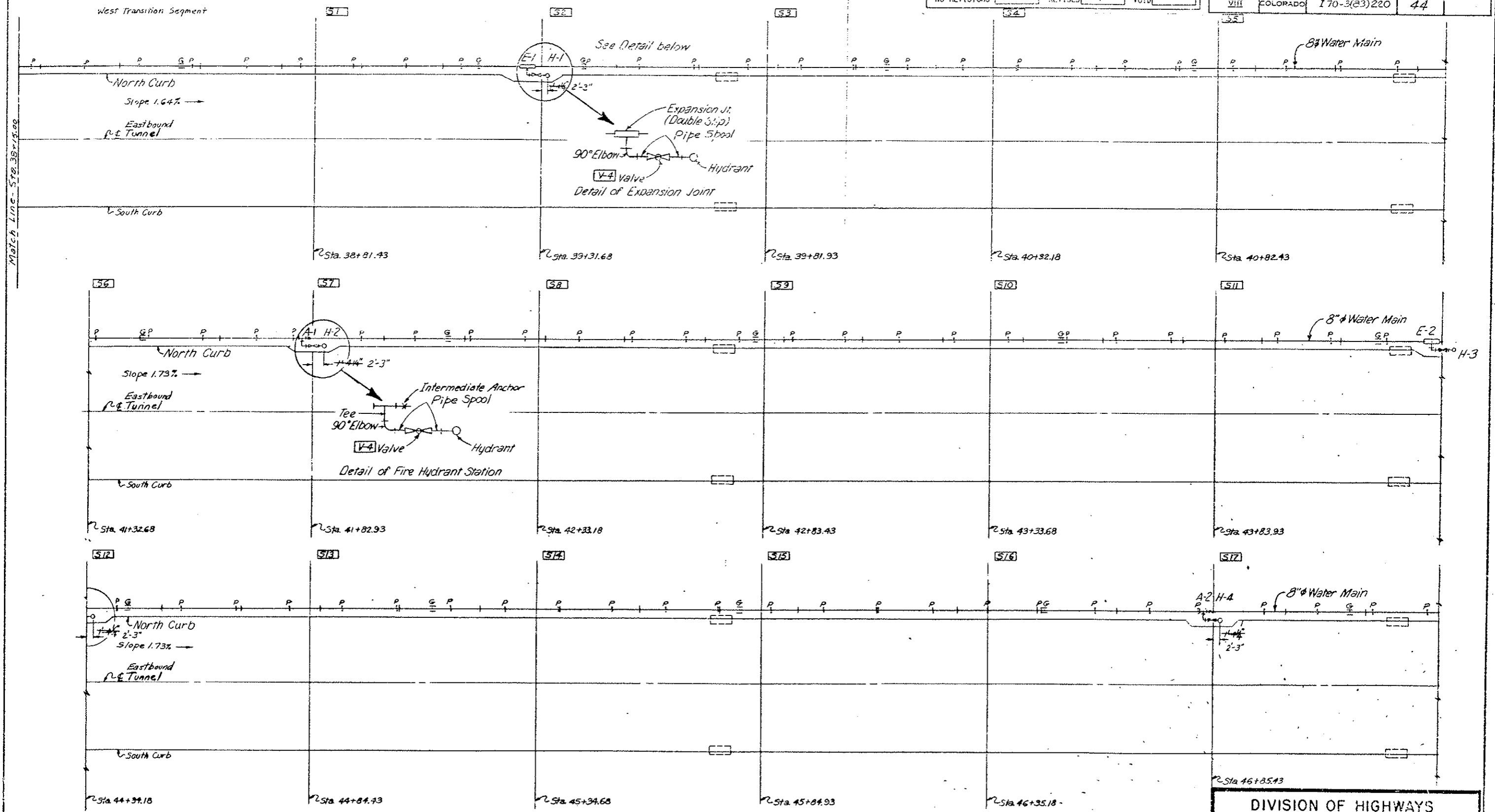
**WATER MAIN SYSTEM
WEST VENTILATION BUILDING
PLAN AND SECTION**

Designer C.D.C.H.	Structure
Detailer J.L. Ketchum	Numbers
Drawing Number FH-5	of Drawings

Revision Dates (Preliminary Stage Only)

AS CONSTRUCTED
 NO REVISIONS REVISED VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLOPADO	170-3(23)220	44	



- LEGEND:
- H Flush Type Fire Hydrant
 - ⊕ E Expansion Joint (With Anchor Base)
 - ⊗ A Intermediate Anchor
 - G Alignment Guide
 - ⋮ P Slide Support
 - ∇ V Valve
 - S Segment
 - ▭ Inlet Special (Existing)

Original Scale: 1"=10'

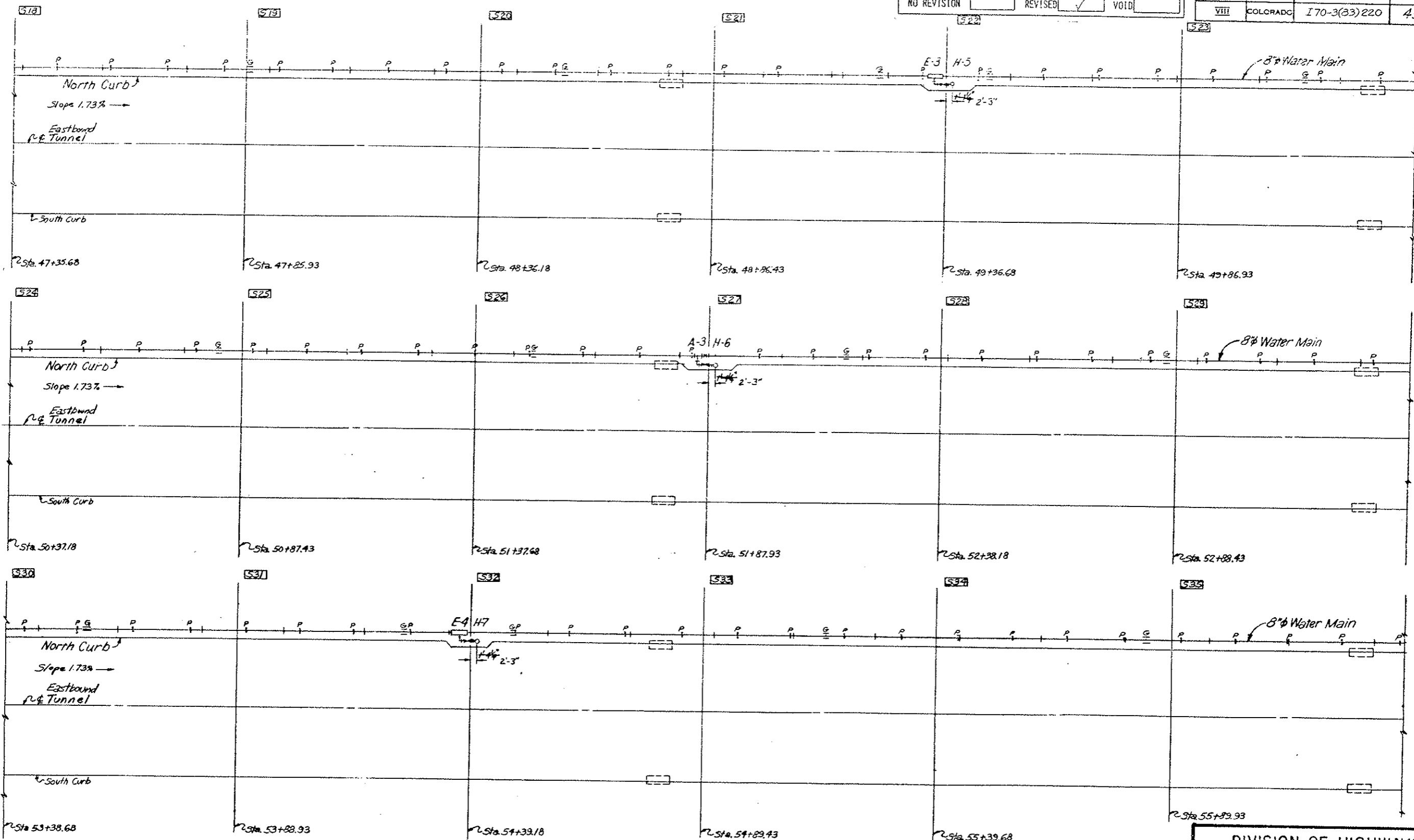
DIVISION OF HIGHWAYS

**WATER MAIN SYSTEM
WEST TRANSITION
THRU SEGMENT 17**

Designer C.D.O.H.	Structure
Detailer J. Leitchworth	Number
Drawing Number FH-7	of Drawings

AS CONSTRUCTED
 NO REVISION REVISED VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(33) 220	45	



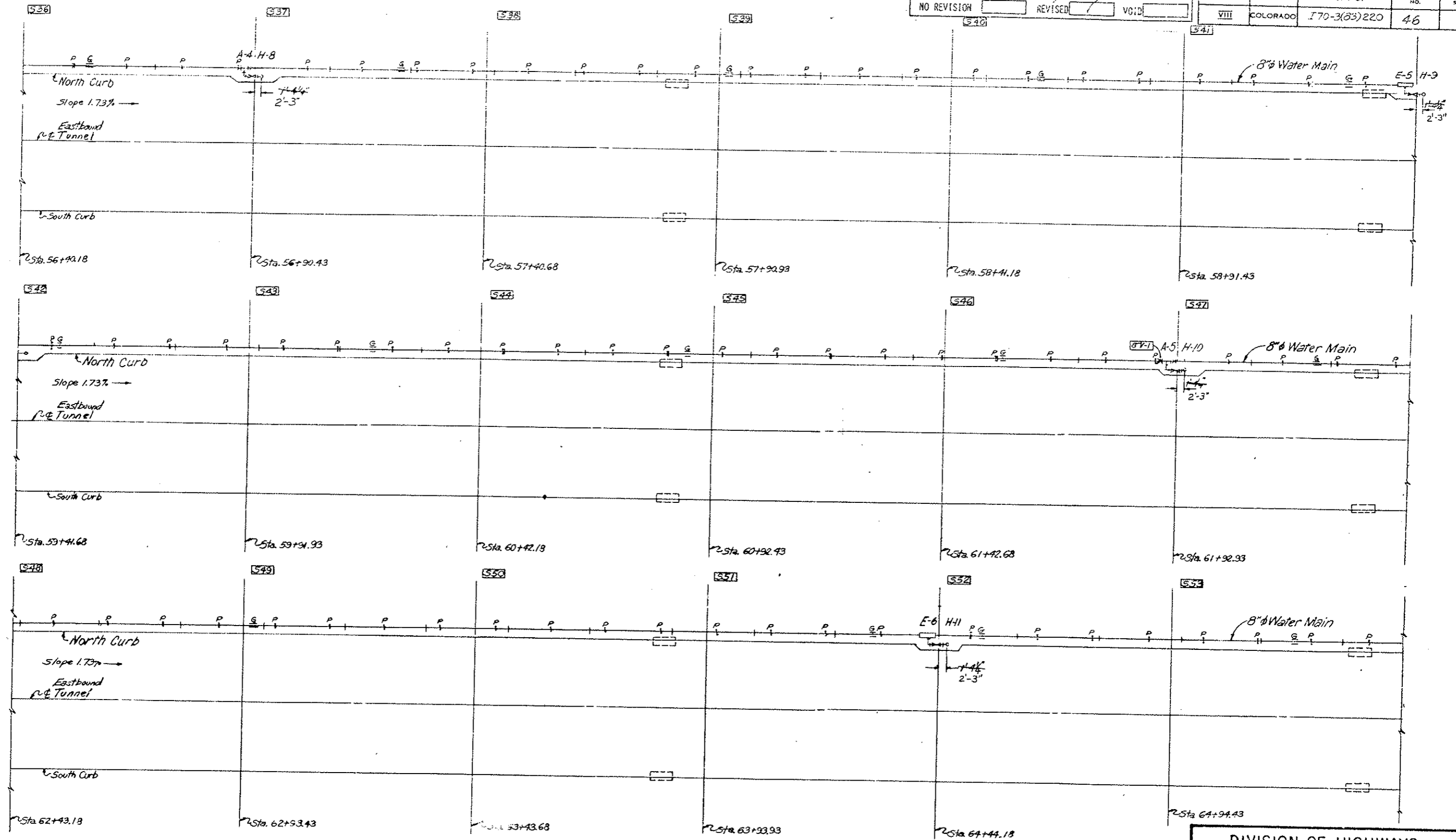
- LEGEND:
- o H Flush Type Fire Hydrant
 - o E Expansion Joint (With Anchor Base)
 - x A Intermediate Anchor
 - ||| G Alignment Guide
 - + P Side Support
 - x V Valve
 - [] Segment
 - [] Inlet Special (Existing)

Original Scale: 1"=10'

DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 18 THRU 35	
Designer C.D.O.H.	Structure Number
Detailer J. Letchworth	Number
Drawing Number FH-8	of Drawings

AS CONSTRUCTED
 NO REVISION [] REVISED [] VOID []

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(83)220	46	



- LEGEND:
- o H Flush Type Fire Hydrant
 - E Expansion Joint (With Anchor Base)
 - x A Intermediate Anchor
 - G Alignment Guide
 - + V Valve
 - S Segment
 - Inlet Special (Existing)

Original Scale = 1" = 10'

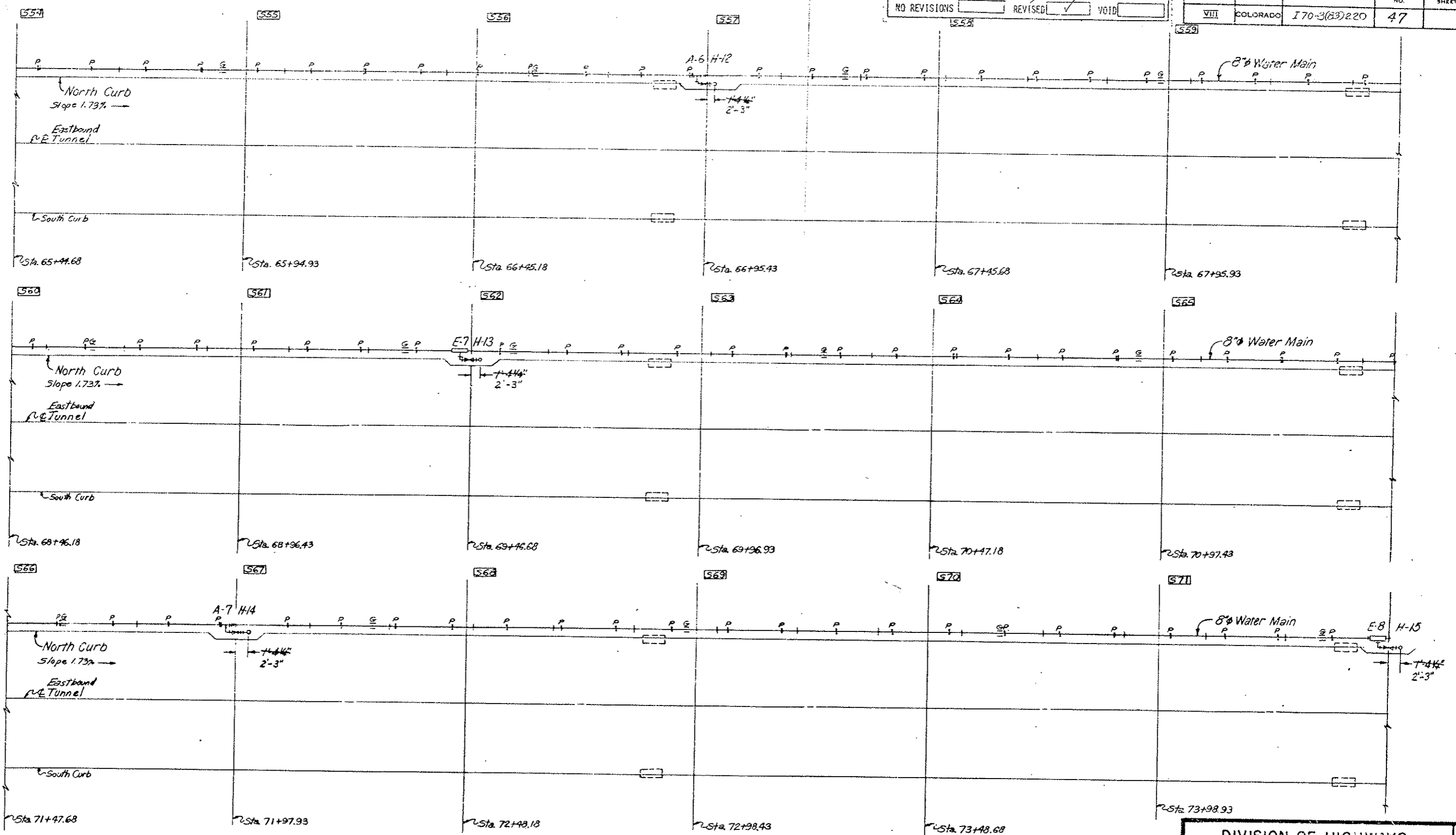
DIVISION OF HIGHWAYS

WATER MAIN SYSTEM

PLAN

SEGMENT 36 THRU 53

Designer C.D.O.H.	Structure Number
Detailer J. Letchworth	
Drawing Number FH-9	of [] Drawings

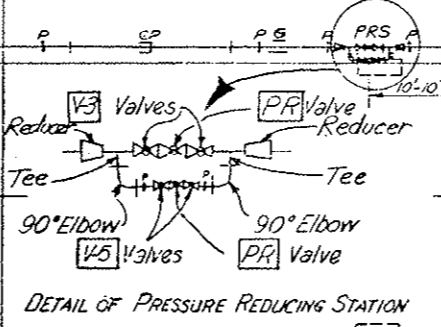
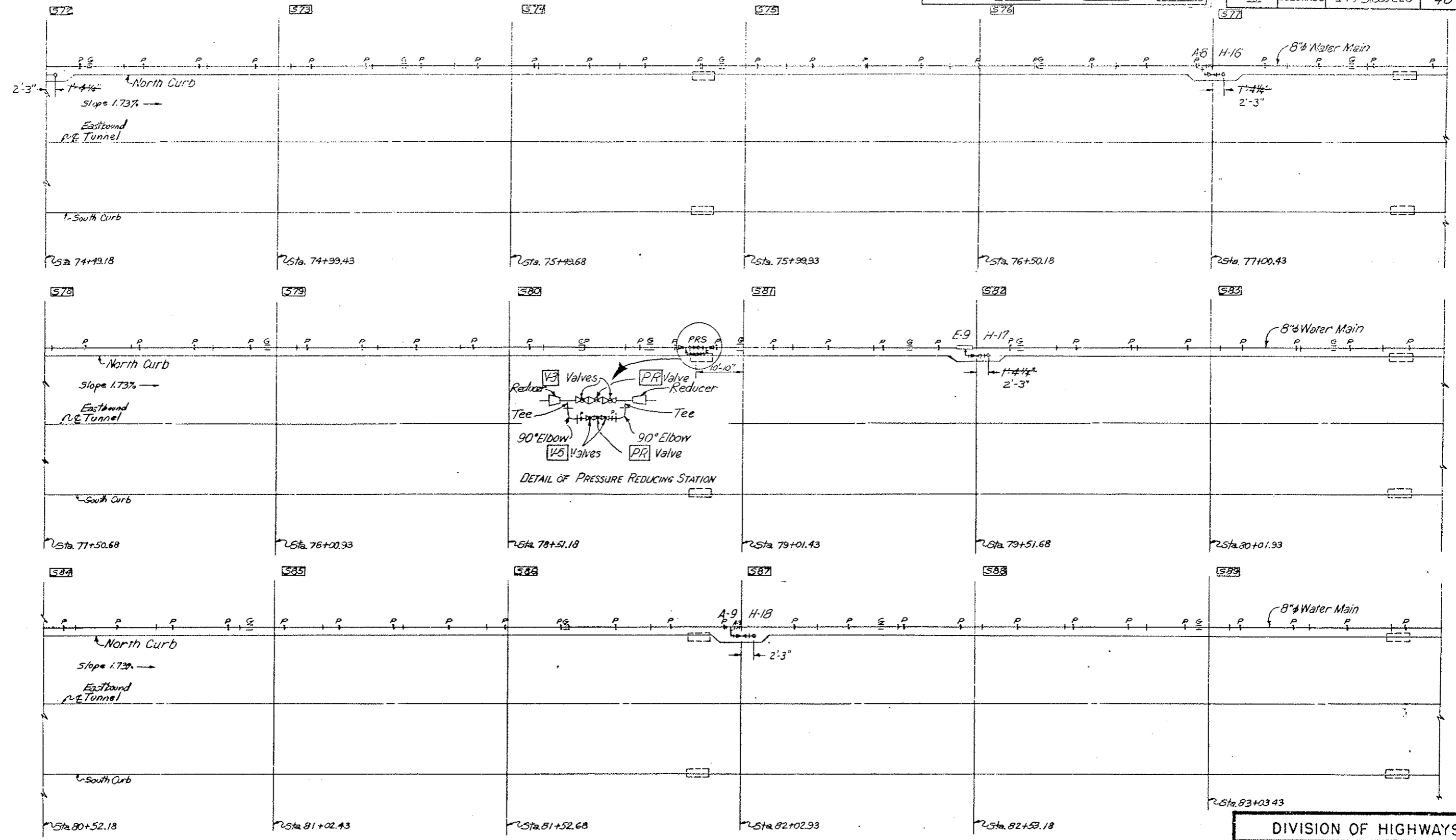


LEGEND:

- o H Flush Type Fire Hydrant
- E Expansion Joint (With Anchor Base)
- x A Intermediate marker
- G Alignment
- + P Slide
- x V Valve
- Segment
- Inlet Special (Existing)

Original Scale: 1"=10'

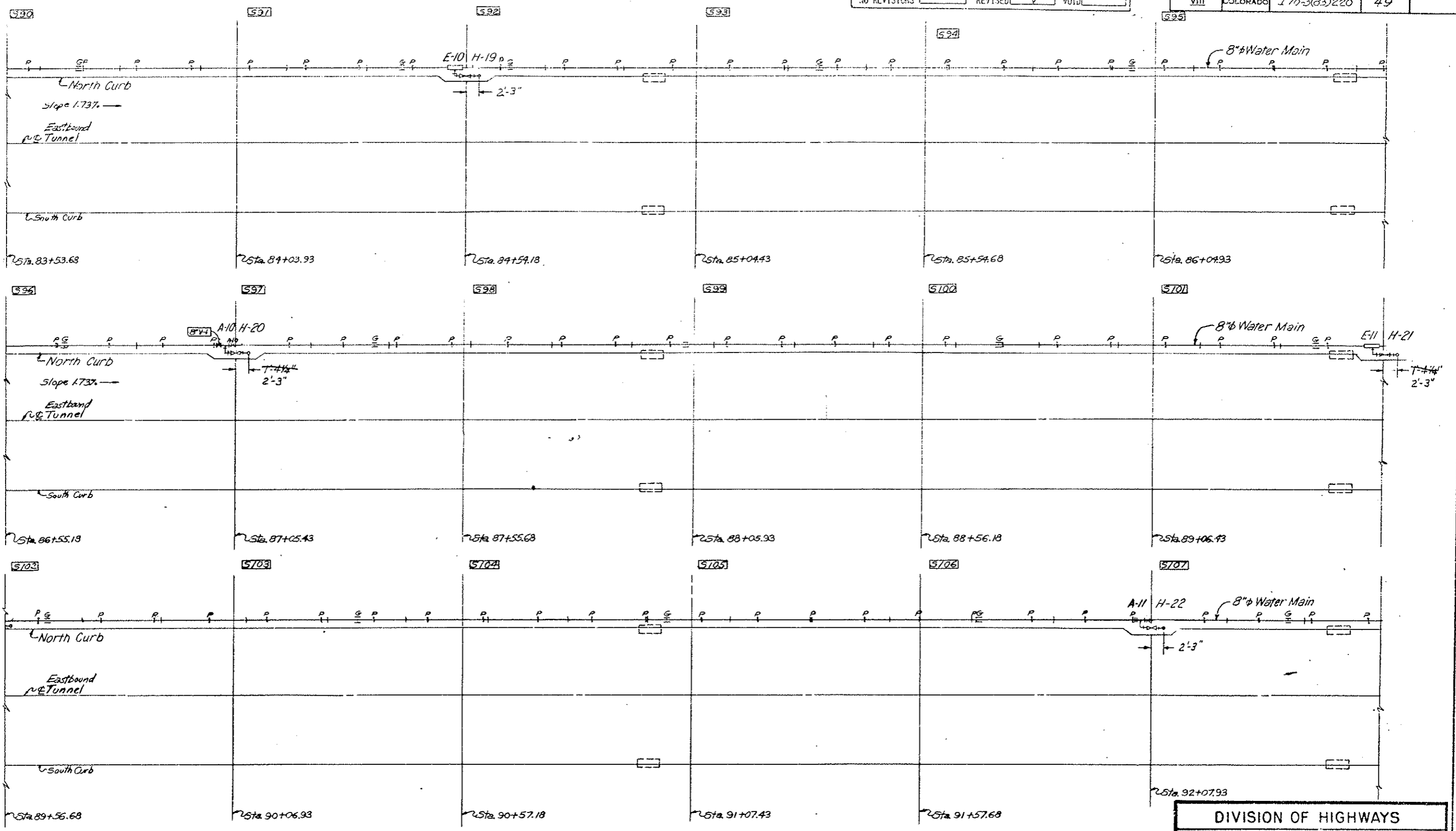
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 54 THRU 71	
Designer C.D.O.H.	Structure Number
Detailer J. Leitchworth	Number
Drawing Number FH-10	of Drawings



- LEGEND:
- F Flush Type Fire Hydrant
 - E Expansion Joint (With Anchor Base)
 - x A Intermediate Anchor
 - G Alignment Guide
 - + P Valve Side Support
 - ∇ V Valve
 - PRV Pressure Reducing Station Sta. 78+90.6
 - S Segment
 - Inlet Special (Existing)

Original Scale 1"=10'

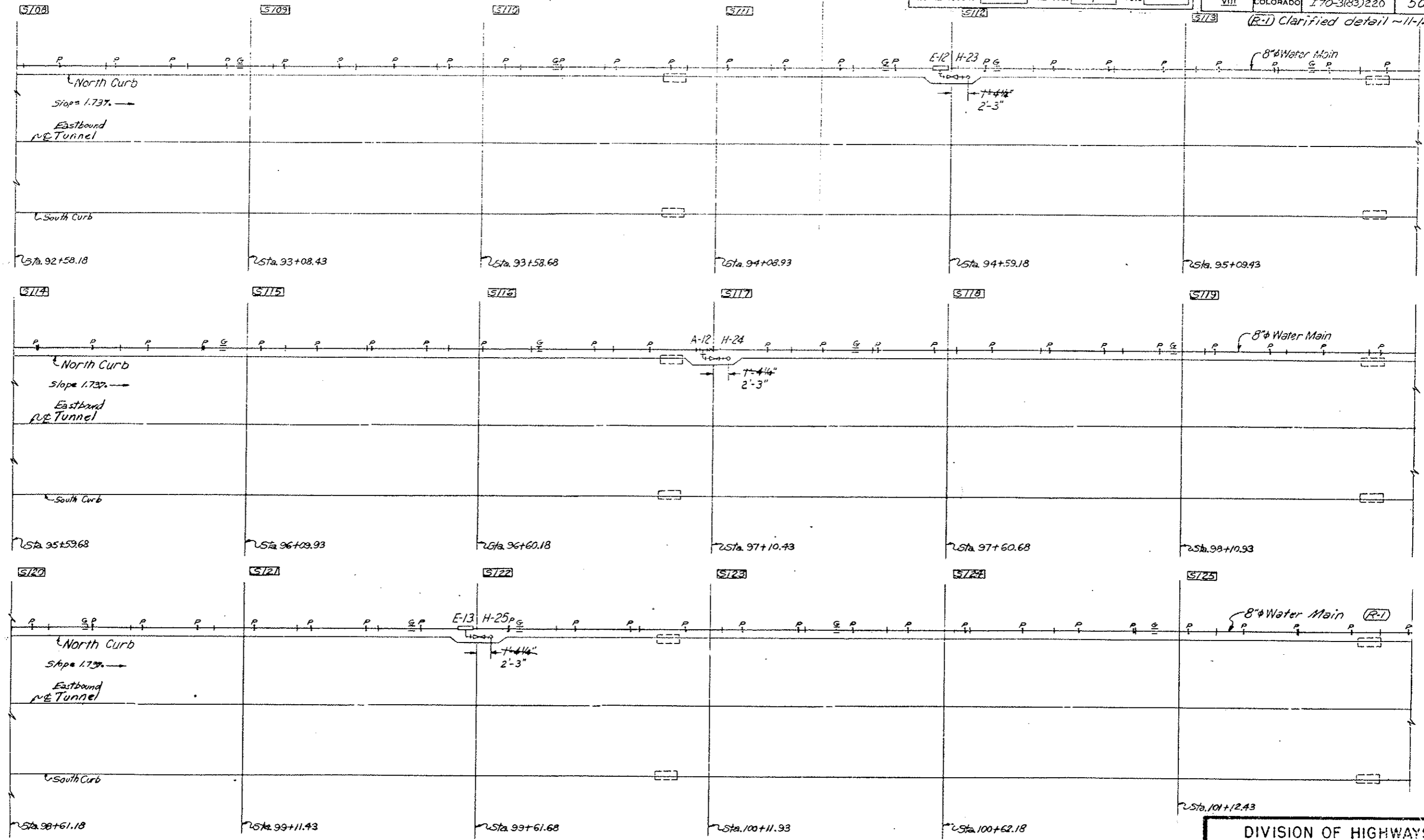
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 72 THRU 89	
Designer C.D.O.H	Structure Number
Detailer J. Litchworth	Number
Drawing Number FH-11	of Drawings



- LEGEND:
- H Flush Type Fire Hydrant
 - E Expansion Joint (With Anchor Base)
 - x A Intermedial Anchor
 - G Alignment Guide
 - P Slide Support
 - V Valve
 - Segment
 - Inter Special (Existing)

Original Scale 1"=10'

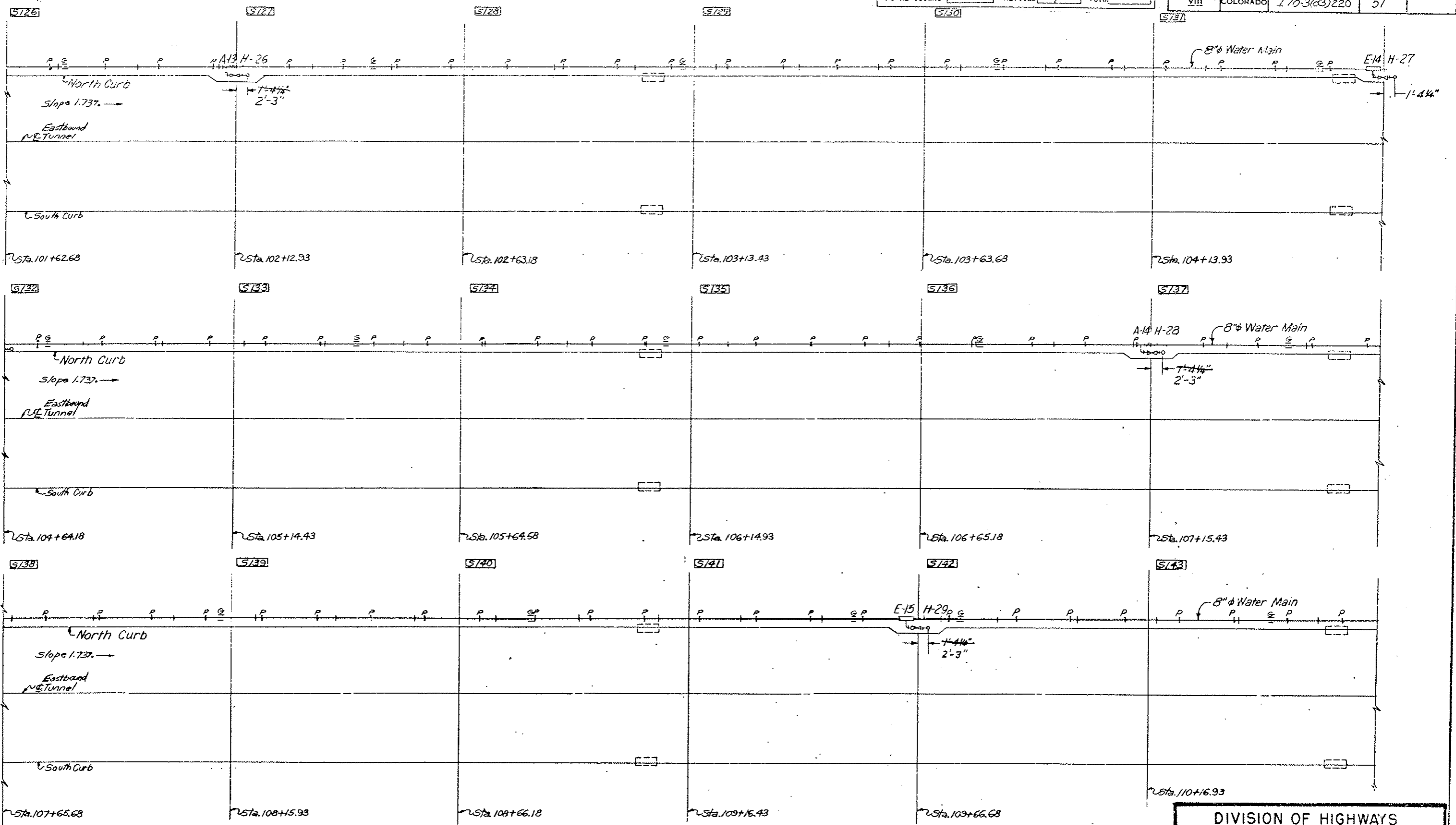
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 90 THRU 107	
Designer C. D. O. H.	Structure Number
Detailer J. Leichworth	Number
Drawing Number FH-12	of Drawings



LEGEND:
 ○ H Flush Type Fire Hydrant
 —E— Expansion Joint (With In-line Case)
 x A Intermediate Anchor
 ≡ G Alignment Guide
 + P Slide Support
 V Valve
 S Segment
 [] Inlet Special (Existing)

Original Scale 1"=10'

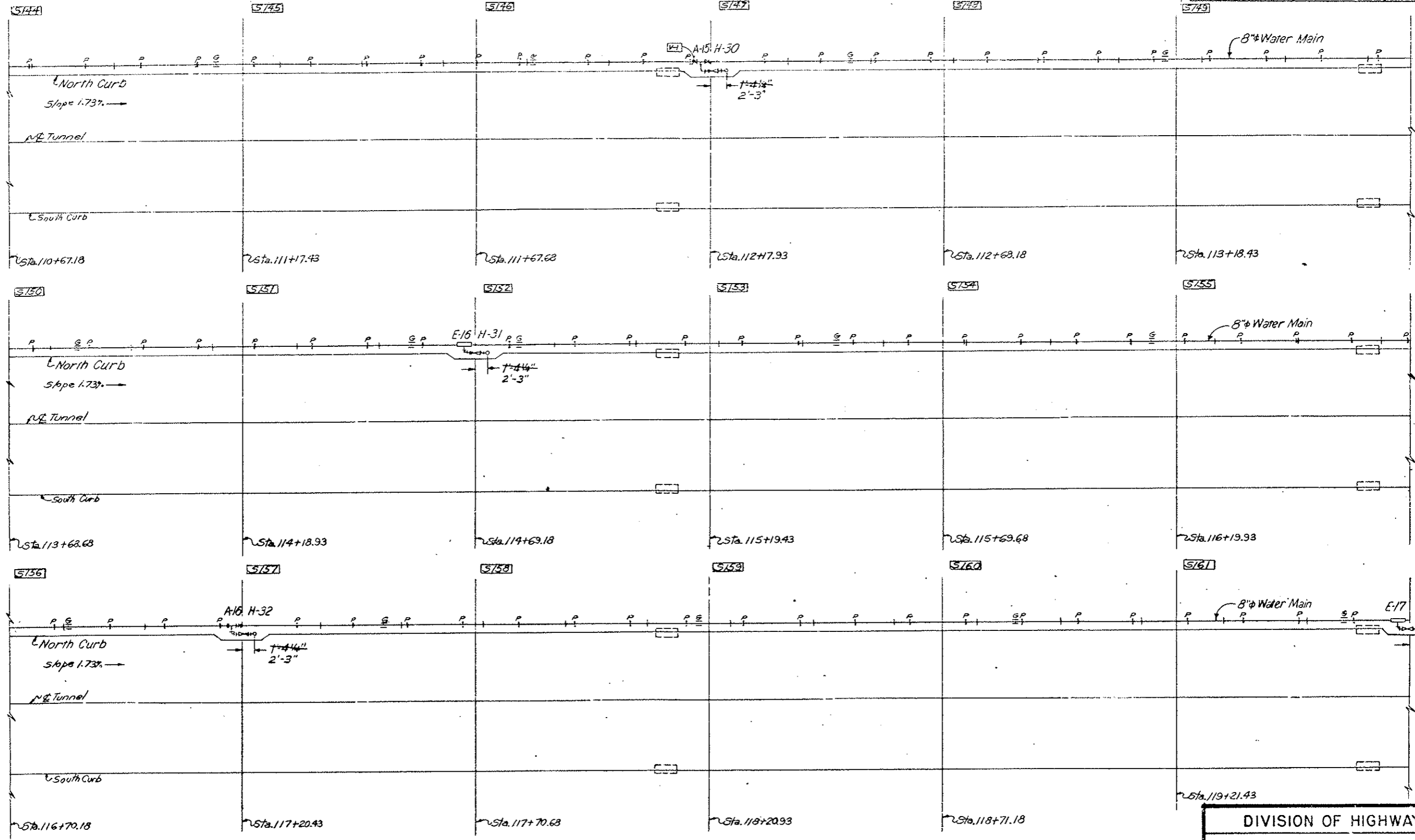
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 108 THRU 125	
Designer C. D. O. H.	Structure Number
Detailer J. Letchworth	Number
Drawing Number FH-13	of Drawings



LEGEND:
 ○ H Flush Type Fire Hydrant
 □ E Expansion Joint (With Anchor Base)
 × A Intermediate Anchor
 ≡ G Alignment Guide
 + P Slide Support
 V Valve
 S Segment
 □ Inlet Special (Existing)

Original Scale: 1"=10'

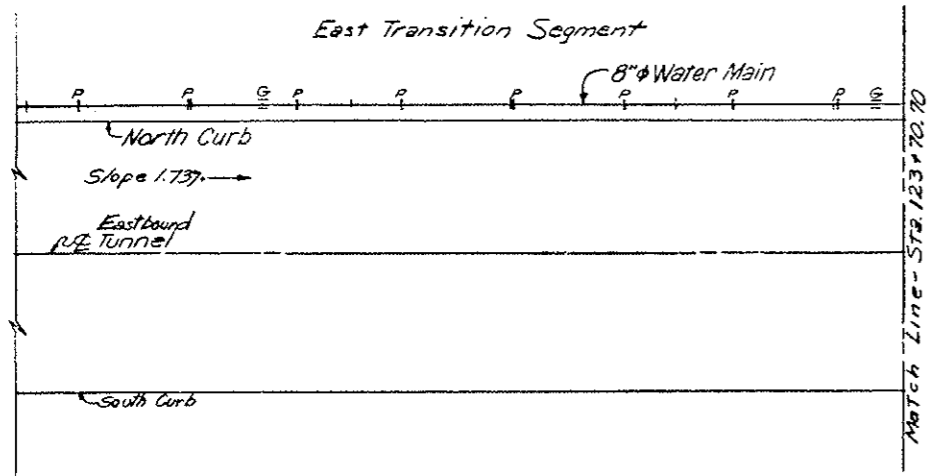
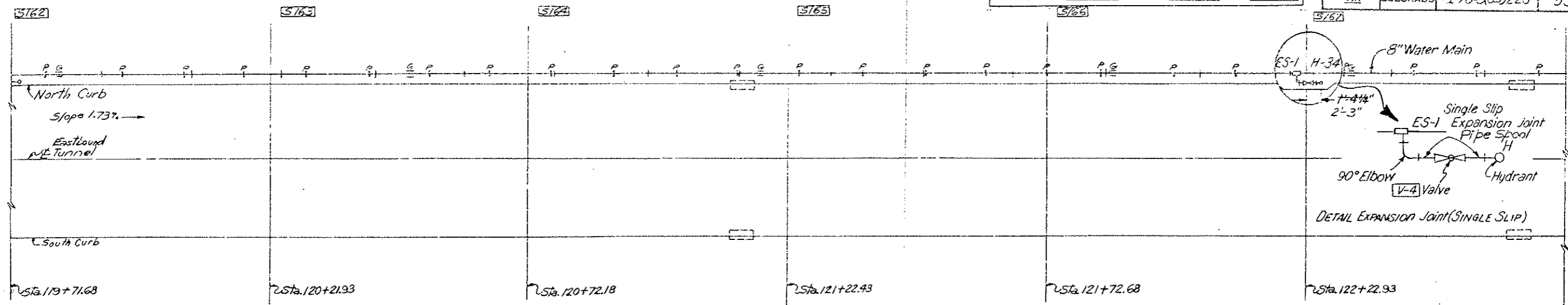
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 126 THRU 143	
Designer C. D. O. H.	Structure
Detailer J. Letchworth	Number
Drawing Number FH-14	of Drawings



LEGEND:
 H Flush Type Manhole
 E Expansion Manhole (Anchor Base)
 A Intermediate Manhole
 G Alignment Manhole
 P Slide Support
 V Valve
 S Manhole Segment
 S Special (Existing)

Original Scale: 1"=10'

DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 144 THRU 161	
Designer C.D.O.H.	Structure Number
Detailer J. Letchworth	Number
Drawing Number FH-15	of Drawings

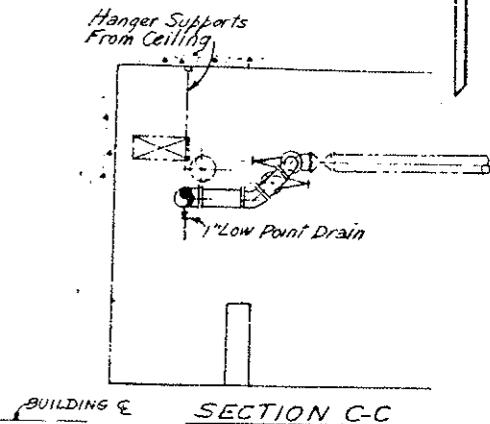
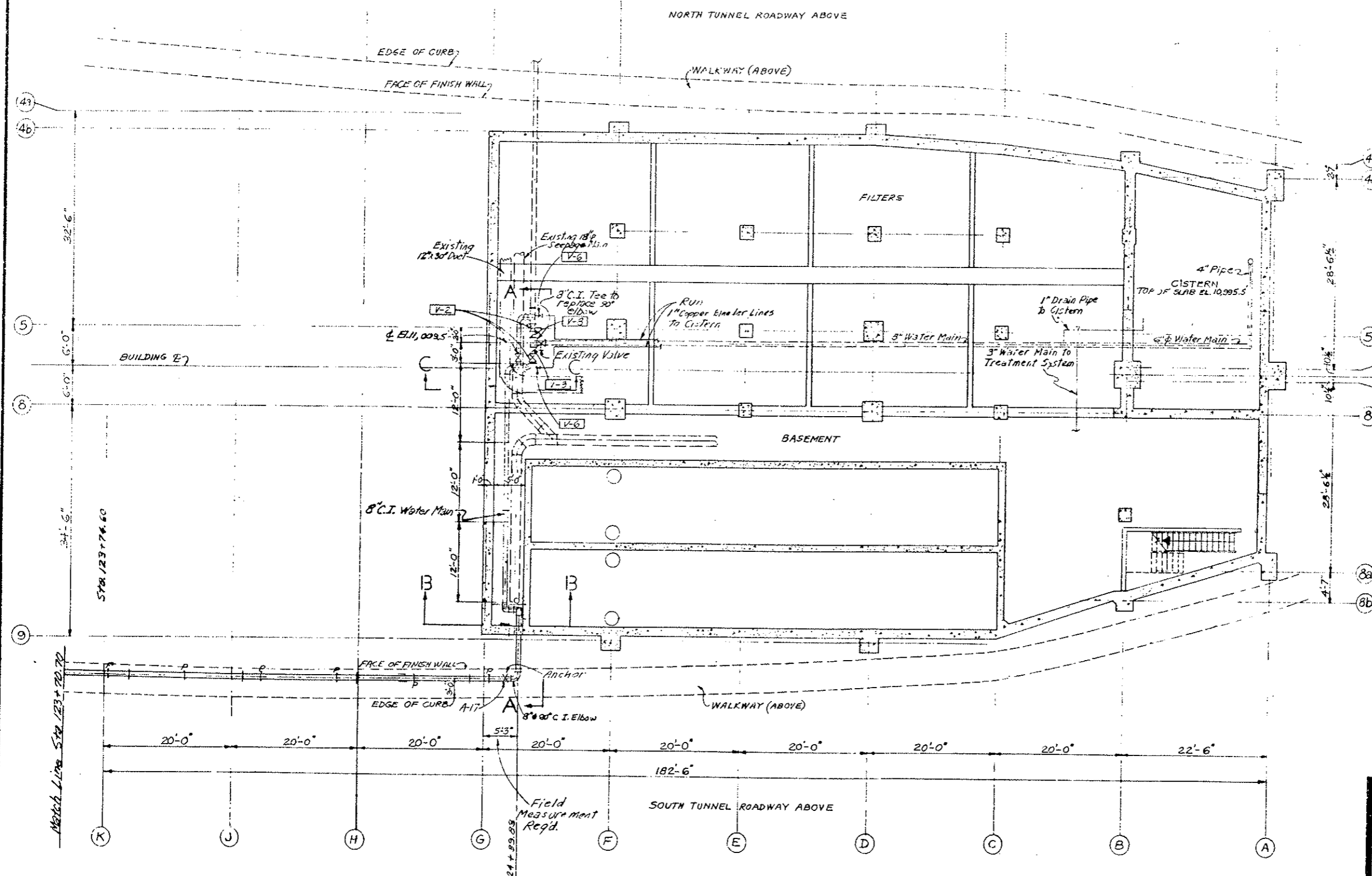
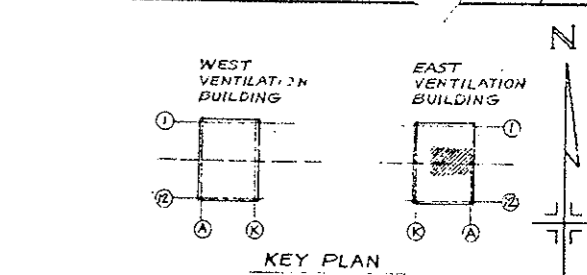


- LEGEND:
- H Flush Type Fire Hydrant
 - ES Expansion Joint (Single Slip With Anchor Base)
 - × A Intermediate Anchor
 - ≡ G Alignment Guide
 - + P Side Support
 - ⊗ V Valve
 - Segment
 - Inlet Special (Existing)

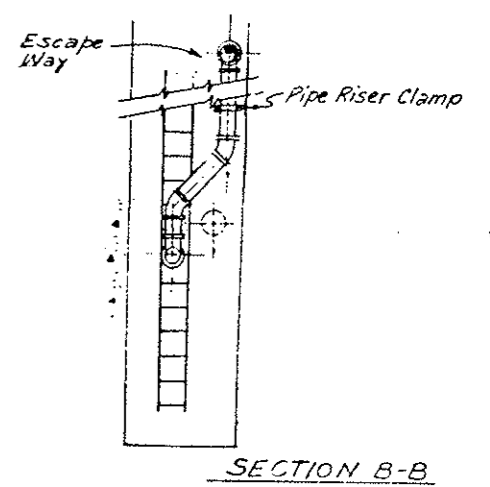
Original Scale: 1"=10'

DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEG 162 THRU E. TRANS.	
Designer C.D.O.H.	Structure Number
Detailer J. Leitchworth	Number
Drawing Number FH-16	of Drawings

K J H G F E D C B A



NOTE
 Pipe Lengths per Field Measurements



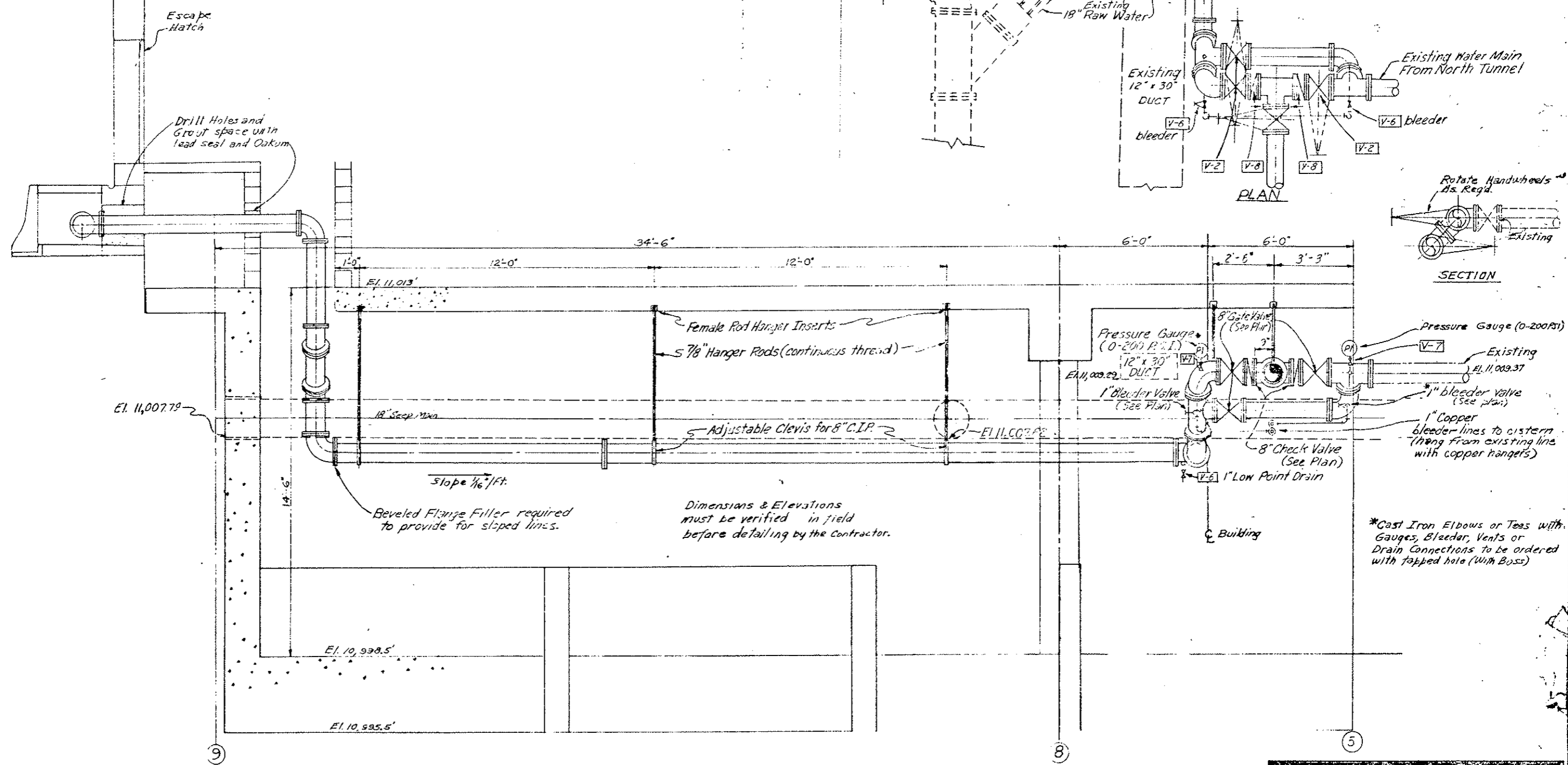
INITIAL	DATE	CHECKED BY
	7/2/72	CDD
DESIGNED BY	QUANTITIES BY	
DETAILED BY	CHECKED BY	

PLAN VIEW
 Orig. Scale: 1/8" = 1'-0"

Note:
 Basement Area is classified as
 Division I, Class I, Location
 Reference NEC, Sect 500

DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM EAST VENTILATION BUILDING SHEET NO 1	
Designer CDD	Structure
Detailer J. Letchworth	Numbers
Drawing Number FH-17	of Drawings
Revision Dates	(Preliminary Stage Only)

REVISIONS	



DESIGNED BY	CHECKED BY	DATE

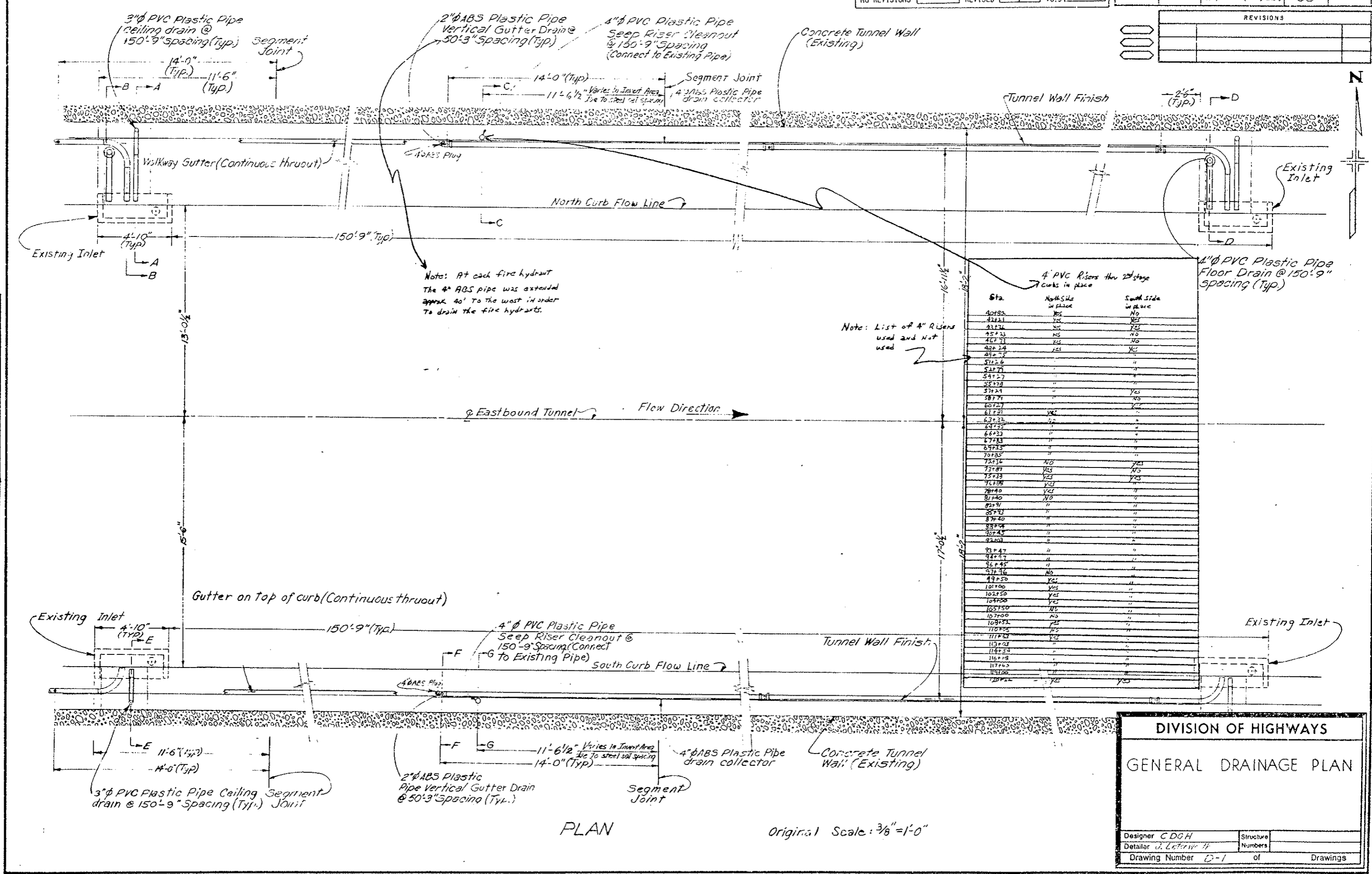
SECTION A-A FH-17
Original Scale: 1/2" = 1'-0"

Note: Basement Area is classified as Division I, Class 1, Location Reference NEC, Sect. 500

DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM EAST VENTILATION BUILDING SHEET NO 2	
Designer CDOH	Structure
Detailer J. Letchworth	Numbers
Drawing Number FH-18	of Drawings

Revision	Date	Description

REVISIONS	



DESIGNED BY	CHECKED BY	DATE	QUANTITIES BY	CHECKED BY

4" PVC Risers thru 2nd stage
Arms in place

Sta.	North Side in place	South Side in place
40+82	YES	NO
41+11	YES	YES
41+74	YES	YES
45+33	YES	NO
46+71	YES	NO
48+24	YES	YES
49+75		
51+26		
52+77		
54+27		
55+78		
57+29		
58+79		YES
60+30		YES
61+81		
62+32		
64+83		
66+33		
67+84		
69+35		
70+85		
72+36		
73+87		
75+38		
76+89		
78+40		
80+91		
82+42		
83+93		
85+44		
87+95		
89+46		
91+97		
93+48		
95+99		
97+50		
99+01		
101+52		
102+50		
104+50		
105+50		
107+00		
108+51		
110+52		
111+53		
113+03		
114+54		
116+04		
117+55		
119+05		
120+56		

DIVISION OF HIGHWAYS

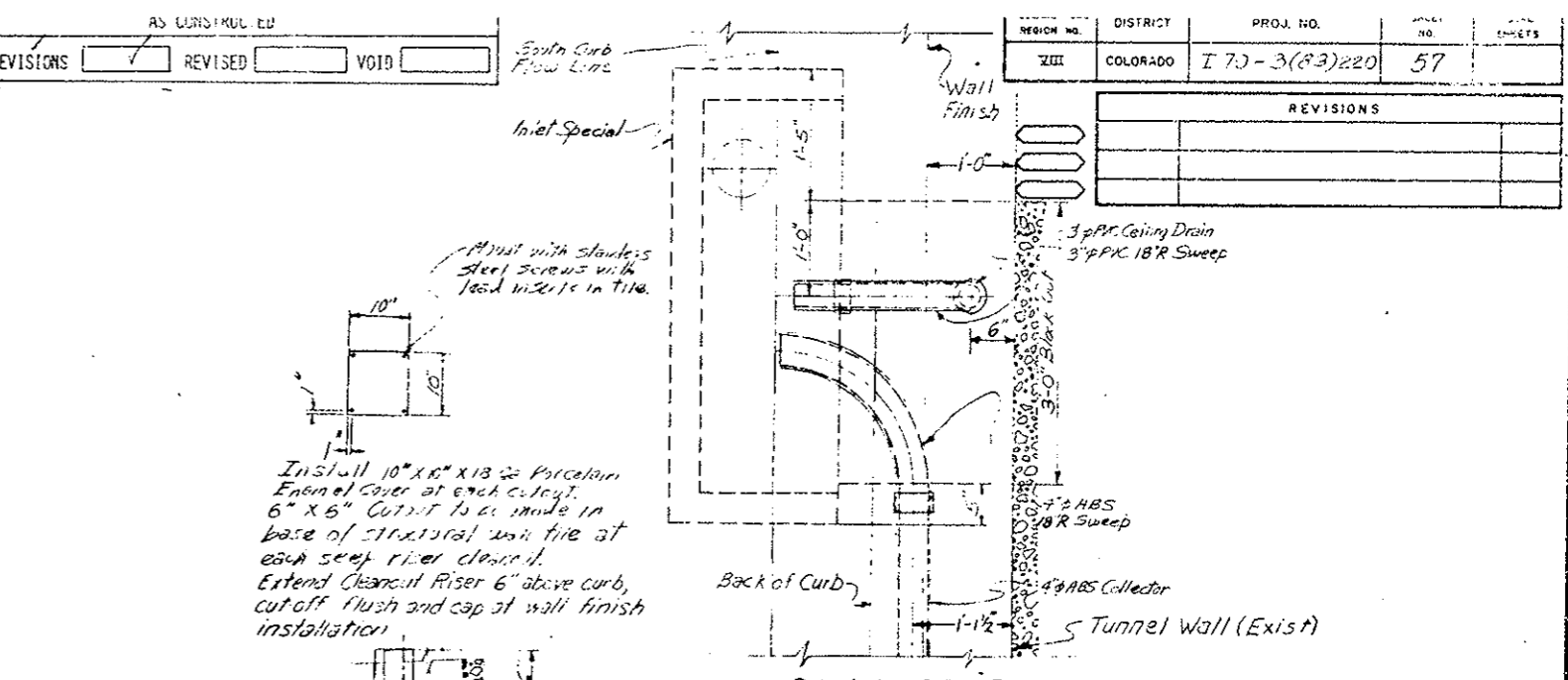
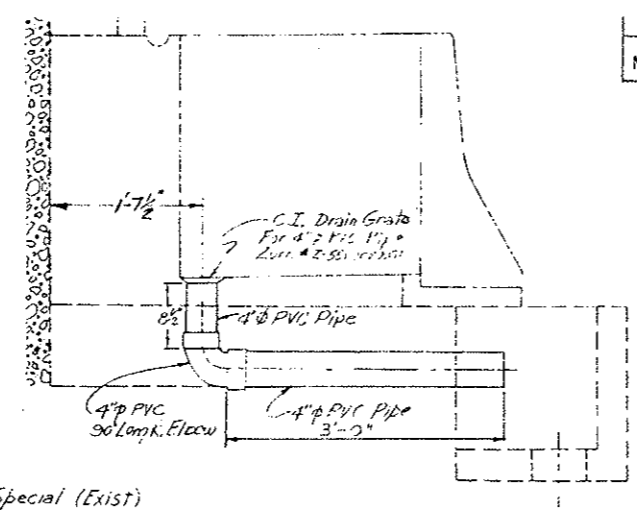
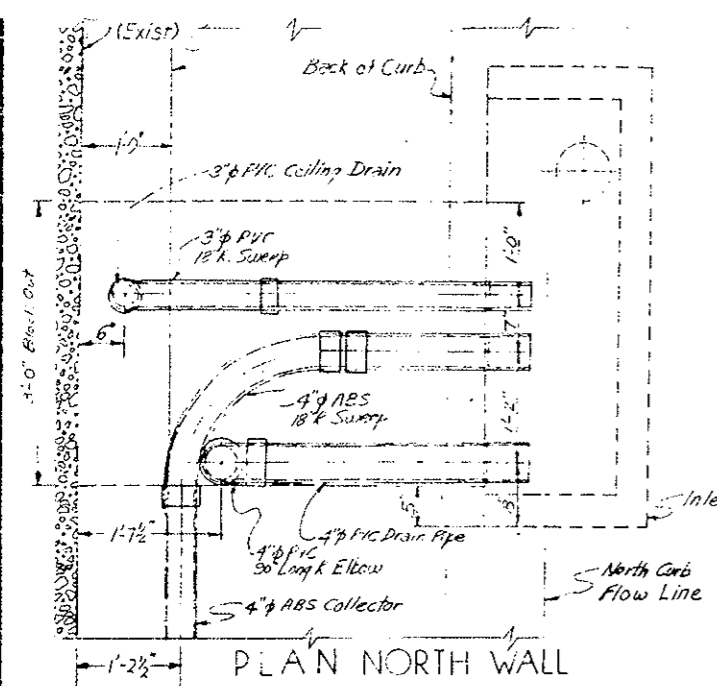
GENERAL DRAINAGE PLAN

Designer CDGH Structure

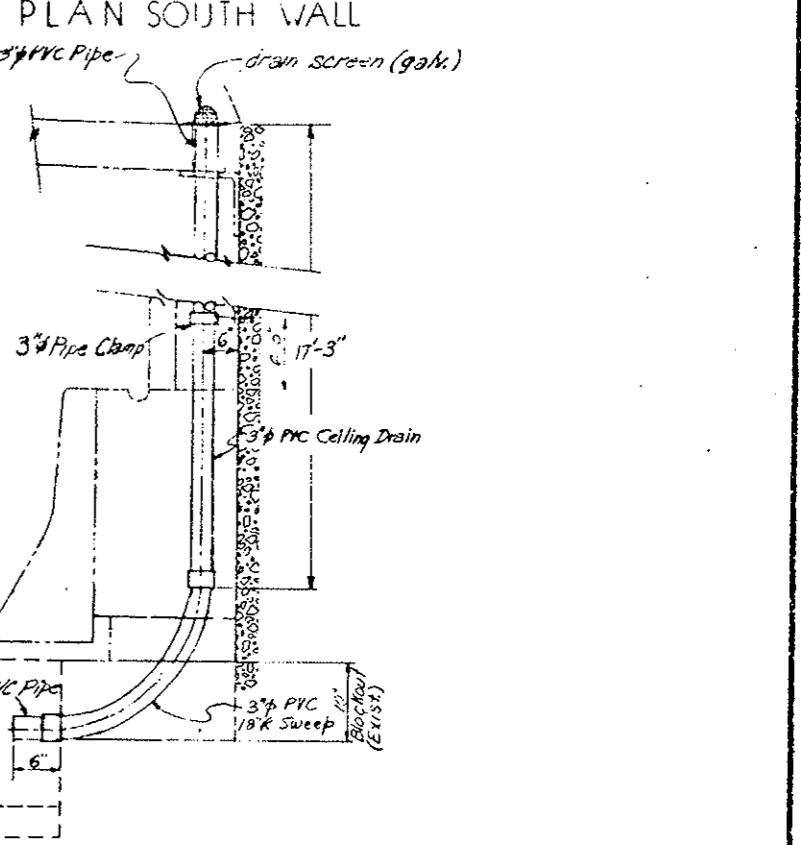
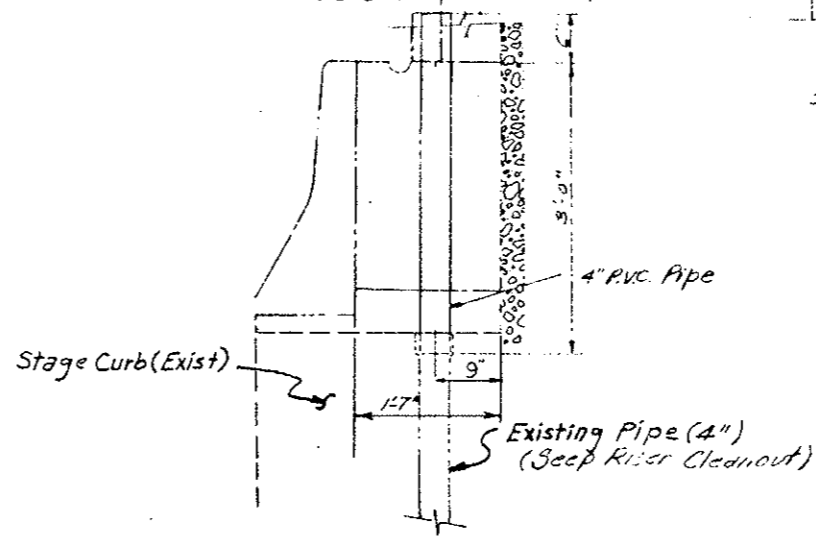
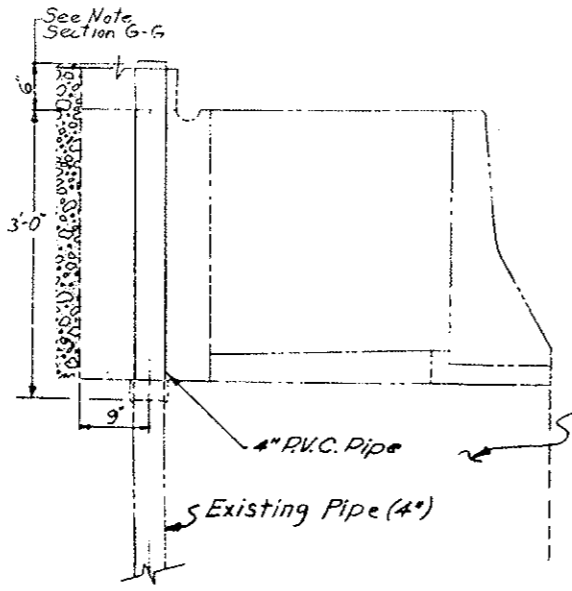
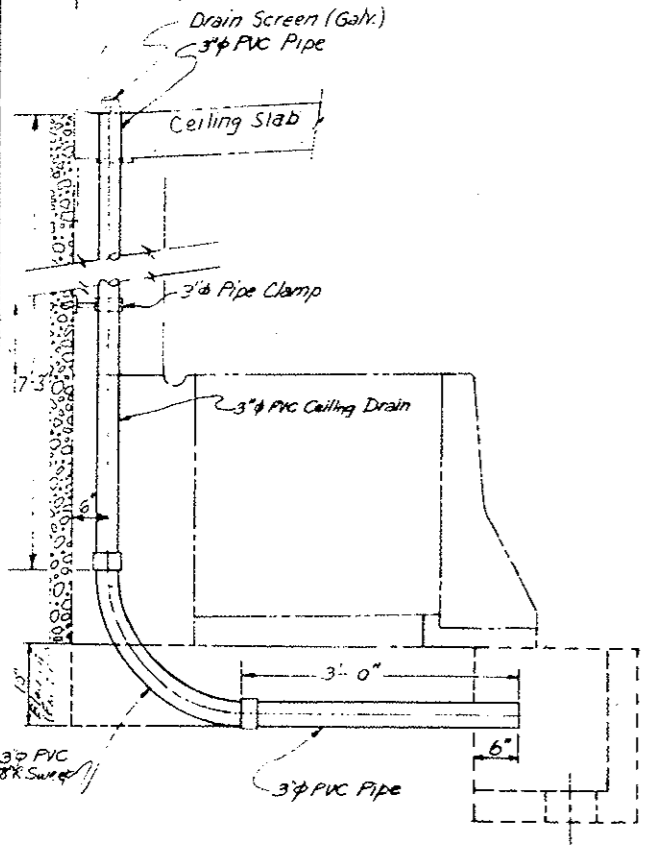
Detailer J. Letourneau # Numbers

Drawing Number 0-1 of Drawings

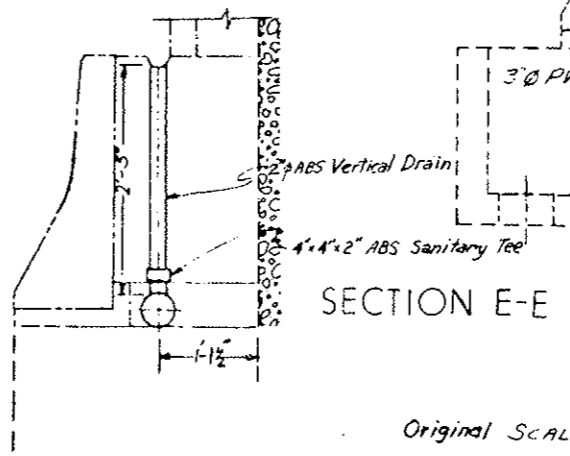
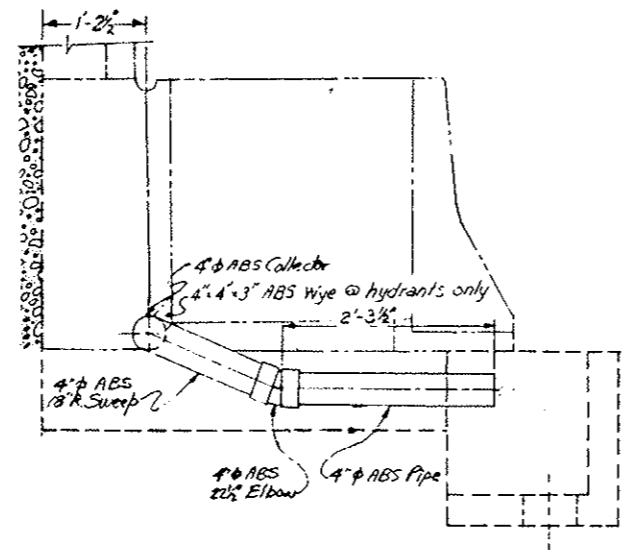
REVISIONS	



Install 10" x 10" x 1/8" porcelain enamel cover at each cutout. 6" x 6" cutout to be made in base of structural wall tile at each sweep riser cleanout. Extend cleanout riser 6" above curb, cut off flush and cap at wall finish installation.



SECTION A-A SHEET D-I
 Original SCALE: 1"=1'-0"



SECTION E-E SHEET D-I
 Original SCALE: 1"=1'-0"

SECTION B-B SHEET D-I

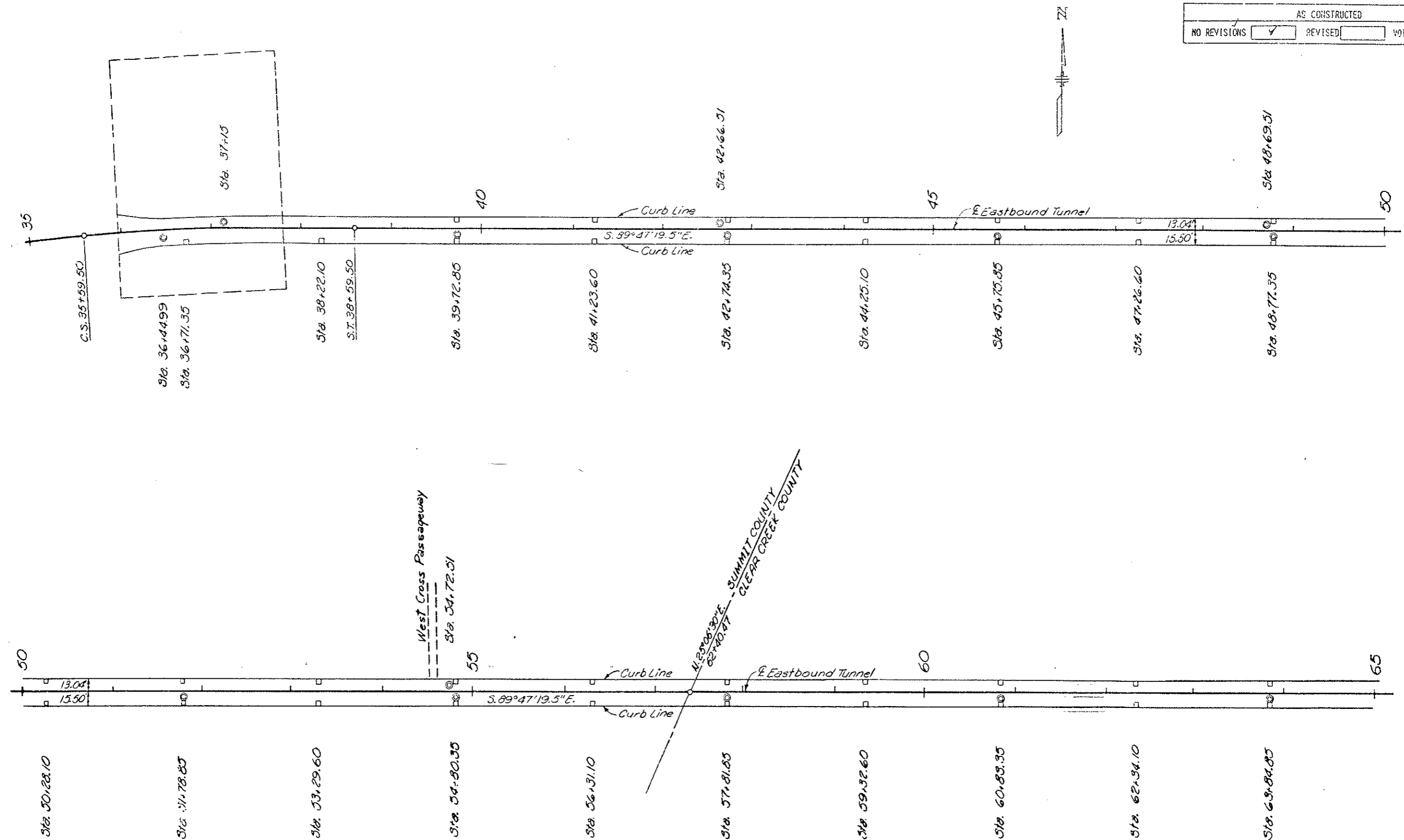
SECTION F-F SHEET D-I

INITIAL	DATE	CHECKED BY	QUANTITIES BY

DIVISION OF HIGHWAYS

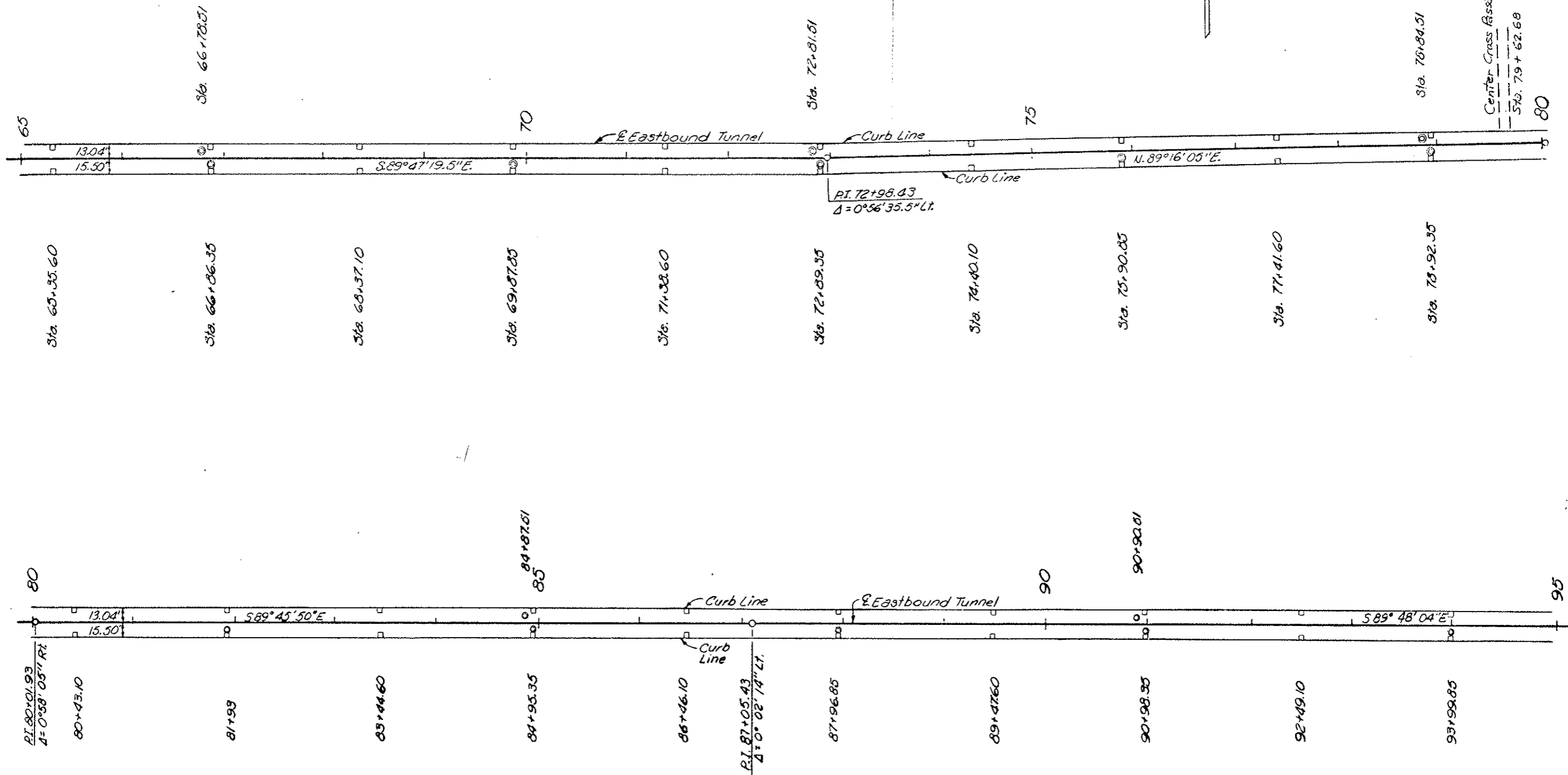
INLET DRAIN PIPING LOCATION-NORTH AND SOUTH CURB

Designer CDOH	Structure
Detailer J. LETCHWORTH	Numbers
Drawing Number D-2	of Drawings



LEGEND
 ● Existing Manhole
 □ Existing Inlet

INLET & MANHOLE LOCATION PLAN
 STA. 35+00 TO 65+00
 DRAWING D-3



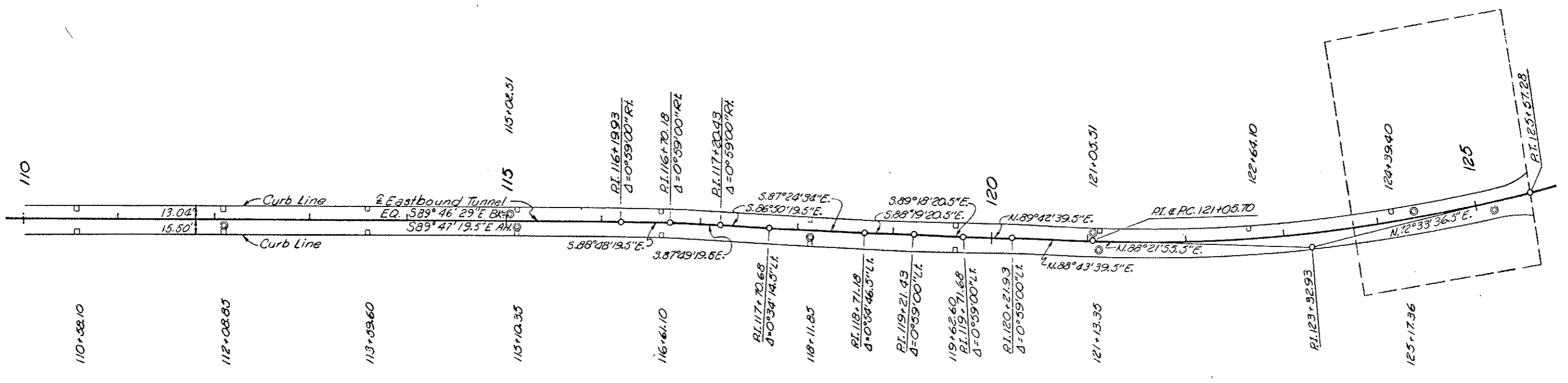
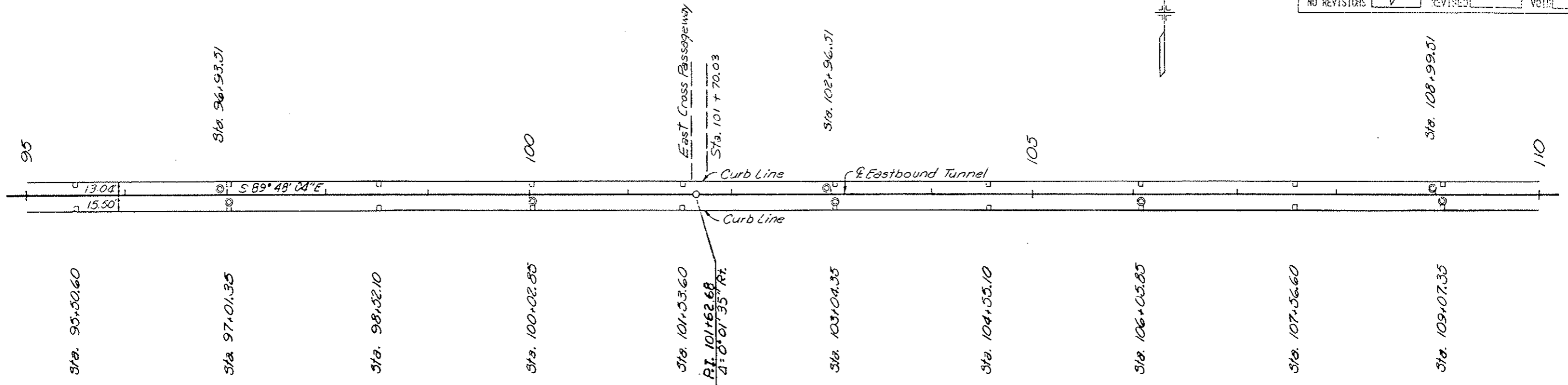
LEGEND

- Existing Manhole
- Existing Inlet

INLET & MANHOLE LOCATION PLAN
STA. 65+00 TO 95+00
DRAWING D-4

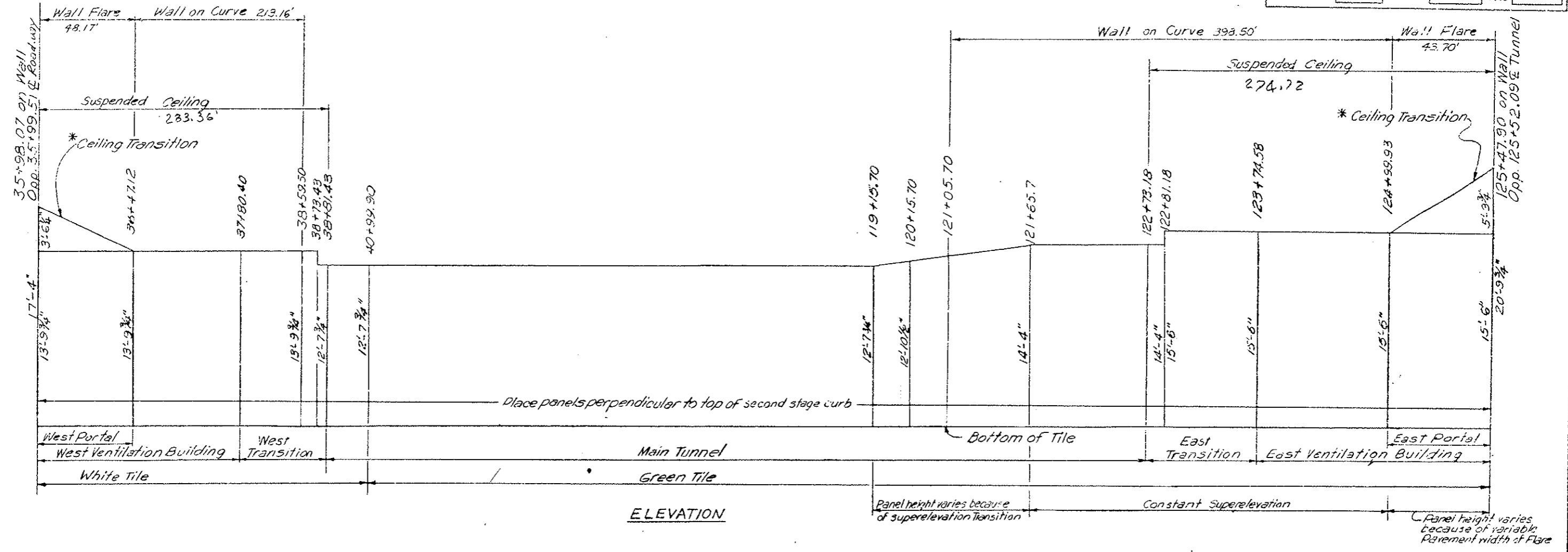
REGION NO.	DIVISION	PROJ. NO.	NO.	SHEET
III	COLORADO	170-31831220	60	

AS CONSTRUCTED		
NO REVISIONS	REVISIONS	VOID

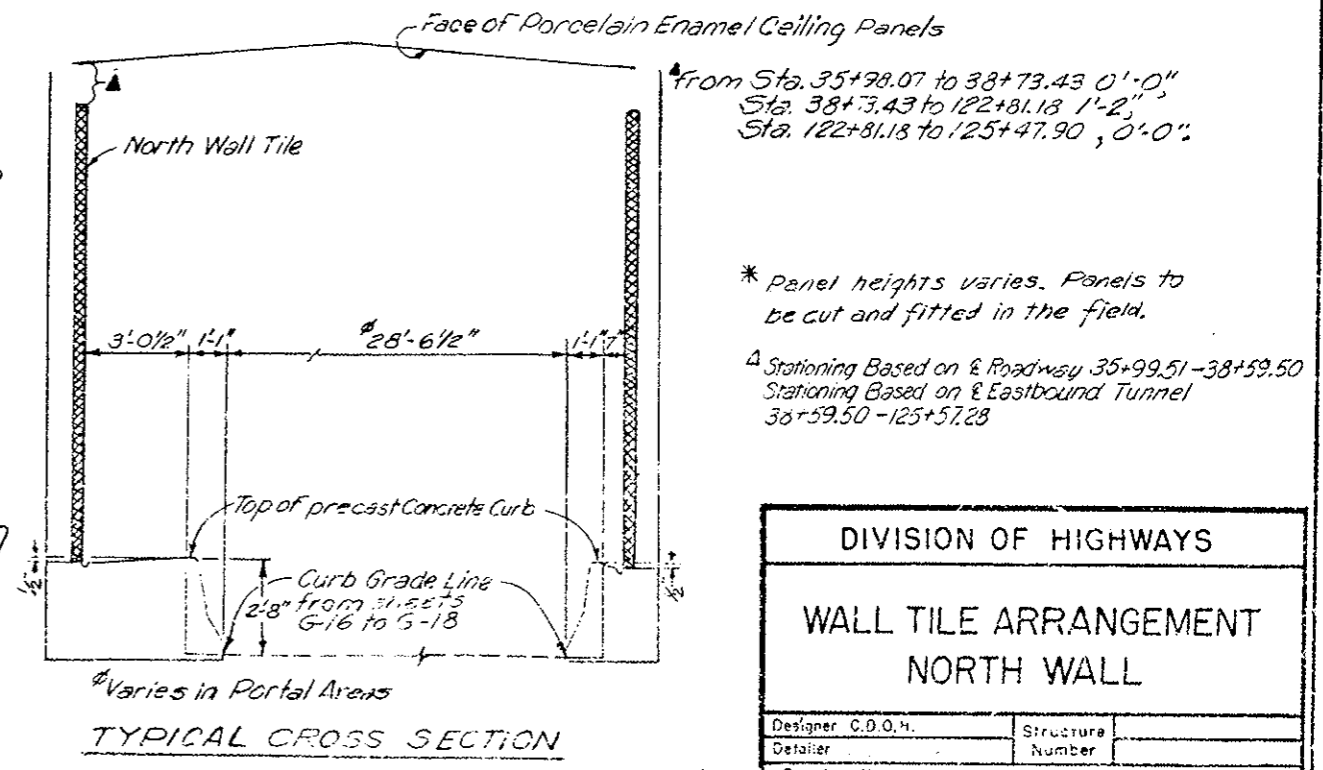


- LEGEND**
- Existing Manhole
 - Existing Inlet

INLET & MANHOLE LOCATION PLAN
STA. 95+00 TO 125+00
DRAWING D-5



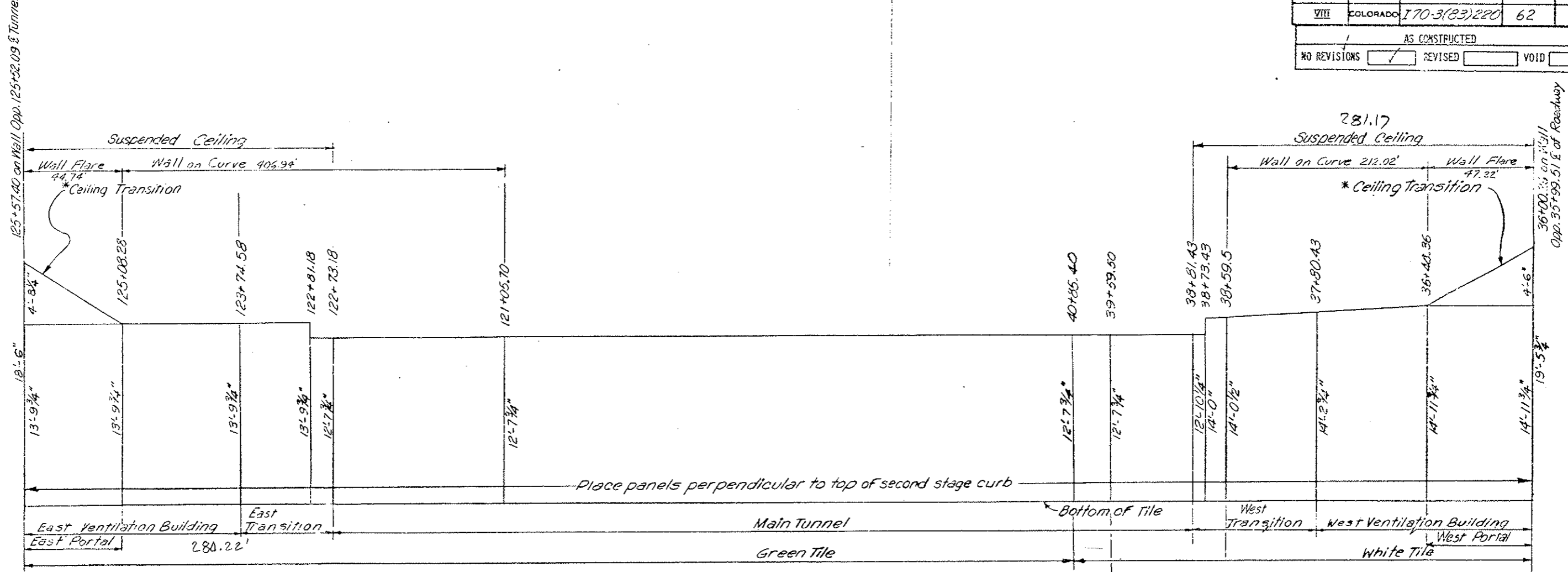
STATION	DESCRIPTION	PANEL SIZE			COLOR	SQ. FT.
		Height	Width	Thickness		
35+98.07 to 36+47.12	West Portal and Ceiling Transition	17'-4" to 13'-9 3/4"	7'-11 3/4"	3 3/4"	White	764
36+47.12 to 38+73.43	West Ventilation Bldg. and West Transition	13'-9 3/4"			White	3,125
38+73.43 to 38+81.43	West Transition	12'-7 3/4"			White	101
38+81.43 to 40+99.90	Main Tunnel	12'-7 3/4"			White	2,764
40+99.90 to 119+15.70	Main Tunnel	12'-7 3/4"			Green	98,870
119+15.70 to 120+15.70	Main Tunnel	12'-7 3/4" to 12'-10 1/2"			Green	1,277
120+15.70 to 121+65.70	Main Tunnel	12'-10 1/2" to 14'-4"			Green	2,041
121+65.70 to 122+73.18	Main Tunnel	14'-4"			Green	1,541
122+73.18 to 122+81.18	East Transition	14'-4"			Green	115
122+81.18 to 124+99.93	East Transition and East Ventilation Bldg.	15'-6"			Green	3,391
124+99.93 to 125+47.90	East Portal and Ceiling Transition	15'-6" to 20'-3 3/4"			Green	871
	Total					114,860



DIVISION OF HIGHWAYS

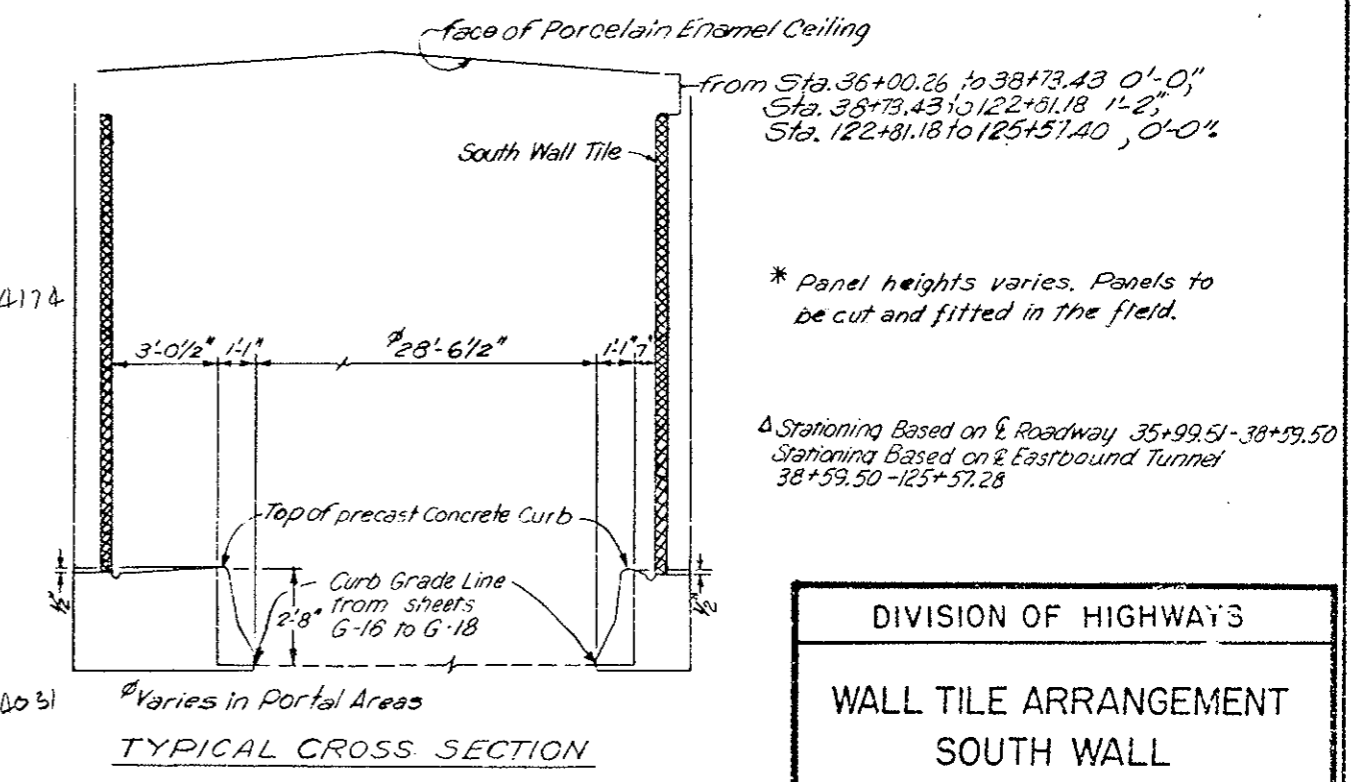
WALL TILE ARRANGEMENT NORTH WALL

Designer C.D.O.H. Structure Number
 Detailer Number
 Drawing Number of Drawings



ELEVATION

STATION	DESCRIPTION	PANEL SIZE			COLOR	SQ. FT.
		Height	Width	Thickness		
36+00.26 to 36+48.36	West Portal and Ceiling Transition	19'-5 3/4" to 14'-11 3/4"	7'-11 3/4"	3 3/4"	White	829
36+48.36 to 37+80.43	West Ventilation Building	14'-11 3/4" to 14'-2 3/4"			White	1,929
37+80.43 to 38+59.50	West Transition	14'-2 3/4" to 14'-0 1/2"			White	1,118
38+59.50 to 38+73.43	West Transition	14'-0 1/2" to 14'-0"			White	195
38+73.43 to 38+81.43	West Transition	12'-10 1/4"			White	103
38+81.43 to 39+59.50	Main Tunnel	12'-10 1/4" to 12'-7 3/4"			White	997
39+59.50 to 40+85.40	Main Tunnel	12'-7 3/4"			White	1,593
40+85.40 to 122+73.18	Main Tunnel	12'-7 3/4"			Green	103,575
122+73.18 to 122+81.18	East Transition	12'-7 3/4"			Green	101
122+81.18 to 125+08.28	East Transition and Ventilation Bldg.	13'-9 3/4"			Green	3,136
125+08.28 to 125+57.40	East Portal and Ceiling Transition	13'-9 3/4" to 18'-6"			Green	794
Total						114,370



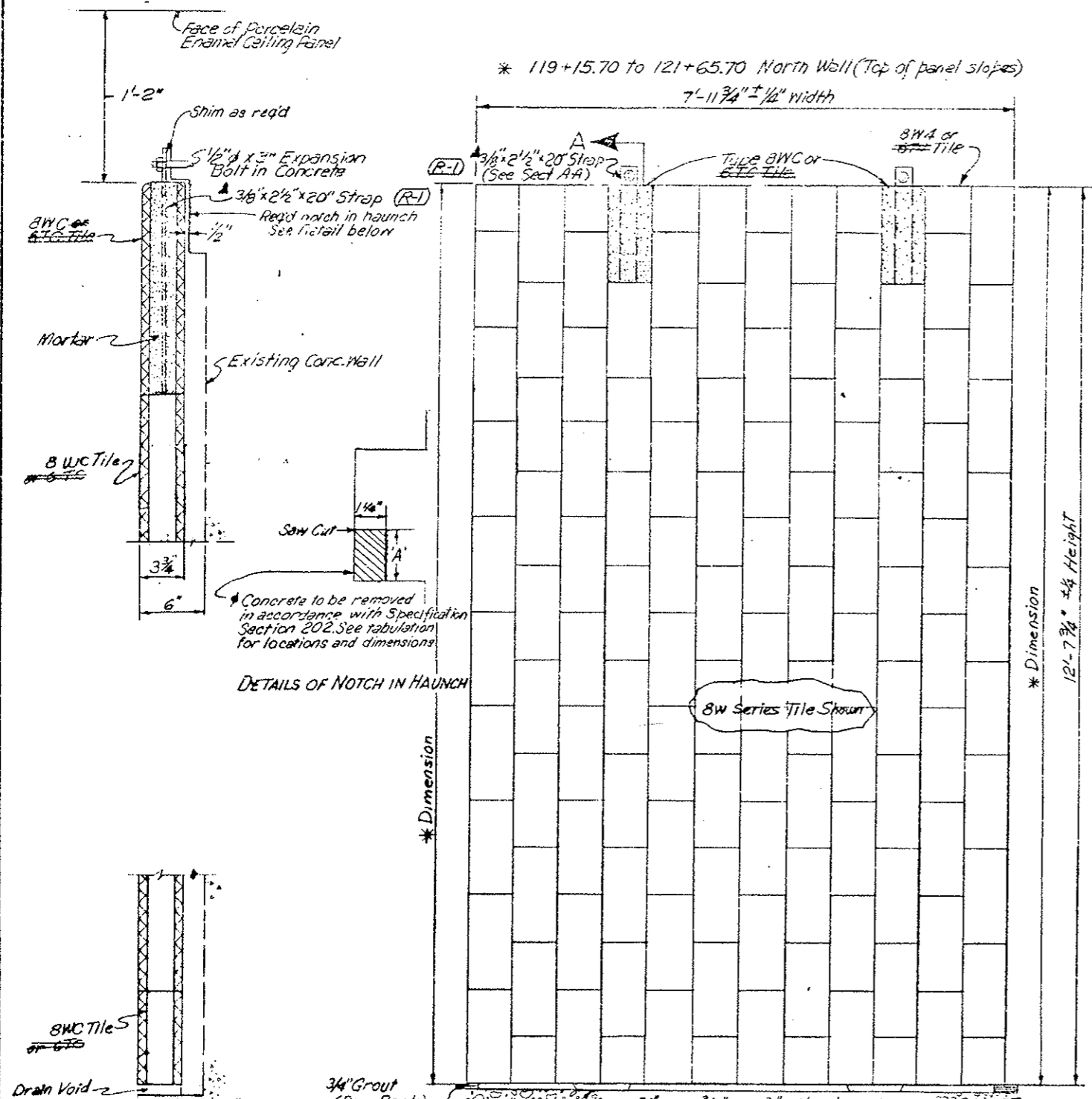
TYPICAL CROSS SECTION

DIVISION OF HIGHWAYS

WALL TILE ARRANGEMENT
SOUTH WALL

Designer C.D.O.H.	Structure Number
Detailer C.L.S.M.A.	Number
Drawing Number 114-2	of Drawings

REVISIONS		
(R-1)	11-3-78	Strap Size, Added Note E.B.



DETAILS OF NOTCH IN HAUNCH



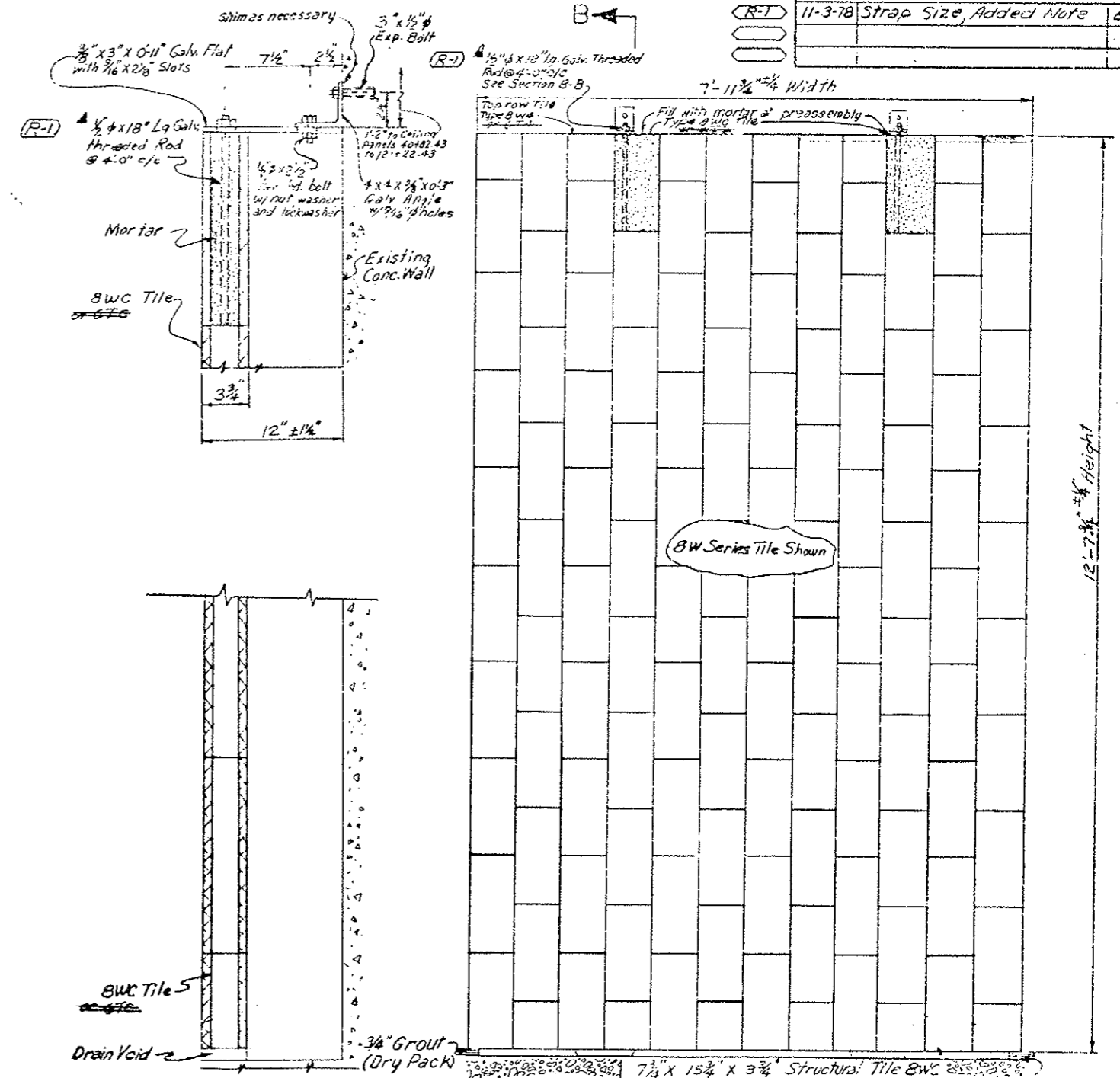
DESIGNED BY	CHECKED BY	DATE	QUANTITIES BY	CHECKED BY	DATE

Section A-A
Wall Tile Mounting Unit
Original Scale: 2"=1'-0"

TABULATION OF HAUNCH REMOVAL

STATION	LENGTH	NORTH WALL	SOUTH WALL
38+81.43 to 40+82.43	201.00'	0.84' to 0.89'	0.87' to 0.70'
121+22.43 to 122+73.18	150.75'	1.50' to 0.22'	1.51' to 0.09'

(R-1) The same size strap or rod shall be used for either tile series.



Section B-B
Wall Tile Mounting Unit
Original Scale: 2"=1'-0"

GLAZED STRUCTURAL WALL TILE ELEVATION
Original Scale 1"=1'-0"

* See Wall Tile Arrangement Drawing WFA

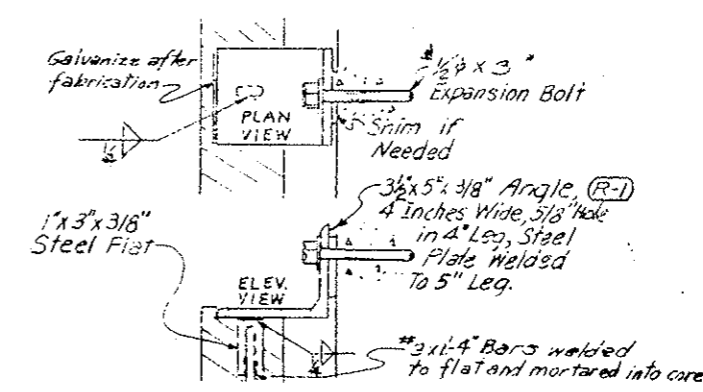
DIVISION OF HIGHWAYS

WALL TILE AND MOUNTING UNIT DETAILS

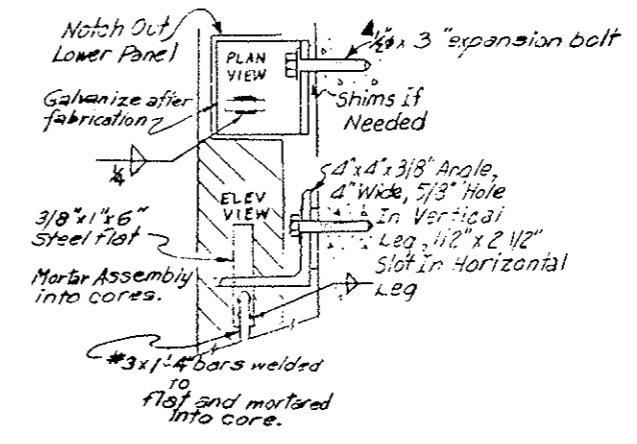
Designer C.D.H.	Structure
Detailer J. Letchworth	Numbers
Drawing Number WF-3	of

REVISIONS		
(R-1)	11-3-78 Angle size, Added note	EB
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

CONNECTION OF GLAZED TILE PANELS

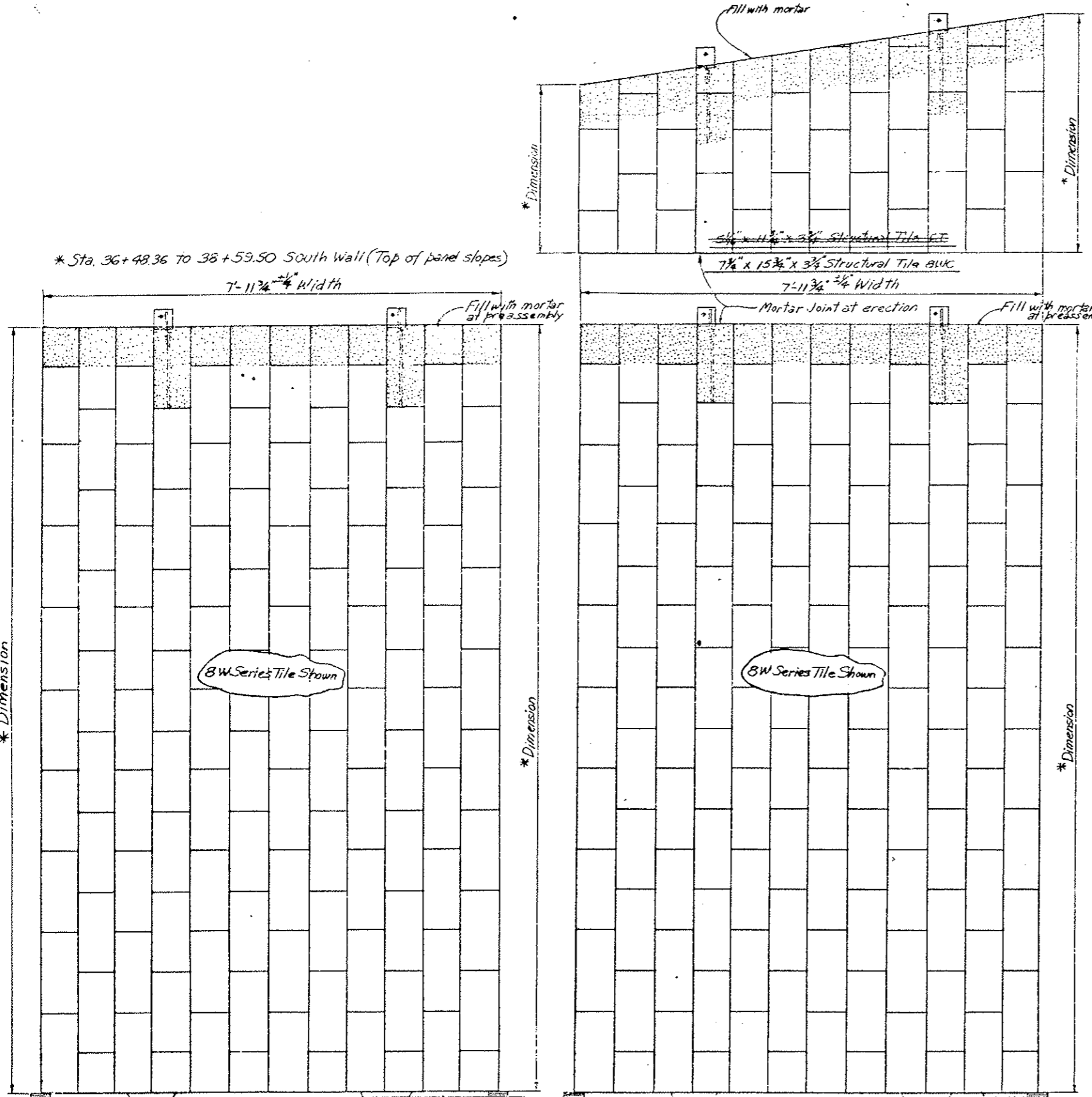


INTERMEDIATE CONNECTION OF GLAZED TILE PANELS



(R-1) ▲ These details shall be modified to a 1/2" x 12" bolt with 2" x 2" x 1/8" washer to connect wall tile thru the 10" concrete block walls in the ventilation buildings (Centerline stations 35+97.90 to 37+80.40 and 123+74.60 to 125+57.28)

Note: 6T Tile Deleted



Second Stage Curb
 North Wall (Sta. 36+47.12 to 38+81.43)
 South Wall (Sta. 36+48.36 to 38+81.43)
 (Sta. 122+81.18 to 124+99.93)
 (Sta. 122+81.18 to 125+08.53)
 3/4" Grout (Dry Pack)

Second Stage Curb
 North Wall (Sta. 35+98.07 to 36+47.12)
 South Wall (Sta. 36+00.26 to 36+48.36)
 (Sta. 124+99.93 to 125+47.90)
 (Sta. 125+08.28 to 125+57.40)
 3/4" Grout (Dry Pack)

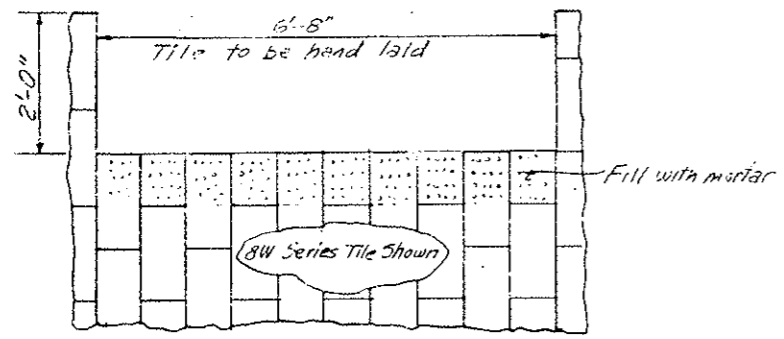
GLAZED STRUCTURAL WALL TILE ELEVATION
 Original Scale 1"=1'-0"

DIVISION OF HIGHWAYS	
WALL TILE AND MOUNTING UNIT DETAILS	
Designer C.D.H.	Structure Numbers
Detailer J. Letchworth	
Drawing Number WF-4	of Drawings

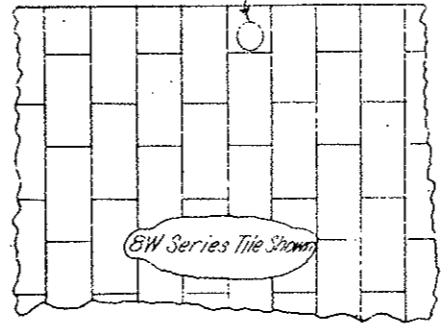
* See Wall Tile Arrangement Drawings WF-1 and WF-2

REVISIONS	

Cutout on North wall for Junction Box for Emergency Lights @ 99' Centers.

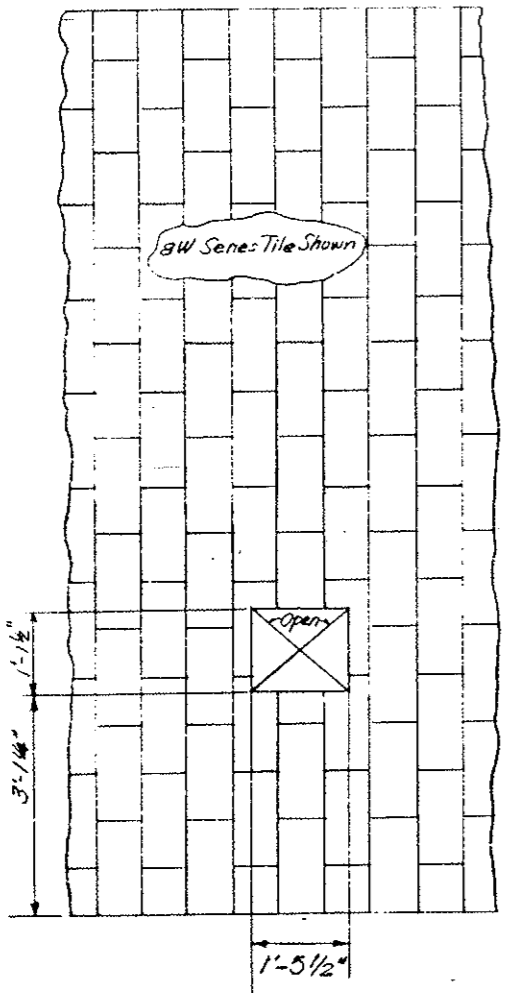


MESSAGE BOARD CUTOUT

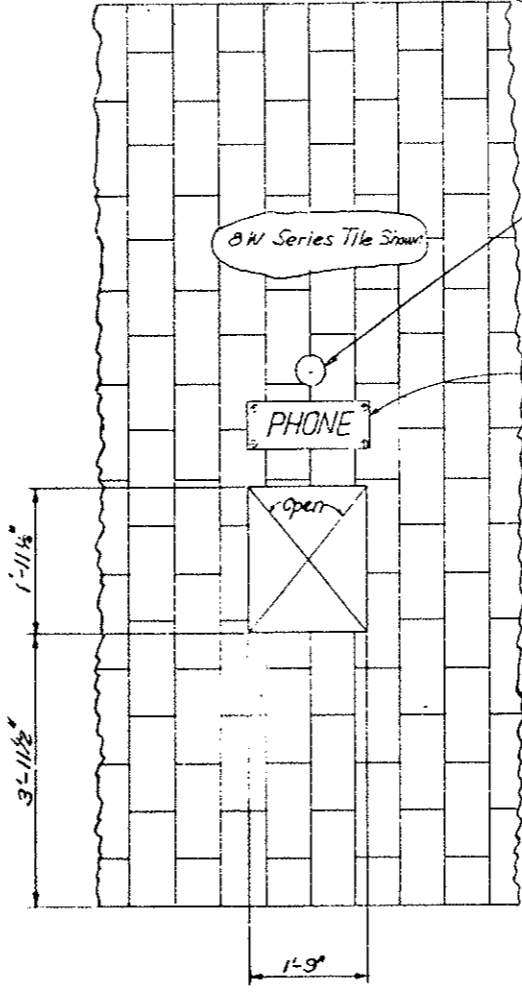


EMERGENCY LIGHT CUTOUT

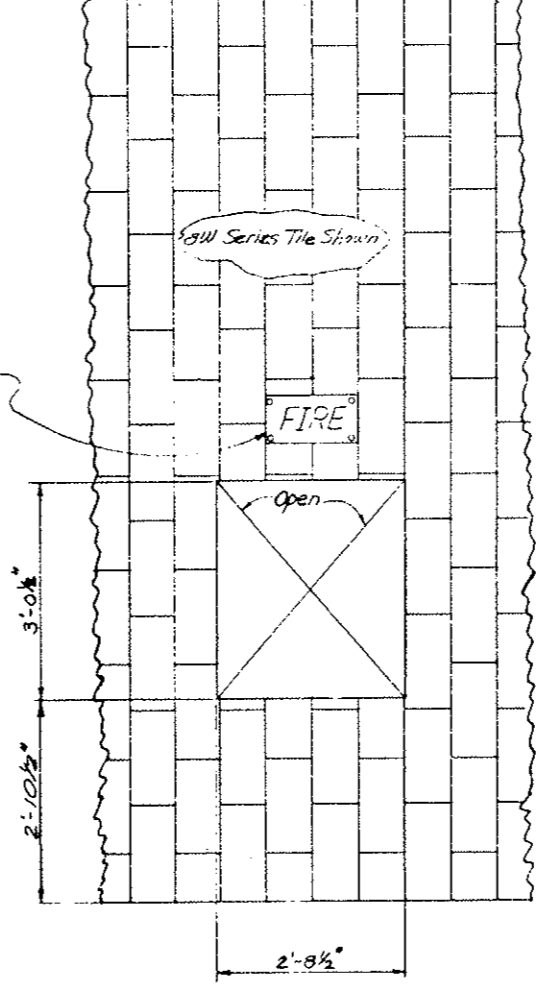
Cutout on North wall for Junction Box for Telephone Cabinet Marker Light



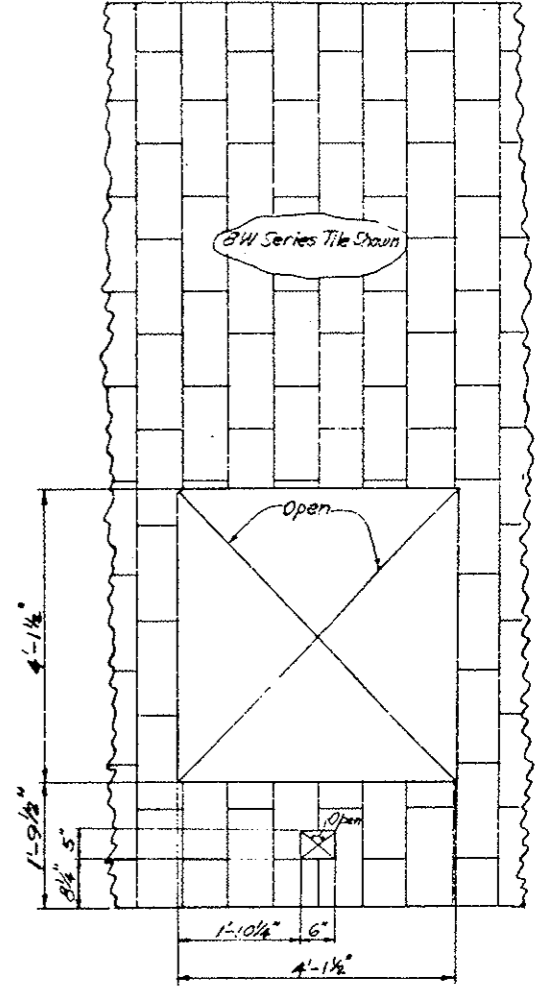
PANEL INSTRUMENTATION CABINET CUTOUT
ORIGINAL SCALE 3/4" = 1'-0"



PANEL EMERGENCY TELEPHONE CUTOUT
ORIGINAL SCALE 3/4" = 1'-0"



PANEL FIRE EXTINGUISHER CUTOUT
ORIGINAL SCALE 3/4" = 1'-0"



PANEL CO ANALYZER CUTOUT
ORIGINAL SCALE 3/4" = 1'-0"

DESIGNED BY	CHECKED BY	DATE	QUANTITIES BY	CHECKED BY	DATE
CDOH	CDOH	2-2-76	CDOH	CDOH	2-2-76

NORTH WALL

Note: Cutouts in tile to be square with tile.

DIVISION OF HIGHWAYS	
WALL TILE TYPICAL CUTOUT DETAILS	
Designer CDOH	Structure
Detailer J. Letchworth	Numbers
Drawing Number WF-5	of Drawings
Revision Dates	(Preliminary Stage Only)

DESIGNED BY	CED	CHECKED BY	CED
DATE	7-9-75	QUANTITIES BY	CED
CHECKED BY	CED	DATE	7-9-75
DETAILED BY	CED	CHECKED BY	CED

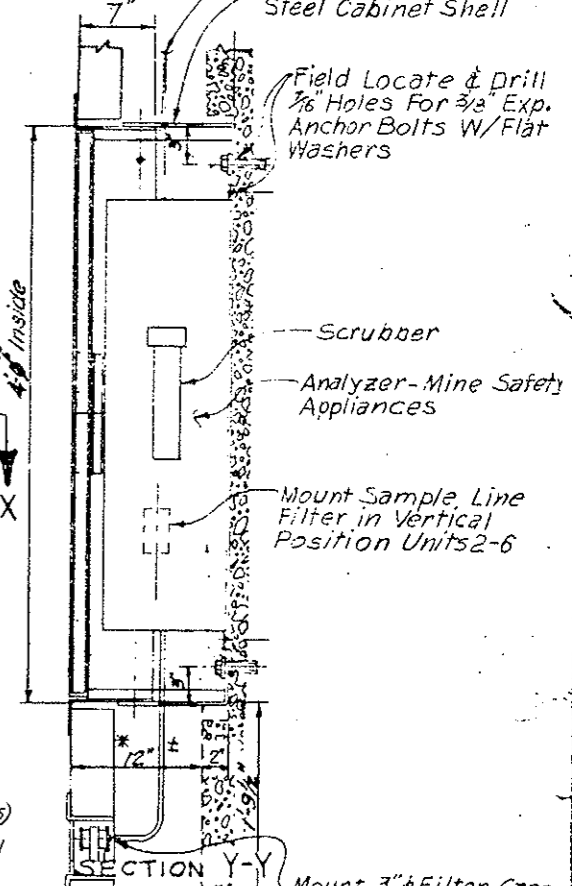
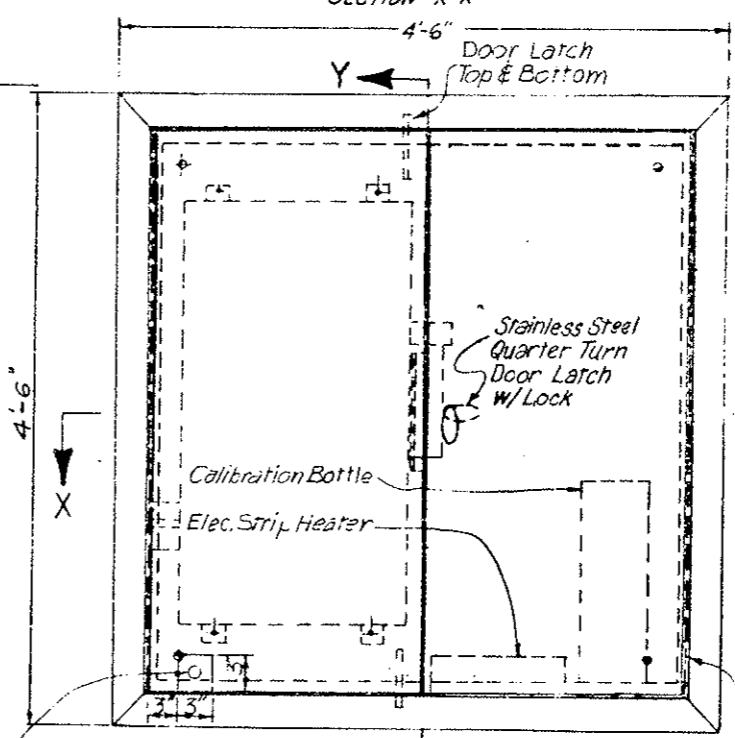
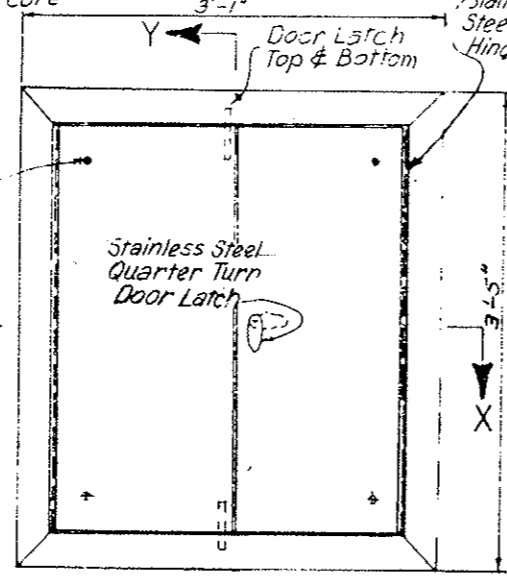
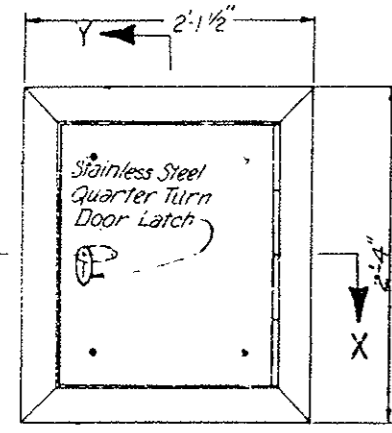
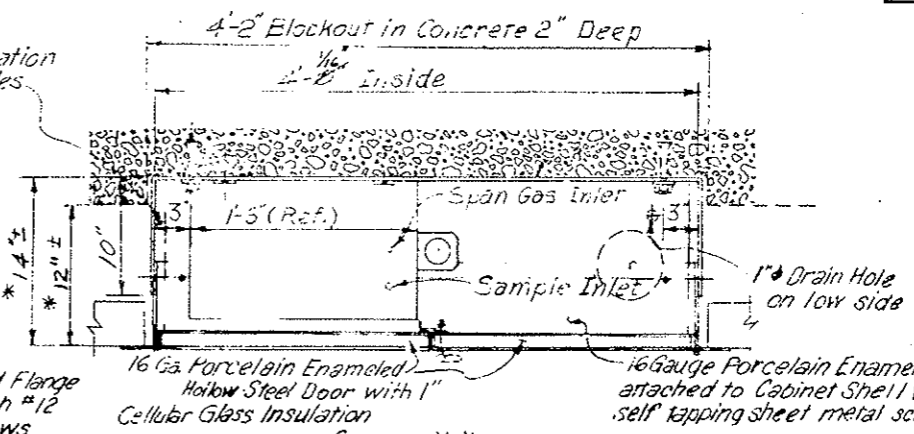
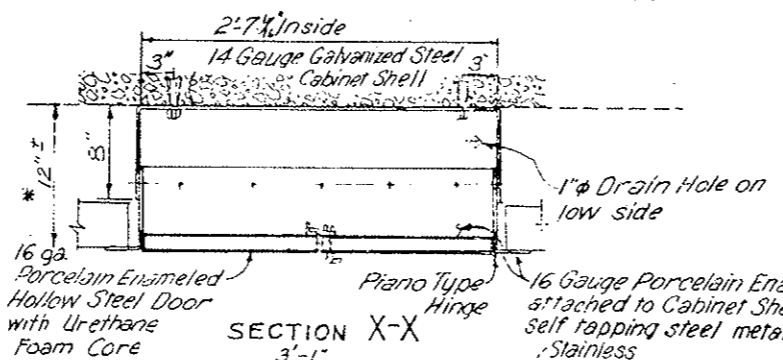
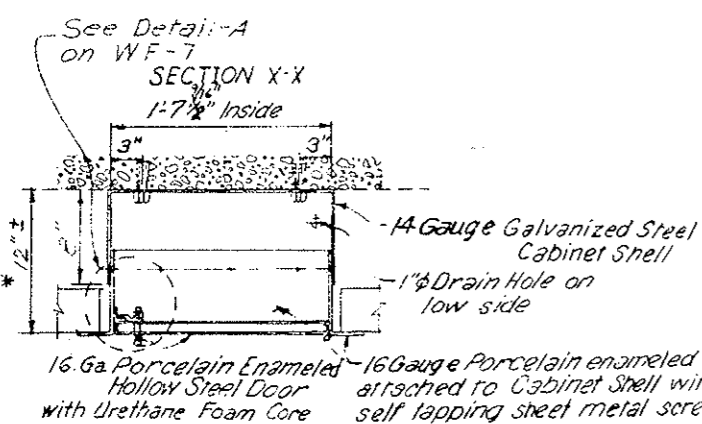
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID
	✓	

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(23)220	66	

REVISIONS	
R-1	Dimension changes

Note: Removal of Concrete for Blockout to be in accordance with Spec. Section 202. The perimeter of the Blockout shall be sawed to a minimum of 2 inches before removing concrete.

* Cabinet depth adjustable
#12 Self-tapping screws to be installed after cabinet depth is adjusted in the field. (See Detail A-WF-7)



EMERGENCY TELEPHONE CABINET
ORIGINAL SCALE: 1/4" = 1'-0"

FIRE EXTINGUISHER CABINET
ORIGINAL SCALE: 1/2" = 1'-0"

CARBON MONOXIDE ANALYZER CABINET
ORIGINAL SCALE: 1/4" = 1'-0"

CABINET LOCATIONS ON NORTH WALL

Cabt. No.	Emerg. Phone Cabt.	Cabt. No.	Emerg. Phone Cabt.
1	41+10.70	6	81+30.70
2	49+14.70	7	89+34.70
3	57+18.70	8	97+38.70
4	65+22.70	9	105+42.70
5	73+26.70	10	113+46.70
		11	(See WF-7)

Cabt. No.	Fire Ext. Cabt.	Cabt. No.	Fire Ext. Cabt.	Cabt. No.	Fire Ext. Cabt.	Cabt. No.	Fire Ext. Cabt.
1	(See WF-7)	9	59+13.35	18	81+74.60	27	104+35.85
2	41+54.60	10	61+64.60	19	84+25.85	28	106+87.10
3	44+75.25	11	64+15.85	20	86+77.10	29	109+38.35
4	46+57.10	12	66+67.10	21	89+28.35	30	111+89.60
5	49+08.35	13	69+18.35	22	91+79.60	31	114+40.85
6	51+59.60	14	71+69.60	23	94+30.85	32	116+92.10
7	54+10.85	15	74+20.85	24	96+82.10	33	119+43.35
8	56+62.10	16	76+72.10	25	99+33.35	34	(See WF-7)
		17	79+23.35	26	101+84.60		

Cabt. No.	Co Analyzer Cabt.	Cabt. No.	Co Analyzer Cabt.	Cabt. No.	Co Analyzer Cabt.
1	37+80.40	3	68+74.45	6	104+92.45
2	56+62.45	4	80+80.45	7	123+74.78
		5	92+86.45		

▲ Cabinets are not required for West and East Ventilation Building 30 or 31, 2, 3.

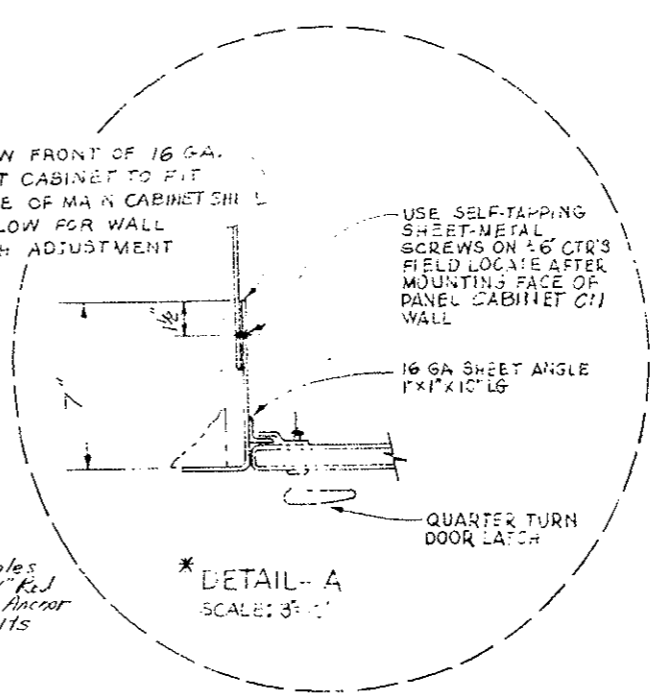
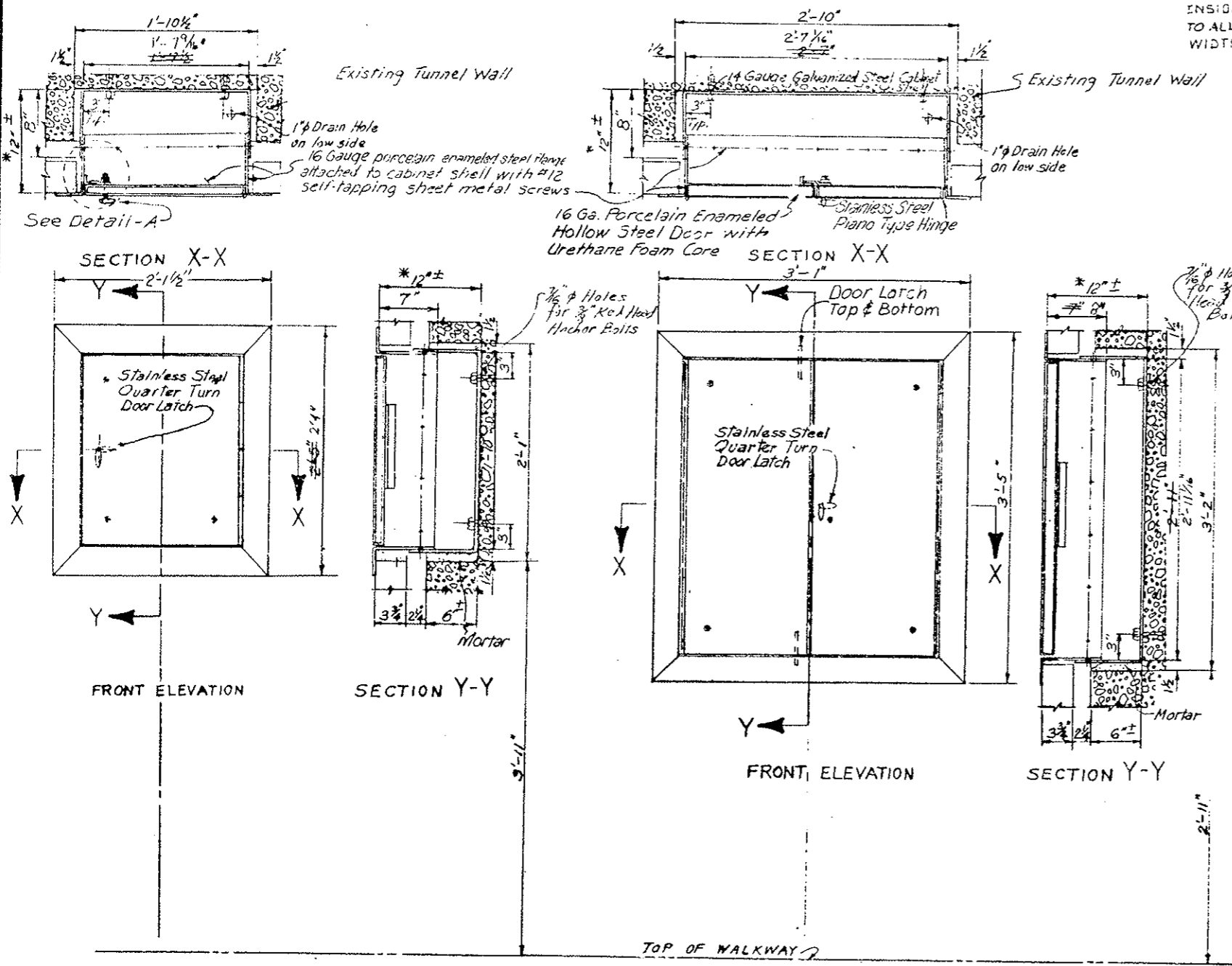
Cabinets for fire extinguisher, emergency telephone and Carbon Monoxide Analyzer shall be of welded and bolted construction and galvanized on all surfaces except for doors and flaps which shall have a porcelain enamel surface front and back. Cabinets to be square with wall tie. See Cabinet, Hardware and Finish Schedule for additional information.

DIVISION OF HIGHWAYS

CABINETS TELEPHONE, FIRE EXTINGUISHER AND CO ANALYZER

Designer: C.D.H. Structure: _____
 Detailer: J. LETCHER Structure Numbers: _____
 Drawing Number: WF-6 of _____ Drawings

REVISIONS	



NOTE: See Cabinet, Hardware, and Finish Schedule for additional information.

CHECKED BY	DATE	QUANTITIES BY	CHECKED BY
CDH	1/25/11	CDH	1/25/11
CHECKED BY	DATE	QUANTITIES BY	CHECKED BY

EMERGENCY TELEPHONE CABINET
 ORIGINAL SCALE: 1/2" = 1'-0"

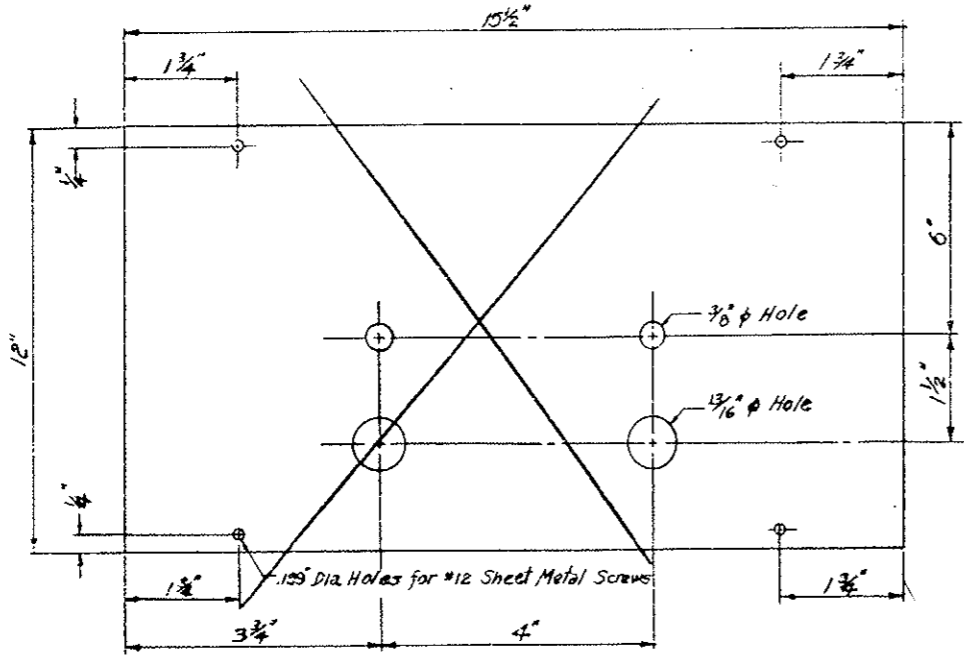
Cabt. No.	Emerg. Phone Cabt.
11	121-50,70

FIRE EXTINGUISHER CABINET
 ORIGINAL SCALE: 1/2" = 1'-0"

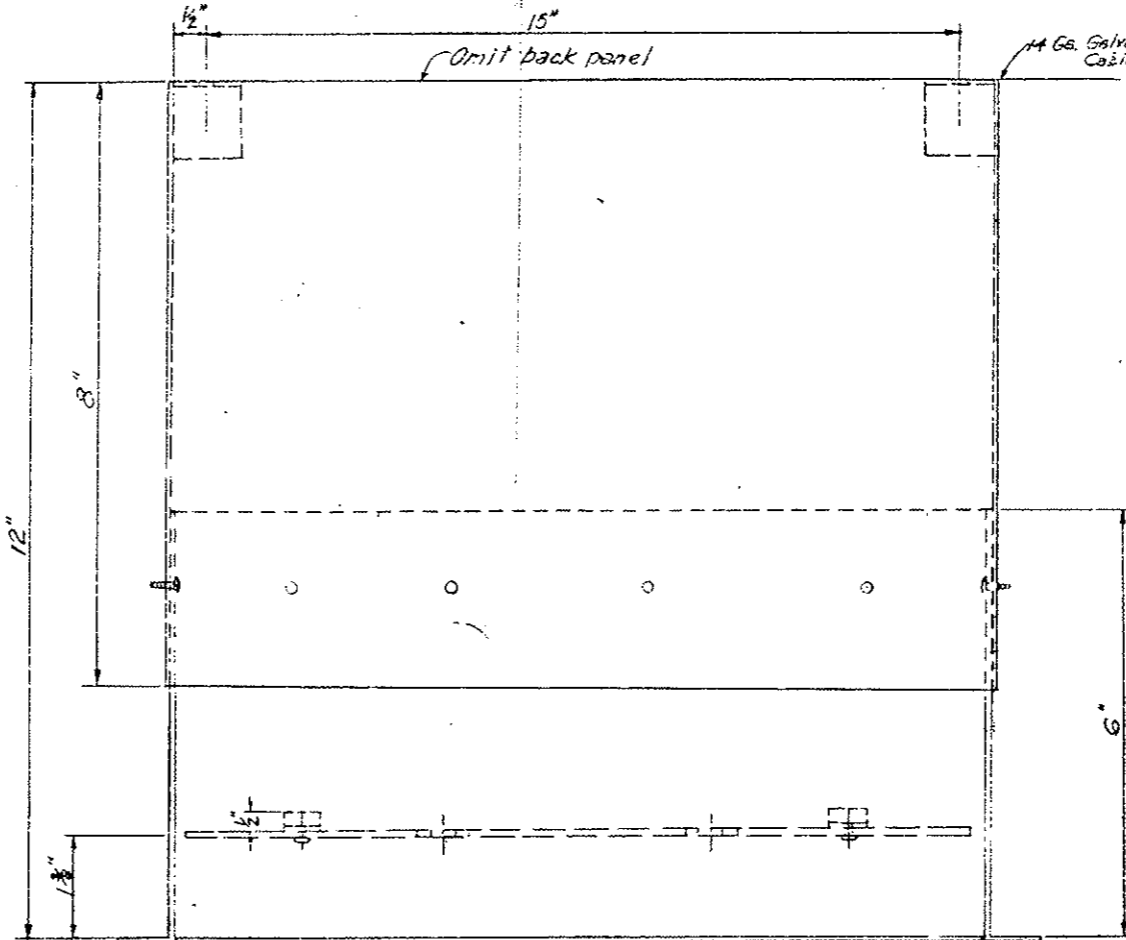
Cabt. No.	Fire Ext. Cabt.
1	39-03,41
34	121-49,60

DIVISION OF HIGHWAYS	
CABINETS	
TELEPHONE AND	
FIRE EXTINGUISHER	
Designer C.D.H.	Structure
Detaller J. Letchworth	Numbers
Drawing Number WF-7	of Drawings
Revision Dates	(Preliminary Stage Only)

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I 70-3(83)220	68	
REVISIONS				
<u>R-1</u>	11-3-78	Cabinet Locations		E.B.
AS CONSTRUCTED				
NO REVISIONS		REVISED	<input checked="" type="checkbox"/>	VOID



SWITCH MOUNTING PLATE
Delete



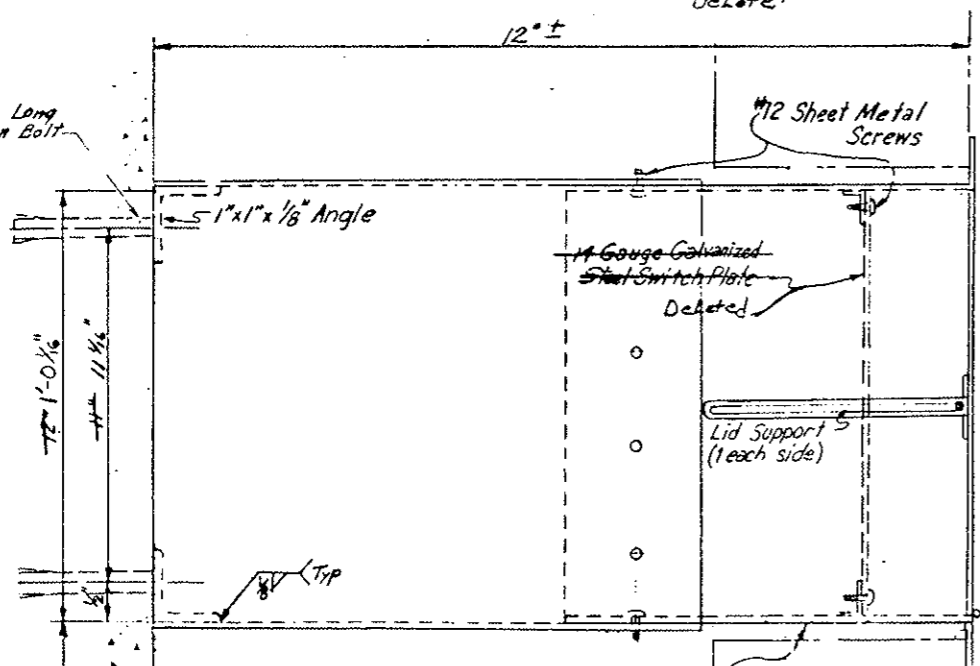
PLAN VIEW

INSTRUMENT CABINET LOCATIONS

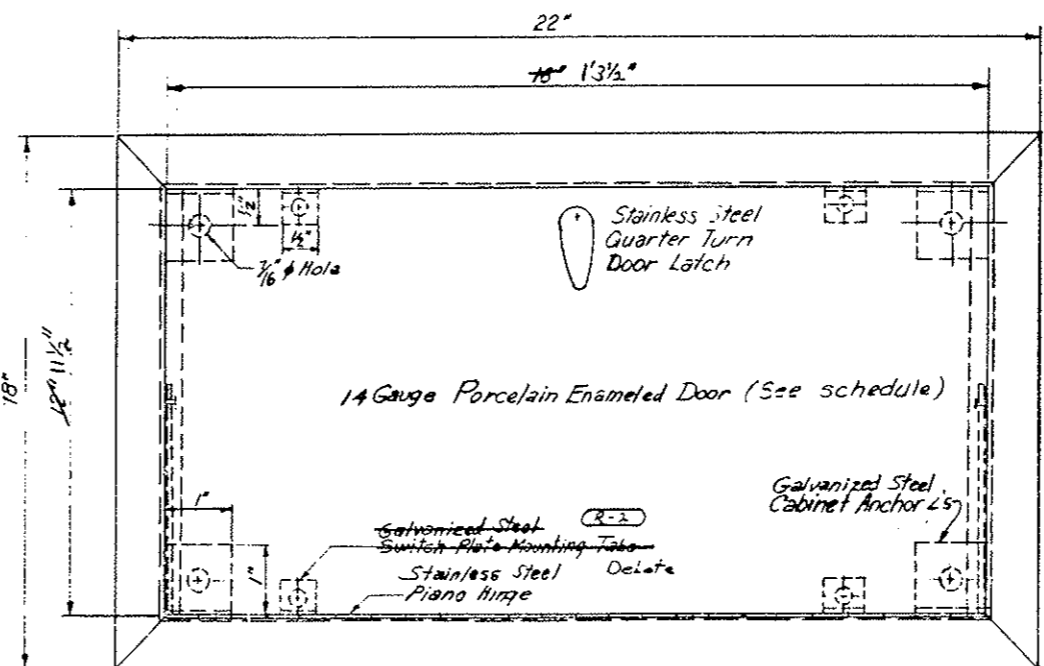
No.	I- Instr. Cabinet
1	41+60
2	51+98
3	58+94
4	62+48
5	63+04
6	63+60
7	64+00
8	64+52
9	65+08
10	70+20
11	71+04
12	72+40
13	72+44
14	73+48
15	80+90
16	81+50
17	81+86
18	82+46
19	83+43
20	84+00
21	85+00 <i>Delete</i>
22	86+00
23	87+52 <i>Delete</i>
24	88+18
25	89+38
26	90+32
27	90+46
28	90+98
29	91+94
30	93+02
31	94+10
32	96+02
33	97+02
34	97+50
35	98+26
36	102+52
37	103+00
38	103+84
39	105+48
40	105+96
41	106+36
42	108+64
43	113+88
44	118+77
45	119+59

3-Digits 2 on the North
1 on the South

These stations are approximate.



SIDE VIEW



ELEVATION VIEW

INSTRUMENTATION CABINET

DIVISION OF HIGHWAYS

INSTRUMENTATION CABINET

Designer CDOH	Structure
Detailer J. Leitchworth	Numbers
Drawing Number WF-8	of Drawings

DESIGNED BY	CHECKED BY
DATE	DATE
QUANTITY BY	QUANTITY BY
CHECKED BY	CHECKED BY

1/2 x 2" Long Expansion Bolt 4 Req'd

REVISIONS	

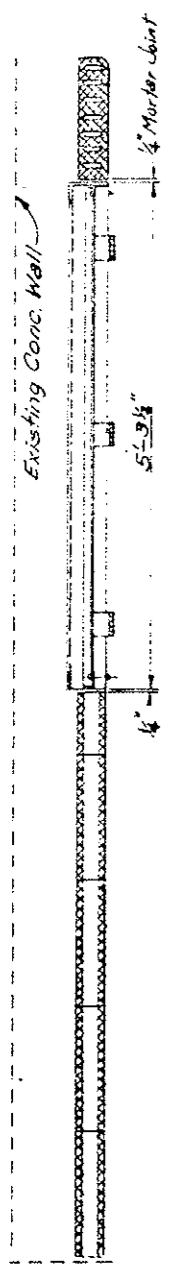
AS CONSTRUCTED	
MC REVISIONS <input checked="" type="checkbox"/>	REVISED <input type="checkbox"/> VOID <input type="checkbox"/>

STANDARD PULLBOX STATION LOCATIONS

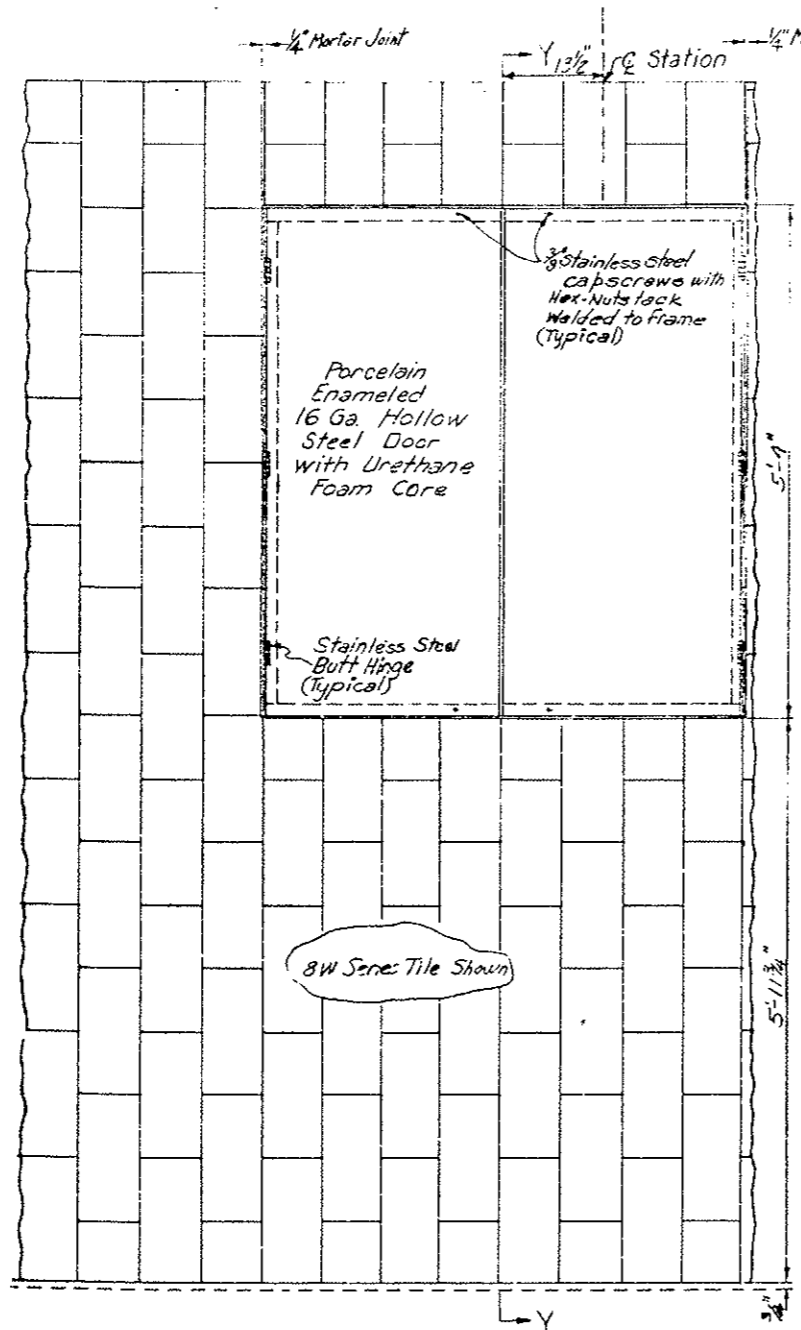
Pullbox Station Number	Locations North Wall	Locations South Wall
1	West Vent. Bldg (See WF-11)	West Vent. Bldg (See WF-11)
2	(See WF-11)	(See WF-11)
3	(See WF-13)	(See WF-13)
4	44+74.19	44+74.19
5	48+64.45	48+64.45
6	52+58.18	52+58.18
7	56+68.45	56+68.45
8	(See WF-14)	59+55.37
9	61+92.93	61+92.93
10	64+72.45	64+72.45
11	68+84.10	68+74.45
12	72+76.45	72+76.45
13	76+50.18	76+50.18
14	(See WF-14)	79+62.68
15	80+80.45	80+80.45
16	84+89.14	84+89.14
17	88+84.45	88+84.45
18	92+93.18	92+93.18
19	96+88.45	96+88.45
20	99+61.68	99+61.68
21	(See WF-14)	101+70.03
22	104+92.45	104+92.45
23	109+02.76	108+94.45
24	112+96.45	112+96.45
25	117+08.10	117+00.43
26	(See WF-13)	(See WF-13)
27	East Vent. Bldg	East Vent. Bldg

Notes: Field cut tile to fit pullbox locations.
 Pullbox to be square with tile.
 Pullbox frame and door not required for 1N, 15, 27N and 27S.
 See Cabinet, Hardware, and Finish Schedule for additional information.

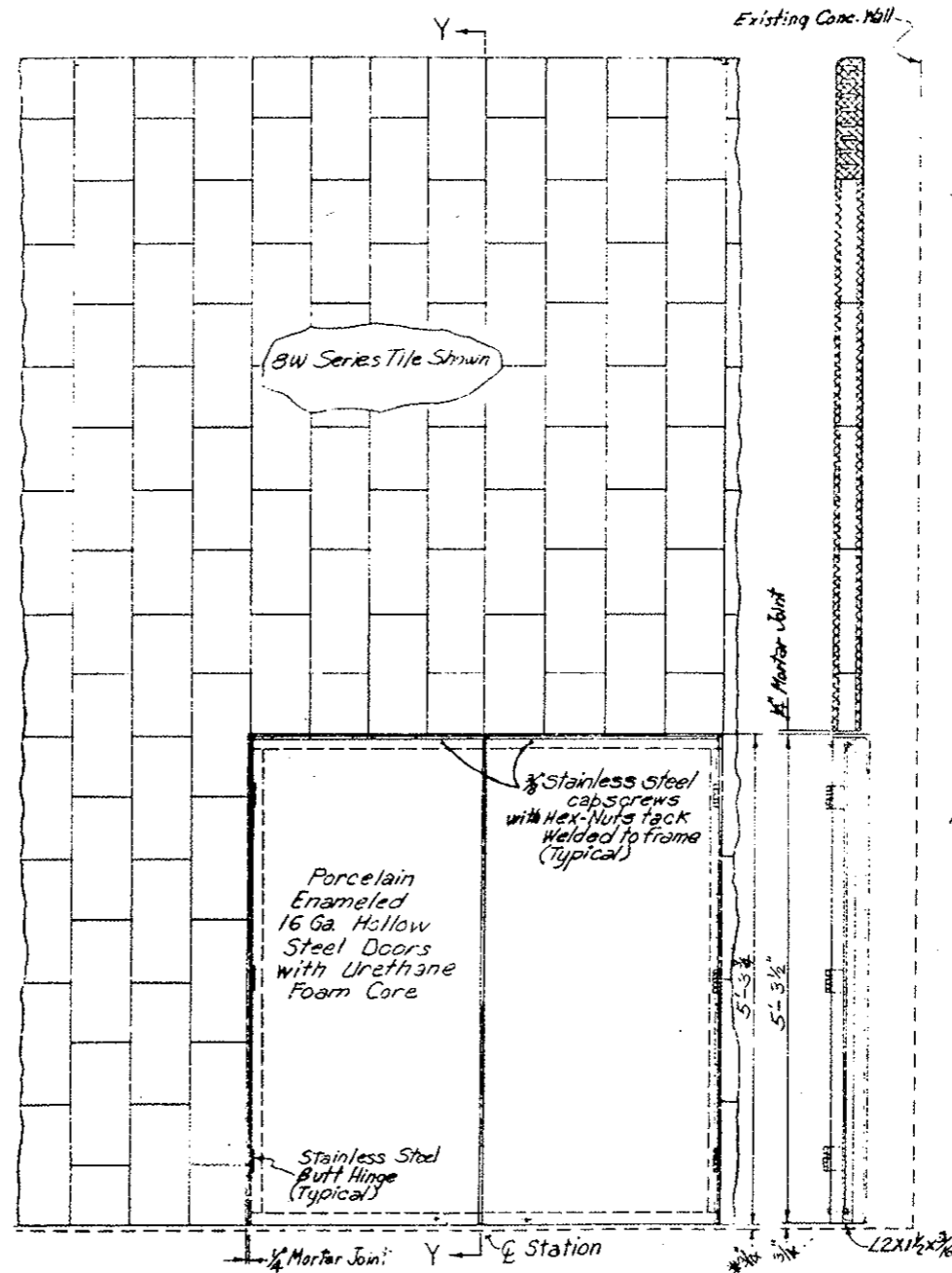
DESIGNED BY	DATE	CHECKED BY
DRAWN BY		QUANTITIES BY
DETAILS BY		CHECKED BY



SECTION Y-Y



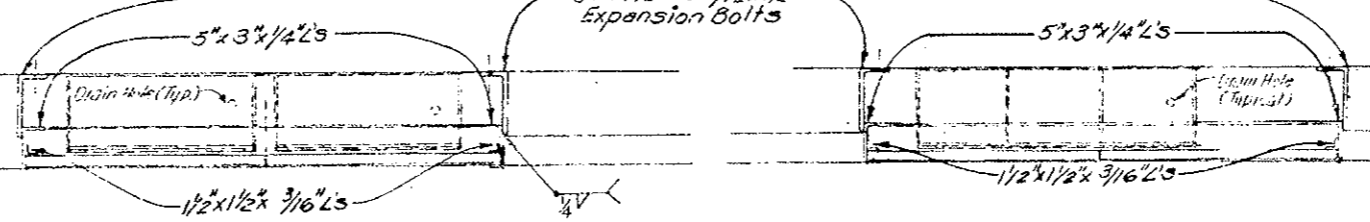
ELEVATION
 PANEL AT PULLBOX DISTRIBUTION STATION
 NORTH WALL
 ORIGINAL SCALE: 1"=1'-0"



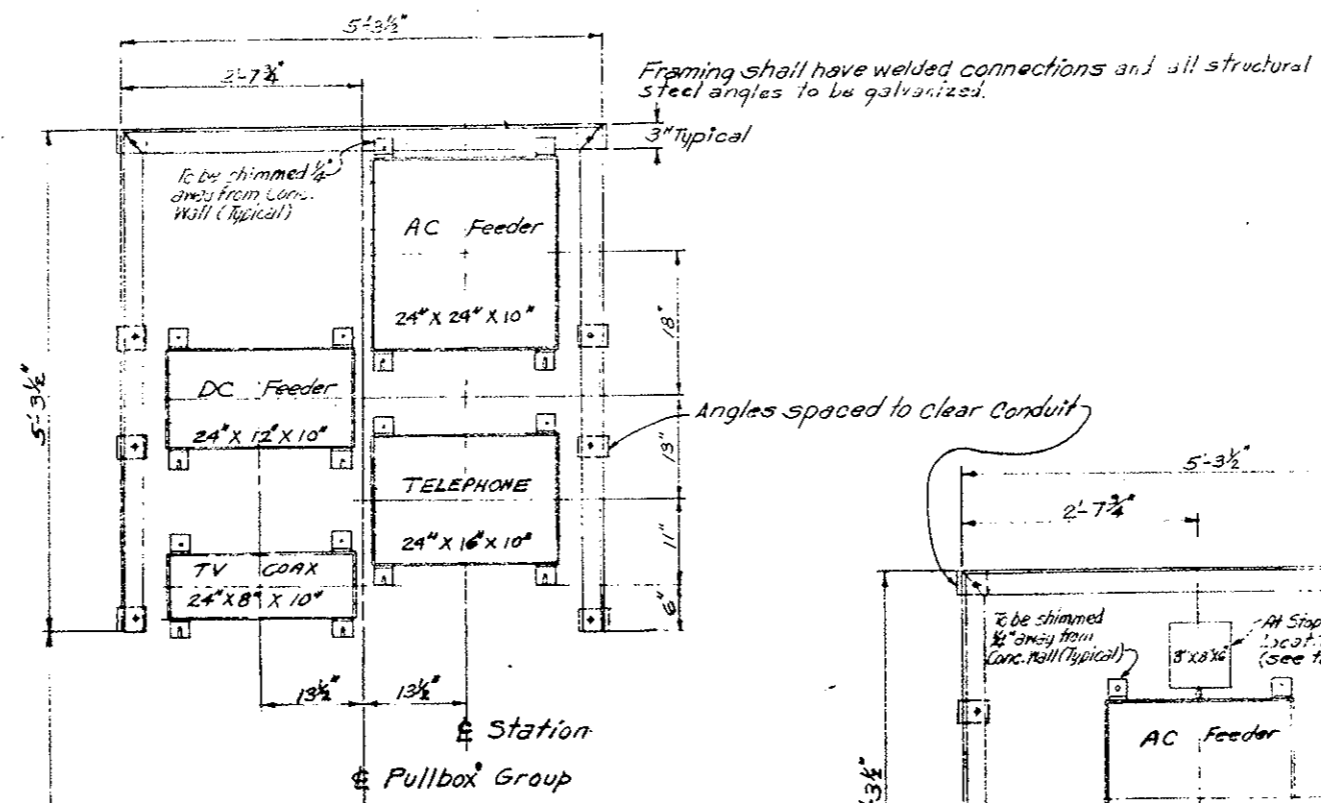
ELEVATION
 PANEL AT PULLBOX DISTRIBUTION STATION
 SOUTH WALL
 ORIGINAL SCALE: 1"=1'-0"
 #Varies See Following Sheet

DIVISION OF HIGHWAYS	
WALL TILE	
DETAILS AT PULLBOX STATION	
STANDARD	
Designer C.D.O.H.	Structure
Detailer J. LeForth	Numbers
Drawing Number WF-3	of Drawings

REVISIONS	



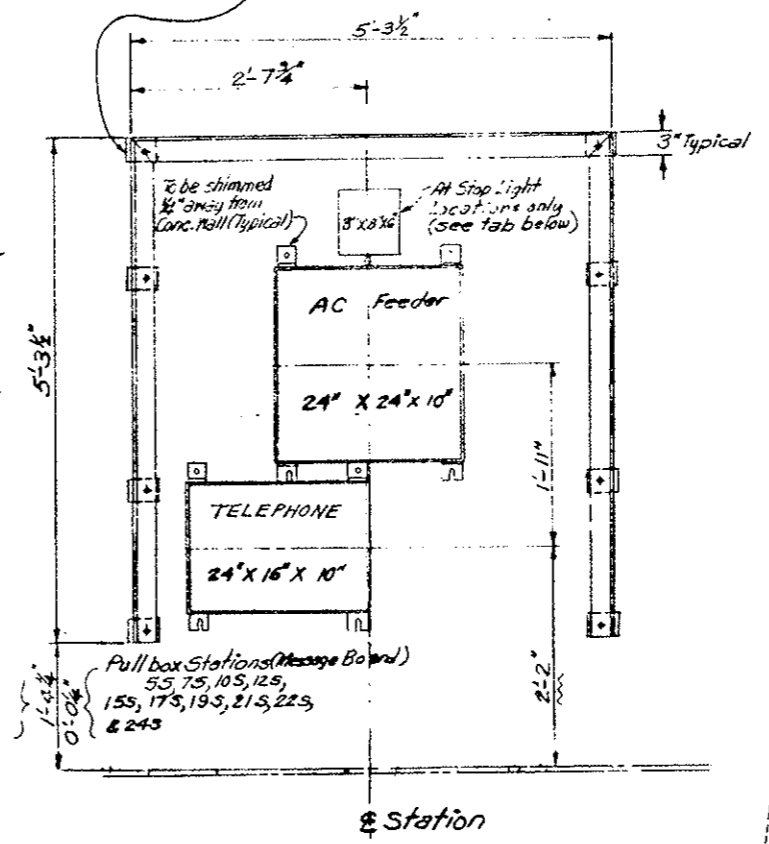
FOR CONDUIT SIZE AND LOC.
REFER TO DWGS.
ET-1S & ET-3S



Pullbox Stations
4 N THRU 25 N
EXCEPT ON 14 N REIN
(See WF-14)

Pullbox Stations (Step Light)
4S, 6S, 8S, 11S, 13S,
16S, 18S, 20S, 23S, 25S

ELEVATION
STANDARD PULLBOX STATION FRAME
NORTH WALL
ORIGINAL SCALE: 1"=1'-0"



Pullbox Stations (Message Board)
5S, 7S, 10S, 12S,
15S, 17S, 19S, 21S, 22S,
& 24S

ELEVATION
STANDARD PULLBOX STATION FRAME
SOUTH WALL
ORIGINAL SCALE: 1"=1'-0"

For conduit size and location
Refer to Dwgs. ET-1S & ET-3S

Notes:
Pullbox Frame to be square with tile.
Each Pullbox within the Pullbox
Stations shall be included
with its related work and not
be paid for as part of the
pullbox station.

Pullboxes and Covers shall be
fabricated from 10 gauge galvanized sheet
steel. Covers not shown here
but will be fastened with #12 self
tapping screws @ 6" spacing

DIVISION OF HIGHWAYS
DETAILS OF
PULLBOX STATION FRAME
STANDARD

AS CONSTRUCTED	NO REVISIONS	REVISED	VOID
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Designer CDDH	Structure
Detailer J. LITZGARTH	Numbers
Drawing Number WF-10	of Drawings

DESIGNED BY	DATE	CHECKED BY
CDDH	5-8-75	
CHECKED BY	QUANTITIES BY	
DETAILED BY		

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	71	

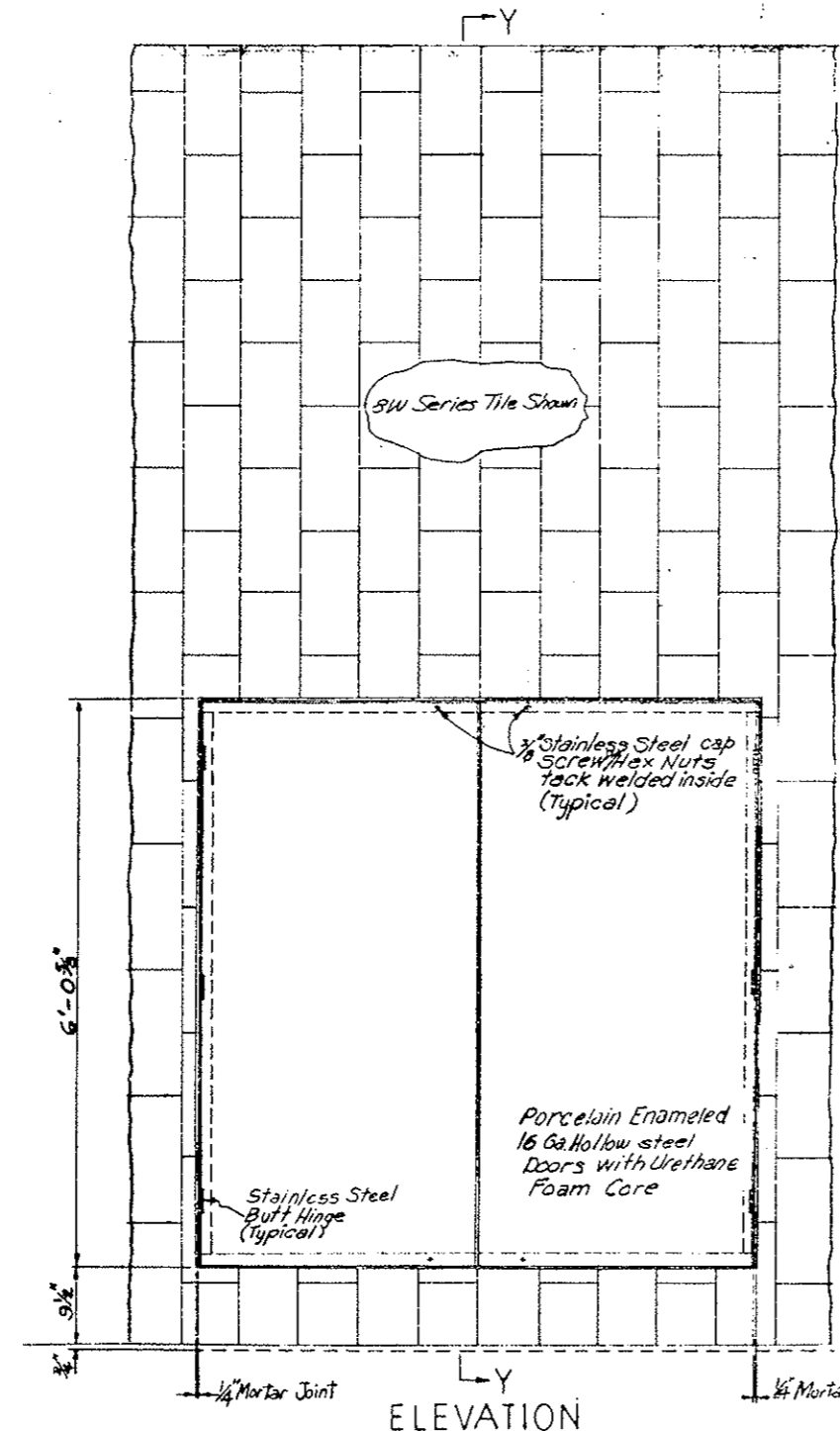
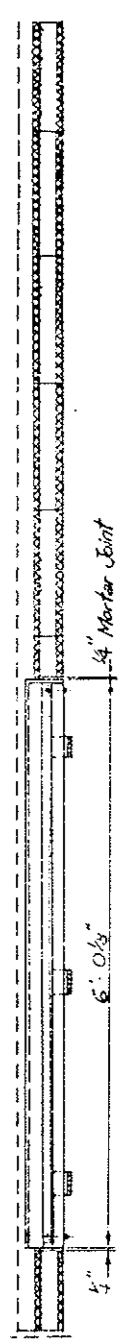
REVISIONS		
NO REVISIONS	REVISED	VOID

AS CONSTRUCTED

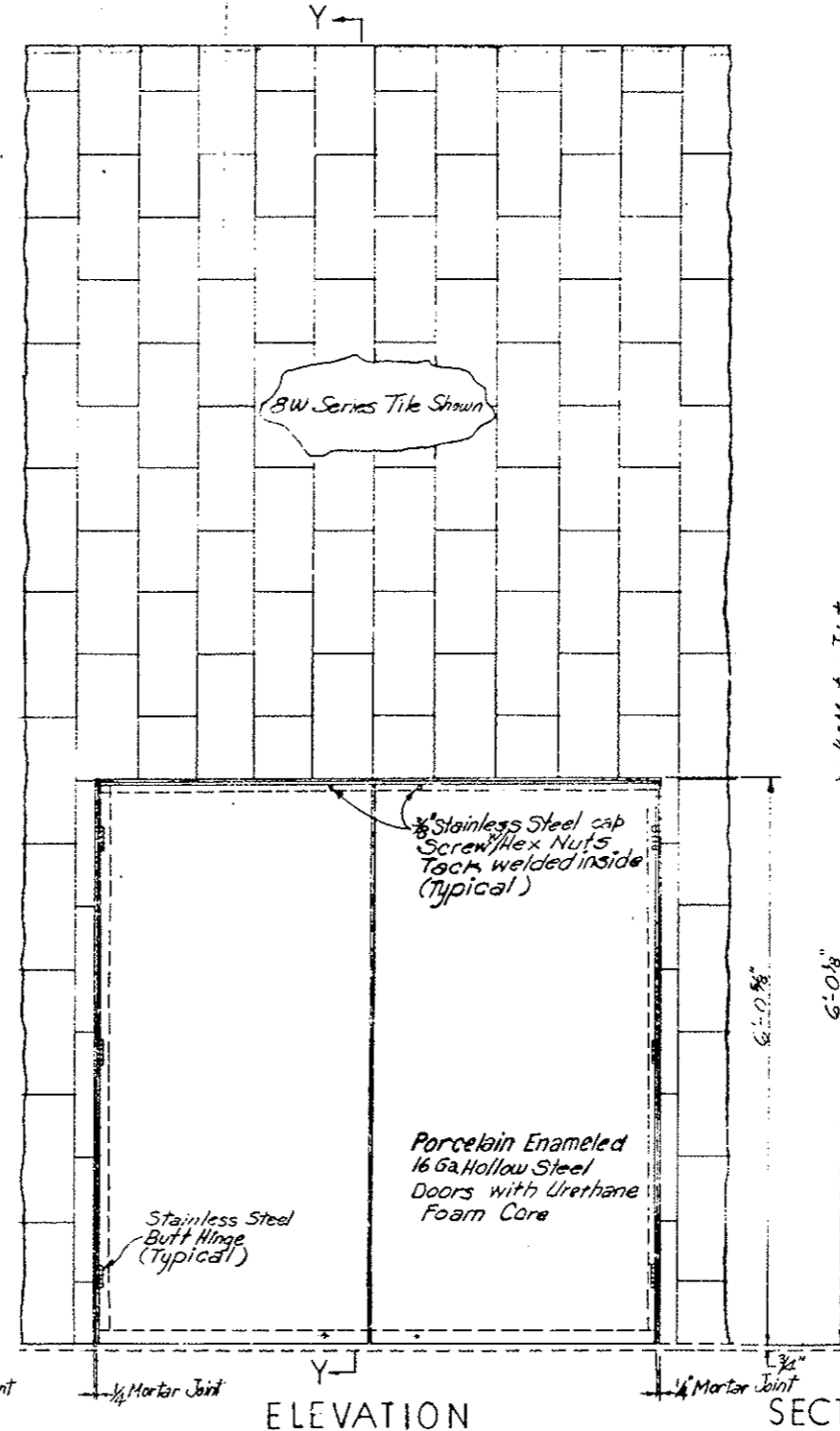
NO REVISIONS REVISED VOID

Pullbox Station N&S	N Location North Wall	S Location South Wall
2	40+60.47	40+66.72

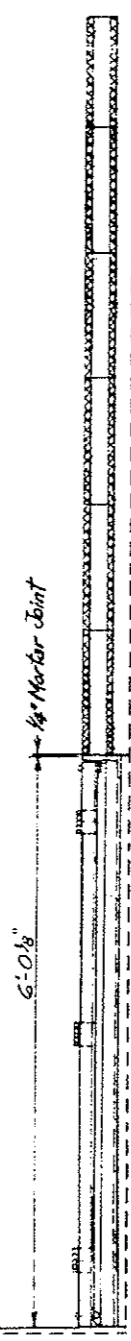
DESIGNED BY	DATE	CHECKED BY
CDCH	1-15-78	
CHECKED BY	QUANTITIES BY	
CDCH	CDCH	
DETAILED BY	CHECKED BY	
	CDCH	



PANEL AT PULLBOX DISTRIBUTION STATION 2N
NORTH WALL
ORIGINAL SCALE: 1"=1'-0"



PANEL AT PULLBOX DISTRIBUTION STATION 2S
SOUTH WALL
ORIGINAL SCALE: 1"=1'-0"



SECTION Y-Y

ELEVATION

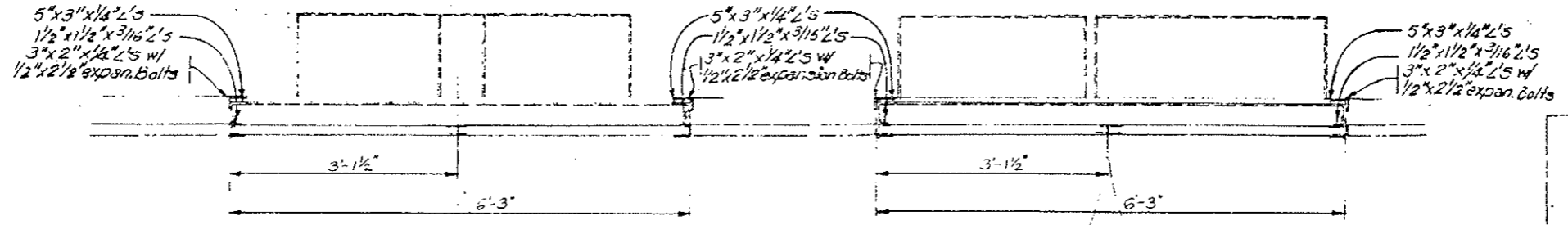
ELEVATION

SECTION Y-Y

Notes:
Field cut tiles to fit pullbox locations.
Pull box to be square with tile.
See Cabinet, Hardware, and Finish Schedule for additional information.

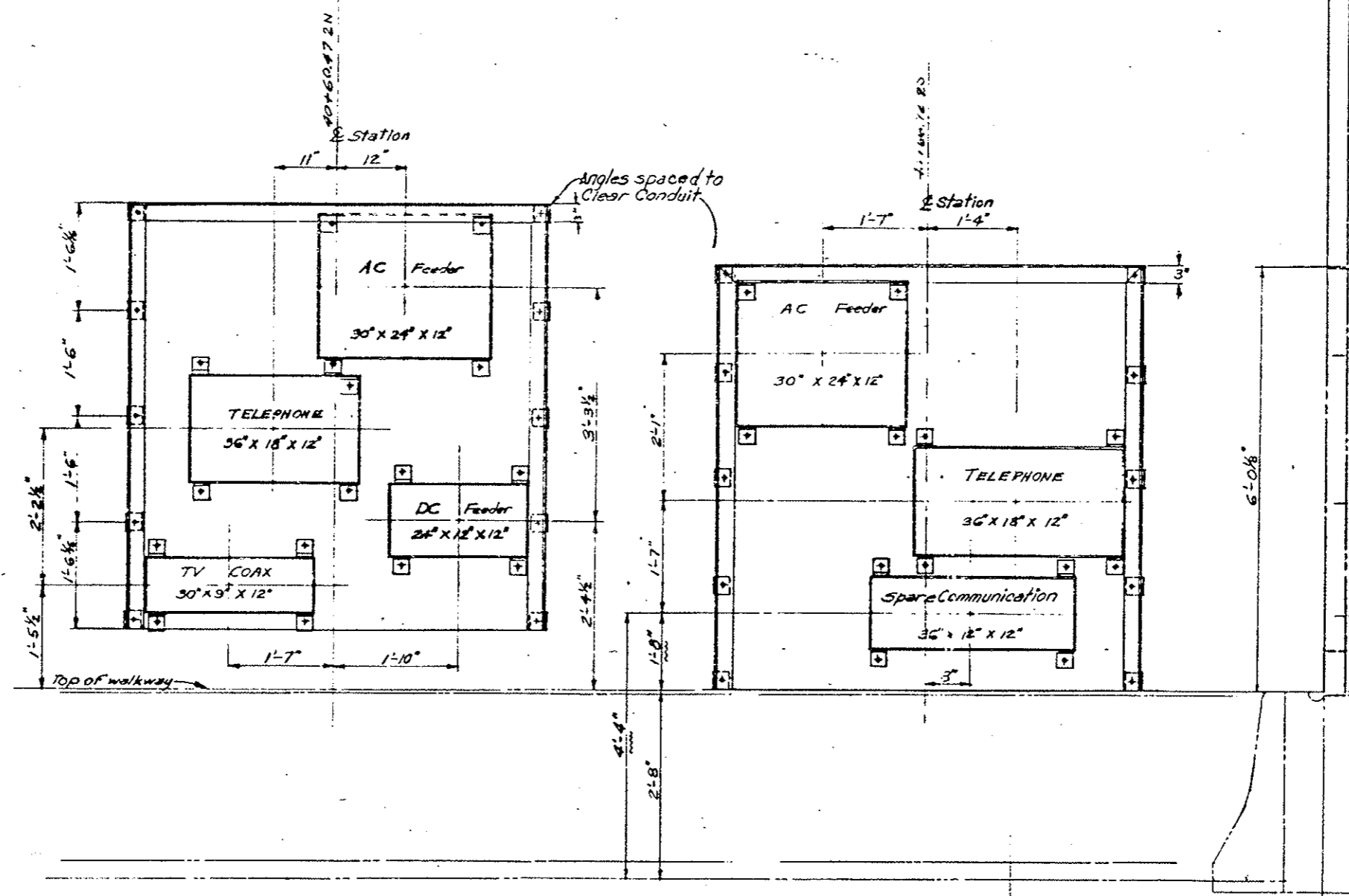
DIVISION OF HIGHWAYS	
WALL TILE DETAILS AT PULLBOX STATIONS	
2N AND 2S	
Designer CDCH	Structure
Detailer J Letchworth	Numbers
Drawing Number WF-11	of Drawings

Revision Dates (Preliminary Stage Only)



SECTION NO.	DISTRICT	PROJ. NO.	NO.	SHEETS
VIII	COLORADO	I 70-3 (82) 220	72	
REVISIONS				
AS CONSTRUCTED				
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID

DESIGNED BY	DATE	CHECKED BY
CDOH	5-22-75	
CHECKED BY	QUANTITIES BY	
VLS	5-22-75	
DETAILED BY		



ELEVATION
PULLBOX STATION FRAME 2N
NORTH WALL
ORIGINAL SCALE: 1"=1'-0"

ELEVATION
PULLBOX STATION FRAME 2S
SOUTH WALL
ORIGINAL SCALE: 1"=1'-0"

See Notes on WF-10

DIVISION OF HIGHWAYS	
DETAILS OF PULLBOX STATION FRAMES 2S AND 2N	
Designer CDOH	Structure
Detailer J. Letchworth	Numbers
Drawing Number WF-12	of Drawings

REVISIONS	

AS CONSTRUCTED

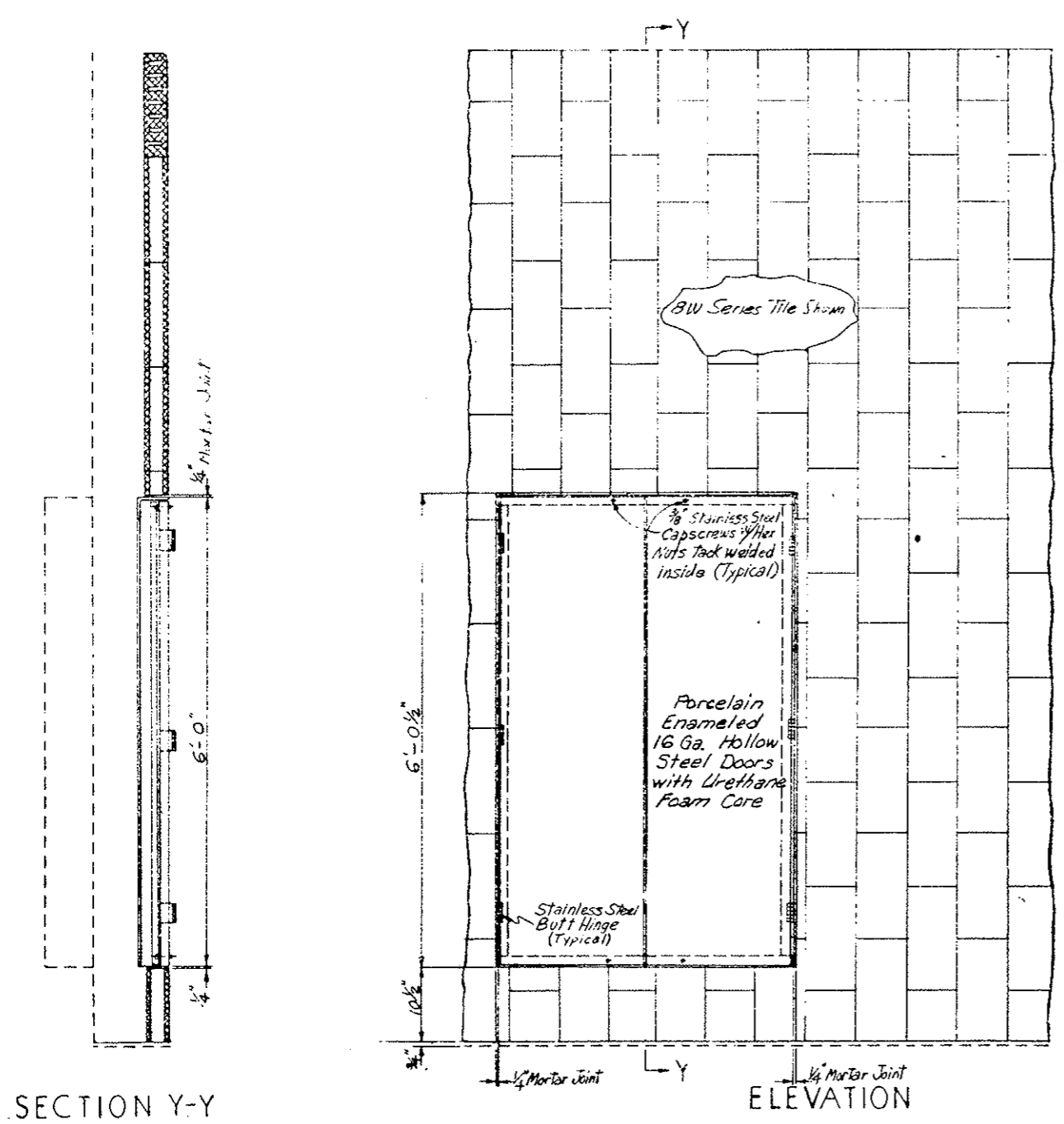
NO REVISIONS REVISIONS VOID

Pullbox Stations North S	N Locations North Wall	S Locations South Wall
3	40+83.93	40+83.93
26	120+20.43	120+20.43

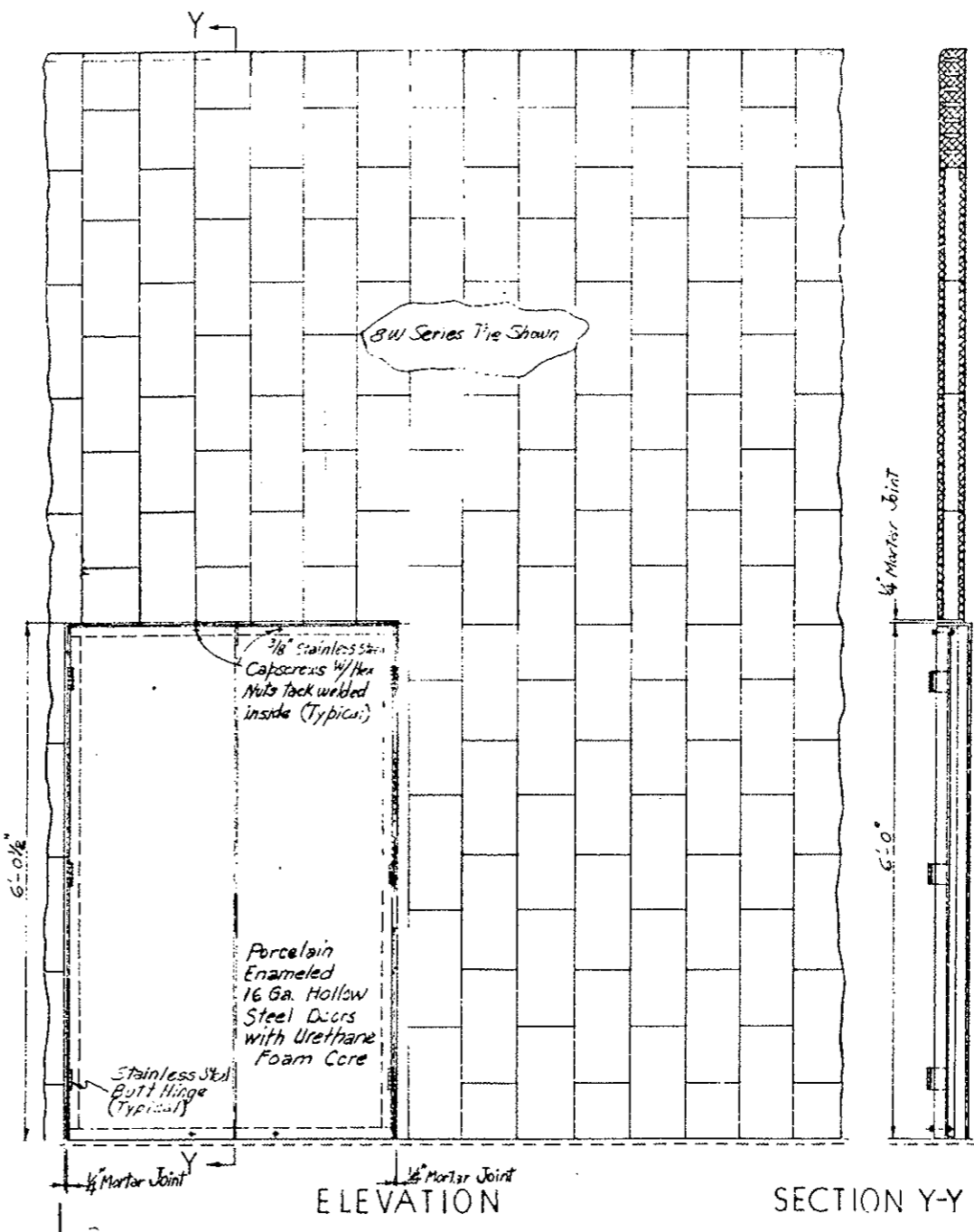
Note: Field cut tiles to fit Pullbox locations. Pullbox Station to be square with wall tile.

See Cabinet, Hardware, and Finish Schedule for additional information.

DESIGNED BY	CHECKED BY
CHECKED BY	QUANTITIES BY
DATE	CHECKED BY
	CHECKED BY



ELEVATION
 PANEL AT PULLBOX DISTRIBUTION STATION 3N,26N
 NORTH WALL
 ORIGINAL SCALE: 1"=1'-0"



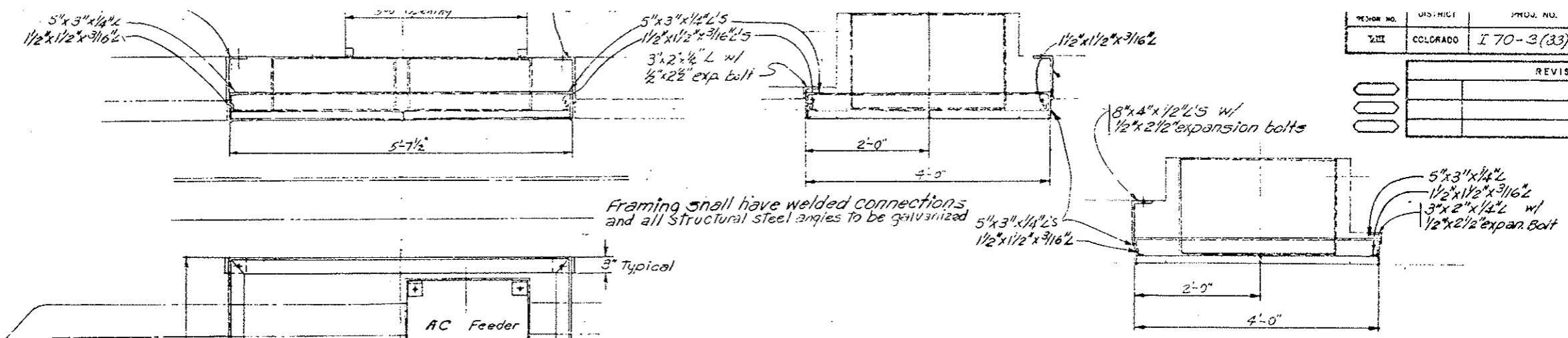
ELEVATION
 PANEL AT PULLBOX DISTRIBUTION STATION 3S,26S
 SOUTH WALL
 ORIGINAL SCALE: 1"=1'-0"

SECTION Y-Y

SECTION Y-Y

DIVISION OF HIGHWAYS
WALL TILE
 DETAILS AT PULLBOX STATIONS
 3N, 26N, 3S AND 26S

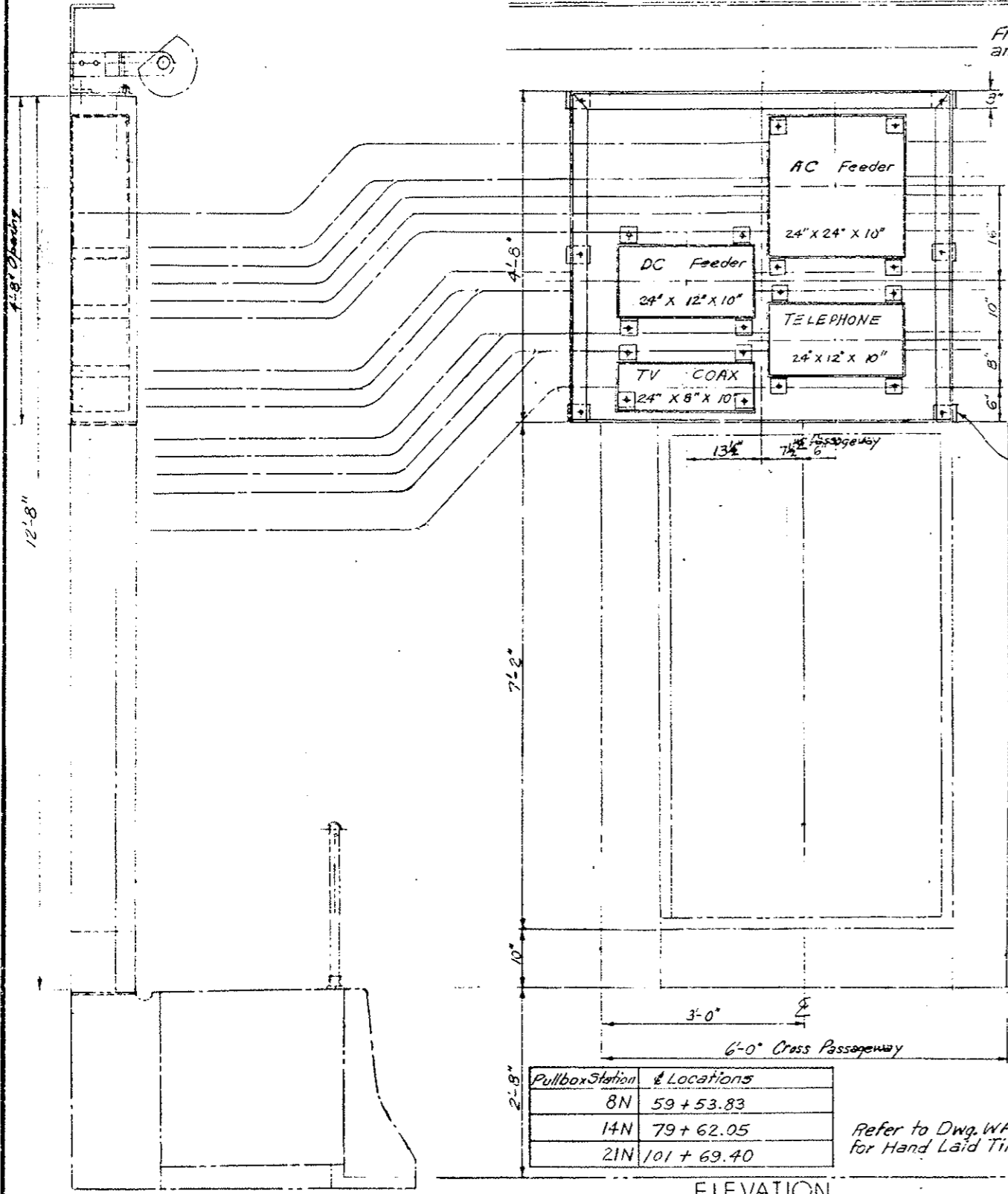
Designer CDOH	Structure
Detailer J. Letchworth	Numbers
Drawing Number VVF-13	of Drawings



AS CONSTRUCTED

NO REVISIONS REVISED VOID

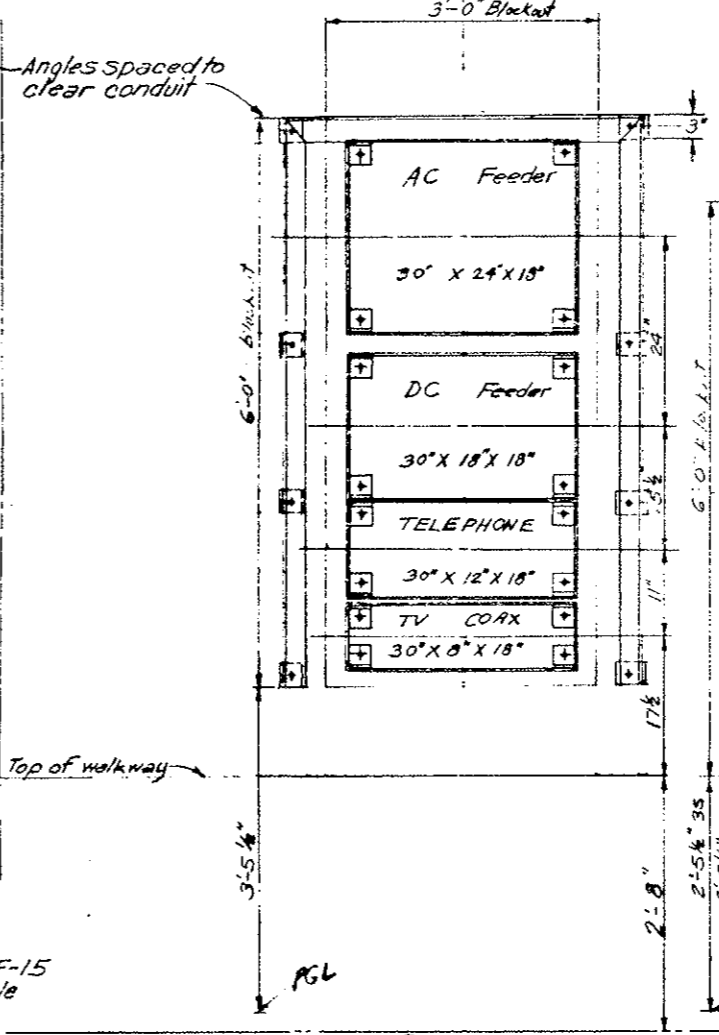
DESIGNED BY	DATE	CHECKED BY
C.D.O.H.	8-17-75	
CHECKED BY		QUANTITIES BY
		CHECKED BY



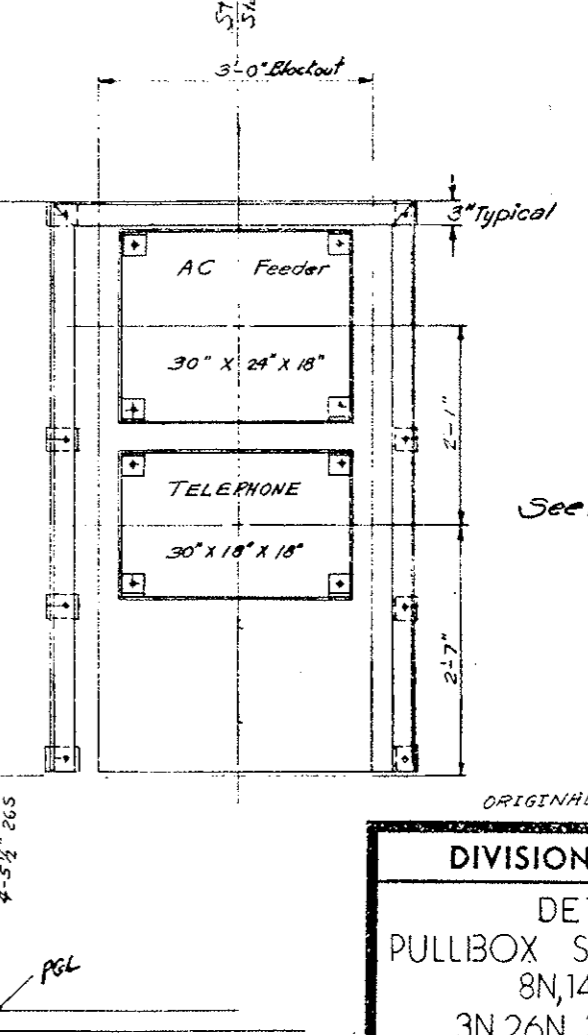
Pullbox Station	Locations
8N	59 + 53.83
14N	79 + 62.05
21N	101 + 69.40

Refer to Dwg. WF-15 for Hand Laid Tile

ELEVATION PULLBOX STATIONS 8N, 14N, 21N (X-PASSAGEWAYS)



ELEVATION PULLBOX STATIONS 3N 26N-OPP HAND FRAMING



ELEVATION PULLBOX STATIONS 3S 26S-OPP HAND FRAMING

ORIGINAL SCALE 1" = 1'-0"

DIVISION OF HIGHWAYS

DETAILS OF PULLBOX STATION FRAMES

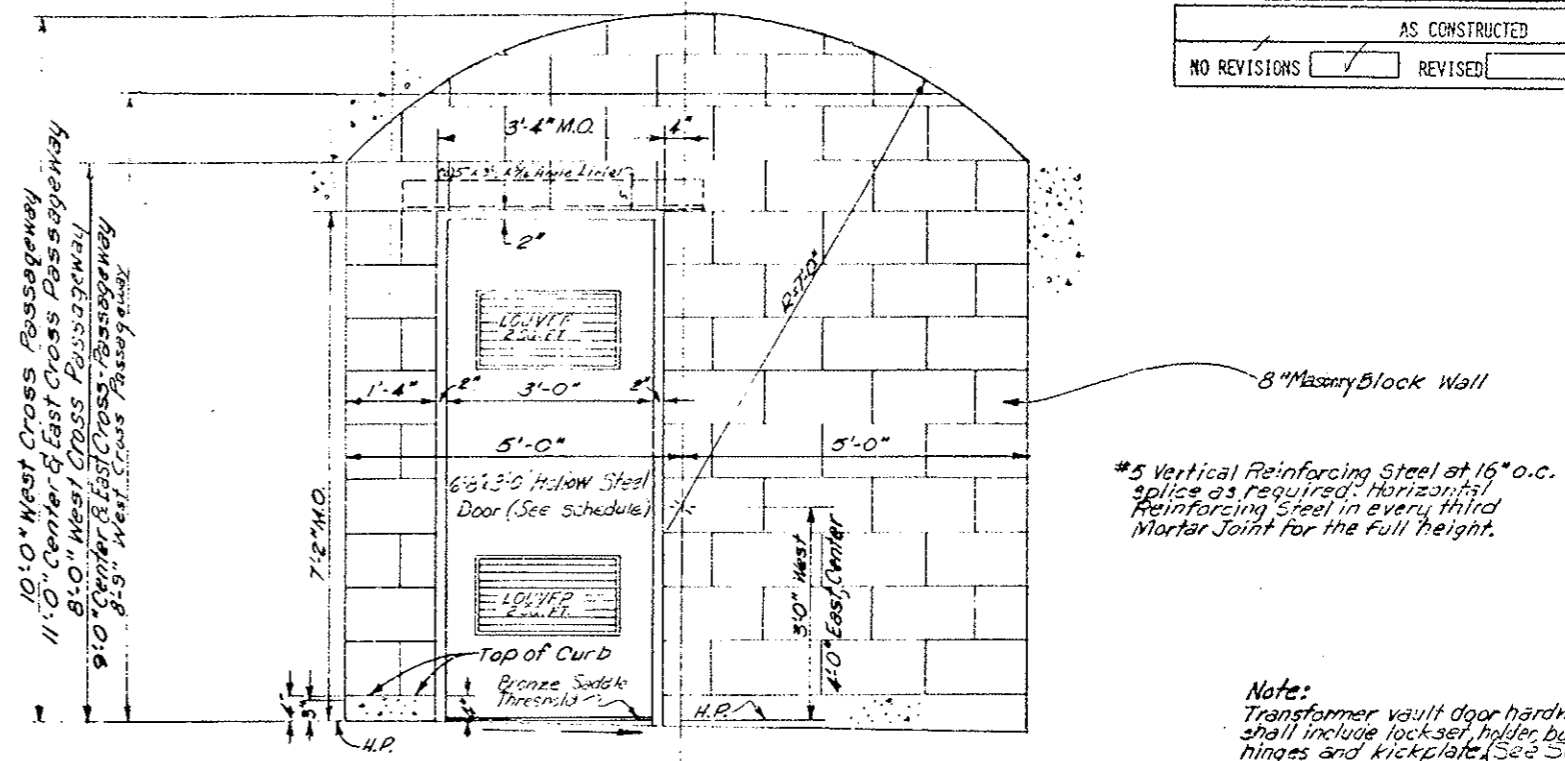
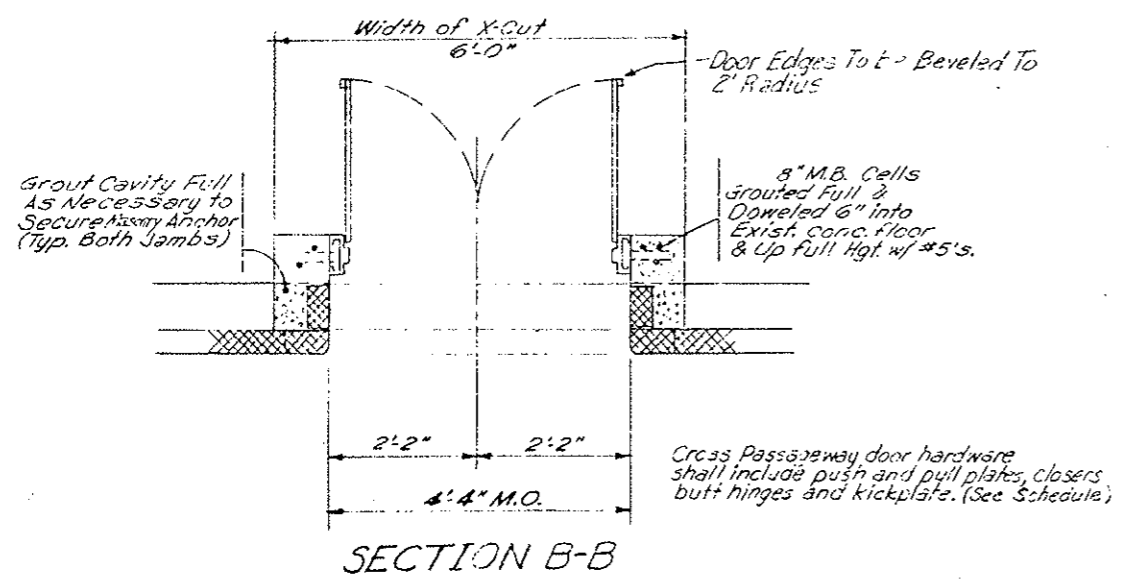
8N, 14N, 21N
3N, 26N, 3S, AND 26S

Designer C.D.O.H.	Structure Numbers
Detailer J.L. Letchworth	
Drawing Number WF-14	of Drawings

REVISIONS	

AS CONSTRUCTED

NO REVISIONS REVISED VOID



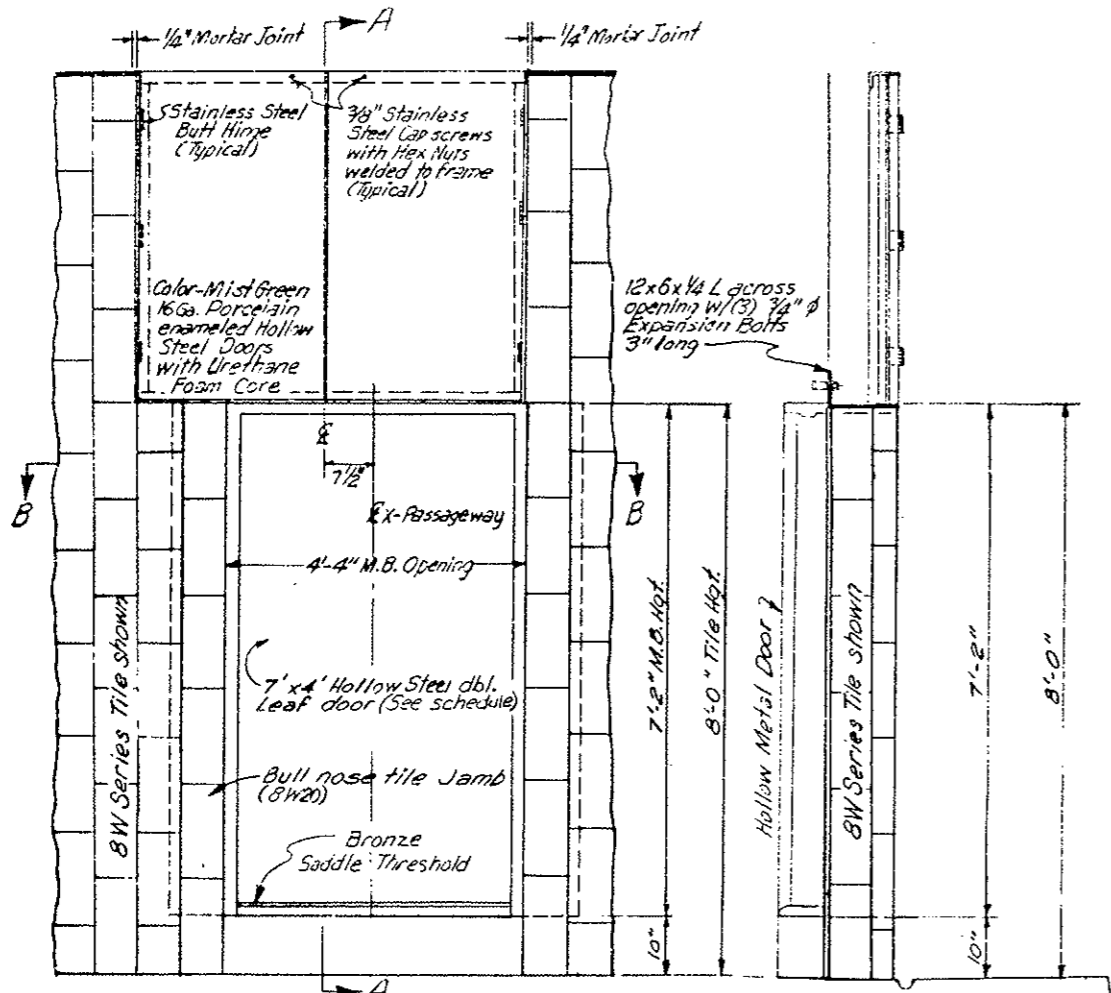
TRANSFORMER VAULT ENCLOSURE AND DOOR

IN WEST CROSS PASSAGEWAY (OPPOSITE HAND)
 IN CENTER CROSS PASSAGEWAY (OPPOSITE HAND)
 IN EAST CROSS PASSAGEWAY (AS SHOWN)

Note:
 Transformer vault door hardware shall include lock set, holder, butt hinges and kickplate. (See Schedule)

Transformer Vault Doors and Cross Passageway Doors shall be set plumb and square.

DESIGNED BY	DATE	CHECKED BY
CDOH	7-8-72	CDOH
CHECKED BY	DATE	QUANTITIES BY
CDOH	7-9-72	CDOH
DETAILED BY	DATE	CHECKED BY
CDOH	7-9-72	CDOH



LOCATION	WEST X PASSAGEWAY	CENTER X PASSAGEWAY	EAST X PASSAGEWAY
STATION	59+54.43	79+62.68	101+70.03

PULLBOX STATION AND CROSS PASSAGEWAY DOORS

LEGEND

M.B. - Masonry Block
 M.O. - Masonry Opening

C.J. - Construction Joint
 H.P. - High Point

DIVISION OF HIGHWAYS

DOOR DETAILS

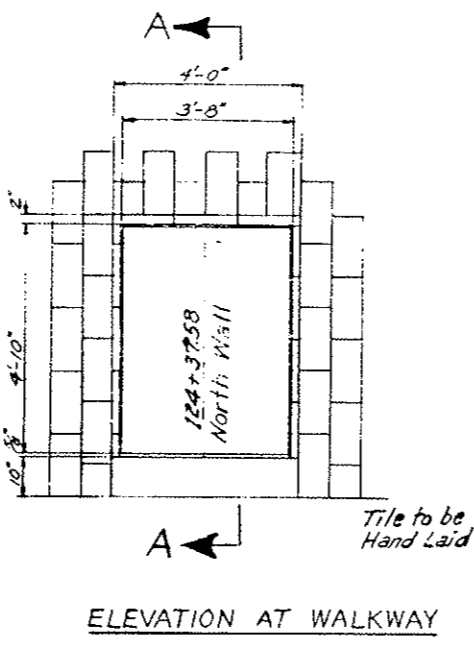
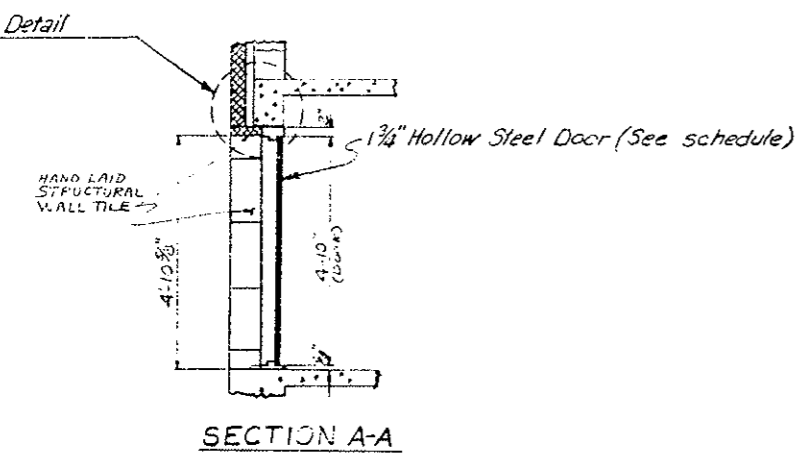
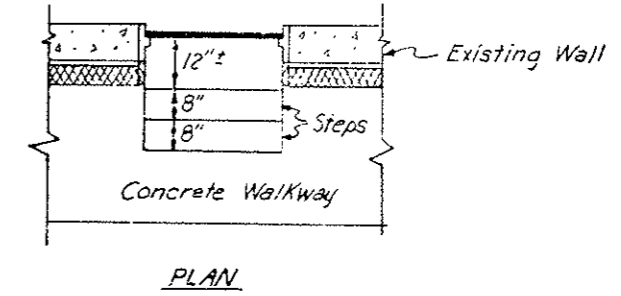
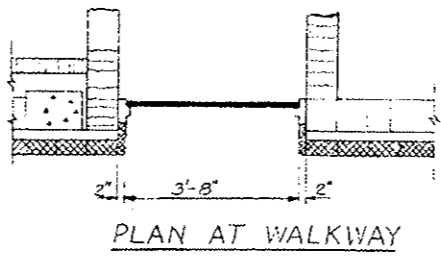
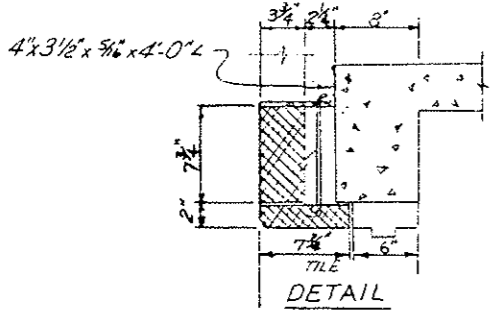
X-PASSAGEWAY, TRANSFORMER VAULT, AND PULLBOX STA.

Designer CDOH	Structure
Detailer J. Letchworth	Numbers
Drawing Number WF-15	of Drawings

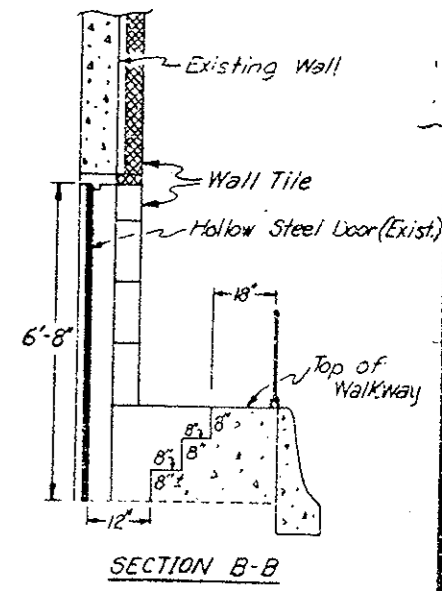
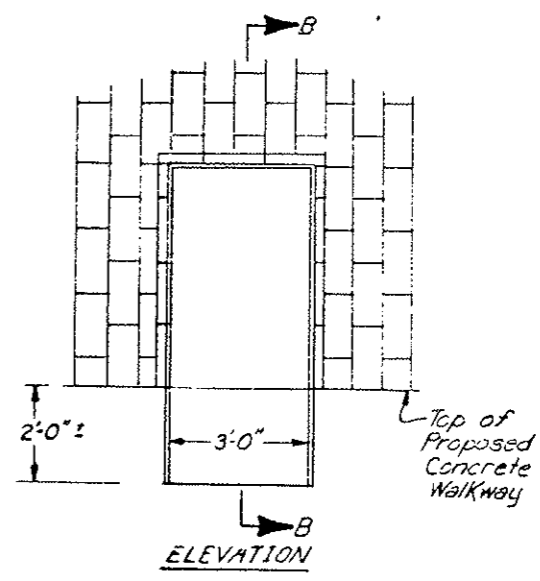
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	76	

REVISIONS	

AS CONSTRUCTED	
NO REVISION	<input checked="" type="checkbox"/> REVISION <input type="checkbox"/> VOID <input type="checkbox"/>



Basement Emergency Door with frame and hardware will be furnished by the Division. (See schedule)
Basement Emergency Door to be set plumb and square.



BASEMENT EMERGENCY DOOR
EAST VENTILATION BUILDING
STA. 124+37.58 NORTH WALL

EXISTING WEST VENTILATION
BUILDING DOOR
APPROX. STA. 36+03 NORTH WALL

Original Scale: 1"=2'-0"

DIVISION OF HIGHWAYS	
BASEMENT EMERGENCY AND WEST VENTILATION BUILDING DOORS	
Designer <i>CDOH</i>	Structure
Detailer <i>J. Letchworth</i>	Numbers
Drawing Number <i>WF-16</i>	of Drawings

DESIGNED BY	DATE	CHECKED BY
CDOH	2-18-76	
CHECKED BY	DATE	QUANTITIES BY
	7-19-76	
DETAILED BY	DATE	CHECKED BY

Note: All products of a specific manufacturer, listed on the schedule, are intended only to establish a standard of quality, durability and design, and shall not be construed as limiting competition. Products of other manufacturers will be accepted provided such products are approved equal to those shown on the schedule.

DESIGN NO.	DIVISION	PROJ. NO.	SHEET NO.	SHEETS
VIII	COLORADO	170-3(83) 220	79	
AS CONSTRUCTED				
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID

TUNNEL INTERIOR ~ CABINET, DOOR, FRAME, HARDWARE AND FINISH SCHEDULE

Item	DOOR		FRAME	HARDWARE									FINISH					DOOR FILLER MATERIAL			
	Door Type	Door Modification	Frame Type	Sliding Door Hardware	Threshold	Latches	Lockset	Push Plates and Pulls	Kickplate	Hinges	Closer	Holder or Lid Support	Painting			Porcelain Enameling			Galvanizing Only Item		
													Protection	Prime	Finish Paint Color	Item	Color				
Cross Passageway Door and Frame	Ceco, Imperial Series 4'-0" x 7'-0" Standard Ga.	Double-Leaf door with split astragal	Ceco, Series SF 34, Double Rabbit 8 3/4" x 2"		Ceco, 4200 Series, Corrugated Saddle Type Bronze	●	●	Russwin, No 1016 and No. 1033 (U.S.32D)	Russwin, Series 418 (U.S.32D)	6- Stanley, Life span Series, No. CB 1960 (U.S.32D) 4 1/2" x 4 1/2"	2- Russwin, 2810 Series Bronze (SBL)	●		Galvanized	Shop and Field Primed	Red	●	●	●	⊕	
Transformer Vault Door and Frame	Ceco, Imperial Series 3'-0" x 6'-8" Standard Ga.	Two Fixed Slat Louvers	Ceco, Series SF 34, Double Rabbit 8 3/4" x 2"		Ceco, 4200 Series, Corrugated Saddle Type Bronze	●		Russwin, Uniloc Series, No. 563, Eaton Design (U.S.32D)	Russwin, Series 418 (U.S.32D)	3- Stanley, Life span Series, No. CB 1960 (U.S.32D) 4 1/2" x 4 1/2"	●		1- Russwin 2750 Series Bronze (SBL)	Galvanized	Shop and Field Primed	Red	●	●	●	⊕	
Ventilation Building Door and Frame	Ceco, Imperial Series 3'-0" x 6'-8" Standard Ga.	One Laminated Glass Window (Half Glass)	Ceco, Series CF 34, Double Rabbit 12 3/4" x 2"		Ceco, 4200 Series, Corrugated Saddle Type Bronze	●		Russwin, Uniloc Series, No. 563, Eaton Design (U.S.32D)	Russwin, Series 418 (U.S.32D)	3- Stanley, Life span Series, No. CB 1960 (U.S.32D) 4 1/2" x 4 1/2"	●		1- Russwin 2810 Series Bronze (SBL)	Galvanized	Shop and Field Primed	White	●	●	●	⊕	
Placing Basement Emergency Door	Door, frame and hardware furnished by the Division																				
Fire Extinguisher Cabinet	∅	∅	∅		●		●	●	●	●	●	●	●	●	●	●	●	Door White Flange Red	Shell	Urethane Foam	
Telephone Cabinet	∅	∅	∅		●		●	●	●	●	●	●	●	●	●	●	●	Door White Flange Red	Shell	Urethane Foam	
Instrumentation Cabinet	∅	∅	∅		●		●	●	●	●	●	●	●	●	●	●	●	Door and Flange Green	Shell	●	
CO Analyzer Cabinet	∅	∅	∅		●		●	●	●	●	●	●	●	●	●	●	●	Door and Flange Green	Shell	Cellular Glass Insulation	
Pullbox Station	∅	∅	∅		●		●	●	●	●	●	●	●	●	●	●	●	Door Green	Frame	Urethane Foam	
* Duct Access Hatch Door	∅	∅	∅		●		●	●	●	●	●	●	●	●	●	●	●	●	●	Door and Frame	●
* Duct Divider Wall Door	□	□	∅		●		●	●	●	●	●	●	●	●	●	●	●	●	●	Door and Frame	●
* Sliding Bulkhead Door	Ceco - Fire Door, Omega Series (Hollow Metal Const.) 3'-6" x 7'-0"	∅	∅	∞	●		●	●	●	●	●	●	●	Galvanized	Shop Primed	●	●	●	●	⊕	

* Shown on Ceiling Series Drawings
● None required

∅ Detailed on plans

⊕ Determined by Door Type

□ Door shall be as shown on plans and similar to Model 211-B-1, pressure door as manufactured by Julius Mock and Son, Inc., Brooklyn, N.Y.

⊗ Suitable dogging device as manufactured by Julius Mock and Son, Inc.

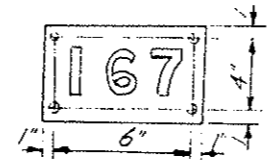
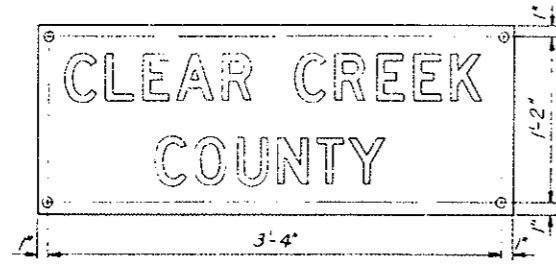
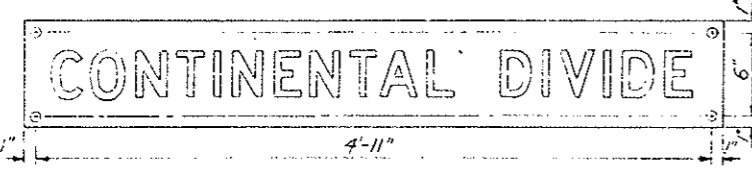
∞ Sliding door hardware shall consist of one No. 240X Track, two No. 244X Hangers, one No. 306 Pull, one No. 305-H Pull, three No. 173 Binders, and one No. 367 Stay Roller; All galvanized and as manufactured by The Allith Corporation, Danville, Illinois.

DIVISION OF HIGHWAYS

TUNNEL INTERIOR
CABINET, DOOR AND HARDWARE
SCHEDULE

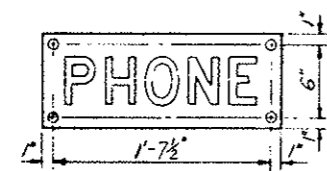
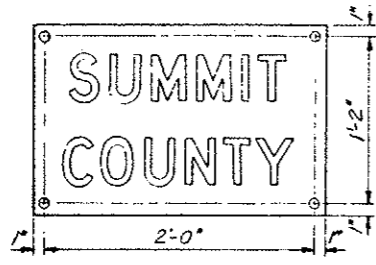
Designer C.D.O.H.
Detailer D. Bevard
DRAWING NUMBER WF-19

REVISIONS	



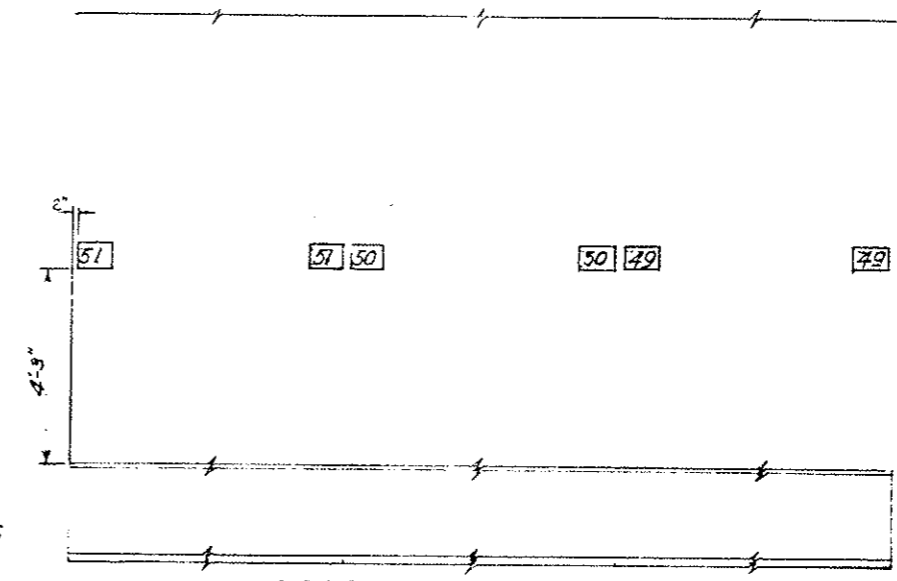
SIGNS FOR SEGMENTS 1 THRU 167 (334 Total)

3" Black Letters on White background for Segment Designation Signs

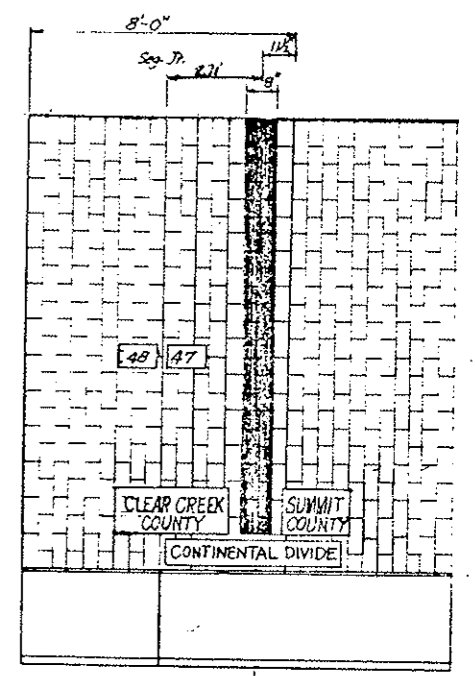


PORCELAIN ENAMELED SIGNS
 ORIGINAL SCALE 1 1/2" = 1'-0"

4 Inch Capital Letters shall be Red for "PHONE" and "FIRE", and Black for the Remaining Signs. A White Background is Required for All Signs. Stainless Steel Screws shall Fasten the 19 Gauge Steel Signs to the Tile Wall. Lead Exp. for Inserts shall be Placed in the Wall.



ELEVATION - SOUTH WALL NORTH WALL
 TYPICAL LOCATION OF SEGMENT SIGNS



Sta 62+40.47
 ELEVATION - SOUTH WALL
 CONTINENTAL DIVIDE MARKER
 ORIGINAL SCALE 3/8" = 1'-0"

TABULATION OF SIGN LOCATIONS
 (For information only)

Sign No	NORTH WALL		SOUTH WALL	
	E Fire	TR Phone	Sign Continental Divide	County
1	39+03.41	41+10.70	1	62+40.47
2	41+54.60	43+14.70	2	62+38.20
3	44+05.35	57+18.70	Mkt.	62+40.47
4	46+57.10	65+22.70		
5	49+08.35	73+26.70		
6	51+59.60	81+30.70		
7	54+12.35	89+34.70		
8	56+62.10	97+38.70		
9	59+13.35	105+42.70		
10	61+64.60	113+46.70		
11	64+15.95	121+50.70		
12	66+67.10			
13	69+18.35			
14	71+69.60			
15	74+20.85			
16	76+72.10			
17	79+23.35			
18	81+74.60			
19	84+25.85			
20	86+77.10			
21	89+28.35			
22	91+79.60			
23	94+30.85			
24	96+82.10			
25	99+33.35			
26	101+84.60			
27	104+35.85			
28	106+87.10			
29	109+38.35			
30	111+89.60			
31	114+40.85			
32	116+92.10			
33	119+43.35			
34	121+94.60			

The black porcelain enameled strip shall be placed on the South wall only. This steel strip shall conform to the requirements of and be included in the lump sum payment for "Porcelain Enameled Signs"

DIVISION OF HIGHWAYS

MISCELLANEOUS SIGN DETAILS

Designer CDSH	Structure
Detailer J. L. Stewart	Numbers
Drawing Number WF-18	of Drawings

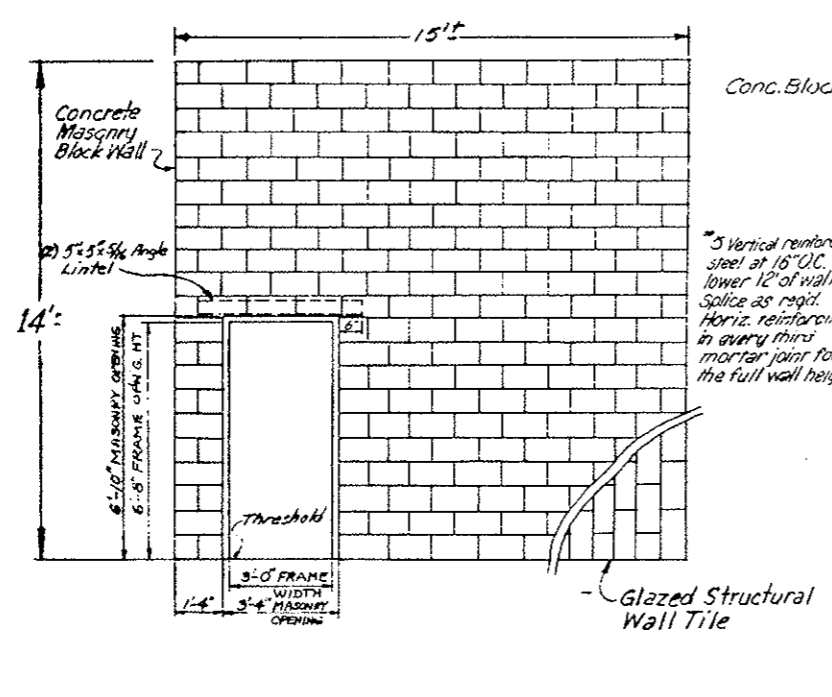
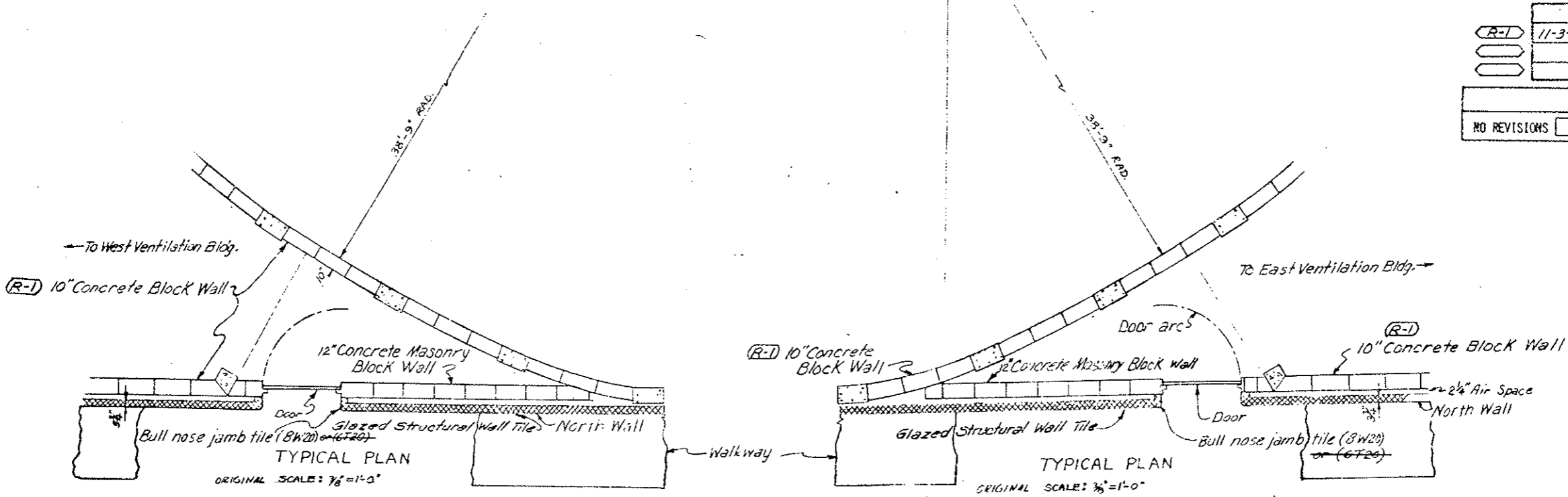
Revision Dates (Preliminary Stage Only)

DESIGNED BY	CHECKED BY
CHECKED BY	QUANTITIES BY
CHECKED BY	CHECKED BY
DATE	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	77	

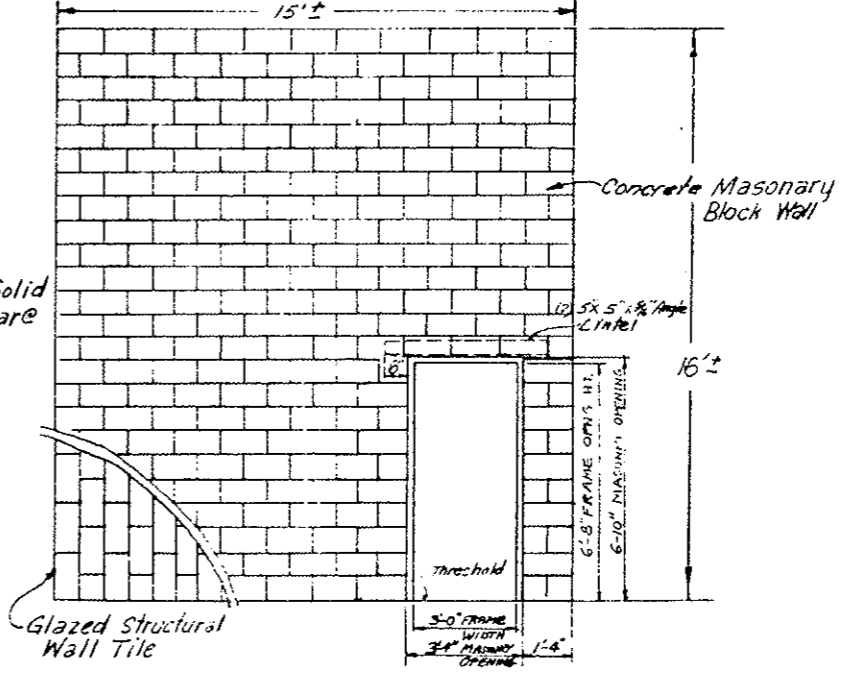
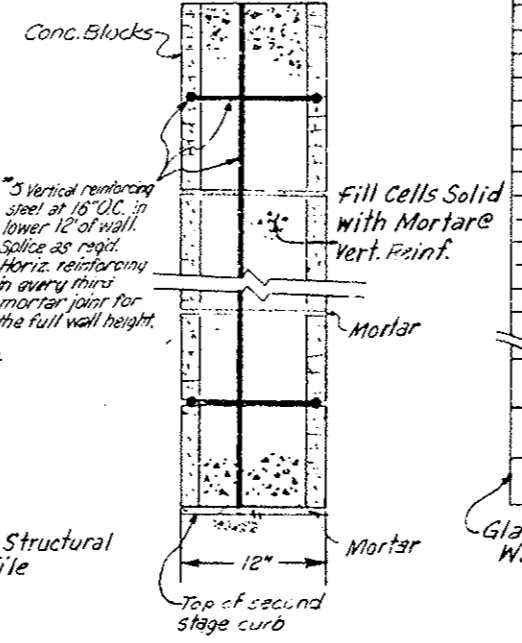
REVISIONS			
(R-1)	11-3-78	Wall Construction	E.B.

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID
	<input checked="" type="checkbox"/>	



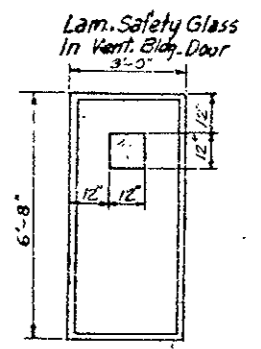
ELEVATION
ORIGINAL SCALE: 3/8" = 1'-0"

WALL DETAIL
Not to Scale



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

Notes:
Ventilation building doors hardware shall include lockset, closer, butt hinges, and kickplate
1 1/4" Hollow Steel Doors (See Schedule)



VENT BUILDING DOOR

WEST VENTILATION BLDG

EAST VENTILATION BLDG.

NORTH WALL EXTENSIONS AND VENT. BUILDING DOORS

Note: Ventilation Building Door to be set plumb and square.

DIVISION OF HIGHWAYS	
NORTH WALL EXTENSIONS AND VENT BUILDING DOORS	
Designer CDOH	Structure
Detailer J. Letenworth	Numbers
Drawing Number WF-17	of Drawings

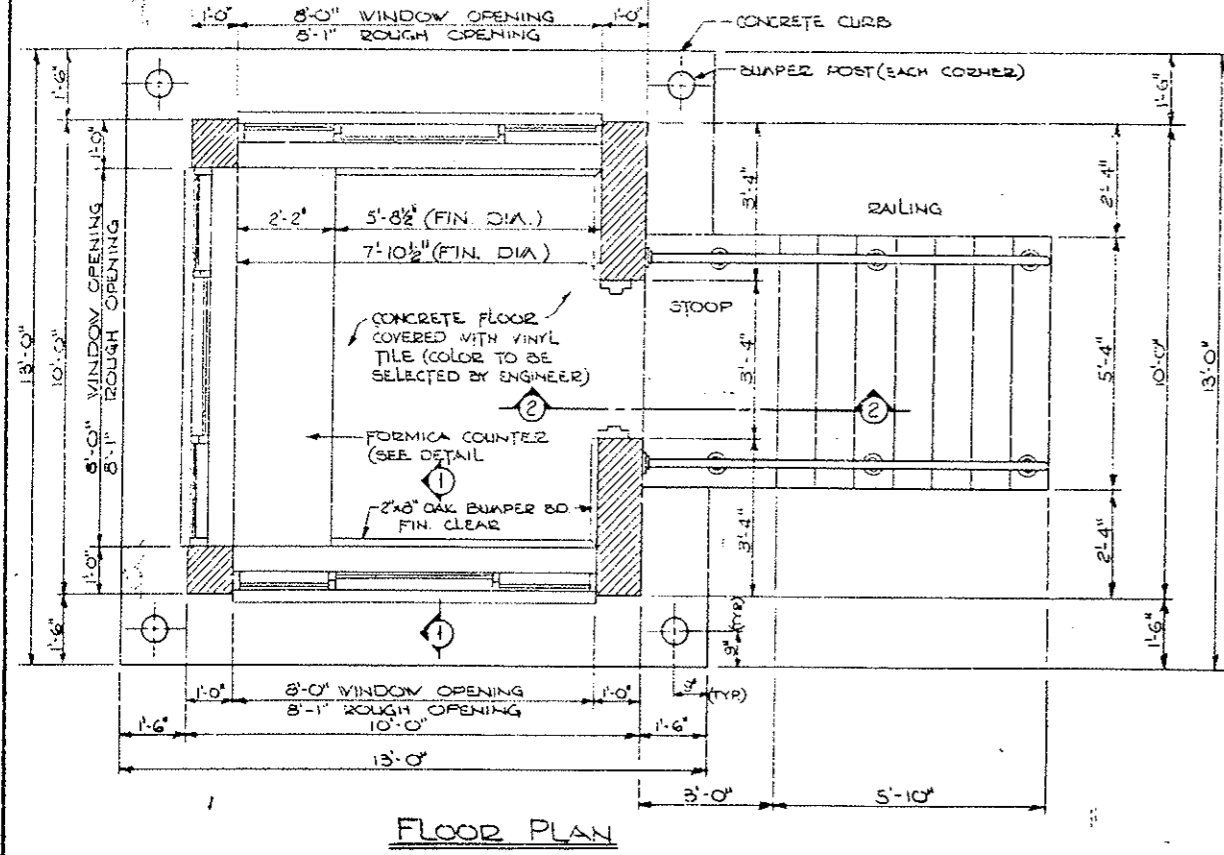
Revision Dates (Preliminary Stage Only)

CHECKED BY	DATE	CHECKED BY	DATE
	11-5-78		11-5-78
DESIGNED BY		DESIGNED BY	
CHECKED BY		CHECKED BY	
QUANTITIES BY		QUANTITIES BY	
CHECKED BY		CHECKED BY	
DATE		DATE	

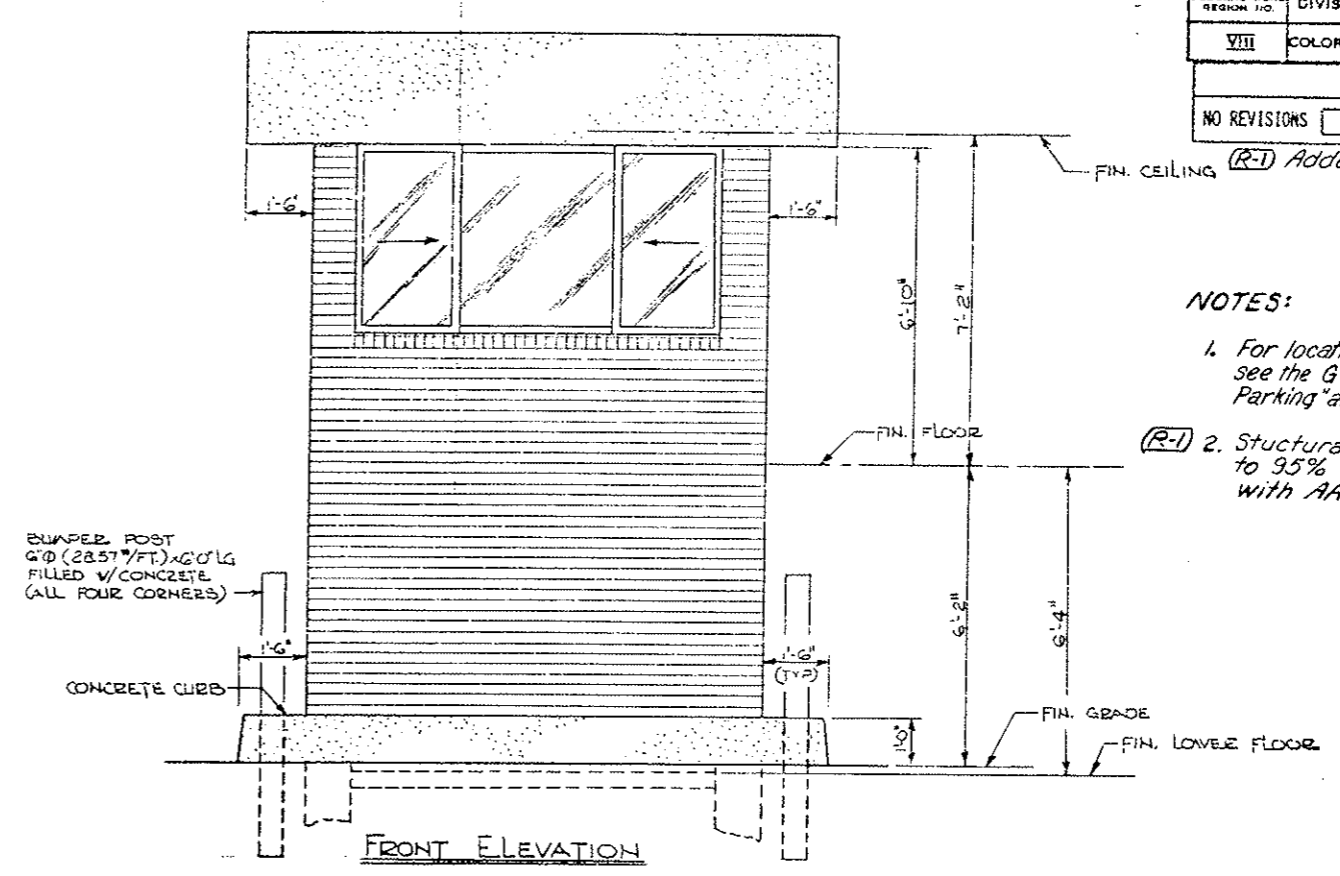
REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	80	
AS CONSTRUCTED				
NO REVISIONS		REVISED		VOID

(R-1) Added Note ~ 11-3-78 ~ E.B.

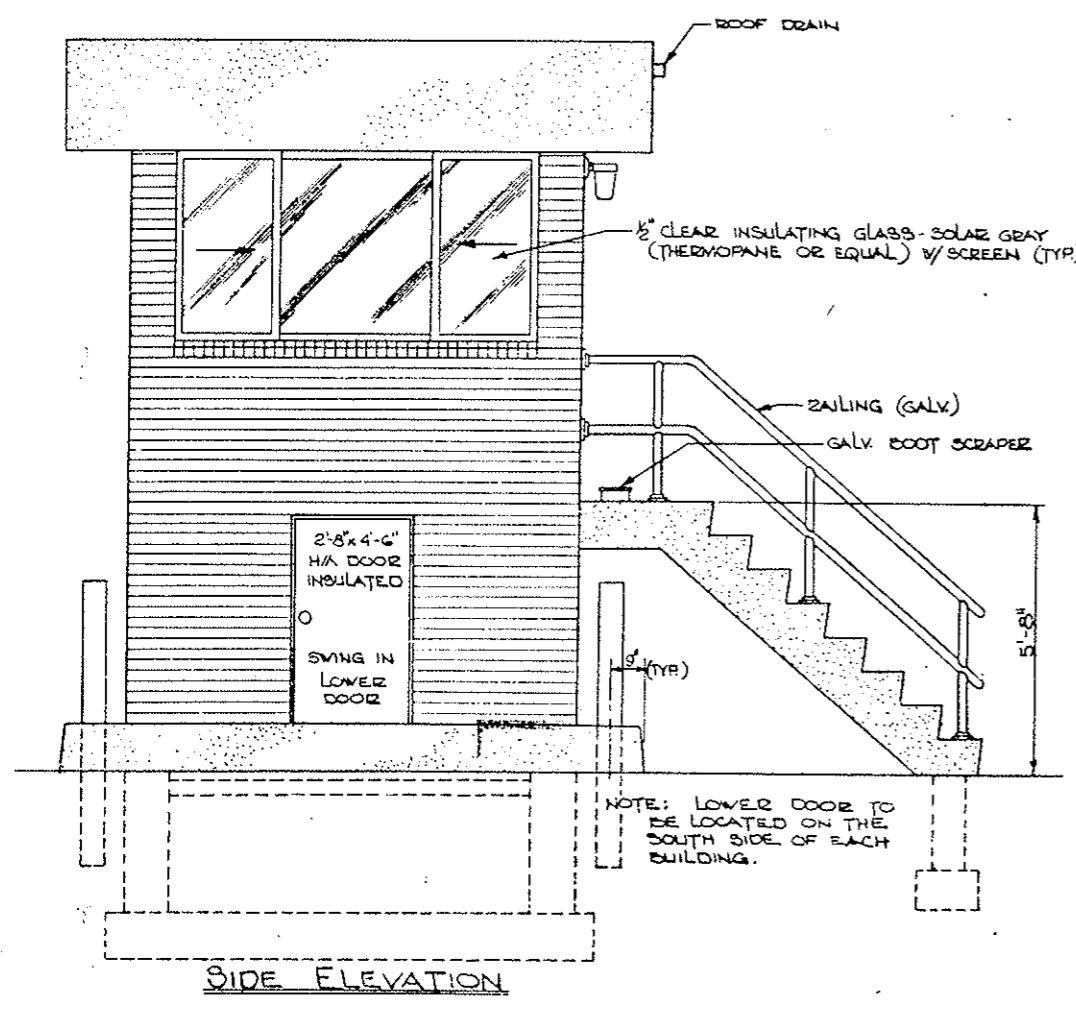
- NOTES:**
- For locations of Portal Attendant Booths, see the G-Series Sheets "West Portal Area Parking" and "East Portal Area Parking".
 - (R-1) Structural Backfill shall be compacted to 95% of optimum in accordance with AASHTO T-180.



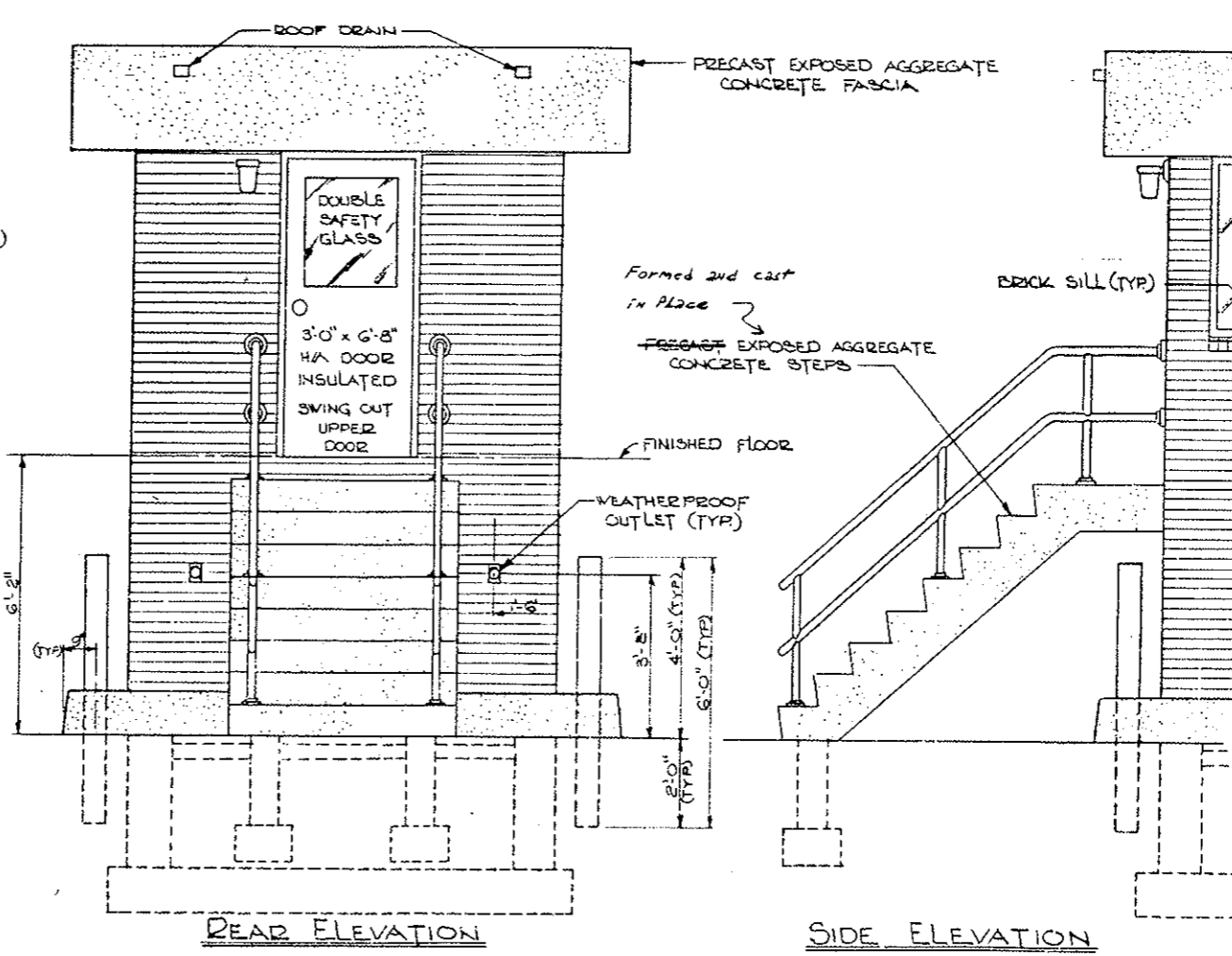
FLOOR PLAN



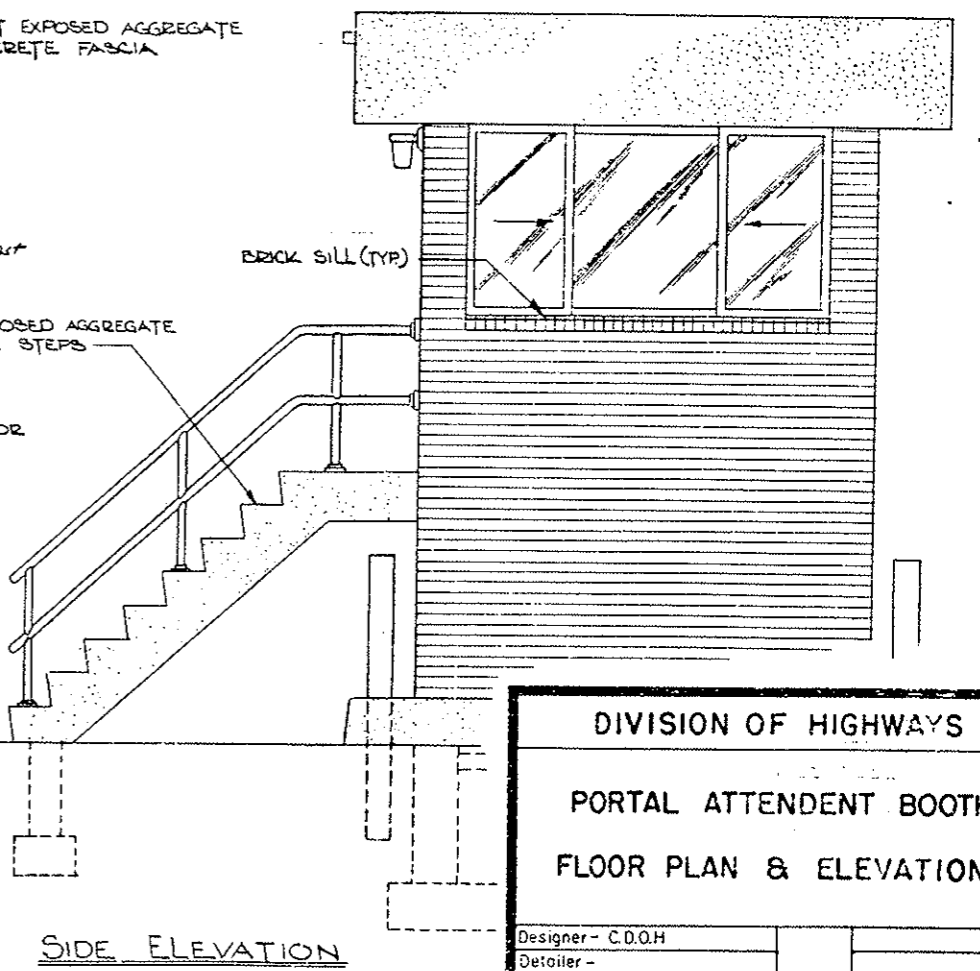
FRONT ELEVATION



SIDE ELEVATION



REAR ELEVATION



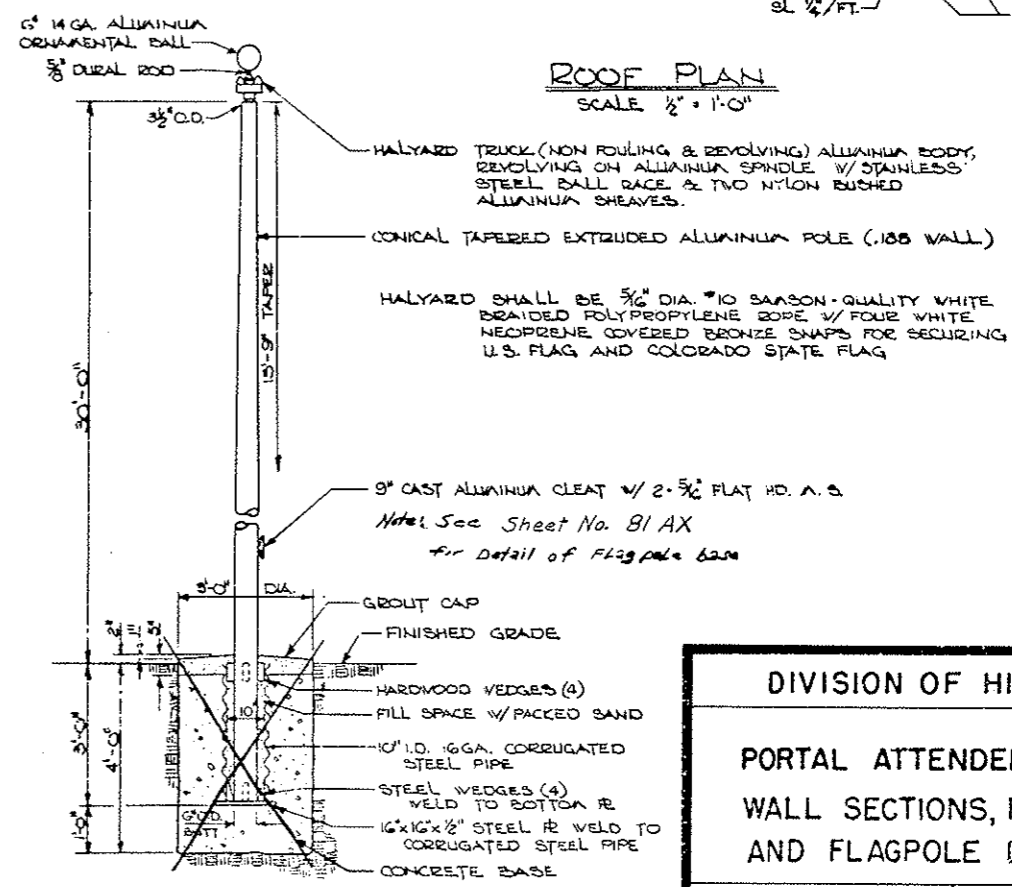
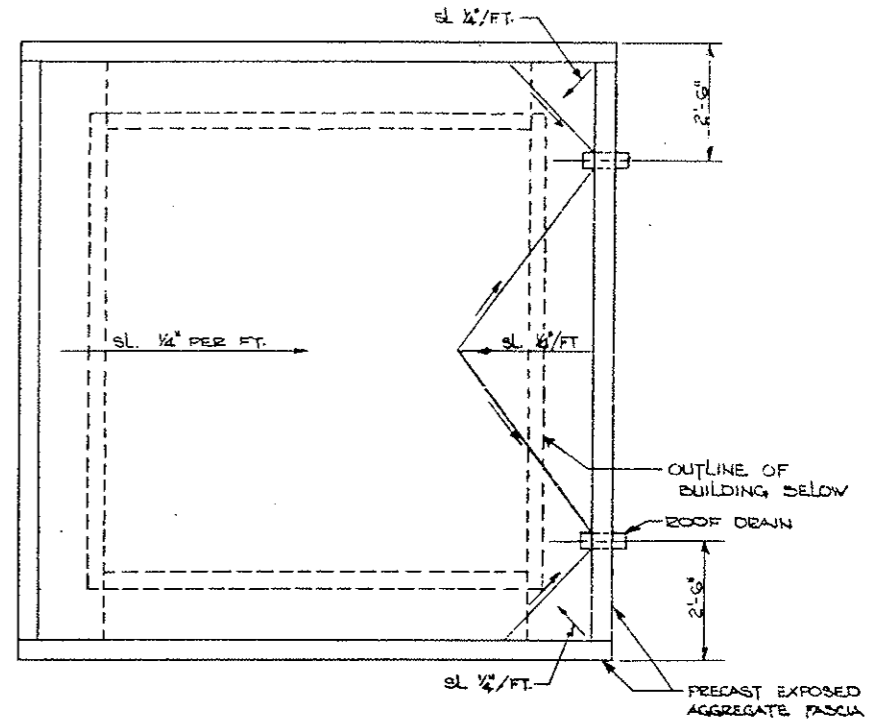
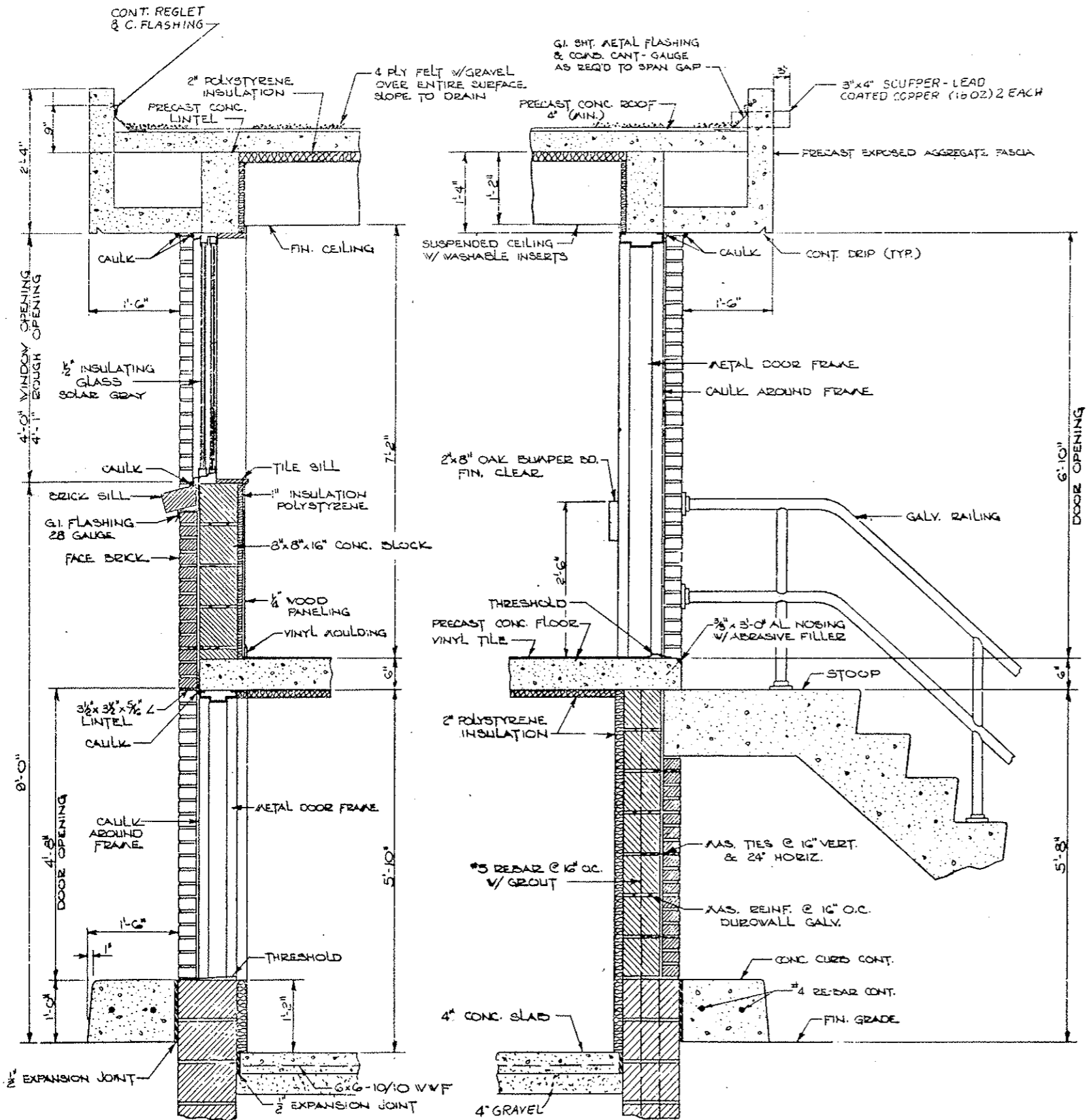
SIDE ELEVATION

DIVISION OF HIGHWAYS

PORTAL ATTENDANT BOOTH

FLOOR PLAN & ELEVATIONS

Designer - C.D.O.H.
 Detailer -
 Drawing Number - B-1



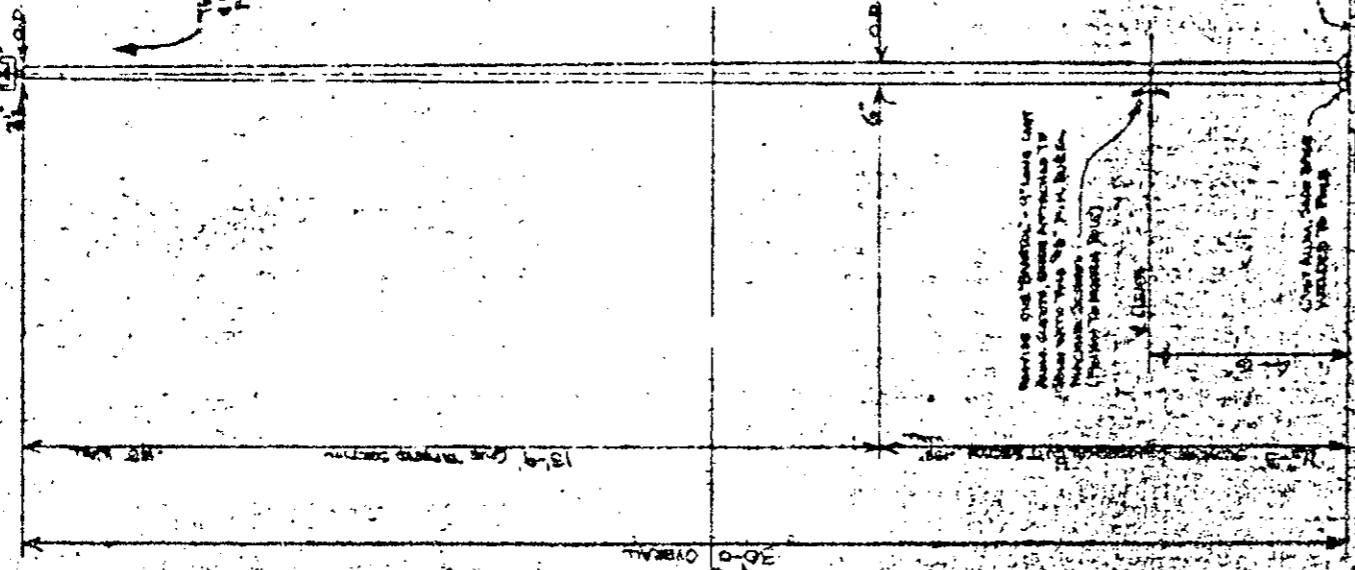
DIVISION OF HIGHWAYS	
PORTAL ATTENDANT BOOTH	
WALL SECTIONS, ROOF PLAN	
AND FLAGPOLE DETAILS	
Designer - C.O.O.H.	
Detailer -	
Drawing Number - B-2	

81 AX

6" DIA. x 1/8" THICK ALUMINUM BOLT
MOUNTED ON A 2" DIA. TUBING WHICH
GIVES OVER 100 LB. OF TENSILE STRENGTH
(PERMANENT TO IMPACT TEST)

STANDARD CONNECTION WITH FULCRUM, BEARING
PLATE AND TUBING WITH ALUM. COUPLER, SHEET
WITH END BEARING KEYS. CENTERING TUBING TO
6" DIA. TUBING WITH SHEET KEYS. KEYS TO INCLUDE TUBING
MOUNTED AND END KEYS TO BE FITTED WITH
THE 2" DIA. TUBING BUSHED WITH SHEET KEYS
BY THE END OF THE TUBING.

THE TUBING SHALL BE TIED TO THE ALUM. COUPLER WITH
4" DIA. V-BELT, UNDER THE COUPLER, TO THE TUBING
PERMANENTLY. NONE TO BE USED.



BEARING AND TUBING - 6" DIA. TUBING
ALUM. COUPLER, SHEET KEYS ATTACHED TO
TUBING WITH 2" DIA. TUBING KEYS.
TUBING TO INCLUDE TUBING
MOUNTED AND END KEYS TO BE FITTED WITH
THE 2" DIA. TUBING BUSHED WITH SHEET KEYS
BY THE END OF THE TUBING.

6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

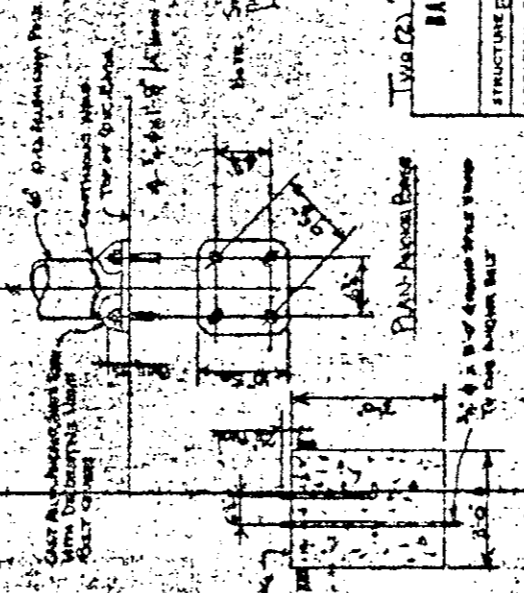
6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

GENERAL NOTES

1. FINISHES SHALL BE AS SHOWN ON SEPARATE SHEET DRAWING
EXTENDED ALUMINUM TUBING.
2. THE TAPERED SECTION OF FLAGPOLE HAS A MAXIMUM
CONCENTRATION OF 1/8" PER FT.
3. THE EXTENSION SHALL BE AS SHOWN ON SEPARATE SHEET
DRAWING WITH A FIELD KEY WHICH SHALL BE
WITH "LUTATOR" TUBING AND WITH THE HEAVY TUBING
4. FLAGPOLE SHALL BE SHIPPED IN ONE SECTION
BEFORE SHIPMENT THE POLE SHALL BE SHIPPED
WITH A WEIGHT WHICH SHALL BE SHIPPED WITH
WITH WEIGHTING IN THE TUBING SECTION IN THE NORTH
-SOUTH DIRECTION. TUBING SHALL BE SHIPPED IN ONE SECTION



6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

6" DIA. TUBING
ALUM. COUPLER
SHEET KEYS

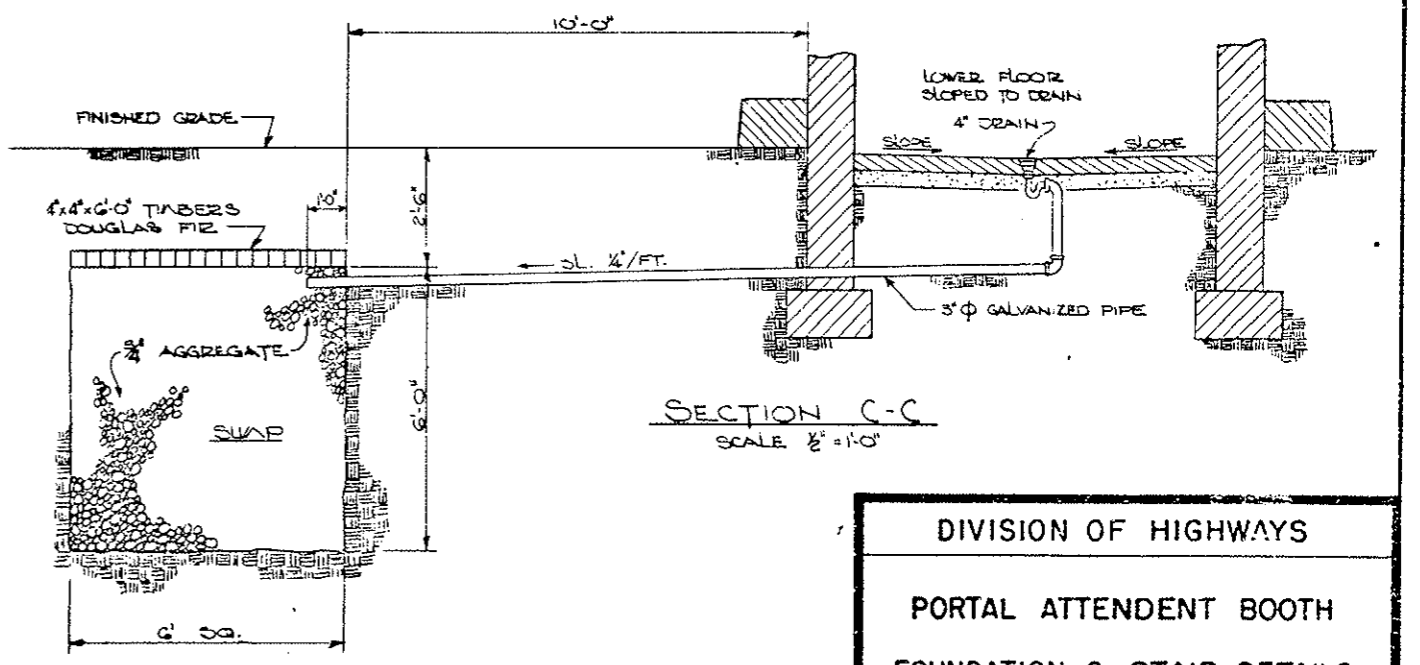
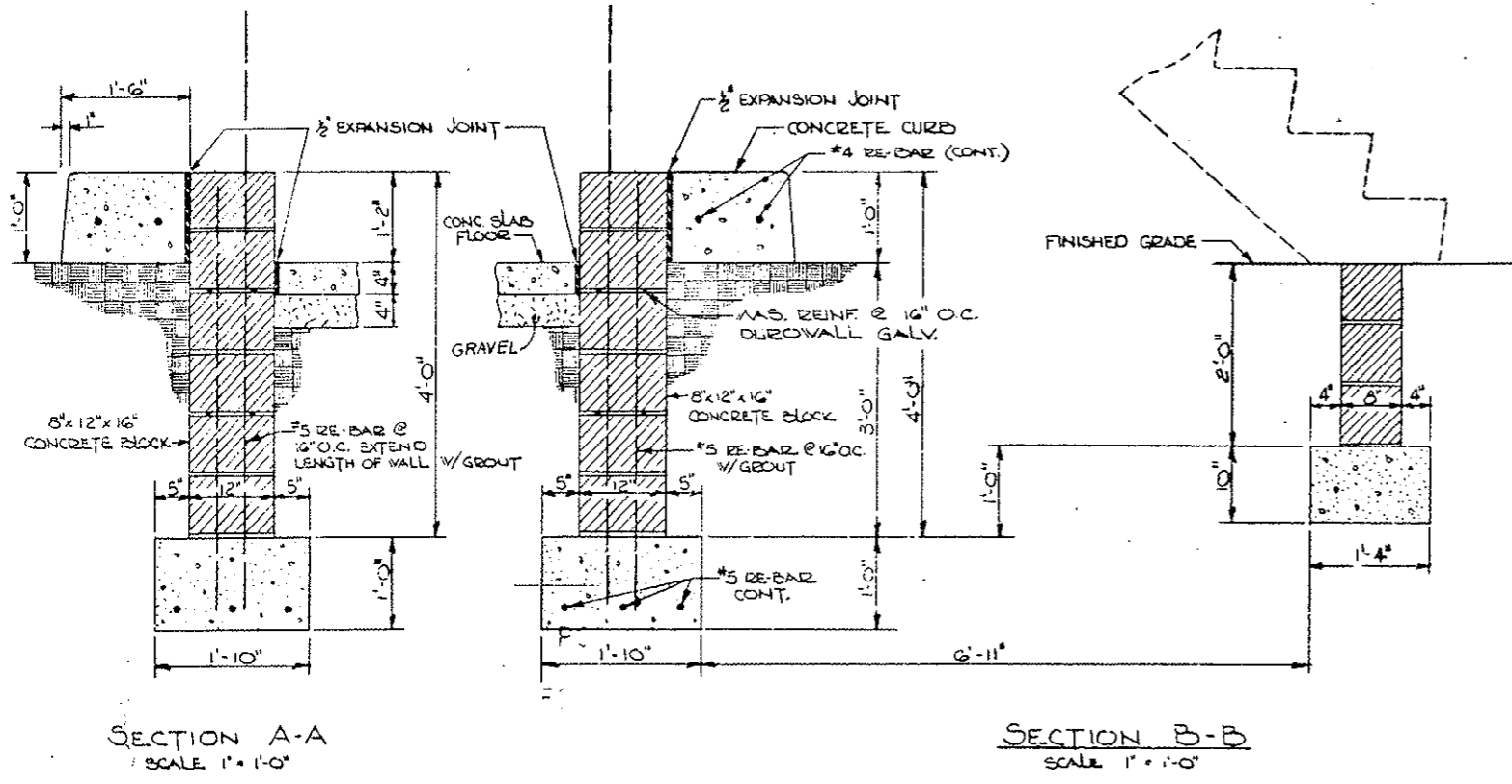
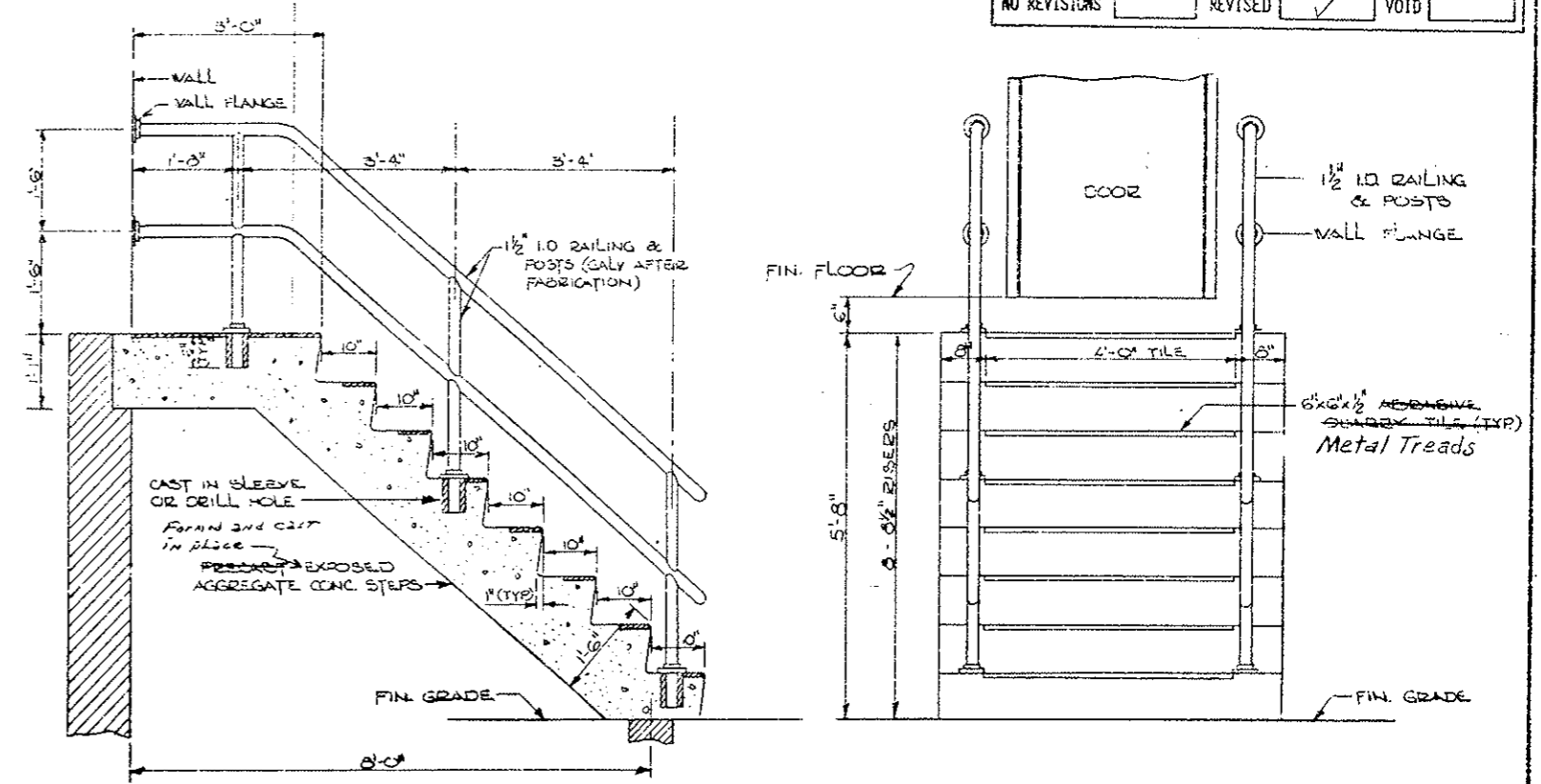
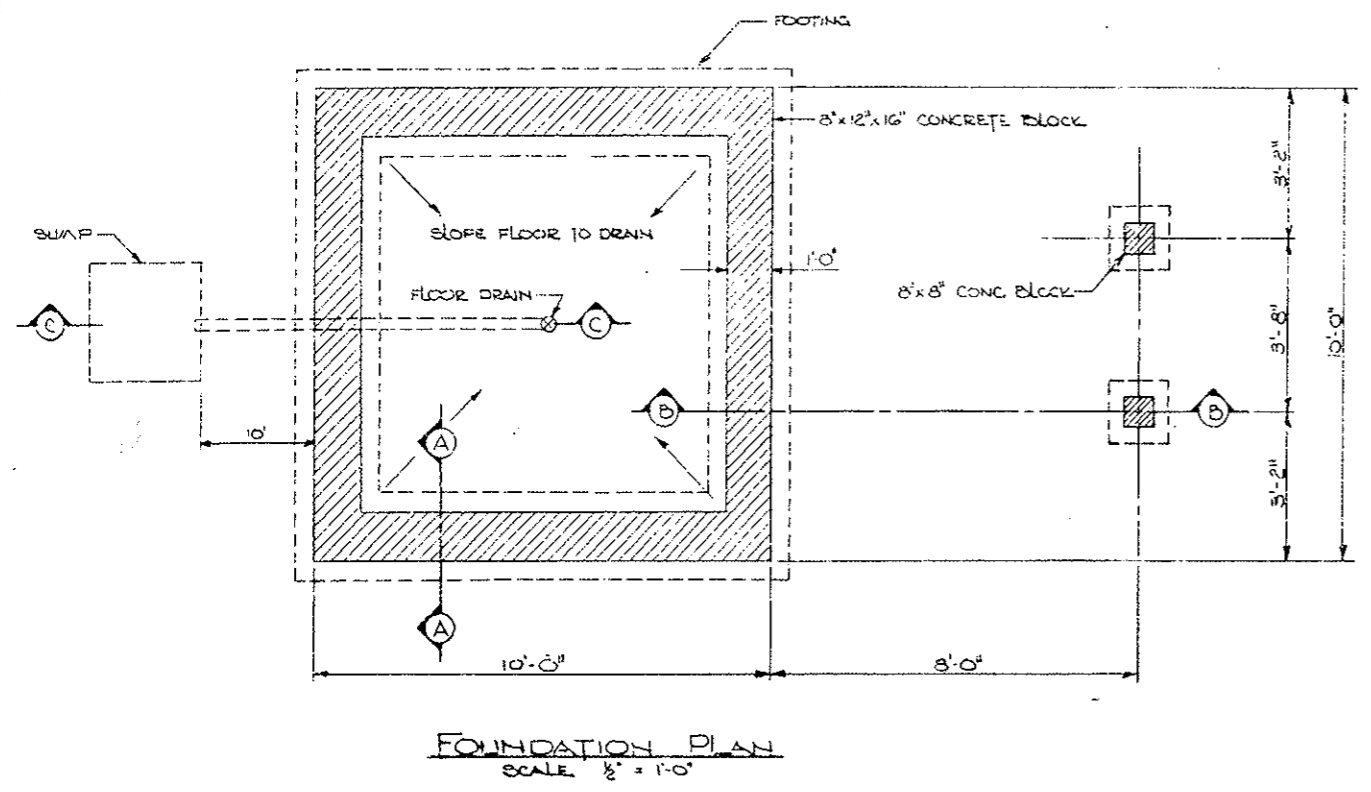
30'-0" OVERALL ONE TAPERED ALUMINUM FLAGPOLE

TWO CO. READY AS SHOWN
BARTOL COMPANY, INC.
KEANTON, OHIO

STRUCTURE	ELISHA WOODRUFF MEMORIAL TOWER
LOCATION	CLEAR CREEK CO. OHIO
CONTRACTOR	WALTER A. GARDNER, INC.
ARCHITECT	
DATE	4-2-31
DRAWN BY	JNA
REVISION	

DAN ARNOLD ENGINEER

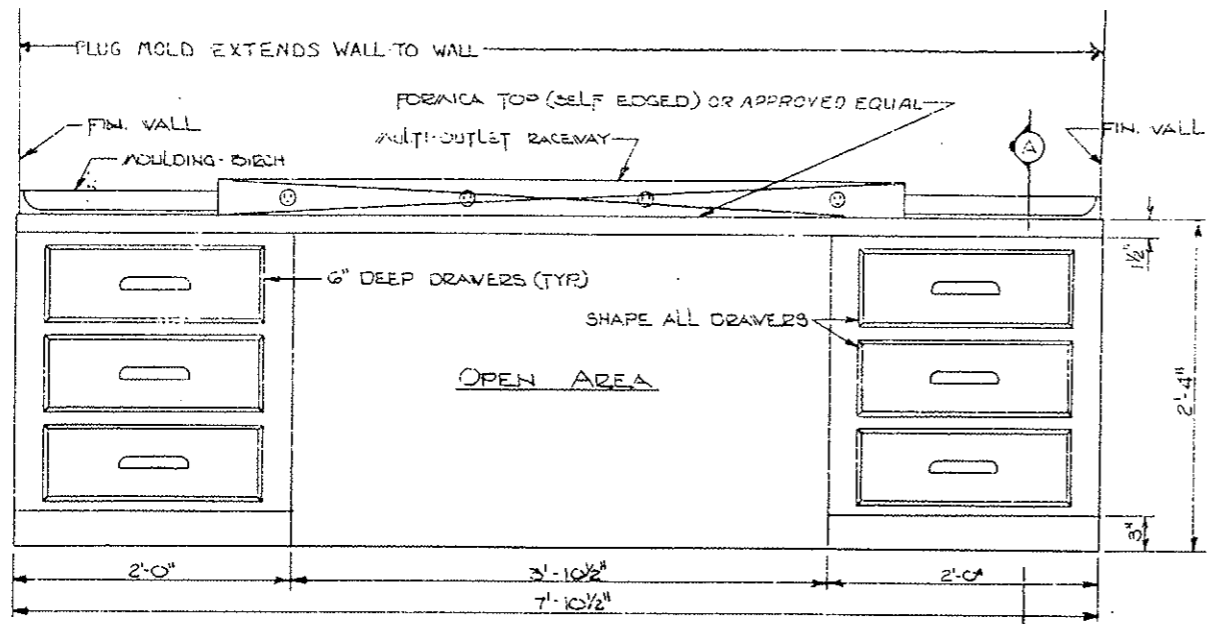
3" x 3" x 1/8" ALUM. COUPLER WITH SHEET KEYS TO THE TUBING



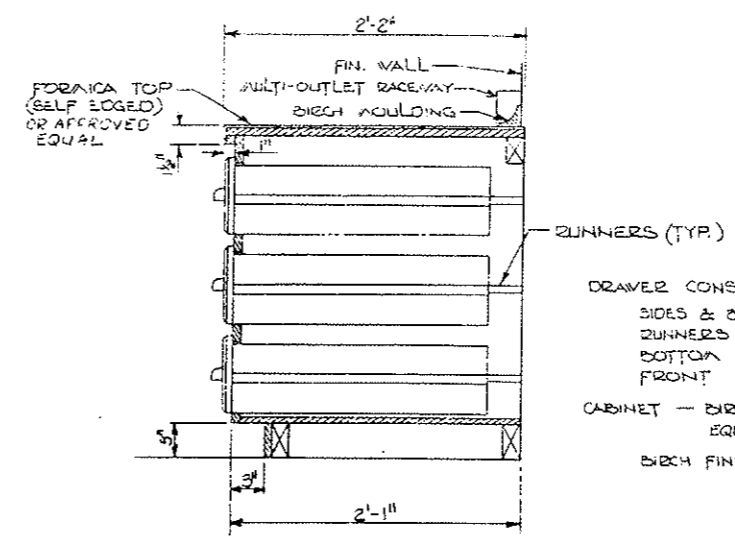
DIVISION OF HIGHWAYS

PORTAL ATTENDANT BOOTH
FOUNDATION & STAIR DETAILS

Designer - C.D.O.H.
 Detailer -
 Drawing Number B-3



FRONT ELEVATION



SECTION A-A

COUNTER CABINET DETAILS
SCALE 1/2" = 1'-0"

DOOR SCHEDULE

ITEM	DOOR		FRAME	HARDWARE						FINISH		
	TYPE	MOD.	TYPE	THRESHOLD	LOCKSET	KICKPLATE	HINGES	CLOSER	HOLDER	PROTECTION	PRIME	COLOR
UPPER FLOOR DOOR	CECO IMPERIAL SERIES 3'-0" x 6'-8" 18 GA.	HALF GLASS 1/2" SOLAR GRAY INSULATING TEMPERED GLASS	CECO SERIES SF 34 DOUBLE RABBET 8 3/4" x 2" 16 GA.	CECO 4200 SERIES CORRUGATED SADDLE BRONZE	RUSSWIN UNILOC SER NO. 563 EATON DESIGN US 32 D	RUSSWIN 418 SERIES US 32 D 6" x 2'-8"	STANLEY LIFESPAN SERIES CB 1960 4 1/2" x 4 1/2" US 32 D	RUSSWIN 2810 SERIES BRONZE (SBL)		GALV.	SHOP AND FIELD PRIME	BROWN
LOWER FLOOR DOOR	CECO IMPERIAL SERIES SPECIAL 18 GA.	DOOR SIZE 2'-8" x 4'-6"	CECO SERIES SF 34 DOUBLE RABBET 8 3/4" x 2" 16 GA.	CECO 4200 SERIES CORRUGATED SADDLE BRONZE	RUSSWIN UNILOC SERIES NO. 563 EATON DESIGN US 32 D		STANLEY LIFESPAN SERIES CB 1960 4 1/2" x 4 1/2" US 32 D	RUSSWIN 2750 SERIES BRONZE (SBL)		GALV.	SHOP AND FIELD PRIME	BROWN

WINDOW SCHEDULE

ITEM	WINDOW	GLASS	FRAME
	TYPE	SIZE & TYPE	FINISH
WINDOWS	TRUSCON ROLLING WINDOW 8040 FC W/ SCREENS	1/2" SOLAR GRAY INSULATING GLASS	BROWN PAINT

NOTE: MANUFACTURED ITEMS LISTED IN THE DOOR AND WINDOW SCHEDULES, OR AN APPROVED EQUAL, SHALL BE SUBMITTED IN ACCORDANCE WITH SUBSECTION 106.01 OF THE PROJECT SPECIFICATIONS.

DIVISION OF HIGHWAYS

PORTAL ATTENDANT BOOTH
DOOR & WINDOW SCHEDULE
AND
COUNTER CABINET DETAILS

Designer - C.D.O.H.
Detailer -
Drawing Number - B-4

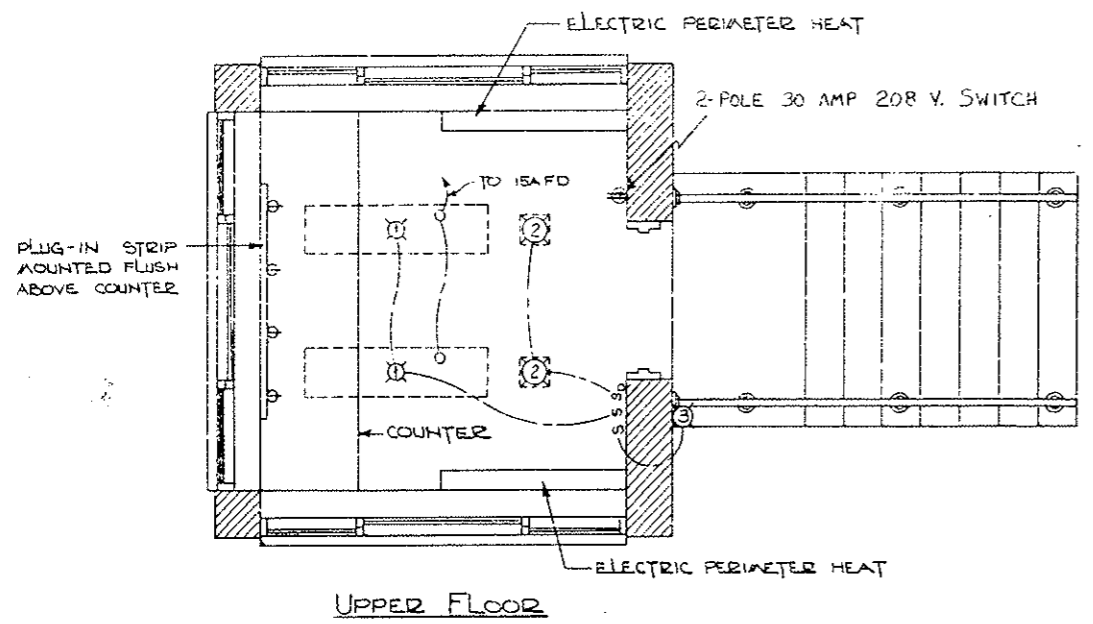
LIGHTING FIXTURE SCHEDULE

MARK	QUANTITY	DESCRIPTION	MANUFACTURER	CATALOG NO.	LAMPS / FIXTURE		REMARKS
					NO.	DESIGNATION	
1	2	CEILING RECESSED FLUORESCENT W/ D.C. AUX. INCAND. LAMP	HOLOPHANE	5045-4	1 2	100W A-21 F40/CW	INCANDESCENT LAMP TO BE WIRED TO AUXILIARY POWER
2	2	CEILING RECESSED INCANDESCENT	LIGHTOLIER	46H16	1	150W PAR-38	CONTROL WITH FULL RANGE DIMMER SWITCH
3	1	WALL SURFACE MOUNT INCANDESCENT	ACPHILBEN	43-40VT	1	100W A-21	WEATHERPROOF & VAPORTIGHT
4	1	WALL SURFACE MOUNT INCANDESCENT	ACPHILBEN	43-40	1	100W A-21	FINAL LOCATION TO BE DETERMINED BY ENGINEER

OR AN APPROVED EQUAL

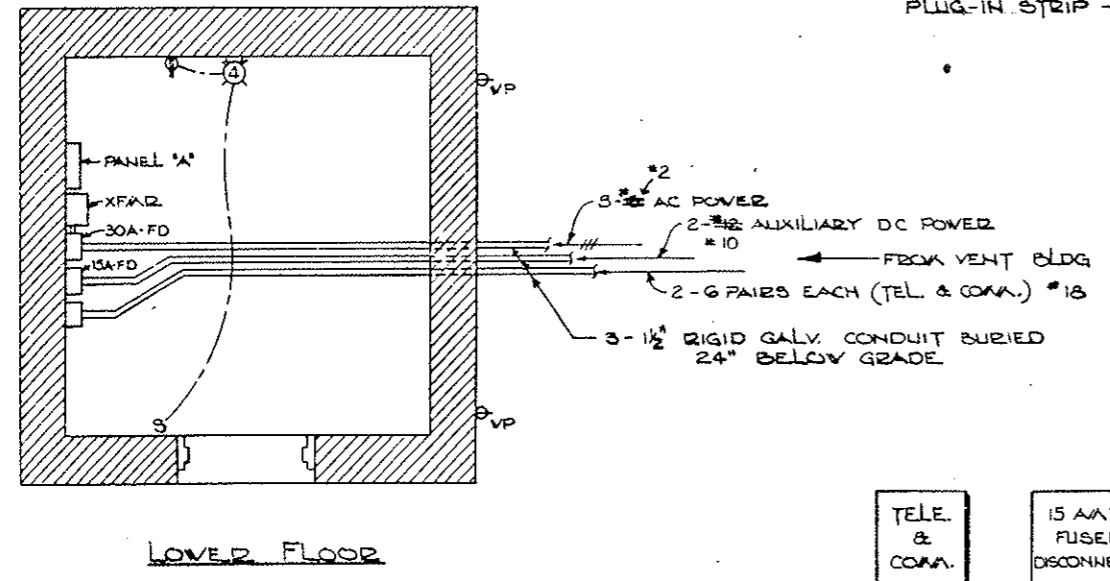
LEGEND

- O INCAND. LAMP IN FIXTURE *1 WIRED TO AUX. DC
- ⊕ THERMOSTAT @ +52" FROM FLOOR
- ⊕ DUPLEX CONVENIENCE OUTLET @ +52"
- ⊕ SINGLE CONVENIENCE OUTLET
- ⊕_{VP} WEATHERPROOF SINGLE CONVENIENCE OUTLET
- S SWITCH SINGLE POLE @ +52"
- S_D DIMMER SWITCH - FULL RANGE
- XFAR TRANSFORMER

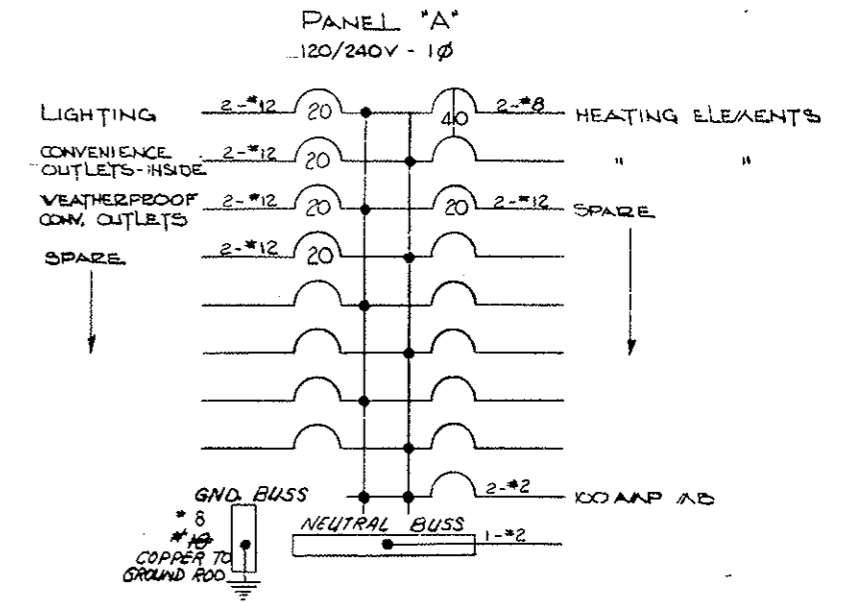
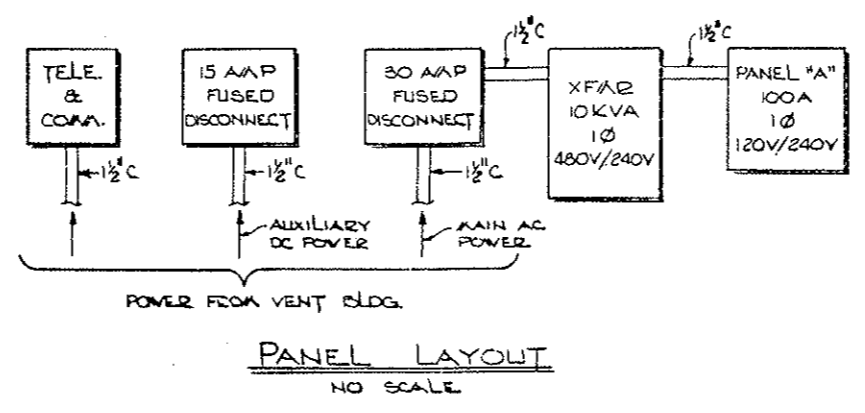


ELECTRIC HEAT - ~~EMERSON CHEMICON~~ SINGER Model ASF-7
240V-1Ø FRONT OUTLET W/ THERMOSTAT AND DISCONNECT SWITCH, OR AN APPROVED EQUAL.

PLUG-IN STRIP - 5' LONG WITH SINGLE CONVENIENCE OUTLETS @ 12" O.C. MOUNTED ABOVE COUNTER.



ELECTRICAL AND HEATING PLAN
SCALE 1/8" = 1'-0"



ELECTRICAL REQUIREMENTS
TOTAL CONNECTED LOAD = 6660V * 27.8 A
CIRCUIT BREAKERS SHALL BE PROVIDED W/ GROUND FAULT CIRCUIT INTERRUPTERS

DIVISION OF HIGHWAYS

PORTAL ATTENDANT BOOTH

ELECTRICAL & HEATING PLAN

Designer - C.O.O.H.

Detailer -

Drawing Number - 8-5

GENERAL NOTES:
 ALL WORK SHALL BE DONE ACCORDING TO THE PROJECT SPECIFICATIONS FOR 70-3(8.3)220.
 ALL STRUCTURAL STEEL NOT OTHERWISE NOTED SHALL BE AASHTO SPECIFICATION M-222 (ASTM A-588) (WEATHERING STEEL), (GALVANIZED).
 ALL BOLTS SHALL BE 3/4" DIAMETER, HIGH STRENGTH, UNLESS OTHERWISE NOTED.
 NO WELDING OF ANY KIND SHALL BE PERMITTED ON STRUCTURAL STEEL MEMBERS UNLESS SPECIFICALLY CALLED FOR ON THE PLANS.
 GRADE 60 REINFORCING STEEL IS REQUIRED FOR #5 BARS AND LARGER. GRADE 40 MAY BE USED FOR #4 BARS.
 THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR REINFORCING BARS:

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH	1'-0"	1'-3"	1'-6"	2'-3"	3'-0"	3'-10"	4'-10"	5'-11"

THE ABOVE SPLICE LENGTHS SHALL BE INCREASED BY 20 PERCENT FOR 3 BAR BUNDLES AND 33 PERCENT FOR 4 BAR BUNDLES.

E.F. = EACH FACE
 F.F. = FAR FACE
 N.F. = NEAR FACE

DESIGN DATA:

AASHTO DATED -- 1977 AND 1978 INTERIM.

LOADING DATA:

AIR PRESSURE IN VENTILATION DUCTS:
 FRESH AIR = 25 psf MAXIMUM
 EXHAUST = 125 psf MAXIMUM
 LIVE LOAD = 42 psf

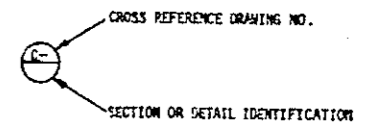
REINFORCED CONCRETE: #5 BARS AND LARGER, $f_c = 24,000$ psi
 #4 BARS, $f_c = 20,000$ psi
 CLASS T-1 CONCRETE
 $f_c = 1,200$ psi, $n = 10$

STRUCTURAL STEEL: AASHTO M-183 (ASTM A-36) $f_c = 20,000$ psi
 AASHTO M-222 (ASTM A-588) $f_c = 27,000$ psi

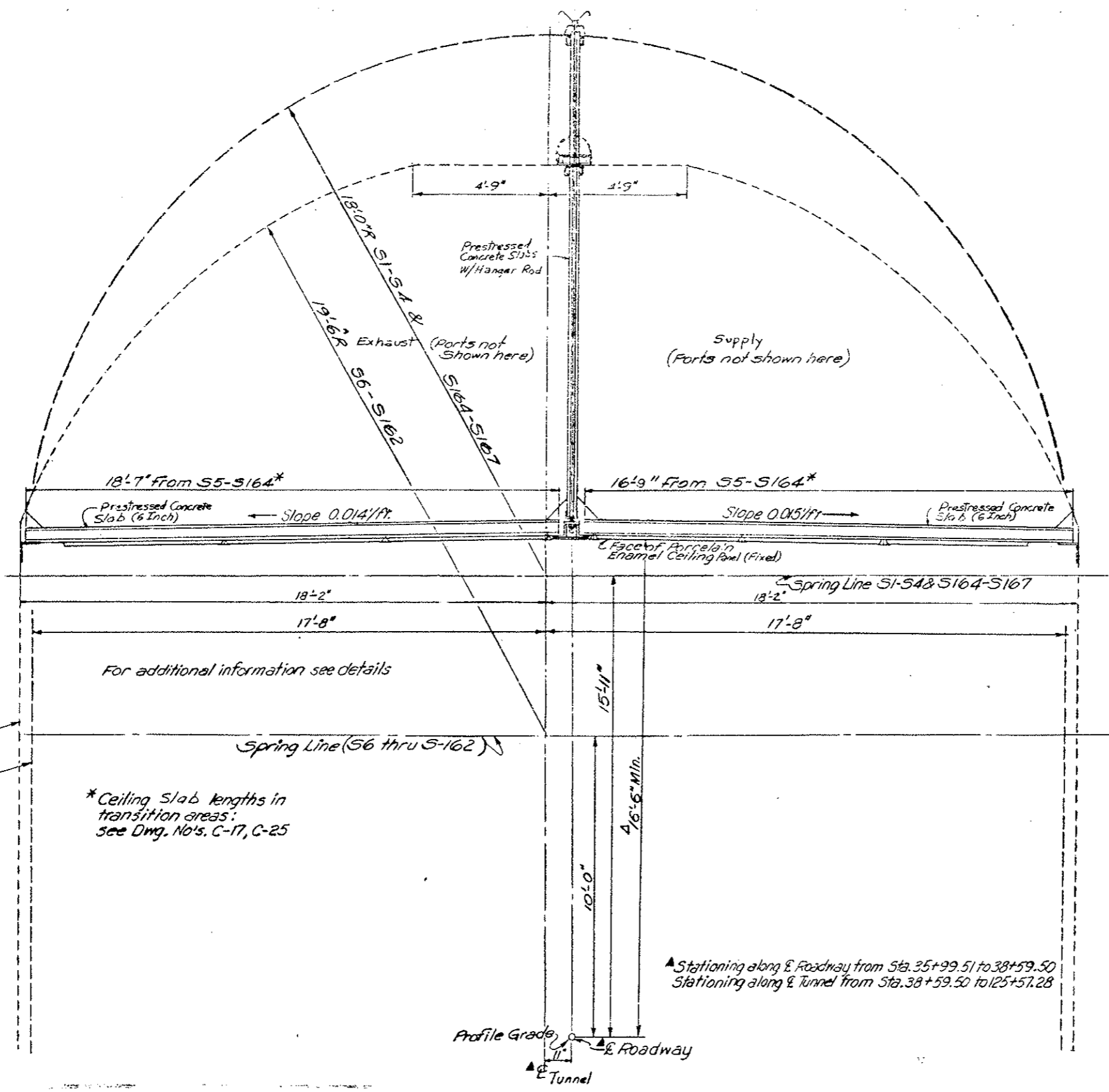
PRESTRESSED CONCRETE: $f'_s = 270,000$ psi
 $f'_c =$ (See Details)

GENERAL NOTES CONTINUED

DIMENSIONS AND ELEVATIONS TO EXISTING STRUCTURE SURFACES ARE APPROXIMATE FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY THIS INFORMATION IN THE FIELD, AND ADJUST THE CORRESPONDING MATERIAL DIMENSIONS AS REQUIRED, PRIOR TO FABRICATION OF MATERIAL FOR THIS PROJECT.



IN SUPERELEVATED SECTIONS, THE MINIMUM CLEARANCE IS 16'-6" AT THE CURB GRADE LINE.



Existing Conc. Final Lining (S5-S164)

Existing Conc. Final Lining (S1-S54 & S165-S167)

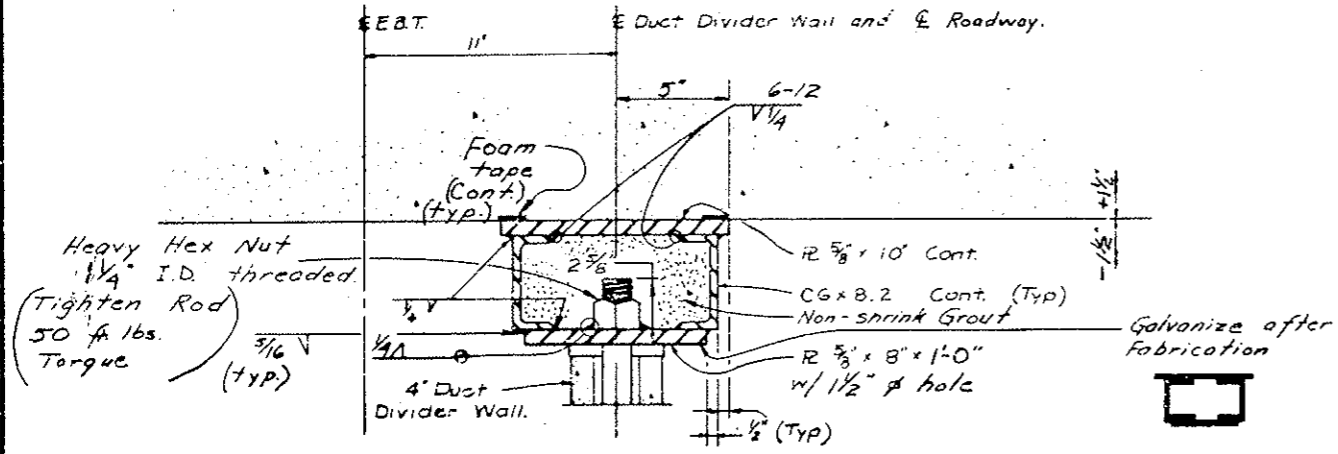
* Ceiling Slab lengths in transition areas: see Dwg. No's. C-17, C-25

▲ Stationing along E. Roadway from Sta. 35+99.51 to 38+59.50
 Stationing along E. Tunnel from Sta. 38+59.50 to 125+57.28

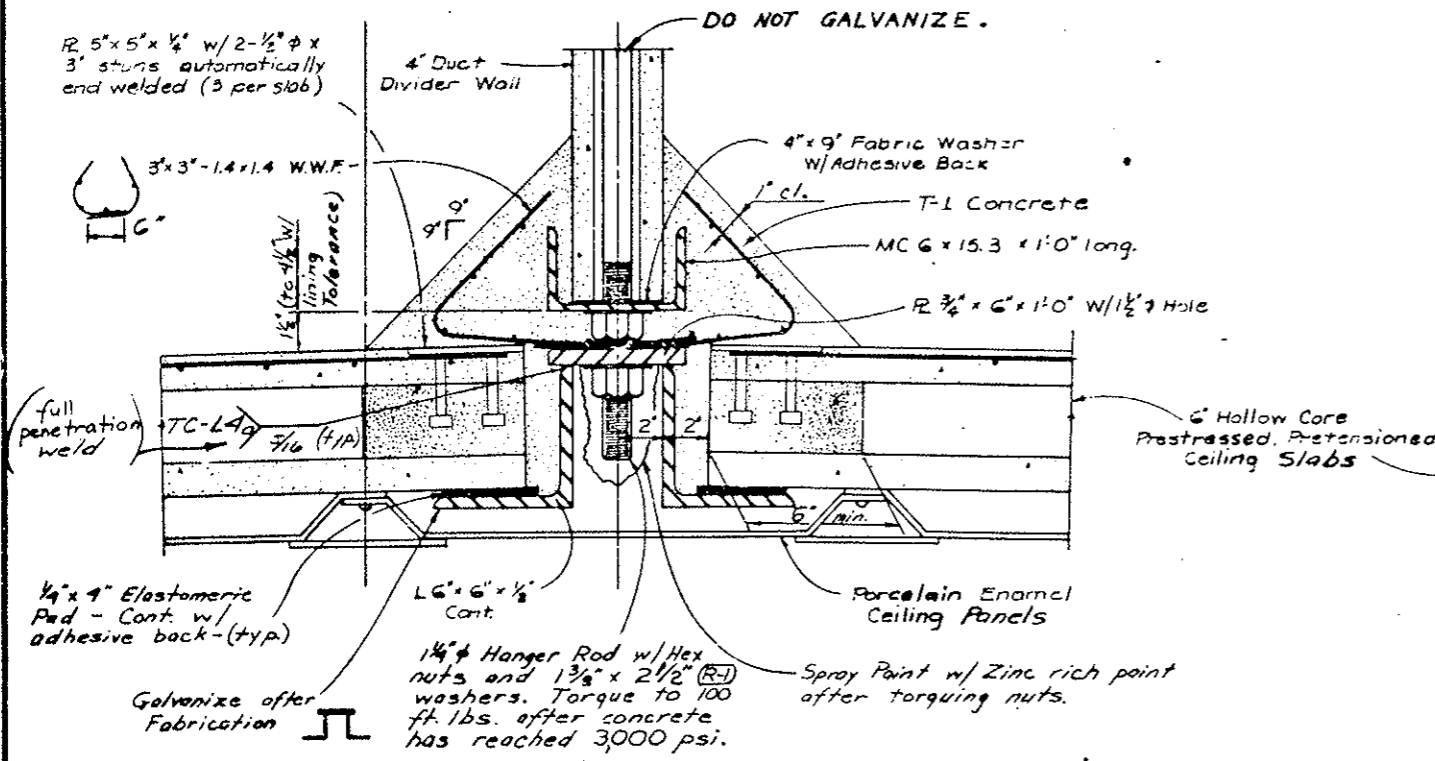
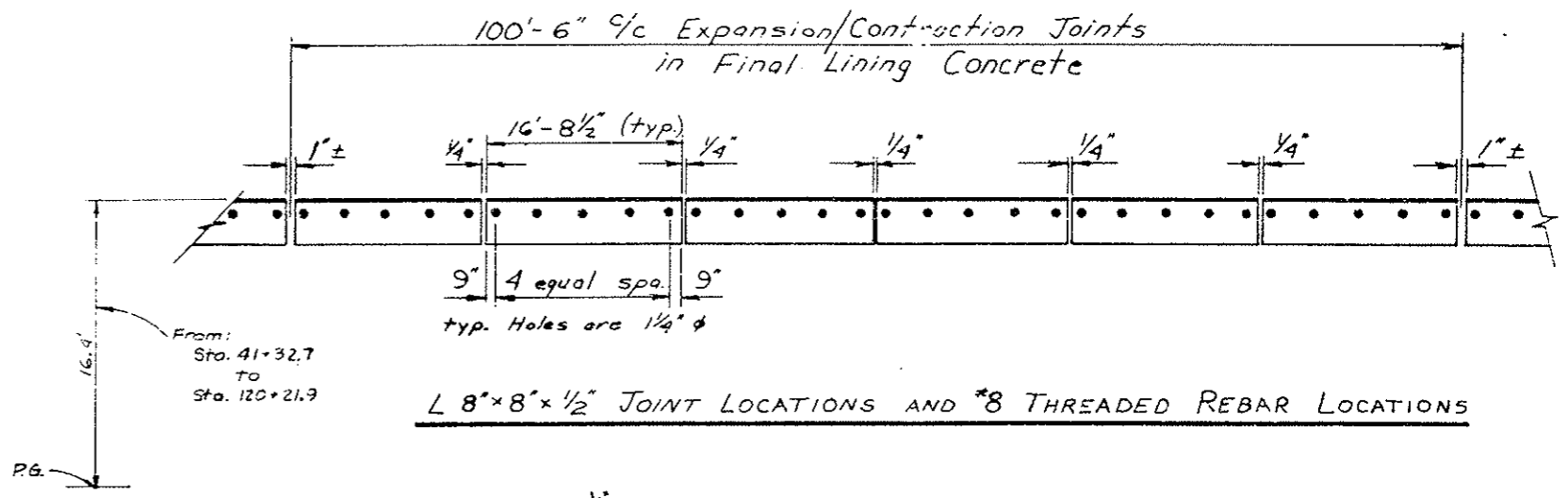
TYPICAL SECTION LOOKING EAST
 Original Scale 1/2" = 1'-0"

DIVISION OF HIGHWAYS	
TYPICAL SECTION CEILING SLAB AND DUCT DIVIDER WALL	
Designer C.D.O.H.	Structure Number
Detailer J. Letchworth	Number
Drawing Number C-1	of Drawings

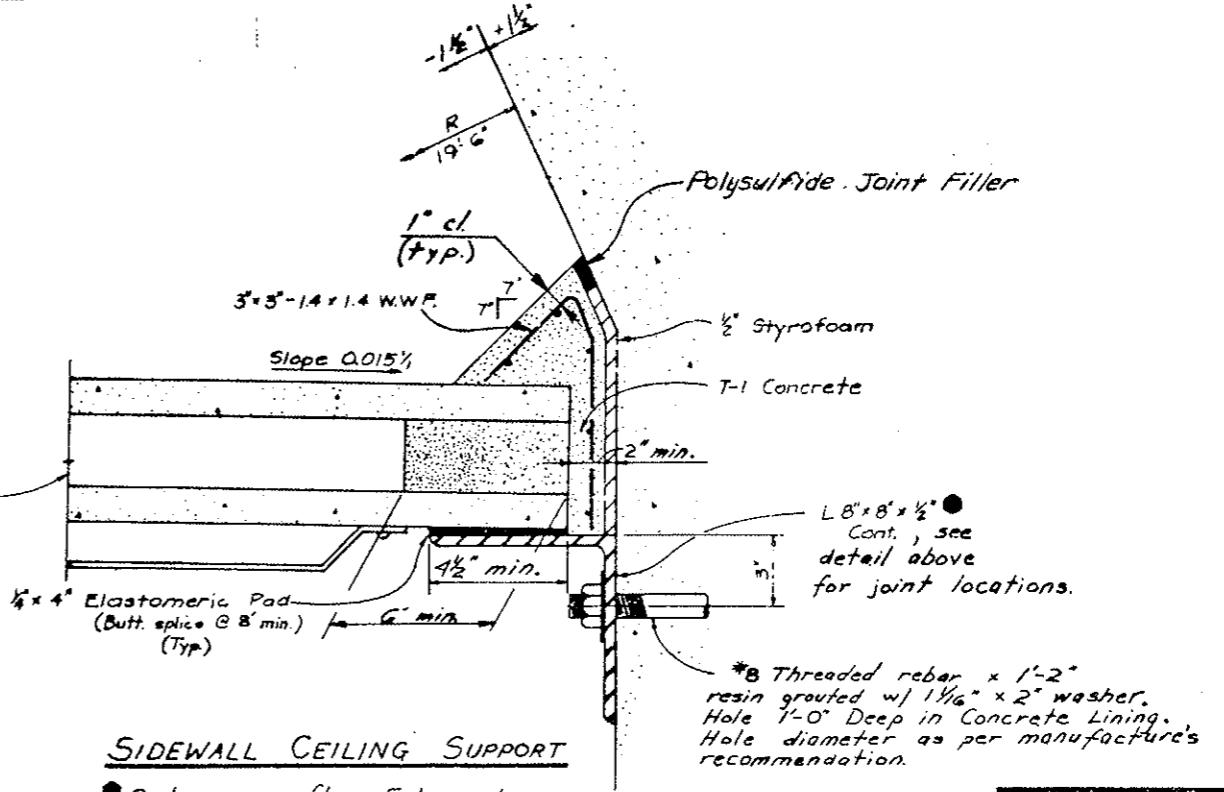
REVISIONS			
R-1	11-14-78	Washer Size	E.E.



HANGER UNIT ASSEMBLY @ 1/4" HANGER ROD



CENTER CEILING SUPPORT @ 1/4" HANGER ROD



SIDEWALL CEILING SUPPORT
Galvanize after Fabrication.

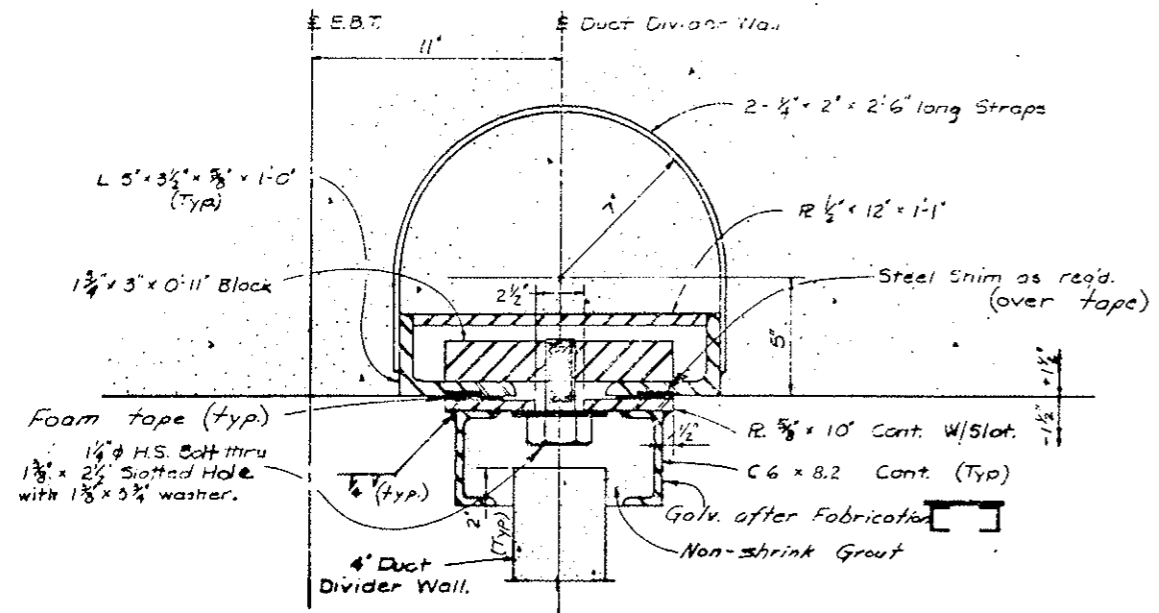
DATE	BY	REVISION
9-77	BRH	1
4-78	BRH	2
8-77	BRH	3
8-77	BRH	4
8-77	BRH	5
8-77	BRH	6
8-77	BRH	7
8-77	BRH	8
8-77	BRH	9
8-77	BRH	10
8-77	BRH	11
8-77	BRH	12
8-77	BRH	13
8-77	BRH	14
8-77	BRH	15
8-77	BRH	16
8-77	BRH	17
8-77	BRH	18
8-77	BRH	19
8-77	BRH	20
8-77	BRH	21
8-77	BRH	22
8-77	BRH	23
8-77	BRH	24
8-77	BRH	25
8-77	BRH	26
8-77	BRH	27
8-77	BRH	28
8-77	BRH	29
8-77	BRH	30

DIVISION OF HIGHWAYS	
CEILING SUPPORT DETAILS	
Designer C.D.O.H.	Structure F-13-X
Detailer B.R. Lora	Numbers
Drawing Number C-2	
Revision Dates	(Preliminary Stage Only)

AS CONSTRUCTED
 NO REVISIONS REVISED VOID

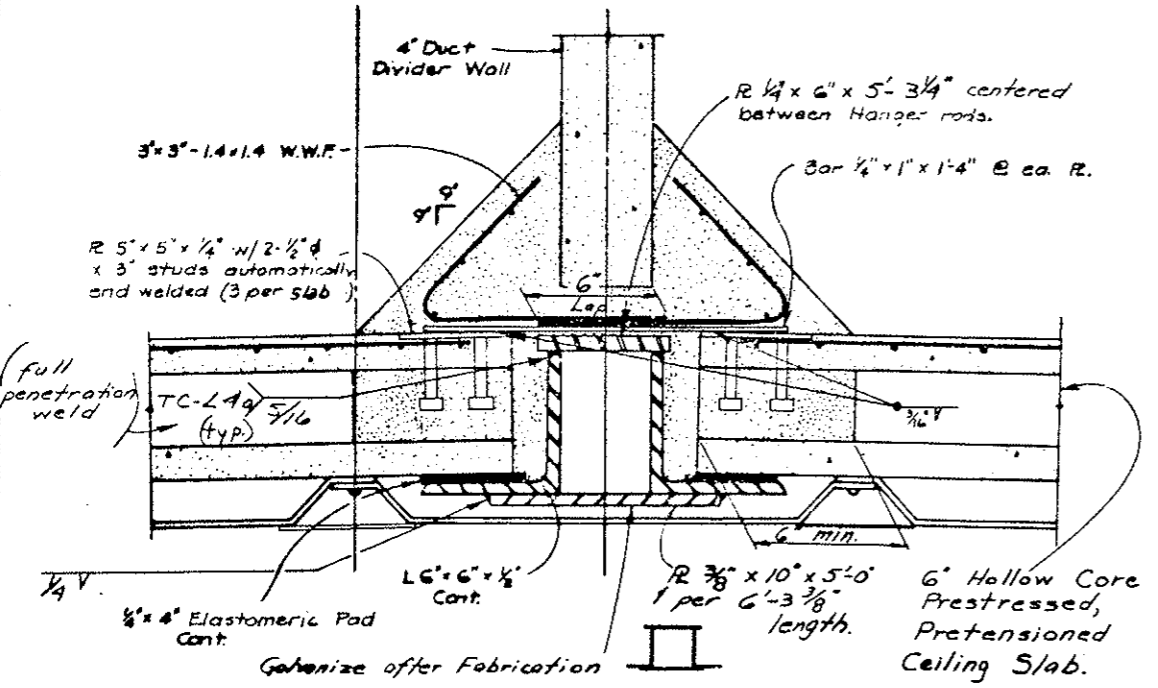
FISCAL YEAR	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
2013	COLORADO	I70-3(83)220	28	

REVISIONS			



HANGER UNIT ASSEMBLY @ HANGER EMBED

* Hanger Embed installed under Proj. I70-3(81)220



CENTER CEILING SUPPORT @ HANGER EMBED

DATE	BY	CHKD	APP'D
11/14/13	BRL	BRL	BRL
11/14/13	BRL	BRL	BRL
11/14/13	BRL	BRL	BRL
11/14/13	BRL	BRL	BRL
11/14/13	BRL	BRL	BRL
11/14/13	BRL	BRL	BRL
11/14/13	BRL	BRL	BRL
11/14/13	BRL	BRL	BRL
11/14/13	BRL	BRL	BRL

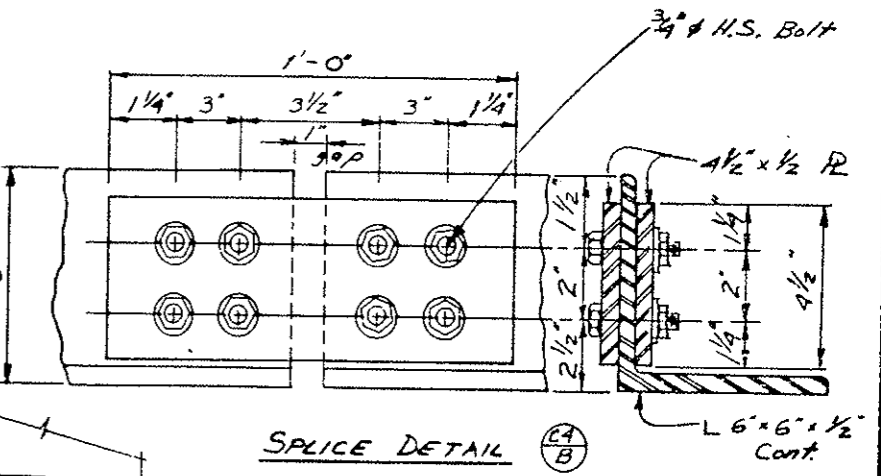
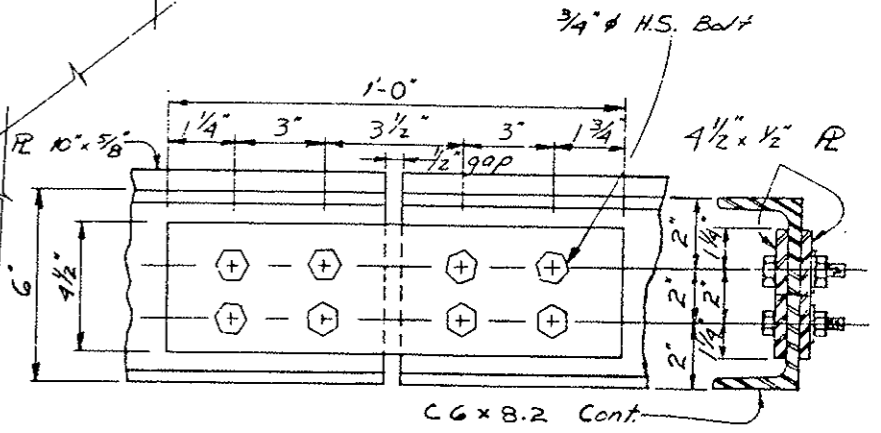
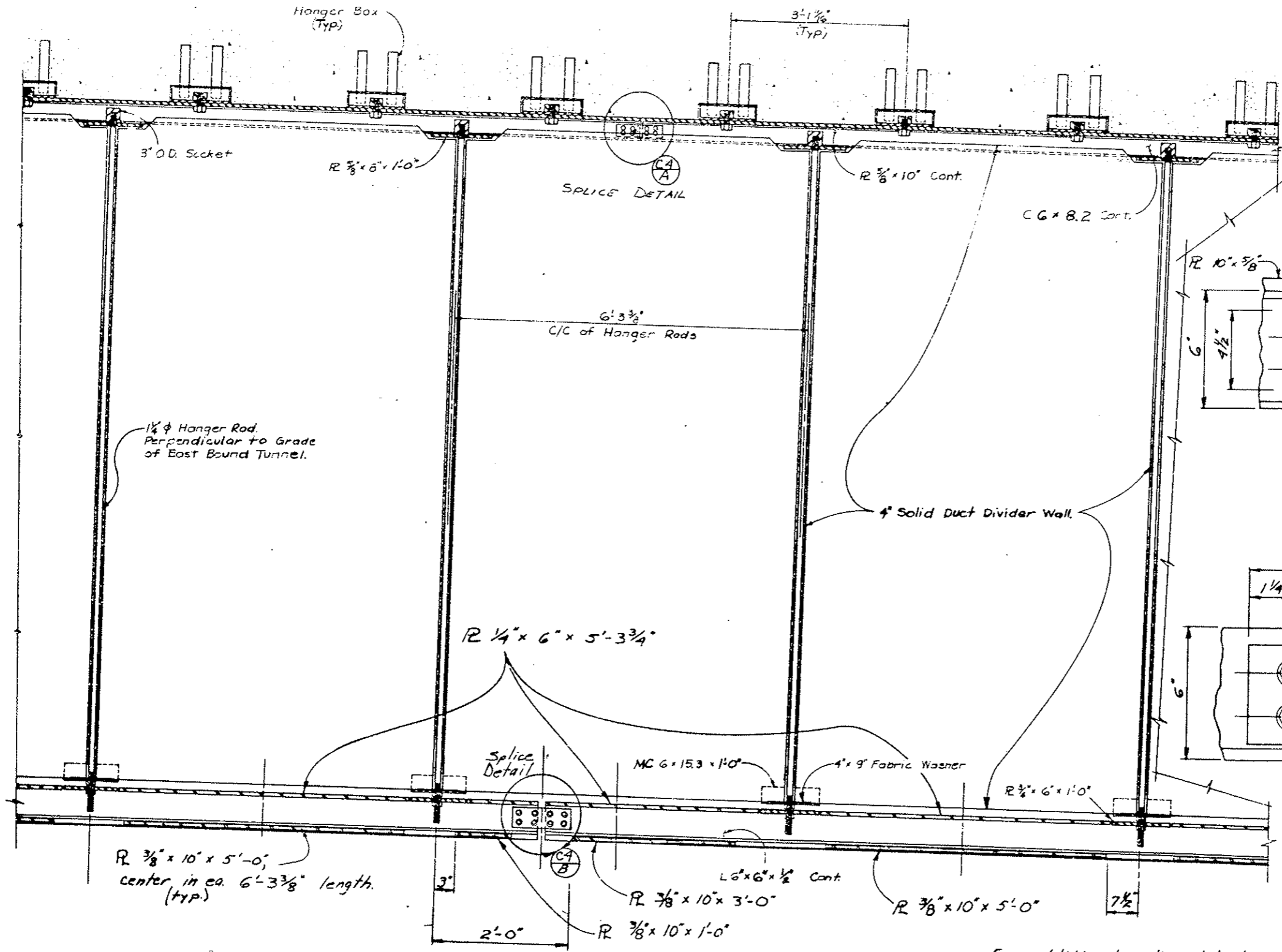
DIVISION OF HIGHWAYS

CEILING SUPPORT DETAILS

Designer	C.D.O.H.	Structure	F-13-X
Designer	B.R.Lers	Numbers	
Drawing Number C-3			

Revision	Date	(Preliminary Stage Only)

REVISIONS	



DESIGNED BY	DATE	8-77
CHECKED BY	DATE	8-77
QUANTITIES BY	DATE	8-77
CHECKED BY	DATE	8-77

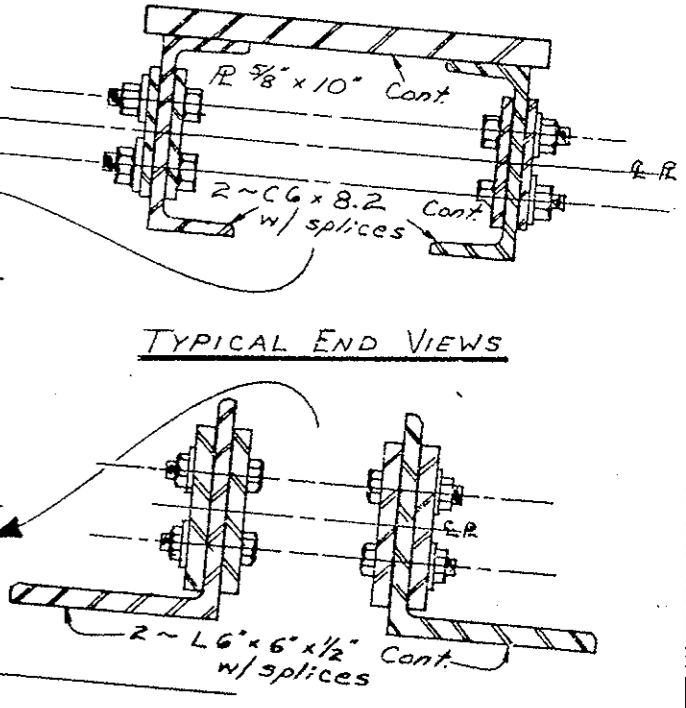
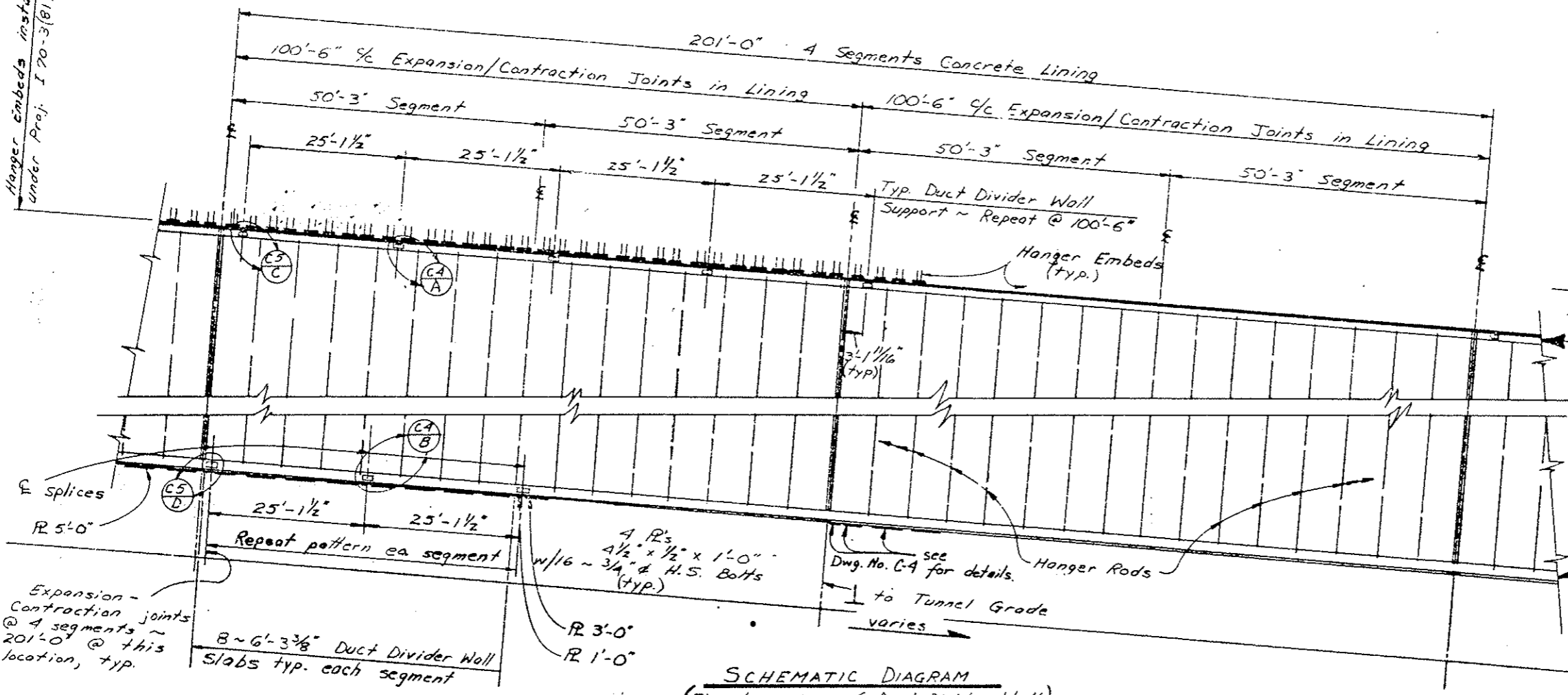
SECTION THRU Φ DUCT DIVIDER WALL

For additional splice details, see Dwg. No. C-5.

DIVISION OF HIGHWAYS	
DUCT DIVIDER WALL and CEILING SUPPORT DETAILS	
Designer C.D.O.H.	Structure F-13-X
Detailer B.R.Lere	Numbers
Drawing Number C-9	
Revision Date	(Preliminary Stage Only)

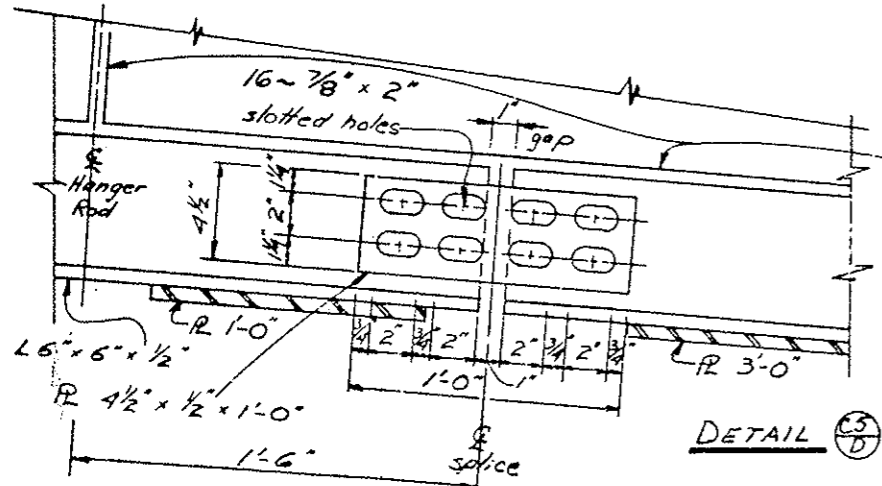
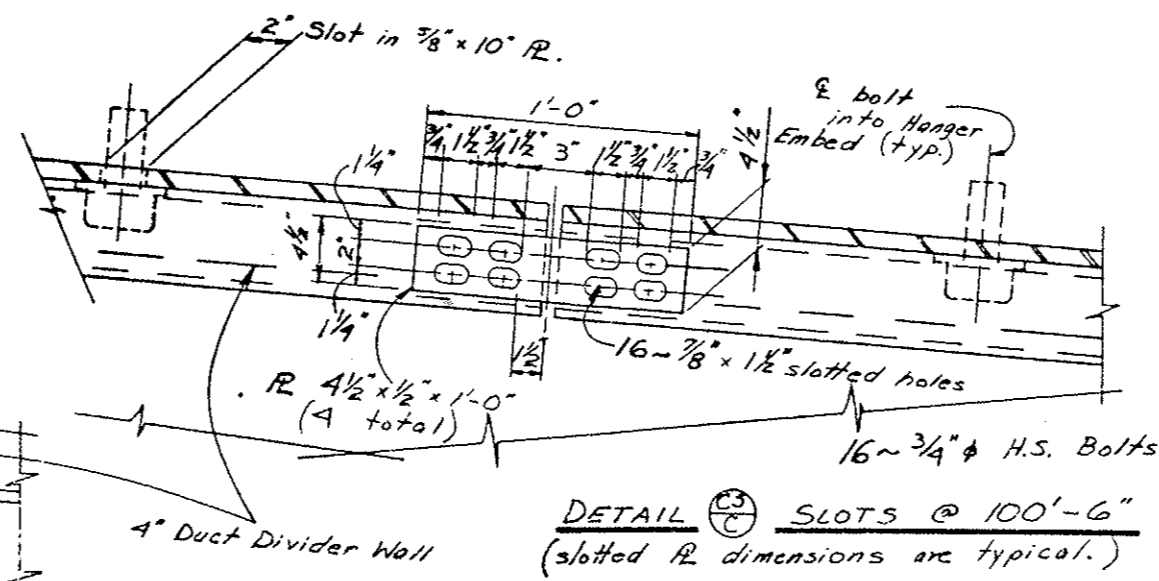
REVISIONS	

Hanger embeds installed under Proj. I 70-3(81)220



DATE	BY	QUANTITY	BY
3-27-78	W.R.H.	1-78	W.R.H.
3-27-78	W.R.H.	2-78	W.R.H.

SCHEMATIC DIAGRAM
(Elevation view of Duct Divider Wall.)



DETAIL (C) SLOTS @ 100'-6"
(slotted R dimensions are typical.)

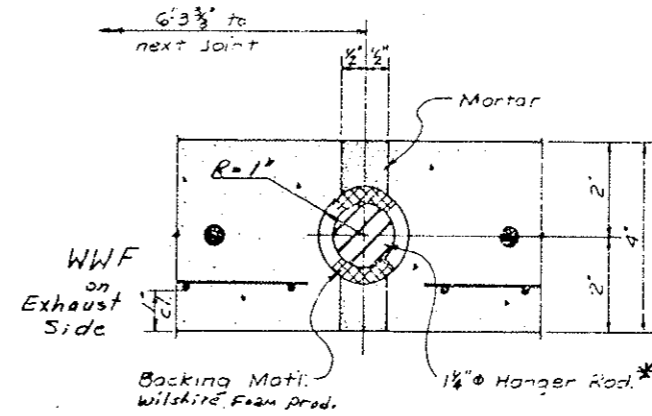
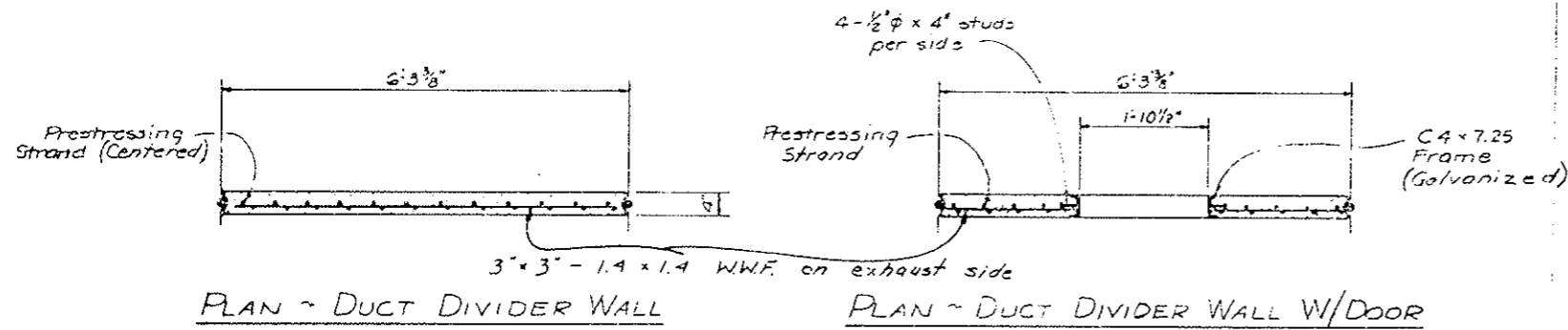
For additional Details, see Dwg. No. C-2, C-3 & C-4.

DIVISION OF HIGHWAYS	
SPlice DETAILS for DUCT DIVIDER WALL SUPPORT and PRECAST CEILING SUPPORT	
Designer C.D.O.H.	Structure F-13-X
Detailer W.R. HESSLER	Numbers
Drawing Number C-5	

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
120	OKLAHOMA	170-3(83)220	91	

REVISIONS	



TYPICAL JOINT ~ DUCT DIVIDER WALL

PRESTRESSING NOTES

CUT ALL STRANDS FLUSH WITH THE SLAB ENDS UNLESS OTHERWISE NOTED.
 USE STRESS-RELIEVED STRANDS. $f'_s = 270$ KSI. ALTERNATE STRANDS ARE LOW-RELAXATION STRANDS MEETING THE REQUIREMENTS OF ASTM-A416-68 GRADE 270.

IF LOW-RELAXATION STRANDS ARE USED, THE NET COMPRESSIVE STRESS IN THE CONCRETE AFTER ALL LOSSES SHALL BE AT LEAST AS LARGE AS THAT PROVIDED BY THE STRESS-RELIEVED STRANDS. ALSO THE ULTIMATE STRENGTH OF THE SLAB WITH THE LOW-RELAXATION STRANDS SHALL MEET THE REQUIREMENTS OF THE APPLICABLE AASHTO SPECIFICATIONS.

INITIAL PRESTRESS FORCE: THE JACKING FORCE PER SLAB INCLUDING ALL LOSSES
 $F_i = S_s \cdot x' \cdot A_s$

FINAL PRESTRESS FORCE: THE FORCE REMAINING PER SLAB AFTER ALL LOSSES
 $F_f = C_p \cdot x' \cdot A_s$

A_s = AREA OF PRESTRESSING STEEL
 f'_s = ULTIMATE STRENGTH OF PRESTRESSING STEEL
 CONCRETE STRENGTH: f'_{ci} - IS AT TIME OF RELEASE OF PRESTRESS FORCE.
 f'_c - IS AT 28 DAYS

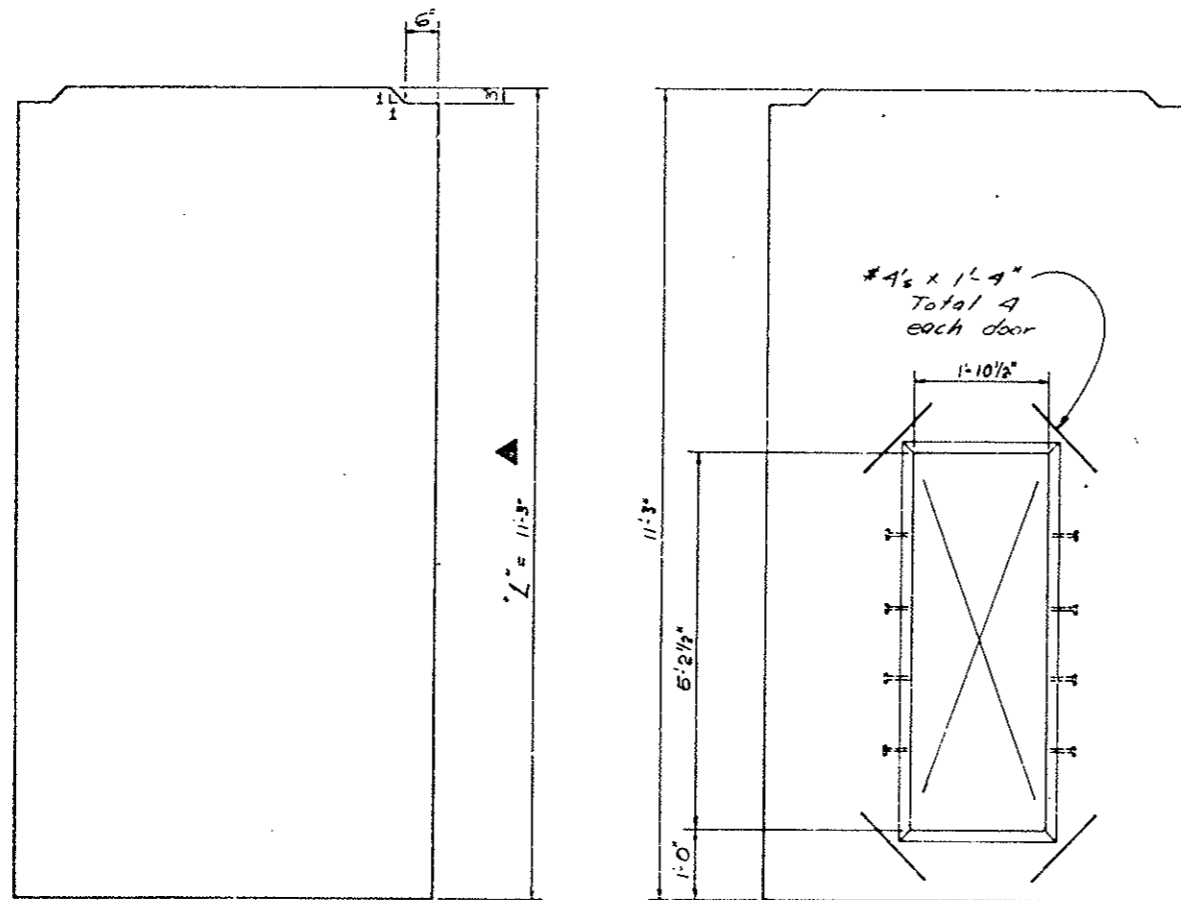
CLEARANCE: THE MINIMUM DISTANCE BETWEEN GROUPS OR INDIVIDUAL STRANDS IS 1-3/8\"/>

DESIGN ASSUMES: AREA OF 4\"/>

THE RESULTANT PRESTRESSING FORCE SHALL BE CENTERED ACROSS THE WIDTH OF THE SLAB.

* 1-1/2\"/>

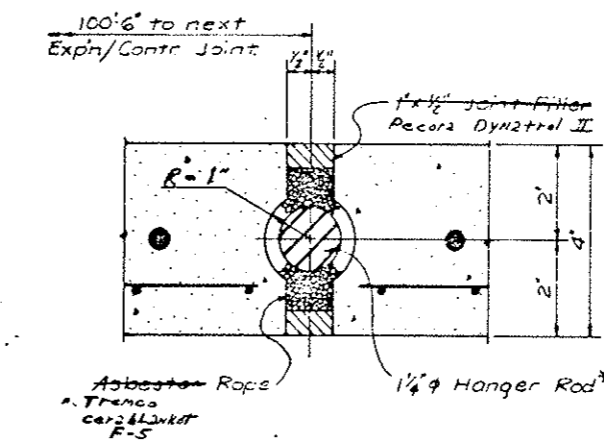
SLAB SHALL BE STEEL-TROWEL FINISHED. CONTRACTOR SHALL MARK ALL EDWARDS - SIDE OF SLAB WITH A WELL-RECOGNIZABLE INDENTATION.



ELEVATION ~ DUCT DIVIDER WALL

ELEVATION ~ DUCT DIVIDER WALL WITH DOOR

For locations see Duct Divider Wall Door Details sheet no. C-32.



EXPANSION/CONTRACTION JOINT ~ DUCT DIVIDER WALL

HEIGHT OF DUCT DIVIDER WALL "L": STA. 37+80.4 (WEST VENT BLDG.) TO STA. 41+32.7 (END SEGMENT S5) AND FROM STA. 120+21.9 (END SEGMENT S162) TO STA. 123+74.6 (EAST VENT BLDG);
 To be verified in the field by the Contractor

DESIGNED BY	DATE	CHECKED BY	DATE
C.D.M.	6-77	W.N.	1-78
S.F.C.	8-77	B.P.L.	1-78
DRAWN BY	DATE	CHECKED BY	DATE
B.L.L.	8-77	B.P.L.	1-78

SLAB No.	L (Feet)	A concrete (in ²)	S concrete (in ³)	F _i (KIPS)	C _i	F _f (KIPS)	C _f	Concrete Strength
								f' _{ci} (PSI) f' _c (PSI)
Standard Slab	11'-3"	300	200	277	.67	207	.50	4000 4000
Slab W/Door	11'-3"	204	136	165	.66	124	.50	4000 4000
Slab in Trans Area	▲	300	200	338	.68	248	.50	4000 4700

DIVISION OF HIGHWAYS

4\"/>

Designer	C.D.M.	Structure	F-13-X
Detailer	B.R.-e-e	Numbers	
Drawing Number C-6			

Revision Dates (Preliminary Stage Only)

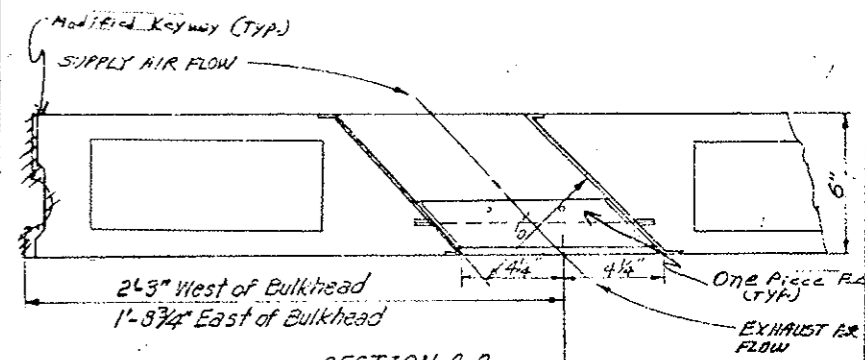
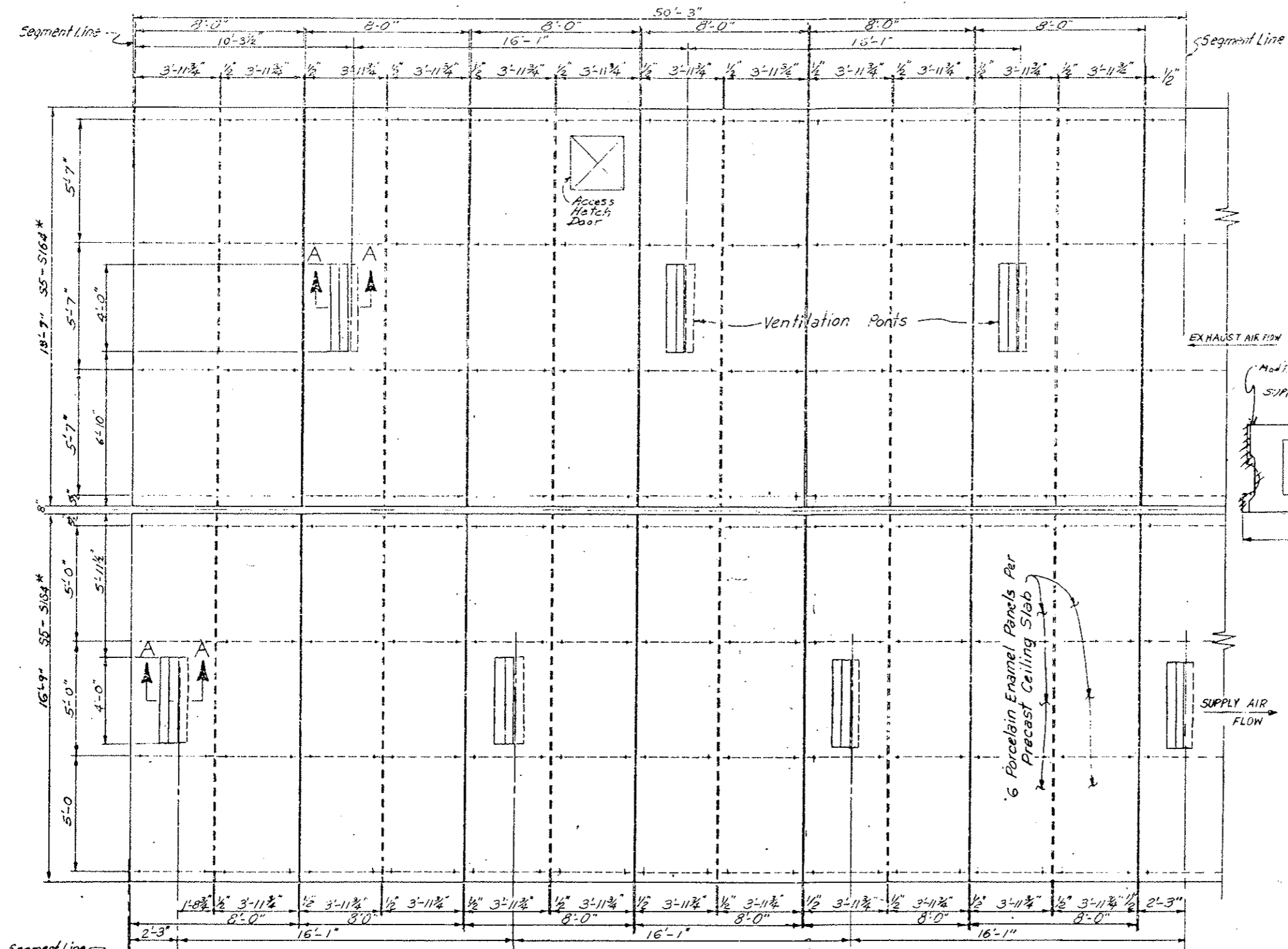
FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	I 70-3183-220	92

REVISIONS	

AS CONSTRUCTED

NO REVISIONS REVISED VOID

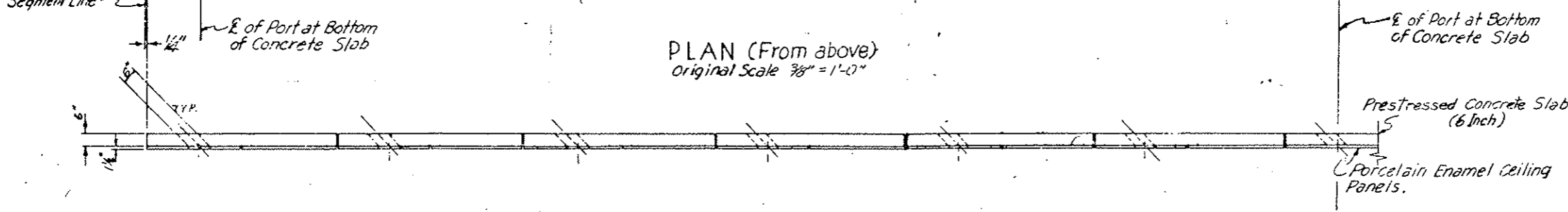
* Ceiling Slab Lengths in Transition Areas:
see Dwg. Nos. C-17, C-25



SECTION A-A
Original Scale 3"=1'-0"

Port shown for West of Sta. 80+77 (Bulkhead)
All Ports to the East of Sta. 80+77 (Bulkhead) are sloped opposite direction.

PLAN (From above)
Original Scale 3/8"=1'-0"



SIDE ELEVATION

DESIGNED BY	DATE	CHECKED BY
CDOH	7-2-75	
CHECKED BY	QUANTITIES BY	CHECKED BY

DIVISION OF HIGHWAYS

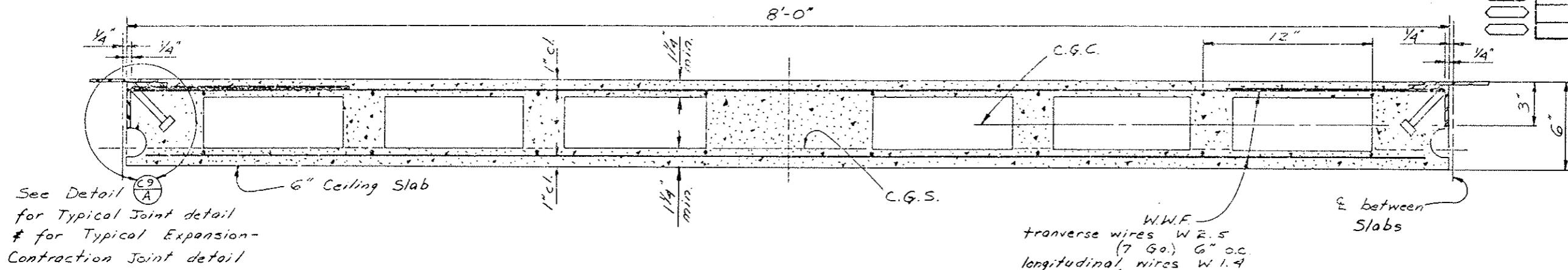
TYPICAL CEILING SLAB PLAN

Designer CDOH	Structure
Detailer G. LEITCHWORTH	Numbers
Drawing Number C-7	of Drawings

AS CONSTRUCTED		
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VOID <input type="checkbox"/>

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	93	

REVISIONS	

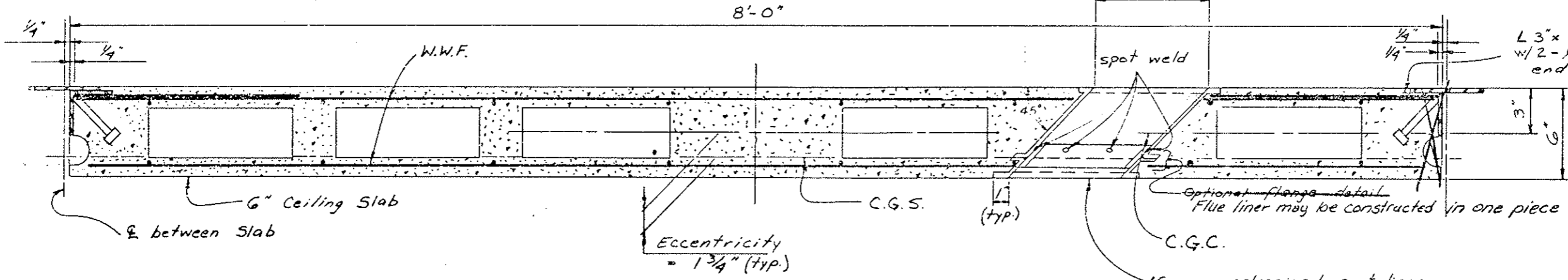


STANDARD 6" HOLLOW CORE PRESTRESSED CEILING SLAB ~ No. 1

Voids shown are schematic and actual configuration of slab shall be shown on shop drawings and submitted to the Engineer for approval. All void corners shall be rounded or chamfered.

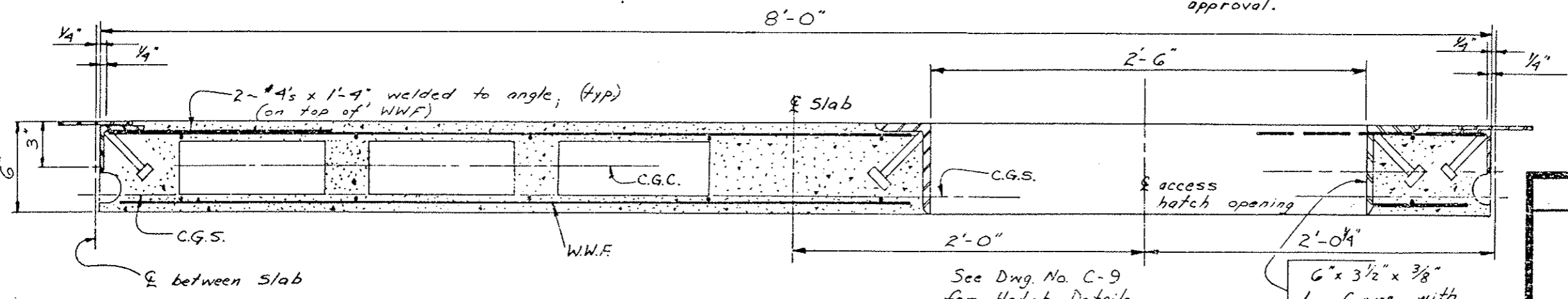
Joint details shown are schematic only; actual details are to be shown on the Shop Drawings for Engineer's Approval.
NOTE: See Sheets No. 93AX thru 93DX for Joint Details & Typical Sections

DESIGNED BY	CDH	CHECKED BY	WRH
DRAWN BY	WRH	QUANTITIES BY	WRH
CHECKED BY	WRH	DATE	6-77
DATE	2-78	CHECKED BY	WRH
		CHECKED BY	WRH
		CHECKED BY	WRH



6" HOLLOW CORE PRESTRESSED CEILING SLAB W/AIR OPENING ~ No. 2

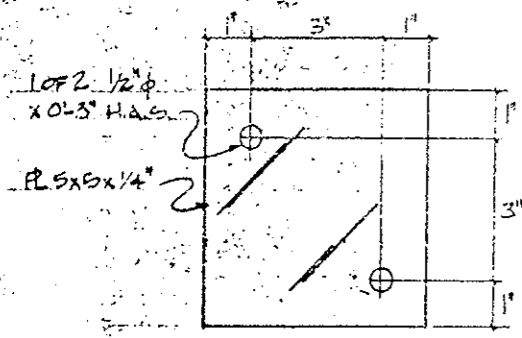
16 gage galvanized port liner galvanize after fabrication. Additional details required to secure liner during concrete pour to be submitted for approval.



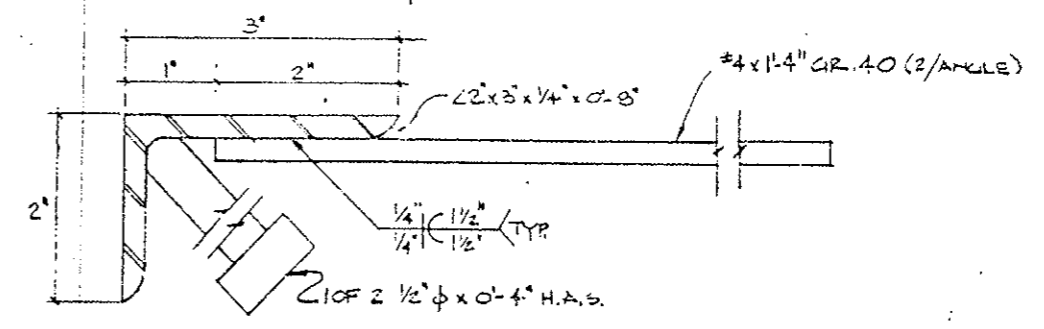
6" PRESTRESSED CEILING SLAB W/ACCESS HATCH ~ No. 3

DIVISION OF HIGHWAYS	
6" HOLLOW CORE PRESTRESSED CEILING SLAB DETAILS	
Designer	C.D.H.
Detailer	W.R. HESSLER
Drawing Number	C-8
Structure	F-13-X
Numbers	

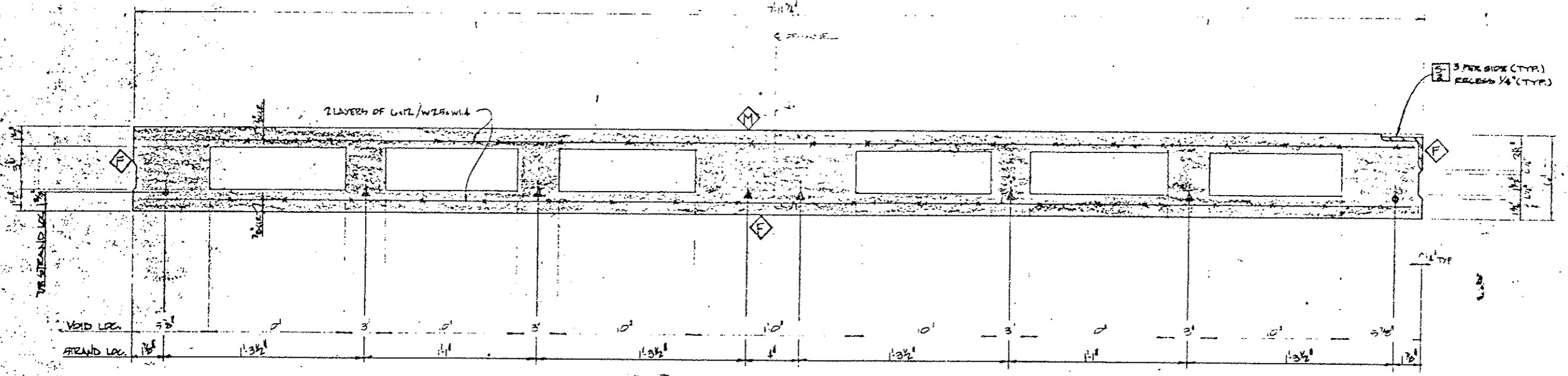
Revision		Date		



1 PLATE DETAIL



2 PLATE DETAIL



TYP SECTION THRU CLG. PRL.
 (TYP. PANEL W/ NO OPENINGS)
 NOTE:
 ○ = 1/2" φ STRAND
 ▲ = 3/8" φ STRAND
 SCALE: 3" = 1'-0"

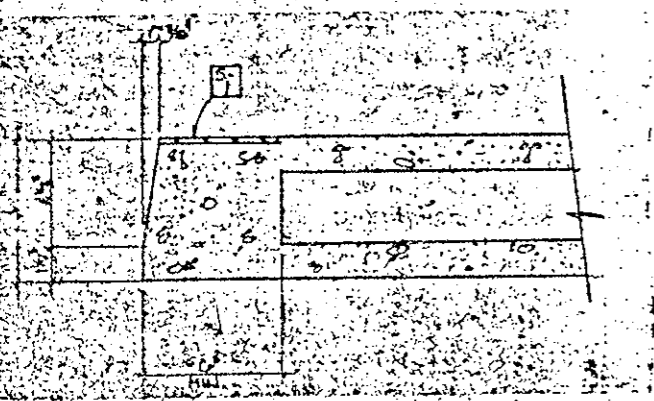
NOTE: ALL VOIDS MAY BE DISCONTINUOUS IN THE LENGTH OF ANY PIECE. THESE INTERMEDIATE DISCONTINUITIES SHALL BE LIMITED TO 2 PER PIECE AND SHALL BE A MAX. OF 6" IN LENGTH.

STRESSING DATA FOR U CLG. PANELS

$A_{ps} = 0.8186 \text{ in}^2$ (2-1/2" φ & 4-3/8" φ) 270# STRAND
 INITIAL PRESTRESS FACTOR = 0.70 fpu
 $E_c = 155 \text{ ksi}$
 $E_{ps} = 125 \text{ ksi}$
 $E_{sh} = 3500 \text{ psi}$
 $F_c = 4200 \text{ psi}$

FINISH SCHEDULE FOR U CLG. PANELS

- ◇ FORM
- ◇ MACHINESCREEN



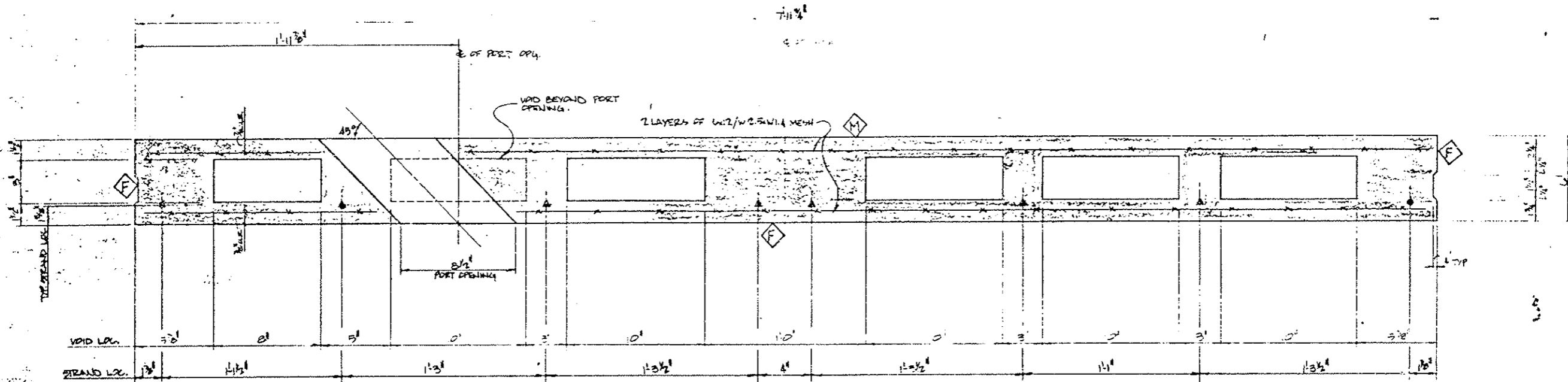
SECTION AT END OF U CLG. PANEL
 TYPICAL AT ALL PANELS

SUBMITTED FOR FINAL APPROVAL MAR 21 1989

APPROVED FINAL
 DATE 1/2/79
 BY Rick Fugella

Stanley Structures
 A Subsidiary of
 The Stanley Works
 1441 Pacific Street
 Denver, Colorado 80202
 (303) 455-4300

Architect:	Engineer:	Checker:	Date:
Colorado Highway Dept.	Wayne G. Gault	R. E. Empey	1-22-79
Customer:	Project:	Scale:	Sheet:
Denver International Airport	Enhancement Tunnel (2nd Floor)	1/2" = 1'-0"	1 of 7
Job Number:	2130		



NOTE:
 PORT SHOWN FOR WEST OF BULLHEAD. ALL PORTS TO THE EAST OF BULLHEAD ARE SLOPED OPPOSITE DIRECTION.

TYP. SECTION THRU C.L.G. PNL.
 (TYP. PANEL w/ PORT OPENING)
 NOTE:
 ●: #11 STRAND
 ▲: #6 STRAND
 SCALE: 3/4"=1'-0"

NOTE:
 ALL VOIDS MAY BE DISCONTINUOUS IN LENGTH OF ANY PIECE. THESE INTERMEDIATE DISCONTINUITIES SHALL BE LIMITED TO 2 PER. FEET AND SHALL BE A MAX. OF 6" EA. IN LENGTH.

SUBMITTED FOR FINAL APPROVAL
 MAR 21 1979
 DATE

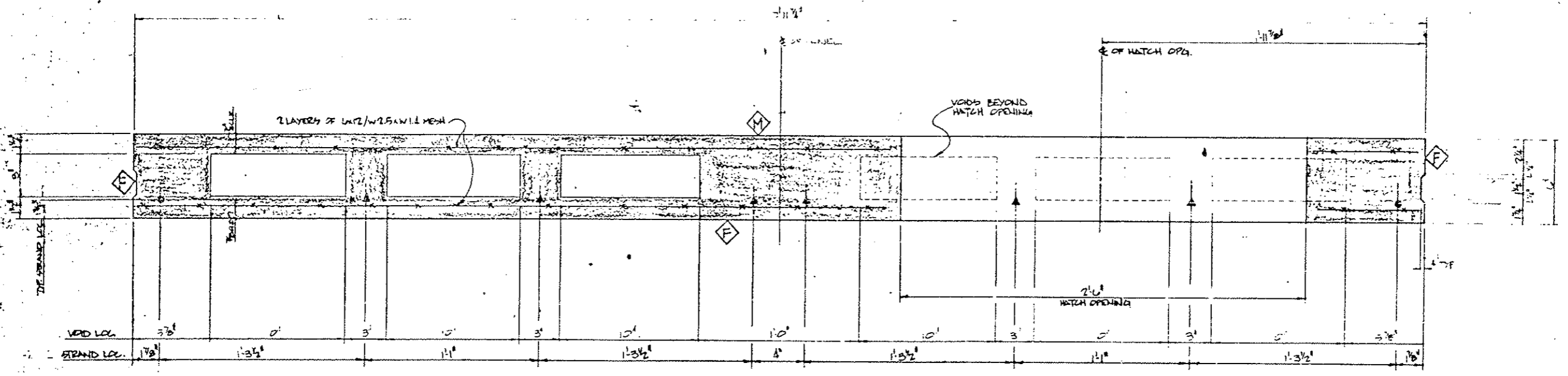
APPROVED FINAL
 DATE 4/2/79
 BY *Rich Reynolds*

Stanley Structures
 A Subsidiary of
 5801 Peros Street
 Denver, Colorado 80211
 (303) 467-8411

Architect	Colorado Highway Dept.	Est. 750
Engineer	HEAVER CONSULTING	Est. 64
Project Leader	TOM BOHNER	Est. 64
Drawn by	W. J. ENYER	Est. 64
Date	1-22-79	215

TYP. SECTION THRU C.L.G. PNL.
 (TYP. PANEL w/ PORT OPENING)
 Structure: EXPLOSION TUNNEL (2nd BOLE)
 Location

Sheet Number	2 of 7
Job Number	2138



TOP SECTION THRU C44 PANEL
 (TYP. PANEL W/ HATCH OPENING)

NOTE:
 ● 1/2" STRAND
 ▲ 3/8" STRAND
 SCALE: 3"=1'-0"

NOTE:
 ALL VOIDS MAY BE DISCONTINUOUS IN THE LENGTH OF ANY PIECE THESE INTERMEDIATE DISCONTINUITIES SHALL BE LIMITED TO 2 PER PIECE AND SHALL BE A MAX. OF 6" EA. IN LENGTH.

SUBMITTED FOR FINAL APPROVAL
 MAR 21 1979

APPROVED FINAL
 DATE 4/2/79
 BY *R. J. ...*

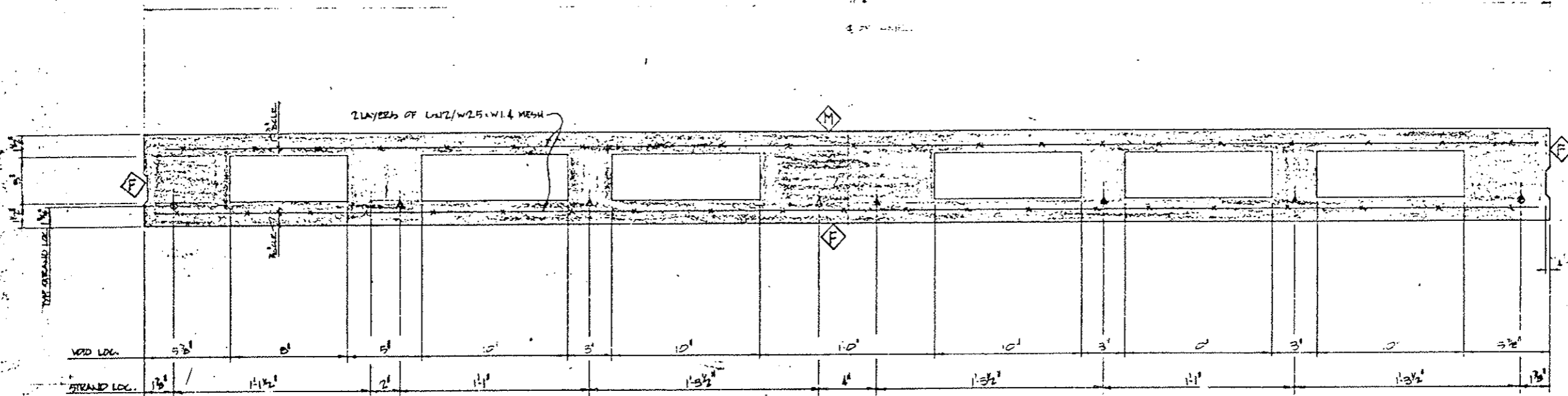
Stanley Structures
 A Subsidiary of
 The Stanley Works
 1801 Peck Street
 Columbus, Ohio 43221
 (603) 454-4301

Architect	Engineer	Customer	Project Leader	Drawn	Date
	COLLEGGIO HIGHWAY DEPT.	WEAVER CORP.	JOY ROSS	E. EYSTER	1-22-78
Checked	Est.	9/15	9/15	9/15	9/15
BY	BY	BY	BY	BY	BY

TOP SECTION THRU C44 PANEL
 (TYP. PANEL W/ HATCH OPENING)
 Structure: EMBROIDERY TUNNEL (2" BOWLE)
 Location:

Sheet Number	3 of 7
Job Number	2138

93 DK



Typ. Section Thru Gg. Pnl.
(Typ. Transition Panel)

NOTE:
 8" x 8" STRAND
 4" x 8" x 8" STRAND
 SCALE: 3" = 1'-0"

NOTE: ALL VOIDS MAY BE DISCONTINUOUS AT THE LENGTH OF ANY PIECE. THESE INTERMEDIATE DISCONTINUITIES SHALL BE LIMITED TO 2 PER PIECE AND SHALL BE A MAX. OF 6" EA. IN LENGTH.

SUBMITTED FOR FINAL APPROVAL
 DATE: MAR 21 1979

APPROVED FINAL
 DATE: 4/2/79
 BY: *[Signature]*

Stanley Structures
 A Subsidiary of
 The Stanley Works
 1601 Pecos Street
 Denver, Colorado 80231
 (303) 454-0301

Architect	Engineer	Colorado Highway Dept.	EA 200
Customer	Project Leader	Customer: HEAVY CONCRETE	EA 200
Drawn	Checked	Drawn: E. E. ...	Checked: ...
Date	Date	Date: 1-24-79	Date: 3/16/79

Typ. Section Thru Gg. Pnl.
(Typ. Transition Panel)

Structure: OVERFLOW TRAPEZOID (7-55 SCALE)

Sheet Number: 4 of 7
 Job Number: 2135

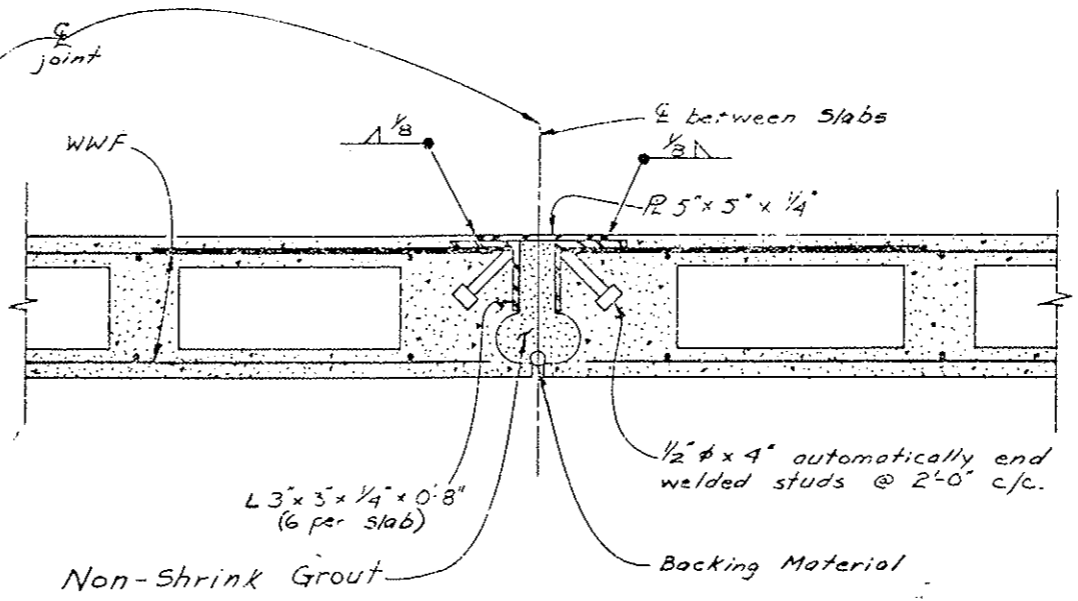
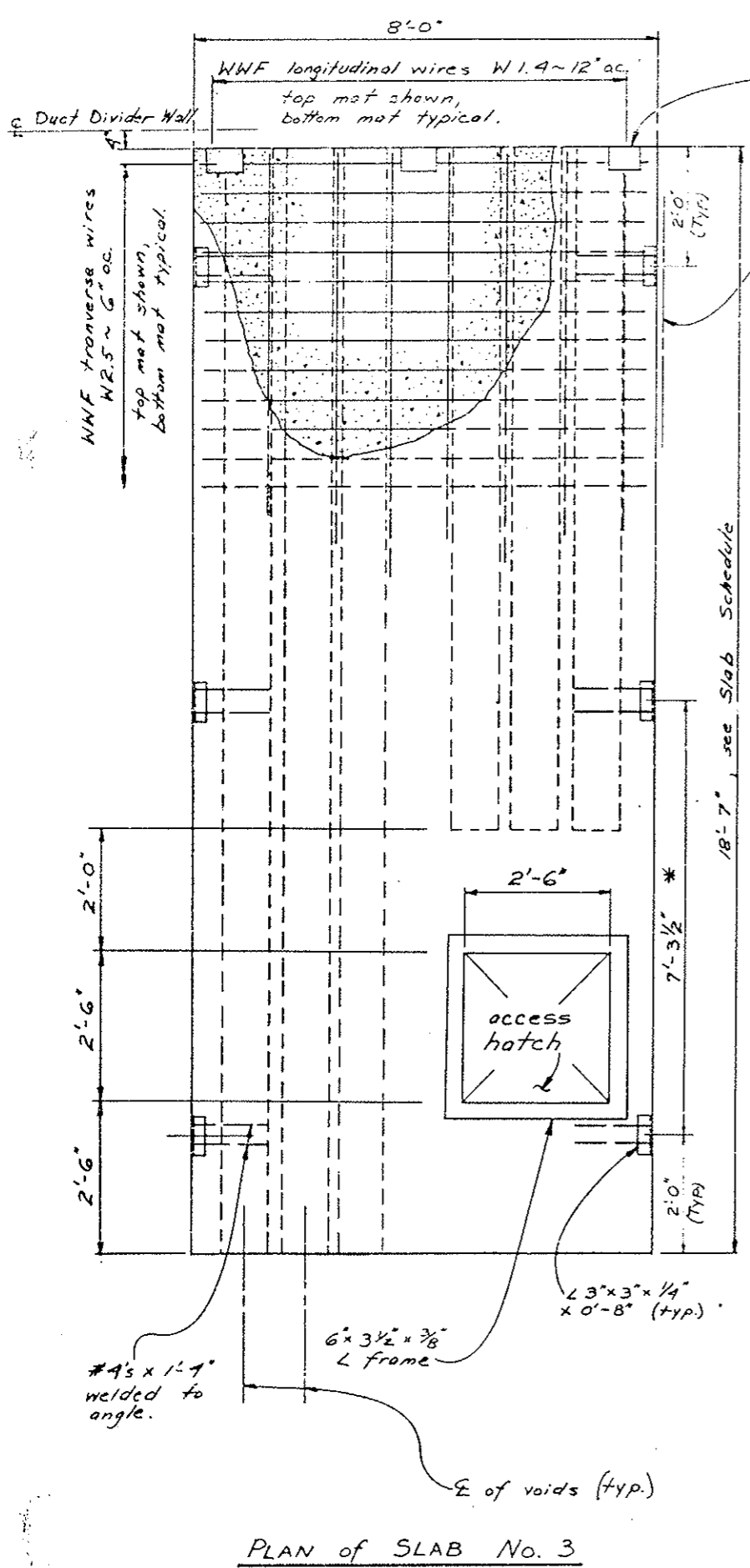
DATE	CHECKED BY	DATE	CHECKED BY
5-77	W.P.	5-77	W.P.
5-77	W.P.	5-77	W.P.
5-77	W.P.	5-77	W.P.

AS CONSTRUCTED

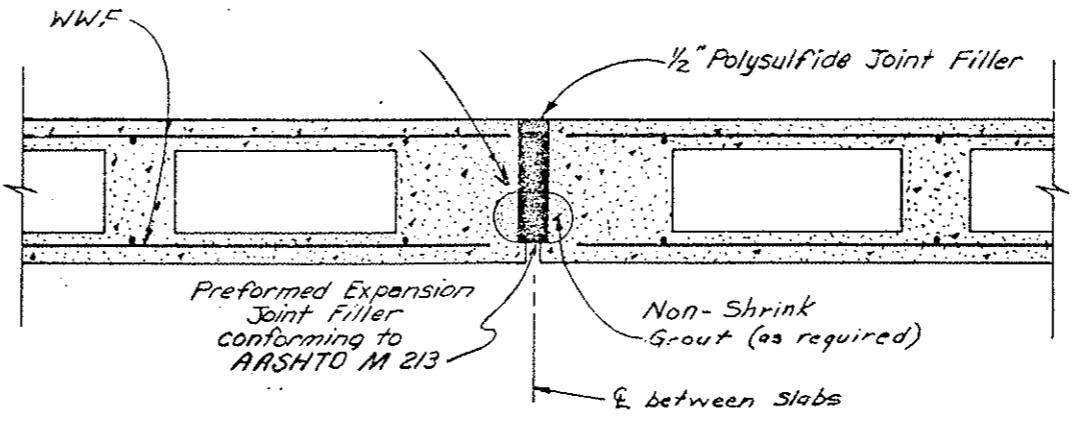
NO REVISIONS REVISED VOID

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
3031	COLORADO	170-3(83)220	9-4	

REVISIONS	



TYPICAL JOINT Note: Keyway Section on Sheet No. 93 AX
Alternate Detail as Approved



TYPICAL EXPANSION - CONTRACTION JOINT 20'-0" c/c
Alternate Detail as Approved

DETAIL (C8/A)

* 6'-4 1/2" for Supply Slabs

Slab No.	L (feet)	A (Concrete) (in ²)	S (Concrete) (in ³)	V (%)	F _i (KIPS)	C _i	F _f (KIOS)	C _f	Concrete Strength	
									f' _{ci} (PSI)	f' _c (PSI)
1 Exhaust	18'-7"	365	505	36	141	0.65	110	0.50	4000	4000
2 Exhaust	18'-7"	350	460	39	153	0.64	119	0.50	4000	4000
3 Exhaust	18'-7"	256	348	56	142	0.67	110	0.52	4200	4200
1 Supply	16'-9"	365	505	36	141	0.65	110	0.50	4000	4000
2 Supply	16'-9"	350	460	39	155	0.65	119	0.50	4000	4000

PRESTRESSING NOTES

A MINIMUM OF TACK WELDING ON REINFORCING STEEL MAY BE PERMITTED WHEN APPROVED BY THE ENGINEER.

CUT ALL STRANDS FLUSH WITH THE SLAB ENDS UNLESS OTHERWISE NOTED.

USE STRESS-RELIEVED STRANDS. F_s = 270 KSI. ALTERNATE STRANDS ARE LOW-RELAXATION STRANDS MEETING THE REQUIREMENTS OF ASTM-A416-68 GRADE 270.

IF LOW-RELAXATION STRANDS ARE USED, THE NET COMPRESSIVE STRESS IN THE CONCRETE AFTER ALL LOSSES SHALL BE AT LEAST AS LARGE AS THAT PROVIDED BY THE STRESS-RELIEVED STRANDS. ALSO THE ULTIMATE STRENGTH OF THE SLAB WITH THE LOW-RELAXATION STRANDS SHALL MEET THE REQUIREMENTS OF THE APPLICABLE AASHTO SPECIFICATIONS.

INITIAL PRESTRESS FORCE: THE JACKING FORCE PER SLAB INCLUDING ALL LOSSES
F_i = $\frac{A_s}{C_i} \times F_s \times A_s$

FINAL PRESTRESS FORCE: THE FORCE REMAINING PER SLAB AFTER ALL LOSSES
F_f = $\frac{C_f}{C_i} \times F_i$

A_s = AREA OF PRESTRESSING STEEL
F_s = ULTIMATE STRENGTH OF PRESTRESSING STEEL

CONCRETE STRENGTH: f'_{ci} - IS AT TIME OF RELEASE OF PRESTRESS FORCE.
f'_c - IS AT 28 DAYS.

CLEARANCE: THE MINIMUM DISTANCE BETWEEN GROUPS OR INDIVIDUAL STRANDS IS 1-3/4" (MEASURED BETWEEN CENTERS OF ADJACENT STRANDS).

DESIGN ASSUMES:
AREA OF 8" WIDE SLAB = A
SEC. MOD. = S
% VOID = V

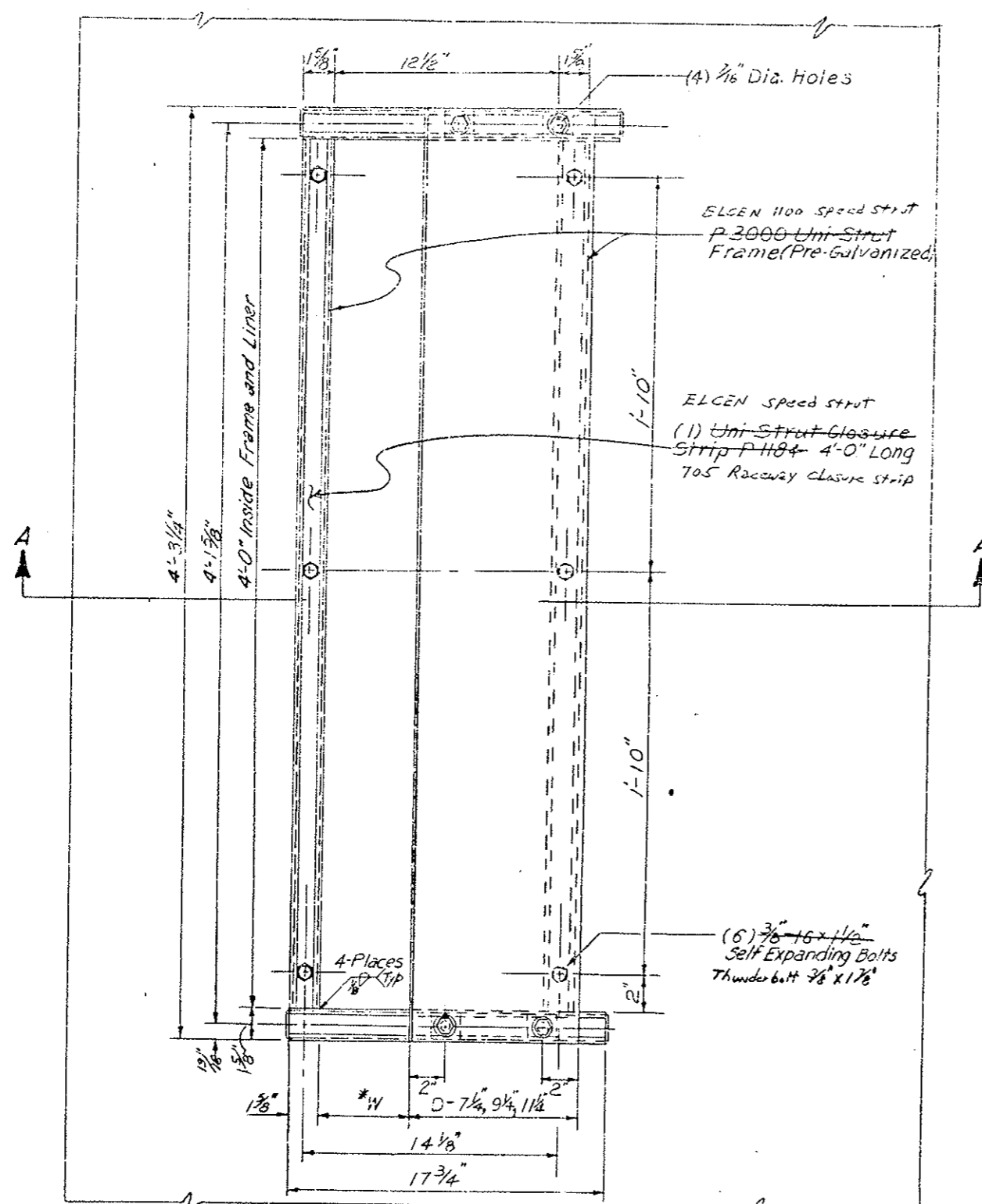
▲ THE LENGTHS OF SLABS FROM STA. 37+00.4 (WEST VENT BLDG.) TO STA. 40+82.43 (BEGIN SEGMENT 55) AND FROM STA. 121+22.43 (END SEGMENT 5164) TO STA. 123+74.6 (EAST VENT BLDG.) WILL VARY FOR LENGTHS SEE SHEET NOS. C-17, C-25.

DIVISION OF HIGHWAYS

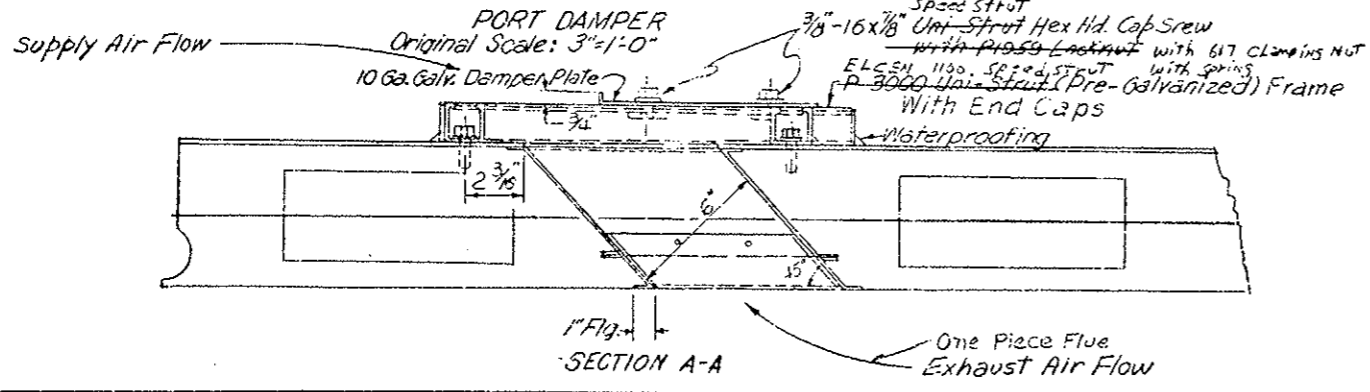
6" HOLLOW CORE PRESTRESSED CEILING SLAB DETAILS

Designer C.D.M. Structure F-13-X
Detailer W.R. HESSLER Number
Drawing Number C-9

Revision Dates	(Preliminary Stage Only)
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PLAN VIEW



DAMPER SETTING REQUIREMENTS

Segment	*W Supply	*W Exhaust	Segment	*W Supply	*W Exhaust
1-2	3 1/2"	2 7/8"	85-86	6 1/8"	8 1/2"
3-4	3 1/2"	2 7/8"	87-88	6 1/8"	8 1/2"
5-6	3 3/8"	2 7/8"	89-90	6 1/2"	8"
7-8	4 1/8"	2 7/8"	91-92	6 3/8"	7 7/8"
9-10	4 3/4"	2 7/8"	93-94	6 5/8"	7 3/4"
11-12	4 13/16"	2 13/16"	95-96	6 11/16"	7 1/2"
13-14	5 1/8"	3"	97-98	6 3/4"	7 3/8"
15-16	5 3/8"	3 1/8"	99-100	6 7/8"	7 1/8"
17-18	5 9/16"	3 1/2"	101-102	7"	6 7/8"
19-20	5 1/4"	3 1/4"	103-104	7 1/16"	6 11/16"
21-22	6"	3 3/8"	105-106	7 1/4"	6 1/2"
23-24	6 1/4"	3 7/8"	107-108	7 3/8"	6 1/4"
25-26	6 1/2"	3 1/2"	109-110	7 1/2"	6 11/8"
27-28	6 3/4"	3 5/8"	111-112	7 5/8"	5 7/8"
29-30	7"	3 3/4"	113-114	7 3/4"	5 11/8"
31-32	7 1/4"	3 7/8"	115-116	7 7/8"	5 1/2"
33-34	7 1/2"	4"	117-118	8"	5 1/4"
35-36	7 5/8"	4 1/2"	119-120	8 1/8"	5 1/8"
37-38	7 7/8"	4 1/8"	121-122	8 1/8"	4 11/16"
39-40	8"	4 3/8"	123-124	8 3/8"	4 13/16"
41-42	8 1/8"	4 1/2"	125-126	8 3/8"	4 5/8"
43-44	8 3/16"	4 3/8"	127-128	8 1/8"	4 1/2"
45-46	8 3/16"	4 1/16"	129-130	8"	4 3/8"
47-48	8 1/8"	4 1/16"	131-132	7 7/8"	4 1/8"
49-50	8 1/16"	5 1/8"	133-134	7 5/8"	4 1/16"
51-52	8"	5 1/4"	135-136	7 1/2"	4"
53-54	7 7/8"	5 1/2"	137-138	7 1/4"	3 7/8"
55-56	7 3/4"	5 1/16"	139-140	7"	3 3/4"
57-58	7 5/8"	5 7/8"	141-142	6 3/4"	3 3/8"
59-60	7 1/2"	6 1/8"	143-144	6 1/2"	3 1/2"
61-62	7 3/8"	6 1/4"	145-146	6 1/4"	3 7/16"
63-64	7 1/4"	6 1/2"	147-148	6"	3 9/16"
65-66	7 1/16"	6 1/16"	149-150	5 3/4"	3 1/4"
67-68	7"	6 7/8"	151-152	5 9/16"	3 1/16"
69-70	6 7/8"	7 1/8"	153-154	5 3/8"	3 1/16"
71-72	6 3/4"	7 3/8"	155-156	5 1/8"	3"
73-74	6 11/16"	7 1/2"	157-158	4 15/16"	2 5/16"
75-76	6 5/8"	7 3/4"	159-160	4 3/4"	2 7/8"
77-78	6 3/16"	7 7/8"	161-162	4 9/16"	2 7/8"
79-80	6 1/2"	8"	163-164	3 3/8"	2 7/8"
81-82	6 1/16"	8 1/2"	165-166	3 1/2"	2 7/8"
83-84	6 7/16"	8 1/2"	167	3 1/2"	2 7/8"

DAMPER WIDTH REQUIREMENTS

Qty. Req'd	SUPPLY		EXHAUST		
	Segment No.	Damper Width-D	Qty. Req'd	Damper Width-D	
72	S-1 thru S-12 S-157 thru S-167	1 1/4"	297	S-1 thru S-48 S-121 thru S-167	1 1/4"
187	S-13 thru S-28 S-71 thru S-98 S-141 thru S-156	9/4"	112	S-49 thru S-66 S-103 thru S-120	9/4"
262	S-29 thru S-70 S-99 thru S-140	7/4"	91	S-67 thru S-102	7/4"

(R-1) Port frame with damper plate 1021
 Port frame only 28
 (R-1) Port dampers (Pay Quantity) Total 1049

Note: Uni-Strut or approved equal

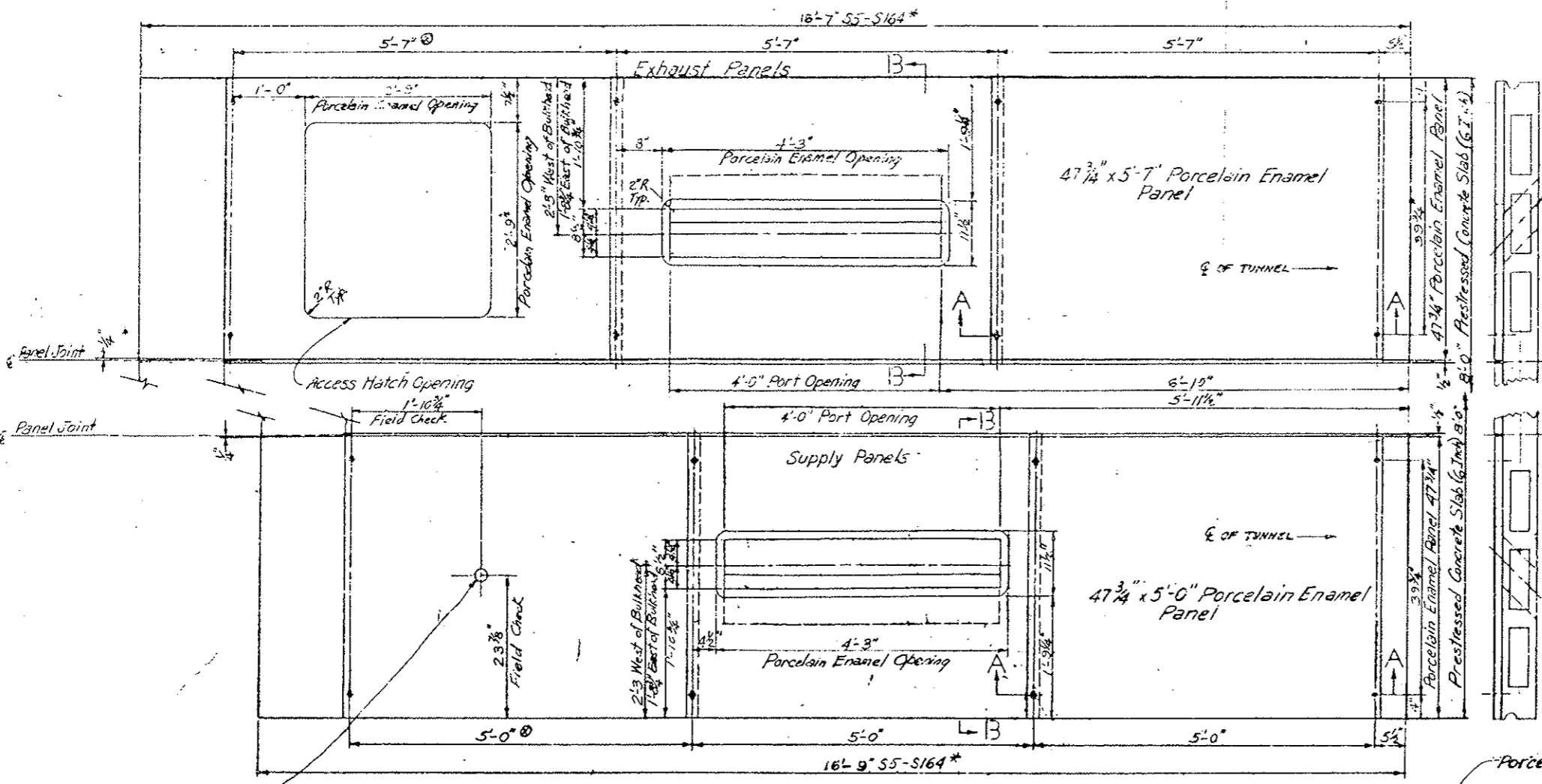
* No Damper Plate Required

DIVISION OF HIGHWAYS

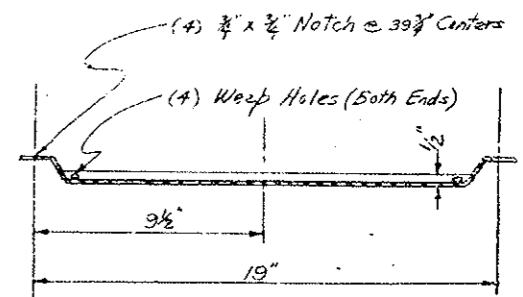
PORT DAMPER ASSEMBLY DETAILS

Designer	Structure
Detailer	Numbers
Drawing Number C-10 of Drawings	

REVISIONS	

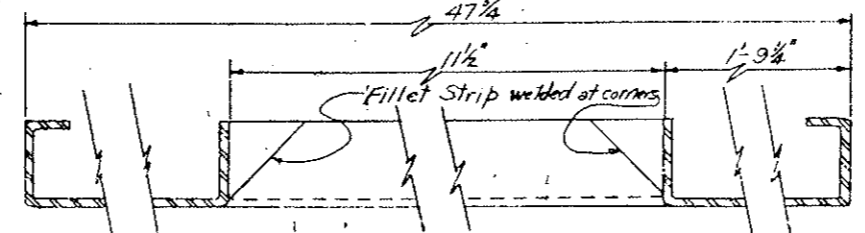


* Ceiling Slab lengths in Transition areas see Dwg. No's. C-17, C-25
 * Porcelain Enamel Ceiling panels located adjacent to the Tunnel Wall to be approximately 2" shorter at the following locations:
 Supply and Exhaust panels Sta. 38+81.43 to 40+32.43
 Supply panels only Sta. 121+22.43 to 122+22.93

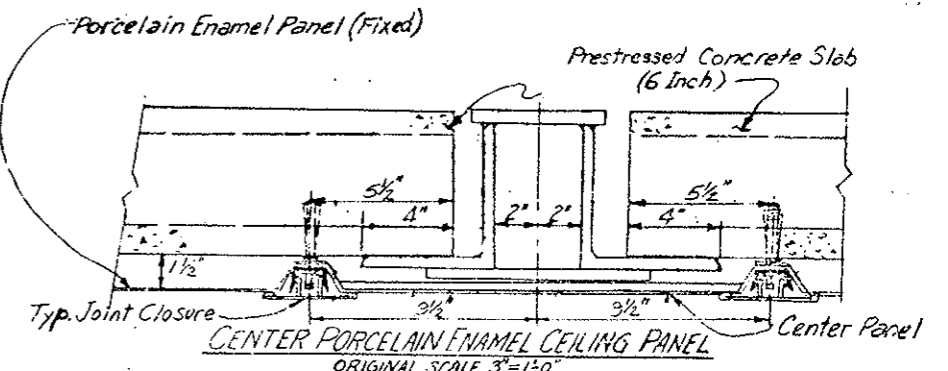


CENTER CLOSURE PANEL DETAIL

Field cut 2 1/8" hole for Message Board Shaft (11 Reyd) ORIGINAL SCALE: 1"=1'-0"
 VIEW OF CEILING FROM BELOW

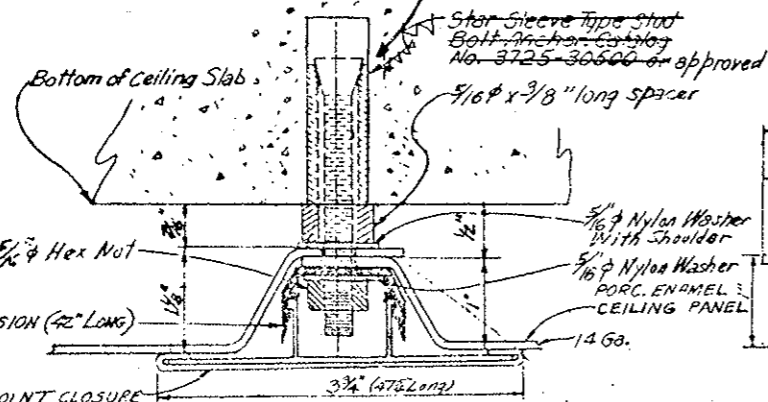


SECTION B-B

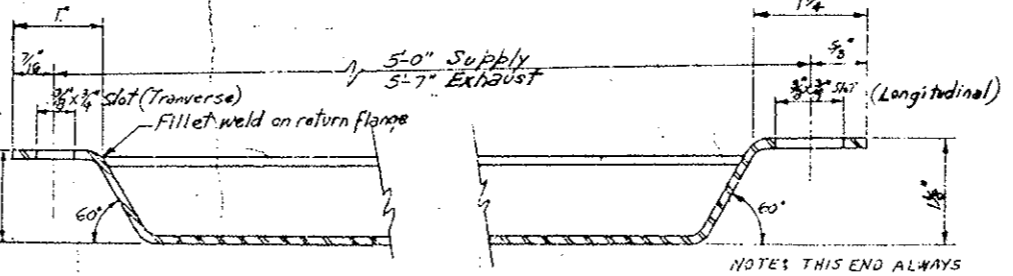


CENTER PORCELAIN ENAMEL CEILING PANEL

NOTE: PORCELAIN ENAMEL PANELS ARE ATTACHED TO BOTTOM OF PRECAST SLABS.



PANEL ATTACHMENT DETAIL
 ORIGINAL SCALE: FULL



SECTION A-A
 ORIGINAL SCALE: FULL

NOTE: THIS END ALWAYS TOWARD CENTER OF TUNNEL AND ALWAYS CLOSEST TO CONCRETE AT A LAPPED CONNECTION. (SEE PANEL ATTACHMENT DETAIL)

DIVISION OF HIGHWAYS
 DETAILS FOR
 ATTACHING PORCELAIN ENAMEL
 PANELS TO PRECAST CONCRETE
 CEILING SLABS

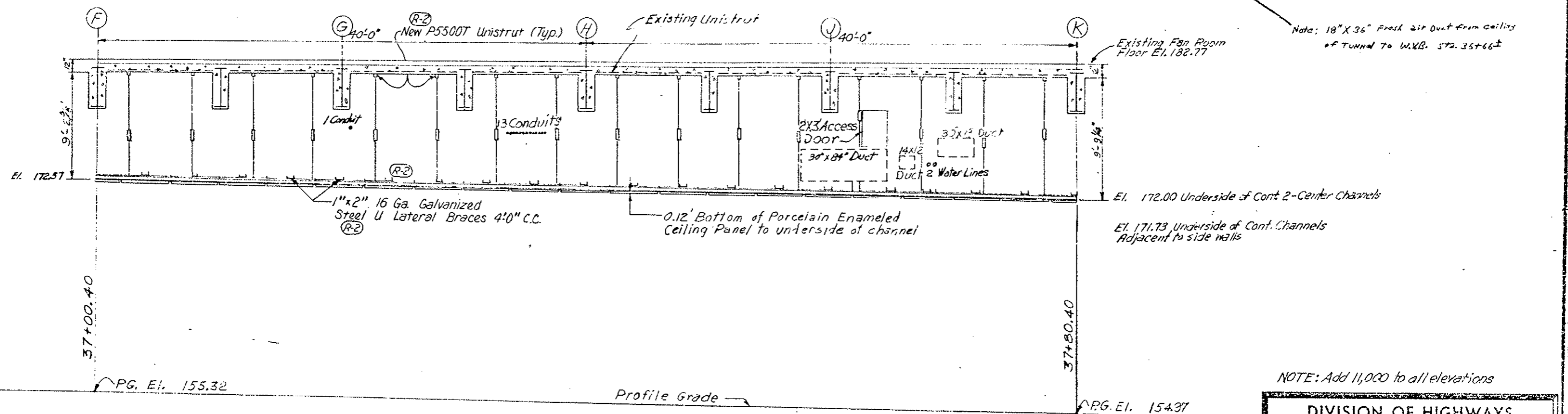
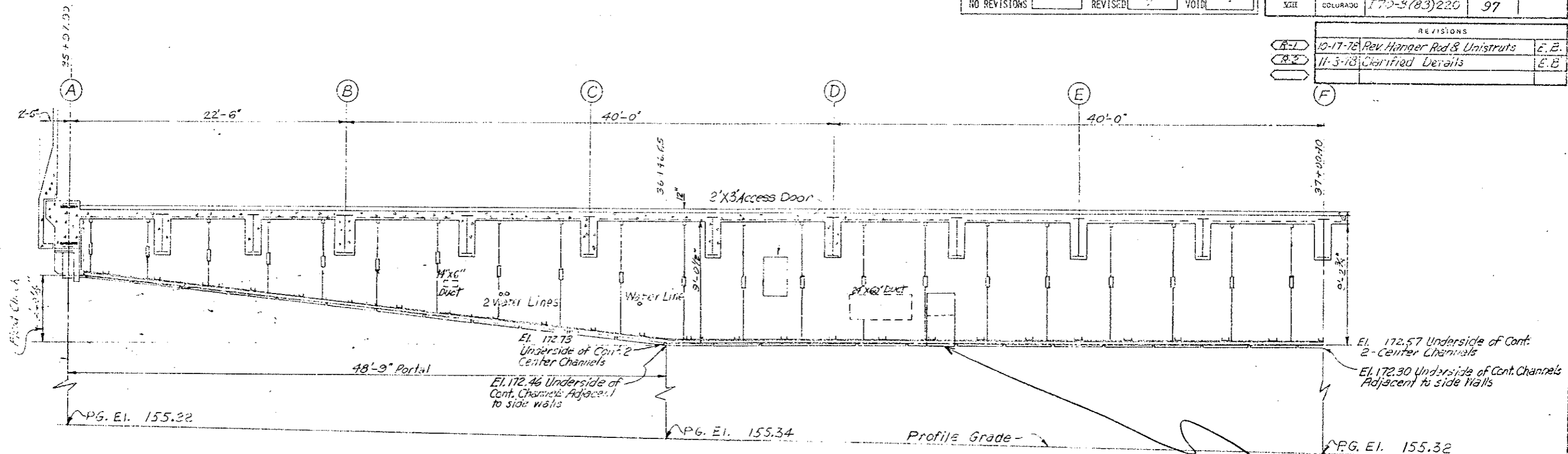
Designer CDOH	Structure
Detailer J. LETCHER/WRTH	Numbers
Drawing Number C-11	of Drawings

DESIGNED BY	CHECKED BY
CHECKED BY	QUANTITIES BY
CHECKED BY	CHECKED BY
DATE	
5/12/75	
INITIAL	
JEL	

AS CONSTRUCTED
 NO REVISIONS REVISED VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-5(83)220	97	

REVISIONS		
R-1	10-17-78 Rev. Hanger Rod & Unistruts	E.B.
R-2	11-3-78 Clarified Details	E.B.



DESIGNED BY	DATE	CHECKED BY
CHECKED BY	DATE	QUANTITIES BY
DESIGNED BY	DATE	CHECKED BY
CHECKED BY	DATE	QUANTITIES BY

NOTE: Add 11,000 to all elevations

DIVISION OF HIGHWAYS

ELEVATION THRU SUSPENDED CEILING

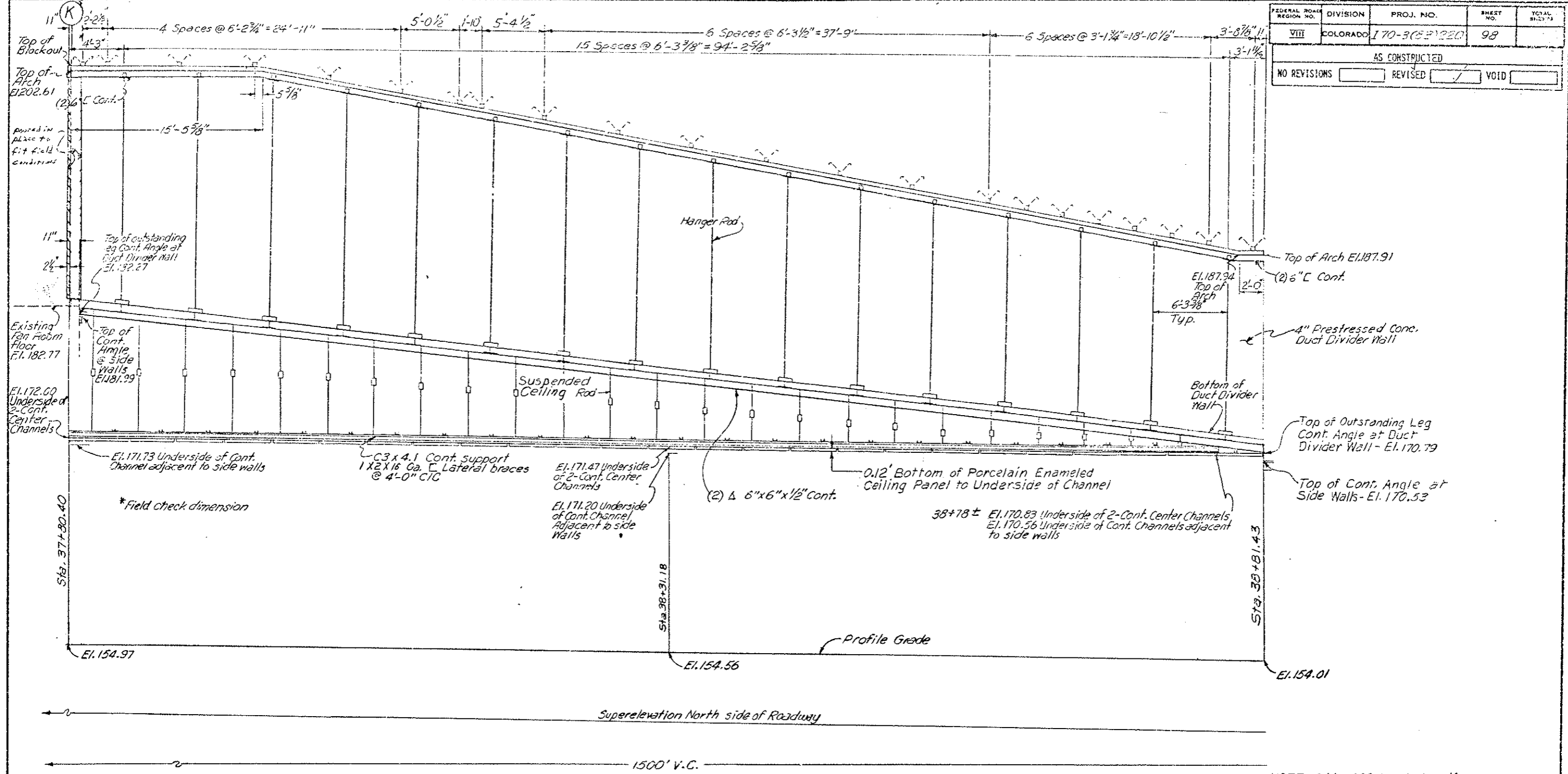
WEST VENTILATION BUILDING

Designer CDOH	Structure
Detailer J. Leichworth	Numbers
Drawing Number C-12	of Drawings

Scale 1" = 4'

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(53)220	98	

AS CONSTRUCTED
 NO REVISIONS REVISED VOID



NOTE: Add 11,000 to all elevations

DIVISION OF HIGHWAYS

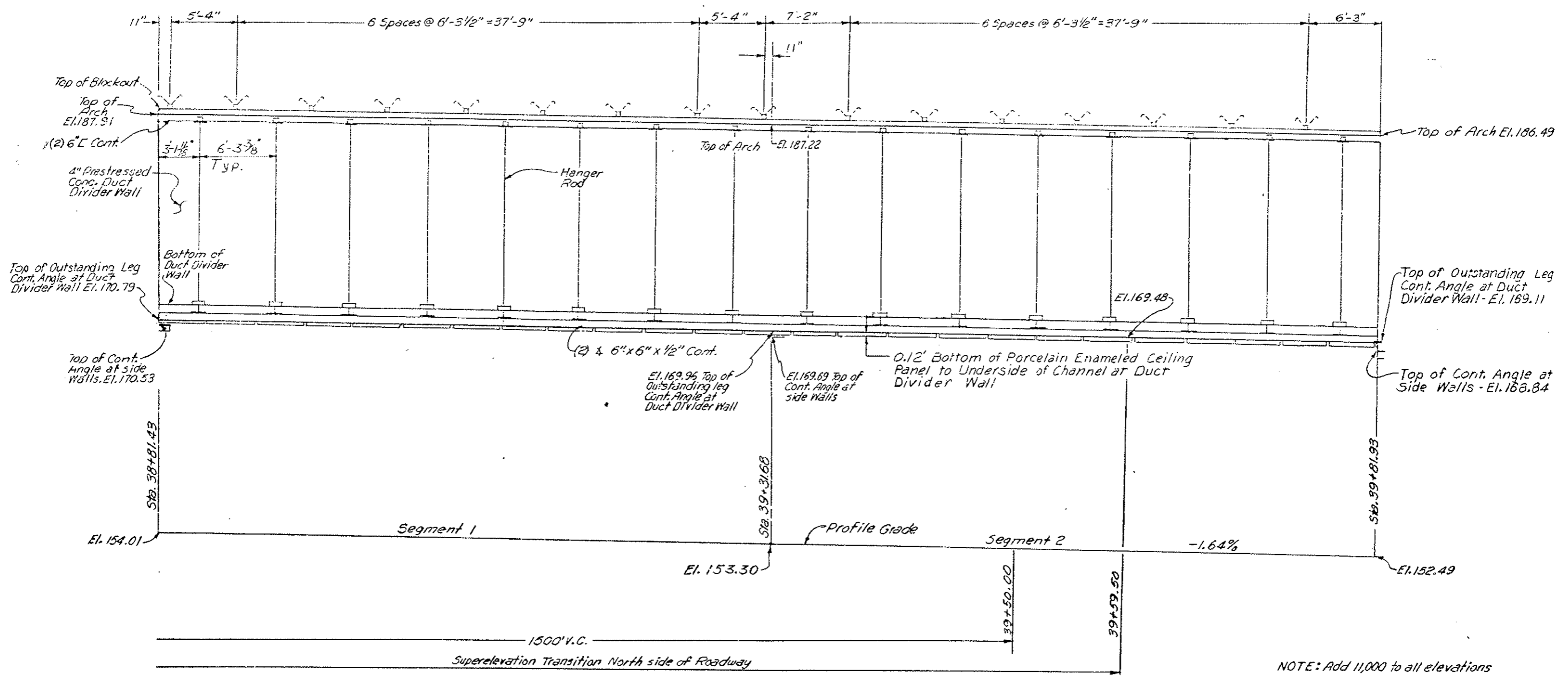
DUCT WALL AND CEILING PROFILE
 WEST TRANSITION AREA
 37+80.40 TO 38+81.43

Designer	Structure	F-13-X
Detailer	Numbers	
Drawing Number	C-13	of Drawings

Scale 1" = 4'

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
55	COLORADO	I 70-3(23)220	99	

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

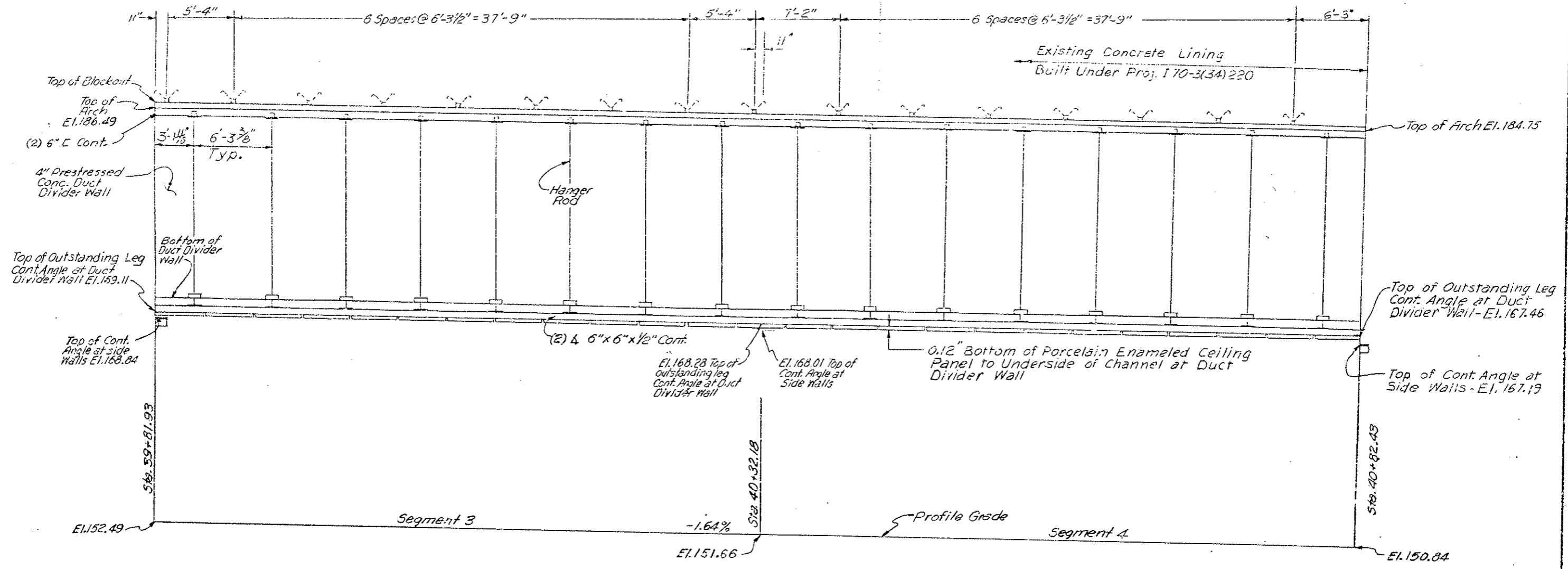


NOTE: Add 11,000 to all elevations

Scale 1" = 4'

DIVISION OF HIGHWAYS	
DUCT WALL AND CEILING PROFILE WEST AREA 38+81.43 TO 39+81.93	
Designer	Structure <i>F-13-X</i>
Detailer	Numbers
Drawing Number <i>C-14</i>	of Drawings

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(33)220	100	
AS CONSTRUCTED				
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID



NOTE: Add 11,000 to all elevations

DIVISION OF HIGHWAYS

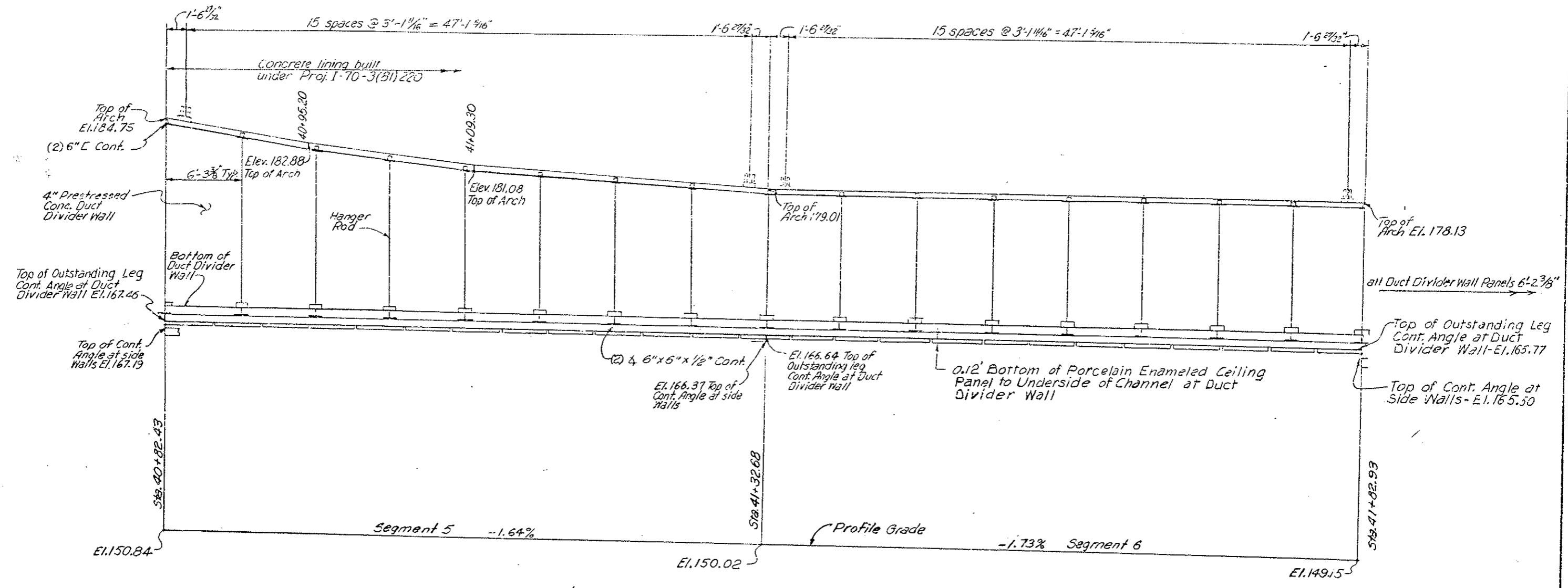
DUCT WALL AND CEILING PROFILE
WEST AREA
39+81.93 TO 40+82.43

Designer	Structure: F-13-X
Detailer	Numbers:
Drawing Number: C-15	of Drawings:

Scale 1" = 4'

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
311	COLORADO	170-3(23)220	101	

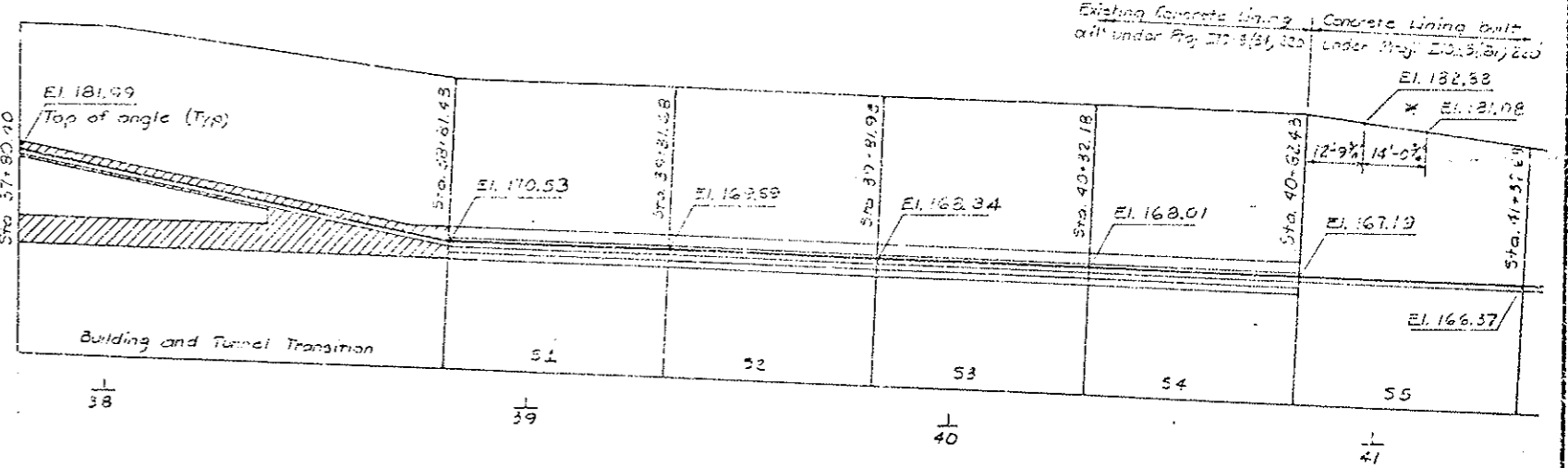
AS CONSTRUCTED
 NO REVISIONS REVISED VOID



NOTE: Add 11,000 to all elevations

DIVISION OF HIGHWAYS	
DUCT WALL AND CEILING PROFILE WEST TRANSITION AREA 40+82.43 TO 41+82.93	
Designer	Structure F-13-X
Detailer	Numbers
Drawing Number C-16	of Drawings

Scale 1" = 4'



SCHEMATIC DIAGRAM - SIDEWALL SUPPORT ANGLE LOCATION
 Elevations + 11,000 ft.

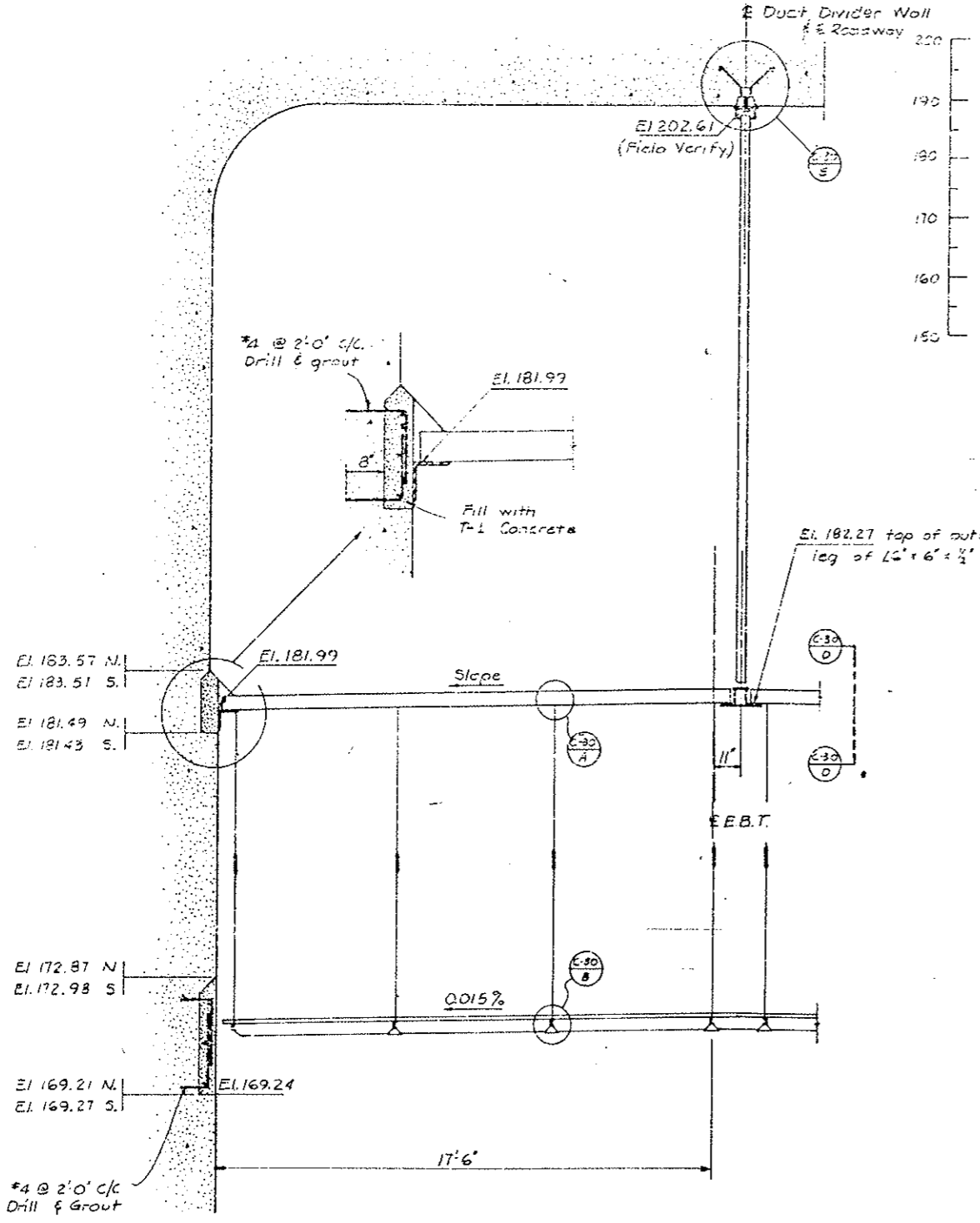
Limits of T-1 Concrete

* The arch transitions from the 18'-0" radius built under Project E70-3(24)220 to the 19'-6" radius built under Project E70-3(81)220 in the 14'-0 1/4" shown.

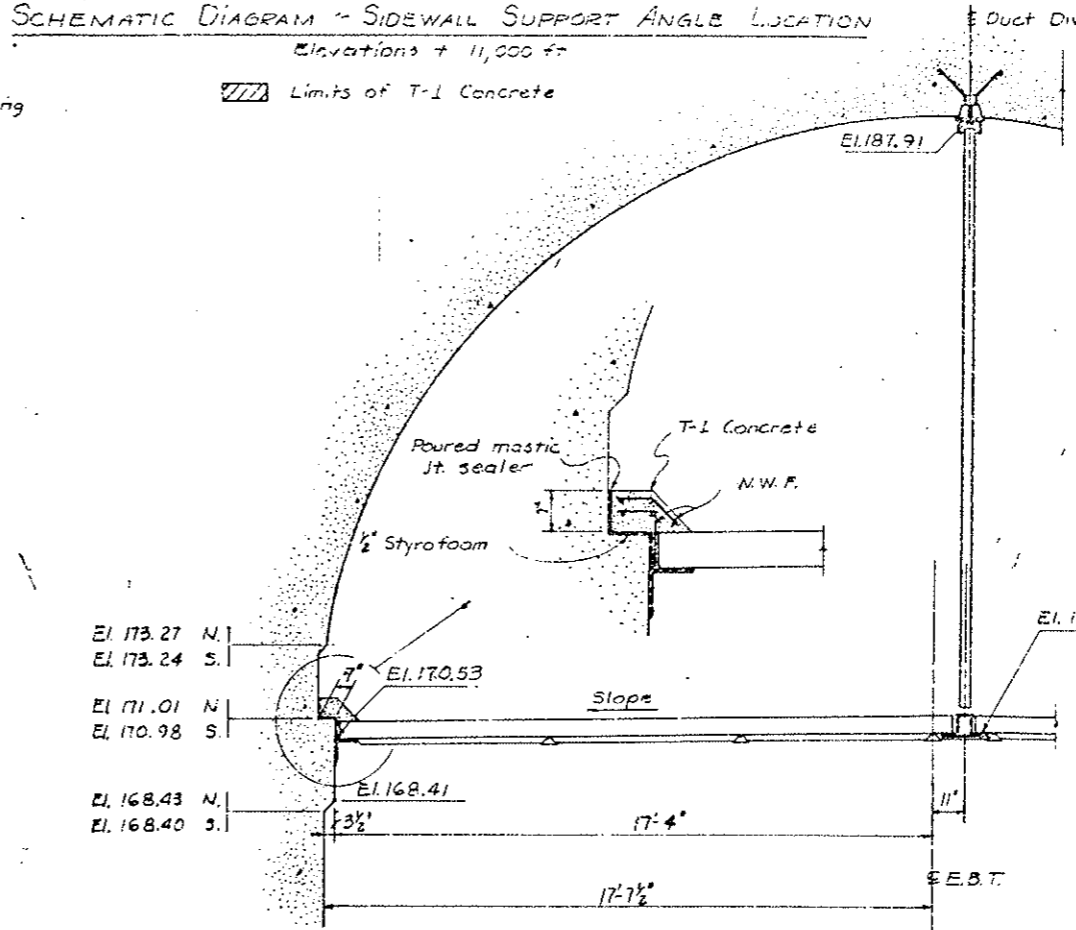
Sidewall Support Angle 8"x8"x 1/2" slopes at +11.34% from Sta. 37+80.4 to Sta. 38+81.4

Sta. to Sta.	Exhaust	Supply
37-80.40	38+44.40	18'-0" 16'-2"
38-44.40	38+81.43	18'-1" 16'-3"
38-81.43	40-32.43	17'-9" 15'-11"

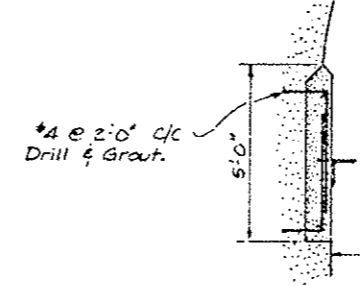
DESIGNED BY	DATE	CHECKED BY	DATE
C.D.O.H.	5-27-77	C.D.O.H.	5-27-77
CHECKED BY	DATE	QUANTITIES BY	DATE
B.R.L.	5-27-77	B.R.L.	5-27-77
DETAILS BY	DATE	CHECKED BY	DATE



SECTION @ STA. 37+80.40 (@ WEST VENT BLDG.)
 Elevations + 11,000 ft.



SECTION @ STA. 38+81.43
 (Tunnel Side)



SECTION @ STA. 38+81.43
 (Transition Side)

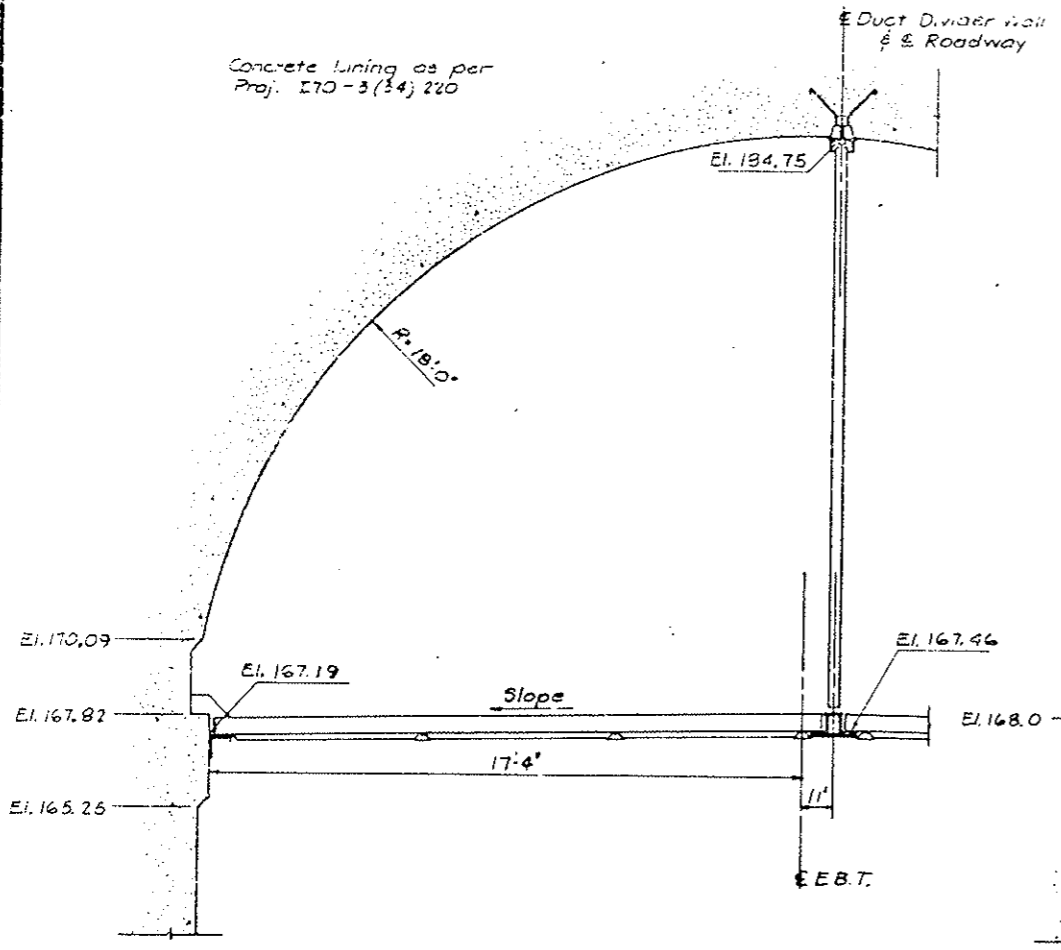
DIVISION OF HIGHWAYS	
WEST TRANSITION AREA	
SECTIONS	
Designer C.D.O.H.	Structure F-13-X
Detailer B.R. Lore	Numbers
Drawing Number C-17	
Revision Dates	(Preliminary Stage Only)

AS CONSTRUCTED
 NO REVISIONS REVIDED VOID

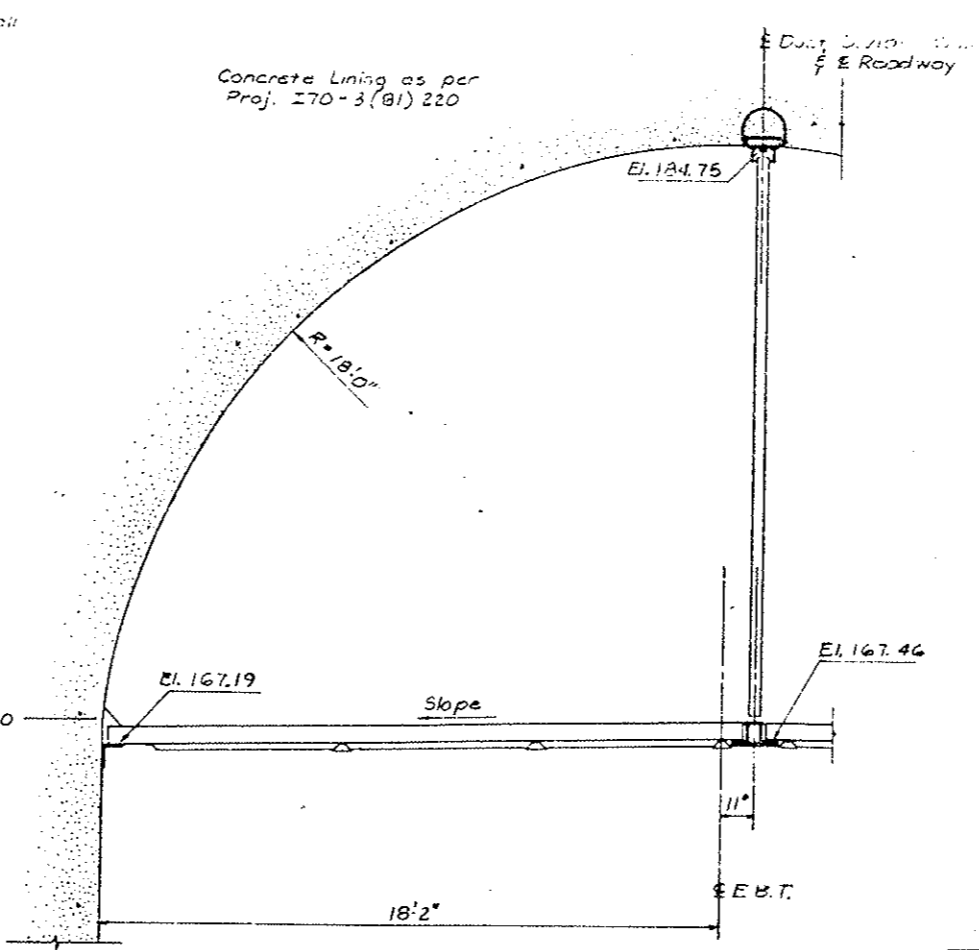
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I70-3(83)220	103	

REVISIONS	

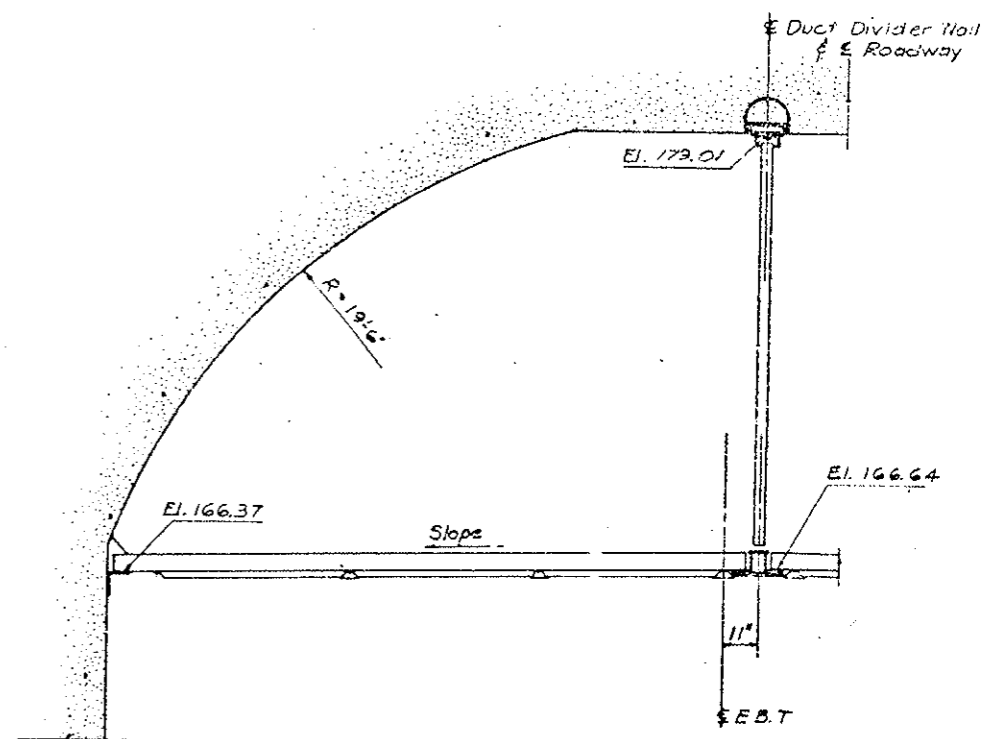
DESIGNED BY	CHECKED BY	DATE	INITIAL
S.P.C.	J.M.P.	9-77	J.M.P.
CHECKED BY <td>QUANTITIES BY <td>DATE <td>INITIAL</td> </td></td>	QUANTITIES BY <td>DATE <td>INITIAL</td> </td>	DATE <td>INITIAL</td>	INITIAL
S.P.C.	M.R.H.	9-77	M.R.H.
DETAILED BY <td>CHECKED BY <td>DATE <td>INITIAL</td> </td></td>	CHECKED BY <td>DATE <td>INITIAL</td> </td>	DATE <td>INITIAL</td>	INITIAL
S.P.C.	P.S.C.	9-78	P.S.C.
		9-78	



SECTION @ STA. 40+82.43
 (End Segment 54)



SECTION @ STA. 40+82.43
 Elevations +11,000 ft.
 (Begin Segment 55)



SECTION @ STA. 41+32.68
 (Tunnel Side)

DIVISION OF HIGHWAYS

WEST TRANSITION AREA

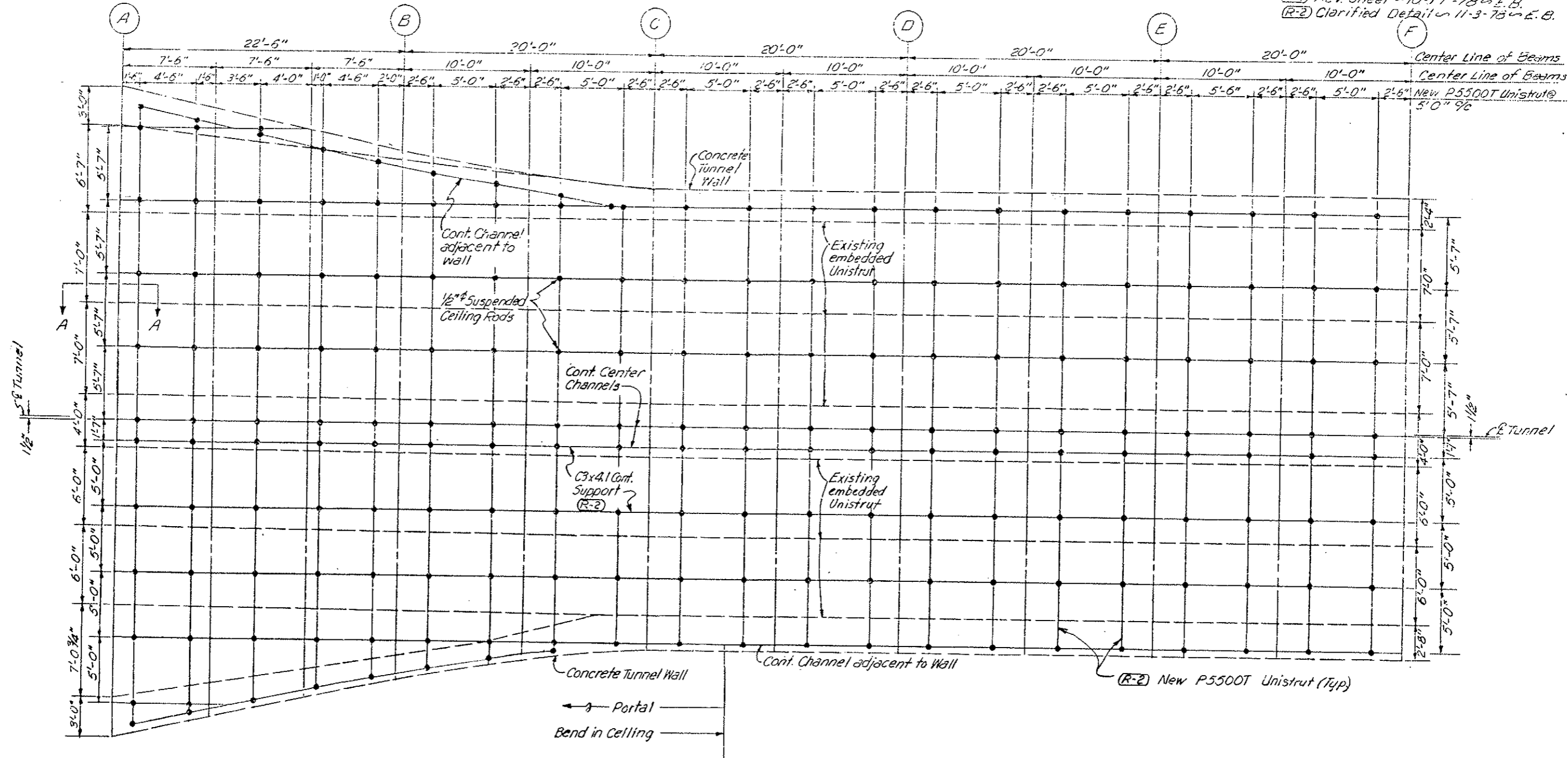
SECTIONS

Designer	C.D.H.	Structure	F-13-X
Detailer	B.R. Lore	Numbers	
Drawing Number C-18			

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	104	

AS CONSTRUCTED
 NO REVISIONS REVISED VOID

(R-1) Rev. Sheet 10-17-78 in E.B.
 (R-2) Clarified Detail 11-3-78 in E.B.



NOTE: See Contractors Final Approved Shop Drawings
 Sheets No. 104 AX thru 104 GX.

Note: Suspended ceiling rod spacing may vary due to slope and horizontal curvature. Suspended ceiling rods in building to be attached to ceiling in a manner that will not conflict with existing facilities.

See Section A-A on Plan Sheet for East Ventilation Building

DIVISION OF HIGHWAYS	
PLAN THRU SUSPENDED CEILING WEST VENTILATION BUILDING	
Designer:	Structure Numbers:
Detailer:	
Drawing Number C-19	of Drawings

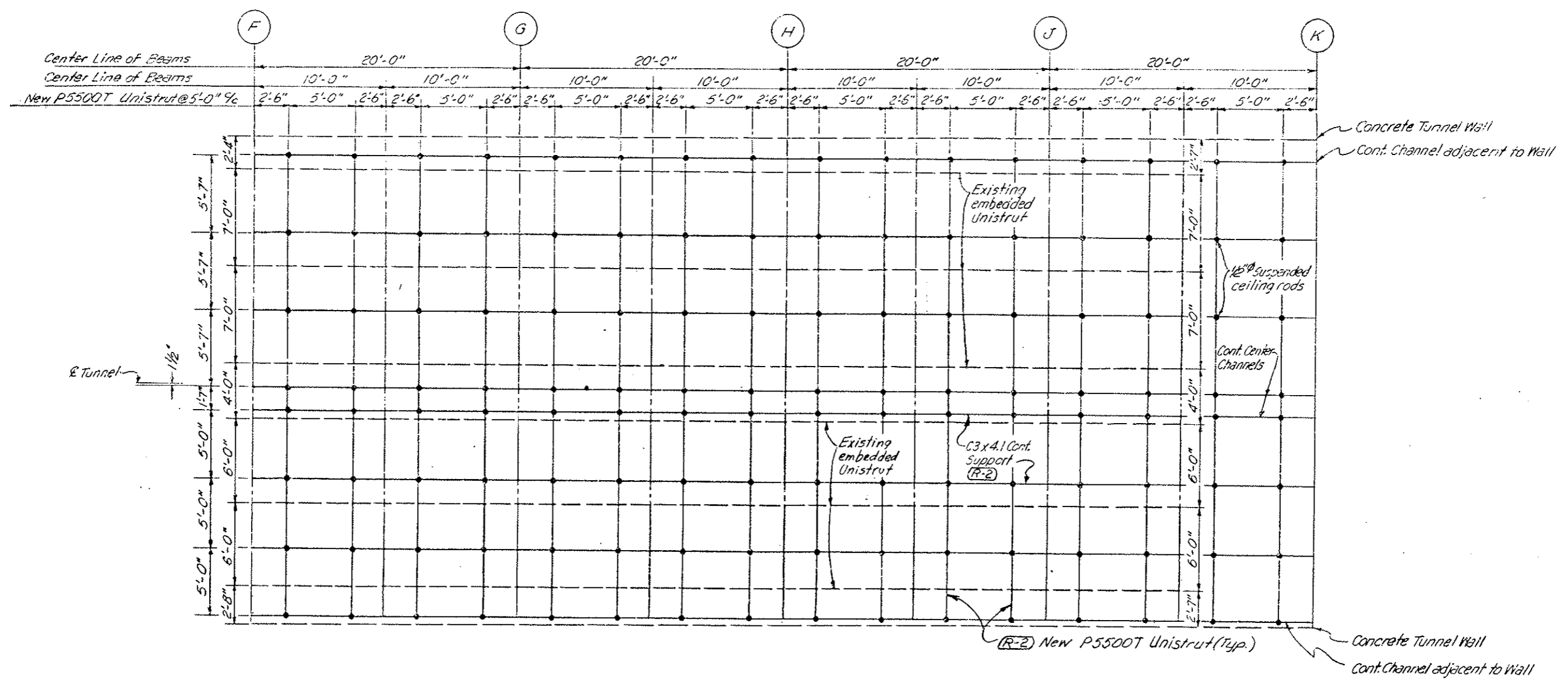
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	170-3(83)220	104X	

AS CONSTRUCTED

NO REVISIONS REVISED VOID

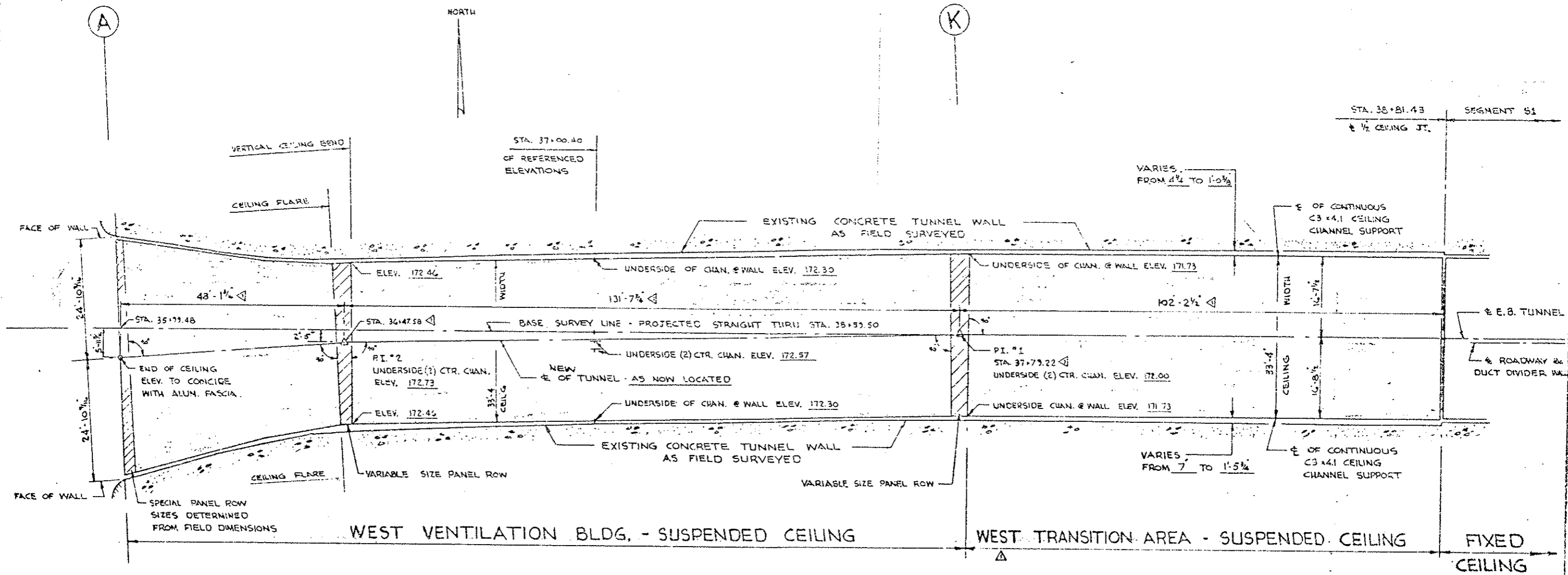
(R-1) Added Sheet 10-17-78 E.B.

(R-2) Clarified Detail 11-3-78 E.B.



NOTE: See Contractors Final Approved Shop Drawings
Sheets No. 104 BX thru 104 GX.

DIVISION OF HIGHWAYS	
PLAN THRU SUSPENDED CEILING WEST VENTILATION BUILDING	
Designer	Structure Numbers
Detailer	
Drawing Number C-19X	of _____ Drawings

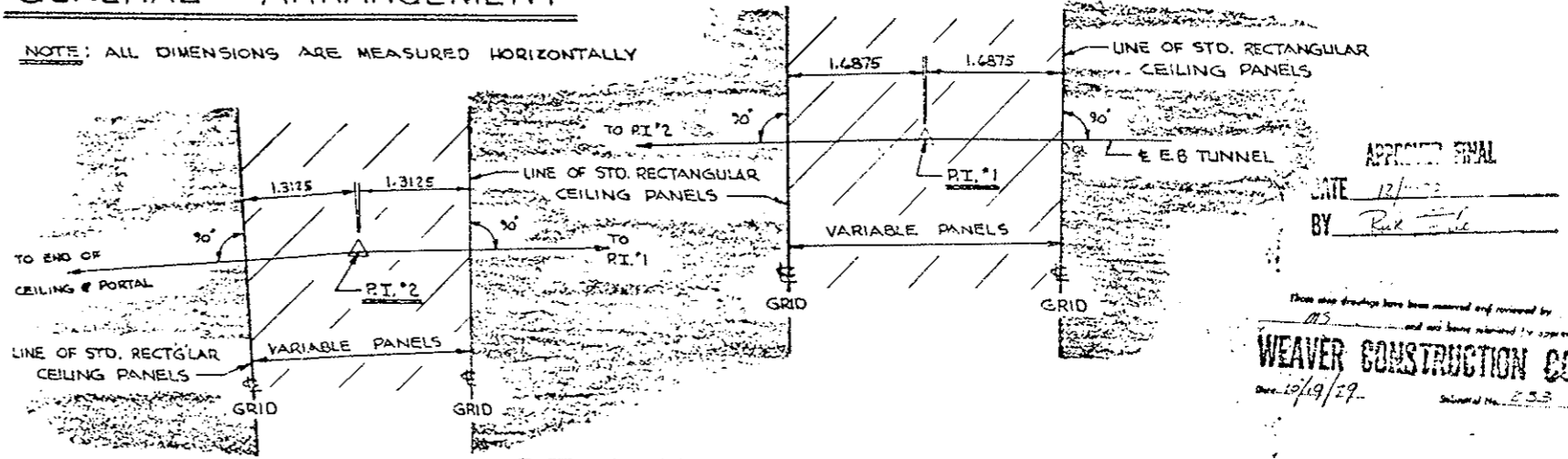


NOTES:

- | | |
|--|--|
| 1. CEILING PANELS | - SAME AS PREVIOUSLY APPROVED FOR FIXED CEILING. |
| 2. SOUND DEADENING | - SHOP APPLIED TO BACK OF CEILING PANELS (SUSPENDED) |
| 3. C3x4.1 CHANNEL & 1/2 GA LATERAL BRACING | - CONFORM TO ASTM A-36, GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A-123 |
| 4. THREADED HANGER RODS | - CONFORM TO ASTM A-36, CADMIUM PLATED IN ACCORDANCE WITH ASTM A-165 |
| 5. NUTS, BOLTS, & WASHERS | - CONFORM TO ASTM A-307 GRADE A, CADMIUM PLATED IN ACCORDANCE WITH ASTM A-165. |
| 6. NEW "SPEED STRUT" | - FURNISHED IN STOCK LENGTHS - ELECTRO-GALVANIZED |
| 7. EXTRUDED ALUMINUM RETAINER & COVER | - SAME AS PREVIOUSLY APPROVED FOR FIXED CEILING. |
| 8. FIELD TOUCH-UP | - ALL MATERIALS CUT TO SIZE IN THE FIELD MUST BE COATED WITH A ZINC-RICH APPROVED PAINT, SPEC. MIL-P21035. |

GENERAL ARRANGEMENT

NOTE: ALL DIMENSIONS ARE MEASURED HORIZONTALLY



P.I. LAYOUTS

**EISENHOWER MEMORIAL TUNNEL
2ND. BORE PROJECT NO. I 70-3(83)220**

WEAVER CONSTRUCTION CO
2115 SOUTH VALENTIA ST.
DENVER, COLORADO 80231

Jemrec, Inc.
Corrosion Control Coatings



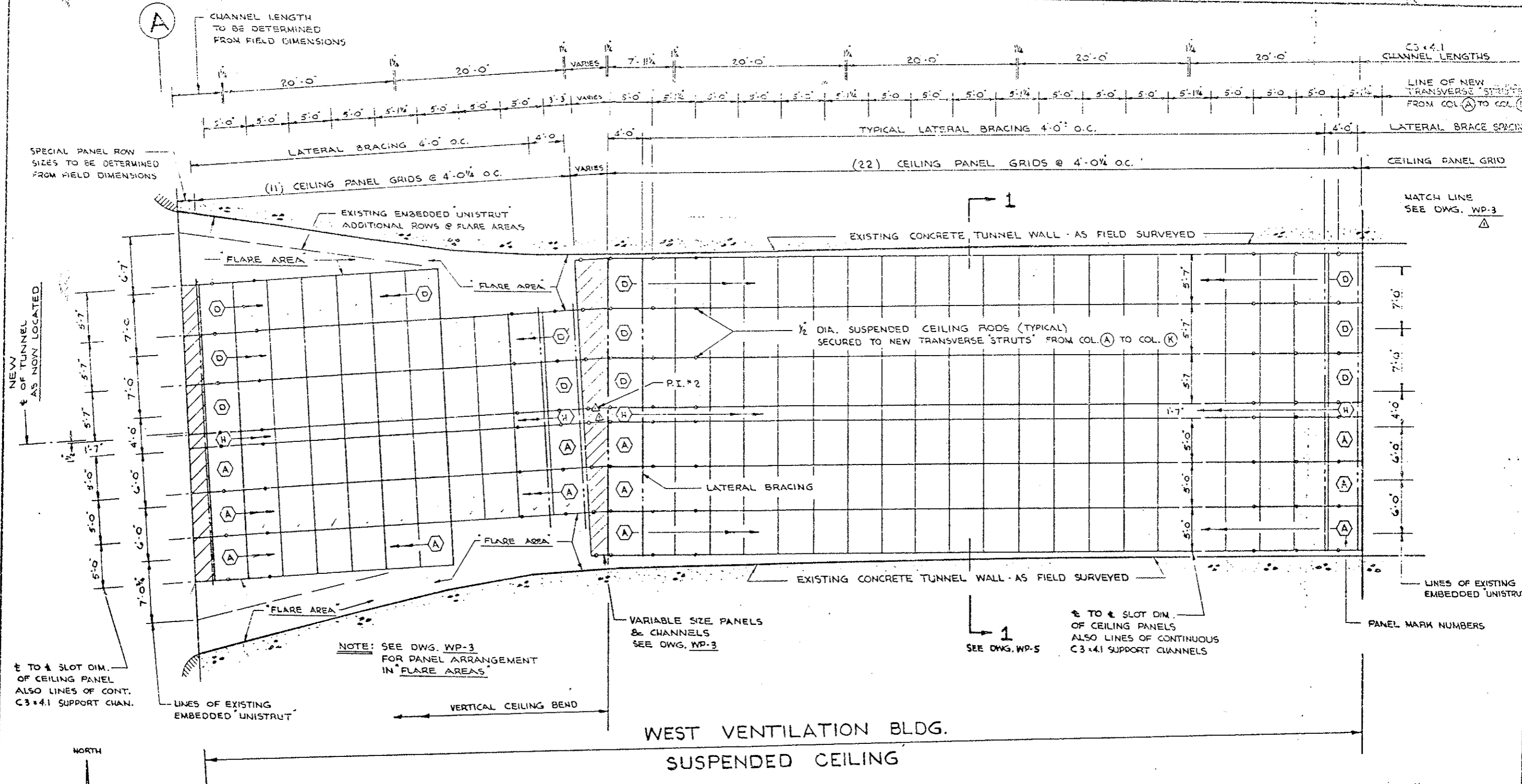
P.O. BOX 369 KENSINGTON, MD. 20795

NUMBER	DATE	REVISIONS	DATE
Δ	9-14-73	PI. STA. MOVED - HORIZ. DIM. CHANGED NOTE CHANGED - ADD PI. LAYOUTS.	7 JUNE 1973
			DRAWN: L.K.
			CHECKED:
			SCALE: 1" = 10'

**SUSPENDED CEILING
WEST PORTAL AREA**

WP-1

SHEET 1 OF 7



WEST VENTILATION BLDG.
SUSPENDED CEILING

NOTE: ALL DIMENSIONS ARE MEASURED HORIZONTALLY

TO SLOT DIM. OF CEILING PANEL ALSO LINES OF CONT. C3x4.1 SUPPORT CHAN.

NOTE: SEE DWG. WP-3 FOR PANEL ARRANGEMENT IN FLARE AREAS

VARIABLE SIZE PANELS & CHANNELS SEE DWG. WP-3

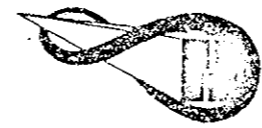
TO SLOT DIM. OF CEILING PANELS ALSO LINES OF CONTINUOUS C3x4.1 SUPPORT CHANNELS

APPROVED FINAL
DATE 12/1/79
BY [Signature]
WEAVER CONSTRUCTION CO.
DATE 10/17/79

EISENHOWER MEMORIAL TUNNEL
2ND BORE PROJECT NO. I 70-3(83)220

WEAVER CONSTRUCTION CO
2115 SOUTH VALENTINE ST.
DENVER, COLORADO, 80231

Jemrec, Inc.
Corrosion Control Coatings



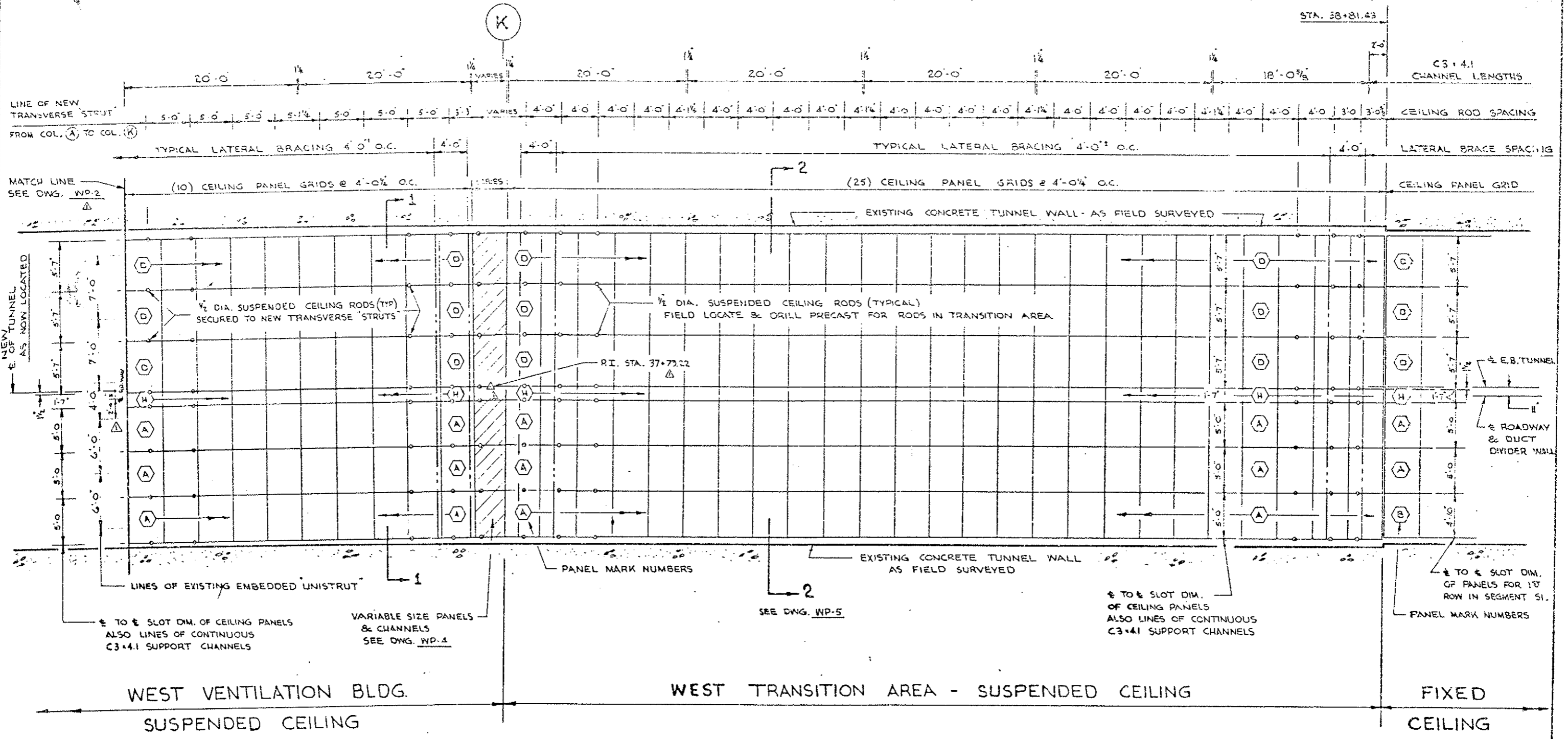
P.O. BOX 389 KENSINGTON, MD. 20795

NUMBER	DATE	REVISIONS	DATE
Δ	9-24-79	P.I. MOVED - ADDED DWG. NO.	7 JUNE 1979
			DRAWN L.K.
			CHECKED
			SCALE 3/16" = 1'-0"

CEILING PLAN
WEST PORTAL AREA

WP-2

SH. 2 OF 7



NORTH

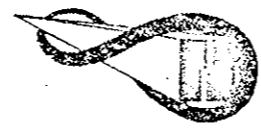
NOTE: ALL DIMENSIONS ARE MEASURED HORIZONTALLY.

APPROVED FINAL
 DATE 12/1/79
 BY *Rick Tompkins*
 These shop drawings have been reviewed and approved by
 MS and are being submitted for approval.
WEAVER CONSTRUCTION CO.
 DATE 10/19/79

EISENHOWER MEMORIAL TUNNEL
 2ND BORE PROJECT NO. I 70-3(83)220

WEAVER CONSTRUCTION CO.
 2115 SOUTH VALENTIA ST.
 DENVER, COLORADO 80231

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P.O. BOX 389 KENSINGTON, MD. 20795

NUMBER	DATE	REVISIONS	DATE
1	9-24-79	P.I. MOVED - STA. CHANGED ADDED DIM. - ADDED DWG. NO.	7 JUNE 1979

CEILING PLAN
 WEST PORTAL AREA

WP-3

SHT. 3 OF 7

WEST PORTAL

SPECIAL PANEL ROW SIZES TO BE DETERMINED FROM FIELD DIMENSIONS

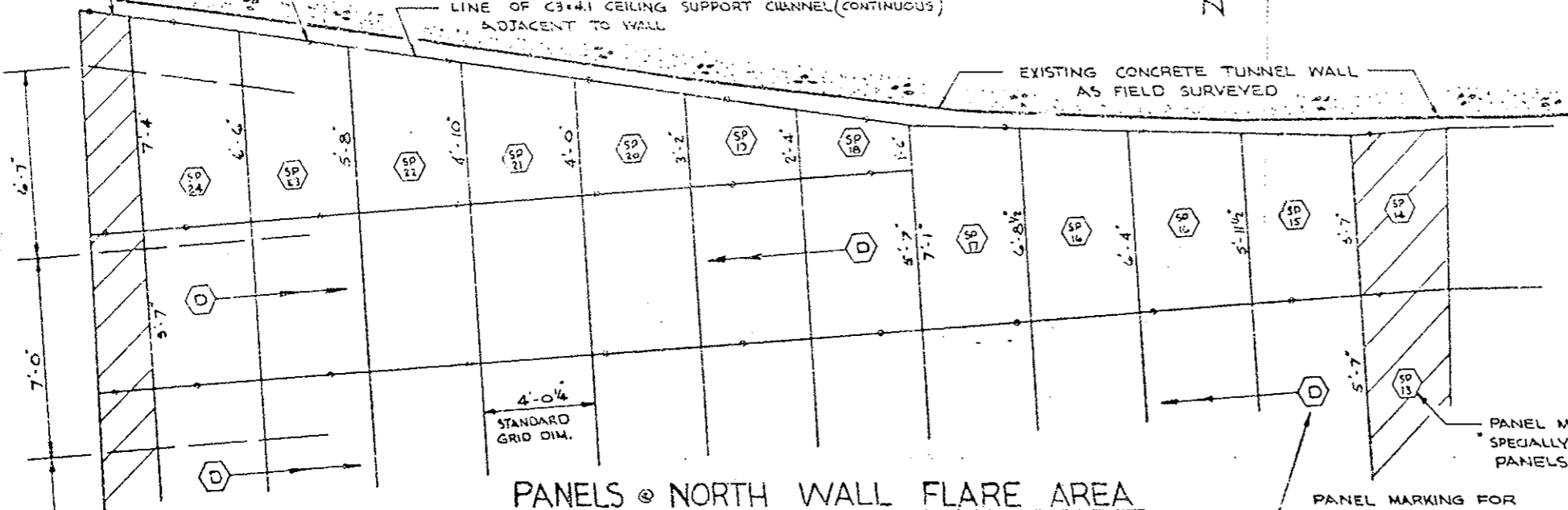
1/2" DIA. SUSPENDED CEILING RODS SECURED TO NEW TRANSVERSE "STRUTS"

LINE OF C3x4.1 CEILING SUPPORT CHANNEL (CONTINUOUS) ADJACENT TO WALL

EXISTING CONCRETE TUNNEL WALL AS FIELD SURVEYED

NORTH

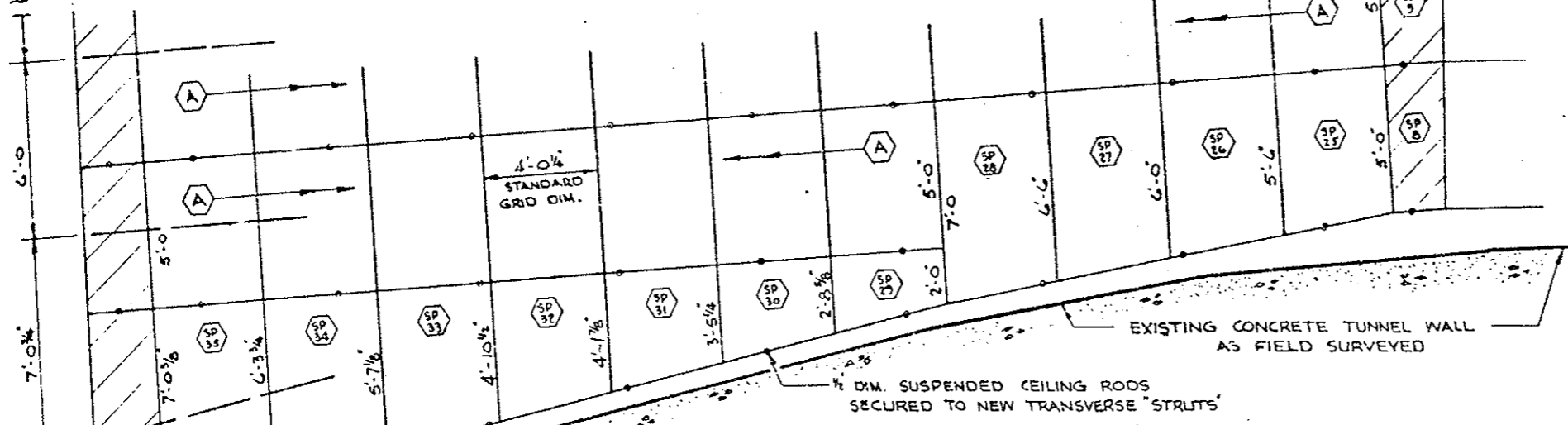
± TO ± SLOT DIMENSIONS OF CEILING PANELS ALSO LINES OF CONTINUOUS C3x4.1 SUPPORT CHANNELS (TYPICAL BOTH ROWS)



**PANELS @ NORTH WALL FLARE AREA
WEST VENT BLDG.**

NOTE: REFER TO DWG. WP-2 FOR OTHER VARIOUS DIMENSIONS PERTAINING TO THESE FLARE AREAS.

LINES OF EXISTING EMBEDDED "UNISTRUT"



**PANELS @ SOUTH WALL FLARE AREA
WEST VENT BLDG.**

LINE OF C3x4.1 CEILING SUPPORT CHANNEL (CONTINUOUS)

1/2" DIA. SUSPENDED CEILING RODS SECURED TO NEW TRANSVERSE "STRUTS"

APPROVED FINAL

DATE 12/11/70
BY Bob Taylor

These shop drawings have been reviewed and approved by
M.S. and are hereby submitted for approval
WEAVER CONSTRUCTION CO.
DATE 10/19/70
SUBMIT NO. 233

**SPECIAL
PANEL ROW
@ P.I. #2**

**SPECIAL
PANEL ROW
@ P.I. #1**

**EISENHOWER MEMORIAL TUNNEL
2ND BORE PROJECT NO. I 70-3(83) 220**

WEAVER CONSTRUCTION CO
2115 SOUTH VALENTIA ST.
DENVER, COLORADO 80231

Jemrec, Inc.
Corrosion Control Coatings



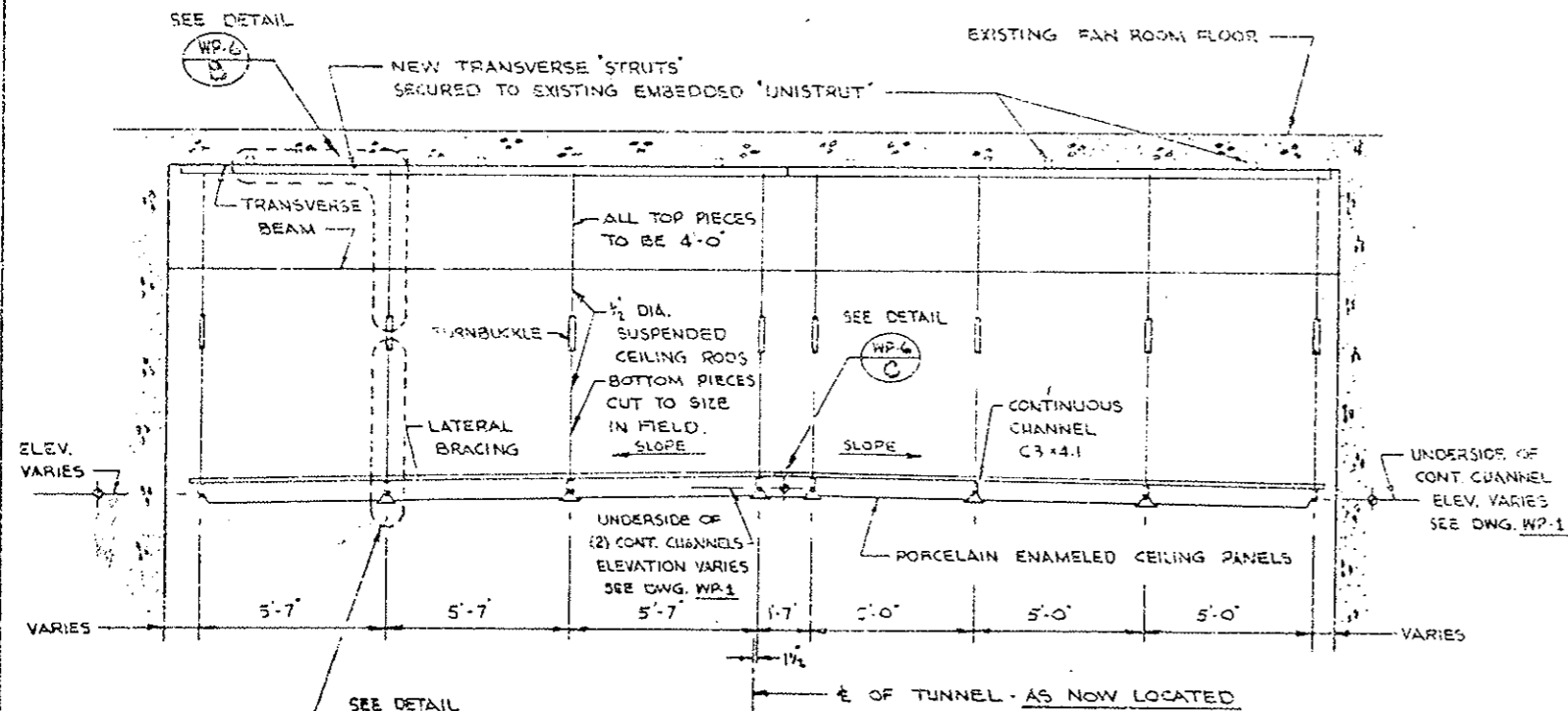
P.O. BOX 369 KENSINGTON, MD. 20795

NUMBER	DATE	REVISIONS	DATE
1	9-24-70	P.I.S MOVED TO 2 PANEL ROW - PANEL ROW DIMENSIONS CHANGED	7 JUNE 1977
			DRAWN: L.K.
			CHECKED:
			SCALE: 1/8" = 1'-0"

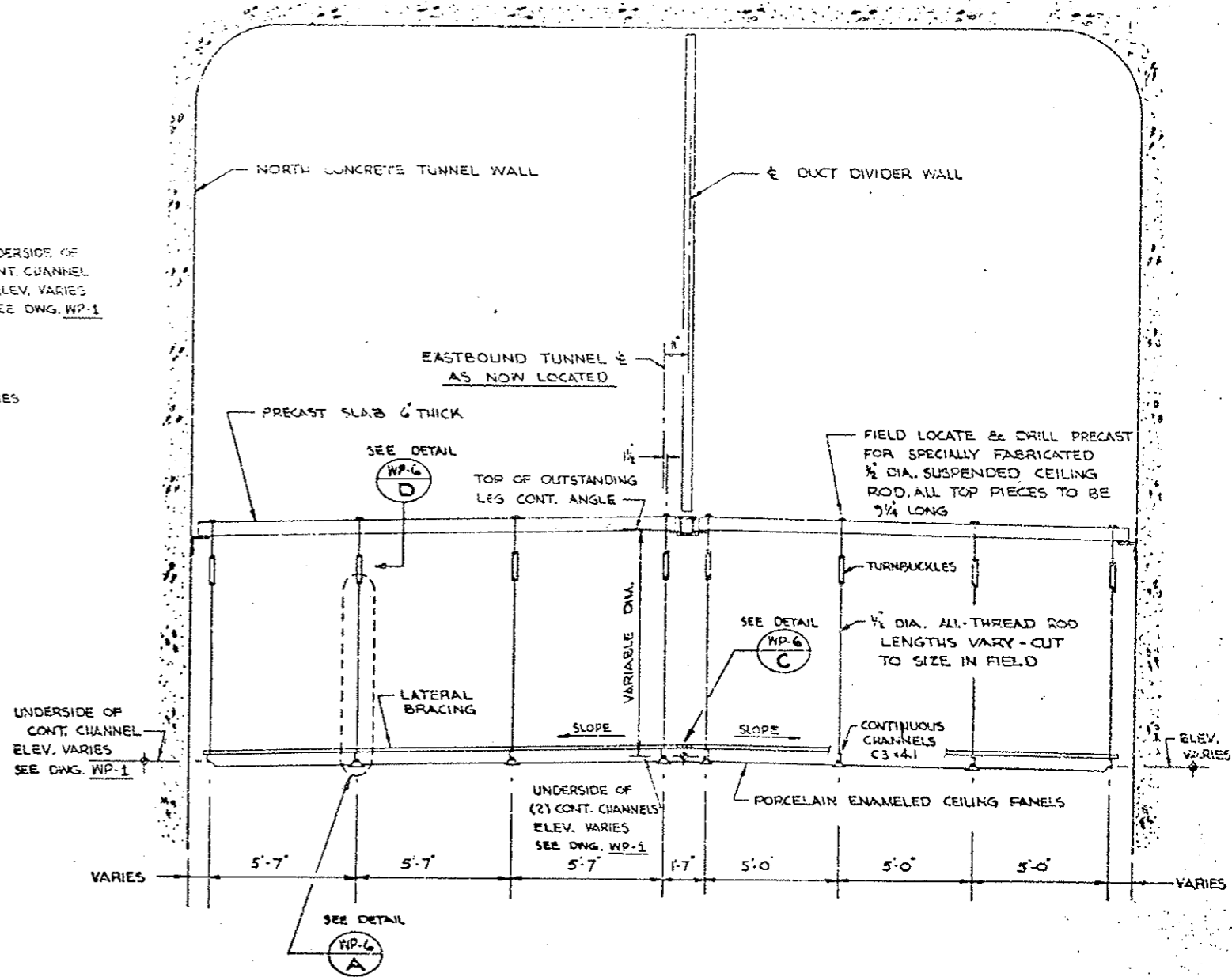
**FLARES & SPECIAL PANEL ROWS
WEST PORTAL AREA**

WP-4

REV. 4 OF 7



SECTION 1-1
THRU WEST VENTILATION BLDG.
COLUMN (A) TO (K)



SECTION 2-2
THRU WEST TRANSITION AREA

APPROVED FINAL
 DATE 12/1/77
 BY [Signature]
 These shop drawings have been reviewed and reviewed by [Signature] and are being submitted for approval.

EISENHOWER MEMORIAL TUNNEL
 2ND BORE PROJECT NO. I 70-3(83)220

WEAVER CONSTRUCTION CO
 2115 SOUTH VALENTIA ST.
 DENVER, COLORADO 80231

Temrec, Inc.
 Corrosion Control Coatings



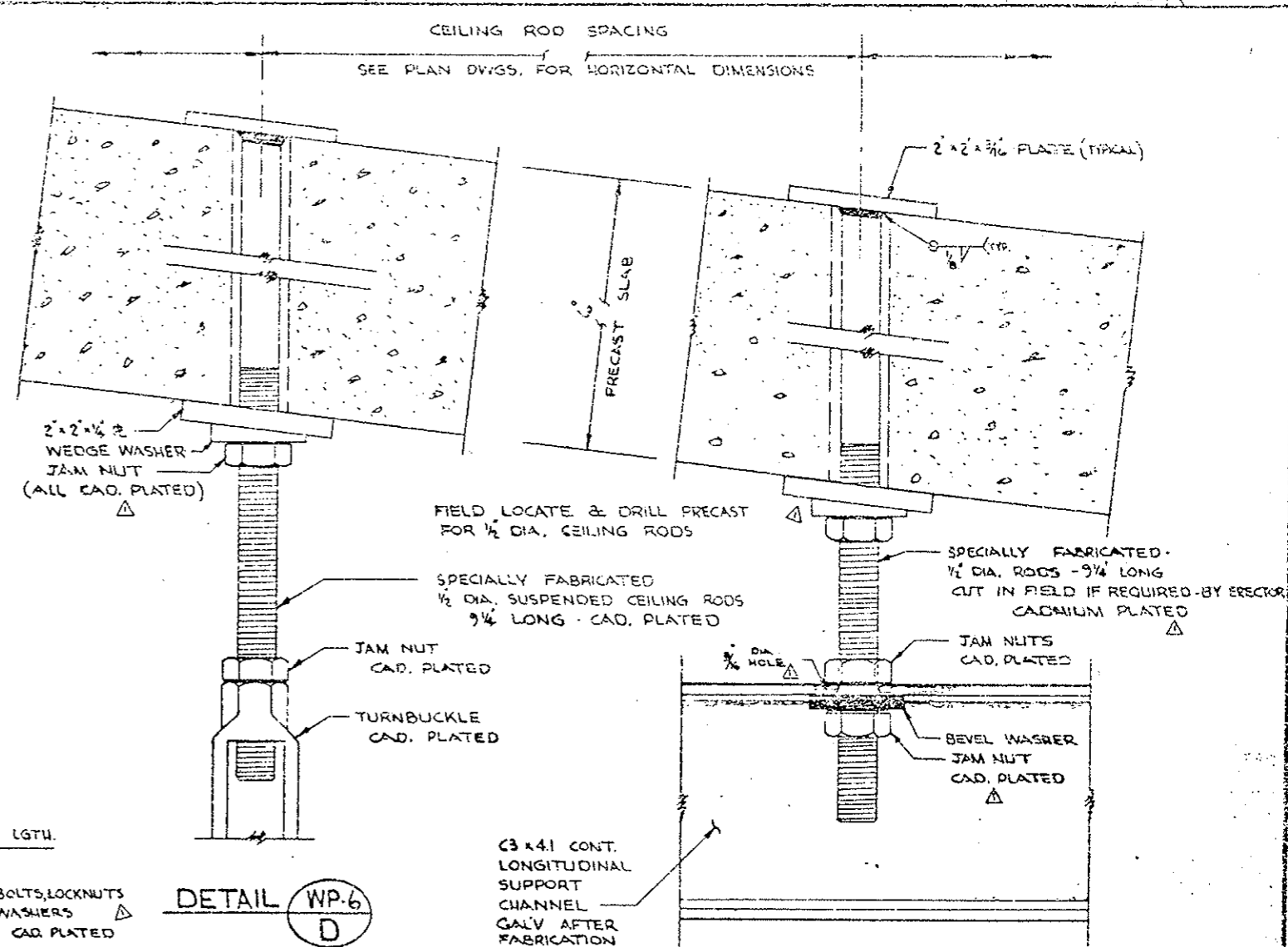
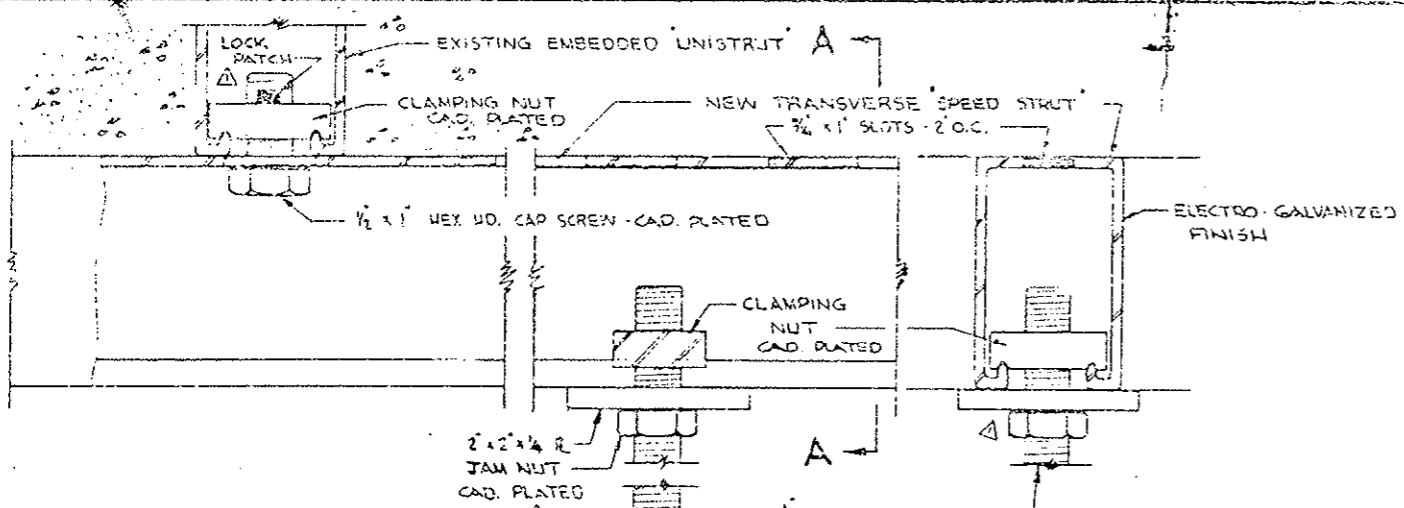
P.O. BOX 369 KENSINGTON, MD. 20795

NUMBER	DATE	REVISIONS

DATE 7 JUNE 1979
 DRAWN L.K.
 CHECKED
 SCALE 3/8" = 1'-0"

SECTIONS
 WEST PORTAL AREA

WP-5



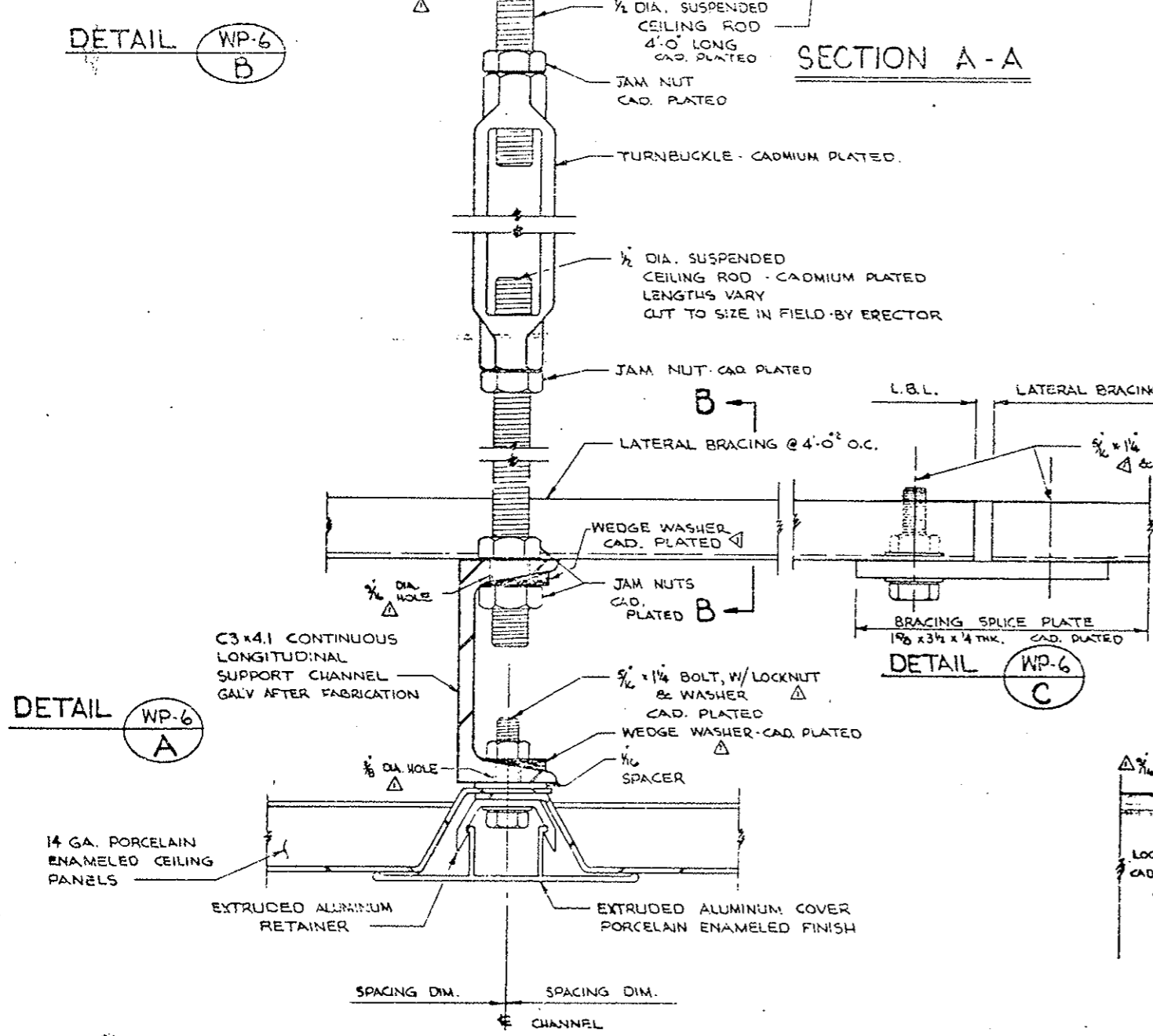
DETAIL WP-6 B

SECTION A-A

DETAIL WP-6 D

DETAIL WP-6 E

WHERE TURNBUCKLE CAN NOT BE USED DUE TO INSUFFICIENT SPACE



DETAIL WP-6 C

DETAIL WP-6 A

SECTION B-B

APPROVED FINAL

12/1/79
 R. K. [Signature]
 10/19/79

EISENHOWER MEMORIAL TUNNEL
 2ND BORE PROJECT NO. I 70-3(83)220

WEAVER CONSTRUCTION CO.
 2115 SOUTH VALENTIA ST.
 DENVER, COLORADO 80231

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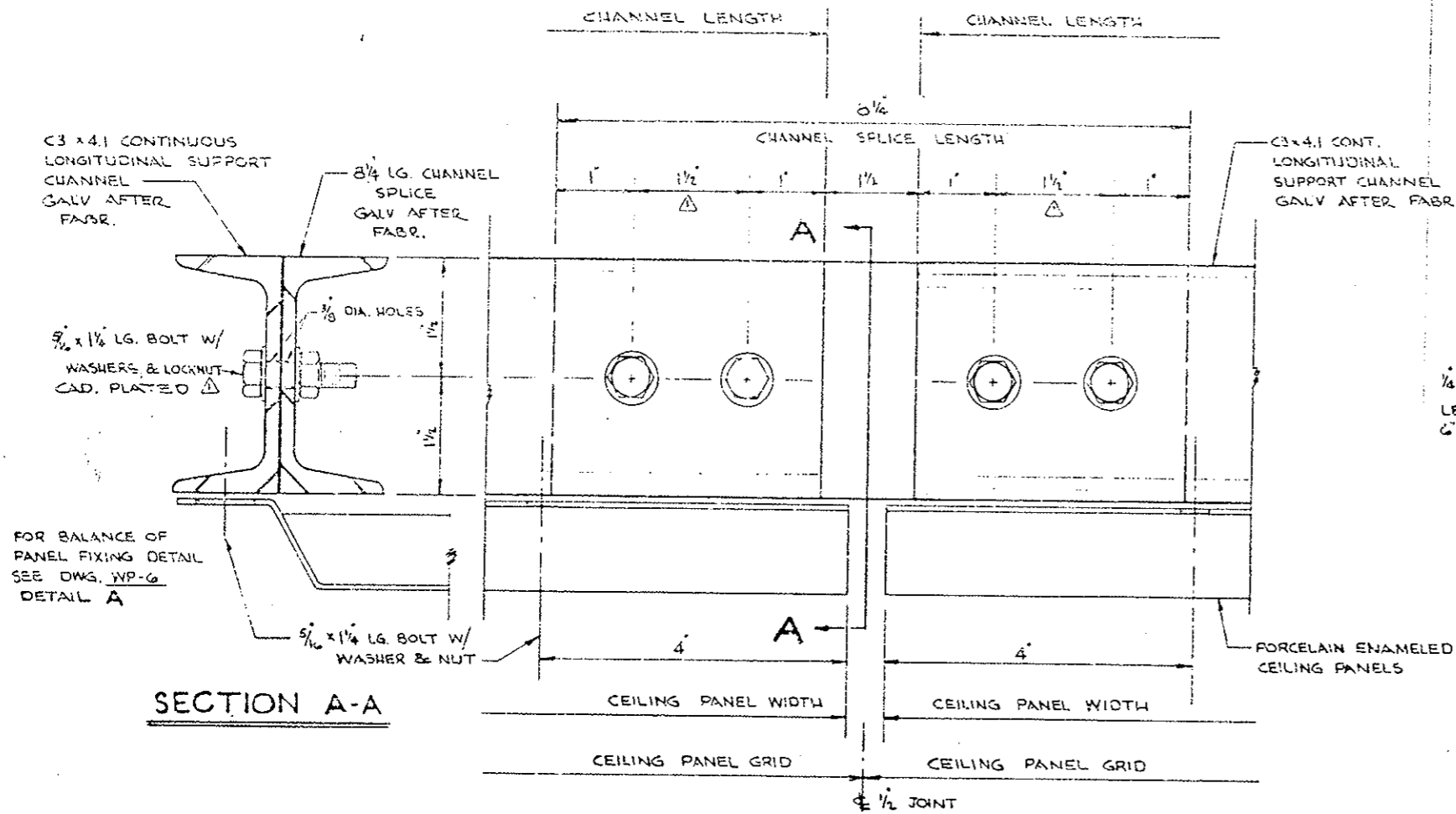
P.O. BOX 369 KENSINGTON, MD. 20725

NUMBER	DATE	REVISIONS	DATE
1	9-26-79	GENERAL REVISIONS & CHANGES PER APPROVED PRELIMINARY DWG. AO-1.	7 JUNE 1979

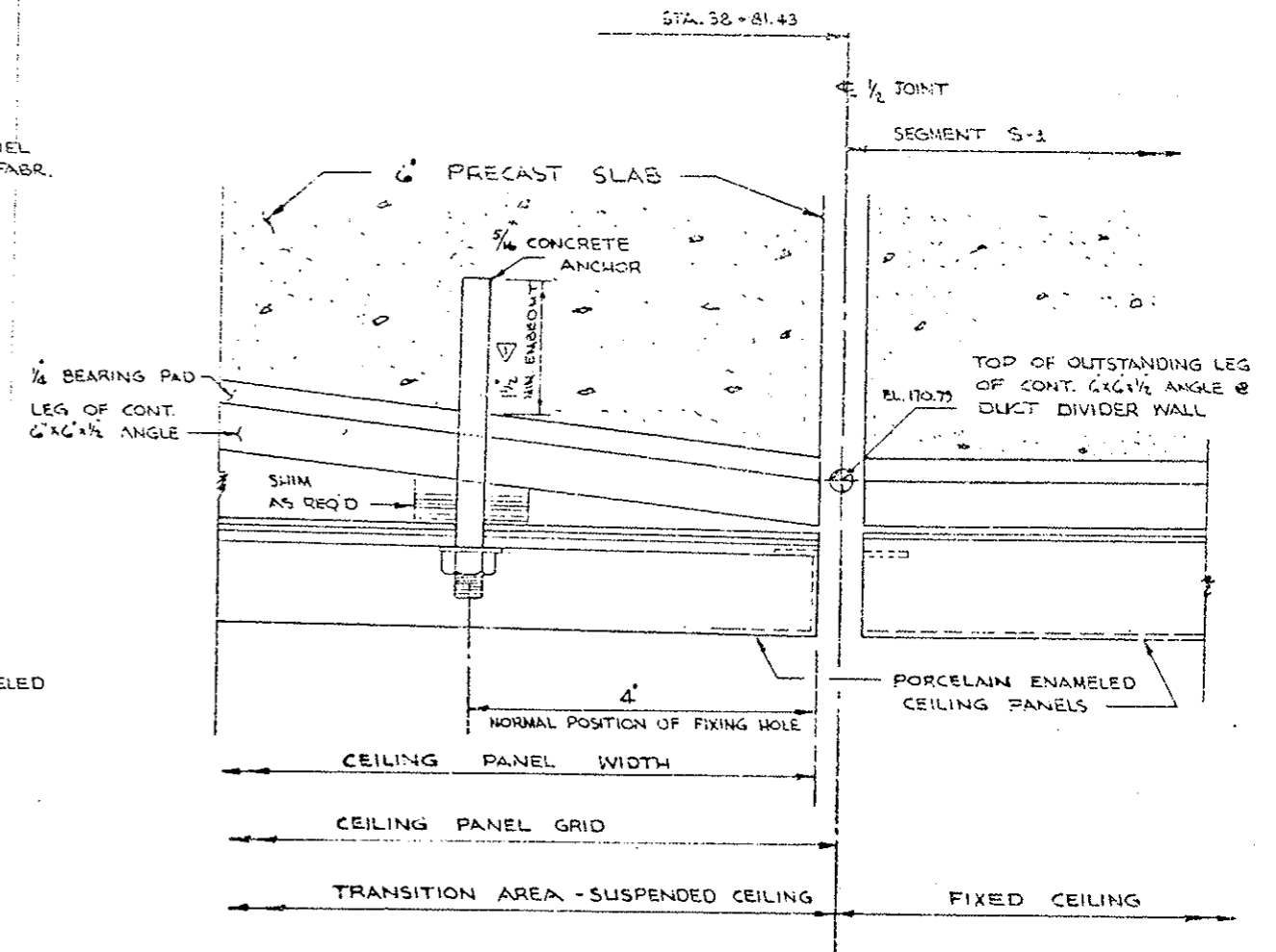
DETAILS
 SUSPENDED CEILING

WP-6

REV. 6 OF 7



TYPICAL CHANNEL CONNECTION DETAIL



SPECIAL CEILING FIXING DETAIL
AT STA. 38+81.43

These shop drawings have been reviewed and returned by
 APPROVED FIELD
 DATE 12/1/79
 BY [Signature]
 WEINER CONSTRUCTION CO.
 12/1/79

EISENHOWER MEMORIAL TUNNEL
 2ND BORE PROJECT NO. I 70-3(83) 220

WEINER CONSTRUCTION CO
 2115 SOUTH VALENTI ST.
 DENVER, COLORADO 80231

Jemrec, Inc.
 Corrosion Control Coatings



P.O. BOX 369 KENSINGTON, MD. 20795

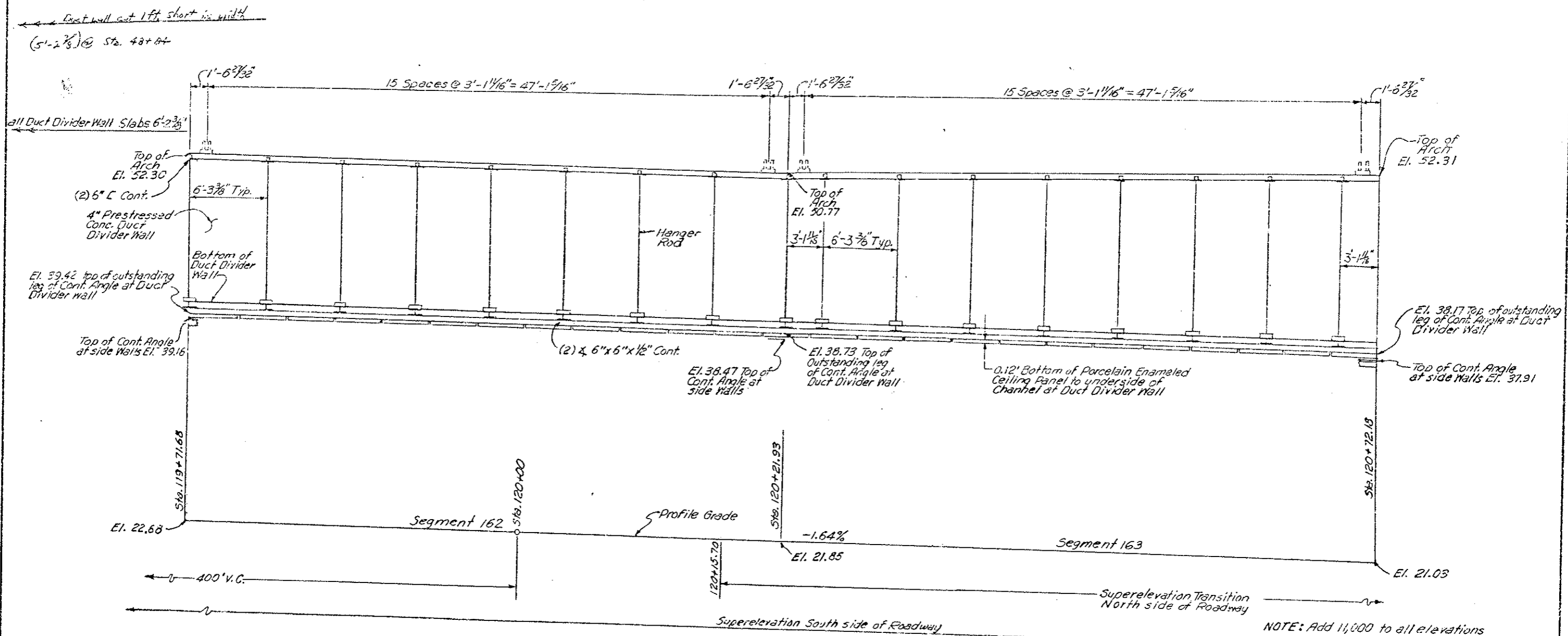
NUMBER	DATE	REVISIONS	DATE
Δ	9-24-79	DIM. CORRECTION - ADD DIMENSIONS CHANGE REGULAR HEX NUT TO LOCKNUT	7 JUNE 1979

DETAILS
 SUSPENDED CEILING

WP-7

OUT. 7 OF 7

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(33)220	105	
AS CONSTRUCTED				
NO REVISIONS	REVISED	VOID		

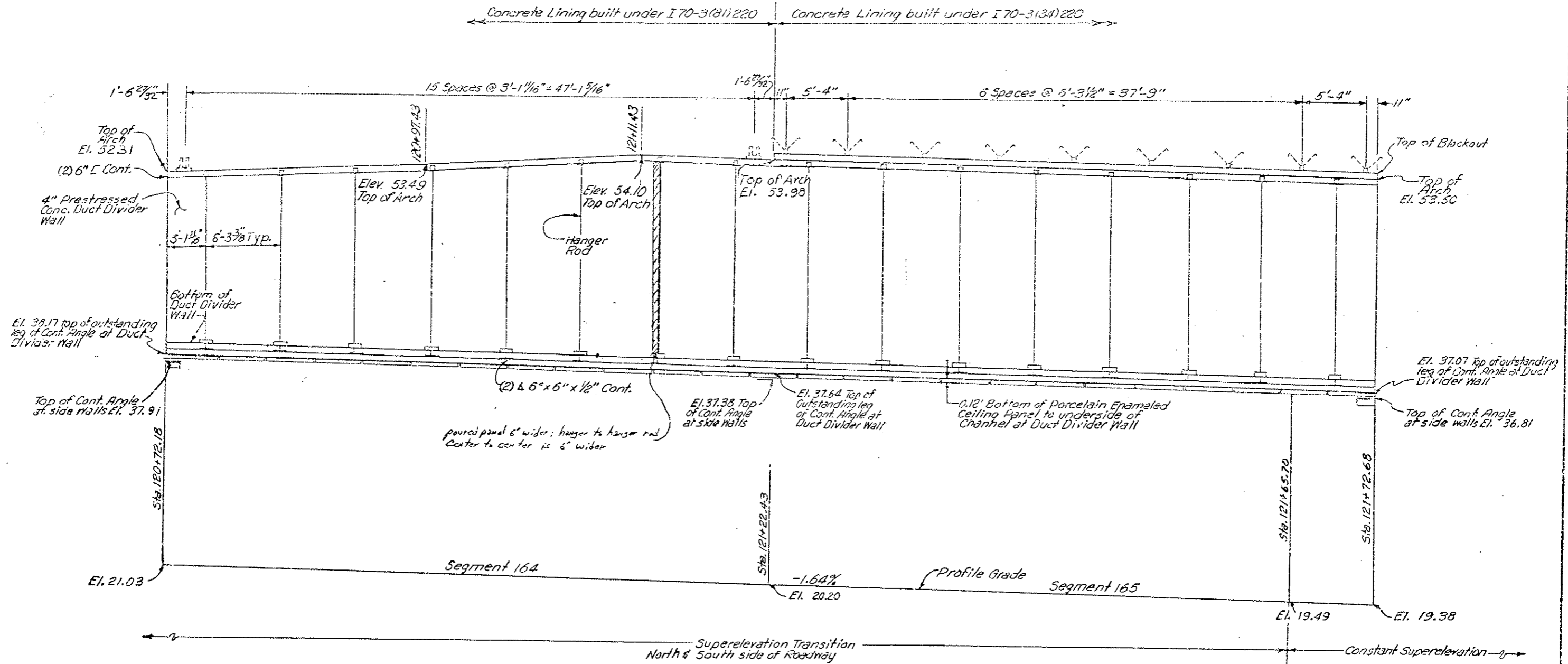


NOTE: Add 11,000 to all elevations

DIVISION OF HIGHWAYS	
DUCT WALL AND CEILING PROFILE EAST TRANSITION AREA 119+71.68 TO 120+72.18	
Designer	Structure F-13-X
Detailer	Numbers
Drawing Number C-20	of Drawings

Scale 1"=4'

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	I 70-3(33) 220	106	
AS CONSTRUCTED				
NO REVISIONS	REVISED	VOID		



NOTE: Add 11,000 to all elevations

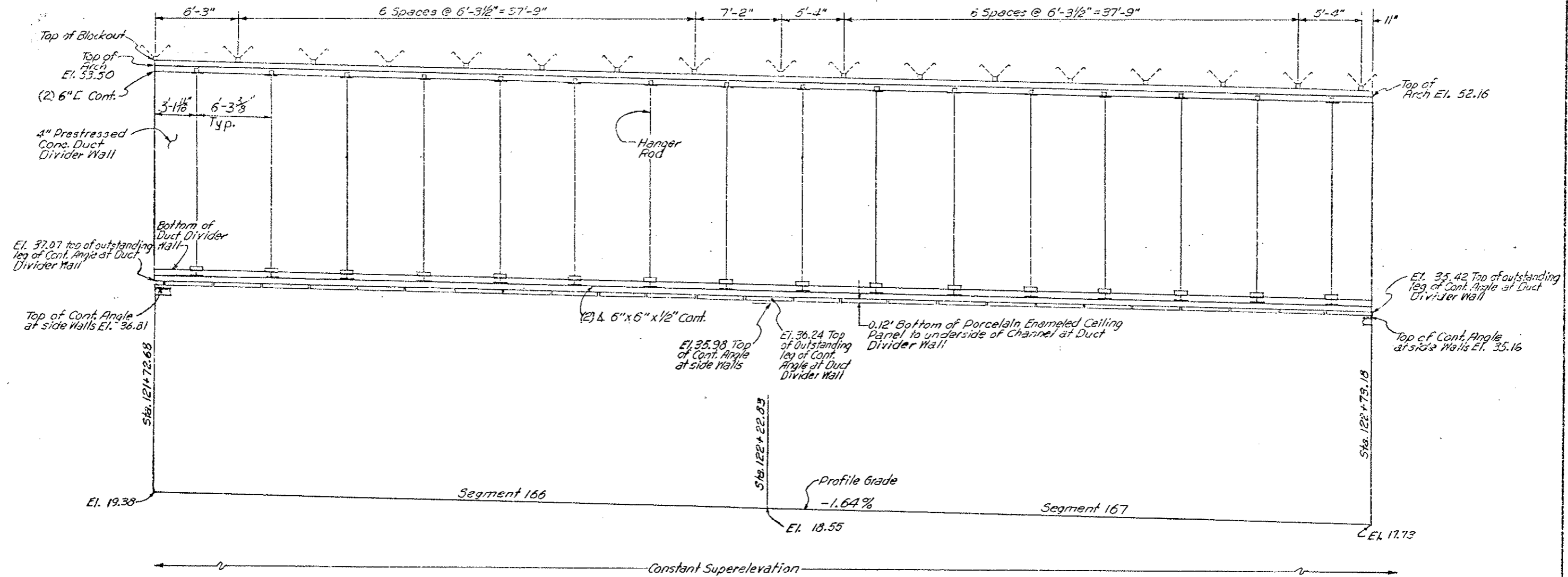
DIVISION OF HIGHWAYS

DUCT WALL AND CEILING AREA
EAST AREA
120+72.18 TO 121+72.68

Designer	Structure
Detailer	Numbers
Drawing Number C-21	of Drawings

Scale 1" = 4'

FEDERAL ROAD DISTRICT NO. VIII	DIVISION COLORADO	PROJ. NO. 70-3(85)220	SHEET NO. 107	TOTAL SHEETS
AS CONSTRUCTED				
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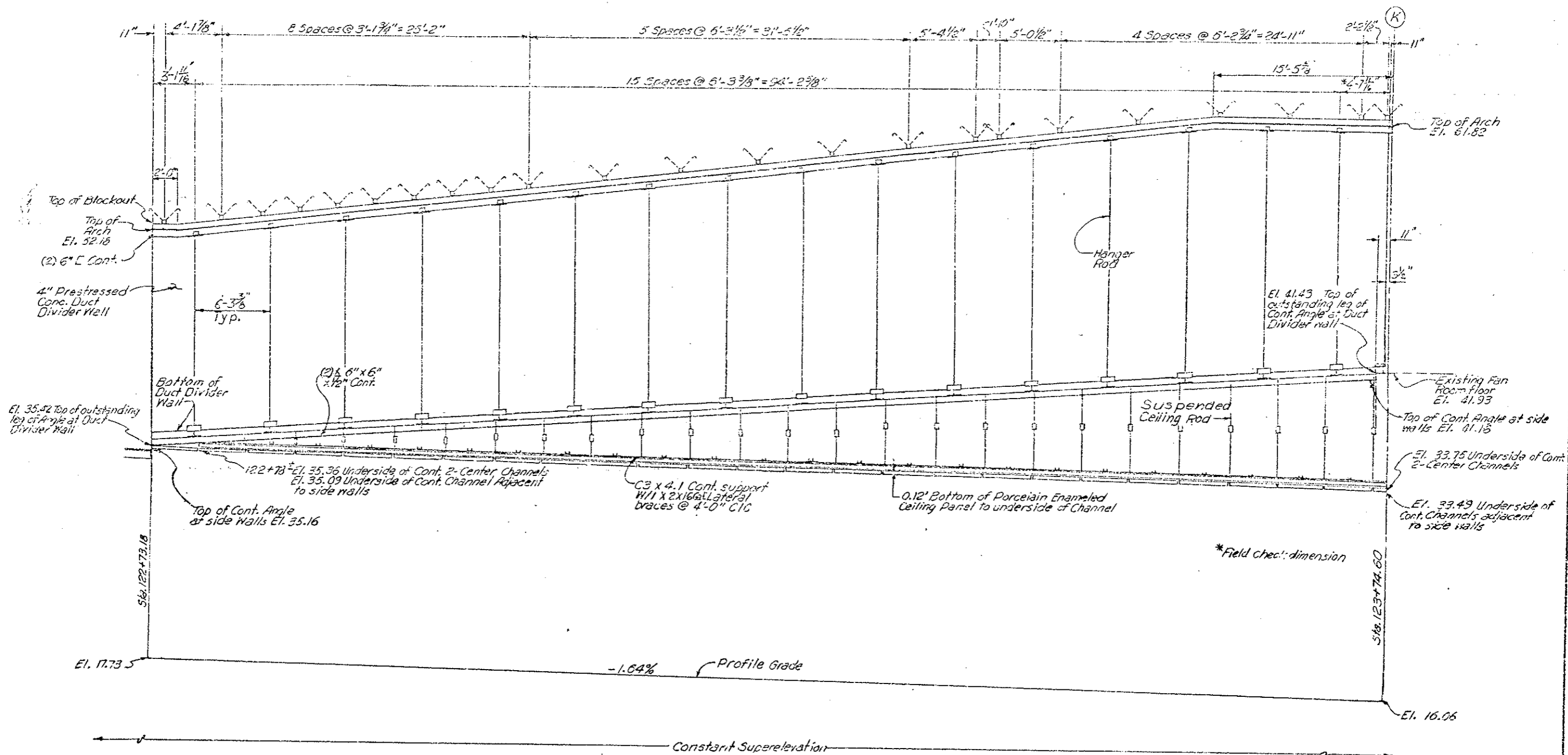


NOTE: Add 11,000 to all elevations

DIVISION OF HIGHWAYS	
DUCT WALL AND CEILING PROFILE EAST AREA 121+72.68 TO 122+73.18	
Designer	Structure F-13-X
Detailer	Numbers
Drawing Number C-22	of Drawings

Scale 1" = 4'

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SKETCH NO.	DATE
716	COLORADO	170-3(83) 220	108	
AS CONSTRUCTED				
NO REVISIONS	Y	REVISED		VOID



NOTE: Add 11,000 to all elevations

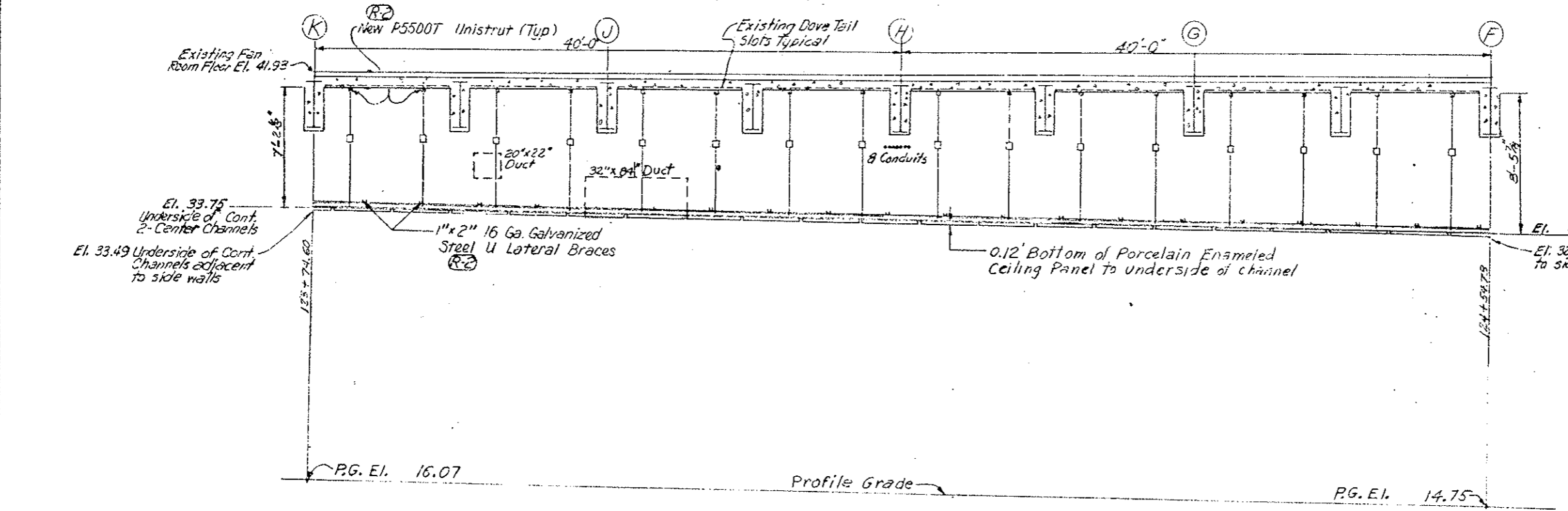
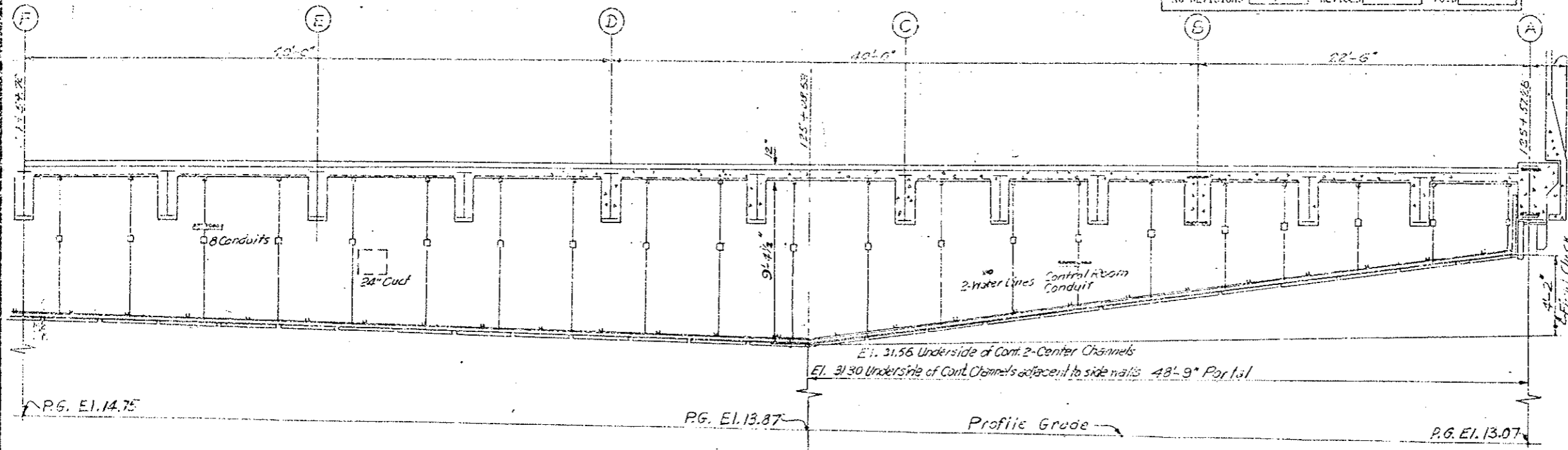
DIVISION OF HIGHWAYS	
DUCT WALL AND CEILING PROFILE EAST TRANSITION AREA 122+73.18 TO 123+74.60	
Designer	Structure Numbers F-13-X
Detailer	
Drawing Number C-23	of Drawings

Scale 1" = 4'

AS CONSTRUCTED
 NO REVISIONS REVISED VOID

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(83)220	103	

REVISIONS	
R-1	10-17-78 Rev. Hanger Rods & Unistruts E.E.
R-2	11-3-78 Clarified Detail E.C.

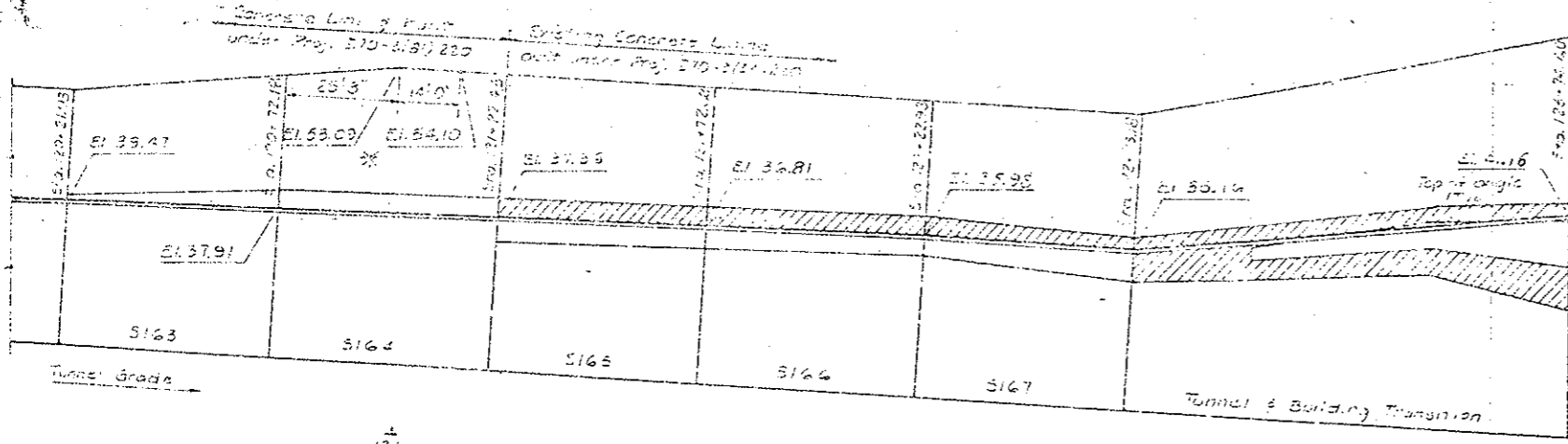


DESIGNED BY	C. D. H.
CHECKED BY	J. L. W.
DATE	7/5/78
QUANTITIES BY	
CHECKED BY	
DATE	

NOTE: Add 11,000 to all elevations

DIVISION OF HIGHWAYS	
ELEVATION THRU SUSPENDED CEILING EAST VENTILATION BUILDING	
Designer C.D.H.	Structures
Detailer J. Letchworth	Numbers
Drawing Number C-84	of Drawings

Revision Dates	(Preliminary Stage Only)
----------------	--------------------------



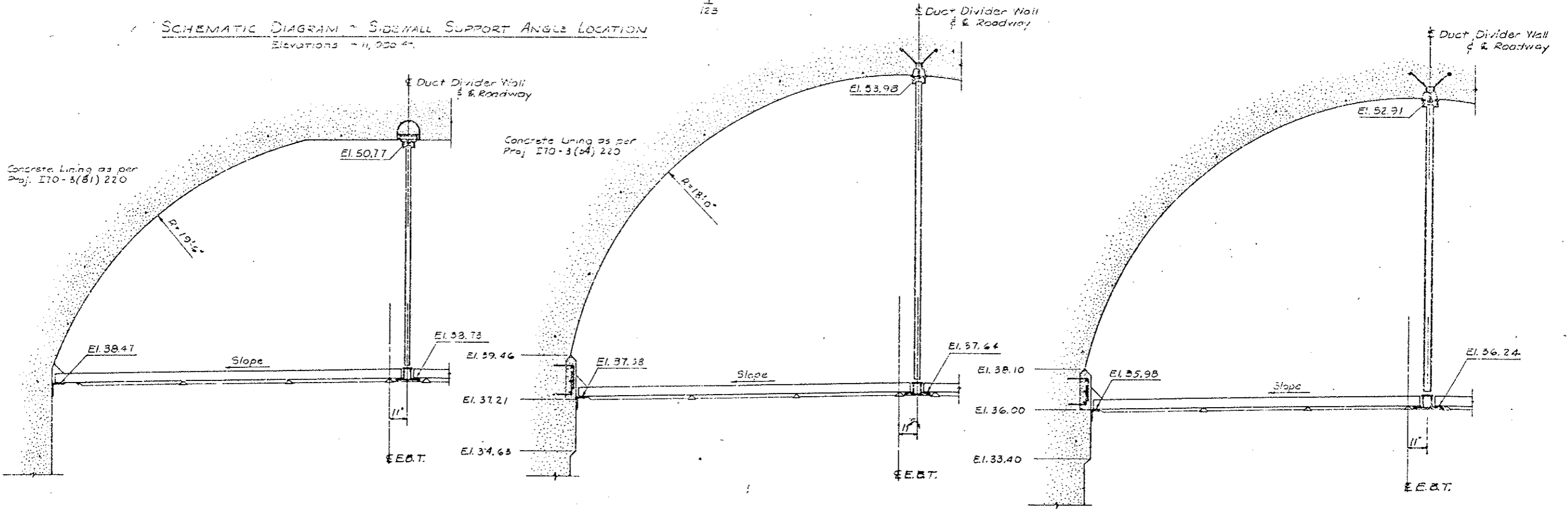
AS CONSTRUCTED		
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FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	I70-3(33)220	110	

REVISIONS	

East Transition Area 6' Ceiling Slab Lengths			
Sta. to	Sta.	EXCESS	SUPPLY
21-22.43	22-22.93	17'-10"	16'-0"
22-22.93	23-50.50	8'-2"	16'-3"
23-50.50	23-74.50	13'-1"	16'-2"

SCHEMATIC DIAGRAM - SIDEWALL SUPPORT ANGLE LOCATION
Elevations - 11,000 ft.



DESIGNED BY	DATE	CHECKED BY	DATE
C.D.O.H.	5-17-77	J.T.P.	5-17-77
CHECKED BY	DATE	QUANTITIES BY	DATE
B.R.L.	5-17-77	B.R.L.	5-17-77
DETAILED BY	DATE	CHECKED BY	DATE
B.R.L.	5-17-77	B.R.L.	5-17-77

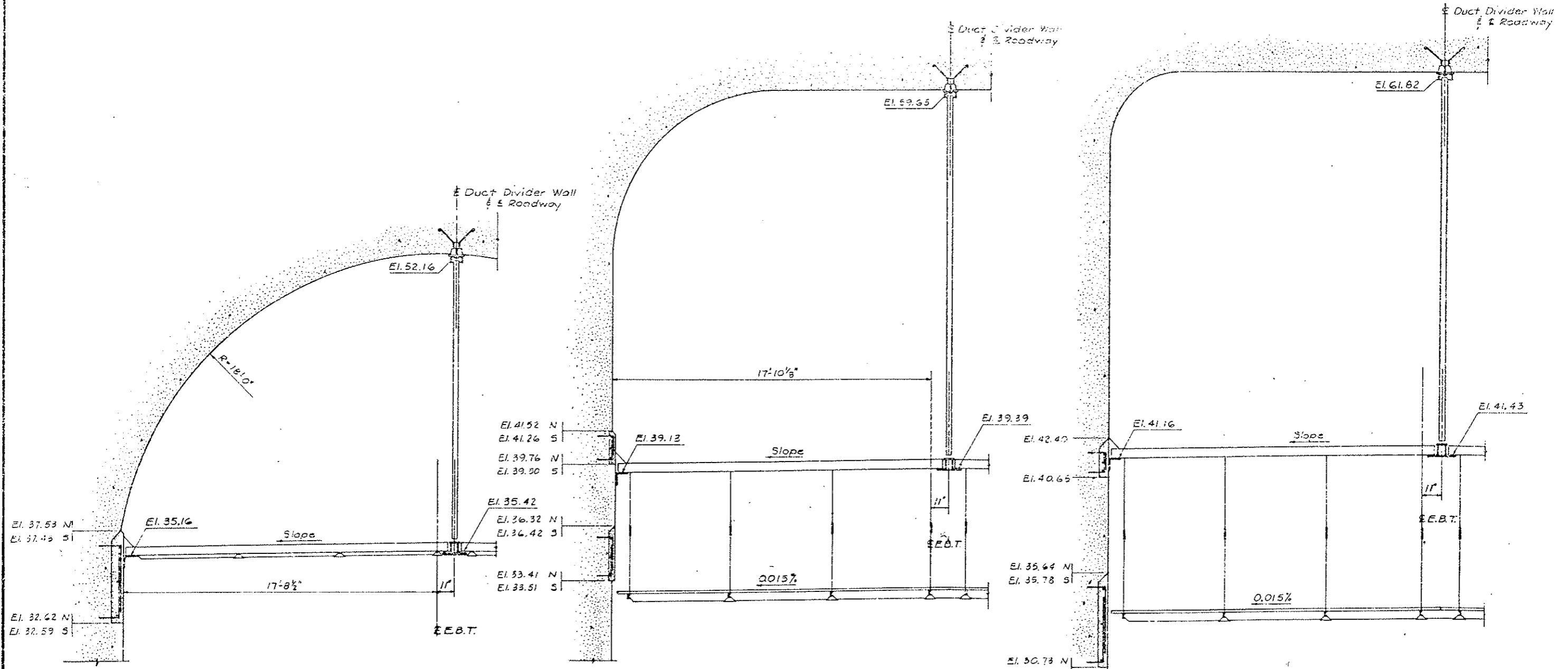
*The Arch Transitions from the 19'-6" radius built under Project I70-3(81)220 to the 18'-0" radius built under Project I70-3(34)220 in the 14'-0" shown.

DIVISION OF HIGHWAYS	
EAST TRANSITION AREA SECTIONS	
Designer C.D.O.H.	Structure F-13-X
Detailer B.R.Lers	Numbers
Drawing Number C-25	

Revision Dates	Pre-Primary Stage Only
----------------	------------------------

REVISIONS	

DESIGNED BY	DATE	CHECKED BY	DATE
CHECKED BY	DATE	DESIGNED BY	DATE
CHECKED BY	DATE	DESIGNED BY	DATE



SECTION @ STA. 122+73.18
 (Begin Transition to E.V.3.)

SECTION @ STA. 123+41.10
 Elevation +11,000 Ft.
 (Tunnel to Building Transition)

SECTION @ STA. 123+74.60
 (@ East Vert Bldg.)

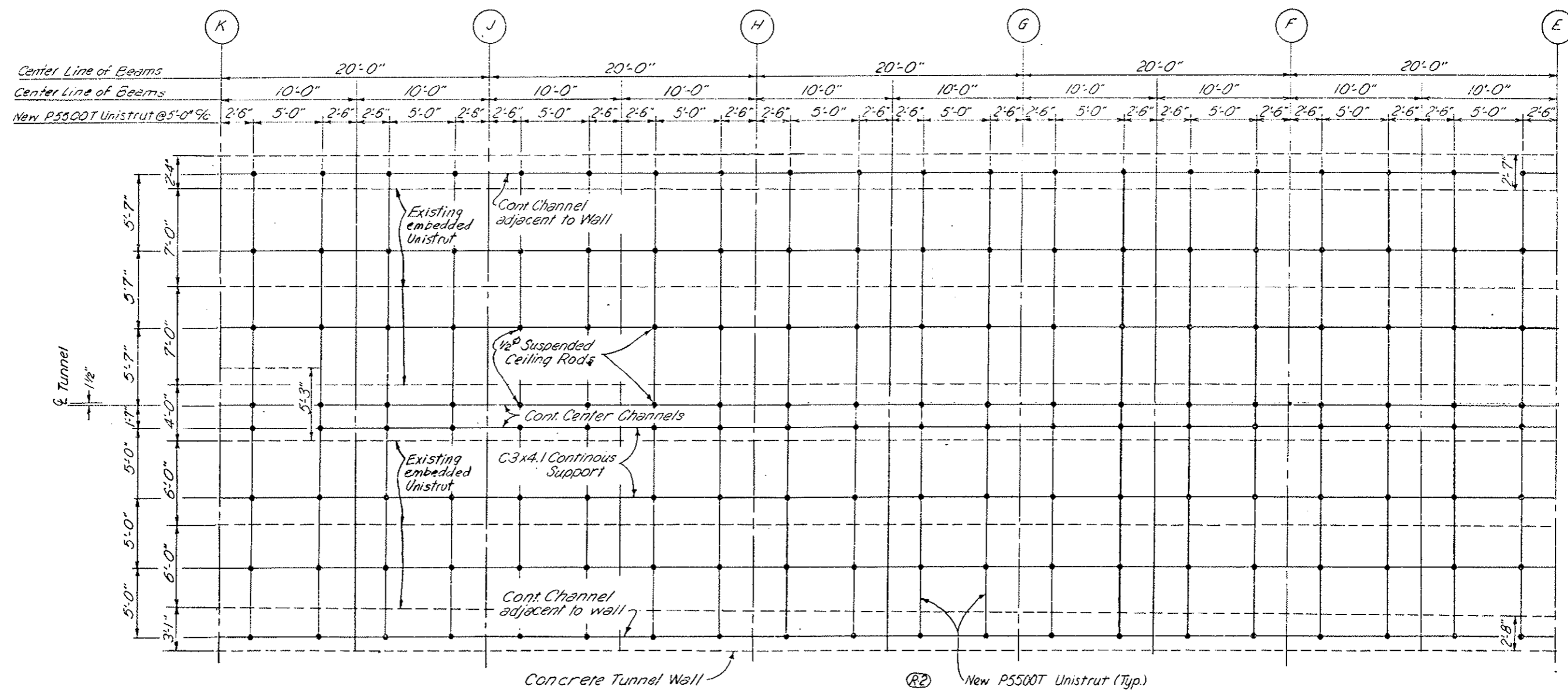
Sidewall Support Angle 8"x8"x1/2"
 Slope @ +5.43% from
 Sta. 122+73.18 to Sta. 123+74.60

DIVISION OF HIGHWAYS	
EAST TRANSITION AREA	
SECTIONS	
Designer CDOH	Structure F-13-X
Detailer BRLare	Numbers
Drawing Number C-25	
Revision Dates	(Preliminary Stage Only)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	112	

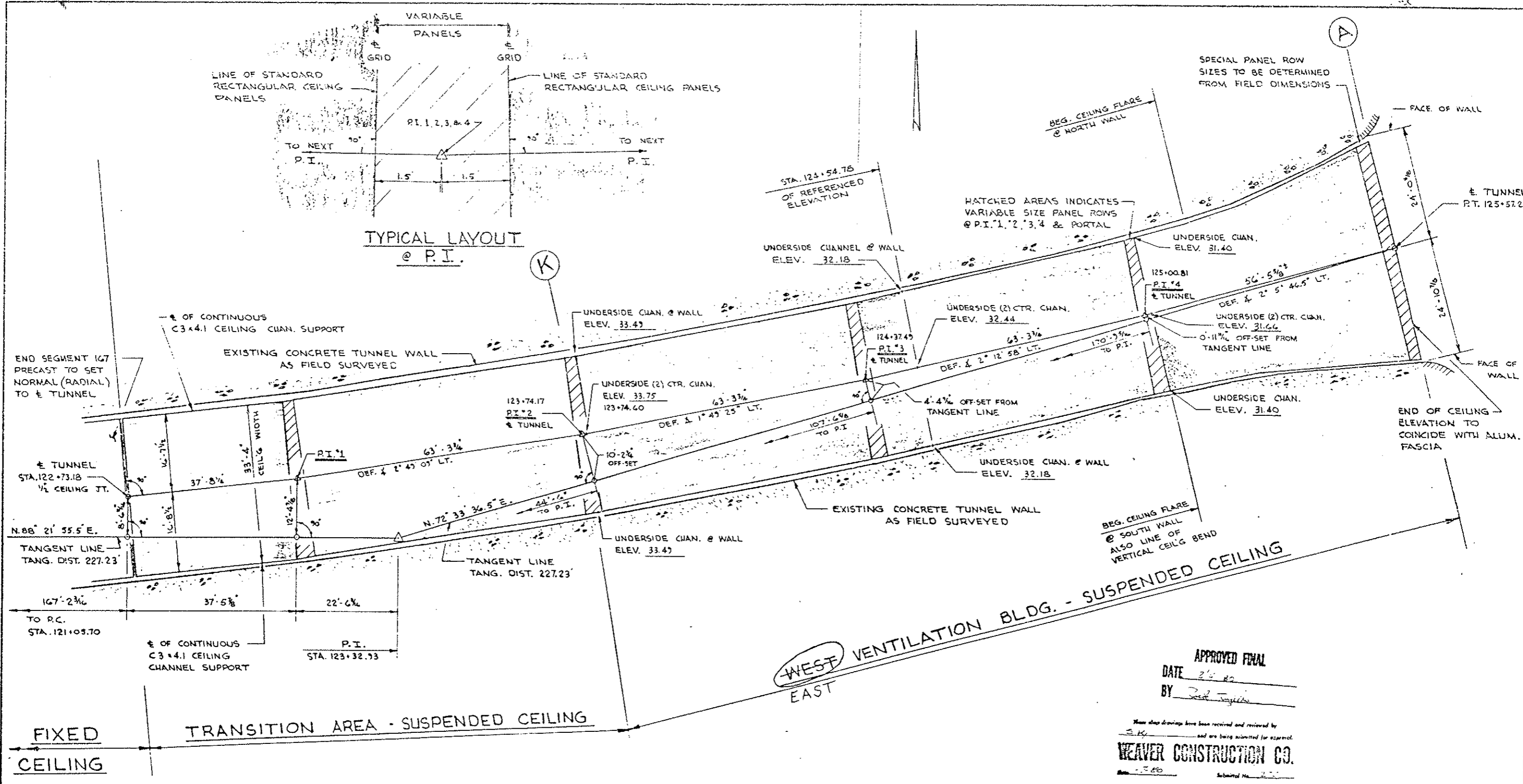
AS CONSTRUCTED
 NO REVISIONS REVISED VOID

(R-1) Rev. Sheer - 10-17-78 - E.B.
 (R-2) Clarified Detail - 11-3-78 - E.B.



NOTE: See Contractor's Final Approved Shop Drawings
 Sheets No. 112 AX thru 112 EX.

DIVISION OF HIGHWAYS	
PLAN THRU SUSPENDED CEILING EAST VENTILATION BUILDING	
Designer <i>CDOH</i>	Structure Number
Detailer	
Drawing Number <i>C-27</i>	of <i> </i> Drawings



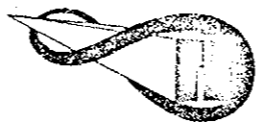
GENERAL ARRANGEMENT

APPROVED FINAL
 DATE 2/2/80
 BY [Signature]

These shop drawings have been received and reviewed by
 S.K. and are being submitted for approval.
WEAVER CONSTRUCTION CO.
 Submitted No. 200

EISENHOWER MEMORIAL TUNNEL
 2ND BORE PROJECT NO. 70-3(83)220

Jemrec, Inc.
 Corrosion Control Coatings
 P.O. BOX 369 KENSINGTON, MD. 20795

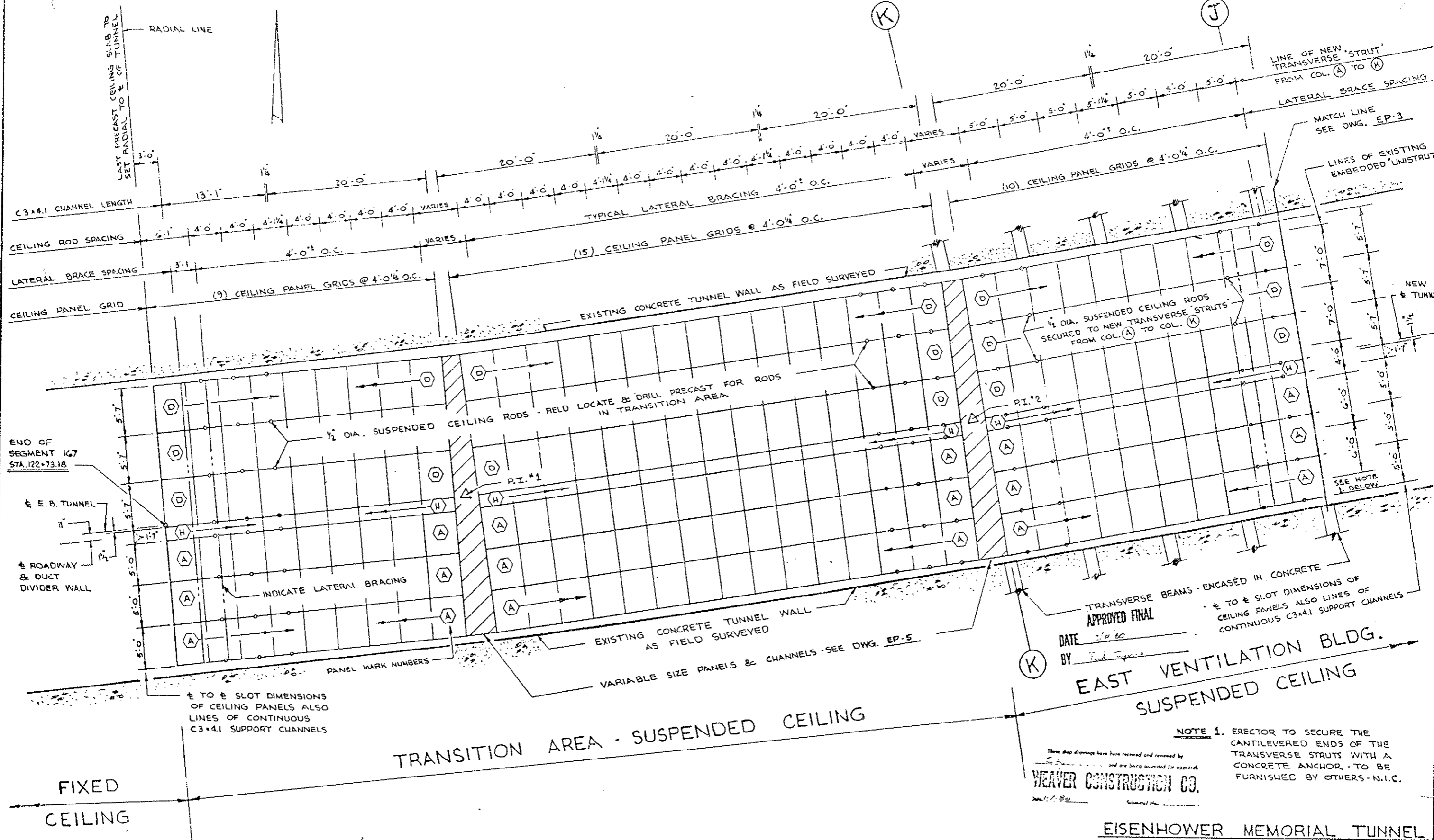


NUMBER	DATE	REVISIONS	DATE
			6 AUG. 1979
			DRAWN L.K.
			CHECKED:
			SCALE 1" = 10'

**SUSPENDED CEILING
 EAST PORTAL AREA**

EP-1

ENT. OF



END OF SEGMENT 167 STA. 122+73.18

E.E.B. TUNNEL
ROADWAY & DUCT DIVIDER WALL

TO & SLOT DIMENSIONS OF CEILING PANELS ALSO LINES OF CONTINUOUS C3x4.1 SUPPORT CHANNELS

TRANSVERSE BEAMS - ENCASED IN CONCRETE
DATE 7/10/80 BY [Signature]
APPROVED FINAL

EAST VENTILATION BLDG.
SUSPENDED CEILING

NOTE 1. ERECTOR TO SECURE THE CANTILEVERED ENDS OF THE TRANSVERSE STRUTS WITH A CONCRETE ANCHOR - TO BE FURNISHED BY OTHERS - N.I.C.

WEAVER CONSTRUCTION CO.
DATE 7/17/80

EISENHOWER MEMORIAL TUNNEL
2ND BORE PROJECT NO. I 70-3(83)220

Jemrec, Inc.
Corrosion Control Coatings



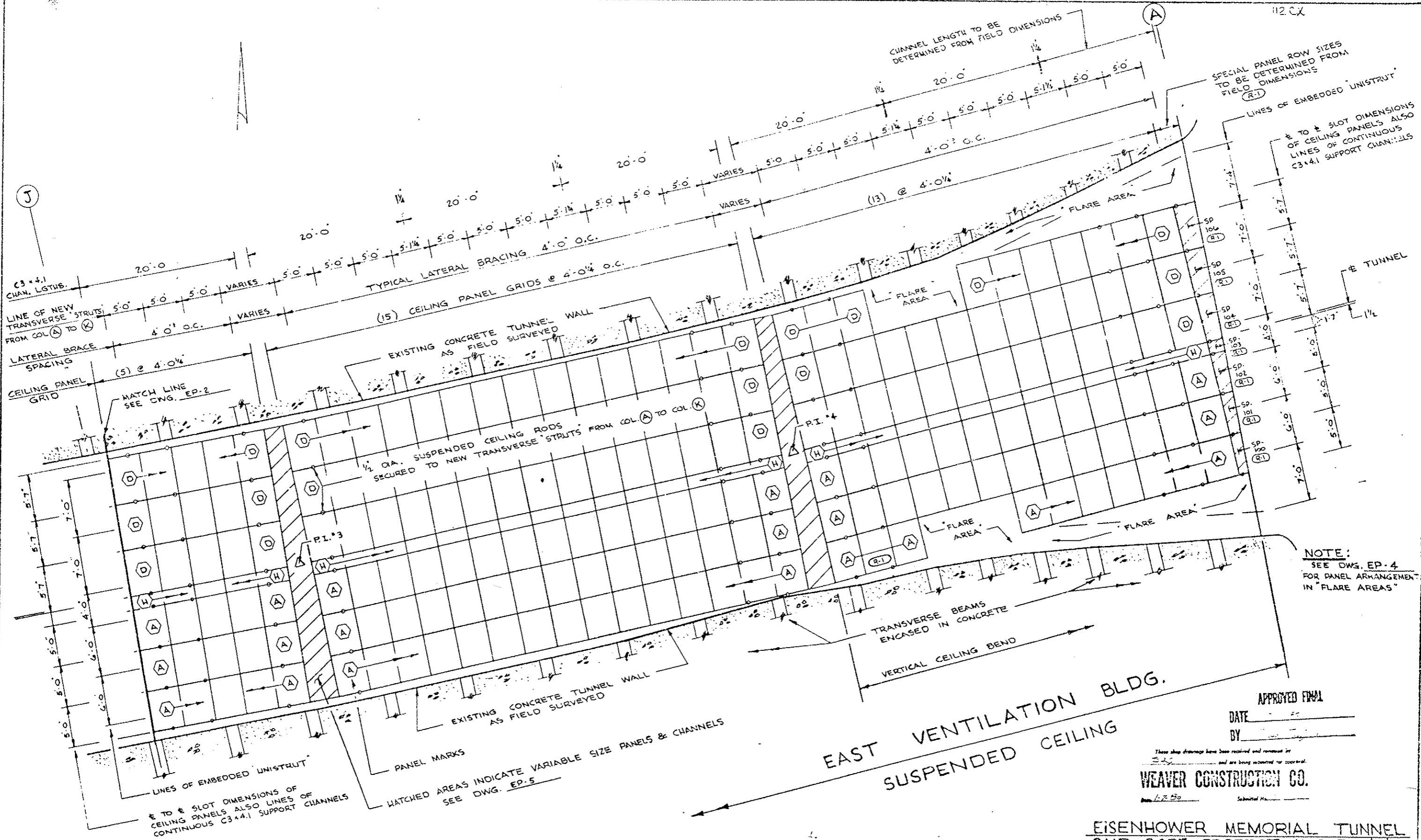
P.O. BOX 369 KENSINGTON, MD. 20795

NUMBER	DATE	REVISIONS	DATE
			6 AUG. 1979
			DRAWN L.K.
			CHECKED
			SCALE 1/8" = 1'-0"

CEILING PLAN
EAST PORTAL AREA

EP-2

SHT. OF



NOTE:
SEE DWG. EP-4
FOR PANEL ARRANGEMENT
IN "FLARE AREAS"

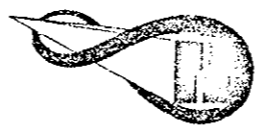
EAST VENTILATION BLDG.
SUSPENDED CEILING

APPROVED FINAL
DATE _____
BY _____

These shop drawings have been reviewed and returned by
and are being submitted for approval.
WEAVER CONSTRUCTION CO.
L.K.S. Submitted

EISENHOWER MEMORIAL TUNNEL
2ND BORE PROJECT NO. I 70-3(83)220

Jemrec, Inc.
Corrosion Control Coatings



P.O. BOX 269 KENSINGTON, MD. 20795

NUMBER	DATE	REVISIONS	DATE
(R-1)	11-23-75	PANEL SIZES REVISED PER NEW FIELD DIM. FURNISHED BY CONTRACTOR, AOO S.P. PANEL MARKS @ PORTAL.	6 AUG. 1979
			DRAWN L.K.
			CHECKED
			SCALE
			3/16" = 1'-0"

CEILING PLAN
EAST PORTAL AREA

EP-3

SHT OF

SPECIAL PANEL ROW SIZES TO BE DETERMINED FROM FIELD DIMENSIONS

EAST PORTAL

1/4 DIA. SUSPENDED CEILING RODS SECURED TO NEW TRANSVERSE STRUTS

LINE OF C3x4.1 CEILING SUPPORT CHANNELS ADJACENT TO WALL (CONTINUOUS)

PANELS @ NORTH WALL FLARE AREA EAST VENT BLDG.

EXISTING CONCRETE TUNNEL WALL AS FIELD SURVEYED

LINE OF EXISTING EMBEDDED UNISTRUT

NOTE: REFER TO DWG. EP-3 FOR OTHER VARIOUS DIMENSIONS PERTAINING TO THESE "FLARE AREAS"

PANEL MARKING FOR TYPICAL RECTANGULAR PANELS

PANEL MARKING FOR "SPECIALLY FABRICATED PANELS"

EXISTING CONCRETE TUNNEL WALL AS FIELD SURVEYED

PANELS @ SOUTH WALL FLARE AREA EAST VENT BLDG.

APPROVED FINAL

DATE 2/4/80

BY *Rick ...*

WEAVER CONSTRUCTION CO.

EISENHOWER MEMORIAL TUNNEL 2ND BORE PROJECT NO. I 70-3(83)220

Jemrec, Inc. Corrosion Control Coatings



P.O. BOX 369 KENSINGTON, MD. 20795

NUMBER	DATE	REVISIONS	DATE
(P-1)	11-23-78	PANEL SIZES REVISED PER NEW FIELD DIM. FURNISHED BY CONTRACTOR. ADD SP- PANEL MARKS.	6 AUG. 1979

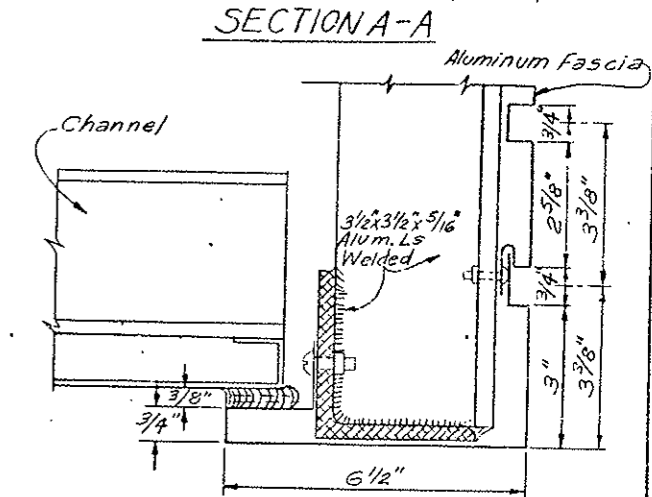
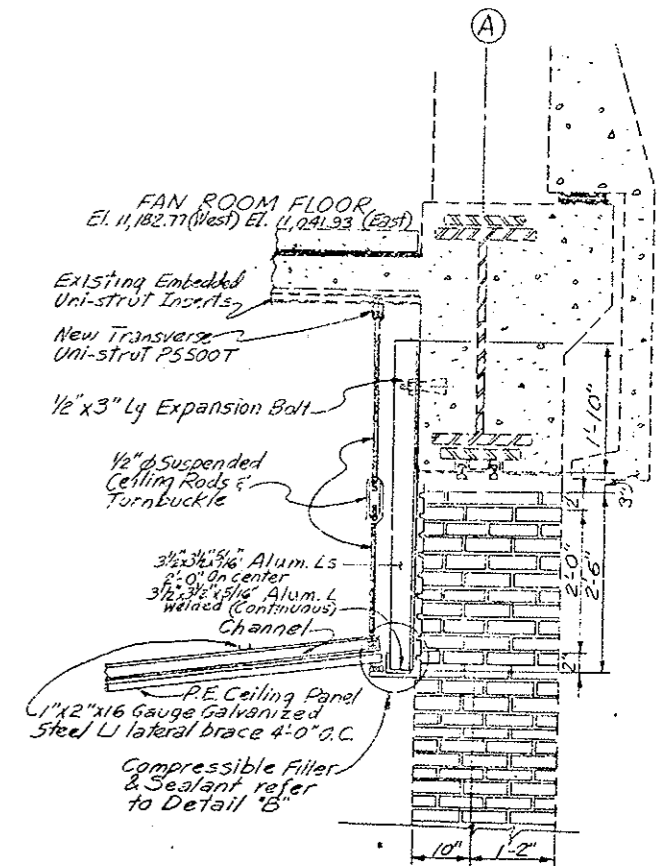
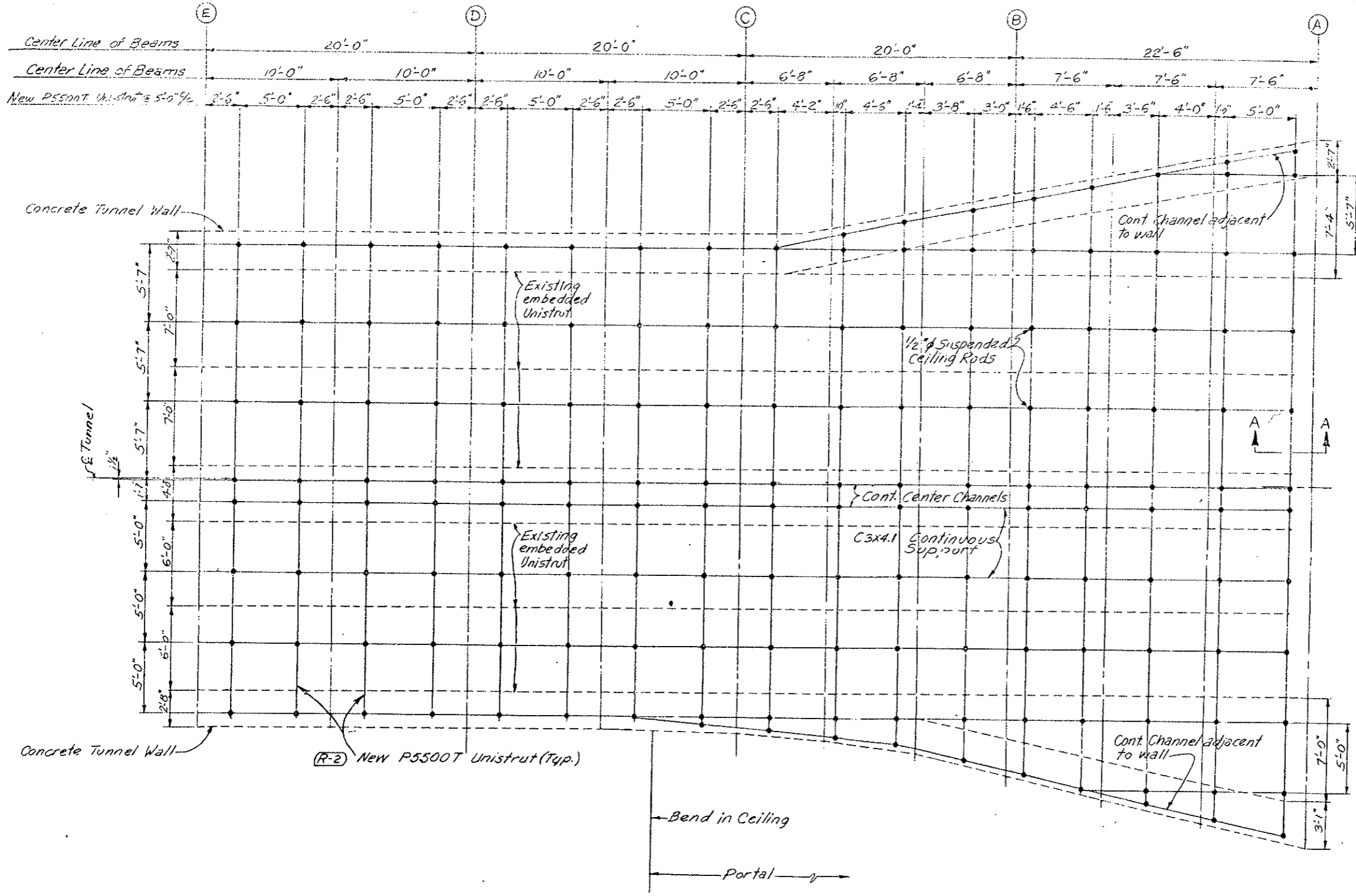
FLARE PANELS EAST PORTAL AREA

EP-4

SHT. OF

PROJ. ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	112X	
AS CONSTRUCTED				
NO REVISIONS		REVISED		VOID

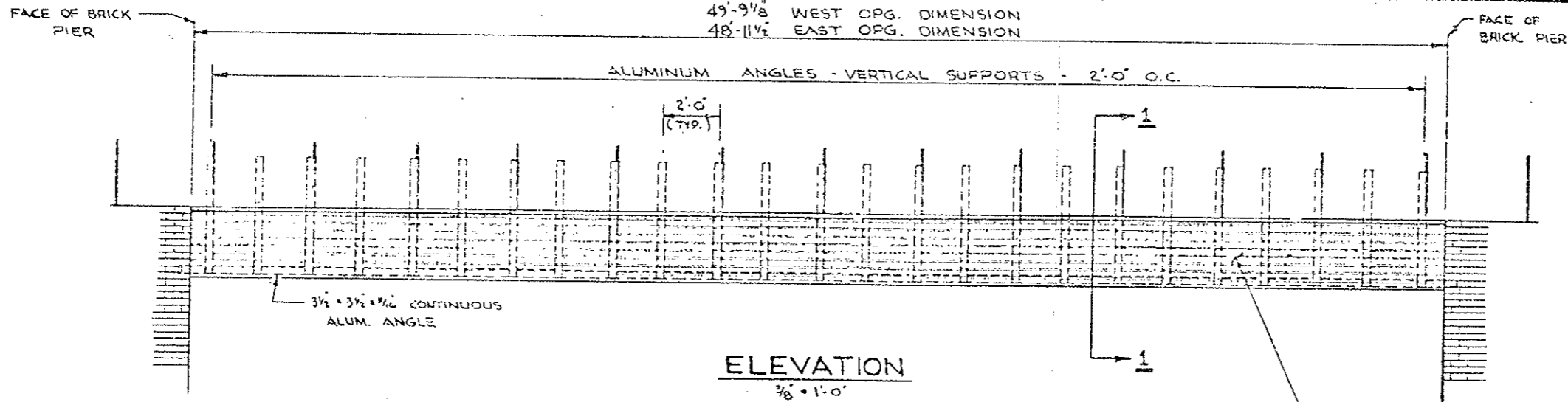
(R-1) Added Sheet 10-17-78 E.B.
(R-2) Clarified Detail 11-3-78 E.B.



NOTE: See Contractor's Final Approved Shop Drawings
Sheets No. 112 AX thru 112 EX. for Suspended Ceiling & Sheet No. 112 XAX for Fascia Panels

Note: Suspended ceiling rod spacing may vary due to Slope and Horizontal Curvature. Suspended ceiling rods in building to be attached to ceiling in a manner that will not conflict with existing facilities.

DIVISION OF HIGHWAYS	
PLAN THRU SUSPENDED CEILING	
EAST VENTILATION BLDG.	
Designer CDOH	Structure
Detailer J. Letchworth	Numbers
Drawing Number C-27X of Drawings	

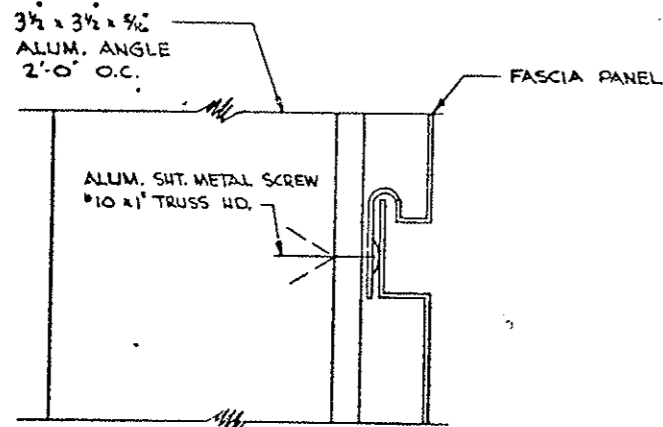


ELEVATION
3/8" = 1'-0"

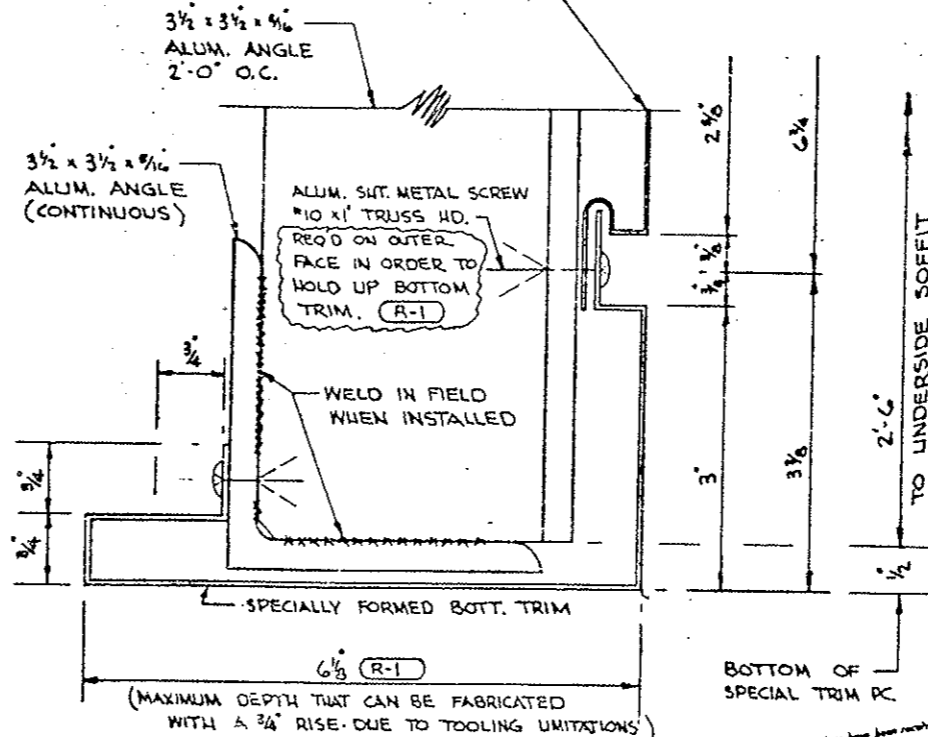
NOTE:

ALL PANELS & ALUMINUM ANGLES ARE TO BE FURNISHED IN STOCK LENGTHS. ERECTOR IS TO CUT TO SIZE IN FIELD.

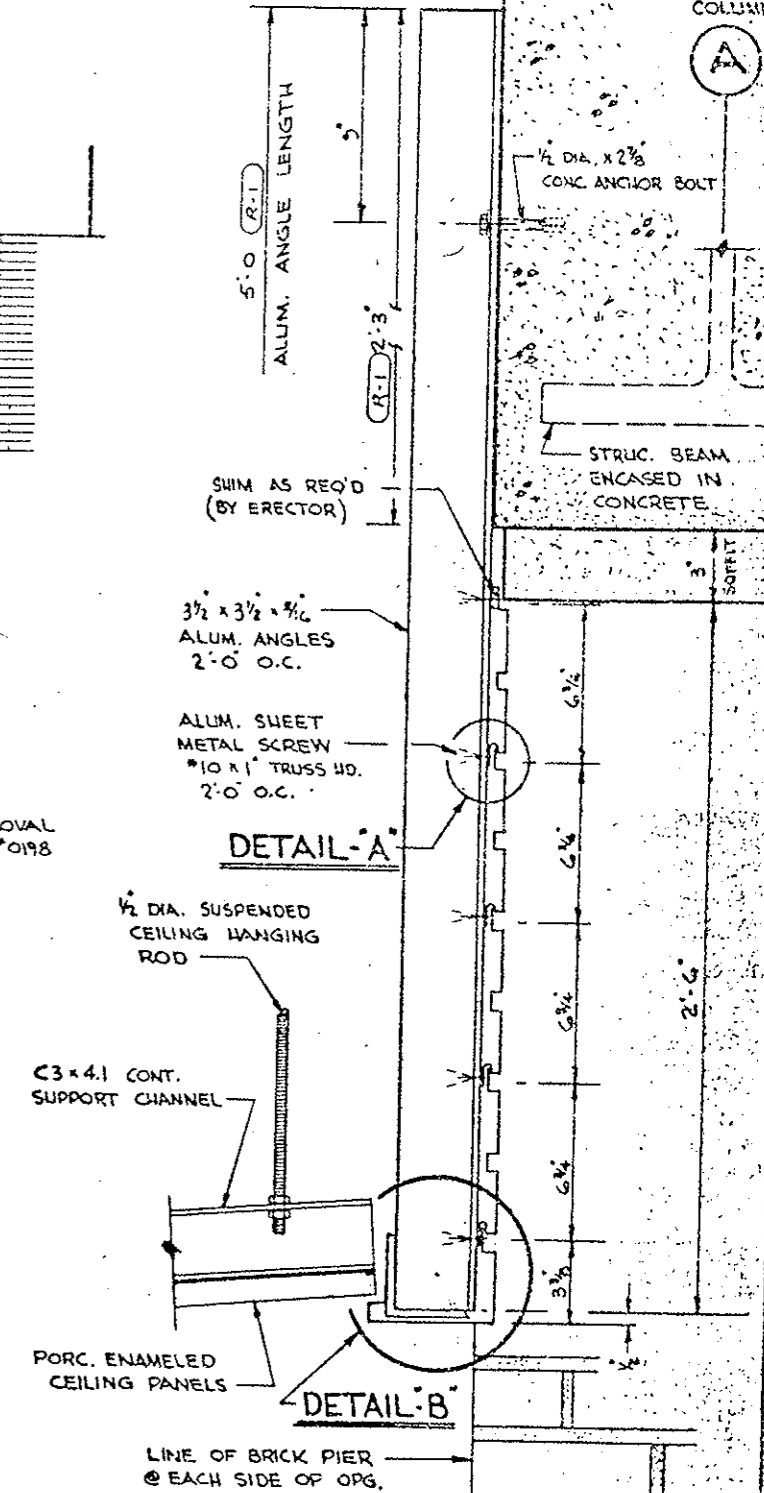
COLORTRIM FASCIA PANELS W/TRIM
MODEL F-675
FINISH - KYNAR 500
NO. 43 MEDIUM BRONZE - AT NO ADDITIONAL COST TO STATE PER EARLIER APPROVAL PER D.O.H. TRANSMITTAL #0198 (R-1)



DETAIL - A
FULL SIZE



DETAIL - B
FULL SIZE



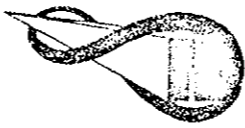
SECTION 1-1
3" = 1'-0"

These shop drawings have been reviewed and approved by
DATE 10/31/77 BY [Signature]
WEAVER CONSTRUCTION CO.

APPROVED FINAL
DATE 10/31/77 BY [Signature]
EISENHOWER MEMORIAL TUNNEL
2ND BORE PROJECT NO. I 70-3(83) 220

WEAVER CONSTRUCTION CO.
2315 SOUTH VALENTIA ST.
DENVER, COLORADO 80231

Jemrec, Inc.
Corrosion Control Coatings



P.O. BOX 309 KENSINGTON, MD. 20795

NUMBER	DATE	REVISIONS	DATE
(R-1)	10-31-77	REVISED BOTTOM TRIM ONLY - ADDED NOTES - ALUM. ANGLE DIM.	15 AUG. 79
			DRAWN L.K.
			CHECKED
			SCALE
			AS NOTED

FASCIA PANELS @
EAST & WEST PORTALS

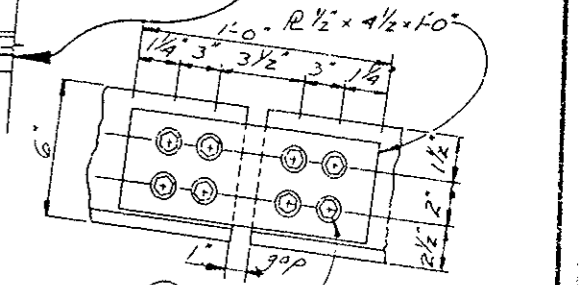
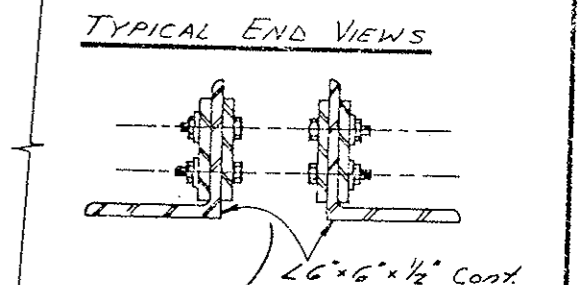
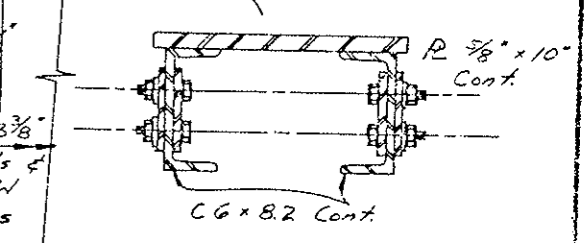
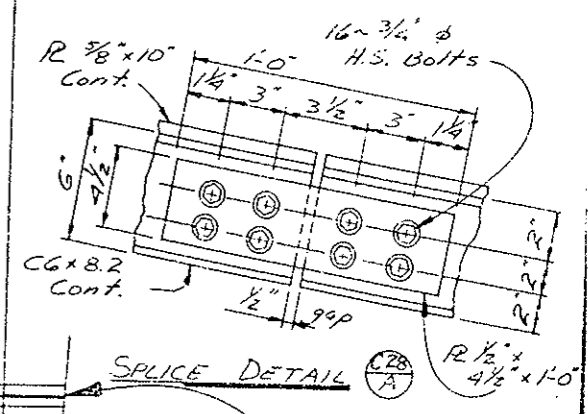
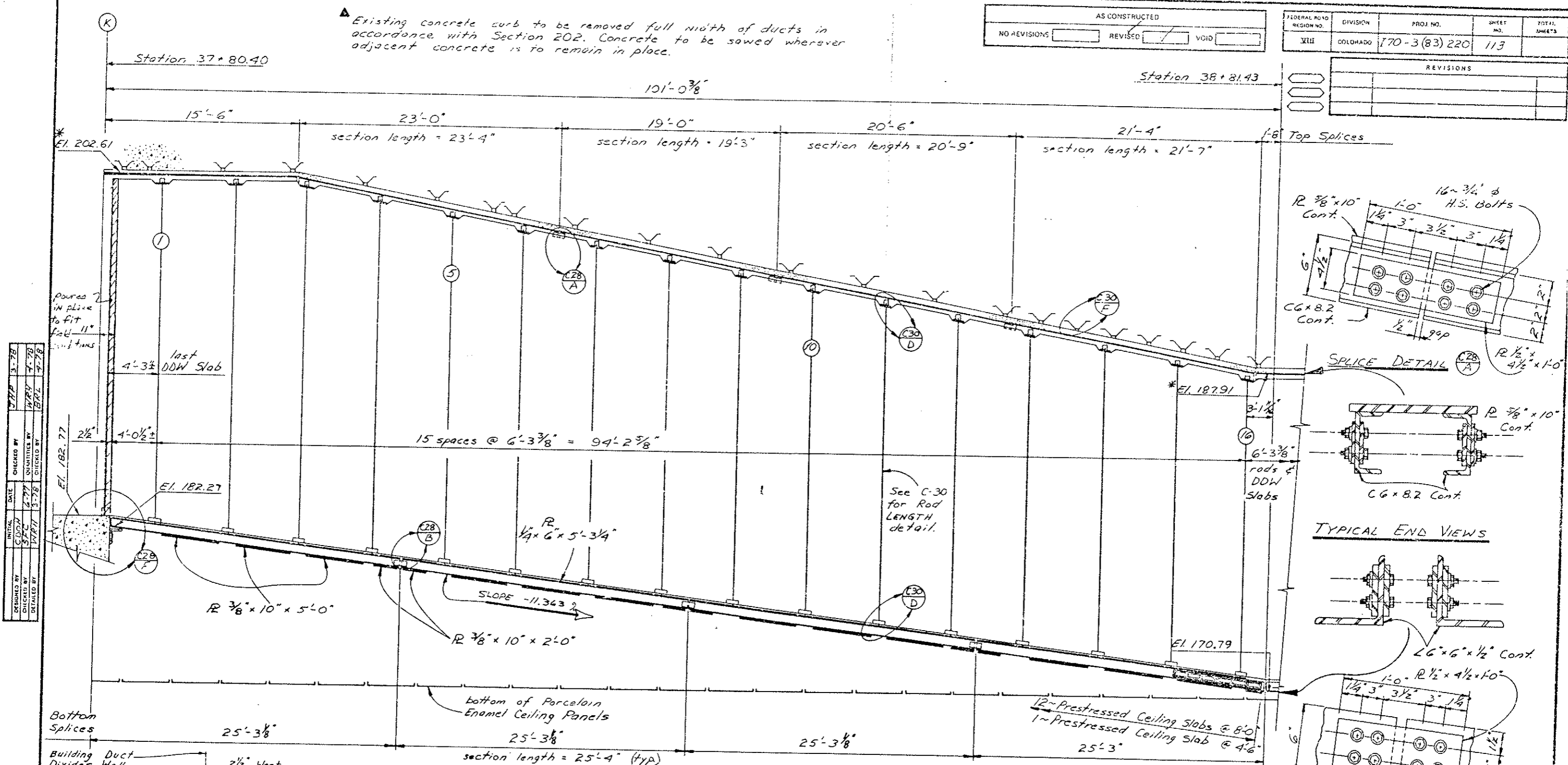
FP-1

▲ Existing concrete curb to be removed full width of ducts in accordance with Section 202. Concrete to be sawed wherever adjacent concrete is to remain in place.

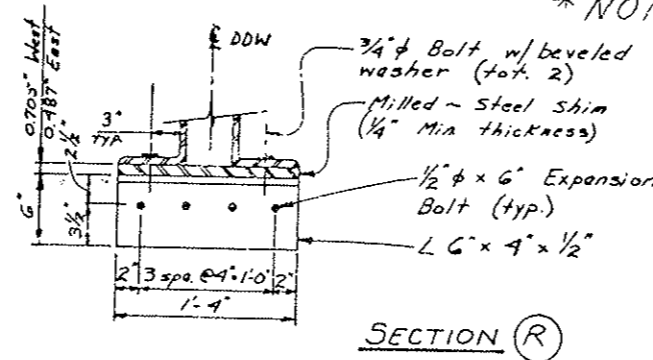
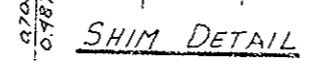
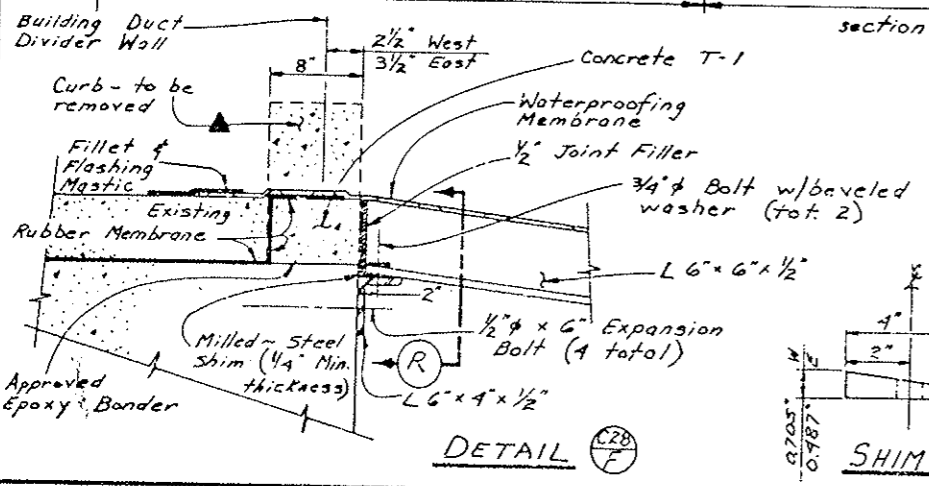
AS CONSTRUCTED		
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VOID <input type="checkbox"/>

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	170-3(83) 220	113	

REVISIONS	



DESIGNED BY	C.D.O.H.	CHECKED BY	W.R.V.
DRAWN BY	S.P.C.	QUANTITIES BY	W.R.V.
DATE	1/27/77	DATE	4-7-78
INITIAL	C.D.O.H.	DATE	3-7-78
DESIGNED BY	S.P.C.	CHECKED BY	W.R.V.
DRAWN BY	W.R.V.	QUANTITIES BY	W.R.V.
DATE	1/27/77	DATE	4-7-78



* Contractor to verify in the field for length prior to fabrication.

* NOTE: See Sheets No. 113AX & 113BX

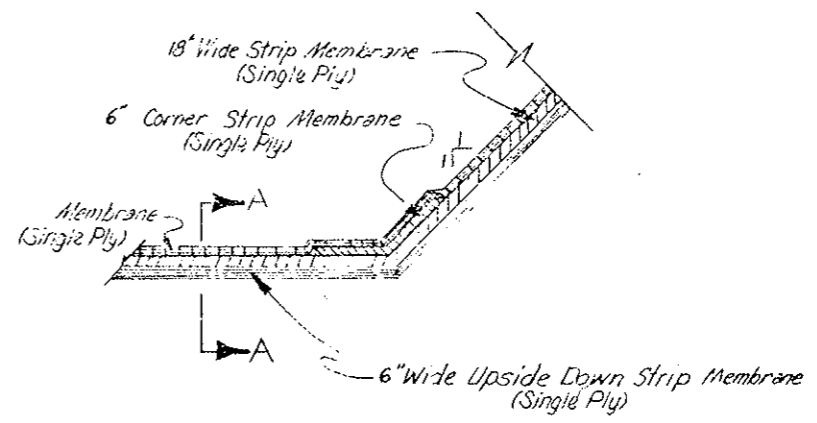
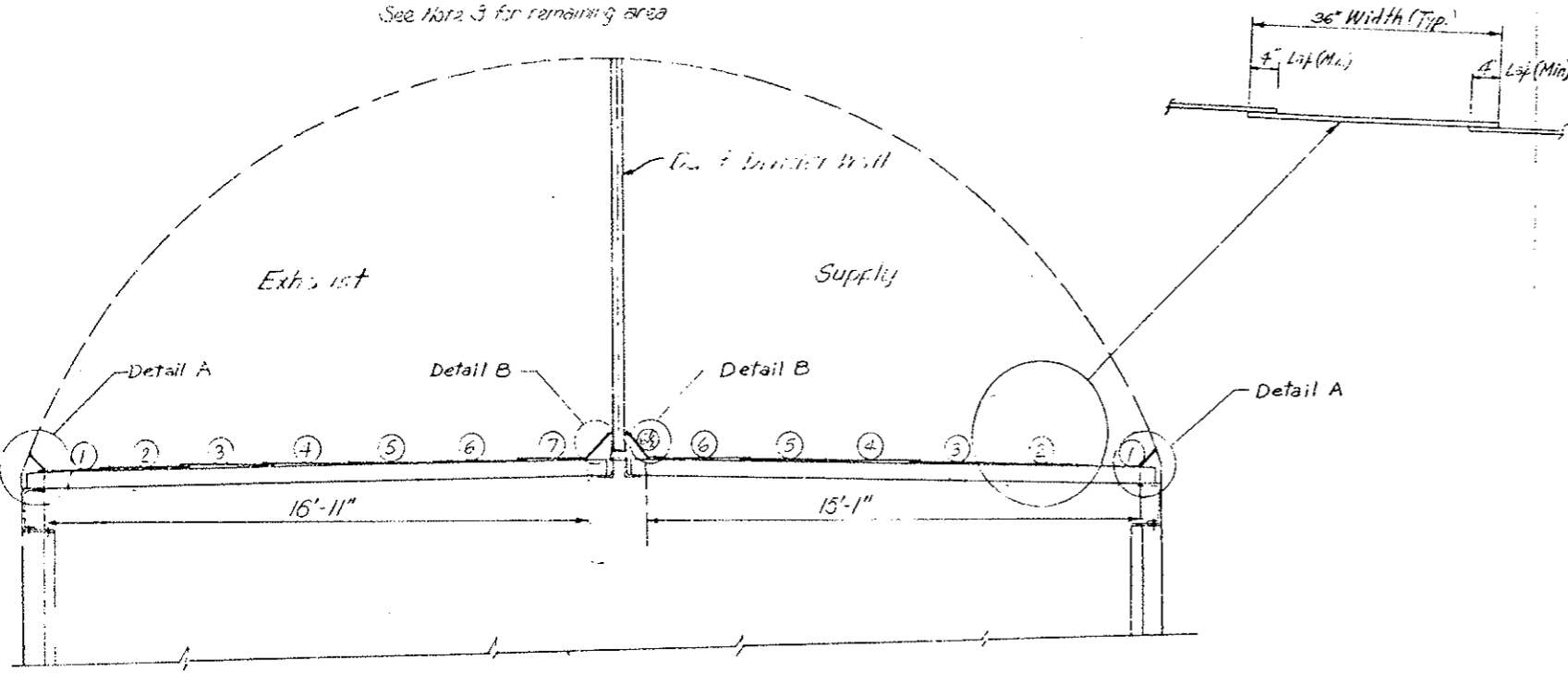
* HANGER ROD SCHEDULE *

Rod No.	LENGTH	Rod No.	LENGTH
1	20'-6"	9	19'-6"
2	21'-2"	10	19'-1 1/2"
3	21'-10"	11	18'-9"
4	21'-5"	12	18'-4"
5	21'-1"	13	17'-11 1/2"
6	20'-8"	14	17'-6"
7	20'-3"	15	17'-2"
8	19'-11"	16	16'-9"

DIVISION OF HIGHWAYS	
TRANSITION AREA DETAILS for the SUSPENDED PORCELAIN ENAMEL CEILING and SUPPORT SYSTEM for the DUCT DIVIDER WALL and PRECAST CEILING SLABS	
West Part 1	
Designer C.D.O.H.	Structure F-13-X
Detailer W.R. HESSLER	Numbers
Drawing Number C-28	

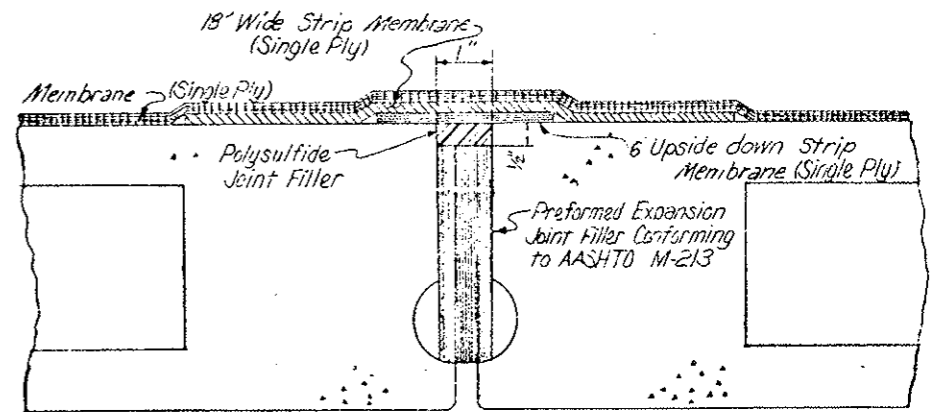
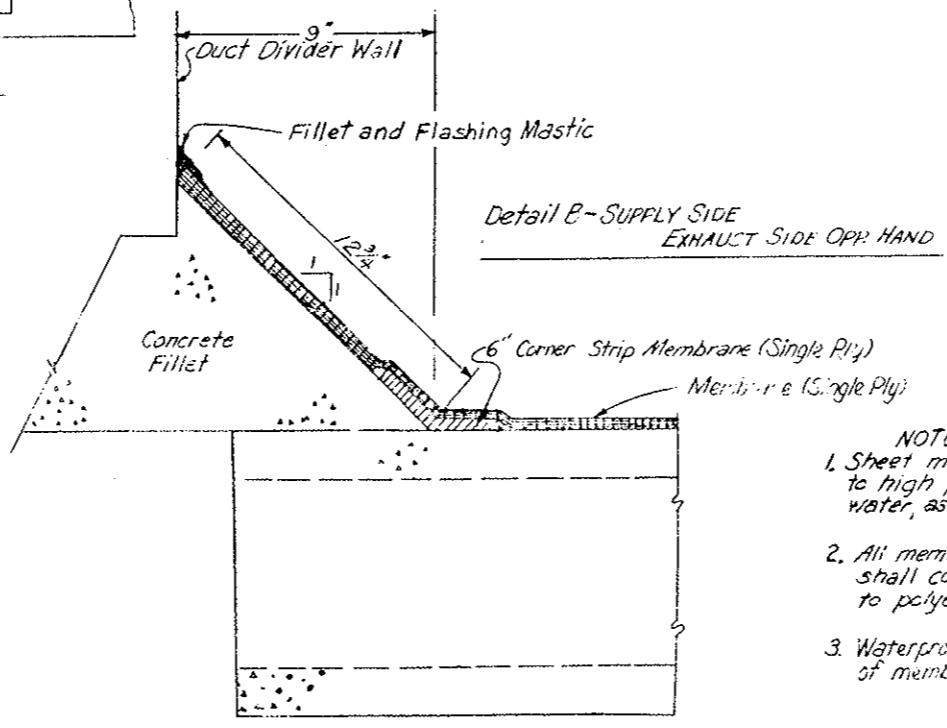
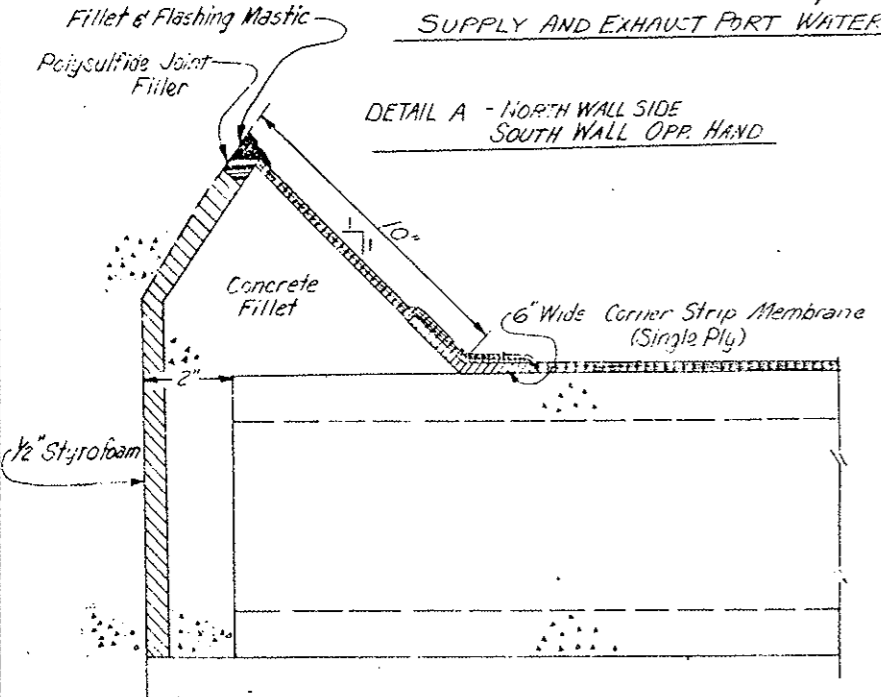
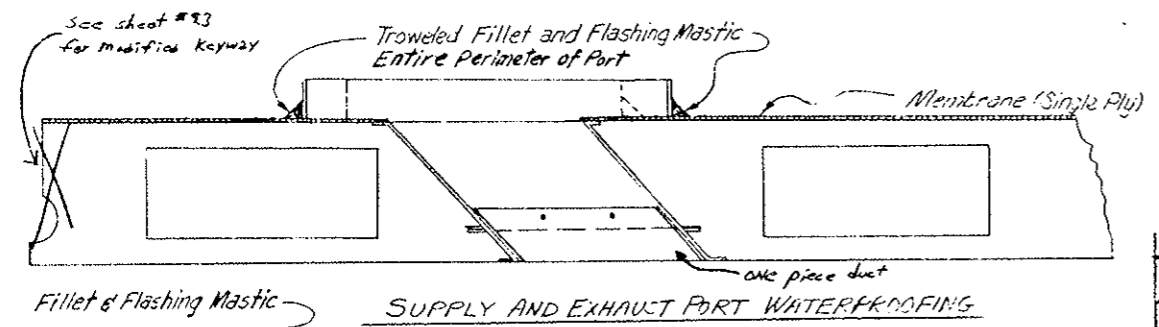
WATERPROOFING (MEMBRANE) LAPPING ARRANGEMENT
 TYPICAL SECTION LOOKING EAST
 Applies from Sta. 37+90 to 41+05
 and Sta. 120+57 to 123+75
 See Note 3 for remaining area

REVISIONS		
R-1	10-17-15	Added Sheet E.B.



CROSS-SECTION THROUGH AN EXPANSION JOINT AT DETAIL A OR B

DESIGNED BY	C.D.O.H.
CHECKED BY	J.P.C.
DATE	7-9-75
CHECKED BY	C.D.O.H.
QUANTITIES BY	J.P.C.
DATE	7-9-75
DESIGNED BY	C.D.O.H.
CHECKED BY	J.P.C.
DATE	7-9-75



- NOTES:
1. Sheet membrane will be laid from low point to high point so that the laps will shed water, as do shingles on a roof.
 2. All membranes shown on the above details shall consist of rubberized asphalt bonded to polyethylene sheeting.
 3. Waterproofing (Duct Filler) shall be applied in piece of membrane from Sta. 41+08 to 120+97.

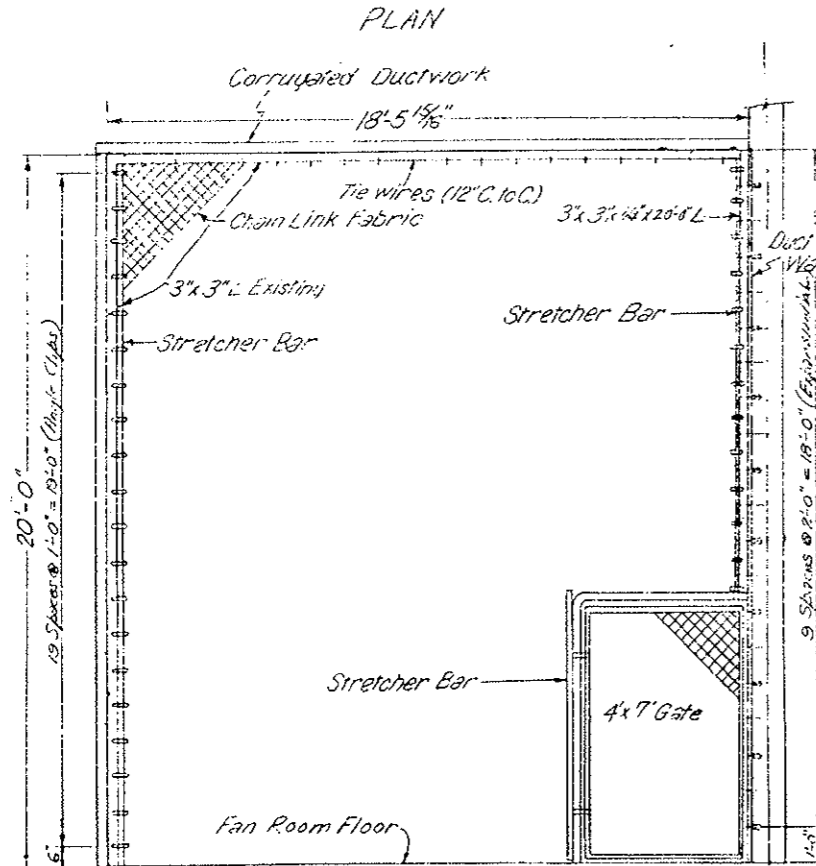
DIVISION OF HIGHWAYS

CEILING WATERPROOFING (MEMBRANE)

Designer C.D.O.H.	Structure
Detailer J. Lopez with	Numbers
Drawing Number C-31	of Drawings

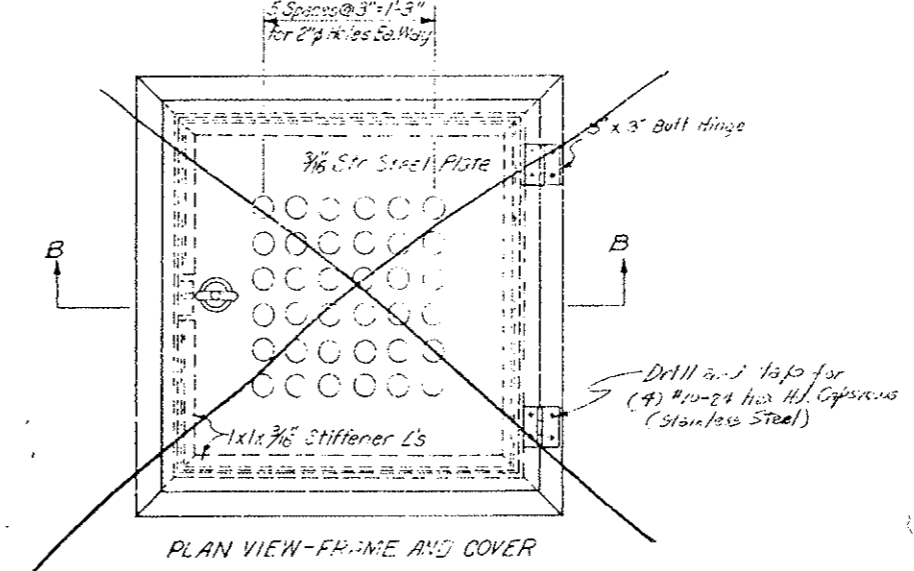
Revision Dates: (Preliminary Stage Only)

REVISIONS	

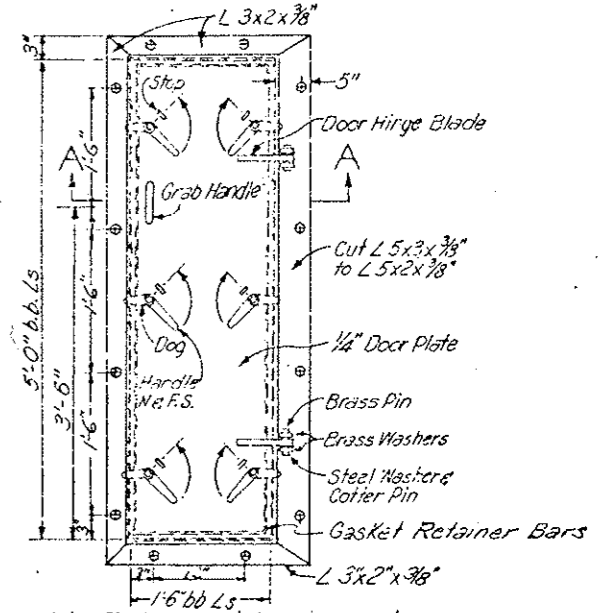


NOTE: Safety Screen Installed by DOH Tunnel Maintenance

DUCT ACCESS HATCH DETAILS
NOTE: See Approved Shop Drawing, Sheet No. 117AX



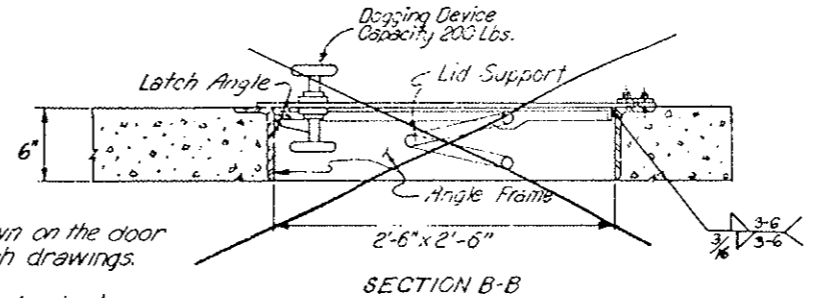
DUCT DIVIDER WALL DOOR DETAILS



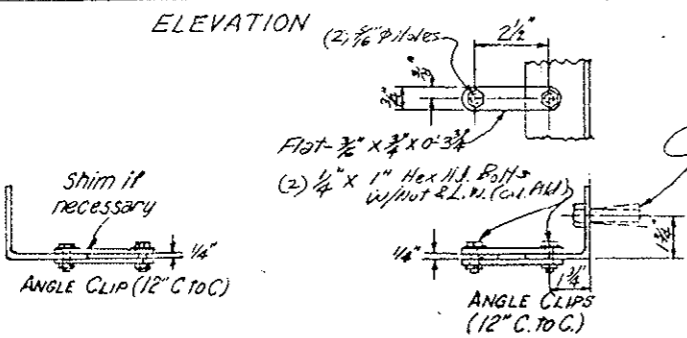
Note: Eight required, 4 as shown and 4 opposite hang. Differential Pressure for design = 50 lbs / Sq. ft.

ELEVATION-FRESH AIR SIDE

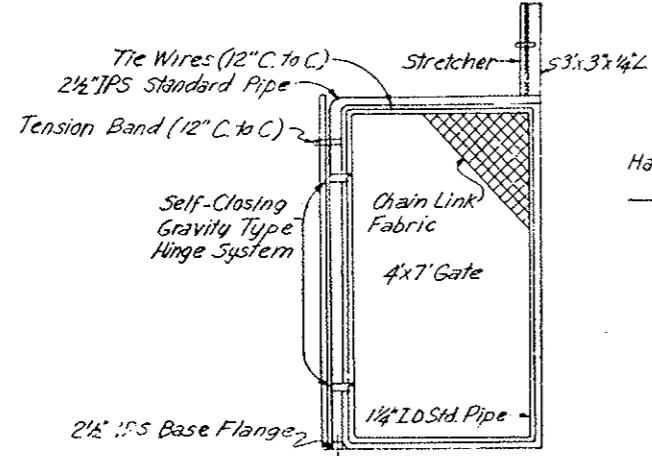
Frame not shown for clarity (See Section A-A)



SECTION B-B



- Notes:
- All hardware shall be as shown on the door schedule included in Wall Finish drawings.
 - All steel components shall be galvanized.

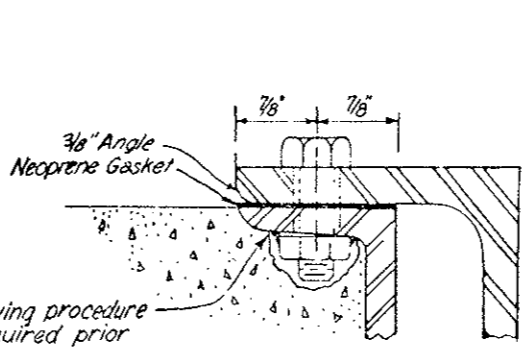


DETAILS OF SAFETY SCREEN

Note: Safety screens will be required in exhaust duct of both ventilation buildings and shall be located at the duct work brace furthest from the fans. All chain link fabric shall be 11 gage with 2" mesh. Safety screen for East end shown. For both ends, the gate frame shall be welded to the fan side of angle brace and gate shall open away from the fans.

Duct Access Hatch - Approximate Stationing	Duct Divider Wall Door - Approximate Stationing
45+58.8	45+56.7
55+63.8	55+61.7
65+68.8	65+66.7
75+73.8	75+71.7
85+78.8	85+76.7
95+83.8	95+81.7
105+88.8	105+86.7
115+93.8	115+91.7

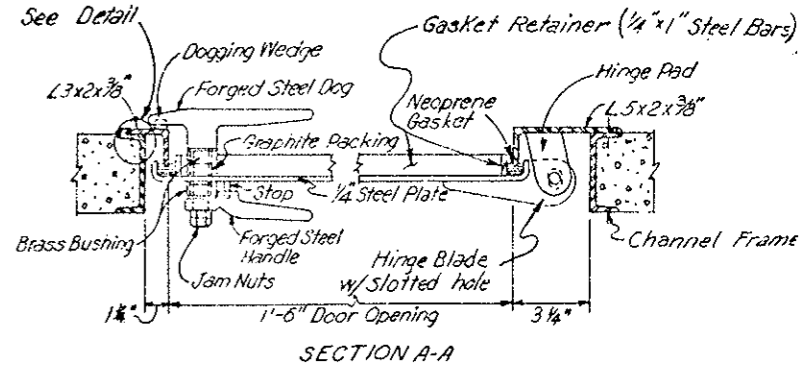
Stationing is to the centerline of hatch or door.



CONNECTION DETAIL

The following procedure will be required prior to precasting

- Drill hole in channel
- Tack weld nut to channel
- Thread bolt into nut
- Cover nut and bolt with grease

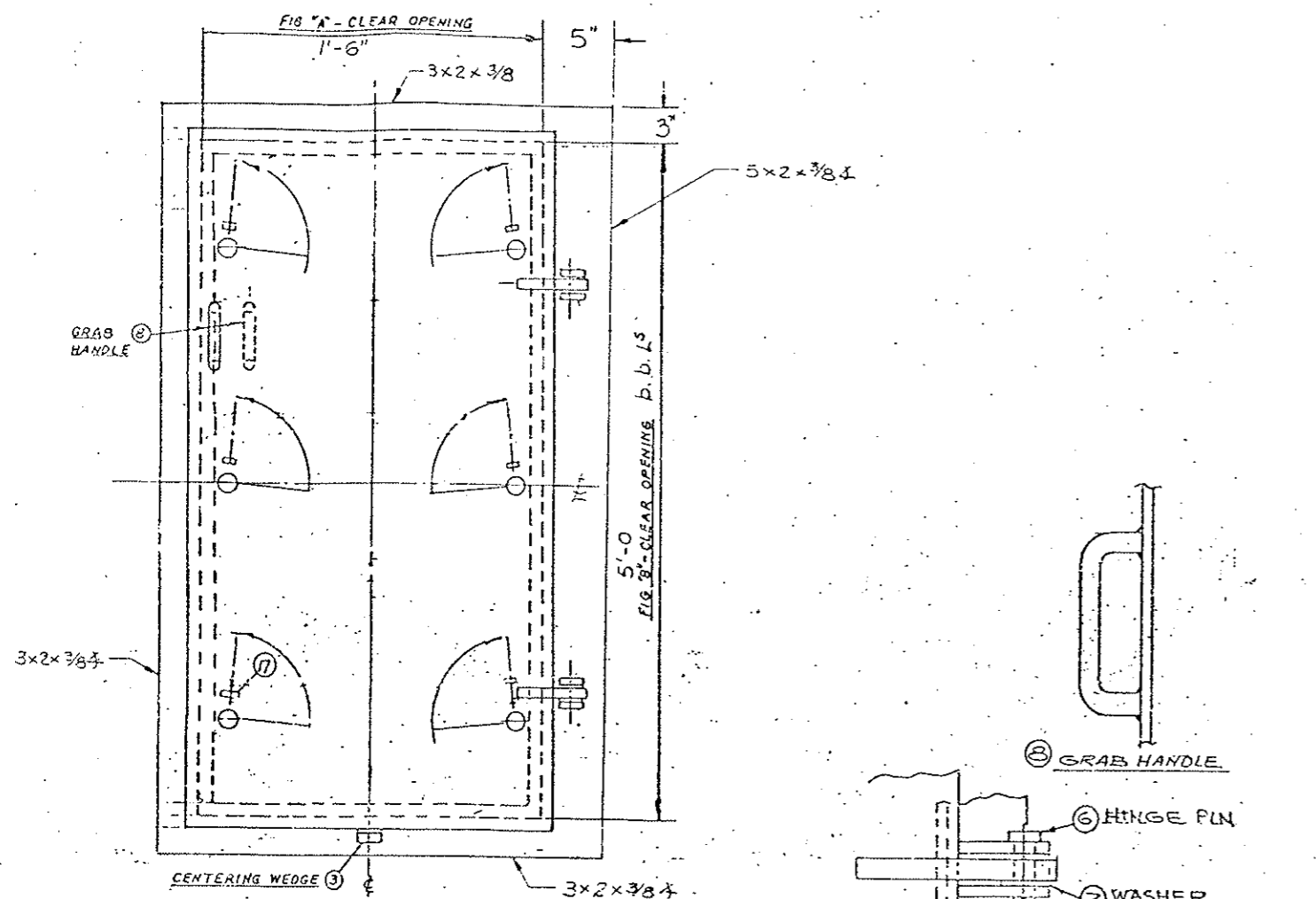


SECTION A-A

DIVISION OF HIGHWAYS	
ACCESS HATCH, DUCT DIVIDER DOOR AND SAFETY SCREEN DETAILS	
Designer C.D.	Structure Numbers
Detailer J. Z...	of
Drawing Number C-32	Drawings

CHECKED BY	DATE	QUANTITIES BY	CHECKED BY
DESIGNED BY		CHECKED BY	

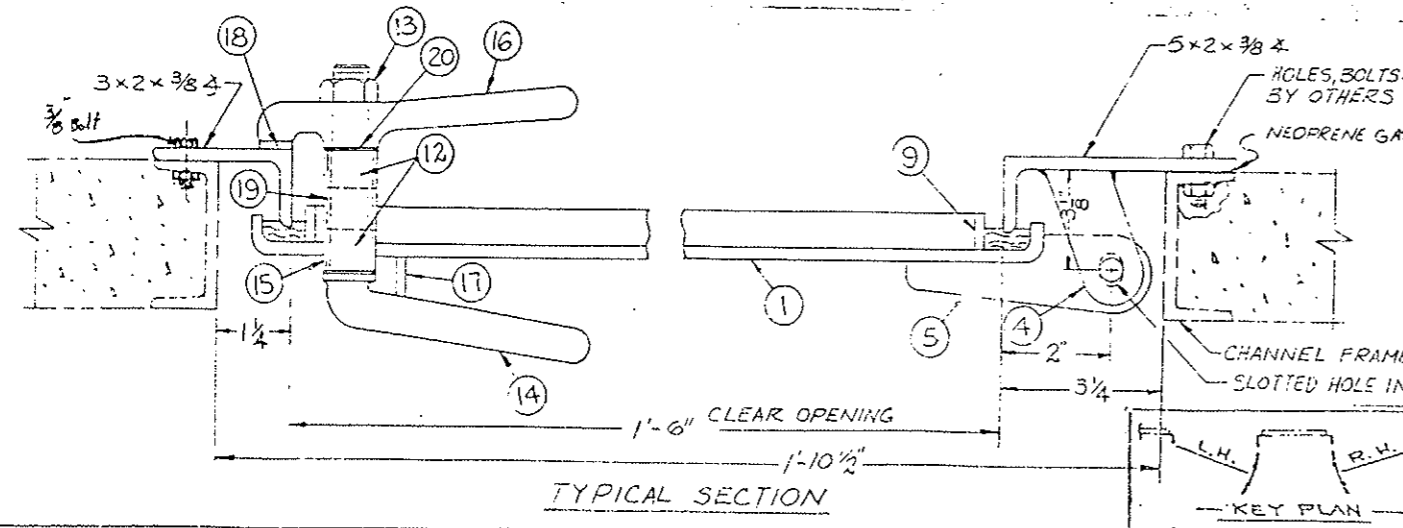
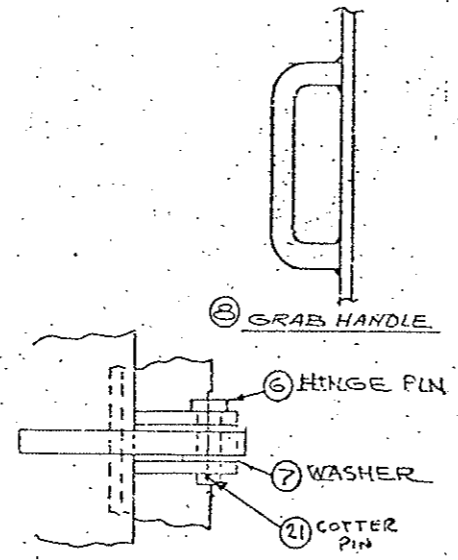
117AX



— LIST OF MATERIAL —

PC	PART	MATERIAL	REMARKS
1	PANEL	STEEL	1/4" R
2	FRAME	STEEL	SEE ELEVATION
3	CENTERING WEDGE	STEEL	
4	HINGE PAD	STEEL	
5	HINGE BLADE	STEEL	
6	HINGE PIN	CRES	
7	HINGE WASHER	CRES	
8	GRAB HANDLE	STEEL	
9	RETAINER	STEEL	1/4" x 1 1/4"
10	GASKET	NEOPRENE	
12	BUSHING	OILITE	
13	LOCK NUT	STEEL	
14	DOG HANDLE	CR. STL	
15	DOG SLEEVE	STEEL	
16	DOG	STL OR BRZ	
17	DOG STOP	STEEL	
18	DOG WEDGE	STEEL	
19	PACKING	GRAPHITE	
20	DOG WASHER	CRES	
21	COTTER PIN	CRES	

ITEM	QTY	FIG. A	FIG. B	No. DOGS	HAND	REMARKS
8	1	1'-6"	5'-0"	6	RH	DOOR IN WALL

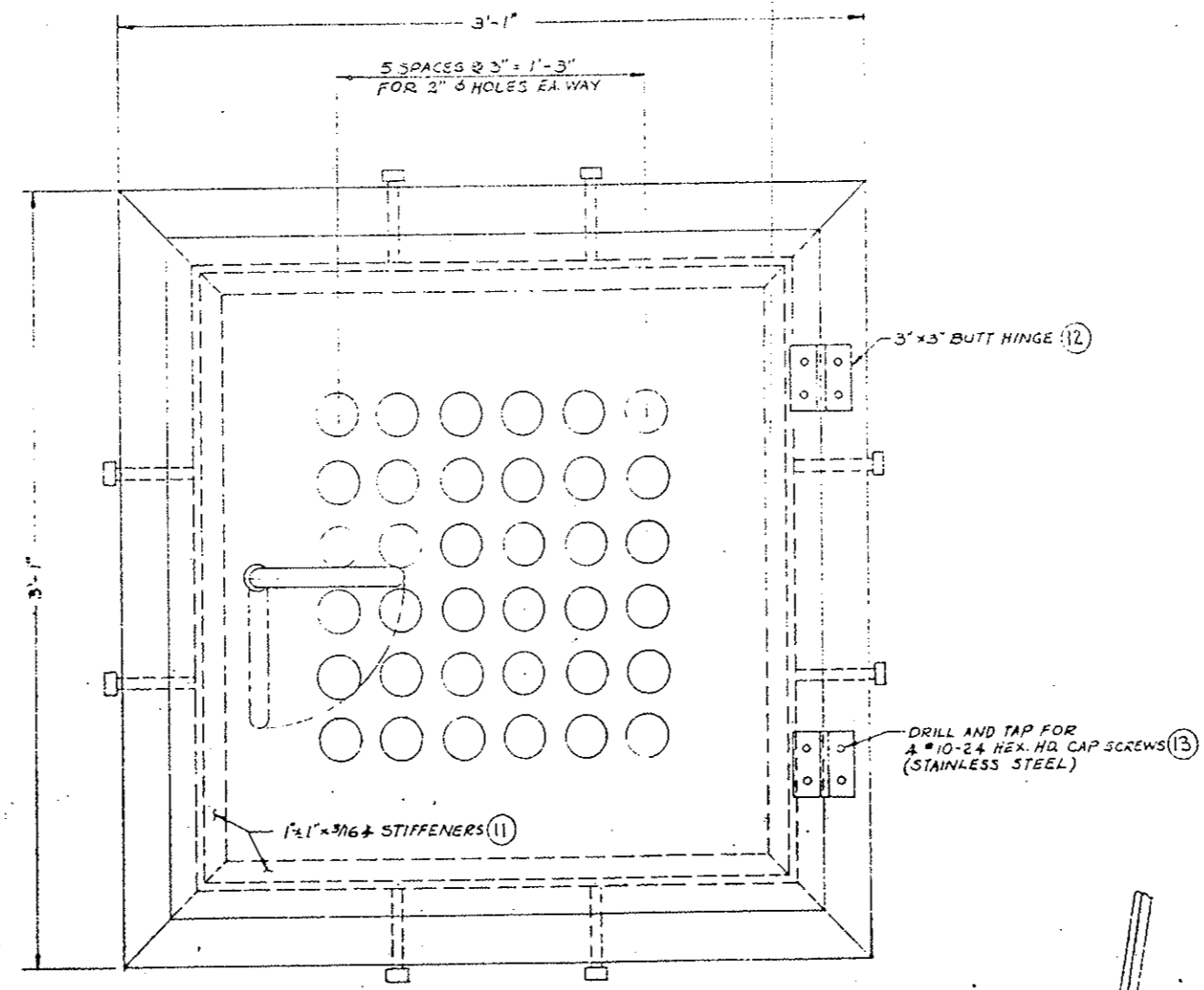


DUCT DIVIDER WALL DOOR
WEAVER CONSTRUCTION CO.
P.O. 1660-0170
JULIUS MOCK & SONS, INC.
MARINE DIVISION
777 RUTLAND ROAD
BROOKLYN, N.Y. 11203
FINISH GALVANIZE
APPROVED
SHIPYARD ABS USCG Mock Job 9040
DRAWING NO. 9040-2

APPROVED PRELIMINARY
DATE 3/22/79
BY Paul Tuzillo

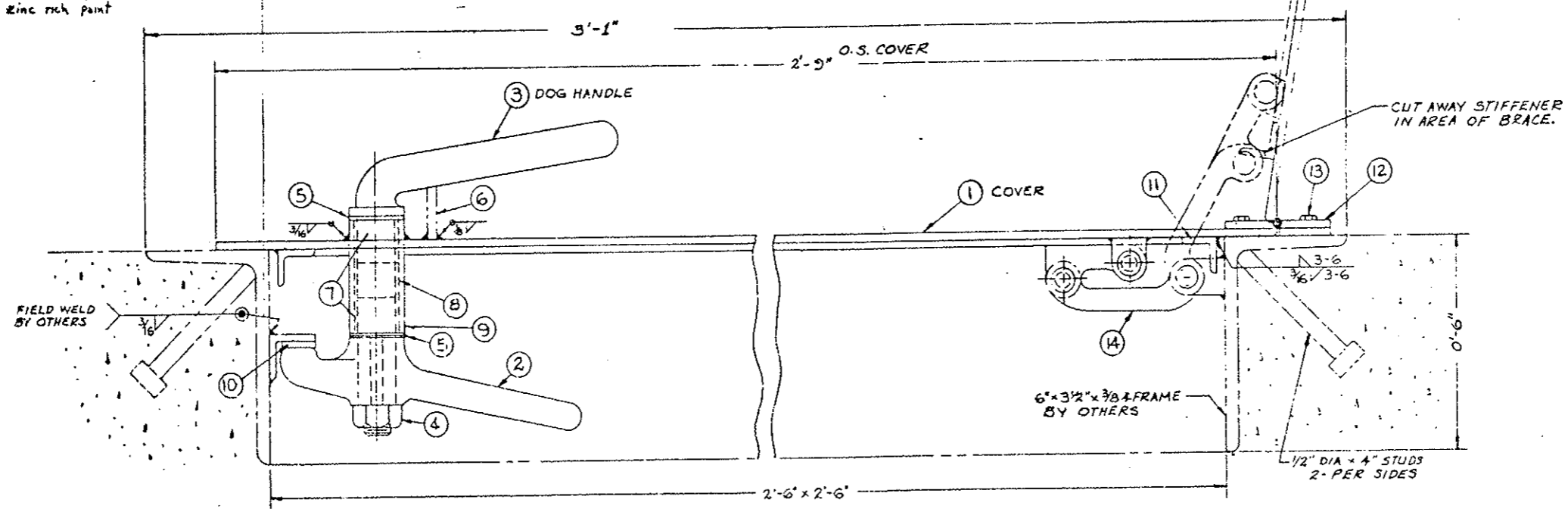
These shop drawings were prepared and approved by
MIS
3/20 72

P. No.	QTY	PART	MATERIAL	REMARKS
1	1	COVER	STEEL ASTM A36	3/16 THK
2	1	DOG	STEEL	COMM'L
3	1	HANDLE	STEEL	COMM'L
4	1	LOCK NUT	STEEL	
5	2	DOG WASHER	BRASS	
6	1	STOP	STEEL ASTM A36	COMM'L
7	2	BUSHING	BRZ. COMP'Z	
8	AS REQ'D	PACKING	GRAPHITE	COMM'L
9	1	SLEEVE	STEEL ASTM A120	
10	1	WEDGE	FORGED STEEL	C-1012
11	1	STIFFENER	STEEL ASTM A36	1" x 1" x 1/4"
12	2	HINGE		STANLEY # 850
13	8	CAP SCREWS	STNLS. STEEL	# 10-24 HEX. HD
14	1	BRACE	STEEL	



PLAN VIEW - FRAME AND COVER
SCALE 1/4" = 1"

Welds must be painted
with zinc rich paint



TYPICAL SECTION
HALF SCALE

APPROVED PRELIMINARY
DATE 3/22/77
BY Rick Rybicki

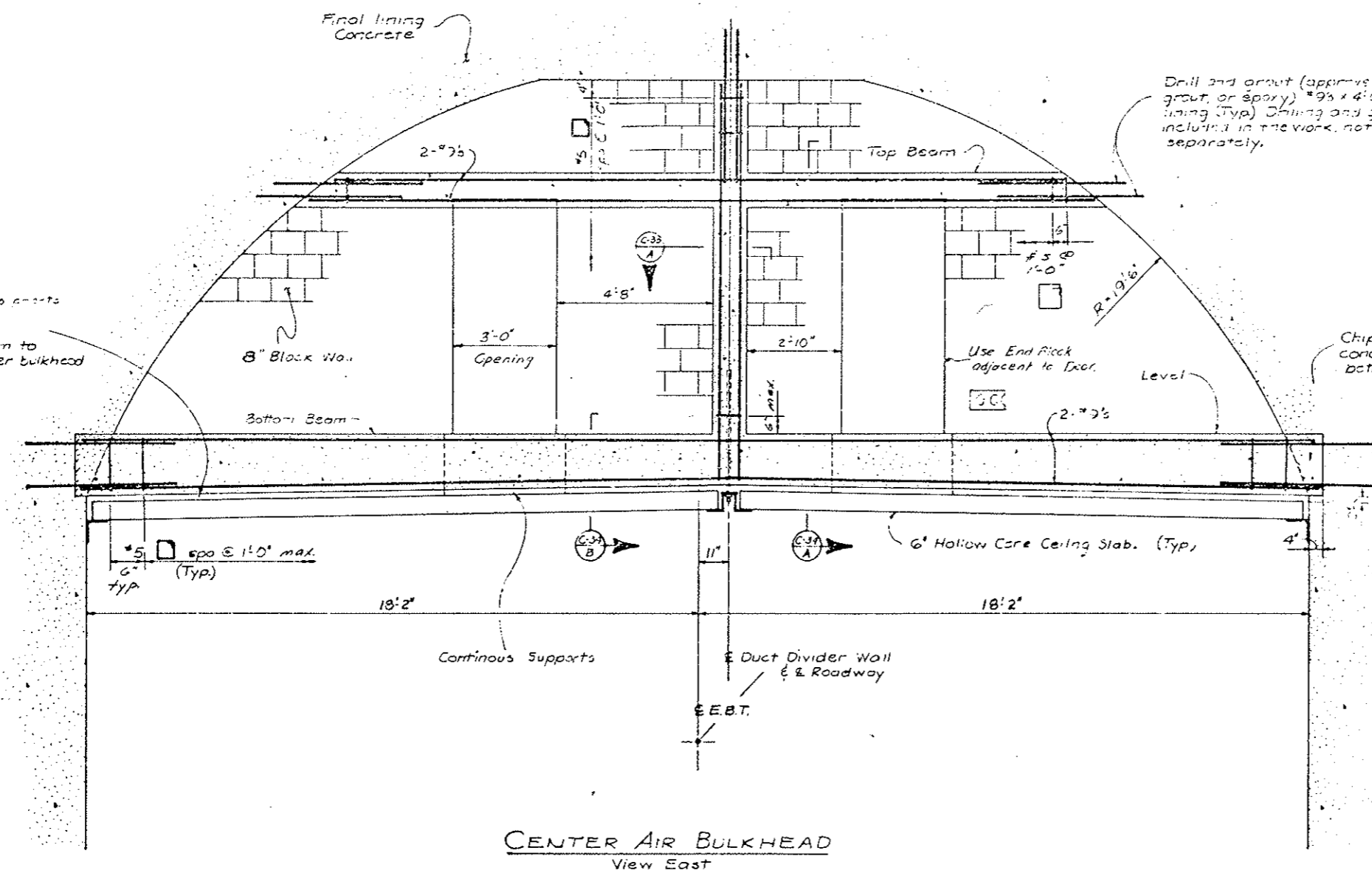
These shop drawings have been reviewed and returned by
DATE 3/20/77
WEAVER CONSTRUCTION CO.
DATE 3/20/77

WEAVER CONSTRUCTION CO.		
2'-6" x 2'-6" DUCT ACCESS HATCH		
JULIUS MOCK & SONS, INC. MARINE DIVISION 777 RUTLAND ROAD BROOKLYN, N.Y. 11208		
FINISH GALVANIZE		
APPROVED		
SHIPYARD	ABS	USCG
DRAWING NO. 9040-1		

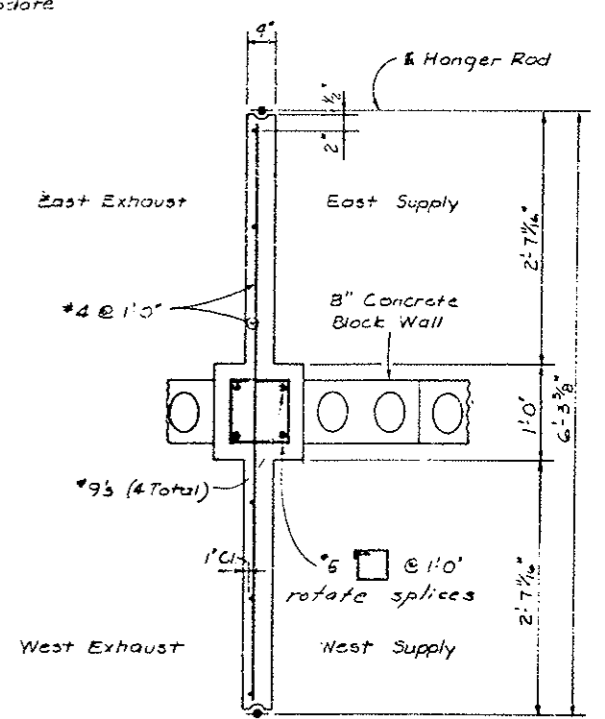
REVISIONS	

CONSTRUCTION SEQUENCE

1. Install hollow-core ceiling slabs.
2. Chip final lining concrete to required geometry.
3. Set temporary form & wedge supports.
4. Construct bottom beam.
5. Remove temporary wedge supports after bottom beam has reached 3000 psi.
6. Form and pour remaining parts of reinforced concrete frame (center column and top beam). Forming and concrete load to bear on bottom beam.
7. Place 8" block on lower beam and upper beam.
8. Grout under bottom beam.



CENTER AIR BULKHEAD
View East



SECTION C-33/A

Concrete: Class T-1
 $f_c = 1200$ psi.
 $n = 10$

Reinforcing Steel: Grade 60
 $f_s = 24,000$ psi.

DESIGNED BY	C.D.O.H.	CHECKED BY	J.H.P.	DATE	9-77
DETAILD BY	B.R.L.	QUANTIFIED BY	W.S.H.	DATE	4-78
CHECKED BY	B.R.L.	DATE	8-77		

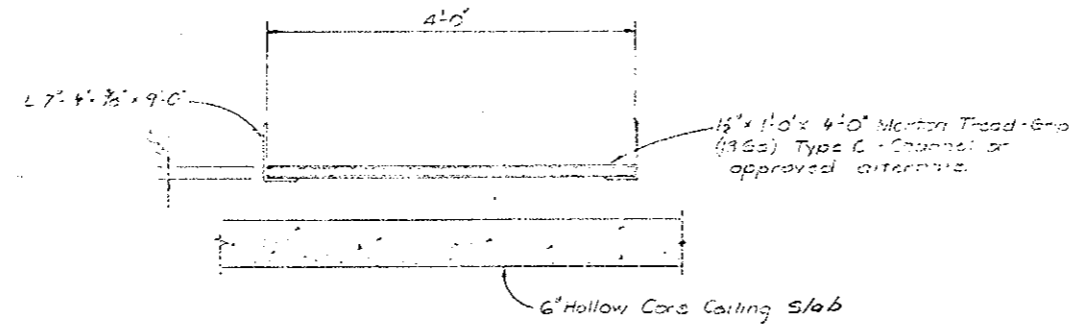
Area under beam to be grouted after bulkhead is complete.

Drill and grout (approx. non-shrink grout, or epoxy) #9's x 4'-6" @ 1'-6" into final lining (Typ). Drilling and grouting to be included in the work, not to be paid for separately.

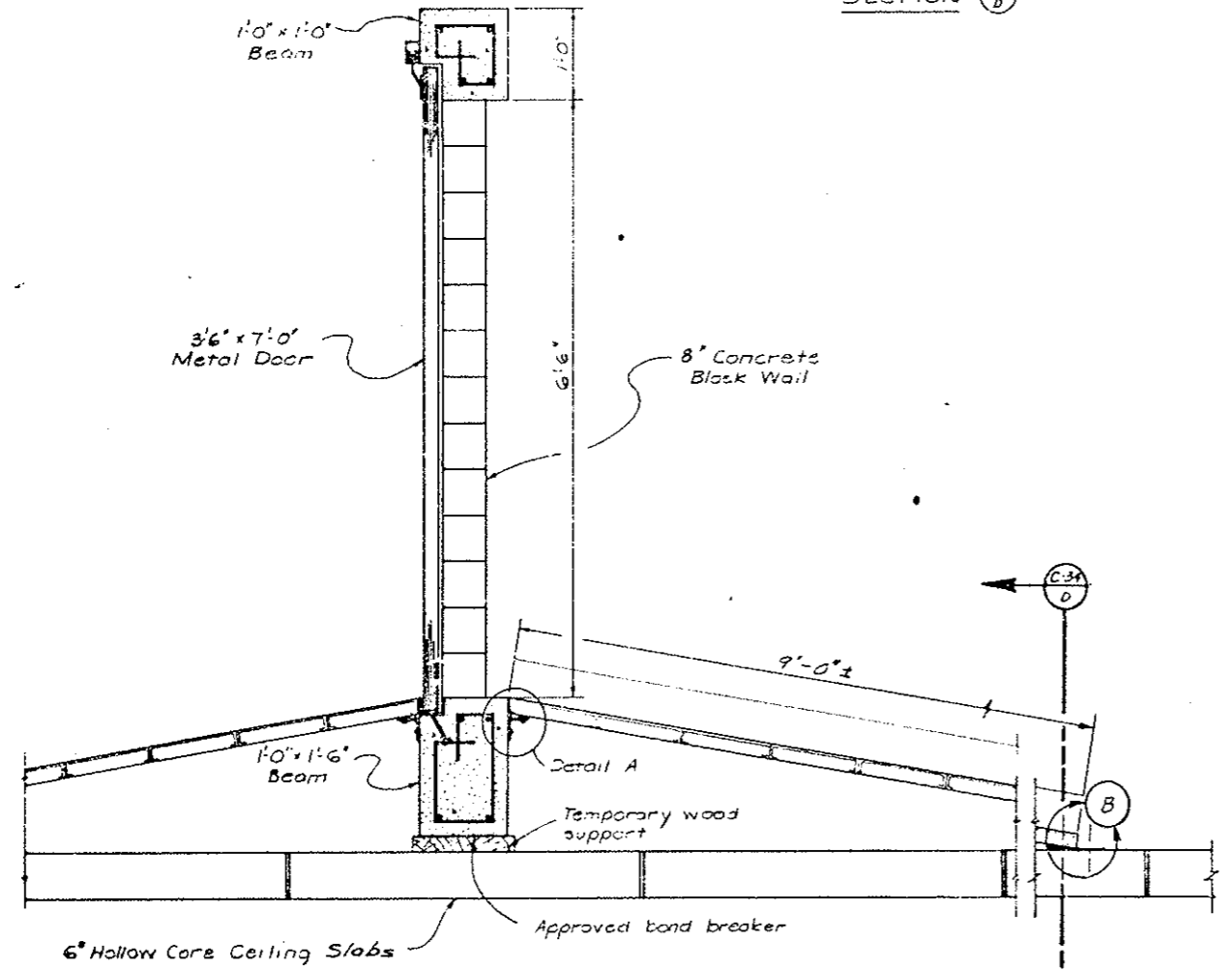
Chip final lining concrete to accommodate bottom beam.

DIVISION OF HIGHWAYS	
CENTER AIR BULKHEAD	
STA. 80+77.31	
Designer C.D.O.H.	Structure F-13-X
Detailer B.R.Lers	Numbers
Drawing Number C-33	

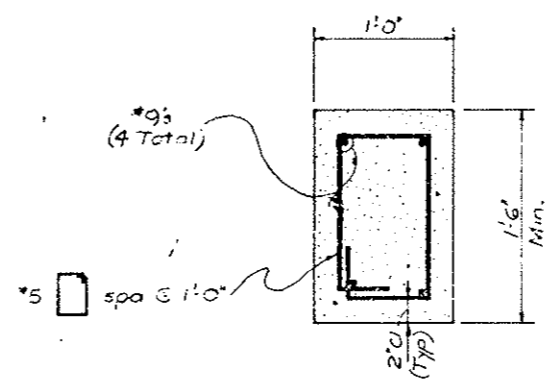
REVISIONS	



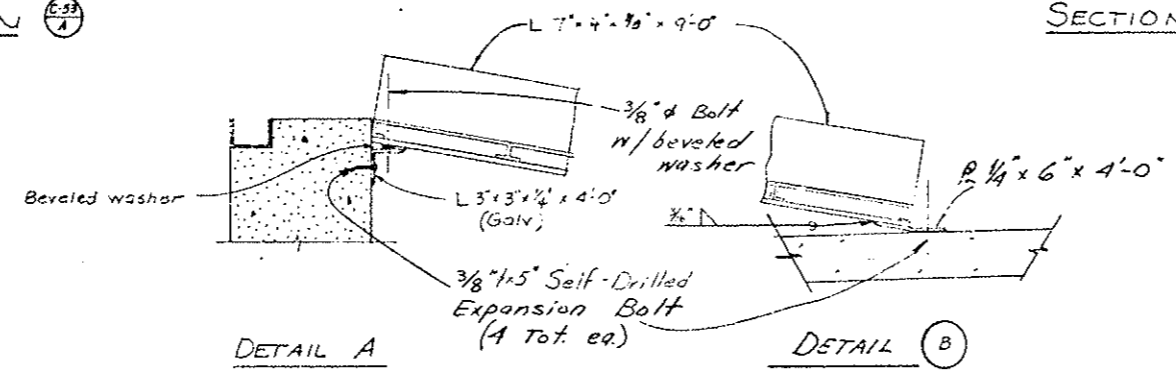
SECTION C-34 D



SECTION C-33 A

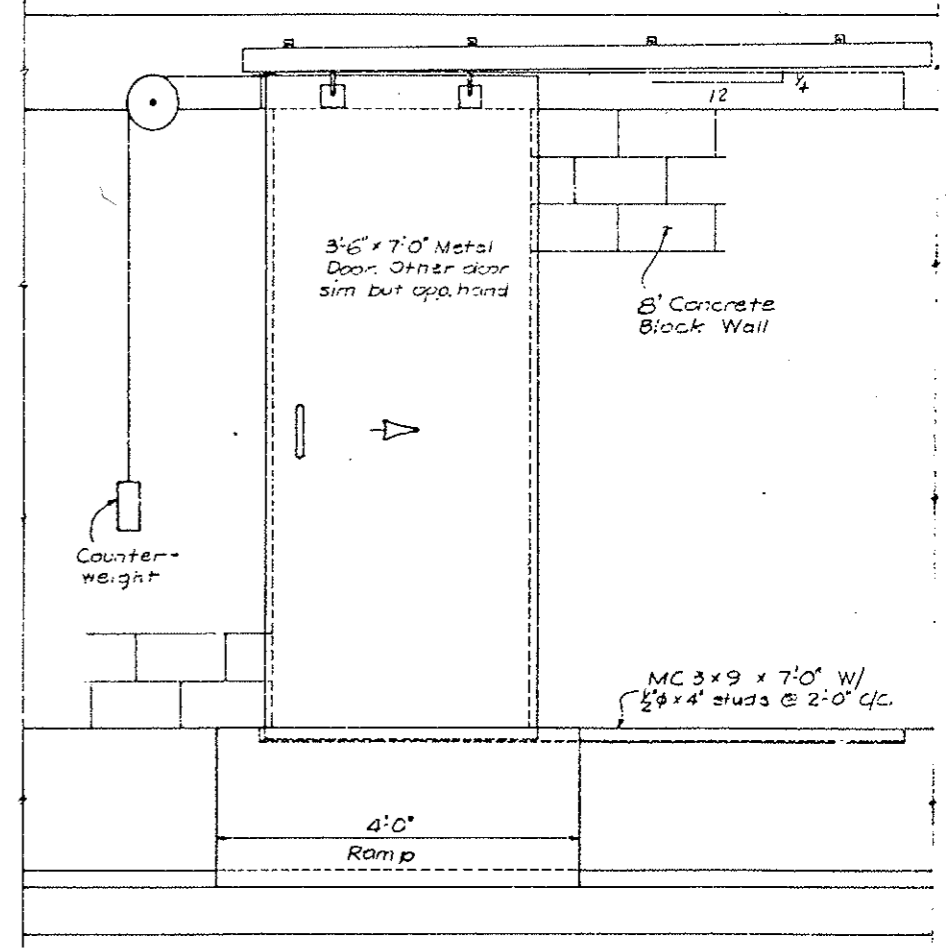


SECTION C-33 B



DETAIL A

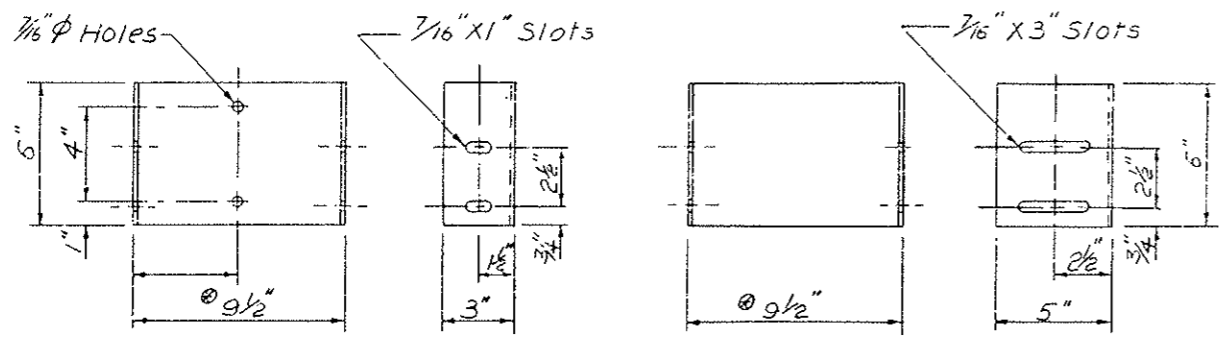
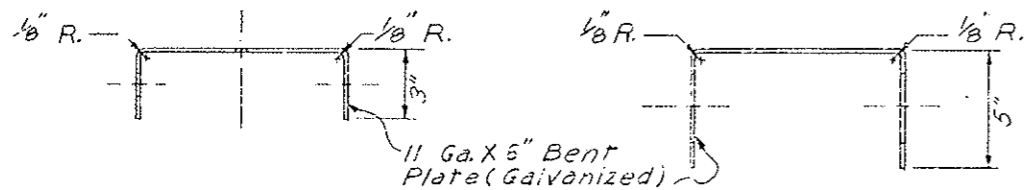
DETAIL B



TYPICAL DOOR ELEVATION

DESIGNED BY	DATE	CHECKED BY
QUANTITIES BY	DATE	CHECKED BY
DETAILS BY	DATE	CHECKED BY

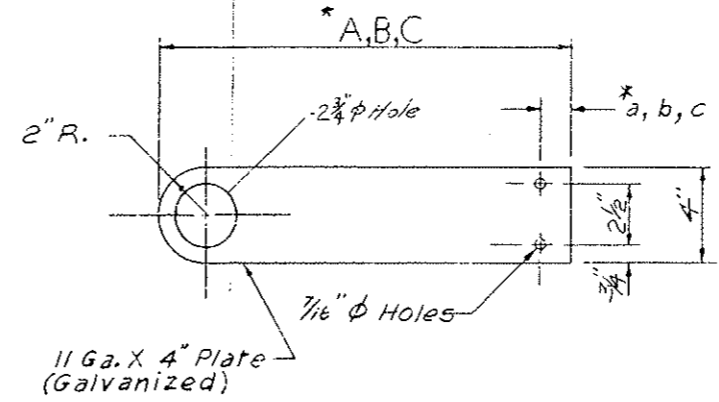
DIVISION OF HIGHWAYS	
CENTER AIR	
BULKHEAD DETAILS	
Designer CDDH	Structure F-13-X
Detailer SRL-e	Numbers
Drawing Number C-34	



1 WALL BRACKET

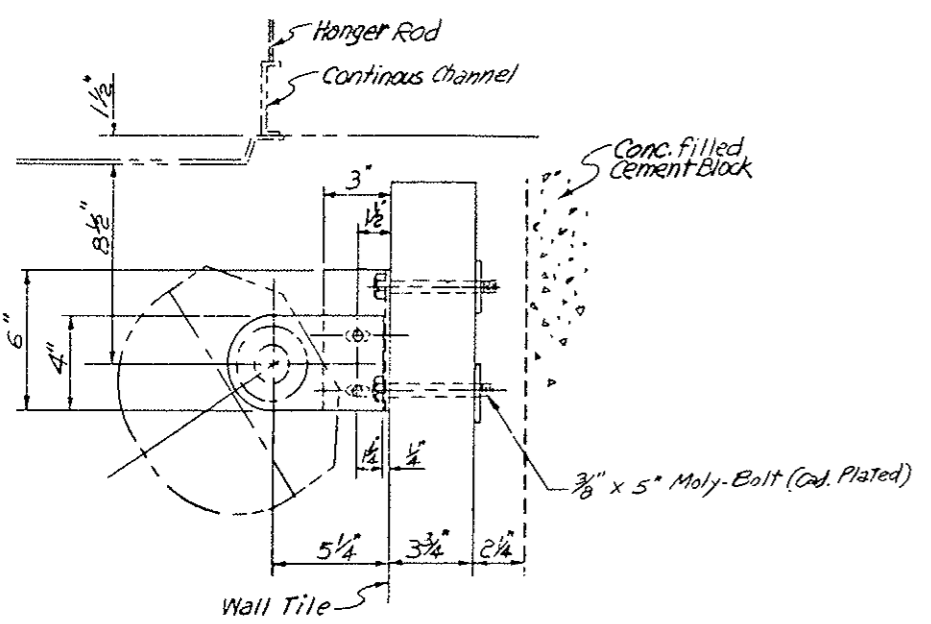
2, 3 WALL BRACKETS

* Dimension approximate depending on Fixture used



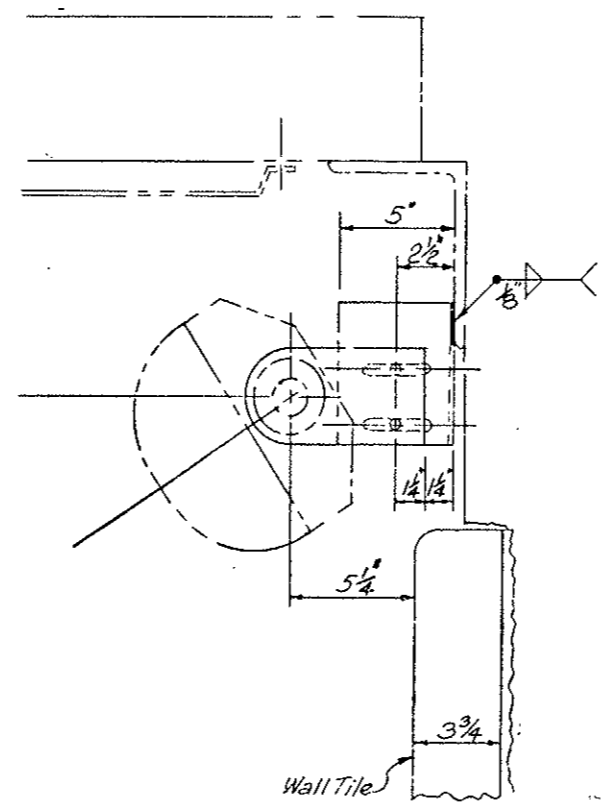
SIDE BRACKET

*		
For Type 1 Bracket	A = 7"	a = 1 1/4"
For Type 2 Bracket	B = 7 7/8"	b = 1/4"
For Type 3 Bracket	C = 16"	c = 1 3/8"



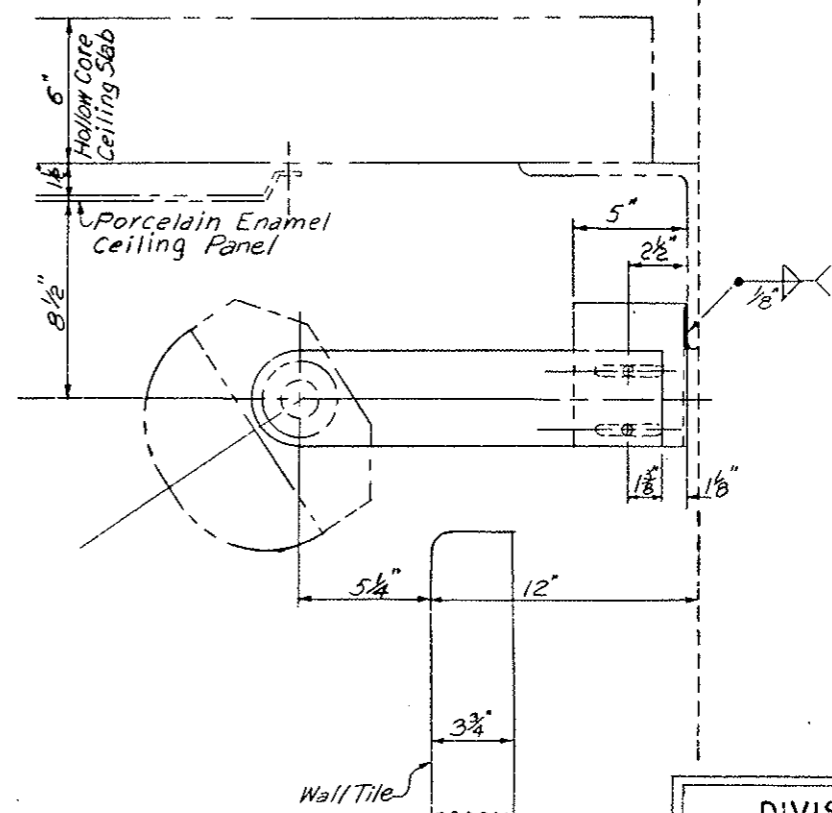
TYPE 1 BRACKET

Sta. 35+97.90 to Sta. 38+81.43
Sta. 122+73.18 to Sta. 125+57.28



TYPE 2 BRACKET

Sta. 38+81.43 to Sta. 40+82.43
Sta. 121+22.43 to Sta. 122+73.18

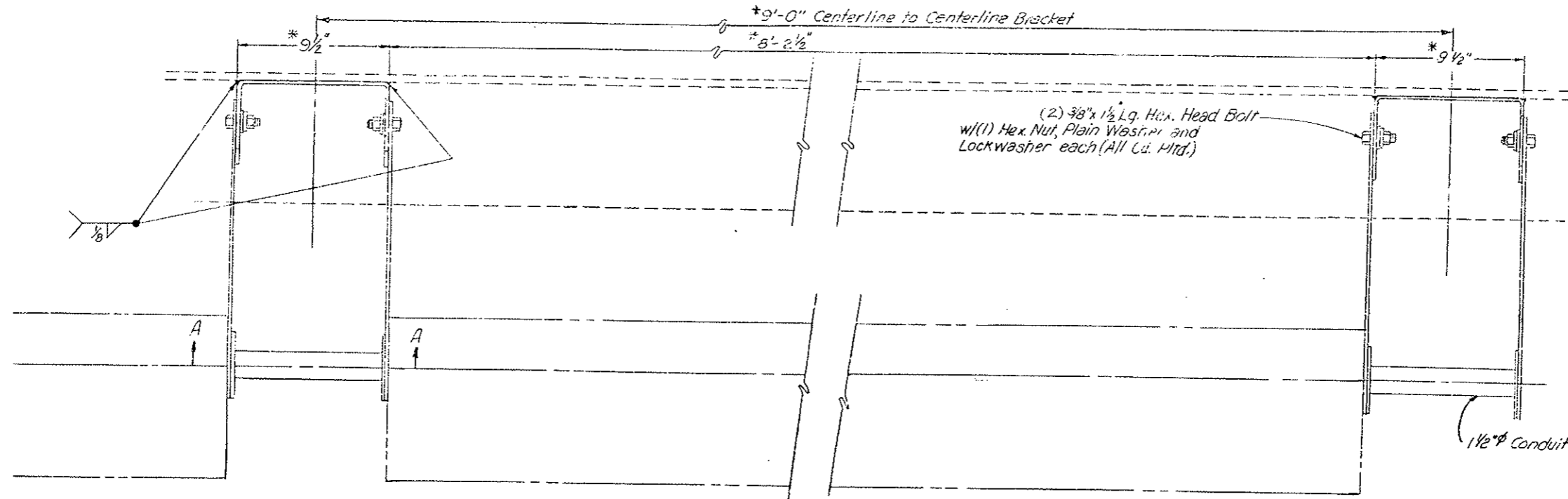


TYPE 3 BRACKET

Sta. 40+82.43 to Sta. 121+22.43

DIVISION OF HIGHWAYS	
DETAILS	
LIGHT FIXTURE BRACKETS	
Designer	Structure
Detailer	Numbers
Drawing Number C-35	of Drawings

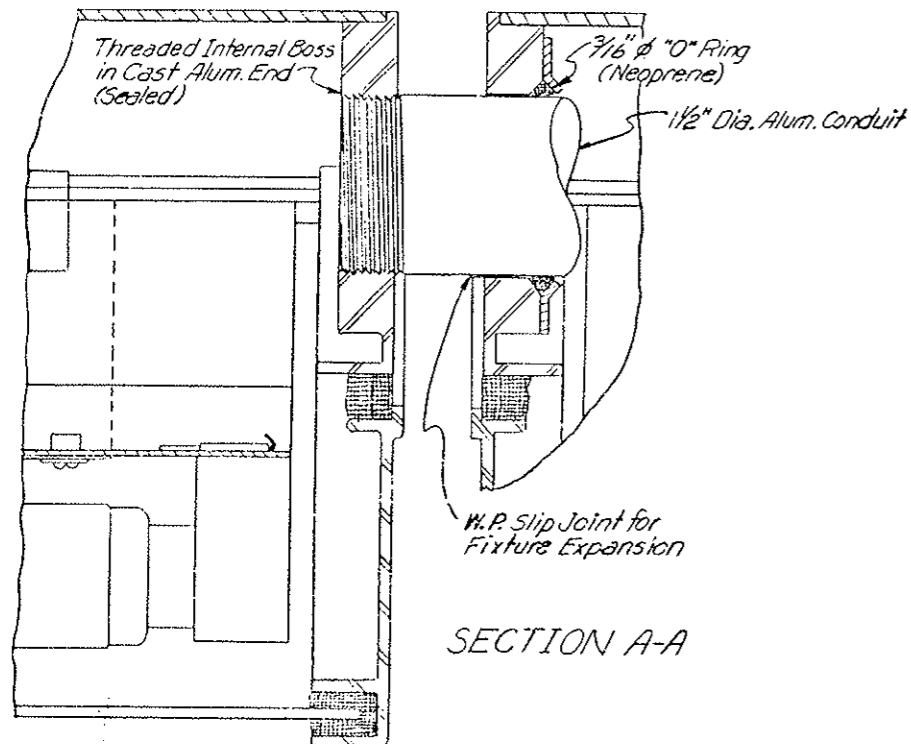
REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	121	
AS CONSTRUCTED				
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID



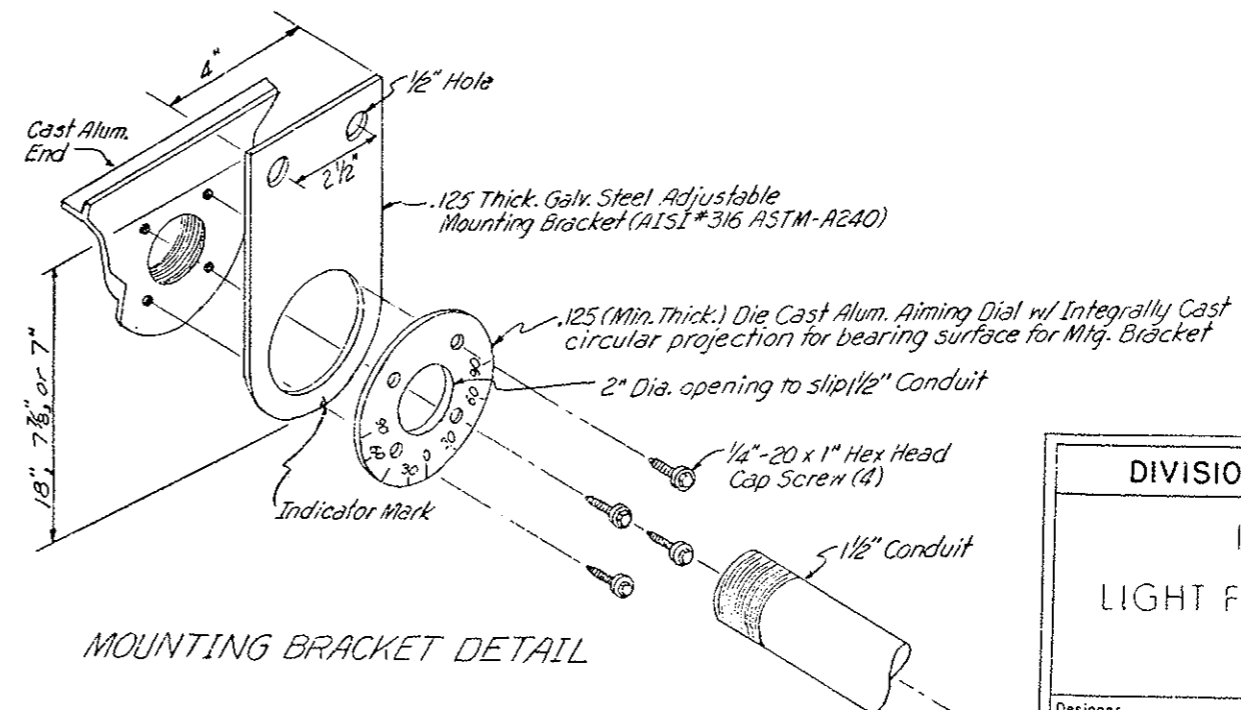
* Dimension approximate depending on Fixture used.

PLAN VIEW

TYPICAL LIGHT FIXTURE BRACKET SPACING



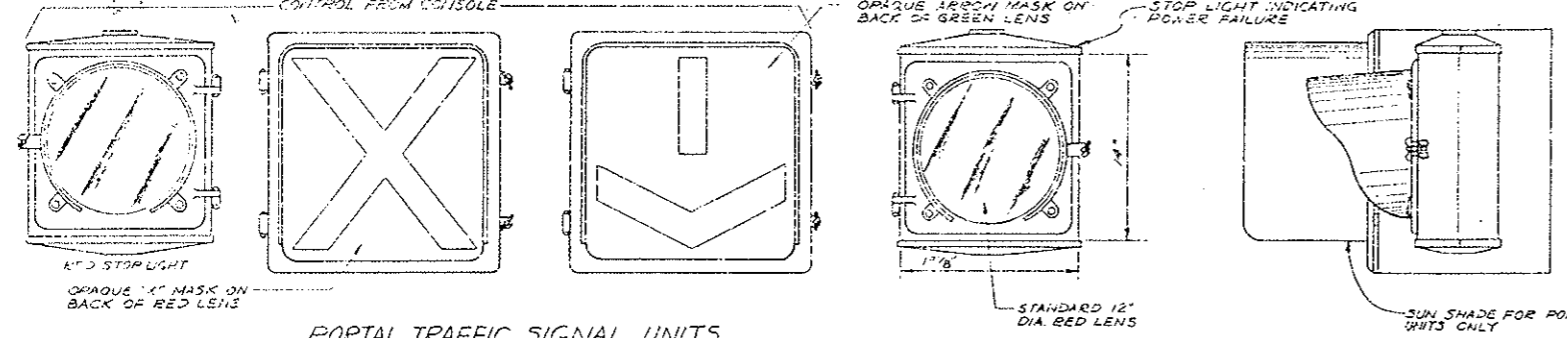
SECTION A-A



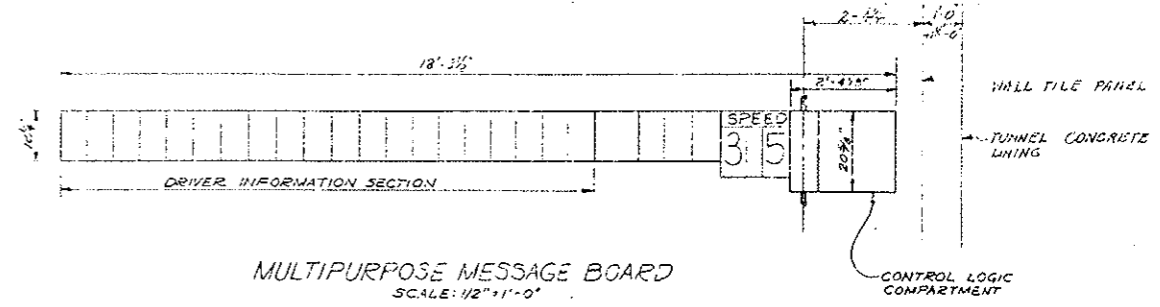
MOUNTING BRACKET DETAIL

DIVISION OF HIGHWAYS	
DETAILS	
LIGHT FIXTURE BRACKETS	
Designer	Structure
Detailer	Numbers
Drawing Number C-36 of Drawings	

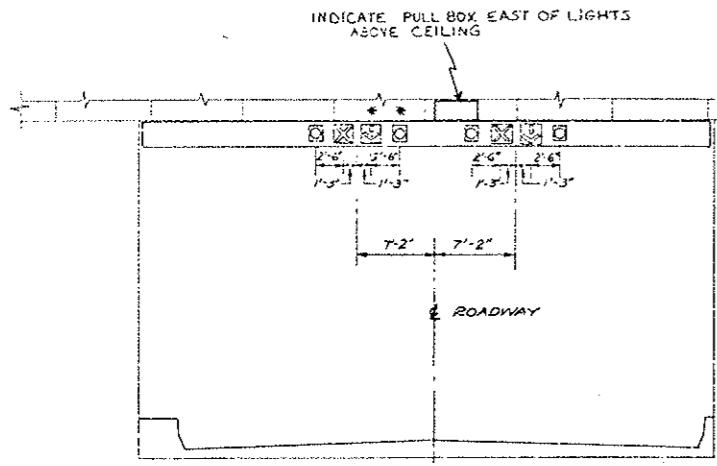
REVISED FOR PROJ. NO. I70-3(83)220
ADDED OVER AT CONSOLE 10-6-73



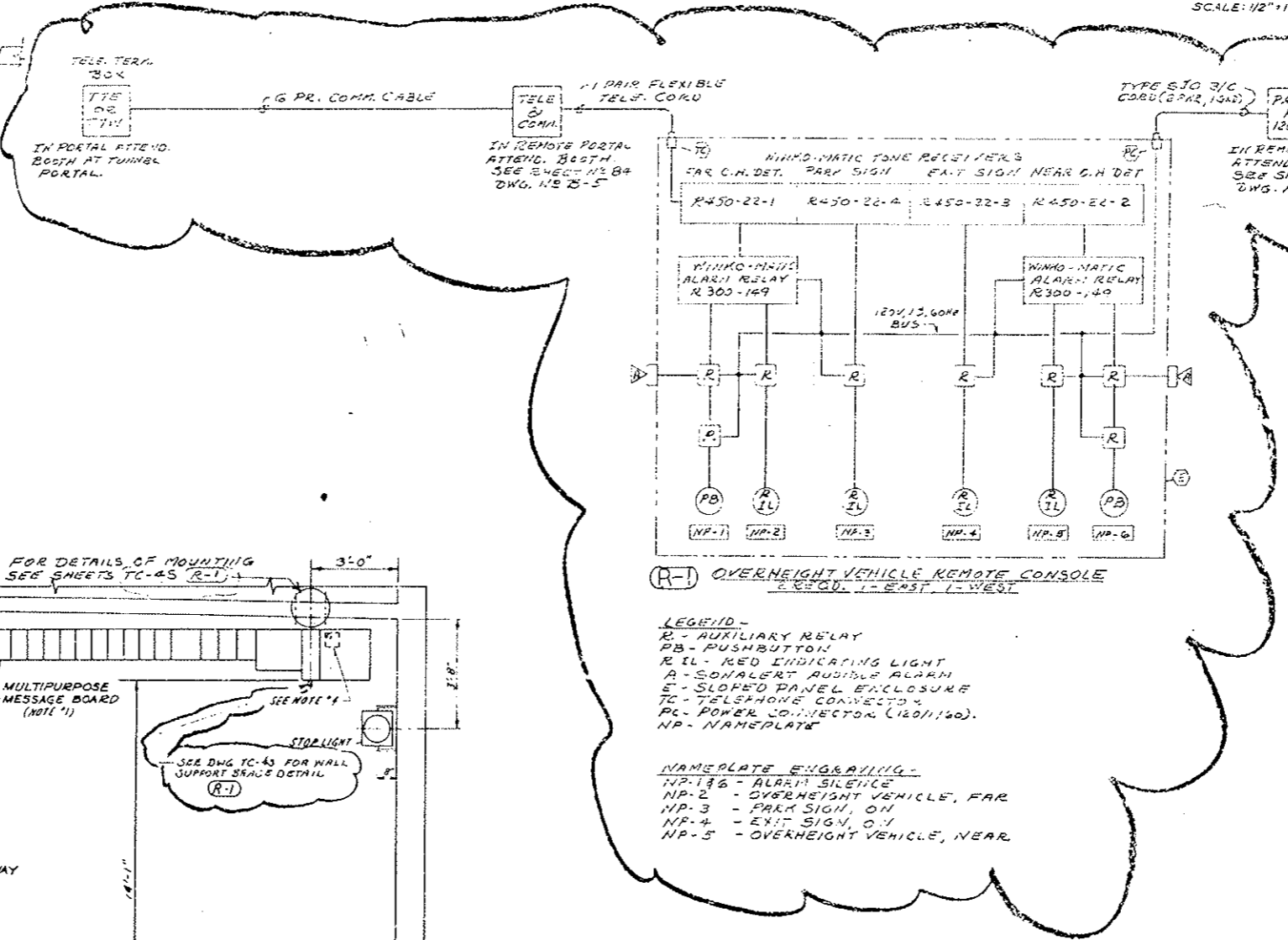
PORTAL TRAFFIC SIGNAL UNITS
SCALE: 1/2" = 1'-0"



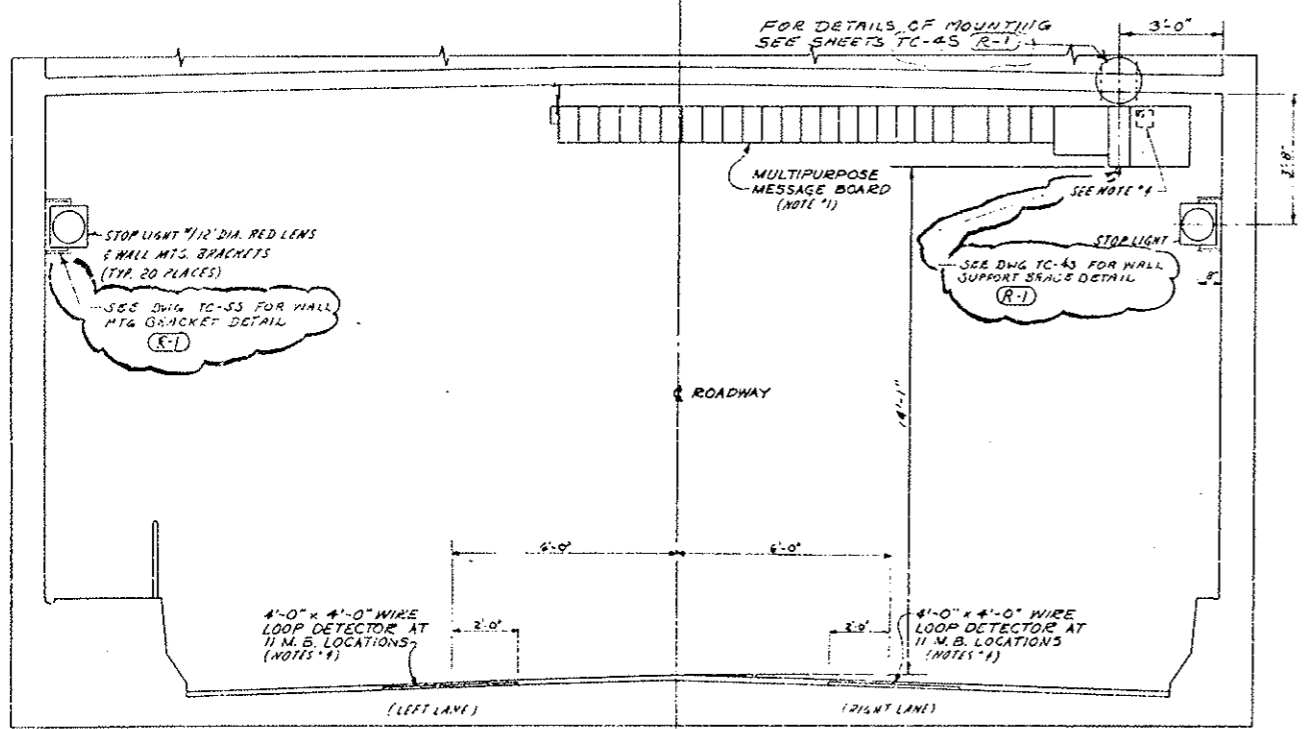
MULTIPURPOSE MESSAGE BOARD
SCALE: 1/2" = 1'-0"



LOCATION OF PORTAL TRAFFIC SIGNAL UNITS
ON WEST PORTAL FOR SOUTH TUNNEL
SCALE: 1/8" = 1'-0"



- NOTES:
1. II MULTIPURPOSE MESSAGE BOARDS PRESENTLY USE FOR THE NORTH TUNNEL EAST TRAFFIC SHALL BE RELOCATED TO THE SOUTH TUNNEL.
 2. THE PORTAL TRAFFIC SIGNAL UNITS PRESENTLY LOCATED AT THE WEST PORTAL OF THE NORTH TUNNEL SHALL BE MOVED TO THE WEST PORTAL OF THE SOUTH TUNNEL AS INDICATED ON THE LOCATION ELEVATION, ONE NEW ARROW SIGNAL UNIT AND ONE NEW RED LENS STOP LIGHT SIGNAL UNIT WILL BE REQUIRED. (R-1)
 3. 20 NEW 12" DIA. STOP LIGHTS SHALL BE PROVIDED FOR THE SOUTH TUNNEL AND LOCATED AS SHOWN ON DRAWING E-T-15.
 4. II RIGHT LANE LOOP DETECTORS TO BE WIRED TO EXIST. AMPLIFIERS IN MESSAGE BOARD. II LEFT LANE LOOP DETECTORS TO BE WIRED TO NEW AMPLIFIERS IN A WEATHERPROOF ENCLOSURE WITH SUBPANEL ON BACK OF MESSAGE BOARD (NIPPLE) INTO CONTROL LOGIC COMPARTMENT.
 5. THE PORTAL TRAFFIC SIGNAL UNITS PRESENTLY LOCATED AT THE EAST PORTAL OF THE NORTH TUNNEL SHALL BE REARRANGED AS SHOWN ON THIS DRAWING.
 6. 10 STOP SIGNALS ON THE SOUTH WALL OF THE NORTH TUNNEL SHALL BE ROTATED 130° TO FACE WEST BOUND TRAFFIC. BRACKETS SUPPORTING STOP SIGNALS LOCATED AT PULPITS P1, P3 (P5 SHALL BE EXTENDED AS INDICATED ON DWG. TC-55, EACH STOP SIGNAL SHALL BE REWIRED TO SLAVE A MESSAGE BOARD AS INDICATED ON DWG. E-T-15.



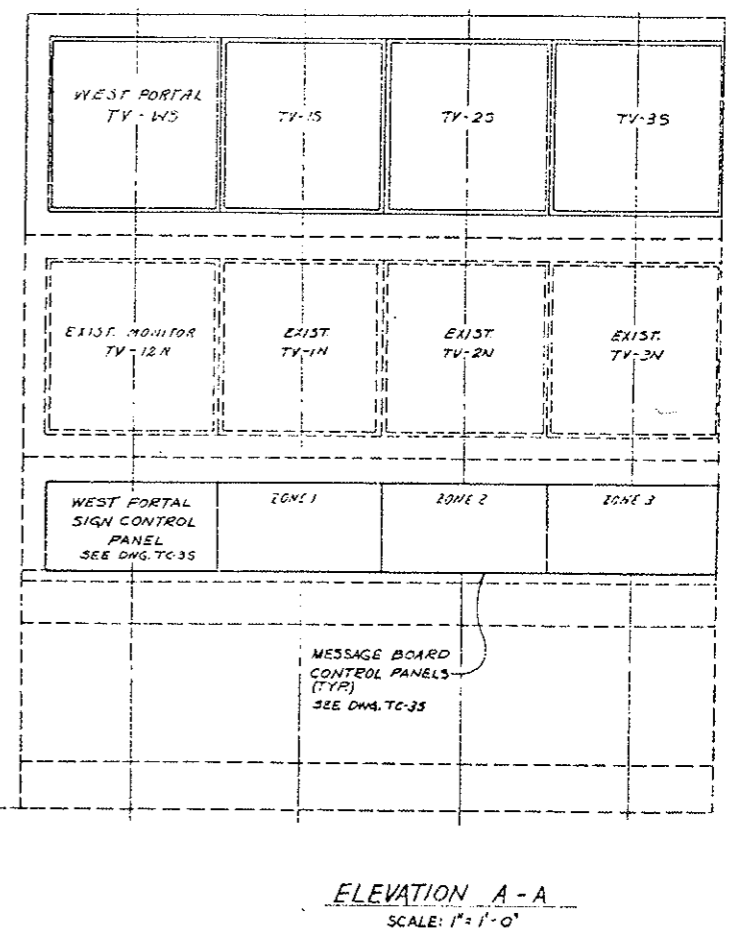
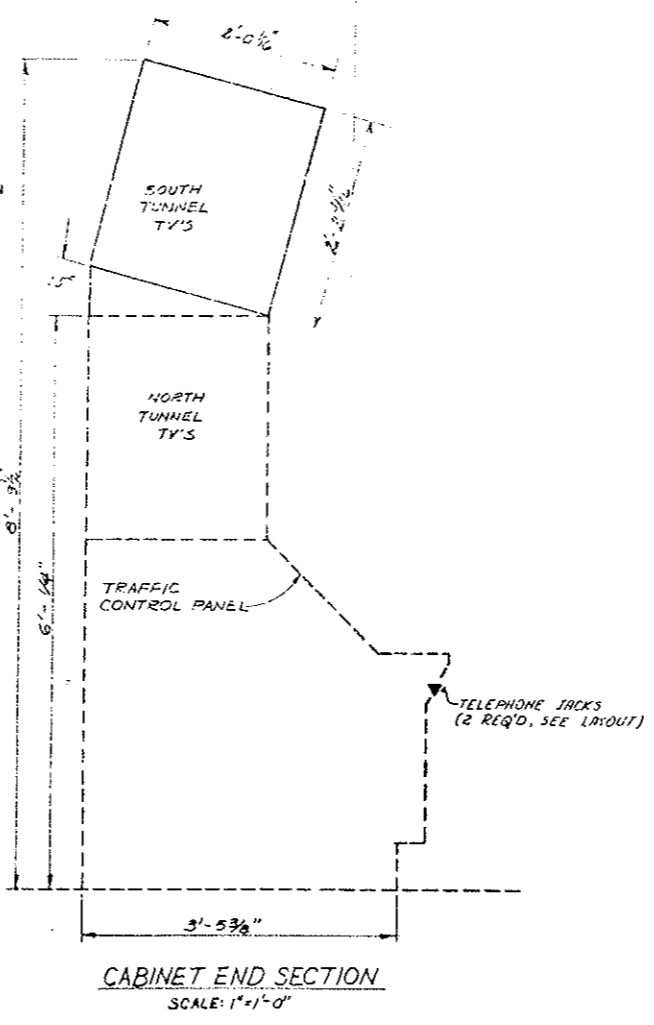
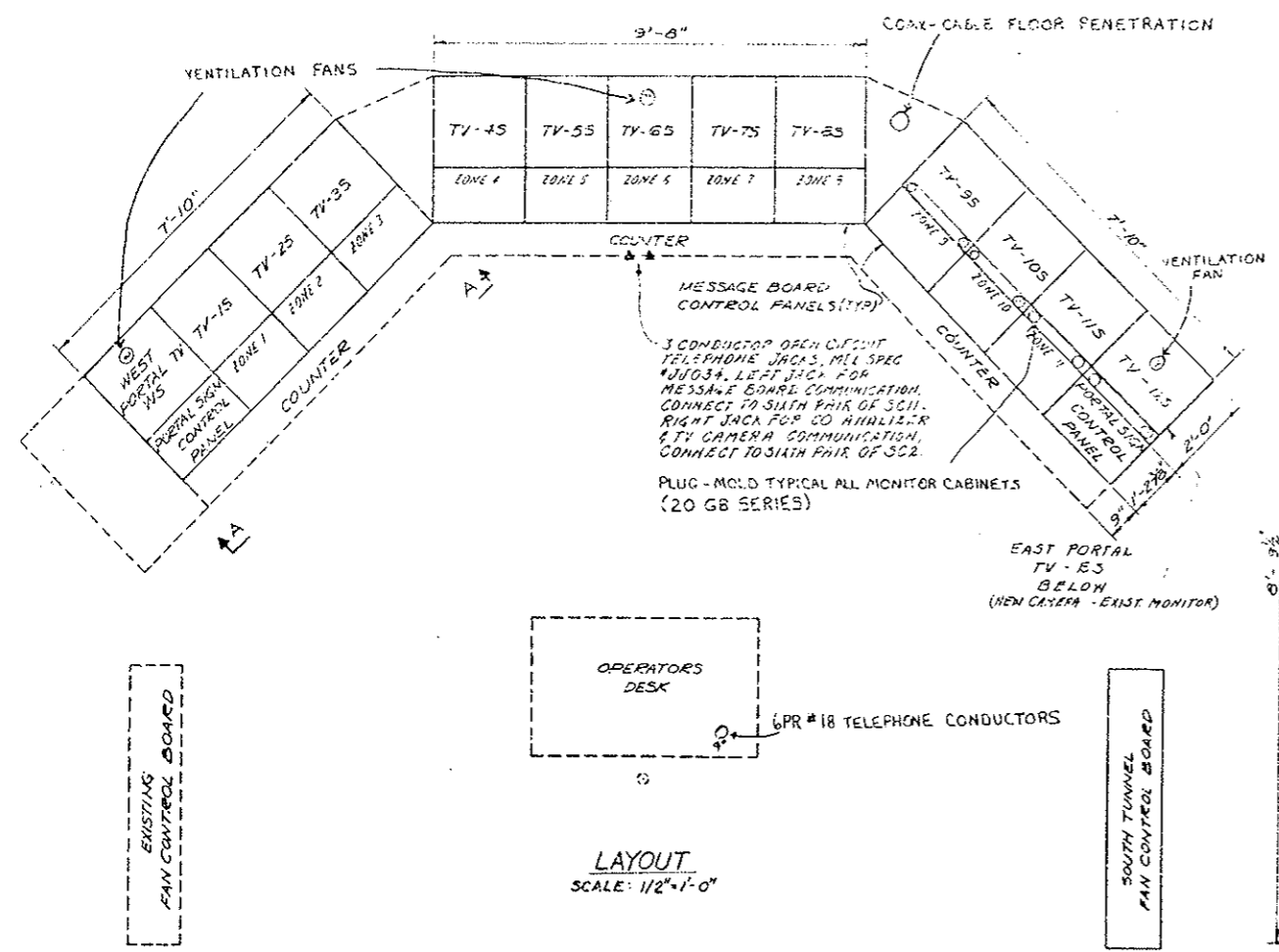
TYPICAL SECTION THRU TUNNEL
SCALE: 3/8" = 1'-0"



PRINT RECORD

DATE ISSUED	12/15/73
REGION NO.	0 0 0 R1 51 R1
CONTRACTOR	5 5 10 41 0140016
INTRA CD.	15 15 1 1 15 15

REVISIONS		DATE	BY	CRD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND SORE				
TRAFFIC CONTROL SYSTEM				
TUNNEL				
TUNNEL SIGNING, LOOP DETECTORS				
& C'HEIGHT CONSOLE				
DRAWN	JEV 3-27-74			(12)
CHECKED	12/15/73			
AS NOTED	C14570			
				TC-IS



EXISTING FAN CONTROL BOARD

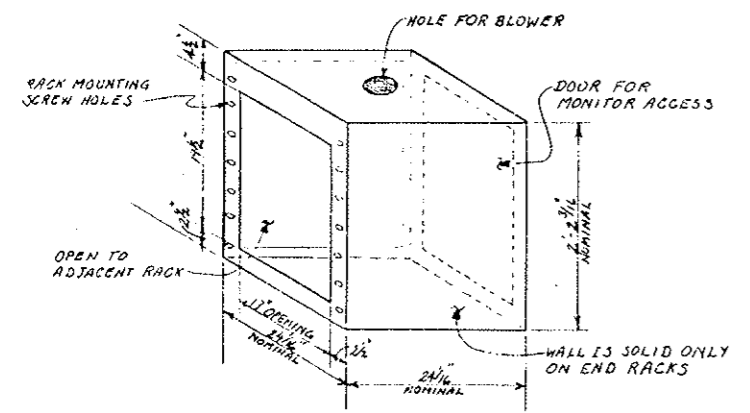
SOUTH TUNNEL FAN CONTROL BOARD

LAYOUT
SCALE: 1/2"=1'-0"

CABINET END SECTION
SCALE: 1"=1'-0"

ELEVATION A-A
SCALE: 1"=1'-0"

NOTE
WORK THIS DRAWING WITH DRAWING TC-35

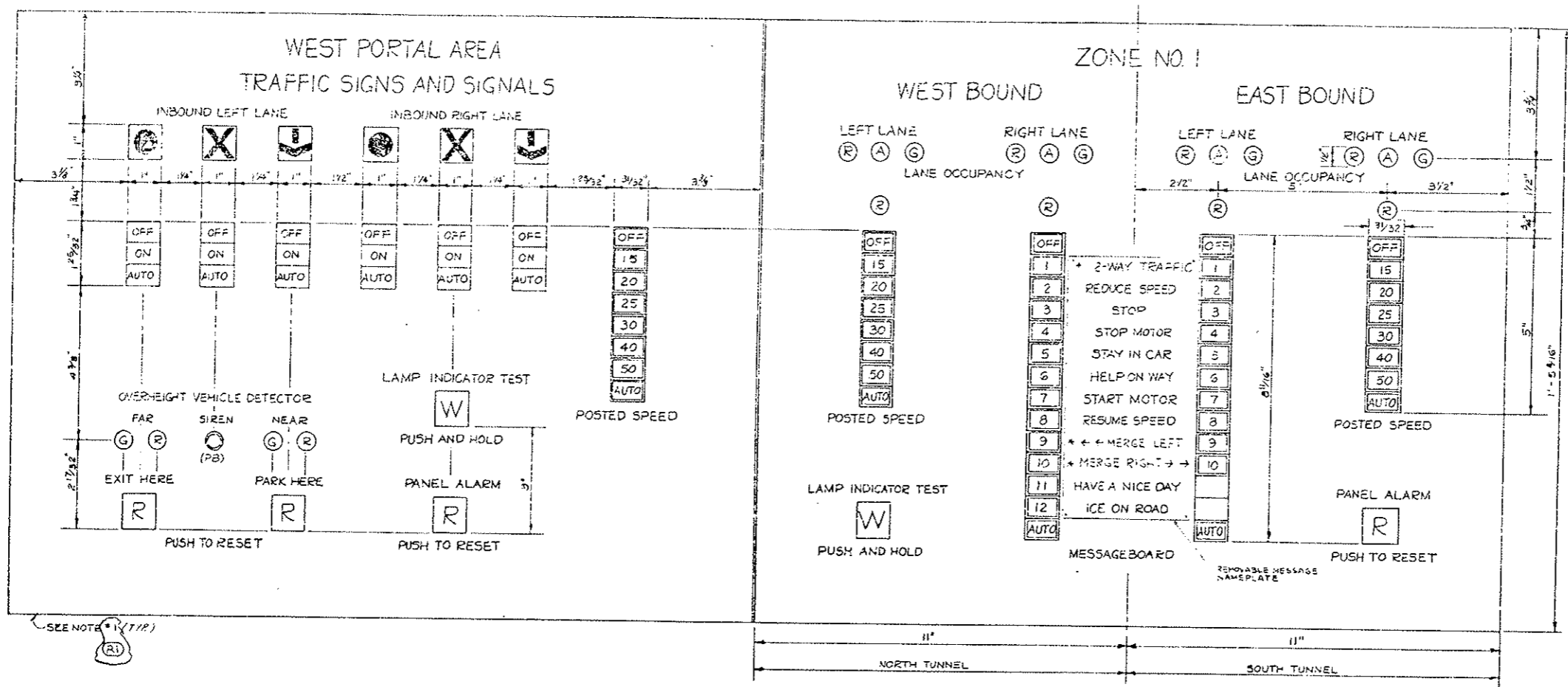


- NOTES:
- OPERATOR'S CONSOLE WAS ORIGINALLY SUPPLIED BY EQUIPTO ENCLOSURE SYSTEMS DIV OF EQUIPTO ELECTRONICS CORP., 435 WOODLAWN AVE., AURORA, ILL. 60507
 - CONSOLE IS DESIGNED AROUND A MODULAR DESIGN CONCEPT ALLOWING FOR EXPANSION VERTICALLY & HORIZONTALLY BY BELTING ON ADDITIONAL SECTIONS OF CABINET. CONTRACTOR SHALL FIELD VERIFY EXACT DIMENSIONS FOR ENCLOSURES. (THIRTEEN REQUIRED)
 - 120VOLT AC, SINGLE PHASE 60HZ POWER SHALL BE SUPPLIED TO MONITORS VIA A CONTINUOUS MULTI-OUTLET PLUG STRIP MOUNTED IN THE CABINETS PHYSICALLY SIMILAR TO THE EXISTING CABINETS. POWER SHALL ORIGINATE FROM EXISTING LIGHTING PANEL "LEG" WITH A SINGLE PHASE 3-WIRE CIRCUIT.



PRINT RECORD	
DATE ISSUED	11/15/78
REVISION NO.	0
FOR	PHOTOGRAPHIC COPY
CUSTOMER	5 5 10 5 5 4 CRIG
FIELD	0
INTRA. SQ.	15 15 1 1 1 15

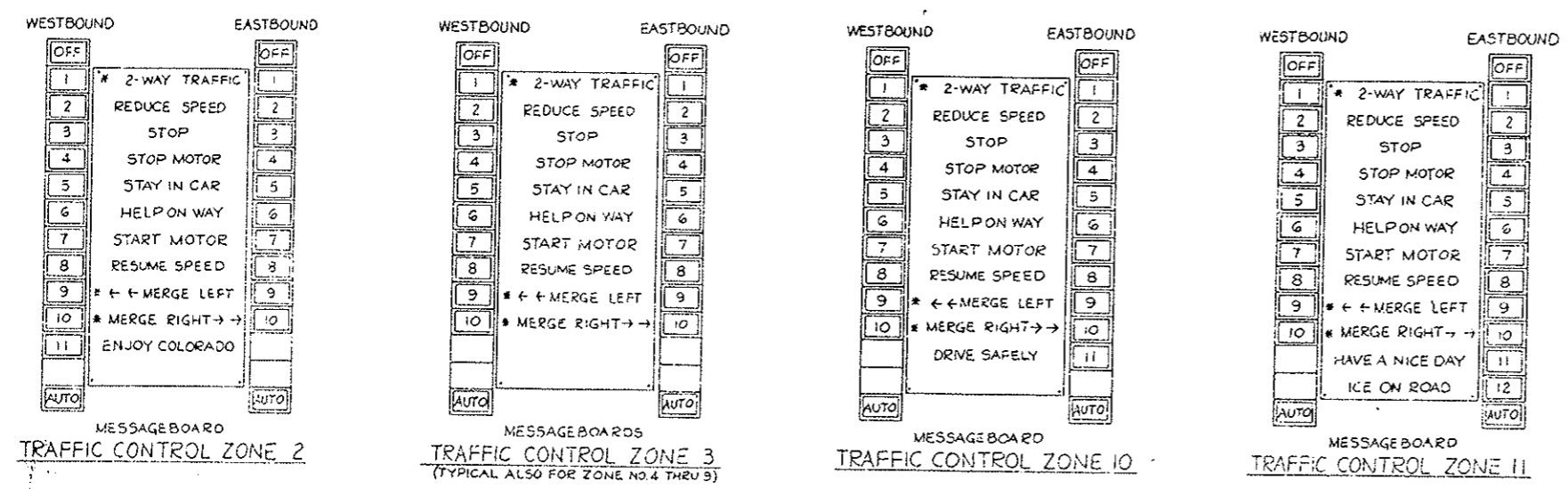
REVISIONS		DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
TRAFFIC CONTROL SYSTEM EAST VENTILATION BUILDING TRAFFIC CONTROL CONSOLE SHEET NO. 1				
NAME	JES 12-27-78	DATE	12/27/78	NO.
DESIGNED	PHOTOGRAPHIC COPY	CHECKED	12/27/78	NO.
AS SHOWN	CI4570	DRAWING NO.	TC-25	



NOTE
 1. CONTRACTOR TO REMOVE EXIST. CONSOLE PANELS & INSTALL NEW PANEL FACES. NEW PANEL FACES TO BE OF BRUSHED ALUMINUM & HELD IN PLACE BY THREADED FASTENERS. ENGRAVING ON NEW PANEL FACES TO BE THE SAME AS ON EXISTING PANEL FACES WITH RESPECT TO SIZE, LETTER TYPE AND VISUAL APPEARANCE.

WEST PORTAL AREA TRAFFIC SIGN AND SIGNAL CONTROL
 EAST PORTAL AREA SAME AS ABOVE EXCEPT SUBSTITUTE 'EAST' FOR 'WEST'

TRAFFIC CONTROL ZONE I
 * NEW MESSAGES TO BE ADDED.

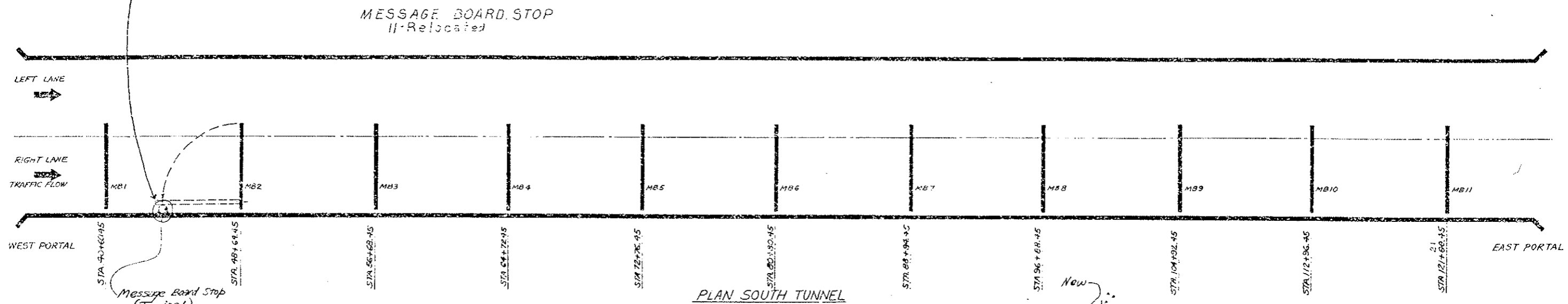
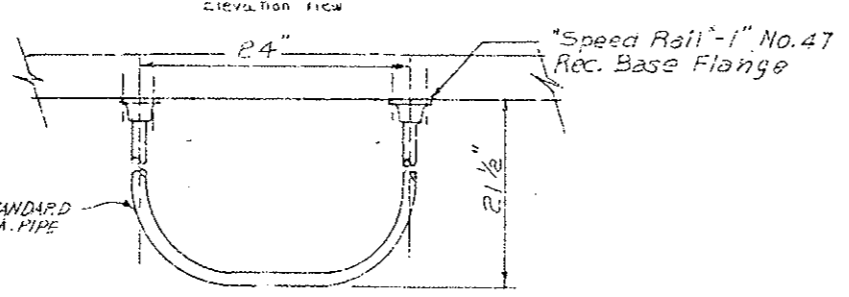


PRINT RECORD

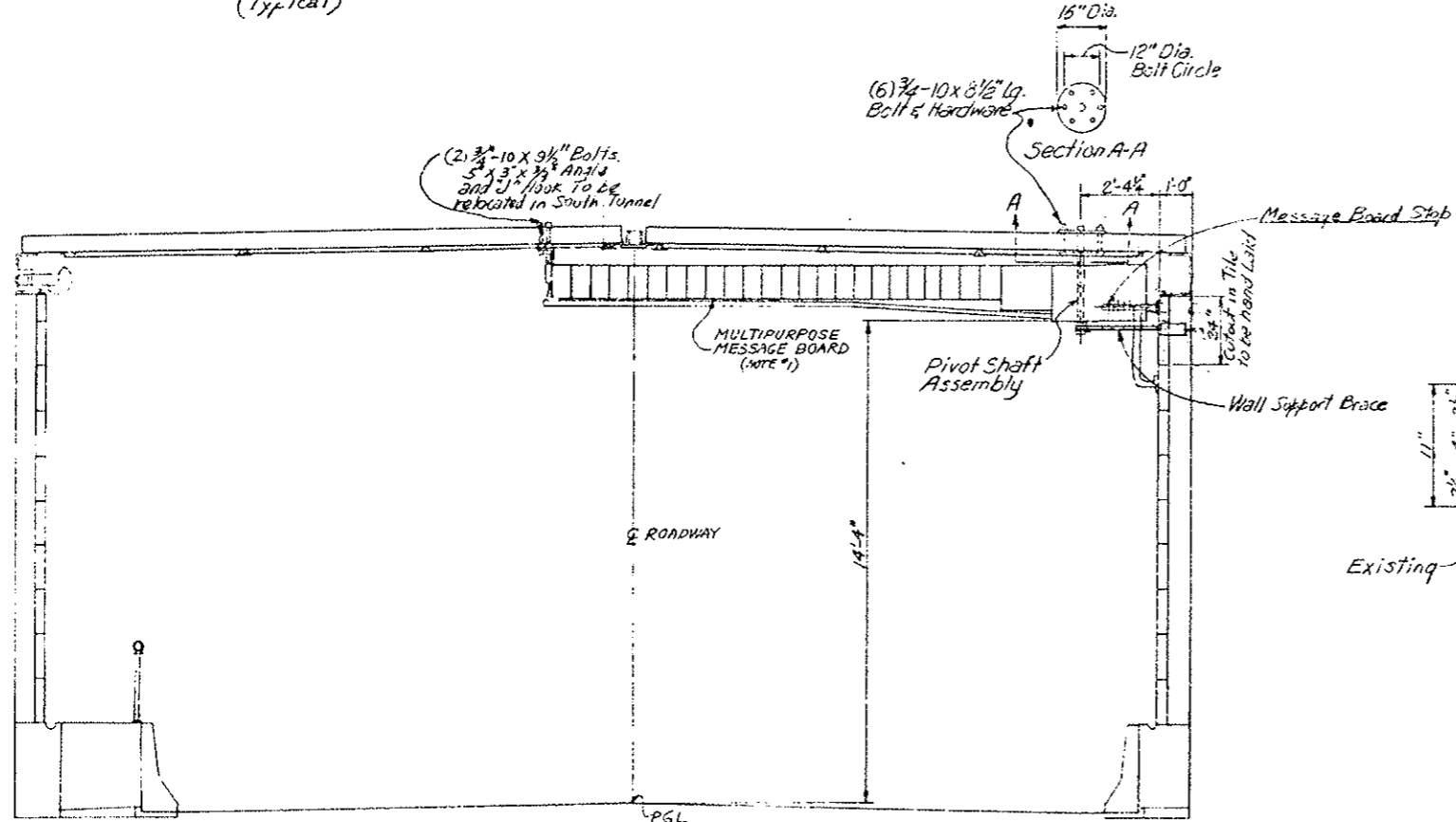
DATE	TIME	BY
15	15	15

NO.	REVISIONS	DATE	BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE			
TRAFFIC CONTROL SYSTEM EAST VENTILATION BUILDING TRAFFIC CONTROL CONSOLE SHEET NO. 2			
DATE	BY	NO.	NO.
15	15	15	15
6" = 1'	CI4570	TC-3S	(85)

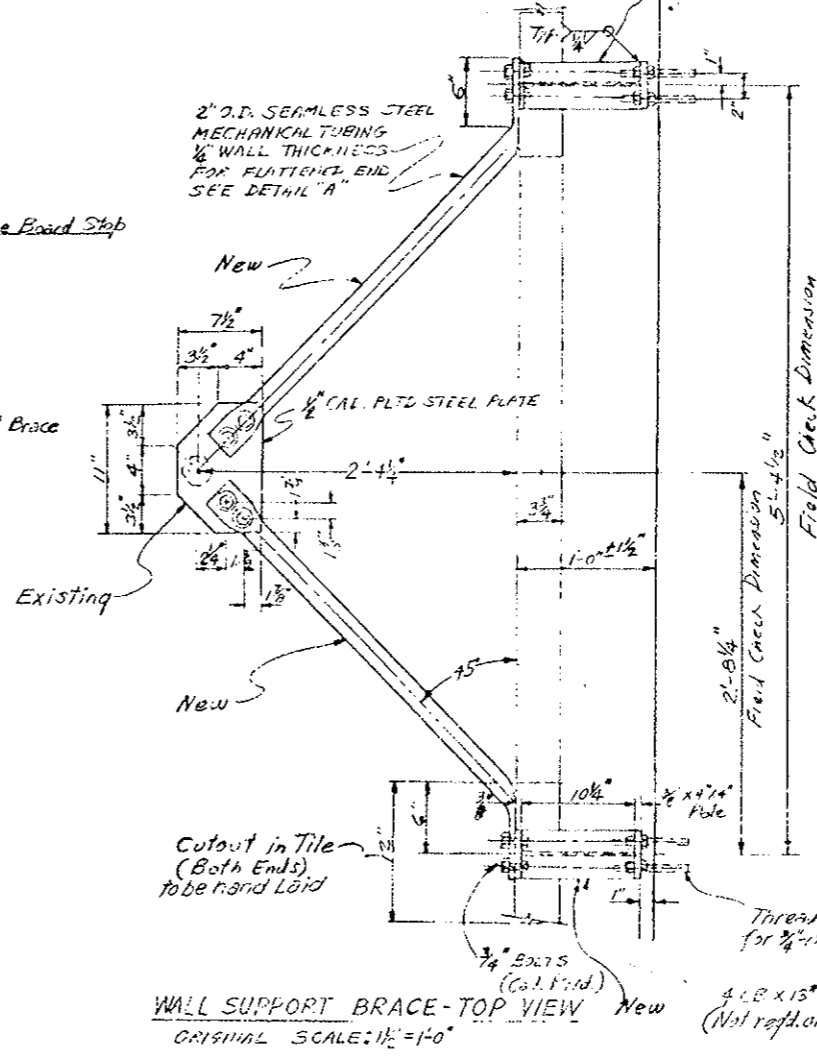
REGION NO.	COLORADO	PROJECT NO.	I 70-3(93)220	NO.	125
REVISIONS					
AS CONSTRUCTED					
NO REVISIONS		REVISED	<input checked="" type="checkbox"/>	VOID	



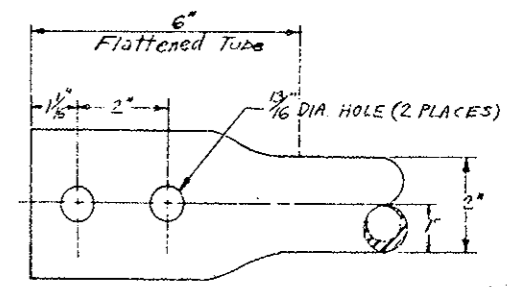
DESIGNED BY	CED	CHECKED BY	7/1/77
DRAWN BY	7/1/77	QUANTITIES BY	7/1/77
CHECKED BY		CHECKED BY	



TYPICAL SECTION THRU TUNNEL
OR. INCL. SCALE: 3/8" = 1'-0"
VIEW LOOKING EAST



WALL SUPPORT BRACE - TOP VIEW
ORIGINAL SCALE: 1/2" = 1'-0"

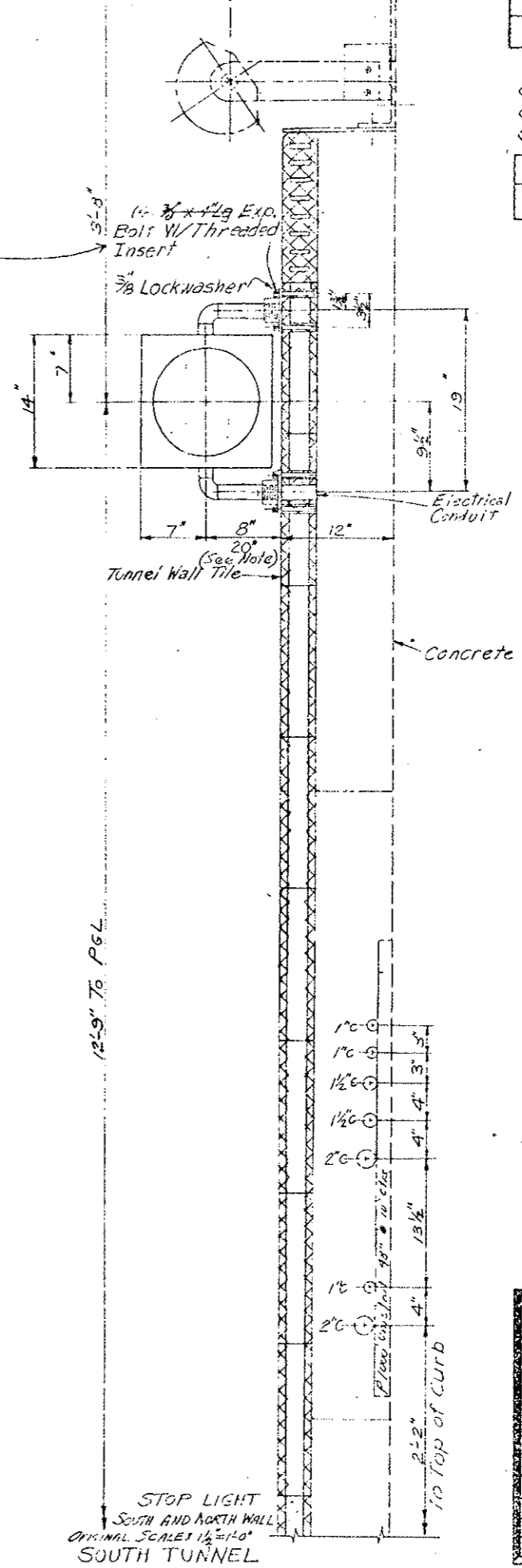


DETAIL "A"
SCALE 6" = 1'-0"

NOTES:
1. IF MULTIPURPOSE MESSAGE BOARDS PRESENTLY USED FOR THE NORTH TUNNEL EAST BOUND TRAFFIC SHALL BE RELOCATED TO THE SOUTH TUNNEL, WITH ALL MOUNTING BRACKETS AND/OR NUTS, BOLTS & WASHERS EXCEPT FOR THE 2 INCH O.D. SEAMLESS STEEL MECHANICAL TUBING AND WALL MOUNTING NUTS AND STUDS WHICH WILL BE REWORKED.

DIVISION OF HIGHWAYS	
MESSAGE BOARD WALL SUPPORT BRACE DETAILS	
Designer C.D.H.	Structure
Detailer J. Letchworth	Numbers
Drawing Number 7C-45	of Drawings

Bolts Changed to 1/4"

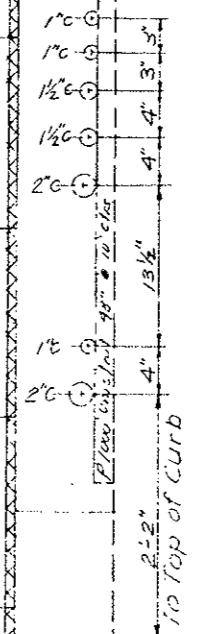


STOP LIGHT LOCATION
SOUTH TUNNEL

No.	STATION
1	44+62.45
2	52+88.45
3	60+70.45
4	68+74.45
5	76+73.45
6	84+82.45
7	92+86.45
8	100+90.45
9	108+94.45
10	116+98.45

Concrete Tunnel Wall (Existing)

12'-9" To P&L

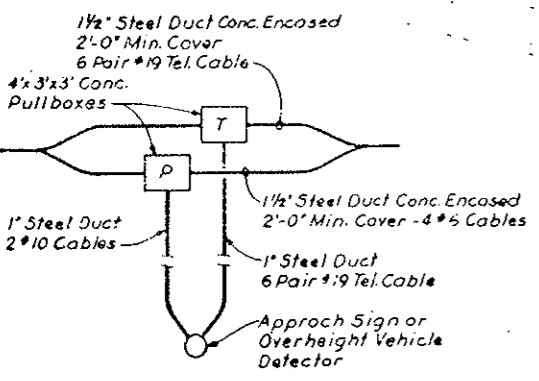
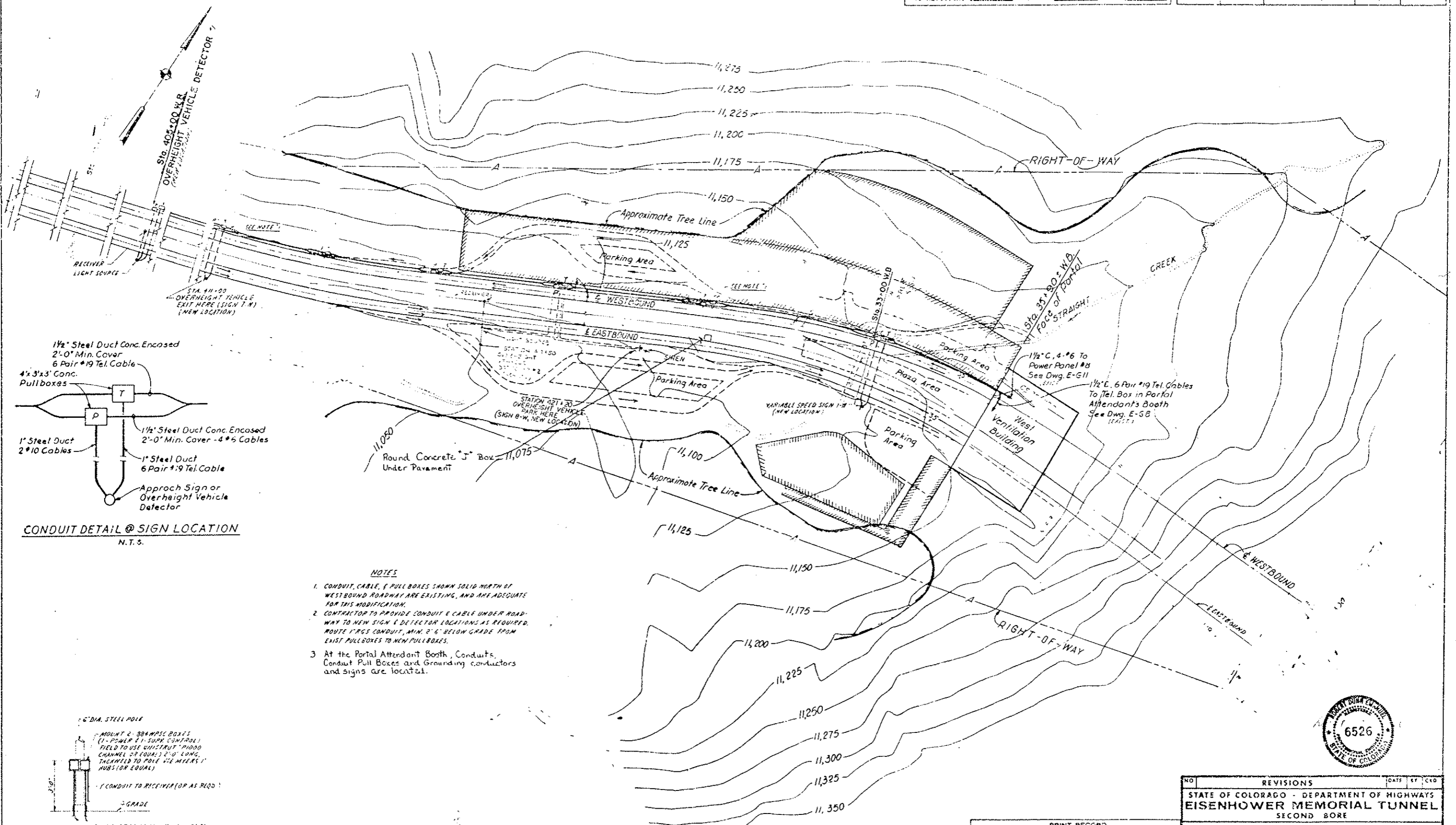


Note: 10 Stop Lights in North Tunnel on walkway side (South Side) to be rotated 180° for Westbound Traffic. Stop Lights near Pulpit Stations #1, #3 and #5 to be mounted 20" from Structural Wall Tile.

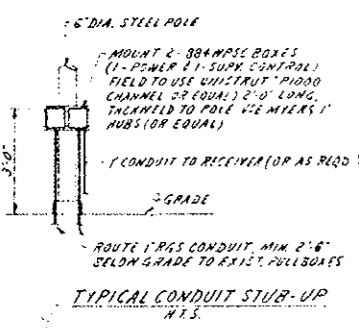
STOP LIGHT
SOUTH AND NORTH WALL
ORIGINAL SCALE 1/2"=1'-0"
SOUTH TUNNEL

DIVISION OF HIGHWAYS	
STOP LIGHT MOUNTING DETAILS	
Designer C.D.H.	Structure Numbers
Detailer J. C. Johnson	of Drawings
Drawing Number TC-59	

DESIGNED BY	C.D.H.	CHECKED BY	C.D.H.
CHECKED BY	C.D.H.	QUANTITIES BY	C.D.H.
Detailed by		CHECKED BY	C.D.H.



- NOTES**
- CONDUIT, CABLE, & PULL BOXES SHOWN SOLID NORTH OF WESTBOUND ROADWAY ARE EXISTING, AND ARE ADEQUATE FOR THIS MODIFICATION.
 - CONTRACTOR TO PROVIDE CONDUIT & CABLE UNDER ROADWAY TO NEW SIGN & DETECTOR LOCATIONS AS REQUIRED. ROUTE 1" PGS CONDUIT, MIN. 2'-6" BELOW GRADE FROM EXIST. PULLBOXES TO NEW PULLBOXES.
 - At the Portal Attendant Booth, Conduits, Conduit Pull Boxes and Grounding conductors and signs are located.



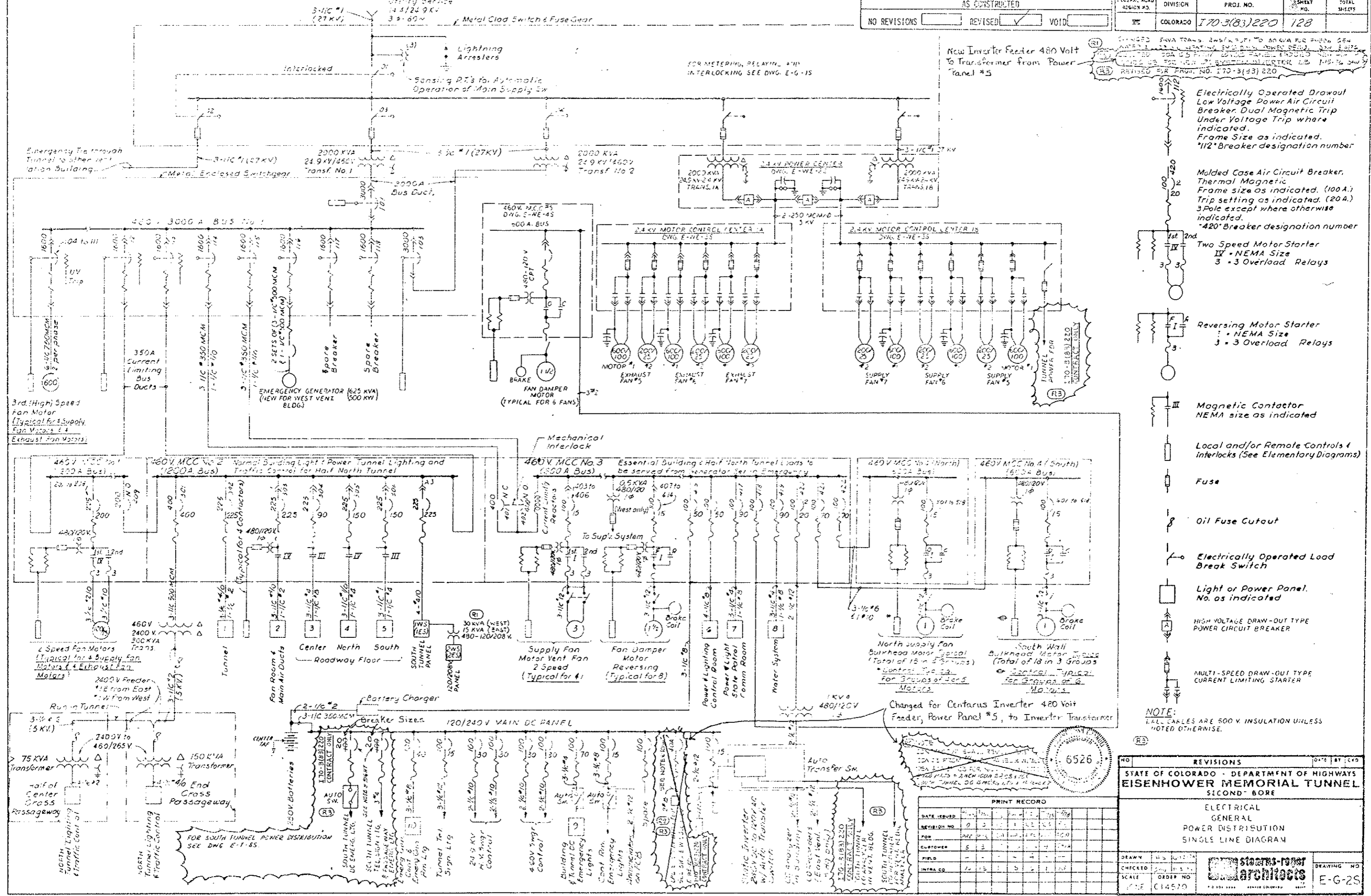
PRINT RECORD

DATE ISSUED	NO.	BY	FOR	CUSTOMER	FIELD	INTRA CO.

NO	REVISIONS	DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND BORE				
ELECTRICAL				
WEST PORTAL AREA				
APPROACH SIGNING AND MISC. DEVICES				
DRAWN	PPJ	11/11/73		
CHECKED	PPJ	11/11/73		
SCALE	ORDER NO.			
1"=100'	C14570			

stearns-roger architects
ARCHITECTS

DRAWING NO. CA-15



New Inverter Feeder 480 Volt to Transformer from Power Panel #5

- Electrically Operated Drawout Low Voltage Power Air Circuit Breaker, Dual Magnetic Trip Under Voltage Trip where indicated. Frame Size as indicated. *112* Breaker designation number
- Molded Case Air Circuit Breaker, Thermal Magnetic Trip setting as indicated. (100A.) 3 Pole except where otherwise indicated. *420* Breaker designation number
- Two Speed Motor Starter
 IV = NEMA Size
 3 = 3 Overload Relays
- Reversing Motor Starter
 I = NEMA Size
 3 = 3 Overload Relays
- Magnetic Contactor
 NEMA size as indicated
- Local and/or Remote Controls & Interlocks (See Elementary Diagrams)
- Fuse
- Oil Fuse Cutout
- Electrically Operated Load Break Switch
- Light or Power Panel, No. as indicated
- HIGH VOLTAGE DRAW-OUT TYPE POWER CIRCUIT BREAKER
- MULTI-SPEED DRAW-OUT TYPE CURRENT LIMITING STARTER

NOTE: ALL CABLES ARE 500 V. INSULATION UNLESS NOTED OTHERWISE.

Changed for Centarus Inverter 480 Volt Feeder, Power Panel #5, to Inverter Transformer

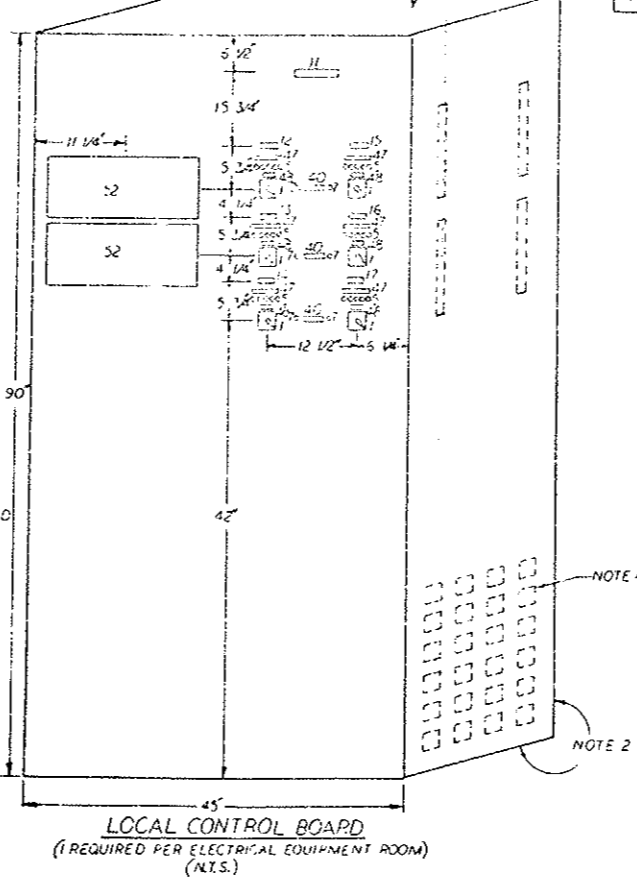
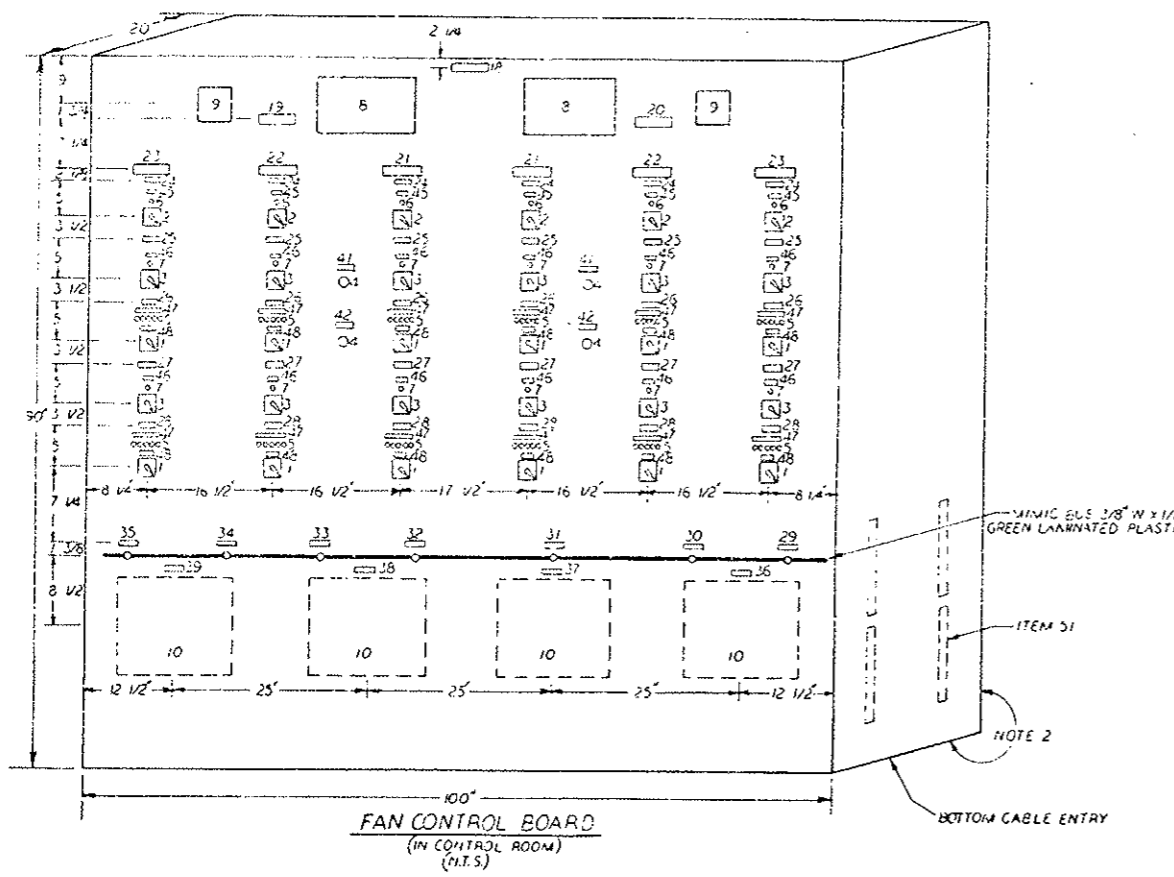
DATE ISSUED	REVISION NO.	FOR	BY	CHKD.
	1			
	2			
	3			
	4			
	5			
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	9			
	10			

NO.	REVISIONS	DATE	BY	CHKD.
1				
2				
3				
4				
5				
6				
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8				
9				
10				

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND BORE
 ELECTRICAL GENERAL POWER DISTRIBUTION SINGLE LINE DIAGRAM

DRAWN: J.S. [unclear]
 CHECKED: [unclear]
 SCALE: [unclear]
 ORDER NO. CI4570

STARK-ROBERT ARCHITECTS
 DRAWING NO. E-G-2S



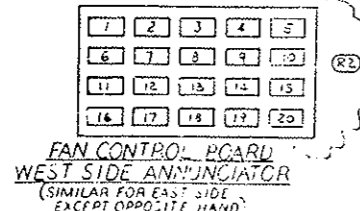
- EQUIPMENT LIST**
- SWITCH, TYPE SB 10, PULL TO START, 5 POSITION; STOP-HIGH-INTERMEDIATE 2-INTERMEDIATE 1-LOW
 - SWITCH, TYPE SB 1, 2 POSITION; OPEN-CLOSE
 - SWITCH, TYPE SB 1, 2 POSITION; PCB-LCB
 - PUSHBUTTON
 - INDICATING LIGHTS (SEE NOTE 6)
 - INDICATING LIGHT, WHITE
 - INDICATING LIGHT, GREEN
 - ANNUNCIATOR, PANEL ALARM, MODEL 51345 (R1)
 - BELL, PANEL ALARM, MODEL VSD
 - CO-INDICATING RECORDER (NOTE 7)

NAMEPLATE SCHEDULE

FIRST LINE	SECOND LINE	THIRD LINE	DETAIL
11. LOCAL CONTROL BOARD			(NOTE 5)
12. SUPPLY FAN 5 CONTROL			2
13. SUPPLY FAN 6 CONTROL			2
14. SUPPLY FAN 7 CONTROL			2
15. EXHAUST FAN 5 CONTROL			2
16. EXHAUST FAN 6 CONTROL			2
17. EXHAUST FAN 7 CONTROL			2
18. FAN CONTROL BOARD SOUTH TUNNEL			(NOTE 5)
19. EAST FANS CONTROL			1
20. WEST FANS CONTROL			1
21. FAN 5			1
22. FAN 6			1
23. FAN 7			1
24. SUPPLY FAN BULKHEADS CONTROL		CONTROL TRANSFER	2
25. SUPPLY FAN CONTROL			2
26. SUPPLY FAN CONTROL			2
27. EXHAUST FAN CONTROL		TRANSFER	2
28. EXHAUST FAN CONTROL			2
29. CO ANALYZER 1			1
30. CO ANALYZER 2			1
31. CO ANALYZER 3			1
32. CO ANALYZER 4			1
33. CO ANALYZER 5			1
34. CO ANALYZER 6			1
35. CO ANALYZER 7			1
36. ANALYZER 1 & 2		RECORDER	1
37. ANALYZER 3		RECORDER	1
38. ANALYZER 4 & 5		RECORDER	1
39. ANALYZER 6 & 7		RECORDER	1
40. CONTROL AVAILABLE LAMP TEST			1
41. ANNUNCIATOR SILENCE			1
42. ALARM			1
43. CLOSED			1
44. FCB ON			1
45. STOP-HIGH-INTERMEDIATE 2-INTERMEDIATE 1-LOW			1
46. PULL TO START			1

- EQUIPMENT LIST (CONT.)**
- RELAY, 8 POLE 120V AC COIL GE TYPE CR 120A
 - RELAY, 6 POLE 120V AC COIL GE TYPE CR 120A
 - RELAY, 4 POLE 120V AC COIL GE TYPE CR 122A
 - FLASHER RELAY, 120V AC COIL, 50 PULSES/MIN, ZENITH TYPE B-1
 - TERMINAL STRIP, 20A-500V 50 PT TUBULAR CLAMP
 - INDICATING MULTIPoint ALARM/CONTROLLER, SIGMA SERIES 9321
 - RELAY, 2 POLE 120V AC COIL GE TYPE CR 120A
 - RELAY, 4 POLE 120V AC COIL AGASTAT # 7012 AC, OR EQUAL

- NOTES-**
- NAMEPLATE MATERIAL - G.E. A19250A-1/16"
 - NON-REMOVABLE DOORS ON BACK, OPEN BOTTOM.
 - ON WEST SIDE ANNUNCIATOR ONLY.
 - LOCAL CONTROL BOARD BUILDER TO FURNISH & INSTALL TERMINAL STRIPS & RELAYS. FOR EACH FAN, MOUNT (1) ITEM 43, (1) ITEM 44, (1) ITEM 49, (1) ITEM 50, (1) ITEM 51, (1) ITEM 53 & (1) ITEM 54. WIRE PER ELEMENTARY DIAGRAMS ON DWG. E-G-35. FURNISH & WIRE PER ELEMENTARY DIAGRAMS. (1) ITEM 51 FOR ALL ALARM CIRCUITS. MOUNT TERMINAL STRIPS ON UPPER SIDES OF BOARDS & RELAYS BELOW THEM ON SUBPANEL.
 - WIDTH IS 6 INCHES.
 - INDICATING LIGHT COLORS TO BE AS FOLLOWS:
 GREEN - STOP
 RED - HIGH SPEED
 AMBER - INTERMEDIATE 2 SPEED
 BLUE - INTERMEDIATE 1 SPEED
 WHITE - LOW SPEED
 - CO RECORDERS ARE LEEDS AND HERTHROP MODEL "SPEEDOMAX W" INSTALLED. IN PROJ. NO. 170-3(63)220 (R2)
 - EXISTING FAN CONTROL BOARD & LOCAL CONTROL BOARDS WERE BUILT BY GENERAL ELECTRIC. NEW FAN CONTROL BOARD & LOCAL CONTROL BOARDS TO IDENTICAL IN APPEARANCE & PAINT COLOR & WIRE PER ELEMENTARY DIAGRAMS SHOWN ON DWG. E-G-35.
 - FOR UPPER CONTROLLER, EAST BUILDING, USE E51, E56 & E57 FOR LOWER CONTROLLER.



ANNUNCIATOR PANEL WINDOW ENGRAVING

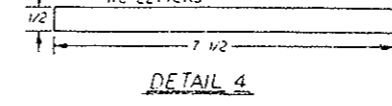
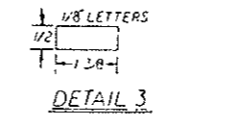
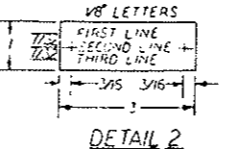
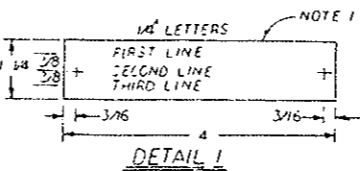
WINDOW	FIRST LINE	SECOND LINE
1	SUPPLY FAN 5	FAILURE
2	SUPPLY FAN 6	FAILURE
3	SUPPLY FAN 7	FAILURE
4	TRANSF. 1A	NEUTRAL GROUND
5	TRANSF. 1B	NEUTRAL GROUND
6	EXHAUST FAN 5	FAILURE
7	EXHAUST FAN 6	FAILURE
8	EXHAUST FAN 7	FAILURE
9	POWER PANELS	OFF
10	EMERG. LIGHTS	ON
11	CO	LEVEL 1
12	CO	LEVEL 2
13	EMERGENCY GEN.	FAILURE (NOTE 3)
14	MOTOR HIGH	TEMPERATURE
15	PAN DAMPER	TEMPERATURE
16	BEARING HIGH	TEMPERATURE
17	NATURAL GAS	IN USE
18	MIXED GAS	IN USE
19	MIXED GAS SYSTEM	SHUT DOWN
20	APPROACHING	NATURAL GAS LIMIT

(IF CAGING FOR ALARM RELAYS IS REQUIRED IT SHALL BE PROVIDED)

ALARM/CONTROLLER NAMEPLATE SCHEDULE

N.P. NO.	FIRST LINE	SECOND LINE
1	FAN E55 (NOTE 9)	BEARING NO. 1
2		BEARING NO. 2
3		BEARING NO. 3
4		BEARING NO. 4
5		BEARING NO. 5
6		BEARING NO. 6
7		BEARING NO. 7
8		BEARING NO. 8
9	FAN E56 (NOTE 9)	BEARING NO. 1
10		BEARING NO. 2
11		BEARING NO. 3
12		BEARING NO. 4
13		BEARING NO. 5
14		BEARING NO. 6
15		BEARING NO. 7
16		BEARING NO. 8
17	FAN E57	BEARING NO. 1
18		BEARING NO. 2
19		BEARING NO. 3
20		BEARING NO. 4
21		BEARING NO. 5
22		BEARING NO. 6
23		BEARING NO. 7
24		BEARING NO. 8

SUBSTITUTE W FOR WEST BUILDING.



REVISIONS

NO.	DESCRIPTION	DATE
1	AS CONSTRUCTED	
2	ADDED 4 ALARM WINDOWS TO ANNUNCIATORS ITEM 8 FOR MIXED GAS SYSTEM. DWG. 21176 ADD. 10-22-63.	
3	REVISED FOR PROJ. NO. 170-3(63)220.	

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

ELECTRICAL
 GENERAL
 FAN CONTROL BOARDS
 LAYOUT AND DETAILS

DRAWING NO. E-G-65

- (R1) RELATED TO PROJ. NO. 170-3(83)220 (GROUNDING & BONDING)
- (R2) REVISED FOR PROJ. NO. 170-3(83)220

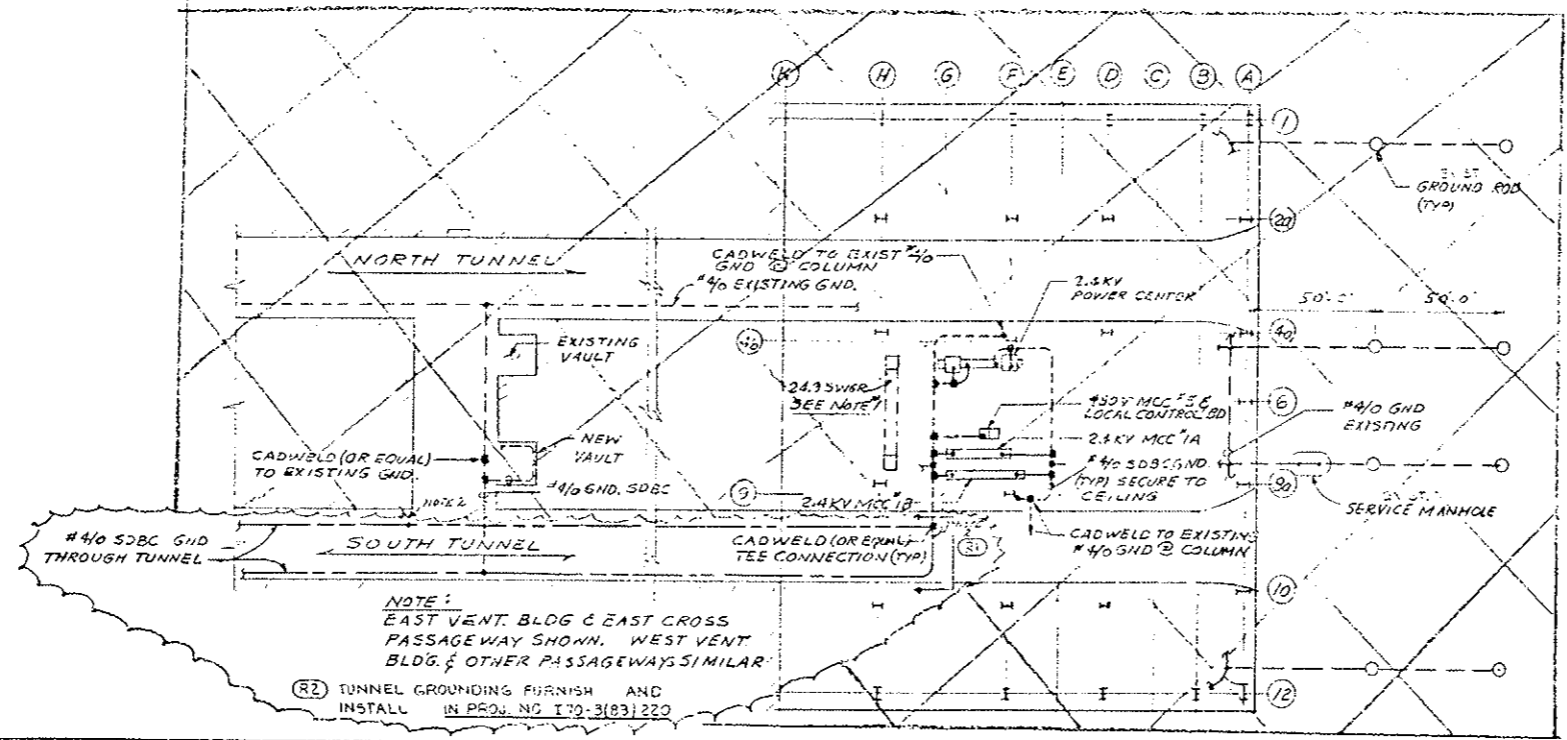
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

LEGEND

--- EXISTING GROUND

--- NEW GROUND

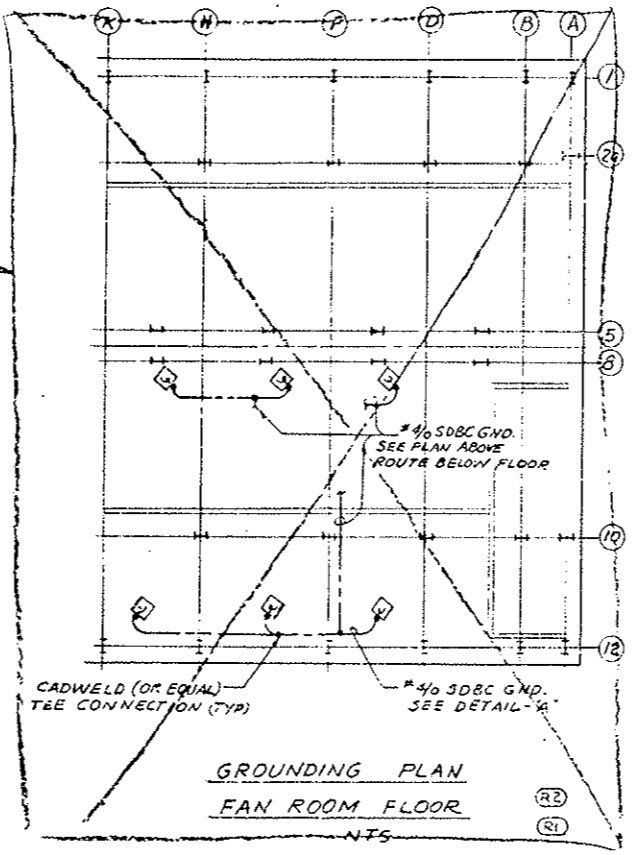
- NOTES:**
- (R1) NEW UNITS OF 24.3 KV SWITCH GEAR TO BE FIRED INTO EXISTING GND BUS OF SWGR.
 - (R2) ALL GROUNDING IN VENT BUILDING TO BE INSTALLED BY CONTRACTOR.
 - (R2) ALL GROUNDING IN TUNNEL & CROSS-PASSAGEWAYS TO BE INSTALLED BY THIS CONTRACT.
1. WORK THIS DWG WITH DWG E-T-25
- (R2) 2. BOND ALL #40 SDBC GROUND TO THE WATER MAIN AT ALL CROSS-PASSAGEWAYS AND AT THE VENTILATION BUILDINGS.



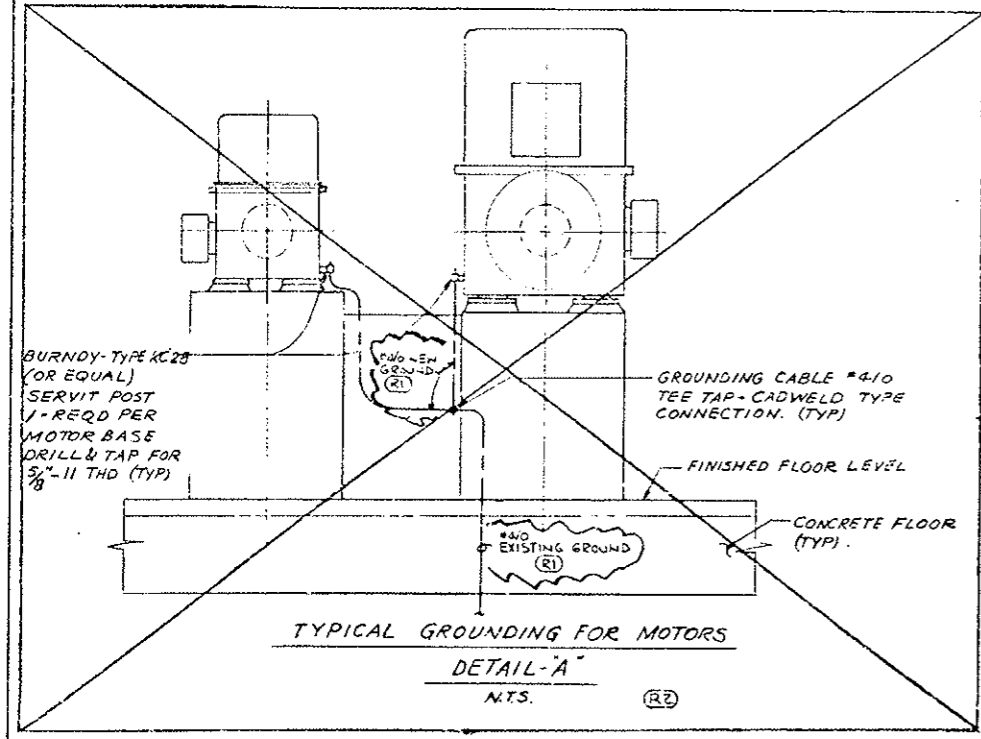
NOTE:
EAST VENT. BLDG & EAST CROSS-PASSAGEWAY SHOWN, WEST VENT. BLDG. & OTHER PASSAGEWAYS SIMILAR.

(R2) TUNNEL GROUNDING FURNISH AND INSTALL IN PROJ. NO. 170-3(83)220

GROUNDING PLAN
VENT BLDG'S & TUNNEL
NTS



GROUNDING PLAN
FAN ROOM FLOOR
NTS



TYPICAL GROUNDING FOR MOTORS
DETAIL-A
NTS. (R2)

N.I.C.



PRINT RECORD

DATE REVISION	BY	CHKD
0 0 0 0 0 0 0 0 0 0		
5 3 12 00 4 00 AM		
15 15 1 15 1 15		

NO.	REVISIONS	DATE BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS		
EISENHOWER MEMORIAL TUNNEL		
SECOND BORE		
ELECTRICAL GENERAL		
GROUNDING PLANS & DETAILS		
CSW 6-12-74		
RPJ 6-27-74		
NOTED C14570		

E-G-7S

WEST VENTILATION BUILDING

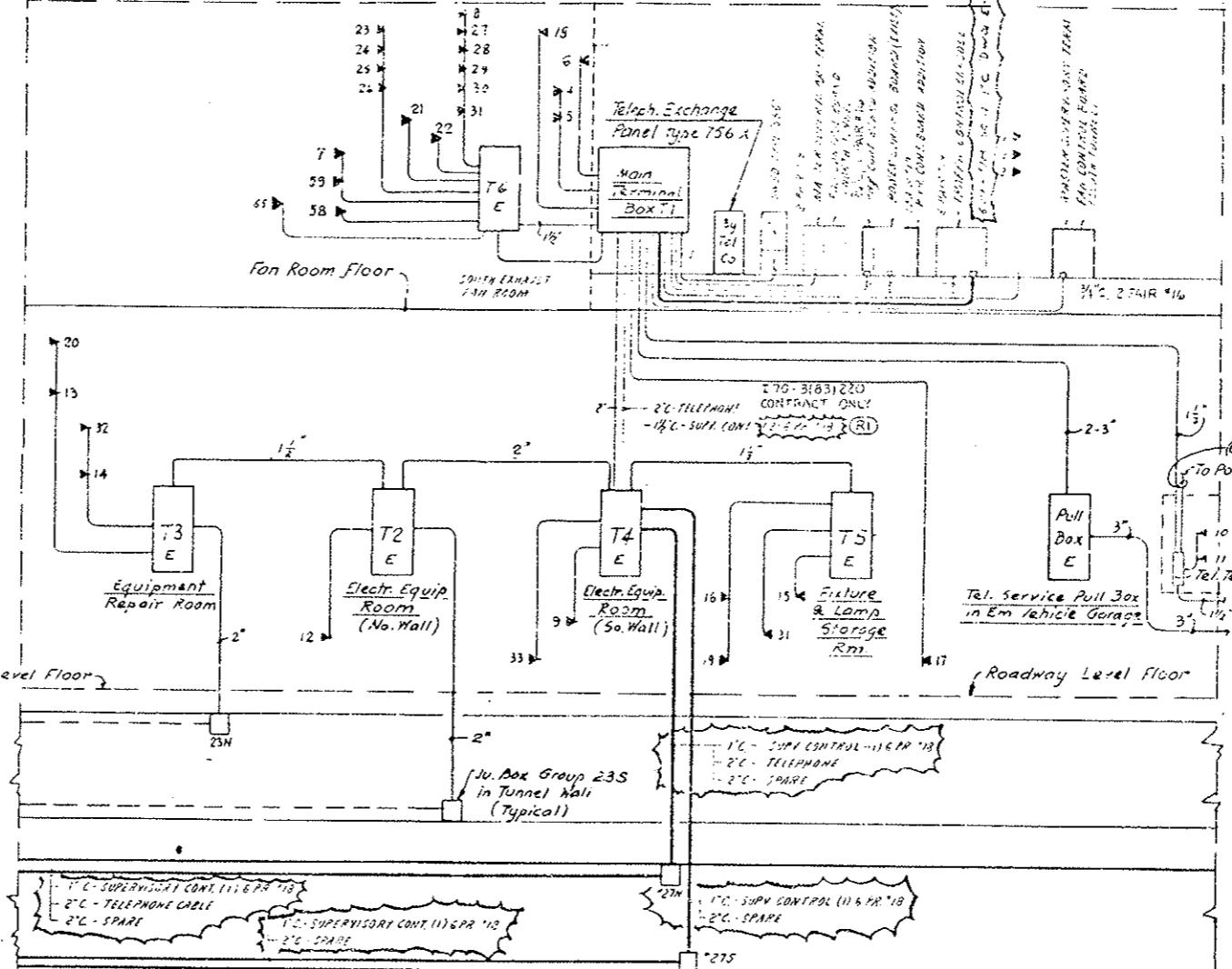
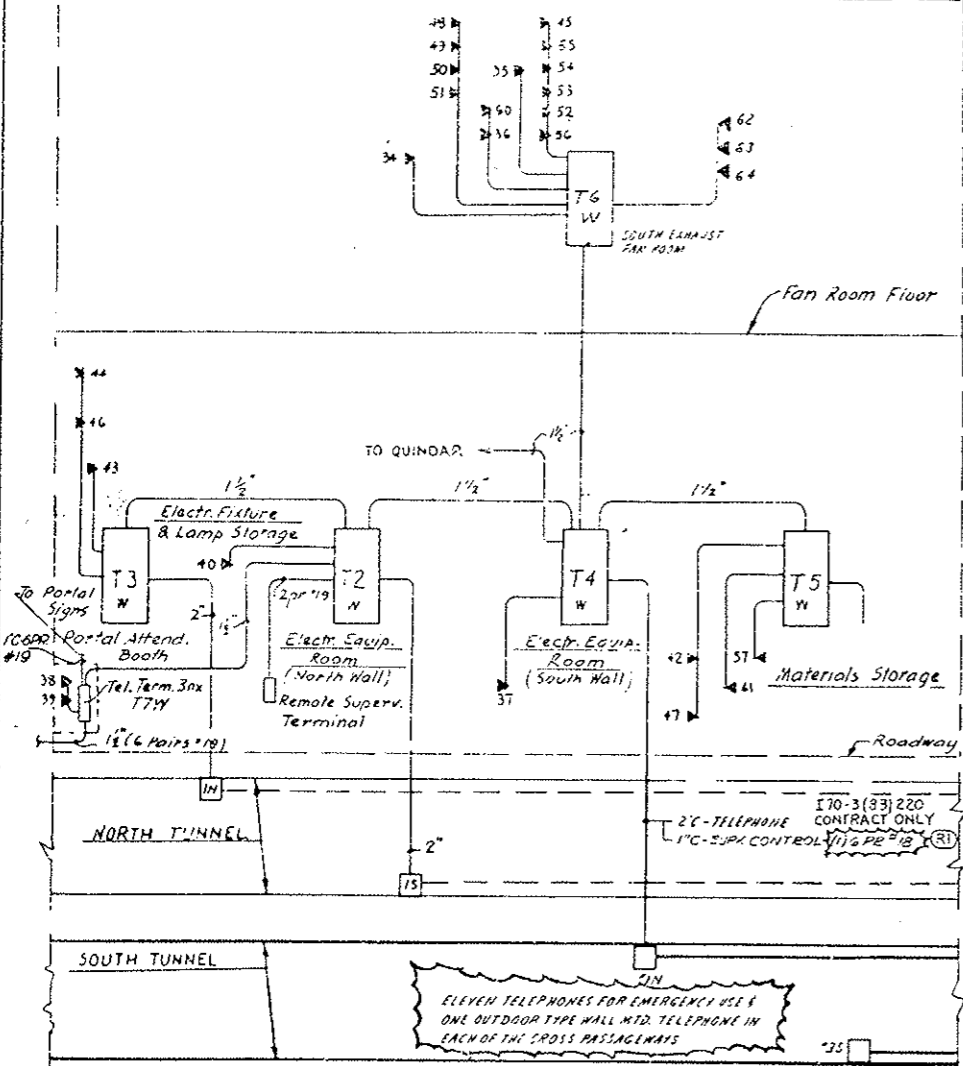
EAST VENTILATION BUILDING

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
301	COLORADO	I70-3(83)220	131	

(R) REVISED FOR PROJ. NO. I70-3(83)220

AS CONSTRUCTED

NO REVISIONS REVISED VOID



- NOTES
1. THIS DRAWING REPRESENTS THE TELEPHONE SYSTEM AS SHOWN IN DWG. E-13 INCLUDING THE ADDITIONS AS REQUIRED FOR THE SOUTH TUNNEL.
 2. FOR PHYSICAL LOCATION OF TELEPHONE BOXES & OUTLETS IN VENTILATION BUILDING, SEE DWG. E-13 & E-14 & E-15.
 3. FOR TELEPHONE IN TUNNEL CROSS PASSAGEWAYS, SEE DWG. E-7-12 & E-7-25.
 4. WHERE A ROOM IS INDICATED, THE CONTRACTOR SHALL PROVIDE A 120VAC RECEPTACLE FROM NEAREST TO THE PANEL.
 5. ALL CONDUITS SHALL BE GALVANIZED STEEL UNLESS OTHERWISE NOTED.
 6. TELEPHONE WIRING EQUIPMENT WILL BE FURNISHED BY MAIN BELL.
 7. WHERE CABLE RUNS ARE INDICATED, THEY WILL BE FURNISHED & INSTALLED BY CONTRACTOR.

- (R) NOTES FOR PROJ. NO. I70-3(83)220
1. SEE RISER DIAGRAM FOR WORK INCLUDED IN PROJ. NO. I70-3(83)220 AS NOTED BY LEGEND SYMBOLS OR BY

- LEGEND
- EXIST. CONDUIT
 - NEW CONDUIT FOR CONTRACT I70-3(83)220
 - ⬆ EXIST. TELEPHONE OUTLET BOX W/COVER
 - ⬆ NEW TELEPHONE OUTLET BOX W/COVER
 - * WORK FURNISHED, MAINT. & INSTALLED BY TELEPHONE COMPANY

EAST VENTILATION BUILDING (EXIST. OUTLETS)

Outlet No.	LOCATION	TYPE	PURPOSE
1	Control Room	W. Wall	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	For Telephone & Loudspeaker Connect. Comes with 400 P.A. type Panel
11	"	Built-in	"
12	Emergency Vehicle Garage	Wall	For Telephone & Loudspeaker Connect.
13	Garage Vehicle Repair Shop	"	Telephone Connection
14	Equipment Repair Room	"	For Telephone & Signal Horn
15	Electrical Fixture & Lamp Storage	"	For Telephone & Loudsp. Connection
16	South Vehicle Storage	"	"
17	Sewage Treatment Plant	Expt. arf.	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	"	"
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	"	S/5	"
28	"	G/5	"
29	"	E/5	"
30	"	C/5	"
31	State Patrol Equipment Room	Wall	"

WEST VENTILATION BUILDING (EXIST. OUTLETS)

Outlet No.	LOCATION	TYPE	PURPOSE	
34	North Supply Fan Room @ Col. 2/A	Wall	Outdoor Type Tel. Connection	
35	" @ Col. F/3	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. Supplied with 400 Push Button Panel	
39	"	Built-in	"	
40	Emergency Vehicle Garage	Wall	For Telephone & Loudspeaker Conn.	
41	South Vehicle Storage	"	"	
42	"	"	"	
43	Electrical Fixture & Lamp Storage	"	For Telephone & Loudspeaker Conn.	
44	Garage & Vehicle Repair	Wall	"	
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	"
57	Materials Storage	"	"	
60	South Supply Fan Rm. Tel. Outlet Col. A/11	"	"	

WEST VENTILATION BLDG. (NEW OUTLETS)

Outlet No.	LOCATION	TYPE
58	EMERGENCY GENERATOR ROOM	WALL
62	SOUTH SUPPLY FAN ROOM @ COL. F-11	TEL JACK
61	"	"
59	"	"

EAST VENTILATION BLDG. (NEW OUTLETS)

Outlet No.	LOCATION	TYPE
65	SOUTH SUPPLY FAN ROOM @ COL. F-11	TEL JACK



REVISIONS

NO.	REVISIONS	DATE	BY	CHKD.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
SECOND BORE

ELECTRICAL TELEPHONE RISER DIAGRAM

PRINT RECORD

DATE ISSUED	REVISION NO.	FOR	CUSTOMER	FIELD	INTRA CD.

DRAWN: P. J. J. 2/2/64
CHECKED: J. J. J. 2/2/64
SCALE: NONE
ORDER NO: CI4570

stearns-rogar architects
E-G-85

EXISTING
LOCATION: WEST VENTILATION BLDG. ELECT. EQUIPMENT ROOM (DWG. E-W-15) ONE LINE DIAG. DWG. E-G-25

480/277 VOLT 60HZ 3PHASE-4 WIRES
4" x 4" FEEDER CABLES - TOP ENTRY
225A MAIN BUS

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.	COND. WIRE SIZE AND SIZE
		A	B	C			
1	INT. ZONE NORTH LTG. FEEDER NI	12	15.2	15.2	30	100	4" x 6"
2	SOUTH	51	5.4	13.3	30		
3	NORTH	12	8.2	8.2	30		
4	SOUTH	52	2.2	7.2	30		
5	NORTH	N3	15.2	15.2	30		
6	SOUTH	53	1.2	13.3	30		
7	WATER MAIN PIPE HEATING FDR	18.4	9.2	9.2	30		
8	SEEPAGE DRAIN PIPE HEATING FDR	26.0	17.3	24.4	40		
9	TRAFFIC CONTROL FDR SO. WALL	12	12	12	30		
10	AIR HEAT BURNER FLAME CONT. PHL.	10	10	10	16		
11	30 KVA TRANSFORMER	26	36	36	40		
12	EMERG. GEN. MISC. COMPRESSOR	8	8	8	20		
13	EMERG. GEN. CONTROL PHL.	3	3	15	15		
14	EMERG. GEN. MISC. POWER	5	5	5	15		
15	SPARE				30		
16	SPARE				15		
PHASE LOAD		153.5	157.7	150.1			

PHASE LOAD: 153.5 157.7 150.1

EXISTING
LOCATION: WEST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

480/277 VOLT 60HZ 3PHASE-4 WIRES
4" x 4" FEEDER CABLES - BOTTOM ENTRY
350 A MAIN BRKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.	COND. WIRE SIZE AND SIZE
		A	B	C			
1	TUNNEL LTG. NORTH FDR. NI	23.7	23.7	23.7	30	100	4" x 6"
2	N2	23.7	23.7	23.7	30		
3	N3	23.7	23.7	23.7	30		
4	N4	23.7	23.7	23.7	30		
5	LIGHTING TRANSFORMER	36	36	36	50		
6	WATER MAIN PIPE HEATING FDR	18.4	9.2	27.6	40		
7	AIR DUCT POWER OUTLETS	24	24	24	30		
8	TRAFFIC CONTROL FDR SO. WALL	12	12	12	30		
9	TUNNEL LTG. SOUTH FDR. S1	23.7	23.7	23.7	30		
10	S2	23.7	23.7	23.7	30		
11	S3	23.7	23.7	23.7	30		
12	S4	23.7	23.7	23.7	30		
13	SPARE				30		
14	SPARE				10		
PHASE LOAD		219.8	219.8	219.8			

PHASE LOAD: 219.8 219.8 219.8

EXISTING
LOCATION: WEST VENTILATION BLDG. ELECT. EQUIPMENT ROOM (DWG. E-W-15) ONE LINE DIAG. DWG. E-G-25

120/208 VOLT 60HZ 3PHASE-4 WIRES
4" x 4" FEEDER CABLES - TOP ENTRY
100A MAIN CRT. BRKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.	COND. WIRE SIZE AND SIZE
		A	B	C			
1	24KV MCC NO. 1A TEST POWER	10.0			20		
2	24KV MCC NO. 1B TEST POWER	10.0			20		
3	RELAY PANEL CONTROL POWER	5.0			15		
4	AUTO TRANSFER SWITCH	5.0			15		
5	SPEED SWITCHES		5.0		15		
6	GAS METER BLDG. LTG.		2.5		15		
7	TUNNEL TV FEEDER NO. WALL	1.5			20		
8	RECEPTACLE SO. WALL	1.5			20		
9	NO. WALL	1.5			20		
10	SO. WALL	1.5			20		
11	NO. WALL	1.5			20		
12	SO. WALL	1.5			20		
13	SPARE				15		
14	EMERG. GEN. WATER HEATER #1	18			20		
15	REMOTE SUPERVISORY CABINET	15			20		
16	EMERG. GEN. RADIATOR RECEPT.	15			20		
17	EMERG. GEN. LG. LG. #2 PUMP	3.4			40		
18	LOCAL CONTROL BOARD	10			20		
19	SPARE				20		
20	UP. SYSTEM CONTROL PANEL	5			20		
21	EMERG. GEN. WATER HEATER #2	18			20		
22	RELAY PANEL LG. RECEPT.	1.8			20		
23	SPARE				20		
24	SPARE				15		
PHASE LOAD		47	53.3	54			

PHASE LOAD: 47 53.3 54

AS CONSTRUCTED
LOCATION: EAST VENTILATION BLDG. ELECT. EQUIPMENT ROOM (DWG. E-E-15) ONE LINE DIAG. DWG. E-G-25

120/208 VOLT 60HZ 3PHASE-4 WIRES
4" x 4" FEEDER CABLES - TOP ENTRY
100A MAIN CRT. BRKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.	COND. WIRE SIZE AND SIZE
		A	B	C			
1	24KV MCC NO. 1A TEST POWER	10.0			20		
2	24KV MCC NO. 1B TEST POWER	10.0			20		
3	RELAY PANEL CONTROL POWER	5.0			20		
4	AUTO TRANSFER SWITCH	5.0			15		
5	SPEED SWITCHES		5.0		15		
6	GAS METER BLDG. LTG.		2.0		15		
7	TUNNEL TV FEEDER NO. WALL	3.0			20		
8	RECEPTACLE SO. WALL	1.5			20		
9	NO. WALL	3.0			20		
10	SO. WALL	1.5			20		
11	NO. WALL	1.5			20		
12	SO. WALL		1.5		20		
13	SPARE				15		
14	SPARE				20		
15	MASTER SUPERVISORY CABINET	15			20		
16	SPARE				20		
17	FAN CONTROL BOARD		10		20		
18	LOCAL CONTROL BOARD		10		20		
19	ELEVATOR LG. RECEPT.	4.8			20		
20	UP. SYSTEM CONTROL PANEL	5			20		
21	SPARE				20		
22	SPARE				20		
23	SPARE				20		
24	SPARE				15		
PHASE LOAD		34.1	29.3	28.5			

PHASE LOAD: 34.1 29.3 28.5

AC POWER DIST. PANEL NO. P2TS
LOCATION: CENTER CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

480/277 VOLT 60HZ 3PHASE-4 WIRES
4" x 4" FEEDER CABLES - BOTTOM ENTRY
350 A MAIN BRKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.	COND. WIRE SIZE AND SIZE
		A	B	C			
1	TUNNEL LTG. NORTH FDR. NI	20.9	20.9	20.9	30	100	4" x 6"
2	N2	20.9	20.9	20.9	30		
3	N3	20.9	20.9	20.9	30		
4	N4	20.9	20.9	20.9	30		
5	LIGHTING TRANSFORMER	36	36	36	50		
6	WATER MAIN PIPE HEATING FDR	21.6	21.6	27.6	40		
7	AIR DUCT POWER OUTLETS	24	24	24	30		
8	TRAFFIC CONTROL FDR SO. WALL	12	12	12	30		
9	TUNNEL LTG. SOUTH FDR. S1	20.0	20.0	20.0	30		
10	S2	20.0	20.0	20.0	30		
11	S3	20.0	20.0	20.0	30		
12	S4	20.0	20.0	20.0	30		
13	SPARE				30		
14	SPARE				10		
PHASE LOAD		267.6	261.4	259.6			

PHASE LOAD: 267.6 261.4 259.6

AC POWER DIST. PANEL NO. P2TS
LOCATION: EAST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

480/277 VOLT 60HZ 3PHASE-4 WIRES
4" x 4" FEEDER CABLES - BOTTOM ENTRY
350 A MAIN BRKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.	COND. WIRE SIZE AND SIZE
		A	B	C			
1	TUNNEL LTG. NORTH FDR. NI	20.0	19.1	19.1	30	100	4" x 6"
2	N2	19.1	20.0	17.1	30		
3	N3	20.0	11.1	17.1	30		
4	N4	19.1	20.0	17.1	30		
5	LIGHTING TRANSFORMER	36	36	36	50		
6	WATER MAIN PIPE HEATING FDR	36.8	27.6	27.6	50		
7	AIR DUCT POWER OUTLETS	24	24	24	30		
8	TRAFFIC CONTROL FDR SO. WALL	12	12	12	30		
9	TUNNEL LTG. SOUTH FDR. S1	17.1	17.1	17.1	30		
10	S2	17.6	17.1	17.1	30		
11	S3	17.1	17.1	17.1	30		
12	S4	17.6	17.1	17.1	30		
13	SPARE				20		
14	SPARE				10		
PHASE LOAD		252.4	254.2	251.4			

PHASE LOAD: 252.4 254.2 251.4

LIGHTING PANEL NO. L2TS
LOCATION: EAST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

120/208 VOLT 60HZ 3PHASE-4 WIRES
4" x 4" FEEDER CABLES - TOP ENTRY
125A MAIN CRT. BRKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.	COND. WIRE SIZE AND SIZE
		A	B	C			
1	TUNNEL TV CO. ANAL. FDR. NO. WALL	3.0			20		2" x 8" #12
2	TUNNEL RECEPTACLE SO. WALL	1.5			20		
3	NO. WALL	3.0			20		
4	SO. WALL	1.5			20		
5	NO. WALL		3.0		20		
6	PASSAGEWAY RECEPTACLE (1)		1.5		20		2" #12
7	PASSAGEWAY LTG. N/EMERG.	2.5			15		2" #12
8	DUCT LTG. WEST SUPPLY EAST RETURN	7			20		2" #6
9	PASSAGEWAY LTG.		3.3		15		2" #12
10	DUCT LTG. WEST SUPPLY EAST RETURN	7			20		1" #6
11	RELAY PANEL CONTROL PWR		5		15		2" #12
12	DUCT LTG. WEST SUPPLY EAST RETURN	7			20		1" #6
13	SPARE				20		
14	DUCT LTG. EAST SUPPLY WEST RETURN	7			20		2" #6
15	SPARE				20		
16	DUCT LTG. EAST SUPPLY WEST RETURN	7			20		1" #6
17	SPARE				20		
18	DUCT LTG. EAST SUPPLY WEST RETURN	7			20		1" #6
19	SPARE				20		
20	SPARE				20		
21	SPARE				20		
22	SPARE				20		
23	SPARE				20		
24	SPARE				20		
25 TO 30	SPACES						
PHASE LOAD		31	21.8	23.5			

PHASE LOAD: 31 21.8 23.5

EXISTING
LOCATION: EAST VENTILATION BLDG. ELECT. EQUIPMENT ROOM (DWG. E-E-15) ONE LINE DIAG. DWG. E-G-25

480/277 VOLT 60HZ 3PHASE-4 WIRES
4" x 4" FEEDER CABLES - TOP ENTRY
225A MAIN BUS

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.	COND. WIRE SIZE AND SIZE
		A	B	C			
1	INT. ZONE NORTH LTG. FDR. NI	2.2	3.2	3.2	30	100	4" x 6"
2	SOUTH	51	8.2	7.3	30		
3	NORTH	112	2.2	7.6	30		
4	SOUTH	52	2.2	7.6	30		
5	NORTH	N3	8.2	7.6	30		
6	SOUTH	53	2.2	7.3	30		
7	WATER MAIN PIPE HEATING FDR	18.4	9.2	9.2	30		
8	SEEPAGE DRAIN PIPE HEATING FDR	24.3	24.3	27.3	40		
9	TRAFFIC CONTROL FDR SO. WALL	12	12	12	30		
10	AIR HEAT BURNER FLAME CONT. PHL.	10	10	10	16		
11	TRANSFORMER	18	18	18	30		
12	INT. ZONE NORTH LTG. FDR. NI	8.2	7.6	8.2	30		
13	SOUTH	54	8.2	7.6	30		
14	SPARE				40		
15	SPARE				40		
16	SPARE				30		
PHASE LOAD		156.5	177.5	173.5			

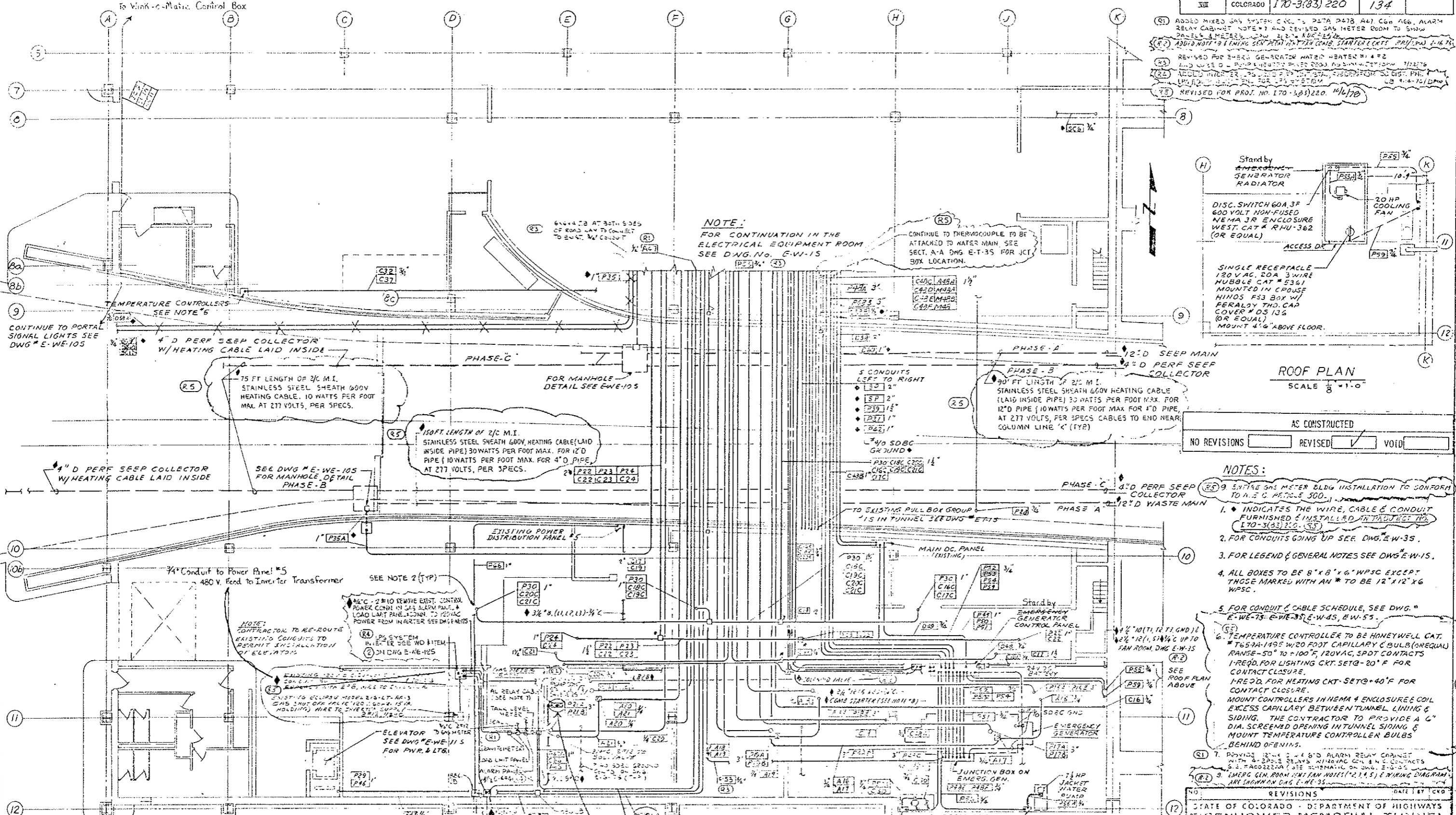
PHASE LOAD: 156.5 177.5 173.5

LIGHTING PANEL NO. L1TS
LOCATION: WEST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

120/208 VOLT 60HZ 3PHASE-4 WIRES
4" x 4" FEEDER CABLES - TOP ENTRY
125A MAIN CRT. BRKR.

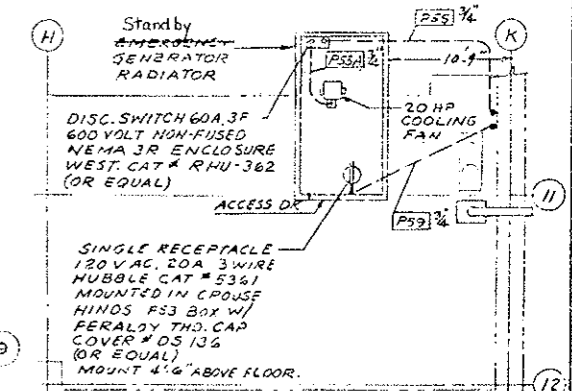
BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.	COND. WIRE SIZE AND SIZE
		A	B	C			
1	TUNNEL TV CO. ANAL. FDR. NO. WALL	4			20		2" x 8" #12
2	TUNNEL RECEPTACLE SO. WALL	1.5			20		
3	NO. WALL	4.5			20		
4	SO. WALL	1.5			20		
5	NO. WALL		3.0		20		
6	PASSAGEWAY RECEPTACLE (1)		1.5		20		2" #12
7	PASSAGEWAY LTG. N/EMERG.	2.5			15		2" #12
8	DUCT LTG. WEST SUPPLY EAST RETURN	7			20		2" #6
9	PASSAGEWAY LTG.		3.3		15		2" #12
10	DUCT LTG. WEST SUPPLY EAST RETURN	7			20		1" #6
11	RELAY PANEL CONTROL PWR		5		15		2" #12
12	DUCT LTG. WEST SUPPLY EAST RETURN	7			20		1" #6
13	SPARE				20		
14	DUCT LTG. EAST SUPPLY WEST RETURN	7			20		2" #6
15	SPARE				20		
16	DUCT LTG. EAST SUPPLY WEST RETURN	7			20		1" #6
17	SPARE				20		
18	DUCT LTG. EAST SUPPLY WEST RETURN	7			20		1" #6
19	SPARE				20		
20	SPARE				20		
21	SPARE			</			

FEDERAL ROAD REGION NO.	DIVISION	PRJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	170-3(83) 220	134	



NOTE:
FOR CONTINUATION IN THE ELECTRICAL EQUIPMENT ROOM SEE DWG. NO. E-W-15

CONTINUE TO THERMOCOUPLE TO BE ATTACHED TO WATER MAIN SEE SECT. A-A DWG. E-T-35 FOR JCT. BOX LOCATION.



ROOF PLAN
SCALE 1/8" = 1'-0"

AS CONSTRUCTED
NO REVISIONS REVISED VOID

- NOTES:**
- INDICATES THE WIRE, CABLE & CONDUIT FURNISHED & INSTALLED IN PROJECT PER 170-3(83) 220, (R5)
 - FOR CONDUITS GOING UP SEE DWG. E-W-35.
 - FOR LEGEND & GENERAL NOTES SEE DWG. E-W-15.
 - ALL BOXES TO BE 8" X 8" X 6" WPSC EXCEPT THOSE MARKED WITH AN * TO BE 12" X 12" X 6" WPSC.
 - FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-W-75, E-W-85, E-W-85, E-W-55.
 - TEMPERATURE CONTROLLER TO BE HONEYWELL CAT. # T651A-1495 W/20 FOOT CAPILLARY & BULB (UNEQUAL RANGE -50° TO +100°F, 120VAC, SPDT CONTACTS 1-REQD. FOR LIGHTING CKT. SET@ -20°F FOR CONTACT CLOSURE, 1-REQD. FOR HEATING CKT. SET@ +40°F FOR CONTACT CLOSURE. MOUNT CONTROLLERS IN NEMA 4 ENCLOSURE & COIL EXCESS CAPILLARY BETWEEN TUNNEL LINING & SIDING. THE CONTRACTOR TO PROVIDE A 6" DIA. SCREENED OPENING IN TUNNEL SIDING & MOUNT TEMPERATURE CONTROLLER BULBS BEHIND OPENING.
 - PROVIDE 12" X 6" X 6" ALARM RELAY CABINET WITH 2 SPDT RELAYS MIXING GEN. & M. CONTACTS & 2 FACED RELAYS (SEE SCHEMATIC ON DWG. E-W-35)
 - EMERG. GEN. ROOM FAN NOISE (2, 4, 5) & WIRING DIAGRAM ARE SHOWN ON DWG. E-W-35.

REVISIONS

NO.	DATE	BY	CHKD.
1			
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STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
SECOND BORE

ELECTRICAL
WEST VENTILATION BUILDING
ROADWAY FLOOR
POWER & CONTROL PLAN

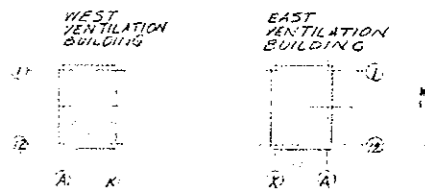
6526

E-W-25

INVERTMENT DEVICE TO BE A 30A, 3P BRKR. FURNISH OR REPLACE UN USED 3 POLE SPARE BRKR WITH NEW BRKR.

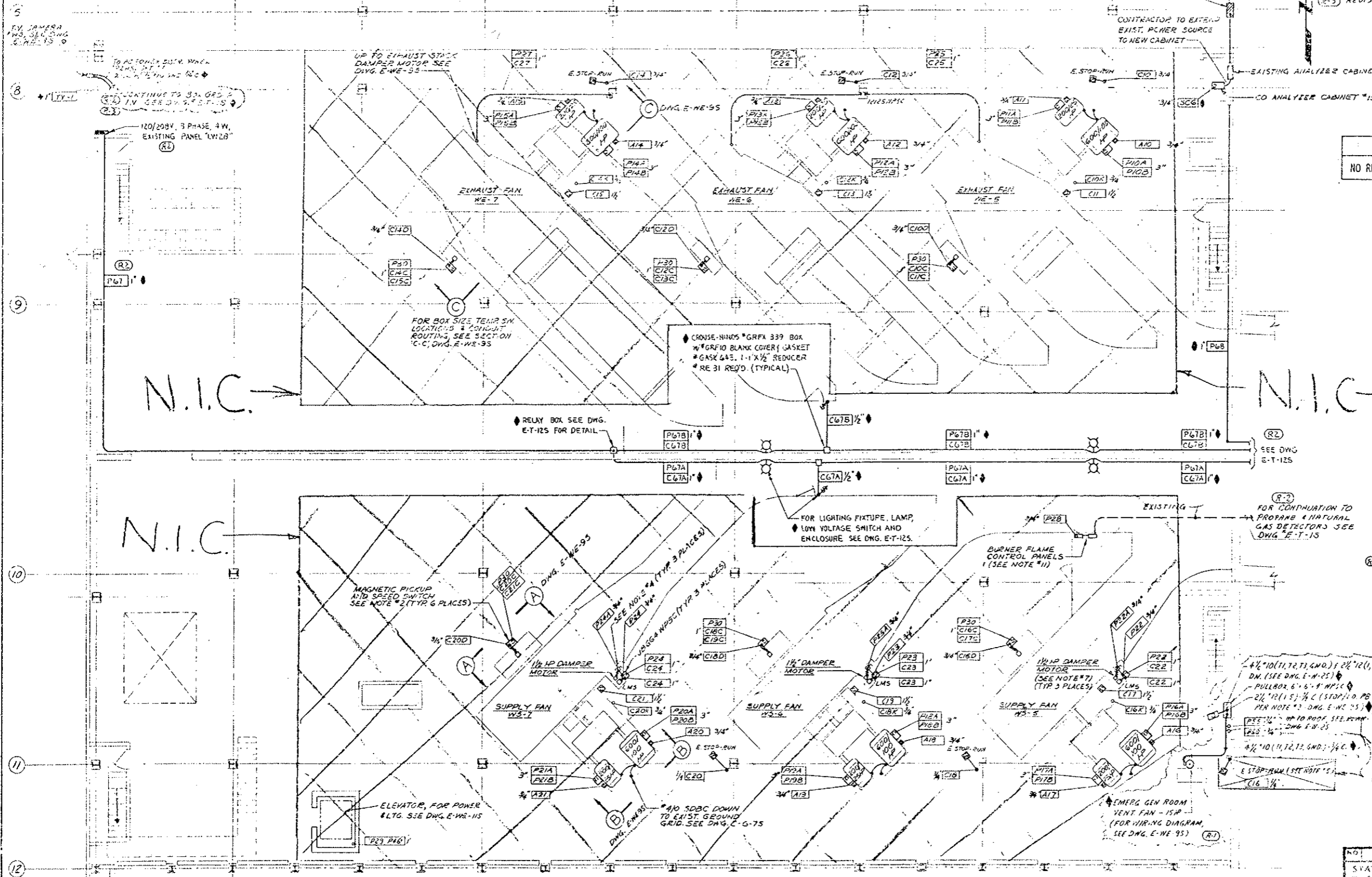
EXISTING 480V POWER DISR. PNL "P6" WEST

- (R1) ADDD EMERG. GEN. ROOM VENT. FAN & CIRCUITS 2/1/54
- (R2) REVISED FOR PROJ. NO. 170-3(83)220
- (R3) REVISED Box GROUP NO. 10/1/73



KEY PLAN
AS CONSTRUCTED
NO REVISIONS REVISED VOID

- NOTES:
1. FOR CONTINUATION OF CONDUITS GOING DOWN SEE DWG. E-W-15 & E-W-25
 2. SPEED SWITCHES W/ MAGNETIC PICKUP TO BE SYNCHRO-START PRODUCTS, INC. MODEL #ESSB-41T MOUNTED IN A 20" x 16" x 10" W/SC BOX W/ 5/8" PANEL (TWO SETS OF 4 SPOT CONTACTS PER FAN)
 3. FOR LEGEND & GENERAL NOTES SEE DWG. E-6-13
 4. DISCONNECT SWITCH TO BE 30 AMP, 3P, 600V NON-FUSIBLE NEMA 12 ENCLOSURE, WESTINGHOUSE CAT #JHU-36 (OR EQUAL). TOP OF DISCONNECT TO BE MOUNTED 5'-0" ABOVE FINISHED FLOOR.
 5. EMERG. STOP-RUN SELECTOR SWITCH IS EXISTING. CONTRACTOR TO WIRE AS REQ'D & ROUTE CONDUIT.
 6. LIGHTING FIXTURES, WELDING RECEPTACLES & CONVENIENCE RECEPTACLES ARE EXISTING & WIRED.
 7. 1/2 HP DAMPER MOTOR & LIMIT SWITCH (LMS) ARE FURNISHED BY OTHERS. CONTRACTOR TO WIRE AS INDICATED.
 8. FOR TELEPHONE OUTLETS, SEE DWG. E-G-85.
 9. FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-W-75 & E-W-85.
 10. FOR FAN & DAMPER ELEMENTARY DIAGRAMS, SEE DWG. E-G-35
 11. BURNER FLAME CONTROL PANELS & ASSOCIATED CONTROLS W/ METHANE DETECTOR ARE TO BE WIRED PER MANUFACTURER'S RECOMMENDATIONS.
 12. * INDICATES WIRE, CABLE & CONDUIT FURNISHED & INSTALLED IN PROJ. NO. 170-3(83)220 (R2)
 13. CONTRACTOR TO CORE DRILL FLOOR FOR CONDUITS & TRAIL TUBES * (TYPICAL)



◆ CRUISE-HINDS #GRFX 339 BOX
W/ #GRFIO BLANK COVER (GASKET)
#GASK 443, 1-1/2" X 1/2" REDUCER
#RE 31 RED'D. (TYPICAL)

◆ FOR LIGHTING FIXTURE, LAMP,
◆ LOW VOLTAGE SWITCH AND
◆ ENCLOSURE SEE DWG. E-T-125.

◆ 4" x 10" (11, 12, 13, 14, 15) 1/2" C.
DN. (SEE DWG. E-W-25)
◆ PULLBOX 6" x 6" x 4" W/SC
◆ 2" x 12" (15) 1/2" C. (STOP/10. PB STATION
PER NOTE #3 DWG. E-W-25)
◆ SEE DWG. E-W-25
◆ 4" x 10" (11, 12, 13, 14, 15) 1/2" C.
◆ E STOP-RUN (SEE NOTE #5)
◆ C16 1/2"



PRINT RECORD

DATE	BY	CHKD	APP'D
0 0 0 0 0 0 0 0 0 0			
5 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100			

NO. 1 DEVISIONS DATE BY JCD

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
(SECOND) BORE

ELECTRICAL
WEST VENTILATION BUILDING
FAN FLOOR
POWER & CONTROL PLAN

DATE 6/29/74
DRAWN BY JCD
CHECKED BY JCD
SCALE 1/8" = 1'-0"
C14570

SPAWING 112
E-W-3S

CONDUIT NO	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
C04	3 1/2" 1/2"	24.9 KV SWITCHGEAR, UNIT 05W	REMOTE SUPERVISORY CABINET	CONTROL
C05	3 1/2" 1/2"			INDICATING LIGHTS
C06	3 1/2" 1/2"	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL
C07	3 1/2" 1/2"			INDICATING LIGHTS
C2A	3 1/2" 1/2"	24.9 KV SWITCHGEAR, UNIT 06W	REMOTE SUPERVISORY CABINET	CONTROL
C2B	3 1/2" 1/2"			INDICATING LIGHTS
C2C	3 1/2" 1/2"	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL
C2D	3 1/2" 1/2"			INDICATING LIGHTS
C3	3 1/2" 1/2"	24KV POWERCENTER NO.1, F2E BKR.1A	REMOTE SUPERVISORY CABINET	CONTROL
C3A	3 1/2" 1/2"			INDICATING LIGHTS
C3B	3 1/2" 1/2"	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL
C3C	3 1/2" 1/2"			INDICATING LIGHTS
C3D	3 1/2" 1/2"	24KV POWERCENTER NO.1, 3USTE	REMOTE SUPERVISORY CABINET	CONTROL
C3E	3 1/2" 1/2"			INDICATING LIGHTS
C3F	3 1/2" 1/2"	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL
C3G	3 1/2" 1/2"			INDICATING LIGHTS
N3	2 1/2" 1/2"	2.4KV POWERCENTER NO.1, AUX. SECT.1A	REMOTE SUPERVISORY CABINET	AMMETER VIA TRANSDUCER
N3B	2 1/2" 1/2"	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	AMMETER
N3C	2 1/2" 1/2"			VOLTMETER
C4	3 1/2" 1/2"	24KV POWERCENTER NO.1, 4DE BKR.1C	REMOTE SUPERVISORY CABINET	CONTROL
C4A	3 1/2" 1/2"			INDICATING LIGHTS
C4B	3 1/2" 1/2"	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL
C4C	3 1/2" 1/2"			INDICATING LIGHTS
M4	2 1/2" 1/2"	2.4KV POWERCENTER NO.1, AUX. SECT.1B	REMOTE SUPERVISORY CABINET	AMMETER VIA TRANSDUCER
M4A	2 1/2" 1/2"			VOLTMETER VIA TRANSDUCER
M4B	2 1/2" 1/2"	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	AMMETER
M4C	2 1/2" 1/2"			VOLTMETER
C0E	7 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO. 5, CONTROL
C0F	6 1/2" 1/2"			IND. LIGHTS
C0G	7 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL
C0H	6 1/2" 1/2"			IND. LIGHTS
A10A	2 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO.5, FAN FAILURE ALARM
A10B	1 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A10C	1 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	FAN SEIZING HIGH TEMPERATURE ALARM
A10D	1 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A10E	2 1/2" 1/2"	LOCAL CONTROL BOARD	2.4KV MCC NO.1A, UNIT '1'	ALARM - MOTOR HIGH TEMPERATURE
C1E	7 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO. 6, CONTROL
C1F	6 1/2" 1/2"			IND. LIGHTS
C1G	7 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL
C1H	6 1/2" 1/2"			IND. LIGHTS
A12A	1 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO.6, FAN FAILURE ALARM
A12B	1 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A12C	2 1/2" 1/2"	LOCAL CONTROL BOARD	2.4KV MCC NO.1A, UNIT '3'	ALARM - MOTOR HIGH TEMPERATURE
C1E	7 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO.7, CONTROL
C1F	6 1/2" 1/2"			IND. LIGHTS
C1G	7 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL
C1H	6 1/2" 1/2"			IND. LIGHTS
A14A	1 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO.7, FAN FAILURE ALARM
A14B	1 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A14C	2 1/2" 1/2"	LOCAL CONTROL BOARD	2.4KV MCC NO.1A, UNIT '5'	ALARM - MOTOR HIGH TEMPERATURE
C1E	7 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.5, CONTROL
C1F	6 1/2" 1/2"			IND. LIGHTS
C1G	7 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL
C1H	6 1/2" 1/2"			IND. LIGHTS
A16A	1 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.5, FAN FAILURE ALARM
A16B	1 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A16C	2 1/2" 1/2"	LOCAL CONTROL BOARD	2.4KV MCC NO.1B, UNIT '1'	ALARM - MOTOR HIGH TEMPERATURE

CONDUIT NO	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
C1E	7 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.6, CONTROL
C1F	6 1/2" 1/2"			IND. LIGHTS
C1G	7 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL
C1H	6 1/2" 1/2"			IND. LIGHTS
A18A	1 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.6, FAN FAILURE ALARM
A18B	1 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A18C	2 1/2" 1/2"	LOCAL CONTROL BOARD	2.4KV MCC NO.1B, UNIT '3'	ALARM - MOTOR HIGH TEMPERATURE
C20E	7 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.7, CONTROL
C20F	6 1/2" 1/2"			IND. LIGHTS
C20G	7 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL
C20H	6 1/2" 1/2"			IND. LIGHTS
A20A	1 1/2" 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.7, FAN FAILURE ALARM
A20B	1 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A20C	2 1/2" 1/2"	LOCAL CONTROL BOARD	2.4KV MCC NO.1B, UNIT '5'	ALARM - MOTOR HIGH TEMPERATURE
A20D	1 1/2" 1/2"			REMOTE SUPERVISORY CABINET
A20E	1 1/2" 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
P29	3 1/2" 10 1/2" 10G	AC POWER DIST. PANEL #PIWS	AIR HEATED BUENER FLAME CONTR. PNL.	FEEDER
P30	12 1/2" 1/2"	AC POWER DIST. PANEL #P2WS	SPEED SWITCH & TEMP CONTROLLER	120V FEEDER
P31	1" 3 1/2" 6"	AC POWER DIST. PANEL #PIWS	SOUTH TUNNEL WALL AC PULLBOX GRPS.	TRAFFIC CONTROL
P32	4 1/2" 6"	AC POWER DIST. PANEL #PIWS	LTG. & HTG. CONTACTOR PANEL	WATER MAIN PIPE HTG. FEEDER
C32	2 1/2" 1/2"	TEMPERATURE CONTROLLER #2	LTG. & HTG. RELAY & CONTROL PNL.	CONTROL
P33	1/2" 4 1/2" 6"	LTG. & HTG. CONTACTOR PANEL	NORTH TUNNEL WALL AC PULLBOX GRPS	WATER MAIN PIPE HTG. FEEDER
P33A	3/4" 4 1/2" 12"	TEMPERATURE CONTROLLER T.C.#3	LTG. & HTG. RELAY & CONTROL PNL.	CONTROL T.C.#3 POWER
P33B	1/2" 1 1/2" 20"	TEMPERATURE CONTROLLER T.C.#3	THERMOCOUPLE ON WATER MAIN	TEMP SENSING
P34	1/2" 4 1/2" 6"	AC POWER DIST. PANEL #PIWS	LTG. & HTG. CONTACTOR PANEL	SEEPAGE DRAIN HTG. FEEDER
P35	1" 4 1/2" 6"	LTG. & HTG. CONTACTOR PANEL	NORTH TUNNEL WALL DRAIN MANHOLE	SEEPAGE DRAIN HTG. FEEDER
P35A	1" 4 1/2" 6"		SOUTH	
P36	12 1/2" 6"	AC POWER DIST. PANEL #PIWS	LTG. & HTG. CONTACTOR PANEL	TUNNEL INT. ZONES LTG FEEDER MIN. 53
P37	12 1/2" 6"			51, 52, 53
C37	2 1/2" 1/2"	TEMPERATURE CONTROLLER #1	LTG. & HTG. RELAY & CONTROL PNL.	CONTROL
C37A	2 1/2" 1/2"	PHOTOELECTRIC CELL RELAY 'PK'		
C37B	6 1/2" 1/2"	LTG. & HTG. CONTACTOR PANEL		
P38	1/2" 12 1/2" 6"		NORTH TUNNEL WALL AC PULLBOX GRPS	TUNNEL INT. ZONES LTG FEEDER MIN. 53
P39	1/2" 12 1/2" 6"		SOUTH	51, 52, 53
P40	3 1/2" 6"	AC POWER DIST. PANEL #PIWS	30KV TRANSFORMER PRIMARY	FEEDER
P40A	4 1/2" 2"	30KV TRANSFORMER SECONDARY	AC POWER DIST. PANEL #P2WS	120V 208V FEEDER
P41	1/2" 1" 4 1/2" 6" 10G	AC POWER DIST. PANEL #P2WS	NORTH TUNNEL AC PULLBOX GRPS.	TV CAMERA, TUNNEL RECEPTACLE FOR
P42	1/2" 1" 4 1/2" 6" 10G		SOUTH	TUNNEL RECEPTACLE FEEDER
P43	2 1/2" 1/2"		2.4KV MCC NO.1A	120V TEST POWER
P44	2 1/2" 1/2"		2.4KV MCC NO.1B	
P45	2 1/2" 1/2"		LTG. & HTG. RELAY & CONTROL PNL.	120V FEEDER
P46	2 1/2" 1/2" 10G		ELEVATOR PENTHOUSE	LTG. & RECEPTACLE FEEDER
P47	3 1/2" 1/2"	POWER PANEL #P2WS BKR 6 & 20	LOCAL JUNCTION BOX	LIGHTING FEEDER (INSTRUMENTS)
P47A	2 1/2" 1/2"	LOCAL JCT. BOX (BKR #20)	MIXED GAS SYSTEM ALARM & CTR PNL'S	ALARM & CONTROL POWER
P47B	2 1/2" 1/2"	(BKR #6)	GAS METER BLDG. LIGHT	LIGHTING FEEDER
A47	5 1/2" 1/2"	GAS METER RM. ALARM RELAY CAB.	REMOTE SUPERVISORY PANEL	MIXED GAS SYSTEM ALARMS
A47A	5 1/2" 1/2"	MASTER SUPERVISORY PANEL	ANNUNCIATOR - FAN CONTROL BOARD	

CONTINUED ON DWG. E-W-55

- (R1) ADDED MIXED GAS SYSTEM CIRCUITS PATA, P47B, A47, A47A AND REVISED CIRCUIT P47 DPW 2/11/76, RDE 4/14/76
- (R2) REVISED FOR ENRG. GENERATOR WATER HEATER #1A #2 AND LUBE OIL PUMP & HTG POWER REQU. AS SHOWN 3/8/76, JTB/1/76
- (R3) REVISED FOR PROJ. NO. I 70-3(83)220.

AS CONSTRUCTED

NO REVISIONS REVISED VOID

NOTES:

- FOR WIRE & CABLE, SEE D.O.H. SPECIFICATIONS, SECTION # 720
- INDICATES WIRE, CABLE & CONDUIT FURNISHED & INSTALLED IN PROJ. NO. I 70-3(83)220. (R3)
- SPARE CONDUITS ARE NOT INDICATED IN THIS SCHEDULE BUT SHALL BE INCLUDED IN PROJ. I 70-3(83)220 WHEN IDENTIFIED ON PLANS AND SECTIONS PER NOTE 2.

(R3)

(R2)

(R1)

NO.	REVISIONS	DATE	BY	CD
1				

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
SECOND BORE

ELECTRICAL
WEST VENTILATION BUILDING
CONDUIT & CABLE SCHEDULE
SHEET NO. 1

PRINT RECORD

DATE REVISION	NO.	BY	DATE	NO.	BY	DATE	NO.	BY	DATE
0	0	0	0	0	0	0	0	0	0

CUSTOMER: 5 5 10 5 DEG 10/26/76

FIELD: - - - - -

SCALE: NONE

CHECKED: NONE

DRAWN: JEU 6/23/76

ORDER NO: C14570

DRAWING NO: E-W-4S

6526



Instruments Fed from Inverter I 70-3(83)220 Modification

CONDUIT NO	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
P484	4 1/2" 500 MCM	480V SWGR. UNIT "K1"	EMERG. GENERATOR CONTROL PANEL	FEEDER
P485	3 1/2" 500 MCM			
P486	4 1/2" 500 MCM	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	
P487	5 1/2" 500 MCM			
P488	6 1/2" 12			EMERG. GENERATOR FIELD EXC. GOVERNOR MOTOR FEEDER
P489	3 1/2" 12			
D49	2 1/2" 10	EMERG. GENERATOR CONTROL PANEL	34V DC BATTERY COMPARTMENT	34V DC FEEDER
C49	2 1/2" 12	120V SWGR. UNIT "K1"	24VRY SWITCHGEAR UNIT "J1"	INTERLOCK
C48A	9 1/2" 12	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48B	7 1/2" 12		480V SWGR. UNIT "K1"	E-INTERLOCK
C48C	3 1/2" 12		REMOTE SUPERVISORY CABINET	GOVERNOR SEL. SW. CONTROL
C48D	2 1/2" 12			EMERG. GEN. START-STOP SEL. SW.
C48E	2 1/2" 12			EMERG. GEN. ON IND. LTG.
C48F	3 1/2" 12			LOW OIL & HIGH TEMP IND. LTG.
C48G	3 1/2" 12	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	GOVERNOR SEL. SW.
C48H	2 1/2" 12			EMERG. GEN. START-STOP SEL. SW.
C48J	2 1/2" 12			EMERG. GEN. ON IND. LTG.
C48K	3 1/2" 12			LOW OIL & HIGH TEMP LTG.
M49	2 1/2" 12	EMERG. GEN. CONTROL PANEL	REMOTE SUPERVISORY CABINET	AMMETER
M48A	2 1/2" 12			VOLTMETER
M48B	2 1/2" 12			FREQUENCY METER
M48C	2 1/2" 12	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	AMMETER
M48D	2 1/2" 12			VOLTMETER
M48E	2 1/2" 12			FREQUENCY METER
M48A	2 1/2" 12	EMERG. GEN. CONTROL PANEL	REMOTE SUPERVISORY CABINET	ALARM-EMERG. GENERATOR FAILURE
M48B	1 1/2" 12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	ALARM-GENERATOR FAILURE
P49	3 1/2" 12	AC POWER DIST. PANEL #P1WS	EMERG. GEN. CONTROL PANEL	FEEDER-BATTERY CHARGER
D49	3 1/2" 10	120/240V DC MAIN PANEL	EMERG. GEN. CONTROL PANEL	MISC. CONTROLS
P50	3 1/2" 12 & 1/2" 10G	AC POWER DIST. PANEL #P1WS	COMB. MAGNETIC STARTER	FEEDER-AIR COMPRESSOR
P50A	3 1/2" 12 & 1/2" 10G	COMB. MAGNETIC STARTER	AIR COMPRESSOR MOTOR (5HP)	
C50	2 1/2" 12			PRESSURE SWITCH CONTROL
P51	3 1/2" 12	AC POWER DIST. PANEL #P1WS	EMERG. GENERATOR JUNCTION BOX	MISC. 480V POWER FEEDER
P52	2 1/2" 12	AC POWER DIST. PANEL #P2WS	EMERG. GENERATOR JUNCTION BOX	FEEDER-ENGINE WATER HEATER #1
P53	2 1/2" 9			LOW OIL HEATER (CRCL. PUMP VIA CONTACTOR)
P54	2 1/2" 12			ENGINE WATER HEATER #2
P55	3 1/2" 8 & 1/2" 10G	EMERG. GENERATOR CONTROL PANEL	60A DISC. SWITCH ON ROOF	FEEDER
P55A	3 1/2" 8 & 1/2" 10G	60A DISC. SWITCH ON ROOF	RADIATOR FAN MOTOR (20HP)	
P56	3 1/2" 12 & 1/2" 10G	EMERG. GENERATOR CONTROL PANEL	30A DISC. SWITCH	FEEDER
P56A	3 1/2" 12 & 1/2" 10G	30A DISC. SWITCH	JACKET WATER PUMP (172HP)	
P57	2 1/2" 12	AC POWER DIST. PANEL #P2WS	REMOTE SUPERVISORY CABINET	120V AC FEEDER
D58	3 1/2" 4/0	MAIN DC PANEL	AUTO. TRANSFER SWITCH	TUNNEL EMERG. LTG. FEEDER
D58A	2 1/2" 10	DC DISTRIBUTION PULLBOX GER IN	PORTAL STOP LIGHTS	POWER FAILURE STOP LIGHTS
P58	2 1/2" 12	AC POWER DIST. PANEL #P2WS	AUTO. TRANSFER SWITCH	CONTROL POWER
A58	2 1/2" 12	AUTO. TRANSFER SWITCH	REMOTE SUPERVISORY CABINET	ALARM-EMERG. LTGS. ON
A58A	1 1/2" 12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A1	2 1/2" 12	2.4KV POWERCENTER, TRANSF. 18	REMOTE SUPERVISORY CABINET	ALARM-GROUND NEUTRAL
A1A	1 1/2" 12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A2	2 1/2" 12	2.4KV POWERCENTER, TRANSF. 1A	REMOTE SUPERVISORY CABINET	
A2A	1 1/2" 12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A7	2 1/2" 12	LTG. & HTG. RELAY CONTROL CABINET	REMOTE SUPERVISORY CABINET	- POWER PANELS OFF
A7A	1 1/2" 12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
P59	2 1/2" 10 & 1/2" 10G	AC POWER DIST. PANEL #P2WS	RECEPTACLE AT RADIATOR FAN	120V AC FEEDER
D60	3 1/2" 4	MAIN DC PANEL	DC DISTRIBUTION PULLBOX GER IN	TELEPHONE CARRIER & SIGNAL LIGHT FSR
P61	2 1/2" 12	AC POWER DIST. PANEL #P2WS	LOCAL CONTROL BOARD	120V AC FSR-TEMP CONTROLLERS
S65	1 1/2" 16	TELEPHONE CABINET "TAN"	LTG. & HTG. RELAY CONTROL CABINET	CONTACTOR RESET
S69	2 1/2" 12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED 'X'	TRAFFIC CONTROL
S610	2 1/2" 12	MAIN DC PANEL	PORTAL SIGNAL LIGHT W/GREEN ARROW	
S611	2 1/2" 12		PORTAL SIGNAL STOP LIGHT	
S612	2 1/2" 12	TELEPHONE CABINET "TAN"	REMOTE SUPERVISORY CABINET	SUPERVISORY CONTROL

CONDUIT NO	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
C62	3 1/2" 12	480V SWITCHGEAR, UNIT "K1"	REMOTE SUPERVISORY CABINET	CONTROL
C62A	2 1/2" 12			INDICATING LIGHTS
C62B	3 1/2" 12	REMOTE SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL
C62C	2 1/2" 12			INDICATING LIGHTS
C63	2 1/2" 12	480 MCC N. 45	REMOTE SUPERVISORY CABINET	CONTROL - FAN WS-5 BULKHEADS
C63A	2 1/2" 12			IND. LGT.
C63B	2 1/2" 12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL
C63C	2 1/2" 12			IND. LGT.
C64	2 1/2" 12	480V MCC N. 45	REMOTE SUPERVISORY CABINET	CONTROL - FAN WS-5 BULKHEADS
C64A	2 1/2" 12			IND. LGT.
C64B	2 1/2" 12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL
C64C	2 1/2" 12			IND. LGT.
C65	2 1/2" 12	480V MCC N. 45	REMOTE SUPERVISORY CABINET	CONTROL - FAN WS-7 BULKHEADS
C65A	2 1/2" 12			IND. LGT.
C65B	2 1/2" 12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL
C65C	2 1/2" 12			IND. LGT.
A67	1 1/2" 12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	ALARM - FAN DAMPER FAILURE
A67A	1 1/2" 12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
P66	4 1/2" 1/2" 5	POWER DIST. PHILBS (EXISTING) FOR SP. BRKR. CONTROL	LP-GAS SYSTEM POWER PANEL	LPG SYSTEM FEEDER
C66	1 1/2" 22 (600V)	LPG STORAGE TANK LEVEL TRANSMITTER	GAS METER ROOM LEVEL METER	LPG TANK LEVEL INDICATION
A66	2 1/2" 12	BLENDER CONTROL PANEL	GAS METER ROOM ALARM PANEL	BLENDER ALARM
P67	1 1/2" 16	LTG. PNL "LWZB" BRKRS #30,32,34	RELAY BOX	AIR DUCT LTG. FDR
P67A	1 1/2" 16		SUPPLY AIR DUCT LIGHTS	
P67B	1 1/2" 16		EXHAUST AIR DUCT LIGHTS	
C67A	3 1/2" 14		SUPPLY AIR DUCT LTG. CNTRL. SWS.	AIR DUCT LTG. CONTROL
C67B	3 1/2" 14		EXHAUST AIR DUCT LTG. CNTRL. SWS.	
P68	1 1/2" 16 & 1/2" 14 G.	AC POWER DISTR. PNL "P2" WEST	RECEPT. SUPPLY EXHAUST DUCTS	POWER OUTLETS

(R1) ADDED MINED GAS SYSTEM CIRCUITS C66 & A66 300 2/12/76
 (R2) REVISED FOR EMERG. GENERATOR WATER HEATER #1 & #2 AND LOW OIL PUMP & TR. POWER REQ. AS SHOWN 7/1/76
 (R3) REVISED FOR PROJ. NO. E70-3(83)210.

AS CONSTRUCTED

NO. REVISIONS REVISED VOID

NOTES:

- FOR WIRE & CABLE, SEE D.O.H. SPECIFICATIONS, SECTION # 710
- INDICATES WIRE, CABLE & CONDUIT FURNISHED & INSTALLED IN PROJ. NO. E70-3(83)210 (R3)
- SPARE CONDUITS ARE NOT INDICATED ON THIS SCHEDULE BUT SHALL BE INCLUDED IN PROJ. NO. E70-3(83)210 WHEN IDENTIFIED ON PLANS AND SECTIONS PER NOTE 2.

(R1)
(R1)
(R3)
(R3)
(R3)
(R3)
(R3)



PRINT RECORD

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NO. REVISIONS DATE BY CDR

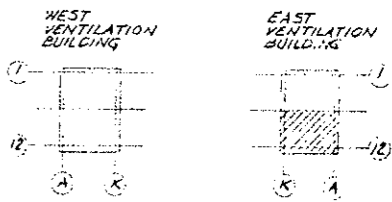
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

ELECTRICAL
 WEST VENTILATION BUILDING
 CONDUIT & CABLE SCHEDULE
 SHEET NO. 2

DRAWN: JEU 7/25/76
 CHECKED: R.P. 7/20/76
 SCALE: AS SHOWN
 NONE C14570

stearns-roger architects
 DRAWING NO. E-W-55

(R1) REVISED FOR PROJ. NO. I 70-3(83)220.

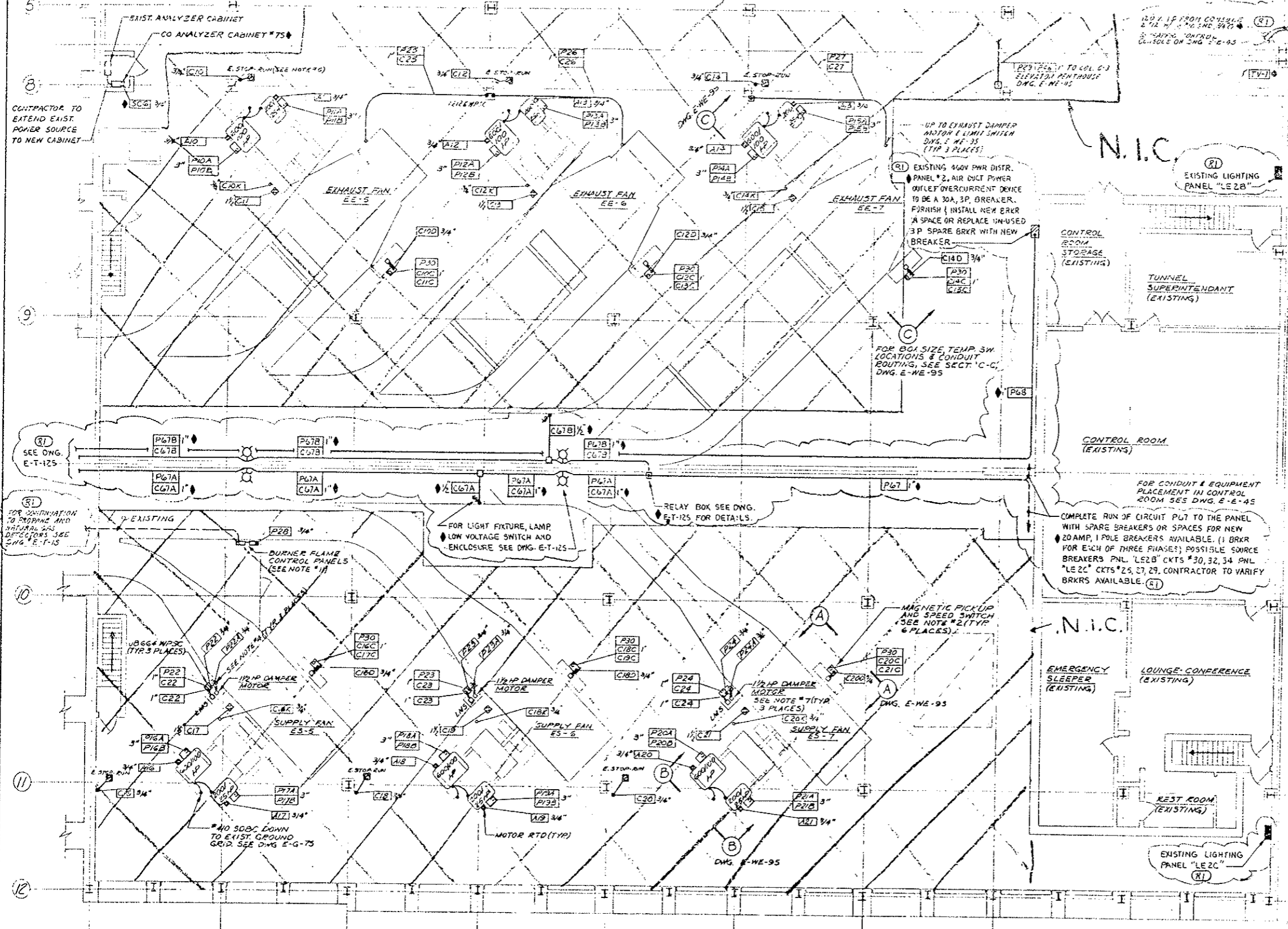


KEY PLAN

AS CONSTRUCTED

NO REVISIONS REVISED VOID

- NOTES:
- FOR CONTINUATION OF CONDUITS GOING DOWN, SEE DWG. E-E-15 & E-E-25
 - SPEED SWITCHES W/MAGNETIC PICKUP TO BE SYNCHRO-START PRODUCTS, INC. MODEL #ESSBAAT MOUNTED IN A 20" x 16" x 10" W/SPC BOX W/SUBPANEL. 140 SETS OF 4 SPDT CONTACTS PER PANEL
 - FOR LEGEND & GENERAL NOTES SEE DWG. E-E-15
 - DISCONNECT SWITCH TO BE 30AMP, 3P, 600V NON-FUSIBLE MEMA 12 ENCLOSURE, WESTINGHOUSE CAT. #JMU-361 (OR EQUAL). TOP OF DISCONNECT TO BE MOUNTED 5'-0" ABOVE FINISHED FLOOR.
 - EMERG. STOP-RUN SELECTOR SWITCH IS EXISTING. CONTRACTOR TO WIRE AS REQ'D & ROUTE CONDUIT.
 - LIGHTING FIXTURES, WELDING RECEPTACLES & CONVENIENCE RECEPTACLES ARE EXISTING & WIRED.
 - 1/2HP DAMPER MOTOR & LIMIT SWITCH (LMS) ARE FURNISHED BY OTHERS. CONTRACTOR TO WIRE AS INDICATED.
 - FOR TELEPHONE OUTLETS, SEE DWG. E-G-85.
 - FOR CONDUIT & CABLE SCHEDULE SEE DWG. E-WE-75 & E-WE-85.
 - FOR FAN & DAMPER ELEMENTARY DIAGRAMS, SEE DWG. E-G-35
 - BURNER FLAME CONTROL PANELS & ASSOCIATED CONTROLS W/METHANE DETECTOR TO BE WIRED PER MANUFACTURER'S RECOMMENDATIONS.
 - INDICATES WIRE CABLE & CONDUIT FURNISHED & INSTALLED IN PROJ. NO. I 70-3(83)220. (R1)
 - CONTRACTOR TO CORE DRILL FLOOR FOR CONDUITS & SEAL Voids w/DIASEAL



PRINT RECORD

DATE REVISION	BY	CHKD	APP'D
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REVISION NO.	0 0 0 0 0 0 0 0 0 0 0 0		
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CUSTOMER	5 5 10 10 4 DRWG		
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WTRA CO.	15 15 1 1 15		

NO.	REVISIONS	DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
ELECTRICAL EAST VENTILATION BUILDING FAN FLOOR POWER & CONTROL PLAN				
DRAWN	JEJ 6/1/84			
CHECKED	R.P.J. 6-24-84			
SCALE	AS SHOWN			
1/8" = 1'-0"	C14570			
				DRAWING NO. E-E-35

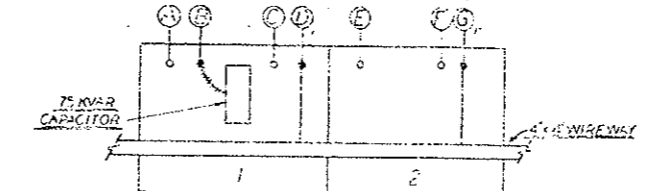
- (R1) ADDED MAED GAS SYSTEM CIRCUITS P.17 & P.18
- (R2) REVISED FOR PROJ. NO. 170-3(83)220
- (R3) REVISED TUNNEL LIGHTING

LEGEND

- 1 480V/277 V AC POWER DISTRIBUTION PANEL (P1ES), CIRCUIT BREAKER TYPE COP WESTINGHOUSE (OR EQUAL). SEE DWG. E-G-95 FOR SCHEDULE.
- 2 LIGHTING & HEATING CONTACTOR PANEL, W/20A 3P, 480V CONTACTORS (120V COILS), NEMA I ENCLOSURE. SEE WIRING DIAG. DWG. E-T-75.
- 3 LIGHTING HEATING RELAY & CONTROL CABINET, NEMA I ENCLOSURE. SEE WIRING DIAGRAM ON DWG. E-T-75.
- 4 LIGHTING TRANSFORMER, 480-208/120V, WALL-MOUNTED, NON-VENT TYPE EPT, W/2-2 1/2% FCAN & FCAN TAPS, 15 KVA. SEE WIRING DIAG. DWG. E-G-95 (OR EQUAL).
- 5 120/208V AC POWER DISTRIBUTION PANEL (P2ES), 50A MAIN CIRCUIT BREAKER WESTINGHOUSE CAT. NO. NQ# 24-48-050, SURFACE MOUNTED (OR EQUAL). SEE DWG. E-G-95 FOR SCHEDULE.
- 6 AUTO-TRANSFER SWITCH - DOUBLE THROW CONTACTOR, 30A, 3 POLE, 120/240V AC, W/120V AC COIL, W/UX, 1PDT CONTACT, NEMA I ENCLOSURE, ZENITH CAT. NO. 6QT33A (OR EQUAL). WIRING DIAG. DWG. E-G-45.
- 7 TEMPERATURE CONTROLLER (TC#3) ELECTRONIC FOR WATER MAIN HEAT TRACING CONTROL, THERMON MFG CO. CAT. NO. 4-ET-0600. (SINGLE UNIT IN NEMA 4 ENCLOSURE, FOR CHROMEL-CONSTANTAN TYPE "E" THERMOCOUPLE WITH MAX RESISTANCE ON 200 OHMS (OR EQUAL).

NOTES-

1. WORK THIS DRAWING WITH DWGS. E-E-15 & E-E-25.
2. FOR LEGEND AND GENERAL NOTES, SEE DWG. E-E-15.
3. USE CADWELD TYPE W/ROUND CONNECTIONS FOR GND TAPS.
4. CONTACTOR TO PROVIDE HV BARRIER IN AC PULL BOX.
5. PULL BOXES - STATION 27N ARE EXISTING & HAVE EXIST. GROUND TIED INTO EXIST. GROUND LOOP.
6. ITEMS 1 THROUGH 6 TO BE MOUNTED ON UNISTRUT "D" 1000 CHANNEL (OR EQUAL). ITEMS 1, 5 & 6 TO HAVE TOP OF BOXES 6" ABOVE FLOOR; TOP OF ITEM 3 TO BE 5" ABOVE FLOOR; TOP OF ITEM 2 TO BE 11" ABOVE FLOOR.
7. CORE DRILL WALL FOR CONDUITS & SEAL VOID'S W/DRUSEAL (OR EQUAL).
- (R2) INDICATES WIRE CABLE & CONDUIT PURNISHED & INSTALLED IN PROJ. NO. 170-3(83)220. ALL OTHER WORK IS EXIST'G.
- (R3) INSTALLED LEGEND ITEMS 1, 2 & 3 WILL HAVE TO BE MODIFIED IN PROJ. NO. 170-3(83)220 TO PROVIDE FOR CHANGE IN CONDUIT OF TUNNEL EAST END LIGHTING FROM THREE INTENSIVE ZONES TO NORMAL ZONE LIGHTING.



FAN	A	B	C	D	E	F	G
EE-5	P10A P10B	P10C P10D	P10E P10F	P10G P10H	P10I P10J	P10K P10L	P10M P10N
EE-6	P12A P12B	P12C P12D	P12E P12F	P12G P12H	P12I P12J	P12K P12L	P12M P12N
EE-7	P14A P14B	P14C P14D	P14E P14F	P14G P14H	P14I P14J	P14K P14L	P14M P14N
ES-5	P16A P16B	P16C P16D	P16E P16F	P16G P16H	P16I P16J	P16K P16L	P16M P16N
ES-6	P18A P18B	P18C P18D	P18E P18F	P18G P18H	P18I P18J	P18K P18L	P18M P18N
ES-7	P20A P20B	P20C P20D	P20E P20F	P20G P20H	P20I P20J	P20K P20L	P20M P20N

CIRCUIT LIST 'A'

P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
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W/24 SDRC GND.

CIRCUIT LIST 'B'

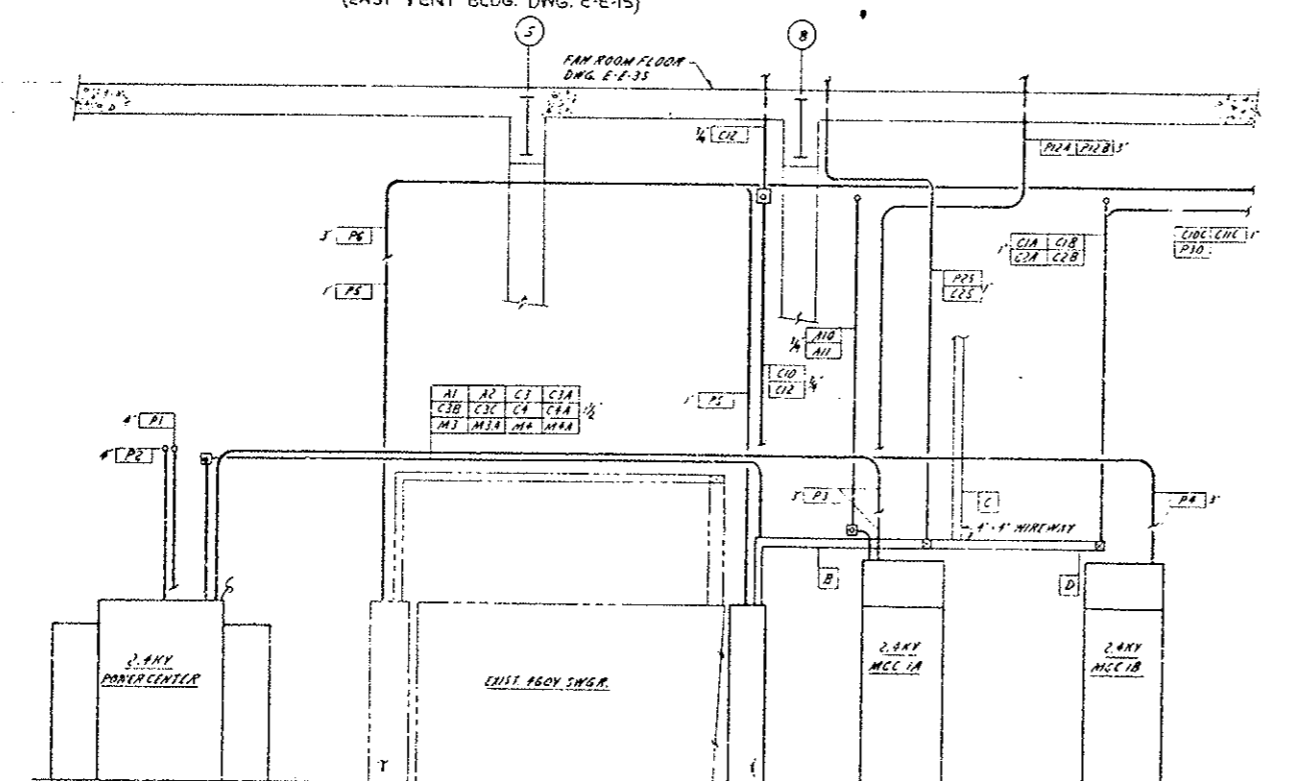
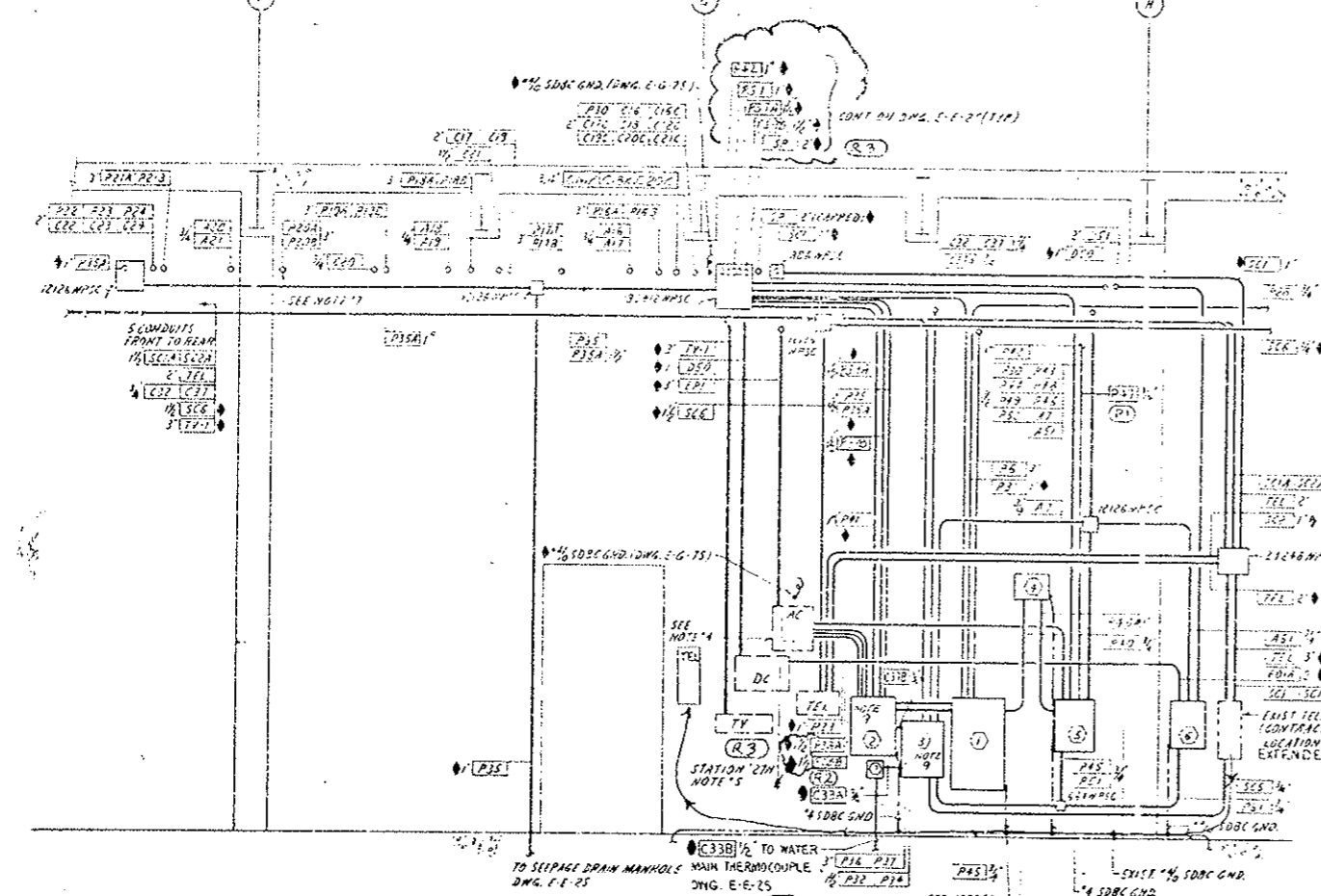
P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31	P32	P33	P34	P35	P36	P37	P38	P39	P40	P41	P42	P43	P44	P45	P46	P47	P48	P49	P50	P51	P52	P53	P54	P55	P56	P57	P58	P59	P60	P61	P62	P63	P64	P65	P66	P67	P68	P69	P70	P71	P72	P73	P74	P75	P76	P77	P78	P79	P80	P81	P82	P83	P84	P85	P86	P87	P88	P89	P90	P91	P92	P93	P94	P95	P96	P97	P98	P99	P100
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CIRCUIT LIST 'C'

P101	P102	P103	P104	P105	P106	P107	P108	P109	P110	P111	P112	P113	P114	P115	P116	P117	P118	P119	P120	P121	P122	P123	P124	P125	P126	P127	P128	P129	P130	P131	P132	P133	P134	P135	P136	P137	P138	P139	P140	P141	P142	P143	P144	P145	P146	P147	P148	P149	P150	P151	P152	P153	P154	P155	P156	P157	P158	P159	P160	P161	P162	P163	P164	P165	P166	P167	P168	P169	P170	P171	P172	P173	P174	P175	P176	P177	P178	P179	P180	P181	P182	P183	P184	P185	P186	P187	P188	P189	P190	P191	P192	P193	P194	P195	P196	P197	P198	P199	P200
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CIRCUIT LIST 'D'

P201	P202	P203	P204	P205	P206	P207	P208	P209	P210	P211	P212	P213	P214	P215	P216	P217	P218	P219	P220	P221	P222	P223	P224	P225	P226	P227	P228	P229	P230	P231	P232	P233	P234	P235	P236	P237	P238	P239	P240	P241	P242	P243	P244	P245	P246	P247	P248	P249	P250	P251	P252	P253	P254	P255	P256	P257	P258	P259	P260	P261	P262	P263	P264	P265	P266	P267	P268	P269	P270	P271	P272	P273	P274	P275	P276	P277	P278	P279	P280	P281	P282	P283	P284	P285	P286	P287	P288	P289	P290	P291	P292	P293	P294	P295	P296	P297	P298	P299	P300
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AS CONSTRUCTED

NO REVISIONS REVISED VOID



NO.	REVISIONS	DATE	BY	CHKD
1	AS CONSTRUCTED			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

ELECTRICAL
 WEST & EAST VENTILATION BUILDINGS
 CONDUIT SECTIONS & DETAILS
 SHEET NO. 1

DATE REVISIONS: 5 13 10 S. DUG. H. CHANDLER
 DATE REVISIONS: 15 15 15 15 15 15

NOTED: C14570

DRAWING NO: E-WE-5S

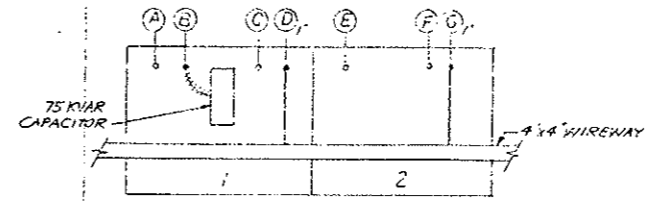
(R1) REVISED FOR ENERGY GENERATOR WATER HEATER P1472 AND P1473 ON PUMP & HEATER POWER REBO. AS SHOWN. T811074 7/11/76
 (R2) REVISED FOR PROJ. NO. E 70-3(B3)270.

LEGEND

- (R1) ① 120/209 V. AC. POWER DISTRIBUTION PANEL (P2WS) 100A MAIN CIRCUIT BREAKER WEST CAT # NDB 24-43-050, SURFACE MOUNTED (OR EQUAL) SEE DWG E-G-95 FOR SCHEDULE.
- (R1) ② LIGHTING TRANSFORMER, 480-208/120 V. WALL MOUNTED, NON-VENT TYPE EPT W/2-2 1/2" FCAN & FC3N TAPS, 30KVA WEST CAT # 6E4397 (OR EQUAL)
- ③ 480 Y 277V AC POWER DISTRIBUTION PANEL (P1WS) CIRCUIT BREAKER TYPE CDP WEST (OR EQUAL) SEE DWG E-G-95 FOR SCHEDULE.
- ④ LIGHTING & HEATING RELAY CONTROL CABINET, NEMA 1, ENCLOSURE. SEE WIRING DIAGRAM ON DWG. E-T-75.
- ⑤ LIGHTING & HEATING CONTACTOR PANEL W/8-30A, 3-POLE 480V AC CONTACTORS (120V COILS), NEMA 1, ENCLOSURE SEE WIRING DIAGRAM DWG E-T-75
- ⑥ AUTO-TRANSFER SWITCH - DOUBLE THROW CONTACTOR 30A, 3-POLE 120/240V DC. W/120 V. COIL, W/AUX SPDT CONTACT, NEMA 1, ENCLOSURE, ZENITH CAT # GQT33A (OR EQUAL) WIRING DIAGRAM - DWG. E-G-45.
- ⑦ TEMPERATURE CONTROLLER (T.C.#3), ELECTRONIC, FOR WATER MAIN HEAT TRACING CONTROL, THERMOM MFG. CO. CAT. NO. 4-ET-0600, (SINGLE UNIT IN NEMA 4 ENCLOSURE, 7/8" CHANNEL CONSTANTAN TYPE "E" THERMOCOUPLE WITH MAX. RESISTANCE OF 200 OHMS (OR EQUAL)

NOTES

- 1. WORK THIS DRAWING WITH DWG'S E-W-15 & E-W-25.
- 2. FOR LEGEND & GENERAL NOTES SEE DWG E-W-15.
- 3. USE CADWELD TYPE GROUND CONNECTIONS FOR GND TAPS.
- 4. CONTRACTOR TO PROVIDE N.Y. BARRIER IN AC. PULLBOX.
- 5. PULLBOXES @ STATION 'IN' ARE EXISTING & HAVE GROUNDS TIED INTO EXISTING #4/0 GROUND LOOP.
- 6. ITEMS #1 THRU #6 TO BE MOUNTED ON UNISTRUT # P1000 CHANNEL (OR EQUAL). ITEMS #1, 3, 5 & 6 TO HAVE TOP OF BOXES @ 6'-0" ABOVE FLOOR, TOP OF ITEM #4 TO BE 5'-0" ABOVE FLOOR, TOP OF ITEM #2 TO BE 9'-0" ABOVE FLOOR.
- 7. CORE DRILL WALL FOR CONDUITS & SEAL VOIDS W/ DUXSEAL (OR EQUAL).
- (R2) INDICATED WIRE, CABLES & CONDUIT FURNISHED & INSTALLED IN PROJ. NO. I 70-3(B3)220. ALL OTHER WORK IS EXISTING.



ENLARGED PLAN NO. 1
 2.4 KV MCC NO. 1A & MCC NO. 1B
 (PLAN SHOWN FOR 1 TYPICAL G-PLACE)

FAN	A	B	C	D	E	F	G
EE-5	P10A P10B	P10C P10D	A10 A11	C10A C10B C10C	P11A P11B	A11 A12	C11A C11B
EE-6	P12A P12B	P12C P12D	A12 A13	C12A C12B C12C	P13A P13B	A13 A14	C13A C13B
EE-7	P14A P14B	P14C P14D	A14 A15	C14A C14B C14C	P15A P15B	A15 A16	C15A C15B
ES-5	P16A P16B	P16C P16D	A16 A17	C16A C16B C16C	P17A P17B	A17 A18	C17A C17B
ES-6	P18A P18B	P18C P18D	A18 A19	C18A C18B C18C	P19A P19B	A19 A20	C19A C19B
ES-7	P20A P20B	P20C P20D	A20 A21	C20A C20B C20C	P21A P21B	A21 A22	C21A C21B

CIRCUIT LIST 'A'

P22, P23	P24, P25, P26, P27		
C22A, C23A, C24A, C25A, C26A, C27A			

FROM MCC #5 TO LOCAL CONTROL BOARD VIA 2" NIPPLE

CIRCUIT LIST 'B'

P27, A7, C19A, C20, C16A, P26, C13C, C25, C10A, C11D, C63
SC11, C11A, C12B, A58, C12, P36, C17A, C26, C18B, C19D, C63A
C10, C11B, C12C, C12, C12C, P27, C11B, C27, C18C, C12D, C64
C10A, C11C, P2, C12A, C20, C16, C17C, C14A, P7, C63A
C10B, C15A, C22, C12B, C20A, P30, C17A, C14B, P22, C65
C10C, C15B, C23, C12C, C20B, C13A, C15C, C14C, P23, C65A
P67, C15C, C24, C16, C20C, C13B, C15C, C18, P24, A21A
A12E, A14A, A12E, A14A, A14C, A14A, A14C, A14A, A14C, A14A, A14C
C10, C12, C14A, C6, C10B, P20, C10, C12, C14A, C10B, C12C
C20A

FROM LOCAL CONTROL BOARD TO WIREWAY

CIRCUIT LIST 'C'

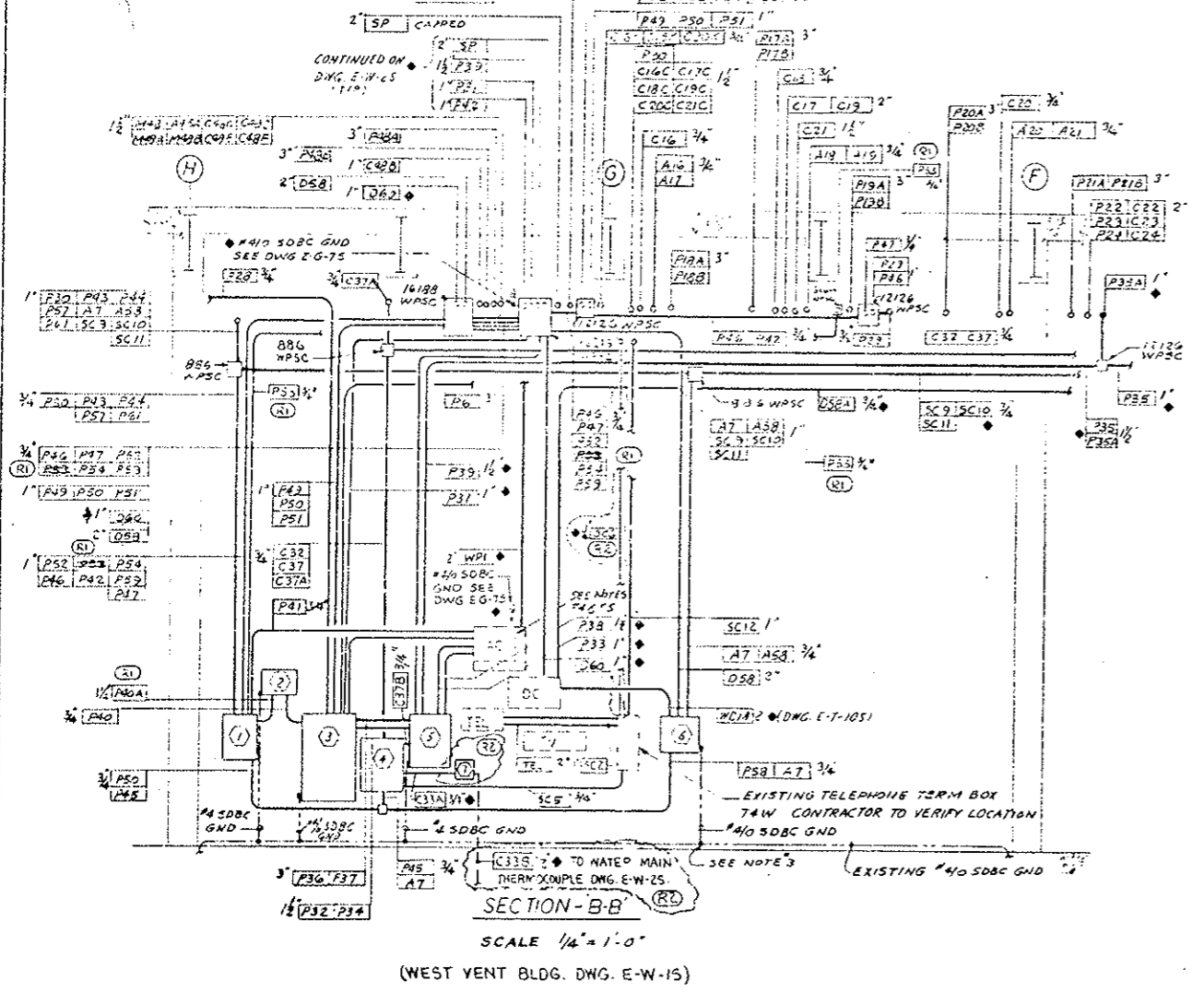
P27, C10E, C16A, C12B, C12A, A14A, A58, C20, SC10, SC11
C12C, C20E, A14A, A14C, C12C, C12E, A12A, A7, A20D, A21
C12F, C20F, A14A, A14C, C12F, C12A, A14A, A14C
C67, C63A, C64, C63A, C65, C63A

FROM LOCAL CONTROL BOARD TO REMOTE SUPERVISORY CABINET VIA 3" NIPPLE

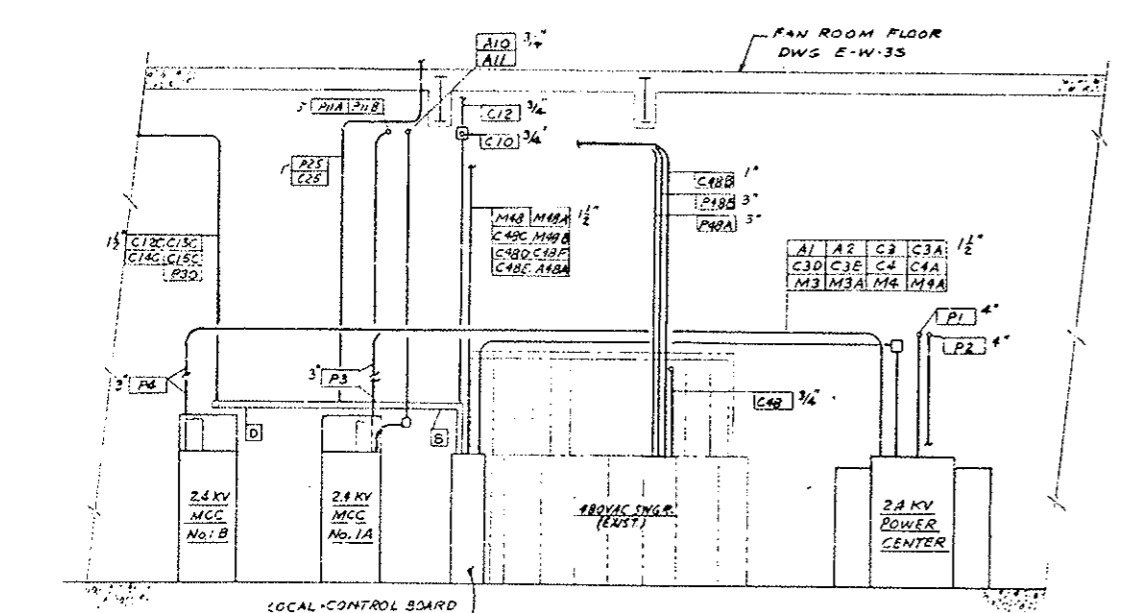
CIRCUIT LIST 'D'

P27, P67, C19C, C16A, P8, C20C, C21A, C20, P13, C18
SC9, P30, P22, C14B, C12C, C20A, C12B, A7, A58, C18A
SC10, C13A, C22, C12A, C20, P23, C12C, C18B
SC11, C19B, C16, C17B, C20A, C23, P24, C18C
C17D, C17D, C17D, C63, C63A, C64, C63A, C65, C65A
A14C, A14A, A14C, A14A, A14C, A14A, A14C, A14A, A14C, A14A
C12, C14, C12, C14, C12, C14, C12, C14, C12, C14

WIREWAY BETWEEN 2.4 KV MCC'S #1A & 1B



SCALE 1/4" = 1'-0"
 (WEST VENT BLDG. DWG. E-W-15)



SECTION-A-A
 SCALE 3/16" = 1'-0"

AS CONSTRUCTED

NO REVISIONS REVISED VOID



PRINT RECORD

DATE REVISION	BY	REVISION
0		
1		
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REVISIONS

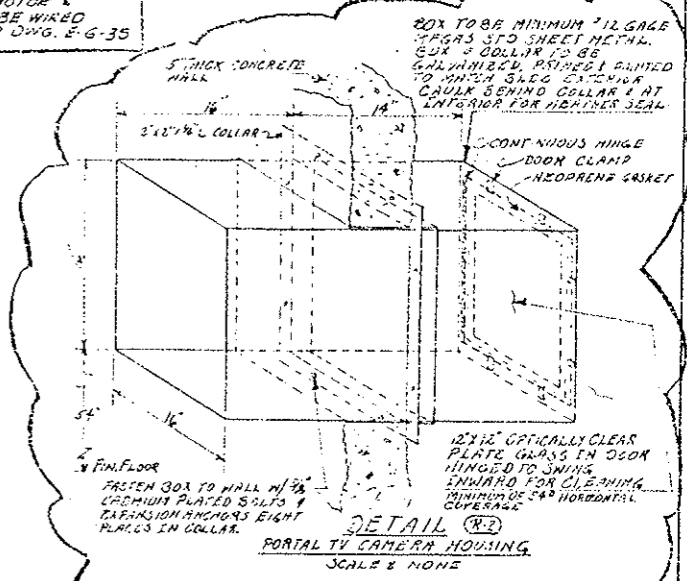
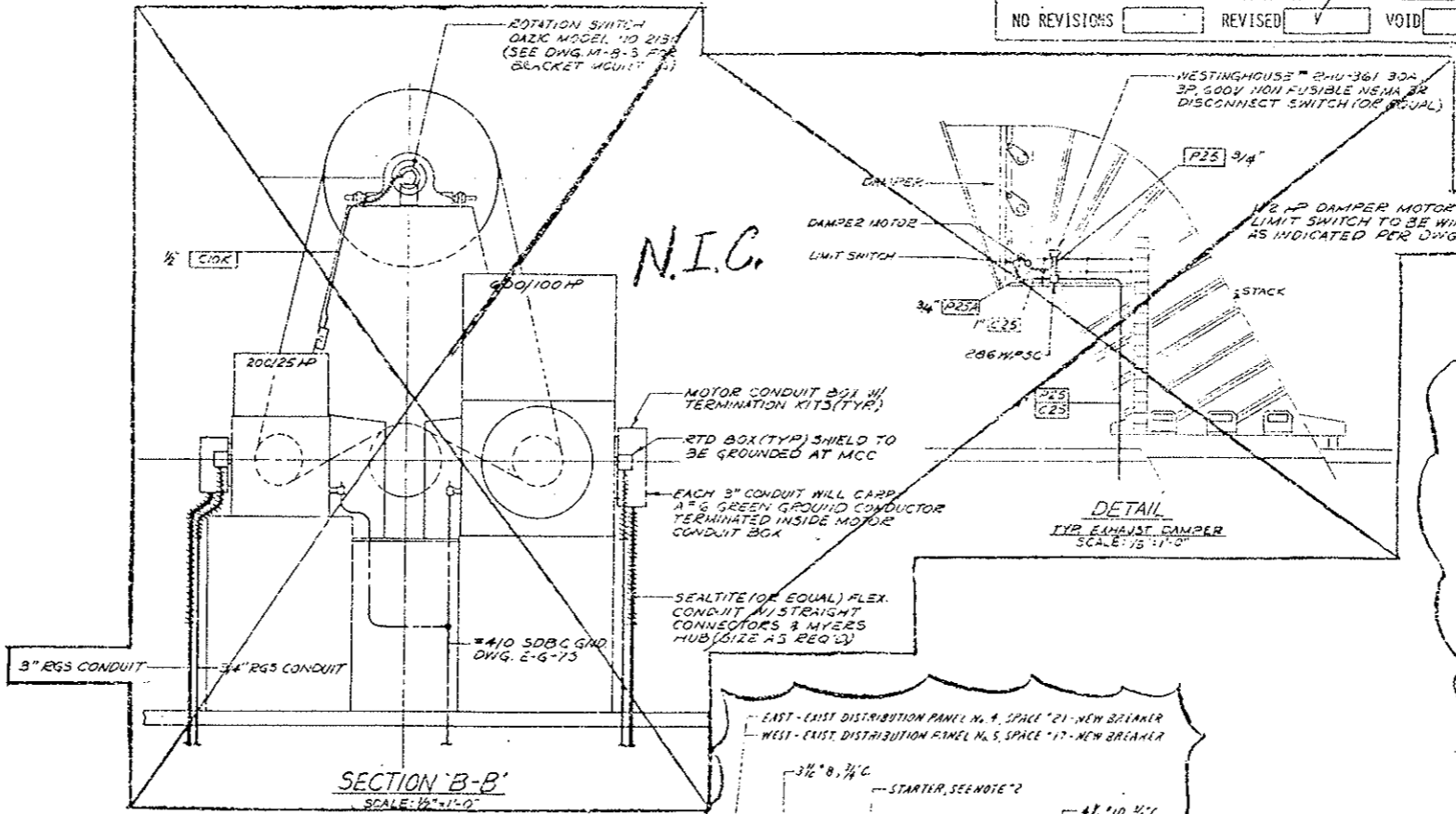
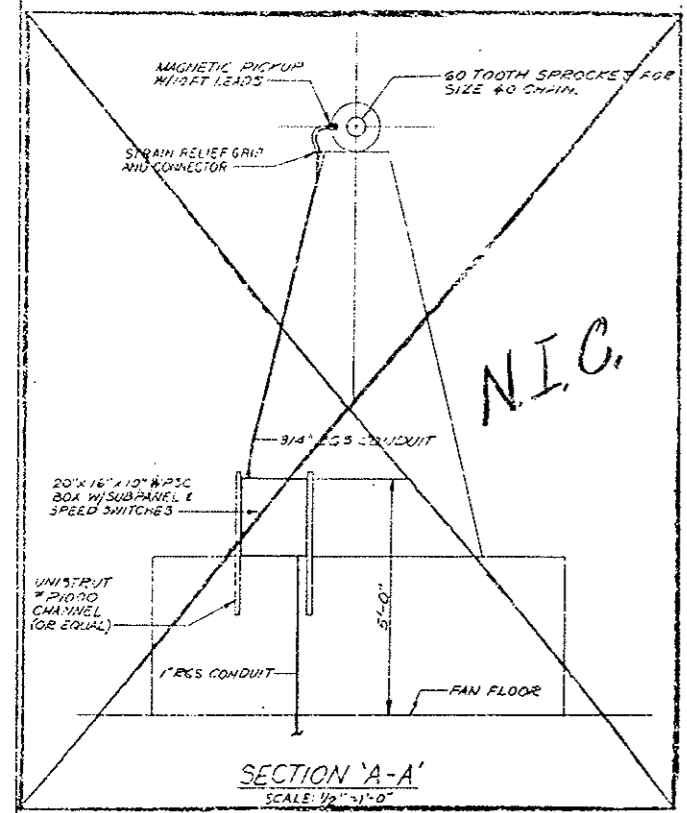
NO.	DESCRIPTION	DATE	BY	CHKD
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STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
 SECOND SORE

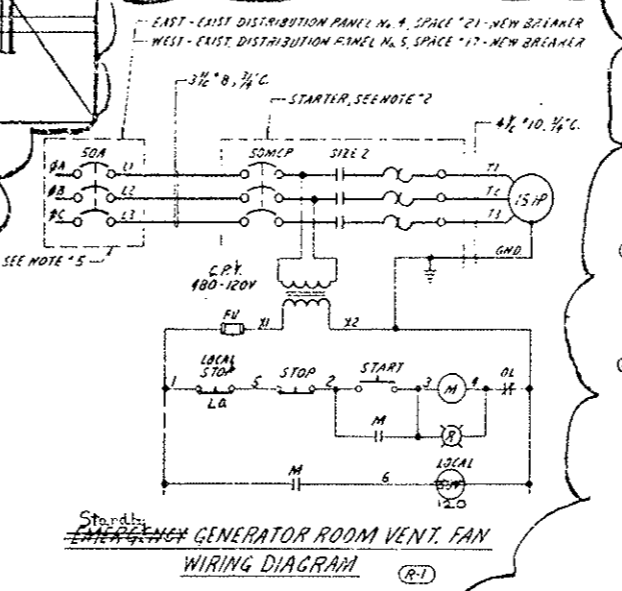
ELECTRICAL
 WEST & EAST VENTILATION BUILDINGS
 CONDUIT SECTIONS & DETAILS
 SHEET NO. 2

DATE: CEW 7-24-74
 DRAWING NO. E-WE-6S

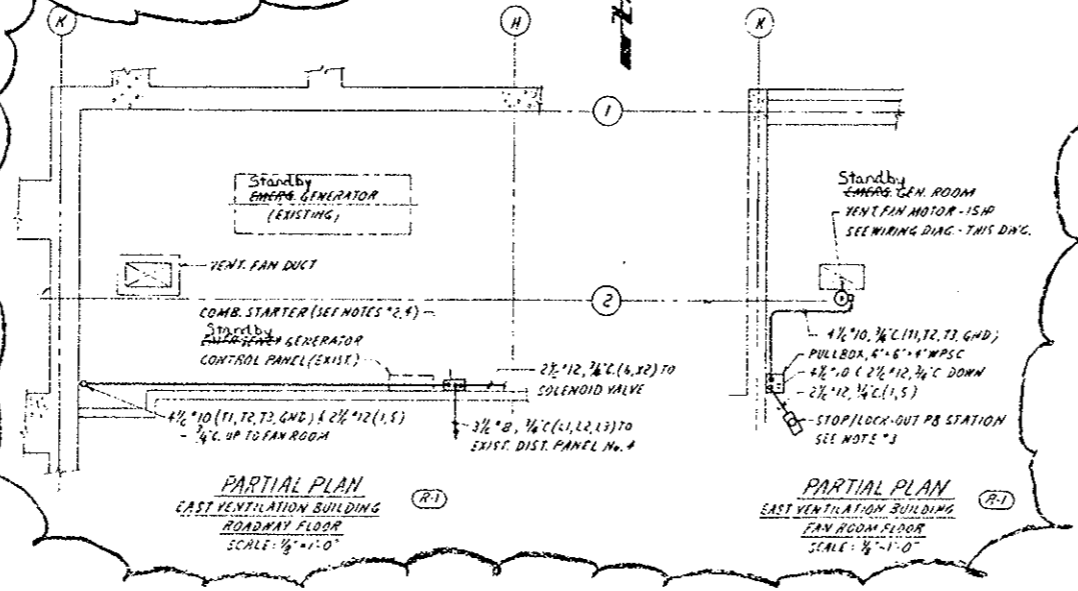
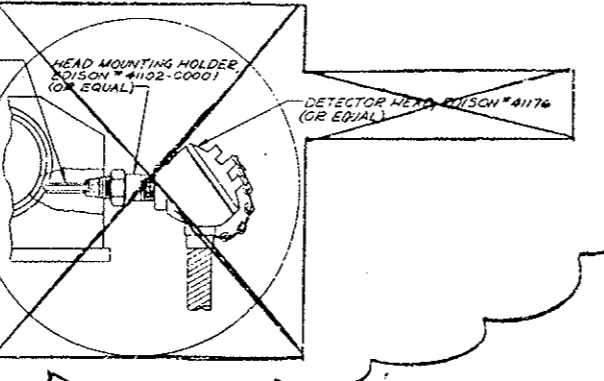
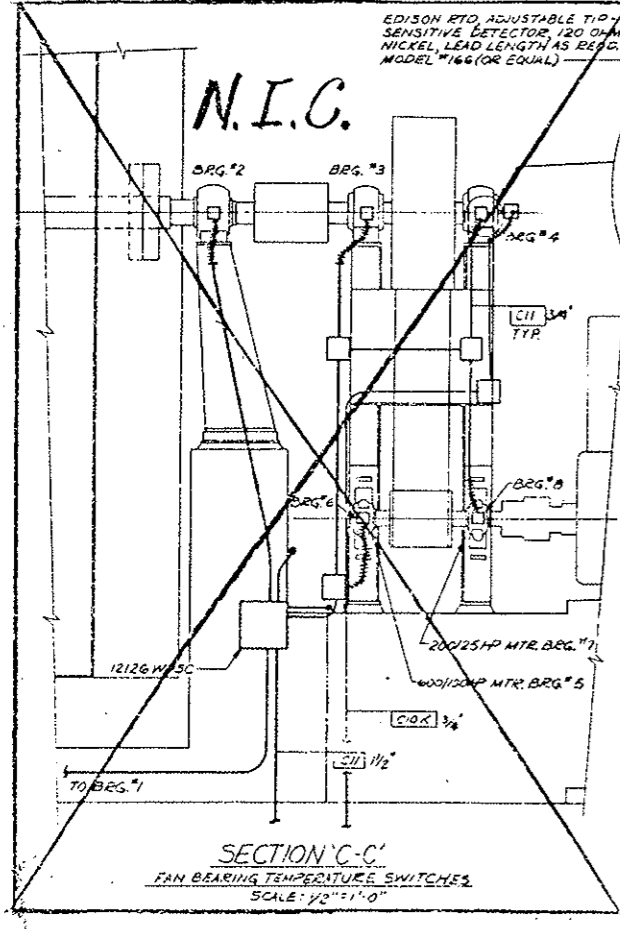
(1) ADD 1/2" ELEC. GEN. VENT. FAN WIRING DIAG. & PARTIAL PLANS ABOVE THIS SHEET.
 (2) REVISED FOR PROJ. NO. 170-3(83)220.



- NOTES:**
- (R2) 1. POSITION CAMERA BACK FROM OPENING TO AVOID DIRECT SUNLIGHT ON VIDEO TUBE.
 - (R1) 2. EMERGENCY GENERATOR ROOM VENT. FAN COMBINATION STARTER WITH 3 POLE 50MCP A STAR CTY PROTECTOR NEMA SIZE 2, NON-PERMISSIVE, 120VAC-60HZ COIL, CONTROL POWER TRANSFORMER (480V PRI-120V SEC) 1-M.O. & 1-M.S. AUX. CONTACT BLOCK, NEMA 12 ENCLOSURE WITH RED INDICATING LIGHT AND START-STOP PUSHBUTTONS ON COVER. 3-PSU OVERLOAD HEATERS, HEATING/SHUT-OFF ATTACHMENT FOR EQUAL TOP OF STARTER TO BE 6'-0" ABOVE FLOOR AND MOUNTED ADJACENT TO EMERGENCY GENERATOR CONTROL PANEL.
 3. STOP/LOCK-OUT PUSHBUTTON STATION TO CONSIST OF A RED PUSHBUTTON OPERATOR WITH NO SHROUD & "OTLD (M.C.) CONTACT BLOCK, OIL-TITE, HEATING/SHUT-OFF ATTACHMENT, STOP LEGEND PLATE-CAT. #187004NDI, LATCHING ATTACHMENT-CAT. #182288G01, SURFACE MOUNTED DIE CAST 1 UNIT ENCLOSURE-CAT. #022501 WITH COVER-CAT. #011010R EQUAL, MOUNT STATION - 9'-6" ABOVE FLOOR.
 4. CONTRACTOR TO GROUND STARTER WITH 1/2" #6 SDBC TO THE NEAREST BUILDING OR EQUIPMENT GROUND CABLE. MOTOR TO BE GROUNDED WITH 1/2" #10 STRANDED COPPER & 1/4" MIN INSULATION - ENDS OF WIRE TO BE GREEN TAPED.
 5. CONTRACTOR TO FURNISH CIRCUIT BREAKERS AS SHOWN ON EMERGENCY GENERATOR ROOM VENT. FAN WIRING DIAGRAM. BREAKER TO BE 50A 600VAC-3 POLE THERMAL MAGNETIC SUITABLE FOR USE IN EXIST DISTRIBUTION PANELS NO. 4 & 5.



General Electric CR 28T
 480/120 V
 General Electric



PRINT RECORD

DATE ISSUED	1/5 15 1 15 1 15
REVISIONS	R1 R2 R3 R4
CHECKED	PREP BY P.M. FCA FCA PRC GEA
CUSTOMER	5 S 10 10 04 4 04
DATE	1/5 15 1 15 1 15
PROJECT NO.	170-3(83)220
DRAWING NO.	E-WE-9S



NO.	REVISIONS	DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
ELECTRICAL WEST & EAST VENTILATION BUILDINGS MISC. DETAILS SHEET NO. 1				
DRWN	NEW	1/5	15	15
CHECKED	P.M.	1/5	15	15
AS NOTED				

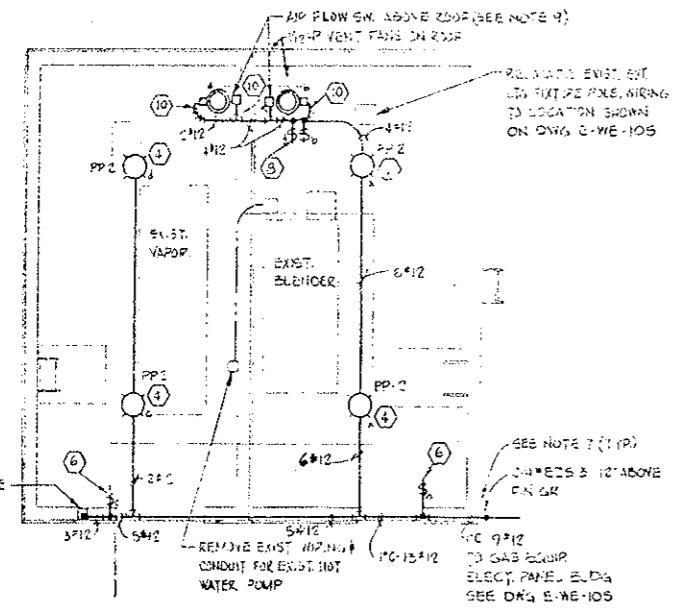
(R) REVISED FOR PROJ. NO. 170-3(83)220, 10-6-78

EQUIPMENT LIST		
SYMBOL	DESCRIPTION	CATALOG # (OR EQUIV.)
①	CIRCUIT BREAKER 40A F150VDC FOR MTD IN 1/2" TYPE NEMA PANEL BOARD	GE # THQ2140
②	INVERTER 800VAC, 120VDC INPUT, 120VAC OUTPUT, STATIC TRANSFER SWITCH, OVERCURRENT PROTECTION, NEMA 1 ENCL. 20" SEE NOTE 13.	WESTINGHOUSE #125CT65-0
③	LIGHTING FIXTURE VAPOR ROOM, GLOBE & GUARD, 150W SURFACE MTD	CROUSE-HINDS #VDC 75SP
④	LIGHTING FIXTURE BLENDER ROOM, GLOBE & GUARD, 150W SURFACE MTD	CROUSE-HINDS #E111210
⑤	TOGGLE SWITCH 20A SPDT, 120VAC, MTD IN CABINET BOX WITH COVER & GASKET	HUBBELL #9805 CROUSE-HINDS #FS2 #0532 #54391
⑥	TOGGLE SWITCH 20A SPDT, 120VAC, E.P. FACTORY SEALED, IP RATED	CROUSE-HINDS #EDS215
⑦	MANUAL MOTOR STARTER, DPTD, 120VAC, FACTORY SEALED WITH 200LBS FOR BLEND PUMP + LOCKOUT PROVISION ON NEMA ENCL.	SQ D CLASS 2510 #KG-1
⑧	2 GANG MANUAL MOTOR STARTER, SPDT, 120VAC, E.P. FACTORY SEALED WITH 200LBS EACH FOR BLEND PUMP + LOCKOUT PROVISION	CROUSE-HINDS #E06 22094226
⑨	3 UNIT CONTROL STATION, NEMA 1 ENCL. (3) 30" RUN PILOT LIGHT (2) 30" START PB (1) STOP PB WITH NAMEPLATE LP LIQUID PUMP MOUNTED ABOVE CONTROL STATION	SQ D CLASS 9001 #GG-322A
⑩	3/4" X 1/2" LONG E.P. FLEX COUPLING	CROUSE-HINDS #ECLK 03
⑪	2 UNIT CONTROL STATION, E.P. FACTORY SEALED, CLOSED PB, (2) OPEN PB WITH NAMEPLATE LP GAS SHUT-OFF VALVE MTD ABOVE CONTROL STA.	CROUSE-HINDS #E05215
⑫	CONTROL RELAY 120VAC 250VDC CONTACTS	SQ D CLASS 8501 #GO-20
⑬	16" X 12" CONTROL CABINET NEMA 1 ENCL. WITH HINGED DOOR & PANEL	ALWALT #AW1025-1
⑭	CIRCUIT BREAKER 40A F150VDC FOR MTD IN EXIST. 120VDC PANEL	MATCH EXISTING

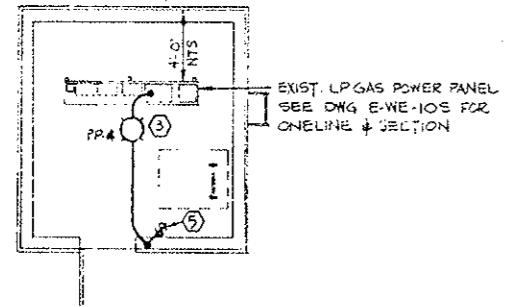
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

- NOTES**
- ELECTRICAL INSTALLATION SHALL COMPLY WITH ART. 500 OF NEC FOR CLASS I DIV. 2 GROUP D HAZARDOUS AREA.
 - ALL CONDUIT SHALL BE #2 RIGID UNLESS OTHERWISE NOTED.
 - ALL WIRE SHALL BE #12 TYPE NM-B UNLESS OTHERWISE NOTED.
 - CONTRACTOR SHALL MODIFY EXISTING VAPORIZER & BLENDER CONTROL WIRING TO COMPLY WITH ART. 500 OF NEC FOR CLASS I, DIV. 2, GROUP D HAZARDOUS AREA.
 - CONTRACTOR SHALL REMOVE VAPORIZER CONTROL POWER WIRES (2"12) FROM CB 3 & CONNECT TO (UPS POWER) WIRE #11 & #13 IN EXIST. WIREWAY.
 - CONTRACTOR SHALL REMOVE HOT WATER CIRC PUMP BETWEEN VAPORIZER & BLENDER.
 - ALL WALL & ROOF PENETRATIONS SHALL BE SEALED WEATHER & GAS TIGHT.
 - CONTRACTOR SHALL REMOVE EXIST. CONTROL POWER CONNECTIONS IN EXIST. GAS ALARM PANEL & LOAD LMT PANEL IN PORTAL BLDG & CONNECT TO WIRE #10 & #11 FROM NEW INVERTER.
 - FOR DESCRIPTION OF AIR FLOW SWITCH SEE SPEC. & DWG M-21-5.
 - CONTRACTOR SHALL INSTALL ITEM ① IN EXIST. PANELBOARD LOCATED IN GAS EQUIP ELECTR. PANEL BLDG.
 - CONTRACTOR SHALL REMOVE EXIST. 00A IP CDS IN EXIST. 120VDC PANEL IN PORTAL BLDG & INSTALL ITEM ⑫.
 - ⑫ INDICATES WIRE, CABLE, CONDUIT & DEVICES FURNISHED & INSTALLED IN PROJECT NO. 170-3(83)220. (R)
 - INVERTER TO BE SUITABLE FOR OPERATION OVER TEMPERATURE RANGE OF -35°F TO +80°F AND AT ELEVATION OF 11,000 FEET. (R)

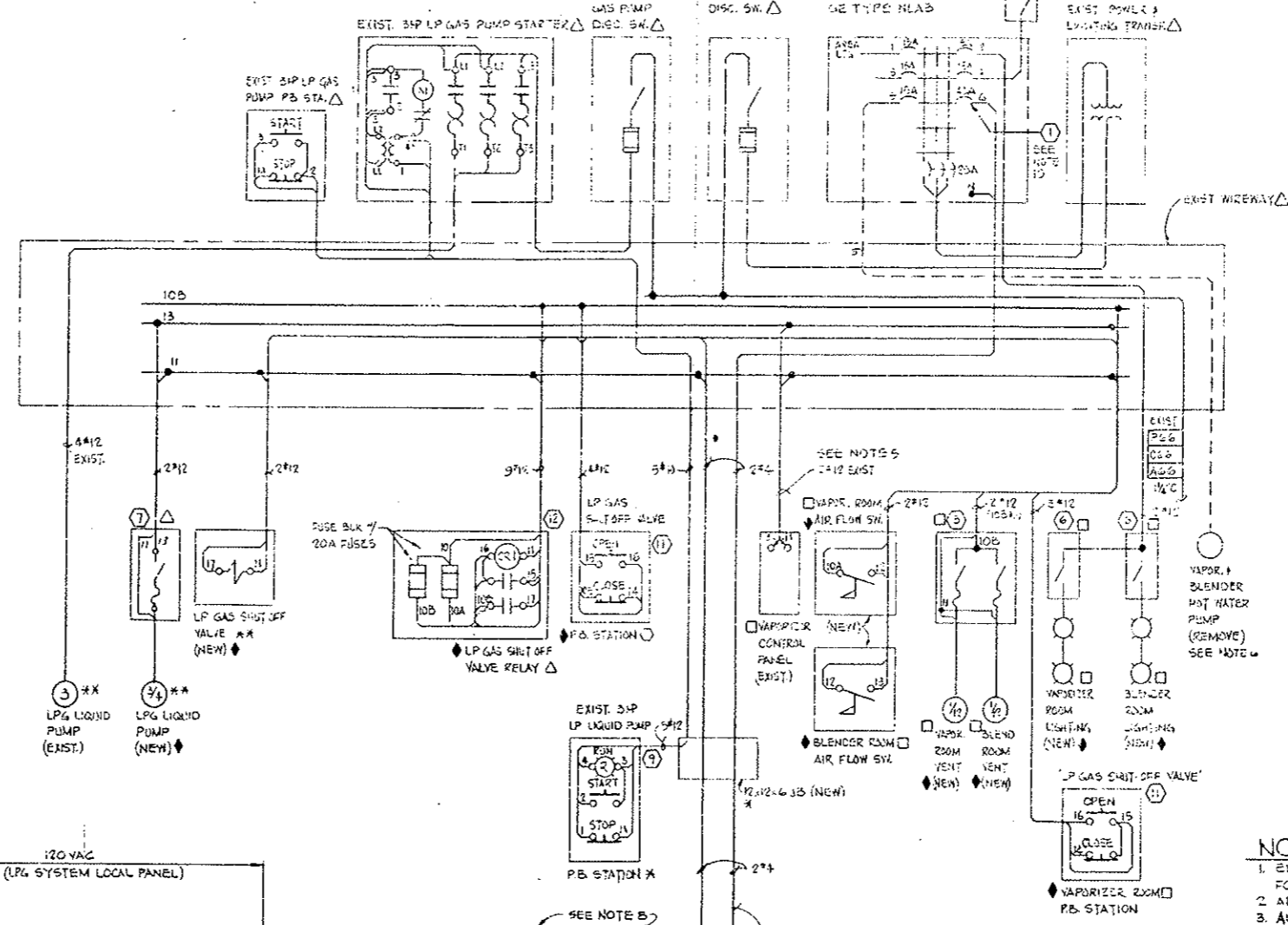
See Sheet 147A Draw E-WE-125 Modification 11-14-78 and 1-8-80 To Accommodate Centarus II Inverter.



GAS EQUIPMENT BUILDING LIGHTING & POWER PLAN
SCALE 1/4"=1'-0"
NOTE - SEE DWG E-WE-105 FOR LOCATION

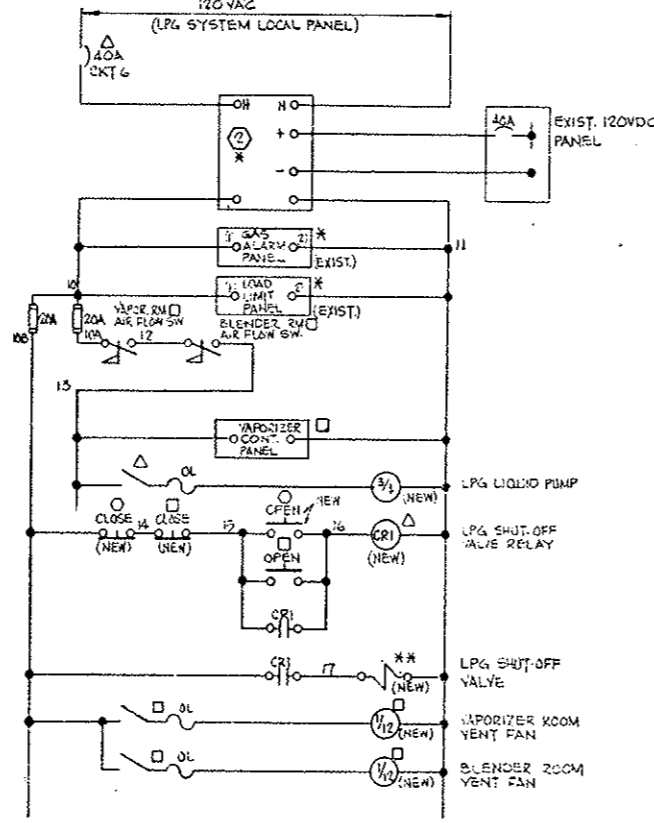


GAS EQUIPMENT ELECTRICAL PANEL BUILDING LIGHTING PLAN
SCALE 1/4"=1'-0"
NOTE - SEE DWG E-WE-105 FOR LOCATION



LPG SYSTEM WIRING DIAGRAM

3HP LPG LIQUID PUMP CONTROL DIAGRAM



LPG SYSTEM CONTROL DIAGRAM

- LEGEND**
- * LOCATED IN PORTAL BLDG ADJACENT TO GAS METERING ROOM SEE DWGS E-E-25, E-W-25 & E-WE-105
 - ** LOCATED AT LP GAS STD TANK SEE DWGS E-WE-105
 - LOCATED IN GAS EQUIP BLDG THIS DWG & E-WE-105
 - △ LOCATED IN GAS EQUIP ELECTR. PANEL BLDG THIS DWG & E-WE-105
 - LOCATED AT LP GAS TRUCK FILLING STATION SEE DWG E-WE-105

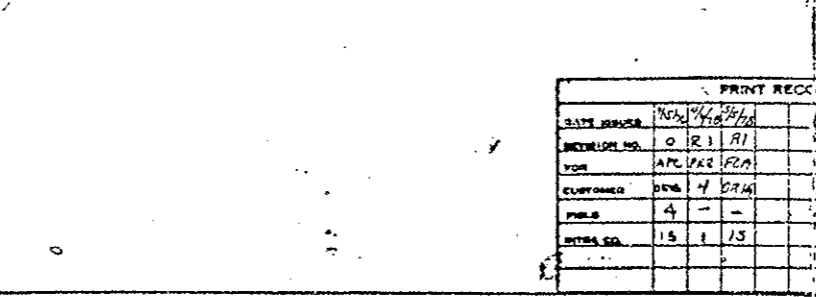
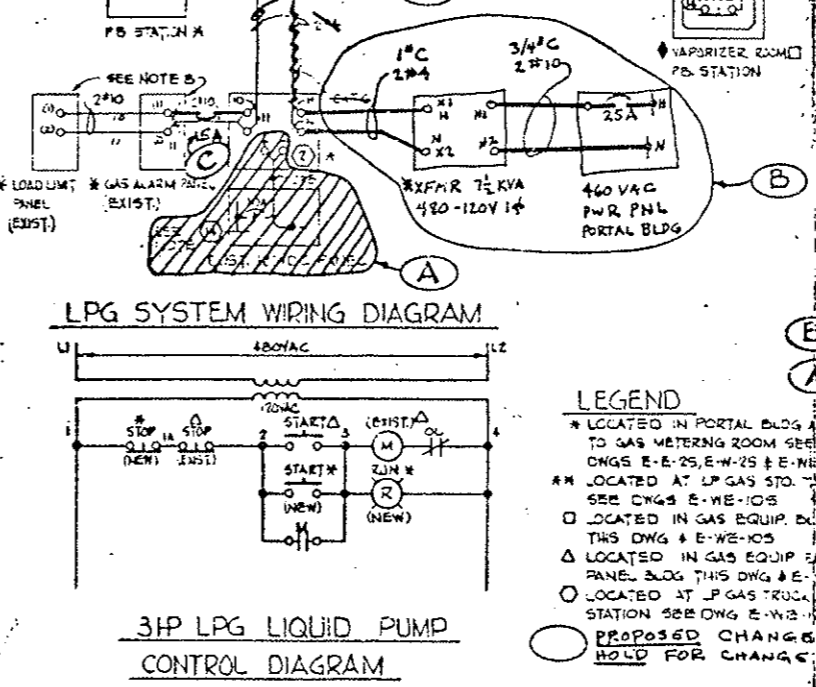
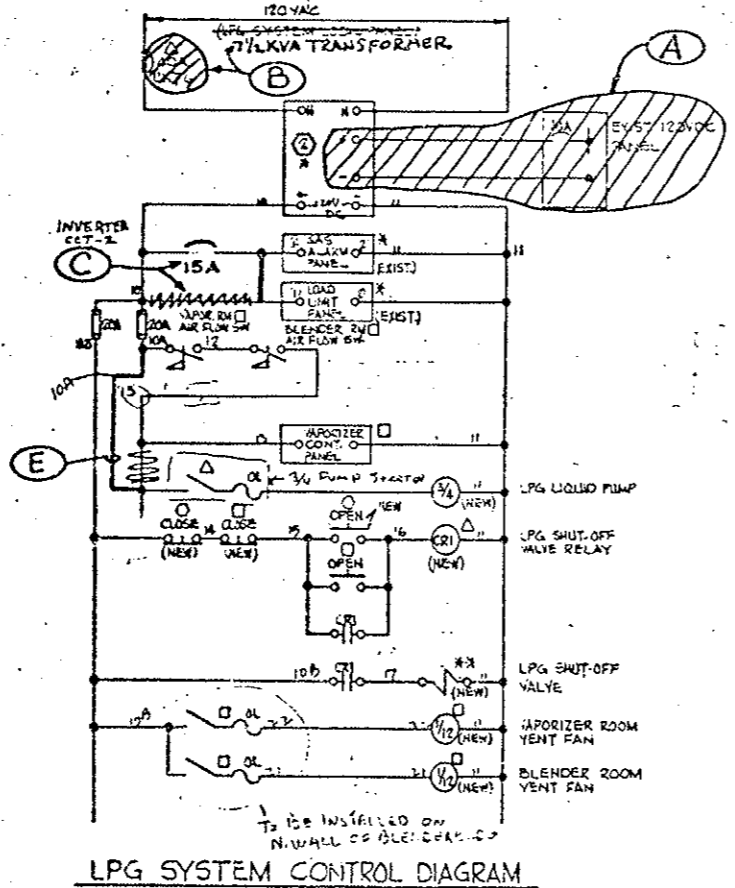
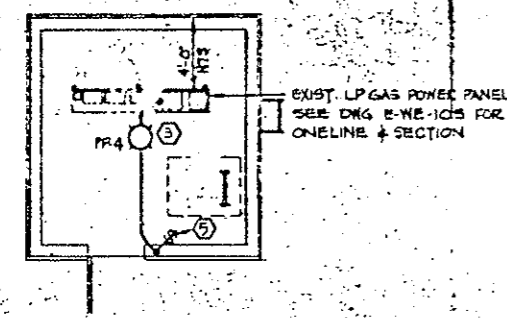
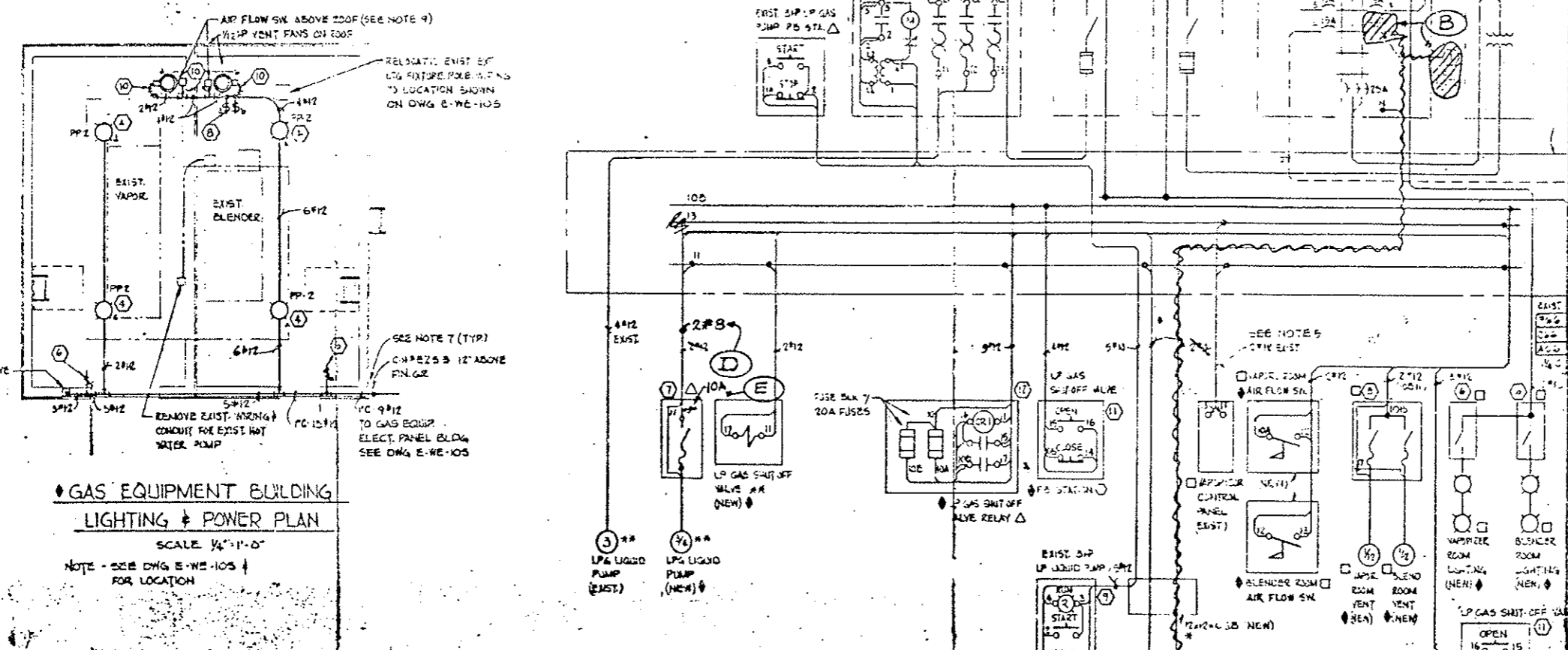
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DATE ISSUED	10/15/78
REVISION NO.	0 R 1 AT R1
DATE	10/15/78
BY	C. J. GARDNER
CHECKED	
DATE	10/15/78

REVISIONS		DATE	BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS			
EISENHOWER MEMORIAL TUNNEL			
SECOND BORE			
ELECTRICAL			
WEST & EAST VENTILATION BUILDINGS			
MISC DETAILS			
SHEET NO 3			
DATE	10/15/78	CHECKED	
BY	C. J. GARDNER	DATE	10/15/78
PROJECT NO.	170-3(83)220	DRAWING NO.	E-WE-125

(R) REVISED FOR PROJ. NO. 170-3(83)220. 1/2 1/16

NO.	DESCRIPTION	QUANTITY	REMARKS
1	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
2	2 1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
3	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
4	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
5	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
6	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
7	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
8	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
9	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
10	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
11	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205
12	1/2" DIA. 10' LONG EP FLY COUPLING	2	GROUP - HINDS #ECLK 205

- NOTES**
- ELECTRICAL INSTALLATION SHALL COMPLY WITH ART. 500 OF NEC FOR CLASS I DIV. 2 GROUP D HAZARDOUS AREA.
 - ALL CONDUIT SHALL BE 1/2" RIGID UNLESS OTHERWISE NOTED.
 - ALL WIRE SHALL BE #12 TYPE XHHW UNLESS OTHERWISE NOTED.
 - CONTRACTOR SHALL MODIFY EXISTING VAPORIZER & BLENDER CONTROL WIRING TO COMPLY WITH ART. 500 OF NEC FOR CLASS I, DIV. 2, GROUP D HAZARDOUS AREA.
 - CONTRACTOR SHALL REMOVE VAPORIZER CONTROL POWER WIRES (2#12) FROM CB 3 & CONNECT TO (LPG POWER) WIRE #11 & #13 IN EXIST. WIRING.
 - CONTRACTOR SHALL REMOVE HOT WATER CIRC. PUMP BETWEEN VAPORIZER & BLENDER.
 - ALL WALL & ROOF PENETRATIONS SHALL BE SEALED WEATHER & GAS TIGHT.
 - CONTRACTOR SHALL REMOVE EXIST. CONTROL POWER CONNECTIONS IN EXIST. GAS ALARM PANEL & LOAD LIMIT PANEL IN PORTAL BLDG & CONNECT TO WIRE #10 & #11 FROM NEW INVERTER.
 - FOR DESCRIPTION OF AIR FLOW SWITCH SEE SPEC. & DWG. M-21-5.
 - CONTRACTOR SHALL REMOVE EXIST. CONTROL PANEL & LOAD LIMIT PANEL IN PORTAL BLDG & RELOCATE IN GAS EQUIP. BLDG. SEE DWG. E-WE-105.
 - CONTRACTOR SHALL REMOVE EXIST. CONTROL PANEL & LOAD LIMIT PANEL IN PORTAL BLDG & RELOCATE IN GAS EQUIP. BLDG. SEE DWG. E-WE-105.
 - INDICATES WIRE, CABLE, CONDUIT & DEVICES FURNISHED & INSTALLED IN PROJECT NO. 170-3(83)220. (R)



- LEGEND**
- * LOCATED IN PORTAL BLDG ADJACENT TO GAS METERING ROOM SEE DWGS. E-E-25, E-W-25 & E-WE-105
 - ** LOCATED AT LP GAS STATION LINK SEE DWGS. E-WE-105
 - LOCATED IN GAS EQUIP. BLDG THIS DWG. & E-WE-105
 - △ LOCATED IN GAS EQUIP. ELECT. PANEL BLDG THIS DWG. & E-WE-105
 - LOCATED AT LP GAS TRUCK FILLING STATION SEE DWG. E-WE-105
 - PROPOSED CHANGE ITEM HOLD FOR CHANGE ORDER

DATE	REVISION	BY	CHKD.
1/15/76	1	LB	LB
1/21/76	2	LB	LB
1/23/76	3	LB	LB

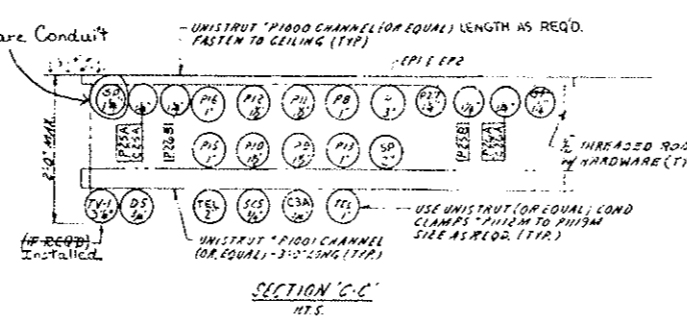
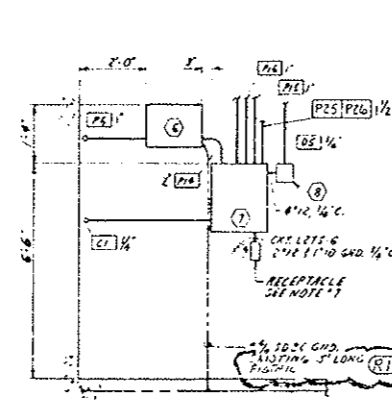
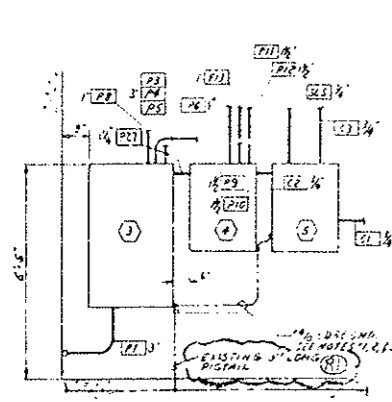
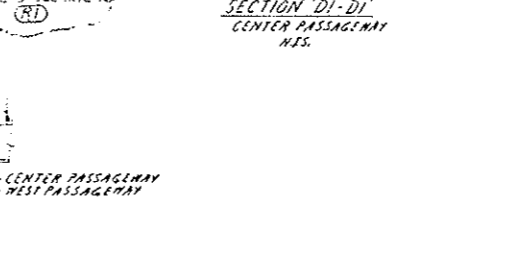
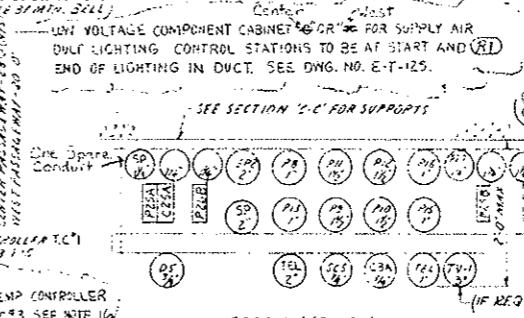
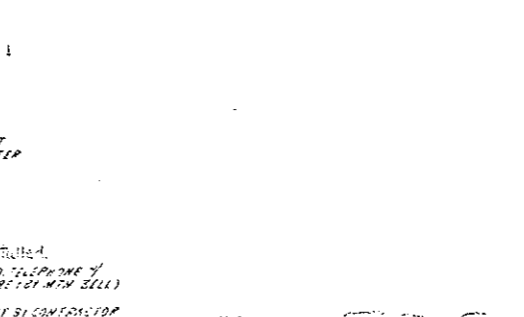
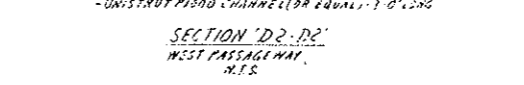
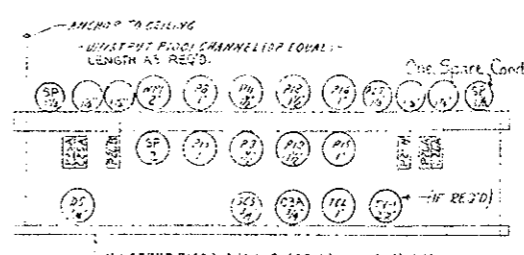
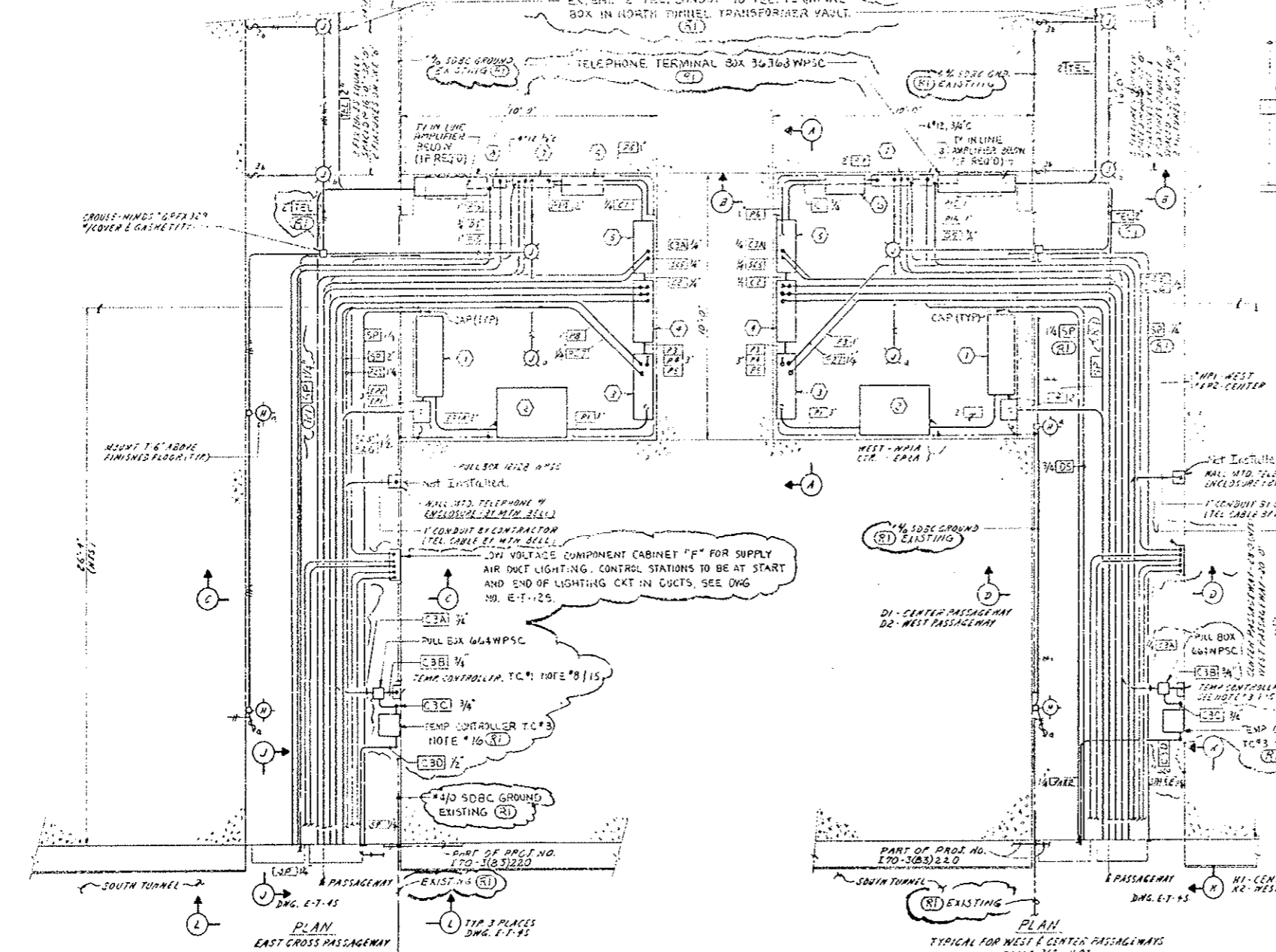
NO.	REVISIONS	DATE	BY	CHKD.
1	STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE			
2	ELECTRICAL WEST EAST VENTILATION BUILDINGS MISC. DETAILS SHEET NO. 3			



AS-BUILT

EXIST. 100' L.T.G. PICTURE TO HEART TUNNEL
 EXIST. 100' L.T.G. PICTURE TO HEART TUNNEL

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
170-3(83)220	COLORADO	170-3(83)220	149	

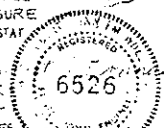


- (R1) DESIGNATED EXISTING 5/0 UNID. WIRES
- LEGEND
- * 1 PRIMARY FUSE CUTOFF, 5.2KV, 60 AMPERES WITH 55A FUSE LINKS *F55 (OR EQUAL)
 - * 2 1/2" W/500V, 3000-1400/127V, VENTILATED 3P1-TYPE 7/1-27/4 FCAN & FCAN TAPS 125/114, TYPE DT-2, WESTINGHOUSE CAT. #424-2222 (OR EQUAL)
 - * 3 480V/277VAC POWER DISTRIBUTION PANEL, CIRCUIT BREAKER TYPE COP W/20 AMPERES OF 10 IN. SEE DWG. E-6-35 FOR SCHEDULE
 - * 4 LIGHTING & HEATING CONTACTOR PANEL, 1/3-20A-3P-480V CONTACTORS/220V COILS, NEMA 1 ENCLOSURE, SEE WIRING DIAG. DWG. E-T-25
 - * 5 LIGHTING & HEATING RELAY & CONTROL CABINET, NEMA 1 ENCLOSURE, SEE WIRING DIAGRAM ON DWG. E-T-25
 - * 6 LIGHTING TRANSFORMER 480-208Y/120V, WALL MOUNTED, NON-VENT. TYPE EPT, 1/2-2 1/2" FCAN L 4-2 1/2" FCAN TAPS, 20 CVA, WESTINGHOUSE CAT. #44397 (OR EQUAL)
 - * 7 LIGHTING PANEL 3-PHASE-4-WIRE, 125A MAIN CKT. BREAKER SURFACE MOUNTED, W/20 AMPERES OF 10 IN. SEE DWG. E-6-35 FOR SCHEDULE
 - * 8 TRANSFER RELAY, 120VAC 50A COIL 2/20A 220V CONTACTS, ENTREGAMMER TYPE, 480-1400/127V, 1/3-20A-3P-480V CONTACTORS, CAT. #2515-2080S (OR EQUAL) SEE WIRING DIAG. ON DWG. E-T-25
- * General Electric Equipment Installed.

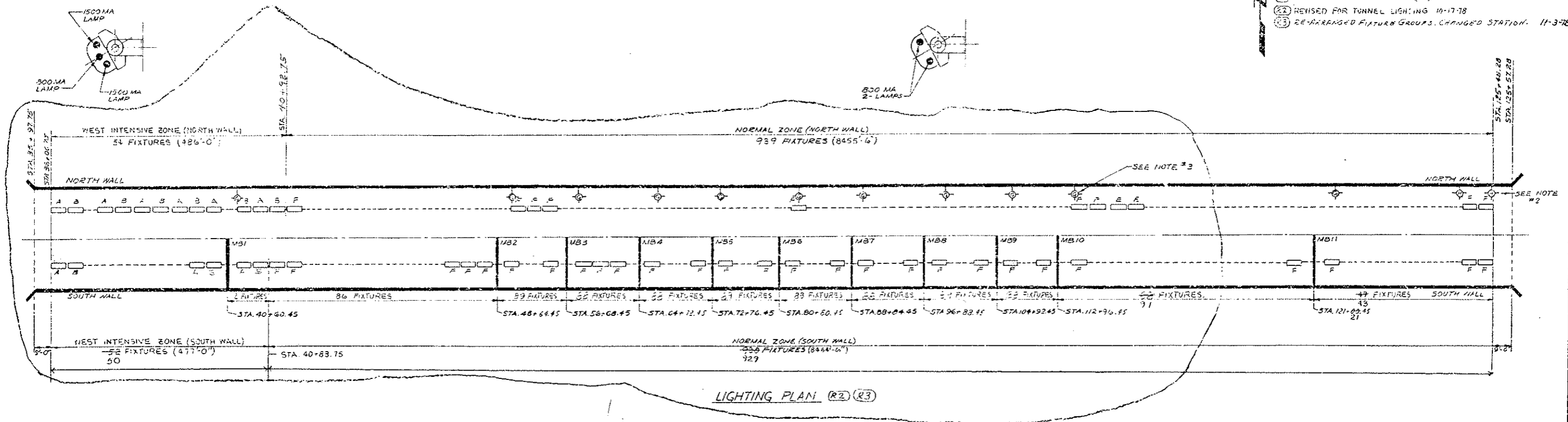
- NOTES
1. USE CADWELD TYPE GROUND CONNECTIONS FOR GND. TAPS.
 2. USE 1/4" SDBC TO GROUND ITEMS #1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

AS CONSTRUCTED		NO REVISIONS		REVISED		VOID	
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DATE OF COLORADO DEPARTMENT OF HIGHWAYS		EISENHOWER MEMORIAL TUNNEL		SECOND SORE	
ELECTRICAL		TUNNEL		POWER PLAN, SECTIONS & DETAILS	
SHEET NO. 2		DRAWING NO.		E-T-25	



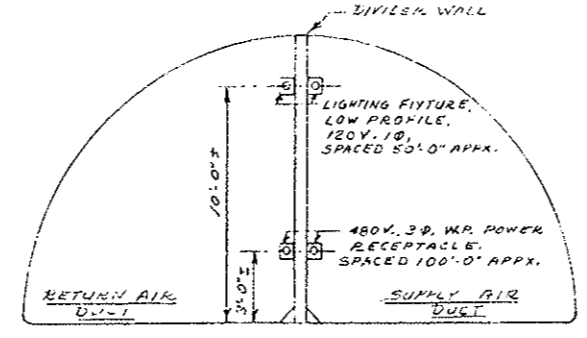
(21) REVISED FOR PHOJ NO 170-3(33)220
 (22) REVISED FOR TUNNEL LIGHTING 10-17-78
 (23) RE-ARRANGED FIXTURE GROUPS, CHANGED STATION. 11-3-78



LIGHTING FIXTURE SCHEDULE (R3)

CAT. NO.	DESCRIPTION	TYPE	TOTAL
* 3-96-2-15-2-B	TNL SERIES LUMINAIRE, 2-1500MA & 1-800MA LAMPS, 277K 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE B	"A"	53
* 3-96-2-15-0-B	TNL SERIES LUMINAIRE, 2-1500MA & 1-800MA LAMPS, 277K 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE A	"B"	53
* 3-96-2-3-2-B	TNL SERIES LUMINAIRE, 3-800MA LAMPS, 277K 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE D	"C"	68
* 3-96-2-3-0-B	TNL SERIES LUMINAIRE, 3-800MA LAMPS, 277K 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE C	"D"	68
* 3-96-2-8-1-1	TNL SERIES LUMINAIRE, 2-300MA LAMPS MIDDLE & LOWER, 277V, 60HZ, FUSED, NO LAMP BALLAST OPERATION OF EACH MIDDLE OR LOWER LAMP IN CONJUNCTION WITH ADJACENT TYPE "E" FIXTURE	"E"	146
* 3-96-2-8-1-1	TNL SERIES LUMINAIRE, 2-300MA LAMPS UPPER & LOWER, 277V, 60HZ, FUSED, NO LAMP BALLAST OPERATION OF EACH UPPER OR LOWER LAMP IN CONJUNCTION WITH ADJACENT TYPE "F" FIXTURE	"FA"	1880*
WESTINGHOUSE	E96T12/CW/SHO FLUORESCENT LAMP, SUPER-HI	SUPER-HI (500MA)	212
WESTINGHOUSE	E96T12/CW/SHO FLUORESCENT LAMP, HIGH OUTPUT	HI-OUTPUT (800MA)	3866
KPHILBEN 43-40VT	INCANDESCENT WALL BRACKET WEATHERTIGHT FOR TELEPHONE MARKER & SIGNAL LIGHT, 50WATT	G	11
KPHILBEN 43-40VT	INCANDESCENT WALL BRACKET WEATHERTIGHT FOR TUNNEL EMERGENCY & PASSAGEWAY LTG., 100WATT	H	38
KPHILBEN 43-45VT	INCANDESCENT CEILING SURFACE INTD. WEATHERTIGHT FOR PASSAGEWAY LIGHTING, 100WATT	J	17
* 3-96-2-8-1-1	TNL SERIES LUMINAIRE, 2-300MA LAMPS MIDDLE & LOWER, 277V, 60HZ, FUSED, SINGLE LAMP BALLAST OPERATION OF EACH LAMP	"E"	AS REQ'D
* 3-96-2-8-1-1	TNL SERIES LUMINAIRE, 2-300MA LAMPS UPPER & LOWER, 277V, 60HZ, FUSED, SINGLE LAMP BALLAST OPERATION OF EACH LAMP	"F"	AS REQ'D
* 3-96-2-15-2-B	TNL SERIES LUMINAIRE, 2-1500MA & 1-800MA LAMPS, 277K 60HZ, FUSED, SINGLE LAMP BALLAST OPERATION OF EACH LAMP	"A"	1
White	No Ballast Terminal Block, 2-1500MA Lamps	"FB"	
White	Fluorescent Fixtures Installed	FA, FB, FI, A, B	

* 11 Fixtures shall be furnished for installation by State Forces in the North Bore at locations where Message Boards are removed on the South Wall.



VENTILATION DUCTS LIGHTING & POWER INSTALLATION

NOTES:

- LIGHTING FIXTURES ARE CROUSE-HINDS INCANDESCENT FIXTURE CAT. NO. VKG110 WITH CLEAR GLOBE N° VIB. FIXTURE SHALL BE ON 1" OUTLET BOX N° GRK334.
- 11/2" WALL, 125 DWT, CLEAR LAMPS CAT. NO. 116 R2/15/120 SHALL BE INSTALLED IN EACH FIXTURE.
- POWER RECEPTACLES ARE 30 AMP, 115V, 3-POLE, 4-WIRE, 600VOLT, WITH THREADED CAP. CAT. NO. N° NIS CAT. NO. AR348, INSTALL ON 1" BACK BOX N° ANK333.
- 1" RG CONDUIT SHALL BE INSTALLED BETWEEN LIGHTING OUTLET BOXES AND BETWEEN POWER BACK BOXES FOR LIGHTING AND POWER CIRCUITS. THE CONDUIT SHALL BE SUPPORTED ON THE DUCT DIVIDER WALL.
- SUPPLY DUCT LIGHTING IS TO BE ESTABLISHED IN APPX. 1000 FT. INCREMENTS. SWITCH CONTROL SHALL BE ARRANGED AT EACH END OF AN INCREMENT. RETURN AIR DUCT LIGHTING IS TO BE ESTABLISHED IN INCREMENTS MATCHING DIVIDER WALL DUCT LIGHTING (APPX. 1000 FT. INCREMENTS). RETURN AIR DUCT LIGHTING CONTROL WILL BE FROM SWITCHING LOCATED AT ENTRANCE BORE POSITIONS.
- LIGHTING CIRCUITS SHALL BE 120V AND 600V. THE 120V, 1/2" STRANDED COPPER WIRE LIGHTING (LOW VOLTAGE) CONTROL CIRCUITS SHALL BE 115V ANGR. 1/2" STRANDED COPPER WIRE. 480V. POWER RECEPTACLE CIRCUITS SHALL BE N° 4 AWG, 600V, 1/2" STRANDED COPPER.
- SEE DWG. E-T-125 FOR POWER & LIGHTING PLANS & DETAILS.

(R2) MODE OF OPERATION

INTENSIVE ZONE
 DAY, 3 LAMPS ON
 NIGHT, CENTER LAMP ONLY.
 DAY-NIGHT LEVELS ARE CONTROLLED FROM PHOTO ELECTRIC CONTROL TRANSFERRED AT 10FC AMBIENT LIGHT.

NORMAL ZONE
 ONE LAMP ON WITH ALTERNATING DUTY ON THE TWO LAMPS EVERY TWENTY FOUR (24) HOURS
 TEMPERATURE TO TURN ON ADDITIONAL LAMP BELOW MINUS TWENTY (20) DEGREES F.
 PASSAGEWAY LOCATED SELECTOR SWITCH ALLOWS OPERATOR TO TURN OFF 50% OF NORMAL ZONE LAMPS (EVERY SECOND BALLAST).

NOTES:

- TUNNEL FLUORESCENT LIGHTING FIXTURES SHALL BE SPECIALLY DESIGNED FOR TUNNEL LIGHTING. SEE FIXTURE SCHEDULE THIS DRAWING FOR DESCRIPTION OF FIXTURES.
- TUNNEL WALKWAY EMERGENCY LIGHTING FIXTURES SHALL BE INSTALLED EVERY 39'-0" THE FULL LENGTH OF THE TUNNEL. FIXTURE TO BE MOUNTED BETWEEN FLUORESCENT FIXTURES & BELOW THEM TO PERMIT MAINTENANCE OF FLUORESCENT FIXTURES
- TELEPHONE MARKER AND SIGNAL LIGHTS SHALL BE INSTALLED AT EVERY TUNNEL EMERGENCY TELEPHONE (11 LOCATIONS) 7'-6" ABOVE WALKWAY
- FOR CROSS PASSAGEWAY LIGHTING SEE DWG. E-T-25
- WORK THIS DRAWING WITH DRAWINGS E-T-65 AND E-T-65
- ONE FLUORESCENT LIGHTING FIXTURE HAS BEEN DELETED AT EACH MESSAGE BOARD LOCATION
- FOR LIGHTING FIXTURE DETAIL AND SPACING SEE DWG. E-T-65

PRINT RECORD

DATE ISSUED	11-15-78
REVISION NO.	0 0 0 0 1 1 2 2 3 3
JOB	FOR THE STATE OF COLORADO
CUSTOMER	STATE OF COLORADO
FILE NO.	
INTRA. CO.	15 15 15 1 1 15 15 15

REVISIONS

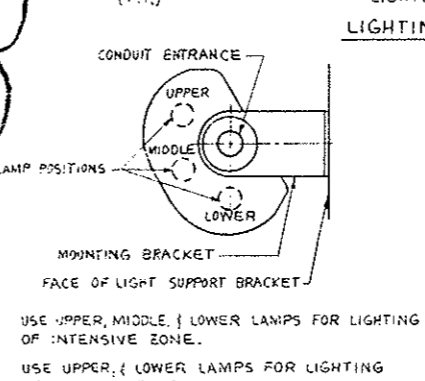
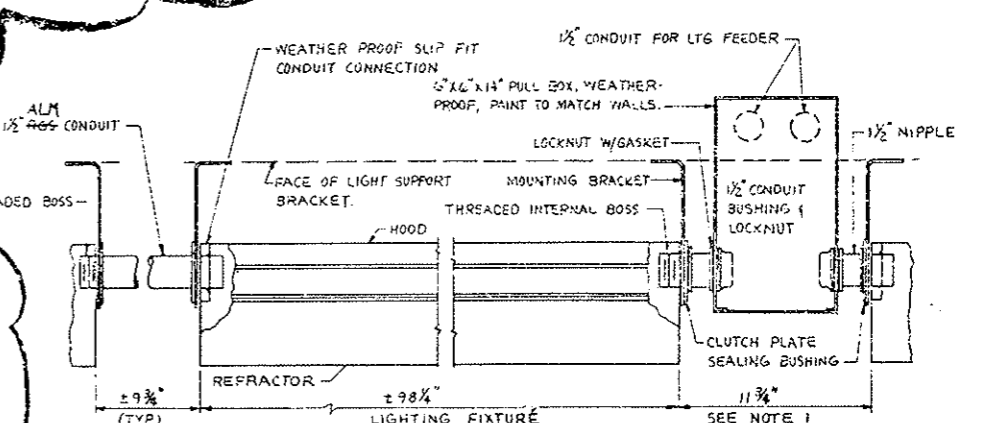
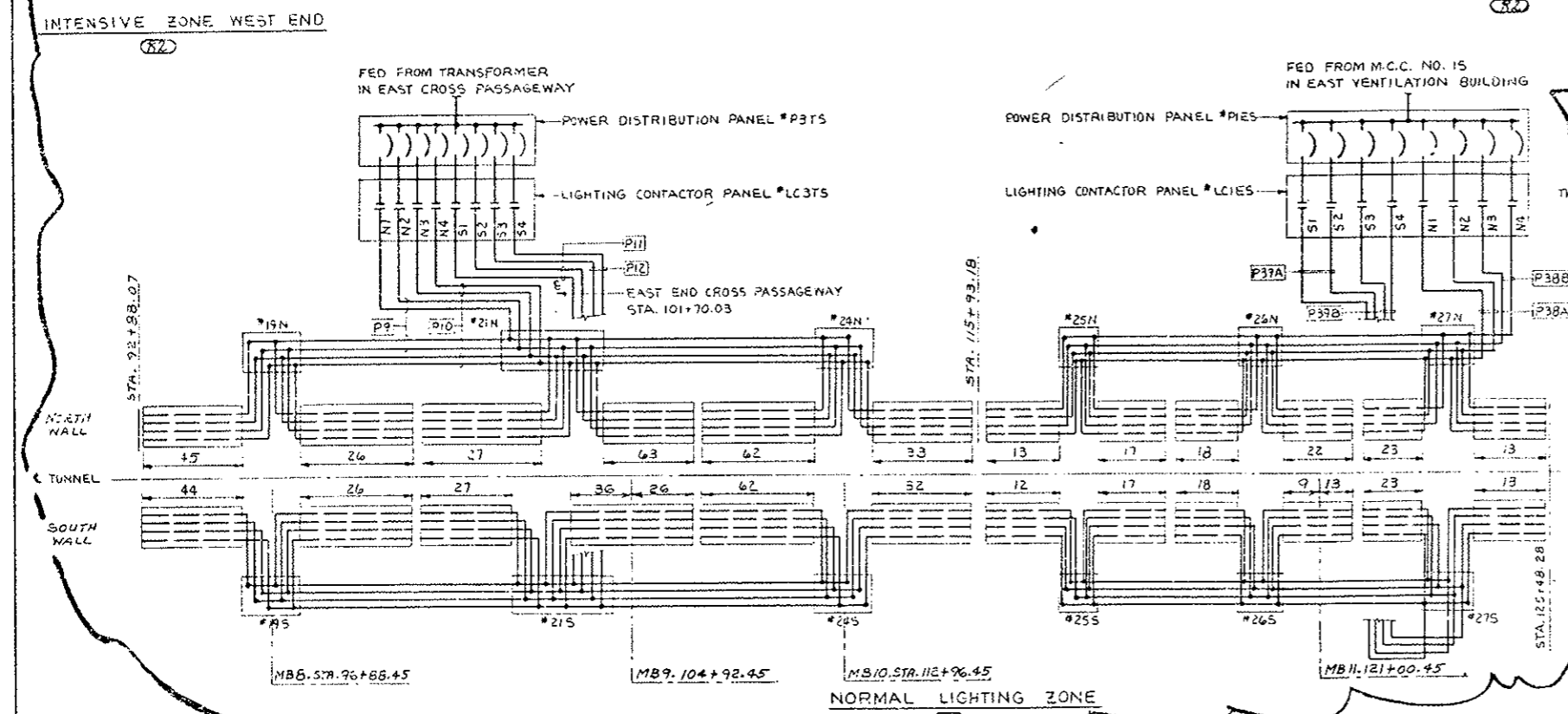
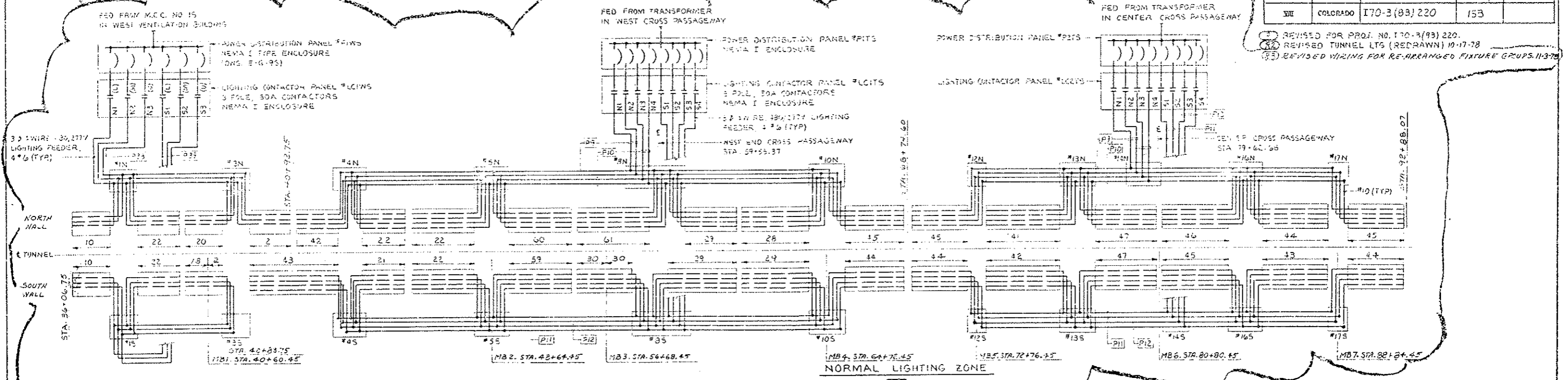
NO.	REVISIONS	DATE	BY	CHKD
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STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

ELECTRICAL TUNNEL LIGHTING PLAN AND DETAILS

DATE: 11-15-78
 DRAWING NO: E-T-55
 NONE C14570

(1) REVISED FOR PROJ. NO. I70-3(83) 220.
 (2) REVISED TUNNEL LTG (REDRAWN) 10-17-78
 (3) REVISED WIRING FOR RE-ARRANGED FIXTURE GROUPS 11-3-78



- NOTES**
1. SPACING BETWEEN FIXTURES TO BE ± 9 3/4" EXCEPT WHERE PULLBOX IS REQ'D. THEN THE SPACING IS 11 3/4" & THE CONTRACTOR SHALL MAKE UP THE DIFFERENCE BETWEEN ADJOINING FIXTURES. PULLBOXES TO BE USED AT DISTRIBUTION BOX GROUPS #1N, 2N, 4N, 5N, 8N, 10N, 12N, 13N, 16N, 17N, 17N, 21N, 24N, 25N, 26N, & 27N AT NORTH WALL FIXTURES AND AT 15, 35, 45, 55, 85, 105, 125, 135, 165, 175, 215, 195, 245, 255, 265 & 275 AT SOUTH WALL FIXTURES. (82)
 2. FOR WIRING INSIDE FIXTURES, SEE DWG. E-T-75.
 3. FOR LOCATION OF DISTRIBUTION BOX GROUPS, SEE DWG. E-T-15.
 4. WORK THIS DWG. WITH LIGHTING PLAN, DWG. E-T-55.
 5. FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-T-105.

AS CONSTRUCTED

NO REVISIONS	REVISED	VOID
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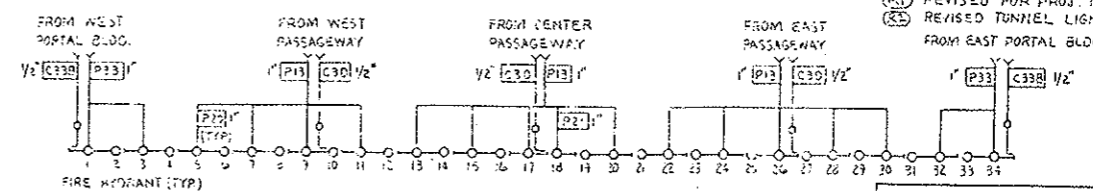
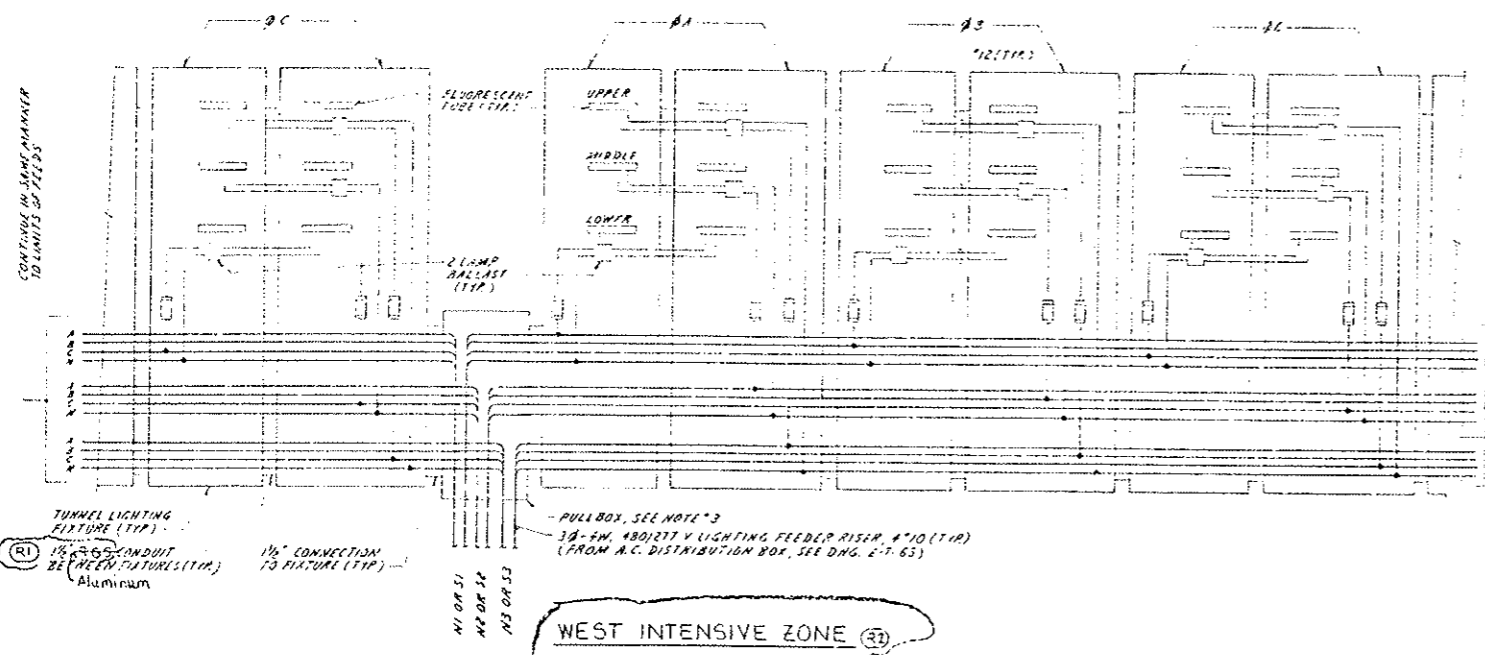
PRINT RECORD		REVISIONS		DATE	BY	CHKD
DATE REVISION	BY	NO.	DESCRIPTION			
0	0	0	0	0	RI	RI
PRE	PRE	PRE	PRE	PRE	PRE	PRE
5	5	5	10	5	4	GRIGORIS
15	13	15	1	1	13	15

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
 SECOND BORE
 ELECTRICAL
 TUNNEL
 WIRING DIAGRAMS
 SHEET NO. 1

DRAWN BY: P.J. 3-15-74
 CHECKED BY: DPW 3-26-74
 SCALE: NONE
 ORDER NO: C14570

ARCHITECTS
 E-T-6S

(R1) REVISED FOR PROJ. NO I70-3(63)220
 (R2) REVISED TUNNEL LIGHTING 10-17-75
 FROM EAST PORTAL BLDG.



AS CONSTRUCTED	
NO REVISIONS	REVISED
	VOID

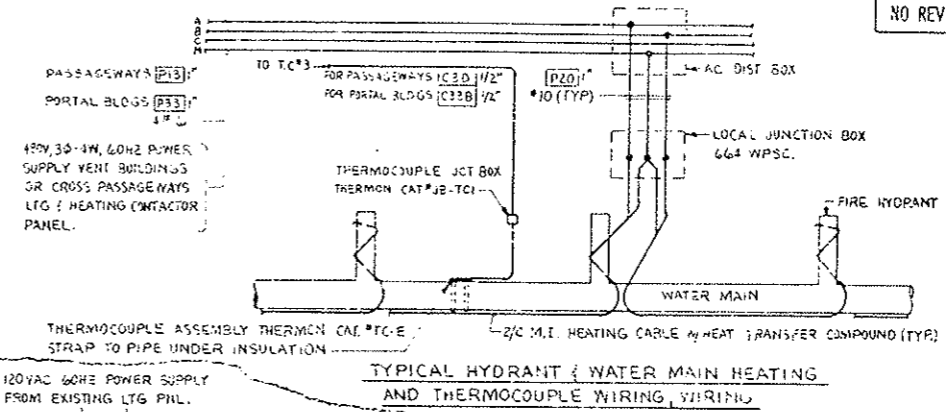
FLOUORESCENT TUBE PLACEMENT

WEST INTENSIVE ZONE

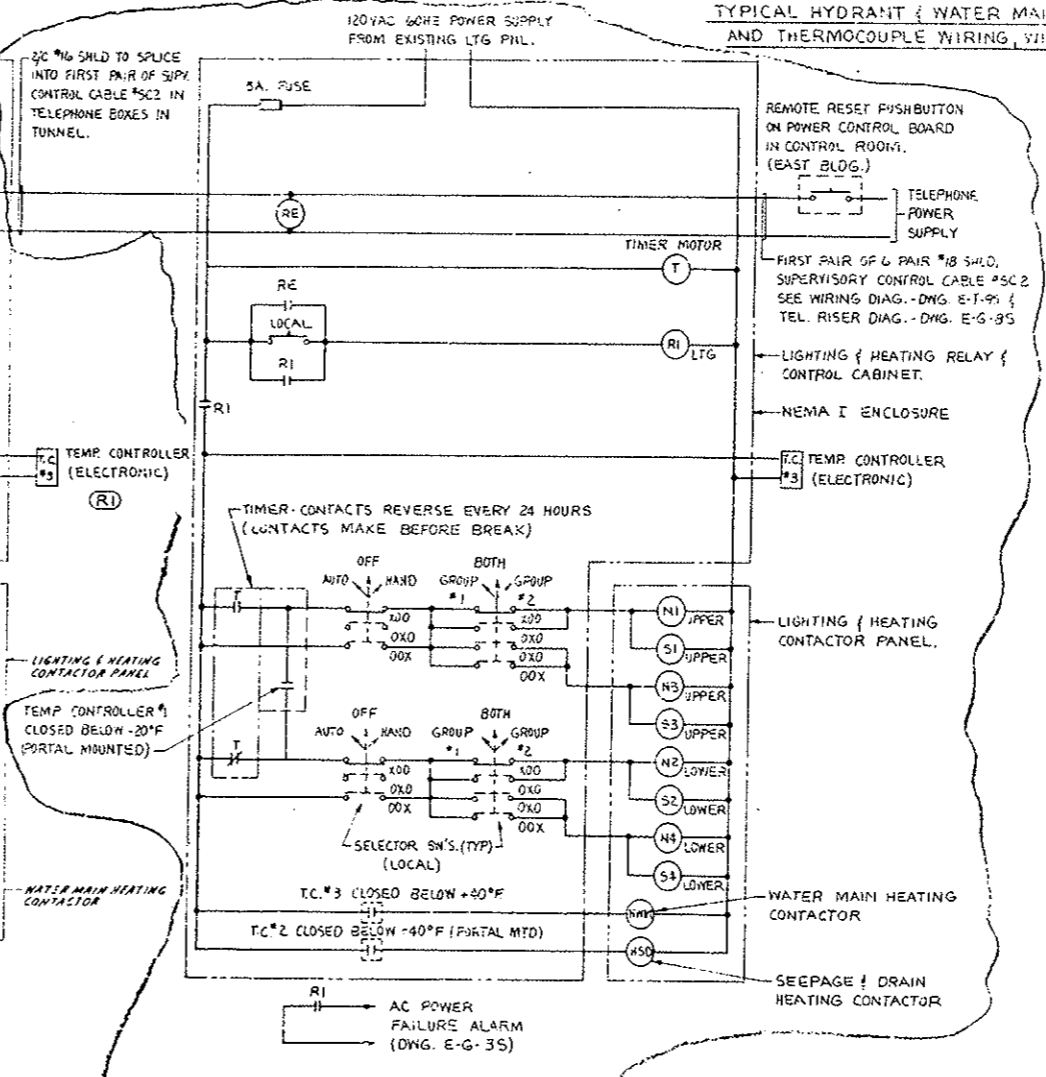
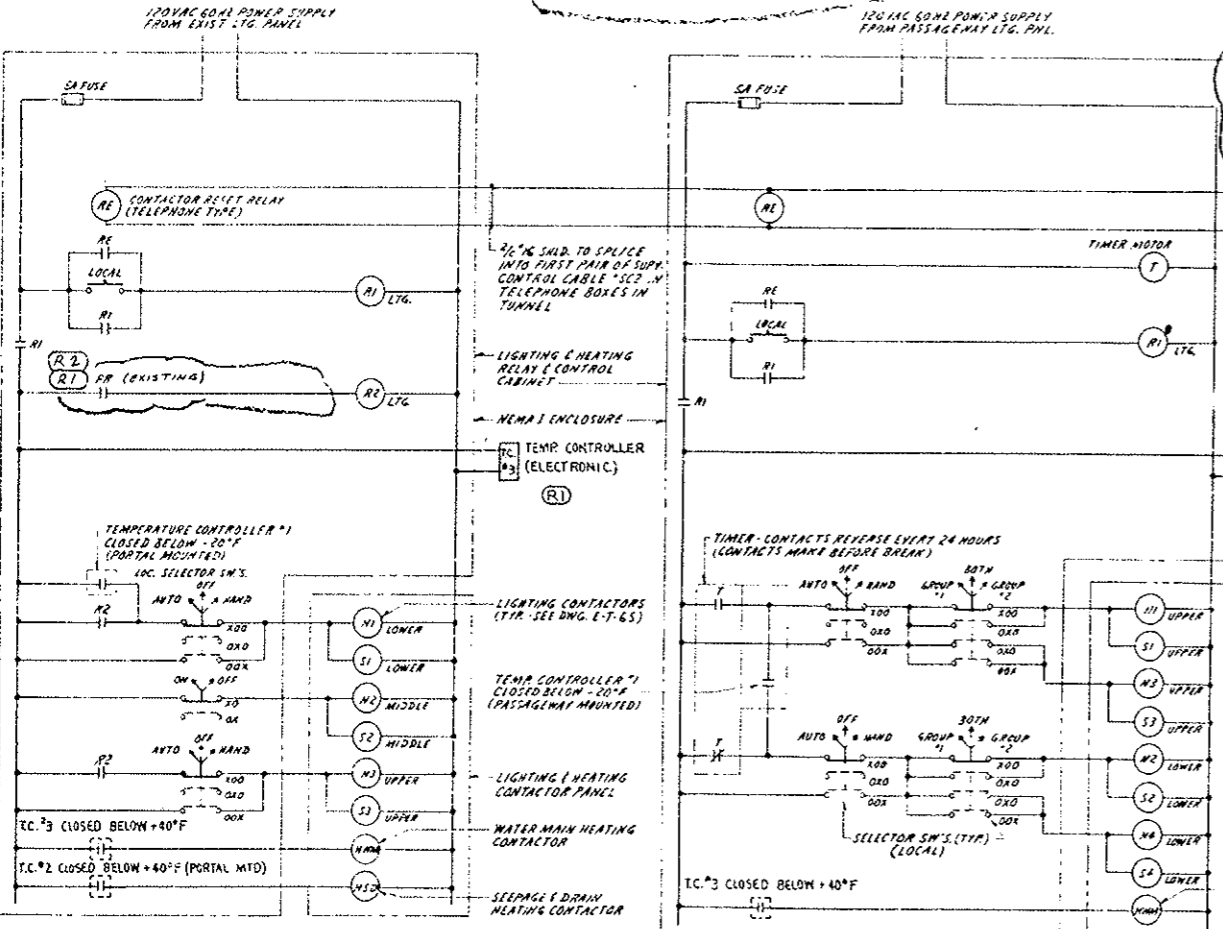
CONTACTORS	POS.	TUBE TYPE	TYPE
N1	51	LOWER	S.H.O
N2	52	MIDDLE	H.O
N3	53	UPPER	S.H.O

NORMAL ZONE

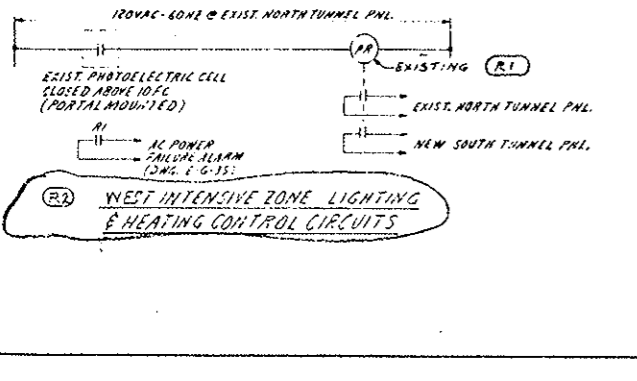
CONTACTORS	POS.	TUBE TYPE	TYPE
N1	51	UPPER	H.O.
N3	53	LOWER	H.O.



LIGHTING FIXTURE WIRING
 (TYPICAL FOR BOTH SIDES)



NOTES:
 1. WORK THIS DRAWING WITH DWG'S: 31, E-T-55, E-T-65, E-T-25 E E - 95
 2. SEE DWG. E-T-25 FOR LOCATIONS OF POWER DIST. PANELS, RELAY & CONTROL PANELS & CONTACTOR PANELS
 3. NO FILLBOXES REQUIRED AT LIGHTING FIXTURES WHERE MESSAGE BOARDS ARE LOCATED.
 (R1) 4. CONTRACTOR TO WIRE EXIST. PORTAL MOUNTED PHOTOELECTRIC CELL TO NEW RELAY 'PR' (120VAC-60HZ COIL 72 MA. CONTACTS IN A NEMA I ENCLOSURE) WIAR EXISTING LTG. & H.T.G. RELAY & CONTROL CABINET. ROUTE CONTACT WIRES INTO EXIST. CIRCUIT IN PLACE OF PHOTOELECTRIC CELL CONTACT & INTO NEW CIRCUIT AS SHOWN



NORMAL ZONE LIGHTING & HEATING CONTROL CIRCUITS FOR CROSS PASSAGEWAYS
 ONE REQUIRED IN EAST PASSAGEWAY

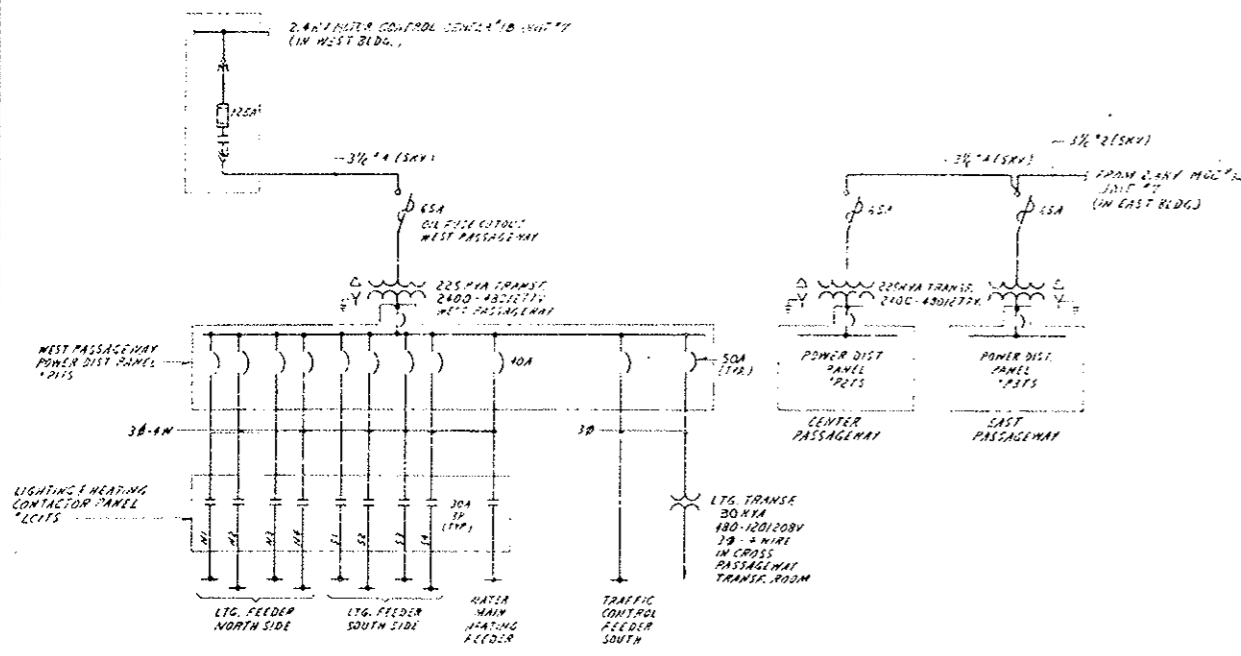
(R-2) EAST NORMAL ZONE LIGHTING & HEATING CONTROL CIRCUITS

PRINT 05/20/70

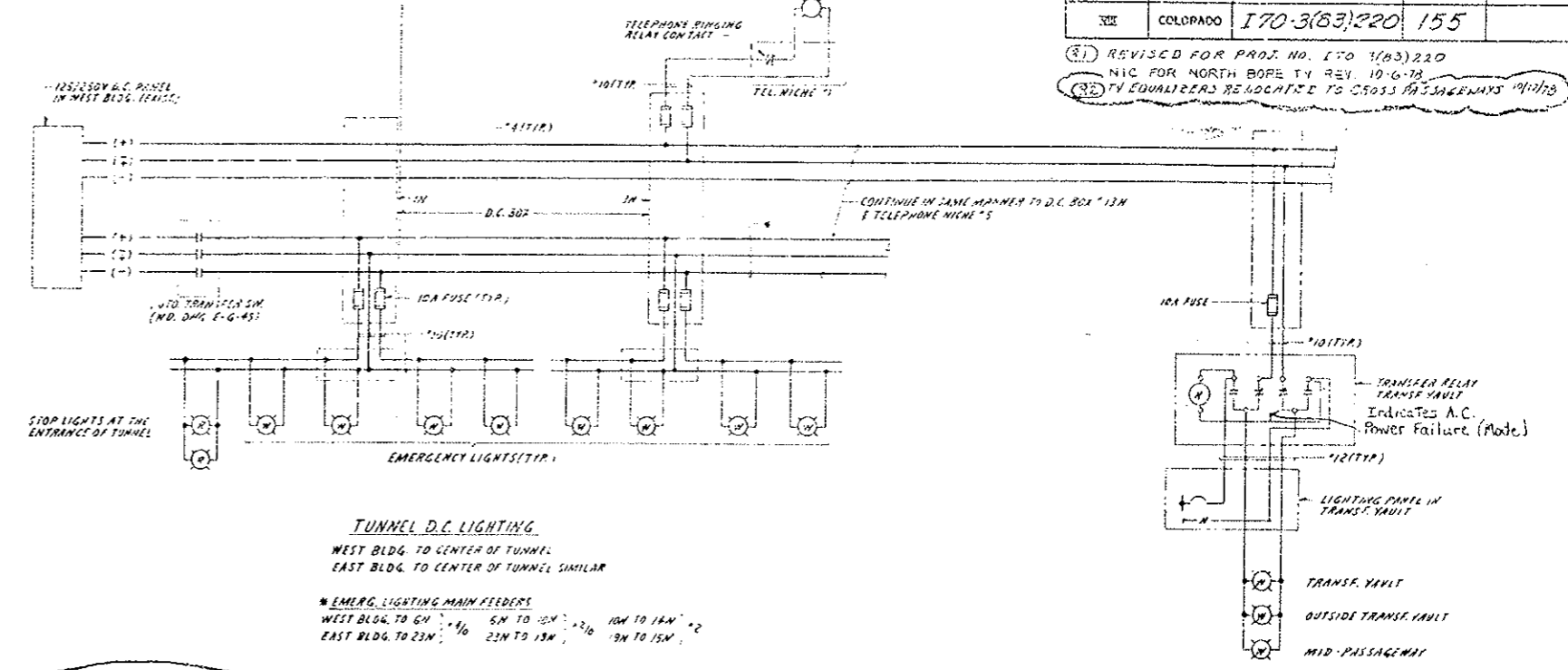
DATE ISSUED	10/15/75
REVISION NO.	0
BY	RJ
CHKD BY	...
DATE	10/15/75

REVISIONS		DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND SORE				
ELECTRICAL TUNNEL WIRING DIAGRAMS SHEET NO.2				
NAME	RJ	DATE	10/15/75	DRAWING NO.
CHECKED	...	DATE	...	
SCALE	NONE	ORDER NO.	C14570	E-T-7S

(1) REVISED FOR PROJ. NO. ETO 1(83)220
 NIC FOR NORTH BORE TV REV. 10-6-78
 (2) TV EQUALIZERS RELOCATED TO CROSS PASSAGeways 10/1/78

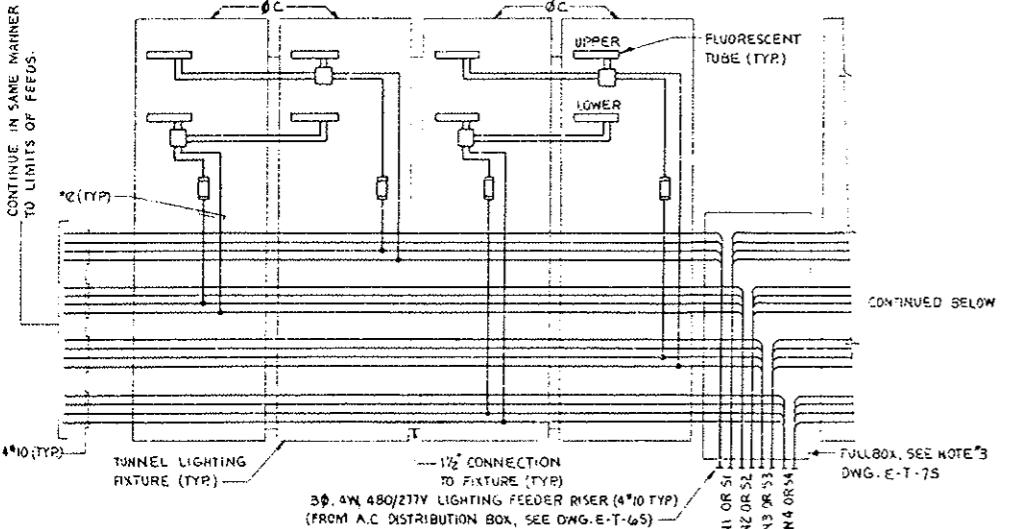


TUNNEL POWER SUPPLY ONE LINE DIAGRAM
 WEST PASSAGEWAY AS SHOWN
 EAST & CENTER PASSAGEWAY - SIMILAR

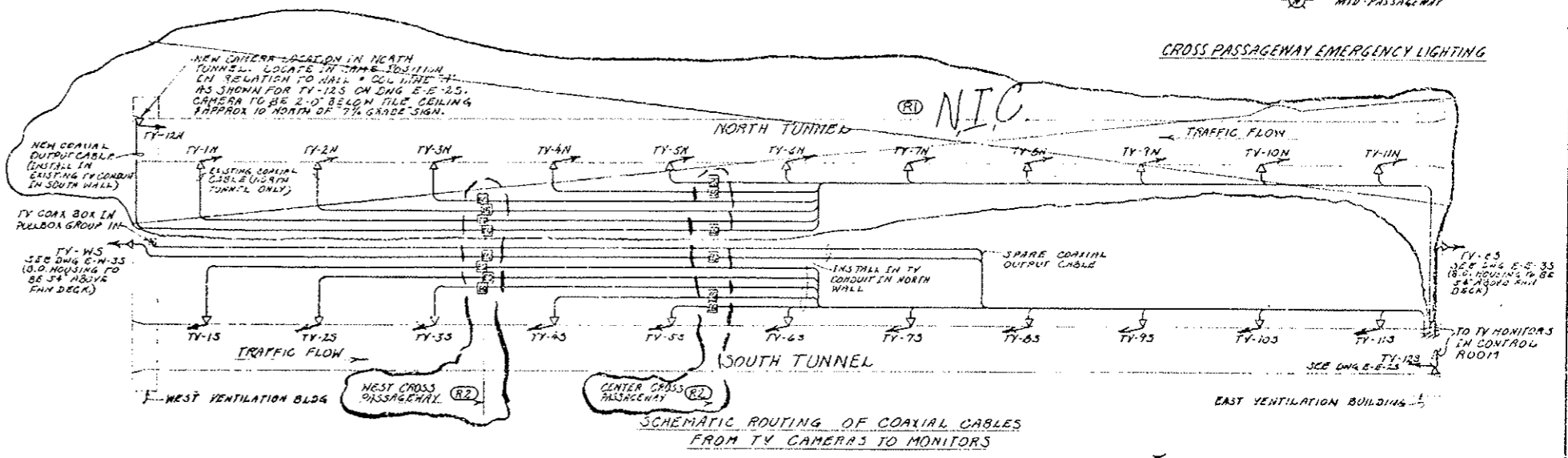


TUNNEL D.C. LIGHTING
 WEST BLDG. TO CENTER OF TUNNEL
 EAST BLDG. TO CENTER OF TUNNEL SIMILAR

CROSS PASSAGEWAY EMERGENCY LIGHTING

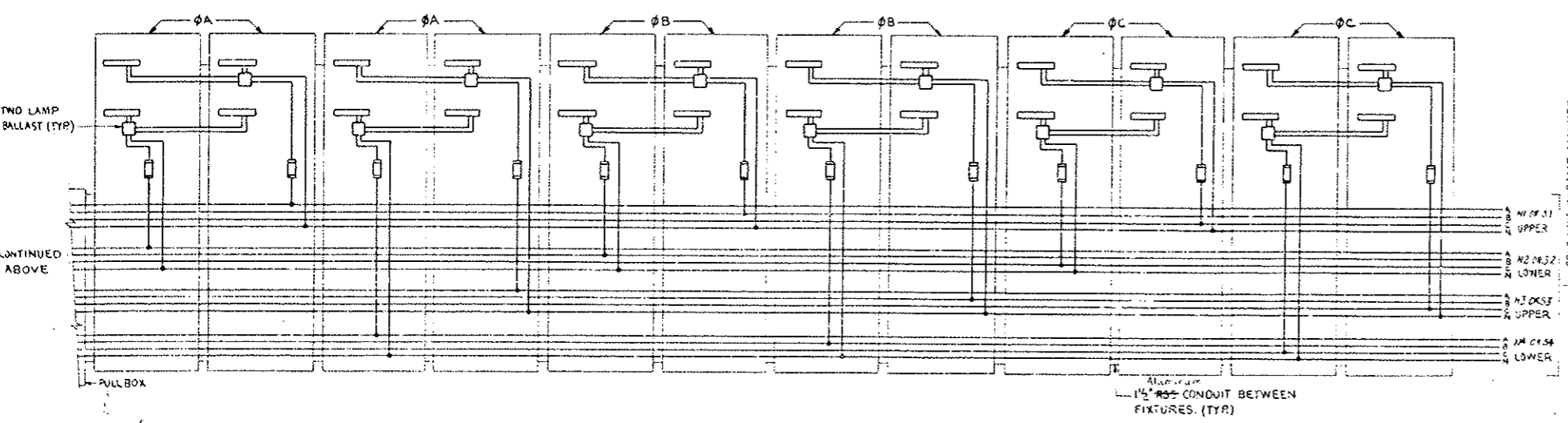


3/8" DIA 480/277V LIGHTING FEEDER RISER (4" TYP.)
 (FROM A.C. DISTRIBUTION BOX, SEE DWG. E-T-65)



SCHEMATIC ROUTING OF COAXIAL CABLES FROM TV CAMERAS TO MONITORS

1 CAMERA AND VIEWING DIRECTION
 2 VIDEO EQUALIZER & LINE AMPLIFIER TO BE INSTALLED IN CROSS PASSAGEWAYS AS INDICATED ON DWG. E-T-23.



NORMAL ZONE

AS CONSTRUCTED
 NO REVISIONS REVISED VOID



DATE	BY	REVISION
10-6-78	J. J. ...	REVISED FOR PROJ. NO. ETO 1(83)220
10-6-78	J. J. ...	NIC FOR NORTH BORE TV REV. 10-6-78
10-6-78	J. J. ...	TV EQUALIZERS RELOCATED TO CROSS PASSAGEWAYS 10/1/78

NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED		

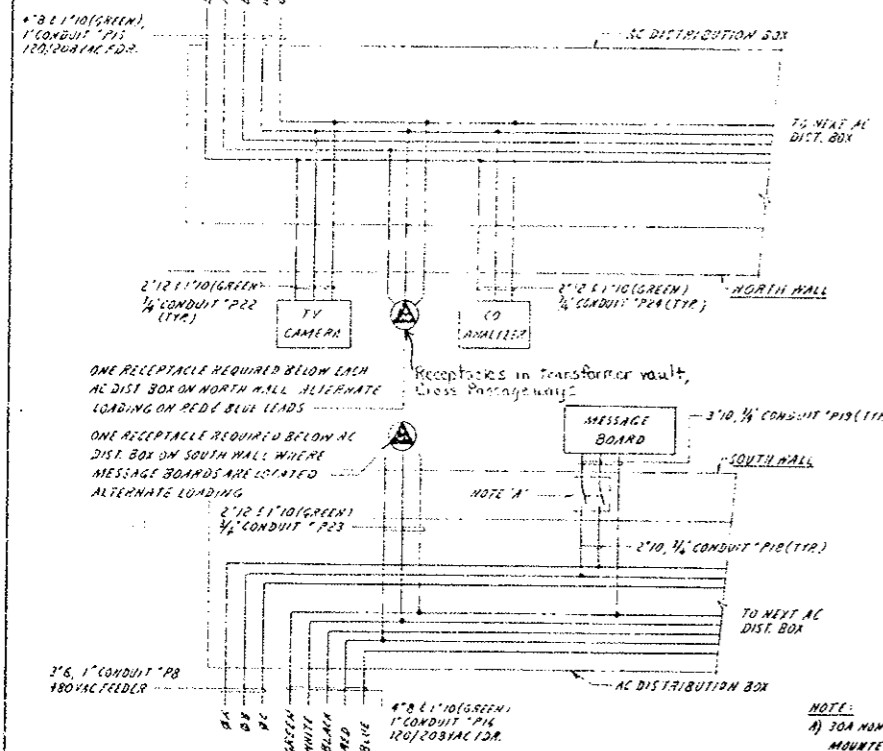
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

ELECTRICAL
 TUNNEL
 WIRING DIAGRAMS
 SHEET NO. 3

DATE: 10-6-78
 DRAWING NO: E-T-8S

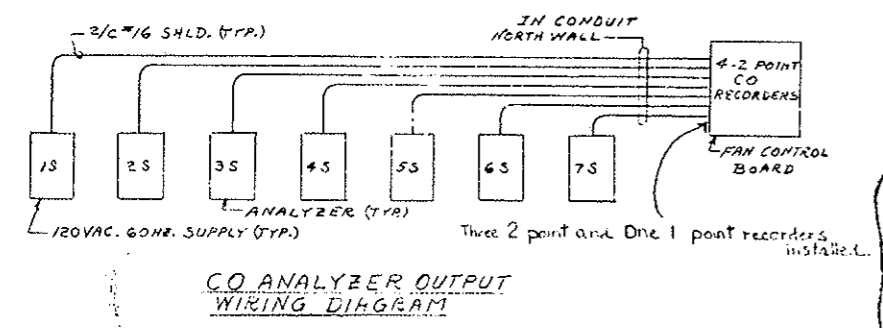
(R-1) REVISED FOR PROJ NO I70-3(83)220
NIC FOR NORTH BORE T.V. REV. 10-6-78

AS CONSTRUCTED
NO REVISIONS REVISED VOID

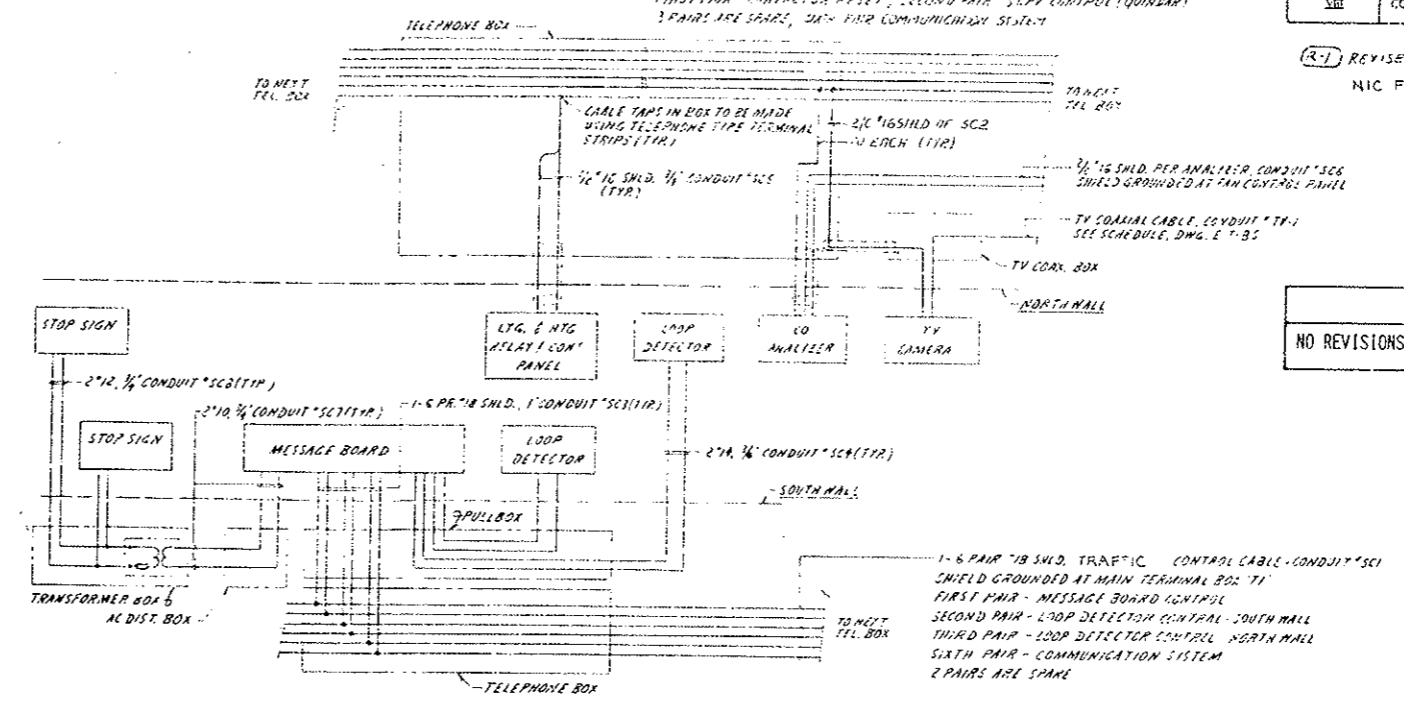


POWER FEEDER WIRING DIAGRAM

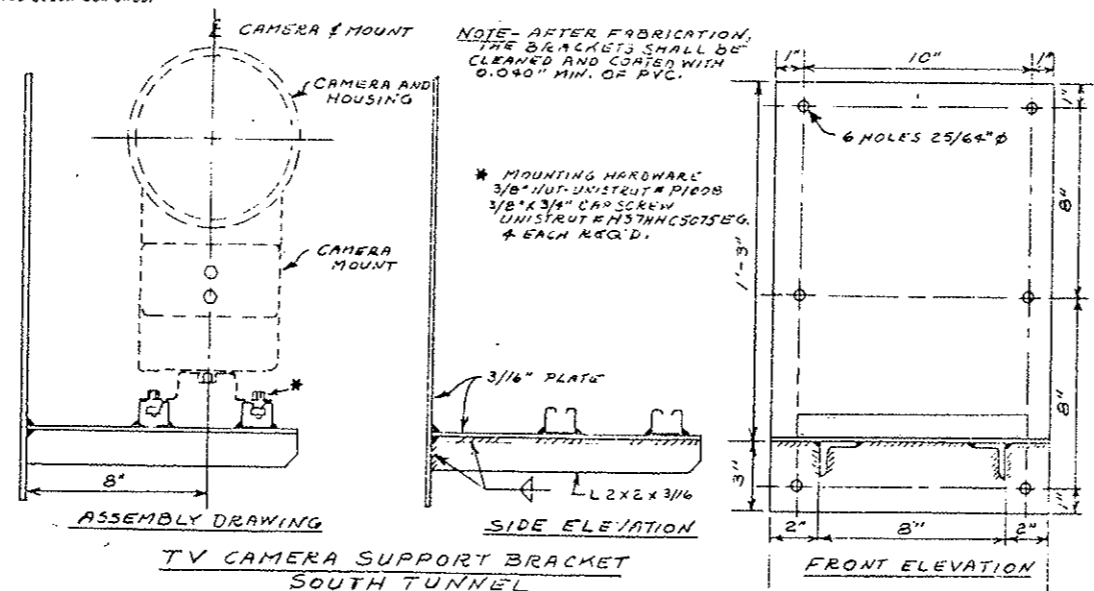
CONDUIT NO.	POINT OF ORIGIN	VOLTAGE	HALL	TV CAMERA	CO ANALYZER	MESSAGE BOARD ZONE	RECEPT.
P41	WEST VENT. BLDG.	120/208	NORTH	15, 17S	*15	---	*3M, 4M, 5M
P42	WEST VENT. BLDG.	120/208	SOUTH	---	---	---	*3S, 5S
P31	WEST VENT. BLDG.	480	SOUTH	---	---	*15 F 2S	---
P15	WEST PASSAGEWAY	120/208	NORTH	*25 / 4S	*25 / 3S	---	*6M, 7M, 9M 10M, 11M
P16	WEST PASSAGEWAY	120/208	SOUTH	---	---	---	*7S, 10S
P8	WEST PASSAGEWAY	480	SOUTH	---	---	*3S F 4S	---
P15	CTR. PASSAGEWAY	120/208	NORTH	*5S 6S 7S	*4S / 5S	---	*12M, 13M, 15M 14M, 17M, 18M
P16	CTR. PASSAGEWAY	120/208	SOUTH	---	---	---	*12S, 15S, 17S
P8	CTR. PASSAGEWAY	480	SOUTH	---	---	*5S 6S 7S	---
P15	EAST PASSAGEWAY	120/208	NORTH	*8S / 9S	*6S	---	*15M, 20M 22M, 23M
P16	EAST PASSAGEWAY	120/208	SOUTH	---	---	---	*12S, 22S
P8	EAST PASSAGEWAY	480	SOUTH	---	---	*8S / 9S	---
P41	EAST VENT. BLDG.	120/208	NORTH	10S, 11S	*7S	---	*24M, 25M, 26M
P42	EAST VENT. BLDG.	120/208	SOUTH	12S	---	---	*24S, 24S
P31	EAST VENT. BLDG.	480	SOUTH	---	---	*10S 4NS	---



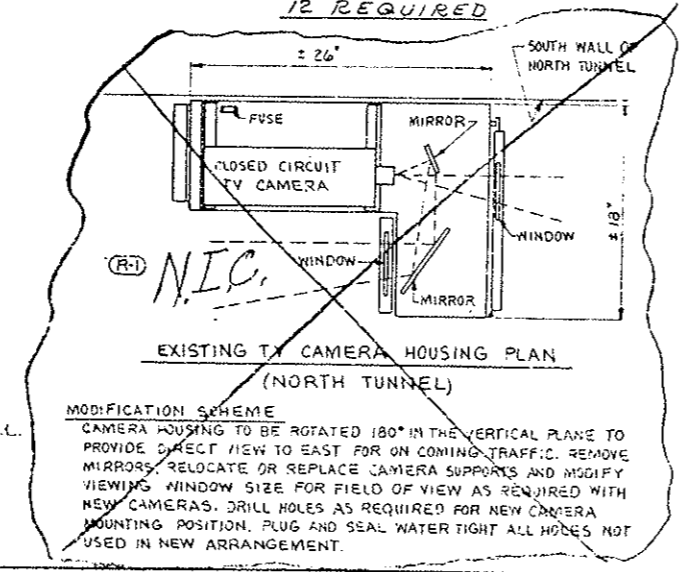
CO ANALYZER OUTPUT WIRING DIAGRAM



CONTROL SIGNAL WIRING DIAGRAM



TV CAMERA SUPPORT BRACKET SOUTH TUNNEL 12 REQUIRED



MODIFICATION SCHEME
CAMERA HOUSING TO BE ROTATED 180° IN THE VERTICAL PLANE TO PROVIDE DIRECT VIEW TO EAST FOR ON COMING TRAFFIC. REMOVE MIRRORS, RELOCATE OR REPLACE CAMERA SUPPORTS AND MODIFY VIEWING WINDOW SIZE FOR FIELD OF VIEW AS REQUIRED WITH NEW CAMERAS. DRILL HOLES AS REQUIRED FOR NEW CAMERA MOUNTING POSITION. PLUG AND SEAL WATER TIGHT ALL HOLES NOT USED IN NEW ARRANGEMENT.

NO.	REVISIONS	DATE	BY	CHKD
1	AS CONSTRUCTED			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
SECOND BORE

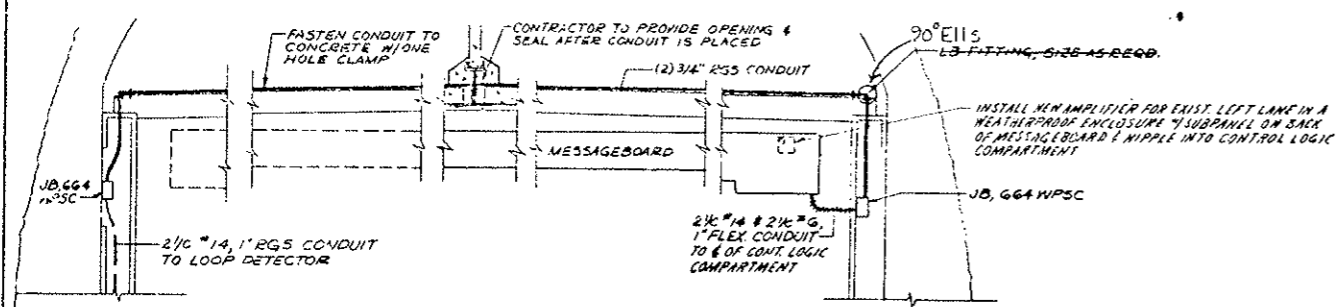
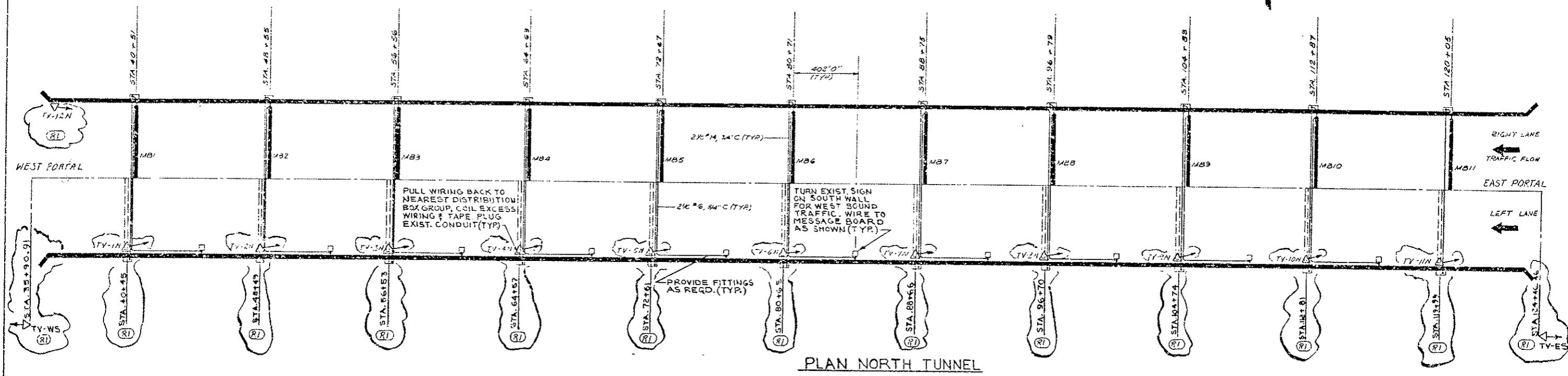
ELECTRICAL
TUNNEL
WIRING DIAGRAMS
SHEET NO. 4

DESIGNED BY: [Signature]
CHECKED BY: [Signature]
SCALE: NONE
ORDER NO: CI4570

DATE: 2-26-78
DRAWING NO: E-T-9S



REVISED FOR PROJ. NO. 170-1(83)220
 NIC FOR NORTH BORE T.V. REV. 10-6-73



- NOTE:
1. MESSAGEBOARDS ORIGINALLY LOCATED ON SOUTH WALL OF NORTH TUNNEL TO BE LOCATED IN SOUTH TUNNEL PER DWG. E-T-15 & TC-43
 2. EXISTING LOOP DETECTORS IN SOUTH LANE MUST BE WIRED TO MESSAGE BOARD REMAINING IN NORTH LANE.
 3. RELOCATE TV-WS TO NEW LOCATION AT STATION SHOWN.
 4. T.V.-IN THRU TV-12N NOT IN CONTRACT 83.



PRINT RECORD

DATE PUBLISHED	DATE REVISION	DATE BY	CHKD
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PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY
5 5 10	5 5 10	5 5 10	5 5 10

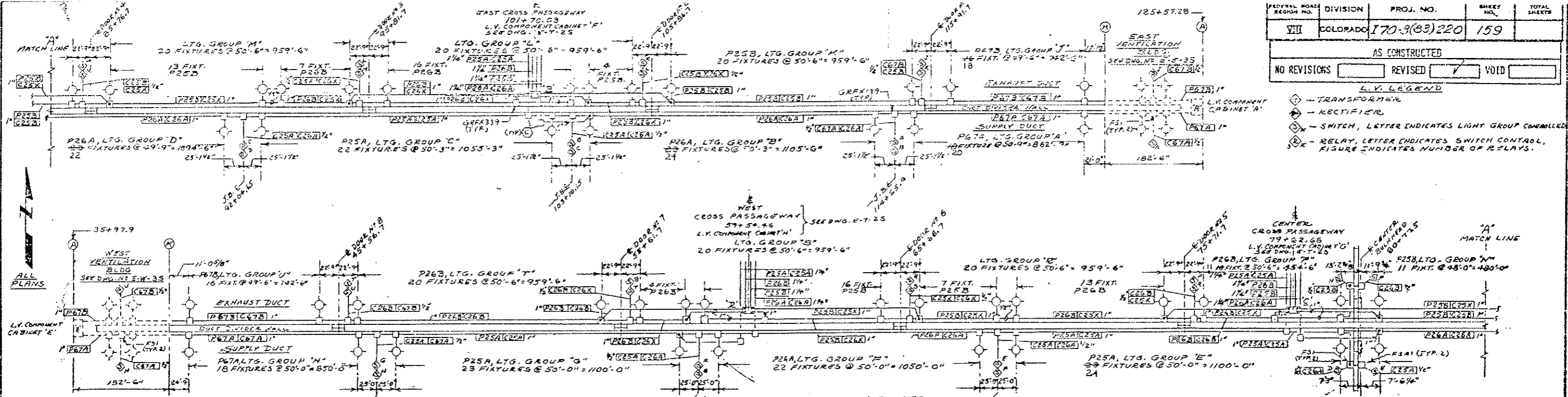
REVISIONS		DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND BORE				
ELECTRICAL				
NORTH TUNNEL				
TRAFFIC CONTROL MODIFICATIONS				
LEARN	JEJ 7/16/74			(83)
CHECKED	KPJ 11/14			DRAWING NO.
ORDER NO.	C14570			E-T-115

AS CONSTRUCTED

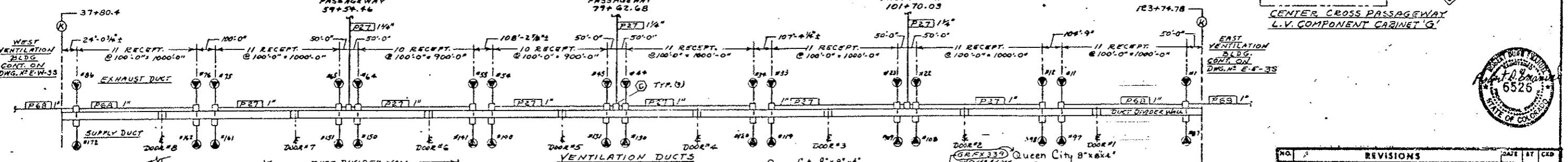
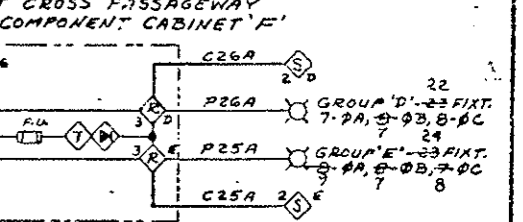
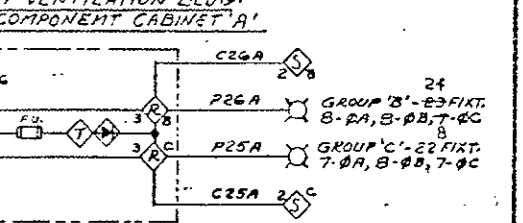
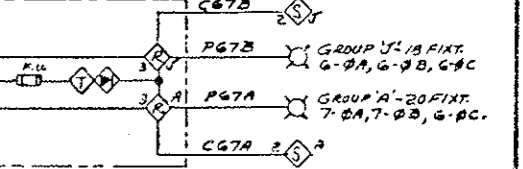
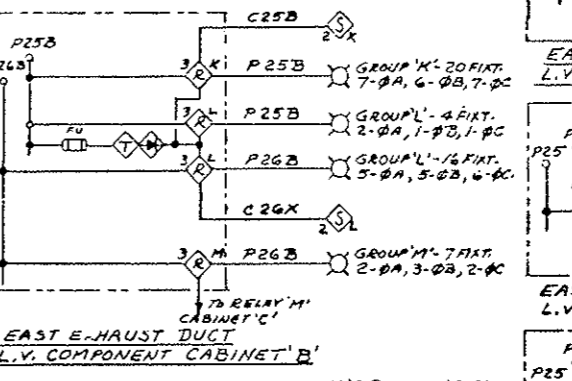
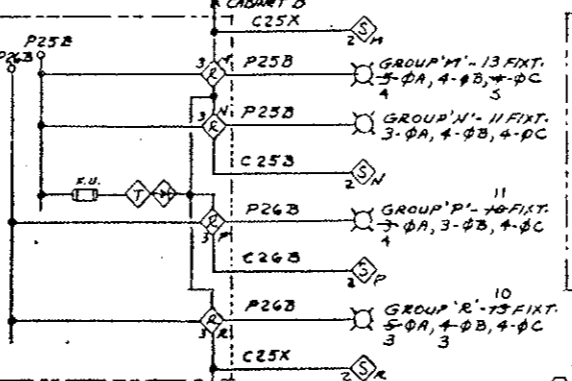
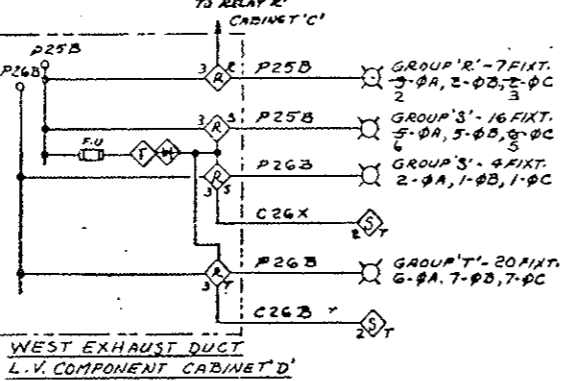
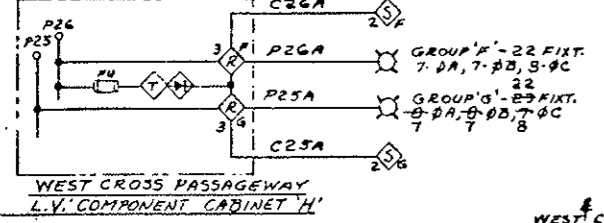
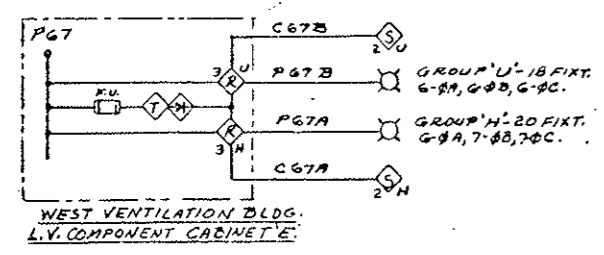
NO REVISIONS REVISED VOID

L.V. LEGEND

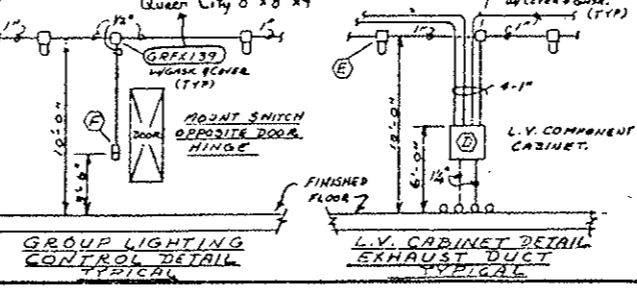
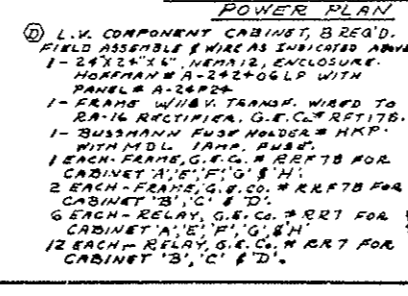
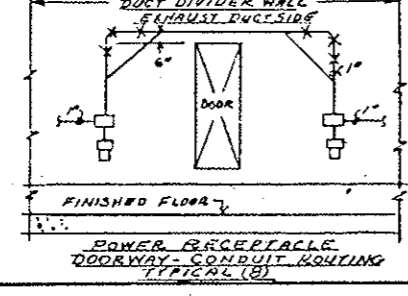
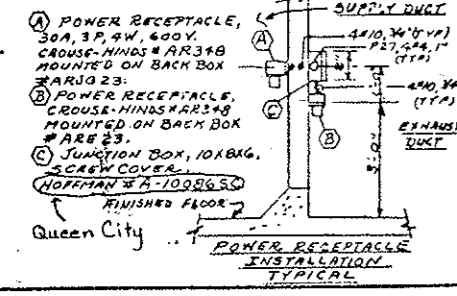
- ◇ - TRANSFORMER
- ⊠ - RECTIFIER
- ⊞ - SWITCH, LETTER INDICATES LIGHT GROUP CONTROLLED
- ⊞ - RELAY, LETTER INDICATES SWITCH CONTROL, FIGURE INDICATES NUMBER OF RELAYS.



VENTILATION DUCTS LIGHTING PLAN



VENTILATION DUCTS POWER PLAN



PRINT RECORD

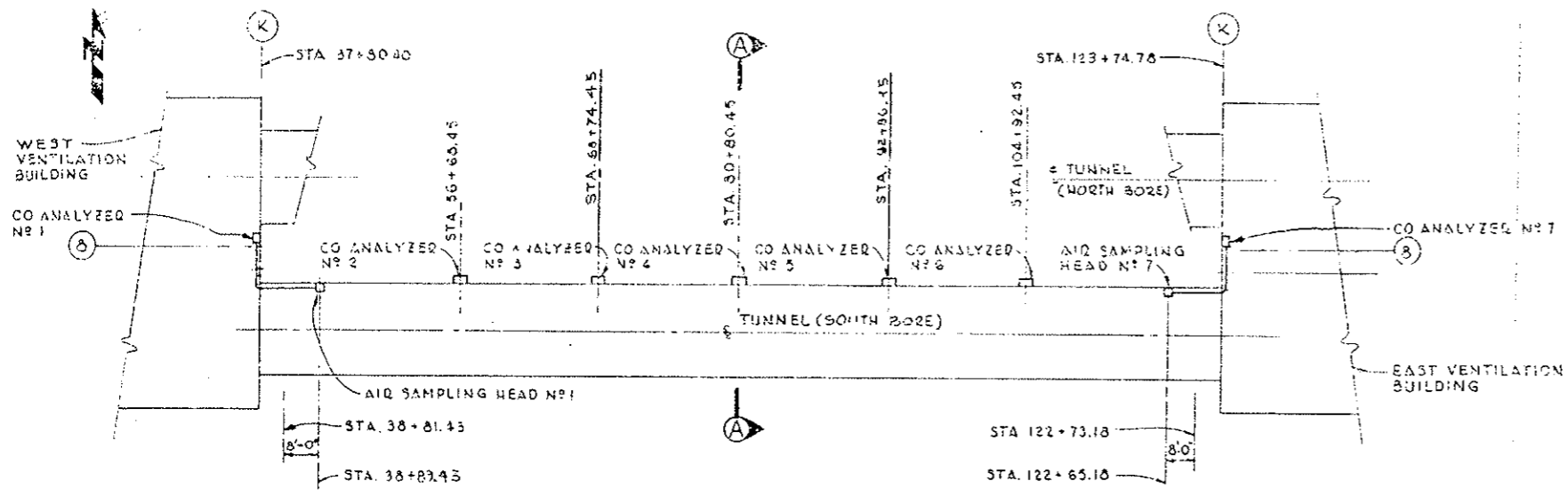
DATE ISSUED	7/7/77
DESIGNED BY	D
FOR	FCR
CUSTOMER	0861
FIELD	-
INTRA CO.	KS

REVISIONS		DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND BORE				
ELECTRICAL				
TUNNEL				
VENTILATION DUCTS				
POWER LIGHTING PLANS DETAILS				
DRAWN	9/2	12/77		
CHECKED	10/5	1/1/78		
SCALE	NONE	ORDER NO.		
		CD635		

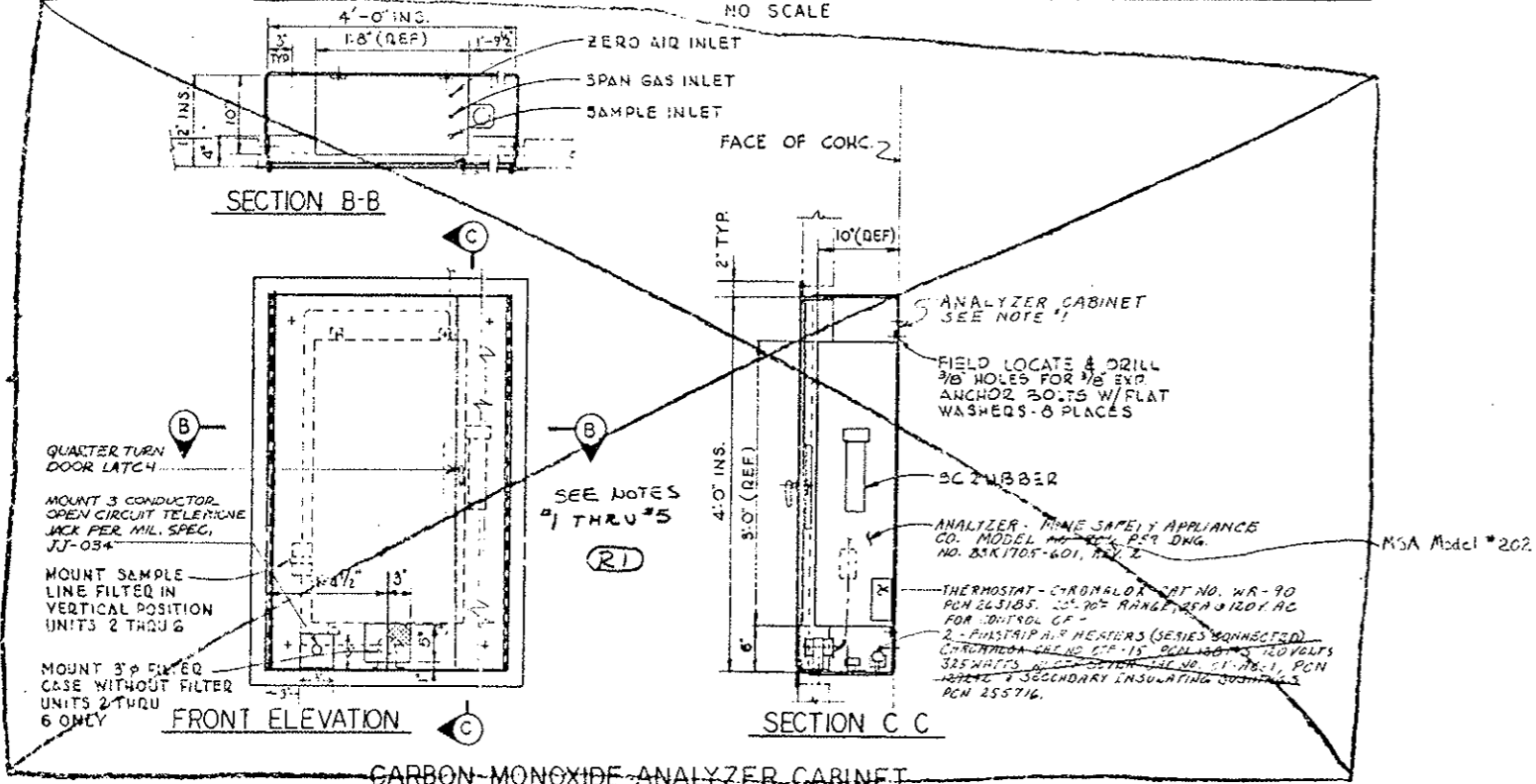
stearns-roger architects

DRAWING NO. E-T-125

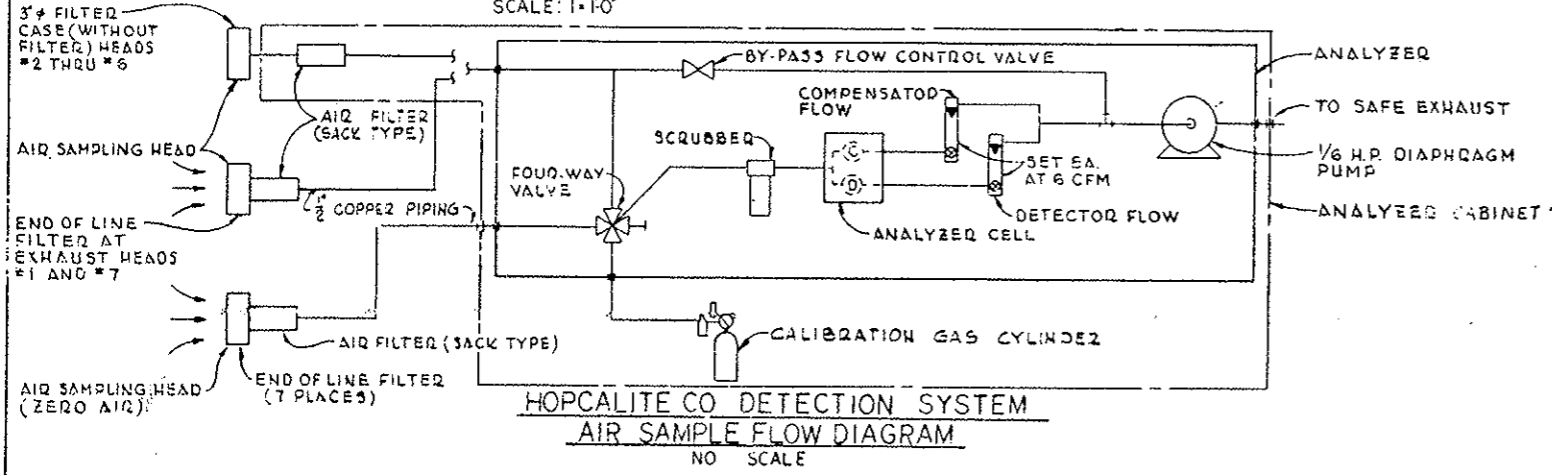




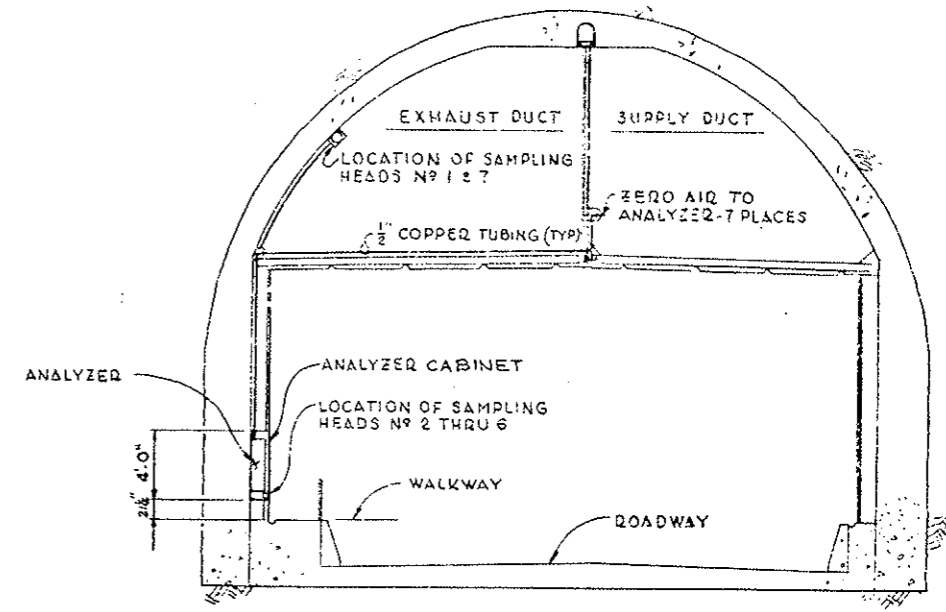
SCHEMATIC PLAN OF SOUTH TUNNEL AND PART OF VENTILATION BLDGS



CARBON MONOXIDE ANALYZER CABINET



HOPCALITE CO DETECTION SYSTEM AIR SAMPLE FLOW DIAGRAM



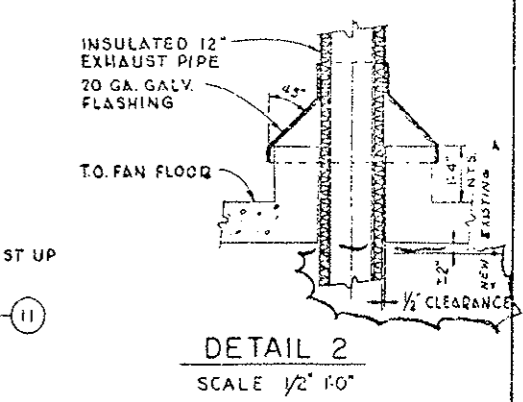
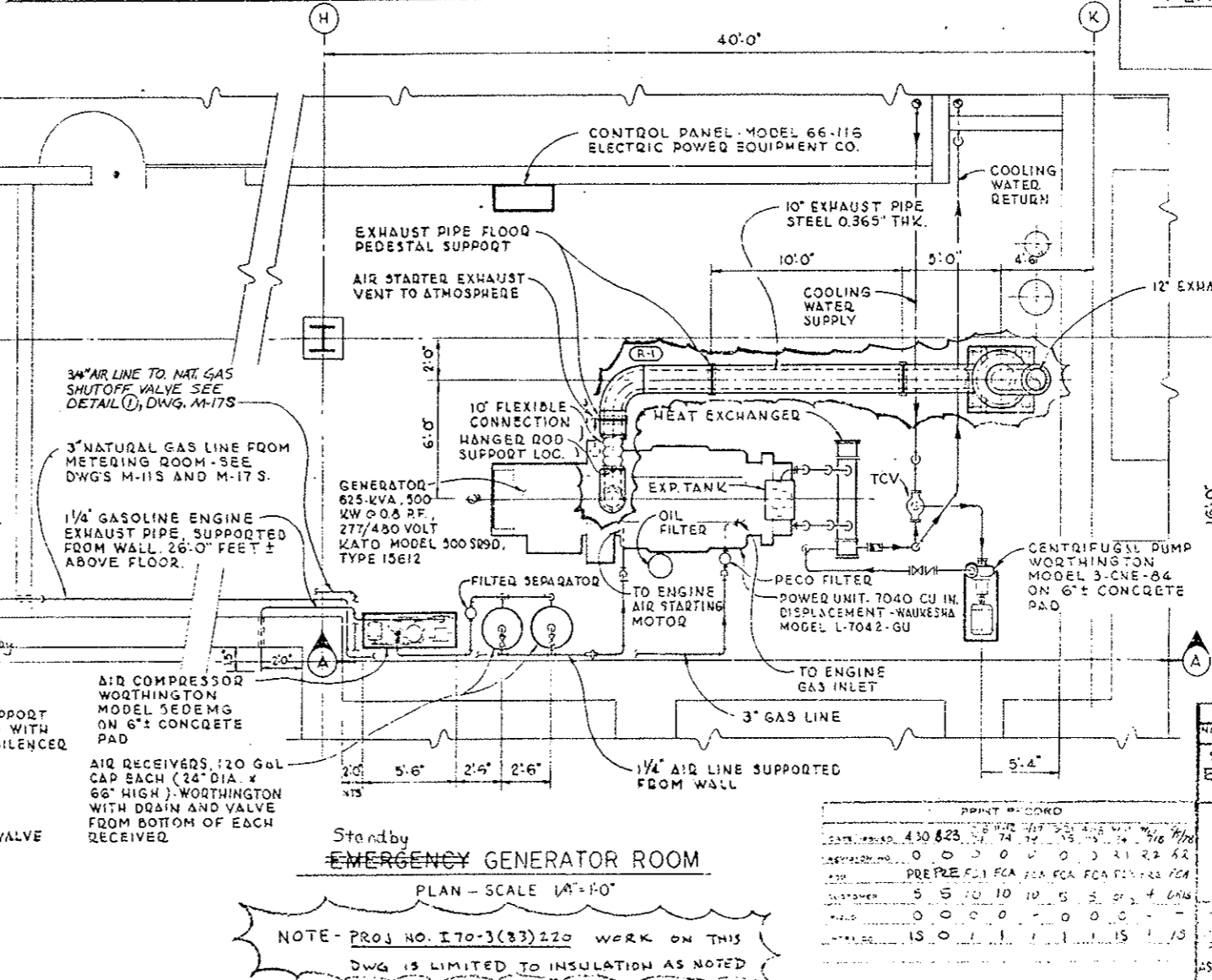
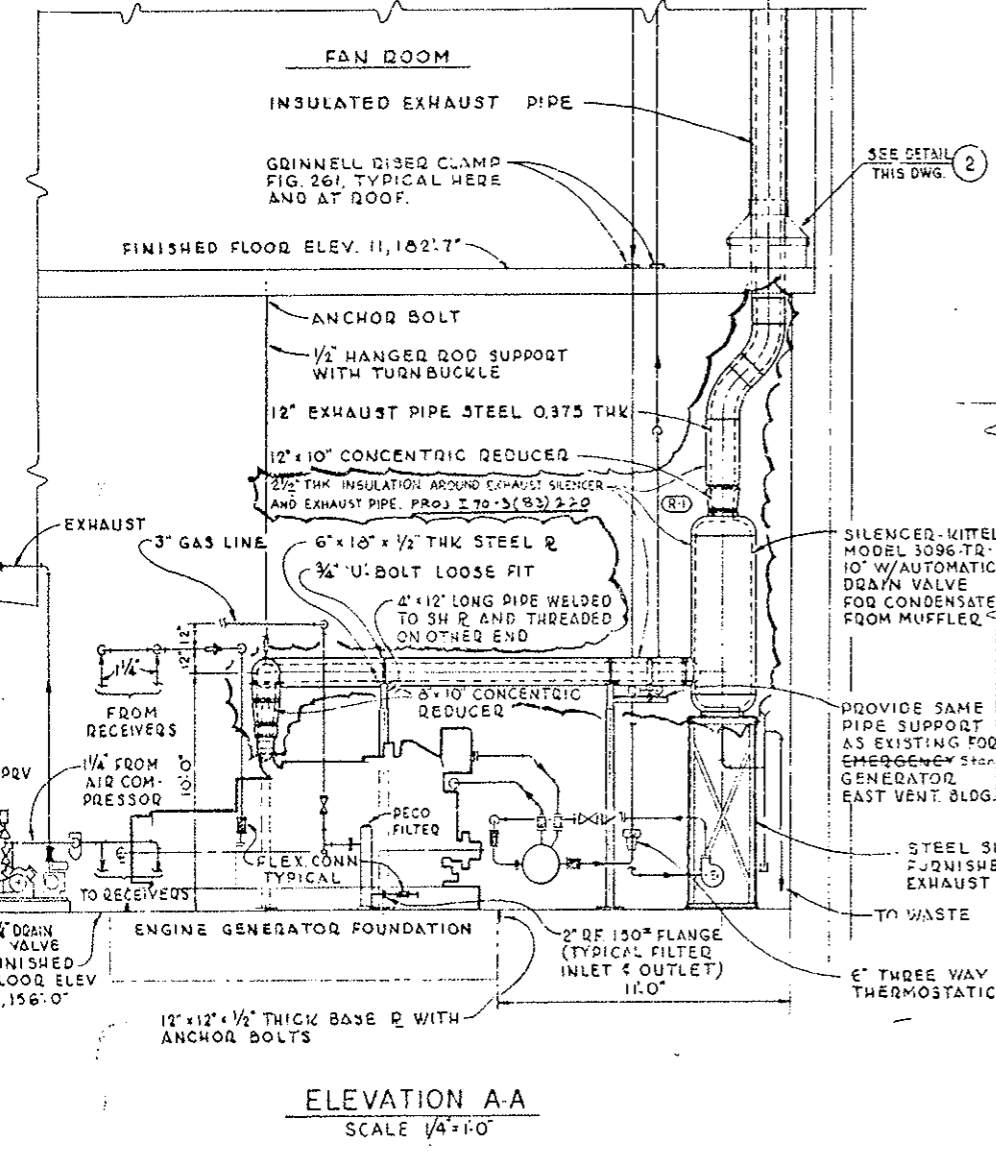
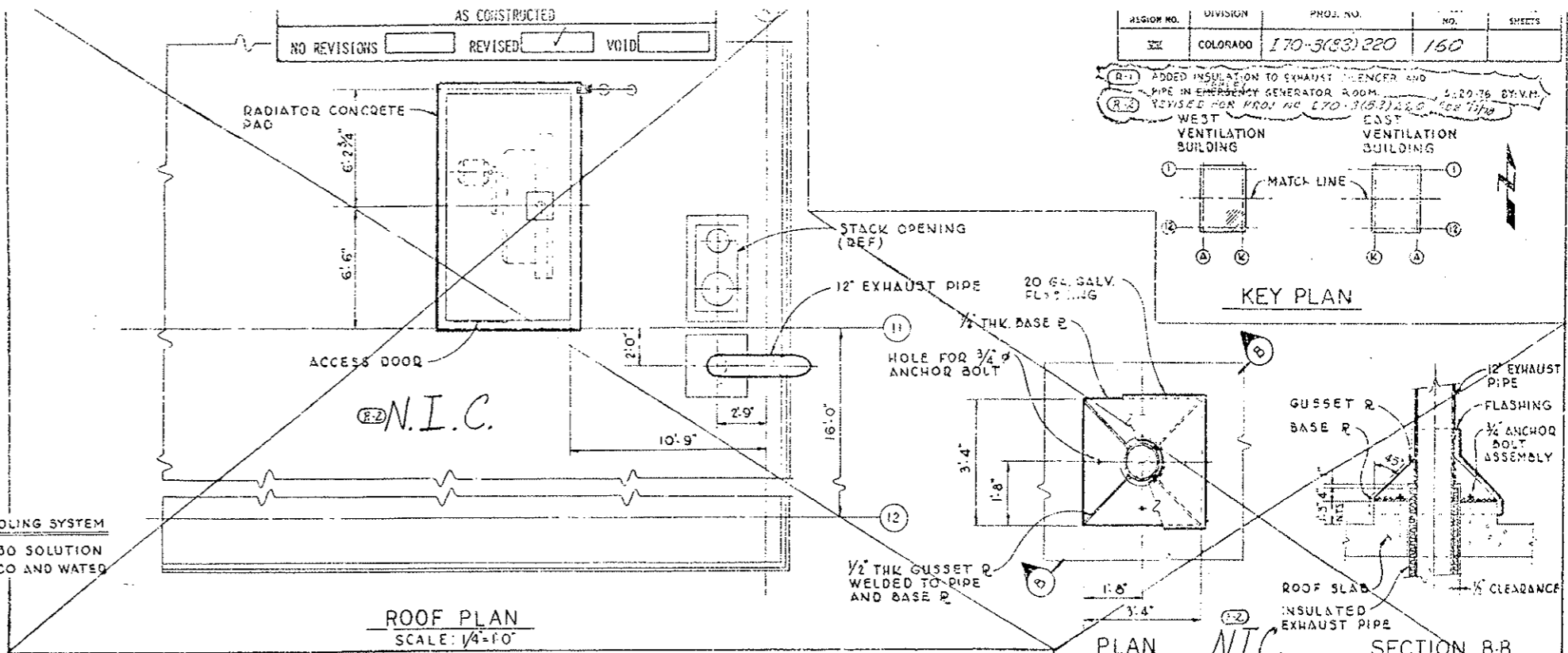
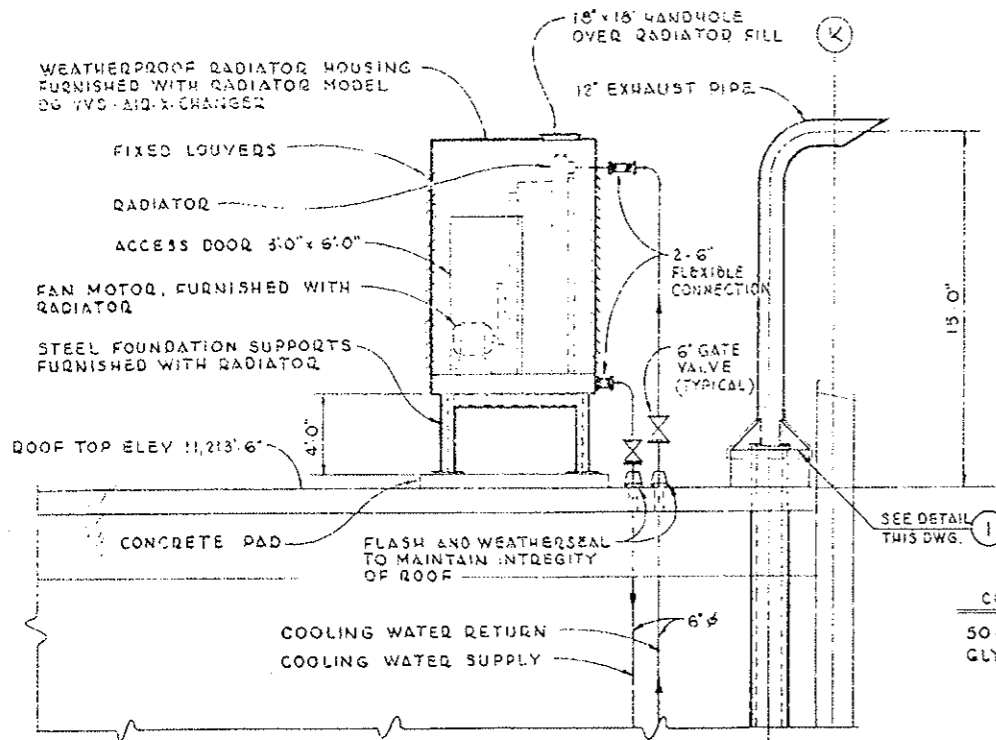
SECTION A-A TYPICAL
SCALE 3/16"=1'-0"

- NOTES:
1. ALL ANALYZERS EXCEPT #1 & 7 WILL HAVE A CABINET AS DETAILED ON DWG (WF-6) (R1)
 2. UNITS 2 THRU 6 WILL BE MOUNTED ON WALL ALONG ROADWAY IN TUNNEL AND REQUIRE AIR SAMPLING HEADS MOUNTED IN OPENING BELOW CABINET IN TILE WITH 5"x6" SCREEN. (R1)
 3. UNIT 1 & 7 WILL BE MOUNTED IN EXIST. CO. ANAL. ROOM IN VENTILATION BUILDINGS WITH AIR SAMPLING HEADS LOCATED IN EXHAUST DUCT - NOT ON CABINET DOOR.
 4. CO ANALYZER VERTICAL PIPING SHALL TERMINATE IN A DRIP LEG, AND NO SAGS PERMITTED IN HORIZONTAL PIPING.
 5. ANALYZER CABINETS FOR UNITS 2 THRU 6 WILL CONTAIN A THERMOSTAT-CHROMALOX CAT. NO. WR-90, PCN 263185, 20°-90° RANGE, 25A @ 120V. AC. (OR EQUAL) FOR CONTROL OF 2-FINSTRIP AIR HEATERS (SERIES CONNECTED) CHROMALOX CAT. NO. 07F-15, PCN 128143, 120 VOLTS, 325 WATTS, WITH OTF COVER CAT. NO. 07AC-1, PCN 129202 + SECONDARY INSULATING BUSHINGS PCN 255716.
 Chromalox C11835 579/120 V 350 W 1K1
 Two each cabinet.

FOR INFORMATION ONLY

NO.	REVISIONS	DATE	BY	CHKD
1	STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND SORE			
MECHANICAL CARBON MONOXIDE SAMPLING AND ANALYZING SYSTEM PLANS, SECTIONS AND DETAILS				
DATE ISSUED	5-31-73	8-23	10/15/73	11/15/73
REVISED	0	0	0	0
PREPARED BY	PRE	PRE	PRE	PRE
CHECKED BY	5	5	5	5
FIELD	0	0	0	0
NOTED	1-5	15	0	1

PROJECT NO.	GEN 528-74	DATE	5-30-74
AS NOTED	C 14570	DRAWING NO.	M-13 S

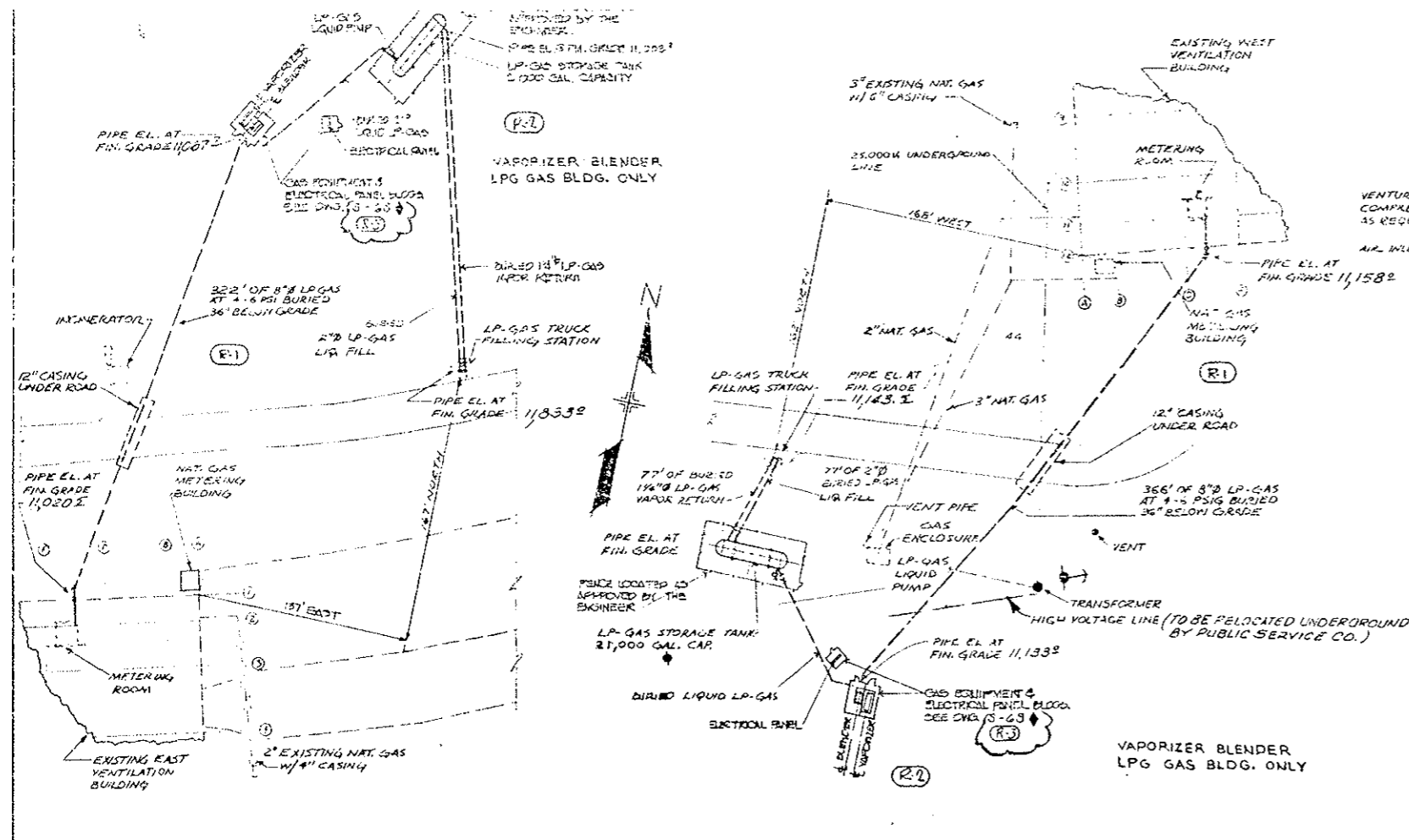


NOTES:

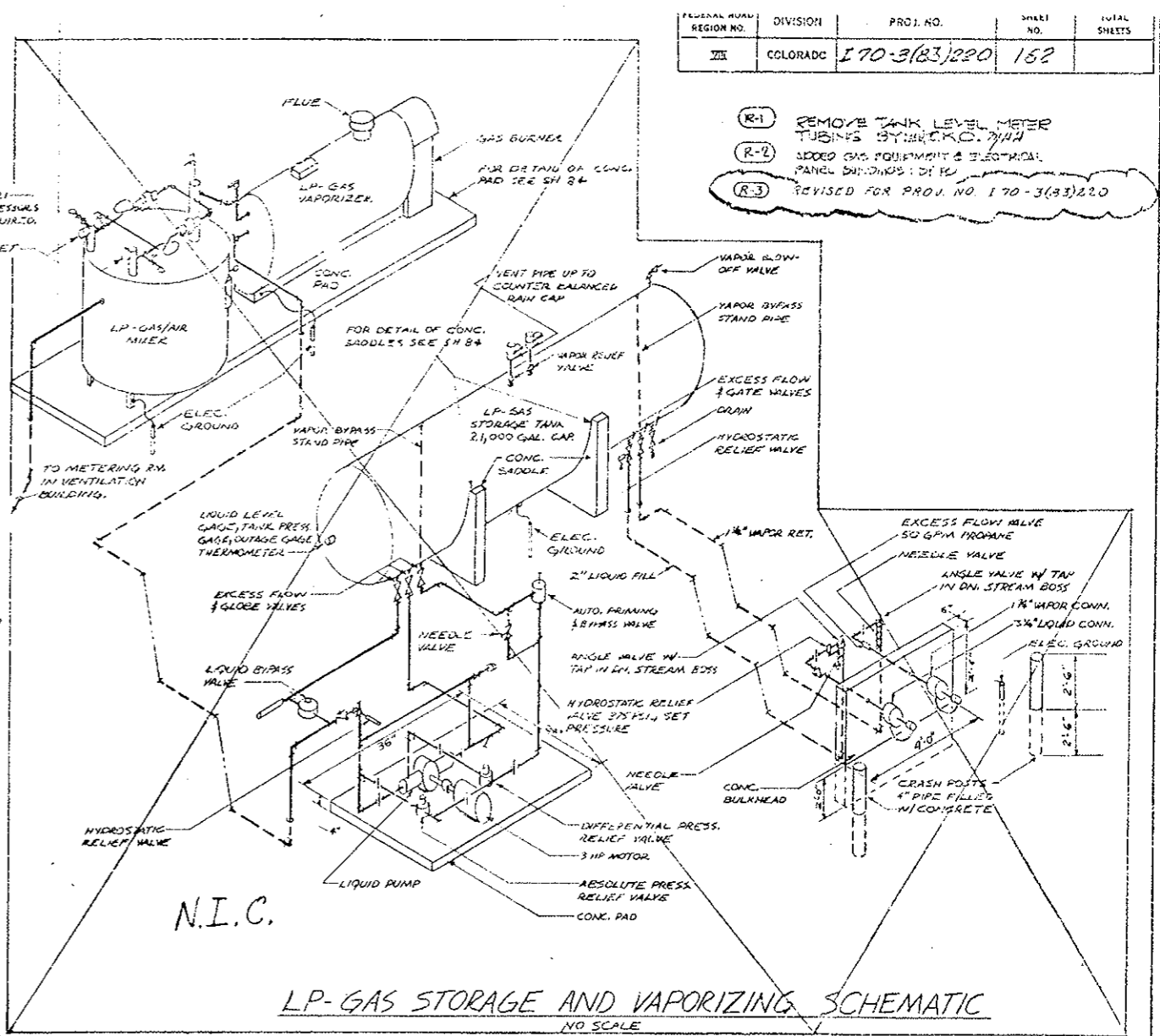
1. THE INSTALLATION OF THE EMERGENCY GAS FIRED ENGINE SHALL BE IN ACCORDANCE WITH THE NATIONAL FIRE CODE, NFPA # 37, LATEST EDITION, TITLED, "STANDARD FOR THE INSTALLATION AND USE OF COMBUSTION ENGINES AND GAS TURBINES"
2. ALL EQUIPMENT TO BE ARRANGED SIMILAR AND COMPLETE AS THE GENERATOR SYSTEM NOW EXISTING IN THE EAST VENTILATION BLDG. (SYSTEM INCLUDES AIR COMPRESSOR, RECEIVER, TANKS, GENERATOR, POWER UNIT, REMOTE COOLER, HEAT EXCHANGER, SILENCER, CENTRIFUGAL PUMP, CONTROL PANEL AND REQ'D PIPING WITH COMPONENTS.)

NO.	REVISIONS	DATE	BY	CHKD
1	STATE OF COLORADO - DEPARTMENT OF HIGHWAYS			
EISENHOWER MEMORIAL TUNNEL				
SECOND BORE				
MECHANICAL				
WEST VENTILATION BUILDING				
EMERGENCY GENERATOR ROOM				
PLAN, ELEVATION AND DETAILS				
M-2 S				

DATE	BY	CHKD
4-30-83
5-5-83
5-10-83
5-15-83



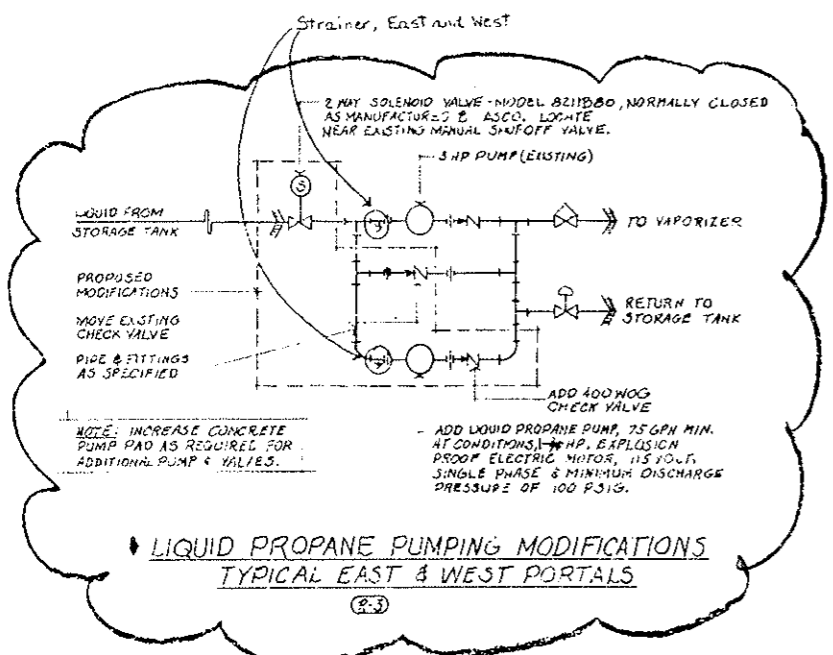
EAST PORTAL STANDBY LP-GAS SYSTEM PLAN
SCALE: 1" = 50'-0"



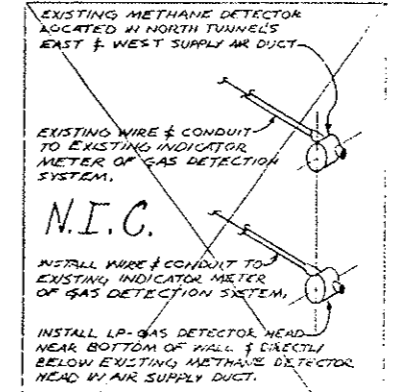
WEST PORTAL STANDBY LP-GAS SYSTEM PLAN
SCALE: 1" = 50'-0"

LP-GAS STORAGE AND VAPORIZING SCHEMATIC
NO SCALE

- (R-1) REMOVE TANK LEVEL METER TUBING BY N.I.C.
- (R-2) ADD GAS EQUIPMENT & ELECTRICAL PANEL BUILDINGS (D.F.W.)
- (R-3) REVISED FOR PROJ. NO. 170-3(83)220



LIQUID PROPANE PUMPING MODIFICATIONS TYPICAL EAST & WEST PORTALS
(R-3)



LP-GAS DETECTION FOR EXISTING NORTH TUNNEL
NO SCALE

AS CONSTRUCTED		
NO REVISION	REVISED	VOID

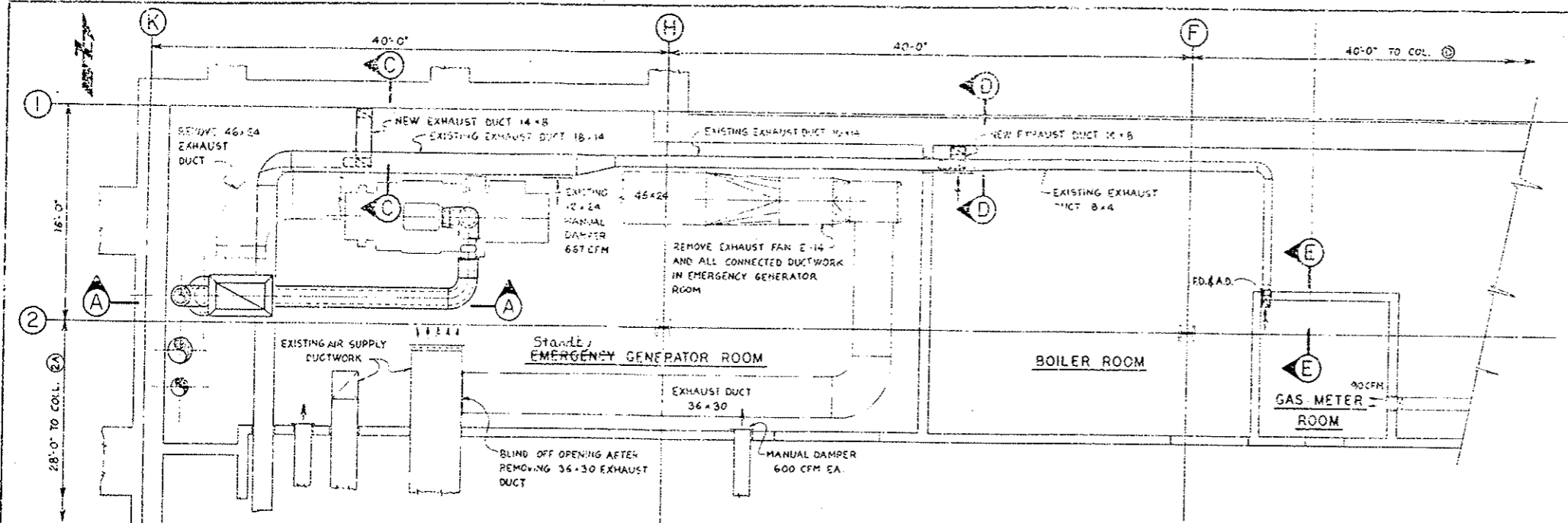
NOTES:
1. ALL LOCATIONS OF EQUIPMENT & PIPE LENGTHS INDICATED ON THIS DRAWING ARE APPROXIMATE. EXACT LOCATIONS & PIPE LENGTHS SHALL BE DETERMINED IN FIELD.
2. (R-3) INDICATES WORK IN PROJ. NO. 170-3(83)220.

PRINT RECORD	
DATE REVISION	BY
0 0 21 22 23 24	
PREPARED BY	DATE
5 5 08 10 14 08 16	
SCALE	AS NOTED
ORDER NO.	C14580

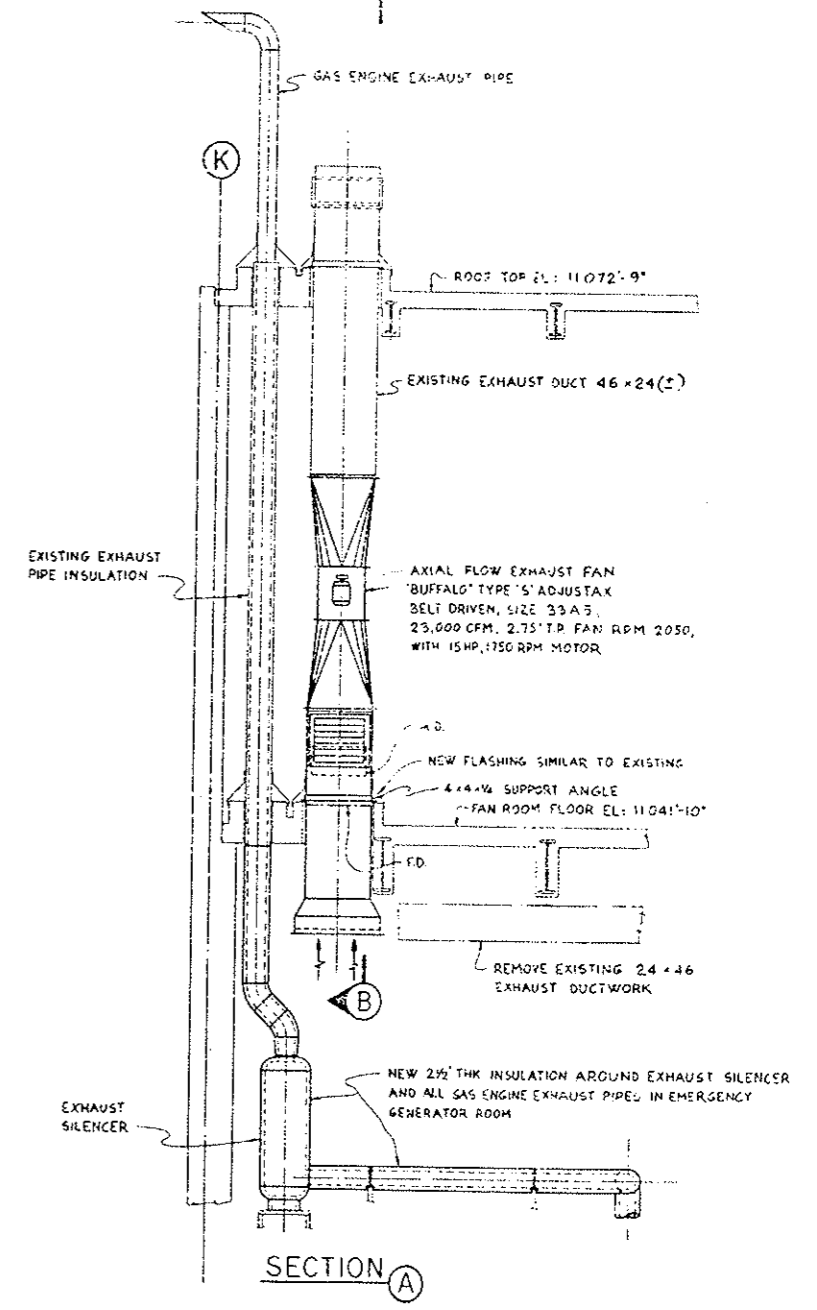
REVISIONS		DATE	BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS			
EISENHOWER MEMORIAL TUNNEL			
SECOND BORE			
MECHANICAL			
EAST AND WEST			
STANDBY PROPANE SYSTEMS			
PLANS & SCHEMATICS			
DRAWN	DATE	CHECKED	DATE
LUC	3/17/75	W.H.	3/17/75
SCALE	ORDER NO.	AS NOTED	C14580
DRAWING NO.	M-18 S		

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	170-3(83)220	163	

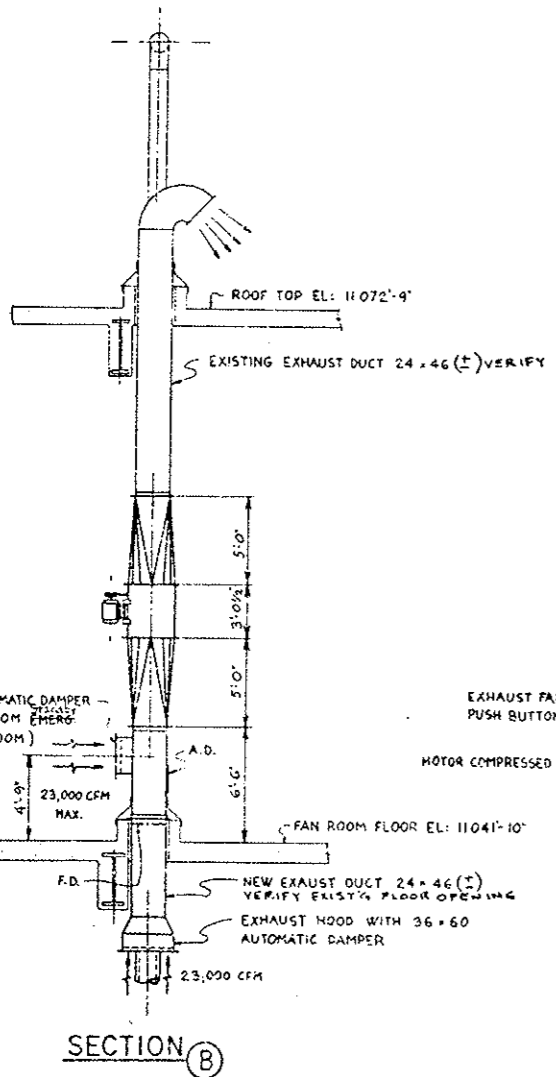
(R1) REVISED FOR PROJ. NO. 170-3(83)220



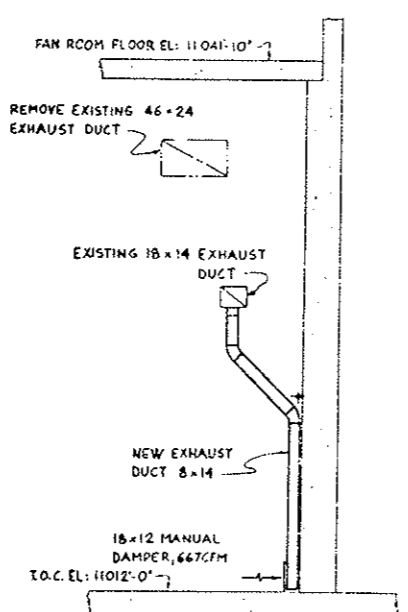
PLAN AT ELEVATION 11012'-0"



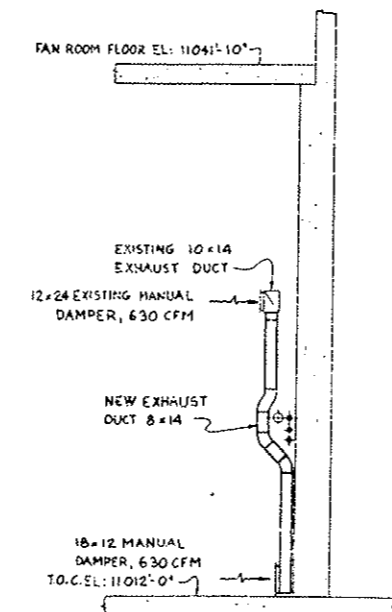
SECTION A



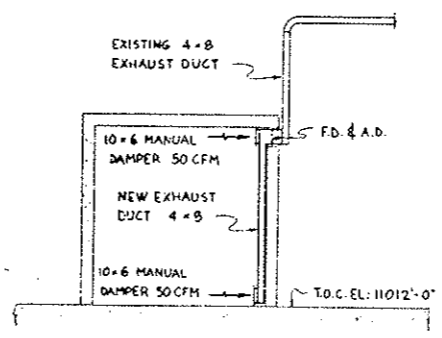
SECTION B



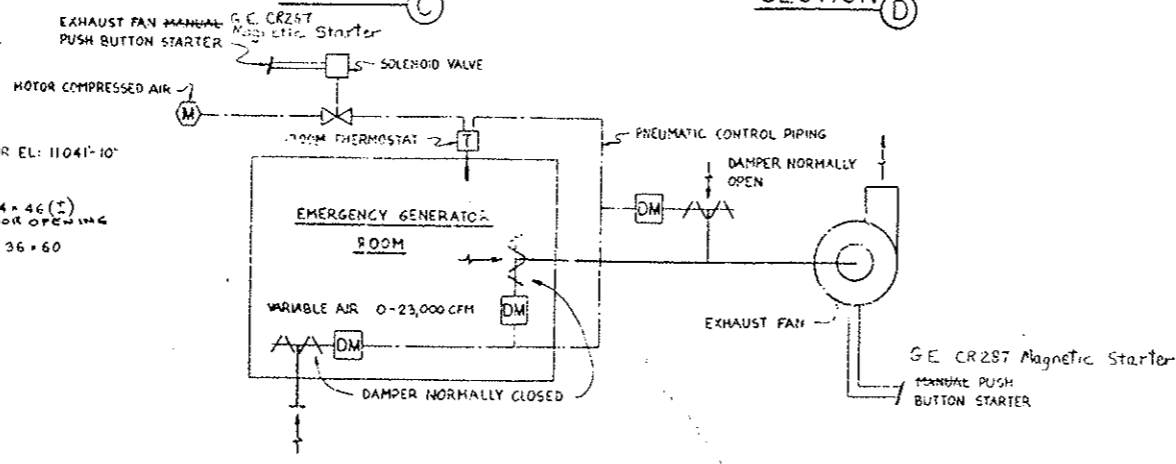
SECTION C



SECTION D



SECTION E



VENTILATION CONTROL DIAGRAM

NOTES:

- 1. FD & A.D. DENOTES LOCATION OF FIRE DAMPER AND ACCESS DOOR.

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
SECOND BORE

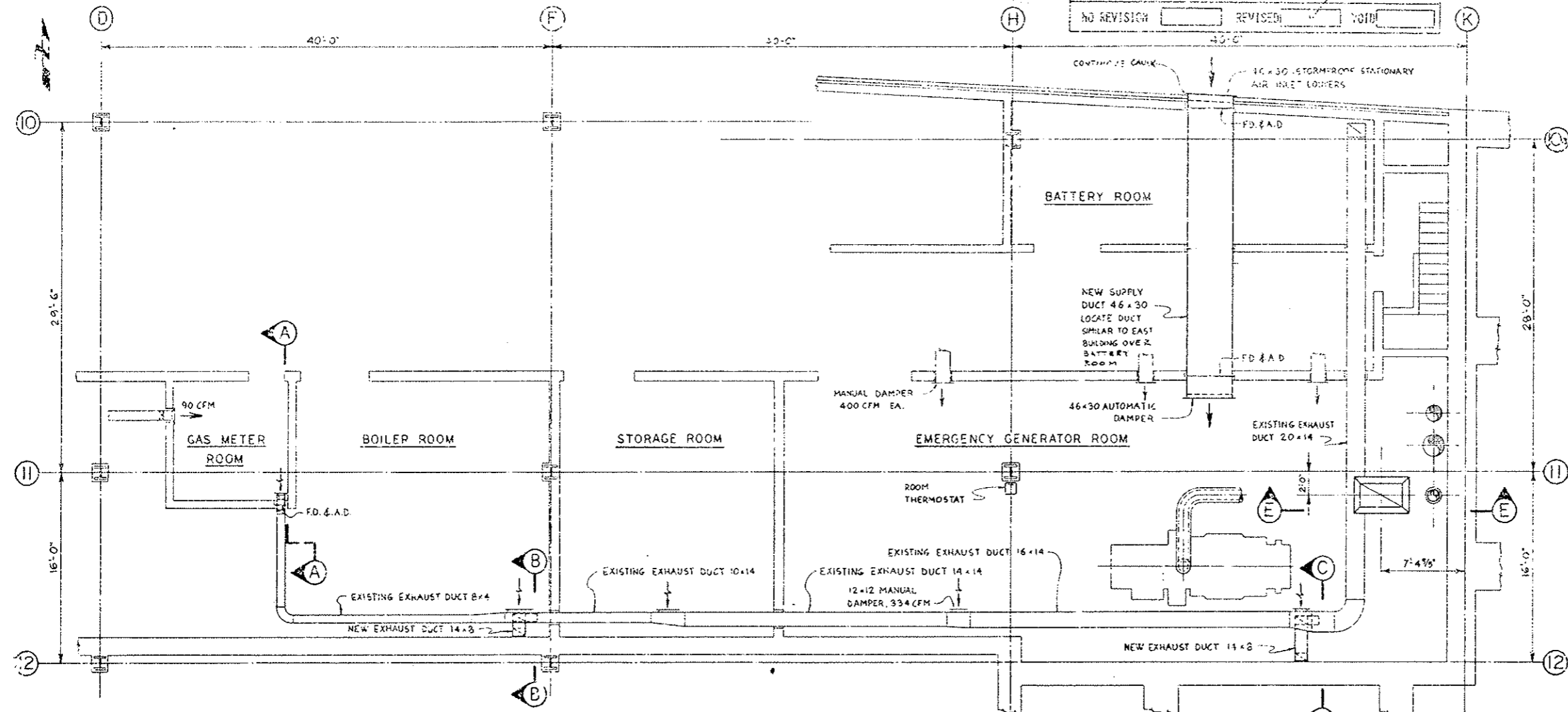
MECHANICAL
EAST VENTILATION BUILDING
EMERGENCY GENERATOR ROOM VENTILATION MODIFICATION
PLAN AND SECTIONS

6200
All Bunch

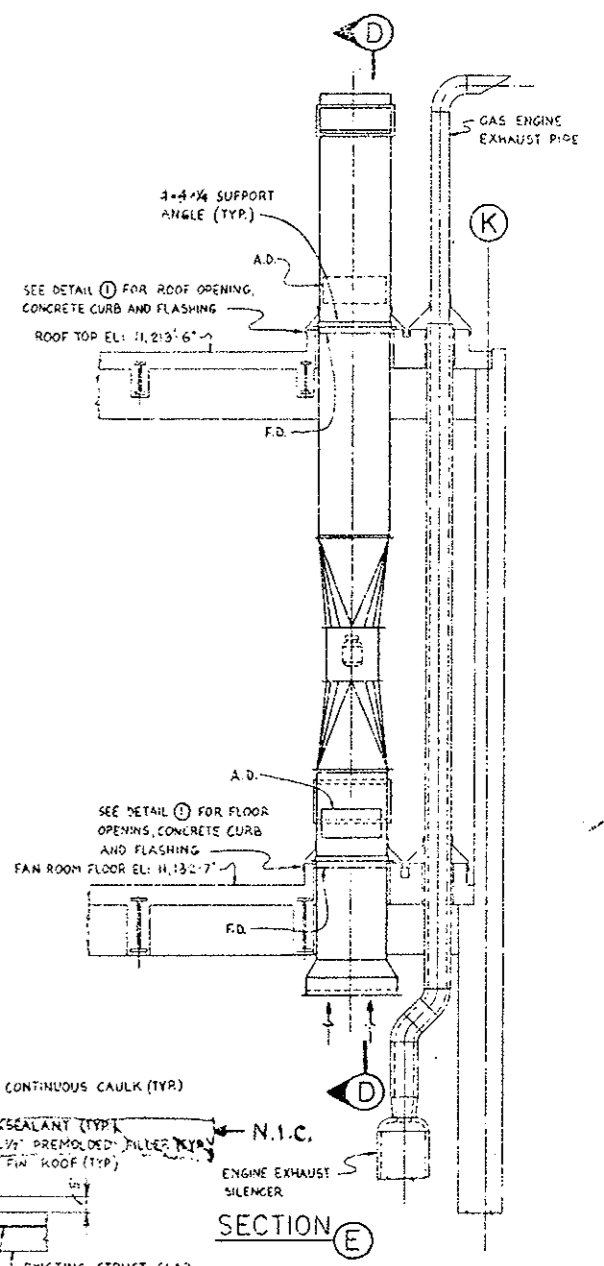
PRINT RECORD	
DATE ISSUED	02/19/76
REVISION NO.	0 R1 R1
DESIGNED BY	FCA PER FCA
CHECKED BY	01/4/76
FIELD	
INSTR. NO.	15-1-75

DATE	01/19/76	BY	01/19/76
REVISION NO.	0-2-76	BY	01/19/76
DATE	01/19/76	BY	01/19/76
DATE	01/19/76	BY	01/19/76

REVISED FOR PROJ. NO. 170 3(193) 230.

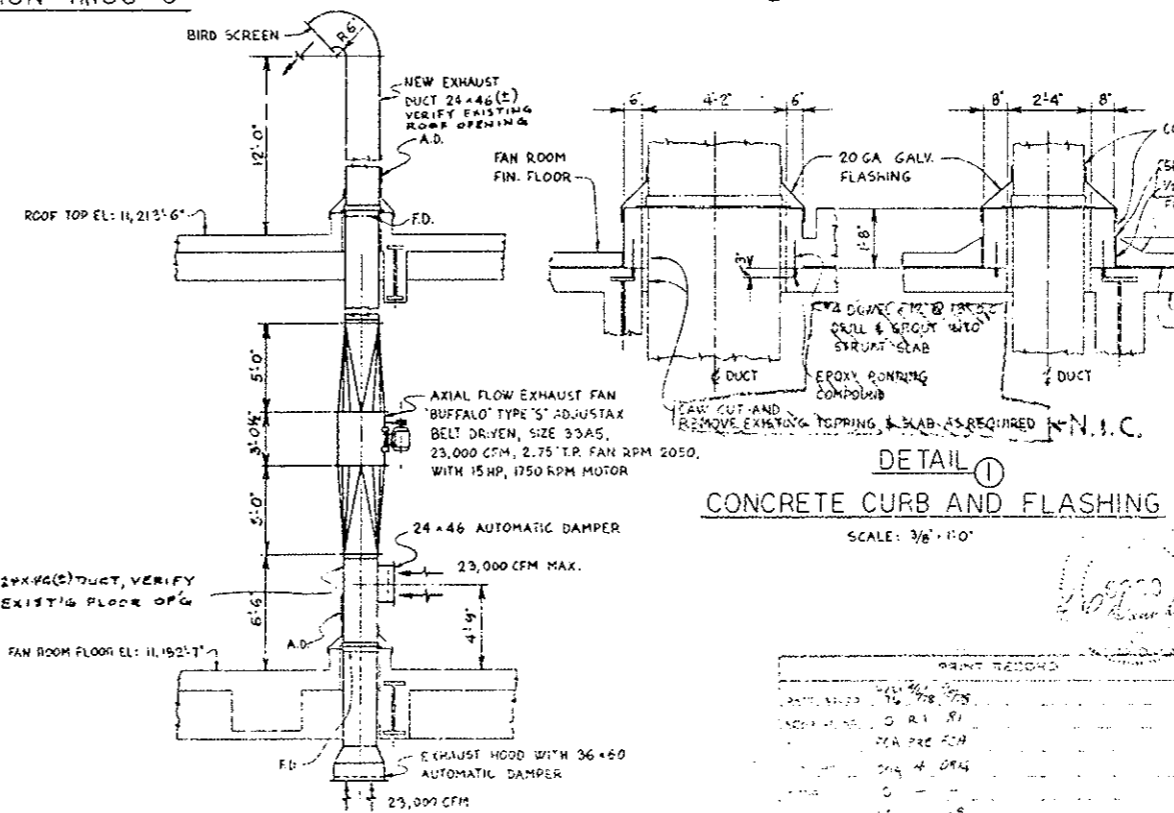


PLAN AT ELEVATION 11,156'-0"

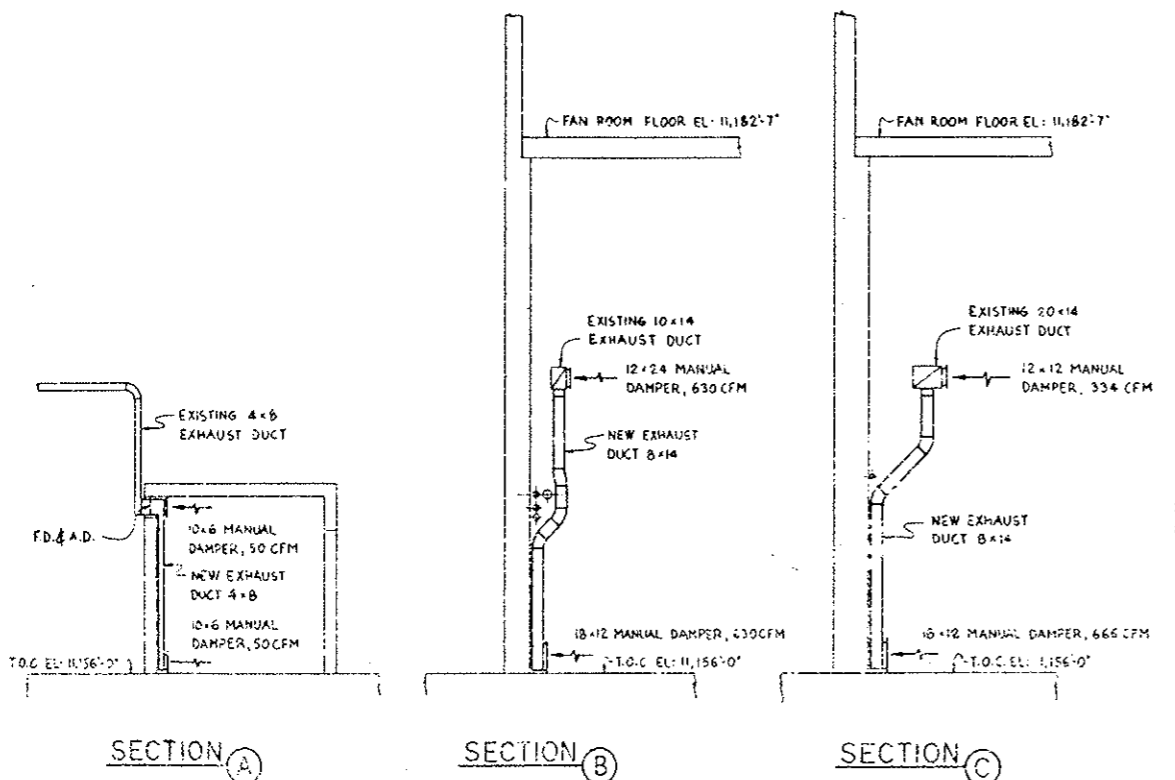


SECTION E

- NOTES:**
- SEE DWG M-195 FOR VENTILATION CONTROL DIAGRAM.
 - F.D. & A.D. DENOTES LOCATION OF FIRE DAMPER AND ACCESS DOOR.
 - APPROX 28x50 ROOF AND FLOOR OPENINGS ARE EXISTING. VERIFY SIZE PRIOR TO DETAILING DUCTS.



DETAIL 1
CONCRETE CURB AND FLASHING
SCALE: 3/8" = 1'-0"



SECTION A

SECTION B

SECTION C

SECTION D

NO.	REVISIONS	DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL STANDARD BORE				
MECHANICAL				
WEST VENTILATION BUILDING EMERGENCY GENERATOR ROOM VENTILATION MODIFICATION PLAN, SECTIONS AND DETAIL				
C-15 900				