

# DEPARTMENT OF HIGHWAYS STATE OF COLORADO

FEDERAL AID PROJECT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
170-3(83)220	COLORADO	I 70-3(83)220	1	

R.O.W. Acquired Under I 70-3(14)220  
I 70-3(18)  
I 70-3(26)  
PE. and Utilities under I 70-3(78)

AS NOTIFIED		
NO REVISIONS	REVISED	VOID

(R-1) Signature, Title block 10-17-78-E.B.

TABULATION OF LENGTH AND DESIGN DATA		
STATION	TOWNSHIP STRUCTURE No. 7-12-77	
	ROUTE COUNTY	CLEAR CREEK COUNTY
	LN. FT.	MILES
151+31.90 TO 151+97.82	ADJ. TO RPT.	
151+97.82 BEGIN I 70-3(83)220 + 151+97.82 ON I 70-3(81)220	2642.65	
62+43.47		1.116
125+57.28 END I 70-3(83)220 + 125+57.28 ON I 70-3(81)220		
125+57.28 TO 125+57.28	ADJ. TO RPT.	
PROJECT TOTAL	2642.65	1.196

SUMMARY		
	LN. FT.	MILES
SUMMIT COUNTY	2642.65	0.501
CLEAR CREEK COUNTY	3315.31	1.196
NET AND GROSS LENGTH	5959.45	1.697

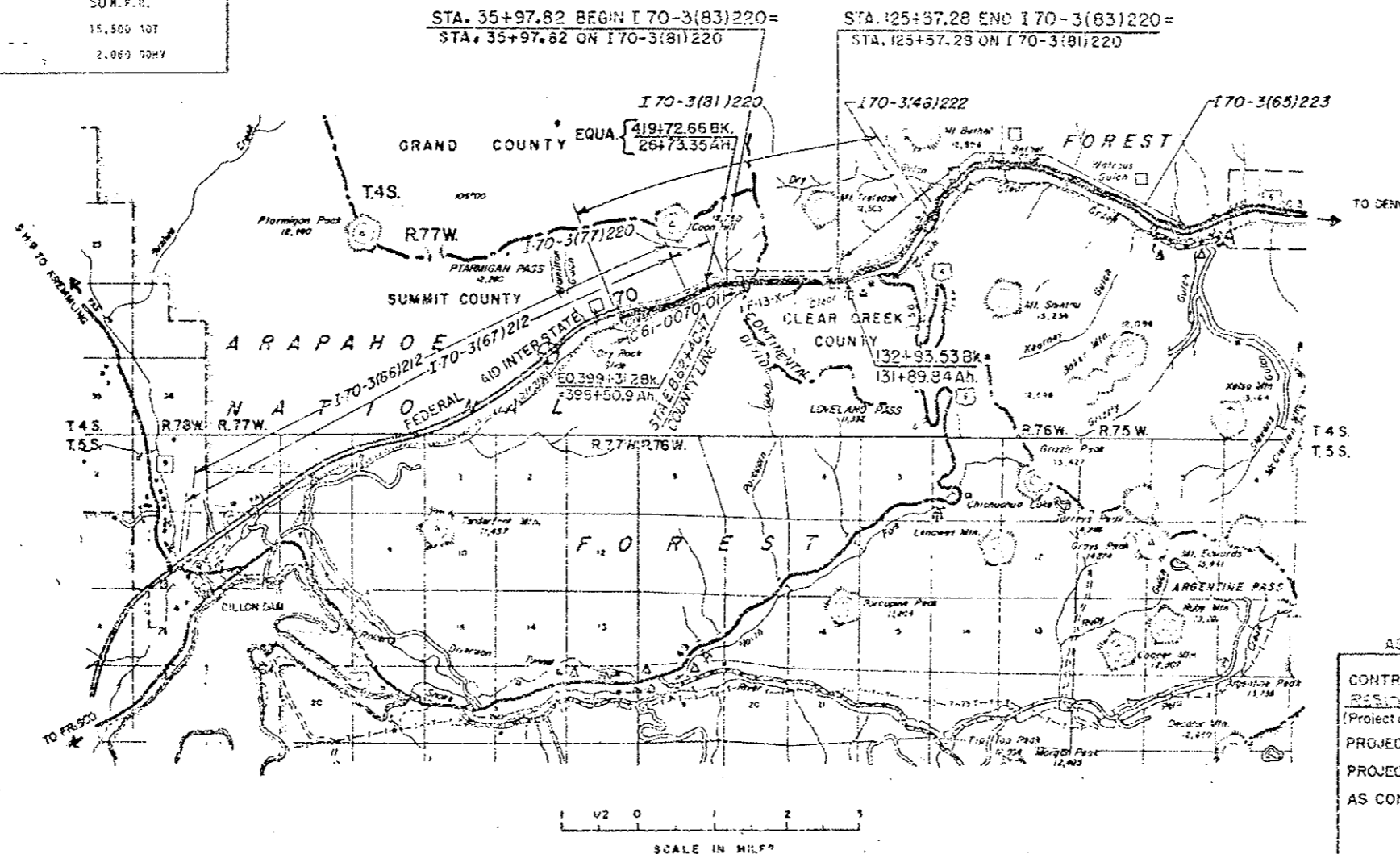
  

DESIGN DATA	
MAXIMUM DEGREE OF CURVE	3° 30'
MAXIMUM GRAD	2.23%
MINIMUM SSD HORIZONTAL	350'
MINIMUM SSD VERTICAL	490'
MAXIMUM DESIGN SPEED	50 M.P.H.
1934 DESIGN TRAFFIC	15,560 ADT
	2,069 DDHV

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

### SUMMIT AND CLEAR CREEK COUNTIES

SCALES OF ORIGINAL DRAWINGS  
ON PLANS AS SHOWN  
GROSS AND NET LENGTH OF PROJECT 5959.5 FEET=1.697 MILES



ALL SCALES SHOWN ARE FOR ORIGINAL DRAWINGS.

INDEX OF SHEETS  
(SEE SHEET 2 & 3)

DIVISION OF HIGHWAYS	
APPROVED:	DATE
<i>(Signature)</i>	
ASST. CHIEF ENGINEER	

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED:	DATE
DIVISION ENGINEER	

AS CONSTRUCTED INFORMATION	
CONTRACTOR	WEAVER CONSTRUCTION CO.
RESIDENT ENGINEER	WALKER GAY (Projector Resident)
PROJECT STARTED	April 2 1979
PROJECT COMPLETED	March 1 1980
AS CONSTRUCTED PLANS APPROVED	
TITLE	DATE

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

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
20-23	G-20 TO G-23	WEST PORTAL PARKING, STORAGE AND ACCESS AREAS
24-27	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 95+00 TO 95+00
59	D-4	INLET AND MANHOLE LOCATION PLAN - STATION 95+00 TO 95+00
60	D-5	INLET AND MANHOLE LOCATION PLAN - STATION 95+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 S35
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 CUTOUT 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-6-5	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.G.H.	Structure
Detailer	Numbers
Drawing Number 5-2	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	PORTR 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 38+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-EX		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-EA		Suspended Ceiling in East Ventilation Building
112 AX-EX		Enamel Panels
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-BX		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	SA-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-55	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
146	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 3-3 of \_\_\_\_\_ Drawings

SUMMARY OF APPROXIMATE QUANTITIES

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID   
 FEDERAL ROAD DISTRICT NO. IIII DIVISION COLORADO PROJ. NO. I 70-3(83)220 SHEET NO. 4 TOTAL SHEETS

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.						8,415	-3	100.0		8,418		
(R-1) Folder #6	515	Waterproofing (Membrane)	Sq. Yd.						2,422	-2	100.0		2,424		
Folder #7	515	Waterproofing (Duct Floor)	Sq. Yd.						33,234	+608	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		2,370		
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 (4 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		
(R-2) Folder #20	619	3 Inch Ductile Iron Pipe	Lin. Ft.						6	0	100.0		6		
(R-2) Folder #21	619	4 Inch Ductile Iron Pipe	Lin. Ft.						120	0	100.0		120		
(R-2) Folder #22	619	6 Inch Ductile Iron Pipe	Lin. Ft.						8	0	100.0		8		
(R-2) 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		



# SUMMARY OF APPROXIMATE QUANTITIES

FINAL (R-1) Rev. Quantity ~ 11-14-78 ~ E.B.

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

FURNACE ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XXII	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	2	0	100.0	2
Folder #56			626	Mobilization	L.S.	34	0	100.0	34
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	CD 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.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	170-3(23)220	6	

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	FINAL PROJECT TOTALS	DIFF.	%	PROJECTED TOTALS AMOUNT
BOOK	PAGE	SHEET							
				<u>FORCE ACCOUNT</u>					
			F/A01	On-the-Job Trainee	F.A. <del>Each</del>	\$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.				/
			F/A05	Deleted					
			F/A06	Telephone Service (Work by Mtn. Bell) See Sheet 6A	F.A.				/
				<u>NON-FEDERAL AID</u>					PROJECT TOTALS
Folder #62			632	Emergency Radio System (Portable)	L.S.	/	0	100.0	/
Folder #63			641	East Building Ventilation Modifications	L.S.	/	0	100.0	/
Folder #66			642	CO Sampling and Analyzing System (Furnish Only)	L.S.	/	0	100.0	/
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 ATTENDENT 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	P	
	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(83) 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(BI)	\$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 26 N., 26 S. & 3 N.	\$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	\$4,193.00	\$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 (8) 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	\$5,098.08		
	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	170-3(83)220	6B	
AS CONSTRUCTED				
NO REVISIONS <input type="checkbox"/>		REVISED <input type="checkbox"/>		VOID <input type="checkbox"/>

# FINAL SUMMARY OF CONTRACT MODIFICATION ORDERS

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)	\$40,000.00	—	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+224	\$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	\$116,870.34	\$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	

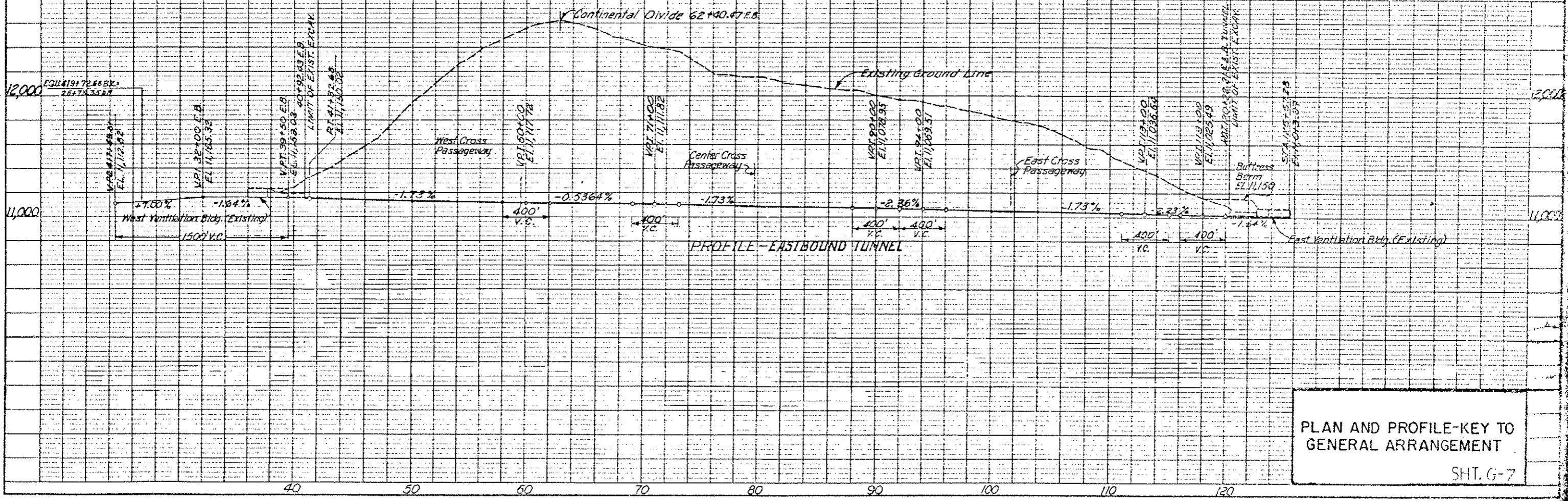
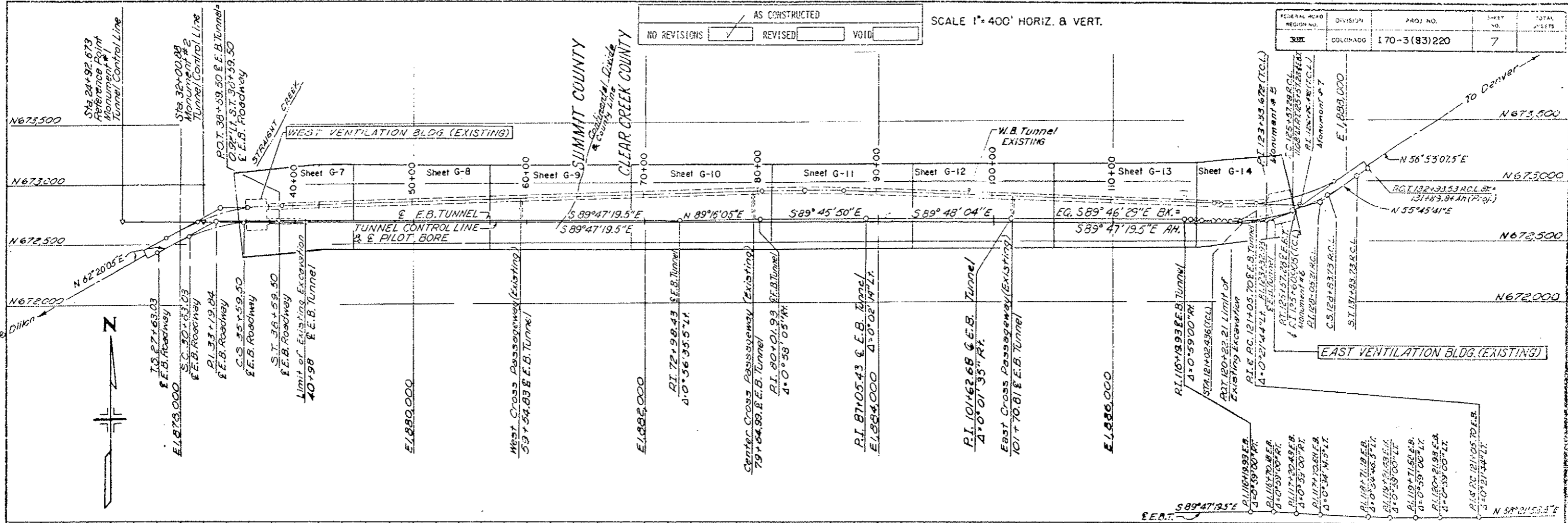
PLAN
NOTE BOOK
NO. OF SHEETS
NO. OF THIS SHEET

PROFILE
NOTE BOOK
NO. OF SHEETS
NO. OF THIS SHEET

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

SCALE 1" = 400' HORIZ. & VERT.

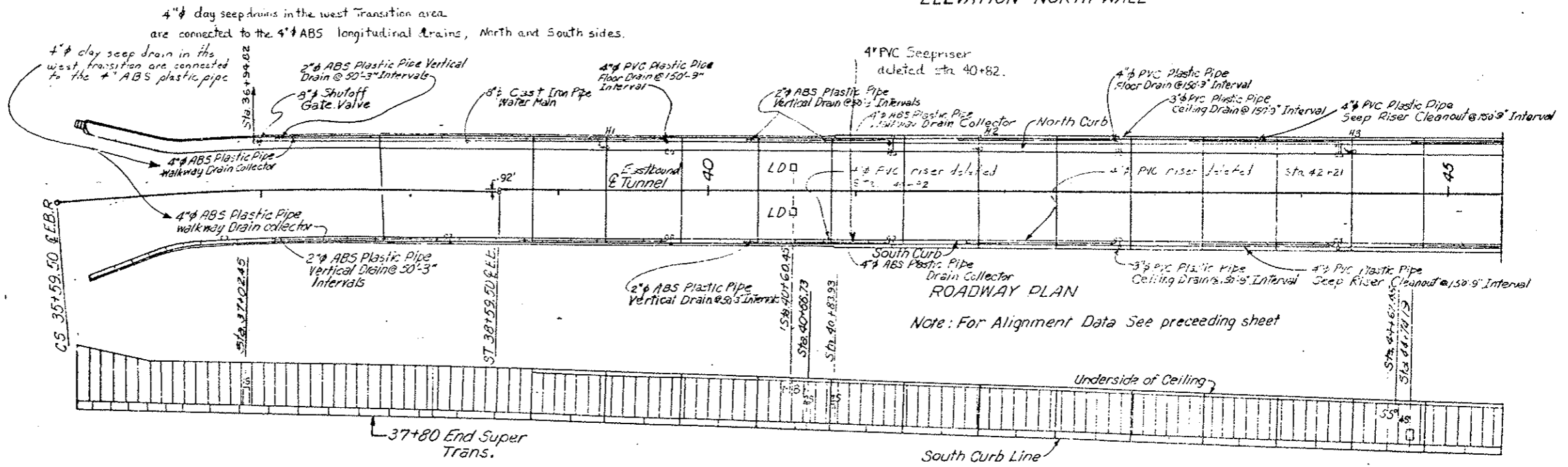
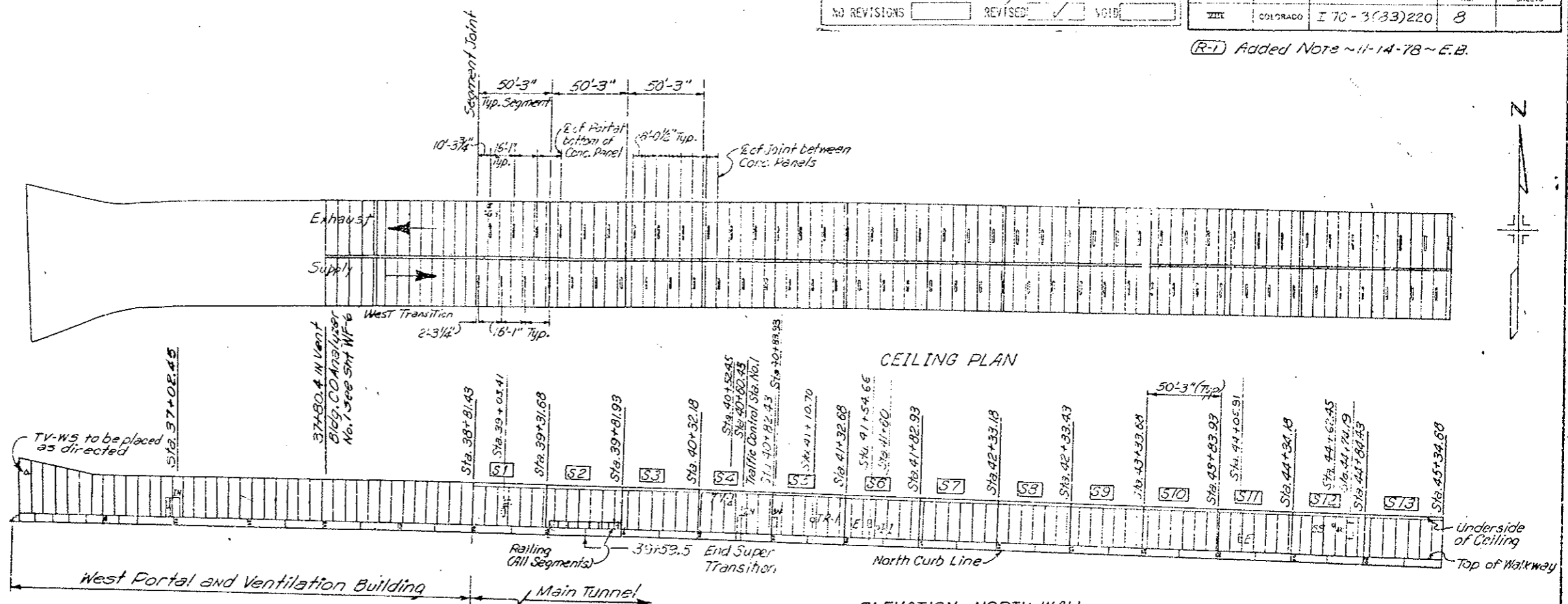
FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
300	170-3(83)220	7	



PLAN AND PROFILE-KEY TO GENERAL ARRANGEMENT

SHT. G-7

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



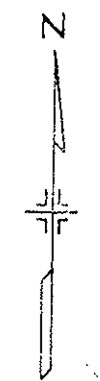
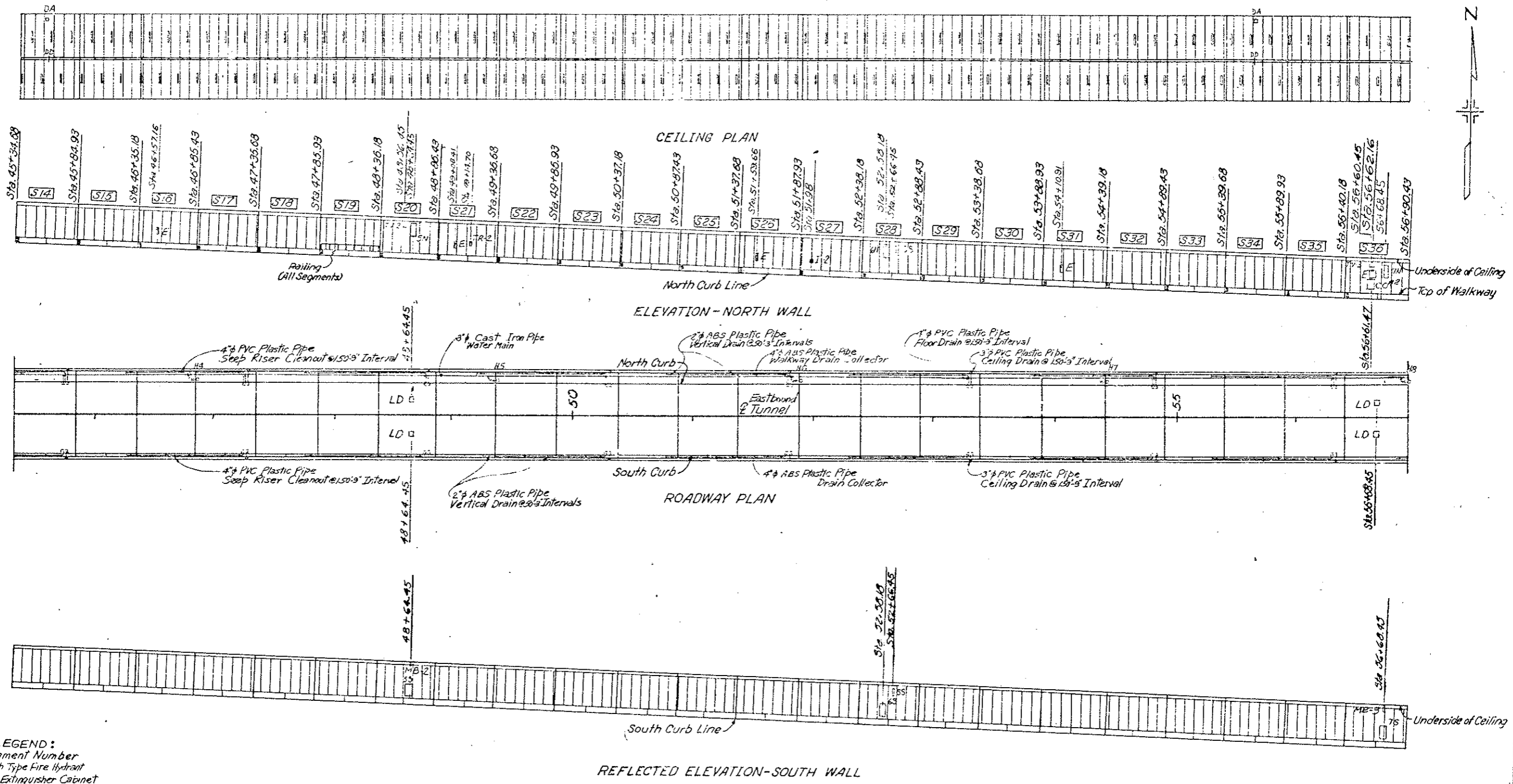
- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet - North Wall
  - S Electrical Pullbox Cabinet - South Wall
  - MB Message Board (Traffic Control System)
  - LD Loop Detector
  - TV Television Camera
  - SS Stop Signal
  - TR Tunnel Emergency Reporting Telephone Cabinet
  - ASH Air Sampling Head
  - CA 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 a roadway.  
 - Stationing given at ends of tunnel segments are general profile stationing taken along the centerline of roadway. Between ends of tunnel segments longitudinal dimensions are taken as shown in Detail "A" and are measured along the centerline of roadway. In certain cases longitudinal dimensions are taken along the centerline of roadway and projected horizontally on radial lines.

GENERAL ARRANGEMENT  
 WEST PORTAL TO STA. 45+34.68



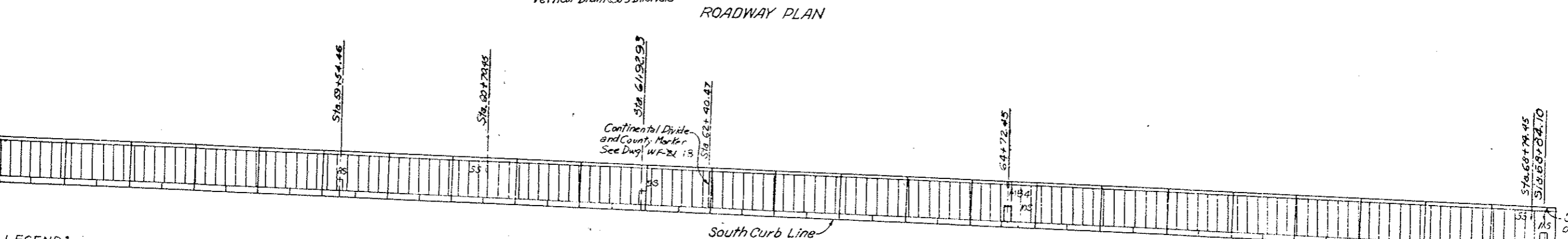
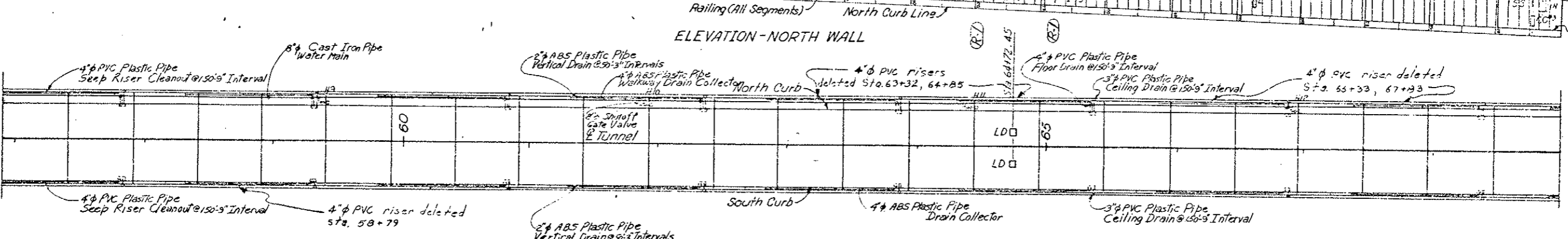
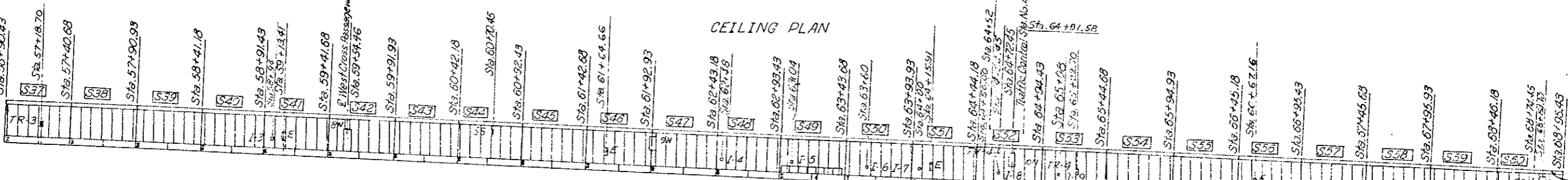
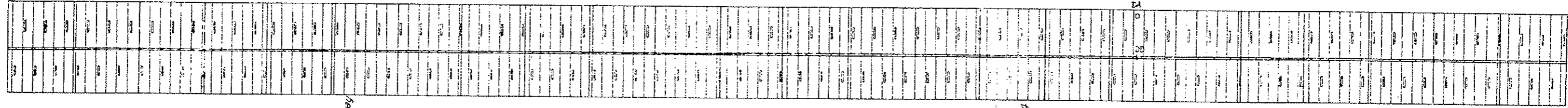


- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet-North Wall
  - S Electrical Pullbox Cabinet-South Wall
  - MB Message Board (Traffic Control System)
  - LD Loop Detector
  - TV Television Camera
  - SS Stop Signal
  - TR Tunnel 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-9



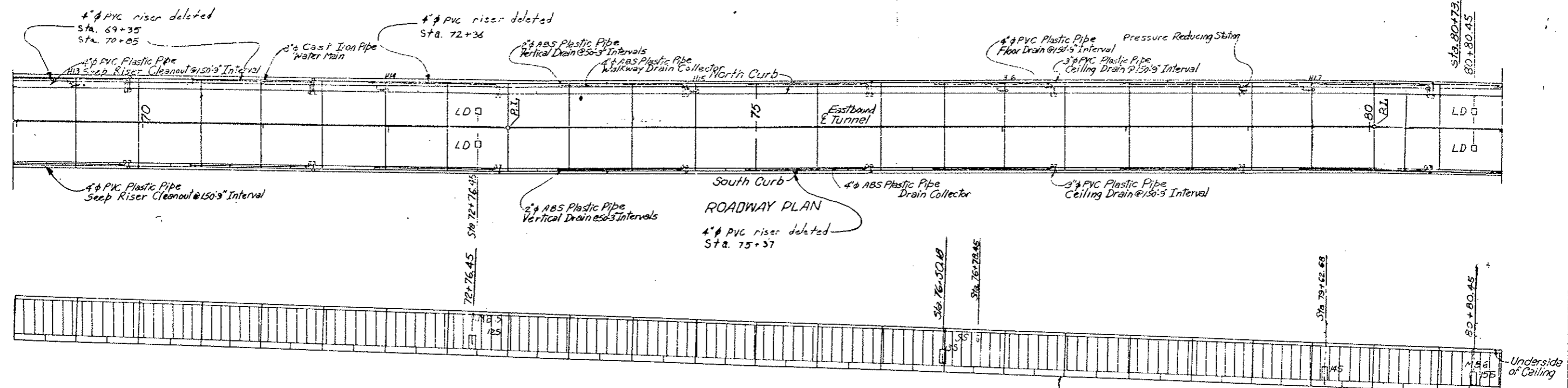
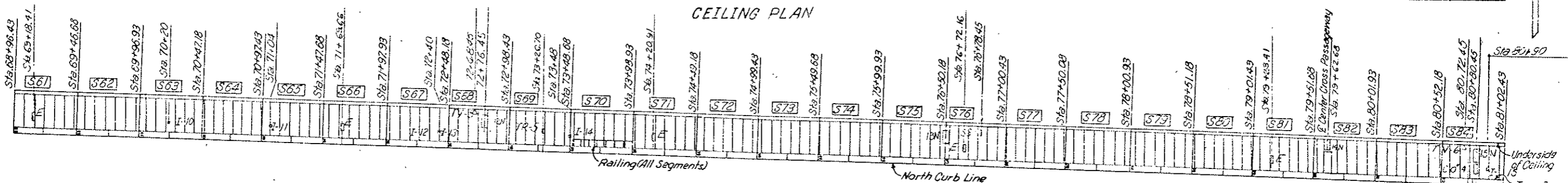
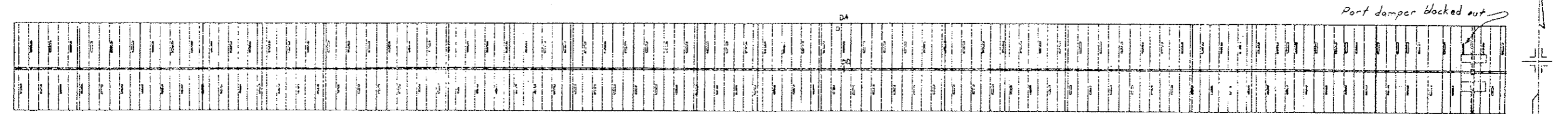
(R-D) Inst. Cab Locations ~ 11.3.78 ~ E.B.



- 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 Tunnel Emergency Reporting Telephone Cabinet
  - AS Air Sampling Head
  - CO Carbon Monoxide Analyzer Cabinet
  - PR Pressure Reducing Station
  - DA Duct Access
  - TI Instrumentation Cabinet
  - DD Duct Divider

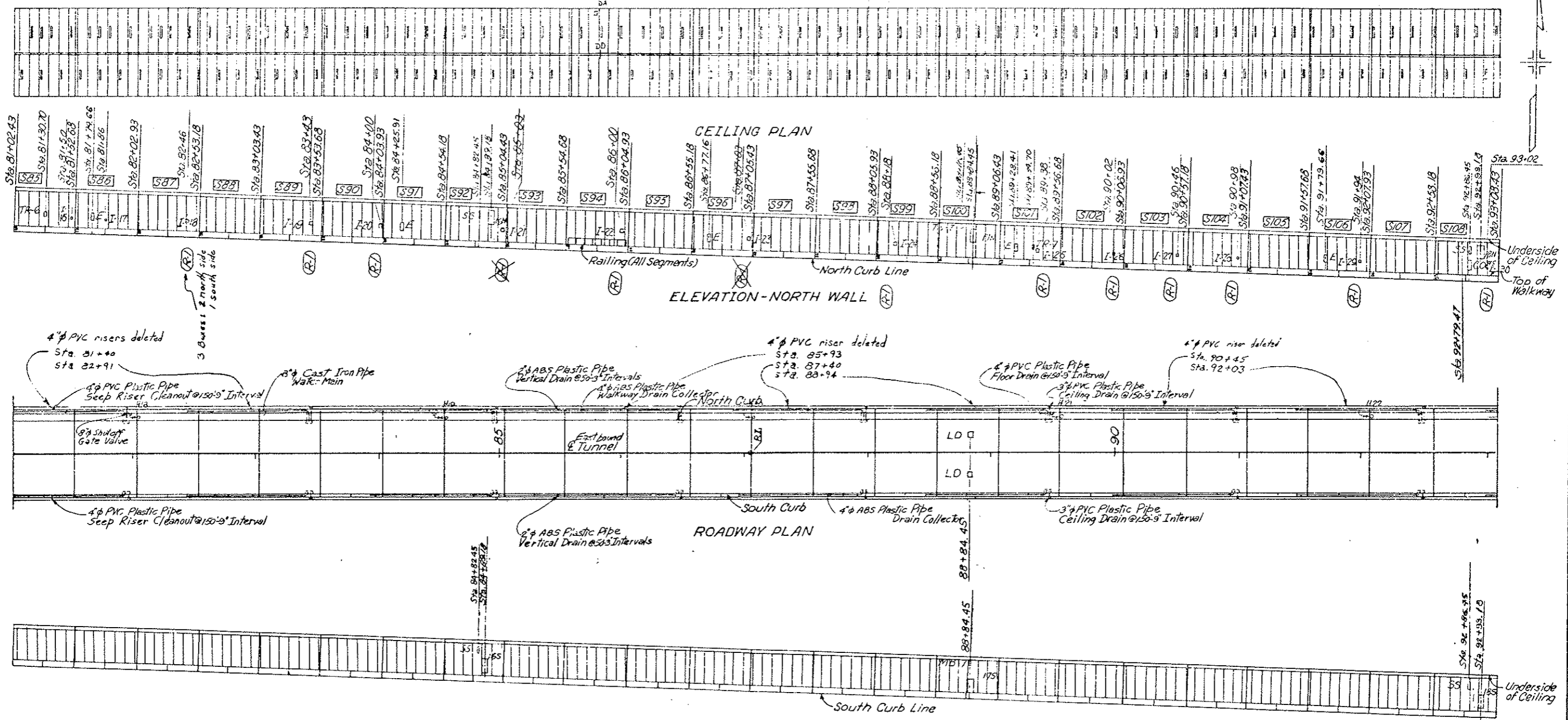
GENERAL ARRANGEMENT  
STA. 56+90.43 TO STA. 68+96.43

DWG. NO. G-10



- 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 Repairing 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  
 DWG. NO G-11



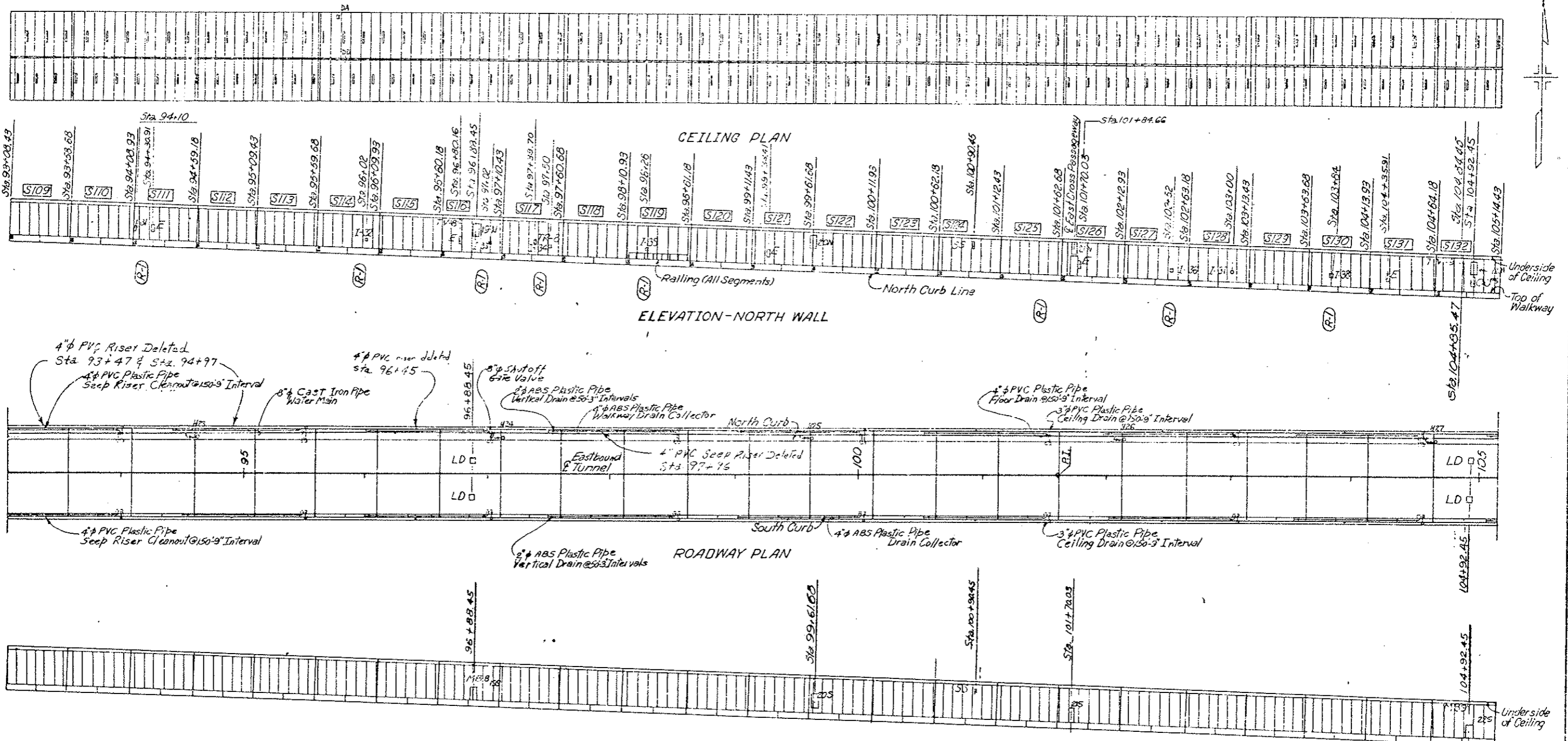
- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet-North Wall
  - S Electrical Pullbox Cabinet-South Wall
  - MB Message Board (Traffic Control System)
  - LD Loop Detector
  - TV Television Camera
  - SS Stop Signal
  - TR Tunnel 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

Note: Instrumentation Cabinets 20-23 shall be at locations determined by the Engineer.

REFLECTED ELEVATION-SOUTH WALL

GENERAL ARRANGEMENT  
 STA. 81+02.43 TO STA. 93+08.43  
 DWG. N2 G-12

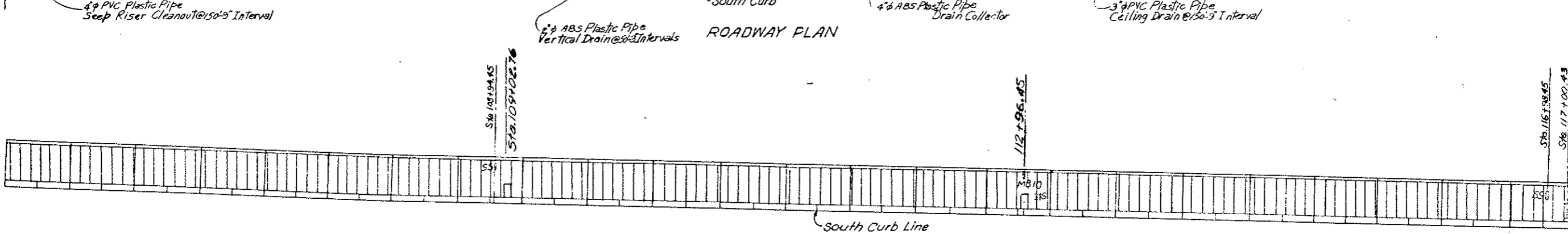
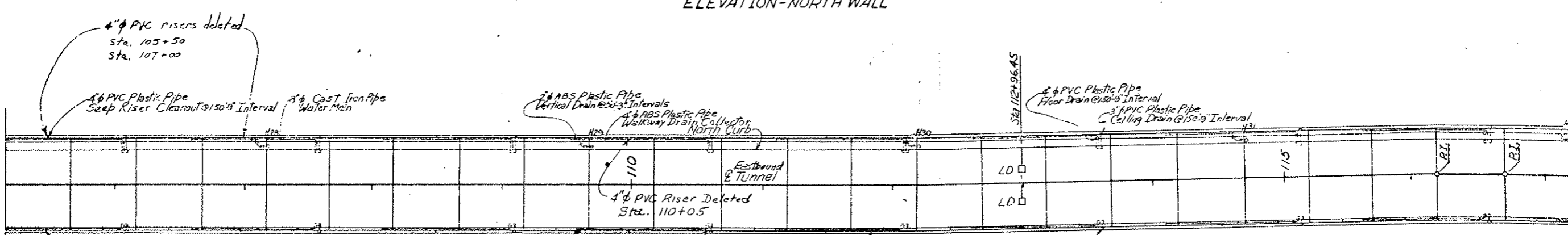
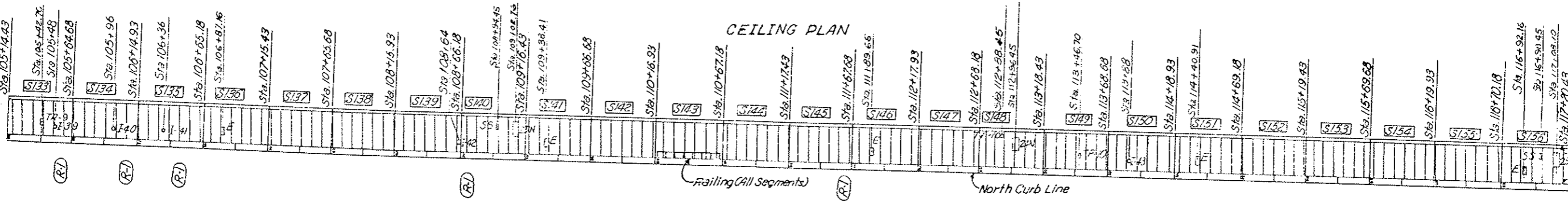
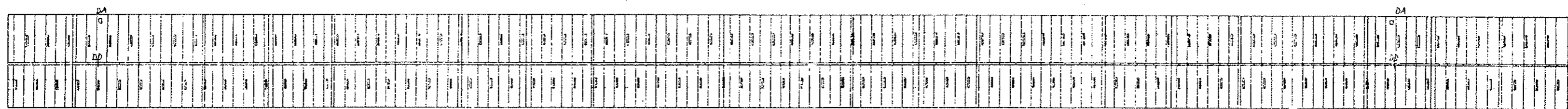
(R-1) Inst. Cab Locations ~ 11-3-78 ~ E.B.



- 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)
  - 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
  - HA Hand Access Hatch
  - IC Instrumentation Cabinet
  - DD Duct Divider Door

GENERAL ARRANGEMENT  
 STA. 93+08.43 TO STA. 105+14.43  
 DWG. NO. G-3

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



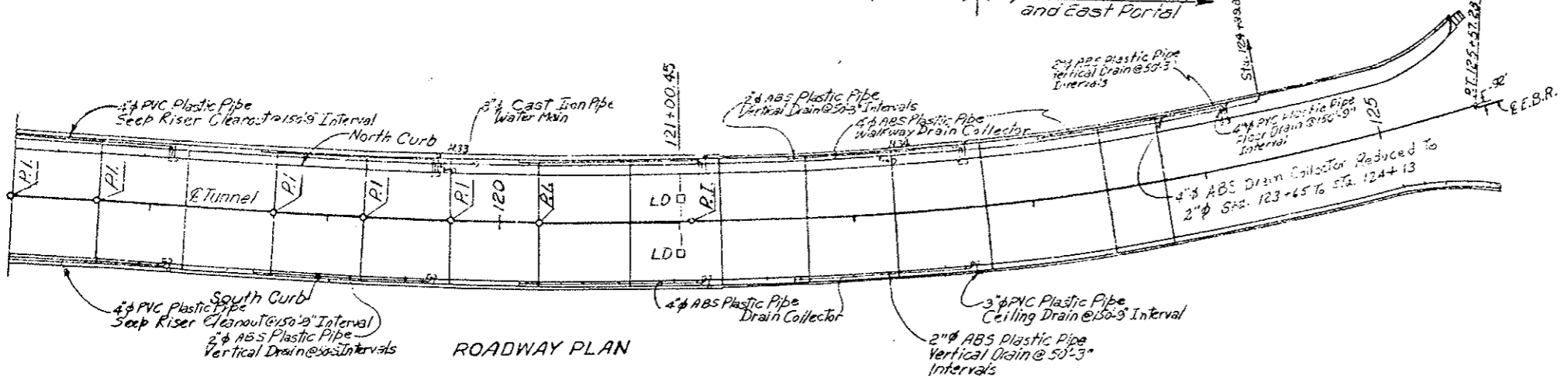
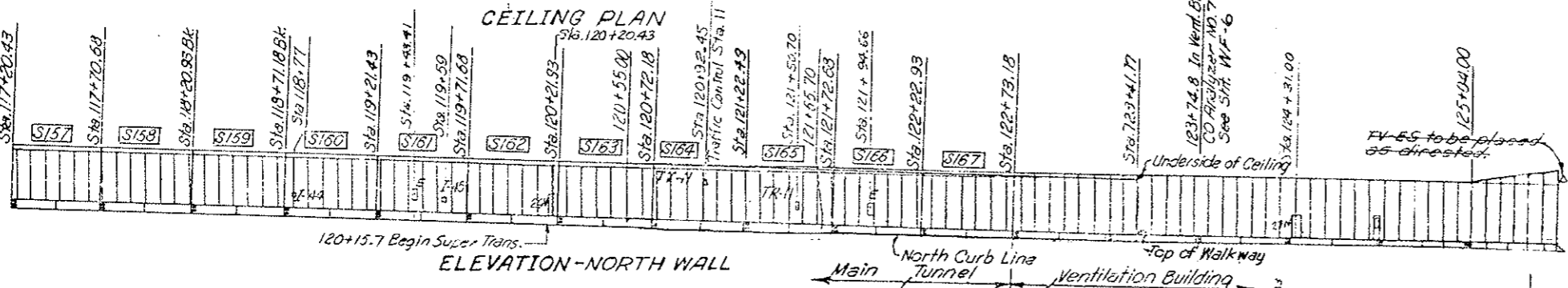
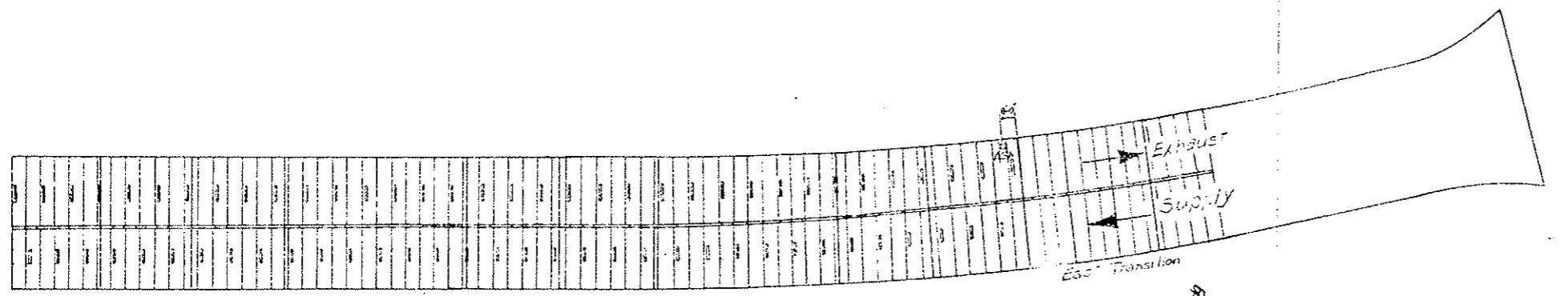
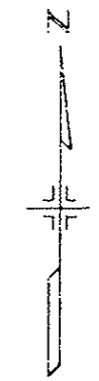
- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet-North Wall
  - S Electrical Pullbox Cabinet-South Wall
  - MS Message Board (Traffic Control System)
  - LD Loop Detector
  - T Television Camera
  - SR Signal
  - ERT Road Emergency Reporting Telephone Cabinet
  - ASH Air Sampling Head
  - CA 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

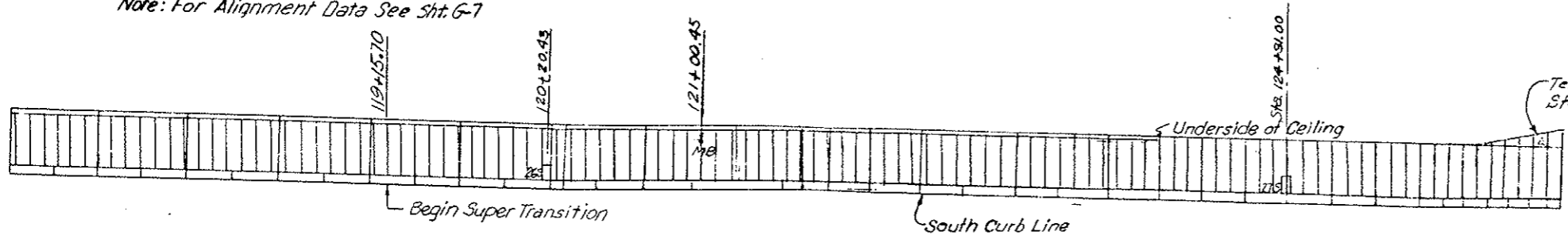
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	I 70-3(23)220	15	

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-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 Hood
  - CO Carbon Monoxide Analyzer Cabinet
  - PRS Pressure Relieving Station
  - DA Duct Access Hatch
  - I Instrumentation Cabinet
  - DD Duct Divider Door

Television Camera Relocated Sta. 125+50 By Tunnel Maintenance

GENERAL ARRANGEMENT  
STA. 117+20.43 TO EAST PORTAL

DWG. NO. G-15

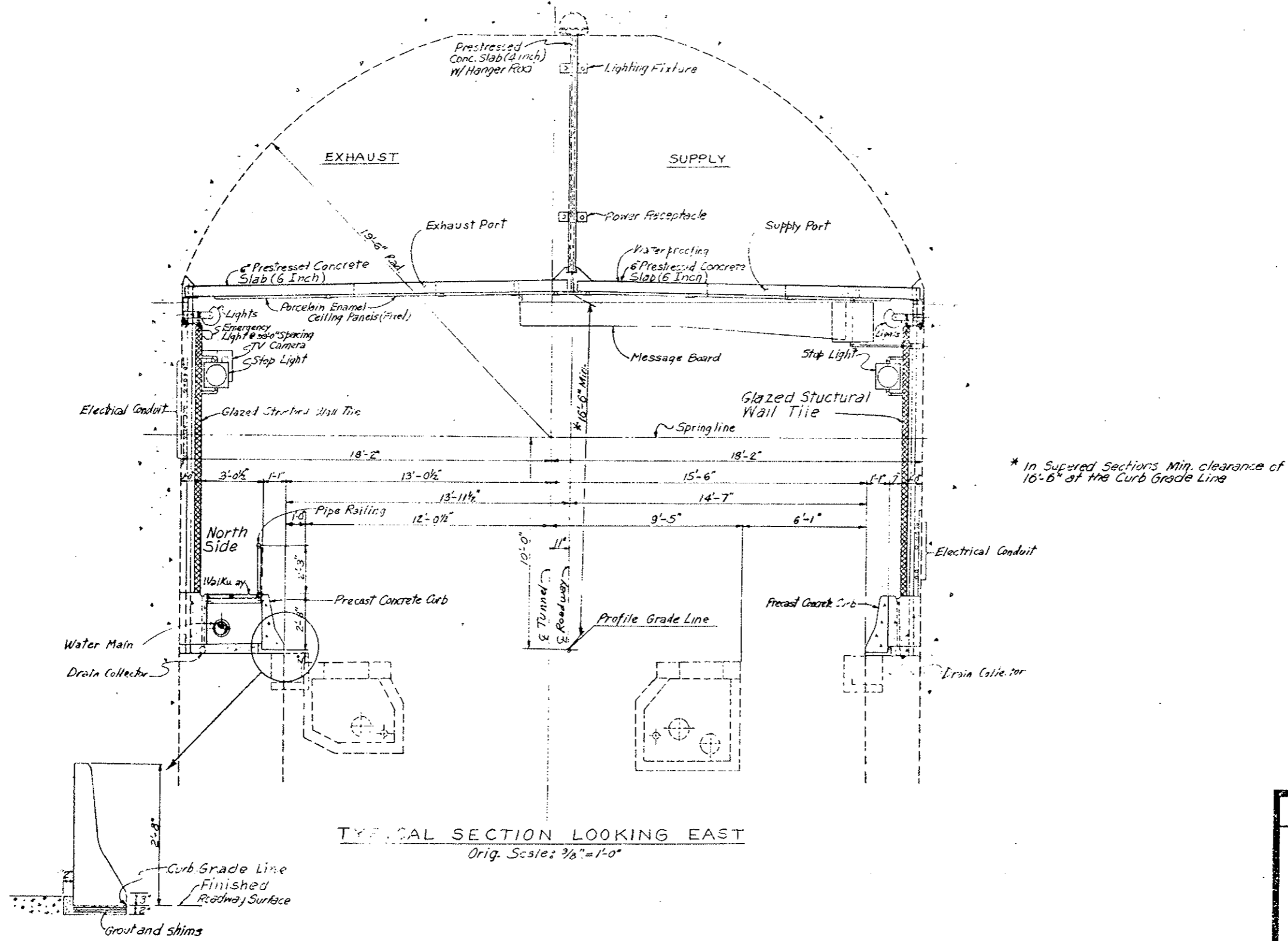


AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

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

REVISIONS	

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

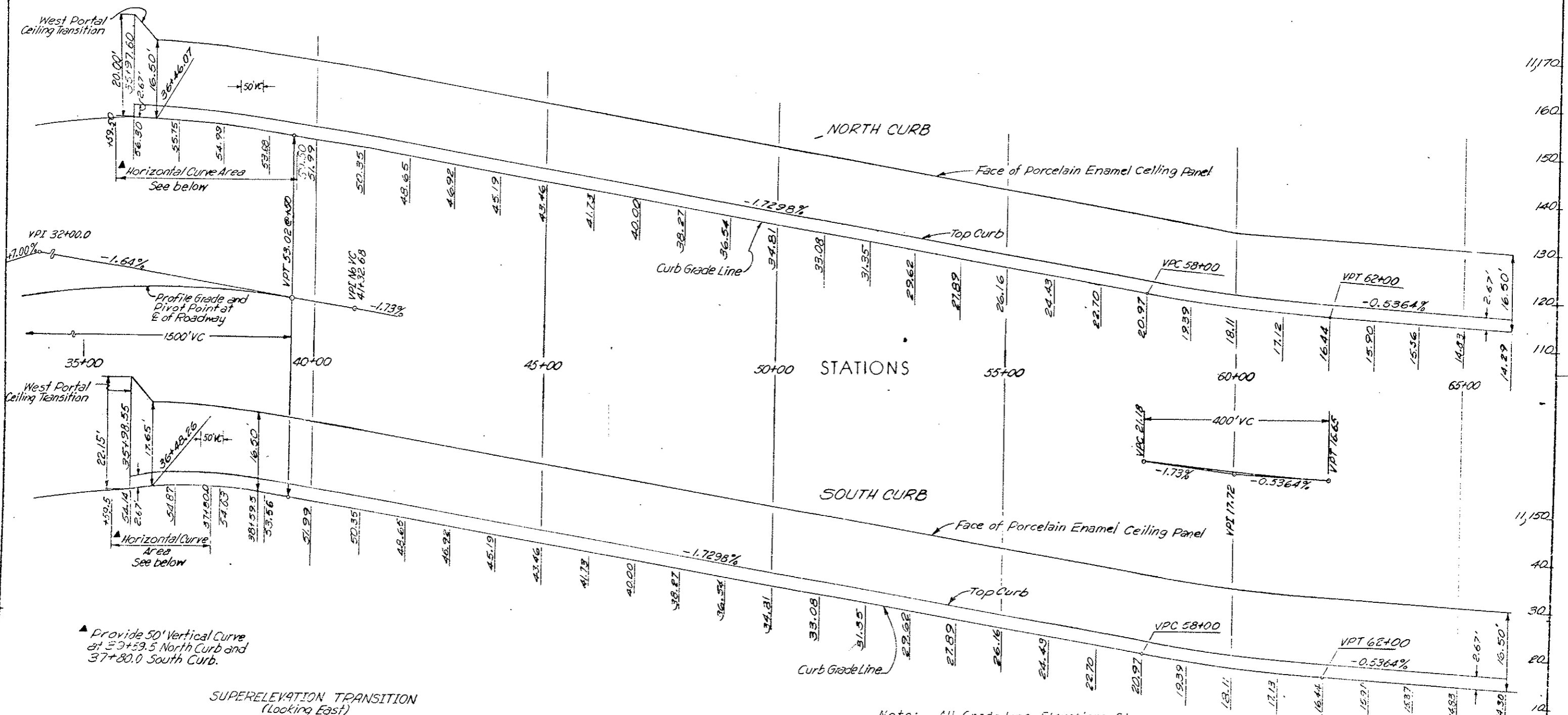


<b>DIVISION OF HIGHWAYS</b>	
TYPICAL SECTION TUNNEL INTERIOR	
Designer <i>CDOH</i>	Structure Numbers
Detailer <i>J. LeFrancis</i>	of
Drawing Number <i>G-16</i>	Drawings



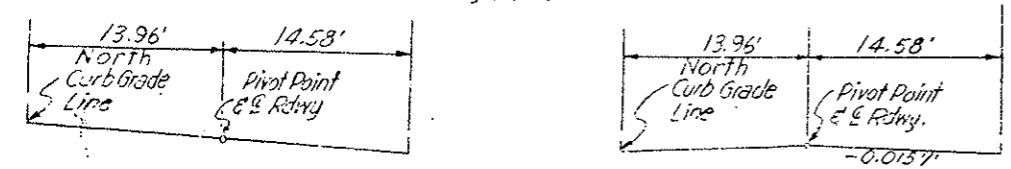
FEDERAL ROAD REGION NO.	DIVISION	PROJ NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(33)220	17	

AS CONSTRUCTED		
NO REVISIONS	REVISI	VOID



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

SUPERELEVATION TRANSITION (Looking East)



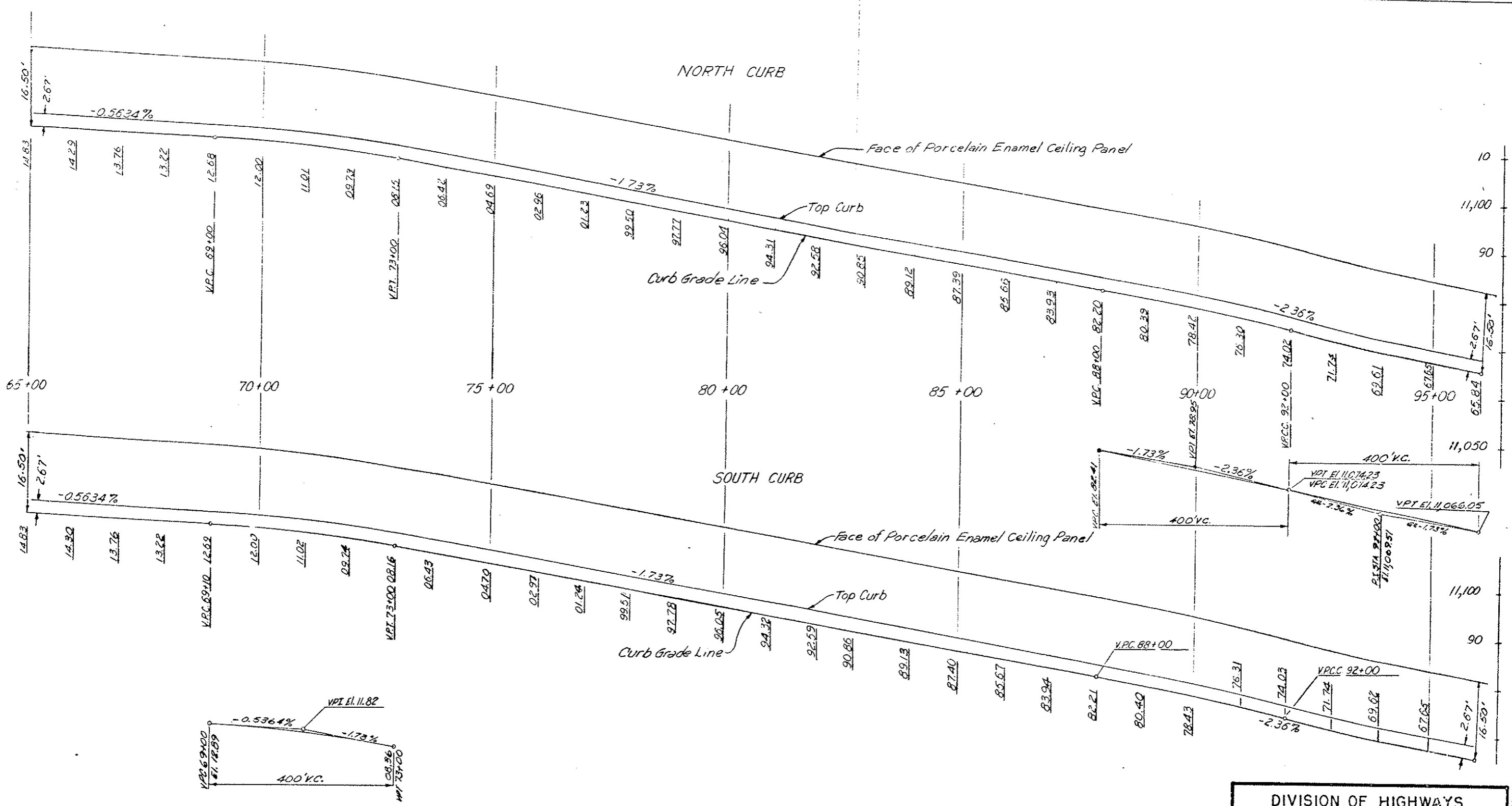
Full Super	35+59.5	0.0581' North and South
Super Transition	37+80.0	+0.0151' North, -0.0151' South
	38+59.0	0.000' North, -0.0151' South
Normal Section	39+59.5	-0.0141' North, 0.0151' South

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 6-17	of Drawings

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(85)220	18	
AS CONSTRUCTED				
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID

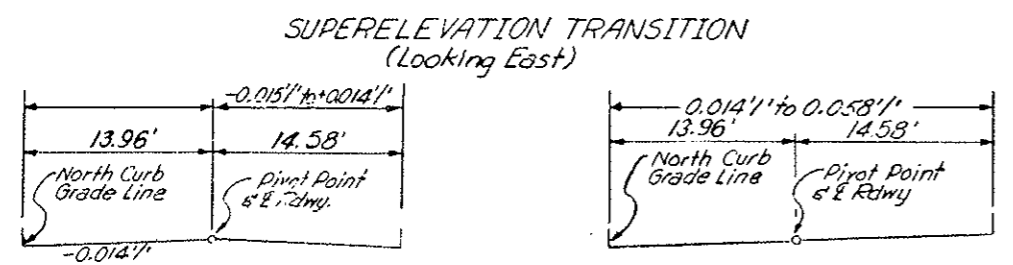
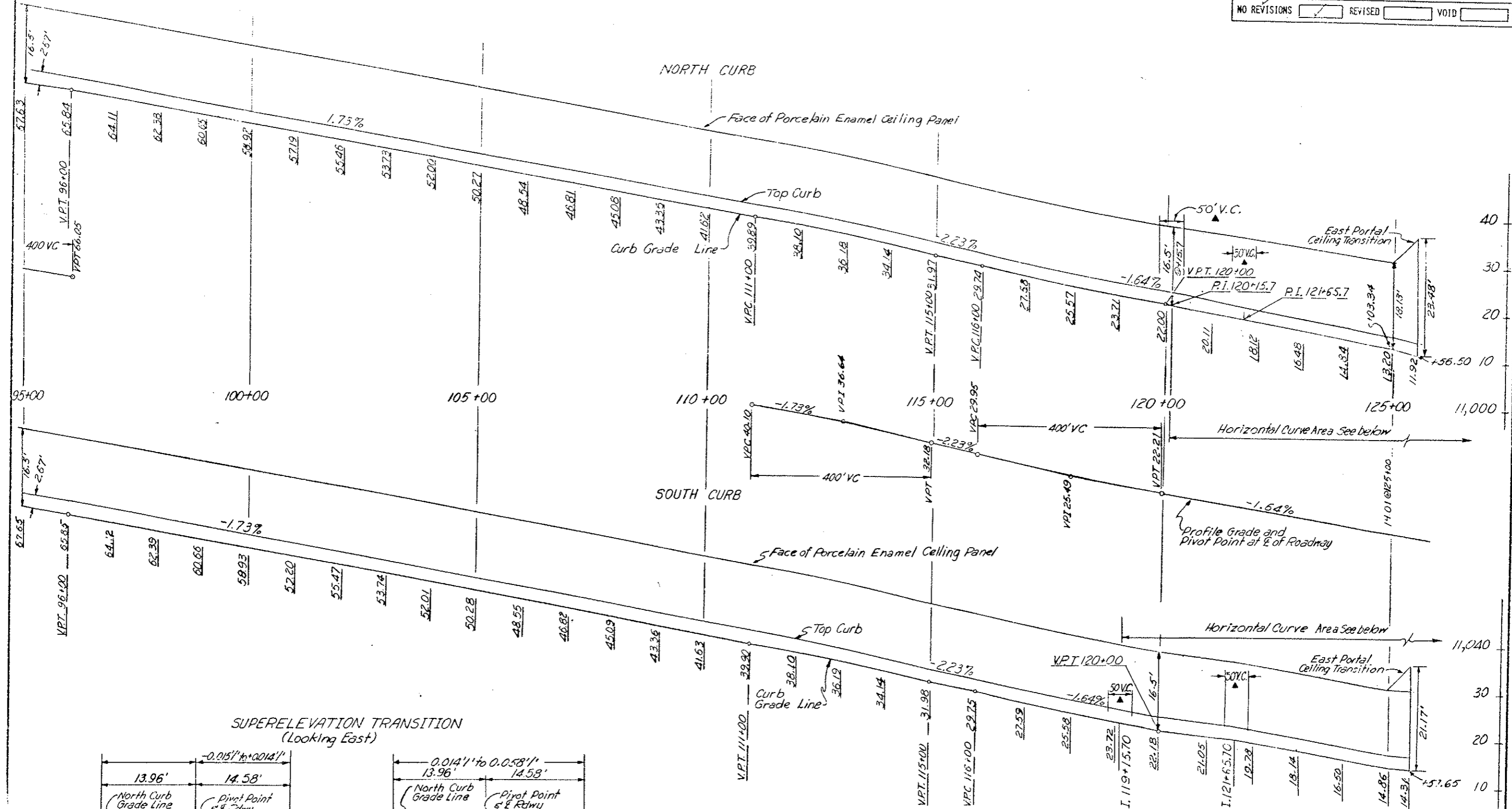


Scale: 1" = 100' V.L.  
1" = 10' H.L.

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

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	19	

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID



Transition Super-elevation on South Side of Roadway from -0.0151' at Sta. 113+5.7 to 0.0001' at Sta. 120+5.7 to +0.0581' at Sta. 121+65.7

Transition Super-elevation on North Side of Roadway from -0.0141' at Sta. 120+5.7 to -0.0581' at Sta. 121+65.7

▲ Provide 50' Vertical Curve at Sta. 120+5.7 on North Curb and Sta. 119+5.7 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 6-19	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"/>	III	COLORADO	I70-3(53)220	20	

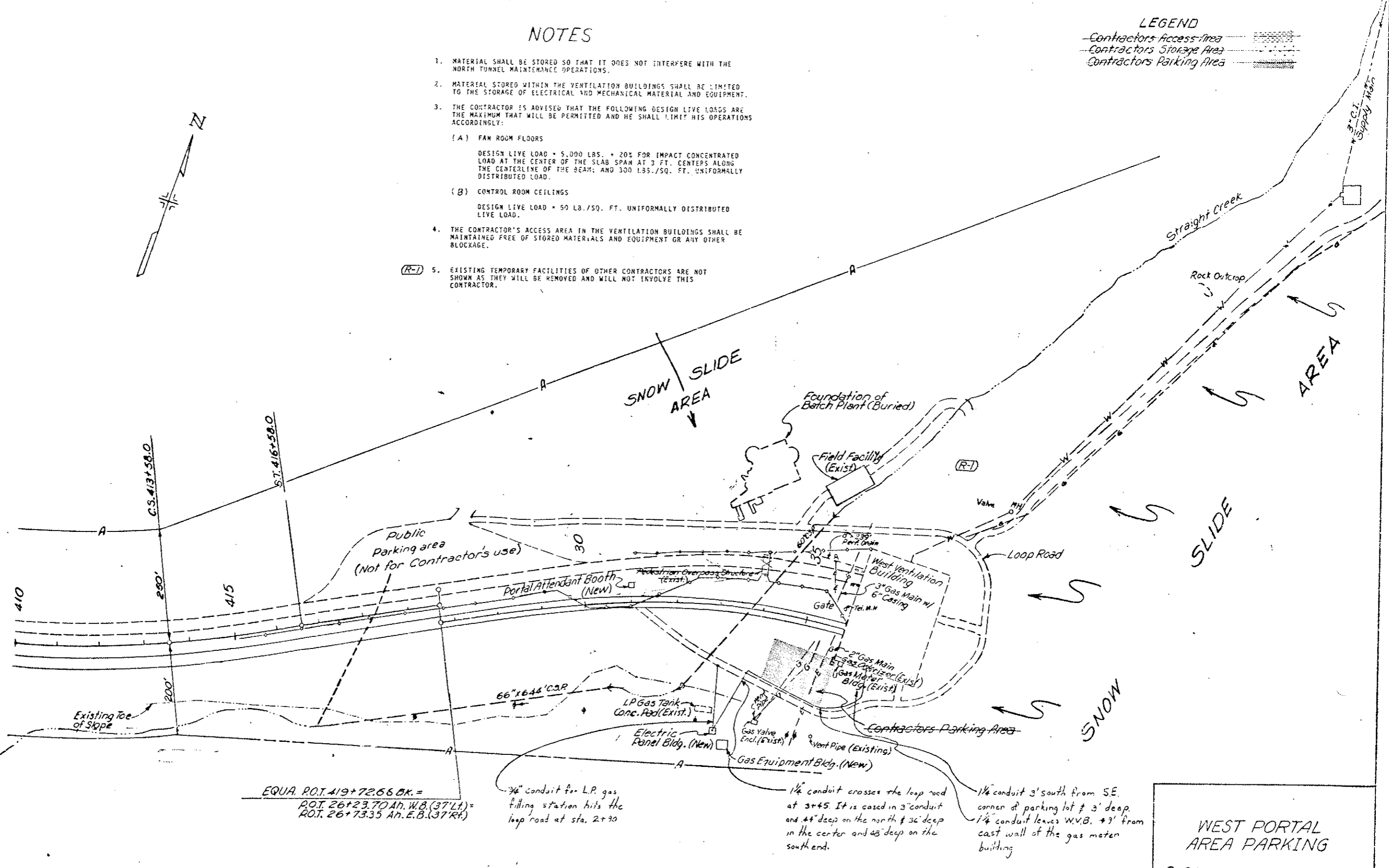
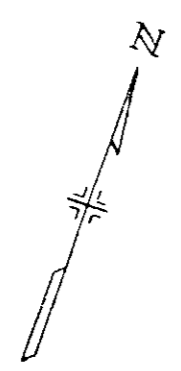
(R-1) Rev. Detail, Added Note -10-17-78 - E.B.

## 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+70

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.

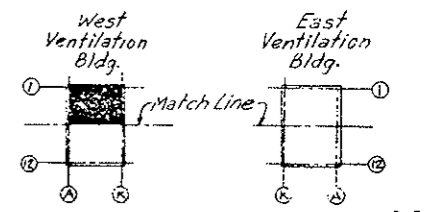
1 1/4" conduit 3' south from S.E. corner of parking lot & 3' deep. 1 1/4" conduit leaves W.V.B. + 3' from east wall of the gas meter building

WEST PORTAL AREA PARKING  
 G-20

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	21	

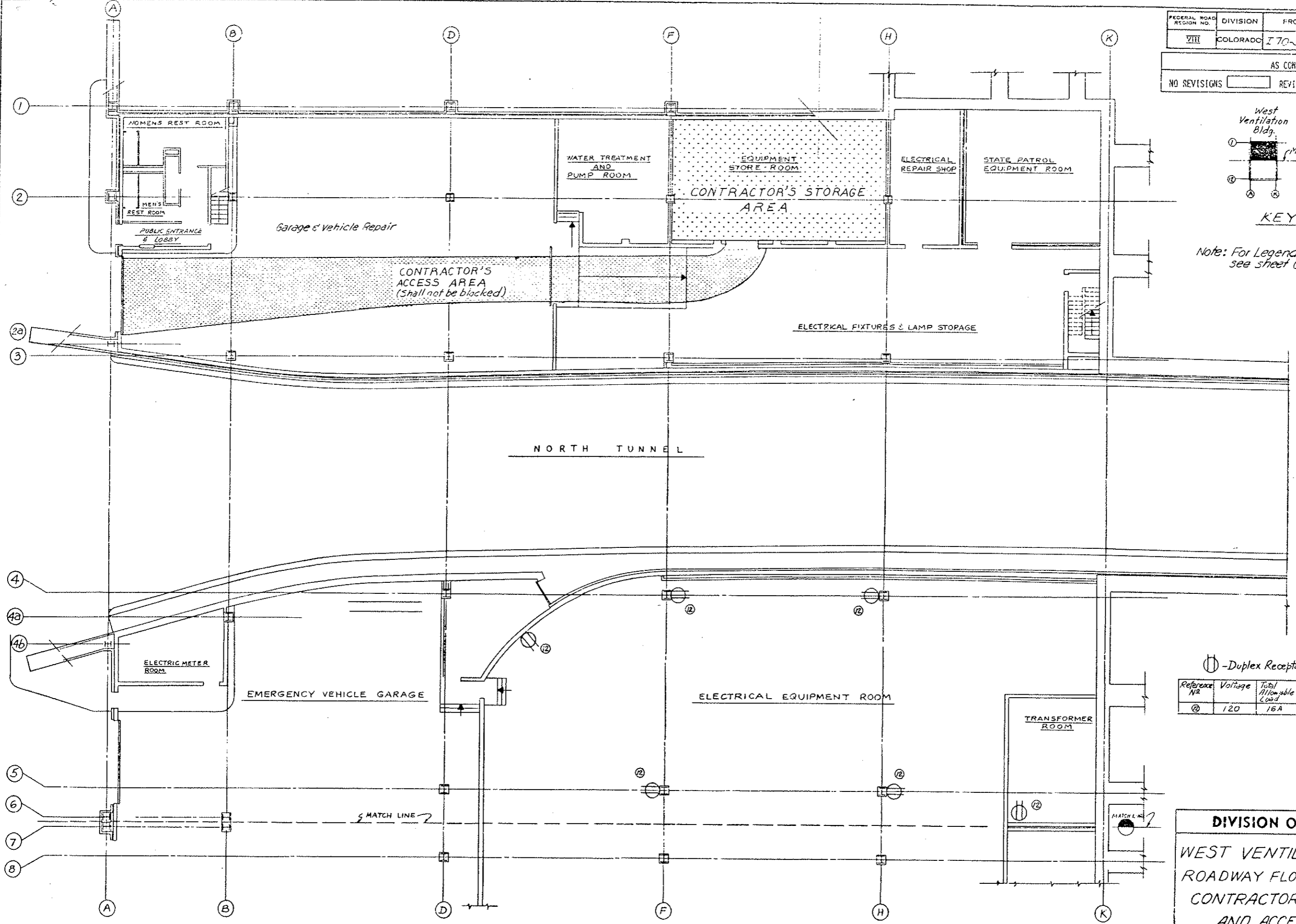
AS CONSTRUCTED

NO REVISIONS  REVISED  VOID



KEY PLAN

Note: For Legend and notes see sheet G-20



⊙ - Duplex Receptacles - 120V-1 Phase

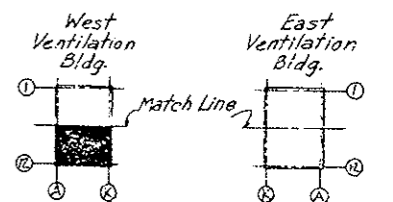
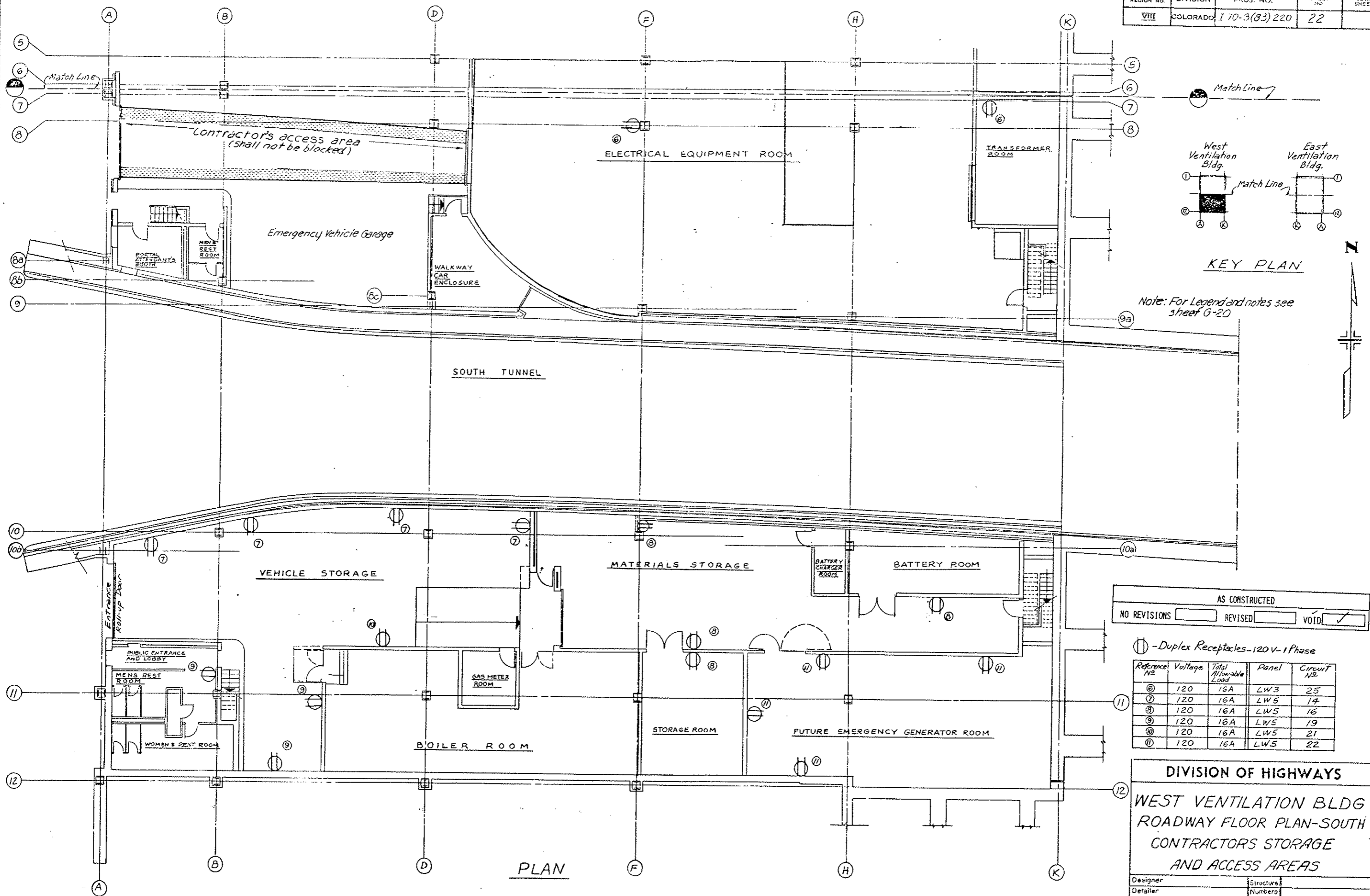
Reference No.	Voltage	Total Allowable Load	Panel	Circuit No.
⊙	120	16A	LW3	27

**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



KEY PLAN

Note: For Legend and notes see sheet G-20

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

① - Duplex Receptacles - 120 V - 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**

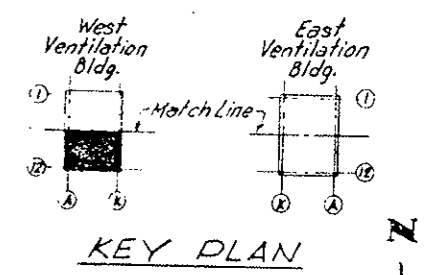
Designer	Structure
Detailer	Numbers
Drawing Number G-22 of Drawings	

PLAN

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

FEDERAL ROAD DISTRICT NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I70-3(83)220	23	

REVISIONS	

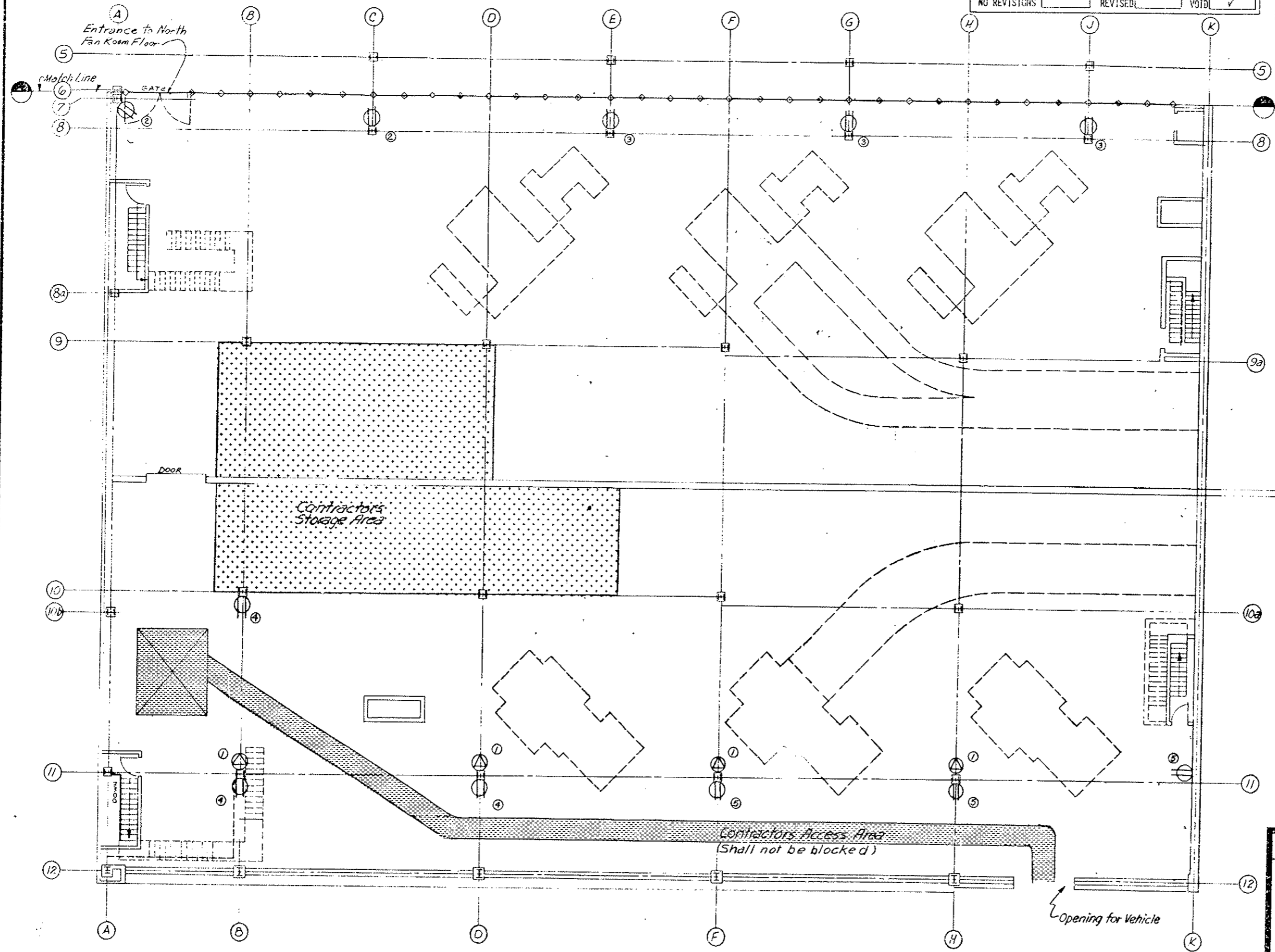


- ⊕ Duplex Receptacles-120V-1 Phase
- ⊗ 480V Receptacles 3Ph-4W-4P-30A

Reference No.	Voltage	Total Branch Circuit 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

DESIGNED BY	CHECKED BY
CHECKED BY	QUANTIFIED BY
DATE	CHECKED BY



DIVISION OF HIGHWAYS

WEST VENTILATION BLDG  
 FAN ROOM SOUTH  
 CONTRACTORS STORAGE  
 AND ACCESS AREAS

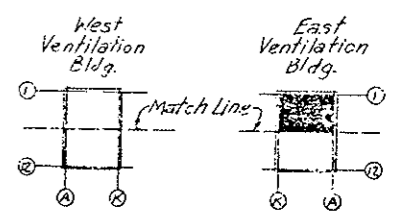
Designer	Structure
Drawing Number G-23	of Drawings



FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	24	

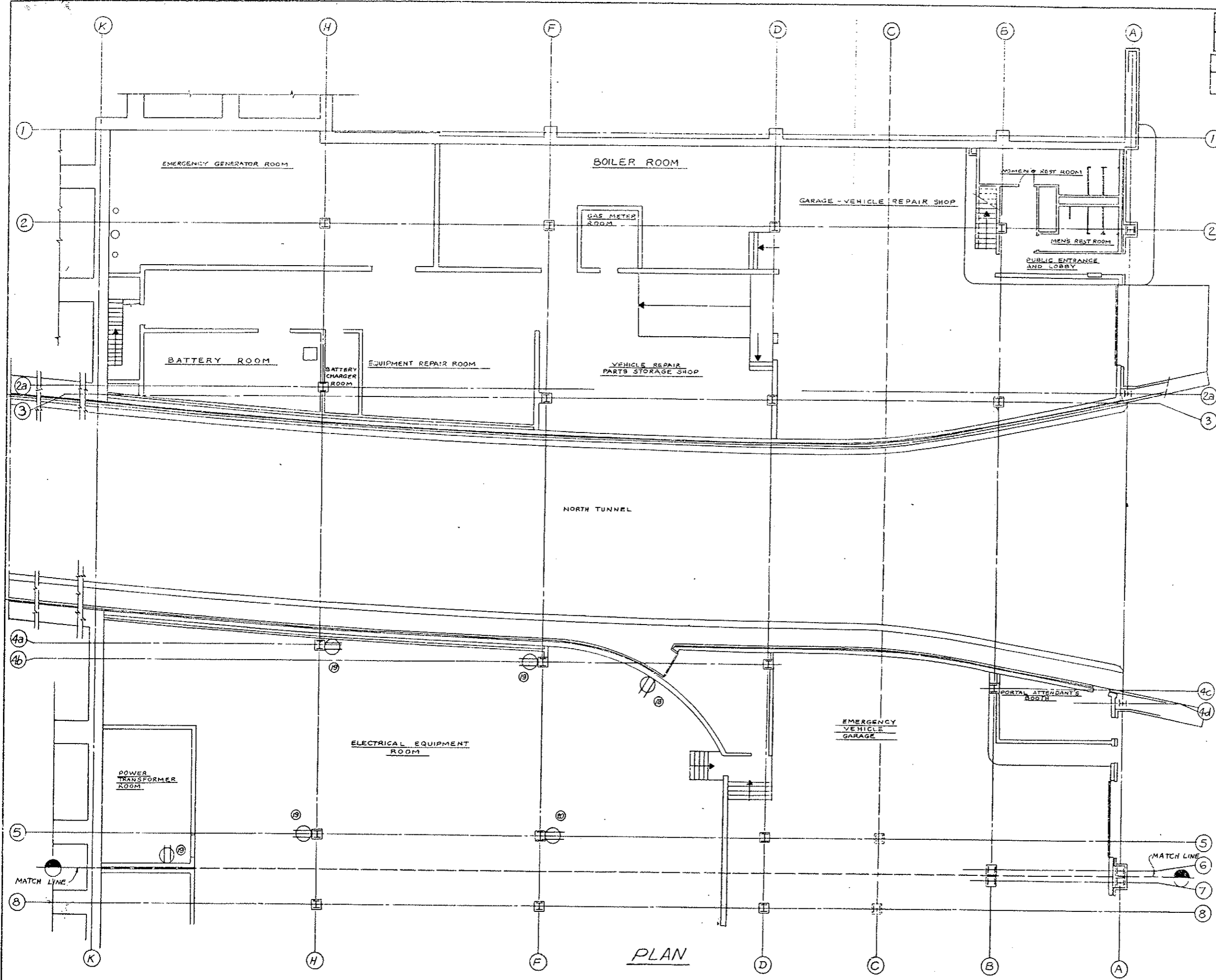
AS CONSTRUCTED

NO REVISIONS  REVISED  VOID



KEY PLAN

Note: For Legend and notes see sheet G-20



PLAN

⊕ - Duplex Receptacles - 120V - 1 Phase

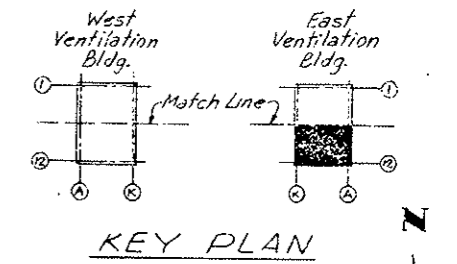
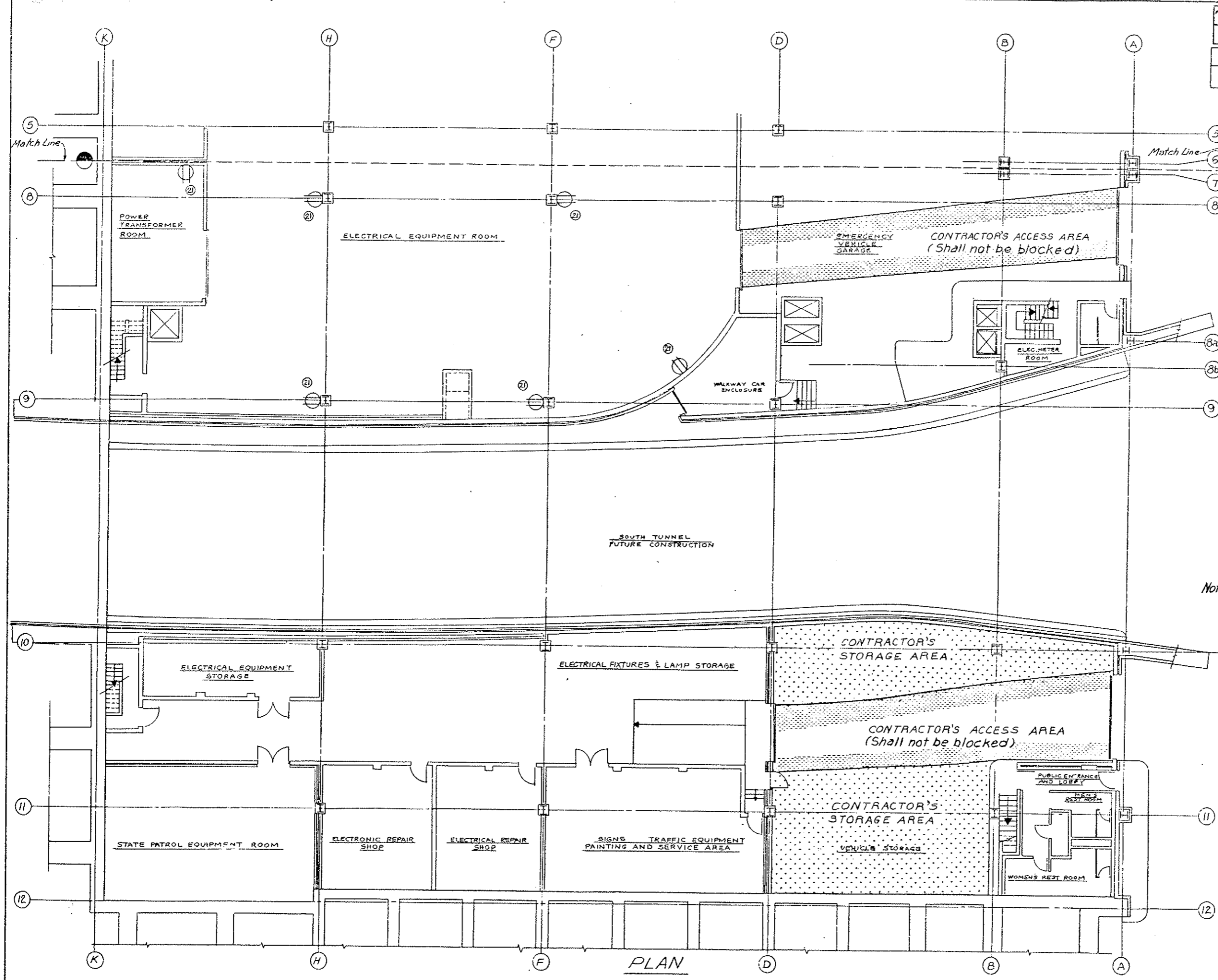
Reference N's	Voltage	Total Allowable Load	Panel	Circuit No.
18	120	16A	LE 3A	19
19	120	16A	LE 3A	21
20	120	16A	LE 3A	23

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	

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



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**

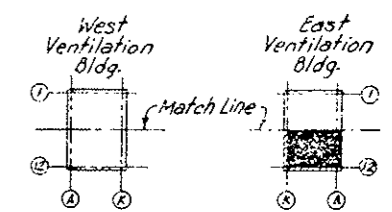
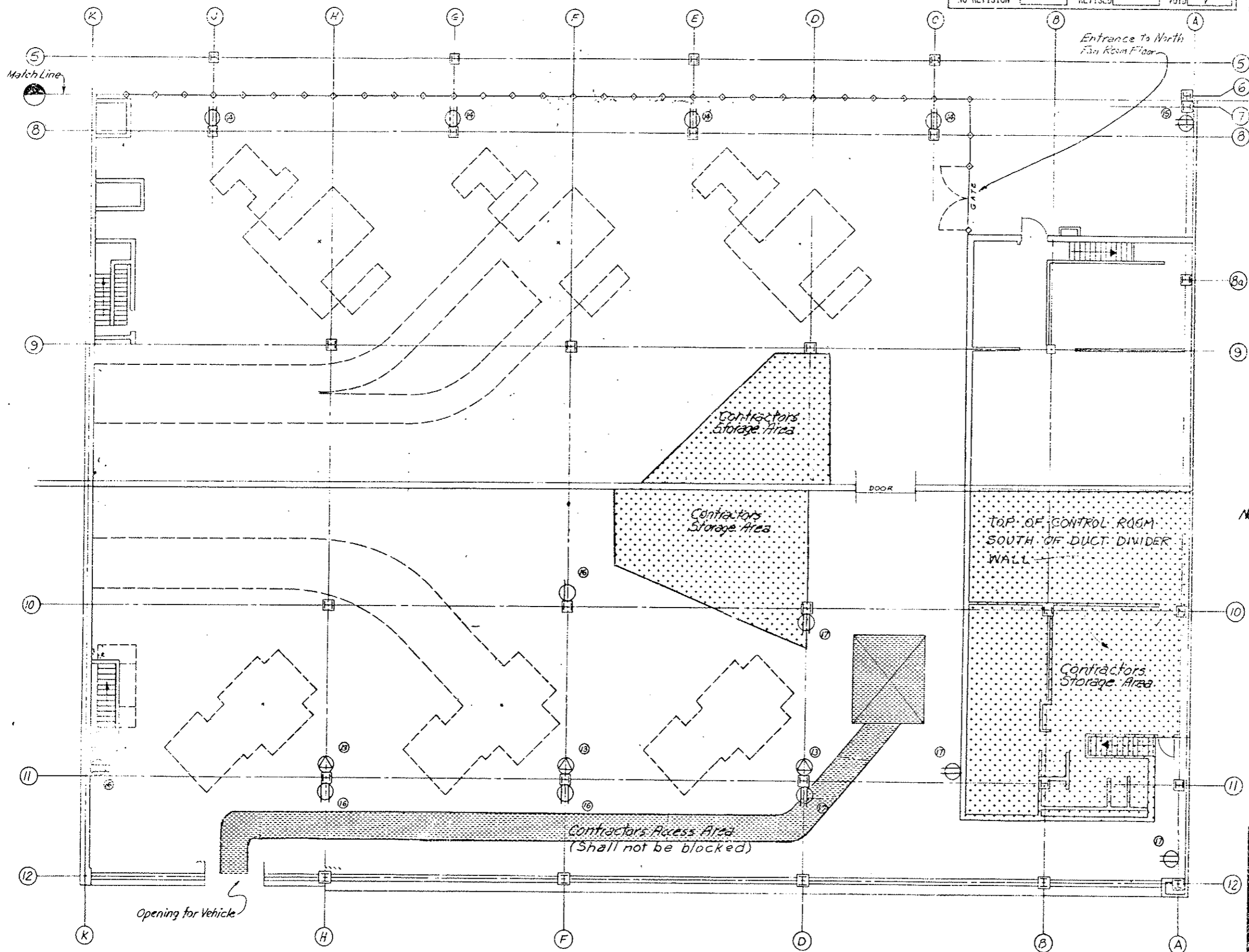
Designer	Structure
Detailer	Numbers
Drawing Number G-25 of Drawings	

**PLAN**

AS CONSTRUCTED  
 NO REVISION  REVISED  VOID

FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	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	LE2B	6
16	120	16A	LE2C	1E
17	120	16A	LE2C	1B

Note: For Legend and notes see sheet G-20

DESIGNED BY	CHECKED BY
DATE	
INITIAL	
QUANTITIES BY	CHECKED BY

**PLAN**

<b>DIVISION OF HIGHWAYS</b>	
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

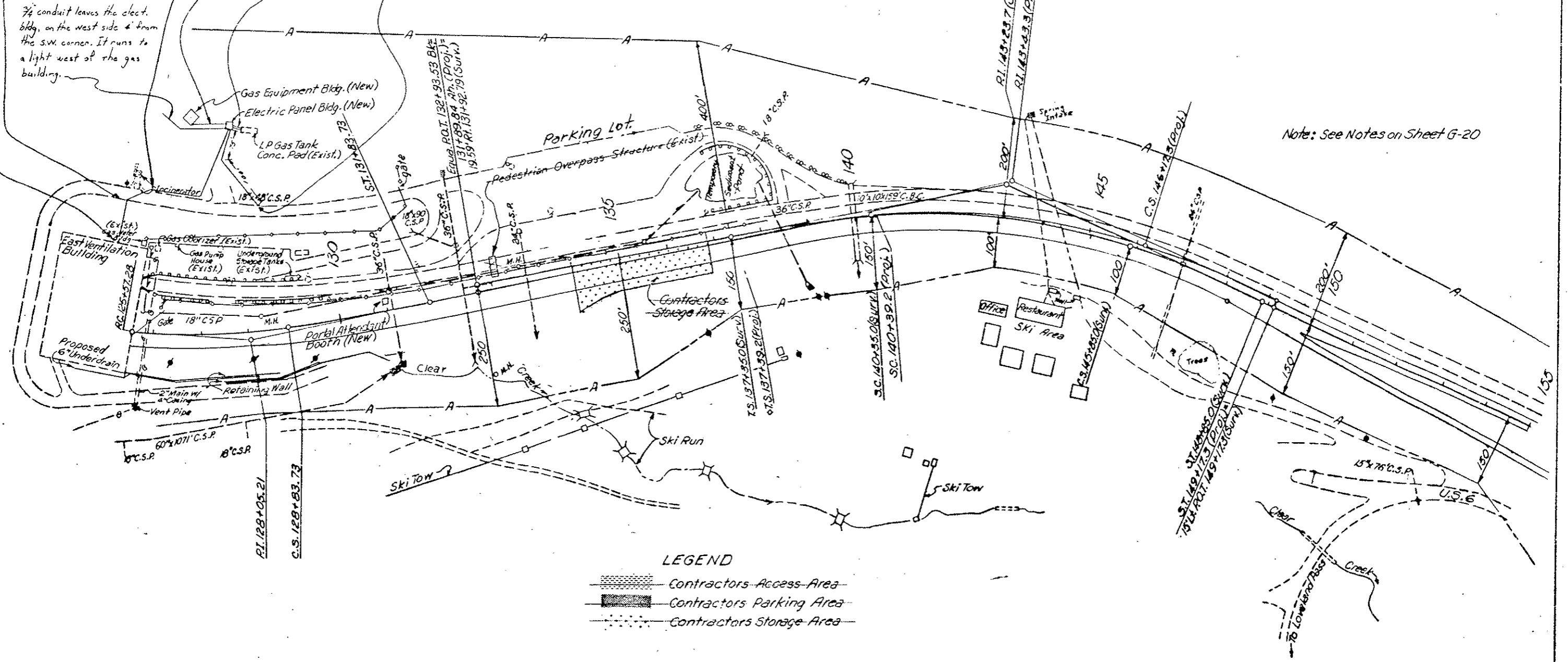
1 1/4" conduit 3' below subgrade across loop road sta. 321+80

7/8" conduit leaves the elect. bldg. on the west side 4' from the SW. corner. It runs to a light west of the gas building.

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

2 - 7/8" 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

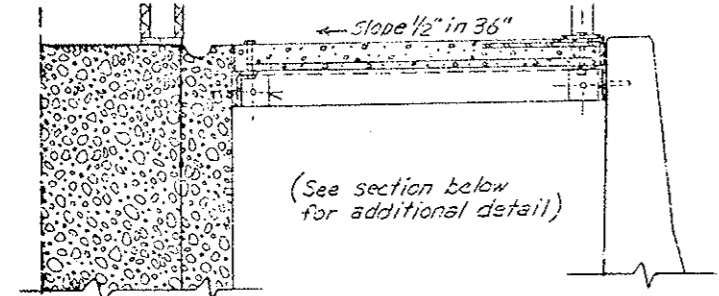


**LEGEND**

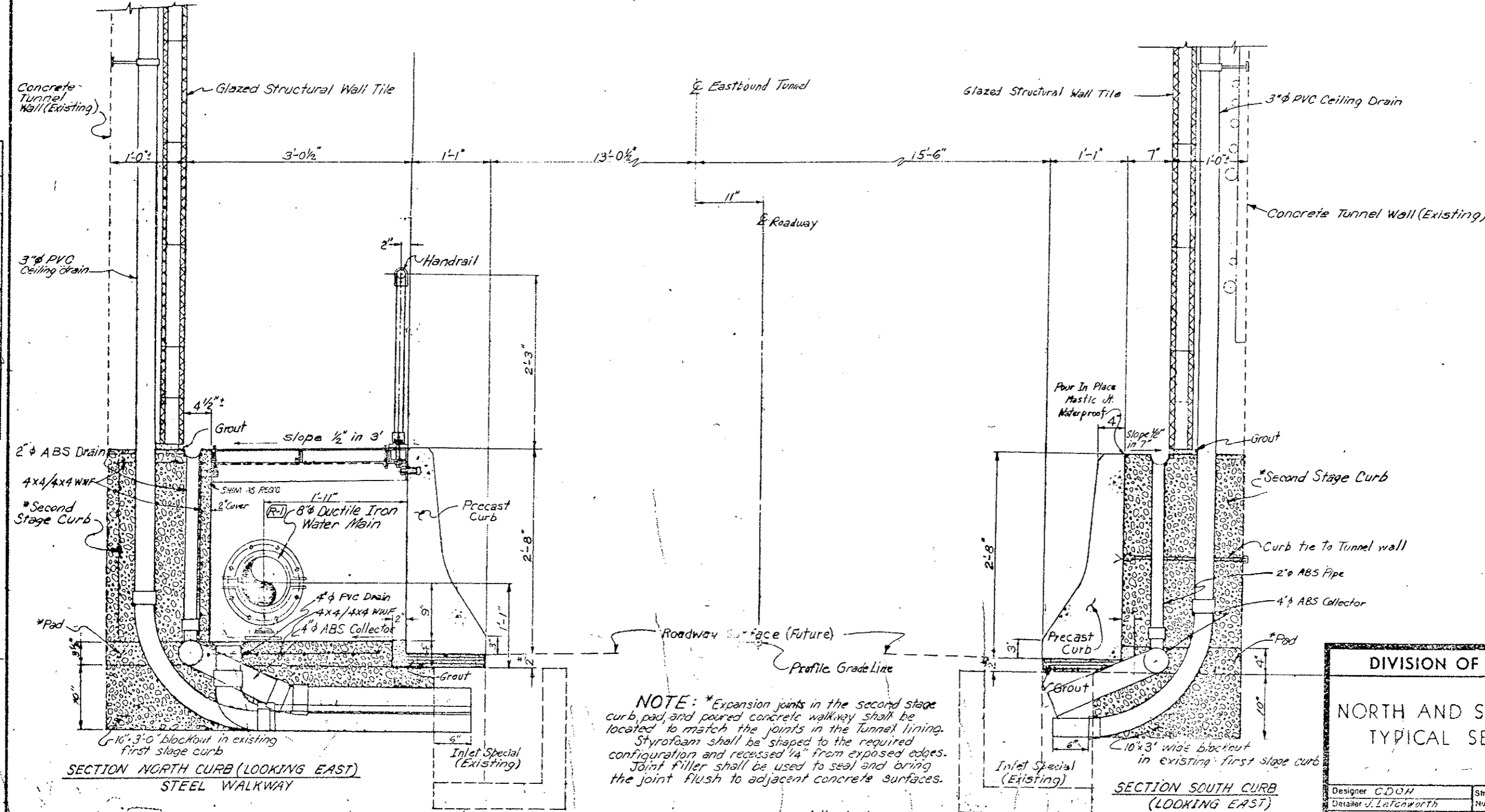
- Contractors Access Area
- Contractors Parking Area
- Contractors Storage Area

EAST PORTAL  
AREA PARKING  
G-27

VIII	COLORADO	I 70-3 (33) 220	23
REVISIONS			
<u>R-1</u>	11-14-73	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
QUANTITIES BY	DATE	CHECKED BY	DATE
DETAILS BY	DATE	CHECKED BY	DATE

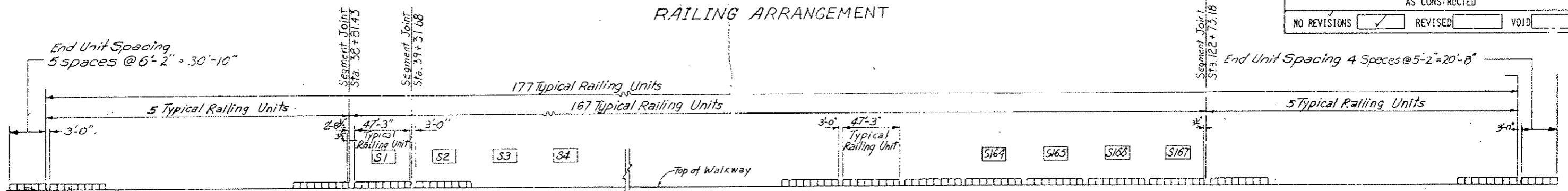
**NOTE:** \*Expansion joints in the second stage curb, pad, and poured concrete walkway shall be located to match the joints in the tunnel lining. Styrofoam shall be shaped to the required configuration and recessed 1/4" from exposed edges. Joint filler shall be used to seal and bring the joint flush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

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

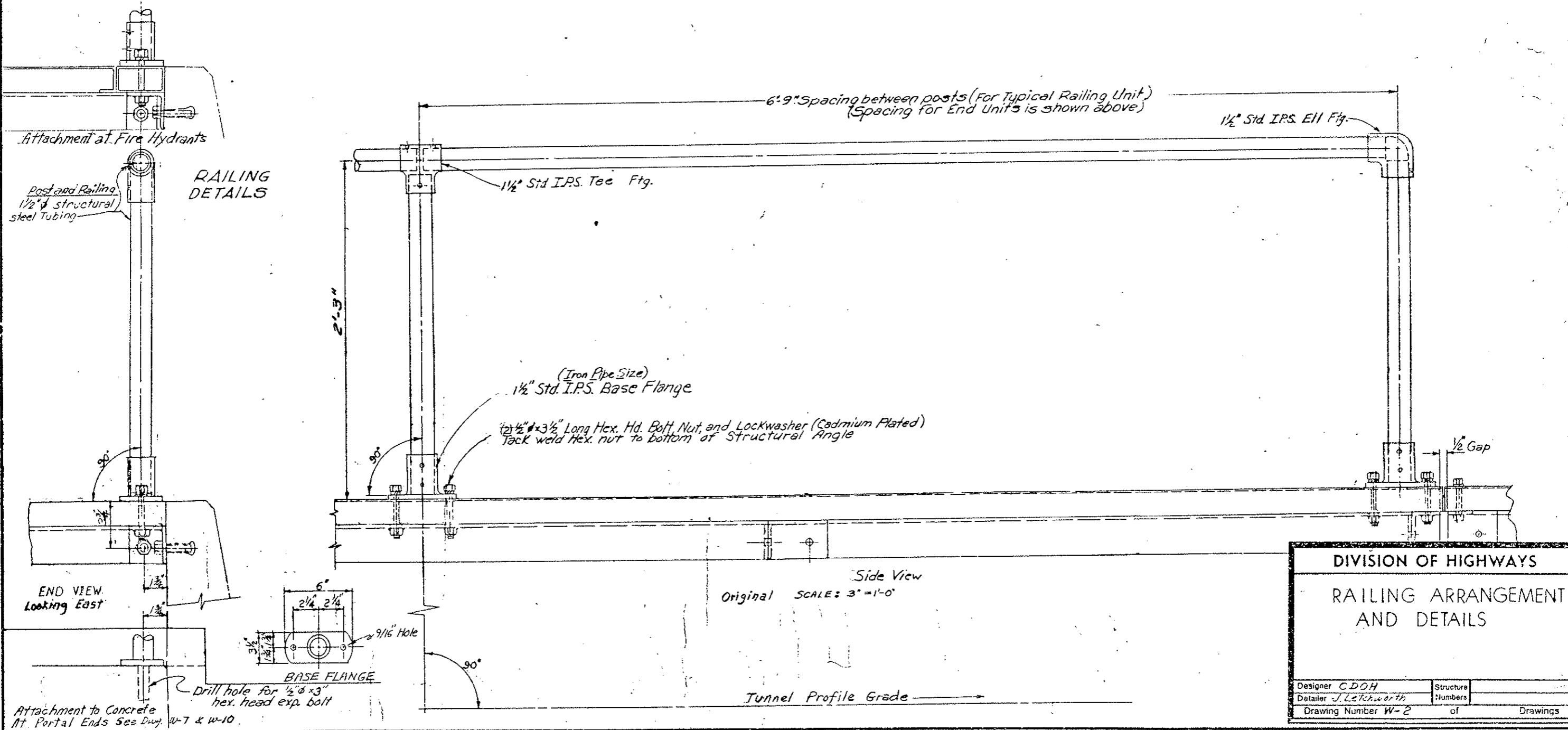
<b>DIVISION OF HIGHWAYS</b>	
<b>NORTH AND SOUTH CURBS TYPICAL SECTIONS</b>	
Designer <i>CDW</i>	Structure
Detailer <i>J. Lettoworth</i>	Numbers
Drawing Number <i>W-1</i>	Drawings

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

### RAILING ARRANGEMENT



DESIGNED BY	CDOH
CHECKED BY	
DATE	7-9-75
QUANTITIES BY	
CHECKED BY	
DATE	7-9-75
DETAILS BY	
CHECKED BY	

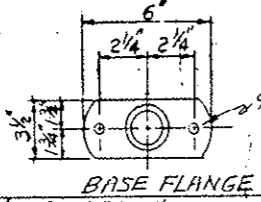


Attachment at Fire Hydrants

#### RAILING DETAILS

Post and Railing  
1/2" structural  
steel tubing

END VIEW  
Looking East



BASE FLANGE

Attachment to Concrete  
At Portal Ends See Dwg. W-7 & W-10

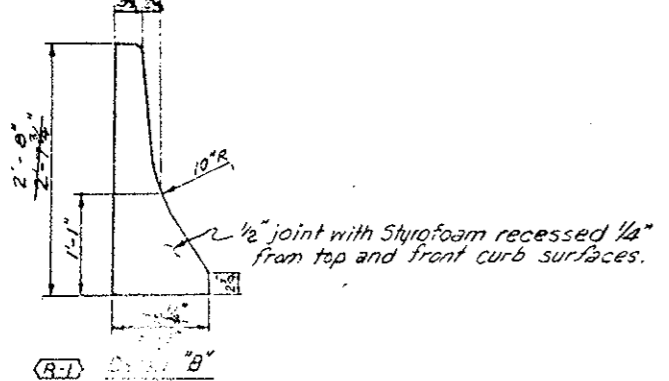
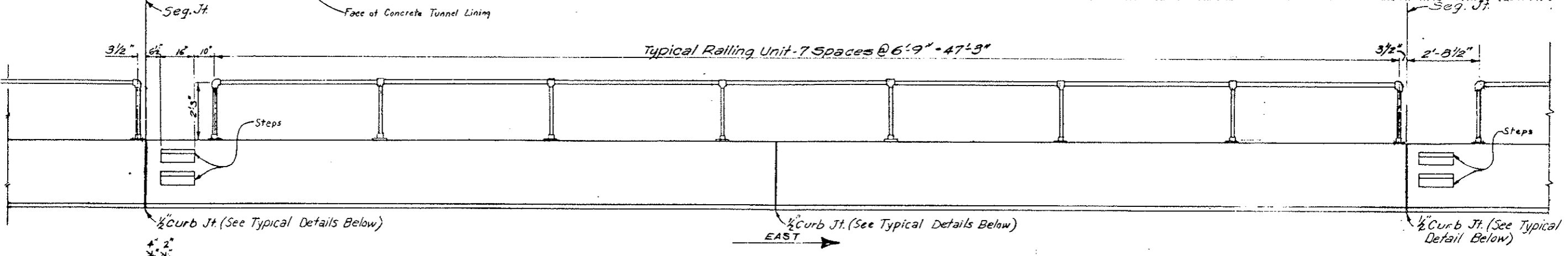
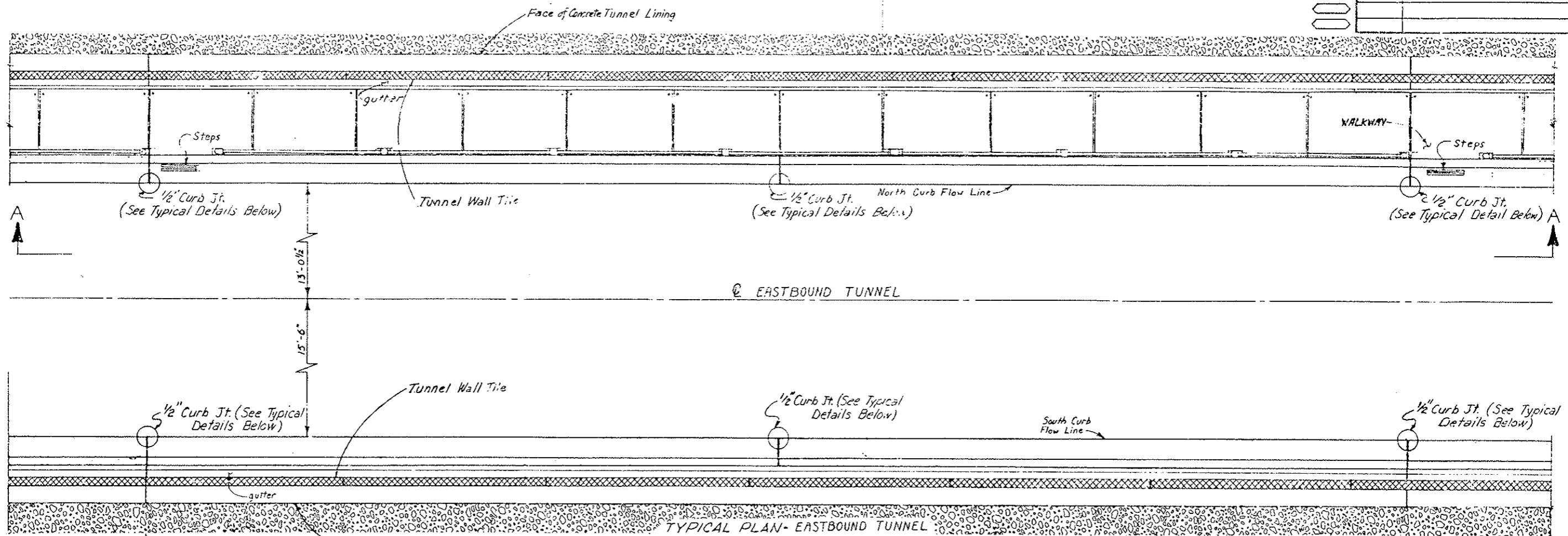
Side View  
Original SCALE: 3" = 1'-0"

Tunnel Profile Grade

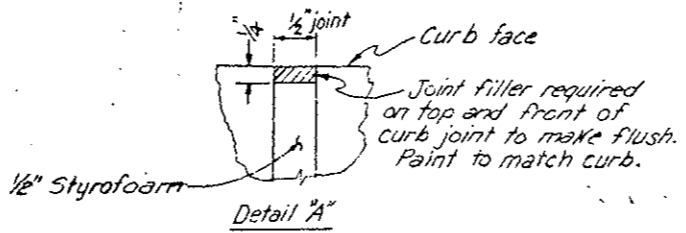
DIVISION OF HIGHWAYS	
RAILING ARRANGEMENT AND DETAILS	
Designer CDOH	Structure Numbers
Detailer J. Letchworth	of
Drawing Number W-2	Drawings

(R-1) Revised detail "B"

REVISIONS	



VIEW A-A  
TYPICAL ELEVATION - HANDRAIL AND CURB



LEGEND  
 Tunnel Wall Tile   
 Precast Safety Curb   
 Conc. Tunnel Lining

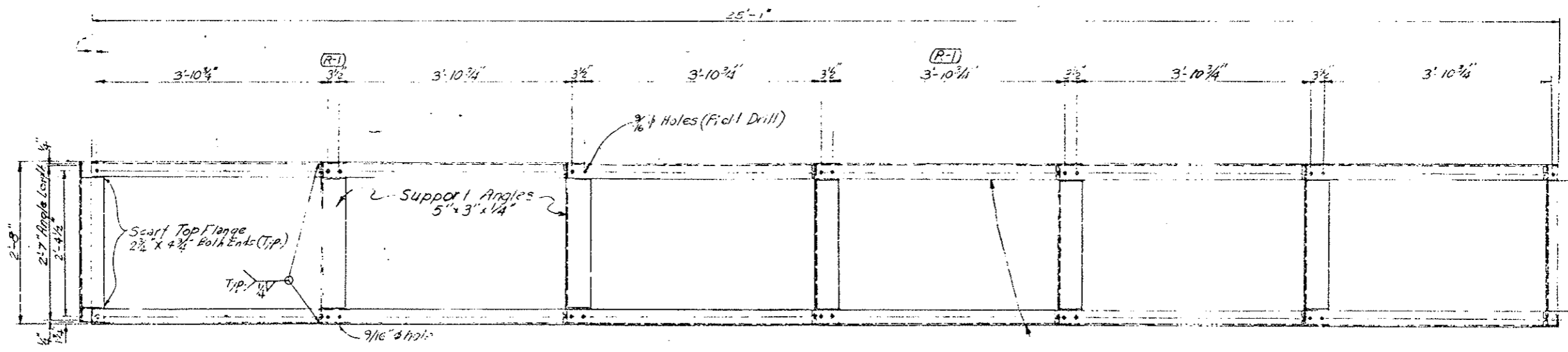
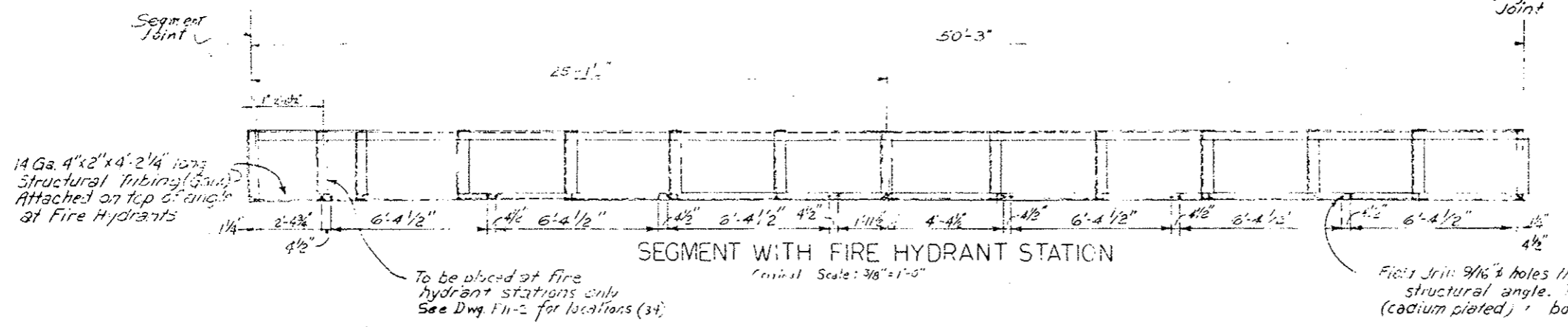
Original Scale: 1/2" = 1'-0"

DIVISION OF HIGHWAYS	
PLAN AND ELEVATION OF TYPICAL SAFETY CURB AND HANDRAIL SPACING	
Designer: CDOT	Structure Numbers
Detailer: J. Letcher	of Drawings
Drawing Number W-3	

INITIAL	DATE	CHECKED BY	QUANTITIES BY
CDOT	3-27-76	CDOT	CDOT
CDOT	3-27-76	CDOT	CDOT

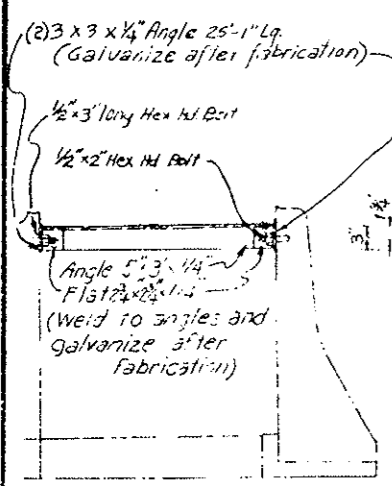


VIII	COLORADO	I 70-3(33)227	31
REVISIONS			
(R-1)	11-3-78	Bolt hole spacing	E.B.
AS CONSTRUCTED			
NO REVISION		REVISED	VOID

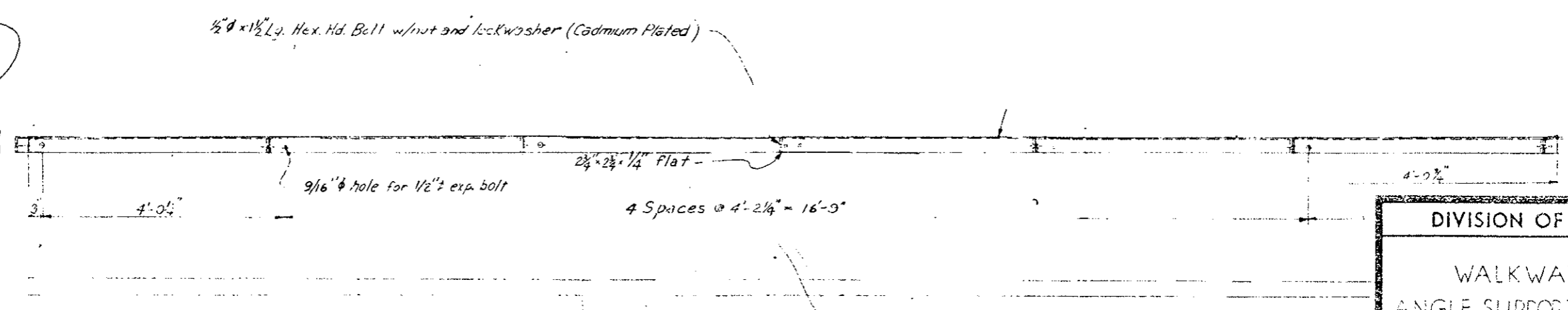


PLAN

Original Scale: 1"=1'-0"



END VIEW

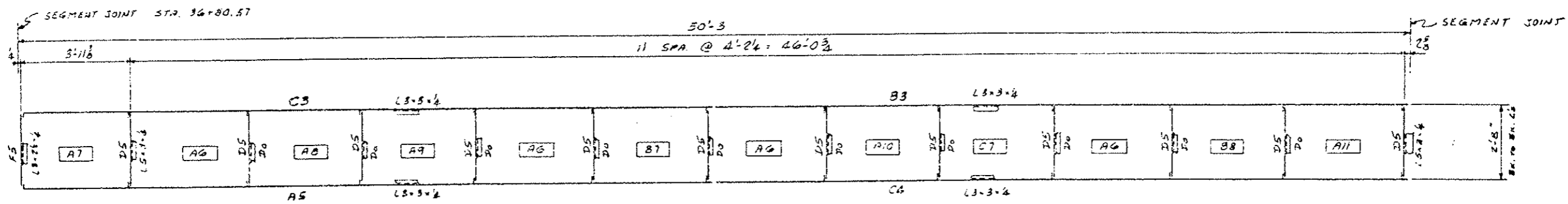


ELEVATION

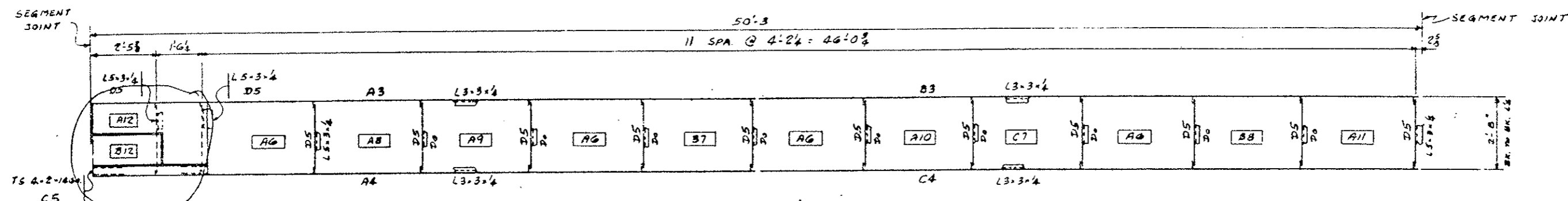
Original Scale: 1"=1'-0"

DESIGNED BY	CDJH	CHECKED BY	CDJH
CHECKED BY	CDJH	DATE	7-9-75
QUANTITIES BY	CDJH	CHECKED BY	CDJH
DATE	7-9-75	QUANTITIES BY	CDJH
DESIGNED BY	CDJH	CHECKED BY	CDJH
CHECKED BY	CDJH	DATE	7-9-75
QUANTITIES BY	CDJH	CHECKED BY	CDJH
DATE	7-9-75	QUANTITIES BY	CDJH

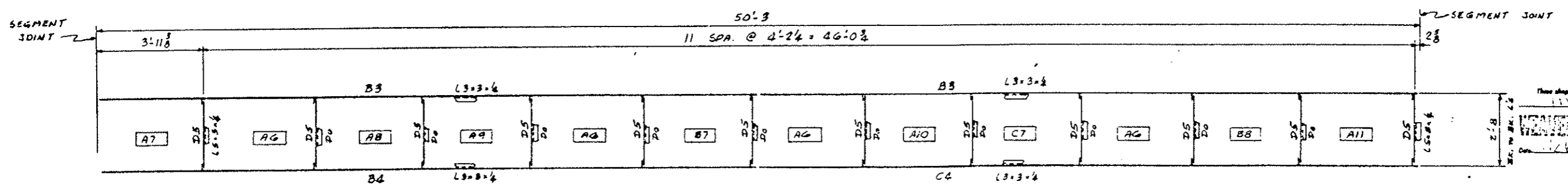
DIVISION OF HIGHWAYS	
WALKWAY	
ANGLE SUPPORT ASSEMBLY	
DETAILS	
Designer CDJH	Structural
Detailer J. L. ...	Numbers
Drawing Number W-4	of Drawings
Revision Date	(Summary Stage Only)



WEST END SEGMENT  
ONE



SEGMENT AT FIRE HYDRANT STATIONS  
34



TYPICAL SEGMENT  
138

LOCATION PLANS FOR PRECAST  
CONCRETE WALKWAY FRAMING

NOTE  
SEE CALIF. 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 referred to  
and are being submitted for approval  
**WEAVER CONSTRUCTION CO.**  
Date 1/10/79

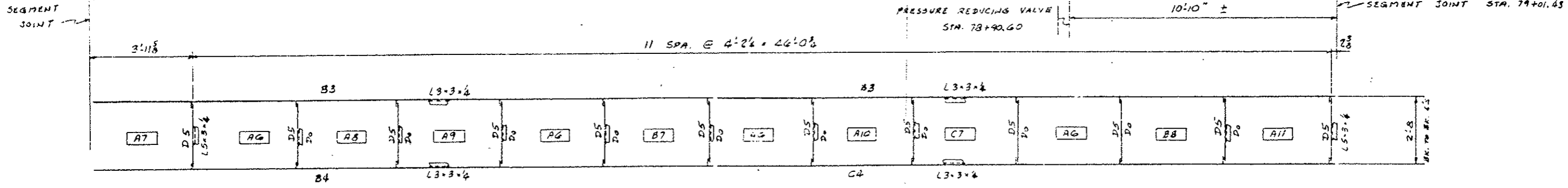
**Weaver Construction Co.**  
2115 So. Valentia Street  
Denver, Colo. 80231 (303) 755-1285

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**

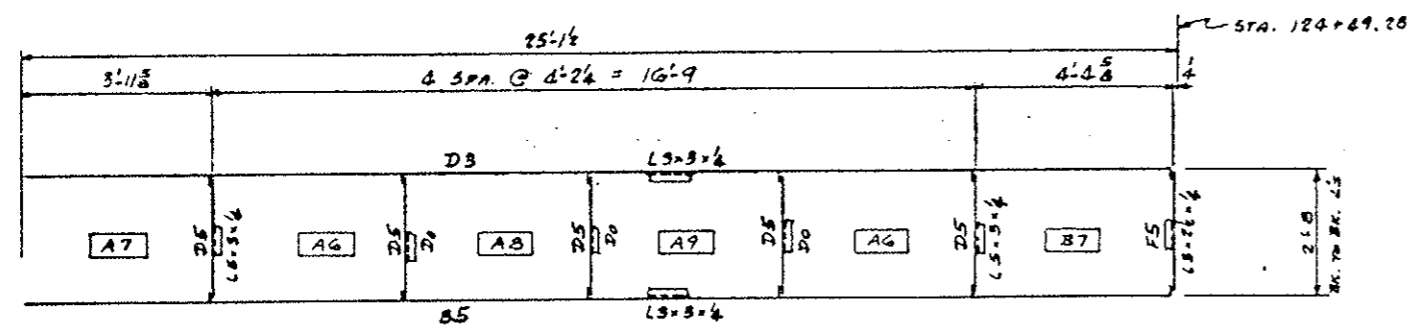
Rev. No.	Items	Date
Rev. No.	Items	Date
Scale:	Drawn By: RHE	Shop
Date: 1-10-79	Checked By: ED	Dwg. No. E1

50'-5"



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. [Signature]

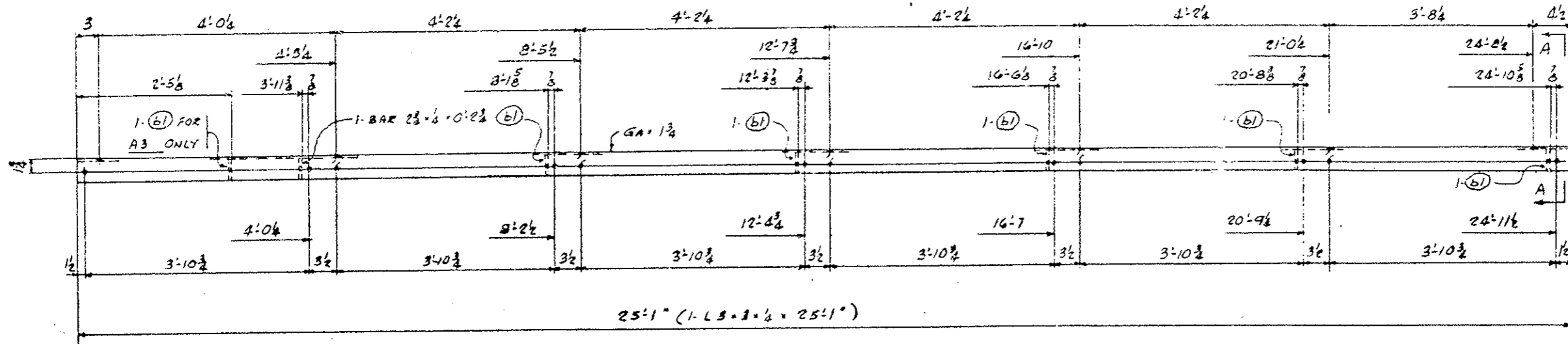
These shop drawings have been reviewed and returned to the contractor and are being submitted for approval.  
**WEAVER CONSTRUCTION CO.**

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

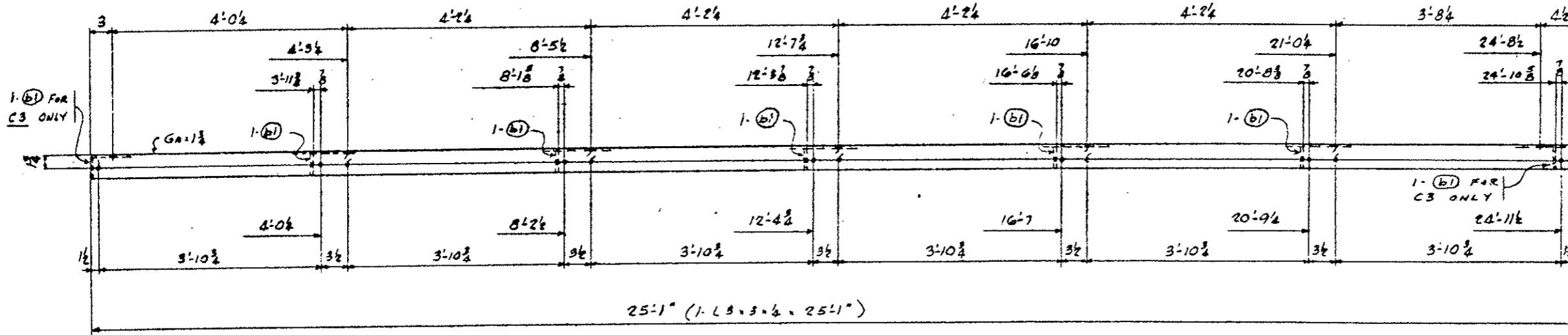
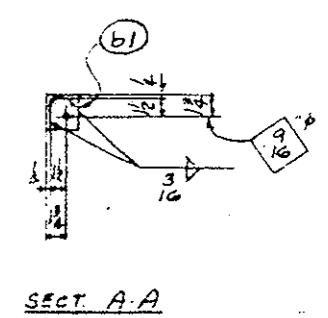
Project: Eisenhower Tunnel Interior Finish Work  
 2nd Bore - Summit & Clear Creek Counties  
 Department of Highways, State of Colorado  
 Project No.: I 70-3(83)220

Sheet Title: WALKWAY ERECTION PLAN

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



34 WALKWAY SUPPORT ANGLES - A3  
 315 D0 - B3



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.**  
 Submittal No. \_\_\_\_\_

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

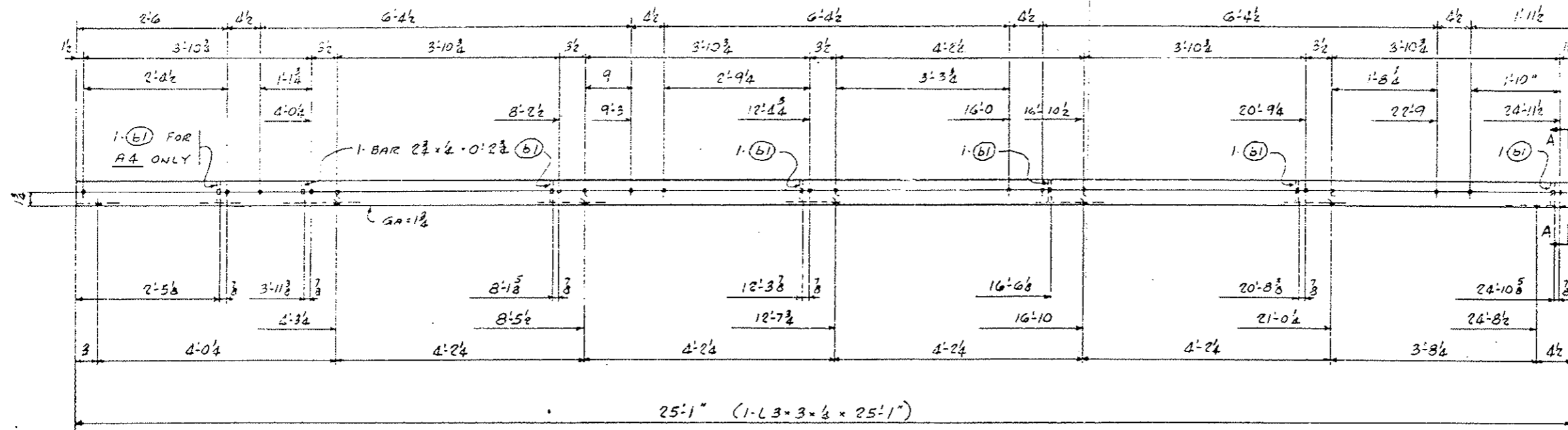
FINISH - GALVANIZE  
 HOLES - 1/8" UNLESS NOTED

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

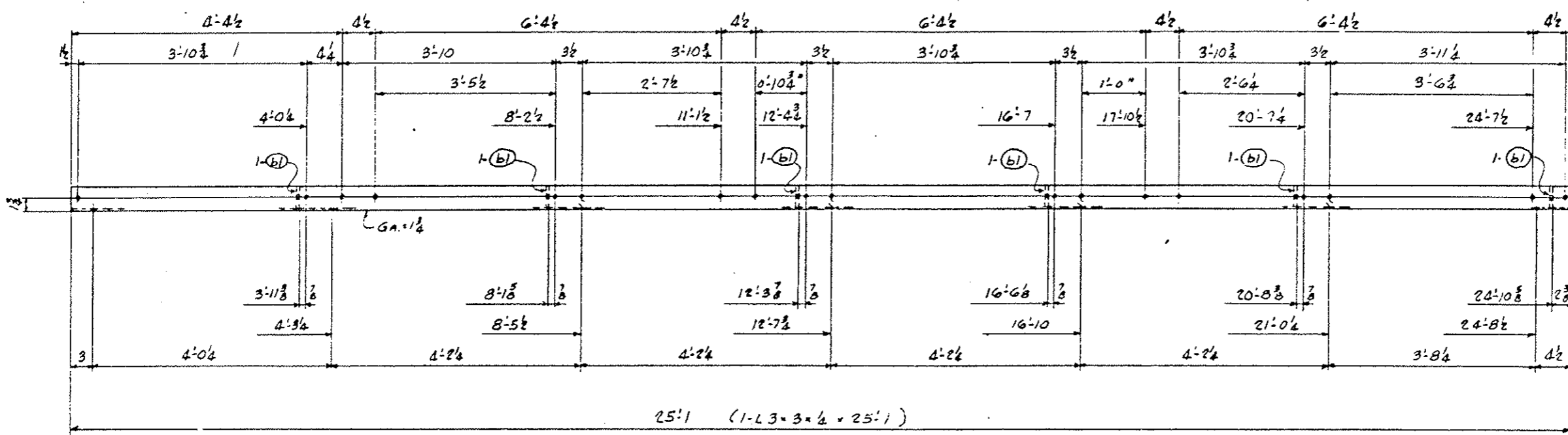
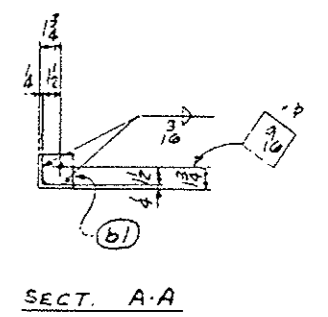
Project: Eisenhower Tunnel Interior Finish Work  
 2nd Bore - Summit & Clear Creek Counties  
 Department of Highways, State of Colorado  
 Project No. I 70-3(B3)220

Sheet Title: WALKWAY FRAMING

Rev. No.	Items	Date
Rev. No.	Items	Date
Scale	Drawn By: RNS	Shop
Date: 1-18-79	Checked By: ED	Dwg. No. 9



34 WALKWAY SUPPORT ANGLES - A4  
139 Do - B4



174 WALKWAY SUPPORT ANGLES - C4

FINISH - GALVANIZE  
HOLES 1/16" UNLESS NOTED

APPROVED PRELIMINARY  
DATE \_\_\_\_\_  
BY \_\_\_\_\_

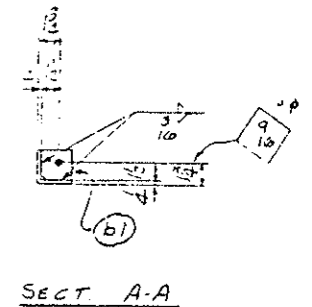
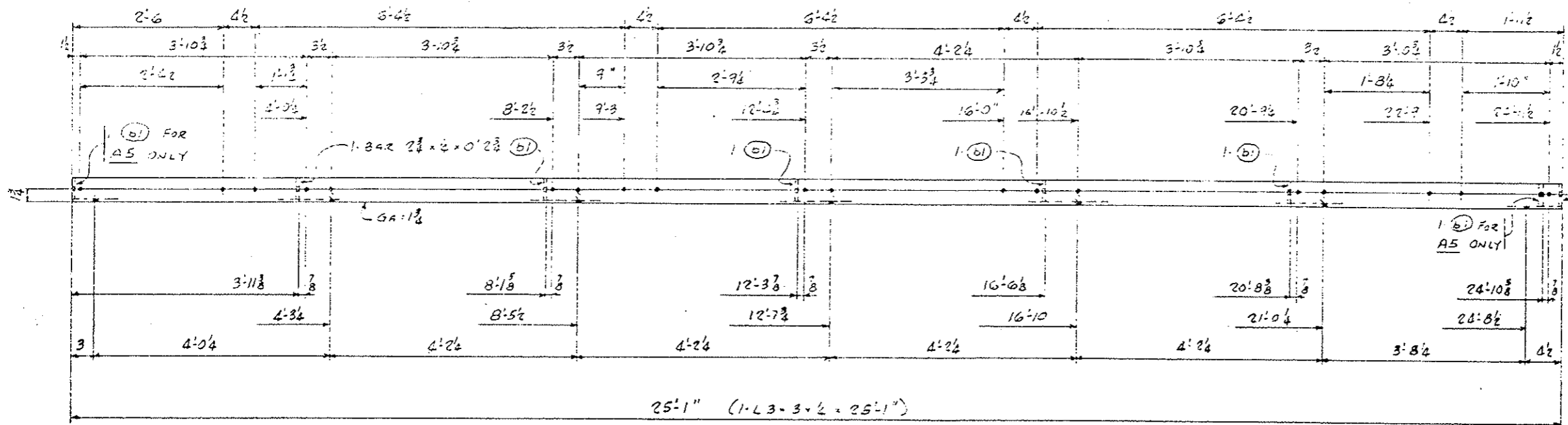
**Weaver Construction Co.**  
2115 So. Valentia Street  
Denver, Colo. 80231, 303-733-1285

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

Sheet No. WALKWAY ARRANGING

Rev. No.	Issued	By	Date

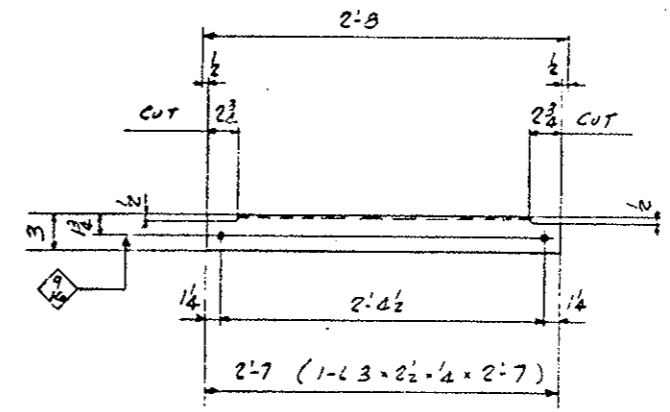
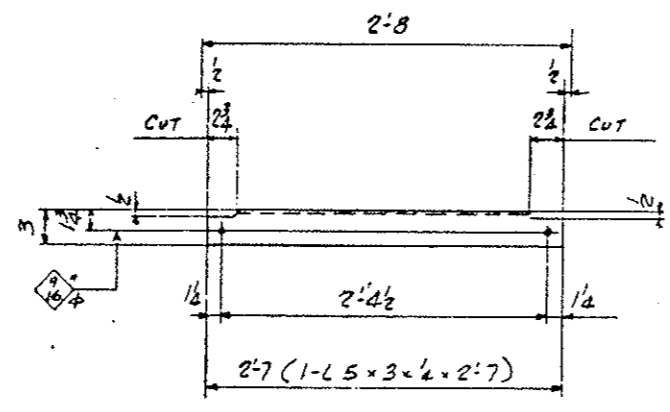
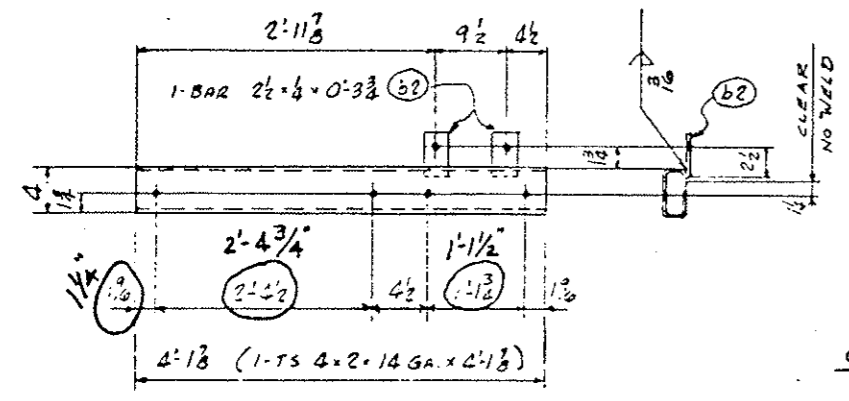
Drawn by: ENG  
Checked by: E.D.  
Date: 7-28-79



ONE WALKWAY SUPPORT ANGLE - A5  
 ONE DO - B5

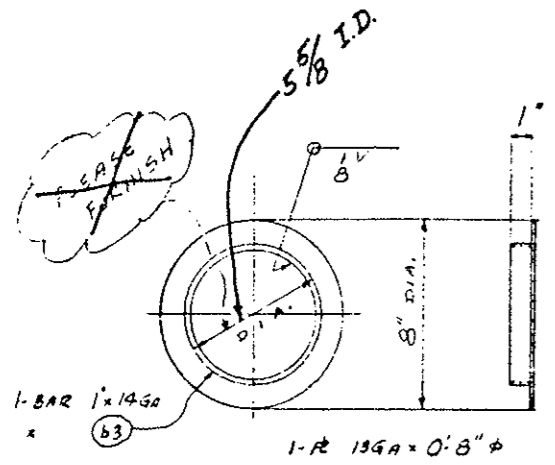
FIELD BOLTS FOR STEEL ONLY

- 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"



2127 ANGLES - D5

2 ANGLES - F5



FRICION CAPS - H5

FINISH - GALVANIZE  
 HOLES - 1/16\"/>

APPROVED PRELIMINARY  
 DATE 3/1/79  
 BY *Rich Traylor*

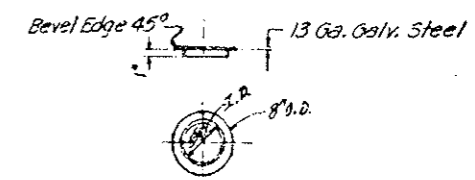
<b>Weaver Construction Co.</b>		
2115 So. Valentia Street		
Denver, Colo. 80231 (303) 755-1285		
Project: Eisenhower Tunnel Interior Finish Work		
2nd Bore - Summit & Clear Creek Counties		
Department of Highways, State of Colorado		
Project No. I 70-3(83)220		
Sheet Title: WALKWAY FRAMING		
Rev. No.	Desc.	Date
Rev. No.	Desc.	Date
Scale	Drawn By: <i>RNG</i>	Check
Date: 1-18-79	Checked By: <i>ED</i>	DWG No.

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

REVISIONS				
(R-1)	10/17/78	Rev dims, slab reinf, conc		
(R-2)	11/3/78	Slab dims, Angle size		

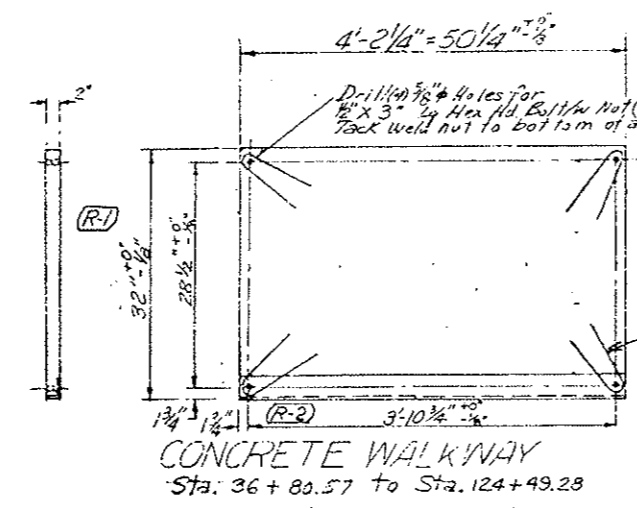
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

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.



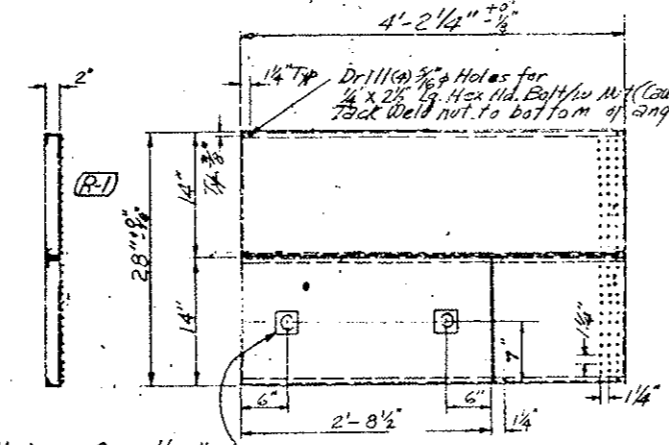
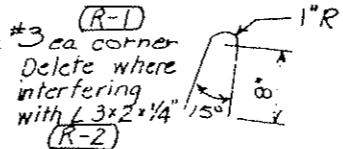
Friction Cap (Typical)

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



CONCRETE WALKWAY  
 Sta. 36+80.57 to Sta. 124+49.28

(R-1) Note: Concrete walkway shop drawings shall include provisions for permanent lifting device.



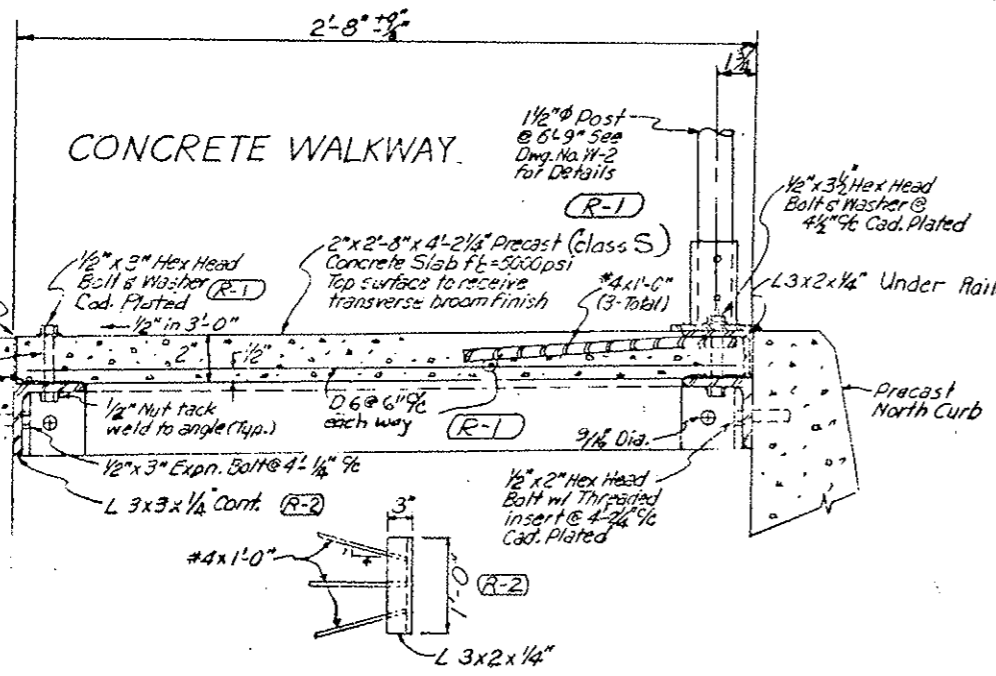
STEEL WALKWAY CHANNEL  
 (FIRE HYDRANT STA.)

NOTE:  
 Metal Panels Deleted  
 Replaced with precast conc. Panels  
 See Sheet No. 32 GX

2 Hydrant Cover Handles  
 Welded to Floor Plate  
 (install flush)

See Dwg. FH-2 (Sheet No. 39) for Fire Hydrant Locations (34 Total)  
 See Dwg. FH-5 (Sheet No. 42) for Pressure Reducing Station (1)

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

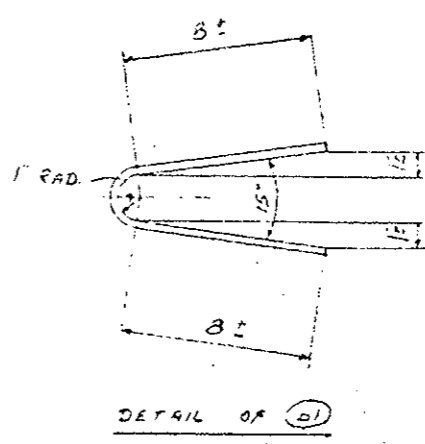
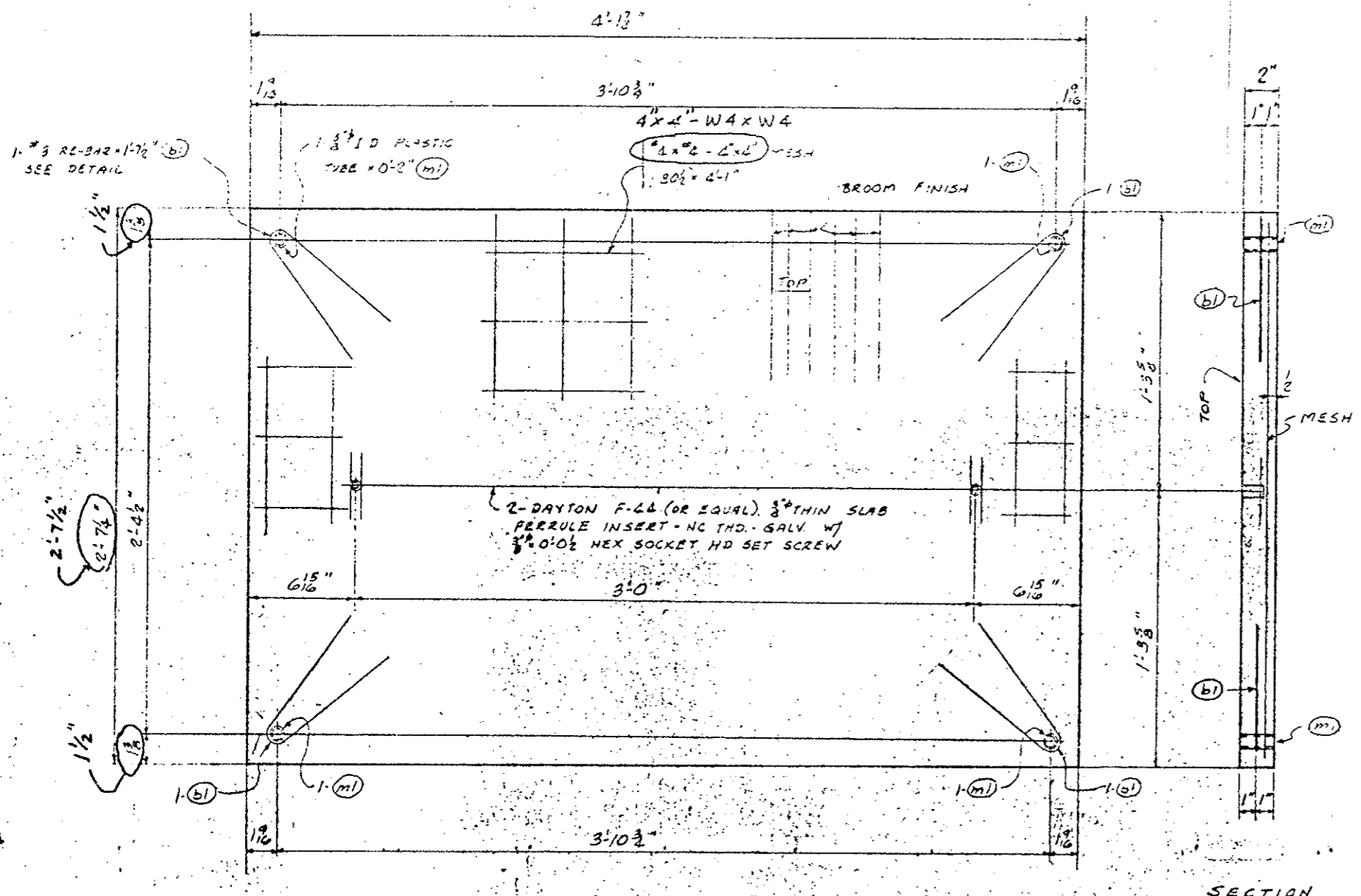


CONCRETE WALKWAY

DESIGNED BY	C.P.O.H.	CHECKED BY	
CHECKED BY		DATE	5-30-78
QUANTITIES BY		DATE	9-30-78
CHECKED BY		DATE	10-1-78

DIVISION OF HIGHWAYS			
WALKWAY DETAILS			
Designer C.D.O.H.	Structure Numbers		
Detailer J. Letchworth	of	Drawings	
Drawing Number W-3			
Revision Dates	(Preliminary Stage Only)		





FIELD BOLTS FOR CONC. PANELS

8000 - 1/2"  $\phi$  ZINC PLATED  
HEX. HD. MACH. BOLTS x 0'-3"

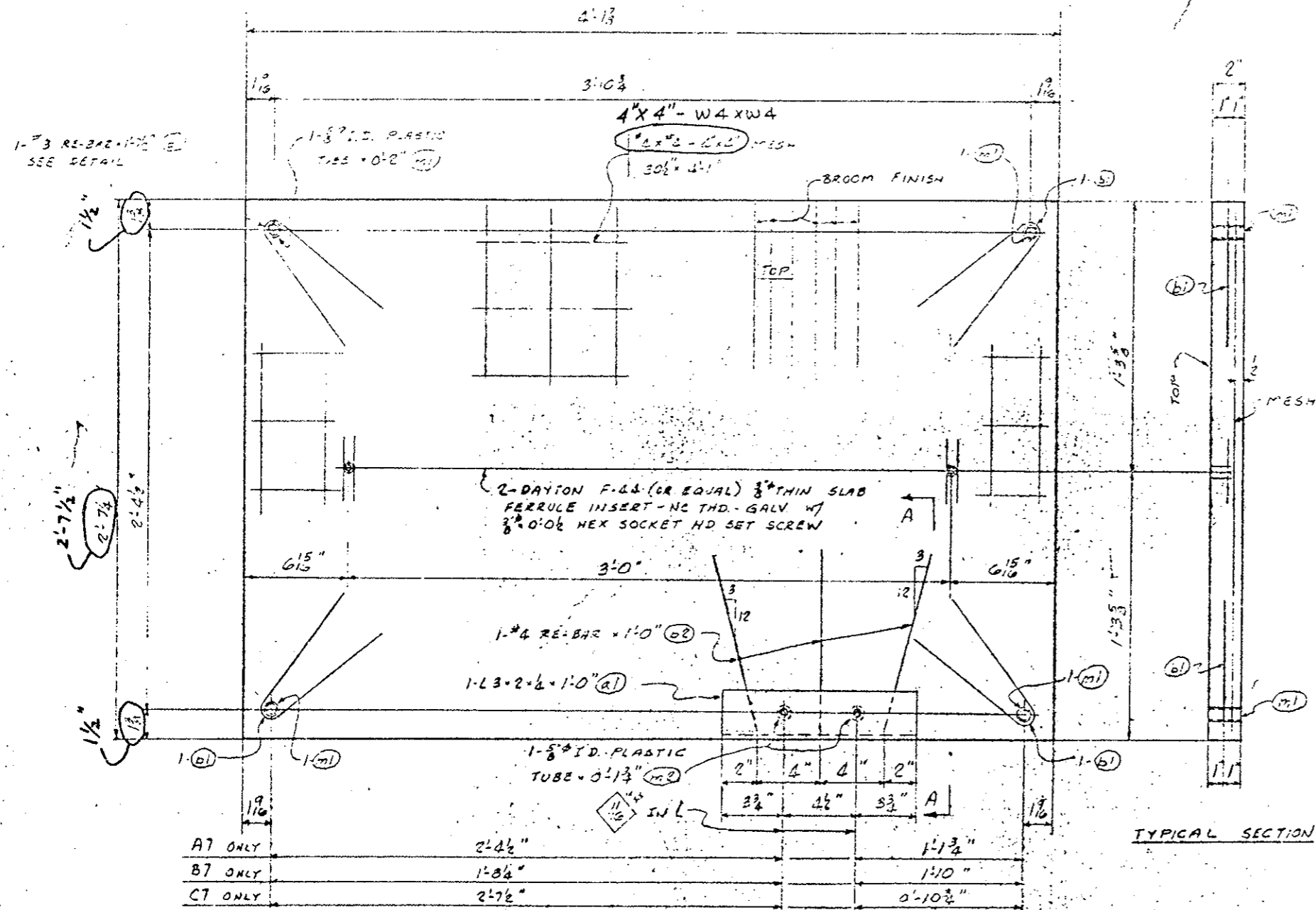
8000 - 1/2"  $\phi$  ZINC PLATED CUT WASHERS

698 CONCRETE WALKWAY PANELS - AG

CLASS 5 CONCRETE - FC=5000 PSI

APPROVED PRELIMINARY  
DATE 3/1/79  
BY *Rich Foyt*

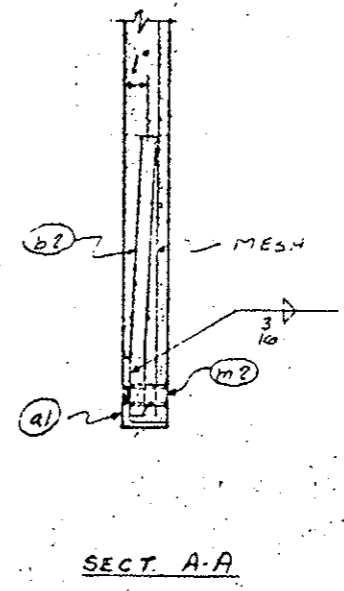
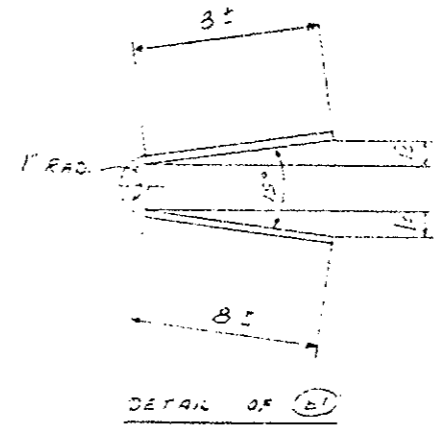
<b>Weaver Construction Co.</b>		
2115 So. Valentic Street		
Denver, Colo. 80231 (303) 755-1285		
Project: Eisenhower Tunnel Interior Finish Work		
2nd Bore - Summit & Clear Creek Counties		
Department of Highways, State of Colorado		
Project No.: I 70-3(83)220		
Sheet Title: CONCRETE WALKWAY PANELS		
Rev. No.	Name	Date
Rev. No.	Name	Date
Scale:	Drawn By: <i>RJG</i>	CHKD
Date: 1-18-79	Checked By: <i>ED</i>	DWG. No. 6



A7 ONLY	2'-4 1/2"	1'-11 1/4"
B7 ONLY	1'-8 1/4"	1'-10"
C7 ONLY	2'-7 1/2"	0'-10 1/8"

1&1	CONCRETE WALKWAY PANELS - A7
175	Do - B7
174	Do - C7

CLASS 5 CONCRETE - FC=5000 PSI



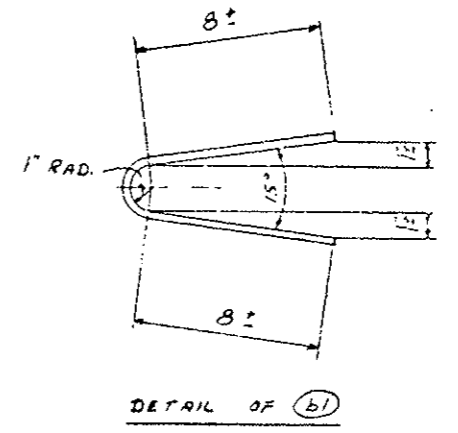
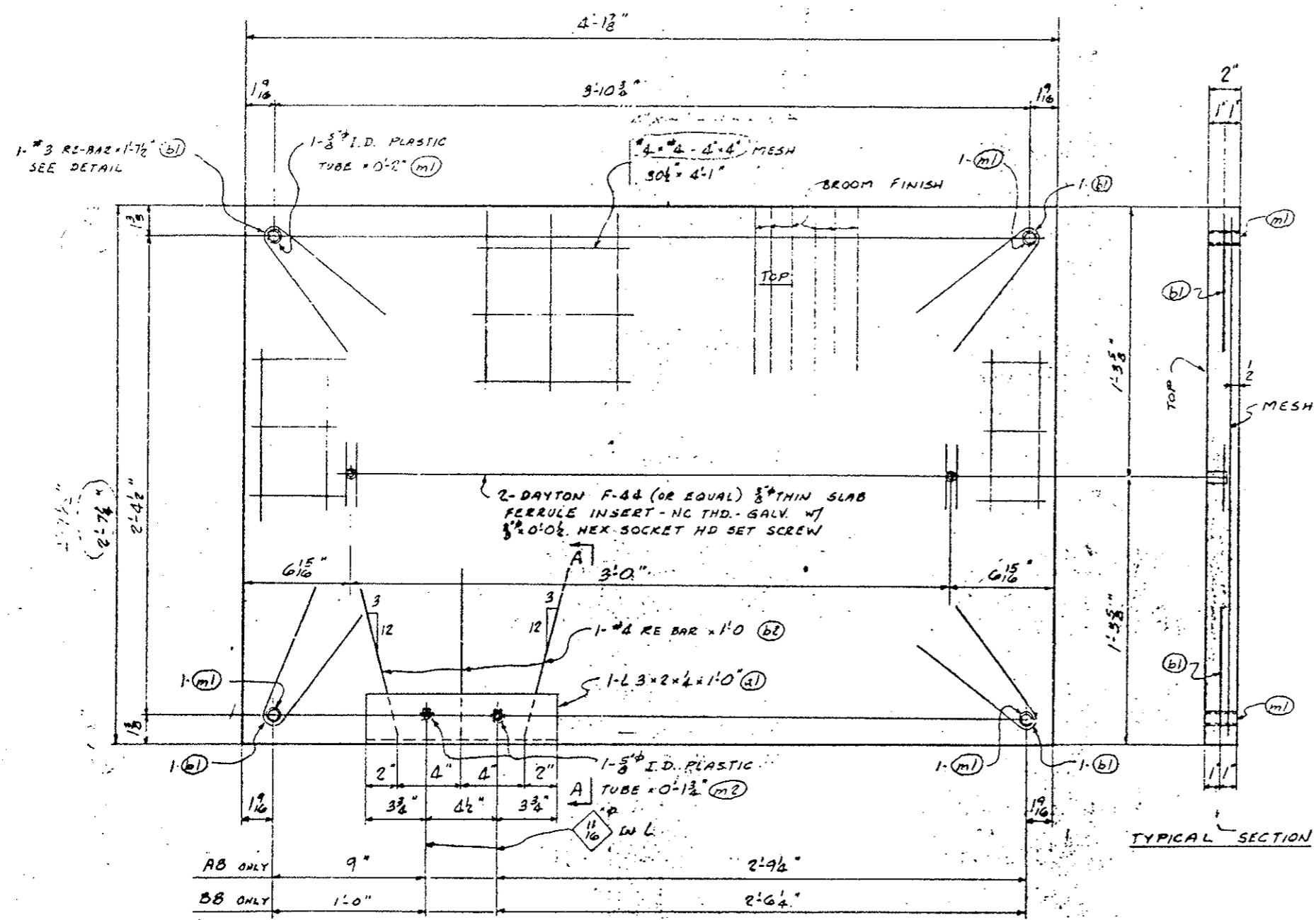
APPROVED PRELIMINARY  
DATE 3/1/79  
BY *Rick Foyelle*

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

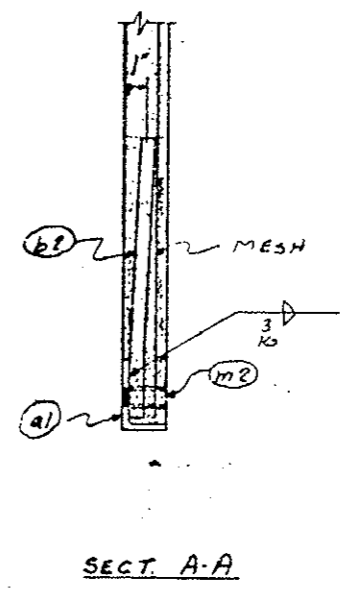
Project: Eisenhower Tunnel Interior Finish Work  
2nd Bore - Summit & Clear Creek Counties  
Department of Highways, State of Colorado  
Project No.: I 70-3(82)220

Sheet Title: CONCRETE WALKWAY PANELS

No. 10	11844	DATE
No. 10	11844	DATE
Scale	Drawn By R.H.G.	Sheet
Date 1-19-79	Checked By E.D.	Dwg. No. 7



TYPICAL SECTION



175 CONCRETE WALKWAY PANELS - AB  
 174 DO - BB

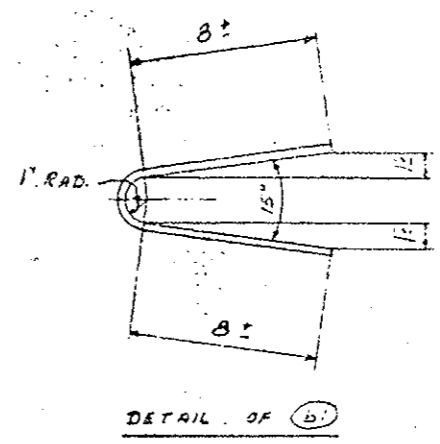
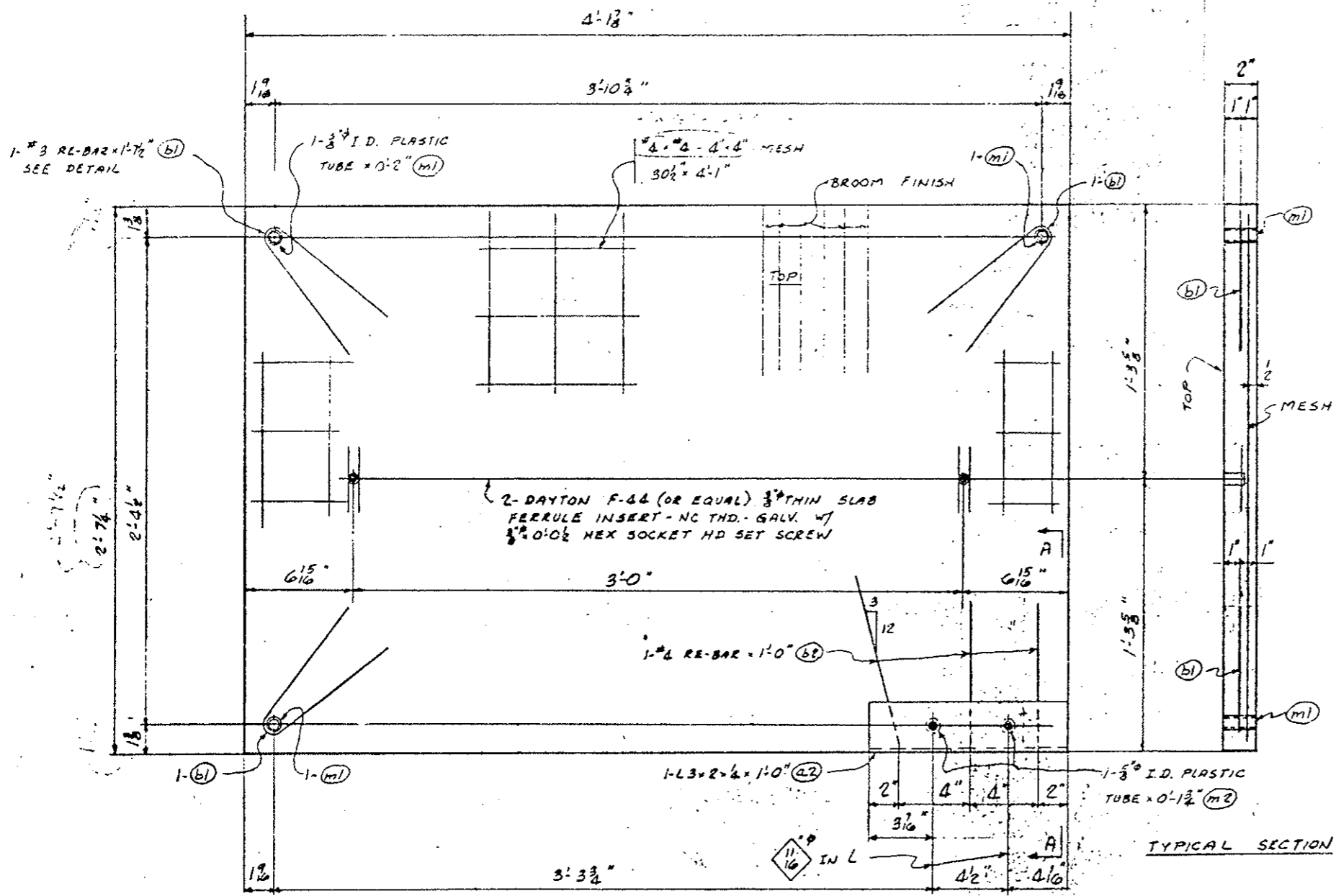
CLASS. S CONCRETE - f'c = 5000 psi

**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.: 170-3(83)220

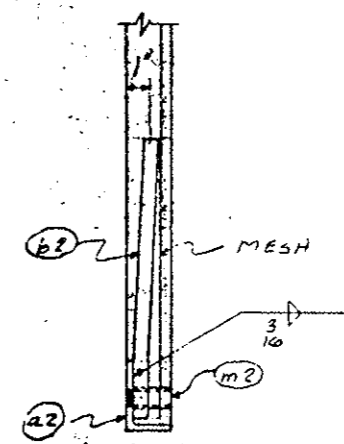
Sheet Title: CONCRETE WALKWAY PANELS

Rev. No.	Desc.	Date
Rev. No.	None	Date
Scale:	Drawn By: RHG	Shop
Date: 1-17-79	Checked By: EID	Dwg. No. 8



DETAIL OF (b1)

TYPICAL SECTION



SECT. A-A

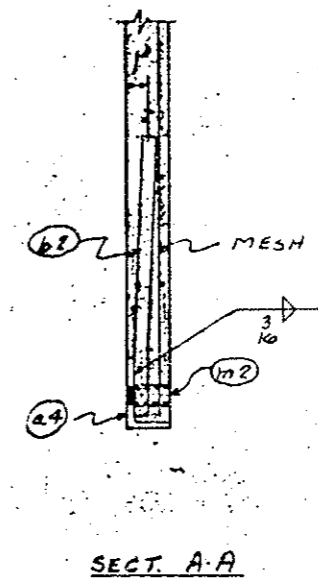
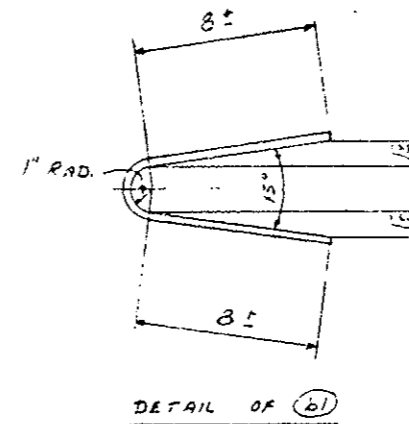
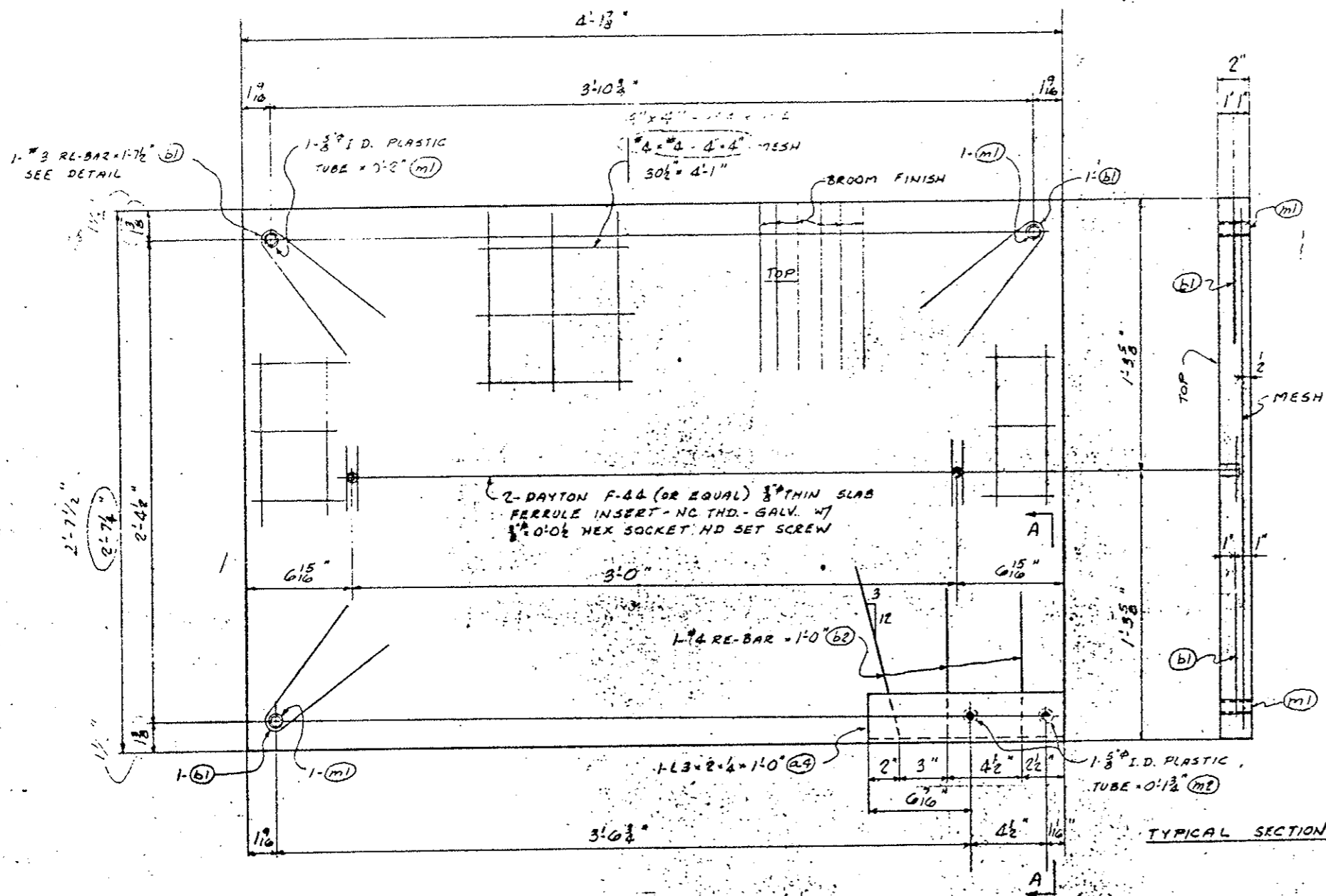
175 CONCRETE WALKWAY PANELS - A9

CLASS 3 CONCRETE - FC=5000 PSI

APPROVED - PRELIMINARY

<b>Weaver Construction Co.</b>		
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.	Item	Date
Scale	Drawn By: RHG	Shop
Date: 1-19-78	Checked By: ED	Dwg. No. 9



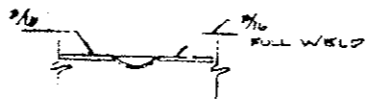
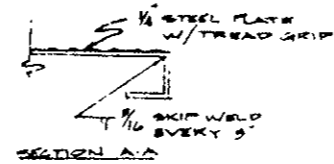
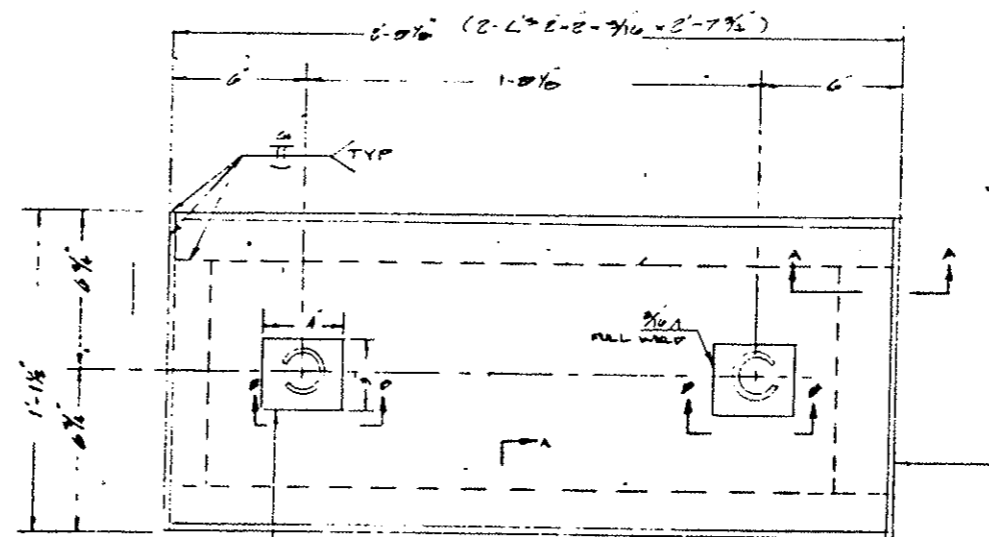


17A. CONCRETE WALKWAY PANELS - All

CLASS 5. CONCRETE - FC=5000 PSI

NOTED PRELIMINARY

<b>Weaver Construction Co.</b>		
2115 So. Valentia Street		
Denver, Colo. 80231 (303) 755-1295		
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		
Shop Title: CONCRETE WALKWAY PANELS		
Rev. No.	Name	Date
Rev. No.	Name	Date
Scale	Drawn By: RHG	Shop
Date: 1-19-79	Checked By: ED	Draw. No. 11



1010 STANLEY  
RING FULL  
FLUSH MOUNTED  
GALVANIZED

34 REMOVABLE WALLWAY PANELS P.C.  
GALVANIZE AFTER FABRICATION

WEAVER CONSTRUCTION CO 8110 SA VALENTIA STREET DENVER COLORADO 80031		
PROJECT: EISENHOWER TUNNEL INTERIOR FINISH WORK 2 1/2\"/>		
SHEET TITLE: CONCRETE WALKWAY PANELS		
1	REVISION CHANGED DIM	2.19.80
DATE 2-22-79	DRAWN BY JAH	NO. 10



REVISIONS		
(R-1)	10-17-75	Curb Color
		E.B.

AS CONSTRUCTED

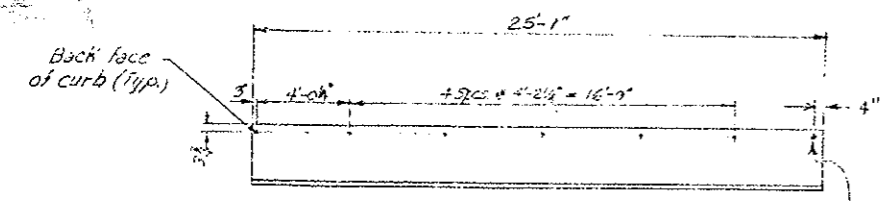
NO REVISIONS  REVISED  VOID

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:

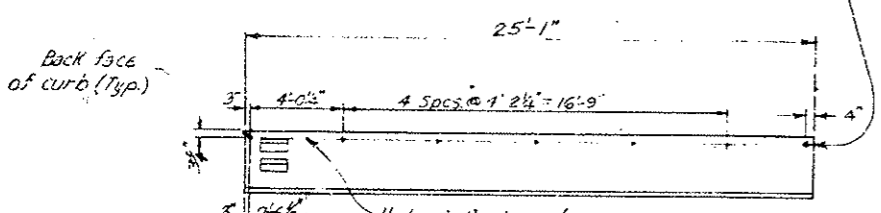
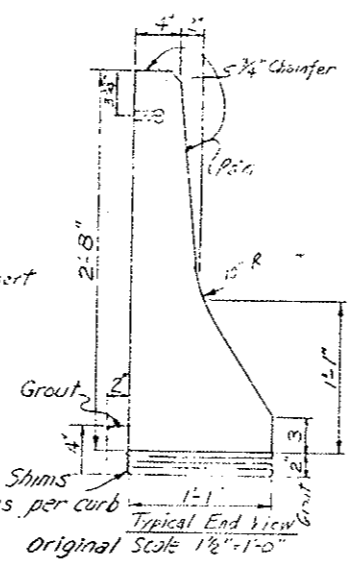
BAR SIZE	#3	#4	#5	#6	#7	#8
SPLICE LENGTH	1'-0"	1'-0"	1'-3"	1'-8"	2'-3"	3'-0"



- 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

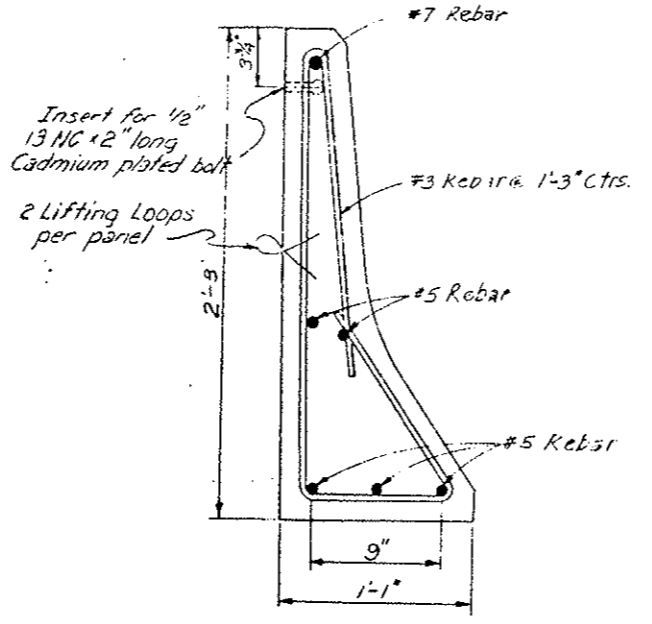
Without Steps

Additional Insert



- Curb ① Color - Green with expansion bolt insert
- Curb ⑤ Color - White with expansion bolt insert
- Curb ⑧ Color - Green (R-1) without expansion bolt insert

With Steps

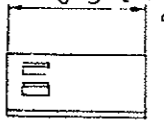


Typical Section  
Original Scale: 2"=1'-0"



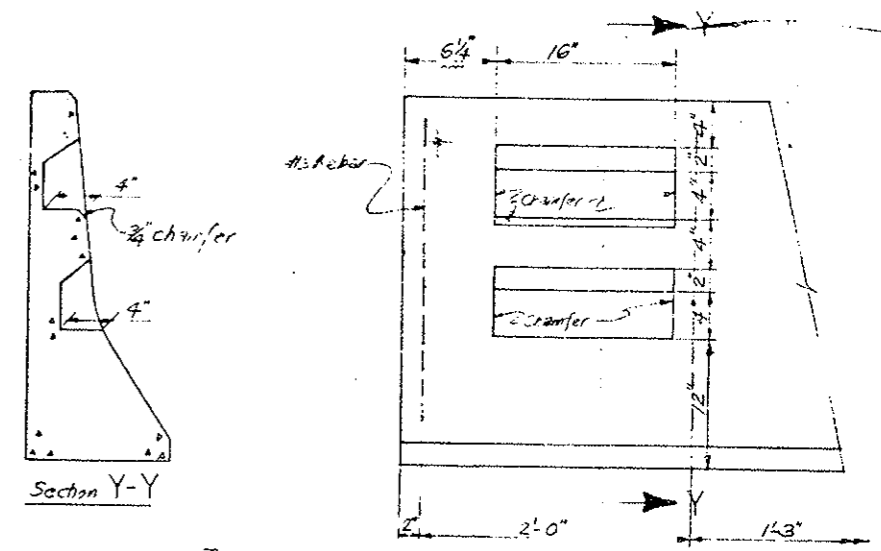
- Curb ⑥ Color - White without expansion bolt insert
- (R-1) Curb ⑩ Color - Green without expansion bolt insert

Without Steps



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

With Steps



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

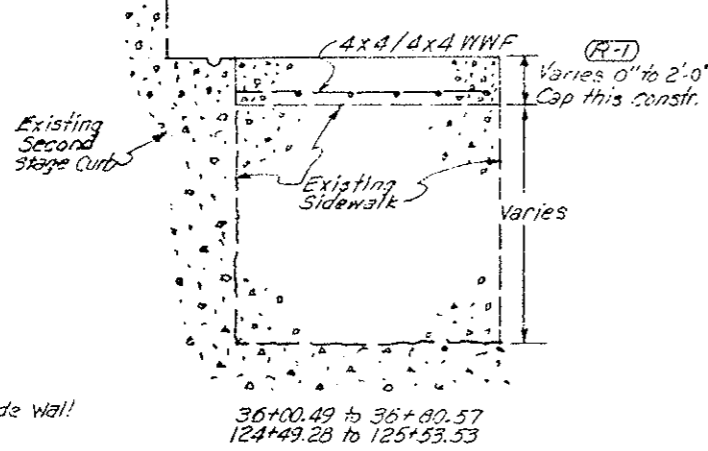
DESIGNED BY	C.E.O.H.	CHECKED BY	
DATE	7-3-75	QUANTITIES BY	
INITIAL	C.E.O.H.	CHECKED BY	
		DATE	7-3-75

**DIVISION OF HIGHWAYS**

PRECAST SAFETY CURBS  
DETAILS

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

**DETAIL OF RAISE SIDEWALK**  
(No Scale)

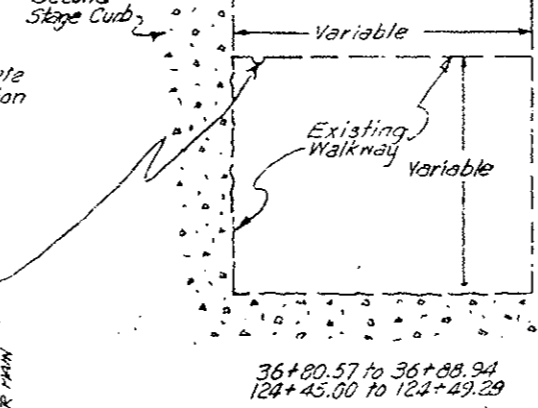


36+30.57 to 36+88.94 - Remove Concrete Walkway Lt. in accordance with Specification Section 202

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

Gutter Drain Deleted on South Side from sta. 35+99± to sta. 37+80±

**DETAIL OF WALKWAY TO BE REMOVED**  
(No Scale)



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

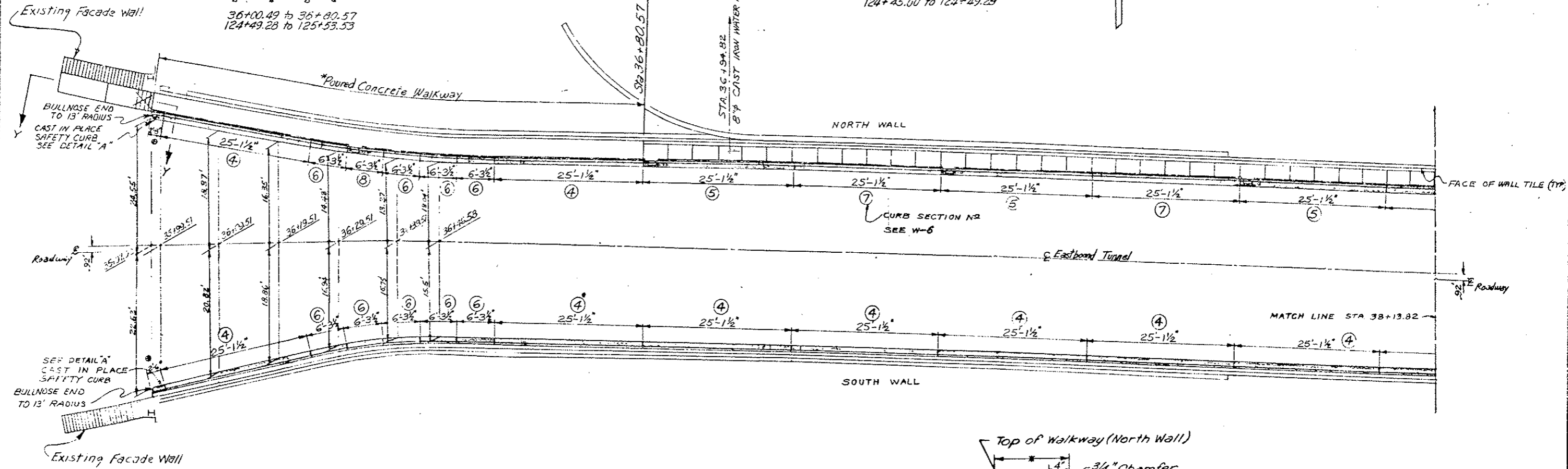
FEDERAL ROAD DESIGN NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I70-3(83)220	34	

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

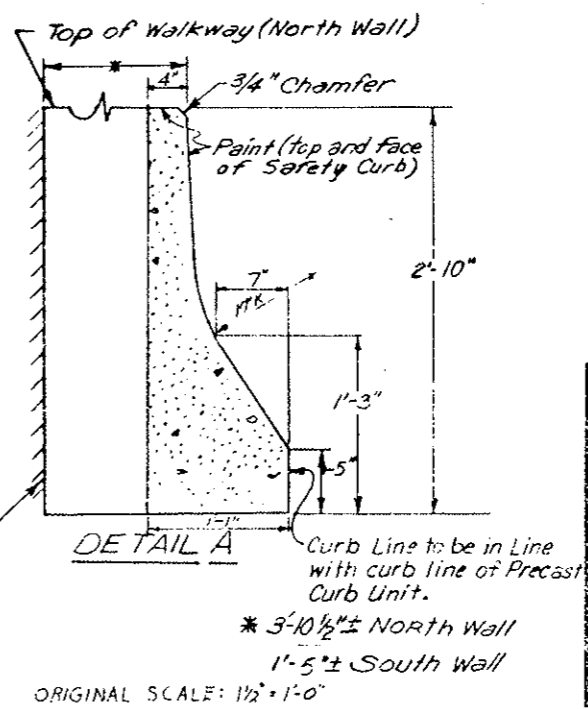
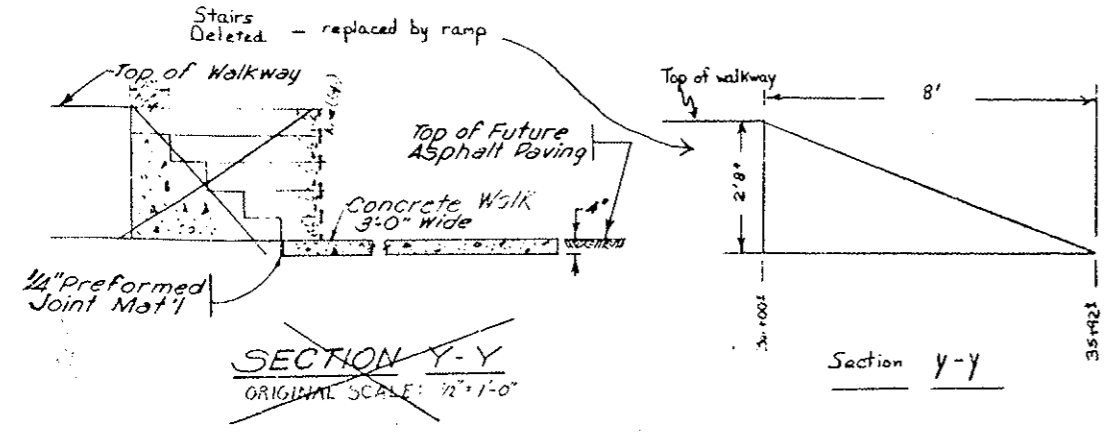
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID



DESIGNED BY	DATE	CHECKED BY
DETAILED BY	9-17-75	QUANTITIES BY
		CHECKED 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.D.O.H.	Structure
Detailer J.L. Lichtenwirth	Numbers
Drawing Number W-7	of Drawings

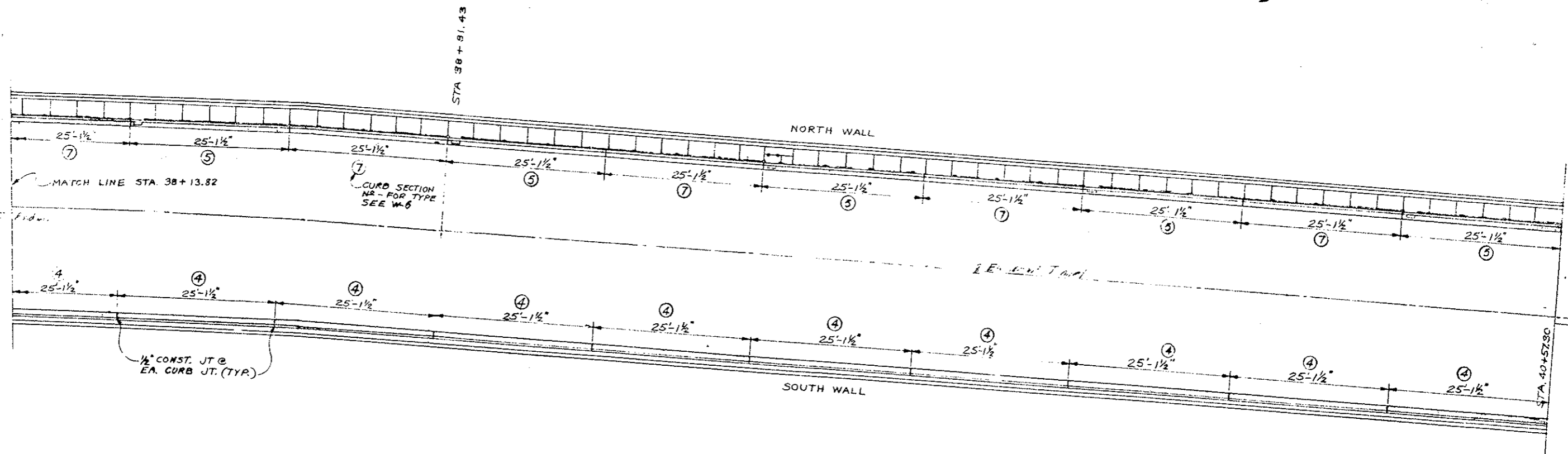
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(83)220	35	

REVISIONS	

AS CONSTRUCTED

NO REVISIONS  REVISED  VOID

DESIGNED BY	DATE	CHECKED BY
CDOH	9/17/72	
DRAWN BY		



PLAN OF PRECAST CURB-CONTINUED  
ORIGINAL SCALE: 1/8"=1'-0"

NOTES:  
1. FOR CURB DETAILS SEE W-8

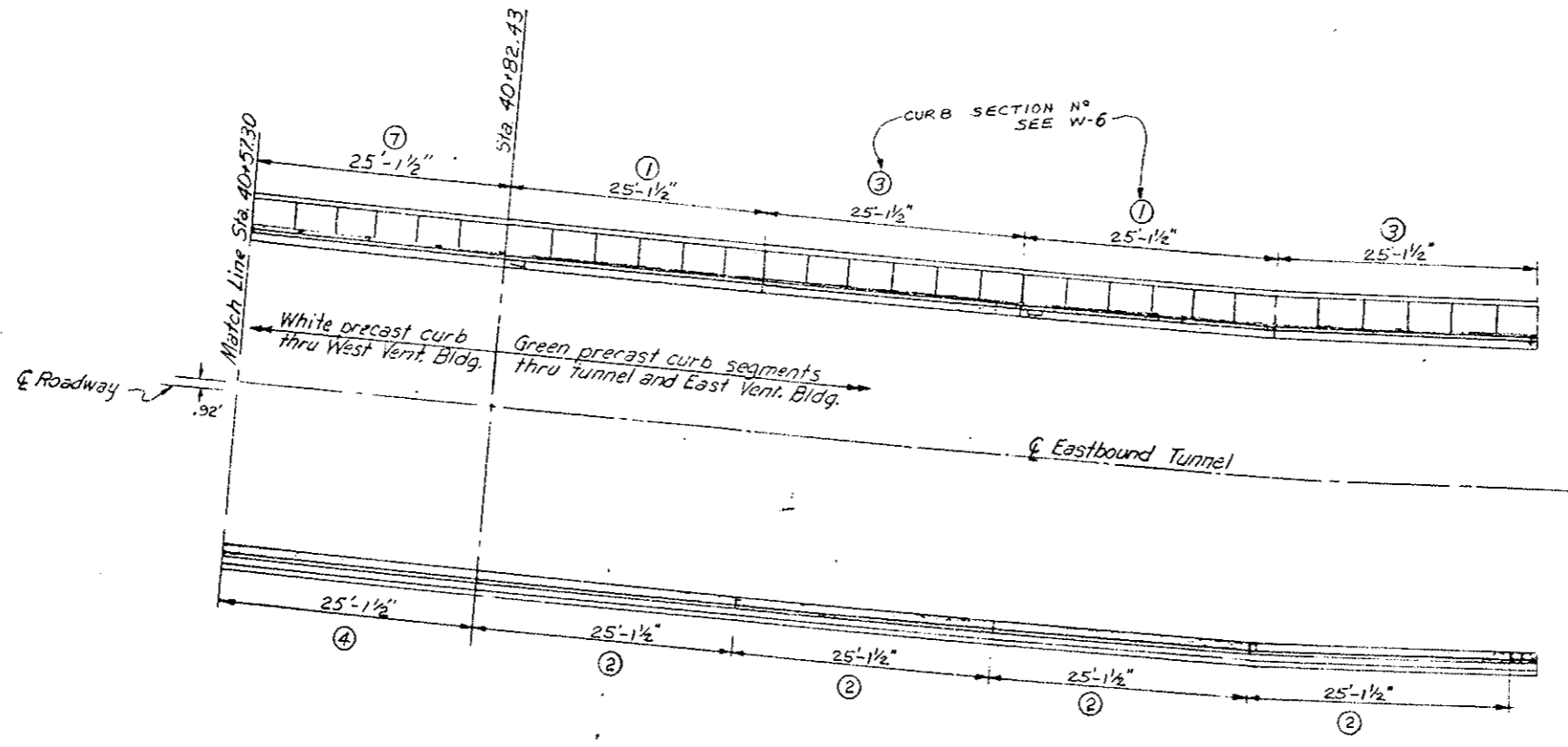
**DIVISION OF HIGHWAYS**

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

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

Revision Dates	(Preliminary Stage Only)

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I70-3(93)220	36	
REVISIONS				
○				
○				
○				
AS CONSTRUCTED				
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID



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
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
Detailer <i>J. Letchworth</i>	Numbers
Drawing Number <i>IV-9</i>	of Drawings

Revision Dates	(Preliminary Stage Only)

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

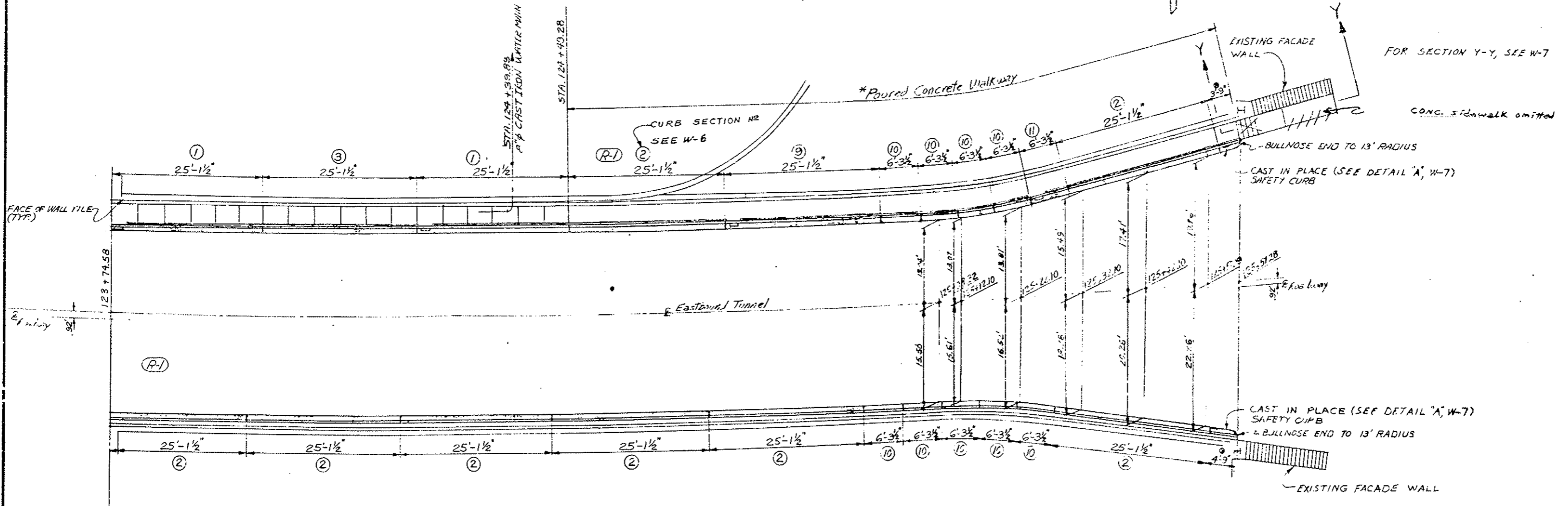
REVISIONS		
R-1	10-17-78	Curb Section No and Sheet Title E.B.

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

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

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

CHECKED BY	DATE	QUANTITIES BY
DESIGNED BY	DATE	DETAILS BY



- NOTE:**
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

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

<b>DIVISION OF HIGHWAYS</b>	
<b>PLAN OF PRECAST CURB THRU EAST VENT BUILDING</b>	
(R-1)	
Designer CDOH	Structure
Detailer J. Letchworth	Numbers
Drawing Number W-10	of Drawings

Revision Dates	(Preliminary Stage Only)

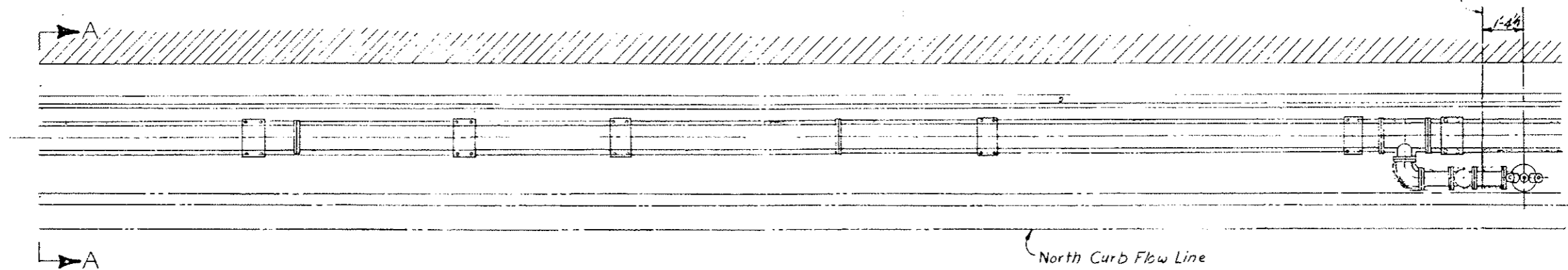
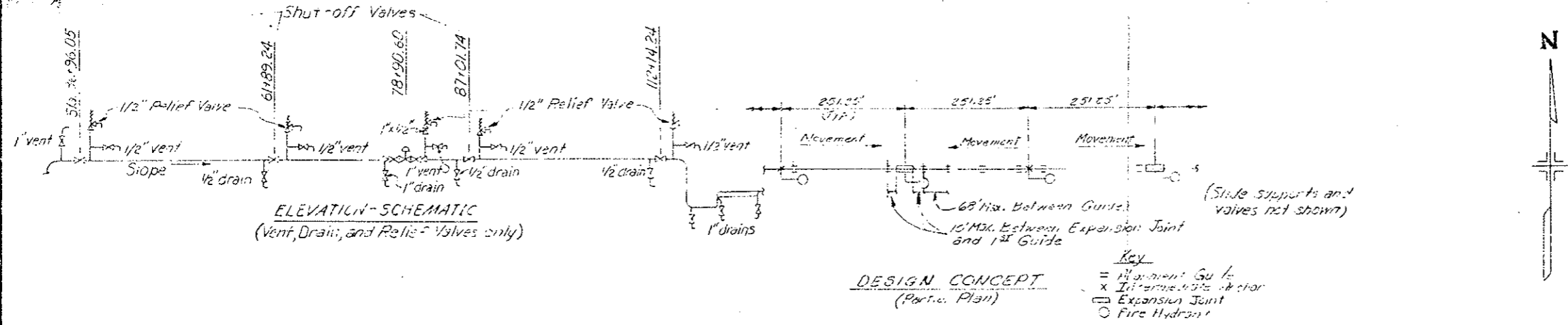
FEDERAL ROAD REGION NO.	DIVISION	PRG. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	I 70-3(83)220	38	

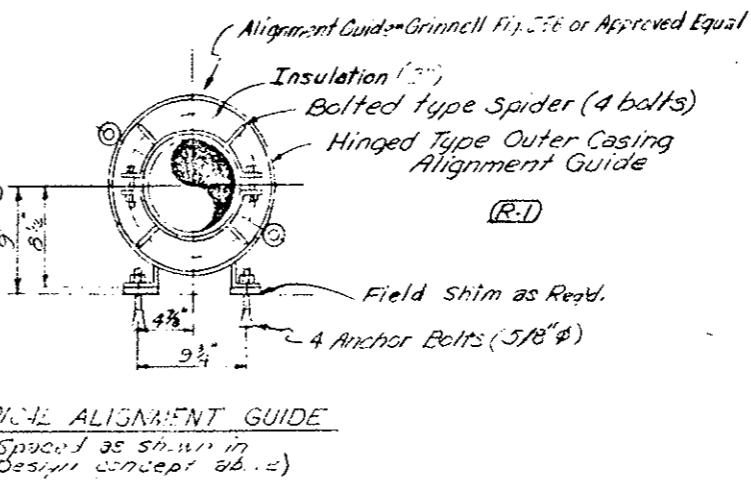
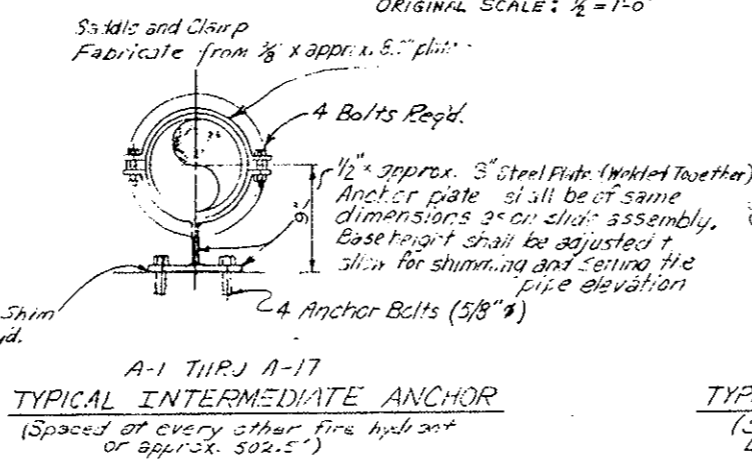
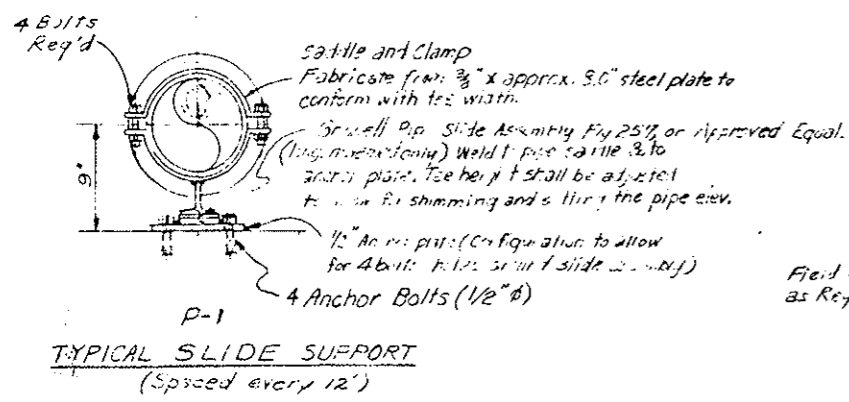
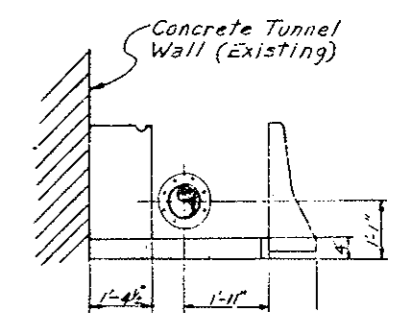
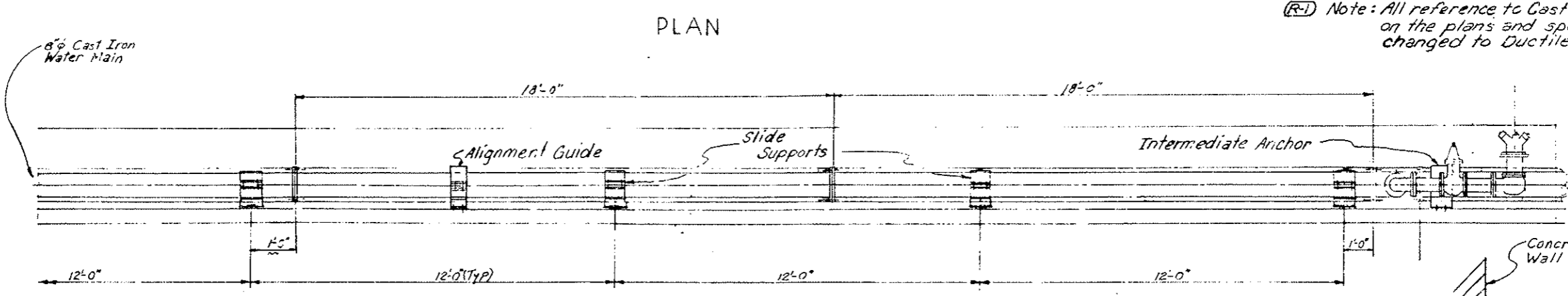
REVISIONS		
R-1	11-14-78	Added note, deleted detail E.B.

AS CONSTRUCTED		
NO REVISIONS	REVISED	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 CDGH	Structure
Detailer J. Leitchworth	Numbers
Drawing Number 21-1	of Drawings
Revision Dates	(Preliminary Stage Only)

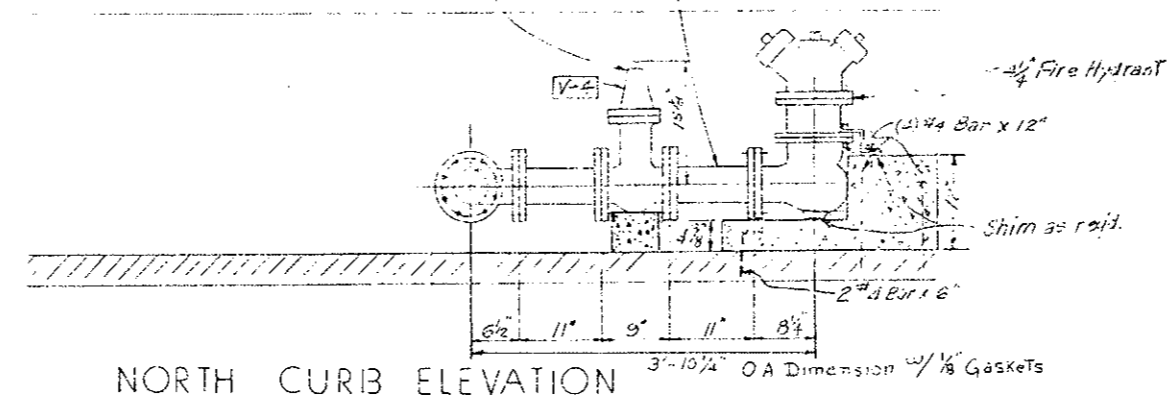
INITIAL	DATE	CHECKED BY	QUANTITIES BY

4" Gate Valve  
4" Cast Iron Water Line

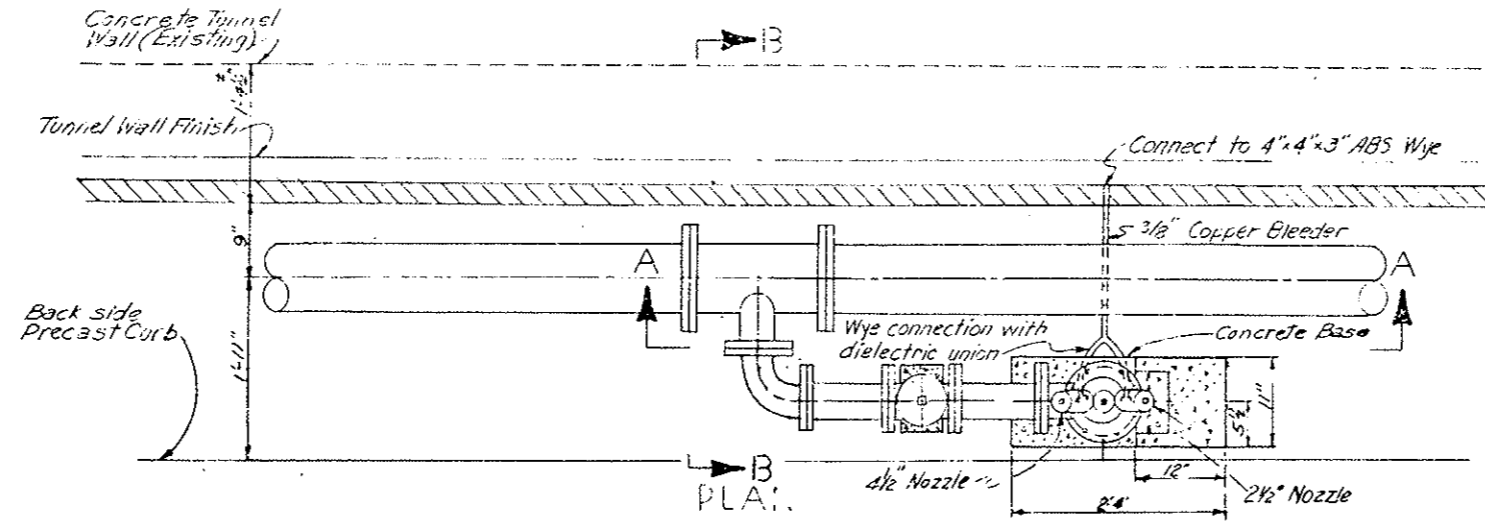
AS CONSTRUCTED  
NO REVISIONS  REVISED  VOID

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	39	

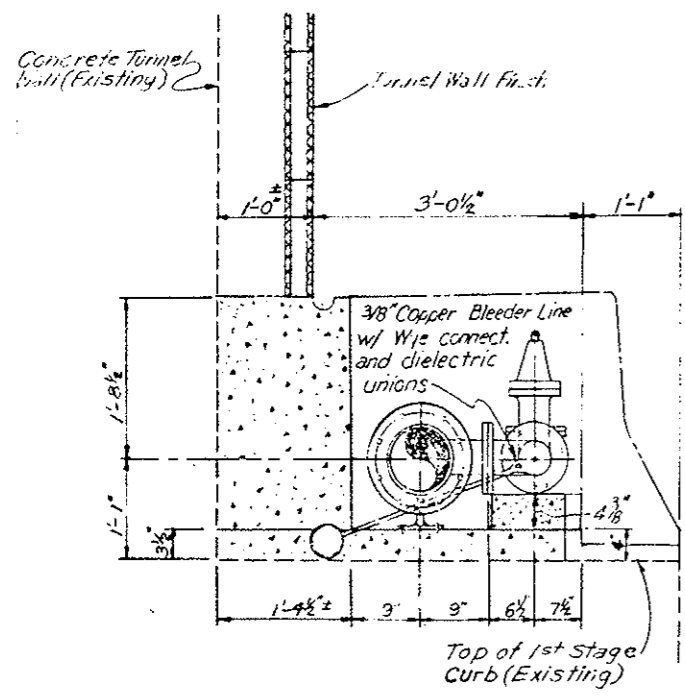
Valve Size and Type	Symbol on Plans
9" Gate (Non Rising Stem)	V-1
8" Gate (Outside Screw and Yoke)	V-2
6" Gate (Non Rising Stem)	V-3
4" Gate (Non Rising Stem)	V-4
3" Gate (Non Rising Stem)	V-5
1" Gate (Rising Stem)	V-6
1/2" Gate (Rising Stem)	V-7
8" Check	V-8
1/2" Relief	V-9



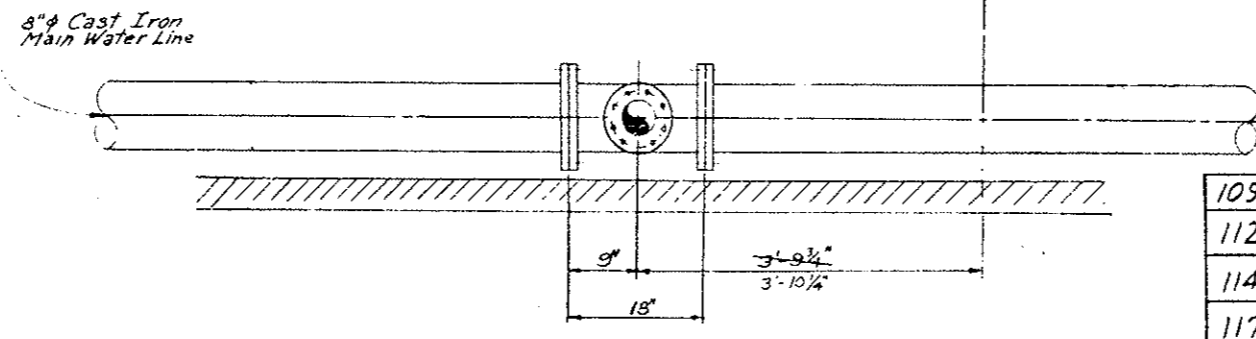
NORTH CURB ELEVATION



PLAN



SECTION B-B



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

Fire Hydrant Locations

H-No.	Station	Station
H-1	<del>39+33.03</del>	39+33.93
H-2	<del>41+84.28</del>	41+85.18
H-3	<del>44+36.53</del>	44+36.43
H-4	<del>46+86.78</del>	46+87.68
H-5	<del>49+38.03</del>	49+38.93
H-6	<del>51+89.28</del>	51+90.18
H-7	<del>54+40.53</del>	54+41.43
H-8	<del>56+91.78</del>	56+92.68
H-9	<del>59+43.03</del>	59+43.93
H-10	<del>61+94.28</del>	61+95.18
H-11	<del>64+45.53</del>	64+46.43
H-12	<del>66+96.78</del>	66+97.68
H-13	<del>69+48.03</del>	69+48.93
H-14	<del>71+99.28</del>	72+00.18
H-15	<del>74+50.53</del>	74+51.43
H-16	<del>77+01.78</del>	77+02.68
H-17	<del>79+53.03</del>	79+53.93
H-18	<del>82+04.28</del>	82+05.18
H-19	<del>84+55.53</del>	84+56.43
H-20	<del>87+06.78</del>	87+07.68
H-21	<del>89+58.03</del>	89+58.93
H-22	<del>92+09.28</del>	92+10.18
H-23	<del>94+60.53</del>	94+61.43
H-24	<del>97+11.78</del>	97+12.68
H-25	<del>99+63.03</del>	99+63.93
H-26	<del>102+14.28</del>	102+15.18
H-27	<del>104+65.53</del>	104+66.43
H-28	<del>107+16.78</del>	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



DESIGNED BY	C. J. O'H
CHECKED BY	
DATE	3-7-72
QUANTITIES BY	
CHECKED BY	
DATE	3-7-72

**DIVISION OF HIGHWAYS**

**FIRE HYDRANT STATION**

Designer C.D.H.	Structure
Detailer J. Lettsworth	Numbers
Drawing Number FH-2	of Drawings

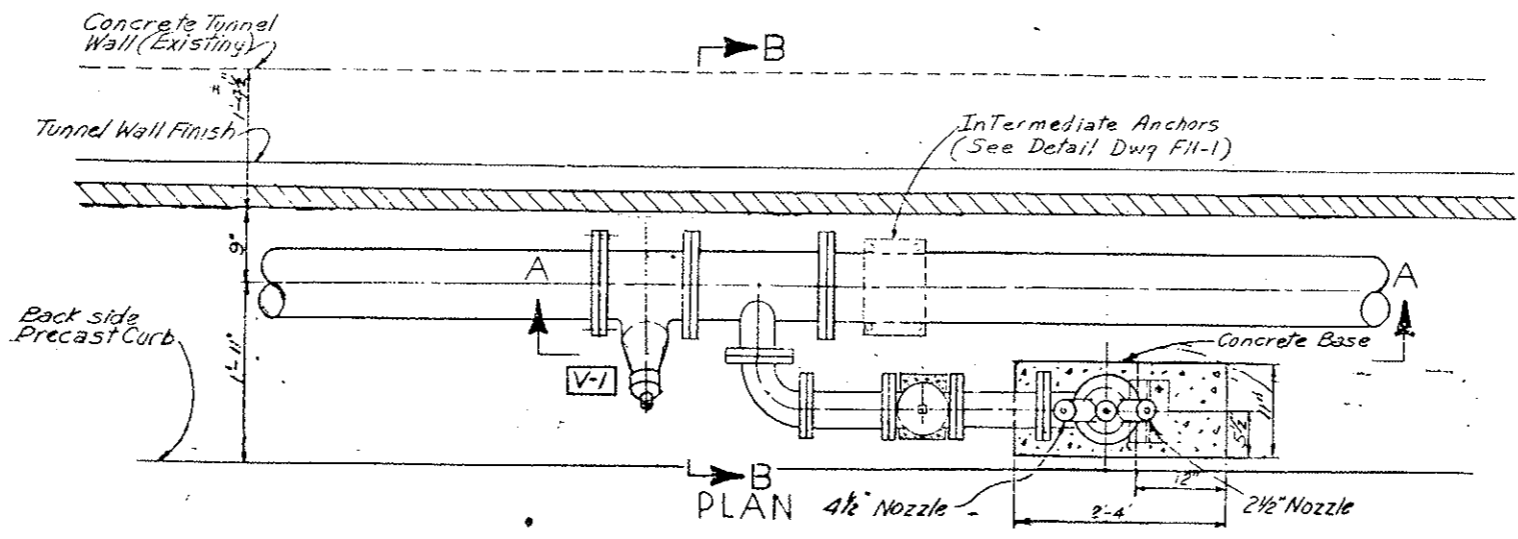
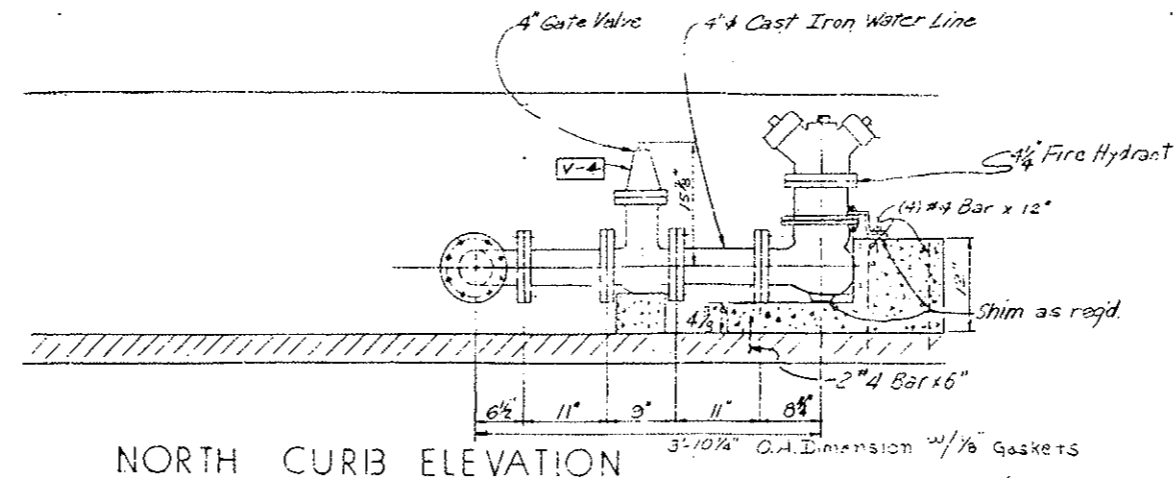
Revision Dates (Preliminary Stage Only)



FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I70-3(83)220	40	

REVISIONS	
NO REVISIONS	REVISED
	VOID

AS CONSTRUCTED

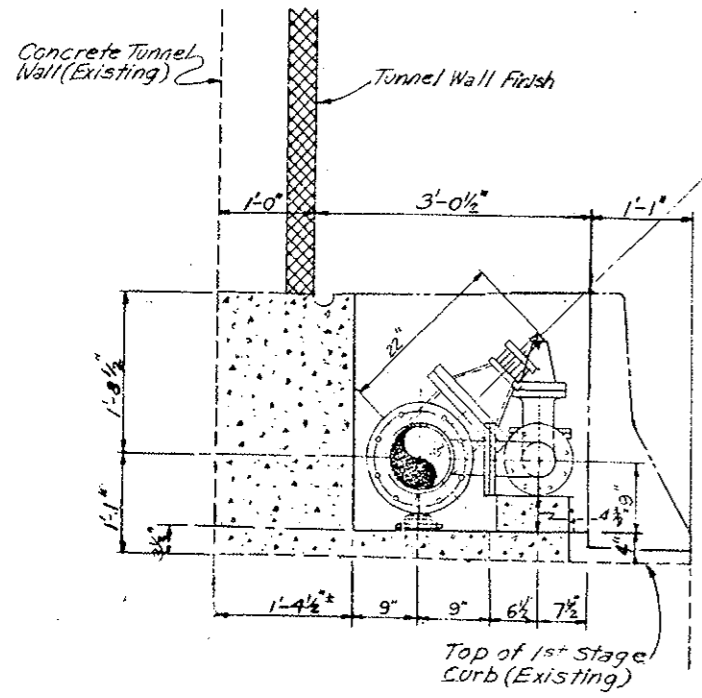


Shut-Off Valve (8" Gate) Locations

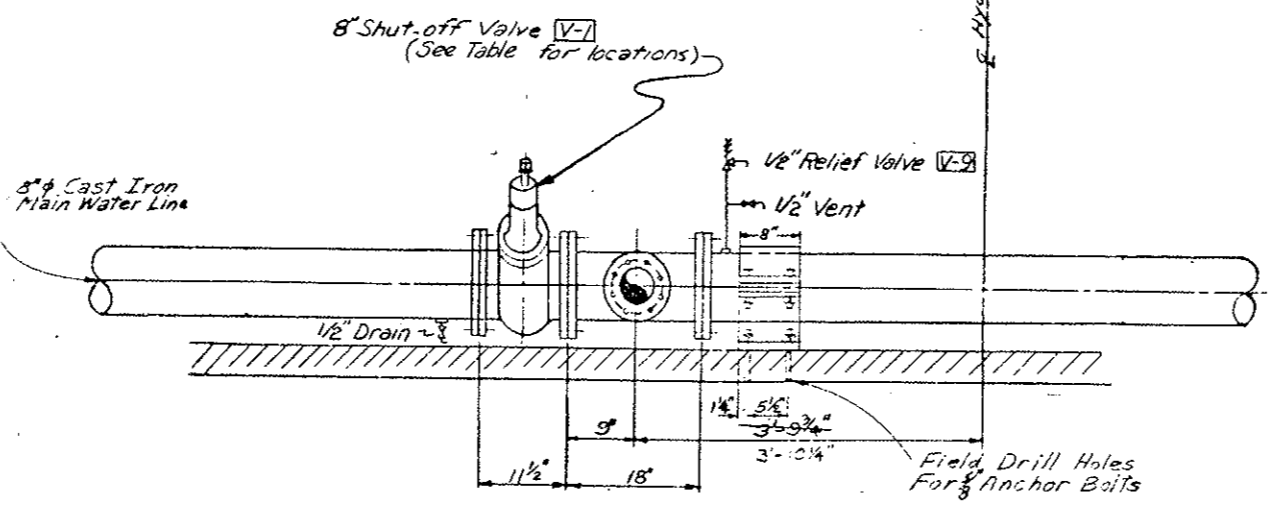
No.	Station
1	36+96.05
2	61+89.24 61+90.09
3	87+01.74 87+02.59
4	112+14.24 112+15.09

Remaining 8" Gate Valves are located in the East Ventilation Building (see FH-18)

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



SECTION B-B



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

**DIVISION OF HIGHWAYS**

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

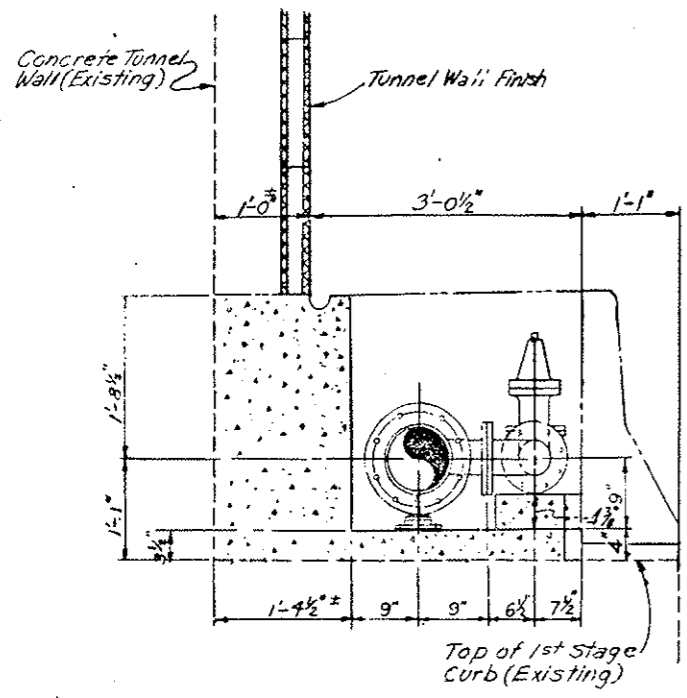
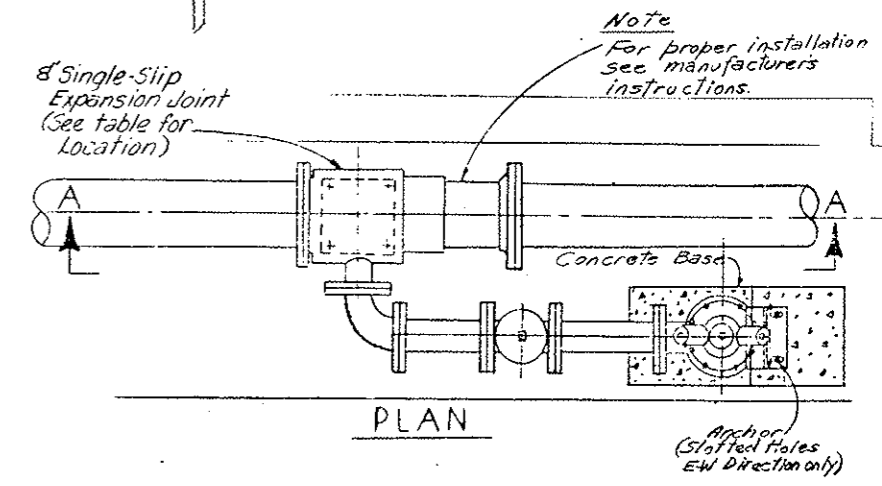
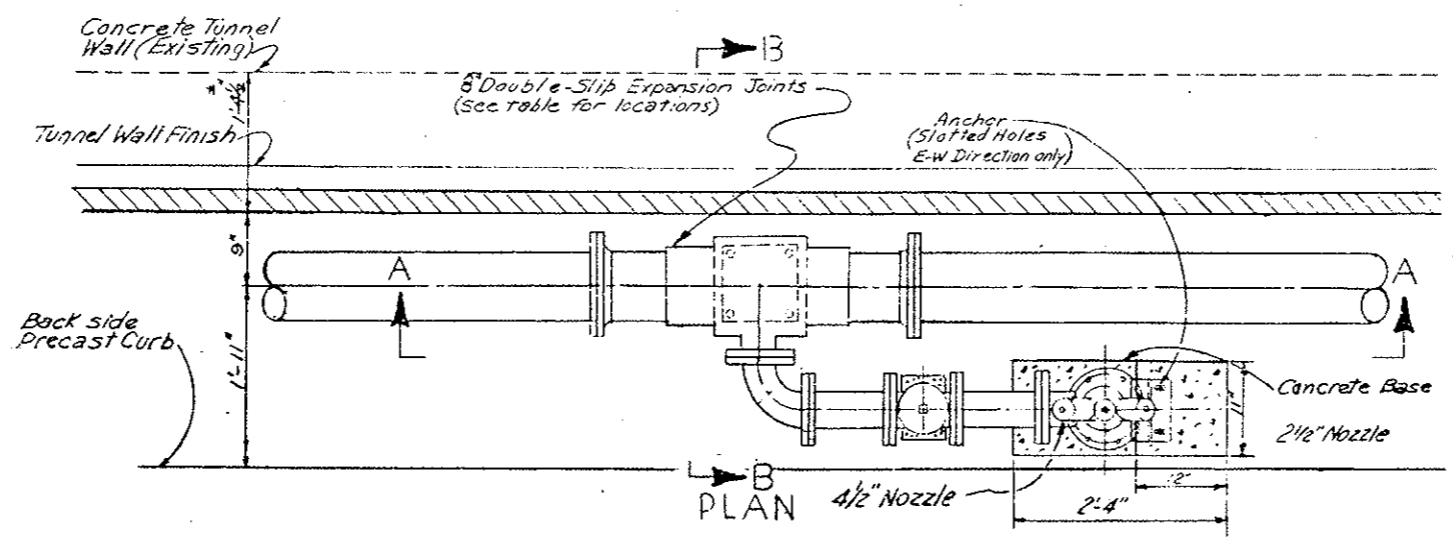
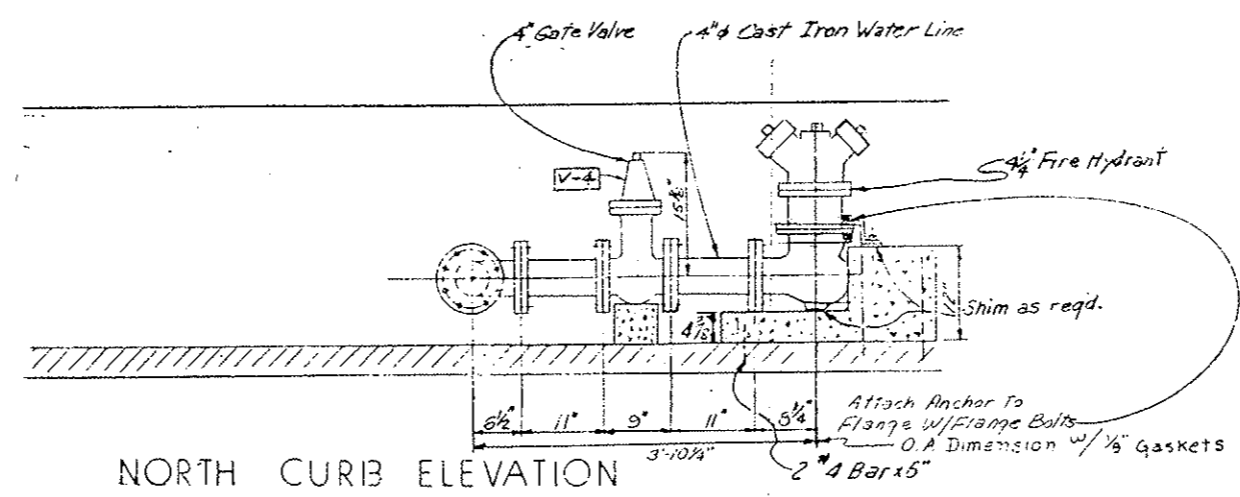
Designer CDOH	Structure
Detailer J. LeFichworth	Numbers
Drawing Number FH-3	of Drawings

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

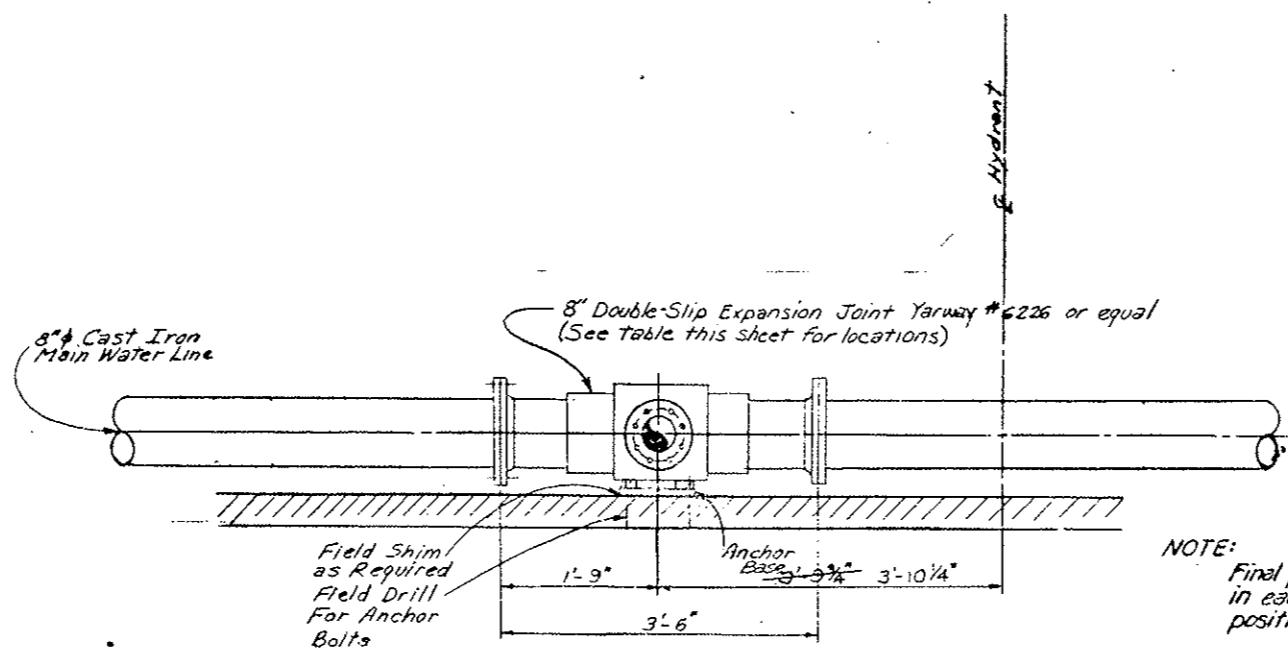
8 Inch Expansion Joint Locations

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
CDOH	CDOH	2/15/75
CDOH	CDOH	2/15/75

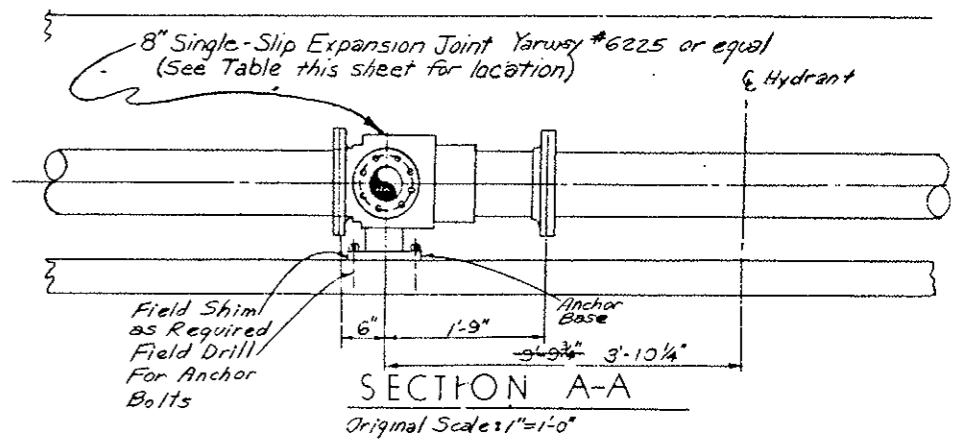


SECTION B-B



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.



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

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

REVISIONS		

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

**DIVISION OF HIGHWAYS**

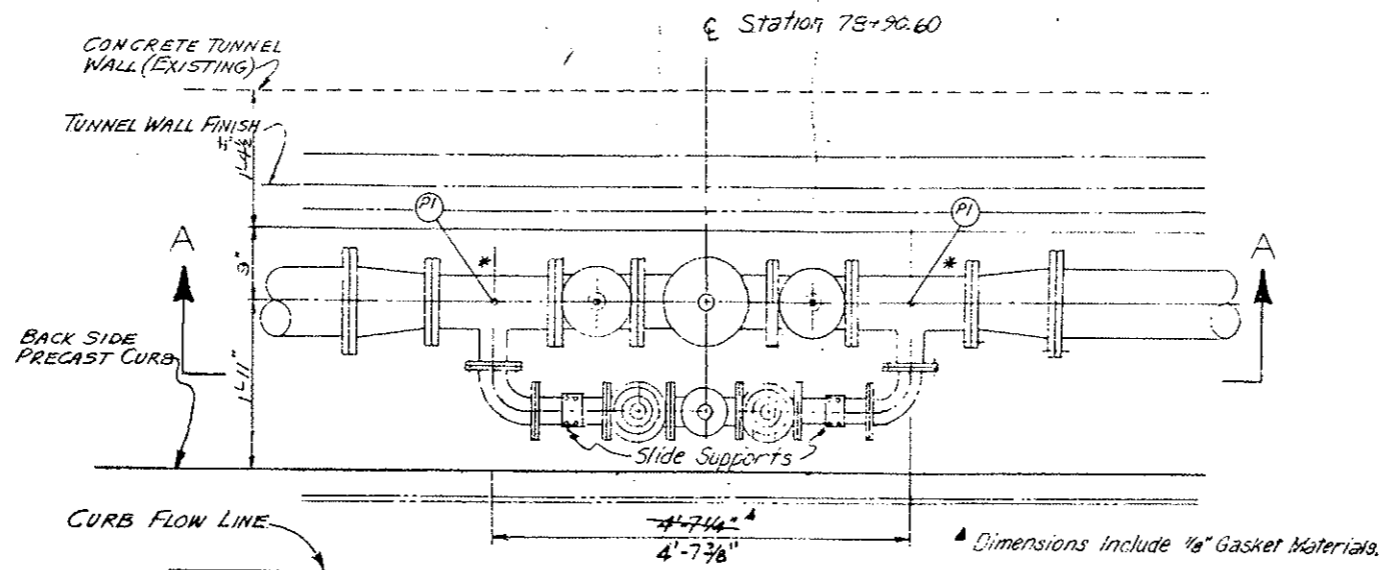
**FIRE HYDRANT STATION WITH EXPANSION JOINT**

Designer: CDOH  
 Detailer: J. Letzworth  
 Drawing Number: FH-4 of Drawings

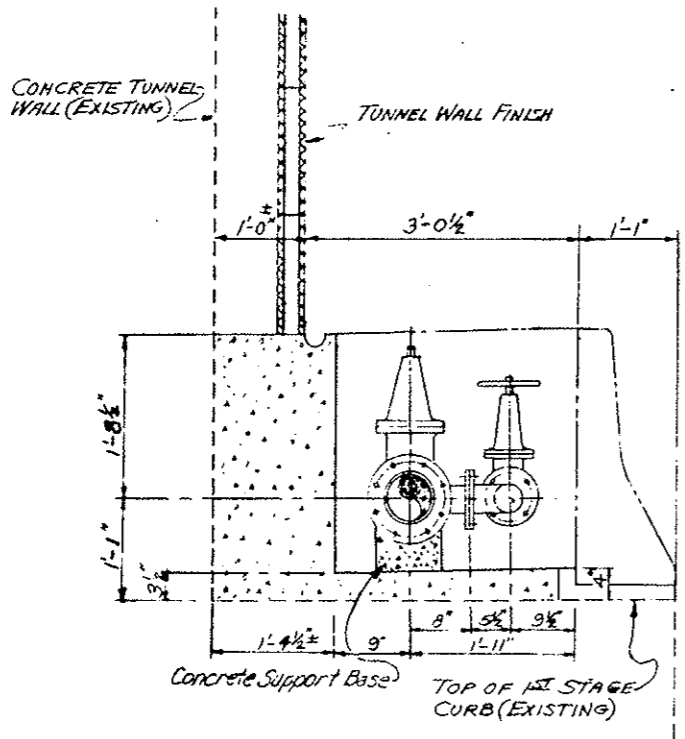
Revision Date: (Preliminary Stage Only)

INITIAL	DATE	CHECKED BY	QUANTITIES BY
CDW	7/27	CDW	CDW
CHECKED BY	DATE	CHECKED BY	QUANTITIES BY
CDW	7/27	CDW	CDW
DETAILED BY	DATE	CHECKED BY	QUANTITIES BY
CDW	7/27	CDW	CDW

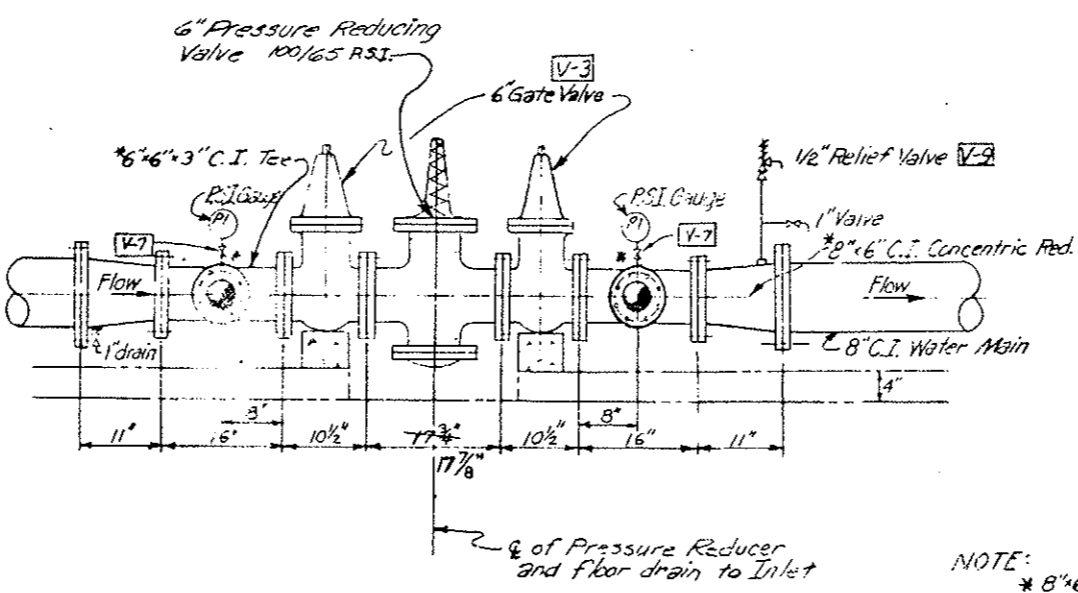
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	42	
REVISIONS				
AS CONSTRUCTED				
NO REVISIONS		REVISED	<input checked="" type="checkbox"/>	VOID



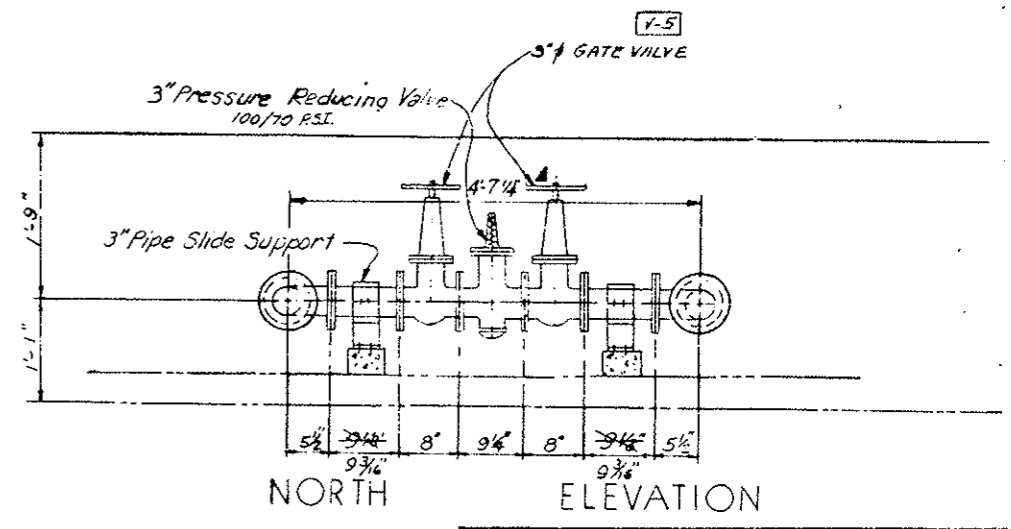
PLAN



WEST ELEVATION



SECTION A-A



NORTH ELEVATION

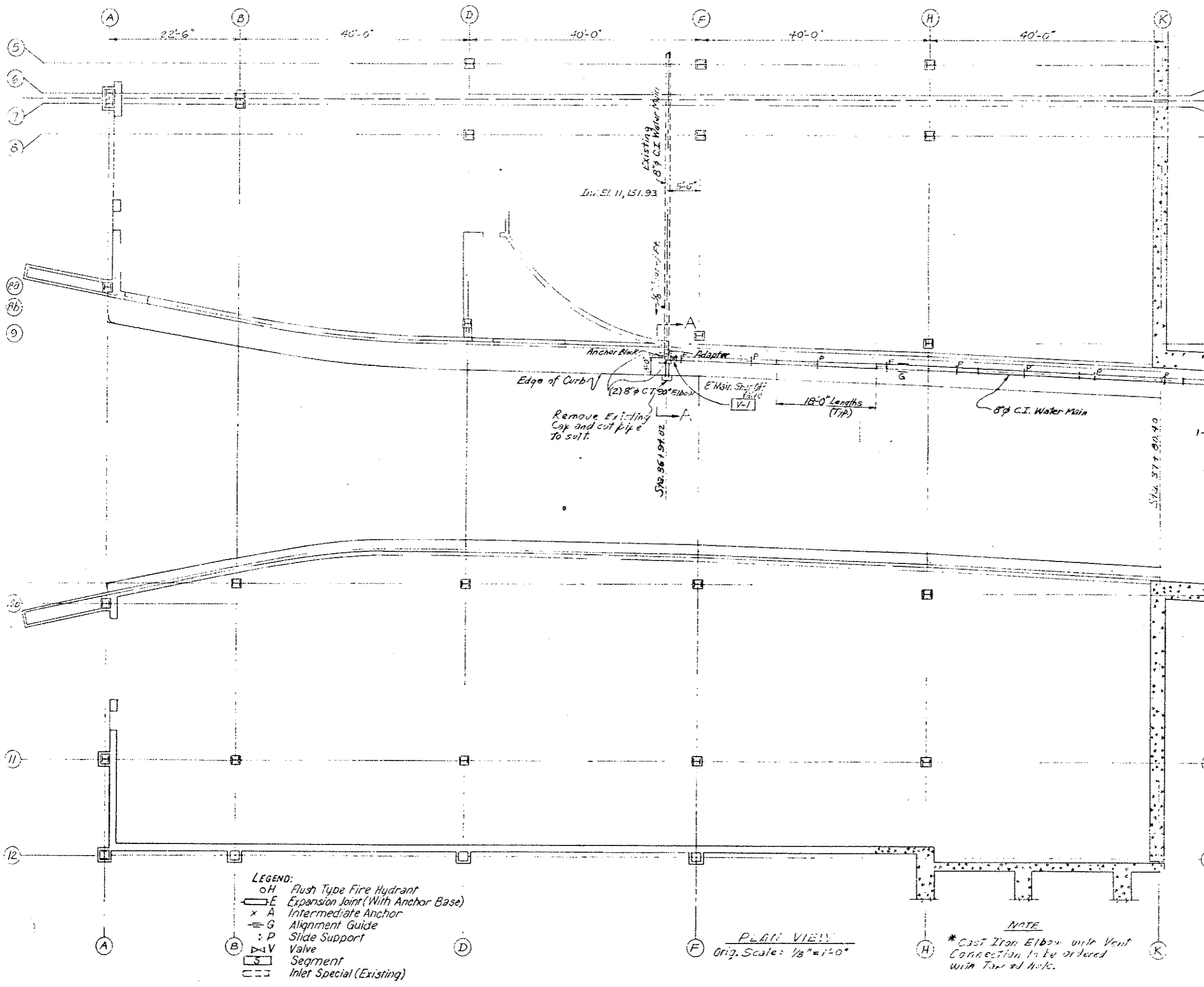
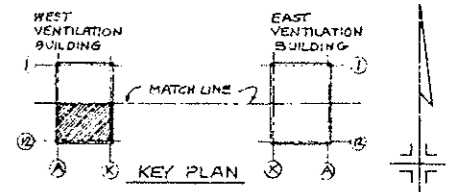
NOTE:  
 \* 8"x6" Reducers shall be ordered with 1" tapped holes near the large end for drain and vent.  
 Tees shall be ordered with 1/2" tapped holes for the gauges.

ORIGINAL SCALE: 1"=1'-0"

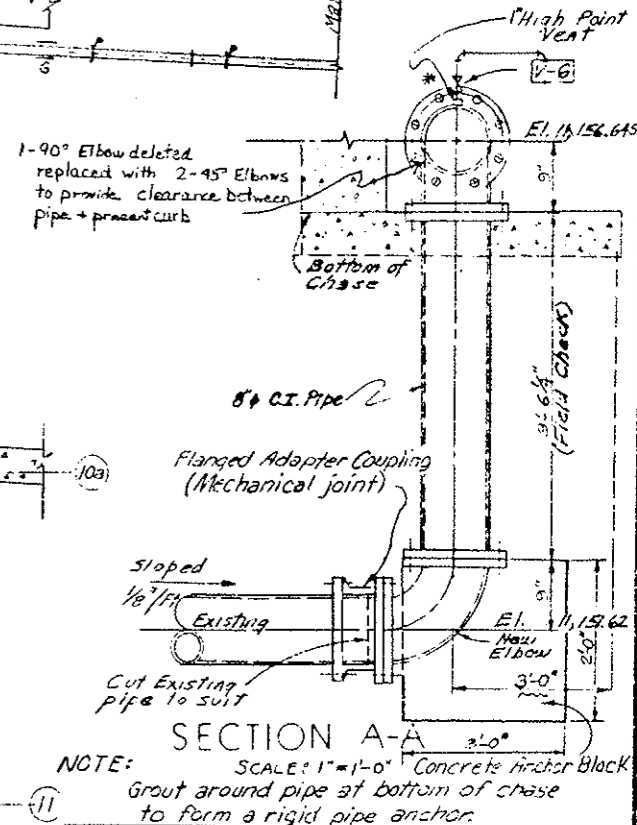
DIVISION OF HIGHWAYS			
PRESSURE REDUCING STATION			
Designer	GDOH	Structure	
Detailer	J. Letchworth	Numbers	
Drawing Number	FH-5	of	Drawings
Revision Dates	(Preliminary Stage Only)		

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

REVISIONS				
5				
6				
7				
8				



CHECKED BY	DATE	CHECKED BY	DATE
QUANTITIES BY	1/25/77	QUANTITIES BY	1/25/77
CHECKED BY	1/25/77	CHECKED BY	1/25/77
DATE	1/25/77	DATE	1/25/77



- 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 Tee and Nuts.

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

**DIVISION OF HIGHWAYS**

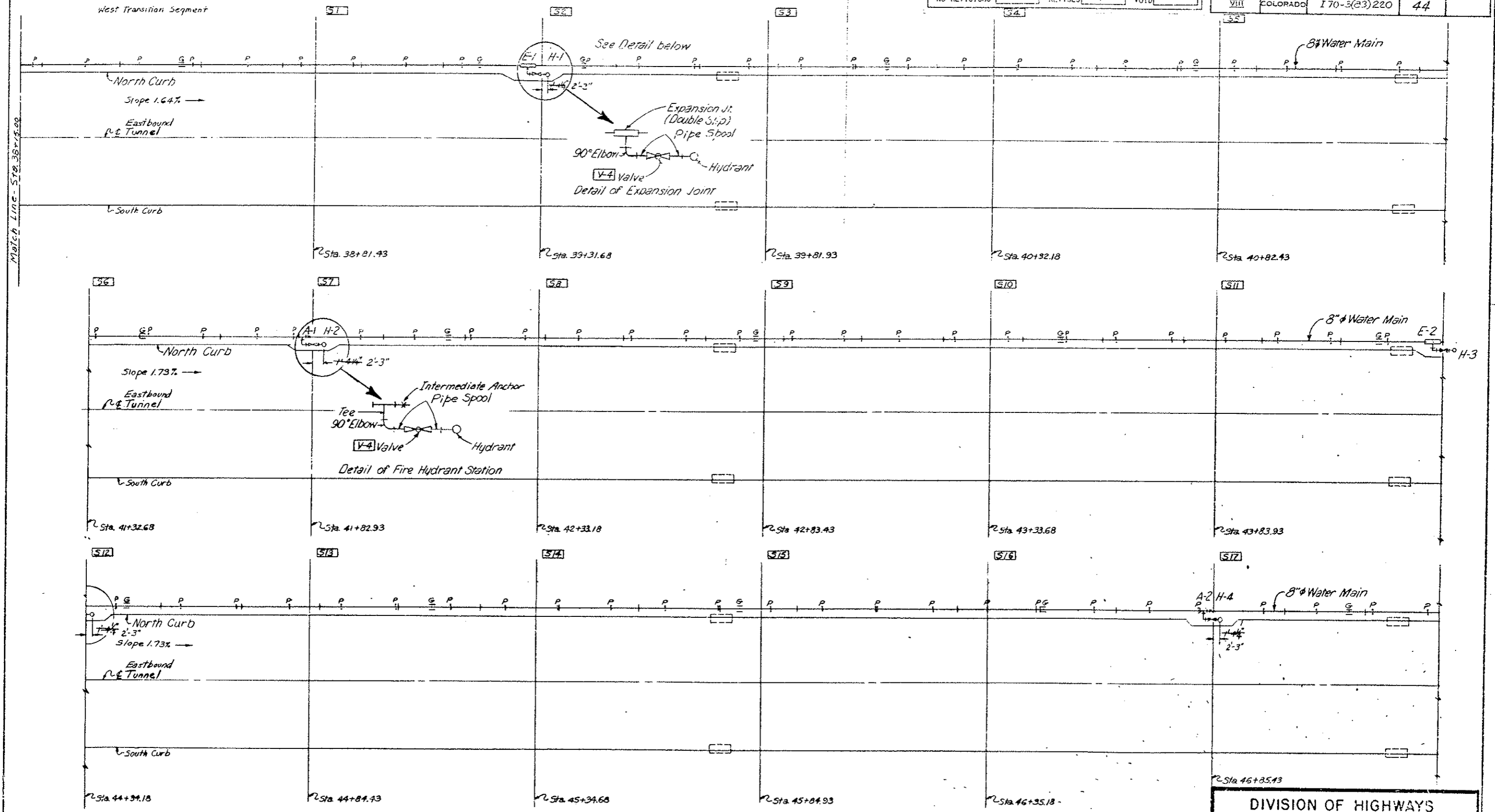
**WATER MAIN SYSTEM**  
**WEST VENTILATION BUILDING**  
**PLAN AND SECTION**

Designer CDCH  
Detailer J. Letcher, Jr.  
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	COLORADO	I 70-3(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
  - Segment
  - Inlet Special (Existing)

Original Scale: 1"=10'

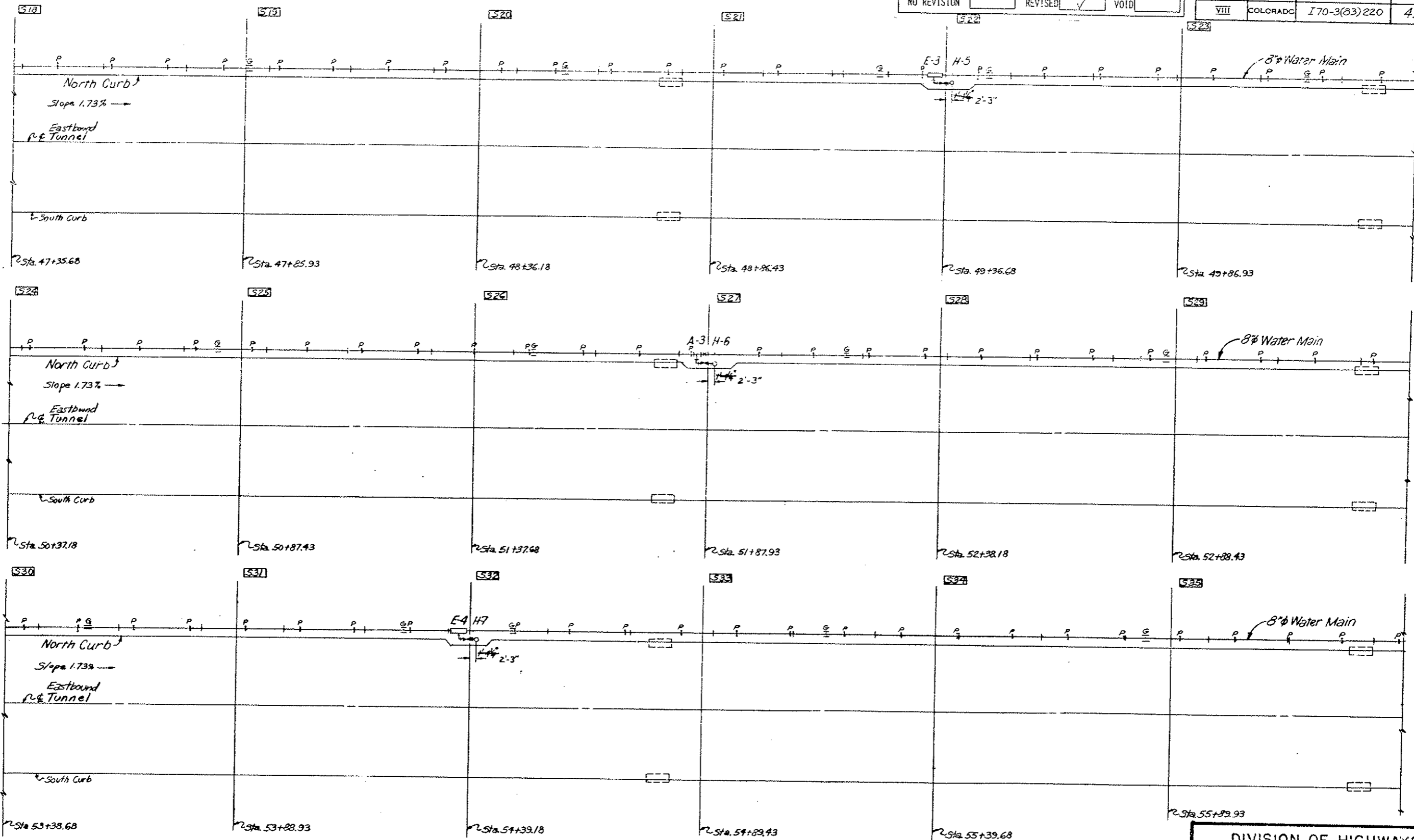
DIVISION OF HIGHWAYS

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

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

AS CONSTRUCTED  
 NO REVISION  REVISED  VOID

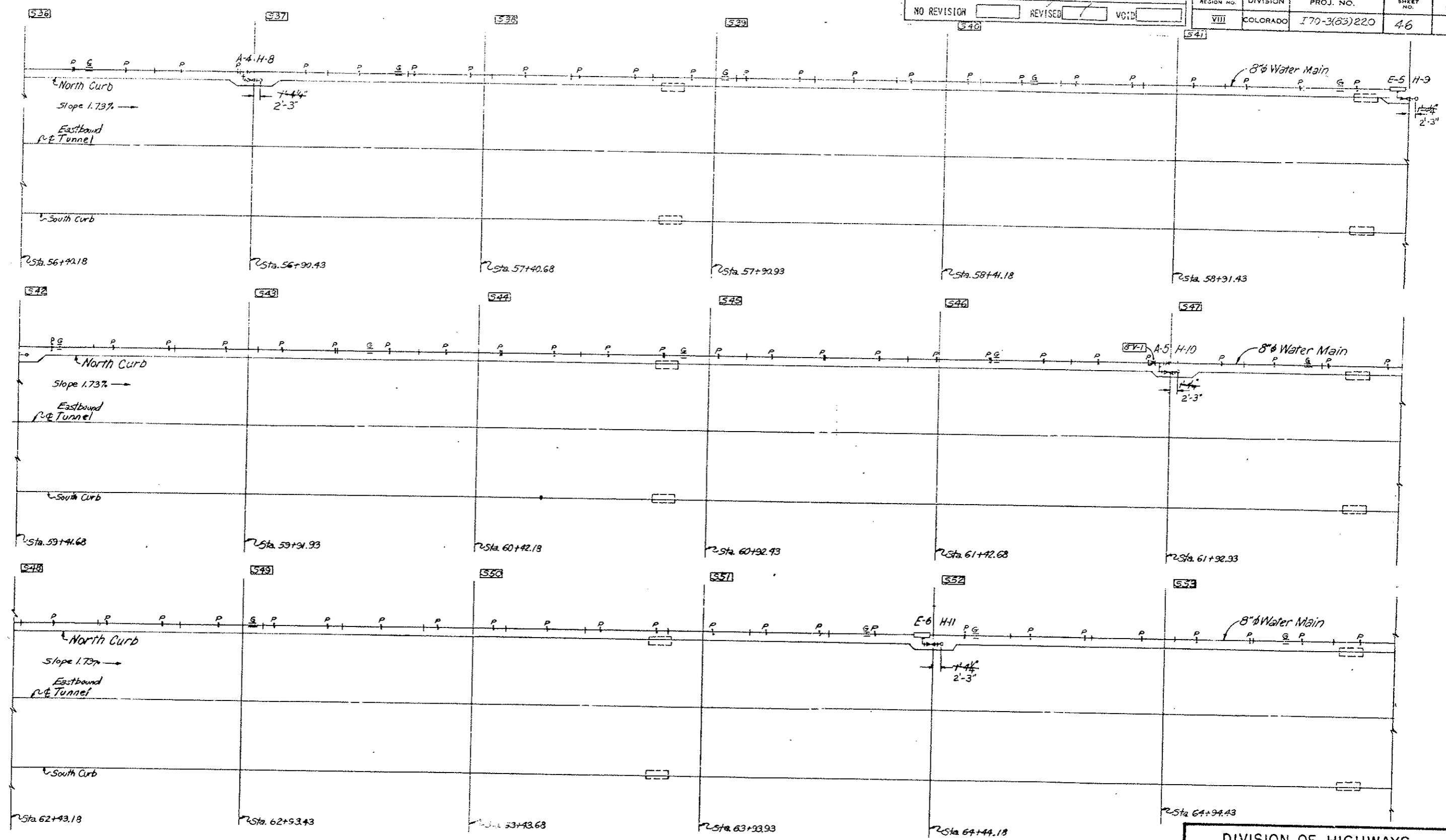
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLCRADC	I70-3(83)220	45	



- LEGEND:
- H Flush Type Fire Hydrant
  - ⊕ E Expansion Joint (With Anchor Base)
  - × A Intermediate Anchor
  - ≡ G Alignment Guide
  - + P Slide 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

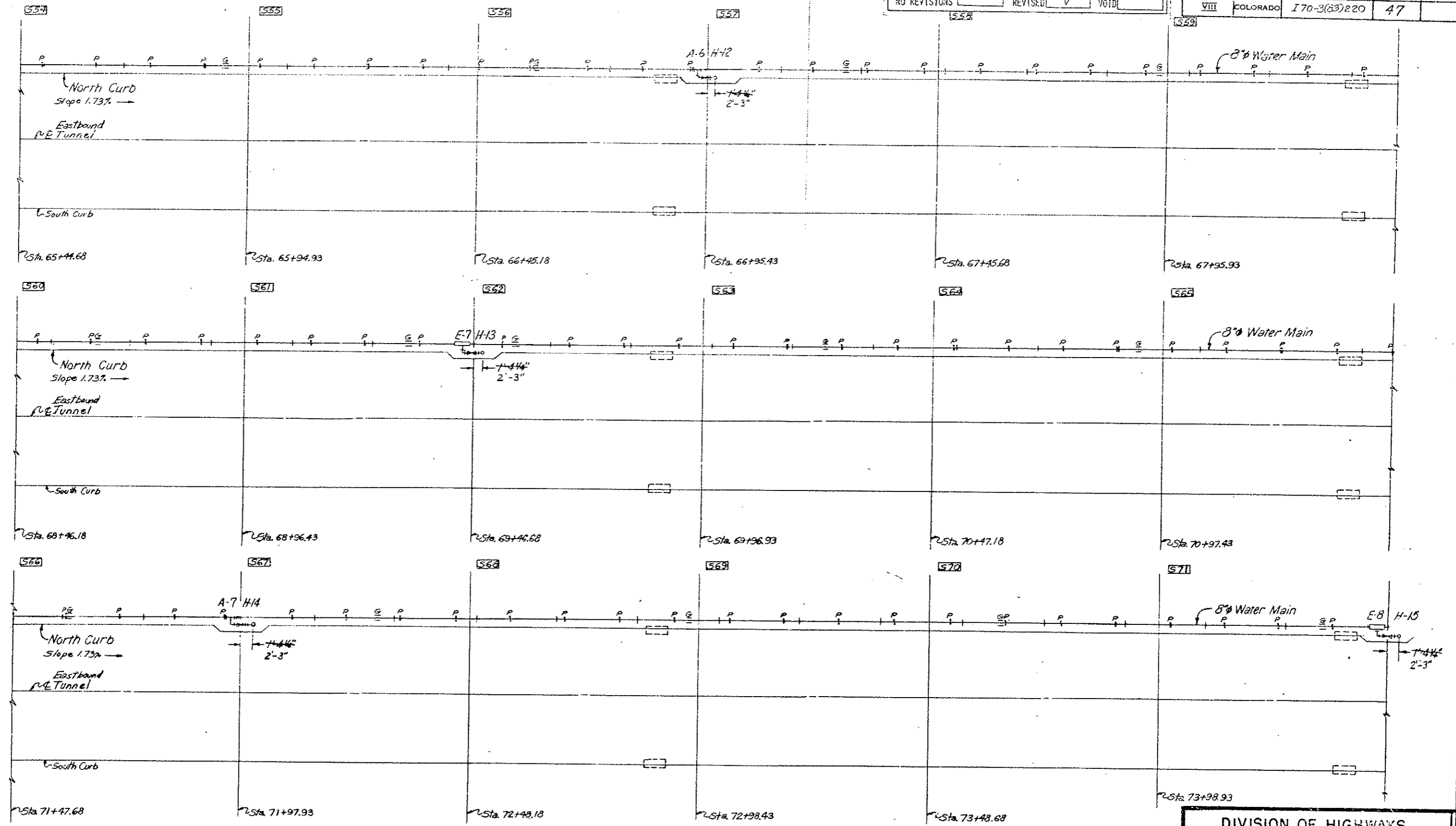


- LEGEND:
- FH Flush Type Fire Hydrant
  - E Expansion Joint (With Anchor Base)
  - × A Intermediate Anchor
  - G Alignment Guide
  - S Slide Support
  - V Valve
  - S Segment
  - I Inlet Special (Existing)

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



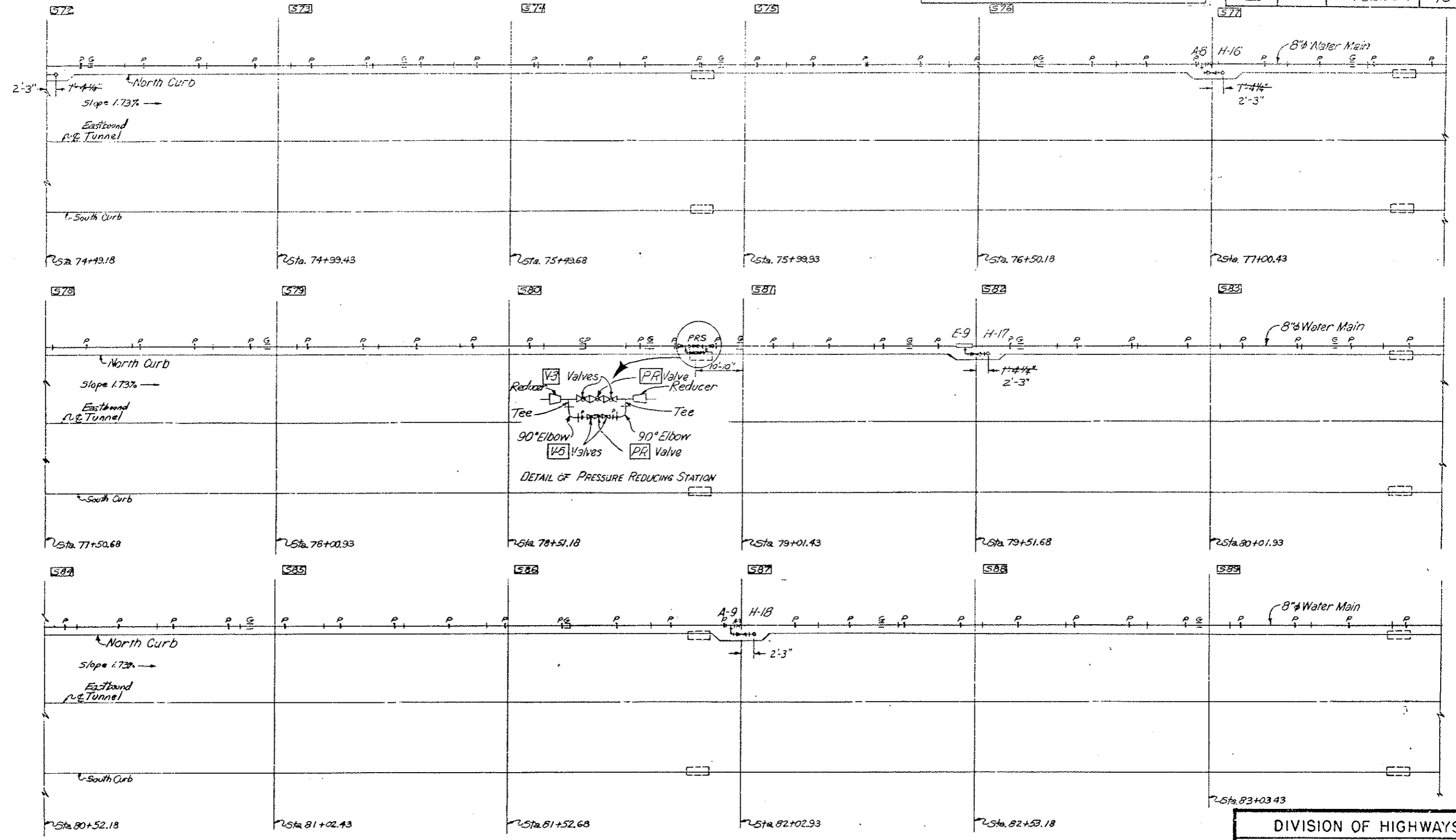


LEGEND:

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

Original Scale: 1"=10'

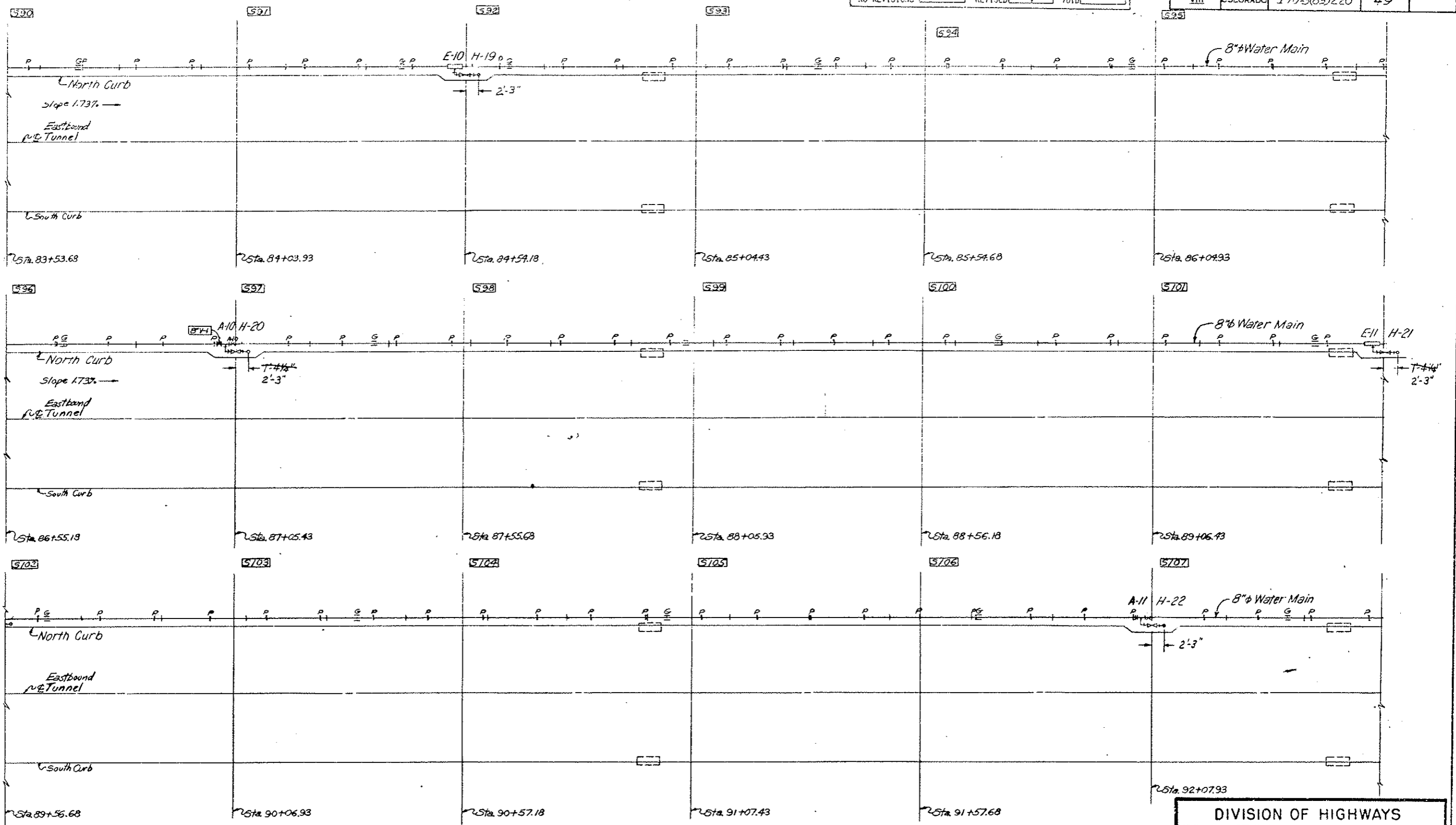
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 54 THRU 71	
Designer C.D.O.H.	Structure Number
Detailer J. Letchworth	Number
Drawing Number FH-10	of Drawings



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

Original Scale 1"=10'

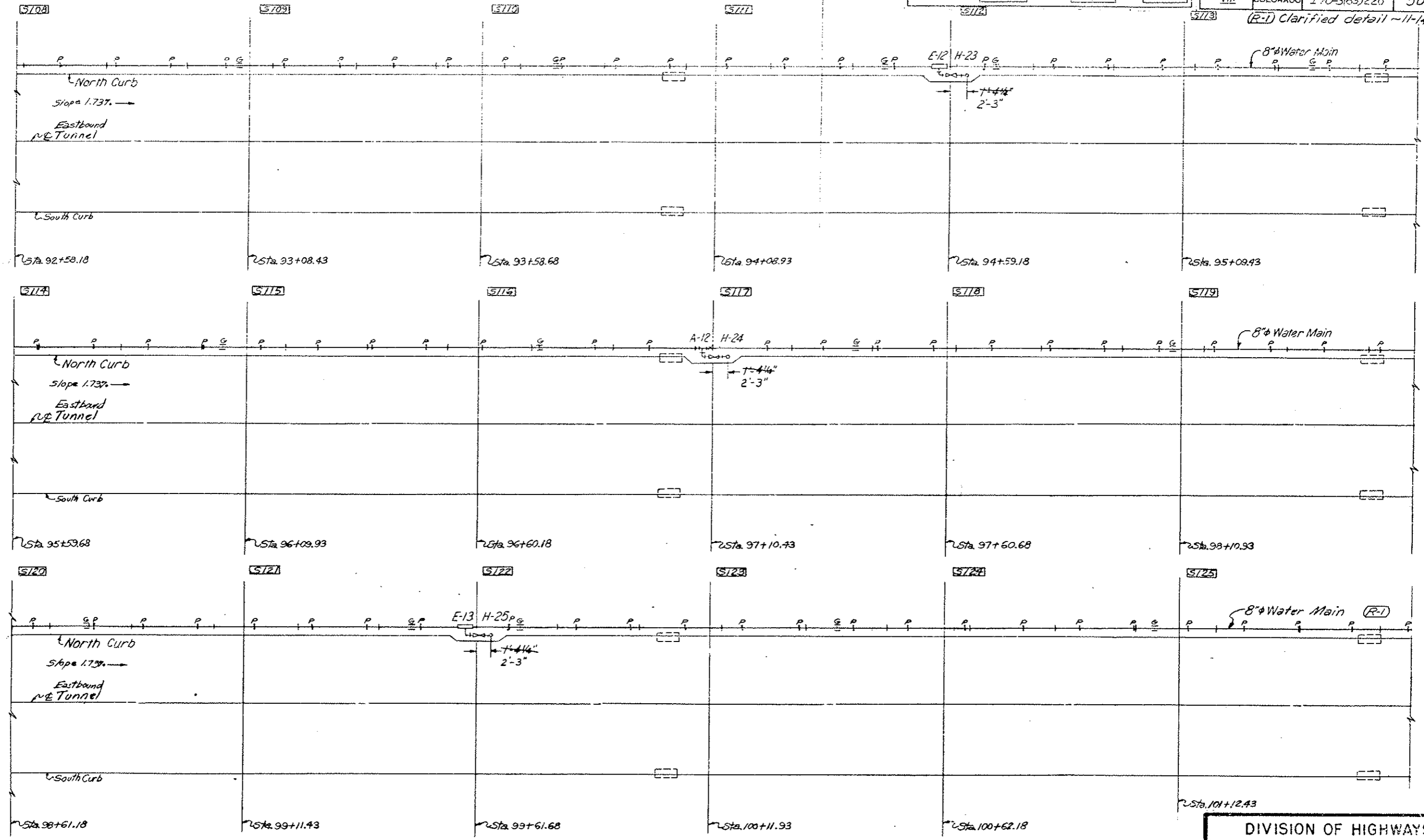
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 72 THRU 89	
Designer C.O.O.H	Structure Number
Detailer J. Letchworth	Number
Drawing Number FH-ii	of Drawings



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

Original Scale 1"=10'

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

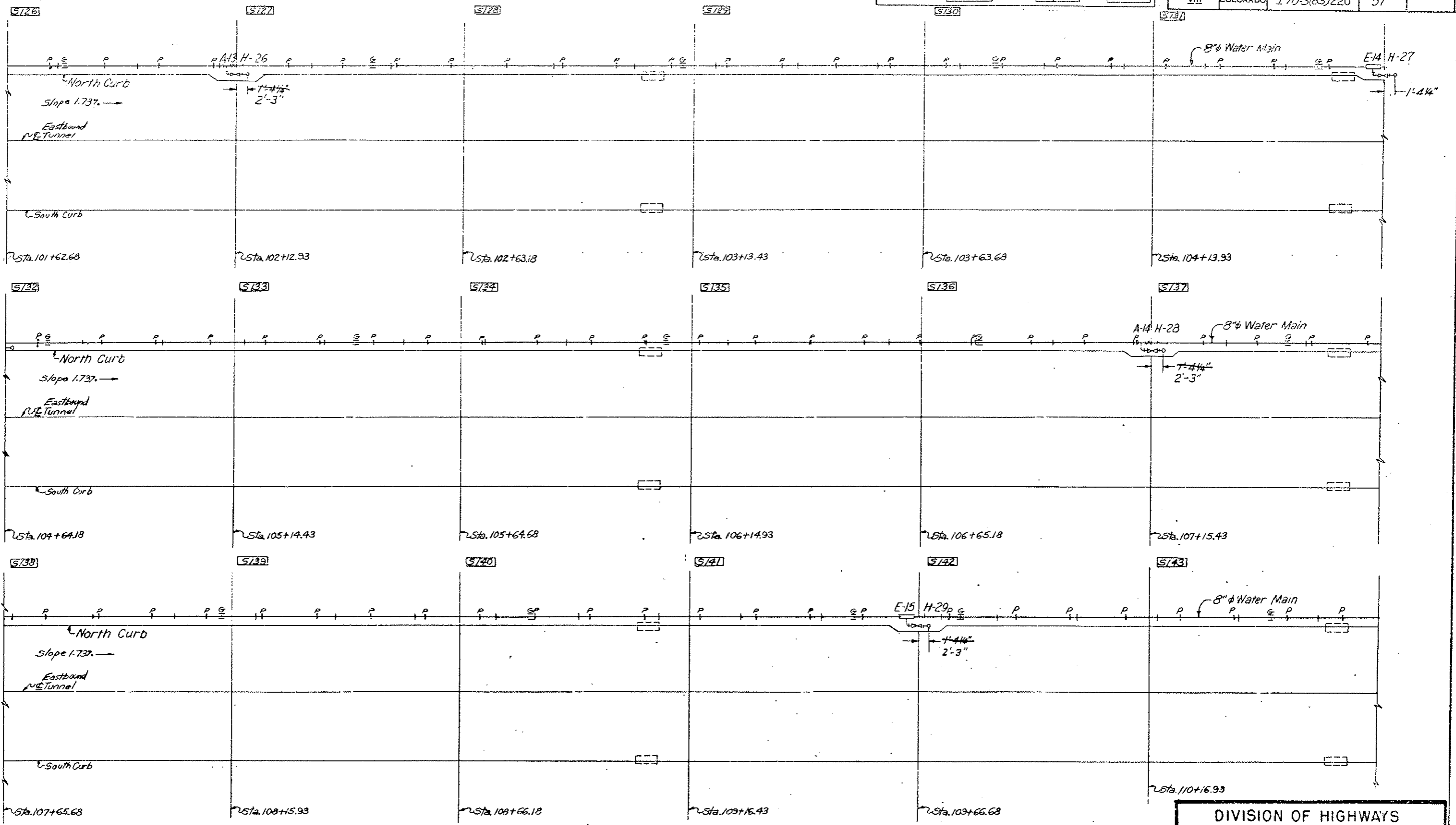


LEGEND:

- o H Flush Type Fire Hydrant
- E Expansion Joint (With Linch & Rose)
- x A Intermediate Anchor
- ||| S Alignment Guide
- + V Side Support
- o V Valve
- S Segment
- Inlet Special (Existing)

Original Scale = 1" = 10'

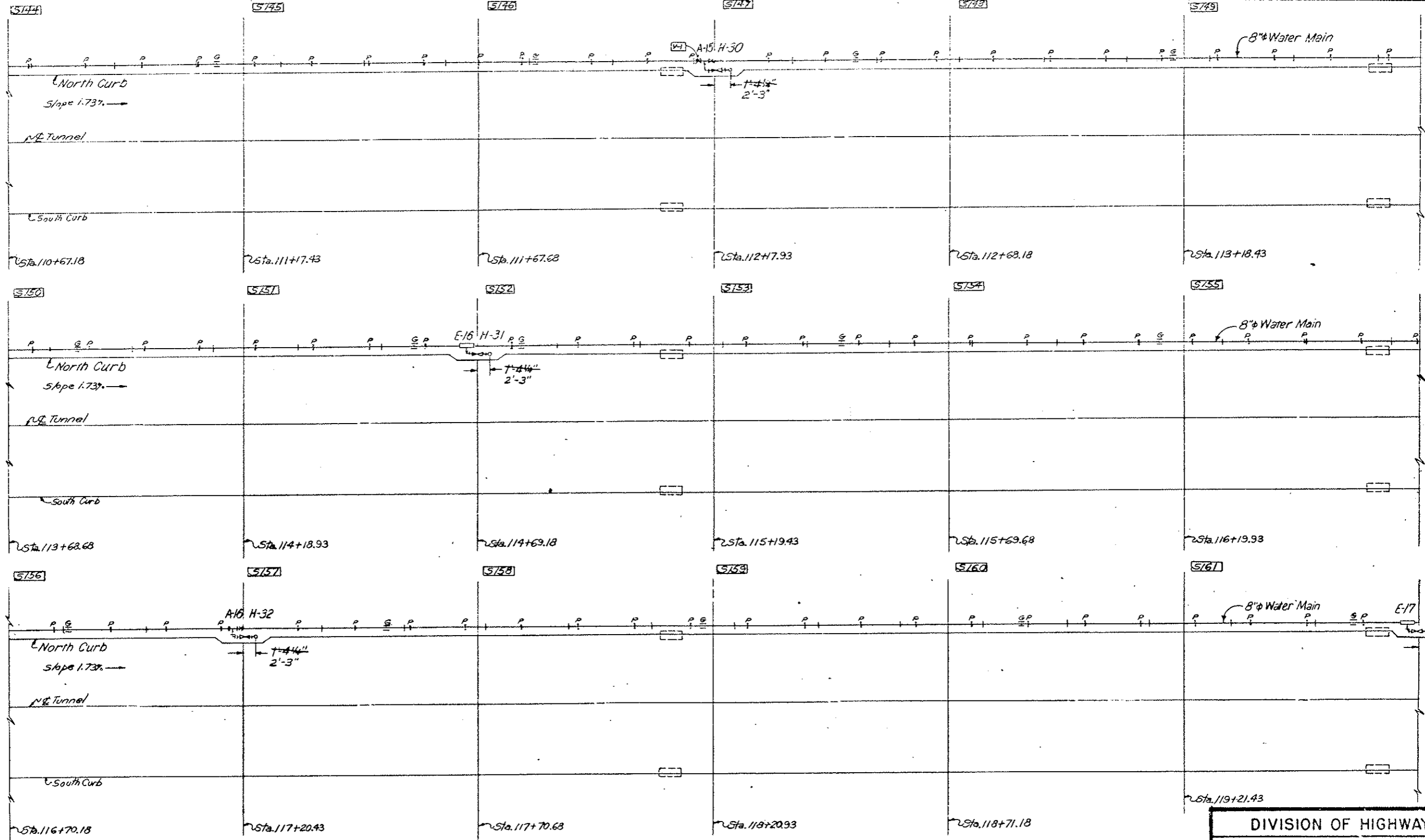
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 108 THRU 125	
Designer C. D. O. H.	Structure Number
Detailer J. Letchworth	
Drawing Number FH-13	of Drawings



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

Original Scale 1"=10'

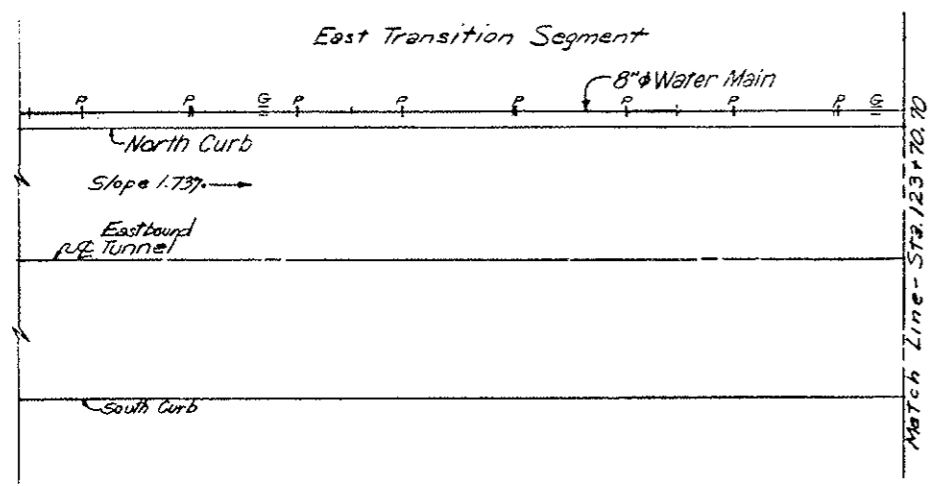
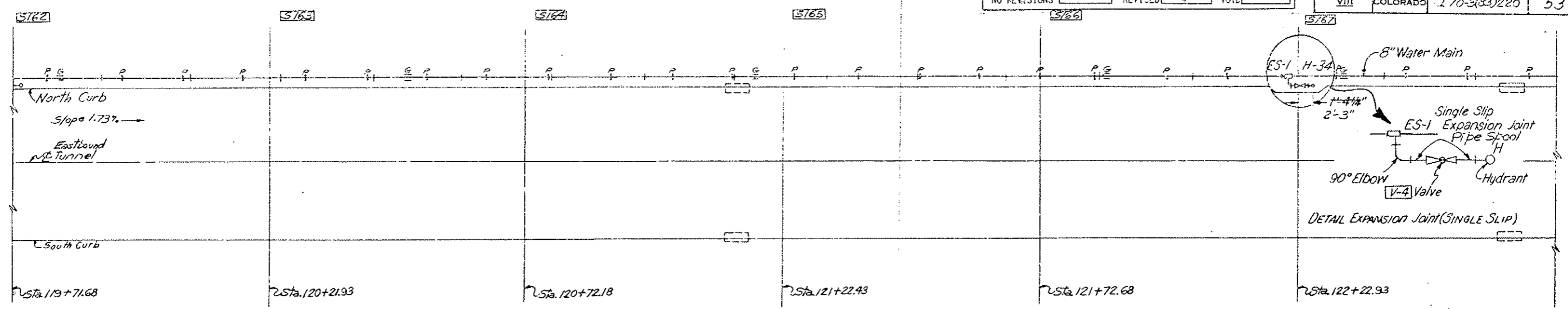
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 126 THRU 143	
Designer C. D. O. H.	Structure Number
Detailer J. Letchworth	Number
Drawing Number FH-14	of Drawings



**LEGEND:**  
 ○ H Flush Type Manhole  
 □ E Expansion Joint (Anchor Base)  
 × A Intermediate Manhole  
 ≡ G Alignment Symbol  
 + P Slide Support  
 ⊕ V Valve  
 S Segment  
 □ Special (Existing)

Original Scale: 1"=10'

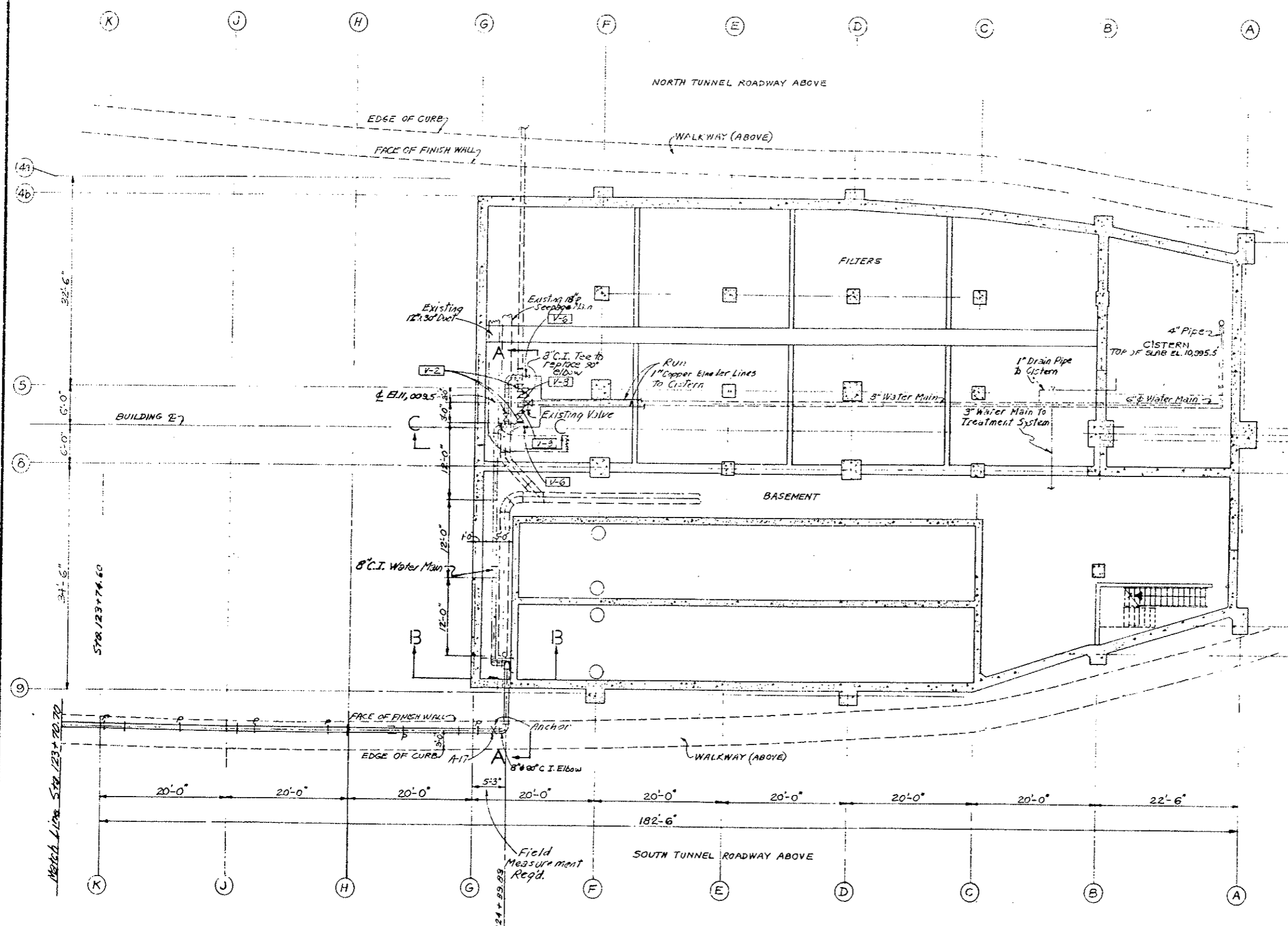
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEGMENT 144 THRU 161	
Designer C.D.O.H.	Structure Number
Detailer J. Letchworth	Number
Drawing Number FH-15	of Drawings



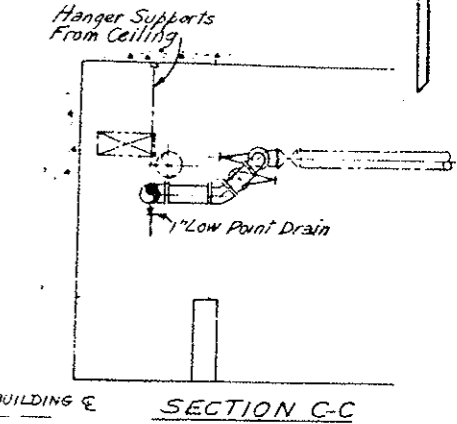
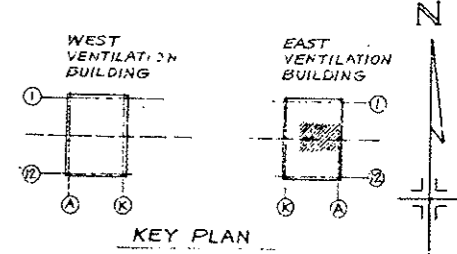
- LEGEND:
- H Flush Type Fire Hydrant
  - ES Expansion Joint (Single Slip With Anchor Base)
  - × A Intermediate Anchor
  - ≡ G Alignment Guide
  - + P Side Support
  - ∇ V Valve
  - S Segment
  - Inlet Special (Existing)

Original Scale: 1"=10'

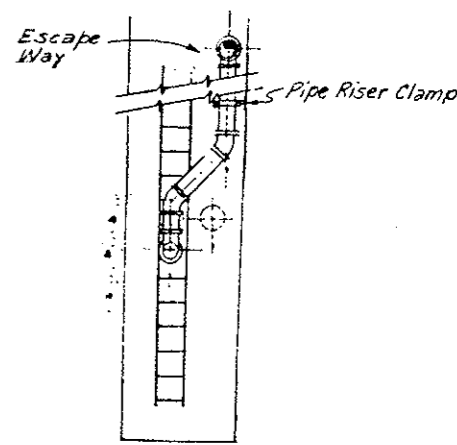
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
PLAN	
SEG 162 THRU E. TRANS.	
Designer C.D.O.H.	Structure Number
Detailer J. Letchworth	Number
Drawing Number FH-16	of Drawings



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



NOTE  
 Pipe Lengths per Field Measurements



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

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

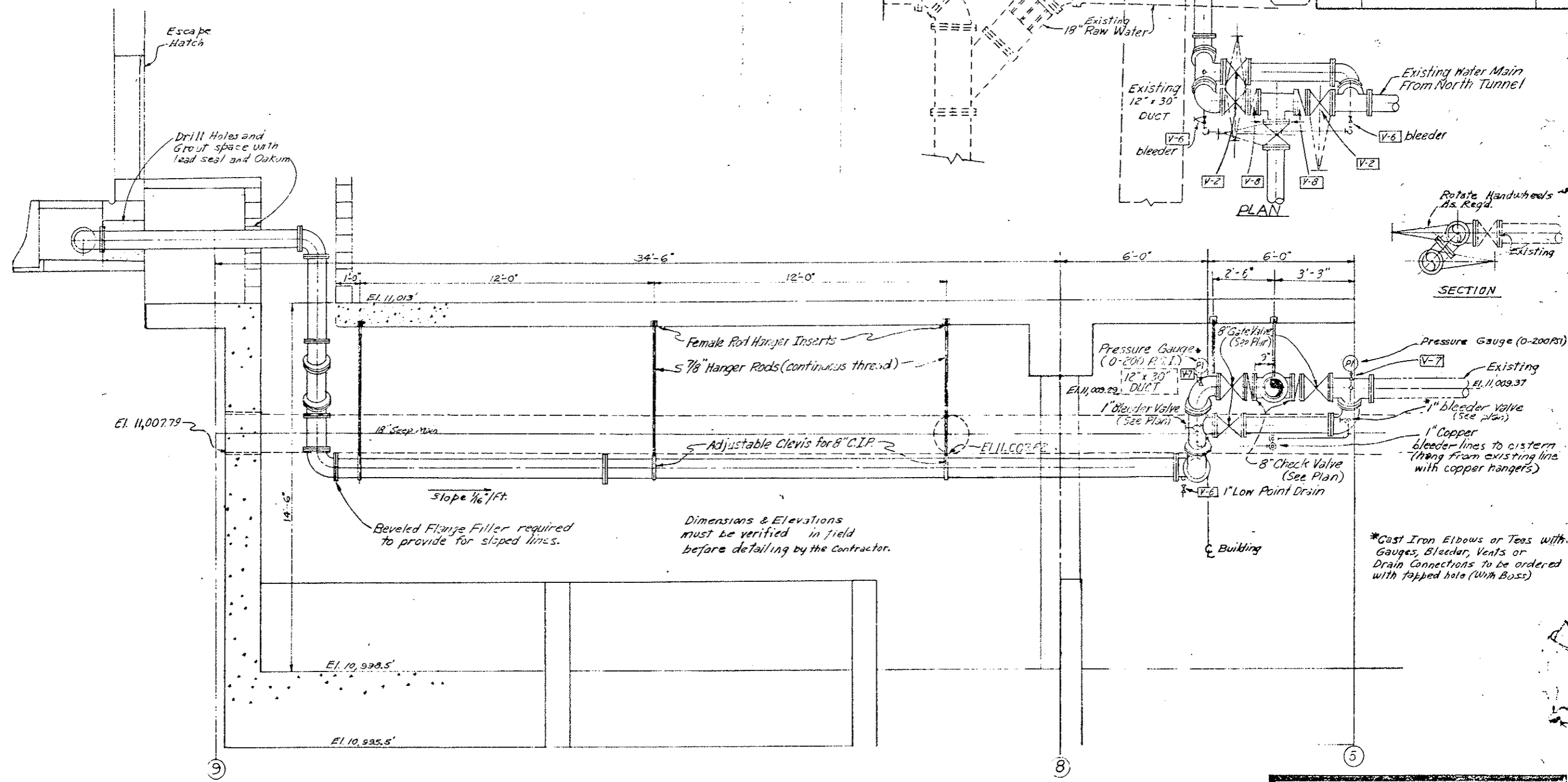
DIVISION OF HIGHWAYS	
WATER MAIN SYSTEM	
EAST VENTILATION BUILDING	
SHEET NO 1	
Designer C D O H	Structure
Detailer J. Letchworth	Numbers
Drawing Number FH-17	of Drawings
Revision Dates	(Preliminary Stage Only)



NO REVISIONS  REVISED  VOID

REGION NO. XIII COLORADO I 70-3(83)220 NO. 55

REVISIONS	



INITIAL	DATE	CHECKED BY	QUANTITIES BY
C.E.	10-27-75	C.E.	C.E.
C.E.	10-27-75	C.E.	C.E.

SECTION A-A FH-7  
Original Scale: 1/2" = 1'-0"

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

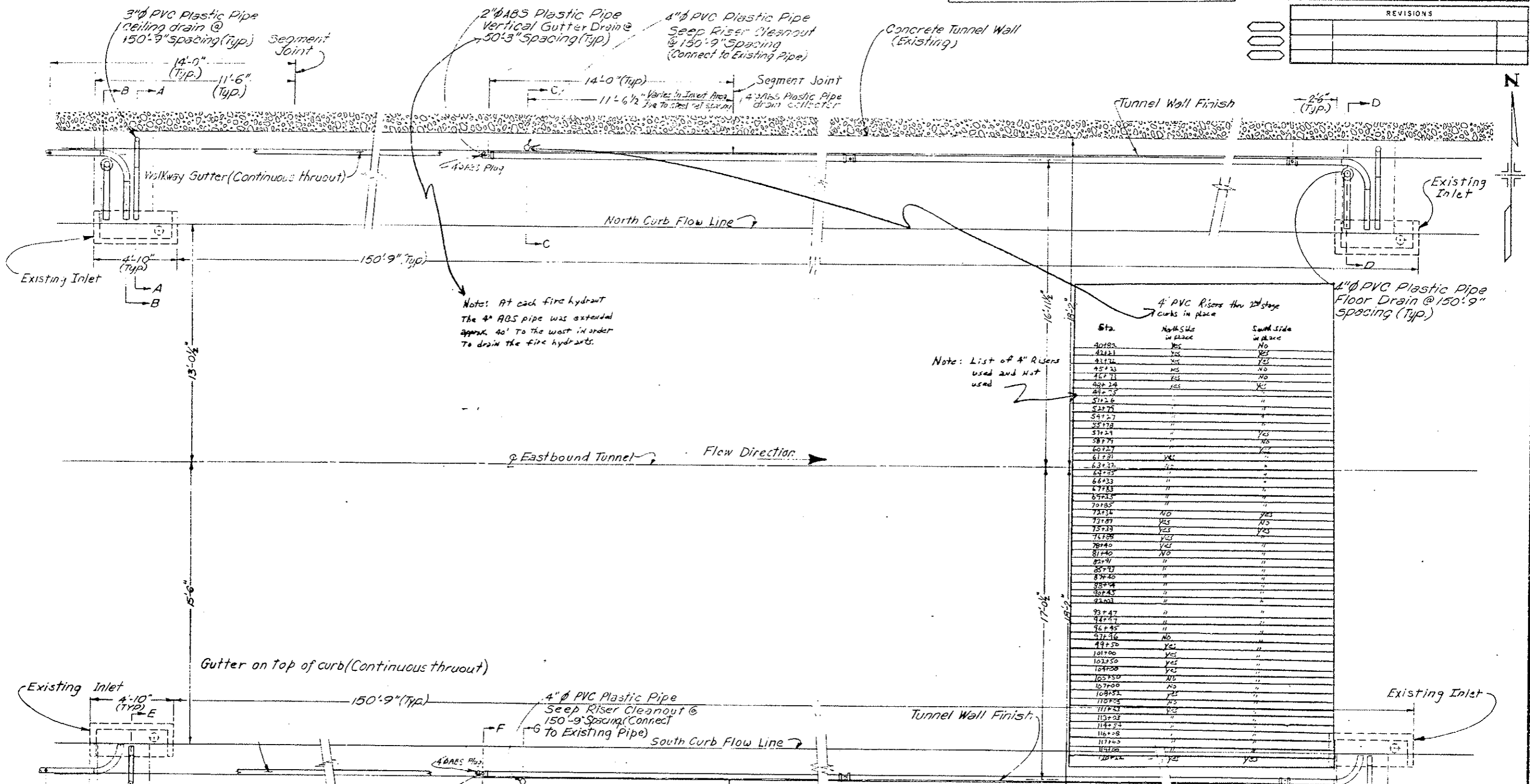
**DIVISION OF HIGHWAYS**

WATER MAIN SYSTEM  
EAST VENTILATION BUILDING  
SHEET NO 2

Designer CDOH	Structure
Detailer J. Zetchnorth	Numbers
Drawing Number FH-18	of Drawings

Revision Dates	(Preliminary Stage Only)

REVISIONS	



INITIAL	DATE	CHECKED BY

Sta.	North Side in place	South Side in place
40+85	YES	NO
41+11	YES	YES
41+76	YES	YES
45+23	YES	NO
46+71	YES	NO
48+24	YES	YES
49+37		
51+26		
52+75		
55+18		
57+24		YES
58+74		NO
60+27		YES
61+21	YES	
63+37		
64+35		
66+23		
67+83		
69+25		
70+85		
72+34	NO	YES
73+87	YES	NO
75+33	YES	YES
77+28	YES	
78+40	YES	
81+40	NO	
82+97		
85+71		
87+40		
88+94		
90+43		
92+01		
93+47		
94+47		
96+45		
97+16	NO	
99+50	YES	
101+00	YES	
102+50	YES	
104+00	YES	
105+50	NO	
107+00	NO	
108+52	YES	
109+25	YES	
111+23	YES	
113+23		
114+24		
116+28		
117+40		
119+20		
120+24	YES	YES

Note: List of 4" Risers used and Not used

Note: At each fire hydrant the 4" ABS pipe was extended approx. 40' to the west in order to drain the fire hydrants.

**DIVISION OF HIGHWAYS**

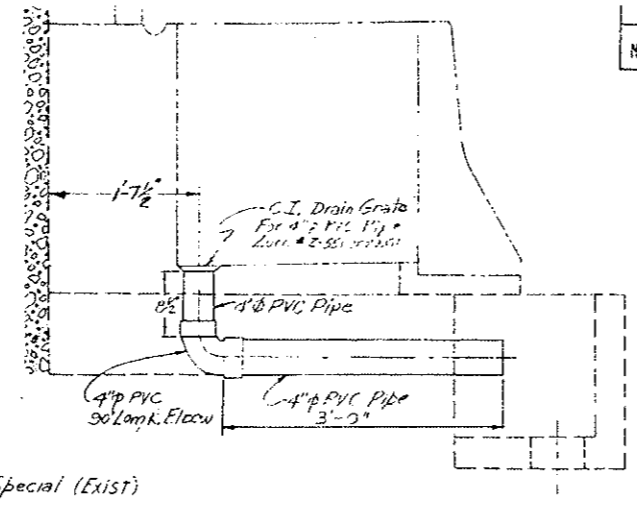
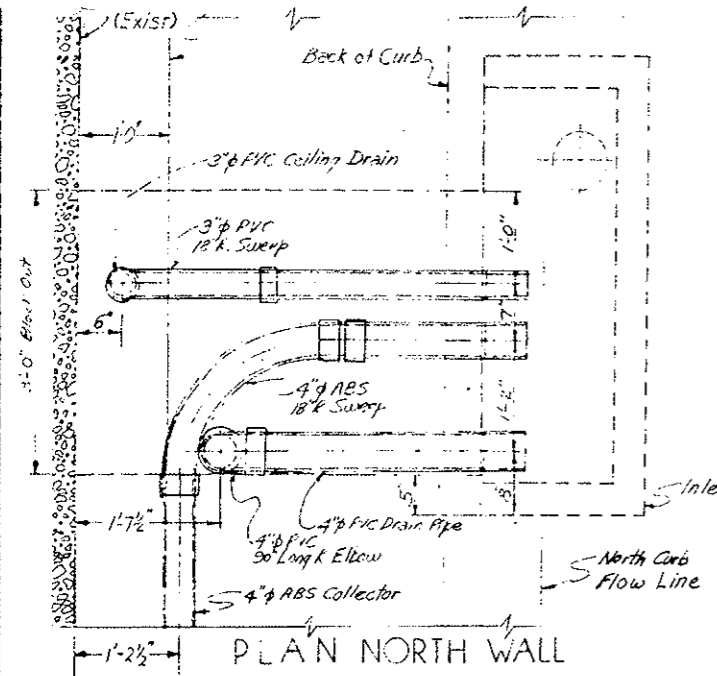
**GENERAL DRAINAGE PLAN**

Designer CDGH	Structure
Detailer J. Latorre II	Numbers
Drawing Number 0-1	of
	Drawings

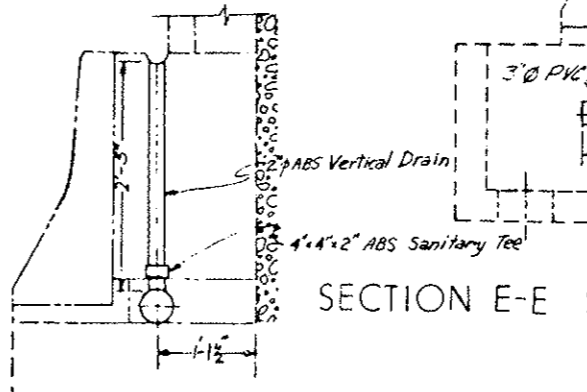
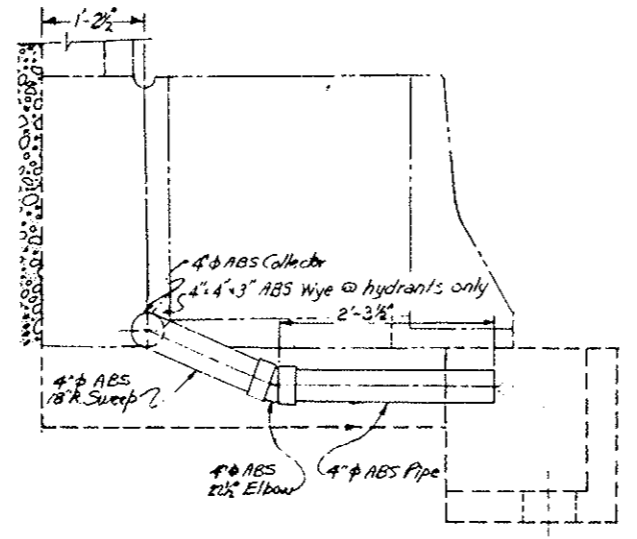
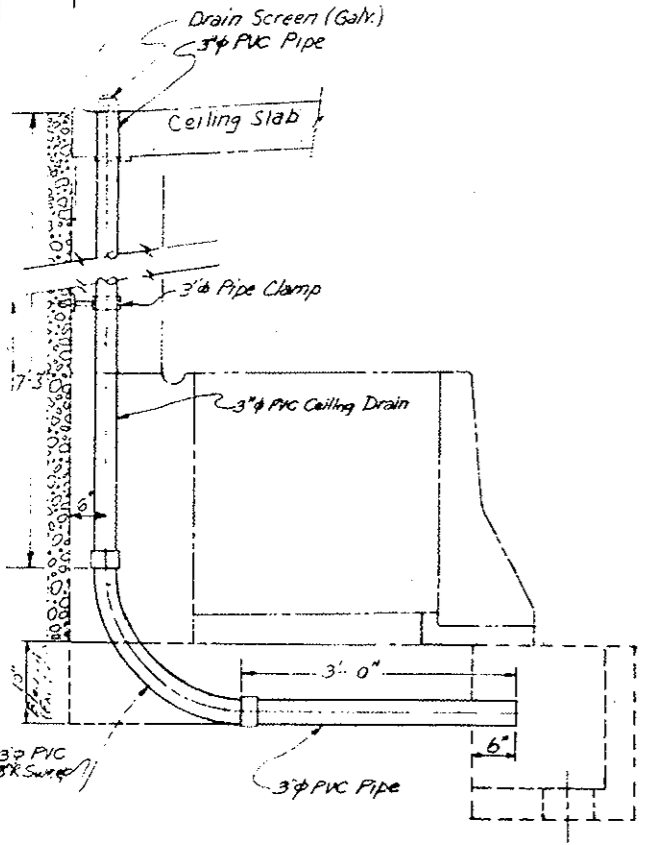
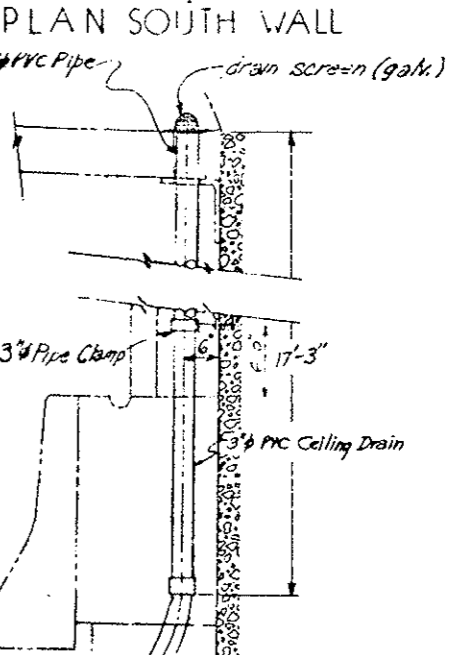
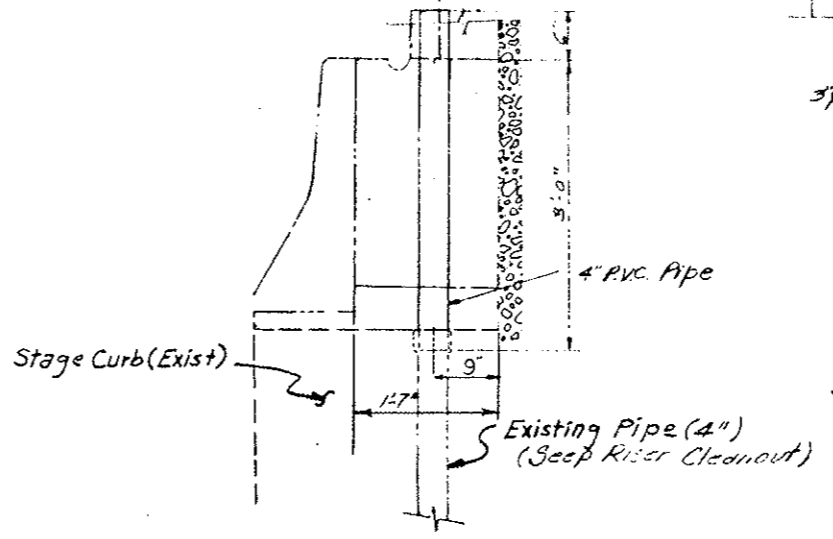
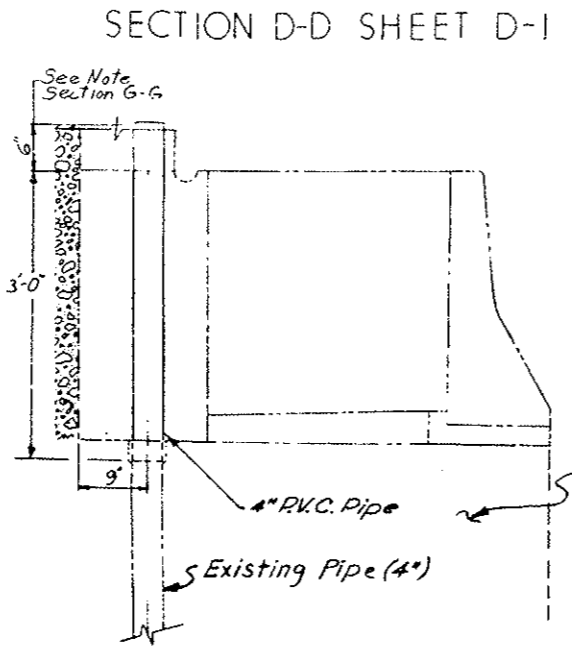
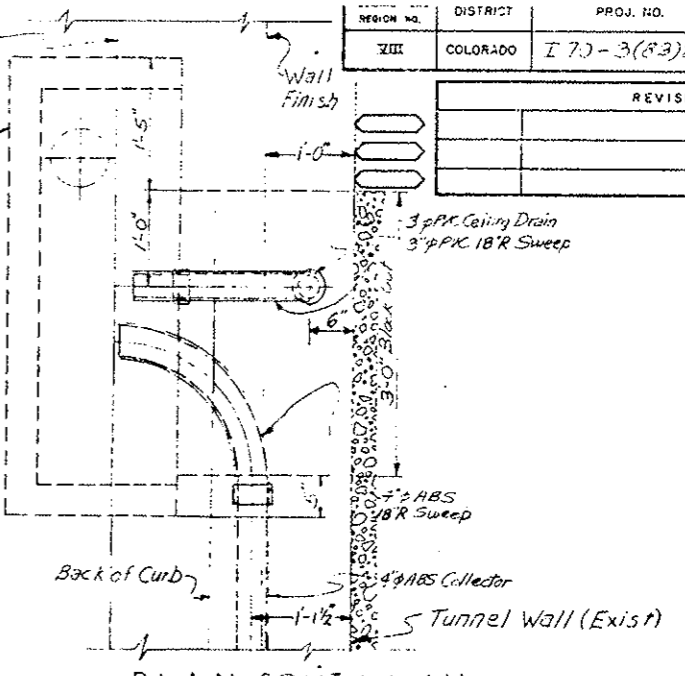
PLAN Original Scale: 3/8" = 1'-0"

AS LISTS + REV. ED.  
 NO REVISIONS  REVISED  VOID

REVISIONS	



Install 10" x 10" x 1/2" Precast Enamel Cover at each curbside. 6" x 6" Cutout to be made in base of structural with tie at each side clear. Extend Cleanout Riser 6" above curb, cut off flush and cap at wall finish installation.



SECTION A-A SHEET D-I

SECTION C-C SHEET D-I

SECTION G-G SHEET D-I

SECTION E-E SHEET D-I

SECTION B-B SHEET D-I

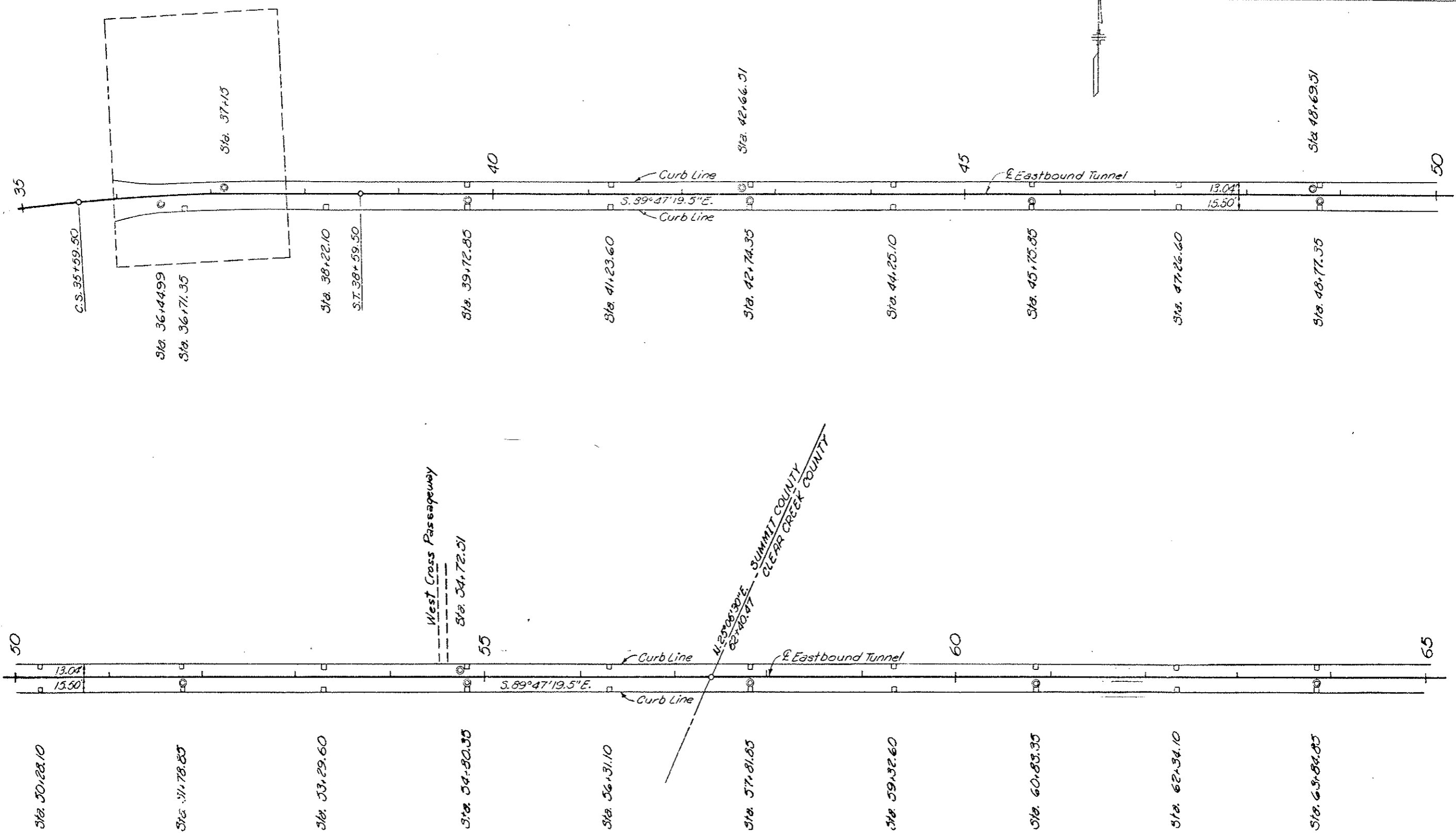
SECTION F-F SHEET D-I

Original SCALE: 1"=1'-0"

Original SCALE: 1"=1'-0"

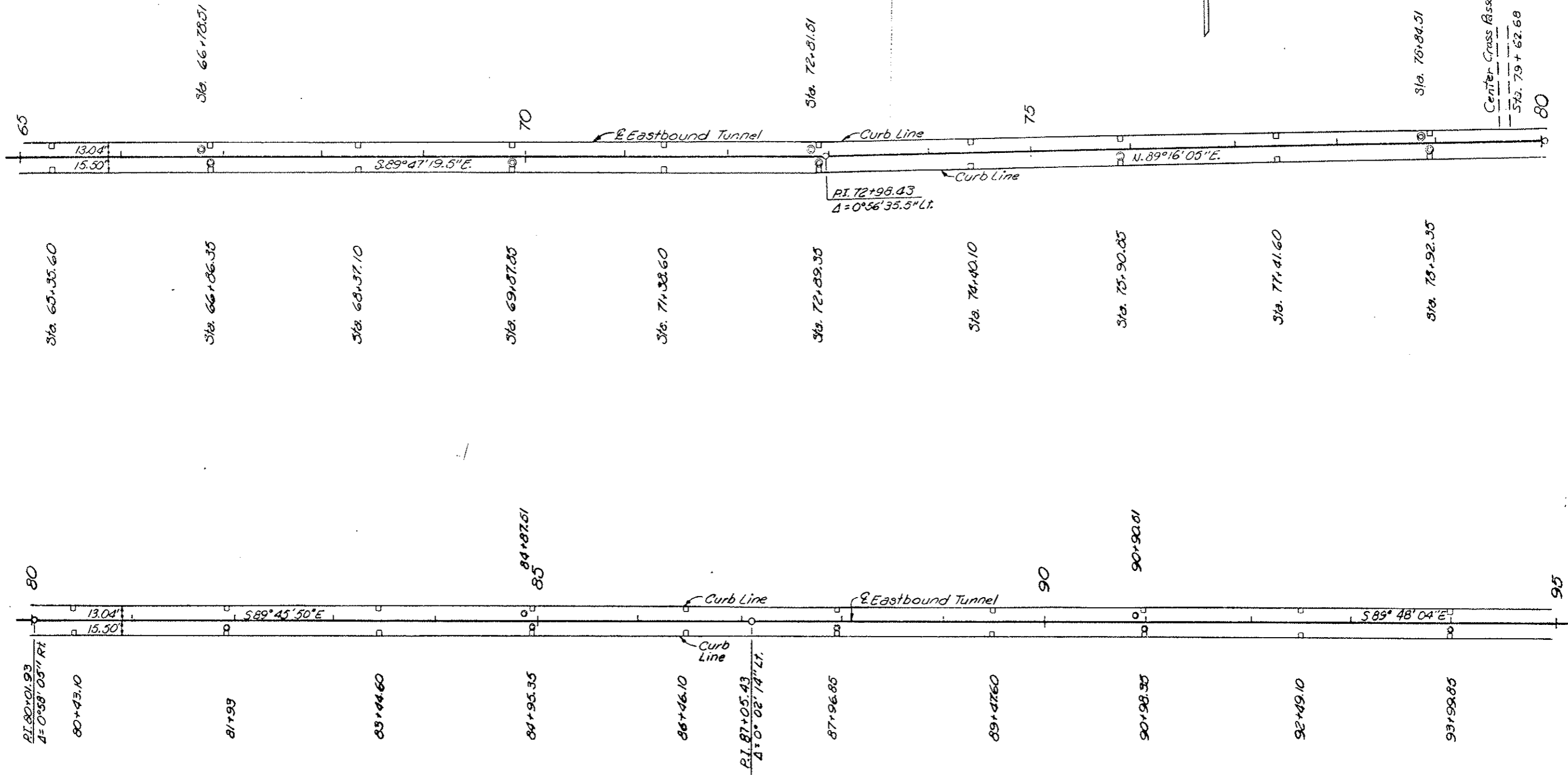
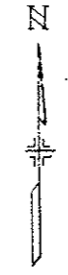
DESIGNED BY	
CHECKED BY	
DATE	
QUANTITIES BY	
CHECKED BY	
DATE	

<b>DIVISION OF HIGHWAYS</b>	
INLET DRAIN PIPING LOCATION-NORTH AND SOUTH CURB	
Designer C.D.O.H.	Structure
Detailer J. LETCHWORTH	Numbers
Drawing Number D-2	of Drawings



**LEGEND**  
 ● Existing Manhole  
 □ Existing Inlet

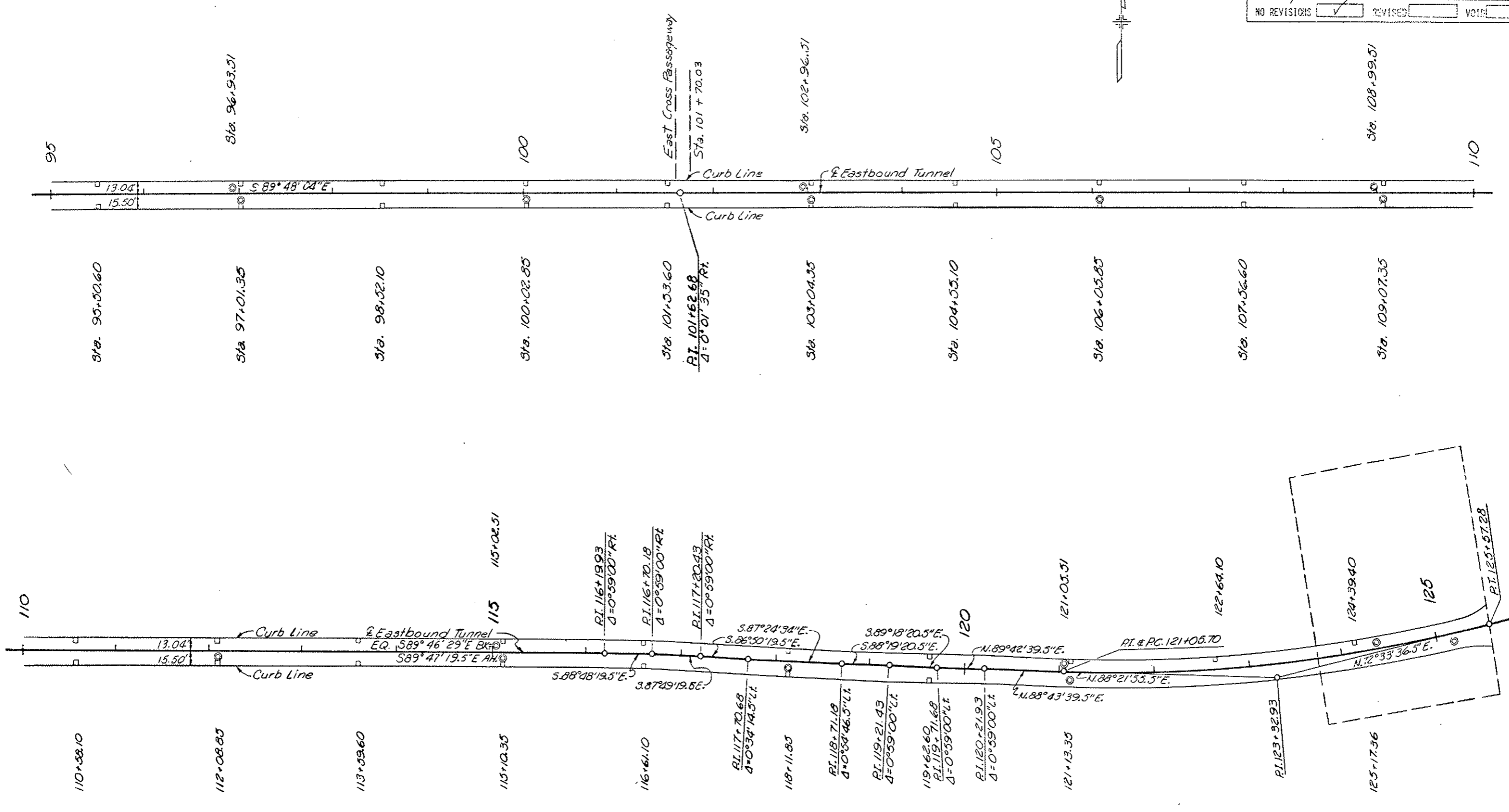
**INLET & MANHOLE LOCATION PLAN**  
 STA. 35+00 TO 65+00  
 DRAWING D-3



**LEGEND**

- Existing Manhole
- Existing Inlet

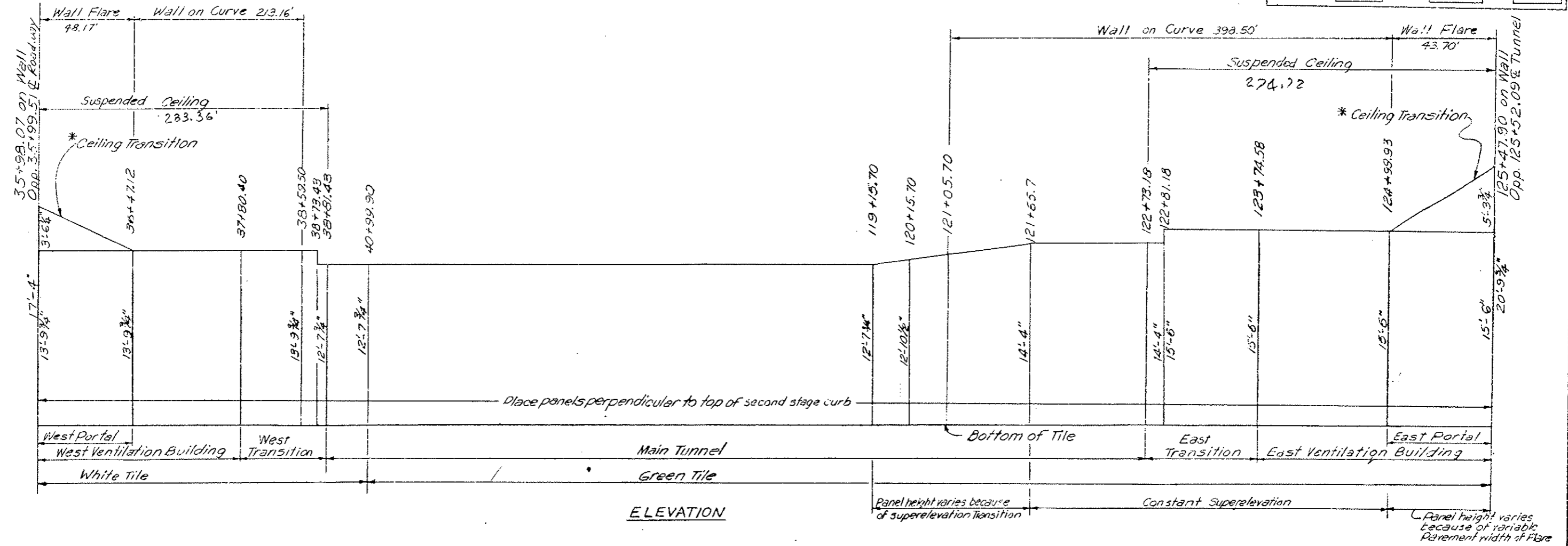
INLET & MANHOLE LOCATION PLAN  
STA. 65+00 TO 95+00  
DRAWING D-4



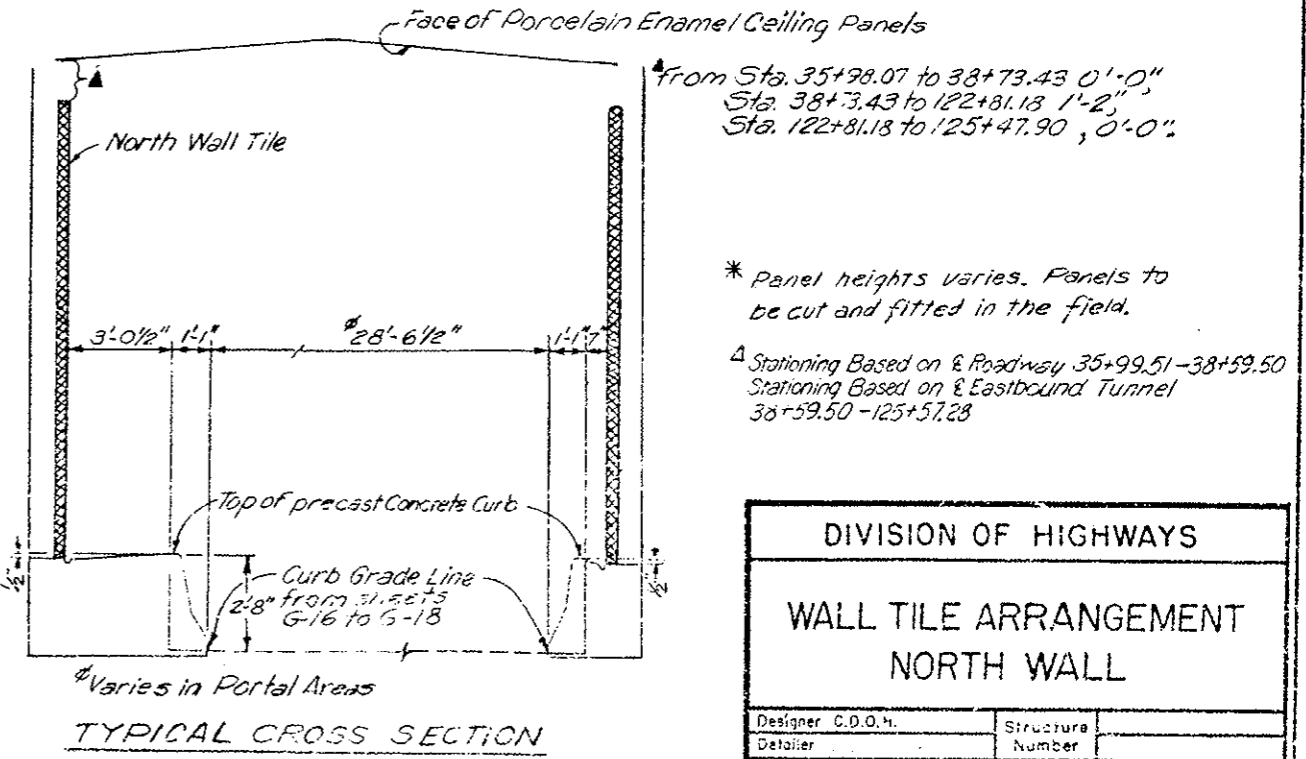
**LEGEND**

- Existing Manhole
- Existing Inlet

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



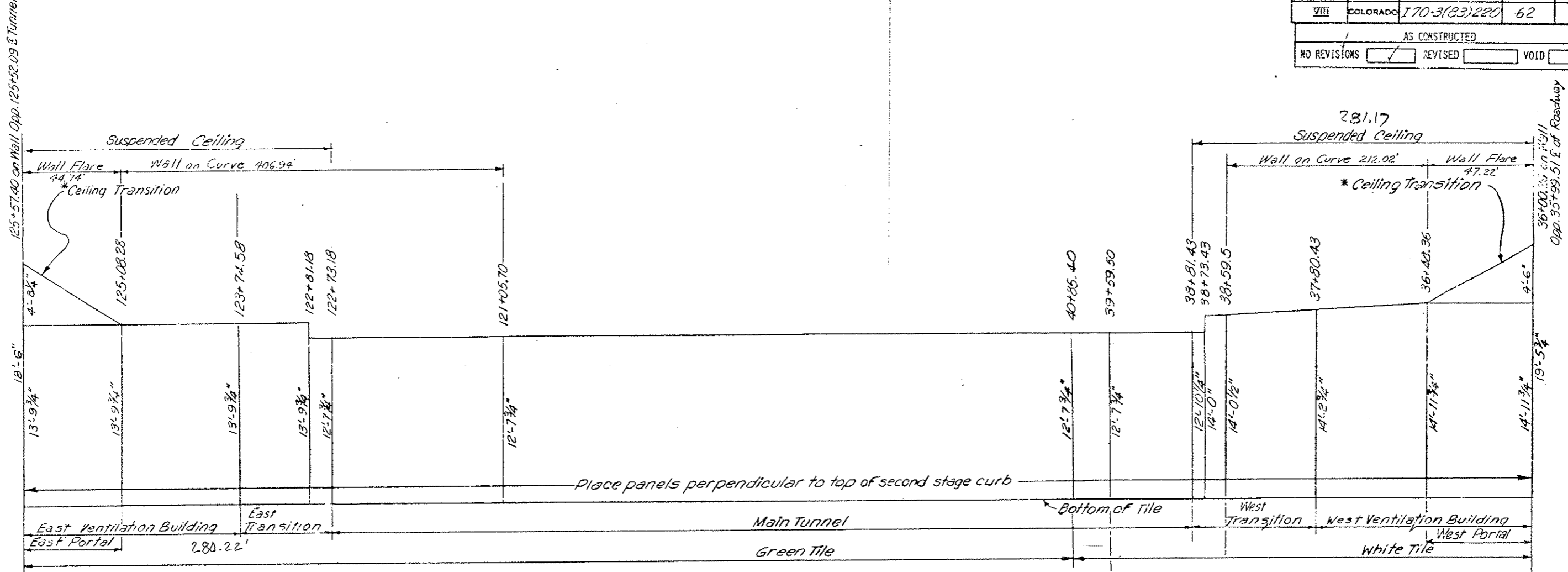
STATION	DESCRIPTION	PANEL SIZE			COLOR	SQ. FT.
		Height	Width	Thickness		
35+98.07 to 36+47.12	West Portal and Ceiling Transition	17'-4" to 13'-9 3/4"	7'-11 3/4"	3 3/4"	White	764
36+47.12 to 38+73.43	West Ventilation Bldg. and West Transition	13'-9 3/4"			White	3,125
38+73.43 to 38+81.43	West Transition	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+55.70	Main Tunnel	12'-10 1/2" to 14'-4"			Green	2,041
121+55.70 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**

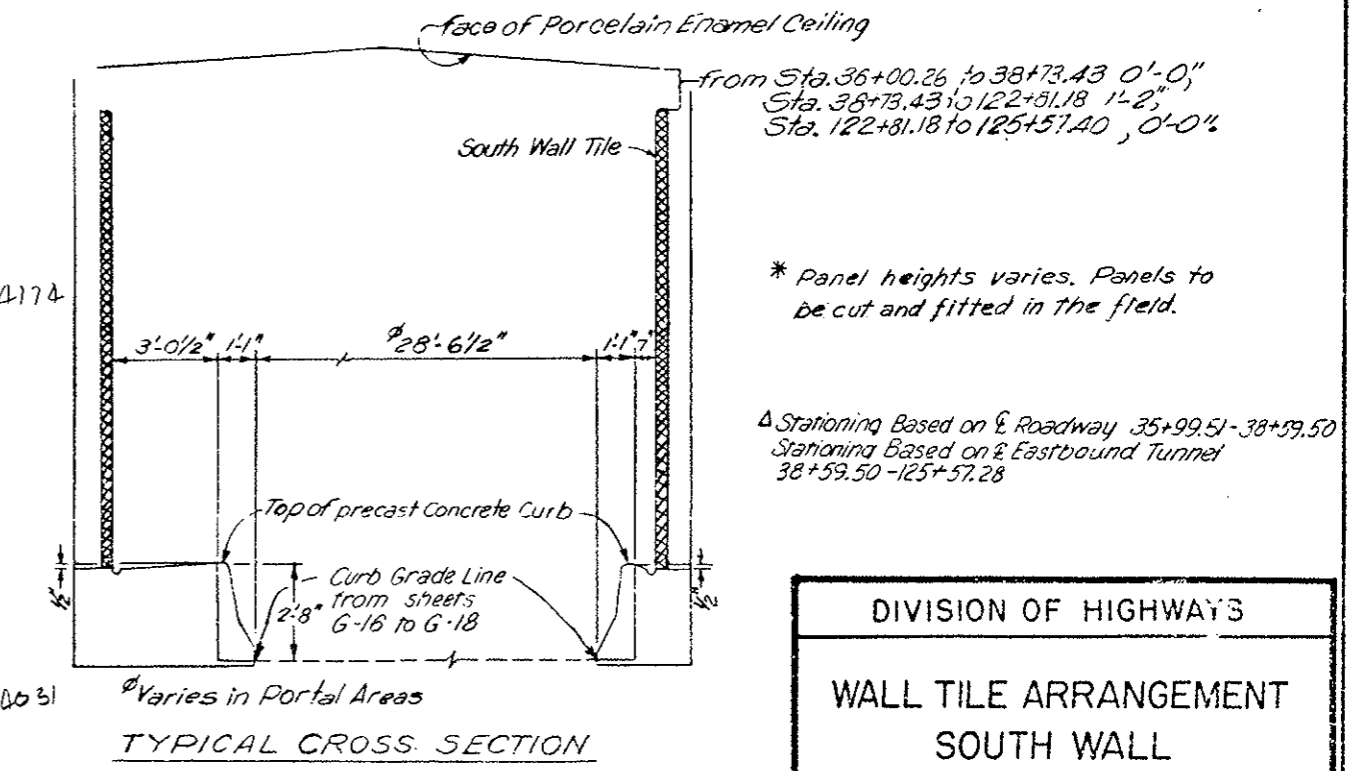
**WALL TILE ARRANGEMENT  
NORTH WALL**

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
121+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
<b>Total</b>						<b>114,370</b>



TYPICAL CROSS SECTION

**DIVISION OF HIGHWAYS**

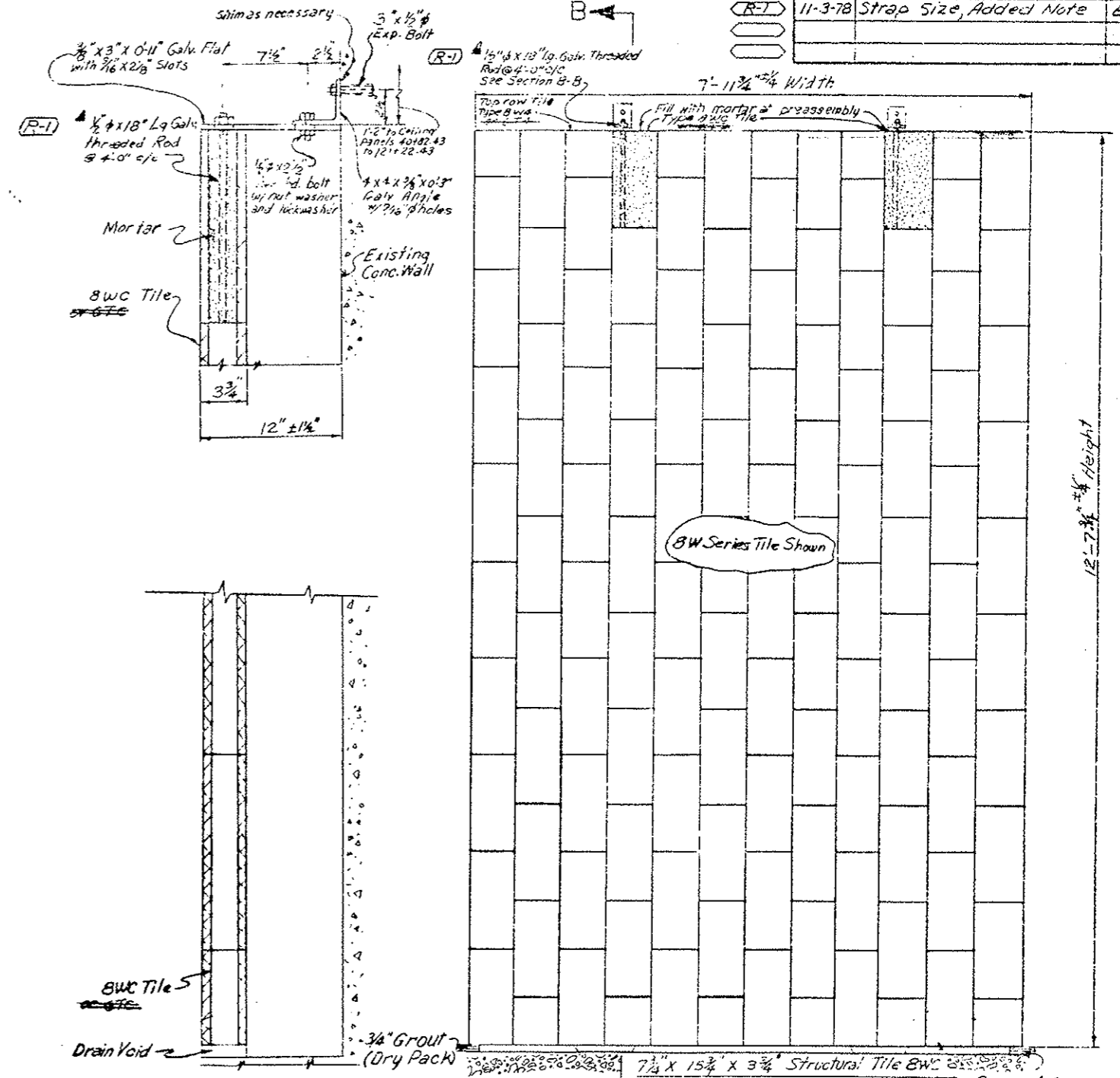
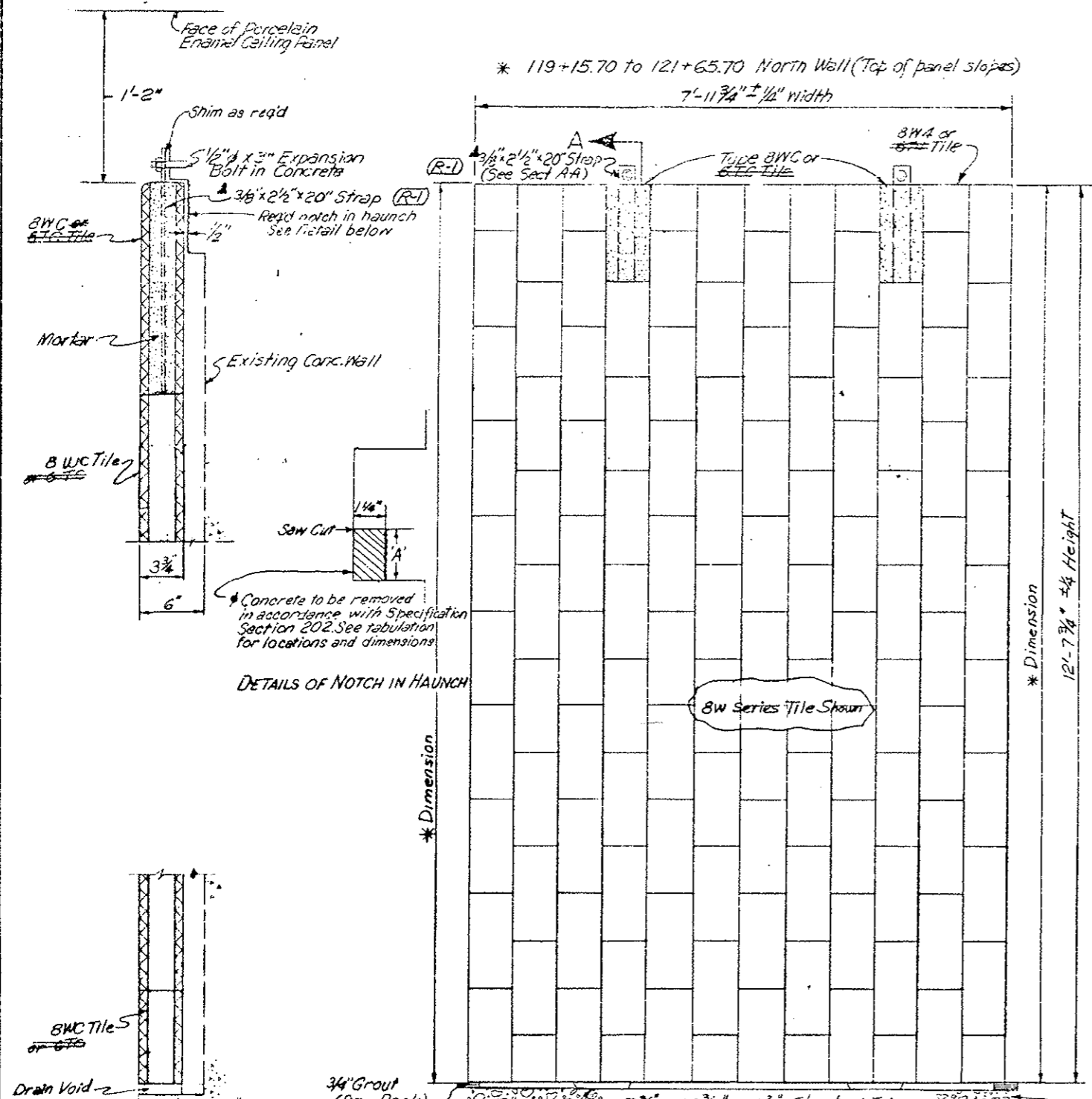
**WALL TILE ARRANGEMENT**

**SOUTH WALL**

Designer C.D.O.H.	Structure Number
Detailer C.L.S.M.T.A.	Number
Drawing Number 11-2	of Drawings



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



DESIGNED BY	DATE	CHECKED BY
CYCH	7/30/78	7/30/78
CHECKED BY	DATE	CHECKED BY
QUANTITIES BY	DATE	CHECKED BY

DETAILS OF NOTCH IN HAUNCH

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

Section B-B  
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 0.69'	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.

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

\* See Wall Tile Arrangement Drawing WFI

DIVISION OF HIGHWAYS

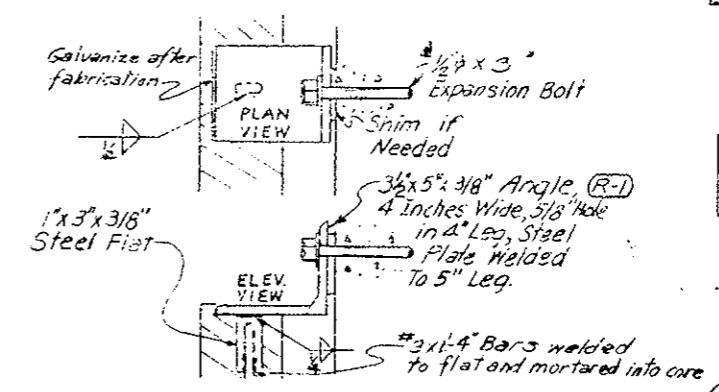
WALL TILE AND MOUNTING UNIT DETAILS

Designer C.D.M.	Structure Numbers
Detailer J. Letchworth	
Drawing Number WFI-3	of

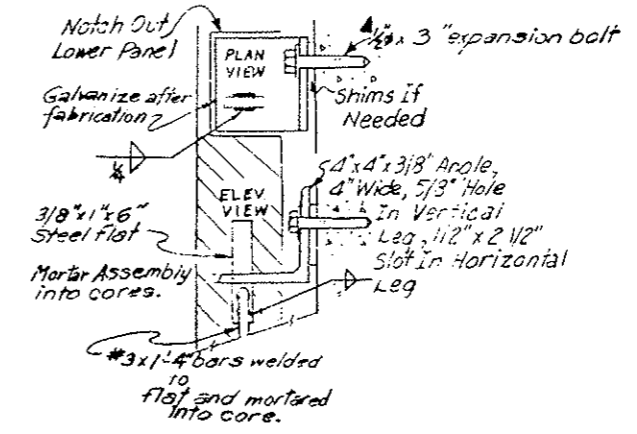
FEDERAL ROAD REGION NO	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLOADO	I70-3(23)220	64	

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

CONNECTION OF GLAZED TILE PANELS

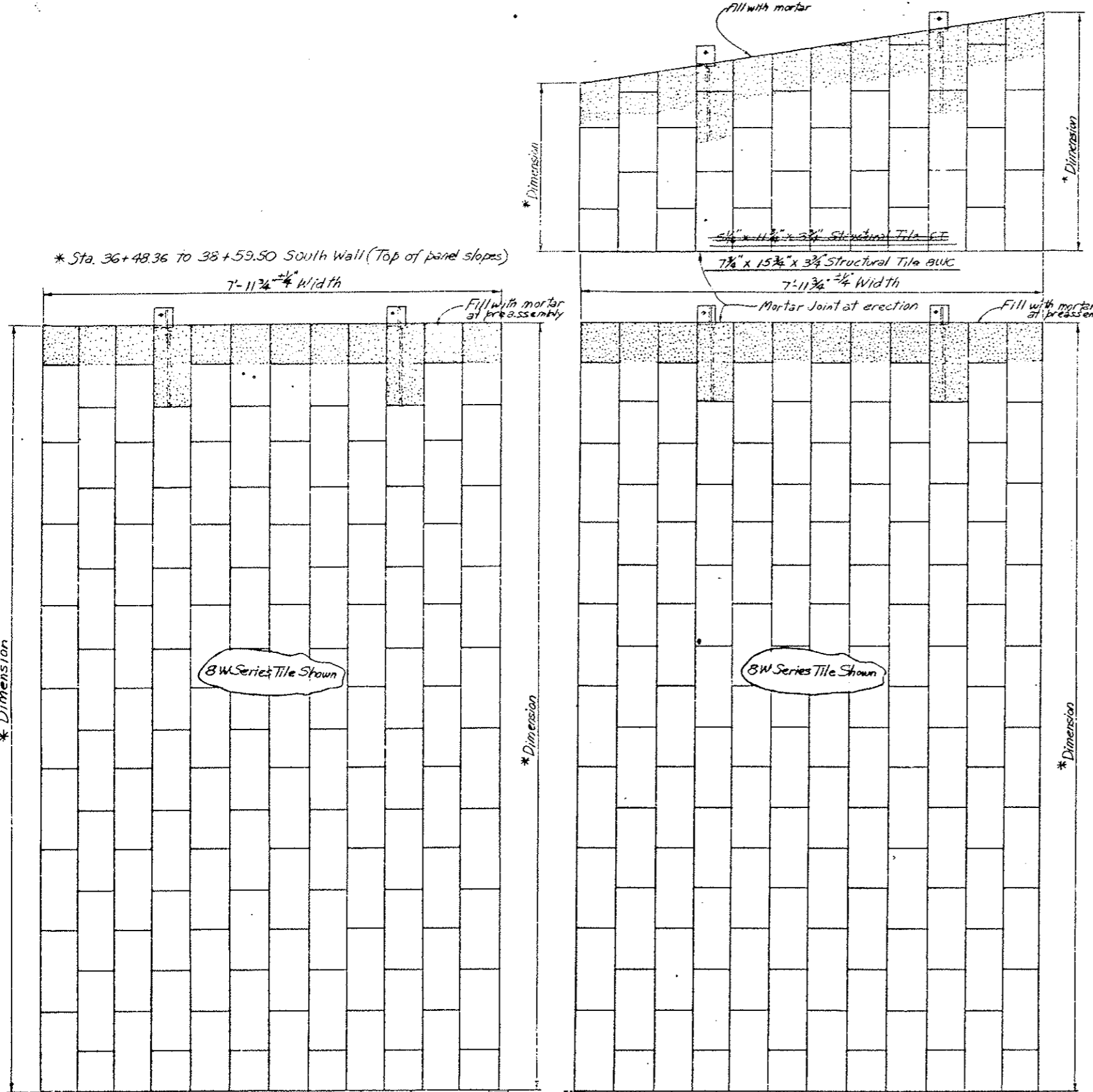


INTERMEDIATE CONNECTION OF GLAZED TILE PANELS



(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: 4T Tile Deleted.



Second Stage Curb North Wall (Sta. 36+47.12 to 38+81.43) (Sta. 122+81.18 to 124+99.93) South Wall (Sta. 36+48.36 to 38+81.43) (Sta. 122+81.18 to 125+08.53)

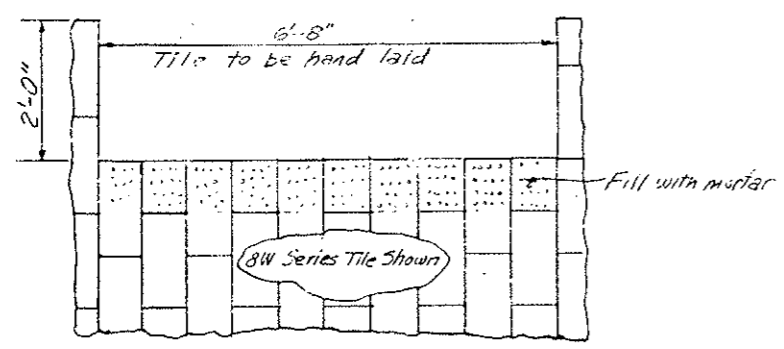
Second Stage Curb North Wall (Sta. 35+98.07 to 36+47.12) (Sta. 124+99.93 to 125+47.90) South Wall (Sta. 36+00.26 to 36+48.36) (Sta. 125+08.28 to 125+57.40)

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

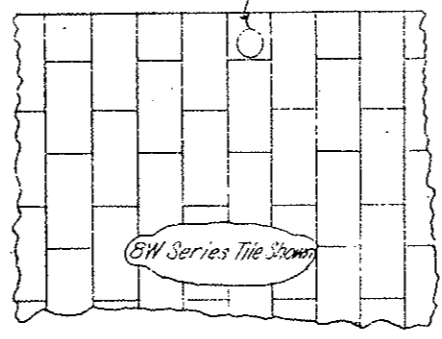
\* See Wall Tile Arrangement Drawings WF1 and WF2

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

REVISIONS	

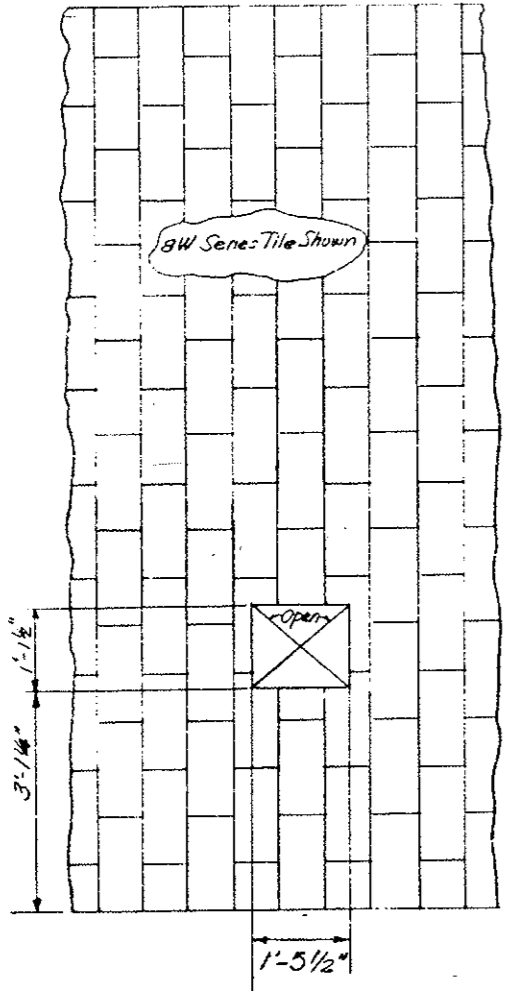


MESSAGE BOARD CUTOUT

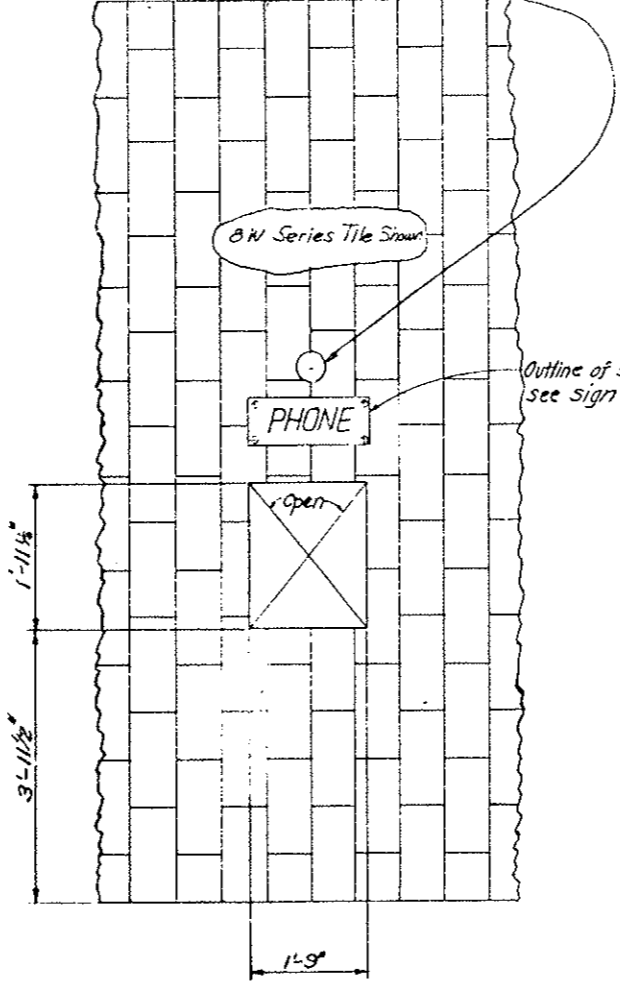


EMERGENCY LIGHT CUTOUT

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

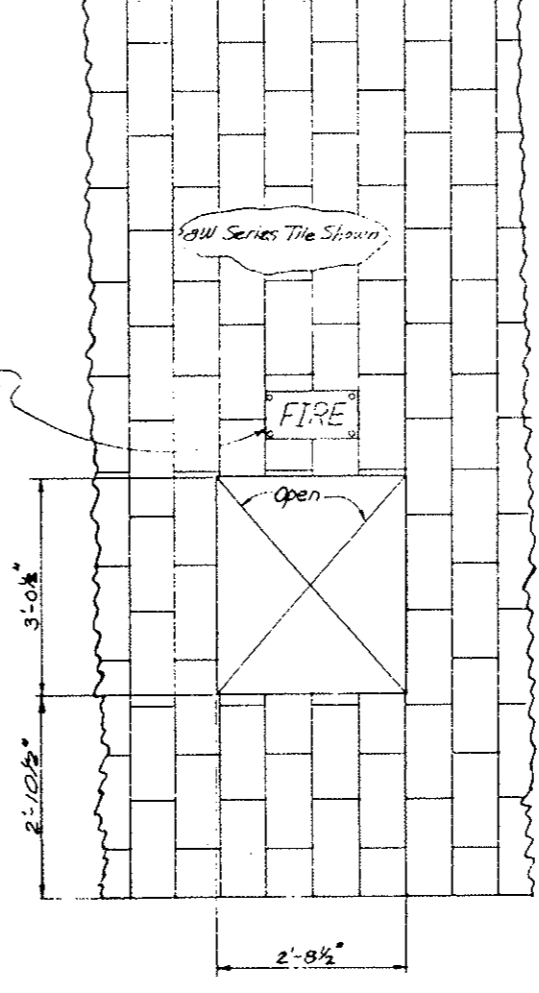


PANEL INSTRUMENTATION CABINET CUTOUT  
ORIGINAL SCALE 3/4" = 1'-0"



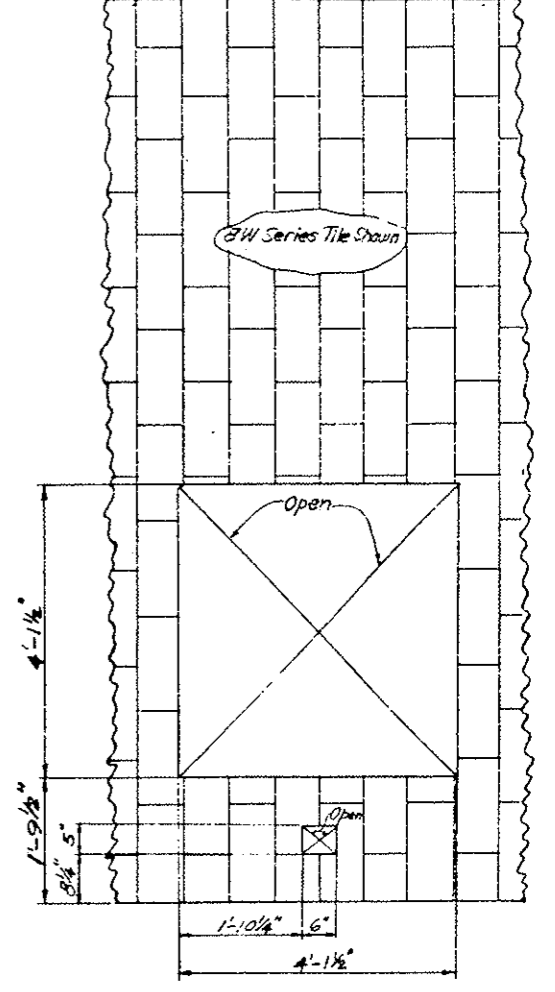
PANEL EMERGENCY TELEPHONE CUTOUT  
ORIGINAL SCALE 3/4" = 1'-0"

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



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

Outline of sign see sign detail



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

NORTH WALL

DESIGNED BY	CHECKED BY	DATE	QUANTITIES BY	CHECKED BY	DATE
CDOH	EPO	8-10-78	CDOH	EPO	8-10-78

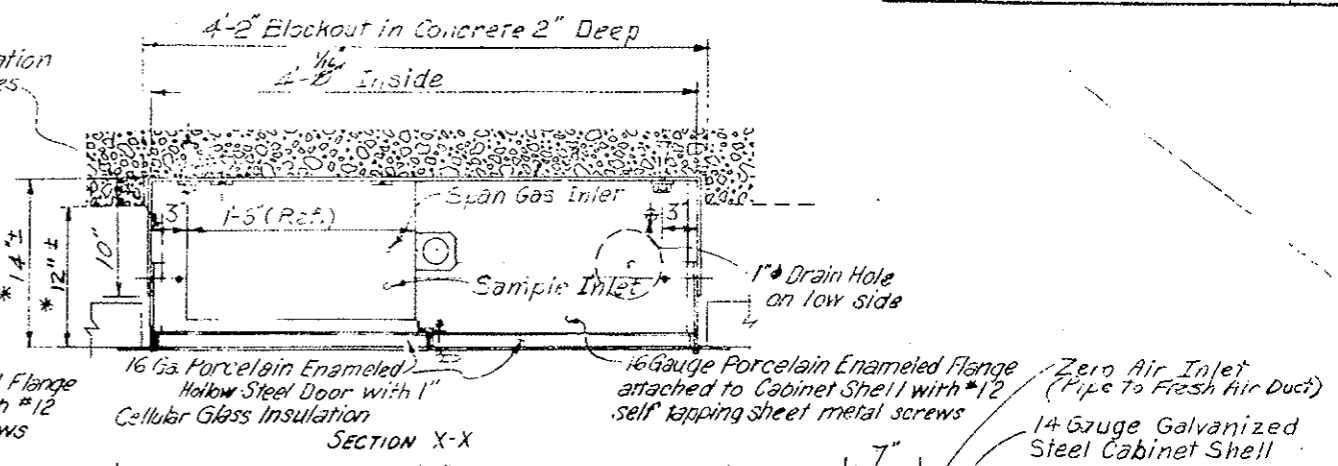
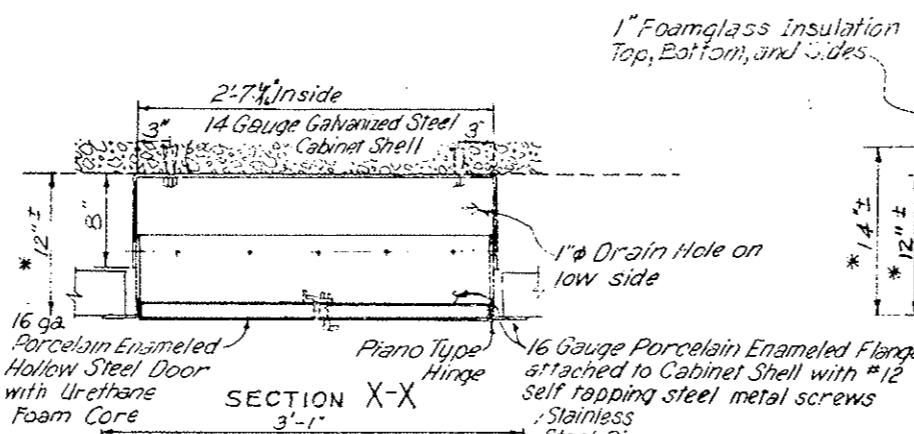
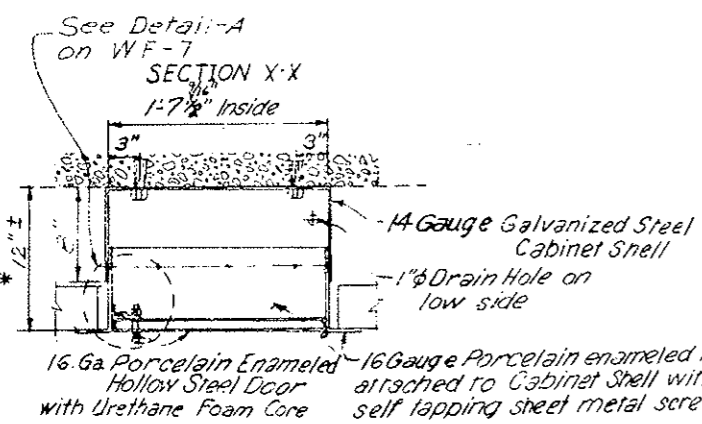
Note: Cutouts in tile to be square with tile.

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)

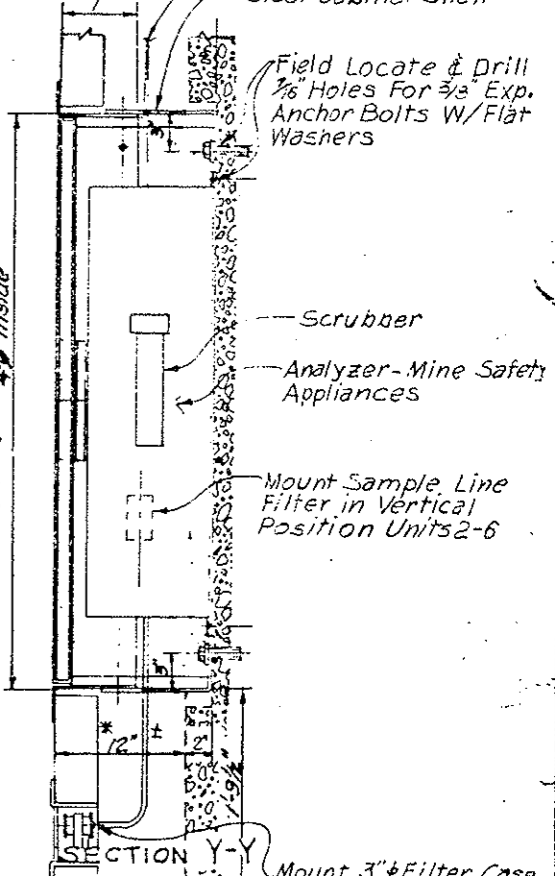
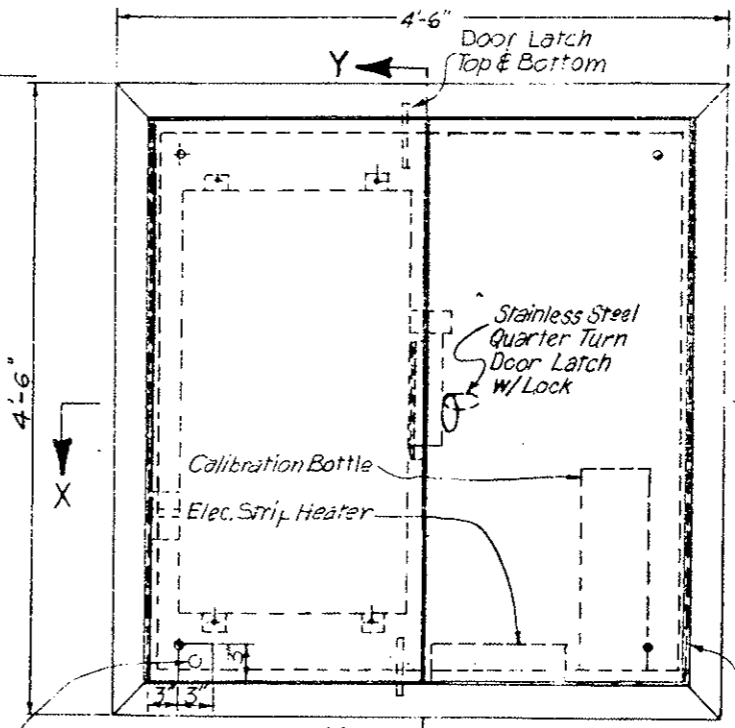
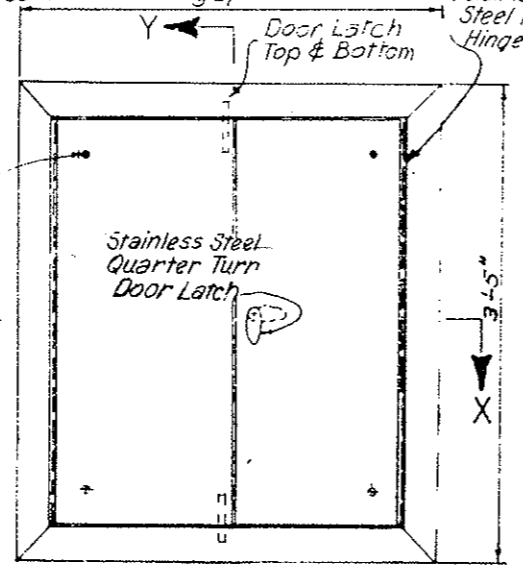
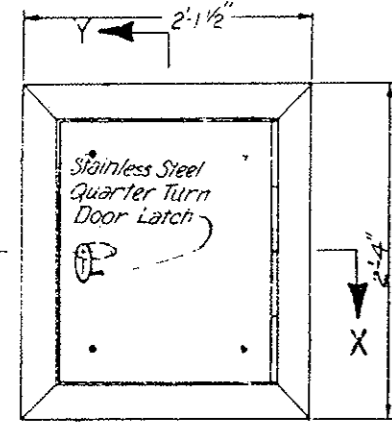
Note: Removal of Concrete for Blockout to be in accordance with Spec. Section 202. The perimeter of the blockout shall be sawed to a minimum of 2 inches before removing concrete.

REVISIONS	
R-1	Dimension changes

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



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



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

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

CARBON MONOXIDE ANALYZER CABINET  
 ORIGINAL SCALE: 1/2" = 1'-0"

CABINET LOCATIONS ON NORTH WALL

Cab. No.	Emerg. Phone Cab.	Cab. No.	Emerg. Phone Cab.
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)

Cab. No.	Fire Ext. Cab.	Cab. No.	Fire Ext. Cab.	Cab. No.	Fire Ext. Cab.	Cab. No.	Fire Ext. Cab.
1	(See WF-7)	9	59+13.35	18	81+74.00	27	104+35.85
2	41+54.60	10	61+64.60	19	84+25.85	28	106+87.10
3	44+75.95	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+84.50		

Cab. No.	Co Analyzer Cab.	Cab. No.	Co Analyzer Cab.	Cab. No.	Co Analyzer Cab.
1	37+80.40	3	68+74.45	6	104+92.45
2	56+68.45	4	80+80.45	7	123+74.78
		5	92+86.45		

\* Cabinets are not required for West and East Ventilation Building 30 & 31, 2nd fl.

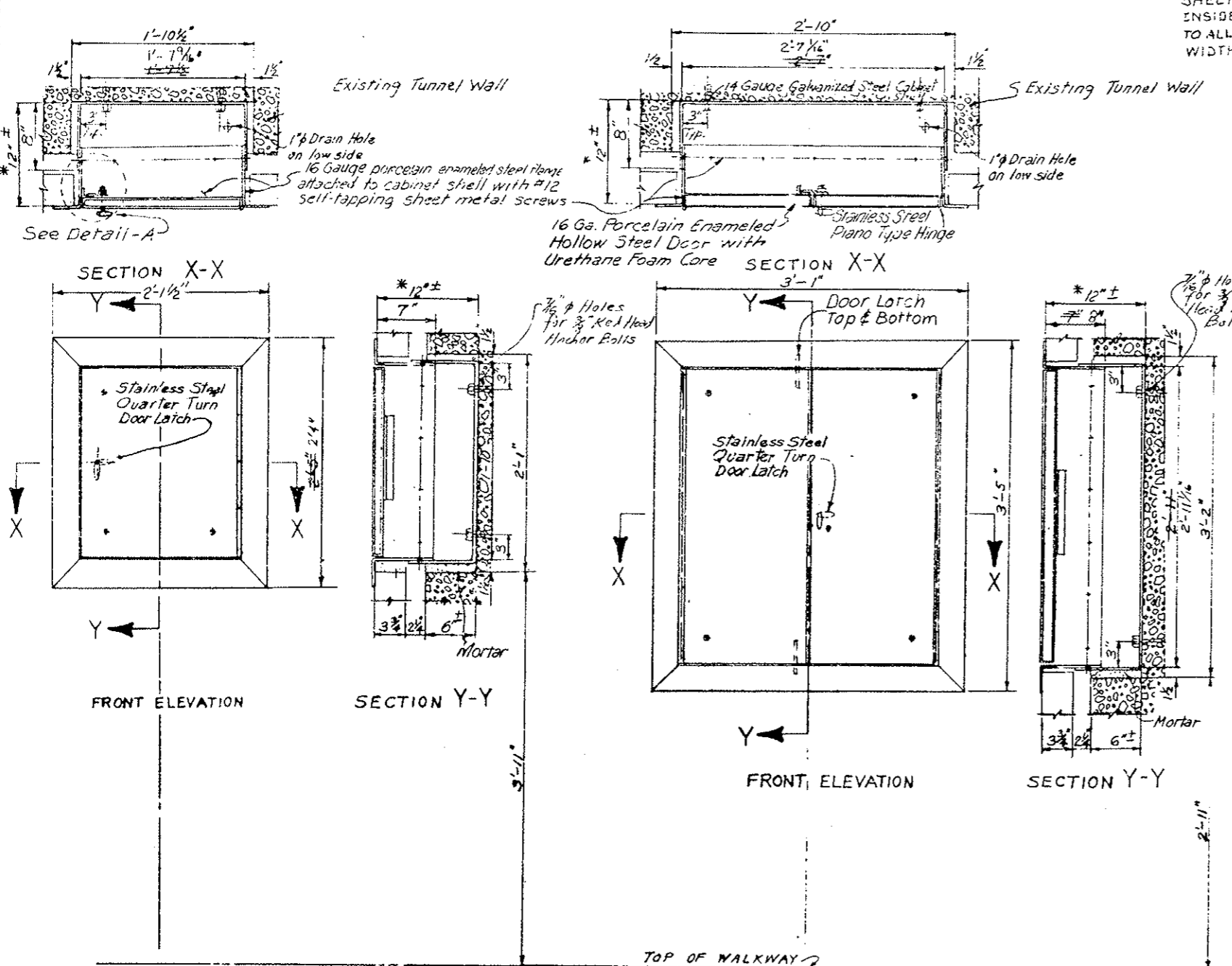
Cabinets for fire extinguisher, emergency telephone and Carbon Monoxide Analyzer shall be of welded and bolted construction and galvanized on all surfaces except for doors and faces which shall have a porcelain enamel surface front and back. Cabinets to be square with wall tie. See Cabinet, Hardware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

**DIVISION OF HIGHWAYS**

**CABINETS TELEPHONE, FIRE EXTINGUISHER AND CO ANALYZER**

Designer: C.D.H.      Structure Numbers: \_\_\_\_\_  
 Detailer: J. LETCHWORTH      Drawing Number: WF-6 of \_\_\_\_\_ Drawings

REVISIONS	



ALLOW FRONT OF 16 GA. SHEET CABINET TO FIT INSIDE OF MAIN CABINET SHELL TO ALLOW FOR WALL WIDTH ADJUSTMENT

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

DESIGNED BY	DATE	CHECKED BY
CDOH	7/25/11	CDOH
CHECKED BY	DATE	QUANTITIES BY
SST	10/26/11	SST
DETAILED BY	DATE	CHECKED BY

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

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

Cabt. No.	Emerg. Phone Cabt.
11	121+30.70

Cabt. No.	Fire Ext. Cabt.
1	39+03.41
34	121+49.60

DIVISION OF HIGHWAYS	
CABINETS TELEPHONE AND FIRE EXTINGUISHER	
Designer CDOH	Structure
Detailer J. Letchworth	Numbers
Drawing Number WF-7	of Drawings

Revision Dates	(Preliminary Stage Only)

REVISIONS			
2-1	11-3-78	Cabinet Locations	E.B.

AS CONSTRUCTED

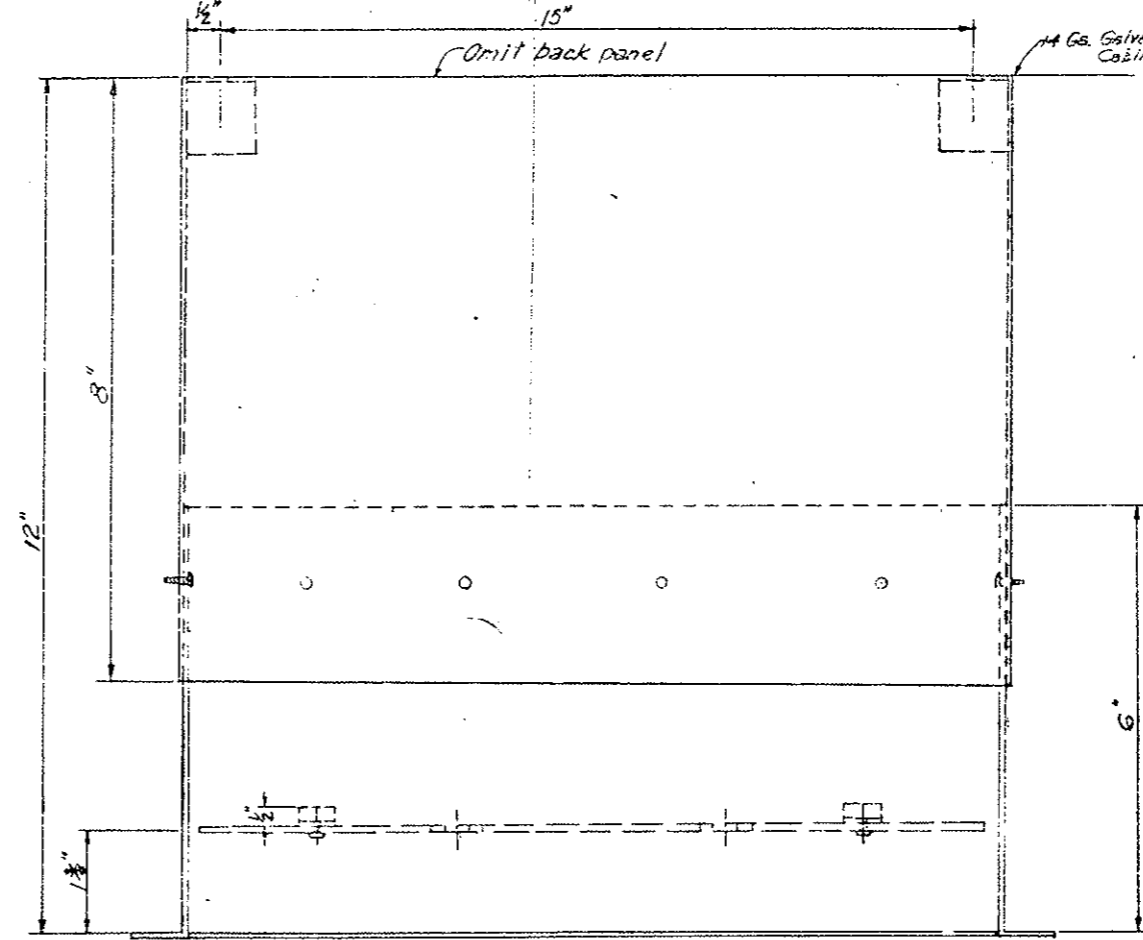
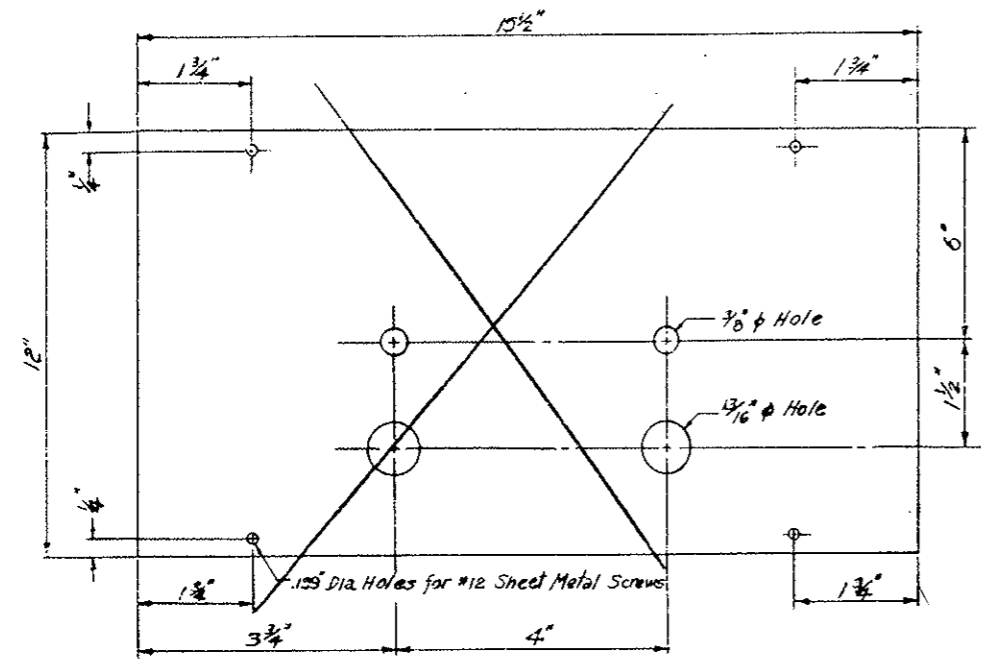
NO REVISIONS  REVISED  VOID

INSTRUMENT CABINET LOCATIONS

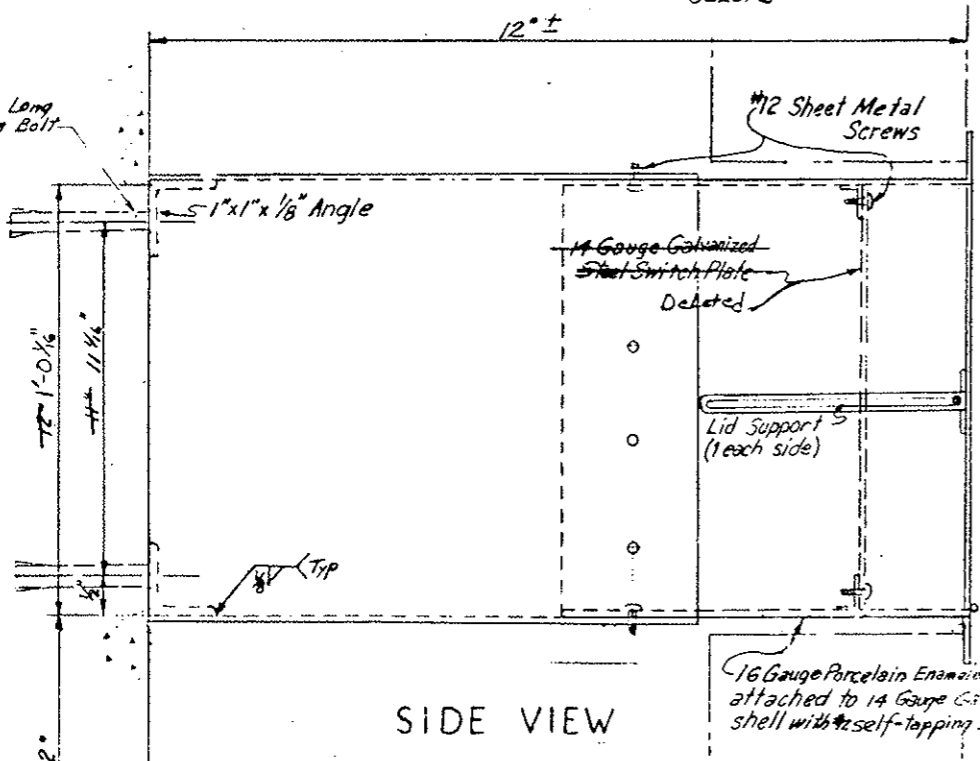
No.	I- Instr. Cabinet
1	41+60
2	51+98
3	58+94
4	62+48
5	63+04
6	63+60
7	64+00
8	64+52
9	65+08
10	70+20
11	71+04
12	72+40
13	72+44
14	73+48
15	80+90
16	81+50
17	81+86
18	82+46
19	83+43
20	84+00
21	85+00 Deleted
22	85+00
23	87+00 Deleted
24	88+18
25	89+38
26	90+02
27	90+46
28	90+98
29	91+04
30	93+02
31	94+10
32	96+02
33	97+02
34	97+30
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-Bars 2 on the North 1 on the South

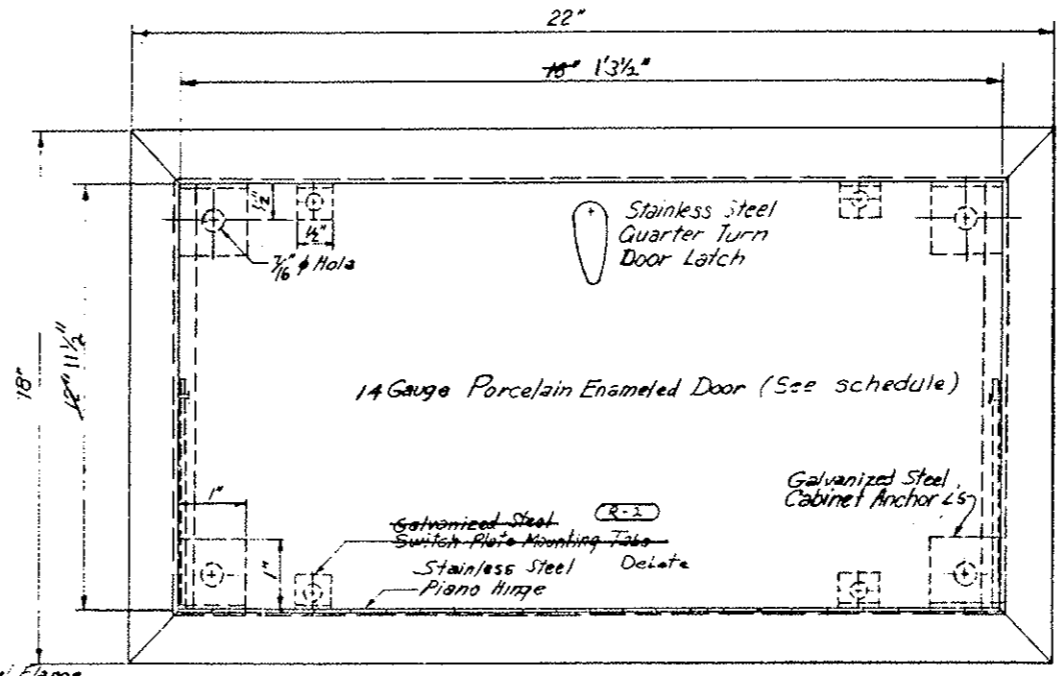
These Stations are approximate.



PLAN VIEW



SIDE VIEW



ELEVATION VIEW

INSTRUMENTATION CABINET

Instrumentation Cabinet to be square with tile.

DESIGNED BY	DATE	CHECKED BY
C.D.O.H.	3-29-78	
CHECKED BY	DATE	QUANTITIES BY
	3-29-78	
DETAILED BY		CHECKED BY

3/8" x 2" Long Expansion Bolt 4 Req'd

**DIVISION OF HIGHWAYS**

**INSTRUMENTATION CABINET**

Designer	C.D.O.H.	Structure	
Detailer	J. Letchworth	Numbers	
Drawing Number	WF-8	of	Drawings

Revision Dates (Preliminary Stage Only)

REVISIONS	

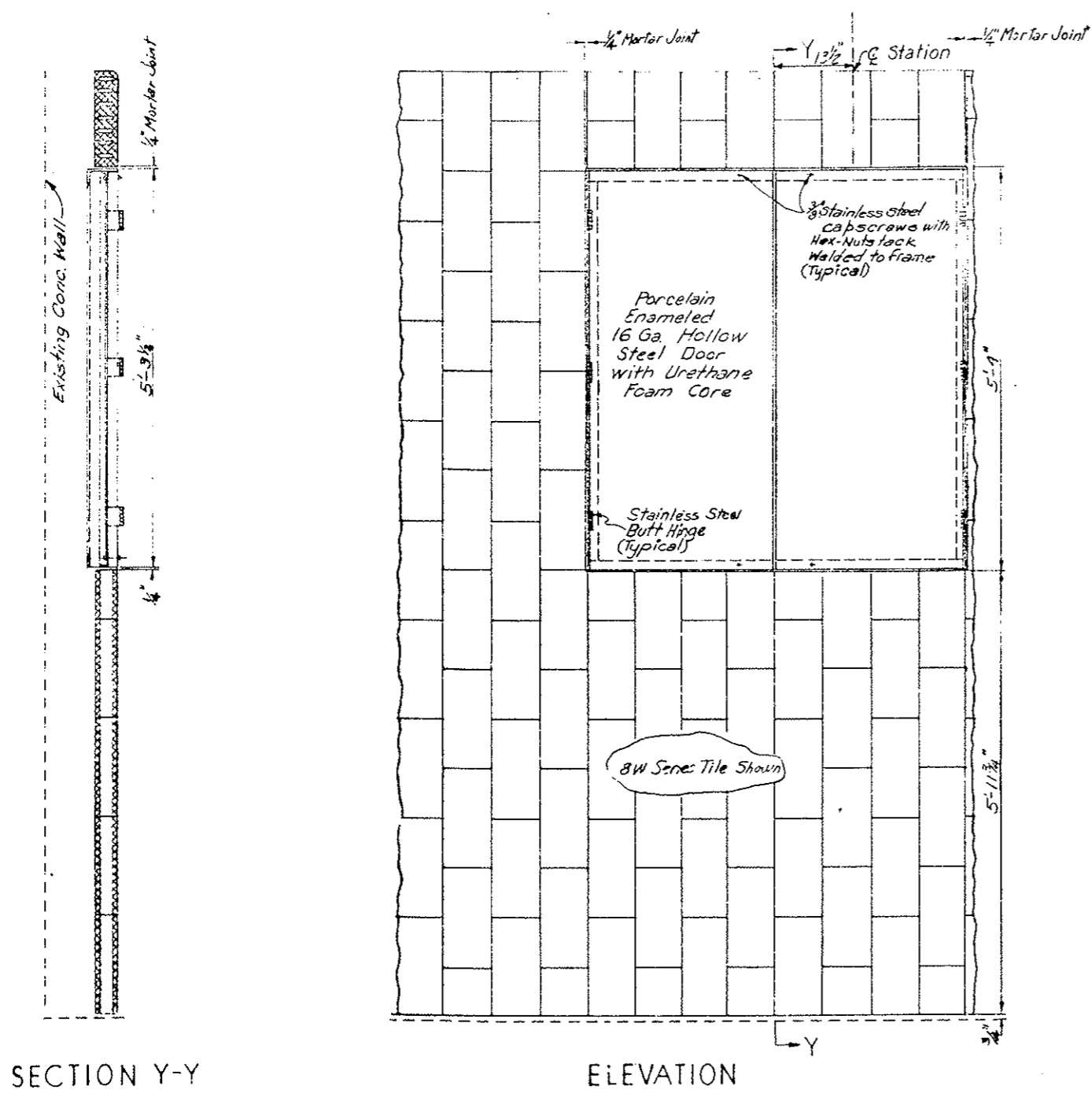
AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

STANDARD PULLBOX STATION LOCATIONS

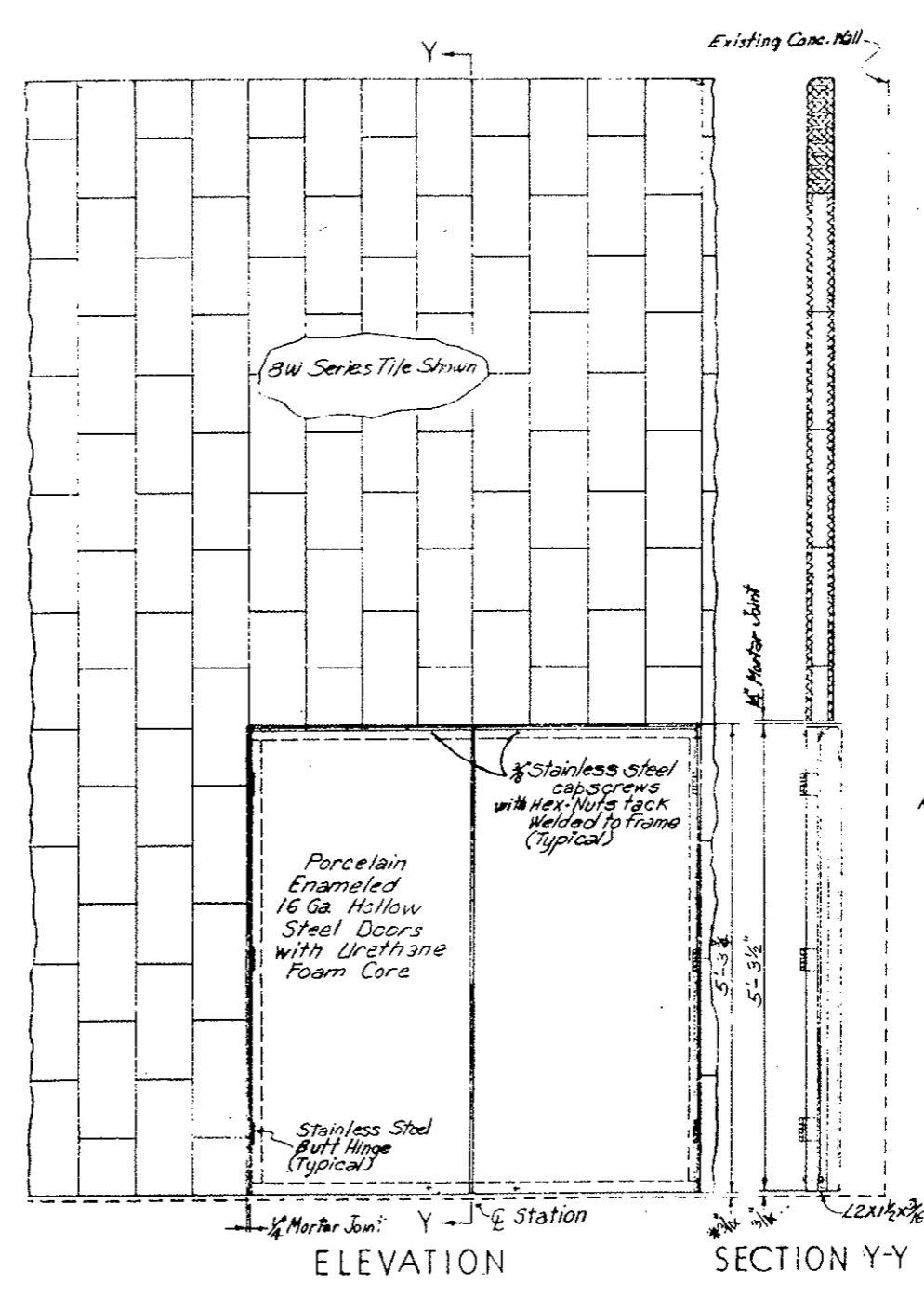
Pullbox Station No.	Locations North Wall	Locations South Wall
1	West Veil Bldg (See WF-11)	West Veil Bldg (See WF-11)
2	(See WF-13)	(See WF-13)
3	44+74.19	44+74.19
4	48+64.45	48+64.45
5	52+58.18	52+58.18
6	56+68.45	56+68.45
7	(See WF-14)	59+55.37
8	61+92.93	61+92.93
9	64+72.45	64+72.45
10	68+84.10	68+74.45
11	72+76.45	72+76.45
12	76+50.18	76+50.18
13	(See WF-14)	79+62.68
14	80+80.45	80+80.45
15	84+89.14	84+89.14
16	88+84.45	88+84.45
17	92+93.18	92+93.18
18	96+88.45	96+88.45
19	99+61.68	99+61.68
20	(See WF-14)	101+70.03
21	104+92.45	104+92.45
22	109+02.76	108+94.45
23	112+96.45	112+96.45
24	117+08.10	117+00.43
25	(See WF-13)	(See WF-13)
26	East Veil Bldg	East Veil Bldg
27		

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

DESIGNED BY	DATE	CHECKED BY
CHECKED BY	12/3/76	QUANTITIES BY
DETAILS BY		CHECKED BY



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"

**DIVISION OF HIGHWAYS**

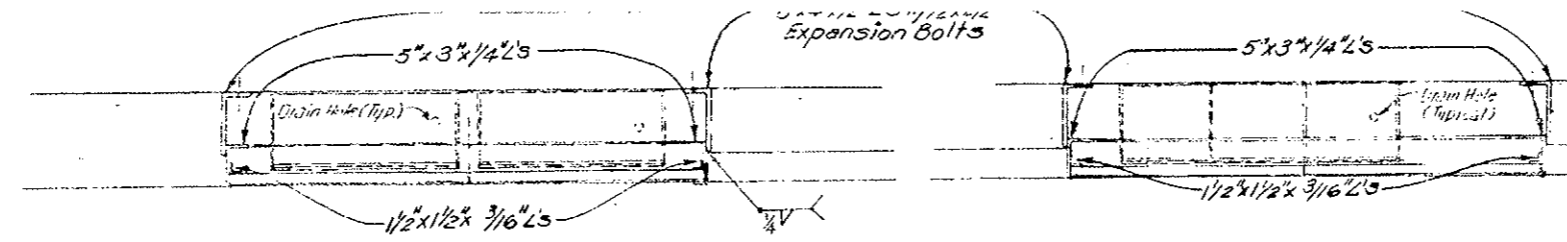
**WALL TILE**  
**DETAILS AT PULLBOX STATION**  
**STANDARD**

Designer CDOH	Structure
Detailer J. LeSchworth	Numbers
Drawing Number WF-3	of Drawings

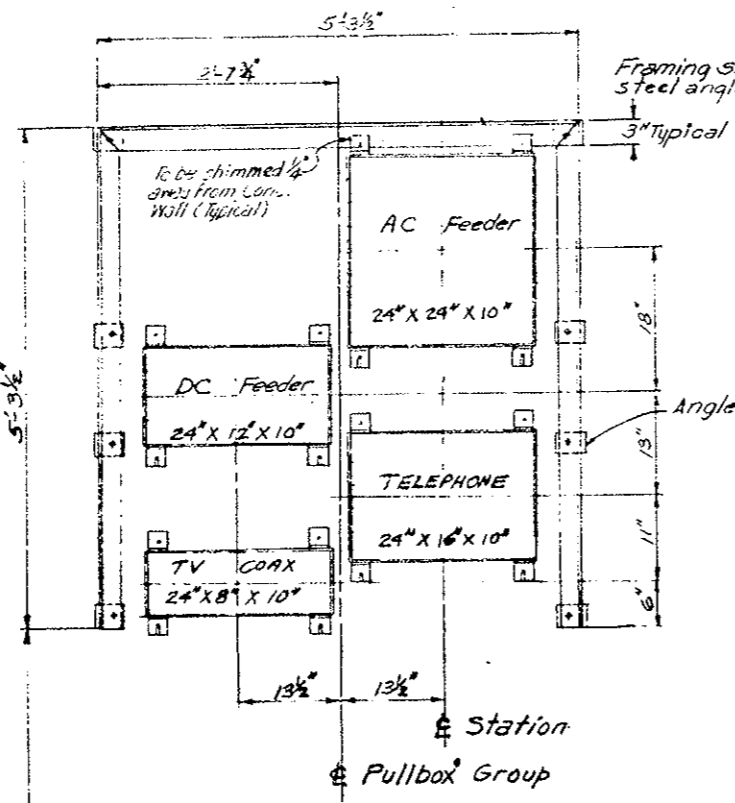
\*Varies See Following Sheet



REVISIONS	



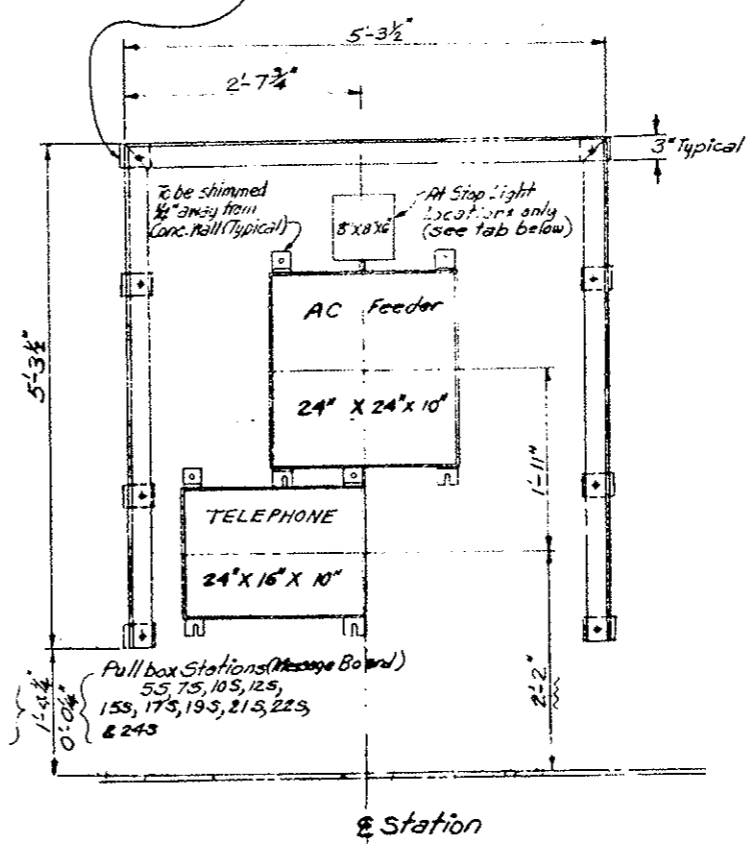
FOR CONDUIT SIZE AND LOC.  
 REFER TO DWGS.  
 ET-15 & ET-35



Pullbox Stations  
 4N THRU 25N  
 EXCEPT ON IAN 82IN  
 (See N1-14)

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

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



For conduit size and location  
 Refer to Dwgs. ET-15 & ET-35

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

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

**DIVISION OF HIGHWAYS**

**DETAILS OF PULLBOX STATION FRAME STANDARD**

Designer CDOH	Structures
Detailer J. LETCHWORTH	Numbers
Drawing Number WF-10	of Drawings

AS CONSTRUCTED

NO REVISIONS  REVISED  VOID

INITIAL	DATE	CHECKED BY	QUANTITY BY
CDOH	5-8-75		



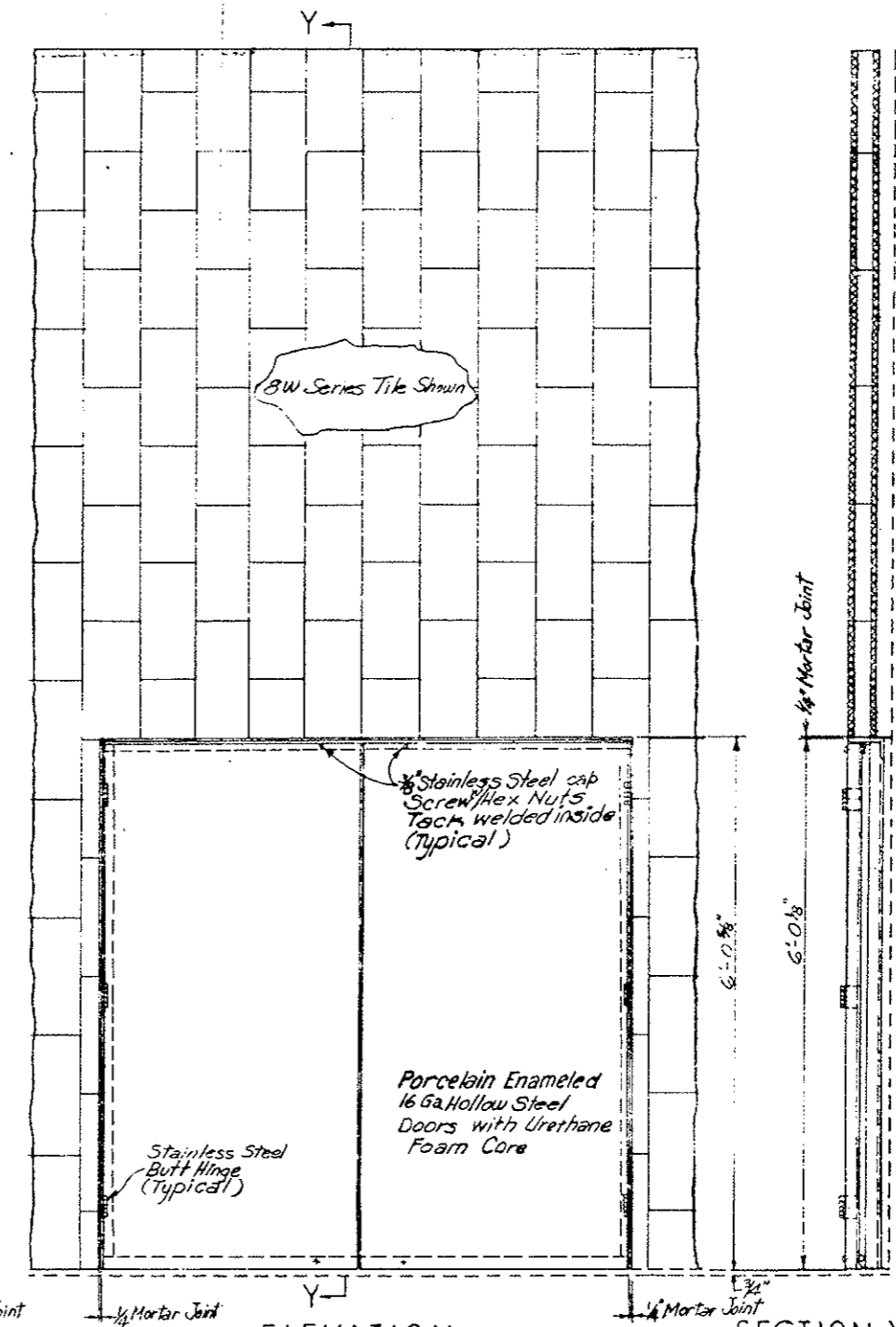
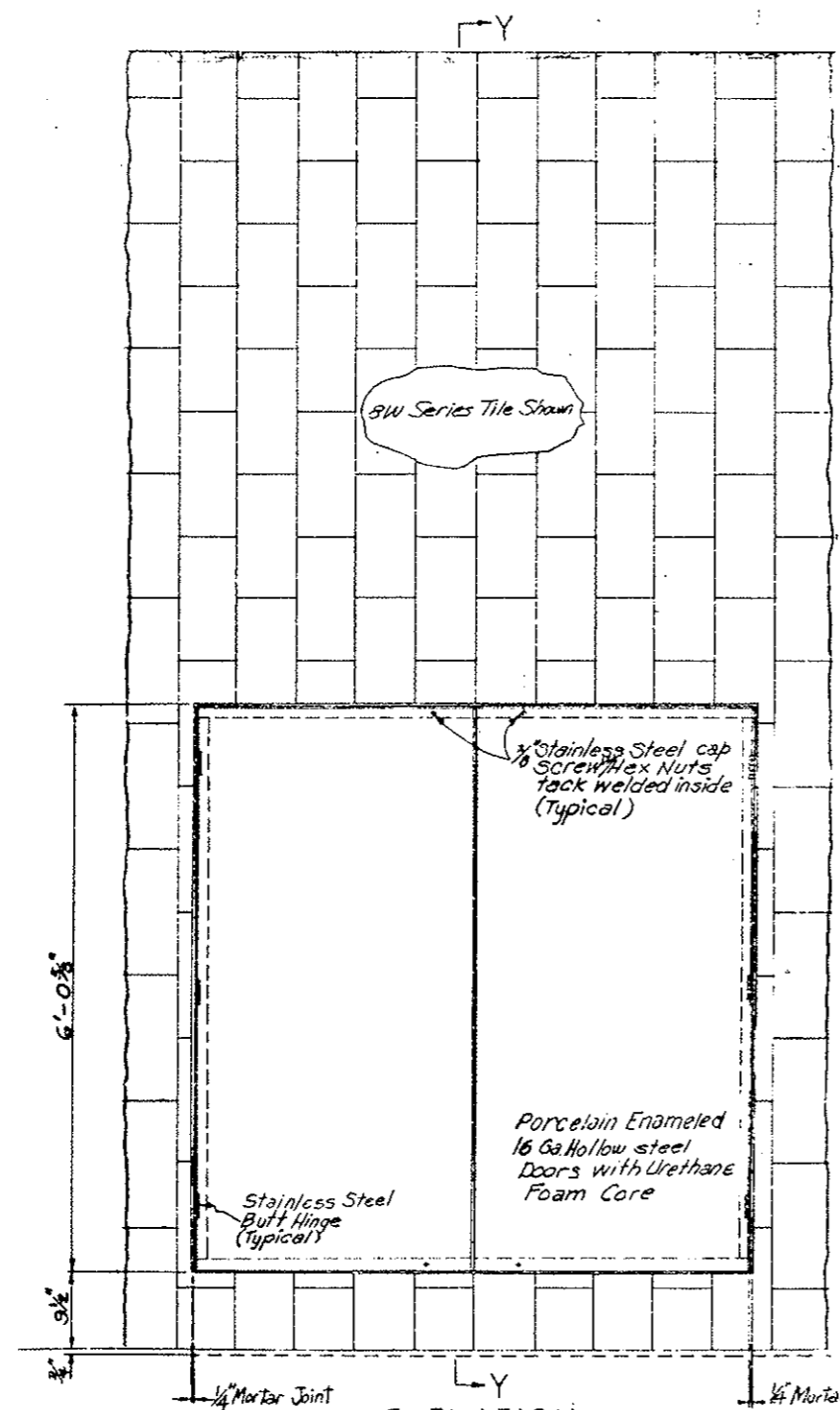
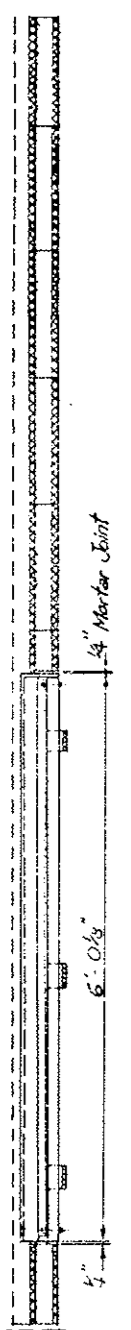
REVISIONS	

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
CDGH	3.15.11	J.E.L.
CHECKED BY	QUANTITIES BY	
CDGH	J.E.L.	
DETAILS BY	CHECKED BY	



SECTION Y-Y

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"

**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**

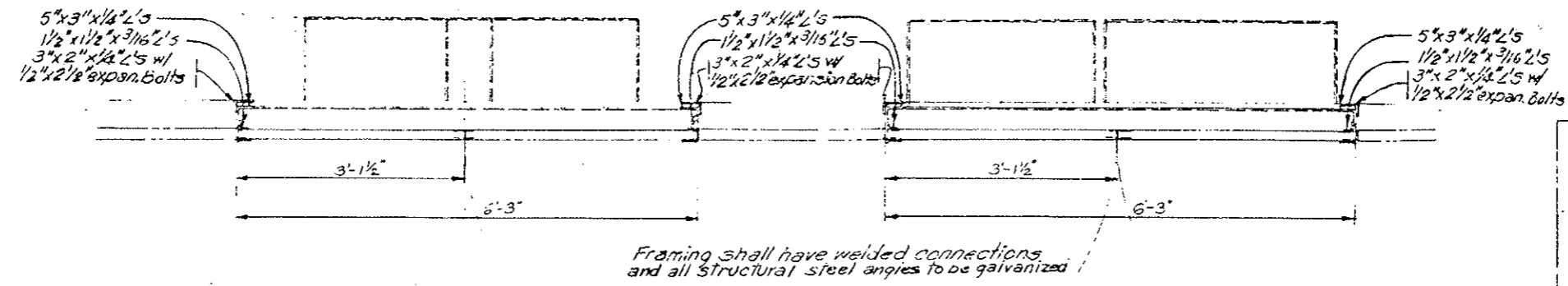
**WALL TILE**

**DETAILS AT PULLBOX STATIONS**

**2N AND 2S**

Designer CDGH	Structure
Detailer J Letchworth	Numbers
Drawing Number WF-11	of Drawings

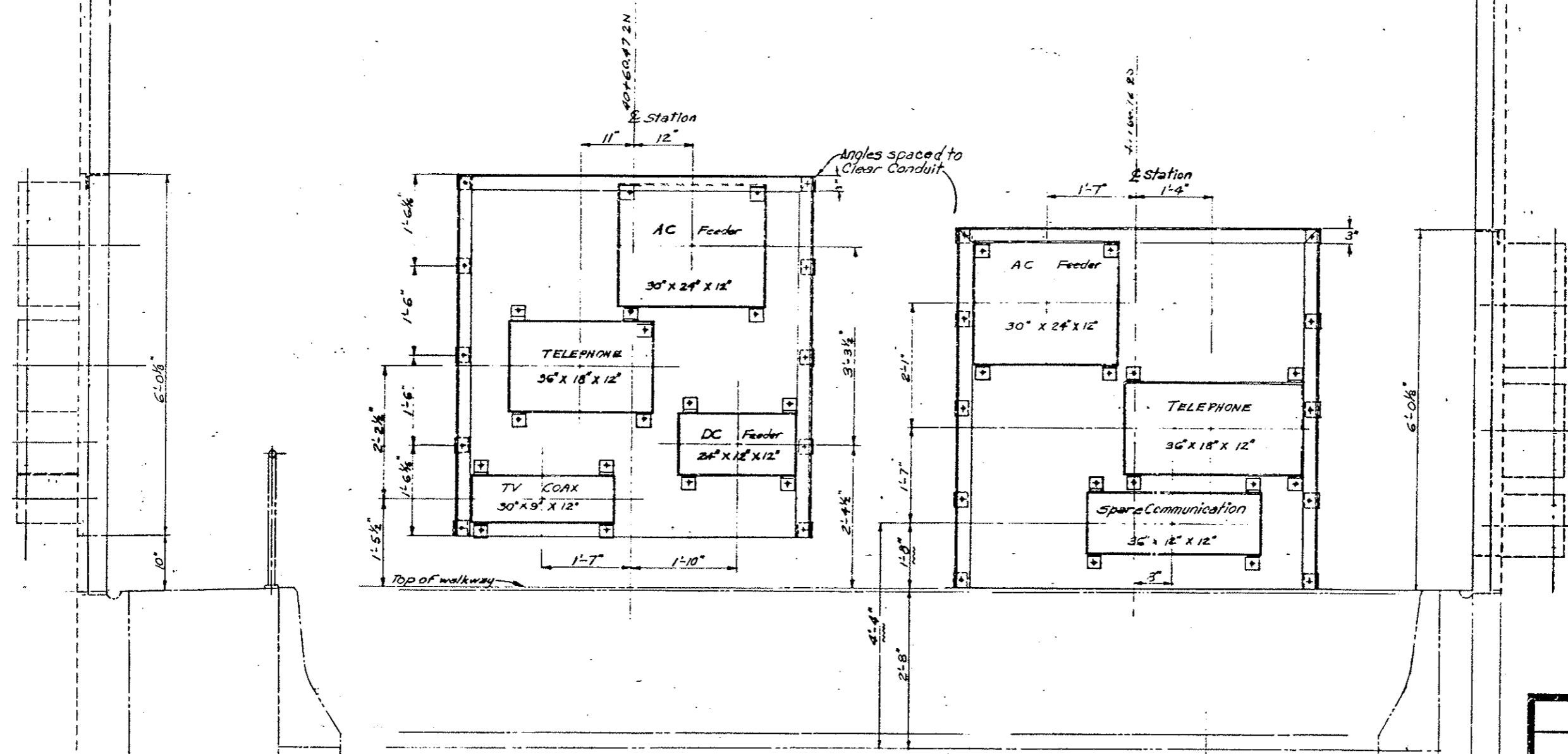
Revision Dates	(Preliminary Stage Only)



Framing shall have welded connections and all structural steel angles to be galvanized

REGION NO.	DISTRICT	PROJ. NO.	NO.	SHEETS
XIII	COLORADO	I 70-3 (83)220	72	
REVISIONS				
AS CONSTRUCTED				
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID

DESIGNED BY	DATE	CHECKED BY
CDOH	7-22-75	
CHECKED BY		QUANTITIES BY
DETAILED BY		CHECKED 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. Leitchworth	Numbers
Drawing Number WF-12	of Drawings

REVISIONS	

AS CONSTRUCTED

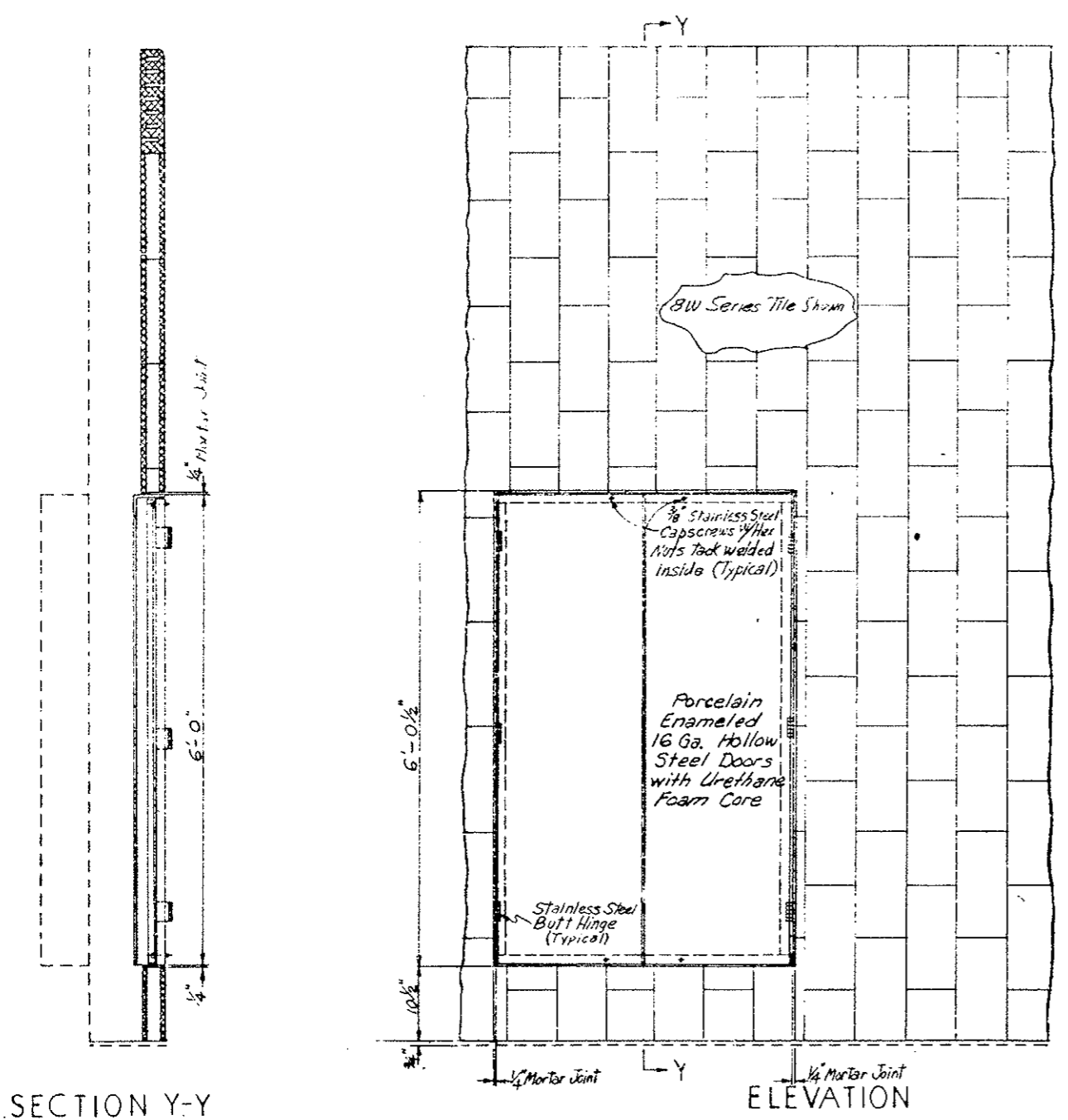
NO REVISIONS  REVISIONS  VOID

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

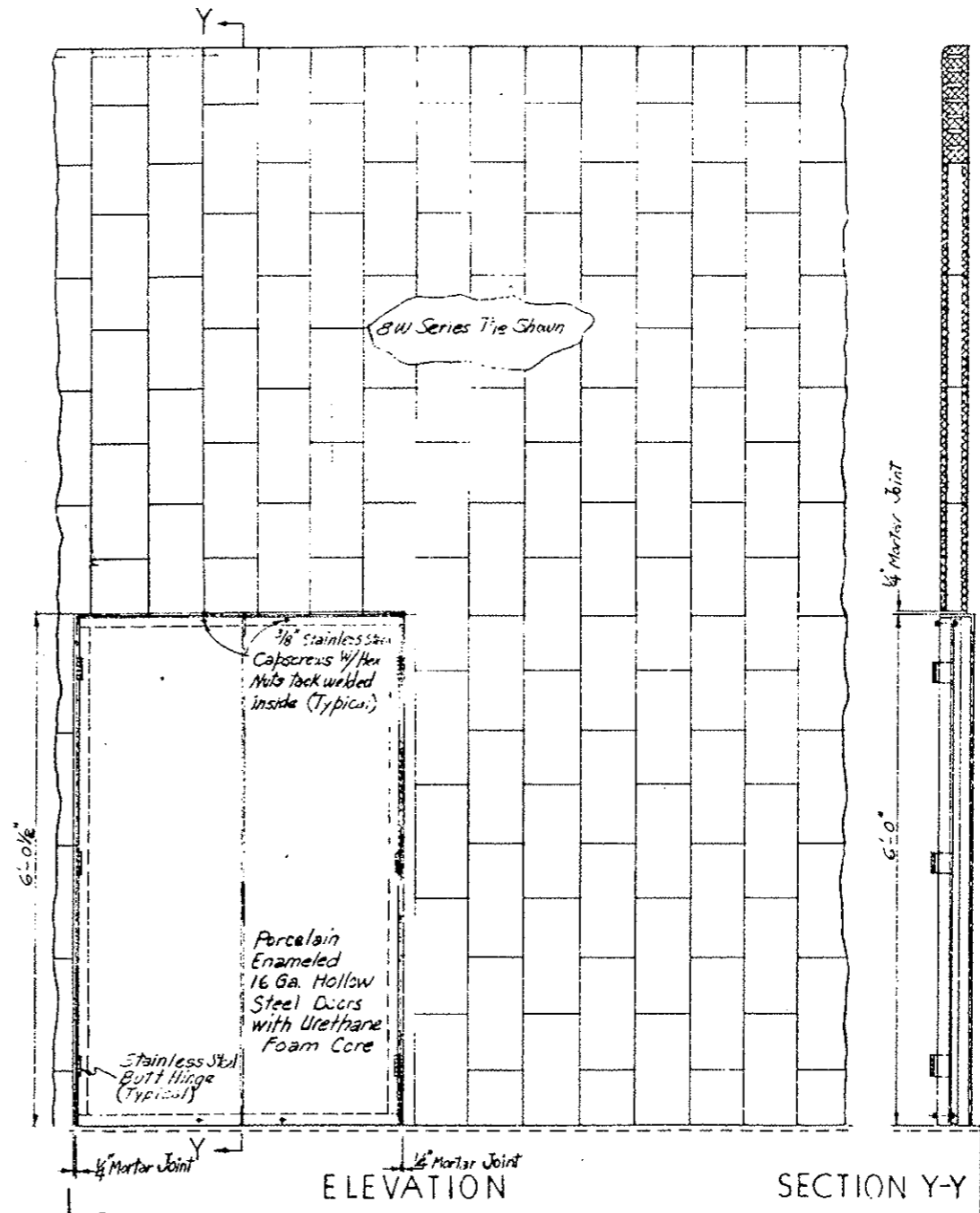
Note: Field cut tiles to fit Pullbox locations  
Pullbox Station to be square with wall tile.

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"

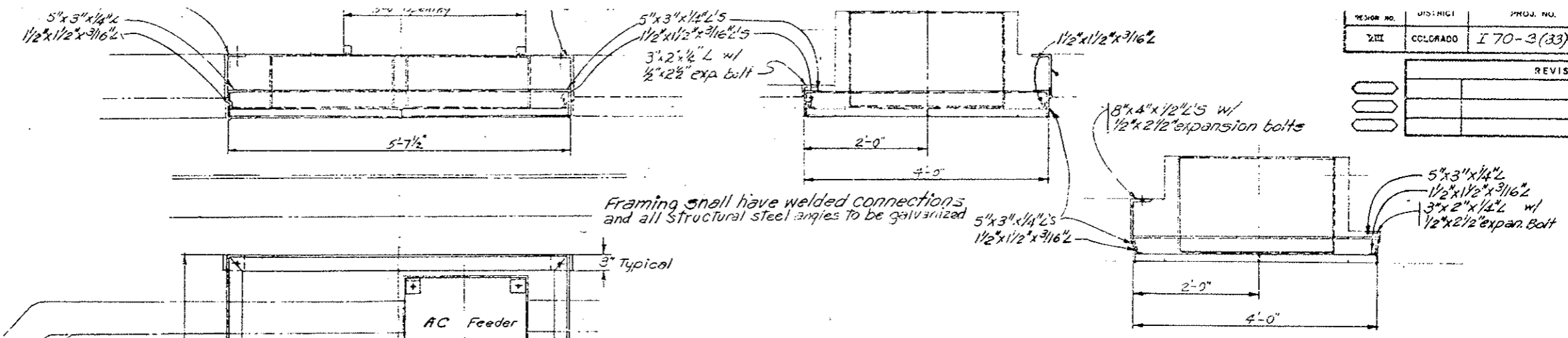
SECTION Y-Y

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 17F-13	of Drawings

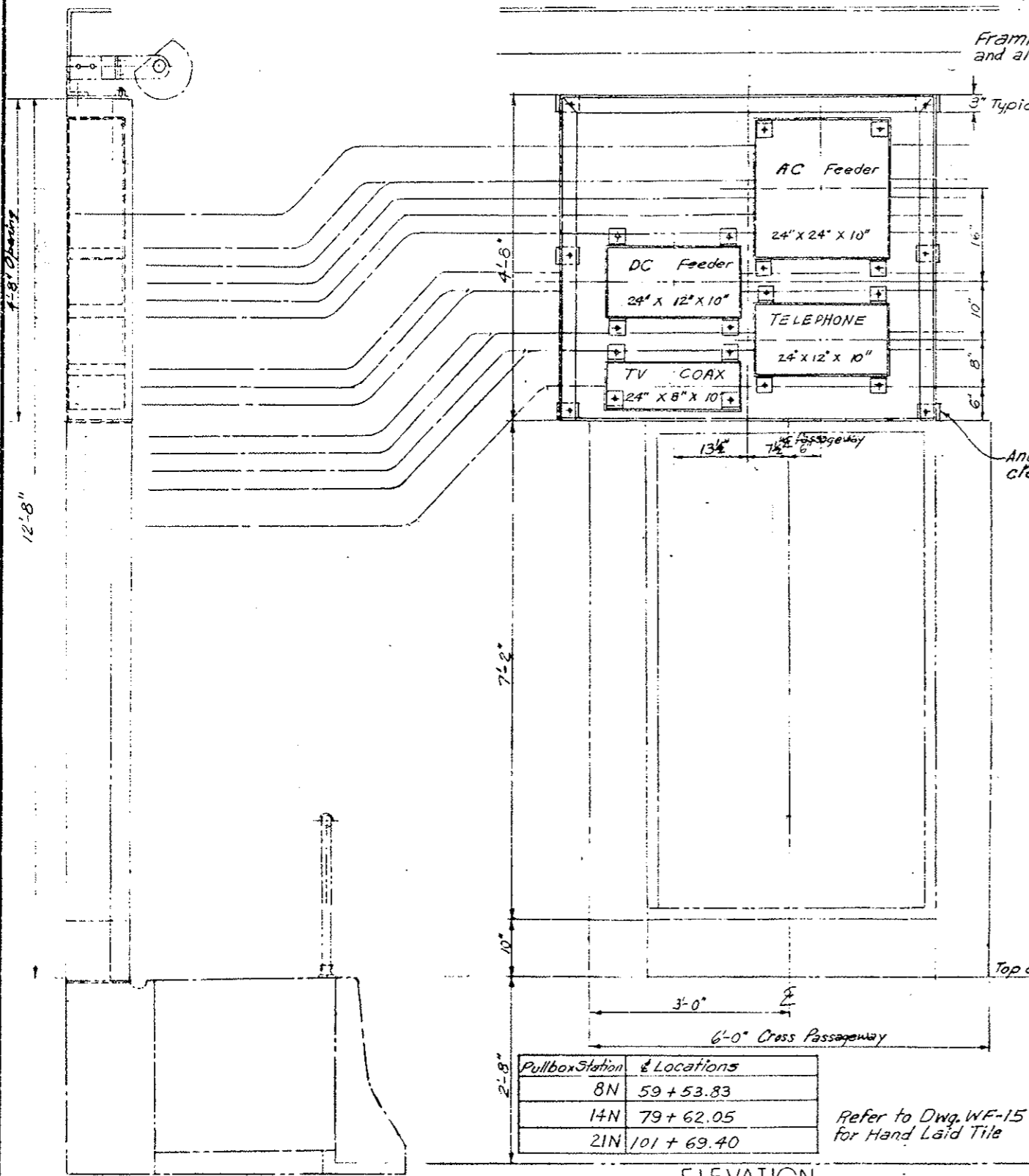
Revision Dates (Preliminary Stage Only)



Framing shall have welded connections and all structural steel angles to be galvanized

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

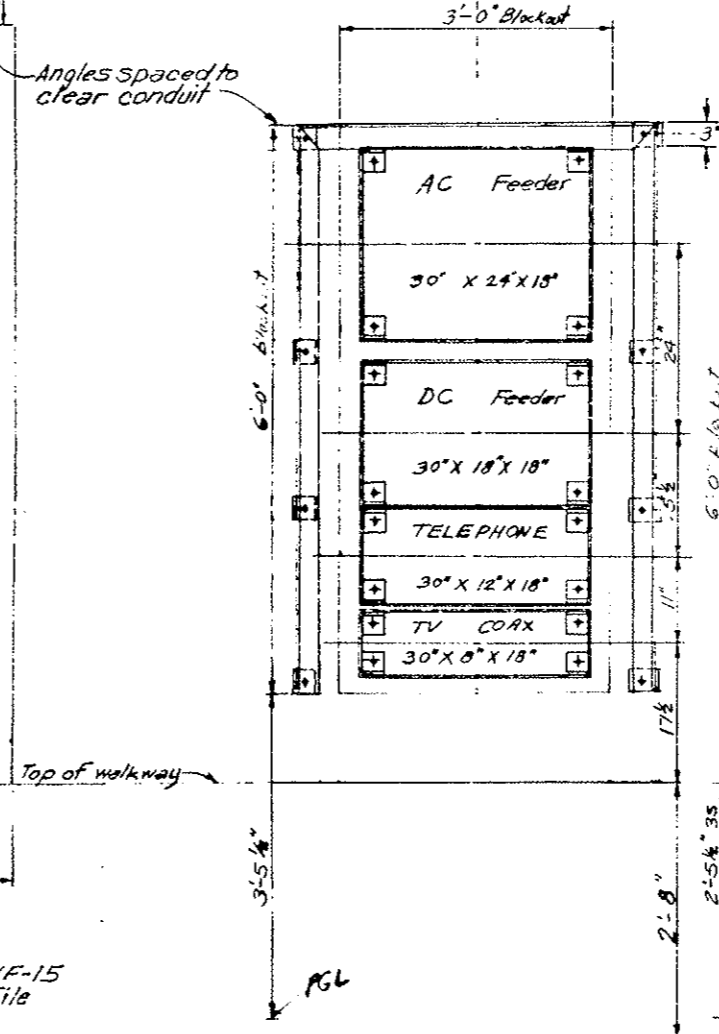
INITIAL	DATE	CHECKED BY



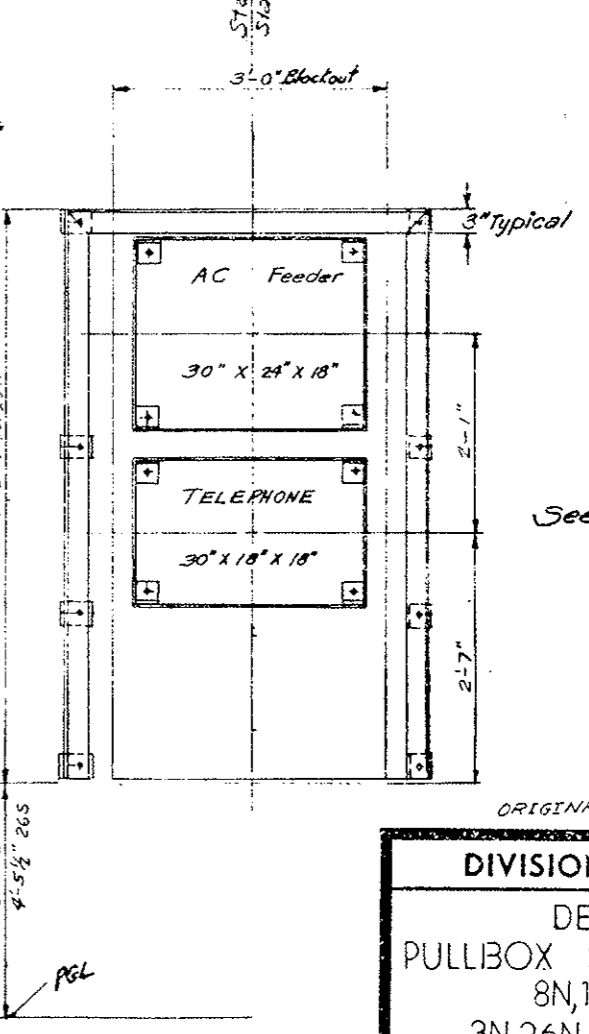
Pullbox Station	Locations
8N	59 + 53.83
14N	79 + 62.05
21N	101 + 69.40

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

Angles spaced to clear conduit

See Notes on WF-10

ORIGINAL SCALE 1" = 1'-0"

**DIVISION OF HIGHWAYS**

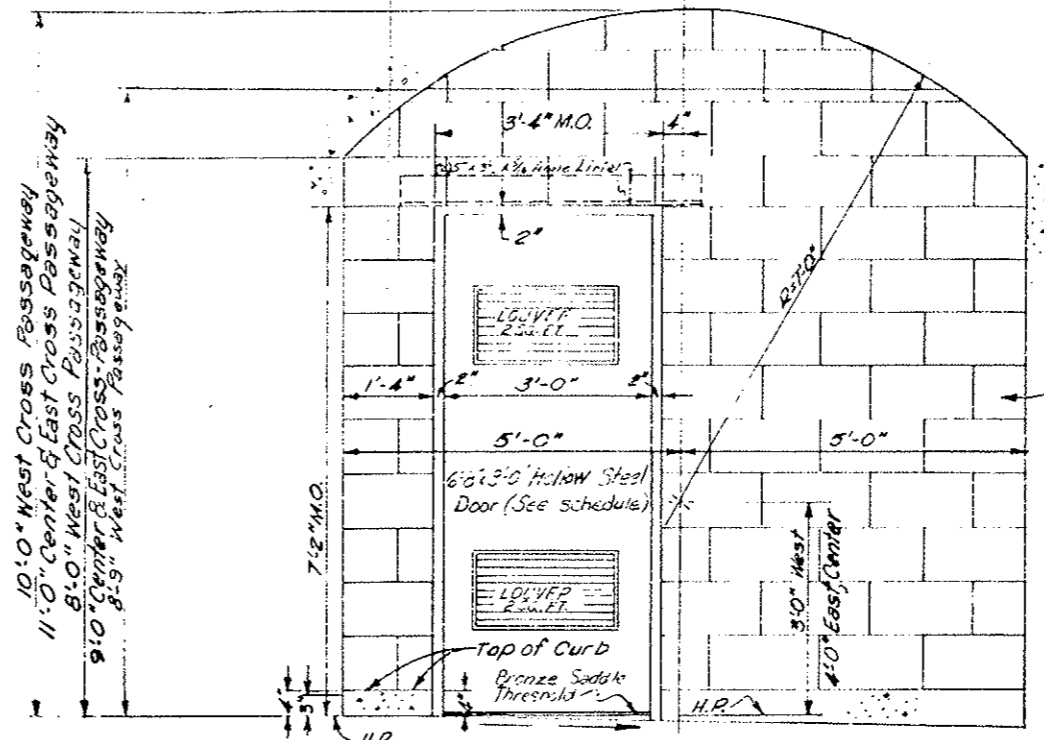
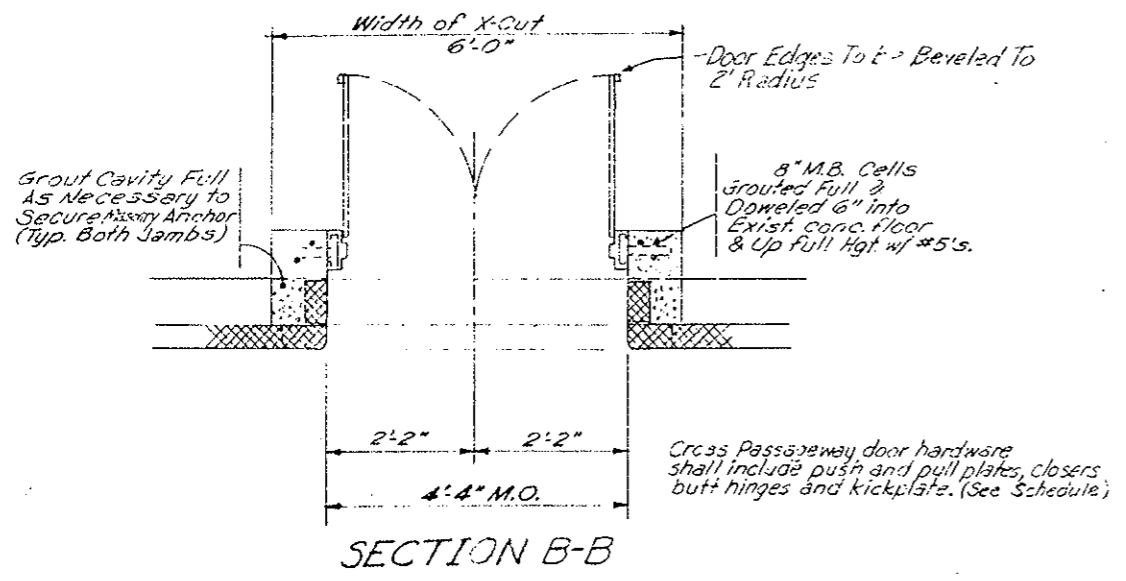
DETAILS OF PULLBOX STATION FRAMES  
 8N, 14N, 21N  
 3N, 26N, 3S, AND 26S

Designer CDOH	Structure
Detailer J. Letchworth	Numbers
Drawing Number WF-14	of Drawings

REVISIONS		

AS CONSTRUCTED

NO REVISIONS  REVISED  VOID

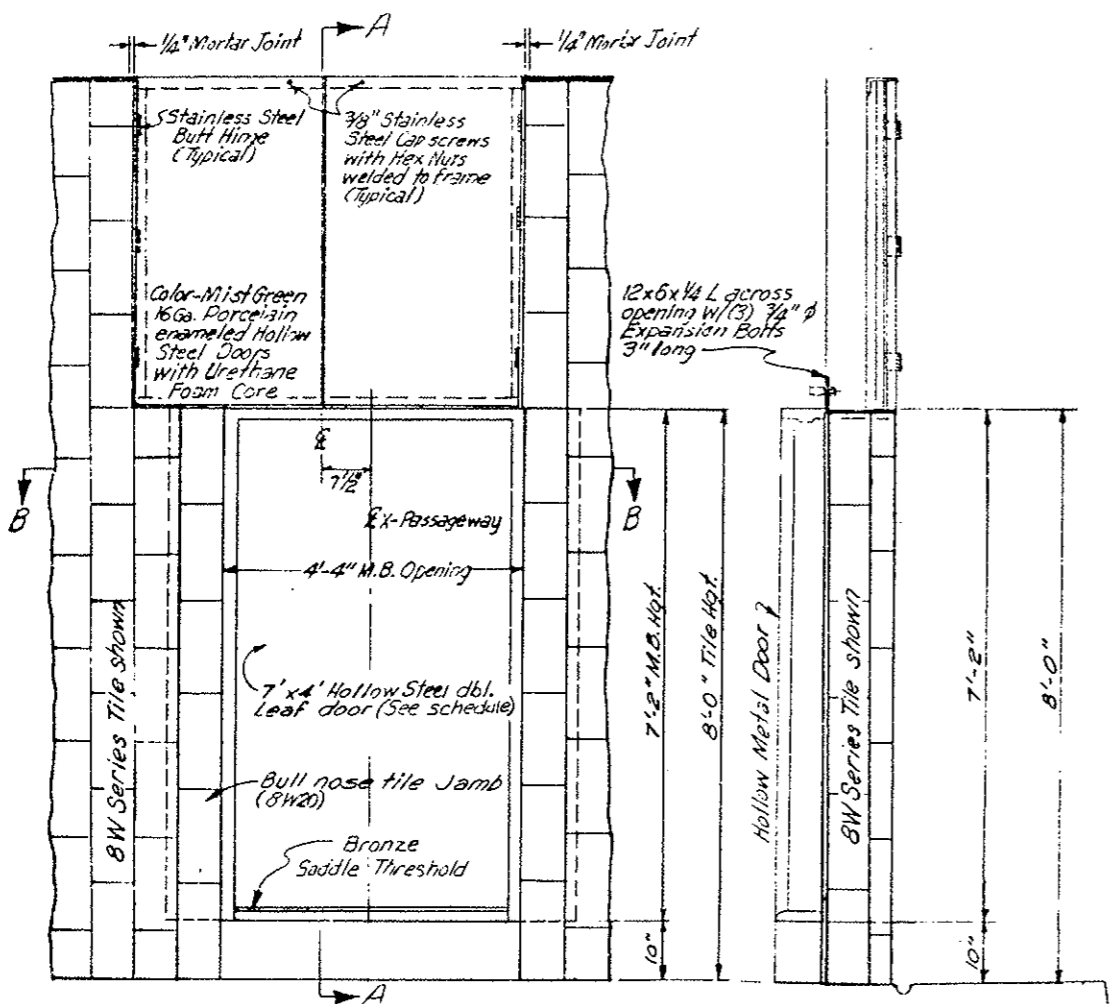


TRANSFORMER VAULT ENCLOSURE AND DOOR

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, built hinges and kickplate. (See Schedule)  
 Transformer Vault Doors and Cross Passageway Doors shall be set plumb and square.

DESIGNED BY	DATE	CHECKED BY
CDH	7-8-78	CDH
CHECKED BY	DATE	QUANTITIES BY
CDH	7-29-78	CDH
DETAILS BY	DATE	CHECKED BY



ELEVATION

SECTION A-A

LOCATION	WEST X PASSAGEWAY	CENTER X PASSAGEWAY	EAST X PASSAGEWAY
STATION	59+54.48	79+62.68	101+70.03

PULLBOX STATION AND CROSS PASSAGEWAY DOORS

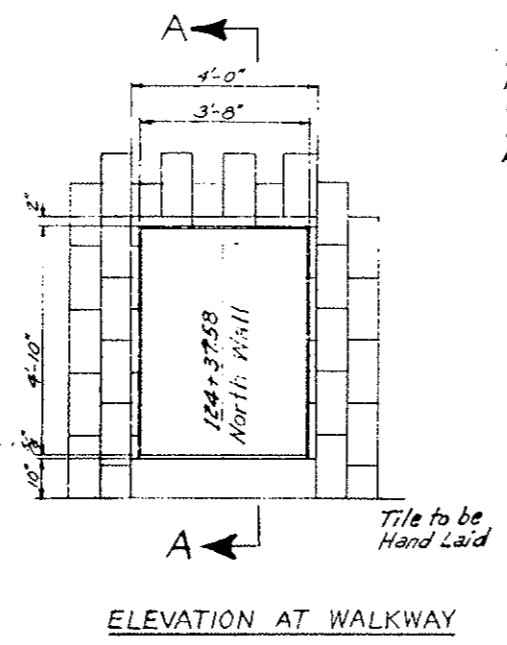
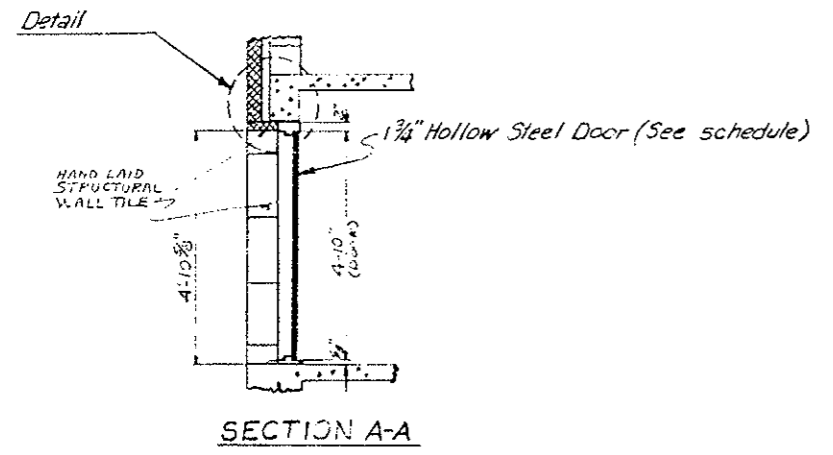
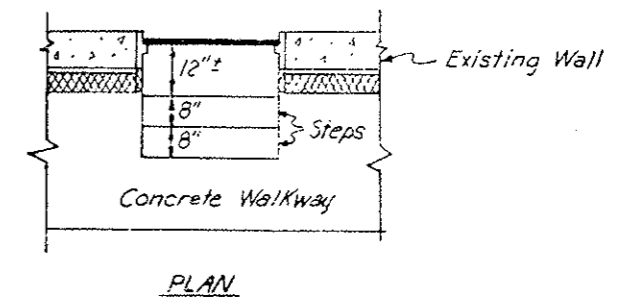
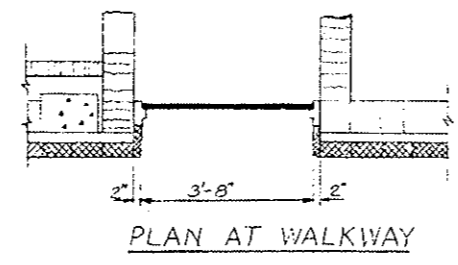
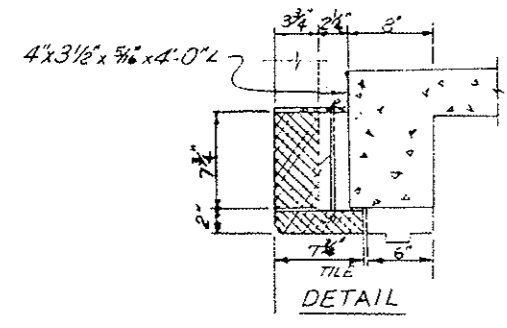
**LEGEND**  
 M.B. - Masonry Block  
 M.O. - Masonry Opening  
 C.J. - Construction Joint  
 H.P. - High Point

**DIVISION OF HIGHWAYS**

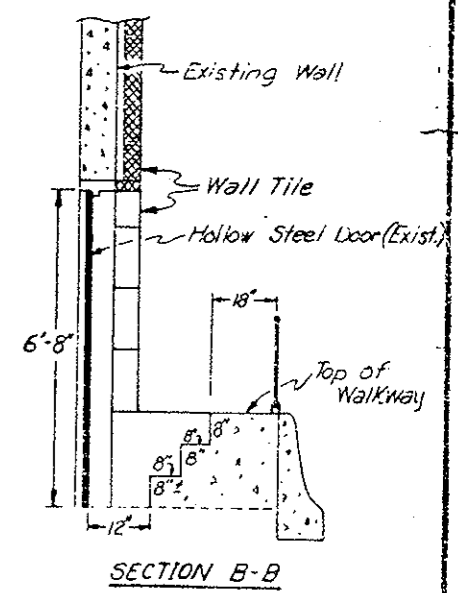
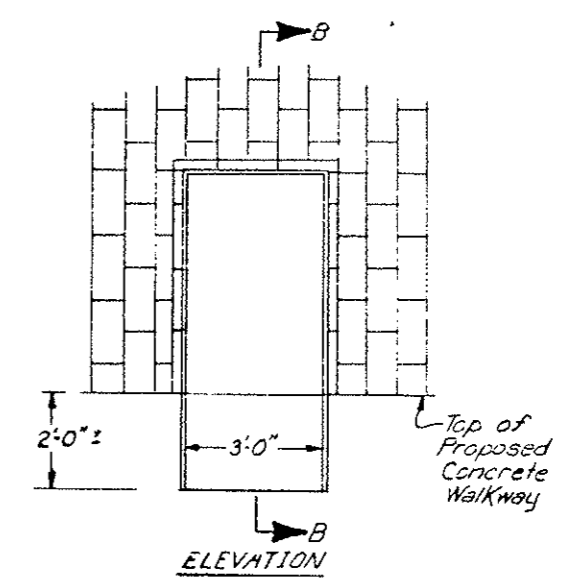
**DOOR DETAILS**  
 X-PASSAGEWAY, TRANSFORMER VAULT, AND PULLBOX STA.

Designer CDH	Structure
Detailer J. LeFchwerth	Numbers
Drawing Number WF-15	of Drawings

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	75	
REVISIONS				
AS CONSTRUCTED				
NO REVISION	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID



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"

<b>DIVISION OF HIGHWAYS</b>	
<b>BASEMENT EMERGENCY AND WEST VENTILATION BUILDING DOORS</b>	
Designer <i>CDOH</i>	Structure Numbers
Detailer <i>U. Letchworth</i>	Numbers
Drawing Number <i>WF-16</i>	of Drawings
Revision Dates	(Preliminary Stage Only)

INITIAL	DATE	CHECKED BY
C.D.O.H.	2/18/76	
CHECKED BY	QUANTITIES BY	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.

REVISION NO.	DIVISION	PROJ. NO.	NO.	SHEETS
001	COLORADO	170-3(B3) 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. 1838 (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)	5-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 (Hair 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)	5-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													Field Primed	White	•	•	•				
Fire Extinguisher Cabinet	∅	∅	∅													Door Flange	White Red	Shell			Urethane Foam	
Telephone Cabinet	∅	∅	∅													Door Flange	White 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.

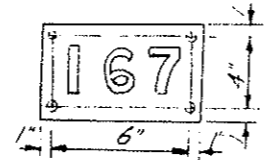
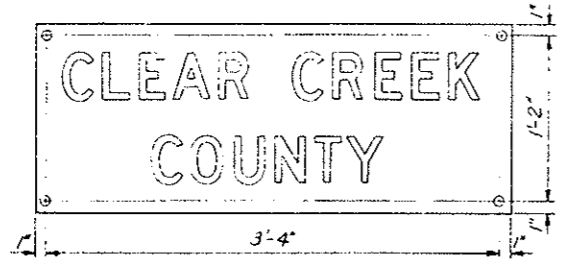
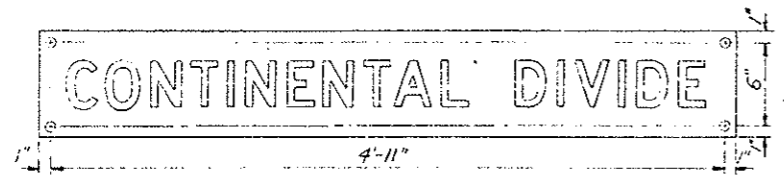
∞ Sliding door hardware shall consist of one No. 240X Track, two No. 244X Hangers, one No. 306 Pull, one No. 305H Pull, three No. 173 Binders, and one No. 367 Stay Roller; All galvanized and as manufactured by The Allith Corporation, Danville, Illinois.

DIVISION OF HIGHWAYS

TUNNEL INTERIOR  
CABINET, DOOR AND HARDWARE  
SCHEDULE

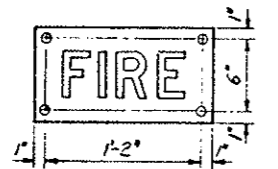
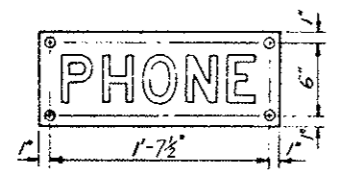
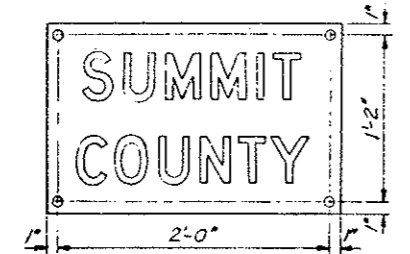
Designer C.D.O.H.  
Detailer D. Bevard  
DRAWING NUMBER WF-19

REVISIONS	



SIGNS FOR SEGMENTS 1 THRU 167  
(334 Total)

3" Black Letters on White background  
for Segment Designation Signs



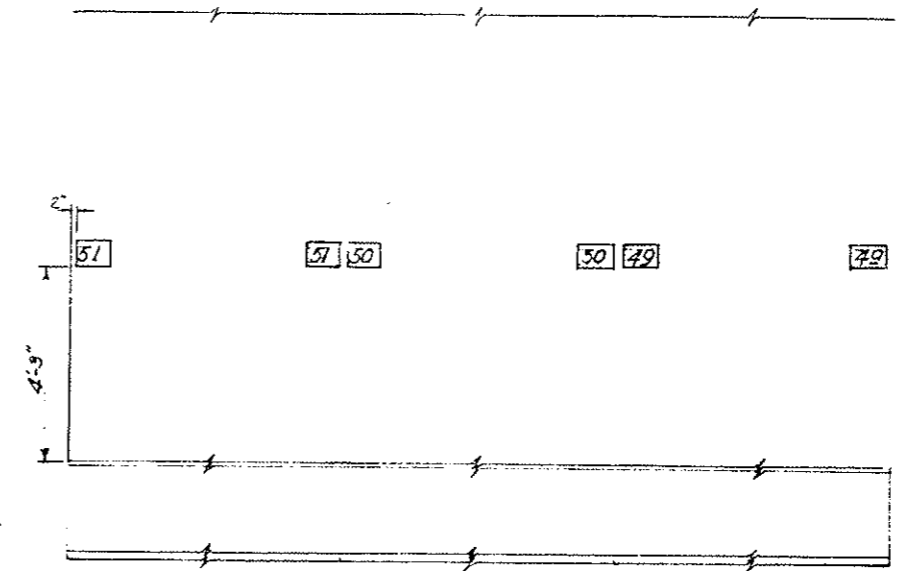
PORCELAIN ENAMELED SIGNS  
ORIGINAL SCALE 1 1/2"=1'-0"

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 15 Gauge Steel Signs To The Tile Wall. Lead Exp. RT. Inserts Shall Be Placed In The Wall.

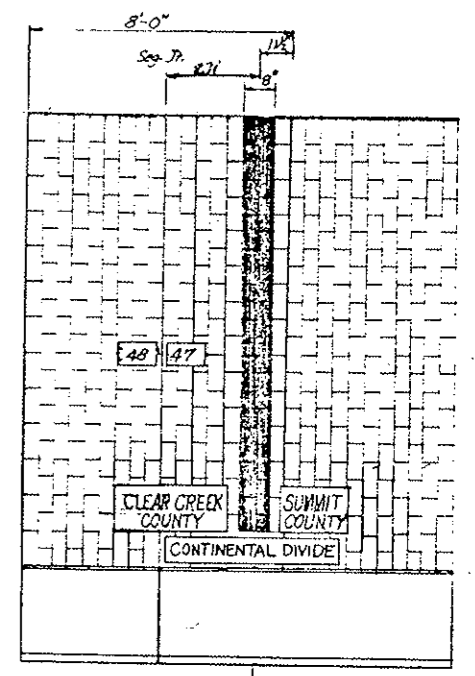
TABULATION OF SIGN LOCATIONS  
(For information only)

Sign No.	NORTH WALL	
	E Fire	TR Phone
1	39+03.41	41+10.70
2	41+54.60	49+14.70
3	44+05.85	57+18.70
4	46+57.10	65+22.70
5	49+08.35	73+26.70
6	51+59.60	81+30.70
7	54+12.85	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+15.85	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	

Sign Continental No.	SOUTH WALL	
	Divide	County
1	62+40.47	62+38.20
2		62+42.80
Mkt.	62+40.47	



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"

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 C D J H	Structure Numbers
Detailer J. L. Steinwirth	of Drawings
Drawing Number WF-18	
Revision Dates	(Preliminary Stage Only)

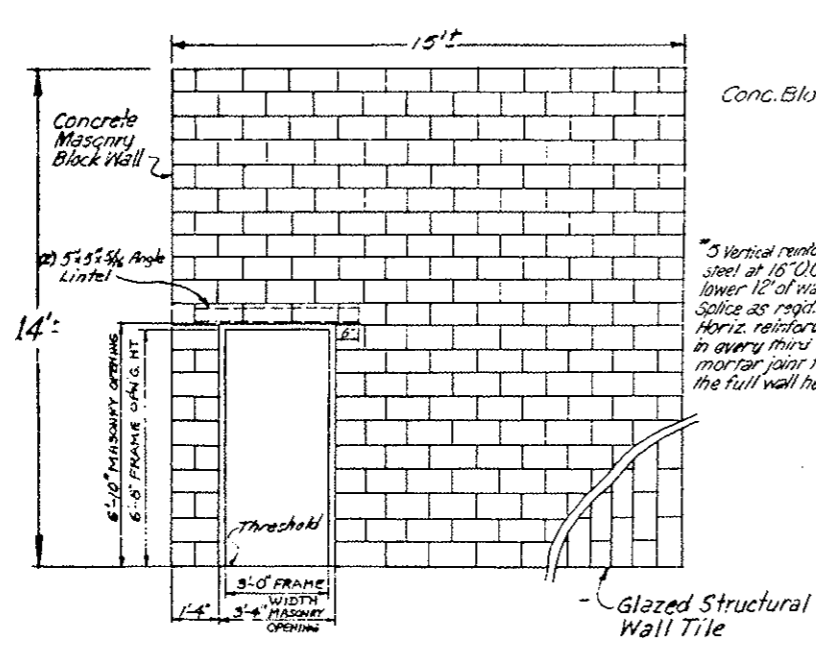
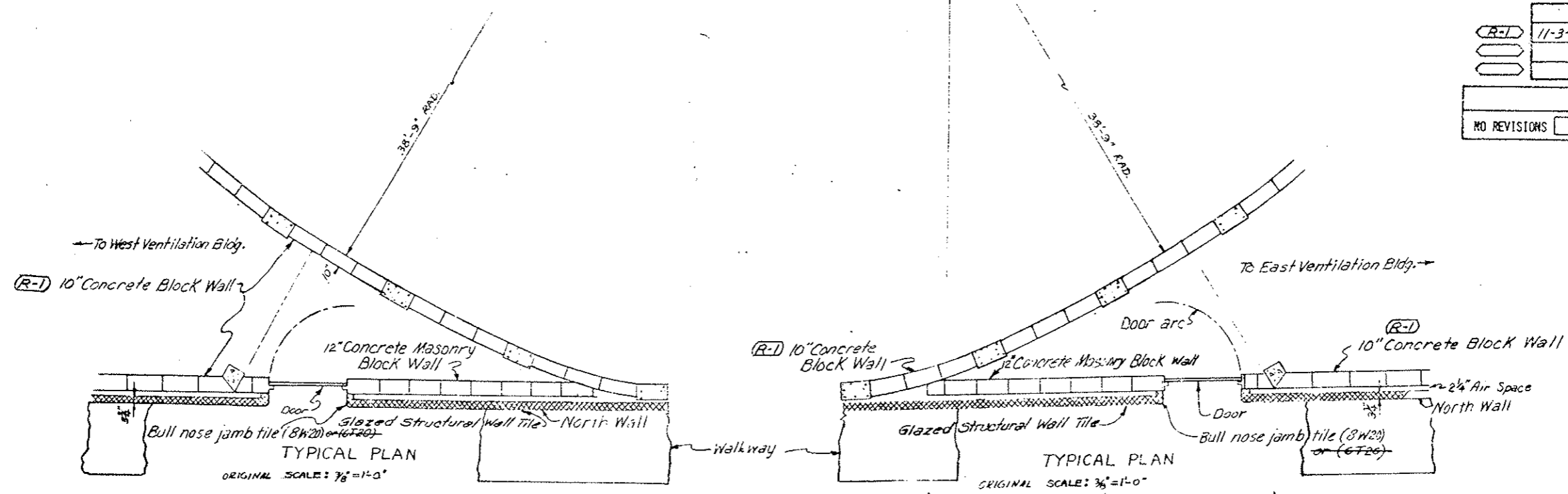
DESIGNED BY	CHECKED BY
CHECKED BY	QUANTITIES BY
DATE	CHECKED BY
	QUANTITIES BY
	CHECKED BY
	DATE



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

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

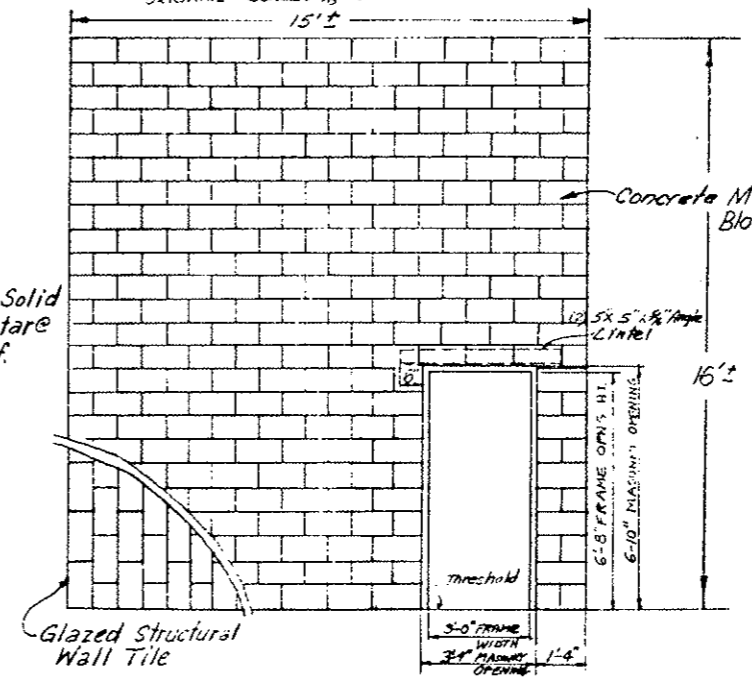
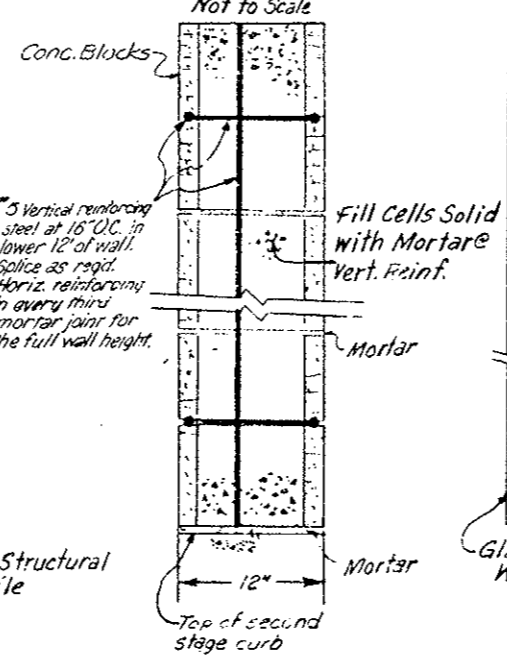
AS CONSTRUCTED		
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VOID <input type="checkbox"/>



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

WEST VENTILATION BLDG

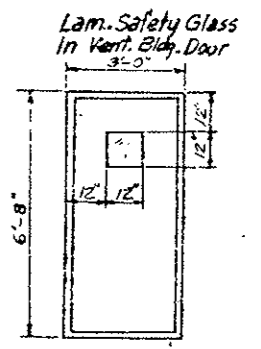
WALL DETAIL  
Not to Scale



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

EAST VENTILATION BLDG.

Notes:  
Ventilation building doors hardware shall include lockset, closer, built hinges, and kickplate  
1 3/4" Hollow Steel Doors (See Schedule)



VENT BUILDING DOOR

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

NORTH WALL EXTENSIONS AND VENT. BUILDING DOORS

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

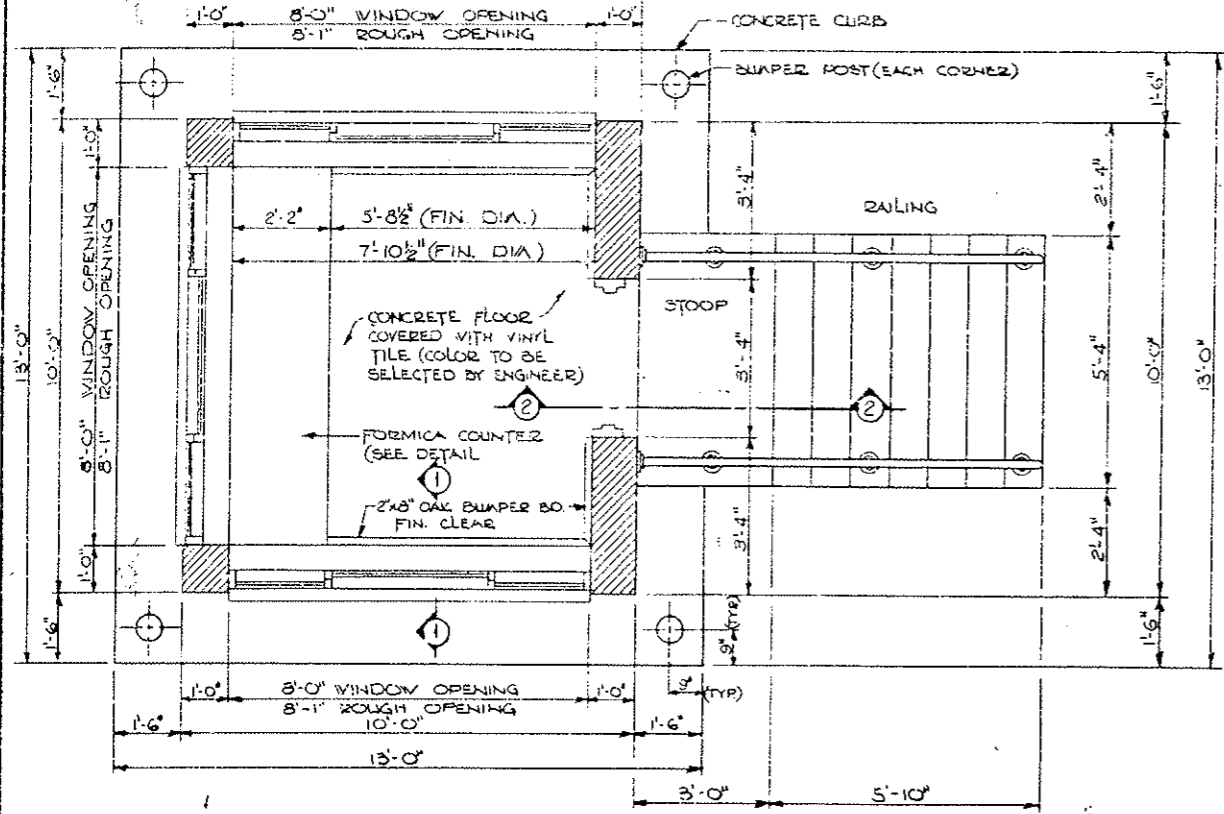
Revision Dates	(Preliminary Stage Only)
----------------	--------------------------

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

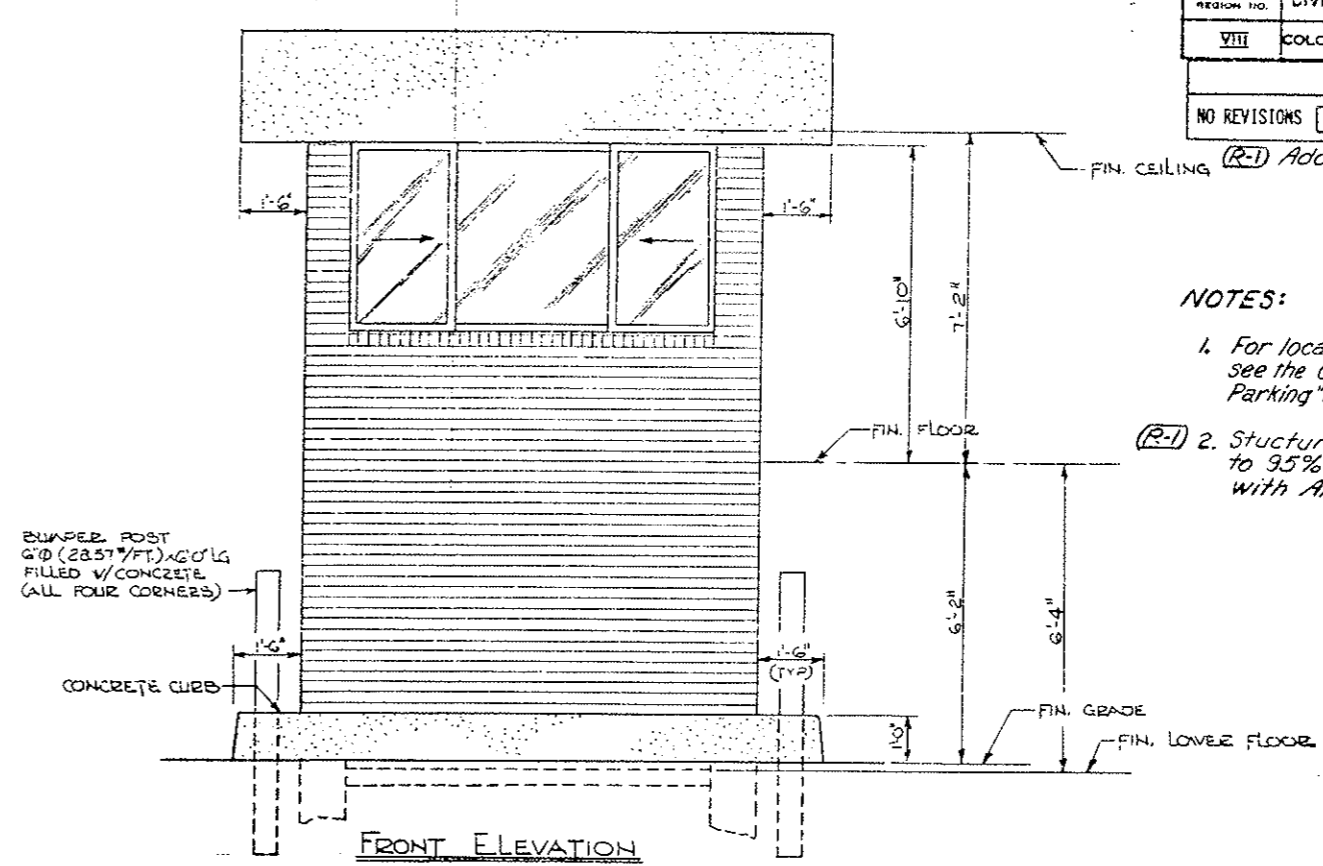
REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	80	
AS CONSTRUCTED				
NO REVISIONS		REVISED <input checked="" type="checkbox"/>		VOID <input type="checkbox"/>

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

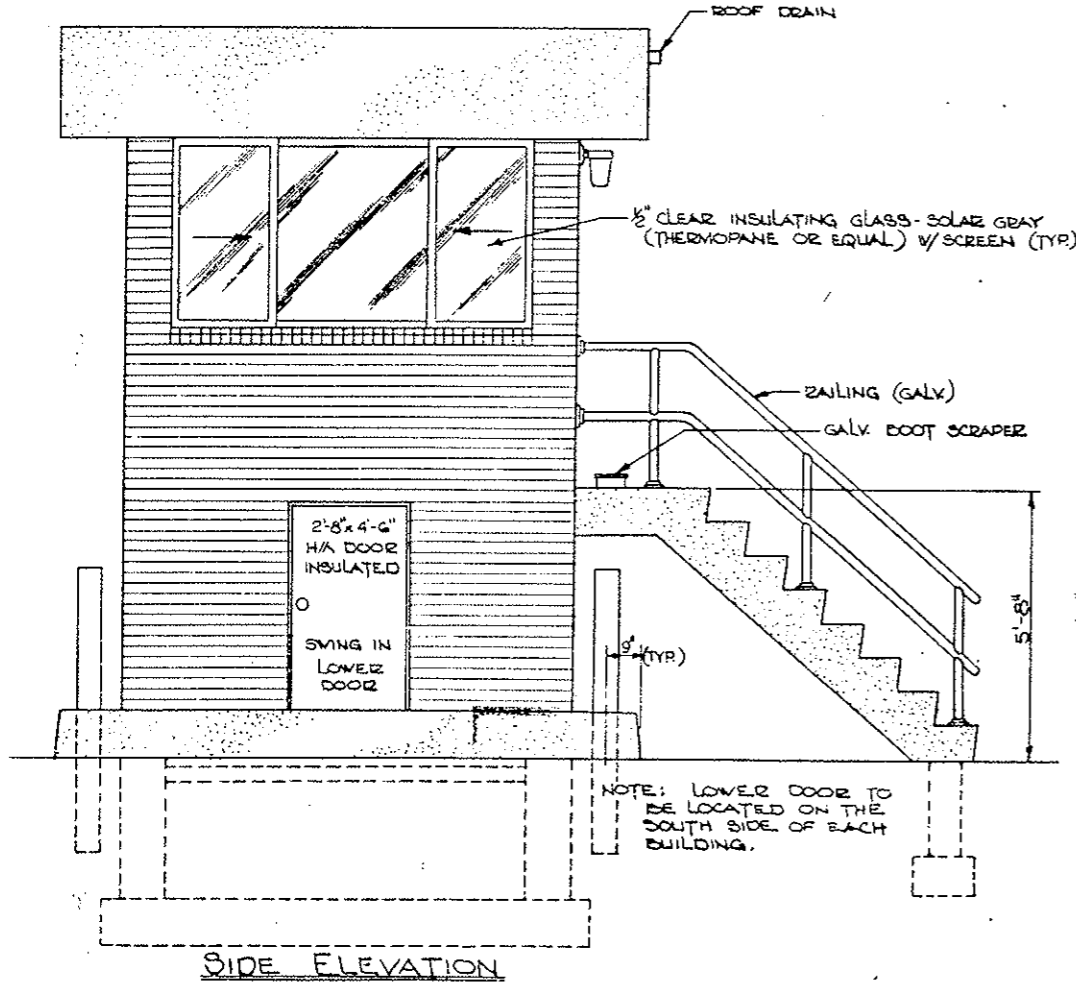
- NOTES:**
- For locations of Portal Attendant Booths, see the G-Series Sheets "West Portal Area Parking" and "East Portal Area Parking".
  - (R-1) Structural Backfill shall be compacted to 95% of optimum in accordance with AASHTO T-180.



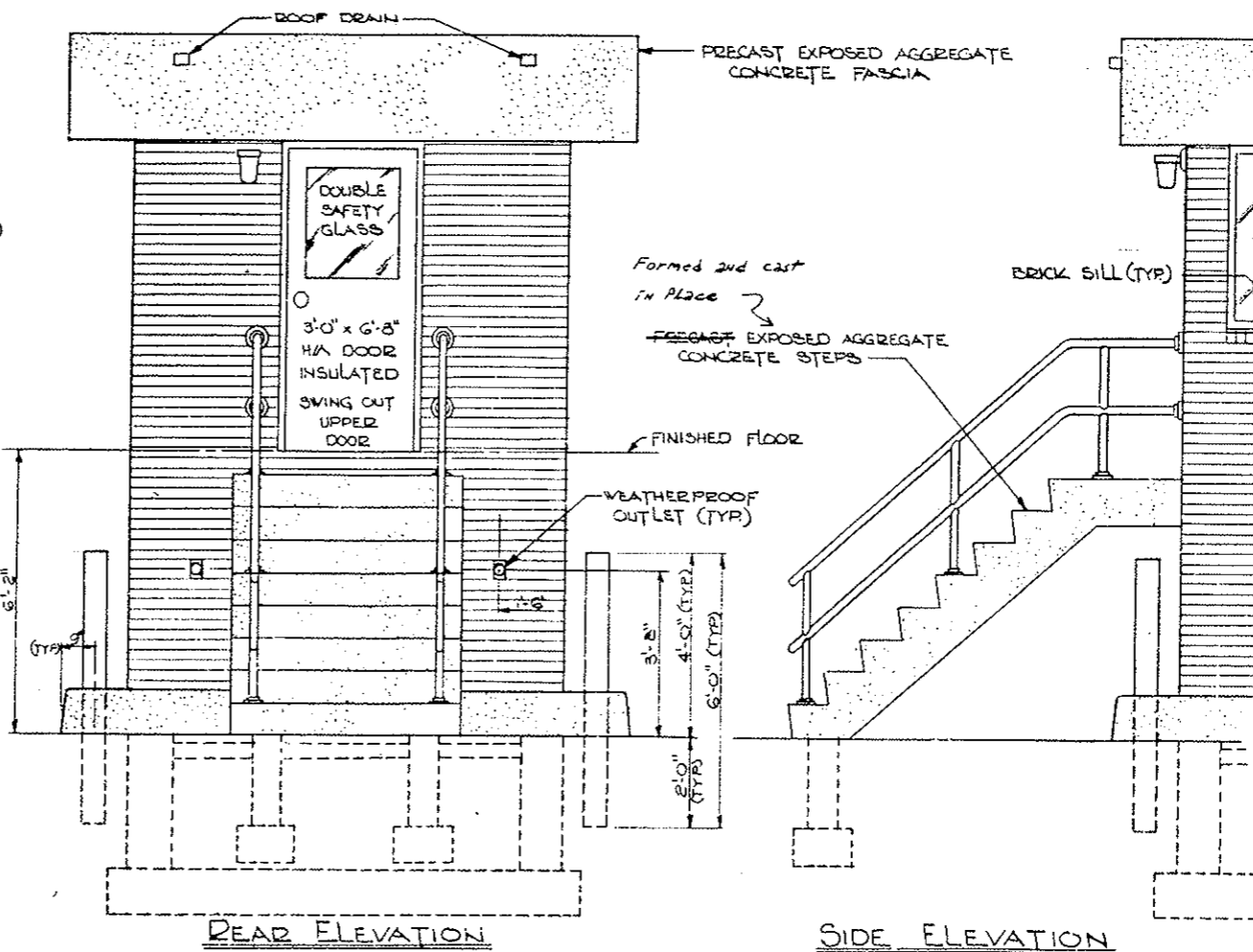
**FLOOR PLAN**



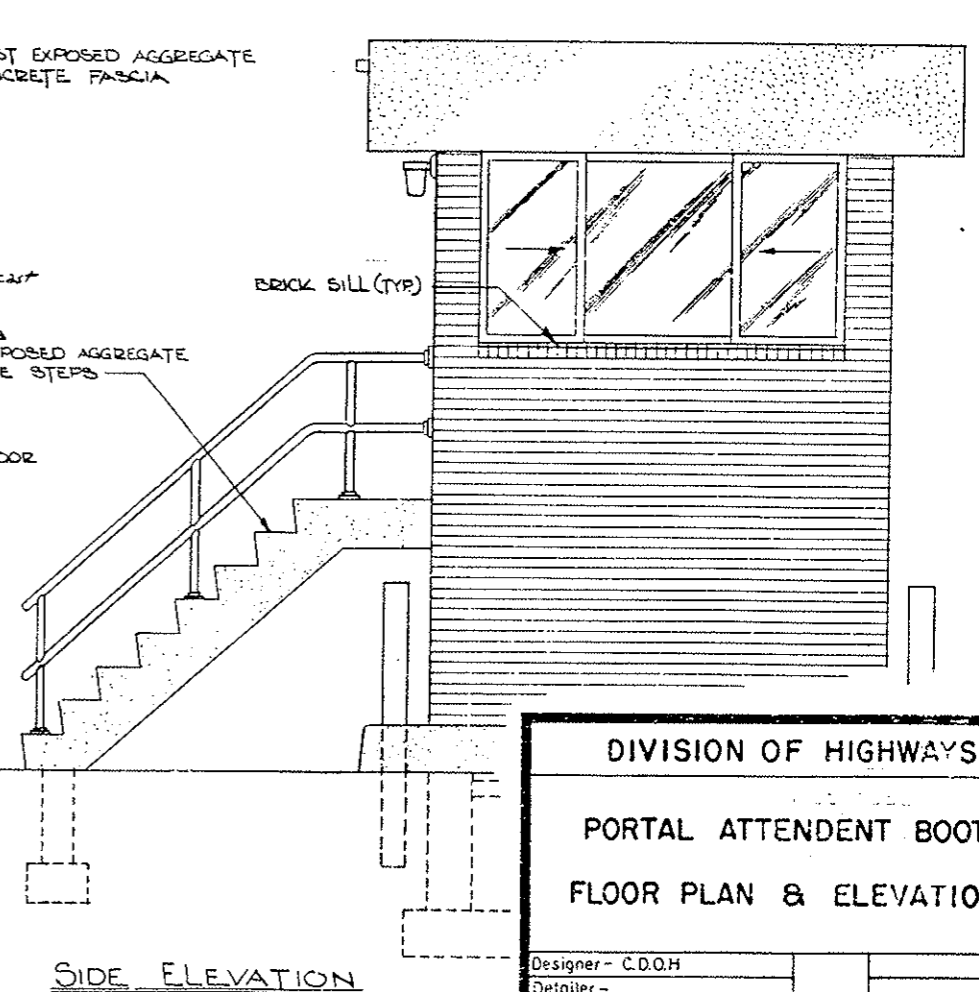
**FRONT ELEVATION**



**SIDE ELEVATION**



**REAR ELEVATION**



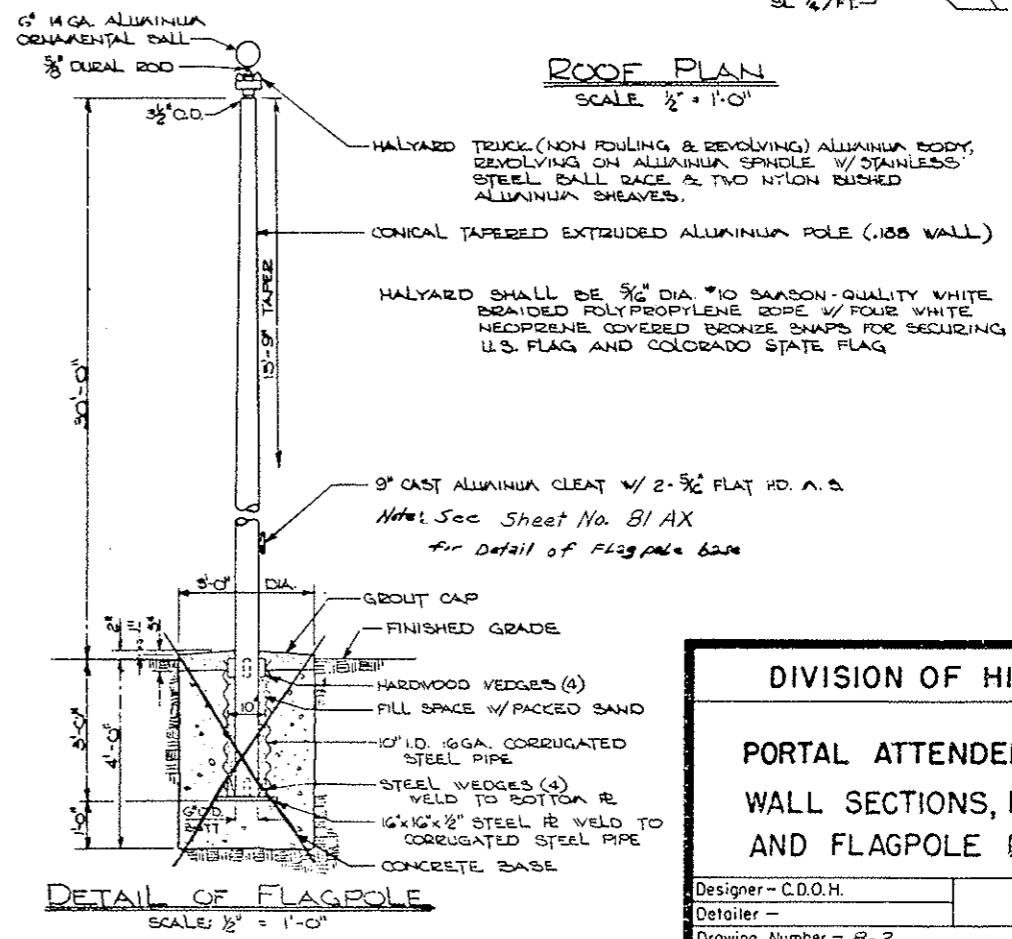
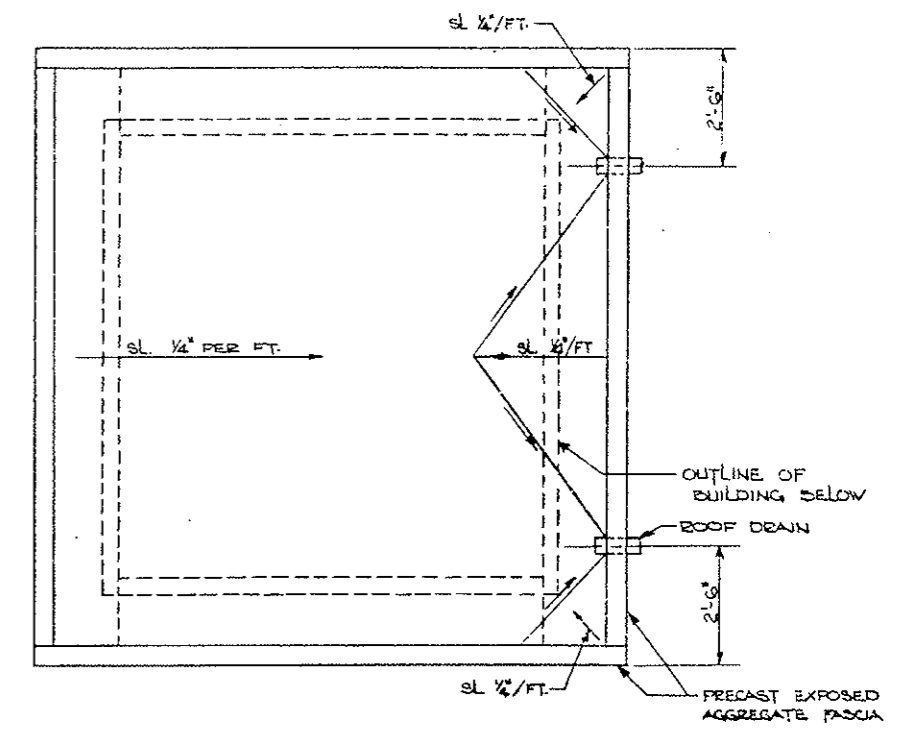
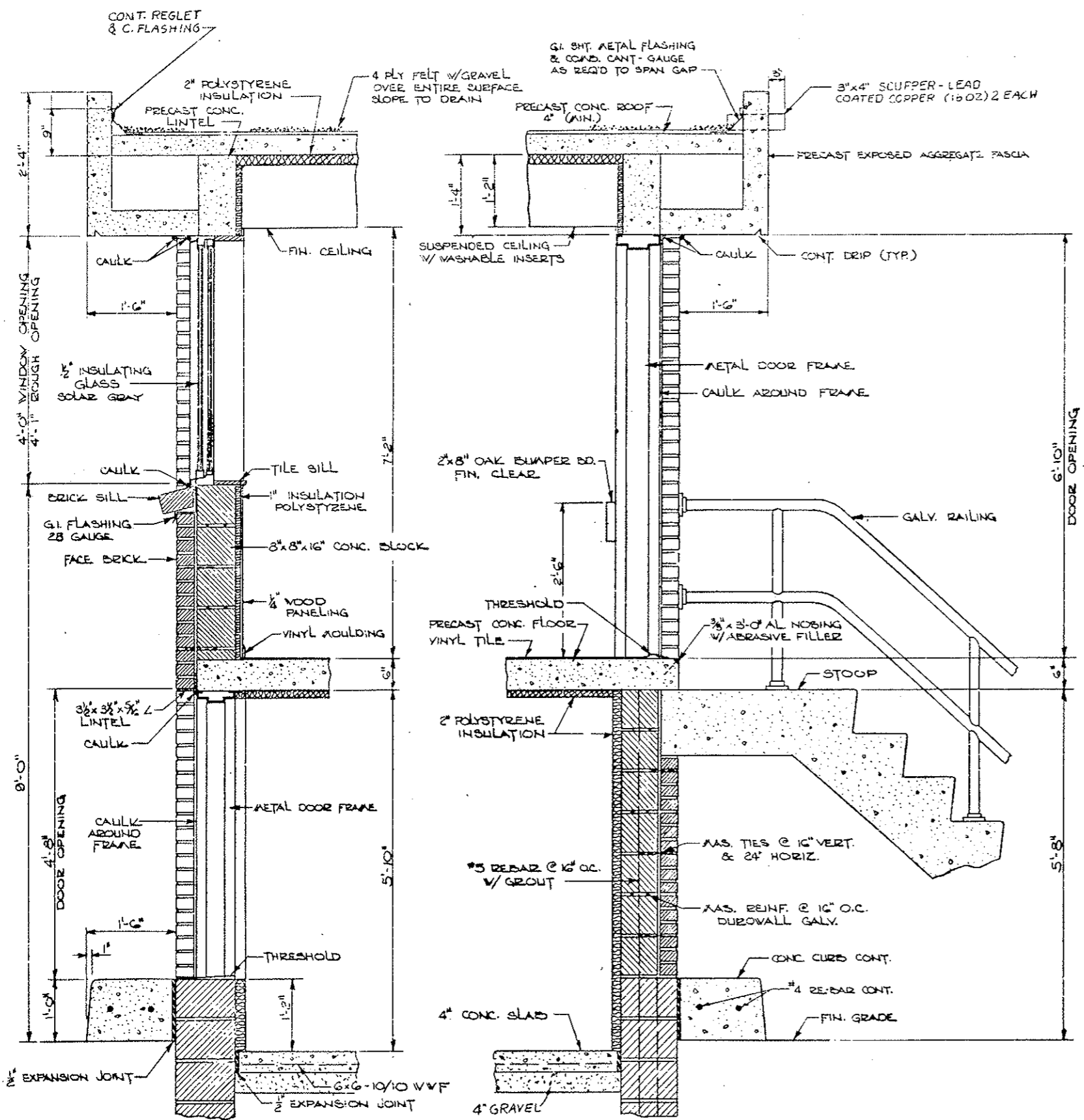
**SIDE ELEVATION**

**DIVISION OF HIGHWAYS**

**PORTAL ATTENDANT BOOTH**

**FLOOR PLAN & ELEVATIONS**

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



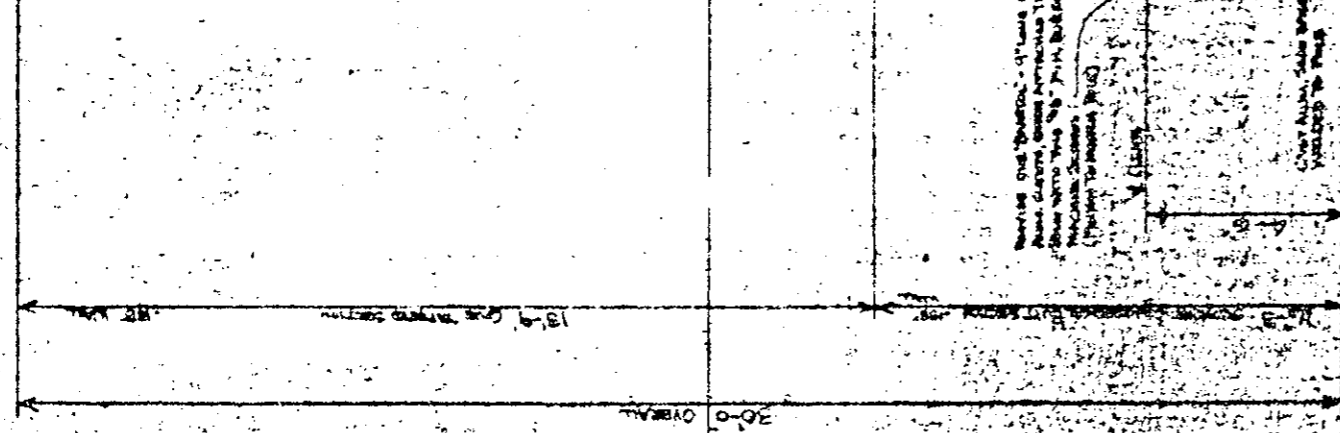
<b>DIVISION OF HIGHWAYS</b>	
<b>PORTAL ATTENDANT BOOTH WALL SECTIONS, ROOF PLAN AND FLAGPOLE DETAILS</b>	
Designer - C.D.O.H.	
Detailer -	
Drawing Number - 8-2	

6" Dia. x 14' 0" Long Aluminum Bolt  
Mounted on a 2" Dia. Tube with  
Bushing One End and the Reducing Tube  
(From the Main Pipe)

STANDARD CONNECTION WITH POLYMER END-BEARING  
FLANGES. THICKNESS WITH ALUM. END BEARING  
WITH DUAL END-BEARING FLANGES. CONTINUOUS THICKNESS  
6" DIA. APPROXIMATELY 3" DIA. BUSHING IS INCLUDED WITH  
PACKING AND DUST-CAP. THIS IS FITTED WITH  
THE 2" DIA. END. THIS BUSHING MUST BE ORDERED IN  
THE 6" DIA. END.

THIS SET, WITH TWO ANGLES, MUST  
BE USED TO HOLD THE BOLT IN PLACE.  
PERMANENTLY WELD TOGETHER.

WELD



- GENERAL NOTES
1. Flange Name of 6061-T6 Aluminum Cold Chamber Extruded Aluminum Tube.
  2. The Tapered Section of Flag Pole Has a Jaws in Chemical Process of V-Ply L.C.
  3. The External Surface of Extruded Section of Flagpole Shall Have a Fine Grain Machine Finish in "Illustration" Finish and Then Be Heat Treated.
  4. FLANGES SHALL BE SUPPLIED IN ONE SECTION. BEFORE SUPPLYING THE POLYMER END-BEARING FLANGES IN WEAR SURFACE POLYMER SHALL BE OVEN DRYED IN VENTILATED PLACE. THE PROCESSING IN NORTH CAROLINA DURING TUBES THE FLANGES IS USED TO BE

REMOVE THE "TAPER" OF THIS PART  
FROM CENTER, BEING PROTECTED BY  
THE 6" DIA. BUSHING. THE 6" DIA.  
BUSHING IS INCLUDED WITH  
PACKING AND DUST-CAP.

6" DIA. ALUMINUM BOLT  
WITH DUST-CAP  
AND WASHER

6" DIA. ALUMINUM PIPE  
CONTINUOUS THICKNESS  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

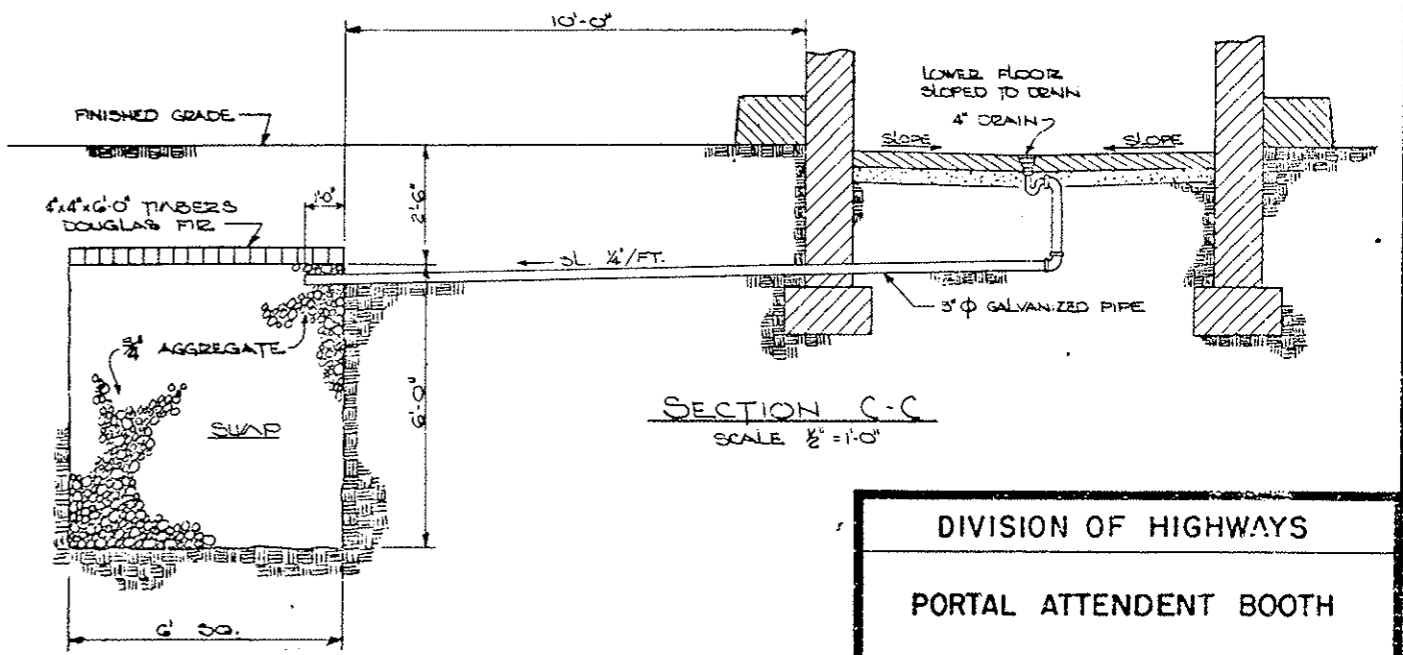
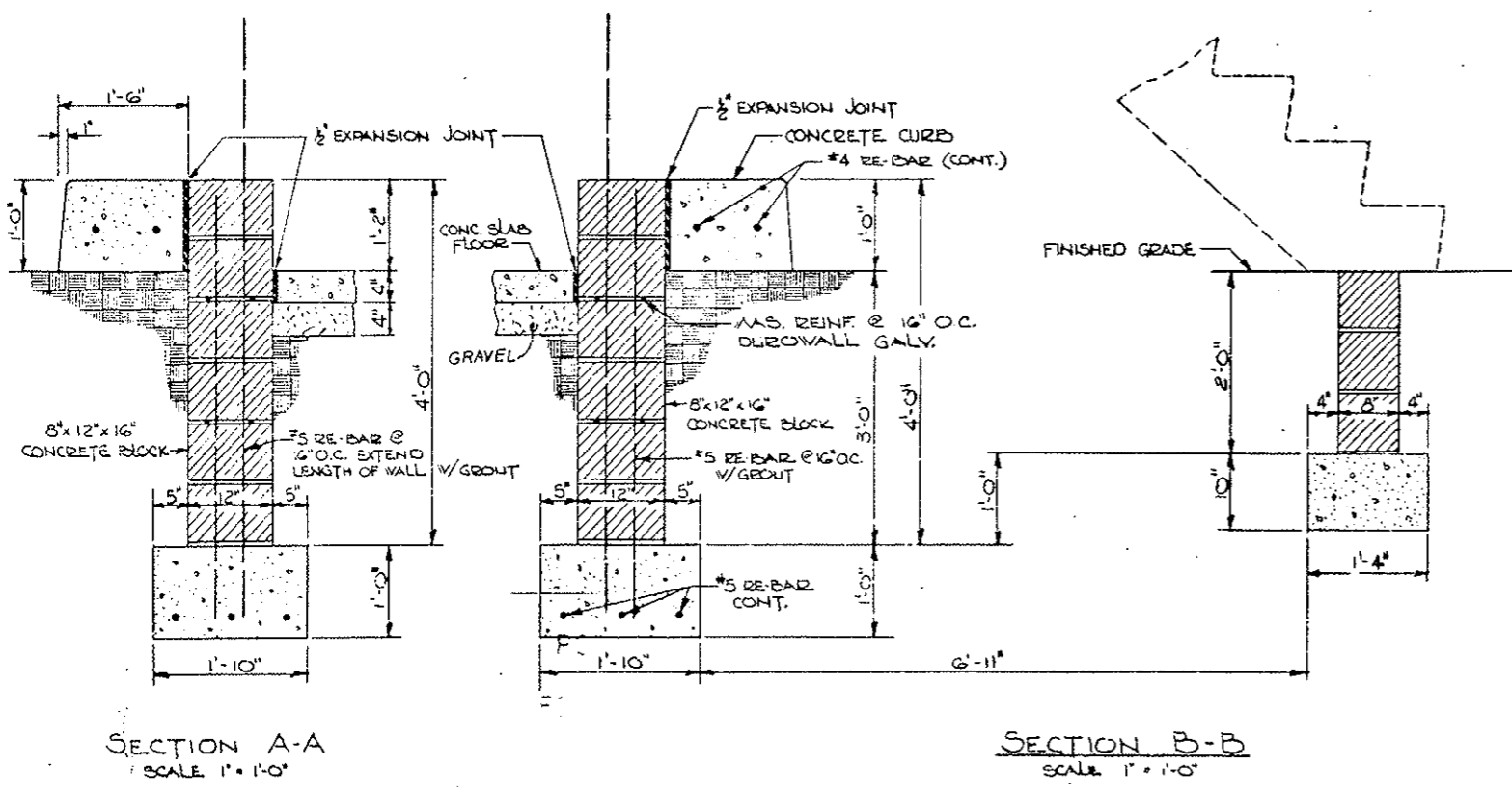
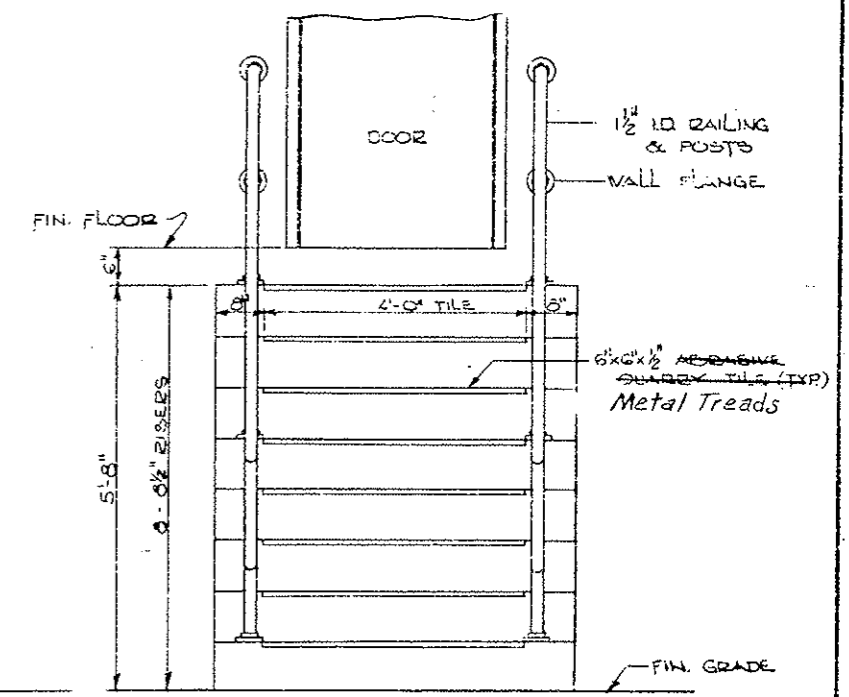
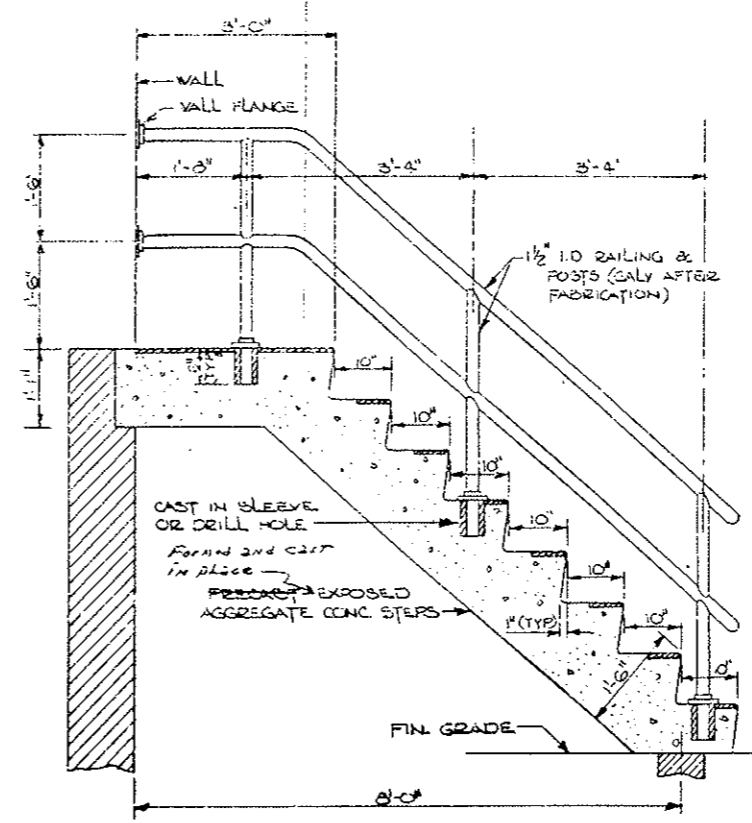
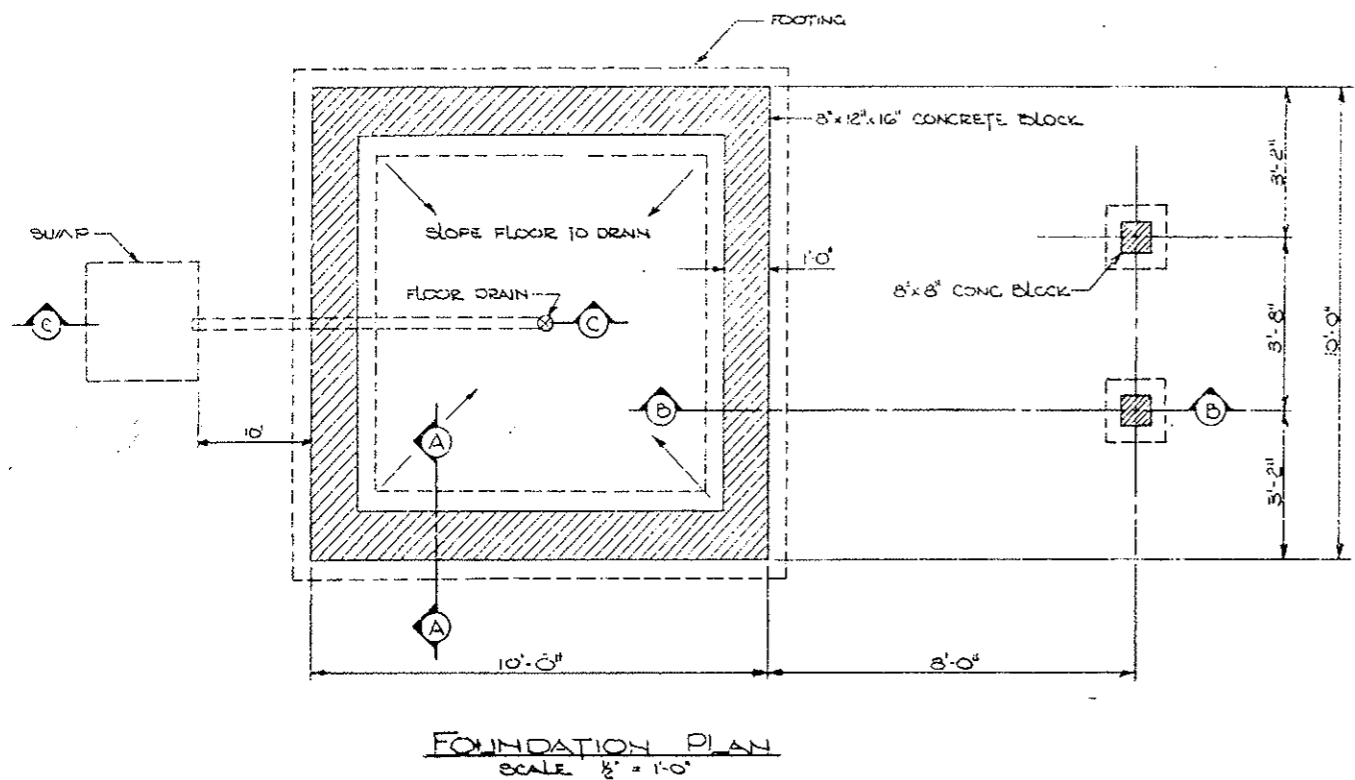
6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

6" DIA. ALUMINUM PIPE  
TOP OF SPEC. GRADE

BARROL 30" OVERALL ONE TAPERED ALUMINUM FLAGPOLE

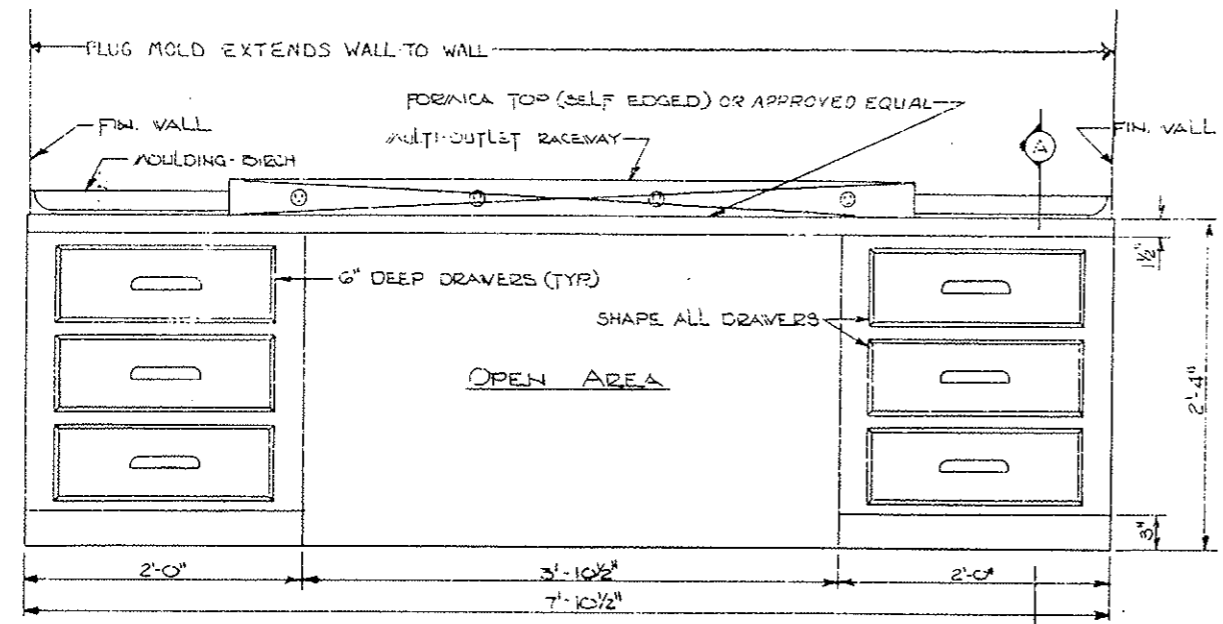
TYPE CO. REV'D AS SHOWN	
BARROL COMPANY, INC.	
KENTON, OHIO	
STRUCTURE	ELSENHOWER MEMORIAL TRAINING
LOCATION	CLEVER, OHIO, OHIO
CONTRACTOR	WENZEL CORP., OHIO
ARCHITECT	
DRAWN BY	JNS
DATE	4-1-33
ORDER #	
REVISION	1930



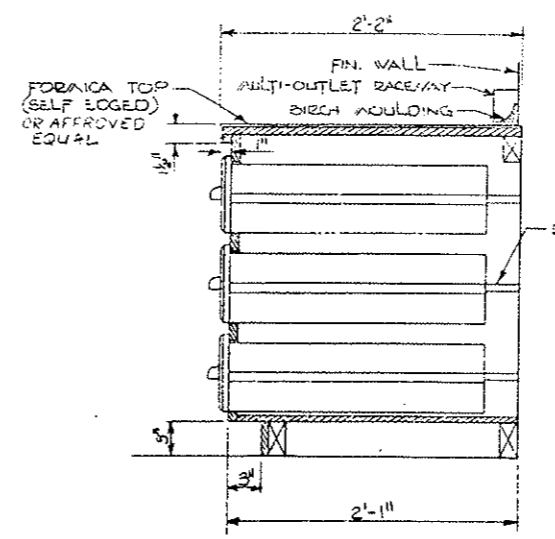
**DIVISION OF HIGHWAYS**

**PORTAL ATTENDANT BOOTH**  
**FOUNDATION & STAIR DETAILS**

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



FRONT ELEVATION



SECTION A-A

**DRAWER CONSTRUCTION**  
 SIDES & BACK - 3/8" HARDWOOD (DADO & RABBET JOINTS)  
 RUNNERS - METAL DRAWER GUIDES - 50LB LOAD  
 BOTTOM - 1/4" MASONITE  
 FRONT - 3/4" BIRCH W/LIP (DADO & RABBET JOINTS)

**CABINET** - BIRCH W/FORMICA TOP (PATTERN & COLOR OF FORMICA OR APPROVED EQUAL SHALL BE AS APPROVED BY THE ENGINEER.)  
 BIRCH FINISH - NATURAL POLYURETHANE VARNISH (2 OR MORE COATS)

**COUNTED 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 TEAPERED 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 (SEL)			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 (SEL)		GALV.	SHOP AND FIELD PRIME	BROWN

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.

**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

**DIVISION OF HIGHWAYS**

**PORTAL ATTENDANT BOOTH  
DOOR & WINDOW SCHEDULE  
AND  
COUNTER CABINET DETAILS**

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

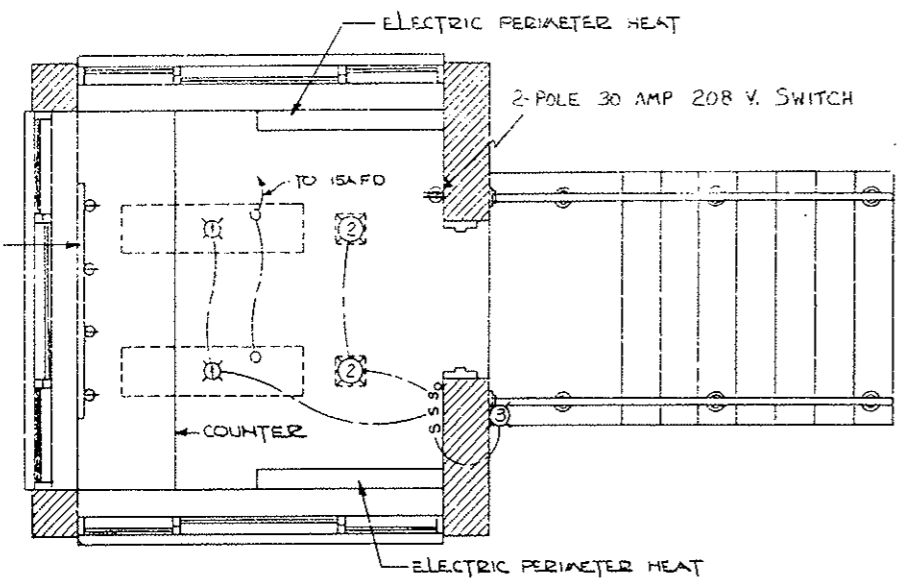
### LIGHTING FIXTURE SCHEDULE

MARK	QUANTITY	DESCRIPTION	MANUFACTURER	CATALOG NO.	LAMPS / FIXTURE		REMARKS
					NO.	DESIGNATION	
1	2	CEILING RECESSED FLUORESCENT w/ DC AUX. INCAND. LAMP	HOLOPHANE	2045-4	1	100W A-21	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

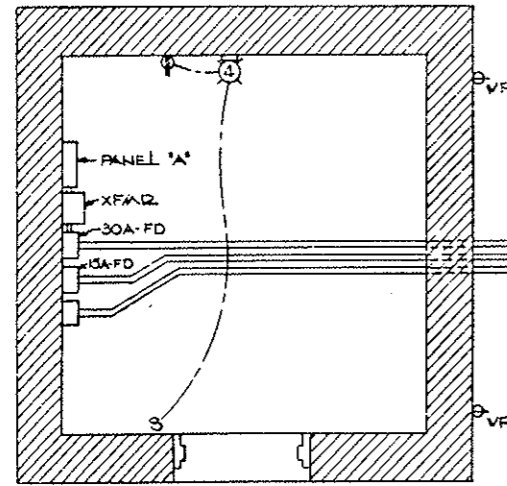
- O INCAND. LAMP IN FIXTURE \*1 WIRED TO AUX. DC
- ⊕ THERMOSTAT @ +52" FROM FLOOR
- ⊕ DUPLEX CONVENIENCE OUTLET @ +52"
- ⊕ SINGLE CONVENIENCE OUTLET
- ⊕<sub>VP</sub> WEATHERPROOF SINGLE CONVENIENCE OUTLET
- S SWITCH SINGLE POLE @ +52"
- S<sub>D</sub> DIMMER SWITCH - FULL RANGE
- XFAR TRANSFORMER



UPPER FLOOR

ELECTRIC HEAT - ~~EMERSON ELECTRONIC ACCEL. NO. 251014 4750~~ <sup>Singer Model ASF-7</sup> 240V-1Ø FRONT OUTLET w/ THERMOSTAT AND DISCONNECT SWITCH, OR AN APPROVED EQUAL.

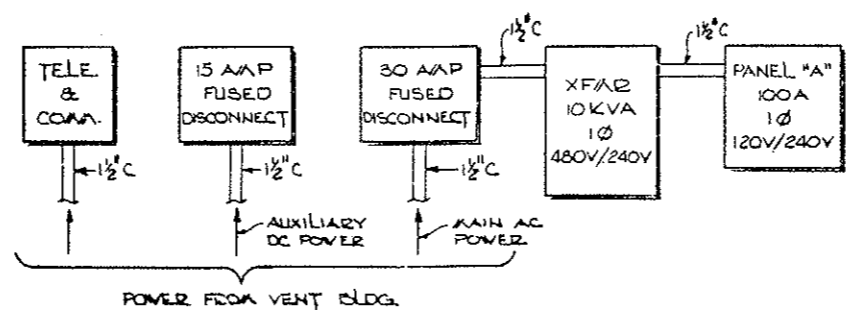
PLUG-IN STRIP - 5' LONG WITH SINGLE CONVENIENCE OUTLETS @ 12" O.C. MOUNTED ABOVE COUNTER.



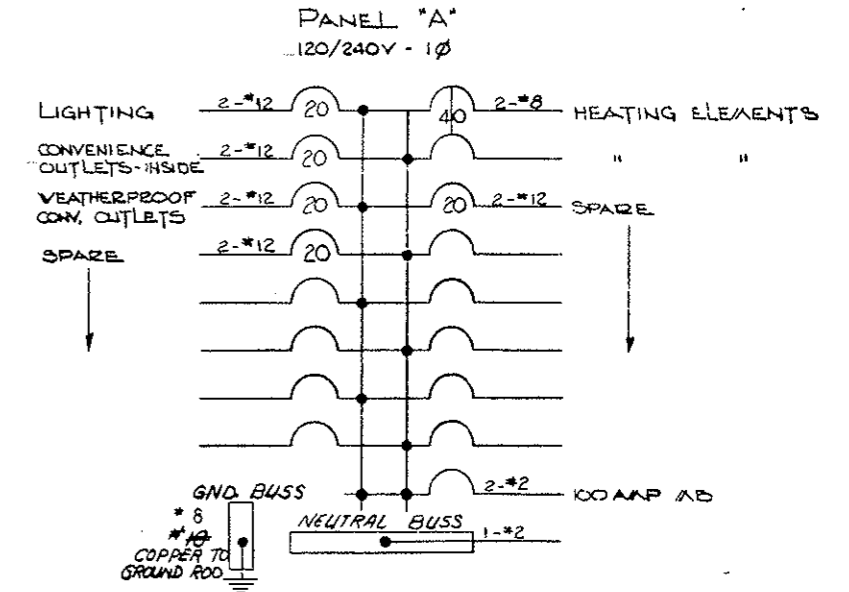
LOWER FLOOR

### ELECTRICAL AND HEATING PLAN

SCALE 1/2" = 1'-0"



PANEL LAYOUT  
NO SCALE



**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.D.Q.H.

Detailer -

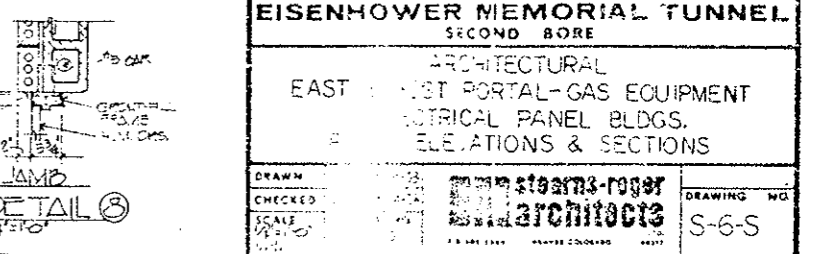
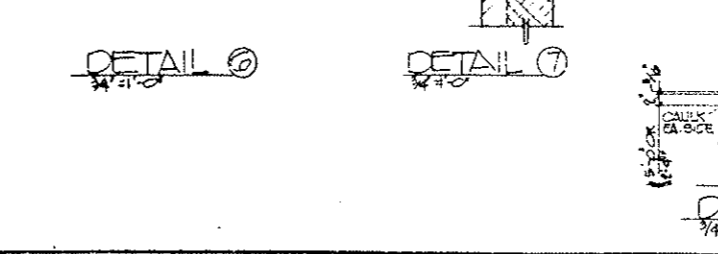
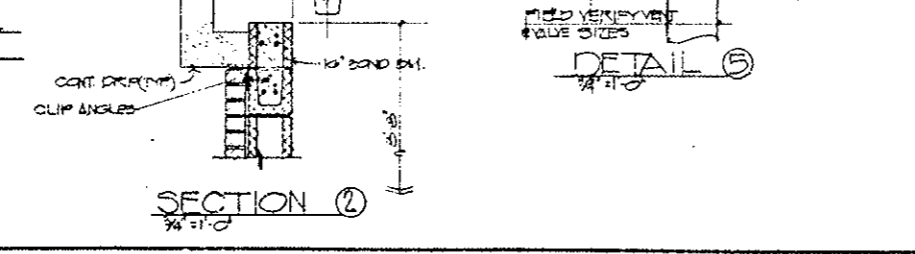
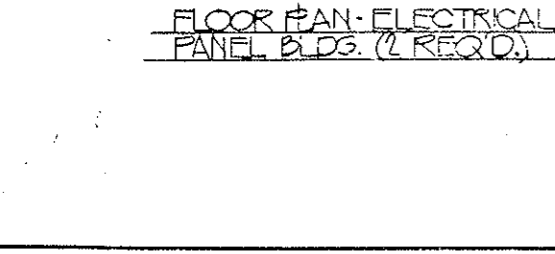
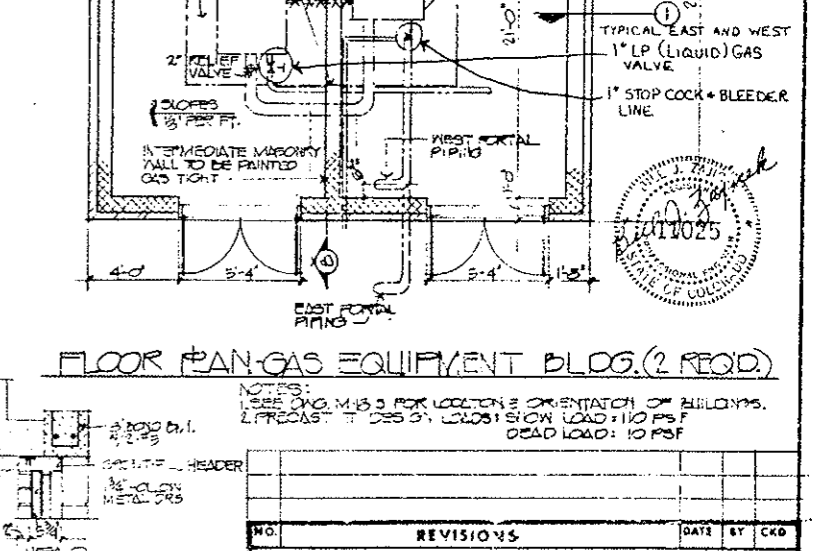
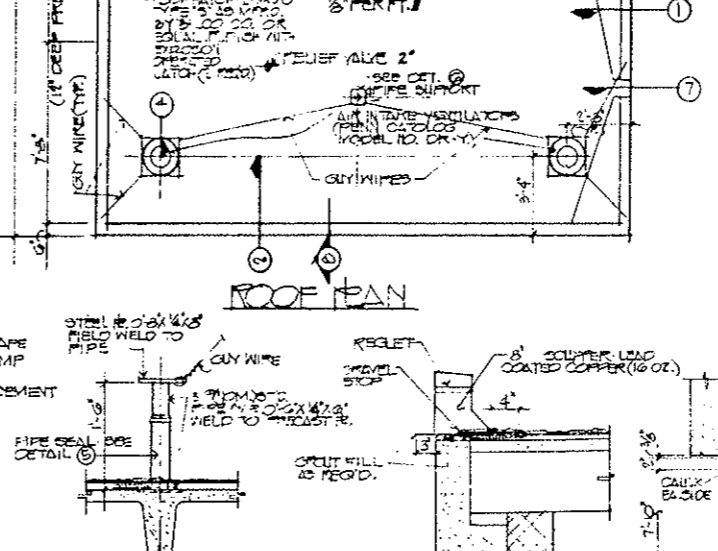
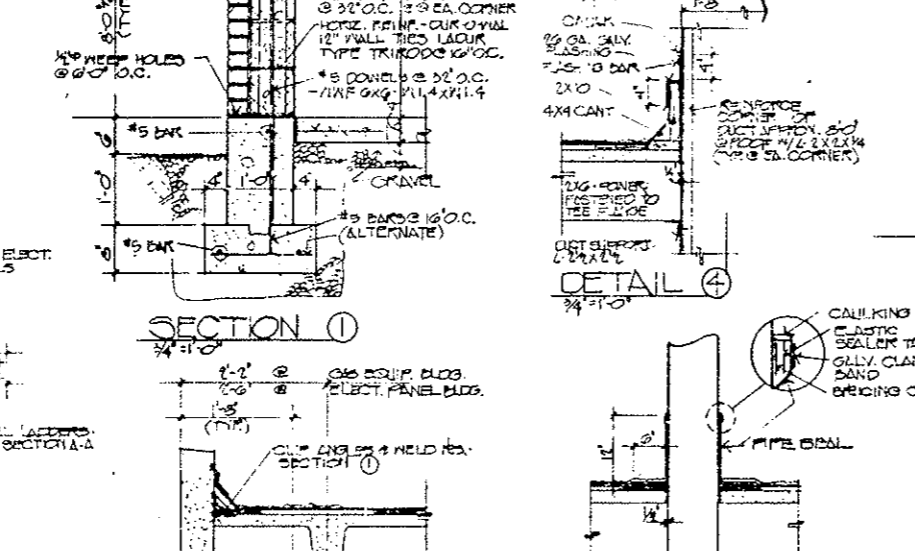
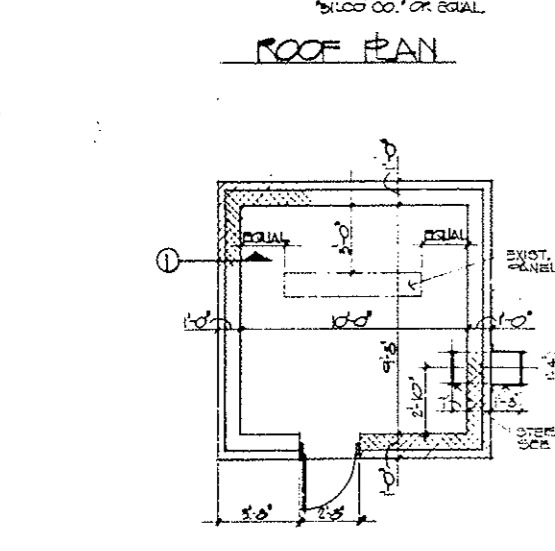
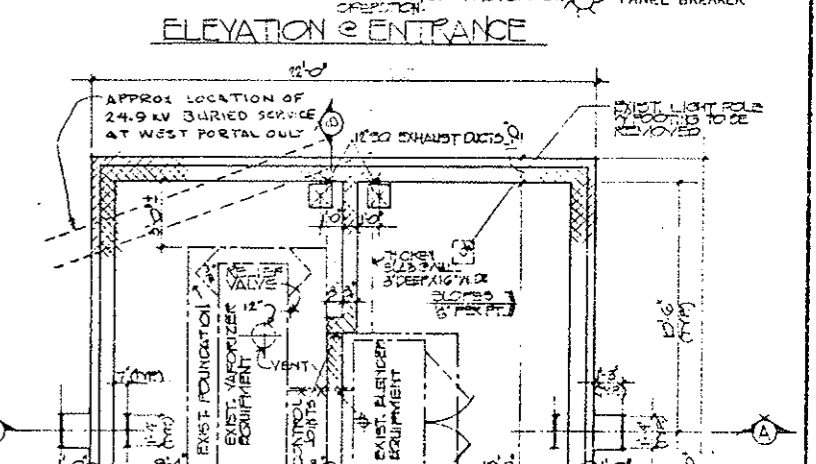
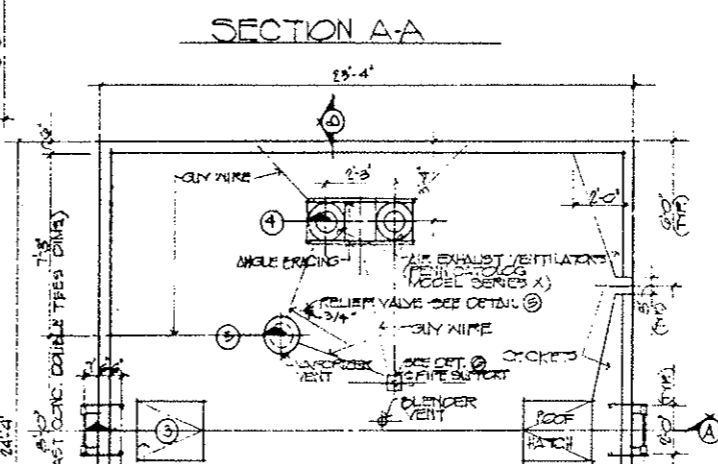
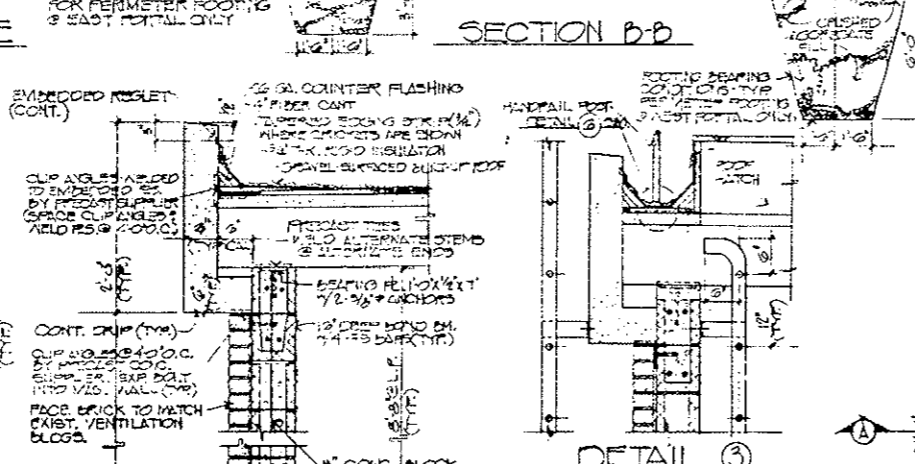
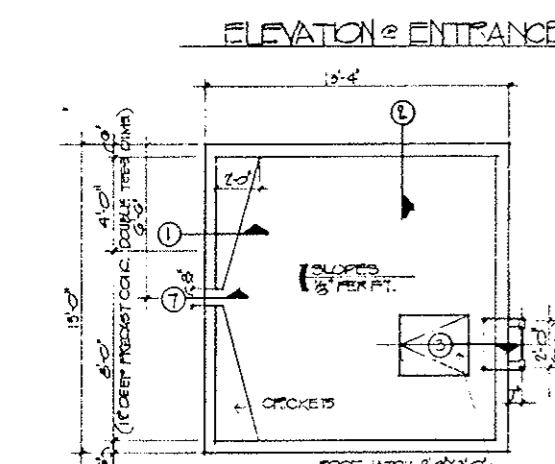
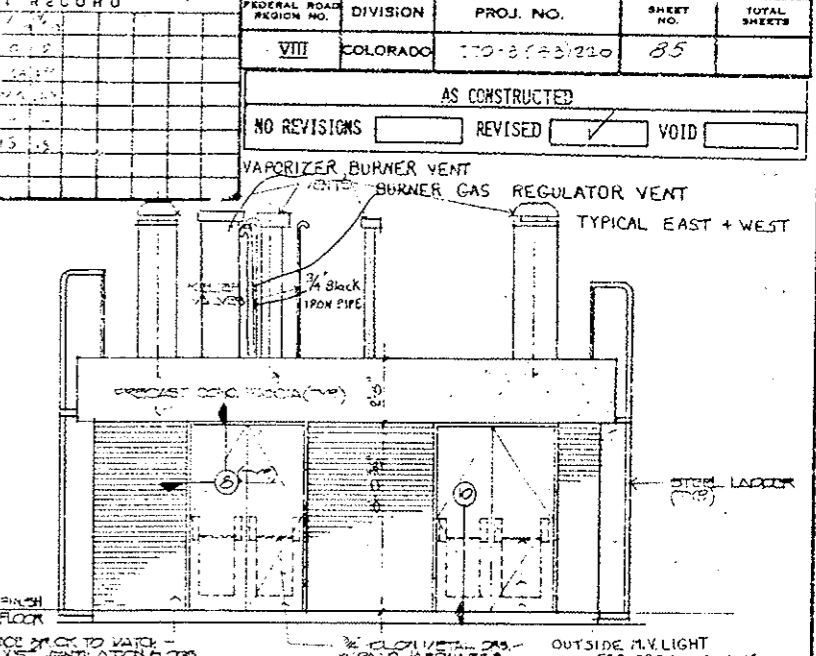
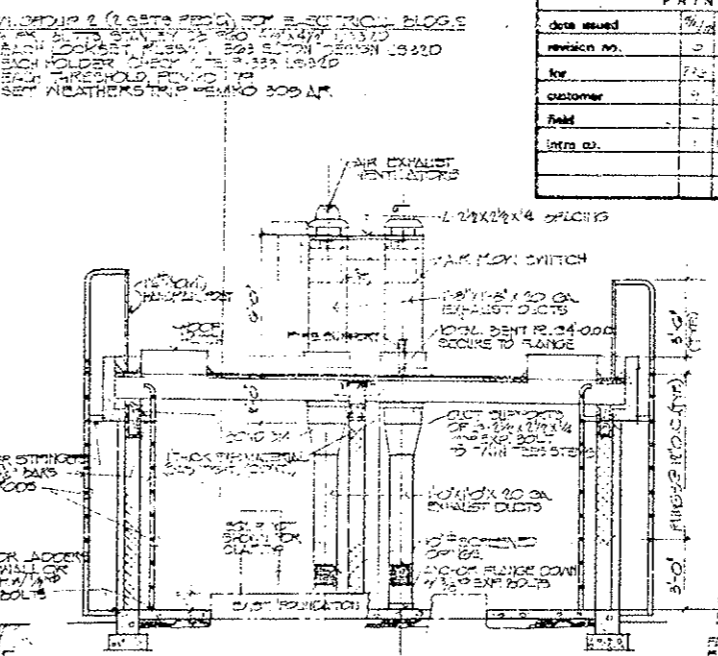
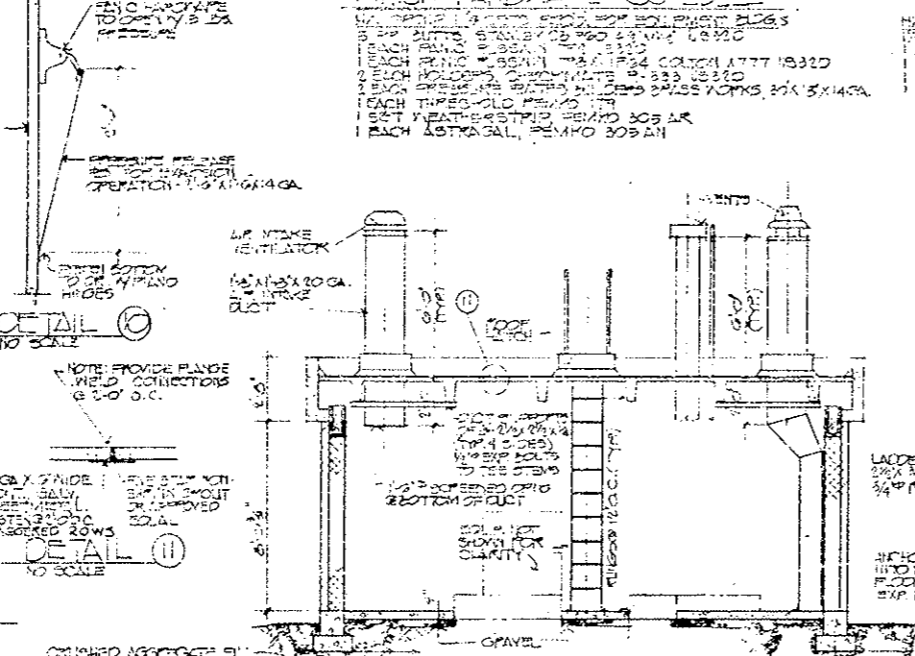
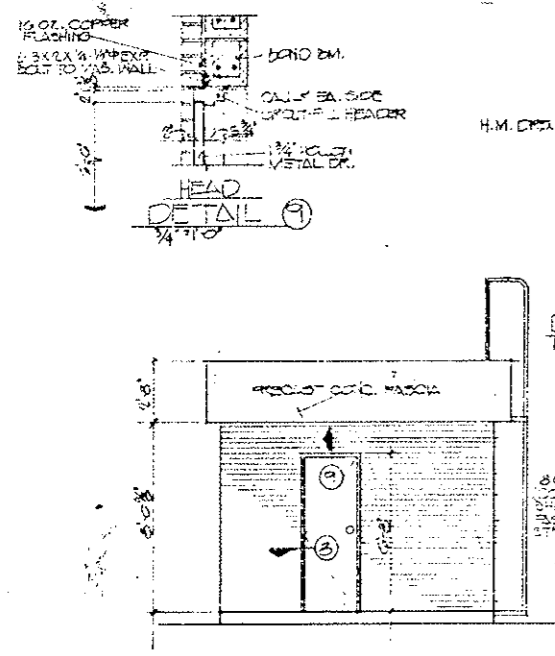
Drawing Number - B-5



PRINT RECORD				
DATE ISSUED	REVISION NO.	FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.
7/15/55	0	VIII	COLORADO	170-3 (23) 230
				SHEET NO. 85
				TOTAL SHEETS

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID



REVISIONS			DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS					
EISENHOWER MEMORIAL TUNNEL					
SECOND BORE					
ARCHITECTURAL					
EAST PORTAL-GAS EQUIPMENT					
ELECTRICAL PANEL BLDGS.					
ELEVATIONS & SECTIONS					
DRAWN	STEARNS-ROGER ARCHITECTS				DRAWING NO.
CHECKED	S-6-S				
SCALE					



GENERAL NOTES:  
 ALL WORK SHALL BE DONE ACCORDING TO THE PROJECT SPECIFICATIONS FOR I 70-3(83)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'-8"	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 = 1-128 psf MAXIMUM  
 LIVE LOAD = 42 psf

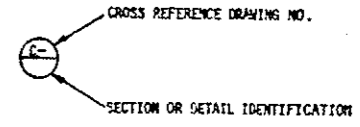
REINFORCED CONCRETE: #5 BARS AND LARGER,  $f_c = 24,000$  psi  
 #4 BARS,  $f_c = 24,150$  psi  
 CLASS T-1 CONCRETE  
 $f_c = 1,200$  psi,  $n = 10$

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

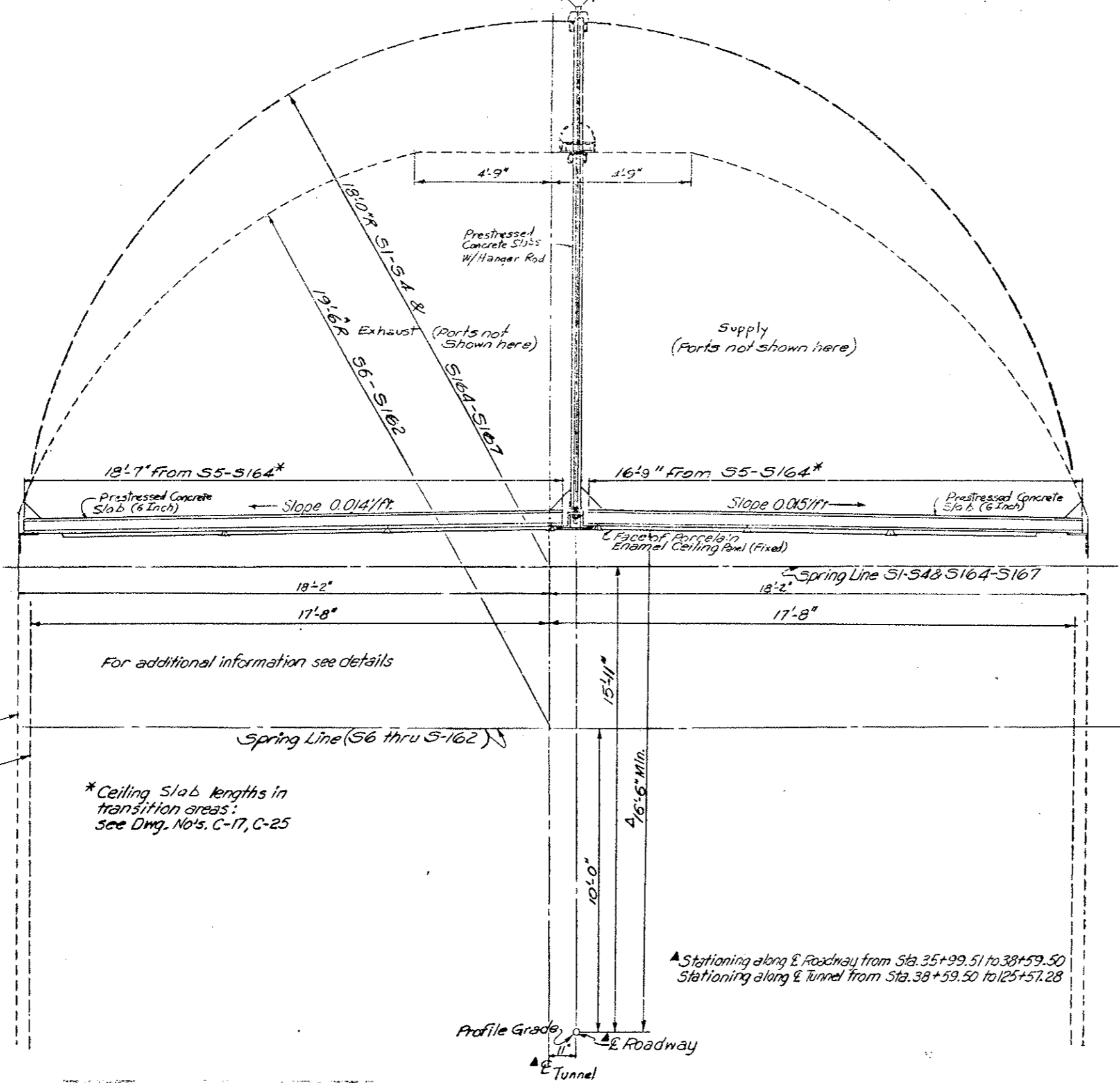
PRESTRESSED CONCRETE:  $f'_s = 270,000$  psi  
 $f'_c =$  (See Details)

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.



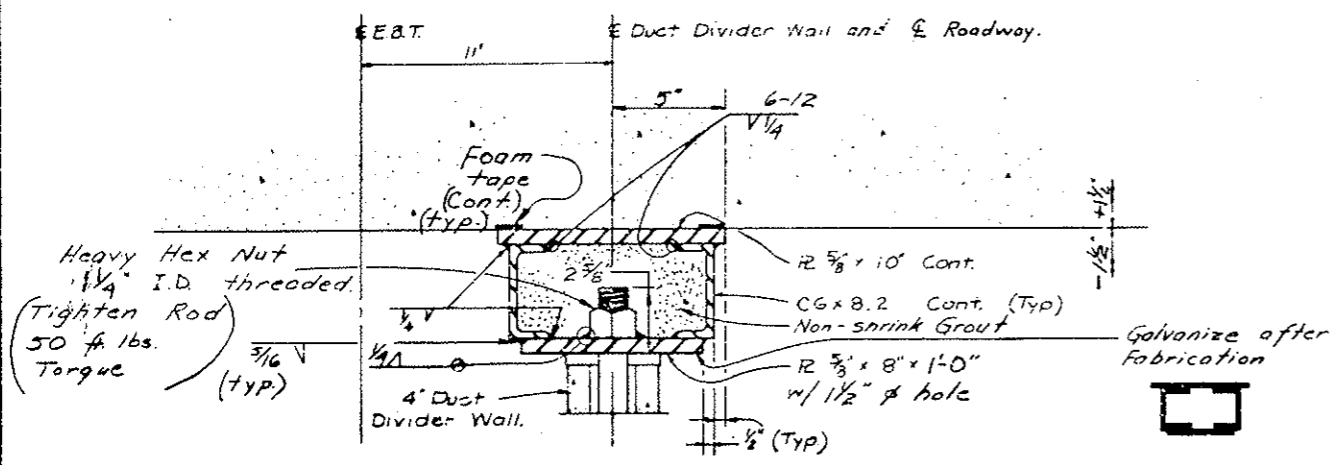
▲ IN SUPERELEVATED SECTIONS, THE MINIMUM CLEARANCE IS 16'-6" AT THE CURB GRADE LINE.



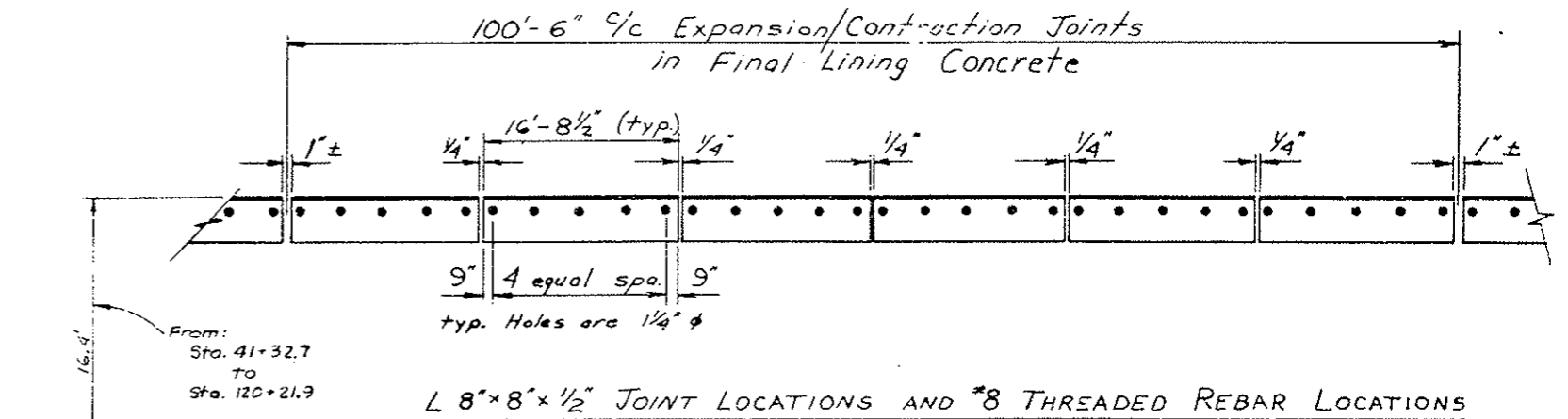
TYPICAL SECTION LOOKING EAST  
 Original Scale 1/2" = 1'-0"

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

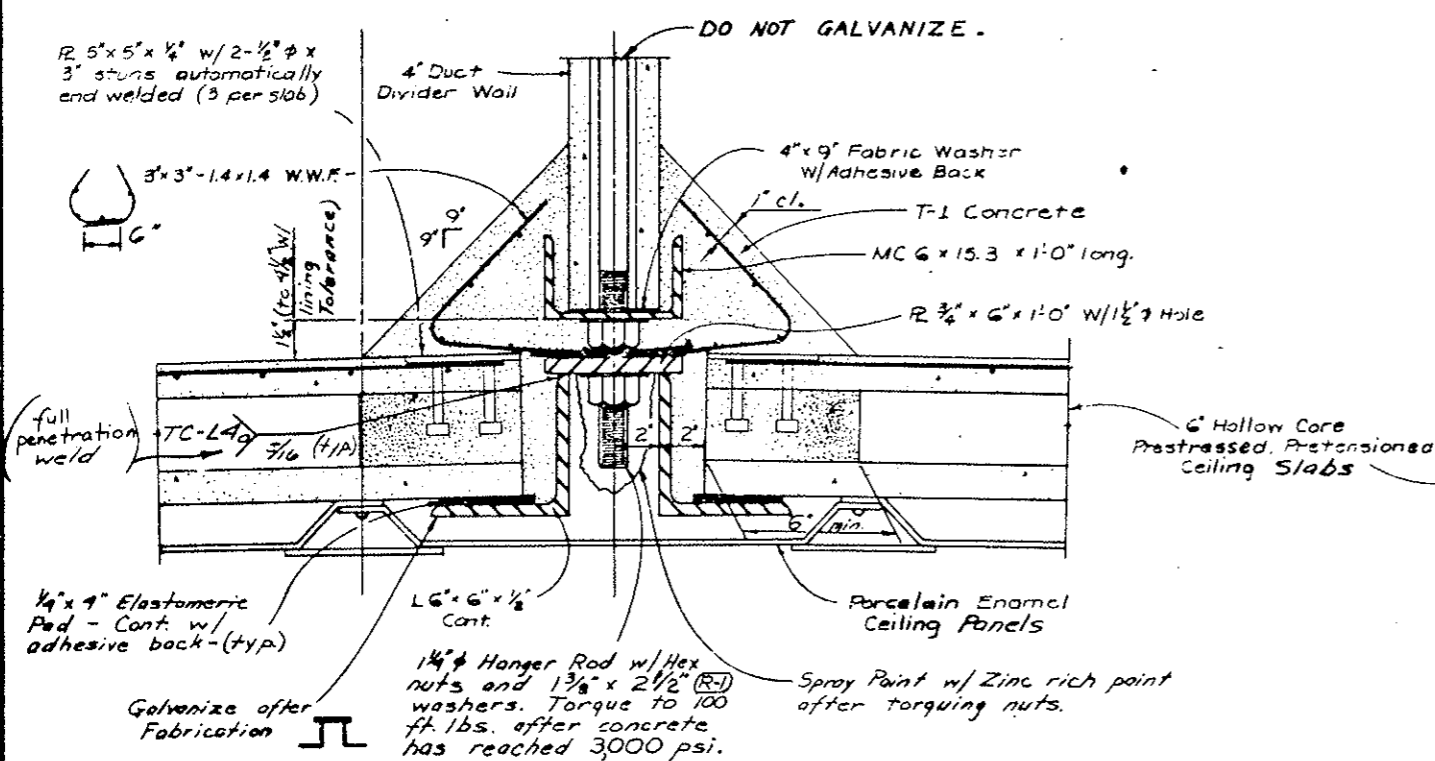
AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED	VOID	III	COLORADO	I70-3(B3)220	37
REVISIONS						
R-1	11-14-78	Washer Size	E.E.			



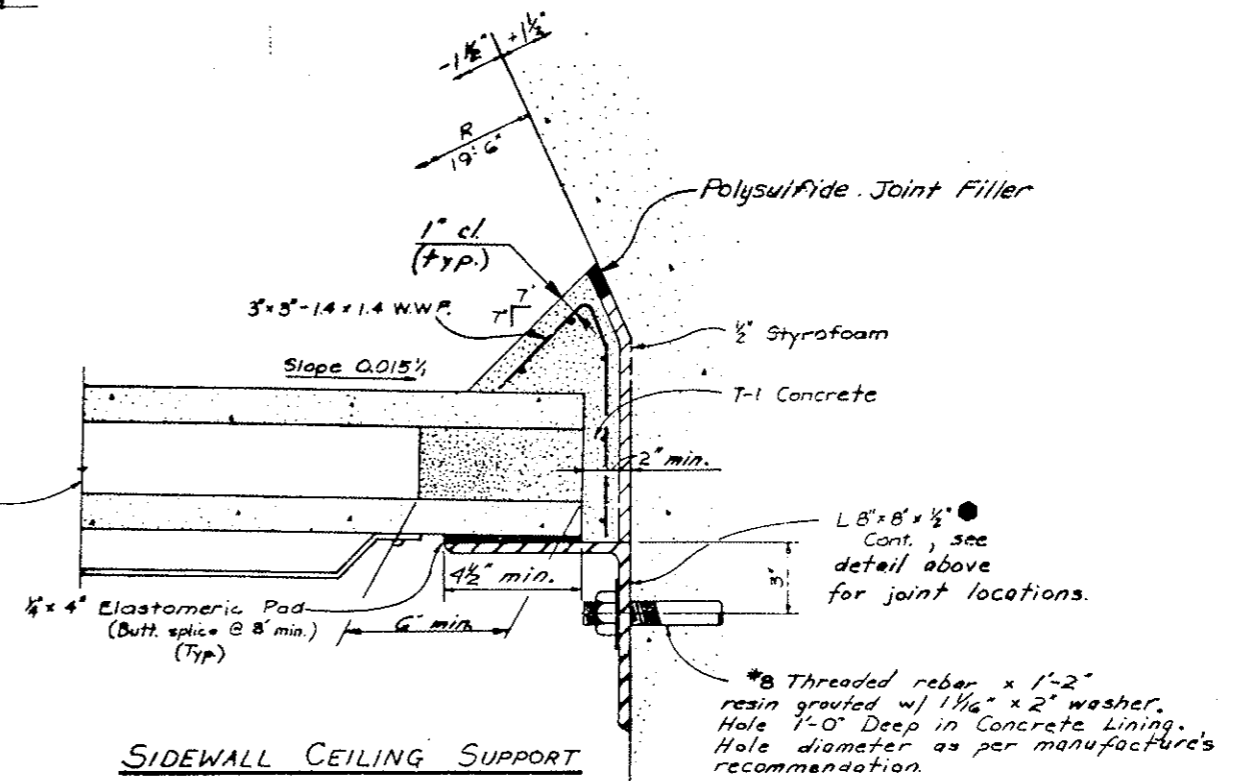
HANGER UNIT ASSEMBLY @ 1/4" HANGER ROD



L 8"x8"x1/2" JOINT LOCATIONS AND #8 THREADED REBAR LOCATIONS



CENTER CEILING SUPPORT @ 1/4" HANGER ROD



SIDEWALL CEILING SUPPORT

Galvanize after Fabrication.

DESIGNED BY	CHKD BY	DATE
APPROVED BY	DATE	
QUANTITIES BY	DATE	
CHECKED BY	DATE	
ENTRUSTED BY	DATE	

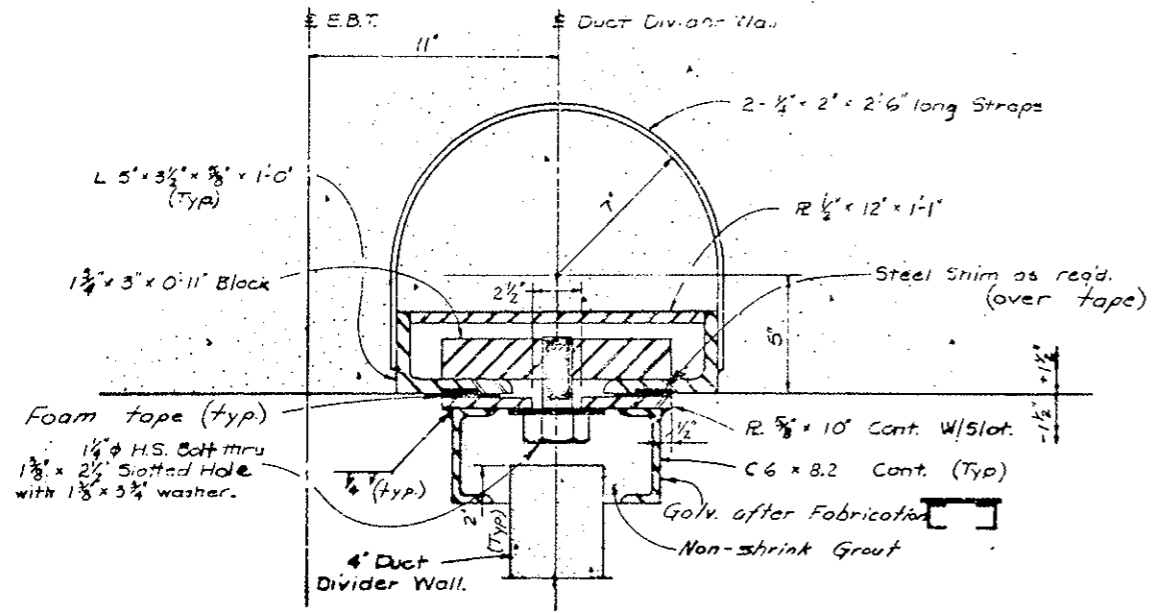
DIVISION OF HIGHWAYS	
CEILING SUPPORT DETAILS	
Designer C.D.O.H.	Structure F-13-X
Detailer B.R.L.e.s	Numbers
Drawing Number C-2	

Revised Dates (Preliminary Stage Only)

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

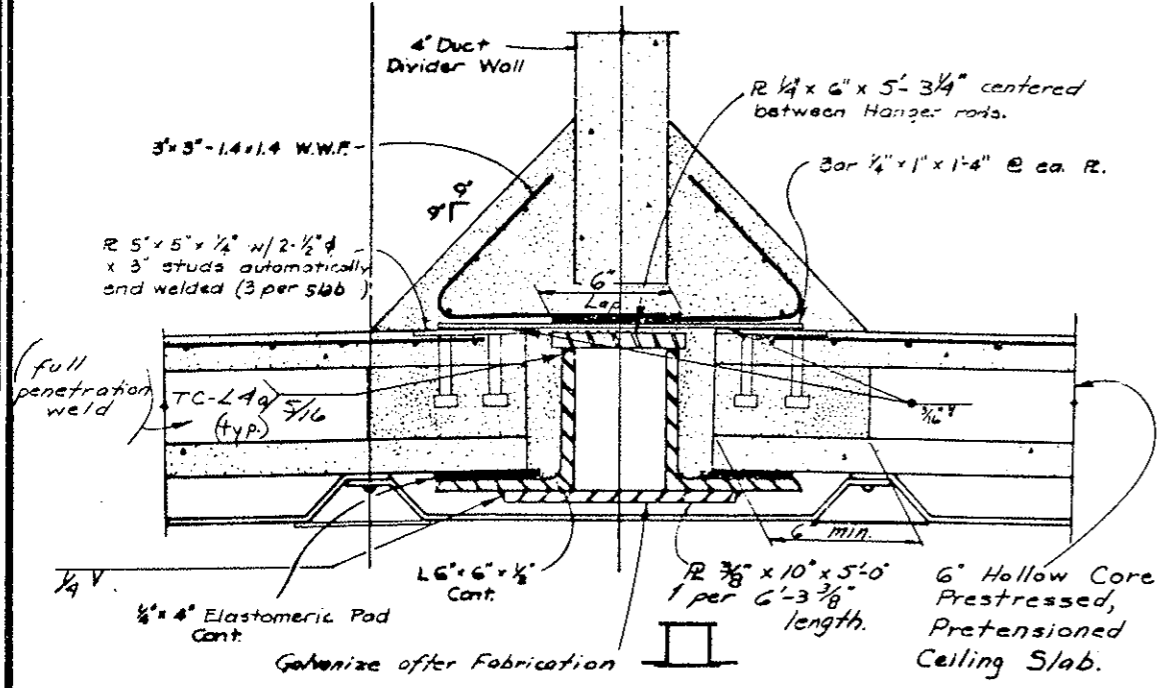
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(83)220	88	

REVISIONS	



**HANGER UNIT ASSEMBLY @ HANGER EMBED**

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



**CENTER CEILING SUPPORT @ HANGER EMBED**

NO.	DATE	BY	CHKD.	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

**DIVISION OF HIGHWAYS**

**CEILING SUPPORT DETAILS**

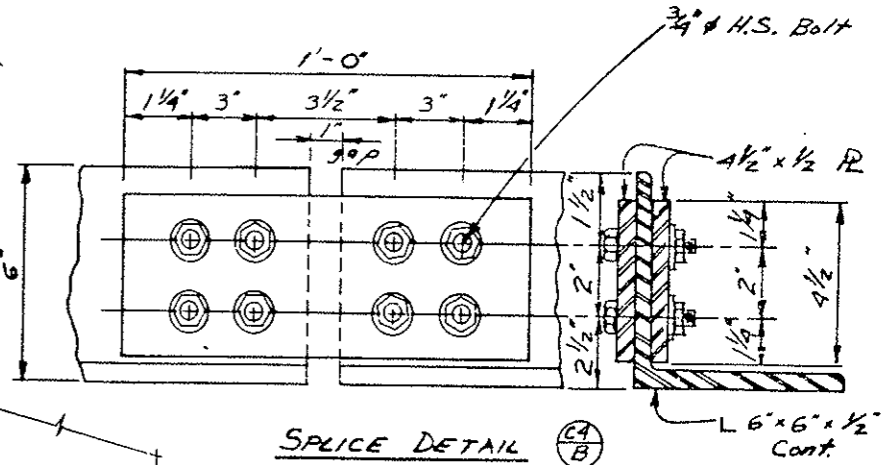
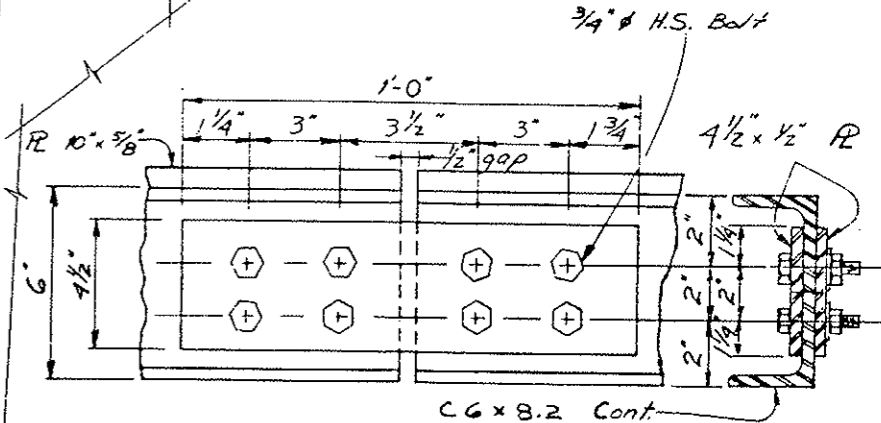
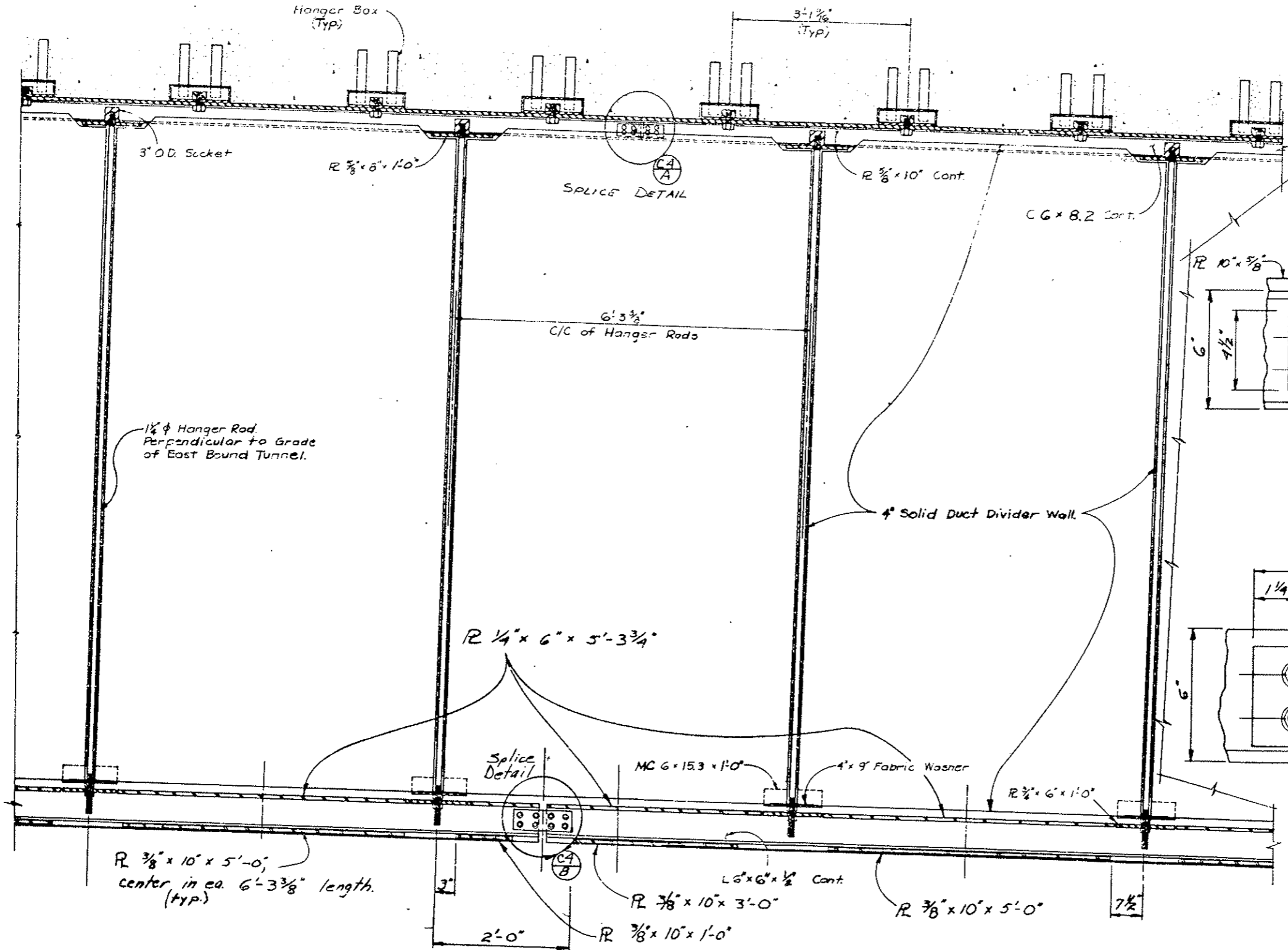
Designer	C.D.O.H.	Structure	F-13-X
Detailer	B.R. Lera	Numbers	
Drawing Number C-3			

Revision Date (Preliminary Stage Only)

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(E3) 220	89	

REVISIONS	



DESIGNED BY	DATE	APPROVED BY	DATE
C.D.O.H.	6-77	B.R.L.	6-78
CHECKED BY		QUANTITIES BY	
B.R.L.		B.R.L.	
DETAILS BY		CHECKED BY	
B.R.L.		B.R.L.	

SECTION THRU DUCT DIVIDER WALL

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

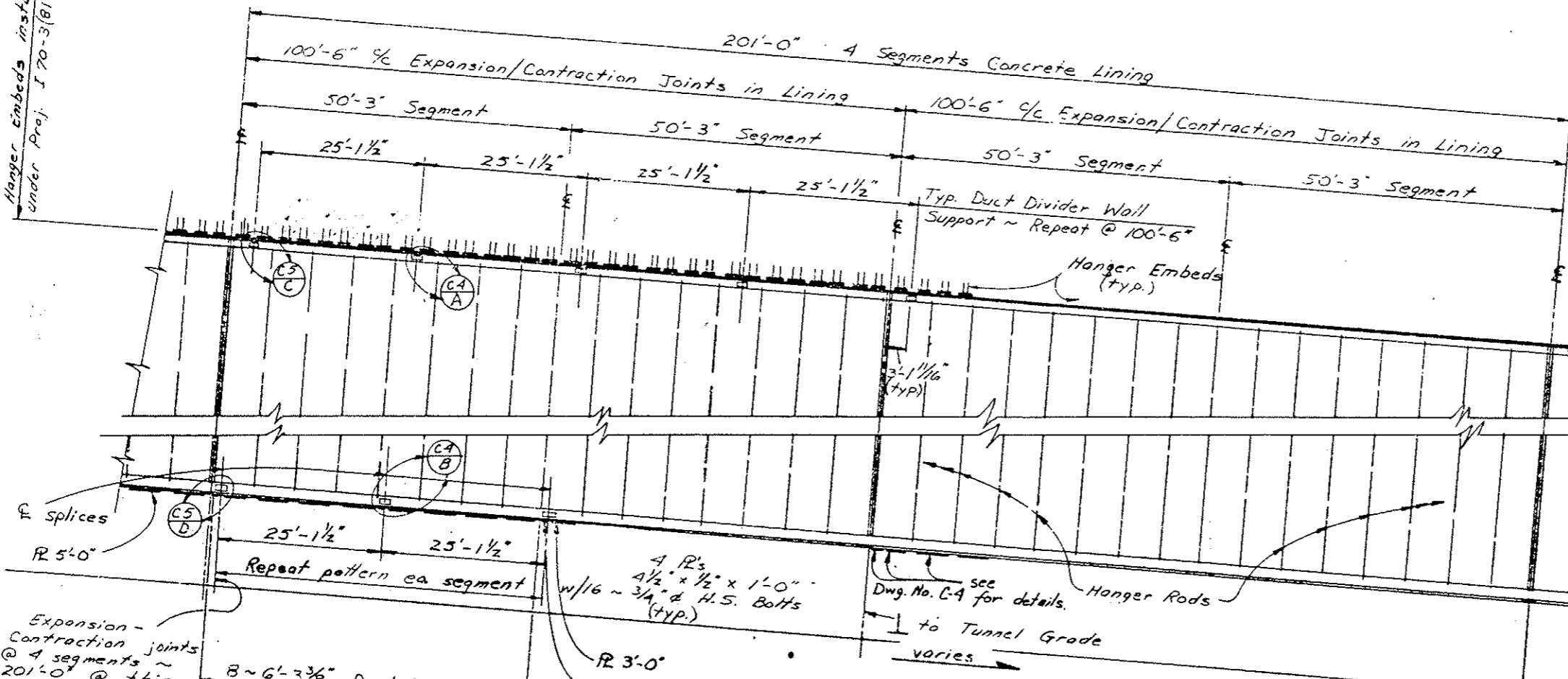
DIVISION OF HIGHWAYS	
DUCT DIVIDER WALL and CEILING SUPPORT DETAILS	
Designer C.D.O.H.	Structure F-13-X
Detailer B.R.Lere	Numbers
Drawing Number C-9	
Revision Date	(Preliminary Stage Only)

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

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I 70-3(82)220	90	

REVISIONS	

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



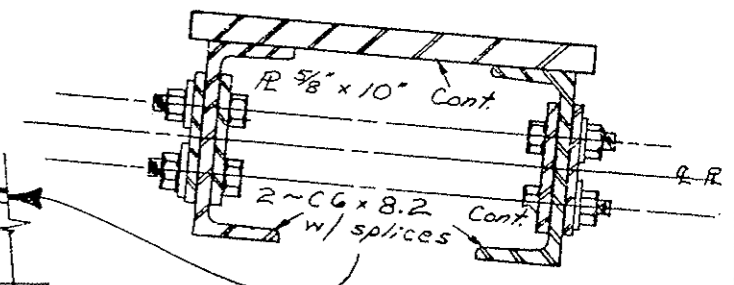
Expansion-contraction joints @ 4 segments ~ 201'-0" @ this location, typ.

8 ~ 6'-3 3/8" Duct Divider Wall Slabs typ. each segment

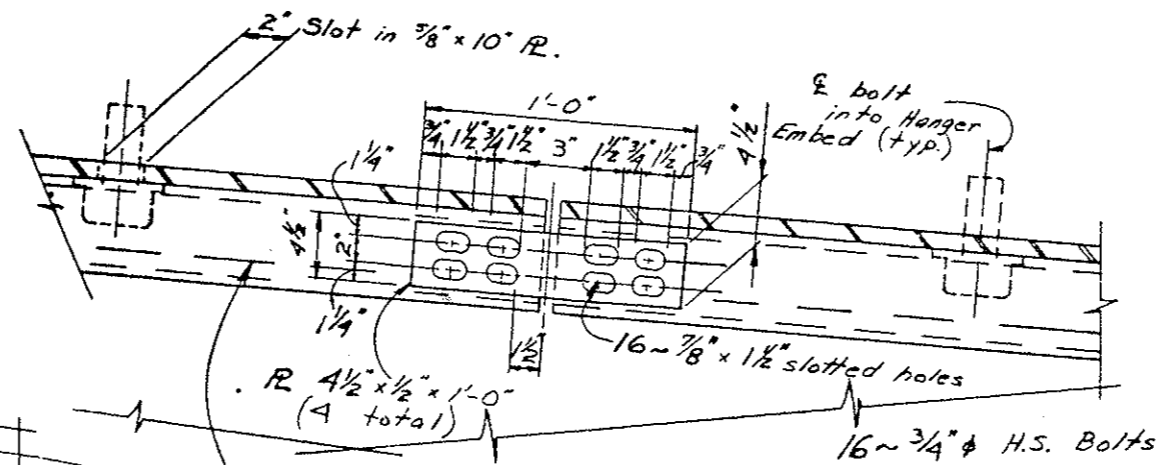
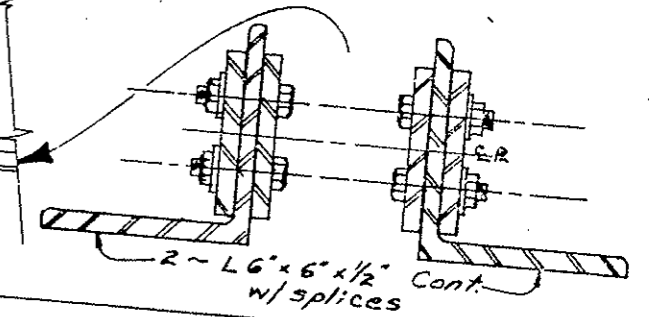
4 R's 4 1/2" x 1/2" x 1'-0" w/16 ~ 3/4" d H.S. Bolts (typ.)

Hanger Rods to Tunnel Grade varies

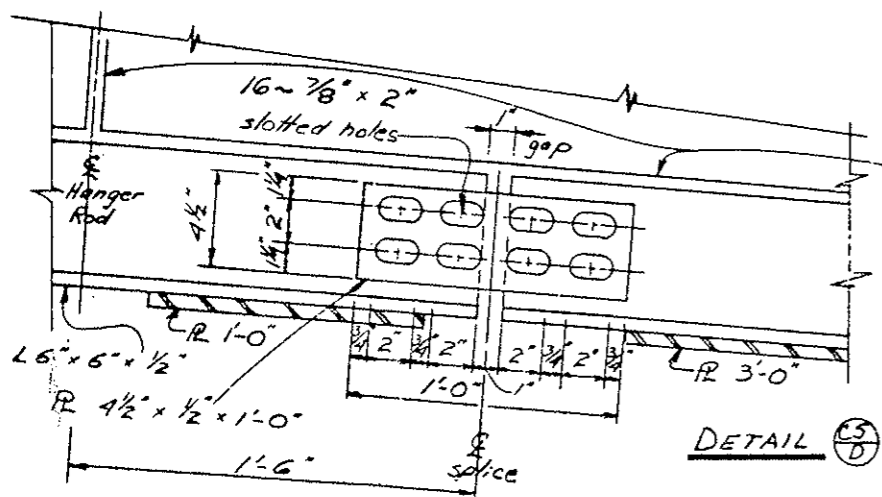
**SCHMATIC DIAGRAM**  
(Elevation view of Duct Divider Wall)



**TYPICAL END VIEWS**



**DETAIL C3 SLOTS @ 100'-6"**  
(slotted R dimensions are typical.)



**DETAIL C5**

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

DATE	2-78
DESIGNED BY	WHP
CHECKED BY	WHP
QUANTITIES BY	WRH
CHECKED BY	WHP
DETAILS BY	WHP

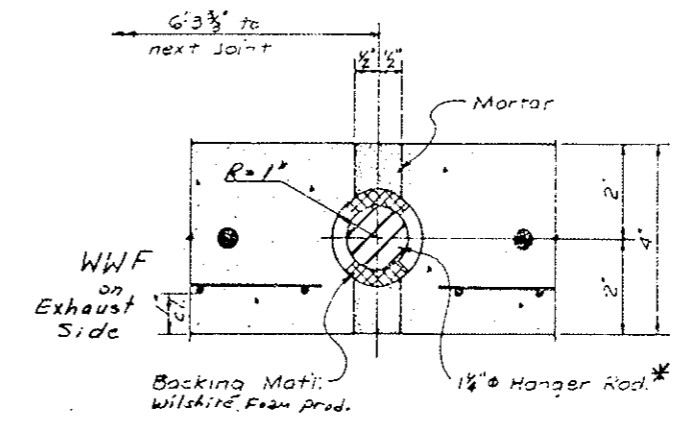
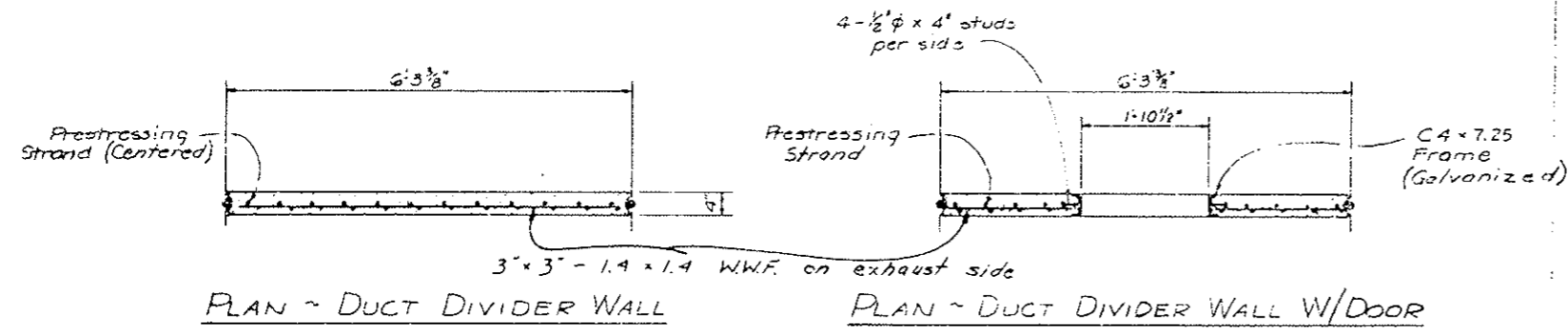
DIVISION OF HIGHWAYS			
SPlice DETAILS for DUCT DIVIDER WALL SUPPORT and PRECAST CEILING SUPPORT			
Designer	C.D.O.H.	Structure	F-13-X
Detailer	W.R. HESSLER	Numbers	
Drawing Number		C-5	

Revision Dates (Preliminary Stage Only)

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
100	COLORADO	170-3(83)220	9/	

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.

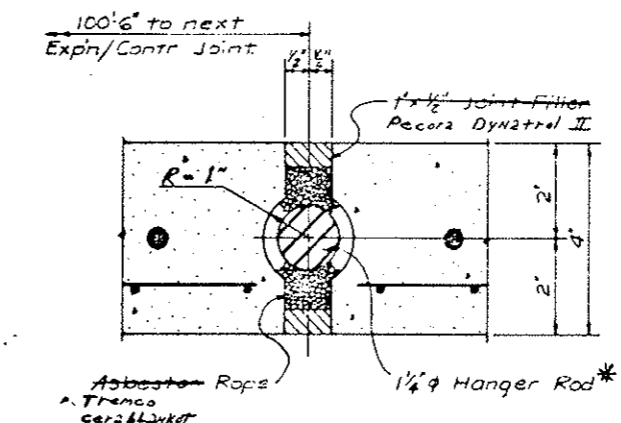
INITIAL PRESTRESS FORCE: THE JACKING FORCE PER SLAB INCLUDING ALL LOSSES  
 $F_i = \dots \times f'_s \times A_s$

FINAL PRESTRESS FORCE: THE FORCE REMAINING PER SLAB AFTER ALL LOSSES  
 $F_f = \dots \times f'_s \times A_s$

$A_s$  = 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 1-3/4" (MEASURED BETWEEN CENTERS OF ADJACENT STRANDS).



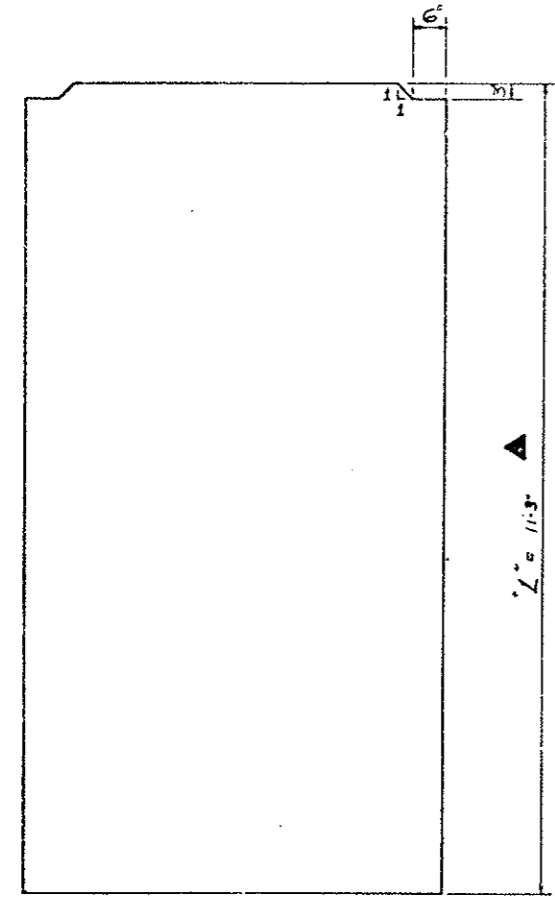
EXPANSION/CONTRACTION JOINT ~ DUCT DIVIDER WALL

DESIGN ASSUMES AREA OF 4'-3 3/8" WIDE SLAB = A  
 SEC. NO. = 5

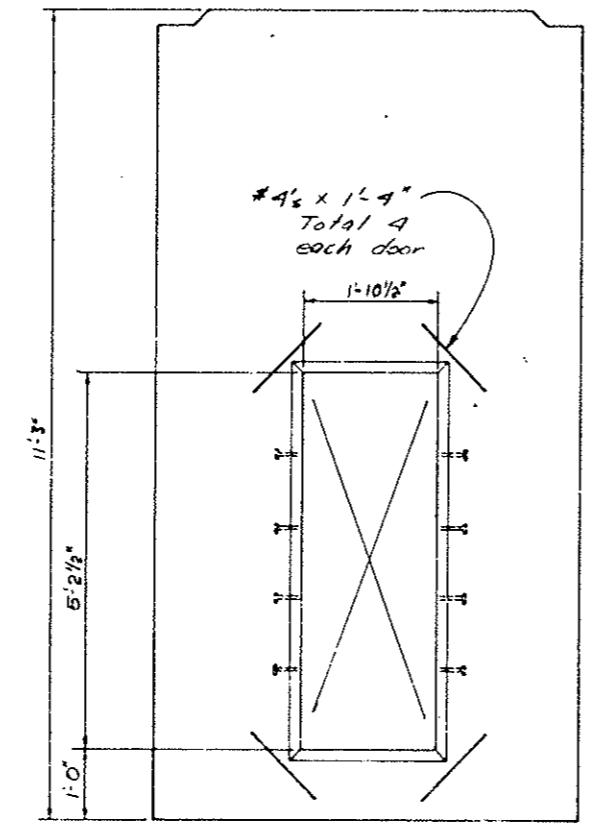
THE RESULTANT PRESTRESSING FORCE SHALL BE CENTERED ACROSS THE WIDTH OF THE SLAB.

\* 1-1/2" FROM STA. 37+80.4 TO STA. 41+32.7 AND FROM STA. 120+21.9 TO STA. 123+74.6

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



ELEVATION ~ DUCT DIVIDER WALL



ELEVATION ~ DUCT DIVIDER WALL WITH DOOR

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

SLAB No	L (Feet)	A concrete (in <sup>2</sup> )	S concrete (in <sup>3</sup> )	F <sub>i</sub> (KIPS)	C <sub>i</sub>	F <sub>f</sub> (KIPS)	C <sub>f</sub>	Concrete Strength	
								f <sub>ci</sub> (PSI)	f' <sub>c</sub> (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	243	.50	4000	4700

**DIVISION OF HIGHWAYS**

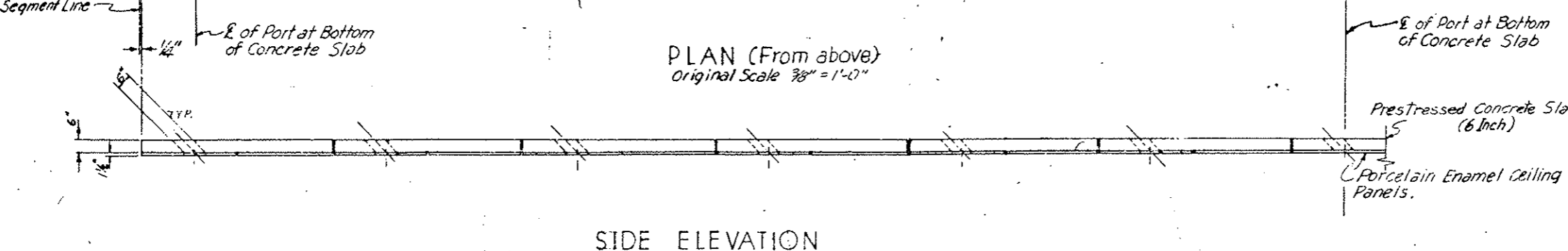
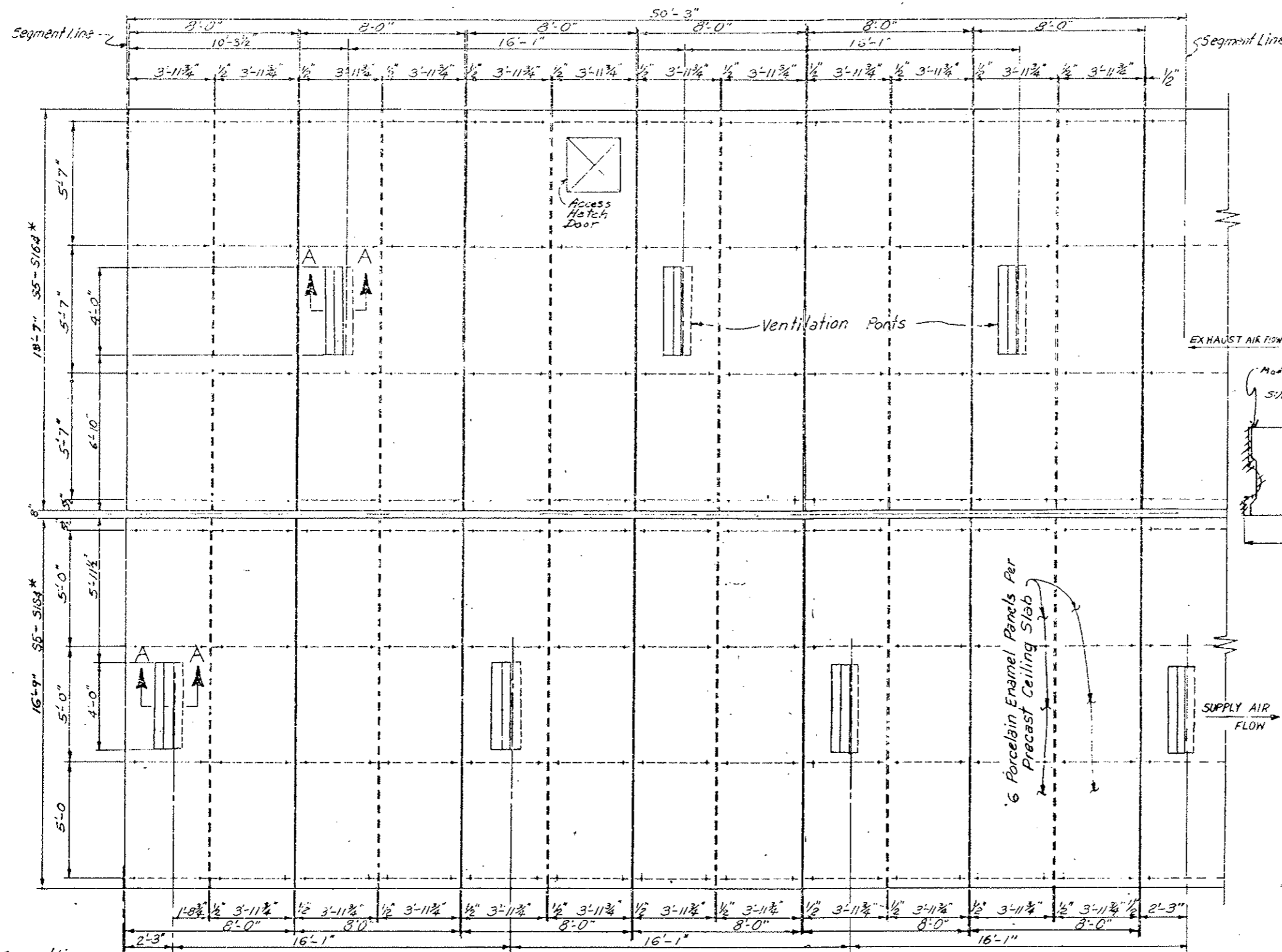
4" SOLID PRESTRESSED  
DUCT DIVIDER WALL  
DETAILS

Designer	C.D.O.H.	Structure	F-13-X
Detailer	BR-e-e	Numbers	
Drawing Number C-6			

Revision Dates: \_\_\_\_\_ (Preliminary Stage Only)

DATE	BY	CHECKED BY	DATE	BY	DATE	BY
8-77	WZH	8-77	8-77	WZH	8-77	WZH
8-77	WZH	8-77	8-77	WZH	8-77	WZH

INITIAL	DATE	CHECKED BY
C.D.H.	7-3-75	C.D.H.
CHECKED BY	QUANTITIES BY	
C.D.H.	C.D.H.	
DATE	QUANTITIES BY	
7-3-75	C.D.H.	

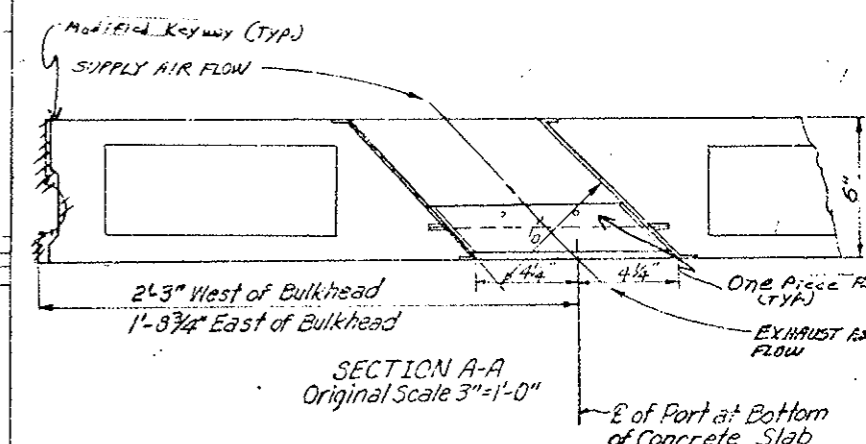


FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
5011	175-3103-220	92	

REVISIONS	

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

\* Ceiling Slab Lengths in Transition Areas:  
 see Dwg. No's. C-17, C-25



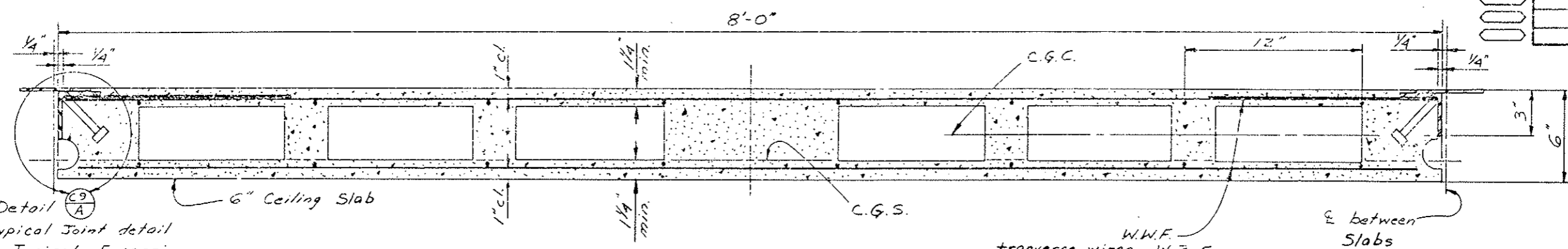
Port shown for West of Sta. 80+77. (Bulkhead)  
 All Ports to the East of Sta. 80+77 (Bulkhead) are sloped opposite direction.

<b>DIVISION OF HIGHWAYS</b>	
<b>TYPICAL CEILING SLAB PLAN</b>	
Designer C.D.H.	Structure
Detailer J. LEITCHKOPF	Numbers
Drawing Number C-7	of Drawings

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

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

REVISIONS	



See Detail C-9 for Typical Joint detail  
 \* for Typical Expansion-Contraction Joint detail

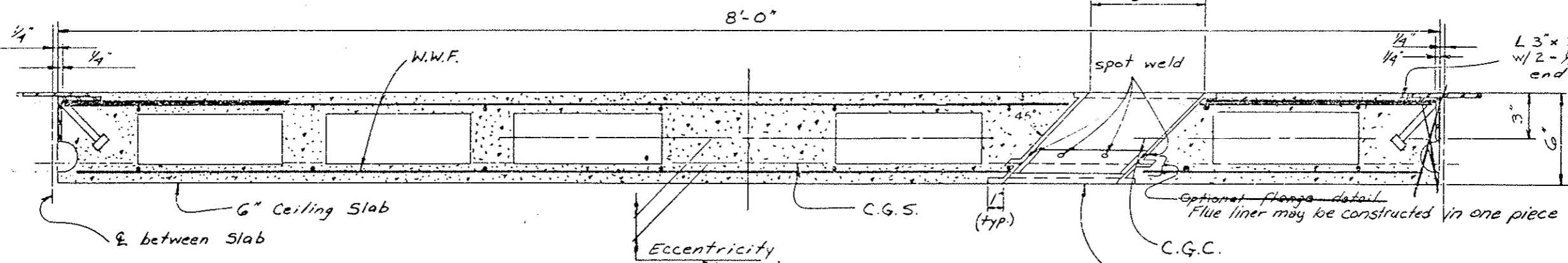
**STANDARD 6" HOLLOW CORE PRESTRESSED CEILING SLAB ~ No. 1**

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.

W.W.F.  
 transverse wires W2.5 (7 Ga.) 6" oc.  
 longitudinal wires W1.4 (10 Ga.) 12" oc.  
 (typical)

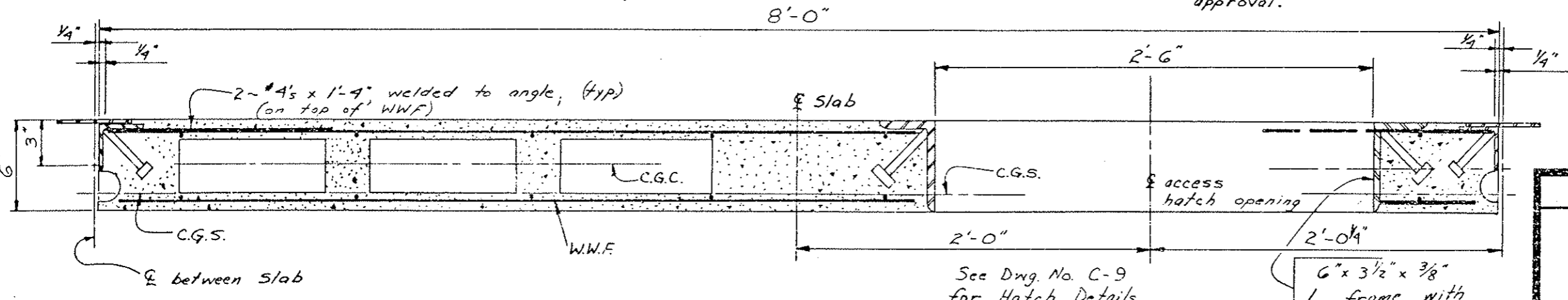
Joint details shown are schematic only; actual details are to be shown on the Shop Drawings for Engineer's Approval.  
 NOTE: See Sheets No. 93AX thru 93DX for Joint Details & Typical Sections

DATE	DESIGNED BY	CHECKED BY
6-7-78	JHP	W.R.H.
6-7-78	S.F.C.	B.R.L.
6-7-78	W.R.H.	B.R.L.
6-7-78	W.R.H.	B.R.L.



**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.



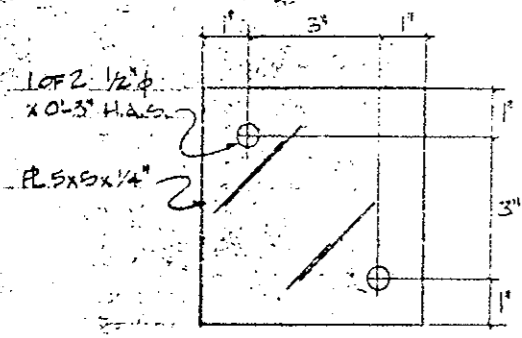
**6" PRESTRESSED CEILING SLAB W/ACCESS HATCH ~ No. 3**

See Dwg. No. C-9 for Hatch Details

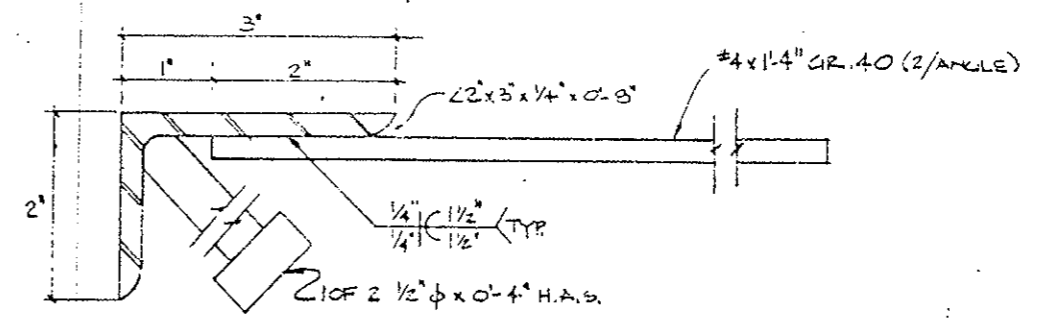
6" x 3 1/2" x 3/8" L frame with 1/2" phi x 0'-4" studs 2 ea. side

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

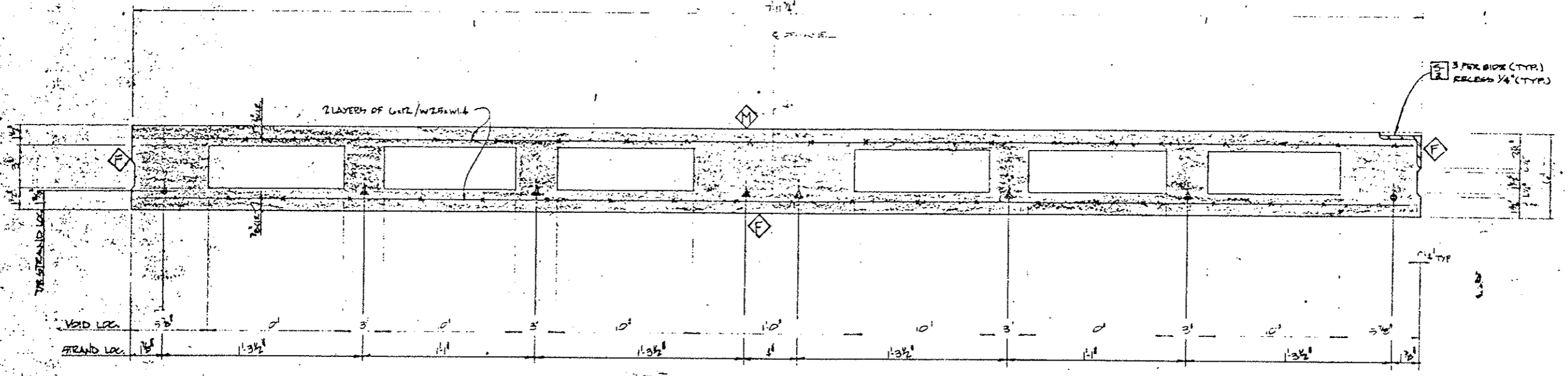




1 PLATE DETAIL



2 PLATE DETAIL



TYP SECTION THRU 6' PREC. P.C.

(TYP. PANEL W/ NO OPENINGS)  
 NOTE:  
 ● 1/2" STRAND  
 ▲ 3/8" STRAND  
 SCALE: 3" = 1'-0"

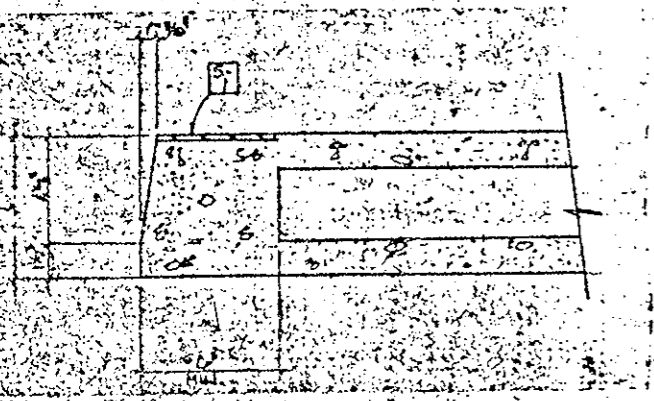
NOTE: ALL VOIDS MAY BE DISCONTINUOUS IN THE LENGTH OF ANY PIECE. THESE INTERMEDIATE DISCONTINUITIES SHALL BE LIMITED TO 2 PER PIECE AND SHALL BE A MAX. OF 6" IN LENGTH.

STRESSING DATA FOR 6' PREC. PANELS

$A_{ps} = 0.8186 \text{ in}^2$  (2-1/2"  $\phi$  & 6-3/8"  $\phi$ ) 270<sup>6</sup> STRAND  
 INITIAL PRESTRESS FACTOR = 0.70 fpu  
 $E_c = 155 \text{ ksi}$   
 $E_s = 125 \text{ ksi}$   
 $E_{ki} = 3500 \text{ psi}$   
 $F_c = 4200 \text{ psi}$

FINISH SCHEDULE FOR 6' PREC. PANELS

- ◆ FORM
- ◆ MACHINE SCREED



SECTION AT END OF 6' PREC. PANEL  
 TYPICAL AT ALL PANELS

SUBMITTED FOR FINAL APPROVAL MAR 21 1989

APPROVED FINAL  
 DATE 1/2/79  
 BY Rick Fugella

Stanley Structures

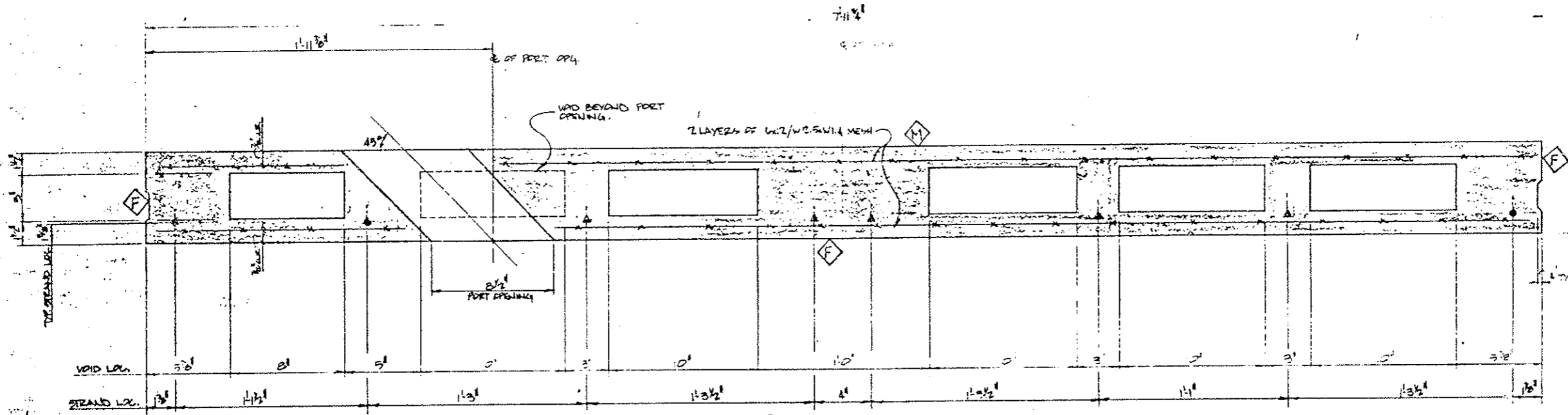
6401 Pacific Street  
 Denver, Colorado 80221  
 (303) 455-0001

Architect	Engineer	Customer	Project Location	Date	Checked	Scale
Colorado Highway Dept	Wayne Conroy	Wayne Conroy	Denver, CO	12/2/88	5/15	1/4" = 1'-0"

TYP. SECTION THRU 6' PREC. P.C. PANEL  
 (TYP. PANEL W/ NO OPENINGS)

Project: EMBARKMENT PANEL (200 SORE)

Sheet Number: 1 of 7  
 Job Number: 2130



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

TYP. SECTION THRU G.I.G. P.W.  
(TYP. PANEL w/ PORT OPENING)  
NOTE:  
● 1/2" STRAND  
▲ 3/8" 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 Tringali*

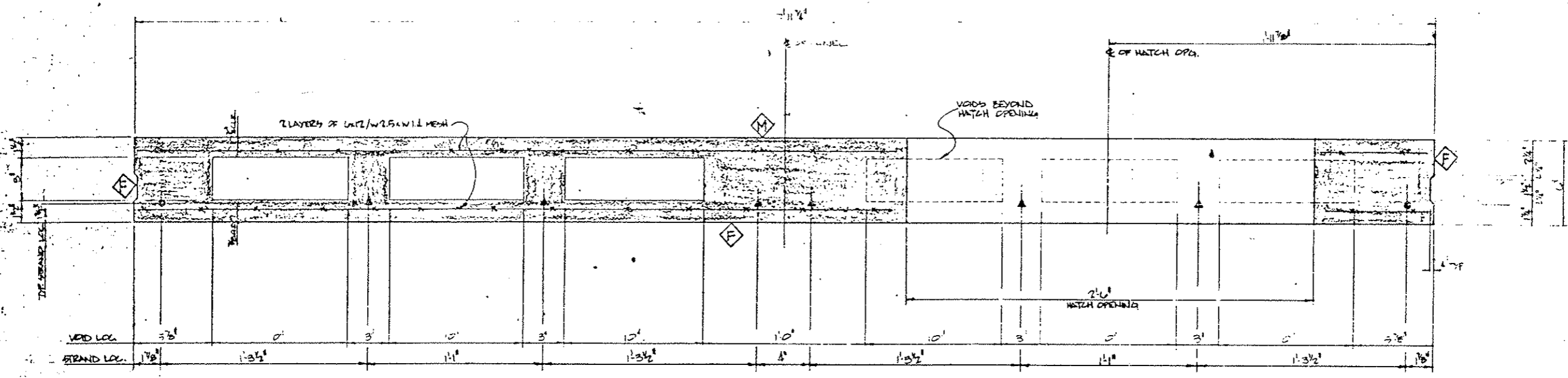
Stanley Structures  
8801 Peoria Street  
A Subsidiary of  
The Stanley Works  
Cedar Rapids, IA 52404

Architect Engineer Colorado Highway Dept.	Project No. EN 750
Customer Weaver Conrete	Project Leader Tom Fongio
Drawn C. E. / J. S.	Est. / Checked J. H. / J. H.
Date 1/24/78	Scale 1/4" = 1'-0"

TYP. SECTION THRU G.I.G. P.W.  
(TYP. PANEL w/ PORT OPENING)

Structure 12-48-CONCRETE TUNNEL (289 ROAD)  
Location

Sheet Number 2 of 7
Job Number 2138



TOP SECTION THRU C44 P.W.  
(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.

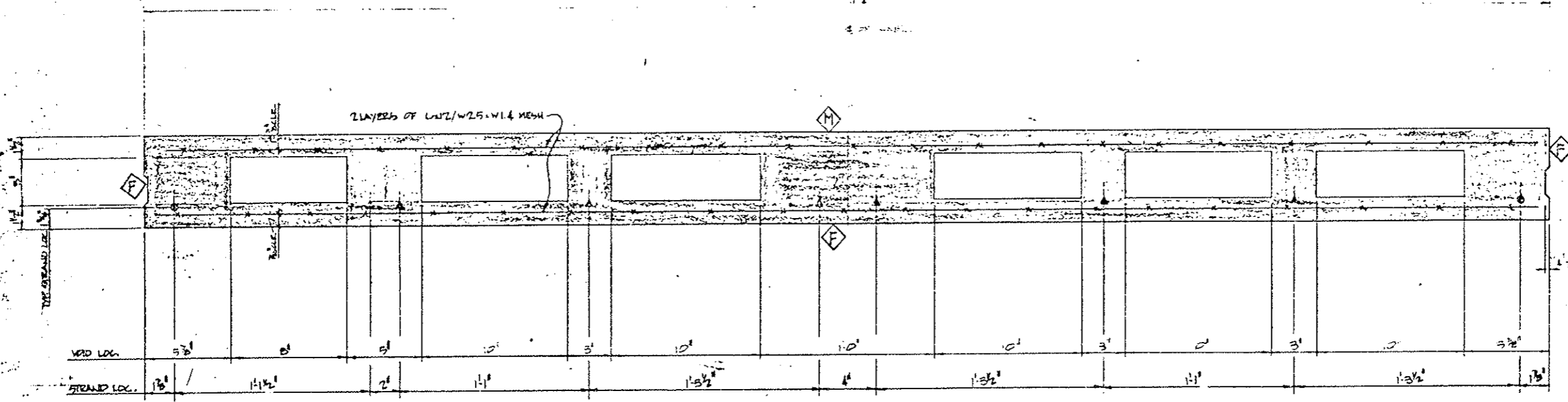
SUBMITTED FOR FINAL APPROVAL  
MAR 21 1979

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

Stapley Structures  
A Subsidiary of  
The Stapley Works  
2801 Pecos Street  
Denver, Colorado 80221  
(303) 438-4301

Architect	Engineer	Inspector	Customer	Project Leader	Drawn	Checked	Date
	Colorado Highway Dept.		Weaver, Conifer	Tom Ruppel	E. Eyster		1-22-78
TOP SECTION THRU C44 P.W. (TYP. PANEL W/ HATCH OPENING)							
Structure: EMERGENCY TUNNEL (2 <sup>ND</sup> BOOLE)							
Sheet Number	3 of 7						
Job Number	2138						

43 OK



TYP. SECTION THRU G.G. FIN.  
(TYP. TRANSITION PANEL)

NOTE:  
 8: #4 STRAND  
 4: #6 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]

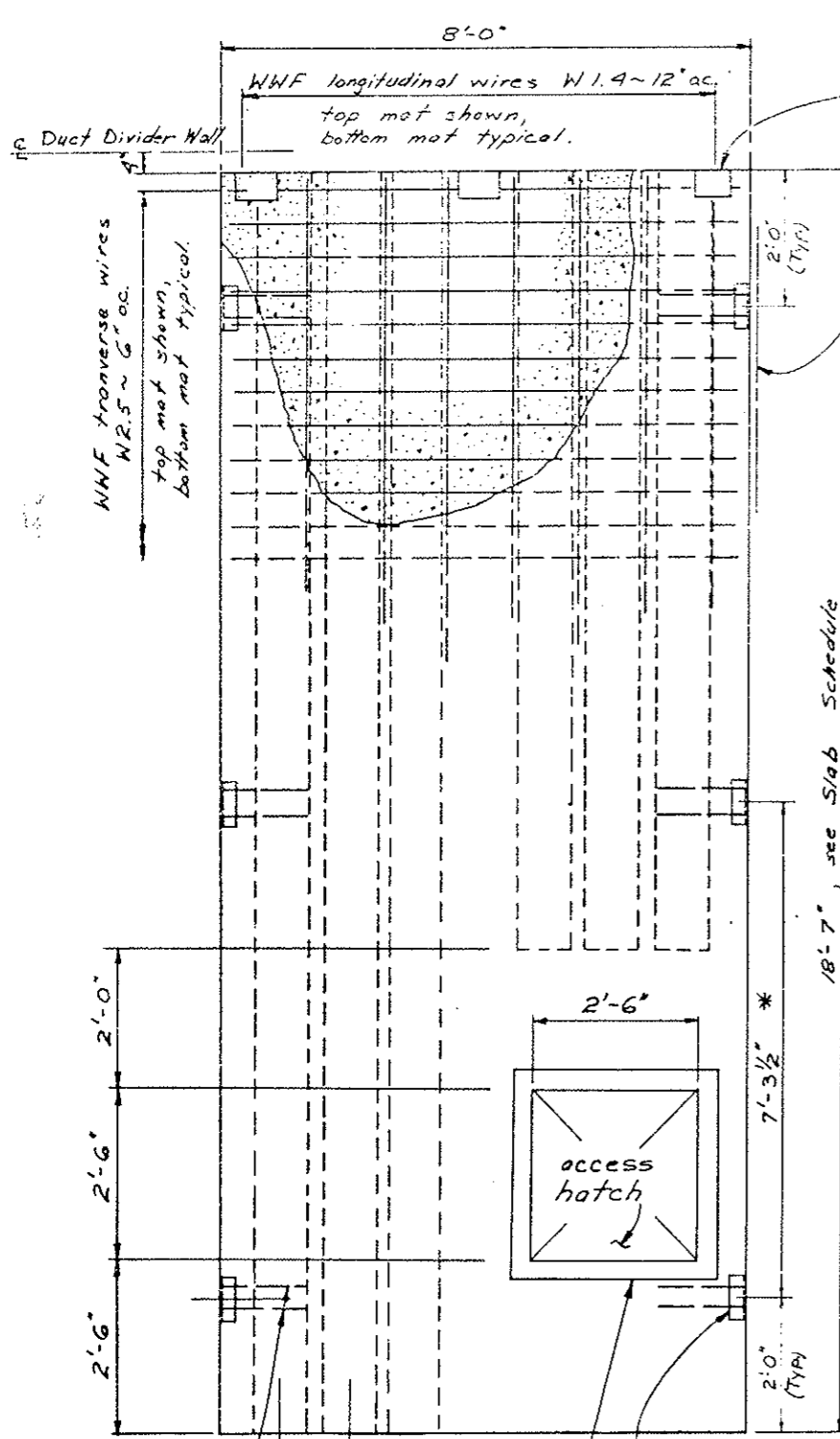
Stanley Structures  
 A Subsidiary of  
 The Stanley Works  
 5001 Pecos Street  
 Denver, Colorado 80221  
 (303) 454-0301

Architect	Colorado Highway Dept.	EA/TKO
Engineer	Customer Weaver Concrete	EA
Project Leader	Tom Condit	EA
Drawn	E. E. [Signature]	Checked: [Signature]
Date	1-24-79	Date
Structure	Transition Panel (2" Holes)	Sheet Number
Location	TYP. SECTION THRU G.G. FIN. (TYP. TRANSITION PANEL)	4 of 7
Job Number		2135

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

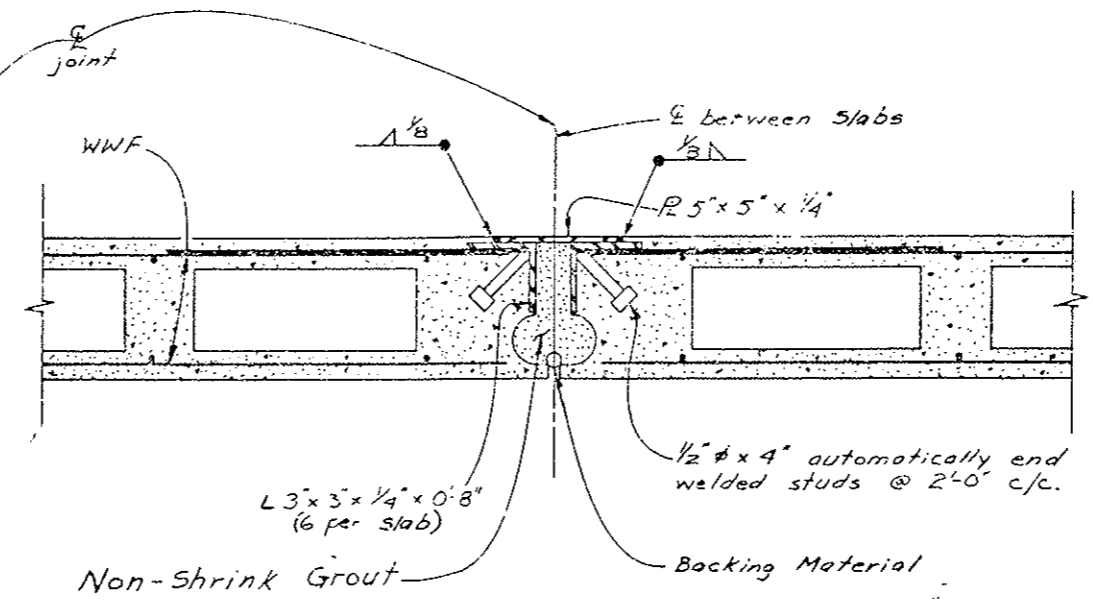
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XXXIII	COLORADO	I70-3(83)220	94	

REVISIONS	

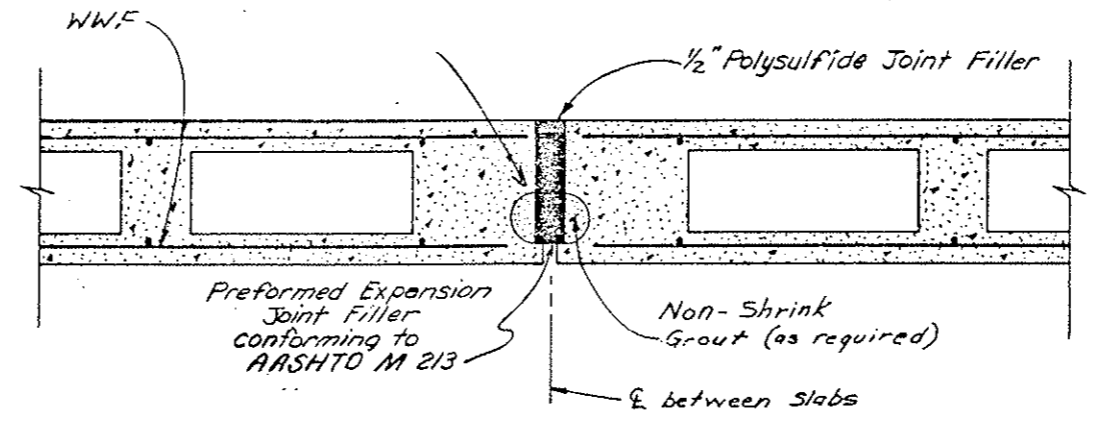


PLAN of SLAB No. 3

R 5" x 5" x 1/4" see Dwg. No. C-2.



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 (C/A)

\* 6'-4 1/2" for Supply slabs

Slab No.	L (feet)	A (Concrete) (in <sup>2</sup> )	S (Concrete) (in <sup>3</sup> )	V (%)	F <sub>i</sub> (KIPS)	C <sub>i</sub>	F <sub>f</sub> (KIPS)	C <sub>f</sub>	Concrete Strength	
									f' <sub>ci</sub> (PSI)	f' <sub>c</sub> (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<sub>s</sub> = 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<sub>i</sub> =  $\frac{A_s}{C_i} \times F_s \times A_g$

FINAL PRESTRESS FORCE: THE FORCE REMAINING PER SLAB AFTER ALL LOSSES  
F<sub>f</sub> =  $\frac{A_s}{C_f} \times F_s \times A_g$

A<sub>g</sub> = AREA OF PRESTRESSING STEEL

F<sub>s</sub> = ULTIMATE STRENGTH OF PRESTRESSING STEEL

CONCRETE STRENGTH: f'<sub>ci</sub> - IS AT TIME OF RELEASE OF PRESTRESS FORCE.  
f'<sub>c</sub> - IS AT 28 DAYS.

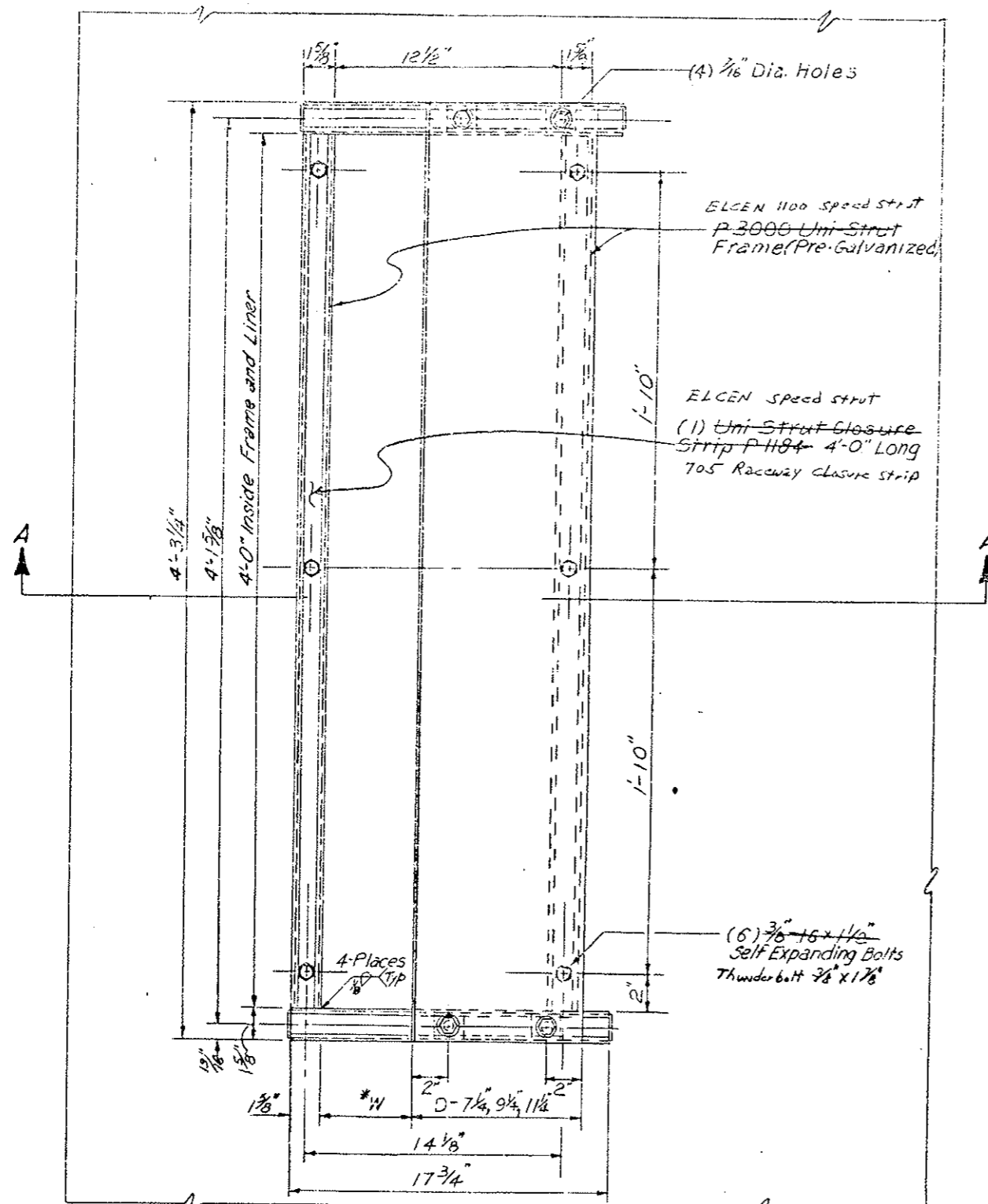
CLEARANCE: THE MINIMUM DISTANCE BETWEEN GROUPS OR INDIVIDUAL STRANDS IS 1-3/4" (MEASURED BETWEEN CENTERS OF ADJACENT STRANDS).

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

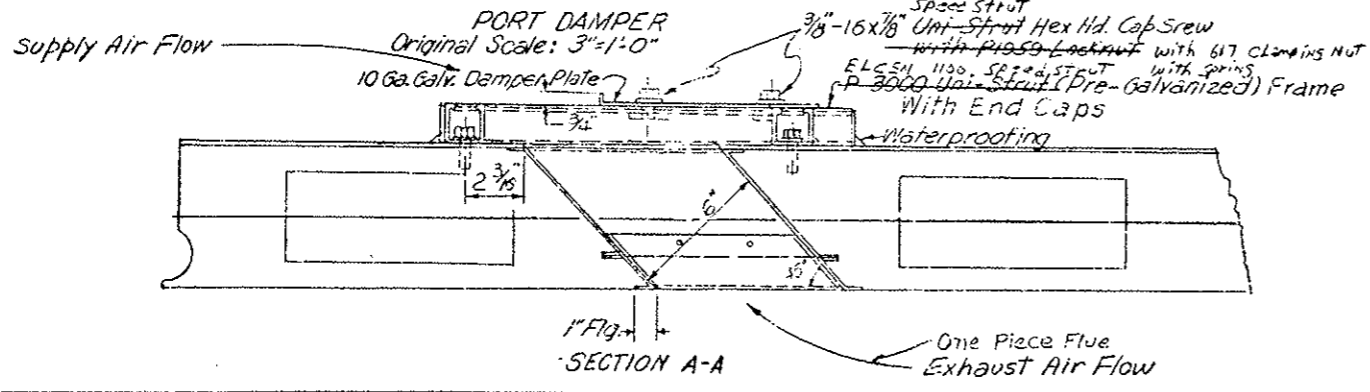
▲ THE LENGTHS OF SLABS FROM STA. 37+80.4 (WEST VENT BLDG.) TO STA. 40+82.43 (BEGIN SEGMENT 55) AND FROM STA. 121+22.43 (END SEGMENT S164) TO STA. 123+74.6 (EAST VENT BLDG.) WILL VARY FOR LENGTHS SEE SHEET NOS. C-17, C-25.

<b>DIVISION OF HIGHWAYS</b>	
<b>6" HOLLOW CORE PRESTRESSED CEILING SLAB DETAILS</b>	
Designer <i>C.D.O.H.</i>	Structure <i>F-13-X</i>
Detailer <i>W.R. HESSLER</i>	Number
Drawing Number <i>C-9</i>	
Revision Date	(Preliminary Stage Only)

DATE	CHECKED BY	DATE	CHECKED BY
6-77	C.D.O.H.	6-77	W.R.H.
7-78	S.P.C.	7-78	W.R.H.
8-78	M.P.H.	8-78	W.R.H.



PLAN VIEW



SECTION A-A

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 1/8"	7 7/8"
9-10	4 3/4"	2 7/8"	93-94	6 3/8"	7 3/4"
11-12	4 13/16"	2 7/8"	95-96	6 1/8"	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 3/8"	7 1/8"
17-18	5 9/16"	3 1/8"	101-102	7"	6 7/8"
19-20	5 3/4"	3 1/4"	103-104	7 1/8"	6 1/8"
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 1/8"
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 1/8"
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 3/4"
35-36	7 5/8"	4 1/8"	119-120	8 1/8"	5 1/8"
37-38	7 7/8"	4 1/8"	121-122	8 1/8"	4 13/16"
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 5/8"	127-128	8 1/8"	4 1/2"
45-46	8 3/16"	4 9/16"	129-130	8"	4 3/8"
47-48	8 1/8"	4 1/8"	131-132	7 7/8"	4 1/8"
49-50	8 1/8"	5 1/8"	133-134	7 3/8"	4 1/8"
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 1/8"	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 1/16"
65-66	7 1/16"	6 1/8"	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 1/8"	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 3/16"	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

SUPPLY		EXHAUST			
Qty. Req'd	Segment No.	Damper Width-D	Qty. Req'd	Segment No.	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 1/4"	112	S-49 thru S-66 S-103 thru S-120	9 1/4"
262	S-29 thru S-70 S-99 thru S-140	7 1/4"	91	S-67 thru S-102	7 1/4"

(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

**DIVISION OF HIGHWAYS**

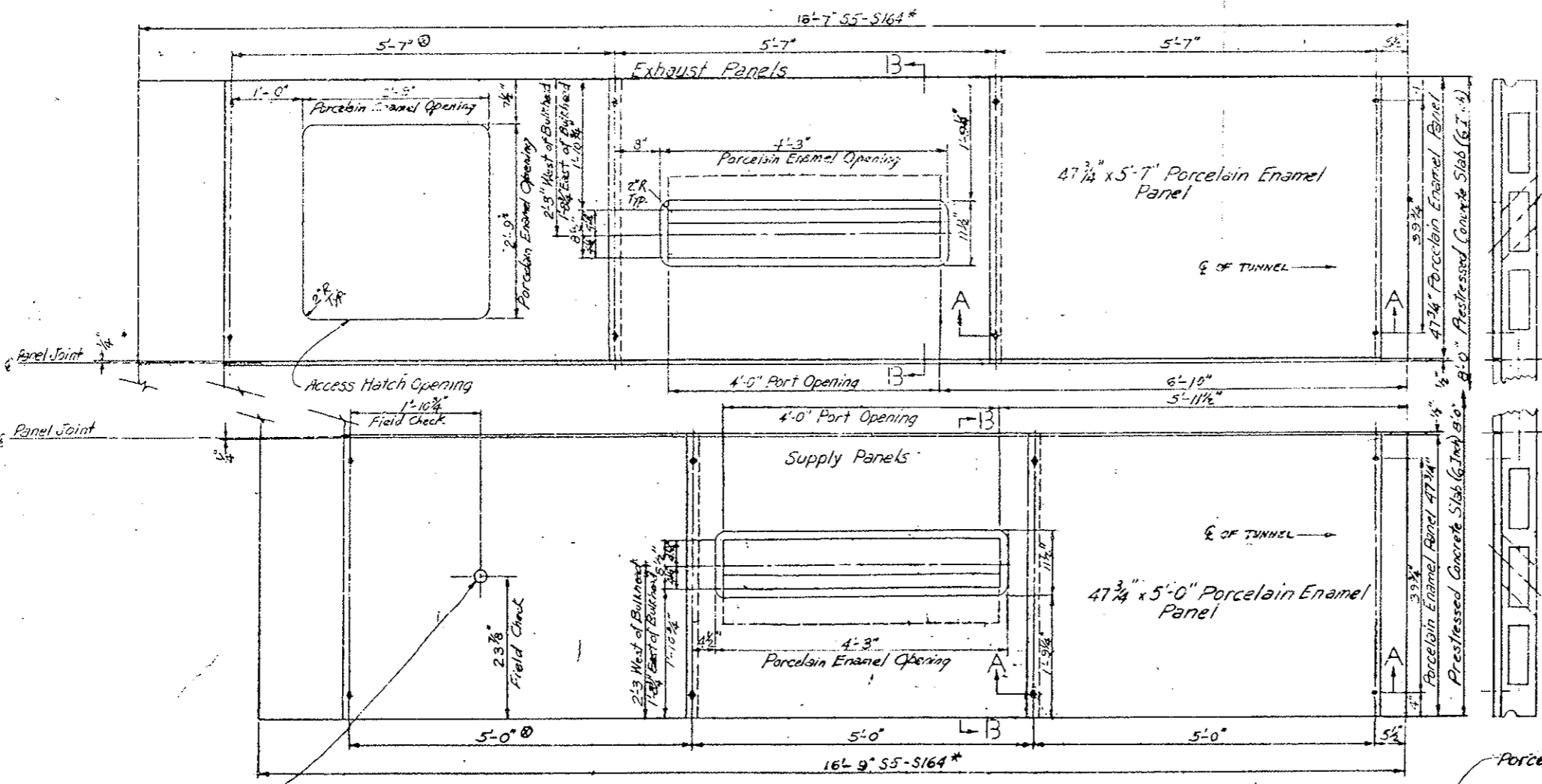
**PORT DAMPER ASSEMBLY DETAILS**

Designer	Structure
Drawer	Numbers
Drawing Number C-10 of Drawings	

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

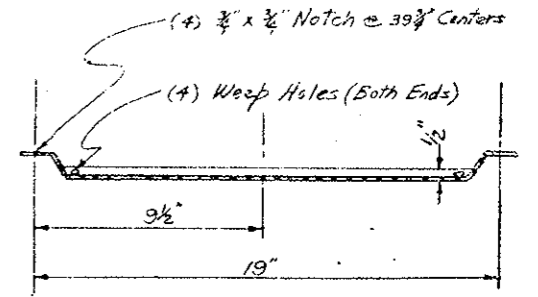
FEDERAL AID REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(83)220	96	

REVISIONS	



\* Ceiling Slab lengths in Transition areas see Dwg. Nos. C-17, C-25

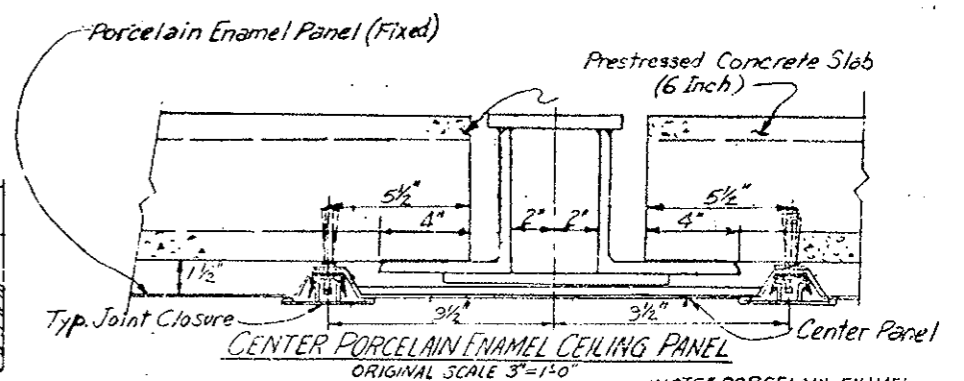
\* Porcelain Enamel Ceiling panels located adjacent to the Tunnel Wall to be approximately 2" shorter at the following locations:  
 Supply and Exhaust panels Sta 38+81.43 to 40+82.43  
 Supply panels only Sta 121+22.43 to 122+22.93



CENTER CLOSURE PANEL DETAIL

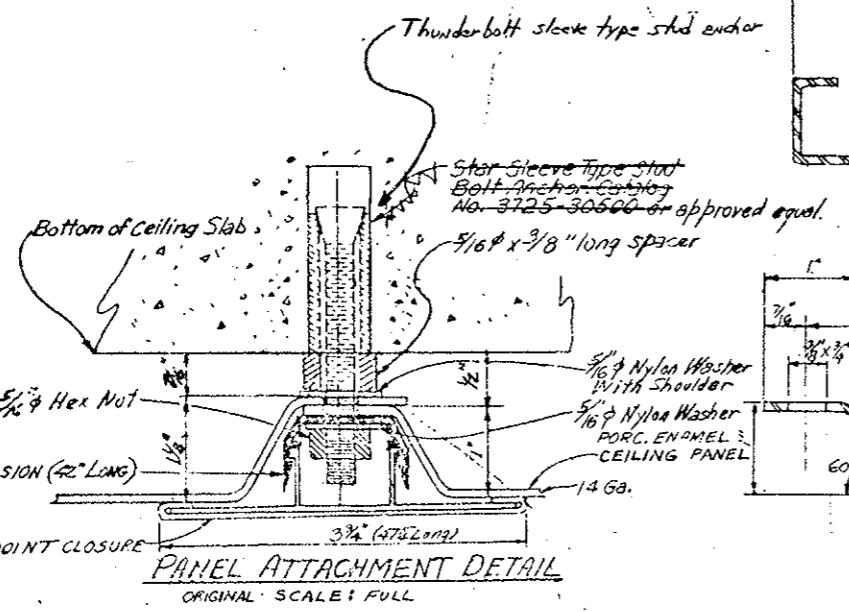
Field cut 2 1/8" hole for Message Board Shaft (11 Key) ORIGINAL SCALE: 1"=1'-0"

VIEW OF CEILING FROM BELOW

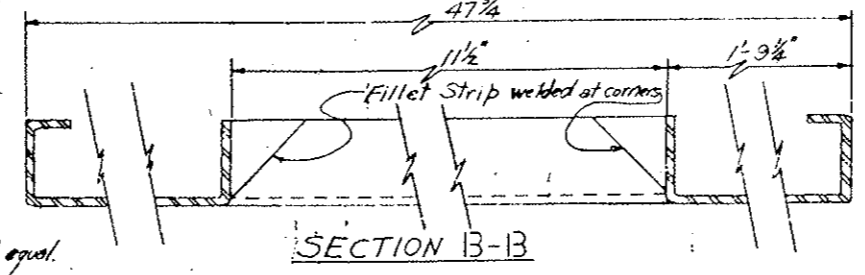


CENTER PORCELAIN ENAMEL CEILING PANEL ORIGINAL SCALE 3"=1'-0"

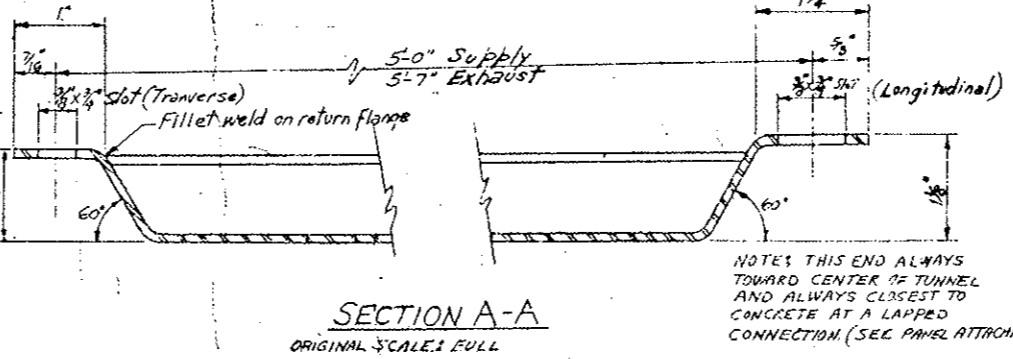
NOTES PORCELAIN ENAMEL PANELS ARE ATTACHED TO BOTTOM OF PRECAST SLABS.



PANEL ATTACHMENT DETAIL ORIGINAL SCALE: FULL



SECTION B-B



SECTION A-A ORIGINAL SCALE: FULL

NOTES 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 Numbers
Detailer: J. LETCHWORTH	
Drawing Number: C-11	of Drawings

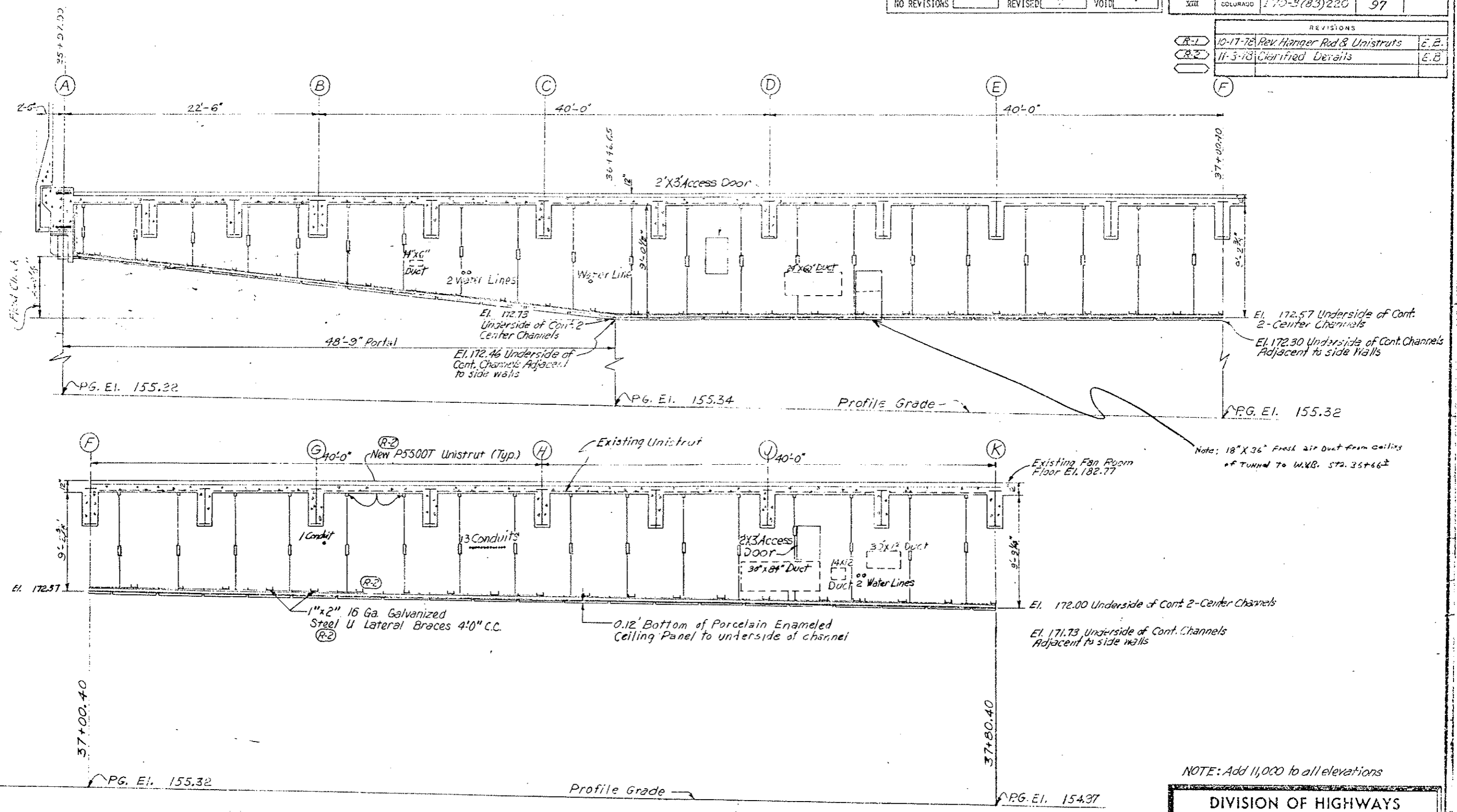
DESIGNED BY	DATE	CHECKED BY
CHECKED BY		QUANTITIES BY



AS CONSTRUCTED  
 NO REVISIONS [ ] REVISED [ ] VOID [ ]

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	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	CHECKED BY	DATE	QUANTITIES BY	CHECKED BY	DATE

NOTE: Add 11,000 to all elevations

**DIVISION OF HIGHWAYS**

ELEVATION THRU SUSPENDED CEILING  
 WEST VENTILATION BUILDING

Designer C.D.H.	Structure
Detailer J. Letchworth	Numbers
Drawing Number C-12	of Drawings

Revision Dates (Preliminary Stage Only)

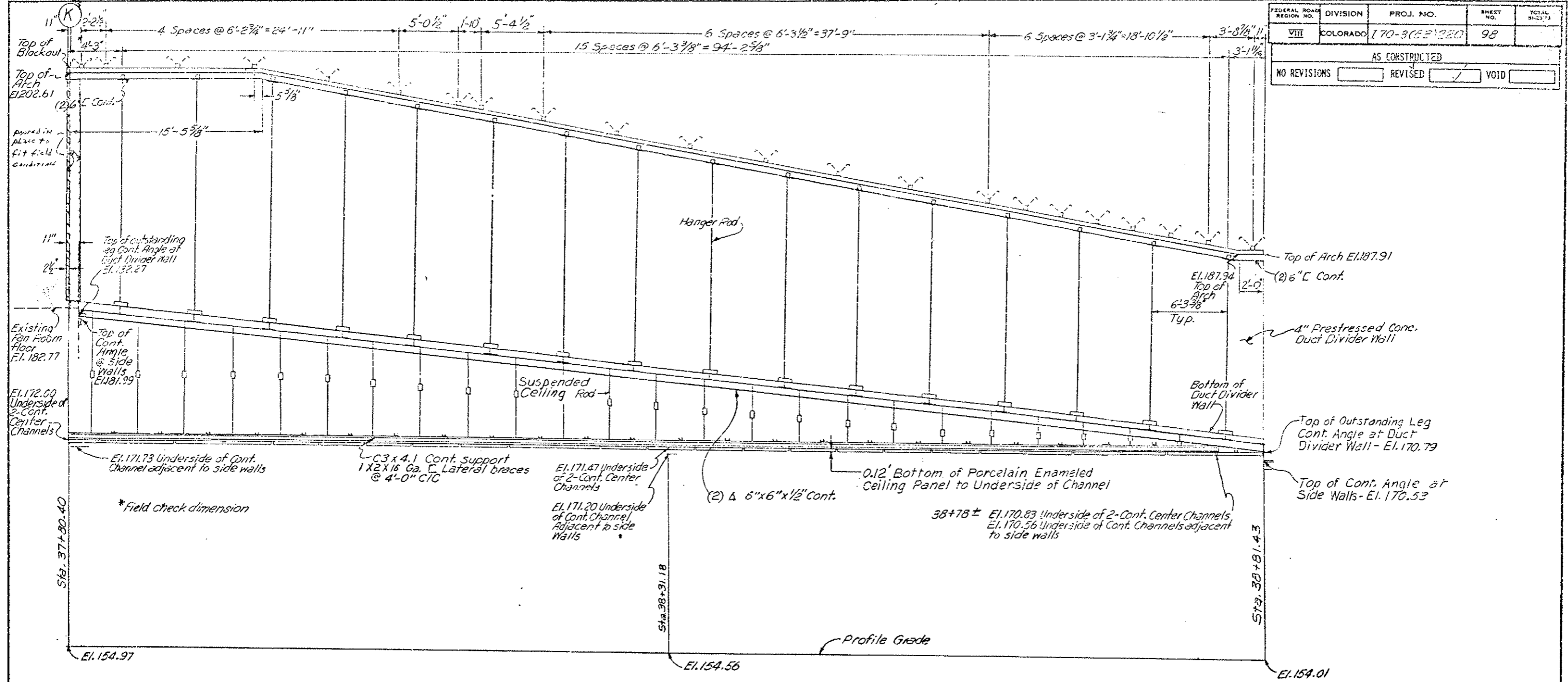
Scale 1" = 4'



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

AS CONSTRUCTED

NO REVISIONS  REVISED  VOID



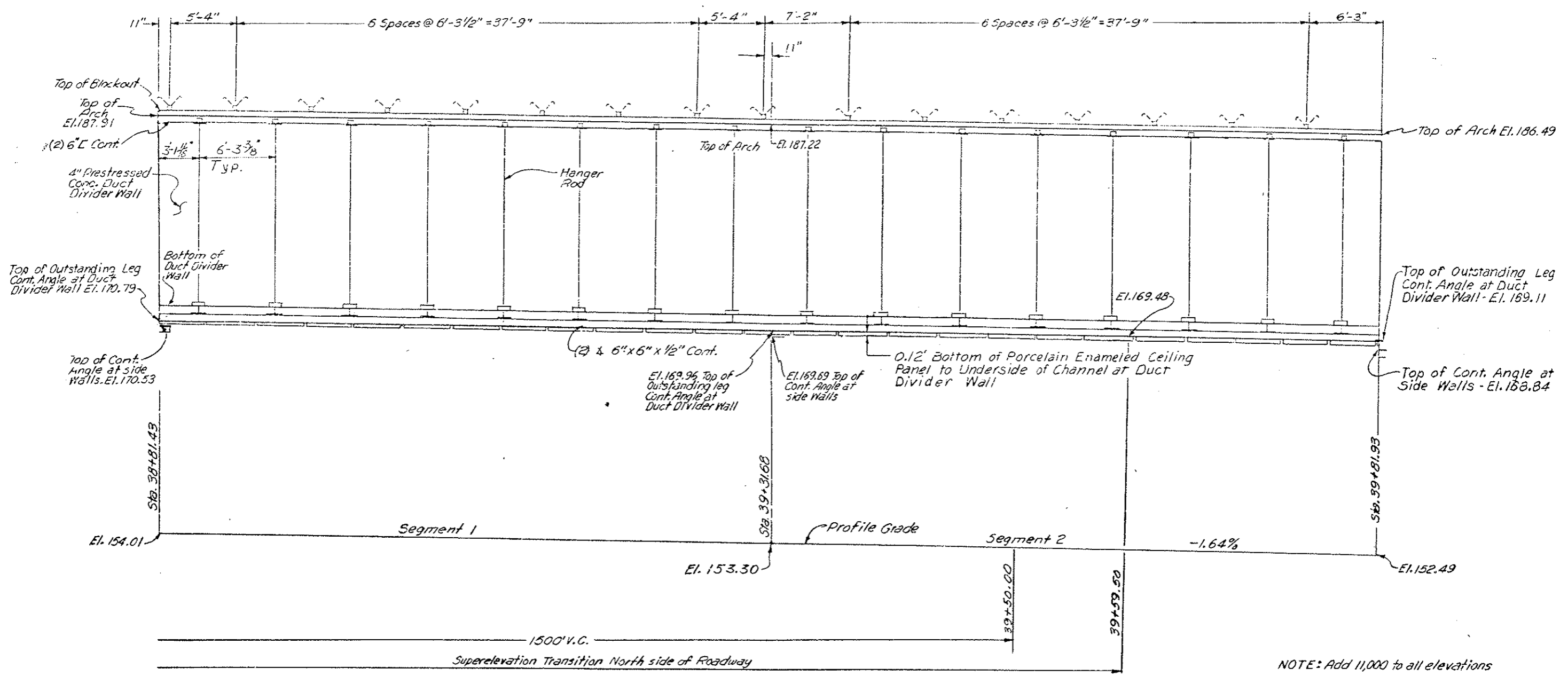
NOTE: Add 11,000 to all elevations

<b>DIVISION OF HIGHWAYS</b>	
DUCT WALL AND CEILING PROFILE WEST TRANSITION AREA 37+80.40 TO 38+81.43	
Designer	Structure <i>F-13-X</i>
Detailer	Numbers
Drawing Number <i>C-13</i>	of Drawings

Scale 1" = 4'

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
11	COLORADO	170-3(23)220	99	

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID



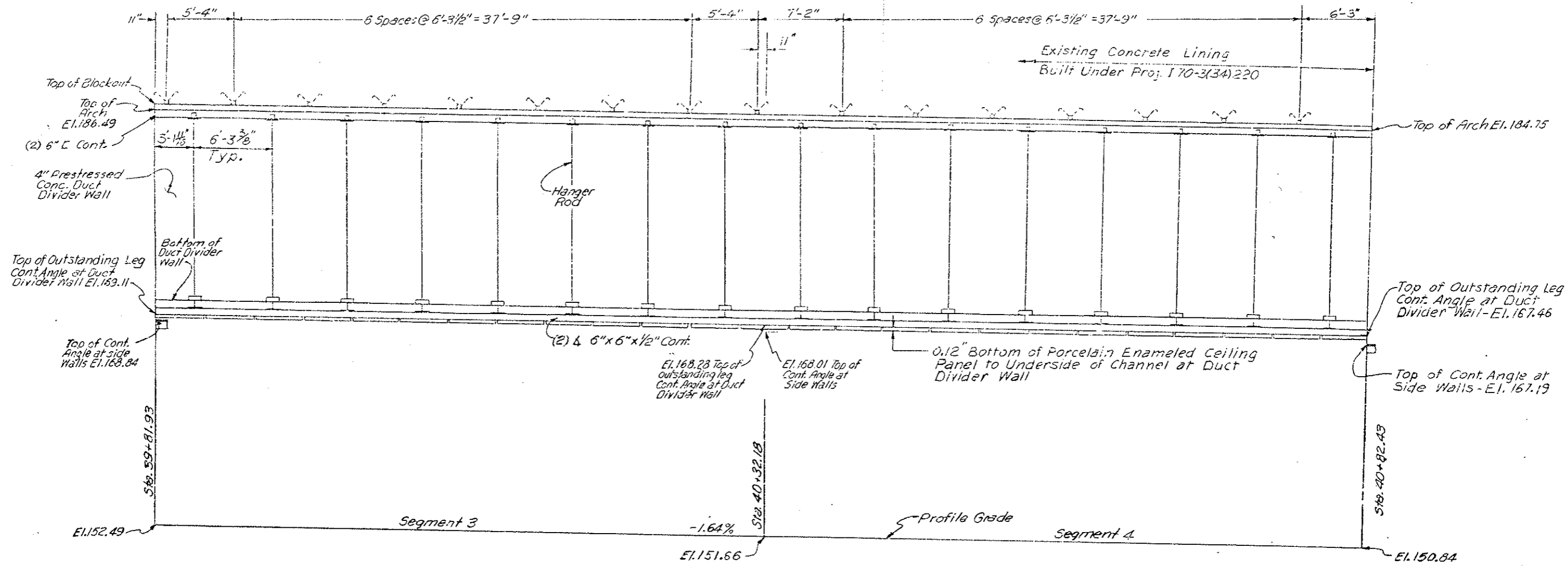
NOTE: Add 11,000 to all elevations

Scale 1" = 4'

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

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83) 220	100	

AS CONSTRUCTED  
 NO REVISIONS  REVISED  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

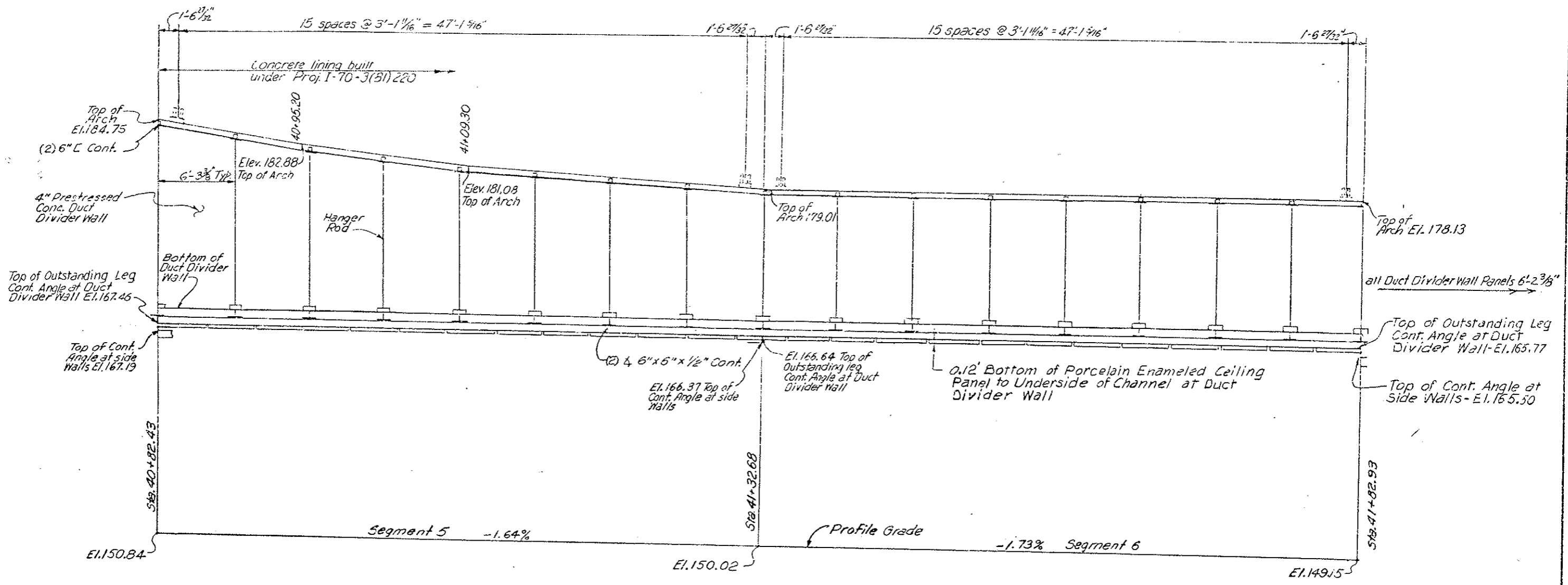
Designer	Structure F-13-X
Detailer	Numbers
Drawing Number C-15	of Drawings

Scale 1" = 4'

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

AS CONSTRUCTED

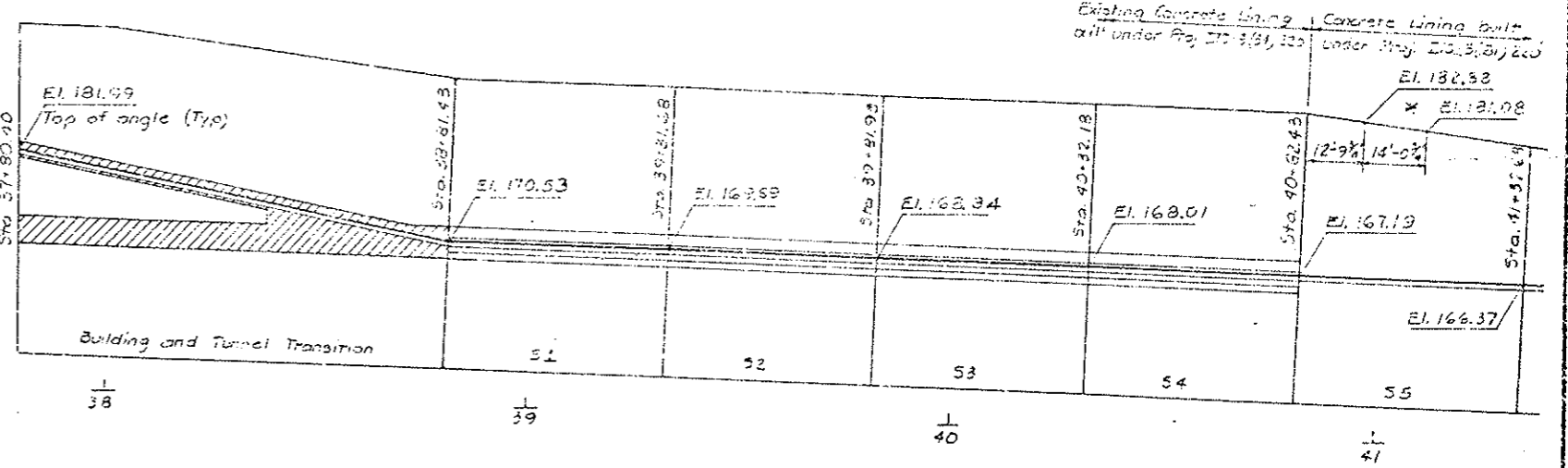
NO REVISIONS  REVISED  VOID



NOTE: Add 11,000 to all elevations

Scale 1" = 4'

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



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

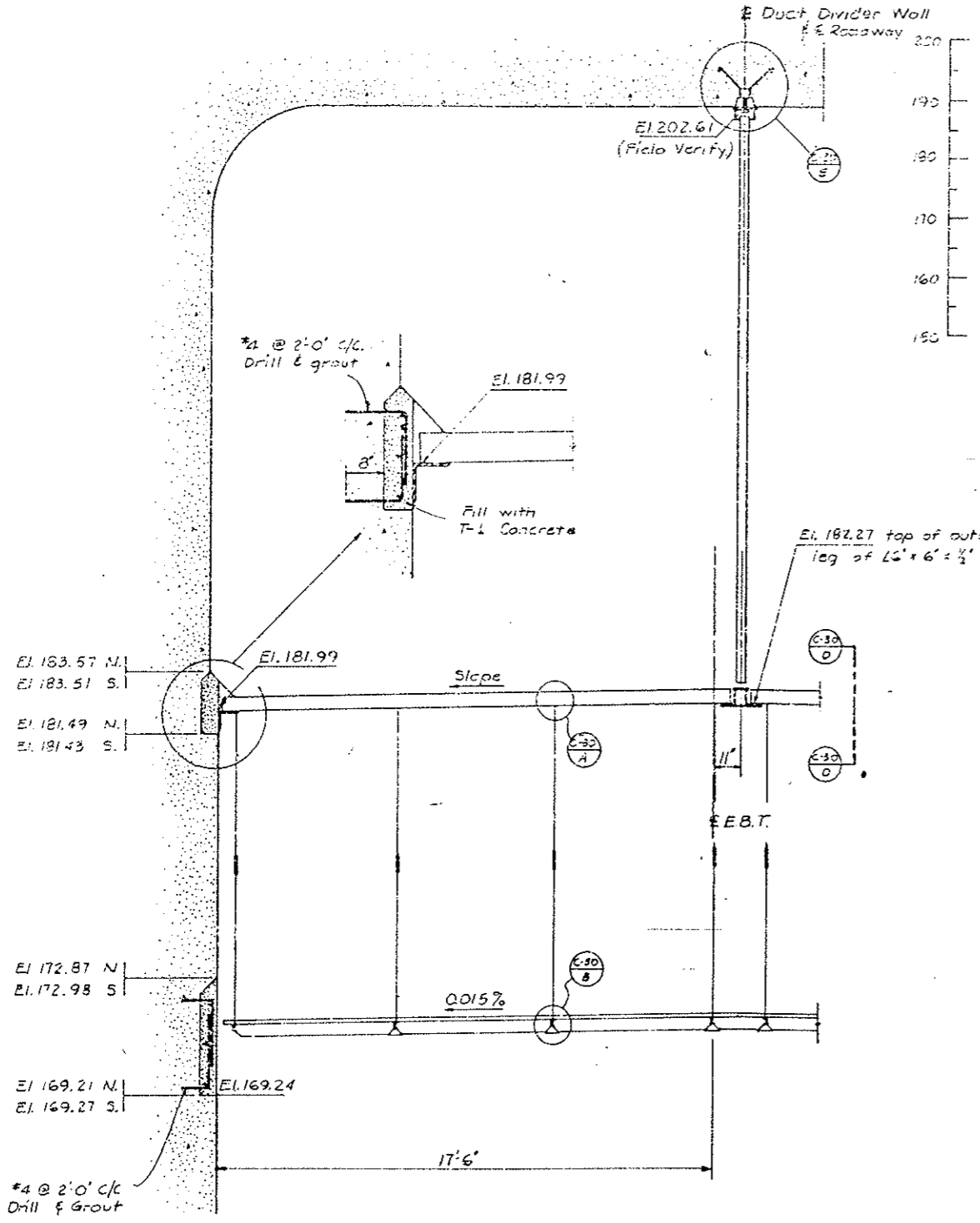
Existing Concrete lining built under Proj. E70-3(61)220  
 Concrete Lining built under Proj. E70-3(61)220

\* 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(61)220 in the 14'-0" shown.

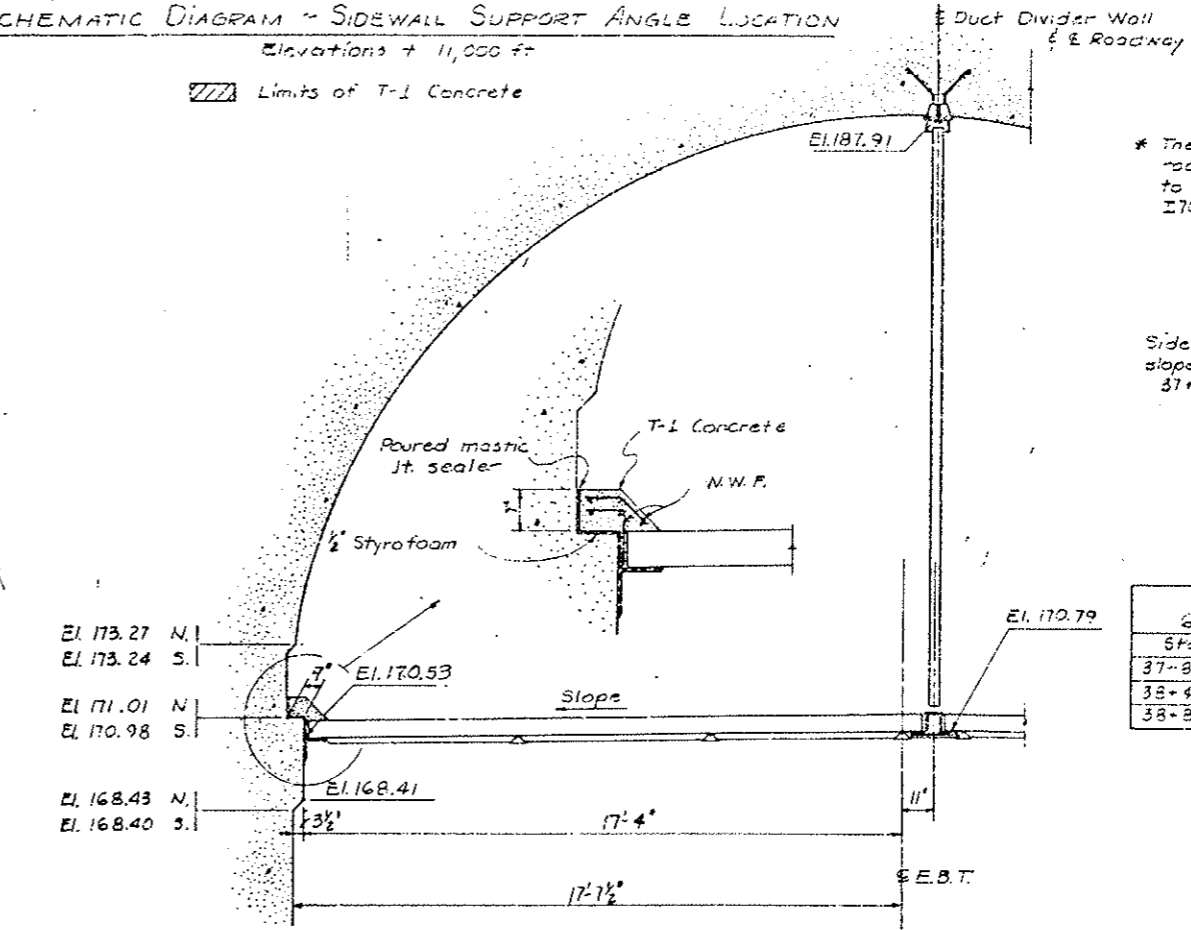
Sidewall Support Angle 8"x8"x1/2" slopes at -11.34% from Sta. 37+80.4 to Sta. 38+81.4

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

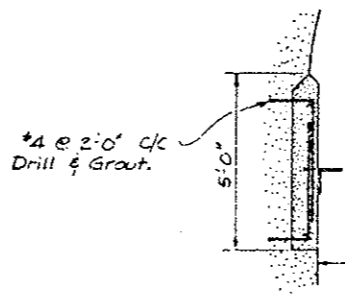
DESIGNED BY	C.D.O.H.	CHECKED BY	E.R. Lere
DATE	8-77	QUANTITIES BY	W.S.H.
INITIAL	C.D.O.H.	CHECKED BY	E.R. Lere
DATE	8-77	QUANTITIES BY	W.S.H.



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)

<b>DIVISION OF HIGHWAYS</b>	
WEST TRANSITION AREA	
SECTIONS	
Designer	C.D.O.H.
Structure	F-13-X
Detailer	E.R. Lere
Numbers	
Drawing Number	C-17

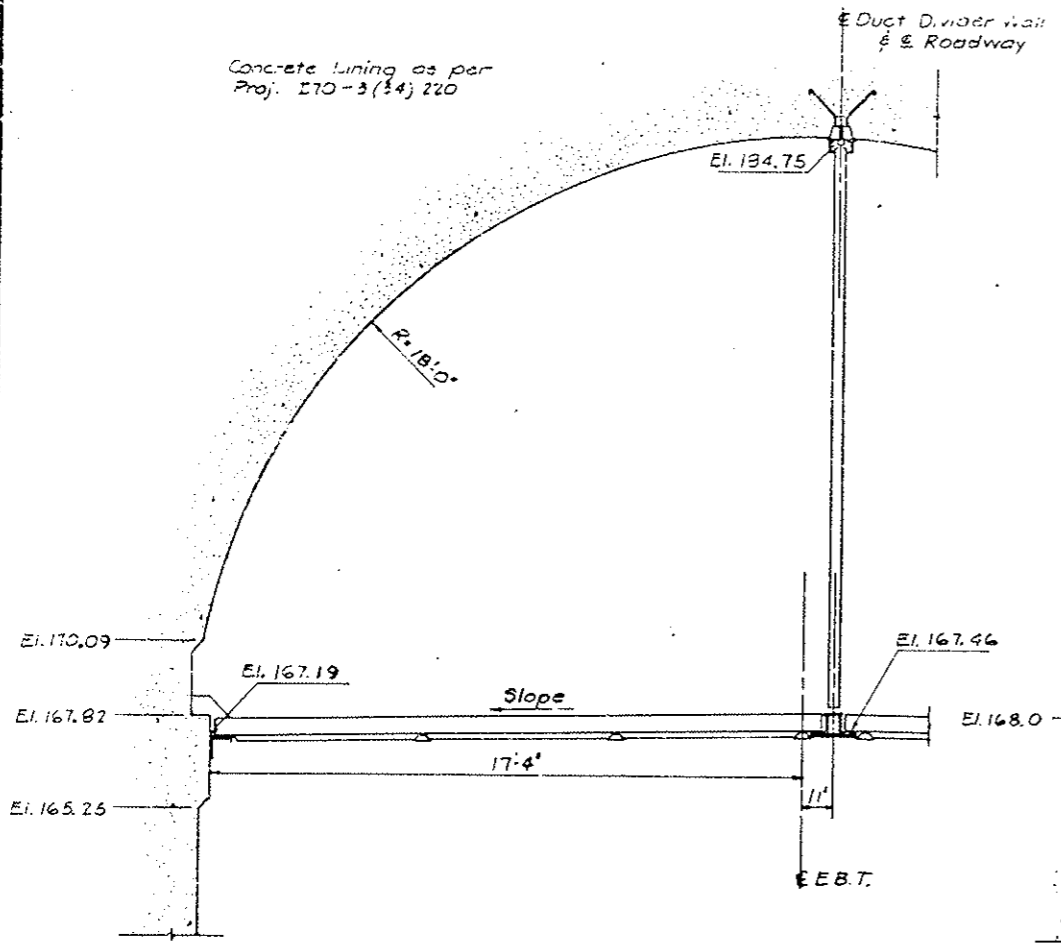
AS CONSTRUCTED  
 NO REVISIONS  REVIDED  VOID

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

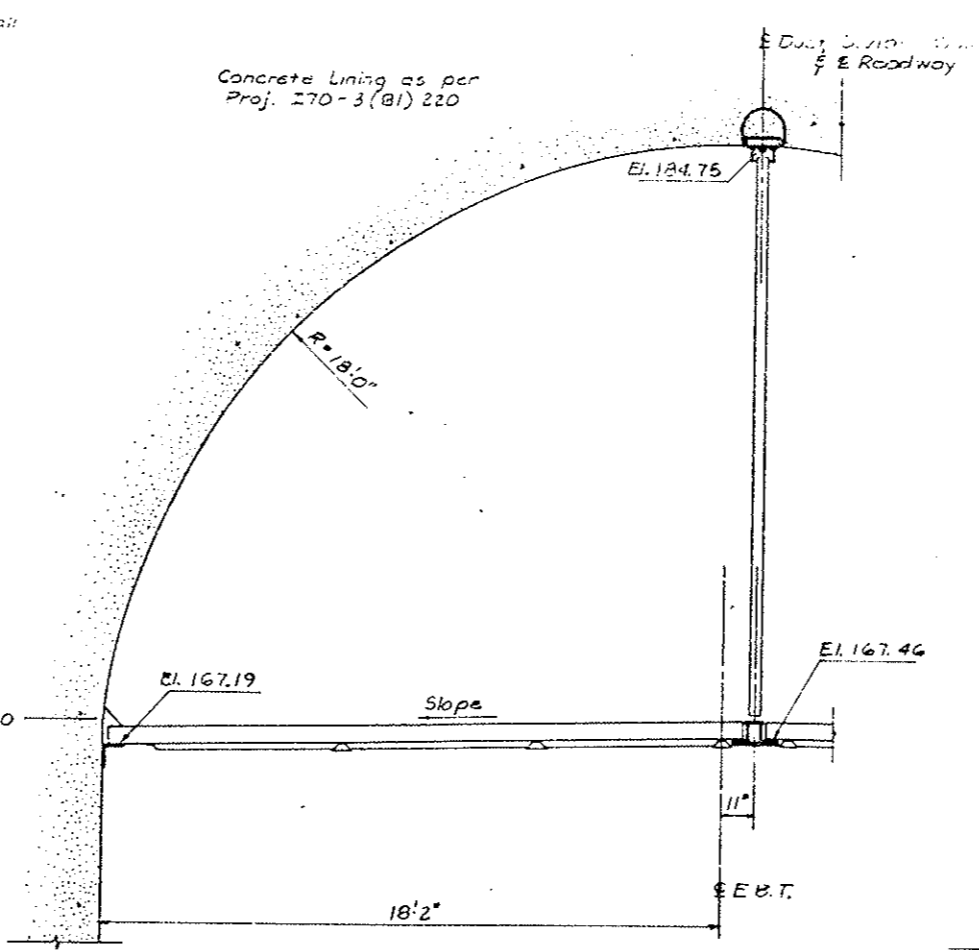
  

REVISIONS	

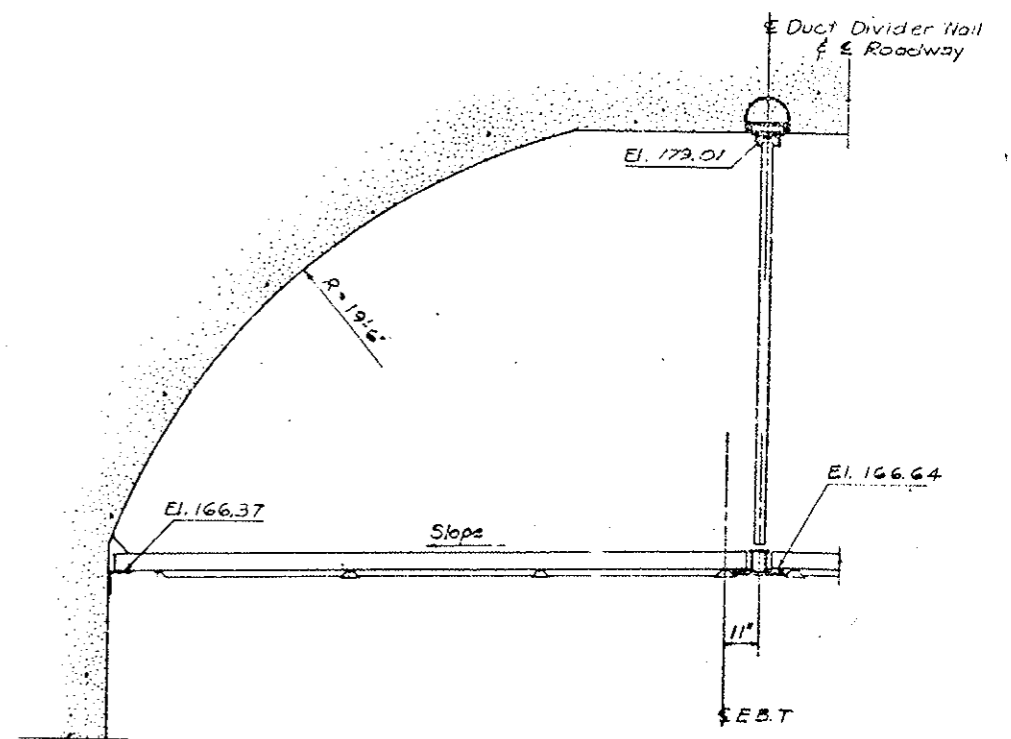
DESIGNED BY	CHECKED BY	DATE	INITIAL
	JMP	9-77	
CHECKED BY			



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



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



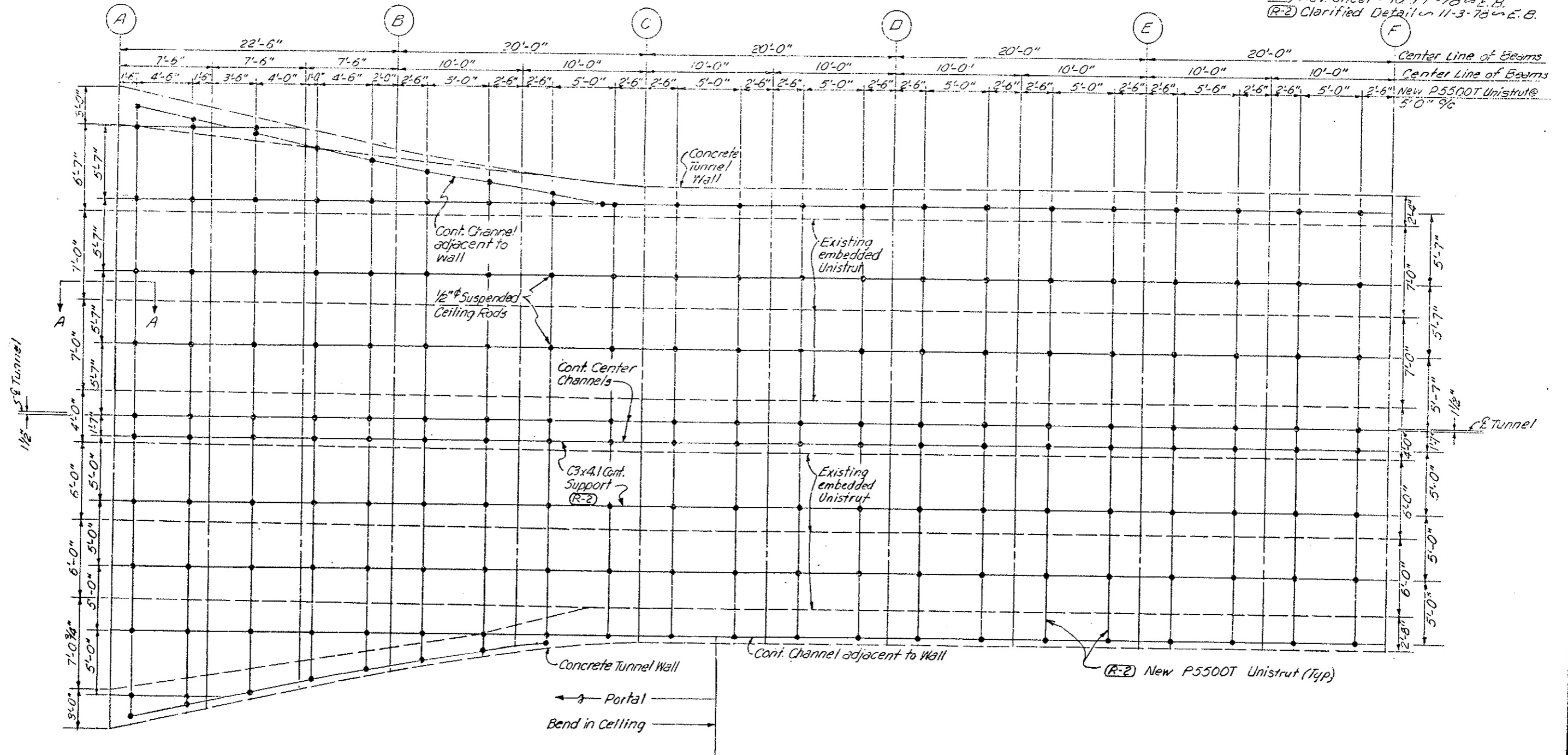
SECTION @ STA. 41+32.68  
 (Tunnel Side)

<b>DIVISION OF HIGHWAYS</b>	
WEST TRANSITION AREA	
SECTIONS	
Designer C.D.H.	Structure F-13-X
Detailer B.R. Lore	Numbers
Drawing Number C-18	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(25)220	104	

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

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

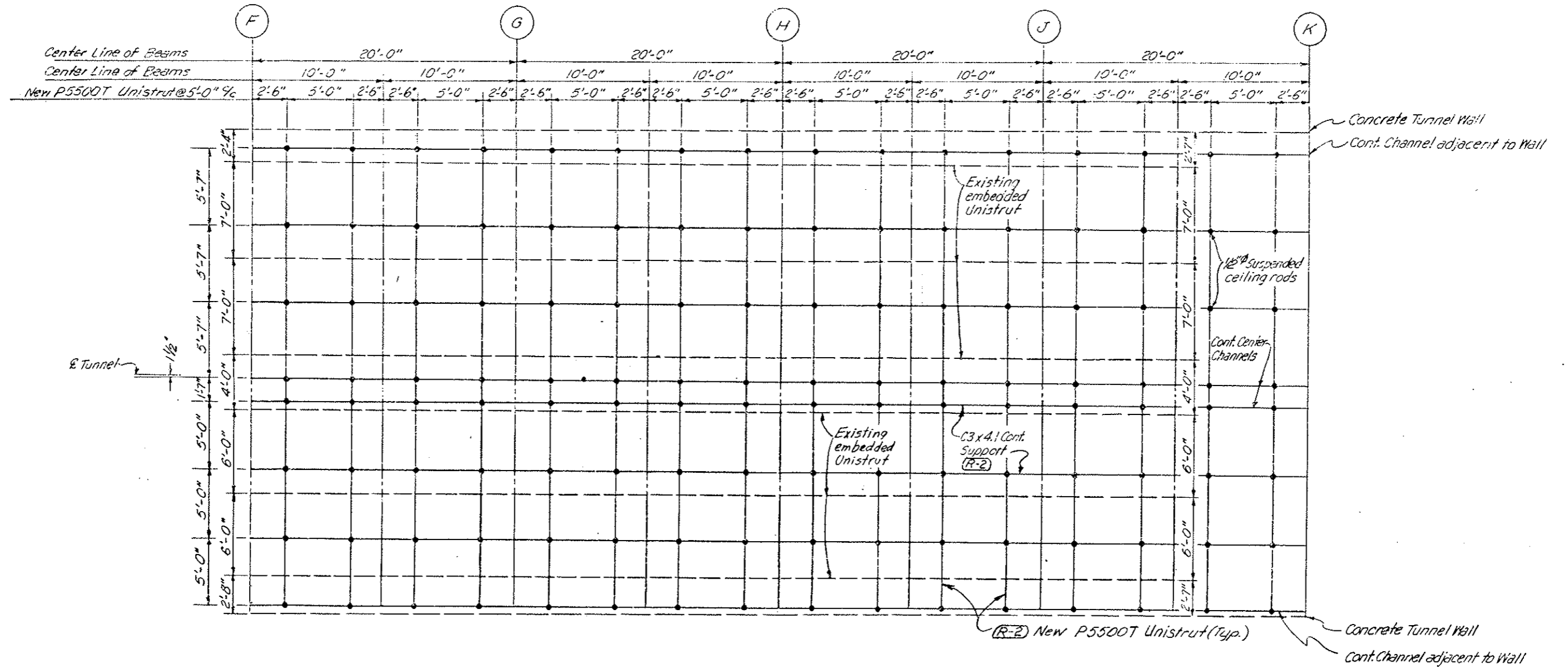
See Section A-A on Plan Sheet for East Ventilation Building

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
VIII	COLORADO	170-3(B2)22C	104X	

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

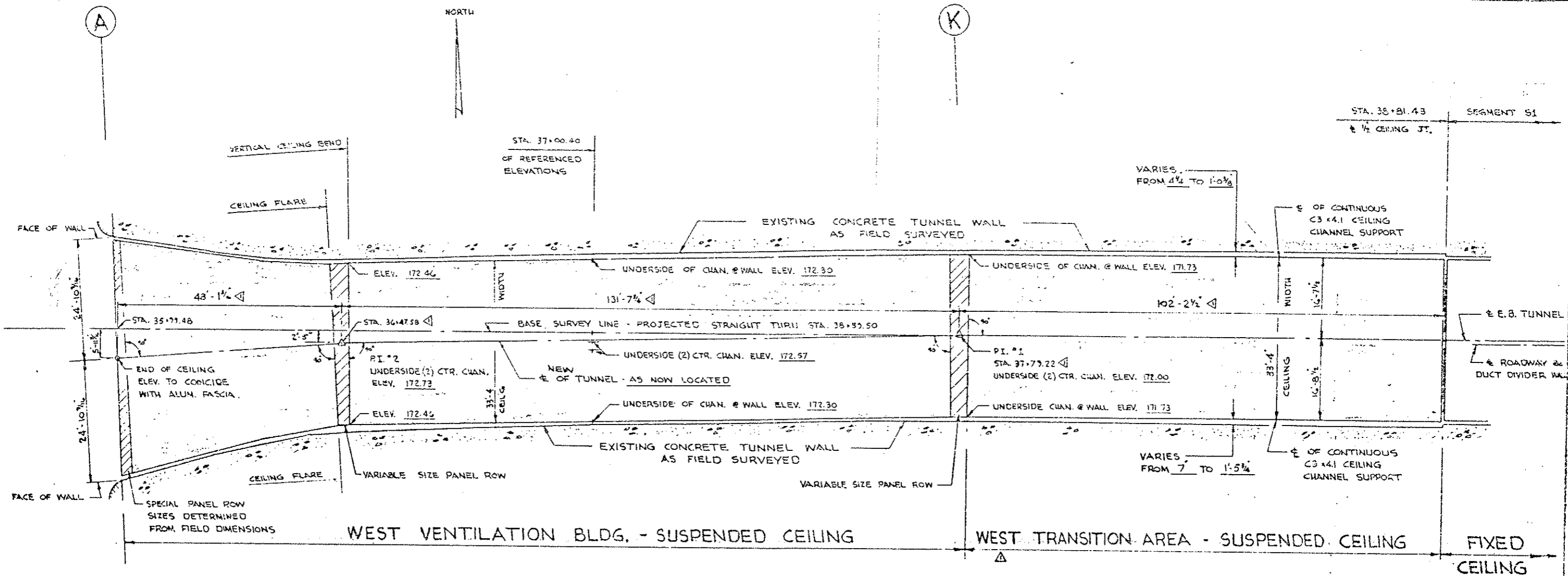
(R-1) Added Sheet 10-17-78 E.B.  
 (R-2) Clarified Detail 11-3-78 E.B.



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	



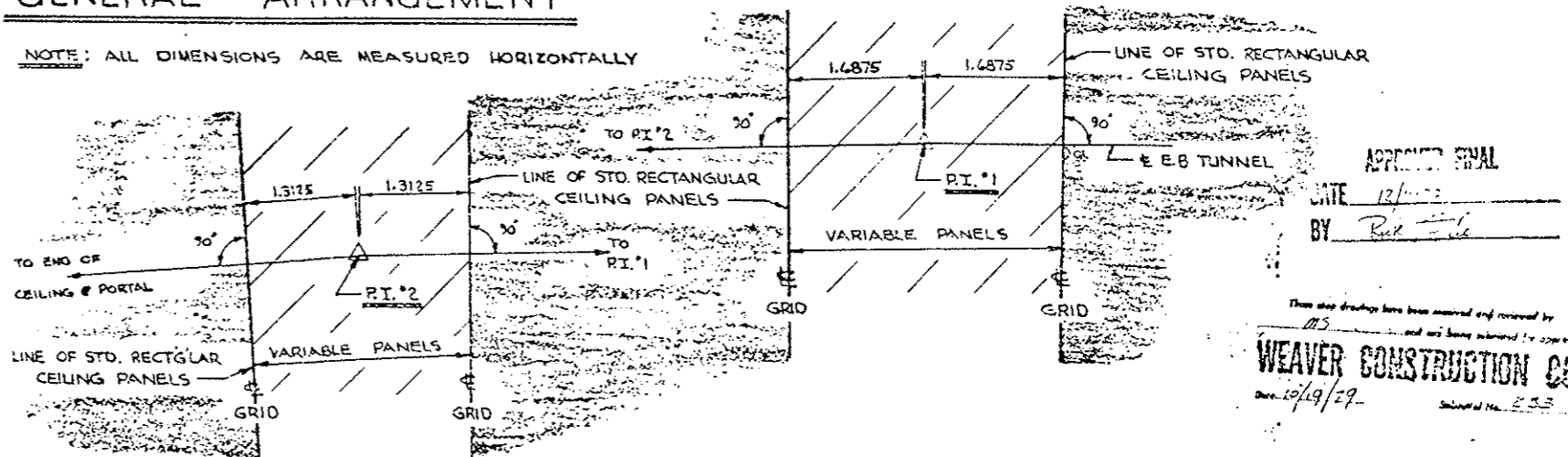


**NOTES:**

- 1. CEILING PANELS - SAME AS PREVIOUSLY APPROVED FOR FIXED CEILING.
- 2. SOUND DEADENING - SHOP APPLIED TO BACK OF CEILING PANELS (SUSPENDED)
- 3. C3 x 4.1 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



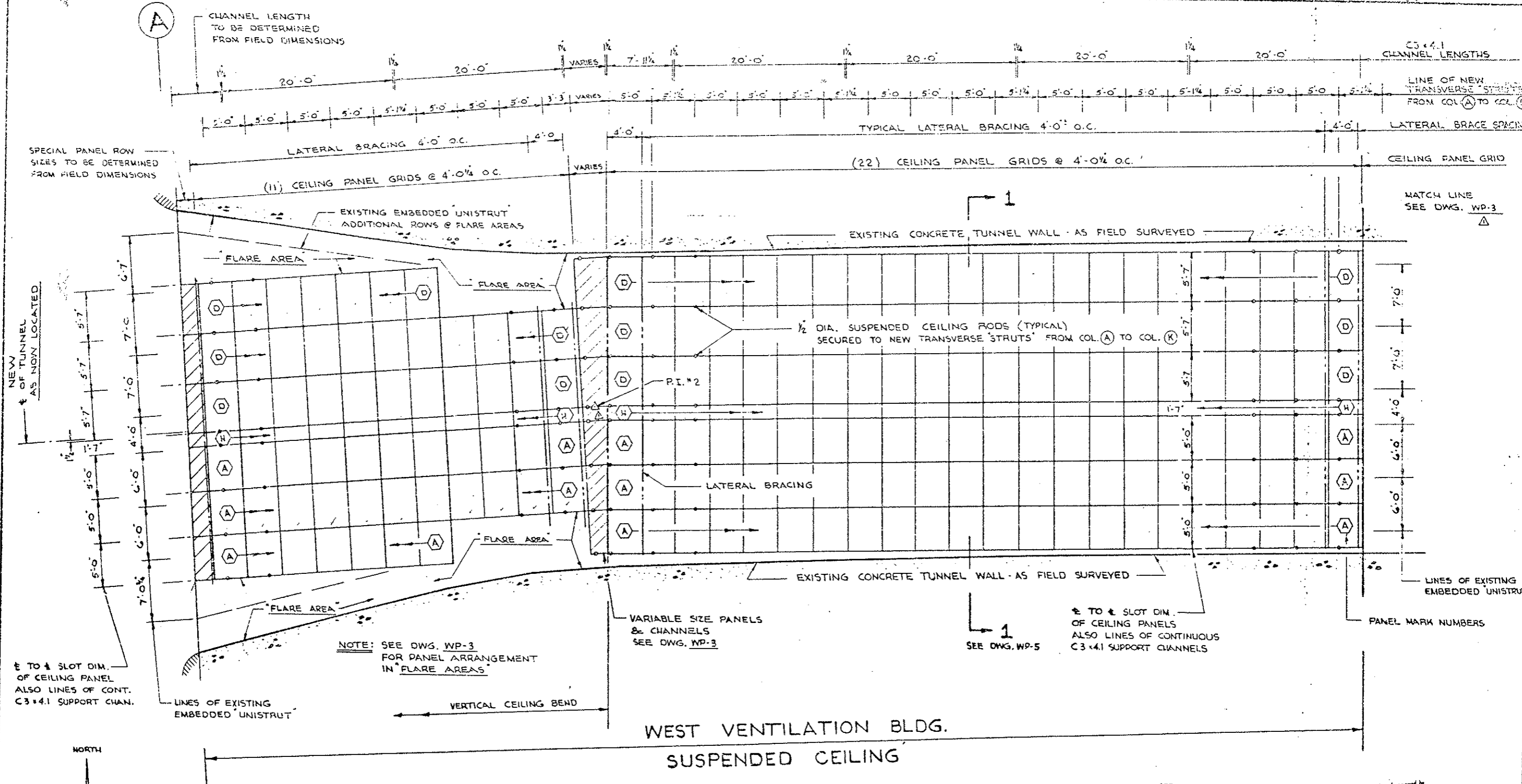
P.O. BOX 389 KENSINGTON, MD. 20795

NUMBER	DATE	REVISIONS	DATE
Δ	9-24-77	PI. STA. MOVED - HORIZ. DIM. CHANGED NOTE CHANGED - ADD P.I. LAYOUTS.	7 JUNE 1977
			DRAWN L. K.
			CHECKED
			SCALE
			1" = 10'

SUSPENDED CEILING  
WEST PORTAL AREA

WP-1

Sheet 1 of 7



WEST VENTILATION BLDG.  
SUSPENDED CEILING

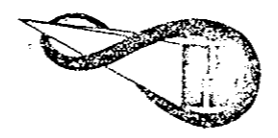
NOTE: ALL DIMENSIONS ARE MEASURED HORIZONTALLY

APPROVED FIRM  
 BY: *Red [Signature]*  
 DATE: 12/17/79  
 THESE DRAWINGS HAVE BEEN REVIEWED AND REMOVED BY: *MS* AND ARE BEING SUBMITTED FOR APPROVAL.  
**WEAVER CONSTRUCTION CO.**  
 10/19/79  
 Submittal No. 233

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 389 KENSINGTON, MD. 20795

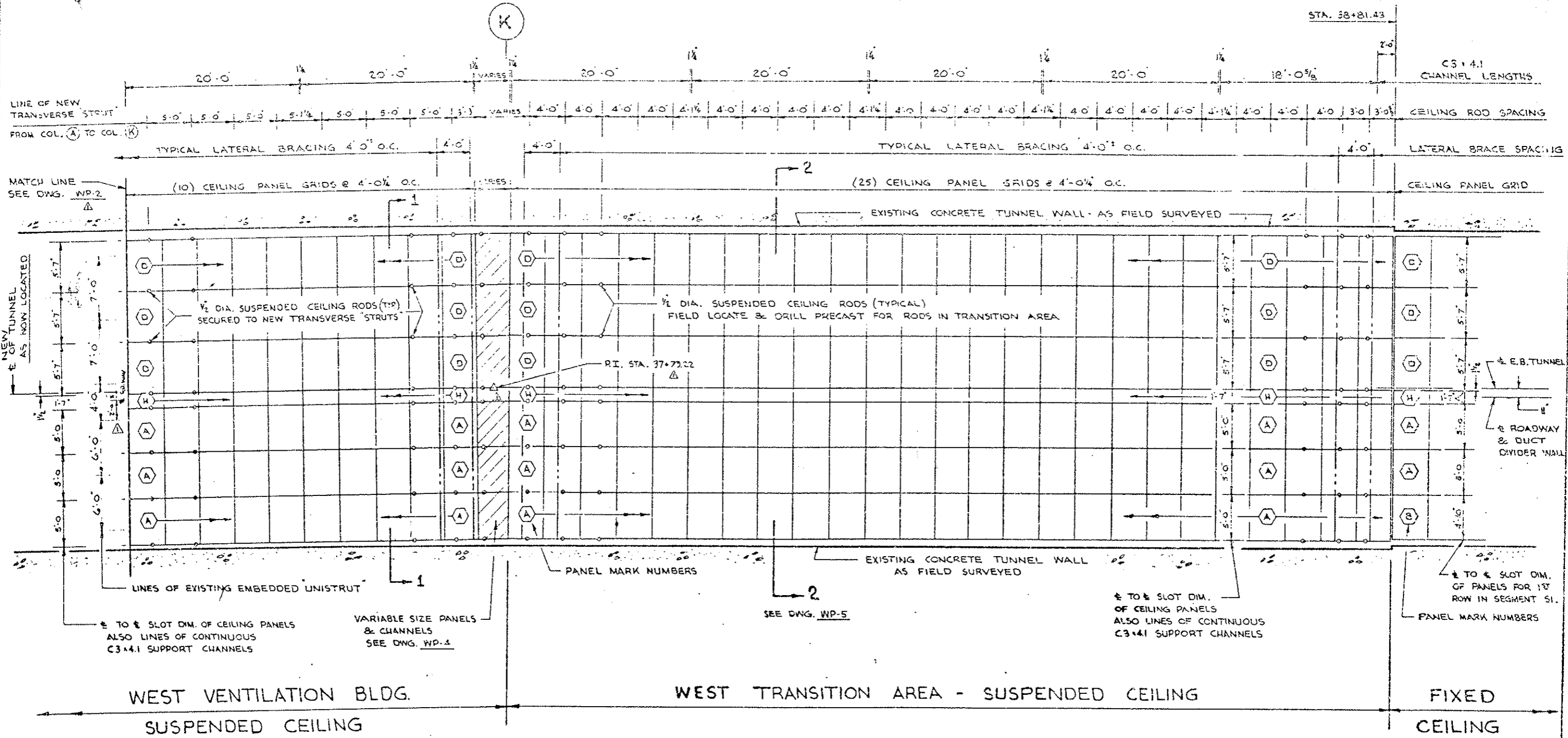


NUMBER	DATE	REVISIONS	DATE
Δ	7-24-73	P.I. MOVED - ADDED DWG. NO.	7 JUNE 1979
			DRAWN: L.K.
			CHECKED:
			SCALE: 3/16" = 1'-0"

CEILING PLAN  
WEST PORTAL AREA

WP-2

SHT. 2 OF 7



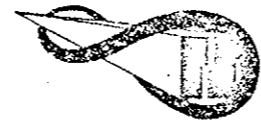
NOTE: ALL DIMENSIONS ARE MEASURED HORIZONTALLY.

APPROVED FINAL  
 DATE 12/1/79  
 BY *Rick Taylor*  
 These shop drawings have been reviewed and approved by M.S. and are being returned for approval.  
**WEAVER CONSTRUCTION CO.**  
 10/19/79  
 Submittal No. 233

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

CEILING PLAN  
 WEST PORTAL AREA

WP-3

SH. 3 OF 7

WEST PORTAL

SPECIAL PANEL ROW SIZES TO BE DETERMINED FROM FIELD DIMENSIONS

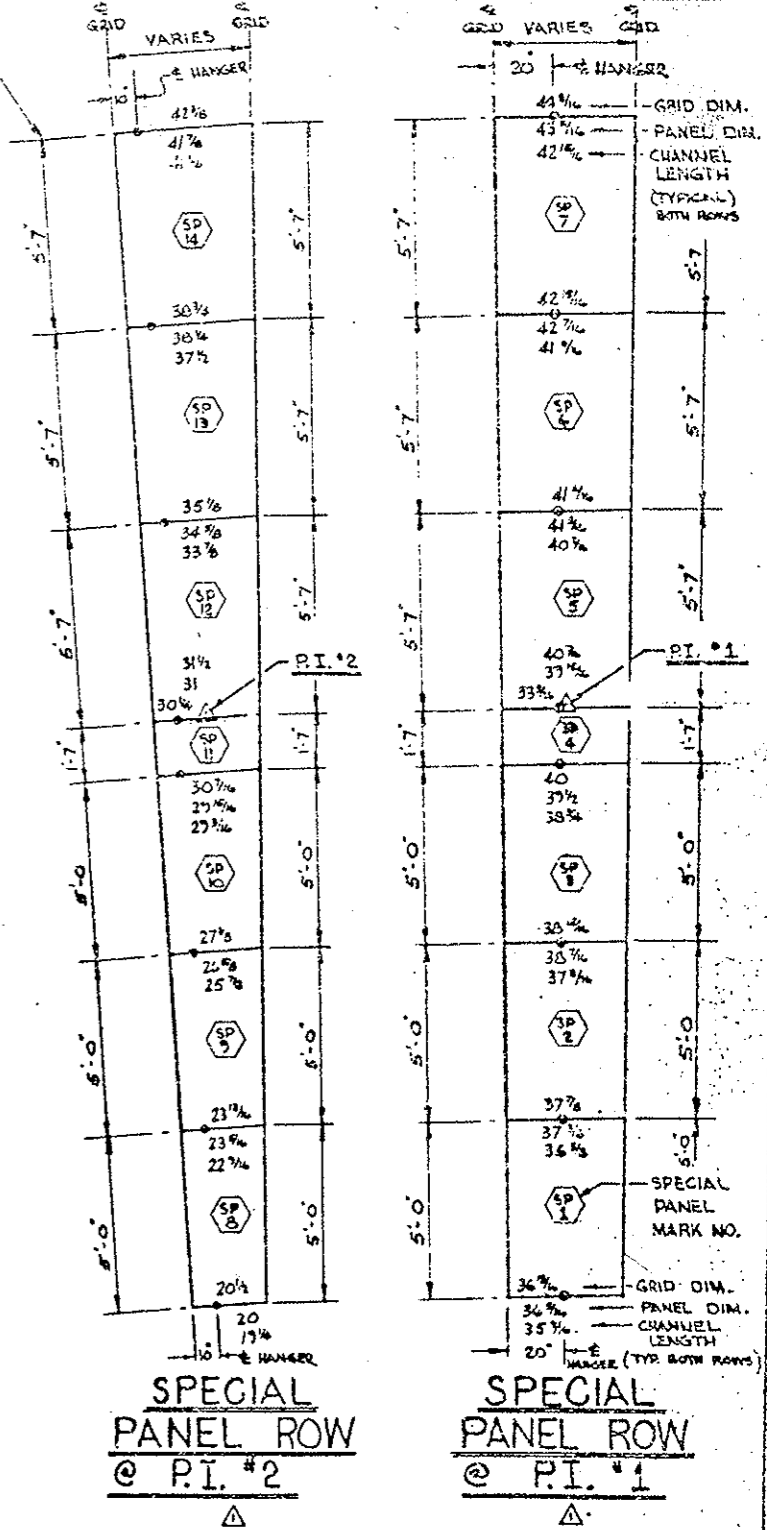
1/2 DIA. SUSPENDED CEILING RODS SECURED TO NEW TRANSVERSE 'STRUTS'

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.

**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'

EXISTING CONCRETE TUNNEL WALL AS FIELD SURVEYED

APPROVED FINAL  
DATE 12/11/70  
BY [Signature]

WEAVER CONSTRUCTION CO.  
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

**Jemrec, Inc.**  
Corrosion Control Coatings



P.O. BOX 359 KENSINGTON, MD. 20795

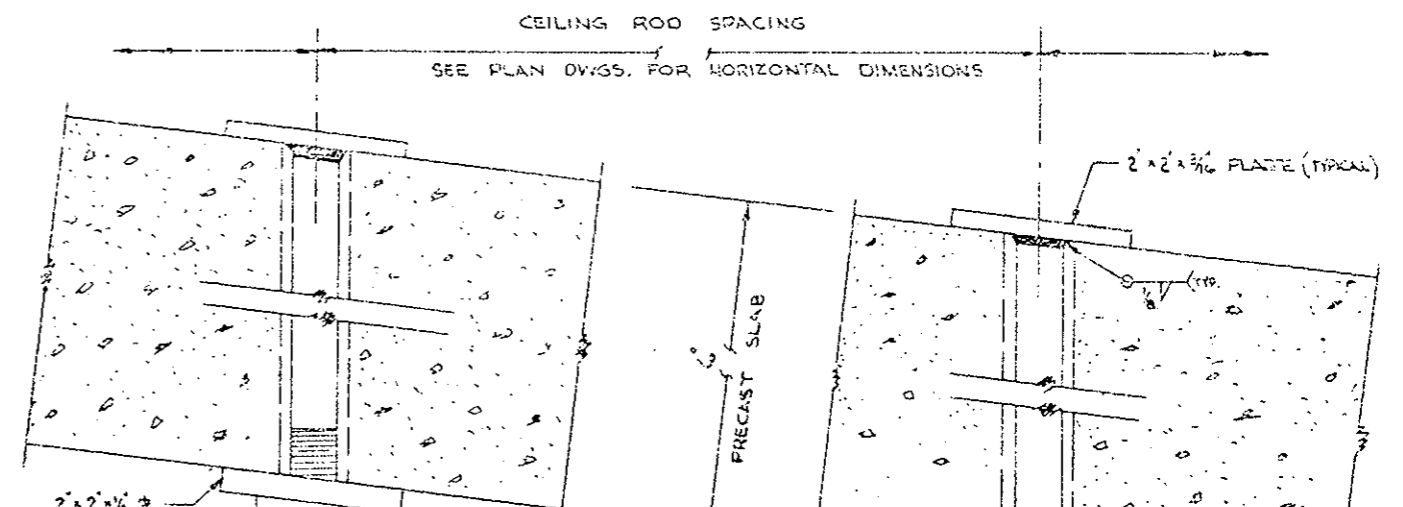
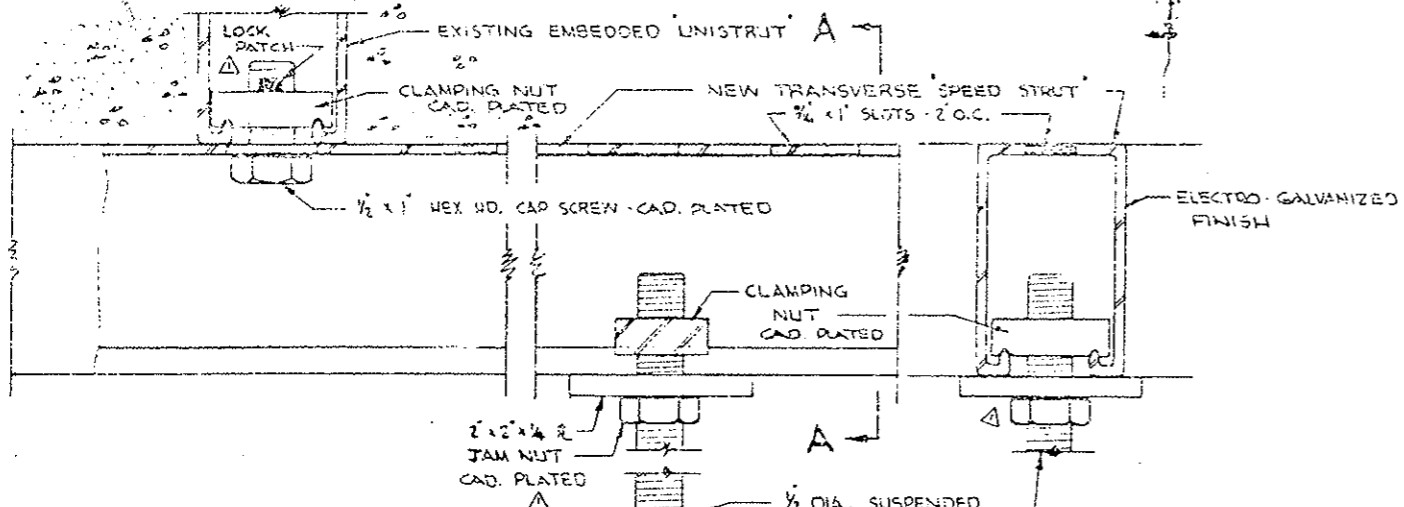
NUMBER	DATE	REVISIONS	DATE
1	9-24-79	P.I.S MOVED TO ± PANEL ROW - PANEL ROW DIMENSIONS CHANGED	7 JUNE 1977

FLARES & SPECIAL PANEL ROWS  
WEST PORTAL AREA

WP-4

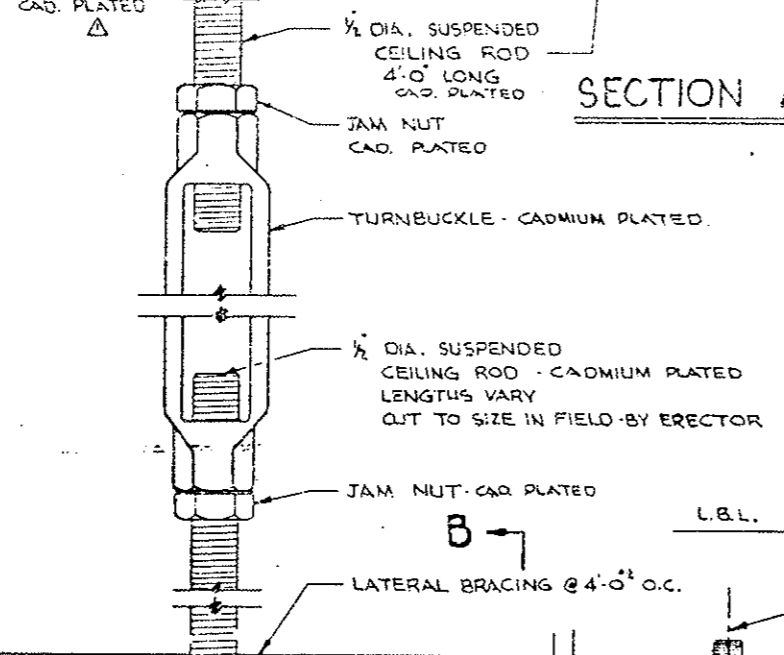
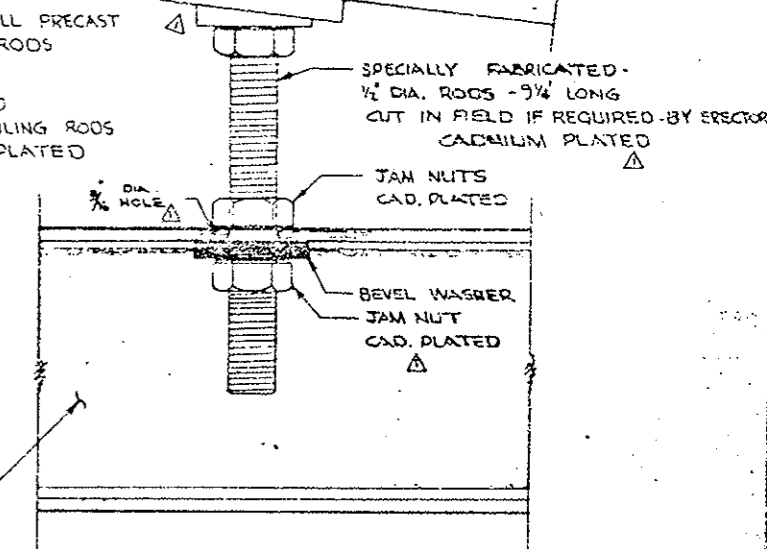
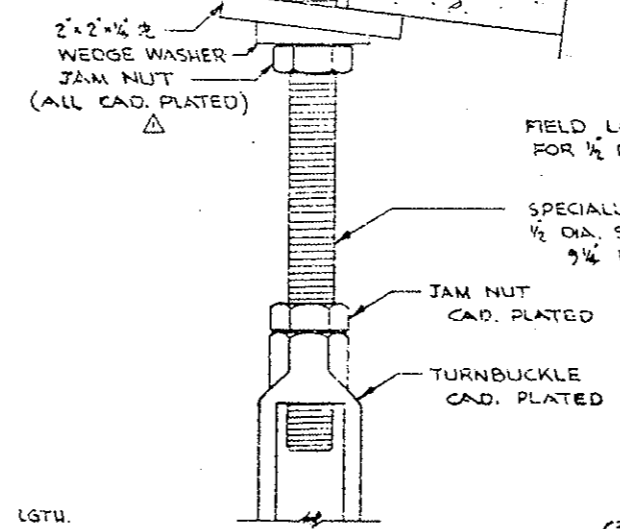
MT. 4 OF 7





DETAIL WP-6 B

SECTION A-A



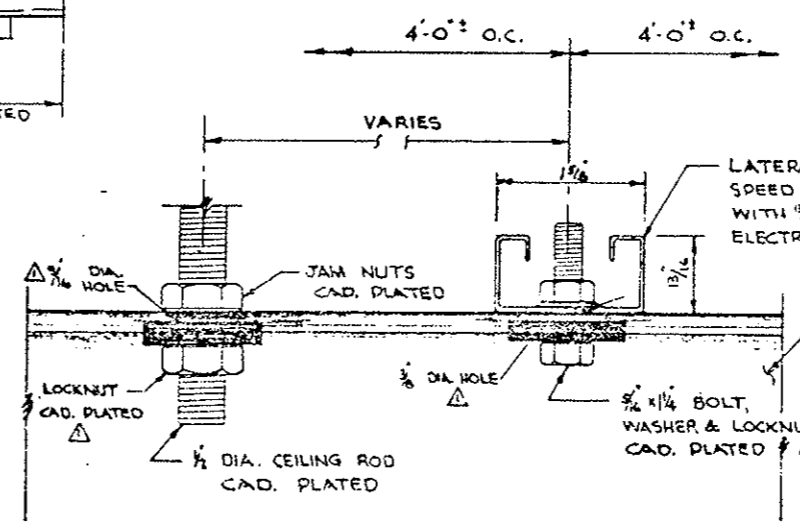
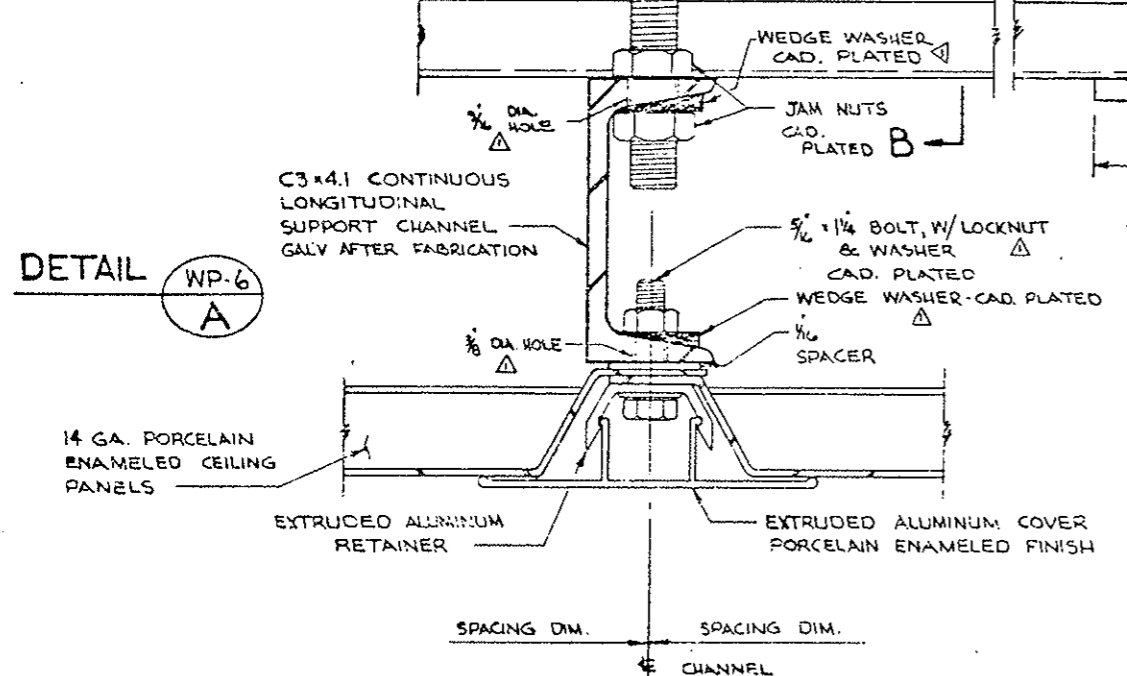
DETAIL WP-6 D

DETAIL WP-6 E

WHERE TURNBUCKLE CAN NOT BE USED DUE TO INSUFFICIENT SPACE

DETAIL WP-6 A

DETAIL WP-6 C



SECTION B-B

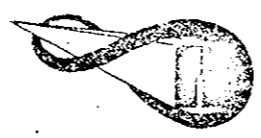
APPROVED FINAL

DATE 7 JUNE 1979  
 DRAWN L.K.  
 CHECKED  
 SCALE FULL SIZE  
 10/19/79

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

WEAVER CONSTRUCTION CO.  
 2113 SOUTH VALENTIA ST.  
 DENVER, COLORADO 80231

Jemrec, Inc.  
 Corrosion Control Coatings



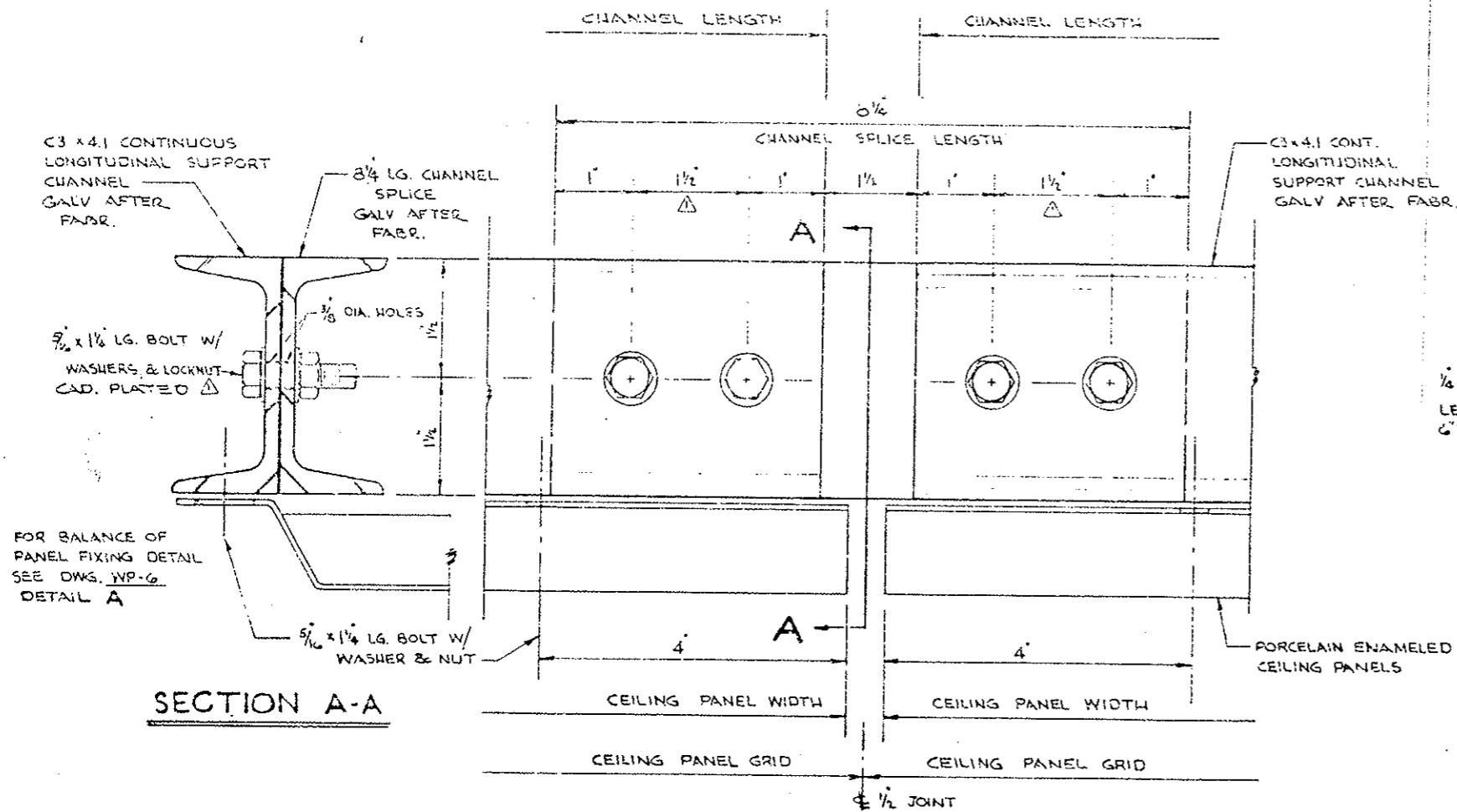
P.O. BOX 369 KENSINGTON, MD. 20725

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

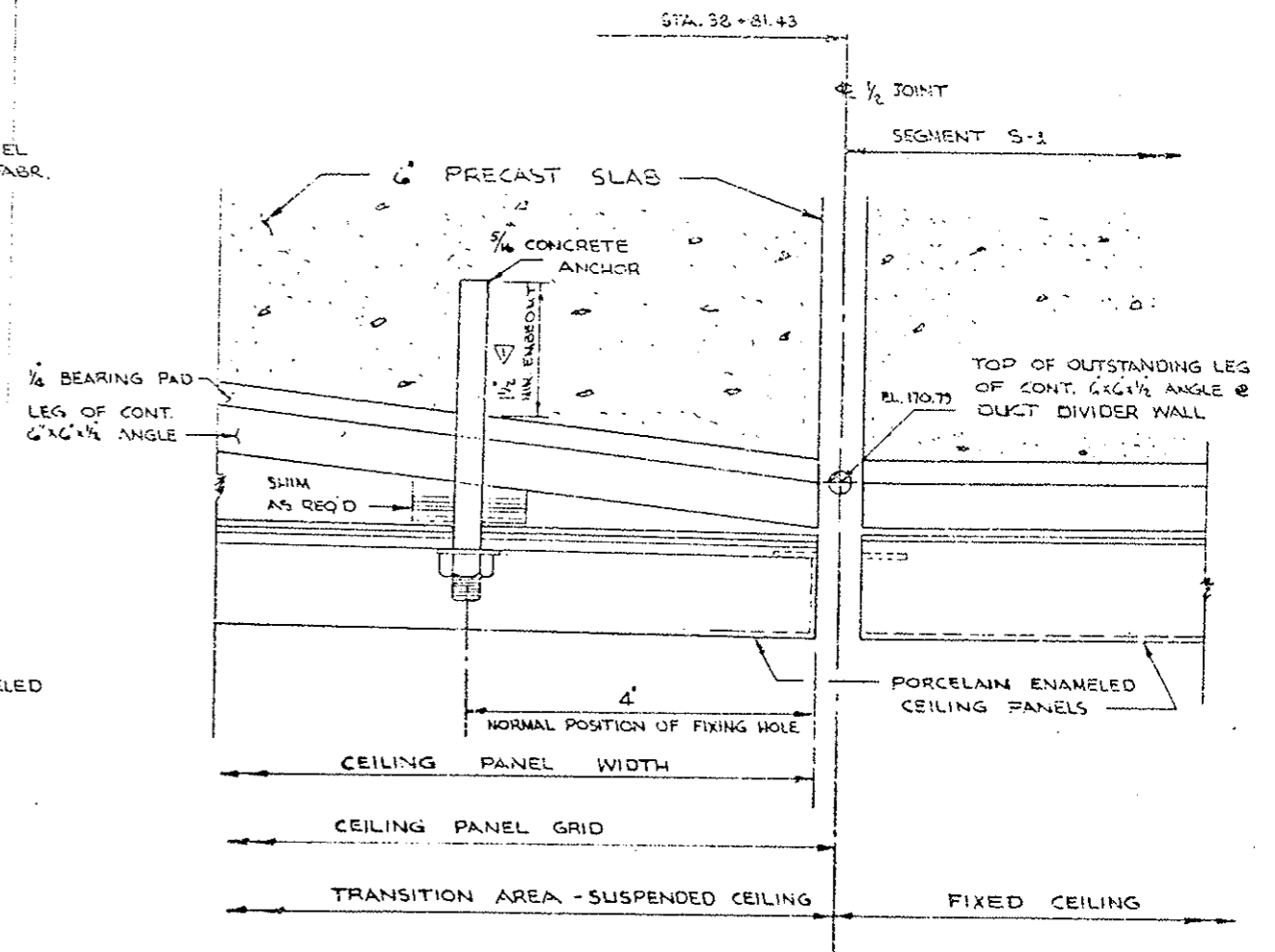
DETAILS  
 SUSPENDED CEILING

WP-6

SH. 6 OF 7



**TYPICAL CHANNEL CONNECTION DETAIL**



**SPECIAL CEILING FIXING DETAIL  
AT STA. 33+81.43**

These shop drawings have been reviewed and returned by  
 APPROVED FIELD  
 DATE 12/1/79  
 BY [Signature]  
 WEAVER CONSTRUCTION CO.  
 DATE 10/19/79

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

WEAVER 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
1	9-24-79	DIM. CORRECTION - ADD DIMENSIONS CHANGE REGULAR HEX NUT TO LOCKNUT	7 JUNE 1979
			DRAWN L.K.
			CHECKED
			SCALE
			FULL SIZE

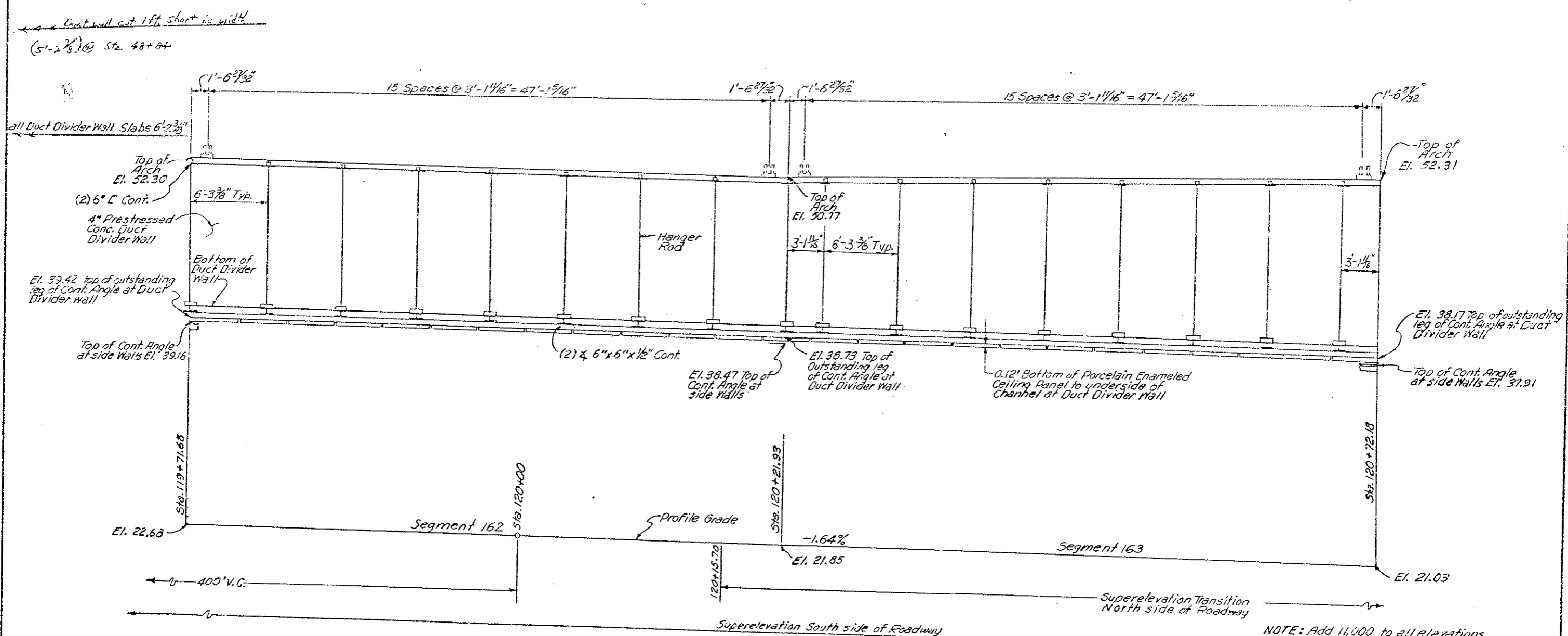
**DETAILS  
SUSPENDED CEILING**

**WP-7**

of 7 of 7



FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	172-3(82)220	105	
AS CONSTRUCTED				
NO REVISIONS	REVIS	VOID		



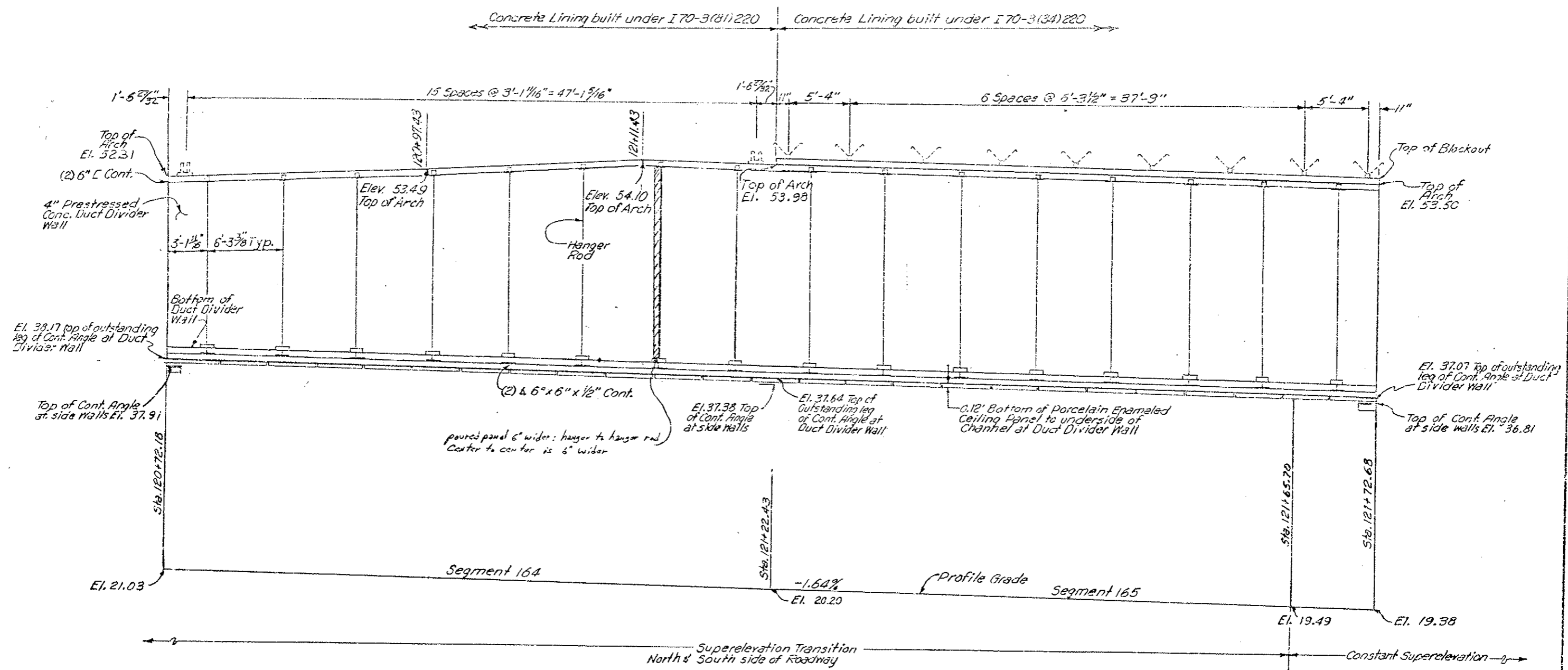
Scale 1"=4'

NOTE: Add 11,000 to all elevations

<b>DIVISION OF HIGHWAYS</b>		
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



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



NOTE: Add 11,000 to all elevations

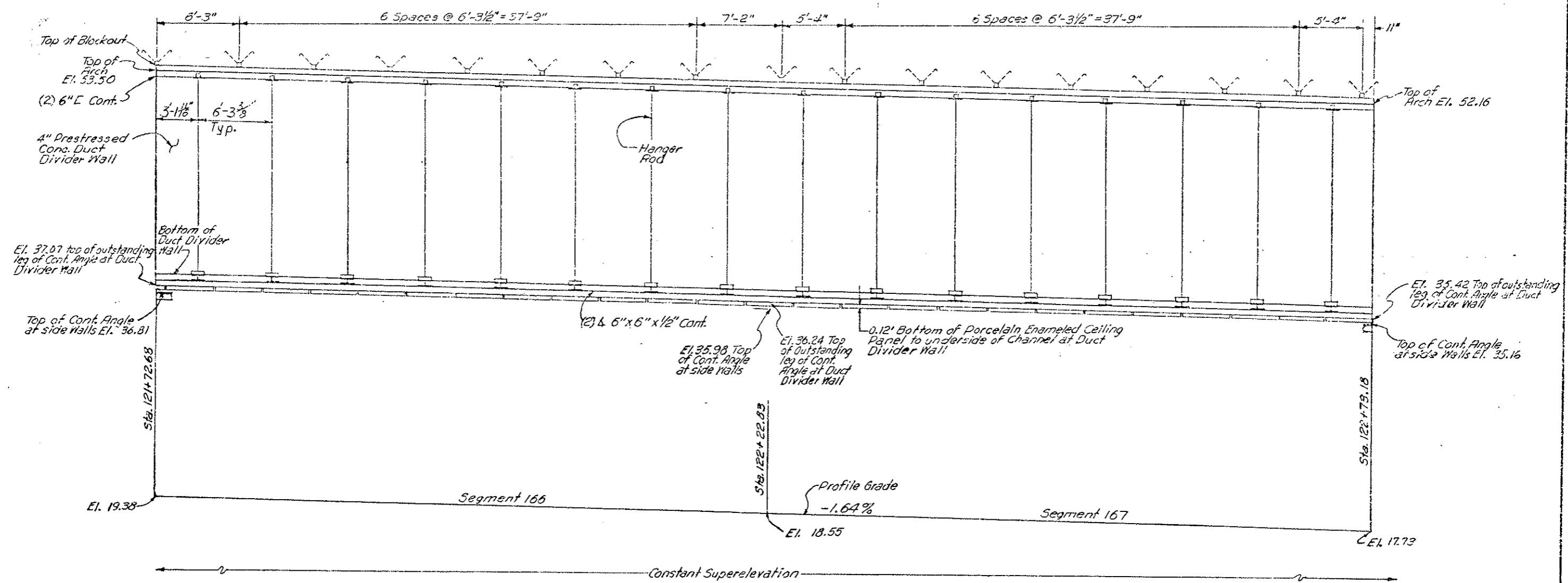
**DIVISION OF HIGHWAYS**

DUCT WALL AND CEILING AREA  
EAST AREA  
120+72.18 TO 121+72.58

Designer	Structure	F-13-X
Detailer	Numbers	
Drawing Number C-21	of	Drawings

Scale 1" = 4'

REGION NO. VII	DIVISION COLORADO	PROJ. NO. 170-31831220	SHEET NO. 107	TOTAL SHEETS
AS CONSTRUCTED				
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID

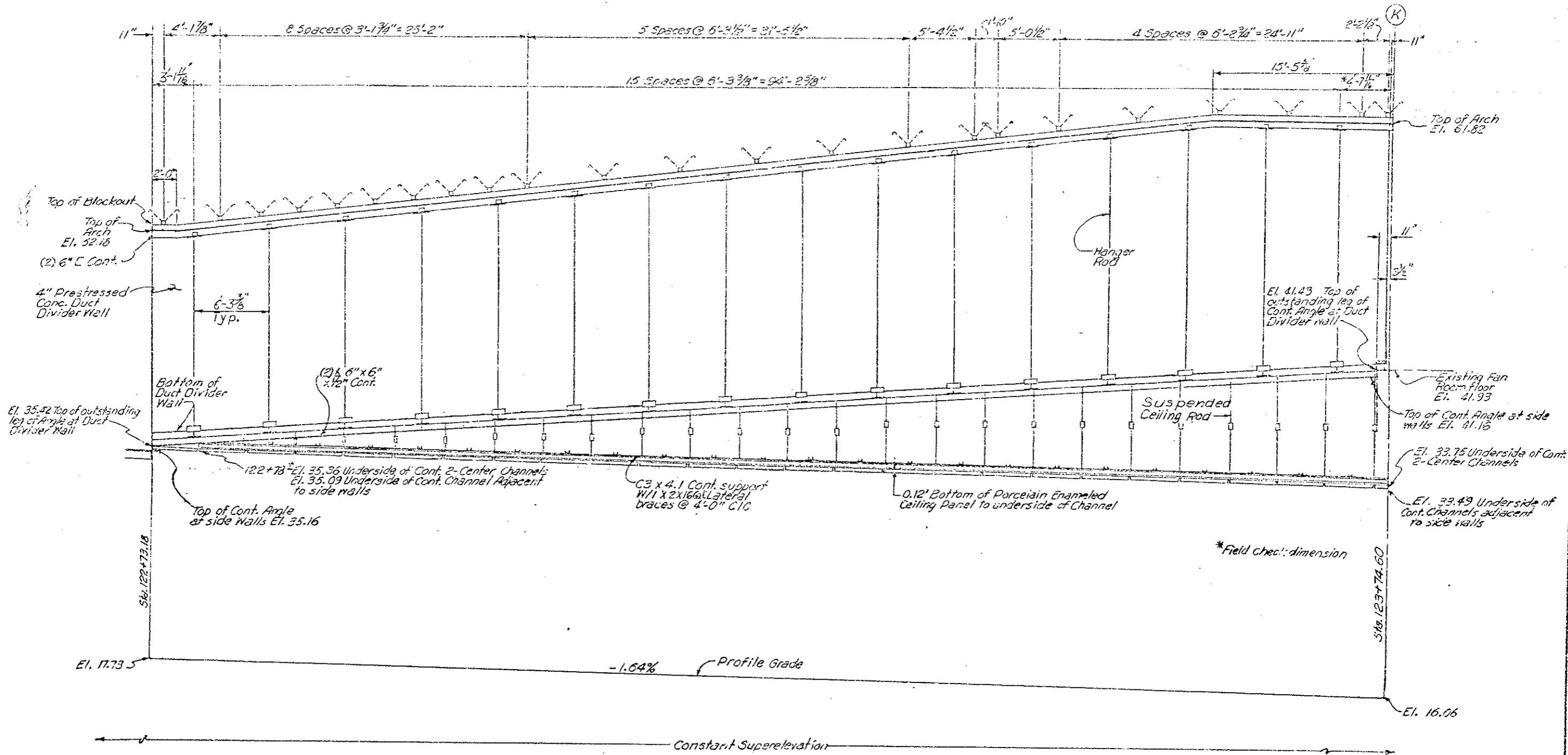


NOTE: Add 11,000 to all elevations

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

Scale 1" = 4'

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLO. ROAD	170-3(23) 220	108	
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 EAST TRANSITION AREA 122+73.15 TO 123+74.60	
Designer	Structure F-13-X
Datelist	Numbers
Drawing Number C-23	of Drawings

Scale 1" = 4'

Constant Superelevation

\*Field check: dimension

El. 17.73.5

El. 16.06

-1.64%

Profile Grade

Sta. 122+73.15

Sta. 123+74.60

Top of Cont. Angle at side walls El. 35.16  
 El. 35.36 Underside of Cont. 2-Center Channels  
 El. 35.09 Underside of Cont. Channel Adjacent to side walls

C3 x 4.1 Cont. support  
 W11 x 21.6 Lateral braces @ 4'-0" C/C

0.12' Bottom of Porcelain Enameled Ceiling Panel to underside of Channel

El. 33.75 Underside of Cont. 2-Center Channels  
 El. 33.49 Underside of Cont. Channels adjacent to side walls

Top of Cont. Angle at side walls El. 41.15

Existing Fan Room floor El. 41.93

El. 41.43 Top of outstanding leg of Cont. Angle at Duct Divider wall

Top of Arch El. 52.16  
 (2) 6" C Cont.

4" Prestressed Conc. Duct Divider Wall

Bottom of Duct Divider Wall

(2) 6" x 6" x 12" Cont.

Suspended Ceiling Rod

Hanger Rod

Top of Arch El. 61.82

11" 4'-1 7/8" 8 Spaces @ 3'-1 7/8" = 25'-2" 5 Spaces @ 6'-3 1/2" = 31'-5 1/2" 5'-4 1/2" 5'-0 1/2" 4 Spaces @ 5'-2 3/4" = 24'-11" 2'-2 1/8" 11"

3'-1 1/8"

15 Spaces @ 6'-3 3/8" = 94'-2 3/8"

15'-5 3/8"

4'-7 1/2"

2'-0"

6'-3 3/8" Typ.

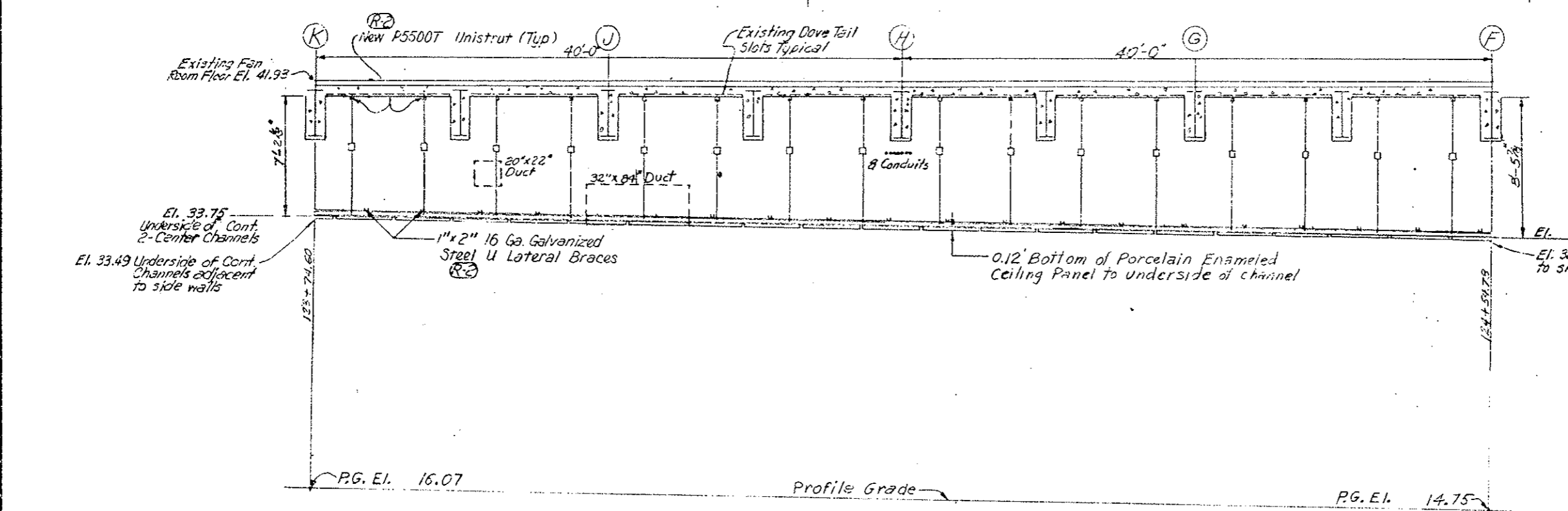
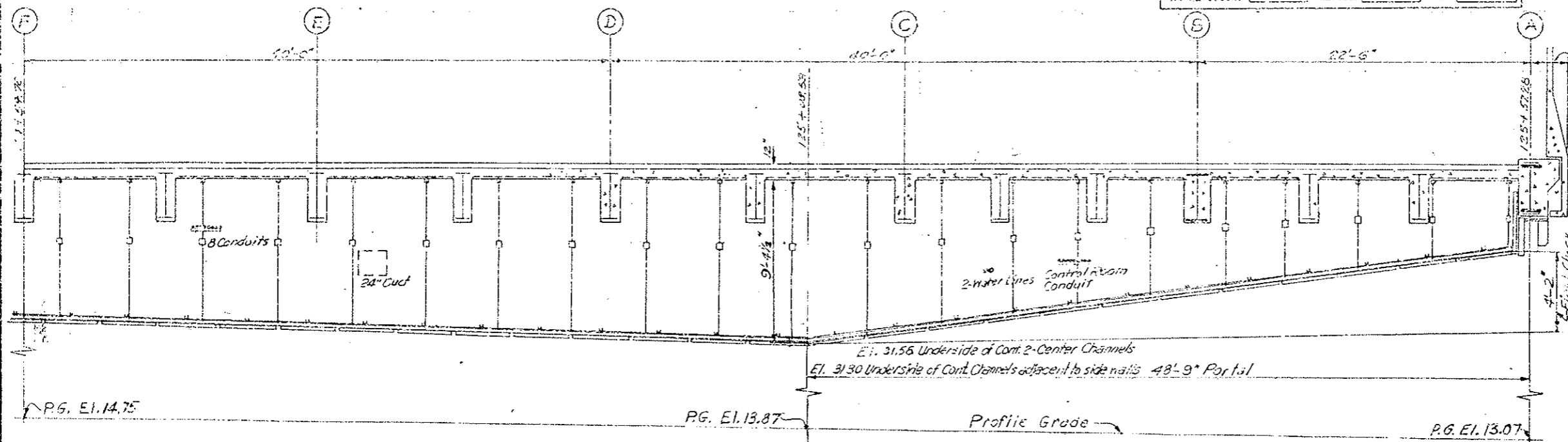
11"

3/2"

AS CONSTRUCTED  
 NO REVISIONS [ ] REVISED [ ] VOID [ ]

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
1111	COLORADO	I70-3(83)220	103	

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

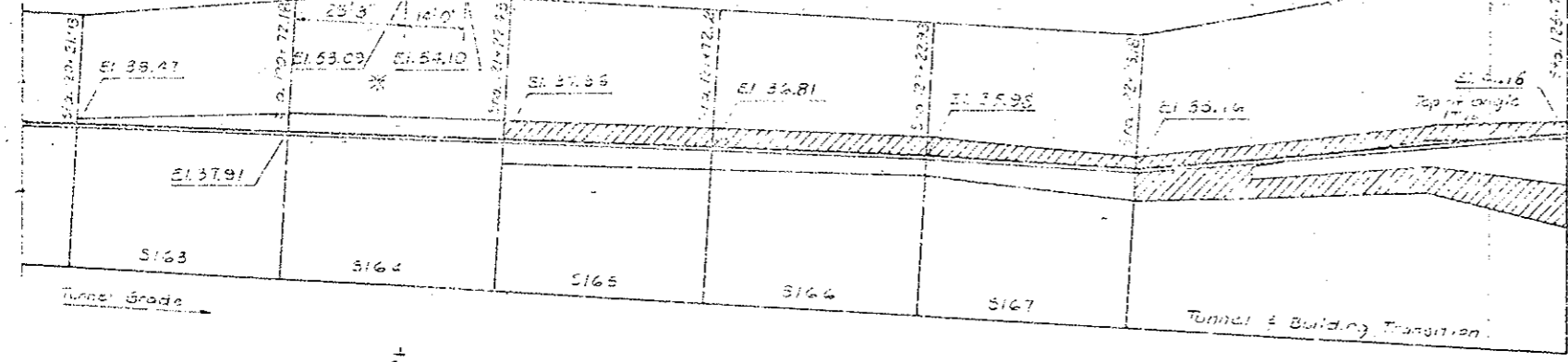


DESIGNED BY	C.D.H.
CHECKED BY	
DATE	7-9-78
QUANTITIES BY	
CHECKED BY	
DATE	7-9-78

NOTE: Add 11,000 to all elevations

DIVISION OF HIGHWAYS	
ELEVATION THRU SUSPENDED CEILING	
EAST VENTILATION BUILDING	
Designer C.D.H.	Structure Numbers
Detailer J. Letkowitz	Numbers
Drawing Number C-27	of Drawings
Revision Dates	(Preliminary Stage Only)

Schematic Limit of Exist. Existing Concrete Lining  
 under Proj. I70-3(81)220  
 Limit under Proj. I70-3(34)220



AS CONSTRUCTED

NO REVISIONS  REVISED  VOID

FEDERAL ROAD DISTRICT NO.	DIVISION	PRC. NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	I70-3(33)220	110	

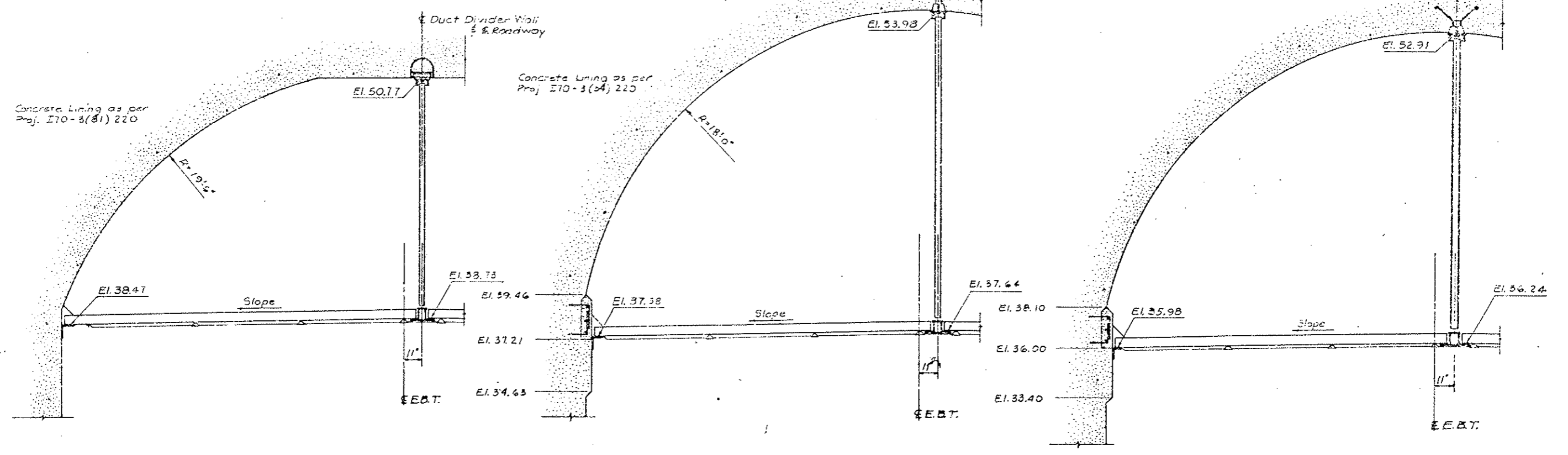
REVISIONS	

East Transition Area  
 6' Ceiling Slope Lengths

Sta.	To	Sta.	Length	Supply
121+22.43	122+22.93	17'-10"	16'-0"	
122+22.93	123+50.50	18'-2"	16'-4"	
123+50.50	23+74.50	13'-1"	16'-2"	

Limits of T-L Concrete

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



SECTION @ STA. 120+21.93  
 (Begin Segment S163)

SECTION @ STA. 121+22.43  
 Elevation +11,000 ft.  
 (Begin Segment S165)

SECTION @ STA. 122+22.93  
 (Tunnel Side)  
 (Begin Segment S167)

\*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

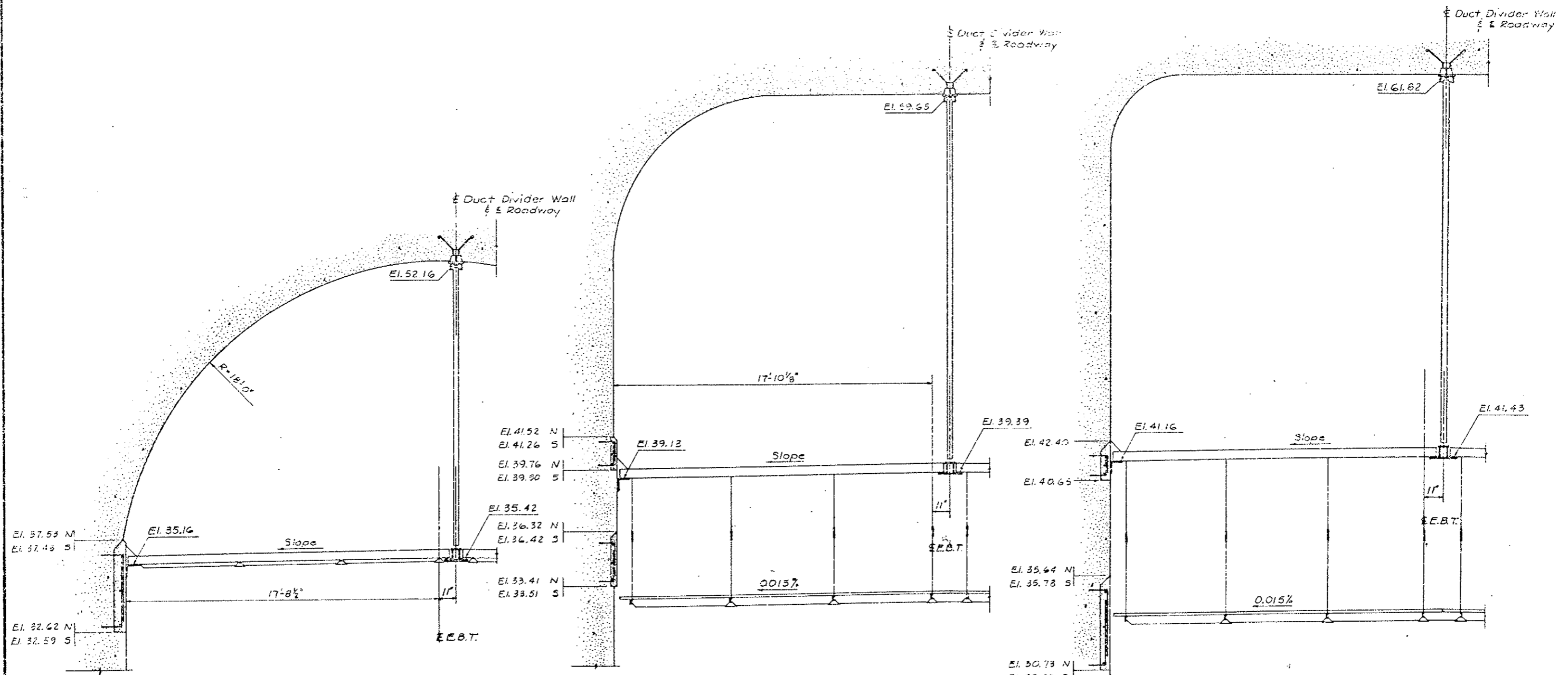
Designer C.D.H. Structure F-13-X  
 Detailer BR Lere Numbers  
 Drawing Number C-25

DATE	DATE	DATE	DATE
3/77	3/77	3/77	3/77
DESIGNED BY	CHECKED BY	QUANTIFIED BY	CHECKED BY
C.D.H.	B.R.L.	B.R.L.	B.R.L.
3/77	3/77	3/77	3/77

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
5011	COLORADO	170-3(83)220	111	
REVISIONS				

DESIGNED BY	CHECKED BY	DATE
JHP	JHP	5-77
DESIGNED BY	CHECKED BY	DATE
BR	BR	5-77
DESIGNED BY	CHECKED BY	DATE
BR	BR	5-77



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.)

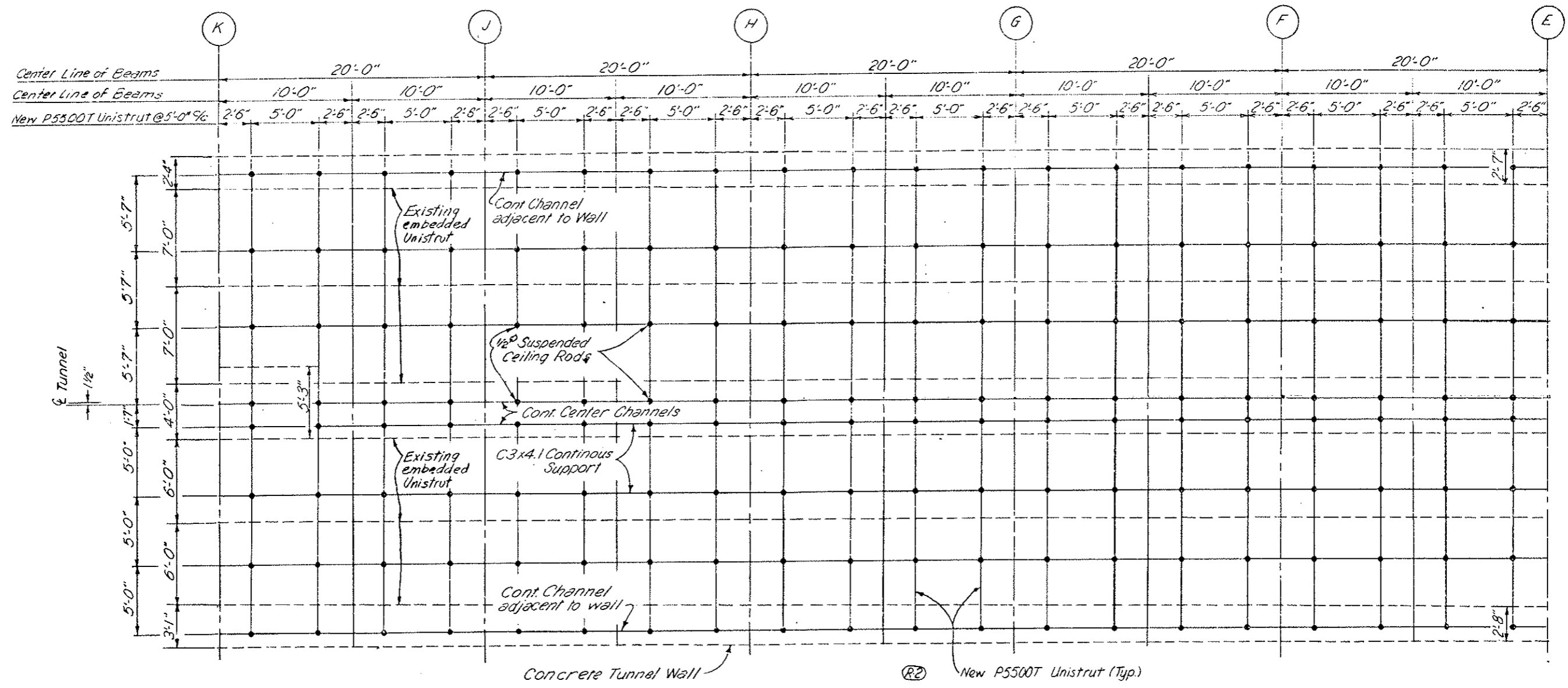
Sidewall Support Angle 8'x8'x1/2"  
slopes @ +5.43% from  
Sta. 122+73.18 to Sta. 123+74.60

<b>DIVISION OF HIGHWAYS</b>	
EAST TRANSITION AREA	
SECTIONS	
Designer CDOH	Structure F-13-X
Detailer BR Lore	Numbers
Drawing Number C-26	
Revision Dates	(Preliminary / Stage Only)

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

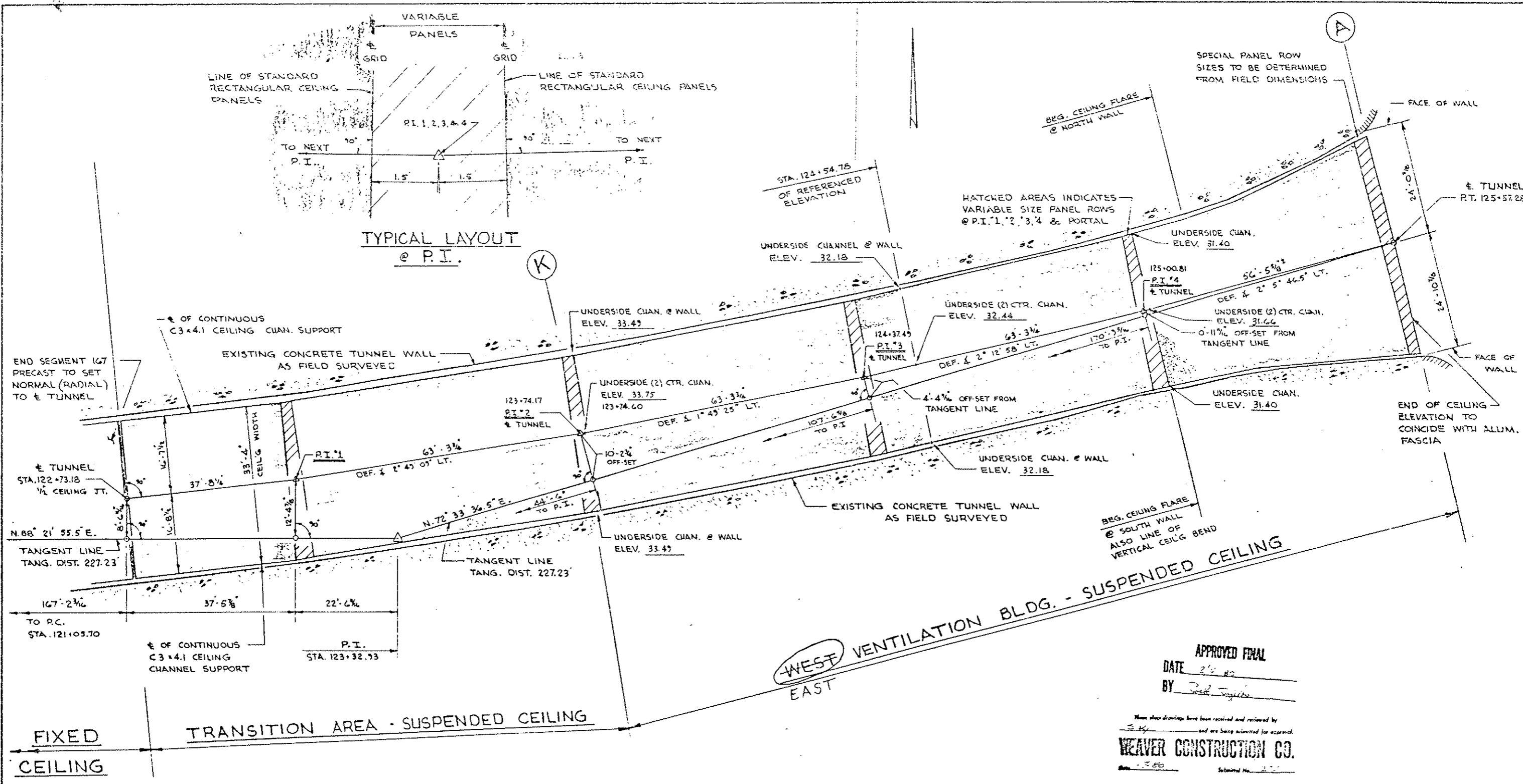
AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

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



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 CDOH	Structure Name
Detailer	
Drawing Number C-27	of Drawings



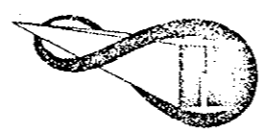
APPROVED FINAL  
 DATE 2/5/82  
 BY [Signature]

These shop drawings have been received and reviewed by  
 S.K. and are being submitted for approval.  
**WEAVER CONSTRUCTION CO.**  
 Submitted No. 222

**GENERAL ARRANGEMENT**

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

**Jemrec, Inc.**  
 Corrosion Control Coatings



P.O. BOX 369 KENSINGTON, MD. 20795

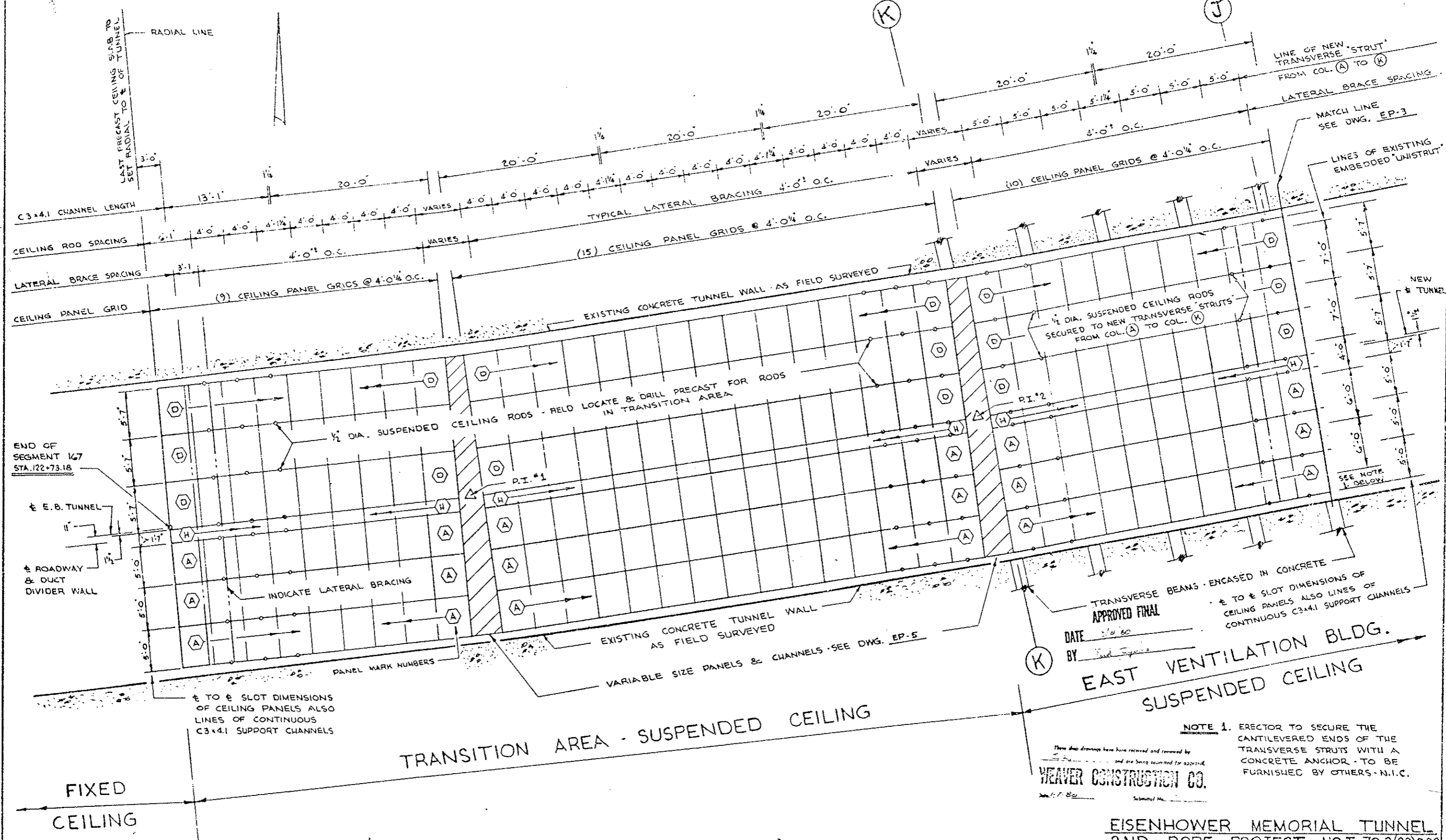
NUMBER	DATE	REVISIONS	DATE
			6 AUG. 1979

**SUSPENDED CEILING  
 EAST PORTAL AREA**

**EP-1**

SHT. OF





DATE 7/10/80  
 BY [Signature]

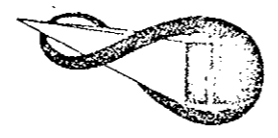
**EAST VENTILATION BLDG.  
 SUSPENDED CEILING**

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

These shop drawings have been received and reviewed by [Signature] and are being submitted for approval.  
**WEAVER CONSTRUCTION CO.**  
 Date: 7/80

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

**Jemrec, Inc.**  
 Corrosion Control Coatings  
 P.O. BOX 389 KENSINGTON, MD. 20795



NUMBER	DATE	REVISIONS	DATE
			6 AUG. 1979

**CEILING PLAN  
 EAST PORTAL AREA**

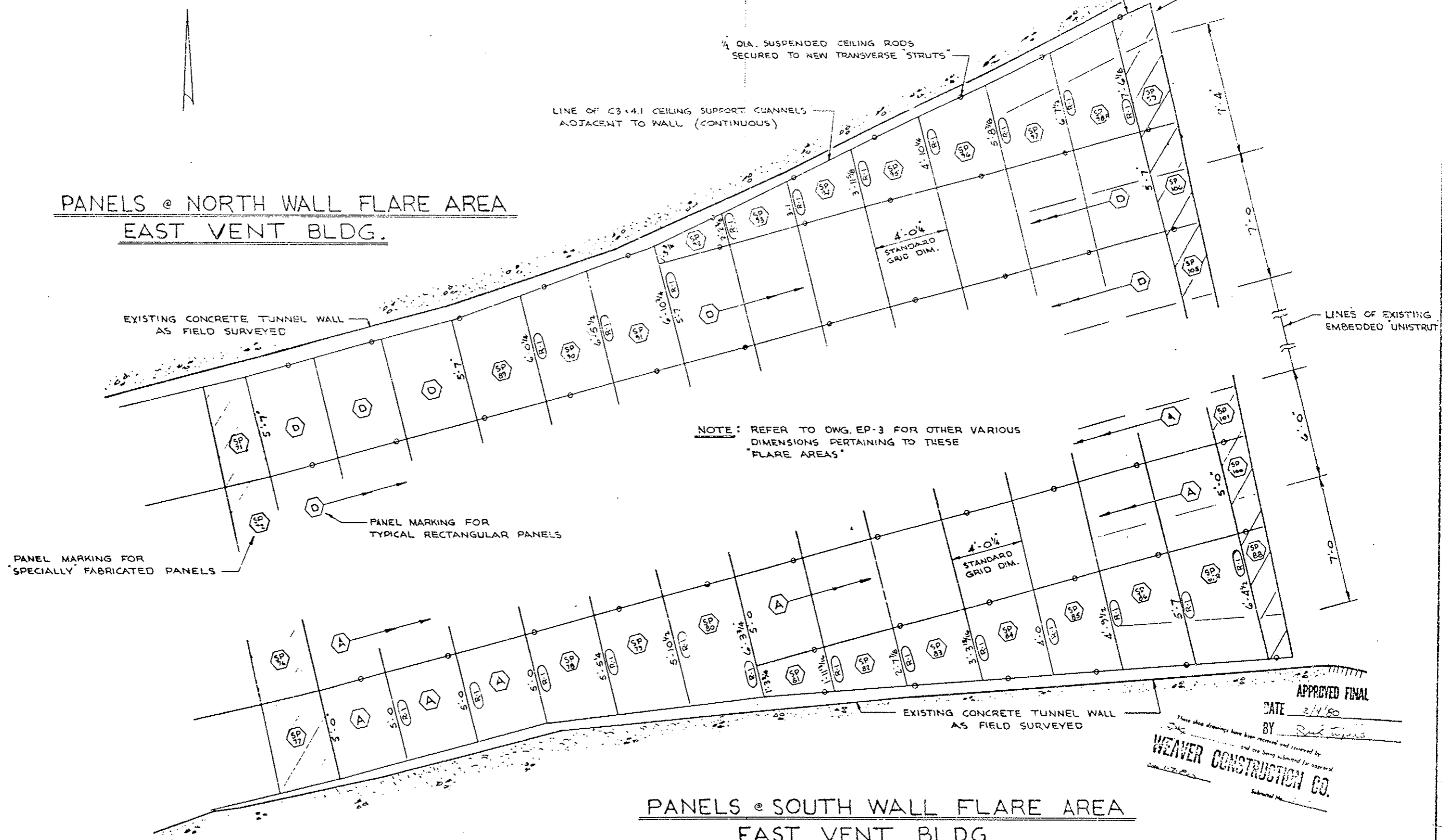
**EP-2**



SPECIAL PANEL ROW  
SIZES TO BE DETERMINED  
FROM FIELD DIMENSIONS

EAST PORTAL

PANELS @ NORTH WALL FLARE AREA  
EAST VENT BLDG.



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

APPROVED FINAL

DATE 2/4/80

BY *[Signature]*

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

PANELS @ SOUTH WALL FLARE AREA  
EAST VENT BLDG.

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

**Jemrec, Inc.**  
Corrosion Control Coatings



P.O. BOX 369 KENSINGTON, MD. 20795

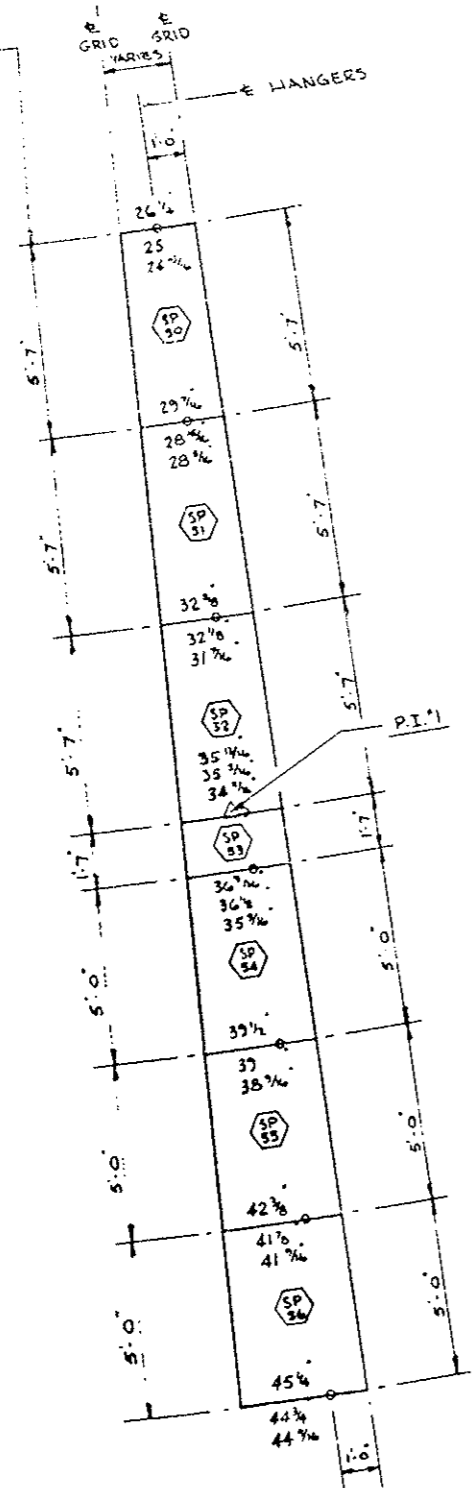
NUMBER	DATE	REVISIONS	DATE
(P.1)	11-23-78	PANEL SIZES REVISED PER NEW FIELD DIM. FURNISHED BY CONTRACTOR. ADD SP-PANEL MARKS.	6 AUG. 1979

FLARE PANELS  
EAST PORTAL AREA

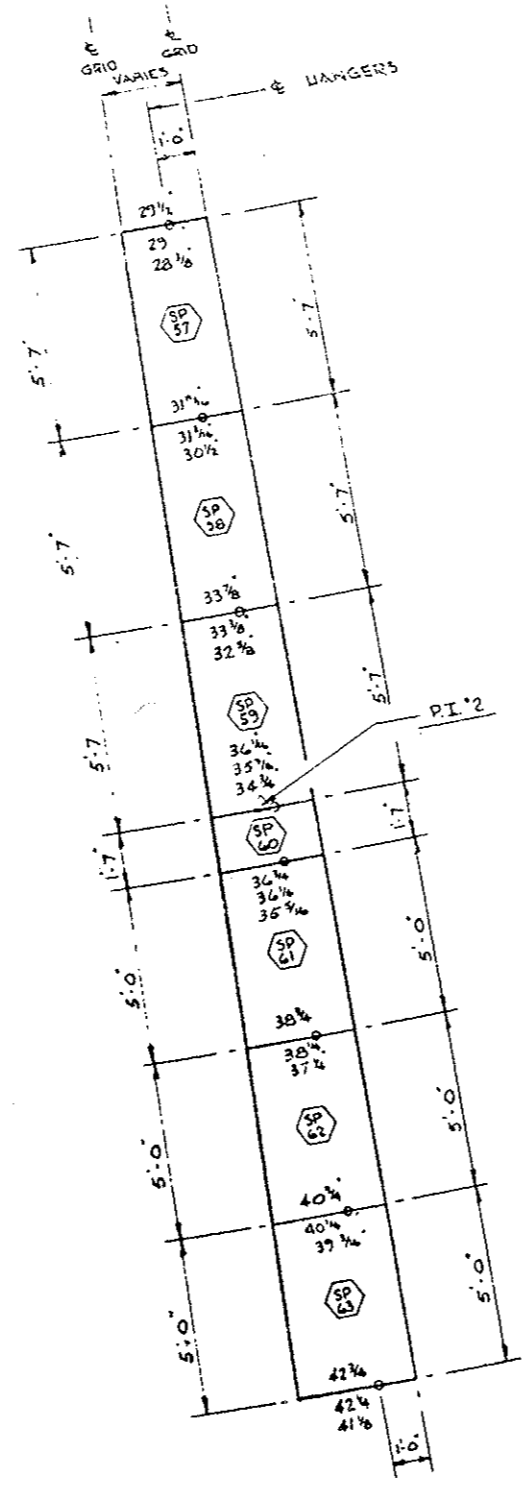
**EP-4**

SHT. OF

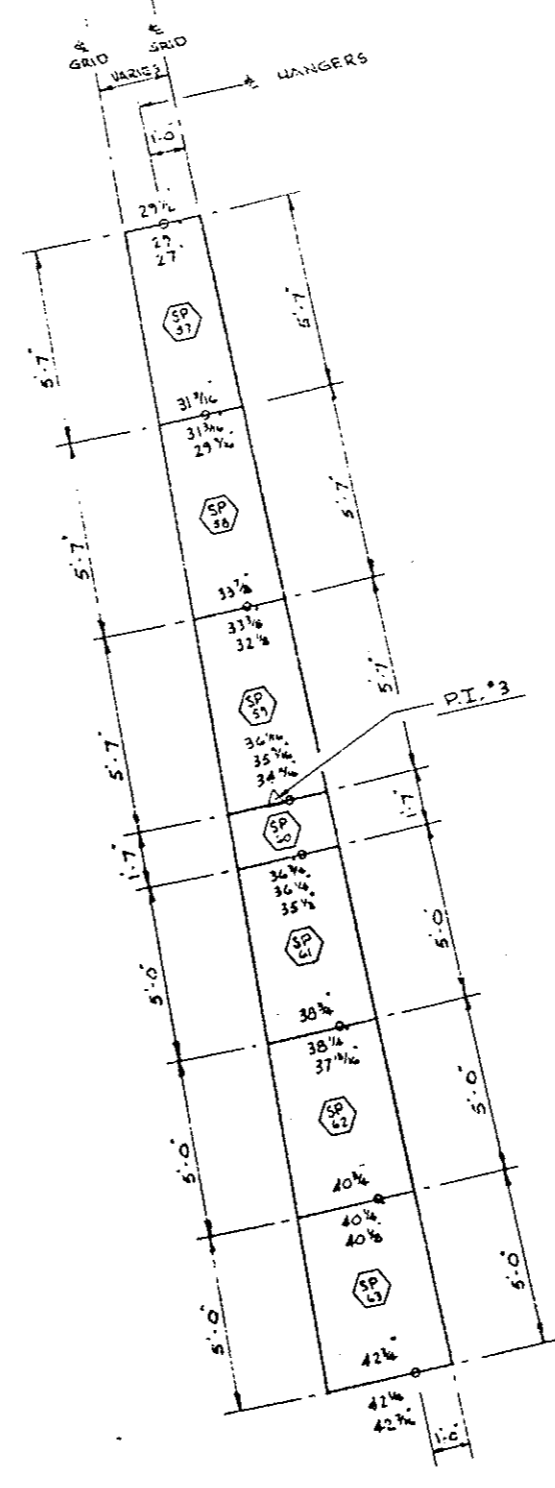
E TO E DIMENSIONS OF CEILING PANELS ALSO LINES OF CONTINUOUS C3x4.1 SUPPORT CHANNELS (TYPICAL ALL SPECIAL PANEL ROWS)



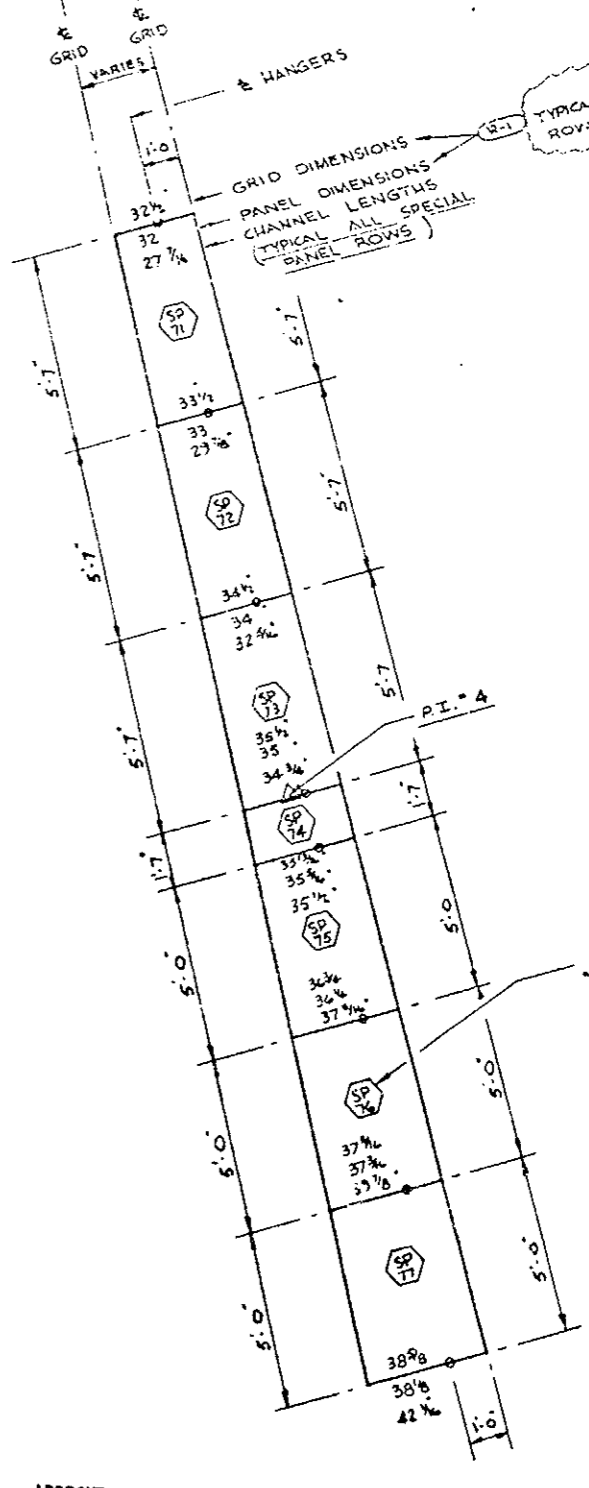
SPECIAL PANEL ROW @ P.I. #1



SPECIAL PANEL ROW @ P.I. #2



SPECIAL PANEL ROW @ P.I. #3



SPECIAL PANEL ROW @ P.I. #4

TYPICAL FOR SPECIAL PANEL ROWS #1, #2, #3, & #4.

PANEL MARKING FOR SPECIALLY FABRICATED PANELS

APPROVED FINAL  
DATE 2/1/80  
BY [Signature]

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

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

Jemrec, Inc.  
Corrosion Control Coatings



P.O. BOX 369 KENSINGTON, MD. 20785

NUMBER	DATE	REVISIONS	DATE
(R-1)	11-23-79	PANEL SIZES REVISED PER NEW FIELD DIM. FURNISHED BY CONTRACTOR. CHANGE SP. PANEL MARKS @ P.I. #3	2 AUG. 1979

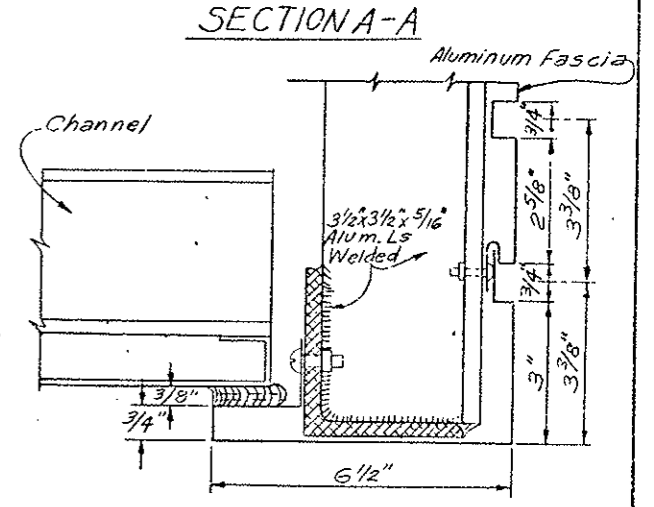
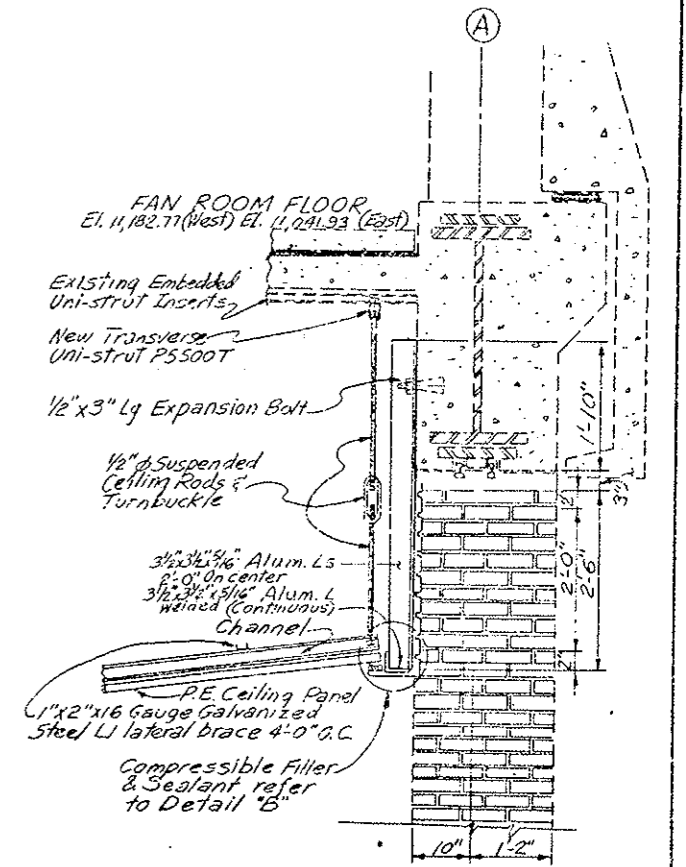
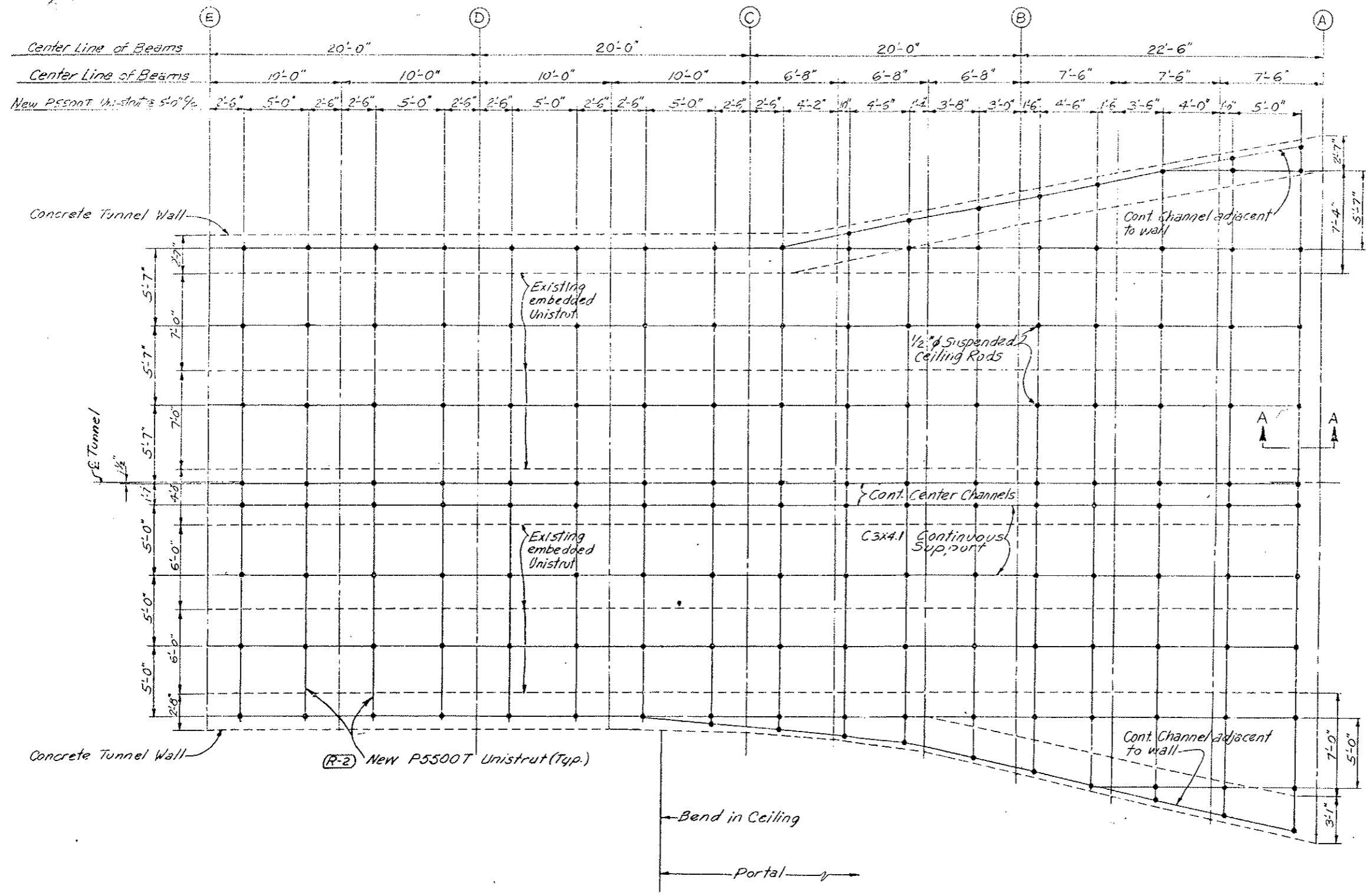
SPECIAL PANEL ROWS  
EAST PORTAL AREA

EP-5

SHT. OF

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)280	112X	
AS CONSTRUCTED				
NO REVISIONS	REVISED	VOID		

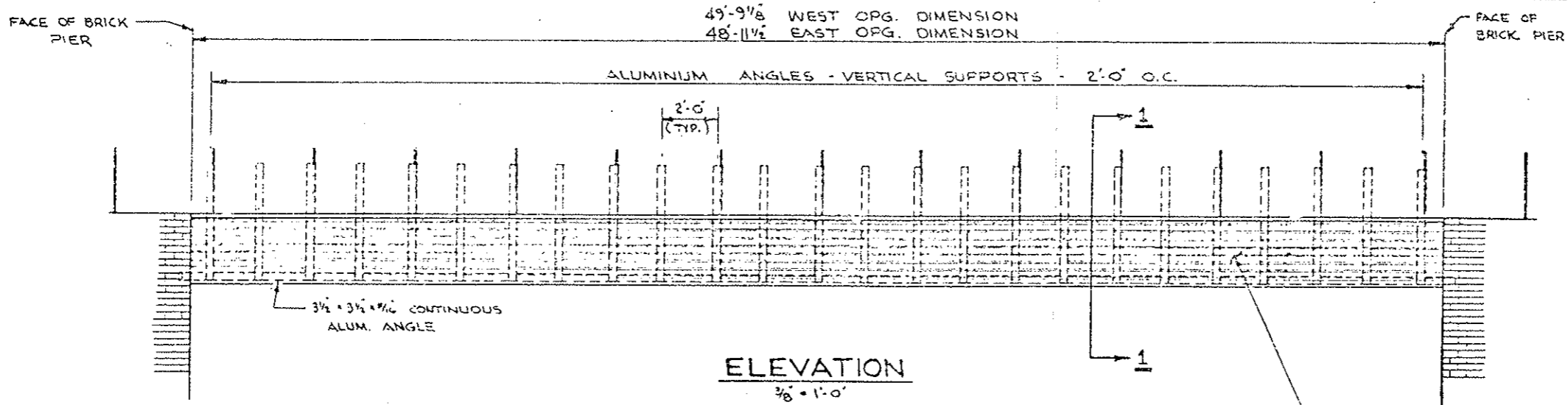
(R-1) Added Sheet 10-17-78 E.B.  
 (R-2) Clarified Detail 11-3-78 E.B.



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.

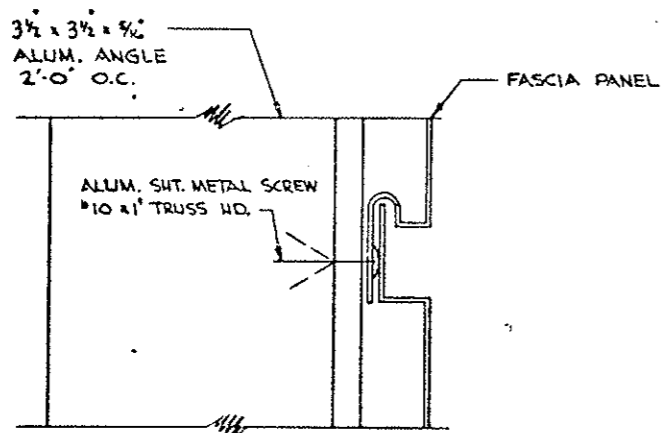
<b>DIVISION OF HIGHWAYS</b>	
PLAN THRU SUSPENDED CEILING	
EAST VENTILATION BLDG.	
Designer CDOH	Structure
Detailer J. Letchworth	Numbers
Drawing Number C-27X	of Drawings



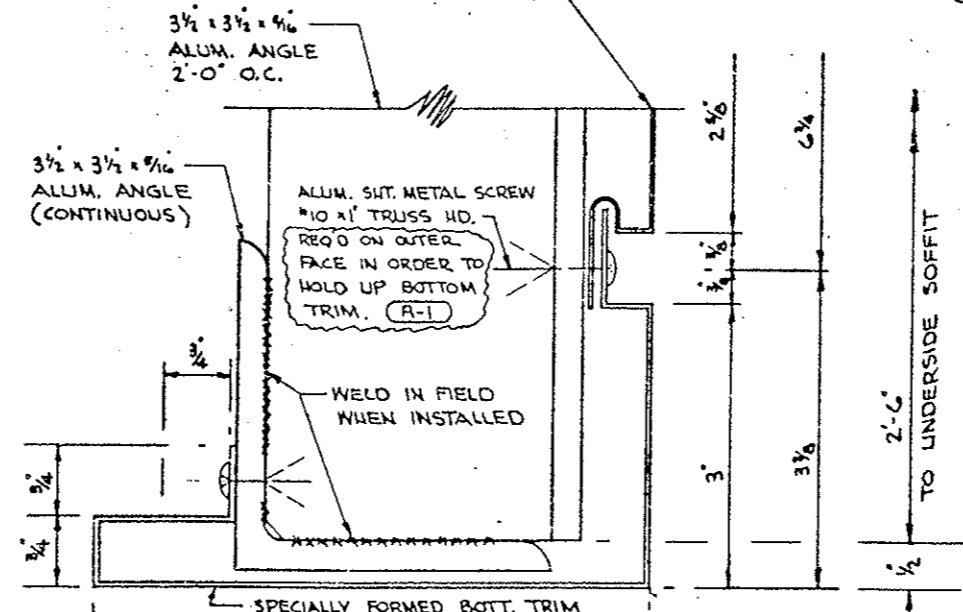
**ELEVATION**  
3/8" = 1'-0"

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

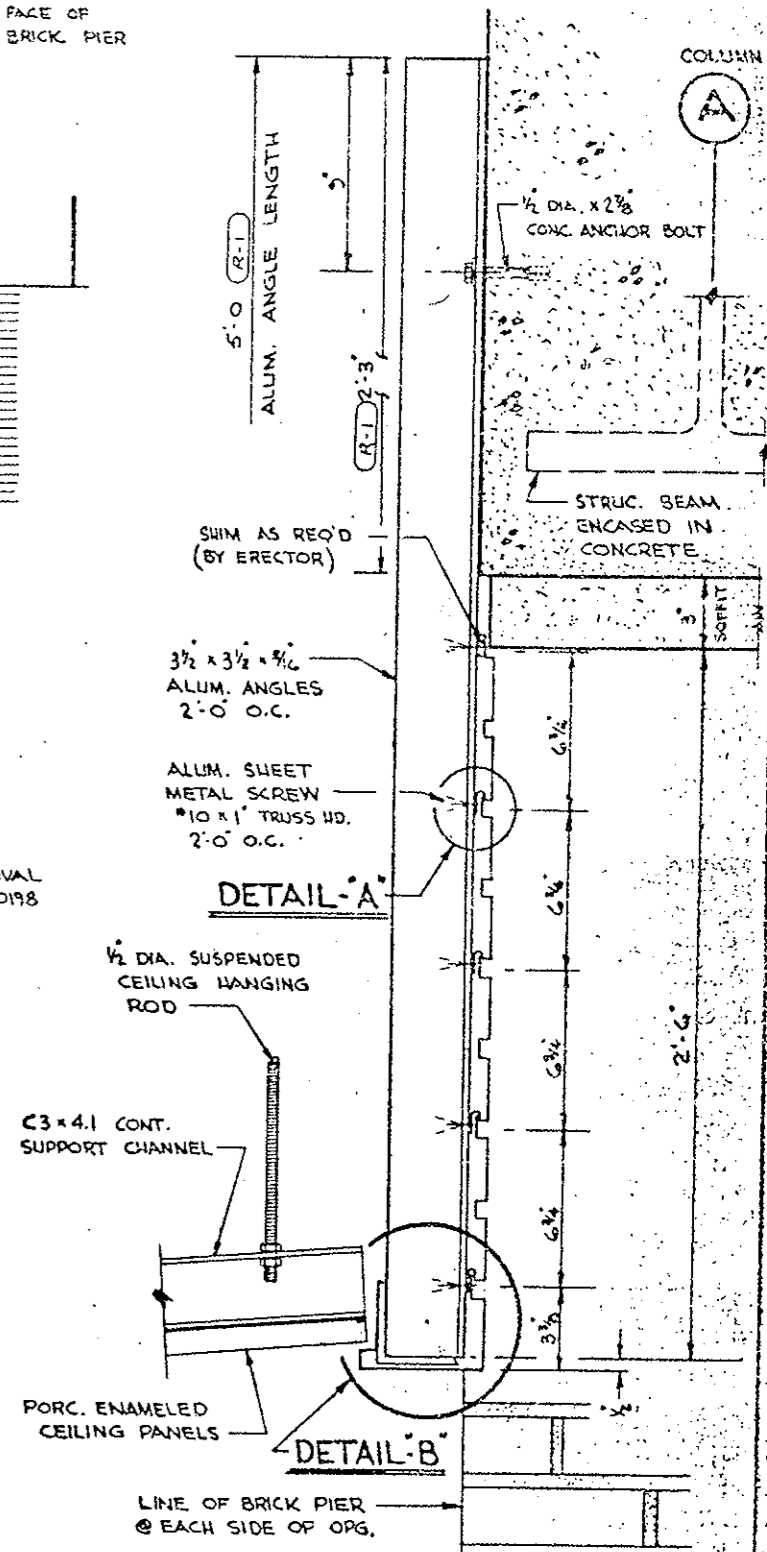
COLORTRIM FASCIA PANELS W/TRIM  
MODEL F-675  
FINISH - KYNAR 500  
NO. 43 MEDIUM BRONZE - AT NO ADDITIONAL COST TO STATE PER EARLIER APPROVAL D.O.H. TRANSMITTAL #0198 (R-1)



**DETAIL - A**  
FULL SIZE



**DETAIL - B**  
FULL SIZE



**DETAIL - A**

**DETAIL - B**

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

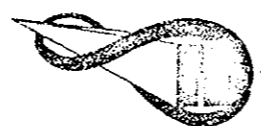
APPROVED FINAL  
DATE 12/14/79  
BY [Signature]

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

*This drawing has been reviewed and revised by [Signature]*  
**WEAVER CONSTRUCTION CO.**

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

**Jemrec, Inc.**  
Corrosion Control Coatings



P.O. BOX 369 KENSINGTON, MD. 20785

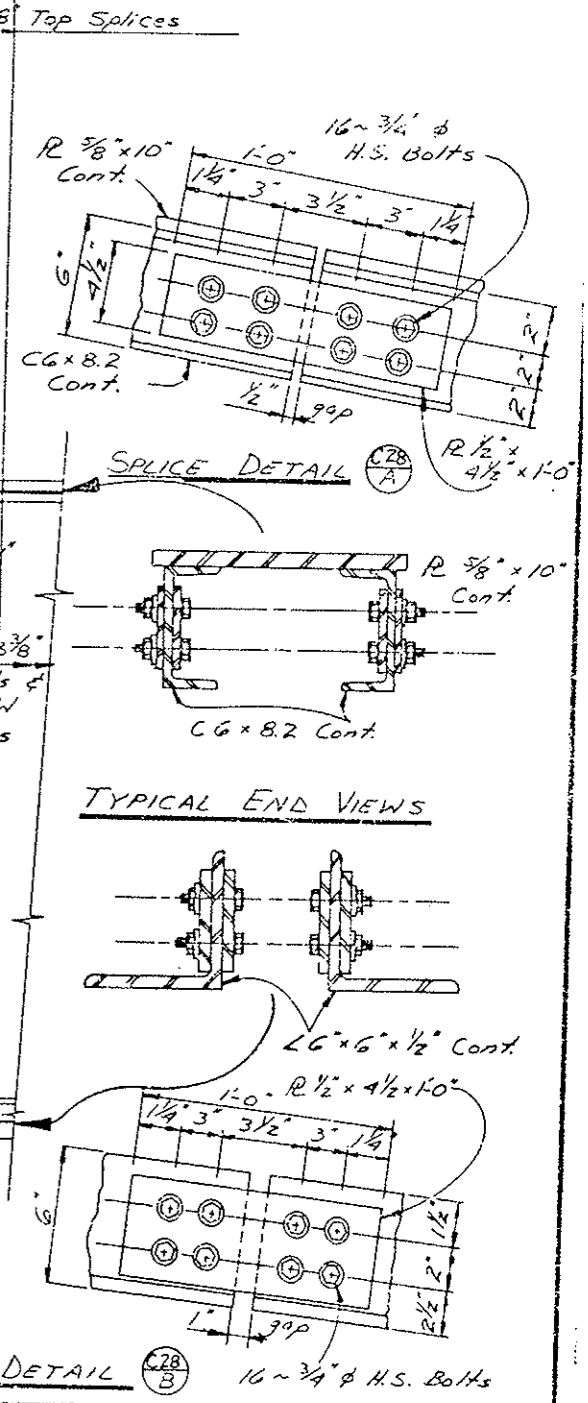
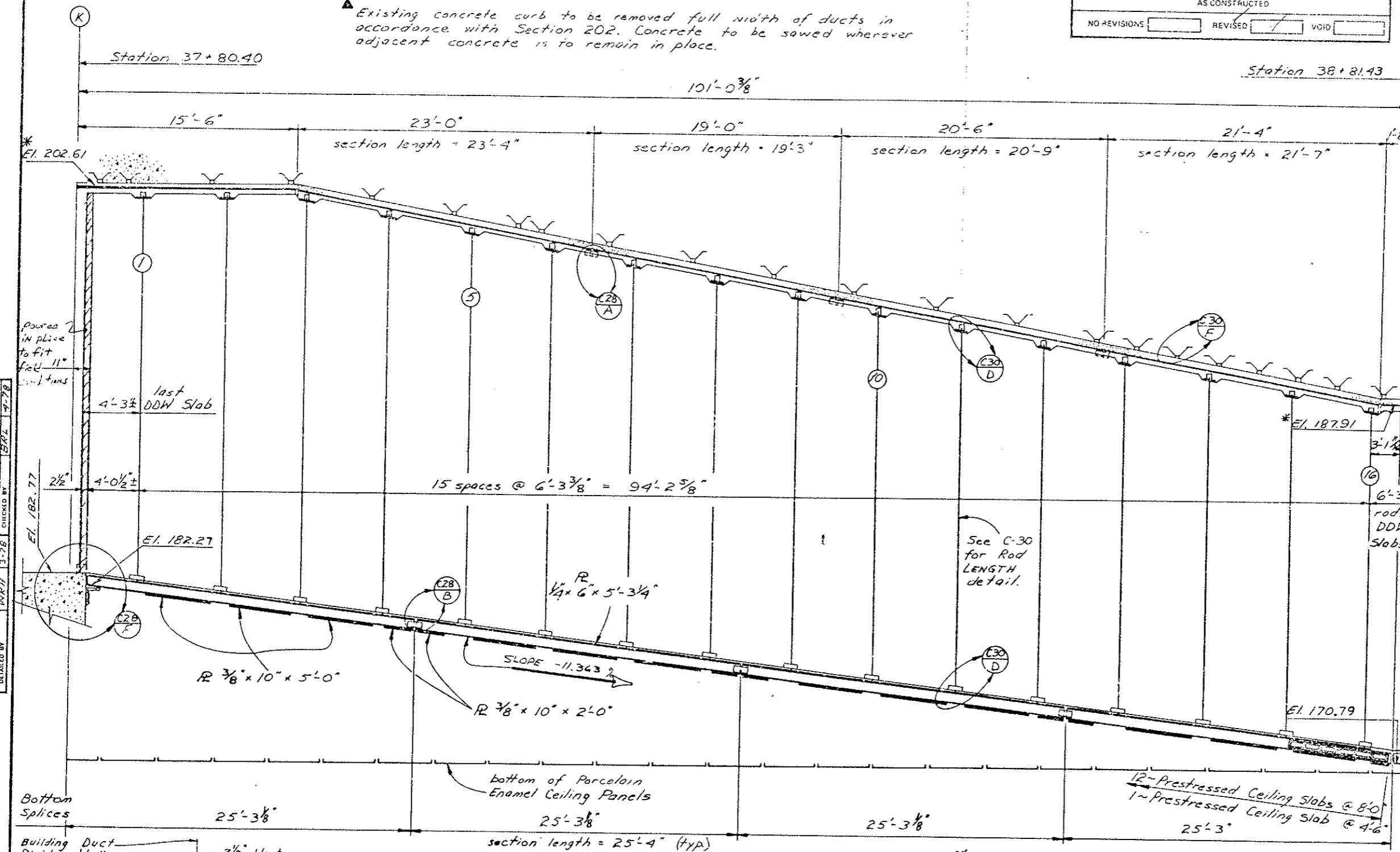
NUMBER	DATE	REVISIONS	DATE
(R-1)	10-31-77	REVISED BOTTOM TRIM DIM. - ADDED NOTES - ALUM. ANGLE DIM.	15 AUG. 77
			DRAWN: L.K.
			CHECKED:
			SCALE:
			AS NOTED

**FASCIA PANELS @ EAST & WEST PORTALS**

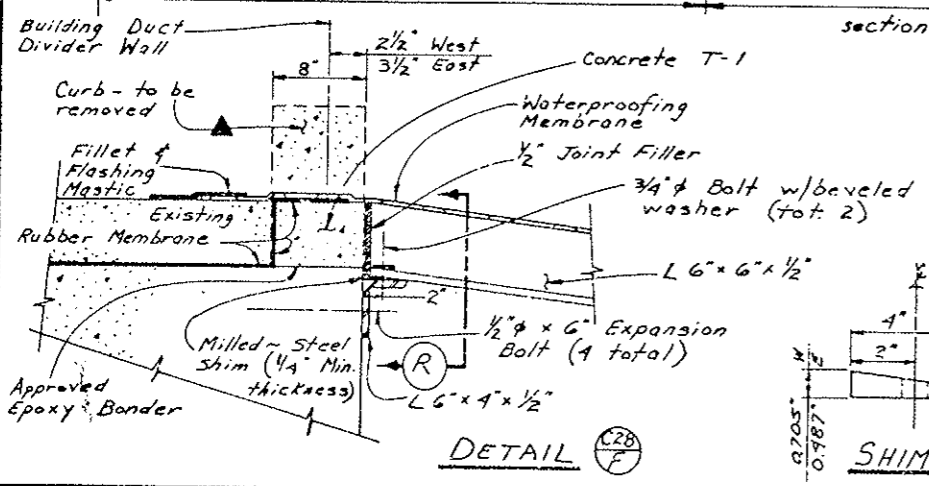
**FP-1**

REVISIONS	

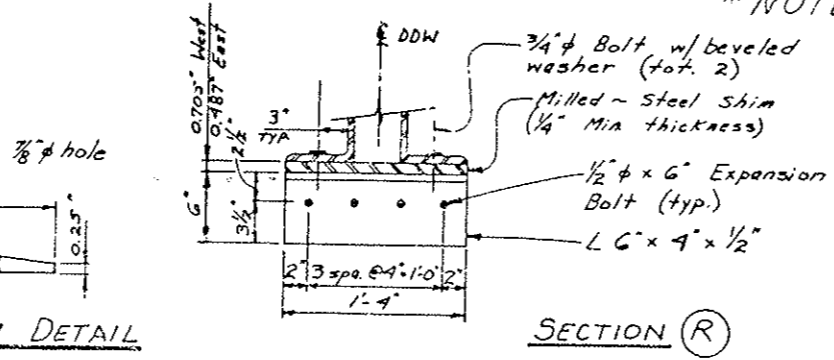
▲ Existing concrete curb to be removed full width of ducts in accordance with Section 202. Concrete to be sawed wherever adjacent concrete is to remain in place.



DESIGNED BY	DATE	CHECKED BY	DATE
W.R. HESSLER	3-78	W.R. HESSLER	3-78
DESIGNED BY	DATE	CHECKED BY	DATE
W.R. HESSLER	3-78	W.R. HESSLER	3-78



WEST TRANSITION ELEVATION



\* Contractor to verify in the field for Length prior to fabrication.

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

\* 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

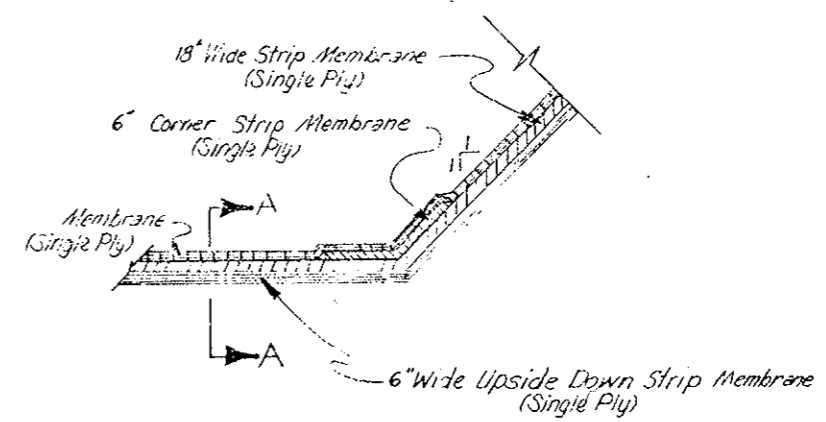
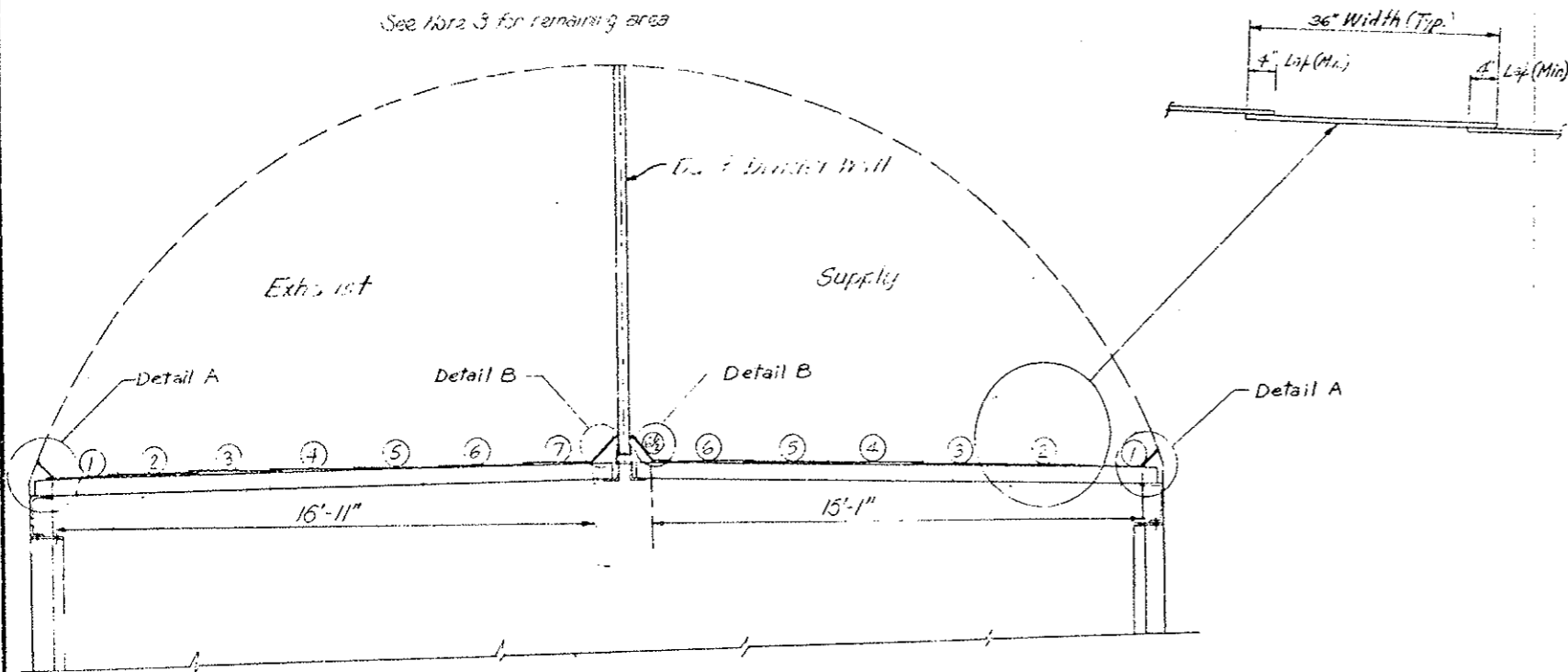
TRANSITION AREA DETAILS for the SUSPENDED PORCELAIN ENAMEL CEILING and SUPPORT SYSTEM for the DUCT DIVIDER WALL and PRECAST CEILING SLABS

West Part 1

Designer	C.D.O.H.	Structure	F-13-X
Detailer	W.R. HESSLER	Numbers	
Drawing Number	C-28		

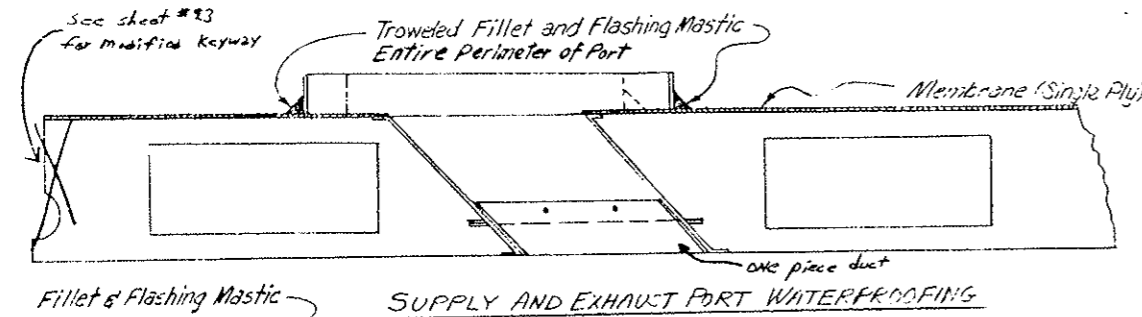


WATERPROOFING (MEMBRANE) LAPPING ARRANGEMENT  
 TYPICAL SECTION LOOKING EAST  
 Applies from Sta 37+80 to 41+05  
 and Sta 120+97 to 121+75  
 See 16r2 3 for remaining area

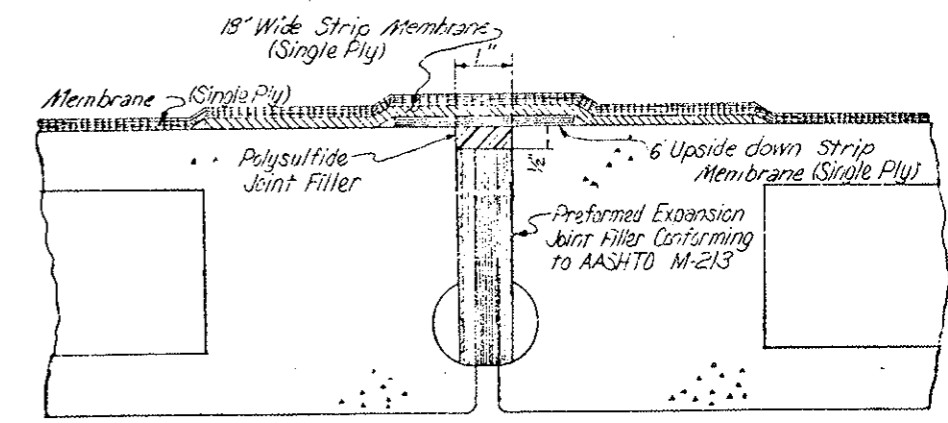
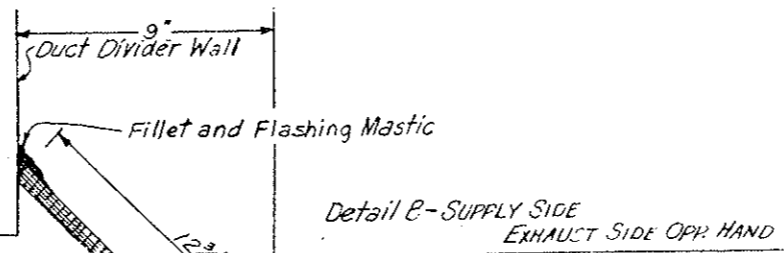
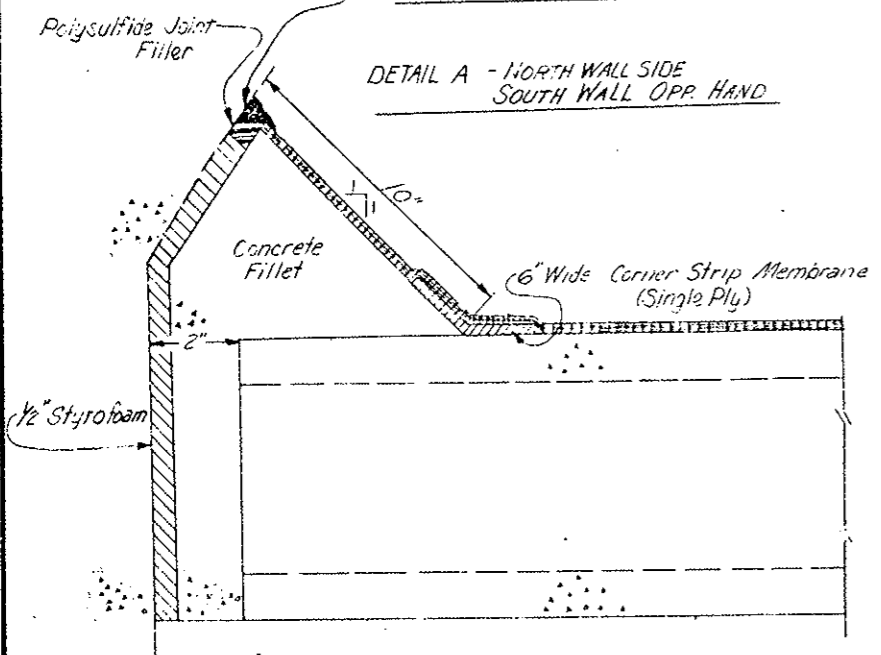


CROSS-SECTION THRU AN EXPANSION JOINT AT DETAIL A OR B

DESIGNED BY	C.D.O.H.	CHECKED BY	J. L. P. W. R. T. H.
QUANTITIES BY	C.D.O.H.	CHECKED BY	J. L. P. W. R. T. H.
DATE	7-9-75	DATE	7-9-75
INITIAL	C.D.O.H.	INITIAL	J. L. P. W. R. T. H.



DETAIL A - NORTH WALL SIDE  
 SOUTH WALL OPP. HAND



- 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 place of membrane from Sta 41+05 to 120+97.

DIVISION OF HIGHWAYS

CEILING  
 WATERPROOFING  
 (MEMBRANE)

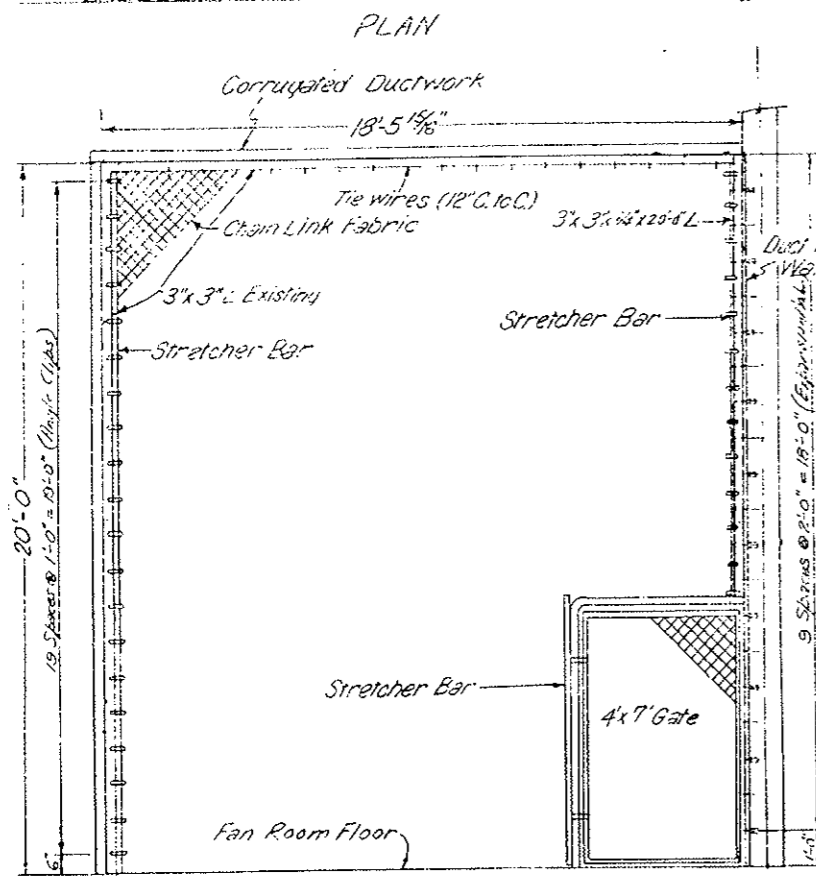
Designer C.D.O.H. Structure Numbers  
 Detailer J. L. P. W. R. T. H. of Drawings  
 Drawing Number C-31

Revision Dates (Preliminary Stage Only)

NO REVISIONS	REVISED	VOID	XIII	COLORADO	170-3(83)220	116
	7					
REVISIONS						
R-1	10-17-75	Added Sheet				E.B.



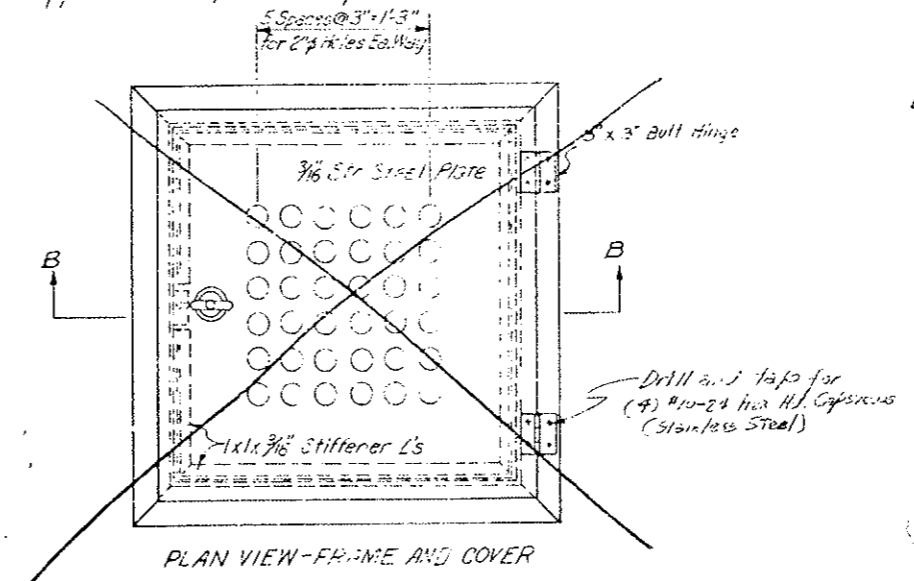
REVISIONS	



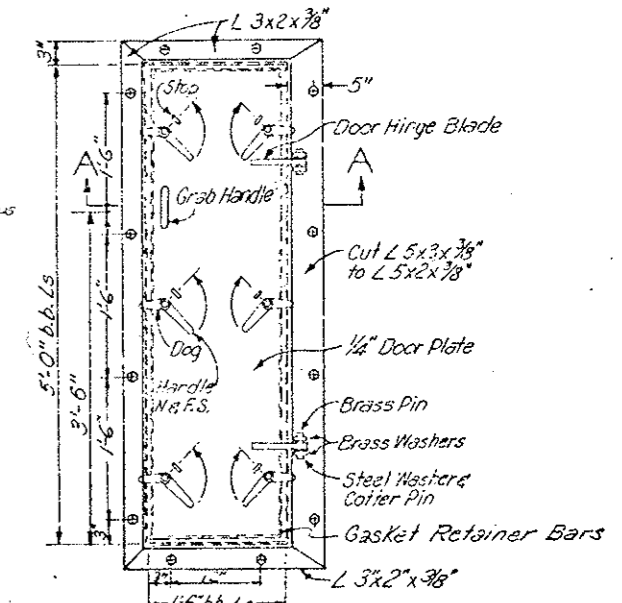
NOTE: Safety Screen Installed by DOH Tunnel Maintenance

DUCT ACCESS HATCH DETAILS

NOTE: See Approved Shop Drawing Sheet No. 117AX



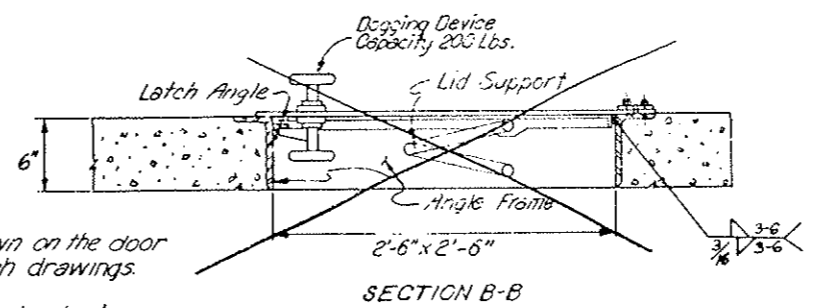
DUCT DIVIDER WALL DOOR DETAILS



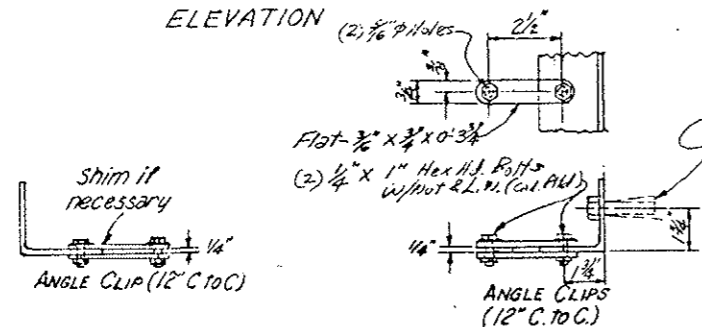
Note: Eight required, 4 as shown and 4 opposite hand. Differential Pressure for design = 50 lbs / sq. ft.

ELEVATION-FRESH AIR SIDE

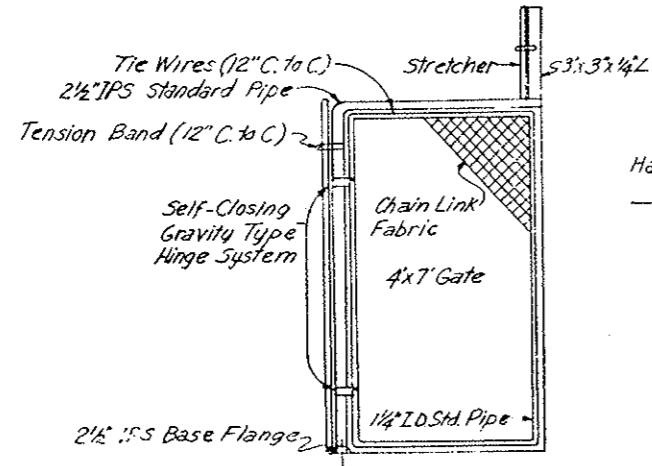
Frame not shown for clarity (See Section A-A)



SECTION B-B



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

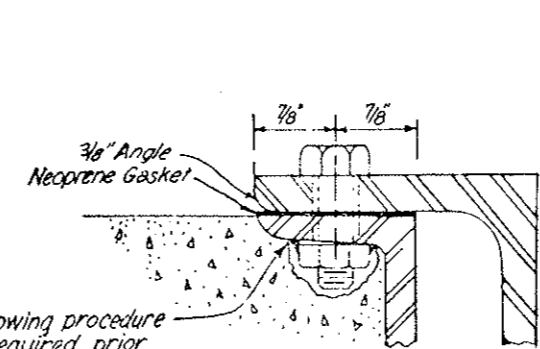


DETAILS OF SAFETY SCREEN

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 gauge 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

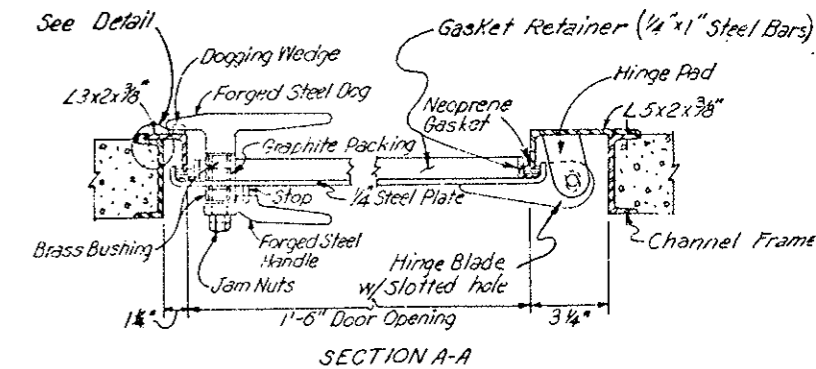
Stationing is to the centerline of hatch or door.



CONNECTION DETAIL

The following procedure will be required prior to precasting

1. Drill hole in channel
2. Tack weld nut to channel
3. Thread bolt into nut
4. Cover nut and bolt with grease

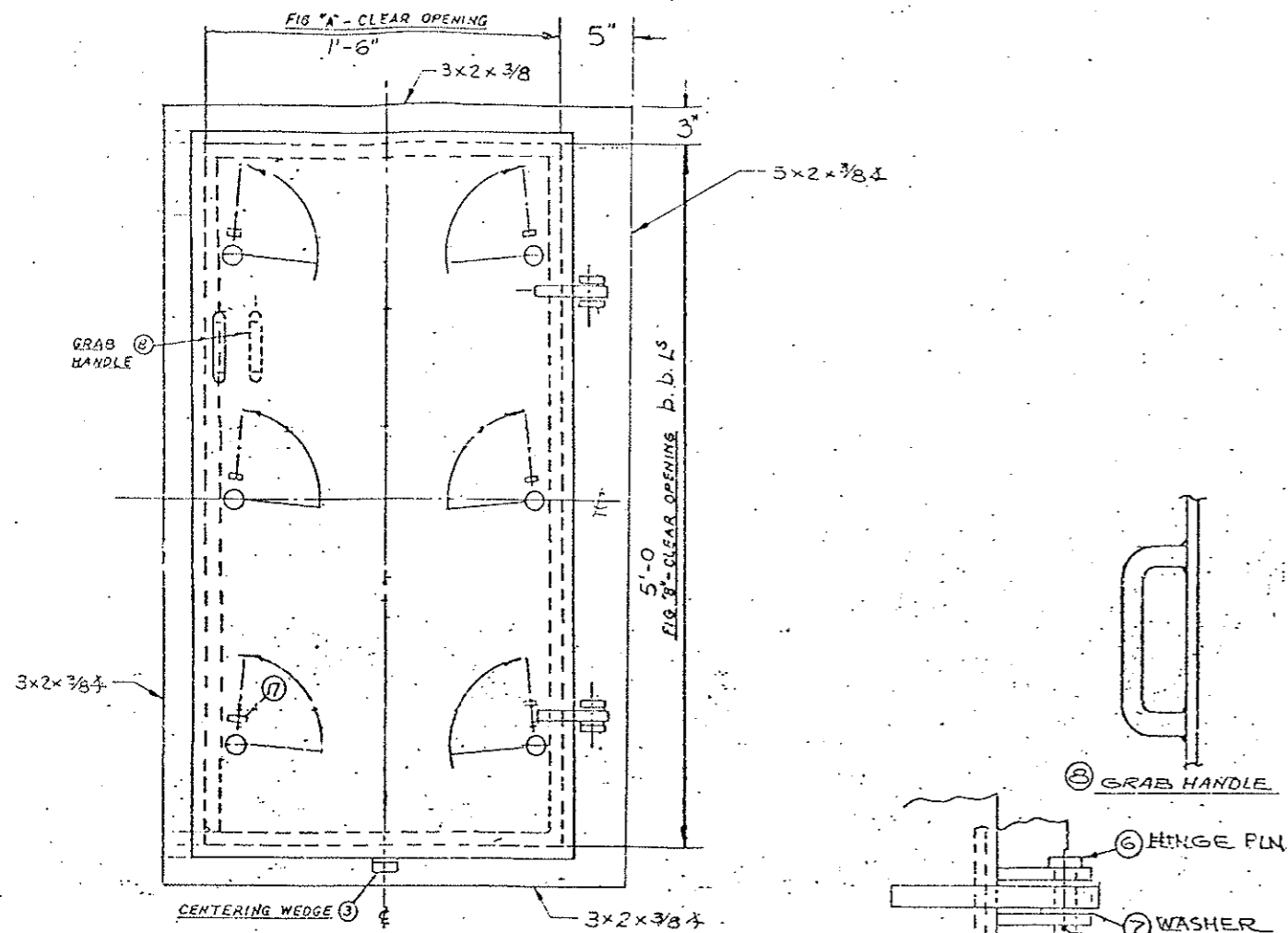


SECTION A-A

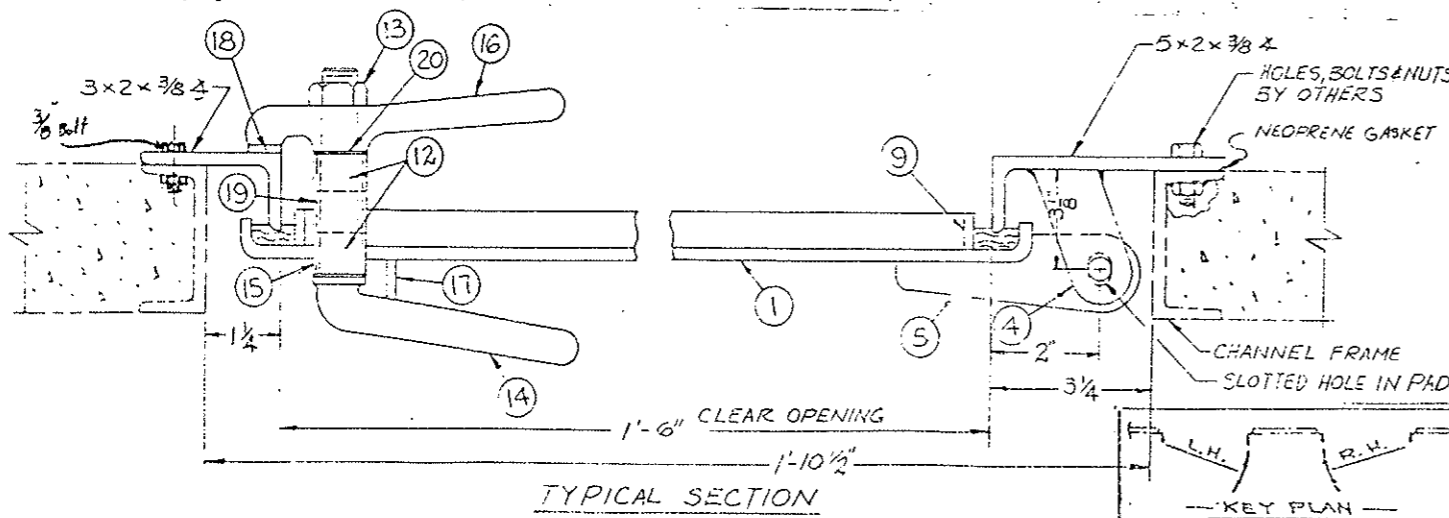
<b>DIVISION OF HIGHWAYS</b>	
ACCESS HATCH, DUCT DIVIDER DOOR AND SAFETY SCREEN DETAILS	
Designer <i>CD</i>	Structure
Detailer <i>CD</i>	Numbers
Drawing Number <i>C-32</i>	of Drawings

DATE	DESIGNED BY	CHECKED BY
7-8-75	C.D.H.	C.D.H.
7-8-75	CHECKED BY	CHECKED BY
7-8-75	QUANTITIES BY	QUANTITIES BY
7-8-75	DETAILS BY	DETAILS BY

117AX



ELEVATION  
(RIGHT HAND DOOR SHOWN)



TYPICAL SECTION

KEY PLAN

-LIST OF MATERIAL-

PC	PART	MATERIAL	REMARKS
1	PANEL	STEEL	1/4" TH
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

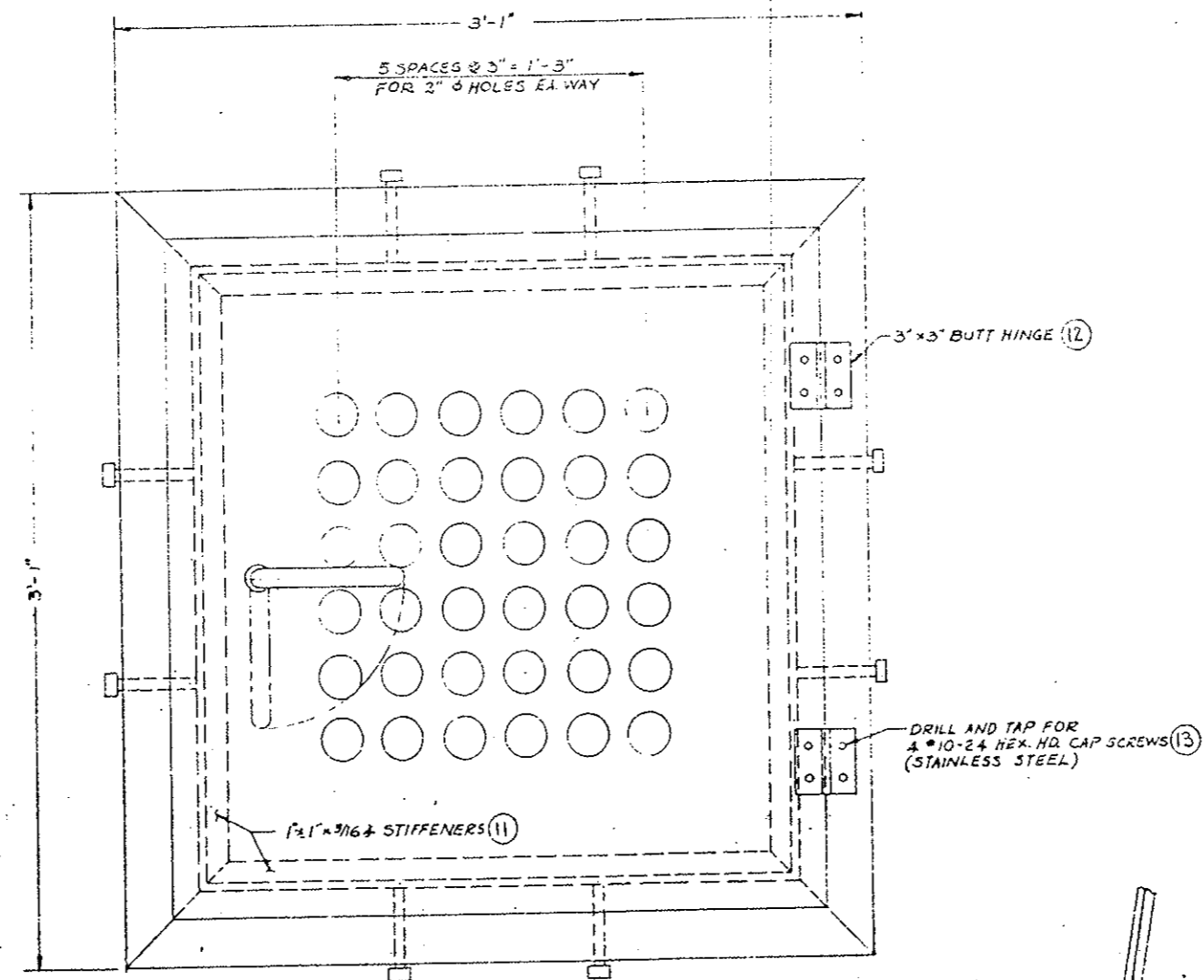
APPROVED PRELIMINARY

DATE 3/22/79

BY *Rich Fungillo*

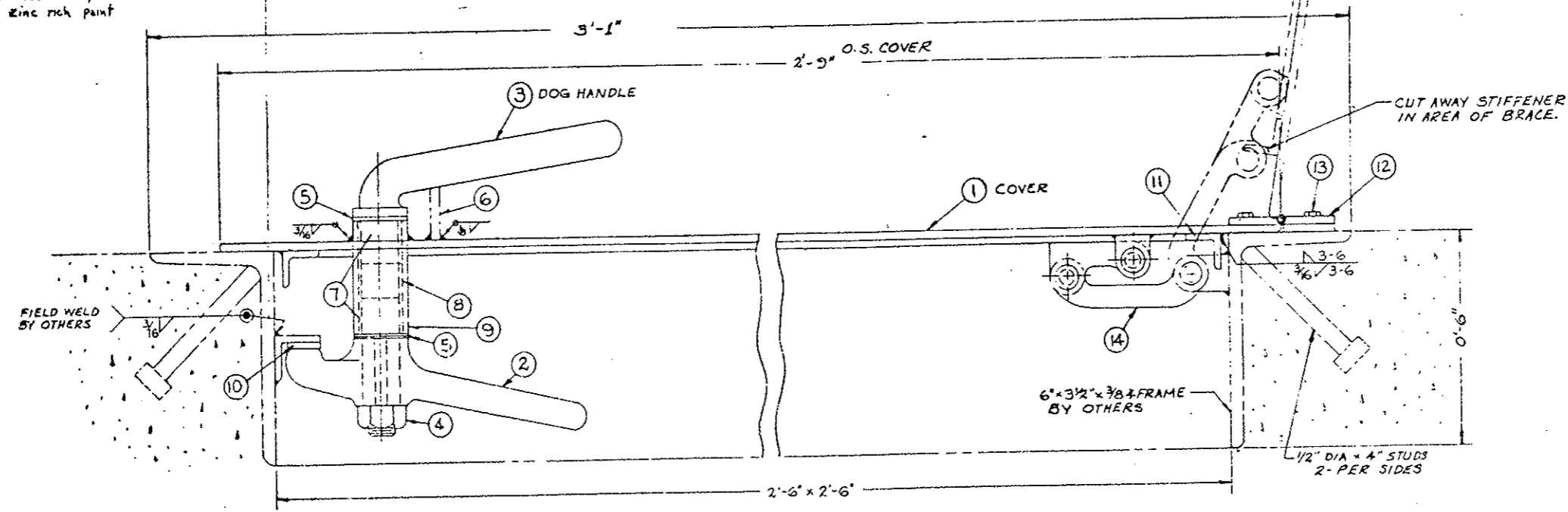
Have shop drawings etc. checked and reviewed by  
*MS*  
 3/20 72

QTY	PART	MATERIAL	REMARKS
1	COVER	STEEL ASTM A36	3/16 THK
2	DOG	STEEL	COMM'L
3	HANDLE	STEEL	COMM'L
4	LOCK NUT	STEEL	
5	DOG WASHER	BRASS	
6	STOP	STEEL ASTM A36	COMM'L
7	BUSHING	BRT. BRASS	
8	PACKING	GRAPHITE	COMM'L
9	SLEEVE	STEEL ASTM A120	
10	WEDGE	FORGED STEEL	C-1012
11	STIFFENER	STEEL ASTM A36	1" x 1" x 1/16"
12	HINGE		STANLEY # 850
13	CAP SCREWS	STNLS. STEEL	*10-24 HEX. HD
14	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 Bill Reynolds

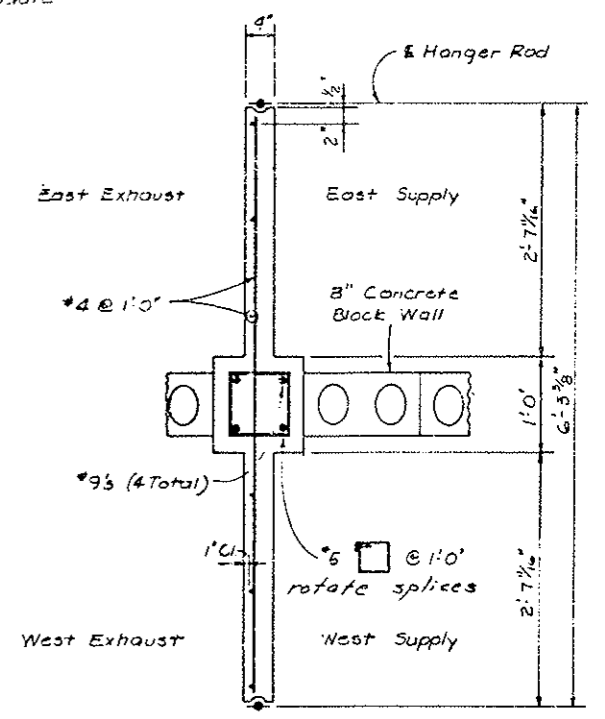
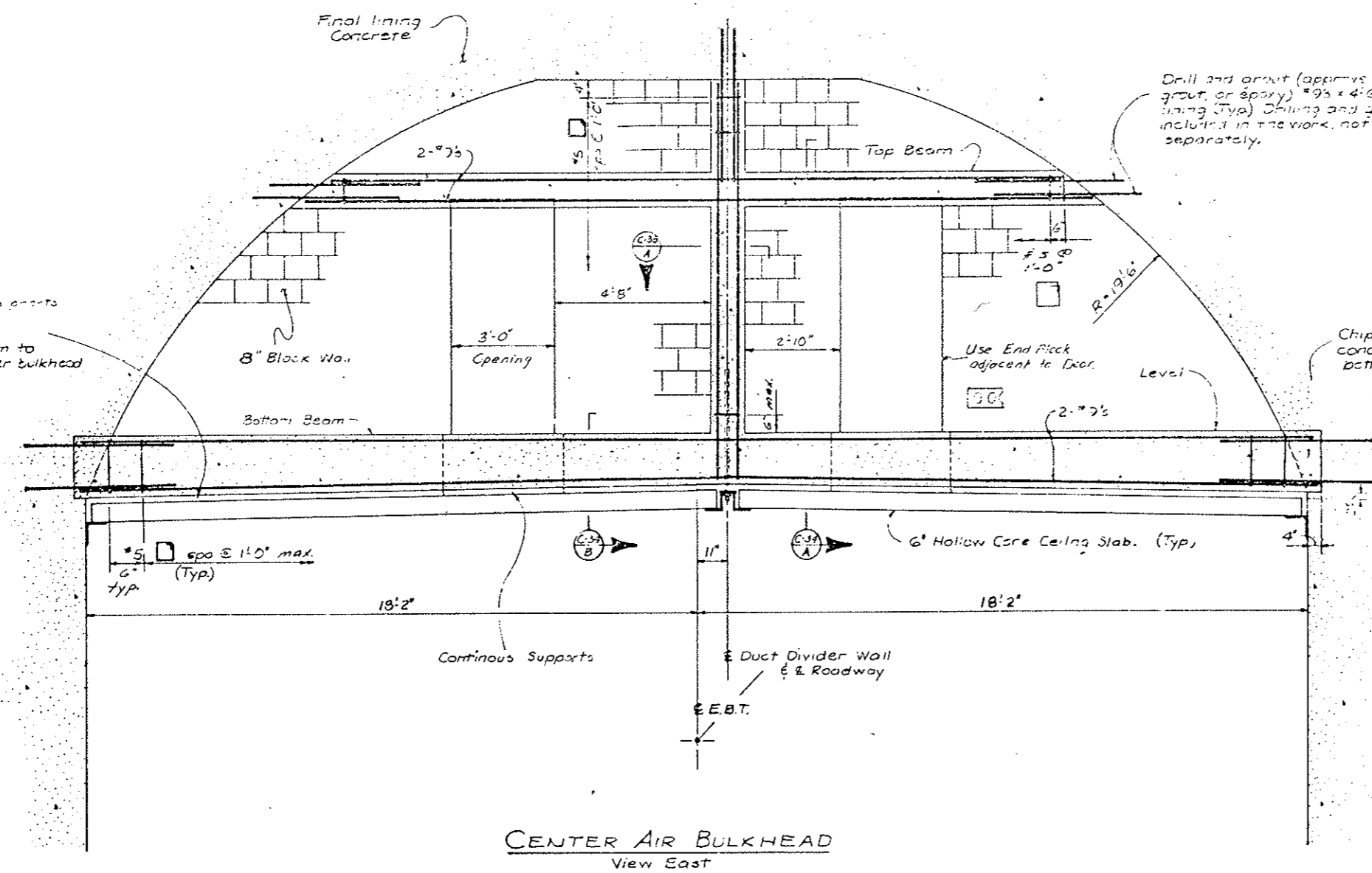
These drawings have been received and reviewed by  
MIS and are being submitted for approval  
WEAVER CONSTRUCTION CO.  
Date 3/20

WEAVER CONSTRUCTION CO.		
2'-6" x 2'-6" DUCT ACCESS HATCH		
JULIUS MOCK & SONS, INC.		
MARINE DIVISION 777 RUTLAND ROAD BROOKLYN, N.Y. 11203		
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.



SECTION C-33/A

Concrete: Class T-1  
 $f_c = 1200$  psi.  
 $n = 10$   
 Reinforcing Steel: Grade 60  
 $f_s = 24,000$  psi.

CENTER AIR BULKHEAD  
 View East

INITIAL	DATE	CHECKED BY	DATE
JHP	9-77		
C.D.O.H.	6-77	QUANTITIES BY	W.R.H. 4-78
S.F.C.	8-77	CHECKED BY	B.R.L. 4-78
B.R.L.	8-77	DESIGNED BY	

Temporary wood supports wedge in place.  
 Area under beam to be grouted after bulkhead is complete.

Drill and grout (approx 1 inch shrink grout, or epoxy) #9 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.

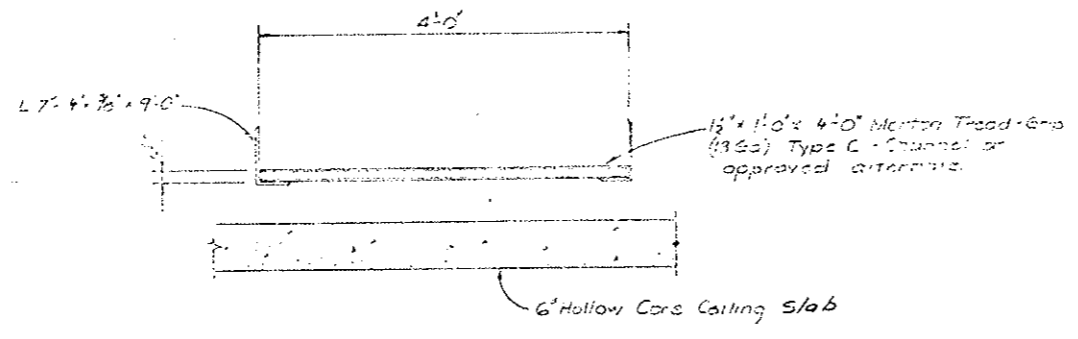
**DIVISION OF HIGHWAYS**

CENTER AIR BULKHEAD  
 STA. 80+77.31

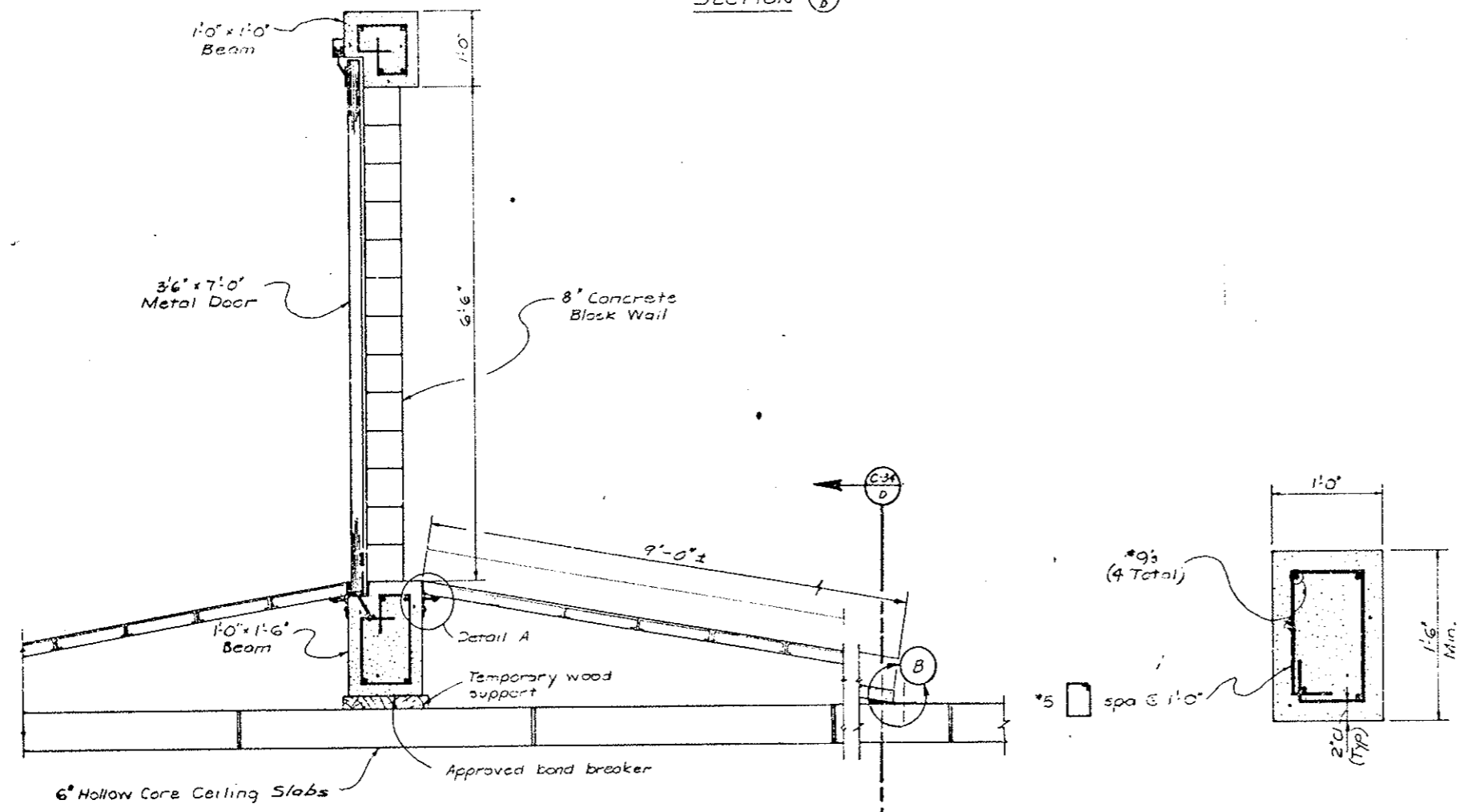
Designer C.D.O.H.	Structure F-13-X
Detailer B.R.Lera	Number
Drawing Number C-33	

Revision Dates (Preliminary Stage Only)

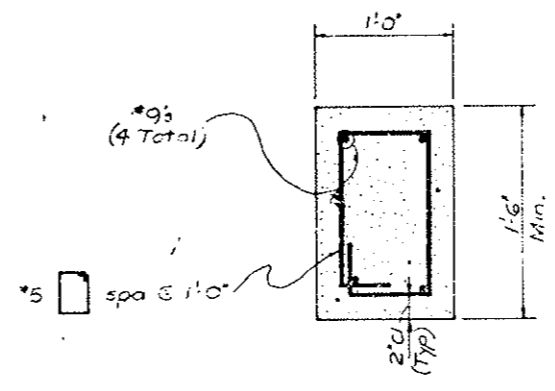
REVISIONS	



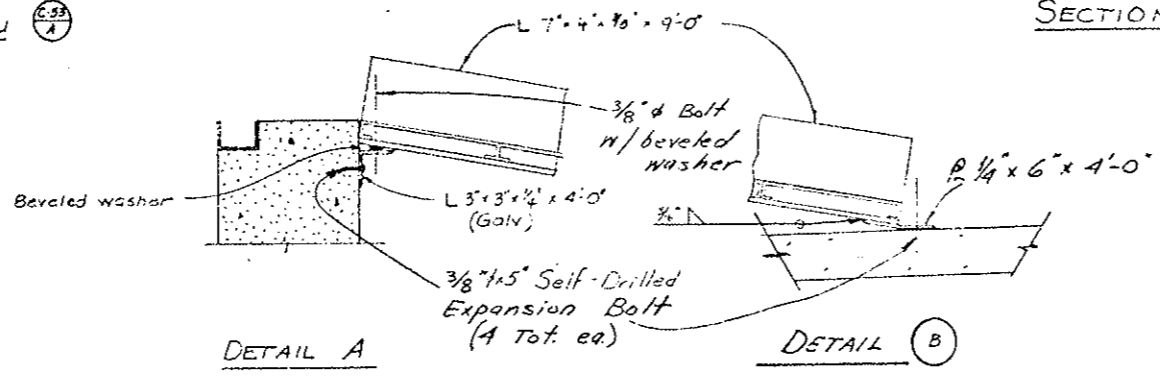
SECTION C-34 D



SECTION C-34 A

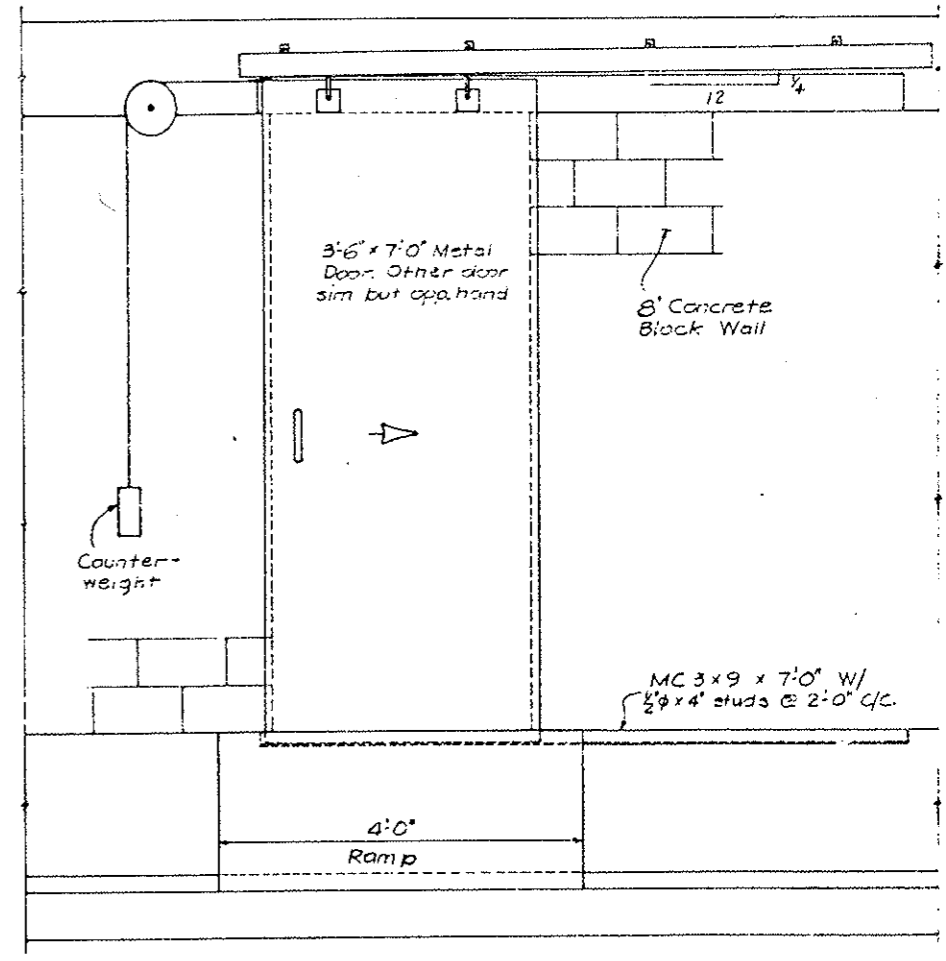


SECTION C-34 B



DETAIL A

DETAIL B



TYPICAL DOOR ELEVATION

DESIGNED BY	DATE	CHECKED BY
CDCH	5-77	JHP
CHECKED BY	DATE	QUANTITIES BY
BR	5-77	W/M
DETAILS BY	DATE	CHECKED BY
BR	5-77	W/M

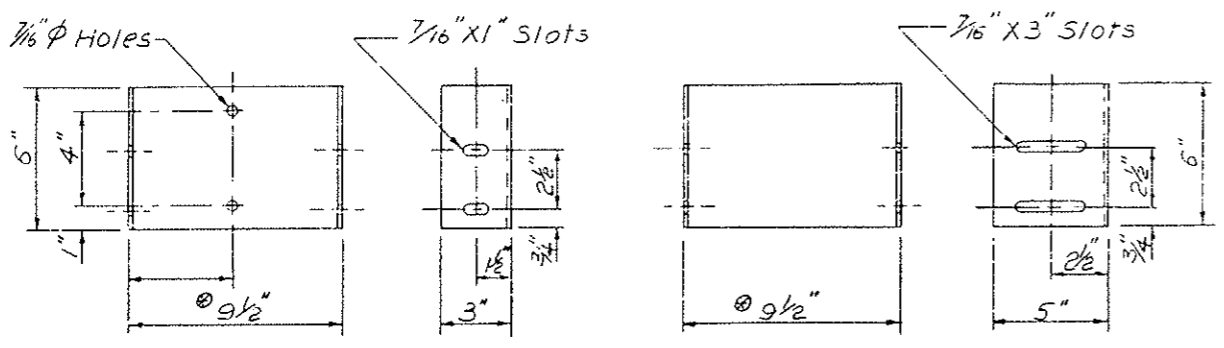
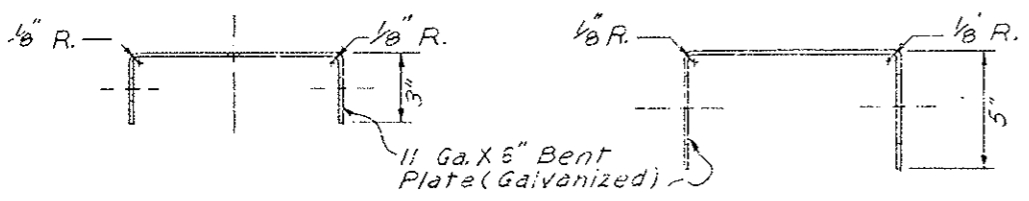
**DIVISION OF HIGHWAYS**

CENTER AIR

BULKHEAD DETAILS

Designer	CDCH	Structure	F-13-X
Detailer	BR	Numbers	
Drawing Number C-34			

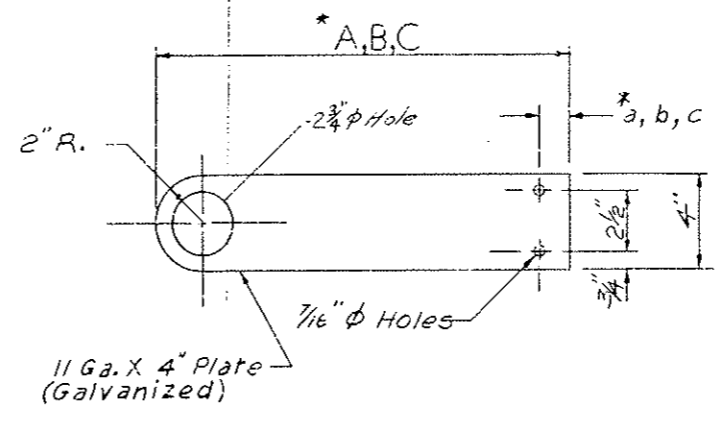
Revision Dates	(Preliminary Stage Only)



1 WALL BRACKET

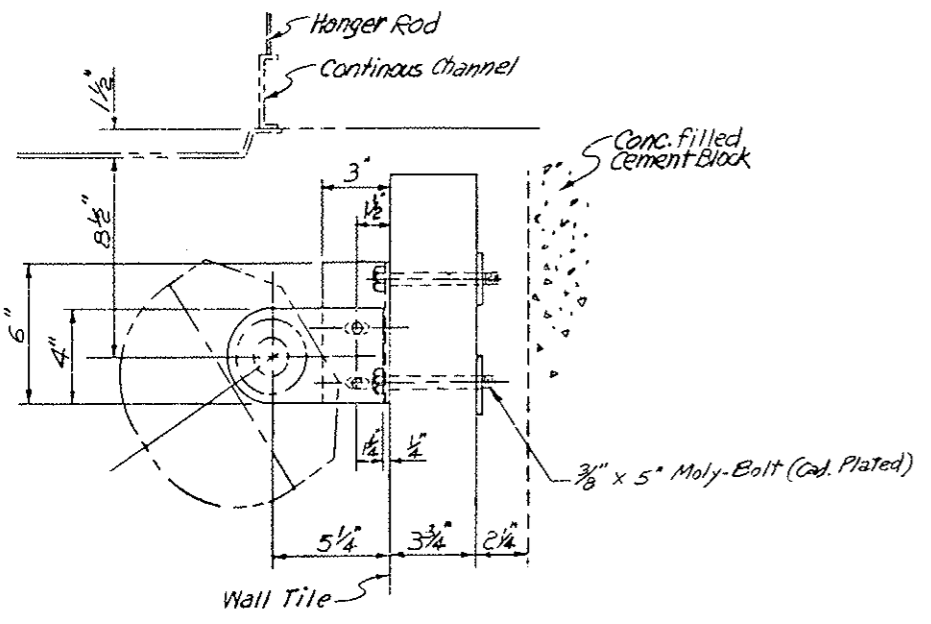
2, 3 WALL BRACKETS

\* Dimension approximate depending on Fixture used



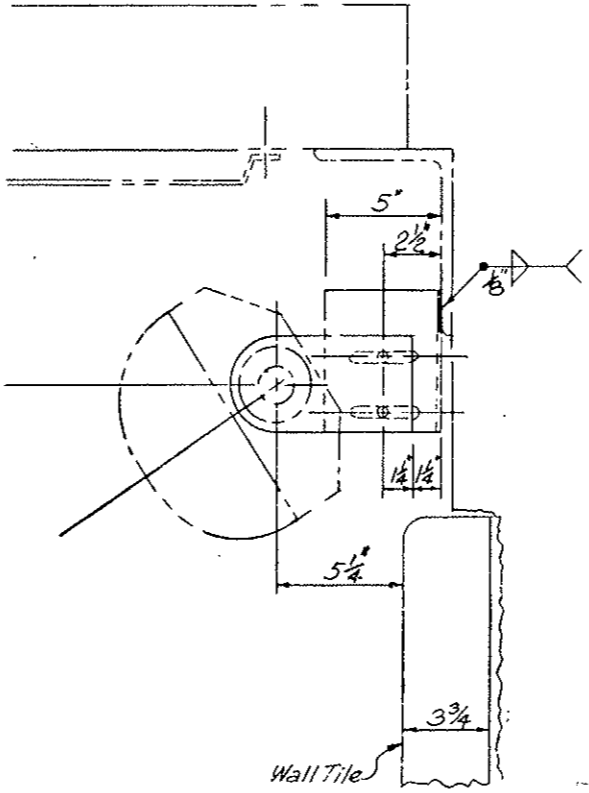
SIDE BRACKET

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



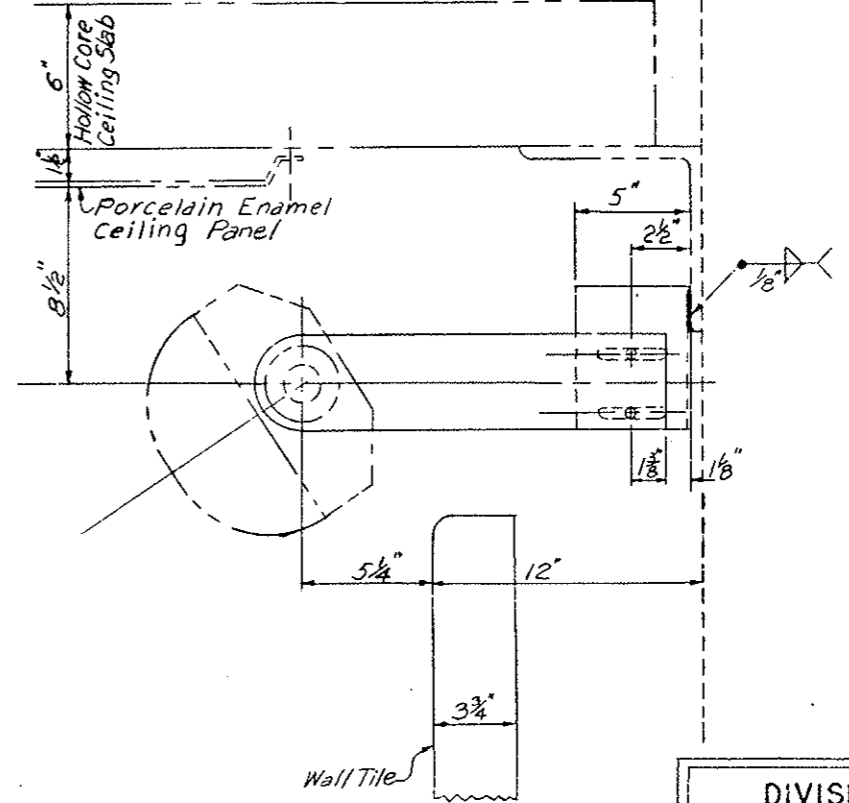
TYPE 1 BRACKET

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

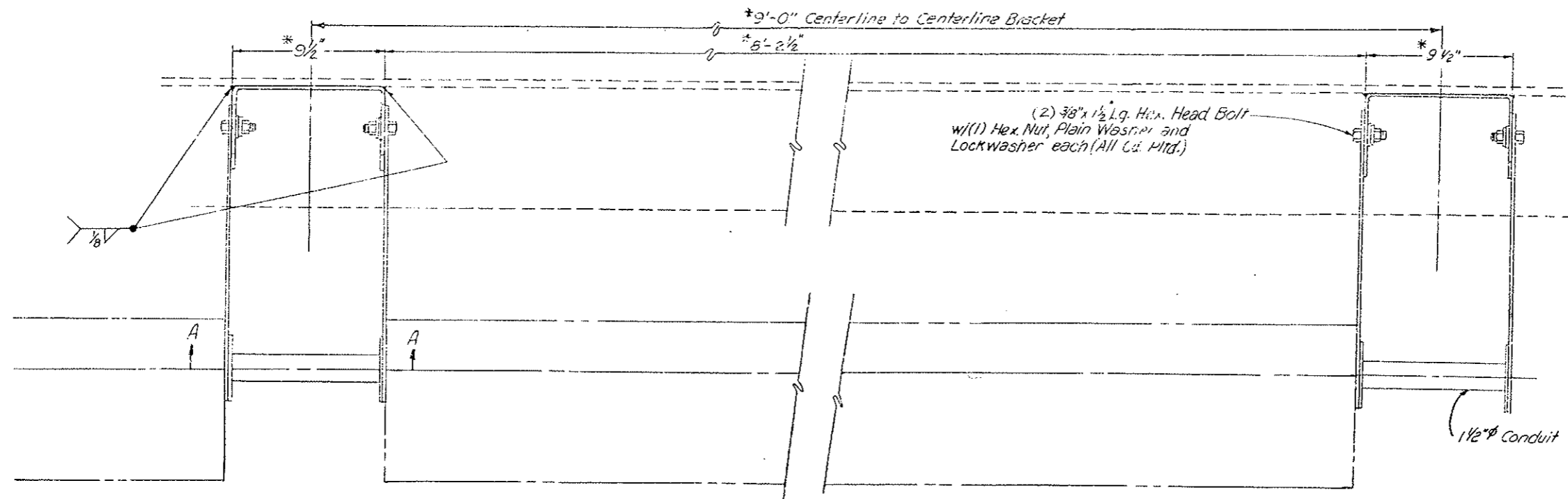


TYPE 3 BRACKET

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

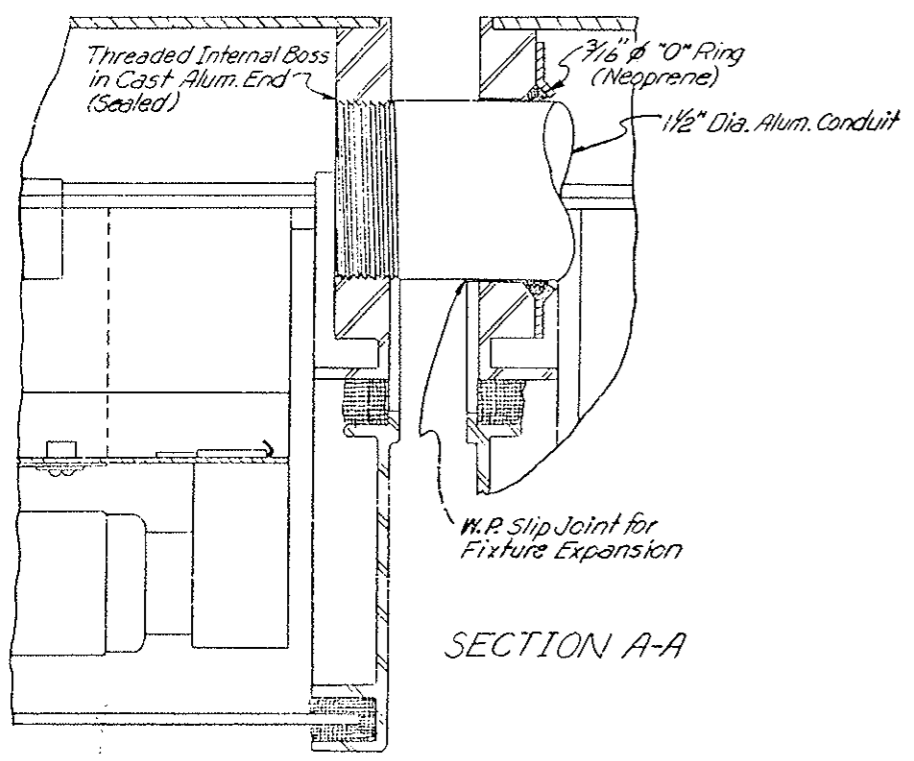
REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	121	
AS CONSTRUCTED				
NO REVISIONS	<input checked="" type="checkbox"/>	REVISED	<input type="checkbox"/>	VOID



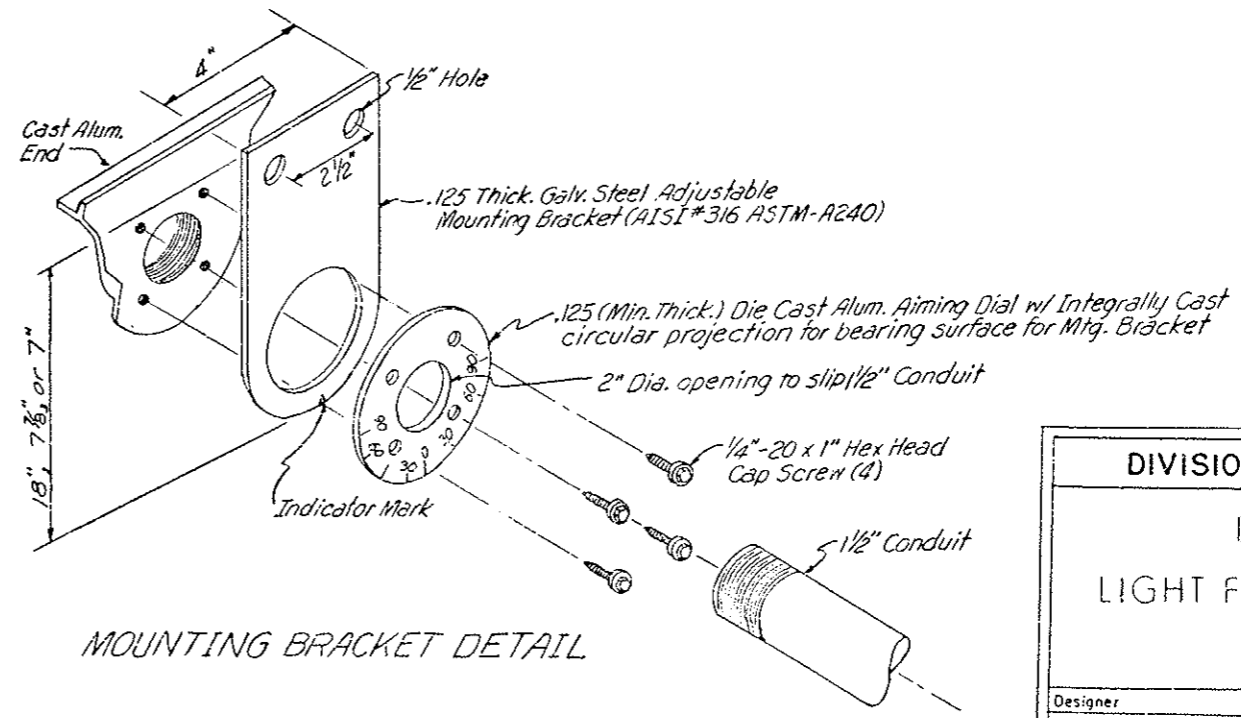
\* Dimension approximate depending on Fixture used.

PLAN VIEW

TYPICAL LIGHT FIXTURE BRACKET SPACING



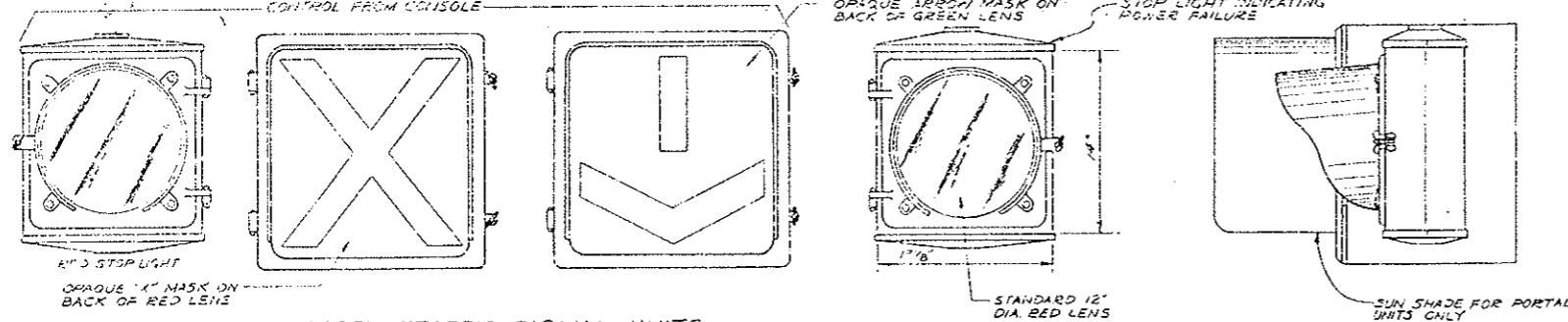
SECTION A-A



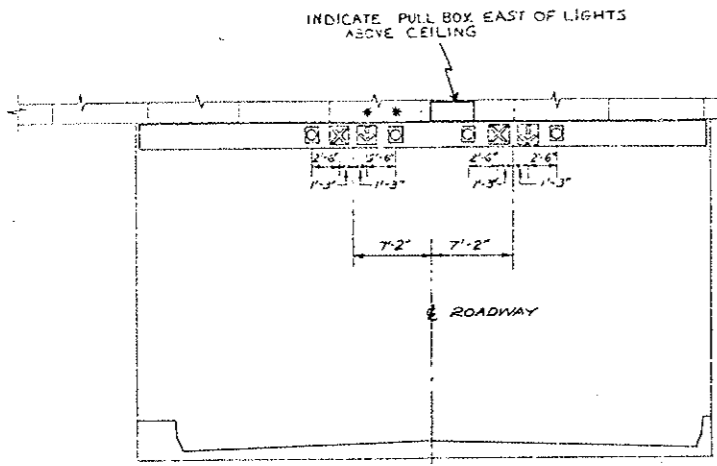
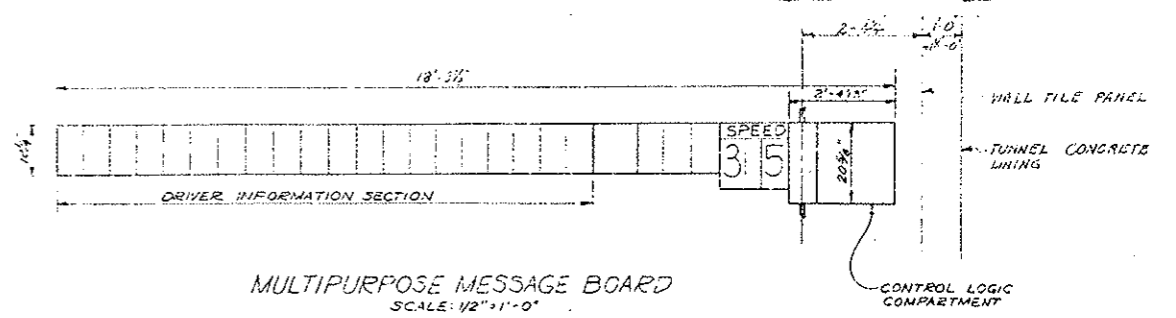
MOUNTING BRACKET DETAIL

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

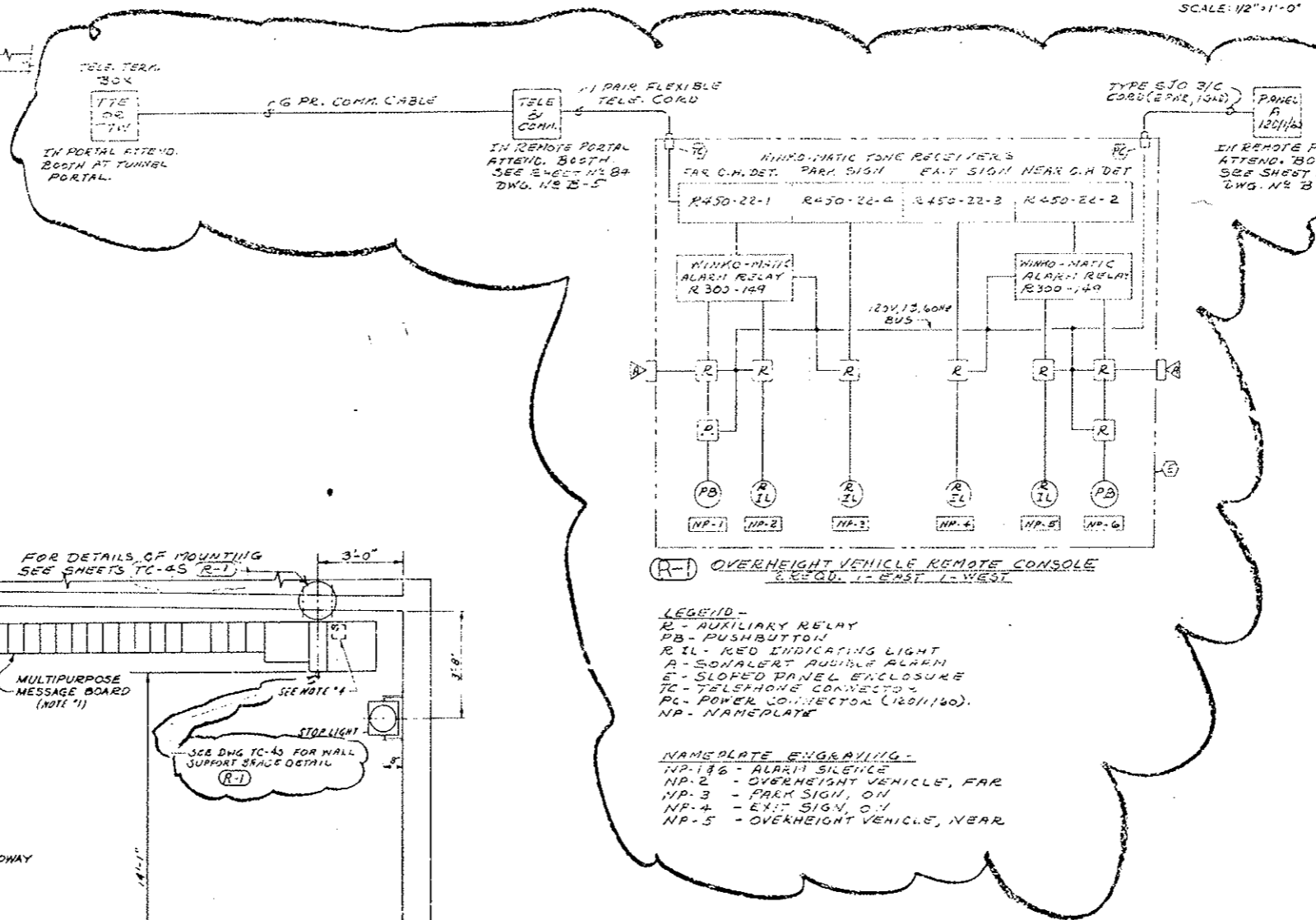
REVISED FOR PROJ. NO. 170-3(83)220  
ADDED OVER AT CONSOLE 10-6-73



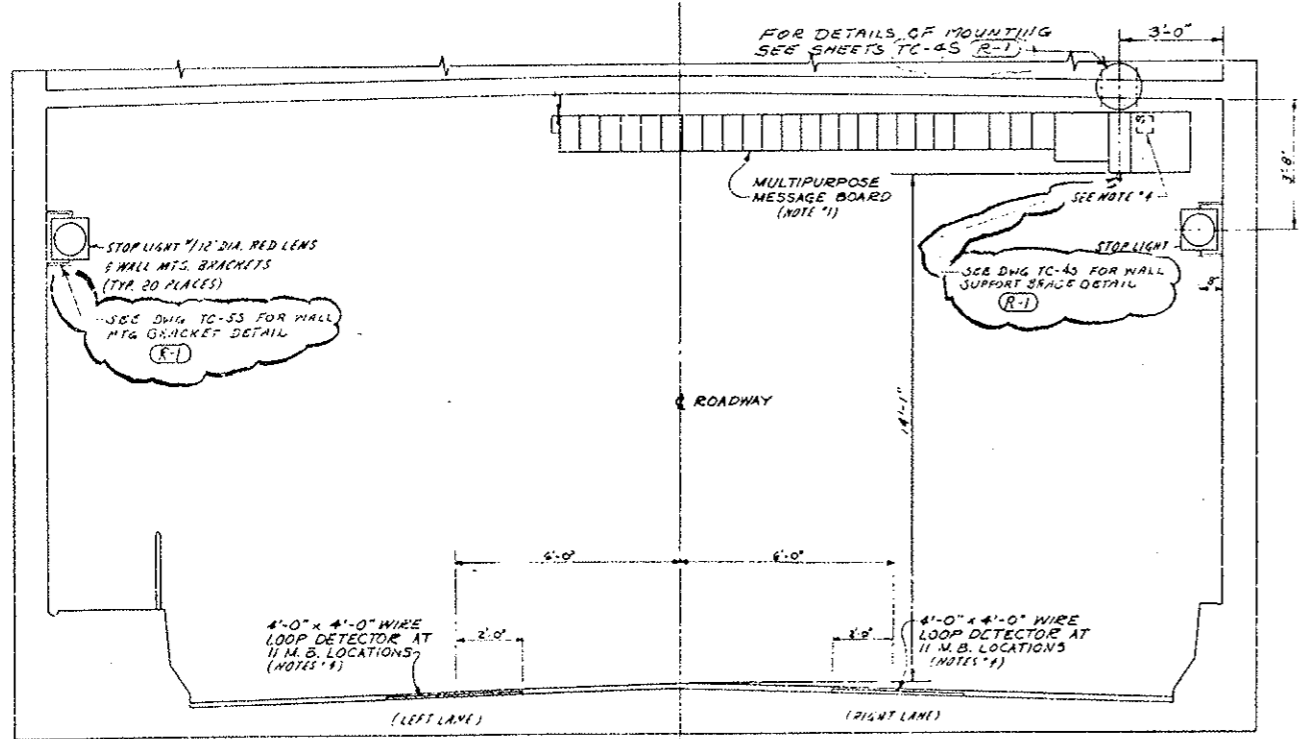
PORTAL TRAFFIC SIGNAL UNITS  
SCALE: 1/2" = 1'-0"



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



- NOTES:
- MULTIPURPOSE MESSAGE BOARDS PRESENTLY USE FOR THE NORTH TUNNEL EAST TRAFFIC SHALL BE RELOCATED TO THE SOUTH TUNNEL.
  - 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)
  - 20 NEW 12" DIA. STOP LIGHTS SHALL BE PROVIDED FOR THE SOUTH TUNNEL AND LOCATED AS SHOWN ON DRAWING E-T-15.
  - RIGHT LANE LOOP DETECTORS TO BE WIRED TO EXIST. AMPLIFIERS IN MESSAGE BOARD. 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).
  - THE PORTAL TRAFFIC SIGNAL UNITS PRESENTLY LOCATED AT THE EAST PORTAL OF THE NORTH TUNNEL SHALL BE REARRANGED AS SHOWN ON THIS DRAWING.
  - STOP SIGNALS ON THE SOUTH WALL OF THE NORTH TUNNEL SHALL BE ROTATED 180° 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-115.



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

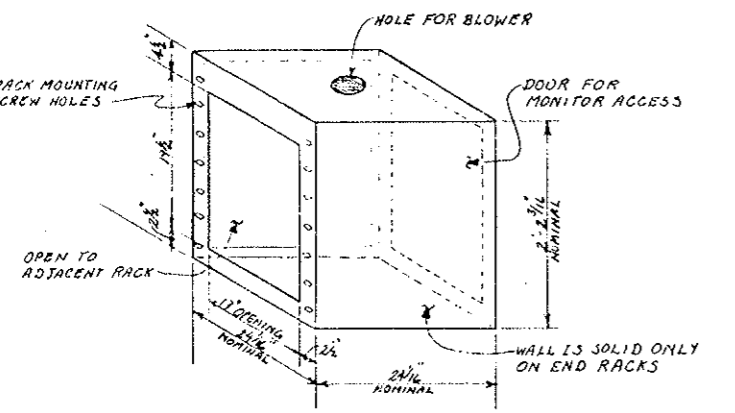
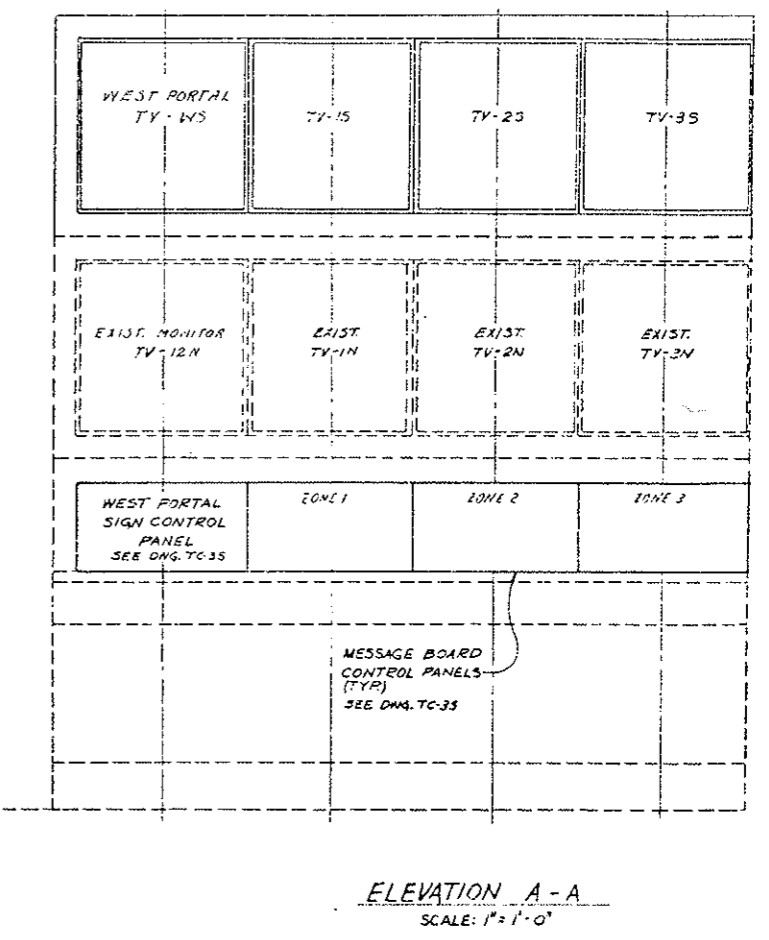
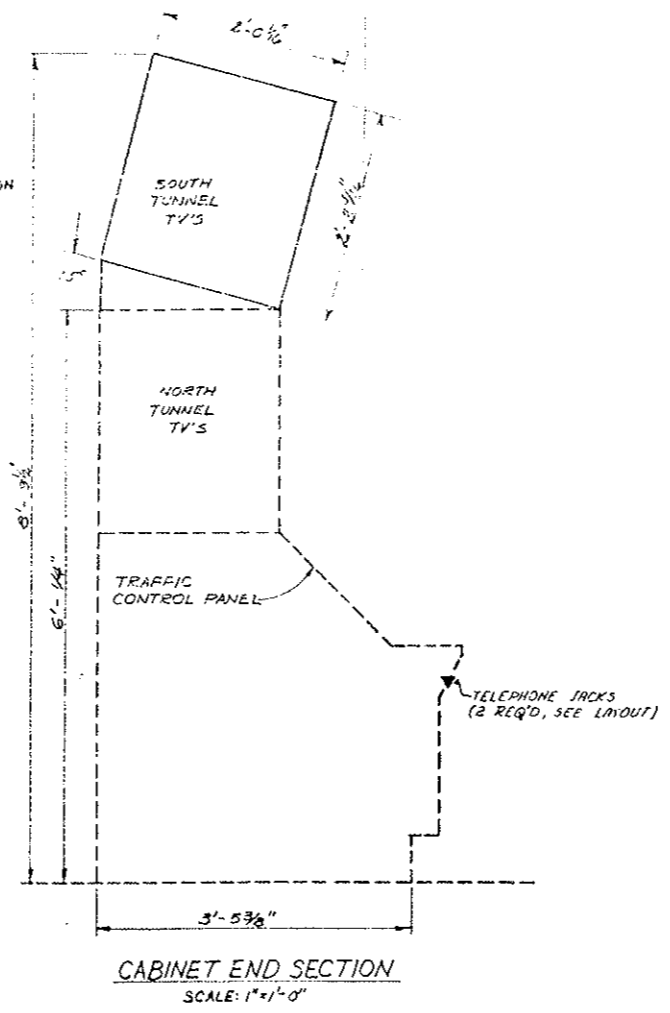
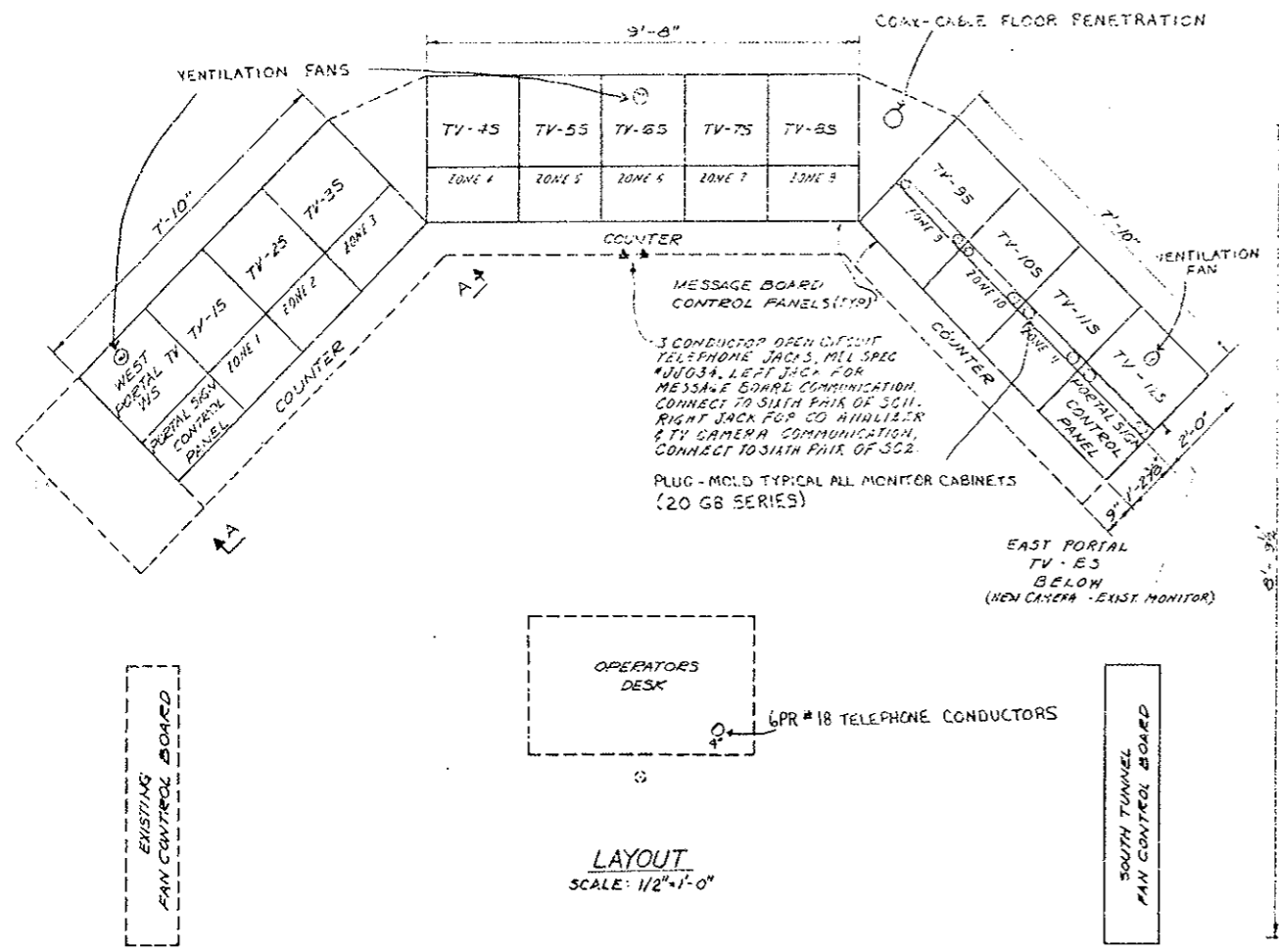


PRINT RECORD

DATE ISSUED	15/15/74
REVISION NO.	0 0 0 R1 S1 R1
DESIGNED BY	PRE PRE PRE PRE PRE PRE
CHECKED BY	5 5 10 4 05/05/74
DATE	15 15 1 1 15 15

NO.	REVISIONS	DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
TRAFFIC CONTROL SYSTEM TUNNEL TUNNEL SIGNING, LOOP DETECTORS & OVERHEIGHT CONSOLE				
DRAWN	12/13/74			
CHECKED				
DATE				
AS NOTED	C14570			





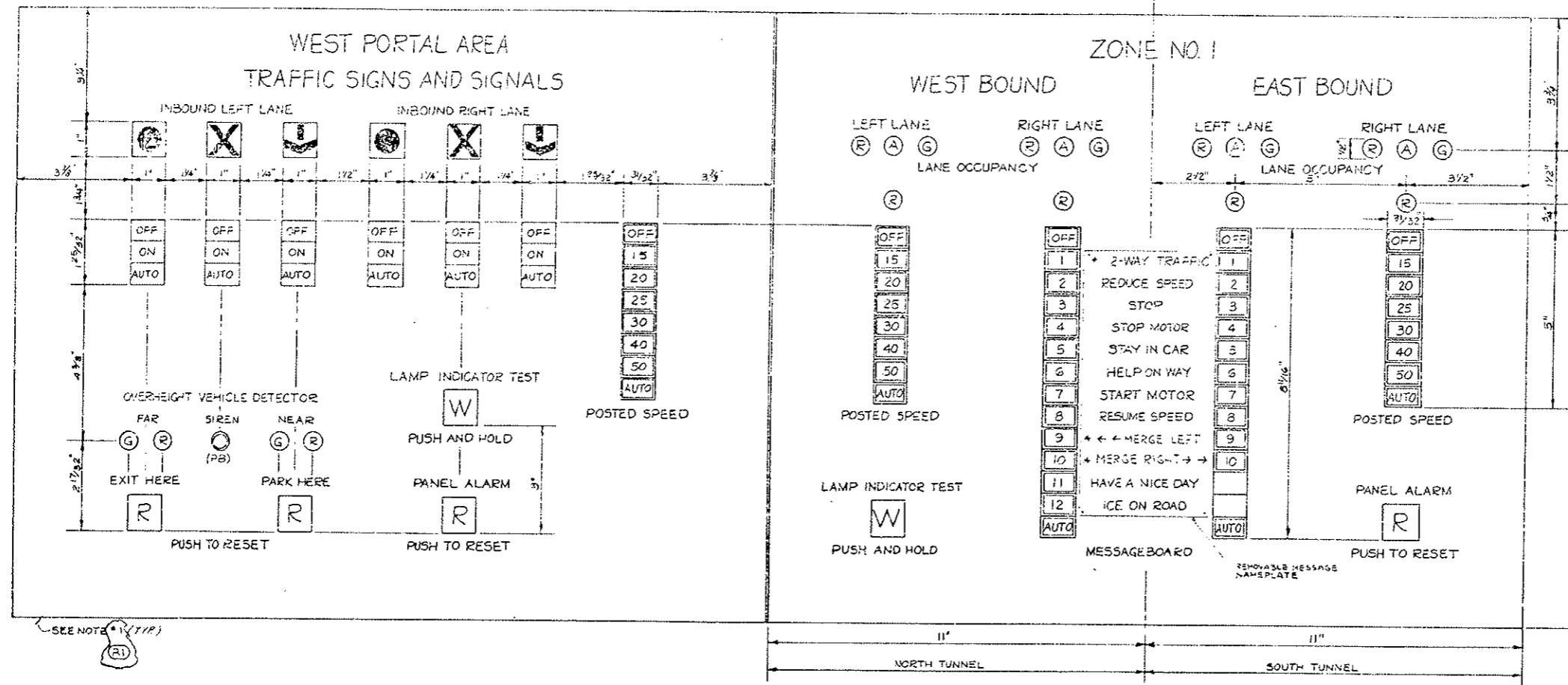
- NOTES:**
- OPERATOR'S CONSOLE WAS ORIGINALLY SUPPLIED BY: EQUIPTO ENCLOSURE SYSTEMS DIV OF EQUIPTO ELECTRONICS CORP., 435 WOODLAWN AVE, HURON, ILL. 60507
  - CONSOLE IS DESIGNED AROUND A MODULAR DESIGN CONCEPT ALLOWING FOR EXPANSION VERTICALLY & HORIZONTALLY BY BOLTING ON ADDITIONAL SECTIONS OF CABINET. CONTRACTOR SHALL FIELD VERIFY EXACT DIMENSIONS FOR ENCLOSURES. (FIFTEEN 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 "L56" WITH A SINGLE PHASE SWIRE CIRCUIT.

**NOTE**  
WORK THIS DRAWING WITH DRAWING TC-35



PRINT RECORD		REVISIONS		DATE	BY	CHKD	
DATE ISSUED	11/15/72						
REVISION NO.	0 0 0 0 0 0 0 0 0 0						
FOR	PREP. FOR TYPING PREP. FOR						
CUSTOMER	S S D S S A CMG						
FIELD							
DATE	15 15 1 1 1 1 1 1 1 1						
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE TRAFFIC CONTROL SYSTEM EAST VENTILATION BUILDING TRAFFIC CONTROL CONSOLE SHEET NO. 1		NO. 1 REVISIONS DATE BY CHKD		JEU 3-27-74 DATE DRAWN BY AS SHOWN C14570		1972 DRAWING NO. TC-25	

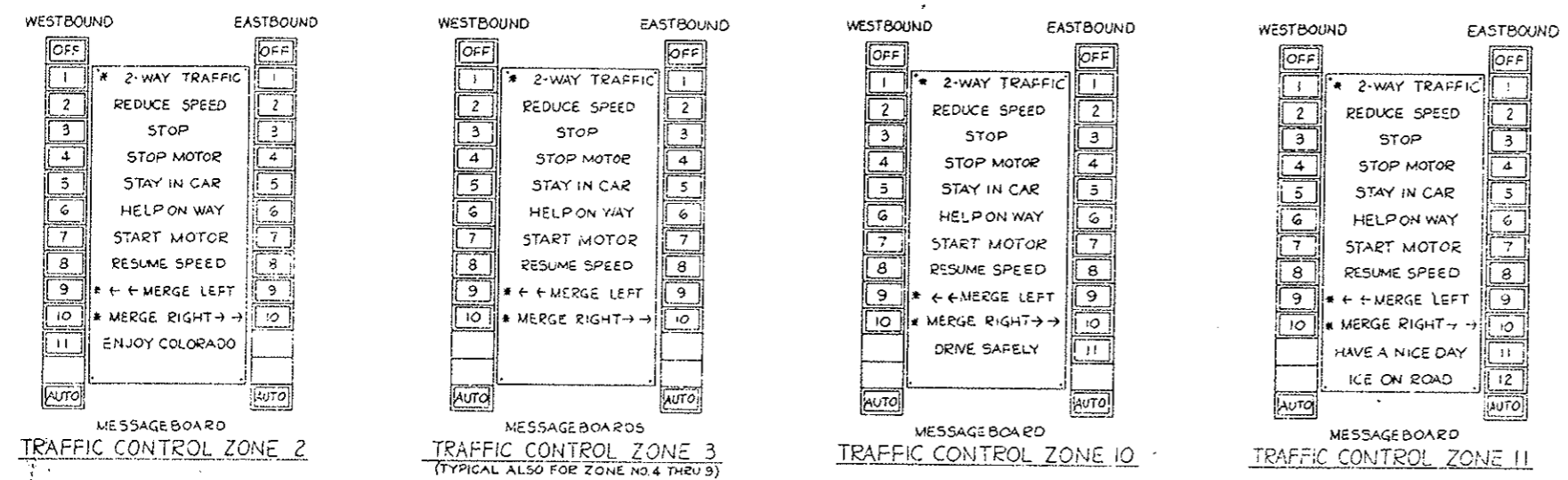
(R) REVISED FOR PROJ. NO. 170-3(3)220



**NOTE**  
 1. CONTRACTOR TO REMOVE EXIST. CONSOLE PANELS & INSTALL NEW PANEL FACES NEW PANEL FACES TO BE OF BRUSHED ALUMINUM & HELD IN PLACE WITH 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.

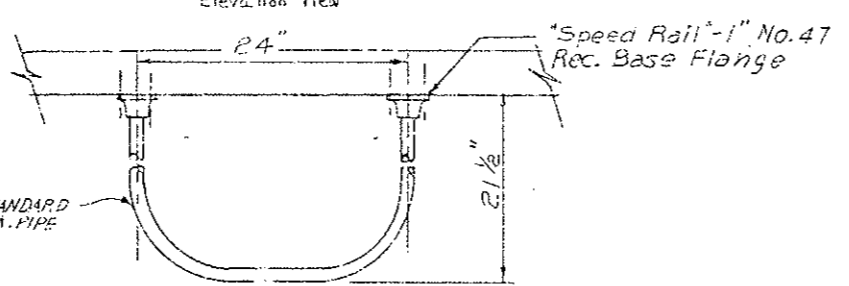
**WEST PORTAL AREA TRAFFIC SIGN AND SIGNAL CONTROL**  
 EAST PORTAL AREA SAME AS ABOVE EXCEPT SUBSTITUTE 'EAST' FOR 'WEST'

**TRAFFIC CONTROL ZONE 1**  
 \* NEW MESSAGES TO BE ADDED.



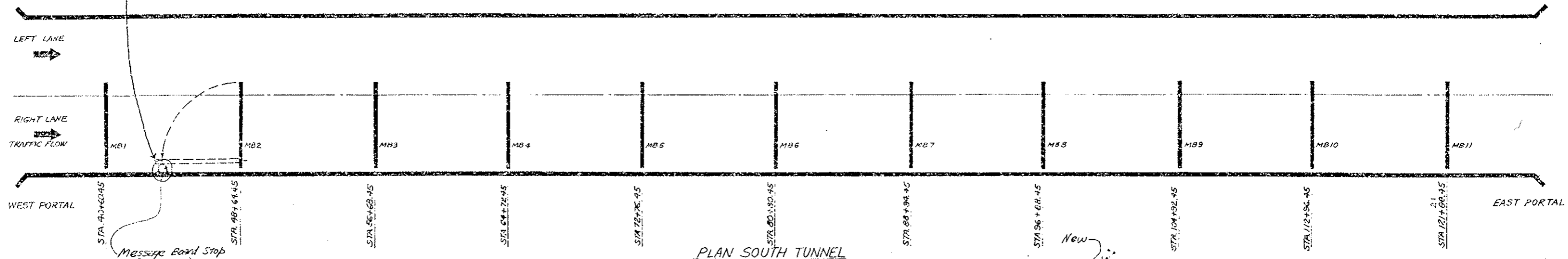
NO.	REVISIONS	DATE	BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE			
TRAFFIC CONTROL SYSTEM EAST VENTILATION BUILDING TRAFFIC CONTROL CONSOLE SHEET NO. 2			
DATE	BY	DATE	BY
15 15 15 15 15 15 15 15 15 15 15 15	SW	15 15 15 15 15 15 15 15 15 15 15 15	SW
6" x 1"	CI4570	6526	TC-3S

REGION NO.	DISTRICT	PROJECT NO.	NO.	SHEET
VIII	COLORADO	I 70-3(93)220	125	
REVISIONS				
AS CONSTRUCTED				
NO REVISIONS	REVISED	VOID		



Message Board Stop is mounted vertically and bolted to wall tile.

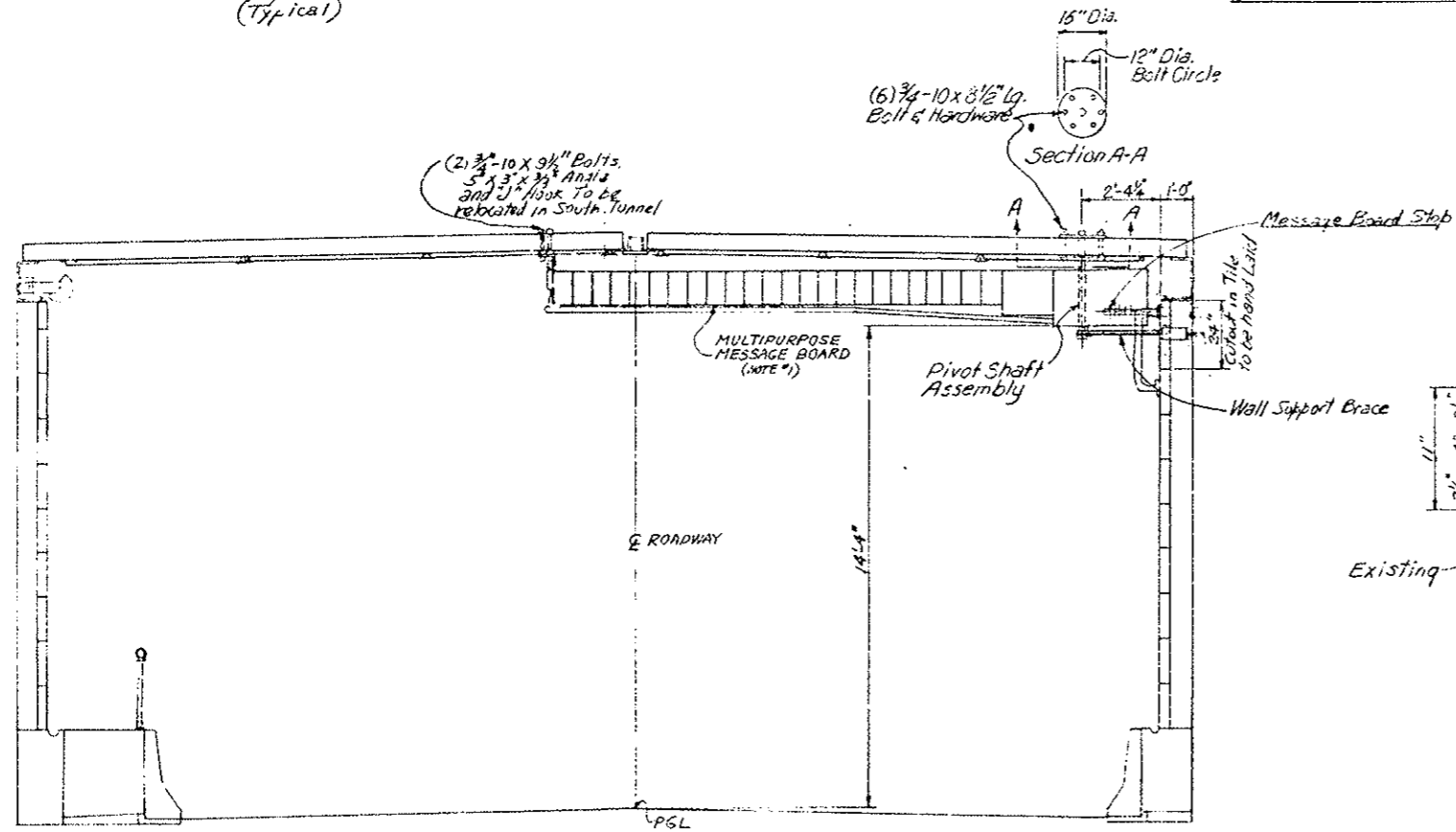
MESSAGE BOARD STOP  
11-Relocated



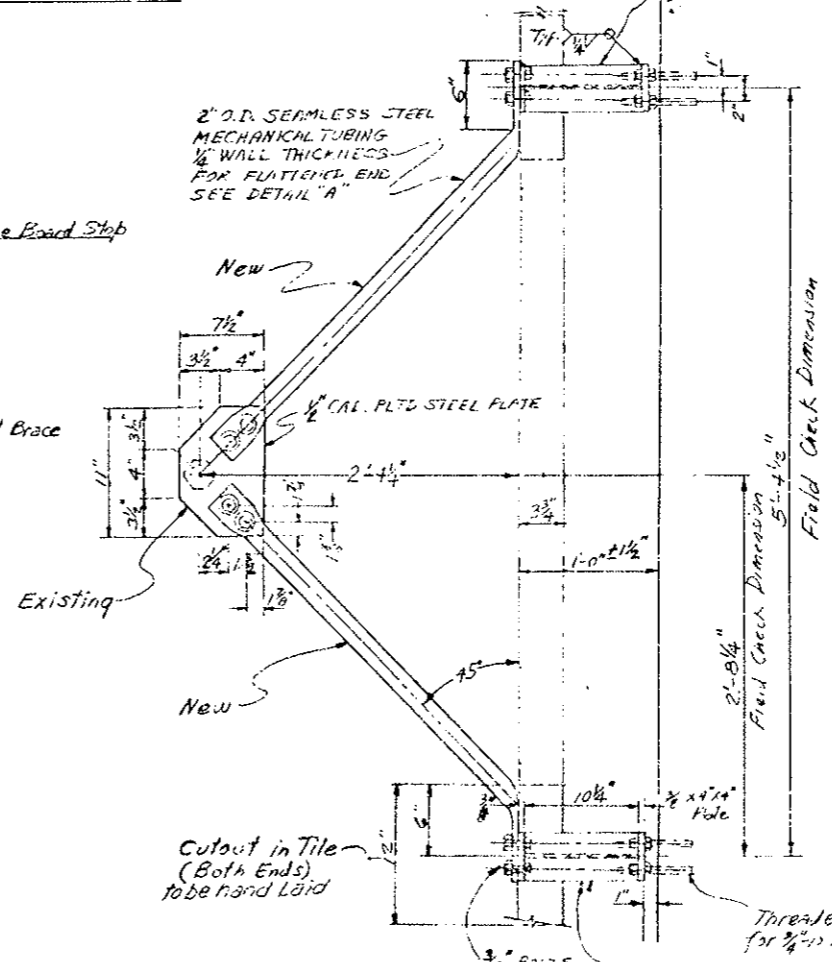
PLAN SOUTH TUNNEL

NOTES:  
1. 11 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 WAYS BOLTS & WASHERS EXCEPT FOR THE 2 INCH O.D. SEAMLESS STEEL MECHANICAL TUBING AND WALL MOUNTING NUTS AND STUDS WHICH WILL BE REWORKED.

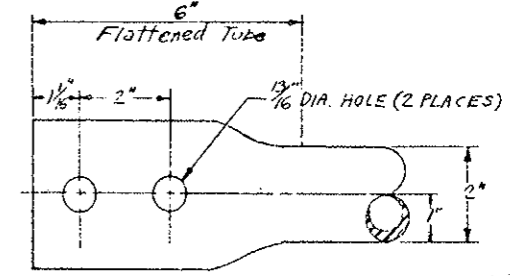
DESIGNED BY	DATE	CHECKED BY
CE/2071	7-1-77	7-1-77
CHECKED BY	DATE	QUANTITIES BY
7-1-77	7-1-77	
DRAWN BY	DATE	CHECKED BY



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



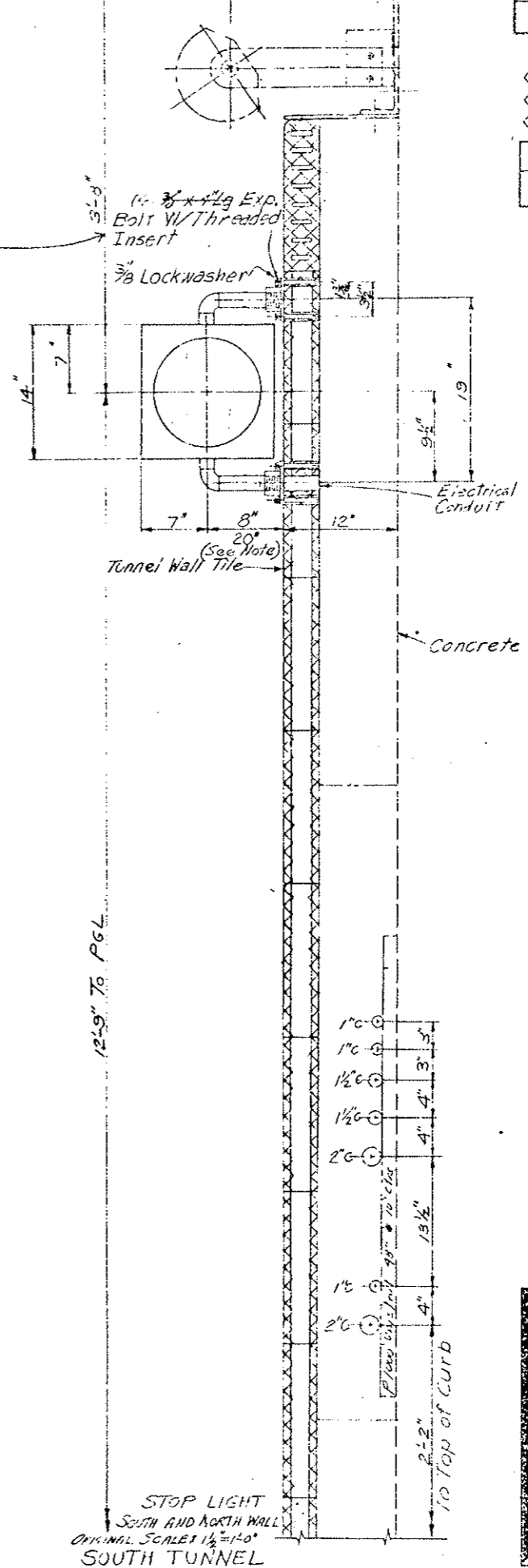
WALL SUPPORT BRACE-TOP VIEW  
ORIGINAL SCALE: 1/2" = 1'-0"



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

DIVISION OF HIGHWAYS	
MESSAGE BOARD WALL SUPPORT BRACE DETAILS	
Designer CDBH	Structure
Detailer J. Letcher, Jr.	Numbers
Drawing Number 7C-45	of Drawings

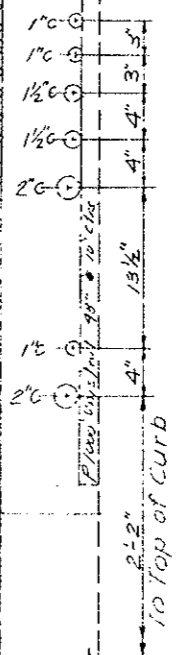
Bolts Changed to 1/4"



STOP LIGHT LOCATION  
SOUTH TUNNEL

No.	STATION
1	44+62.45
2	52+66.45
3	60+70.45
4	68+74.45
5	76+78.45
6	84+82.45
7	92+86.45
8	100+90.45
9	108+94.45
10	116+98.45

12'-9" To P6L

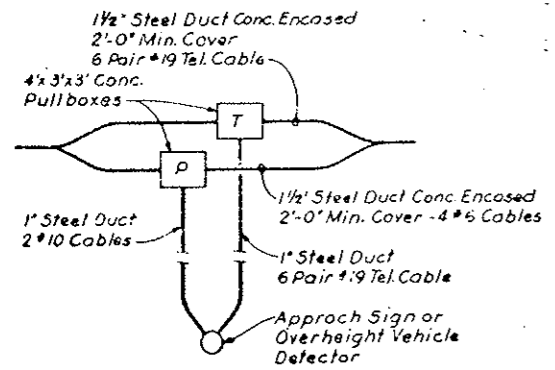
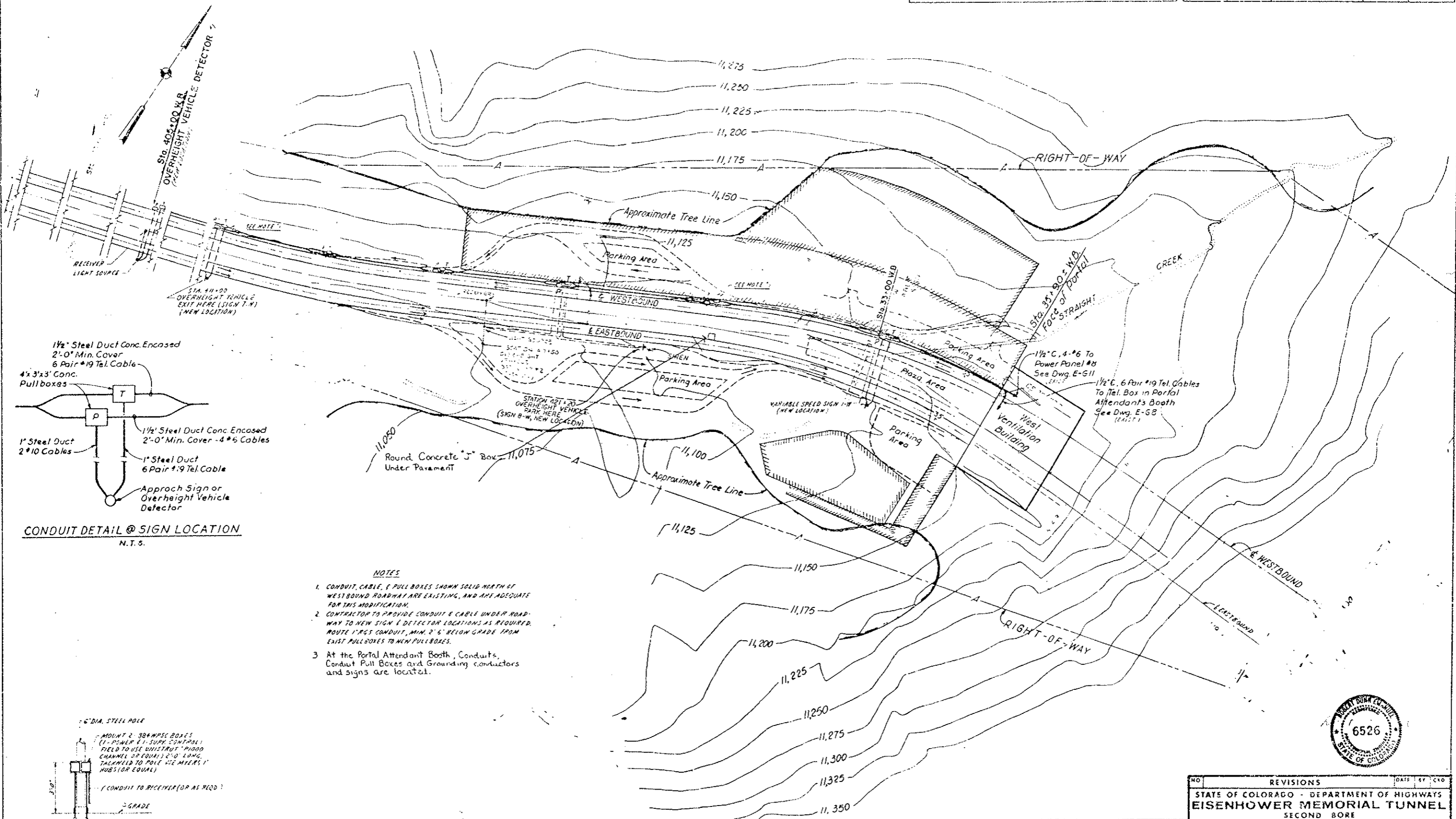


Note: 10 Stop Lights in North Tunnel on walkway side (South Side) to be rotated 180° for Westbound Traffic. Stop Lights near Pulbit Stations #1, #3 and #5 to be mounted 20" from Structural Wall Tile.

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

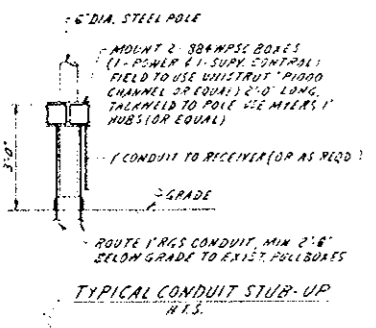
DIVISION OF HIGHWAYS			
STOP LIGHT MOUNTING DETAILS			
Designer C. D. H.	Structure		
Detailer J. L. Fisher	Numbers		
Drawing Number TC-55	of	Drawings	
Revision Dates (Preliminary Stage Only)			

DESIGNED BY	DATE	CHECKED BY
C. D. H.	7-17-57	
CHECKED BY		QUANTITIES BY
DETAILS BY		CHECKED BY



CONDUIT DETAIL @ SIGN LOCATION  
 N.T.S.

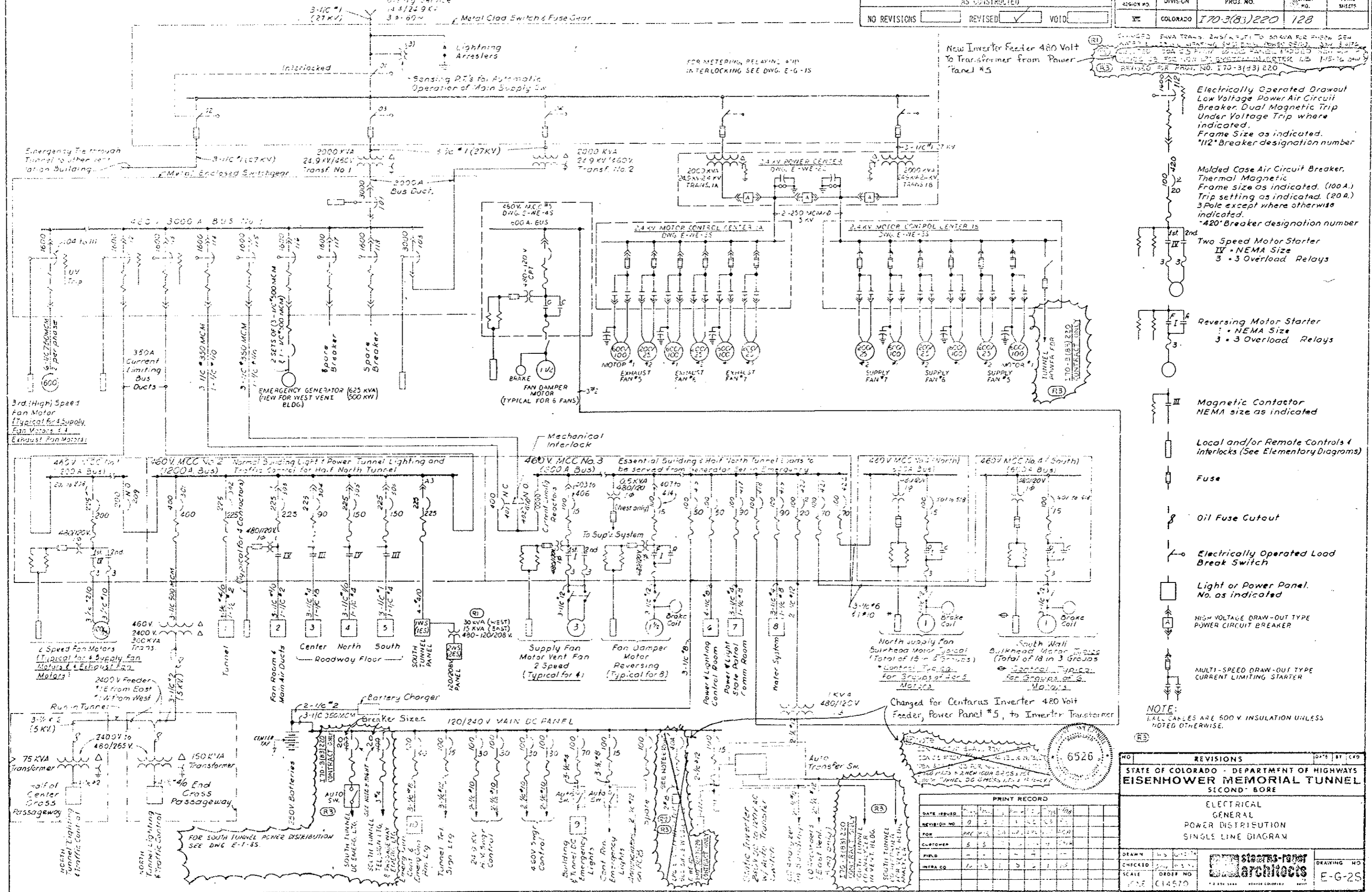
- NOTES**
1. CONDUIT, CABLE, & PULL BOXES SHOWN SOLID NORTH OF WESTBOUND ROADWAY ARE EXISTING, AND ARE ADEQUATE FOR THIS MODIFICATION.
  2. CONTRACTOR TO PROVIDE CONDUIT & CABLE UNDER ROADWAY TO NEW SIGN & DETECTOR LOCATIONS AS REQUIRED. ROUTE 1" RGCS CONDUIT, MIN. 2'-6" BELOW GRADE FROM EXIST PULL BOXES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



PRINT RECORD

DATE ISSUED	BY	FOR	CUSTOMER	FIELD	INTRA CO.
05/20/75	J. J. W.	170-3(33) 220	STATE OF COLORADO		
05/20/75	J. J. W.				
05/20/75	J. J. W.				
05/20/75	J. J. W.				
05/20/75	J. J. W.				
05/20/75	J. J. W.				

NO.	REVISIONS	DATE	BY	CAO
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
ELECTRICAL WEST PORTAL AREA APPROACH SIGNING AND MISC. DEVICES				
DRAWN	PPJ	J. J. W.		
CHECKED	J. J. W.	J. J. W.		
SCALE	1"=100'	ORDER NO.	C14570	
			DRAWING NO. GA-15	



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

REVISIONS  
 R1 CHANGED 240V FEEDER TO 480V FOR INVERTER  
 R2 CHANGED 240V FEEDER TO 480V FOR INVERTER  
 R3 REVISED PER DRAWING NO. I70-3(83)220

- 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. Frame size as indicated. (100A.) Trip setting as indicated. (20A.) 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 600V INSULATION UNLESS NOTED OTHERWISE.

6526

DATE ISSUED	REVISION NO.	FOR	CHECKED	FIELD	INFRACQ
	0				
	1				
	2				
	3				
	4				
	5				

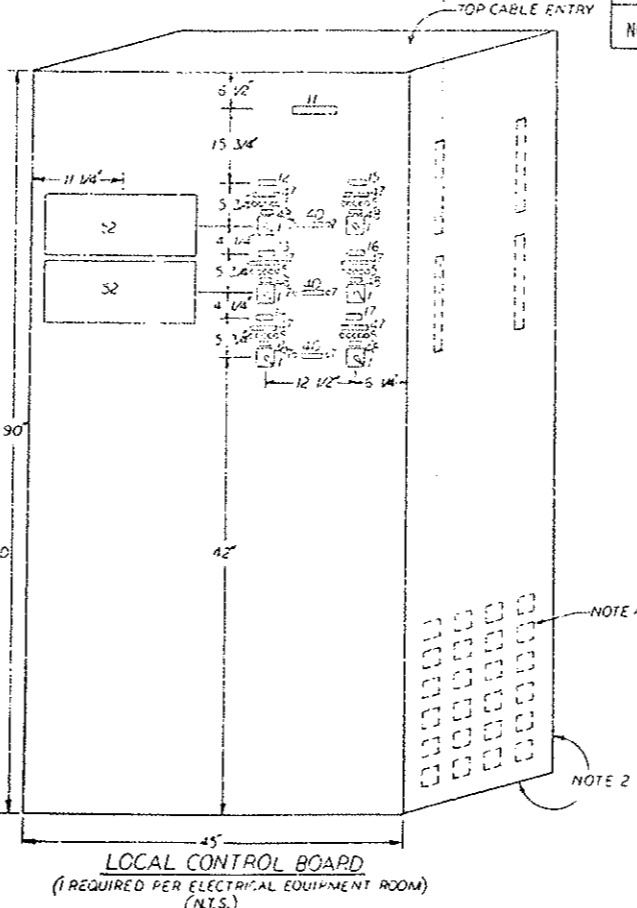
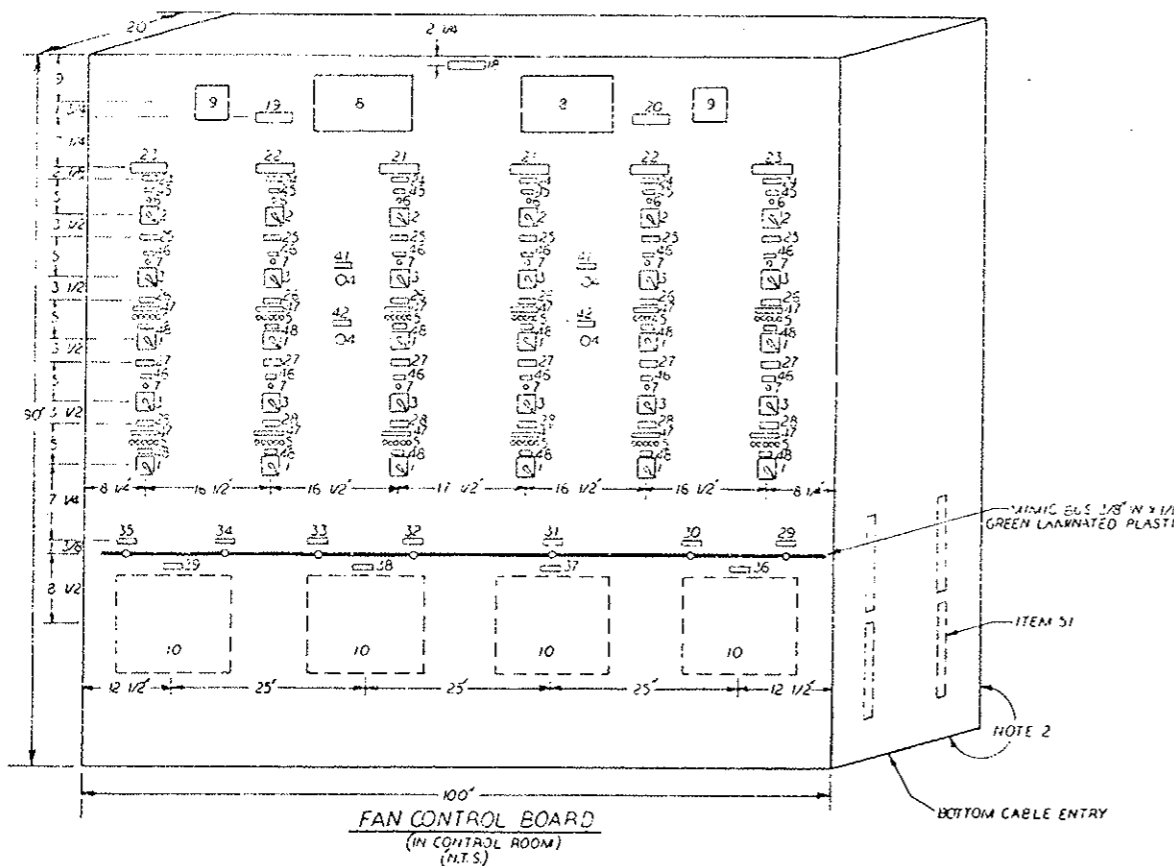
REVISIONS

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS  
**EISENHOWER MEMORIAL TUNNEL**  
 SECOND BORE

ELECTRICAL GENERAL POWER DISTRIBUTION SINGLE LINE DIAGRAM

DETAILED BY: [ ]  
 CHECKED BY: [ ]  
 SCALE: [ ]  
 ORDER NO: [ ]  
 DATE: 11-15-70

staebert-ross architects  
 DRAWING NO: E-G-2S



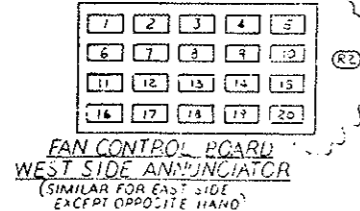
- EQUIPMENT LIST**
- SWITCH, TYPE SB 10, PULL TO START, 5 POSITION; STOP-HIGH-INTERMEDIATE 2-INTERMEDIATE 1-LOW
  - SWITCH, TYPE SB 1, 2 POSITION; OPEN-CLOSE
  - SWITCH, TYPE SB 1, 2 POSITION; FC6-LC8
  - PUSHBUTTON
  - INDICATING LIGHTS (SEE NOTE 6)
  - INDICATING LIGHT, WHITE
  - INDICATING LIGHT, GREEN
  - ANNUNCIATOR, PANEL ALARM, MODEL 51545 (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		2
20. WEST FANS	CONTROL		2
21. FAN 5			1
22. FAN 6			1
23. FAN 7			1
24. SUPPLY FAN CONTROL	BULKHEADS	CONTROL	1
25. SUPPLY FAN CONTROL		TRANSFER	1
26. SUPPLY FAN CONTROL			1
27. EXHAUST FAN CONTROL		TRANSFER	1
28. EXHAUST FAN CONTROL			1
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	1 1/2	RECORDER	1
37. ANALYZER 2	1 1/2	RECORDER	1
38. ANALYZER 3	1 1/2	RECORDER	1
39. ANALYZER 4	1 1/2	RECORDER	1
40. CONTROL AVAILABLE			1
41. ANNUNCIATOR LAMP TEST			1
42. ALARM SILENCE			1
43. CLOSED			1
44. FCS ON			1
45. STOP-HIGH-INTERMEDIATE 2-INTERMEDIATE 1-LOW			4
46. PULL TO START			3

- 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 120A
  - FLASHER RELAY, 120V AC COIL, 60 PULSES/MIN, ZENITH TYPE B-1
  - TERMINAL STRIP, 20A-600V 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 AE, OR EQUAL

- NOTES-**
- NAMEPLATE MATERIAL - G.E. A1950A - 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 LEADS AND WORTH-UP MODEL 5 SPEEDS MAX W' INSTALLED IN PROJ. NO 170-3(83)220 (R2)  
 PANEL FABRICATOR TO PROVIDE CUT-OUTS AS REQUIRED.
  - 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 E55, E56 & E57 FOR LOWER CONTROLLER.



**ANNUNCIATOR PANEL WINDOW ENGRAVING**

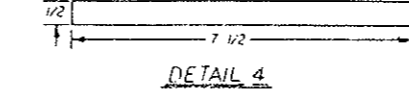
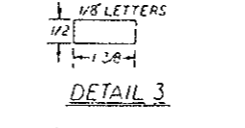
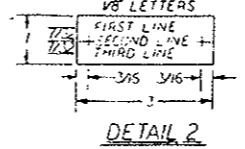
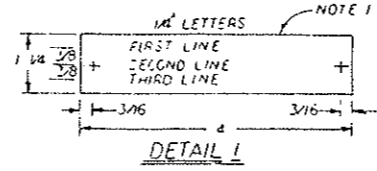
WINDOW	FIRST LINE	SECOND LINE
1	SUPPLY FAN 5	FAILURE
2	SUPPLY FAN 6	FAILURE
3	SUPPLY FAN 7	FAILURE
4	TRANSF. 1A	NEUTRAL GROUND
5	EXHAUST FAN 5	FAILURE
6	EXHAUST FAN 6	FAILURE
7	EXHAUST FAN 7	FAILURE
8	TRANSF. 1B	NEUTRAL GROUND
9	POWER PANELS	OFF
10	EMERG. LIGHTS	ON
11	CO	LEVEL 1
12	CO	LEVEL 2
13	EMERGENCY GEN.	FAILURE (NOTE 3)
14	MOTOR HIGH	TEMPERATURE
15	FAN DAMPER	FAILURE
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 COILING FOR ALARM RELAYS IS REQUIRED IT SHALL BE PROVIDED)

**ALARM/CONTROLLER NAME PLATE SCHEDULE**

N.P. NO.	FIRST LINE	SECOND LINE
1	FAN EES (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 EES (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 EET	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	BY
1	ISSUED FOR CONSTRUCTION	12/15/65	...
2	...	...	...
3	...	...	...
4	...	...	...
5	...	...	...
6	...	...	...
7	...	...	...
8	...	...	...
9	...	...	...
10	...	...	...
11	...	...	...
12	...	...	...
13	...	...	...
14	...	...	...
15	...	...	...

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS  
**EISENHOWER MEMORIAL TUNNEL**  
 SECOND BORE

**ELECTRICAL GENERAL FAN CONTROL BOARDS LAYOUT AND DETAILS**

DATE: 12/15/65  
 DRAWING NO: E-G-65



(R1) SELECTED GROUNDING PLAN-FAN ROOM FLOOR (GROUNDING & EXIT WG)  
 REVISED DETAIL 'A' TO SHOW EXISTING GROUNDING INDICATED FUTURE  
 CONTRACT. DWM 11/76, ADE 1/4/76

(R2) REVISED FOR PROJ. NO. 170-3(83)220

AS CONSTRUCTED

NO REVISIONS  REVISED  VOID

LEGEND

--- EXISTING GROUND

--- NEW GROUND

NOTES:

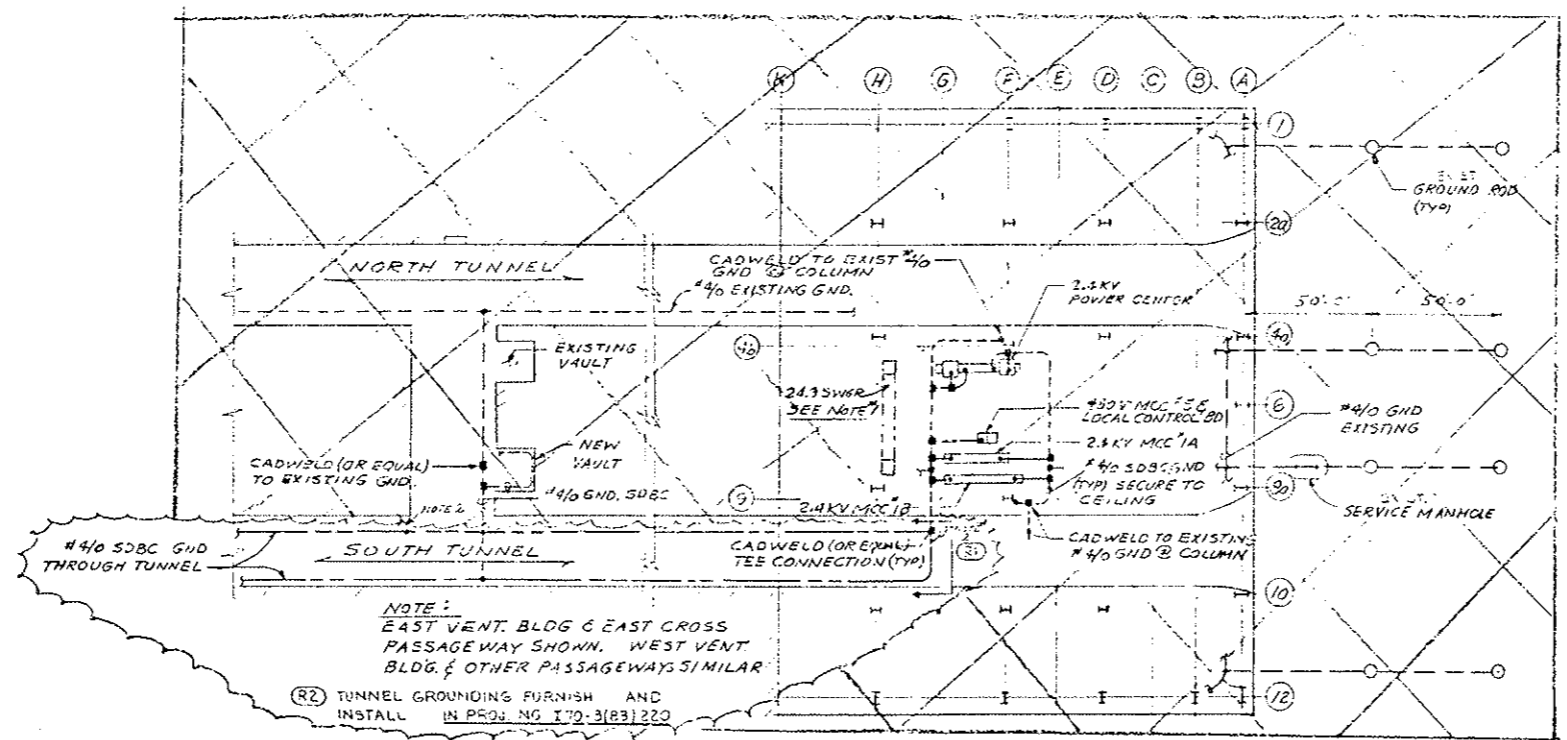
(R1) 1-NEW UNITS OF 24.3KV SWITCH GEAR TO BE TIED INTO EXISTING GND-BUS OF SWGR.

2-ALL GROUNDING IN VENT-BUILDING TO BE INSTALLED BY CONTRACTOR.

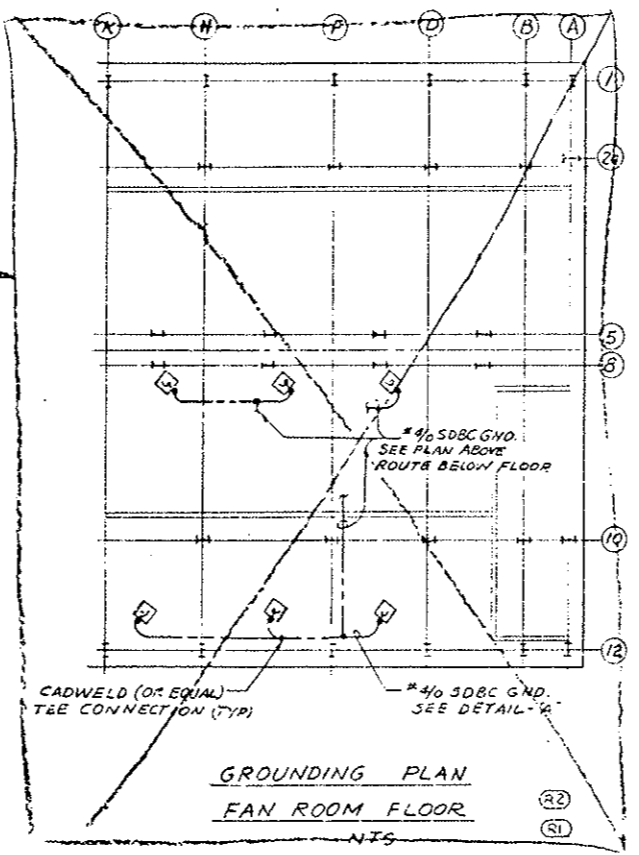
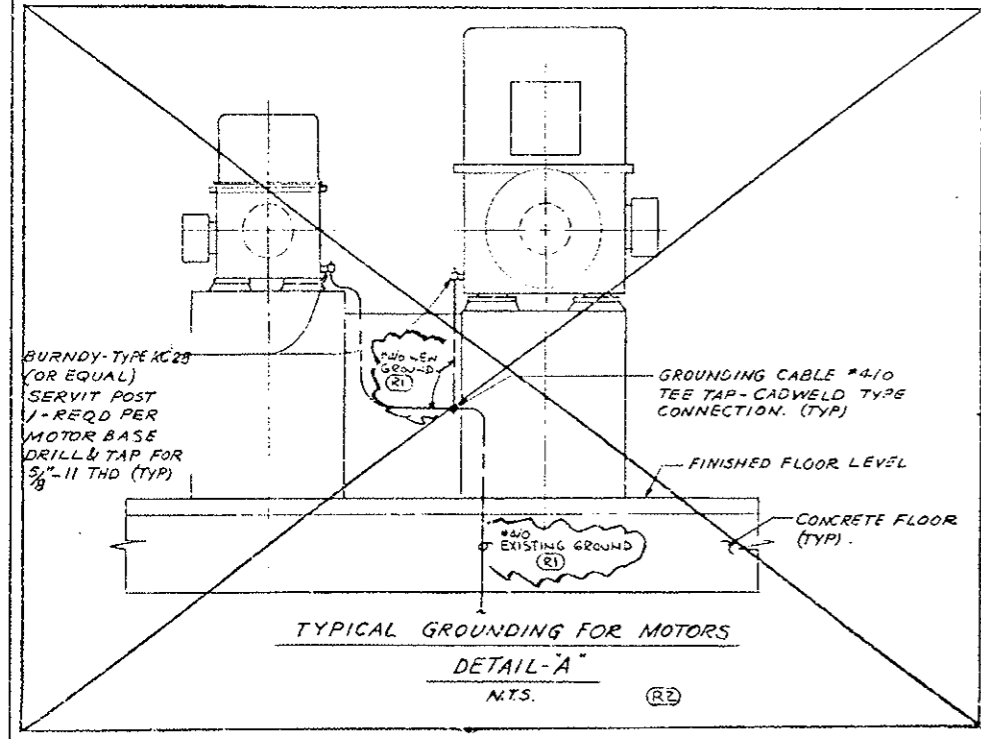
(R2) ALL GROUNDING IN TUNNEL & CROSS-PASSAGEWAYS TO BE INSTALLED BY THIS CONTRACT.

1. WORK THIS DWG WITH DWG E-T-25

(R2) 2. BOND TAC #40SDBC GND TO THE WATER MAIN AT ALL CROSS PASSAGEWAYS ARE AT THE VENTILATION BUILDINGS.



GROUNDING PLAN  
 VENT BLDG'S & TUNNEL  
 NTS



GROUNDING PLAN  
 FAN ROOM FLOOR  
 N.T.S.



PRINT RECORD

DATE	BY	REVISION
15	10	1
15	10	1

NO.	REVISIONS	DATE	BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS			
EISENHOWER MEMORIAL TUNNEL			
SECOND BORE			
ELECTRICAL			
GENERAL			
GROUNDING			
PLANS & DETAILS			
DATE	BY	DATE	BY
15	10	1	10
15	10	1	10
NOTED	614570		

DRAWING NO. E-G-7S



WEST VENTILATION BUILDING

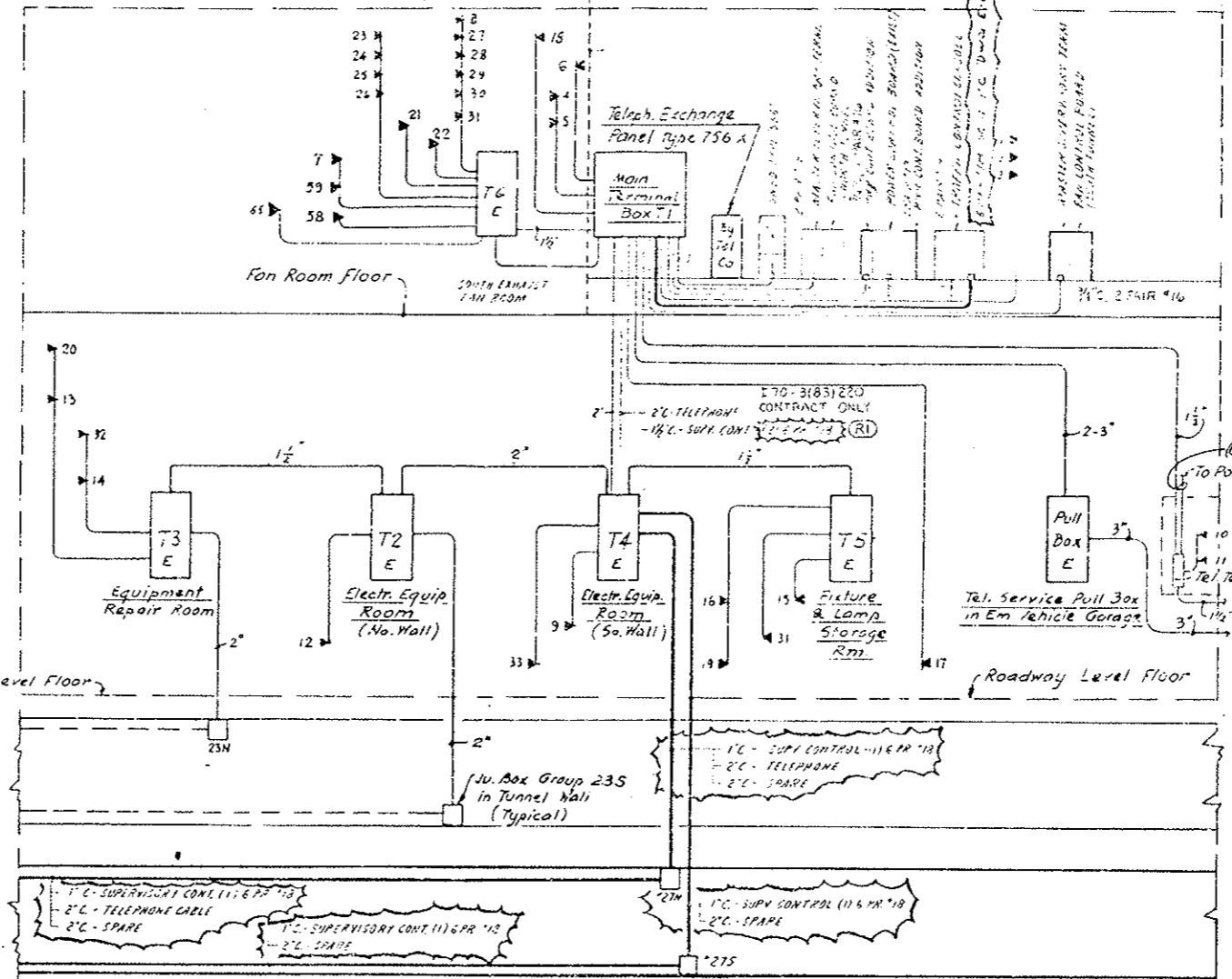
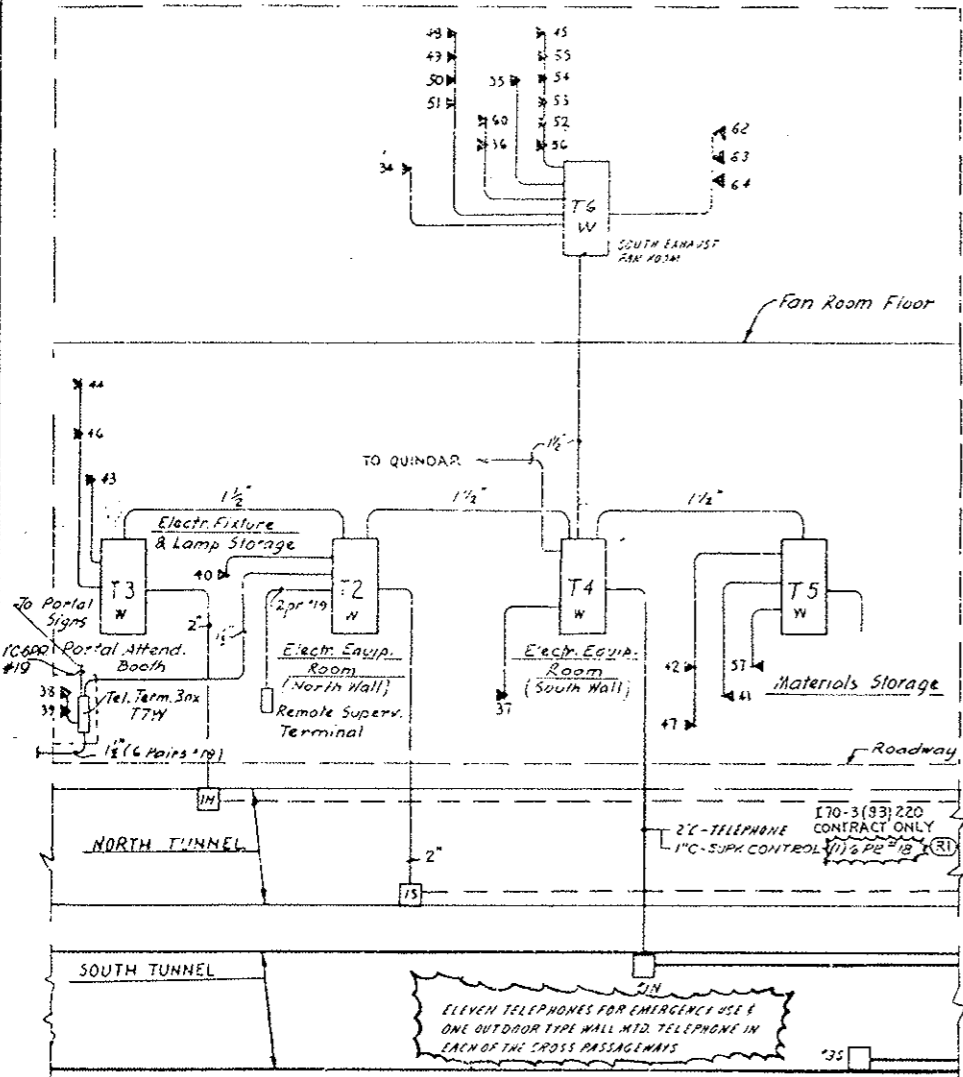
EAST VENTILATION BUILDING

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
35	COLORADO	I70-3(83)220	131	

REVISED FOR PROJ. NO. I70-3(83)220

AS CONSTRUCTED

NO REVISIONS  REVISED  VOID



- NOTES
1. THE DRAWING REPRESENTS THE TELEPHONE SYSTEM AS SHOWN IN DIV. 2, INCLUDING THE ADDITIONS AS REQUIRED FOR THE SOUTH TUNNEL.
  2. FOR PHYSICAL LOCATIONS OF TELEPHONE BOXES & OUTLETS IN VENTILATION BUILDINGS, SEE DIV. 2, CONTRACT NO. I70-3(83)220.
  3. FOR TELEPHONE WIRING IN TUNNEL CROSS PASSAGEWAYS, SEE DIV. 2, E-7-12 & E-7-25.
  4. THE CONTRACTOR SHALL PROVIDE A PROTECTIVE CAP FOR NEAREST TO PANEL.
  5. ALL CONDUITS SHALL BE RIGID GALV. STEEL UNLESS OTHERWISE NOTED.
  6. TELEPHONE WIRING & EQUIPMENT WILL BE FURNISHED BY THE BELL.
  7. WHERE CABLE PINS ARE INDICATED, THEY WILL BE FURNISHED & INSTALLED BY CONTRACTOR.

- 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 COVER

⊠ NEW TELEPHONE OUTLET BOX COVER

\* HORN FURNISHED, WAGED, & INSTALLED BY TELEPHONE COMPANY

EAST VENTILATION BUILDING (EXIST. OUTLETS)

Outlet No.	LOCATION	TYPE	PURPOSE
1	Control Room	Fan Deck	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/Wall	For Teleph. & Loudspeaker Connect. Comes with 400 P.B. type Panel
11	"	Built-in	"
12	Emergency Vehicle Garage	Wall	For Teleph. & Loudspeaker Connect.
13	Garage Vehicle Repair Shop	"	Telephone Connection
14	Equipment Repair Room	"	For Telephone & Signal Horn #14
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	" " " " " " " " " " " "	"	"
23	Fan Rm. Fl. Emerg. Stop Switch @ Col. K/2	Tel. Jack	Portable Telephone Connection
24	" " " " " " " " " " " "	H/2	"
25	" " " " " " " " " " " "	H/2	"
26	" " " " " " " " " " " "	D/2	"
27	" " " " " " " " " " " "	J/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	" " " " " " " " " " " "	Horn	Signal Service from Control Room
36	South Supply Fan Room @ Col. F/10	Horn	"
37	Electrical Equipment Room	Wall	For Telephone Connection
38	Portal Attendant Booth	Desk	For Telephone & Loudspeaker Conn.
39	"	Built-in	Supplied with 400 Push Button Panel
40	Emergency Vehicle Garage	Wall	For Telephone & Loudspeaker Conn.
41	South Vehicle Storage	"	"
42	"	"	"
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. A/2	Coinless	Public Telephone Service
47	South Tunnel Rest Room @ Col. B/11	"	"
48	North Supply Fan Rm. Emerg. Stop Sw. @ D/2	Tel. Jack	Portable Telephone Connection
49	" " " " " " " " " " " "	F/2	"
50	" " " " " " " " " " " "	H/2	"
51	" " " " " " " " " " " "	K/2	"
52	North Exhaust Fan Rm.	C/5	"
53	" " " " " " " " " " " "	E/5	"
54	" " " " " " " " " " " "	G/5	"
55	" " " " " " " " " " " "	J/5	"
56	" " " " " " " " " " " "	Col. Outlet @ Col. A/5	Wall
57	Materials Storage	"	"
58	South Supply Fan Rm. Tel. Outlet @ Col. A/11	"	"
59	South Exhaust Fan Room @ Col. A-7	"	"

WEST VENTILATION BLDG. (EXIST. OUTLETS)

Outlet No.	LOCATION	TYPE
51	EMERGENCY GENERATOR ROOM	WALL
52	SOUTH SUPPLY FAN ROOM @ COL. F-11	TEL JACK
53	" " " " " " " " " " " "	H/11
54	" " " " " " " " " " " "	H/11

EAST VENTILATION BLDG. (EXIST. OUTLETS)

Outlet No.	LOCATION	TYPE
65	SOUTH SUPPLY FAN ROOM @ COL. F-11	TEL JACK

PRINT RECORD

DATE ISSUED	BY	FOR	CUSTOMER	FIELD	INTRA CO.
11/15/50	J. S. [unclear]	170-3(83)220	5	5	3 15 2

NO. REVISIONS [ ] DATE BY CRD

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS

**EISENHOWER MEMORIAL TUNNEL**

SECOND BORE

ELECTRICAL TELEPHONE RISER DIAGRAM

DETAILED BY: J. S. [unclear]

CHECKED BY: J. S. [unclear]

SCALE: NONE

ORDER NO: C14570

DRAWING NO: E-G-85

6526

**EXISTING AC POWER DIST. PANEL NO. P1W3**  
 LOCATION: WEST VENTILATION BLDG. ELECT. EQUIPMENT ROOM (DWG. E-W-15) ONE LINE DIAG. DWG. E-G-25

480/277VOLT 60HZ 3PHASE-4WIRES  
 4" 1/0 FEEDER CABLES - TOP ENTRY  
 225A MAIN BKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.
		A	B	C		
1	INT. ZONE NORTH LG. FEEDER NI	51	51	51	30	4" 6
2	SOUTH	51	51	51	30	
3	NORTH	51	51	51	30	
4	SOUTH	51	51	51	30	
5	NORTH	51	51	51	30	
6	SOUTH	51	51	51	30	
7	WATER MAIN PIPE HEATING FDR	18	18	18	30	
8	SEEPAGE DRAIN PIPE HEATING FDR	24	24	24	40	3" 6
9	TRAFFIC CONTROL FDR SO. WALL	12	12	12	30	3" 6
10	AIR HEAT BURNER FLAME CONT. PHL.	10	10	10	16	3" 12
11	30KVA TRANSFORMER	36	36	36	40	3" 2
12	EMERG. GEN. AIR COMPRESSOR	8	8	8	20	3" 4
13	EMERG. GEN. CONTROL PHL.	3	3	3	15	3" 12
14	EMERG. GEN. MISC. POWER	5	5	5	15	3" 12
15	SPARE				30	
16	SPARE				15	
PHASE LOAD		153.6	153.6	153.6		

**EXISTING AC POWER DIST. PANEL NO. P1T3**  
 LOCATION: WEST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

480/277VOLT 60HZ 3PHASE-4WIRES  
 4" 1/0 FEEDER CABLES - BOTTOM ENTRY  
 350 A MAIN BKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.
		A	B	C		
1	TUNNEL LG. NORTH FDR. NI	23.7	23.7	23.7	30	4" 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	3" 6
6	WATER MAIN PIPE HEATING FDR	18	18	18	40	4" 6
7	AIR DUCT POWER OUTLETS	24	24	24	30	3" 4
8	TRAFFIC CONTROL FDR SO. WALL	12	12	12	30	3" 6
9	TUNNEL LG. SOUTH FDR. SI	23.7	23.7	23.7	30	4" 6
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		218.6	218.6	218.6		

**EXISTING AC POWER DIST. PANEL NO. P2W3**  
 LOCATION: WEST VENTILATION BLDG. ELECT. EQUIPMENT ROOM (DWG. E-W-15) ONE LINE DIAG. DWG. E-G-25

120/208VOLT 60HZ 3PHASE-4WIRES  
 4" 1/0 FEEDER CABLES - TOP ENTRY  
 100A MAIN CKT. BKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.
		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			3.0	15	
6	GAS METER BLDG. LGT.			2.0	15	
7	TUNNEL TV FEEDER NO. WALL	1.5			20	
8	RECEPTACLE SO. WALL	1.5			20	
9	NO. WALL	3.0			20	
10	NO. WALL	1.5			20	
11	NO. WALL	1.5			20	
12	NO. WALL	1.5			20	
13	SPARE				15	
14	EMERG. GEN. WATER HEATER #1	18			20	
15	REMOTE SUPERVISORY CABINET	15			20	
16	EMERG. GEN. RADIATION RECEPT.	15			20	
17	EMERG. GEN. #93.1 - #93.2 PUMP	34			40	
18	LOCAL CONTROL BOARD	10			20	
19	SPARE				20	
20	LOG. SYSTEM CONTROL PANEL	5			20	
21	EMERG. GEN. WATER HEATER #2	18			20	
22	RELAY LGT. RECEPT.	1.0			20	
23	SPARE				20	
24	SPARE				15	
PHASE LOAD		49	53.3	54		

N.I.C.

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
31	COLORADO	I-70-3(83)220	132	

- (R1) ADDED CIRCUITS P2ES-20 AND P2WS-20
- (R2) REVISED FOR EMERG. GEN. #93.1 WATER HEATER #1
- (R3) REVISED FOR EMERG. GEN. #93.2 WATER HEATER #2
- (R4) REVISED FOR EMERG. GEN. #93.1 WATER HEATER #1
- (R5) REVISED FOR EMERG. GEN. #93.2 WATER HEATER #2
- (R6) REVISED TUNNEL LIGHTING
- (R7) REVISED TUNNEL LIGHTING

**AC POWER DIST. PANEL NO. P2T3**  
 LOCATION: CENTER CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

480/277VOLT 60HZ 3PHASE-4WIRES  
 4" 500 MCM FEEDER CABLES - BOTTOM ENTRY  
 350 A MAIN BKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.
		A	B	C		
1	TUNNEL LG. NORTH FDR. NI	20.9	20.9	20.9	30	4" 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	3" 6
6	WATER MAIN PIPE HEATING FDR	21.6	21.6	21.6	40	4" 6
7	AIR DUCT POWER OUTLETS	24	24	24	30	3" 4
8	TRAFFIC CONTROL FDR SO. WALL	12	12	12	30	3" 6
9	TUNNEL LG. SOUTH FDR. SI	20.0	20.0	20.0	30	4" 6
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		262.6	261.4	259.6		

**AC POWER DIST. PANEL NO. P3T3**  
 LOCATION: EAST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

480/277VOLT 60HZ 3PHASE-4WIRES  
 4" 500 MCM FEEDER CABLES - BOTTOM ENTRY  
 350 A MAIN BKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.
		A	B	C		
1	TUNNEL LG. NORTH FDR. NI	20.0	19.1	19.1	30	4" 6
2	N2	19.1	20.0	19.1	30	
3	N3	20.0	19.1	19.1	30	
4	N4	19.1	20.0	19.1	30	
5	LIGHTING TRANSFORMER	36	36	36	50	3" 6
6	WATER MAIN PIPE HEATING FDR	21.6	21.6	21.6	40	4" 6
7	AIR DUCT POWER OUTLETS	24	24	24	30	3" 4
8	TRAFFIC CONTROL FDR SO. WALL	12	12	12	30	3" 6
9	TUNNEL LG. SOUTH FDR. SI	19.1	19.1	19.1	30	4" 6
10	S2	19.1	19.1	19.1	30	
11	S3	19.1	19.1	19.1	30	
12	S4	19.1	19.1	19.1	30	
13	SPARE				30	
14	SPARE				10	
PHASE LOAD		252.4	251.2	252.4		

**EXISTING LIGHTING PANEL NO. L3TS**  
 LOCATION: EAST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

120/208VOLT 60HZ 3PHASE-4WIRES  
 4" 1/0 FEEDER CABLES - TOP ENTRY  
 125A MAIN CKT. BKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.
		A	B	C		
1	TUNNEL TV CO. ANAL. FDR. NO. WALL	3.0			20	2" 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 LGT. W/EMERG.	2.5			15	2" 12
8	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	2" 6
9	PASSAGEWAY LGT.	3.3			15	2" 12
10	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
11	RELAY PANEL CONTROL PWR	5			15	2" 12
12	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
13	SPARE				20	
14	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	2" 6
15	SPARE				20	
16	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
17	SPARE				20	
18	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
19	SPARE				20	
20	SPARE				20	
21	SPARE				20	
22	SPARE				20	
23	SPARE				20	
24	SPARE				20	
PHASE LOAD		31	21.8	23.5		

**LIGHTING PANEL NO. L1TS**  
 LOCATION: WEST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

120/208VOLT 60HZ 3PHASE-4WIRES  
 4" 1/0 FEEDER CABLES - TOP ENTRY  
 125A MAIN CKT. BKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.
		A	B	C		
1	TUNNEL TV CO. ANAL. FDR. NO. WALL	4			20	2" 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 LGT. W/EMERG.	2.5			15	2" 12
8	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	2" 6
9	PASSAGEWAY LGT.	3.3			15	2" 12
10	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
11	RELAY PANEL CONTROL PWR	5			15	2" 12
12	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
13	SPARE				20	
14	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	2" 6
15	SPARE				20	
16	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
17	SPARE				20	
18	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
19	SPARE				20	
20	SPARE				20	
21	SPARE				20	
22	SPARE				20	
23	SPARE				20	
24	SPARE				20	
PHASE LOAD		22	25.3	23.5		

**LIGHTING PANEL NO. L2TS**  
 LOCATION: CENTER CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

120/208VOLT 60HZ 3PHASE-4WIRES  
 4" 1/0 FEEDER CABLES - TOP ENTRY  
 125A MAIN CKT. BKR.

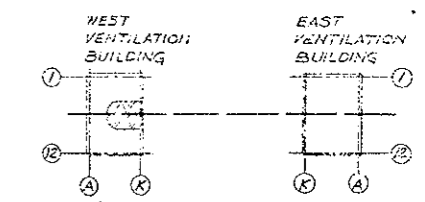
BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.
		A	B	C		
1	TUNNEL TV CO. ANAL. FDR. NO. WALL	5.0			20	2" 8 #12
2	TUNNEL RECEPTACLE SO. WALL	1.5			20	
3	NO. WALL	4.5			20	
4	SO. WALL	1.5			20	
5	NO. WALL	3.0			20	
6	PASSAGEWAY RECEPTACLE (1)	1.5			20	2" 12
7	PASSAGEWAY LGT. W/EMERG.	2.5			15	2" 12
8	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	2" 6
9	PASSAGEWAY LGT.	3.3			15	2" 12
10	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
11	RELAY PANEL CONTROL PWR	5			15	2" 12
12	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
13	SPARE				20	
14	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	2" 6
15	SPARE				20	
16	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
17	SPARE				20	
18	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
19	SPARE				20	
20	SPARE				20	
21	SPARE				20	
22	SPARE				20	
23	SPARE				20	
24	SPARE				20	
PHASE LOAD		23	26.5	25		

**EXISTING LIGHTING PANEL NO. L3TS**  
 LOCATION: EAST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

120/208VOLT 60HZ 3PHASE-4WIRES  
 4" 1/0 FEEDER CABLES - TOP ENTRY  
 125A MAIN CKT. BKR.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP.	COND. WIRE NO.
		A	B	C		
1	TUNNEL TV CO. ANAL. FDR. NO. WALL	3.0			20	2" 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 LGT. W/EMERG.	2.5			15	2" 12
8	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	2" 6
9	PASSAGEWAY LGT.	3.3			15	2" 12
10	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
11	RELAY PANEL CONTROL PWR	5			15	2" 12
12	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
13	SPARE				20	
14	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	2" 6
15	SPARE				20	
16	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
17	SPARE				20	
18	DUCT LGT. WEST SUPPLY EAST RETURN	7			20	1" 6
19	SPARE				20	
20	SPARE				20	
21	SPARE				20	
22	SPARE				20	
23	SPARE				20	

(R1) ADDED MIXED GAS SYSTEM CIRCUIT A47  
 (R2) REVISED FOR 5000W GENERATOR WATER HEATER #1 & #2 AND LINE OIL PUMP #1 WATER PUMP #2. AS SHOWN IN 1/2" PLAN 1/2" 7/21/76  
 (R3) REVISED FOR PROJ. NO. 170-3(33) 220

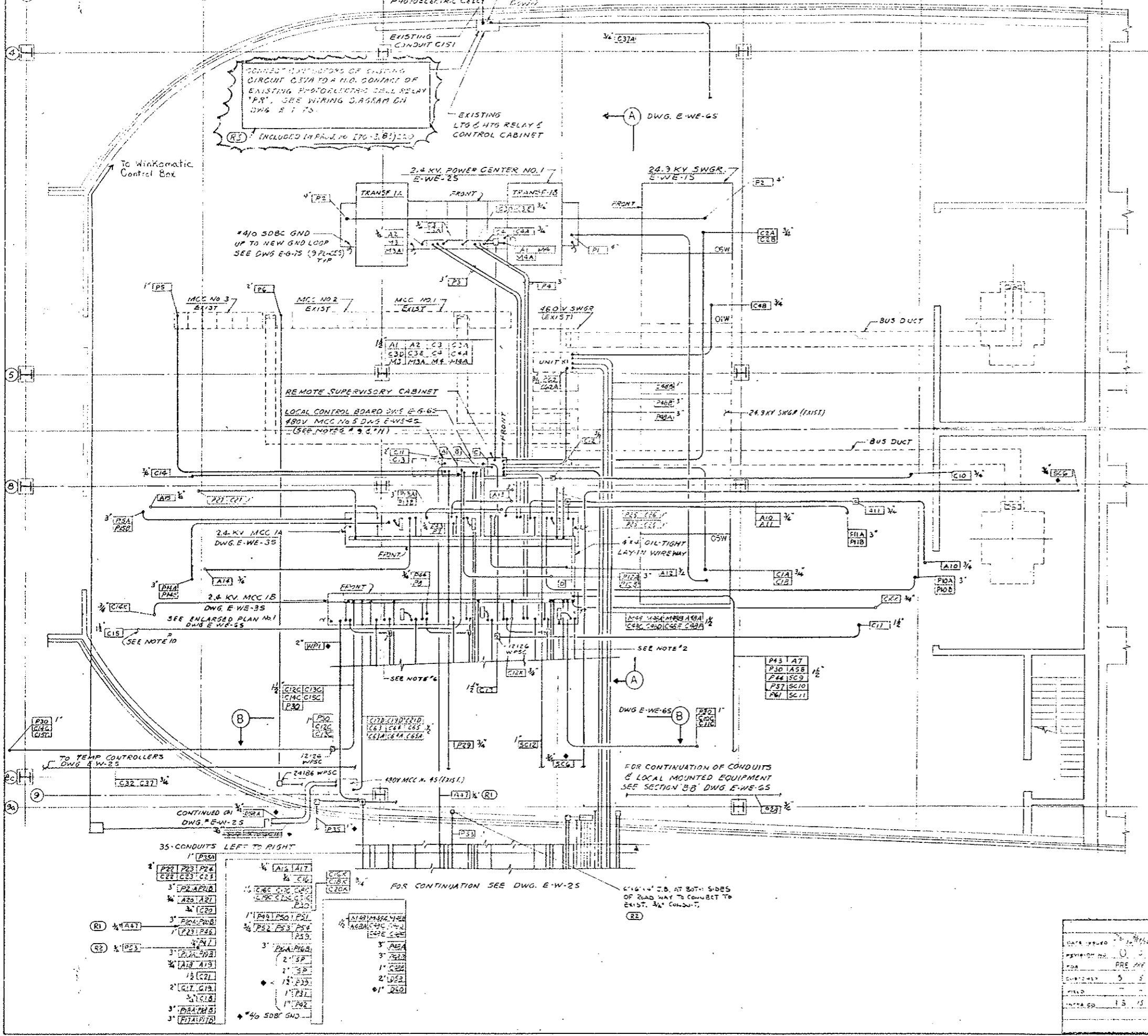


**LEGEND**

- CONDUIT RUN EXPOSED
- - - GROUND WIRE, NEW/ADDITIONAL (R3)
- EXPOSED CONDUIT COMING TOWARD OBSERVER.
- EXPOSED CONDUIT GOING AWAY FROM OBSERVER.
- - - FLEXIBLE CONDUIT
- JUNCTION BOX OR PULL BOX

**NOTES**

1. CONDUIT & EQUIPMENT SHOWN DIAGRAMMATICALLY ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK POSSIBLE EXISTING & NEW INTERFERENCES SUCH AS CONDUIT EQUIPMENT PIPES, DUCTS & STRUCTURAL BEFORE INSTALLING NEW EQUIPMENT & CONDUIT.
- (R3) 2. FOR POWER FACTOR CORRECTION CAPACITOR MOUNTING & CONNECTION SEE DETAIL ON DWG. E-WE-105.
3. FOR CONDUIT & CABLE SCHEDULES, SEE DWG. E-W-45 & 55, E-WE-75, 85 & ET-105.
4. FOR GROUNDING PLAN & DETAILS, SEE E-G-75.
5. \* INDICATES WIRE CABLE & CONDUIT FURNISHED & INSTALLED IN PROJ. NO. 170-3(33) 220
6. ALL JUNCTION BOXES TO BE 884 WPSC EXCEPT AS NOTED.
7. FOR ELEMENTARY DIAGRAMS SEE DWGS. E-G-33, 45 & E-T-65, 75
8. FOR PANEL SCHEDULES SEE DWG. E-G-35.
- (R3) 9. CONTRACTOR TO PREPARE FOR & PROVIDE LEVELING CHANNELS FOR POWER CENTER & MCC'S.
10. FOR CONDUITS GOING UP SEE DWG. E-W-35.
- (R3) 11. GROUND REMOTE SUPV. CABINET & LOCAL CONTROL BOARD W/ #4 SDBS GND. FROM MCC #5 GROUND BUS.
12. [A] INDICATES CIRCUIT LIST SHOWN ON DWG. E-WE-65.



AS CONSTRUCTED

NO REVISIONS  REVISED  VOID



REVISIONS		DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
ELECTRICAL WEST VENTILATION BUILDING ELECTRICAL EQUIPMENT ROOM POWER & CONTROL PLAN				
DATE PREP'D	0 5 76			
REVISION NO.	0			
DESIGNER	PRE			
CHECKED BY	5 5 76			
FIELD				
INSTR. CD.	15 15 1 1 10 15 15			
DRAWING NO.		E-W-15		

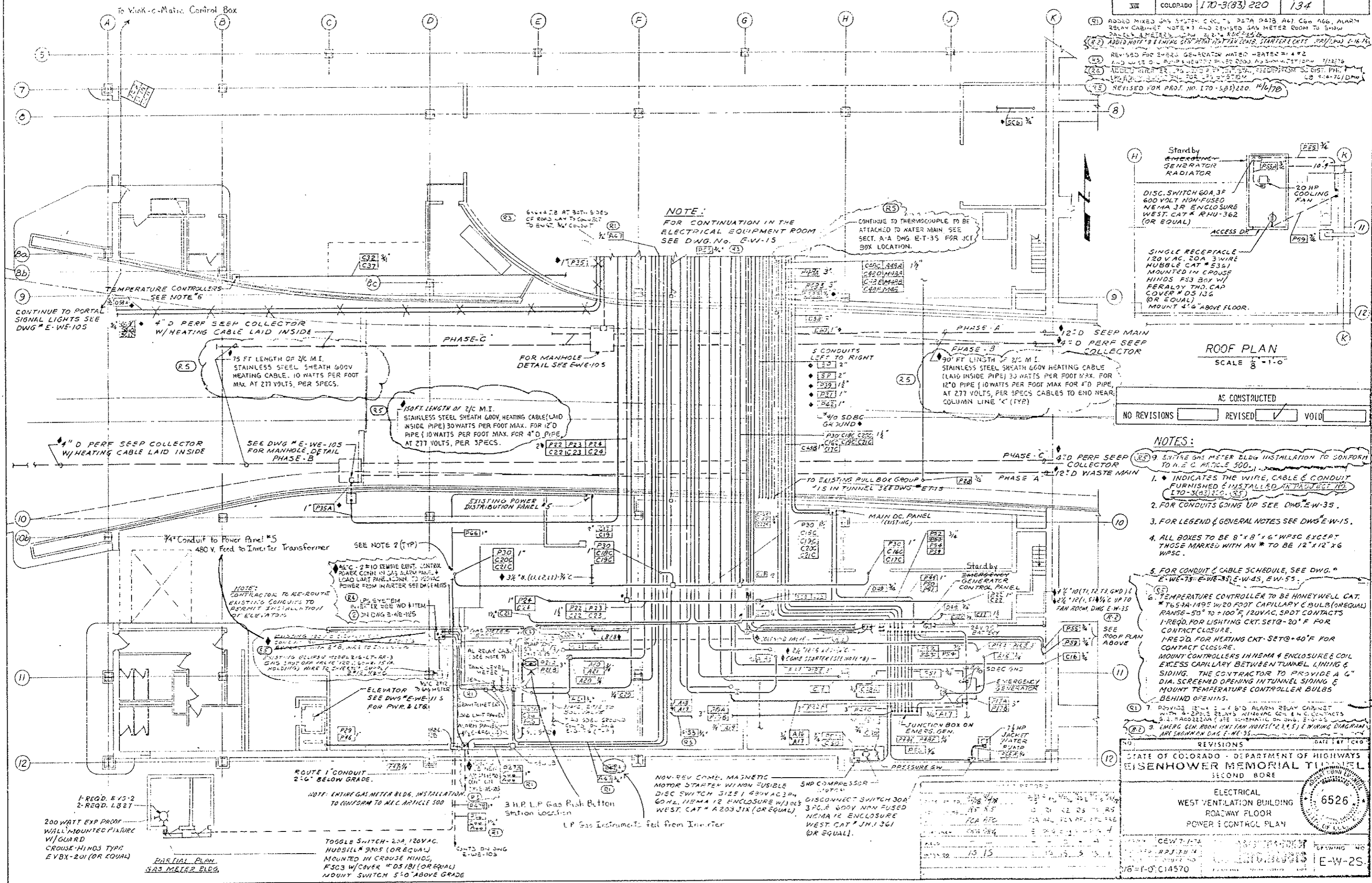
PRINT RECORD	
DATE PREP'D	0 5 76
REVISION NO.	0
DESIGNER	PRE
CHECKED BY	5 5 76
FIELD	
INSTR. CD.	15 15 1 1 10 15 15

35 CONDUITS LEFT TO RIGHT

1" [P30]	1/2" [A12, A17]
2" [P21, P23, P24]	1/2" [C21, C22, C23]
3" [P22, P25]	1/2" [A20, A21]
3" [P26, P27]	1/2" [C24]
3" [P28, P29]	1/2" [A22, A23]
3" [P31, P32]	1/2" [C25]
3" [P33, P34]	1/2" [A24, A25]
3" [P35, P36]	1/2" [C26]
3" [P37, P38]	1/2" [A26, A27]
3" [P39, P40]	1/2" [C27]
3" [P41, P42]	1/2" [A28, A29]
3" [P43, P44]	1/2" [C28]
3" [P45, P46]	1/2" [A30, A31]
3" [P47, P48]	1/2" [C29]
3" [P49, P50]	1/2" [A32, A33]
3" [P51, P52]	1/2" [C30]
3" [P53, P54]	1/2" [A34, A35]
3" [P55, P56]	1/2" [C31]
3" [P57, P58]	1/2" [A36, A37]
3" [P59, P60]	1/2" [C32]
3" [P61, P62]	1/2" [A38, A39]
3" [P63, P64]	1/2" [C33]
3" [P65, P66]	1/2" [A40, A41]
3" [P67, P68]	1/2" [C34]
3" [P69, P70]	1/2" [A42, A43]
3" [P71, P72]	1/2" [C35]
3" [P73, P74]	1/2" [A44, A45]
3" [P75, P76]	1/2" [C36]
3" [P77, P78]	1/2" [A46, A47]
3" [P79, P80]	1/2" [C37]
3" [P81, P82]	1/2" [A48, A49]
3" [P83, P84]	1/2" [C38]
3" [P85, P86]	1/2" [A50, A51]
3" [P87, P88]	1/2" [C39]
3" [P89, P90]	1/2" [A52, A53]
3" [P91, P92]	1/2" [C40]
3" [P93, P94]	1/2" [A54, A55]
3" [P95, P96]	1/2" [C41]
3" [P97, P98]	1/2" [A56, A57]
3" [P99, P100]	1/2" [C42]

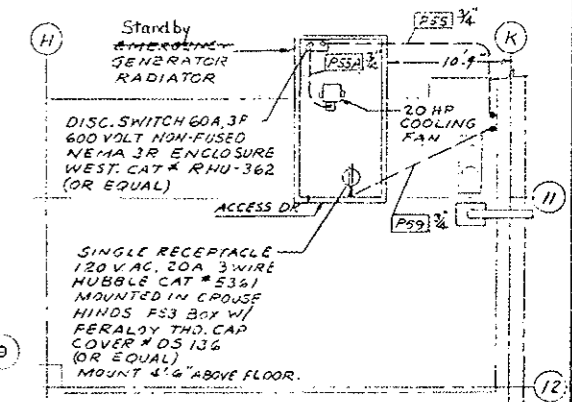
\* #4 SDBS GND

- (R1) ADDED MIXED GAS SYSTEM CIRCUITS, PLTA P413 A41 C66 A66, ALARM RELAY CABINET NOTE #1 AND REVISED GAS METER ROOM TO SHOW PANELS, METER, VALVE, 2" DIA. RUE 212, 16"
- (R2) ADDED NOTE #9 ELEVATOR CONTROL SYSTEM STARTER EXTS. P21/P22 E-1674
- (R3) REVISED FOR 240V GENERATOR WATER HEATER #1 & #2 AND WIRE TO 240V HEATER FROM 240V DISCONNECT P21/P22
- (R4) ADDED METER ROOM TO SHOW METER, VALVE, 2" DIA. RUE 212, 16"
- (R5) REVISED FOR PROJ. NO. 170-3(83) 220. 11/6/70



**NOTE:**  
FOR CONTINUATION IN THE ELECTRICAL EQUIPMENT ROOM SEE DWG. NO. E-W-15

(R5) 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 NO. 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" W/SPC EXCEPT THOSE MARKED WITH AN \* TO BE 12" X 12" X 6" W/SPC.
  - FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-W-75, E-W-85, E-W-85, E-W-85, E-W-85.
  - TEMPERATURE CONTROLLER TO BE HONEYWELL CAT. # T65-1A-1A9E W/20 FOOT CAPILLARY & BULB (OR EQUAL) 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 1" DIA. SCREENED OPENING IN TUNNEL SIDING & MOUNT TEMPERATURE CONTROLLER BULBS BEHIND OPENING.
  - PROVIDE 24" X 24" X 6" ALARM RELAY CABINET WITH 4 SPDT RELAYS APPROX. COIL & 4 CONTACTS 240VAC (SEE SCHEMATIC ON DWG. E-W-35) 1" REQD. FOR LIGHTING CKT. SET@ 20° F 1" REQD. FOR HEATING CKT. SET@ 40° F 1" REQD. FOR LIGHTING CKT. SET@ 20° F 1" REQD. FOR HEATING CKT. SET@ 40° F
  - EMERG. GEN. ROOM (SEE NOTE #1, 2, 3, 4, 5) ELEVATOR DIAGRAM ARE SHOWN ON GAS E-W-35.

SEE ROOF PLAN ABOVE

SEE DWG. E-W-15

SEE DWG. E-W-35

SEE DWG. E-W-35

SEE DWG. E-W-35

REVISIONS

NO.	REVISIONS	DATE	BY
1			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS  
EISENHOWER MEMORIAL TUNNEL  
SECOND BORE

ELECTRICAL  
WEST VENTILATION BUILDING  
ROADWAY FLOOR  
POWER & CONTROL PLAN

6526

E-W-25



(R-1) ADDED EMERG. GEN. ROOM VENT. FAN & CIRCUIT P21/22/23 6-16-76  
 (R-2) REVISED FOR PROJ. NO. 170-3(83)220  
 (R-3) REVISED BOX GROUP NO. 10/11/75

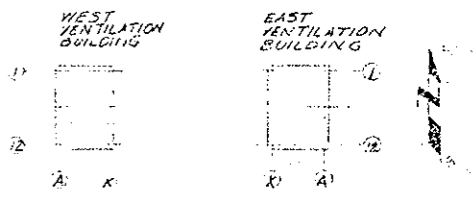
BY JAMARA  
 NS, SEC. DWG.  
 5-18-75

DECURRENT DEVICE TO BE  
 A 30A, 3P BKFR. FURNISH &  
 INSTALL NEW BRKR IN SPACE  
 OR REPLACE UN USED 3 PILE  
 SPARE BKFR WITH NEW BKFR.

EXISTING 480V POWER  
 DISCR. PNL 'P2' WEST

CONTRACTOR TO EXTEND  
 EXIST. POWER SOURCE  
 TO NEW CABINET

SAISING ANALYZER CABINET  
 CO ANALYZER CABINET '15'



KEY PLAN  
 AS CONSTRUCTED

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

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 "ESB4AT"  
 MOUNTED IN A 20" x 16" x 10" WPSC BOX W/SHIELD  
 (TWO SETS OF 4 SPDT 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.  
 "VHU-361 (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, WEEDING RECEPTACLES &  
 CONVENIENCE RECEPTACLES ARE EXISTING & WIRED

7. 1/2 HP DAMPER MOTOR & LIMIT SWITCH/LMS/JARE  
 FURNISHED BY OTHERS. CONTRACTOR  
 TO WIRE AS INDICATED.

8. FOR TELEPHONE OUTLETS, SEE DWG. E-G-85.

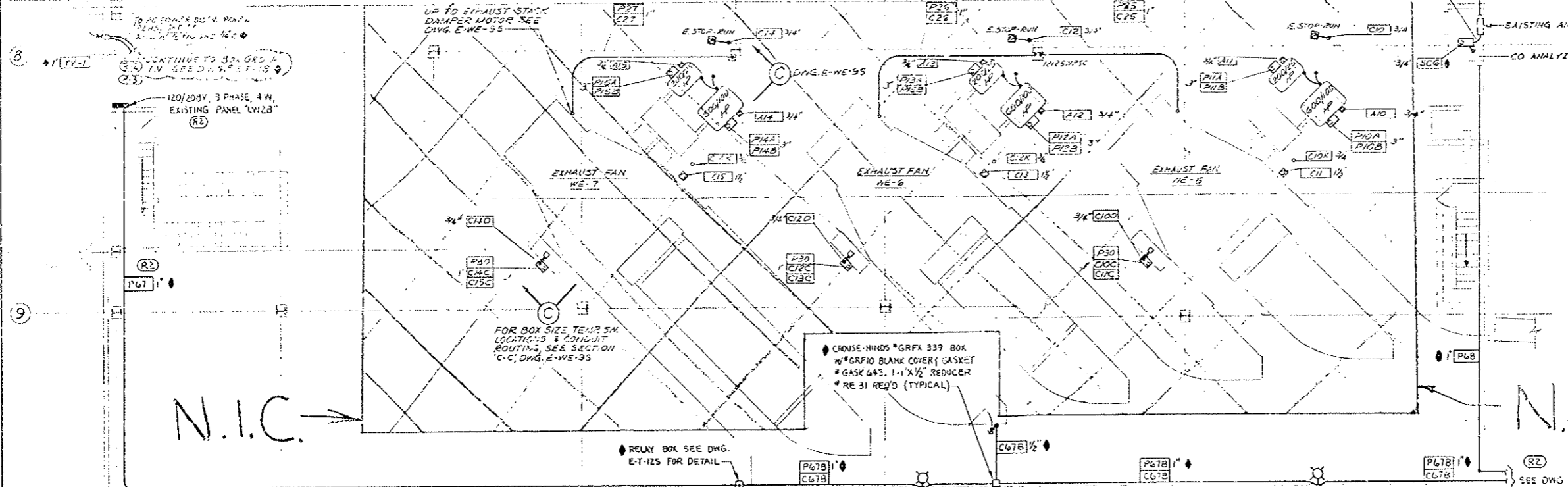
9. FOR CONDUIT & CABLE SCHEDULE, SEE DWG.  
 E-W-75 & E-W-85.

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. (R-1)

13. CONTRACTOR TO CORE DRILL FLOOR FOR CONDUITS & SEAL  
 INDS. \* IDENTICAL



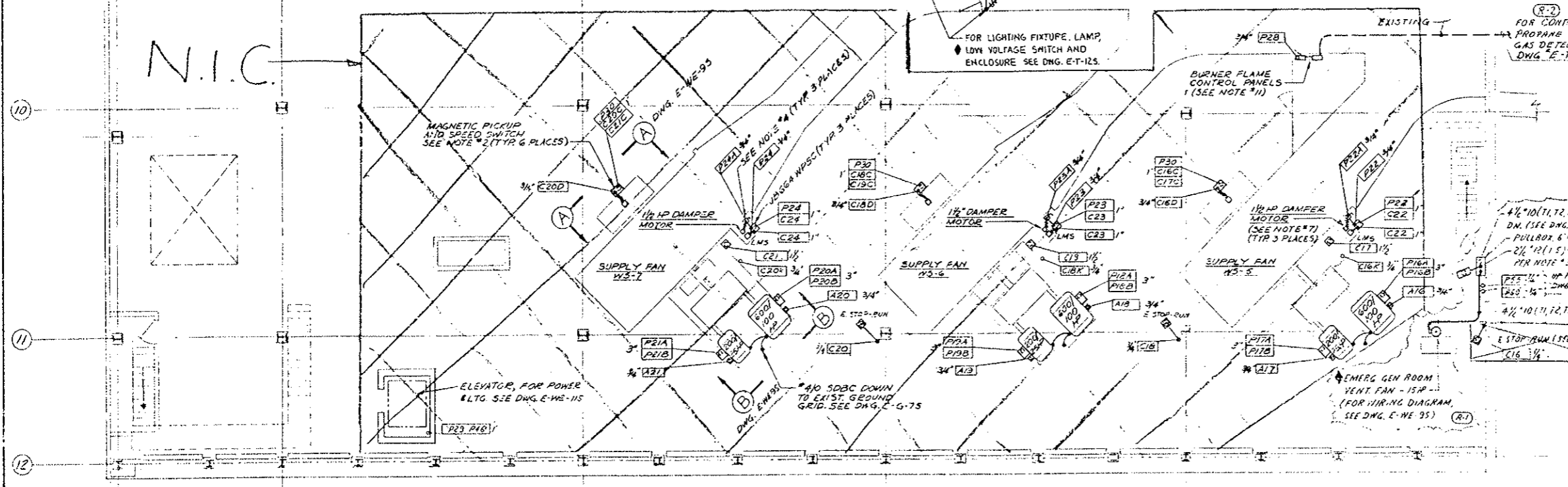
CRUISE-HINDS \*GRFX 339 BOX  
 W \*GRF10 BLANK COVER (GASKET  
 \*GASKETS. 1-1" X 1/2" REDUCER  
 \*RE 31 REQ'D. (TYPICAL)

FOR BOX SIZE TEMP. SM.  
 LOCATIONS & CONDUIT  
 ROUTINGS, SEE SECTION  
 C-C, DWG. E-W-95

RELAY BOX SEE DWG.  
 E-T-125 FOR DETAIL

N.I.C.

N.I.C.



FOR LIGHTING FIXTURE, LAMP,  
 LOW VOLTAGE SWITCH AND  
 ENCLOSURE SEE DWG. E-T-125.

FOR CONTINUATION TO  
 PROPANE A NATURAL  
 GAS DETECTOR SEE  
 DWG. E-T-15

MAGNETIC PICKUP  
 AND SPEED SWITCH  
 SEE NOTE \*2 (TYP 6 PLACES)

4" x 10" (1, 2, 3, GND.) & 2" x 10" (1, 2, 3, 4) C.  
 DN. (SEE DWG. E-W-25)  
 PULLBOX 6" x 6" x 4" WPSC  
 2" x 12" (1, 2, 3) C (STOP) 10 PD STATION  
 PER NOTE \*3. DWG. E-W-75  
 P25-26 UP TO ROOF. SEE PLAN  
 P25-14 DWG. E-W-25  
 4" x 10" (1, 2, 3, GND.) & 2" x 10" (1, 2, 3, 4) C.  
 E STOP-RUN (SEE NOTE \*5)  
 C16 3/4"

N.I.C.



PRINT RECORD

DATE	BY	CHKD	APP'D
0 0 0 6 9 1 27 82 53			
15	15	1	15 15 15 15 15 15

NO. REVISIONS  
 STATE OF COLORADO - DEPARTMENT OF HIGHWAYS  
 EISENHOWER MEMORIAL TUNNEL  
 SECOND BORE

ELECTRICAL  
 WEST VENTILATION BUILDING  
 FAN FLOOR  
 POWER & CONTROL PLAN

DATE 05/01/74  
 DRAWING NO. E-W-35

CONDUIT		WIRE OR CABLE		FROM	TO	FUNCTION
NO	SIZE KIND	SIZE & TYPE				
C1A	3	1/2" #12	24.9KV SWITCHGEAR, UNIT 06W	REMOTE SUPERVISORY CABINET	CONTROL	
C1B	3	1/2" #12	24.9KV SWITCHGEAR, UNIT 06W	REMOTE SUPERVISORY CABINET	INDICATING LIGHTS	
C1C	3	1/2" #12	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL	
C1D	3	1/2" #12	24.9KV SWITCHGEAR, UNIT 06W	REMOTE SUPERVISORY CABINET	INDICATING LIGHTS	
C2A	3	1/2" #12	24.9KV SWITCHGEAR, UNIT 06W	REMOTE SUPERVISORY CABINET	CONTROL	
C2B	3	1/2" #12	24.9KV SWITCHGEAR, UNIT 06W	REMOTE SUPERVISORY CABINET	INDICATING LIGHTS	
C2C	3	1/2" #12	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL	
C2D	3	1/2" #12	24.9KV SWITCHGEAR, UNIT 06W	REMOTE SUPERVISORY CABINET	INDICATING LIGHTS	
C3	3	1/2" #12	24KV POWERCENTER NO.1, FOR 2KR.1A	REMOTE SUPERVISORY CABINET	CONTROL	
C3A	3	1/2" #12	24KV POWERCENTER NO.1, FOR 2KR.1A	REMOTE SUPERVISORY CABINET	INDICATING LIGHTS	
C3B	3	1/2" #12	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL	
C3C	3	1/2" #12	24KV POWERCENTER NO.1, FOR 2KR.1A	REMOTE SUPERVISORY CABINET	INDICATING LIGHTS	
C3D	3	1/2" #12	24KV POWERCENTER NO.1, JUSTIE	REMOTE SUPERVISORY CABINET	CONTROL	
C3E	3	1/2" #12	24KV POWERCENTER NO.1, JUSTIE	REMOTE SUPERVISORY CABINET	INDICATING LIGHTS	
C3F	3	1/2" #12	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL	
C3G	3	1/2" #12	24KV POWERCENTER NO.1, FOR 2KR.1A	REMOTE SUPERVISORY CABINET	INDICATING LIGHTS	
N3	2	1/2" #12	2.4KV POWERCENTER NO.1, AUX SECT.1A	REMOTE SUPERVISORY CABINET	AMMETER VIA TRANSDUCER	
H3A	2	1/2" #12	2.4KV POWERCENTER NO.1, AUX SECT.1A	REMOTE SUPERVISORY CABINET	VOLTMETER VIA TRANSDUCER	
M3B	2	1/2" #12	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	AMMETER	
M3C	2	1/2" #12	2.4KV POWERCENTER NO.1, FOR 2KR.1B	REMOTE SUPERVISORY CABINET	VOLTMETER	
C4	3	1/2" #12	2.4KV POWERCENTER NO.1, FOR 2KR.1B	REMOTE SUPERVISORY CABINET	CONTROL	
C4A	3	1/2" #12	2.4KV POWERCENTER NO.1, FOR 2KR.1B	REMOTE SUPERVISORY CABINET	INDICATING LIGHTS	
C4B	3	1/2" #12	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL	
C4C	3	1/2" #12	2.4KV POWERCENTER NO.1, AUX SECT.1B	REMOTE SUPERVISORY CABINET	INDICATING LIGHTS	
M4	2	1/2" #12	2.4KV POWERCENTER NO.1, AUX SECT.1B	REMOTE SUPERVISORY CABINET	AMMETER VIA TRANSDUCER	
M4A	2	1/2" #12	2.4KV POWERCENTER NO.1, AUX SECT.1B	REMOTE SUPERVISORY CABINET	VOLTMETER VIA TRANSDUCER	
M4B	2	1/2" #12	MASTER SUPERVISORY CABINET	POWER CONTROL BOARD	AMMETER	
M4C	2	1/2" #12	2.4KV POWERCENTER NO.1, AUX SECT.1B	REMOTE SUPERVISORY CABINET	VOLTMETER	
C10E	7	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO. 5, CONTROL	
C10F	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS	
C10G	7	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL	
C10H	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS	
A10A	2	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO.5, FAN FAILURE ALARM	
A10B	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	FAN CONTROL BOARD	
A10C	1	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	FAN SCARING HIGH TEMPERATURE ALARM	
A10D	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	FAN CONTROL BOARD	
A10E	2	1/2" #12	LOCAL CONTROL BOARD	2.4KV MCC NO.18, UNIT '1'	ALARM - MOTOR HIGH TEMPERATURE	
C12E	7	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO.6, CONTROL	
C12F	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS	
C12G	7	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL	
C12H	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS	
A12A	1	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO.6, FAN FAILURE ALARM	
A12B	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	FAN CONTROL BOARD	
A12C	2	1/2" #12	LOCAL CONTROL BOARD	2.4KV MCC NO.18, UNIT '3'	ALARM - MOTOR HIGH TEMPERATURE	
C14E	7	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO.7, CONTROL	
C14F	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS	
C14G	7	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL	
C14H	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS	
A14A	1	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	EXHAUST FAN NO.7, FAN FAILURE ALARM	
A14B	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	FAN CONTROL BOARD	
A14C	2	1/2" #12	LOCAL CONTROL BOARD	2.4KV MCC NO.18, UNIT '5'	ALARM - MOTOR HIGH TEMPERATURE	
C16E	7	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.5, CONTROL	
C16F	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS	
C16G	7	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL	
C16H	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS	
A16A	1	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.5, FAN FAILURE ALARM	
A16B	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	FAN CONTROL BOARD	
A16C	2	1/2" #12	LOCAL CONTROL BOARD	2.4KV MCC NO.18, UNIT '7'	ALARM - MOTOR HIGH TEMPERATURE	

CONDUIT		WIRE OR CABLE		FROM	TO	FUNCTION	
NO	SIZE KIND	SIZE & TYPE					
C18E	7	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.6, CONTROL		
C18F	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS		
C18G	7	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL		
C18H	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS		
A18A	1	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.6, FAN FAILURE ALARM		
A18B	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	FAN CONTROL BOARD		
A18C	2	1/2" #12	LOCAL CONTROL BOARD	2.4KV MCC NO.18, UNIT '3'	ALARM - MOTOR HIGH TEMPERATURE		
C20E	7	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.7, CONTROL		
C20F	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS		
C20G	7	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL		
C20H	6	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	IND. LIGHTS		
A20A	1	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	SUPPLY FAN NO.7, FAN FAILURE ALARM		
A20B	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	FAN CONTROL BOARD		
A20C	2	1/2" #12	LOCAL CONTROL BOARD	2.4KV MCC NO.18, UNIT '5'	ALARM - MOTOR HIGH TEMPERATURE		
A20D	1	1/2" #12	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	FAN CONTROL BOARD		
A20E	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	FAN CONTROL BOARD		
P28	3	1/2" #10	AC POWER DIST. PANEL #PIWS	AIR HEATED BURNER FLAME CONTR. PNL.	FEEDER		
P30	2	1/2" #12	AC POWER DIST. PANEL #P2WS	SPEED SWITCH & TEMP CONTROLLER	120V FEEDER		
P31	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" #12	TEMPERATURE CONTROLLER #2	LTG. & HTG. RELAY & CONTROL PNL.	CONTROL		
P33	4	1/2" #6	AC POWER DIST. PANEL #PIWS	NORTH TUNNEL WALL AC PULLBOX GRPS.	WATER MAIN PIPE HTG. FEEDER		
P33A	3	1/2" #6	TEMPERATURE CONTROLLER T.C.#3	LTG. & HTG. RELAY & CONTROL PNL.	CONTROL (T.C.#3 POWER)		
P33B	1	2/2" #20	TEMPERATURE CONTROLLER T.C.#3	THERMOCOUPLE ON WATER MAIN	TEMP. SENSING.		
P34	4	1/2" #6	AC POWER DIST. PANEL #PIWS	LTG. & HTG. CONTACTOR PANEL	SEEPAGE DRAIN HTG. FEEDER		
P35	4	1/2" #6	AC POWER DIST. PANEL #PIWS	NORTH TUNNEL WALL DRAIN MANHOLE SOUTH	SEEPAGE DRAIN HTG. FEEDER		
P35A	4	1/2" #6	AC POWER DIST. PANEL #PIWS	LTG. & HTG. CONTACTOR PANEL	TUNNEL INT. ZONES LTG. FEEDER MIN.2,3		
P36	12	1/2" #6	AC POWER DIST. PANEL #PIWS	LTG. & HTG. CONTACTOR PANEL	TUNNEL INT. ZONES LTG. FEEDER MIN.2,3		
P37	12	1/2" #6	AC POWER DIST. PANEL #PIWS	LTG. & HTG. CONTACTOR PANEL	TUNNEL INT. ZONES LTG. FEEDER MIN.2,3		
C37	2	1/2" #12	TEMPERATURE CONTROLLER #1	LTG. & HTG. RELAY & CONTROL PNL.	CONTROL		
C37A	2	1/2" #12	PHOTOELECTRIC CELL RELAY 'P2'	LTG. & HTG. RELAY & CONTROL PNL.	CONTROL		
C37B	6	1/2" #12	LTG. & HTG. CONTACTOR PANEL	NORTH TUNNEL WALL AC PULLBOX GRPS.	TUNNEL INT. ZONES LTG. FEEDER MIN.2,3		
P38	12	1/2" #6	AC POWER DIST. PANEL #PIWS	NORTH TUNNEL WALL AC PULLBOX GRPS.	TUNNEL INT. ZONES LTG. FEEDER MIN.2,3		
P39	12	1/2" #6	AC POWER DIST. PANEL #PIWS	NORTH TUNNEL WALL AC PULLBOX GRPS.	TUNNEL INT. ZONES LTG. FEEDER MIN.2,3		
P40	3	1/2" #8	AC POWER DIST. PANEL #PIWS	30KV TRANSFORMER PRIMARY	FEEDER		
P40A	4	1/2" #8	AC POWER DIST. PANEL #PIWS	30KV TRANSFORMER SECONDARY	AC POWER DIST. PANEL #P2WS	120V 208V FEEDER	
P41	4	1/2" #6	AC POWER DIST. PANEL #P2WS	NORTH TUNNEL AC PULLBOX GRPS. SOUTH	TY CANEER, TUNNEL RECEPTACLE FOR TUNNEL RECEPTACLE FEEDER		
P42	4	1/2" #6	AC POWER DIST. PANEL #P2WS	2.4KV MCC NO.1A	120V TEST POWER		
P43	2	1/2" #12	TEMPERATURE CONTROLLER #1	2.4KV MCC NO.1B	120V FEEDER		
P44	2	1/2" #12	TEMPERATURE CONTROLLER #1	LTG. & HTG. RELAY & CONTROL PNL.	120V FEEDER		
P45	2	1/2" #12	TEMPERATURE CONTROLLER #1	ELEVATOR PENTHOUSE	LTG. & RECEPTACLE FEEDER		
P46	2	1/2" #12	TEMPERATURE CONTROLLER #1	LOCAL JUNCTION BOX	LIGHTING FEEDER (INSTRUMENTS)		
P47	3	1/2" #12	LOCAL JUNCTION BOX (3KR #20)	MIXED GAS SYSTEM ALARM & CTR PNL'S	ALARM & CONTROL POWER		
P47A	2	1/2" #12	LOCAL JUNCTION BOX (3KR #20)	GAS METER BLDG. LIGHT	LIGHTING FEEDER		
P47B	2	1/2" #12	LOCAL JUNCTION BOX (3KR #20)	REMOTE SUPERVISORY PANEL	MIXED GAS SYSTEM ALARMS		
A47	5	1/2" #12	GAS METER RM. ALARM RELAY CAB.	ANNUNCIATOR - FAN CONTROL BOARD			
A47A	5	1/2" #12	MASTER SUPERVISORY PANEL	ANNUNCIATOR - FAN CONTROL BOARD			

CONTINUED ON DWG. E-W-55

REGION NO. 100

COLDRADO I70-3(83)220 136

(R1) ADDED MIXED GAS SYSTEM CIRCUITS PARA, P47B, A47, A47A AND REVISED CIRCUIT P47 DPW 2/11/76, R2E 4/24/76

(R2) REVISED FOR ENERG. GENERATOR WATER HEATER #1472 AND WIRE OIL PUMP MOTOR POWER REQU. AS SHOWN JET/DMW 7/11/76

(R3) REVISED FOR PROJ. NO. I70-3(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. I70-3(83)220. (R3)
- SPARE CONDUITS ARE NOT INDICATED IN THIS SCHEDULE BUT SHALL BE INCLUDED IN PROJECT I70-3(83)220 WHEN IDENTIFIED ON PLANS AND SECTIONS PER NOTE 2.

(R3)

(R1)

(R2)

(R3)

(R1)

(R2)

(R3)

(R1)

Instruments Fed from Inverter I70-3(83)220 Modification

REVISIONS

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
	0	0	0

DRAWN: JEU 6/28/76  
CHECKED: R.P.S. 7-5-76  
SCALE: NONE  
ORDER NO: CH4570

6526

E-W-4S

CONDUIT		WIRE OR CABLE		FROM	TO	FUNCTION
NO	SIZE & KIND	SIZE & TYPE				
P48A	4	1/2" #10	120V SWGR. UNIT "K1"	EMERG. GENERATOR CONTROL PANEL	FEEDER	
P48B	3	1/2" #10		EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	
P48C	4	1/2" #10		EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	
P48D	3	1/2" #10		EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	
P48E	8	1/2" #12			EMERG. GENERATOR FIELD EXC. GOVERNOR MOTOR, FEEDER	
P48F	3	1/2" #12			EMERG. GENERATOR FIELD EXC. GOVERNOR MOTOR, FEEDER	
D48	2	1/2" #10	EMERG. GENERATOR CONTROL PANEL	24V DC BATTERY COMPARTMENT	24V DC FEEDER	
C48	2	1/2" #12	120V SWGR. UNIT "K1"	24V DC SWITCHGEAR UNIT "S1W"	INTERLOCK	
C48A	9	1/2" #12	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL	
C48B	7	1/2" #12		120V SWGR. UNIT "K1"	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	9	1/2" #12			LOW OIL & HIGH TEMP LTG.	
M48	1	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" #12			LOW OIL HEATER & CIRC. 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 (7 1/2 HP)	
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 GRP 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	24V POWERCENTER, TRANS. 1B	REMOTE SUPERVISORY CABINET	ALARM - GROUND NEUTRAL	
A1A	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD		
A2	2	1/2" #12	24V POWERCENTER, TRANS. 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	1	1/2" #4	MAIN DC PANEL	DC DISTRIBUTION PULLBOX GRP IN	TELEPHONE WORKER & SIGNAL LIGHT PSE.	
P61	2	1/2" #12	AC POWER DIST. PANEL "P2WS"	LOCAL CONTROL BOARD	120V AC FDR - TEMP CONTROLLERS	
S65	1	1/2" #16	TELEPHONE CABINET "TAN"	LTG. & HTG. RELAY & CONTROL CABINET	CONTACTOR RESET	
S65A	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED "X"	TRAFFIC CONTROL	
S65B	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/GREEN ARROW		
S65C	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65D	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65E	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65F	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65G	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65H	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65I	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65J	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65K	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65L	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65M	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65N	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65O	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65P	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65Q	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65R	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65S	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65T	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65U	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65V	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65W	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65X	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65Y	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		
S65Z	2	1/2" #12	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED ARROW		

CONDUIT		WIRE OR CABLE		FROM	TO	FUNCTION
NO	SIZE & KIND	SIZE & TYPE				
C62	3	1/2" #12	480V SWITCHGEAR, UNIT "K1"	REMOTE SUPERVISORY CABINET	CONTROL	
C62A	3	1/2" #12			INDICATING LIGHTS	
C62B	3	1/2" #12		REMOTE SUPERVISORY CABINET	POWER CONTROL BOARD	CONTROL
C62C	3	1/2" #12			INDICATING LIGHTS	
C63	4	1/2" #12	480 MCC No. #5	REMOTE SUPERVISORY CABINET	CONTROL - FAN WS-5 BULKHEADS	
C63A	2	1/2" #12			IND. LGT.	
C63B	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL	
C63C	2	1/2" #12			IND. LGT.	
C64	4	1/2" #12	480 MCC No. #5	REMOTE SUPERVISORY CABINET	CONTROL - FAN WS-6 BULKHEADS	
C64A	2	1/2" #12			IND. LGT.	
C64B	1	1/2" #12	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	CONTROL	
C64C	2	1/2" #12			IND. LGT.	
C65	4	1/2" #12	480 MCC No. #5	REMOTE SUPERVISORY CABINET	CONTROL - FAN WS-7 BULKHEADS	
C65A	2	1/2" #12			IND. LGT.	
C65B	1	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" G	POWER DIST. PHILBY (EUSTING) (S.S. SP. BRK. T.F. #1)	LP-GAS SYSTEM POWER PANEL	LP-GAS SYSTEM FEEDER	
C66	1	5/8" #22 (600V)	LP-GAS STORAGE TANK LEVEL TRANSMITTER	GAS METER ROOM LEVEL METER	LP-GAS TANK LEVEL INDICATION	
P66	2	1/2" #12	BLENDED CONTROL PANEL	GAS METER ROOM ALARM PANEL	BLENDED ALARM	
P67	1	1/2" #12	LTG. PNL "LWZB" BRKRS #30, 32, 34	RELAY BOX	AIR DUCT LTG. FDR	
P67A	1	1/2" #12		RELAY BOX	SUPPLY AIR DUCT LIGHTS	
P67B	1	1/2" #12			EXHAUST AIR DUCT LIGHTS	
C67A	3	1/2" #14			SUPPLY AIR DUCT LTG. CNTL. SWS.	AIR DUCT LTG. CONTROL
C67B	3	1/2" #14			EXHAUST AIR DUCT LTG. CNTL. SWS.	
P68	1	3/4" #1 & 1/2" #4 G.	AC POWER DISTR. PNL "P2" WEST	RECEPTS, SUPPLY & EXHAUST DUCTS	POWER OUTLETS	

(R1) ADDED MIXED GAS SYSTEM CIRCUITS C66 & A66  
 (R2) REVISED FOR EMERG. GENERATOR WATER HEATER #1 & #2 AND LOW OIL PUMP ENR. POWER REG. AS SHOWN T8/DMU 7/13/76  
 (R3) REVISED FOR PROJ. NO. I70-3(85)220

AS CONSTRUCTED  
 NO. REVISIONS  REVISED  VOID

NOTES:  
 1. FOR WIRE & CABLE, SEE D.O.H. SPECIFICATIONS, SECTION # 720  
 2. \* INDICATES WIRE, CABLE & CONDUIT PURCHASED & INSTALLED IN PROJ. NO. I70-3(85)220, (R3)  
 3. SPARE CONDUITS ARE NOT INDICATED ON THIS SCHEDULE BUT SHALL BE IDENTIFIED ON PLANS AND SECTIONS PER NOTE # 2.

(R1)  
(R1)  
(R3)  
(R3)  
(R3)  
(R3)  
(R3)  
(R3)



REVISIONS  
 STATE OF COLORADO - DEPARTMENT OF HIGHWAYS  
 EISENHOWER MEMORIAL TUNNEL  
 SECOND BORE

ELECTRICAL  
 WEST VENTILATION BUILDING  
 CONDUIT & CABLE SCHEDULE  
 SHEET NO. 2

stearns-roger architects  
 DRAWING NO. E-W-55

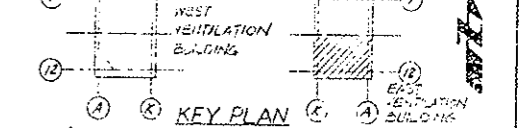
PRINT RECORD

DATE ISSUED	7/15/76
REVISION NO.	0 0 0 0 1 2 3 4 5
FOR	PREPARE FOR CONSTRUCTION
CUSTOMER	STATE OF COLORADO
FIELD	
BY	15 15 1 1 15 15 1 15



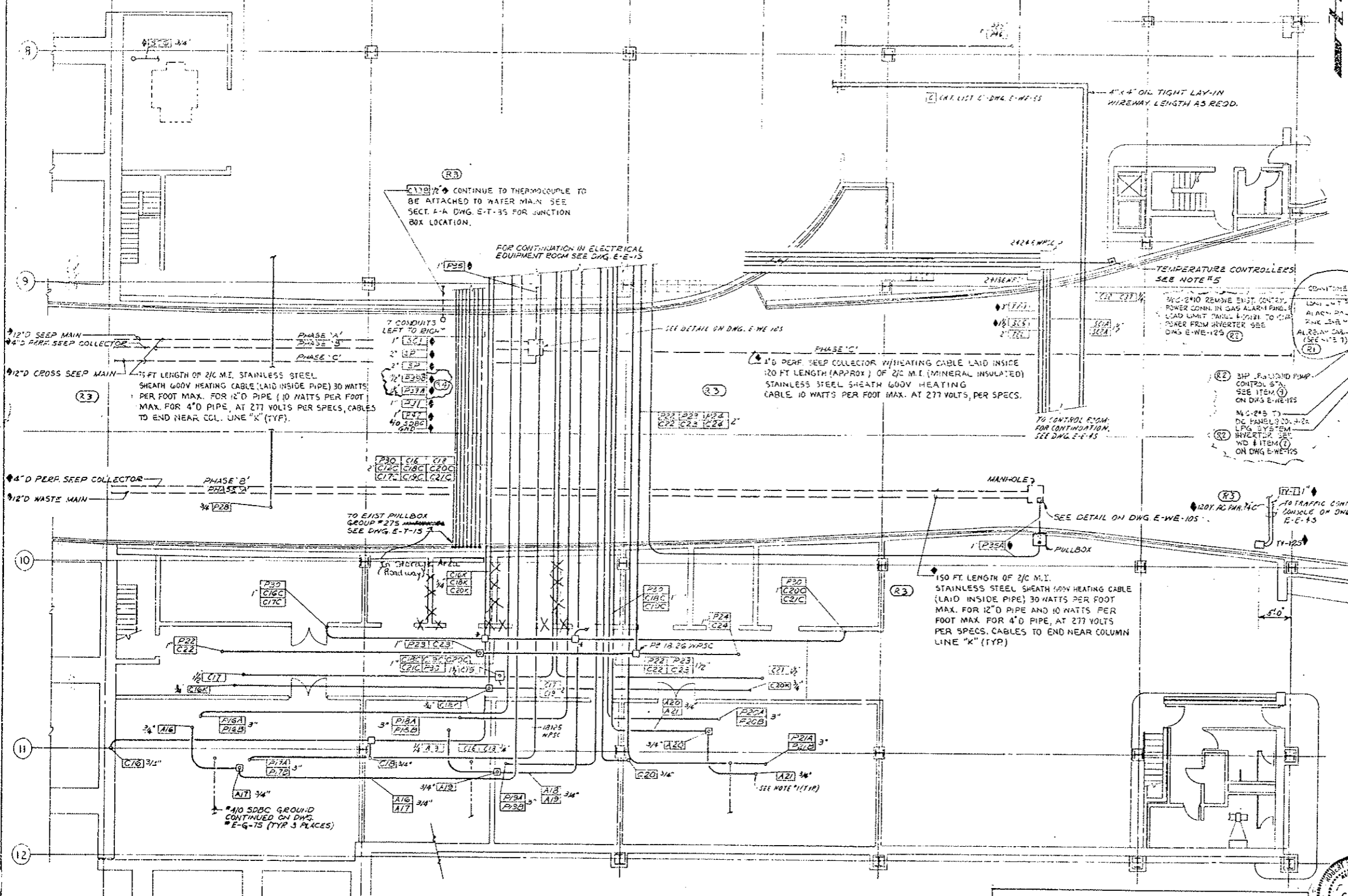


- (R1) ADDED MIXED GAS SYSTEM CIRCUITS P23A, P23B, A07, C6, A06, ALARM RELAY CABINET - NOTE #7 AND REVISED GAS METER ROOM TO SHOW PANELS AND METERS. SEE 210776, 225 11/17/76
- (R2) ADD INVERTER LPS LIQUID PUMP CONT. STA. FEEDS FROM DC BUS. PNL #1 LPS LIQUID PUMP CONT. STA. LPS SYSTEM. SEE 210776, 225 11/17/76
- (R3) REVISED FOR PROJ. NO. 170-3(83) 220. REVISED TUNNEL LIGHTING. 11/17/76



CH'FESC 2129 3/4" HUB THRU FEED SINGLE GANG ENCLOSURE WITH 1P 20A TUMBLER SW. MOUNT 3'-0" ABOVE GRADE. CONTRACTOR TO FURNISH 1-E15241-E1524 FITTING.

PHOTO ELECTRIC RELAY LOCATED AT COL. A-1 AND ASSOCIATED CIRCUIT C151 IN 1" C TO BE RELOCATED TO COL. B-1 TO CLEAR HAZARDOUS AREA LIMIT FOR NEW GAS METER BLDG.



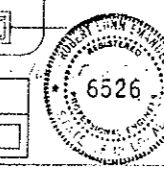
TEMPERATURE CONTROLLERS SEE NOTE #5

PHOTO ELECTRIC RELAY LOCATED AT COL. A-1 AND ASSOCIATED CIRCUIT C151 IN 1" C TO BE RELOCATED TO COL. B-1 TO CLEAR HAZARDOUS AREA LIMIT FOR NEW GAS METER BLDG.

**PARTIAL PLAN GAS METER BLDG & ADDITIONAL CIRCUITING**

- NOTES:**
- FOR CONDUITS GOING UP SEE DWG. E-E-35.
  - FOR LEGEND & GENERAL NOTES SEE DWG. E-E-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-E-75; E-E-85, E-E-55, E-E-45 & E-E-53.
  - TEMPERATURE CONTROLLER TO BE HONEYWELL CAT #T654A-1495 W/20 FOOT CAPILLARY & BULB. RANGE -50° TO +100°, 120VAC, SPDT CONTACTS 1 REQD FOR LIGHTING CKT - SET @ -20°F FOR CONTACT CLOSURE. 1 REQD FOR HEATING CKT - SET @ 10°F FOR CONTACT CLOSURE. MOUNT CONTROLLERS IN NEMA 4 ENCLOSURE & COIL EXCESS CAPILLARY BETWEEN TUNNEL LINING & SIDING (OR EQUAL). CONTRACTOR TO PROVIDE 6" DIA. SCREENED OPENING IN TUNNEL SIDING & MOUNT TEMPERATURE CONTROLLER BULBS BEHIND OPENING.
  - \* INDICATES WIRE, CABLE, & CONDUIT FURNISHED & INSTALLED IN PROJ. NO. 170-3(83) 220. (R3)
  - PROVIDE 12" x 12" x 6" ALARM RELAY CABINET WITH 4-2POLE RELAYS W/120VAC COIL & 1/2 C. CONTACTS G.E. # A00222A (SEE SCHEMATIC ON DWG. E-E-55)
  - ENTIRE GAS METER BLDG INSTALLATION TO CONFORM TO N.E.C. ARTICLE 500.

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID



DATE	BY	REVISION
15	15	1
15	15	2
15	15	3
15	15	4
15	15	5
15	15	6
15	15	7
15	15	8
15	15	9
15	15	10
15	15	11
15	15	12
15	15	13
15	15	14
15	15	15
15	15	16
15	15	17
15	15	18
15	15	19
15	15	20
15	15	21
15	15	22
15	15	23
15	15	24
15	15	25
15	15	26
15	15	27
15	15	28
15	15	29
15	15	30
15	15	31
15	15	32
15	15	33
15	15	34
15	15	35
15	15	36
15	15	37
15	15	38
15	15	39
15	15	40
15	15	41
15	15	42
15	15	43
15	15	44
15	15	45
15	15	46
15	15	47
15	15	48
15	15	49
15	15	50
15	15	51
15	15	52
15	15	53
15	15	54
15	15	55
15	15	56
15	15	57
15	15	58
15	15	59
15	15	60
15	15	61
15	15	62
15	15	63
15	15	64
15	15	65
15	15	66
15	15	67
15	15	68
15	15	69
15	15	70
15	15	71
15	15	72
15	15	73
15	15	74
15	15	75
15	15	76
15	15	77
15	15	78
15	15	79
15	15	80
15	15	81
15	15	82
15	15	83
15	15	84
15	15	85
15	15	86
15	15	87
15	15	88
15	15	89
15	15	90
15	15	91
15	15	92
15	15	93
15	15	94
15	15	95
15	15	96
15	15	97
15	15	98
15	15	99
15	15	100

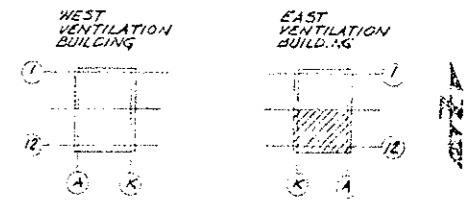
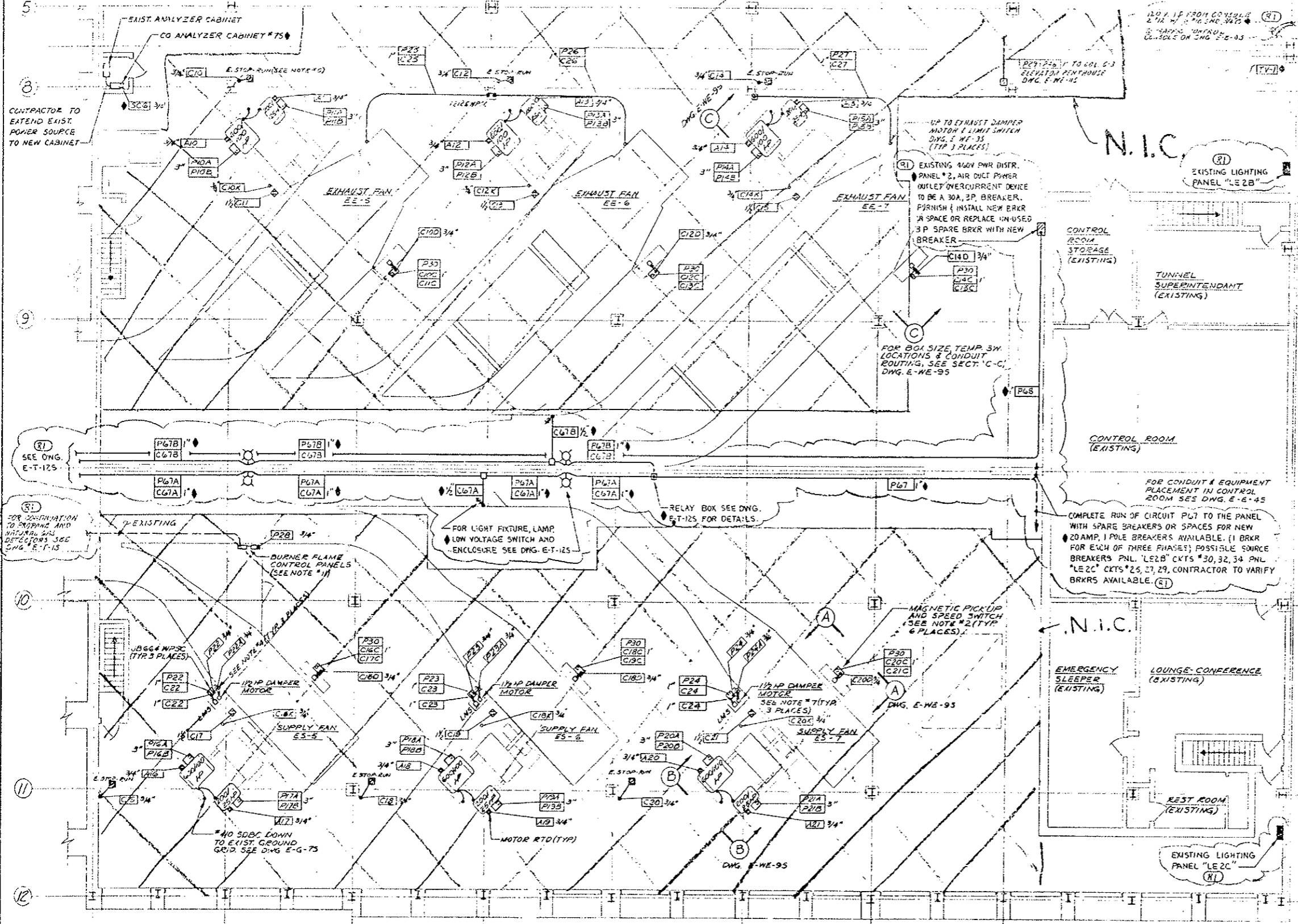
REVISIONS	DATE	BY
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
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		

ELECTRICAL  
 EAST VENTILATION BUILDING  
 ROADWAY FLOOR  
 POWER & CONTROL PLAN

DATE: 11/17/76  
 DRAWN: P.F.J. 6/26/74  
 CHECKED: P.F.J. 6/26/74  
 APPROVED: P.F.J. 6/26/74

PROJECT NO. 170-3(83) 220  
 SHEET NO. E-E-25

REVISED FOR PROJ. NO. I 70-3(83)220.



**NOTES:**

- FOR CONTINUATION OF CONDUITS GOING DOWN, SEE DWG. E-E-15 & E-E-25.
- SPEED SWITCHES WITH MAGNETIC PICKUP TO BE SYNCHRO-START PRODUCTS, INC. MODEL #ESSB4AT MOUNTED IN A 20" x 16" x 10" W/PSC BOX WITH SUBANEL. TWO SETS OF SPOT CONTACTS PER FAH.
- FOR LEGEND & GENERAL NOTES SEE DWG. E-E-15.
- DISCONNECT SWITCH TO BE 30AMP, 3P, 400V NON-FUSIBLE NEMA 12 ENCLOSURE, WESTINGHOUSE CAT #JHJ-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 REQD & ROUTE CONDUIT.
- LIGHTING FIXTURES, WELDING RECEPTACLES & CONVENIENCE RECEPTACLES ARE EXISTING & WIRED.
- 1/2 HP 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 WITH 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 WITH DUAL SEAL.

N.I.C. →



PRINT RECORD

DATE	BY	REVISION
15	15	1
15	15	1

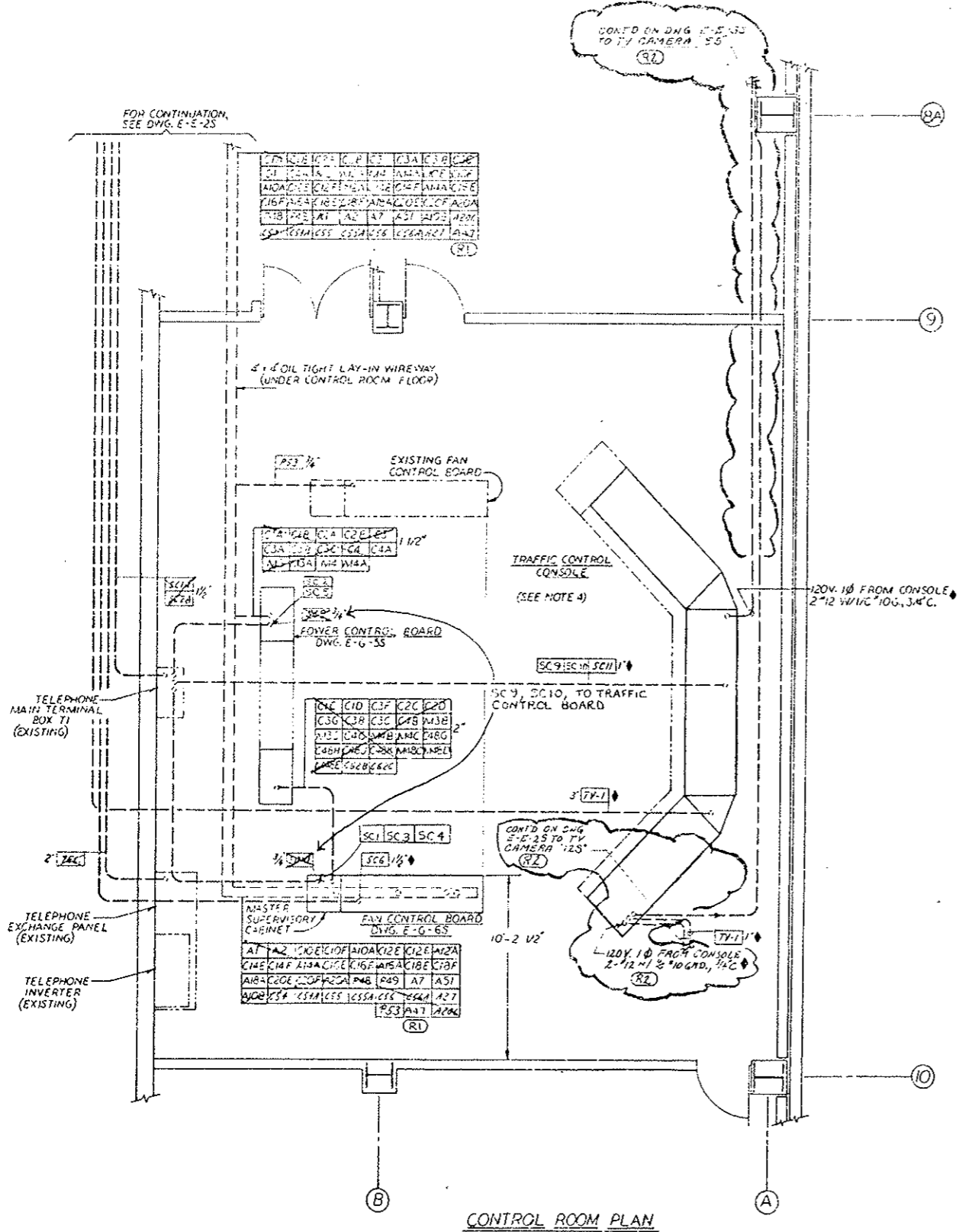
NO.	REVISIONS	DATE	BY	CCD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND BORE				
ELECTRICAL				
EAST VENTILATION BUILDING				
FAN FLOOR				
POWER & CONTROL PLAN				
DATE	BY	REVISION	DATE	BY
15	15	1	15	15
15	15	1	15	15

SCALE: 1/8" = 1'-0" C14570

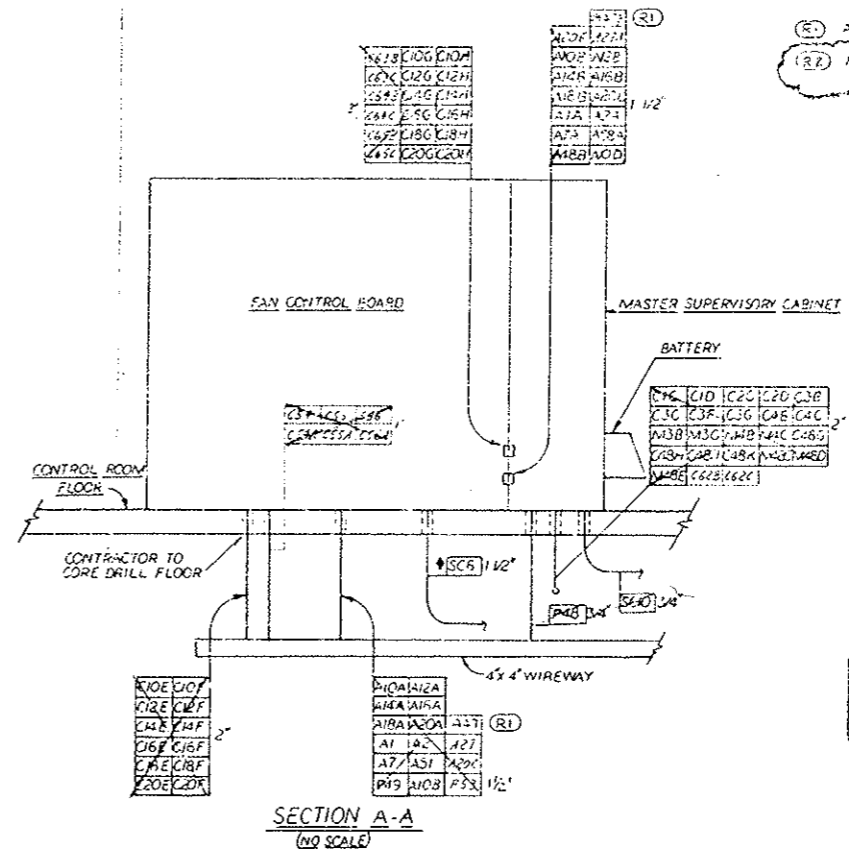
DRAWING NO. E-E-35

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
302	COLORADO	170-3(83)220	141	

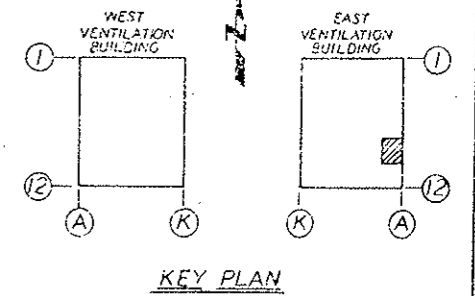
(R1) ADDED M423 GAS SYSTEM ALARM CIRCUITS A-7 & A-7A  
 (R2) REVISED FOR PROJ. NO. 170-3(83)220



CONTROL ROOM PLAN



SECTION A-A  
(NO SCALE)



KEY PLAN

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

- NOTES:
- FOR ELEMENTARY DIAGRAMS, SEE DWGS. E-G-35 & E-45.
  - FOR CONDUIT & CABLE SCHEDULES, SEE DWGS. E-E-55 & E-W-45 & E-55.
  - INDICATES WIRE, CABLE & CONDUIT FURNISHED & INSTALLED IN PROJECT NO. 170-3(83)220.
  - PROJECT NO. 170-3(83)220 INCLUDES THE FURNISHING & INSTALLATION OF (13) TRIGGER TV MONITORS INCLUDING MODULES AND MOUNTING OF THE TRAFFIC CONTROL CONSOLE. SEE DWGS. TC-25 & TC-35.



DATE ISSUED	10/15/78
DATE REVISED	10/22/78
BY	PRE: PHE, ECA, RFL; PRC: PCH
SCALE	5/5 10/20 4/086
DATE	15/15 1/15 1/15

NO.	REVISIONS	DATE BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS		
EISENHOWER MEMORIAL TUNNEL		
SECOND BORE		
ELECTRICAL		
EAST VENTILATION BUILDING		
CONTROL ROOM		
POWER AND CONTROL PLAN		
DATE	10/15/78	BY
SCALE	1/8" = 1'-0"	NO.
DATE	10/15/78	BY
SCALE	1/8" = 1'-0"	NO.



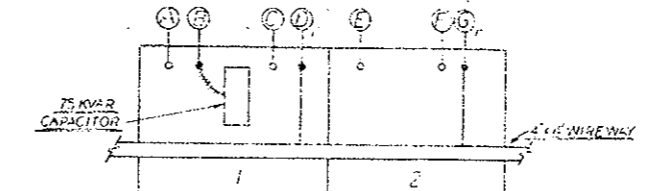
(R1) ADDED MAED GAS SYSTEM CIRCUITS P-27 & A-7 DWG. 4-1-76  
 (R2) REVISED FOR PROJ. NO. 170-3(23)220 RLE 7/4/76  
 (R3) REVISED TUNNEL LIGHTING 7/1/76

**LEGEND**

- 480V/277V AC POWER DISTRIBUTION PANEL (P1E5), CIRCUIT BREAKER TYPE COP, W/STINGHOUSE (OR EQUAL). SEE DWG. E-G-95 FOR SCHEDULE.
- LIGHTING & HEATING CONTACTOR PANEL, W/2 30A, 3P, 480V. CONTACTORS (20V COILS), NEMA 1 ENCLOSURE. SEE WIRING DIAG. DWG. E-T-75.
- WIRING HEATING RELAY & CONTROL CABINET, NEMA 1 ENCLOSURE. SEE WIRING DIAGRAM ON DWG. E-T-75.
- LIGHTING TRANSFORMER, 480-208/120V, WALL-MOUNTED, NON-VENT TYPE EPT, W/2-2 1/2% FCAN & FCEN TAPS, 15 KVA, W/STINGHOUSE (OR EQUAL). SEE DWG. E-G-95 FOR SCHEDULE.
- 120/208V AC POWER DISTRIBUTION PANEL (P2E5), 50A MAIN CIRCUIT BREAKER, W/STINGHOUSE CAT. NO. 44-48-050, SURFACE MOUNTED (OR EQUAL). SEE DWG. E-G-95 FOR SCHEDULE.
- AUTO-TRANSFER SWITCH - DOUBLE THROW CONTACTOR, 30A, 3 POLE, 120/240V DC, W/120V AC COIL, W/UX, 1PDT CONTACT, NEMA 1 ENCLOSURE, ZENITH CAT. NO. 6QT33A (OR EQUAL). WIRING DIAG. DWG. E-G-45.
- 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-**

- WORK THIS DRAWING WITH DWGS. E-E-15 & E-E-25.
  - FOR LEGEND AND GENERAL NOTES, SEE DWG. E-E-15.
  - USE CAD-WELDED TYPE GROUND CONNECTIONS FOR GND TAPS.
  - CONTACTOR TO PROVIDE HV BARRIER IN AC PULLBOX.
  - PULL BOXES - STATION 27N ARE EXISTING & HAVE EXIST. GROUND TIED INTO EXIST. 40 GROUND LOOP.
  - ITEMS 7, 8 THRU 6 TO BE MOUNTED ON UNSTRUCT. 1" OOD CHANNEL (OR EQUAL). ITEMS 1, 5 & 6 TO HAVE TOP OF BOXES 6" ABOVE FLOOR; TOP OF ITEM 7 TO BE 5" ABOVE FLOOR; TOP OF ITEM 8 TO BE 11'-6" ABOVE FLOOR.
  - CORE DRILL WALL FOR CONDUITS & SEAL VOIDS W/DRUSEAL (OR EQUAL).
- (R2) & (R3) INDICATES WIRE CABLE & CONDUIT FURNISHED & INSTALLED IN PROJ. NO. 170-3(23)220. ALL OTHER WORK IS EXIST. WORK.
- (R3) \* INSTALLED LEGEND ITEMS (R2) & (R3) WILL HAVE TO BE MODIFIED IN PROJ. NO. 170-3(23)220 TO PROVIDE FOR CHANGE IN CONCEPT OF TUNNEL EAST END LIGHTING FROM THREE INTENSIVE ZONES TO NORMAL ZONE LIGHTING.



**ENLARGED PLAN NO. 1**  
 24 KV MCC NO. 1A & 1B MCC NO. 1B  
 (PLAN SHOWN FOR 1 TRANSFORMER PLACES)

FAN	A	D	C	D	E	F	S
EE-5	P10A P10B	P10C	P10D	P10E P10F	P10G P10H	P10I P10J	P10K P10L
EE-6	P12A P12B	P12C	P12D	P12E P12F	P12G P12H	P12I P12J	P12K P12L
EE-7	P14A P14B	P14C	P14D	P14E P14F	P14G P14H	P14I P14J	P14K P14L
ES-5	P16A P16B	P16C	P16D	P16E P16F	P16G P16H	P16I P16J	P16K P16L
ES-6	P18A P18B	P18C	P18D	P18E P18F	P18G P18H	P18I P18J	P18K P18L
ES-7	P20A P20B	P20C	P20D	P20E P20F	P20G P20H	P20I P20J	P20K P20L

**CIRCUIT LIST 'X'**

P25	P26	P27	P28	P29	P30	P31	P32
-----	-----	-----	-----	-----	-----	-----	-----

W/2 SCBCC GND.  
 MCC NO. 5 TO LOCAL CONTROL BOARD  
 1/4" NIPPLE

**CIRCUIT LIST 'B'**

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
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

**CIRCUIT LIST 'C'**

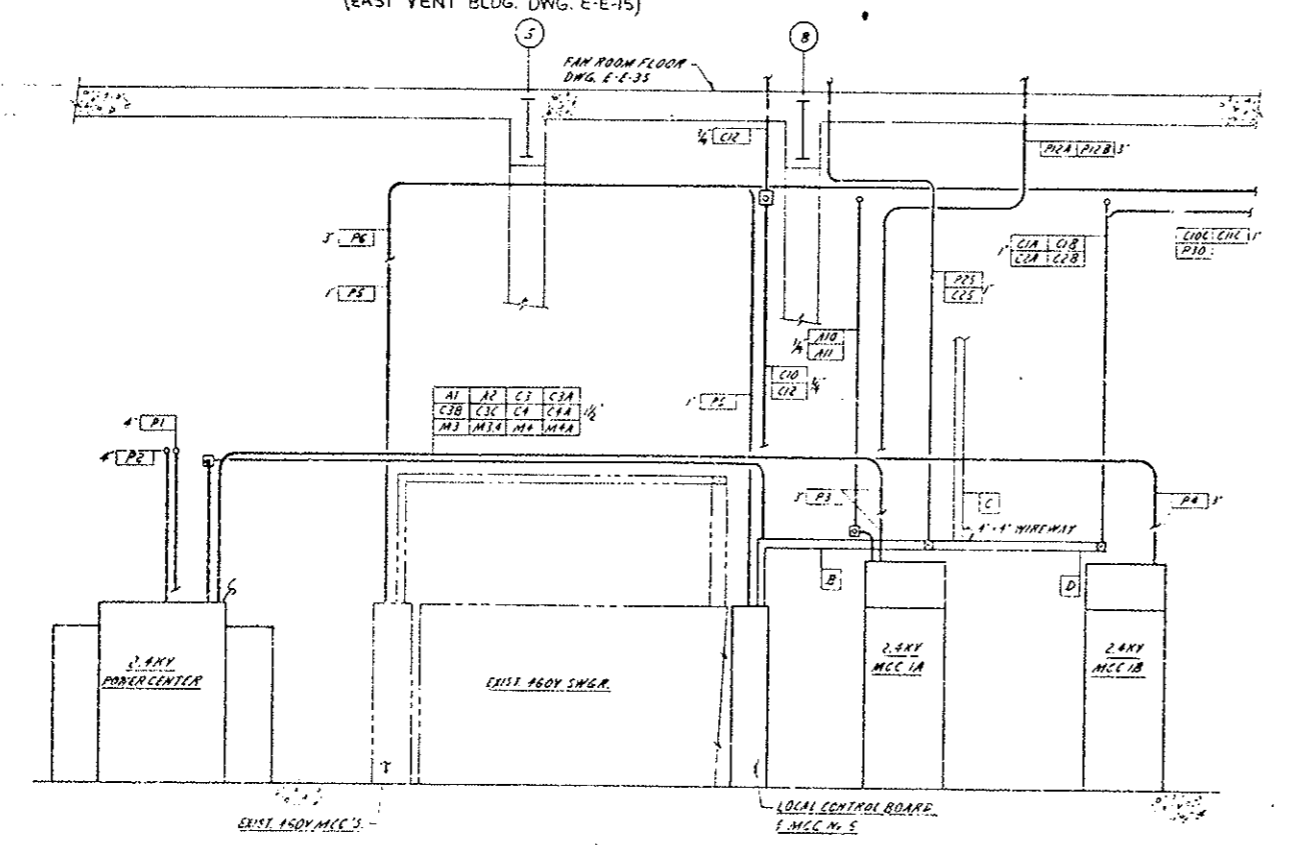
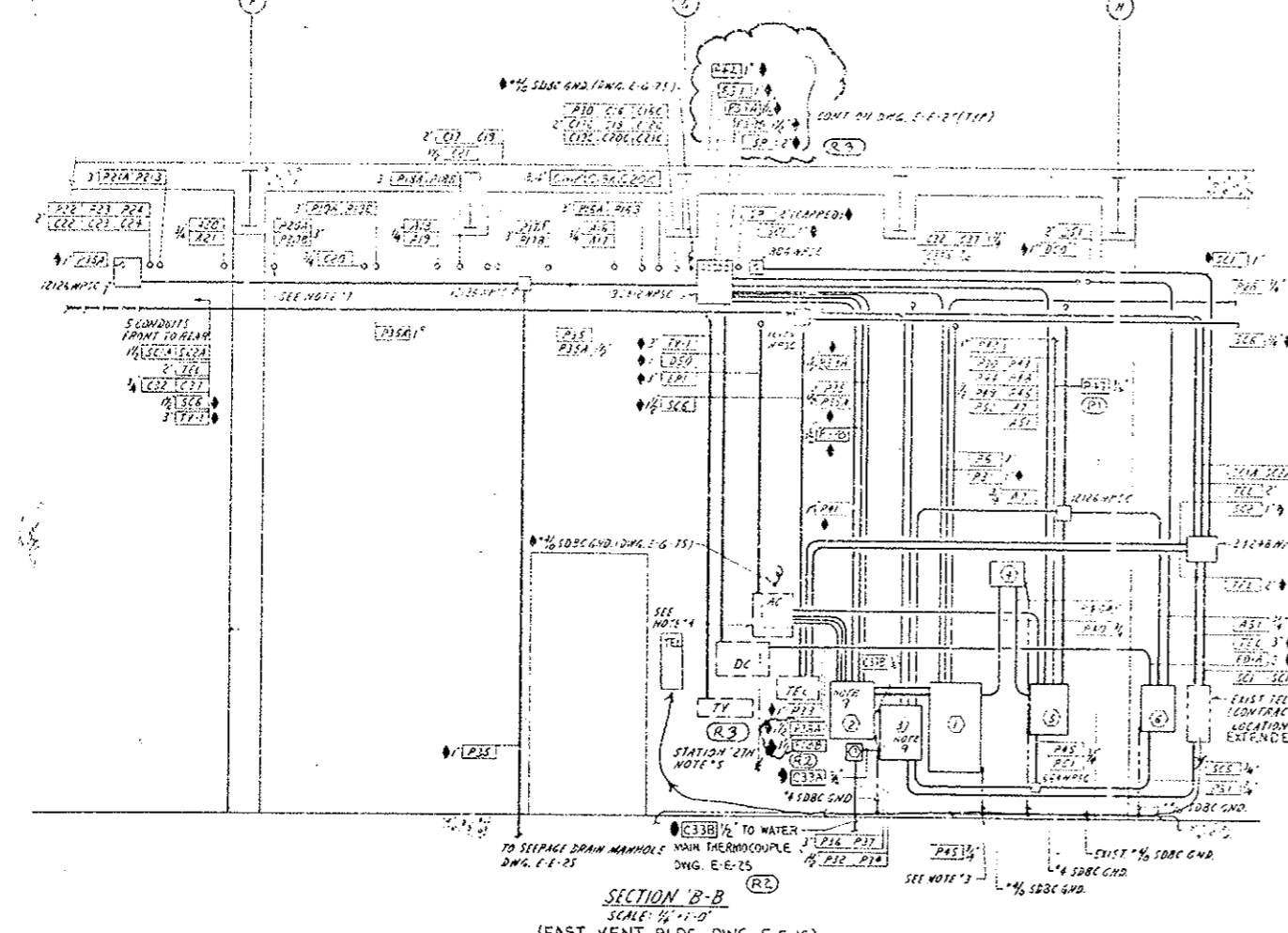
C1A	C1B	C1C	C1D	C1E	C1F	C1G	C1H	C1I	C1J	C1K	C1L	C1M	C1N	C1O	C1P	C1Q	C1R	C1S	C1T	C1U	C1V	C1W	C1X	C1Y	C1Z	C2A	C2B	C2C	C2D	C2E	C2F	C2G	C2H	C2I	C2J	C2K	C2L	C2M	C2N	C2O	C2P	C2Q	C2R	C2S	C2T	C2U	C2V	C2W	C2X	C2Y	C2Z
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

WIREWAY TO CONTROL ROOM

**CIRCUIT LIST 'D'**

D1A	D1B	D1C	D1D	D1E	D1F	D1G	D1H	D1I	D1J	D1K	D1L	D1M	D1N	D1O	D1P	D1Q	D1R	D1S	D1T	D1U	D1V	D1W	D1X	D1Y	D1Z	D2A	D2B	D2C	D2D	D2E	D2F	D2G	D2H	D2I	D2J	D2K	D2L	D2M	D2N	D2O	D2P	D2Q	D2R	D2S	D2T	D2U	D2V	D2W	D2X	D2Y	D2Z
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

WIREWAY FROM LOCAL CONTROL BOARD



AS CONSTRUCTED

NO REVISIONS  REVISED  VOID



NO.	REVISIONS	DATE BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE			
ELECTRICAL WEST & EAST VENTILATION BUILDINGS CONDUIT SECTIONS & DETAILS SHEET NO. 1			
DATE	BY	CHKD	APP'D
15 15 15 15 15 15			
NOTED:	C14570		

**POINT RECORD**

DATE	BY	CHKD	APP'D
15 15 15 15 15 15			



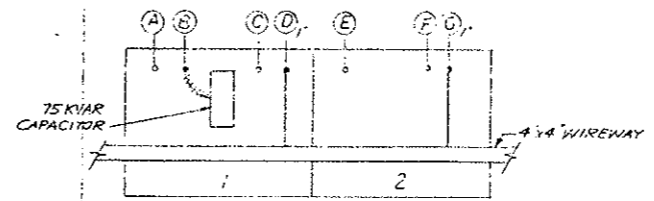
(R1) REVISED FOR EMERGENCY GENERATOR WATER HEATER #1442 AND #1443 ON PUMP & HEATER POWER RELO. AS SHOWN. JET/DPM 7/22/76  
 (R2) REVISED FOR PROJ. NO. I 70-3(83)220.

**LEGEND**

- (R1) ① 120/208 V. AC. POWER DISTRIBUTION PANEL (P2WS) 100A MAIN CIRCUIT BREAKER WEST CAT # NDB 24-48-050, 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 C' PCB N TAPS, 30RVA, WEST CAT # 64397 (OR EQUAL)
- ③ 480 Y 277V AC POWER DISTRIBUTION PANEL (PIWS) CIRCUIT BREAKER TYPE COP 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/120V COIL. W/AUX SPDT CONTACT, NEMA 1, ENCLOSURE, ZENITH CAT # 6 QT 33A (OR EQUAL) WIRING DIAGRAM - DWG. E-G-45.
- ⑦ TEMPERATURE CONTROLLER (T.C.#3), ELECTRONIC, FOR WATER MAIN HEAT TRACING CONTROL, THERMON MFG. CO. CAT. NO. 4-ET-0600, (SINGLE UNIT IN NEMA 4 ENCLOSURE FOR CHRYSLER 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 H.V. 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, CABLE & CONDUIT FURNISHED & INSTALLED IN PROJ. NO. I 70-3(83)220. ALL OTHER WORK IS EXISTING.



ENLARGED PLAN NO. 1  
 2.4KV MCC No. 1A & MCC No. 1B  
 (PLAN SHOWN FOR 1 FAN TYPICAL 6-PLACES)

FAN	A	B	C	D	E	F	G
EE-5	P10A P10B	P10C P10D	A10	C10A C10B C10C C10D	P11A P11B	A11 A12	C11A C11B C11C C11D
EE-6	P12A P12B	P12C P12D	A12	C12A C12B C12C C12D	P13A P13B	A13 A14	C13A C13B C13C C13D
EE-7	P14A P14B	P14C P14D	A14	C14A C14B C14C C14D	P15A P15B	A15 A16	C15A C15B C15C C15D
EE-8	P16A P16B	P16C P16D	A16	C16A C16B C16C C16D	P17A P17B	A17 A18	C17A C17B C17C C17D
EE-9	P18A P18B	P18C P18D	A18	C18A C18B C18C C18D	P19A P19B	A19 A20	C19A C19B C19C C19D
EE-10	P20A P20B	P20C P20D	A20	C20A C20B C20C C20D	P21A P21B	A21 A22	C21A C21B C21C C21D

**CIRCUIT LIST 'A'**

P22, P23, P24, P25, P26, P27					
C22A, C22B, C22C, C22D, C22E, C22F					

FROM MCC #5 TO LOCAL CONTROL BOARD VIA 2" NIPPLE

**CIRCUIT LIST 'B'**

P27, A7, C19A, C19B, C19C, C19D, C19E, C19F, C19G, C19H, C19I, C19J, C19K, C19L, C19M, C19N, C19O, C19P, C19Q, C19R, C19S, C19T, C19U, C19V, C19W, C19X, C19Y, C19Z					
C20A, C20B, C20C, C20D, C20E, C20F, C20G, C20H, C20I, C20J, C20K, C20L, C20M, C20N, C20O, C20P, C20Q, C20R, C20S, C20T, C20U, C20V, C20W, C20X, C20Y, C20Z					

FROM LOCAL CONTROL BOARD TO WIREWAY

**CIRCUIT LIST 'C'**

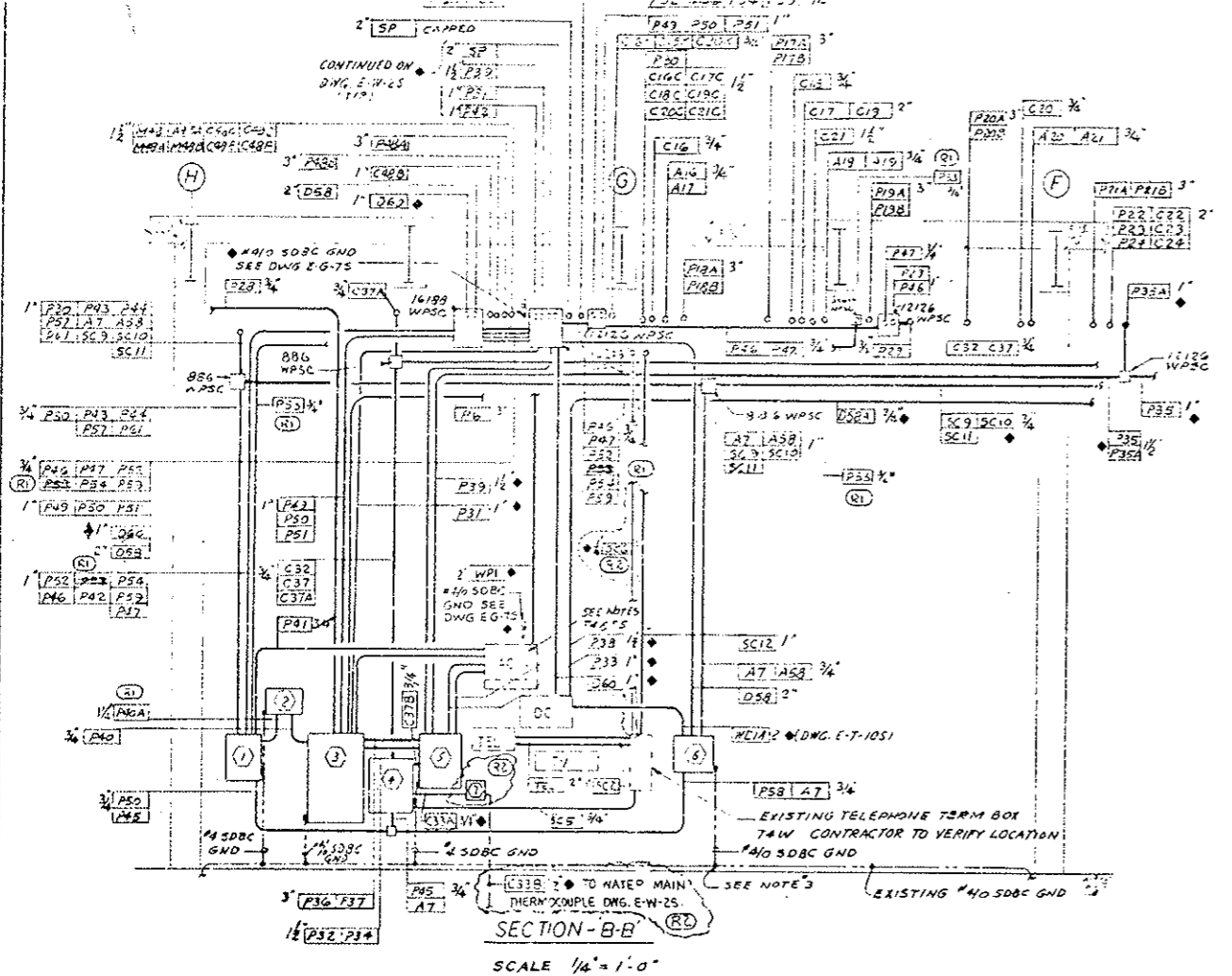
P27, C0E, C10E, C10F, C10G, C10H, C10I, C10J, C10K, C10L, C10M, C10N, C10O, C10P, C10Q, C10R, C10S, C10T, C10U, C10V, C10W, C10X, C10Y, C10Z					
C21A, C21B, C21C, C21D, C21E, C21F, C21G, C21H, C21I, C21J, C21K, C21L, C21M, C21N, C21O, C21P, C21Q, C21R, C21S, C21T, C21U, C21V, C21W, C21X, C21Y, C21Z					

FROM LOCAL CONTROL BOARD TO REMOTE SUPERVISORY CABINET VIA 3" NIPPLE

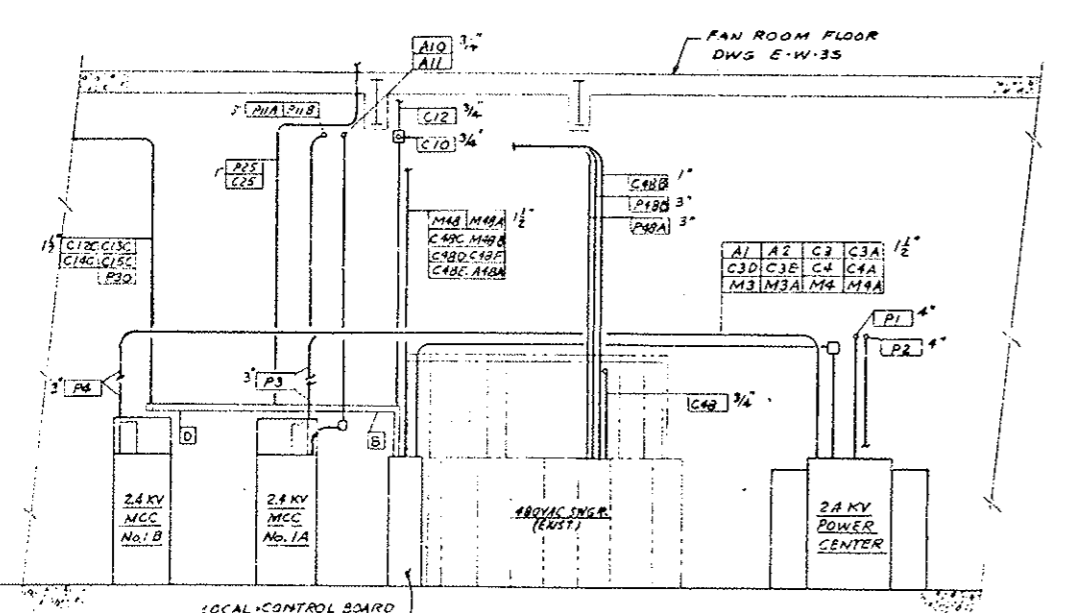
**CIRCUIT LIST 'D'**

P27, P61, C19C, C19A, P8, C20C, C21A, C20, P23, C19					
SC9, P30, P22, C18B, C19C, C20A, C19B, A7, A59, C19A, SC10, C19A, C22, C11A, C20, P23, C19C, C19B, C19C, C19D, C19E, C19F, C19G, C19H, C19I, C19J, C19K, C19L, C19M, C19N, C19O, C19P, C19Q, C19R, C19S, C19T, C19U, C19V, C19W, C19X, C19Y, C19Z					

WIREWAY BETWEEN 2.4KV MCC'S #1A & #1B



SCALE 1/4" = 1'-0"  
 (WEST VENT BLDG. DWG. E-W-15)









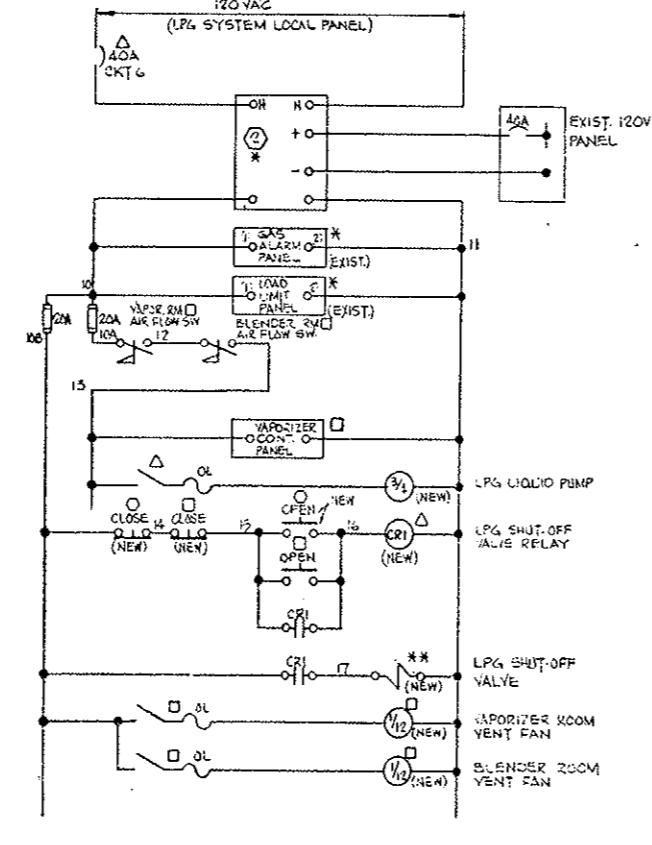
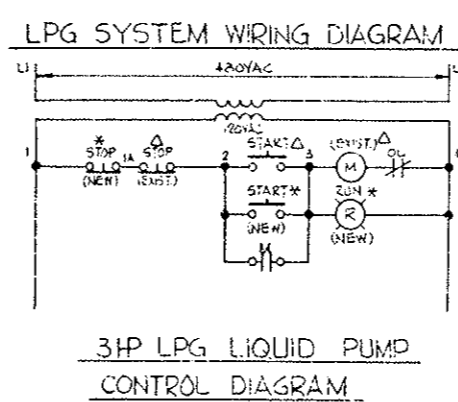
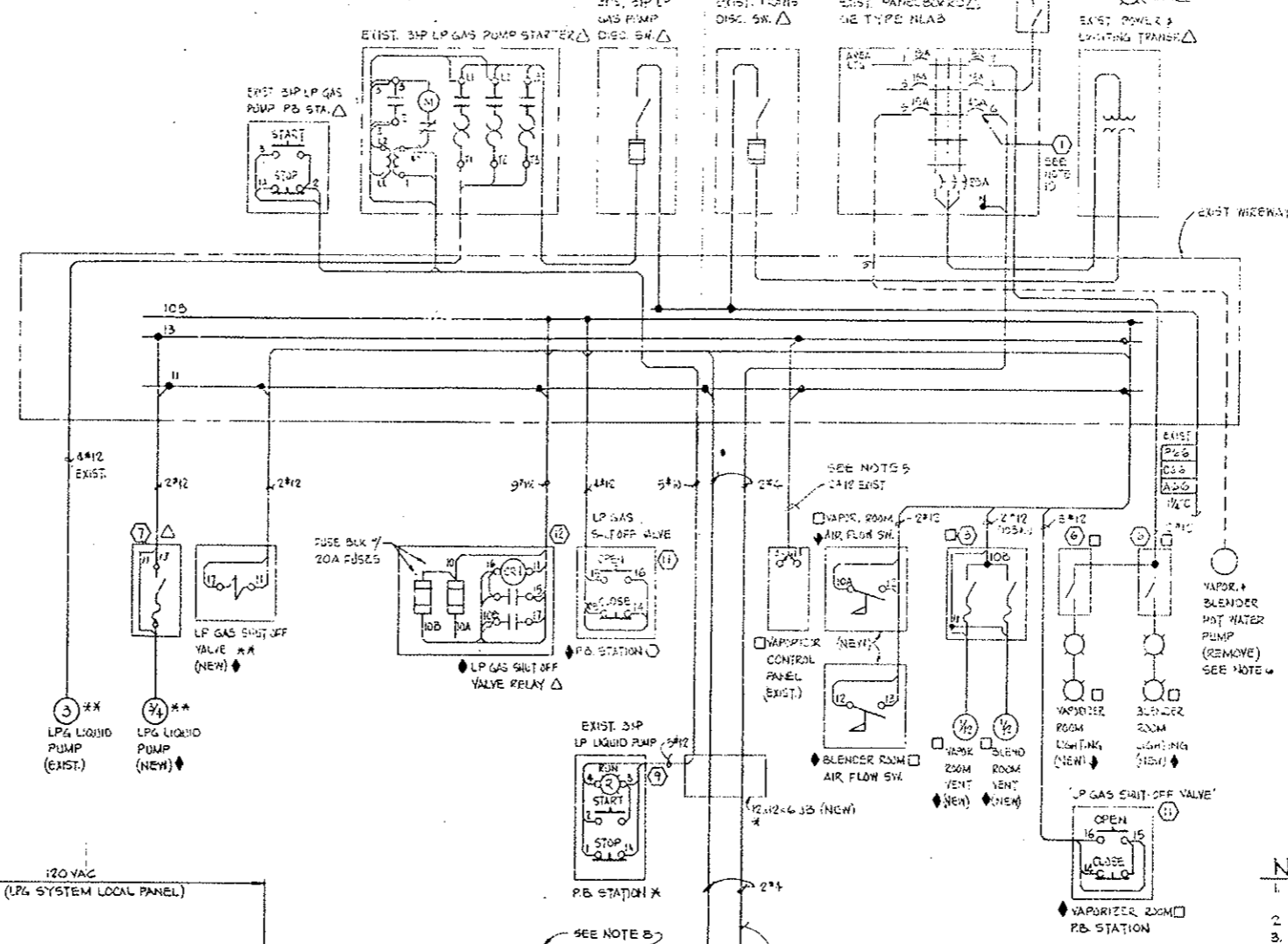
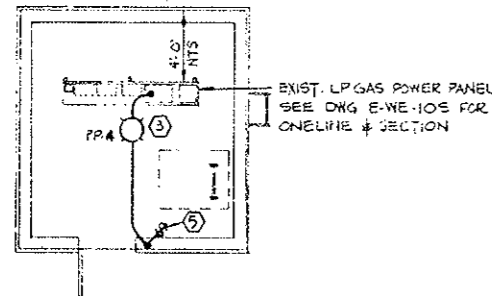
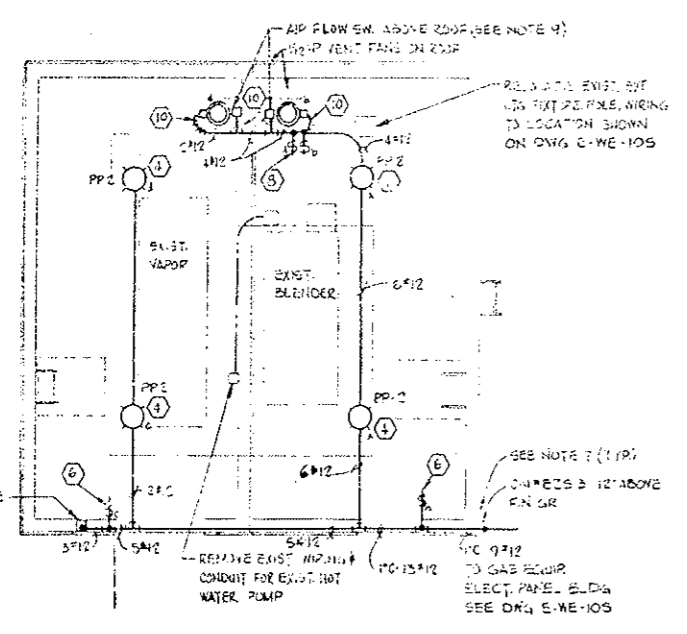
(R) REVISED FOR PROJ. NO. 170-3(83)220, 10-6-73

SYMBOL	DESCRIPTION	CATALOG NO. (OR EQUIV.)
①	CIRCUIT BREAKER 40AMP 120VAC, 20A MTD IN 2" TYPE N.E.B. PANEL 3D473D	GE # TRQ2 140
②	INVERTER - 8000VA, 120VDC INPUT, 120VAC OUTPUT, STG. TRANSFER SWITCH, TRANSIENT PROTECTION, NEMA 1 ENCLOSURE, SEE NOTE 13.	WESTINGHOUSE #125CTE5.0
③	LIGHTING FIXTURE - VAPOR ROOM, GLOBE & GUARD, 19.2W SURFACE MTD	CROUSE-HINDS #70-256P
④	LIGHTING FIXTURE - BLENDR ROOM, GLOBE & GUARD, 19.2W SURFACE MTD	CROUSE-HINDS #70-210
⑤	TOGGLE SWITCH, 20A SPDT, 120VAC, MTD IN CAST BOX WITH COVER & GAS-ET	WESTINGHOUSE #9809 CROUSE-HINDS #FS2, #DSS2, #GAS-ET
⑥	TOGGLE SWITCH, 20A SPDT, 120VAC, 5 P. FACTORY SEALED, IP RATED	CROUSE-HINDS #E05215
⑦	MANUAL MOTOR STARTER, DPDT, 120VAC, FACTORY SEALED WITH 2(1)LS FOR 3/4" PUMP & LOCKOUT PPD'S ON NEMA ENCL.	SGO CLASS 2510 #KG-1
⑧	2 GANG MANUAL MOTOR STARTER, DPDT, 120VAC, 5 P. FACTORY SEALED WITH 2(1)LS EACH FOR 1/2" PUMP & LOCKOUT PROVISION	CROUSE-HINDS #E05215
⑨	5 UNIT CONTROL STATION, NEMA 1 ENCL. (3)RED RUN PILOT LIGHT (2)W/ START PB (1)STOP PB WITH NAMEPLATE "LP LIQUID PUMP" MOUNTED ABOVE CONTROL STATION	SGO CLASS 9001 #GG-322A
⑩	3/4" X 3/4" LONG 5 P FLEX COUPLING	CROUSE-HINDS #ECLK 38
⑪	2 UNIT CONTROL STATION, 5 P. FACTORY SEALED, (1)CLOSED PB, (1)OPEN PB WITH NAMEPLATE "LP GAS SHUT-OFF VALVE" MOUNTED ABOVE CONTROL STA.	CROUSE-HINDS #E05215
⑫	CONTROL RELAY, 120VAC COIL, 2(1)NO CONTACTS	SGO CLASS 8501 #GO-20
⑬	16 1/2" X 6" CONTROL CABINET NEMA 1 ENCL. WITH HINGED DOOR & PANEL	ALWAY #A110126-1
⑭	CIRCUIT BREAKER 40AMP 120VDC FOR MTD IN EXIST. 120VDC PANEL	MATCH EXISTING

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

- NOTES**
- ELECTRICAL INSTALLATION SHALL COMPLY WITH ART. 500 OF NEC FOR CLASS I DIV. 2 GROUP D HAZARDOUS AREA.
  - ALL CONDUIT SHALL BE RUS UNLESS OTHERWISE NOTED.
  - ALL WIRE SHALL BE #12 TYPE 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 (LPS 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-S.
  - CONTRACTOR SHALL INSTALL ITEM (1) IN EXIST. PANELBOARD LOCATED IN GAS EQUIP. ELECT. PANEL BLDG.
  - CONTRACTOR SHALL REMOVE EXIST. 00A IP CB IN EXIST. 120VDC PANEL IN PORTAL BLDG & INSTALL ITEM (14).
  - (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 11000 FEET. (R)

See Sheet 147A Draw E-WE-125  
Modification 11-14-79 and 1-8-80  
To Accommodate Centarus II Inverter.



- LEGEND**
- \* LOCATED IN PORTAL BLDG ADJACENT TO GAS METERS ROOM SEE DWGS E-E-25, E-W-15 & 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. ELECT. PANEL BLDG THIS DWG & E-WE-105
  - LOCATED AT LP GAS TRUCK FILLING STATION SEE DWG E-WE-105

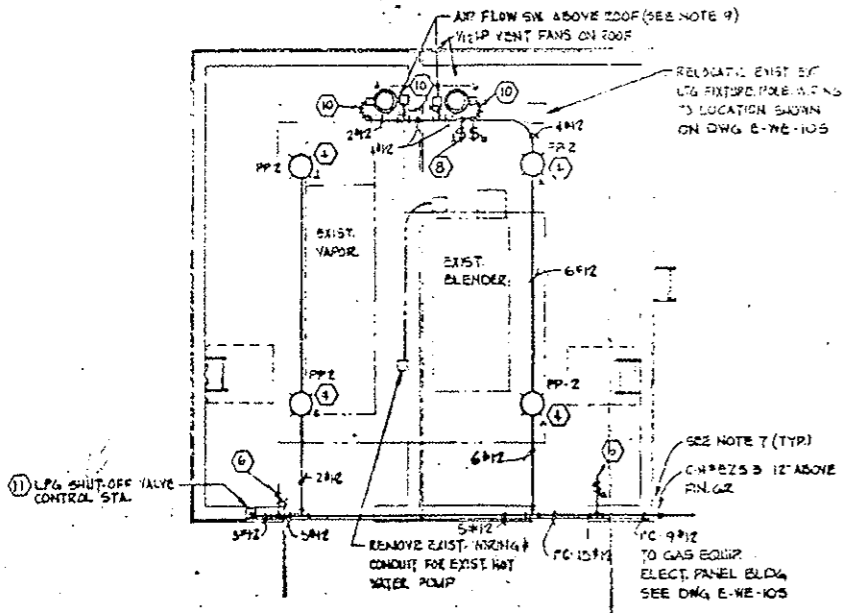
PRINT RECORD	
DATE ISSUED	10/15/79
REVISION NO.	0 R: 1 R: 1
FOR	APC AND FOR SEC
DESIGNER	C. S. DRAKINS
CHECKED	
DATE	10/15/79

NO.	REVISIONS	DATE	BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS			
EISENHOWER MEMORIAL TUNNEL			
SECOND BORE			
ELECTRICAL			
WEST & EAST VENTILATION BUILDINGS			
MISC DETAILS			
SHEET NO 3			
SCALE	1/4"=1'-0"	DATE	10/15/79
PROJECT NO.	170-3(83)220	DRAWING NO.	E-WE-125

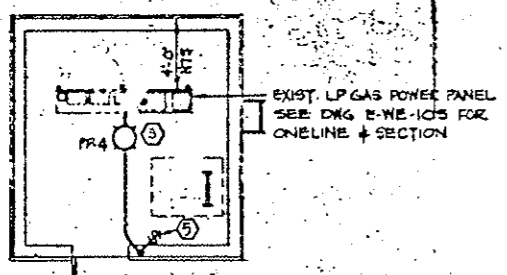
(R) REVISED FOR PROJ. NO. 170-3(83)220, 11/1/10

EQUIPMENT LIST		QUANTITY	DESCRIPTION
1	INSTRUMENT BODY IN VENT. CONTROL STATION	1	SEAFAC 510
2	WATER PUMP	1	CRORSE-HINDS #125CT53.0
3	WATER PUMP	1	CRORSE-HINDS #125CT53.0
4	WATER PUMP	1	CRORSE-HINDS #125CT53.0
5	WATER PUMP	1	CRORSE-HINDS #125CT53.0
6	WATER PUMP	1	CRORSE-HINDS #125CT53.0
7	MANUAL MOTOR STARTER	1	CRORSE-HINDS #E03218
8	MANUAL MOTOR STARTER	1	CRORSE-HINDS #E0322094426
9	3 WIRE CONTROL STATION	1	SO D CLASS 9001 #44-328A
10	1/2" B LONG SP FLY COUPLING	1	CRORSE-HINDS #ECLK 35
11	2 WIRE CONTROL STATION	1	CRORSE-HINDS #E03218
12	CONTROL RELAY	1	SO D CLASS 3501 #40-20
13	1/2" X 1/2" CONTROL CABINET	1	ALVAL #AW1416-1

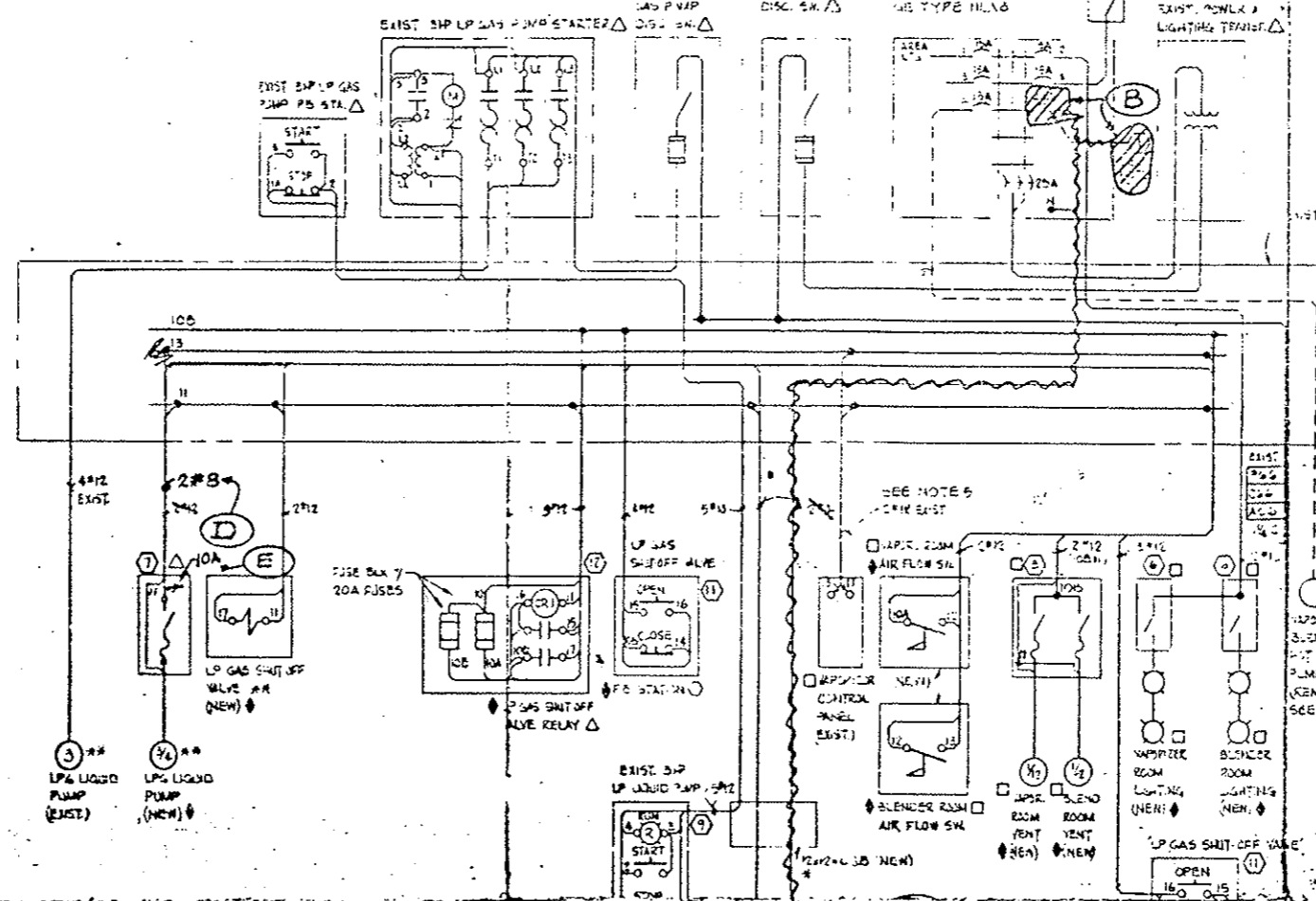
- NOTES**
- ELECTRICAL INSTALLATION SHALL COMPLY WITH ART. 500 OF NEC FOR CLASS I DIV. 2 GROUP D HAZARDOUS AREA.
  - ALL CONDUIT SHALL BE M'RGS UNLESS OTHERWISE NOTED.
  - ALL WIRE SHALL BE #12 TYPE XHHW UNLESS OTHERWISE NOTED.
  - CONTRACTOR SHALL MODIFY EXISTING VAPORIZER & BLENDER CONTROLS WIRING 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. WIRINGWAY.
  - 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 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.
  - INDICATES WIRE, CABLE, CONDUIT & DEVICES FURNISHED & INSTALLED IN PROJECT NO. 170-3(83)220. (R)



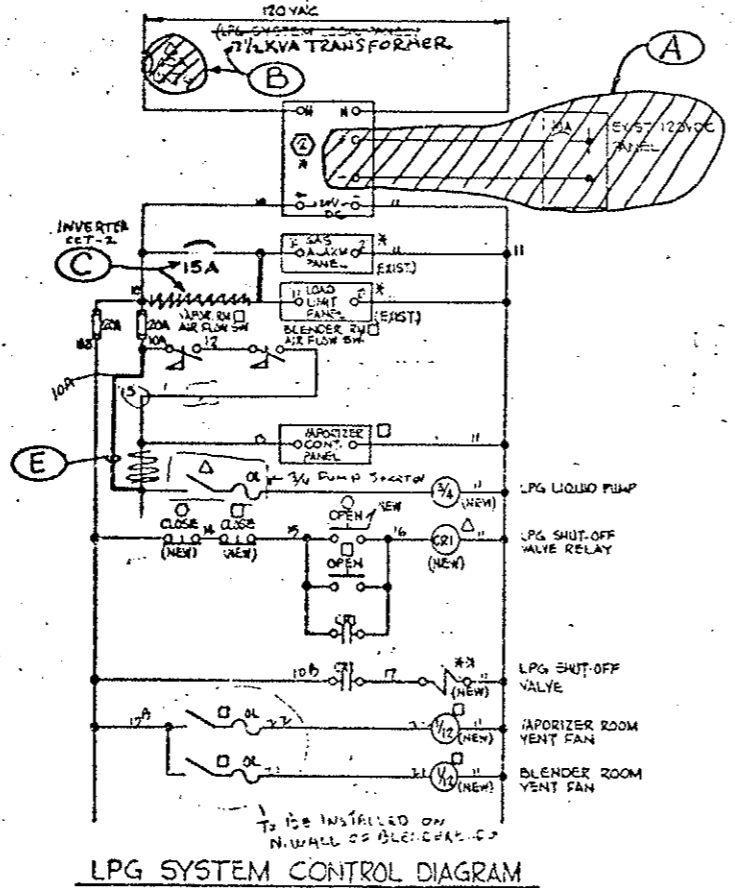
**GAS EQUIPMENT BUILDING LIGHTING & POWER PLAN**  
SCALE 1/4"=1'-0"  
NOTE - SEE DWG. E-WE-105 FOR LOCATION



**GAS EQUIPMENT ELECTRICAL PANEL BUILDING LIGHTING PLAN**  
SCALE 1/4"=1'-0"  
NOTE - SEE DWG. E-WE-105 FOR LOCATION



**LPG SYSTEM WIRING DIAGRAM**



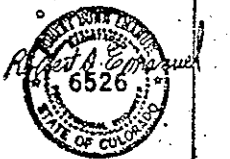
**LPG SYSTEM CONTROL DIAGRAM**

**3HP LPG LIQUID PUMP 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 LPG GAS STATION SEE DWG. 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 LPG GAS TRUCK FILLING STATION SEE DWG. E-WE-105
  - PROPOSED CHANGE ITEM HOLD FOR CHANGE ORDER

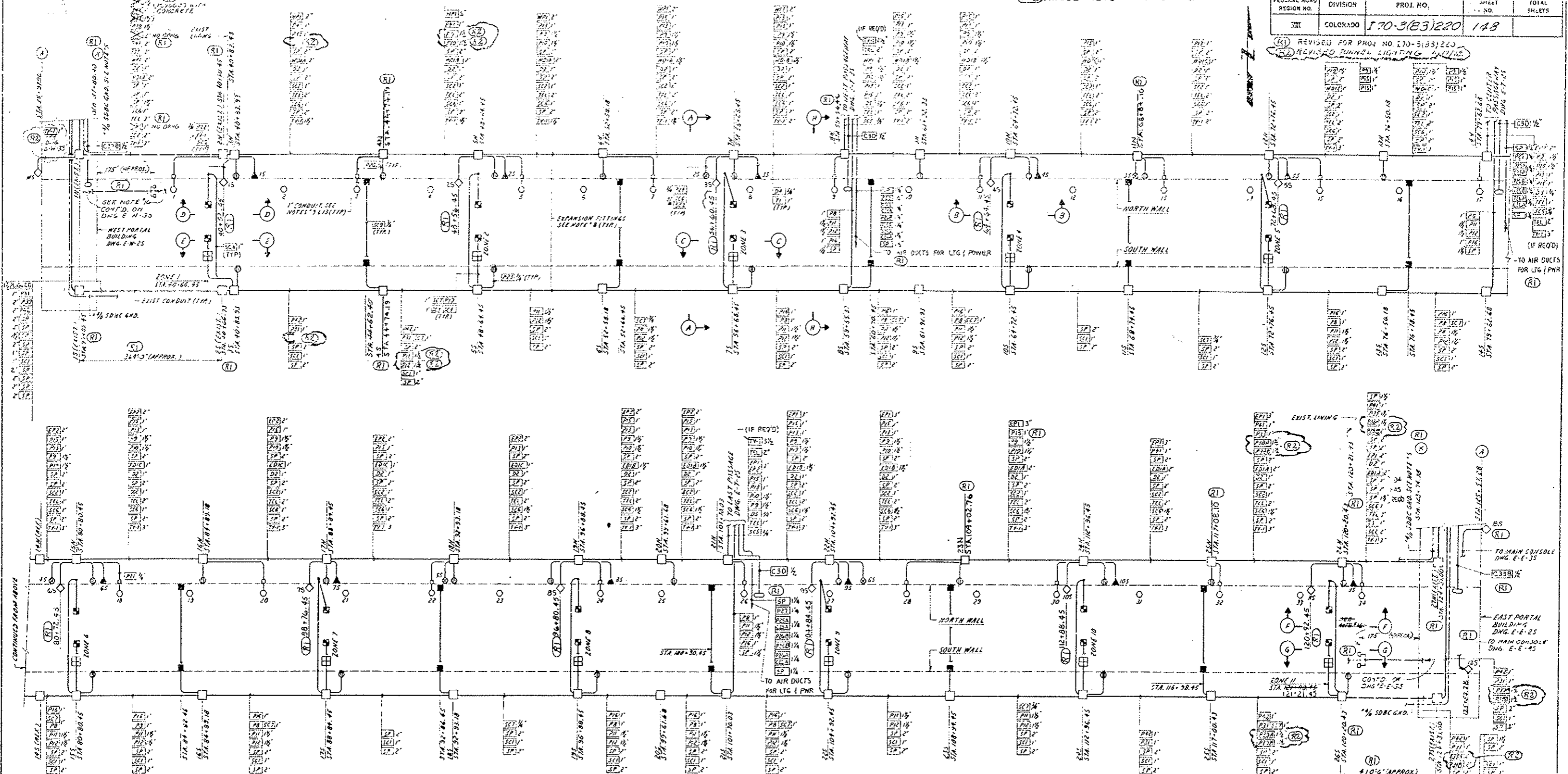
DATE	REVISION	BY	CHKD
11/1/10	1	RL	RL
11/1/10	2	RL	RL
11/1/10	3	RL	RL
11/1/10	4	RL	RL
11/1/10	5	RL	RL

REVISIONS		DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND BORE				
ELECTRICAL				
WEST - EAST VENTILATION BUILDINGS				
MISC. DETAILS				
SHEET NO. 3				
DRAWN	LB	11/1/10		
CHECKED	SPW	11/1/10		
SCALE	ORDER NO.			
AS NOTED	C-16900			



AS-BUILT

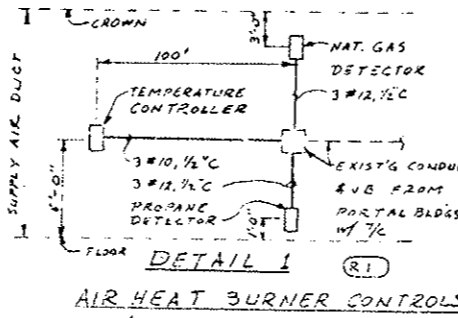
REVISED FOR PROJ. NO. 170-3(B3)220  
 REVISION 5: REVISOR TUNNEL LIGHTING PLAN



- NOTES:**
1. FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-T-103
  2. FOR TUNNEL LIGHTING, SEE DRAWINGS E-T-55, E-T-45 & E-T-75
  3. FOR TELEPHONE SYSTEM, SEE DWG. E-G-85
  4. ALL CONDUIT TO BE RIGID GALV. STEEL
  5. ROUTE 1/2" SDGC GROUND WITH CONDUITS ALONG NORTH & SOUTH WALLS OF TUNNEL & SPRING TO WATER MAIN AT ALL CROSS PASSAGEWAYS. SUPPORT TO EXISTING CHANNELS WITH HULL CLAMPS.
  6. FOR TUNNEL SIGNS & LOOP DETECTORS, SEE DWG. E-15
  7. FOR POWER WIRING, CONTROL SIGNAL WIRING & CO. ANALYZER WIRING, SEE DRAWING E-T-35
  8. EXPANSION FITTINGS TO BE 1/2" THICK HEAT-RESISTANT WITH BONDING JUMBERS. NO CONDUIT MOVEMENT (OR EQUAL). LOCATE MIDWAY BETWEEN DISTRIBUTION BOX GROUPS.
  9. FIELD TO ROUTE COLD SECTION OF HEATING CABLE TO JUNCTION BOX NEAR HYDRANT FOR PLACING TO FEEDER TAP
  10. SECTIONS 'A', 'B', 'C', 'D', 'E', 'F' LOCATED ON DWG. E-T-35. SECTIONS 'G', 'H', 'I', 'J' LOCATED ON DWG. E-T-45
  11. FOR CAMERA LOCATIONS OF HYDRANTS, TV CAMERAS, LOOP DETECTORS, TELEPHONES, & CO. ANALYZER CABINETS, SEE STATE OF COLORADO - DEPT. OF HIGHWAYS DWG. G-7 THRU G-11.

- Elcon Metal (Strut) Products Co.
12. HANGERS TO SUPPORT CONDUITS TO BE 1/2" DIA. GALV. STEEL (OR EQUAL) WITH 1/2" DIA. GALV. STEEL BRACKETS (OR EQUAL) ATTACHED TO CONDUITS AT 4' INTERVALS
  13. ROUTE HEATING CABLE FROM HYDRANT TO PRECEDING HYDRANT ALONG 8" WATER MAIN PIPE FOR WIRING DIM. TAP. DWG. E-T-25 APPROX. 265 FEET LONG. USE VILSON "MILCO" HEATING CABLE TYPE 192 (OR EQUAL) 1/2" DIA. COPPER SHEATH PATED AT 10 WATTS PER FOOT AT 275V BASED ON A TEMPERATURE DIFFERENTIAL OF 60°F (20° TO 40°F). "MILCO" TRANSFER COMPOUND EQUIVALENT OF 2" OF 100# GLASS INSULATION USE NELSON (OR EQUAL) 1/2" PIPE STEAM & TYPE NS CALIBRATION SIGN AS SHOWN
  14. FOR WIRING DIAGRAMS OF DC SYSTEM, TV SYSTEM, & WATER MAIN HEAT TRACING, SEE DRAWING E-T-35
  15. CIRCUIT NUMBERS 'P1', 'P2', 'P3', 'P4', 'P5', 'P6' ARE LISTED ON LAST VENT. BLDG. SCHEDULE - DWG. E-E-53 & WEST VENT. BLDG. SCHEDULE - DWG. E-W-45, 55
  16. ONE EACH PROPANE DETECTOR, NAT. GAS DETECTOR, TEMP. CONTROLLER, FURN BY OWNER. INSTALL AT EACH END OF TUNNEL AS PART OF PROJ. NO. 170-3(B3)220. CONDUIT & T. CONDUCTORS ARE INSTALLED FROM BURNER FLAME CTRL PHAS IN EAST & WEST VENT. BLDGS TO POINT OF DETECTOR INSTALLATIONS. SEE DETAIL 1

**CONDUIT LAYOUT PLAN**



**DETAIL 1**  
 AIR HEAT BURNER CONTROLS  
 (DIAGRAMMATIC ELEVATION)  
 (R3) 17. MOUNT 3" ELECTRICAL CONDUIT TO CONCRETE WALL WITH BRIDGEPORT MALLEABLE STRAP, CAT. # 908 AND CLAMPACK BRIDGEPORT CAT. # 948, OR APPROVED EQUAL.

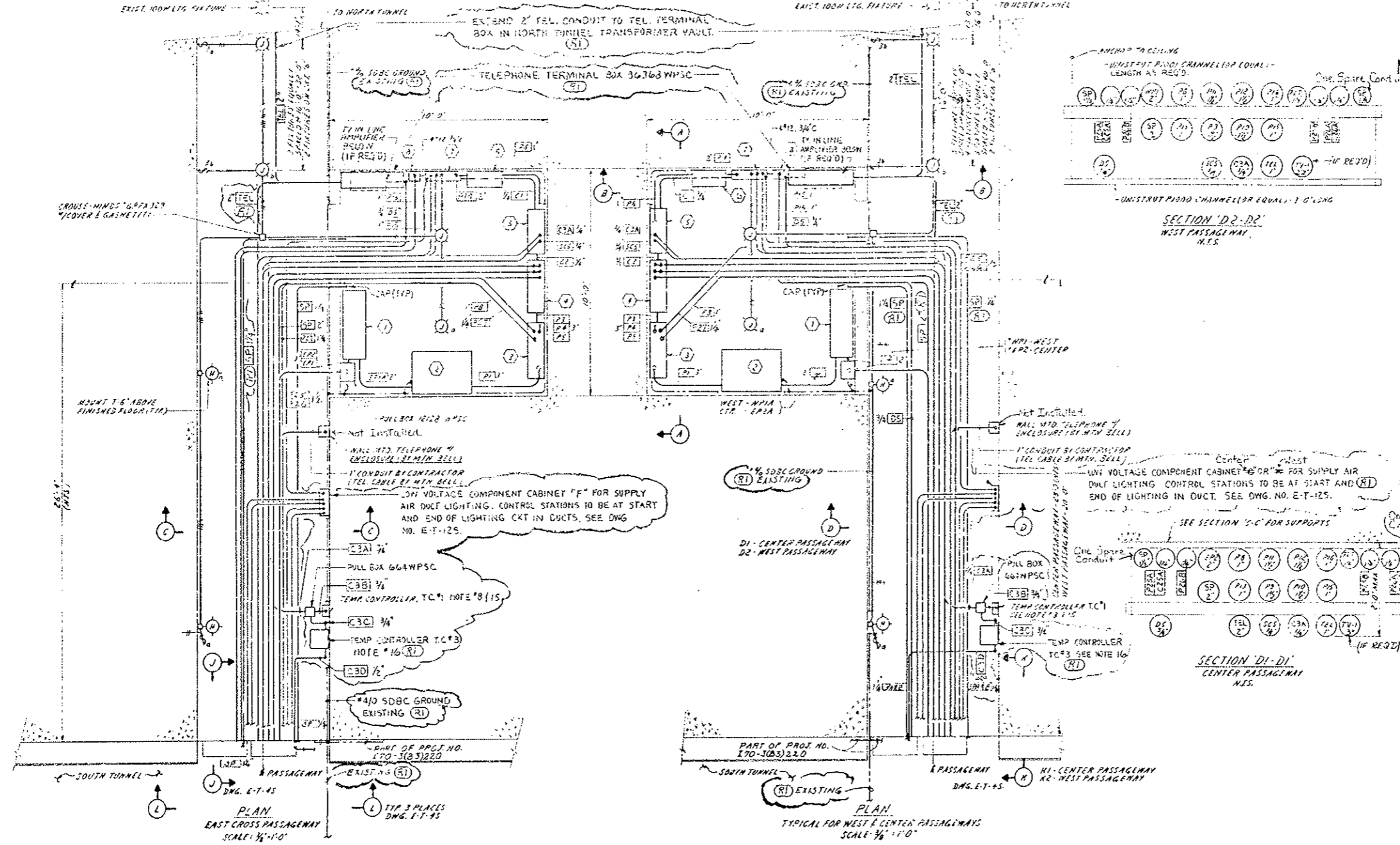


AS CONSTRUCTED	
NO REVISION	REVISED <input checked="" type="checkbox"/>
VOID <input type="checkbox"/>	
REVISIONS	
NO.	DATE
1	11/15/75
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE	
ELECTRICAL TUNNEL POWER PLAN, SECTIONS & DETAILS SHEET NO. 1	
DATE: 11/15/75	BY: [Signature]
REVISION NO.:	DATE:
1	11/15/75
2	11/15/75
3	11/15/75
4	11/15/75
5	11/15/75
6	11/15/75
7	11/15/75
8	11/15/75
9	11/15/75
10	11/15/75
11	11/15/75
12	11/15/75
13	11/15/75
14	11/15/75
15	11/15/75
16	11/15/75
17	11/15/75
18	11/15/75
19	11/15/75
20	11/15/75
21	11/15/75
22	11/15/75
23	11/15/75
24	11/15/75
25	11/15/75
26	11/15/75
27	11/15/75
28	11/15/75
29	11/15/75
30	11/15/75
31	11/15/75
32	11/15/75
33	11/15/75
34	11/15/75
35	11/15/75
36	11/15/75
37	11/15/75
38	11/15/75
39	11/15/75
40	11/15/75
41	11/15/75
42	11/15/75
43	11/15/75
44	11/15/75
45	11/15/75
46	11/15/75
47	11/15/75
48	11/15/75
49	11/15/75
50	11/15/75
51	11/15/75
52	11/15/75
53	11/15/75
54	11/15/75
55	11/15/75
56	11/15/75
57	11/15/75
58	11/15/75
59	11/15/75
60	11/15/75
61	11/15/75
62	11/15/75
63	11/15/75
64	11/15/75
65	11/15/75
66	11/15/75
67	11/15/75
68	11/15/75
69	11/15/75
70	11/15/75
71	11/15/75
72	11/15/75
73	11/15/75
74	11/15/75
75	11/15/75
76	11/15/75
77	11/15/75
78	11/15/75
79	11/15/75
80	11/15/75
81	11/15/75
82	11/15/75
83	11/15/75
84	11/15/75
85	11/15/75
86	11/15/75
87	11/15/75
88	11/15/75
89	11/15/75
90	11/15/75
91	11/15/75
92	11/15/75
93	11/15/75
94	11/15/75
95	11/15/75
96	11/15/75
97	11/15/75
98	11/15/75
99	11/15/75
100	11/15/75

EXIST. 100' L.T.G. FEATURE

EXIST. 100' L.T.G. FEATURE

TO NORTH TUNNEL



FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	170-3(83)220	149	

DESIGNATED EXISTING EQUIPMENT

- LEGEND**
- \* ① PRIMARY FUSE CUTOFF, 5.2KVA, 6-6" FRAME, 120/240V WITH 55A FUSE LINKS (OR EQUAL)
  - \* ② TRANSFORMER, 2800-480/120V, VENTILATED DRY-TYPE 1/2-2 1/2" FLAN & PCB TAPS 225MVA, TYPE DT-3, WESTINGHOUSE CAT. #44397 (OR EQUAL)
  - \* ③ 480/120VAC POWER DISTRIBUTION PANEL, CIRCUIT BREAKER TYPE COP WITH 100A FUSE OR EQUAL, SEE DWG. E-6-95 FOR SCHEDULE
  - \* ④ LIGHTING & HEATING CONTACTOR PANEL, 1/2-30A-1P-480V CONTACTORS (200 COILS), NEMA 1 ENCLOSURE, SEE WIRING DIAG. DWG. E-1-15
  - \* ⑤ LIGHTING & HEATING RELAY & CONTROL CABINET, NEMA 1 ENCLOSURE, SEE WIRING DIAGRAM ON DWG. E-1-15
  - \* ⑥ LIGHTING TRANSFORMER, 480-208Y/120V, WALL MOUNTED, NON-VENT. TYPE EPT, 1/2-2 1/2" FLAN & 4-2 1/2" PCB TAPS, 30 CVA, WESTINGHOUSE CAT. #44397 (OR EQUAL)
  - \* ⑦ LIGHTING PANEL 3-PHASE 4-WIRE, 125A MAIN Ckt. BREAKER SURFACE MOUNTED, WESTINGHOUSE CAT. #44397-30-48-125 (OR EQUAL) SEE DWG. E-6-35 FOR SCHEDULE
  - \* ⑧ TRANSFER RELAY, 120VAC 3-PHASE COIL 1/2" INDOOR CONTACTS, ENTLEER-MANUFACTURE, CAT. #44397-30-48-125 (OR EQUAL) INITIAL ENCLOSURE, CAT. #3515-12205 (OR EQUAL) SEE WIRING DIAG. ON DWG. E-1-15
- General Electric Equipment Installed.

- NOTES**
1. USE CADWELD TYPE CONNECTIONS FOR GND. TAPS.
  2. USE #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.
  3. FASTEN GROUND CABLE TO SURFACE - WANE HOLE STEEL CLAMP
  4. ITEMS #3 TO 8 TO BE SURFACE MOUNTED ON UNISTRUT (OR EQUAL) P-1000 GALV. STEEL CHANNEL - ANCHORED TO WALL
  5. PRIMARY FUSE CUTOFF TO BE MOUNTED ON UNISTRUT (OR EQUAL) P-1000 GALV. STEEL CHANNEL - ANCHORED TO FLOOR - PROVIDE SHIMS AS REQ'D
  6. TOGGLE SWITCHES TO BE 100VAC 20A RATED MOUNTED IN CHOUSE-HINDS - F52 BOX "A" COVER "DS121" - EQUAL - MOUNT 4-5 ABOVE FINISHED FLOOR.
  7. SINGLE RECEPTACLE TO BE 120VAC - 20A - 3-WIRE GROUND-DB, NUBSELL CAT. #331 MOUNTED IN CHOUSE-HINDS F52 BOX "A" FERRULY THREADED CAP COVER "DS126" (OR EQUAL)
  8. TEMPERATURE CONTROLLER TO BE MOUNTED WELL CAT. #1654A-1A95 1/2" DIA. CAPILLARY & BULB, RANGE -50° TO +100°F, 120VAC, 1PD, CONTACTS 1/2" REED. FOR LIGHTING Ckt. - SET @ 20°F FOR CONTACT CLOSURE (T.C.#1)
  9. FOR LIGHTING FEATURE SCHEDULE, SEE DWG. E-1-55
  10. FOR LIGHTING PANEL SCHEDULES, SEE DWG. E-6-35
  11. ALL CONDUIT TO BE 1/2" RIGID GALV. STEEL, UNLESS OTHERWISE NOTED
  12. (R1) FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-1-105
  13. FOR WIRE & CABLE, SEE D.W.H. SPECIFICATIONS - SECTION 120
  14. WIRE FOR LIGHTING PLATYPES & RECEPTABLES TO BE 1/2" 12 AWG STRANDED COPPER, COLOR CODED - BLACK, RED, BLUE, GREEN XNXX. GROUND WIRE TO BE 1/2" 12 AWG STRANDED COPPER, GREEN YXNXX. TYPE XH44
  15. CONTRACTOR TO PROVIDE 6" DIA. SCHEDULED DRAINING IN TUNNEL SIDING & MOUNT TEMPERATURE CONTROLLER BULB BEHIND OPENING NEAR PASSAGEWAY DOORS
  16. TEMPERATURE CONTROLLER (T.C.#3) FOR WATER MAIN HEAT TRACING CONTROL TO BE THERMOS MFG. CO. ELECTRONIC TEMP. CONTROLLER, CAT. NO. 4-ET-0600 (SOLE UNIT IN NEMA 4 ENCLOSURE) FOR CHROMEL-CONSTANTAN TYPE "E" THERMOCOUPLE WITH MAX. RESISTANCE OF 200 OHMS, NEMA 4 ENCLOSURE TO CONTAIN HEATING RESISTOR AND THERMOSTAT FOR OPERATION ON 120 VOLT, 60 HZ SOURCE TO MAINTAIN CONTROLLER TEMPERATURE ABOVE 110°F ± 5°F WITH EXTERIOR AMBIENT AIR TEMP. OF -50°F, AND WITH 2" OF POLYURETHANE FOAM INSULATION INSTALLED ON TOP, BOTTOM SIDES AND REAR OF THE CONTROLLER ENCLOSURE.



AS CONSTRUCTED

NO REVISIONS  REVISED  VOID

DATE	BY	REVISION
10/15/54	J. J. [unclear]	1/15
11/15/54	J. J. [unclear]	2/15
12/15/54	J. J. [unclear]	3/15
1/15/55	J. J. [unclear]	4/15
2/15/55	J. J. [unclear]	5/15
3/15/55	J. J. [unclear]	6/15
4/15/55	J. J. [unclear]	7/15
5/15/55	J. J. [unclear]	8/15
6/15/55	J. J. [unclear]	9/15
7/15/55	J. J. [unclear]	10/15
8/15/55	J. J. [unclear]	11/15
9/15/55	J. J. [unclear]	12/15

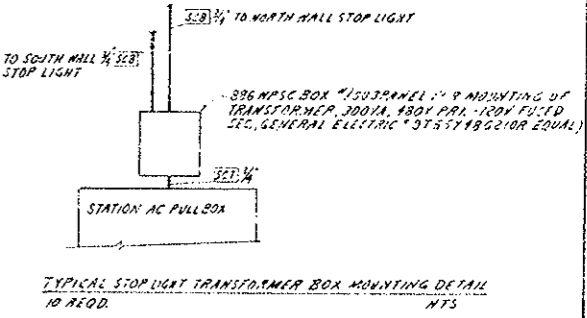
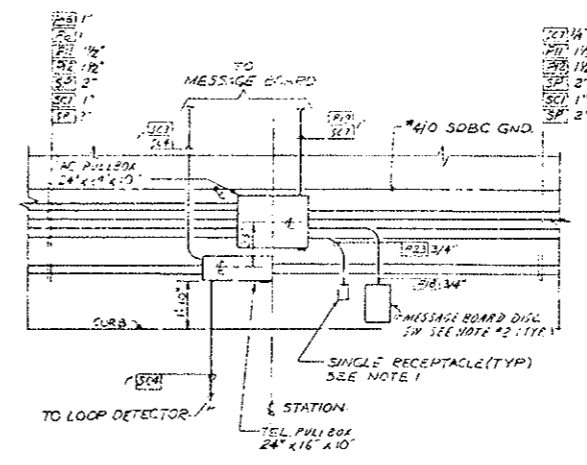
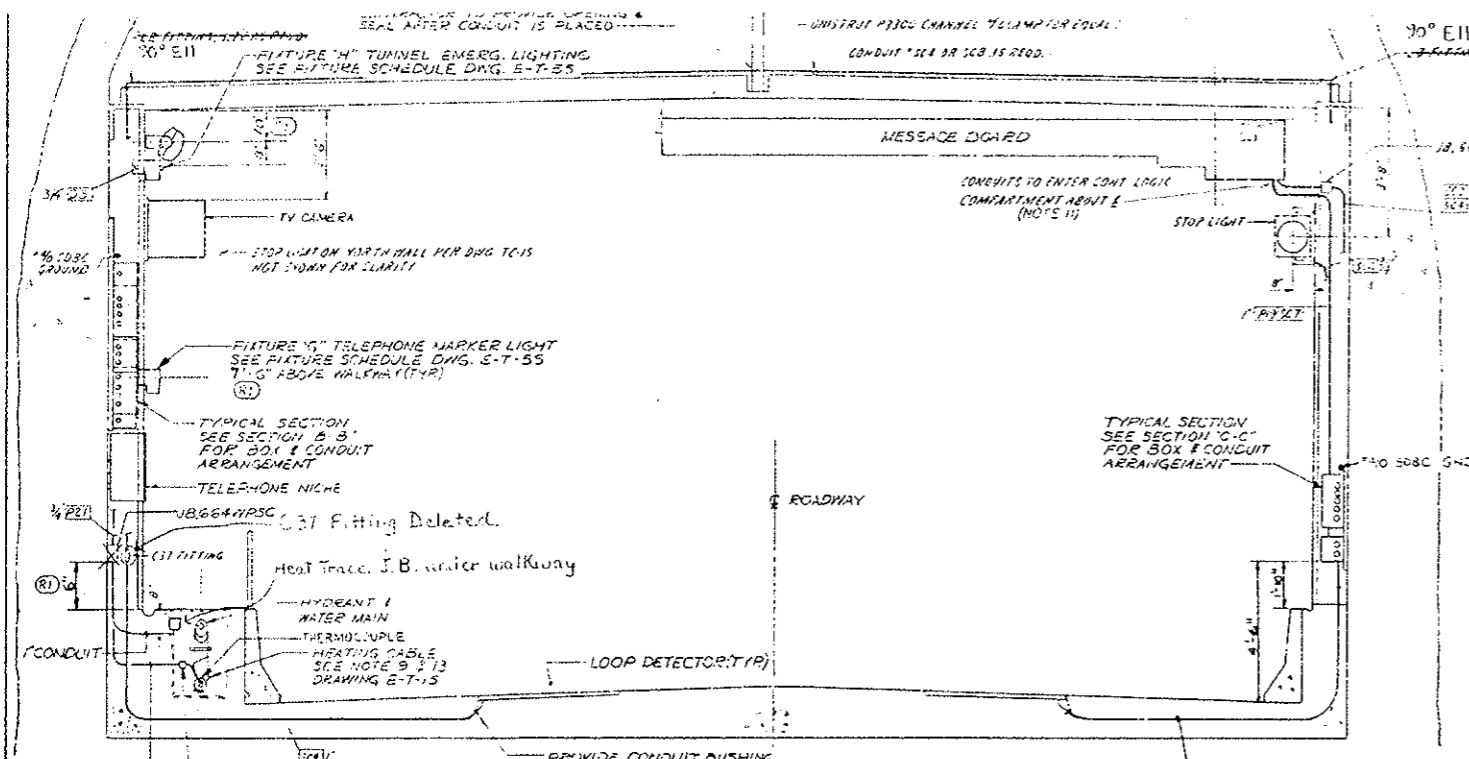
NO.	REVISIONS	DATE	BY	CD
1	AS CONSTRUCTED			

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS  
**EISENHOWER MEMORIAL TUNNEL**  
 SECOND SORE

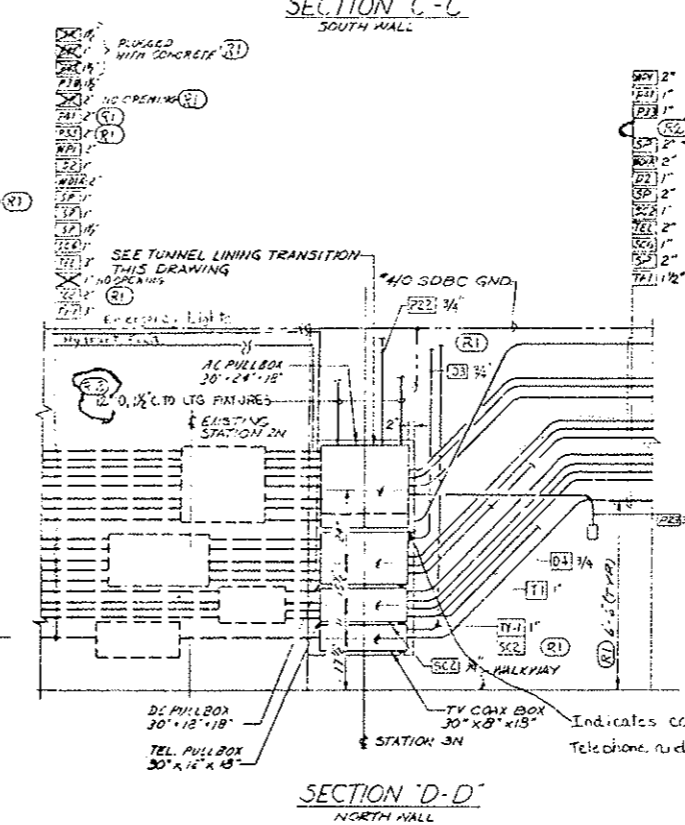
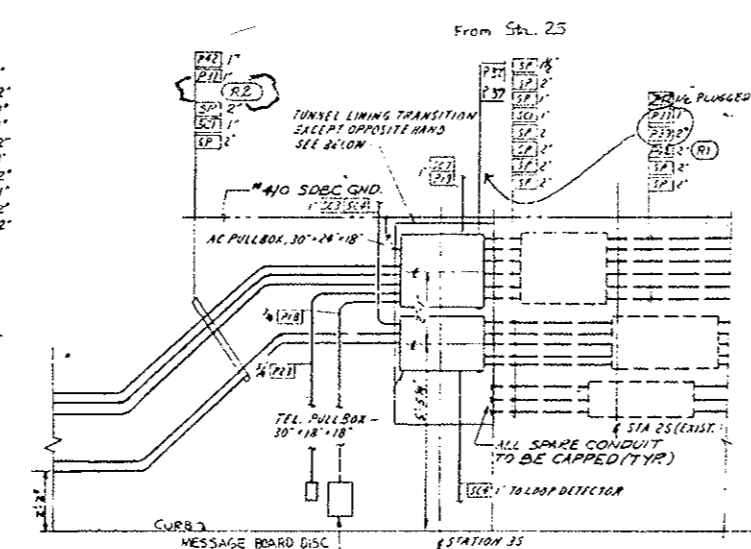
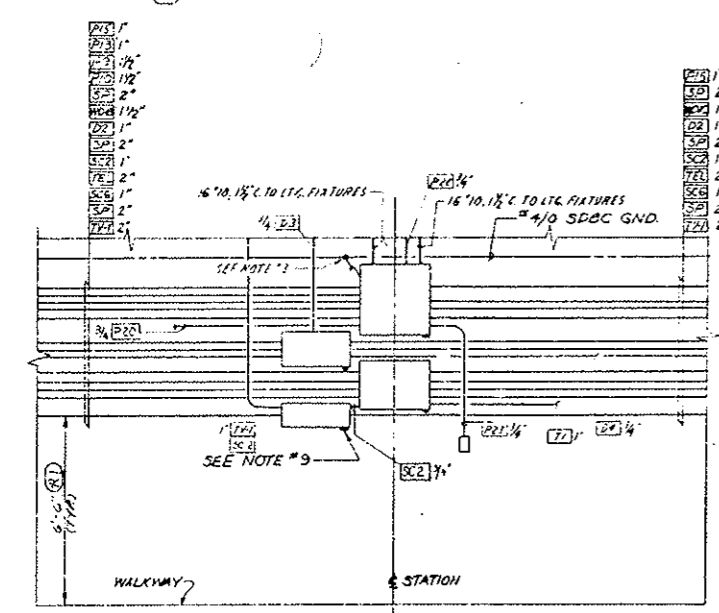
ELECTRICAL  
 TUNNEL  
 POWER PLAN, SECTIONS & DETAILS  
 SHEET NO. 2

DATE: 10/15/54  
 DRAWING NO: E-T-25

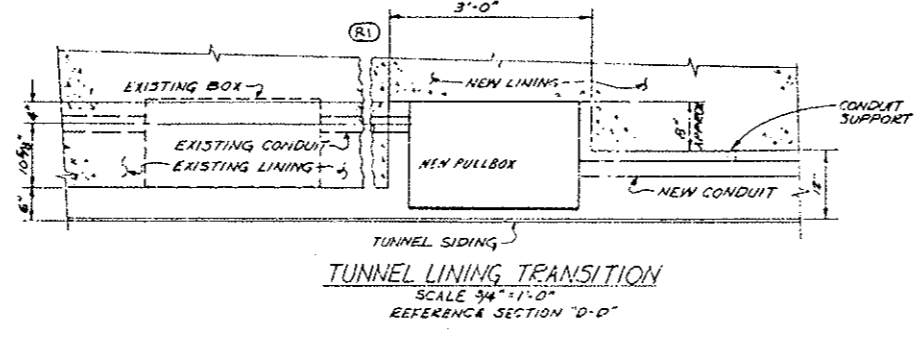
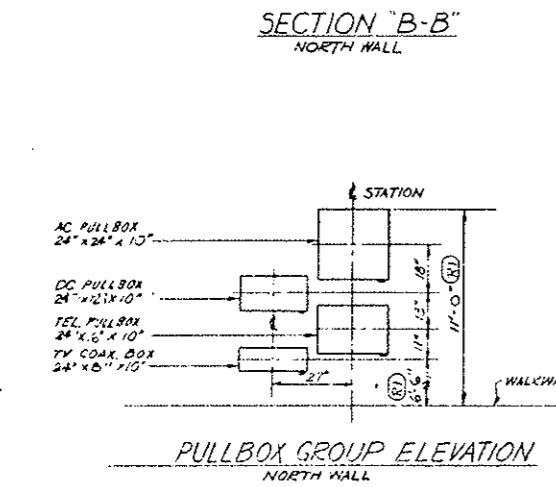




SECTION 'A-A'  
 TYPICAL CROSS SECTION OF TUNNEL  
 REFERENCE DRAWING E-T-15

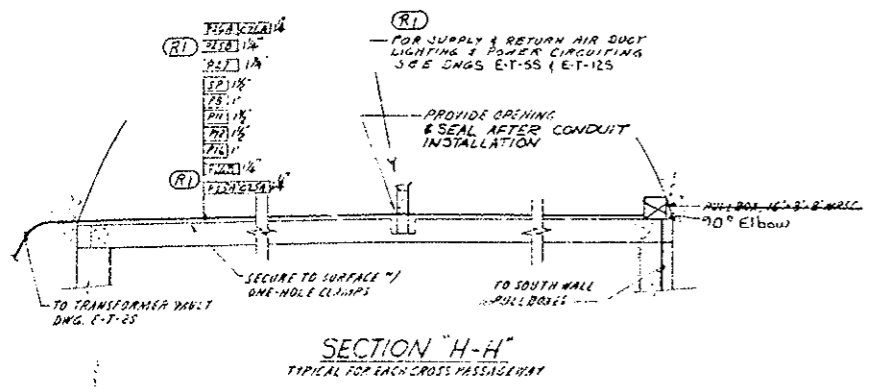
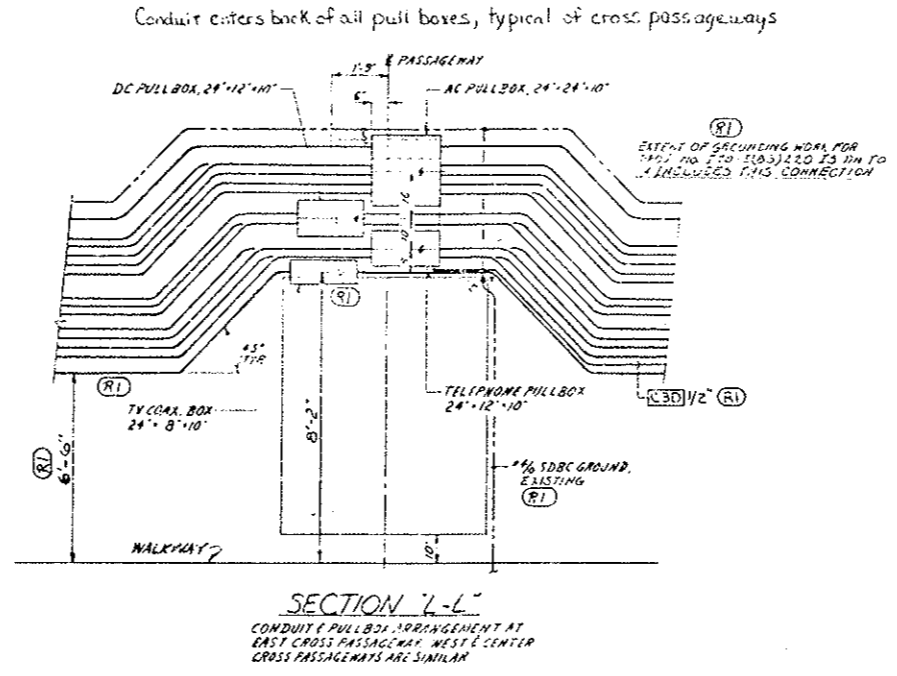
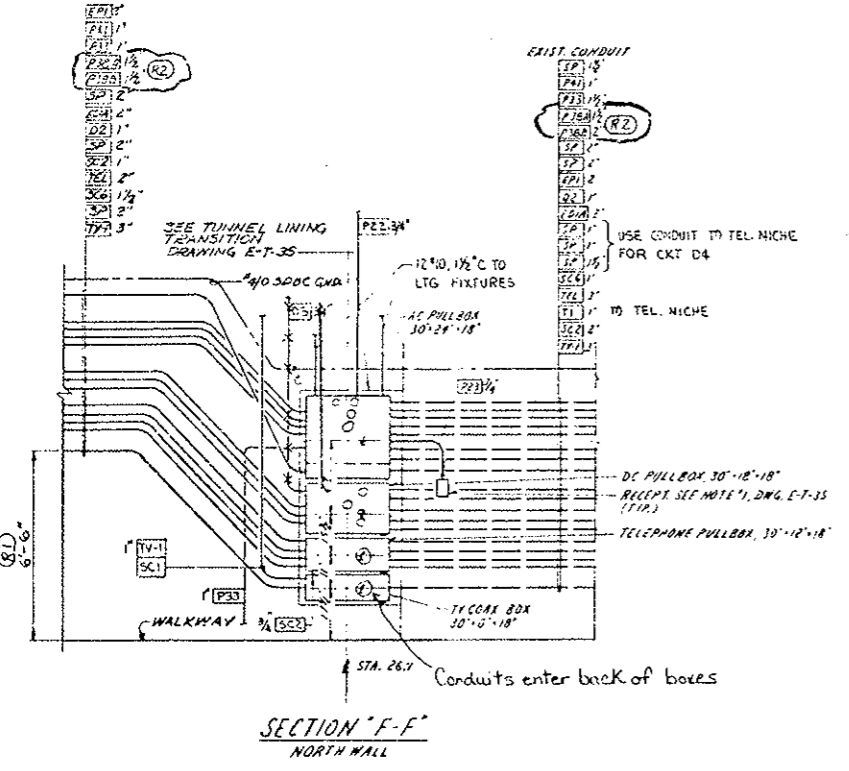
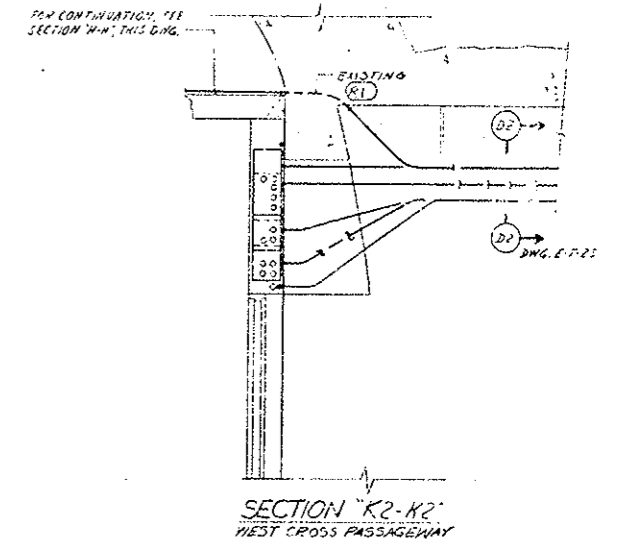
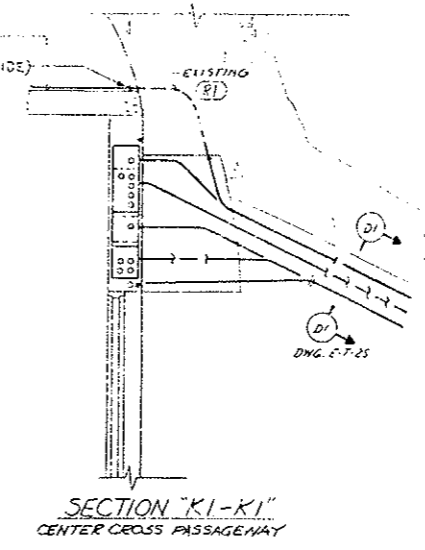
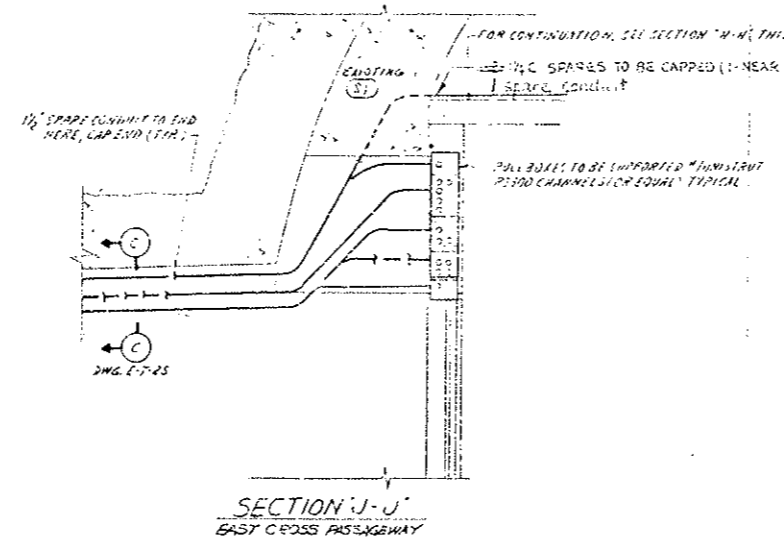
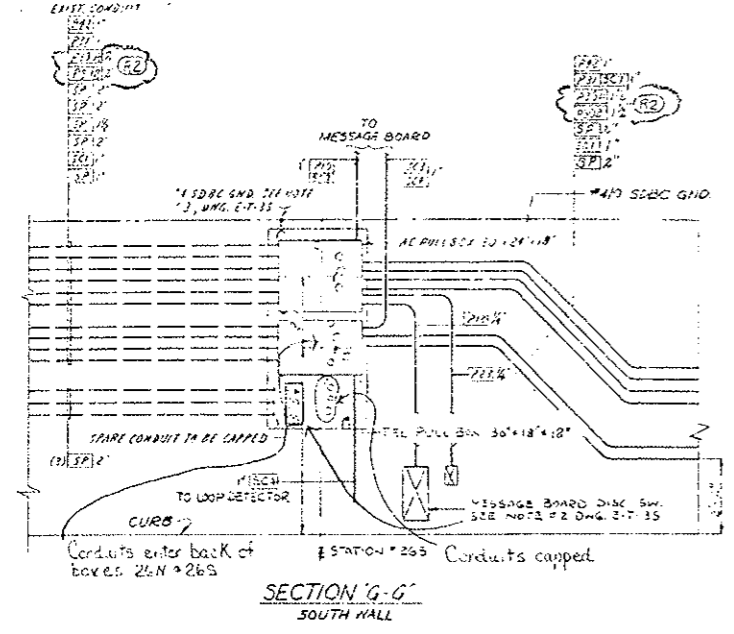


- NOTES:  
 G.E.I.  
 1. SINGLE RECEPTACLE TO BE 120VAC, 20A-3 WIRE GROUNDED, RUBBER CAT # 5361 MOUNTED IN GROUSE-HINDS #33 BOX W/ FERALLOY THREADED CAP COVER #25,36 (OR EQUAL) MOUNT 1'-11" ABOVE CURS AND 6" ABOVE WALKWAY  
 2. DISCONNECT SWITCH TO BE 30 AMP, 2P, 600V NON-FUSIBLE NEMA 12 ENCLOSURE, WESTINGHOUSE CAT # 200-20 (OR EQUAL), TOP OF DISCONNECT TO BE 1'-11" ABOVE CURS  
 3. ALL DISTRIBUTION BOXES & DISCONNECT SWITCHES TO BE GROUNDED WITH #4 SDBC GROUND.  
 4. ALL BOXES TO BE WEATHERPROOF SCREEN COVER, SIZE AS SHOWN  
 5. USE MYERS SCRU-TITE HUBS (OR EQUAL) AT ALL CONDUIT ENTRIES TO DISTRIBUTION BOXES & DISCONNECT SWITCHES.  
 6. CONTRACTOR TO PROVIDE SEAL-TITE (OR EQUAL) FLEXIBLE CONDUIT W/ APPROPRIATE FITTINGS (SIZE AS REQ'D) TO MESSAGE BOARDS, FLUORESCENT FIXTURES, TRAFFIC CONTROL STATIONS, TV CAMERAS, TELEPHONE MARKER LIGHTS & RECEPTACLES.  
 7. IN AC DISTRIBUTION BOX WHERE 2400V CABLE IS LOCATED, FIELD TO FURNISH 12 GAUGE SHEET METAL BARRIER.  
 8. CHECK THIS DRAWING WITH DRAWING E-T-15.  
 9. FIELD TO DRILL 1/4" DIA. WEEP HOLE IN BOTTOM OF BOXES FOR WATER DRAINAGE.  
 10. ALL EMBEDDED CONDUIT TO BE STUBBED-UP 6" ABOVE CONCRETE.  
 11. PROVIDE DRIP LOOPS WHERE CONDUITS ENTER MESSAGE BOARD TO ALLOW THE BOARD TO BE SWUNG AROUND FOR SERVICING.  
 \* General Electric Installed.



	REVISIONS		DATE	BY	CHKD	
	STATE OF COLORADO - DEPARTMENT OF HIGHWAYS					
	EISENHOWER MEMORIAL TUNNEL					
	SECOND BORE					
ELECTRICAL TUNNEL			POWER PLAN, SECTIONS & DETAILS			
SHEET NO. 3						
DRAWN: J.E. J. 4/2/54			CHECKED: R.P. J. 4/2/54			
SCALE: AS SHOWN			DASSET NO. 14570			
DATE ISSUED: 15 19 54			DRAWING NO. E-T-35			

(R1) REVISED FOR PROJ. NO. I70-3(83)220.  
 (R2) REVISED TUNNEL LIGHTING 11/1/78



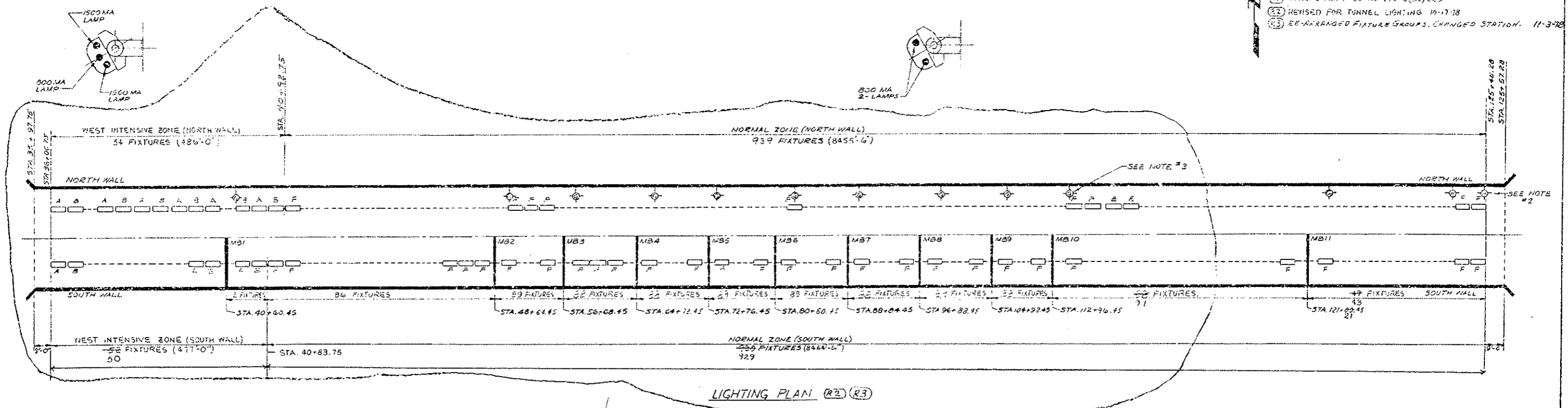
NOTES:  
 1. WORK THIS DRAWING WITH DRAWING E-T-15, E-T-25, E-T-35



PRINT RECORD	
DATE	BY
DRIVER	NO.
CON	PRE
SCALE	NO.
WELD	NO.
INTRA	NO.

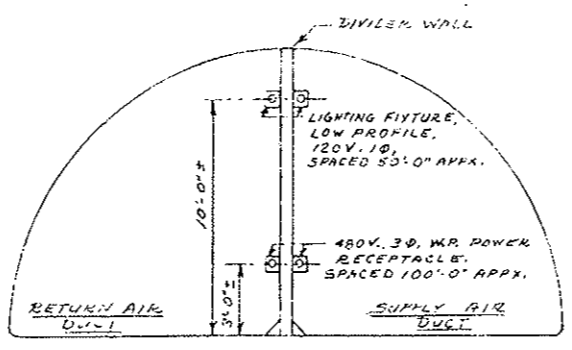
REVISIONS		DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND BORE				
ELECTRICAL				
TUNNEL				
POWER PLAN, SECTIONS & DETAILS				
SHEET NO. 4				
DRAWN	DATE	CHECKED	DATE	NO.
SCALE	NO.	NO.	DATE	NO.
PROJECT	NO.	NO.	DATE	NO.

- (1) REVISED FOR PMOS NO. 170-3(83)220
- (2) REVISED FOR TUNNEL LIGHTING 10-17-78
- (3) RE-ARRANGED FIXTURE GROUPS, CHANGED STATION. 11-3-78



CAT. NO.	DESCRIPTION	TYPE	TOTAL
* 3-96-2-15-2-B	TNL SERIES LUMINAIRE, 2-1500MA & 1-800MA LAMPS, 277V, 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE B	"A"	53
* 3-96-2-15-2-A	TNL SERIES LUMINAIRE, 2-1500MA & 1-800MA LAMPS, 277V, 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE A	"B"	53
3-96-2-3-2-B	TNL SERIES LUMINAIRE, 3-800MA LAMPS, 277V, 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE D	"C"	68
3-96-2-3-2-A	TNL SERIES LUMINAIRE, 3-800MA LAMPS, 277V, 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE C	"D"	68
3-96-2-8-0-8	TNL SERIES LUMINAIRE, 2-300MA LAMPS, MIDDLE LOWER, 277V, 60HZ, FUSED, TWO LAMP BALLAST OPERATION OF EACH MIDDLE OR LOWER LAMP IN CONJUNCTION WITH ADJACENT TYPE "B" FIXTURE	"E"	146
3-96-2-8-1-1	TNL SERIES LUMINAIRE, 2-300MA LAMPS, UPPER LOWER, 277V, 60HZ, FUSED, TWO LAMP BALLAST OPERATION OF EACH UPPER OR LOWER LAMP IN CONJUNCTION WITH ADJACENT TYPE "E" FIXTURE	"FA"	1880*
WESTINGHOUSE	F96T12/CW/SHO FLUORESCENT LAMP, SUPER-HI	SUPER-HI (800MA)	212
WESTINGHOUSE	F96T12/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	98
KPHILBEN 43-45VT	INCANDESCENT CEILING SURFACE MTD. 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	"F1"	AS REQ'D
3-96-2-15-2-A	TNL SERIES LUMINAIRE, 2-1500MA & 1-800MA LAMPS, 277V, 60HZ, FUSED, SINGLE LAMP BALLAST OPERATION OF EACH LAMP	"A"	1
White	No Ballast Terminal Block, 2-800MA Lamps	"FB"	
White	Fluorescent Fixtures Installed	FA, FB, F1, 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.



- NOTES:**
- LIGHTING FIXTURES ARE CROUSE-HINDS INCANDESCENT FIXTURE CAT. NO. V8110 WITH CLEAR GLOBE N° 118. FIXTURE SHALL BE ON 1" OUTLET BOX N° GREF334.
  - 11/2" WALL, 120V, 1Ø, CLEAR LAMP, CAT. NO. 116 A21/T5/120 SHALL BE INSTALLED IN EACH FIXTURE.
  - POWER RECEPTACLES ARE 3Ø, 4-WIRE, 4-WIRE, 600VOLT, WITH THE END OF CABLE, CAT. NO. N2 AR348, INSTALL ON 1" BACK BOX N° AKK33.
  - 1" Ø 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 ENTRANCES UPON POSITIONS.
  - LIGHTING CIRCUITS SHALL BE 120V, 1Ø, TYPE RHH, 1Ø STRANDED COPPER WIRE, LIGHTING (LOW VOLTAGE) CONTROL CIRCUITS SHALL BE 115V, 1Ø, TYPE RHH, 1Ø STRANDED COPPER WIRE, 480V, POWER RECEPTACLE CIRCUITS SHALL BE N° 4 AWG, 600V, TYPE RHH, 1Ø 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 99'-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

DATE ISSUED	10/15/78
REVISION NO.	0 0 0 0 R1 R2 R3
FOR	FOR THE STATE OF COLORADO
CUSTOMER	STATE OF COLORADO
FILE NO.	
INTRA. CO.	15 15 15 1 1 15 15 15

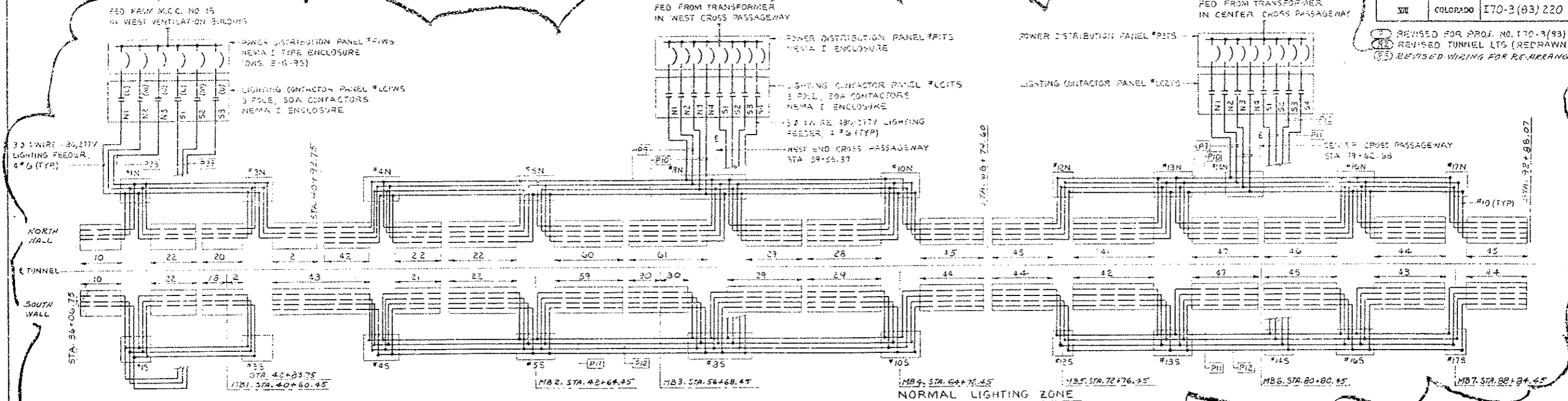
White

NO.	REVISIONS	DATE	BY	CHKD.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
ELECTRICAL TUNNEL LIGHTING PLAN AND DETAILS				
DATE	10/15/78	DESIGNED BY	W. J. BROWN	CHECKED BY
INTRA. CO.	15 15 15 1 1 15 15 15	DRAWING NO.	E-T-5S	



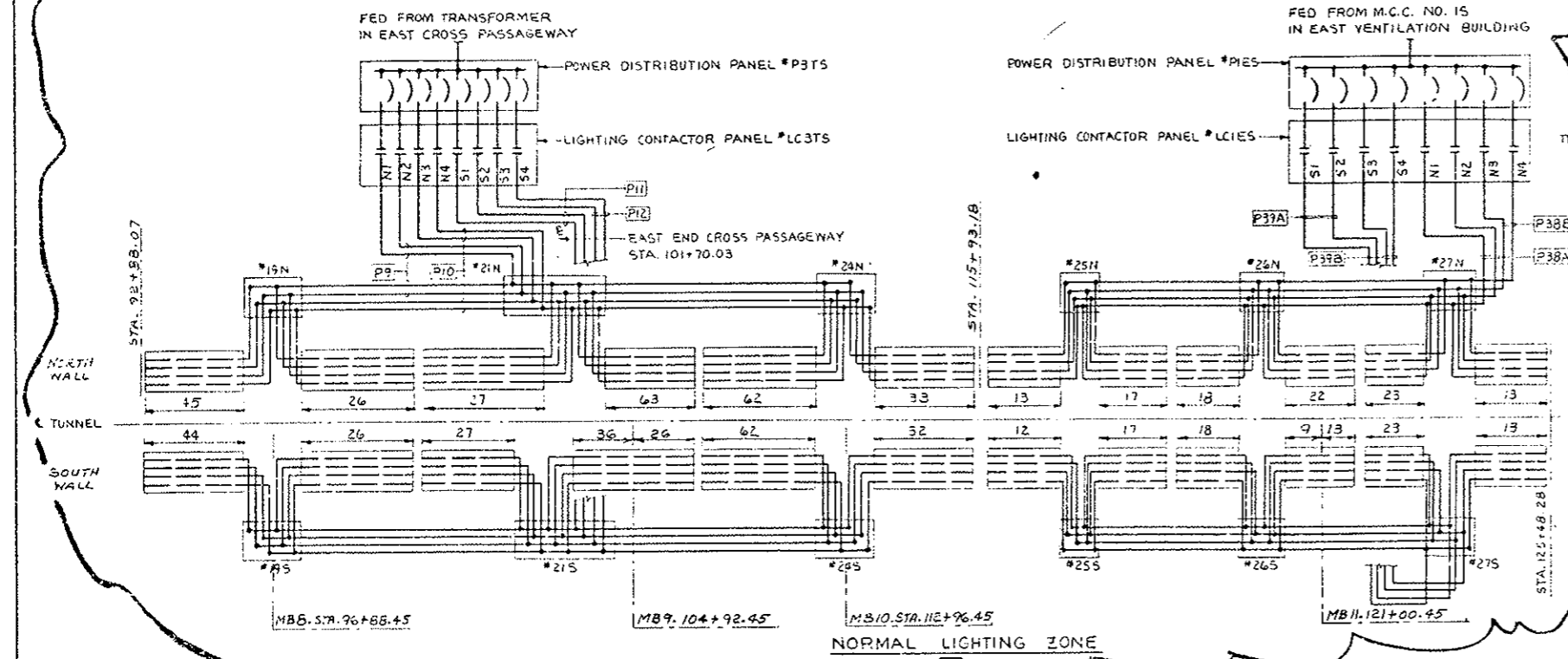
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	I70-3(83) 220	153	

REVISED FOR PROJ. NO. I70-3(83) 220.  
 (22) REVISED TUNNEL LTG (REDRAWN) 10-17-78  
 (23) REVISED WIRING FOR RE-ARRANGED FIXTURE GROUPS 11-3-78



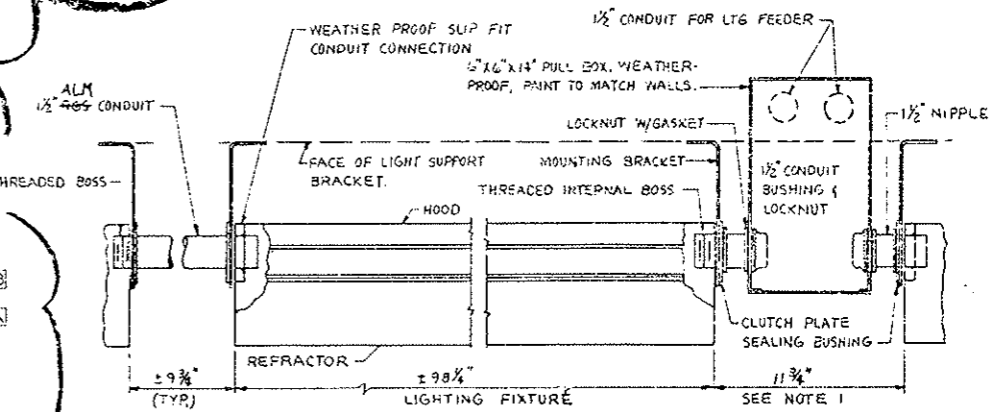
INTENSIVE ZONE WEST END  
 (82)

NORMAL LIGHTING ZONE  
 (82)

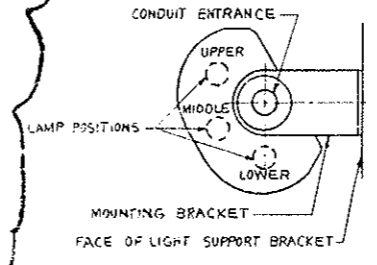


INTENSIVE ZONE EAST END  
 (82)

NORMAL LIGHTING ZONE  
 (82)



LIGHTING FIXTURE DETAIL  
 SEE NOTE 1



USE UPPER, MIDDLE, ( LOWER LAMPS FOR LIGHTING OF INTENSIVE ZONE.  
 USE UPPER, ( LOWER LAMPS FOR LIGHTING OF NORMAL ZONE.

FIXTURE CROSS SECTION

NOTES

1. SPACING BETWEEN FIXTURES TO BE  $\pm 9\frac{3}{4}$  INCH EXCEPT WHERE PULL BOX IS REQ'D. THEN THE SPACING IS  $11\frac{3}{4}$  INCH; THE CONTRACTOR SHALL MAKE UP THE DIFFERENCE BETWEEN ADJOINING FIXTURES. PULL BOXES TO BE USED AT DISTRIBUTION BOX GROUPS #1N, 2N, 4N, 5N, 8N, 10N, 12N, 13N, 16N, 17N, 19N, 21N, 23N, 25N, 26N, & 27N AT NORTH WALL FIXTURES AND AT 15, 35, 45, 55, 65, 105, 125, 155, 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-55.
4. WORK THIS DWG. WITH LIGHTING PLAN, DWG. E-T-55.
5. FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-T-105.

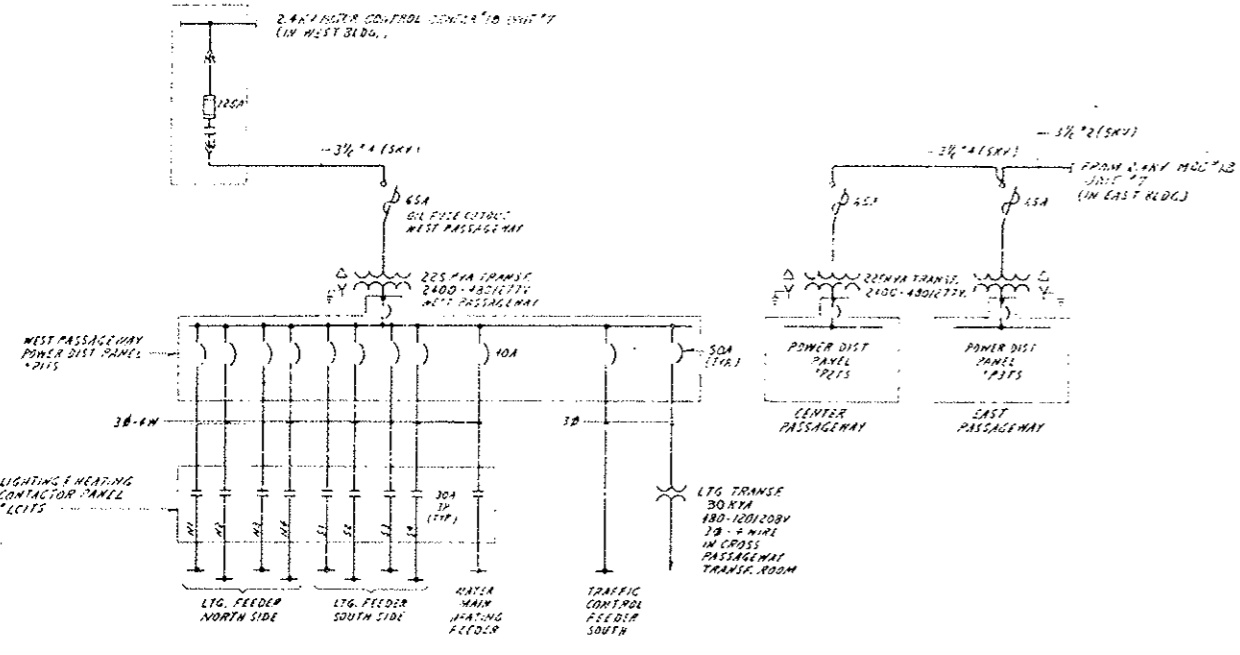
AS CONSTRUCTED	NO REVISIONS	REVISED	VOID
----------------	--------------	---------	------



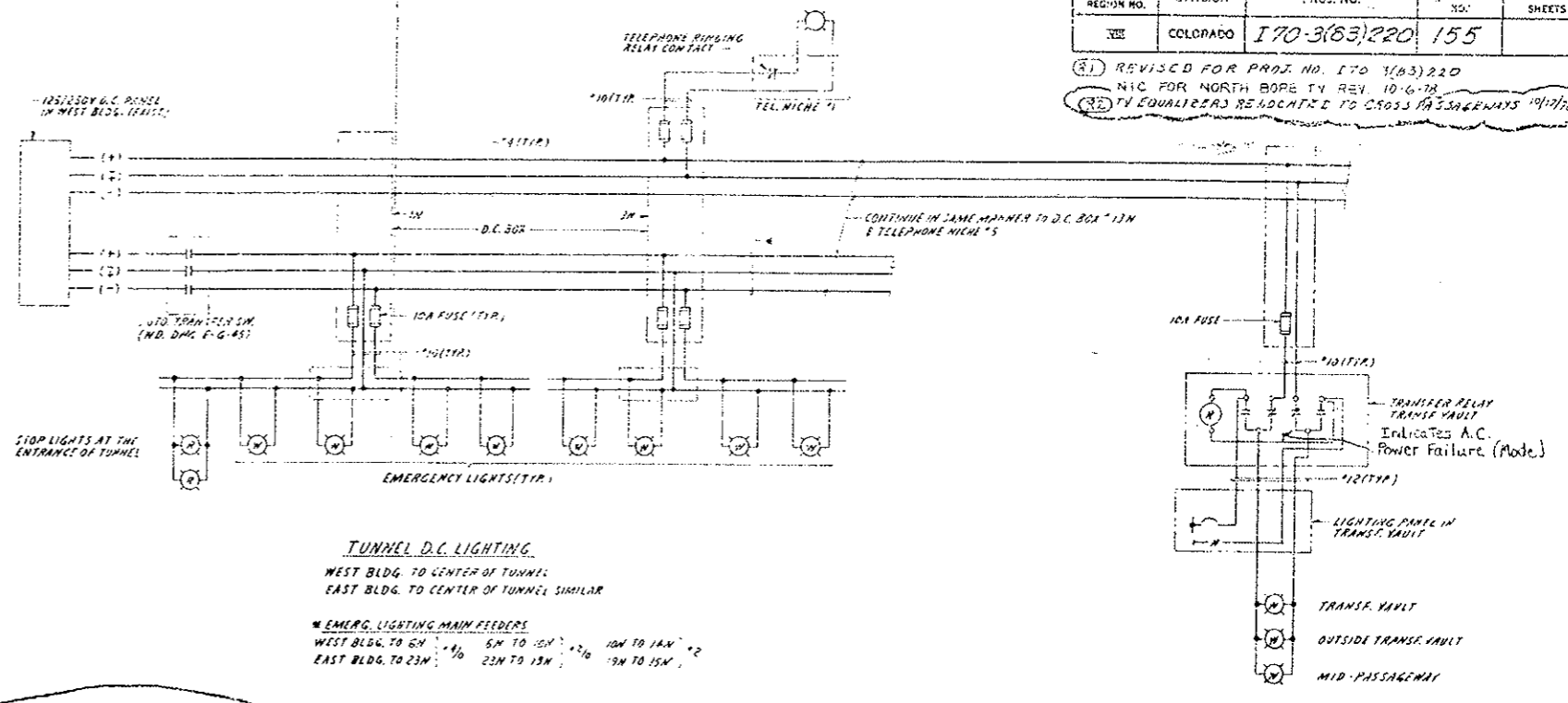
PRINT RECORD	
DATE	BY
10/15/78	W. J. ...
11/15/78	...
12/15/78	...
1/15/79	...
2/15/79	...
3/15/79	...
4/15/79	...
5/15/79	...
6/15/79	...
7/15/79	...
8/15/79	...
9/15/79	...
10/15/79	...
11/15/79	...
12/15/79	...
1/15/80	...
2/15/80	...
3/15/80	...
4/15/80	...
5/15/80	...
6/15/80	...
7/15/80	...
8/15/80	...
9/15/80	...
10/15/80	...
11/15/80	...
12/15/80	...
1/15/81	...
2/15/81	...
3/15/81	...
4/15/81	...
5/15/81	...
6/15/81	...
7/15/81	...
8/15/81	...
9/15/81	...
10/15/81	...
11/15/81	...
12/15/81	...
1/15/82	...
2/15/82	...
3/15/82	...
4/15/82	...
5/15/82	...
6/15/82	...
7/15/82	...
8/15/82	...
9/15/82	...
10/15/82	...
11/15/82	...
12/15/82	...
1/15/83	...
2/15/83	...
3/15/83	...
4/15/83	...
5/15/83	...
6/15/83	...
7/15/83	...
8/15/83	...
9/15/83	...
10/15/83	...
11/15/83	...
12/15/83	...
1/15/84	...
2/15/84	...
3/15/84	...
4/15/84	...
5/15/84	...
6/15/84	...
7/15/84	...
8/15/84	...
9/15/84	...
10/15/84	...
11/15/84	...
12/15/84	...
1/15/85	...
2/15/85	...
3/15/85	...
4/15/85	...
5/15/85	...
6/15/85	...
7/15/85	...
8/15/85	...
9/15/85	...
10/15/85	...
11/15/85	...
12/15/85	...
1/15/86	...
2/15/86	...
3/15/86	...
4/15/86	...
5/15/86	...
6/15/86	...
7/15/86	...
8/15/86	...
9/15/86	...
10/15/86	...
11/15/86	...
12/15/86	...
1/15/87	...
2/15/87	...
3/15/87	...
4/15/87	...
5/15/87	...
6/15/87	...
7/15/87	...
8/15/87	...
9/15/87	...
10/15/87	...
11/15/87	...
12/15/87	...
1/15/88	...
2/15/88	...
3/15/88	...
4/15/88	...
5/15/88	...
6/15/88	...
7/15/88	...
8/15/88	...
9/15/88	...
10/15/88	...
11/15/88	...
12/15/88	...
1/15/89	...
2/15/89	...
3/15/89	...
4/15/89	...
5/15/89	...
6/15/89	...
7/15/89	...
8/15/89	...
9/15/89	...
10/15/89	...
11/15/89	...
12/15/89	...
1/15/90	...
2/15/90	...
3/15/90	...
4/15/90	...
5/15/90	...
6/15/90	...
7/15/90	...
8/15/90	...
9/15/90	...
10/15/90	...
11/15/90	...
12/15/90	...
1/15/91	...
2/15/91	...
3/15/91	...
4/15/91	...
5/15/91	...
6/15/91	...
7/15/91	...
8/15/91	...
9/15/91	...
10/15/91	...
11/15/91	...
12/15/91	...
1/15/92	...
2/15/92	...
3/15/92	...
4/15/92	...
5/15/92	...
6/15/92	...
7/15/92	...
8/15/92	...
9/15/92	...
10/15/92	...
11/15/92	...
12/15/92	...
1/15/93	...
2/15/93	...
3/15/93	...
4/15/93	...
5/15/93	...
6/15/93	...
7/15/93	...
8/15/93	...
9/15/93	...
10/15/93	...
11/15/93	...
12/15/93	...
1/15/94	...
2/15/94	...
3/15/94	...
4/15/94	...
5/15/94	...
6/15/94	...
7/15/94	...
8/15/94	...
9/15/94	...
10/15/94	...
11/15/94	...
12/15/94	...
1/15/95	...
2/15/95	...
3/15/95	...
4/15/95	...
5/15/95	...
6/15/95	...
7/15/95	...
8/15/95	...
9/15/95	...
10/15/95	...
11/15/95	...
12/15/95	...
1/15/96	...
2/15/96	...
3/15/96	...
4/15/96	...
5/15/96	...
6/15/96	...
7/15/96	...
8/15/96	...
9/15/96	...
10/15/96	...
11/15/96	...
12/15/96	...
1/15/97	...
2/15/97	...
3/15/97	...
4/15/97	...
5/15/97	...
6/15/97	...
7/15/97	...
8/15/97	...
9/15/97	...
10/15/97	...
11/15/97	...
12/15/97	...
1/15/98	...
2/15/98	...
3/15/98	...
4/15/98	...
5/15/98	...
6/15/98	...
7/15/98	...
8/15/98	...
9/15/98	...
10/15/98	...
11/15/98	...
12/15/98	...
1/15/99	...
2/15/99	...
3/15/99	...
4/15/99	...
5/15/99	...
6/15/99	...
7/15/99	...
8/15/99	...
9/15/99	...
10/15/99	...
11/15/99	...
12/15/99	...
1/15/00	...
2/15/00	...
3/15/00	...
4/15/00	...
5/15/00	...
6/15/00	...
7/15/00	...
8/15/00	...
9/15/00	...
10/15/00	...
11/15/00	...
12/15/00	...
1/15/01	...
2/15/01	...
3/15/01	...
4/15/01	...
5/15/01	...
6/15/01	...
7/15/01	...
8/15/01	...
9/15/01	...
10/15/01	...
11/15/01	...
12/15/01	...
1/15/02	...
2/15/02	...
3/15/02	...
4/15/02	...
5/15/02	...
6/15/02	...
7/15/02	...
8/15/02	...
9/15/02	...
10/15/02	...
11/15/02	...
12/15/02	...
1/15/03	...
2/15/03	...
3/15/03	...
4/15/03	...
5/15/03	...
6/15/03	...
7/15/03	...
8/15/03	...
9/15/03	...
10/15/03	...
11/15/03	...
12/15/03	...
1/15/04	...
2/15/04	...
3/15/04	...
4/15/04	...
5/15/04	...
6/15/04	...
7/15/04	...
8/15/04	...
9/15/04	...
10/15/04	...
11/15/04	...
12/15/04	...
1/15/05	...
2/15/05	...
3/15/05	...
4/15/05	...
5/15/05	...
6/15/05	...
7/15/05	...
8/15/05	...
9/15/05	...
10/15/05	...
11/15/05	...



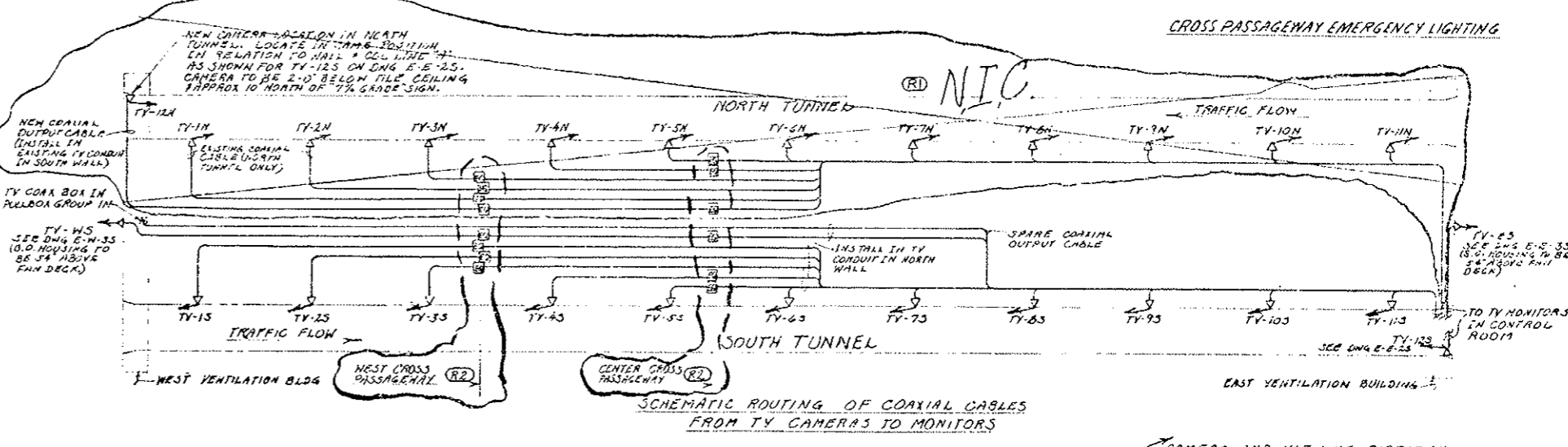
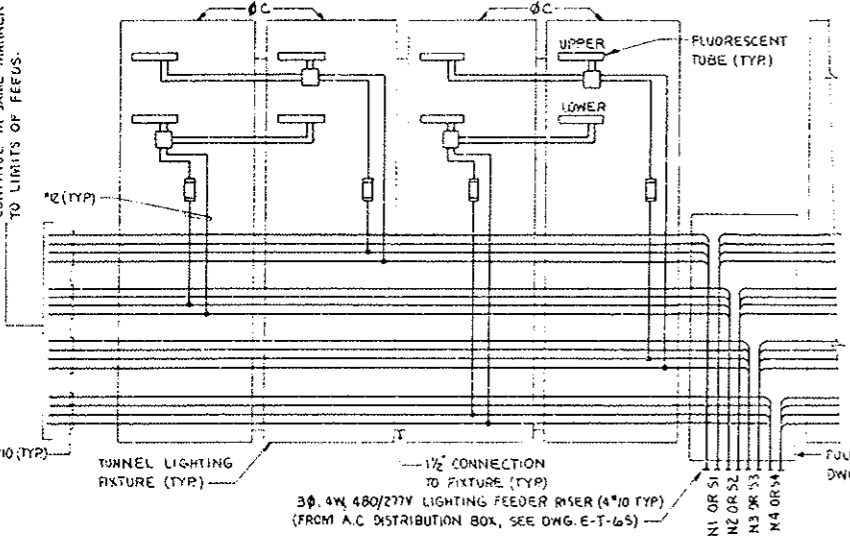
REVISED FOR PROJ. NO. I70 3(83)220  
 NIC FOR NORTH BORE TY REV. 10-6-78  
 (R2) TV EQUALIZERS RELOCATED TO CROSS PASSAGEWAYS 10/17/78



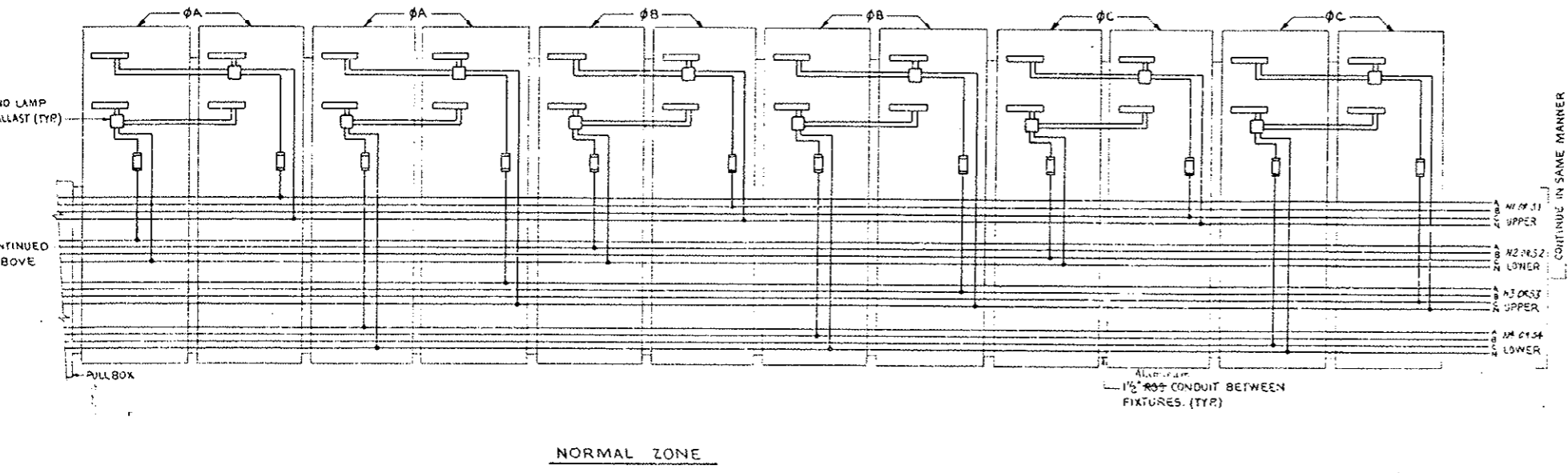
TUNNEL POWER SUPPLY ONE LINE DIAGRAM  
 WEST PASSAGEWAY AS SHOWN  
 EAST & CENTER PASSAGEWAY SIMILAR



TUNNEL D.C. LIGHTING  
 WEST BLDG. TO CENTER OF TUNNEL  
 EAST BLDG. TO CENTER OF TUNNEL SIMILAR  
 EMERG. LIGHTING MAIN FEEDERS  
 WEST BLDG. TO 6M 5M TO 10M 10M TO 14M  
 EAST BLDG. TO 23M 22M TO 13M 19M TO 15M



CROSS PASSAGEWAY EMERGENCY LIGHTING



CAMERA AND VIEWING DIRECTION  
 VIDEO EQUALIZER & LINE AMPLIFIER TO BE INSTALLED IN CROSS PASSAGEWAYS AS INDICATED ON DWG. E-T-25.

AS CONSTRUCTED	NO REVISIONS	REVISED	VOID
----------------	--------------	---------	------



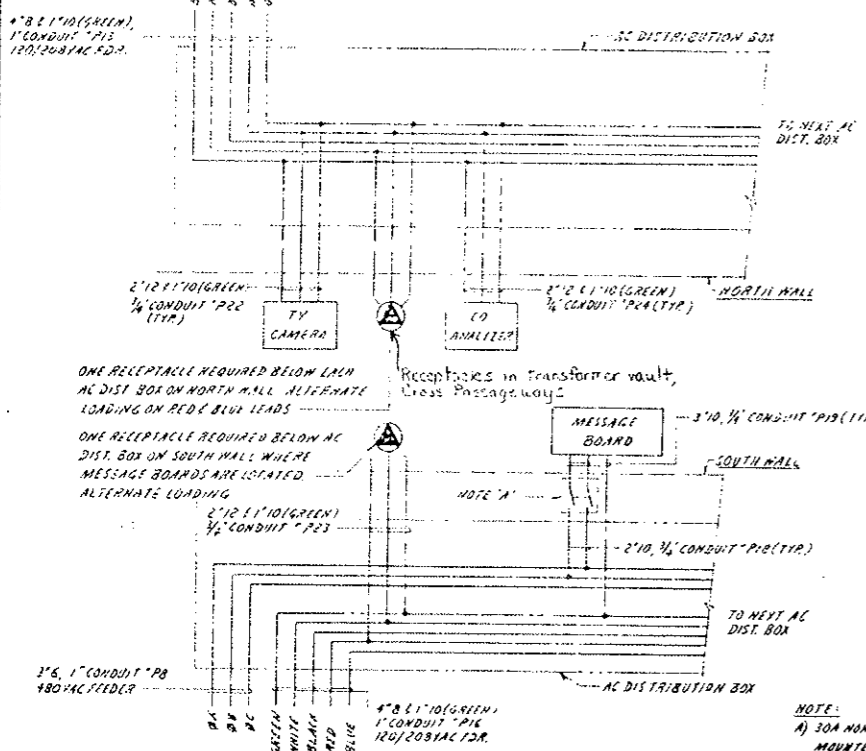
PRINT RECORD

DATE	BY	REVISION
0 0 0	0 0 0	0 0 0
5 5 5	10 5 4	0 0 0
15 15 15	1 1 15 15 15	0 0 0

NO.	REVISIONS	DATE	BY	CRD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
ELECTRICAL TUNNEL WIRING DIAGRAMS SHEET NO. 3				
DATE	BY	DATE	BY	DATE
NONE	CI4570			

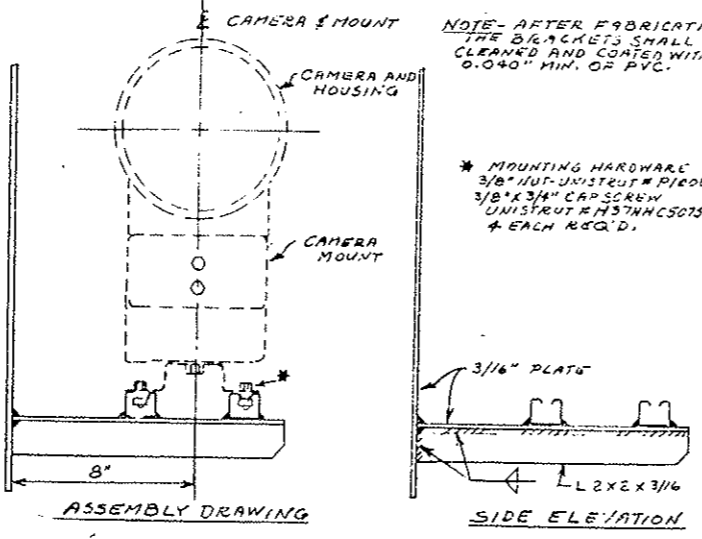
(R-1) REVISED FOR PROJ NO I70-3(83)220  
NIC FOR NORTH BORE T.V. REV. 10-16-78

AS CONSTRUCTED  
NO REVISIONS  REVISED  VOID

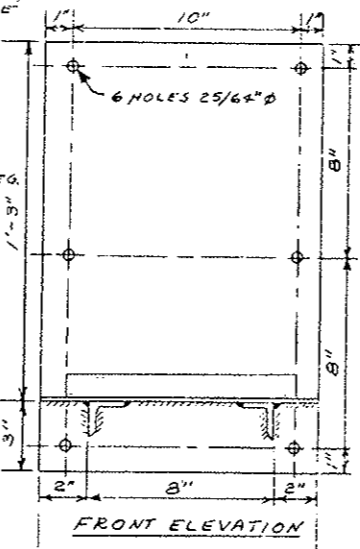


POWER FEEDER WIRING DIAGRAM

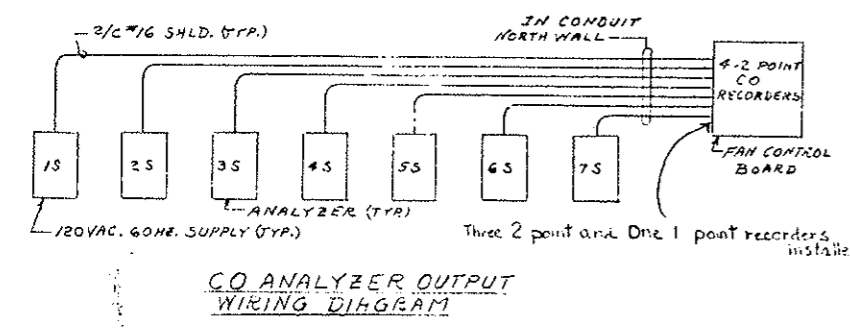
CONDUIT NO.	POINT OF ORIGIN	VOLTAGE	MALL	TY CAMERA	CO ANALYZER	MESSAGE BOARD ZONE	RECEPT.
P41	WEST VENT. BLDG.	120/208	NORTH	15, 125	*15	---	*3M, 4M, 5M
P42	---	120/208	SOUTH	---	---	---	*3S, 5S
P31	---	480	SOUTH	---	---	*15, 125	---
PNC PLWS CKT #7	WEST VENT. BLDG.	120	WEST	M5	---	---	---
P15	WEST PASSAGEWAY	120/208	NORTH	*35, 45	*25, 35	---	*6M, 7M, 9M, 10M, 11M
P16	---	120/208	SOUTH	---	---	---	*7S, 10S
P2	---	480	SOUTH	---	---	---	*3S, 6, 8S
P15	CTR. PASSAGEWAY	120/208	NORTH	*55, 65, 75	*45, 55	---	*12M, 13M, 15M, 16M, 17M, 18M
P16	---	120/208	SOUTH	---	---	---	*12S, 15S, 17S
P8	---	480	SOUTH	---	---	---	*5S, 6S, 7S
P15	EAST PASSAGEWAY	120/208	NORTH	*85, 95	*65	---	*15M, 20M, 22M, 23M
P16	---	120/208	SOUTH	---	---	---	*12S, 20S
P3	---	480	SOUTH	---	---	---	*8S, 9S
P41	EAST VENT. BLDG.	120/208	NORTH	105, 115	*75	---	*24M, 25M, 26M
---	EAST VENT. BLDG. TRAFFIC CTRL. CONSOLE	120	EAST SOUTH	125	---	---	---
P42	EAST VENT. BLDG.	120/208	SOUTH	---	---	---	*24S, 26S
P31	---	480	SOUTH	---	---	---	*10S, 6, 11S



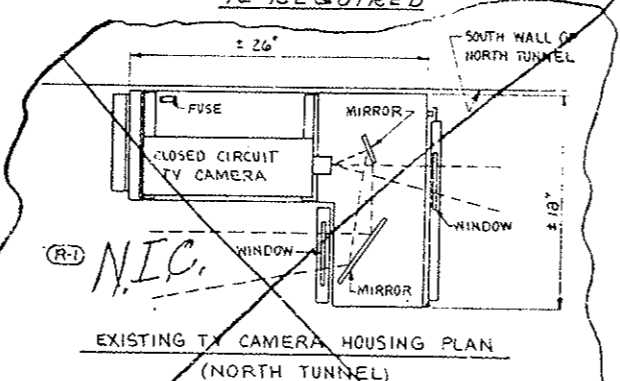
TV CAMERA SUPPORT BRACKET SOUTH TUNNEL 12 REQUIRED



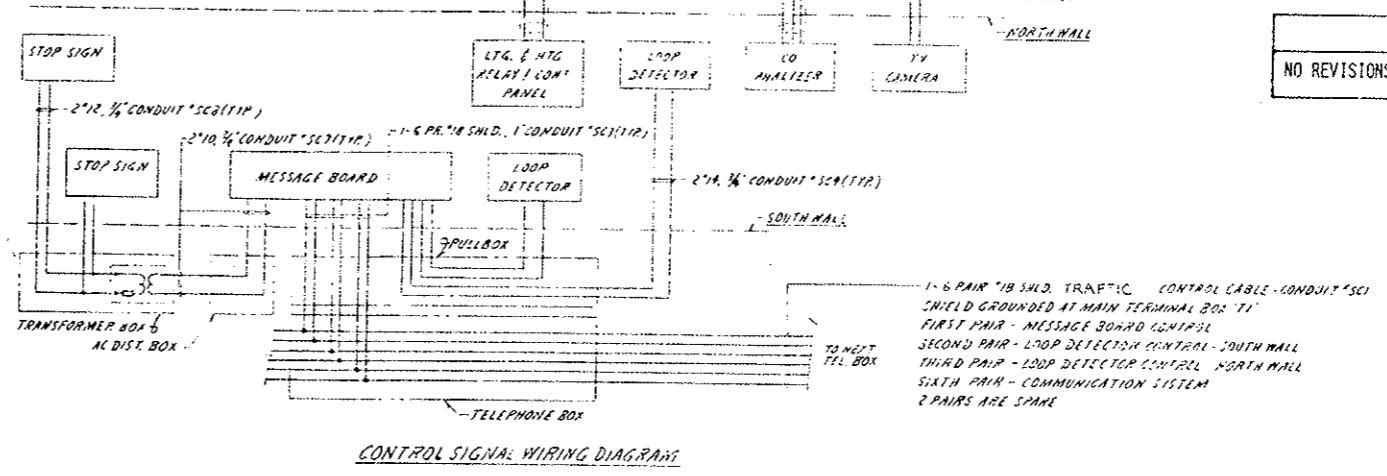
FRONT ELEVATION



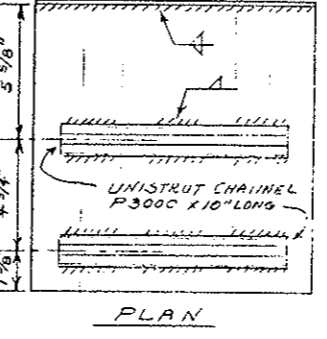
CO ANALYZER OUTPUT WIRING DIAGRAM



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.



CONTROL SIGNAL WIRING DIAGRAM



PLAN



NO. REVISIONS		DATE BY	1000
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE			
ELECTRICAL TUNNEL WIRING DIAGRAMS SHEET NO. 4			
DRAWN	APP'D	DATE	
CHECKED	DATE	DATE	
SCALE	ORDER NO.		
NONE	CI4570		





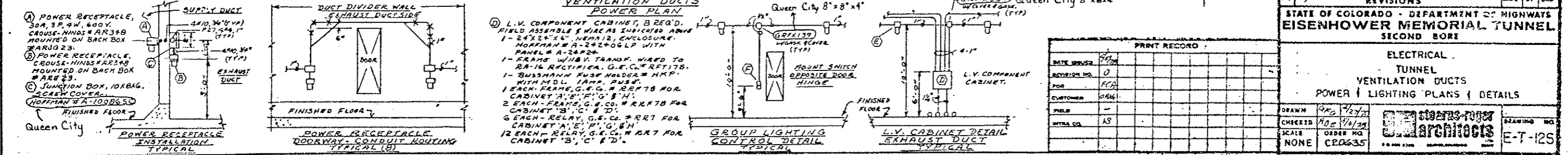
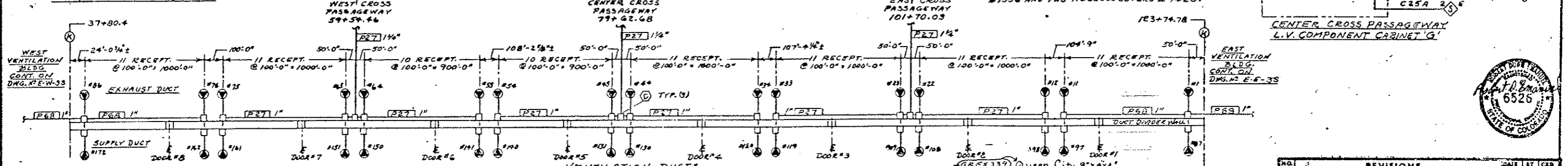
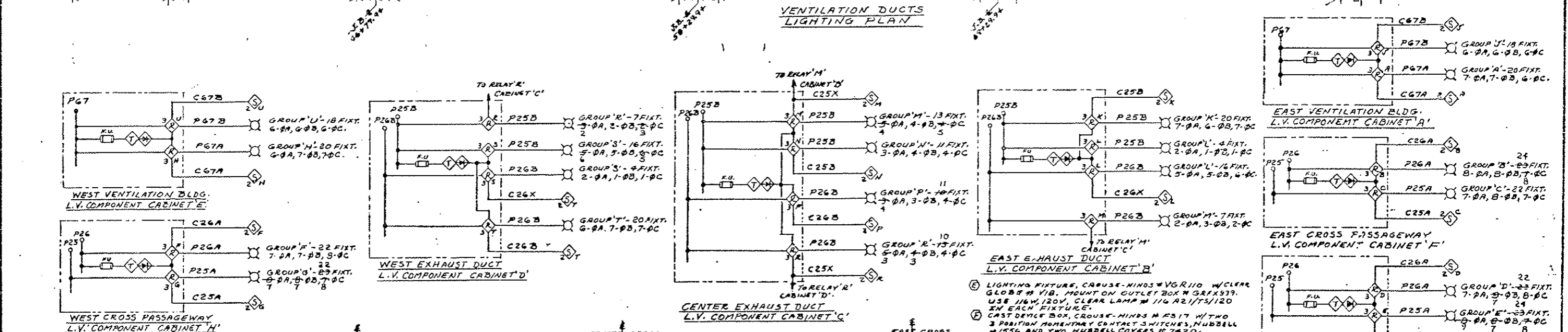
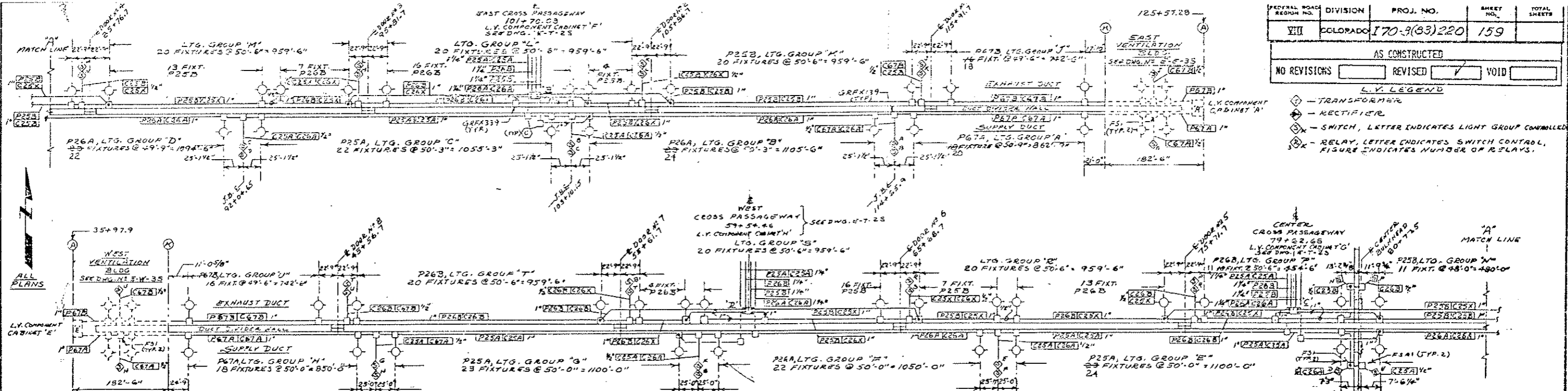


AS CONSTRUCTED

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.



DATE	BY	REVISIONS
9/27/72	AGC	1- REVISIONS
10/1/72	AGC	2- REVISIONS
10/1/72	AGC	3- REVISIONS
10/1/72	AGC	4- REVISIONS
10/1/72	AGC	5- REVISIONS
10/1/72	AGC	6- REVISIONS
10/1/72	AGC	7- REVISIONS
10/1/72	AGC	8- REVISIONS
10/1/72	AGC	9- REVISIONS
10/1/72	AGC	10- REVISIONS
10/1/72	AGC	11- REVISIONS
10/1/72	AGC	12- REVISIONS
10/1/72	AGC	13- REVISIONS
10/1/72	AGC	14- REVISIONS
10/1/72	AGC	15- REVISIONS
10/1/72	AGC	16- REVISIONS
10/1/72	AGC	17- REVISIONS
10/1/72	AGC	18- REVISIONS
10/1/72	AGC	19- REVISIONS
10/1/72	AGC	20- REVISIONS
10/1/72	AGC	21- REVISIONS
10/1/72	AGC	22- REVISIONS
10/1/72	AGC	23- REVISIONS
10/1/72	AGC	24- REVISIONS
10/1/72	AGC	25- REVISIONS
10/1/72	AGC	26- REVISIONS
10/1/72	AGC	27- REVISIONS
10/1/72	AGC	28- REVISIONS
10/1/72	AGC	29- REVISIONS
10/1/72	AGC	30- REVISIONS

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS  
**EISENHOWER MEMORIAL TUNNEL**  
 SECOND BORE

ELECTRICAL  
 TUNNEL  
 VENTILATION DUCTS  
 POWER | LIGHTING PLANS | DETAILS

DRAWN: AGC 10/1/72  
 CHECKED: AGC 10/1/72  
 SCALE: ORDER NO. C20635  
 NONE

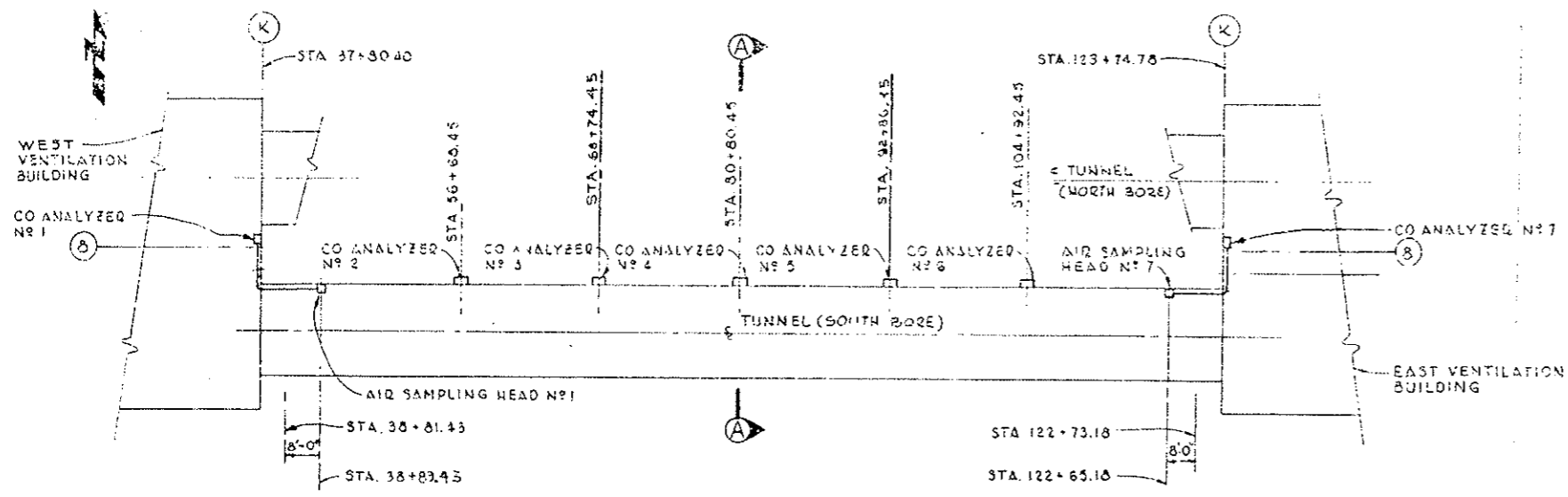
PRINT RECORD

DATE ISSUED: 9/27/72  
 PROJECT NO.: 0  
 JOB: E-125  
 CUSTOMER: D-661  
 FIELD: -  
 WITH: CO. 15

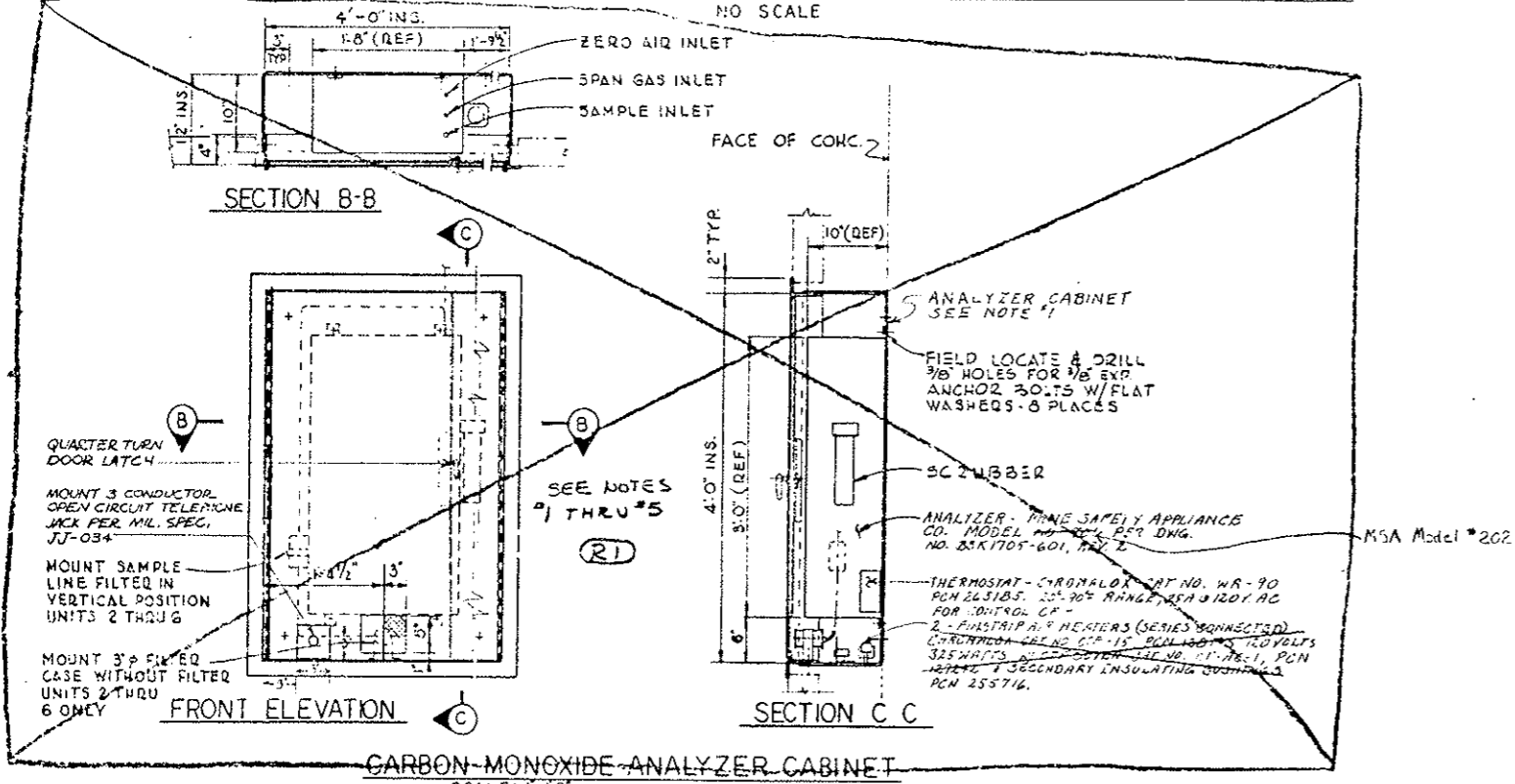
STEARNS ROGER ARCHITECTS  
 6525  
 STATE OF COLORADO

DRAWING NO. E-T-125

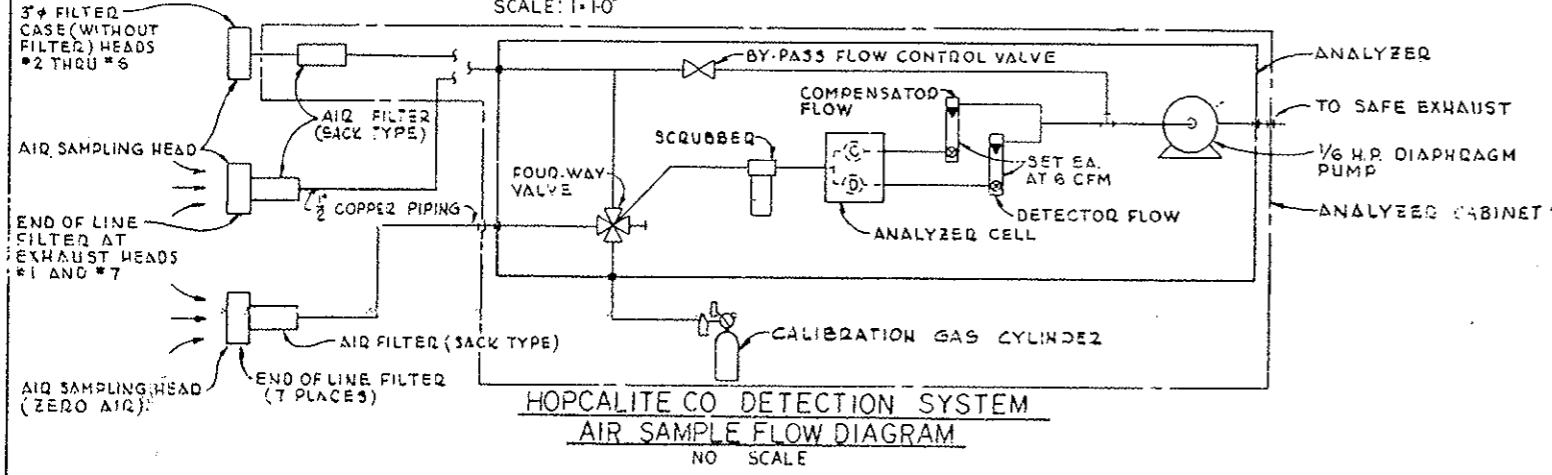




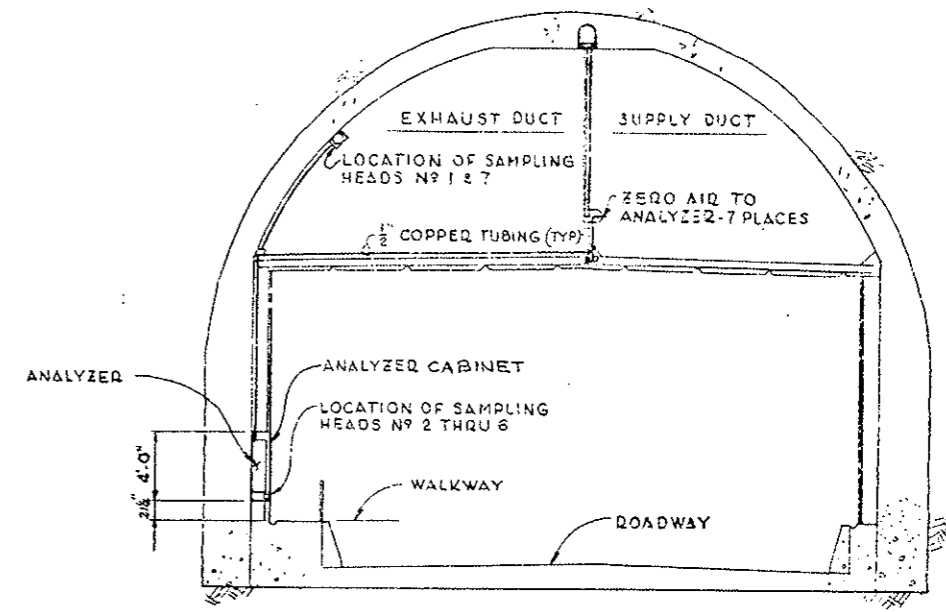
SCHMATIC PLAN OF SOUTH TUNNEL AND PART OF VENTILATION BLDGS



CARBON MONOXIDE ANALYZER CABINET



HOPCALITE CO DETECTION SYSTEM AIR SAMPLE FLOW DIAGRAM



SECTION A-A TYPICAL  
SCALE 3/16" = 1'-0"

- NOTES:
- ALL ANALYZERS EXCEPT #117 WILL HAVE A CABINET AS DETAILED ON DWG (WF-6). (R)
  - UNITS 2 THRU 6 WILL BE MOUNTED ON WALL ALONG ROADWAY IN TUNNEL AND REQUIRE AIR SAMPLING HEAD MOUNTED IN OPENING BELOW CABINET IN FILE WITH 5"x6" SCREEN. (R)
  - UNIT 117 WILL BE MOUNTED IN EXIST. CO. ANAL. ROOM IN VENTILATION BUILDINGS WITH AIR SAMPLING HEADS LOCATED IN EXHAUST DUCT - NOT ON CABINET DOOR.
  - CO ANALYZER VERTICAL PIPING SHALL TERMINATE IN A DRIP LEG, AND NO SAGS PERMITTED IN HORIZONTAL PIPING.
  - ANALYZER CABINETS FOR UNITS 2 THRU 6 WILL CONTAIN A THERMOSTAT-CHROMALOX CAT. NO. WR-90, PCN 263185, 20°-70° RANGE, 25A @ 120V. AC. (OR EQUAL) FOR CONTROL OF 2-FIN STRIP AIR HEATERS (SERIES CONNECTED) CHROMALOX CAT. NO. OTF-15, PCN 128143, 120 VOLTS, 325 WATTS, WITH OTF COVER CAT. NO. OTF-AC-1, PCN 127222, SECONDARY INSULATING BUSHINGS PCN 255716.  
Chromalox C11835 579/120 V 350 W 1K1  
Two each cabinet.

PRINT RECORD

DATE ISSUED	5-31-73	8-28	14	15	25	27	28	29	30	31
APPROVED	0	0	0	0	0	0	0	0	0	0
PREPARED	5	5	5	5	5	5	5	5	5	5
CHECKED	0	0	0	0	0	0	0	0	0	0
FIELD	0	0	0	0	0	0	0	0	0	0
INTRA CO.	1-5	15	0	1	1	1	1	1	1	15

FOR INFORMATION ONLY

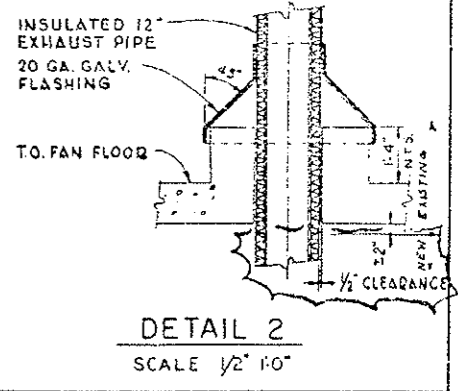
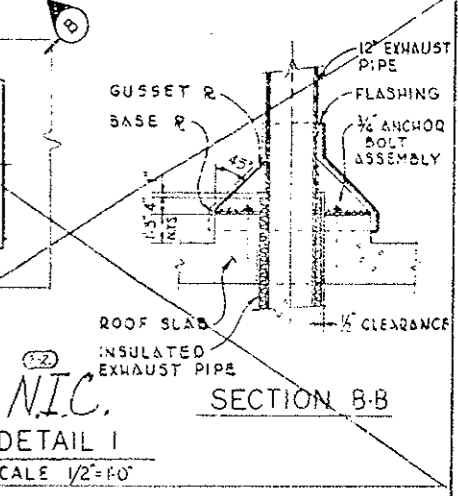
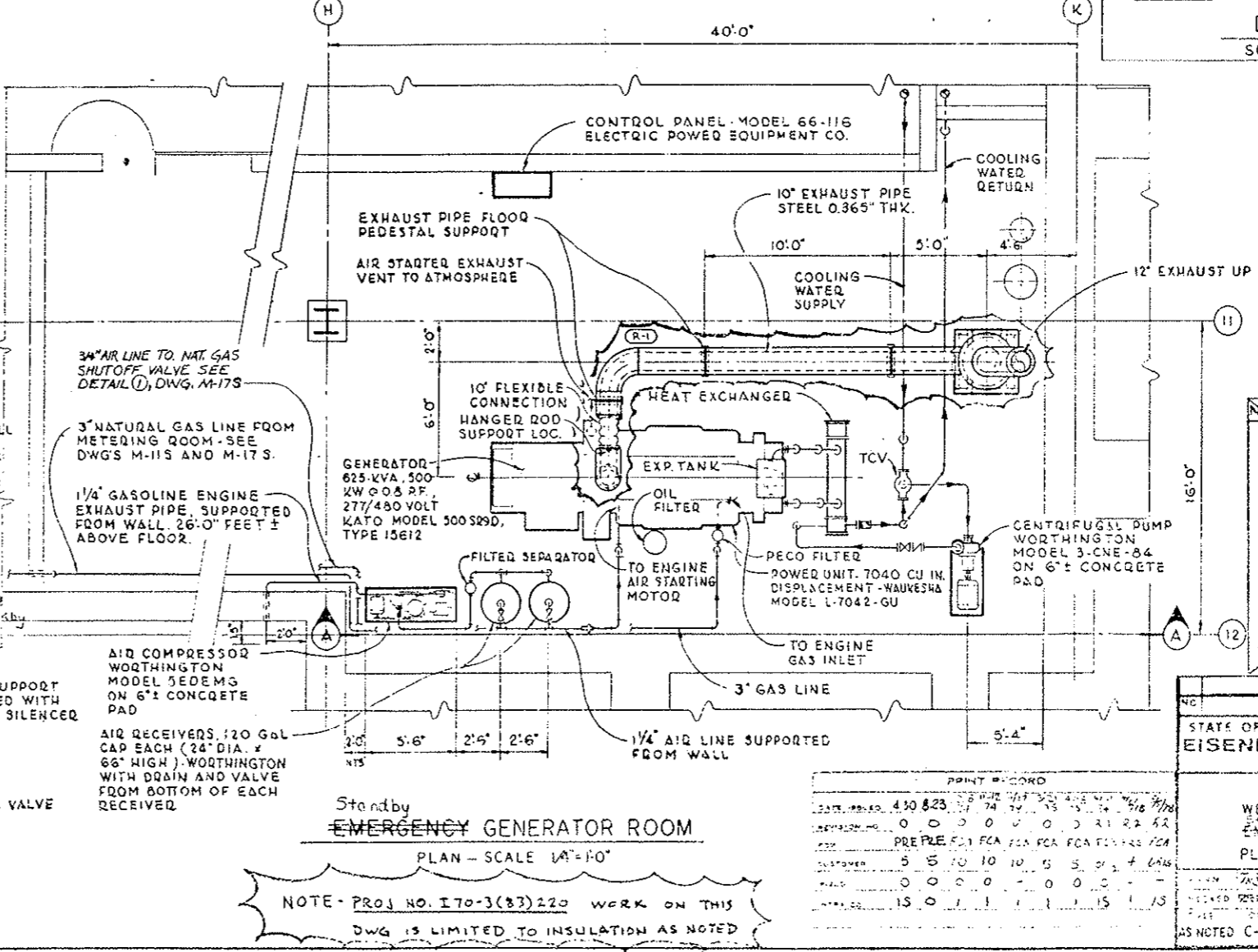
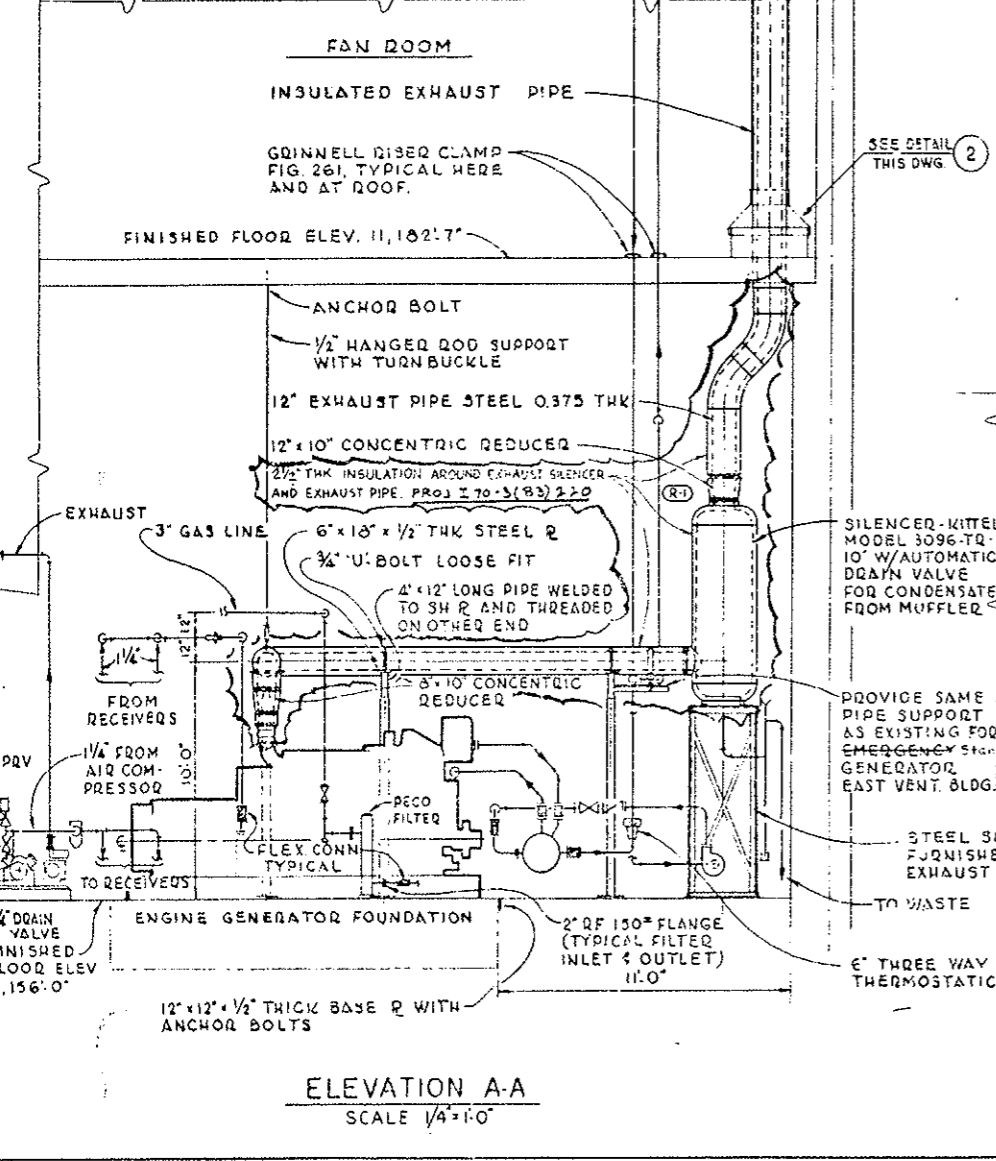
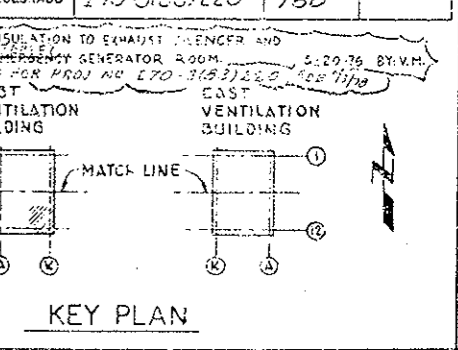
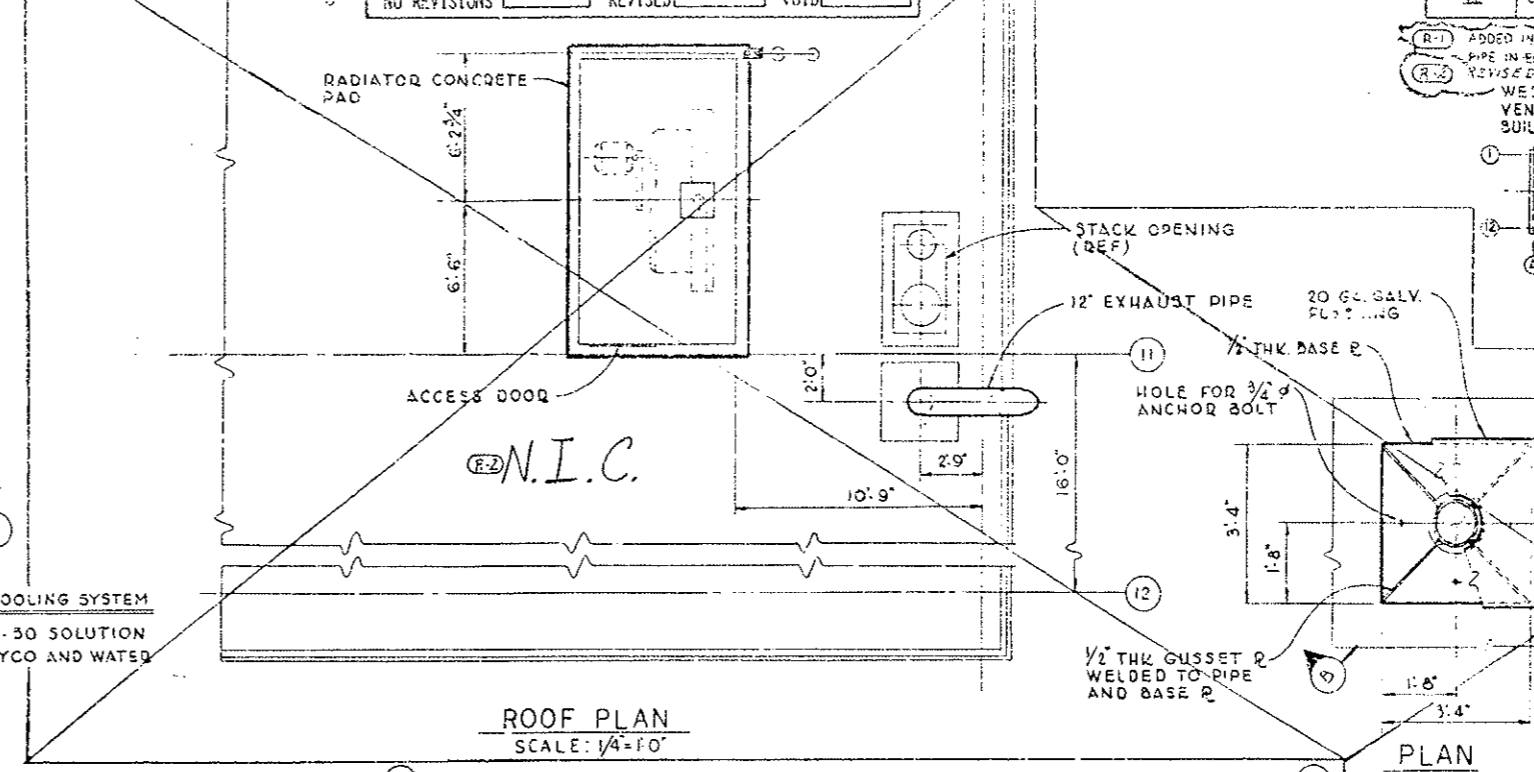
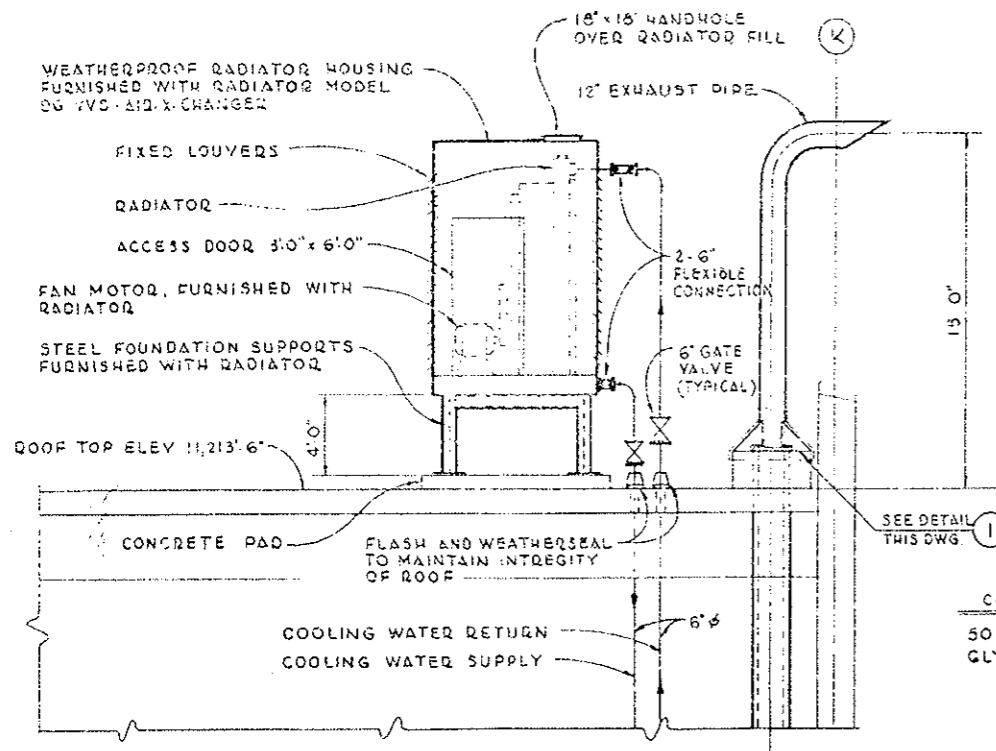
NO.	REVISIONS	DATE

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS  
EISENHOWER MEMORIAL TUNNEL  
SECOND SORE

MECHANICAL  
CARBON MONOXIDE SAMPLING  
AND ANALYZING SYSTEM  
PLANS, SECTIONS AND DETAILS

DATE: 5-28-74  
DRAWN BY: [Signature]  
CHECKED BY: [Signature]  
NOTED: [Signature]

(83)  
DRAWING NO.  
M-13 S



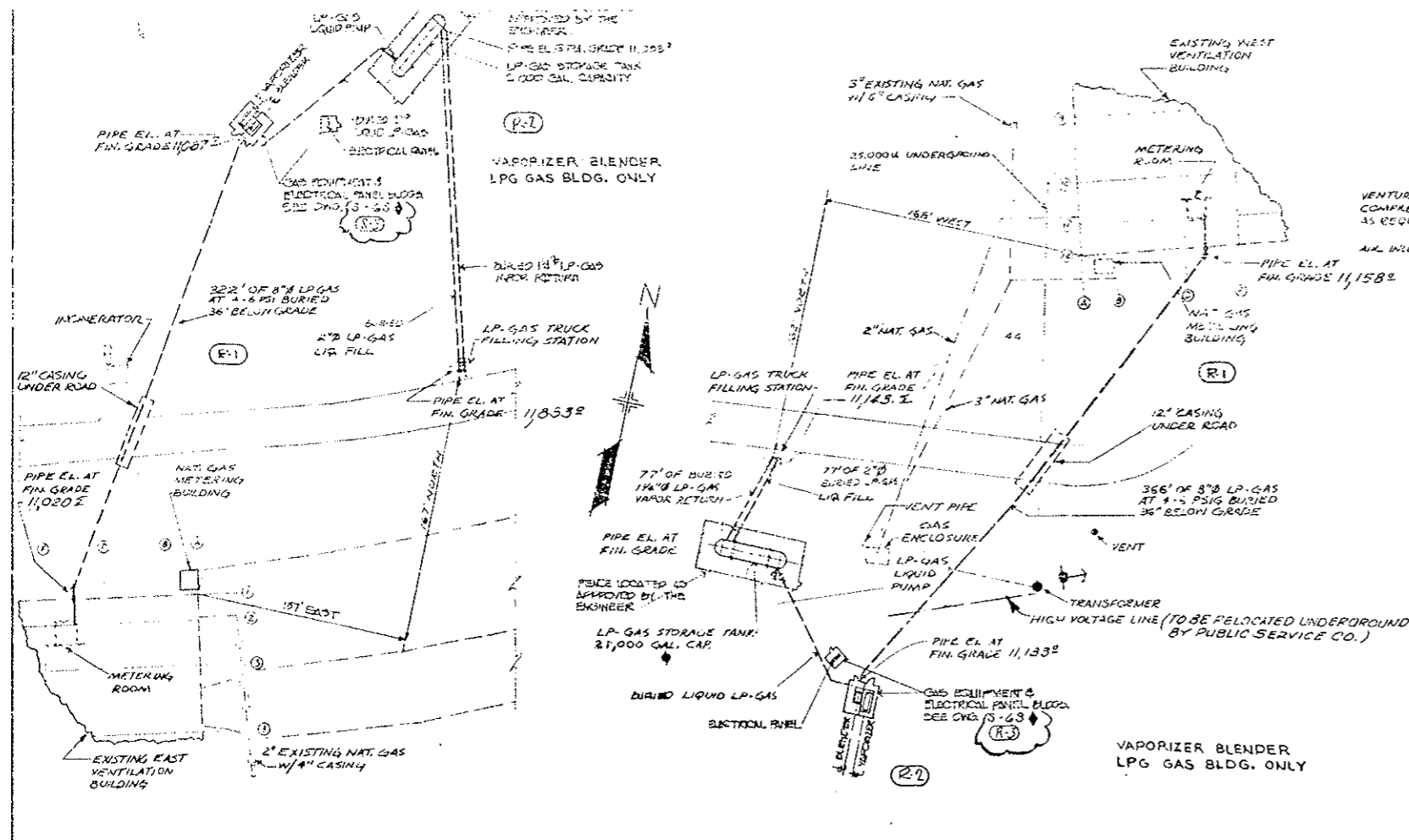
**NOTES:**

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				
ARCHITECTS				
DRAWING NO. M-12 S				

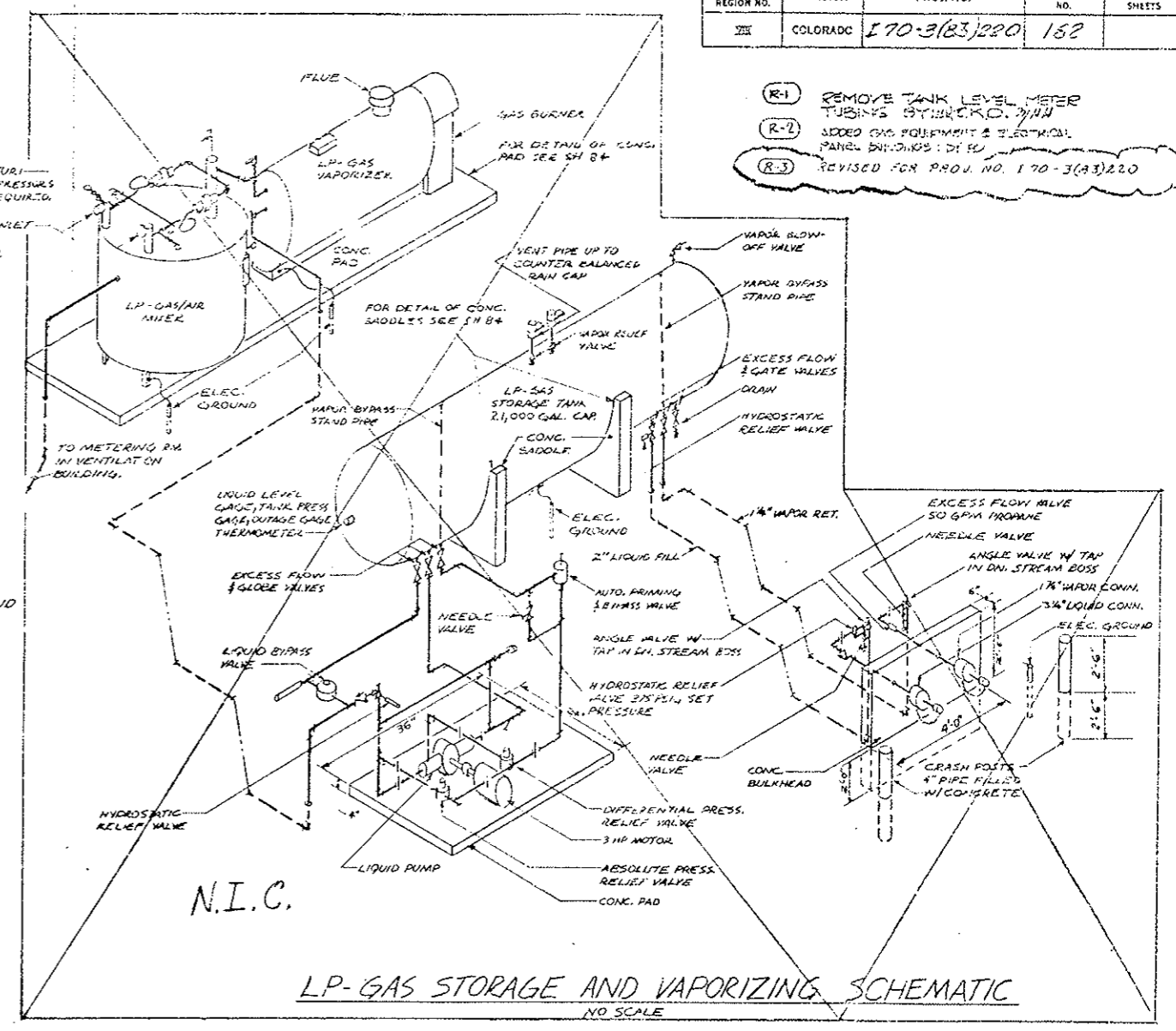
Standby  
**EMERGENCY GENERATOR ROOM**  
 PLAN - SCALE 1/4"=1'-0"  
 NOTE - PROJ. NO. I70-3(83)220 WORK ON THIS  
 DWG IS LIMITED TO INSULATION AS NOTED

DATE	BY	CHKD	REVISIONS
4-30-73	J.P.	J.P.	1
5-10-73	J.P.	J.P.	2
5-15-73	J.P.	J.P.	3
5-20-73	J.P.	J.P.	4
5-25-73	J.P.	J.P.	5
6-1-73	J.P.	J.P.	6
6-5-73	J.P.	J.P.	7
6-10-73	J.P.	J.P.	8
6-15-73	J.P.	J.P.	9
6-20-73	J.P.	J.P.	10
6-25-73	J.P.	J.P.	11
7-1-73	J.P.	J.P.	12



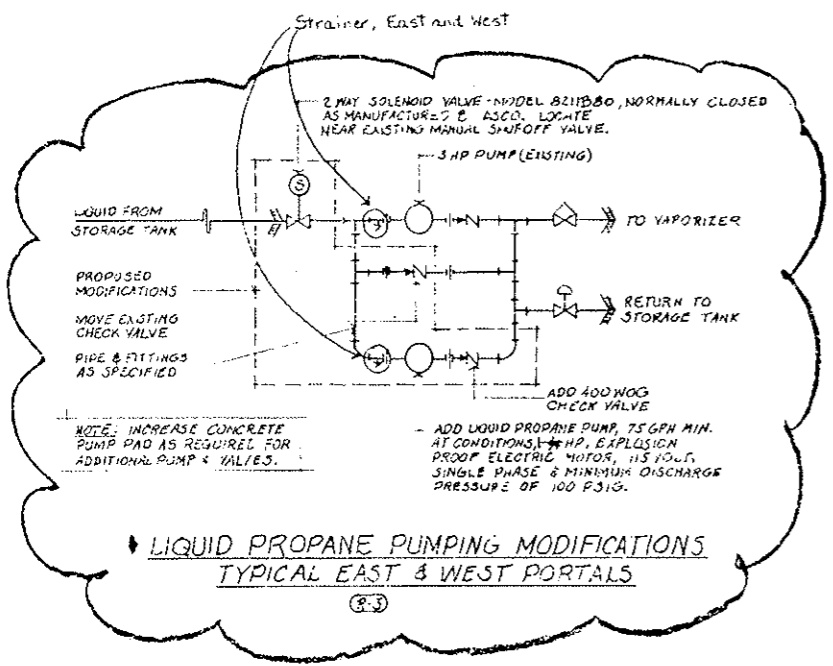
**EAST PORTAL STANDBY LP-GAS SYSTEM PLAN**  
SCALE: 1" = 50'-0"

**WEST PORTAL STANDBY LP-GAS SYSTEM PLAN**  
SCALE: 1" = 50'-0"

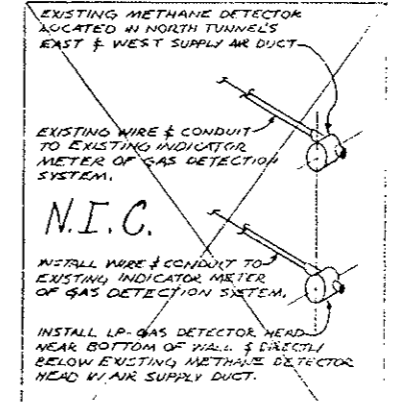


**LP-GAS STORAGE AND VAPORIZING SCHEMATIC**  
NO SCALE

- (R-1) REMOVE TANK LEVEL METER TUBING BY INCHCO. 2/11/75
- (R-2) SIZED GAS EQUIPMENT & ELECTRICAL PANEL BUILDINGS 1/1/75
- (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 <input checked="" type="checkbox"/>	VOID <input type="checkbox"/>

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.

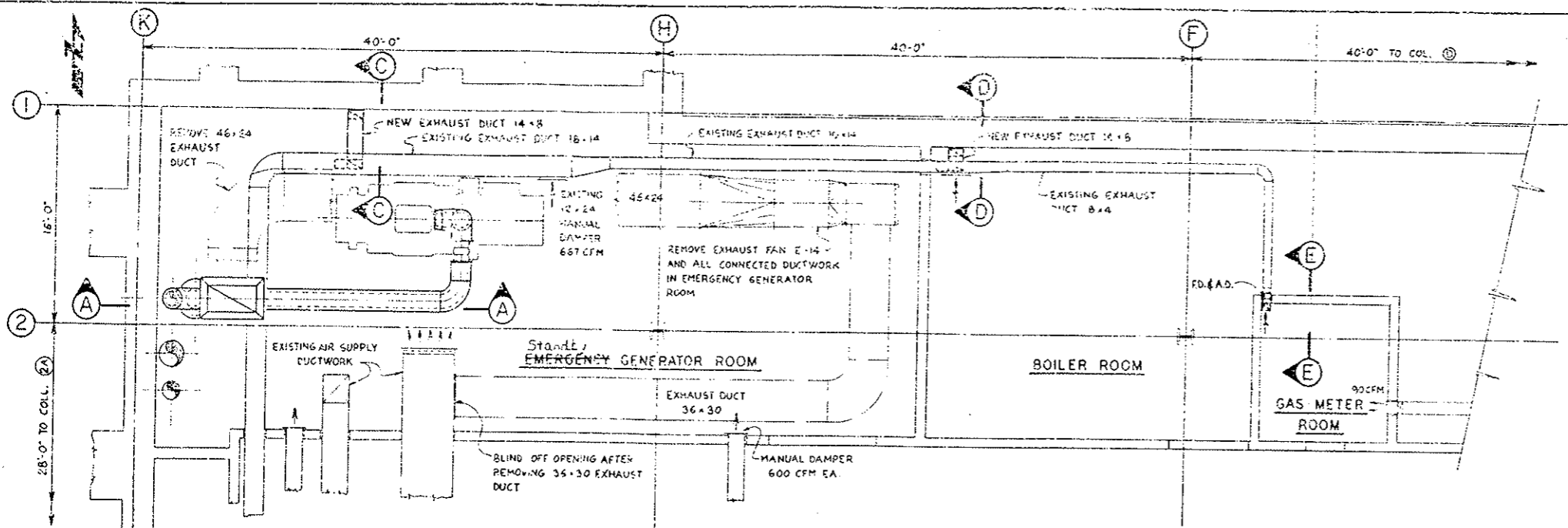


PRINT RECORD	
DATE PLOTTED	3/27/75
REVISION NO.	0 1 2 3 4 5
DATE	PRE 1/15/75
BY	5 5 0 0 0 4 0 0 0 0
DATE	0 0 0 0 0 0
SCALE	1" = 15' 15' 1" 15'

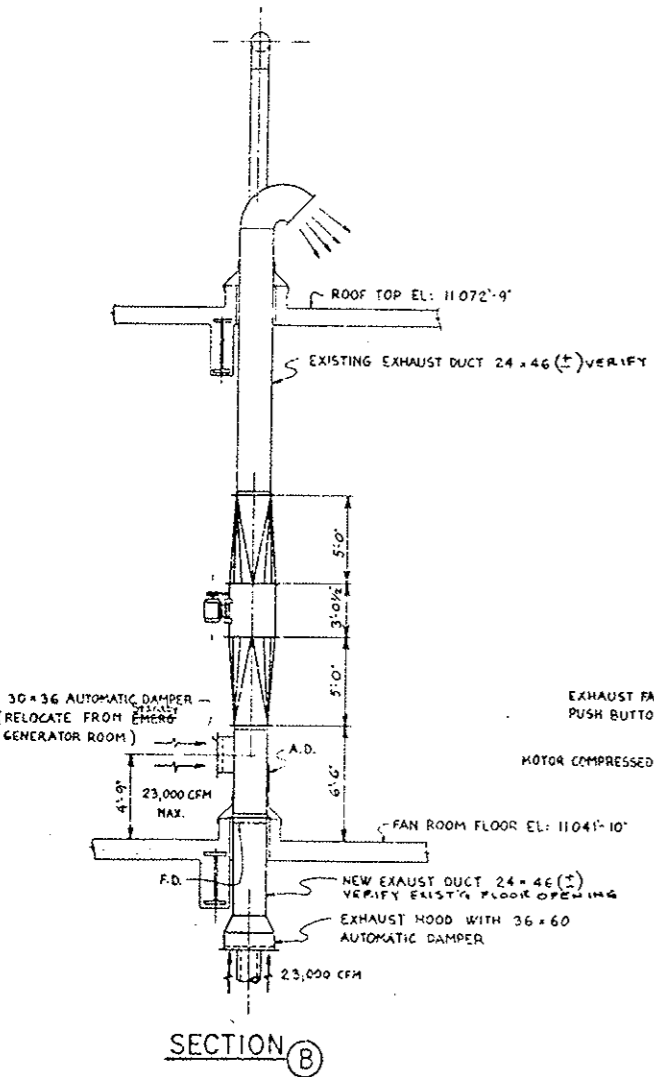
REVISIONS		DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND BORE				
MECHANICAL				
EAST AND WEST				
STANDBY PROPANE SYSTEMS				
PLANS & SCHEMATICS				
DRAWN	LUKE	3/17/75	STANBYS-ROBER	DRAWINGS NO.
CHECKED	M.H.H.	3/17/75	CONTRACTS	M-185
SCALE	ORDER NO.			
DATE	1/15/80			

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	170-3(63)220	163	

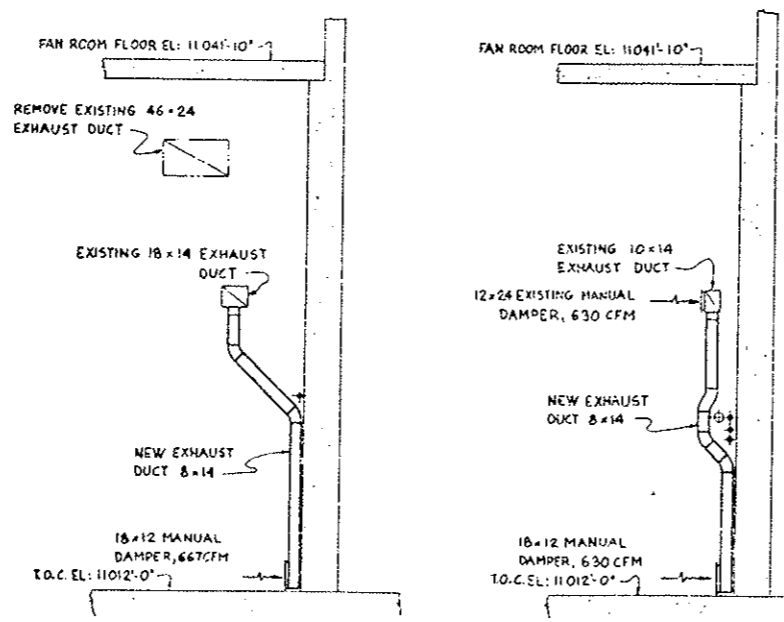
(R-1) REVISED FOR PROJ. NO. 170-3(63)220



PLAN AT ELEVATION 11012'-0"

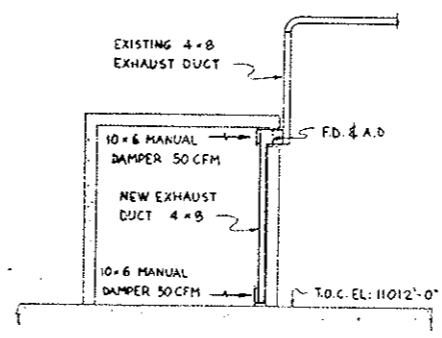


SECTION B

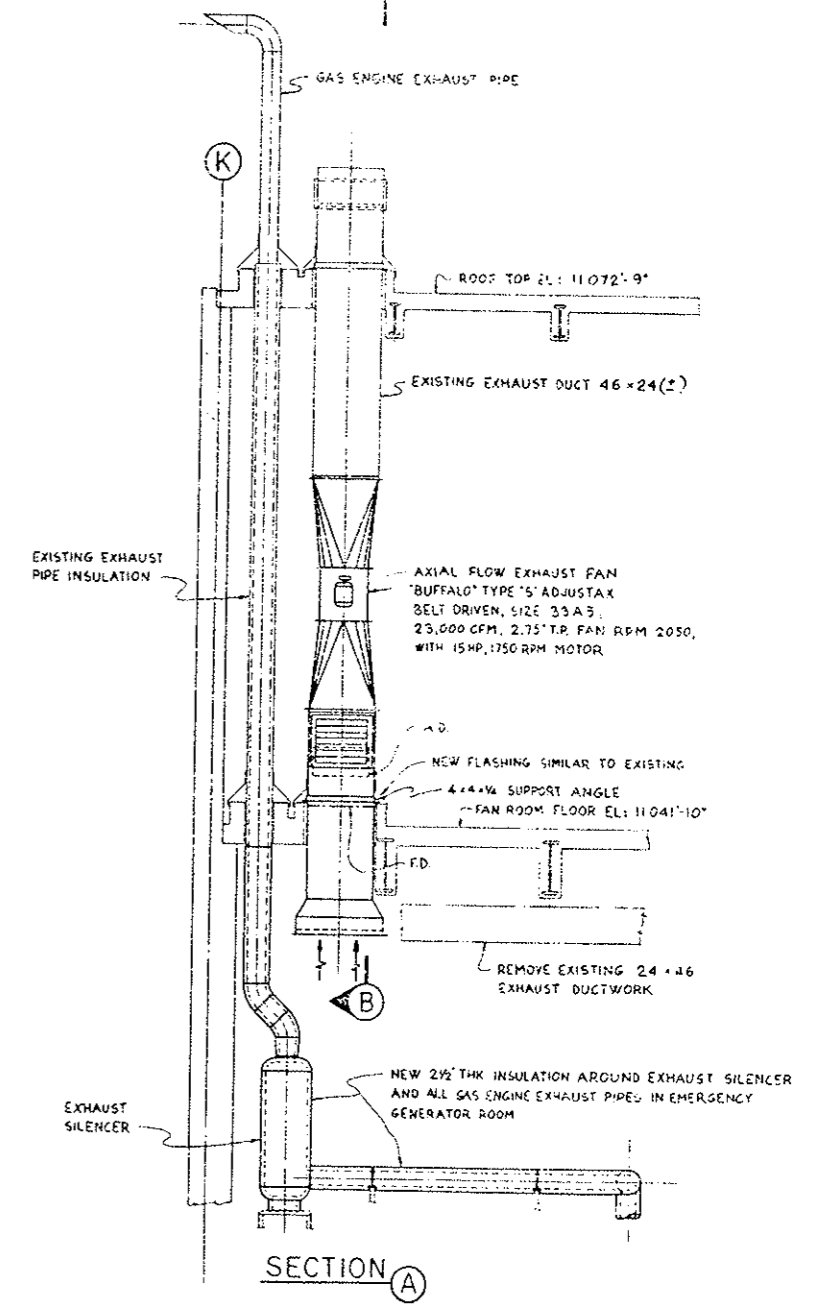


SECTION C

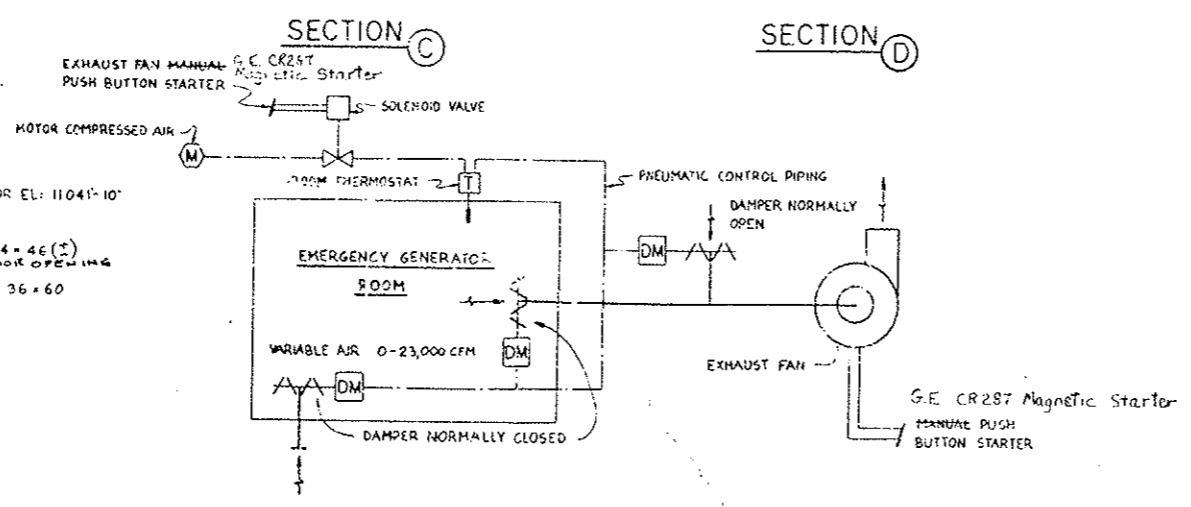
SECTION D



SECTION E



SECTION A



VENTILATION CONTROL DIAGRAM

NOTES:  
1. F.D. & A.D. DEMOTES LOCATION OF FIRE DAMPER AND ACCESS DOOR.

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS  
EISENHOWER MEMORIAL TUNNEL  
SECOND BORE

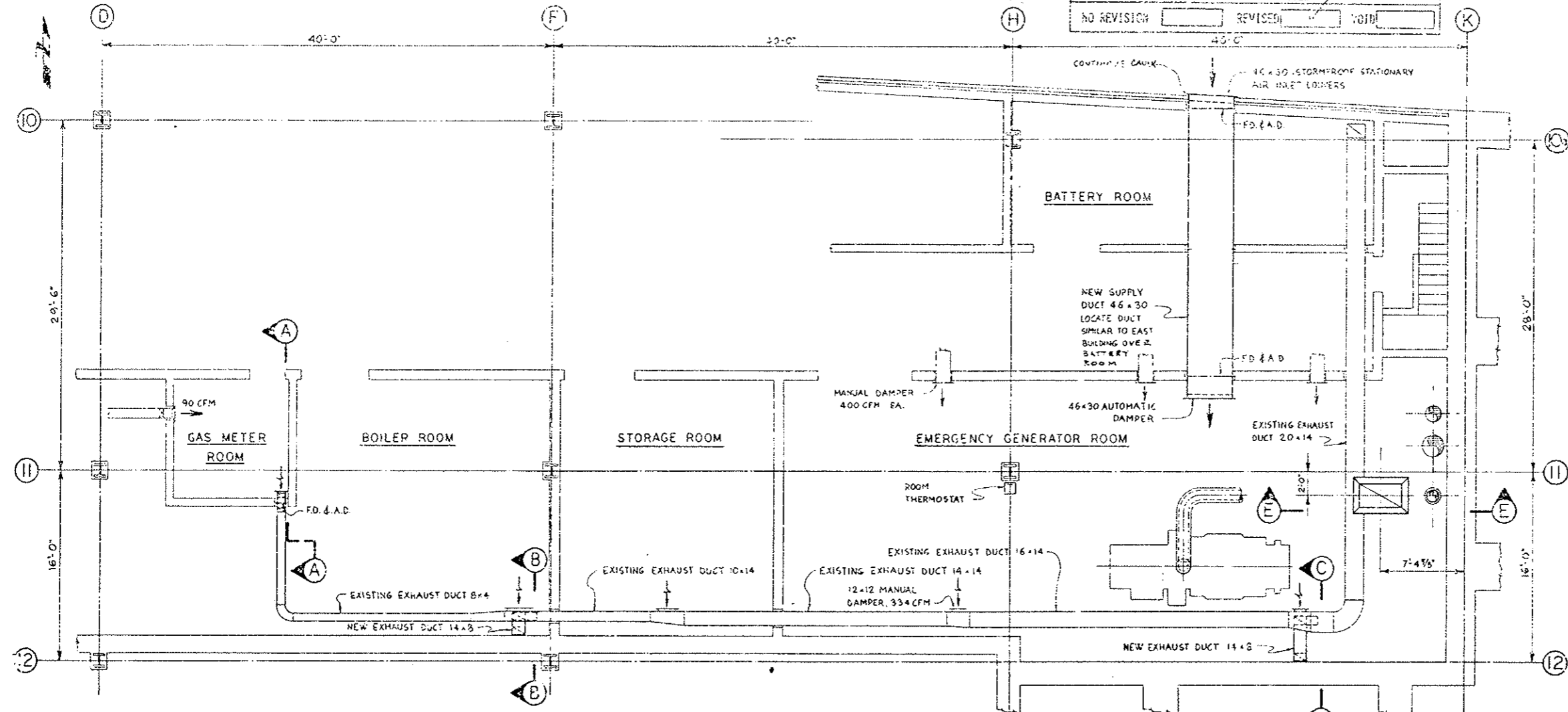
MECHANICAL  
EAST VENTILATION BUILDING  
EMERGENCY GENERATOR ROOM VENTILATION MODIFICATION  
PLAN AND SECTIONS

PRINT RECORD

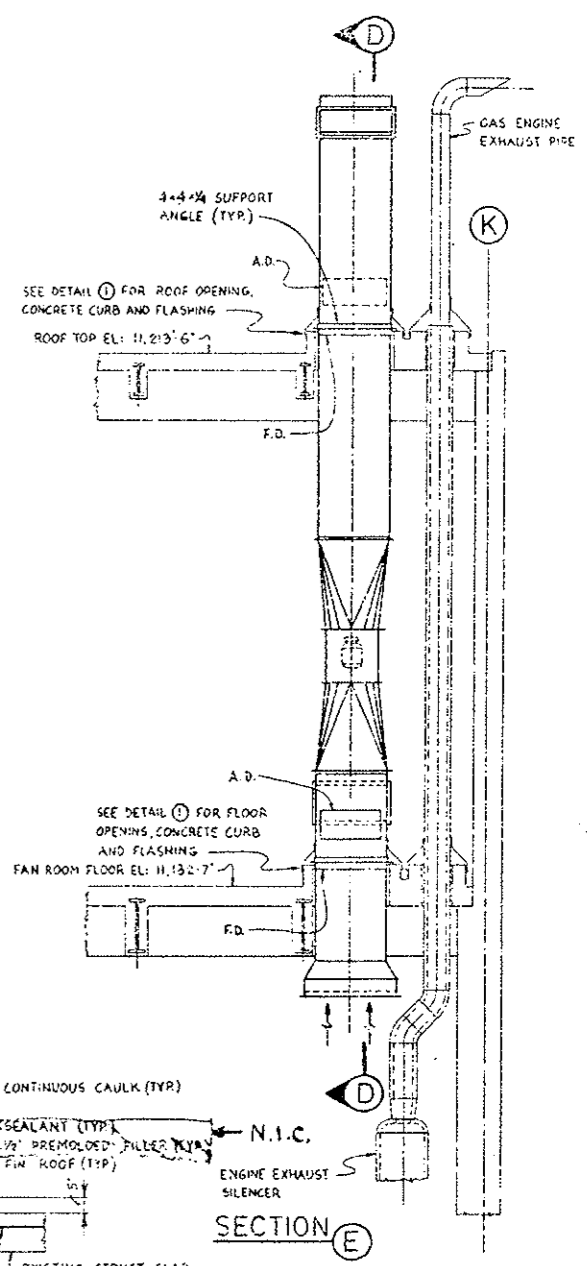
DATE ISSUED	10/13/76
REVISION NO.	0, R1, R1
DESIGNED BY	PCA, P&S, PCA
CHECKED BY	PCA, H. CHIG
FIELD	
DATE	12/1/75

SCALE: 1/4" = 1'-0"  
150'-0" C-16900

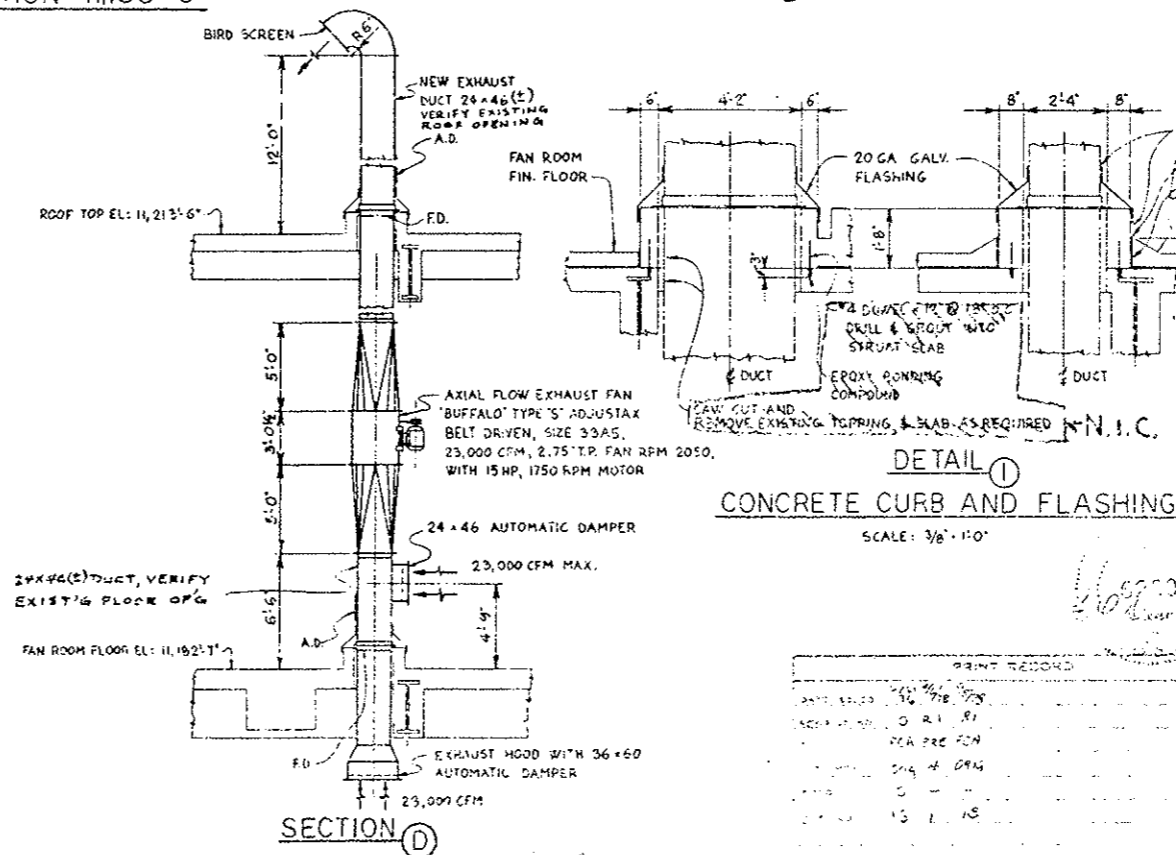
REVISED FOR PROJ. NO. 170 3193 220.



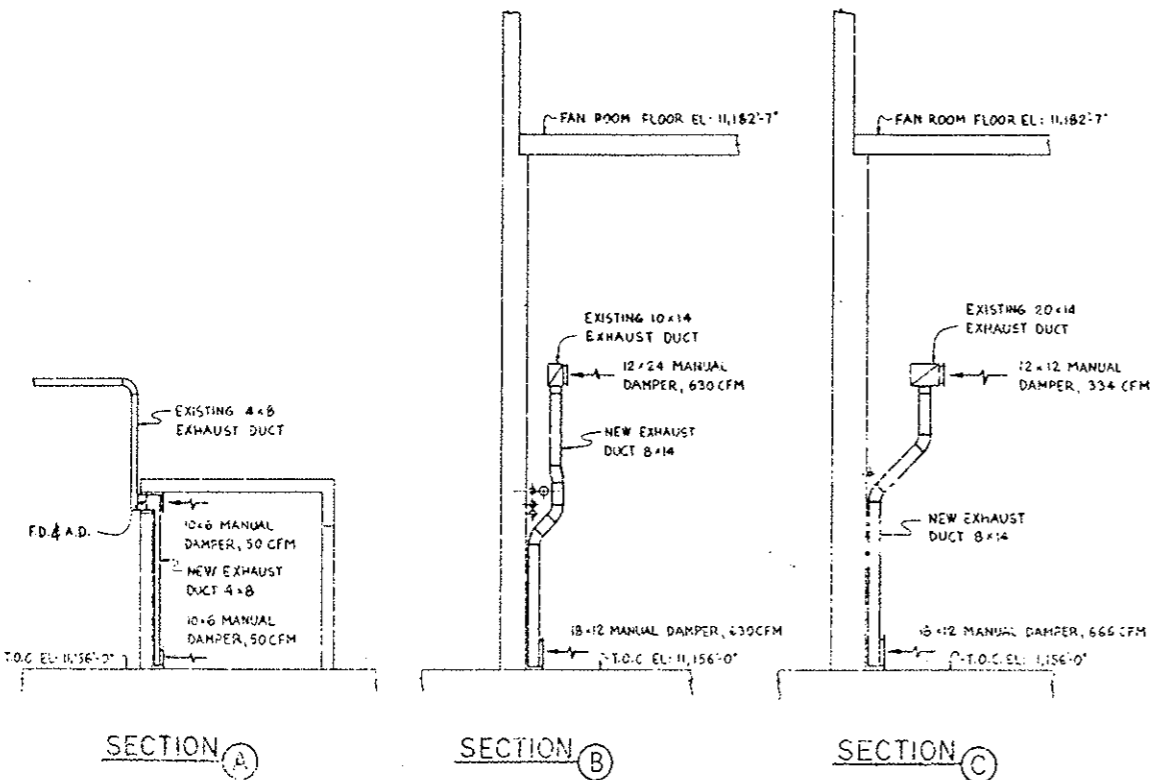
PLAN AT ELEVATION 11,156'-0"



- 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**

NO.	REVISIONS	DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
MECHANICAL				
WEST VENTILATION BUILDING				
EMERGENCY GENERATOR ROOM VENTILATION MODIFICATION				
PLAN, SECTIONS AND DETAIL				
M-205				