

# DEPARTMENT OF HIGHWAYS STATE OF COLORADO

## 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

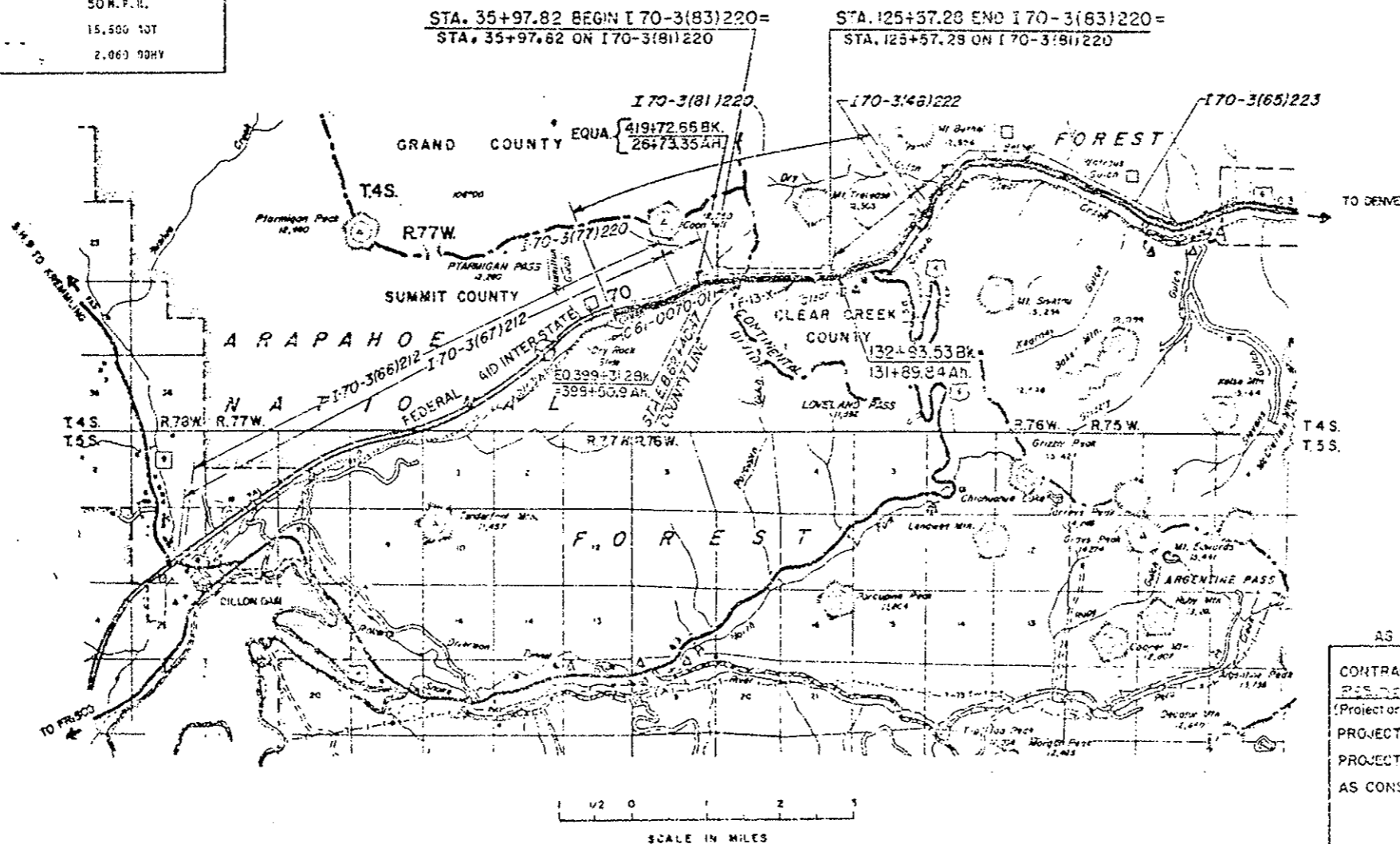
GROSS AND NET LENGTH OF PROJECT 3959.5 FEET=1.697 MILES

REGULATION OF LENGTH AND DESIGN DATA

STATION	DESIGN DATA	
	LENGTH	DESIGN DATA
151+01.50 TO 15+97.82	2642.65	5315.81
15+97.82 BEGIN I 70-3(83)220 15+97.82 ON I 70-3(81)220		
62+43.47		5315.81
125+57.28 END I 70-3(83)220 125+57.28 ON I 70-3(81)220		
125+57.28 TO 315+30.00		5315.81
PROJECT TOTAL	2642.65	5315.81

SUMMARY	LEN. FT.	MILES
SUMMIT COUNTY	2642.65	0.503
CLEAR CREEK COUNTY	5315.81	1.196
NET AND GROSS LENGTH	3959.45	1.697

DESIGN DATA	
MAXIMUM DEGREE OF CURVE	3° 30'
MAXIMUM GRADE	2.23%
MINIMUM SSD HORIZONTAL	350'
MINIMUM SSD VERTICAL	490'
MAXIMUM DESIGN SPEED	50 M.P.H.
1994 DESIGN TRAFFIC	15,500 ADT
	2,060 DDV



PROJECT NO. I 70-3 (83) 220  
R.O.W. Acquired Under I 70-3 (81) 220  
I 70-3(83)  
I 70-3(26)  
PE and Utilities under I 70-3(78)

NO. 1000000  
(R-1) Signature, Title Block 10-7-78-22

ALL SCALES SHOWN ARE FOR ORIGINAL DRAWINGS.

INDEX OF SHEETS  
(SEE SHEET 2 & 3)

AS CONSTRUCTED INFORMATION  
CONTRACTOR WEAVER  
RESIDENT ENGINEER ALAN E. GAY  
(Project or Resident)  
PROJECT STARTED April 2 1979  
PROJECT COMPLETED March 1 1980  
AS CONSTRUCTED PLANS APPROVED  
TITLE \_\_\_\_\_ DATE \_\_\_\_\_

DIVISION OF HIGHWAYS  
APPROVED: \_\_\_\_\_  
DATE \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
APPROVED: \_\_\_\_\_  
DATE \_\_\_\_\_  
DIVISION ENGINEER

(R-1) REVISED SHEET TITLES 10-17-78 & E.B.

PROJECT SHEET NO.	SERIES SHEET NO.	GENERAL
1	G-1	TITLE SHEET AND SKETCH MAP AND TABULATION OF LENGTH AND DESIGN 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

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57	D-2	INLET DRAIN PIPING LOCATION - NORTH AND SOUTH CURB
58	D-3	INLET AND MANHOLE LOCATION PLAN - STATION 35+00 TO 65+00
59	D-4	INLET AND MANHOLE LOCATION PLAN - STATION 55+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

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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
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Walkway Erection Physical Walkway Framing Details  
Concrete Walkway Panels

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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
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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

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40	FH-3	FIRE HYDRANT STATION MAIN LINE SHUT OFF VALVE
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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
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55	FH-18	WATER MAIN SYSTEM EAST VENTILATION BUILDING SHEET NO. 2

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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

DIVISION OF HIGHWAYS			
INDEX OF SHEETS			
Designer C.O.G.H.	Structure		
Detailer	Numbers		
Drawing Number	37		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.

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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
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104 AX-BA	C-20	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
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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
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115	C-30	TRANSITION AREA DETAILS FOR THE SUSPENDED PORCELAIN ENAMEL CEILING AND SUPPORT SYSTEM FOR THE DUCT DIVIDER WALL AND PRECAST CEILING SLABS
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117	C-32	ACCESS HATCH, DUCT DIVIDER DOOR AND SAFETY SCREEN DETAILS
117 AX	C-33	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

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PROJECT SHEET NO.

SERIES SHEET NO.

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130	E-G-75	GENERAL GROUNDING PLANS & DETAILS
131	E-G-85	TELEPHONE RISER DIAGRAM
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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
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145	E-WE-105	WEST & EAST VENTILATION BUILDINGS MISCELLANEOUS DETAILS SHEET NO. 2
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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
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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

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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
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DIVISION OF HIGHWAYS

INDEX OF SHEETS

Designer \_\_\_\_\_ Structure \_\_\_\_\_

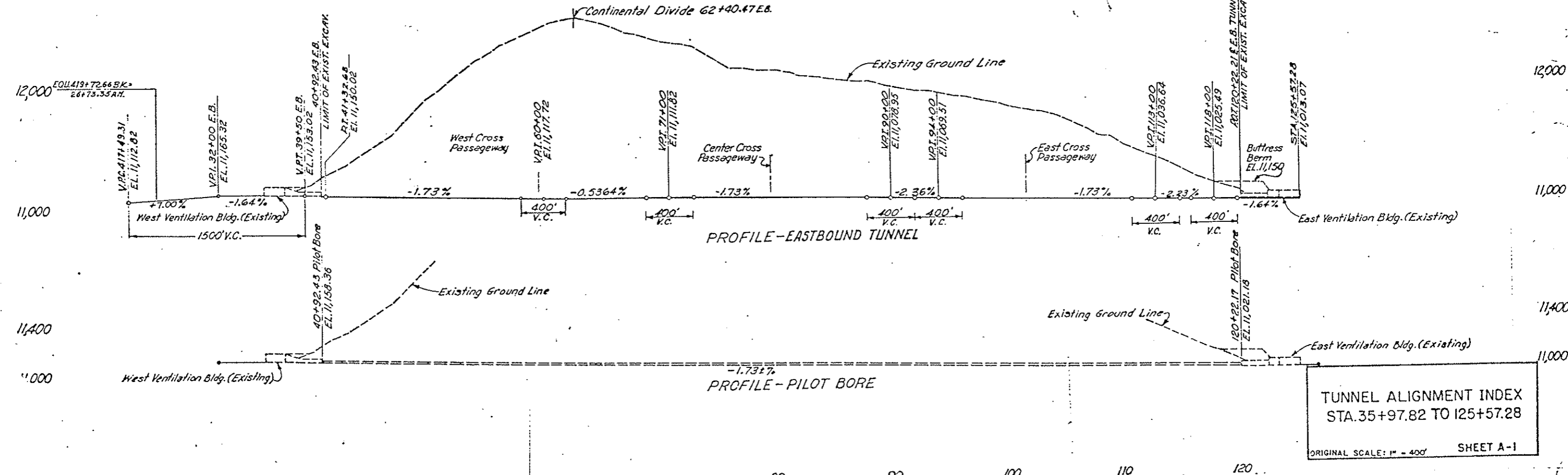
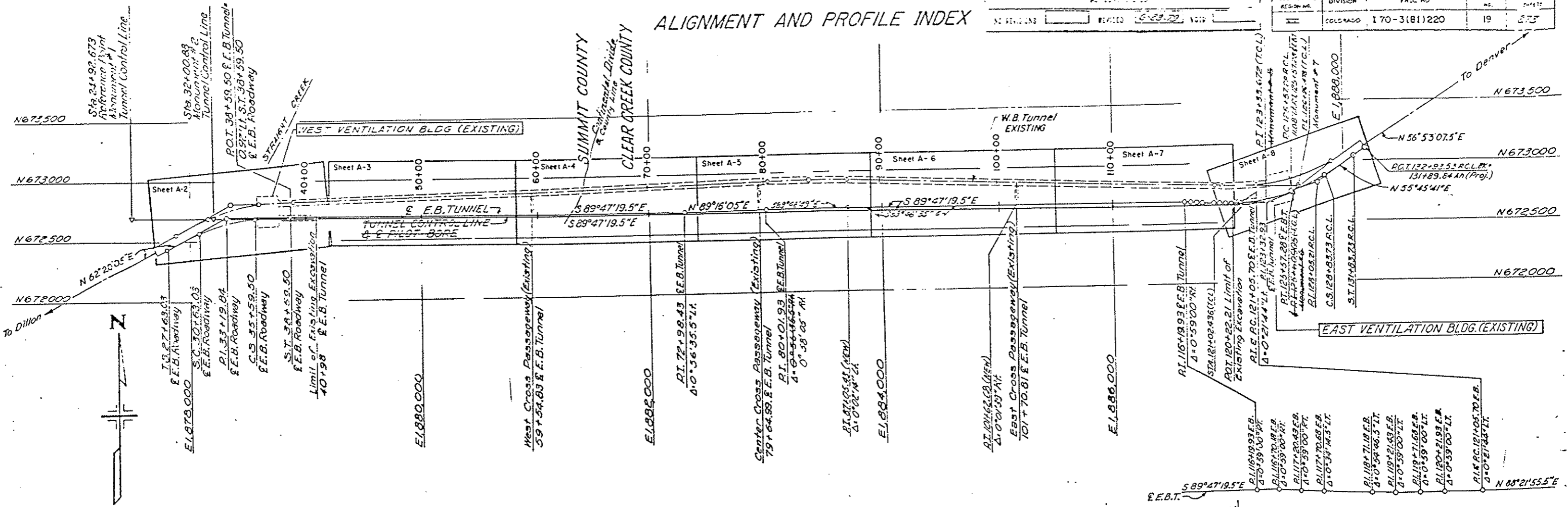
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Drawing Number \_\_\_\_\_ of \_\_\_\_\_ Drawings

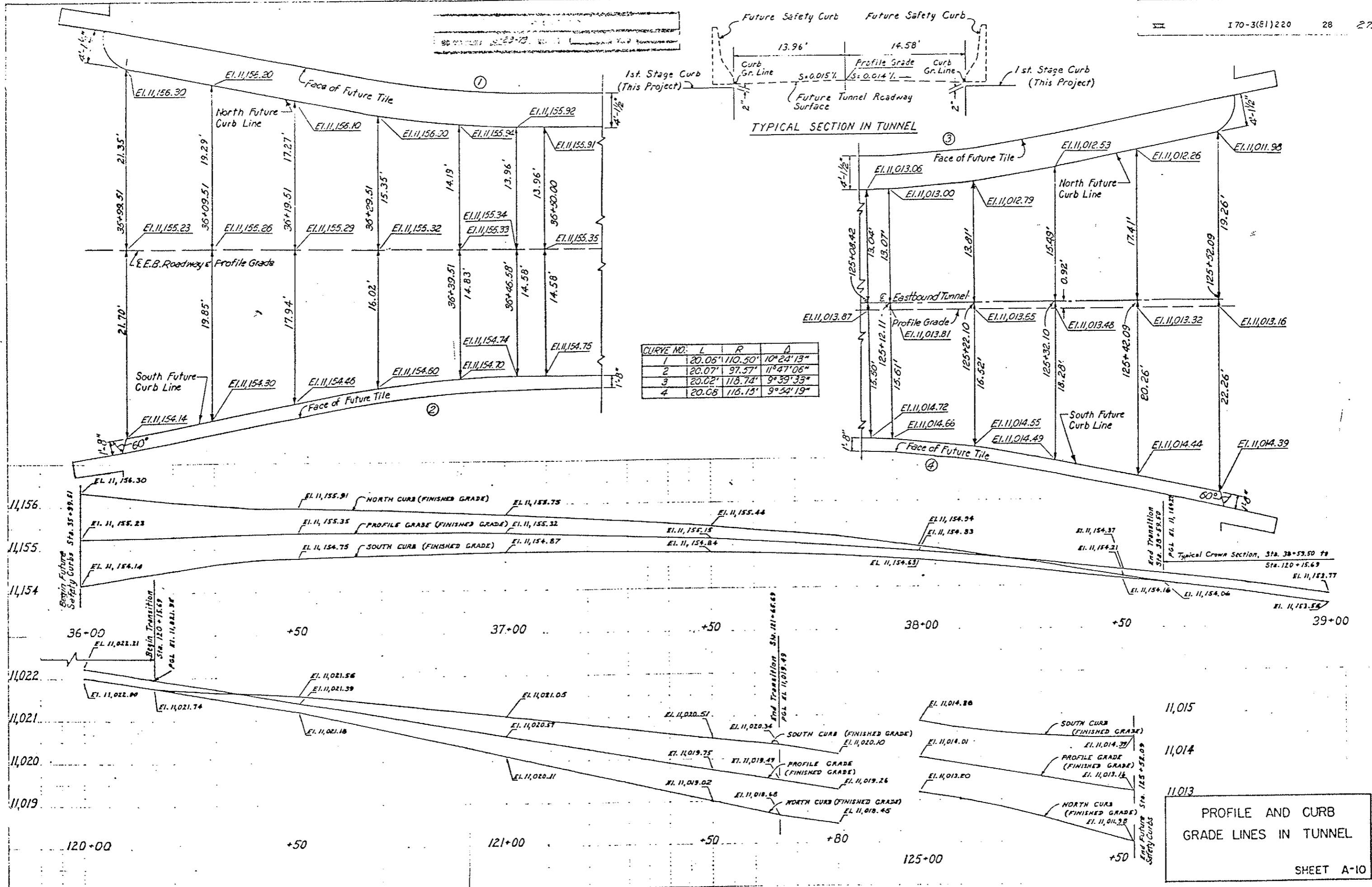
# ALIGNMENT AND PROFILE INDEX

AS BUILT	NO. REVISIONS	REVISION	DATE
		6-23-22	2022

REGIONAL PROJECT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
II	COLORADO	I70-3(81)220	19	275



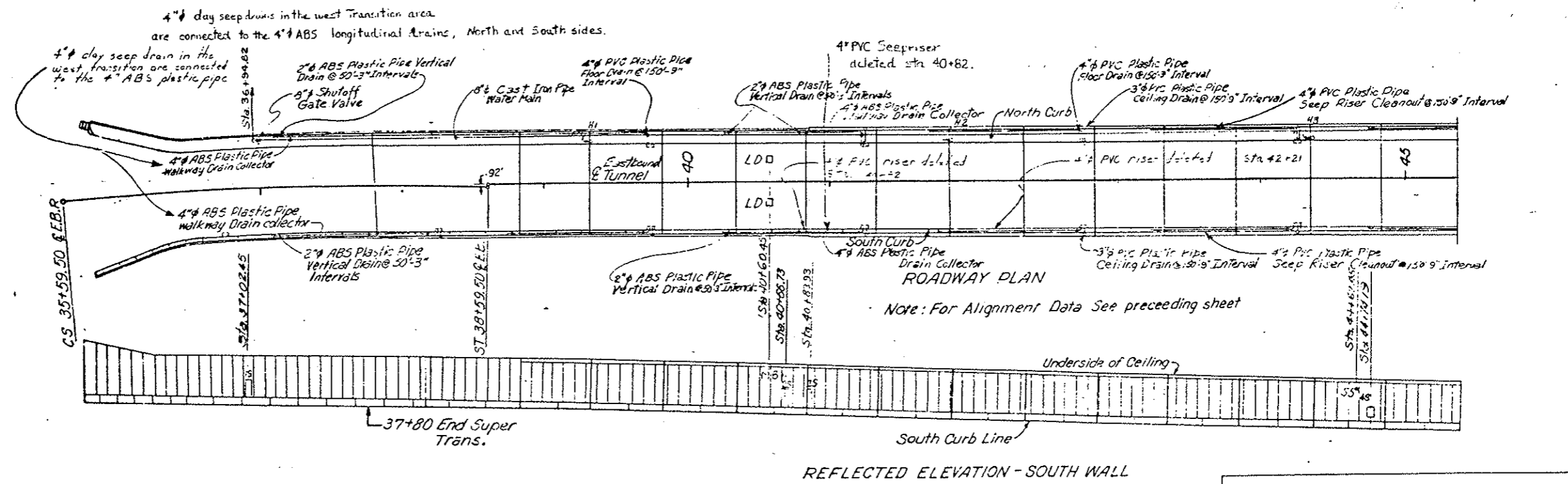
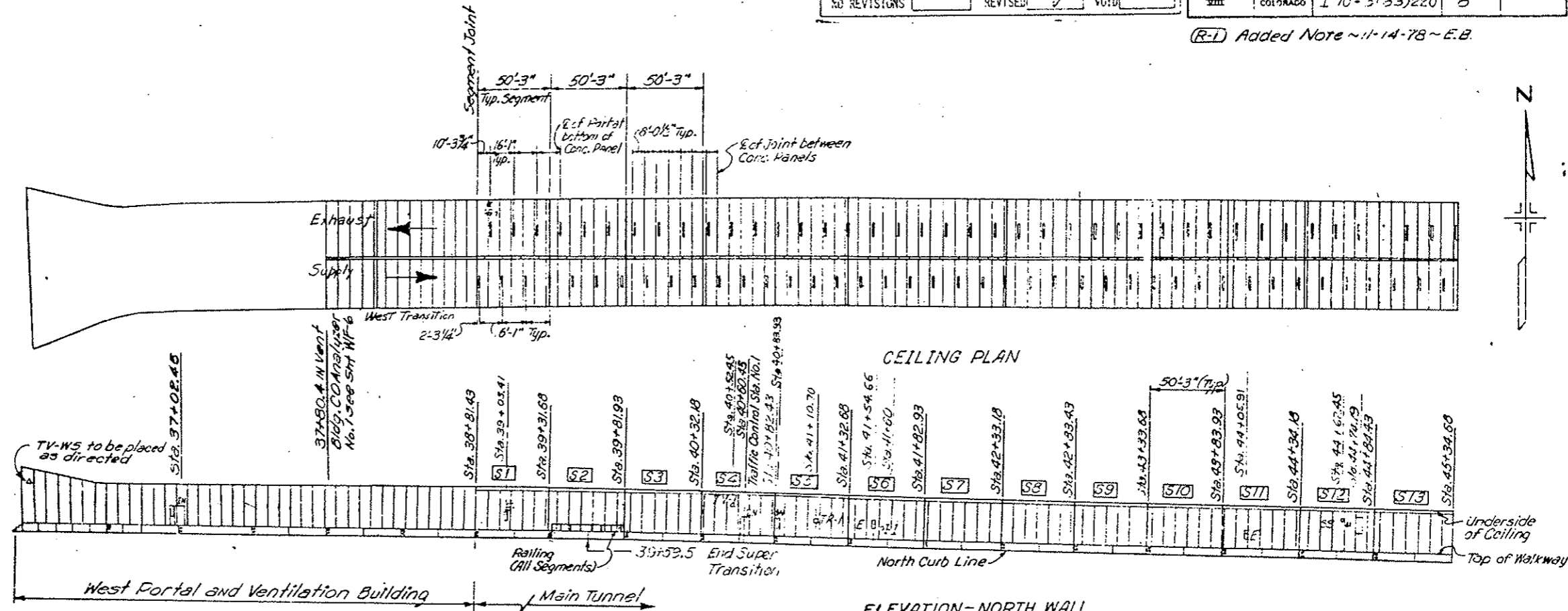
TUNNEL ALIGNMENT INDEX  
 STA. 35+97.82 TO 125+57.28  
 ORIGINAL SCALE: 1" = 400'  
 SHEET A-1



PROFILE AND CURB  
GRADE LINES IN TUNNEL  
SHEET A-10

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

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



- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet - North Wall
  - S Electrical Pullbox Cabinet - South Wall
  - MB Message Board (Traffic Control System)
  - LD Loop Detector
  - TV Television Camera
  - SS Stop Signal
  - TR Tunnel Emergency Reporting Telephone Cabinet
  - ASH Air Sampling Head
  - CA Carbon Monoxide Analyzer Cabinet
  - PRD 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.

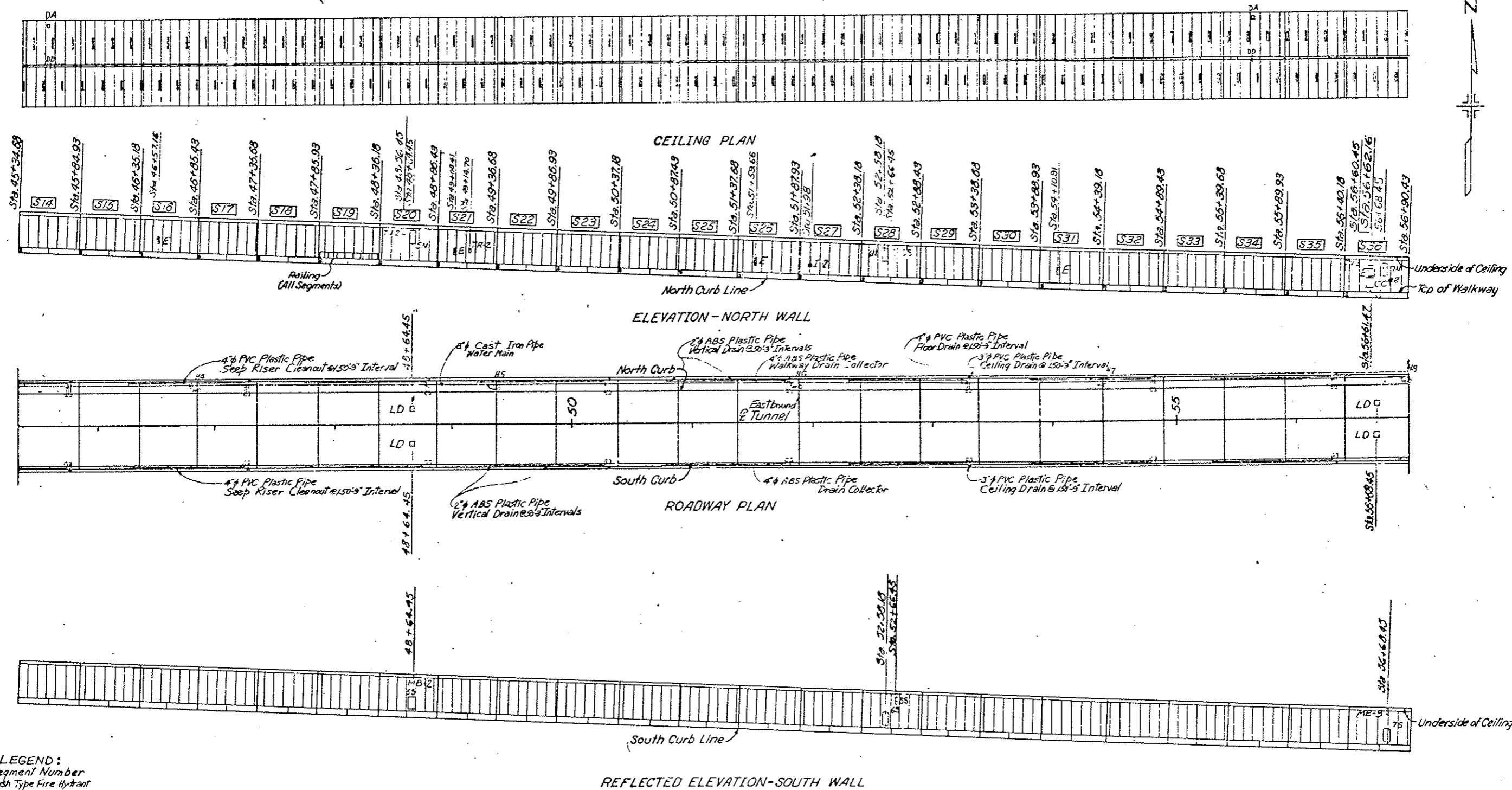
**NOTES:**  
 All longitudinal dimensions are measured from the centerline of roadway. Stationing given at ends of tunnel segments and at structure stations are along the centerline of roadway. East-west longitudinal dimensions are taken as along the centerline of roadway. In cut and cover along the centerline of roadway.

**GENERAL ARRANGEMENT  
 WEST PORTAL TO STA. 45+34.63**

DWG. NO. 100

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

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I 70-3(33)220	9	

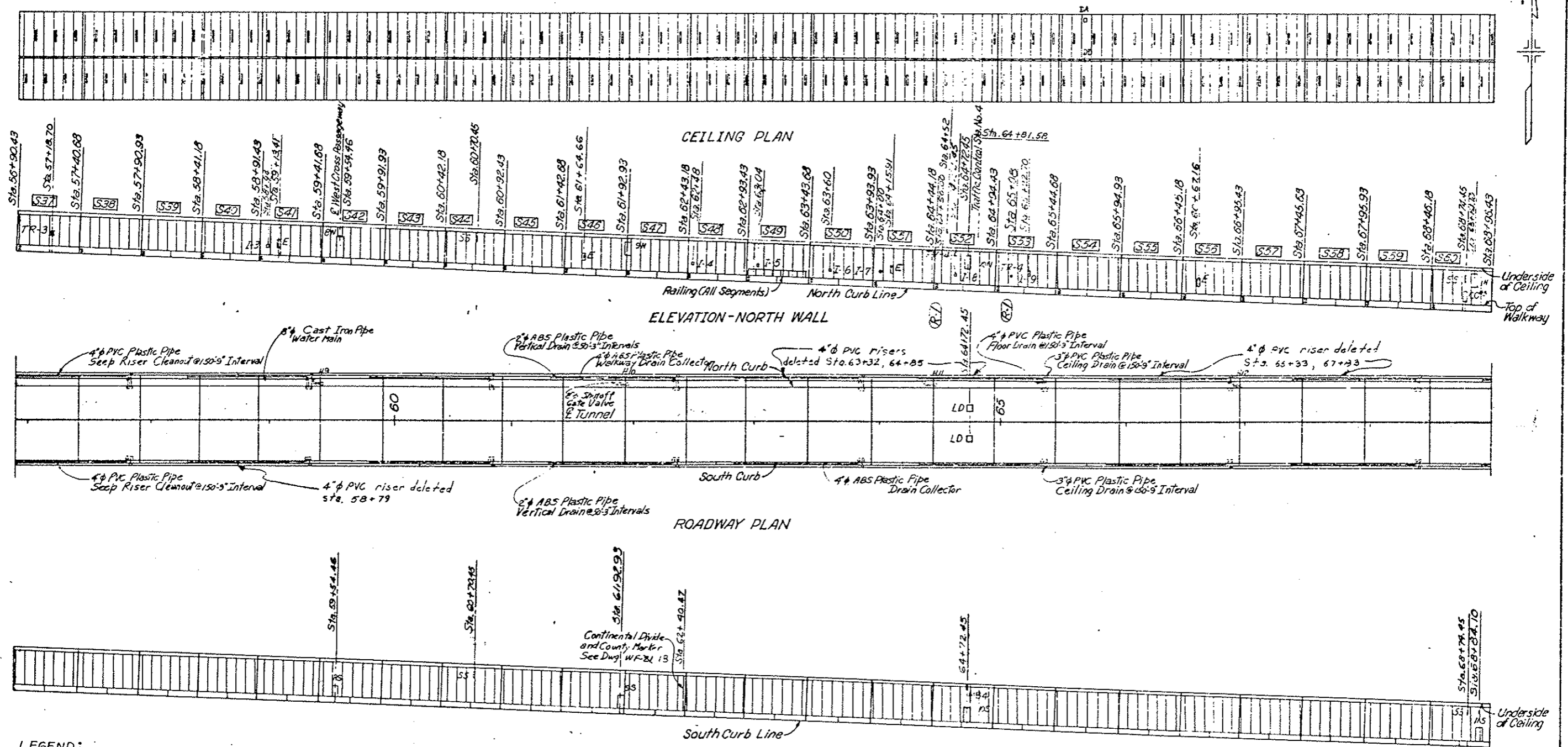


- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet-North Wall
  - S Electrical Pullbox Cabinet-South Wall
  - MB Message Board (Traffic Control System)
  - LD Loop Detector
  - TV Television Camera
  - SS Stop Signal
  - TR Tunnel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

AS CONSTRUCTED		FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED	VOID	III	COLORADO	I 70-3(83)220	10

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

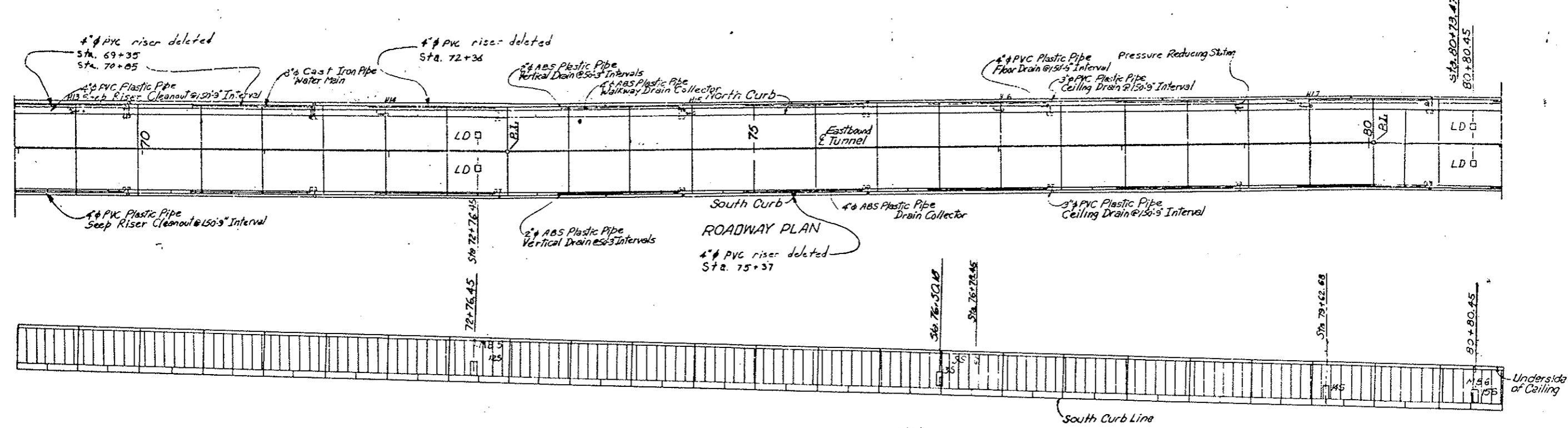
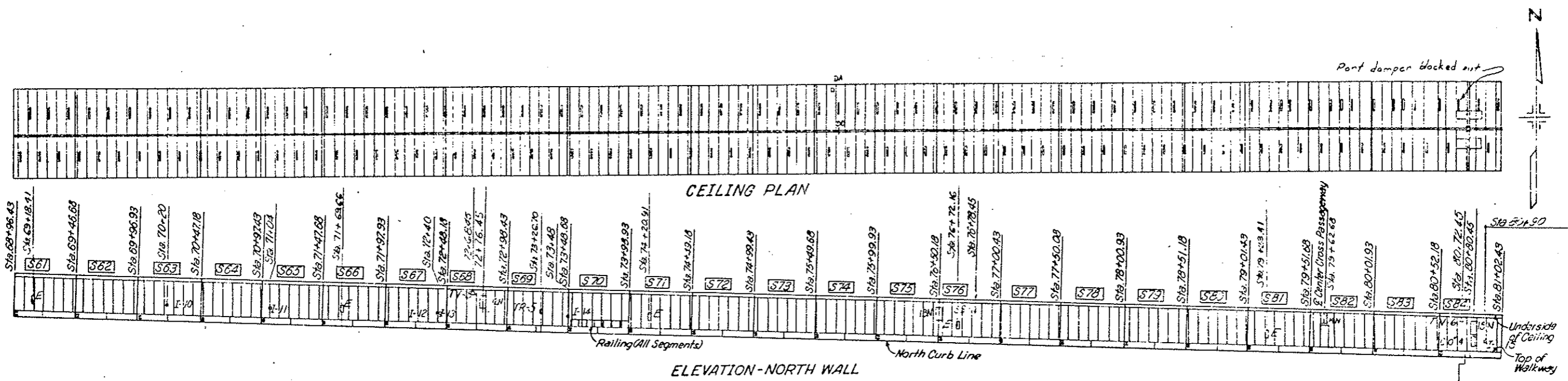


- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet-North Wall
  - S Electrical Pullbox Cabinet-South Wall
  - MB Message Board (Traffic Control System)
  - LD Loop Detector
  - TY Television Camera
  - SS Stop Signal
  - TR Emergency Reporting Telephone Cabinet
  - AS Air Sampling Head
  - CA Carbon Monoxide Analyzer Cabinet
  - FR Pressure Reducing Station
  - GA Gas Access
  - MT Motor Ventilator
  - CD Cont. Divide

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



AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	III	COLORADO	I 70-3(83)220	11	

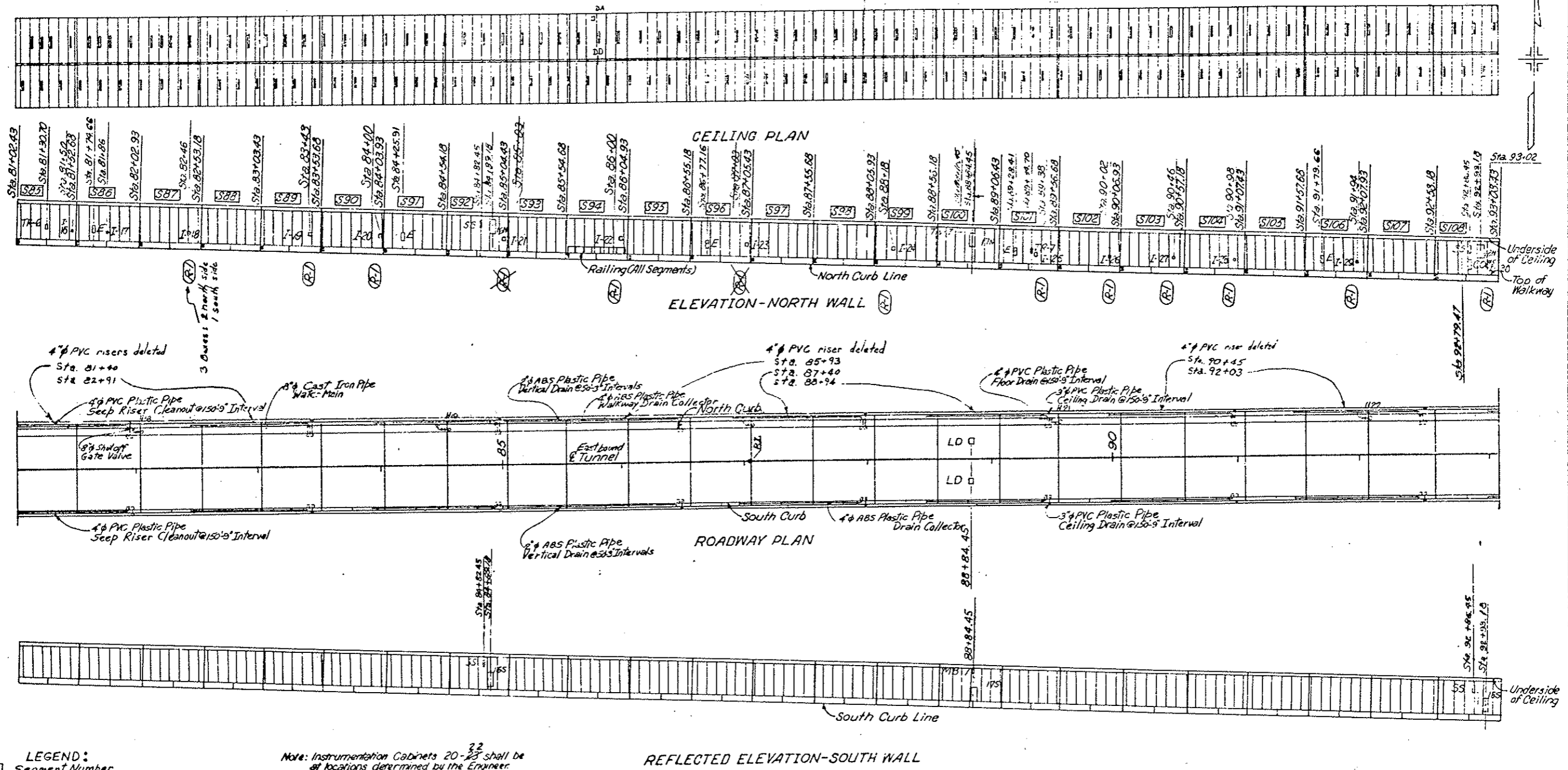


- LEGEND:**
- [S] Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet-North Wall
  - S Electrical Pullbox Cabinet-South Wall
  - MB Message Board (Traffic Control System)
  - LD Loop Detector
  - TV Television Camera
  - SS Stop Signal
  - TR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

GENERAL ARRANGEMENT  
 STA. 68+96.43 TO STA. 81+02.43  
 DWG. N2 6-1

AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	12	COLORADO	I 70-3(83)220	12	

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



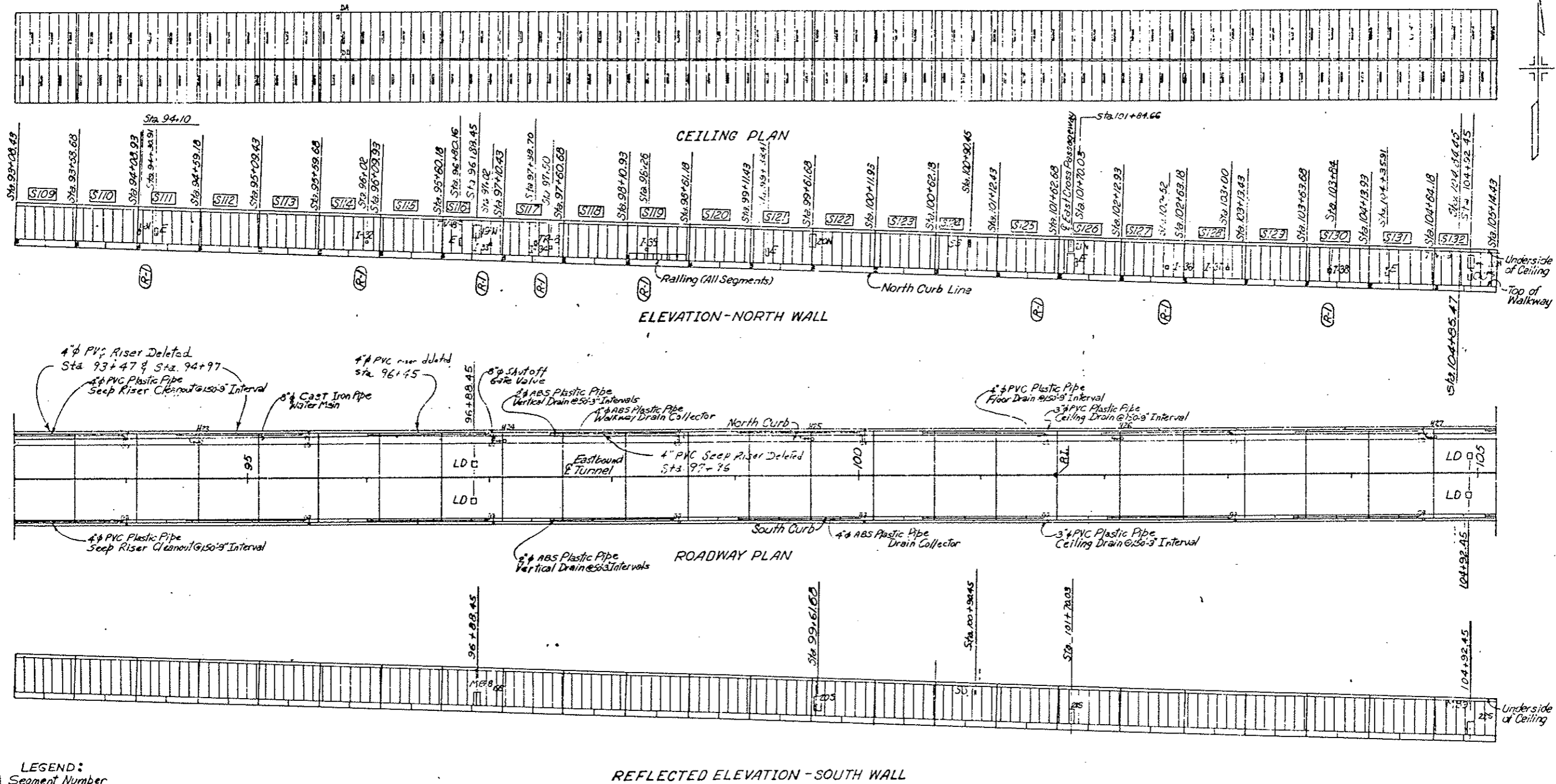
- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet-North Wall
  - S Electrical Pullbox Cabinet-South Wall
  - MB Message Board (Traffic Control System)
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  - SS Stop Signal
 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

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

GENERAL ARRANGEMENT  
STA. 81+02.43 TO STA. 93+08.43  
DWG. NO. C-12

AS CONSTRUCTED		FEDERAL AID REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VOID <input type="checkbox"/>	COLORADO	I 79-3(93)220	13	

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

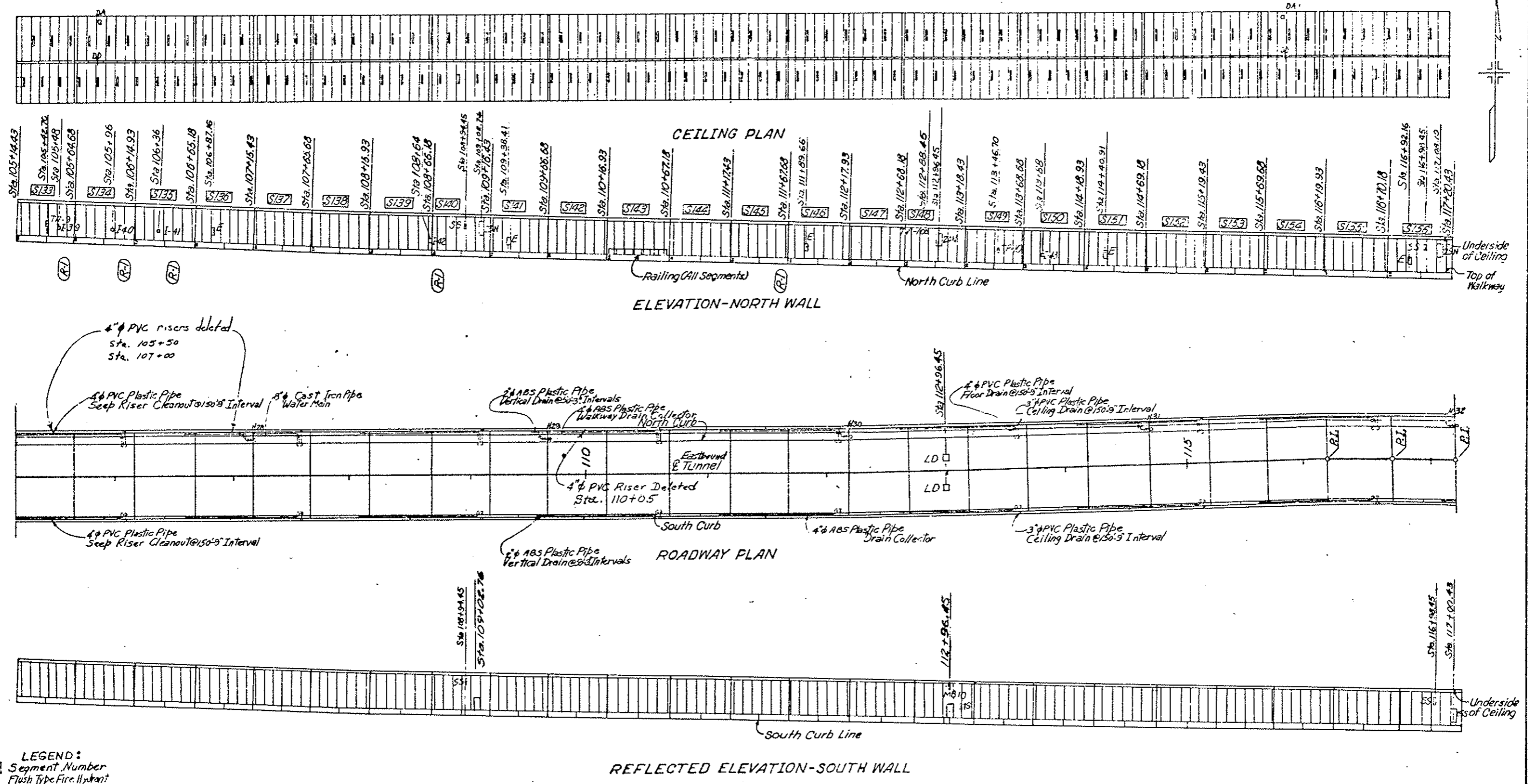


- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet-North Wall
  - S Electrical Pullbox Cabinet-South Wall
  - MB Message Board (Traffic Control System)
  - LD Loop Detector
  - TV Television Camera
  - SS Stop Sign
  - TR Tunnel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

GENERAL ARRANGEMENT  
 STA. 93+08.43 TO STA. 105+14.43  
 DWG. NO. 3-13

AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VOID	III	COLORADO	170-3(33)220	14

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



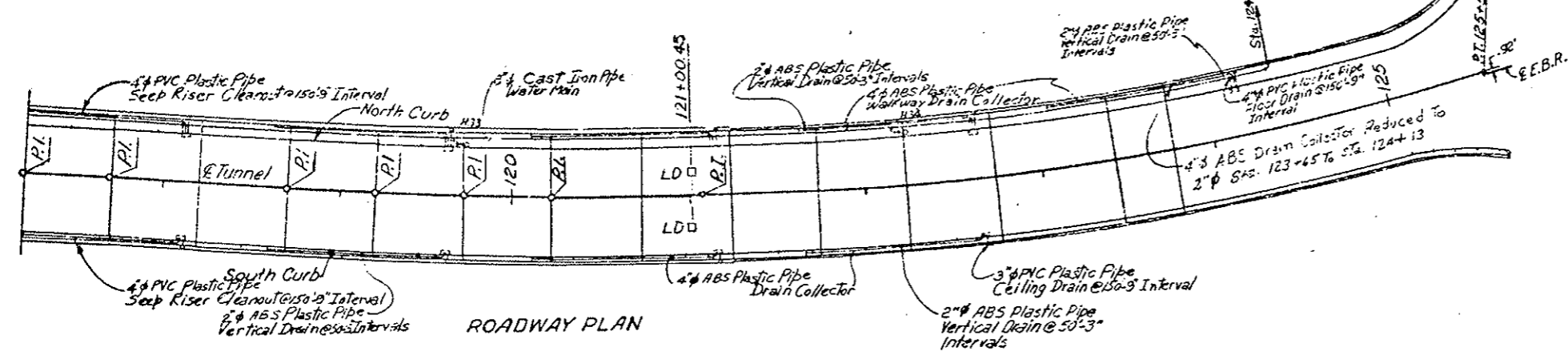
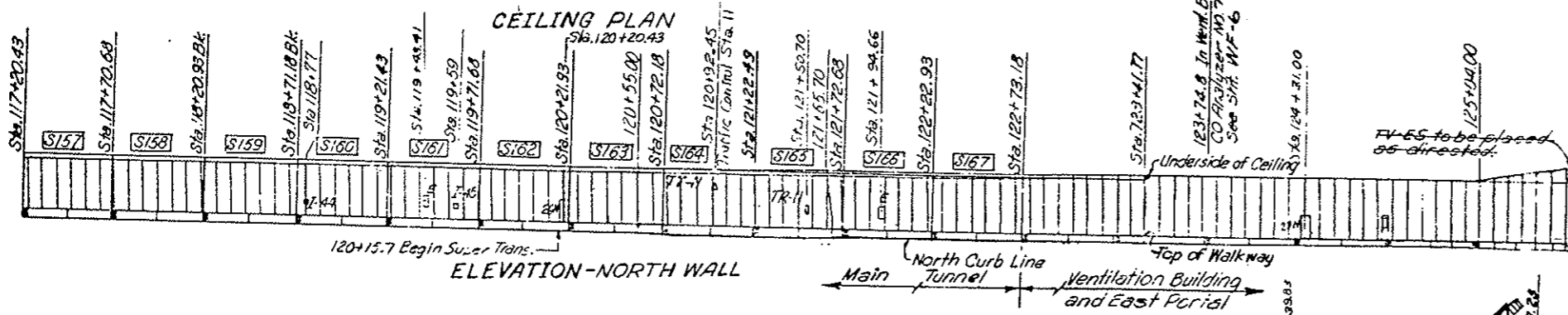
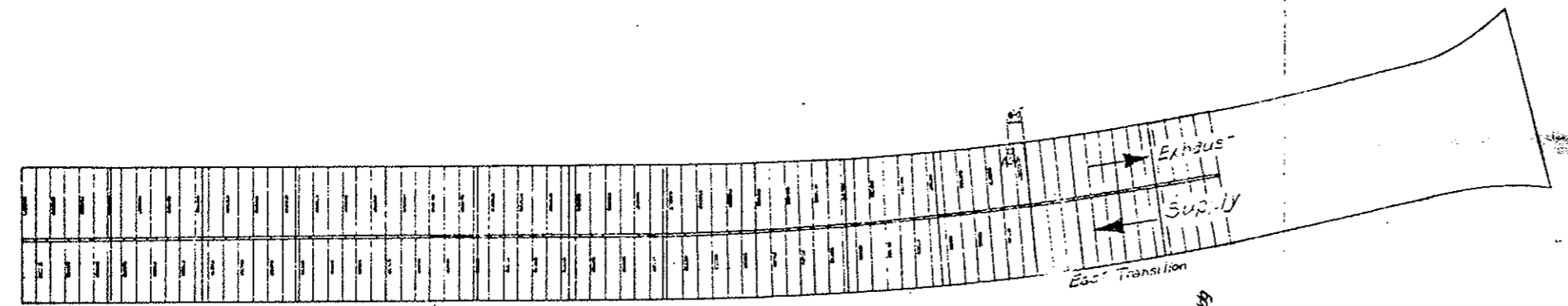
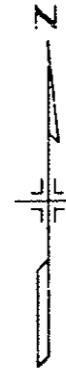
- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet-North Wall
  - S Electrical Pullbox Cabinet-South Wall
  - MB Message Board (Traffic Control System)
  - LD Loop Detector
  - T Television Camera
  - SS Stop Signal
  - RE Road Emergency Reporting Telephone Cabinet
  - PSH Pit 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

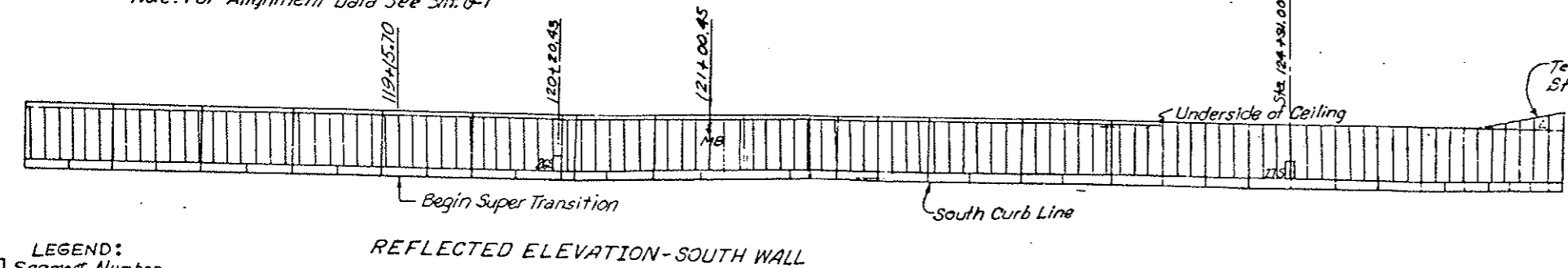
FEDERAL ROAD DIST. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
170-3(23)220	COLORADO	170-3(23)220	15	

AS CONSTRUCTED

NO REVISIONS  REVISED  7/10



Note: For Alignment Data See Sht. 6-7

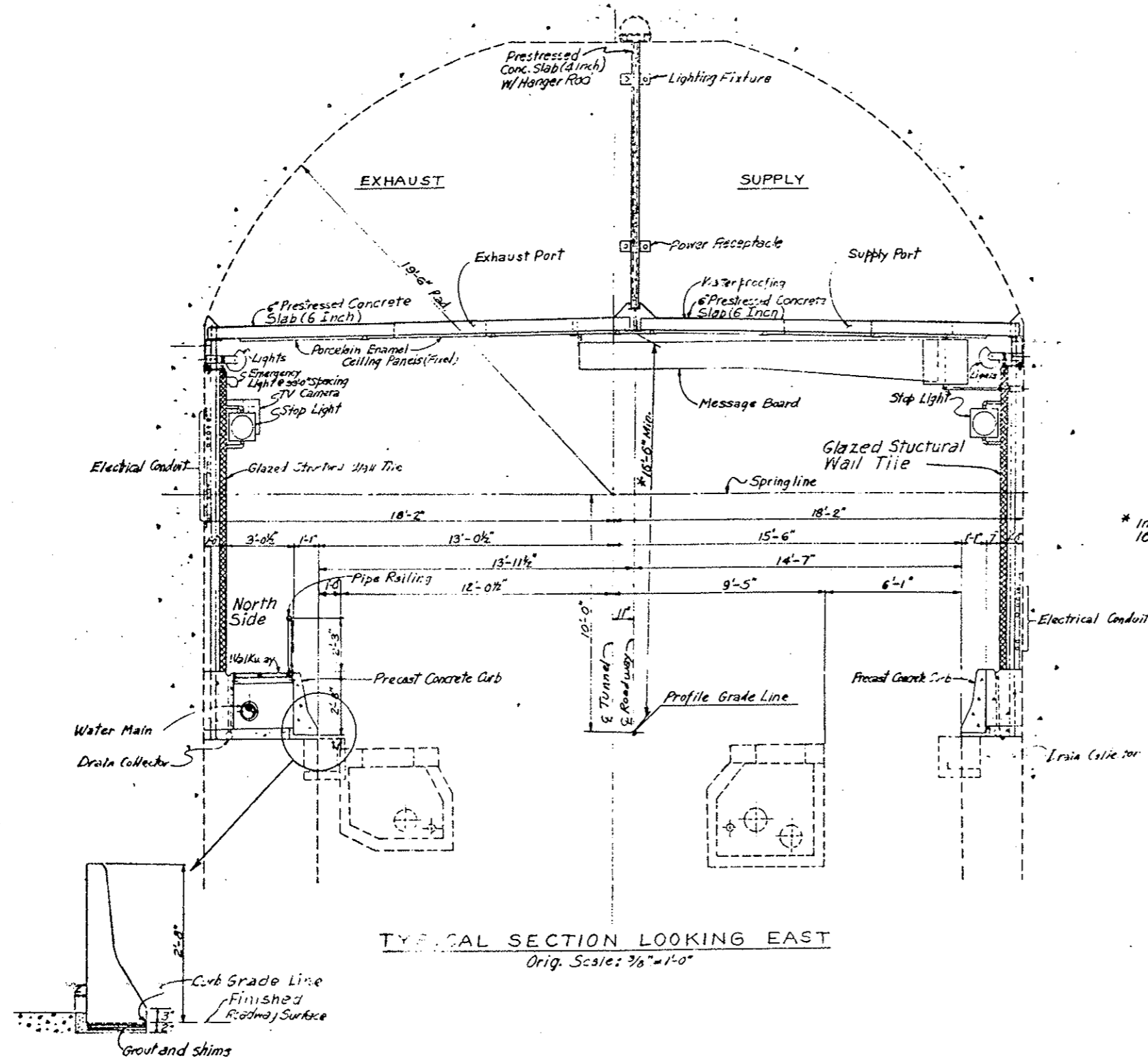


- LEGEND:**
- S Segment Number
  - H Flush Type Fire Hydrant
  - E Fire Extinguisher Cabinet
  - N Electrical Pullbox Cabinet-North Wall
  - S Electrical Pullbox Cabinet
  - MB Message Board (Traffic Control System)
  - LD Loop Detector
  - TV Television Camera
  - SS Stop Signal
  - TR Tunnel Emergency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

GENERAL ARRANGEMENT  
 STA. 117+20.43 TO EAST PORTAL  
 DWG. NO. 6-15

AS CONSTRUCTED		FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS <input checked="" type="checkbox"/>	REVISED <input type="checkbox"/>	VOID <input type="checkbox"/>	XIII	COLORADO	I 70-3(83)220	16

REVISIONS	



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

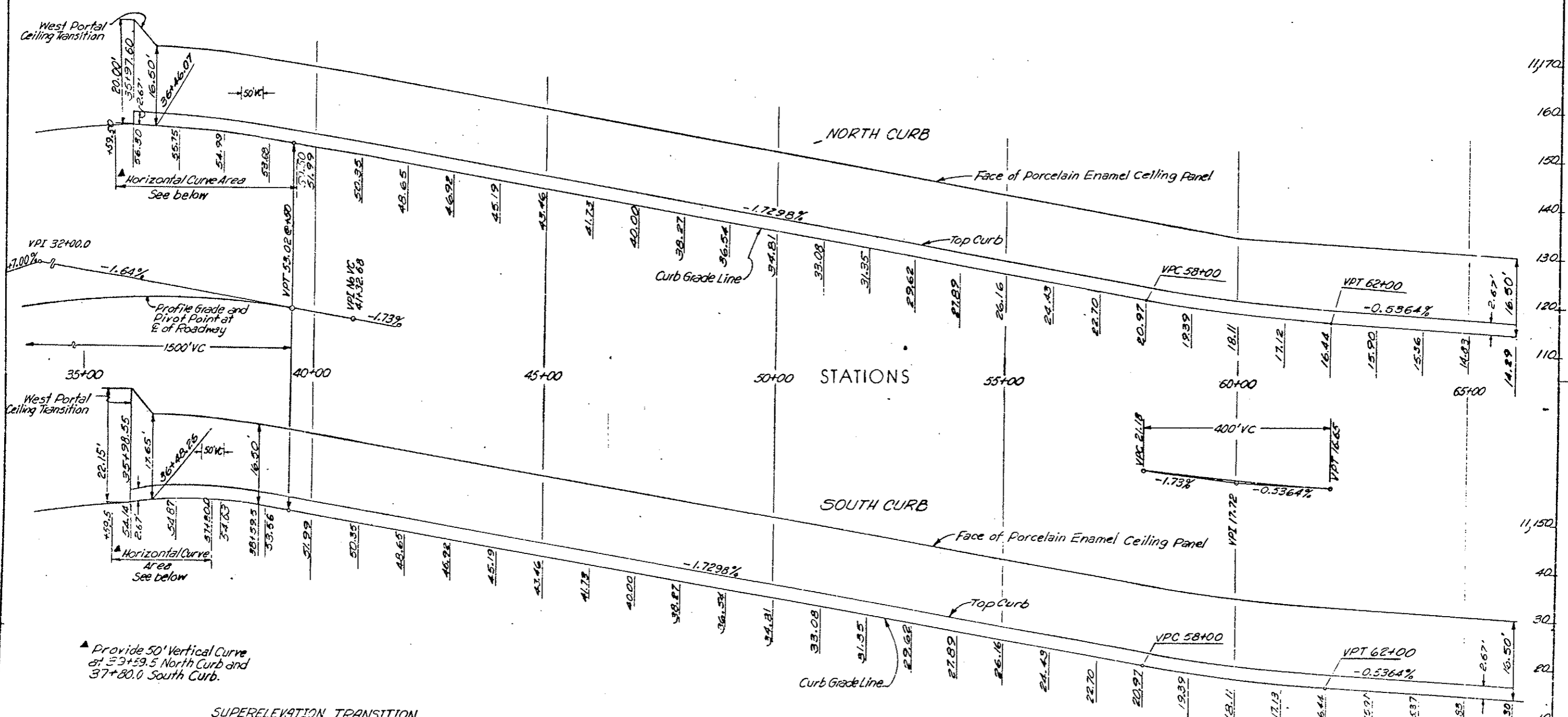
DESIGNED BY	CHECKED BY
CHECKED BY	QUANTITIES BY
DATE	CHECKED BY

DIVISION OF HIGHWAYS	
TYPICAL SECTION TUNNEL INTERIOR	
Designer: CDOT	Structure Numbers:
Detailer: J. L. Smith	of Drawings:
Drawing Number: 3-16	

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

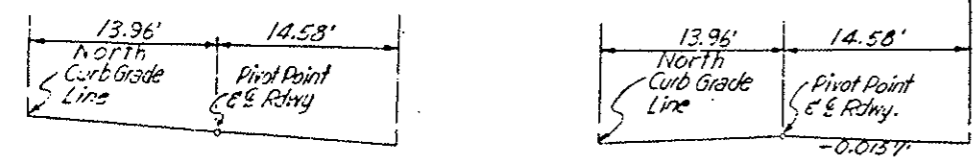
AS CONSTRUCTED

NO REVISIONS  REVISED  VOID



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

**SUPERELEVATION TRANSITION (Looking East)**



Section	Station	Slope
Full Super	35+59.5	0.0581% North and South
Super Transition	37+80.0	+0.0151% North, -0.0151% South
Normal Section	38+53.0	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

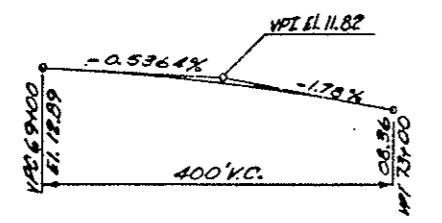
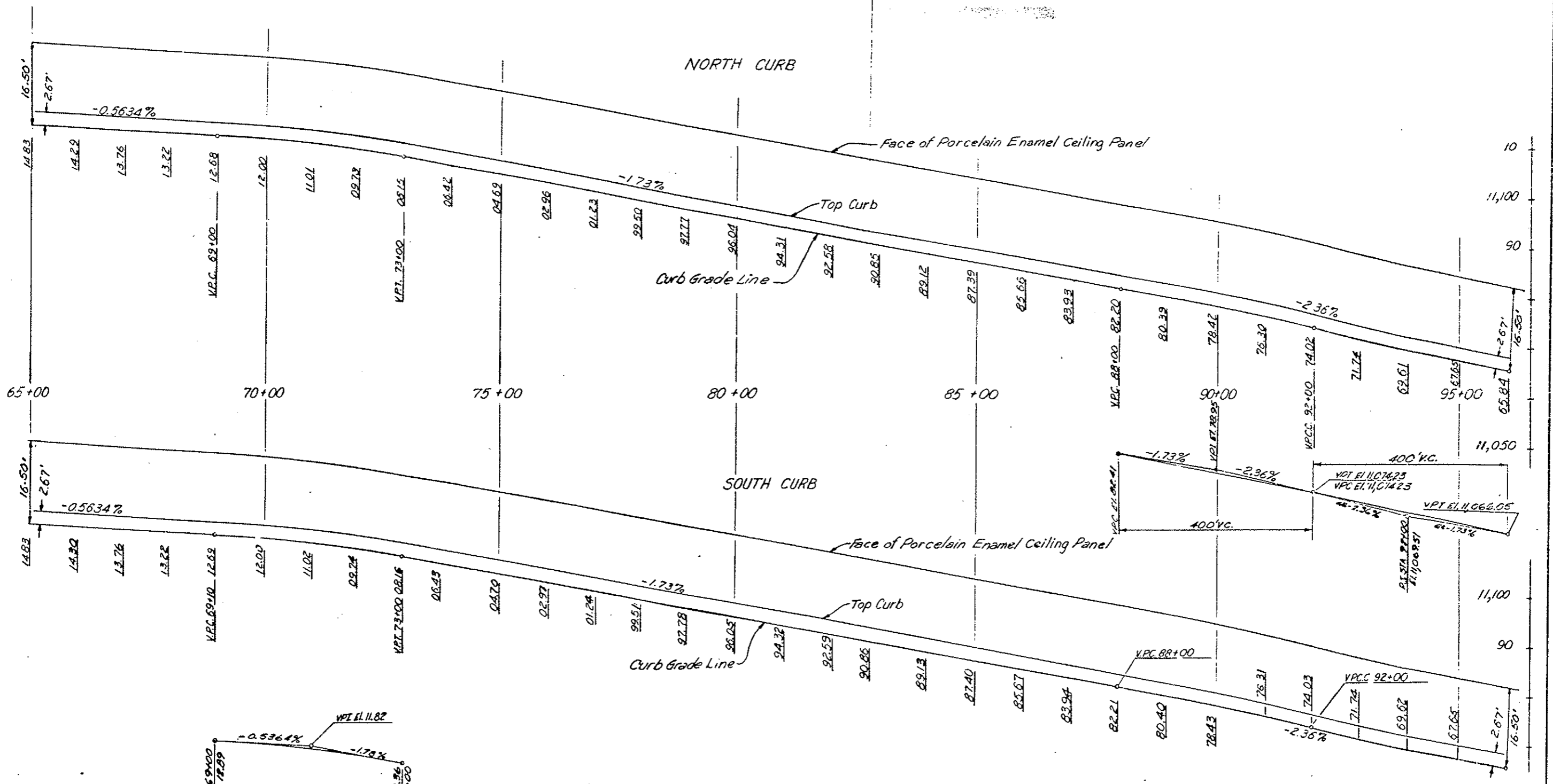
Orig. Scale: 1"=100' Horiz.  
 1"=10' Vert.

**DIVISION OF HIGHWAYS**

**CURB GRADE LINES IN TUNNEL**

Designer C.D.O.H.	Structure Number
Detailer	Number
Drawing Number 2-17	at 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 <input type="checkbox"/>

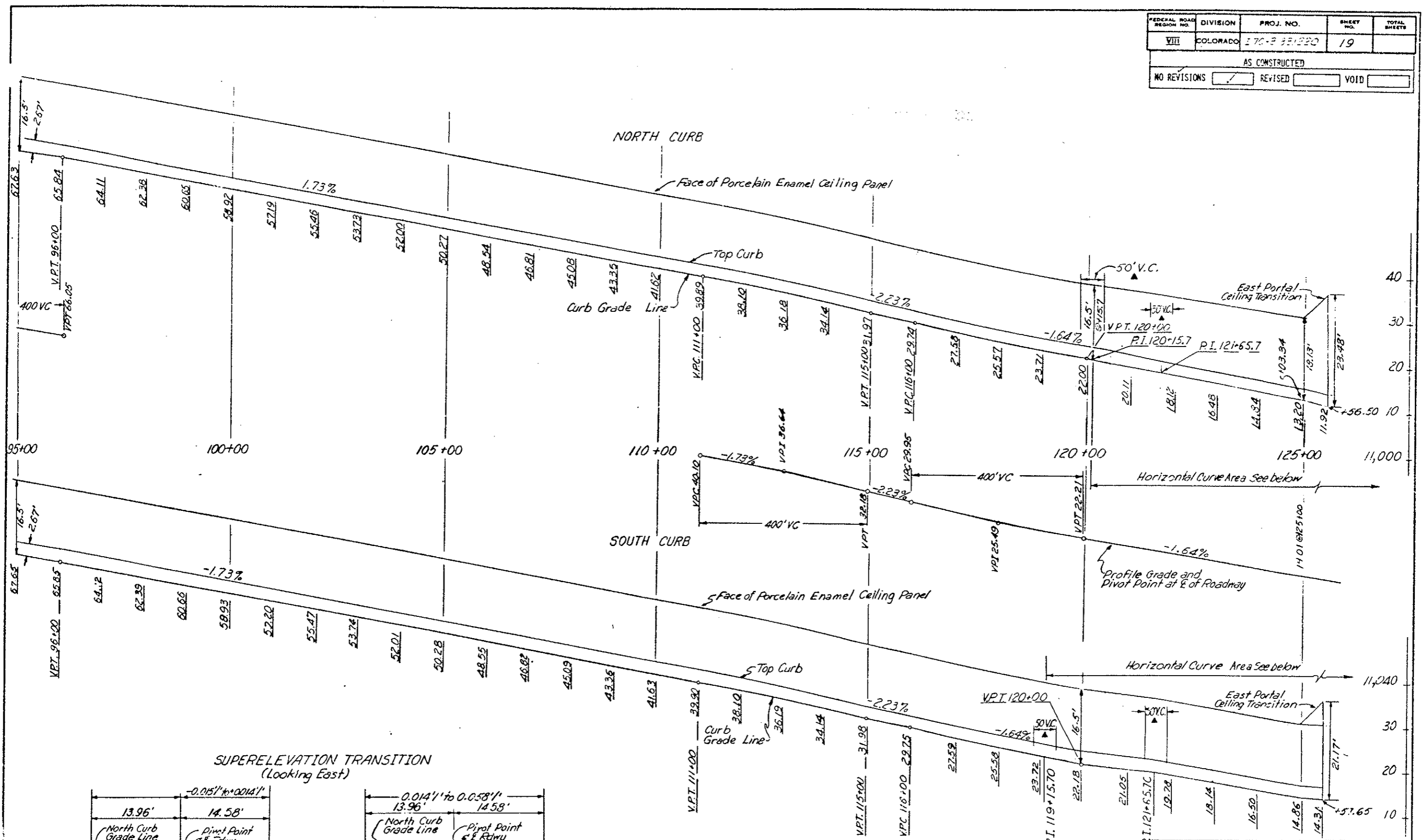


Scale: 1"=100'  
 1"=10'

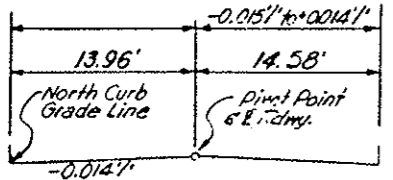
DIVISION OF HIGHWAYS	
CURB GRADE LINES IN TUNNEL	
Designer C.D.O.H.	Structure Number
Detailer	Number
Drawing Number	of Drawings



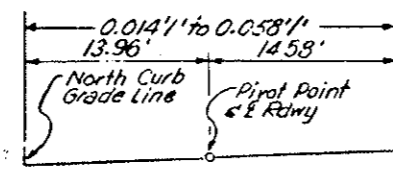
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-B 351220	19	
AS CONSTRUCTED				
NO REVISIONS	REVISED	VOID		



**SUPERELEVATION TRANSITION (Looking East)**



Transition Superlevation on South Side of Roadway from -0.014% at Sta. 119+15.7 to 0.000% at Sta. 120+15.7 to +0.058% at Sta. 121+65.70



Transition Superlevation on North Side of Roadway from 0.014% at Sta. 120+15.7 to -0.058% at Sta. 121+65.7

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

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

<b>DIVISION OF HIGHWAYS</b>	
<b>CURB GRADE LINES IN TUNNEL</b>	
Designer C.D.O.H.	Structure Number
Detainer	Number
Drawing Number 15-12	of Drawings

FORM STRUCTURE OF WALLS  
 DIVISION OF HIGHWAYS  
 STANDARD SPECIFICATIONS FOR CONSTRUCTION  
 SECTION 100.01  
 100.01.01  
 100.01.02

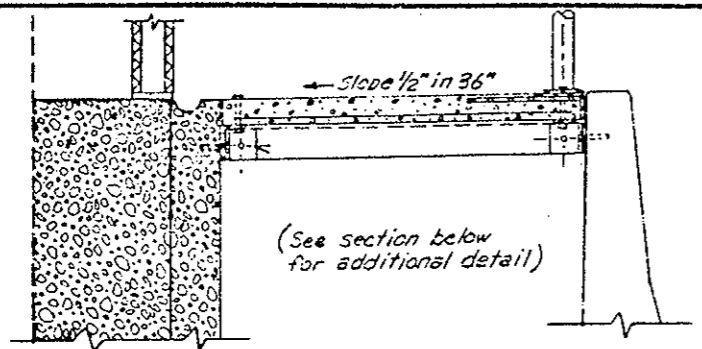
FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO I 70-3 (89) 220	25	

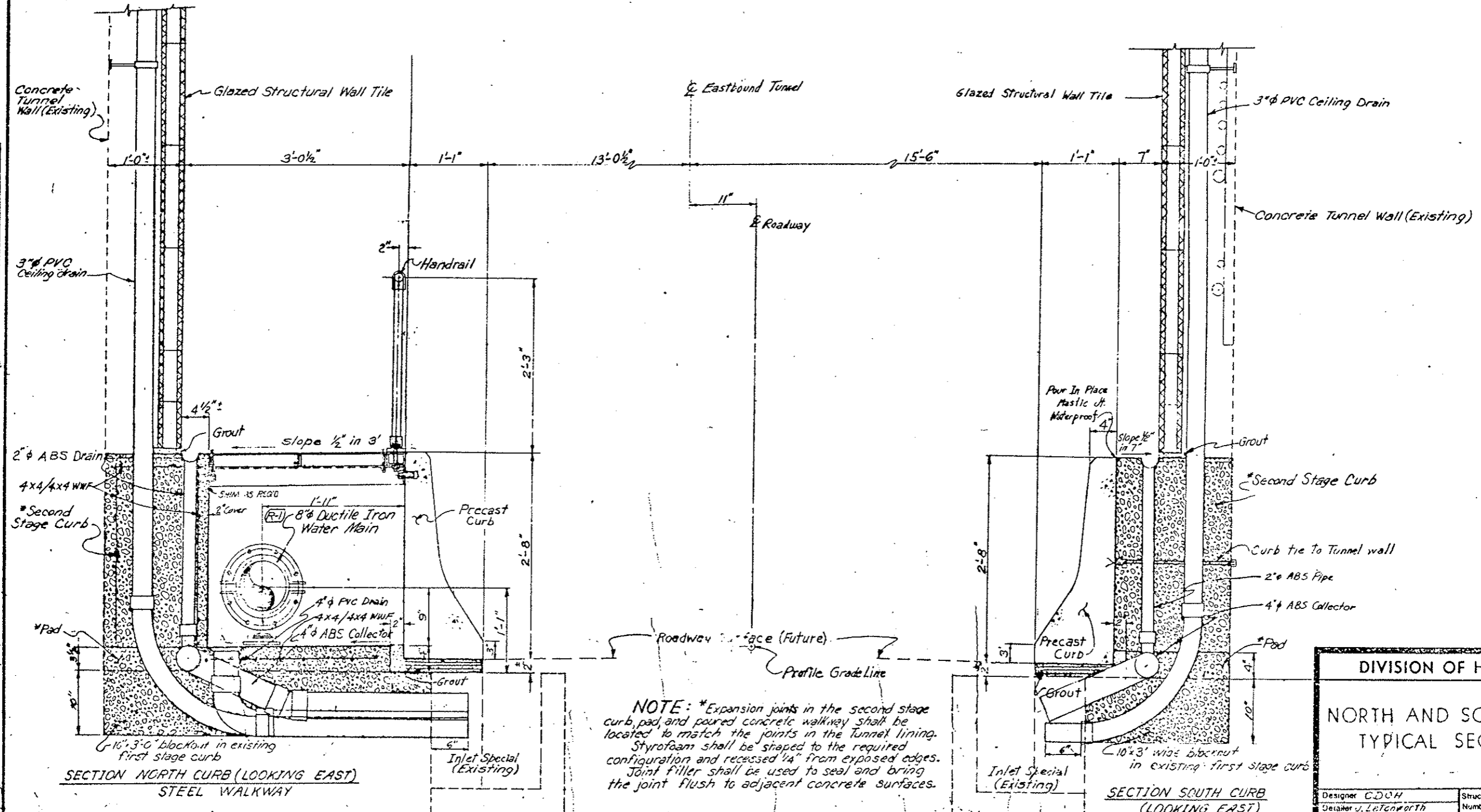
REVISIONS		
(E-1)	11-14-73 Water Main Material	E.B.

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



SECTION NORTH CURB (LOOKING EAST)  
 CONCRETE WALKWAY



SECTION NORTH CURB (LOOKING EAST)  
 STEEL WALKWAY

SECTION SOUTH CURB  
 (LOOKING EAST)

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

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

DESIGNED BY	CHECKED BY	DATE	QUANTITIES BY	CHECKED BY	DATE
	C. DOH	8-20-73			

DIVISION OF HIGHWAYS	
NORTH AND SOUTH CURBS TYPICAL SECTIONS	
Designer C. DOH	Structure
Detailer J. Letenworth	Number
Drawing Number W-1	Drawings

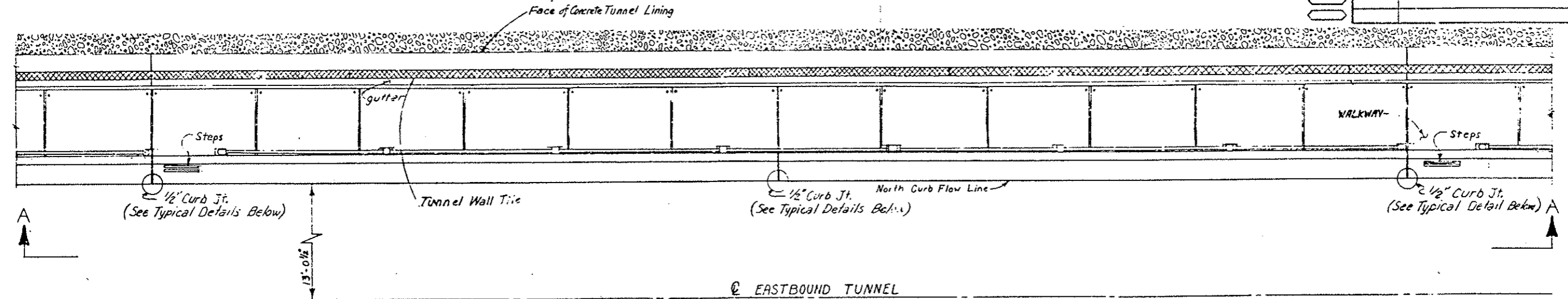
STATE DEPARTMENT OF HIGHWAYS  
 DIVISION OF HIGHWAYS  
 1000 WEST 10TH AVENUE  
 DENVER, CO. 80202

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

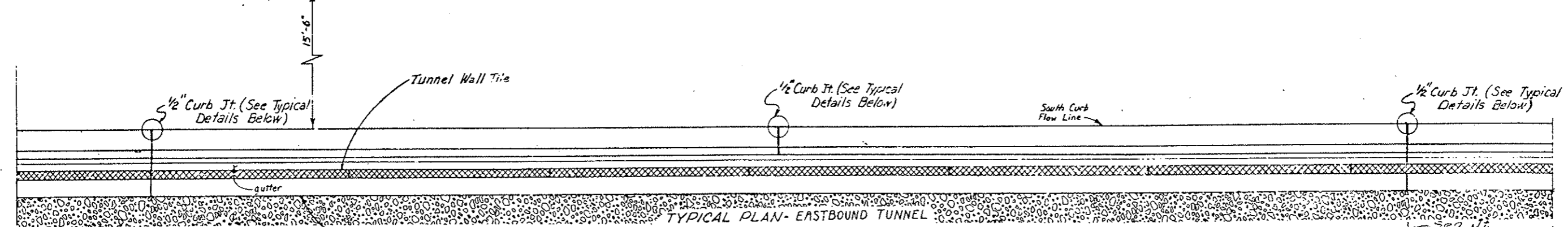
FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III COLORADO	I 70-2-3 220	30	

(R-1) Revised detail "B"

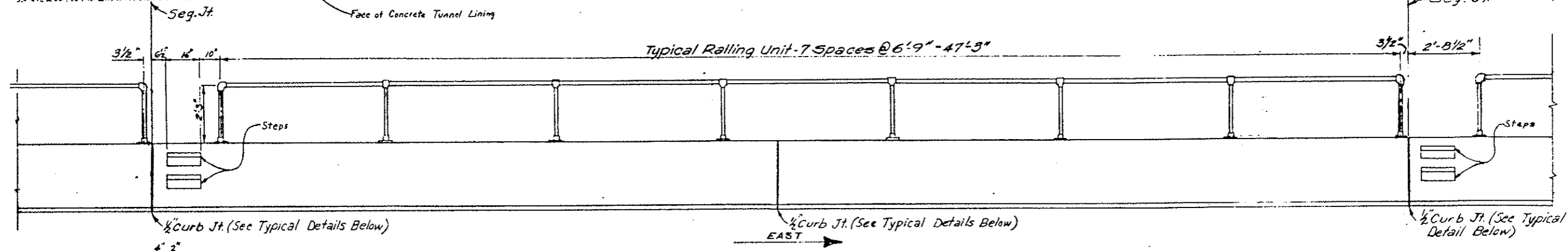
REVISIONS	



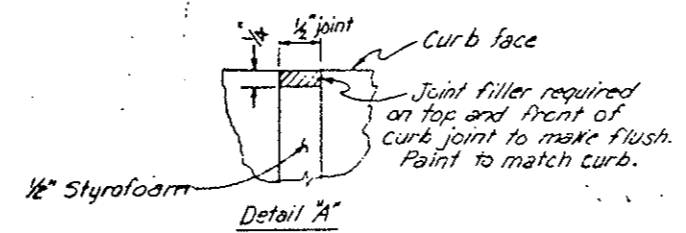
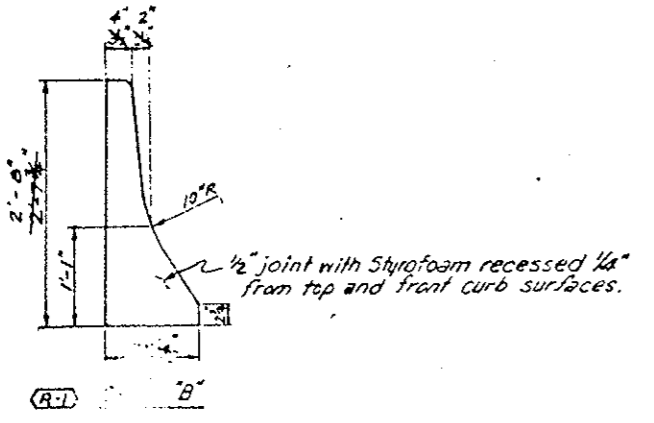
② EASTBOUND TUNNEL



TYPICAL PLAN - EASTBOUND TUNNEL



VIEW A-A  
 TYPICAL ELEVATION - HANDRAIL AND CURB



LEGEND  
 Tunnel Wall Tile [hatched pattern]  
 Precast Safety Curb [stippled pattern]  
 Conc. Tunnel Lining [dotted pattern]

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

DIVISION OF HIGHWAYS	
PLAN AND ELEVATION OF TYPICAL SAFETY CURB AND HANDRAIL SPACING	
Designer: CDOH	Structure Numbers: _____
Detailer: J. F. [unclear]	of _____ Drawings
Drawing Number: W-3	

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

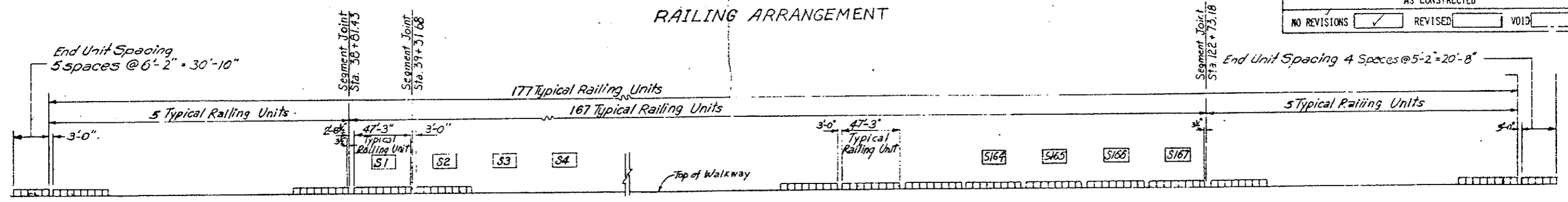
STATE DEPARTMENT OF HIGHWAYS  
DIVISION OF HIGHWAYS  
DESIGN OF STRUCTURES  
SHEET NO. 111  
REV. 10-1-66

FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII COLORADO	L70-31(83)220	29	

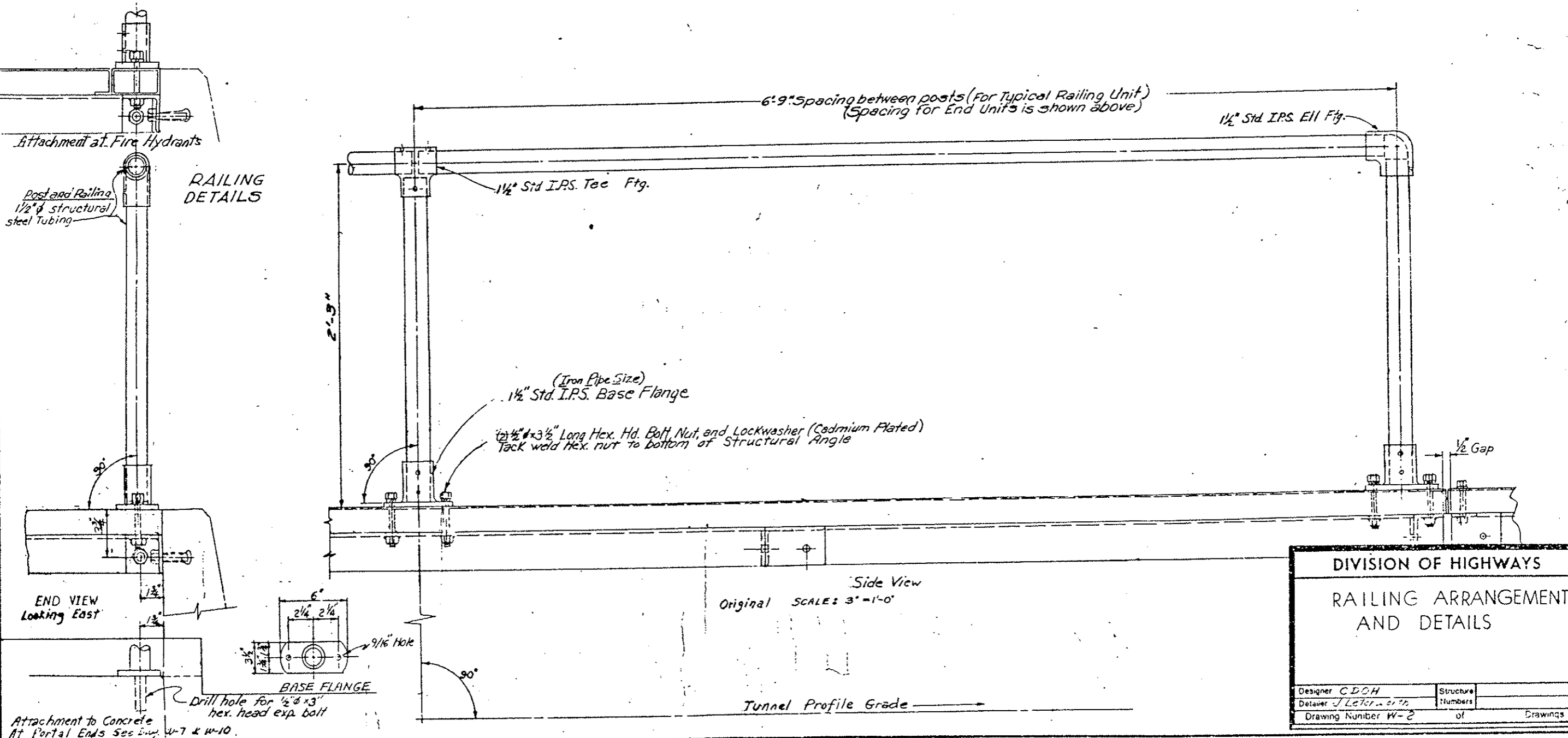
REVISIONS	

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

### RAILING ARRANGEMENT



INITIAL	DATE	CHECKED BY	QUANTITY BY
C.D.O.H.	2-2-72		
C.D.O.H.	2-2-72		
C.D.O.H.	2-2-72		



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

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

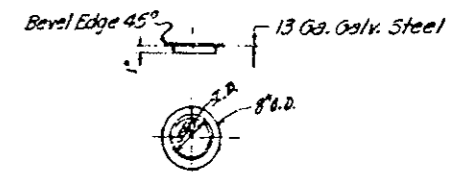
  

REVISIONS				
(R-1)	10/17/79	Rev dims, slab conf, cons		
(R-2)	11/3/79	class, added notes		HHH
(R-2)	11/3/79	Slab dims, ANGLE SIZE		C.C.

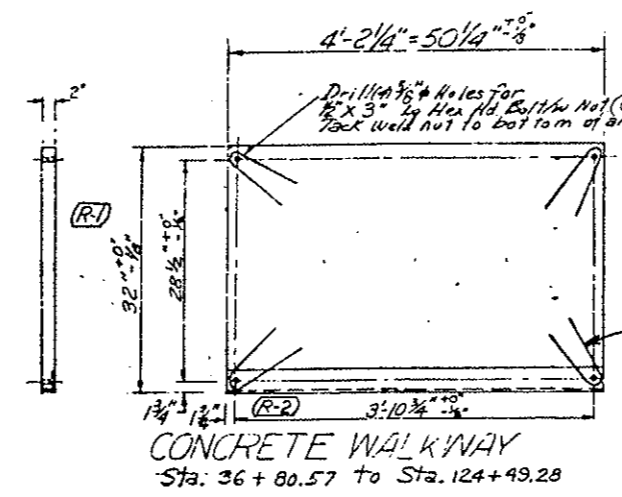
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

Notes:  
The Contractor shall field cut (sawed or punched not burned) 6" diameter holes, the concrete walkway channel directly over the stems or 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.

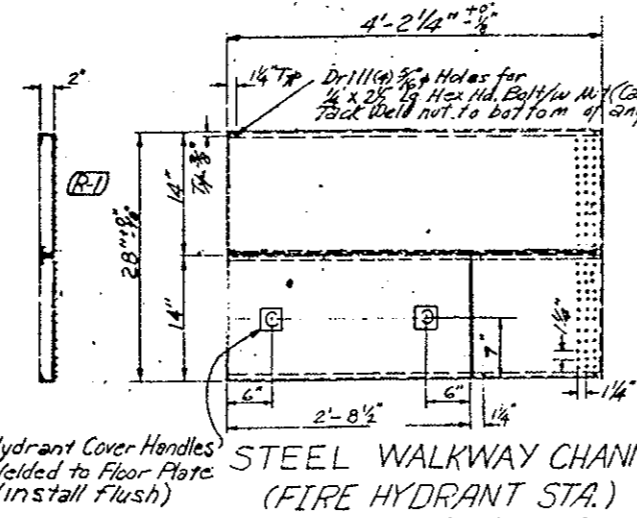
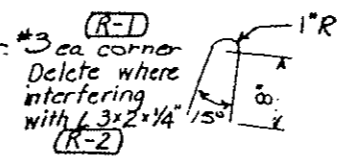


Friction Cap (Typical)

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

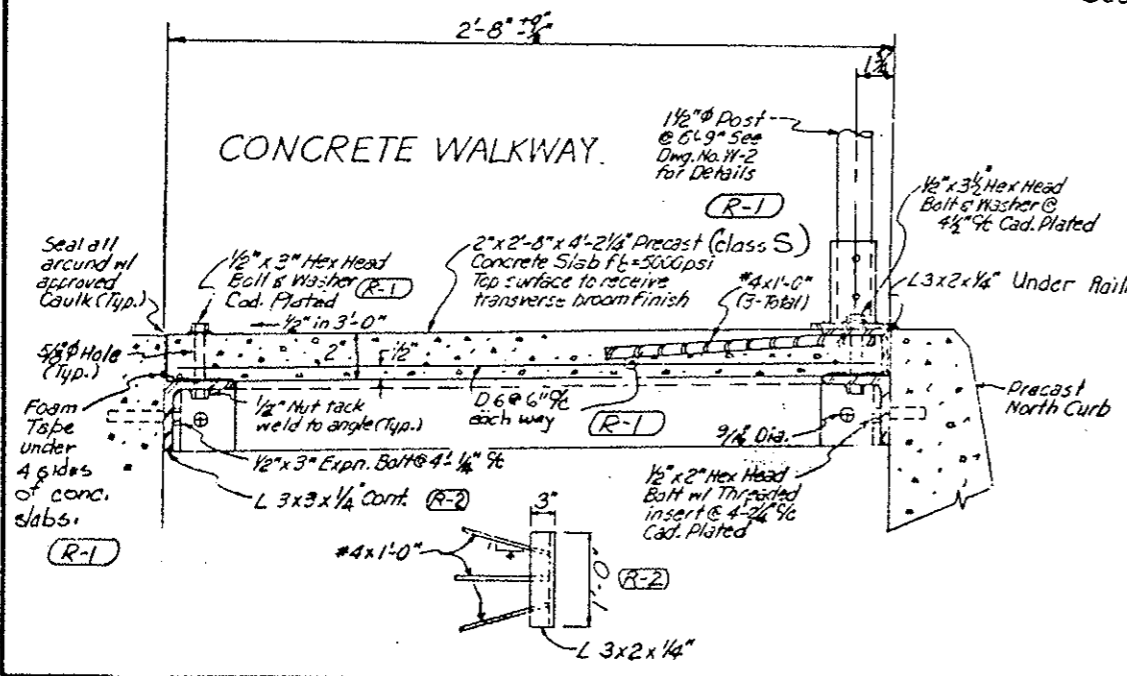


(R-1) Note: Concrete walkway shop drawings shall include provisions for permanent lifting device.



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

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 Details - Sheets No. 32 AX thru 32 GX, Erection Plan - Sheets No. 31 AX & 31 BX.

REVISION NO.	DATE	BY	DESCRIPTION
1	9-30-75	CDOH	INITIAL
2	9-30-75	CDOH	CHECKED BY
3	9-30-75	CDOH	QUANTITIES BY
4	9-30-75	CDOH	CHECKED BY

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

FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII COLORADO	I 70-3-33,220	33	

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

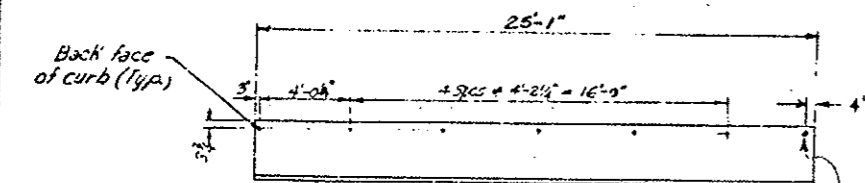
AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

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:

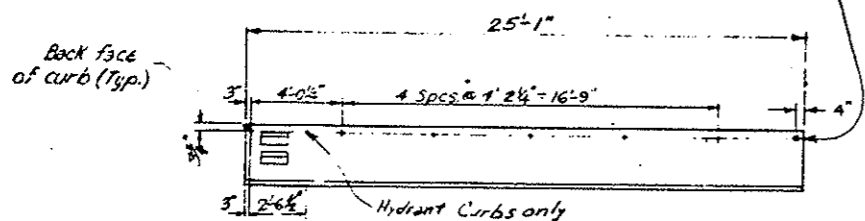
BAR SIZE	#3	#4	#5	#6	#7	#8
SPLICE LENGTH	1'-0"	1'-0"	1'-3"	1'-8"	2'-3"	3'-0"



- 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

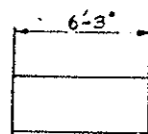


- Curb ① Color-Green With expansion bolt insert
- Curb ⑤ Color-White with expansion bolt insert
- Curb ⑧ Color-Green (R-1) without expansion bolt insert

With Steps

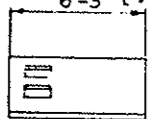
Insert for 1/2" 13 NC x 2" long Cadmium plated bolt

2 Lifting Loops per panel



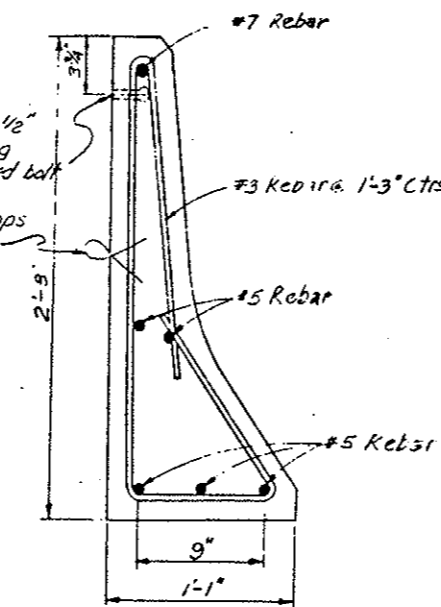
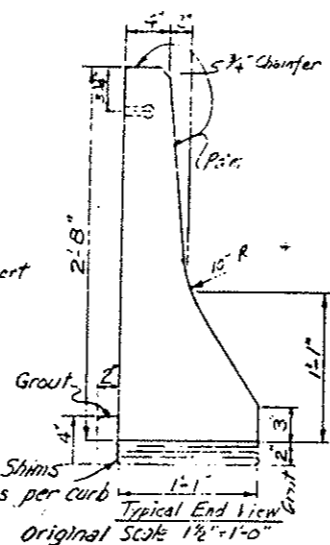
- Curb ⑥ Color-White without expansion bolt insert
- (R-1) Curb ⑩ Color-Green 6'-3" without expansion bolt insert

Without Steps

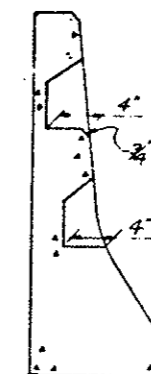


- Curb ⑧ Color-White without expansion bolt insert
- (R-1) Curb ⑪ Color-Green without expansion bolt insert

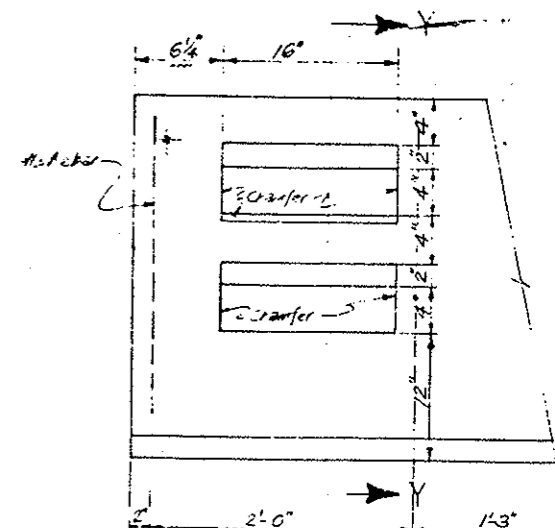
With Steps



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



Section Y-Y



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

DESIGNED BY	CHECKED BY	DATE	QUANTITY BY
C.E.O.H.	7-3-75		
CHECKED BY	7-8-75		
DETAILS BY			

**DIVISION OF HIGHWAYS**

**PRECAST SAFETY CURBS**

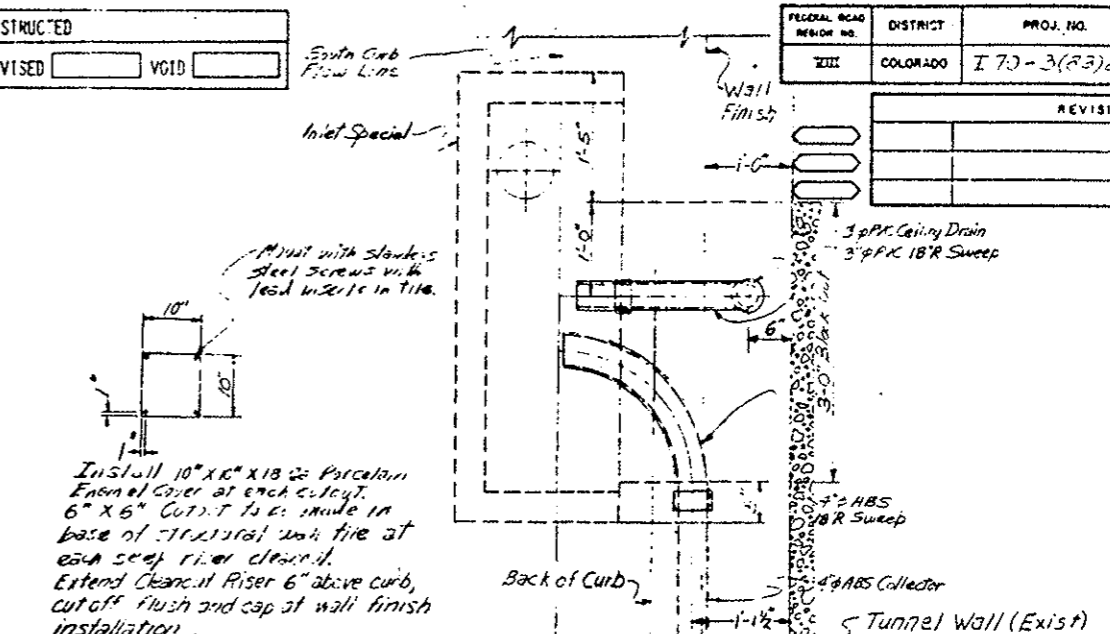
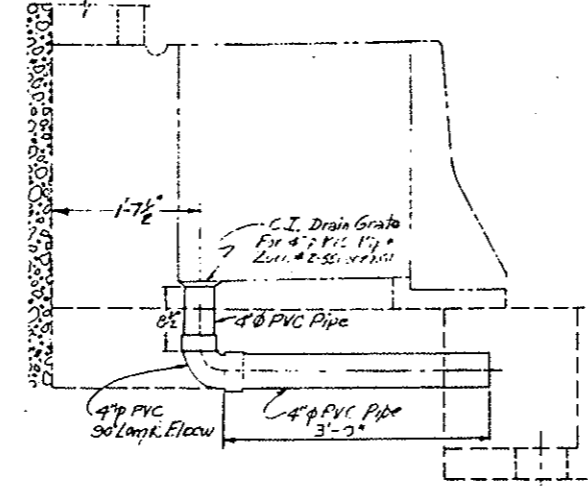
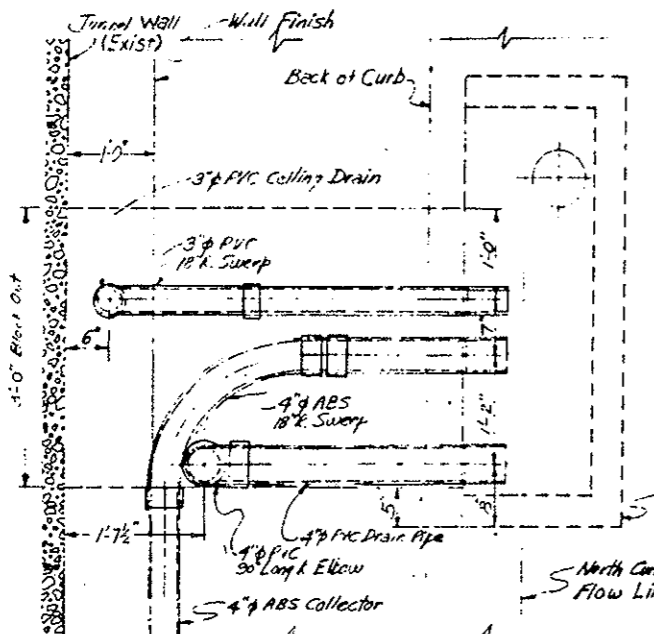
**DETAILS**

Designer C.E.O.H.	Structure
Detailer J. J. ...	Number
Drawing Number W-6	of Drawings

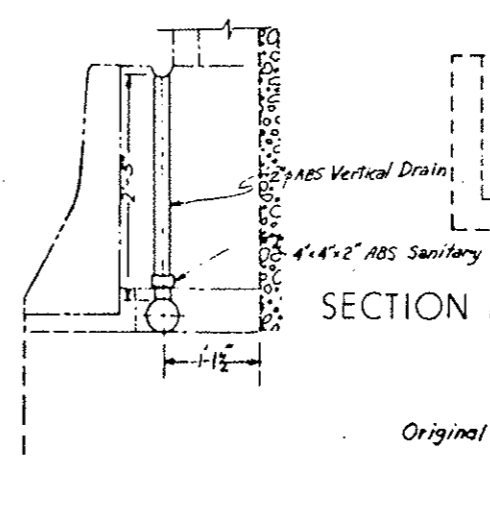
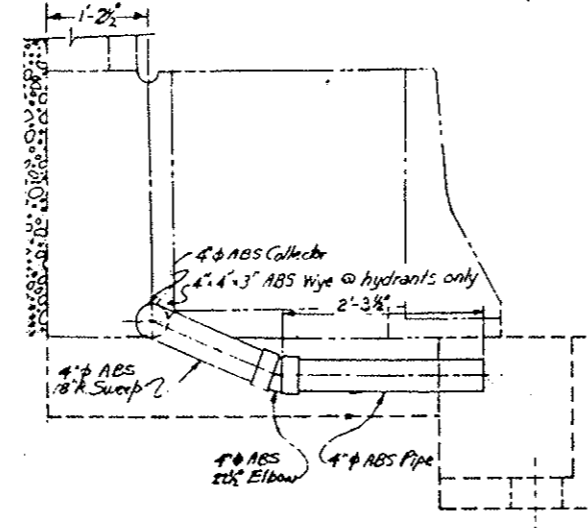
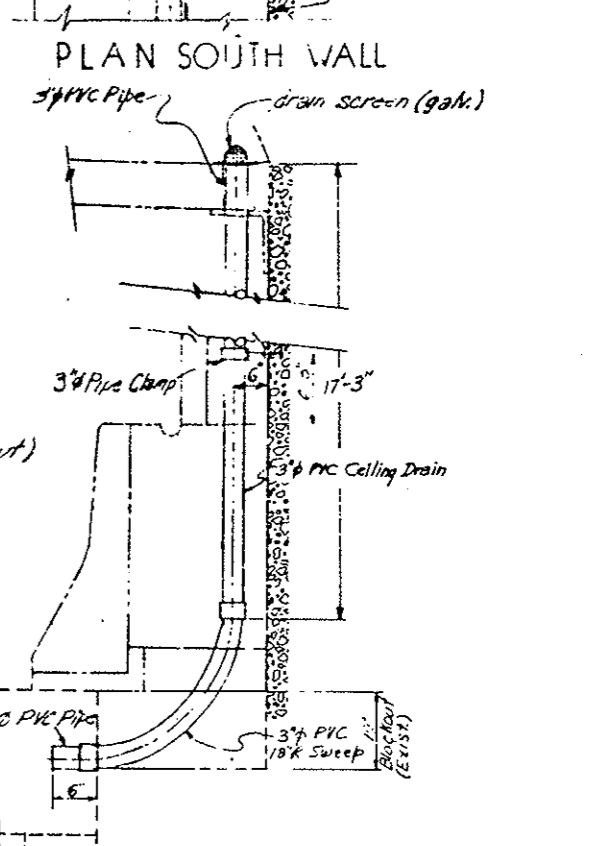
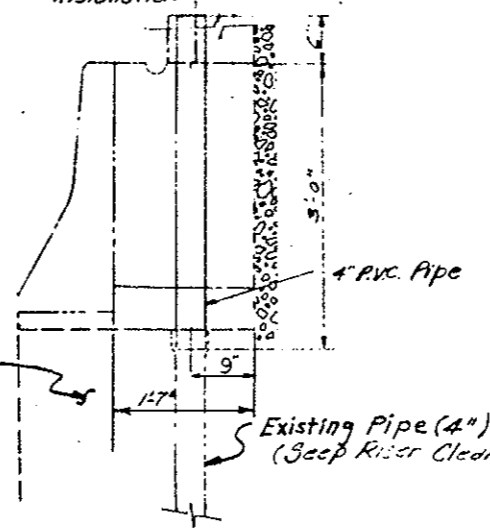
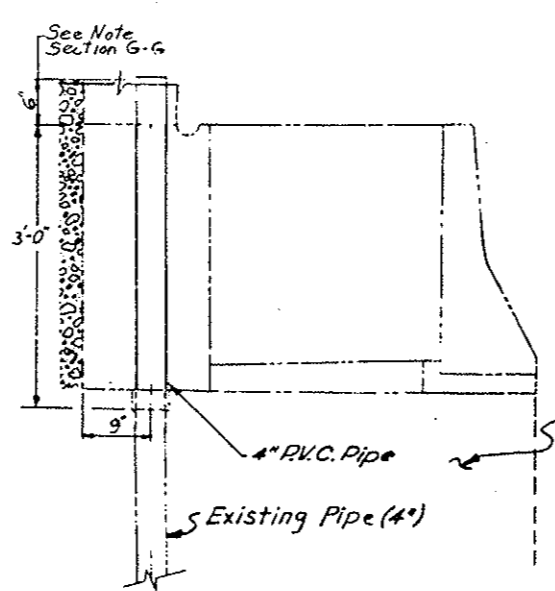
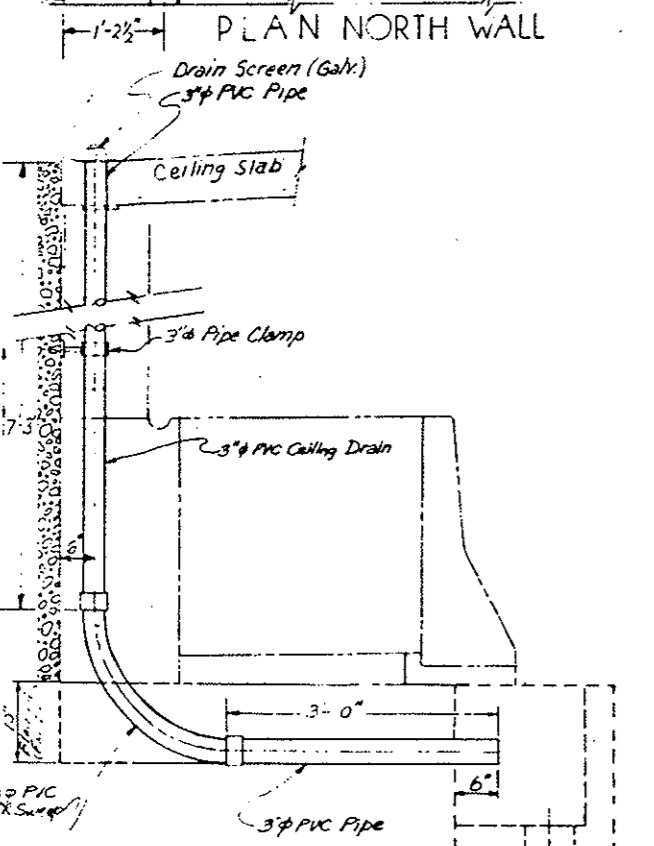
AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III COLORADO	I 70-3(23)220	57	

REVISIONS	



Install 10" X 6" X 1/8" Perforated Enamel Cover at each collect. 6" X 6" Cutout to be made in base of structural wall tie at each sweep riser detail. Extend Cleanout Riser 6" above curb, cut off flush and cap at wall finish installation.



CHECKED BY	DATE	DESIGNED BY	DATE
QUANTITIES BY		DRAWN BY	

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"

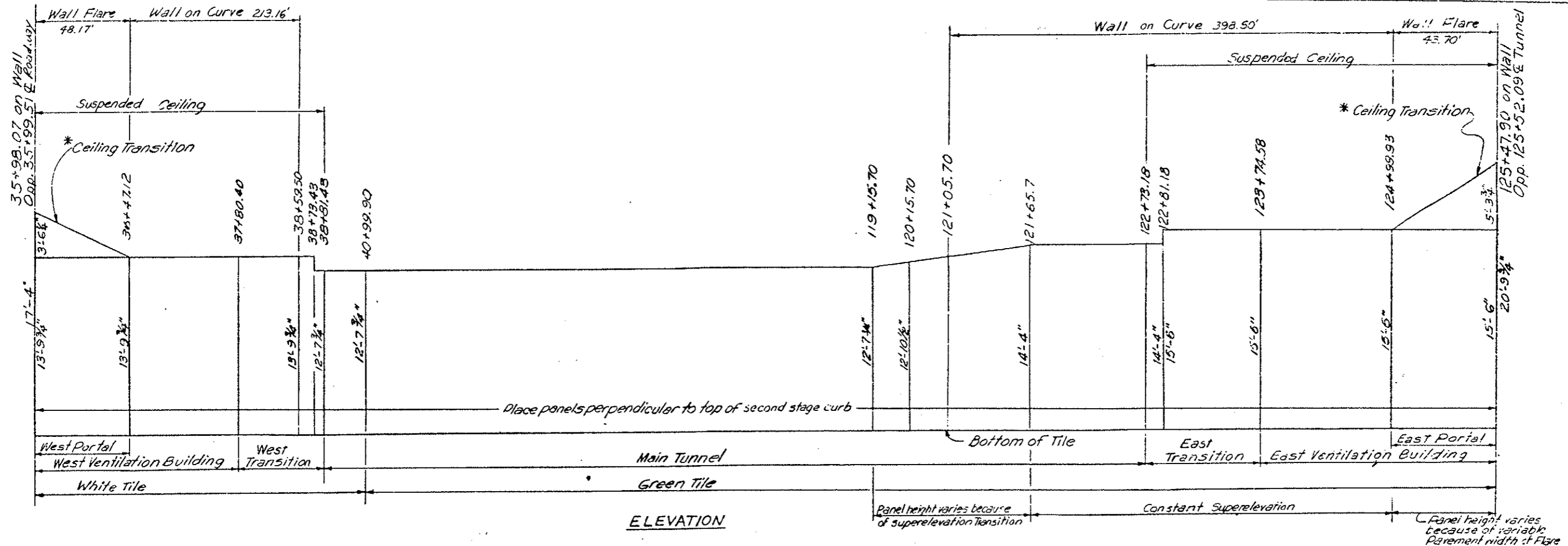
Original SCALE: 1"=1'-0"

**DIVISION OF HIGHWAYS**

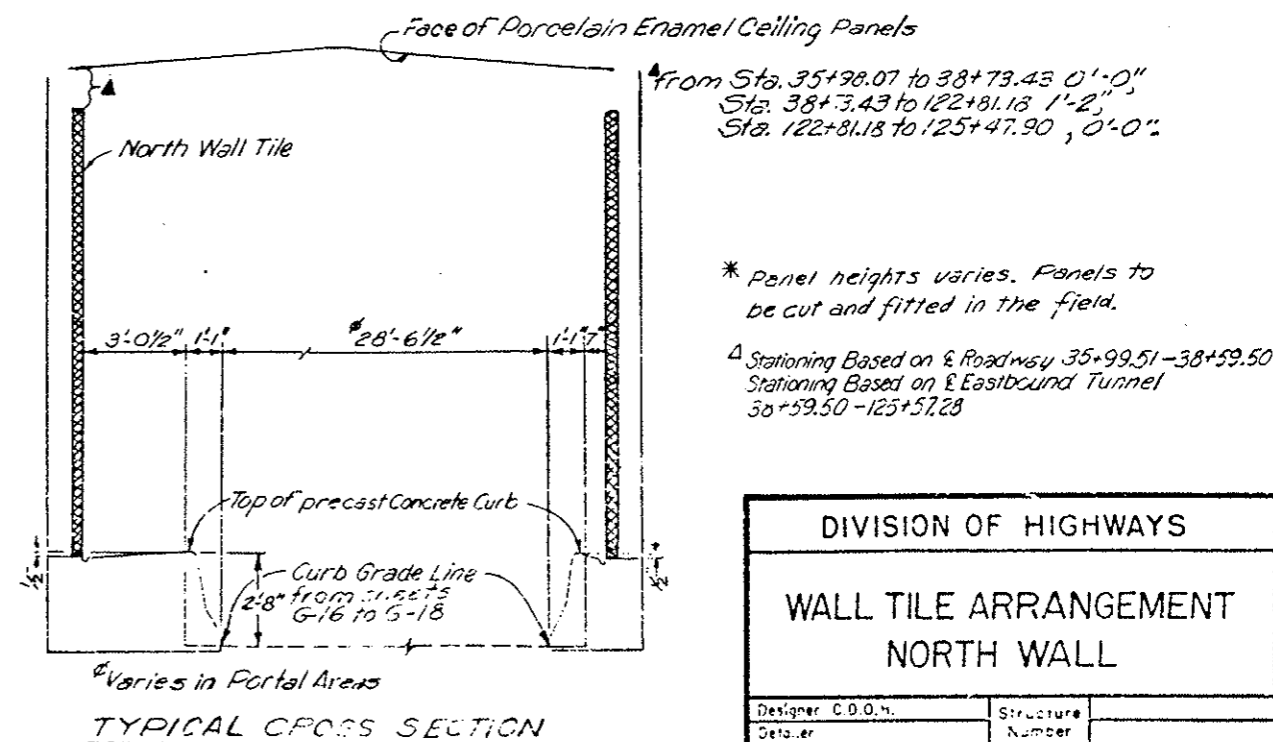
**INLET DRAIN PIPING**  
**LOCATION-NORTH AND**  
**SOUTH CURB**

Designer C.D.O.H.	Structure
Detailer J. LETCHWORTH	Numbers
Drawing Number D-2	of Drawings

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(E).220	61	
AS CONSTRUCTED				
NO REVISIONS	✓	REVISED	VOID	



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	90,870
119+15.70 to 120+15.70	Main Tunnel	12'-7 3/4" to 12'-10 1/2"			Green	1,277
120+15.70 to 121+65.70	Main Tunnel	12'-10 1/2" to 14'-4"			Green	2,041
121+65.70 to 122+73.18	Main Tunnel	14'-4"			Green	1,541
122+73.18 to 122+81.18	East Transition	14'-4"			Green	115
122+81.18 to 124+99.93	East Transition and East Ventilation Bldg.	15'-6"			Green	3,391
124+99.93 to 125+47.90	East Portal and Ceiling Transition	15'-6" to 20'-9 3/4"			Green	871
	Total					114,860



From Sta. 35+98.07 to 38+73.43 0'-0"  
 Sta. 38+73.43 to 122+81.18 1'-2"  
 Sta. 122+81.18 to 125+47.90 0'-0"

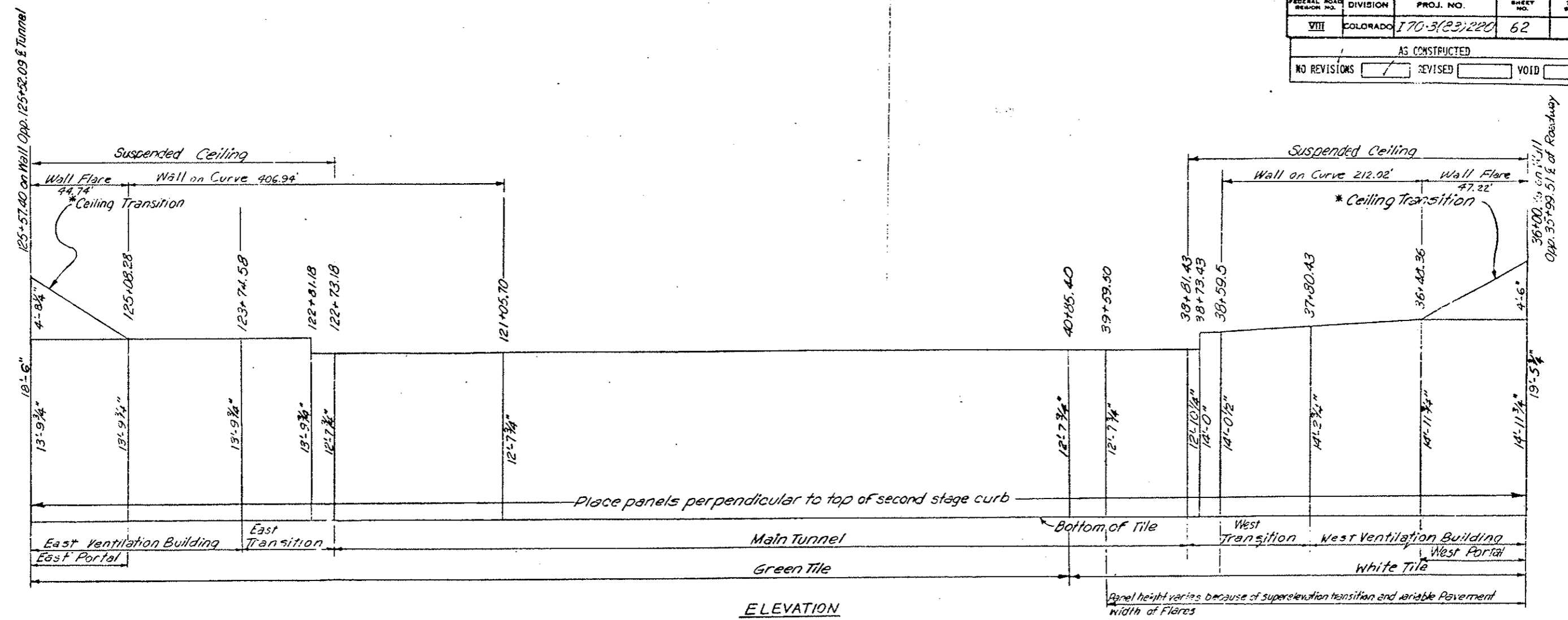
\* Panel heights varies. Panels to be cut and fitted in the field.

Δ Stationing Based on E Roadway 35+99.51-38+59.50  
 Stationing Based on E Eastbound Tunnel 38+59.50-125+57.28

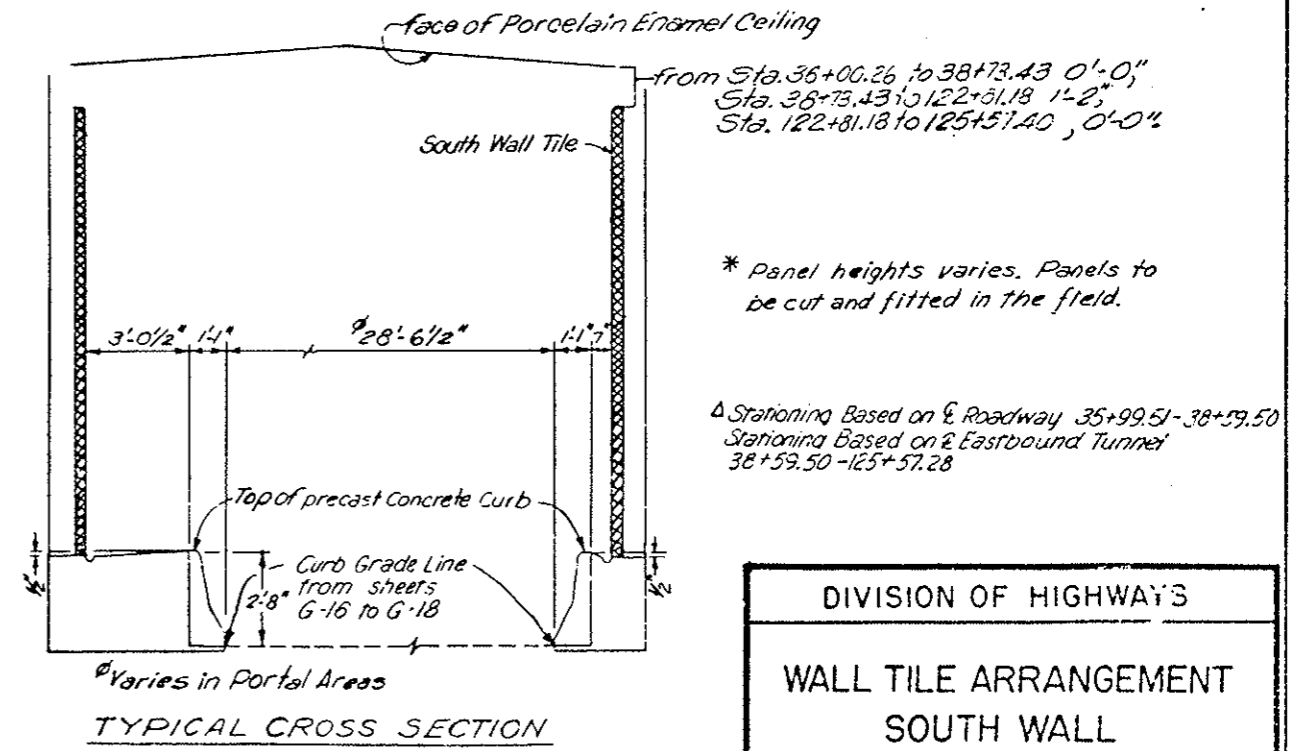
DIVISION OF HIGHWAYS	
WALL TILE ARRANGEMENT NORTH WALL	
Designer C.O.O.M.	Structure Number
Drawer	Number
Drawing Number	of Drawings



FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(23)220	62	
AS CONSTRUCTED				
NO REVISIONS	REVISED	VOID		



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

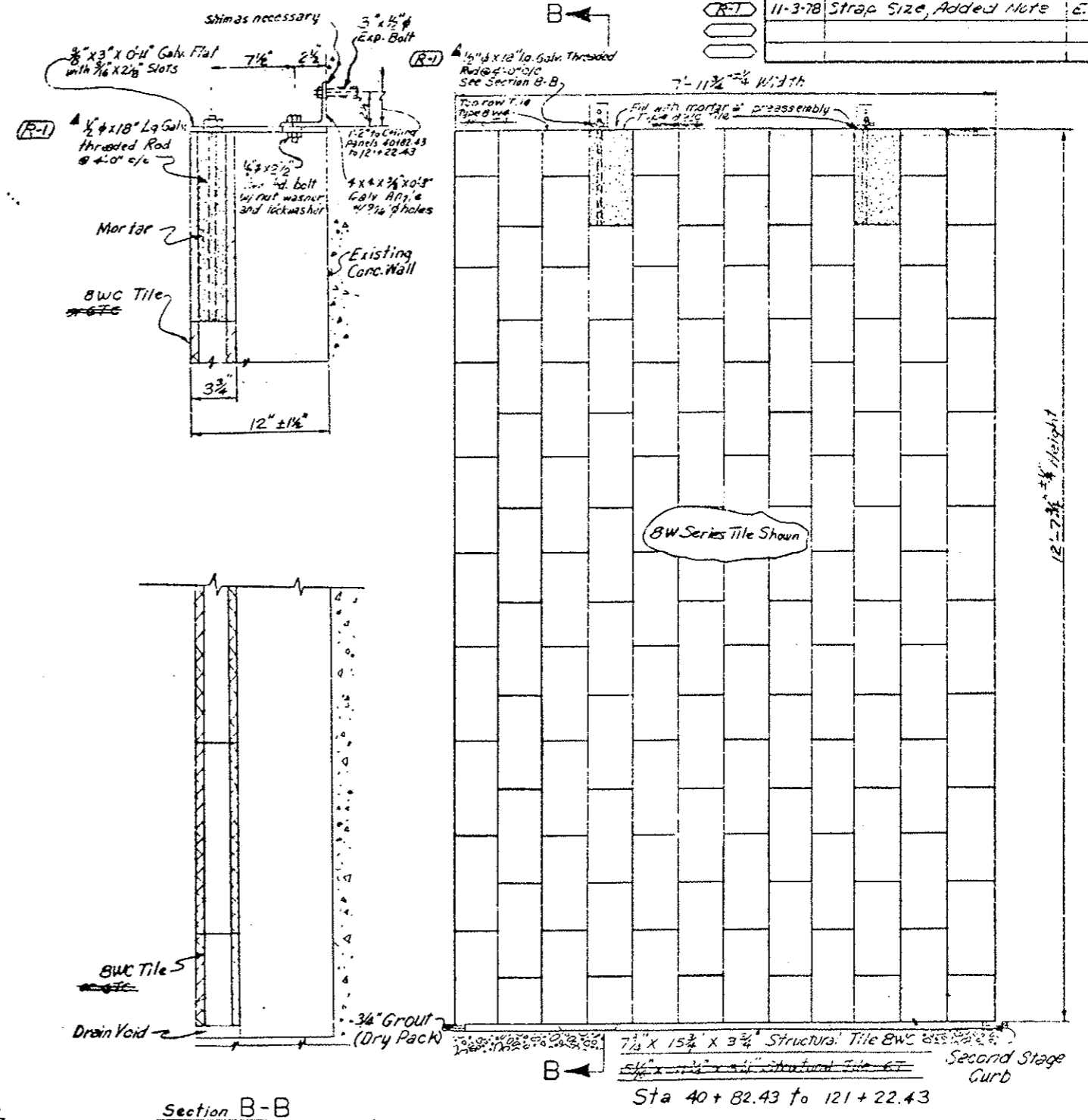
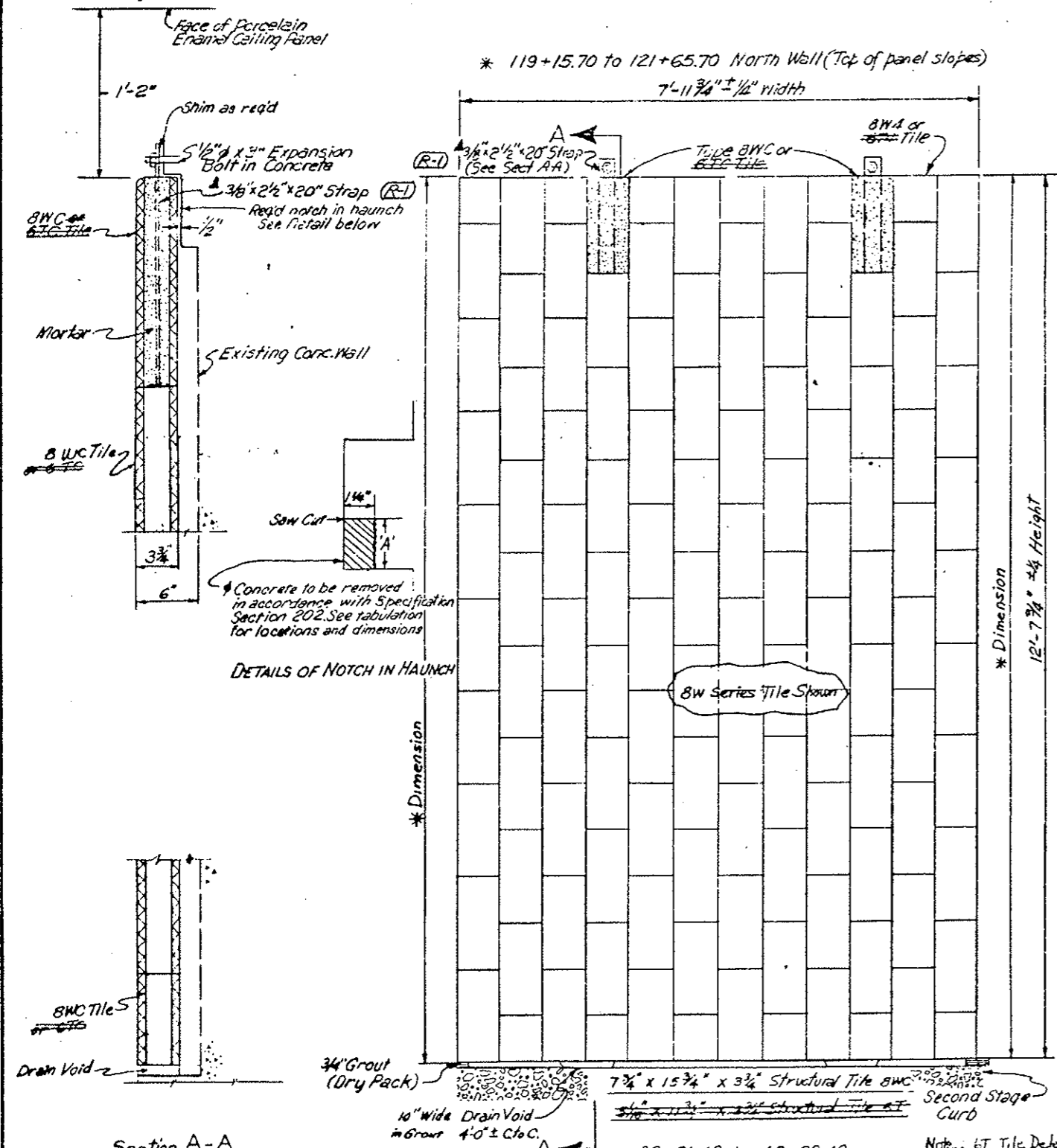


**DIVISION OF HIGHWAYS**

**WALL TILE ARRANGEMENT SOUTH WALL**

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

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



DESIGNED BY	CDDH
CHECKED BY	J. L. WORTH
QUANTITIES BY	J. L. WORTH
CHECKED BY	J. L. WORTH
DATE	7-30-78

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 WF-1

DIVISION OF HIGHWAYS

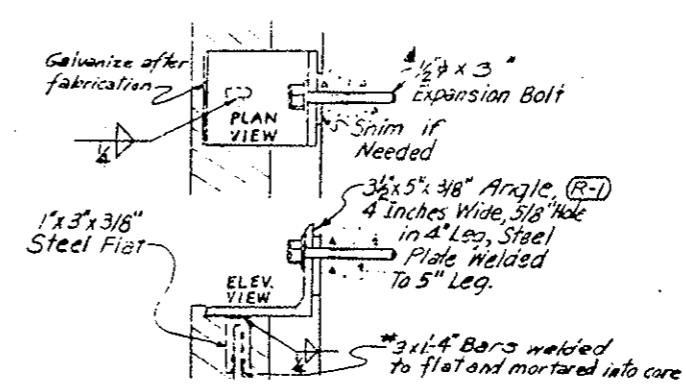
WALL TILE AND MOUNTING UNIT DETAILS

Designer CDDH	Structure Number
Detailer J. L. WORTH	
Drawing Number WF-2	of

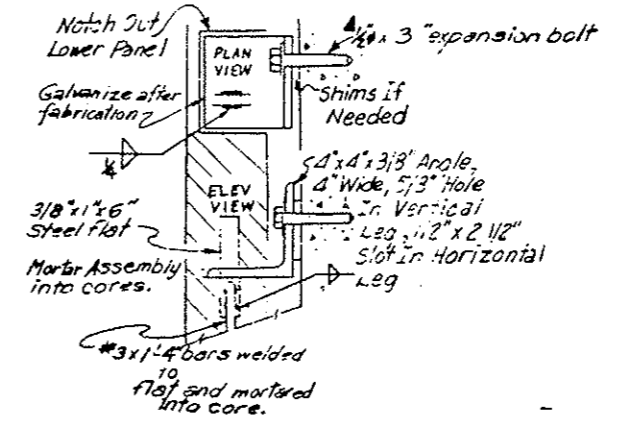
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(23)220	64	

REVISIONS	
(R-1)	11-3-78 Angle size, Added note EE
AS CONSTRUCTED	
NO REVISIONS	REVISED <input checked="" type="checkbox"/>
	VOID <input type="checkbox"/>

TOP CONNECTION OF GLAZED TILE PANELS

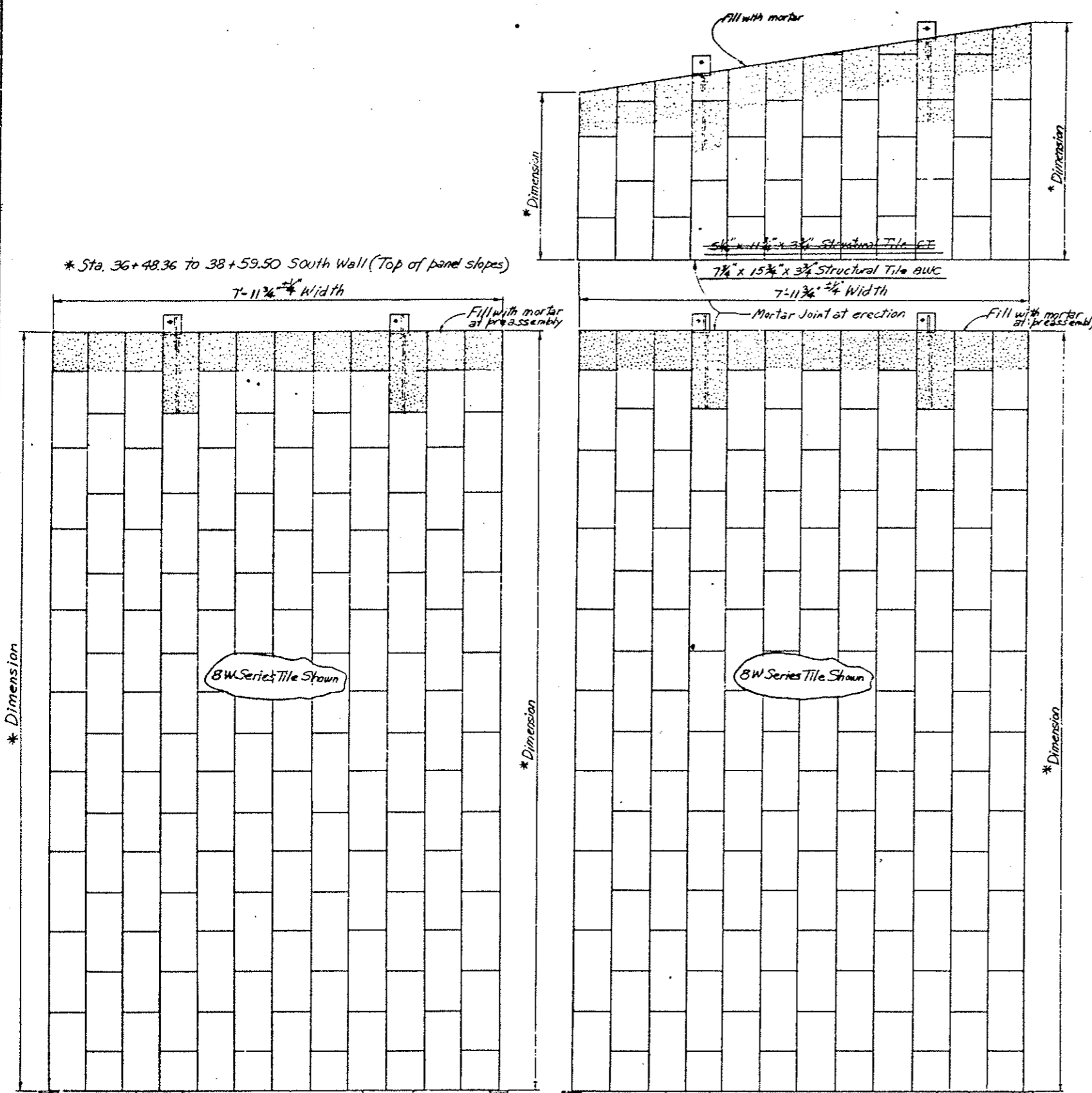


INTERMEDIATE CONNECTION OF GLAZED TILE PANELS



Note: 6T Tile Deleted

(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)



Second Stage Curb	North Wall (Sta. 36+47.12 to 38+81.43)	South Wall (Sta. 36+48.36 to 38+81.43)	Second Stage Curb	North Wall (Sta. 35+38.07 to 36+47.12)	South Wall (Sta. 36+00.26 to 36+48.36)
	(Sta. 122+81.18 to 124+99.93)	(Sta. 122+81.18 to 125+08.53)		(Sta. 124+99.93 to 125+47.90)	(Sta. 125+08.28 to 125+57.40)

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

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

DIVISION OF HIGHWAYS

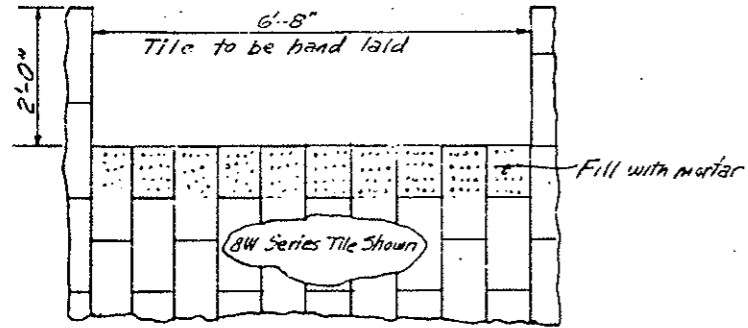
WALL TILE AND MOUNTING UNIT DETAILS

Designer C.S.H.	Structure
Detailer C. L. North	Numbers
Drawing Number WF-4	of Drawings

AS CONSTRUCTED  
NO REVISIONS  REVISED  VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	170-3(83)220	65	

REVISIONS				



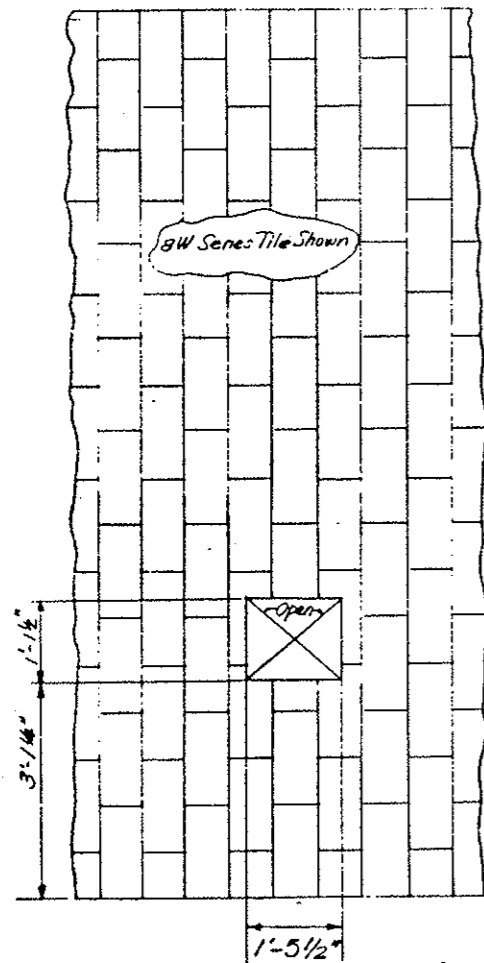
MESSAGE BOARD CUTOUT

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

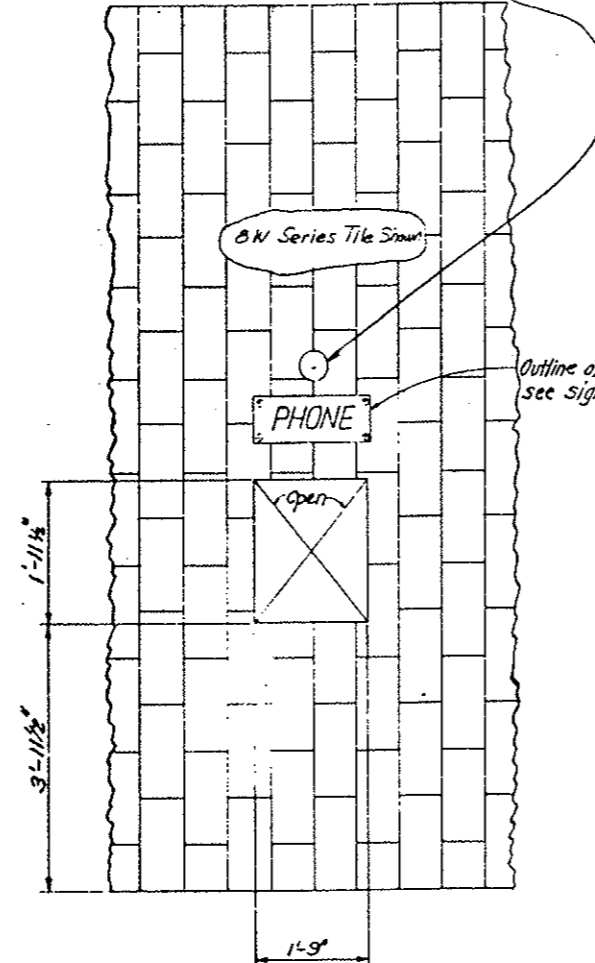


EMERGENCY LIGHT CUTOUT

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

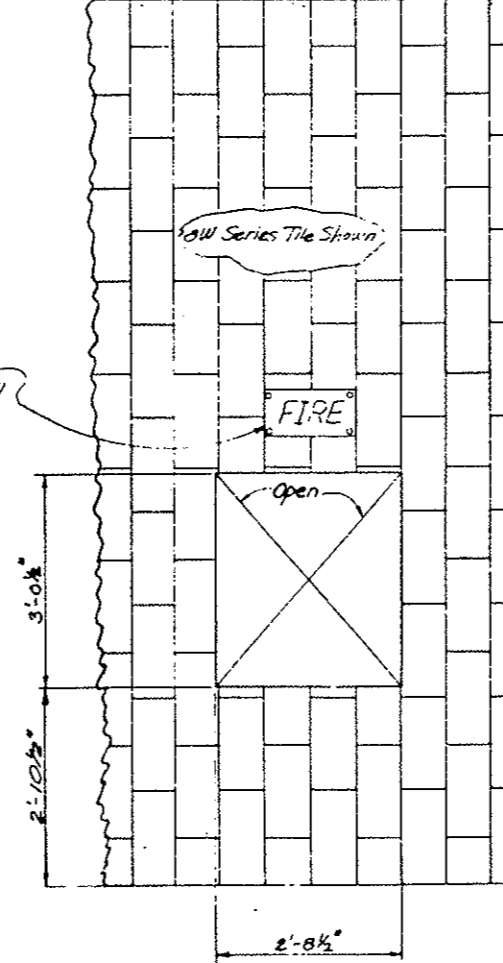


PANEL  
INSTRUMENTATION CABINET CUTOUT  
ORIGINAL SCALE 3/4" = 1'-0"

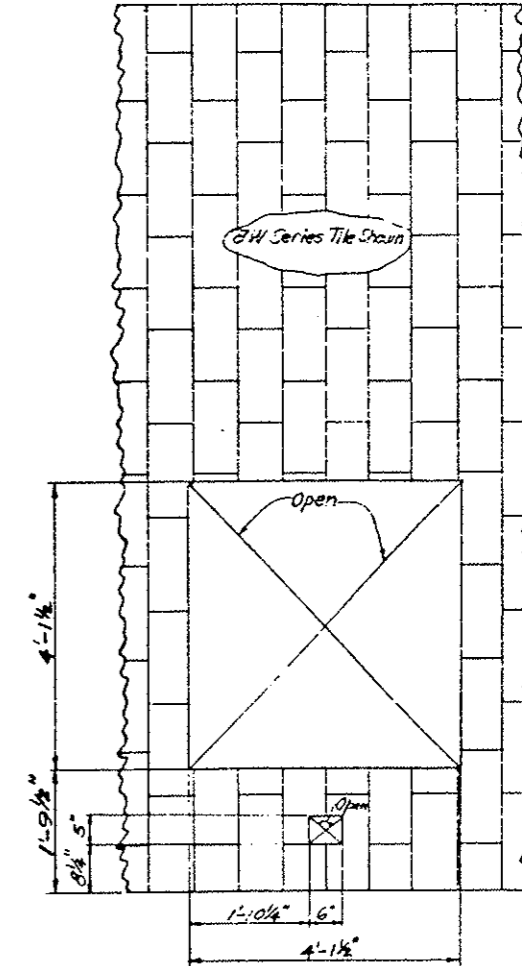


PANEL  
EMERGENCY TELEPHONE CUTOUT  
ORIGINAL SCALE 3/4" = 1'-0"

Outline of sign see sign detail



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



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

DESIGNED BY	CHECKED BY	DATE	QUANTITIES BY	CHECKED BY
CDSH	W.F.S.	1-1-75		

NORTH WALL

Note: Cutouts in tile to be square with tile.

DIVISION OF HIGHWAYS

WALL TILE  
TYPICAL CUTOUT DETAILS

Designer CDSH  
Detailer J. Letourneau  
Drawing Number W.F. 5 of Drawings

FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	170-3(83)220	66	

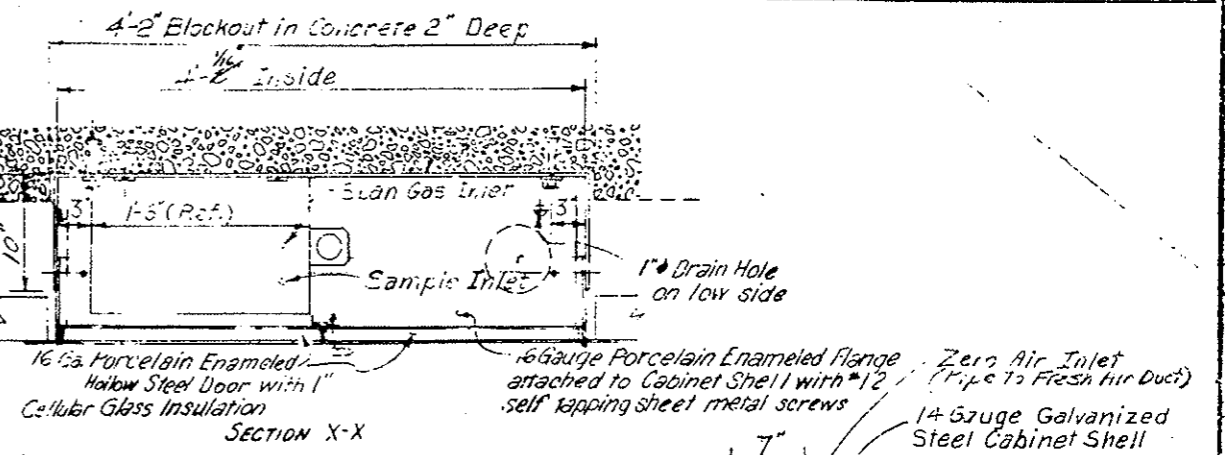
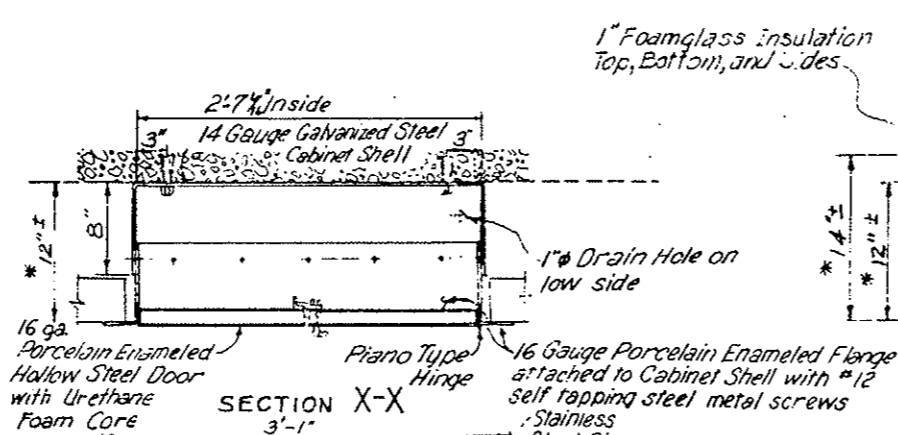
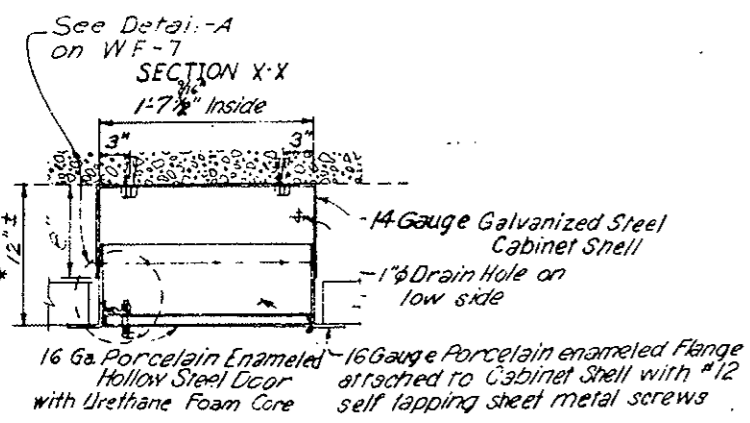
AS CONSTRUCTED

NO REVISIONS  REVISED  VOID

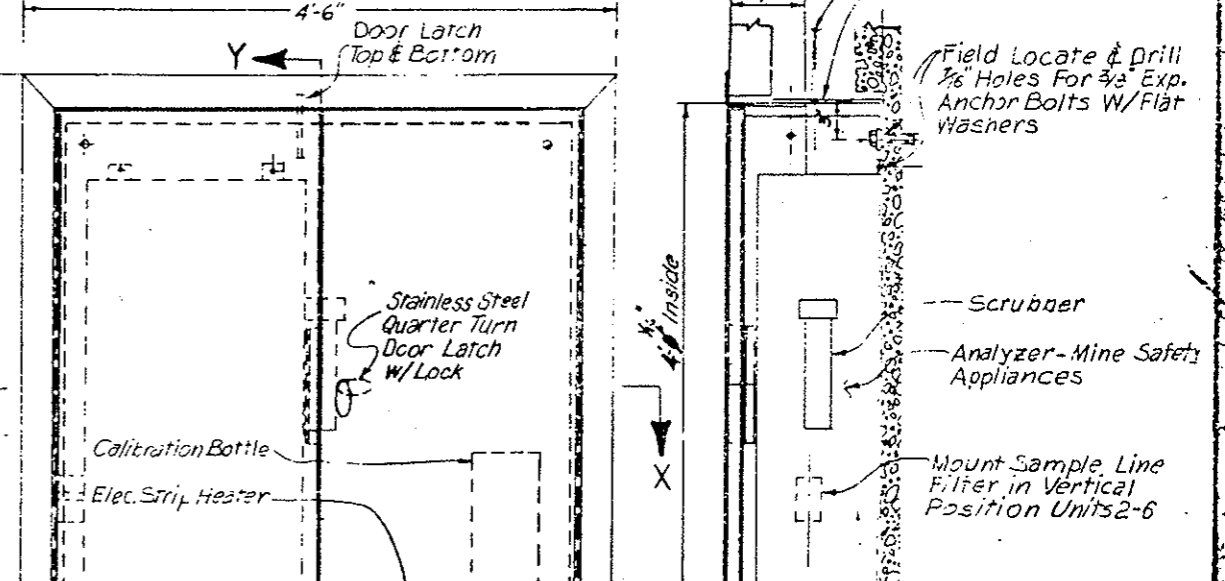
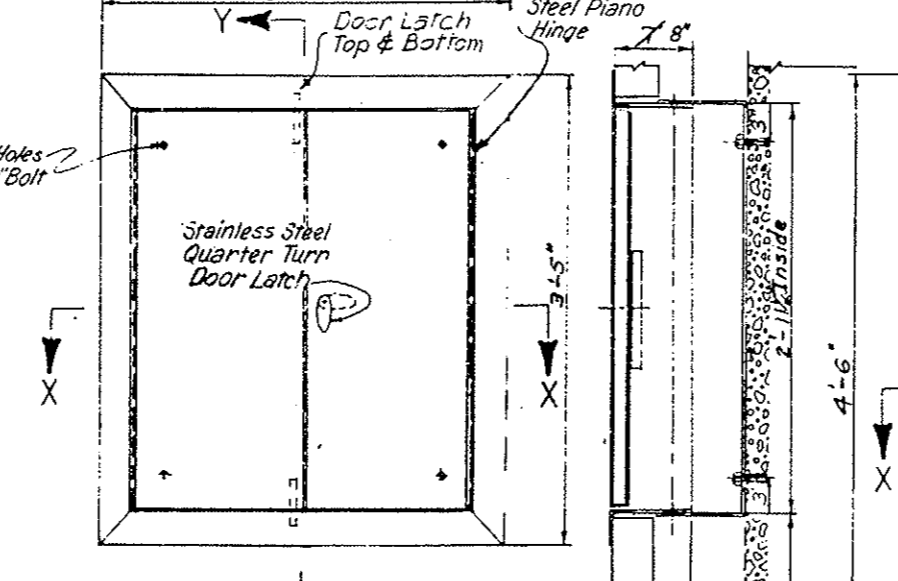
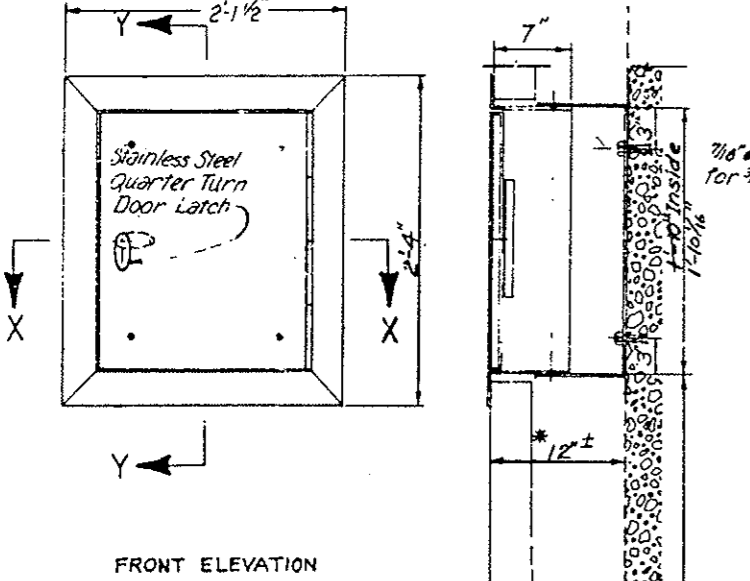
Note: Removal of Concrete for Blockout to be in accordance with Spec. Section 202. The perimeter of the Blockout shall be sawed to a minimum of 2 inches before removing concrete.

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 H-WF-7)



INITIAL	DATE	CHANGED BY
C.D.S.H.	7-3-75	
QUANTIFIED BY	DATE	CHECKED BY
C.D.S.H.	7-3-75	
DESIGNED BY	DATE	DETAILS BY



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

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

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

CABINET LOCATIONS ON NORTH WALL

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

Cabt. No.	Fire Ext. Cabt.	Cabt. No.	Fire Ext. Cabt.	Cabt. No.	Fire Ext. Cabt.	Cabt. No.	Fire Ext. Cabt.
1	(See WF-7)	9	59+13.35	17	79+23.35	25	99+33.35
2	41+54.60	10	61+64.60	18	81+74.60	26	101+84.60
3	44+75.25	11	54+15.85	19	84+25.85	27	104+15.85
4	46+57.10	12	66+67.10	20	86+77.10	28	106+87.10
5	49+08.35	13	69+18.35	21	89+28.35	29	109+38.35
6	51+59.60	14	71+59.60	22	91+29.60	30	111+89.60
7	54+10.85	15	74+20.85	23	94+30.85	31	114+20.85
8	56+62.10	16	76+72.10	24	96+82.10	32	116+92.10
		17	79+23.35	25	99+33.35	33	119+43.35
		26	101+84.60	34	(See WF-7)		

Cabt. No.	Co Analyzer Cabt.	Cabt. No.	Co Analyzer Cabt.	Cabt. No.	Co Analyzer Cabt.
1	37+82.40	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.

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 doors which shall have a porcelain enamel surface front and back. Cabinets to be square with wall i.e. See Cabinet Hardware and Finish Schedule for additional information.

DIVISION OF HIGHWAYS

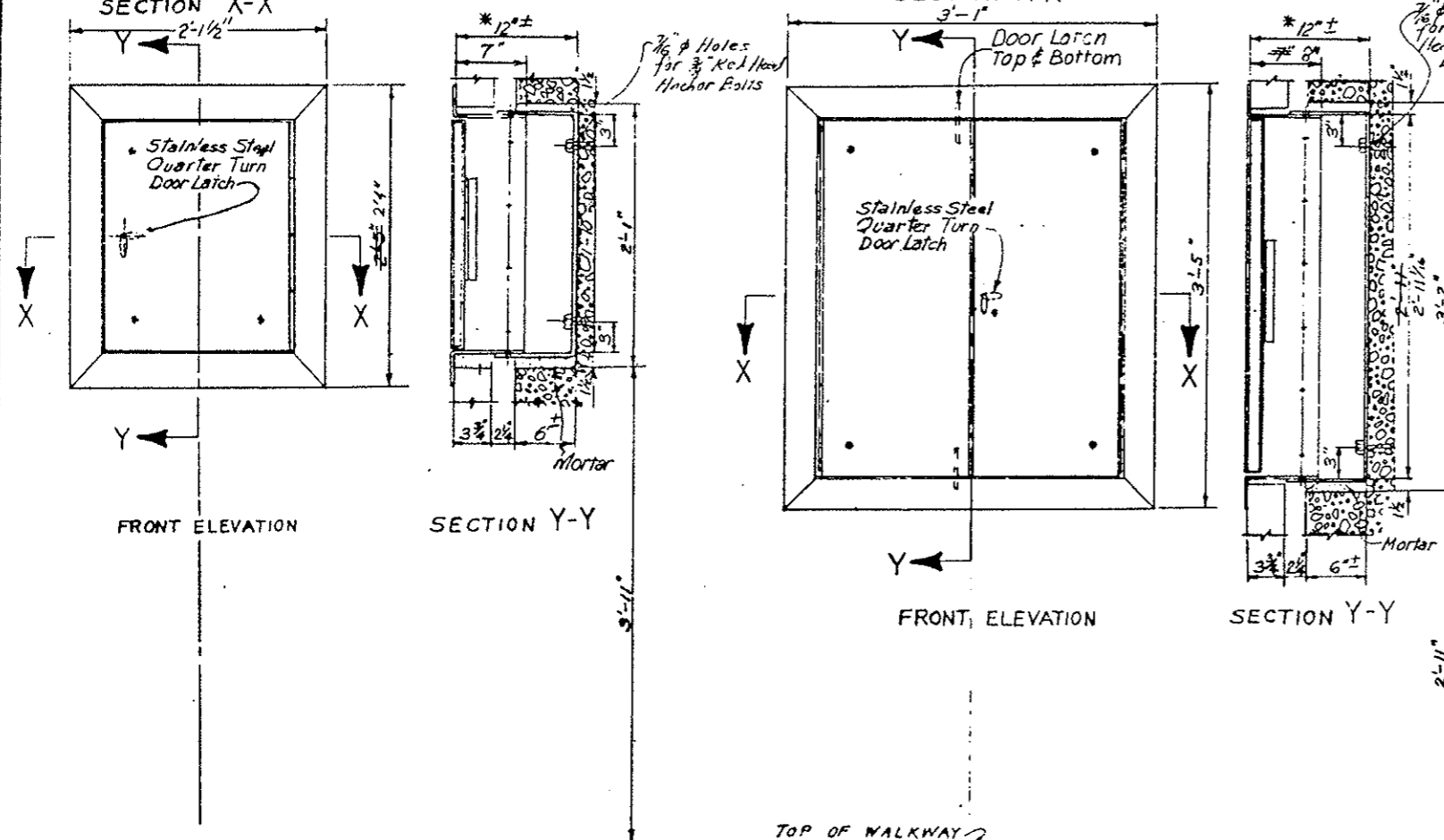
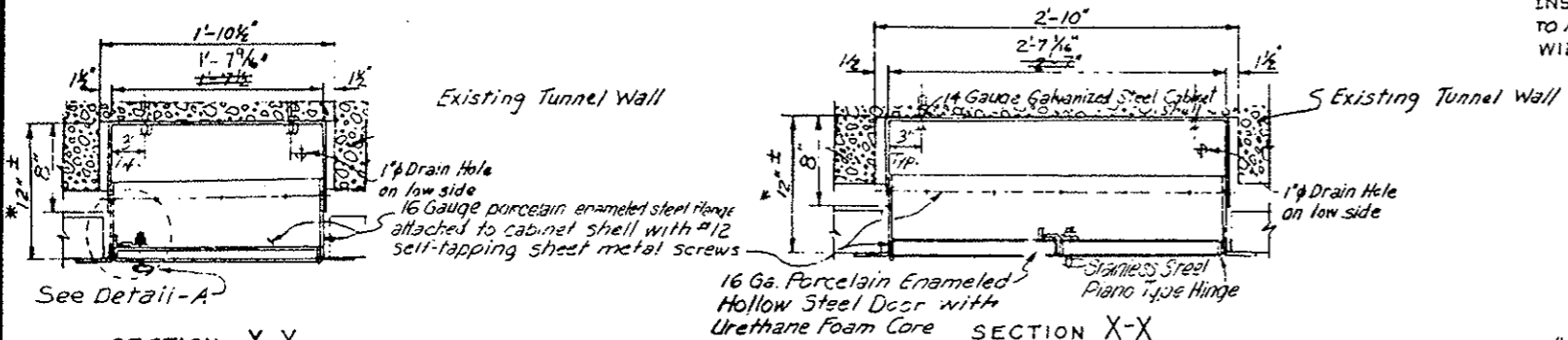
CABINETS TELEPHONE, FIRE EXTINGUISHER AND CO ANALYZER

Designer C.D.S.H. Structure Numbers  
 Detailer J. LEITCH Numbers  
 Drawing Number WF-6 of Drawings

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

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3 (53,220)	67	

REVISIONS	



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

DESIGNED BY	DATE	CHECKED BY
CDM	1/25/61	CDM
DESIGNED BY	DATE	CHECKED BY
CDM	1/25/61	CDM

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

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

Cabt. No.	Emerg. Phone Cabt.
11	121-50.70

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

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

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I 70-3(83)220	68	

REVISIONS			
(P-1)	11-3-78	Cabinet Locations	E.B.

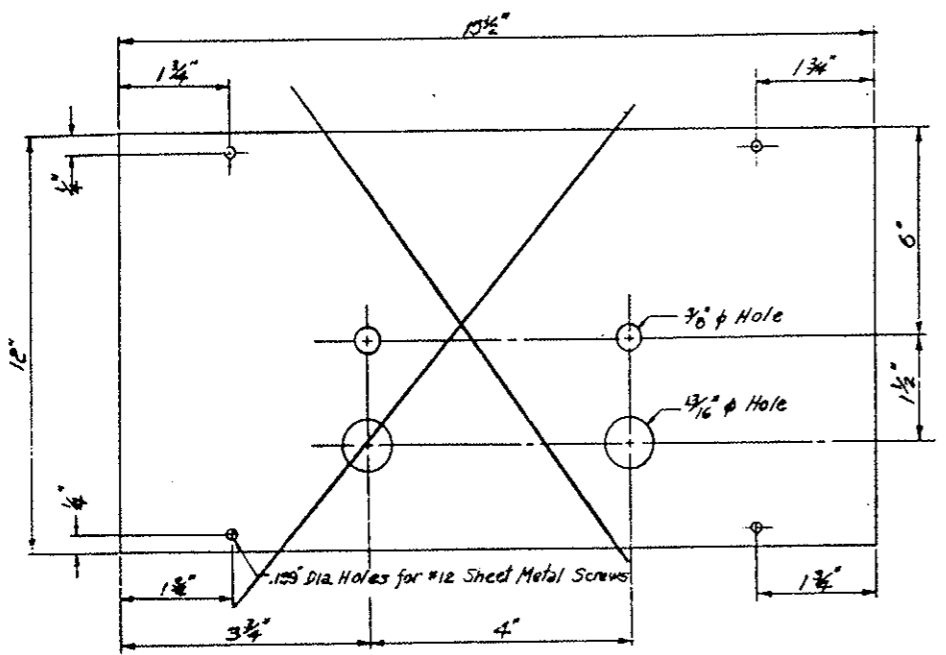
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INSTRUMENT CABINET LOCATIONS

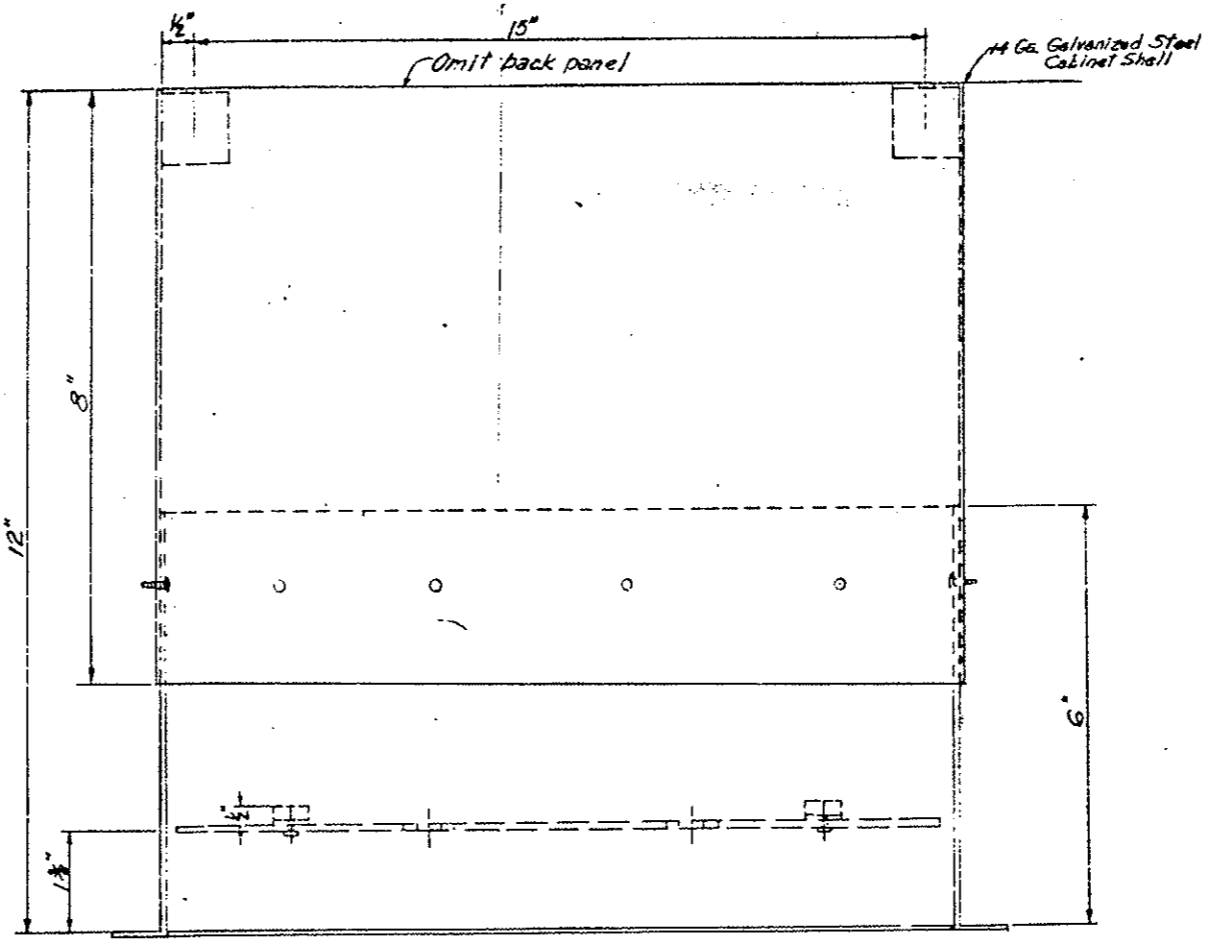
No.	I <sup>n</sup> Instr. Cabinet
1	41+60
2	51+98
3	58+94
4	62+48
5	63+04
6	63+60
7	64+00
8	64+52
9	65+08
10	70+20
11	71+04
12	72+40
13	72+44
14	73+48
15	80+90
16	81+50
17	81+86
18	82+46
19	83+43
20	84+00
21	85+00 Deleted
22	85+00
23	85+50
24	88+18
25	89+38
26	90+32
27	90+46
28	90+98
29	91+94
30	93+02
31	94+10
32	96+02
33	97+02
34	97+50
35	98+26
36	102+52
37	103+00
38	103+84
39	105+48
40	105+95
41	106+36
42	108+64
43	113+88
44	118+77
45	119+59

3-Boxes 2 on the north  
1 on the south

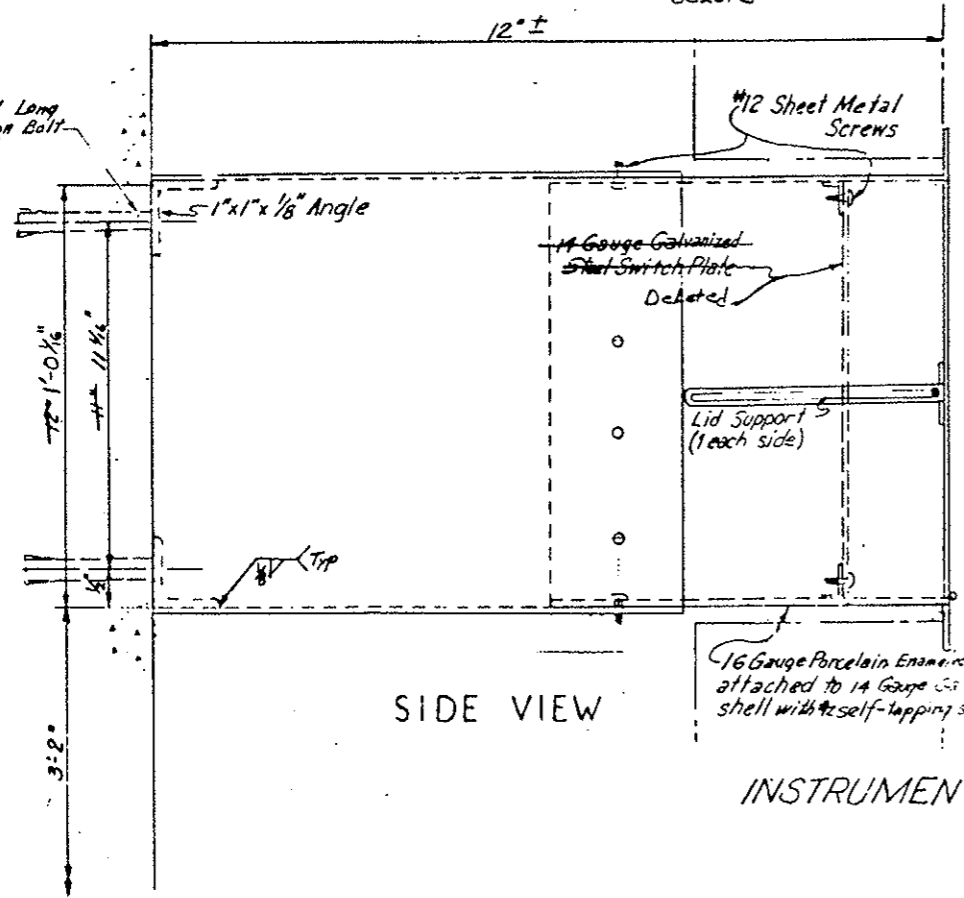
These stations are approximate.



~~SWITCH MOUNTING PLATE~~  
Delete

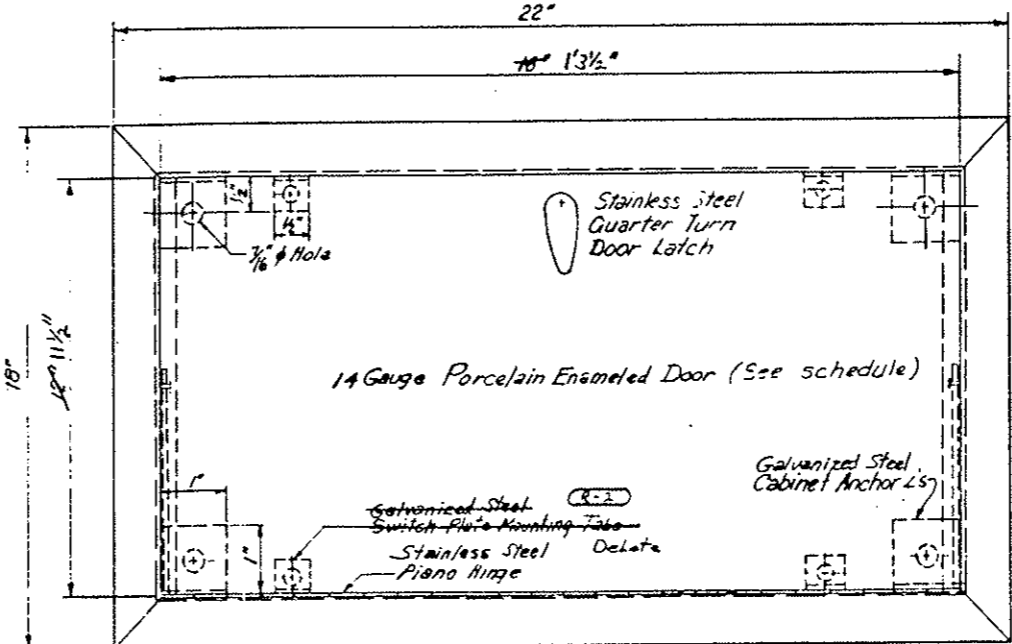


PLAN VIEW



SIDE VIEW

INSTRUMENTATION CABINET



ELEVATION VIEW

Instrumentation Cabinet to be square with tile.

INITIAL	DATE	CHECKED BY
	3-27-78	DESIGNED BY
	3-29-78	CHECKED BY
		QUANTITIES BY
		CHECKED BY

DIVISION OF HIGHWAYS

INSTRUMENTATION CABINET

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

Revision Dates: \_\_\_\_\_  
Primary Scale Only: \_\_\_\_\_

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(83)220	69	

REV. SIGNS	

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

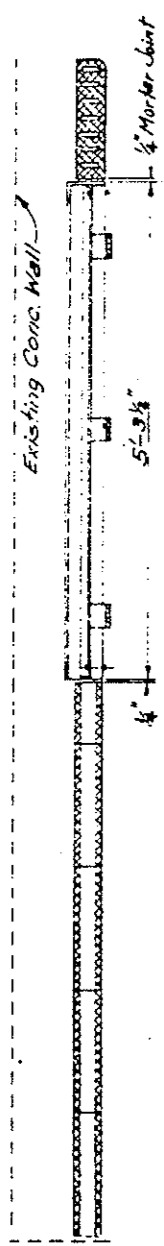
STANDARD PULLBOX STATION LOCATIONS

Pullbox Station No.	Locations North Wall	Locations South Wall
1	West Vent. Bldg (See WF-11)	West Vent. 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+64.10	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 Vent. Bldg	East Vent. Bldg
27		

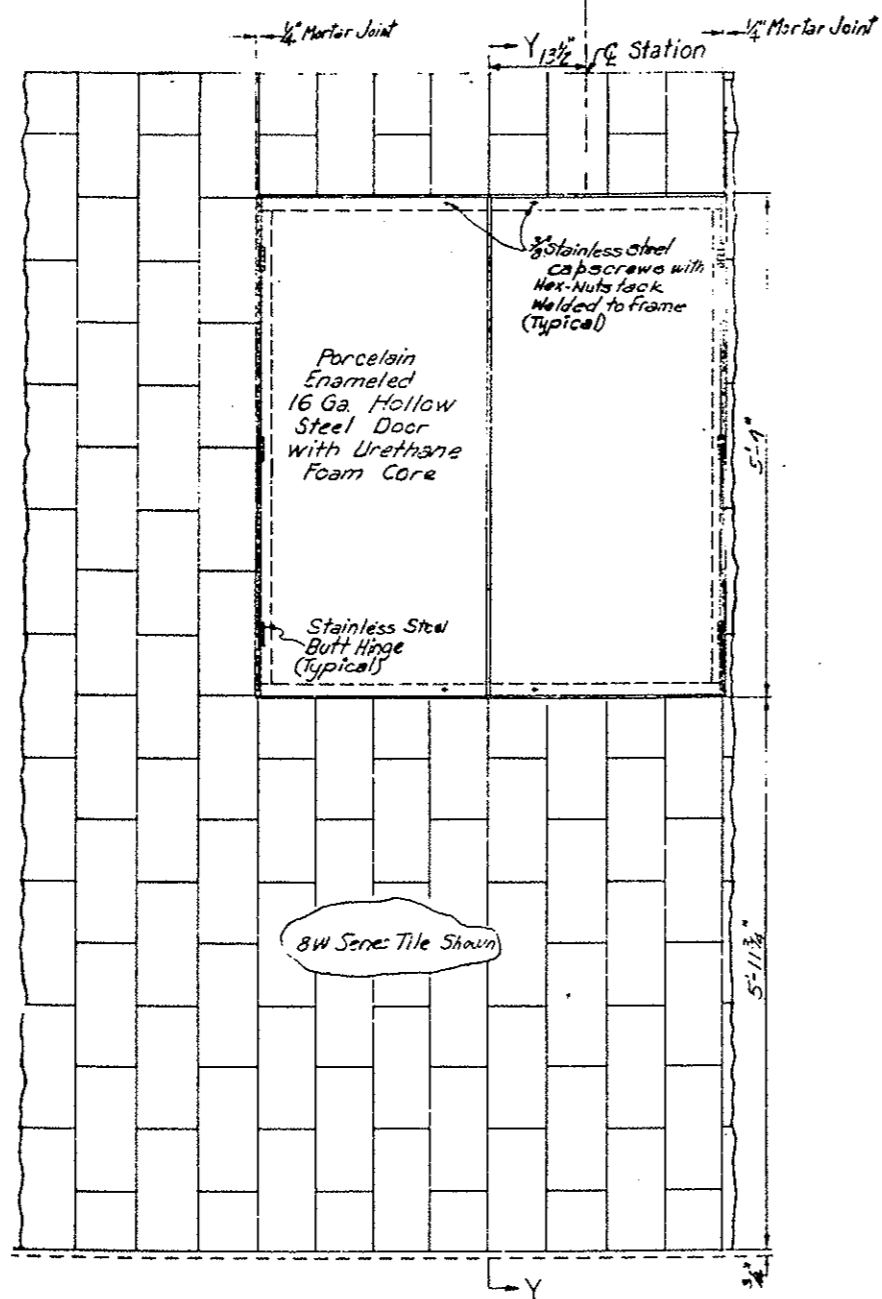
Notes: Field cut tile to fit pullbox locations.  
 Pullbox to be square with tile.  
 Pullbox frame and door not required for 1N, 1S, 27N and 27S.

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

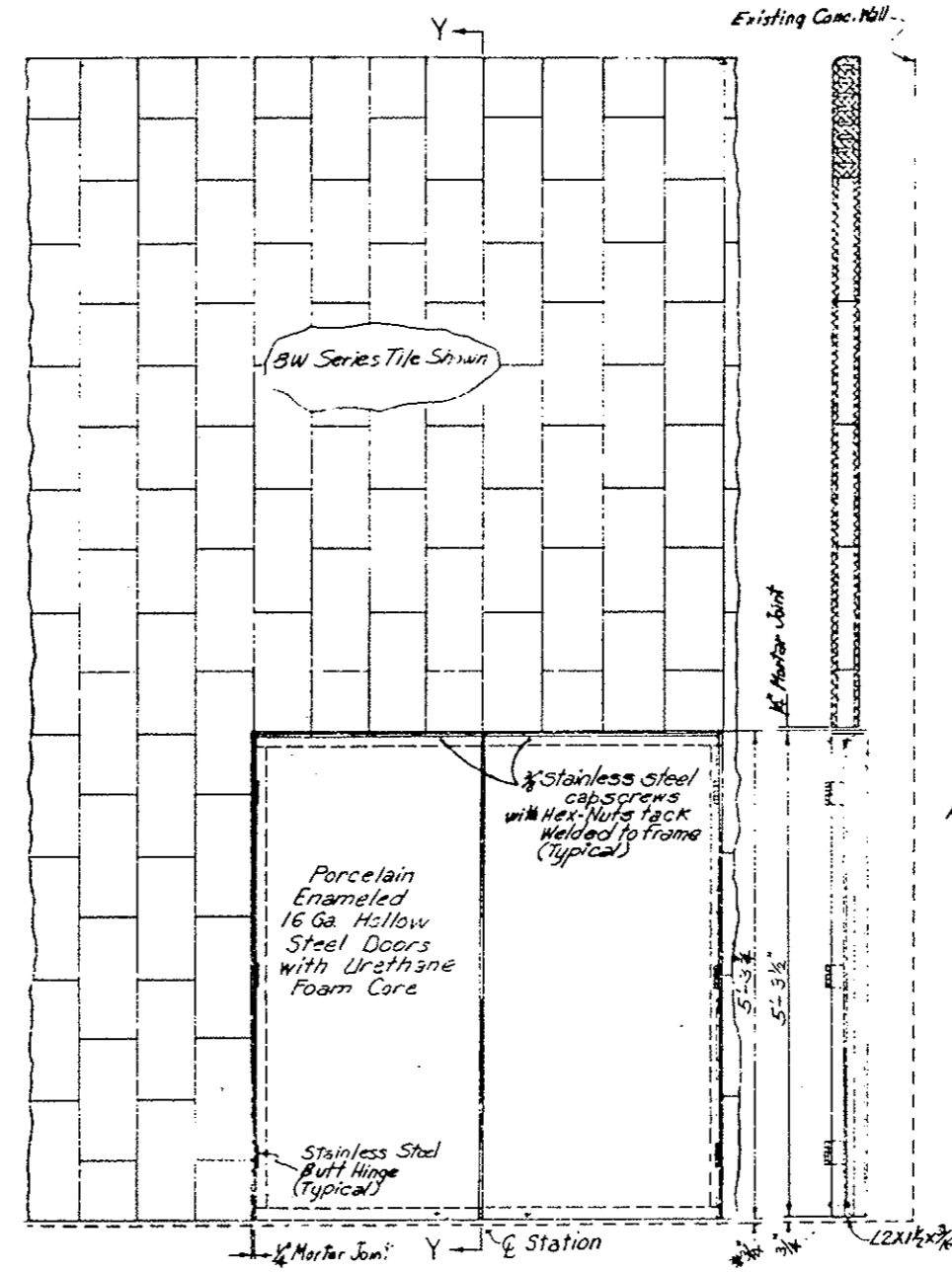
DESIGNED BY	DATE	CHECKED BY
CHECKED BY	7.7.72	QUANTITIES BY
DATE	7.7.72	CHECKED BY



SECTION Y-Y



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



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

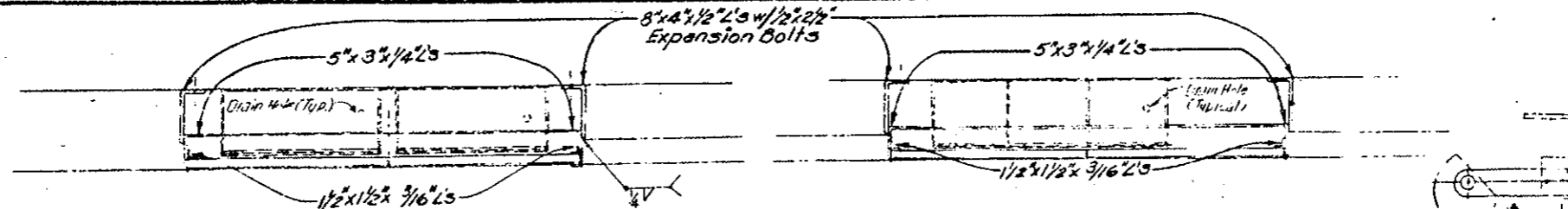
\*Varies See Following Sheet

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

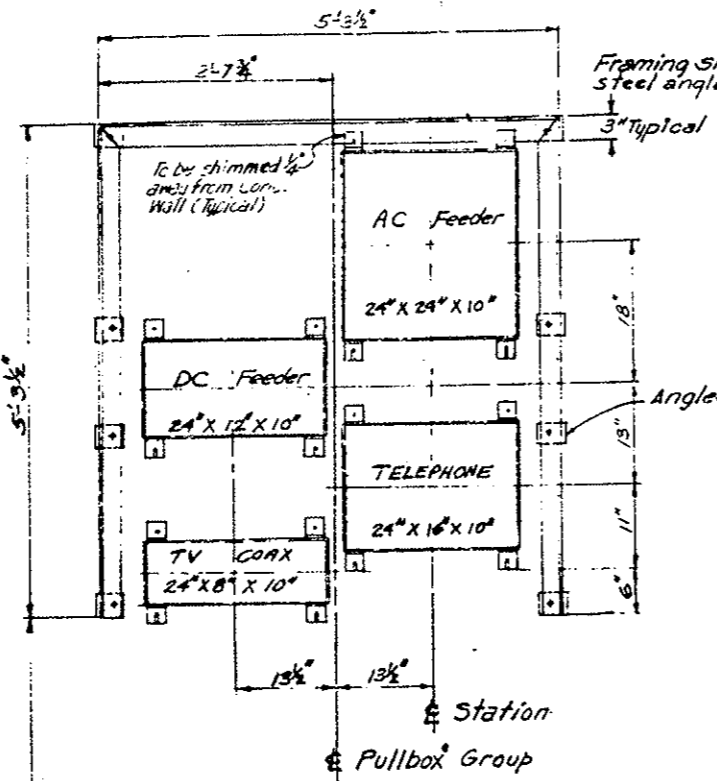


FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(93)225	70

REVISIONS	



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

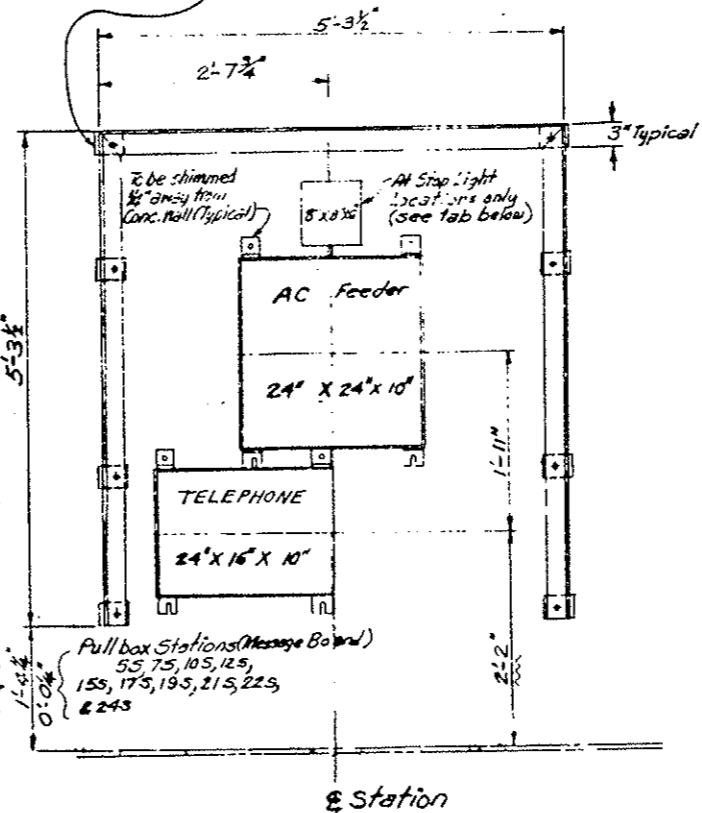


Pullbox Stations 4N 710 25A EXCEPT BY 14N 81N (See WF-14)

Pullbox Stations (Step Light) 45, 65, 85, 115, 135, 165, 185, 205, 235, 255

HIGH POINT OF WALKWAY

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



Pullbox Stations (Message Board) 55, 75, 105, 125, 155, 175, 195, 215, 225, & 245

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

DIVISION OF HIGHWAYS  
DETAILS OF PULLBOX STATION FRAME STANDARD

AS CONSTRUCTED

NO REVISIONS  REVISED  VOID

Designer GDOH	Structure
Contractor J. LECHWARTH	Number
Drawing Number WF-70	of Drawings

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I 70-3(33) 220	71	

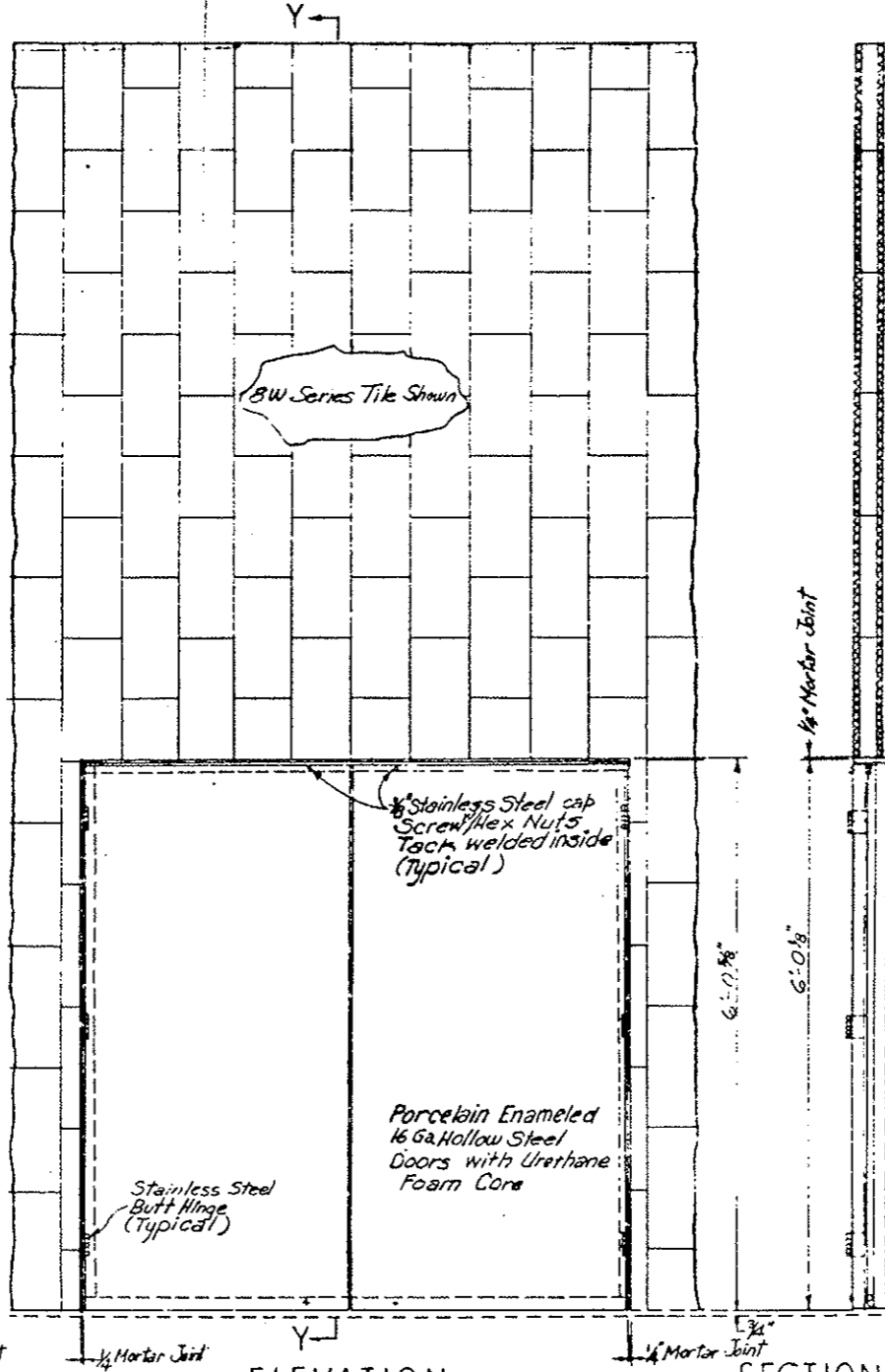
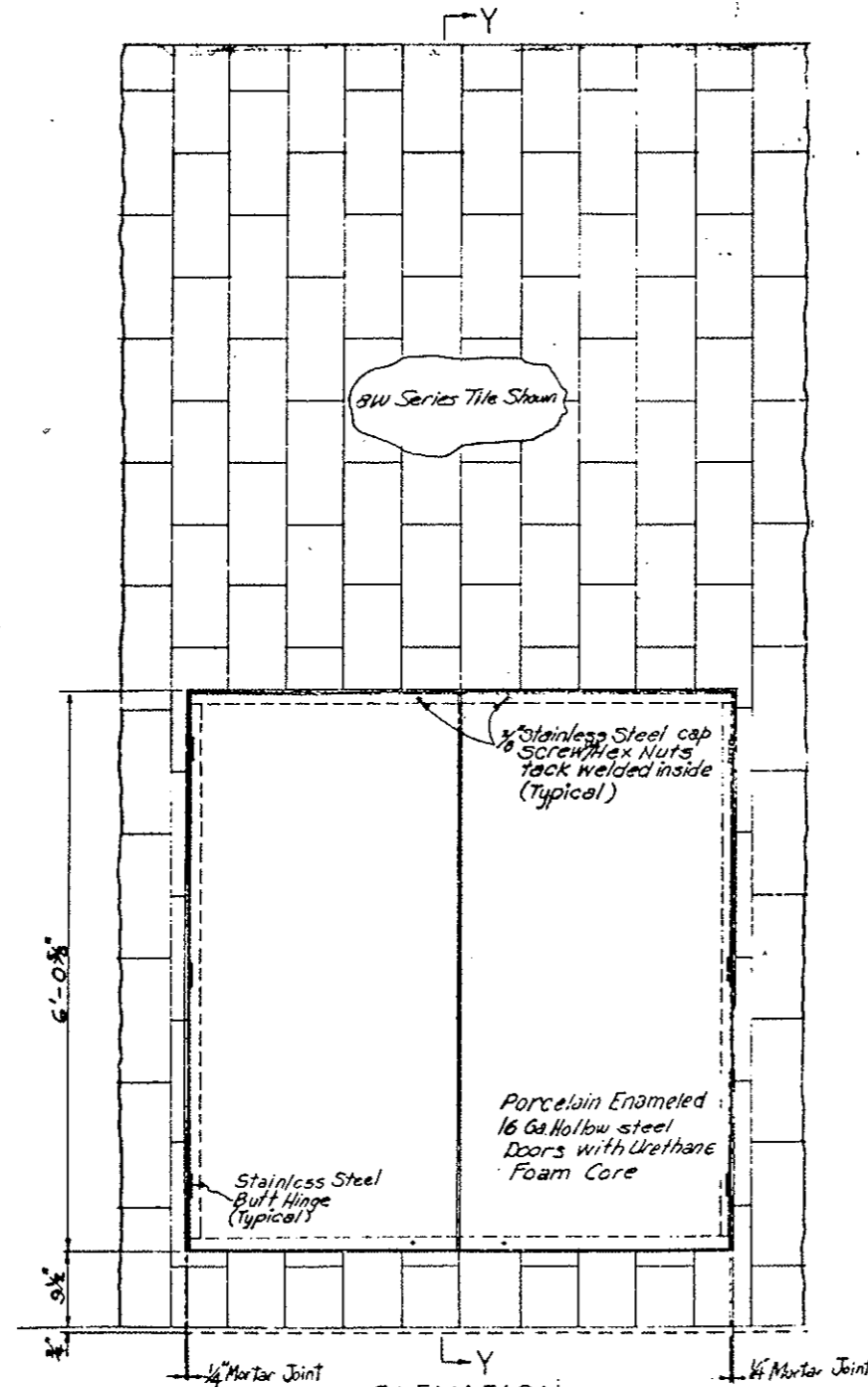
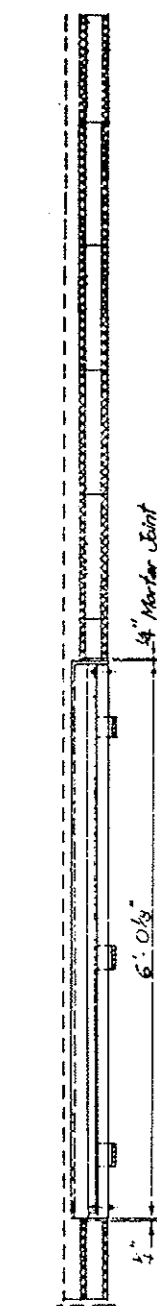
REVISIONS	

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
C.D.H.	5-5-72	C.D.H.
CHECKED BY		QUANTITIES BY
S.P.		S.P.
DETAILS BY		CHECKED BY



SECTION Y-Y

ELEVATION

ELEVATION

SECTION Y-Y

PANEL AT PULLBOX DISTRIBUTION STATION 2N  
 NORTH WALL

PANEL AT PULLBOX DISTRIBUTION STATION 2S  
 SOUTH WALL

ORIGINAL SCALE: 1"=1'-0"

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 C.D.H.	Structure
Detailer J. Letchworth	Numbers
Drawing Number W.F-11	of Drawings

STATE DEPARTMENT OF HIGHWAYS  
 DIVISION OF HIGHWAYS - STATE OF COLORADO  
 100 WEST COLORADO AVENUE  
 DENVER, COLORADO

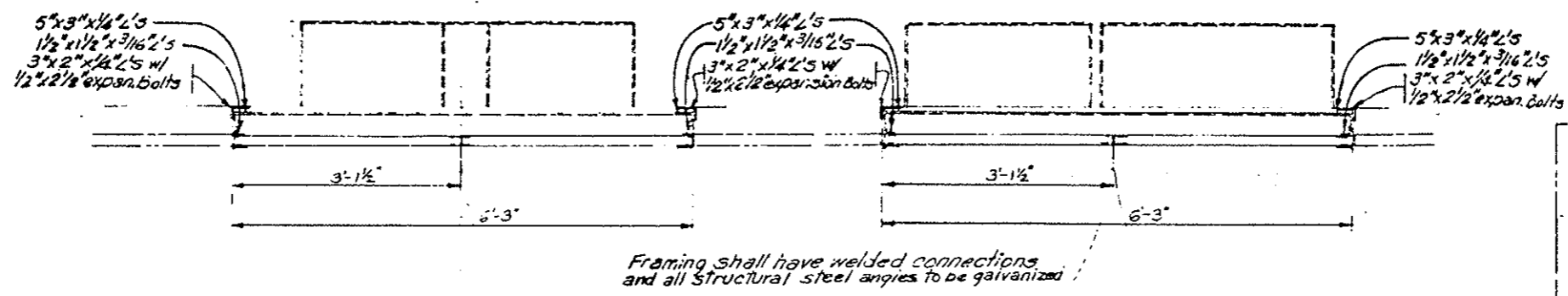
FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII COLORADO	I 70-3 (22) 220	72	

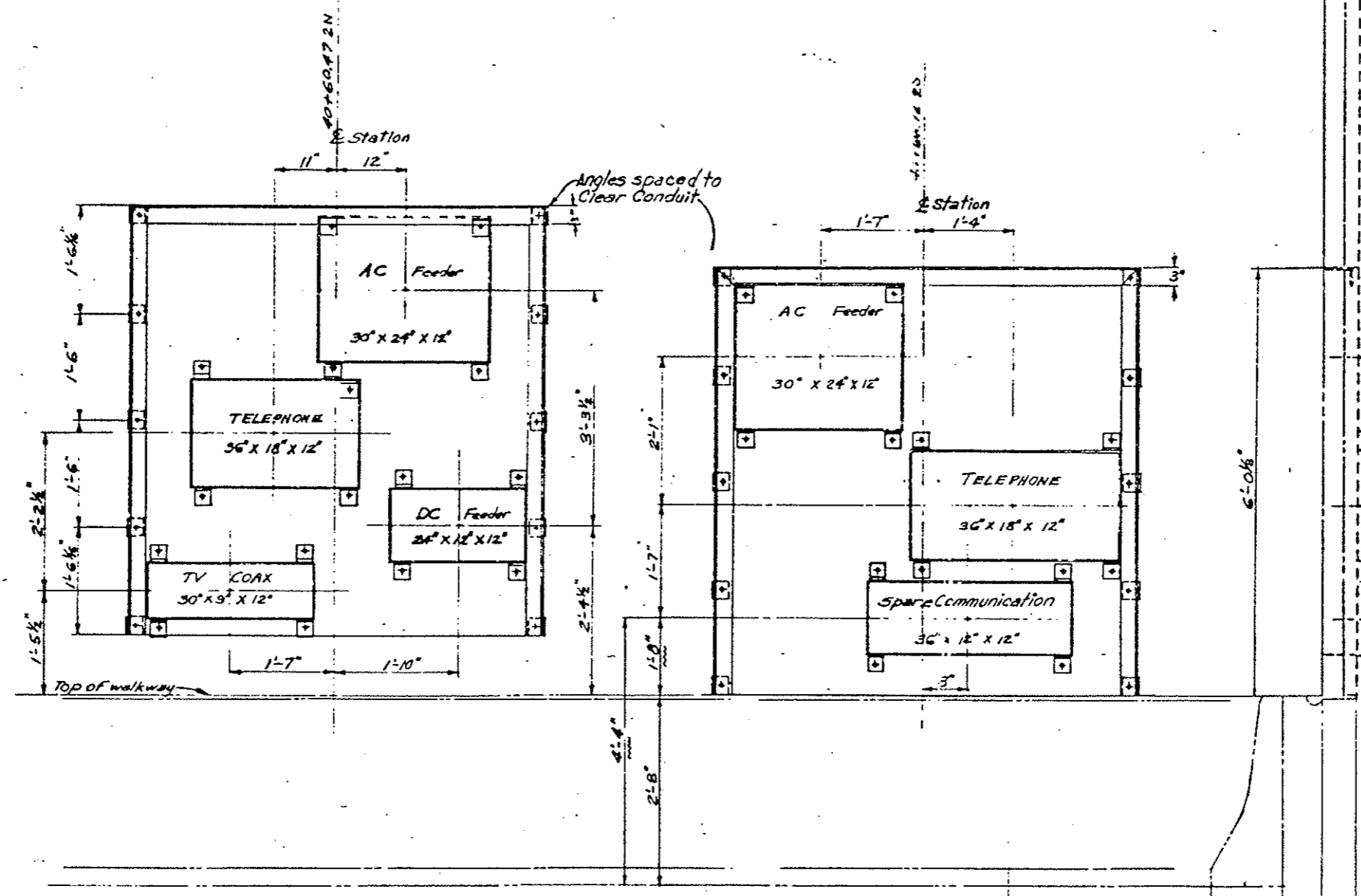
REVISIONS	

AS CONSTRUCTED		
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		VOID <input type="checkbox"/>



DESIGNED BY	DATE	CHECKED BY	QUANTITIES BY
C.D.O.H.	6-27-75	C.D.O.H.	C.D.O.H.



See Notes on WF-10

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

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

**DIVISION OF HIGHWAYS**

**DETAILS OF PULLBOX STATION FRAMES 2S AND 2N**

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

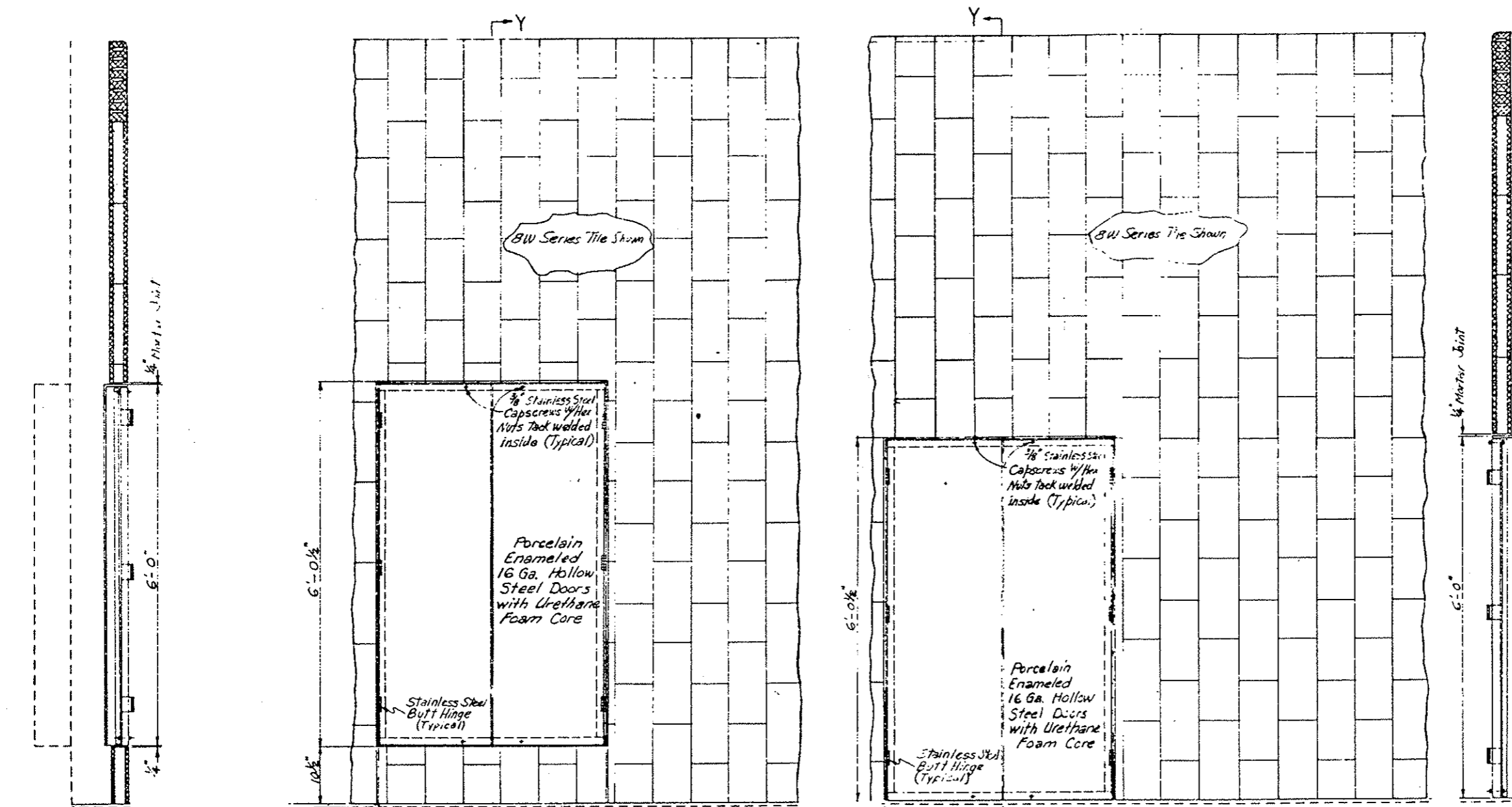
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I 70-3(83)220	73	

REVISIONS				

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

Pullbox Stations N and S	N Locations North Wall	S Locations South Wall
3	40+83.93	40+82.93
26	120+20.43	120+20.43

DATE	CHECKED BY	QUANTITIES BY



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.

SECTION Y-Y

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

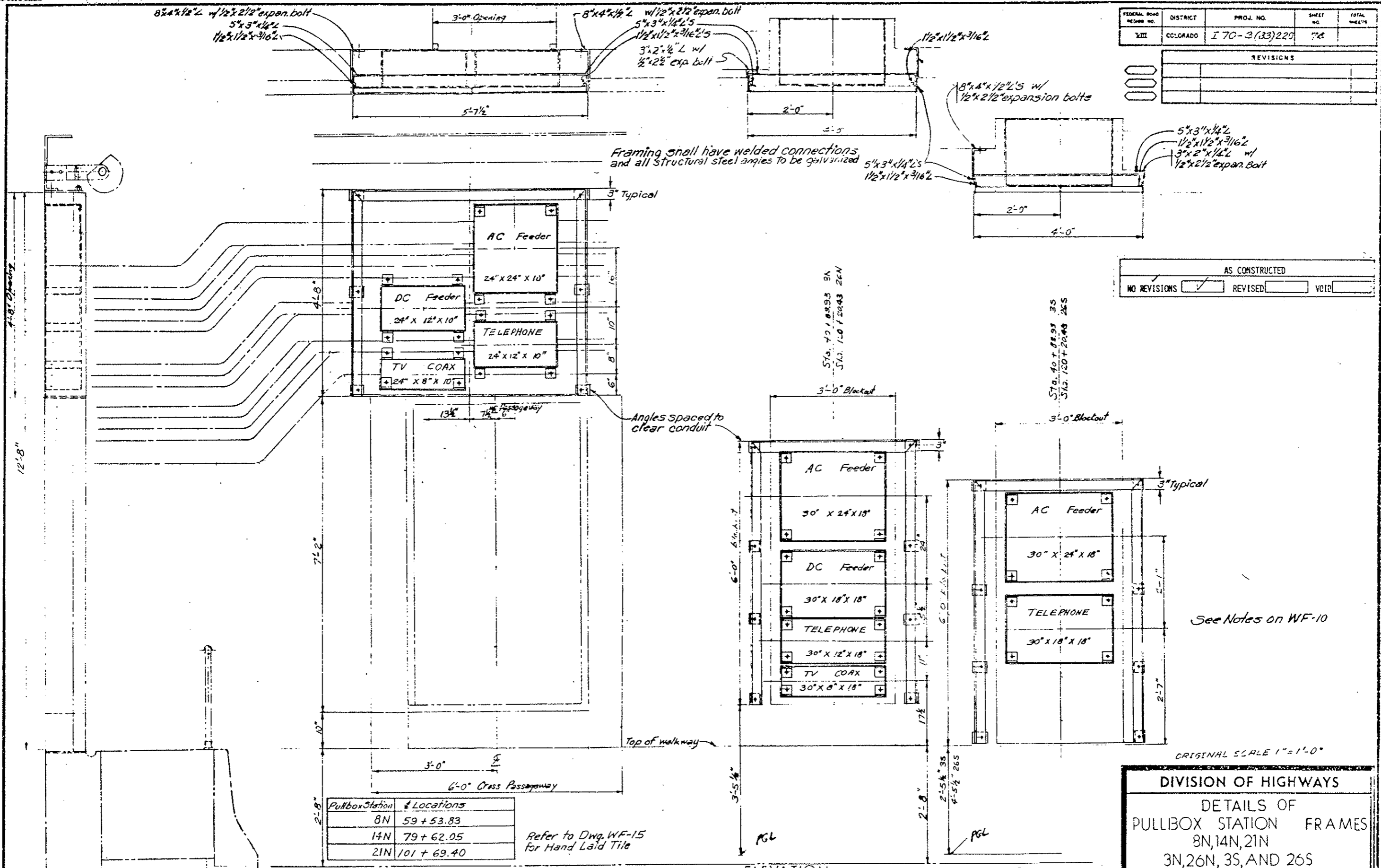
ELEVATION  
PANEL AT PULLBOX DISTRIBUTION STATION 3S,26S  
SOUTH WALL  
ORIGINAL SCALE: 1"=1'-0"

SECTION Y-Y

DIVISION OF HIGHWAYS			
WALL TILE			
DETAILS AT PULLBOX STATIONS 3N, 26N, 3S AND 26S			
Designer C.D.O.H.	Structure		
Detailer J. Lefschworth	Numbers		
Drawing Number W-F-13	of		Drawings
Revision Date	Preliminary Scale Only		

FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III COLORADO	I 70-3(33)220	78	

REVISIONS	



NO REVISIONS	AS CONSTRUCTED	REVISED	VOID
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DESIGNED BY	CHECKED BY	DATE	QUANTITIES CHECKED BY
DETAILED BY	CHECKED BY	DATE	QUANTITIES 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

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 <i>CDON</i>	Structure Numbers
Detainer <i>J. E. P. ...</i>	
Drawing Number <i>WF-14</i>	of Drawings

DATE OF REVISION  
 REVISION NO. 1  
 DATE

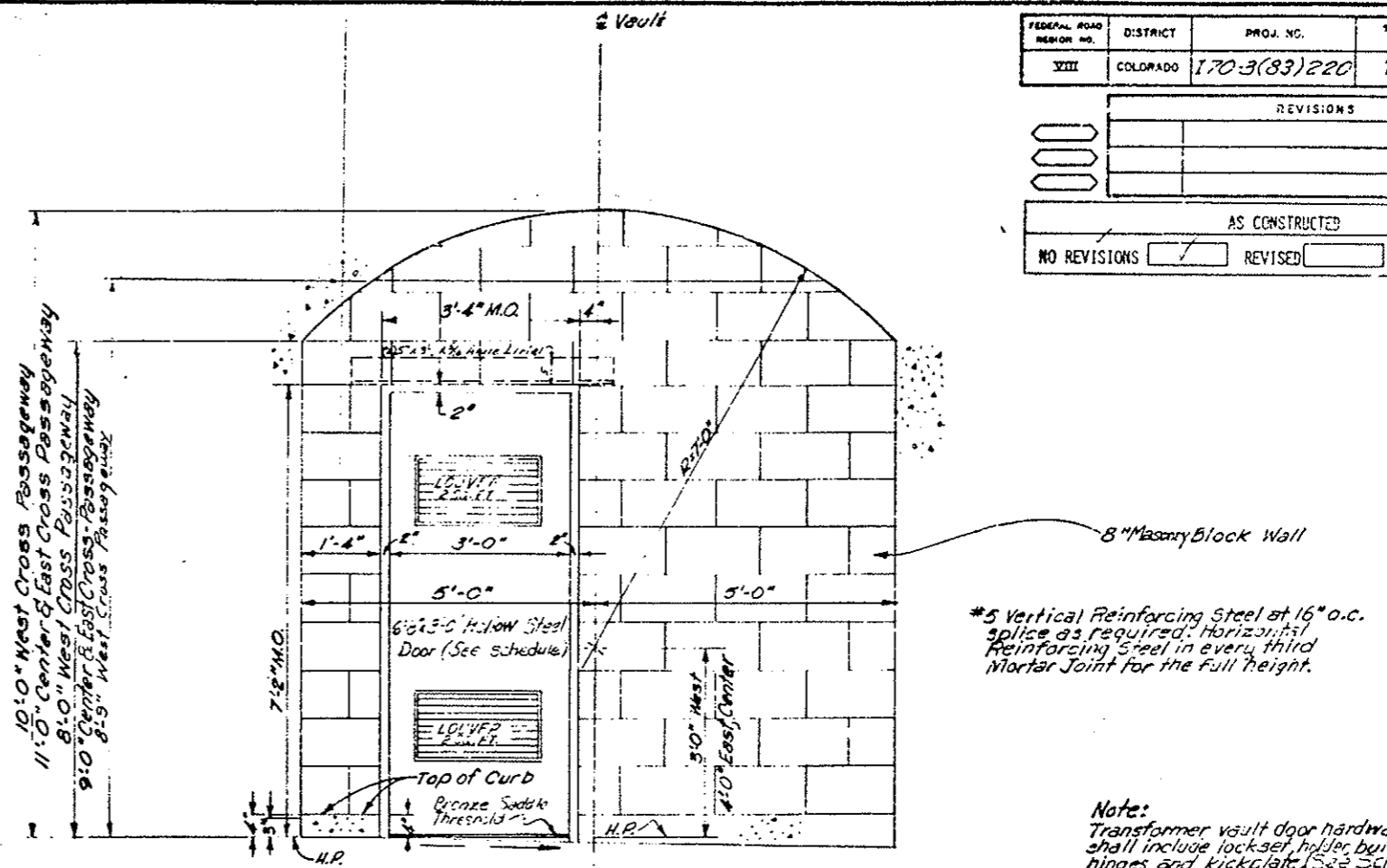
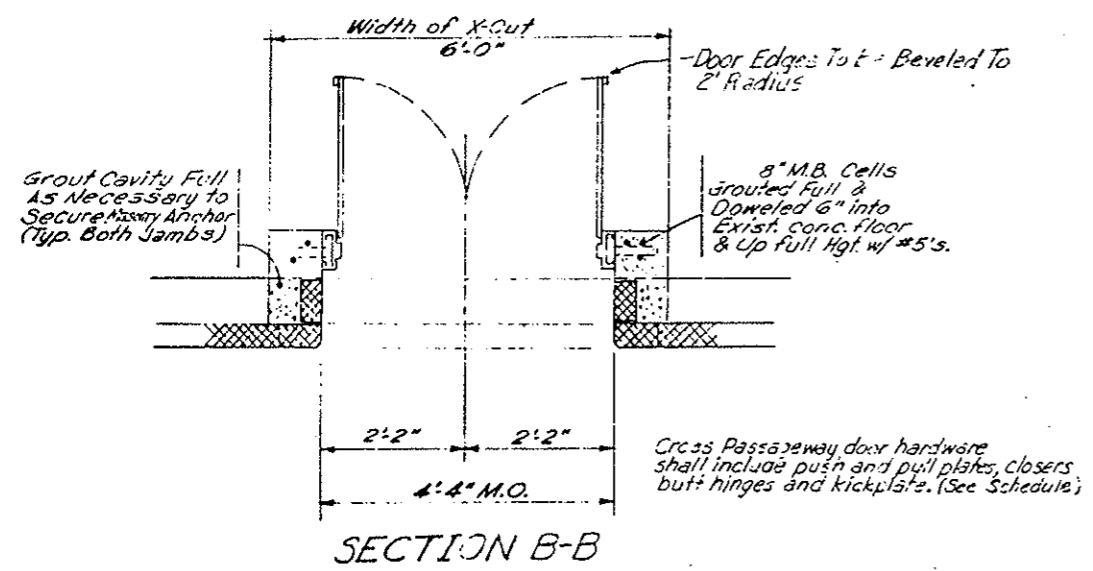
FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII COLORADO	170-3(83)220	75	

REVISIONS	

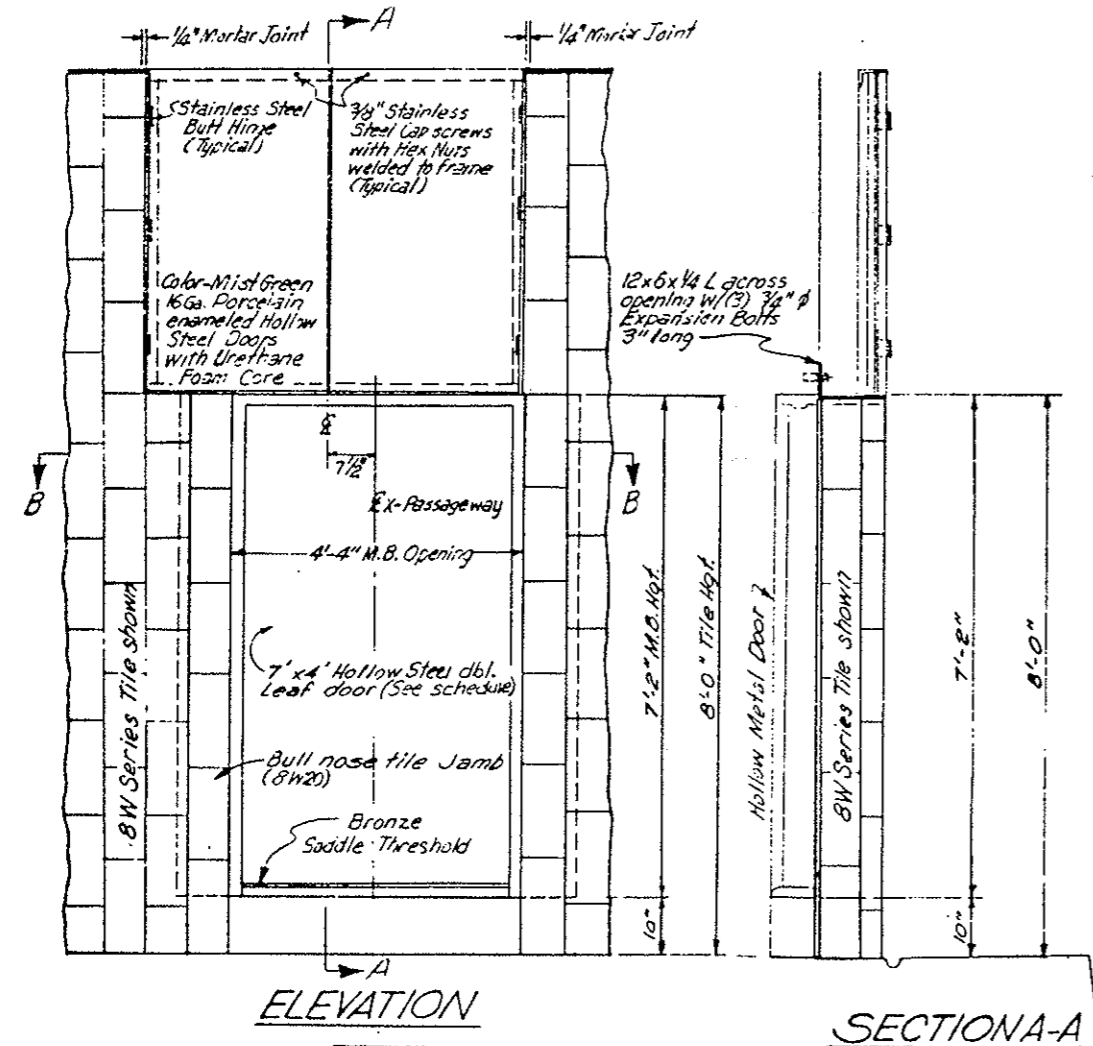
AS CONSTRUCTED	
NO REVISIONS	REVISIED



TRANSFORMER VAULT ENCLOSURE AND DOOR

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

INITIAL	DATE	CHECKED BY	QUANTITIES BY
GDH	7-8-78	GDH	GDH
DESIGNED BY	CHECKED BY	DATE	DETAILS BY
GDH	GDH	7-9-78	GDH



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.

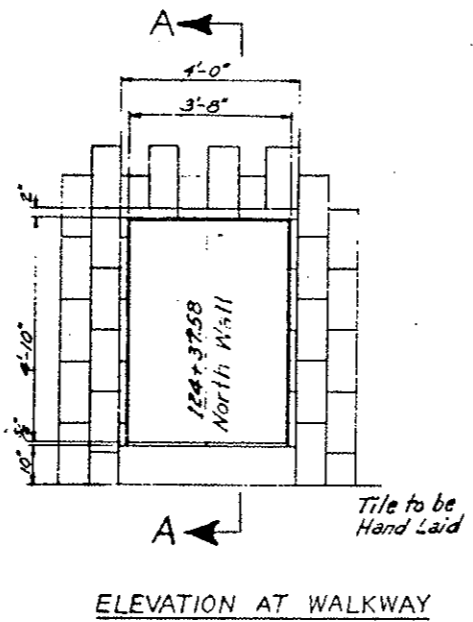
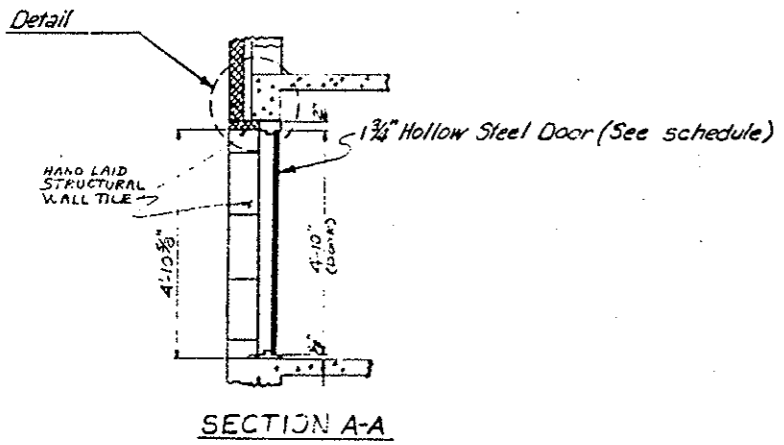
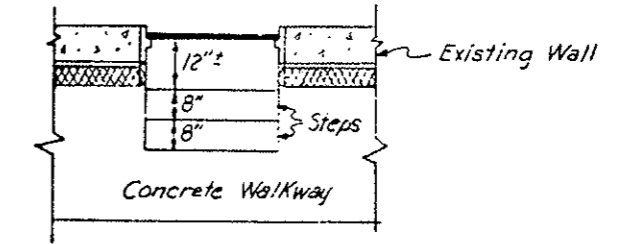
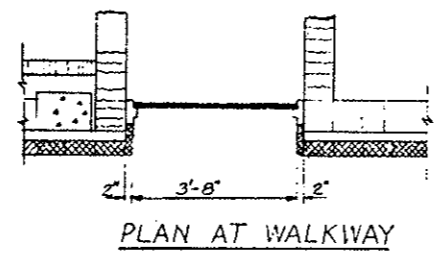
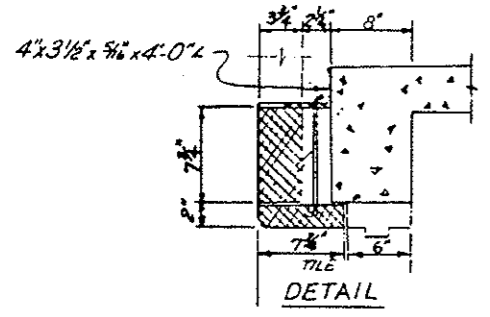
Designer GDH	Structure
Detailer J. Letourneau	Numbers
Drawing Number WF-15	of Drawings

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

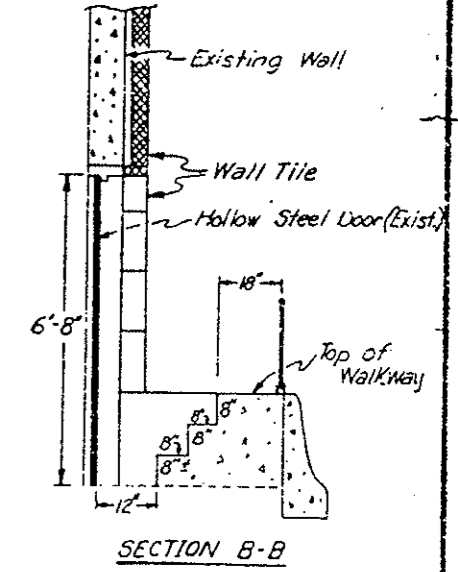
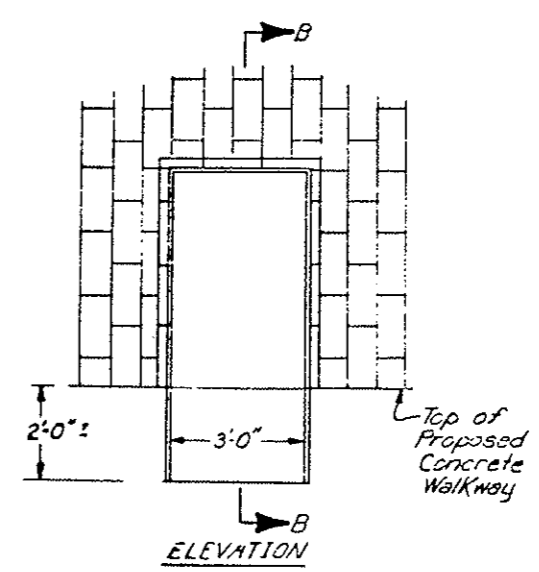
REVISIONS	

AS CONSTRUCTED

NO REVISION  REVISED  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

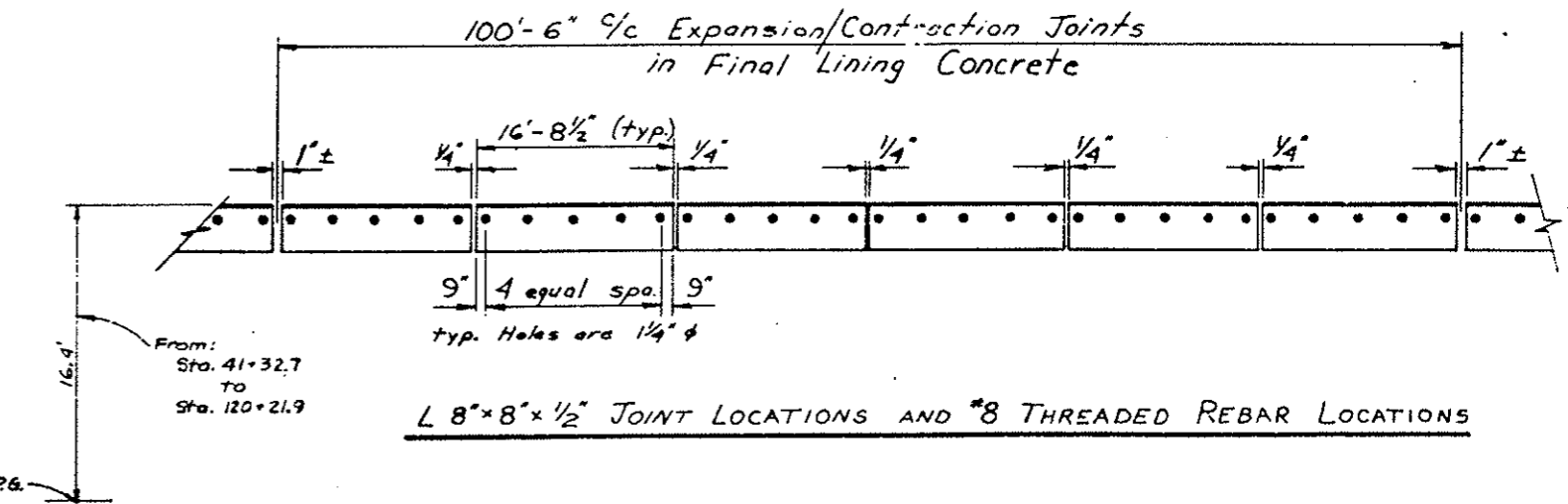
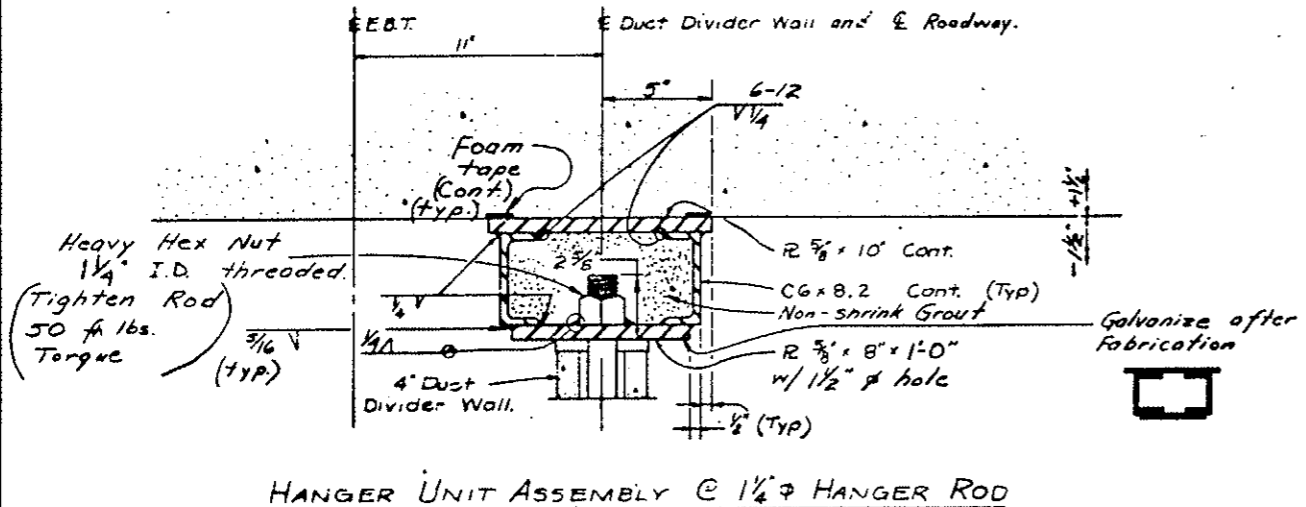
Original Scale: 1" = 2'-0"

DIVISION OF HIGHWAYS	
BASEMENT EMERGENCY AND WEST VENTILATION BUILDING DOORS	
Designer: SBAH	Structure Numbers:
Detailer: J. C. Stewart	
Drawing Number: WF-16	of Drawings:

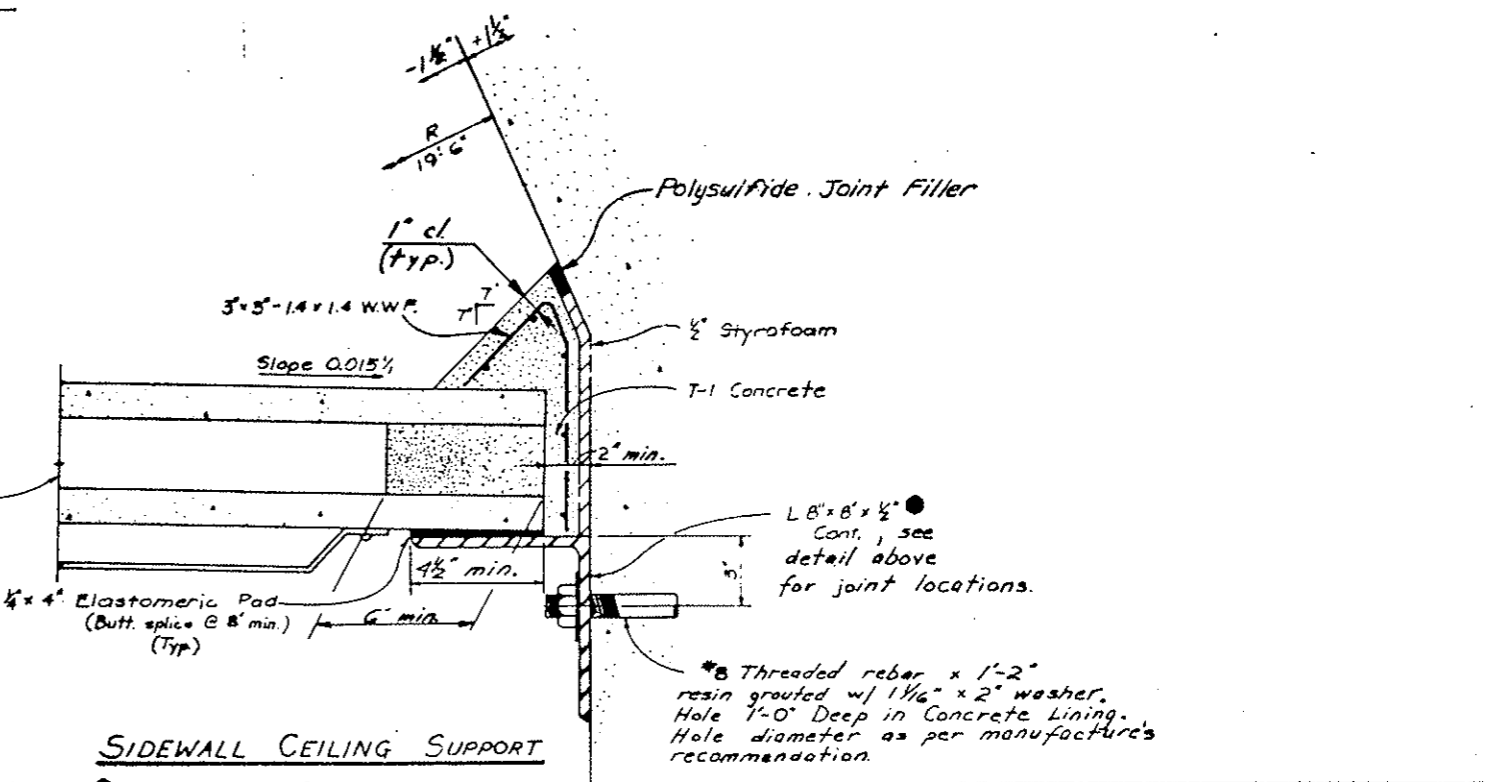
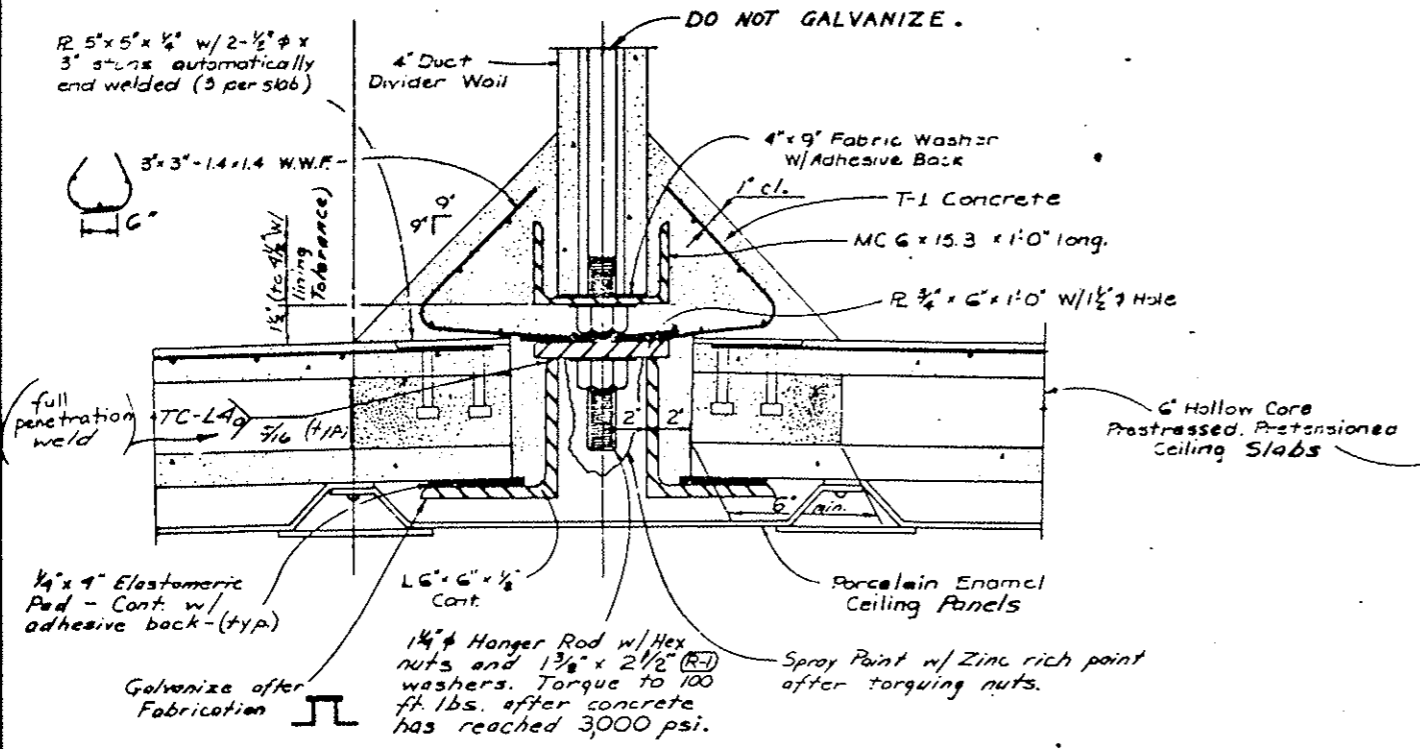
DESIGNED BY	DATE	CHECKED BY
C.D.M.	2/1/72	C.D.M.
CHECKED BY	DATE	QUANTITIES BY
C.D.M.	2/1/72	C.D.M.
DETAILS BY	DATE	CHECKED BY

AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED	VIII	COLORADO	I70-3(83)220	57	

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



DESIGNED BY	CHKD BY	DATE
BY	BY	
BY	BY	
BY	BY	
BY	BY	
BY	BY	
BY	BY	
BY	BY	
BY	BY	
BY	BY	

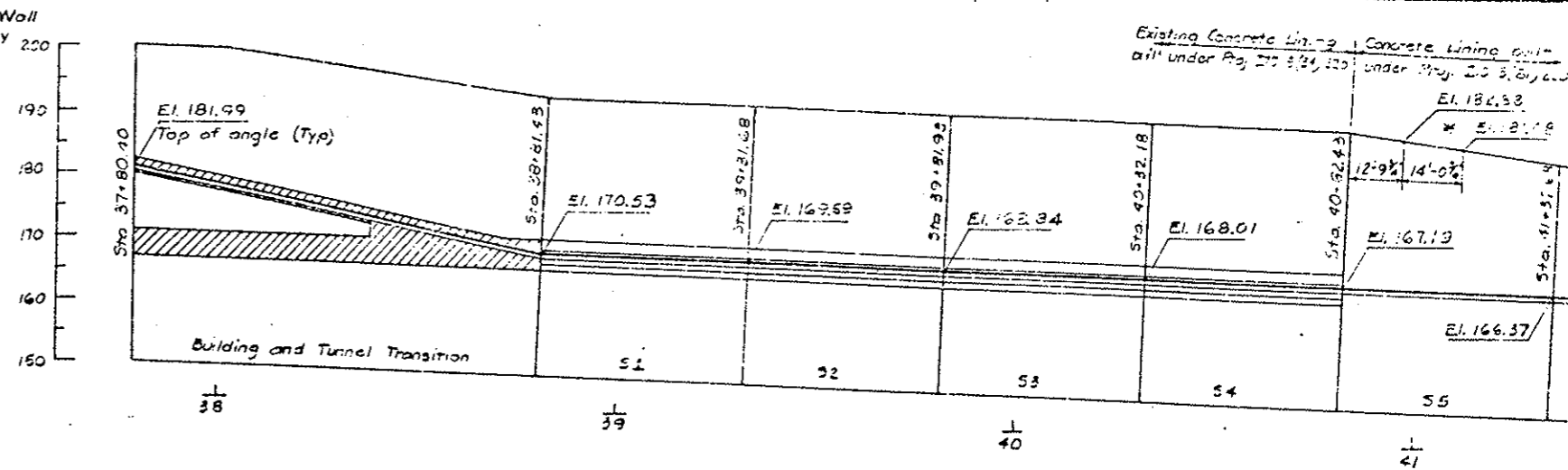


DIVISION OF HIGHWAYS	
CEILING SUPPORT DETAILS	
Designer C.D.M.	Structure F-13-X
Detailer B.R. Lere	Numbers
Drawing Number C-2	



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

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(83)220	102	



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

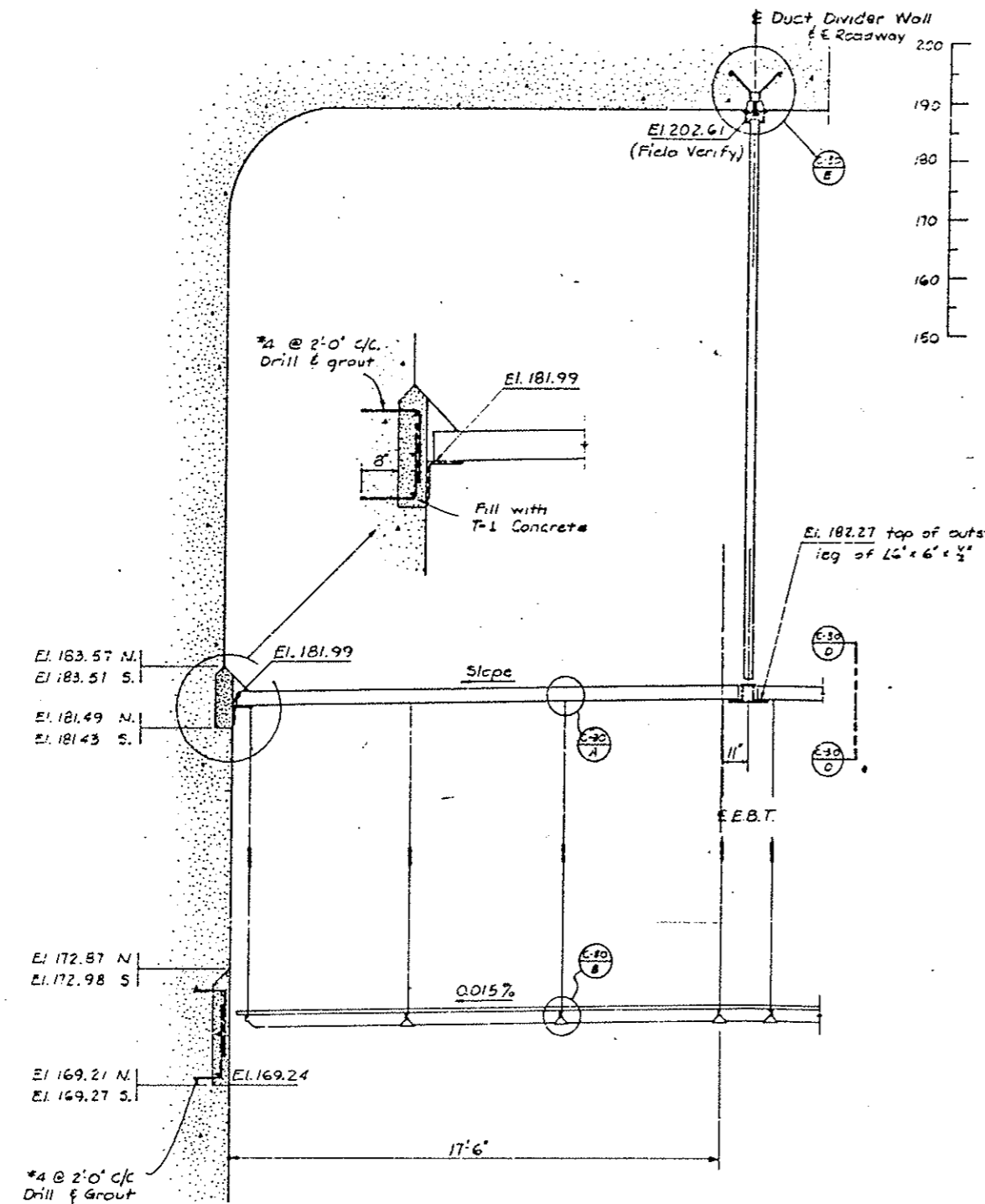
Limits of T-1 Concrete

Existing Concrete Lin. -> Concrete Lin. built  
drill under Proj. I70-3(83)220 under Proj. I70-3(83)220

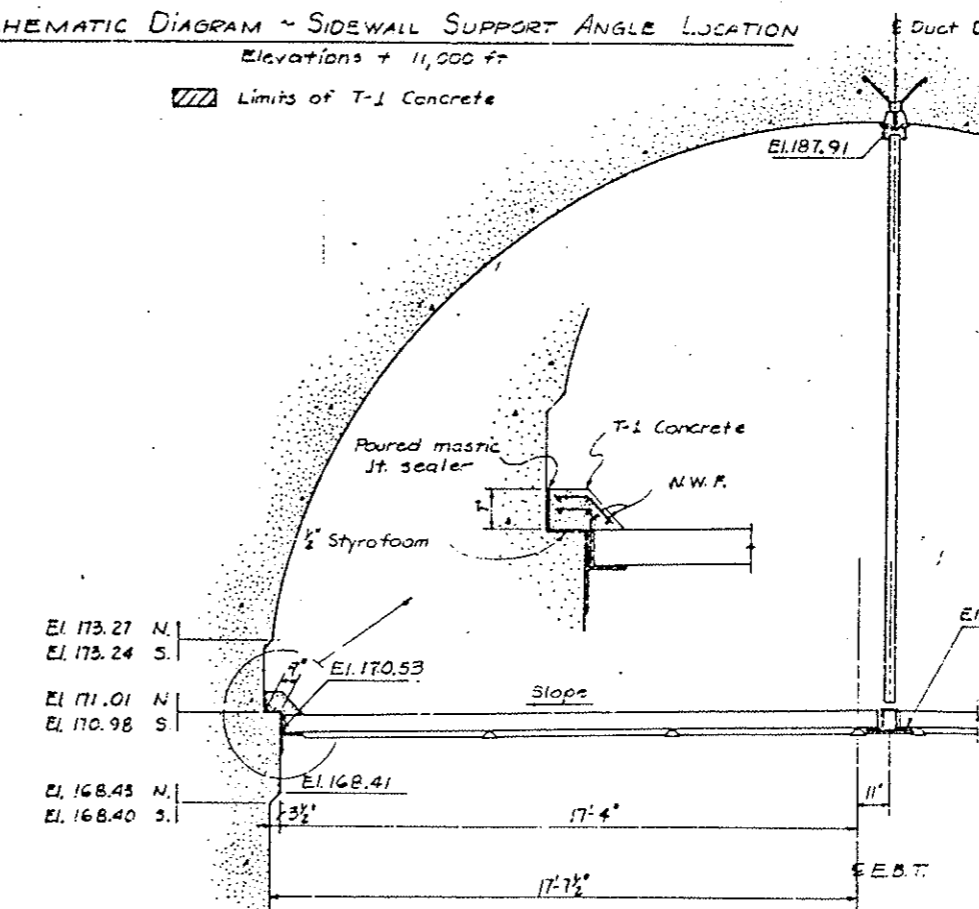
\* The arch transitions from the 18'-0" radius built under Project I70-3(83)220 to the 19'-6" radius built under Project I70-3(81)220 in the 14'-0 1/2" shown.

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

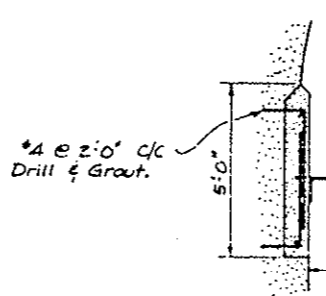
Sta. to	Sta. from	Exhaust	Supply
37-80.40	38+81.40	18'-0"	16'-8"
38-81.40	38+81.43	16'-7"	17'-3"
38-81.43	40+82.43	17'-9"	15'-11"



SECTION C @ 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)

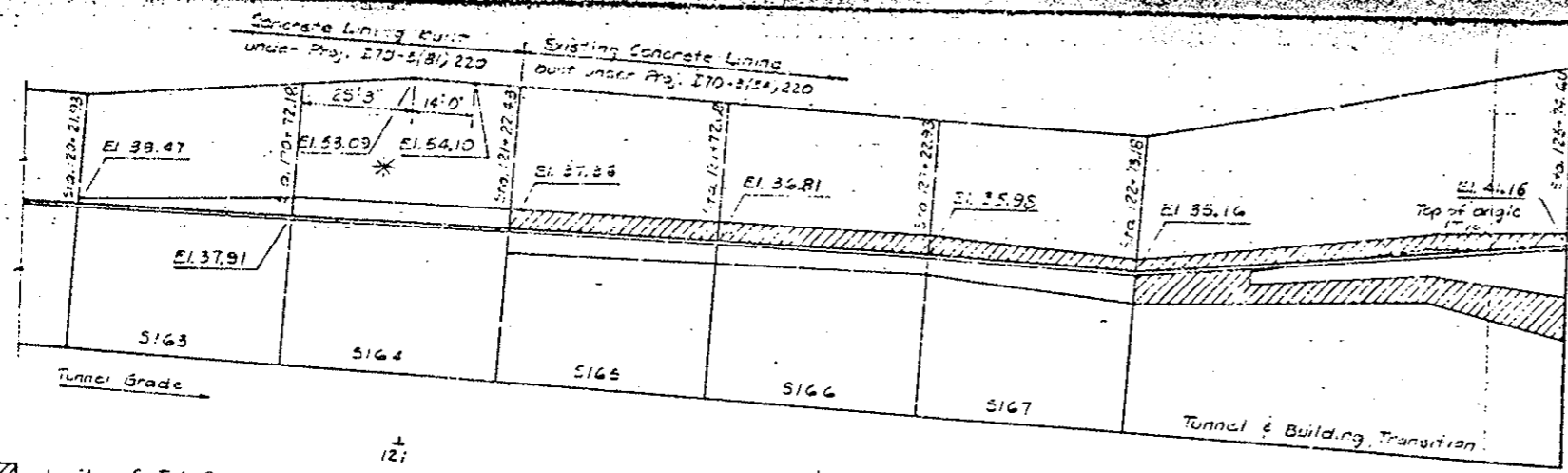
DESIGNED BY	DATE	CHECKED BY	JHP	3-77
C.D.O.H.	5-77	QUANTITIES BY	W.S.M.	4-78
CHECKED BY	5-77	Detailed BY	L.S.L.	4-78

**DIVISION OF HIGHWAYS**

**WEST TRANSITION AREA**

**SECTIONS**

Designer	C.D.O.H.	Structure	=-13-X
Detailer	B.R. Lore	Numbers	
Drawing Number C-17			



AS CONSTRUCTED

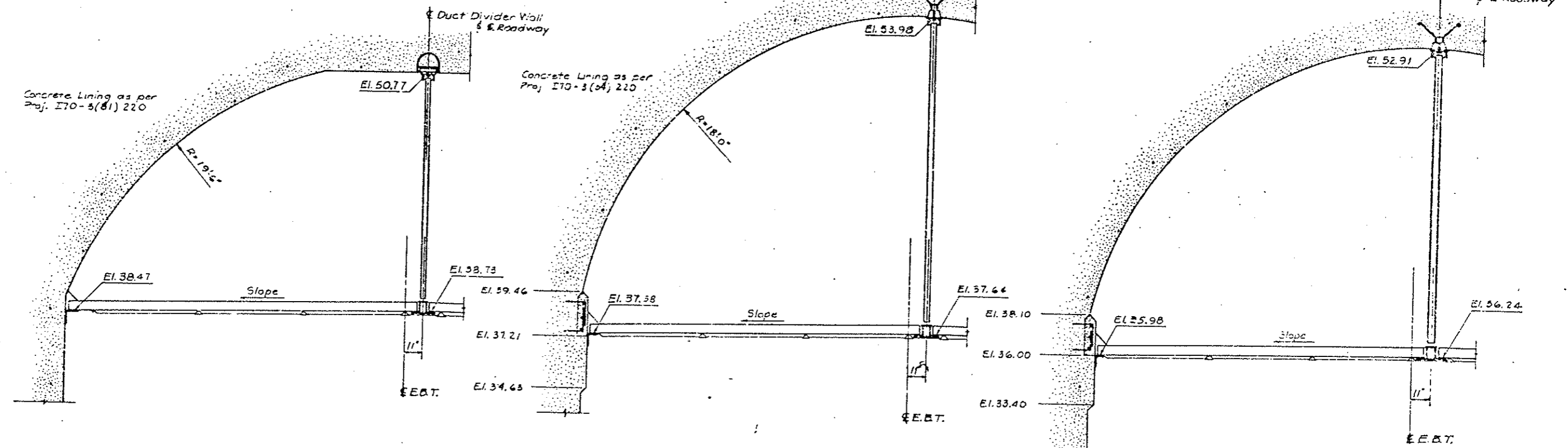
NO REVISIONS  REVISED  VOID

FEDERAL ROAD DISTRICT NO.	DIVISION	PRC. NO.	SHEET NO.	TOTAL SHEETS
III	OKLAHOMA	I70-3(8)220	110	
REVISIONS				

East Transition Area  
6' Ceiling Side Lengths

Sta. to	Sta. to	Exposure	Sluicely
21+22.43	22+22.93	17'-10"	6'-0"
22+22.93	23+50.60	8'-2"	6'-4"
23+50.60	23+74.50	13'-1"	6'-2"

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



**SECTION @ STA. 120+21.93**  
(Begin Segment 5163)

**SECTION @ STA. 121+22.43**  
Elevation +11,000 ft.  
(Begin Segment 5165)

**SECTION @ STA. 122+22.93**  
(Tunnel Side)  
(Begin Segment 5167)

\*The Arch Transitions from the 19'-6" radius built under Project I70-3(8)220 to the 18'-0" radius built under Project I70-3(34)220 in the 14'-0" shown.

DATE	BY	CHECKED BY	DATE
5-17-77			

**DIVISION OF HIGHWAYS**

**EAST TRANSITION AREA**

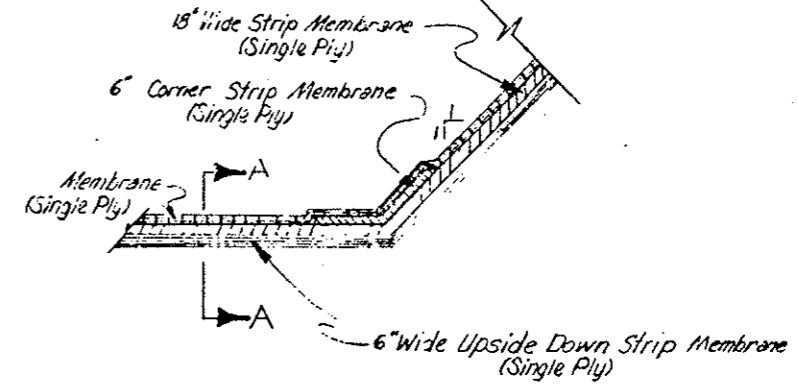
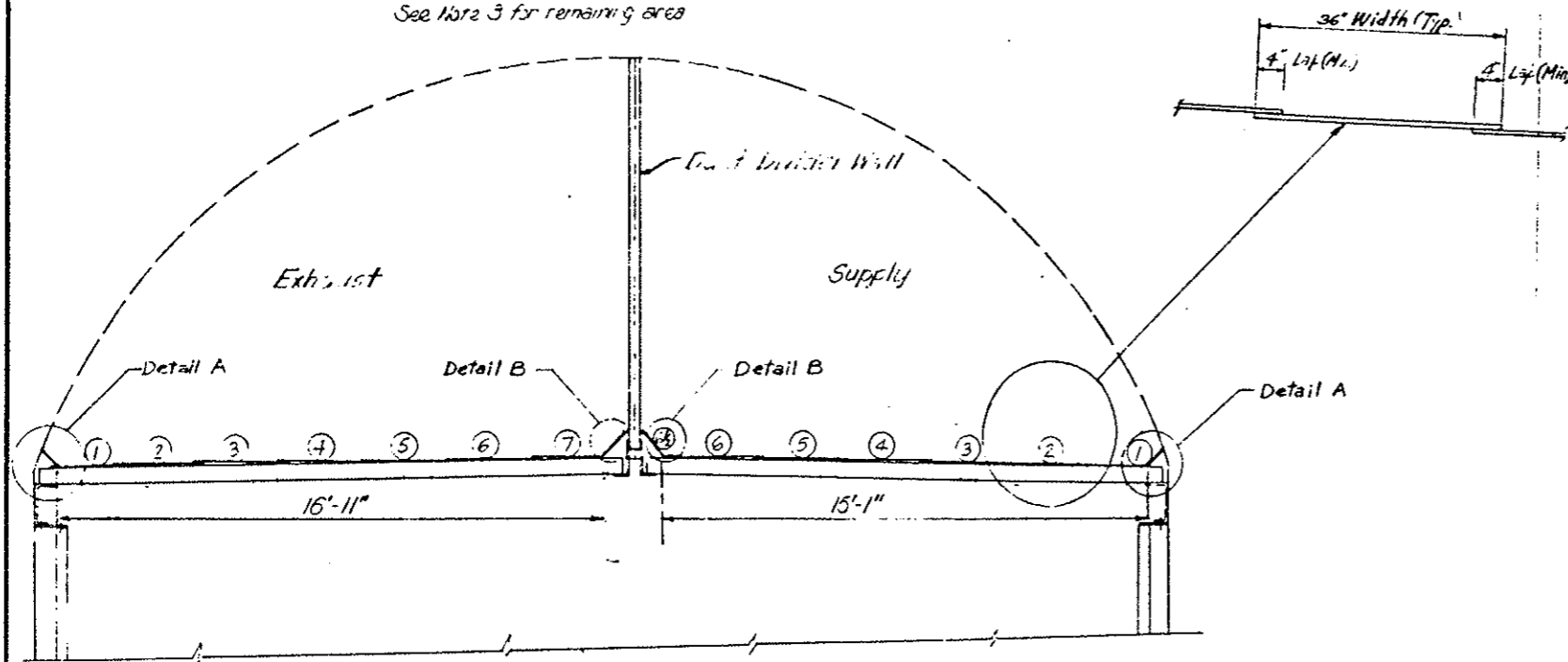
**SECTIONS**

Designer	C.D.H.	Structure	F-13-X
Detailer	B.R. Lane	Numbers	
Drawing Number C-25			

WATERPROOFING (MEMBRANE) LAPPING ARRANGEMENT  
TYPICAL SECTION LOOKING EAST  
Applies from Sta. 37+50 to 41+05  
and Sta. 120+97 to 123+75  
See Note 3 for remaining area

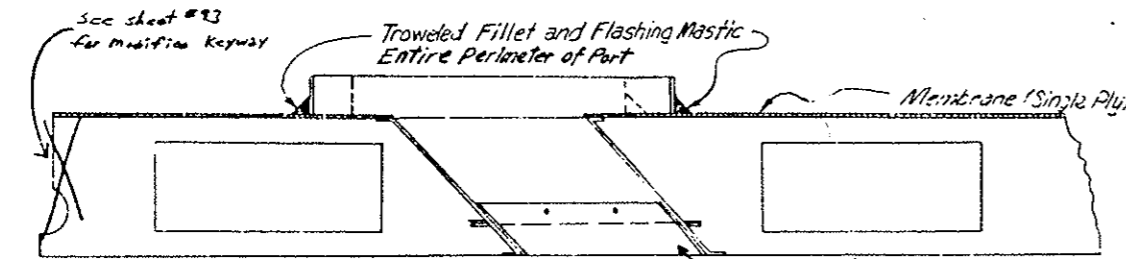
AS CONSTRUCTED /		
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VOID <input type="checkbox"/>

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	70-3(83)220	116	
REVISIONS				
<input type="checkbox"/> R-1	10-17-75	Added Sheet		E.B.
<input type="checkbox"/>				
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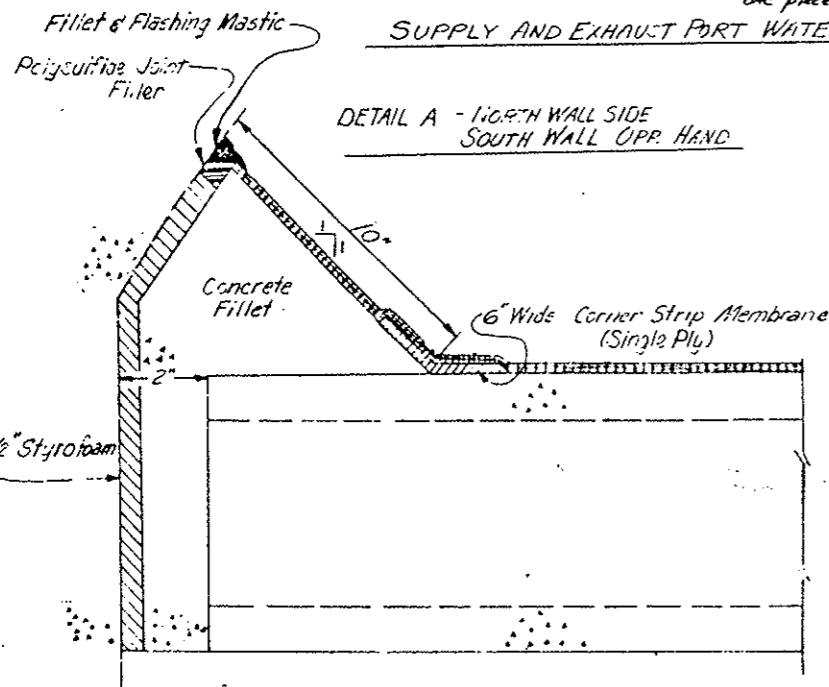


CROSS-SECTION THRU AN EXPANSION JOINT AT DETAIL A OR B

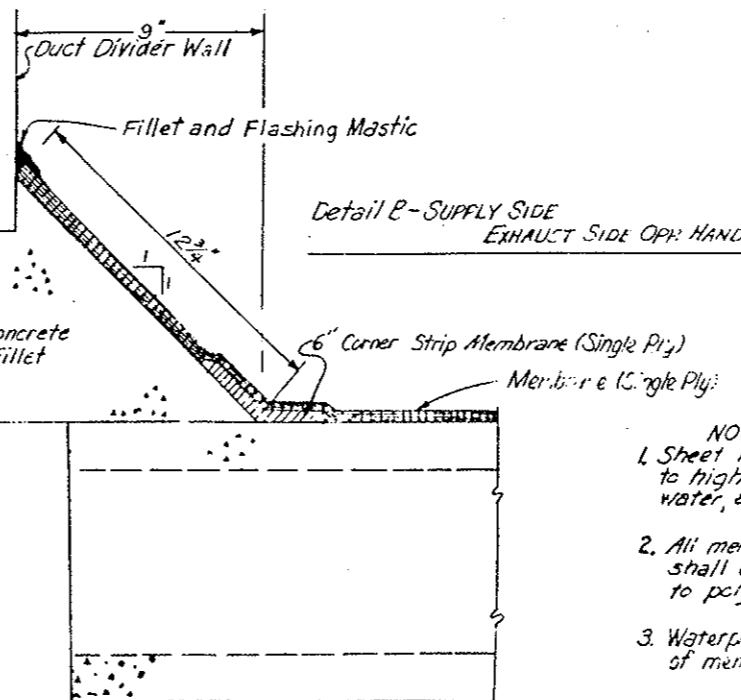
CHECKED BY	DATE	CHECKED BY	DATE
QUANTITIES BY	7-8-75	QUANTITIES BY	7-8-75
DRAWN BY	1-7-75	DRAWN BY	1-7-75



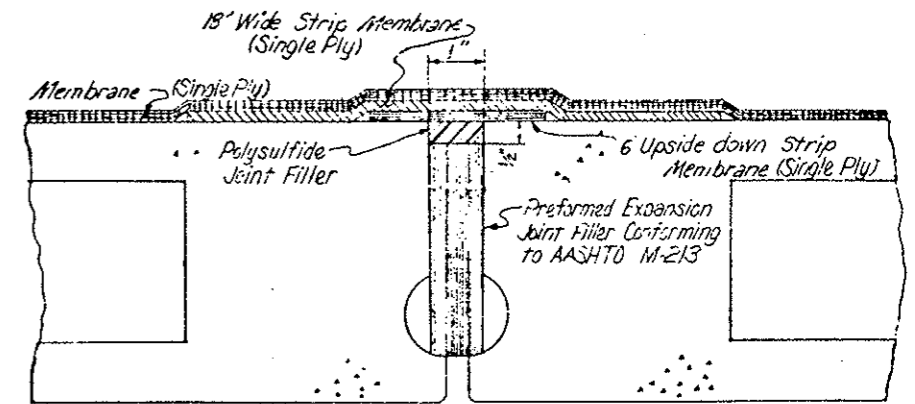
SUPPLY AND EXHAUST PORT WATERPROOFING



DETAIL A - NORTH WALL SIDE  
SOUTH WALL OPP. HAND



DETAIL B - SUPPLY SIDE  
EXHAUST SIDE OPP. HAND

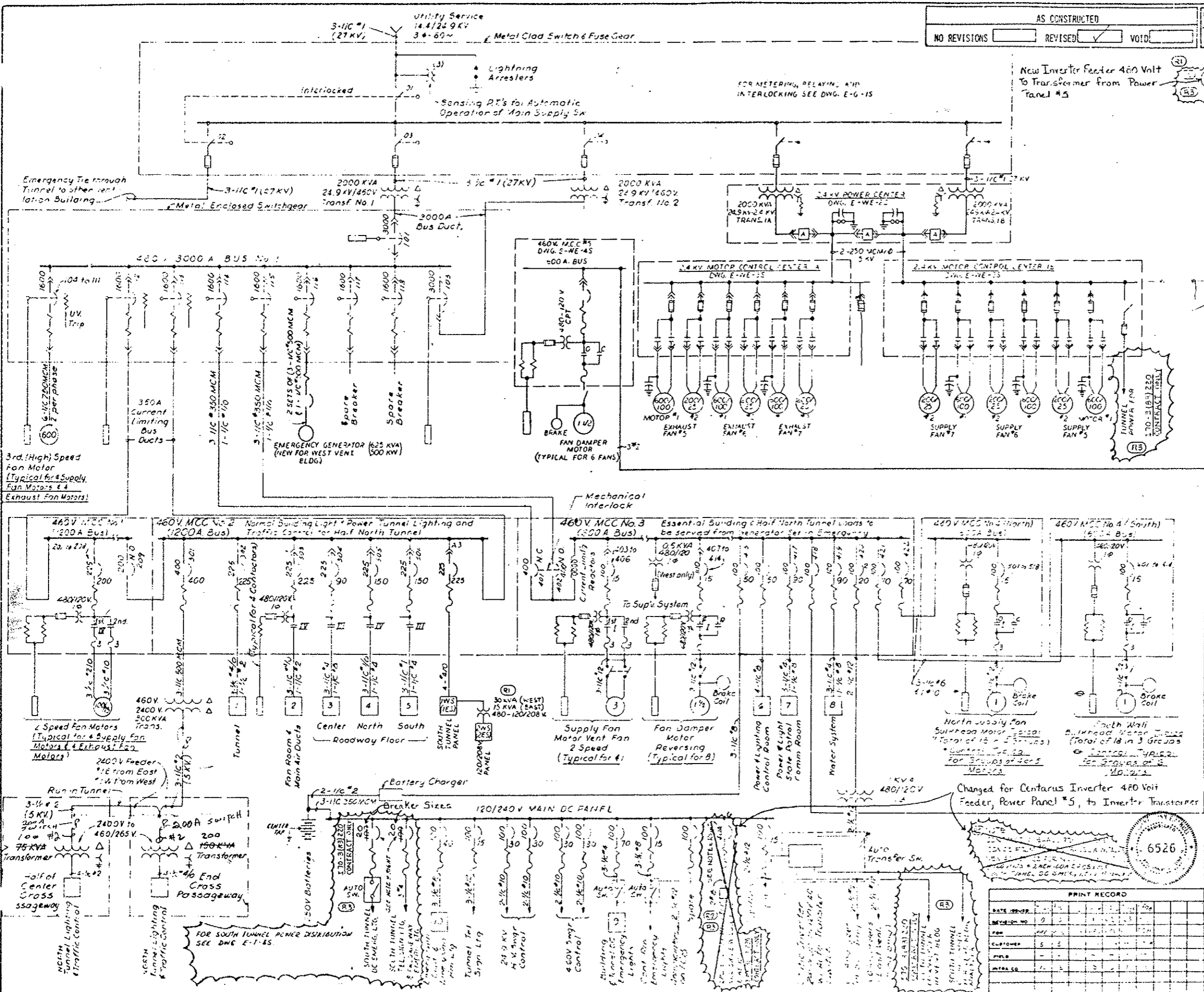


SECTION A-A  
WATERPROOFING AT EXPANSION JOINTS  
Scale of 3/4\"/>

- NOTES:
- Sheet membrane will be laid from low point to high point so that the laps will shed water, as do shingles on a roof.
  - All membranes shown on the above details shall consist of rubberized asphalt bonded to polyethylene sheeting.
  - 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.H.	Structure		
Detailer J. Letourneau	Numbers		
Drawing Number C-31	of	Drawings	

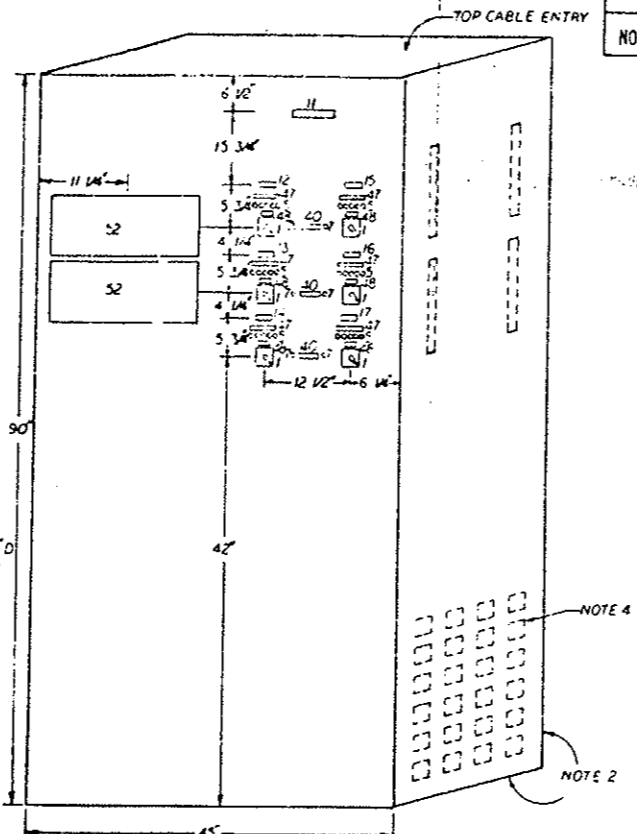
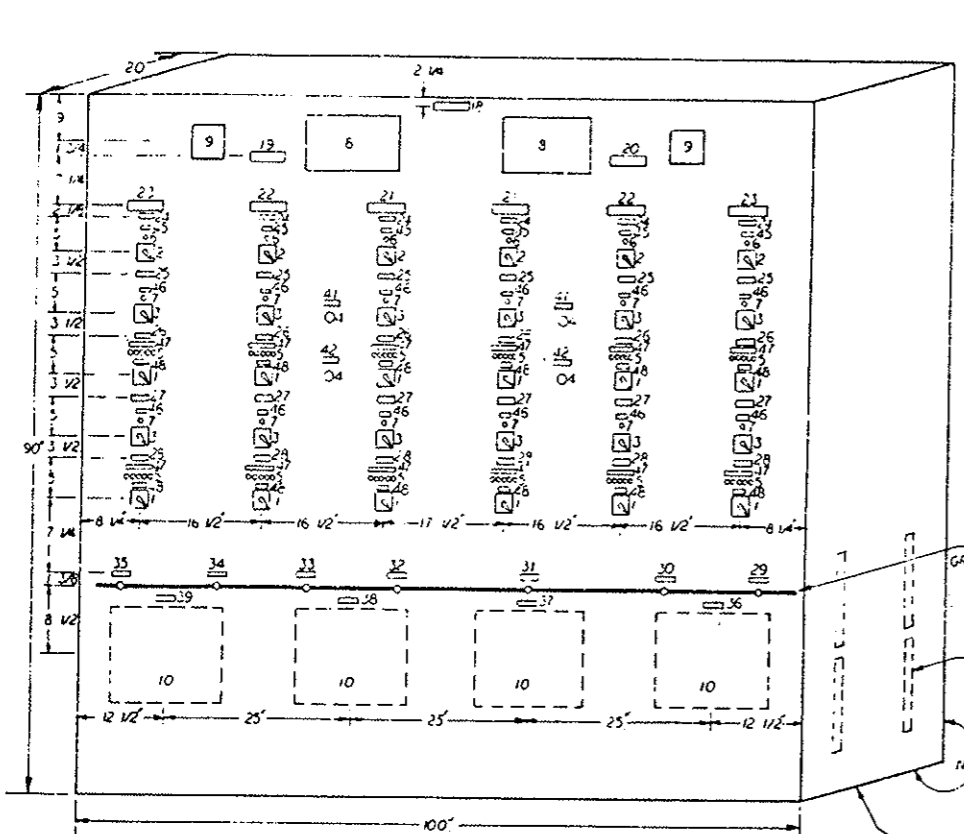
AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VOID	COLORADO	170-3(8)220	128	



- Electrically Operated Drawout Low Voltage Power Air Circuit Breaker Dual Magnetic Trip Under Voltage Trip where indicated. Frame Size as indicated. \*112" Breaker designation number
  - Molded Case Air Circuit Breaker, Thermal Magnetic Trip setting as indicated. (100A.) 3 Pole except where otherwise indicated. \*420" Breaker designation number
  - Two Speed Motor Starter IV - NEMA Size 3 \* 3 Overload Relays
  - Reversing Motor Starter - 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.

NO. 6526		REVISIONS	
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND - CORE			
ELECTRICAL GENERAL POWER DISTRIBUTION SINGLE LINE DIAGRAM			
DRAWN		CHECKED	
SCALE		DATE	
PROJECT NO.		SHEET NO.	
DRAWING NO.		E-G-29	

AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED	✓	COLORADO	170-3(63)220	129	



(S1) ADDED 4 ALARM WINDOWS TO ANNUNCIATOR ITEM 8 FOR MIXED GAS SYSTEM. DRAW 2-1176 ASB 11-22-72.  
(S2) REVISED FOR PROJ. NO. 170-3(63)220.

- EQUIPMENT LIST**
- SWITCH, TYPE S610, PULL TO START, 5 POSITION: STOP-HIGH-INTERMEDIATE 2-INTERMEDIATE 1-LOW
  - SWITCH, TYPE S61, 2 POSITION: OPEN-CLOSE
  - SWITCH, TYPE S61, 2 POSITION: PCB-LLB
  - PUSHBUTTON
  - INDICATING LIGHTS (SEE NOTE 6)
  - INDICATING LIGHT, WHITE
  - INDICATING LIGHT, GREEN
  - PLANNING TON, 24 HOUR, MODEL 1345 (R1)
  - BELL PANEL, MODEL 1350
  - CO INDICATING REC-02A (NOTE 7)

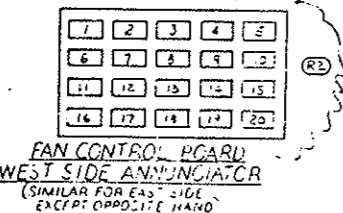
**NAMEPLATE SCHEDULE**

NO.	FIRST LINE	SECOND LINE	THIRD LINE	DETAIL
11.	LOCAL	CONTROL BOARD		(NOTE 5)
12.	SUPPLY FAN 5	CONTROL		2
13.	SUPPLY FAN 6	CONTROL		2
14.	SUPPLY FAN 7	CONTROL		2
15.	EXHAUST FAN 5	CONTROL		2
16.	EXHAUST FAN 6	CONTROL		2
17.	EXHAUST FAN 7	CONTROL		2
18.	FAN	CONTROL BOARD SOUTH TUNNEL		(NOTE 5)
19.	EAST FANS	CONTROL		1
20.	WEST FANS	CONTROL		1
21.	FAN 5			1
22.	FAN 6			1
23.	FAN 7			1
24.	SUPPLY FAN	BULKHEADS	CONTROL	TRANSFER
25.	SUPPLY FAN	CONTROL		TRANSFER
26.	SUPPLY FAN	CONTROL		TRANSFER
27.	EXHAUST FAN	CONTROL		TRANSFER
28.	EXHAUST FAN	CONTROL		TRANSFER
29.	CO	ANALYZER 1		
30.	CO	ANALYZER 2		
31.	CO	ANALYZER 3		
32.	CO	ANALYZER 4		
33.	CO	ANALYZER 5		
34.	CO	ANALYZER 6		
35.	CO	ANALYZER 7		
36.	ANALYZER	132		RECORDER
37.	ANALYZER	132		RECORDER
38.	ANALYZER	132		RECORDER
39.	ANALYZER	132		RECORDER
40.	CONTROL	AVAILABLE		
41.	ANNUNCIATOR	LAMP TEST		
42.	ALARM	SILENCE		
43.	CLOSED			
44.	FCB ON			
45.	STOP-HIGH-INTERMEDIATE 2-INTERMEDIATE 1-LOW			
46.	PULL TO START			

- EQUIPMENT LIST (CONT.)**
- RELAY, 6 POLE 120V AC COIL GE TYPE CR 120A
  - RELAY, 6 POLE 120V AC COIL GE TYPE CR 120A
  - RELAY, 4 POLE 120V AC COIL GE TYPE CR 122A
  - FLASHER RELAY, 120V AC COIL, 50 PULSES/MINI, ZENITH TYPE B-1
  - TERMINAL STRIP, 20A-600V 50 PI TUBULAR CLAMP
  - INDICATING MULTIPoint ALARM/CONTROLLER, SIGMA SERIES 9321
  - RELAY, 2 POLE 120V AC COIL GE TYPE CR 122A
  - RELAY, 4 POLE 120V AC COIL AGASTAT # 7012 A2, OR EQUAL

**NOTES -**

- NAMEPLATE MATERIAL - G.E. A19250A-N67.
- 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 AT ITEM 43, (1) ITEM 44, (1) ITEM 49, (1) ITEM 50, (1) ITEM 51, (1) ITEM 55 & (1) ITEM 54 & WIRE PER ELEMENTARY DIAGRAMS ON DWG. E-G-33. 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 REES AND WPT-490P MODEL SPEEDMAX W\* INSTALLED IN PROJ. NO. 170-3(63)220 (S2).
- EXISTING FAN CONTROL BOARD & LOCAL CONTROL BOARDS WERE BUILT BY GENERAL ELECTRIC. NEW FAN CONTROL BOARD & LOCAL CONTROL BOARDS TO BE IDENTICAL IN APPEARANCE & PAINT COLOR & WIRE PER ELEMENTARY DIAGRAMS SHOWN ON DWG. E-G-33.
- FOR UPPER CONTROLLER, EAST BUILDING, USE E32, E56 & E57 FOR LOWER CONTROLLER.

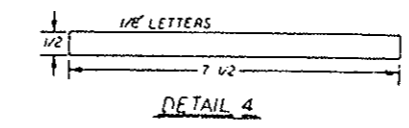
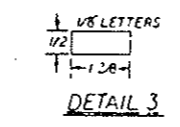
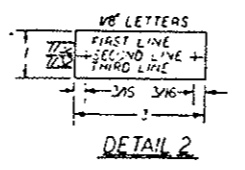
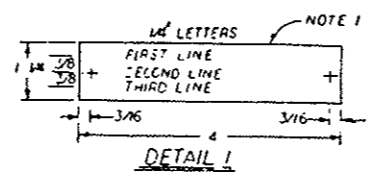


**ANNUNCIATOR PANEL WINDOW ENCODING**

WINDOW	FIRST LINE	SECOND LINE
1	SUPPLY FAN 5	FAILURE
2	SUPPLY FAN 6	FAILURE
3	SUPPLY FAN 7	FAILURE
4	TRANSFER	NEUTRAL GROUND
5	TRANSFER 1B	NEUTRAL GROUND
6	EXHAUST FAN 5	FAILURE
7	EXHAUST FAN 6	FAILURE
8	EXHAUST FAN 7	FAILURE
9	TRANSFER 1B	NEUTRAL GROUND
10	POWER PANELS	OFF
11	EMERG. LIGHTS	ON
12	CO	LEVEL 1
13	CO	LEVEL 2
14	EMERGENCY GEN.	FAILURE (NOTE 3)
15	MOTOR HIGH	TEMPERATURE
16	FAN DAMPER	SHUT OFF
17	BEARING HIGH	TEMPERATURE
18	NATURAL GAS	IN USE
19	MIXED GAS	IN USE
20	MIXED GAS SYSTEM	SHUT DOWN
21	APPROACHING	NATURAL GAS LIMIT

**ALARM/CONTROLLER NAMEPLATE SCHEDULE**

N.P. NO.	FIRST LINE	SECOND LINE
1	FAN 5E5 (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 6E5 (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 7E5	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



**REVISIONS**

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

ELECTRICAL  
GENERAL  
FAN CONTROL BOARDS  
LAYOUT AND DETAILS

DATE: 4-5-2024  
BY: PRT/2/24  
NONE CHANGED  
E-G-6S

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIV	COLORADO	170-3(83)220	130	

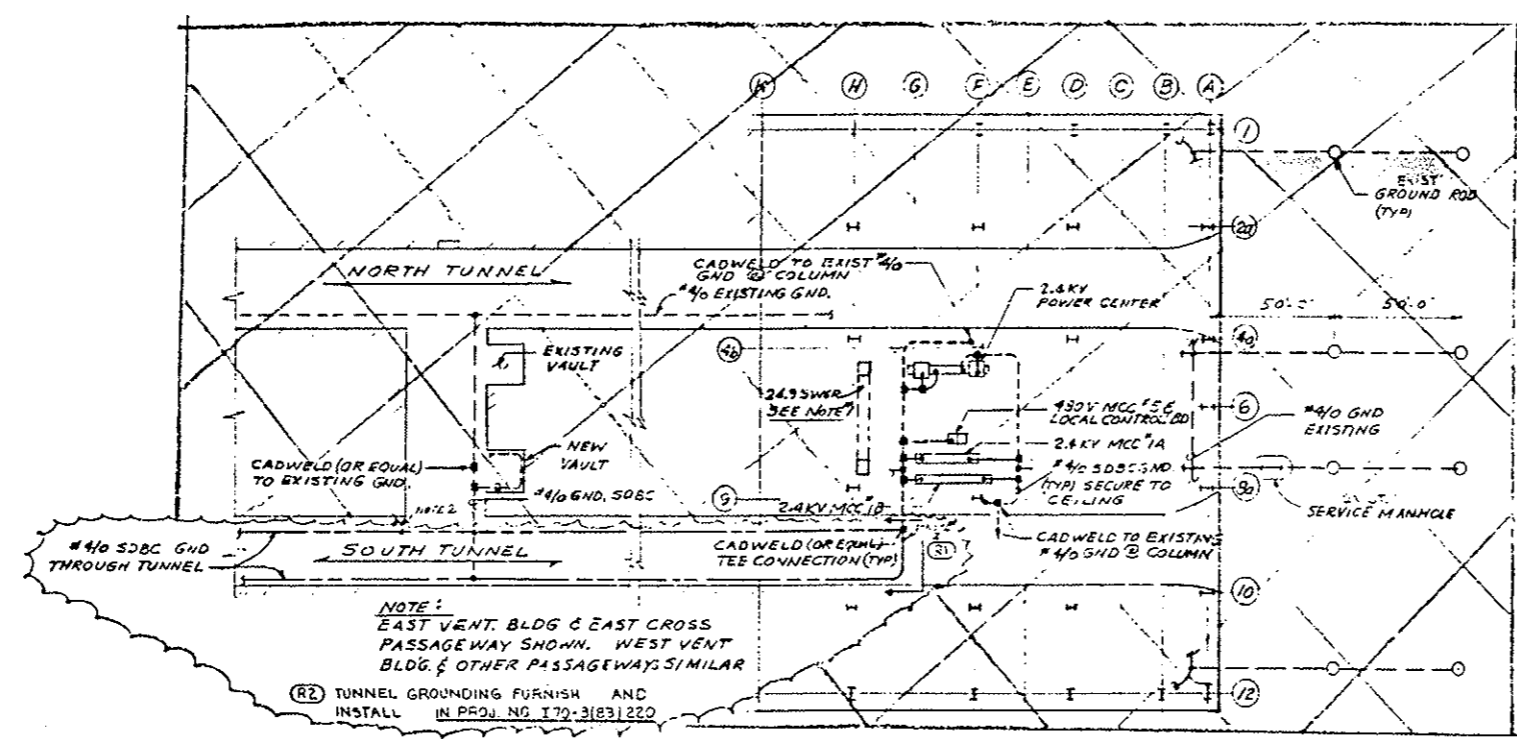
- (R1) REVISIONS TO BE MADE BY CONTRACTOR (GROUNDING SEE E-T-25) REVISIONS TO BE MADE BY CONTRACTOR TO SHOW EXISTING GROUNDING INDICATED BY DOTTED LINE CONTRACTOR TO SHOW NEW GROUNDING INDICATED BY SOLID LINE
- (R2) REVISED FOR PROJ. NO. 170-3(83)220

NO REVISIONS	AS CONSTRUCTED	REVISED	VOID
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**LEGEND**  
 - - - - - EXISTING GROUND  
 \_\_\_\_\_ NEW GROUND

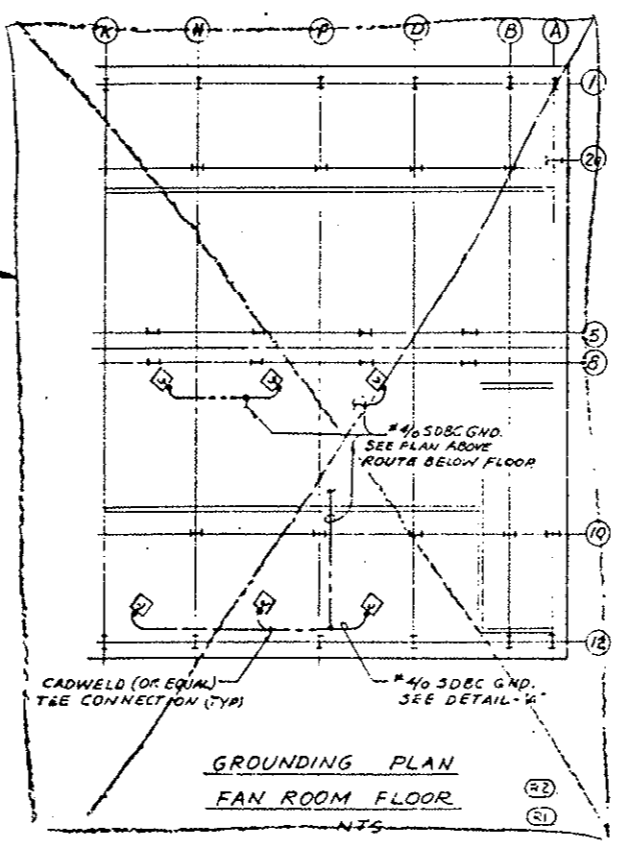
**NOTES:**

- (R2) 1. NEW UNITS OF 24.3 KV SWITCH GEAR TO BE FIRED INTO EXISTING GND-BUS OF SWGR.
- (R2) 2. ALL GROUNDING IN VENT-BUILDING TO BE INSTALLED BY CONTRACTOR.
- (R2) 3. ALL GROUNDING IN TUNNEL & CROSS-PASSAGEWAYS TO BE INSTALLED BY THIS CONTRACTOR.
- 1. WORK THIS DWG WITH DWG E-T-25
- (R2) 2. BOND THE #40 SDBC GROUND TO THE WATER MAIN AT ALL CROSS PASSAGEWAYS ARE AT THE VENTILATION BUILDINGS.

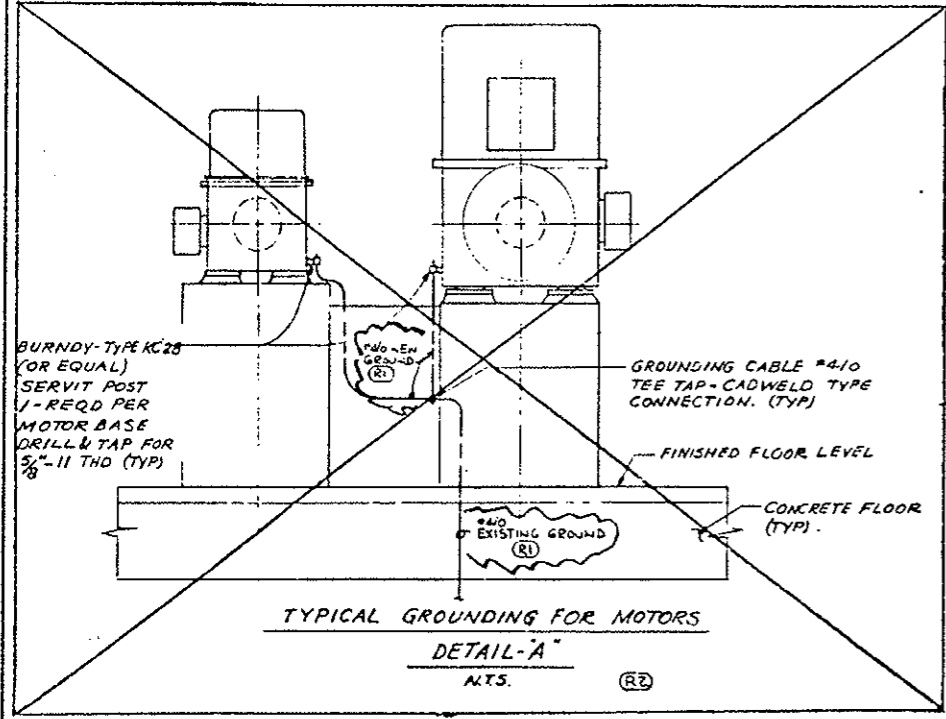


(R2) TUNNEL GROUNDING FURNISH AND INSTALL IN PROJ. NO. 170-3(83)220

**GROUNDING PLAN  
VENT BLDG'S & TUNNEL  
NTS**



**GROUNDING PLAN  
FAN ROOM FLOOR  
NTS**



**TYPICAL GROUNDING FOR MOTORS  
DETAIL-A  
NTS. (R2)**

N.I.C.



**PRINT RECORD**

DATE	BY	REVISION
05/15/74	...	...
05/15/74	...	...
05/15/74	...	...

NO.	REVISIONS	DATE BY
1	...	...
2	...	...

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

ELECTRICAL  
 GENERAL  
 GROUNDING  
 PLANS & DETAILS

CSW6-127A  
 RPJ 4/27/74  
 E-G-7S

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

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

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

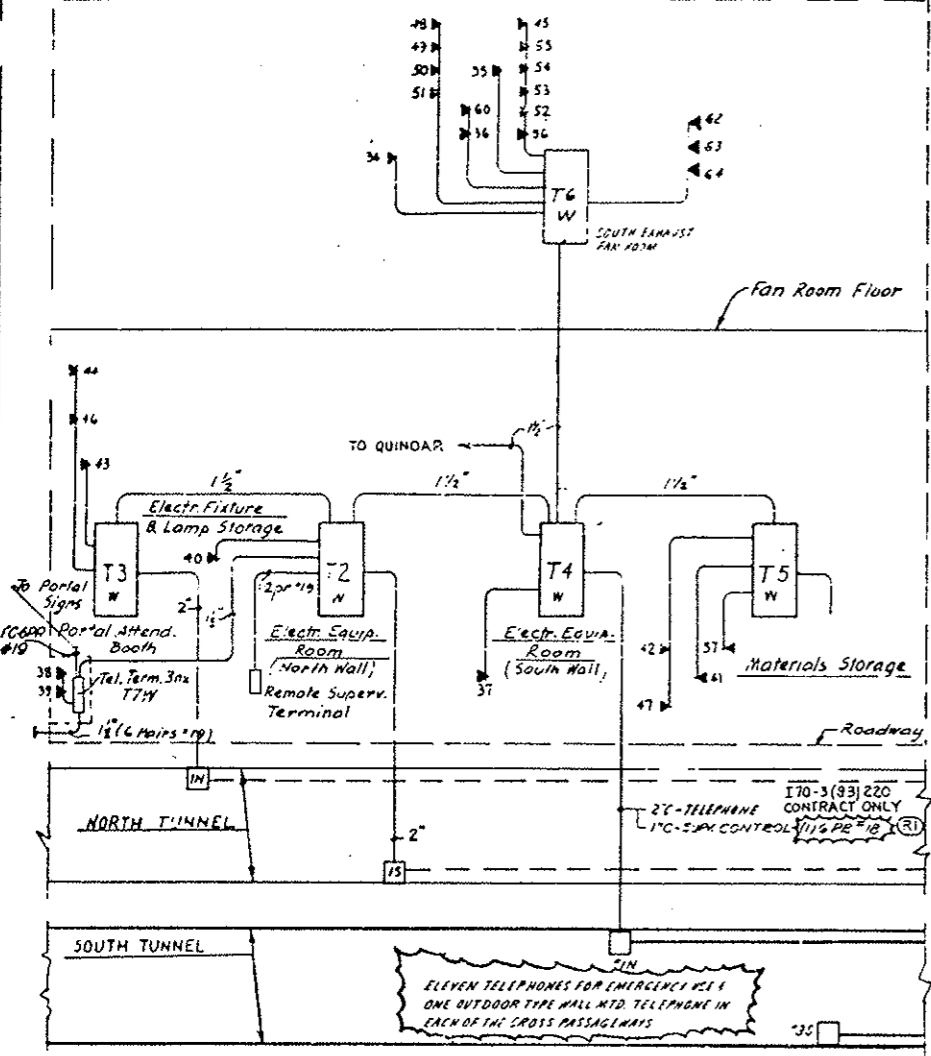
- NOTES**
1. THE DRAWING REPRESENTS THE TELEPHONE SYSTEM AS SHOWN IN DWG. E-1 INCLUDING THE ADDITIONS AS REQUIRED FOR THE SOUTH TUNNEL.
  2. FOR PHYSICAL LOCATIONS OF TELEPHONE BOXES & SLEETS IN STRUCTURES, SEE DWG. E-2 & E-3.
  3. FOR TELEPHONE WIRING IN TUNNEL, SEE DWG. E-4 & E-5.
  4. SEE DWG. E-6 FOR TUNNEL TELEPHONE WIRING.
  5. ALL TELEPHONE WIRING SHALL BE FROM A TUNNEL TO THE TUNNEL.
  6. TELEPHONE WIRING EQUIPMENT WILL BE FURNISHED BY THE BIDDOR.
  7. WHERE CABLE ROUTES ARE INDICATED THEY WILL BE FURNISHED & INSTALLED BY CONTRACTOR.

- NOTES FOR PROJ. NO. I70-3(83)220**
1. SEE RISER DIAGRAM FOR WORK INCLUDED.
  2. PROJ. NO. I70-3(83)220 AS NOTED BY LEGEND SYMBOLS OR EY.

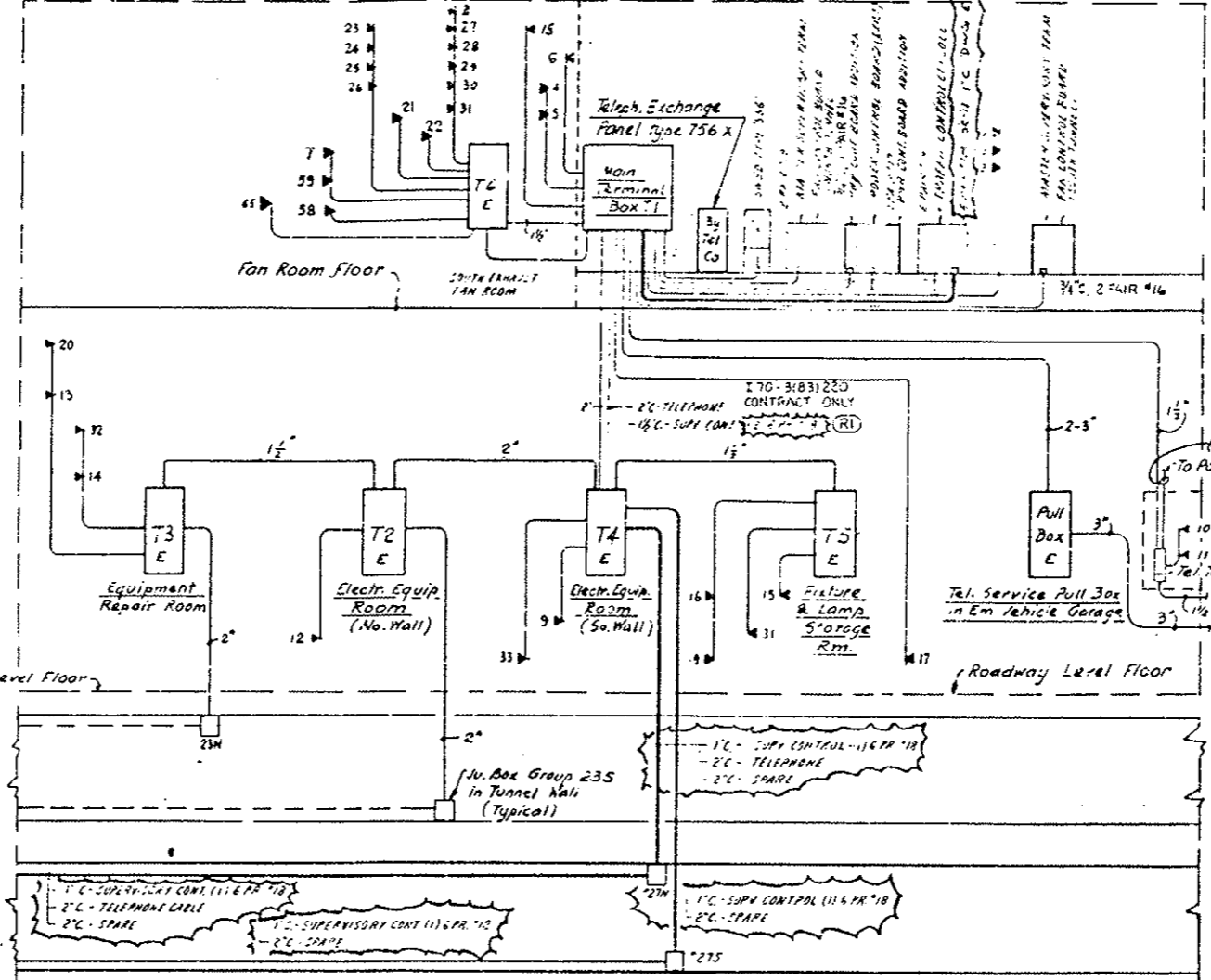
**LEGEND**

— EXIST. CONDUIT  
 — NEW CONDUIT PER CONTRACT I70-3(83)220  
 T — EXIST. TELEPHONE OUTLET BOX 1/2 COVER  
 BT — NEW TELEPHONE OUTLET BOX 1/2 COVER  
 \* — WORK FURNISHED BY CONTRACTOR & INSTALLED BY TELEPHONE COMPANY

### WEST VENTILATION BUILDING



### EAST VENTILATION BUILDING



EAST VENTILATION BUILDING (EXIST. OUTLETS)

Outlet No.	LOCATION	TYPE	PURPOSE
1	Control Room	Fan Desk	For Office Desk Telephone
2	"	"	"
3	"	"	"
4	Tunnel Superintendent Office	Desk	"
5	"	"	"
6	Emergency Sleeping Quarters	Wall	For Telephone Conn.
7	Fan Room near Col. Line A/2	"	"
8	CO Analyzer Room	"	"
9	Electrical Equipment Room	"	"
10	Portal Attendant Booth	Desk	For Telephone & Loudspeaker Conn.
11	"	Built-in	Comes with 400 P.A. type Panel
12	Emergency Vehicle Garage	Wall	For Telephone & Loudspeaker Conn.
13	Garage Vehicle Repair Shop	"	Telephone Connection
14	Equipment Repair Room	"	For Telephone & Signal Horn 1/4"
15	Electrical Fixture & Lamp Storage	"	For Telephone & Loudsp. Connection
16	South Vehicle Storage	"	"
17	Sewage Treatment Plant	Expt. arf.	For Telephone Installation 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	"	Horn	"
23	Fan Rm. P.L. Emerg. Stop Switch @ Col. K/2	Tel. Jack	Portable Telephone Connection
24	"	H/2	"
25	"	H/2	"
26	"	D/2	"
27	"	G/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. P/A Wall	Outdoor Type Tel. Connection	
35	" @ Col. P/B Horn	Signal Service from Control Room	
36	South Supply Fan Room @ Col. P/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	"	"
60	South Supply Fan Rm. 2nd Outlet Col. A/11	"	"

WEST VENTILATION BLDG. (EXIST. OUTLETS)

Outlet No.	LOCATION	TYPE
58	EMERGENCY GENERATOR ROOM	WALL
59	SOUTH SUPPLY FAN ROOM @ COL. F-11	TEL JACK

EAST VENTILATION BLDG. (EXIST. OUTLETS)

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



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

ELECTRICAL TELEPHONE RISER DIAGRAM

DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 SCALE: NONE  
 ORDER NO: G4570

steam-soner architects  
 DRAWING NO: E-G-88

PRINT RECORD

DATE	REVISION	BY	REASON

**EXISTING AC POWER DIST. PANEL NO. P1WS**  
LOCATION: WEST VENTILATION BLDG. ELECT. EQUIPMENT ROOM (DWG. E-14-15) ONE LINE DIAG. DWG. E-G-25

480/277 VOLT 60HZ 3PHASE-4 WIRES  
4" #40 FEEDER CABLES-TOP ENTRY  
225A MAIN BUS

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP. SIZE	COND. WIRE NO. SIZE FRAME SIZE AND SIZE
		A	B	C		
1	INT. ZONE NORTH LTG. RECD. NI	22	15.2	13.5	30	100 4"6
2	NORTH	112	8.2	7.2	30	
3	SOUTH	52	2.1	2.1	30	
4	NORTH	52	2.1	2.1	30	
5	SOUTH	52	2.1	2.1	30	
6	WATER MAIN PIPE HEATING FOR	14	3	3	30	
7	SEWAGE DRAIN PIPE HEATING FOR	26	17.9	24	40	3"6
8	TRAFFIC CONTROL FOR SO. WALL	12	12	12	30	3"6
9	HEAT BURNER FURN. CONT. PH.	10	10	10	15	3"12
10	30VVA TRANSFORMER	26	36	36	40	3"9
11	EMERG. GEN. AIR COMPRESSOR	8	8	8	20	3"12
12	EMERG. GEN. CONTROL PNL	3	3	3	15	3"12
13	EMERG. GEN. WISC. POWER	5	5	5	15	3"12
14	SPARE				30	
15	SPARE				15	
16	SPARE				15	
PHASE LOAD		133.0	75.7	50.1		

**EXISTING AC POWER DIST. PANEL NO. P1TS**  
LOCATION: WEST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

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

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP. SIZE	COND. WIRE NO. SIZE FRAME SIZE AND SIZE
		A	B	C		
1	TUNNEL LTG. NORTH FOR. NI	23.7	23.7	23.7	30	100 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 FOR	18	21.6	21.6	40	4"6
7	AIR DUCT POWER OUTLETS	24	24	24	30	3"6
8	TRAFFIC CONTROL FOR SO. WALL	12	12	12	30	3"6
9	TUNNEL LTG. SOUTH FOR. NI	23.7	23.7	23.7	30	4"6
10	N2	23.7	23.7	23.7	30	
11	N3	23.7	23.7	23.7	30	
12	N4	23.7	23.7	23.7	30	
13	SPARE				30	
14	SPARE				10	
PHASE LOAD		278	278	278		

**EXISTING AC POWER DIST. PANEL NO. P2WS**  
LOCATION: WEST VENTILATION BLDG. ELECT. EQUIPMENT ROOM (DWG. E-14-15) ONE LINE DIAG. DWG. E-G-25

120/208 VOLT 60HZ 3PHASE-4 WIRES  
4" #40 FEEDER CABLES-TOP ENTRY  
100A MAIN CRT. BRK.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP. SIZE	COND. WIRE NO. SIZE FRAME SIZE AND SIZE
		A	B	C		
1	24KV MCC NO. 1A TEST POWER	10.0			20	
2	24KV MCC NO. 7B TEST POWER	10.0			20	
3	RELAY PANEL CONTROL POWER	5.0			15	
4	AUTO TRANSFER SWITCH	5.0			15	
5	SPEED SWITCHES	5.0	1.5		15	
6	GAS METER BLDG. LTG.				20	
7	TUNNEL TV FEEDER NO. WALL	4.5			20	
8	RECEPTACLE SO. WALL	1.5			20	
9	NO. WALL	2.0			20	
10	SO. WALL	1.5			20	
11	NO. WALL	1.5			20	
12	SO. WALL	1.5			20	
13	SPARE				15	
14	EMERG. GEN. WATER HEAT #1	18			20	
15	REMOTE SUPERVISOR CABINET	15			20	
16	EMERG. GEN. RADIATION RECEIPT	5			20	
17	EMERG. GEN. #35	34			40	
18	LOCAL CONTROL BOARD	10			20	
19	SPARE				20	
20	UP. SYSTEM	5			20	
21	EMERG. GEN. WATER HEATER #2	18			20	
22	ELEVATOR LTG. RECEIPT	4.8			20	
23	SPARE				20	
24	SPARE				15	
PHASE LOAD		49	53.3	54		

**EXISTING AC POWER DIST. PANEL NO. P2ES**  
LOCATION: EAST VENTILATION BLDG. ELECT. EQUIPMENT ROOM (DWG. E-14-15) ONE LINE DIAG. DWG. E-G-25

120/208 VOLT 60HZ 3PHASE-4 WIRES  
4" #40 FEEDER CABLES-TOP ENTRY  
100A MAIN BUS

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP. SIZE	COND. WIRE NO. SIZE FRAME SIZE AND SIZE
		A	B	C		
1	24KV MCC NO. 1A TEST POWER	10.0			20	
2	24KV MCC NO. 7B TEST POWER	10.0			20	
3	RELAY PANEL CONTROL POWER	5.0			20	
4	AUTO TRANSFER SWITCH	5.0			15	
5	SPEED SWITCHES	5.0	1.5		15	
6	GAS METER BLDG. LTG.				20	
7	TUNNEL TV FEEDER NO. WALL	3.0			20	
8	RECEPTACLE SO. WALL	1.5			20	
9	NO. WALL	1.5			20	
10	SO. WALL	1.5			20	
11	NO. WALL	1.5			20	
12	SO. WALL	1.5			20	
13	SPARE				15	
14	SPARE				20	
15	MASTER SUPERVISOR CABINET	15			20	
16	SPARE				20	
17	FAN CONTROL BOARD	10			20	
18	LOCAL CONTROL BOARD	10			20	
19	ELEVATOR LTG. RECEIPT	4.8			20	
20	UP. SYSTEM	5			20	
21	SPARE				20	
22	SPARE				20	
23	SPARE				30	
24	SPARE				15	
PHASE LOAD		54.3	29.5	28.5		

**AC POWER DIST. PANEL NO. P3TS**  
LOCATION: CENTER CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

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

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP. SIZE	COND. WIRE NO. SIZE FRAME SIZE AND SIZE
		A	B	C		
1	TUNNEL LTG. NORTH FOR. NI	20.9	20.9	20.9	30	100 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 FOR	21.6	21.6	21.6	40	4"6
7	AIR DUCT POWER OUTLETS	24	24	24	30	3"6
8	TRAFFIC CONTROL FOR SO. WALL	12	12	12	30	3"6
9	TUNNEL LTG. SOUTH FEEDER SI	20.9	20.9	20.9	30	4"6
10	N2	20.9	20.9	20.9	30	
11	N3	20.9	20.9	20.9	30	
12	N4	20.9	20.9	20.9	30	
13	SPARE				30	
14	SPARE				10	
PHASE LOAD		262.6	262.6	259.4		

**AC POWER DIST. PANEL NO. P3ES**  
LOCATION: EAST CROSS PASSAGEWAY TRANSFORMER VAULT (DWG. E-T-25) ONE LINE DIAG. DWG. E-T-85

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

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP. SIZE	COND. WIRE NO. SIZE FRAME SIZE AND SIZE
		A	B	C		
1	TUNNEL LTG. NORTH FOR. NI	20.9	19.1	17.1	30	100 4"6
2	N2	17.1	17.1	17.1	30	
3	N3	20.9	17.1	17.1	30	
4	N4	19.1	20.9	17.1	30	
5	LIGHTING TRANSFORMER	36	36	36	50	3"6
6	WATER MAIN PIPE HEATING FOR	21.6	21.6	21.6	40	4"6
7	AIR DUCT POWER OUTLETS	24	24	24	30	3"6
8	TRAFFIC CONTROL FOR SO. WALL	12	12	12	30	3"6
9	TUNNEL LTG. SOUTH FOR. SI	17.1	17.1	17.1	30	4"6
10	N2	17.1	17.1	17.1	30	
11	N3	17.1	17.1	17.1	30	
12	N4	17.1	17.1	17.1	30	
13	SPARE				20	
14	SPARE				10	
PHASE LOAD		252.4	254.2	252.4		

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

120/208 VOLT 60HZ 3PHASE-4 WIRES  
4" #40 FEEDER CABLES-TOP ENTRY  
125A MAIN CRT. BRK.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP. SIZE	COND. WIRE NO. SIZE AND SIZE
		A	B	C		
1	TUNNEL TV CO. ANAL FOR 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 LTG. N/EMERG.	2.5			15	2"12
8	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	2"6
9	PASSAGEWAY LTG.	3.3			15	2"12
10	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	1"6
11	RELAY PANEL CONTROL PWR.	5			15	2"12
12	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	1"6
13	SPARE				20	
14	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	2"6
15	SPARE				20	
16	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	1"6
17	SPARE				20	
18	DUCT LTG. 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	
25 TO 30	SPACES					
PHASE LOAD		21	21.8	21.5		

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

120/208 VOLT 60HZ 3PHASE-4 WIRES  
4" #40 FEEDER CABLES-TOP ENTRY  
125A MAIN CRT. BRK.

BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP. SIZE	COND. WIRE NO. SIZE AND SIZE
		A	B	C		
1	TUNNEL TV CO. ANAL FOR 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	4.5			20	
6	PASSAGEWAY RECEPTACLE (1)	1.5			20	2"12
7	PASSAGEWAY LTG. N/EMERG.	2.5			15	2"12
8	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	2"6
9	PASSAGEWAY LTG.	3.3			15	2"12
10	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	1"6
11	RELAY PANEL CONTROL PWR.	5			15	2"12
12	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	1"6
13	SPARE				20	
14	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	2"6
15	SPARE				20	
16	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	1"6
17	SPARE				20	
18	DUCT LTG. 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	
25 TO 30	SPACES					
PHASE LOAD		22	23.3	23.3		

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

120/208 VOLT 60HZ 3PHASE-4 WIRES  
4" #40 FEEDER CABLES-TOP ENTRY  
125A MAIN CRT. BRK.

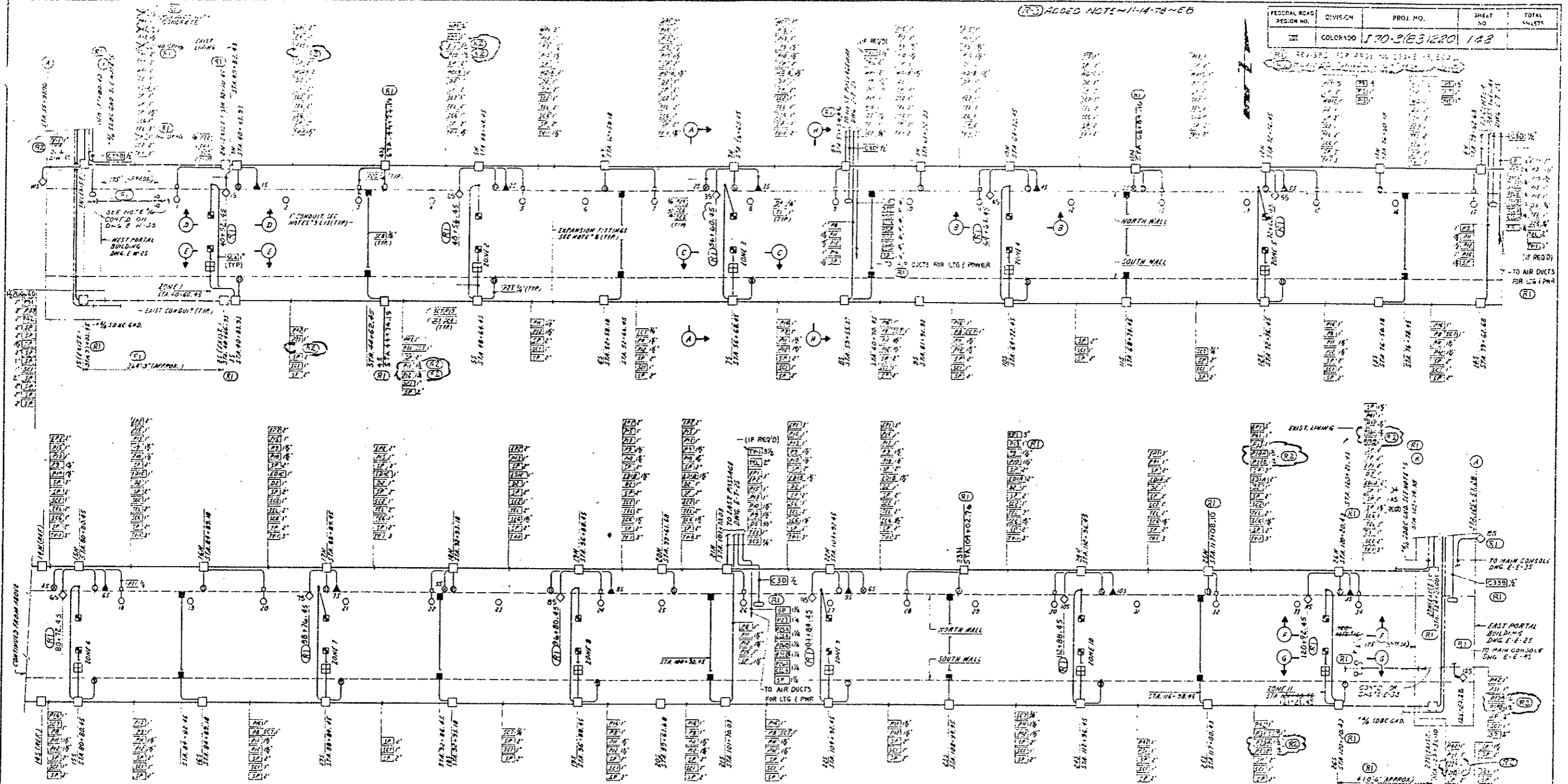
BKR. NO.	DESCRIPTION	AMP. LOAD			BKR. AMP. SIZE	COND. WIRE NO. SIZE AND SIZE
		A	B	C		
1	TUNNEL TV CO. ANAL FOR. NO. WALL	5.9			20	2"8 #12
2	TUNNEL RECEPTACLE SO. WALL	1.5			20	
3	NO. WALL	4.5			20	
4	SO. WALL	1.5			20	
5	NO. WALL	4.5			20	
6	PASSAGEWAY RECEPTACLE (1)	1.5			20	2"12
7	PASSAGEWAY LTG. N/EMERG.	2.5			15	2"12
8	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	2"6
9	PASSAGEWAY LTG.	3.3			15	2"12
10	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	1"6
11	RELAY PANEL CONTROL PWR.	5			15	2"12
12	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	1"6
13	SPARE				20	
14	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	2"6
15	SPARE				20	
16	DUCT LTG. WEST SUPPLY EAST RETURN	7			20	1"6
17	SPARE				20	
18	DUCT LTG. 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	
25 TO 30	SPACES					
PHASE LOAD		23	26.5	25		

- NOTES:**
- 1. AC POWER DISTRIBUTION PANELS SHALL HAVE INTERRUPTING CAPACITY BREAKERS (25000 AMPS-RMS); WESTINGHOUSE TYPE HF8 (OR EQUAL).
  - 2. LIGHTING PANELS L1TS, L2TS, L3TS BREAKERS \*



(R-3) ADDED NOTE 11-14-78-66

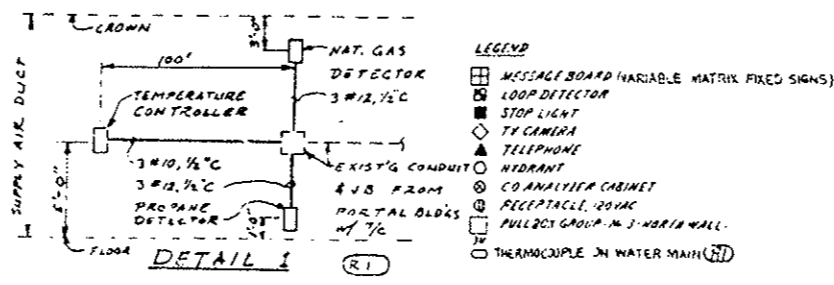
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	I 70-21631220	143	



- NOTES:**
1. FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-T-105
  2. FOR TUNNEL LIGHTING, SEE DRAWINGS E-T-55 & E-T-45 & E-T-75
  3. FOR TELEPHONE SYSTEM, SEE DWG. E-G-43
  4. ALL CONDUIT TO BE RIGID GAL. STEEL
  5. ROUTE 1/2" SBC GROUND WITH CONDUITS ALONG NORTH & SOUTH WALLS OF TUNNEL & 3/4" HD 10" WATER MAIN AT ALL CROSS PASSAGEWAYS SUPPORT TO 10' CHANNELS 1/2" HALL CLAMPS.
  6. FOR TUNNEL SIGNS & LOOP DETECTORS, SEE DWG. E-T-15
  7. FOR POWER WIRING CONTROL SIGNAL WIRING & CO ANALYZER WIRING, SEE DRAWING E-T-35
  8. EXPANSION FITTINGS TO BE OF TYPE HEAT RESISTANT WITH BONDING JUMPS - 4" CONDUIT MOVEMENT (FOR EQUAL). LOCATE MIDWAY BETWEEN DISTRIBUTION BOX GROUPS.
  9. FIELD TO ROUTE COLD SECTION OF ALL HEATING CABLE TO JUNCTION BOX NEAR HYDRANT FOR PLUGGING TO FEEDER TAP
  10. SECTIONS 'A', 'B', 'C', 'D', 'E', 'F' LOCATED ON DWG. E-T-15 SECTIONS 'G', 'H', 'I', 'J' LOCATED ON DWG. E-T-45
  11. CAMERA, LOOP DETECTOR, TELEPHONES & CO ANALYZER CABINETS, SEE STATE OF COLORADO - DEPT. OF HIGHWAYS DWG. G-7 THRU G-11.

- Elcon Metal (Strut) Products Co.
12. CONDUIT TO BE SUPPORTED ON TUNNEL WALLS WITH HANGERS PROVIDED FOR CONDUIT SUPPORTS - SEE CONDUIT SCHEDULE FOR HANGER TYPES
  13. ROUTE HEATING CABLE FROM HYDRANT TO PRELUBRICATED HYDRANT ALONG 1/2" WATER MAIN PIPE PER WIRING DWG. E-T-25 & E-T-25.1. MAXIMUM 25 FEET LONG. USE VILSON MEXEL HEATING CABLE TYPE 100 - 3/8" DIA. 1/2" COPPER SHEATH. RATED AT 10 WATTS PER FOOT AT 270°F BASED ON A TEMPERATURE DIFFERENTIAL OF 60°F (100°F TO 40°F). HEAT TRANSFER COMPOUND EQUIVALENT OF 1" OF 10MM GLASS INSULATION. USE NELSON (OR EQUAL) 1/2" ID PIPE STRAPS & TYPE NS CANTON SIGNS AS MOUNTING.
  14. TOP WIRING DIAGRAMS OF DC SYSTEM TO SYSTEM & WATER MAIN HEAT TRACING, SEE DRAWING E-T-35
  15. CIRCUIT ANALYZER'S #11, #12, #13, #14, #15 ARE LISTED ON LAST FLOOR BLDG. SCHEDULE - DWG. E-E-55 & WEST VENT. BLDG. SCHEDULE - DWG. E-M-55
  16. ONE (1) EACH PROGRAM DETECTOR, NAT. GAS DETECTOR, TEMP. CONTROLLER, FURN. BY OWNER. INSTALL AT EACH END OF TUNNEL AS PART OF PROJ. NO. I 70-31031220. SCHEDULE #7 CONDUCTORS ARE INSTALLED FROM BURNER FLAME CHL. PINS IN EAST & WEST VENTIL. BLDGS TO POINT OF DETECTOR INSTALLATIONS. SEE DETAIL 1.

**CONDUIT LAYOUT PLAN**



**DETAIL 1**  
**AIR HEAT BURNER CONTROLS**  
(DIAGRAMMATIC ELEVATION)  
(R-3) 17. MOUNT 3" ELECTRICAL CONDUIT TO CONCRETE WALL WITH BRIDGEPORT MALLEABLE STRAP CAT. #303 AND CLAMP/BRIDGEPORT CAT. #308 OR APPROVED EQUAL



**AS CONSTRUCTED**

NO REVISION  REVISED  VOID

REVISIONS DATE BY: CEN

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

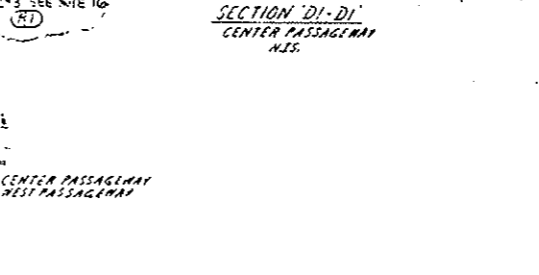
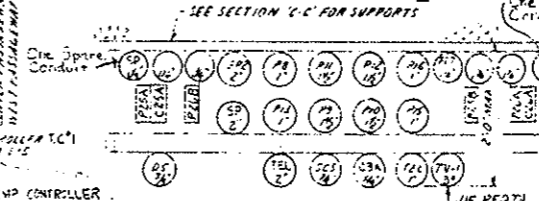
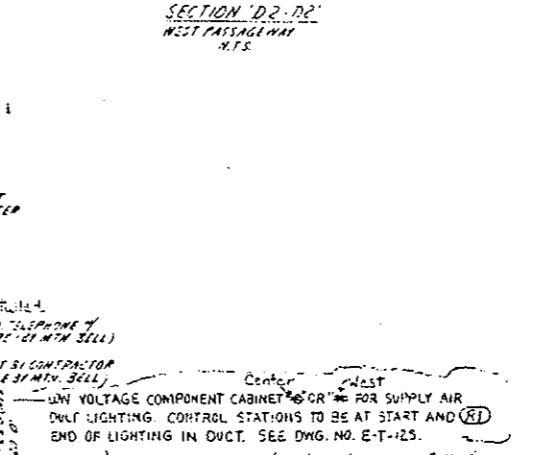
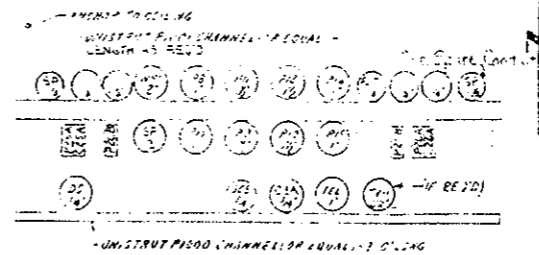
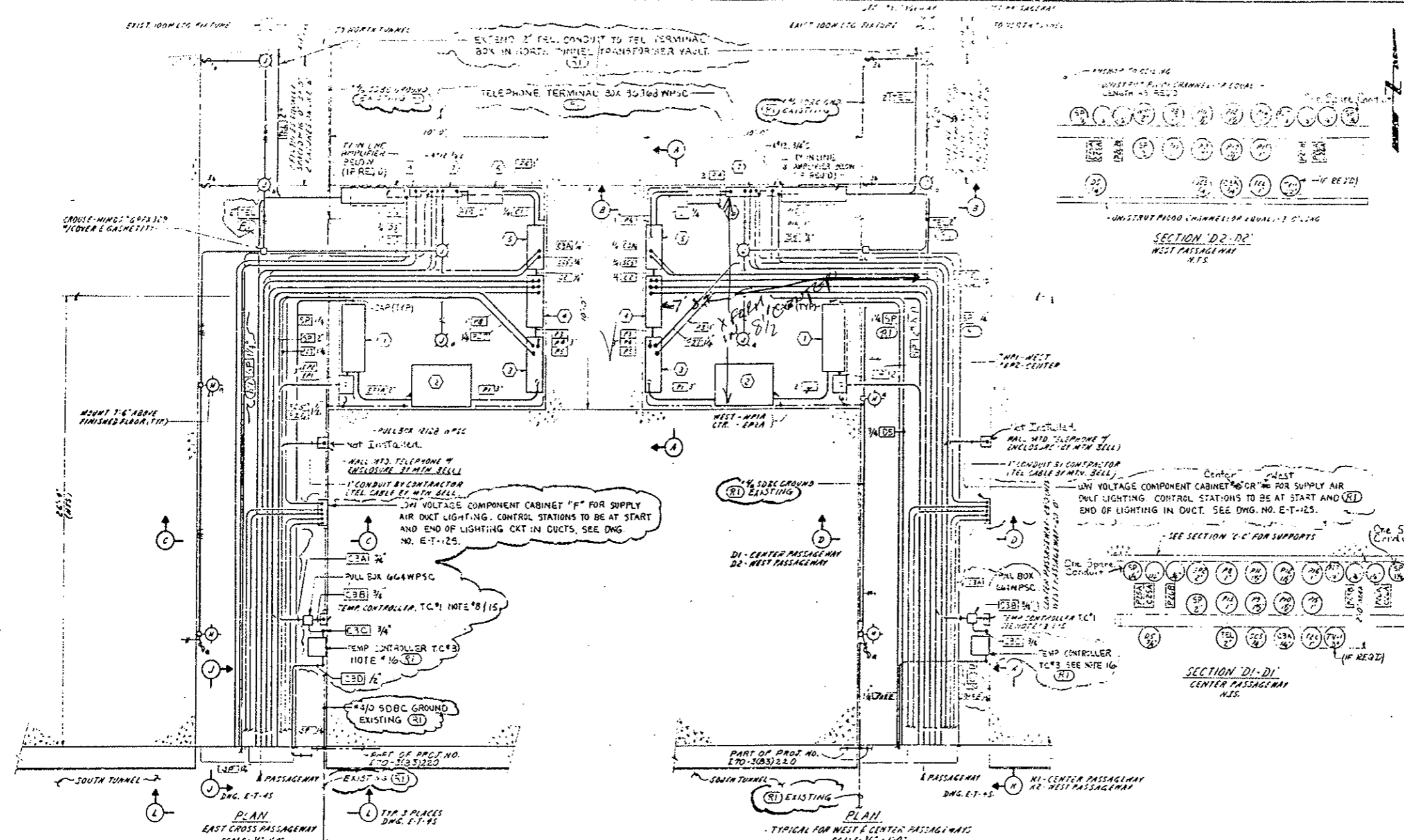
**ELECTRICAL**  
TUNNEL  
POWER PLAN, SECTIONS & DETAILS  
SHEET NO. 1

PRINT RECORD

DATE: 11-14-78  
REVISED: 11-14-78  
BY: R. J. RO  
CHECKED: R. J. RO  
DATE: 11-14-78  
BY: R. J. RO  
DATE: 11-14-78  
BY: R. J. RO

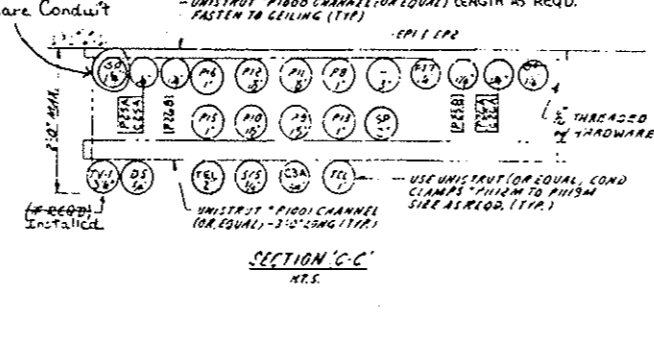
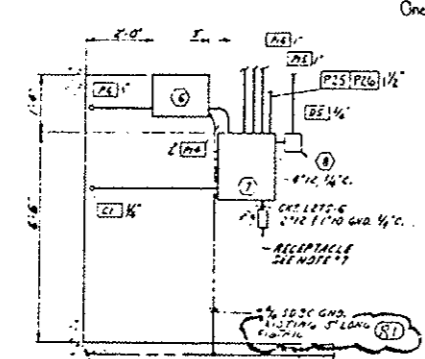
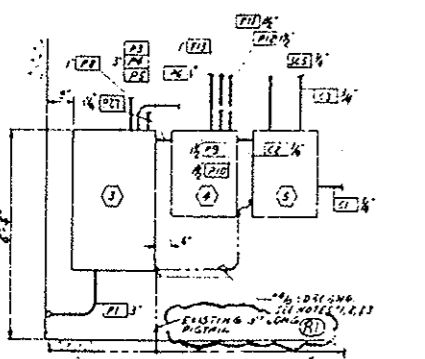
APP. 11-14-78  
R. J. RO  
E-T-15  
NONE C14570

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
771	COLORADO	170-2(A3) REC	149	



- LEGEND**
- \* 1 PRIMARY FUSE OUTLET 125A WITH SEALED LINE "E" OF EQUAL
  - \* 2 LIGHTING & HEATING CONTROL PANEL "13-10A-1P-400V" CONTACTOR/RELAY COILS, NEMA 4 ENCLOSURE SEE WIRING DIAG. DWG. E-T-75
  - \* 3 LIGHTING & HEATING RELAY CONTROL CABINET, NEMA 4 ENCLOSURE SEE WIRING DIAGRAM ON DWG. E-T-75
  - \* 4 LIGHTING TRANSFORMER 400-200/240V WALL MOUNTED, NON-VENT. TYP. EPT. "12-2 1/2" FROM 4-20% FROM TAPS 30 V/A, WIRING DIAG. CAT. W-4337 (OR EQUAL)
  - \* 5 LIGHTING PANEL 3-PHASE 14-RE, 125A MAIN INT. BREAKER SURFACE MOUNTED, WITH 4-20% FROM TAPS 30 V/A, WIRING DIAG. CAT. W-4337 (OR EQUAL) SEE DWG. E-6-35 FOR SCHEDULE
  - \* 6 TRANSFER RELAY 120VAC 50A COIL "C" NO. 400, CONTACTS, ENTRE-AMMERS, CAT. W-4337 (OR EQUAL) SEE W.P. DIAG. ON DWG. E-T-75
  - \* General Electric Equipment Installed

- NOTES**
1. USE CADWELD TYPE GROUND CONNECTIONS FOR GND. TAPS.
  2. USE #4 SDCB TO GROUND ITEMS #1, 4, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.



AS CONSTRUCTED		
NO REVISIONS	REVISED	VOID

PROJECT RECORD	
DATE ISSUED	10/15/72
REVISION NO.	0
DATE	10/15/72
CUSTOMER	STATE OF COLORADO
PROJECT NO.	170-2(A3) REC
SHEET NO.	149

REVISIONS

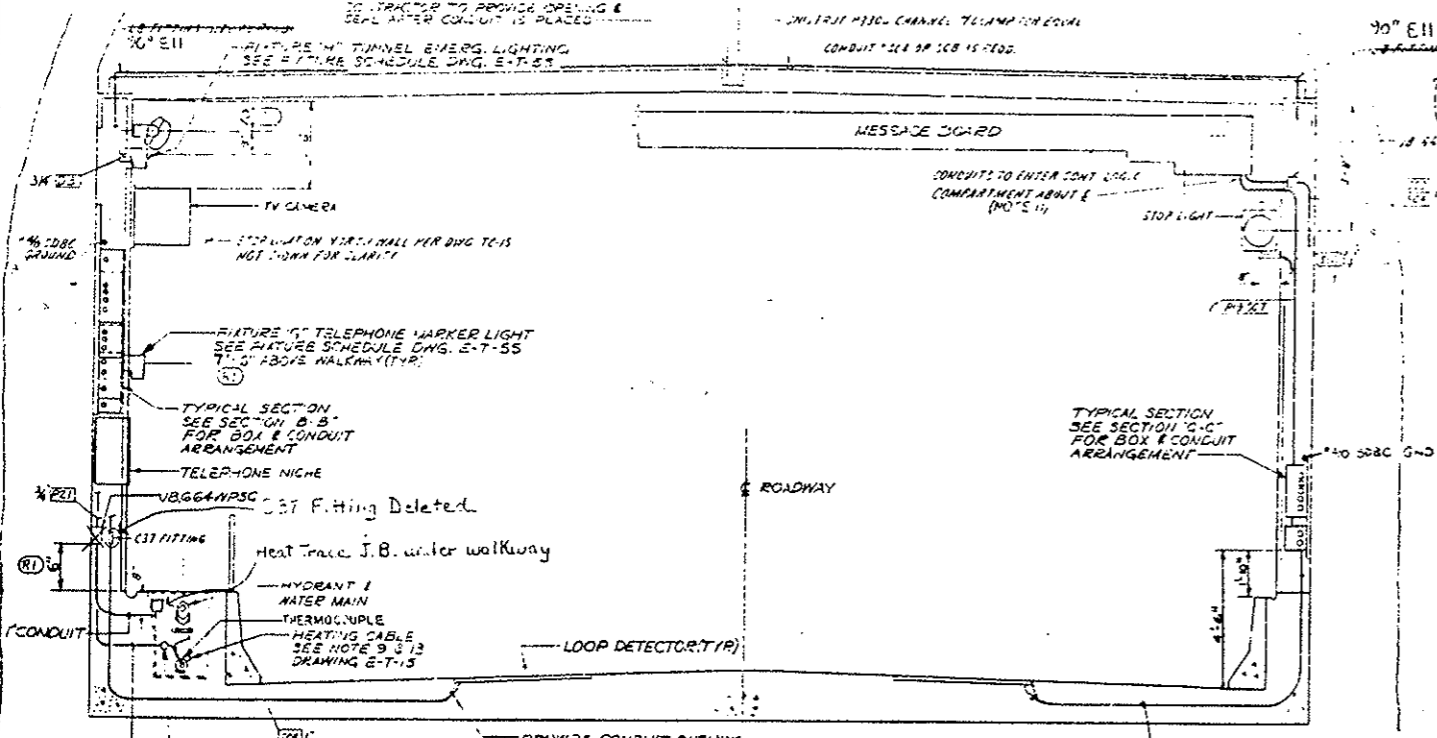
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS  
**BISHOWER MEMORIAL TUNNEL**  
 SECOND SORE

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

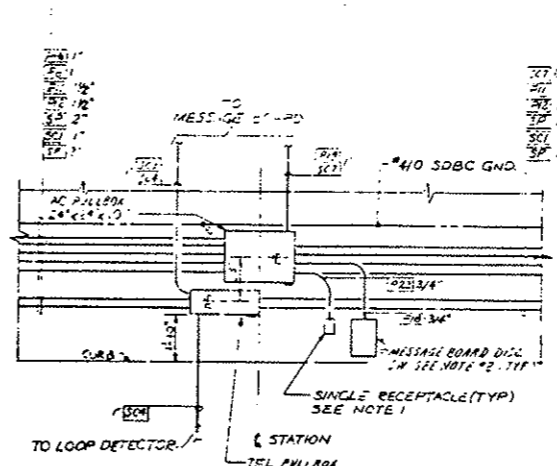
6526

AS NOTED C14570 E-T-25

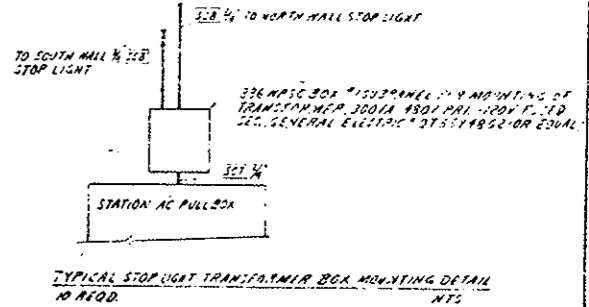
AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISION	REVISED	III	COLORADO	170-3(33)220	150	



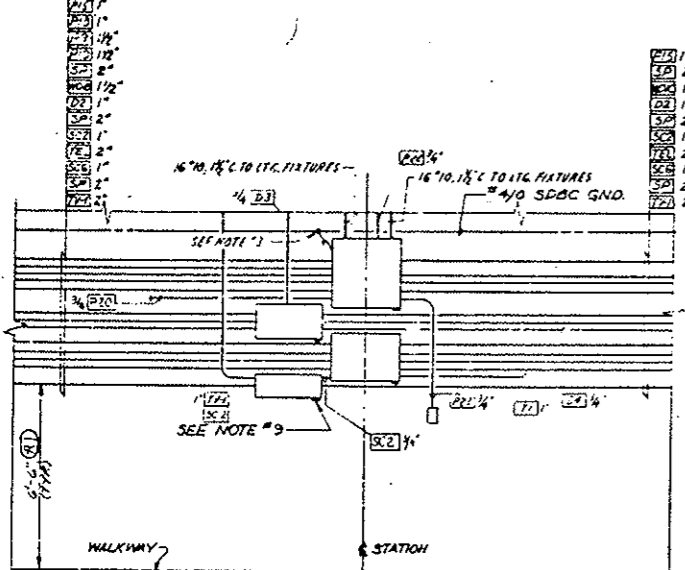
**SECTION A-A**  
 TYPICAL CROSS SECTION OF TUNNEL  
 REFERENCE DRAWING E-T-15



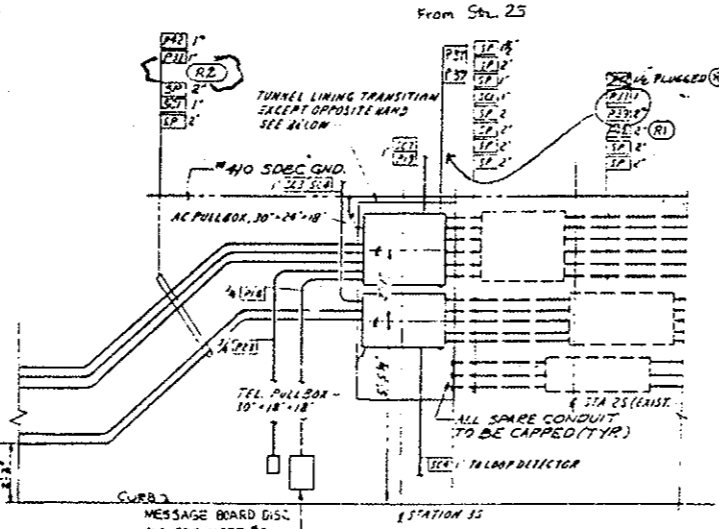
**SECTION C-C**  
 SOUTH WALL



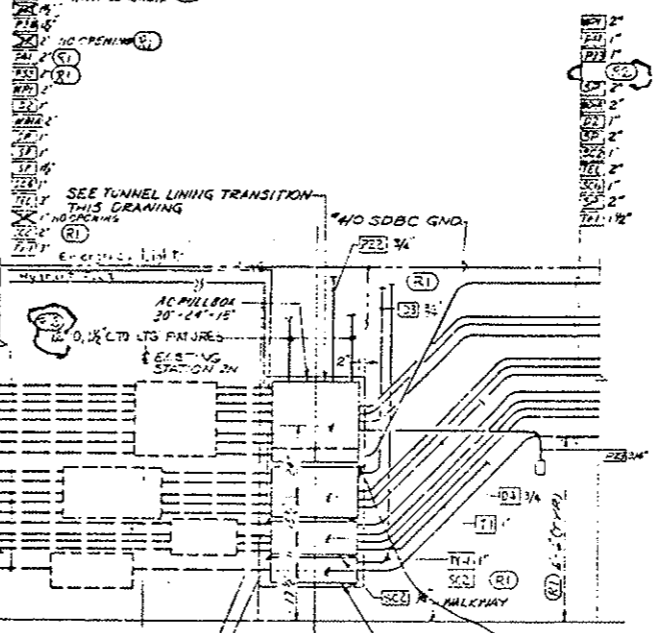
TYPICAL STOP LIGHT TRANSFORMER BOX MOUNTING DETAIL  
 TO SOUTH WALL & STOP LIGHT



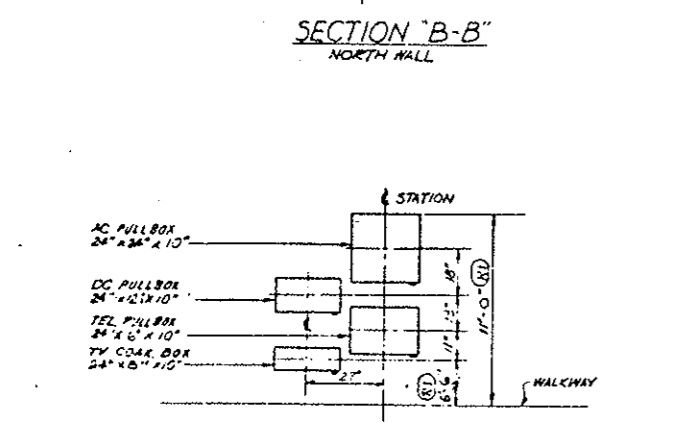
**SECTION B-B**  
 NORTH WALL



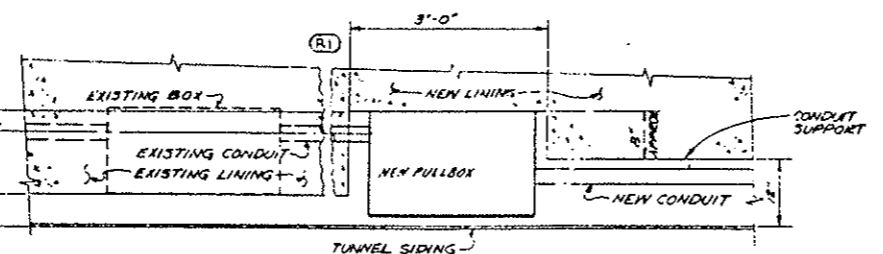
**SECTION E-E**  
 SOUTH WALL



**SECTION D-D**  
 NORTH WALL



**PULLBOX GROUP ELEVATION**  
 NORTH WALL



**TUNNEL LINING TRANSITION**  
 SCALE 3/4\"/>

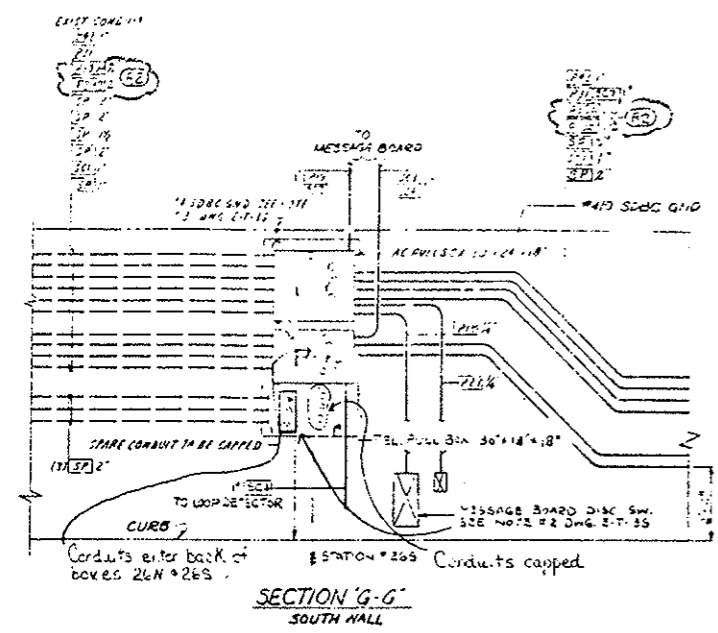
- NOTES.**
1. SINGLE RECEPTACLE TO BE 120VAC-20A-3 WIRE GROUNDED RECEPTACLE CAT #5561 MOUNTED IN CROSS-STRIP #53 BOX W/ REBALOY THREADED CAP COVER #55,30 (OR EQUAL) MOUNT 1'-11\"/>
  2. DISCONNECT SWITCH TO BE 30 AMP, 2P, 600V NON-FUSIBLE NEMA 12 ENCLOSURE, WEATHERPROOF CAT #210-22 (OR EQUAL), TOP OF DISCONNECT TO BE 1'-11\"/>
  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 NYERS SCRU-TITE HUBS (IF 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 REQD) 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 1/2\"/>
  10. ALL EMBEDDED CONDUIT TO BE STUBBED UP 6\"/>
  11. PROVIDE DRIP LOOPS WHERE CONDUITS ENTER MESSAGE BOARD TO ALLOW THE BOARD TO BE SWUNG AROUND FOR SERVICING.
- \* General Electric Installed



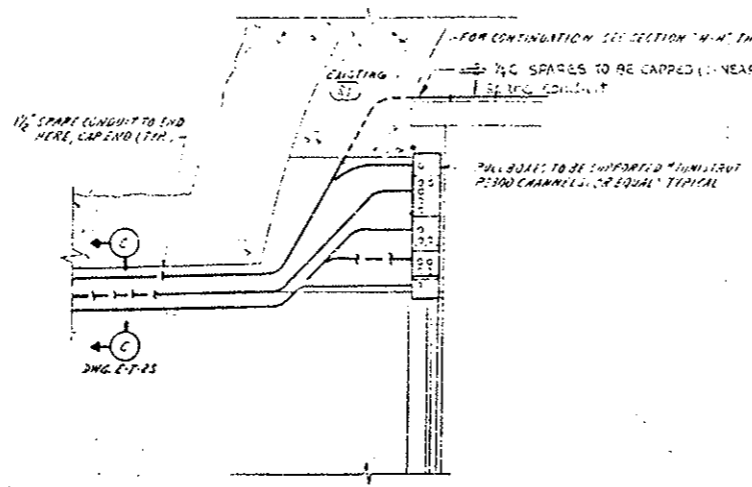
REVISIONS		DATE	BY	CCD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
ELECTRICAL TUNNEL POWER PLAN, SECTIONS & DETAILS SHEET NO. 3				
DATE PLOTTED	DATE CHECKED	DATE DESIGNED	DATE REVISED	DATE APPROVED
15-15-72	15-15-72	15-15-72	15-15-72	15-15-72
DESIGNED BY	CHECKED BY	APPROVED BY	DATE	SCALE
S. B. S.	E. H. H.	E. H. H.	15-15-72	3/4\"/>
DRAWN BY: S. B. S. DATE: 15-15-72				
CHECKED BY: E. H. H. DATE: 15-15-72				
APPROVED BY: E. H. H. DATE: 15-15-72				
PROJECT NO. 170-3(33)220				
SHEET NO. 3				
DRAWING NO. E-T-39				

AS CONSTRUCTED		FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISION	REVISED	215	COLORADO	I 70-3(83) 220	151	

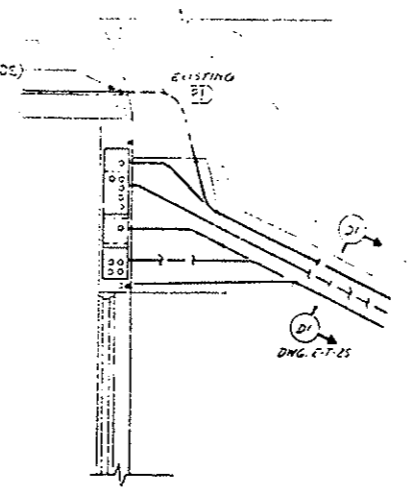
REVISED TUNNEL LIGHTING UNIT 706



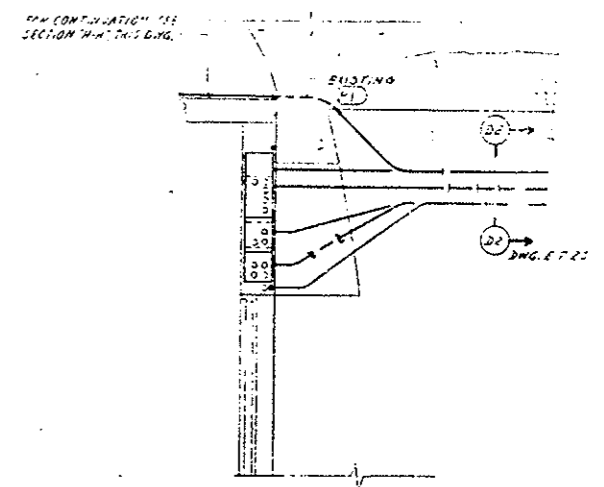
SECTION 'G-G'  
SOUTH HALL



SECTION 'J-J'  
EAST CROSS PASSAGEWAY

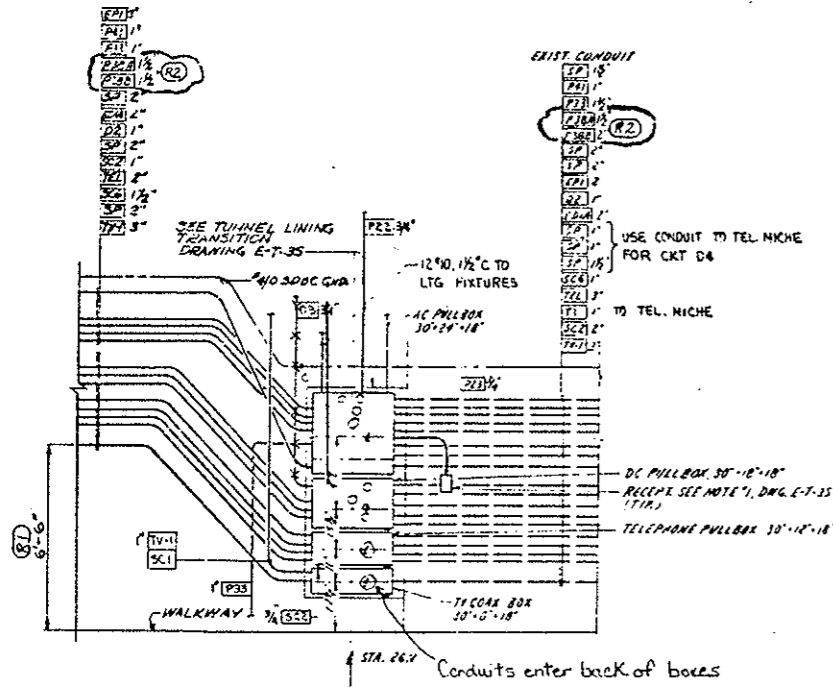


SECTION 'K1-K1'  
CENTER CROSS PASSAGEWAY

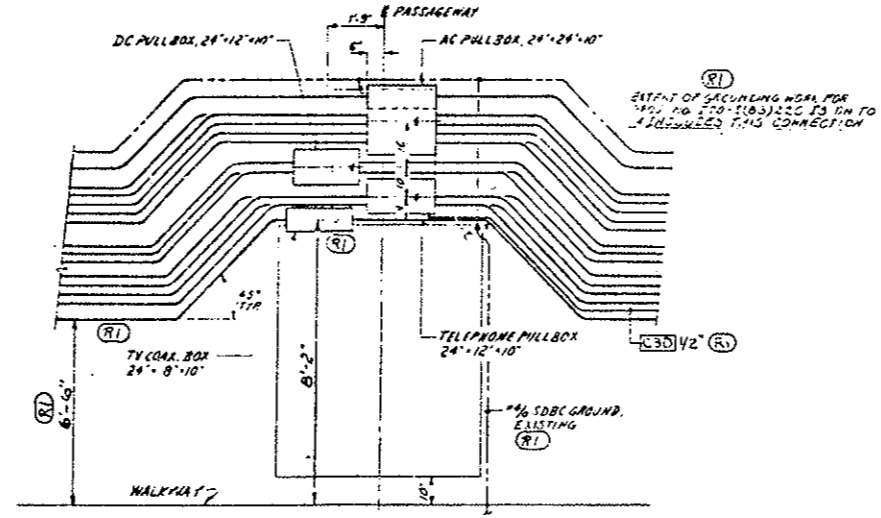


SECTION 'K2-K2'  
WEST CROSS PASSAGEWAY

Conduit enters back of all pull boxes, typical of cross passageways

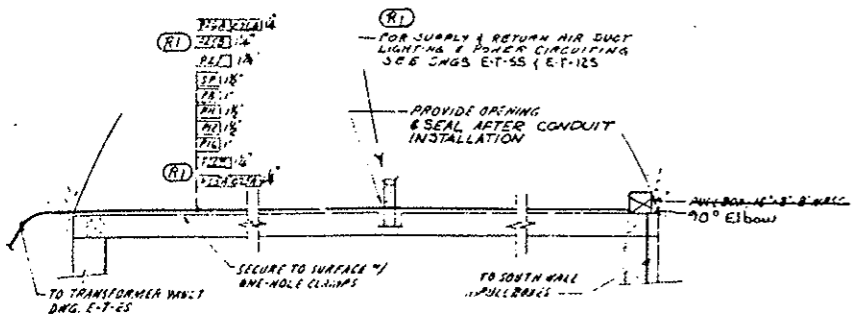


SECTION 'F-F'  
NORTH HALL



SECTION 'L-L'  
CONDUIT & PULL BOX ARRANGEMENT AT  
EAST CROSS PASSAGEWAY. WEST & CENTER  
CROSS PASSAGEWAYS ARE SIMILAR

NOTES:  
 1. WORK THIS DRAWING WITH DRAWING E-T-15, E-T-25,  
 & E-T-35



SECTION 'H-H'  
TYPICAL FOR EACH CROSS PASSAGEWAY

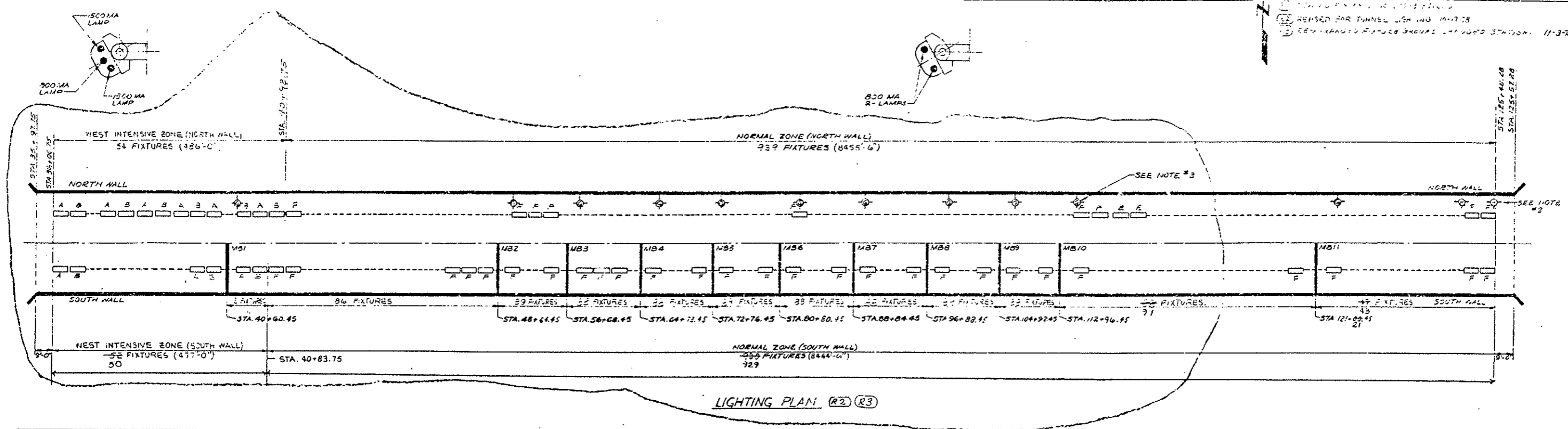


DATE	BY	REVISIONS
15	13	15

NO.	REVISIONS	DATE BY C/O
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS		
EISENHOWER MEMORIAL TUNNEL		
SECOND BORE		
ELECTRICAL		
TUNNEL		
POWER PLAN, SECTIONS & DETAILS		
SHEET NO. 4		
DATE	BY	REVISIONS
15	13	15
E-T-4S		

AS CONSTRUCTED  
 NO REVISIONS  REVISED  VOID

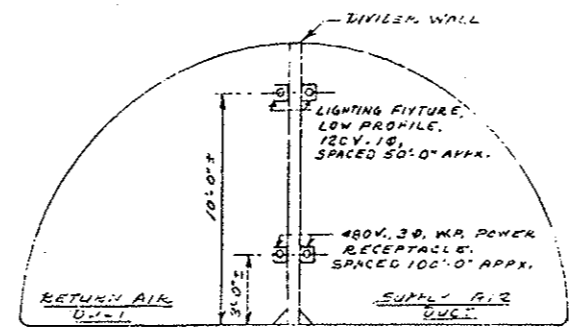
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	I 70-3(33)220	152	



**LIGHTING FIXTURE SCHEDULE (R3)**

CAT. NO.	DESCRIPTION	TYPE	TOTAL
* 3-96-2-15-2-B	TNL SERIES LUMINAIRE, 2-1500MA & 1-800MA LAMPS, 277K 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE B	"A"	53
* 3-96-2-15-0-B	TNL SERIES LUMINAIRE, 2-1500MA & 1-800MA LAMPS, 277K 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE A	"B"	53
* 3-96-2-8-2-B	TNL SERIES LUMINAIRE, 3-800MA LAMPS, 277K 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE D	"C"	68
* 3-96-2-8-0-B	TNL SERIES LUMINAIRE, 3-800MA LAMPS, 277K 60HZ, FUSED, WIRED TO OPERATE IN CONJUNCTION WITH TYPE C	"D"	68
* 3-96-2-8-1-B	TNL SERIES LUMINAIRE, 3-800MA LAMPS, MIDDLE & LOWER, 277K 60HZ, FUSED, NO LAMP BALLAST OPERATION OF EACH MIDDLE OR LOWER LAMP IN CONJUNCTION WITH ADJACENT TYPE "E" FIXTURES	"E"	146
* 3-96-2-8-1-1	TNL SERIES LUMINAIRE, 2-800MA LAMPS, UPPER & LOWER, 277K 60HZ, FUSED, NO 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 (1800MA)	212
WESTINGHOUSE	F96T12/CW/SHO FLUORESCENT LAMP, HIGH OUTPUT	HI-OUTPUT (1800MA)	3866
MPHILBEN 43-40VT	INCANDESCENT WALL BRACKET HEATERTIGHT FOR TELEPHONE MARKER & SIGNAL LIGHT, 50WATT	G	11
MPHILBEN 43-40VT	INCANDESCENT WALL BRACKET HEATERTIGHT FOR TUNNEL EMERGENCY & PASSAGEWAY LTG., 100WATT	H	38
MPHILBEN 43-45VT	INCANDESCENT CEILING SURFACE MTD. HEATERTIGHT FOR PASSAGEWAY LIGHTING, 100WATT	J	17
* 3-96-2-8-1-1	TNL SERIES LUMINAIRE, 2-800MA LAMPS, MIDDLE & LOWER, 277K 60HZ, FUSED, SINGLE LAMP BALLAST OPERATION OF EACH LAMP	"E"	AS REQ'D
* 3-96-2-8-1-1	TNL SERIES LUMINAIRE, 2-800MA LAMPS, UPPER & LOWER, 277K 60HZ, FUSED, SINGLE LAMP BALLAST OPERATION OF EACH LAMP	"E1"	AS REQ'D
* 3-96-2-15-2-B	TNL SERIES LUMINAIRE, 2-1500MA & 1-800MA LAMPS, 277K 60HZ, FUSED, SINGLE LAMP BALLAST OPERATION OF EACH LAMP	"A"	1
Vulite	No Ballast Terminal Block 2-800MA Lamps	"FB"	
Vulite	Flourescent 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.



**VENTILATION DUCTS LIGHTING & POWER INSTALLATION**

**NOTES:**

- LIGHTING FIXTURES ARE CROUCH-MOUNTED INCANDESCENT FIXTURE CHAINS VEG110 WITH CLEAR GLOBE NEVIB. FIXTURE SHALL BE ON 1" CLEAT BOX N° GRP1334.
- 116WATT, 120VOLT, CLEAR LAMPS CAT. NO. 116A21/TS120 SHALL BE INSTALLED IN EACH FIXTURE.
- POWER RECEPTACLES ARE 30 AMPERE, 3-POLE, 4-WIRE, 600VOLT, WITH THE LABEL CAP. CAG150. MINIS CAT. NO. AR348. INSTALL ON 1" BACK BOX N° AKK33.
- 1" RG CONDUIT SHALL BE INSTALLED BETWEEN LIGHTING OUTLET BOXES AND BETWEEN POWER BACK BOXES FOR LIGHTING AND POWER CIRCUITS. THIS CONDUIT SHALL BE SUPPORTED ON THE DUCT DIVIDER WALL.
- SUPPLY DUCT LIGHTING IS TO BE ESTABLISHED IN APPROX. 1000 FT. INCREMENTS. SWITCH CONTROL SHALL BE ARRANGED AT EACH END OF AN INCREMENT. ALL SUPPLY AIR DUCT LIGHTING IS TO BE ESTABLISHED IN INCREMENTS MATCHING DIVIDER WALL DUCT LIGHTING (APPROX. 1000 FT. INCREMENTS). BETWEEN DUCT LIGHTING CONNECTIONS WILL BE RANDOM SWITCHING LOCATED AT ENTRANCE LOCATIONS.
- LIGHTING CIRCUITS SHALL BE 120VAC, 60CY, TYPE KHM, 1/2" SINGLE CONDUIT WIRE. LIGHTING (LOW VOLTAGE) CONTROL CIRCUITS SHALL BE 120VAC, 60CY, TYPE KHM, 1/2" SINGLE CONDUIT WIRE. 480V POWER RECEPTACLE CIRCUITS SHALL BE 120VAC, 60CY, TYPE KHM, 1/2" STRANDED COPPER.
- SEE DWG. E-T-125 FOR POWER & LIGHTING PLANS & DETAILS.

**(R2) MODE OF OPERATION**

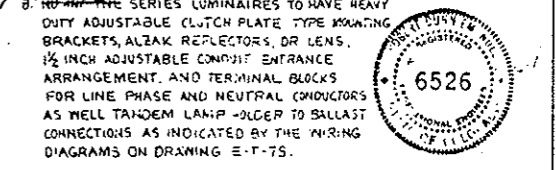
**INTENSIVE ZONE**  
 DAY, 3 LAMPS ON  
 NIGHT, CENTER LAMP ONLY.  
 DAY-NIGHT LEVELS ARE CONTROLLED FROM AUTO ELECTRIC CONTROL TRANSFERRED AT 10FC AMBIENT LIGHT.

**NORMAL ZONE**  
 ONE LAMP ON WITH ALTERNATING DUTY ON THE TWO LAMPS EVERY TWENTY FOUR (24) HOURS  
 TEMPERATURE TO TURN ON ADDITIONAL LAMP BELOW MINUS TWENTY (20) DEGREES F.  
 PASSAGEWAY LOCATED SELECTOR SWITCH ALLOWS OPERATOR TO TURN OFF 50% OF NORMAL ZONE LAMPS (EVERY SECOND BALLAST).

**NOTES:**

- TUNNEL FLUORESCENT LIGHTING FIXTURES SHALL BE SPECIALLY DESIGNED FOR TUNNEL LIGHTING. SEE FIXTURE SCHEDULE THIS DRAWING FOR DESCRIPTION OF FIXTURES.
- TUNNEL WALKWAY EMERGENCY LIGHTING FIXTURES SHALL BE INSTALLED EVERY 39'-0" THE FULL LENGTH OF THE TUNNEL. FIXTURE TO BE MOUNTED BETWEEN FLUORESCENT FIXTURES & BELOW THEM TO PERMIT MAINTENANCE OF FLUORESCENT FIXTURES
- TELEPHONE MARKER AND SIGNAL LIGHTS SHALL BE INSTALLED AT EVERY TUNNEL EMERGENCY TELEPHONS (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

Vulite



**PRINT RECORD**

DATE ISSUED	15 15 15
REVISED BY	0 0 0 0 0 0 0 0 0 0
BY	0 0 0 0 0 0 0 0 0 0
CUSTOMER	0 0 0 0 0 0 0 0 0 0
FIELD	0 0 0 0 0 0 0 0 0 0
INTRA CO.	15 15 15 15 15 15 15 15

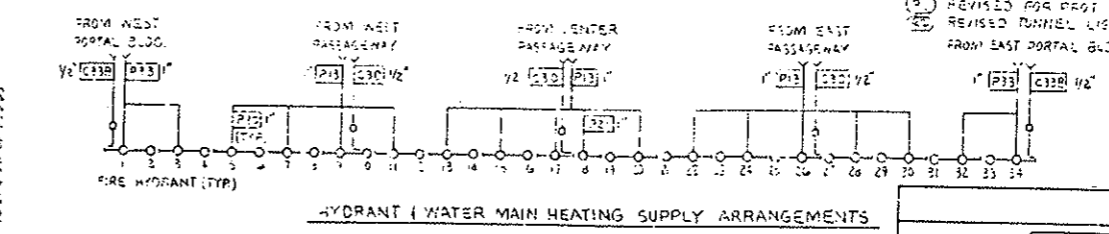
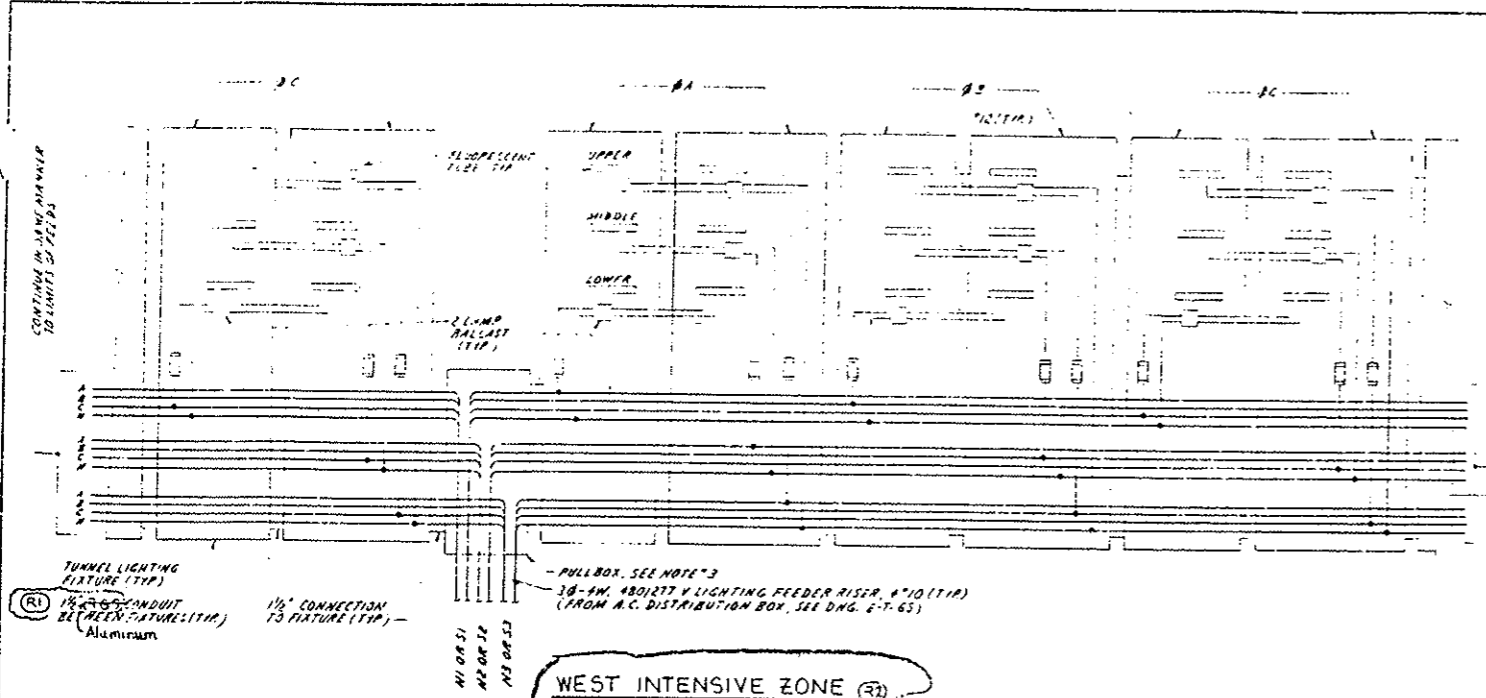
NO.	REVISIONS	DATE
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE		
ELECTRICAL TUNNEL LIGHTING PLAN AND DETAILS		
DATE	JEJ 1-4-74	6526
BY	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0
APPROVED	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0
INTRA CO.	15 15 15 15 15 15 15 15	15 15 15 15 15 15 15 15
NONE	C14570	E-T-55



FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
700	COLORADO	T70-3(83)220	154	

REVISED FOR POST NO. 213-1-1-220  
REVISED TUNNEL LIGHTING AND HEATING  
FROM EAST PORTAL BLDG.

NO REVISIONS	REVISED	VOID
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FLUORESCENT TUBE PLACEMENT

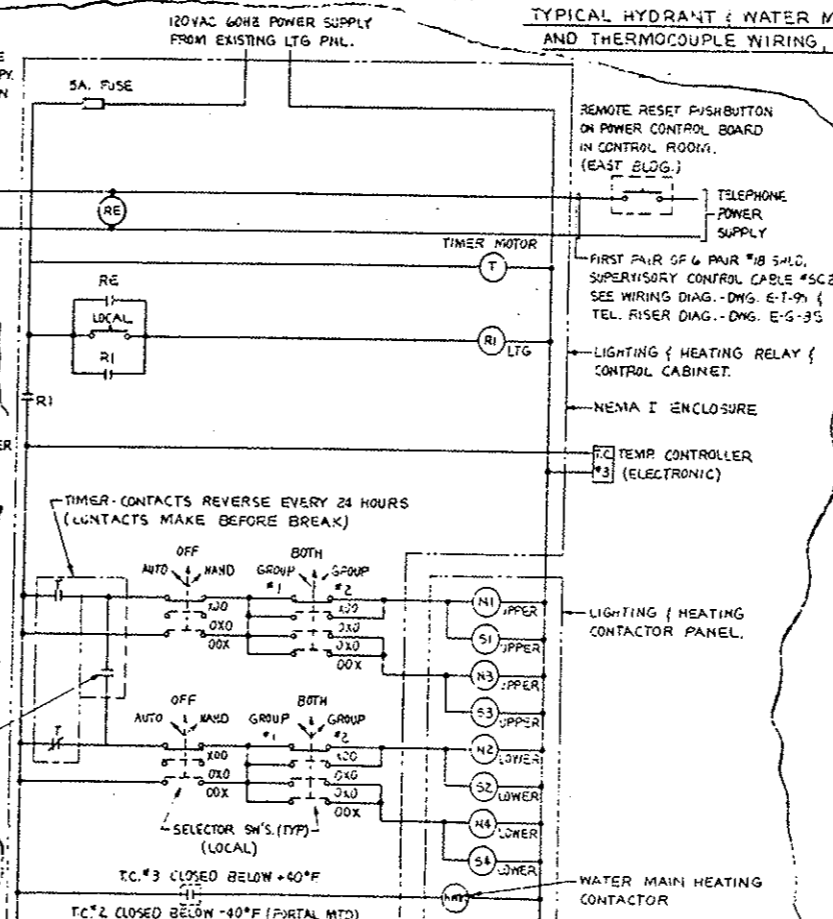
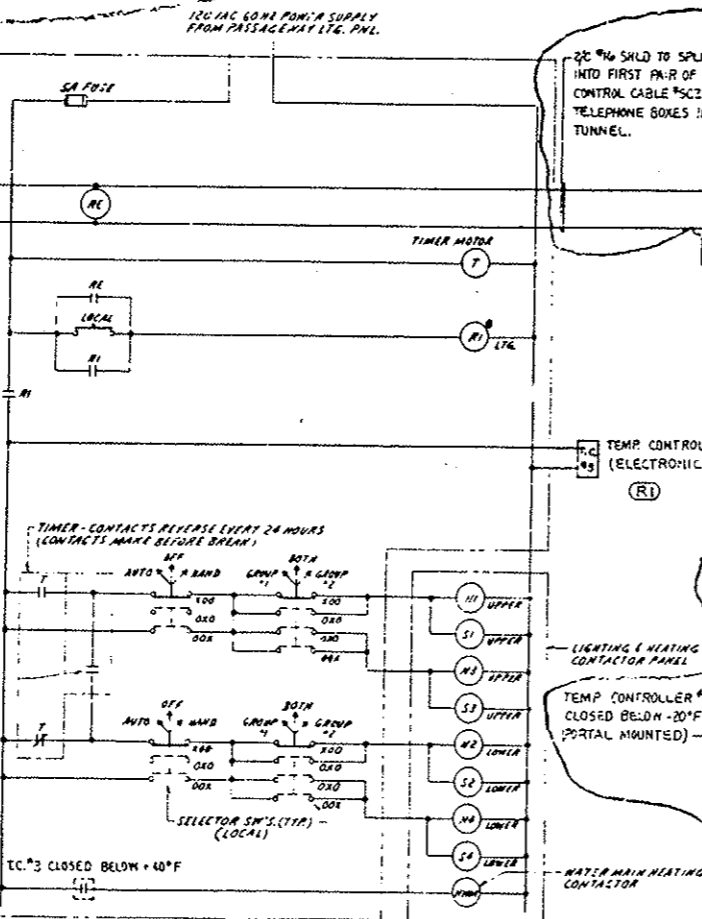
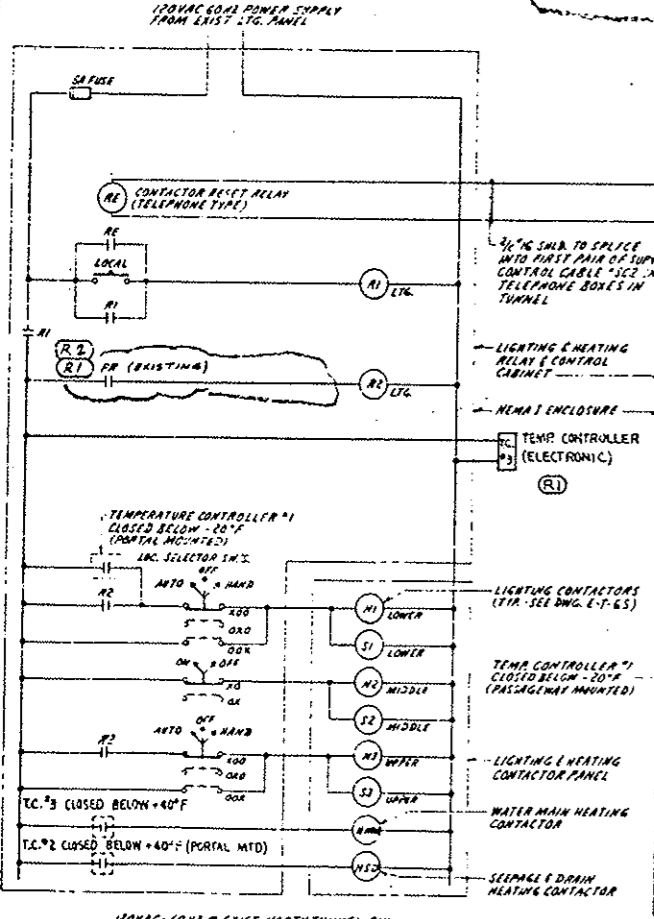
WEST INTENSIVE ZONE

CONTACTORS	POS.	TUBE TYPE
N1	51	LOWER S.H.O.
N2	52	MIDDLE H.O.
N3	53	UPPER S.H.O.

NORMAL ZONE

CONTACTORS	POS.	TUBE TYPE
N1	51	UPPER H.O.
N3	53	
N2	52	LOWER H.O.
N4	54	

LIGHTING FIXTURE WIRING (TYPICAL FOR BOTH SIDES)



NOTES:  
1. WORK THIS DRAWING WITH DWS'S: E-T-55, E-T-65, E-T-65 & E-T-95  
2. SEE DWS, E-T-25 FOR LOCATIONS OF POWER DISC. PANELS, RELAY & CONTROL PANELS & CONTACTOR PANELS  
3. NO PULLBOXES REQUIRED AT LIGHTING FIXTURES WHERE MESSAGE BOARDS ARE LOCATED.  
4. CONTRACTOR TO WIRE EXIST. PORTAL MOUNTED PHOTOELECTRIC CELL TO NEW RELAY "PR" (120VAC-60HZ COIL) 2 M.A. CONTACTS IN A NEMA I ENCLOSURE, NEAR EXISTING LTG. & HTG. RELAY CONTROL CABINET. ROUTE CONTACT WIRES INTO EXIST. CIRCUIT IN PLACE OF PHOTOELECTRIC CELL CONTACT & INTO NEW CIRCUIT AS SHOWN.



NO.	REVISIONS	DATE	BY
	STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND SCORE		
	ELECTRICAL TUNNEL WIRING DIAGRAMS SHEET NO. 2		
	DATE: 11/15/72 DRAWING NO. E-T-75		

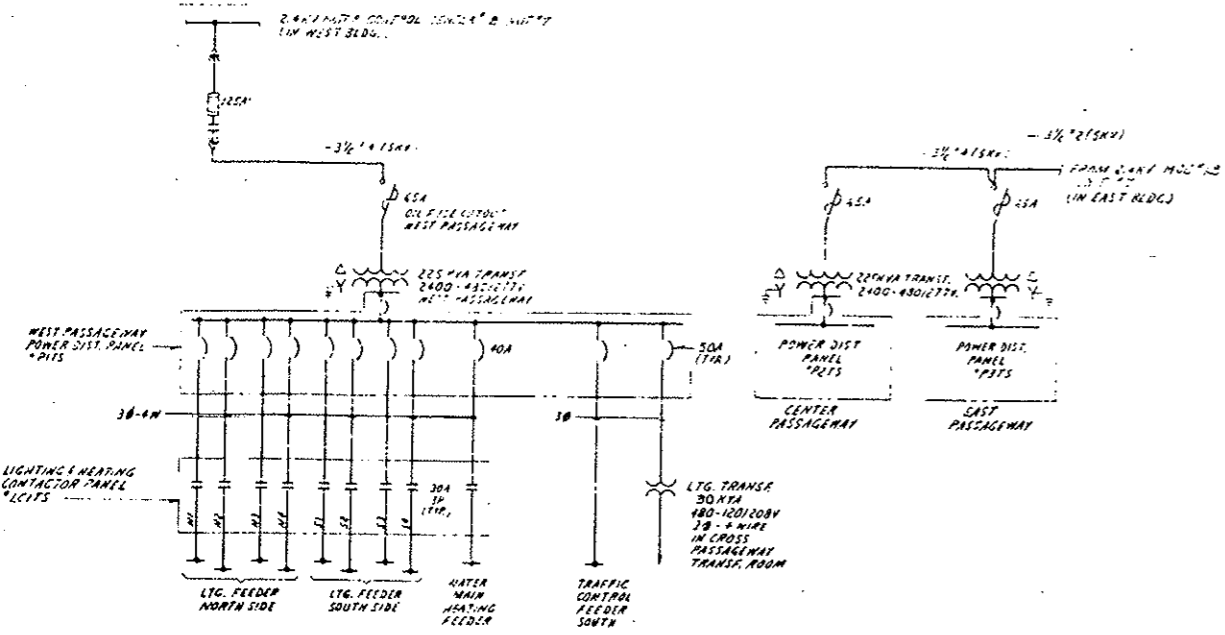
WEST INTENSIVE ZONE LIGHTING & HEATING CONTROL CIRCUITS

EAST NORMAL ZONE LIGHTING & HEATING CONTROL CIRCUITS

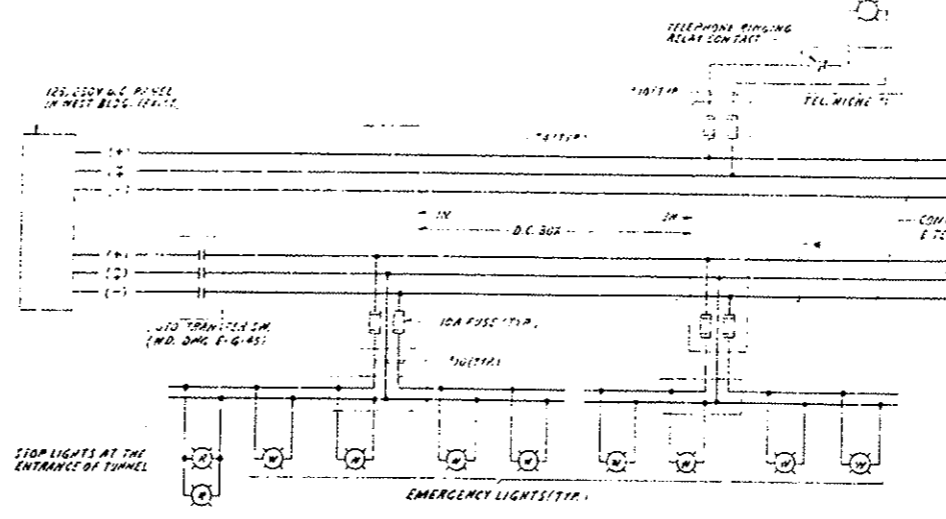
NORMAL ZONE LIGHTING & HEATING CONTROL CIRCUITS FOR CROSS PASSAGEWAYS  
ONE REQUIRED IN EACH PASSAGEWAY

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
100	COLORADO	170-3(03)220	155	

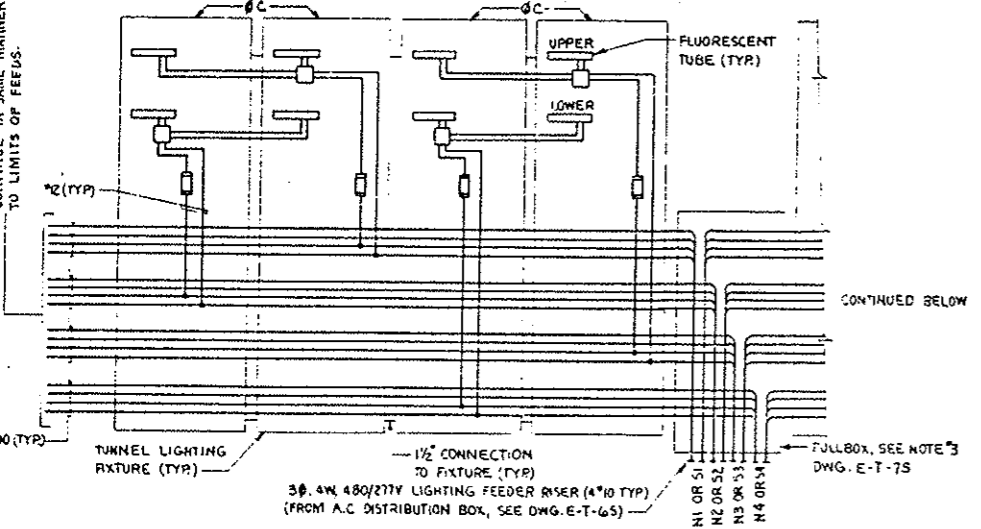
REVISED FOR PHASE II TO BE INSTALLED FOR NORTH BORE TO BE IDENTICAL TO EQUALIZER RE-LOCATED TO CROSS PASSAGEWAYS (SEE DWG. E-T-23)



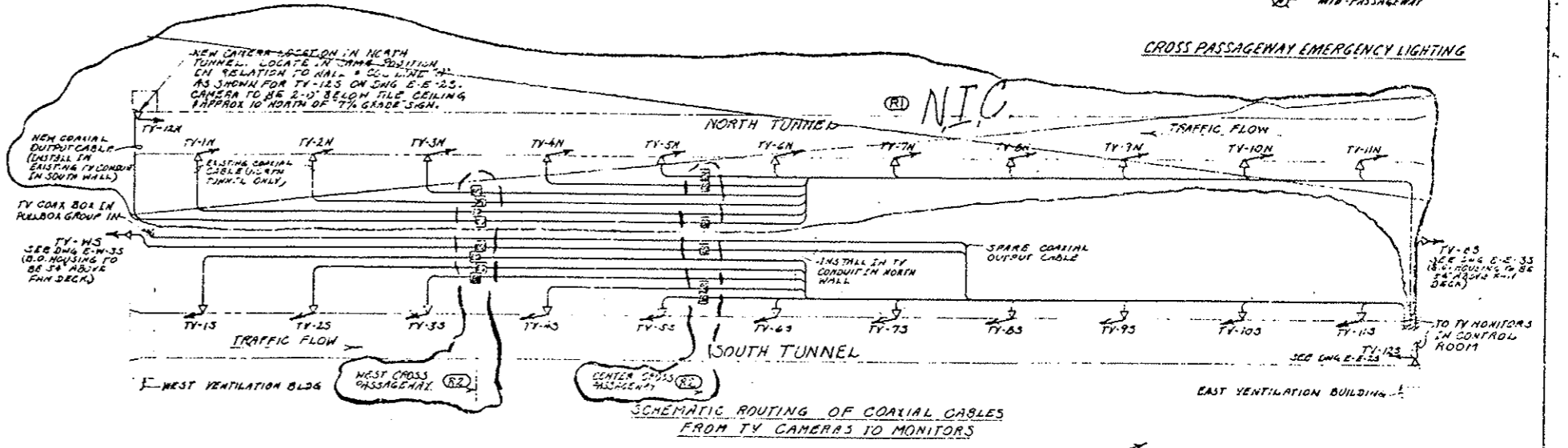
TUNNEL POWER SUPPLY ONE LINE DIAGRAM  
WEST PASSAGEWAY AS SHOWN  
EAST & CENTER PASSAGEWAY - SIMILAR



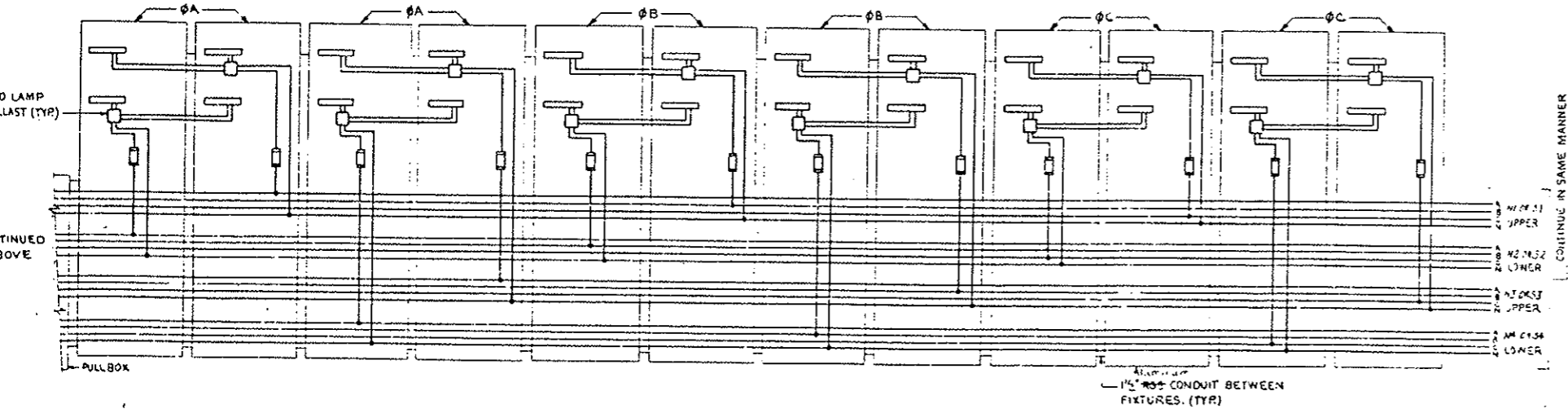
TUNNEL D.C. LIGHTING  
WEST BLDG. TO CENTER OF TUNNEL  
EAST BLDG. TO CENTER OF TUNNEL SIMILAR  
EMERG. LIGHTING MAIN FEEDERS  
WEST BLDG. TO 64' - 1/2" 64' TO 104' 1/2" 104' TO 144' 1/2"  
EAST BLDG. TO 224' 1/2" 224' TO 154' 1/2" 154' TO 154' 1/2"



NORMAL ZONE



CAMERA AND VIEWING DIRECTION  
VIDEO EQUALIZER & LINE AMPLIFIER TO BE INSTALLED IN CROSS PASSAGEWAYS AS INDICATED ON DWG. E-T-23.



AS CONSTRUCTED  
NO REVISIONS  REVISED  VOID



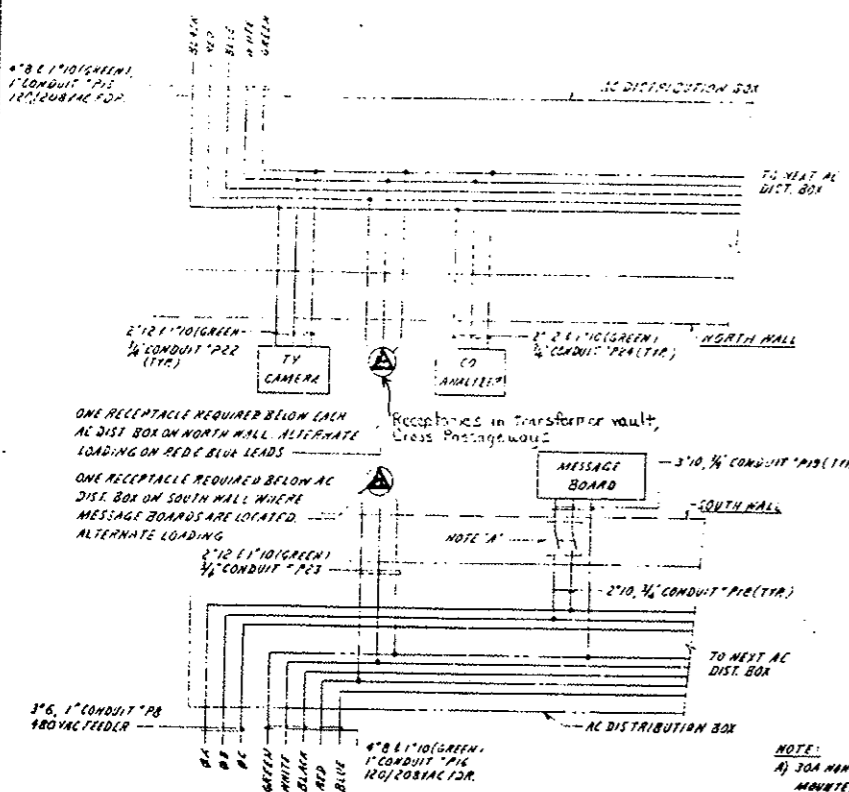
REVISIONS	
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS	
EISENHOWER MEMORIAL TUNNEL	
SECOND BORE	
ELECTRICAL TUNNEL WIRING DIAGRAMS SHEET NO. 3	
DATE: 11/15/72	DRAWING NO. E-T-8S
BY: [Signature]	CHECKED: [Signature]
SCALE: NONE	PROJECT NO. C14570



FEDERAL ROAD DISTRICT NO. III	DIVISION COLORADO	PROJ. NO. 170-3(33)220	SHEET NO. 156	TOTAL SHEETS
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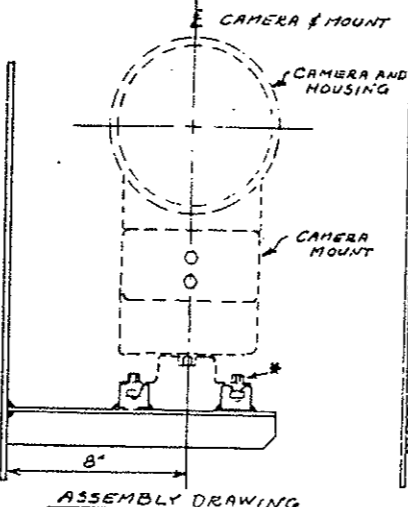
(R-1) REVISED FOR R403 NO. 170-3(33)220  
NIC FOR NORTH BORE T.V. REV. 04-73

NO REVISIONS	AS CONSTRUCTED	REVISED	VOID
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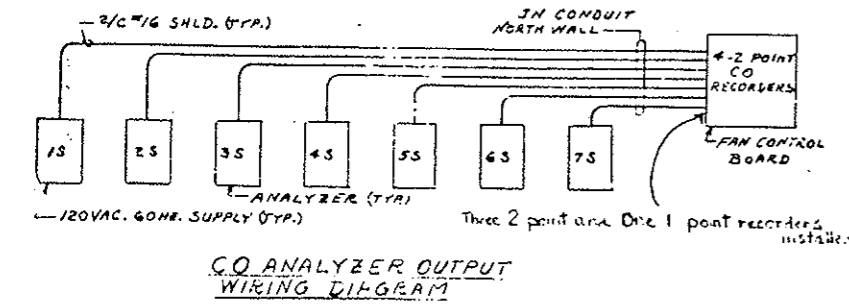
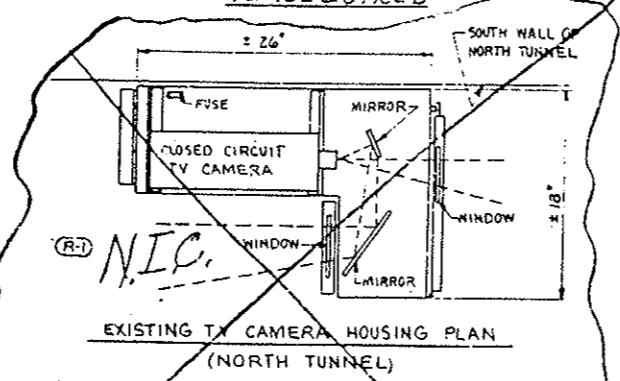
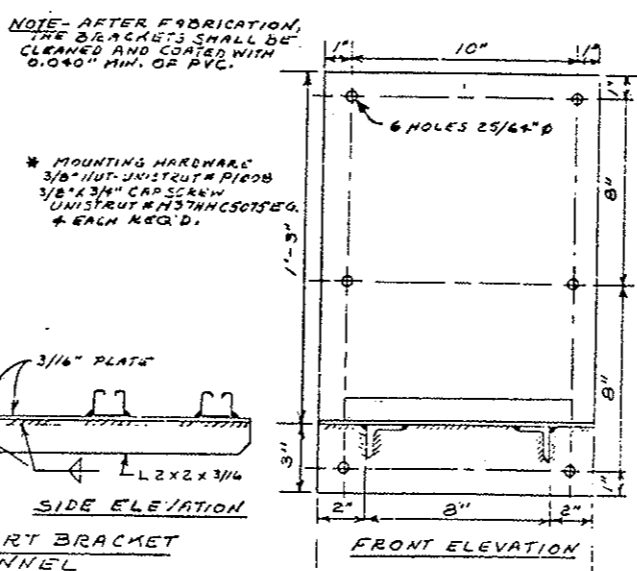


POWER FEEDER WIRING DIAGRAM

CONDUIT NO.	POINT OF ORIGIN	VOLTAGE	WALL	TV CAMERA	CO ANALYZER	MESSAGE BOARD ZONE	RECEPT.
P41	WEST VENT. BLDG.	120/208	NORTH	15, 125	15		3M, 4M, 5M
P42		120/208	SOUTH			15, 125	3S, 5S
P31		480	SOUTH				
P15	WEST PASSAGEWAY	120/208	NORTH	35, 43	25, 35		6N, 7N, 9N, 10N, 11N
P16		120/208	SOUTH				7S, 10S
P8		480	SOUTH			35, 45	
P15	EAST PASSAGEWAY	120/208	NORTH	55, 65, 87S	45, 55		12N, 13N, 15N, 16N, 17N, 18N
P16		120/208	SOUTH				12S, 15S, 17S
P8		480	SOUTH			55, 65, 75S	
P15	EAST PASSAGEWAY	120/208	NORTH	85, 95	65		19N, 20N, 22N, 23N
P16		120/208	SOUTH				12S, 22S
P8		480	SOUTH			85, 95	
P41	EAST VENT. BLDG.	120/208	NORTH	105, 115	75		24N, 25N, 26N
	EAST VENT. BLDG. TRAFFIC CONTROL CONSOLE	120	EAST SOUTH	45	125		
P42	EAST VENT. BLDG.	120/208	SOUTH				24S, 26S
P31		480	SOUTH			105, 115	



TV CAMERA SUPPORT BRACKET SOUTH TUNNEL 12 REQUIRED



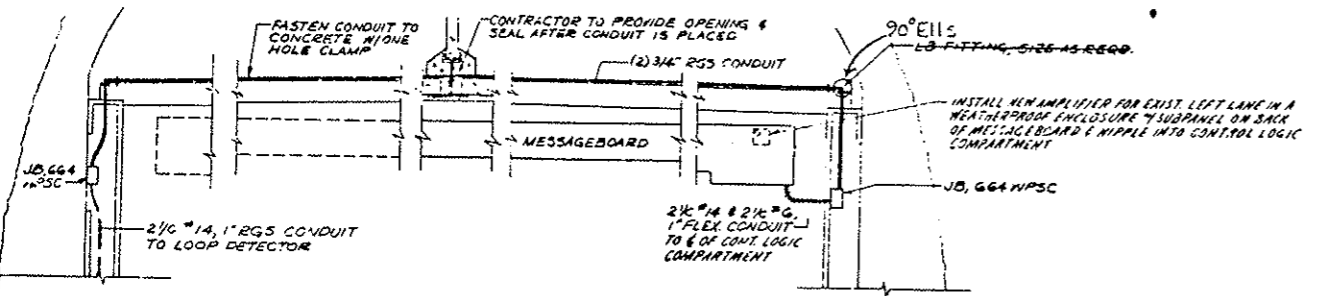
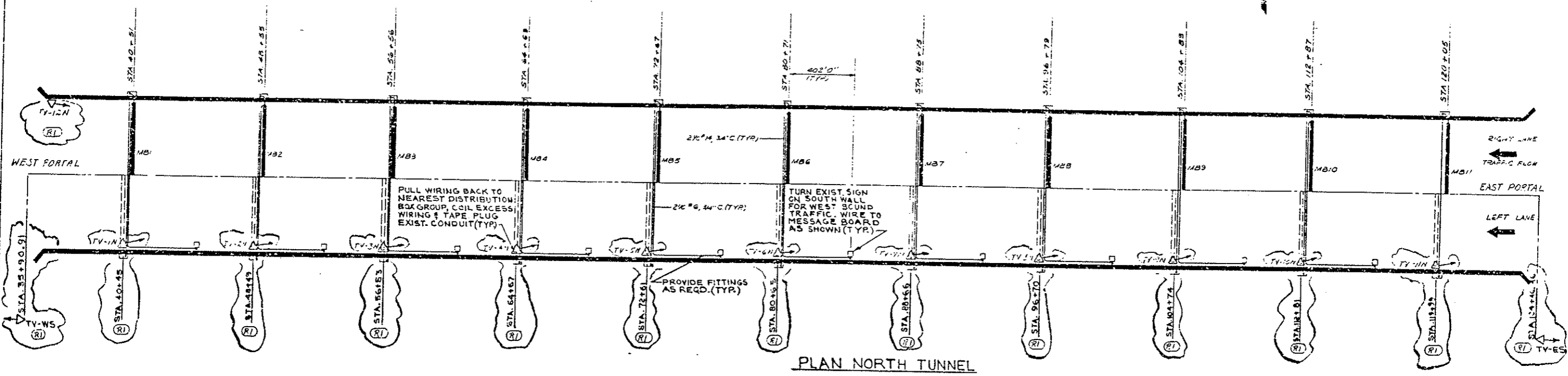
NO. 1	REVISIONS	DATE BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE		
ELECTRICAL TUNNEL WIRING DIAGRAMS SHEET NO. 4		
DRAWING NO. E-T-9S		



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

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	I 70-3(83)220	158	

REVISED FOR POINT NO. 170-1111-20 AND FOR NORTH BORE BY NEARBY



- NOTE:**
1. MESSAGEBOARDS ORIGINALLY LOCATED ON SOUTH HALL OF NORTH TUNNEL TO BE LOCATED IN SOUTH TUNNEL PER DWG. E-T-15 & TC-45
  2. EXISTING LOOP DETECTORS IN SOUTH LANE MUST BE WIRED TO MESSAGE BOARD REMAINING IN NORTH LANE.
  3. RELOCATE TV-WS TO NEW LOCATION AT STATION SHOWN.
  4. TV-IN THRU TV-12N NOT IN CONTRACT B3.



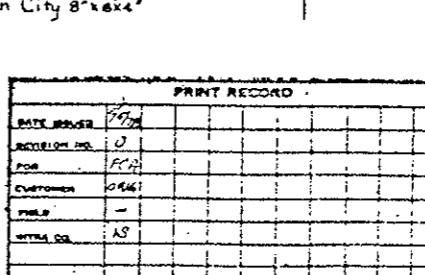
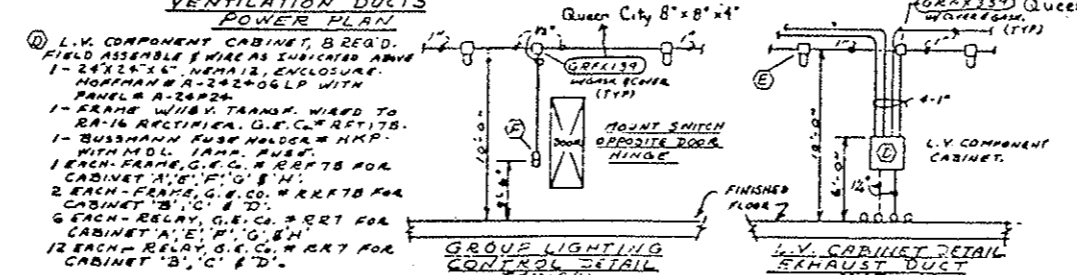
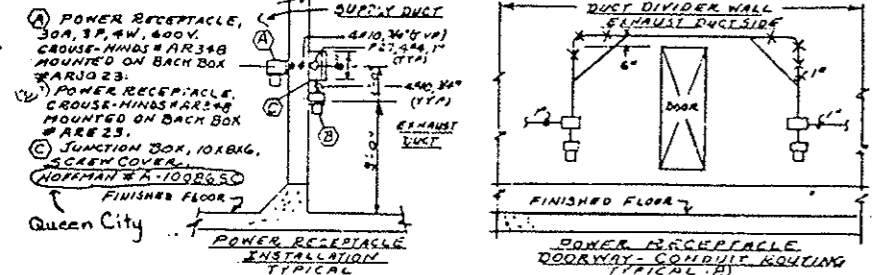
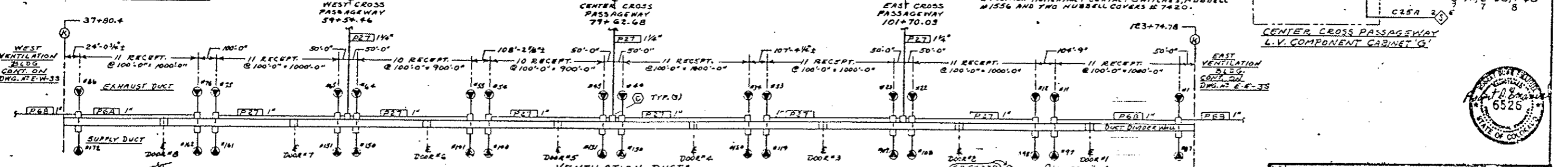
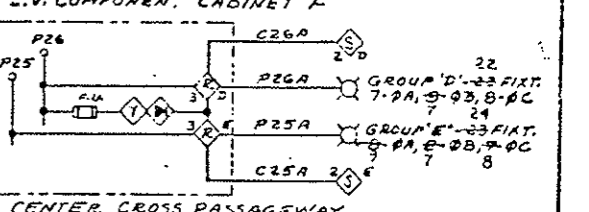
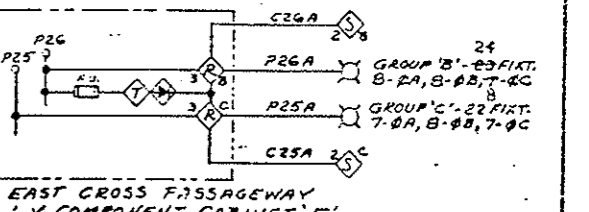
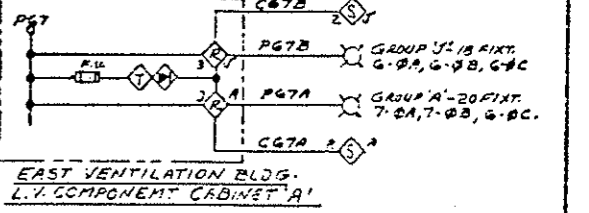
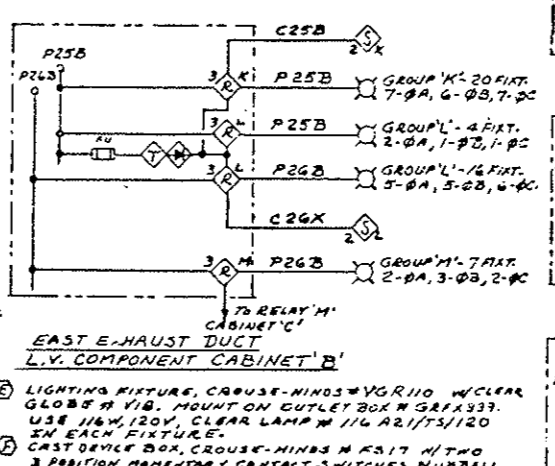
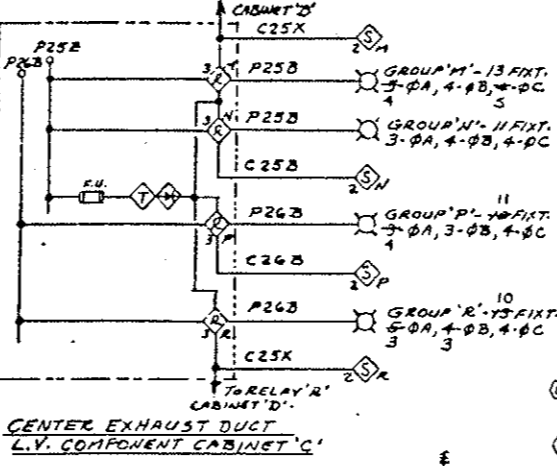
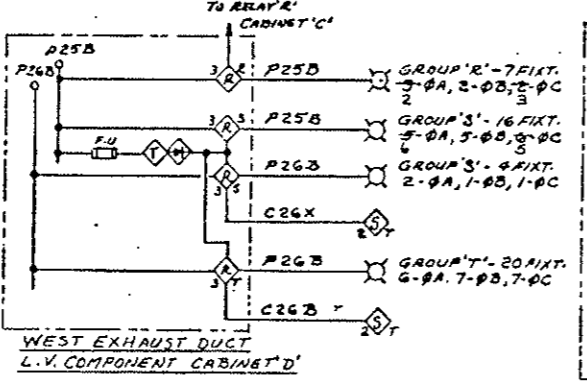
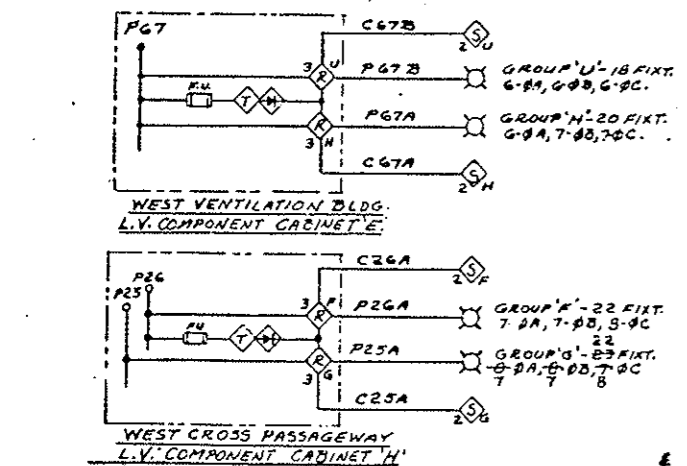
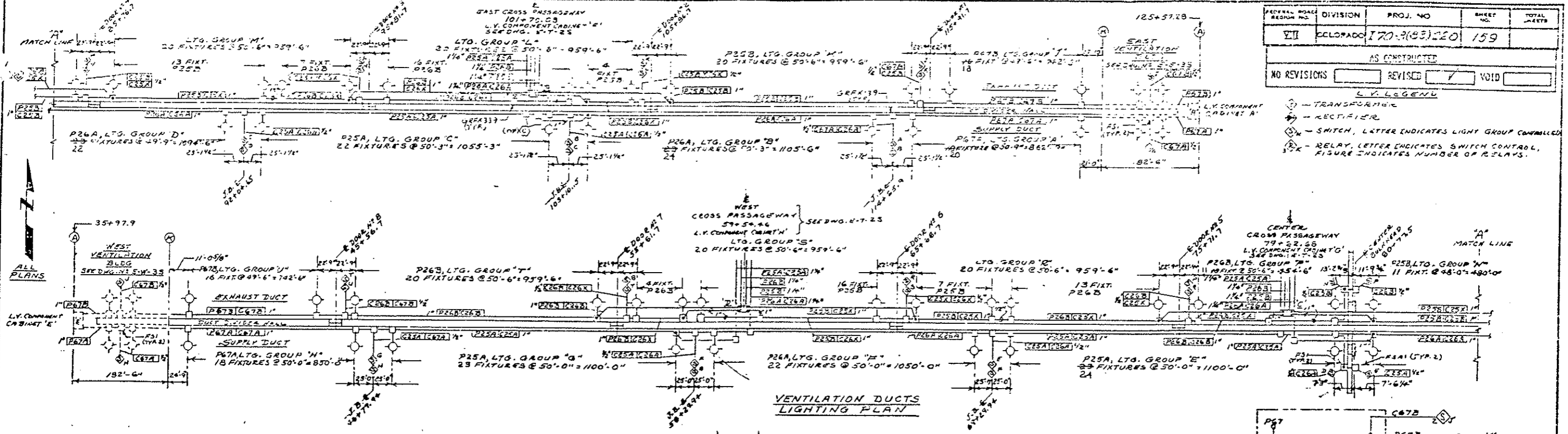
DATE	BY	REVISION
15	15	15

NO.	REVISIONS	DATE BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS		
EISENHOWER MEMORIAL TUNNEL		
SECOND BORE		
ELECTRICAL		
NORTH TUNNEL		
TRAFFIC CONTROL MODIFICATIONS		
DATE	BY	REVISION
15	15	15
NONE	C14570	E-T-115

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	170-9(93)220	159	

AS CONSTRUCTED

NO REVISIONS  REVISED  VOID



DATE	BY	REVISION

NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED		

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

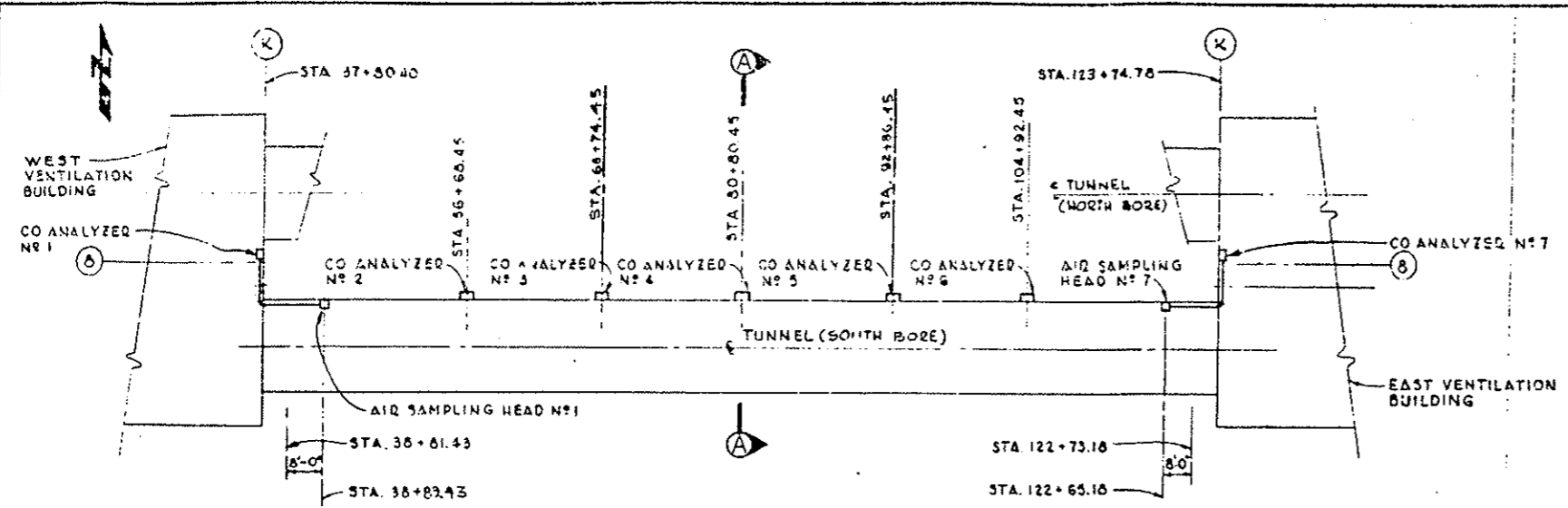
ELECTRICAL  
 TUNNEL  
 VENTILATION DUCTS  
 POWER & LIGHTING PLANS & DETAILS

DRAWN: J. J. [unclear]  
 CHECKED: [unclear]  
 SCALE: AS SHOWN  
 NONE

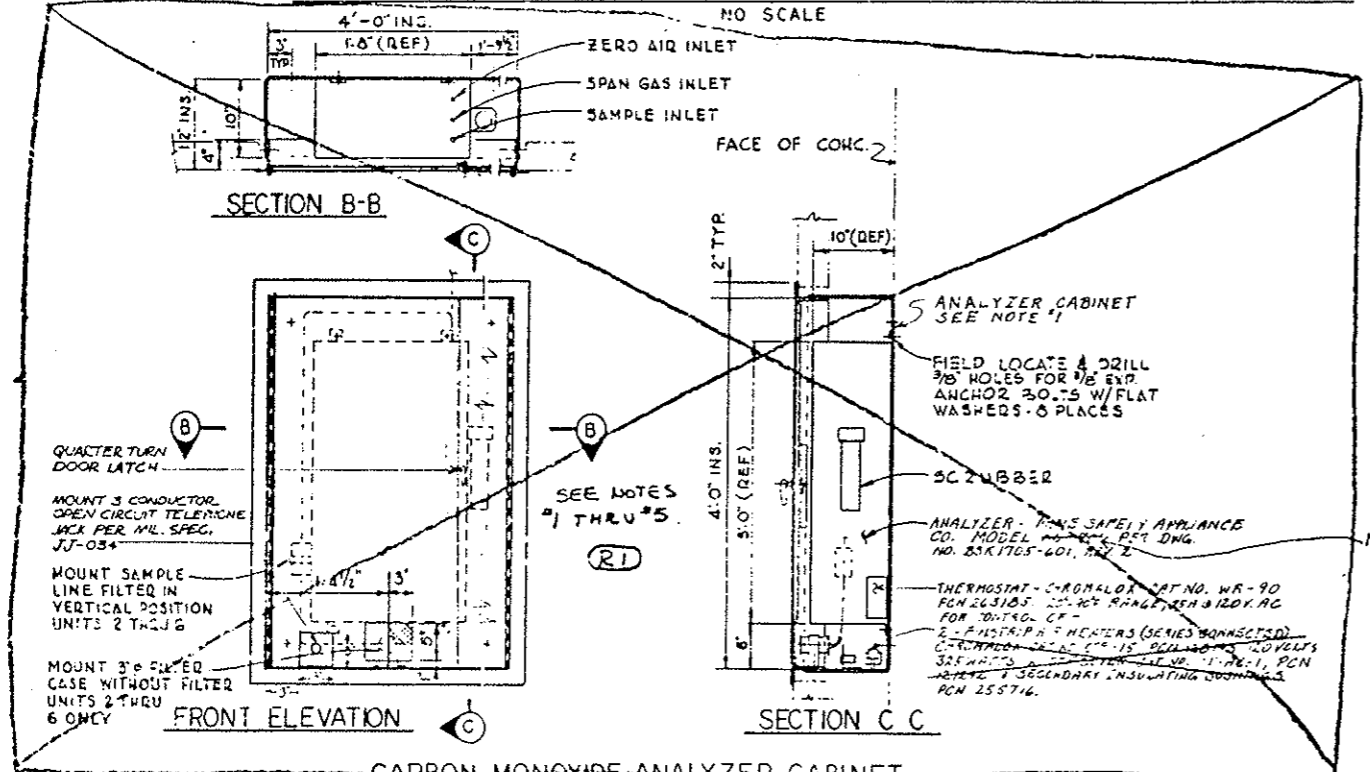
STATE OF COLORADO  
 6526

AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED <input checked="" type="checkbox"/>	VI	COLORADO	170-3(83) 220	161	

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

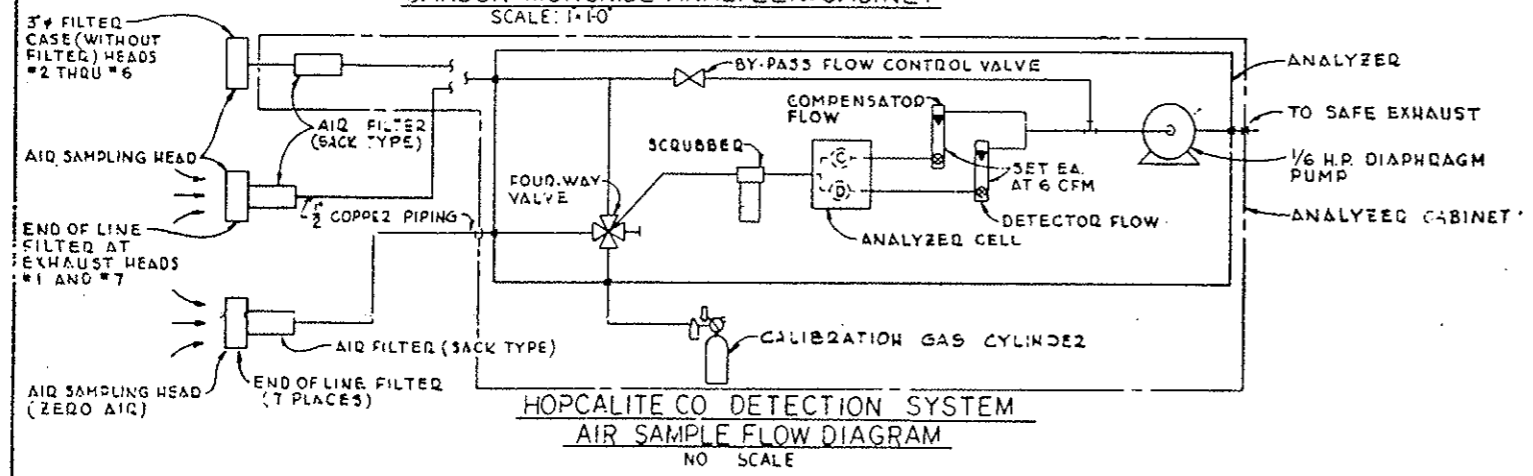


SCHEMATIC PLAN OF SOUTH TUNNEL AND PART OF VENTILATION BLDGS



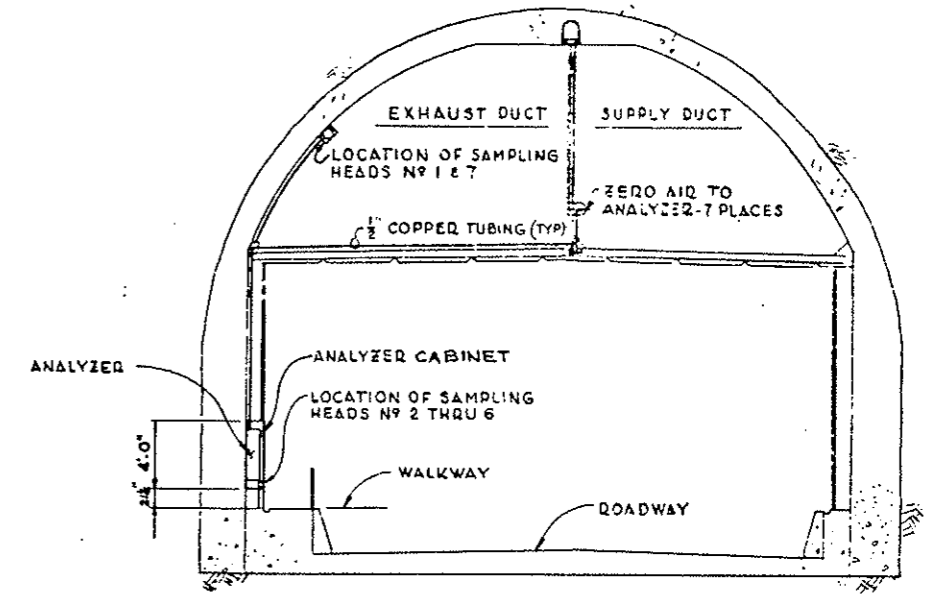
CARBON-MONOXIDE ANALYZER CABINET

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



HOPCALITE CO DETECTION SYSTEM  
AIR SAMPLE FLOW DIAGRAM

NO SCALE



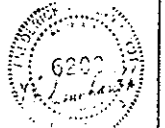
SECTION A-A TYPICAL

SCALE 3/16"=1'-0"

NOTES:

1. ALL ANALYZERS EXCEPT #1147 WILL HAVE A CABINET AS DETAILED ON DWG (WF-6) (R1)
2. UNITS 2 THRU 6 WILL BE MOUNTED ON WALL ALONG ROADWAY IN TUNNEL AND REQUIRE AIR SAMPLING HEAD MOUNTED IN OPENING BELOW CABINET IN TILE WITH 5"x6" SCREEN. (R2)
3. UNIT 1147 WILL BE MOUNTED IN EXIST. CO. ANAL. ROOM IN VENTILATION BUILDINGS WITH AIR SAMPLING HEADS LOCATED IN EXHAUST DUCT - NOT ON CABINET DOOR.
4. CO ANALYZER VERTICAL PIPING SHALL TERMINATE IN A DRIP LEG, AND NO SAGS PERMITTED IN HORIZONTAL PIPING.
5. ANALYZER CABINETS FOR UNITS 2 THRU 6 WILL CONTAIN A THERMOSTAT-CHROMALOX CAT. NO. WR-90, PCN 262185, 20" RANGE, 25A @ 120V AC (OR EQUAL) FOR CONTROL OF 2-FINSTRIP AIR HEATERS (SERIES CONNECTED) CHROMALOX CAT. NO. 07F-15, PCN 128143, 120 VOLTS, 325 WATTS, WITH JTF COVER CAT. NO. 07F-11, PCN 292021 SECONDARY INSULATING DUSHINGS PCN 255716.

Chromalox C11535 579/120 V 350 W 1KI  
Two each cabinet.



FOR INFORMATION ONLY

REVISIONS		DATE	BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE			
MECHANICAL CARBON MONOXIDE SAMPLING AND ANALYZING SYSTEM PLANS, SECTIONS AND DETAILS			
DATE	BY	DATE	BY
5-31-73	10-25	10-25	10-25
1-5-75	10-1	1-1-75	1-1-75

DATE	BY	DATE	BY
5-31-73	10-25	10-25	10-25
1-5-75	10-1	1-1-75	1-1-75

NOTED  
AS 104570  
M-13 S