

(R1) 4/29/75 T.A.L. Delete reference to Utilities.

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	I 70-3(82)220	1	1

R.O.W. Acquired Under I 70-3(14)220
 I 70-3(6)
 I 70-3(26)
 (R1) P.E. under I 70-3(78)

SEE STANDARD M-100-A FOR STANDARD SYMBOLS.

R. Johnson

DEPARTMENT OF HIGHWAYS STATE OF COLORADO

PLAN AND PROFILE OF PROPOSED
FEDERAL AID PROJECT NO. I 70-3 (82) 220
 STATE HIGHWAY NO. 70
 AS CONSTRUCTED

SUMMIT AND CLEAR CREEK COUNTIES

NO CENTERLINE LENGTH INVOLVED

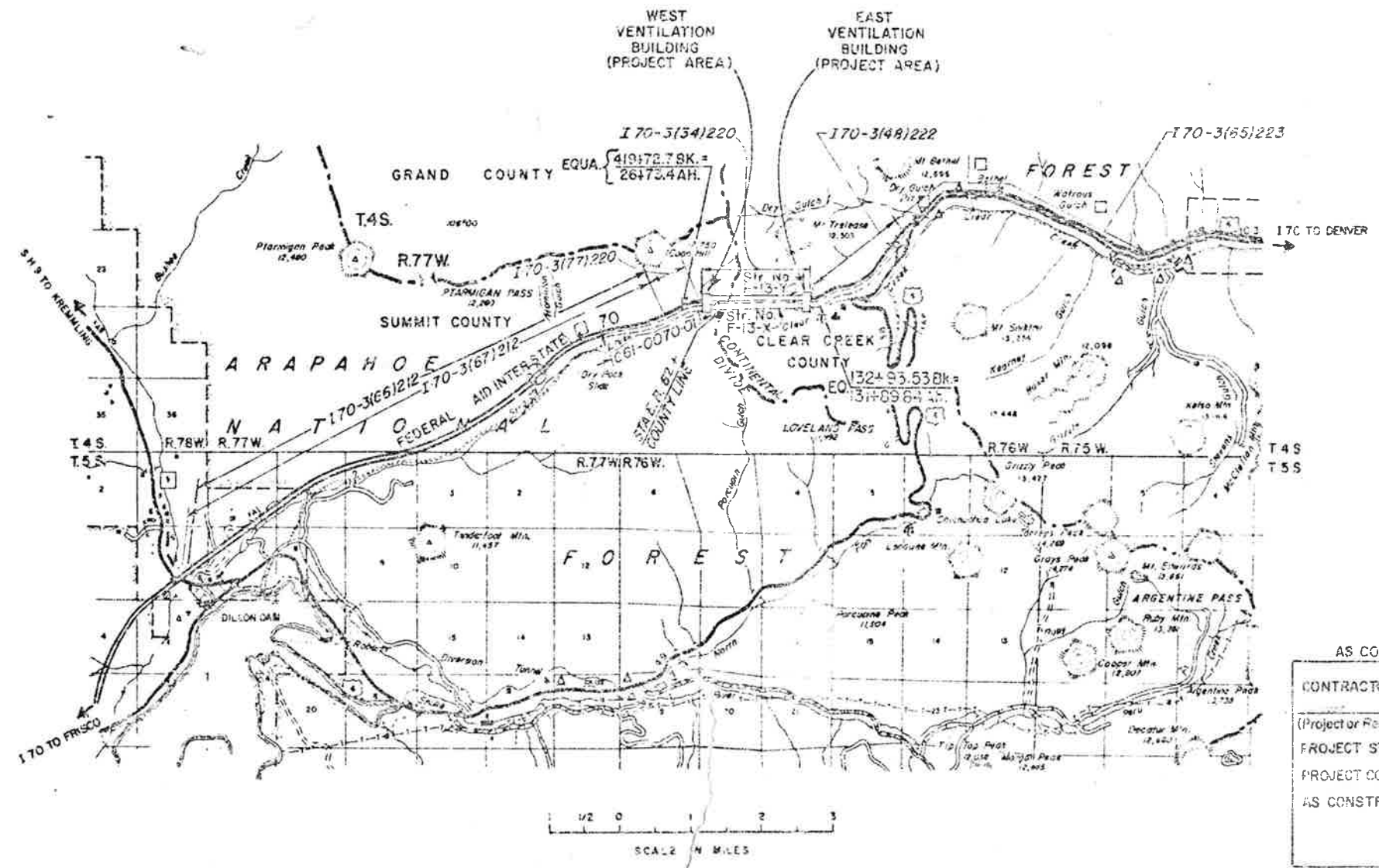
Date started : 7-1-75
 Date completed: 8-31-79
 Resident Engineer Jack Gay
 Contractor Howard Electric & Mechanical Co

IMPORTANT INFO
 Missing Sheets 4b,4c,7,9, 84,85

IMPORTANT INFO
 PDF SHEET NUMBERS MATCH SHEET NUMBERS (10-208)

ALL SCALES SHOWN ARE FOR ORIGINAL DRAWINGS.

INDEX OF DRAWINGS
(SEE SHEET 2)



AS CONSTRUCTED INFORMATION

CONTRACTOR _____
 ENGINEER _____
 (Project or Resident)
 PROJECT STARTED _____
 PROJECT COMPLETED _____
 AS CONSTRUCTED PLANS APPROVED _____
 TITLE _____ DATE _____

DIVISION OF HIGHWAYS

APPROVED: *E. P. Hays*
 CHIEF ENGINEER

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____
 DIVISION ENGINEER

TAL

REVISIONS
 D. G. H. COPIES, INC. 1974
 NEW YORK, N.Y.

AS CONSTRUCTED
 NO REVISIONS DATE

INDEX OF SHEETS

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
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NO REVISIONS		REVISED	5-31-79	VOID

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88	198B2802BA	Fan motor accessory box terminations
89		General fan motor data
90		General fan motor data
91		General fan motor data
92		General fan motor data
93		General fan motor data
94	135D6059-1	Motor starter elementary
95	-2	Motor protection data
96	-3	Motor starter connection diagram
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98	34B109390	200/25 HP motor outline
99	34C107480	600/100 HP motor outline
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104	129D1998	Motor control center outline

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107	-3	Switchgear connection diagrams
108	-4	Switchgear connection diagrams
109	-5	Switchgear connection diagrams
110	0136D1246	Switchgear interconnection diagrams
111	0136D1576-1	M/C switchgear electrical diagrams
112	-2	M/C electrical diagram
113	-3	M/C electrical diagram
114	0118RD914	Switchgear outline and elementary
115	CDR 707	Electric operator for S&C switchgear
116	CDR 708	Electric operator for S&C switchgear
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119	75D680702	West power control board outline
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121	75D680714-1	Fan control board outline
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123	75D680710	West local control board outline
124	75D680711	East local control board outline
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130	-3	Master station schematic
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135	-4	
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137	-6	Remote station schematic
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PANELBOARDS		
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145	11957-1	Exhaust damper operator enclosure
146	-2	Supply damper operator enclosure
147	-3	Exhaust fan damper
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149	02-441-0154-4	Damper operator
150	503DD-5192	Supply fan housing
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152	503CD 3167	Fan housing sections
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154	503CD 5272	Magnetic pickup mounting details
155	WB-2075-SK	48" fan drive sheave
156	WB-2076-SK	24" fan drive idler sheave
157	WB-2077-SK	14" fan drive sheave
158	D 2771-E1	Evase stack
159	D 2771-E2	Evase stack
160	D 2771-E3	Evase stack weather hood
161	D 2771-E4	Evase stack assembly
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163	1463-2	Supply fan and motor elevation
164	1463-4	Exhaust fan and motor bases
165	1463-5	Exhaust fan and motor elevation
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173	D016-801	Interex binary blender
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175	D041-702	HP-70 electrical schematic
176	JE-1516-M	Meter room piping
177	E1 1005	L.P. tank piping detail
178	E1 1004	Equipment piping detail
179	E1 1003	LP tank piping detail
180	E1 1009	LP tank platform and ladder
181	E1 1008	LP tank
182	E017-201-1	Binary blender parts list
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185	D015-704	Binary blender wiring schematic
186	D049-201-1	Vaporizer parts list
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188	-3	Vaporizer parts location
189	D049-301	Liquid manifold assembly
190	JD-1516-E	Master alarm panel and wiring schematic
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205	PPT 02	West Portal, South tunnel transformer control
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207	PPT 04	East Portal fan control
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SUMMARY OF APPROXIMATE QUANTITIES

(R-1) 5-15-75 T.A.L. Revised & Split Items

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(82)220	3	208

INDEX	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	SUMMIT COUNTY	CLEAR CREEK COUNTY	PROJECT TOTALS	FINAL TOTALS	DIFF.	% Change
				(R-1)	(R-1)				
1	65	5/19	206	Structure Excavation	Cu.Yd.				
						1690	2,186	+496	+29
1	15	5/19	206	Structure Backfill (Class 2)	Cu.Yd.				
						2050	1786	-264	-13
1	17	5/19	206	Filter Material (Class A)	Cu.Yd.				
						425	425	0	0
1	21	19	507	Concrete Slope and Ditch Paving (Reinforced)	Cu.Yd.				
						40	40.86	+0.86	+2
1	32	19	518	Waterstop (6 Inch)	Lin.Ft.				
						60	77	+17	+28
1	34	19	601	Concrete Class A (Wall)	Cu.Yd.				
						633	705	+73	+12
2	17	6	601	Concrete Class B	Cu.Yd.				
						276	284.91	+8.91	+3
1	75	19	601	Masonry Veneer	Sq.Ft.				
						5,432	5,657	+225	+4
2	55	6	602	Reinforcing Steel	Lb.				
						88,100	88,100	0	0
1	53	5	605	6 Inch Perforated Corrugated Steel Pipe	Lin.Ft.				
						675	675	0	0
1	57	5	605	6 Inch Non-Perforated Corrugated Steel Pipe	Lin.Ft.				
						100	100	0	0
(R-1)	3	8	620	Field Laboratory	Each				
						1	1	0	0
	3	18	620	Field Facility	L.S.				
						1	1	0	0
	3	63	620	Janitorial Service	Month				
						12.76	12.76	-1.24	-9
	9	63	626	Mobilization	L.S.				
						0.5	0.5	0	0
	4	8	630	24.9 KV Power Distribution System	L.S.				
						0.5	0.5	0	0
	4	24	630	2.4 KV Power Distribution, Fan Drive Motors and Motor Control System	L.S.				
						0.5	0.5	0	0
	4	47	630	480 Volt Power Distribution and Motor Control Systems	L.S.				
						0.5	0.5	0	0

SUMMARY OF APPROXIMATE QUANTITIES

(R-1) 4/29/75 T.A.L. Revise Force Account
 Items - Delete Utility Nets.
 (R-2) 5/15/75 T.A.L. Revised & Split Items

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	I70-3(82)220	4	208

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	SUMMIT COUNTY	CLEAR CREEK COUNTY	PROJECT TOTALS	FINAL TOTALS	DIFF.	% Change
BOOK	PAGE	SHEET									
						(R-2)	(R-2)				
5	8		630	Control Boards	L.S.	0.5	0.5	1	1	0	0
5	40		630	Supervisory Control System	L.S.	0.5	0.5	1	1	0	0
6	11		636	Gas Meter Building East	Each		1	1	1	0	0
6	48		636	Gas Meter Building West	Each	1		1	1	0	0
7	8		640	Tunnel Ventilation System	L.S.	0.5	0.5	1	1	0	0
7	46		641	Emergency Generator System	L.S.	1		1	1	0	0
11	12			FA-07 Line 2 Structure Excavation	C.Y.		540	0	540	+540	+100
			643	Gas Supply System	L.S.	0.5	0.5	1	1	0	0
			644	Passenger Elevator Systems	L.S.	0.5	0.5	1	1	0	0
			645	Water Metering System	L.S.	1		1	1	0	0
			699	Fixed Fee	L.S.	0.5	0.5	1	1	0	0
				Liquidated Damages	Day				352.5		
				<u>FORCE ACCOUNT</u>							
			FIA01	Erosion Control	L.S.	0.5	0.5	1	1	0	0
			4A FIA02	On-The-Job-Trainee	Each	1	2	3	3	0	0
			4A FIA03	Furnish Electricity	L.S.	0.5	0.5	1	1	0	0
			4A FIA04	Building Insulation	L.S.	0.5	0.5	1	1	0	0
			4A FIA05	Adjust Natural Gas Service (Work by Western Slope Gas Co.)	L.S.	0.5	0.5	1	1	0	0
			4A FIA06	Adjust Power Service (Work by Public Service Co.)	L.S.	1		1	1	0	0
			4B FIA07	Miscellaneous	L.S.	0.5	0.5	1	1	0	0
				<u>NON - FEDERAL AID</u>							
			643	Air Heat Burner	L.S.	0.5	0.5	1	1	0	0
				<u>FORCE ACCOUNT</u>							
			4A FIA08	Furnish Spare Parts For Various Systems	L.S.			1	1	0	0

FINAL SUMMARY OF CHANGE ORDERS

PCO NO	CMO NO	DESCRIPTION	PLAN AMT	FINAL AMT	DIFFERENCE	PERCENT CHANGE	REFERENCE		REMARKS
							BOOK	PAGE	
1	17103	Weekend Work	0'	0'	0'	0'	12	8	
FA-02		On-the-Job Trainee	2,400'	2,400'	0'	0'	12	15	Plan force account
3	17108	Additional Duct Bracing	9,493.00	9,493.00	0	0	12	20-22	
4	0289	Building Insulation	235,000	301,014.09	+66,014.09	+28'	12	9	Plan force account FA/04
5	0286	Power & Control Wiring - Water Storage	25,000	19,778.97	-5,221.03	-21'	12	23	Includes \$ 3,180.38 Non-Federal Aid
S-1	0335	Supplement 1 to PCO 5	21,000	20,575.85	-424.15	-2'	12	24	Non-Federal Aid
FA-05	17106	Adjust Natural Gas Service	24,840	24,134.22	-3,405.78	-19	12	14	Plan Force Account
S-1	17106	Supplement 1 to FA-05	2,700						
FA-08		Furnish Spare Parts	10,000	9,076.34	-923.66	-9	12	16	Plan Force Account
FA-06	17107	Relocate Electric Lines	12,000	16,640.31	+4,640.31	+39	12	17	Plan Force Account
7	0293	Extra Gas System Alarms	5,385.77	5,385.77	0	0	12	28	Non-Federal Aid
8	0299	15 Day Time Extension	0'	0'				30	
9	0356	Deletion of Thomas Couplings	0'	0'				31	
10	0357	Emergency Generator Breaker	10,047.00	10,047.00	0	0		32	
11	0364	Fan Testing Costs	17,000.00	16,517.69	-482.31	-3'		33	
12	0365	Excavation & Backfill Compensation	7,593.20	7,593.20	0	0		34	
13	0366	Damper Control Access Doors	989.81	989.81	0	0		35	
14	0367	Raise L-P Tank	12,838.03	12,838.03	0	0		36	
15	4731	Modify Fan Controls	8,641.42	8,641.42	0	0	12	37	
FA-03		Furnish Electricity	6,000.00	223,922.10	+217,922.10	+3632			
FA-01		Erosion Control	10,000.00	0	-10,000	100			FA-01 Voided
16		Butyl Membrane vs Bonding Compound	4,241.10	4,241.10	0	0	12	38	

STRUCTURE QUANTITIES

INDEX			LOCATION	STRUCTURE EXCAVATION CUBIC YARD	STRUCTURE BACKFILL CUBIC YARD CL. 2	REMOVAL OF STRUCTURE EACH	CONCRETE CLASS A CUBIC YARD WALL	REINFORCING STEEL LB.	MISCELLANEOUS
BOOK	PAGE	SHEET							
			19 33+1035+						1-Gas Meter Building (West) 0.5-Gas Supply System
3	18		34+50						1-Field Facility
1	53		124+48 to 130+51	120					675-Lin. Ft. 6" Perforated Corrugated Steel Pipe 300 Cu. Yd. Filter Material (Class A)
1	65		125+ to 129+	2008 1508	1774 2038				40.86 40-Cu. Yds. Concrete Slope & Ditch Paving (Reinforced) 125-Cu. Yds. Filter Material (Class A)
1	17		125+ to 126+						77 60-Lin. Ft. Waterstop (6 Inch) 5,657 5432-Sq. Ft. Masonry Veneer 1-Gas Meter Building (East) 0.5-Gas Supply System
1	15		130+51 to 130+87	64	12				100-Lin. Ft. 6" Non-Perforated Corrugated Steel Pipe
			West Ventilation Bldg.						0.5-24.9KV Power Distribution System. 0.5-2.4KV Power Distribution Fan Drive Motors and Motor Control System. 0.5-480 Volt Power Distribution and Motor Control System. 0.5-Control Boards 0.5-Supervisory Control System 0.5-Tunnel Ventilation System 1-Emergency Generator System 0.5 Elevator System 1-Water Metering System
			East Ventilation Bldg.						0.5-24.9KV Power Distribution System 0.5-2.4KV Power Distribution Fan Drive Motors and Motor Control System. 0.5-480 Volts Power Distribution and Motor Control System. 0.5-Control Boards 0.5-Supervisory Control System 0.5-Tunnel Ventilation System 0.5-Elevator System
			Project Totals	1630	1756 2050				

▲ Included in Tabulation of Concrete and Reinforcing Steel.

(R-1) 5-15-75 T.A.L. Added Separate County Totals

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(82) 220	6	203

TABULATION OF CONCRETE AND REINFORCING STEEL

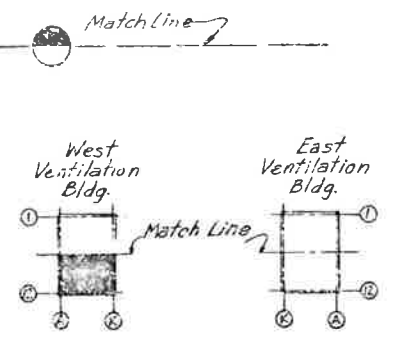
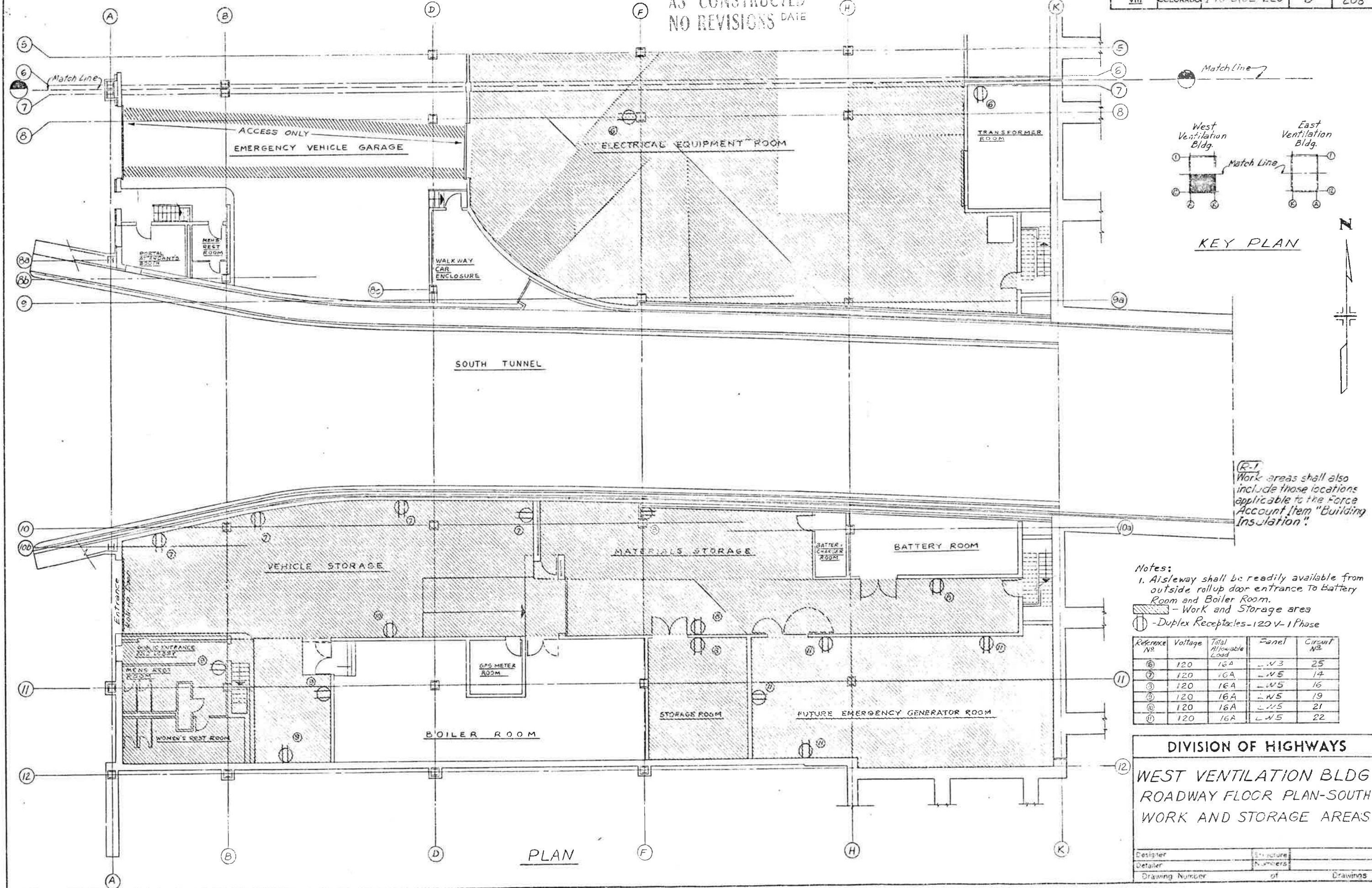
Bk	Page	Description	Concrete		Reinforcing Steel
			Class A (Wall)	Class B	
			Cu. Yd.	Cu. Yd.	Lb.
2	17 55	West Ventilation Building Ventilation System		128.61 123	7350
2	17 55	Emergency Generator		11.68 11	200
2	17 55	Elevator		7.21 8	2000
2	17 55	East Ventilation Building Ventilation System		128.61 123	7350
2	17 55	Elevator		8.80 8	2000
1	34	East Portal Area	706		
2	55	Retaining Wall	633		69,200
(R-1)		Summit County Totals		147.30 105	9,550
(R-1)		Clear Creek County Totals	126 633	13.48 11	78,550
		Totals	706 633	222.59 216	88,100

Note: Gas Meter Buildings, Field Facility and Gas Supply System require quantities of Concrete and Reinforcing Steel that will not be paid for separately, but shall be included in the work.

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(82) 220	8	208

(R-1) 4/29/75 T.A.L. Revise Building Insulation Note.

AS CONSTRUCTED
 NO REVISIONS DATE



KEY PLAN

(R-1) Work areas shall also include those locations applicable to the Force Account Item "Building Insulation".

- Notes:
- Aisleway shall be readily available from outside rollup door entrance to Battery Room and Boiler Room.
 - Work and Storage area
 - Duplex Receptacles - 120 V - 1 Phase

Reference No.	Voltage	Total Allowable Load	Panel	Circuit No.
6	120	16A	-V3	25
7	120	16A	-V5	14
3	120	16A	-V5	16
9	120	16A	-V5	19
10	120	16A	-V5	21
11	120	16A	-V5	22

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

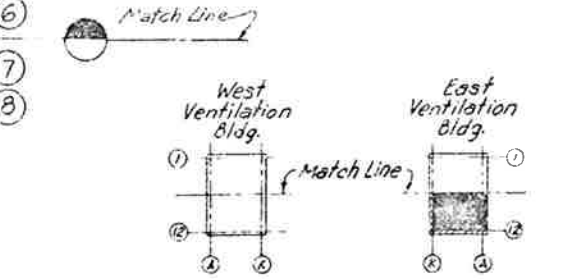
Designer	Structure
Detailer	Numbers
Drawing Number	of Drawings

PLAN

AS CONSTRUCTED
NO REVISIONS DATE

FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII COLORADO	I70-3 (R2)220	10	208

REVISIONS	



KEY PLAN

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

Receptacle No.	Voltage	Total Amps/Load	Panel	Circuit No.
⑤	480	32A	P2	6
⑥	120	16A	LE2B	4
⑦	120	16A	LE2B	6
⑧	120	16A	LE2C	16
⑨	120	16A	LE2C	18

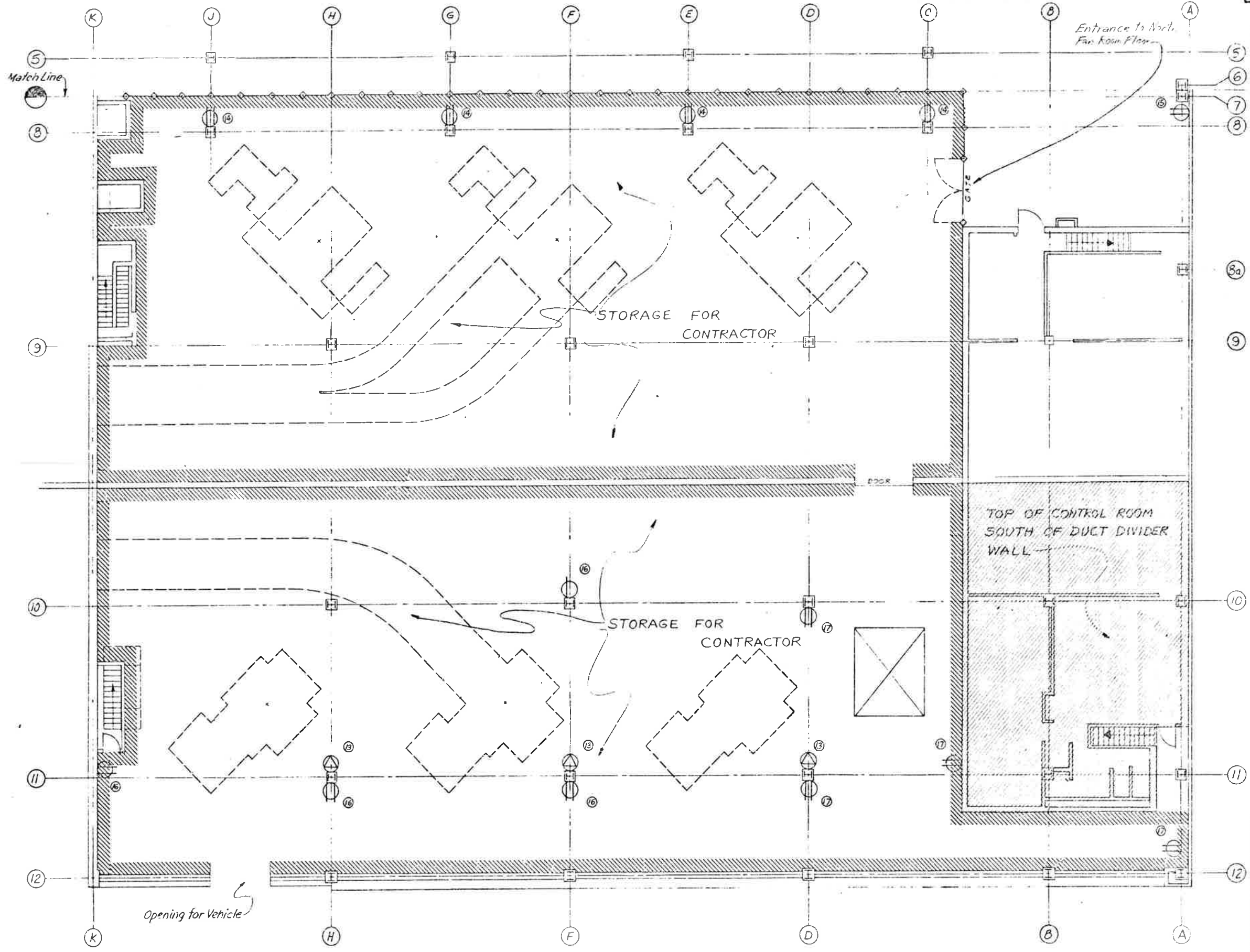
- Notes:
- Aisleway shall be readily available for entrance to the North side of Fan Room Floor from the movable bulkhead vehicle opening in South Side of building.
 - An approved Chain Link Fence and Gate (Minimum Height-5 Feet) shall be constructed along the Match Line between column Lines 6 and 7 to separate storage area from North side Fan Room floor operations. Fence and Gate will not be paid for separately, but shall be included in the work.
 - Contractor shall furnish temporary stairways to work area above Control Room south of Duct Divider Wall, at his own expense.

- Work Area - on Control Room Roof
Work and Storage areas
Proposed Chain Link Fence

DIVISION OF HIGHWAYS

EAST VENTILATION BLDG
FAN ROOM SOUTH
WORK AND STORAGE AREAS

Designer	Structure
Detailer	Numbers
Drawing Number	of Drawings



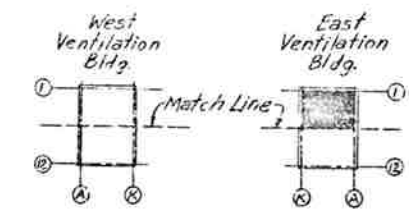
PLAN

CHECKED BY	DATE	DESIGNED BY	DATE
QUANTITIES BY		DETAILS BY	

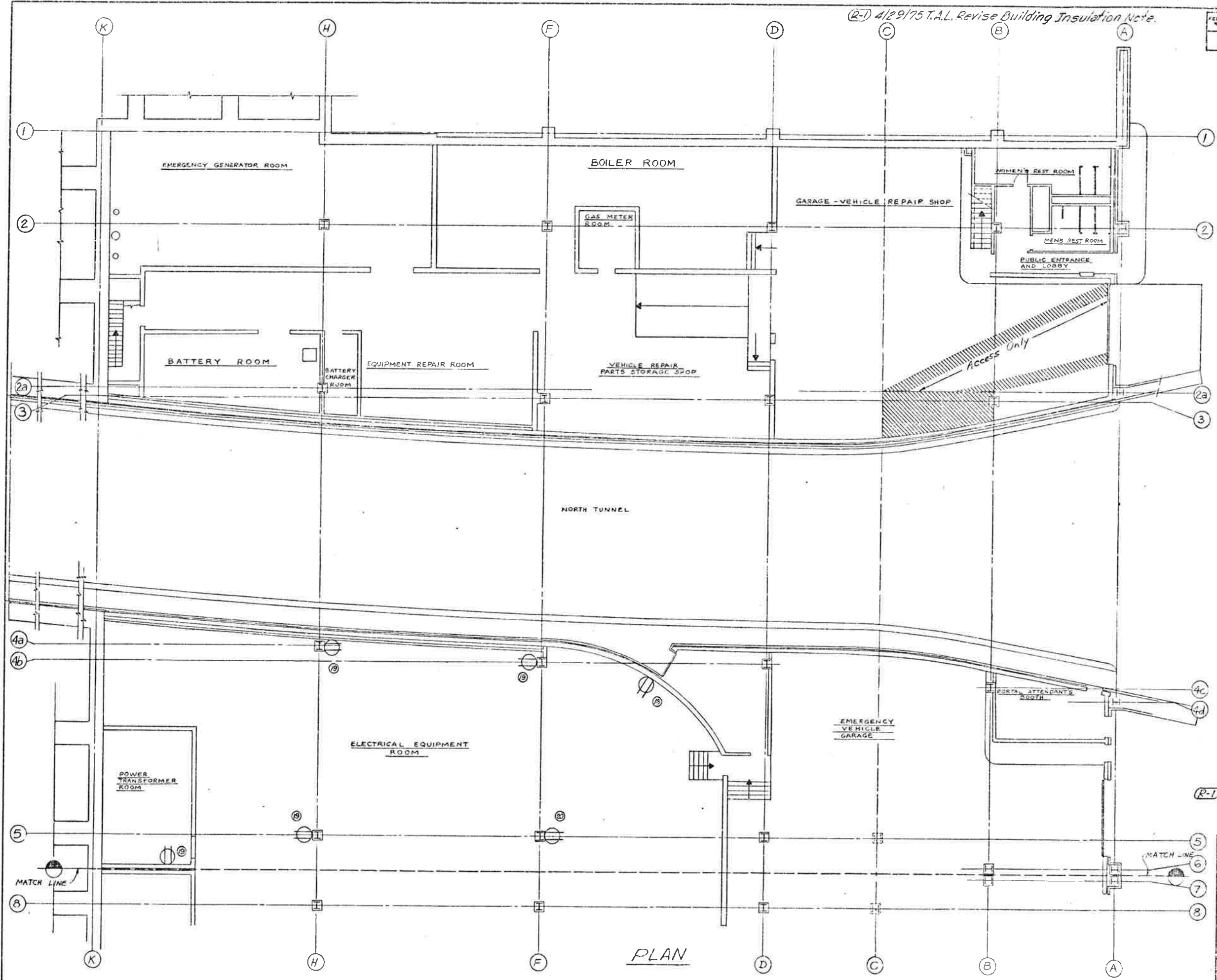
(R-1) 4/29/75 T.A.L. Revise Building Insulation Note.

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-3(82)220	11	208

AS CONSTRUCTED
 NO REVISIONS DATE



KEY PLAN



Work Area - [Hatched Box]

⊕ - Duplex Receptacles - 120V - 1 Phase

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

(R-1) Work areas shall also include those locations applicable to the Force Account Item "Building Insulation".

DIVISION OF HIGHWAYS
 EAST VENTILATION BLDG
 ROADWAY FLOOR PLAN-NORTH
 WORK AND STORAGE AREAS

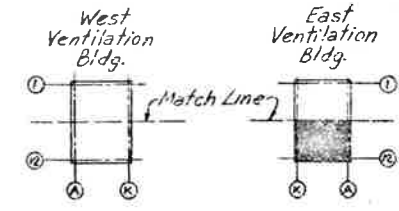
Designer	Structure Numbers
Detailer	of
Drawing Number	Drawings

PLAN

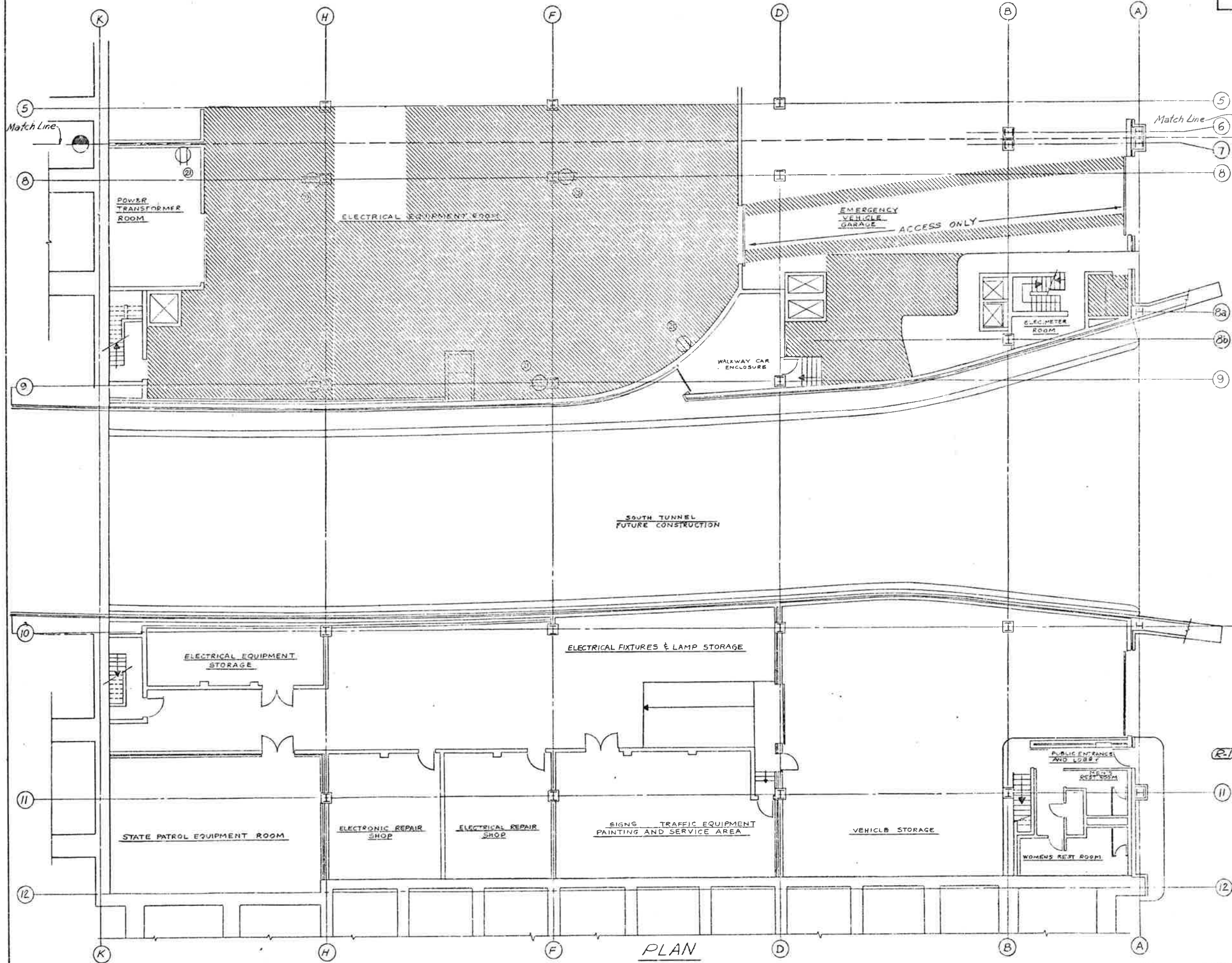
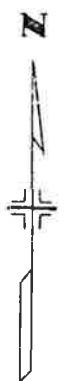
(R-1) 4/29/75 T.A.L. Revise Building Insulation Note.

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(82)220	12	208

AS CONSTRUCTED
 NO REVISIONS DATE



KEY PLAN



- 10 Work Area - [Hatched Box]
- 11 Duplex Receptacle - 120V-1 Phase

Reference No.	Voltage	Total Allowable Load	Panel	Circuit No.
10	120	16A	LE3A	25

(R-1) Work areas shall also include those locations applicable to the Force Account Item: "Building Insulation."

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

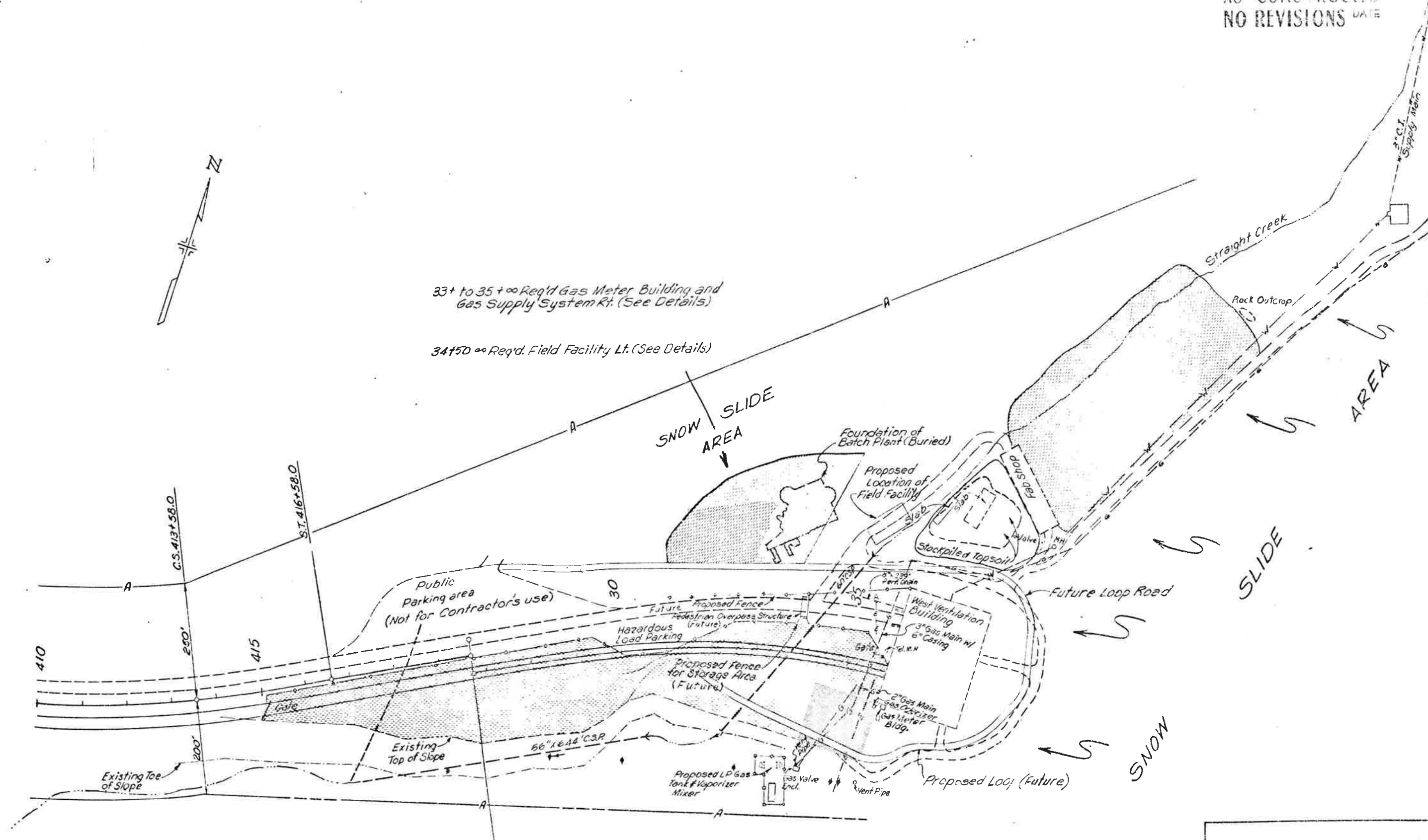
Designer	Structure
Detailer	Numbers
Drawing Number	of Drawings

PLAN

WEST PORTAL AREA

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
22	COLORADO	170-3(62)220	13	208

AS CONSTRUCTED
 NO REVISIONS DATE



33+ to 35+∞ Req'd Gas Meter Building and Gas Supply System Rt. (See Details)
 34+50 ∞ Req'd. Field Facility Lt. (See Details)

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

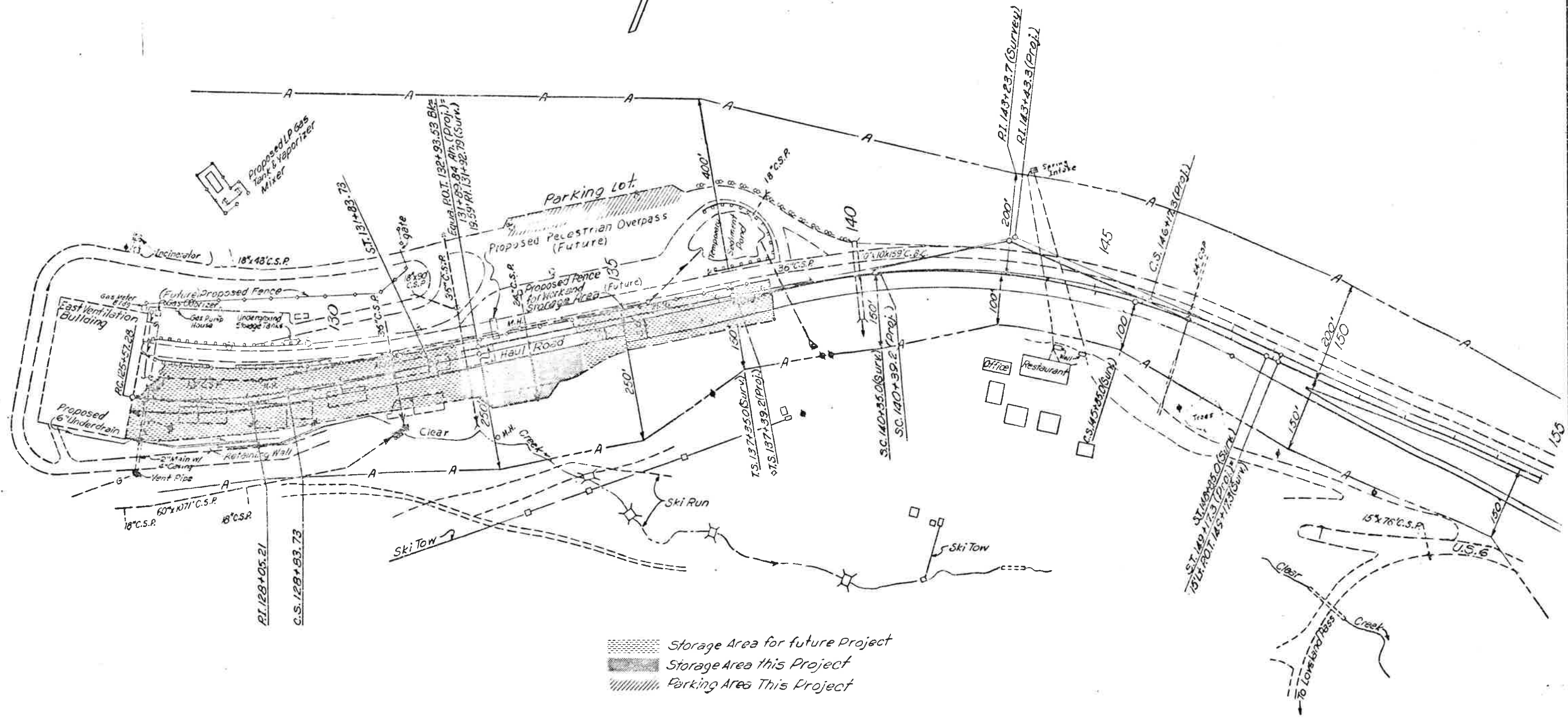
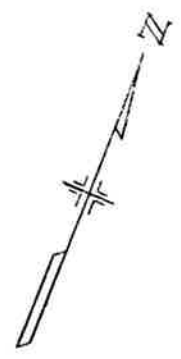
Storage area for Future Project
 Storage and Parking Area this Project

EAST PORTAL AREA

FEDERAL ROAD REGION NO.	DIVISION	PP&J NO.	SHEET NO.	TOTAL SHEETS
38	COLORADO	170-31821220	14	208

AS CONSTRUCTED
 NO REVISIONS DATE

- 124+48 to 130+51⁰⁰ Req'd. 6" x 675' Underdrain Rt. (See Details)
- 125+ to 129+⁰⁰ Req'd. Retaining Wall Rt. (See Details)
- 125+ to 126+⁰⁰ Req'd Gas Meter Building and Gas Supply System Lt. (See Details)
- 130+51 to 130+87⁰⁰ Req'd. 6" x 100' Underdrain Pipe Outlet Rt. (See Details)

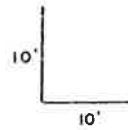


- Storage Area for future Project
- Storage Area this Project
- Parking Area This Project

DETAILS OF FIELD FACILITY

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLO.	170-31821220	15	208

As Constructed
Revised
Date 8/31/79

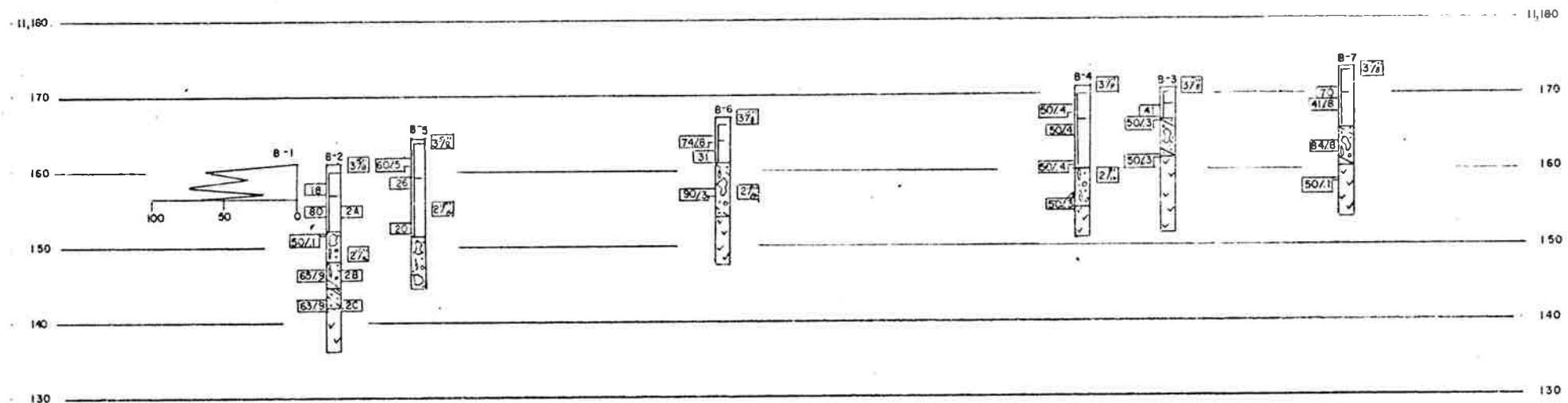
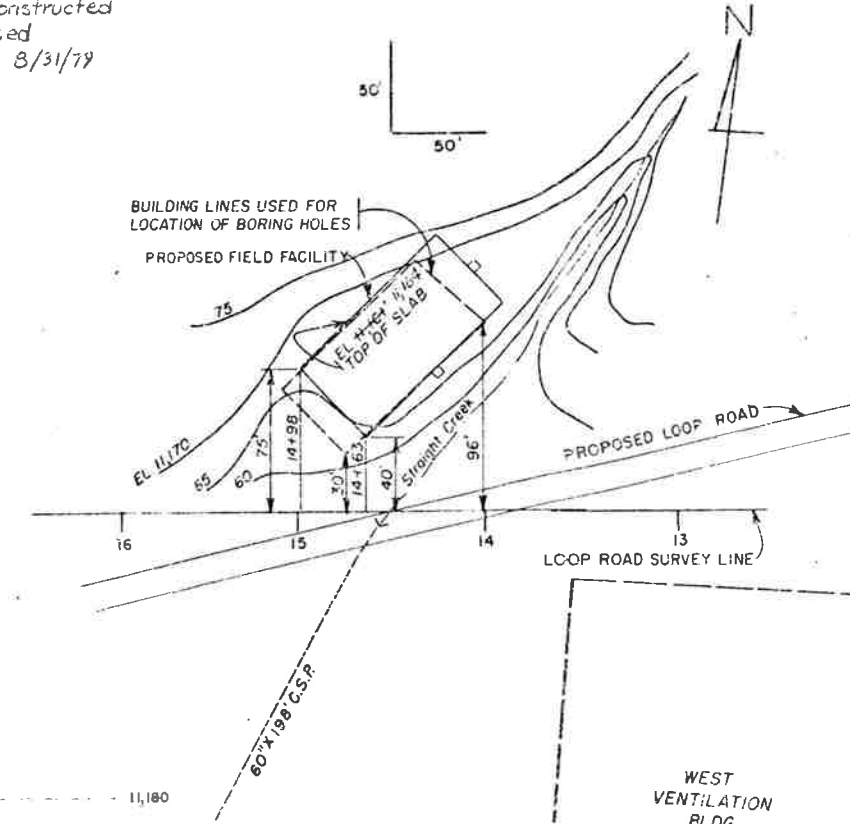
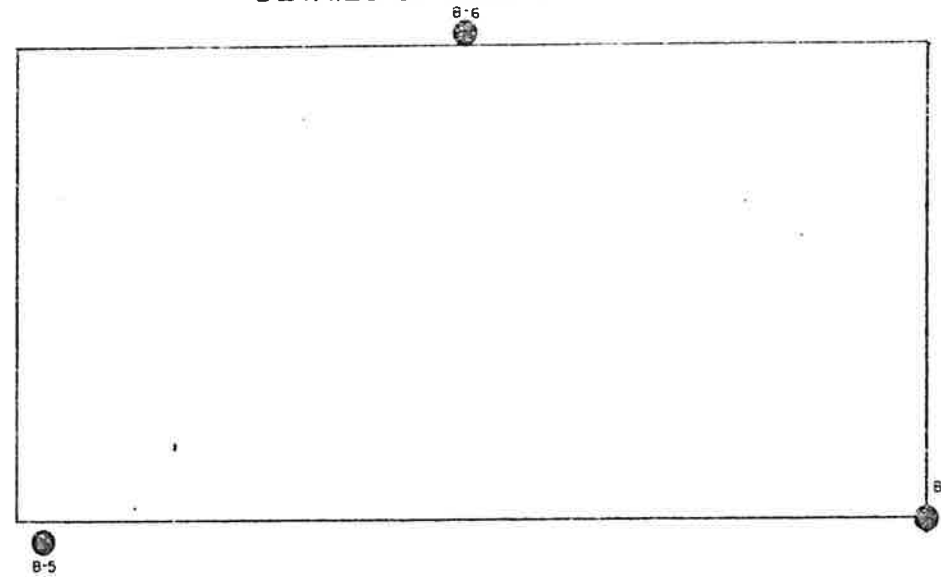


NOTE:

Place continuous footings under the bearing walls of the building. An allowable bearing capacity of one ton per square foot will be obtained on 12 inches of compacted filter material, placed as shown on the plans.

The final location of the field facility may be adjusted to fit field conditions.

The cost of dirt and rock excavation will not be paid for separately but will be included in the work.



SUMMARY OF TEST RESULTS

Sample No.	Depth	Classification	Grading Analysis				Atterberg Limits				Water Cont. %	Max. Unit Weight P.C.F.	Unclassified Strength Q _u T.S.F.	Triaxial Shear Strength				Dia. of Sample (inches)
			Percent				Liquid Limit %	Plasticity Index %	Flow Index %	Cohesion c T.S.F.				Angle of Friction φ T.S.F.	Time hrs	Friction P.S.I.		
Coarse of Enggr. or Visual		AASHTO	Gravel	Coarse Sand	Fine Sand	Silt and Clay					L _u	P _u	I _p				W	T
2A	5.5-7	Silty Sand Gravel A-1(0)	57	18	13	12	26	22	4	6.2								
2B	14-15.4	Clayey Sandy Gravel A-2(0)	61	13	11	15	28	21	7	10.8								
2C	18-19.4	Sandy Silt A-4(0)	9	3	30	58	27	24	3	22.7								

TYPE OF MATERIAL

- FILL
- SAND & GRAVEL W/ COBBLES & BOULDERS
- SILTY SAND & GRAVEL W/ COBBLES & BOULDERS
- CLAYEY SAND & GRAVEL W/ COBBLES & BOULDERS
- GRANITE

LEGEND

TEST BORING

- Hole Size
- Sample No.
- Water Table
- 2 in. O.D. Split-Tube Sampler
- 140 Lb. Hammer
- 30 in. Free Fall

CONTINUOUS PENETRATION TEST

- 2 in. Dia. Drive Point
- 140 Lb. Hammer
- 30 in. Free Fall

Location of Test Boring

- Location of Test Boring
- Location of Continuous Penetration Test
- Rotary Boring
- Auger Boring
- Core Boring

STRUCTURE NO. _____ OF _____

**DIVISION OF HIGHWAYS
STATE OF COLORADO**

**ENGINEERING GEOLOGY
FOR FIELD FACILITY
E. SENHOWER TUNNEL**

Head: _____ Sec: _____ T: _____ R: _____

Designed by L.C.E. Approved by _____
Made by S.M.O. Bridge Engineer
Checked by A.C.E. Date: 4-17-75

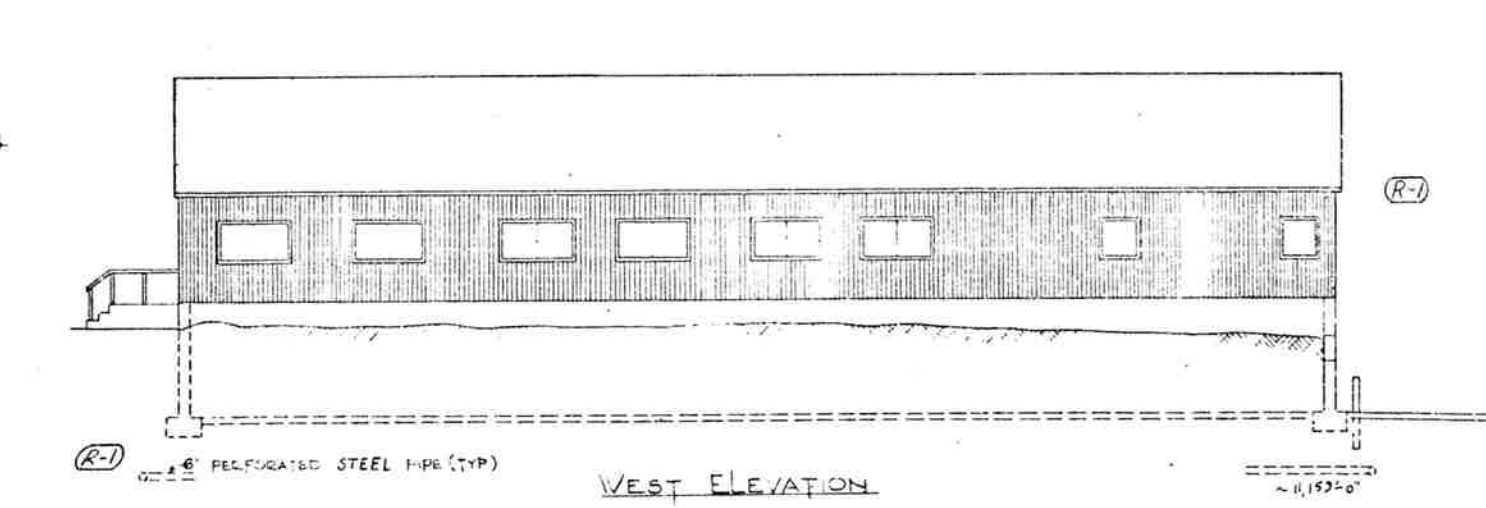
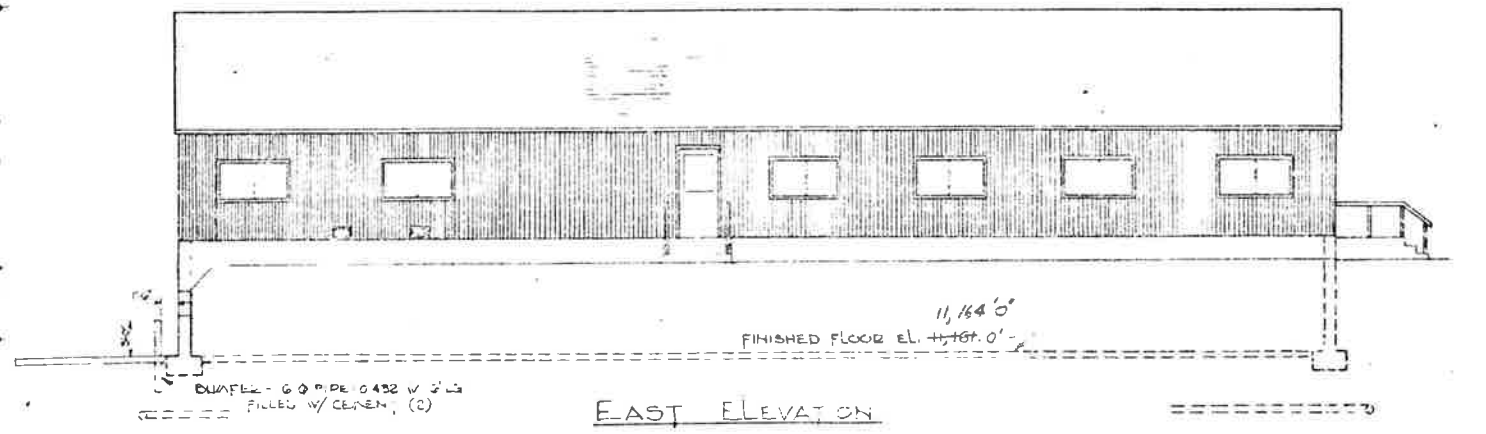
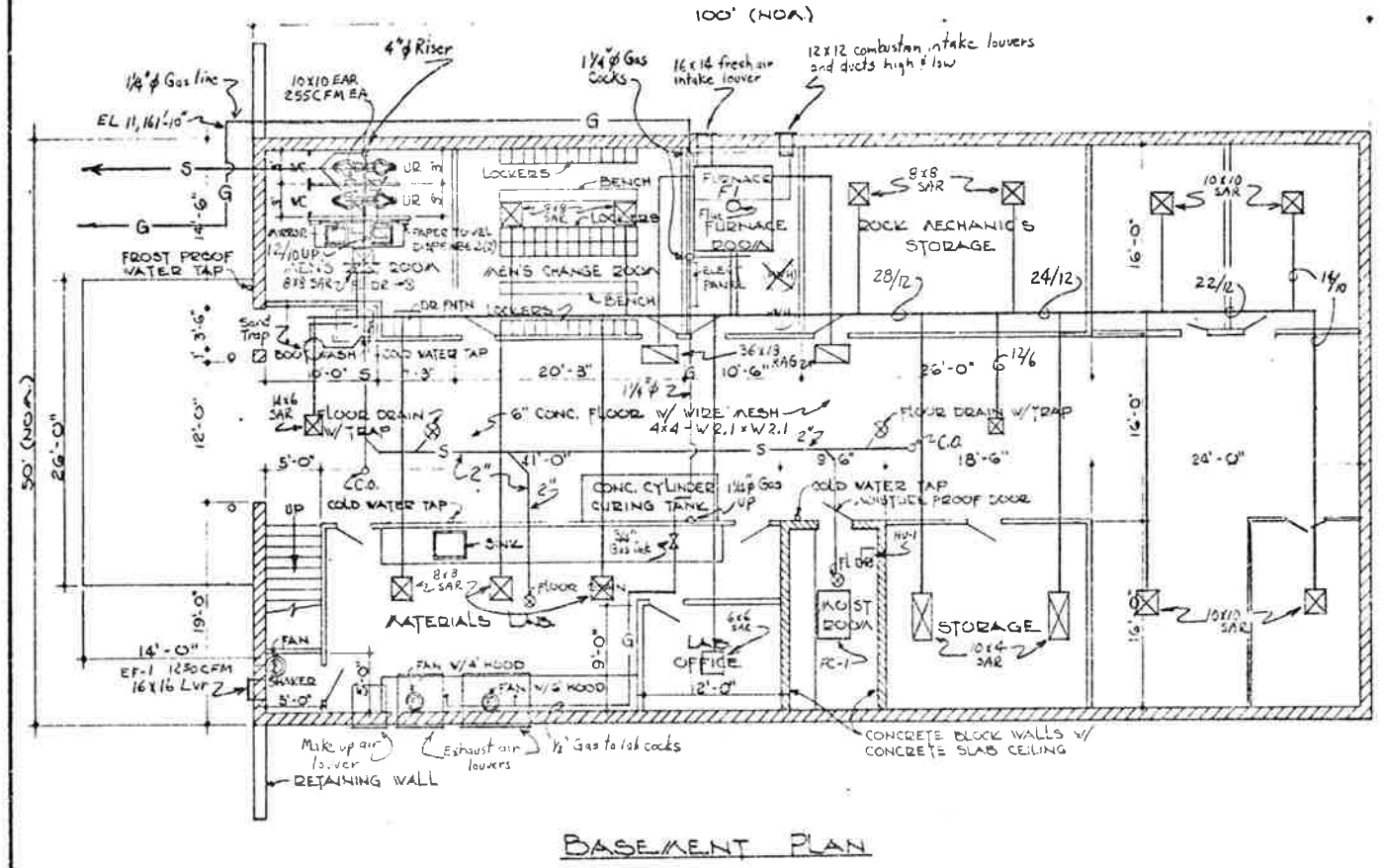
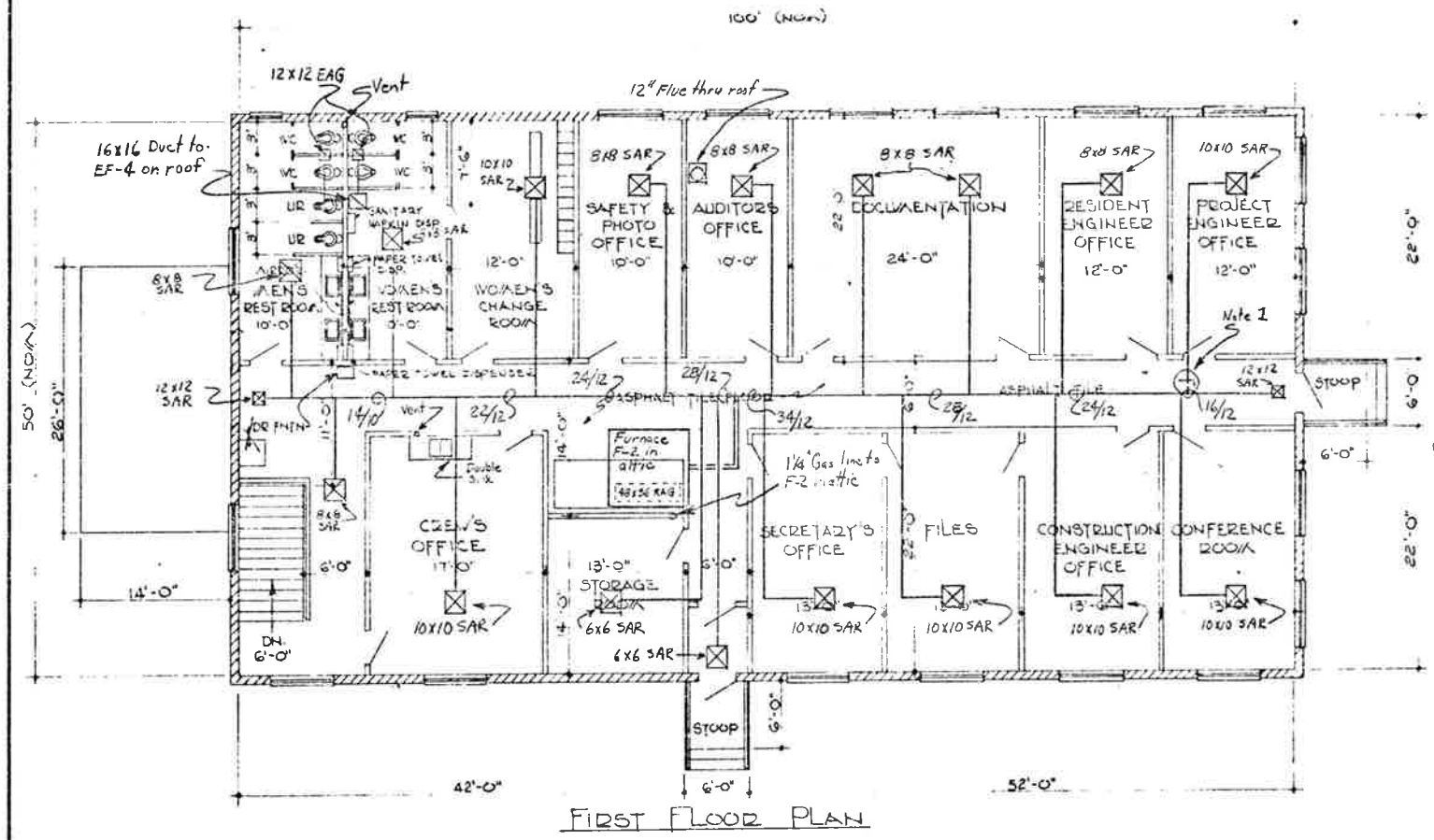
LAYOUT OF FIELD FACILITY

(R-1) 4/29/75 T.A.L. Deleted Brick Veneer.
Revise Pipe Size

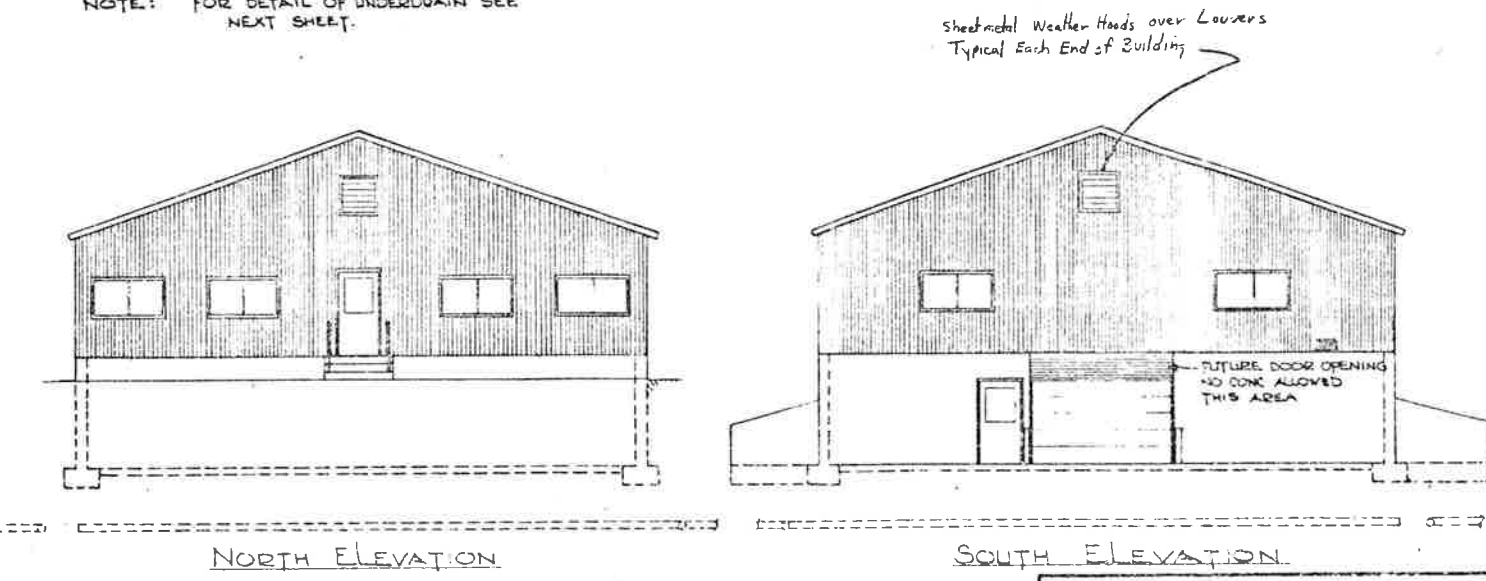
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I70-9(82)220	16	209

REVISIONS	

NOTES:
 1 ⊖ Adjustable Damper Typical at all Branch Ducts
 2 6" φ Typical at all Duct Branches
 As Constructed
 Revised
 Date
 More Notes on Sheet 17



NOTE: FOR DETAIL OF UNDERDRAIN SEE NEXT SHEET.



(R-1) 4/28/75 T.A.L. Revise Pipe Size.

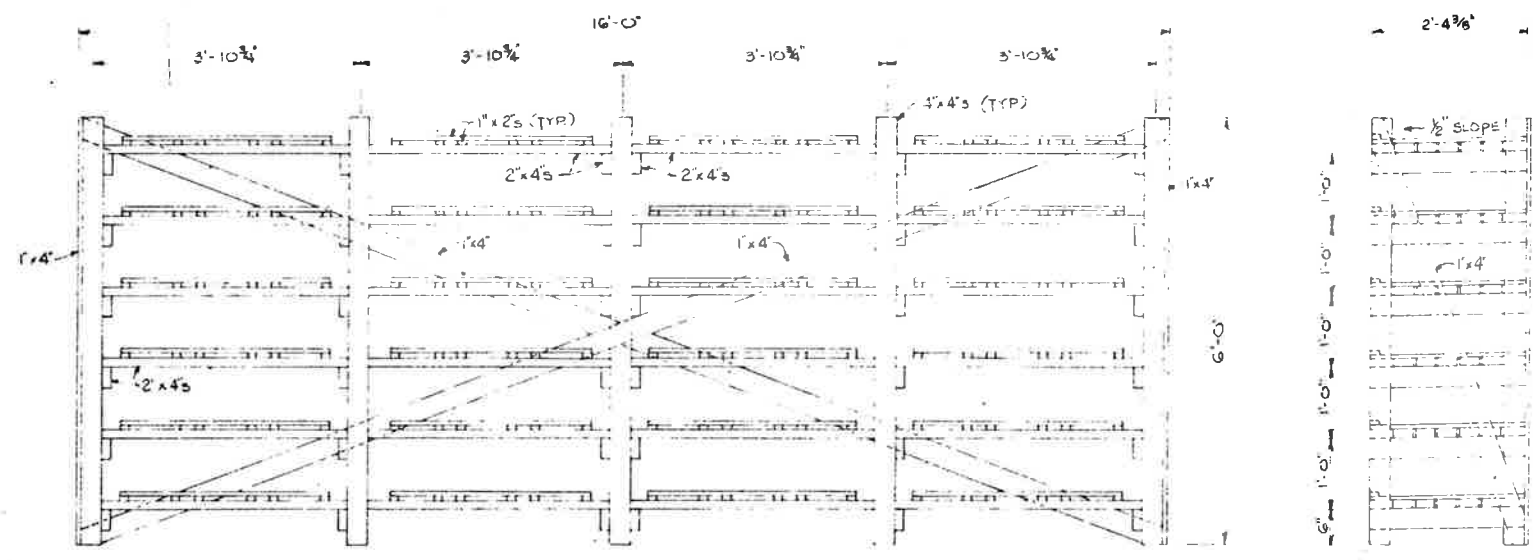
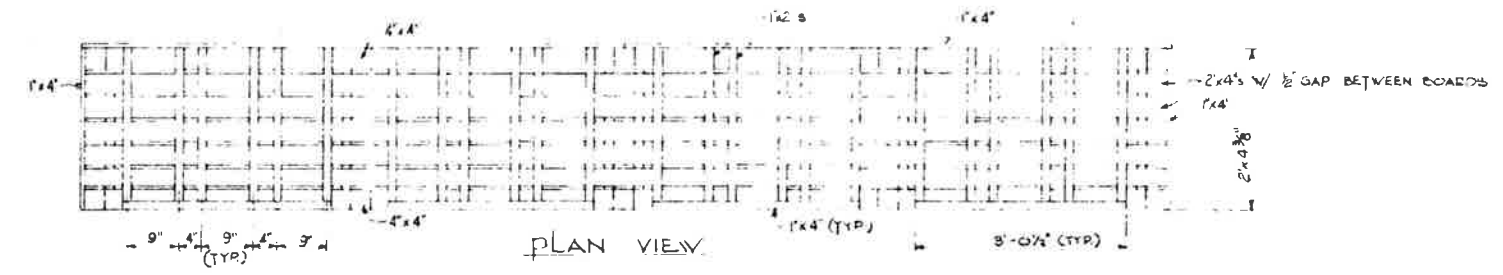
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(82)220	17	208

Notes

- F-1 furnace 3995 CFM @ 3/8" S.P. 625,000 BTU input, 480V, 3φ
 - F-2 furnace 4920 CFM @ 3/8" S.P. 937,500 BTU input, 480V, 3φ
 - FC-1 fan unit with electric heating coil 200 CFM @ 1/8" S.P. 2KW, 1/40 HP, 120V φ
 - HU-1, Humidifier Walton SW10 10 lbs/hr, 120V, 1φ
 - EF-1 1250 CFM @ 1/8" SP Prop fan with backdraft damper, 1/8 HP, 120V, 1φ
 - EF-2 2500 CFM @ 1/8" SP Prop fan with backdraft damper, 1/4 HP, 120V, 1φ
 - EF-3 5000 CFM @ 1/8" SP Prop fan with backdraft damper, 1/2 HP, 120V, 1φ
 - EF-4 1400 CFM @ 1/4" SP Roof exhaust fan w/curb and backdraft damper 1/8 HP, 120V, 1φ
- Insulate all ductwork installed in attic space with 1" x 1/2 lb ductliner
Flues shall be Type B
Undercut all doors 1" for return air
Combustion air for F-2 to come from attic louvers

REVISIONS	

AS CONSTRUCTED
REVISED
DATE 8/31/79



FRONT ELEVATION

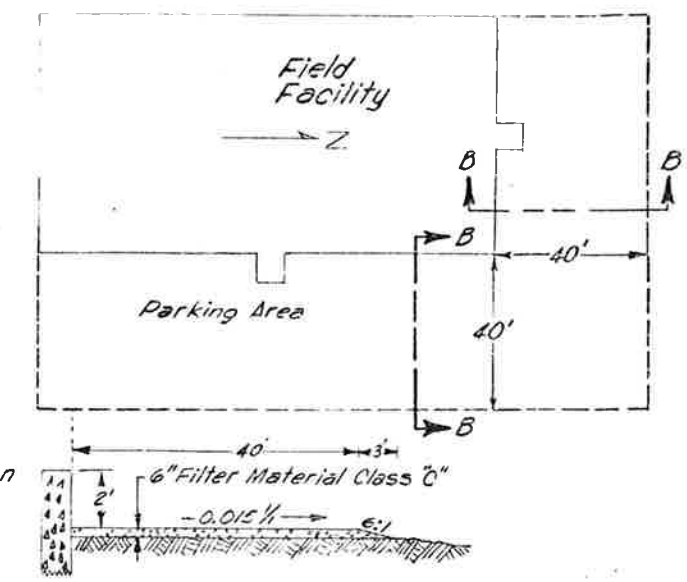
END ELEVATION

REDWOOD SHELVES FOR MOIST ROOM
SCALE 3/4" = 1'-0"

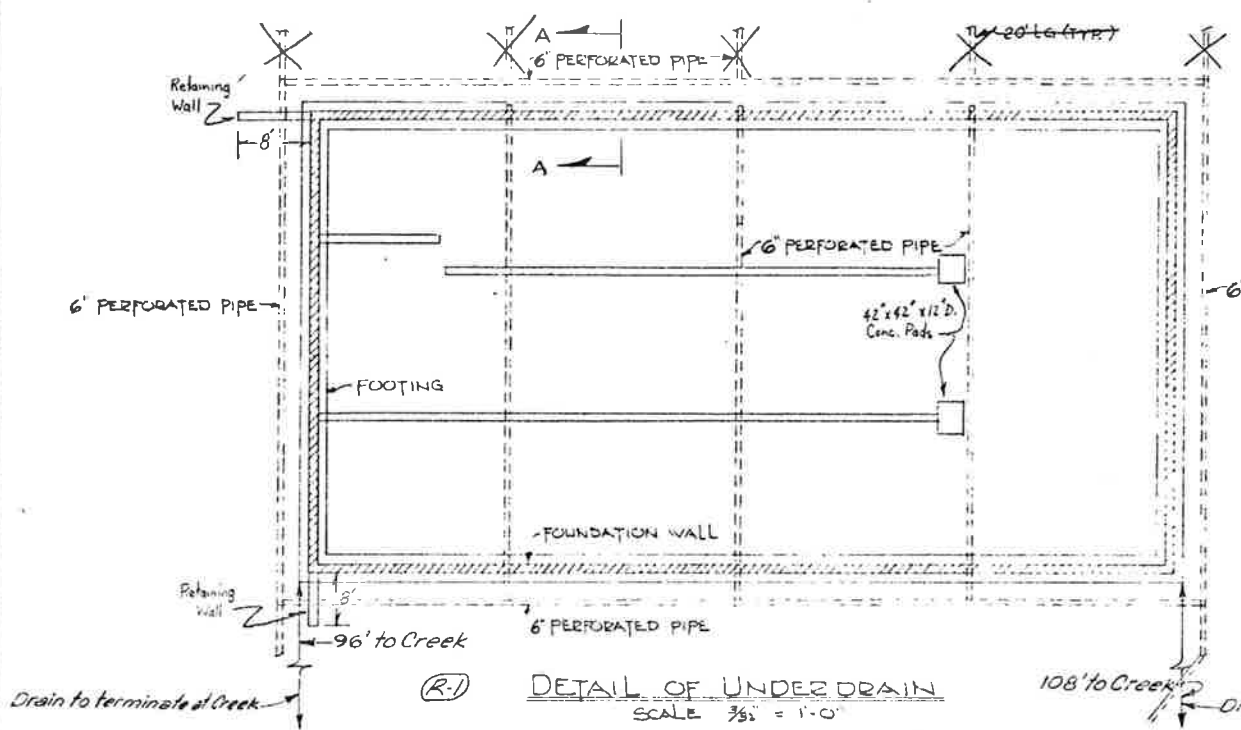
NOTE: ALL MATERIAL FOR SHELVES WILL BE REDWOOD

NOTE: FLOOR SLAB TO BE PLACED ON 12 INCH LAYER OF FILTER MATERIAL CLASS "C"

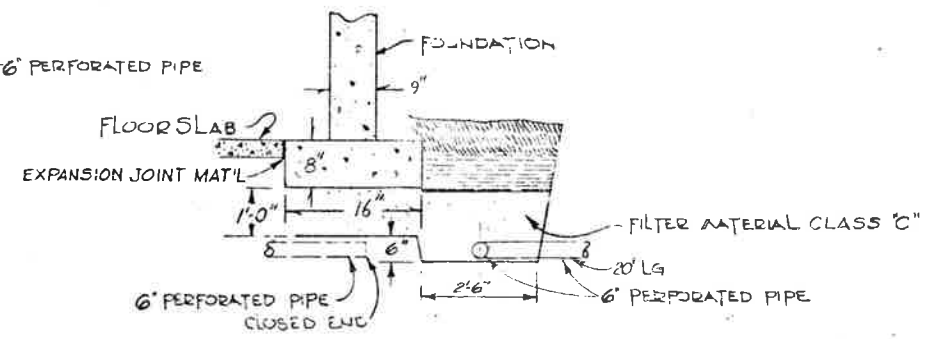
DETAILS OF PARKING AREA



Section B-B



(R-1) DETAIL OF UNDER DRAIN
SCALE 3/8" = 1'-0"



(R-1) SECTION A-A
SCALE 1/2" = 1'-0"

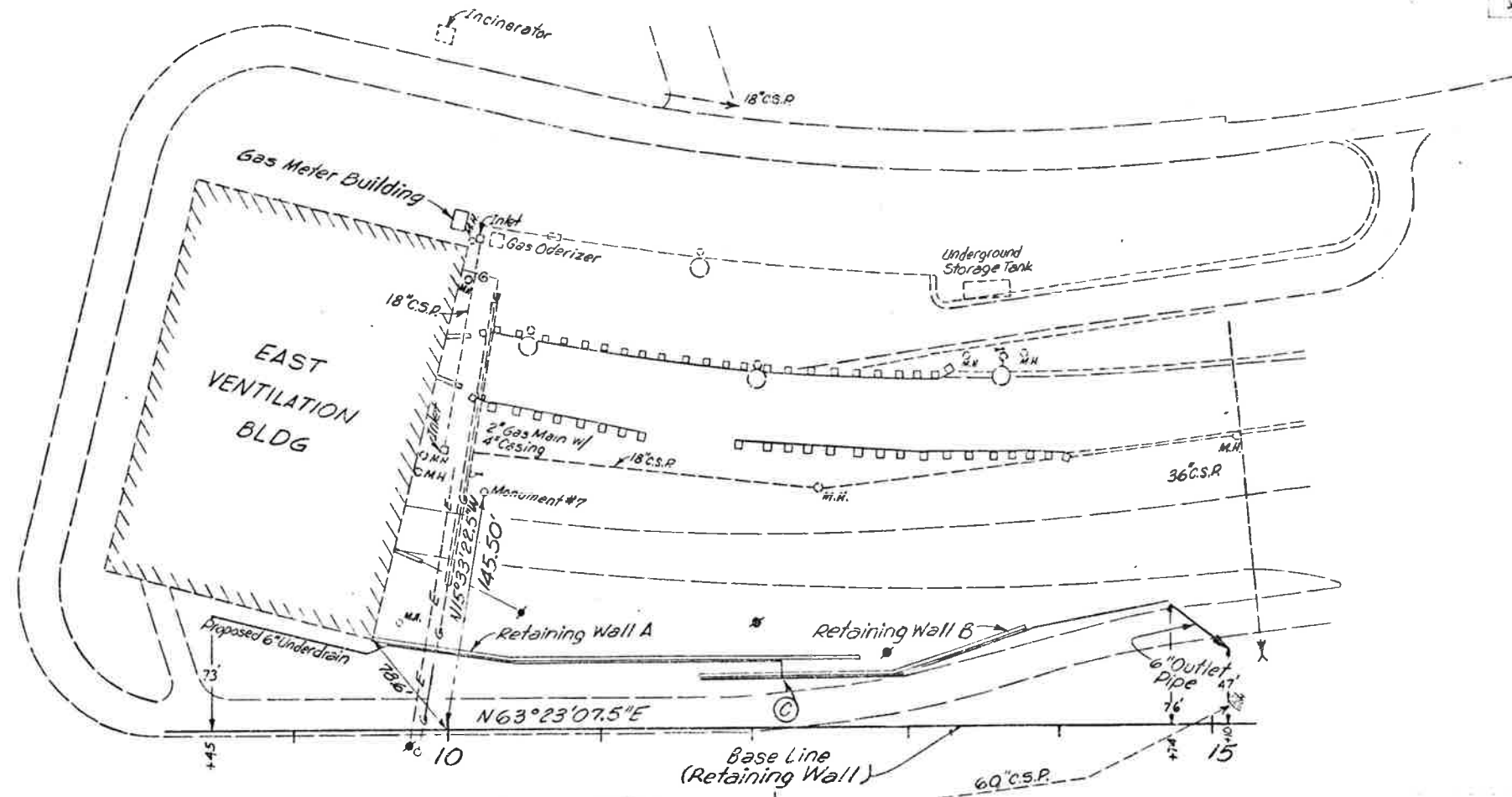
DETAILS OF FIELD FACILITY

DETAILS OF UNDERDRAIN - EAST PORTAL

VIII

170-3(82)220 18

AS CONSTRUCTED
NO REVISIONS DATE



11,050

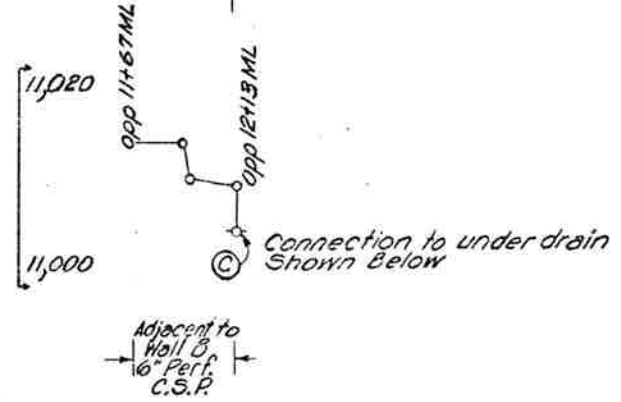
40

30

20

10

11,000



50

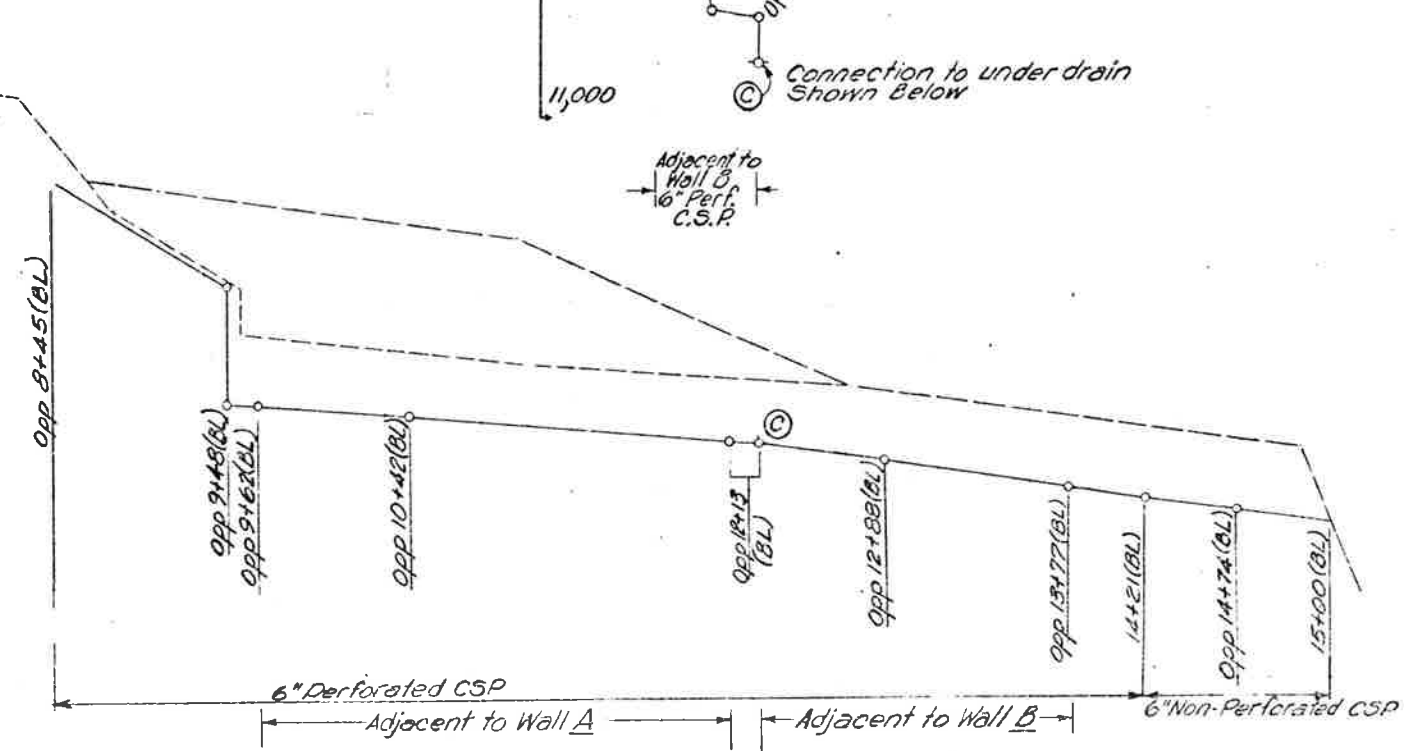
40

30

20

10

11,000



FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-7(8) 320	19	208

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE SPECIFICATIONS APPLICABLE TO THIS PROJECT.

ALL CONCRETE SURFACES MARKED WITH THE SYMBOL ∇ AS SHOWN ON DRAWING NO. B-7 SHALL RECEIVE A CLASS 2 SURFACE FINISH.

ALL CONCRETE CHAMFERS SHALL BE 3/4 INCH UNLESS OTHERWISE NOTED.

EXPANSION JOINT MATERIAL SHALL MEET A.A.S.H.T.O. SPECIFICATION M-213-65. IT SHALL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE WORK.

SOUNDINGS AND DEPTH OF FOOTINGS ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA. WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED, THE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.

WHEN EXCAVATING FOR FOOTINGS, THE FINAL SIX INCHES IN DEPTH SHALL BE DONE BY HAND LABOR METHODS.

FOOTINGS IN ROCK SHALL NOT BE FORMED BUT SHALL BE PLACED AGAINST UNDISTURBED ROCK.

FOR DETAILS OF STRUCTURE EXCAVATION AND STRUCTURE BACKFILL, SEE STANDARD M-206-AA.

ALL STRUCTURAL STEEL NOT OTHERWISE NOTED SHALL BE A.A.S.H.T.O. SPECIFICATION M-183.

ALL BOLTS SHALL BE 3/4" DIAMETER, HIGH STRENGTH, UNLESS OTHERWISE NOTED.

NO WELDING OF ANY KIND SHALL BE PERMITTED ON THE FLANGES OF STEEL GIRDERS UNLESS SPECIFICALLY CALLED FOR ON THE PLANS.

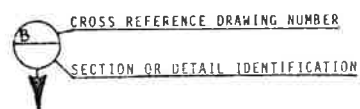
THE FOLLOWING TABLE SHOWS THE MINIMUM LAP FOR COMMON BAR SIZES.

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

GRADE 60 REINFORCING STEEL REQUIRED FOR #5 BARS AND LARGER

GRADE 40 OR GRADE 60 MAY BE FURNISHED FOR #4 BARS.

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



SUMMARY OF QUANTITIES

BK	Pg	ITEM No.	DESCRIPTION	UNIT	RETAINING WALL A	RETAINING WALL B	TOTAL	Final Quantity
1	65	206	STRUCTURE EXCAVATION	Cu. Yd.	1403*	599	2002	2002
1	15	206	STRUCTURE BACKFILL (CLASS 2)	Cu. Yd.	1427*	347	2038	1774
1	17	206	FILTER MATERIAL (CLASS 2)	Cu. Yd.	104	21	125	125
1	20	507	CONCRETE SLOPE & DITCH PAVING REINFORCING	Cu. Yd.			28	40.36
1	32	518	WATERSTOP (6 INCH)	Lin. Ft.	3252	1825	5077	77
1	63	601	CONCRETE CLASS A (WALL)	Cu. Yd.	505	201	706	706
1	75	601	MASONRY VENEER	Sq. Ft.	4432	1215	5647	5657
1	49	602	REINFORCING STEEL	LBS.	57400	11800	69200	69200
6	11	636	GAS METER BUILDING (EAST)	Ea.			1	1
6	48	636	GAS METER BUILDING (WEST)	Ea.			1	1
*Includes sub exc. for conc. slope & ditch paving								

Note: Gas Meter Building (East) and Gas Meter Bldg. (West) require partial quantities to complete the work as shown below. These quantities will not be paid for separately but shall be included in the work.

DESCRIPTION	UNIT	GAS METER BUILDING (EAST)	GAS METER BUILDING (WEST)
STRUCTURE EXCAVATION	Cu. Yd.	29	29
STRUCTURE BACKFILL (CLASS 2)	Cu. Yd.	27	27
CONCRETE CLASS A (WALL)	Cu. Yd.	21	22.7
MASONRY VENEER	Sq. Ft.	460	467
REINFORCING STEEL	LBS.	1200	1207

LOCATION OF ALL CONSTRUCTION JOINTS SHALL BE APPROVED BY THE ENGINEER

METAL TIES FOR BRICK VENEER SHALL BE PLACED SUCH THAT MAXIMUM AREA = 4 1/2 SQ. FT. PER TIE. HORIZONTAL LADDER OR TRUSS TYPE STANDARD WEIGHT TIES SHALL BE PROVIDED AT MAXIMUM 16" SPACING.

LOADING DATA

DESIGN DATA

A.A.S.H.T.O. 1973 UNIT STRESSES, EXCEPT AS NOTED

REINFORCING STEEL #5 & LARGER $F_s = 24,000$ PSI

#4 BARS $F_s = 20,000$ PSI

STRUCTURAL STEEL: A36 $F_s = 20,000$ LBS. PER SQ. IN.
572, GRADE 50 $F_s = 27,000$ LBS. PER SQ. IN.

$F_c = 1,200$ LBS. PER SQ. IN.
 $n = 10$

REVISIONS			

INDEX OF DRAWINGS

- DWG. NO. B 1 GENERAL INFORMATION - SUMMARY OF QUANTITIES
- DWG. NO. B 2 RETAINING WALLS - EAST PORTAL
- DWG. NO. B 3 ENGINEERING GEOLOGY
- DWG. NO. B 4 PANEL LAYOUT - WALLS A & B
- DWG. NO. B 5 GAS METER BUILDINGS DETAILS - LOCATION AT WEST PORTAL
- DWG. NO. B 6 RETAINING WALL AND GAS METER BUILDING DETAILS
- DWG. NO. B 7 RETAINING WALL DETAILS

DESIGNED BY	CHECKED BY
CHECKED BY	QUANTITIES BY
INITIAL	DATE

Approved _____
Bridge Engineer, Date _____

DIVISION OF HIGHWAYS

GENERAL INFORMATION
SUMMARY OF QUANTITIES

Station 9+46 TO 12+65
Station 11+60 TO 13+70

Near DILLON Sec. 26 T. 4 S. R. 76 W

Designer L L FELZIEN Structure _____
Detailer K D HEATER Numbers _____
Drawing Number B 1 of _____ Drawings

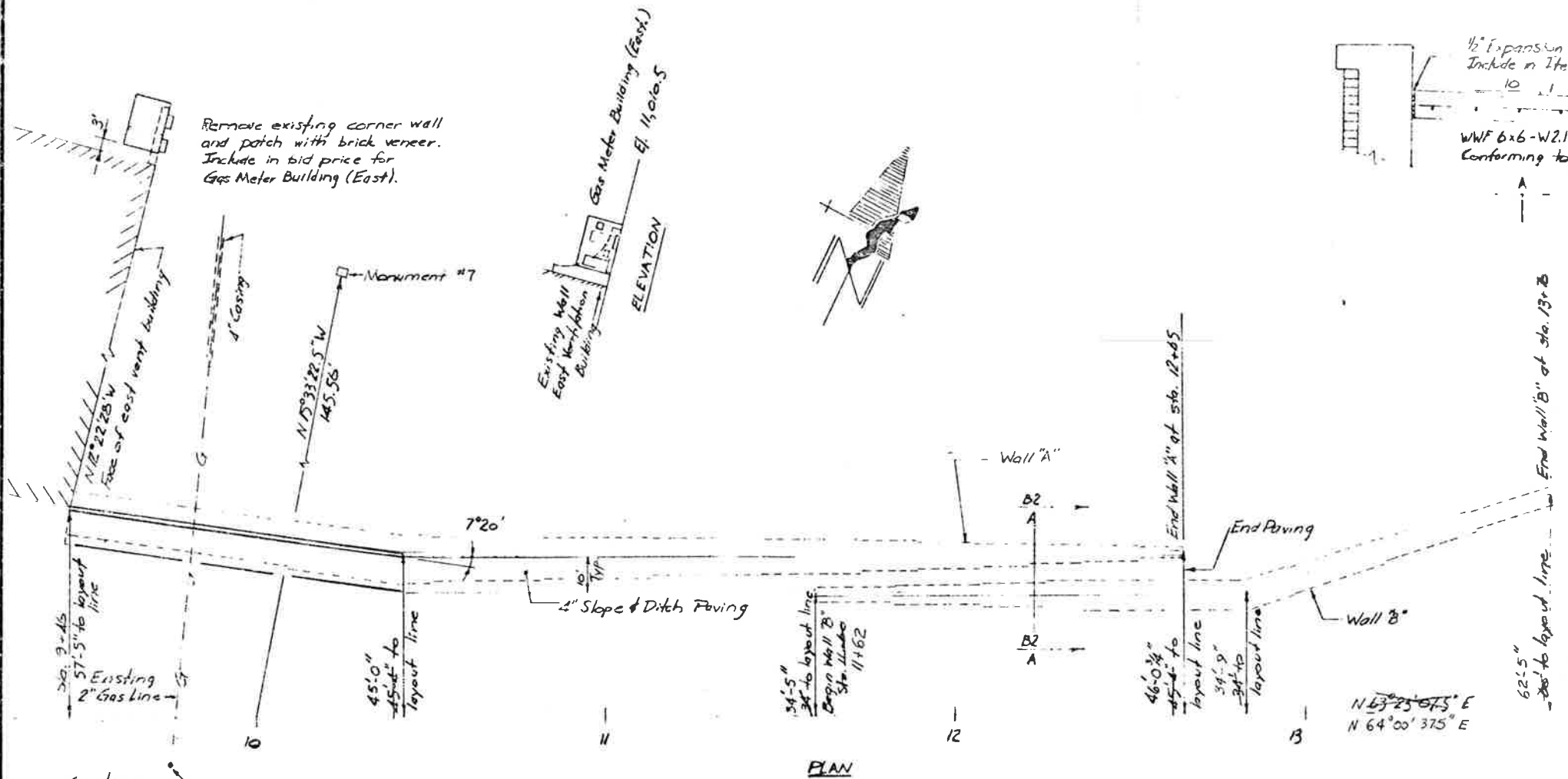
FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(B2)220	20	203

REVISIONS	

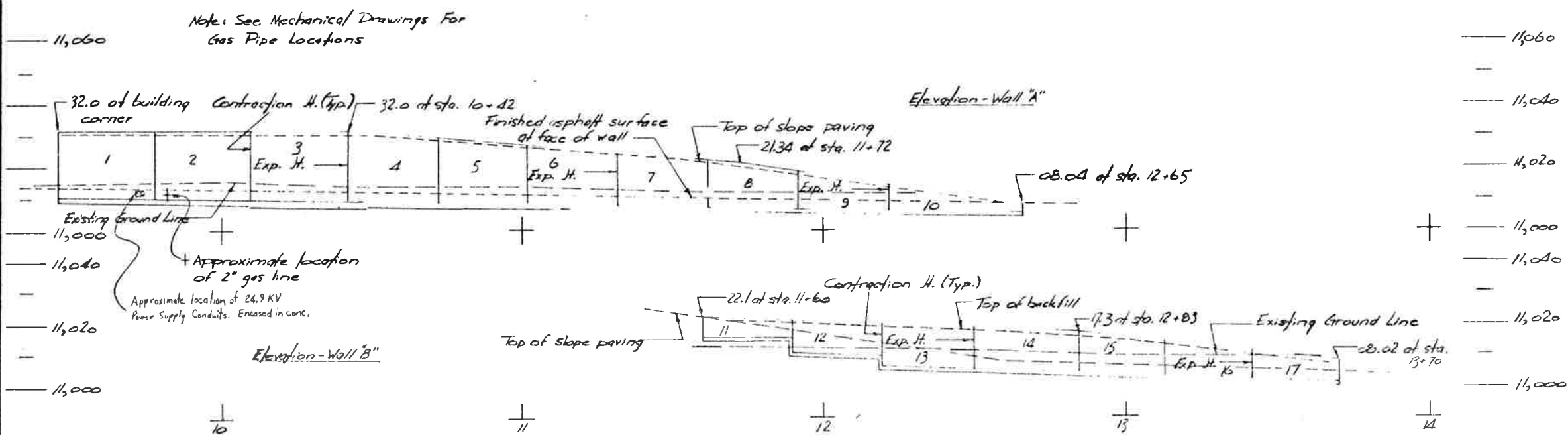
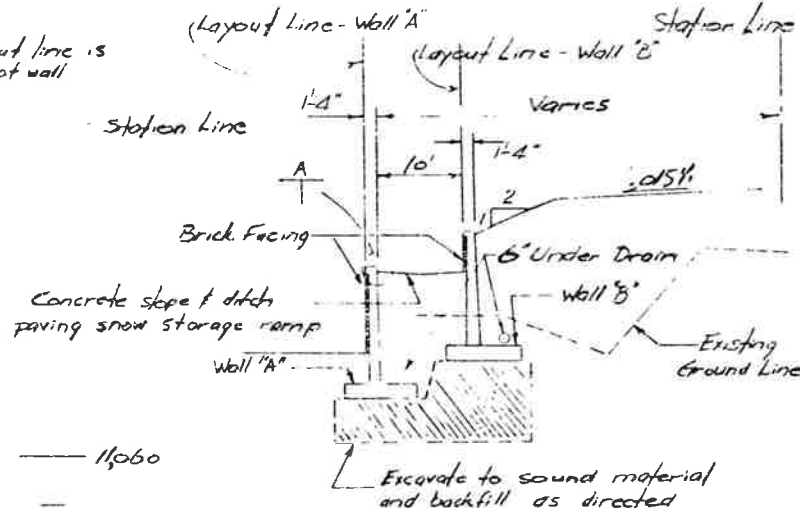
AS CONSTRUCTED
REVISED
DATE 8/31/79

Wall "A"		Wall "B"	
Panel No.	Length	Panel No.	Length
1	32.0	11	30.0
2	32.0	12	30.0
3	32.8	13	30.0
4	30.0	14	33.0
5	30.0	15	30.0
6	30.0	16	30.0
7	30.0	17	30.8
8	30.0		
9	30.0		
10	43.0		

DESIGNED BY	CHECKED BY
QUANTITIES BY	CHECKED BY
DETAILED BY	CHECKED BY



Note: Layout line is front face of wall



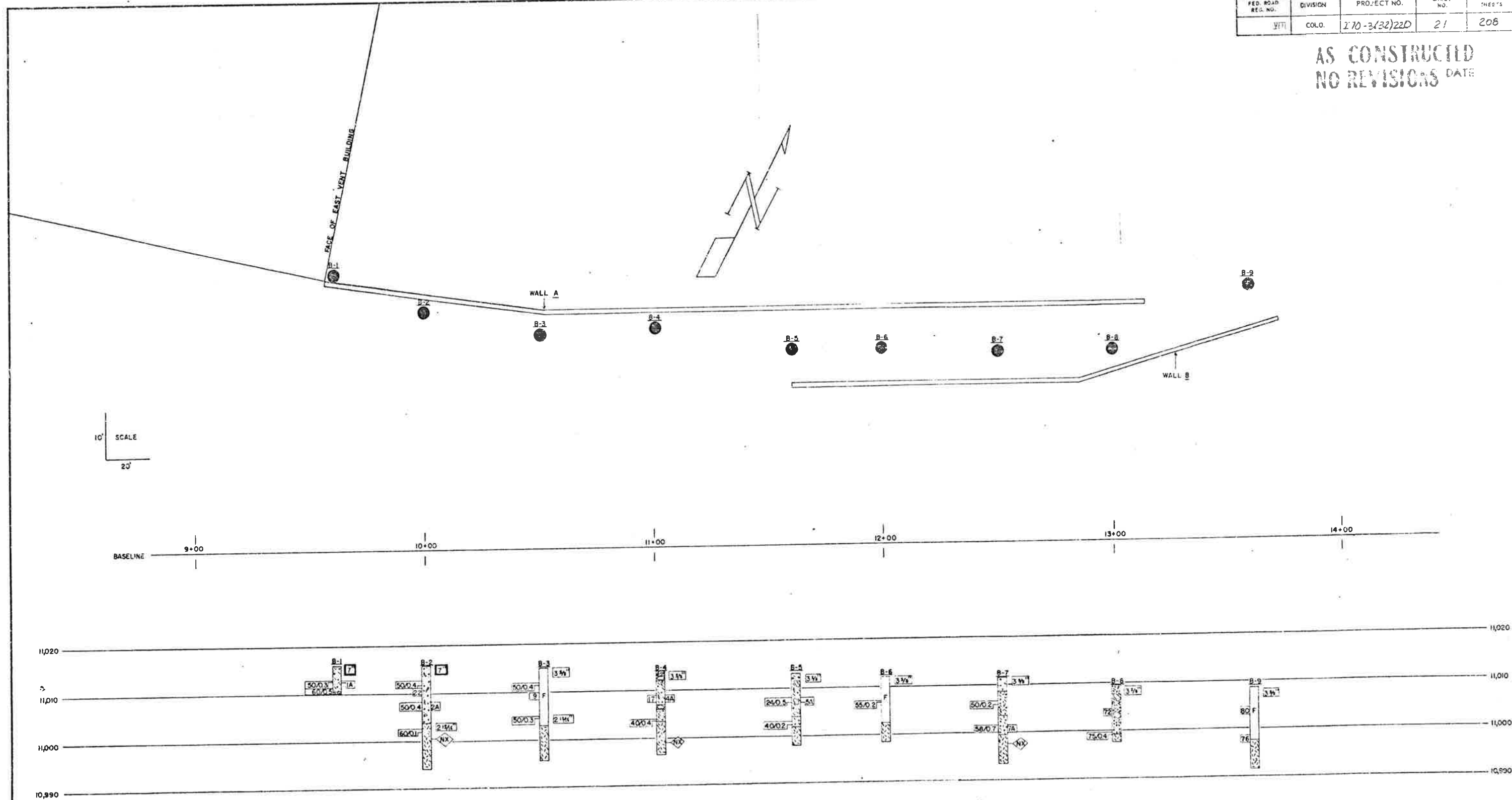
DIVISION OF HIGHWAYS

Retaining Walls - East Portal

Designer Felton	Structural
Detailer Felton	Numbers
Drawing Number B 2	of 7 Drawings

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLO.	170-3(32)22D	21	208

AS CONSTRUCTED
NO REVISIONS DATE



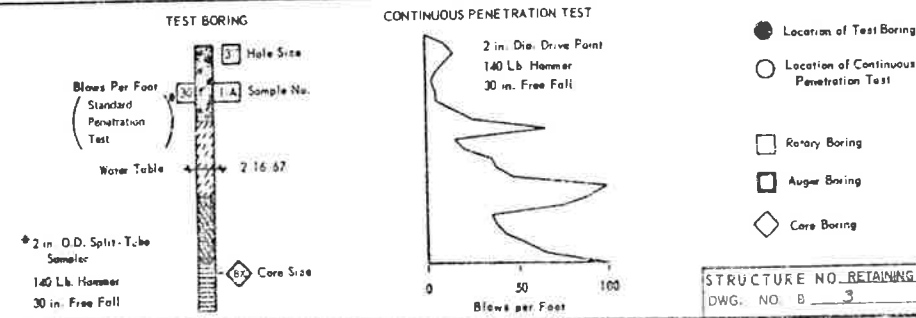
SUMMARY OF TEST RESULTS

Sample No.	Depth	Classification	Grading Analysis					Atterberg Limits			Water Cont. %	Max. Unit Weight P.C.F.	Unclassified Strength Q, T.S.F.	Triaxial Shear Strength				Dia. of Sample (inches)
			Percent					Liquid Limit %	Plastic Limit %	Plastic Index				Unconsolidated	Consolidated			
			Gravel	Coarse Sand	Fine Sand	Silt and Clay	Clay								σ ₁	σ ₃	τ	
1A	30-33	CLAYEY SANDY GRAVEL	A-2-4(0)	49	19	15	17	26	19	7	9.3							
2A	7.5-9.0	SANDY GRAVEL A-1-a(0)	72	15	8	5	NV	NP	NP	7.8								
4A	5.0-6.5	SANDY GRAVEL A-1-a(0)	71	11	8	10	29	24	5	9.3								
5A	5.0-6.0	CLAYEY SANDY GRAVEL	A-1-b(0)	47	22	14	17	29	23	6	15.0							
7A	10.0-11.2	SANDY GRAVEL A-1-a(0)	66	14	10	10	25	23	2	8.6								

TYPE OF MATERIAL

- SILTY, GRAVELLY SAND
- SILTY GRAVEL W/COBBLES
- BOULDER
- SILTY, SANDY GRAVEL W/COBBLES
- SILTY, SANDY GRAVEL W/COBBLES & BOULDERS
- SILTY GRAVEL
- SILTY GRAVEL W/COBBLES
- GRANITE
- SANDY GRAVEL
- FILL

LEGEND



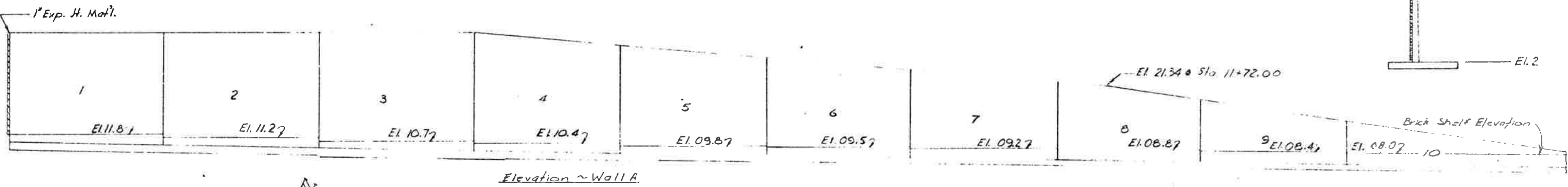
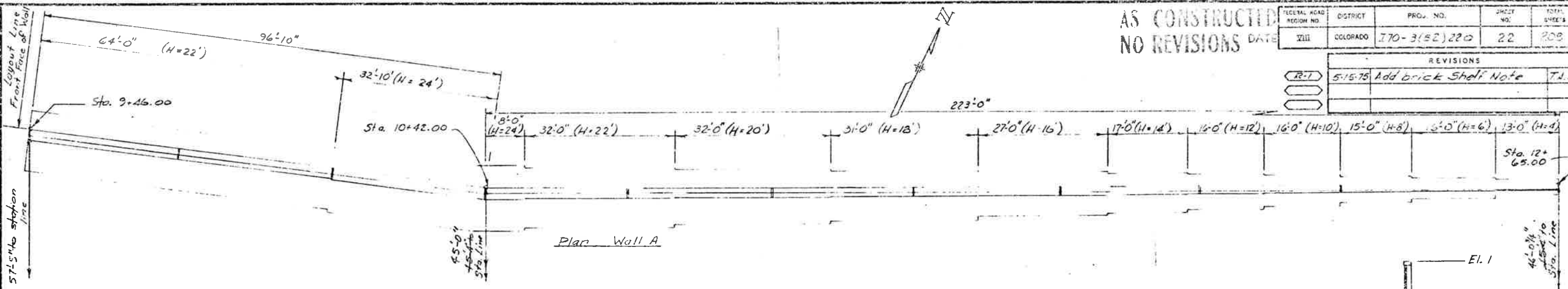
**DIVISION OF HIGHWAYS
STATE OF COLORADO**

ENGINEERING GEOLOGY

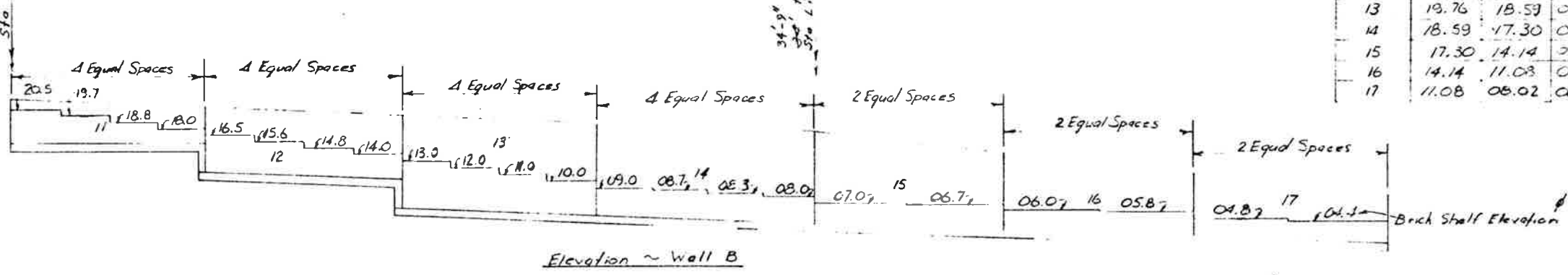
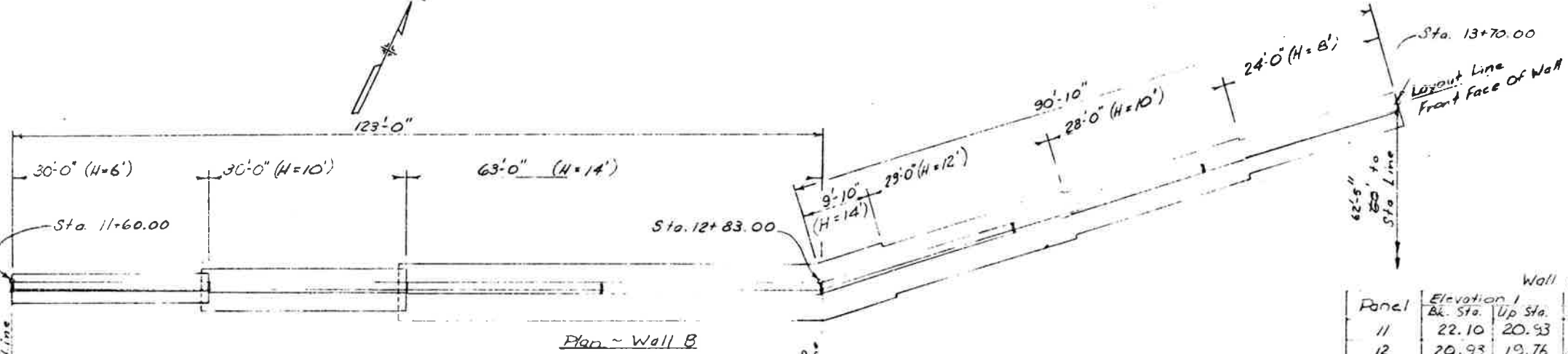
STRUCTURE NO. RETAINING WALL - EAST PORTAL
DWG. NO. B-3 OF

AS CONSTRUCTED
NO REVISIONS DATE

REGIONAL ROAD NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(52)220	22	208
REVISIONS				
R-1	5-15-75	Add brick Shelf Note	T.L.L.	



DATE	CHECKED BY	QUANTITIES BY
INITIAL	DESIGNED BY	DETAILED BY



Wall A

Panel	Elevation 1 Bk. Sta. Up Sta.	Elevation 2 Bk. Sta. Up Sta.
1	32.00 32.00	08.66 08.16
2	32.00 32.00	08.16 07.66
3	32.00 32.00	07.63 07.33
4	32.00 29.52	07.33 07.00
5	29.52 27.04	07.00 06.67
6	27.04 24.56	06.67 06.34
7	24.56 22.08	06.34 05.84
8	22.08 17.11	05.84 05.34
9	17.11 13.33	05.34 04.81
10	13.33 08.04	04.81 04.00

Wall B

Panel	Elevation 1 Bk. Sta. Up Sta.	Elevation 2 Bk. Sta. Up Sta.
11	22.10 20.93	14.50 14.50
12	20.93 19.76	14.24 09.26
13	19.76 18.59	05.00 04.03
14	18.59 17.30	04.03 02.94
15	17.30 14.14	02.94 01.94
16	14.14 11.03	01.94 00.97
17	11.03 08.02	00.97 00.00

DIVISION OF HIGHWAYS

Panel Layout
Walls "A" & "B"

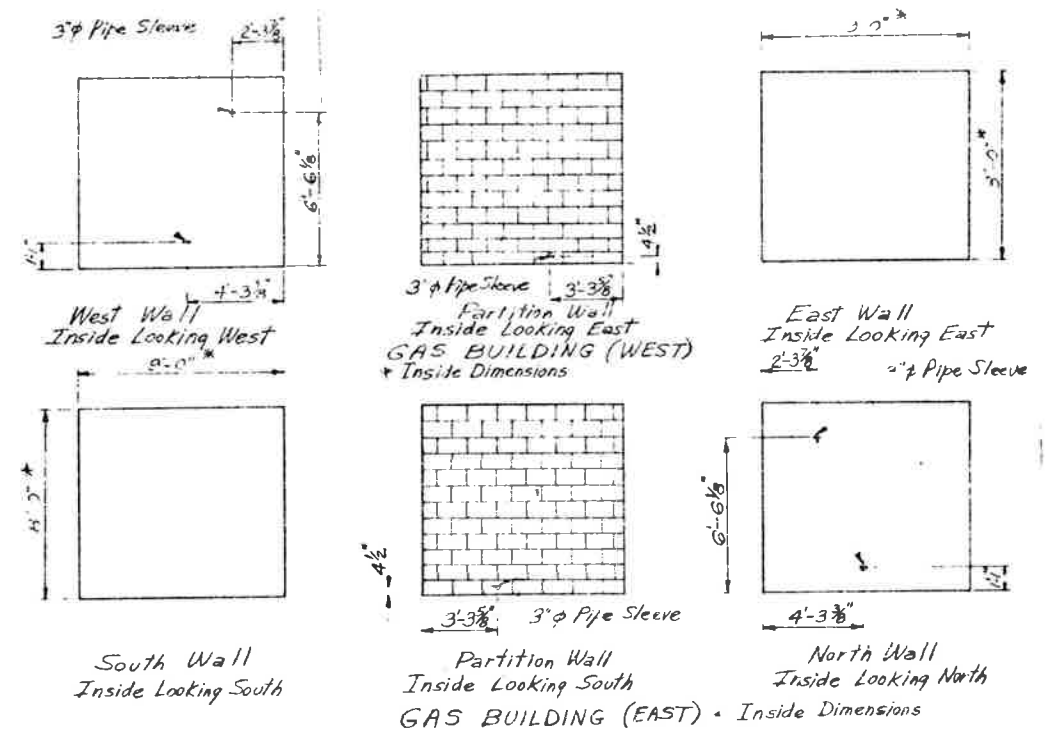
Designer L. Felzien	Structural Numbers
Detailer L. Felzien	of 7
Drawing Number B 4	Drawings

Brick Shelf Elevations are approximate. Contractor shall set final elevations to assure proper alignment of all horizontal and vertical brick joints.

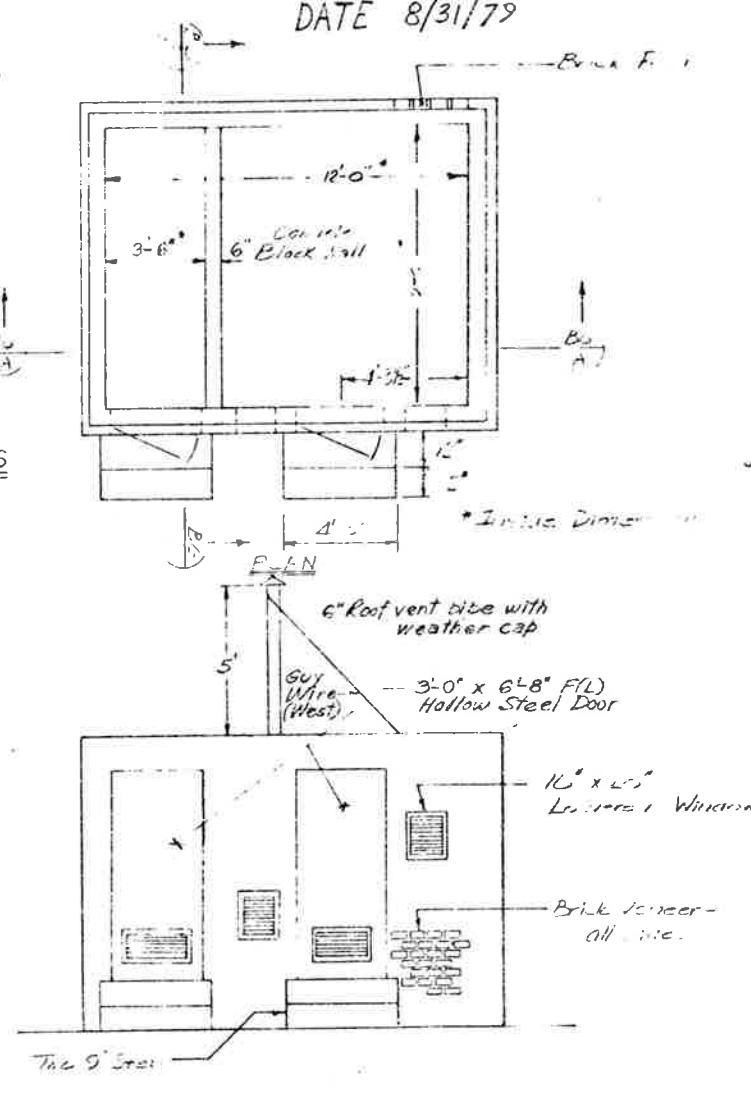
FEDERAL ROAD DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	10-3(82) 220	23	208

REVISIONS	

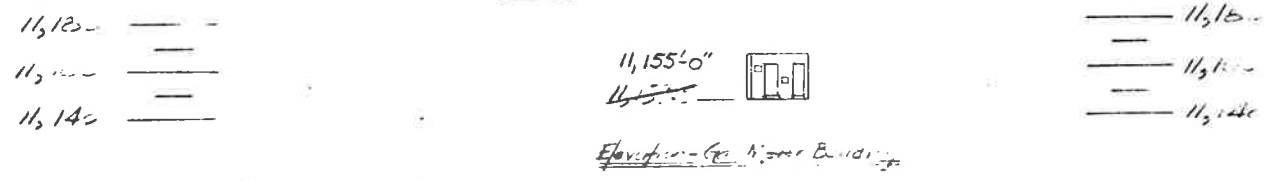
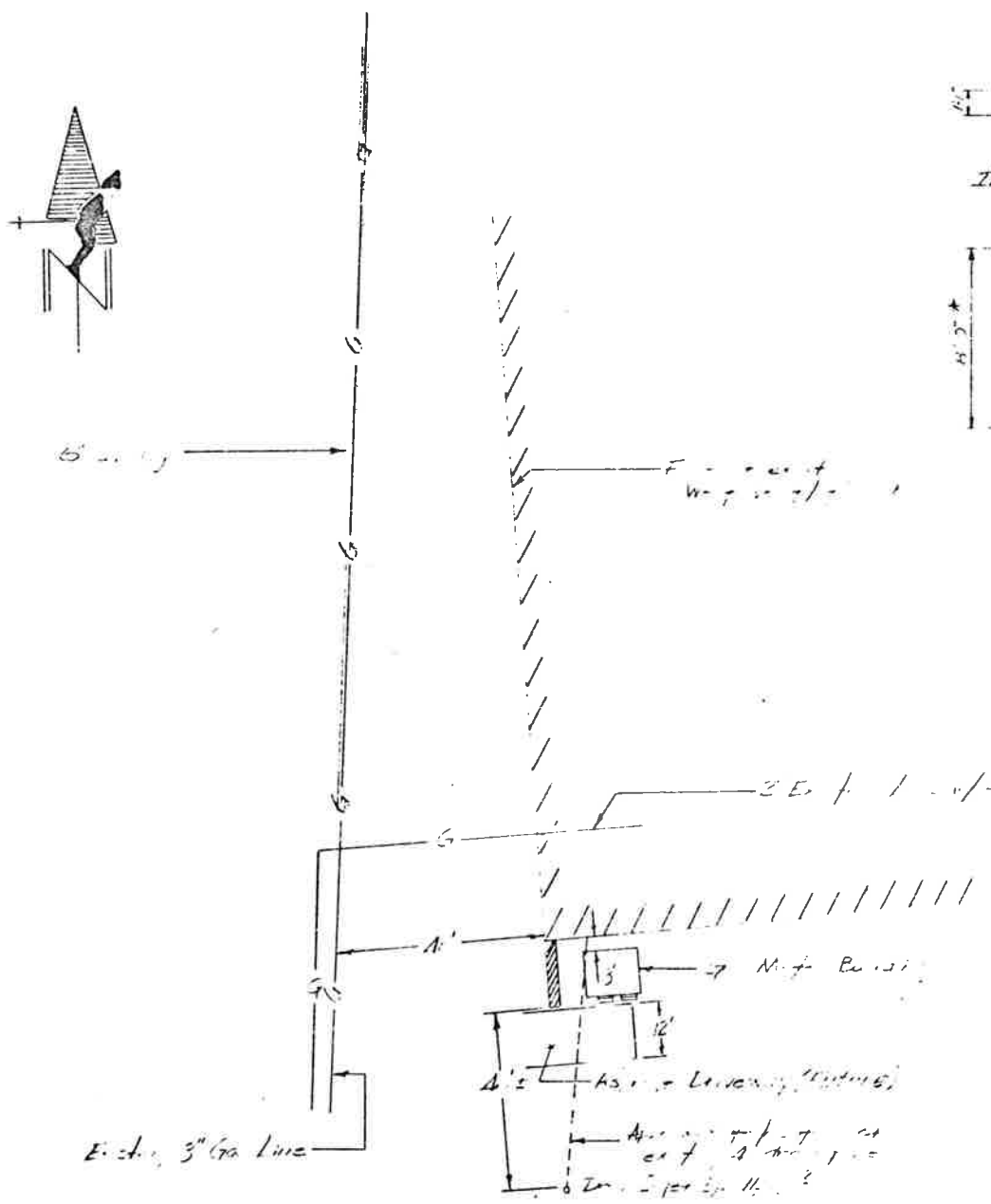
AS CONSTRUCTED
REVISED
DATE 8/31/79



LOCATION OF GAS LINE PIPE SLEEVES IN GAS METER BUILDING WALLS



Front Elevation
Gas Meter Building (East) - As Shown
Gas Meter Building (West) - Opposite Hand



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

DIVISION OF HIGHWAYS

Gas Meter Building Detail
Location of West Portal

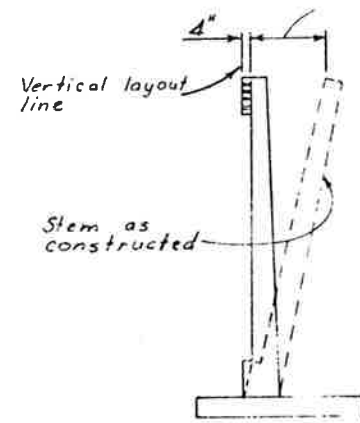
Designer <i>Falson</i>	Structure Numbers
Detailer <i>Falson</i>	
Drawing Number B 5	of 7 Drawings

Revision Dates: _____ (Pre-Construction Stage Only)

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	IT 70-3(52) 220	24	208

REVISIONS	

AS CONSTRUCTED
 REVISED Date 8/31/79



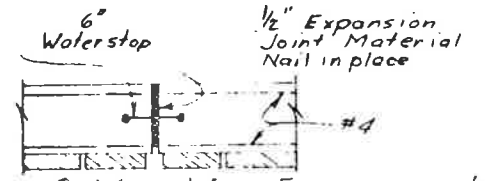
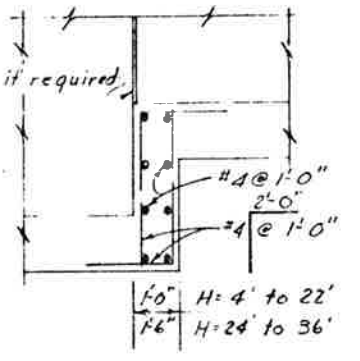
- Offset as follows
- H 4 = 1/4" H 16 = 1 1/2"
 - H 6 = 3/8" H 18 = 1 1/2"
 - H 8 = 1/2" H 20 = 1 3/4"
 - H 10 = 5/8" H 22 = 2"
 - H 12 = 3/4" H 24 = 2 1/4"
 - H 14 = 1" H 26 thru H 36 = 2 1/2"

Values for offsetting form to be determined by the Engineer

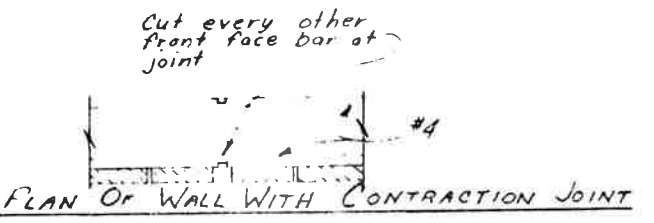
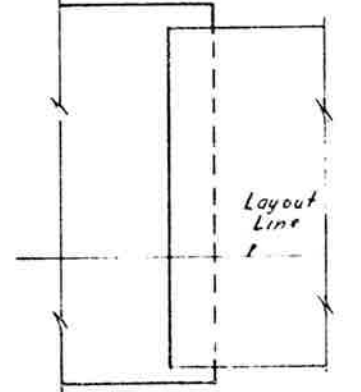
APPROXIMATE WALL OFFSET VALUES



V.C. AT TOP OF WALL SLOPE CHANGE
 Where Shown on the Plans

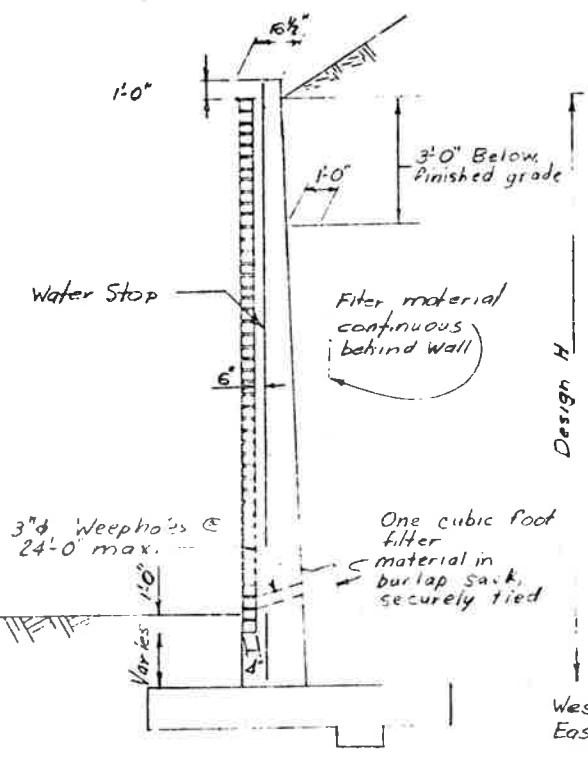


PLAN OF WALL WITH EXPANSION JOINT

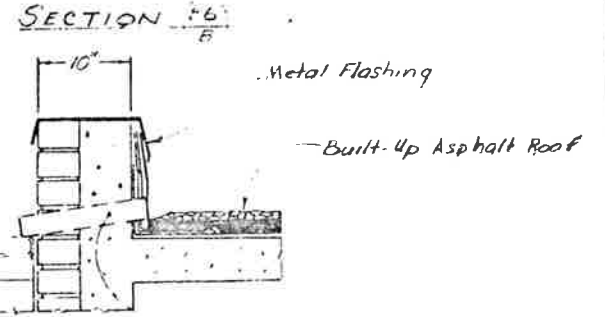
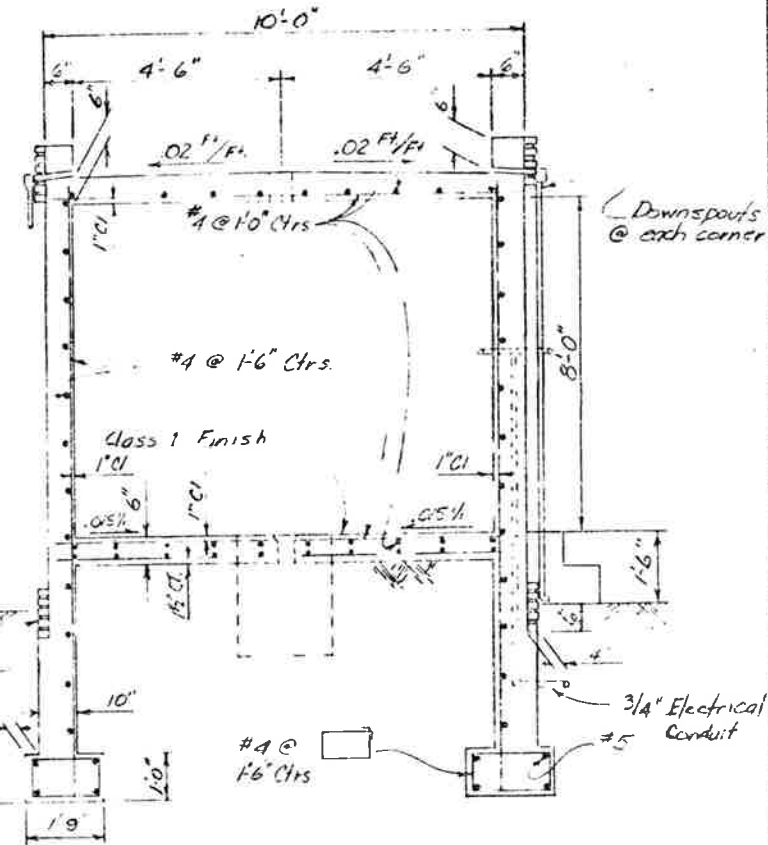


PLAN OF WALL WITH CONTRACTION JOINT

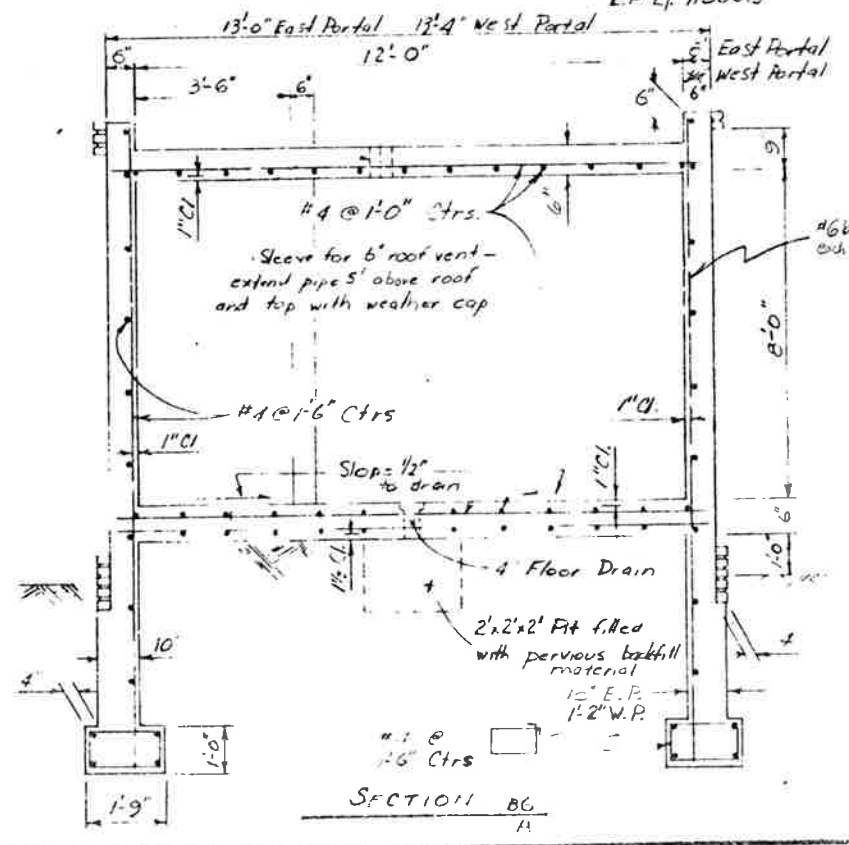
FOOTING STEP



DRAINAGE DETAIL (TYP)



2" Pipe (Galvanized) Detail At Corners



SECTION 11

INITIAL	DATE	CHECKED BY	QUANTITIES BY

DIVISION OF HIGHWAYS			
RETAINING WALL AND GAS METER BUILDING DETAILS			
Designer	L. Felzien	Structure	
Detailer	D. Blacker	Numbers	
Drawing Number	B 6	of	7
Drawings			

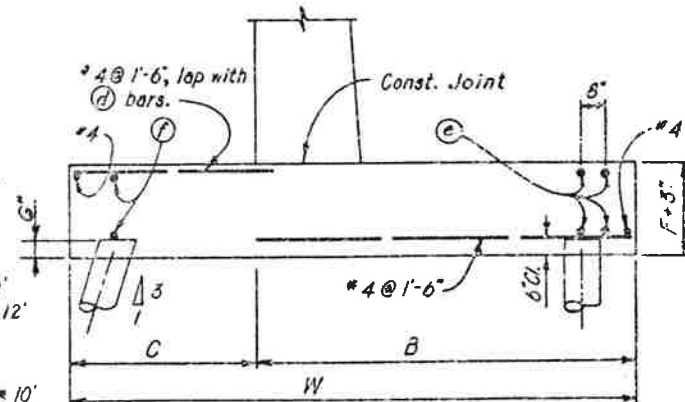
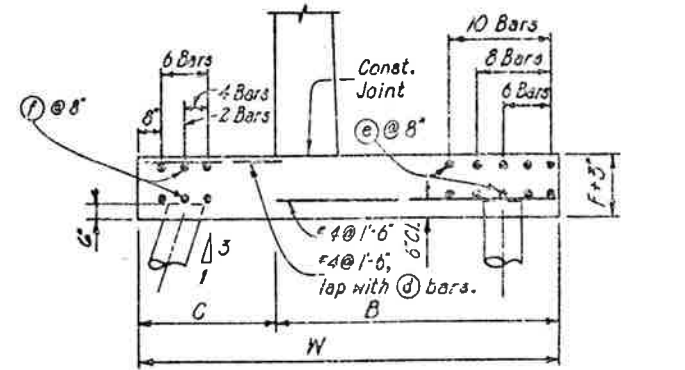
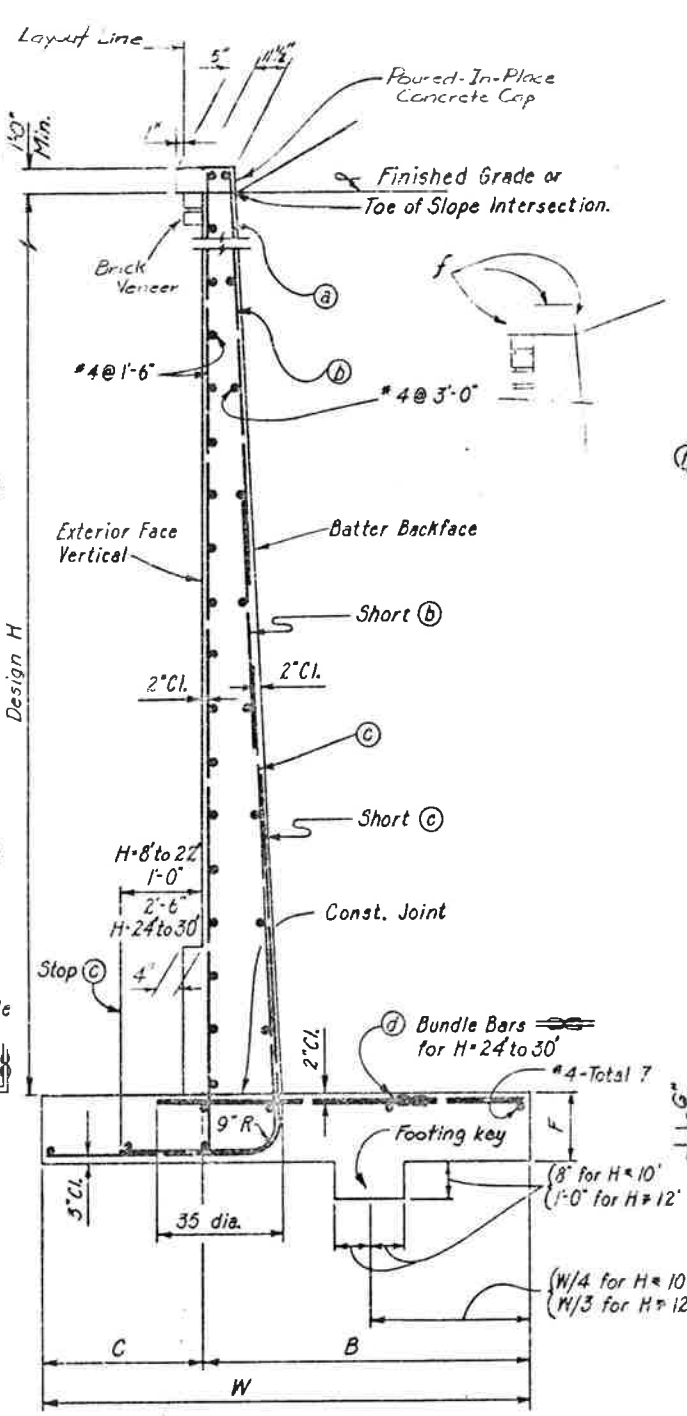
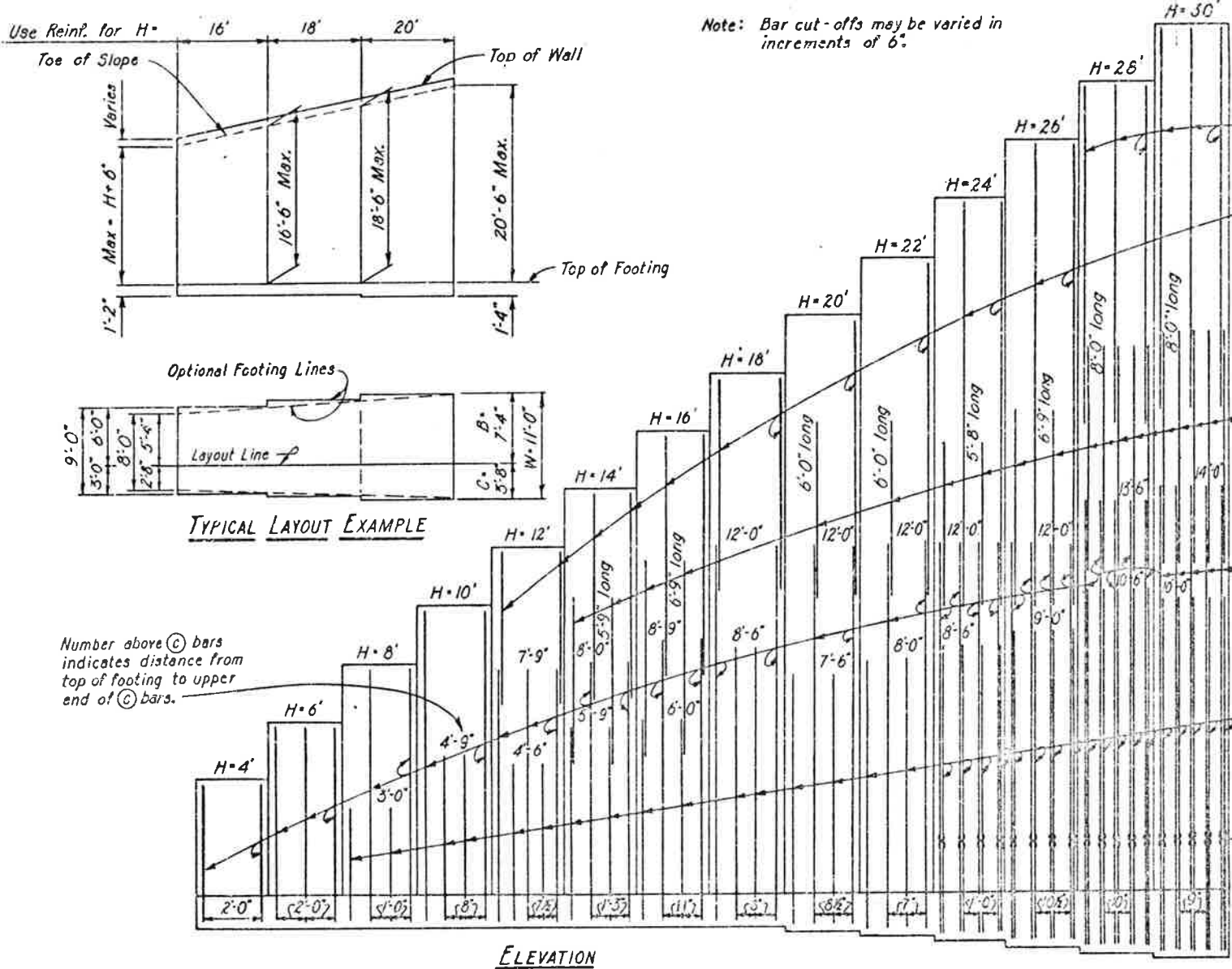


TABLE OF REINFORCING STEEL DIMENSIONS AND DATA

Design H	4'	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'
W	3'-2"	4'-2"	5'-2"	6'-2"	7'-2"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-3"	14'-3"	15'-3"	16'-3"
C	1'-0"	1'-4"	1'-8"	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"	3'-8"	4'-0"	4'-5"	4'-9"	5'-1"	5'-5"
B	2'-2"	2'-10"	3'-6"	4'-2"	4'-10"	5'-4"	6'-0"	6'-8"	7'-4"	8'-0"	8'-10"	9'-6"	10'-2"	10'-10"
F Spread Footing	1'-2"	1'-2"	1'-2"	1'-2"	1'-2"	1'-2"	1'-2"	1'-2"	1'-4"	1'-6"	1'-8"	1'-11"	2'-2"	2'-4"
Batter	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	5/8:12	5/8:12	3/4:12	3/4:12
(a) bars													#7 @ 1'-8"	#7 @ 1'-6"
(b) bars					#5 @ 2'-6"	#5 @ 1'-3"	#5 @ 11"	#6 @ 2'-0"	#7 @ 1'-5"	#7 @ 1'-2"	#8 @ 1'-0"	#8 @ 10 1/2"	#9 @ 10"	#9 @ 9"
(c) bars	#5 @ 2'-0"	#5 @ 2'-0"	#5 @ 1'-0"	#5 @ 8"	#6 @ 7 1/2"	#10 @ 1'-3"	#10 @ 11"	#10 @ 8"	#11 @ 8 1/2"	#11 @ 7"	#11 @ 1'-0"	#11 @ 10 1/2"	#11 @ 10"	#11 @ 9"
(d) bars	#5 @ 2'-0"	#5 @ 2'-0"	#4 @ 1'-0"	#4 @ 8"	#5 @ 7 1/2"	#9 @ 1'-5"	#9 @ 11"	#9 @ 8"	#10 @ 8 1/2"	#10 @ 7"	#10 @ 1'-0"	#10 @ 10 1/2"	#9 @ 10"	#9 @ 9"
Total (a) bars														
Total (b) bars														
2' level surcharge Toe Pr. Ksf	1.4	1.8	2.2	2.5	2.8	3.1	3.5	3.8	4.1	4.6	4.7	5.3	5.7	6.2
2:1 unlimited slope Toe Pr. Ksf	1.1	1.5	2.0	2.5	2.9	3.4	3.8	4.3	4.8	5.5	5.9	6.5	7.1	7.8
1 1/2:1 limited slope Toe Pr. Ksf	1.5	1.9	2.4	2.8	3.5	3.8	4.2	4.6	4.9	5.5	5.8	6.4	6.9	7.5
Spread Footing Reinf. Lbs./L.F.	16	20	26	38	54	83	114	165	198	264	320	386	418	477
Wall Conc. Cu.Yd./L.F.	0.330	0.463	0.604	0.748	0.941	1.039	1.252	1.422	1.667	1.930	2.344	2.711	3.263	3.841
Pile Footing Reinf. Lbs./L.F.														
Wall Conc. Cu.Yd./L.F.														

⊗ Denotes a bundle of two bars.

Note: Reinforcement detailed is to be placed in addition to that shown for spread footing. All piles not shown, see Pile Layout on other sheets.
▲ For pile footing Design H = 4' use same footing dimension as Design H = 6'.

Note: For notes, design and details not shown see Drawing No. B6.

Quantities apply to Design H portion and exclude the added portion above Finished Grade or Toe of Slope Intersection. Use Grade 40 for all reinforcing on this sheet.

Brick veneer shall be constructed with mortar which has been brick-filled.

Design Data:
Exterior surcharge, 2' surcharge.

Equivalent Fluid Pressure = { 20 pct. Max. for determination of toe pressure
27 pct. Min. for determination of heel pressure

REVISIONS

NO.	DESCRIPTION	DATE

AS CONSTRUCTED
NO REVISIONS DATE

DIVISION OF HIGHWAYS

RETAINING WALL DETAILS

Designer: R. Klinebrick
Structural Engineer: R. Klinebrick
Drawing Number: B
of Drawings: 1

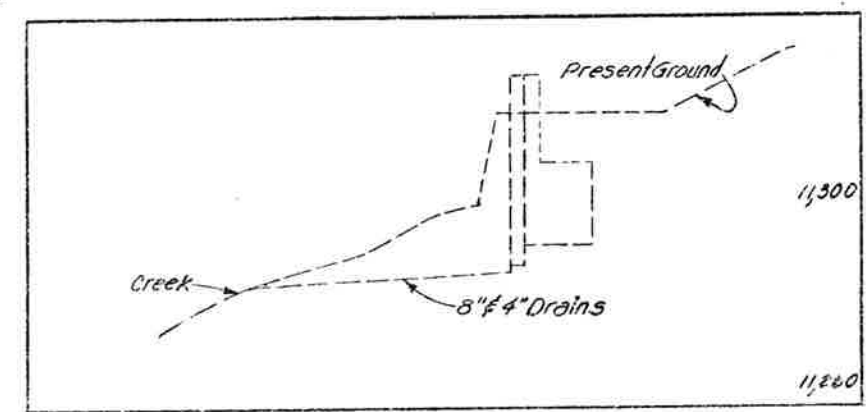
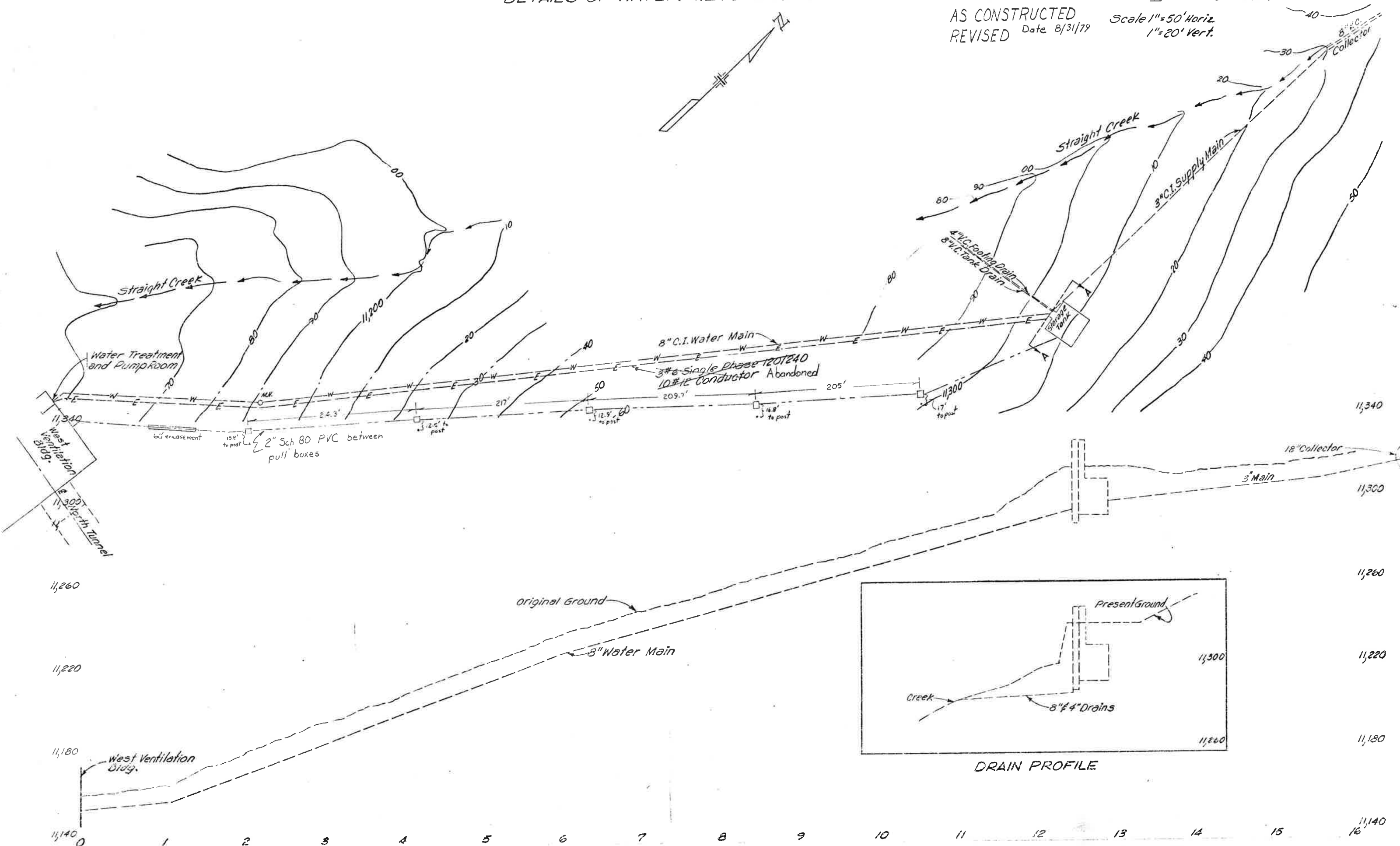
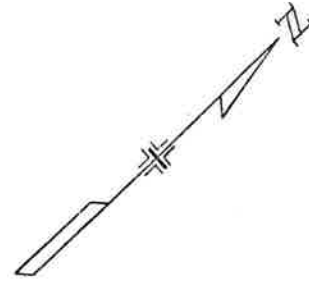
Revision Date: (Preliminary Stamp Only)

DETAILS OF WATER METERING SYSTEM

AS CONSTRUCTED
REVISED Date 8/31/79

VIII
Scale 1" = 50' Horiz
1" = 20' Vert.

170-3(82)220 26

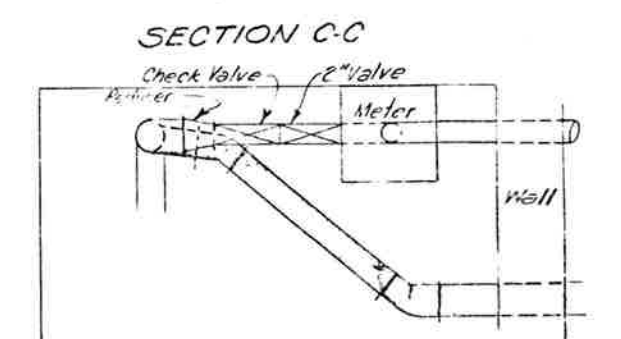
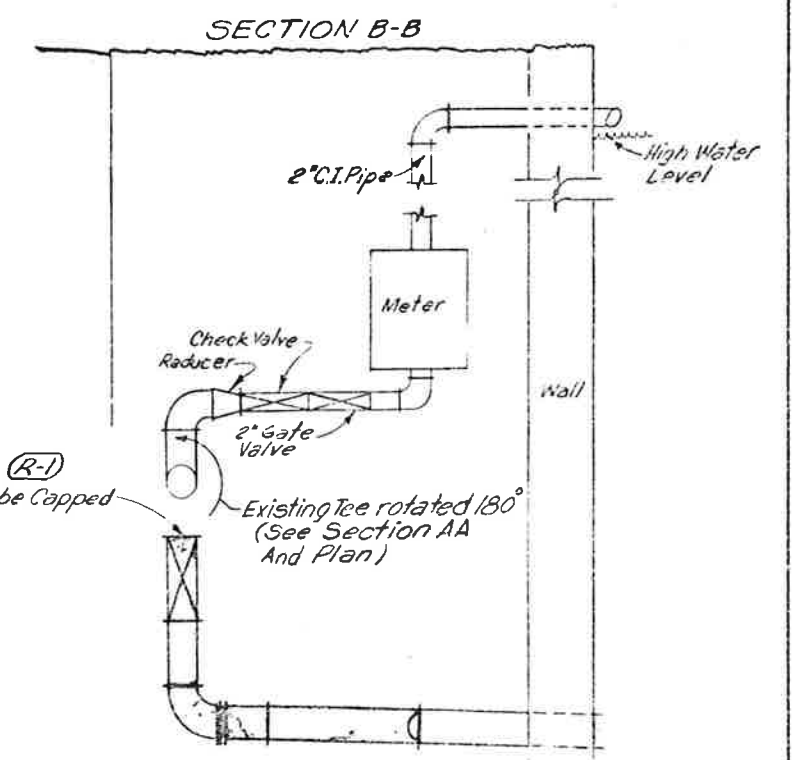


FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	170-3(82)220	21	208

(R-1) 4/29/75 TAL Clarify Location of tee connection.

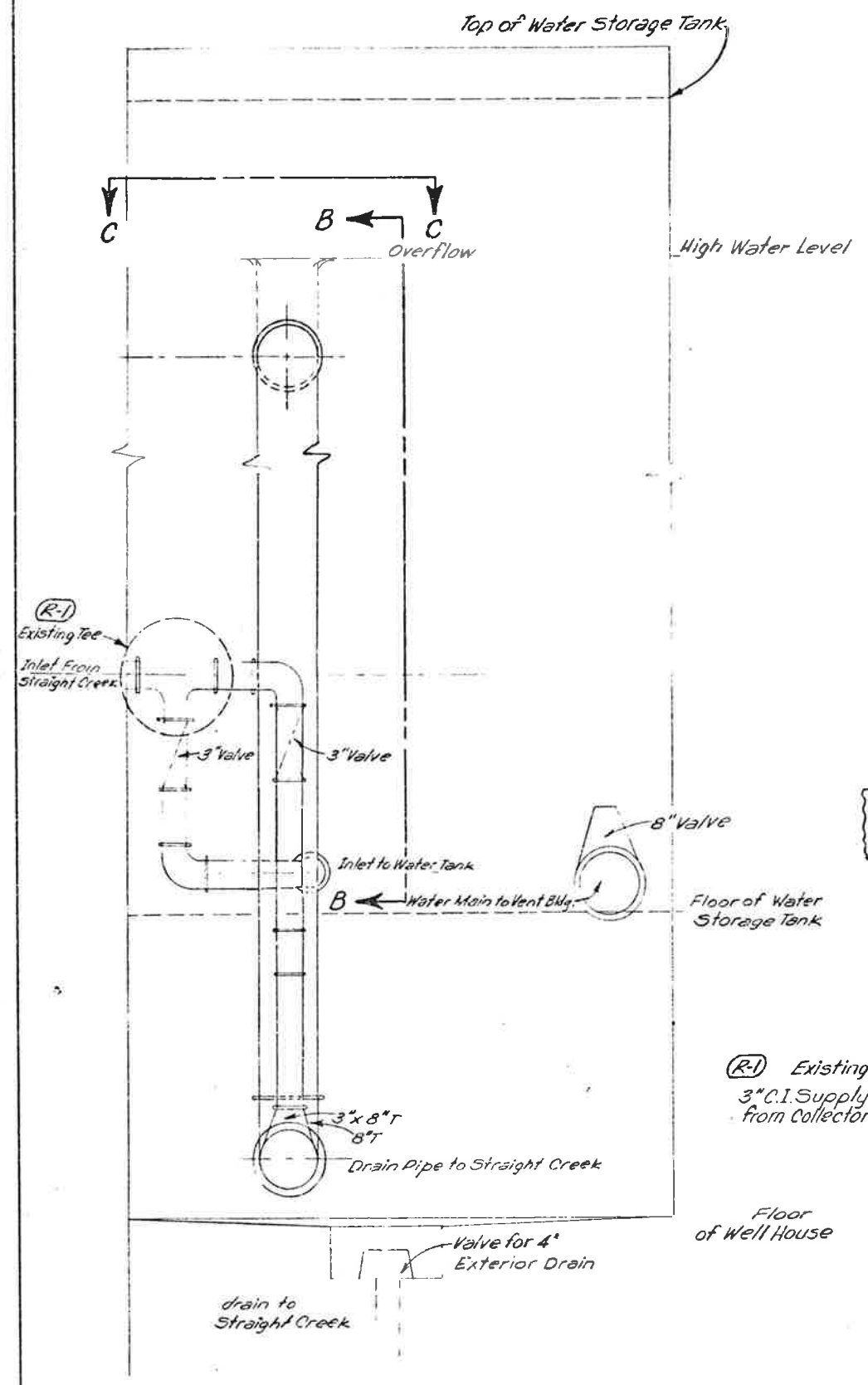
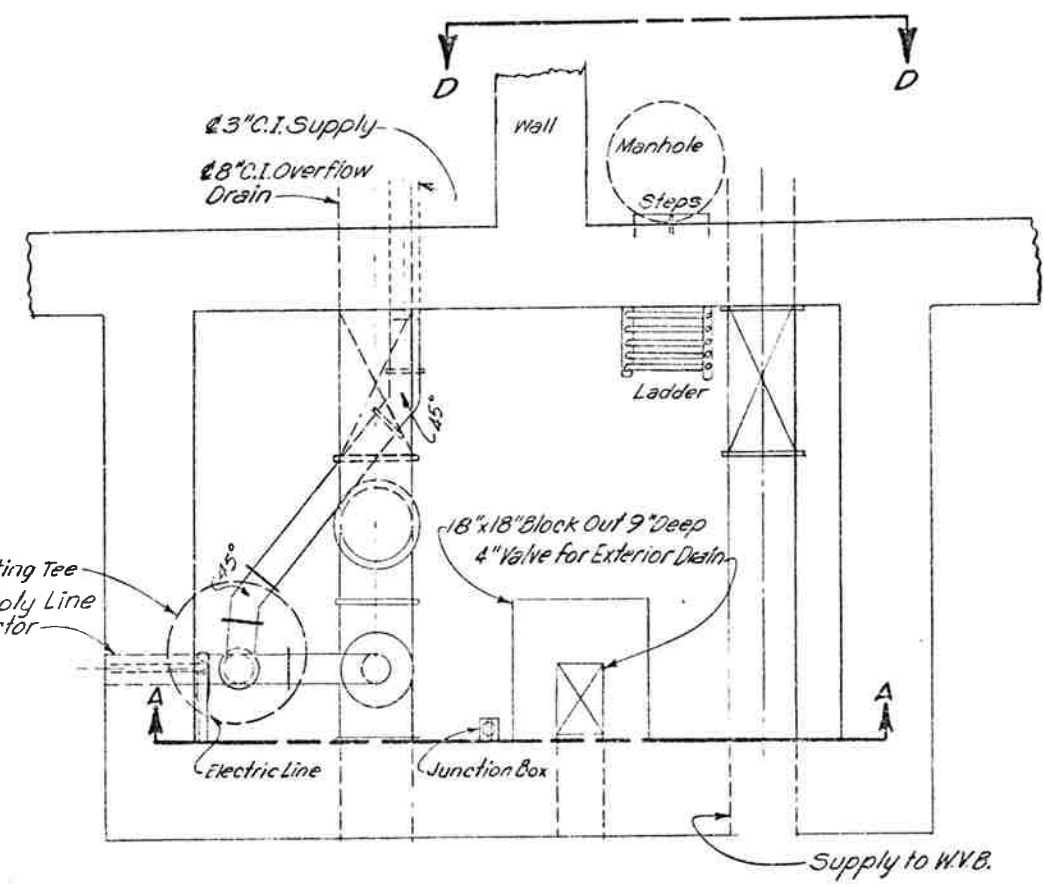
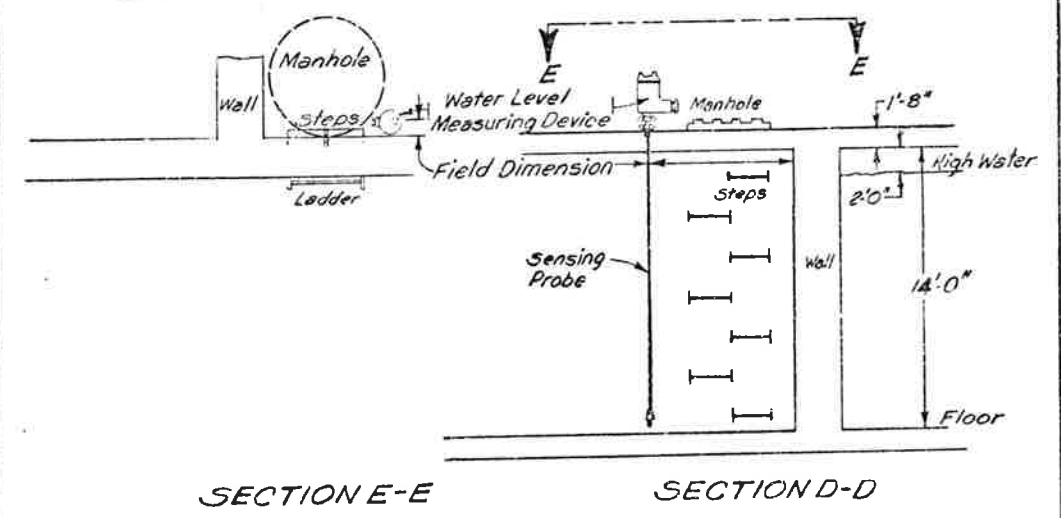
AS CONSTRUCTED
 NO REVISIONS DATE

DETAILS OF METER INSTALLATION



□ Pipe to be abandoned

DETAILS OF WATER LEVEL MEASURING DEVICE



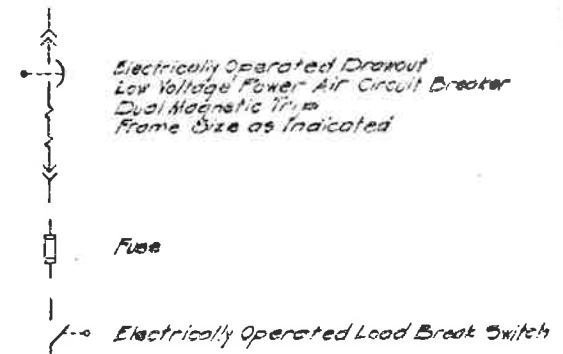
SECTION A-A
 Existing System

PLAN
 Existing System

AS CONSTRUCTED
 NO REVISIONS DATE

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
112	COLORADO	J70-3(B)220	23	203

LEGEND

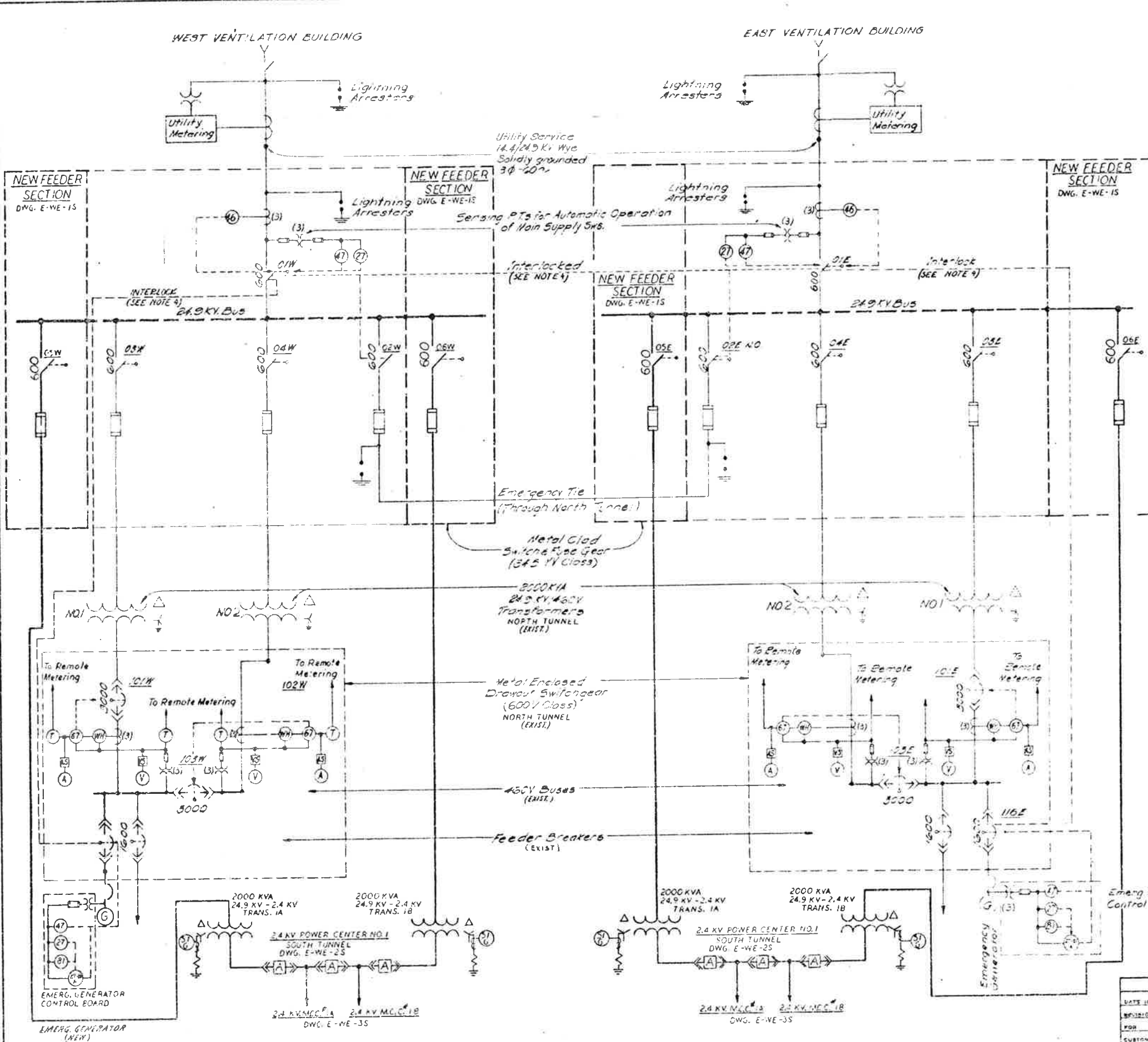


- (R) Reverse Phase Voltage Relay
- (P) Reverse Power Relay
- (T) Telectors or Transducers for Remote Telemetering
- (U) UV Relay
- (B) Current Balance Relay (For Single Phasing Protection)
- (F) Frequency Relay
- (F&U) Frequency & Undervoltage Aux. Relay
- (A) HIGH VOLTAGE DRAW-OUT TYPE POWER CIRCUIT BREAKER
- (G) TIME OVERCURRENT GROUND RELAY

NOTES:

- On the 24.9 KV Switchgear, Sxs # 01W, 02W, 01E and 02E are interlocked to permit closure of only 3 Switches at one time.
- All Main Electrical Switches and Circuit Breakers are operated from respective Building Battery Supply.
- LIGHT BACKGROUND INDICATES EXISTING EQUIPMENT, DARK BACKGROUND INDICATES NEW EQUIPMENT REQUIRED FOR SOUTH TUNNEL.

KEY INTERLOCKING FOR EXISTING EQUIPMENT SHALL BE THE CAPABILITY OF PREVENTING PARALLELING OF THE UTILITY SERVICES FROM THE 24.9 KV SWITCHGEAR LOCATIONS AS WELL AS FROM THE REMOTE POWER CENTER BAYARD. NEW FEEDER SECTIONS SHALL HAVE KEY INTERLOCKING SAFETY DEVICES TO MAINTAIN THE SAME LEVEL OF OPERATING PROTECTION AS IN THE EXISTING FEEDER SECTIONS. EXISTING KEY AND ELECTRICAL INTERLOCKING ON THE 24.9 KV SWITCHGEAR (EXIST) SWITCHGEAR BAYARD AND THE REMOTE POWER CONTROL PANEL SHALL BE MODIFIED AS REQUIRED AND ADDITIONAL KEY AND ELECTRICAL INTERLOCKING SCHEMES SHALL BE ADDED AT ALL EXISTING AND NEW LOCATIONS TO PREVENT PARALLELING OF THE TWO EMERGENCY GENERATORS AND ALSO PREVENT OVER-LOADING OF THE EMERGENCY GENERATORS INTO THE UTILITY SERVICES.



DATE ISSUED	BY	FOR	CUSTOMER	FIELD	INITIALS



NO. 1 REVISIONS
 STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

ELECTRICAL
 GENERAL
 POWER SUPPLY
 SINGLE LINE DIAGRAM

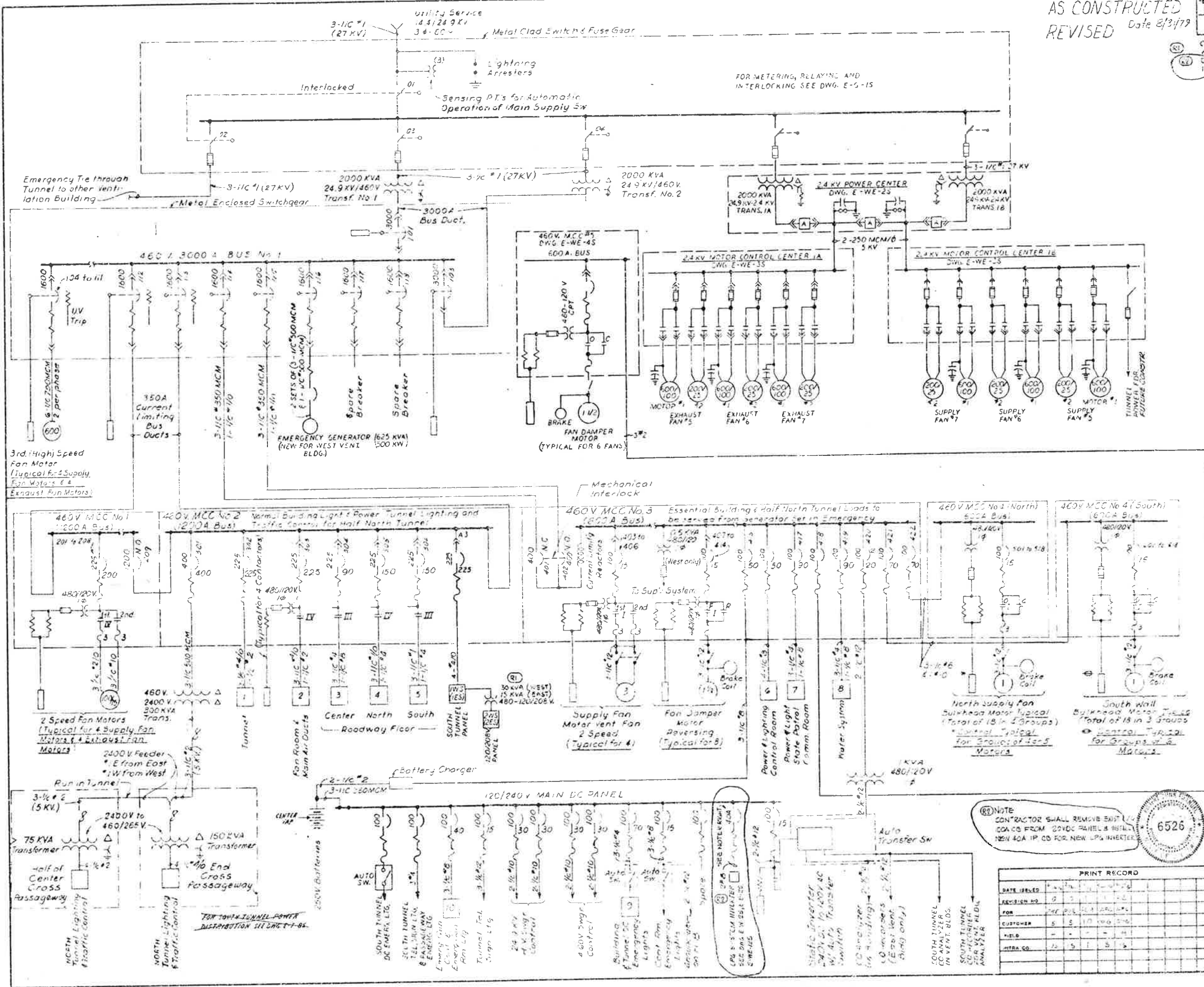
DRAWN	W.S. IG...	CHECKED	
SCALE		DATE	

E-G-15

AS CONSTRUCTED
 REVISED Date 8/3/79

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	HEET NO.	TOTAL SHEETS
711	COLORADO	T70-2(8/2)220	29	208

CHANGED 150VA TRANS. 24V (WEST) TO 300VA FC TYPE. NEW WATER & LUBRICATION SYSTEMS POWER SUPPLY. NEW 300VA COLETTED 100VA CO FROM 200VA PANEL. ADDED NEW 100 IP 120VDC CB FOR NEW UPS SYSTEM. INVERTER IS 7-15-74/DW



- Electrically Operated Drawout Low Voltage Power Air Circuit Breaker. Dual Magnetic Trip Under Voltage Trip where indicated. Frame Size as indicated. *112" Breaker designation number
- Molded Case Air Circuit Breaker. Thermal Magnetic. Frame size as indicated. (100A) Trip setting as indicated. (20A) 3 Pole except where otherwise indicated. *420" Breaker designation number
- Two Speed Motor Starter
 II - NEMA Size
 3 - 3 Overload Relays
- Reversing Motor Starter
 I - NEMA Size
 3 - 3 Overload Relays
- Magnetic Contactor
 NEMA size as indicated
- Local and/or Remote Controls & Interlocks (See Elementary Diagrams)
- Fuse
- Oil Fuse Cutout
- Electrically Operated Load Break Switch
- Light or Power Panel. No. as indicated
- HIGH VOLTAGE (P-W-O-T) TYPE POWER CIRCUIT BREAKER
- MULTI-SPEED DRAW-OUT TYPE CURRENT LIMITING STARTER

NOTE:
 1. ALL CABLES ARE 600 V. INSULATION UNLESS NOTED OTHERWISE.
 2. LIGHT BACKGROUND INDICATES EXISTING EQUIPMENT. DARK BACKGROUND INDICATES NEW EQUIPMENT REQUIRED FOR SOUTH TUNNEL.

NOTE:
 CONTRACTOR SHALL REMOVE EXISTING 100VA CO FROM 200VDC PANEL & INSTALL NEW 100VA IP CO FOR NEW UPS INVERTER.



PRINT RECORD	
DATE ISSUED	8/3/79
REVISION NO.	0
FOR	THE PROJECT
CUSTOMER	STATE OF COLORADO
FIELD	1
INTRA CO.	1

REVISIONS		DATE	BY
NO.	DESCRIPTION		

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

ELECTRICAL
 GENERAL
 POWER DISTRIBUTION
 SINGLE LINE DIAGRAM

DRAWN	PS	DATE	8/3/79
CHECKED	PS	DATE	8/3/79
SCALE	DEPT. NO.		
NONE	IC14570		

DRAWING NO. E-G-25

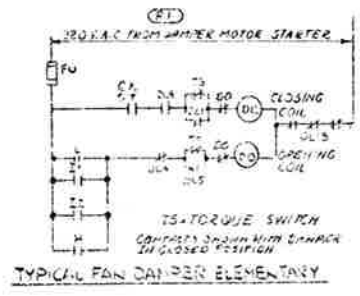
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	I70-3(BE)120	30	208

AS CON-
 STRUCTED
 REVISED
 Date 3/3/79

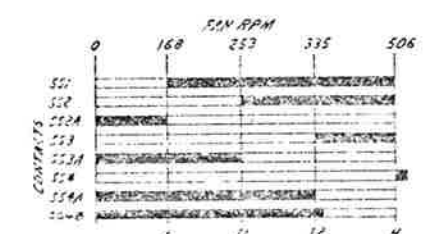
(R1) RE-DESIGN MOTOR #2 ELEMENTARY TO BE 25HP (600RPM) IN 1-2 SPEED LEVELS. ADDED MOTOR ELEMENTARY AND ALARMS FOR HIGH AND LOW SPEED. REVISED FAN DAMPER LIMIT SWITCH DEVELOPMENT AND ELEMENTARY PER IENHRS DMS DYN 2-6-76. XOF ALUW. PLEASE REFER TO DESIGNATIONS TO FAN ELEMENTARY.

LEGEND

- L LOW SPEED 25HP, 600RPM
- I1 INTERMEDIATE SPEED 100HP, 900RPM
- I2 INTERMEDIATE SPEED 200HP, 1200RPM
- H HIGH SPEED 600HP, 1800RPM
- ▲ REMOTE DEVICE
- MOTOR #1 CONTROL CIRCUIT DEVICE
- MOTOR #2 " " " "
- FCB FAN CONTROL BOARD (EAST CTRL ROOM)
- LCB LOCAL CONTROL BOARD
- NC NORMALLY CLOSED CONTACT
- NO NORMALLY OPEN CONTACT
- FAN SPEED SWITCH CONTACT
- ⊗ TERMINAL - LOCAL CONTROL BOARD
- ⊗ TERMINAL - FAN CONTROL BOARD



TYPICAL EAST VENT BLDG. FAN CONTROL (EE-5, 6, 7 & ES-5, 6, 7)



FAN SPEED SWITCH DEVELOPMENT
 STANDARD RELAY LOGIC
 SPEED SWITCH CONTACT CLOSURES TO BE FIELD ADJUSTED TO SUIT REQUIREMENTS

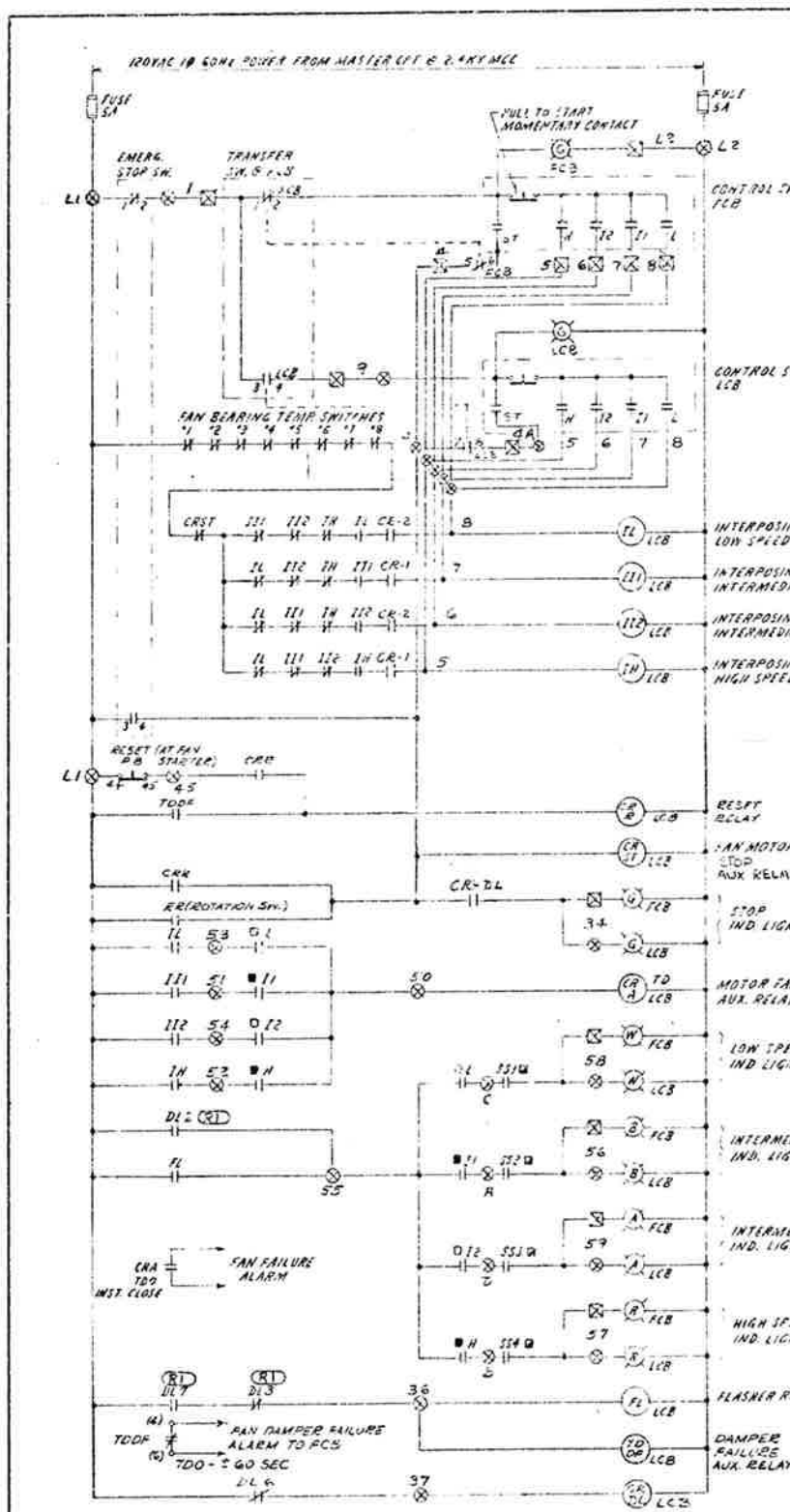
CONTACT	CONTACT USE
S1	STOP
S2	STOP
S3	STOP
S4	STOP
S5	STOP
S6	STOP
S7	STOP
S8	STOP
S9	STOP
S10	STOP

FAN DAMPER LIMIT SWITCH DEVELOPMENT

□ CONTACT OPEN
 ■ CONTACT CLOSED

PRINT RECORD	
DATE ISSUED	5/1/79
DESIGN NO.	0-5-6-7-8-9-10-11
FOR	PH 101 ICA FOR ALC 10
CUSTOMER	S E 10 10 000000
FIELD	
INTRA SQ.	15 15 1 15 15 15

NO.	REVISIONS	DATE	BY	CHKD
1	STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE			
ELECTRICAL GENERAL CONTROL SCHEMATIC DIAGRAMS SHEET NO. 1				
DRAWN	5/1/79	BY	5/1/79	CHKD
CHECKED	5/1/79	BY	5/1/79	CHKD
TESTED		BY		CHKD
NONE		BY		CHKD



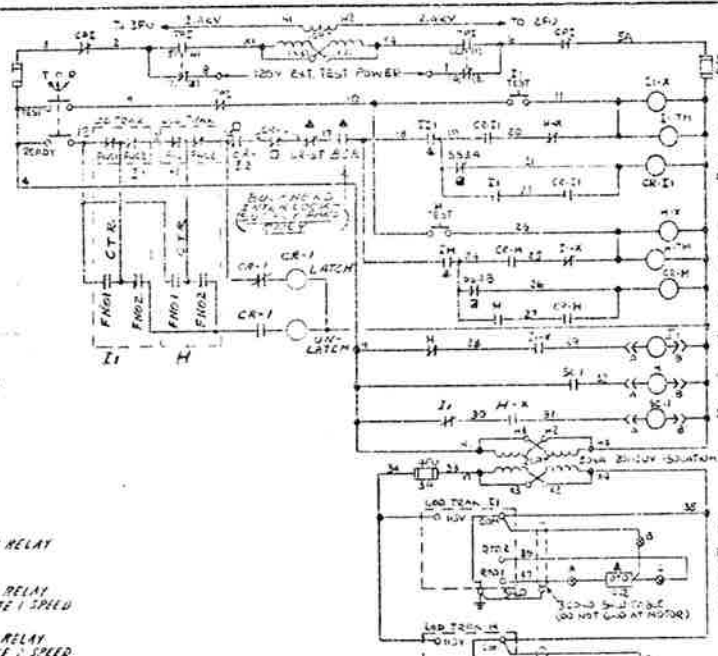
NOTE - THIS ELEMENTARY REPLACES CONTROL FROM QUE. FAN I
 TYPICAL FOR SUPPLY & EXHAUST FANS

EMERGENCY STOP SW. (EXIST.) DEVELOPMENT		
CONTACT	NORMAL	EMERG
1-2	X	-
3-4	-	X

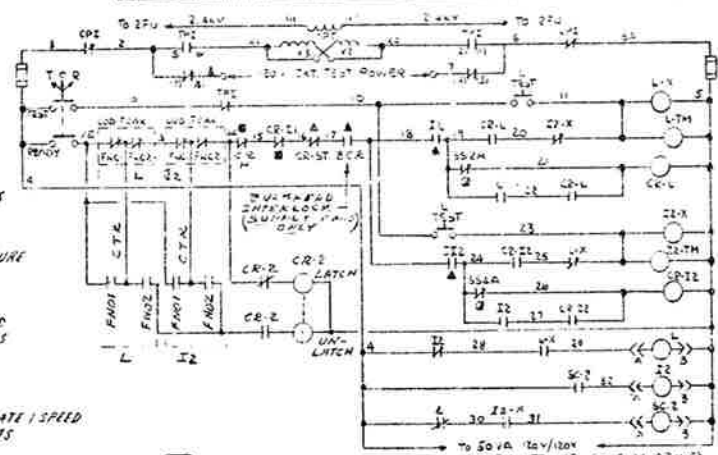
TRANSFER SWITCH DEVELOPMENT		
CONTACT	FCB	LCB
1-2	X	-
3-4	-	X
5-6	X	-
7-8	-	X

CONTROL SW. DEVELOPMENT				
CONTACTS	POSITION			
	ST	H	I2	I1
ST	X	-	-	-
H	-	X	-	-
I2	-	-	X	-
I1	-	-	-	X
L	-	-	-	-
PULL	*	-	-	-

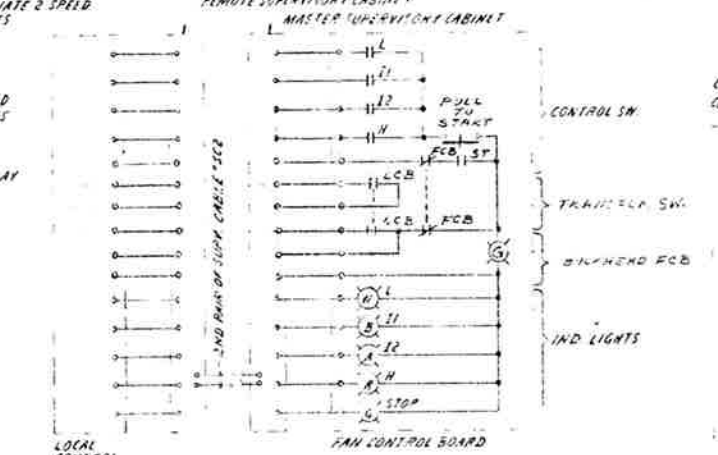
X - CONTACT CLOSED (MAINTAINED)
 * - CONTACT CLOSED (MAINTAINED) WHEN HANDLE IS PULLED IN HIGH, INTERM. 1, INTERM. 2, & LOW POSITIONS



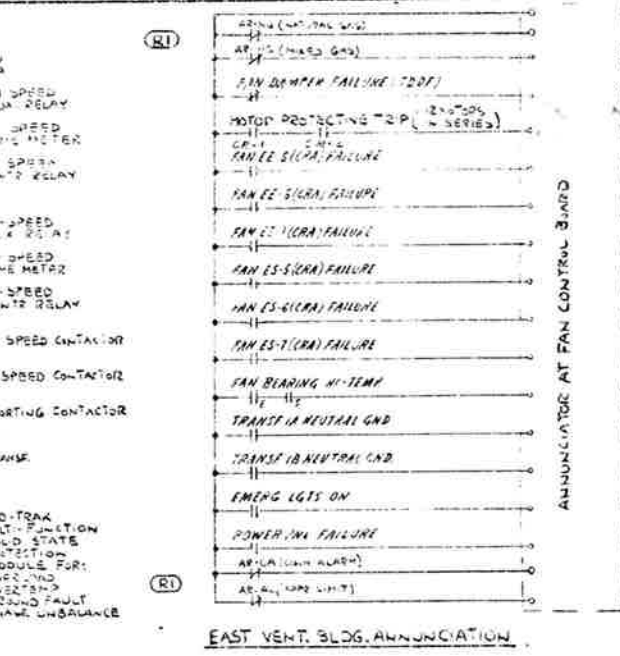
ELEMENTARY MOTOR #1 100HP (INTERM. I1) & 600HP (HIGH H)



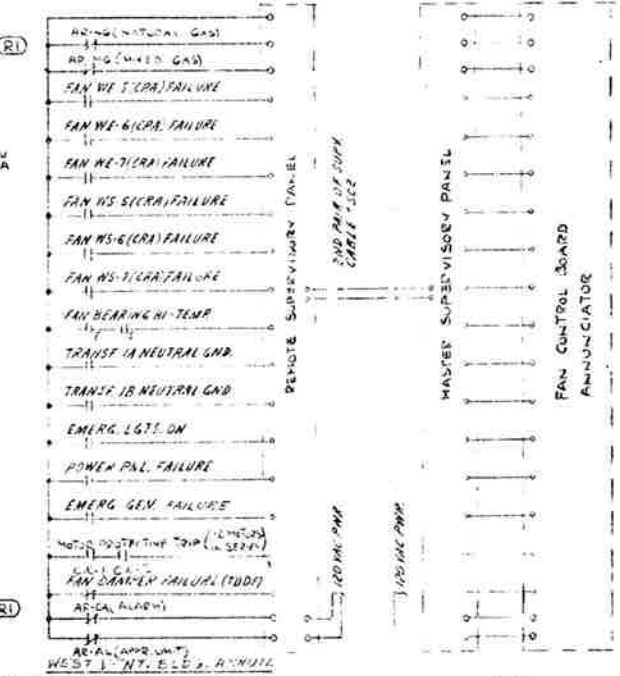
ELEMENTARY MOTOR #2 25HP (LOW L) & 200HP (INTERM. I2)



TYPICAL WEST VENT. BLDG. FAN CONTROL (WE-5, 6, 7 & HS-5, 6, 7)



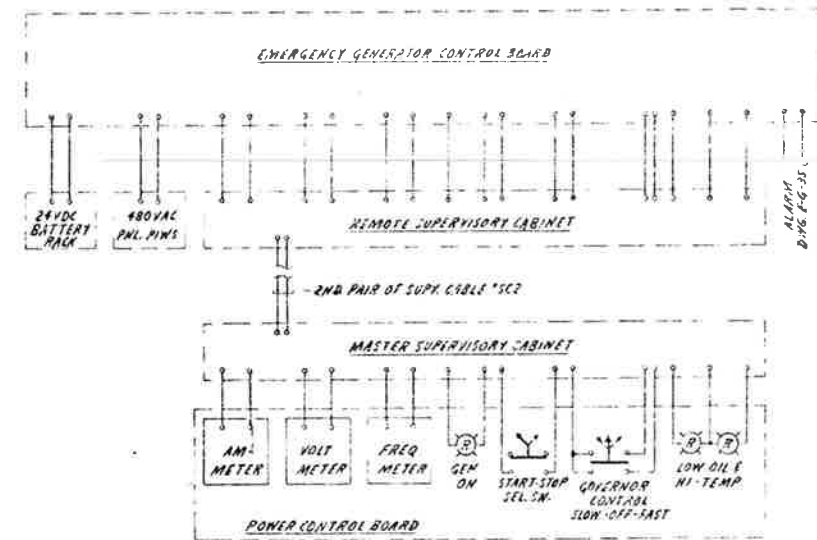
EAST VENT. BLDG. ANNUNCIATION



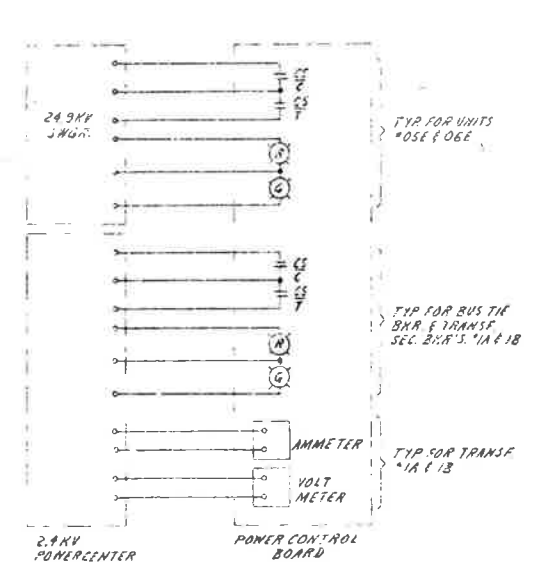
TYPICAL FAN BEARING TEMPERATURE CONTROLLER ELEMENTARY



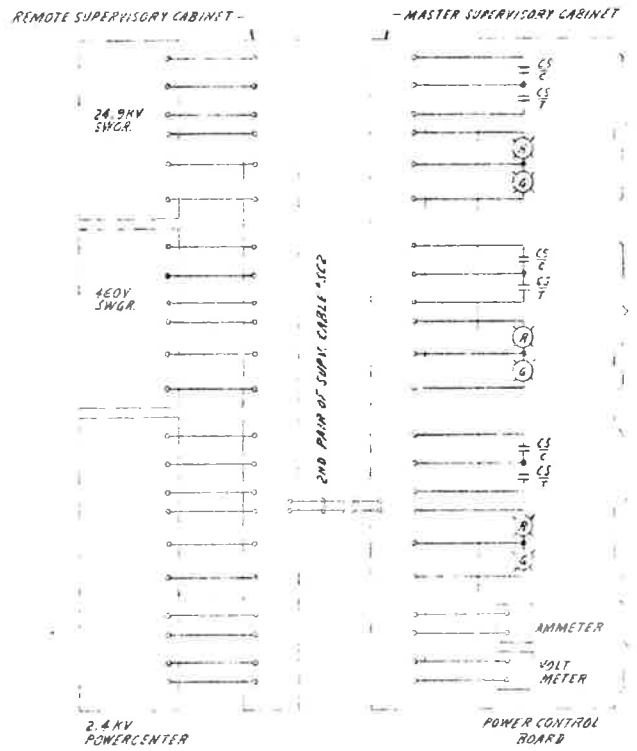
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	I 70-3(182) 220	31	208



EMERGENCY GENERATOR POWER SUPPLIES, CONTROL, & INDICATION



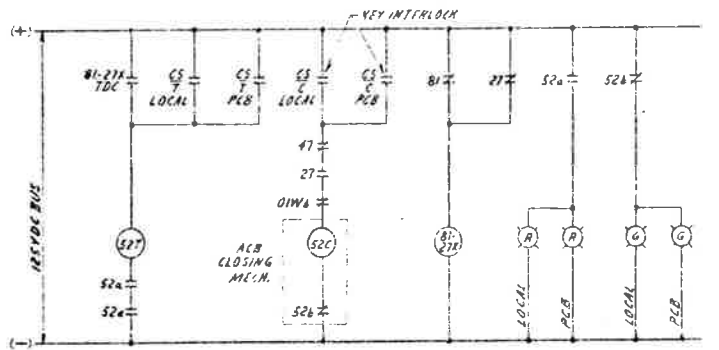
CONTROL & INDICATION FOR 24.9KV SWGR & 2.4KV POWERCENTER EAST VENT. BLDG



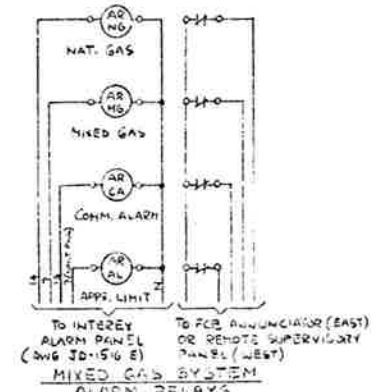
CONTROL & INDICATION FOR 24.9KV SWGR, 460V SWGR & 2.4KV POWERCENTER WEST VENT. BLDG.

AS CONSTRUCTED
 REVISIONS
 Date 8/31/79

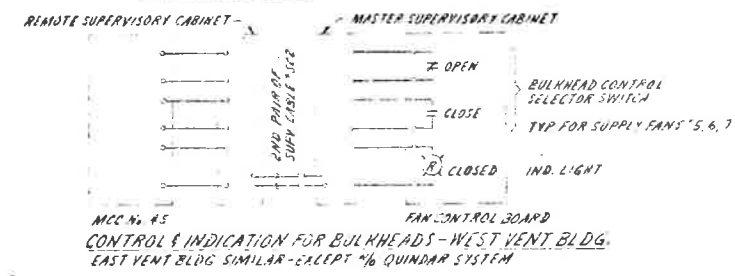
- REVISIONS
- (R1) REVISED POWER CENTER BREAKER CONTROL POWER FROM 240VAC TO 120VAC AND ADDED MIXED GAS SYSTEM ALARM RELAY DIAGRAM (SEE SHEET E-G-35)
 - (R2) ADDED BULKHEAD CONTROL RELAY INDICATION. BULKHEAD CONTROL SECONDARY CIRCUIT DIAGRAM (SEE SHEET E-G-35) TO BE APPLICABLE TO INSTALLATION. DATE 8/31/79.
- LEGEND
- F-CB FAN CONTROL BOARD
 - PCB POWER CONTROL BOARD
 - CS-C CONTROL SWITCH (CLOSING)
 - CS-T CONTROL SWITCH (TRIPPING)
 - 2T UNDERVOLTAGE RELAY
 - 23 BKR POSITION SW (BKR IN OPERATING POSITION)
 - 47 REVERSE PHASE RELAY
 - S24 AUX SW - OPEN WHEN BKR IS OPEN
 - S24 AUX SW - CLOSED WHEN BKR IS OPEN
 - S26, S26C AIR CIRCUIT BREAKER CLOSING COIL
 - S27, S27C AIR CIRCUIT BREAKER TRIPPING COIL
 - S28, S28Y AIR CIRCUIT BREAKER AUX. RELAY
 - 63 PERMISSIVE CONTROL DEVICE
 - 81 FREQUENCY RELAY
 - 81-27X AUX RELAY FOR 27 & 81 RELAYS
 - 81 TIME OVERCURRENT RELAY
 - SIG TIME OVERCURRENT GROUND RELAY
 - 13C TIME DELAY CLOSING CONTACT
 - 01W6 24.9KV SWGR UNIT OLW INTERLOCK
 - NORMALLY OPEN CONTACT
 - NORMALLY CLOSED CONTACT
 - 86 LOCKING-OUT RELAY
 - 301 TO 306 BULKHEADS #1 TO #6 OPENING STARTER COIL
 - 301 TO 306 " " " " CLOSING
 - M-C BULKHEADS CLOSING AUX. RELAY
 - M-O " " " " OPENING



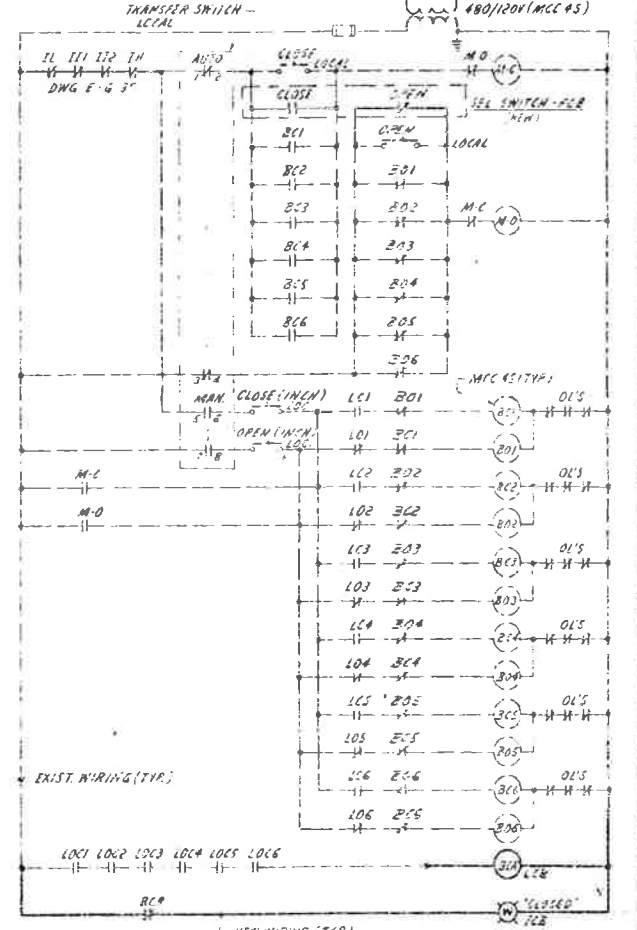
EMERGENCY GENERATOR 460V SWGR - BREAKER 'X' CONTROL (BASED ON EXIST. GENERAL ELECTRIC SPAREX CONTROL)



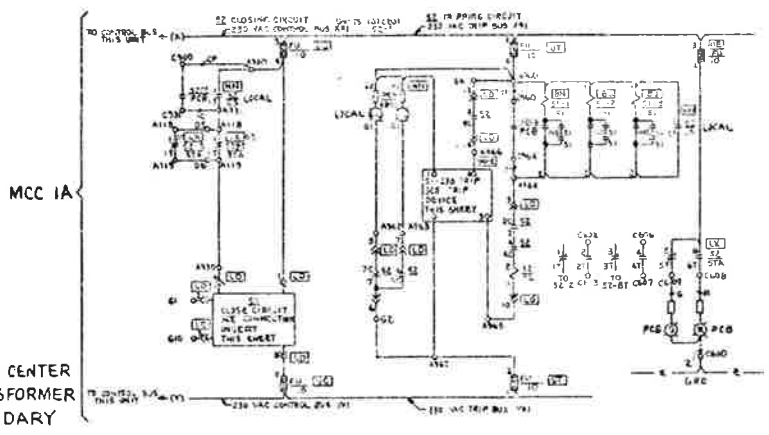
MIXED GAS SYSTEM ALARM RELAYS (R1)



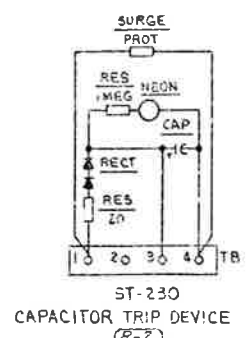
CONTROL & INDICATION FOR BULKHEADS - WEST VENT. BLDG. EAST VENT. BLDG. SIMILAR - EXCEPT % QUADRANT SYSTEM



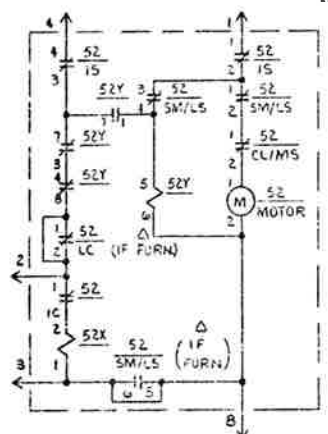
BULKHEADS CONTROL TYP. FOR 1 SUPPLY FAN



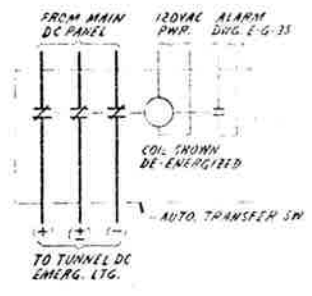
POWER CENTER TRANSFORMER SECONDARY BREAKER CONTROL DIAGRAM (R-2)



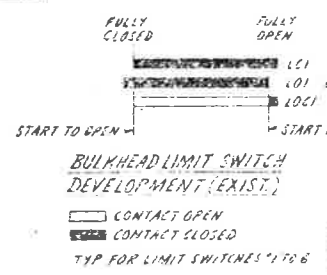
ST-230 CAPACITOR TRIP DEVICE (R-2)



52 CLOSE CIRCUIT CONNECTION INSERT (R-2)



TUNNEL EMERGENCY LIGHTING CONTROL



BULKHEAD LIMIT SWITCH DEVELOPMENT (EXIST.) TYP FOR LIMIT SWITCHES *1 TO 6

TRANSFER SWITCH (EXIST.)		BULKHEAD CONTROL SELECTOR SW.	
CONTACT	AUTO / MAN	CONTACT OPEN / CLOSE	OPEN / CLOSE
1-2	X		
3-4	X		
5-6	X		
7-8	X		

X - CONTACT CLOSED (MAINTAINED)

REVISIONS

NO.	DATE	BY	CHKD.

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

ELECTRICAL GENERAL CONTROL SCHEMATIC DIAGRAMS SHEET NO. 2

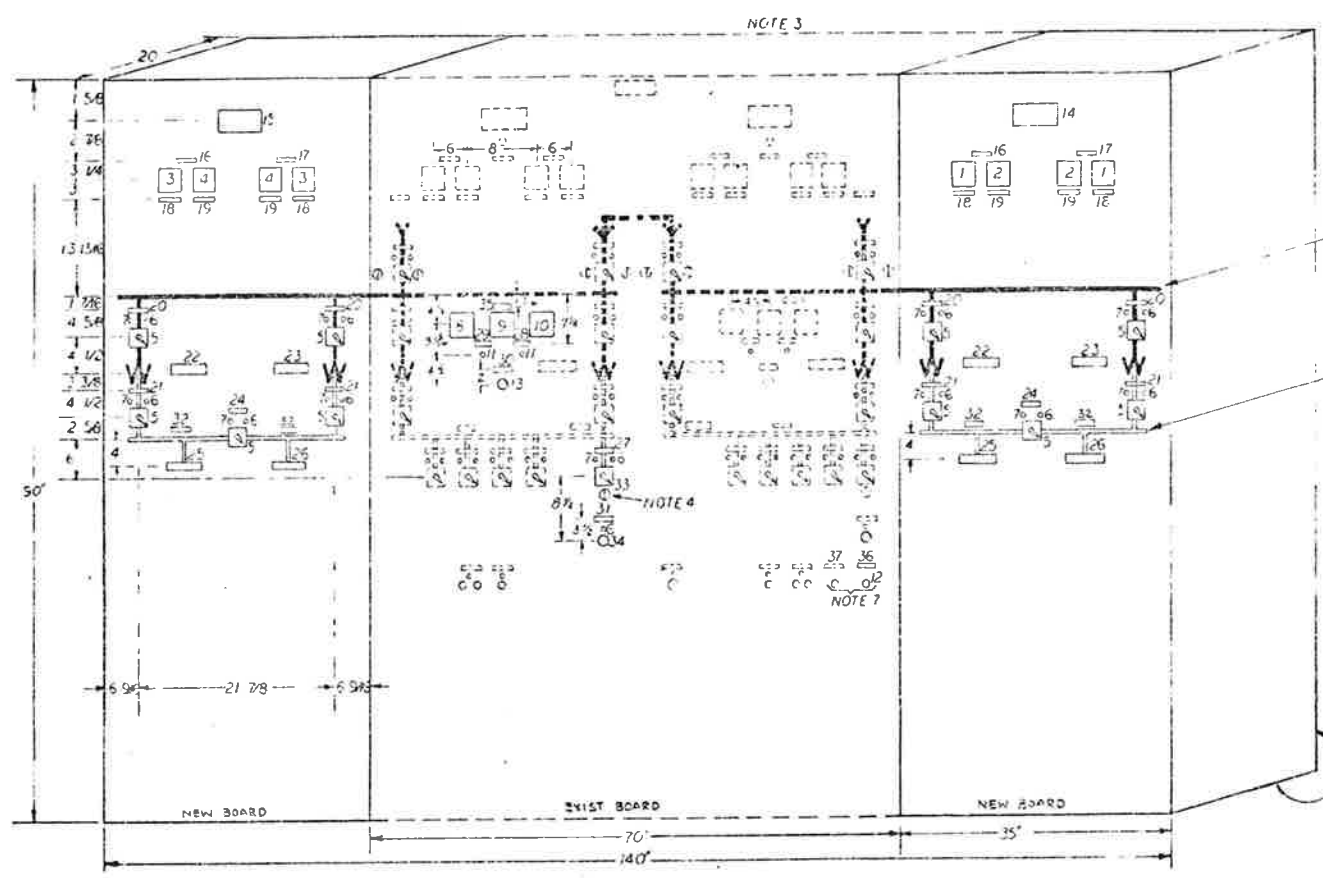
PRINT RECORD

DATE ISSUED	
REVISION NO.	
FOR	
CUSTOMER	
TITLE	
INVEST. NO.	

DRAWN: JES 7/19/79
 CHECKED: JES 7/29/79
 SCALE: NONE
 DESIG. NO. C14570
 DRAWING NO. E-G-4S

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	I 70-3182-220	32	203

AS CONSTRUCTED
 REVISED Date 8/31/79



MIMIC BUS AND SYMBOLS 3/8" x 1/16" RED LAMINATED PLASTIC (EXTEND BUS TO EXISTING PANEL AS INDICATED)

MIMIC BUS AND SYMBOLS 3/8" x 1/16" GREEN LAMINATED PLASTIC

EQUIPMENT LIST

1. AMMETER, AC 0-500 AMP, 4 1/2" H x 4 7/8" W
2. VOLTMETER, AC 0-300 VOLT, 4 1/2" H x 4 7/8" W
3. 0-5 MILLIAMMETER WITH 0-500 AMP SCALE, 4 3/8" H x 4 7/8" W
4. 0-5 MILLIAMMETER WITH 0-300 VOLT SCALE, 4 3/8" H x 4 7/8" W
5. SWITCH TYPE SBI 2 STA. E. 1/2" C.F.
6. INDICATING LIGHT, RED, 125 V.D.C.
7. INDICATING LIGHT, GREEN, 125 V.D.C.
8. 0-5 MILLIAMMETER WITH 0-500 AMP SCALE, 4 3/8" H x 4 7/8" W
9. 0-5 MILLIAMMETER WITH 55-60 HERTZ SCALE, 4 3/8" H x 4 7/8" W
10. 0-5 MILLIAMMETER WITH 0-500 VAC SCALE, 4 3/8" H x 4 7/8" W
11. INDICATING LIGHT, RED 125 V.D.C.
12. PUSHBUTTON 'RESET'
13. SELECTOR SWITCH, SPRING RETURN TO CENTER FROM LEFT & RIGHT POSITIONS, 'FAST-OFF-SLOW'

NAMEPLATE SCHEDULE

FIRST LINE	SECOND LINE	THIRD LINE	DETAIL
14. EAST	BUILDING	3-TUNNEL	1
15. WEST	BUILDING	3-TUNNEL	1
17. TRANSFORMER	NO. 1A	SECONDARY	2
18. TRANSFORMER	NO. 1B	SECONDARY	2
19. AMMETER			2
20. VOLTMETER			2
21. LOAD	BREAK	SWITCH	2
22. A.K.	SHUNT	SPEAKER	2
23. TRANSFORMER	NO. 1A		2
24. TRANSFORMER	NO. 1B		2
25. 24 KV BUS	TIE	SPEAKER	2
26. MCC 1A			2
27. MCC 1B			2
28. EMERGENCY	GENERATOR	SPEAKER	3
29. APPROXIMING	LOW OIL PRE	RE	3
30. APPROXIMING	HIGH WATER TEMP		3
31. EMERGENCY GENERATOR	CONTROL		2 (NOTE 5)
32. EMERGENCY GENERATOR	CONTROL		2
33. 24 KV BUS			4

EQUIPMENT LIST (CONT)

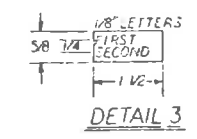
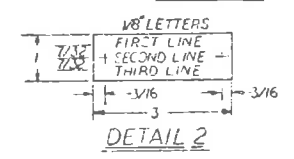
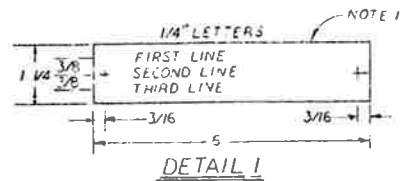
33. SWITCH, TYPE SBI, WITH KIRK KEY LOCK (NOTE 4) ON-OFF
34. SELECTOR SWITCH, START-STOP

NAMEPLATE SCHEDULE (CONT)

FIRST LINE	SECOND LINE	THIRD LINE	DETAIL
35. WEST VENT BUILDING	EMERGENCY GENERATOR		2 (NOTE 6)
36. NORTH TUNNEL BLDG.	NORMAL LIGHTS	RESET	2
37. SOUTH TUNNEL	NORMAL LIGHTS	RESET	2

NOTES -

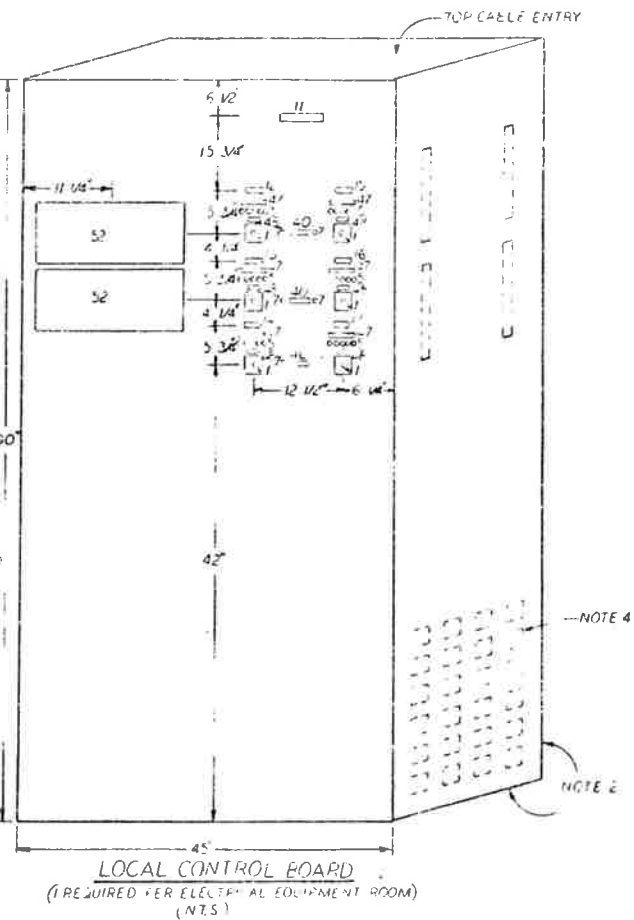
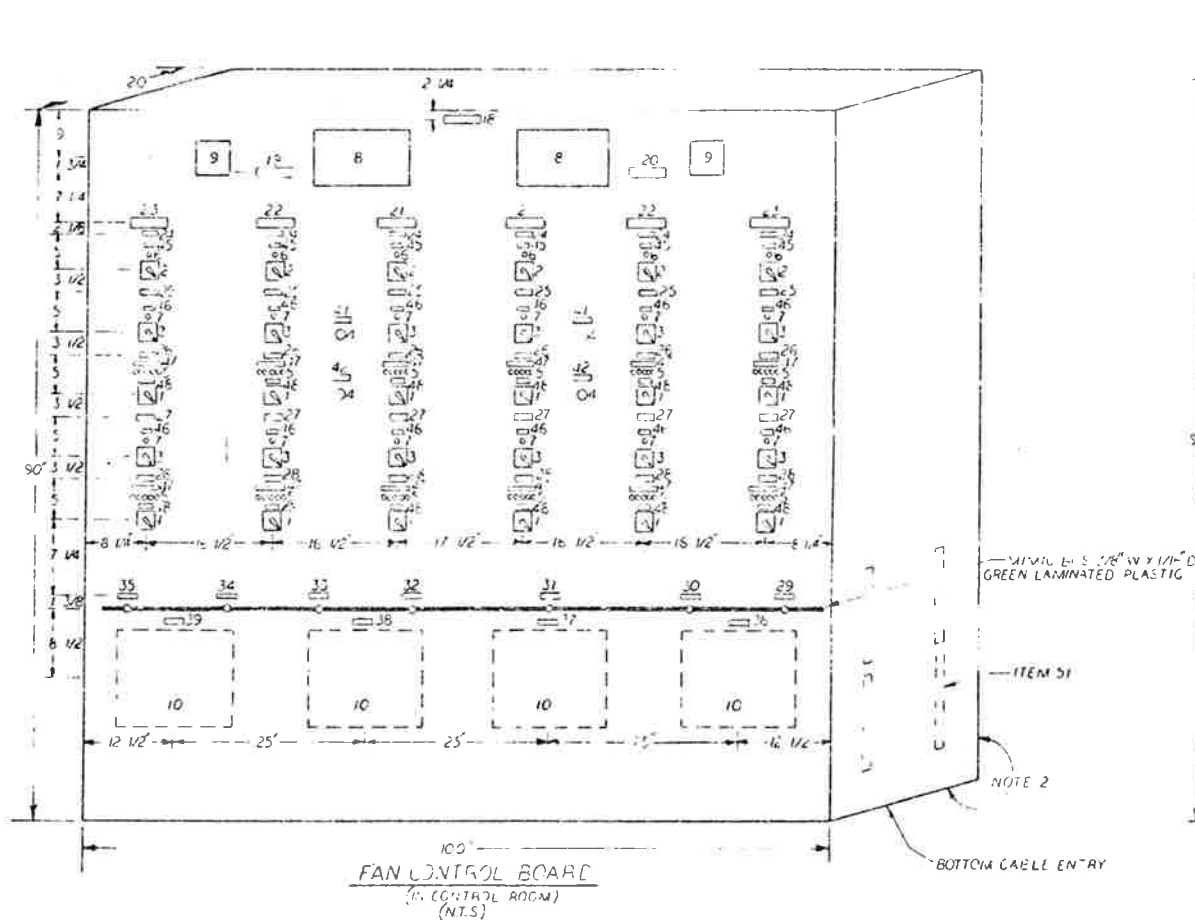
1. NAMEPLATE MATERIAL - G.E. A1250A - 1/16"
2. NON-REMOVABLE DOORPS ON BACK, OPEN BOTTOM.
3. DOTTED LINES INDICATE EXISTING EQUIPMENT.
4. KIRK KEY LOCK TO MATCH EXISTING LOCKS. SEE NOTE 4 ON DWG E-G-45
5. EMERGENCY GENERATOR ON LINE 1, GOVERNOR CONTROL ON LINE 2.
6. SAME AS DETAIL 2 EXCEPT 3/16" LETTERS.
7. RELOCATE EXIST. WIRING TO NEW POSITIONS & ADD NAMEPLATE 36. ADD SOUTH TUNNEL WIRING TO EXIST. PUSHBUTTON & ADD NAMEPLATE 37.
8. THE TWO SECTIONS (MIMIC BUSES) ARE ADDITIONS TO THE EXIST. POWER CONTROL BOARD BUILT BY GENERAL ELECTRIC. THE NEW SECTIONS SHALL BE IDENTICAL IN APPEARANCE & PAINT COLOR WITH THE EXIST. POWER CONTROL BOARD.



NO.		REVISIONS		DATE	BY	CHK
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BOARD						
ELECTRICAL GENERAL POWER CONTROL BOARD LAYOUT AND DETAILS						
PRINT RECORD						
DATE ISSUED	10/18/79	10/18/79	10/18/79			
REVISION NO.	0	0	0			
FOR	PRE. PFC. FCA. PFC. TC					
CUSTOMER	S. E. I. O. S. DRG.					
FILED						
INT'D. CO.	15	15	1	15		
DRAWN	H. S. J.					
CHECKED	P. J. J.					
SHEET	00000					
DATE	11/15/79					
NO.	C14570					
DRAWING NO.						
DATE						
NO.						

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET No.	TOTAL SHEETS
VI	COLORADO	170-3(82)/220	33	208

FIGURE 4 - ELECTRICAL DRAWING TO PROVIDE FOR THE TUNNEL ITEM 51 AND 52
AND SYSTEMS FOR THE TUNNEL, SEE DRAWING.



EQUIPMENT LIST
 1. SWITCH, TYPE S-10, PHIL. TO STOP HIGH-INTERMEDIATE 2-INTERMEDIATE 1-LOW
 2. SWITCH, TYPE S-10, 2 POSITION, OPEN-CLOSE
 3. SWITCH, TYPE S-10, 2 POSITION, FOR LED
 4. PUSHBUTTON
 5. INDICATING LIGHTS (SEE NOTE 6)
 6. INDICATING LIGHT, WHITE
 7. INDICATING LIGHT, GREEN
 8. ANNUNCIATOR, HAWAIIAN, MODEL 100
 9. BELL, PANALARM, MODEL 100
 10. INDICATING RECD-DC (NOTE 1)

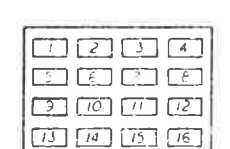
NAMEPLATE SCHEDULE

FIRST LINE	SECOND LINE	THIRD LINE	DETAIL
11. LOCAL	CONTROL BOARD		(NOTE 5)
12. SUPPLY FAN 6	CONTROL		
13. SUPPLY FAN 7	CONTROL		
14. SUPPLY FAN 8	CONTROL		
15. EXHAUST FAN 5	CONTROL		
16. EXHAUST FAN 6	CONTROL		
17. EXHAUST FAN 7	CONTROL		
18. FAN	CONTROL BOARD FOR TUNNEL		(NOTE 5)
19. EAST FANS	CONTROL		
20. WEST FANS	CONTROL		
21. FAN 5			
22. FAN 6			
23. FAN 7			
24. SUPPLY FAN	SLASH HEAD CONTROL		
25. SUPPLY FAN	CONTROL	TRANSFER	
26. SUPPLY FAN	CONTROL		
27. EXHAUST FAN	CONTROL	TRANSFER	
28. EXHAUST FAN	CONTROL		
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	18"	RECORDER	
37. ANALYZER	18"	RECORDER	
38. ANALYZER	18"	RECORDER	
39. ANALYZER	18"	RECORDER	
40. ANALYZER	18"	RECORDER	
41. CONTROL	AVAILABLE		
42. ANNUNCIATOR	LAMP TEST		
43. ALARM	SILENCE		
44. CLOSED			
45. FCB ON			
46. STOP			
47. STOP			

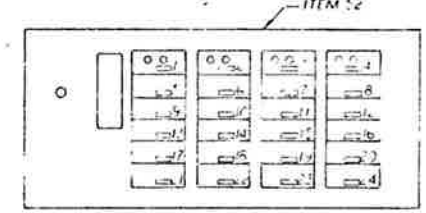
AS CONSTRUCTED
REVISED Date 8/21/79

FAN CONTROL BOARD
(IN CONTROL ROOM)
(N.T.S.)

LOCAL CONTROL BOARD
(REQUIRED FOR ELECTRICAL EQUIPMENT ROOM)
(N.T.S.)



FAN CONTROL BOARD
WEST SIDE ANNUNCIATOR
(SIMILAR FOR EAST SIDE EXCEPT OPPOSITE HAND)

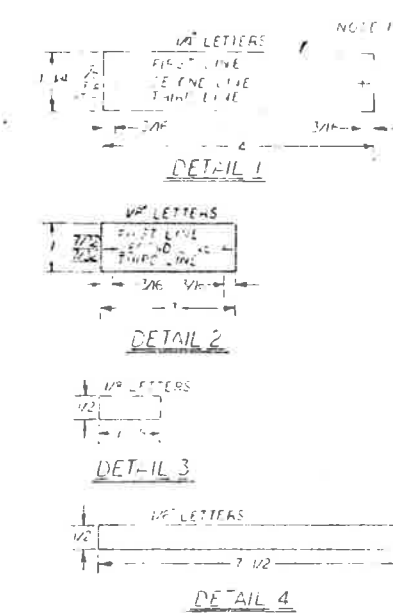


ALARM/CONTROLLER NAMEPLATE SCHEDULE

N.P. NO.	FIRST LINE	SECOND LINE
1	FAILURES (NOTE 2)	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 5 (NOTE 3)	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 6	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

ANNUNCIATOR PANEL WINDOW ENGRAVING

WINDOW	FIRST LINE	SECOND LINE
1	EXHAUST FAN 5	FAILURE
2	EXHAUST FAN 6	FAILURE
3	EXHAUST FAN 7	FAILURE
4	TRANSF. 1B	NEUTRAL GROUND
5	EXHAUST FAN 5	FAILURE
6	EXHAUST FAN 6	FAILURE
7	EXHAUST FAN 7	FAILURE
8	TRANSF. 1B	NEUTRAL GROUND
9	POWER PANELS	OFF
10	EMERGENCY LIGHTS	ON
11	CO	LEVEL 1
12	CO	LEVEL 2
13	EMERGENCY GEN. MOTOR HIGH	FAILURE (NOTE 3)
14	FAN DAMPER	FAILURE
15	FAN DAMPER	TEMPERATURE
16	FAN 5	TEMPERATURE
17	FAN 6	TEMPERATURE
18	FAN 7	TEMPERATURE
19	FAN 5	TEMPERATURE
20	FAN 6	TEMPERATURE
21	FAN 7	TEMPERATURE



EQUIPMENT LIST (CONT.)
 43. RELAY, 5 POLE 120V AC COIL 1/2" X 1/2" X 1/2"
 44. RELAY, 4 POLE 120V AC COIL 1/2" X 1/2" X 1/2"
 45. RELAY, 4 POLE 120V AC COIL 1/2" X 1/2" X 1/2"
 46. FLAME RELAY, 120V AC COIL, 1/2" X 1/2" X 1/2"
 47. TERMINAL STRIP, 120V AC COIL, 1/2" X 1/2" X 1/2"
 48. INDICATING MULTIPoint ALARM/CONTROLLER, SIGMA SERIES 9521
 49. RELAY, 2 POLE 120V AC COIL 1/2" X 1/2" X 1/2"
 50. RELAY, 4 POLE 120V AC COIL 1/2" X 1/2" X 1/2"

NOTE -
 1. NAMEPLATE MATERIAL IS 1/8" ALUMINUM.
 2. NON-REMOVABLE TOP, OPEN BOTTOM.
 3. ON WEST SIDE ANNUNCIATOR ONLY.
 4. LOCAL CONTROL BOARD BUILT IN TUNNEL INSTALL TERMINAL STRIPS & RELAYS.
 5. FAN 5 - 4 FAN ANNUNCIATOR AT ITEM 45, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54.
 6. WIRE PER ELEMENTARY DIAGRAMS IN DWG. E-G-35, FURNISH WIRE PER ELEMENTARY DIAGRAMS. (1) ITEM 51 FOR ALL ALARM CIRCUITS, MOUNT TERMINAL STRIPS ON UPPER SIDES OF BOARDS & RELAYS BELOW THEM ON SUBPANEL.
 7. WIDTH IS 4 INCHES.
 8. INDICATING LIGHT COLORS TO BE AS FOLLOWS:
 GREEN - STOP
 RED - HIGH SPEED
 AMBER - INTERMEDIATE SPEED
 BLUE - INTERMEDIATE SPEED
 WHITE - LOW SPEED
 9. CO RECORDERS ARE LEES AND HOP-ROCK MODEL 'SPREDDMAX' W/ INSTALLED BY FUTURE CONSTRUCTION PANEL FAN COLOR TO PROVIDE CUT OUTS AS REQUIRED.
 10. EXISTING FAN CONTROL BOARD & LOCAL CONTROL BOARDS WERE BUILT BY GENERAL ELECTRIC. NEW FAN CONTROL BOARD & LOCAL CONTROL BOARDS TO IDENTICAL IN APPEARANCE & PAINT COLOR & WIRE PER ELEMENTARY DIAGRAMS SHOWN ON DWG. E-G-35.
 11. FOR UPPER CONTROLLER, EAST BUILDING, USE EST. 526 & EST FOR LOWER CONTROLLER.

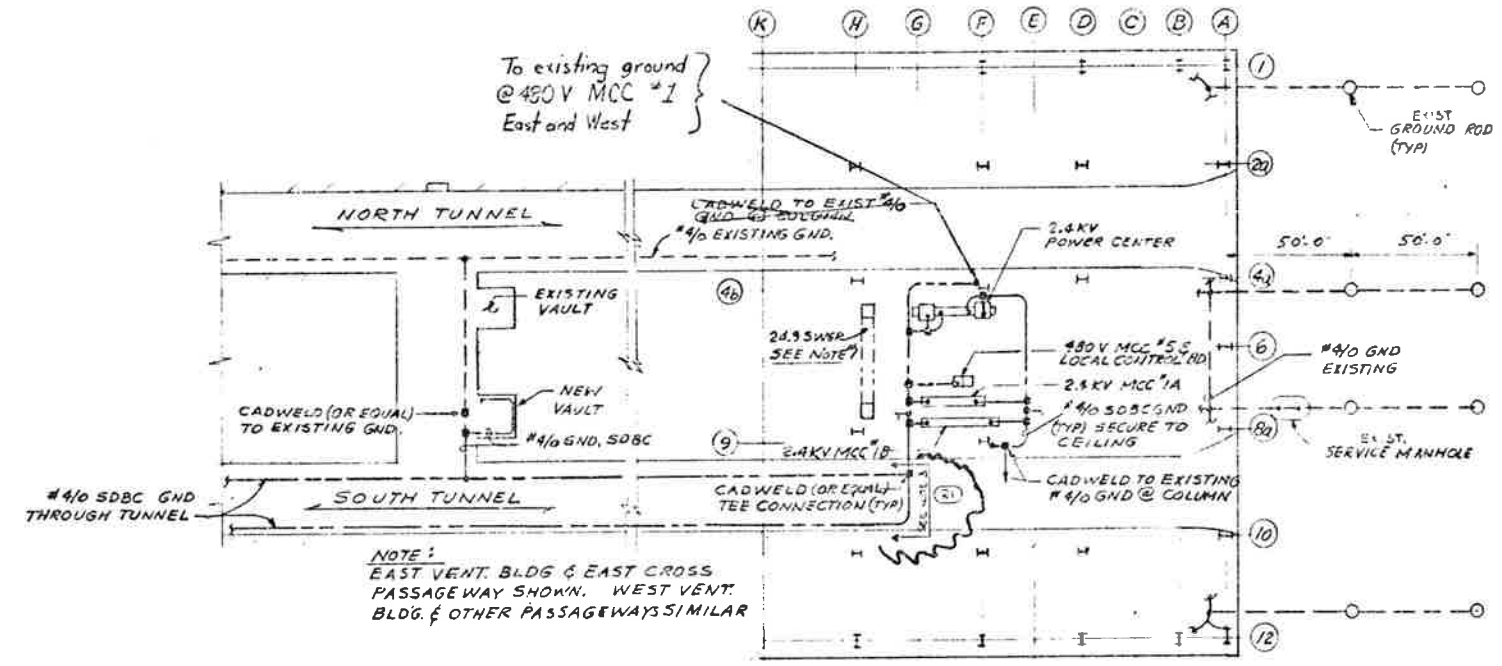


NO.	REVISIONS	DATE	BY	CRD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
ELECTRICAL GENERAL FAN CONTROL BOARDS LAYOUT AND DETAILS				
DATE ORDERED	10/14/74			
DATE OF WORK	0 0 0 0			
CUSTOMER	5 5 10 10 20 6			
SCALE	1/8" = 1'			
DRAWN	H.S.			
CHECKED	H.S.			
SCALE	NONE			
ORDER NO.	014570			
DRAWING NO.	E-G-65			

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	170-3(82)220	34	208

(R1) DELETED GROUNDING PLAN - FAN ROOM FLOOR (GROUNDING & EXISTING)
 REVISED DETAIL 'A' TO SHOW EXISTING GROUNDING INDICATED FUTURE
 CONTRACT. DPH 4/17/76, RDE 7/24/76

AS CONSTRUCTED
 REVISED Date 8/31/79



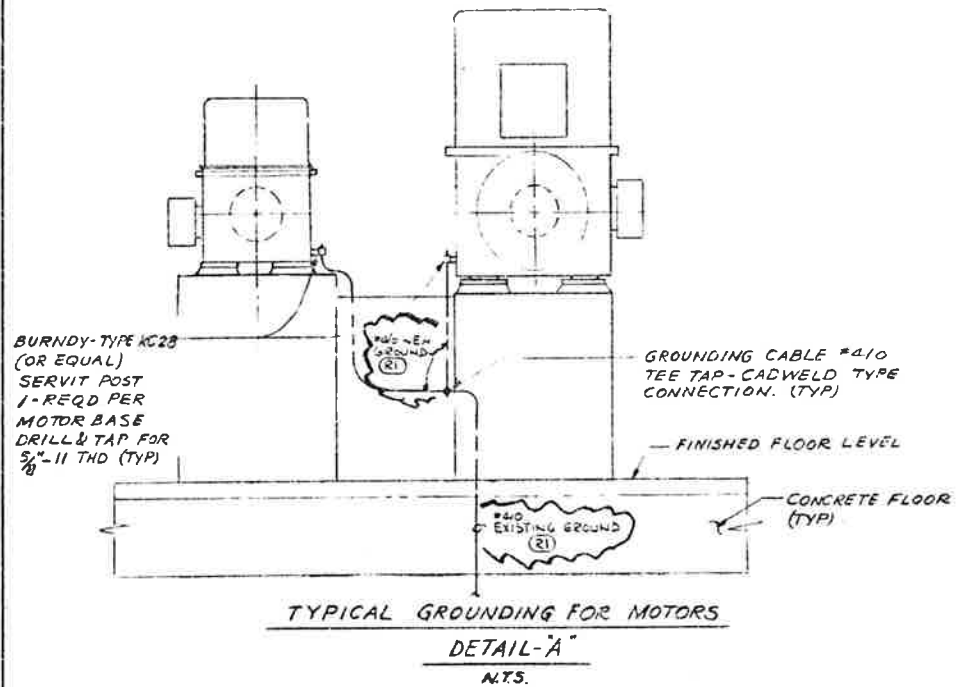
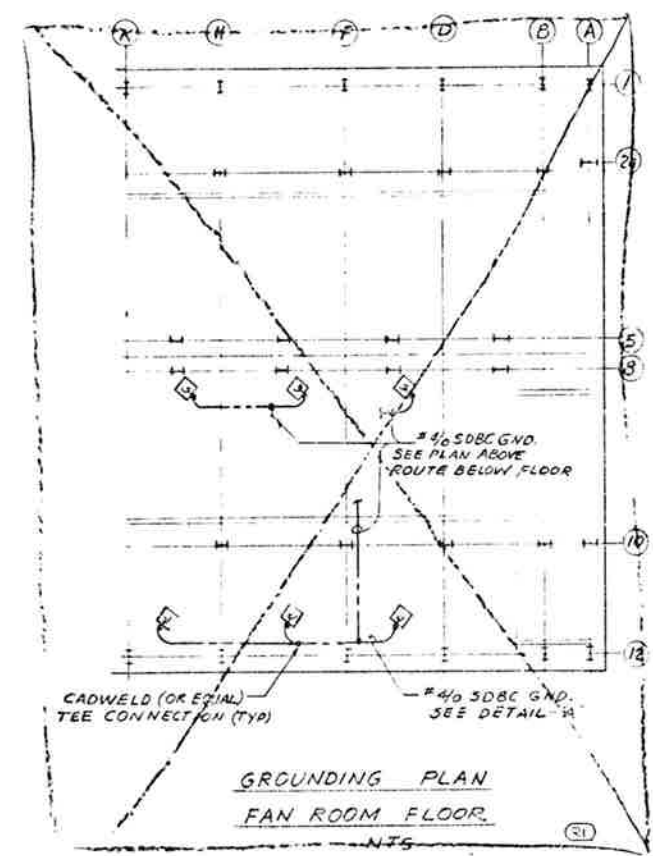
LEGEND

- EXISTING GROUND
- NEW GROUND

NOTES:

1. NEW UNITS OF 24.9 KV SWITCH GEAR TO BE TIED INTO EXISTING GND BUS OF SWGR.
2. ALL GROUNDING IN VENT BUILDING TO BE INSTALLED BY CONTRACTOR. ALL GROUNDING IN TUNNEL & CROSS PASSAGEWAYS TO BE INSTALLED BY FUTURE CONSTR.
3. TUNNEL GROUNDING FURNISHED AND INSTALLED BY TUNNEL ELECTRICAL CONTRACTOR

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



PRINT RECORD

DATE ISSUED	11/14/79
DATE OF NO.	0 0 0 0
FOR	PRE-PROJ. REC.
CUSTOMER	S S 10 CRG
FILE	
SCALE	15 15 1 15

REVISIONS		DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
ELECTRICAL GENERAL GROUNDING PLANS & DETAILS				
DRAWN	CZW 6-13-79			
CHECKED	M.P. 6-27-79			
SCALE	AS SHOWN			
NOTED	C14570			

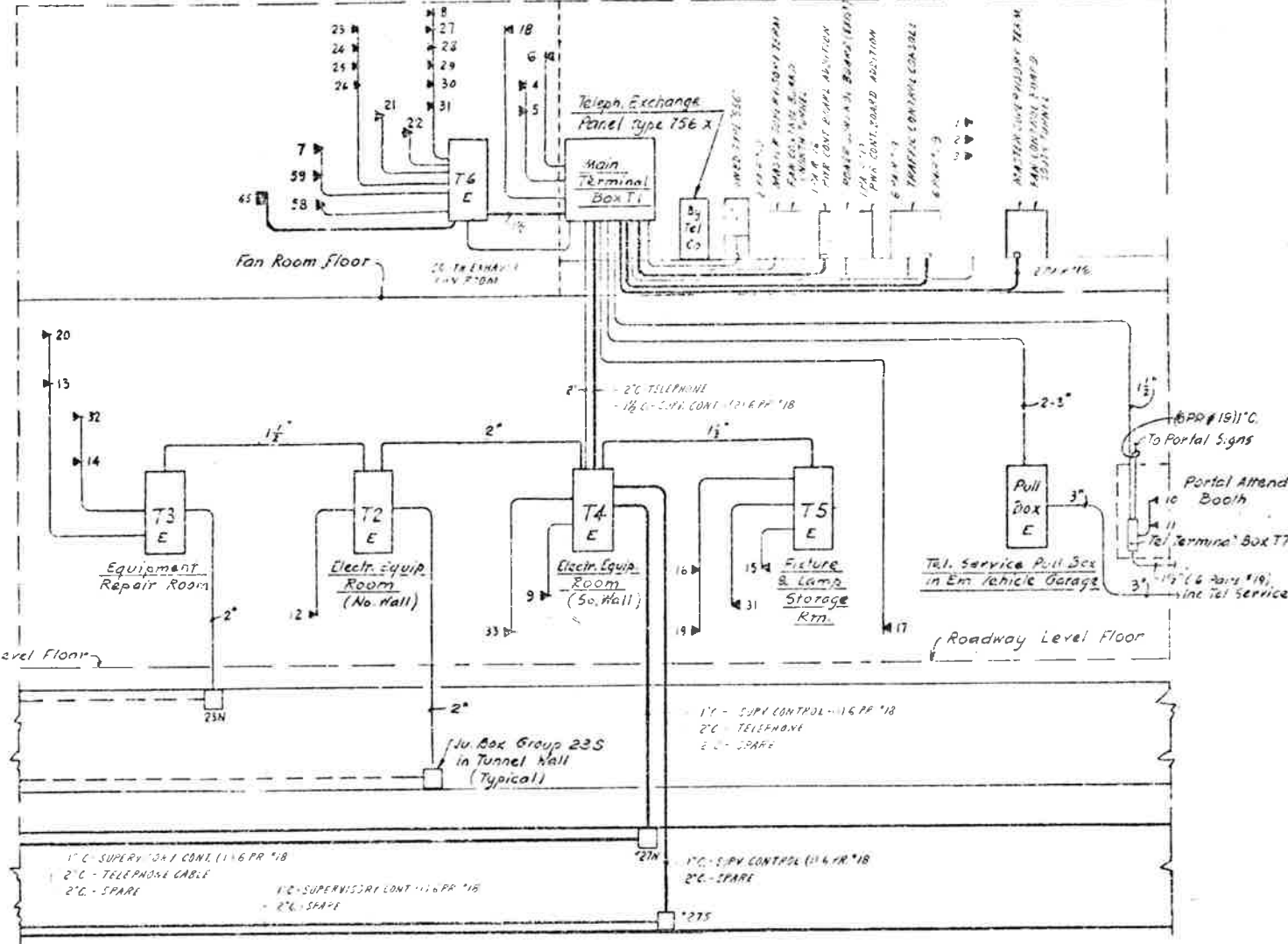
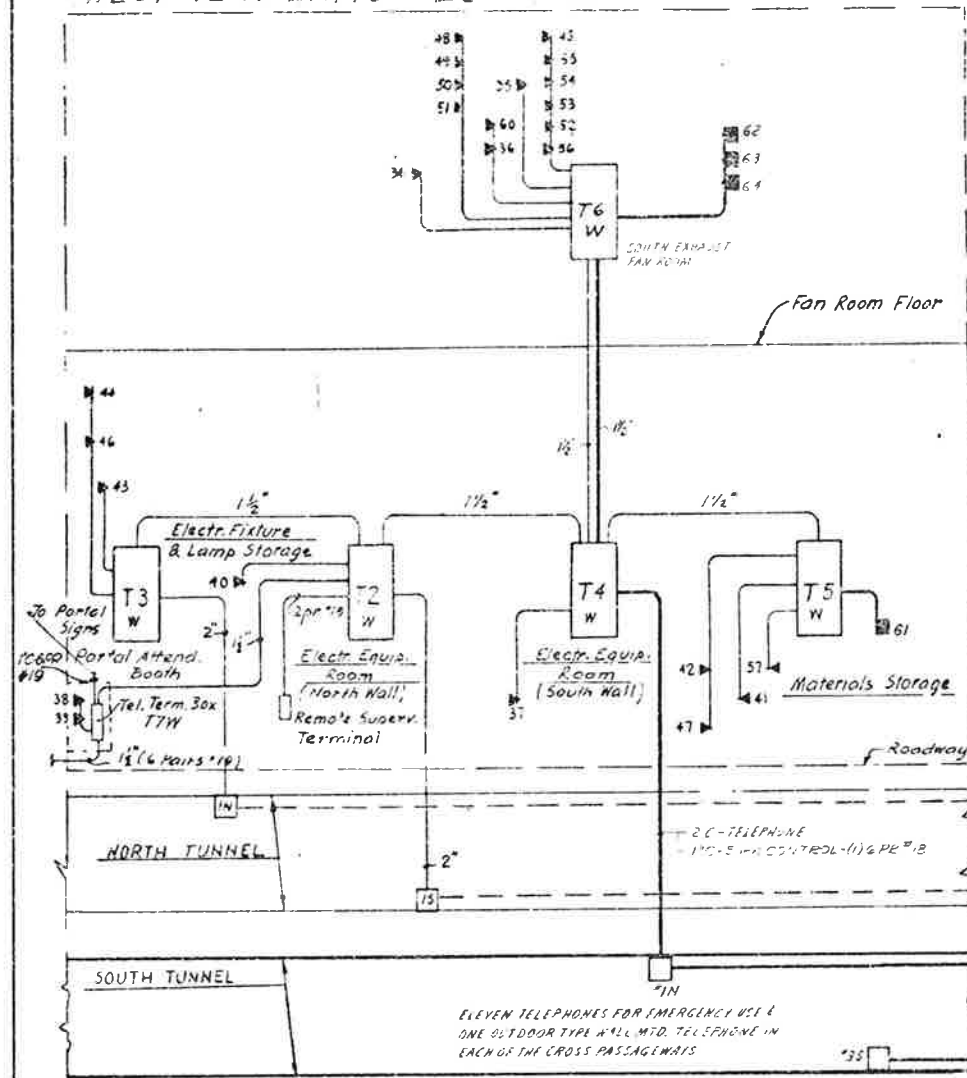
E-G-75

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	I70-3(82)220	35	208

AS CONSTRUCTED
 NO REVISIONS DATE

WEST VENTILATION BUILDING

EAST VENTILATION BUILDING



- NOTES
1. THIS DRAWING REPRESENTS THE TELEPHONE SYSTEM AS SHOWN ON DWG. E-G-88 INCLUDING THE ADDITIONS AS REQUIRED FOR THE SOUTH TUNNEL.
 2. FOR PHYSICAL LOCATION OF TELEPHONE BOARDS & OUTLETS IN VENTILATION BUILDINGS SEE DWG. E-W-253, 254 & 255.
 3. FOR TELEPHONE WIRING IN TUNNELS SEE DWG. E-G-89.
 4. WHERE A HORN IS INDICATED THE CONTRACTOR SHALL PROVIDE A 120VAC SUPPLY FROM NEAREST LUG PANEL.
 5. ALL CONDUIT TO BE RIGID GALV. STEEL UNLESS OTHERWISE NOTED.
 6. TELEPHONE WIRING & EQUIPMENT WILL BE FURNISHED BY BSN BELL.
 7. WHERE PAIR(S) ARE INDICATED THEY WILL BE FURNISHED & INSTALLED BY CONTRACTOR.

EAST VENTILATION BUILDING (EXIST. OUTLETS)

WEST VENTILATION BUILDING (EXIST. OUTLETS)

Outlet No.	LOCATION	TYPE	PURPOSE
1	Control Room	Fan Room	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/B	"	"
8	CO Analyzer Room	"	"
9	Electrical Equipment Room	"	"
10	Portal Attendant Booth	Built-in	For Teleph. & Loudspeaker Connect.
11	"	"	Comes with 400 P.B. type panel
12	Emergency Vehicle Garage	Wall	For Teleph. & Loudspeaker Connect.
13	Garage Vehicle Repair Shop	"	Telephone Connection
14	Equipment Repair Room	"	For Telephone & Signal Horn Room
15	Electrical Fixture & Lamp Storage	"	For Telephone & Loudspeaker Connection
16	South Vehicle Storage	"	"
17	Sewage Treatment Plant	Ext. pri.	For Teleph. Install in Hazard. Area
18	Lounge	Wall	Telephone
19	South Tunnel Rest Room	Coinless	Public Telephone Service
20	North Tunnel Rest Room	"	"
21	Fan Room East near Col. S/F	Horn	Signal Service from Control Room
22	" West 10 F	"	"
23	Fan Rm. Fl. Emerg. Stop Switch @ Col. K/2	Tel Jack	Portable Telephone Connection
24	" " " " " " " " " "	H/2	"
25	" " " " " " " " " "	F/2	"
26	" " " " " " " " " "	D/2	"
27	" " " " " " " " " "	J/5	"
28	" " " " " " " " " "	G/5	"
29	" " " " " " " " " "	L/5	"
30	" " " " " " " " " "	C/5	"
31	State Patrol Equipment Room	Wall	"

Outlet No.	LOCATION	TYPE	PURPOSE
34	North Supply Fan Room @ Col. 2/A	Wall	Outdoor Type Tel. Connection
35	" " " " " " " " " "	@ Col. F/3	Signal Service from Control Room
36	South Supply Fan Room @ Col. H/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. 5/11	"	"
48	North Suppl. Fan Rm. Emerg. Stop Sw. @ D/2	Tel Jack	Portable Telephone Connection
49	" " " " " " " " " "	F/2	"
50	" " " " " " " " " "	A/2	"
51	" " " " " " " " " "	K/2	"
52	North Exh. Fan Rm.	C/5	"
53	" " " " " " " " " "	E/5	"
54	" " " " " " " " " "	G/5	"
55	" " " " " " " " " "	J/5	"
56	" " " " " " " " " "	Col. Outlet @ Col. A/5	"
57	Materials Storage	"	"
60	South Supply Fan Rm. Tel. Outlet @ Col. A/11	"	"

WEST VENTILATION BLDG. (NEW OUTLETS)

Outlet No.	LOCATION	TYPE
61	EMERGENCY GENERATOR ROOM	WALL
62	SOUTH SUPPLY FAN ROOM @ COL. F/11	TEL JACK
63	" " " " " " " " " "	"
64	" " " " " " " " " "	"

EAST VENTILATION BLDG. (NEW OUTLETS)

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

- LEGEND
- EXIST. CONDUIT
 - NEW CONDUIT
 - EXIST. TELEPHONE OUTLET BOX W/COVER
 - NEW TELEPHONE OUTLET BOX W/COVER
 - HORN FURNISHED, WIRED & INSTALLED BY TELEPHONE COMPANY



NO REVISIONS DATE BY L.S.D.
 STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

ELECTRICAL TELEPHONE WIRING DIAGRAM

PRINT RECORD

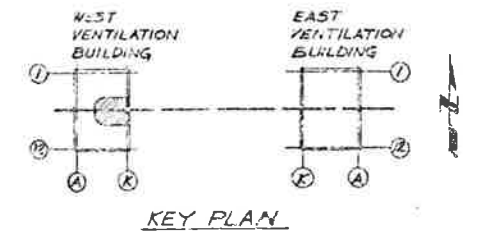
DATE RECD.	BY	FOR

DRAWN: P.P.J. 4/22/73
 CHECKED: J.P.J. 7/3/73
 SCALE: NONE
 ORDER NO: CH4570
 DRAWING NO: E-G-85

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
33	COLORADO	170-3(22) 220	37	208

(R1) ADDED HIRED GAS SYSTEM CIRCUIT A47
 (R2) REVISED FOR EMERG. GENERATOR WATER HEATER W/ 1 P2 AND LUBE OIL PUMP/HEATER POWER PRIOR. AS SHOWN SECTION 11.17.73

AS CONSTRUCTED
 REVISED Date 8/31/73

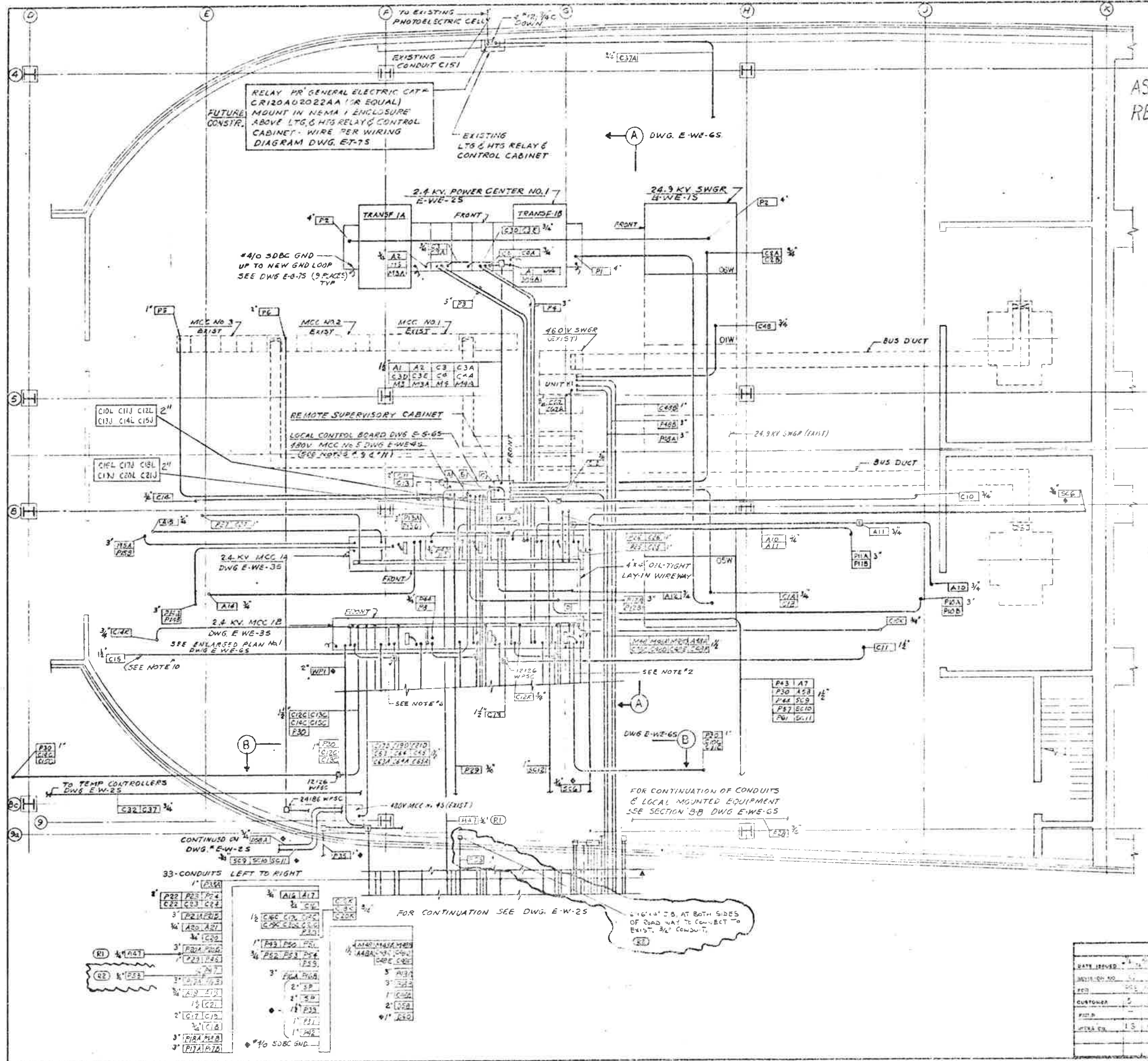


LEGEND

- CONDUIT RUN EXPOSED
- - - GROUND WIRE, NEW ADDITION
- EXPOSED CONDUIT COMING TOWARD OBSERVER
- EXPOSED CONDUIT GOING AWAY FROM OBSERVER
- FLEXIBLE CONDUIT
- JUNCTION BOX OR PULL BOX

NOTES

1. CONDUIT & EQUIPMENT SHOWN DIAGRAMMATICALLY ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO CHECK POSSIBLE EXISTING & NEW INTERFERENCES SUCH AS CONDUIT, EQUIPMENT, PIPES, DUCTS & STRUCTURAL BEFORE INSTALLING NEW EQUIPMENT & CONDUIT.
2. FOR POWER FACTOR CORRECTION CAPACITOR MOUNTING & CONNECTION SEE DETAIL ON DWG. E-WE-105.
3. FOR CONDUIT & CABLE SCHEDULES, SEE DWG. E-W-45 & 55, E-WE-75, 85 & E-105.
4. FOR GROUNDING PLAN & DETAILS, SEE E-G-75.
5. ♦ INDICATES WIRE, CABLE & CONDUIT FURNISHED & INSTALLED BY FUTURE CONSTRUCTION.
6. ALL JUNCTION BOXES TO BE 884 WPSC EXCEPT AS NOTED.
7. FOR ELEMENTARY DIAGRAMS SEE DWG. E-G-35, 45.
8. FOR PANEL SCHEDULES SEE DWG. E-S-35.
9. CONTRACTOR TO PREPARE FOR & PROVIDE LEVELING CHANNELS FOR POWER CENTER & MCC'S.
10. FOR CONDUITS GOING UP SEE DWG. E-W-35.
11. GROUND REMOTE SUPV. CABINET & LOCAL CONTROL BOARD W/ #4 SDBC GND. FROM MCC'S GROUND BUS.
12. □ INDICATES CIRCUIT LIST SHOWN ON DWG. E-WE-65.



REVISIONS		DATE	BY	CHKD
NO.	DESCRIPTION			

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

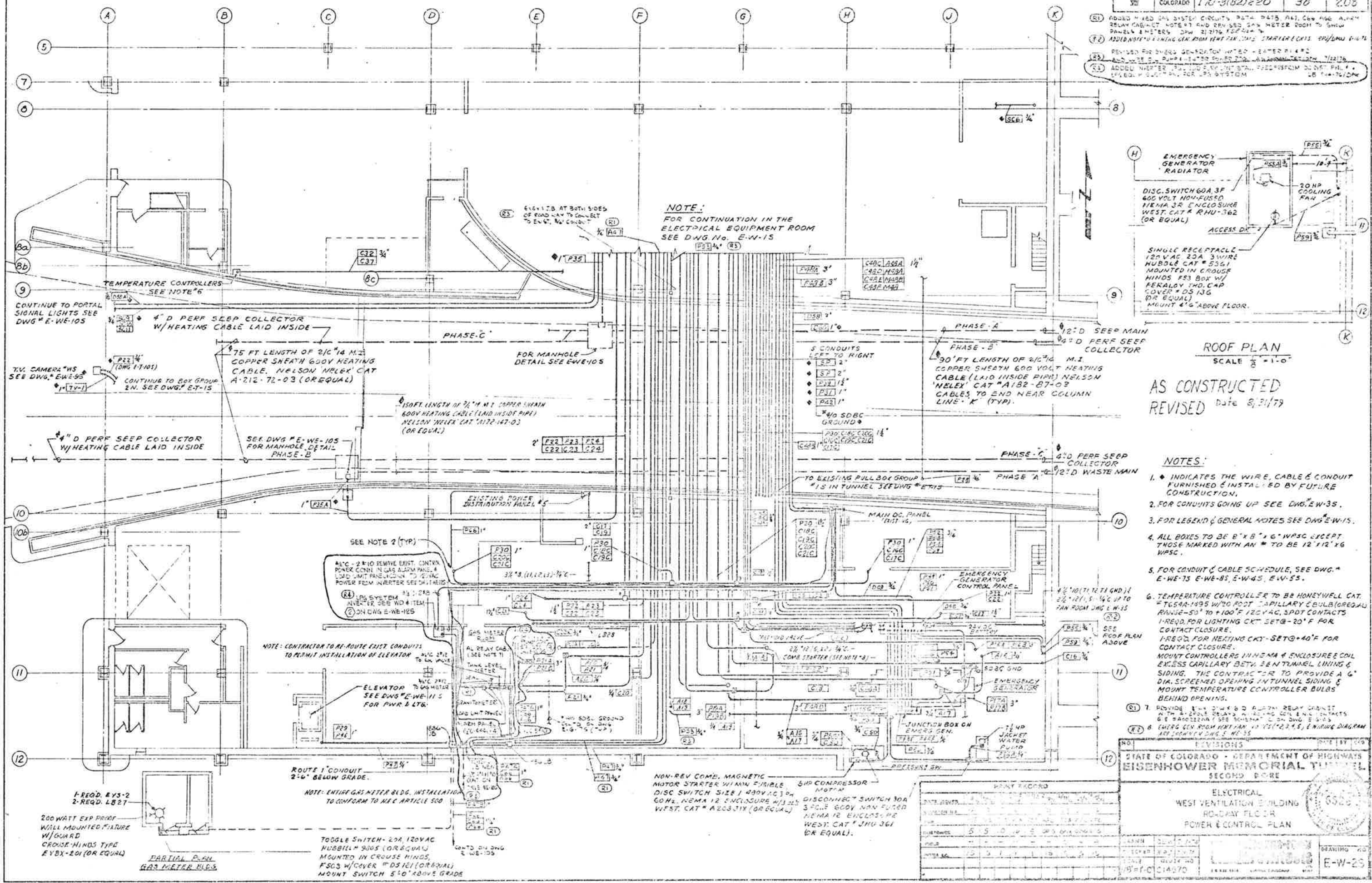
ELECTRICAL
 WEST VENTILATION BUILDING
 ELECTRICAL EQUIPMENT ROOM
 POWER & CONTROL PLAN

PRINT RECORD

DATE ISSUED	NO. OF SETS	NO. OF COPIES
ISSUED TO	BY	DATE
CHECKED	DATE	BY
SCALE	CADRE NO.	
DATE	NO.	

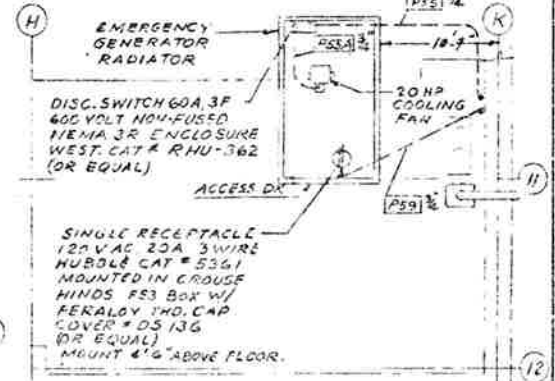
DRAWN: CEV
 CHECKED: JVA
 SCALE: 3/8"=1'-0"
 CREDIT NO: CH4570
 DRAWING NO: E-W-15

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	170-3(82)220	38	208



- (R1) ADDED 4 WED 240V SYSTEM CIRCUITS, P34, P45, P46, C66, H66, A, 4 WED RELAY CABINET, NOTE #7 AND REN 500 240V METER ROOM TO SHOW PANEL & METER. DIM 21 3/4" X 24 1/4"
- (R2) ADD 10' 1/2" LONG GAS ROOM VENT FOR COND. STARTER. DIM 21 3/4" X 14 1/4"
- (R3) REVISED FOR OVER GENERATION HEATED HEATER #1 & #2
- (R4) ADD 10' 1/2" LONG GAS ROOM VENT FOR COND. STARTER. DIM 21 3/4" X 14 1/4"
- (R5) ADD 10' 1/2" LONG GAS ROOM VENT FOR COND. STARTER. DIM 21 3/4" X 14 1/4"

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



ROOF PLAN
 SCALE 1/8" = 1'-0"

AS CONSTRUCTED
 REVISED Date 8/31/79

- NOTES:**
1. * INDICATES THE WIRE, CABLE & CONDUIT FURNISHED & INSTALLED BY FUTURE CONSTRUCTION.
 2. FOR CONDUITS GOING UP SEE DWG. E-W-35.
 3. FOR LEGEND & GENERAL NOTES SEE DWG. E-W-15.
 4. ALL BOXES TO BE 8" X 8" X 6" W/SPC EXCEPT THOSE MARKED WITH AN * TO BE 12" X 12" X 6" W/SPC.
 5. FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-W-75, E-W-85, E-W-95, E-W-55.
 6. TEMPERATURE CONTROLLER TO BE HONEYWELL CAT. # TG59A-1995 W/20 FOOT CAPILLARY C BULB (REG. RANGE -50° TO +100° F 120V AC, SPDT CONTACTS 1-REQD. FOR LIGHTING CKT. SET@ -20° F FOR CONTACT CLOSURE. 1-REQD. FOR HEATING CKT. SET@ +40° F FOR CONTACT CLOSURE. MOUNT CONTROLLERS IN NEMA 4 ENCLOSURE COIL EXCESS CAPILLARY BETA 3/8" TUNNEL LINING & SIDING. THE CONTRACTOR TO PROVIDE A 6" DIA. SCREENED OPENING IN TUNNEL SIDING & MOUNT TEMPERATURE CONTROLLER BULBS BEHIND OPENING.
 7. PROVIDE 1 1/2" DIA. 6' 0" ALUM. RELAY CABINET WITH 2-200V RELAYS, 4-240V COIL & 4-NO CONTACTS & 6-240V CONTACTS (SEE SCHEMATIC) ON DWG. E-W-15.
 8. EMERG. GEN. ROOM VENT PAN. 14" X 14" (2, 2, 4, 5, 6) ENCL. DIAGRAM SEE SCHEMATIC DWG. E-W-35.

REVISIONS		DATE	BY
NO.	DESCRIPTION		
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12			

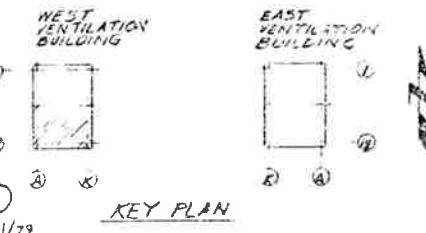
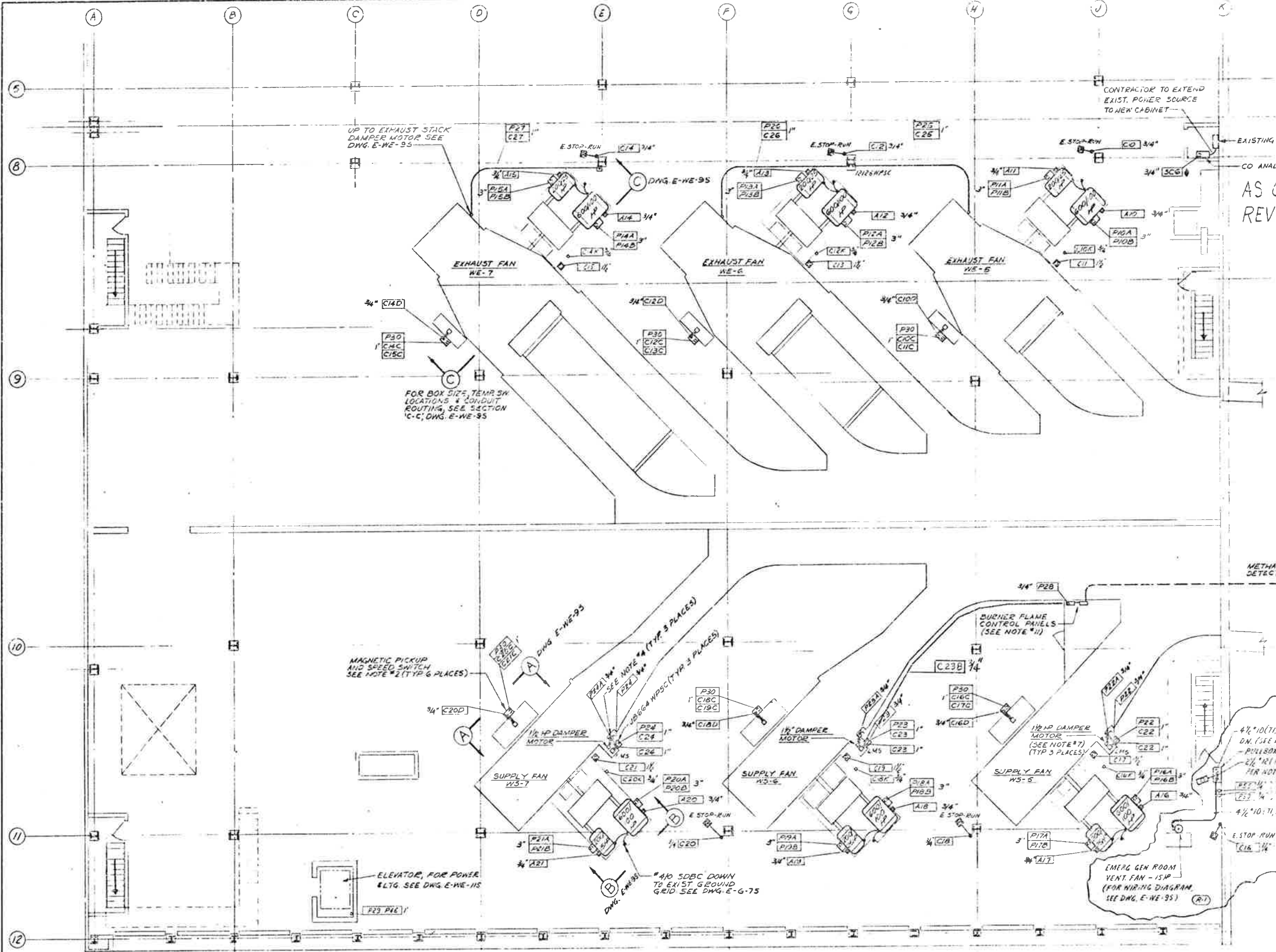
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

ELECTRICAL
 WEST VENTILATION BUILDING
 RO-DWAY FLOOR
 POWER & CONTROL PLAN

DATE: 8/31/79
 DRAWING NO: E-W-25

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
33	COLORADO	170-3(62) 220	33	208

(R.1) ADDED EMERG. GEN. ROOM VENT. FAN & CIRCUIT. RM/DPW 6/16/74



AS CONSTRUCTED
 REVISED Date 8/31/77

- NOTES:**
- FOR CONTINUATION OF CONDUITS GOING DOWN SEE DWG. E-W-15 & E-A-25
 - SPEED SWITCHES WITH MAGNETIC PICKUP TO BE SYNCHRO-START PRODUCTS, INC. MODEL TESS34AT MOUNTED IN A 20" x 16" x 10" WPSC BOX W/SUBPANEL (TWO SETS OF 4 SPDT CONTACTS PER FAN)
 - FOR LEGEND & GENERAL NOTES SEE DWG. E-5-13
 - DISCONNECT SWITCH TO BE 30AMP, 3P 800V NON-FUSIBLE NEMA 12 ENCLOSURE, WESTINGHOUSE CAT. #JHU-361 (OR EQUAL). TOP OF DISCONNECT TO BE MOUNTED 5'-0" ABOVE FINISHED FLOOR.
 - EMERG STOP-RUN SELECTOR SWITCH IS EXISTING. CONTRACTOR TO WIRE AS REQ'D & ROUTE CONDUIT.
 - LIGHTING FIXTURES, WELDING RECEPTACLES & CONVENIENCE RECEPTACLES ARE EXISTING WIRED.
 - 1/2 HP DAMPER MOTOR & LIMIT SWITCH (LMS) ARE FURNISHED BY OTHERS. CONTRACTOR TO WIRE AS INDICATED.
 - FOR TELEPHONE OUTLETS, SEE DWG. E-G-85
 - FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-W-75 & E-W-65
 - FOR FAN & DAMPER ELEMENTARY DIAGRAMS, SEE DWG. E-G-35
 - BURNER FLAME CONTROL PANELS & ASSOCIATED CONTROLS WITH METHANE DETECTOR ARE TO BE WIRED PER MANUFACTURER'S RECOMMENDATIONS
 - ◆ INDICATES WIRE, CABLE & CONDUIT FURNISHED & INSTALLED BY FUTURE CONSTRUCTION.
 - CONTRACTOR TO CORE DRILL FLOOR FOR CONDUITS & SEAL W/MS-1 PHYSICAL

UP TO EXHAUST STACK DAMPER MOTOR SEE DWG. E-W-95

CONTRACTOR TO EXTEND EXIST. POWER SOURCE TO NEW CABINET

EXISTING ANALYZER CABINET
 CO ANALYZER CABINET #15

FOR BOX SIZE, TEMP. SW LOCATIONS & CONDUIT ROUTING, SEE SECTION 'C-C', DWG. E-W-95

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

ELEVATOR, FOR POWER & LTG. SEE DWG. E-W-115

#40 SDBC DOWN TO EXIST. GROUND GRID SEE DWG. E-G-75

BURNER FLAME CONTROL PANELS (SEE NOTE #11)

EMERG. GEN. ROOM VENT. FAN - 1/2 HP (FOR WIRING DIAGRAM SEE DWG. E-W-95) (R.1)

4" x 10" (11, 12, 13 SMD) & 2" x 12" (1, 5) 1/2" C. DM. (SEE DWG. E-A-25)
 - PULL BOX 6" x 6" x 10" WPSC
 2" x 12" (1, 5) 1/2" C. (STOP/LO. PD. STATION PER NOTE #2 - DWG. E-W-95)
 REF. #1 - UP TO 200V. SEE PLAN - DWG. E-W-25
 4" x 10" (11, 12, 13 SMD) 1/2" C.
 E-STOP-RUN (SEE NOTE #5)
 C16 1/2"



REVISIONS	
NO.	DESCRIPTION

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

ELECTRICAL
 WEST VENTILATION BUILDING
 FAN FLOOR
 POWER & CONTROL PLAN

PRINT RECORD

DATE ISSUED	11/11/77
DESIGNER	C. J. O. S.
SCALE	AS SHOWN
CUSTOMER	STATE OF COLORADO
PROJECT	EISENHOWER MEMORIAL TUNNEL
NO.	15

DRAWN	LEU	CHECKED	LEU
SCALE	AS SHOWN	DATE	11/11/77
ORDER NO.	C14570	DRAWING NO.	E-W-35

CONDUIT NO	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
P48A	3 1/2" x 1/2"	480V SWGR UNIT - K1	EMERG. GENERATOR CONTROL PANEL	FEEDER
P48B	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	
P48C	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	
P48D	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	
P48E	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	
P48F	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	
D48	2 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	24V DC BATTERY COMPARTMENT	24V DC FEEDER
C48	2 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48A	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48B	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48C	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48D	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48E	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48F	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48G	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48H	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48I	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48J	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
C48K	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	EMERG. GENERATOR JUNCTION BOX	CONTROL
M48	2 1/2" x 1/2"	EMERG. GEN. CONTROL PANEL	REMOTE SUPERVISORY CABINET	ANALOG METER
M48A	2 1/2" x 1/2"	EMERG. GEN. CONTROL PANEL	REMOTE SUPERVISORY CABINET	ANALOG METER
M48B	2 1/2" x 1/2"	EMERG. GEN. CONTROL PANEL	REMOTE SUPERVISORY CABINET	FREQUENCY METER
M48C	2 1/2" x 1/2"	EMERG. GEN. CONTROL PANEL	REMOTE SUPERVISORY CABINET	ANALOG METER
M48D	2 1/2" x 1/2"	EMERG. GEN. CONTROL PANEL	REMOTE SUPERVISORY CABINET	VOLT-METER
M48E	2 1/2" x 1/2"	EMERG. GEN. CONTROL PANEL	REMOTE SUPERVISORY CABINET	FREQUENCY METER
A48A	2 1/2" x 1/2"	EMERG. GEN. CONTROL PANEL	REMOTE SUPERVISORY CABINET	ALARM-EMERG. GENERATOR FAILURE
A48B	2 1/2" x 1/2"	EMERG. GEN. CONTROL PANEL	REMOTE SUPERVISORY CABINET	ALARM-GENERATOR FAILURE
P49	3 1/2" x 1/2"	AC POWER DIST. PANEL #P1WS	EMERG. GEN. CONTROL PANEL	FEEDER - BATTERY CHARGER
D49	3 1/2" x 1/2"	AC POWER DIST. PANEL #P1WS	EMERG. GEN. CONTROL PANEL	MISC. CONTROLS
P50	3 1/2" x 1/2"	AC POWER DIST. PANEL #P1WS	EMERG. GEN. CONTROL PANEL	FEEDER - AIR COMPRESSOR
P50A	3 1/2" x 1/2"	AC POWER DIST. PANEL #P1WS	EMERG. GEN. CONTROL PANEL	AIR COMPRESSOR MOTOR (5HP)
C50	2 1/2" x 1/2"	AC POWER DIST. PANEL #P1WS	EMERG. GEN. CONTROL PANEL	CONTROL
P51	3 1/2" x 1/2"	AC POWER DIST. PANEL #P1WS	EMERG. GENERATOR JUNCTION BOX	MISC. 480V POWER FEEDER
P52	2 1/2" x 1/2"	AC POWER DIST. PANEL #P2WS	EMERG. GENERATOR JUNCTION BOX	FEEDER - ENGINE WATER HEATER #1
P53	2 1/2" x 1/2"	AC POWER DIST. PANEL #P2WS	EMERG. GENERATOR JUNCTION BOX	FEEDER - ENGINE WATER HEATER #2
P54	2 1/2" x 1/2"	AC POWER DIST. PANEL #P2WS	EMERG. GENERATOR JUNCTION BOX	FEEDER - ENGINE WATER HEATER #2
P55	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	30A DISC SWITCH ON ROOF	FEEDER
P55A	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	30A DISC SWITCH ON ROOF	RADIATOR FAN MOTOR (20HP)
P56	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	30A DISC SWITCH	FEEDER
P56A	3 1/2" x 1/2"	EMERG. GENERATOR CONTROL PANEL	30A DISC SWITCH	BUCKET WATER PUMP (1/2HP)
P57	2 1/2" x 1/2"	AC POWER DIST. PANEL #P2WS	REMOTE SUPERVISORY CABINET	120V AC FEEDER
D58	3 1/2" x 1/2"	MAIN DC PANEL	AUTO TRANSFER SWITCH	TUNNEL EMERG. LTG FEEDER
D58A	2 1/2" x 1/2"	DC DISTRIBUTION FULLBOX GRP IN	PORTAL STOP LIGHTS	POWER FAILURE STOP LIGHTS
P58	2 1/2" x 1/2"	AC POWER DIST. PANEL #P2WS	AUTO TRANSFER SWITCH	CONTROL POWER
A58	2 1/2" x 1/2"	AUTO TRANSFER SWITCH	REMOTE SUPERVISORY CABINET	ALARM - EMERG. LTGS. ON
A58A	1 1/2" x 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A1	2 1/2" x 1/2"	24V POWER CENTER TRANSFER	REMOTE SUPERVISORY CABINET	ALARM - GROUND NEUTRAL
A1A	1 1/2" x 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A2	2 1/2" x 1/2"	24V POWER CENTER TRANSFER	REMOTE SUPERVISORY CABINET	
A2A	1 1/2" x 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
A7	2 1/2" x 1/2"	LTG LTG RELAY CONTROL CABINET	REMOTE SUPERVISORY CABINET	- POWER PANELS OFF
A7A	1 1/2" x 1/2"	MASTER SUPERVISORY CABINET	FAN CONTROL BOARD	
P59	2 1/2" x 1/2"	AC POWER DIST. PANEL #P2WS	RECEPTACLE AT RADIATOR FAN	120V AC FEEDER
D60	3 1/2" x 1/2"	MAIN DC PANEL	DC DISTRIBUTION FULLBOX GRP IN	TELEPHONE NUMBER LIGHTS IN TUNNEL SET 22
P61	2 1/2" x 1/2"	AC POWER DIST. PANEL #P2WS	LOCAL CONTROL BOARD	120V AC FAN - TEMP CONTROLLERS
S65	1 1/2" x 1/2"	TELEPHONE CABINET 'T4W'	LTG & HTG RELAY & CONTROL CABINET	CONTACTOR RESET
S69	2 1/2" x 1/2"	REMOTE SUPERVISORY CABINET	PORTAL SIGNAL LIGHT W/RED 'Y'	TRAFFIC CONTROL
S610	2 1/2" x 1/2"	TELEPHONE CABINET 'T4W'	PORTAL SIGNAL LIGHT W/RED ARROW	
S611	2 1/2" x 1/2"	TELEPHONE CABINET 'T4W'	PORTAL SIGNAL STOP LIGHT	
S612	1 1/2" x 1/2"	TELEPHONE CABINET 'T4W'	REMOTE SUPERVISORY CABINET	SUPERVISORY CONTROL

CONDUIT NO	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
C62	3 1/2" x 1/2"	480V SWITCHING UNIT 'K1'	REMOTE SUPERVISORY CABINET	CONTROL INDICATING LIGHTS
C62A	3 1/2" x 1/2"	480V SWITCHING UNIT 'K1'	REMOTE SUPERVISORY CABINET	CONTROL INDICATING LIGHTS
C62B	3 1/2" x 1/2"	480V SWITCHING UNIT 'K1'	REMOTE SUPERVISORY CABINET	CONTROL INDICATING LIGHTS
C62C	3 1/2" x 1/2"	480V SWITCHING UNIT 'K1'	REMOTE SUPERVISORY CABINET	CONTROL INDICATING LIGHTS
C63	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	CONTROL - FAN WS-5 BULKHEADS
C63A	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	IND. LGT.
C63B	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	IND. LGT.
C63C	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	IND. LGT.
C64	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	CONTROL - FAN WS-6 BULKHEADS
C64A	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	IND. LGT.
C64B	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	IND. LGT.
C64C	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	IND. LGT.
C65	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	CONTROL - FAN WS-7 BULKHEADS
C65A	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	IND. LGT.
C65B	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	IND. LGT.
C65C	4 1/2" x 1/2"	480V MCC No. 45	REMOTE SUPERVISORY CABINET	IND. LGT.
A67	1 1/2" x 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	ALARM - FAN DAMPER FAILURE
A67A	1 1/2" x 1/2"	LOCAL CONTROL BOARD	REMOTE SUPERVISORY CABINET	FAN CONTROL BOARD
P66	4 1/2" x 1/2"	POWER PANELED UNIT (EXISTING)	LP GAS SYSTEM POWER PANEL	LP GAS SYSTEM FEEDER
C66	1 1/2" x 1/2"	LP STORAGE TANK LEVEL TRANSMITTER	GAS METER ROOM LEVEL METER	LP TANK LEVEL INDICATOR
C66A	1 1/2" x 1/2"	LP STORAGE TANK LEVEL TRANSMITTER	GAS METER ROOM ALARM PANEL	BUS-OPER ALARM

(R1) ADDED MISC. CONTROLS SYSTEM CREDITS C66 & A66
 (R2) REVISED FOR EMERG. GENERATOR WATER HEATER #1 & #2
 AND #3 - SEE U.S. PUMP & MOTOR POWER REGUL. AD. DRAWING T-17520 3/21/76

AS CONSTRUCTED
 REVISED Date 8/31/79

- NOTES:
- FOR WIRE & CABLE, SEE D.O.M. SPECIFICATIONS, SECTION # 710
 - INDICATES WIRE, CABLE & CONDUIT FURNISHED & INSTALLED BY FUTURE CONSTRUCTION.



PRINT RECORD	
DATE ISSUED	0 8 1979
REVISION NO.	0
FOR	FOR THE STATE OF COLORADO
CUSTOMER	STATE OF COLORADO
FIELD	
INTRA	15 15 1 1 15 15

NO. REVISIONS

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

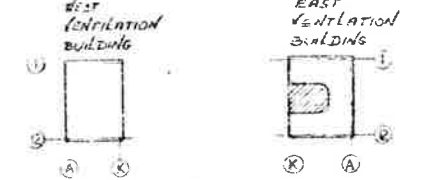
ELECTRICAL
 WEST VENTILATION BUILDING
 CONDUIT & CABLE SCHEDULE
 SHEET NO. 2

DRAWN	BY	DATE
CHECKED	BY	DATE
SCALE		
NONE	04570	

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
300	COLORADO	170-3(52) E20	42	208

ADD'D W/4ED GAS SYSTEM CIRCUITS 7471 A47
 210 TO 215

AS CONSTRUCTED
 REVISED Date 8/31/77

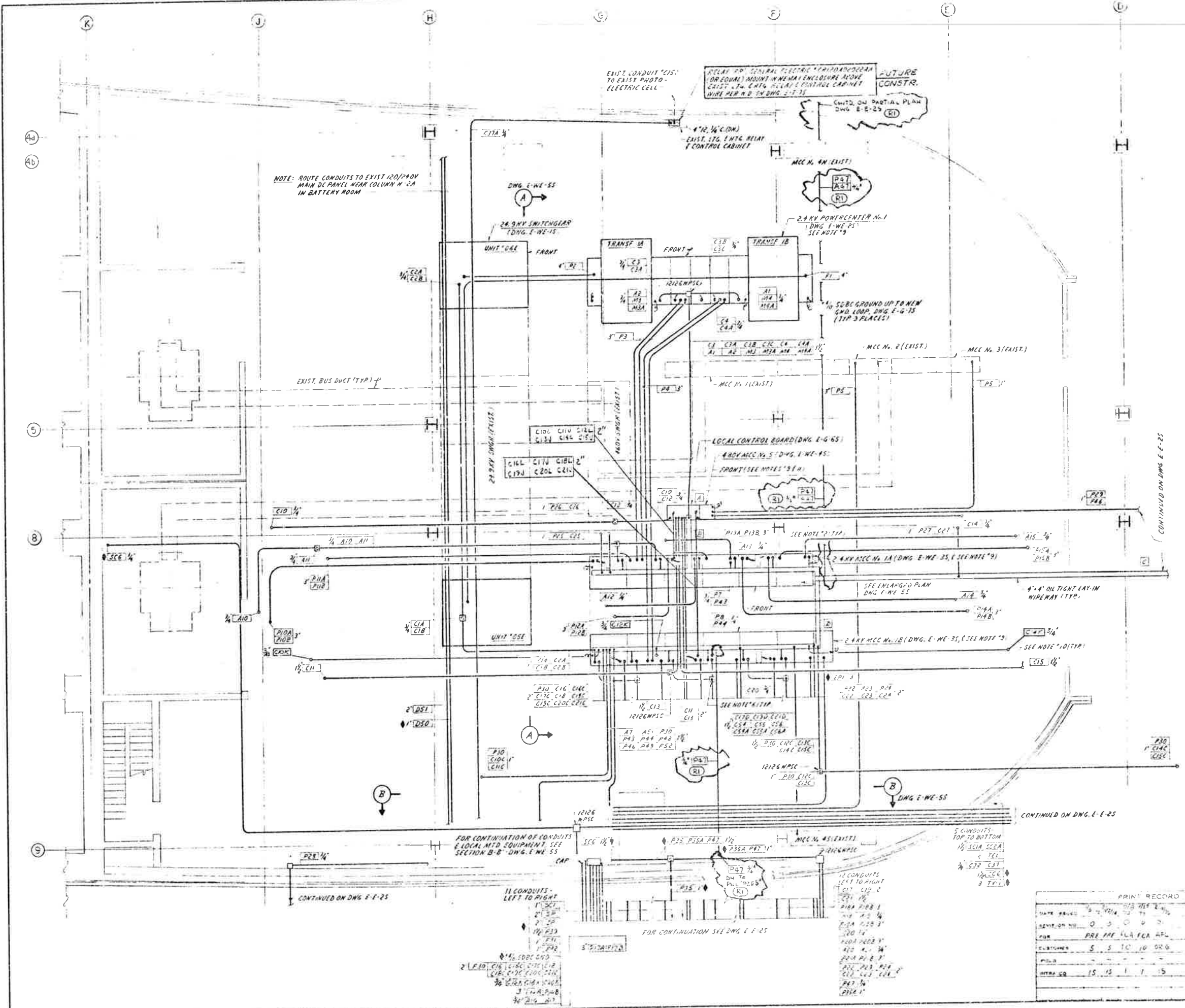


KEY PLAN

- LEGEND
- CONDUIT RUN EXPOSED
 - - - EMBEDDED CONDUIT
 - EXPOSED CONDUIT COMING TOWARD OBSERVER
 - - - EXPOSED CONDUIT GOING AWAY FROM OBSERVER
 - FLEX. CONDUIT
 - NEW GROUND CABLE
 - JUNCTION OR PULL BOX

NOTES

1. CONDUIT & EQUIPMENT SHOWN DIAGRAMMATICALLY ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK POSSIBLE EXISTING & NEW INTERFERENCES SUCH AS CONDUIT, EQUIPMENT, PIPES & DUCTS & STRUCTURAL BEFORE INSTALLING NEW EQUIPMENT & CONDUIT.
2. FOR POWER FACTOR CORRECTION CAPACITOR MOUNTING & CONNECTION, SEE DETAIL ON DWG. E-WE-103.
3. FOR CONDUIT & CABLE SCHEDULES SEE DWG. E-E-55, E-WE-75, BS, & E-T-105.
4. FOR GROUNDING PLAN & DETAILS, SEE DWG. E-G-75.
5. INDICATES W/4E CABLE & CONDUIT FURNISHED & INSTALLED BY FUTURE CONSTRUCTION.
6. ALL JUNCTION BOXES TO BE 886 W/4E EXCEPT AS NOTED.
7. FOR ELEMENTARY DIAGRAMS SEE DWG. E-G-35, 45.
8. FOR PANEL SCHEDULES SEE DWG. E-G-95.
9. CONTRACTOR TO PREPARE FOR & PROVIDE LEVELING CHANNELS FOR POWER CENTER & MCC'S.
10. FOR CONDUIT GOING UP, SEE DWG. E-E-35.
11. GROUND LOCAL CONTROL BOARD W/4E 3/4" 3/4" GND. FROM MCC N. 5 GROUND BUS.
12. [A] INDICATES CIRCUIT LIST SHOWN ON DWG. E-WE-55.



CONTINUED ON DWG. E-25

CONTINUED ON DWG. E-25

FOR CONTINUATION OF CONDUITS & LOCAL MTD EQUIPMENT, SEE SECTION B-B DWG. E-WE-55

FOR CONTINUATION SEE DWG. E-E-25

11 CONDUITS LEFT TO RIGHT

12 CONDUITS LEFT TO RIGHT

5 CONDUITS TOP TO BOTTOM
 1/2" SCLA 3/4" SCLA
 2 TEL
 3 TEL



REVISIONS		DATE	BY	CHK
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
ELECTRICAL EAST VENTILATION BUILDING ELECTRICAL EQUIPMENT ROOM POWER & CONTROL PLAN				
DATE PLOTTED	9/1/77	9/1/77	77	
REVISION NO.	0	0	0	0
FOR	PREPARE FOR T&E	APL		
CUSTOMER	S S TO 10 000			
FIELD				
DATE	15 15 1 15			

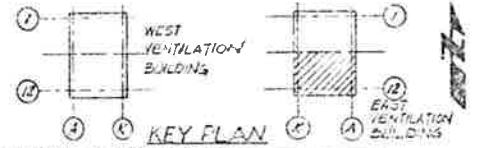
PRINT RECORD	
DATE PLOTTED	9/1/77
REVISION NO.	0
FOR	PREPARE FOR T&E
CUSTOMER	S S TO 10 000
FIELD	
DATE	15 15 1 15

AS CONSTRUCTED
REVISED
Date 8/31/79

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
514	COLORADO	170-3(32) 220	43	208

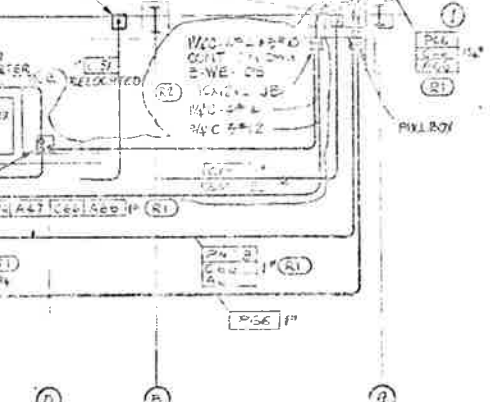
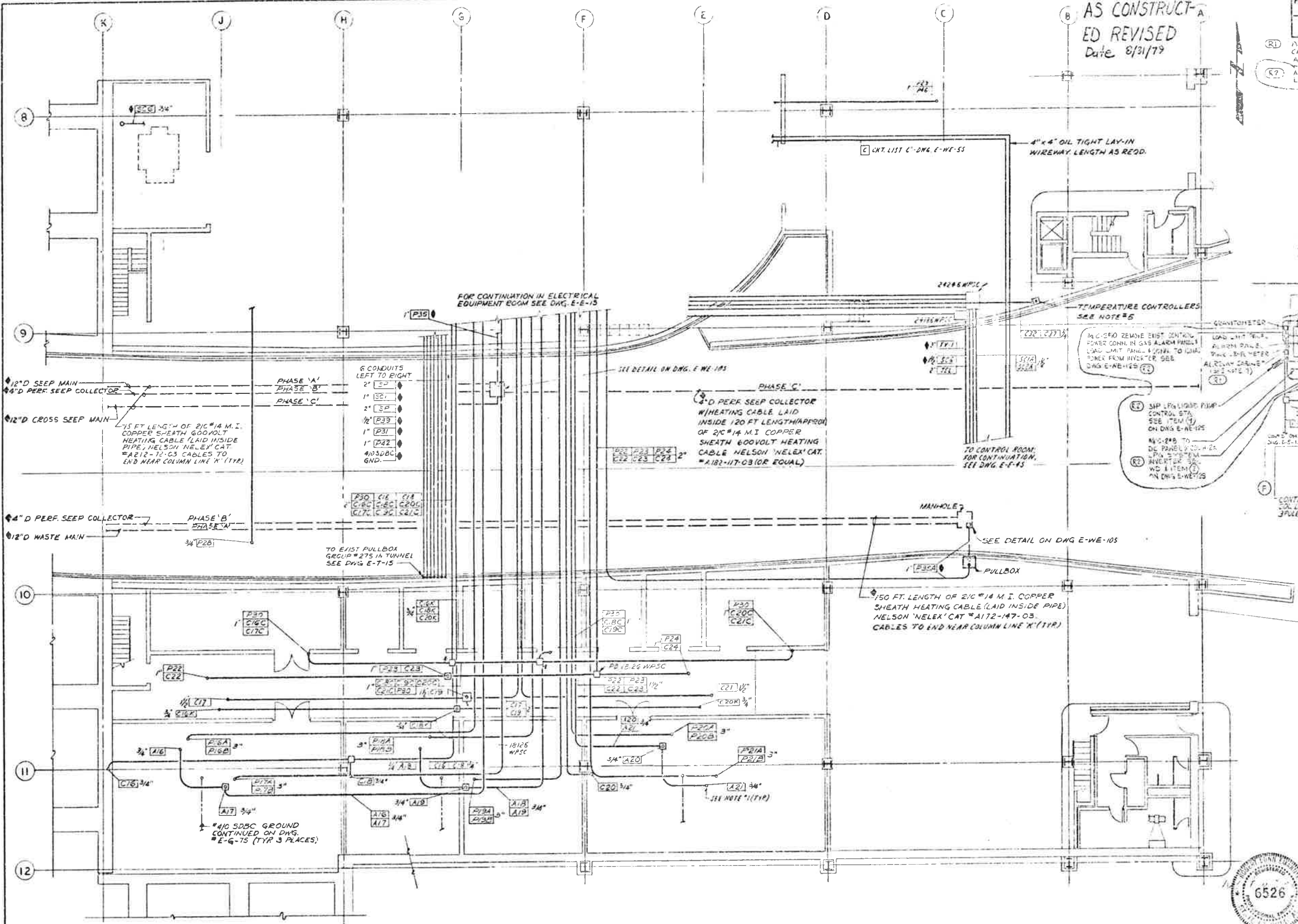
(R1) ADDED MISED GAS SYSTEM SCHEDULES TO GAS METER ROOM AND PULLBOX CABINET. NOTE #7 AND 26-103 GAS METER ROOM TO SHOW PANELS AND METERS. SEE DWG. E-W-105.

(K7) ADD INVERTER, LEAD ACID BATTERY, FEEDERS FROM DC D.C. PANEL TO EAST VENTILATION BUILDING. SEE DWG. E-W-105.



CUTTER 200 3/4" HUB THRU FEED SINGLE GANG ENCLOSURE WITH UP 200 TUMBLER SW. MUST 5" O.D. ALUM. GRATE CONTRACTOR TO FURNISH 1-1552 (1-1552) FITTING.

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



PARTIAL PLAN
GAS METER BLDG &
ADDITIONAL CIRCUITING

- NOTES:
- FOR CONDUITS GOING UP SEE DWG. E-E-33.
 - FOR LEGEND & GENERAL NOTES SEE DWG. E-E-15
 - ALL BOXES TO BE 8" X 8" X 6" WPSC EXCEPT THOSE MARKED WITH AN * TO BE 12" X 12" X 6" WPSC
 - FOR CONDUIT & CABLE SCHEDULE, SEE DWG. E-W-75, E-W-85, E-E-55, E-W-43 & E-W-55.
 - TEMPERATURE CONTROLLER TO BE HOMEWELL, CAT. #T68A-1495 W/20 FOOT CAPILLARY & BULB. RANGE -50° TO +100°F. 120VAC, SPDT CONTACTS. 1 REQ. FOR LIGHTING CKT. SET @ 20°F FOR CONTACT CLOSURE. 1 REQ. FOR HEATING CKT. SET @ 40°F FOR CONTACT CLOSURE. MOUNT CONTROLLERS IN NEMA 4 ENCLOSURE & COM. EXCESS CAPILLARY BETWEEN TUNNEL LINING & SIDING (OR EQUAL). CONTRACTOR TO PROVIDE 6" DIA. SCREENED OPENING IN TUNNEL SIDING & MOUNT TEMPERATURE CONTROLLER BULBS BEHIND OPENING.
 - * INDICATES WIRE CABLE & CONDUIT FURNISHED & INSTALLED BY FUTURE CONSTRUCTION.
 - PROVIDE 12" X 6" X 3" ALUM. RELAY CABINET WITH 4-2 POLE RELAYS W/20VAC COIL & 4 CONTACTS. 6:1-40022AA. (SEE SCHEMATIC ON DWG. E-E-43)



REVISIONS	
NO.	DESCRIPTION
1	ADD INVERTER, LEAD ACID BATTERY, FEEDERS FROM DC D.C. PANEL TO EAST VENTILATION BUILDING. SEE DWG. E-W-105.
2	ADD MISED GAS SYSTEM SCHEDULES TO GAS METER ROOM AND PULLBOX CABINET. NOTE #7 AND 26-103 GAS METER ROOM TO SHOW PANELS AND METERS. SEE DWG. E-W-105.

STATE OF COLORADO DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
SECOND SOLE

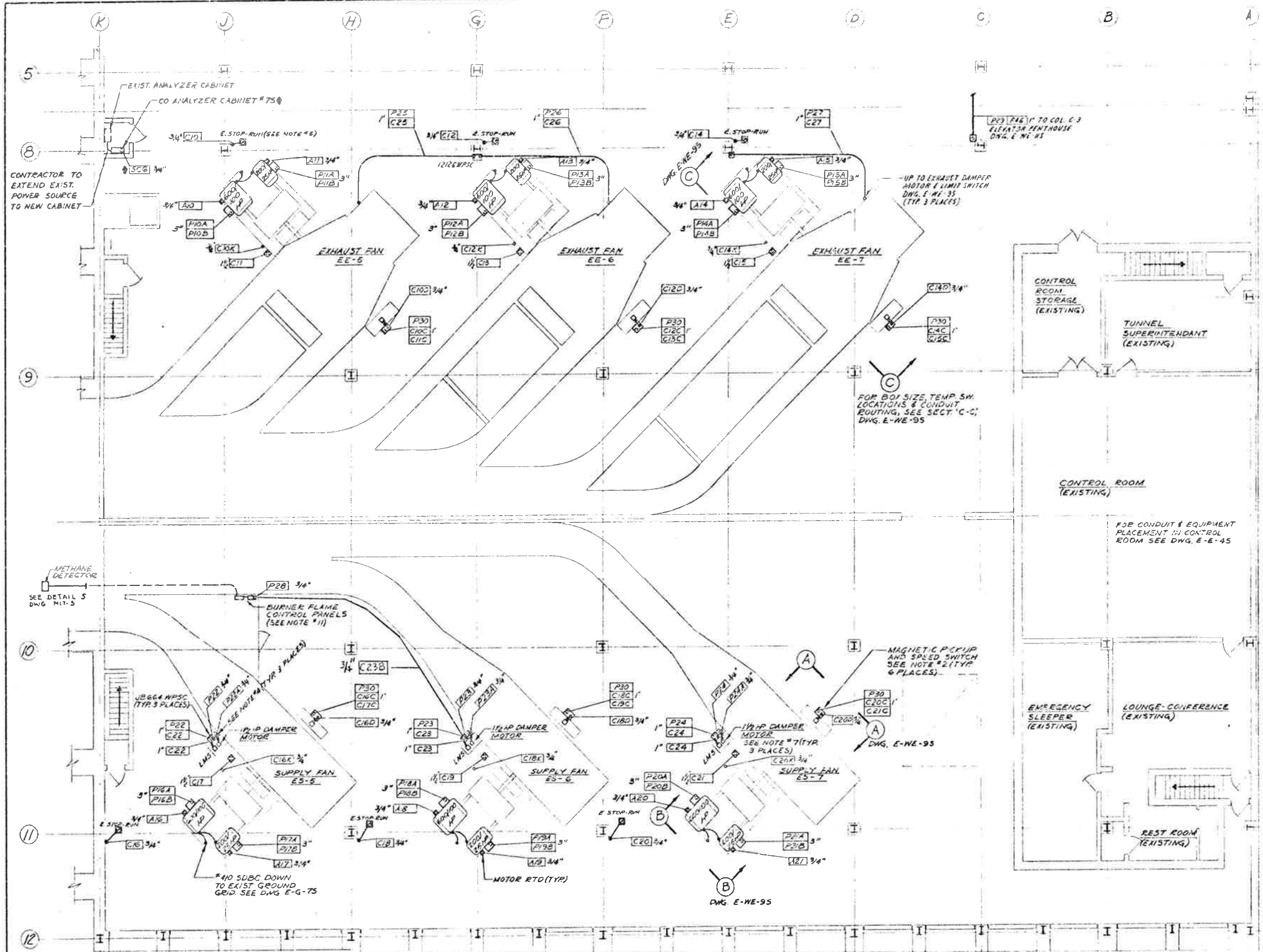
ELECTRICAL
EAST VENTILATION BUILDING
ROADWAY FLOOR
POWER & CONTROL PLAN

DATE	BY	CHKD.	APPD.
10/15/79

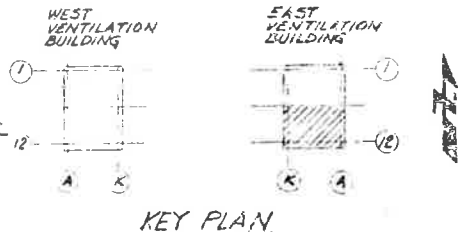
PRINT RECORD

DATE	BY	CHKD.	APPD.
10/15/79

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	170-3(82)220	44	208



AS CONSTRUCTED
 REVISED
 Date 8/31/79



- NOTES:**
- FOR CONTINUATION OF CONDUITS GOING DOWN, SEE DWG. E-E-15 & E-E-25
 - SPEED SWITCHES W/MAGNETIC PICKUP TO BE SYNCHRONIZED START PRODUCTS, INC. MODEL #ES584T MOUNTED IN A 20" x 16" x 10" W/SC BOX W/SUBPANEL (TWO SETS OF 4 SPDT CONTACTS PER FAN)
 - FOR LEGEND & GENERAL NOTES SEE DWG. E-E-15
 - DISCONNECT SWITCH TO BE 30AMP, 2P, 600V NGR-FUSIBLE NEMA 12 ENCL. SURE WESTINGHOUSE CAT #JHU-361 (OR EQUAL), TOP OF DISCONNECT TO BE MOUNTED 5'-0" ABOVE FINISHED FLOOR.
 - EMERG. STOP-RUN SELECTOR SWITCH IS EXISTING. CONTRACTOR TO WIRE AS REVD & ROUTE CONDUIT.
 - LIGHTING FIXTURES, WELLING RECEPTACLES & CONVENIENCE RECEPTACLES ARE EXISTING & WIRED.
 - 1/2 HP DAMPER MOTOR & LIMIT SWITCH (LMS) ARE FURNISHED BY OTHERS. CONTRACTOR TO WIRE AS INDICATED.
 - FOR TELEPHONE OUTLETS, SEE DWG. E-G-85
 - FOR CONDUIT & CABLE SCHEDULE SEE DWG. E-WI-75 & E-WI-85.
 - FOR FAN & DAMPER ELEMENTARY DIAGRAMS, SEE DWG. E-G-35
 - BURNER FLAME CONTROL PANELS & ASSOCIATED CONTROLS W/METHANE DETECTOR TO BE WIRED PER MANUFACTURER'S RECOMMENDATIONS.
 - ⊠ INDICATES WIRE, CABLE, & CONDUIT FURNISHED & INSTALLED BY FUTURE CONSTRUCTION
 - CONTRACTOR TO CORE DRILL FLOOR FOR CONDUITS & SEAL VOIDS W/DUBSEAL

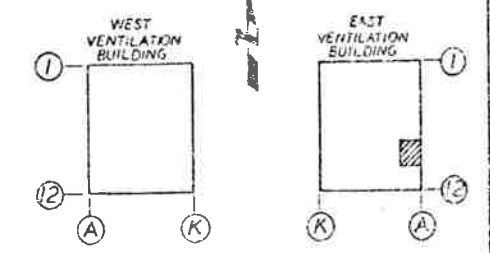
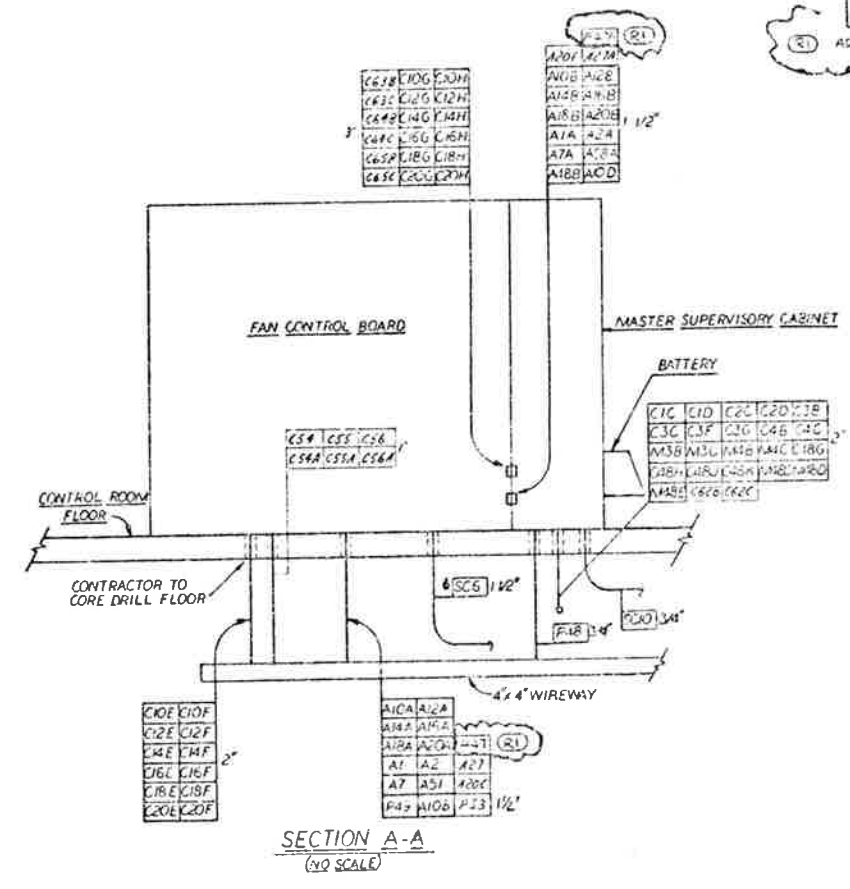
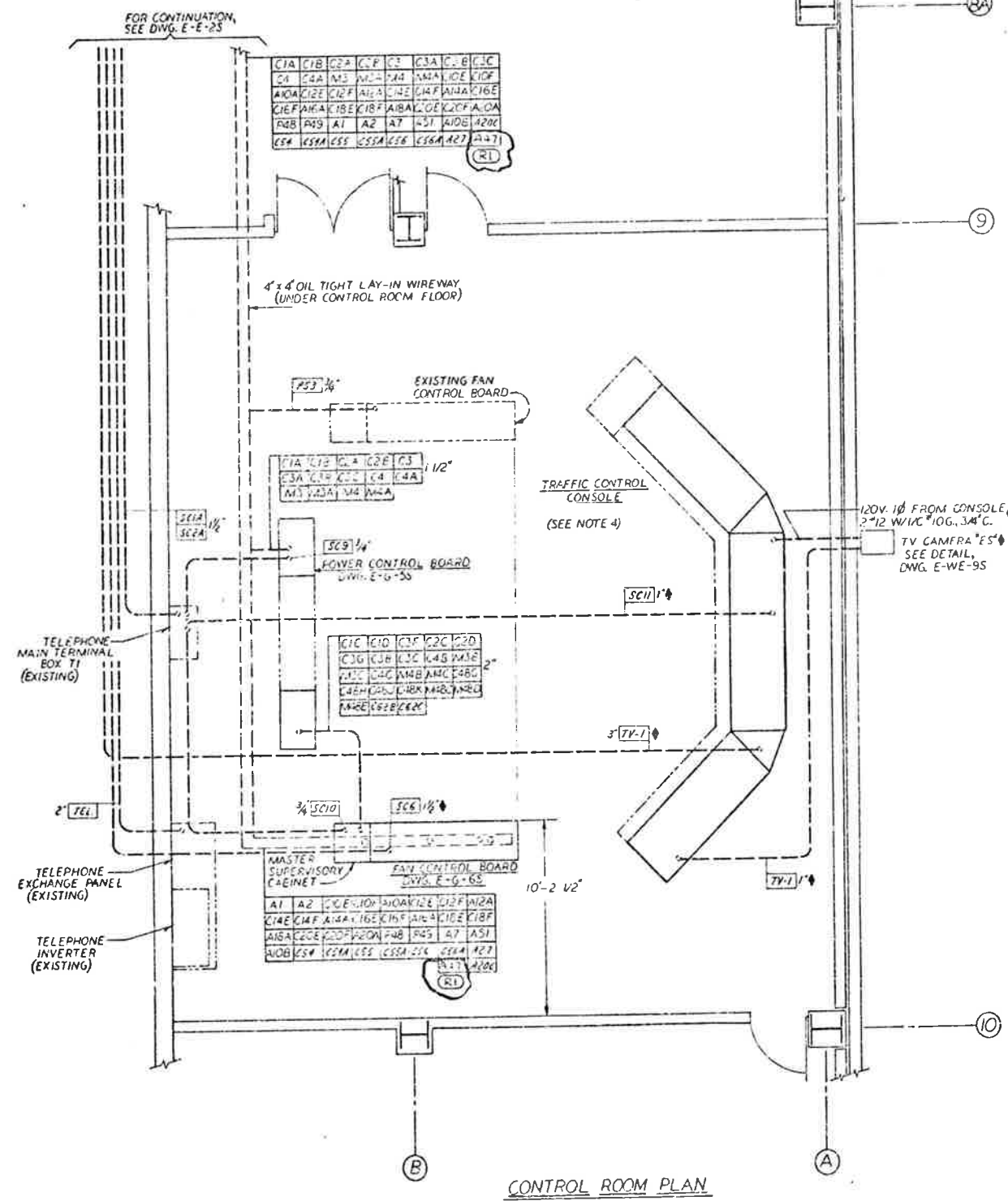


PRINT RECORD

DATE REVISION	BY	CHKD
0 3 0 9		
FOR	FOR	FOR
CUSTOMER	5 5 10 10	
FIELD		
INTRA CO.	15 15 1 1	

NO.	REVISIONS	DATE	BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND CORE			
ELECTRICAL EAST VENTILATION BUILDING FAN FLOOR POWER & CONTROL PLAN			
DESIGNED	REV. 6/2/77		
CHECKED	P.P.J. 2/2/78		
SCALE	AS SHOWN		
DATE	11/5/79		
NO.	C14570		

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
170-3(82)520	COLORADO	170-3(82)520	45	206



AS CONSTRUCTED
 REVISED Date 8/31/79

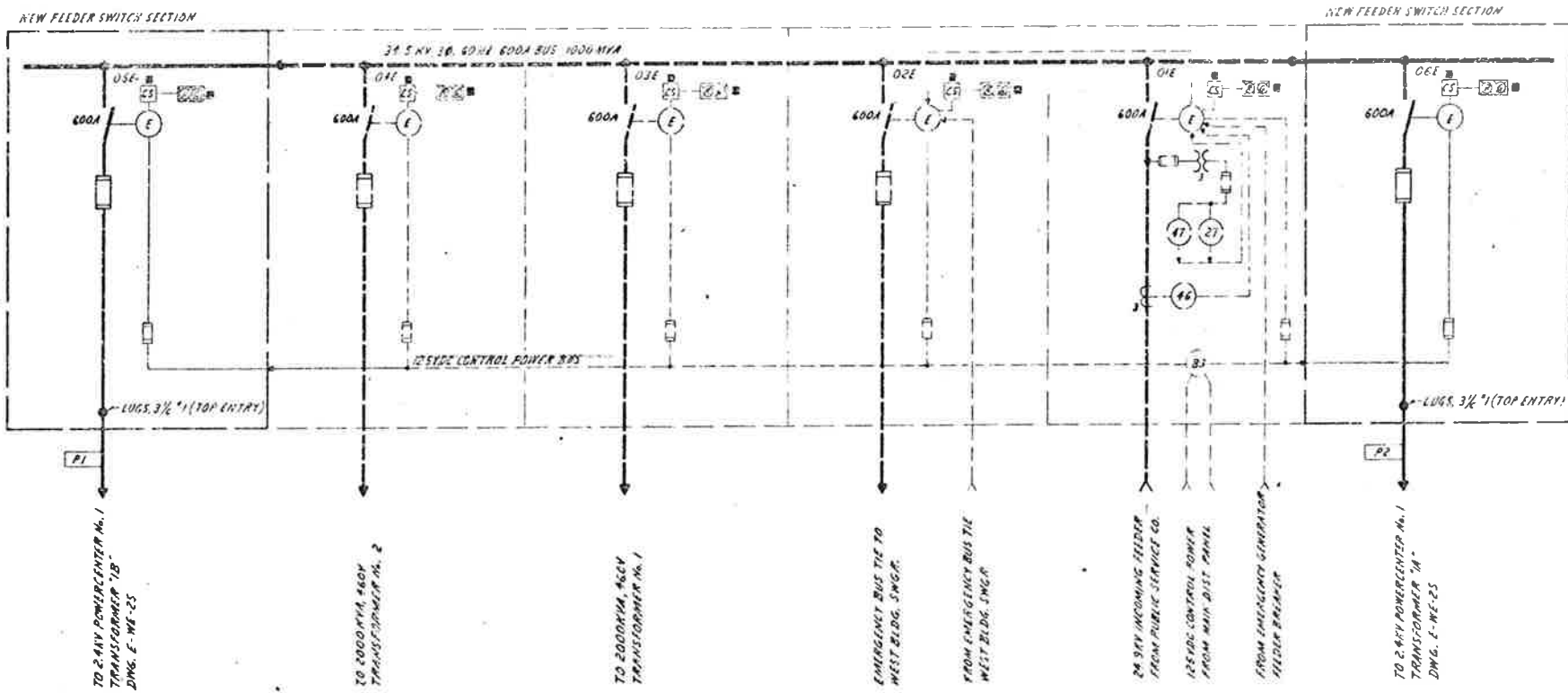
- NOTES:
1. FOR ELEMENTARY DIAGRAMS, SEE DWGS. E-G-55 E-45.
 2. FOR CONDUIT & CABLE SCHEDULES, SEE DWGS. E-E-55 E E-W-45 E 55.
 3. INDICATES WIRE, CABLE & LIGHTING FURNISHED & INSTALLED BY FUTURE CONSTRUCTION.
 4. FUTURE CONSTRUCTION TO FURNISH & INSTALL TV MONITORS (13) & PORTAL TV CAMERA "E"; ALSO MODIFY TRAFFIC CONTROL CONSOLE.



PRINT RECORD		REVISIONS	
DATE MADE	10/15/79	STATE OF COLORADO - DEPARTMENT OF HIGHWAYS	
DATE CHECKED	10/15/79	EISENHOWER MEMORIAL TUNNEL	
DATE APPROVED	10/15/79	SECOND 3008	
DATE	10/15/79	ELECTRICAL	
BY	...	EAST VENTILATION BUILDING	
BY	...	CONTROL ROOM	
BY	...	POWER AND CONTROL PLAN	
CUSTOMER	5 5 10 206	DRAWN	H.S. 7-578
FIELD	...	CHECKED	J.P.P. 7-11-79
DATE	10/15/79	SCALE	AS SHOWN
		DATE	10/15/79
		NO.	6526
		SCALE	1/4" = 1'-0"
		NO.	614570
		NO.	E-E-45

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	170-3(62), 220	17	208

AS CONSTRUCTED
 NO REVISIONS DATE 8/31/79



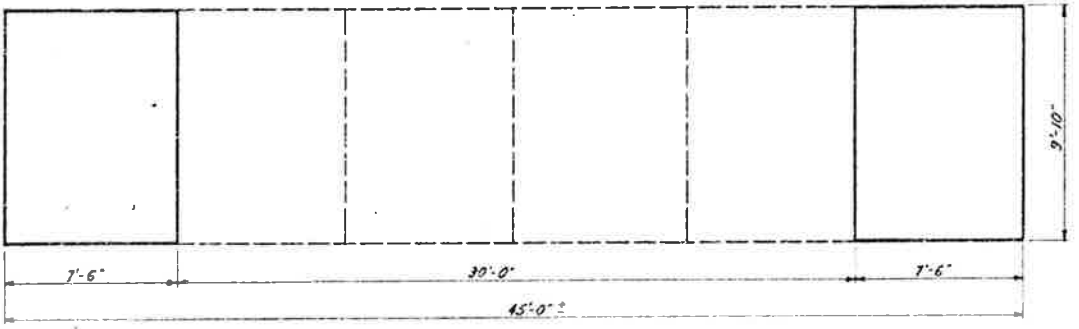
24.9KV (RATED 34.5KV) SWITCHGEAR

LEGEND

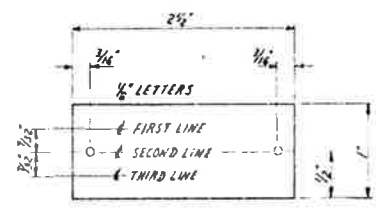
- (E) ELECTRICALLY OPERATED SWITCH
- (27) UNDERVOLTAGE RELAY
- (46) PHASE-BALANCE CURRENT RELAY (FOR SINGLE PHASING PROTECTION)
- (47) PHASE-TO-GROUND VOLTAGE RELAY
- (83) AUTOMATIC TRANSFER RELAY (OR SWITCH)
- (CS) CONTROL SWITCH
- RED INDICATING LIGHT "CLOSED"
- GREEN INDICATING LIGHT "OPEN"
- INDICATES DEVICES LOCATED ON POWER CONTROL BOARD
- DOTTED INDICATES EXISTING EQUIPMENT
- SOLID INDICATES NEW EQUIPMENT
- - - ELECTRICAL INTERLOCK

NOTES

1. SWITCHGEAR SHOWN FOR EAST VENT. BLDG. OPPOSITE HAND FOR WEST VENT. BLDG. SUBSTITUTE "W" FOR WEST VENT. BLDG. SWGR UNIT NUMBERS.
2. FOR 24KV POWERCENTER N.1 SINGLE LINE DIA. - PAM, SEE DWG. E-WE-25
3. FOR POWER SUPPLY SINGLE LINE DIAGRAM, SEE DWG. E-G-15



FLOOR PLAN



NAMEPLATE ENGRAVING SCHEDULE

NP NO.	FIRST LINE	SECOND LINE	THIRD LINE
1	POWERCENTER N.1	TRANSFORMER 1B	SOUTH TUNNEL
2	POWERCENTER N.1	TRANSFORMER 1B	SOUTH TUNNEL



FRONT VIEW



NO.	REVISIONS	DATE

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

ELECTRICAL
 WEST & EAST VENTILATION BUILDINGS
 24.9KV SWITCHGEAR
 SINGLE LINE DIAGRAM

DATE PLOTTED: 8/31/79
 PLOTTER: HP-GL
 PLOT: 11x17
 PLOTTER NO.: 11111
 PLOTTER CO.: HP

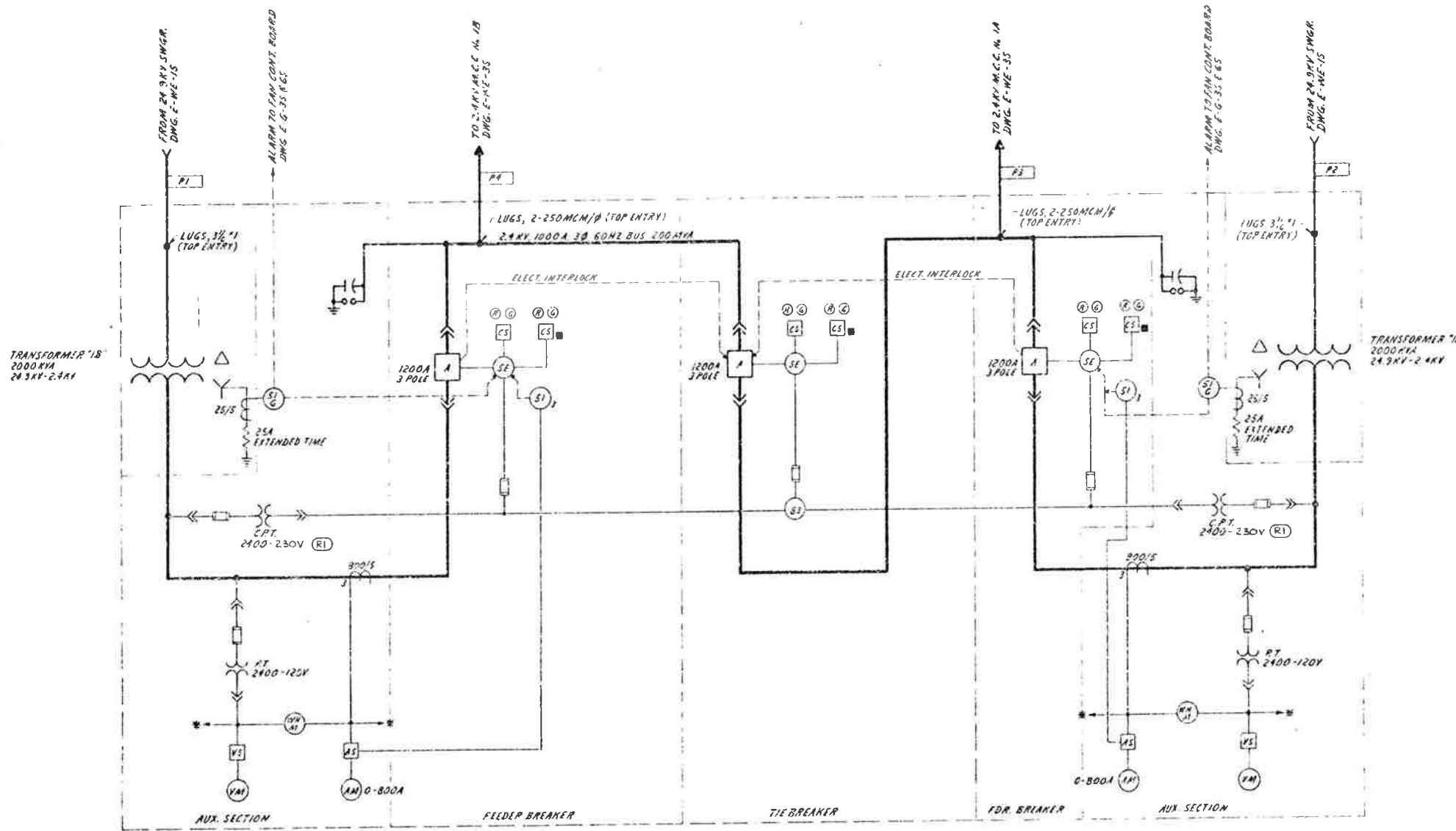
SCALE: NONE
 DRAWING NO.: E-WE-15

FRONT RECORD	
DATE PLOTTED	8/31/79
PLOTTER	HP-GL
PLOT	11x17
PLOTTER NO.	11111
PLOTTER CO.	HP

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
SV	COLORADO	I 70-3(82) 220	48	208

AS CONSTRUCTED
 REVISED Date 8/31/79

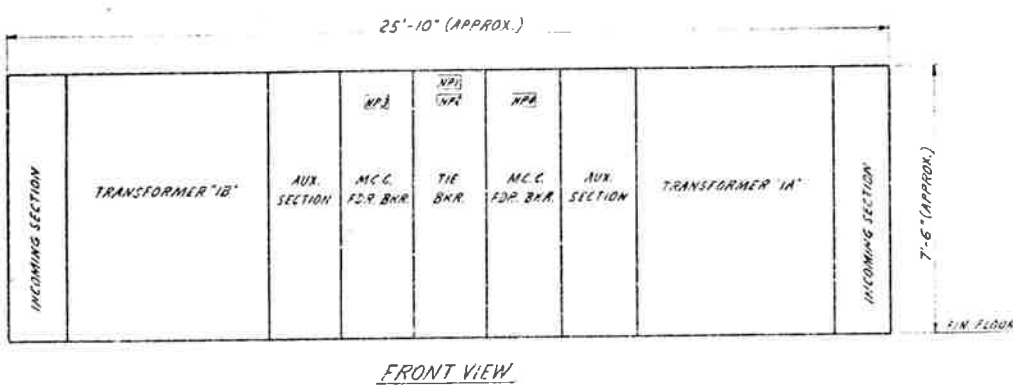
- (R1) REVISED CONTROL POWER FROM 120VAC TO 230VAC PER G.S. DWG. SV 223984
- (R2) ADDED OVERCURRENT RELAY SETTING 6S



- LEGEND**
- (A) AIR CIRCUIT BREAKER (S) STORED ENERGY OPERATOR
 - (SI) TIME OVERCURRENT RELAY
 - (SG) TIME-OVERCURRENT GROUND RELAY
 - (ST) AUTOMATIC TRANSFER RELAY (OR SWITCH)
 - (AM) AMMETER & AMMETER SWITCH
 - (VM) VOLT METER & VOLT METER SWITCH
 - (WM) WATT HOUR METER
 - INDICATES DEVICE LOCATED ON POWER CONTROL BOARD
 - * INDICATES REMOTE METERING ON POWER CONTROL BOARD
 - (WS) OPEN-CLOSE CONTROL SWITCH
 - SPURGE PACK

- NOTES:**
1. THIS DIAGRAM REPRESENTS TWO POWERCENTERS, ONE FOR EACH VENTILATION BUILDING.
 2. SEE DWG. E-G-15 FOR POWER SUPPLY SINGLE LINE DIAGRAM.
 3. SEE DWG. E-WE-15 FOR 24.9KV SWGR. SINGLE LINE DIAGRAM.
 4. SEE DWG. E-WE-35 FOR 2.4KV M.C.C. No. 1B SINGLE LINE DIAGRAM.
 5. PHASE OVERCURRENT RELAYS (SI) SHALL BE SET ON 2A TAP AND NO. 2 TIME DIAL.
 6. GROUND FAULT OVERCURRENT RELAYS (SG) SHALL BE SET ON 2A TAP AND NO. 1 TIME DIAL.

2.4KV POWERCENTER No. 1
 SOUTH TUNNEL
 (4KV RATED)



NAMEPLATE SCHEDULE

NP No.	ENGRAVING	SIZE
1	2.4KV POWERCENTER No. 1 SOUTH TUNNEL	5" x 2"
2	BUS TIE BREAKER	STD.
3	2.4KV M.C.C. No. 1B FEEDER BREAKER	STD.
4	2.4KV M.C.C. No. 1A FEEDER BREAKER	STD.



PRINT RECORD

DATE: 10/15/79
 DRAWN: J. J. J.
 CHECKED: J. J. J.
 SCALE: NONE
 ORDER: C14570

REVISIONS

NO. 1
 STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

ELECTRICAL
 WEST & EAST VENTILATION BUILDINGS
 2.4KV POWERCENTER
 SINGLE LINE DIAGRAM

DATE: 10/15/79
 SCALE: NONE
 ORDER: C14570

AS CONSTRUCTED
 REVISED Date 8/31/79

MP No.	DESCRIPTION	REV	DATE
1	24KV M.C.C. No. 1A SOUTH TUNNEL	1	7/20/79
2	24KV M.C.C. No. 1B SOUTH TUNNEL	1	7/20/79
3	EXHAUST FAN #5 MOTOR No. 1	1	7/20/79
4	EXHAUST FAN #5 MOTOR No. 2	1	7/20/79
5	EXHAUST FAN #6 MOTOR No. 1	1	7/20/79
6	EXHAUST FAN #6 MOTOR No. 2	1	7/20/79
7	EXHAUST FAN #7 MOTOR No. 1	1	7/20/79
8	EXHAUST FAN #7 MOTOR No. 2	1	7/20/79
9	SUPPLY FAN #5 MOTOR No. 1	1	7/20/79
10	SUPPLY FAN #5 MOTOR No. 2	1	7/20/79
11	SUPPLY FAN #6 MOTOR No. 1	1	7/20/79
12	SUPPLY FAN #6 MOTOR No. 2	1	7/20/79
13	SUPPLY FAN #7 MOTOR No. 1	1	7/20/79
14	SUPPLY FAN #7 MOTOR No. 2	1	7/20/79
15	TUNNEL TRANSFORMER FEEDER	1	7/20/79

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
701	COLORADO	170-3(82) 220	19	208

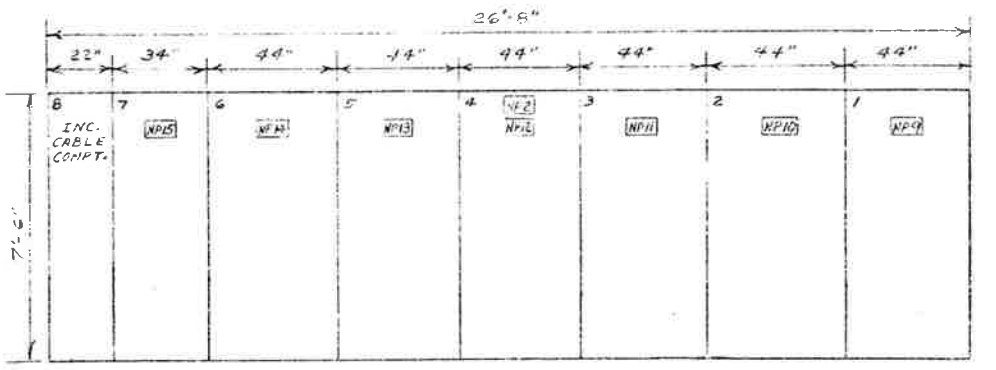
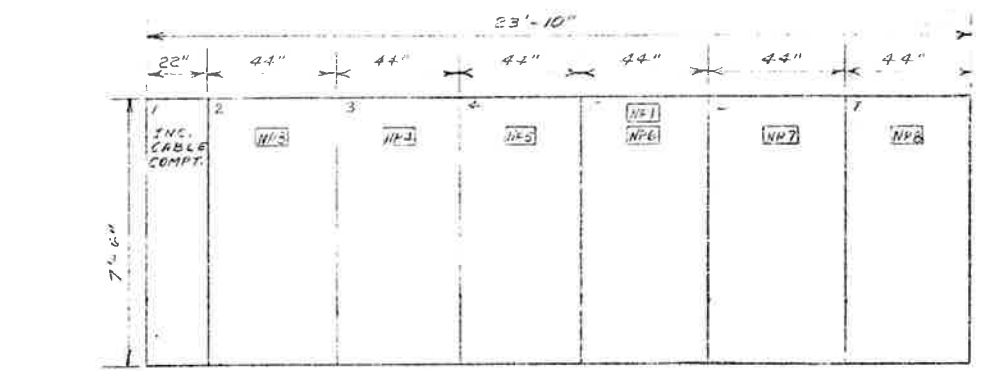
REVISED CT RATIOS & AMMETER SCALES FOR 25 TON 480V HP MOTOR PER O.E. AND 300 AMPER SIZE DELETED DEVICE #27 UNDERVOLTAGE RELAY & INDICATED SOLID STATE TRIP DEVICE #28

GENERAL DESIGN FOR ALL EQUIPMENT, EXCEPT MOTOR CONTROLS, TO BE AS SHOWN IN THIS DRAWING

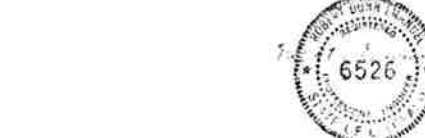
- LEGEND
- * PART OF SOLID STATE TRIP DEVICE (R1)
 - (R1) PHASE-BALANCE CURRENT RELAY (FOR SINGLE PHASE - 6 PROTECT - DM)
 - (OR) THERMAL OVERLOAD RELAY
 - (AM) AMMETER SWITCH & AMMETER
 - (OS) INSTANT OVERCURRENT GROUND FAULT RELAY
 - (E) ELECTRICAL INTERLOCK
 - (TM) ELAPSED TIME METER - RESET TYPE
- MULTI-SPEED DRAWOUT TYPE CURRENT LIMITING STARTER
- 600/150 HP, 1800/720 RPM, HIGH 4 INTERMEDIATE 1 (1) SPEED
 200/25 HP, 1800/1500 RPM, INTERMED 4 (2) (1) LOW 1 (1) SPEED
- POWER FACTOR CORRECTION CAPACITORS

SUBSTITUTE WEST (W) FOR WEST VENT BLDG. MOTOR CONTROL CENTERS.

NAMEPLATE SCHEDULE



24KV M.C.C. No. 1B - FRONT VIEW
 N.T.S.
 (WEST VENT. BLDG. - OPPOSITE HAND)



DATE ISSUED	REVISION NO.	BY	DATE
7/20/79	0	RL	7/20/79

PRINT RECORD

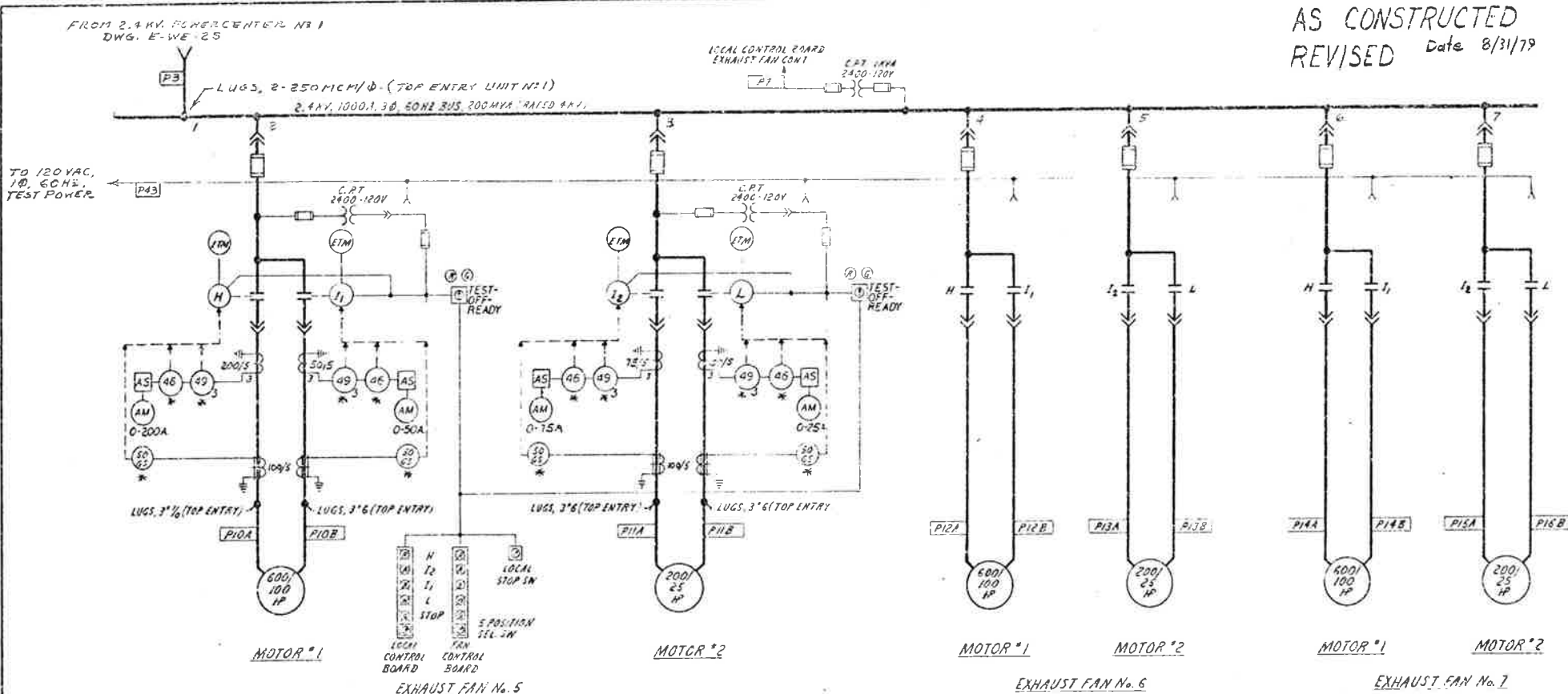
DATE ISSUED	7/20/79
REVISION NO.	0
BY	RL
DATE	7/20/79
PROJECT	170-3(82) 220
FILE	15 15 15 15 15
SCALE	NONE
DRAWING NO.	014570

NO.	REVISIONS	DATE	BY	CD
1	AS CONSTRUCTED	8/31/79	RL	

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

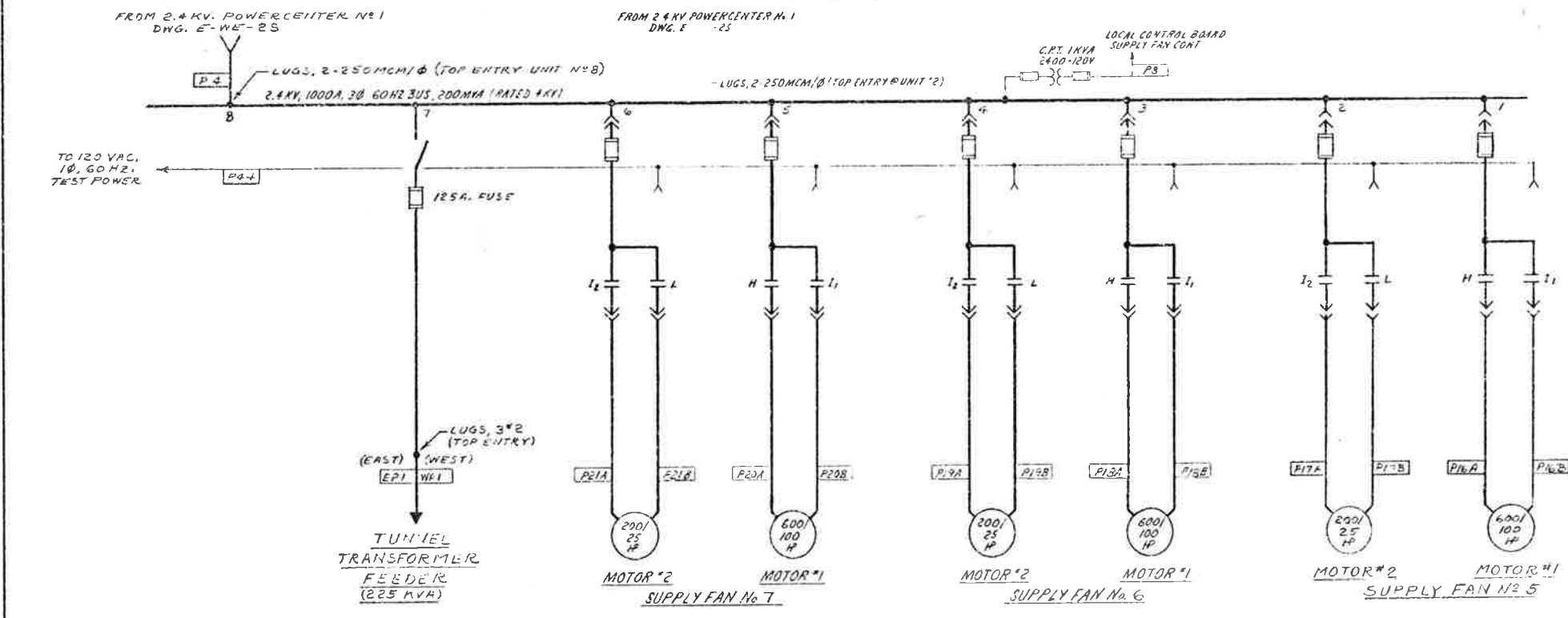
ELECTRICAL
 WEST & EAST VENTILATION BUILDINGS
 24KV MOTOR CONTROL CENTERS
 SINGLE LINE DIAGRAM

DRAWN	RL	DATE	7/20/79
CHECKED	RL	DATE	7/20/79
SCALE	NONE	DRAWING NO.	014570
INTRA CD.	15 15 15 15 15	DRAWING NO.	E-WE-30



NOTE: MOTOR CONTROL IS TYPICAL FOR ALL SUPPLY & EXHAUST FANS

2.4KV MOTOR CONTROL CENTER No. 1A
 (RATED 4KV)

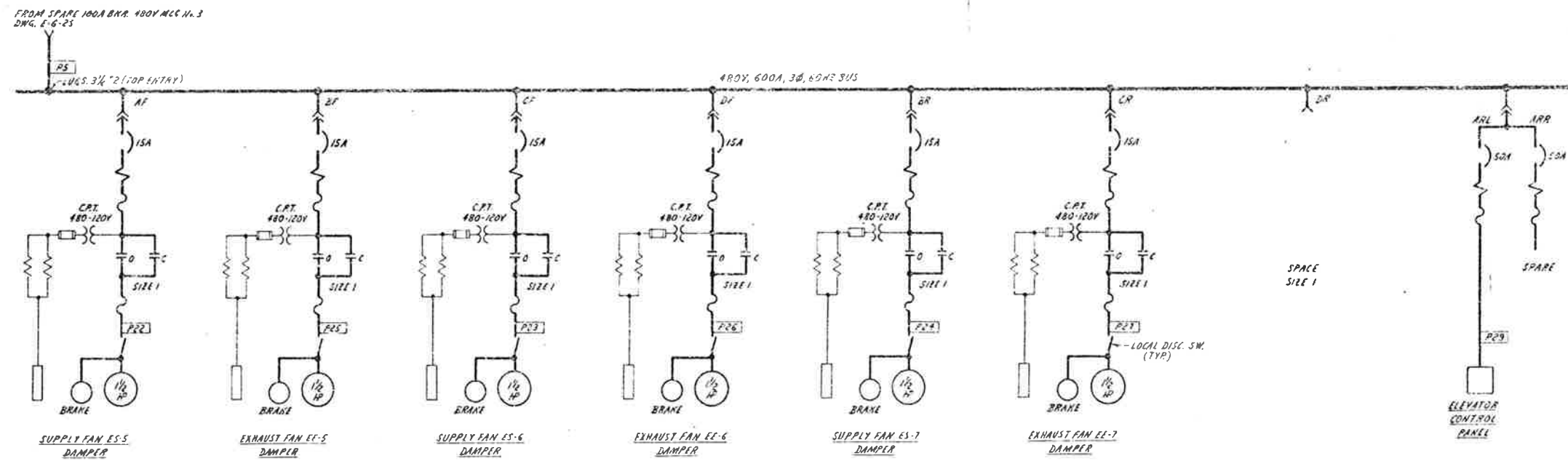


2.4KV MOTOR CONTROL CENTER No. 1B
 (RATED 4KV)

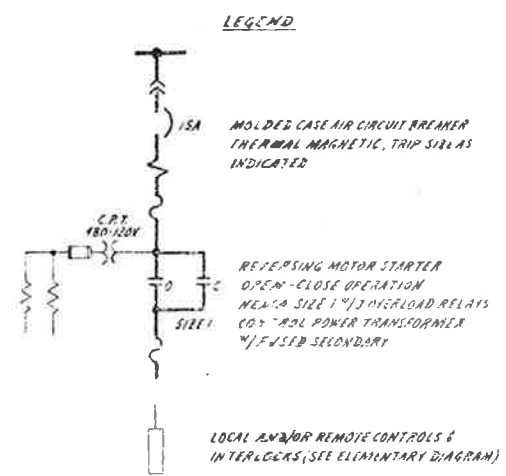
- NOTES
- THIS DRAWING REPRESENTS FOUR MOTOR CONTROL CENTERS, TWO FOR THE EAST VENT. BLDG. AS SHOWN AND TWO FOR THE WEST VENT. BLDG.
 - SEE DWG. E-WE-25 FOR 24KV POWERCENTER No. 1 SINGLE LINE DIAGRAM.
 - FRONT VIEWS OF MCC'S BASED ON GENERAL ELECTRIC'S LIMITAMP CONTROLLERS.

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
170	COLORADO	170-5(82)220	50	208

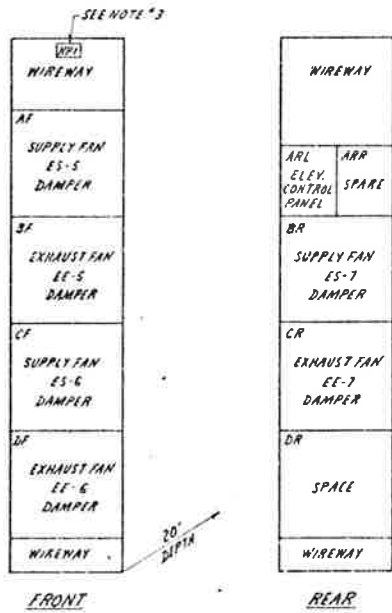
AS CONSTRUCTED
 NO REVISIONS DATE



480V MOTOR CONTROL CENTER No. 5
 SOUTH TUNNEL



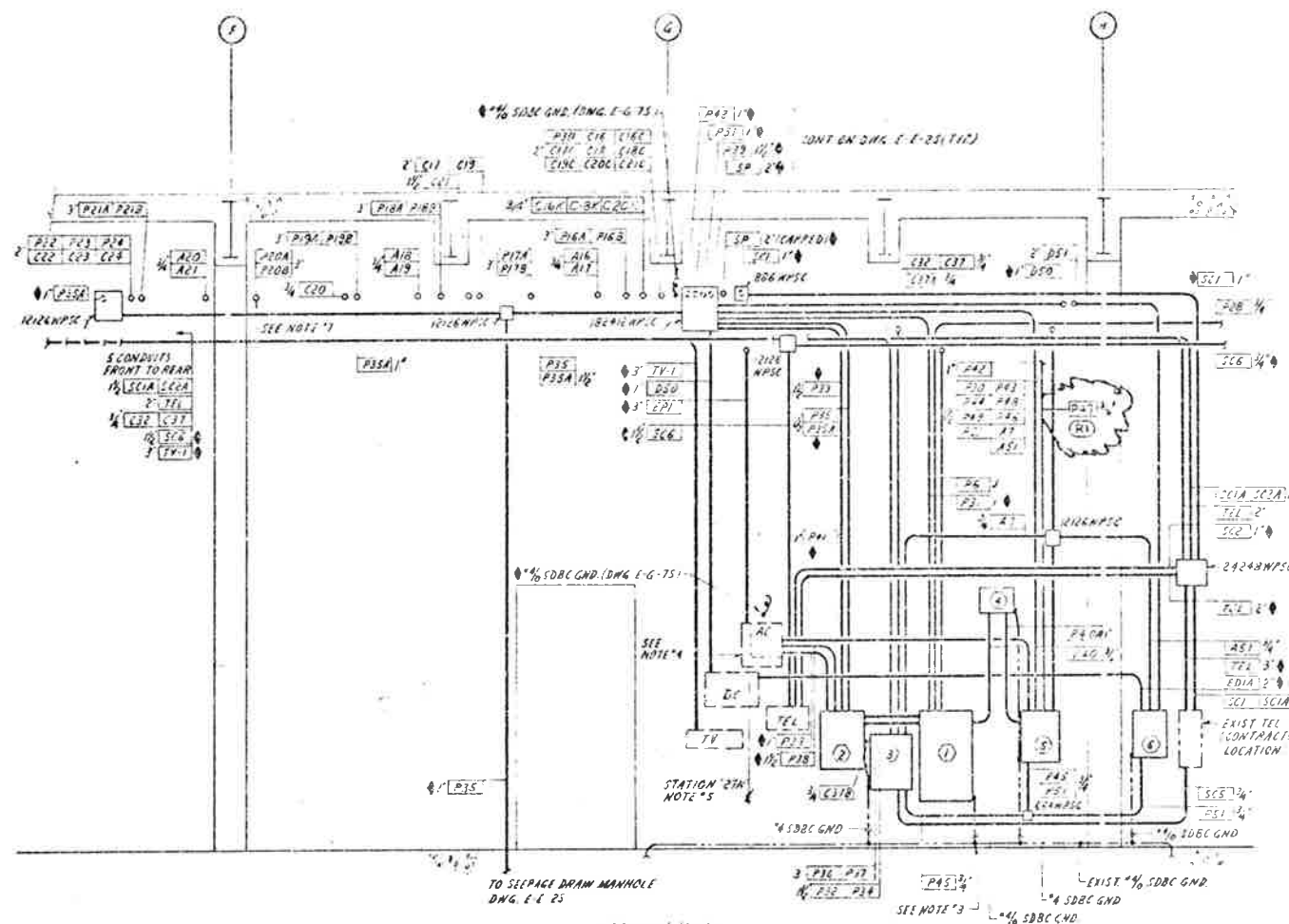
- NOTES
- 480V M.C.C. N. 5 SHALL BE PROVIDED FOR BACK-TO-BACK MOUNTING OF BREAKER-STARTER ASSEMBLIES, CAPABLE OF INTERCHANGING WITH EXISTING M.C.C. GENERAL ELECTRIC 7300 LINE
 - FOR POWER DISTRIBUTION SINGLE LINE DIAGRAM, SEE DWG. E-6-25
 - MPI TO BE 5'-0" WITH 1/2" LETTERS TO READ AS FOLLOWS:
 480V MOTOR CONTROL CENTER No. 5
 SOUTH TUNNEL
 ALL UNITS TO HAVE STANDARD 1-1/2" NAMEPLATES ENGRAVED AS SHOWN ON SINGLE LINE DIAGRAM. SUBSTITUTE WEST (W) FOR WEST VENT BLDG. MOTOR CONTROL CENTER
 - THIS DRAWING REPRESENTS TWO MOTOR CONTROL CENTERS, ONE FOR THE EAST VENT BLDG. AS SHOWN AND ONE FOR THE WEST VENT. BLDG.



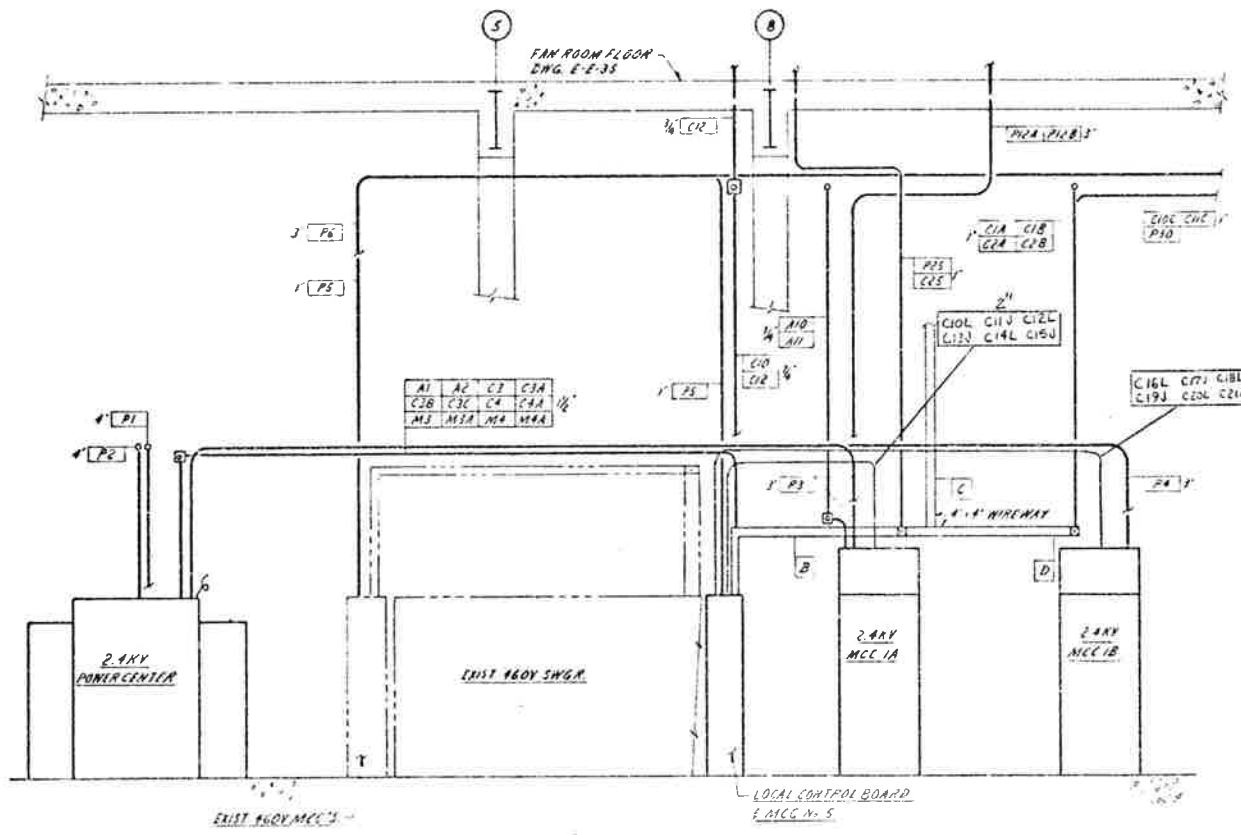
NO.		REVISIONS		DATE	BY	CHKD.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS						
EISENHOWER MEMORIAL TUNNEL						
SECOND BOSS						
ELECTRICAL						
WEST & EAST VENTILATION BUILDINGS						
480V MOTOR CONTROL CENTER No. 5						
SINGLE LINE DIAGRAM						
DRAWN: [Signature]						
CHECKED: [Signature]						
SCALE: NONE						
ORDER NO. C14570						
DRAWING NO. E-WE-45						

FEDERAL AID REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
332	COLORADO	170-3(82)220	51	208

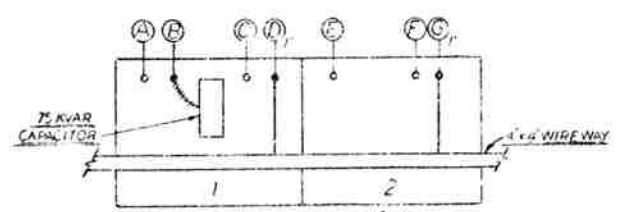
ADDED MAIN GAS SYSTEM CIRCUITS P-7 & A-7



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



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



ENLARGED PLAN NO. 1
 24 KV MCC AC 1A & MCC NO. 1B
 (PLAN SHOWN FOR 1 FAN, TYPICAL - 6 PLACES)

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

CIRCUIT LIST 'A'

P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

WIREWAY TO CONTROL ROOM

CIRCUIT LIST 'B'

C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

WIREWAY FROM LOCAL CONTROL BOARD

CIRCUIT LIST 'C'

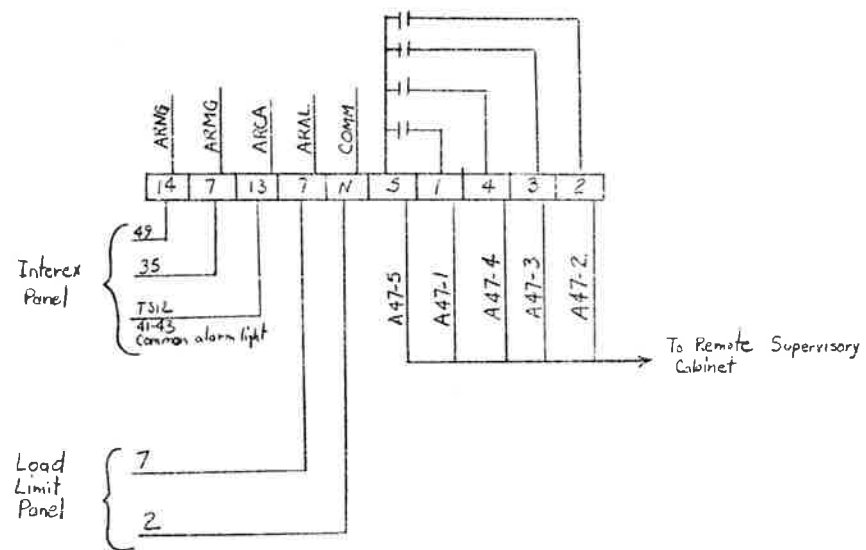
C21	C22	C23	C24	C25	C26	C27	C28	C29	C30
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

WIREWAY TO CONTROL ROOM

CIRCUIT LIST 'D'

C31	C32	C33	C34	C35	C36	C37	C38	C39	C40
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

WIREWAY BETWEEN 24KV MCC 1A & B



MIXED GAS TERMINAL STRIP

LEGEND

- 480V/277 VAC POWER DISTRIBUTION PANEL (P1ES); CIRCUIT BREAKER TYPE LDP WESTINGHOUSE (OR EQUAL). SEE DWG. E-6-95 FOR SCHEDULE.
- LIGHTING & HEATING CONTACTOR PANEL, W/PB-30 A, 3P, 480V. CONTACTORS (120V COILS) NEMA 1 ENCLOSURE. SEE WIRING DIAG. DWG. E-7-75.
- LIGHTING & HEATING RELAY & CONTROL CABINET, NEMA 1 ENCLOSURE. SEE WIRING DIAGRAM ON DWG. E-7-75.
- LIGHTING TRANSFORMER, 480-206/120V, WALL MOUNTED, NON-VENT TYPE EFT, W/2-2 1/2" FCAN & FCAN TAPS, 15 KVA, WESTINGHOUSE CAT. NO. 6E982 (OR EQUAL).
- 120/208V AC POWER DISTRIBUTION PANEL (P2ES); 50A MAIN CIRCUIT BREAKER WESTINGHOUSE CAT. NO. ACB 24-48-050, SURFACE MOUNTED (OR EQUAL). SEE DWG. E-6-95 FOR SCHEDULE.
- AUTO-TRANSFER SWITCH - 20000 AMP, 30A, 3 POLE, 120/240V AC, 120/208V AC, 120V AC, 15000 AMP, NEMA 1 ENCLOSURE, ZENITH CAT. NO. 6QT 3A (OR EQUAL). WIRING DIA. DWG. E-6-45.

AS CONSTRUCTED
 REVISED Date 5/31/79

NOTES-

- WORK THIS DRAWING WITH DWGS. E-6-15 & E-6-25.
- FOR LEGEND AND GENERAL NOTES, SEE DWG. E-6-15.
- USE CADWELD TYPE GROUND CONNECTIONS FOR GND. TAPS.
- CONTRACTOR TO PROVIDE HV BARRIER IN AC PULL BOX.
- PULL BOXES STATION 27N ARE EXISTING & HAVE EXIST. GROUND TIED INTO EXIST. GND GROUND LOOP.
- ITEMS 1) THRU 5) TO BE MOUNTED ON UNISTRUT™ #1000 CHANNEL (OR EQUIV.); ITEMS 6) & 7) TO HAVE TOP OF BOXES 6" & 7" ABOVE FLOOR; TOP OF ITEM 8) TO BE 5'-0" ABOVE FLOOR; TOP OF ITEM 9) TO BE 11'-0" ABOVE FLOOR.
- SCORE DRILL WALL FOR CONDUITS & SEAL VOIDS W/WDURSEAL (OR EQUAL).

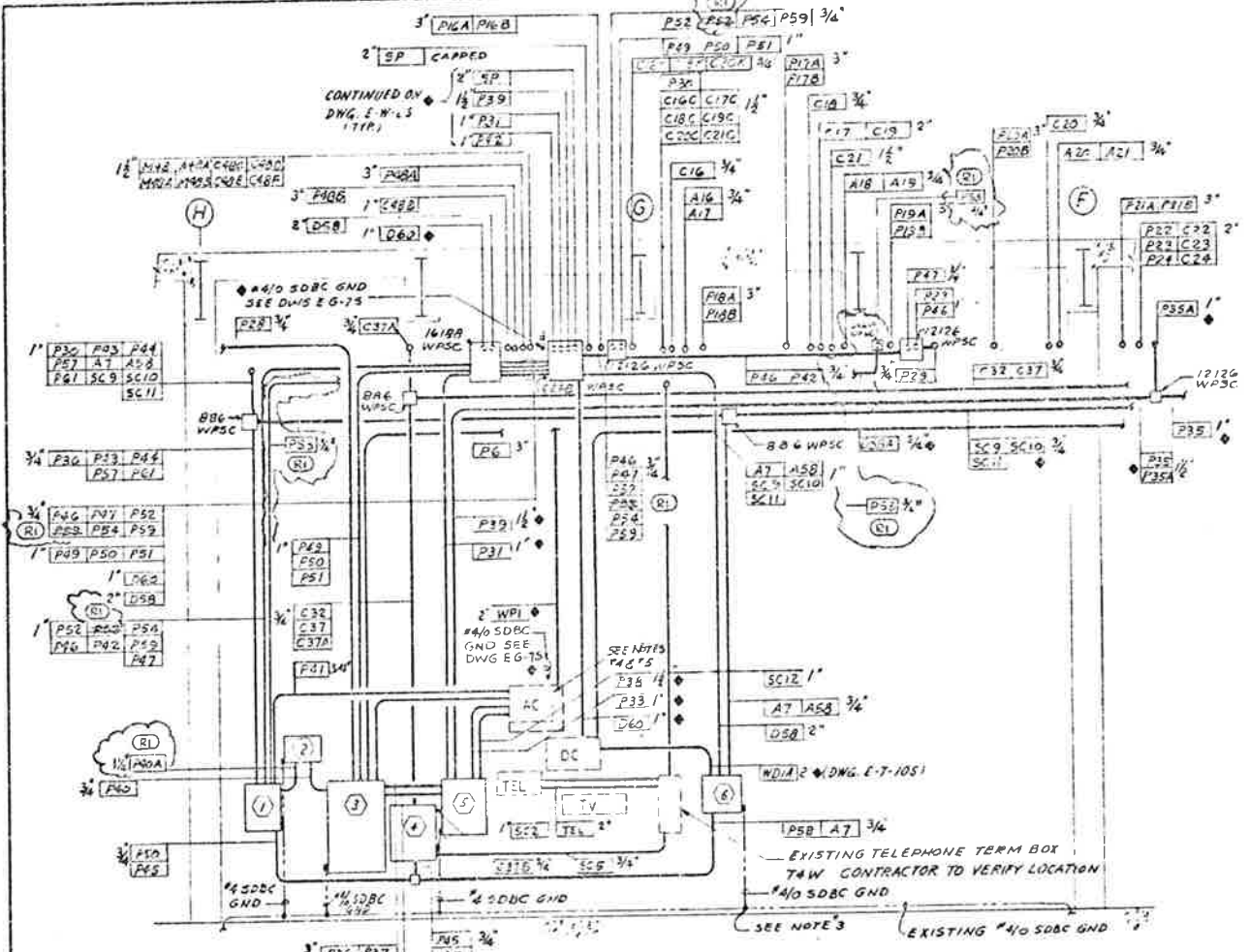


NO.	REVISIONS	DATE	BY	CHKD
1	STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND FLOOR			
ELECTRICAL WEST & EAST VENTILATION BUILDINGS CONDUIT SECTIONS - DETAILS SHEET NO. 51				

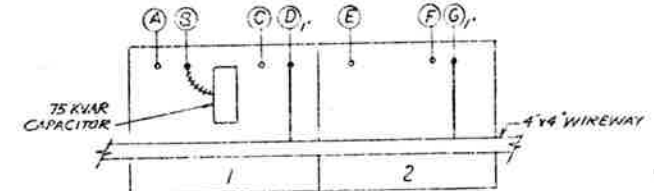
DATE ISSUED: 11/14/78
 REVISION NO: 0
 CUSTOMER: S S 10 10 S DRG
 FIELD: 15 25 1 1 15

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
301	COLORADO	170-3(82)280	52	208

REVISED FOR EMERG. GENERATOR WATER HEATER #1 & 2 AND LUBE OIL PUMP & HEATER POWER REQS. AS SHOWN. JET/DW 7/22/76



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



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

FAN	A	B	C	D	E	F	G
EE-5	P10A P10B	P10C P10D	A10	C10A C10B	P11A P11B	A11	C11A C11B
EE-6	P12A P12B	P12C P12D	A12	C12A C12B	P13A P13B	A13	C13A C13B
EE-7	P14A P14B	P14C P14D	A14	C14A C14B	P15A P15B	A15	C15A C15B
ES-5	P16A P16B	P16C P16D	A16	C16A C16B	P17A P17B	A17	C17A C17B
ES-6	P18A P18B	P18C P18D	A18	C18A C18B	P19A P19B	A19	C19A C19B
ES-7	P20A P20B	P20C P20D	A20	C20A C20B	P21A P21B	A21	C21A C21B

CIRCUIT LIST 'A'

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

1" 1/2" GND FROM MCC #5 TO LOCAL CONTROL BOARD VIA 2" NIPPLE

CIRCUIT LIST 'B'

P27, A7, C19A, C19B, C19C, P28, C19C, C23, C19A, P10, C23					
SC11, C19A, C19B, A5, C19B, P26, C19A, C26, C19B, C19D, C23A					
C10, C10B, C10C, C10D, C10E, P27, C10B, C27, C10, C20, C26					
C10A, C10C, P9, C10A, C20, SC10, C10, P7, C24A					
C10B, C10C, C22, C10A, C10B, P10, C10A, C10D, P29, C25					
C10C, C10B, C23, C10C, C10A, C10C, C10C, C10C, C23					
P21, C10C, C26, C10, C20, C10C, C10C, P24, A7A					
A10, A11, A12, A13, A14, A15, A16, A17, A18, A19, A20, A21					
C19, C19A, C19B, C19C, C19D, C19E, C19F, C19G, C19H, C19I, C19J					
C20					

FROM LOCAL CONTROL BOARD TO WIREWAY

CIRCUIT LIST 'C'

P27, C26, C10C, C10C, C10A, A5, SC9, SC10, SC11					
C10C, C10A, A10, A11, C10C, C10E, A12, A7, A20, A21					
C23, C23A, A20, C10, C10C, A14, A10, C10C					
C10, C10A, C10B, C10C, C10D, C10E, C10F, C10G, C10H, C10I, C10J					

1" 1/2" GND FROM LOCAL CONTROL BOARD TO REMOTE SUPERVISORY CABINET VIA 2" NIPPLE

CIRCUIT LIST 'D'

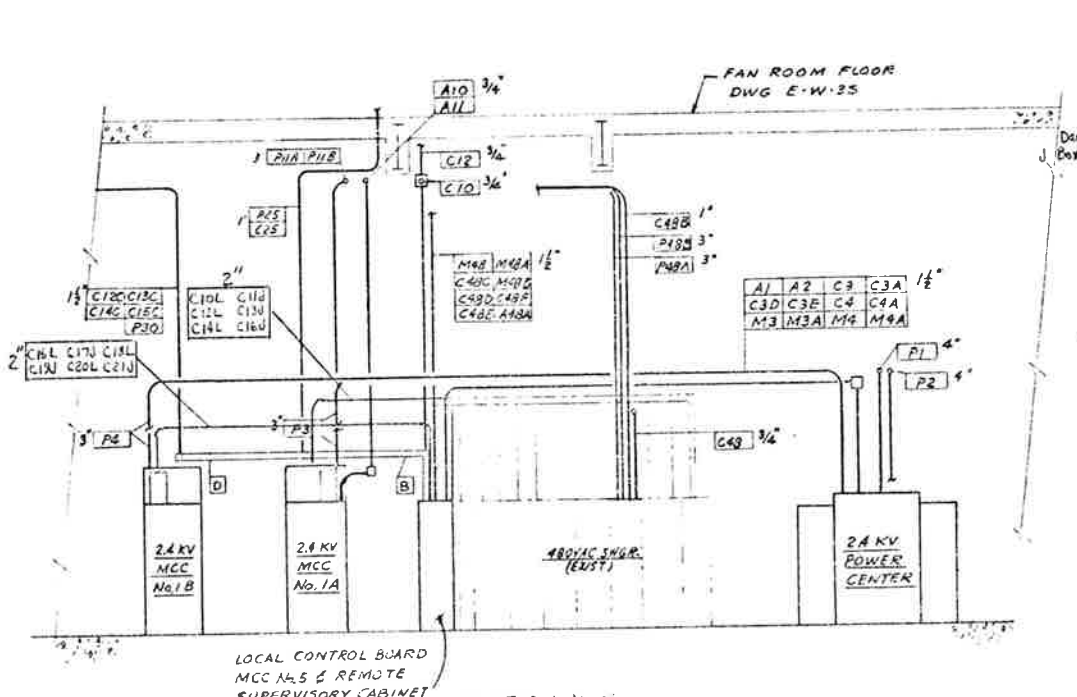
P27, P21, C10C, C10A, P2, C20, C10A, C10, P23, C10					
SC9, P20, P22, C10B, C10C, C10C, C10B, A7, A5, C10A					
SC10, C10A, C22, C10A, SC20, P23, P20, C10C					
SC11, C10B, C10, C10C, C10A, C10, P24, C10C					
C10, C10B, C10, C10, C10A, C10, C10A, C10, P25A, C10C					
A10C, A11A, A12C, A13A, A14C, A15A, A16C, A17A, A18C, A19A, A20C, A21A					
C10C, C10A, C10B, C10C, C10C, C10C, C10C, C10C, C10C, C10C					

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

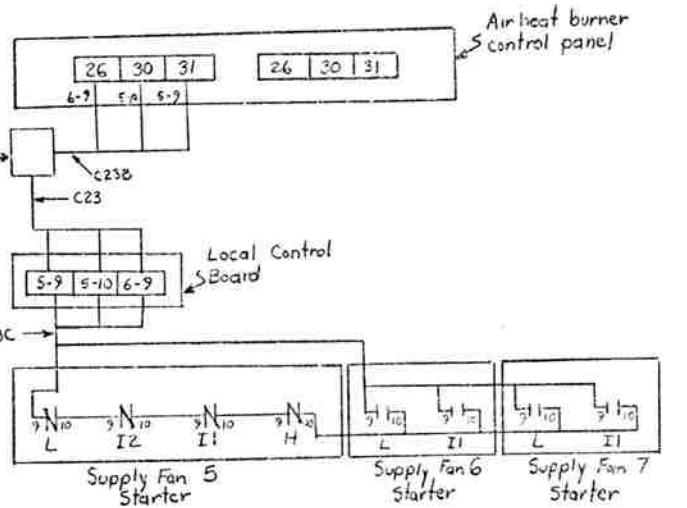
- LEGEND
- 120/208 V. AC. POWER DISTRIBUTION PANEL (P2WS) 100A MAIN CIRCUIT BREAKER WEST CAT # VDB 24-48-050 SURFACE MOUNTED (OR EQUAL) SEE DWG E-G-95 FOR SCHEDULE
 - LIGHTING TRANSFORMER 400-208/120 V. WALL MOUNTED NON-VENT TYPE EPF W/2-2 1/2" FAN & ECBN TAPS 30VA WEST CAT # 6E4397 (OR EQUAL)
 - 480 Y 277V AC. POWER DISTRIBUTION PANEL (PIWS) CIRCUIT BREAKER TYPE CDP WEST (OR EQUAL) SEE DWG E-G-95 FOR SCHEDULE
 - LIGHTING & HEATING RELAY CONTROL CABINET, NEMA 1, ENCLOSURE. SEE WIRING DIAGRAM ON DWG. E-T-75
 - LIGHTING & HEATING CONTACTOR PANEL W/9-30A, 3-POLE 480V AC CONTACTORS (120V COILS); NEMA 1, ENCLOSURE SEE WIRING DIAGRAM DWG E-T-75
 - AUTO-TRANSFER SWITCH - DOVES THROUGH CONTACTOR 30A, 3-POLE 120/240V DC, W/120V COIL; N/AUX SPDT CONTACT, NEMA 1, ENCLOSURE, 2E WITH CAT # 6QT33A (OR EQUAL) WIRING DIAGRAM - DWG. E-G-45.

- NOTES
1. WORK THIS DRAWING WITH DWG'S E-W-15 & E-W-25.
 2. FOR LEGEND & GENERAL NOTES SEE DWG E-W-15.
 3. USE CADWELD TYPE GROUND CONNECTIONS FOR GND TAPS.
 4. CONTRACTOR TO PROVIDE N.V. BARRIER IN AC. PULLBOX.
 5. PULLBOXES @ STATION IN ARE EXISTING & HAVE GROUNDS TIED INTO EXISTING #4/0 GROUND LOOP.
 6. ITEMS #1 THRU #6 TO BE MOUNTED ON UNISTRUT # P1000 CHANNEL (OR EQUAL) ITEMS #1, 3 & 6 TO HAVE TOP OF BOXES @ 6'-0" ABOVE FLOOR, TOP OF ITEM #2 TO BE 5'-0" ABOVE FLOOR, TOP OF ITEM #4 TO BE 9'-0" ABOVE FLOOR.
 7. CORE DRILL WALL FOR CONDUITS & SEAL VOIDS W/ DUXSEAL (OR EQUAL).

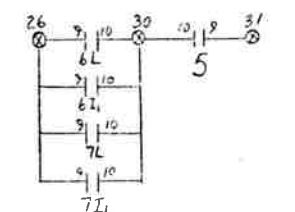
AS CONSTRUCTED
 REVISED Date 5/31/79



SECTION - A-A
 SCALE 3/16" = 1'-0"



AIR HEAT BURNER - FAN INTERLOCK



Partial airheat burner wiring diagram



REVISIONS	
NO.	DESCRIPTION

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

ELECTRIC AL
 WEST & EAST VENTILATION BUILDINGS
 CONDUIT SECTIONS & DETAILS
 SHEET NO. 2

PRINT RECORD

DATE RECD: 5/31/79
 REVISION NO. 0
 PROJ. PREP BY: J. W. W. JR.
 CUSTOMER: S. S. O. W. 206
 FIELD: 15/15/79
 INTRAC. 15/15/79

DESIGN: J. W. W. JR.
 CHECKED: J. W. W. JR.
 SCALE: AS SHOWN
 NOTED: C14576

AS CONSTRUCTED
REVISED Date 8/31/79

CONDUIT NO	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
P18A	3 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #3	SUPPLY FAN NO. 6, MOTOR #1	FEEDER - HIGH SPEED
P18B	3 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #3	SUPPLY FAN NO. 6, MOTOR #1	FEEDER - INTERMEDIATE #1 SPEED
P18C	3 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #3	SUPPLY FAN NO. 6, MOTOR #1	FEEDER - LOW SPEED
C18	3 1/2 #12 (600V)	LOCAL CONTROL BOARD	LOCAL EMERG. STOP-RUN SEL. SW.	CONTROL
C18A	6 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #3	LOCAL CONTROL BOARD	INDICATING LIGHTS
C18B	3 1/2 #12 (600V)	LOCAL CONTROL BOARD	SPEED SWITCH	CONTROL
C18C	8 1/2 #12 (600V)	LOCAL CONTROL BOARD	SPEED SWITCH	CONTROL
C18D	NOTE #4	SPEED SWITCH	MAGNETIC PICKUP	CONTROL
C18E	REFERENCE ONLY	REFERENCE ONLY	REFERENCE ONLY	REFERENCE ONLY
C18I	2 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #3	2.4 KV MCC NO. 1B, UNIT #4	SUPPLY FAN NO. 6, MOTOR #1 INTLK TO MOTOR #2
C18J	2 1/2 #12 (600V)	LOCAL CONTROL BOARD	LOCAL CONTROL BOARD	SUPPLY FAN #6 DAMPER RESET
C18K	2 1/2 #12 (600V)	SUPPLY FAN #6	SUPPLY FAN #6, REVERSE ROTATION SW.	CONTROL
A18	1 3/4 #16 SHLD	2.4 KV MCC NO. 1B, UNIT #3	MOTOR #1 RTD	ALARM
A18A	REFERENCE ONLY	REFERENCE ONLY	REFERENCE ONLY	REFERENCE ONLY
C18L	4 1/2 #12 (600V)	Local Control Board	Supply Fan #6, Mtr #1	Led-Trak Interlock
C19	4 1/2 #12 (600V)	Local Control Board	Supply Fan #6, Mtr #2	Led-Trak Interlock
P19A	3 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #4	SUPPLY FAN NO. 6, MOTOR #2	FEEDER - INTERMEDIATE #2 SPEED
P19B	3 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #4	SUPPLY FAN NO. 6, MOTOR #2	FEEDER - LOW SPEED
P19C	NOT USED	NOT USED	NOT USED	NOT USED
C19	1 3/4 #16 SHLD	FAN BEARING TEMPERATURE SWITCH	LOCAL CONTROL BOARD	CONTROL NOTE #3
C19A	6 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #4	LOCAL CONTROL BOARD	INDICATING LIGHTS
C19B	3 1/2 #12 (600V)	LOCAL CONTROL BOARD	SPEED SWITCH	CONTROL
C19C	8 1/2 #12 (600V)	LOCAL CONTROL BOARD	SPEED SWITCH	CONTROL
C19D	2 1/2 #12 (600V)	MCC No. 45	BULKHEADS #7 TO 12	CONTROL
C19I	2 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #3	2.4 KV MCC NO. 1B, UNIT #3	SUPPLY FAN #6 INTLK TO MOTOR #1
A19	1 3/4 #16 SHLD	MOTOR #2 RTD	ALARM	ALARM
A19A	2 1/2 #12 (600V)	LOCAL CONTROL BOARD	MOTOR HIGH TEMP	ALARM
P20A	3 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #5	SUPPLY FAN NO. 7, MOTOR #1	FEEDER - HIGH SPEED
P20B	3 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #5	SUPPLY FAN NO. 7, MOTOR #1	FEEDER - INTERMEDIATE #1 SPEED
P20C	3 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #5	SUPPLY FAN NO. 7, MOTOR #1	FEEDER - LOW SPEED
C20	3 1/2 #12 (600V)	LOCAL CONTROL BOARD	LOCAL EMERG. STOP-RUN SEL. SW.	CONTROL
C20A	6 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #5	LOCAL CONTROL BOARD	INDICATING LIGHTS
C20B	3 1/2 #12 (600V)	LOCAL CONTROL BOARD	SPEED SWITCH	CONTROL
C20C	8 1/2 #12 (600V)	LOCAL CONTROL BOARD	SPEED SWITCH	CONTROL
C20D	NOTE #4	SPEED SWITCH	MAGNETIC PICKUP	CONTROL
C20E	REFERENCE ONLY	REFERENCE ONLY	REFERENCE ONLY	REFERENCE ONLY
C20I	2 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #5	2.4 KV MCC NO. 1B, UNIT #6	SUPPLY FAN NO. 7, MOTOR #1 INTLK TO MOTOR #2
C20J	2 1/2 #12 (600V)	LOCAL CONTROL BOARD	LOCAL CONTROL BOARD	SUPPLY FAN #7 DAMPER RESET
C20K	2 1/2 #12 (600V)	SUPPLY FAN #7	SUPPLY FAN #7, REVERSE ROTATION SW.	CONTROL
A20	1 3/4 #16 SHLD	2.4 KV MCC NO. 1B, UNIT #5	MOTOR #1 RTD	ALARM
A20A	REFERENCE ONLY	REFERENCE ONLY	REFERENCE ONLY	REFERENCE ONLY
C20L	4 1/2 #12 (600V)	Local Control Board	Supply Fan #7, Mtr #1	Led-Trak Interlock
C21	4 1/2 #12 (600V)	Local Control Board	Supply Fan #7, Mtr #2	Led-Trak Interlock
P21A	3 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #6	SUPPLY FAN NO. 7, MOTOR #2	FEEDER - INTERMEDIATE #2 SPEED
P21B	3 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #6	SUPPLY FAN NO. 7, MOTOR #2	FEEDER - LOW SPEED
P21C	NOT USED	NOT USED	NOT USED	NOT USED
C21	1 3/4 #16 SHLD	FAN BEARING TEMPERATURE SWITCH	LOCAL CONTROL BOARD	CONTROL NOTE #3
C21A	6 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #6	LOCAL CONTROL BOARD	INDICATING LIGHTS
C21B	3 1/2 #12 (600V)	LOCAL CONTROL BOARD	SPEED SWITCH	CONTROL
C21C	8 1/2 #12 (600V)	LOCAL CONTROL BOARD	SPEED SWITCH	CONTROL
C21D	2 1/2 #12 (600V)	MCC No. 45	BULKHEADS #13 TO 18	CONTROL
C21I	2 1/2 #12 (600V)	2.4 KV MCC NO. 1B, UNIT #6	2.4 KV MCC NO. 1B, UNIT #5	SUPPLY FAN NO. 7, MOTOR #2 INTLK TO MOTOR #2
A21	1 3/4 #16 SHLD	MOTOR #2 RTD	ALARM	ALARM
A21A	2 1/2 #12 (600V)	LOCAL CONTROL BOARD	MOTOR HIGH TEMP	ALARM
P22	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT AF	LOCAL DISCONNECT SWITCH	FEEDER
P22A	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT AF	SUPPLY FAN NO. 5, DAMPER MOTOR	FEEDER
C22	12 1/2 #12	LOCAL CONTROL BOARD	LOCAL LIMIT SWITCH	CONTROL
C22A	4 1/2 #12	480V MCC NO. 5, UNIT AF	LOCAL CONTROL BOARD	CONTROL & INTERLOCK
P23	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT CF	LOCAL DISCONNECT SWITCH	FEEDER
P23A	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT CF	SUPPLY FAN NO. 6, DAMPER MOTOR	FEEDER
C23	12 1/2 #12	LOCAL CONTROL BOARD	LOCAL LIMIT SWITCH	CONTROL
C23A	4 1/2 #12	480V MCC NO. 5, UNIT CF	LOCAL CONTROL BOARD	CONTROL & INTERLOCK
C23B	3 1/2 #12 (600V)	Local Limit Sw, damper N.B.	Burner Control Panel	Fan-Air heat burner Interlock
C23C	3 1/2 #12 (600V)	Local Control Board	2.4KV MCC #18	Fan-Air heat burner Interlock

CONDUIT NO	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
P24	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT BF	LOCAL DISCONNECT SWITCH	FEEDER
P24A	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT BF	SUPPLY FAN NO. 5, DAMPER MOTOR	FEEDER
C24	12 1/2 #12	LOCAL CONTROL BOARD	LOCAL LIMIT SWITCH	CONTROL
C24A	4 1/2 #12	480V MCC NO. 5, UNIT BF	LOCAL CONTROL BOARD	CONTROL & INTERLOCK
P25	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT BF	LOCAL DISCONNECT SWITCH	FEEDER
P25A	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT BF	EXHAUST FAN NO. 5 DAMPER MOTOR	FEEDER
C25	12 1/2 #12	LOCAL CONTROL BOARD	LOCAL LIMIT SWITCH	CONTROL
C25A	4 1/2 #12	480V MCC NO. 5, UNIT BF	LOCAL CONTROL BOARD	CONTROL & INTERLOCK
P26	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT DF	LOCAL DISCONNECT SWITCH	FEEDER
P26A	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT DF	EXHAUST FAN NO. 5 DAMPER MOTOR	FEEDER
C26	12 1/2 #12	LOCAL CONTROL BOARD	LOCAL LIMIT SWITCH	CONTROL
C26A	4 1/2 #12	480V MCC NO. 5, UNIT DF	LOCAL CONTROL BOARD	CONTROL & INTERLOCK
P27	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT GR	LOCAL DISCONNECT SWITCH	FEEDER
P27A	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT GR	EXHAUST FAN NO. 7 DAMPER MOTOR	FEEDER
C27	12 1/2 #12	LOCAL CONTROL BOARD	LOCAL LIMIT SWITCH	CONTROL
C27A	4 1/2 #12	480V MCC NO. 5, UNIT GR	LOCAL CONTROL BOARD	CONTROL & INTERLOCK
P28	REFERENCE ONLY	REFERENCE ONLY	REFERENCE ONLY	REFERENCE ONLY
P29	3 1/2 #12 (600V)	480V MCC NO. 5, UNIT AR	60A FUSED DISCONNECT SWITCH	FEEDER
P29A	3 1/2 #12 (600V)	60A FUSED DISCONNECT SWITCH	ELEVATOR CONTROL PANEL	FEEDER
P29B	3 1/2 #12 (600V)	30A FUSED DISCONNECT SWITCH	30A FUSED DISCONNECT SWITCH	FEEDER
P29C	3 1/2 #12 (600V)	30A FUSED DISCONNECT SWITCH	ELEVATOR PENTHOUSE UNIT HEATER	FEEDER

- NOTES:
- FOR WIRE & CABLE SEE D.O.M. SPECIFICATIONS SECTION 1700
 - FOR CIRCUITS MARKED "REFERENCE ONLY" SEE DWG. E-5-55 FOR CONTINUATION IN EAST VENT. BLDG. & DWG. E-W-45 & DWG. E-W-55 FOR CONTINUATION IN WEST VENT. BLDG.
 - CIRCUIT TYPICAL FOR 3-TERM. SWITCHES FOR FAN
 - MAGNET PICKUP FURNISHED 10 FOOT LEADS



PRINT RECORD

DATE ISSUED: 10/1/72

REVISION NO: 1

FOR: 170-3(22)220

CUSTOMER: S-5-10-10

FIELD: 15-12-1

INTRA: 15-12-1

SCALE: NONE

DATE: 10/1/72

REVISIONS

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS

EISENHOWER MEMORIAL TUNNEL

SECOND SUB

ELECTRICAL

WEST & EAST VENT. DAMPER MOTORS

CONDUIT & CABLE SCHEDULE

SHEET NO. 2

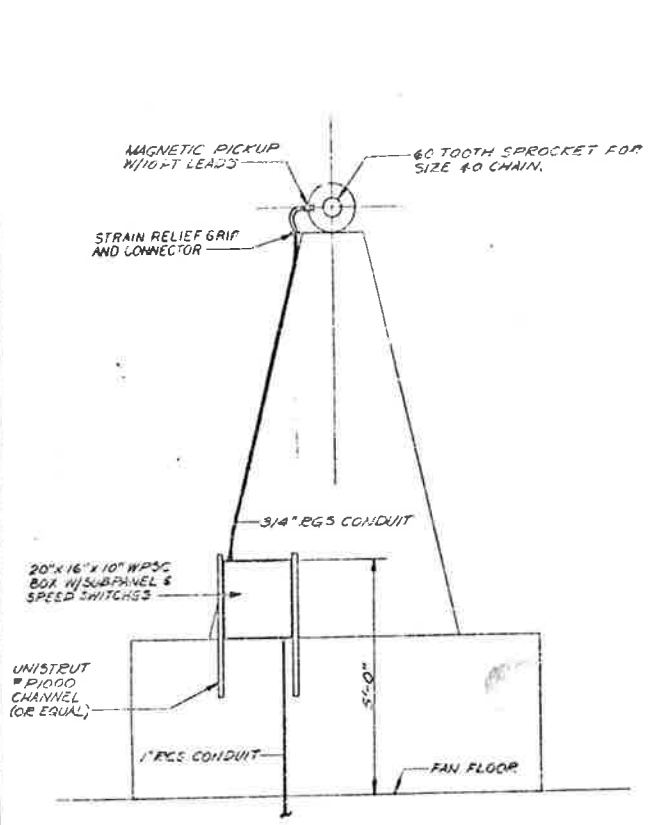
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DATE: 10/1/72

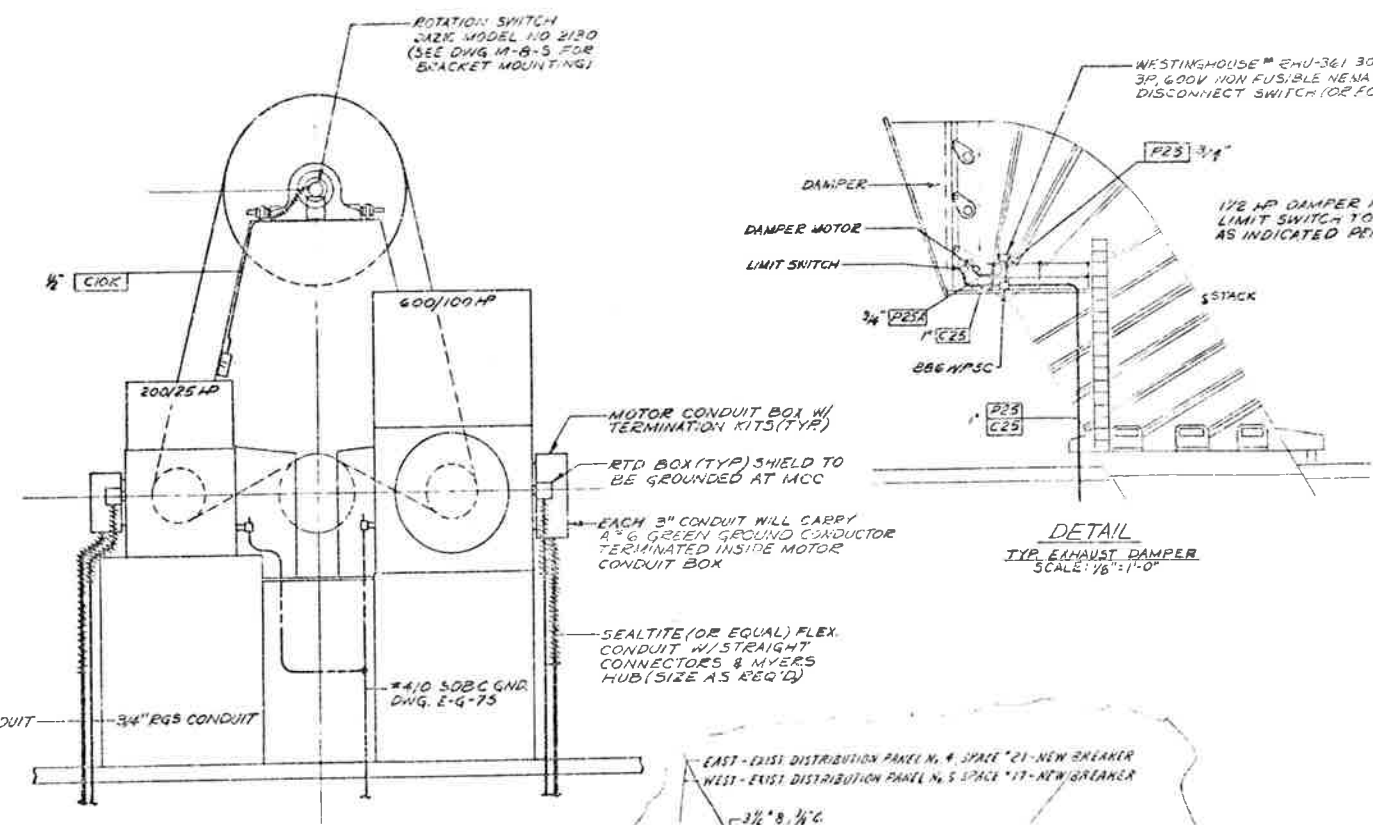
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378	COLORADO	170-3102/280	55	208

(R-1) ADDED EMERG. GEN VENT FAN WIRING DIAG. & PARTIAL PLANS ADDED NOTES 1, 2, 3, 4, 5. RPT/CPW 6/11/76

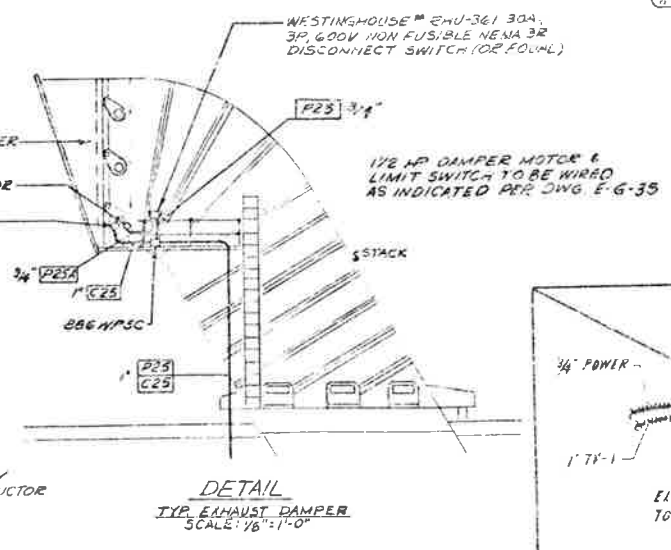
AS CONSTRUCTED
 REVISED Date 6/31/79



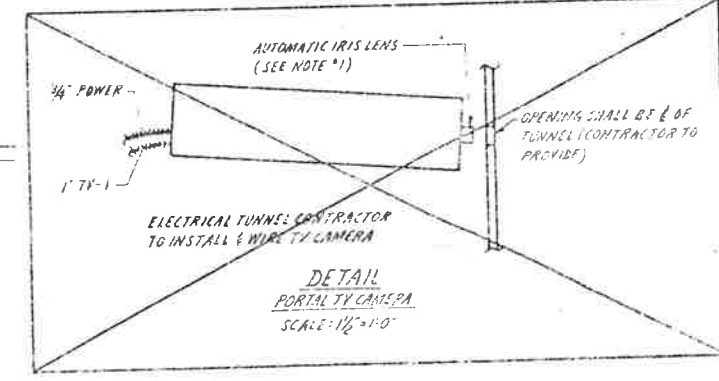
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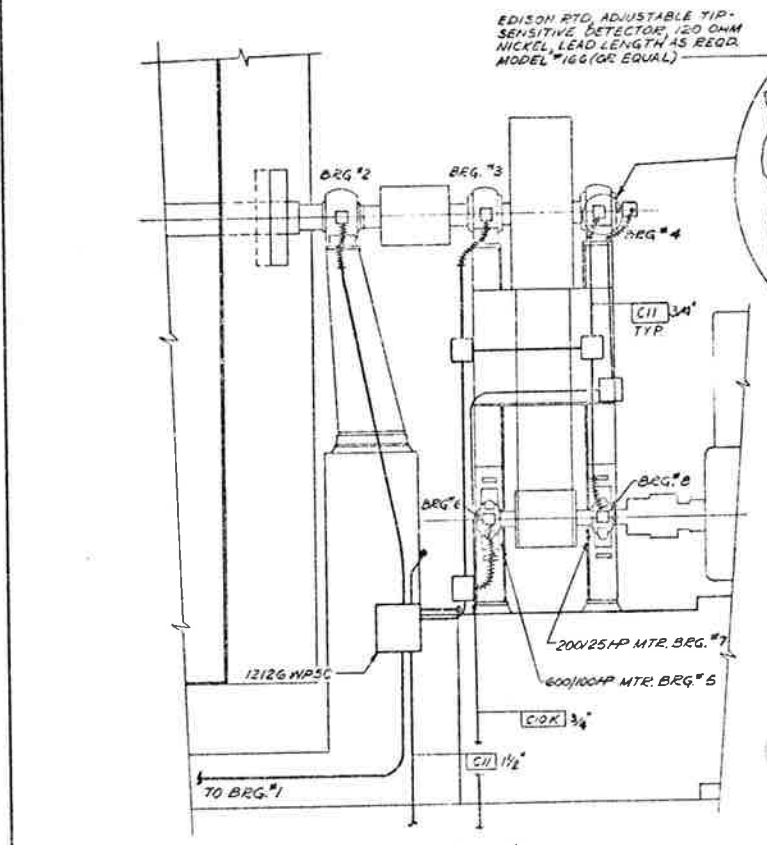
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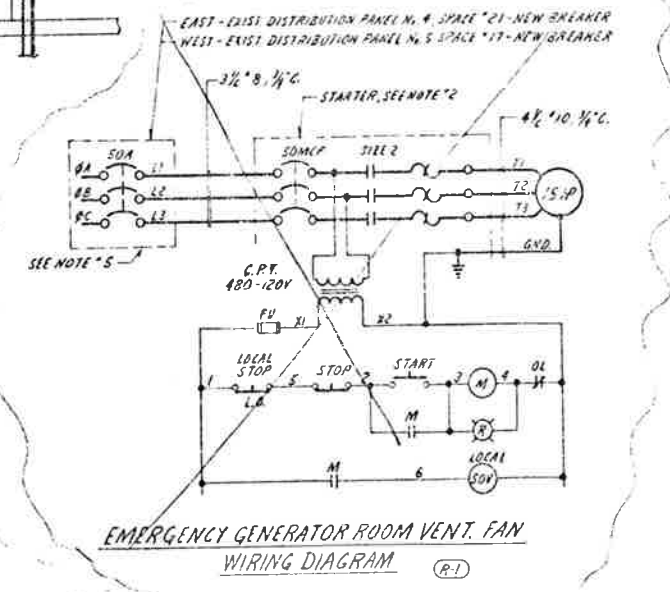
DETAIL
 TYP. EXHAUST DAMPER
 SCALE: 1/8" = 1'-0"



DETAIL
 PORTAL TV CAMERA
 SCALE: 1/2" = 1'-0"



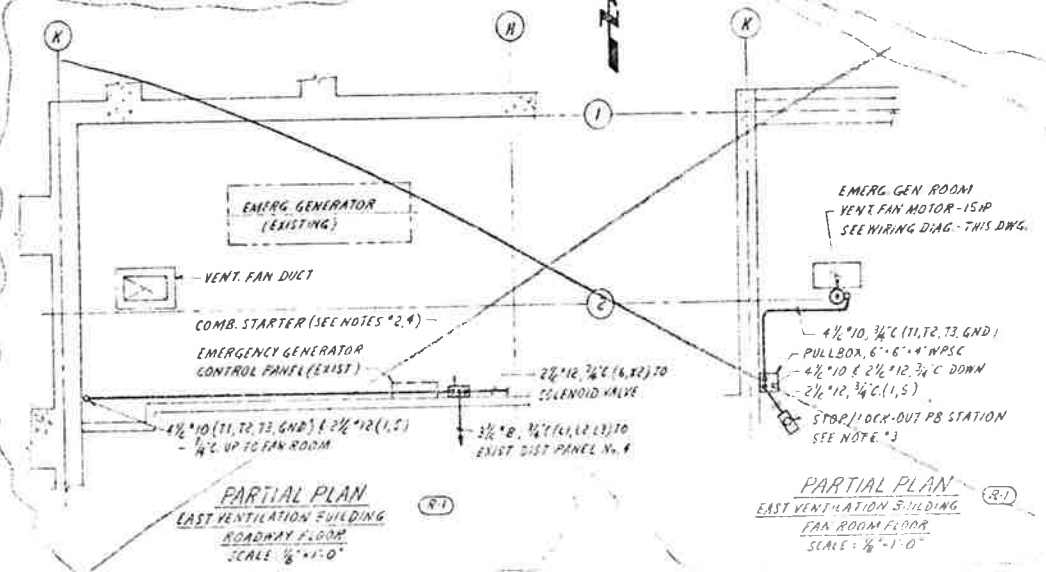
SECTION 'C-C'
 FAN BEARING TEMPERATURE SWITCHES
 SCALE: 1/2" = 1'-0"



EMERGENCY GENERATOR ROOM VENT. FAN
 WIRING DIAGRAM (R-1)

NOTES:

1. POSITION CAMERA BACK FROM OPENING IN WALL DIRECT OUTLET ON VIDEO SURF.
2. EMERGENCY GENERATOR ROOM VENT. FAN CONDUIT STARTER WITH 3 POLE CONTACT MOTOR CAT PROTECTION WEAR SIZE 2, NON-REVERSING, 120VAC-120V COIL, CONTROL POWER TRANSFORMER (120V/240V 100VA) 1/4" O.D. & 1/4" I.D. AUX CONTACT BLOCK NEMA 12 ENCL. WITH RED INDICATING LIGHT AND START-STOP PUSHBUTTONS ON COVER. 3-POLE OVERLOAD HEATERS, WESTINGHOUSE CAT # A00325MAG (AUTOMATIC COIL) TOP OF STARTER TO BE 6'-0" ABOVE FLOOR AND MOUNTED ADJACENT TO EMERGENCY GENERATOR CONTROL PANEL.
3. STOP/LOCK-OUT PUSHBUTTON STAT ON TO CONSIST OF A RED PUSHBUTTON OPERATOR WITH NO SHROUD, 1" STED (A-C) CONTACT BLOCK, 6/16" SIZE RESTING HOUSE CAT # 07600, STOP LEGEND PLATE - CAT # 151500000, LATCHING ATTACHMENT - CAT # 219C 2 88691, SURFACE MOUNTED DIE CAST-1 UNIT ENCLOSURE - CAT # 212501 1/4" TO COVER - CAT # 212101000 (EQU.), MOUNT STATION - 8'-6" ABOVE FLOOR.
4. CONTRACTOR TO GROUND STARTER WITH 1/2" #6 SBC TO THE NEAREST BUILDING OR EQUIPMENT GROUND CABLE. MOTOR TO BE GROUNDING WITH 1/2" #10 STRANDED COPPER & RHH INSULATION - ENDS OF WIRE TO BE GREEN TAPED.
5. CONTRACTOR TO FURNISH CIRCUIT BREAKER AS SHOWN ON EMERGENCY GENERATOR ROOM VENT. FAN WIRING DIAGRAM. BREAKER TO BE 50A 600VAC-3 POLE THERMAL MAGNETIC SUITABLE FOR USE IN EXIST. DISTRIBUTION PANELS NO. 4 & 5.



PARTIAL PLAN
 EAST VENTILATION BUILDING
 ROADWAY FLOOR
 SCALE: 1/8" = 1'-0"

PARTIAL PLAN
 EAST VENTILATION BUILDING
 FAN ROOM FLOOR
 SCALE: 1/8" = 1'-0"

1. Evase stacks grounded from motor ground East Portal.



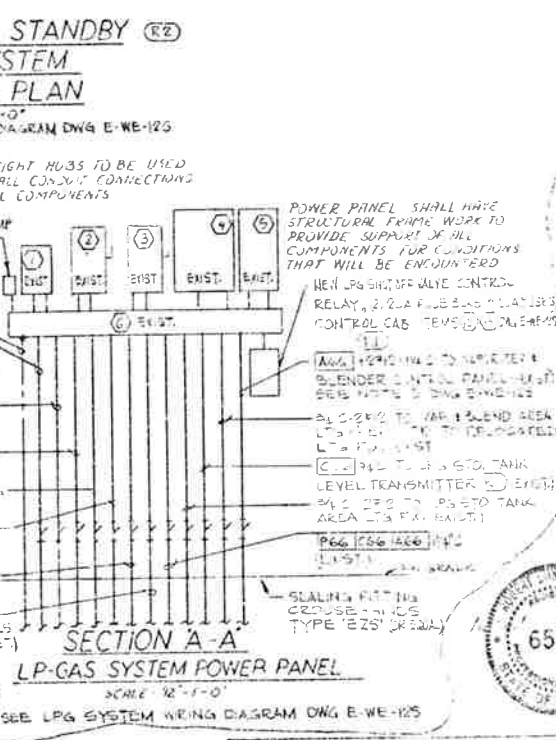
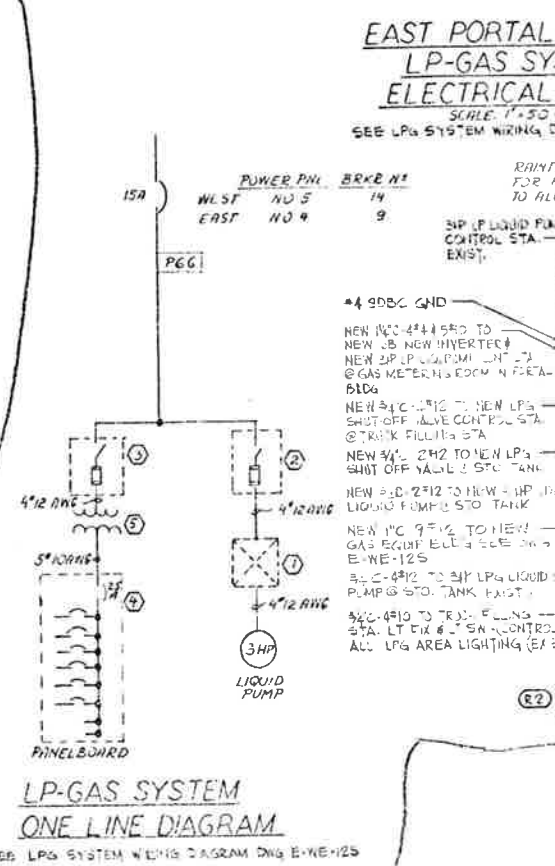
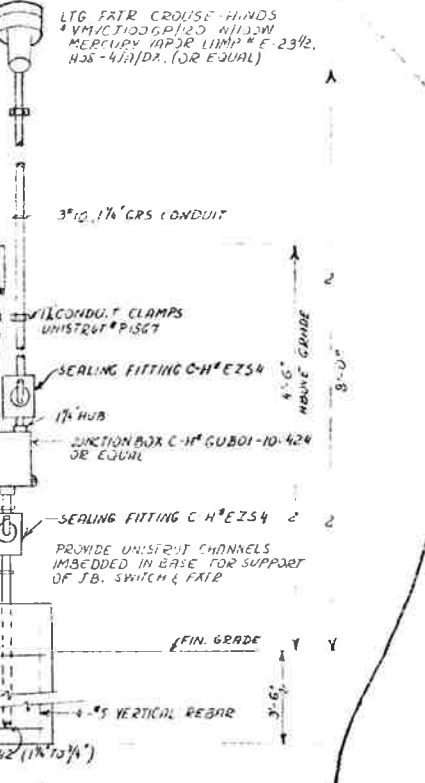
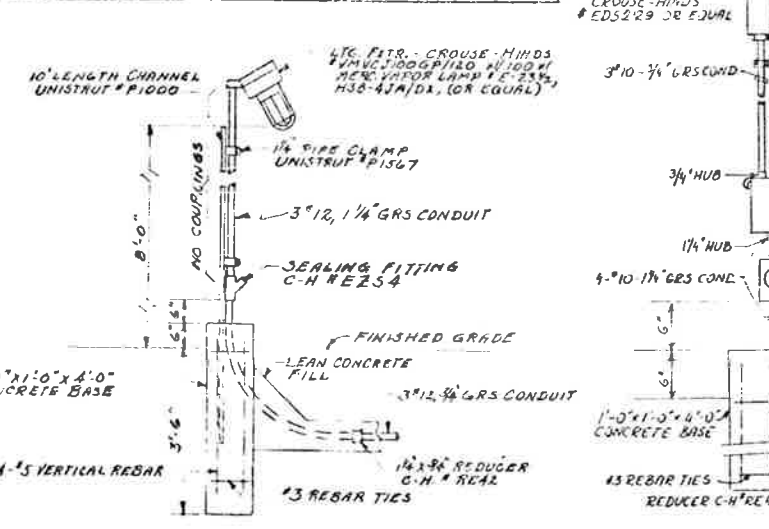
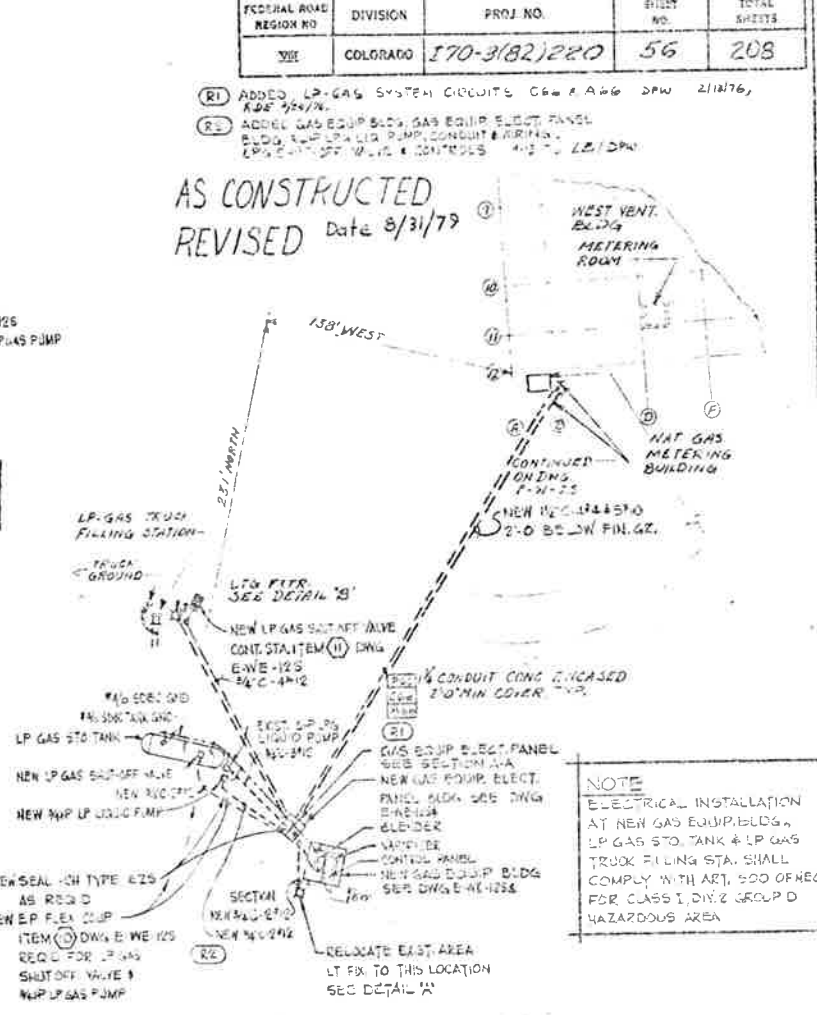
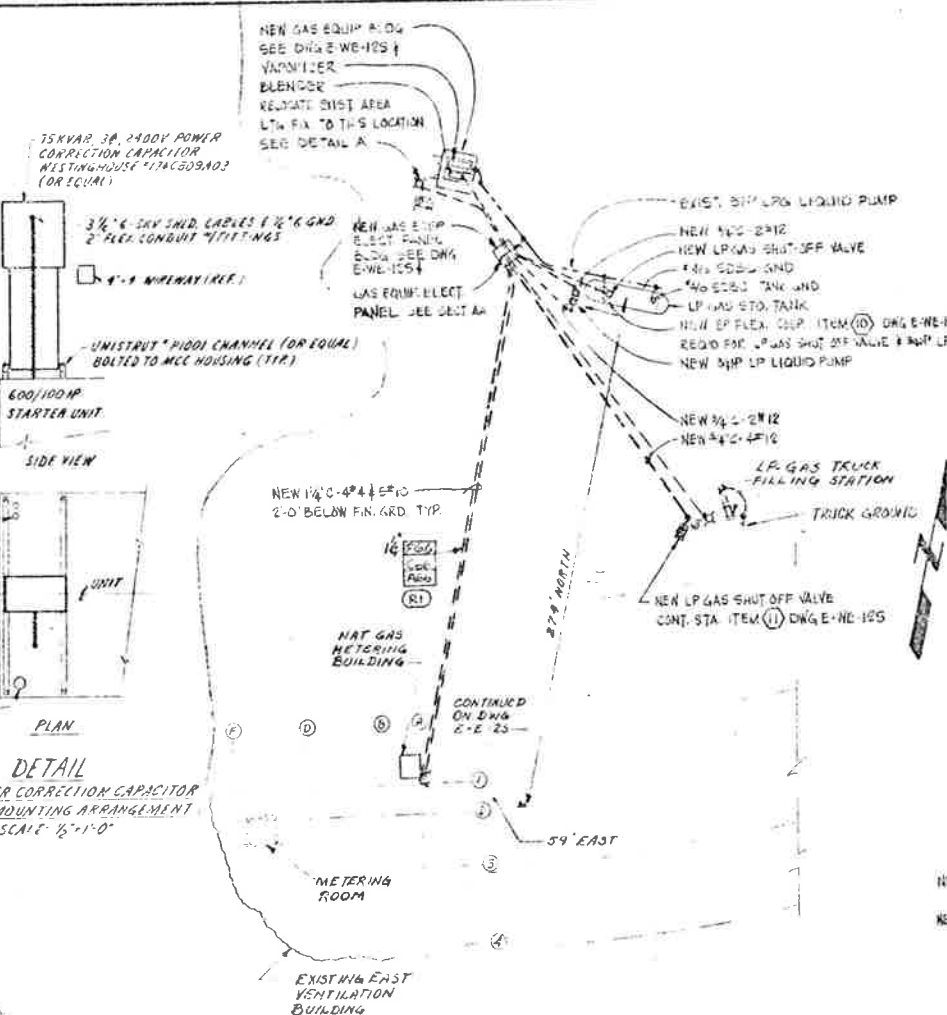
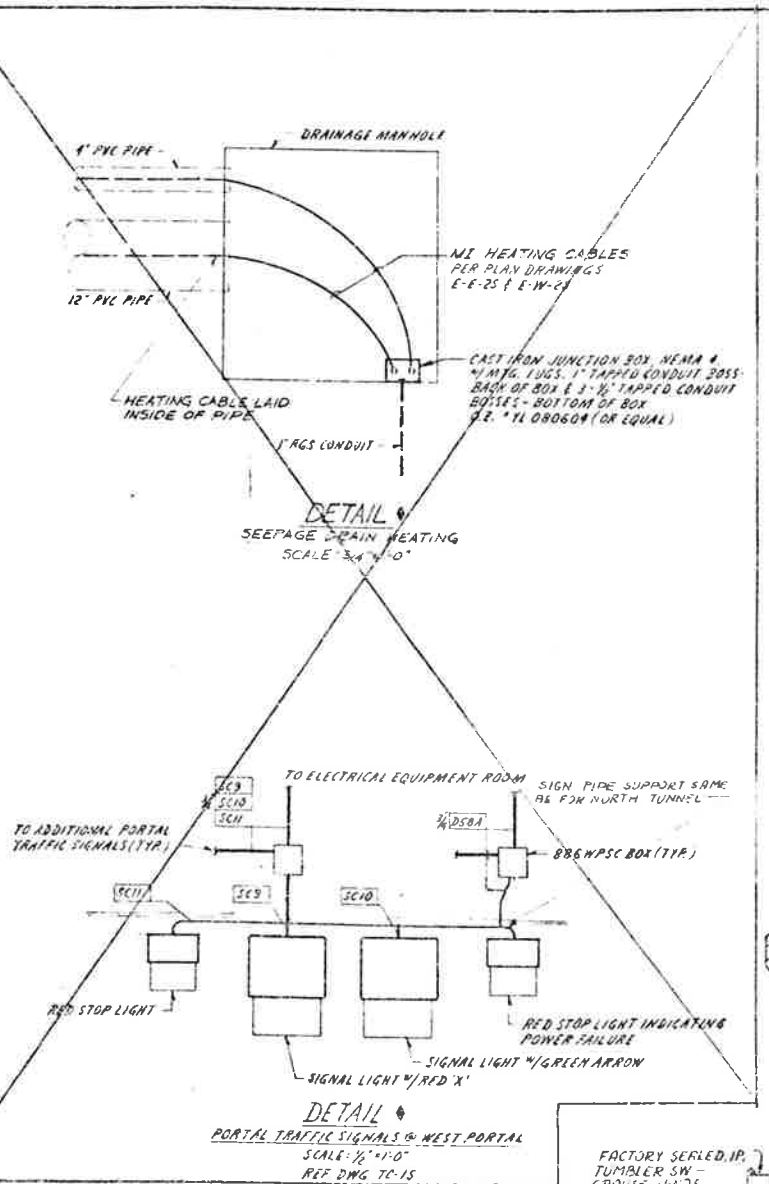
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DATE REVD	BY
REVISION NO.	BY
POB	PRE PRE FCA FCA
MULTIPLIER	5 5 10 10 0/1
FIELD	— — — — —
INTRA SU	15 15 1 1 15

REVISIONS	
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BURE	
ELECTRICAL WEST & EAST VENT. ATCH BUILDINGS MISC. DE. WLS SHEET NO. 1	
DATE	BY
NO.	BY
NO.	BY
NO.	BY
NO.	BY

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
100	COLORADO	170-3182(2)20	56	208

- R1 ADDED LP-GAS SYSTEM CIRCUITS & A/C SW 21076, R.E. 2/2/76
- R2 ADD'L GAS EQUIP BLDG, GAS EQUIP ELEC PANEL BLDG, LP GAS TRUCK FILLING STATION, CONT. STA. SHUT OFF VALVE & METERING ROOM. (SEE DETAIL A) & CONTROLS. SEE DWG E-W-125

AS CONSTRUCTED
REVISED Date 8/31/79



NOTE
ELECTRICAL INSTALLATION AT NEW GAS EQUIP BLDG, LP GAS STO. TANK & LP GAS TRUCK FILLING STA. SHALL COMPLY WITH ART. 500 OF NEC FOR CLASS I, DIV 2 GROUP D HAZARDOUS AREA

NOTE
① INDICATES MISC. CABLE, CONDUIT & DEVICES FURNISHED & INSTALLED ON FUTURE PROJECT

- MAGNETIC STARTER FOR LIQUID PUMP, 400V, 3PH, 1/2HP, 240VOLT COIL AND CONTROL POWER TRANSFORMER, FURNISHED BY LP-GAS SYSTEM VENDOR
- SAFETY SWITCH, 30A, 3P, 300VOLT, FUSIBLE IN NEMA 3R ENCLOSURE, WESTINGHOUSE 2-RHF-361 (1/3 BUSS * FRS 5" FUSE TRON FUSES (FOR EQUAL)
- SAFETY SWITCH, SAME AS ② EXCEPT 1/3 BUSS * FRS 5" FUSE TRON FUSES (FOR EQUAL)
- PANELBOARD, NEMA 3R WEATHERPROOF ENCL., 3PH, 4WIRE, 240VOLTS, 150AMP MAIN BUS, GROUND BUS, NEUTRAL BUS, 25A, 3P, XE MAIN BREAKER, 6-15A-1P BRKNG BREAKERS, 2-1P-SPICES, WESTINGHOUSE 4-1103-08-48-350 (FOR EQUAL)
- TRANSFORMER, DEL. TYP. OUTDOOR ENCLOSURE, 6KVA, 3PHASE, 480-208Y/120VOLTS 1/2-5/8 TAPS PCBW, WESTINGHOUSE TPE EPT-4 G 3009 (FOR EQUAL)
- W-RING TROUGH, OIL TIGHT, JIC, 6"X6"X2", HOFFMAN #F-6670 (FOR EQUAL)



REVISIONS		DATE	BY
NO.			

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

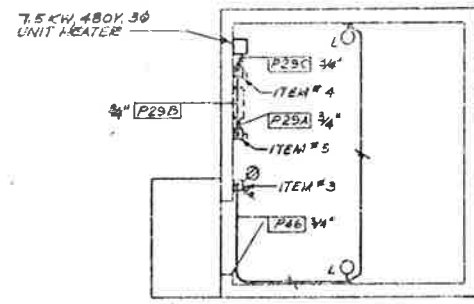
ELECTRICAL
WEST & EAST VENTILATION BUILDINGS
MISC DETAILS
SHEET NO. 2

6526

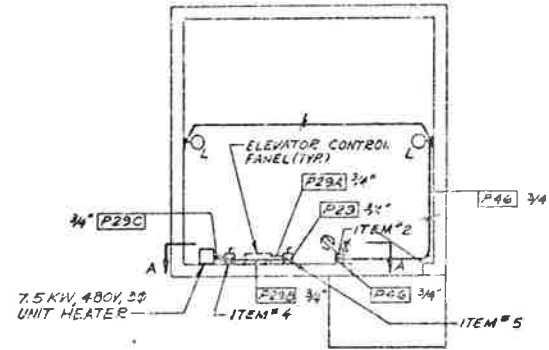
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FOR	PEE H2 H4 TCA HFC HFC
CUSTOMER	5 5 17 5 226 046
SCALE	AS SHOWN
INSTR. NO.	15 13 1 1 15 15

FEDERAL AID DIVISION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
502	COLORADO	I70-5182)2R0	57	208

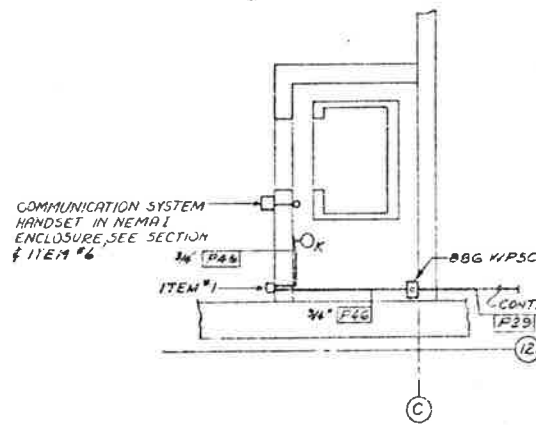
AS CONSTRUCTED
 NO REVISIONS DATE



PENTHOUSE PLAN - WEST
 SCALE: 1/4" = 1'-0"

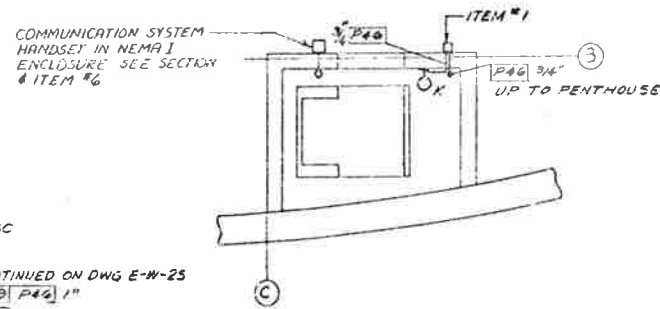


PENTHOUSE PLAN - EAST
 SCALE: 1/4" = 1'-0"

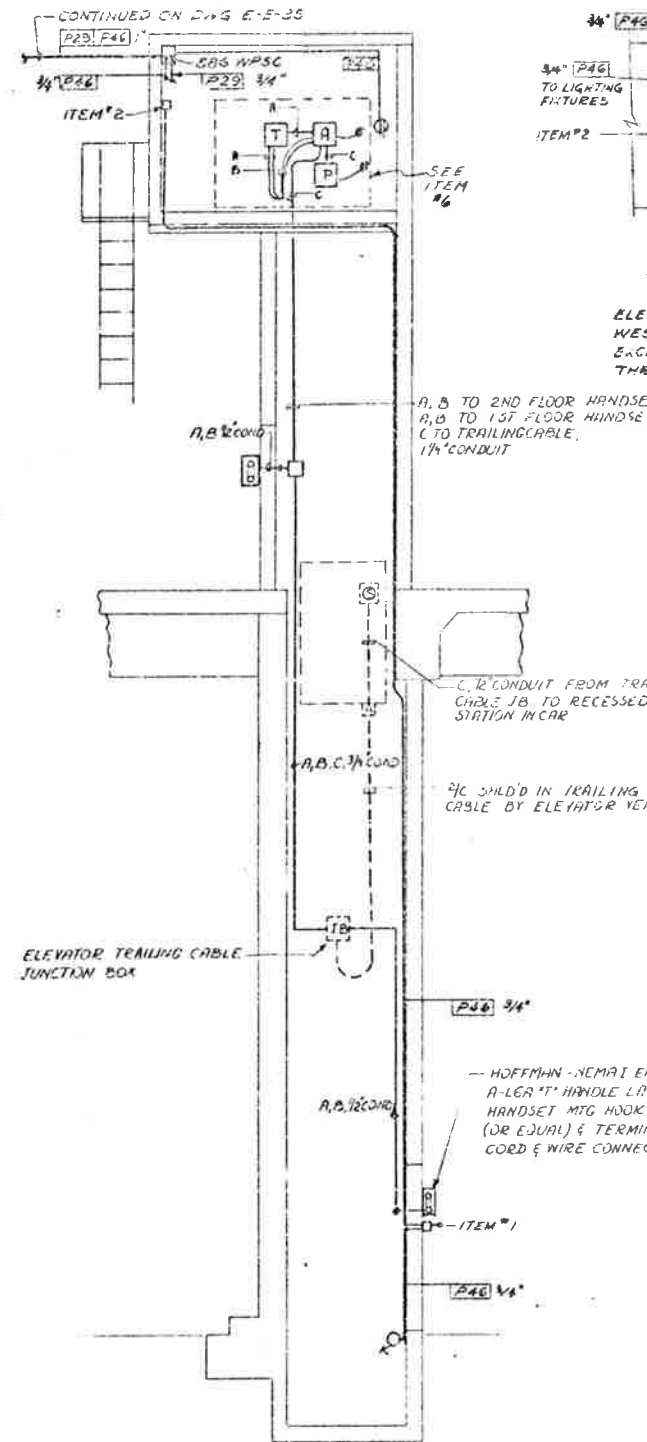


PIT PLAN
 ELEVATOR AT WEST PORTAL
 SCALE: 1/4" = 1'-0"

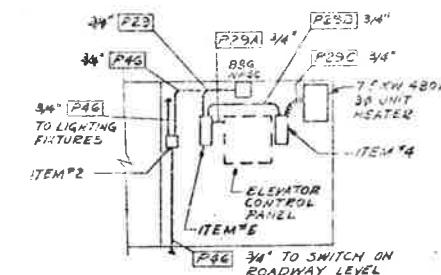
NOTE: CONTRACTOR TO RE-ROUTE EXISTING CONDUITS TO PERMIT INSTALLATION OF ELEVATOR.



PIT PLAN
 ELEVATOR AT EAST PORTAL
 SCALE: 1/4" = 1'-0"



SECTION THRU EAST PORTAL ELEVATOR SHAFT
 WEST PORTAL SIMILAR
 SCALE: 1/4" = 1'-0"



SECTION 'A-A'
 SCALE: 1/4" = 1'-0"
 ELEVATION OF EAST PENTHOUSE WEST PENTHOUSE IS THE SAME EXCEPT MAIN FEDERS ENTER THRU THE FLOOR

- ITEM #1 TOGGLE SWITCH TO BE 120V AC, 20A, HUBBELL #9805 (OR EQUAL) MOUNTED IN A GROUND-HINDS #531 W/COVER #DS181 (OR EQUAL) MOUNT 4'-6" ABOVE FLOOR. CONTRACTOR TO FURNISH EYS2 & LB27 FITTINGS
- ITEM #2 TOGGLE SWITCH TO BE 120V AC, 20A, HUBBELL #9805 (OR EQUAL), SINGLE RECEPTACLE TO BE 120V AC, 20A, 3 WIRE GROUNDED, HUBBELL CAT #5361 (OR EQUAL), ALL MOUNTED IN A GROUND-HINDS #53212 W/COVER #532212 (OR EQUAL) MOUNT 4'-6" ABOVE FLOOR.
- ITEM #3 TOGGLE SWITCH TO BE 120V AC, 20A, HUBBELL #9805 (OR EQUAL), SINGLE RECEPTACLE TO BE 120V AC, 20A, 3 WIRE GROUNDED, HUBBELL CAT #5561 (OR EQUAL), ALL MOUNTED IN A GROUND-HINDS #53212 W/COVER #532212 (OR EQUAL) MOUNT 4'-6" ABOVE FLOOR.
- ITEM #4 DISCONNECT SWITCH TO BE 30A, 3P, 600V FUSIBLE NEMA 12 ENCLOSURE, WESTINGHOUSE CAT #JHF-361 (OR EQUAL), (3) BUSS ONE-TIME FUSE 600V, 15A NOS50 (OR EQUAL) MOUNT 5'-6" ABOVE FLOOR.
- ITEM #5 DISCONNECT SWITCH TO BE 60A, 3P, 600V FUSIBLE NEMA 12 ENCLOSURE, WESTINGHOUSE CAT #JHF-362 (OR EQUAL), (3) BUSS ONE-TIME FUSE 600V, 50A NOS50 (OR EQUAL) MOUNT 5'-6" ABOVE FLOOR.
- ITEM #6 EXECUTONE INC (OR EQUIV) COMMUNICATION SYSTEM COMPONENTS
 - Ø IPTH154LS301 HANDSET
 - Ⓜ J343542 TRANSFORMER
 - Ⓜ F274K AMPLIFIER
 - Ⓜ M216 POWER SUPPLY
 - Ⓞ C198 CAR STATION
 - A - W53 WIRE
 - B - W55 WIRE
 - C - WT2HD WIRE

STYLE NO.	DESCRIPTION	TYPE	TOTAL
CR05E-HINDS #E/BY240	INCANDESCENT WALL BRACKET, EXPLOSION PROOF, 100W, A19 MOUNT 3'-8" ABOVE PIT FLOOR	K	2
CR05E-HINDS #WNB25G	INCANDESCENT WALL BRACKET, VAPORTIGHT, 150W, A21 MOUNT 6'-0" ABOVE FLOOR	L	4

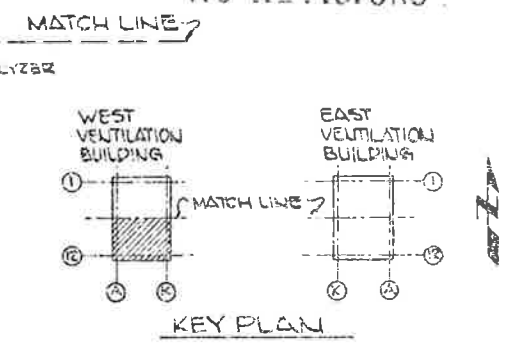
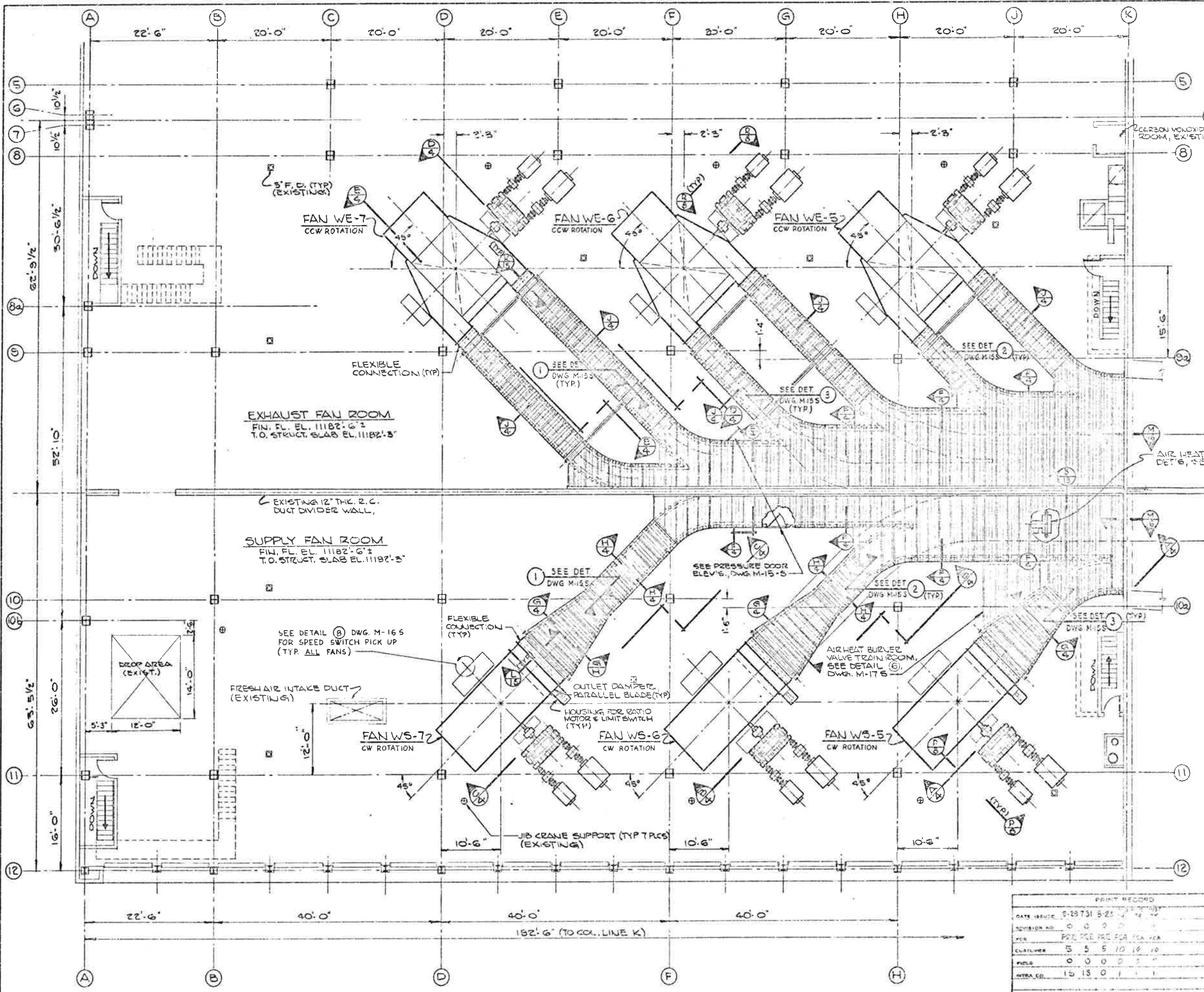
DATE ISSUED	12 15 72
DATE REVISED	
DESIGNED BY	
CHECKED BY	
SCALE	AS NOTED
PROJECT NO.	170-5182)2R0
DRAWING NO.	E-WC-115

NO.	REVISIONS	DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND BORE				
ELECTRICAL				
WEST & EAST VENTILATION BUILDINGS				
PASSENGER ELEVATOR				
DATE	12 15 72	SCALE	AS NOTED	DRAWING NO.
CHECKED		PROJECT NO.	170-5182)2R0	E-WC-115



FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
308	COLORADO	170-3(82) 220	58	208

AS CONSTRUCTED
 NO REVISIONS DATE



EXISTING 4(1) DEEP BLOCKOUTS IN CONC. TOPPING. FILL WITH CONC. AS PER INSTRUCTIONS AT SECTIONS (P) (T), DWG. M-4-5, (TYP.) FOR ALL BLOCKOUTS - EAST & WEST VENTILATION BLDG. AIR HEAT BURLER VALVE TRAIN ROOM, FOR SUPPORT DET'S, SEE SECT. (S), DWG. M-15-5.

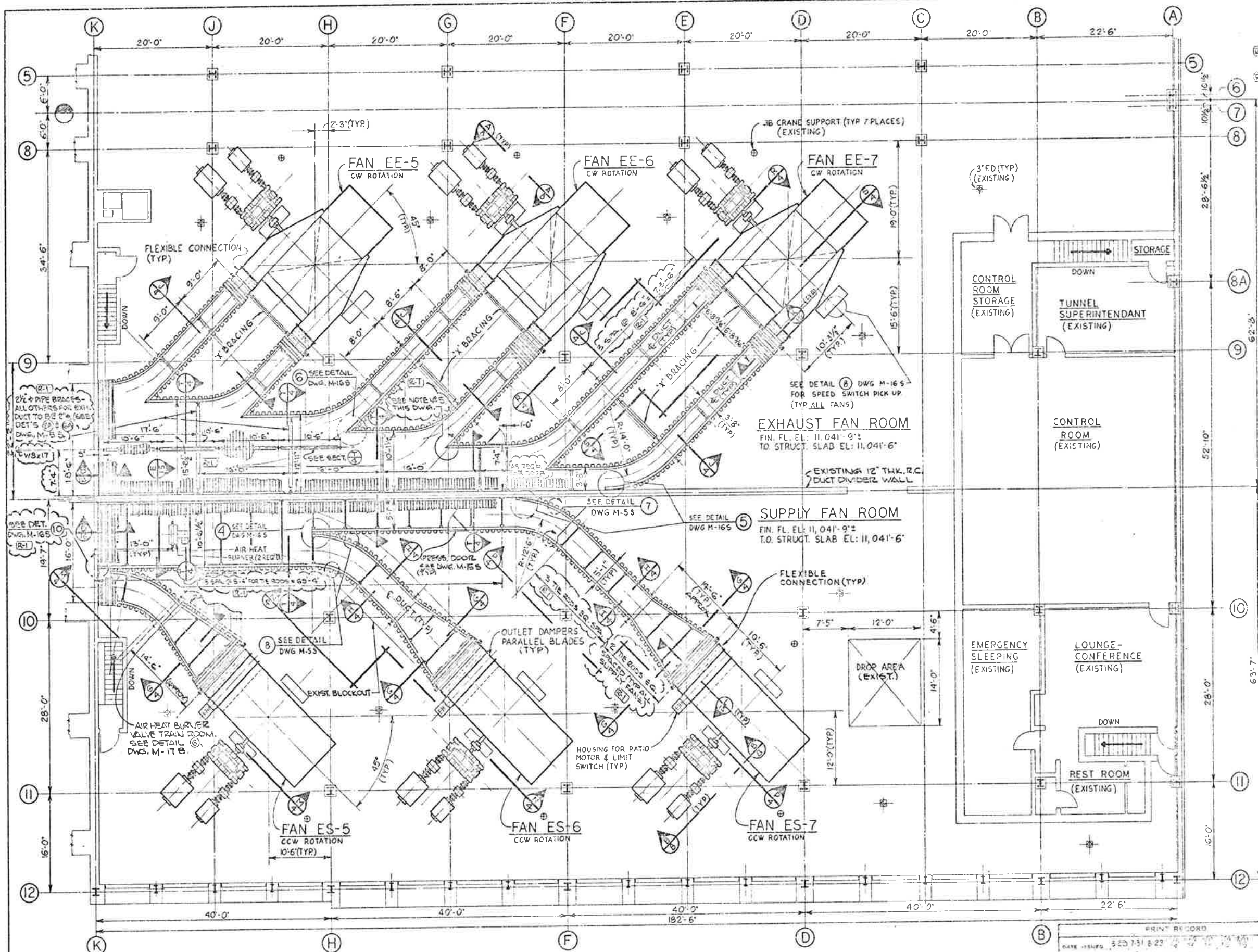
- NOTES:
1. WORK THIS DWG. WITH DWG'S. M-2-3 THRU M-17-5.
 2. SEE DWG. M-2-3 FOR ADDITIONAL SECTIONS, VIEWS AND DETAIL CALLOUTS.
 3. GENERAL ARRANGEMENT AS SHOWN IS SIMILAR & OPPOSITE HAND FOR EAST & WEST VENTILATION BUILDINGS WITH SLIGHT VARIATIONS IN COLUMN LOCATIONS.



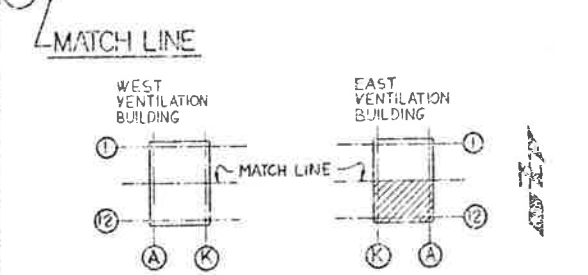
PRINT RECORD	
DATE ISSUED	8-29-73 8-23 14 14
DIVISION NO.	0 0 0 0
REV.	P21 P22 P23 P24 P25 P26
CUSTOMER	5 5 5 10 10 10
FILES	0 0 0 0 0 0
INTRA. CD.	15 15 0 1 1

REVISIONS	
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS - EISENHOWER MEMORIAL TOLLWAY SECOND FLOOR	
MECHANICAL WEST VENTILATION BUILDING FAN ROOM FLOOR PLAN - SCOPED FAN AND DUCTWORK ARRANGEMENT	
DESIGNED	W.M. D.S.
CHECKED	J.M. 10-22-74
DRAWN	W.M. D.S.
SCALE	1/8" = 1'-0"
PROJECT NO.	170-3(82) 220
SHEET NO.	58
TOTAL SHEETS	208

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	170-3621-220	59	230



- (R-1) ADD 2 PIPE BRACES & REVISE 2 PIPE BRACES FOR EXHAUST DUCT. ADD 15 THE RODS TO SUPPLY DUCT. ADD NOTE NO 4 & 5, 11-22.75, 22.82
- (R-2) ADD W/ SUPPORT TO EXHAUST DUCT AND DET. 10 CALL-OUT FOR SUPPLY DUCT, 12-14.75, 2.82



KEY PLAN
 AS CONSTRUCTED
 REVISED Date 8/31/77

- NOTES:
1. WORK THIS DWG. WITH DWG'S. M-15 AND M-35 THRU M-17 S.
 2. SEE DWG. M-15 FOR ADDITIONAL SECTIONS, VIEWS AND DETAIL CALL-OUTS.
 3. GENERAL ARRANGEMENT AS SHOWN IS SIMILAR & OPPOSITE END FOR EAST & WEST VENTILATION BUILDINGS WITH SLIGHT VARIATIONS IN COLUMN LOCATIONS FOR EXHAUST DUCTING. 2'x4" PIPE BRACES ARE REQUIRED FOR THE 15" DIA. AND 12" DIA. WIDE DUCT SECTIONS. ALL OTHERS FOR EXHAUST DUCT TO BE 2" DIA. PIPE. (TYP. FOR BOTH EAST AND WEST VENTILATION BUILDINGS.)
 - (R-1) 4. CONVERGING CHANNEL BRACES (C4&T25) AT MIDSPAN OF THE VERTICAL PORTION OF THE EXHAUST DUCT TO BE NUTTED AND BUTT WELDED. (TYP. 5 PLACES EACH IN BOTH EAST AND WEST VENTILATION BUILDINGS.)



NO.	REVISIONS	DATE

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

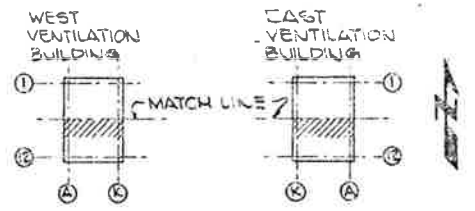
MECHANICAL
 EAST VENTILATION BUILDING
 FAN ROOM FLOOR PLAN-SOUTH
 FAN AND DUCTWORK ARRANGEMENT

DATE ISSUED	BY	FOR
3/20/73		

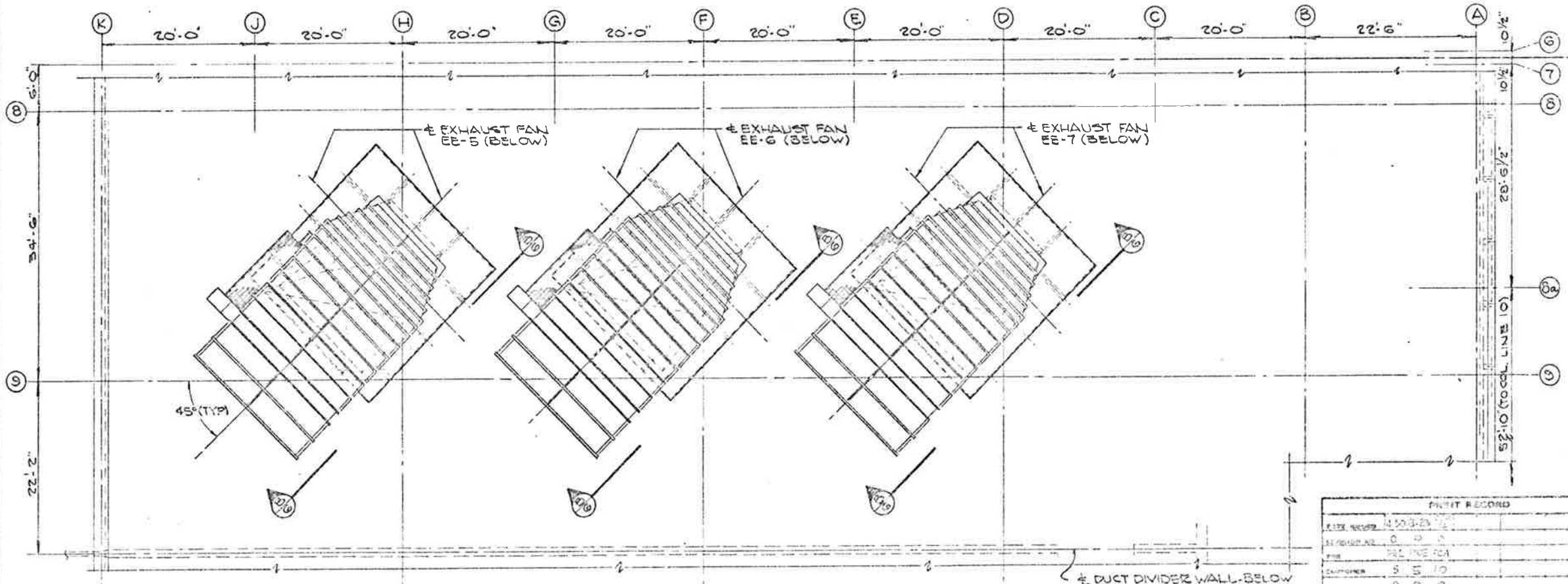
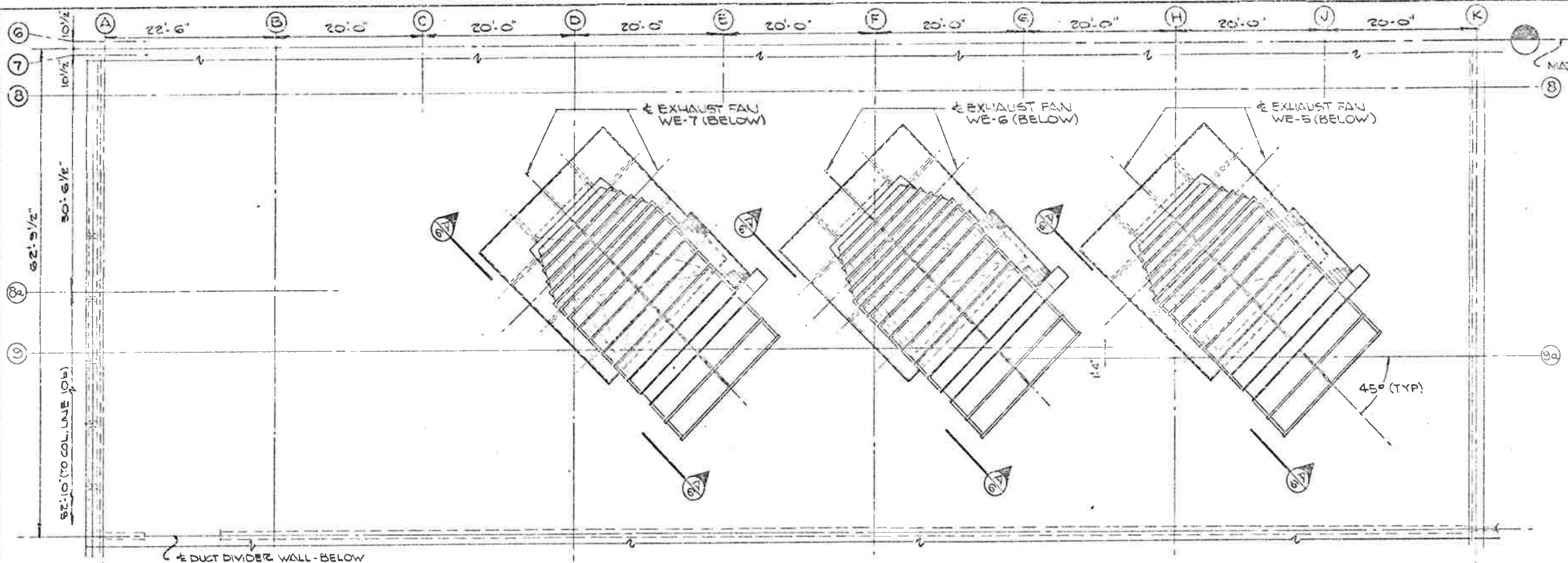
SCALE: 1/8" = 1'-0" (14.570)

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
338	COLORADO	I 70-3(88) 220	60	208

AS CONSTRUCTED
 NO REVISIONS



NOTES:
 1. WORK THIS DRAWING WITH DRAWINGS M-16, M-25 & M-45 THRU M-175.



REVISIONS		DATE	BY	CHKD
NO.	DESCRIPTION			

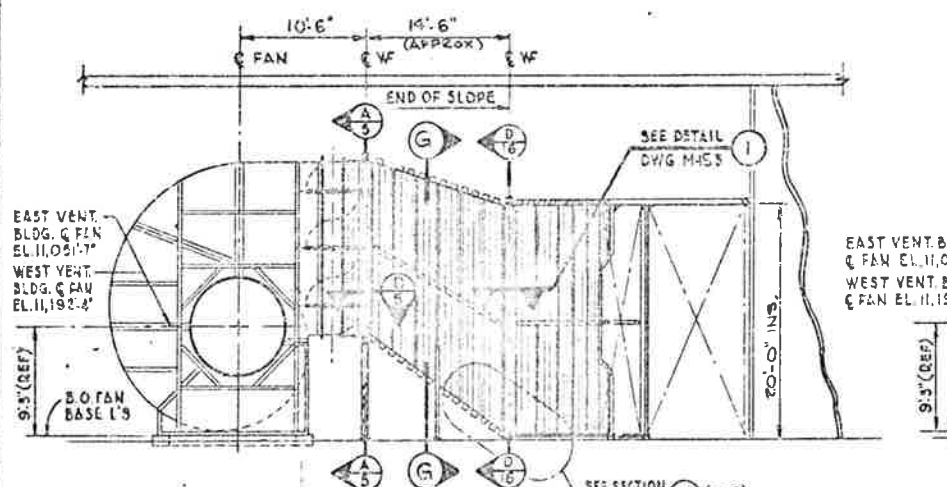
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

MECHANICAL
 EAST & WEST VENTILATION BUILDINGS
 ROOF PLANS

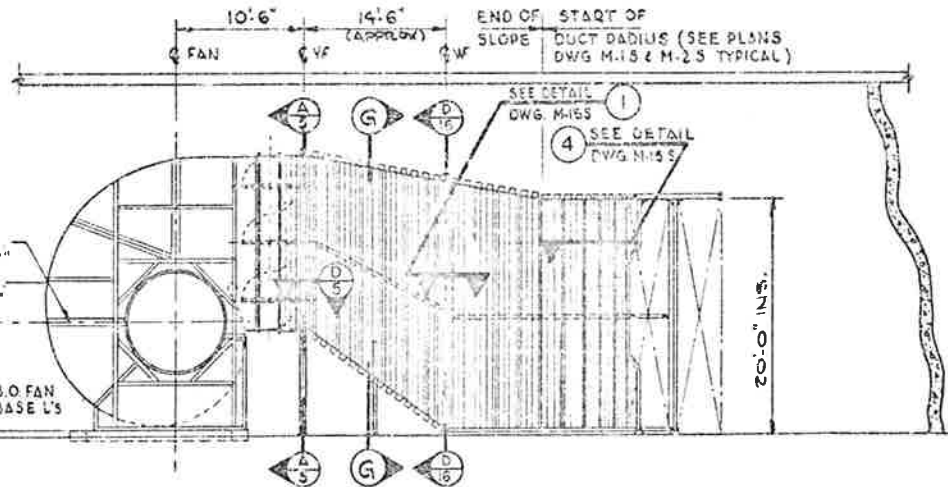
6200

DATE: 10-1-75
 CHECKED: J.E. 10-30-75
 SCALE: OVERALL 1/8"=1'-0" C 1/8"=1'-0"

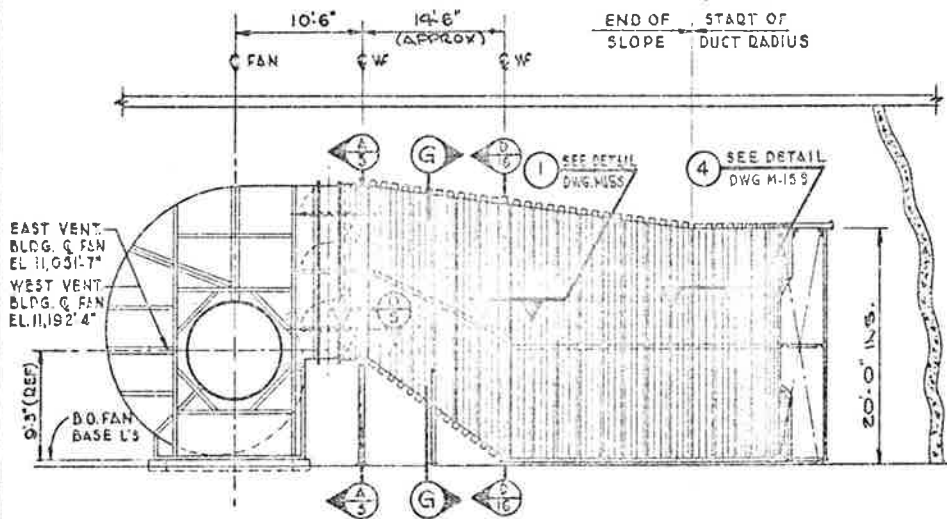
DRAWING NO. M-3 S



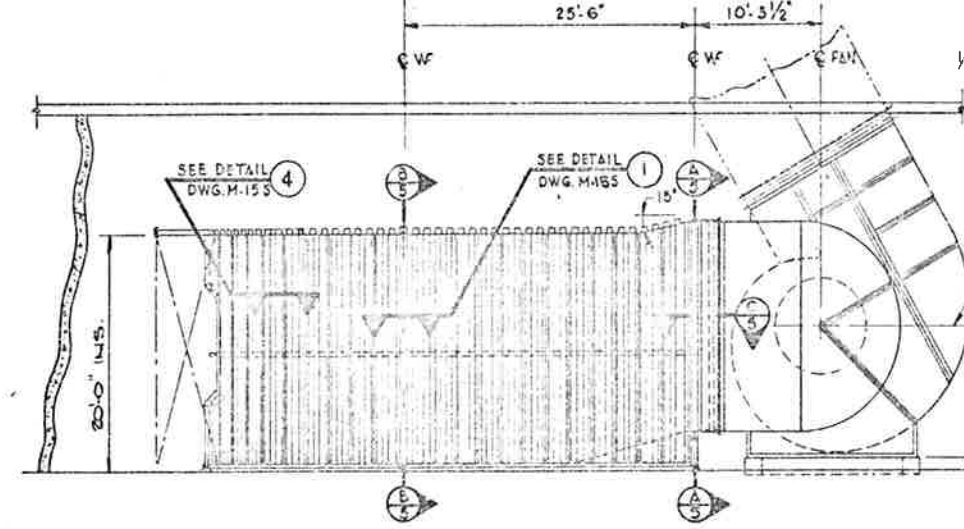
SECTION **A** AS SHOWN
 DWG. M-1 S
 SECTION **M** OPP. HAND
 DWG. M-2 S
 SCALE: 1/8" = 1'-0"



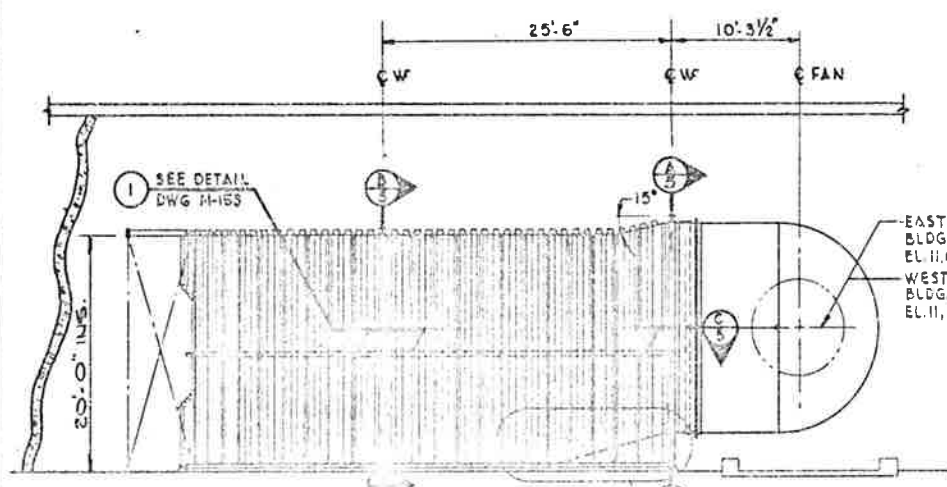
SECTION **B** AS SHOWN
 DWG. M-1 S
 SECTION **N** OPP. HAND
 DWG. M-2 S
 SCALE: 1/8" = 1'-0"



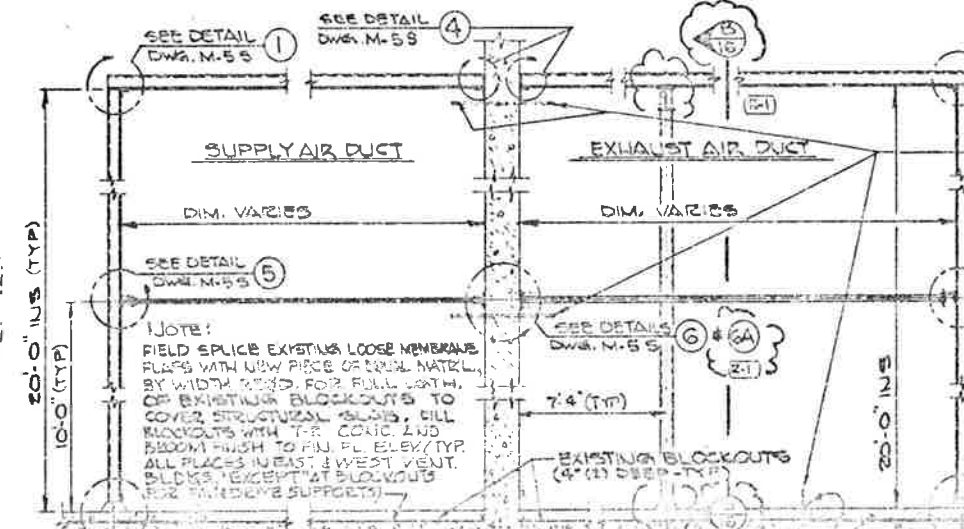
SECTION **C** AS SHOWN
 DWG. M-1 S
 SECTION **P** OPP. HAND
 DWG. M-2 S
 SCALE: 1/8" = 1'-0"



SECTION **D** AS SHOWN
 DWG. M-1 S
 SECTION **R** OPP. HAND
 DWG. M-2 S
 SCALE: 1/8" = 1'-0"



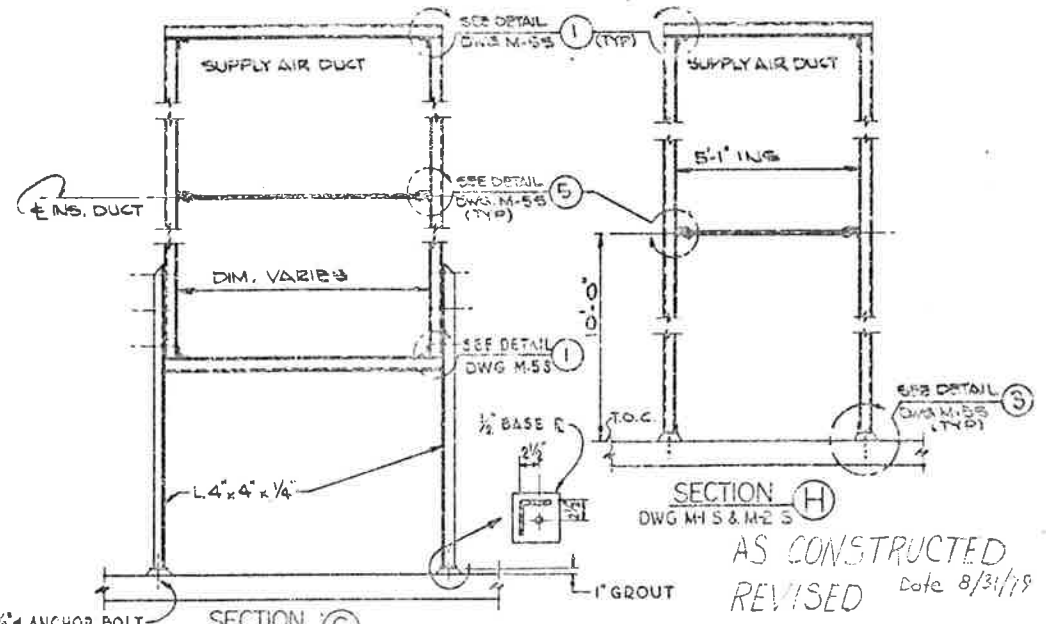
SECTION **E** AS SHOWN
 DWG. M-1 S
 SECTION **S** OPP. HAND
 DWG. M-2 S
 SCALE: 1/8" = 1'-0"



SECTION **F** AS SHOWN
 DWG. M-1 S
 SECTION **T** OPP. HAND
 DWG. M-2 S
 SCALE: 3/8" = 1'-0"

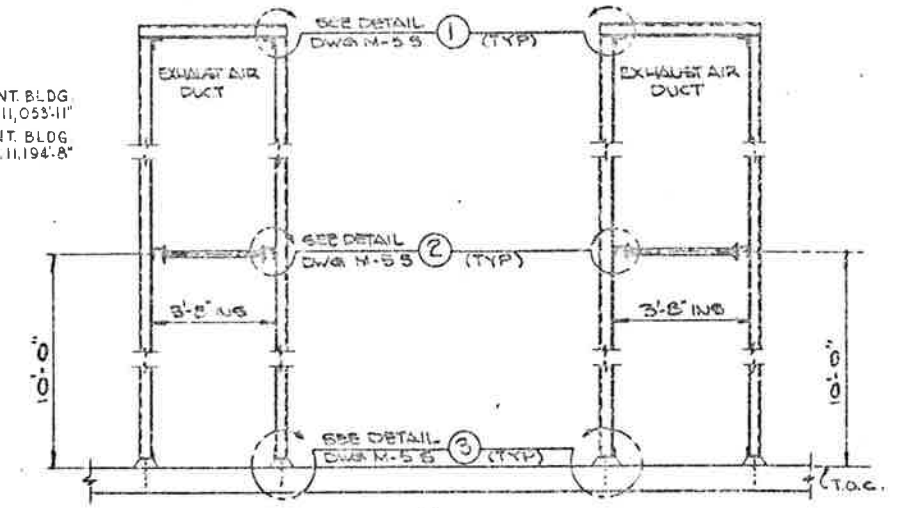
(R1) ADD DET. (1) & (2) CALLOUTS TO SECT'S (E) & (T). 11-22-75, RER
 (R2) ADD DET. SUPPORT & CALLOUT TO SECT'S (E) & (T). 12-11-75, RER

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
SEE	COLORADO	I 70-3(82) 220	61	203



SECTION **G**
 DWG. M-1 S & M-2 S

AS CONSTRUCTED
 REVISED Date 8/31/79



SECTION **H**
 DWG. M-1 S & M-2 S

NOTE:
 FLAME CUT EXISTING DOWELS AND GROUT PATCH, (TYP) ALL PLACES IN EAST & WEST VENTILATION BLDGS EXCEPT AT BLOCKOUTS FOR FAN BASES (SEE DWG. M-1 S & M-2 S)

NOTES:
 1. WORK THIS DWG. WITH DWG'S M-1 S THRU M-3 S & M-5 S THRU M-17 S.



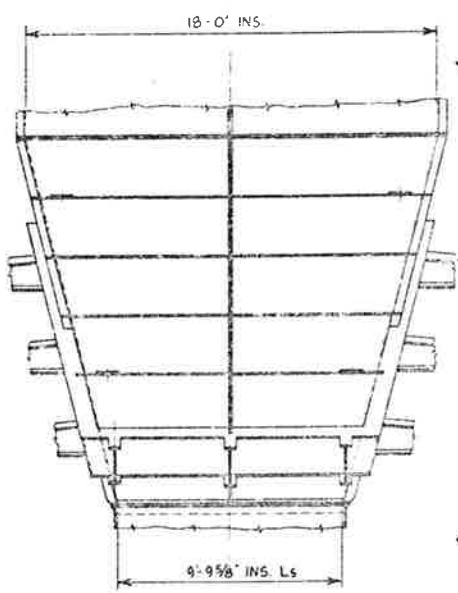
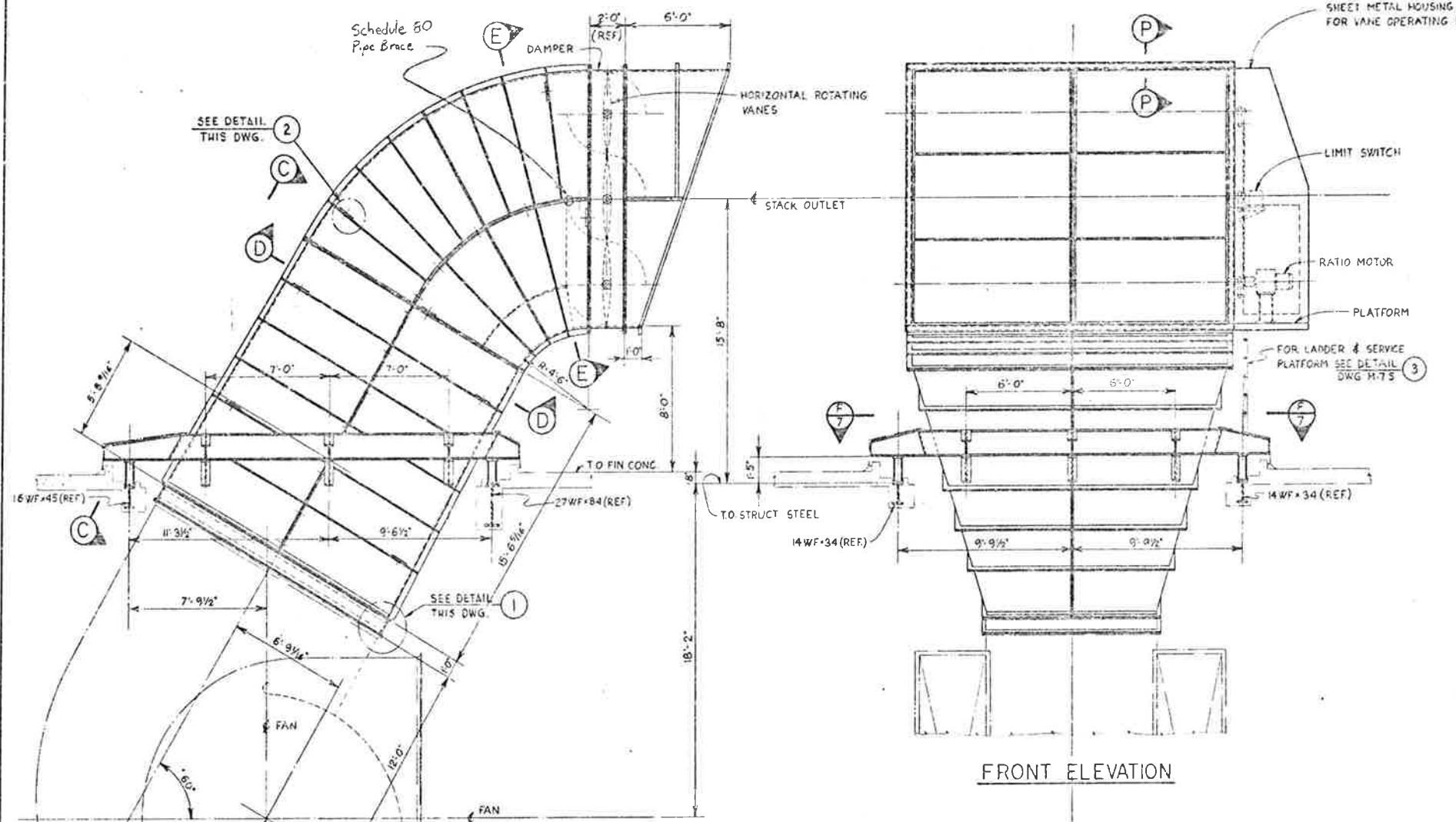
PRINT RECORD

DATE PLOTTED	4-20-78 10:22 AM
SECTION NO.	0 0 0 0 0
FOR	PROJ. OFFICE RAJAY INC.
CUSTOMER	STATE OF COLORADO
NO.	0 0 0 0 0
DATE	11-15-77

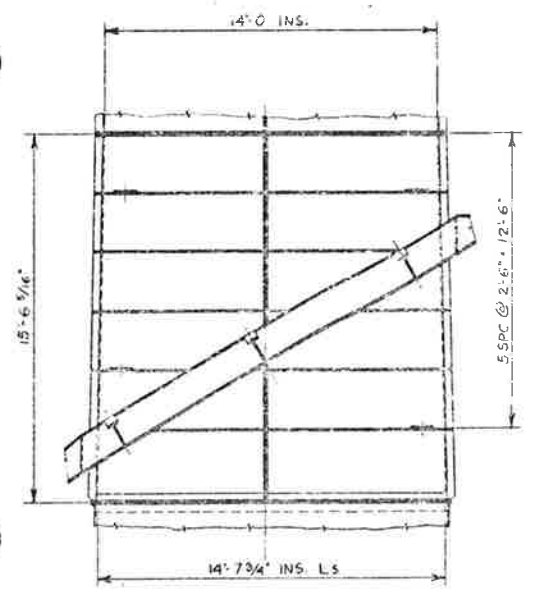
NO.	REVISIONS	DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS				
EISENHOWER MEMORIAL TUNNEL				
SECOND BORE				
MECHANICAL				
EAST & WEST VENTILATION BUILDINGS				
SUPPLY & EXHAUST FANS WITH DUCTWORK				
SECTIONS AND DETAILS				
DRAWN	REV. DATE	DATE	BY	CHKD
CHUCK	J.S. MERRITT			
CHECKED	ORDER NO.			
NOTED	C 14370			
				DRAWING NO.
				M-4 S

AS CONSTRUCTED
 REVISED
 DATE 8/31/79

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
33	COLORADO	170-3(82) 220	63	208



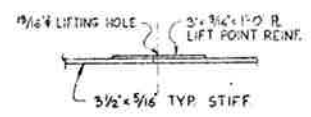
VIEW C



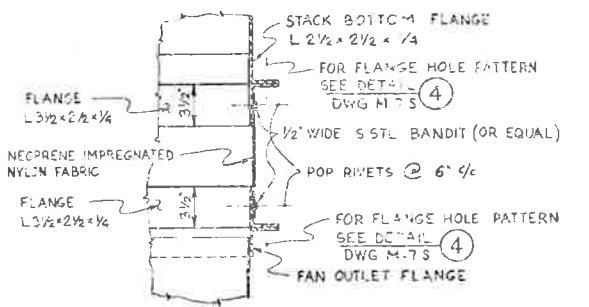
VIEW H

FRONT ELEVATION

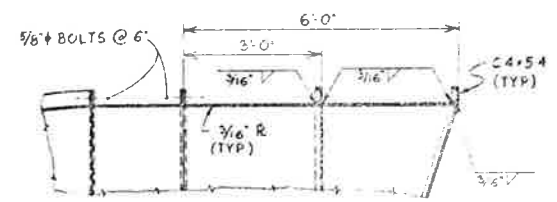
SECTION A AS SHOWN
 DWG. M-3 S 3 REQD.
 SECTION B
 DWG. M-3 S 3 REQD.



DETAIL 2
 SCALE 1" = 1'-0"



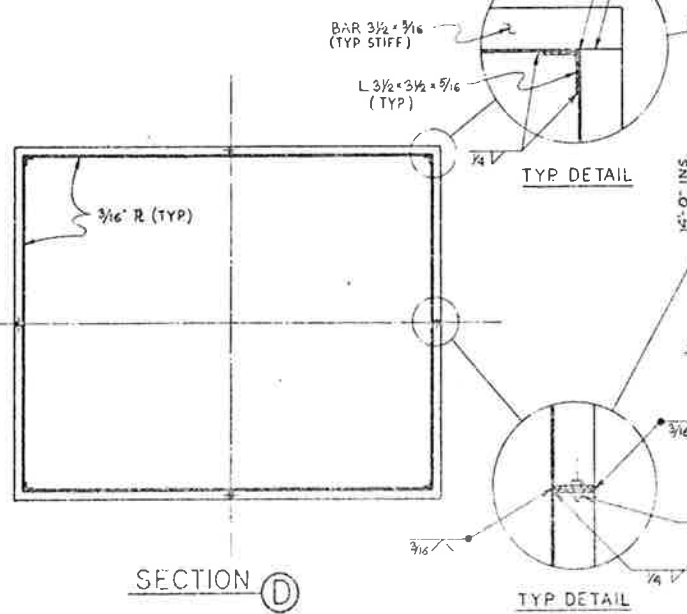
DETAIL 1
 FLEXIBLE JOINT
 SCALE 1/2" = 1'-0"



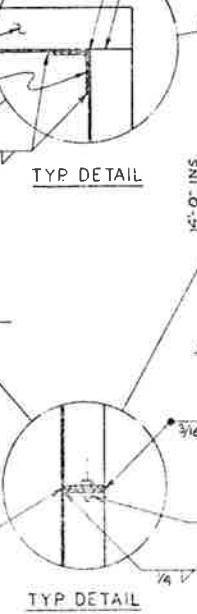
SECTION P
 SCALE 1/2" = 1'-0"

NOTES:

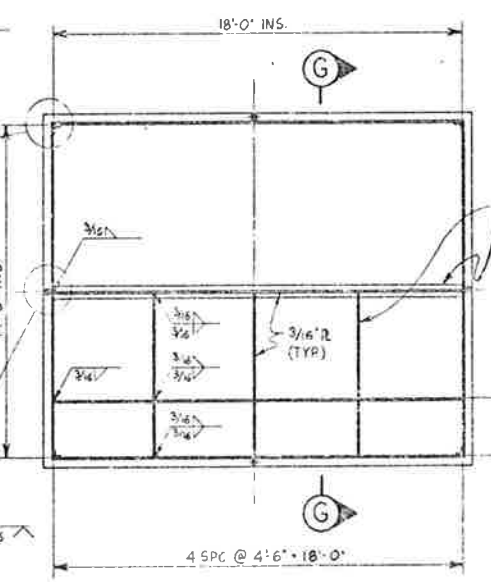
1. WORK THIS DWG WITH DWG. M-BS & M-TS.



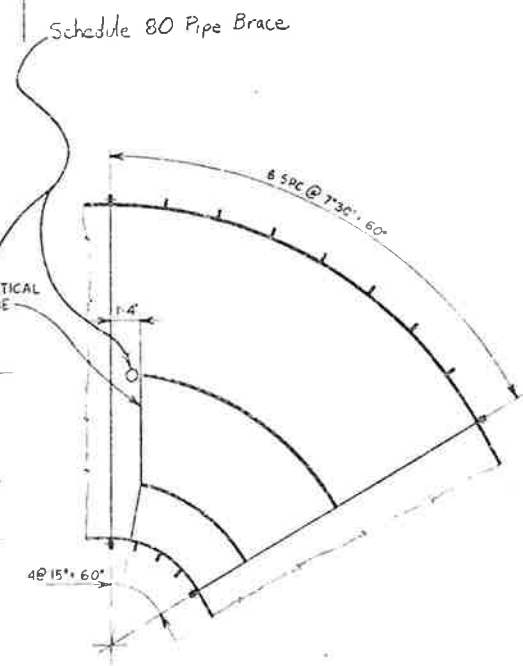
SECTION D



TYP. DETAIL



SECTION E



SECTION G

PRINT RECORD

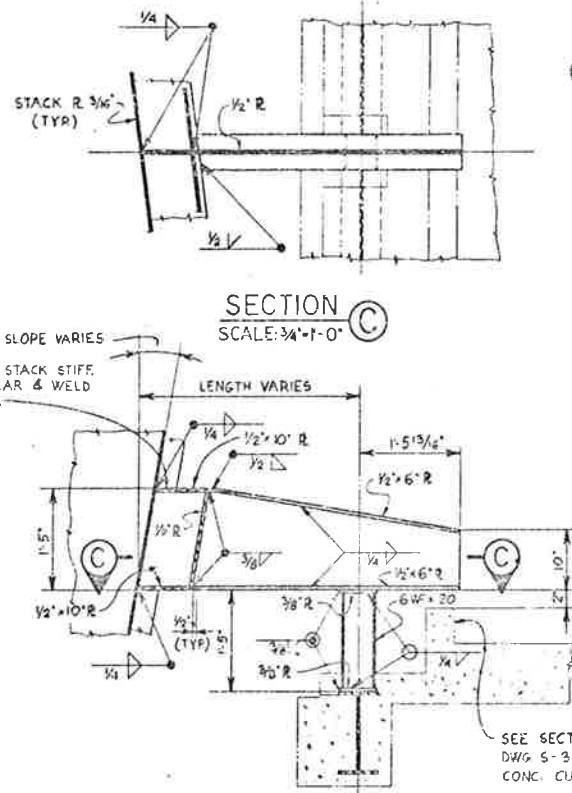
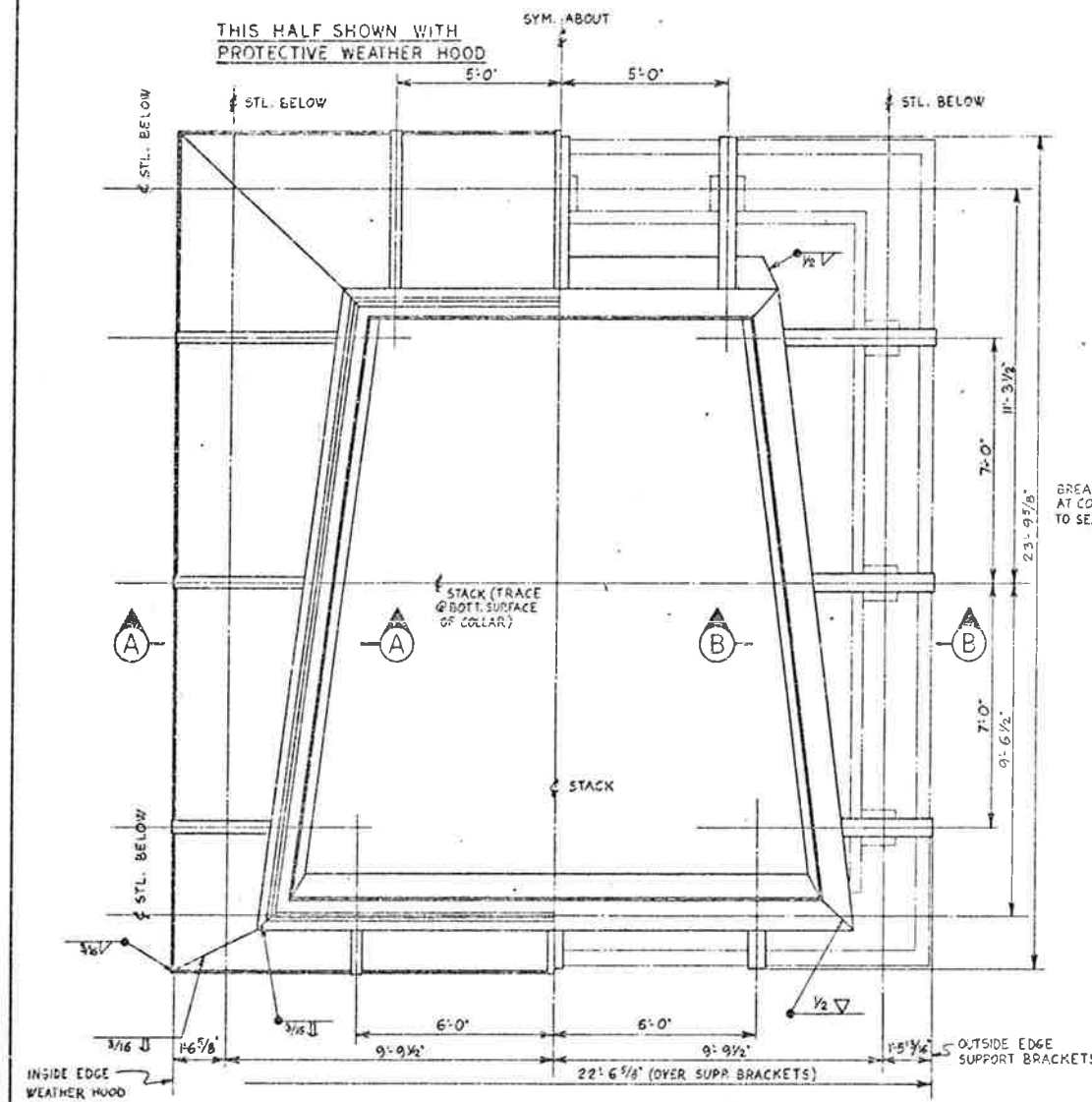
DATE ISSUED	430 8-20-78
REVISION NO.	0
FOR	PRE PREPARED
CUSTOMER	5 5 10
FIELD	0 0 0
INITIAL CO.	15 0 1

NO.	REVISIONS	DATE	BY	CEO
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
MECHANICAL EAST AND WEST VENTILATION BUILDINGS EVAS STACK & SUPPORT SECTIONS & DETAILS				
DRAWN	J. M. H. 3-74			
CHECKED	J. E. 5-29-74			
SCALE	ORDER NO.			
1/2" = 1'-0"	C 14 570			
1/4" = 1'-0"				

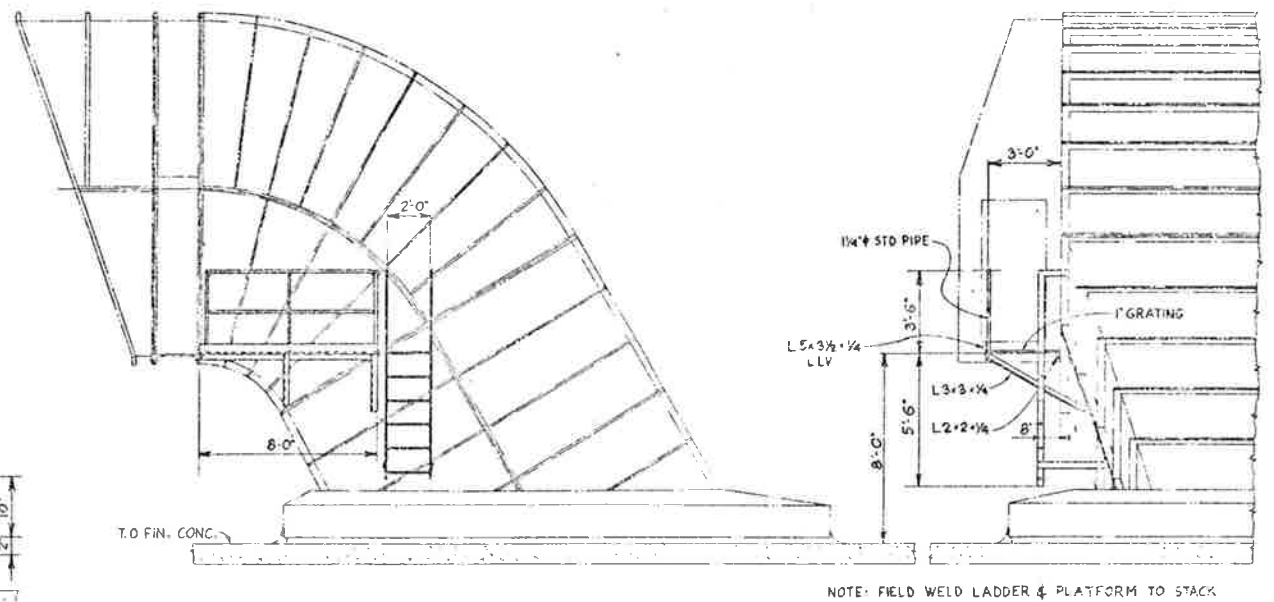


FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
371	COLORADO	170-3162-220	64	208

AS CONSTRUCTED
 REVISED Date 8/31/77

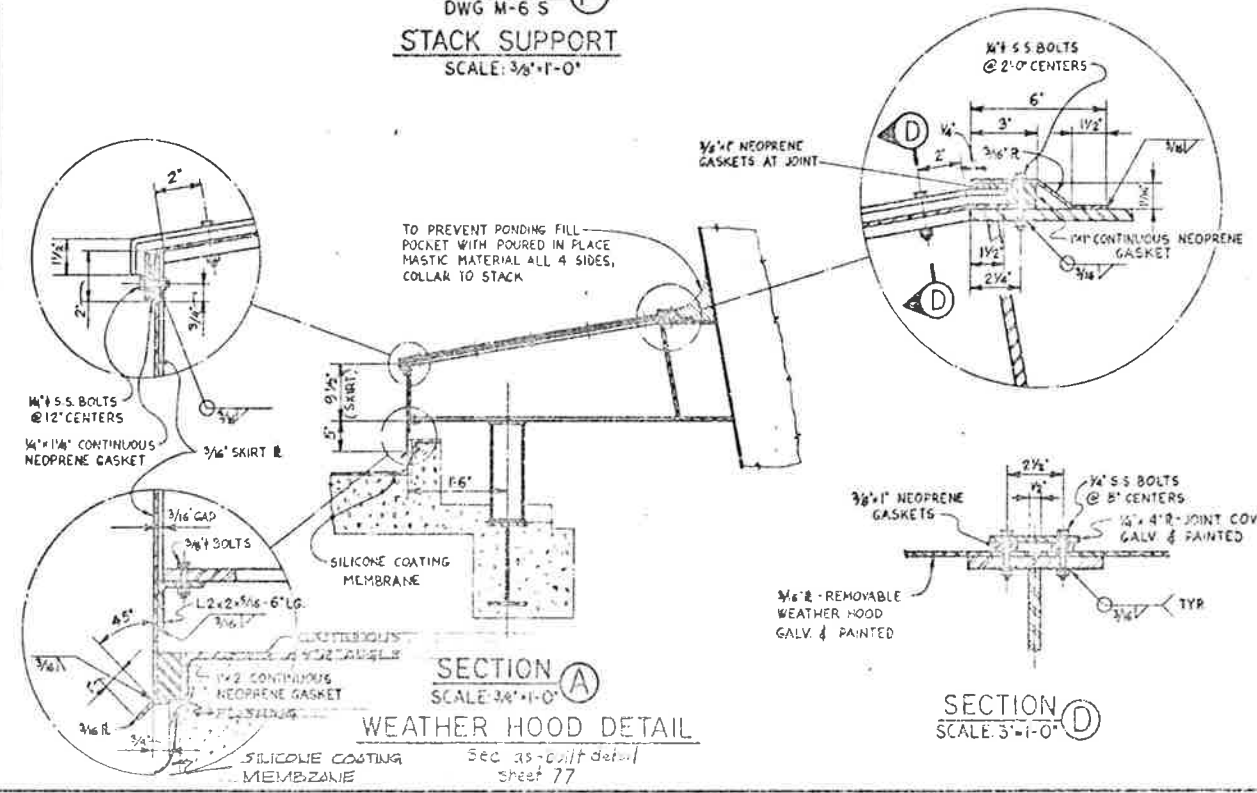


SECTION B
 SCALE: 3/4\"/>



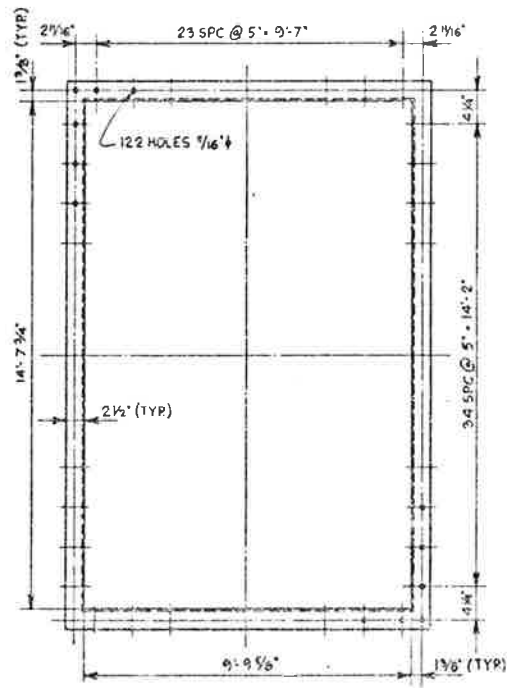
DETAIL 3
 SCALE: 1/4\"/>

SECTION F
 DWG M-6-5
 STACK SUPPORT
 SCALE: 3/8\"/>



SECTION A
 SCALE: 3/4\"/>

SECTION D
 SCALE: 3\"/>



DETAIL 4
 SCALE: NONE
 FLANGE HOLE PATTERN

NOTES:
 1. WORK THIS DRAWING WITH DRAWING M-6-5



PRINT RECORD	
DATE APPROVED	11/20/77
DATE DESIGNED	11/20/77
DATE CHECKED	11/20/77
DATE REVISION	11/20/77
DATE	11/20/77
BY	11/20/77
NO.	15

NO. REVISIONS

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

MECHANICAL
 EAST AND WEST VENTILATION BUILDINGS
 EXHAUST STACK SUPPORT
 SECTIONS & DETAILS

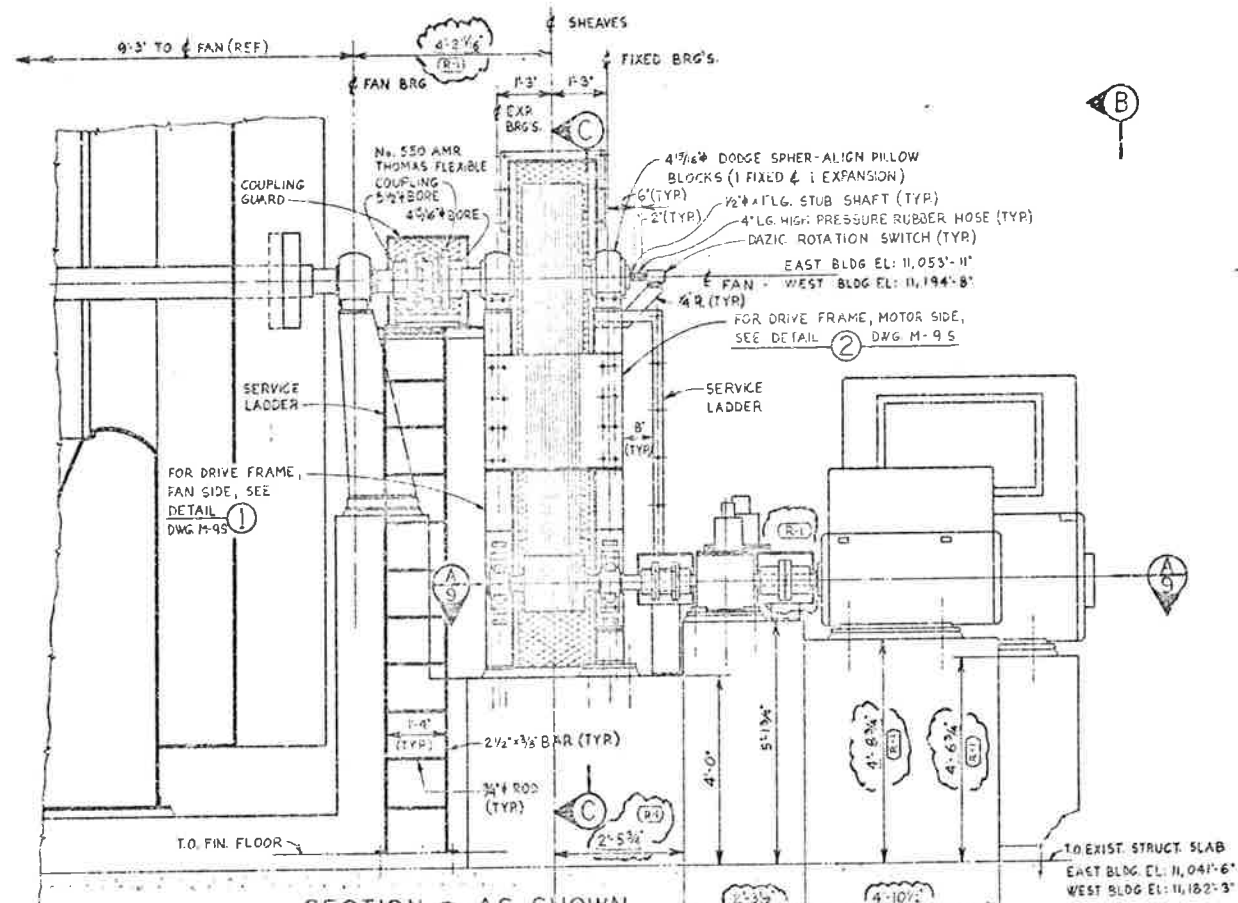
SCALE: AS SHOWN
 SHEET NO. C14570
 NOTES: C14570

DATE: 11/20/77
 DRAWING NO. M-7 S

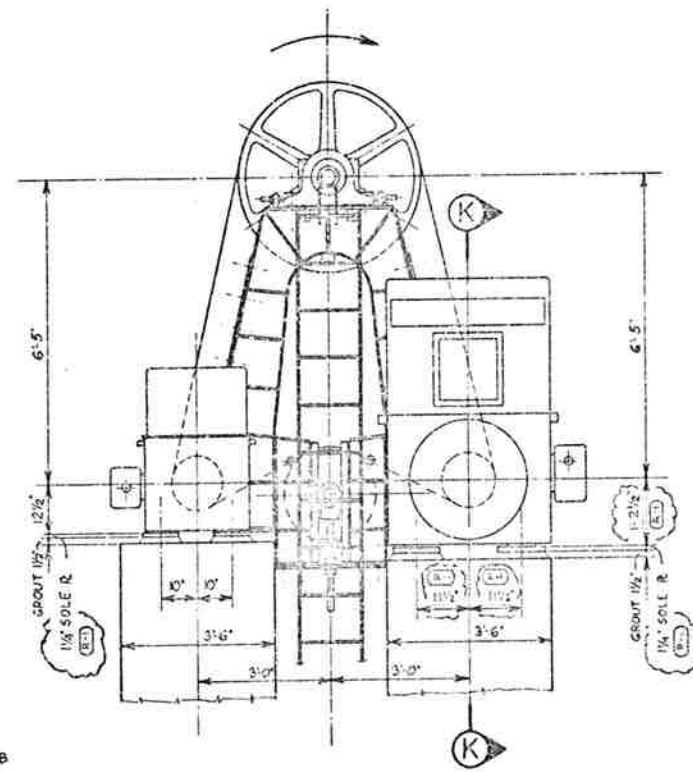
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	170-2(82)220	65	203

(R-1) REVISED COUPLINGS, MOTORS & SHAFT LENGTHS, REMOVED NOTE NO. 3.

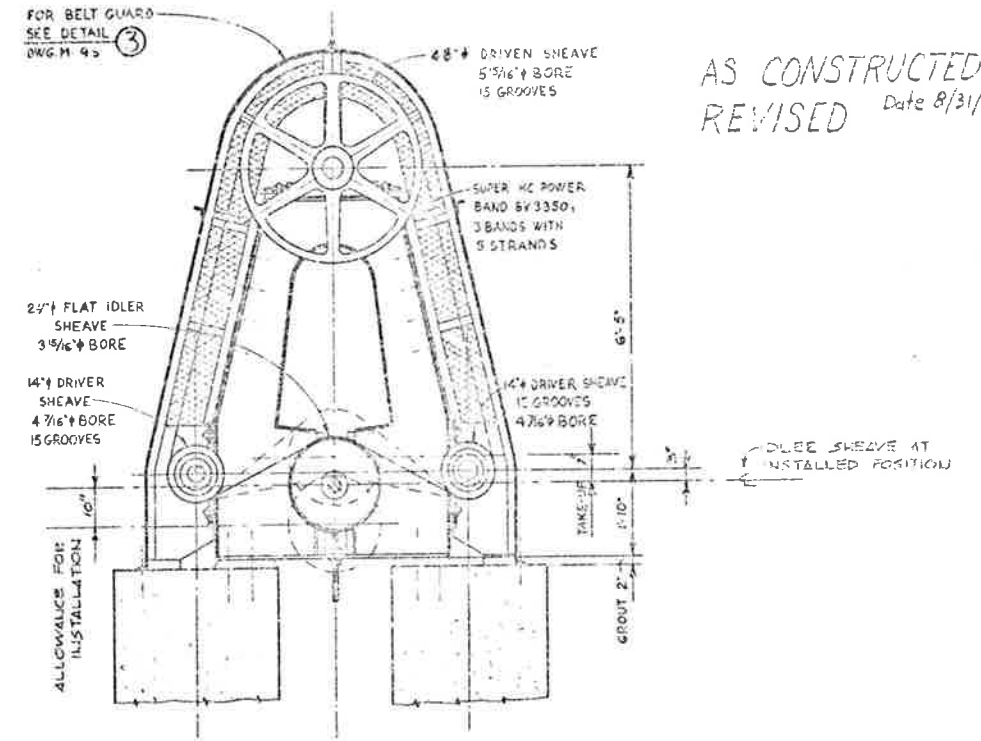
2-17-76 BY:V.M. CUD:TK:EL



SECTION A AS SHOWN
 DWG. M-2 S 3 REQS.
 SECTION R OPP HAND
 DWG. M-1 S 3 REQS.



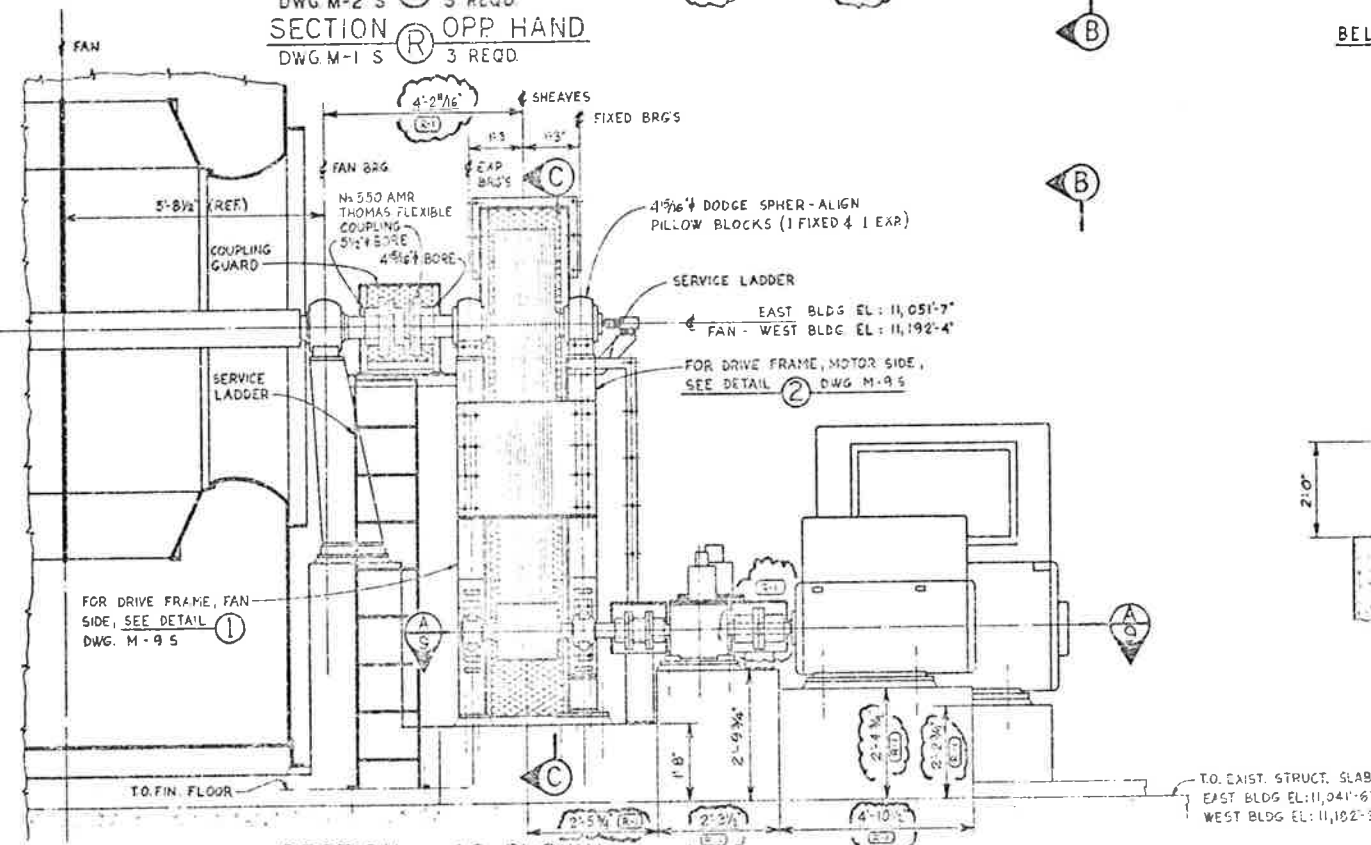
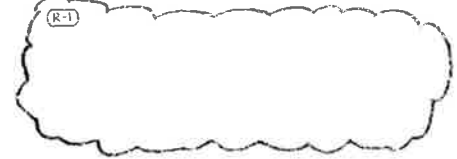
VIEW B
 BELT GUARD NOT SHOWN



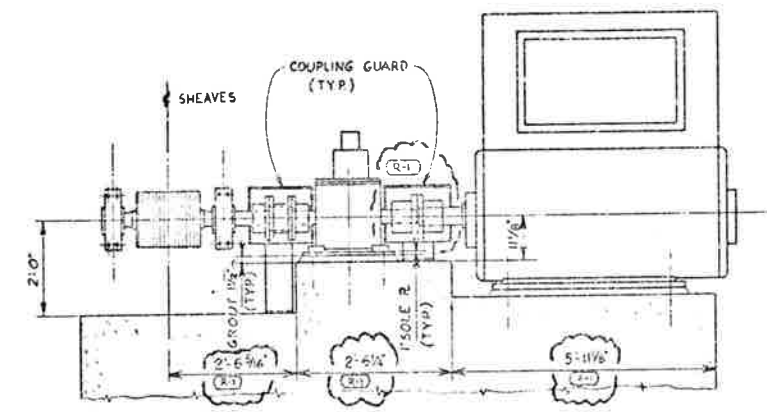
SECTION C

AS CONSTRUCTED
 REVISED Date 8/31/79

- NOTES:
1. WORK THIS DWG WITH DWG. M-16, M-25 & M-95.
 2. SUPPLY EACH BEARING WITH PACK OF SHIMS, ONE EACH OF 1/32", 1/16", 1/8" & 3/16" THICK (SIZE OF SHIMS TO BE SAME AS BEARING BASE).



SECTION P AS SHOWN
 DWG. M-1 S 3 REQS.
 SECTION B OPP HAND
 DWG. M-2 S 3 REQS.



SECTION K

PRINT RECORD

DATE PREP'D	5-11-73	BY	TK
DATE CHECK'D	5-11-73	BY	TK
DATE APPROV'D	5-11-73	BY	TK
DATE	5-11-73	BY	TK
SCALE	AS SHOWN		
APPROV'D	15	18	0

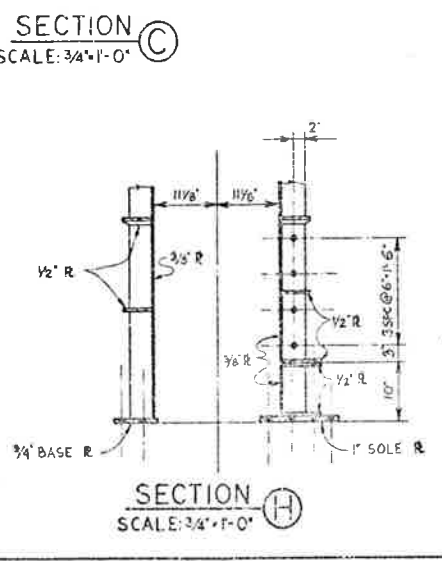
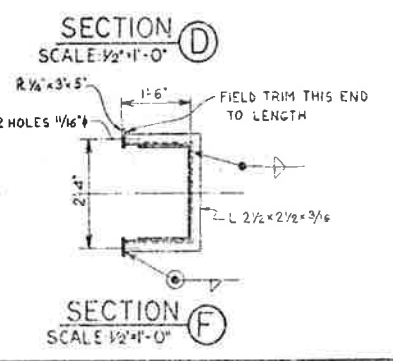
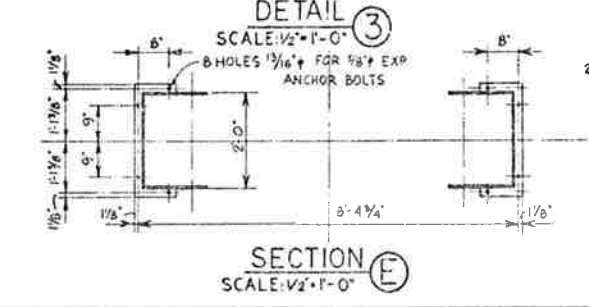
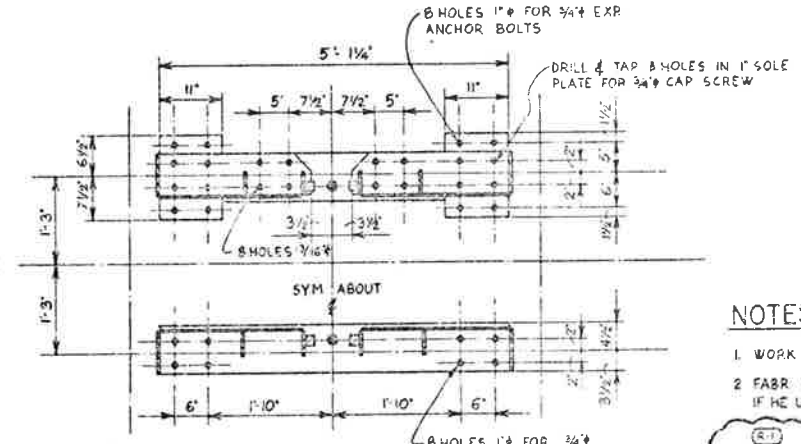
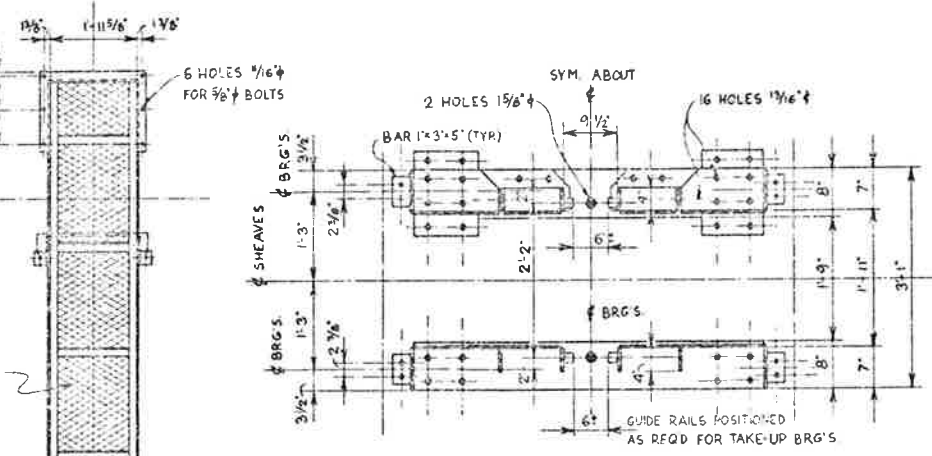
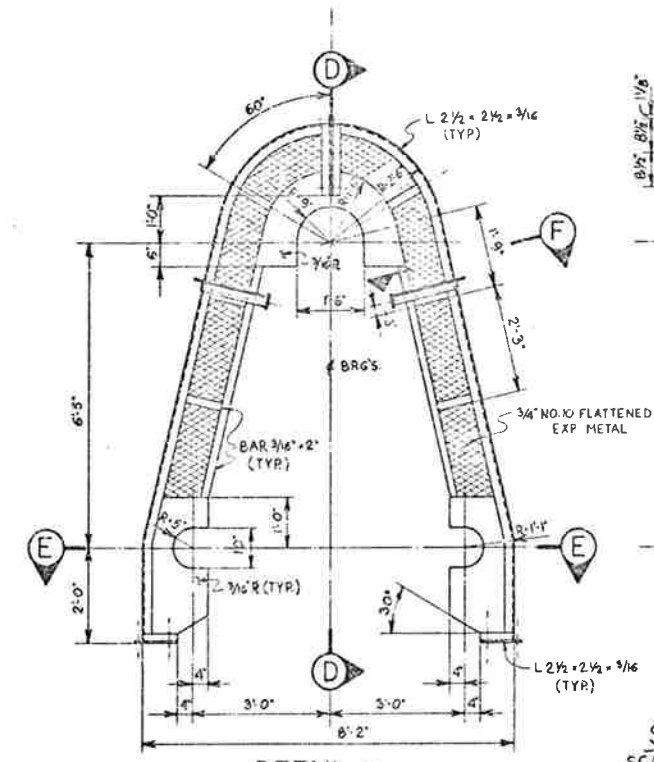
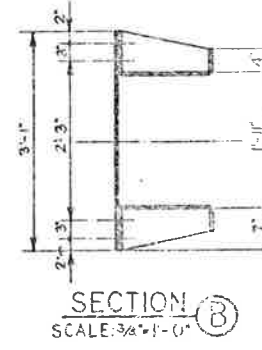
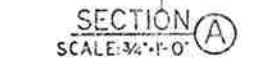
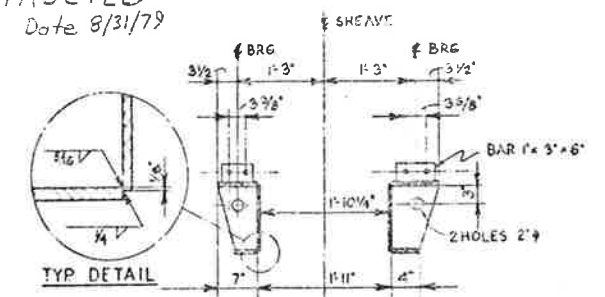
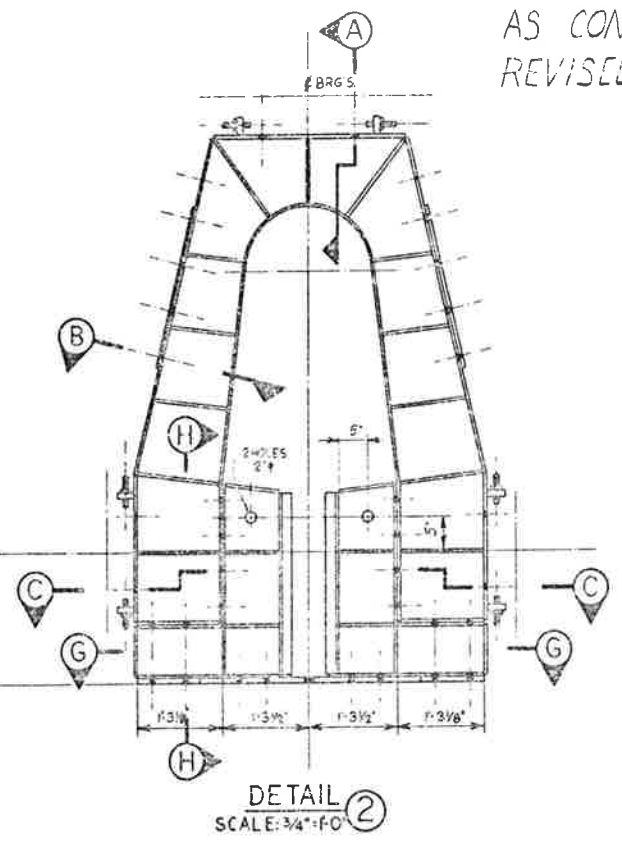
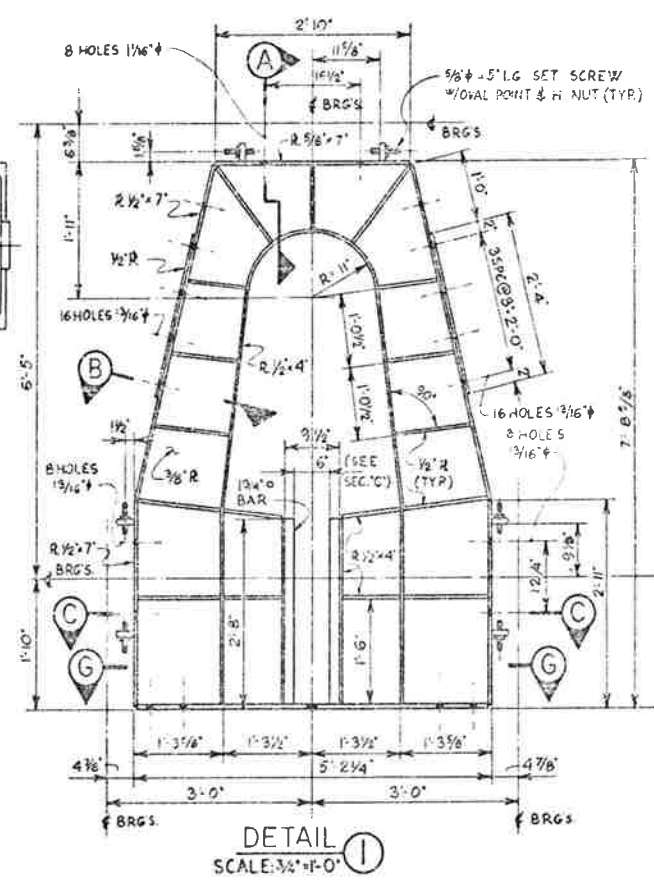
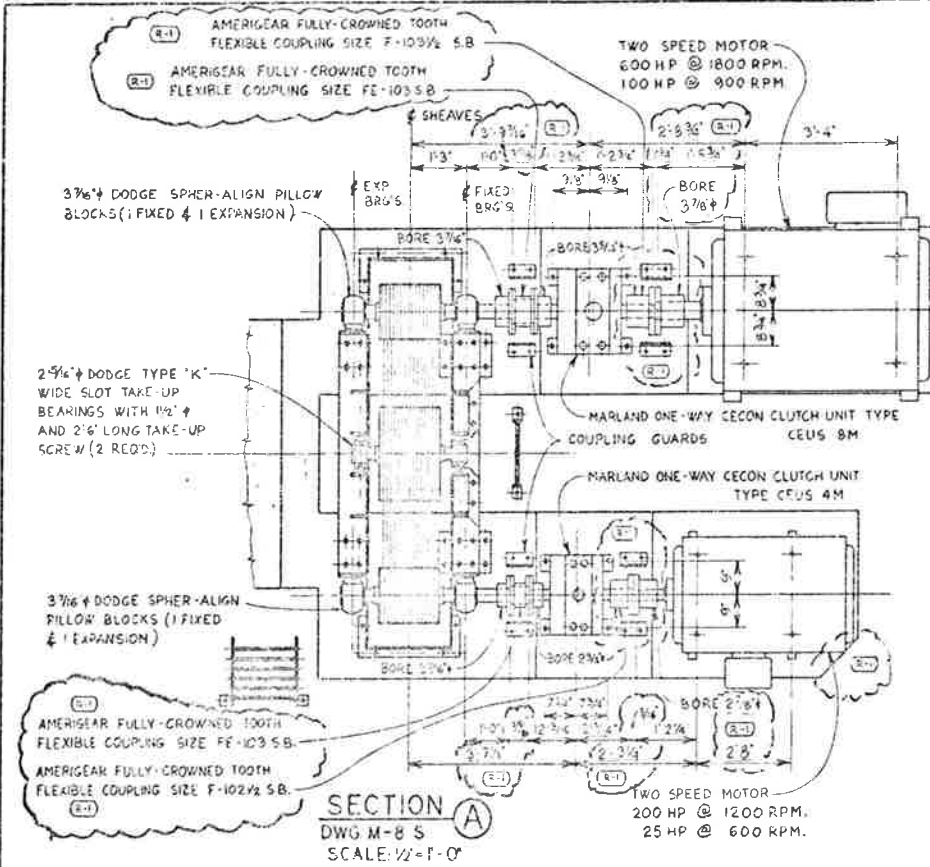
NO.	REVISIONS
STATE OF COLORADO - DEPARTMENT OF TRANSPORTATION	
EISENHOWER MEMORIAL TUNNEL	
SECOND BOSS	
MECHANICAL	
EAST AND WEST VENTILATION CURTAINS	
SUPPLY AND EXHAUST FAN DRIVE APPROPRIATE	
ELEVATIONS, VIEWS & SECTIONS	



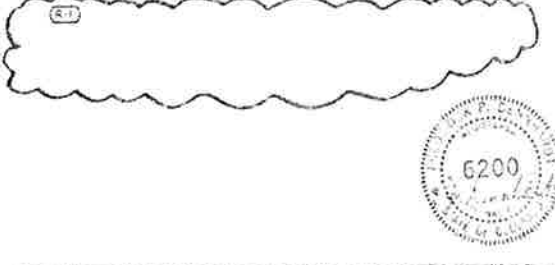
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
52	COLORADO	L 70-5(62) 220	66	208

(R-1) REVISED COUPLINGS, MOTORS & SHAFT LENGTHS.
 2-18-76 BY V.K. CLO, R.B.S.

AS CONSTRUCTED
 REVISED Date 8/31/79



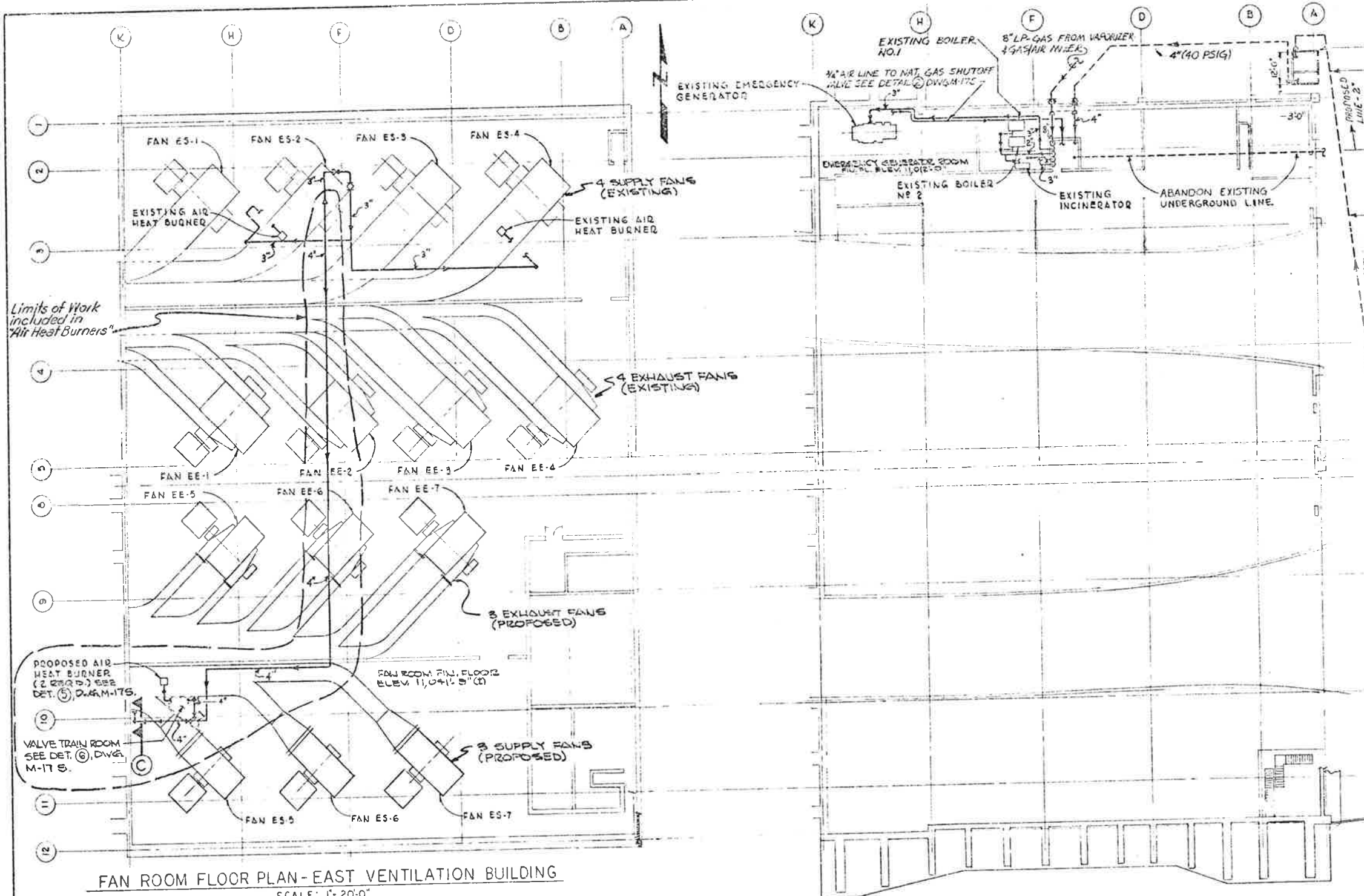
NOTES:
 1 WORK THIS DRAWING WITH DRAWING H-85
 2 FABR TO ASSUME RESPONSIBILITY FOR CHANGES TO BE MADE IF HE USES EQUIP. OTHER THAN THAT SHOWN.



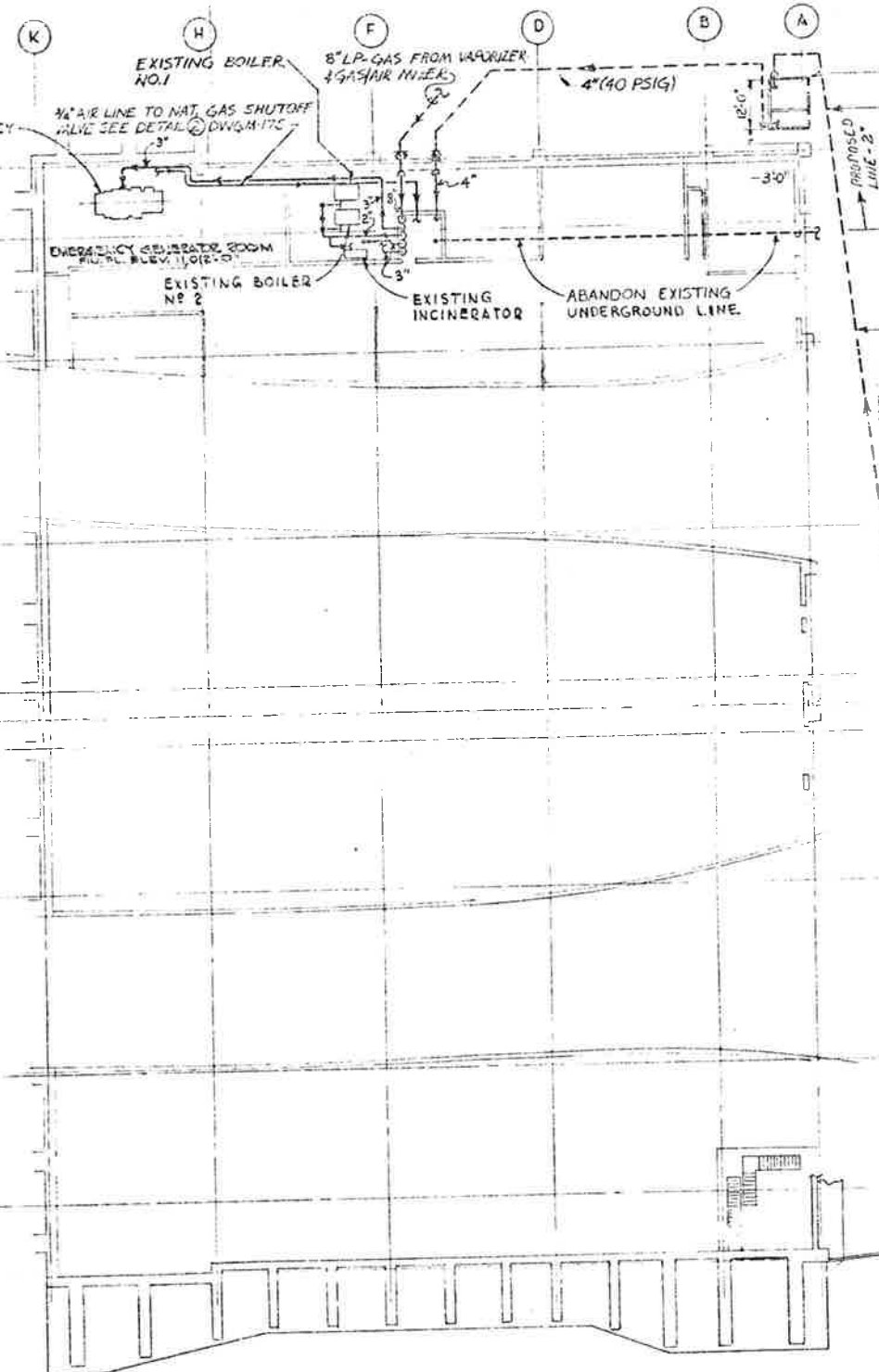
PRINT RECORD	
DATE REVISION	5/31/78 8-22
REVISION NO.	0 0 0 0 0
FOR	FOR PREPARE FOR T&E T&E T&E T&E
CUSTOMER	5 5 5 10 10 10 5 5
FIELD	0 0 0 0 0 0 0 0
INTRA.CO.	15 15 0 1 1 1 15

REVISIONS	
STATE OF COLORADO DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND TUBE	
MECHANICAL EAST AND WEST VENTILATION BUILDING SUPPLY AND EXHAUST FAN DRIVES PLAN, SECTIONS & DETAILS	
DRAWN	J.M. 5-20-78
CHECKED	J.E.D. 5-20-78
TITLE	6200
NOTED	6/14/79

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
5TH	COLORADO	I70-3(182)220	67	208



FAN ROOM FLOOR PLAN - EAST VENTILATION BUILDING
 SCALE: 1" = 20'-0"

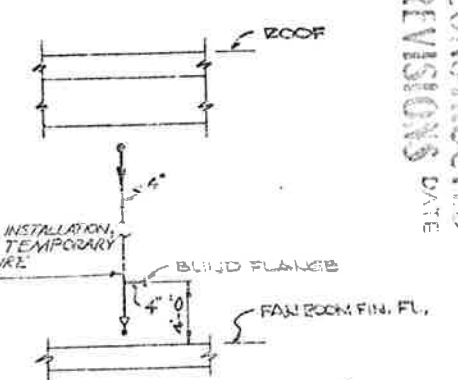


ROADWAY FLOOR PLAN
 EAST VENTILATION BUILDING
 SCALE: 1" = 20'-0"

PROPOSED OUTSIDE GAS METERING BUILDING FOR PIPING SCHEMATIC SEE DETAIL (3), DWG. M-175

3 LB. MAGNESIUM ANNUDE (ONE EA. REQ'D FOR PROPOSED 2" UNDERGROUND LINE & PROPOSED 4" UNDERGROUND LINE)

EXISTING WESTERN SLOPE UNDERGROUND NAT. GAS LINE 2" EXTRA STRONG @ 350 TO 500 PSI (WESTERN SLOPE GAS CO. TO MODIFY EXIST. LINES AS SHOWN & PROVIDE PRESS. REDUCTION TO 40 PSI & GAS METER, BOTH AT OUTSIDE METERING BUILDING.



SECTION C (AS SHOWN)
 THIS DWG.
 SECTION B (OPP. HAND)
 DWG. M-115

PRIOR TO FAN & DUCT INSTALLATION, THIS LINE TO PROVIDE TEMPORARY GAS SUPPLY FOR FUTURE CONSTRUCTION

EXISTING 2" UNDERGROUND NATURAL GAS LINE W/4" CASING, (PRESSURE - 350 TO 500 PSIG)

- NOTES
1. WORK THIS DRAWING WITH DRAWINGS M-25, M-115 AND M-175.
 2. PRESSURE TEST GAS PIPING @ 100 PSIG FOR FOUR (4) HOURS (1HR FOR EXISTING & NEW PIPE RUNS).

AS CONSTRUCTED
 NO REVISIONS DATE



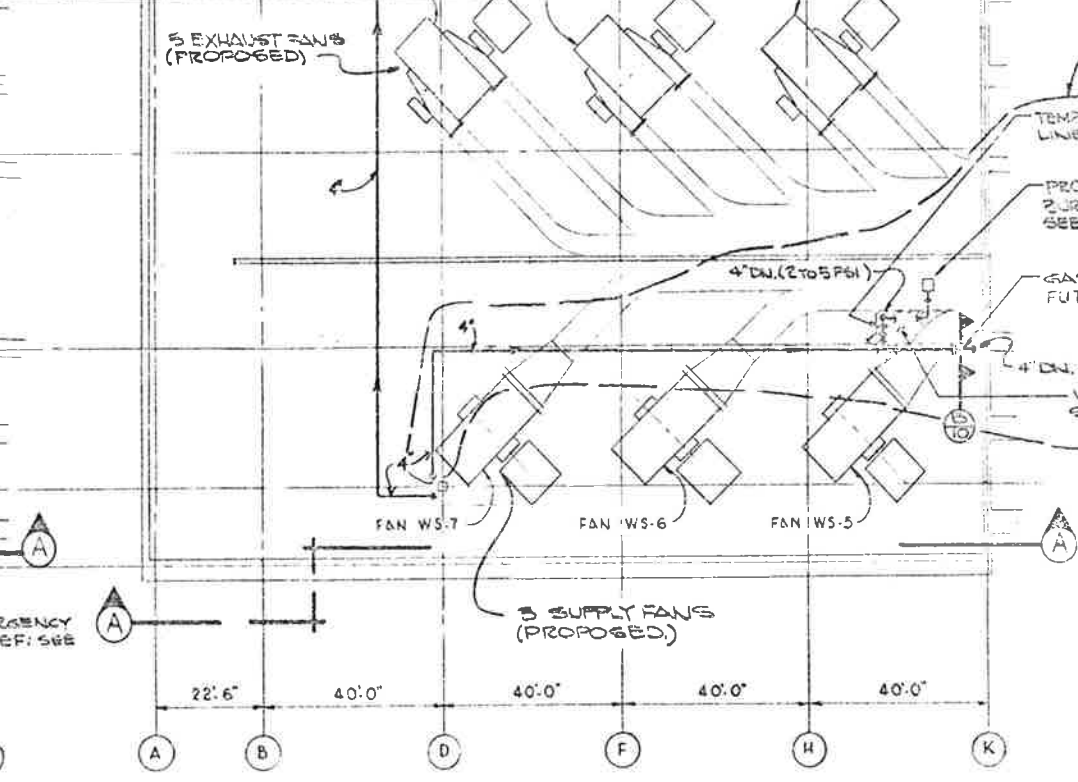
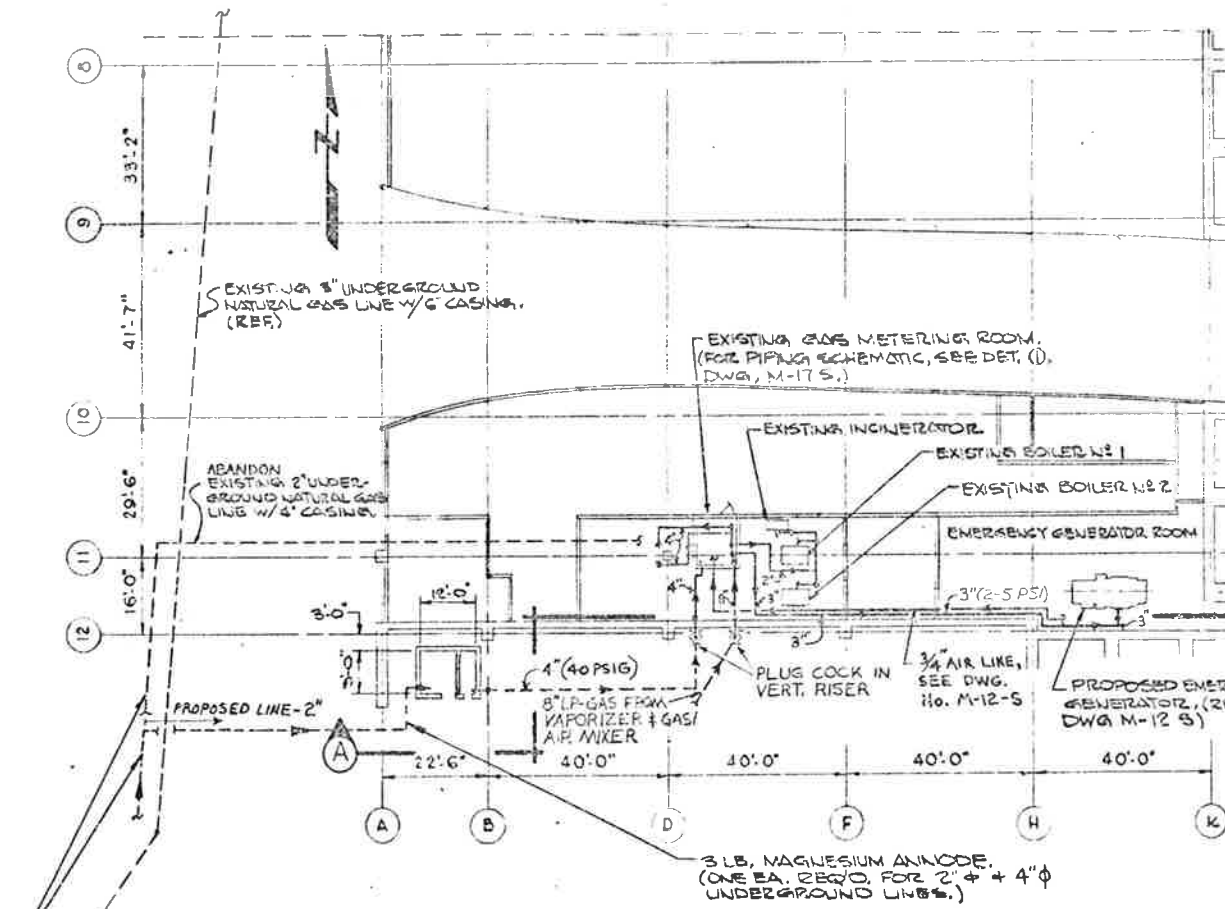
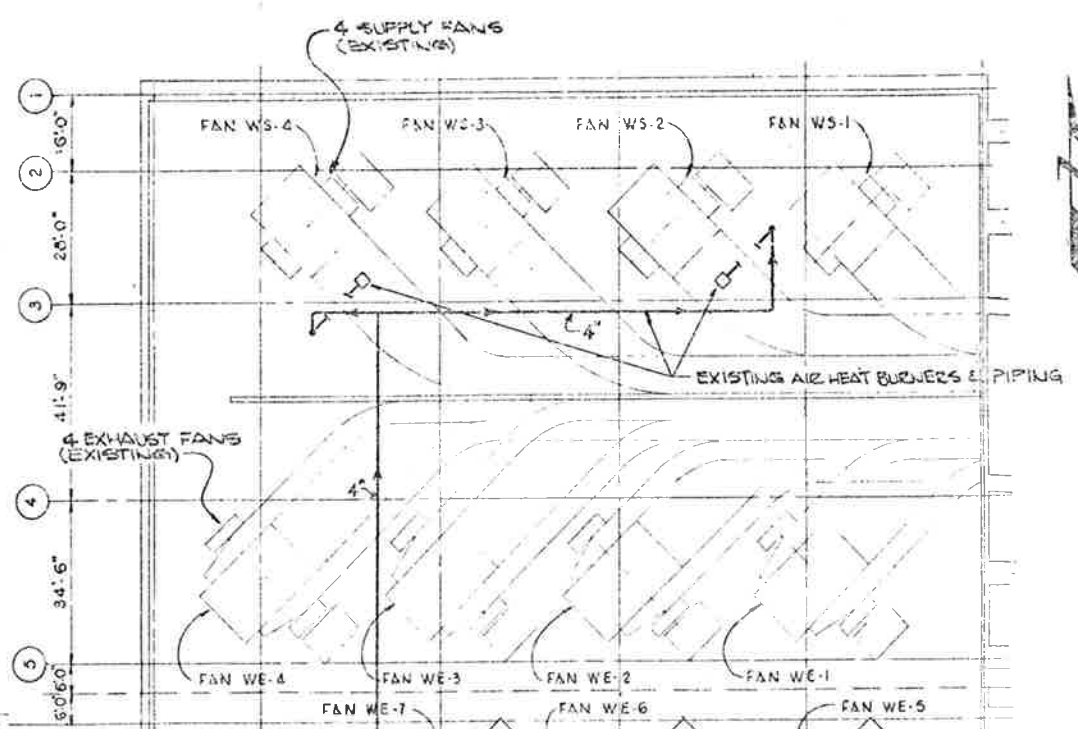
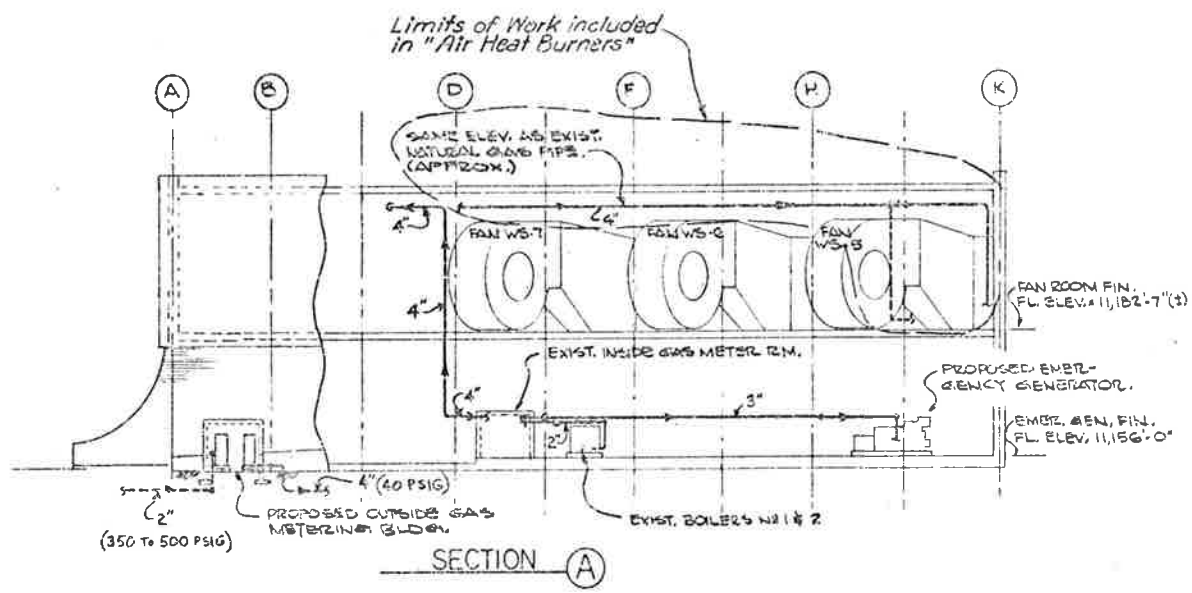
PRINT RECORD

DATE ISSUED	7-24-73	DATE	7-24-73
REVISION NO.	0	DATE	0
CUSTOMER	5 5 10 10 5 5	SCALE	DATE
FIELD	0 0 0 0 0 0	SCALE	DATE
INTRA CO.	19 0 1 1 1 1	SCALE	DATE

REVISIONS	
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BURE	
MECHANICAL	
EAST GAS METERING STATIONS AND PIPING MODIFICATIONS PLANS & SECTIONS	
DRAWN	DATE
CHECKED	DATE
SCALE	DATE
AS NOTED	C-14570

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XII	COLORADO	170-3(82)220	65	208

AS CONSTRUCTED
 NO REVISIONS DATE



- NOTES:
1. WORK THIS DWG. WITH DWGS. M-15, M-105 & M-17S.
 2. FOR PIPE HANGERS, SEE SECT. (3), DWG. M-10 S.
 3. PRESSURE TEST GAS PIPING @ 100 PSIG FOR FOUR (4) HOURS. (TYP. FOR NEW & EX. ST. PIPE RUNS.)



ROADWAY FLOOR PLAN - SOUTH
 WEST VENTILATION BUILDING

FAN ROOM FLOOR PLAN
 WEST VENTILATION BUILDING

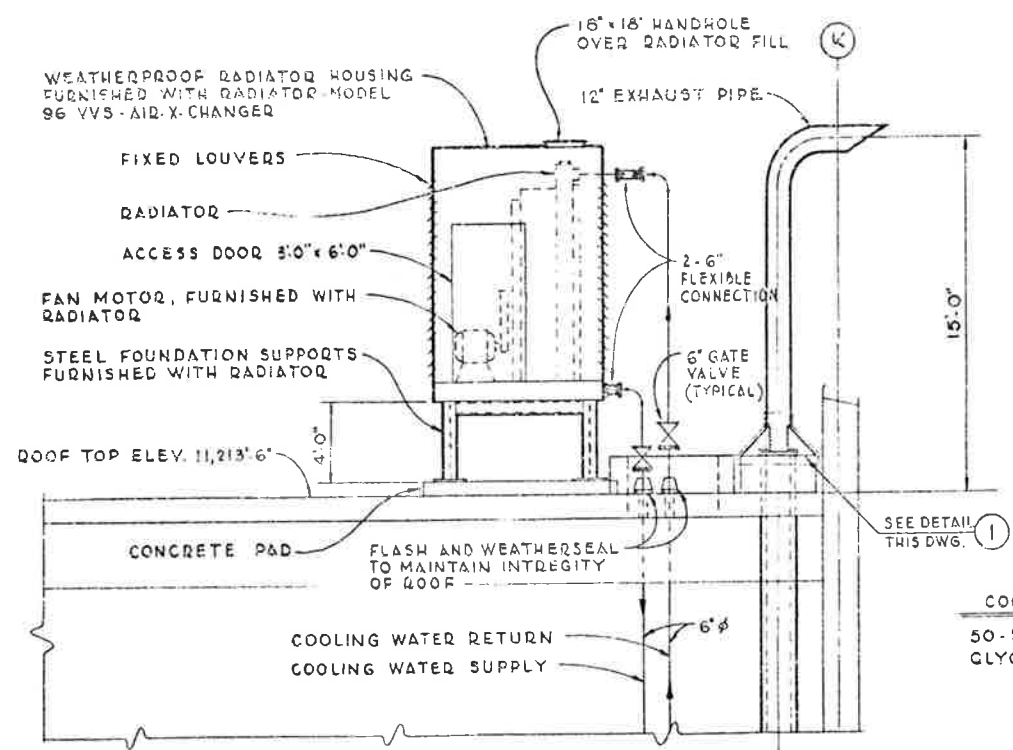
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FOR	PHS TRS A PEA PEA PEA PEA
APPROVED	5 5 10 10 5 5
FIELD	0 0 0 0 0 0
INTRA CO.	15 0 1 1 1 1

NO.	REVISIONS	DATE	BY	CHKD.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
MECHANICAL WEST GAS METERING STATIONS AND PIPING MODIFICATIONS PLANS & SECTION				
DRAWN	JAY	4-5-72		
CHECKED	SPS	9-27-71		
SCALE	AS SHOWN			
INTRA CO.	6-14-570			
				MAIIS

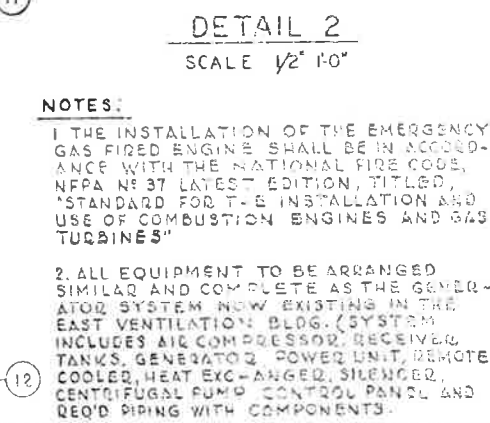
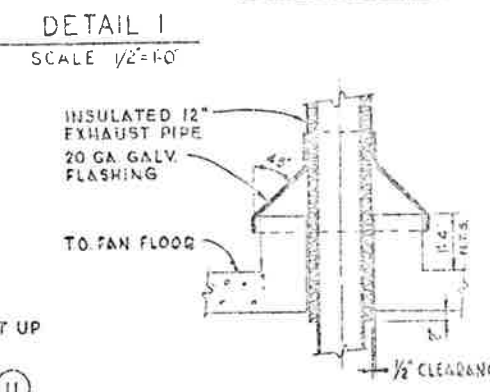
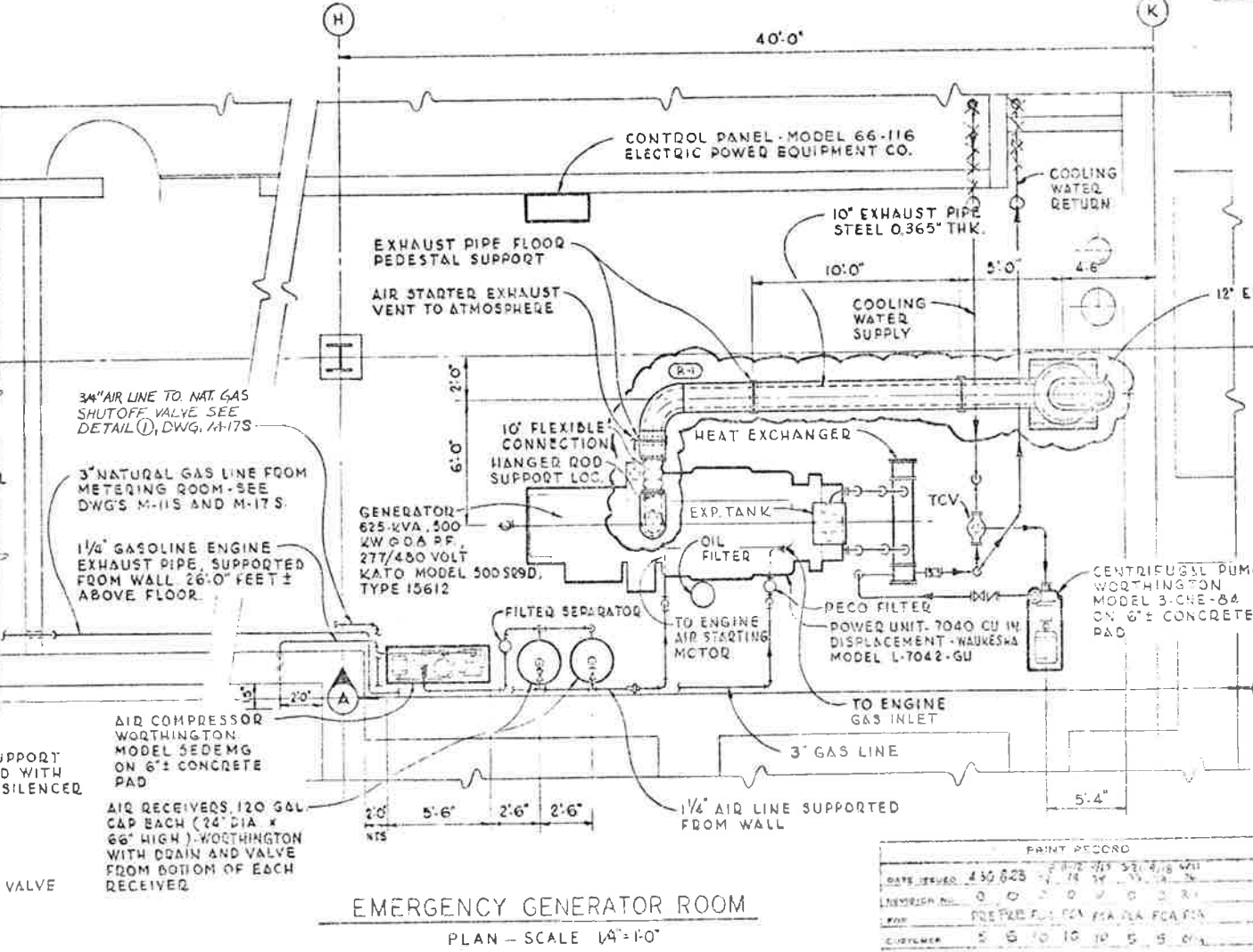
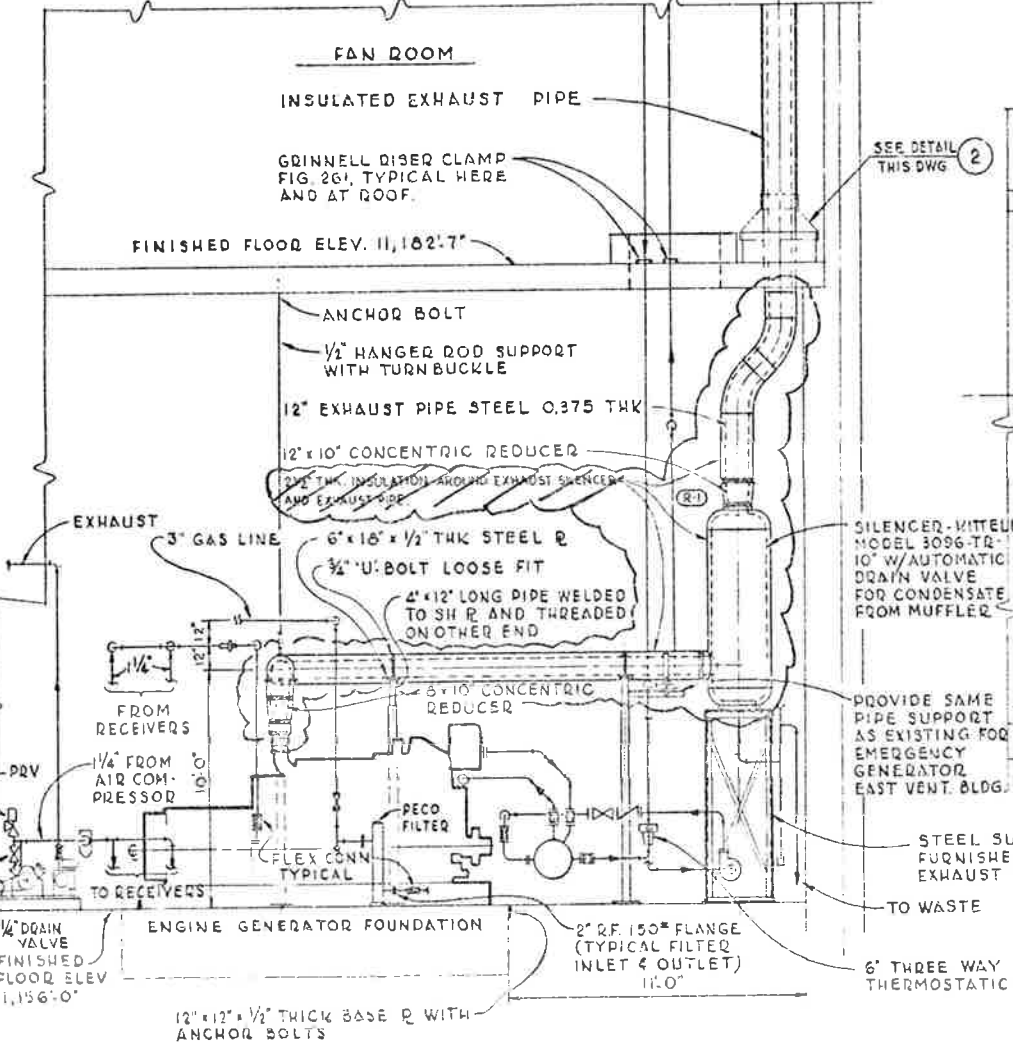
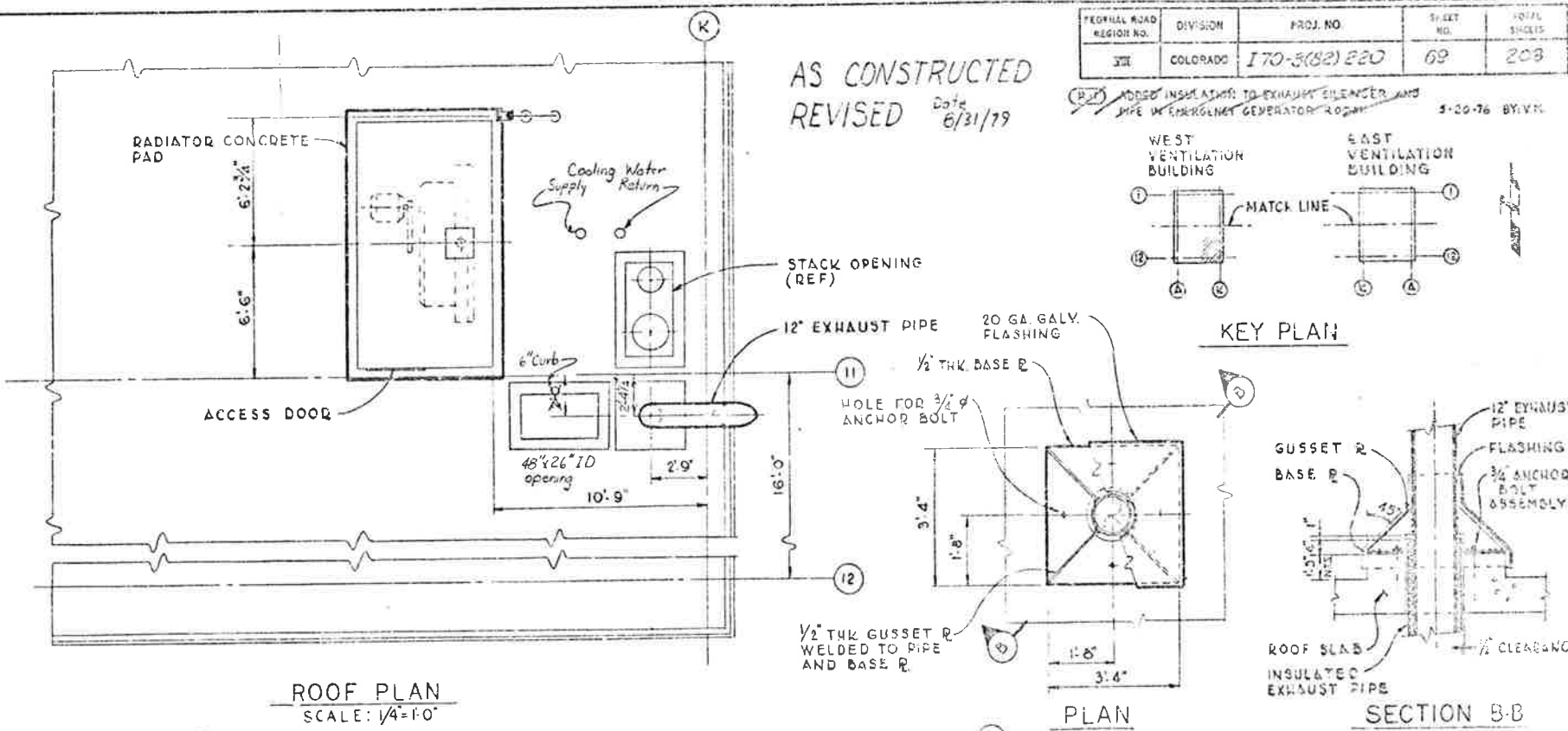
REGIONAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
301	COLORADO	I70-3(82) 220	69	203

AS CONSTRUCTED
 REVISED Date 6/31/79

ADDED INSULATION TO EXHAUST SILENCER AND PIPE IN EMERGENCY GENERATOR ROOM 5-20-76 BY: V.R.



COOLING SYSTEM
 50-50 SOLUTION
 GLYCO AND WATER



NOTES:
 1. THE INSTALLATION OF THE EMERGENCY GAS FIRED ENGINE SHALL BE IN ACCORDANCE WITH THE NATIONAL FIRE CODE, NFPA 97 LATEST EDITION, TITLED, "STANDARD FOR T-B INSTALLATION AND USE OF COMBUSTION ENGINES AND GAS TURBINES"
 2. ALL EQUIPMENT TO BE ARRANGED SIMILAR AND COMPLETE AS THE GENERATOR SYSTEM NOW EXISTING IN THE EAST VENTILATION BLDG. (SYSTEM INCLUDES AIR COMPRESSOR, RECEIVER, TANKS, GENERATOR, POWER UNIT, REMOTE COOLER, HEAT EXCHANGER, SILENCER, CENTRIFUGAL PUMP, CONTROL PANEL AND REQ'D PIPING WITH COMPONENTS)

NO.	REVISIONS	DATE

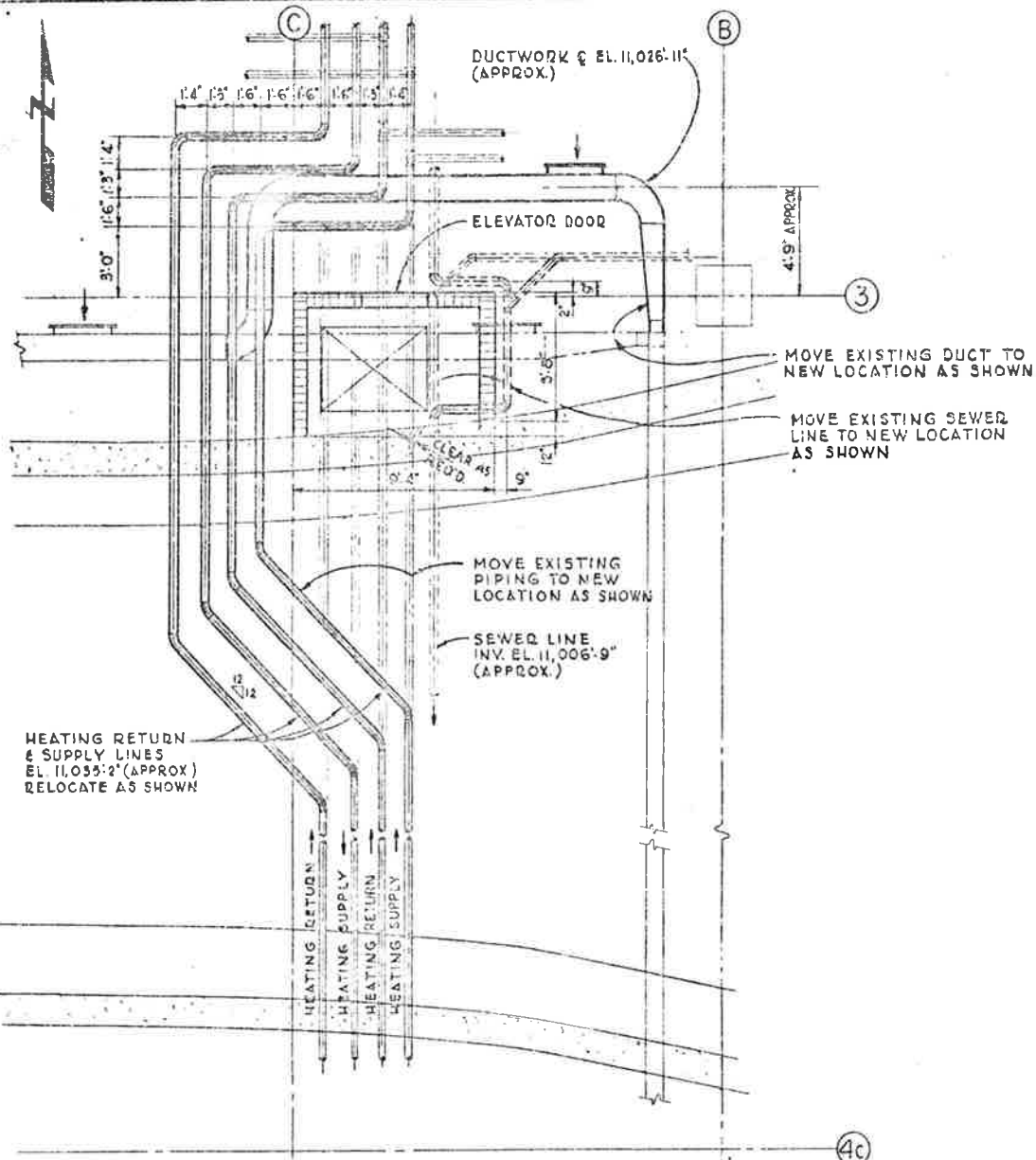
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND HOBBE

MECHANICAL
 WEST VENTILATION BUILDING - (20)
 EMERGENCY GENERATOR ROOM
 PLAN, ELEVATION AND DETAILS

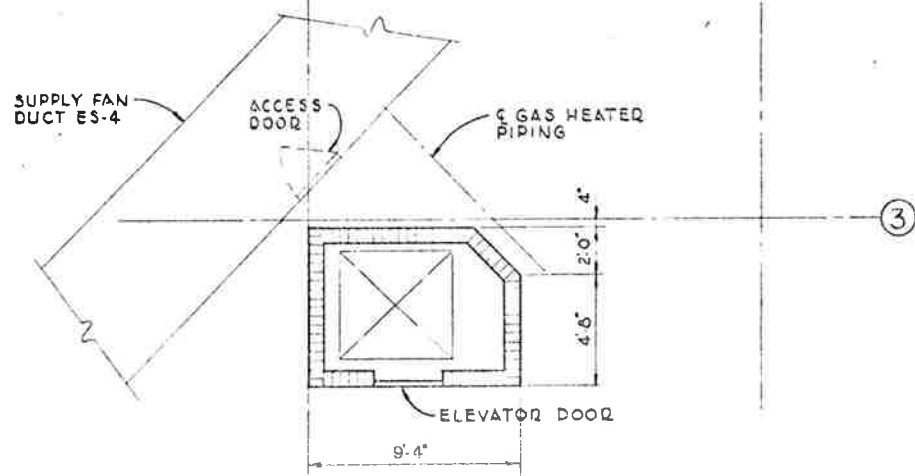
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 CUSTOMER: 5 5 10 10 5 15 0 1
 FIELD: 0 0 0 0 0 0 0 0
 TOTAL: 13 0 2 1 1 1 1 15

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
102	COLORADO	170-3(32)220	71	203

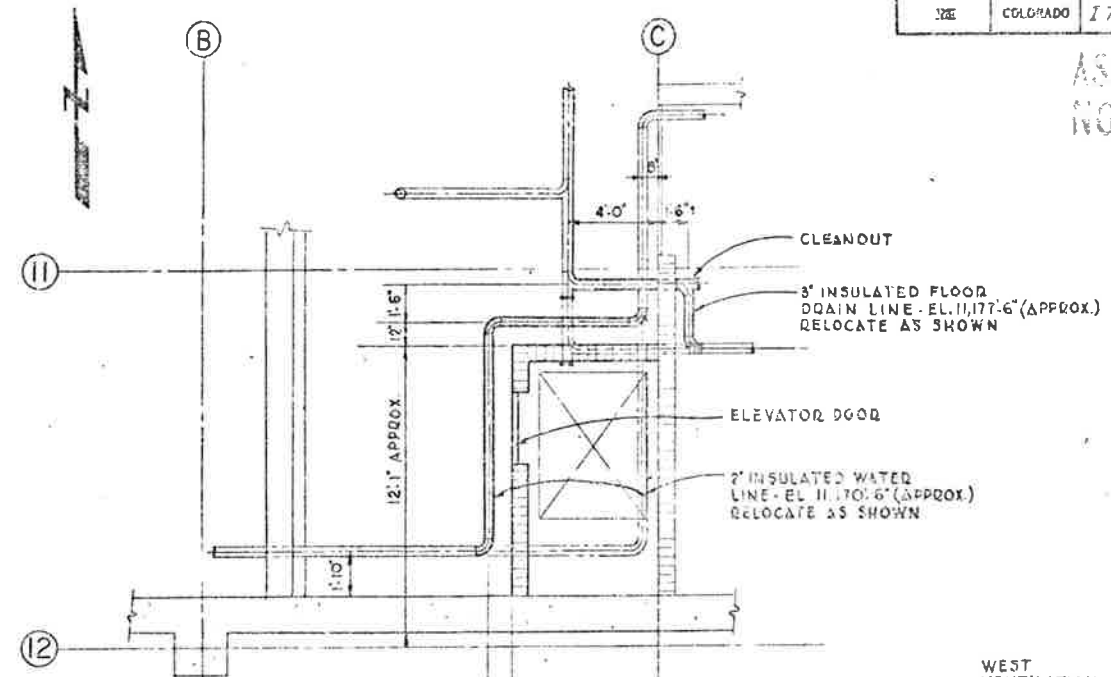
AS CONSTRUCTED
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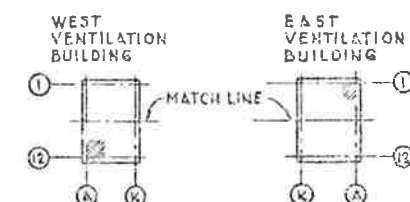
ROADWAY FLOOR PLAN AT ELEVATOR EAST VENTILATION BUILDING



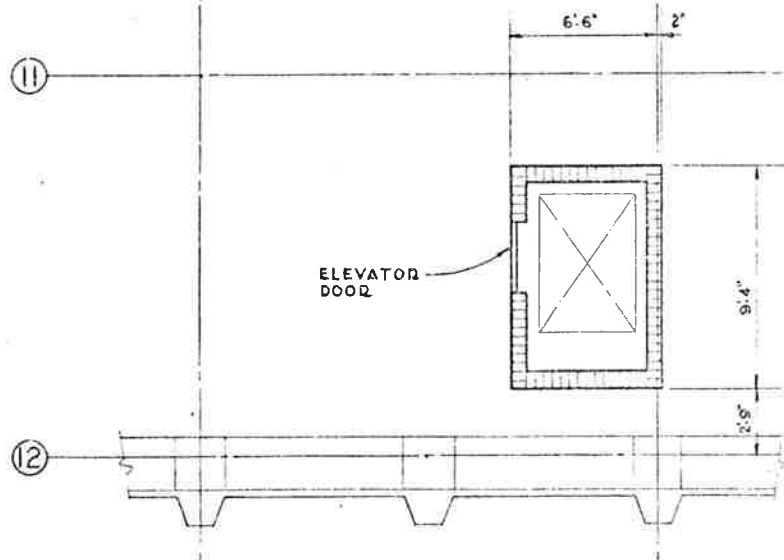
FAN ROOM FLOOR PLAN AT ELEVATOR EAST VENTILATION BUILDING



ROADWAY FLOOR PLAN AT ELEVATOR WEST VENTILATION BUILDING



KEY PLAN



FAN ROOM FLOOR PLAN AT ELEVATOR WEST VENTILATION BUILDING

NOTES:

1. CONTRACTOR TO MODIFY & RELOCATE DUCTWORK & PIPING APPROXIMATELY AS SHOWN.
2. CONTRACTOR TO CHECK DUCTWORK & PIPING ELEVATIONS & DIMENSIONS.
3. FOR ELEVATOR REFERENCE SEE DWG'S 5-4 S AND 5-5 S.
4. FOR HEATING, VENTILATING & PLUMBING REFERENCES SEE PROJECT NO. 1-70-3(34)220, DWG'S M-21 AND M-35.
5. PHANTOM LINES INDICATE EXISTING PIPING OR DUCTWORK TO BE RELOCATED.
6. SHADED LINES INDICATE NEW PIPING OR DUCTWORK TO BE ADDED.

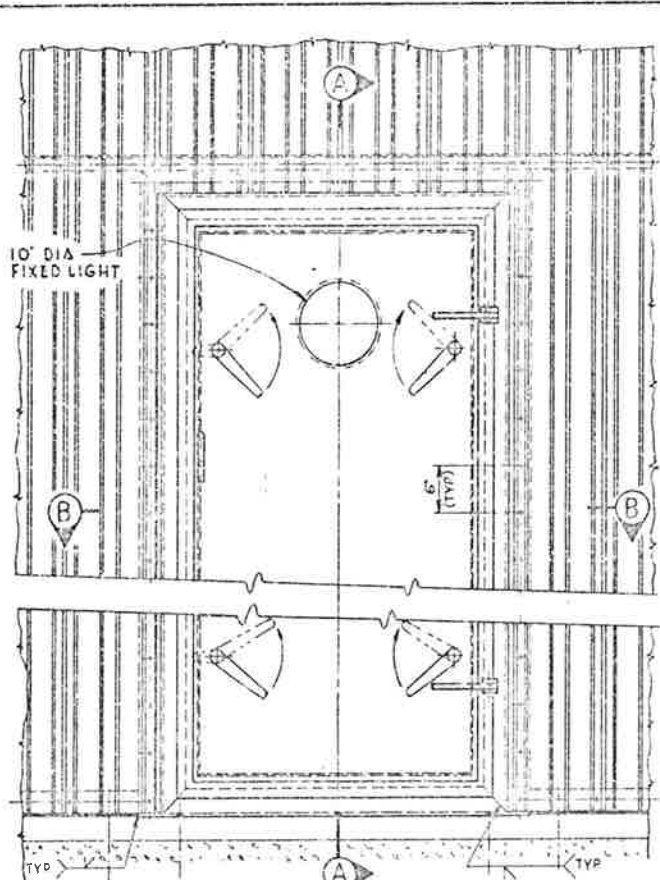


PRIMARY RECORD	
DATE ISSUED	7/31/82
DESIGNER	
FOR	
CUSTOMER	5 5 10
FIELD	0 0 0
INSTR. CO.	15 0 1

NO.	REVISIONS	DATE	BY	CHKD.
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
MECHANICAL EAST & WEST VENTILATION BUILDINGS DUCTWORK & PIPING MODIFICATIONS FOR ELEVATOR INSTALLATION - PLANS & DETAILS				
SCALE	AS SHOWN	C 14570		
DATE	7/31/82			
DRAWING NO.	M-14 S			

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	170-3(82)280	72	208

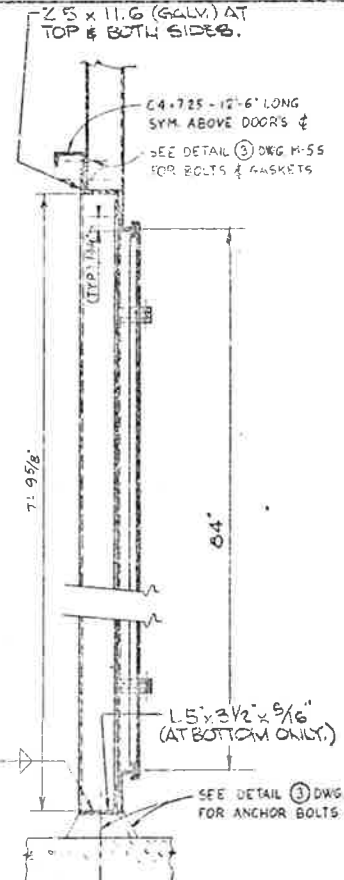
AS CONSTRUCTED
 NO REVISIONS DATE



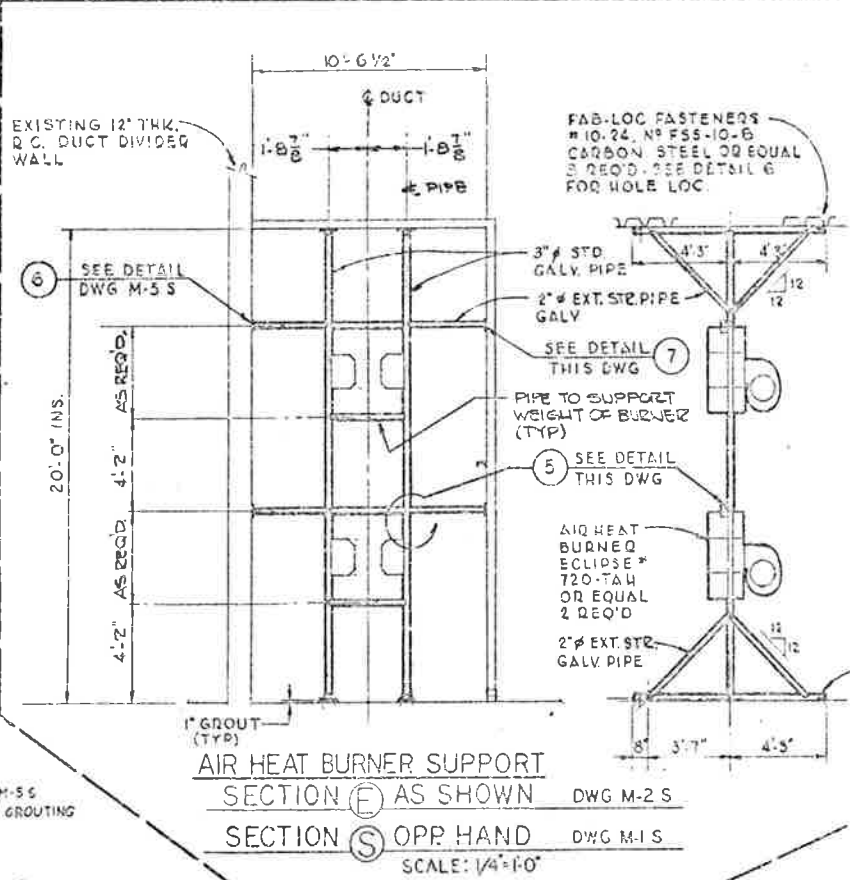
EXHAUST AIR DUCT PRESSURE DOOR ELEVATION

EAST VENTILATION BUILDING - AS SHOWN
 WEST VENTILATION BUILDING - OPPOSITE HAND SCALE: 1/4"=1'-0" DOGS NOT SHOWN

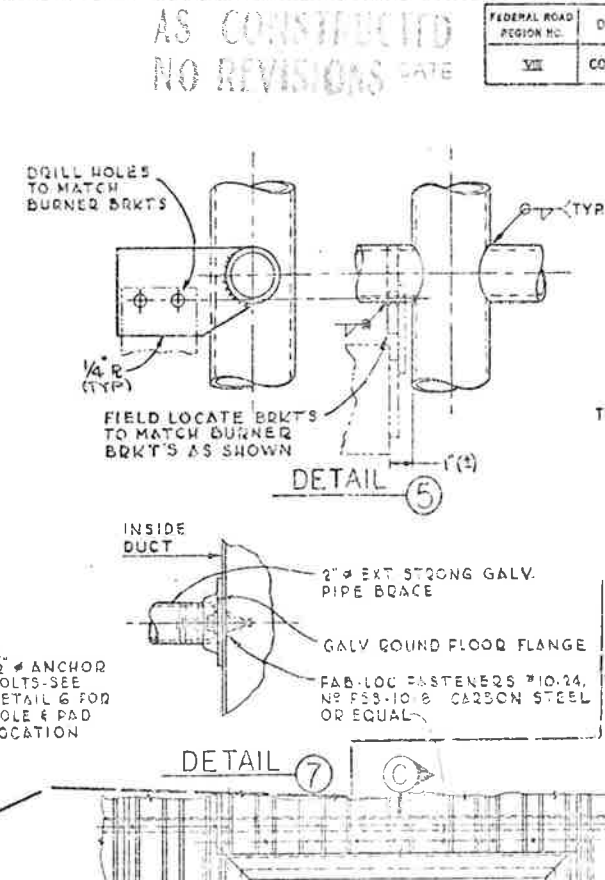
PRESSURE DOOR BY JULIUS MOCK & SONS, INC. BROOKLIN, N.Y. MODEL ON DWG. 261-A I-SQ. WITH 4 DOGS, ONE 10" DIA FIXED LIGHT AND TWO ADJUSTABLE HINGES (OR EQUAL.)



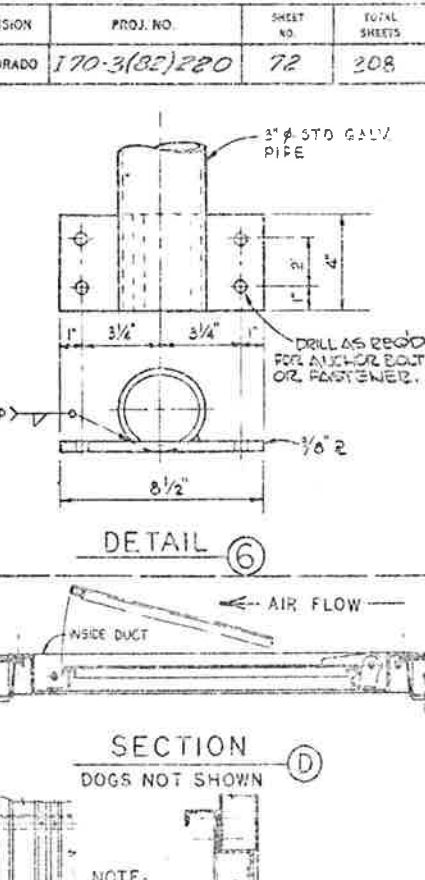
SECTION A-A DOGS NOT SHOWN



AIR HEAT BURNER SUPPORT
 SECTION E-E AS SHOWN DWG M-2 S
 SECTION S-S OPP HAND DWG M-1 S
 SCALE: 1/4"=1'-0"

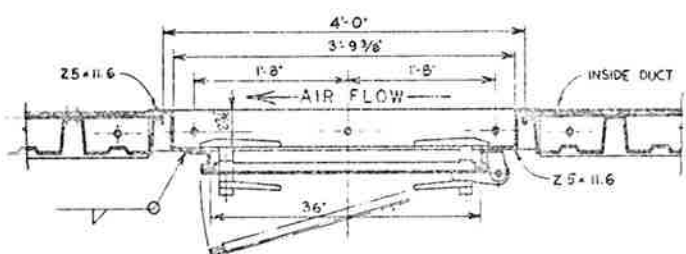


DETAIL 5
 DETAIL 7

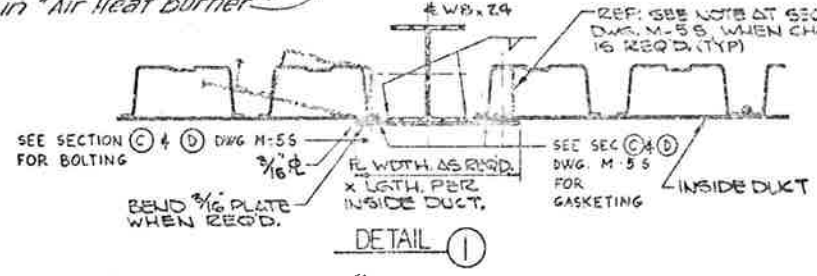


SECTION D-D DOGS NOT SHOWN

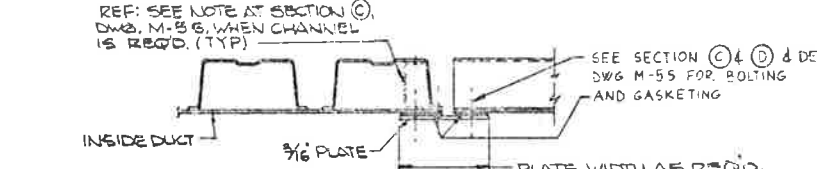
Limits of work included in "Air Heat Burner"



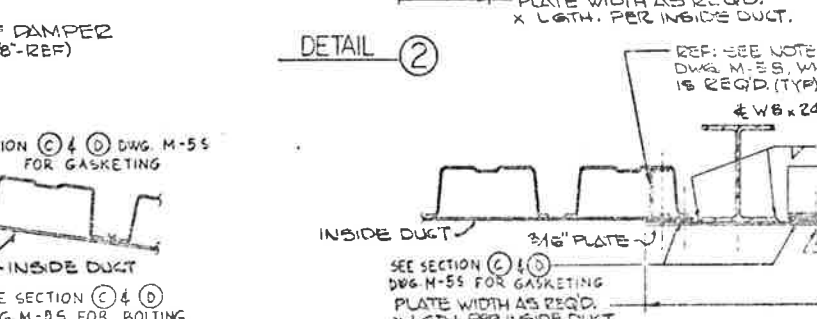
SECTION B-B



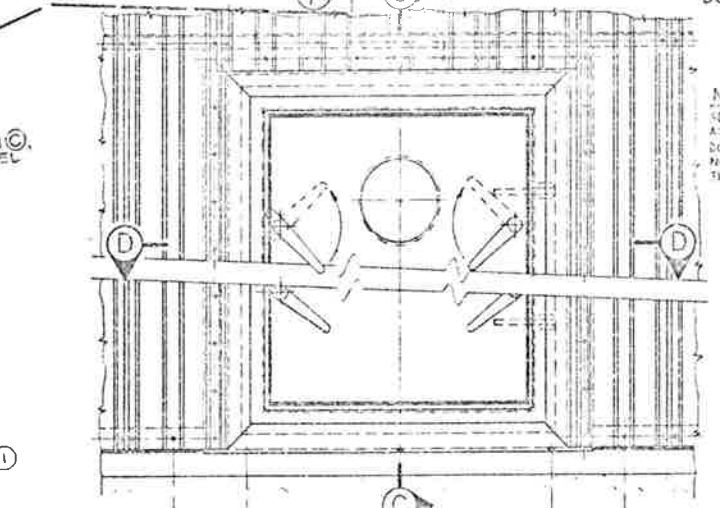
DETAIL 1



DETAIL 2

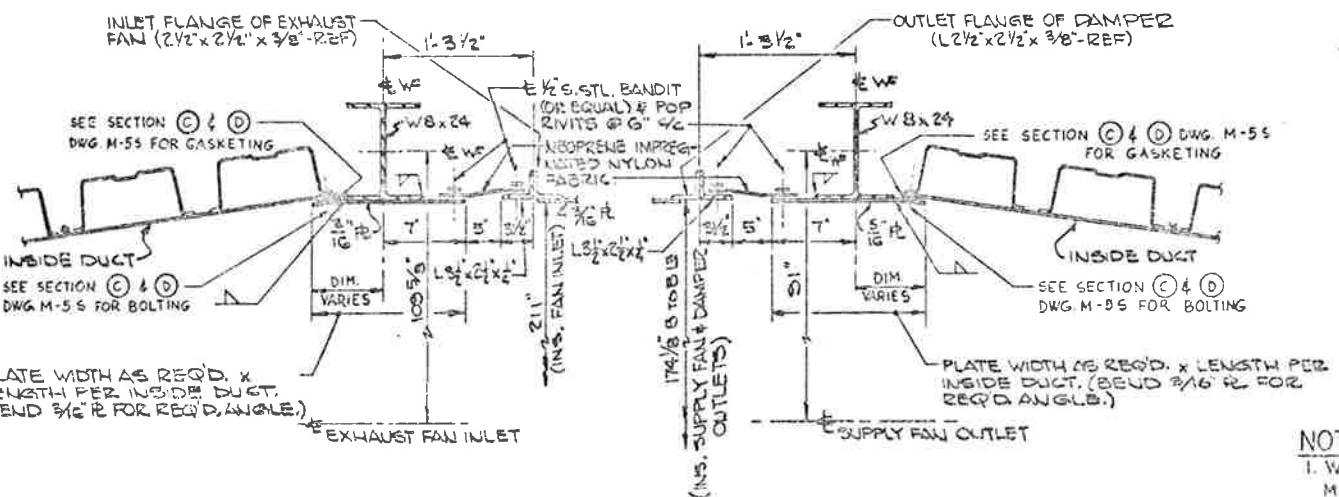


DETAIL 3



SUPPLY AIR DUCT PRESSURE DOOR ELEVATION
 EAST VENT. BLDG. - AS SHOWN, WEST VENT. BLDG. - OPP. HAND SCALE: 1/4"=1'-0" DOGS NOT SHOWN

SECTION C-C DOGS NOT SHOWN



SECTION K-K DWG M-1 S & M-2 S

SECTION L-L DWG M-1 S & M-2 S
 (SECTION IS REVERSE & TYP. FOR BOTTOM OF OUTLET.)

NOTES:
 1. WORK THIS DRAWING WITH DRAWINGS M-1 S THRU M-17 S.

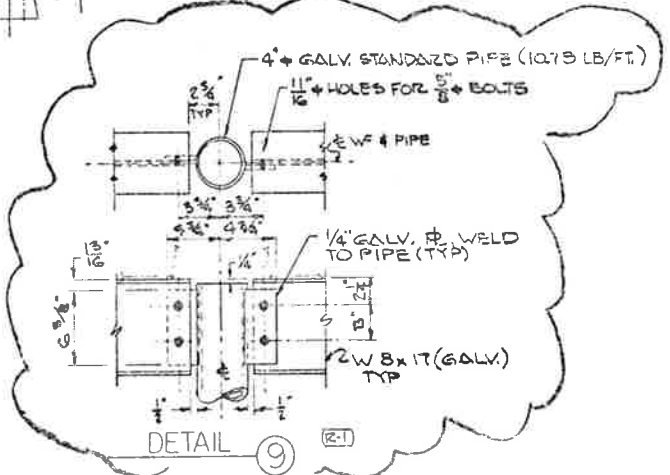
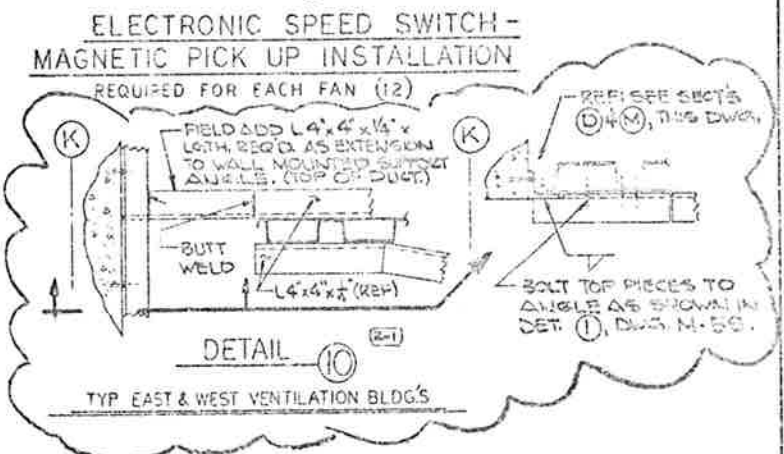
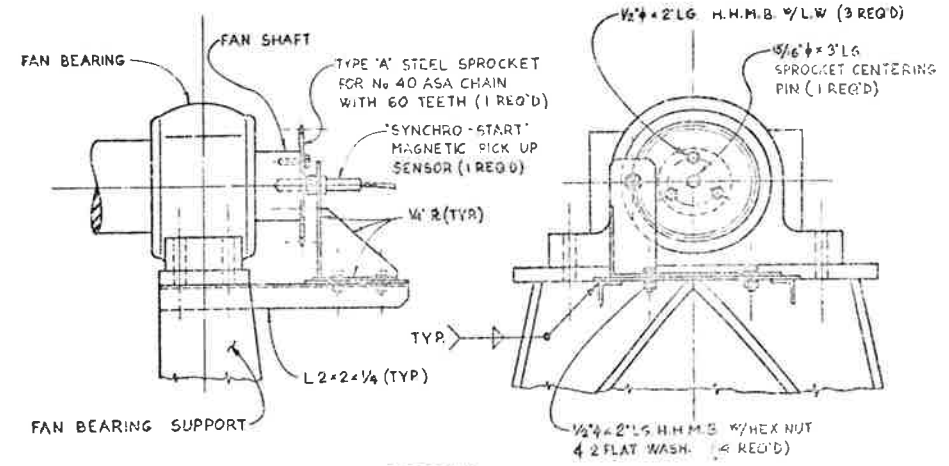
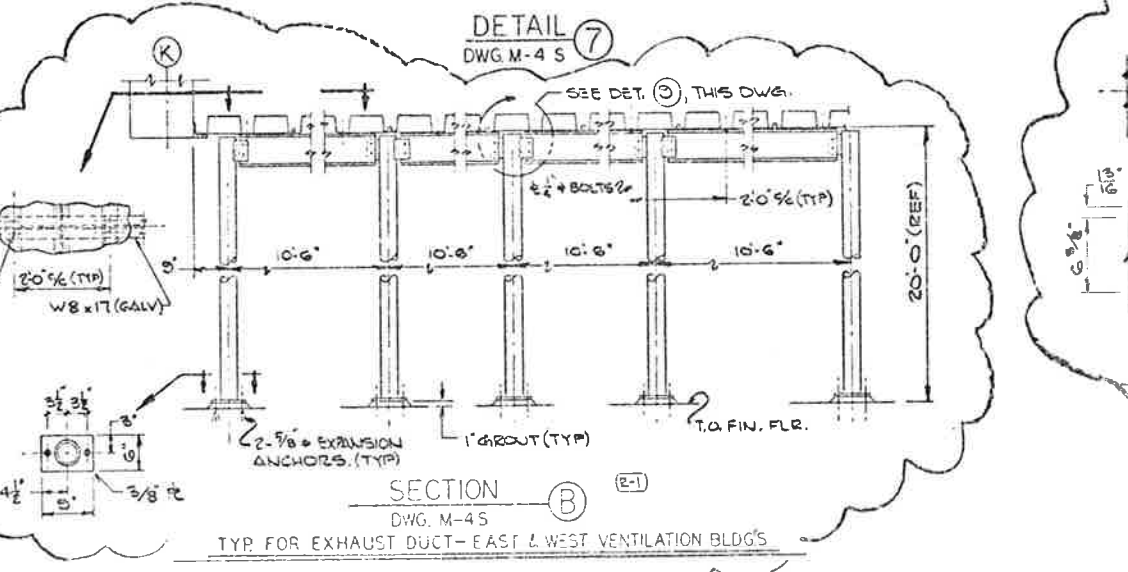
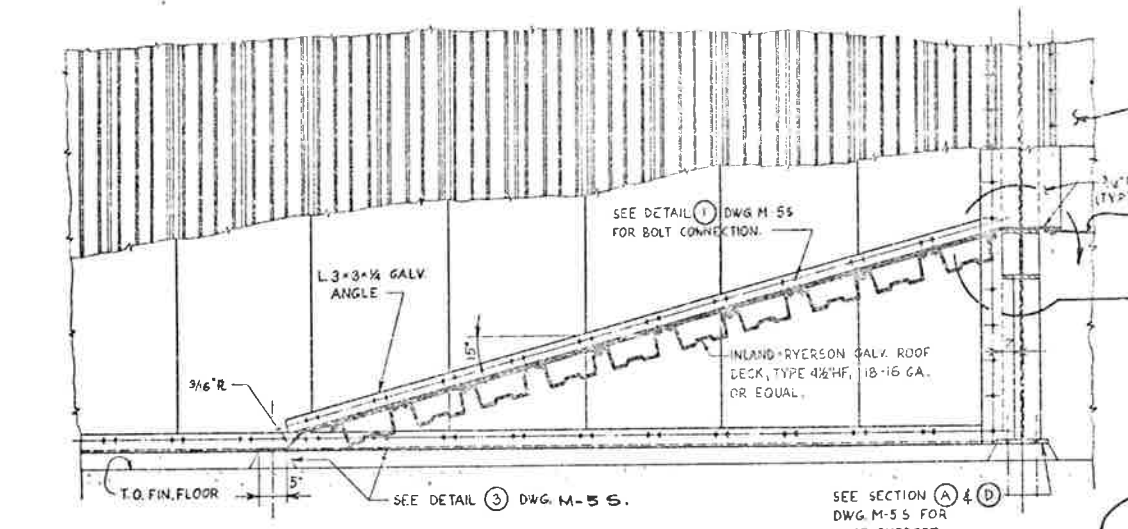
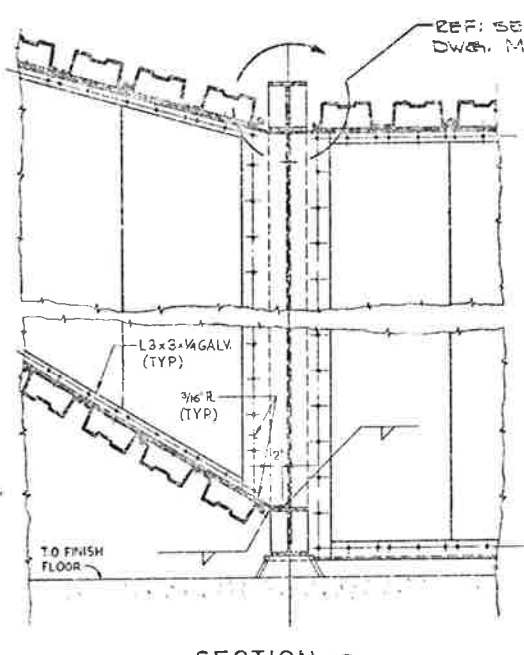
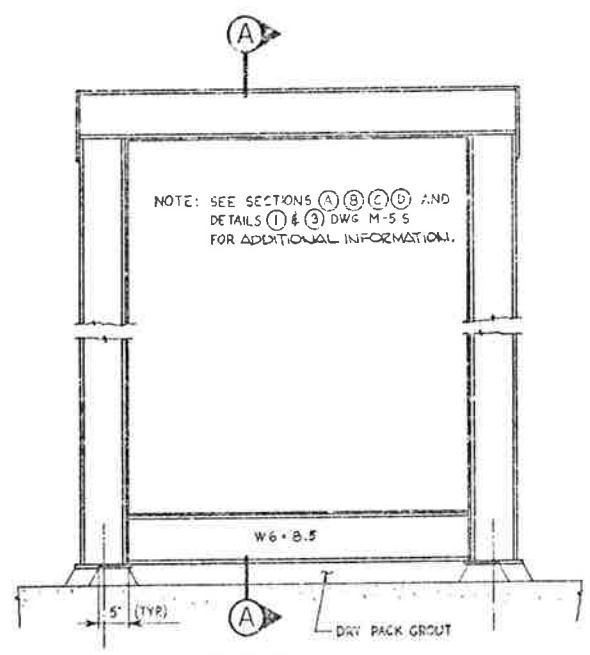
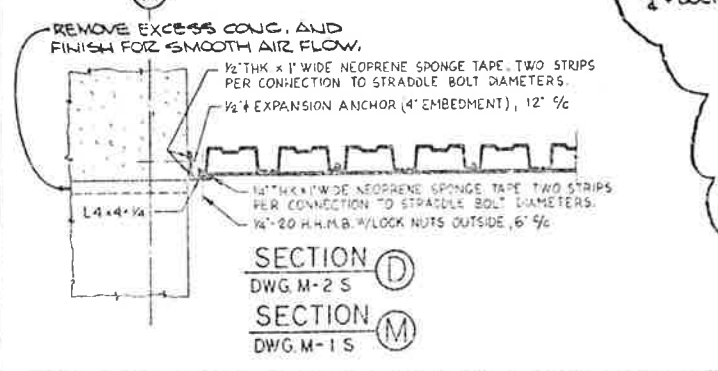
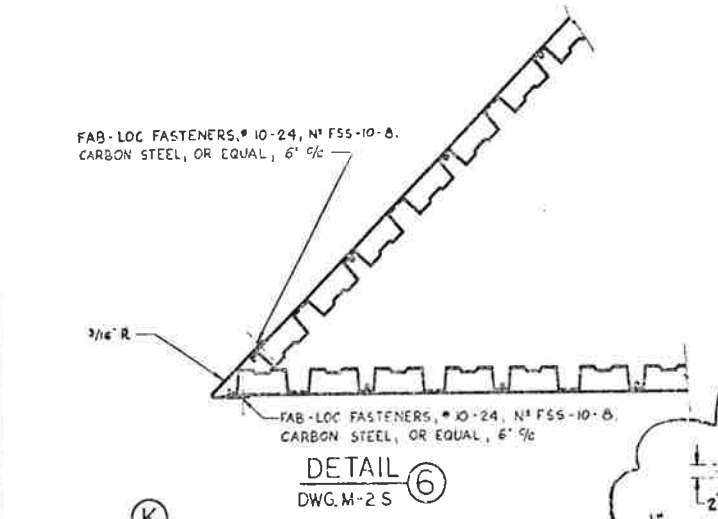
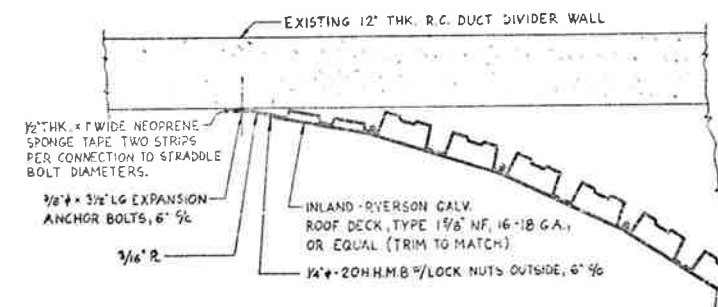
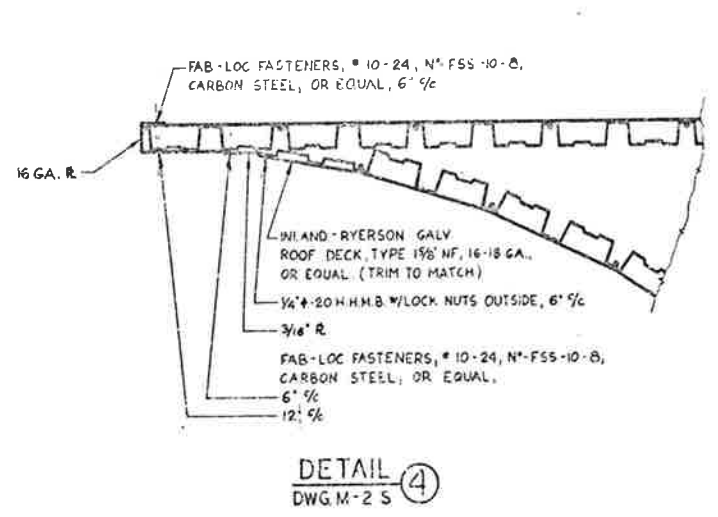
DATE REVISION	5-11-72
REVISION NO.	1
BY	PERMITS FOR
CHECKED	5-11-72
FIELD	0 0 0
WORK ON	15 0 1

NO.	REVISIONS	DATE	BY
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE			
MECHANICAL EAST & WEST VENTILATION BUILDINGS MISCELLANEOUS SECTIONS & DETAILS			
DESIGN	5-11-72	DRAWING NO.	M-15 S
CHECKED	5-11-72	ORDER NO.	
SCALE	AS NOTED	ORDER NO.	



FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	I70-3(B2)220	78	208

ADDED SECTION (B); DET'S (9) & (10).
 12-11-75, R.E.R.
AS CONSTRUCTED
 REVISED Date 8/31/79



NOTES:
 1. WORK THIS DWG. WITH DWG'S M-15 THRU M-15S & M-17S.

PRINT RECORD	
DATE REPR.	7-31-82
APPROVED BY	
FOR	SEE FIELD REV
CUSTOMER	5 5 T O ORG
FIELD	0 0 0 1
INTRA. CO.	15 0 1 4

REVISIONS	
NO.	DESCRIPTION
1	AS CONSTRUCTED
2	REVISED 8/31/79

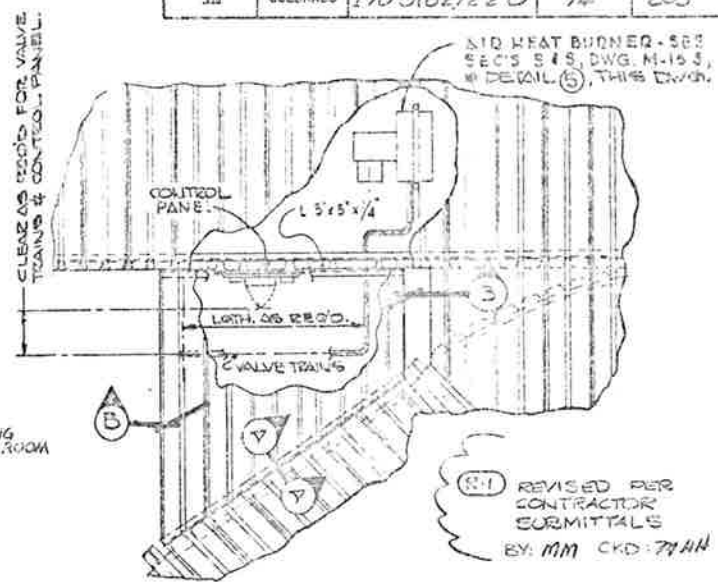
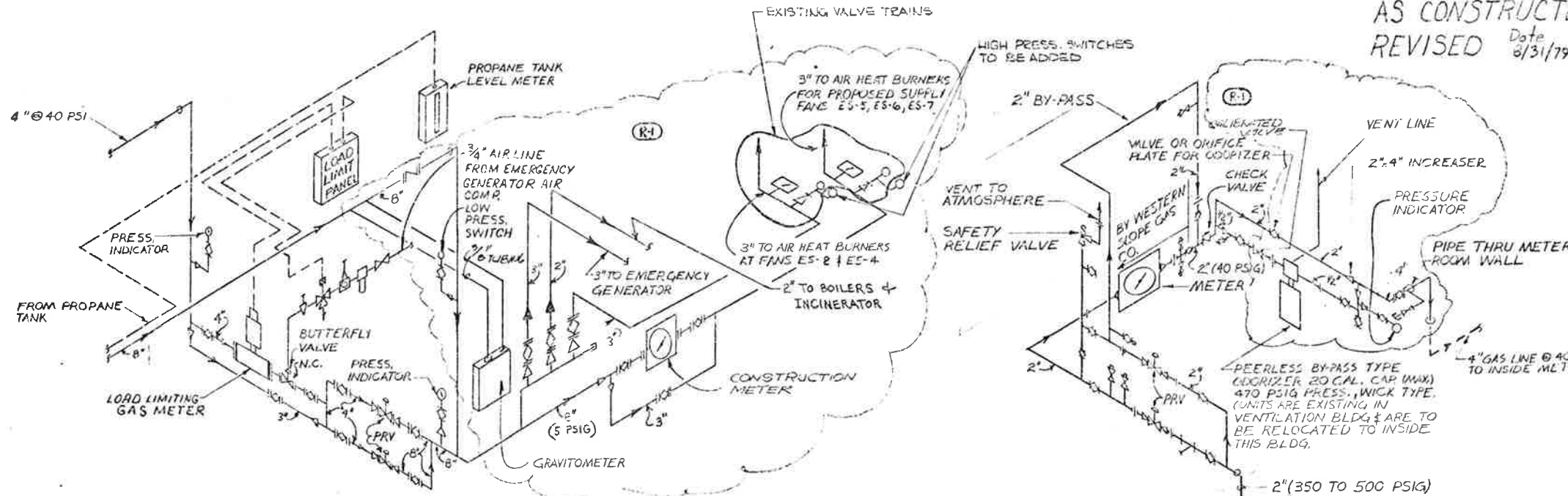
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
 SECOND BORE

MECHANICAL
 EAST AND WEST VENTILATION BUILDINGS
 SUPPLY AND EXHAUST DUCTWORK
 MISCELLANEOUS SECTIONS AND DETAILS

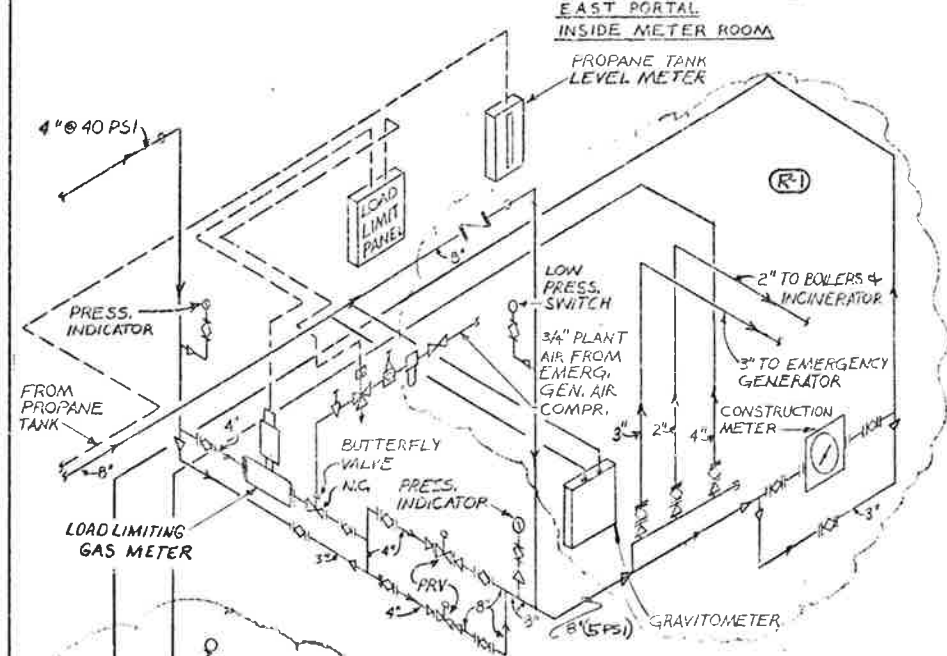
SCALE: AS SHOWN
 ORDER NO. 14570
 DATE: 8/31/79

AS CONSTRUCTED
 REVISED Date 8/31/79

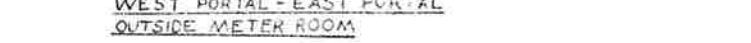
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	170-3(82) PPO	74	203



DETAIL 2
 EAST PORTAL INSIDE METER ROOM

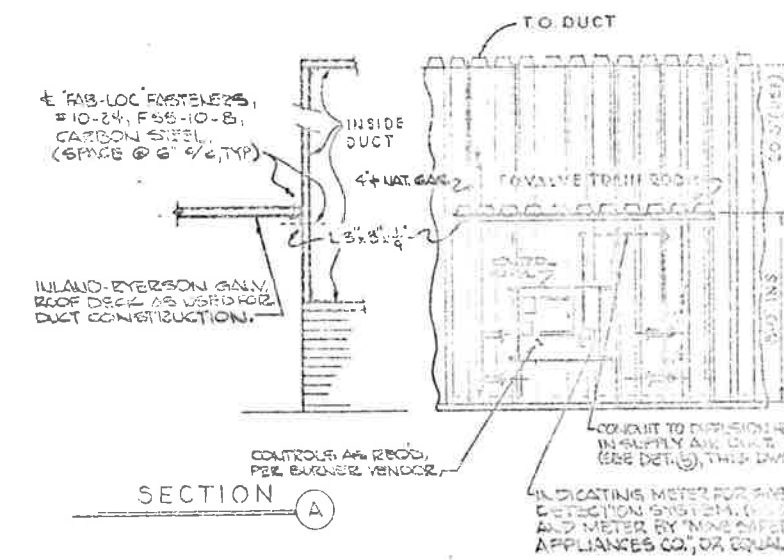
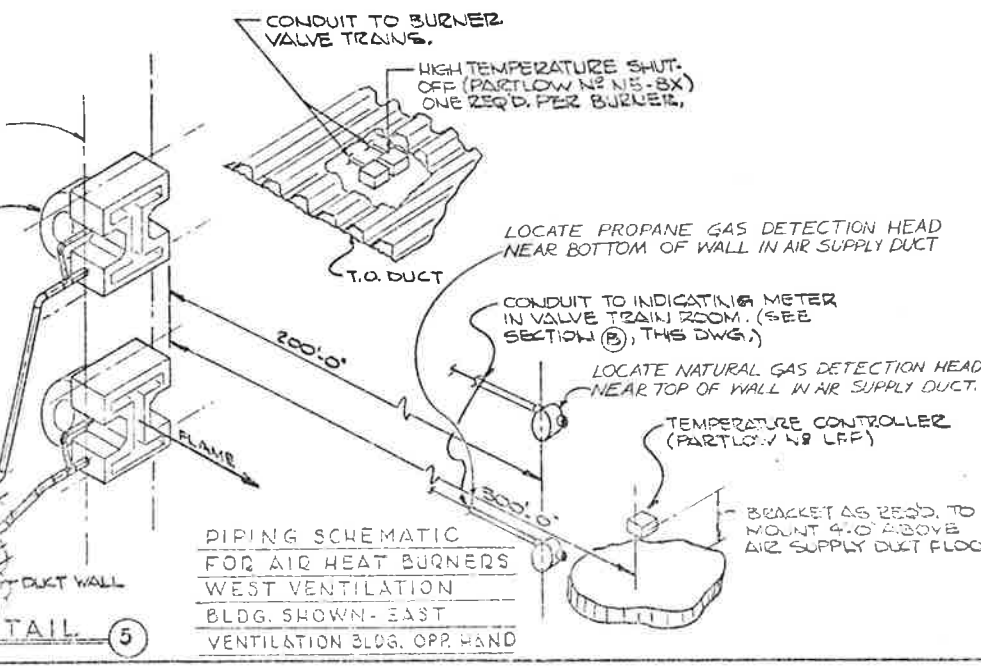
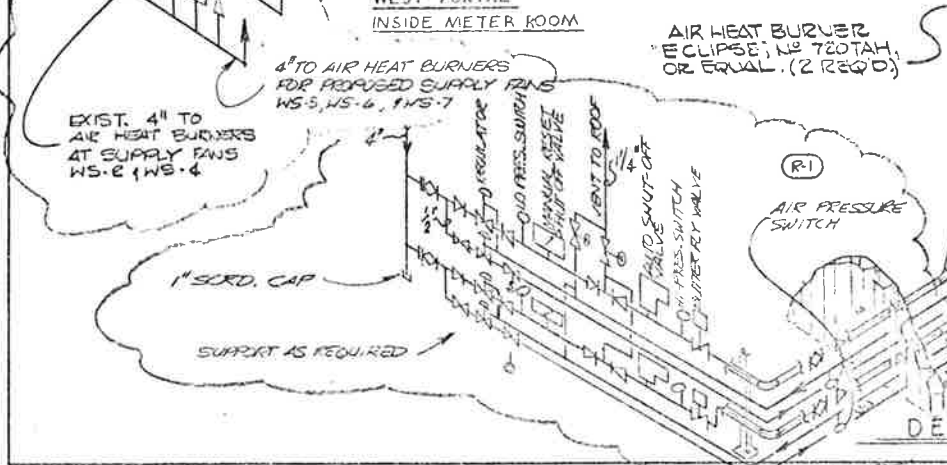


DETAIL 3
 WEST PORTAL - EAST PORTAL OUTSIDE METER ROOM



DETAIL 6
 PLAN-VALVE TRAIN ROOM - WEST VENTILATION BUILDING AS SHOWN - EAST VENTILATION BUILDING OPPOSITE HAND.

DETAIL 1
 WEST PORTAL INSIDE METER ROOM



SECTION B

NOTE:
 1. WORK THIS DWG. WITH DWGS M-15, M-25, M-55, M-10S, M-11S & M-15S.

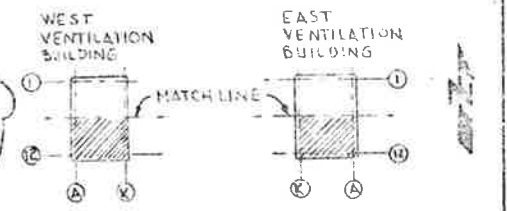


PRINT RECORD

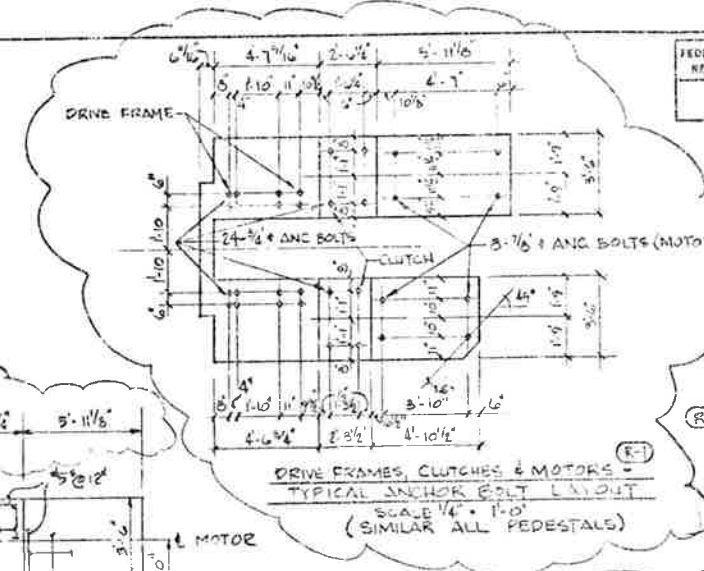
DATE ISSUED	7-31-79	DATE REVISED	8-31-79
REVISION NO.	0	1	2
BY	PREPARED BY	DESIGNED BY	APPROVED BY
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2	10	10	5
3	5	5	5
4	5	5	5
5	5	5	5
6	5	5	5
7	5	5	5
8	5	5	5
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10	5	5	5
11	5	5	5
12	5	5	5
13	5	5	5
14	5	5	5
15	5	5	5

NO.	REVISIONS	DATE
STATE OF COLORADO - DEPARTMENT OF TRANSPORTATION		
EISENHOWER MEMORIAL TUNNEL		
SECOND FLOOR		
MECHANICAL		
EAST AND WEST VENTILATION BUILDINGS		
NATURAL GAS PIPING, BURNERS AND		
BURNER VALVE TRAIN ROOM DETAILS		
DRAWN	REVISED	DATE
CHECKED	DESIGNED	DATE
SCALE	PROJECT	DATE
NONE	C-14570	

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
818	COLORADO	170-5(82)220	75	208

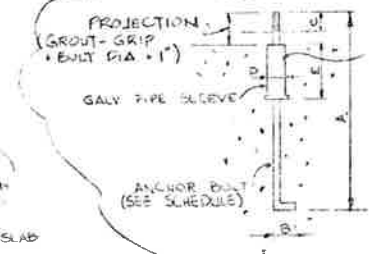


KEY PLAN
 (R-1) CHANGED FOUNDATION DIM. A.B. SCHEDULE 4. ADDED A.B. LAYOUT. 2-24-76 GBS CHKD



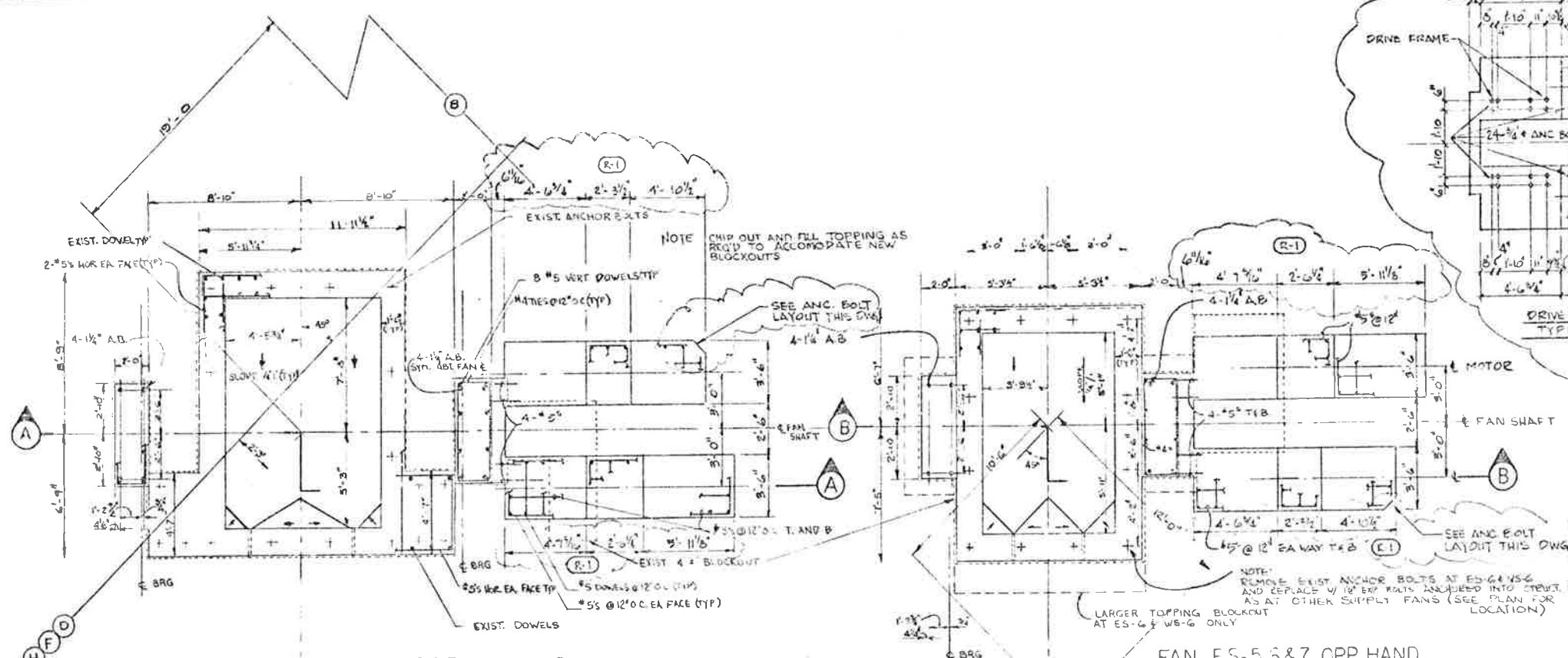
SHEET	A	B	C	D	E	PROJ.	LOCATION
5/6	24'	4'	4 1/2'	2'	8'	4/5	CLUTCH
3/6	24'	4'	4 1/2'	2'	8'	4/5	DRIVE FRAME
7/8	30'	4'	4 1/2'	2 1/2'	12'	4/5	MOTOR
11/4	45'	5'	5'	3'	15'	5'	FAN SUPPORT

ANCHOR BOLT SCHEDULES (ASTM A305 BOLTS, A572 W/TS)



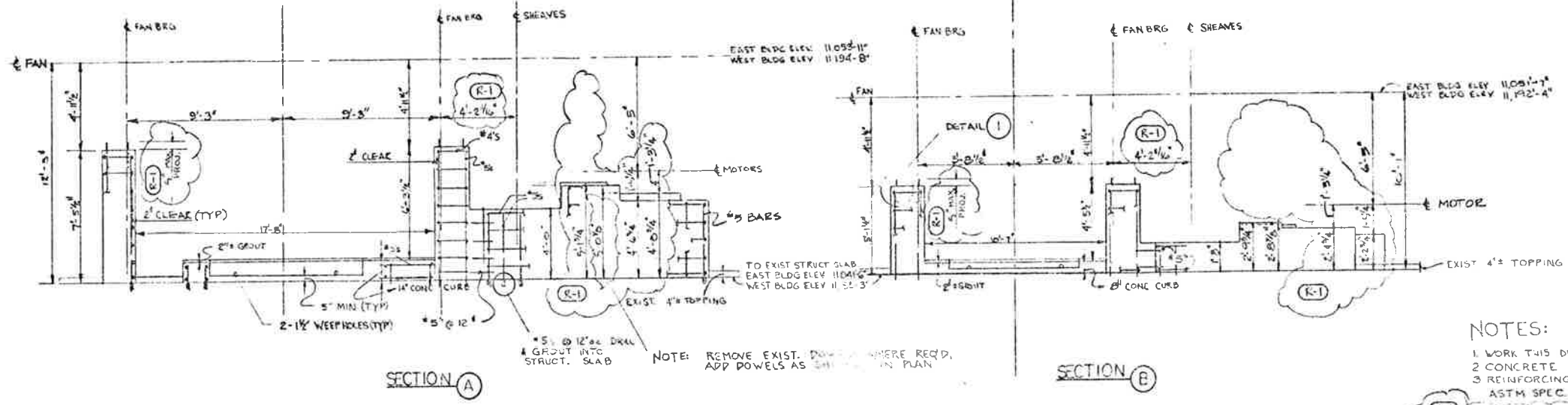
ANCHOR BOLT DETAIL (R-1)

AS CONSTRUCTED
 REVISED Date 8/31/79



FAN EE-5,6&7 OPP. HAND
 FAN WE-5,6&7 AS SHOWN

FAN ES-5,6&7 OPP. HAND
 FAN WS-5,6&7 AS SHOWN



SECTION A

SECTION B

- NOTES:
1. WORK THIS DWG. WITH DWG. M IS THRU M-GS.
 2. CONCRETE TO BE CLASS B.
 3. REINFORCING STEEL TO COMPLY WITH ASTM SPEC. A618 GRADE 60.
 4. PROVIDE EPOXY BONDING COMPOUND PER SPEC. PAR. 4.00.1.1. PER MFG. SPEC. WHEN NEW CONCRETE IS TO BE POURED ON OLD CONCRETE.

PRINT RECORD

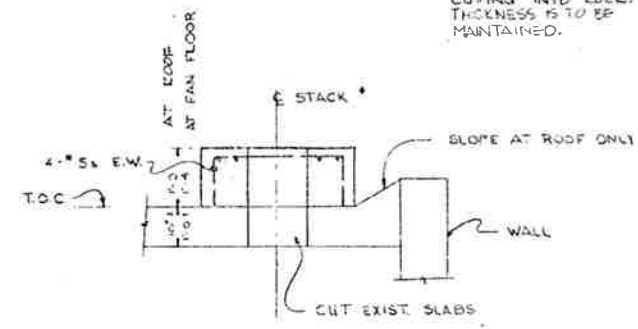
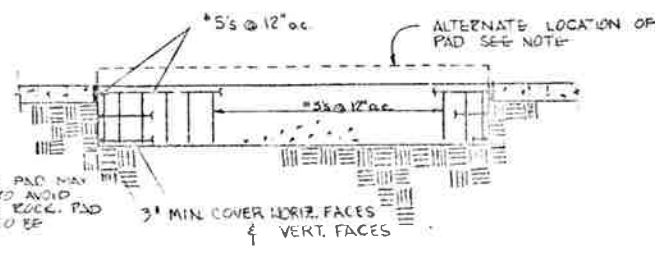
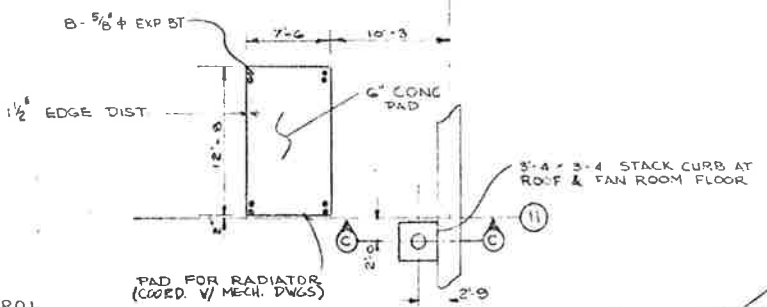
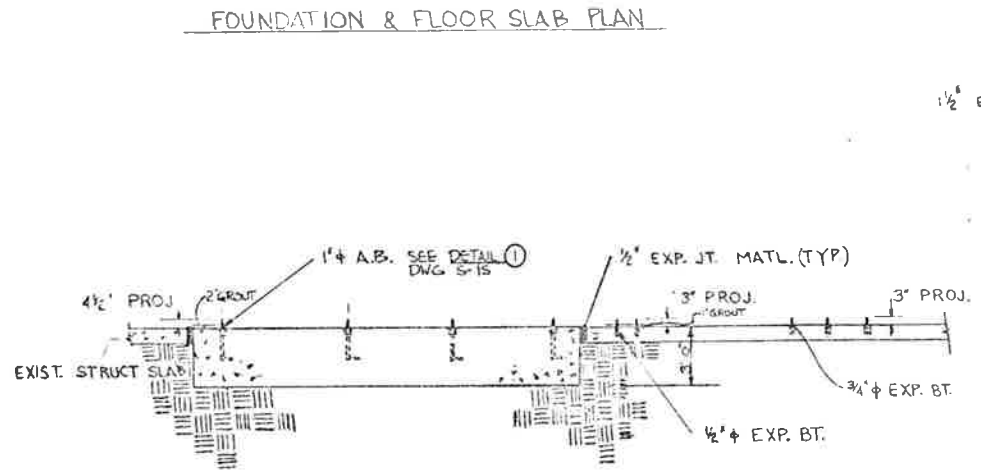
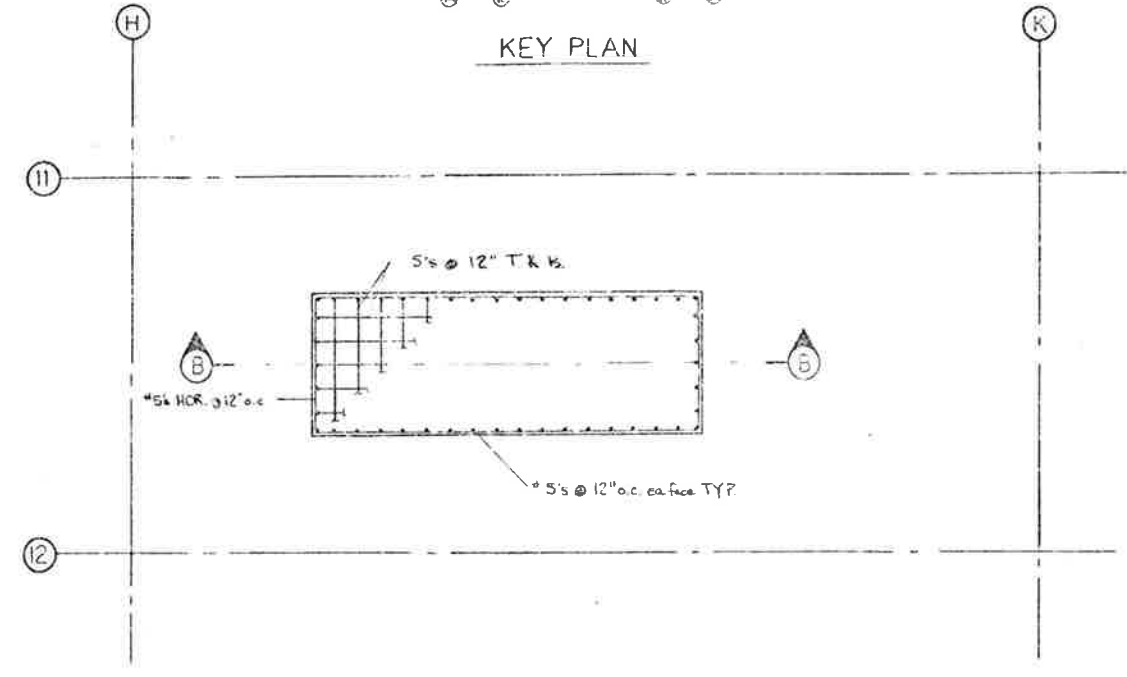
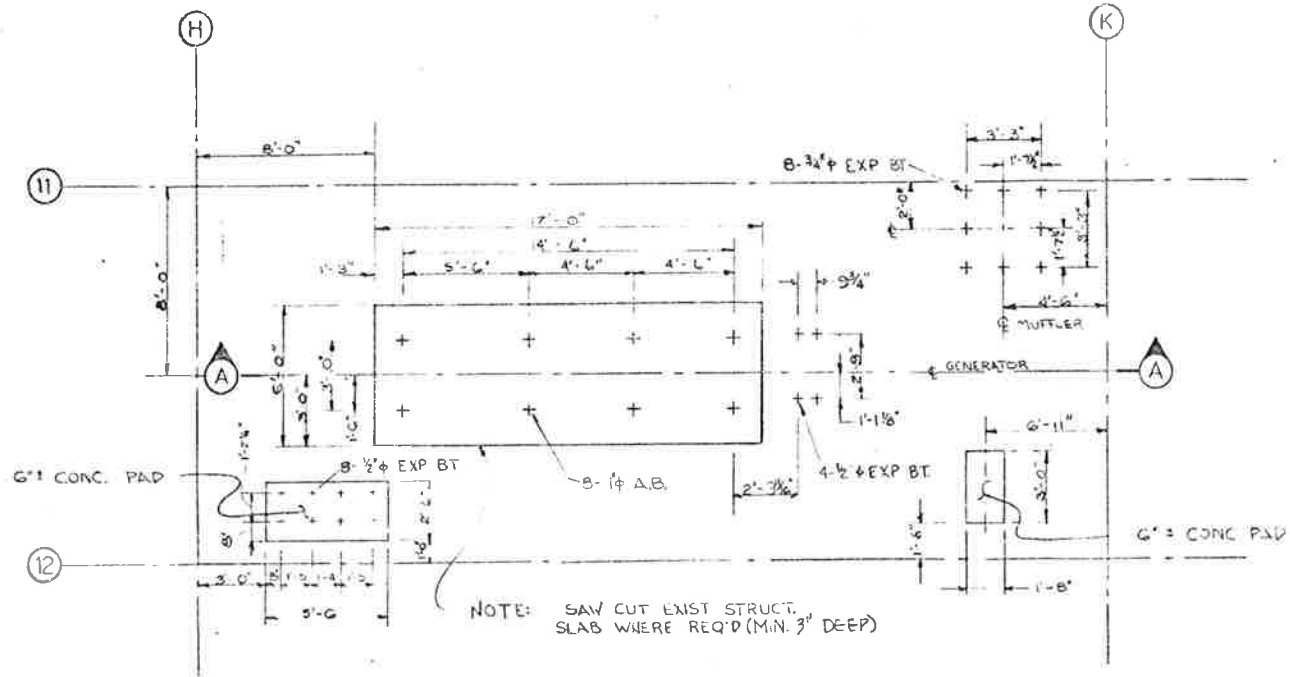
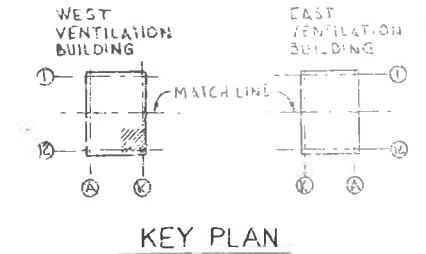
DATE ISSUED	03-18-79
REVISION NO.	0
FOR	THE STATE OF COLORADO
CUSTOMER	5 5 10 10 DRG
FIELD	0 2 0 0
INTRA CO.	15 1 1 13

NO.	REVISIONS	DATE
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE		
CONCRETE PEDESTALS EAST AND WEST VENTILATION BUILDINGS SUPPLY AND INSTALLATION OF CONCRETE PEDESTALS PLANS & SECTIONS		
DRAWN	GBS	12-17-78
CHECKED	GBS	12-17-78
SCALE	AS SHOWN	
PROJECT NO.	170-5(82)220	
SHEET NO.	75	
TOTAL SHEETS	208	



FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
308	COLORADO	I 70-3(32) 220	76	208

AS CONSTRUCTED
 NO REVISIONS DATE



- NOTES:
1. WORK THIS DWG WITH DWG M-125
 2. CONCRETE TO BE CLASS B
 3. REINFORCING STEEL TO COMPLY WITH ASTM SPEC. A615 GRADE 40.
 4. PROVIDE EPOXY BONDING COMPOUND PROTECT. OR EQUAL AS PER MANUFACTURERS SPEC WHERE NEW CONCRETE IS TO BE POURED ON EXIST. CONC.
 5. PROVIDE 5# @ 12" EACH WAY IN 6" CONCRETE PADS.

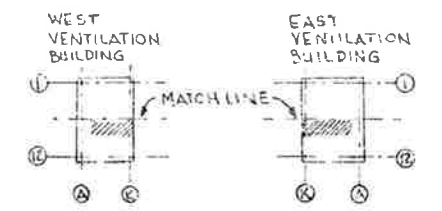


PRINT RECORD

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APPROVED	
CUSTOMER	S S TO
FIELD	O O O
DATE	15

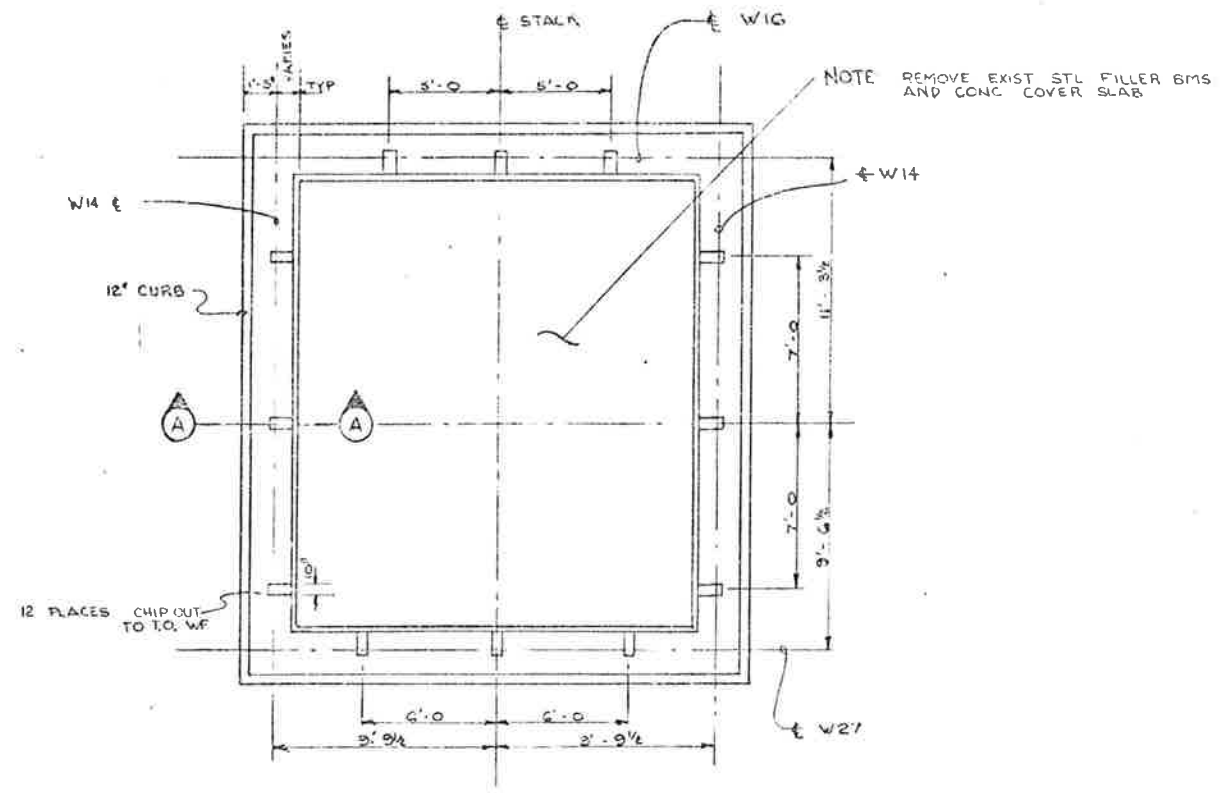
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STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
CONCRETE FOUNDATIONS WEST VENTILATION BUILDING EMERGENCY GENERATOR ROOM PLANS & SECTIONS				
DRAWN	SEB/ML	CHECKED	MLA/TML	DRAWING NO.
SCALE	AS SHOWN	DATE	NOV 1973	S-25

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
101	COLORADO	170-3(82) 220	71	208

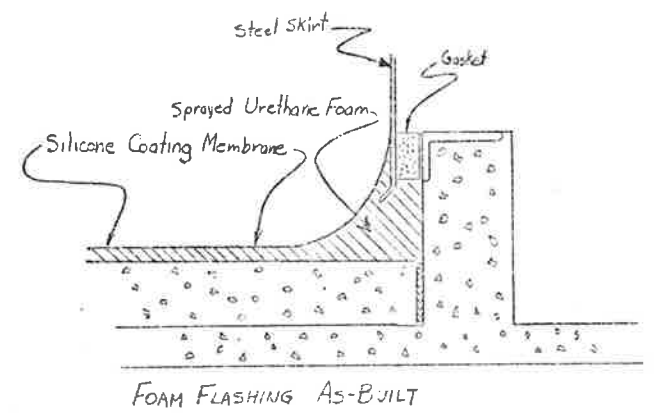
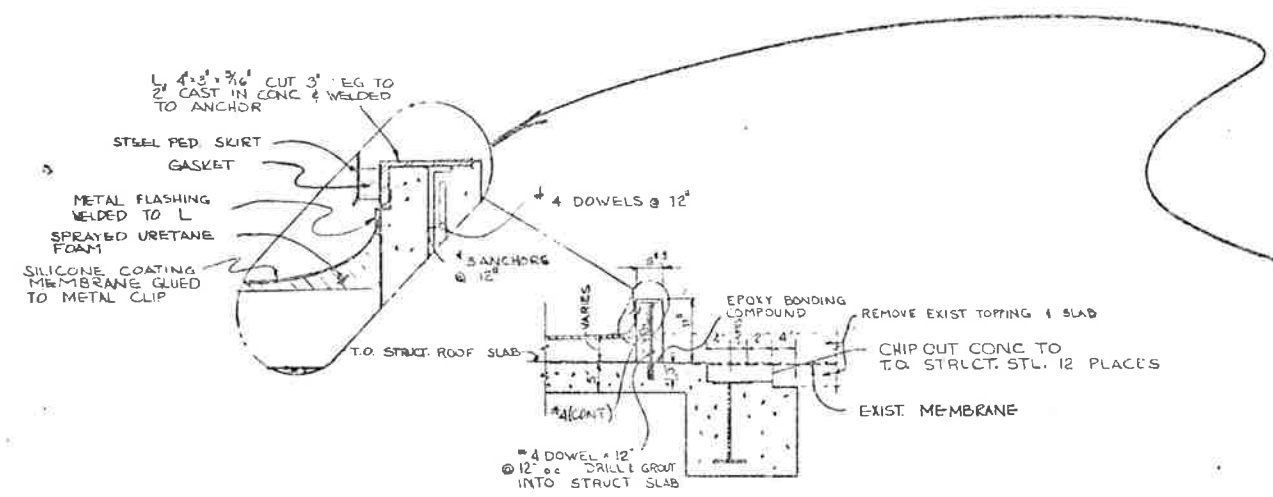


KEY PLAN

AS CONSTRUCTED
 REVISED Date 2/31/79



PLAN OF STACK SUPPORT
 (6 REQ'D)



NOTES:
 1 WORK THIS DWG WITH DWG'S M-65 & M-75.
 2 CONCRETE TO BE CLASS B.
 3 REINFORCING STEEL TO COMPLY WITH ASTM SPEC. A615 GRADE 40.

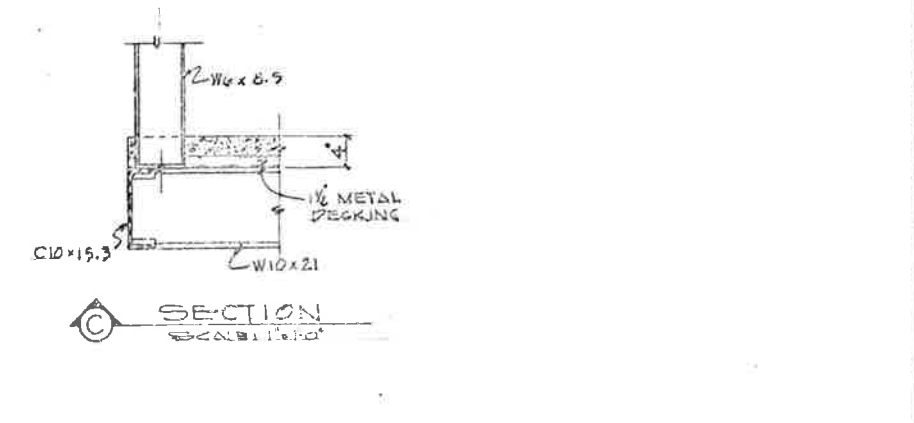
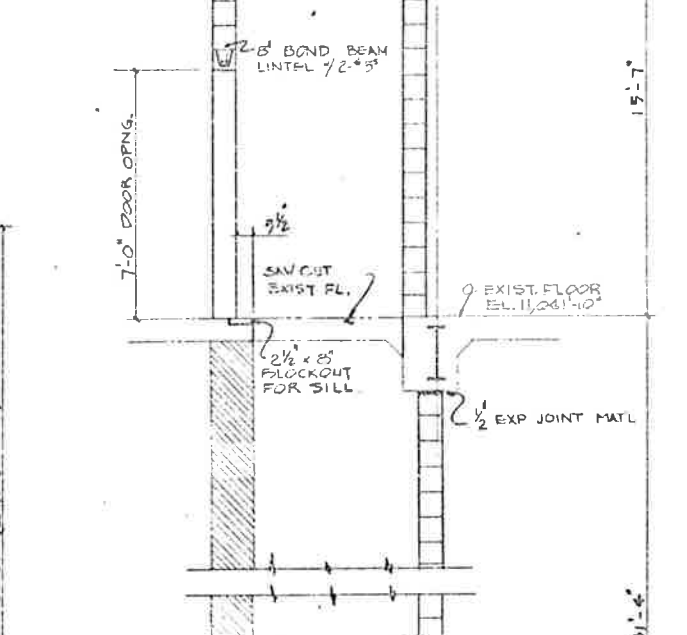
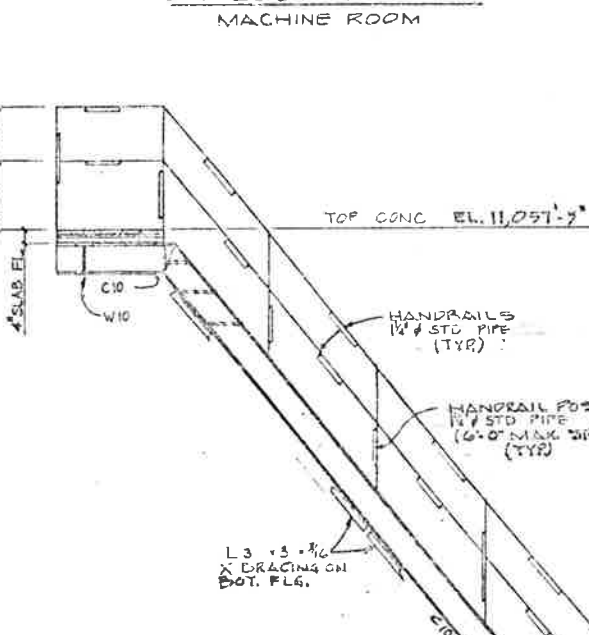
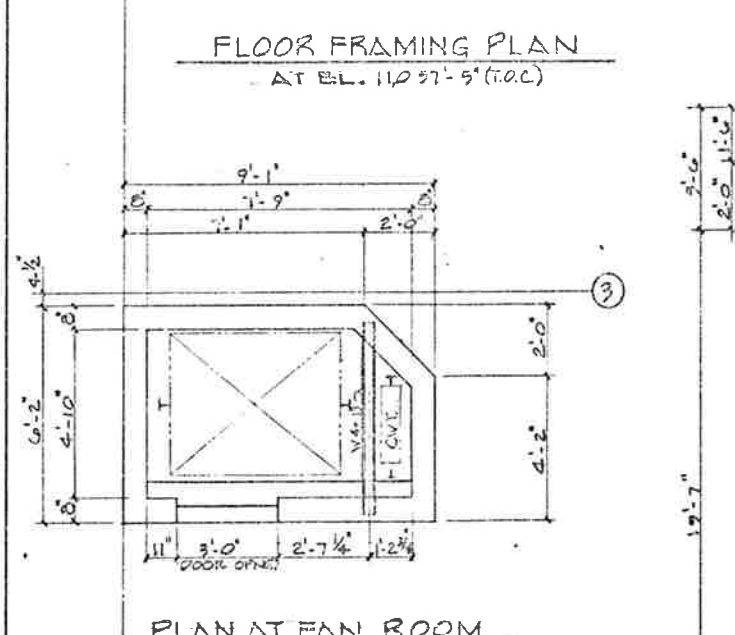
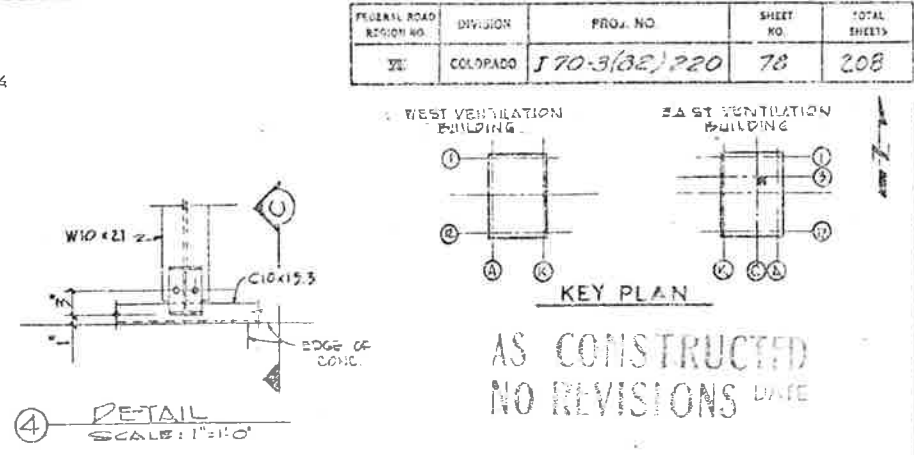
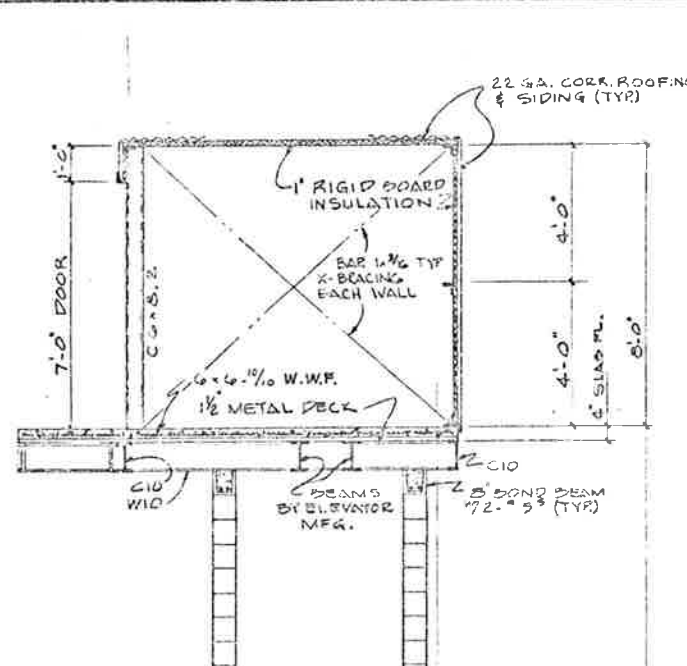
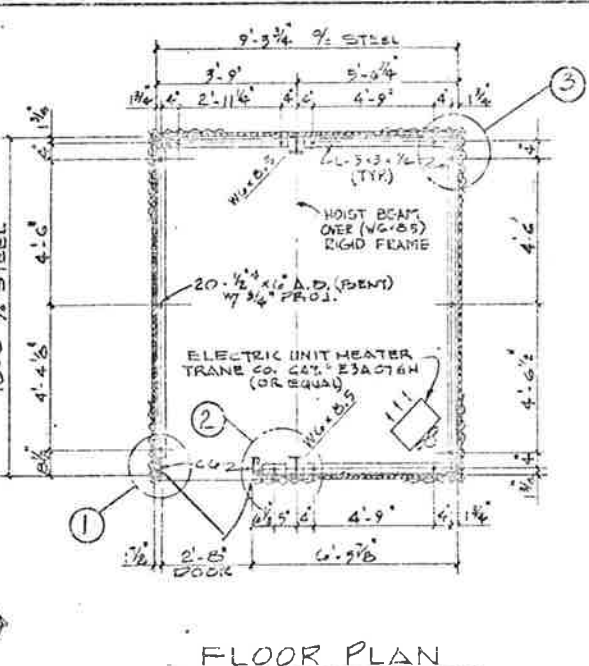
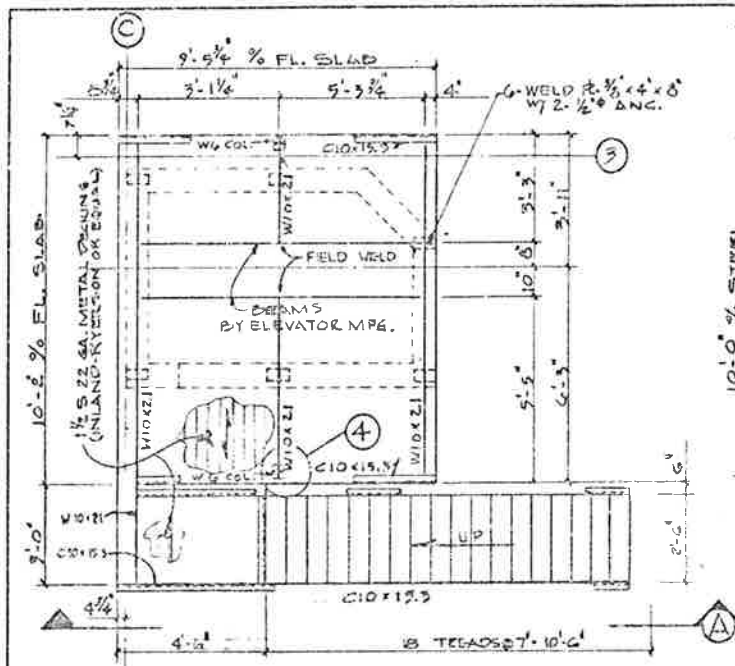


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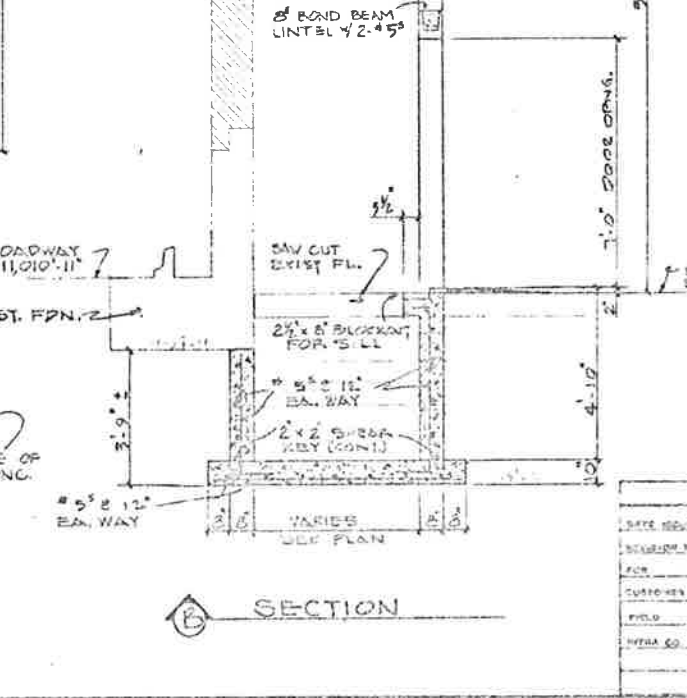
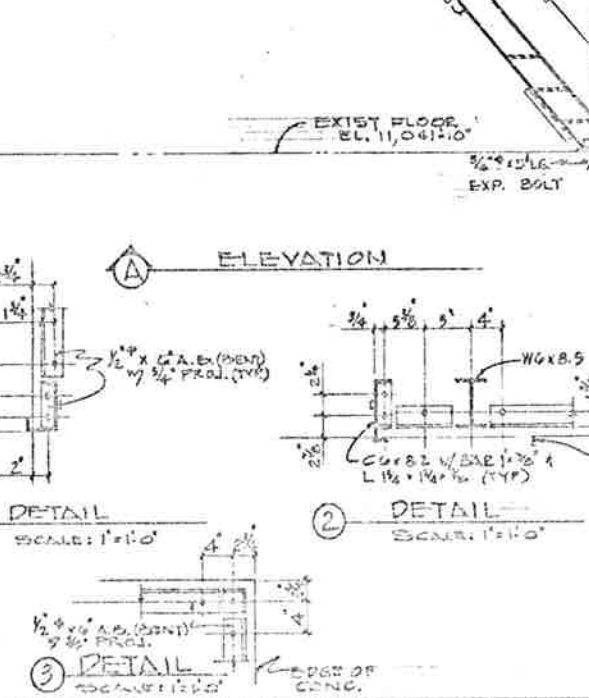
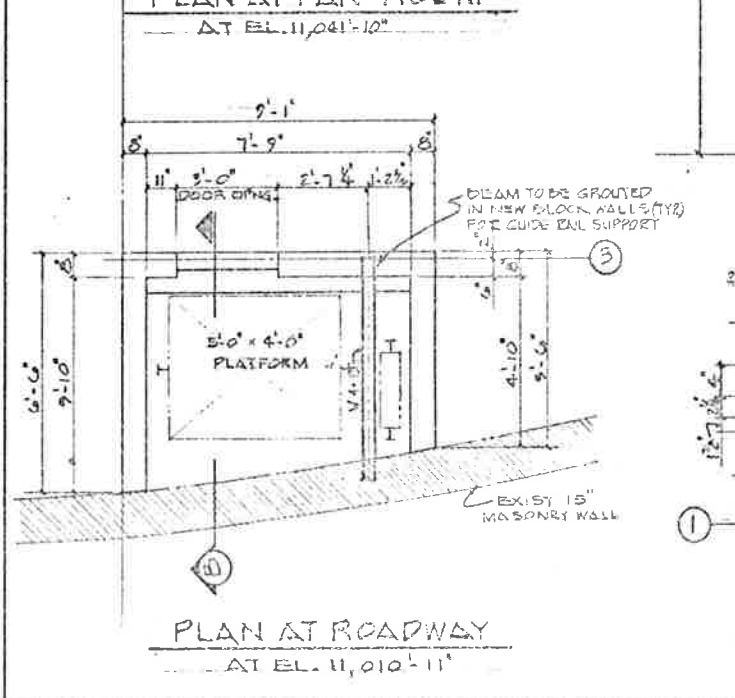
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REVISIONS	0 5 2
BY	W.E.P.
CUSTOMER	5 5 0
PRICE	0 0 0
UTRA CO.	15 1 7

NO.	REVISIONS	DATE	BY	CHKD
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BORE				
CONCRETE CURB EAST AND WEST VENTILATION BUILDINGS PLEASE SEE DRAWING PLAN & SECTION				
DRAWN	WTS	5-1-79	5-1-79	5-1-79
CHECKED	WTS	5-1-79	5-1-79	5-1-79
SCALE	ORDER NO.	170-3(82) 220	170-3(82) 220	170-3(82) 220
DATE	PRICE	15.17	15.17	15.17

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
7E	COLORADO	170-3(82)P20	78	208



- NOTES:**
1. HEAVYWEIGHT CONC. BLOCK WALLS TO BE REIN. WITH #5 @ 24" CTR. AND AT ALL CORNERS & DOOR JAMBS. VERT. GROUT ALL CELLS. STANDARD DUR-O-WALL #816 CTR. VERT.
 2. REINFORCING STEEL TO COMPLY WITH A.S.T.M. SPEC. A615 GRADE 60.
 3. CONCRETE TO BE CLASS 3.
 4. PROVIDE EPOXY BONDING COMPOUND (PROTEX OR EQUAL AS PER MFG. SPEC. WHERE NEW CONCRETE IS TO BE POURED ON EXIST. CONCRETE).
 5. GRATING TO BE WELDED BAR TYPE WITH 1" x 1/2" BEARING BARS @ 1 1/4" CTR. & CROSS BARS @ 4" CTR.
 6. STAIR TREADS TO BE SERRATED WELDED BAR TYPE WITH OUT NOSING.
 7. OPENINGS IN MACHINE ROOM FLOORS TO BE COORDINATED WITH ELEVATOR MFG.
 8. WORK THIS DWG. WITH DWGS. 5-53 & ELEVATOR INSTALLATION SPEC.
 9. MACHINE ROOM DOOR TO BE 2'-8" x 10' HOLLOW STEEL COMPLETE WITH HARDWARE.



REVISIONS

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

STRUCTURAL
 EAST VENTILATION BUILDING
 ELEVATOR
 PLANS AND SECTIONS

PRINT RECORD

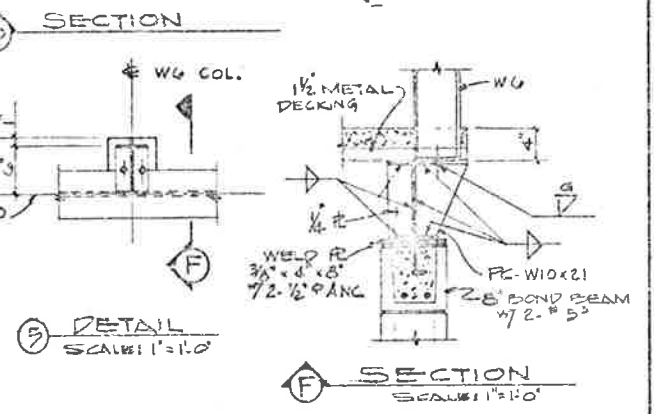
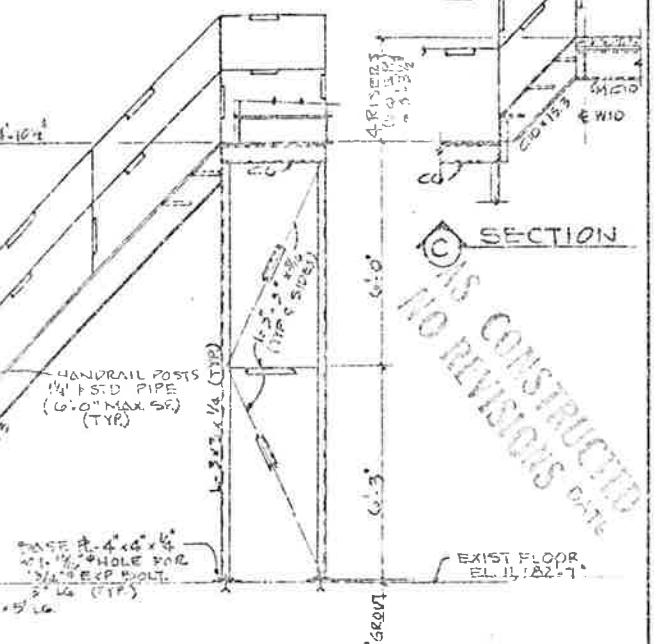
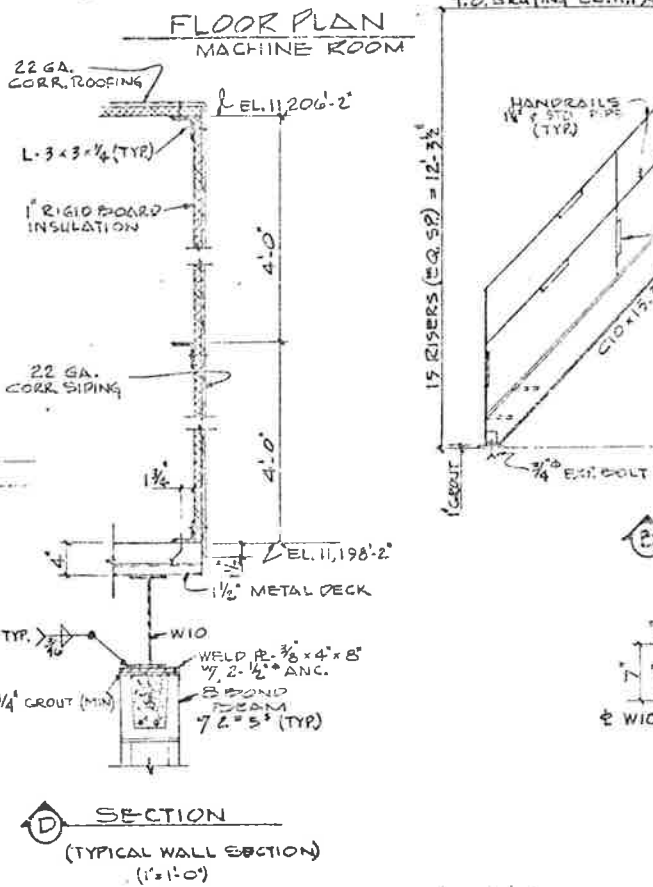
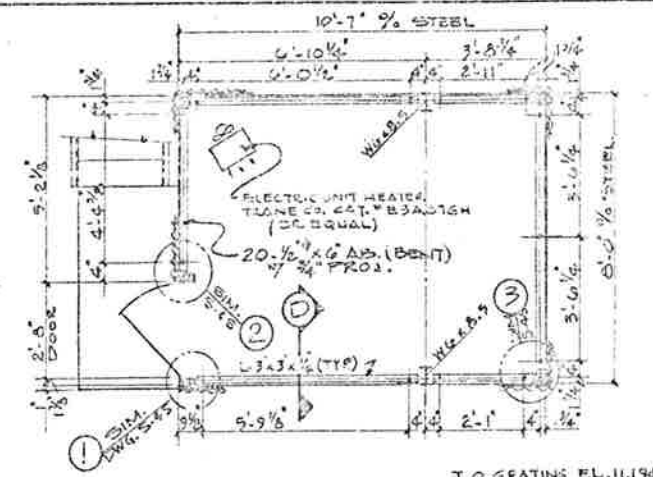
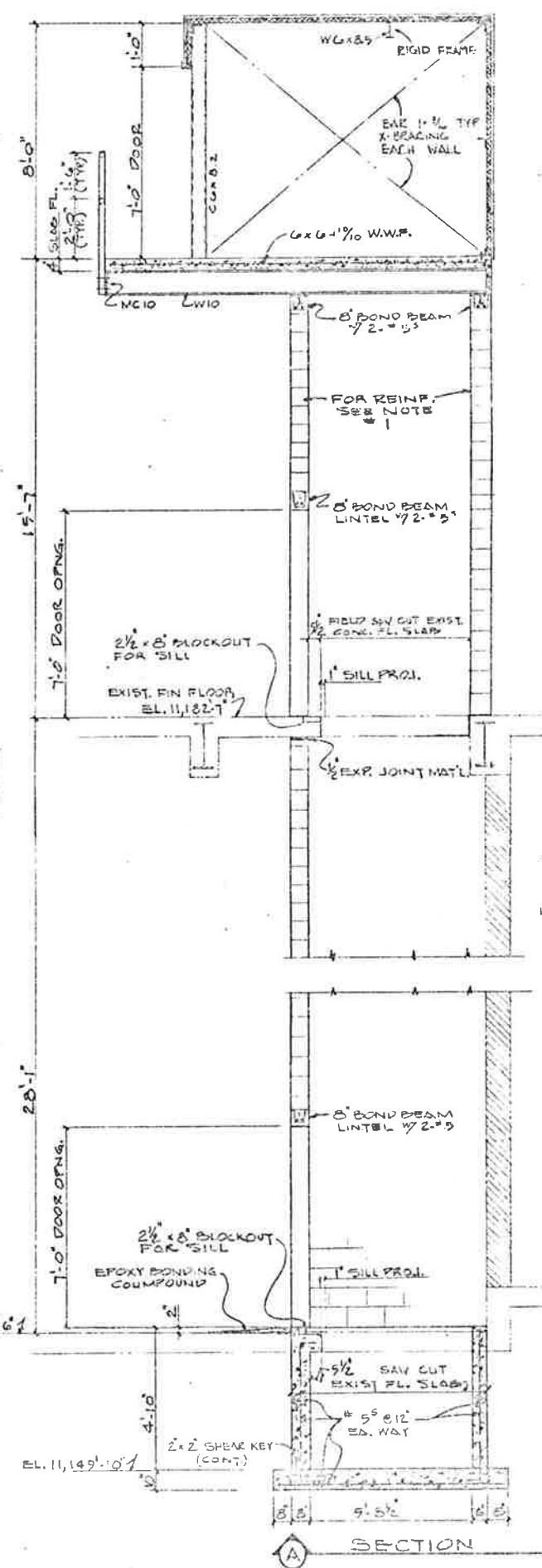
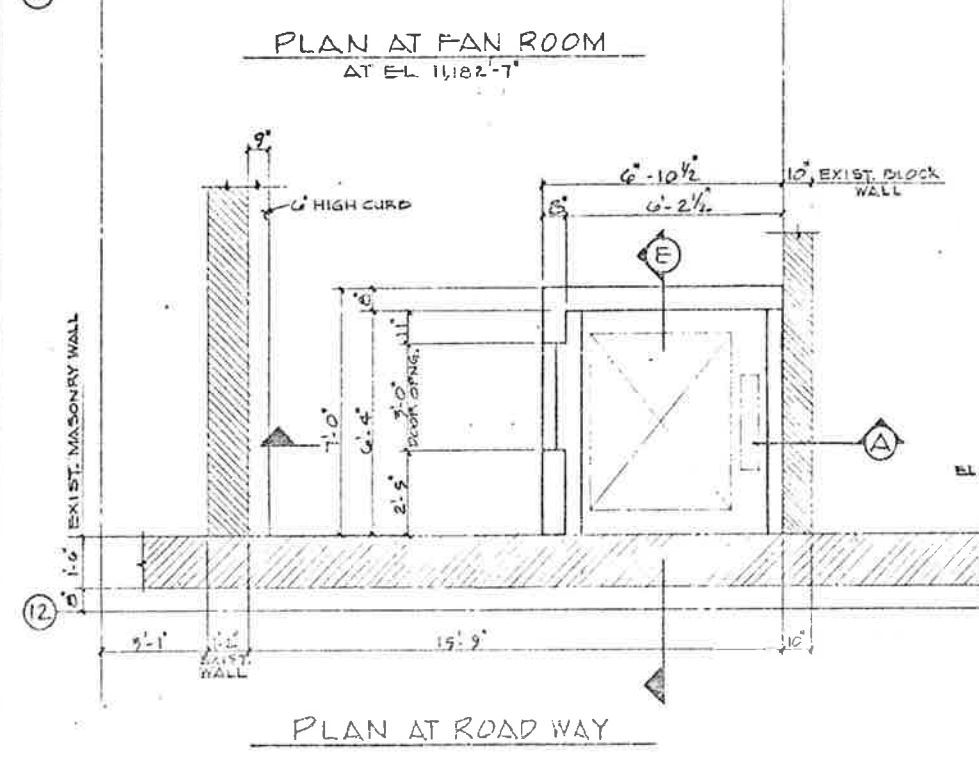
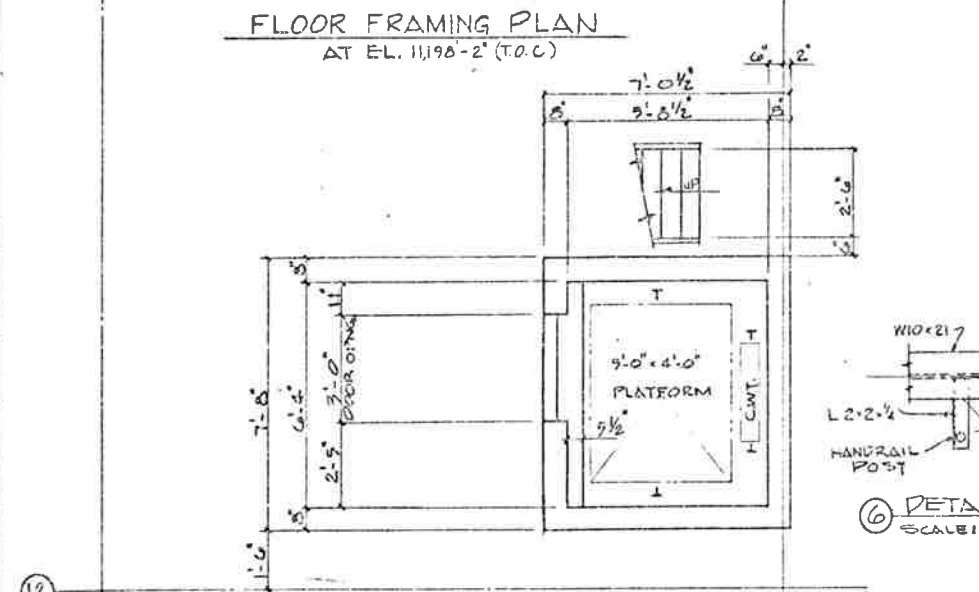
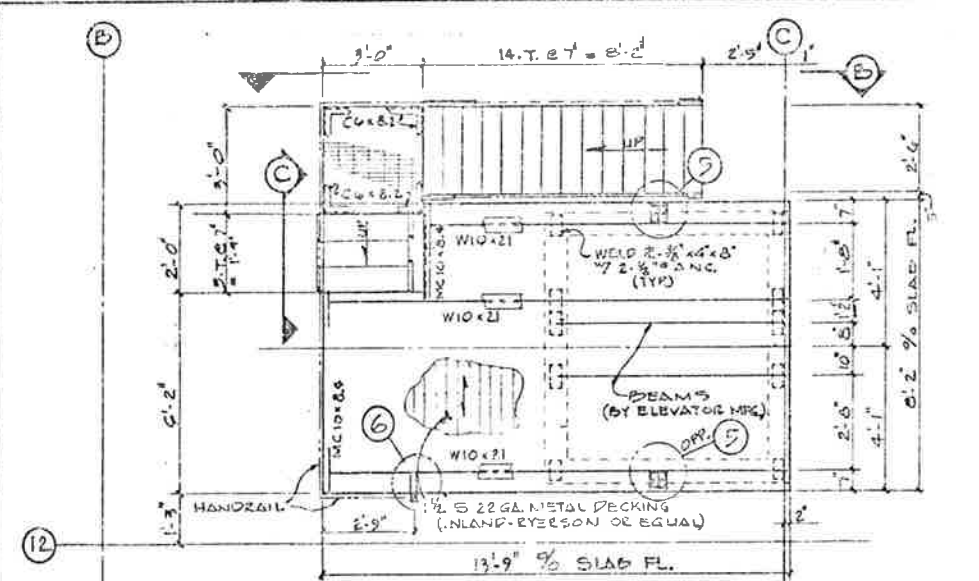
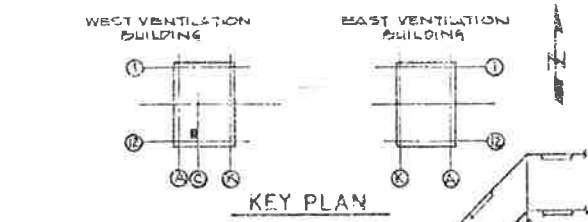
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SCALE	AS SHOWN
FOR	CONSTRUCTION
CHECKED BY	E. J. B.
FILE NO.	0-7
INTRA CO.	1

REVISIONS

NO.	DESCRIPTION	DATE

DRAWING NO.
 S-4-S

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO	170-5(82) 220	79	208



NOTE:
 1. FOR GENERAL NOTES SEE DWG. S-4.S.

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

STRUCTURAL
 WEST VENTILATION BUILDING
 ELEVATOR
 PLANS AND SECTIONS

PRINT RECORD

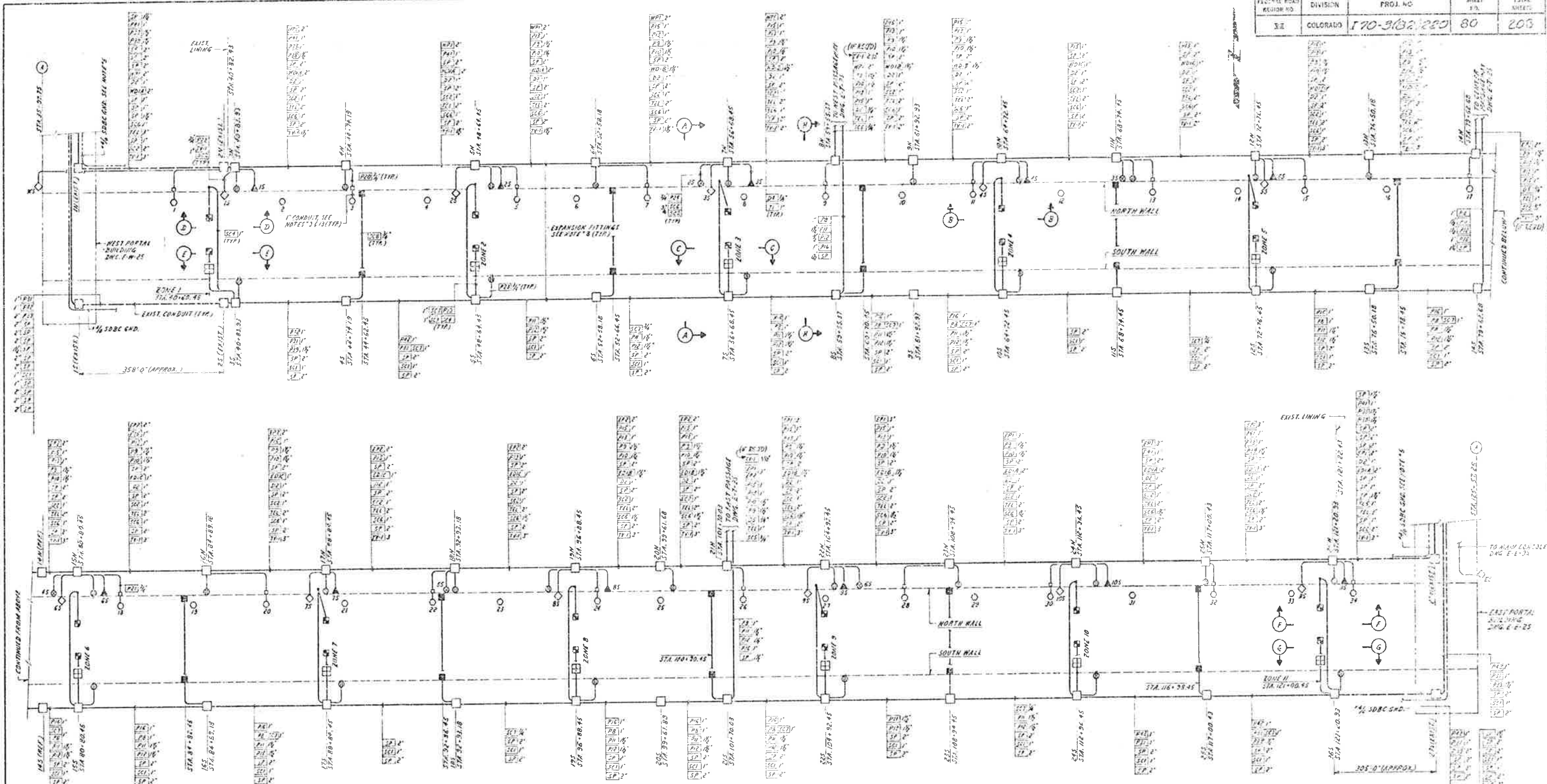
DATE ISSUED	5-29-74
REVISION NO.	0
FOR	PLS. 11
CUSTOMER	5-10
FIELD	0-0
INTRA CO.	1-1

SCALE: 1"=1'-0"

C-14570

S-5 S

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
32	COLORADO	170-3(82) 220	80	203



CONDUIT LAYOUT PLAN

- NOTES:
- FOR CONDUIT & CABLE SCHEDULE SEE DWG. E-T-105
 - FOR TUNNEL LIGHTING, SEE DRAWINGS E-T-55, E-T-65 & E-T-75
 - FOR TELEPHONE SYSTEM, SEE DWG. E-G-85
 - ALL CONDUIT TO BE RIGID GAL. STEEL
 - ROUTE 1/4 SDBC GROUND WITH CONDUITS ALONG NORTH & SOUTH WALLS OF TUNNEL & GROUND TO WATER MAIN AT ALL CROSS PASS-AGWAYS. SUPPORT TO UNISTRUT CHANNELS (1) ONE HOLE CLAMPS.
 - FOR TUNNEL SIGNS & LOOP DETECTORS SEE DWG. T-15
 - FOR POWER WIRING CONTROL SIGNAL WIRING & CO ANALYZER WIRING SEE DRAWING E-T-95
 - EXPANSION FITTINGS TO BE WZ. TYPE #2 WEATHERPROOF WITH BONDING JUMPERS & CONDUIT ANCHORAGE FOR EQUALS. LOCATE MIDWAY BETWEEN DISTRIBUTION BOX GROUPS.
 - FIELD TO ROUTE CABLE SECTION OF HEATING CABLE TO JUNCTION BOX & HYDRANT FOR SP. LING TO FIELD. P. TAP
 - SECTIONS A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ

- CONDUITS SUPPORTED ON TUNNEL WALLS WITH UNISTRUT "PIGGO (OR EQUAL) CHANNELS & CONDUIT CLAMPS AT 10'-0" MAX INTERPHS.
- ROUTE HEATING CABLE FROM HYDRANT TO PRECEDING HYDRANT ALONG B' WATER MAIN PIPE (SEE WIRING DIAGRAM - DWG. E-T-95) APPROX. 255 FEET LONG. USE NELSON WELLS HEATING CABLE TYPE 102 (OR EQUAL) 1/4" 600V COPPER SHEATH RATED AT 10 WATTS PER FOOT AT 275V BASED ON A TEMPERATURE DIFFERENTIAL OF 40°F TO 90°F. HEAT TRANSFER COMPOUND & EQUIVALENT 2" OF CALCIUM SILICATE INSULATION USE NELSON (OR EQUAL) #12 PIPE STRAPS & TYPE #5 CAUTION SIGNS AS REQD.
- FOR WIRING DIAGRAMS OF DC SYSTEM, TV SYSTEM, & WATER MAIN HEAT TRACING SEE DRAWING E-T-95.
- CIRCUIT NUMBERS #31, #33, #34, #35, #36, #37 ARE LISTED ON EAST TENT BLDG. SCHEDULE DWG. E-E-55 & WEST TENT BLDG. SCHEDULE DWG. E-H-55.

- LEGEND
- MESSAGE BOARD
 - LOOP DETECTOR
 - STOP LIGHT
 - TV CAMERA
 - TELEPHONE
 - HYDRANT
 - CO ANALYZER CABINET
 - RECEPTACLE, 120VAC
 - FULL BSA GROUP, IN 3 NORTH WALL



FOR INFORMATION ONLY

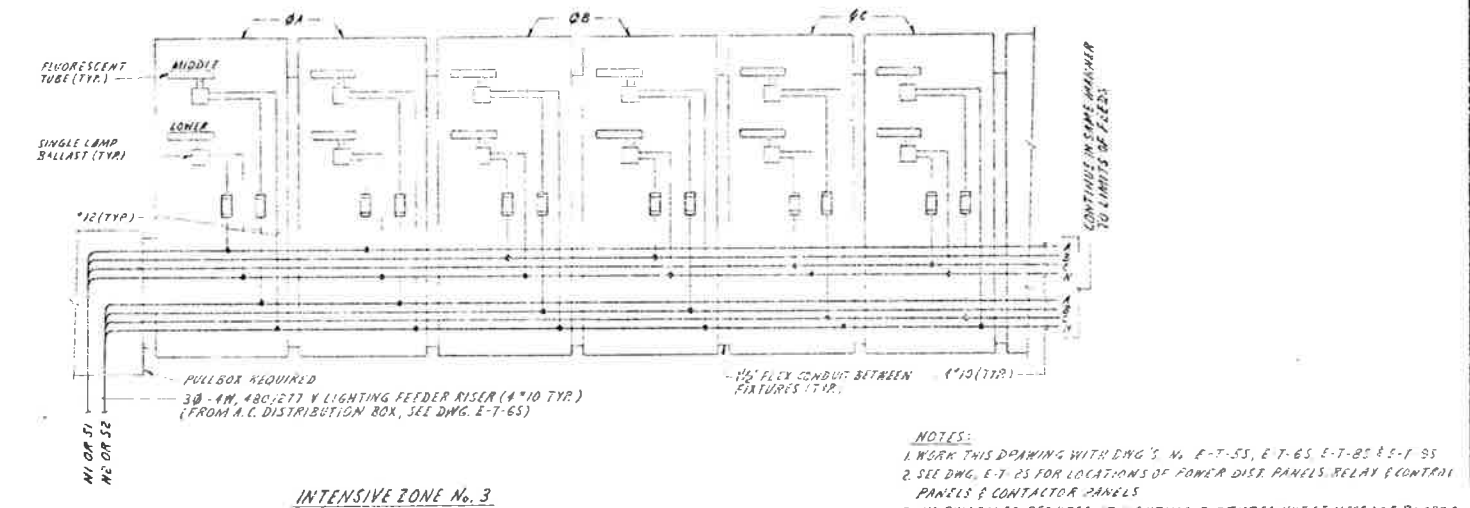
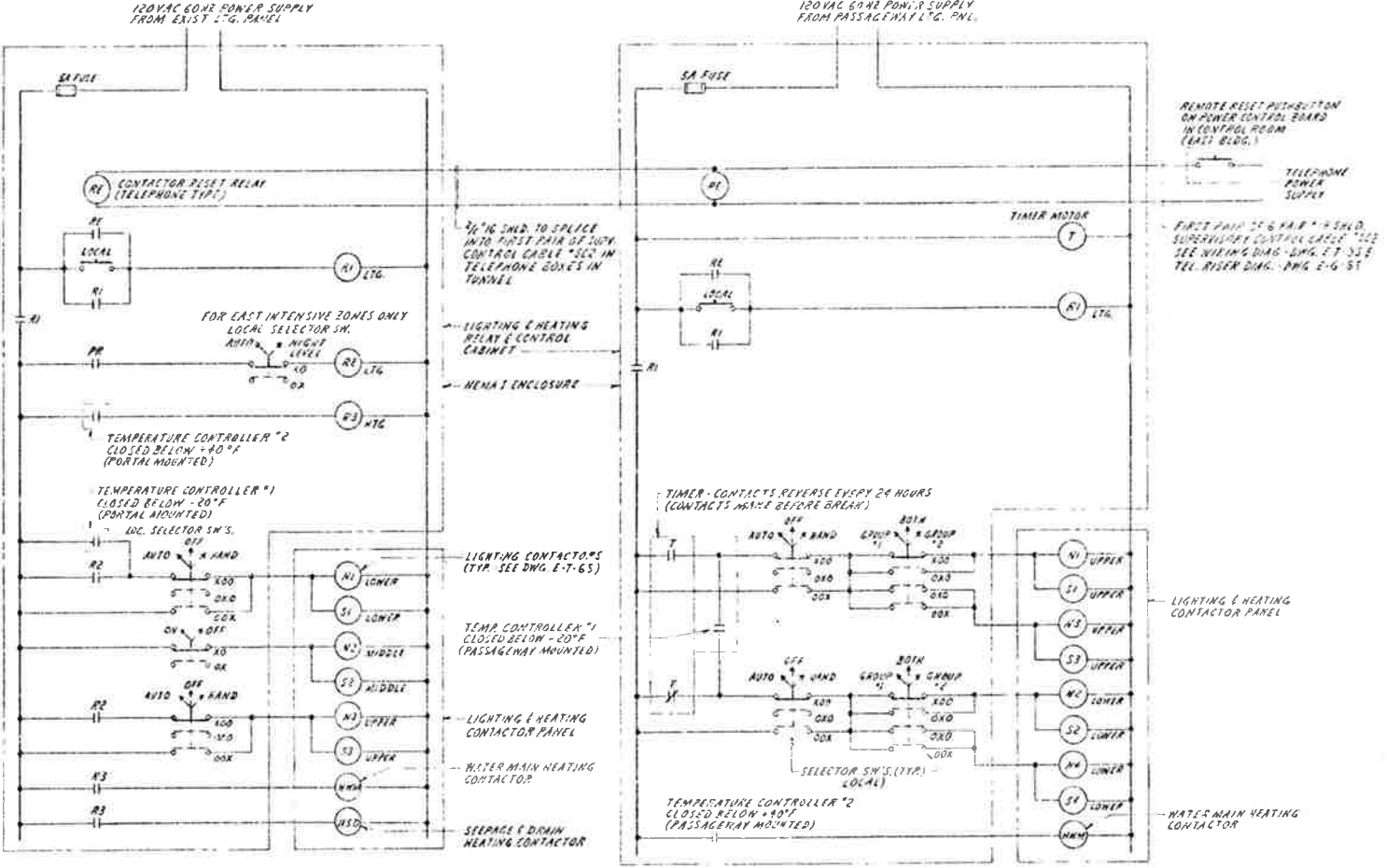
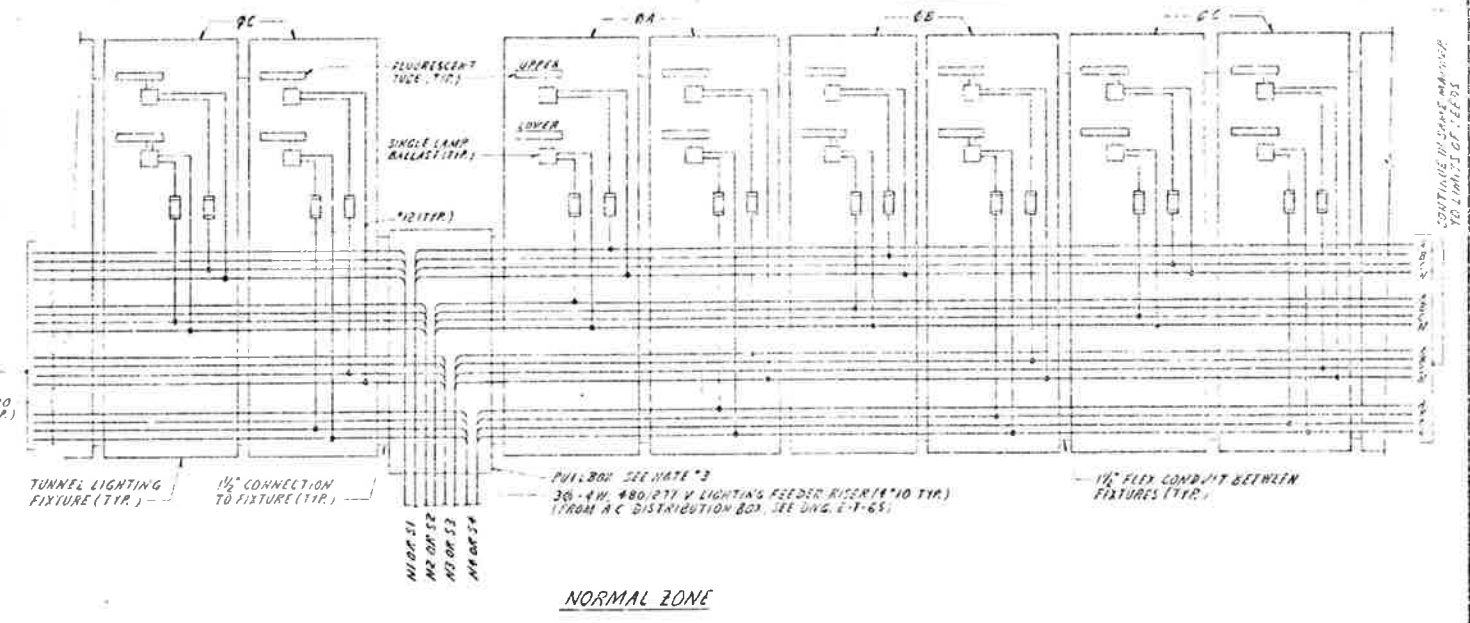
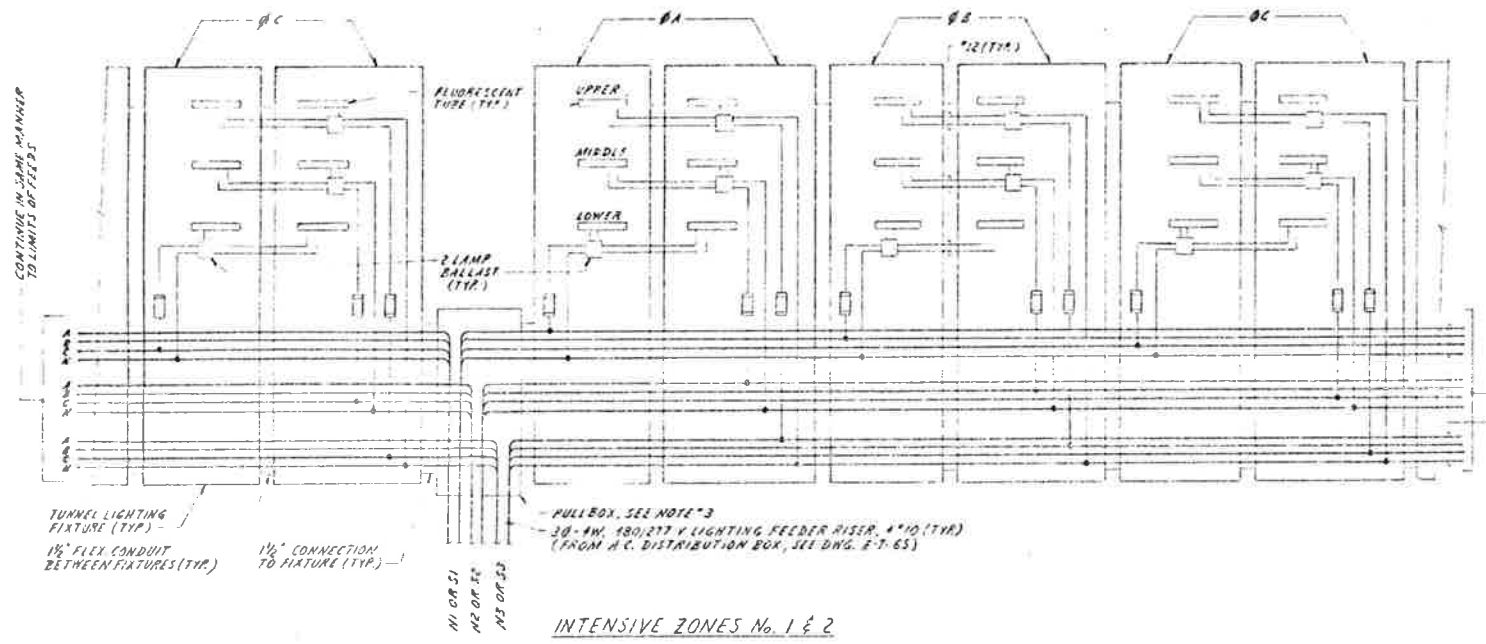
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND FLOOR

ELECTRICAL
 POWER PLAN, SECTIONS & DETAILS
 SHEET NO. 1

PRINT RECORD

DATE MADE: 10/15/72
 DRAWN BY: J. J. [unreadable]
 CHECKED BY: J. J. [unreadable]
 SCALE: AS SHOWN
 SHEET NO.: 80 OF 203

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
22E	COLORADO	170-3(62)220	31	203



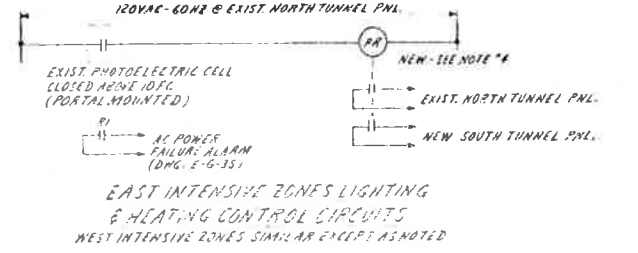
FLUORESCENT TUBE PLACEMENT

CONTACTORS	TUBE	ZONE 1	ZONE 2	ZONE 3
N1	S1	LOWER	N.O.	N.O.
N2	S2	MIDDLE	N.O.	N.O.
N3	S3	UPPER	N.O.	N.O.

NORMAL ZONE

CONTACTORS	TUBE	TYPE
N1	S1	UPPER N.O.
N2	S2	LOWER N.O.
N3	S3	UPPER N.O.

LIGHTING FIXTURE WIRING (TYPICAL FOR BOTH SIDES)



NORMAL ZONE LIGHTING & HEATING CONTROL CIRCUITS FOR CROSS PASSAGEWAYS

ONE REQUIRED IN EACH PASSAGEWAY

FOR INFORMATION ONLY

REVISIONS

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS

EISENHOWER MEMORIAL TUNNEL

SECTION 309E

DATE ISSUED	BY	REVISED	BY
DESIGNED BY		CHECKED BY	
SCALE			

ELECTRICAL TUNNEL WIRING DIAGRAMS SHEET NO. 2

6526

CONDUIT NO	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
EP1	3 #4 (SHV)	2400V LOWVOLTAGE DISTRIBUTION	EAST PASSAGEWAY PBI FUSE CUTOUT	2400 VOLT FEEDER
EP2	3 #4 (SHV)	EAST PASSAGEWAY PBI FUSE CUTOUT	225KV TRANSFORMER PRIMARY	
EP3	3 #4 (SHV)	2400V LOWVOLTAGE DISTRIBUTION	WEST PASSAGEWAY PBI FUSE CUTOUT	
EP4	3 #4 (SHV)	WEST PASSAGEWAY PBI FUSE CUTOUT	225KV TRANSFORMER PRIMARY	
EP5	3 #4 (SHV)	EAST PASSAGEWAY PBI FUSE CUTOUT	CENTER PASSAGEWAY PBI FUSE CUTOUT	2400 VOLT FEEDER
EP6	3 #4 (SHV)	CENTER PASSAGEWAY PBI FUSE CUTOUT	225KV TRANSFORMER PRIMARY	
P1	1/2" 350MCM	225KV TRANSFORMER SECONDARY	AC POWER DISTRIBUTION PANEL	480V/277V FEEDER
P2		NOT USED		
P3	1/2" 350MCM	AC POWER DISTRIBUTION PANEL	ETC & HTG CONTRACTOR PANEL	TUNNEL NORTH ITS FOR HI TANK
P4	1/2" 350MCM			TUNNEL SOUTH ITS FOR HI TANK
P5	1/2" 350MCM			TUNNEL NORTH ITS FOR HI TANK
P6	1/2" 350MCM			TUNNEL SOUTH ITS FOR HI TANK
P7		NOT USED		
P8	1/2" 350MCM	AC POWER DISTRIBUTION PANEL	SOUTH WALL AC DIST. BOXES	TRAFFIC CONTROL
P9	1/2" 350MCM	ETC & HTG CONTRACTOR PANEL	NORTH WALL AC DIST. BOXES	TUNNEL ITS FEEDERS # N1, N2
P10	1/2" 350MCM			TUNNEL ITS FEEDERS # N3, N4
P11	1/2" 350MCM			TUNNEL ITS FEEDERS # S1, S2
P12	1/2" 350MCM			TUNNEL ITS FEEDERS # S3, S4
P13	1/2" 350MCM			TUNNEL ITS FEEDERS # S5, S6
P14	1/2" 350MCM	15 KV/150 TRANSFORMER SECONDARY	LIGHTING PANEL	15KV/277V FEEDER
P15	1/2" 350MCM	LIGHTING PANEL BOXES # N1-S	NORTH WALL AC DIST. BOXES	15KV/277V TUNNEL RECEPTACLE
P16	1/2" 350MCM	LIGHTING PANEL BOXES # N1-S	SOUTH WALL AC DIST. BOXES	RECEPTACLE FEEDER
P17		NOT USED		
P18	1/2" 350MCM	AC DISTRIBUTION BOX	LOCAL DISCONNECT SWITCH	MESSAGE BOARD CUT-OFF
P19	1/2" 350MCM		MESSAGE BOARD	FEEDER
P20	1/2" 350MCM		JUNCTION BOX NEAR HYDRANT	WATER MAIN PIPE HEATING FEEDER
P21	1/2" 350MCM		JUNCTION BOX NEAR HYDRANT #18	
P22	1/2" 350MCM		TV CAMERA	220V FEEDER
P23	1/2" 350MCM		TUNNEL RECEPTACLE	
P24	1/2" 350MCM		CO ANALYZER CABINET	
ED1A	3 #10	AUTO TRANSFER SWITCH	DC DISTRIBUTION BOX # 23N	TUNNEL DC EMERG. ITS FOR
ED1B	3 #10	DC DISTRIBUTION BOX # 23N	DC DISTRIBUTION BOX # 19N	
ED1C	3 #10	DC DISTRIBUTION BOX # 19N	DC DISTRIBUTION BOX # 10N	
ED1A	3 #10	AUTO TRANSFER SWITCH	DC DISTRIBUTION BOX # 6N	
ED1B	3 #10	DC DISTRIBUTION BOX # 6N	DC DISTRIBUTION BOX # 10N	
ED1C	3 #10	DC DISTRIBUTION BOX # 10N	DC DISTRIBUTION BOX # 14N	
D2	3 #10	DC MAIN PANEL	DC DISTRIBUTION BOXES	TELEPHONE NUMBER & SIGNAL LIGHT FOR
D3	3 #10	DC DISTRIBUTION BOXES		TUNNEL EMERG ITS FIXTURES
D4	3 #10			TELEPHONE NICHES
D5	3 #10			TELEPHONE NUMBER & SIGNAL LIGHT
D6	3 #10			LIGHTING TRANSFER PANEL
C1	3 #10	LIGHTING PANEL BOXES # 1	ETC & HTG RELAY CONTROL PANEL	CONTROL POWER FEEDER
C2	3 #10	ETC & HTG RELAY CONTROL PANEL	ETC & HTG CONTRACTOR PANEL	CONTROL
C3	3 #10		TEMPERATURE CONTROLLER	
SC1	1 #14 TYPE UA	MAIN CONTROL CONSOLE	SOUTH WALL TELEPHONE DIST BOXES	SUPERVISORY CONTROL & COMMUNICATION
SC2	1 #14 TYPE UA		NORTH WALL TELEPHONE DIST BOXES	
SC3	1 #14 TYPE UA	TELEPHONE DISTRIBUTION BOX	MESSAGE BOARD	
SC4	1 #14 TYPE UA	MESSAGE BOARD	LOOP DETECTOR	CONTROL
SC5	1 #14 TYPE UA	TELEPHONE DISTRIBUTION BOX	ETC & HTG RELAY & CONTROL PANEL	TUNNEL ITS RESET SYSTEM
SC6	1 #14 TYPE UA	CO ANALYZER CABINET	TEMP CONTROL PANEL	
SC7	1 #14 TYPE UA	MESSAGE BOARD	LOCAL TRANSFORMER BOX	220V 277V-200V FEED
SC8	1 #14 TYPE UA	LOCAL TRANSFORMER BOX	220V LIGHT	CONTROL

CONDUIT NO	WIRE OR CABLE SIZE & TYPE	FROM	TO	FUNCTION
TV-1	1 #14 TYPE UA	TELEPHONE DISTRIBUTION BOX	TELEPHONE NICHES	COMMUNICATION / RESET CONTROL
TV-1	1 #14 TYPE UA	TV CAMERAS (13)	TV MONITORS (11)	TV SURVEILLANCE SYSTEM (SEE NOTE 4)

- NOTES:
- ALL 480VAC, 120/208 VAC, 125/250 VDC WIRE & CABLE TO BE STRANDED 90 COPPER, TYPE XHHW COLOR CODED AS FOLLOWS: PHASE A - BLACK, PHASE B - RED, PHASE C - BLUE, NEUTRAL - WHITE, GROUND - GREEN.
 - FOR WIRE & CABLE, SEE ELECTRICAL CONTRACT SPECS.
 - THIS CIRCUIT SCHEDULE IS TYPICAL FOR EAST CENTER AND WEST CROSS PASSAGEWAY.
 - INSTALL SPARE COAXIAL CABLE RUN FROM TV CONTROL ROOM IN PULLBOX GROUP IN TO TV CONTROL ROOM LOCATED IN EAST PORTAL CONTROL ROOM. ALL COAXIAL CABLE SEEKING TO BE CONNECTED WITH AMP SPECIAL INDUSTRIES VALLEY FORGE, PA, CRIMP TYPE MALE/FEMALE CONNECTOR #226208-4.

PRINT RECORD

DESIGNED BY	DATE
REVISED BY	DATE
FOR	
CUSTOMER	
FIELD	
INTRA CO	

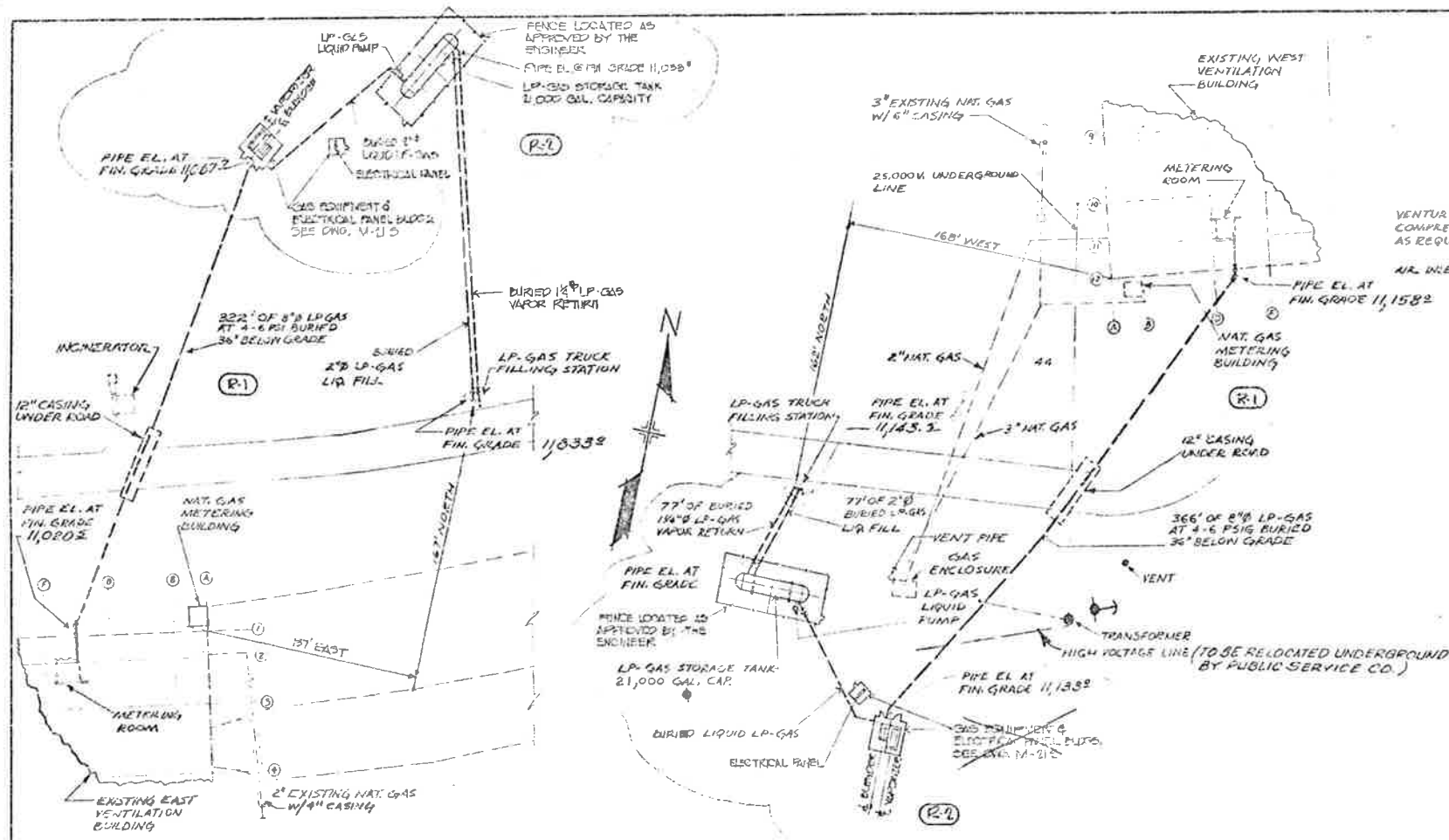
FOR INFORMATION ONLY

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 RIDENHOWER TUNNEL PROJECT
 SECTION 2046

ELECTRICAL TUNNEL CONDUIT & CABLE SCHEDULE

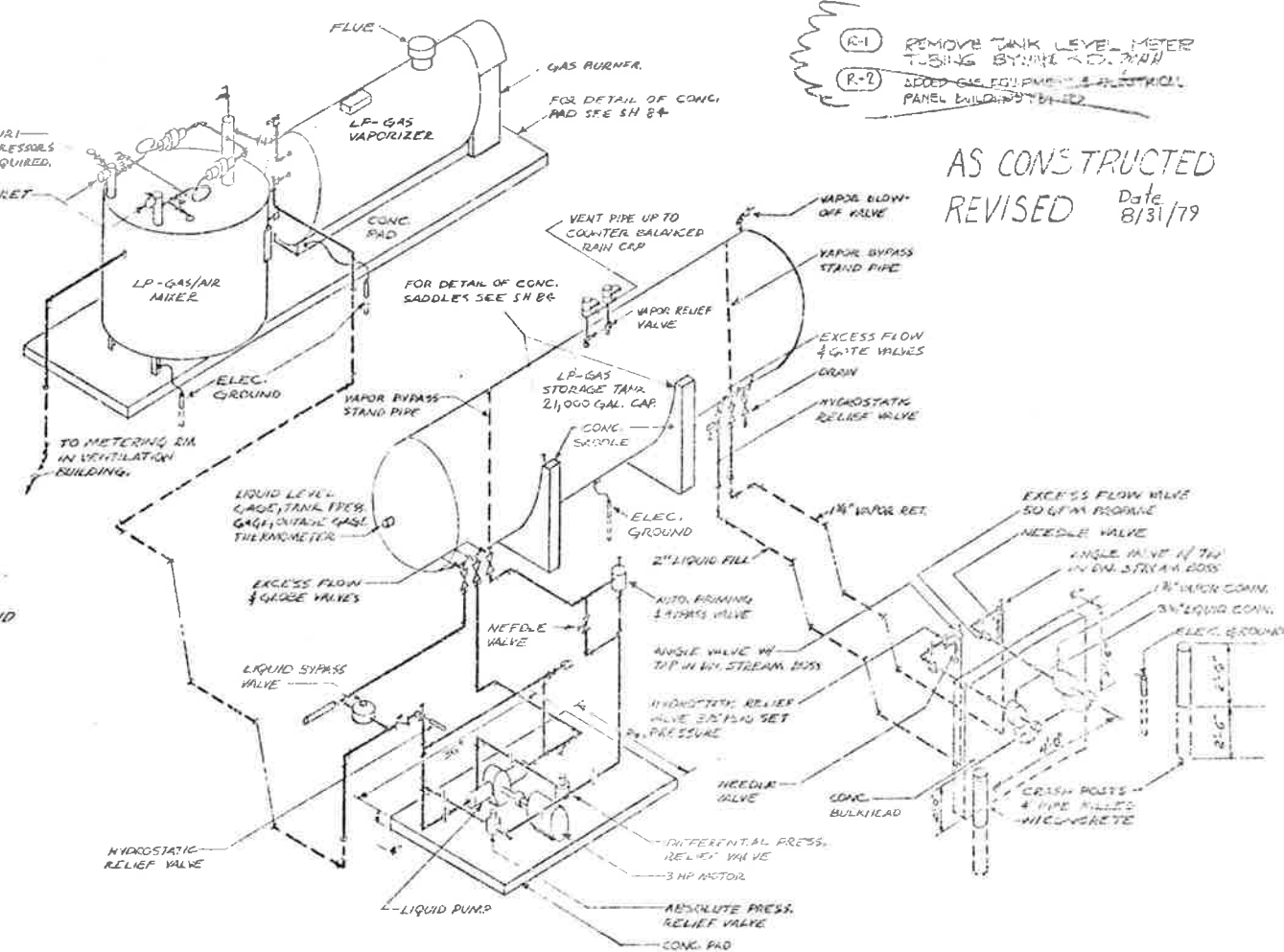
6526

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO	I 70-3(B) 220	85	233

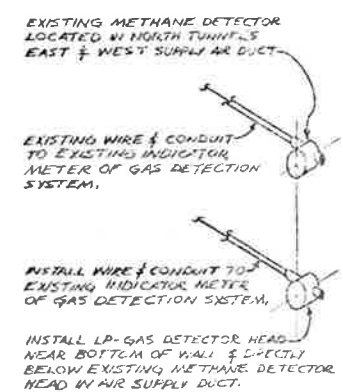


EAST PORTAL STANDBY LP-GAS SYSTEM PLAN
 SCALE: 1"=50'-0"

WEST PORTAL STANDBY LP-GAS SYSTEM PLAN
 SCALE: 1"=50'-0"



LP-GAS STORAGE AND VAPORIZING SCHEMATIC
 NO SCALE



LP-GAS DETECTION FOR EXISTING NORTH TUNNEL
 NO SCALE

NOTES
 1. ALL LOCATIONS OF EQUIPMENT & PIPE LENGTHS INDICATED ON THIS DRAWING ARE APPROXIMATE. EXACT LOCATIONS & PIPE LENGTHS SHALL BE DETERMINED IN FIELD.



PRINT RECORD	
DATE ISSUED	5-15-79
DATE REVISED	0-0-81
BY	PRE PLANS INC.
CUSTOMER	5-5-OP&C INC.
FIELD	0-0-74
INTRA. CH.	1-1-15-79

NO.	REVISIONS

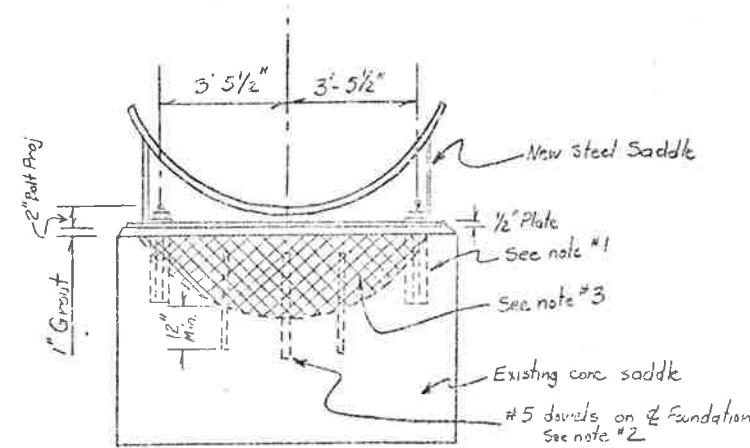
STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
 SECOND TUBE

MECHANICAL
 EAST AND WEST
 STANDBY PROPANE SYSTEMS
 PLANS & SCHEMATICS

DRAWN	W. J. [unclear]
CHECKED	W. J. [unclear]
SCALE	AS SHOWN
NOTED	CMSBB

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO	170-3(81) 220	84	209

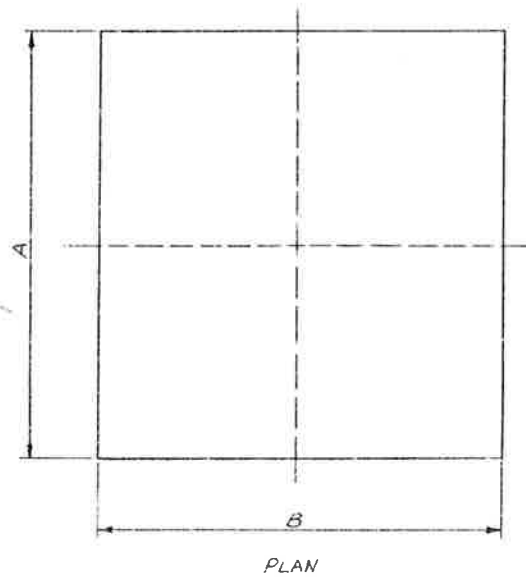
WEST PORTAL L-P TANK SADDLE
 REVISION



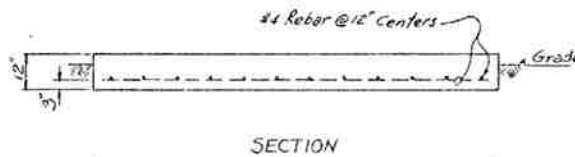
TYP. TWO PLACES

NOTES

1. $3/4\phi$ AB 24, Drill and set with epoxy grout
2. Drill and set dowels with epoxy grout
3. Fill conc. saddle with concrete. Roughen existing concrete and coat with bonding agent prior to placing concrete
4. Paint Steel Saddle with same procedure and color as existing tank.
5. Modify piping, ladders, and appurtenances as approved by the engineer.
6. Install in accordance with all requirements of contract specifications, including section 645.

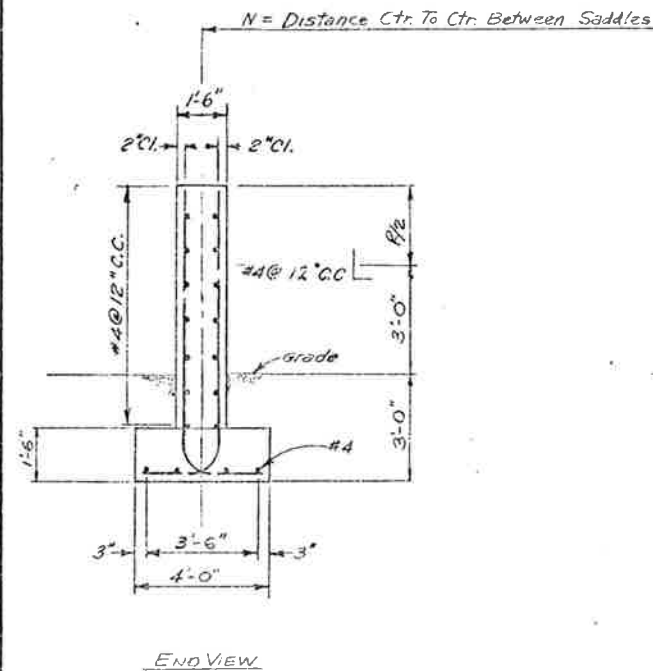


PLAN



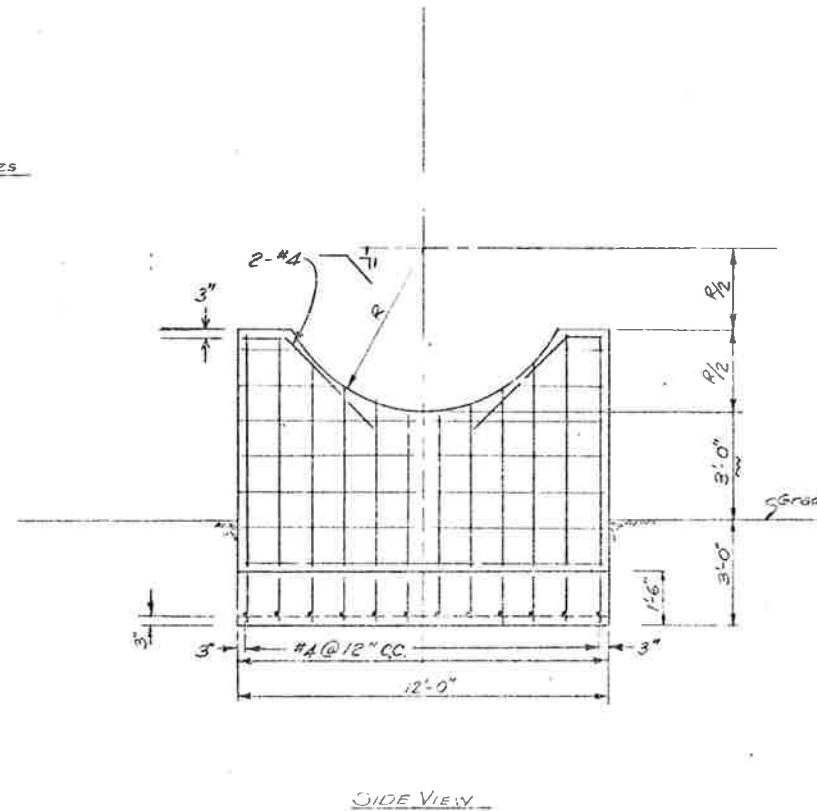
SECTION

Floor Slab for Vaporizer & Mixer



END VIEW

Saddles for Storage Tank



SIDE VIEW

Notes

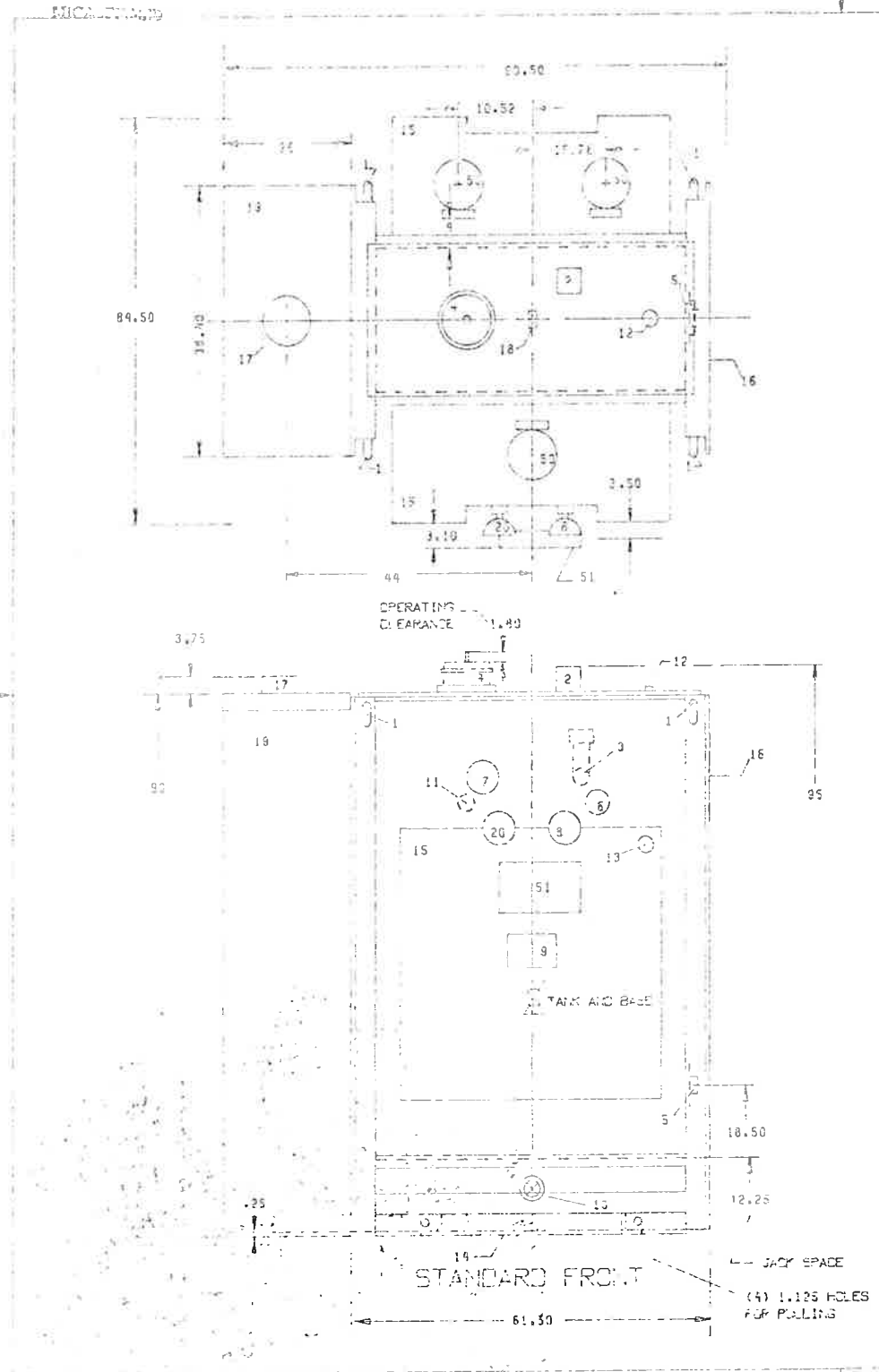
1. Dimensions A, B, M, and R will be determined when type of equipment is chosen.
2. An allowable bearing of 1.5 tons per square foot will be obtained in dense sand, gravel cobbles and boulders. If soft material such as peat or clay is encountered in the excavation at the elevation of the proposed base, it shall be removed down to firm material and replaced with compacted sand or gravel.
3. Concrete for Slabs and Saddles shall be Class C.

AS CONSTRUCTED
 REVISED Date 8/31/79

EAST+WEST PORTAL AREA
 21,000 GAL. PROPANE TANK
 CONCRETE SADDLE AND
 VAPORIZER BLDG. SLAB
 SH. 84

MISSING
sheet 85

MISSING
sheet 85

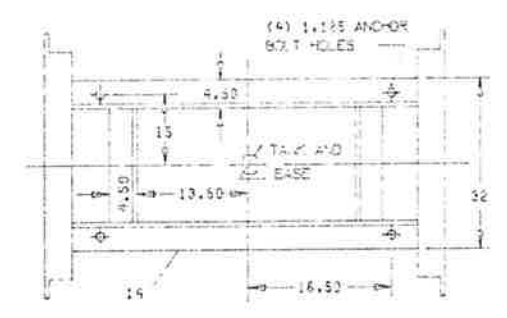


GE. PPA-1 ELECTRIC
155C6089
CONT. ON SH. SH. NO. 1
TITLE
OUTLINE
FIRST PAGE FOR

FOR MANUFACTURERS USE ONLY
LV FLANGE TO 147C132LA FIG 1A AND 21 EXCEPT C=65.53

1. LIFTING LUG FOR LIFTING COMPLETELY FILLED TRANSFORMER (2 INCH SPACING)
2. TAP CHANGER OPERATING MECHANISM FOR HV WINDING
3. FILLING AND TOP FILTER PRESS CONNECTION 1 NPT MALE WITH 1 PIPE CAP
4. 6 INCH O.D. HALF-HOLE, PRESSURE RELIEF FOR PYRANOL UNITS ONLY
5. GROUND BLOCK (N.B.) STANDARD
6. PRESSURE VACUUM GAGE
7. LIQUID LEVEL GAGE
8. LIQUID TEMPERATURE INDICATOR
9. NAMEPLATE
10. DRAIN AND FILTER PRESS VALVE 1 NPT FEMALE (WITH .250 SAMPLER VALVE ON OIL UNITS ONLY)
11. PRESSURE TEST VALVE FOR .250 I.D. TUBE (LOCATED ON OPPOSITE FRONT FROM ITEM 6)
12. AIR VENT-.375 PIPE PLUG
13. SAMPLER VALVE .250 NPT FOR PYRANOL UNITS; PIPE PLUG .250 FOR OIL UNITS
14. TRANSFORMER BASE
15. COOLING TUBES (NON-REMOVABLE)
16. LV FLANGE
17. 4 INCH CONDUIT COUPLING FOR CUSTOMER'S ENTRANCE
18. LIFTING LUG FOR LIFTING COVER
19. HV TERMINAL COMPARTMENT, REMOVABLE END PANEL. TERMINALS ARE LOCATED APPROXIMATELY 33 INCHES FROM THE TOP, AND ARE SUITABLE FOR (1) 1 AWG CABLE PER PHASE
20. HWS TEMPERATURE INDICATOR WITH ALARM CONTACTS
50. FAI
51. TERMINATION BOX FOR ALARM LEADS

General Elec. Supply
Knox - Bristol
Cust. Order #747 300097 D
GE Div #72A004901
GE Reqn. #432-4467C



BASE DETAILS

APPROXIMATE WEIGHTS IN LBS.

UNITANKING	4650
TANK	3050
LIQUID IN TANK	
PYRANOL 390 GAL	5050
TOTAL TRANS	12750
HV COMPT	250
LV COMPT	
TOTAL UNIT	13000

DIMENSIONS ARE TO THE FLOORLINE UNLESS OTHERWISE SPECIFIED.
ITEM NO. 51 (3.9.51) LOCATED ON STANDARD FRONT FOR STANDARD UNIT AND ON REVERSE FRONT FOR REVERSE UNIT.

REVISIONS	PRINTS TO

DATE BY: 1/11/51 APPROVALS: MTPD
155C6089
CONT. ON SH. SH. NO. 1
736 75A866931

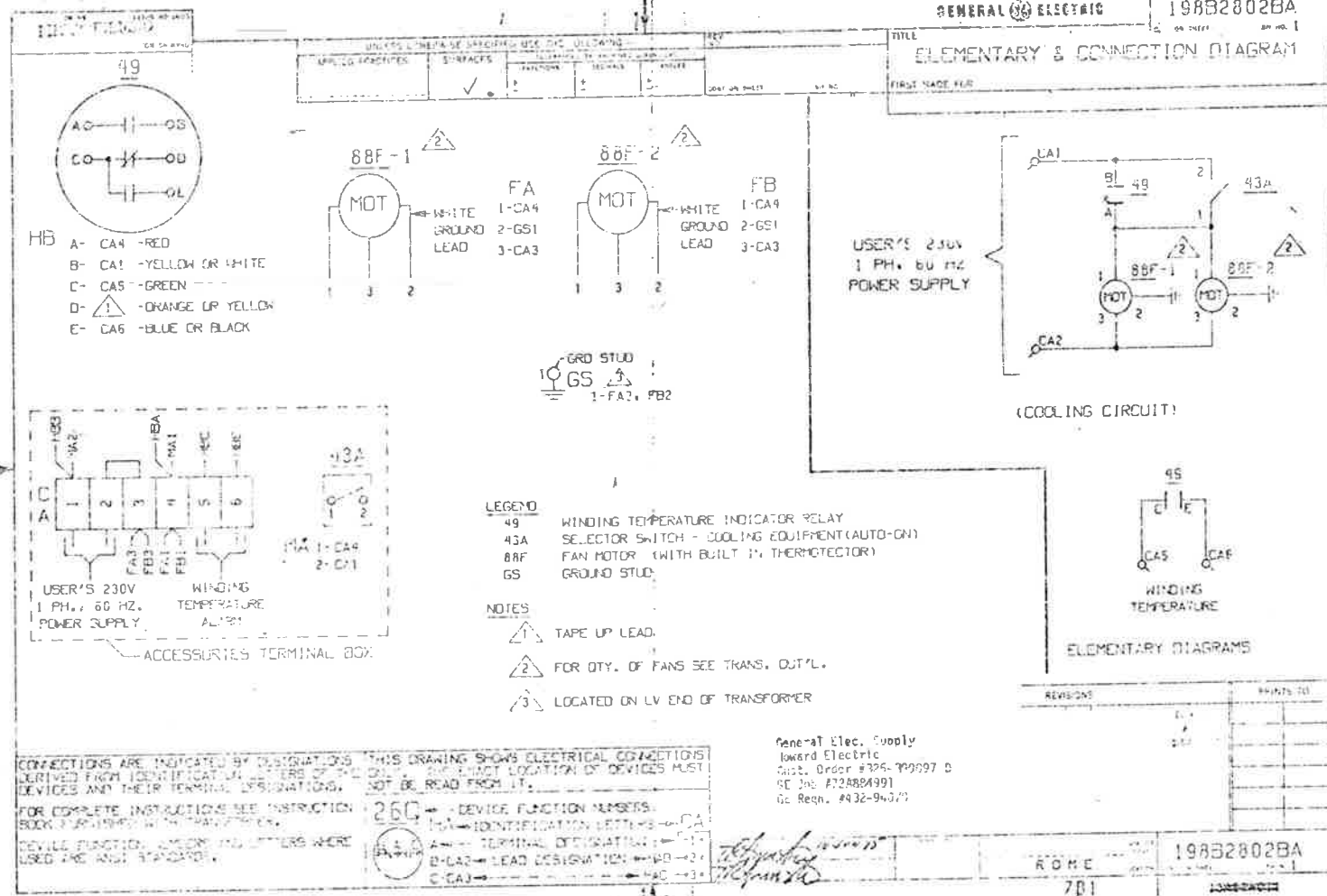
1000 170 50 1130 87 208

Positive study of...
STEARNES-ROGER ARCHITECTS LTD.
Jan 5-14-76

630.13
#178
RECEIVED
1951

Checked
11/11/51

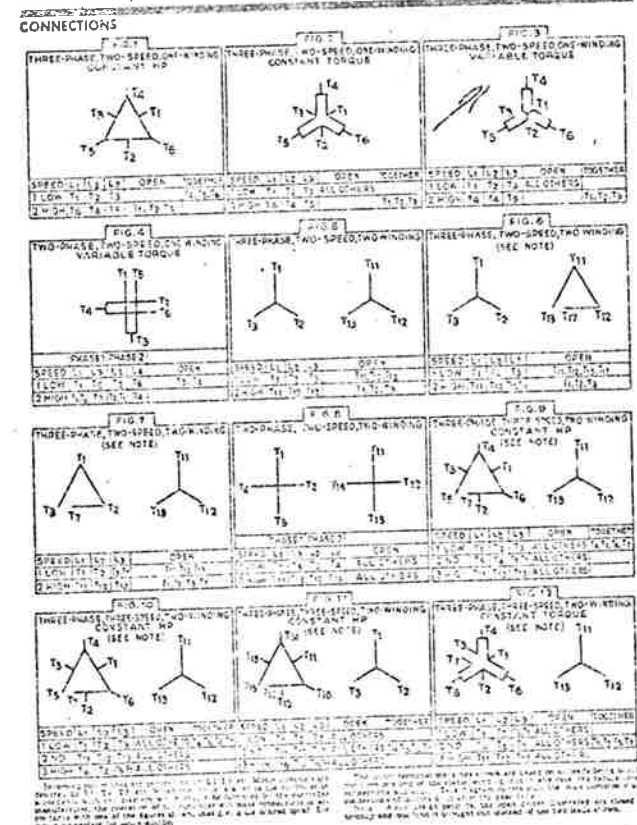
REV. NO.	DATE	BY	CHKD.
1	1 70-31 1790	88	208



Handwritten note or signature in the bottom right corner.

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1220)	89	208

INDUCTION MOTORS—INTEGRAL-HP, 3- AND 2-PHASE
 Two-, Three-, and Four-speed • Type K • TRI-CLAD
 (Connections also apply to Types KQ, KR, and KS)
 SQUIRREL-CAGE GEM-1000A
 Sept. 1, 1950



GENERAL ELECTRIC
 ADDRESS: 1400 N. W. 123RD

MEMO OF DATA TRANSMITTAL
 APR 26 1950
 CLIENT: GENERAL ELECTRIC SUPPLY COMPANY
 LARGE GENERATOR AND MOTOR DEPARTMENT
 GENERAL ELECTRIC
 SECRETARY S. BEN YOUSSEF
 LOCATION: C. E. MATH
 (PRINTS FORWARDED VIA)

MARK: 15707

STANDARD MOTOR NO.	TYPE	SIZE	HP	REV.
33-3071-70			432-44070	

PRINTS ARE:
 FOR APPROVAL FOR INSTALLATION FOR REFERENCE

- ITEM 2:
 34816390-002 OUTLINE
 34816397-003 GROUND PAD
 34816392-001 ACQ. OUTLINE
 3487-0008-004 SOLE PLATE
 GEM-1000 FIG. 3 MOTOR CONNECTION
 34846405-017 HEATER COIL + RTD COIL

MAIL (1) GEN. APPROV. & (14) PRINTS - ALL PRINTS MUST BE 22 X 28" LONG 10"
 MR. STAN LOVE
 AVSD
 DENVER, COLORADO OFFICE

1- R. W. HOOPS, IN-SE, DENVER OFFICE (MARK PJK)

NOTE: TEMP. RISE - 50°C BY RTD @ 230/23 HP @ 11,000 RPM.
 MOTOR RATED TO START AND ACCELERATE TO FULL LOAD SPEED, A FAN WITH 1/2" OF 171,000 LB. FT.² AND DAMPERS IN OPEN POSITION THRU A SERVICE RATIO OF 3.14.
 THESE PRINTS SUPERSEDE PRINTS PREVIOUSLY MAILED.

MI NUMBER, #16-2
 Copy of N/S to:
 ENGINEERING REGISTRATION SERVICE
 14-226A (9/54)

- ENCLOSURE - WEATHER PROTECTED TYPE II
 BEARING - AN.1 FRICTION
 LUBRICATION - GREASE (SUITABLE FOR CODE - C (DINUS 35°)
 TYPE - K
 FRAME - 41108
 PILES - 6/12
 H.P. - 200/25
 SYN. SPEED - 1200/600
 PHASES - 3
 CYCLES - 60
 VOLTS - 2300
 SHAFT EXTEN. - DS-2
 SEC. VOLTS -
 SEC. AMPS -
 SEC. OMS(Y) -
 INSUL. CLASS - F - CUSTOM POLYSEAL
 TEMP. RISE - 40°C BY RTD @ 230/23 HP
 ROT. (O.P.S.) - 0.21
 P.L. SPEED - 118/595
 P.L. AMPS - 47.14
 AIR GAP - .045
 END PLAY - .008
 NET WEIGHT - 2220 LBS. APPROX.
 MOTOR TERM -
 LINE TERM -
 HEATER WATTS - 400
 HEATER VOLTS - 115
 INSTR. BOOM - GEM-3170
 OUTLINE - 34816390-002
 MOTOR COILS - GEM-1000 FIG. 3
 HEATER COIL - 34846405-017
 SOLE PLATE - 3487-0008-004
 ACQ. OUTLINE - 34816392-001
 GROUND PAD - 34816397-003

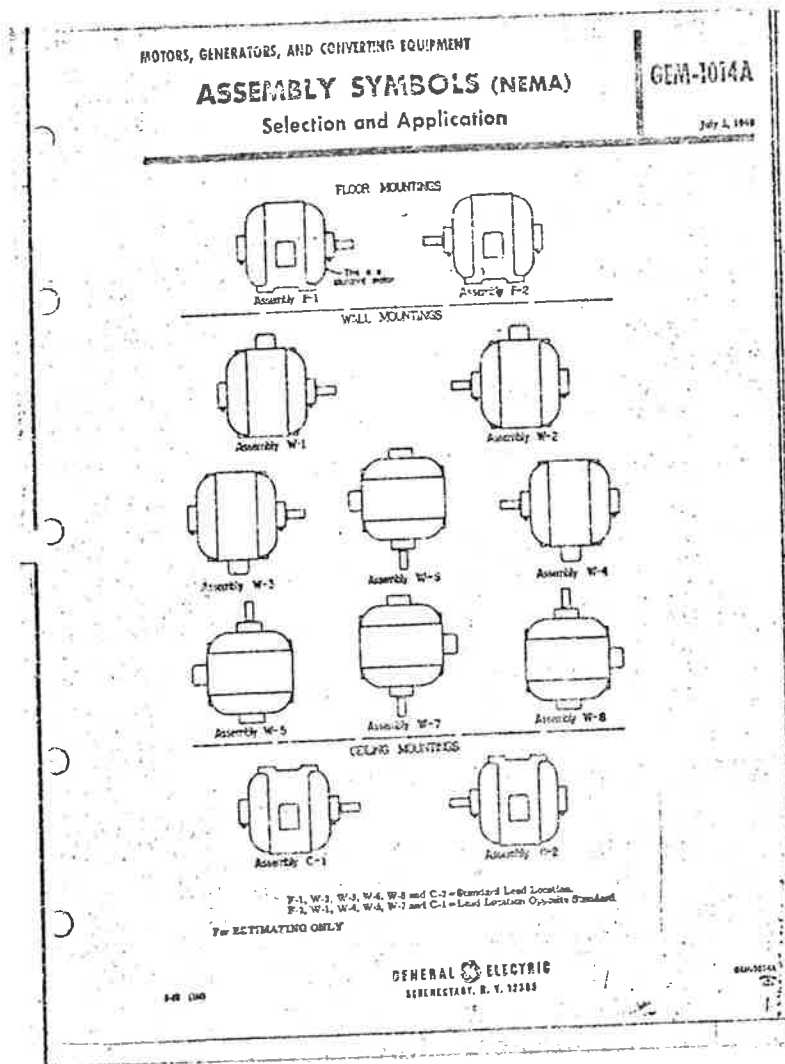
3-PHASE - 10 C/W STATION RTD'S - COPPER
 2-PHASE - 10 C/W STATION RTD'S - COPPER
 TERMINATE IN SAME ACC. BOX



Checked
 Howard Elect. & Mech. Co.
 Proj. Wgn

Check up only the enclosure details on the motor...
 STEARNS ROBEY MANUFACTURING LTD.

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	1 70 31 1220	90	208



MEMO OF DATA TRANSMITTAL
APR 26 1976

GENERAL ELECTRIC
SECRETARY 3, NEW YORK

GENERAL ELECTRIC SUPPLY COMPANY

MARKS: L5707

STATION OR PROJECT NO.	OFFICE NO.	BY	DATE
325-35907D			4-22-50

PRINTS ARE:
 FOR APPROVAL FOR INSTALLATION FOR REFERENCE

APPROVAL REQUIRED OR BY: _____

ITEM 2A

343109390-002	OUTLINE
343101952-001	ACC. OUTLINE
344103327-002	GROUND PAD
344700000-004	SOLE PLATE
GEM-1000 FIG. 3	MOTOR CONN.
346506005-017	HEATER + RTD CONN.
GEM-1014	F-2 ASSEMBLY

MAIL (1) CERT. REPROD. & (14) PRINTS - ALL PRINTS
MUST BE 22 X 34" LONG TO:
MR. STAN LOVE
ADSD
DENVER, COLORADO OFFICE

1- R. W. HOOPS, IESE, DENVER OFFICE (MARK PSR)

NOTE: MOTOR RATED TO START AND ACCELERATE TO
FULL LOAD SPEED, A FAN WITH WK OF 121,500 LB. FT. 2
AND DAMPERS IN OPEN POSITION THRU A SHEAVE RATIO OF
3.46.
THESE PRINTS SUPERSEDE PRINTS PREVIOUSLY MAILED.

•
• MI LUSHER, #16-2
•
•
•
•
•

Copy of N/S to:
EQUIPMENT ACQUISITION SERVICE
By R. V. 12283
LA-226A (5/64)

MOTOR MODEL = 5K311054C32
MOT. SERIAL =
APPLICATION =

ENCLOSURE - WEATHER PROTECTED
TYPE II
BEARINGS - ANTI FRICTION

LUBRICATION - GREASE (SUITABLE FOR
CODE - G (MINUS 35°F)
TYPE - K
FRMS - 31105
FRCS - 6/12
H.F. - 200/23
SW. SPEED - 1200/400
PHASES - 3
CYCLES - 60
VOLTS - 2300
SHAFT EXTEN. - 052
SEC. VOLTS =
SEC. AMPS =
SEC. OHMS(Y) =
INSUL. CLASS - F - CUSTOM POLYSRAL
TEMP. RISE - 90°C BY RID @ 230/25HP
ROT.(O.P.E.) - DIAL @ 11,000 FT.
F.L. SPEED - 1180/595
F.L. ANG.S - 47/14
AIR GAP - .045
END PLAY - NONE
NET WEIGHT - 3520 LB. APPROX.
MOTOR TEAM -
LINE TEAM -
HEATER WATTS - 200
HEATER VOLTS - 115
HEATER SOLE - CEM-1170
INSUL. SOLE - 344600000-002
OUTLINE - GEM-1000 FIG. 3
MOTOR CONN. - GEM-1000 FIG. 3
HEATER CONN. - 346506005-017
ACC. OUTLINE - 343101952-001
GROUND PAD - 344700000-004
SOLE PLATE - 344103327-002

5 - 2/PHASE, 10 OHM STATOR RTD'S - COPPER
RTD'S & SPACE HEATERS LEADS
TERMINATE IN SAME ACC. BOX

FINAL

APPROVED

MAILED

D.C.

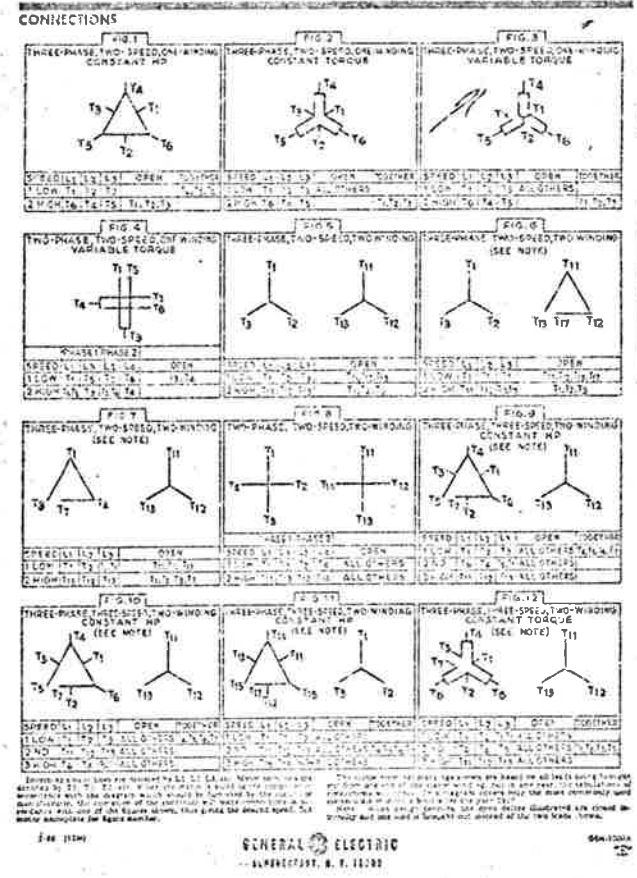
630.16
#169
200/25 NB
F-2

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Checked
Howard Elect. & Mech. Co.
Proj. Mgr.

FEDERAL ROAD DISTRICT	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1220)	91	208

INDUCTION MOTORS—INTEGRAL-HP, 3- AND 2-PHASE
 Two-, Three-, and Four-speed • Type K • TRI-GLAD • GEM-1000A
 (Connections like 222) in Types K.O., K.P., and K.E.
 Dec. 5, 1945



MEMO OF DATA TRANSMITTAL
 APR 26 1946
 LARGE GENERATOR AND MOTOR DEPARTMENT
GENERAL ELECTRIC
 SECRETARY 3, NEW YORK
 LOCATED IN
 G. E. MAIL
 (PRINTS DELIVERED VIA)

MARKS: 15707

STATION OR PROJECT NO.	CUSTOMER ORDER	CUSTOMER MARK	G.E. CONTROL	G.E. REVISION
	325-199097D			432-9407D

Drawing as made is to be considered final and applicable to the factory. Changes are noted concerning any alterations in the design. Features not shown by purchase order specifications apply General Electric Company standard design unless otherwise noted. The drawing sets for this motor shall be based on drawings supplied by the client, specified date and any other information to be used in the design of work. Any required changes from the purchase order specifications, resulting in additional engineering and/or manufacturing from the client, shall be noted in price and the number of the drawing affected.

PRINTS ARE:
 FOR APPROVAL FOR INSTALLATION FOR REFERENCE

- | | |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| ITEM 2A
348104790-002
348104790-001
348103327-002
348740008-001
GE4-1000 FIG-3
348840005-017
GEM-1014 | OUTLINE
ACC. OUTLINE
GROUND PAD
SOLE PLATE
MOTOR CONN.
HEATER + P.T. CONN.
F-2 ASSEMBLY |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|

MAIL (1) CERT. REPROD. & (14) PRINTS - ALL PRINTS
 MUST BE 22 X 34" LONG TO:
 MR. STAN LOVE
 DELIVER, COLORADO OFFICE

1- R. W. HOOPS, EISE, DESKTOP OFFICE (MARK PSK)

NOTE: MOTOR RATED TO START AND ACCELERATE TO FULL LOAD SPEED, A P.M. WITH WK² OF 121,000 LB. FT.² AND DAMPERS IN OPEN POSITION THRU A SHEAVE RATIO OF 3.46.
 THESE PRINTS SUPERSEDE PRINTS PREVIOUSLY MAILED.

• MI LUSHER, #16-2

Copy of N/S to:
 ENGINEERING REGULATION SERVICE
 1A-2264 (9/64)

3 - 3-PHASE, 10 OHM STATOR RUD'S - COPPER
 RUD'S & SPACE HEATER - LEADS
 TERMINATE IN SAME ACC. BOX

- MTN MODEL = 5K811054C32
- MT. SERIAL =
- APPLICATION =
- EXPLOSIVE - WEATHER PROTECTED
- TYPE II
- BEARINGS - AMPI FRICTION
- LUBRICATION - GREASE (SUITABLE FOR CODE - C (MINUS 35°F
- TYPE = K
- PRICE = \$1105
- LEAFS = 6/12
- ...P. = 200/25
- SYN. SPEED = 1200/600
- PHASES = 3
- CYCLES = 60
- VOLTS = 2300
- SHAFT EXTEN. = DS2
- SEC. VOLTS =
- SEC. AMPS =
- SEC. CHG(Y) =
- INSUL. CLASS = F - CUSTOM POLYSEAL
- TEMP. RISE = 90°C BY RTD @ 230/230HP
- ROT.(O.P.E.) = DIAL @ 11,000 R.P.M.
- F.L. SPEED = 1180/595
- F.L. AMPS = 47/14
- AIR GAP = .045
- END PLAY = NONE
- NET WEIGHT = 1520 LB. APPROX.
- MOTOR TERM =
- LEAD TERM =
- HEATER WATTS = 800
- HEATER VOLTS = 115
- INSUL. BOX = GEH-3170
- OUTLINE = 348105340-002
- MOTOR CONN. = GEN-1000 FIG. 3
- HEATER CONN. = 348064005-017
- ACC. OUTLINE = 348101945-001
- GROUND PAD = 348103327-002
- SOLE PLATE = 348740008-004

Checked
 Howard Elect. & Mech. Co.
 Proj. Mgr.



Checking is only for conformity with the design of copy to the client and does not constitute an approval of the design. The client is responsible for the design and the client is responsible for the design. The client is responsible for the design. The client is responsible for the design.

NOTE: The design of this drawing is the property of General Electric Company and is not to be used for any other purpose without the written consent of General Electric Company. The design of this drawing is the property of General Electric Company and is not to be used for any other purpose without the written consent of General Electric Company.

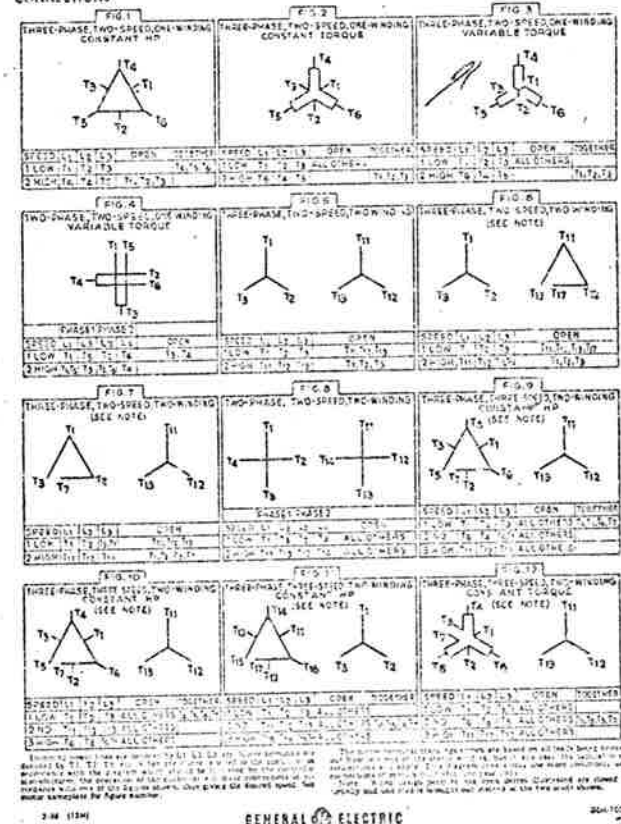
CREATED BY: R. W. HOOPS
 DATE: 4/26/46

3/11/46
 #119
 209/25-4-R
 E. J. ...

FEDERAL REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-31 1220	92	208

INDUCTION MOTORS—INTEGRAL-WP, 3- AND 2-PHASE
SQUIRREL-CAGE **GEM-1000A**
Two-, Three-, and Four-speed • Type K • **TRICLAD**
(Connections also apply to Types EG, ER, and KE) Sept. 5, 1959

CONNECTIONS



GENERAL ELECTRIC
CORPORATION, N. Y. 10288

MEMO OF DATA TRANSMITTAL
DATE: APR 26 1976
TO: GENERAL ELECTRIC
FROM: GENERAL ELECTRIC SUPPLY COMPANY

STATION OR PROJECT NO. 325-339097D
CUSTOMER ORDER NO. 432-9407D
S.E. CONTRACT NO. 432-9407D

PRINTS ASSE:
 FOR APPROVAL FOR INSTALLATION FOR REFERENCE

APPROVAL REQUIRED BY: [Signature]
DATE: [Date]
REVISIONS: [List of changes]

- ITEM 1A: 34C107480-005, 34B101952-002, 34A103227-002, 34A790055-004, GEM-1000 FIG. 3, 34C840405-017
- OUTLINE ASSEMBLY ACC. OUTLINE GROUND PAD SHALE PLATE MOTOR CONN. HEATER CONN. + STD. CONN.

MAIL (1) CERT. REPROD. & (14) PRINTS—ALL PRINTS MUST BE 12 X 36" LONG TO: STAN LOVE, ADSD, DENVER, COLORADO OFFICE

NOTE: TEMP. RISE - 90°C BY RTD @ 690/115 HP @ 11,000 FT.
MOTOR RATED TO START AND ACCELERATE TO FULL LOAD SPEEDS, A PUMP WITH W&2 OF 171,500 LN. FT. 2 AND DAMPERS IN OPEN POSITION THRU A SHEAVE RATIO OF 3.45

HEATER WATTS - 800
HEATER VOLTS - 115
INSTN. BOX - GEM-3170
OUTLINE - 34C107480-005
MOTOR CONN. - GEM-1000 FIG. 3
HEATER CONN. - 34C840405-017
SOLE PLATE - 34A790055-004
ACC. OUTLINE - 34B101952-002
GROUND PAD - 34A103227-002
P-2 ASSEMBLY - GEM-1014

Checked
Howard Elect. & Mech. Co.
Proj. Mgr.

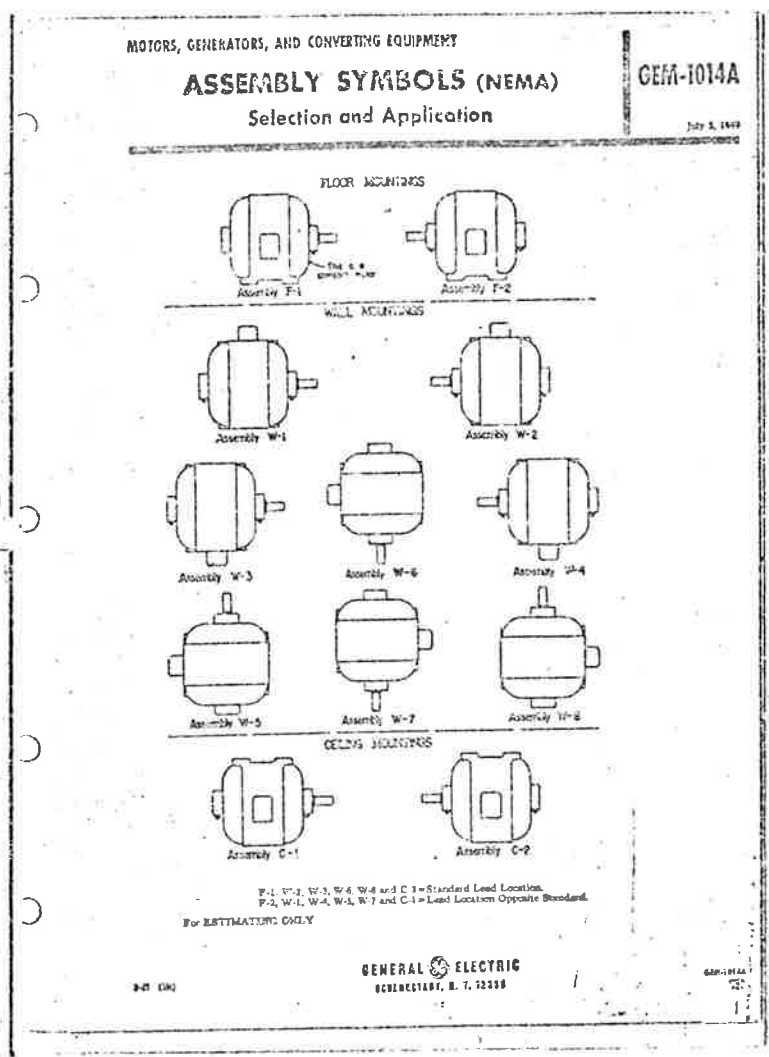
- MOTOR MODEL - 34B1166417
- NO. SERIAL -
- APPLICATION -
- ENCLOSURE - WEATHER PROTECTED TYPE II
- BEARINGS - ANTI FRICTION
- LUBRICATION - GREASE (SUITABLE FOR CODE - C (MINUS 55° F)
- TYPE - K
- FRAME - 42115
- POLES - 4/8
- R.P. - 400/1000
- SYN. SPEED - 1800/900
- PHASES - 3
- CYCLES - 60
- VOLTS - 2300
- SHAFT EXTEN. - DS-2
- SEC. VOLTS -
- SEC. AMPS -
- SEC. OHM(Y) -
- INSUL. CLASS - F CUSTOM POLYSEAL
- TEMP. RISE - 90°C BY RTD @ 690/115
- ROT. (C.P.S.) - DUAL (HP)
- F.L. SPEED - 1700/890
- F.L. AMPS - 135/31
- AIP GAP - .070
- END PLAY - .005E
- NET WEIGHT - 5500 LBS. APPROX.
- MOTOR TERM -
- LEAD TERM -
- HEATER WATTS - 800
- HEATER VOLTS - 115
- INSTN. BOX - GEM-3170
- OUTLINE - 34C107480-005
- MOTOR CONN. - GEM-1000 FIG. 3
- HEATER CONN. - 34C840405-017
- SOLE PLATE - 34A790055-004
- ACC. OUTLINE - 34B101952-002
- GROUND PAD - 34A103227-002
- P-2 ASSEMBLY - GEM-1014



Approved for construction with this drawing...
Checked by: [Signature]
Date: [Date]

620
7/19
600
P.P.

FEDERAL PROJECT REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1220)	93	203



MEMO OF DATA TRANSMITTAL
APR 26 1976

LARGE GENERATORS AND MOTORS DEPARTMENT
GENERAL ELECTRIC
SCHUYLKILL BLDG., NEW YORK, N. Y. 10001
G. E. MAIL (PRINT FOLLOWED BY)

CUSTOMER: MARK 1 L5707
GENERAL ELECTRIC SUPPLY COMPANY

STATION OR PROJECT NO.	CUSTOMER ORDER NO.	ASSEMBLY NO.	REVISION NO.
375-339177D			432-94070

Drawing is intended to be in accordance with applicable drawings and specifications. Contains an integral controlling or protective circuit. Features set or used by purchase order specifications. General Electric Company is not responsible for the drawing data for this drawing. It is the responsibility of the purchaser to verify the drawing data for this drawing. Any required change from the purchase order specifications, including additional engineering and/or testing, shall be made in writing and the purchaser shall be responsible for the change.

PRINTS ARE:
 FOR APPROVAL FOR INSTALLATION FOR REFERENCE

Approved Required Within 5 Days OR BY: (DATE) _____

LETTER OF TRANSMITTAL PRINTS SHOULD BE REFERRED TO THE GENERAL ELECTRIC OFFICE WITH WHICH YOUR ORDER IS PLACED. - GO TO THE FACILITY -

ITEM 1A
 34C107480-005 OUTLINE
 GEM-1014 P-2 ASSEMBLY
 34B101952-002 ACC. OUTLINE
 34A101827-002 GROUND PAD
 34A740055-004 SOLE PLATE
 GEM-1009 FIG. 3 MOTOR CONN.
 34C840405-017 HEATER CONN. + RTD CONN.

MAIL (1) CERT. REPROD. & (14) PRINTS-ALL PRINTS MUST BE 22 X 34" 100% TO:

MR. STAN LOVE
 ADSD
 DENVER, COLORADO OFFICE

1- E. M. HOOPS, 165P, DENVER OFFICE (MARK PNR)

NOTE: T&P, RISE = 90°C BY RTD @ 690/115 HP @ 11,000 FT.

MOTOR RATED TO START AND ACCELERATE TO FULL LOAD SPEEDS, A PAN WITH WT² OF 121,300 LB. FT.² AND DAMPERS IN OPEN POSITION THRU A SHEAVE RATIO OF 3.46

THESE PRINTS SUPERSEDE PRINTS PREVIOUSLY MAILED.

HEATER WATTS = 800
 HEATER VOLTS = 115
 INSTR. BOCK = GEM-1170
 OUTLINE = 34C107480-005
 HEATER CONN. = GEM-1000 FIG. 3
 HEATER CONN. = 34C840405-017
 SOLE PLATE = 34A740055-004
 ACC. OUTLINE = 34B101952-002
 GROUND PAD = 34A101827-002
 P-2 ASSEMBLY = GEM-1014

HEATER WATTS = 800
 HEATER VOLTS = 115
 INSTR. BOCK = GEM-1170
 OUTLINE = 34C107480-005
 HEATER CONN. = GEM-1000 FIG. 3
 HEATER CONN. = 34C840405-017
 SOLE PLATE = 34A740055-004
 ACC. OUTLINE = 34B101952-002
 GROUND PAD = 34A101827-002
 P-2 ASSEMBLY = GEM-1014

8 - 7/PHASE - 10 CON STATOR RTD'S - COPPER
 RTD'S & SPACE HEATER LEADS
 TERMIN-12 IN SAME ACC. BOX

Copy of N/S to:
 ENGINEERING ACQUISITION SERVICE
 2 MARUSCULLO/da
 By LA-226A (9/64)

6 - 7/PHASE - 10 CON STATOR RTD'S - COPPER
 RTD'S & SPACE HEATER LEADS
 TERMIN-12 IN SAME ACC. BOX

FINAL

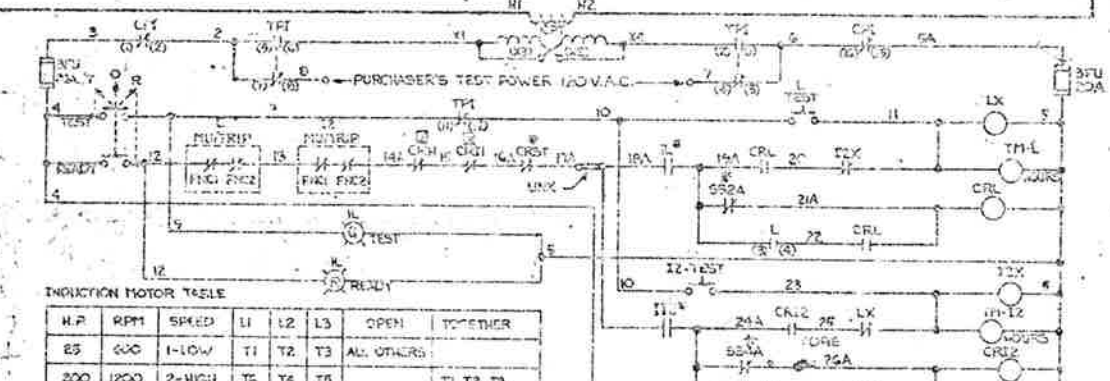
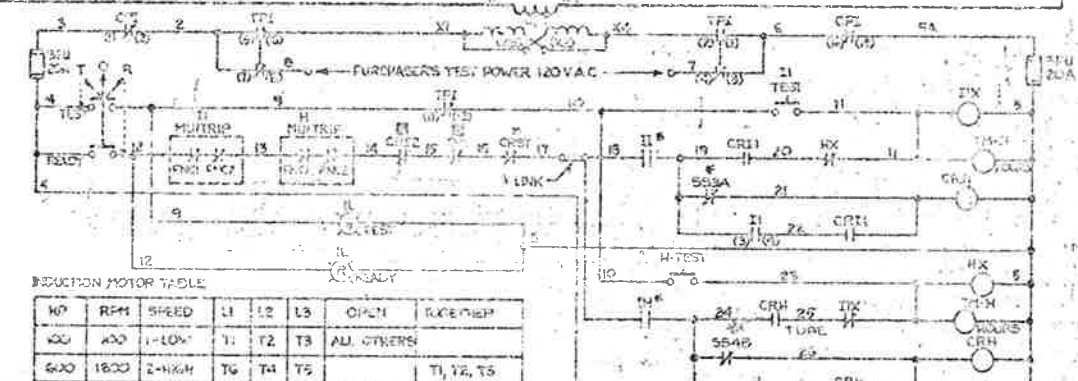
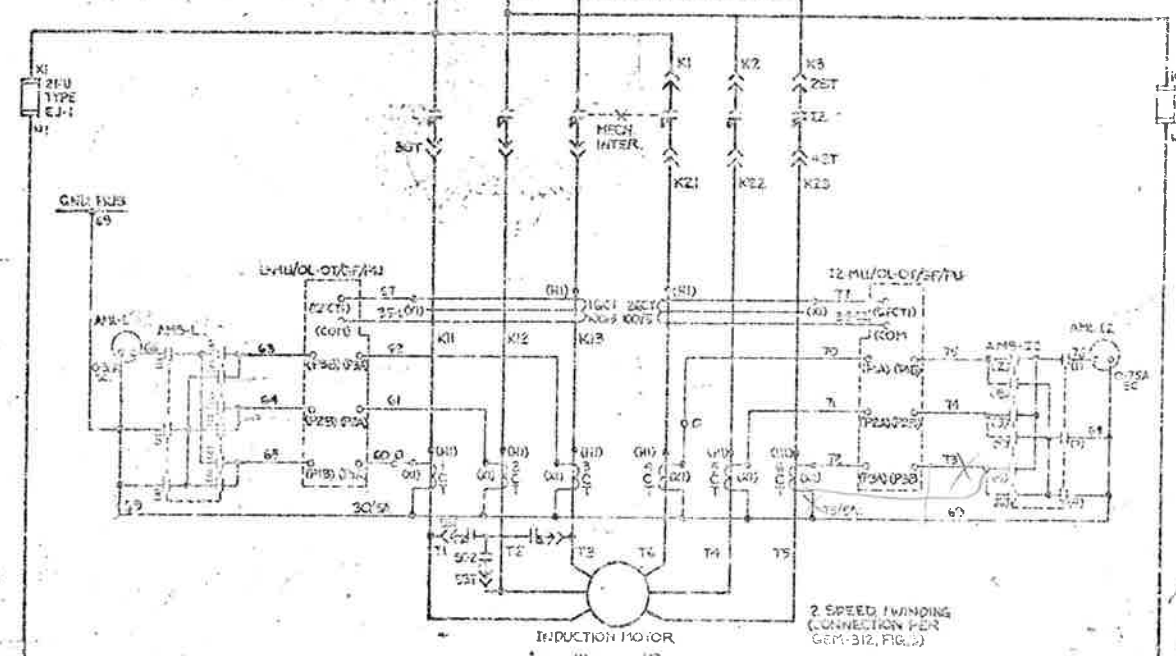
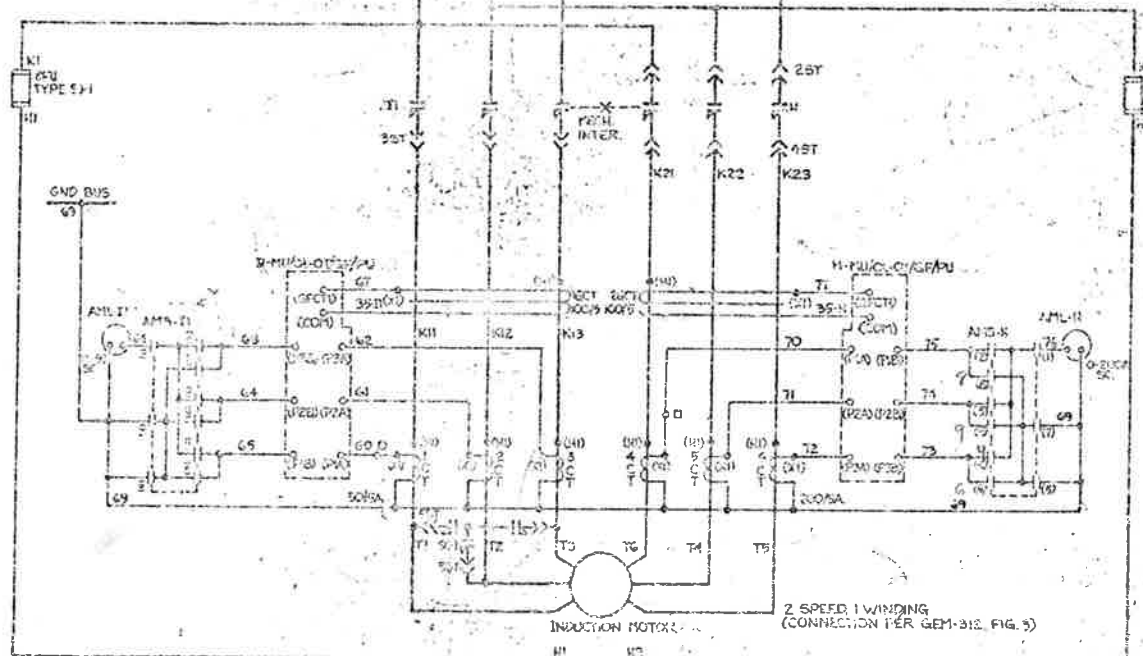
Checked
 Howard Elect. & Mech. Co.
 P. M. E.



10/18
 #164
 600/100 HP
 FA Box

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Printed in U.S.A.
 General Electric Company
 Schuylkill Building
 New York, N.Y. 10001



TDRE - TIME DELAY AFTER ENERGIZING

- TO SUPPLY AND EXHAUST FAN CONTROL CIRCUIT
- TO MOTOR FAILURE AND RELAY "CR" CONTROL CIRCUIT
- TO INTERMEDIATE SPEED AND LIGHTS (L1, L2)
- TO HIGH SPEED AND LIGHTS (L3)
- TO LOW SPEED AND LIGHTS (L4)
- TO INTERMEDIATE 2-SPEED AND LIGHTS (L5)

SWEARNS-ROGER ARCHITECTS, LTD.

NOBENCLATURE

- AM-----LINE AMMETER
- AMS-----AMMETER TRANSFER SWITCH
- CPI-----CONTROL POWER INTERLOCK (OPERATED BY FUSE SHELF HANDLE)
- CPT-----CONTROL POWER TRANSFORMER
- CRH-----CONTROL RELAY-HIGH SPEED
- CRI-----CONTROL RELAY-INTERMEDIATE SPEED
- CRL-----CONTROL RELAY-LOW SPEED
- CRST-----CONTROL RELAY-STOP
- CT-----CURRENT TRANSFORMER
- FU-----FUSE
- GCT-----GROUND CURRENT TRANSFORMER
- GND-----GROUND
- H-----HIGH SPEED CONTACTOR
- HX-----AUXILIARY RELAY TO "H"
- H-TM-----HIGH SPEED TIME METER
- IN-----INTERPOSING RELAY-HIGH SPEED
- II-----INTERPOSING RELAY-INTERMEDIATE SPEED
- MU-----100-15% NO. 11-FLUCTION SOLID STATE PROTECTION MODULE
- MU/CF-----GROUND FAULT RELAY IN "MU"
- MU/OL-OT-----OVERLOAD RELAY AND OVERTEMPERATURE DEVICE IN "MU"
- MU/PU-----PHASE UNBALANCE IN "MU"
- RTD-----RESISTANCE TEMPERATURE DEVICE
- SC-----SHORTING CONTACTOR
- L-----LOW SPEED CONTACTOR
- LX-----AUXILIARY RELAY TO "L"
- SS2A } -----FAH SPEED SWITCH CONTACTS
- SS3A }
- SS4A }
- SS4B }
- ST-----STAB
- L-TM-----SLOW SPEED TIME METER
- TB-----TERMINAL BOARD
- TPI-----TEST POWER INTERLOCK (OPERATED BY FUSE SHELF HANDLE)
- INDICATES DEVIANT SPAS
- ⊙-----INDICATES REMOTE-MOUNTED DEVICE
- ⊠-----INDICATES DEVICE IN MOTOR NO. 2 CONTROL CIRCUIT
- ⊡-----INDICATES DEVICE IN MOTOR NO. 1 CONTROL CIRCUIT
- I-----INTERMEDIATE SPEED CONTACTOR
- IL-----INDICATING LIGHT R-RED, G-GREEN
- I X-----AUXILIARY RELAY TO "I"
- TDAC-----TIME DELAY AFTER EMERGING

MOTOR NO. 1

600 H.P.
H-MU" FACTORY TRIP SETTINGS
 SEC. FLI. 3.8 AMPS (RT 5% LOAD) - 90°C
 STALL 74 SEC AT 219 A. LRI.
 RTD ALARM AT 150°C
 RTD TRIP AT 155°C
 GF TRIP AT 0.5 AMPS
 PU TRIP AT 15% UNBALANCE

100 H.P.
II-MU" FACTORY TRIP SETTINGS

SEC. FLI. 3.1 AMPS
 STALL 73 SEC. AT 16.6 A LRI-65°C
 RTD ALARM AT 150°C
 RTD TRIP AT 155°C
 GF TRIP AT 0.5 AMPS
 PU TRIP AT 15% UNBALANCE

MOTOR NO. 2

25 H.P.
L-MU" FACTORY TRIP SETTINGS
 SEC. FLI. 2.95
 STALL 83 SEC. AT 14 A. LRI-65°C
 RTD ALARM AT 150°C
 RTD TRIP AT 155°C
 GF TRIP AT 0.5 AMPS
 PU TRIP AT 15% UNBALANCE

200 H.P.
I2-MU" FACTORY TRIP SETTINGS

SEC. FLI. 3.1 AMPS
 STALL 27.5 SEC. AT 20.4 A. LRI - 83°C
 RTD ALARM AT 150°C
 RTD TRIP AT 155°C
 GF TRIP AT 0.5 AMPS
 PU TRIP AT 15% UNBALANCE

AMIS SEQUENCE TABLE

CONTACTS HANDLE END	HANDLE POSITIONS			
	OFF	1	2	3
1		X	X	X
2		X		
3			X	
4				X
5	X			
6	X	X	X	
7		X	X	X
8	X	X	X	X
9	X	X	X	X

X = DENOTES CLOSED CONTACTS

DIAGRAM PART TABLE

DIAGRAM PART NO.	MOTOR HP	MOTOR RPM	MOTOR AMPS	MOTOR VOLTS	MU/OL TRIP	EFFECTIVE C.T. RATIO	ICPT SIZE AND RATING	EJ-1 FUSE SIZE & CAT. NO.	EJ-2 FUSE SIZE & CAT. NO.	PANEL POWER WIRE SIZE 50KV
1	100	1800	31A.	2300	SEE FACTORY SETTING TABLE	50/5A	2KVA 2300-230/15V	SIZE 13E 5FACBB003	SIZE 12R 5FACLB012	14 50/005
	600	1800	135A.		200/5A	2KVA 2300-230/15V	SIZE 13E 5FACBB003	SIZE 12R 5FACLB012	14 50/005	
2	25	600	14A.	2300	SEE FACTORY SETTING TABLE	30/5A	2KVA 2300-230/15V	SIZE 83E 5FACBB003	SIZE 4R 5FACLB004	14 50/005
	200	1200	47A.		75/5A	2KVA 2300-230/15V	SIZE 83E 5FACBB003	SIZE 4R 5FACLB004	14 50/005	

GENERAL NOTES

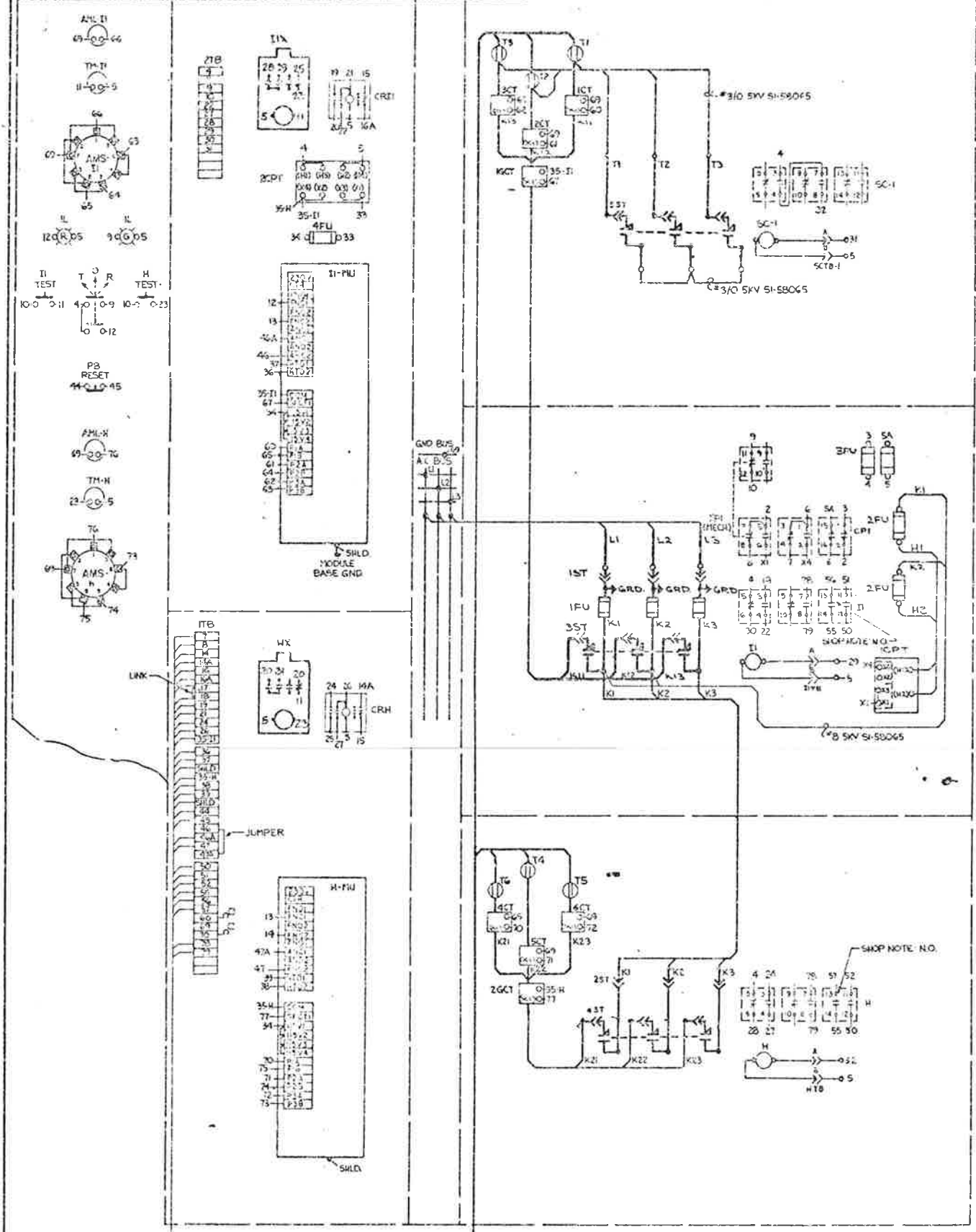
THIS DIAGRAM SHOWS STARTER WITH THE FUSE SHELF IN THE DISCONNECT POSITION AND THE TEST POWER INTERLOCK IN THE TEST POSITION.
 TO TEST: HANDLE MUST BE IN THE DISCONNECT POSITION (OFF). PUR-CHASER TO CONNECT HIS FEED PEGS TO THE PROPER TERMINALS AND NOTE THAT THE CONTROL CIRCUIT IS NOT GROUNDED WHEN DISCONNECTS ARE OPEN.
 TO START: SEE CUSTOMER'S PERMITS STARTING AND STOPPING CIRCUITRY.
 CPI: OPENS ONLY WHEN FUSE ISOLATING MECHANISM IS PUSHED IN. CANNOT BE OPENED WHEN MAIN LINE CONTACTOR IS CLOSED.
 ⊠: AT TERMINAL BOARD ITS, A LOOP IN THE CT SECONDARY CIRCUIT WIRE PERMITS THE INSERTION OF A LOCK-ON AMMETER FOR MEASURING LINE CURRENT.

Check only for conformity with the design of the project and compliance with the applicable codes and regulations. The contractor is responsible for obtaining all necessary permits and approvals. The contractor shall be responsible for the safety of all personnel and the protection of the work of others.
 Approved: _____
 Howard Elect. & Mfg. Co.
 STEARNS-ROGER ARCHITECTS, LTD.

Approved
 Howard Elect. & Mfg. Co.

FINAL

10-TIGO-GIIT 2 SPEED 1 WINDING IND MOTOR STARTER (FRONT VIEW)



WIRE NO.	CONNECTION
1	STRD 5KV SI-58045
2	STRD 5KV SI-58045
3	STRD 5KV SI-58045
4	STRD 5KV SI-58045
5	STRD 5KV SI-58045
6	STRD 5KV SI-58045
7	STRD 5KV SI-58045
8	STRD 5KV SI-58045
9	STRD 5KV SI-58045
10	STRD 5KV SI-58045
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94	STRD 5KV SI-58045
95	STRD 5KV SI-58045
96	STRD 5KV SI-58045
97	STRD 5KV SI-58045
98	STRD 5KV SI-58045
99	STRD 5KV SI-58045
100	STRD 5KV SI-58045

WIRE NO.	CONNECTION
1	STRD 5KV SI-58045
2	STRD 5KV SI-58045
3	STRD 5KV SI-58045
4	STRD 5KV SI-58045
5	STRD 5KV SI-58045
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99	STRD 5KV SI-58045
100	STRD 5KV SI-58045

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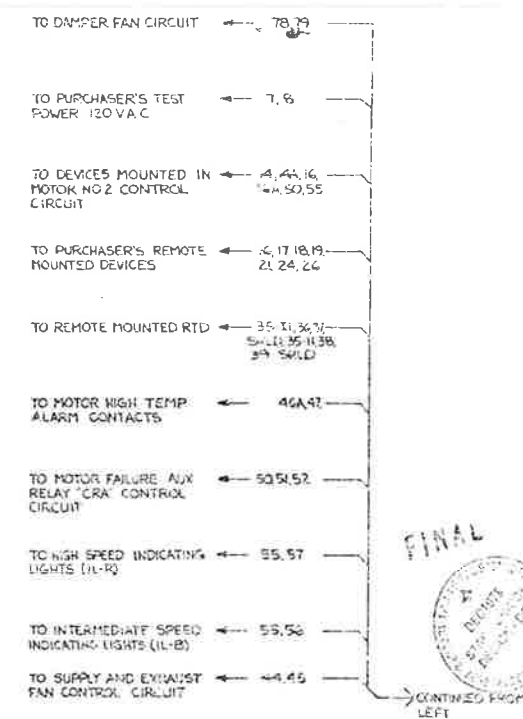
T1, T2, T3 → TO INTERMEDIATE SPEED, 100 H.P.

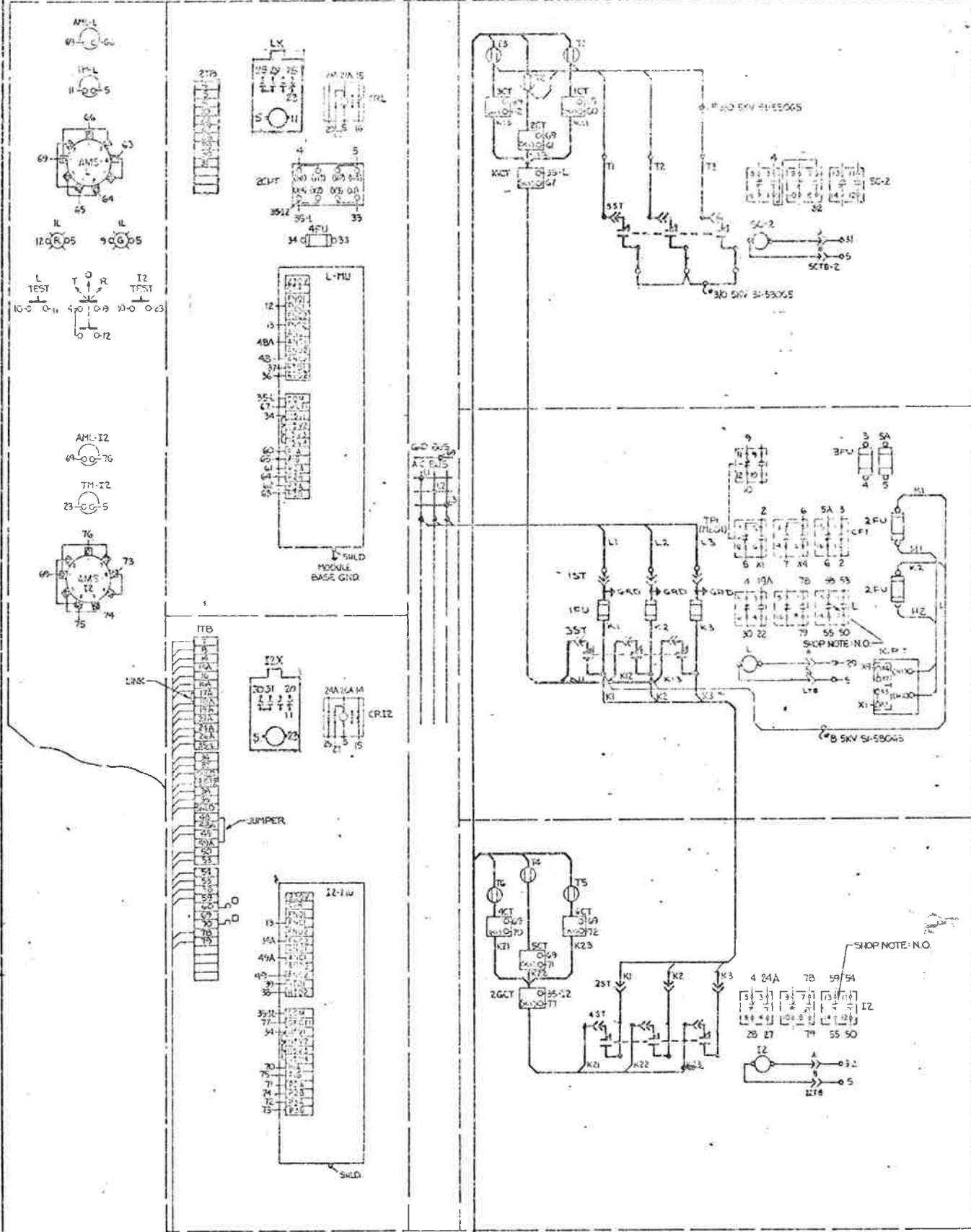
T4, T5, T6 → TO HIGH SPEED, 600 H.P.

Check all wiring for compliance with the definition of the National Electrical Code and all applicable local codes. The contractor is responsible for any violation of the National Electrical Code and all applicable local codes. The architect is not responsible for any violation of the National Electrical Code and all applicable local codes. The contractor is responsible for any violation of the National Electrical Code and all applicable local codes. The architect is not responsible for any violation of the National Electrical Code and all applicable local codes.

STEARNS-ROGER ARCHITECTS, LTD.

Date: 1/3/79 By: C.F.G.





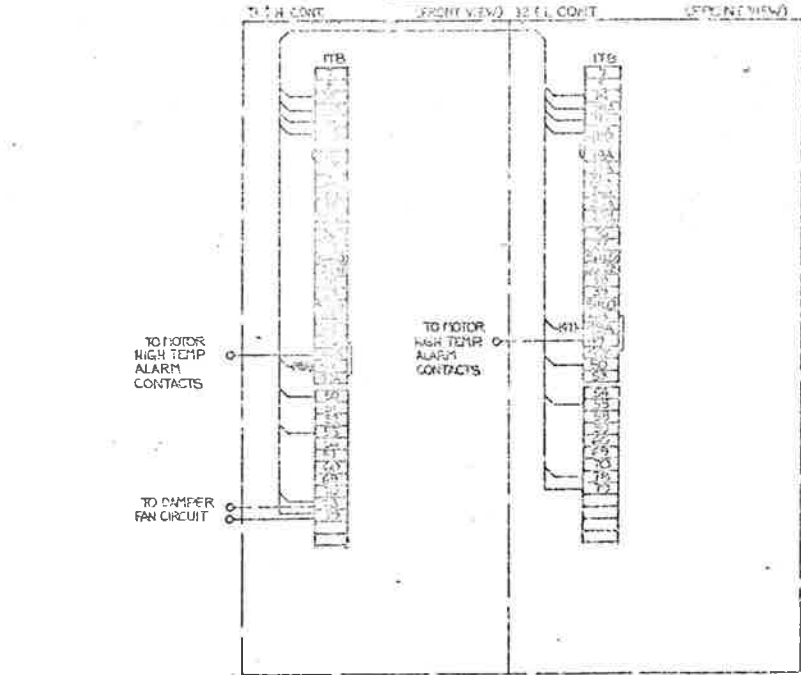
T1, T2, T3 → TO LOW SPEED, 25 H.P.
 T4, T5, T6 → TO INTERMEDIATE SPEED, 200 H.P.

WIRE TABLE

WIRE NO.	DESCRIPTION
1	STOP
2	STOP
3	STOP
4	STOP
5	STOP
6	STOP
7	STOP
8	STOP
9	STOP
10	STOP
11	STOP
12	STOP
13	STOP
14	STOP
15	STOP
16	STOP
17	STOP
18	STOP
19	STOP
20	STOP
21	STOP
22	STOP
23	STOP
24	STOP
25	STOP
26	STOP
27	STOP
28	STOP
29	STOP
30	STOP
31	STOP
32	STOP
33	STOP
34	STOP
35	STOP
36	STOP
37	STOP
38	STOP
39	STOP
40	STOP
41	STOP
42	STOP
43	STOP
44	STOP
45	STOP
46	STOP
47	STOP
48	STOP
49	STOP
50	STOP
51	STOP
52	STOP
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54	STOP
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56	STOP
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70	STOP
71	STOP
72	STOP
73	STOP
74	STOP
75	STOP
76	STOP
77	STOP
78	STOP
79	STOP
80	STOP
81	STOP
82	STOP
83	STOP
84	STOP
85	STOP
86	STOP
87	STOP
88	STOP
89	STOP
90	STOP
91	STOP
92	STOP
93	STOP
94	STOP
95	STOP
96	STOP
97	STOP
98	STOP
99	STOP
100	STOP

INTERCONNECTION WIRE TABLE

WIRE NO.	DESCRIPTION	TO
1	STOP	STOP
2	STOP	STOP
3	STOP	STOP
4	STOP	STOP
5	STOP	STOP
6	STOP	STOP
7	STOP	STOP
8	STOP	STOP
9	STOP	STOP
10	STOP	STOP
11	STOP	STOP
12	STOP	STOP
13	STOP	STOP
14	STOP	STOP
15	STOP	STOP
16	STOP	STOP
17	STOP	STOP
18	STOP	STOP
19	STOP	STOP
20	STOP	STOP
21	STOP	STOP
22	STOP	STOP
23	STOP	STOP
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25	STOP	STOP
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30	STOP	STOP
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85	STOP	STOP
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88	STOP	STOP
89	STOP	STOP
90	STOP	STOP
91	STOP	STOP
92	STOP	STOP
93	STOP	STOP
94	STOP	STOP
95	STOP	STOP
96	STOP	STOP
97	STOP	STOP
98	STOP	STOP
99	STOP	STOP
100	STOP	STOP



TO DAMPER FAN CIRCUIT → TR 79

TO PURCHASER'S TEST POWER 120 V.A.C. → 7, 8

TO DEVICES MOUNTED IN MOTOR NO. 1 CONTROL CIRCUIT → 14, MA, 16, 4A, 50, 55

TO PURCHASER'S REMOTE MOUNTED DEVICES → 12A, 21A, 24A, 26A

TO REMOTE MOUNTED RTD → 35-1, 36, 37, 38, 39, 52, 53, 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

TO MOTOR HIGH TEMP ALARM CONTACTS → 48A, 49

TO MOTOR FAILURE AUX RELAY "CRA" CONTROL CIRCUIT → 10A, 11A, 12A, 13A, 14A, 15A, 16A, 17A, 18A, 19A, 20A, 21A, 22A, 23A, 24A, 25A, 26A, 27A, 28A, 29A, 30A, 31A, 32A, 33A, 34A, 35A, 36A, 37A, 38A, 39A, 40A, 41A, 42A, 43A, 44A, 45A, 46A, 47A, 48A, 49A, 50A, 51A, 52A, 53A, 54A, 55A, 56A, 57A, 58A, 59A, 60A, 61A, 62A, 63A, 64A, 65A, 66A, 67A, 68A, 69A, 70A, 71A, 72A, 73A, 74A, 75A, 76A, 77A, 78A, 79A, 80A, 81A, 82A, 83A, 84A, 85A, 86A, 87A, 88A, 89A, 90A, 91A, 92A, 93A, 94A, 95A, 96A, 97A, 98A, 99A, 100A

TO LOW-SPEED INDICATING LIGHTS (IL-V) → 55, 56

TO INTERMEDIATE SPEED INDICATING LIGHTS (IL-A) → 55, 59

STEARNS-ROGGER ARCHITECTS, LTD.
 1/13/79

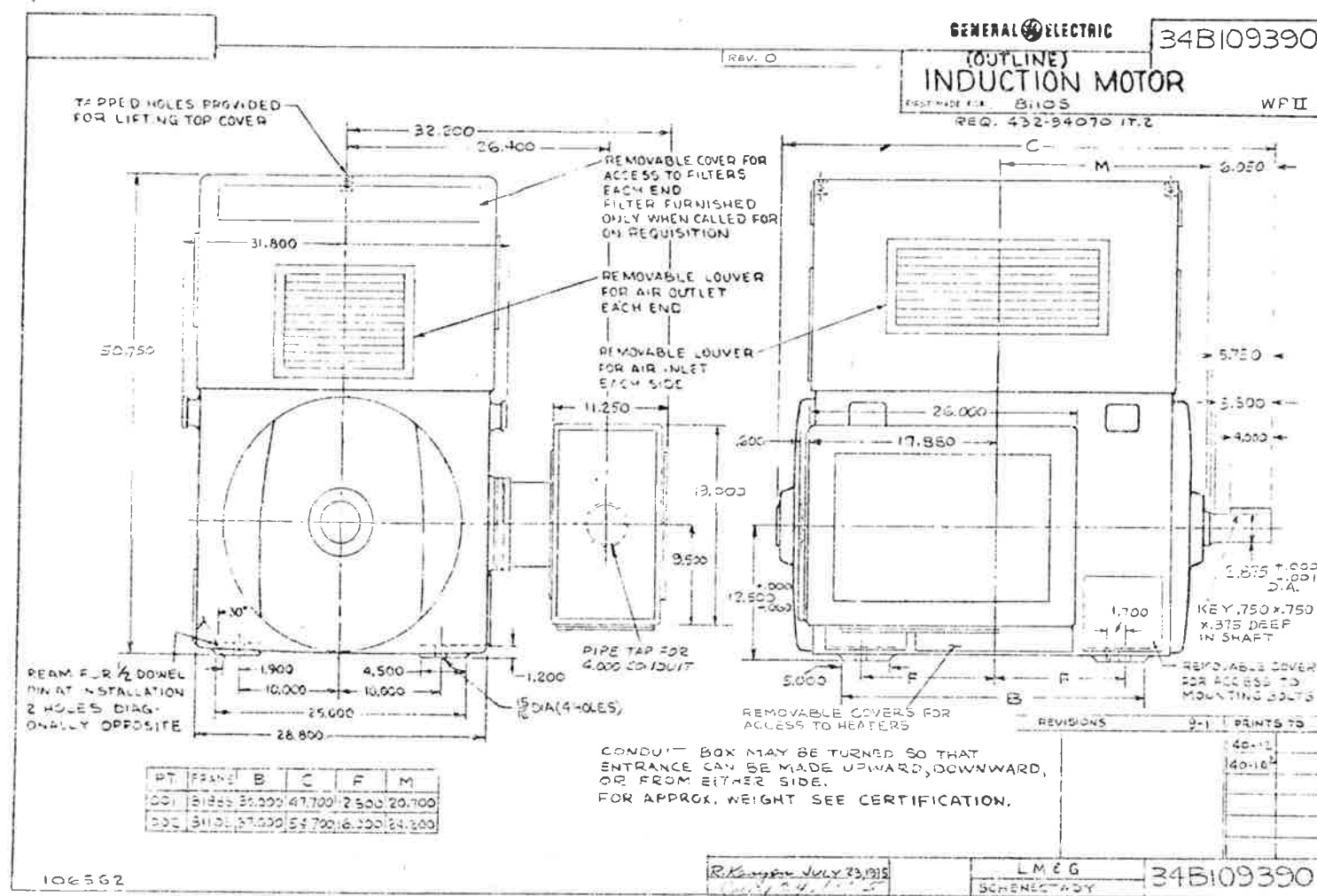
MOTOR NO. 2

NO.	DESCRIPTION	DATE	BY	CHECKED	APPROVED
1	DESIGN	1/13/79	J. S. ROGGER		
2	DRAWING	1/13/79	J. S. ROGGER		
3	TESTING				
4	INSTALLATION				

1-70-81-1220
 97
 207



FEDERAL REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1020)	98	208



MEMO OF DATA TRANSMITTAL
 APR 26 1976
 CUSTOMER: (blank)
 MARK: 15707

LARGE GENERATOR AND MOTOR DEPARTMENT
GENERAL ELECTRIC
 GENERAL ELECTRIC SUPPLY COMPANY

34B109390
 WPII

STATION OR PROJECT NO. 325-390970
 CUSTOMER WORK (blank)
 GE CONTRACT (blank)
 GE NUMBER 432-94070

Drawings are intended to be in accordance with applicable purchase order specifications. Comments are retained concerning any deviations in the equipment is based on drawings approved by the applicable General Electric factory standard design group. The drawing shall be the basis for the purchase order specifications, including all additional engineering and manufacturing data, necessary to produce in parts and the assembly thereof.

PRINTS ARE:
 FOR APPROVAL FOR INSTALLATION FOR REFERENCE

Approval Required: (blank)
 GE BY: (blank)

MOTOR MODEL = 5K811054C31
 MOT. SERIAL = (blank)
 APPLICATION = (blank)

ENCLOSURE = WEATHER PROTECTED TYPE 11
 BEARINGS = ANTI FRICTION

LUBRICATION = GREASE (SUITABLE FOR CODE - G (MINUS 35°F)
 TYPE = K
 FRAME = 81105
 PULS = 6/12
 HP = 200/25
 SYN. SPEED = 1200/600
 PHASES = 60
 VOLTS = 2300
 SWFT EXTEN. = DS-2
 SEC. VOLTS = (blank)
 SEC. AMPS = (blank)
 SEC. CHRT(Y) = (blank)
 INSP. CLASS = F - CUSTOM POLYUREA
 TEMP. RISE = 90°C BY RTD @ 250/28 HP
 ROT.(O.F.E.) = DUAL
 F.L. SPEED = 1180/595
 F.L. AMPS = 47/14
 AIR GAP = .045
 END PLAY = NONE
 NET WEIGHT = 3520 LBS. APPROX.
 MOTOR TEMP = (blank)
 LINE TEMP = (blank)
 HEATER WATTS = 800
 HEATER VOLTS = 115
 INSTR. BOOK = GEN-3170
 OUTLINE = 34B109390-002
 HEATER CONN. = GEN-1000 #10, 3
 HEATER CONN. = 34B64005-017
 SOLE PLATE = 34B74008-004
 ACC. OUTLINE = 34B10552-001
 GROUND PAD = 34B10327-003

ITEM 2:
 34B109390-002 - OUTLINE
 34B10327-003 - GROUND PAD
 34B10552-001 - ACC. OUTLINE
 34B74008-004 - SOLE PLATE
 GEN-1000 #10, 3 - MOTOR CONNECTION
 34B64005-017 - HEATER CONN. + RTD CONN.

MAIL (1) CERT. REPROD. & (14) PRINTS - ALL PRINTS MUST BE 22 X 34" LONG TO:
 MR. STAN LOVE
 ADD:
 DENVER, COLORADO OFFICE
 I - R. W. HOPPS, JR., DENVER OFFICE (MARK FSK)

NOTE: TEMP RISE = 90°C BY RTD @ 250/28 HP @ 11,000 FT.
 MOTOR RATED TO START AND ACCELERATE TO FULL LOAD SPEED, A FAN WITH 1/2 OF 121,300 LB. FT. 2 AND DAMPERS IN OPEN POSITION THRU A SHEAVE RATIO OF 3.46.
 THESE PRINTS SUPERSEDE PRINTS PREVIOUSLY MAILED.

NO LUSHER, #16-2
 Copy of M/S Let
 ENGINEERING REQUISITION SERVICE
 R. WENTGELMANN
 LA-226A (9/64)

Checked
 Howard Elect. & Mech. Co.
 Proj. Mgr.

6 - 2/PHASE - 10 OHM STATOR RTD'S - COPPER
 MID-3 1/4 PHASE HEATER LEADS
 TERMINATE IN SAME ACC. BOX



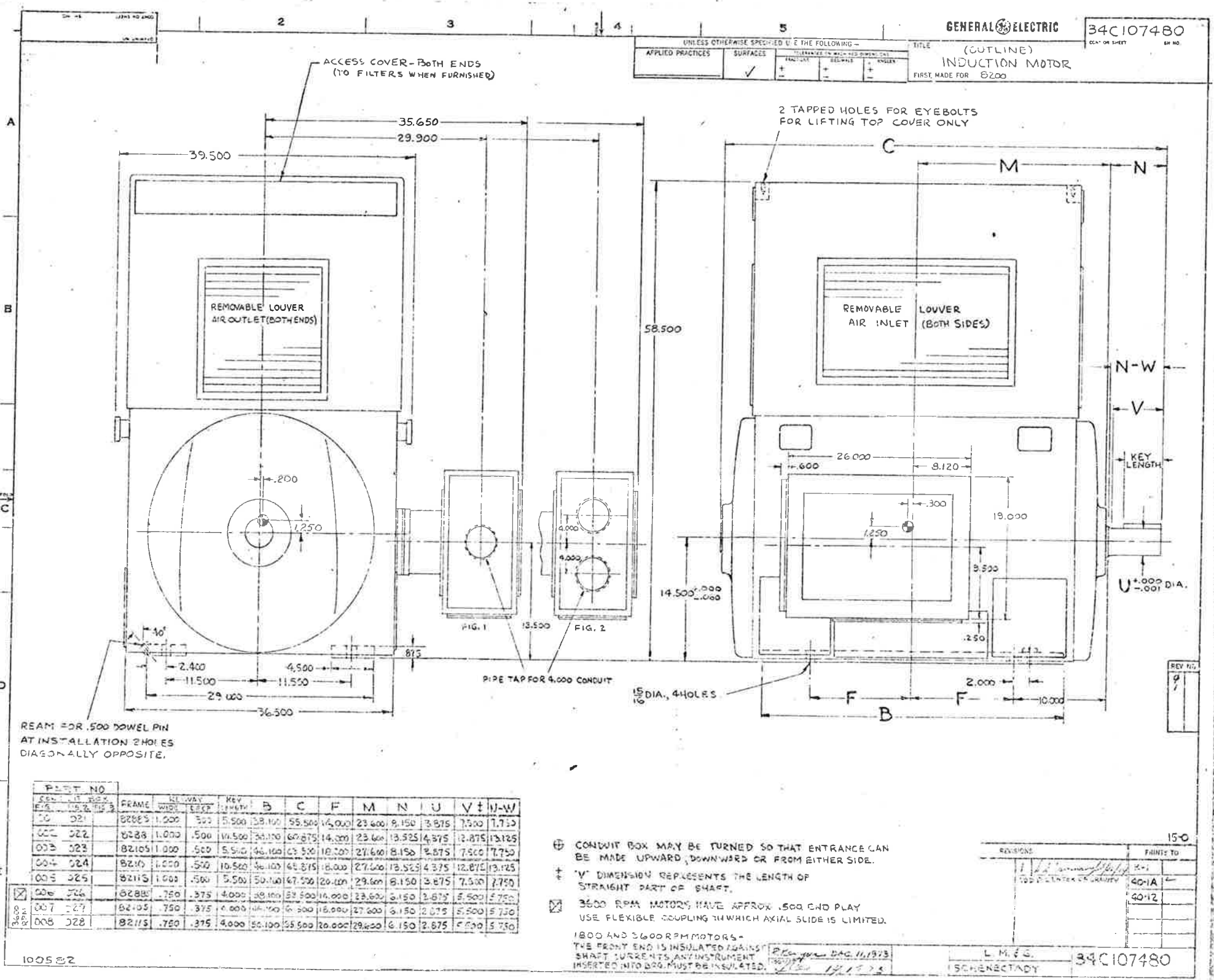
630.16
 #169
 200/25 HP
 Std Box

Check for compliance with the design of the Project and drawings with the following: (blank)
 Note - The Authority of the State of Colorado requires that all electrical equipment be tested and certified by a licensed electrical engineer. The Authority of the State of Colorado requires that all electrical equipment be tested and certified by a licensed electrical engineer. The Authority of the State of Colorado requires that all electrical equipment be tested and certified by a licensed electrical engineer.

STEARNS-ROBEY AND MOTORS, LTD.
 Date: 5/2/76 By: JMW



RECEIVED



FEDERAL PROJ. RECORD NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1220)	99	208

Checking level of construction is the duty of the contractor of the project and the contractor is responsible for the correct location of the motor in the building. The architect is responsible for the correct location of the motor in the building. The architect is responsible for the correct location of the motor in the building.

STEARNES-ROGER ARCHITECTS, LTD.
By: [Signature] J.P.W.

GENERAL ELECTRIC

FOR APPROVAL [] FOR INFORMATION [] FOR REFERENCE []

REVISIONS

NO.	DATE	DESCRIPTION
150		

PRINTED TO

40-1A	
40-12	

100532

POST NO.	SEC.	HT.	WID.	HT.	HT.	B	C	F	M	N	U	V	U-W
001	021	8208	1.000	500	5.500	38.100	55.500	14.000	23.600	8.150	3.875	7.500	7.750
002	022	8208	1.000	500	10.500	34.100	60.875	14.000	23.600	13.525	4.375	7.875	13.125
003	023	82105	1.000	500	5.500	46.100	63.500	18.000	27.600	8.150	3.875	7.500	7.750
004	024	82105	1.000	500	10.500	36.100	65.875	18.000	27.600	13.525	4.375	12.875	13.125
005	025	82115	1.000	500	5.500	50.100	67.500	20.000	29.600	8.150	3.875	7.500	7.750
006	026	8288	.750	375	4.000	38.100	53.500	16.000	23.600	6.150	3.875	5.500	5.750
007	027	82105	.750	375	4.000	44.100	56.800	18.000	27.600	6.150	3.875	5.500	5.750
008	028	82115	.750	375	4.000	50.100	59.500	20.000	29.600	6.150	3.875	5.500	5.750

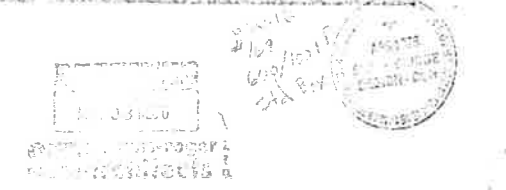
CONDUIT BOX MAY BE TURNED SO THAT ENTRANCE CAN BE MADE UPWARD, DOWNWARD OR FROM EITHER SIDE.

V DIMENSION REPRESENTS THE LENGTH OF STRAIGHT PART OF SHAFT.

3600 RPM MOTORS HAVE APPROX .500 END PLAY USE FLEXIBLE COUPLING IN WHICH AXIAL SLIDE IS LIMITED.

1800 AND 3600 RPM MOTORS - THE FRONT END IS INSULATED AGAINST SHAFT CURRENTS ANY INSTRUMENT INSERTED INTO END MUST BE INSULATED.

Checked
Howard Elert & Mech. Co.
Proj. Mgr.



34C840405

GENERAL ELECTRIC

34C840405

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING -			
APPLIED PRACTICES	SURFACE	TOLERANCES UNLESS OTHERWISE SPECIFIED	MATERIAL
✓			

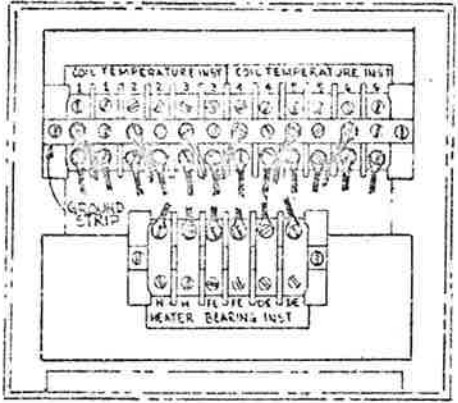
DIAGRAM (ACCESSORY)
FIRST MADE FOR IND. MOTOR. B000

FEDERAL ROAD BOARD NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1)220	100	208

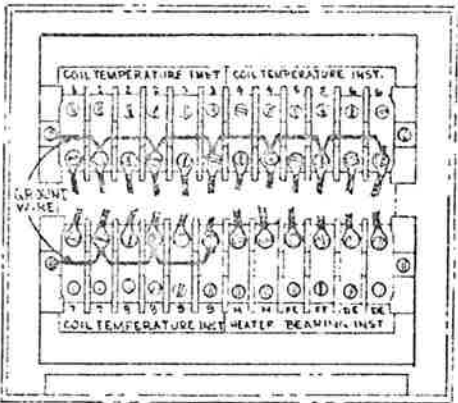
Check this drawing against the data sheet of the project and the drawing of the motor in the catalog. If any discrepancy is found, the drawing of the motor in the catalog shall govern. If any discrepancy is found, the drawing of the motor in the catalog shall govern. If any discrepancy is found, the drawing of the motor in the catalog shall govern.

Note: The motor is to be used in the case of a bearing device. The motor is to be used in the case of a bearing device. The motor is to be used in the case of a bearing device.

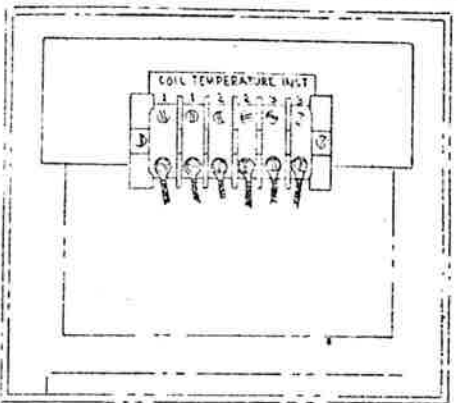
STEERING MOTOR CO. LTD.



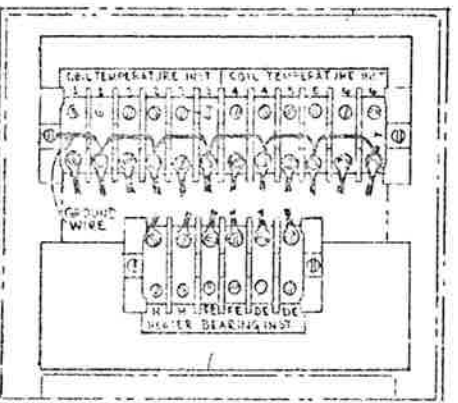
010 (6) RES. TEMP DETECTORS, HEATERS (2) BEARING DEVICES



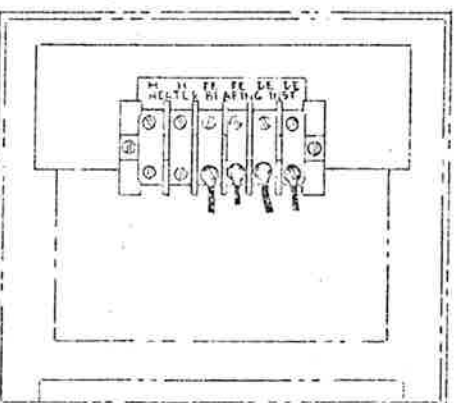
013 (9) THERMOCOUPLES, HEATERS (2) BEARING DEVICES



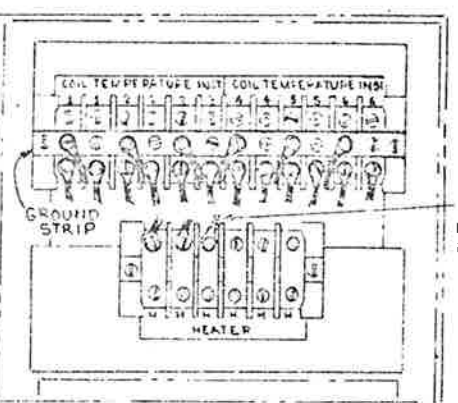
016 (3) THERMISTORS



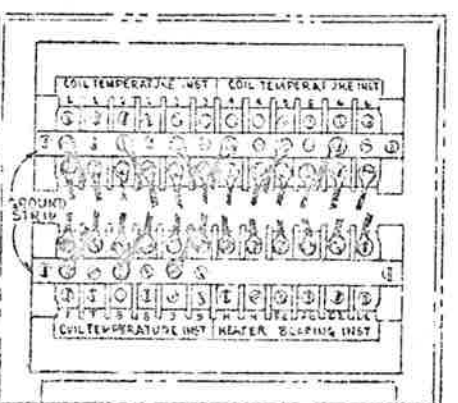
011 (6) THERMOCOUPLES, HEATERS (2) BEARING DEVICES



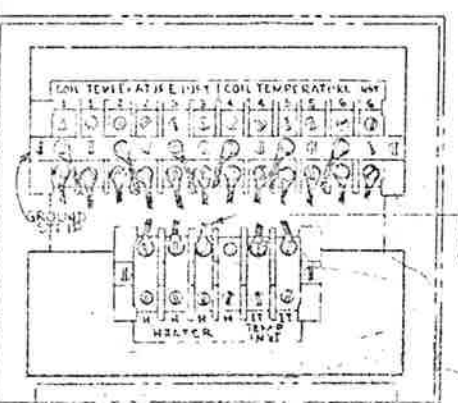
014 (2) BEARING DEVICES



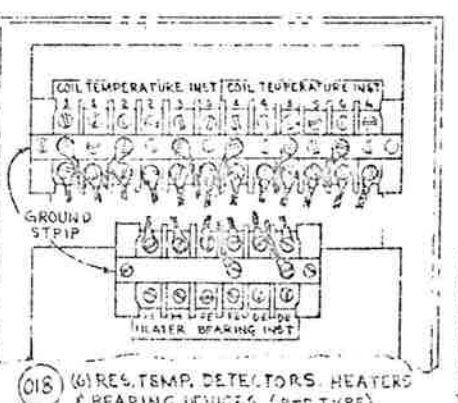
017 (6) RES. TEMP DETECTORS & 8 HEATERS



012 (9) RES. TEMP. DETECTORS, HEATERS (2) BEARING DEVICES



015 (6) RES. TEMP. DETECTORS, HEATERS (2) INCL.



018 (6) RES. TEMP. DETECTORS, HEATERS & BEARING DEVICES (RTD TYPE)

34C840405

FOR 3 PHASE HEATERS WHEN REQ'D

FOR 3 PHASE HEATERS WHEN REQ'D

34C840405

GENERAL ELECTRIC MOTOR DEPARTMENT

GENERAL ELECTRIC

GENERAL ELECTRIC SUPPLY COMPANY

DATE: 1/2/57

FOR APPROVAL FOR INSTALLATION FOR REFERENCE

REVISIONS:

- REV. 1 - 1/2/57
- REV. 2 - 1/2/57
- REV. 3 - 1/2/57
- REV. 4 - 1/2/57
- REV. 5 - 1/2/57
- REV. 6 - 1/2/57
- REV. 7 - 1/2/57
- REV. 8 - 1/2/57
- REV. 9 - 1/2/57
- REV. 10 - 1/2/57
- REV. 11 - 1/2/57
- REV. 12 - 1/2/57
- REV. 13 - 1/2/57
- REV. 14 - 1/2/57
- REV. 15 - 1/2/57
- REV. 16 - 1/2/57
- REV. 17 - 1/2/57
- REV. 18 - 1/2/57
- REV. 19 - 1/2/57
- REV. 20 - 1/2/57

REVISIONS:

- REV. 1 - 1/2/57
- REV. 2 - 1/2/57
- REV. 3 - 1/2/57
- REV. 4 - 1/2/57
- REV. 5 - 1/2/57
- REV. 6 - 1/2/57
- REV. 7 - 1/2/57
- REV. 8 - 1/2/57
- REV. 9 - 1/2/57
- REV. 10 - 1/2/57
- REV. 11 - 1/2/57
- REV. 12 - 1/2/57
- REV. 13 - 1/2/57
- REV. 14 - 1/2/57
- REV. 15 - 1/2/57
- REV. 16 - 1/2/57
- REV. 17 - 1/2/57
- REV. 18 - 1/2/57
- REV. 19 - 1/2/57
- REV. 20 - 1/2/57

Checked
Square Elect. & Mech. Co.
1/2/57

Checked
Square Elect. & Mech. Co.
1/2/57

Checked
Square Elect. & Mech. Co.
1/2/57

34C840405

2

3

4

5

GENERAL ELECTRIC

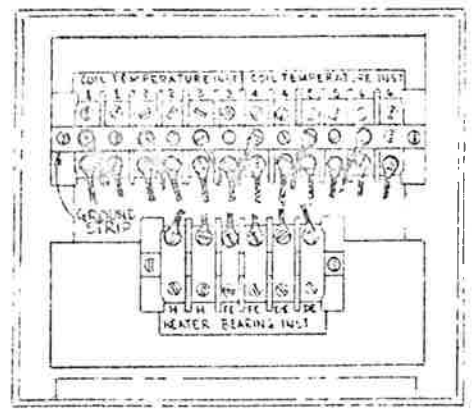
34C840405

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING		TITLE
APPLIED PRACTICES	SURFACE	DIAGRAM (ACCESSORY)
✓		FIRST MADE FOR IND MOTOR 8000

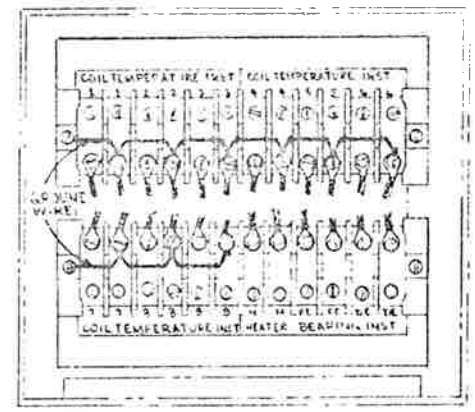
FEDERAL ROAD BUILDING NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-31220	101	208

THIS IS ONLY A DESIGN DRAWING AND NOT A CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. ANY CHANGES TO THIS DRAWING SHALL BE MADE BY A GENERAL ELECTRIC ENGINEER. DATE: 5/1/76

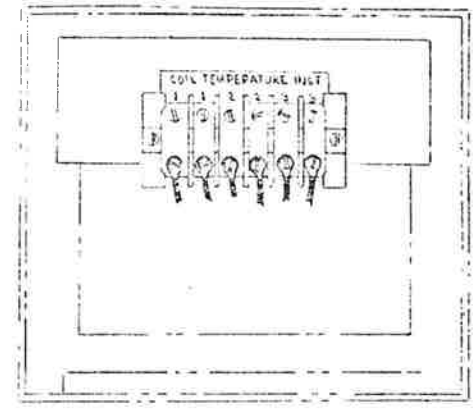
A



010 (6) RES. TEMP DETECTORS HEATERS (2) BEARING DEVICES

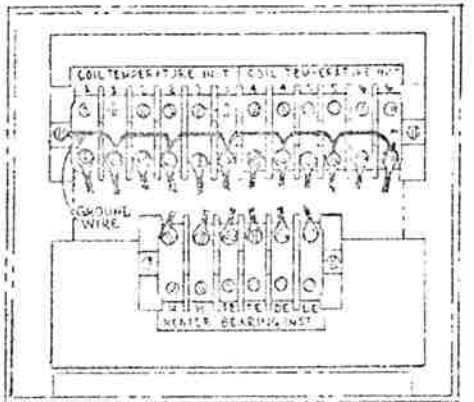


013 (9) THERMOCOUPLES HEATERS (2) BEARING DEVICES

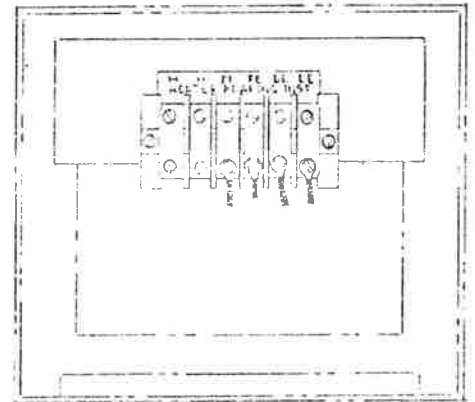


016 (3) THERMISTORS

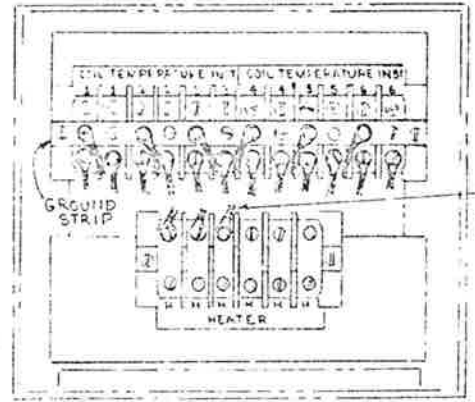
B



011 (6) THERMOCOUPLES HEATERS (1) BEARING DEVICES



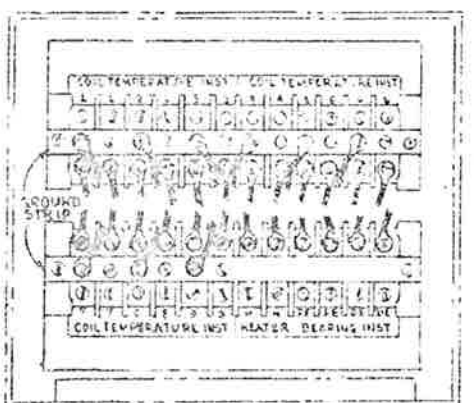
014 (2) BEARING DEVICES



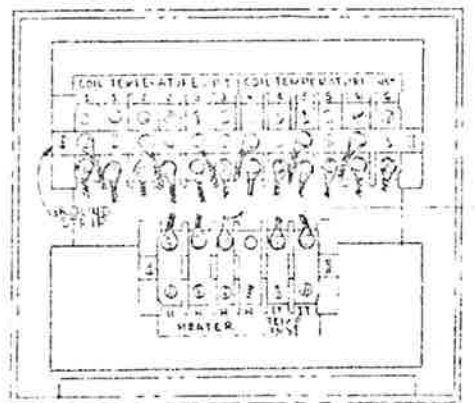
017 (6) RES. TEMP DETECTORS 4 HEATERS

C

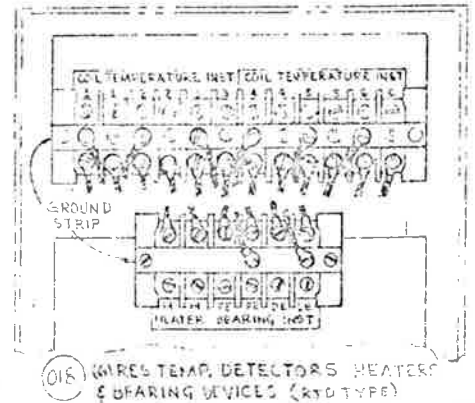
D



012 (5) RES. TEMP DETECTORS HEATERS (1) BEARING DEVICES



015 (5) RES. TEMP DETECTORS HEATER (1) BEARING INST.



018 (4) RES. TEMP DETECTORS BEARING DEVICES (RTD TYPE)

E

MEMO OF DATA TRANSMITTAL
 APR 20 1976
 CUSTOMER: GENERAL ELECTRIC SUPPLY COMPANY

STATION OR PROJECT NO.	DATE	BY	REVISION
329-3003070			632-91070

FOR APPROVAL FOR INSTALLATION FOR REFERENCE

APPROVAL REQUIRED: _____

REASON FOR THIS APPROVAL: _____

- ITEM 2: 348109390-002 OUTLINE
- 348109390-003 GROUNDED PAD
- 348101552-001 ACC. OUTLINE
- 348109390-004 SOLDER PLATE
- 025-1000 FIG. 3 HEATER CONNECTION
- 348109390-017 HEATER WIND. + RTD CONN.

MAIL (1) CERT. REPROD. & (14) PRINTS - ALL PRINTS MUST BE 22 X 34" LONG MIN.

MR. STAN LAYNE
 ADSD
 DENVER, COLORADO OFFICE

1 - R. W. HOOPS, LASE, DENVER OFFICE (MARK FSK)

NOTE: TEMP RISE - 90°C BY ACC @ 230/28 IN @ 11,000 FT.

MOTOR RATED TO START AND ACCELERATE TO FULL LOAD SPEED, A FAC WITH IN @ 121,300 LB. FT.² AND DAMPERS IN OPEN POSITION THRU A SHEAVE RATIO OF 3.46.

THESE PRINTS SUPERSEDE PRINTS PREVIOUSLY MAILED.

- MOTOR MODEL - 5KR11054031
- MT. SERIAL -
- APPLICATION -
- ENCLOSURE - WEATHER PROTECTED
- TYPE II
- BEARINGS - ANTI FRICTION
- LUBRICATION - GREASE (SUITABLE FOR
- CODE - C (MINUS 35°F)
- TYPE - K
- FRAME - 8110S
- HOLES - 6/12
- N.F. - 200/25
- SYN. SPEED - 1200/600
- PHASES - 3
- CYCLES - 60
- VOLTS - 2300
- SWGT EQUIV. - 16-2
- SEC. VOLTS -
- SEC. AMPS -
- SEC. CONSN -
- ISOL. (CLASS) - F - CUSTOM POLYSEAL
- TEMP. RISE - 90°C BY RTD @ 230/28 IN
- ROT. (O.P.E.) - DUAL
- F.L. SPEED - 1100/565
- F.L. AMPS - 47/14
- AIR CAP - .045
- END FLAT - WIRE
- NET WEIGHT - 3520 LBS. APPROX.
- MOTOR TERM -
- LENS TERM -
- HEATER WATTS - 500
- HEATER VOLTS - 115
- INST. LOCK - 329-3170
- OUTLINE - 348109390-002
- NOT ON CONN. - 025-1000 FIG. 3
- HEATER CONN. - 348109390-017
- SOLDER PLATE - 348109390-004
- ACC. OUTLINE - 348101552-001
- GROUNDED PAD - 348109390-003

Copy of N/S to:

RECOMMENDED ACQUISITION SERVICE

By: _____

1A-22(A) (9/64)

Checked: Howard Elect. & Mech. Co. Proj. Mgr.

200/25 27

5/26/76

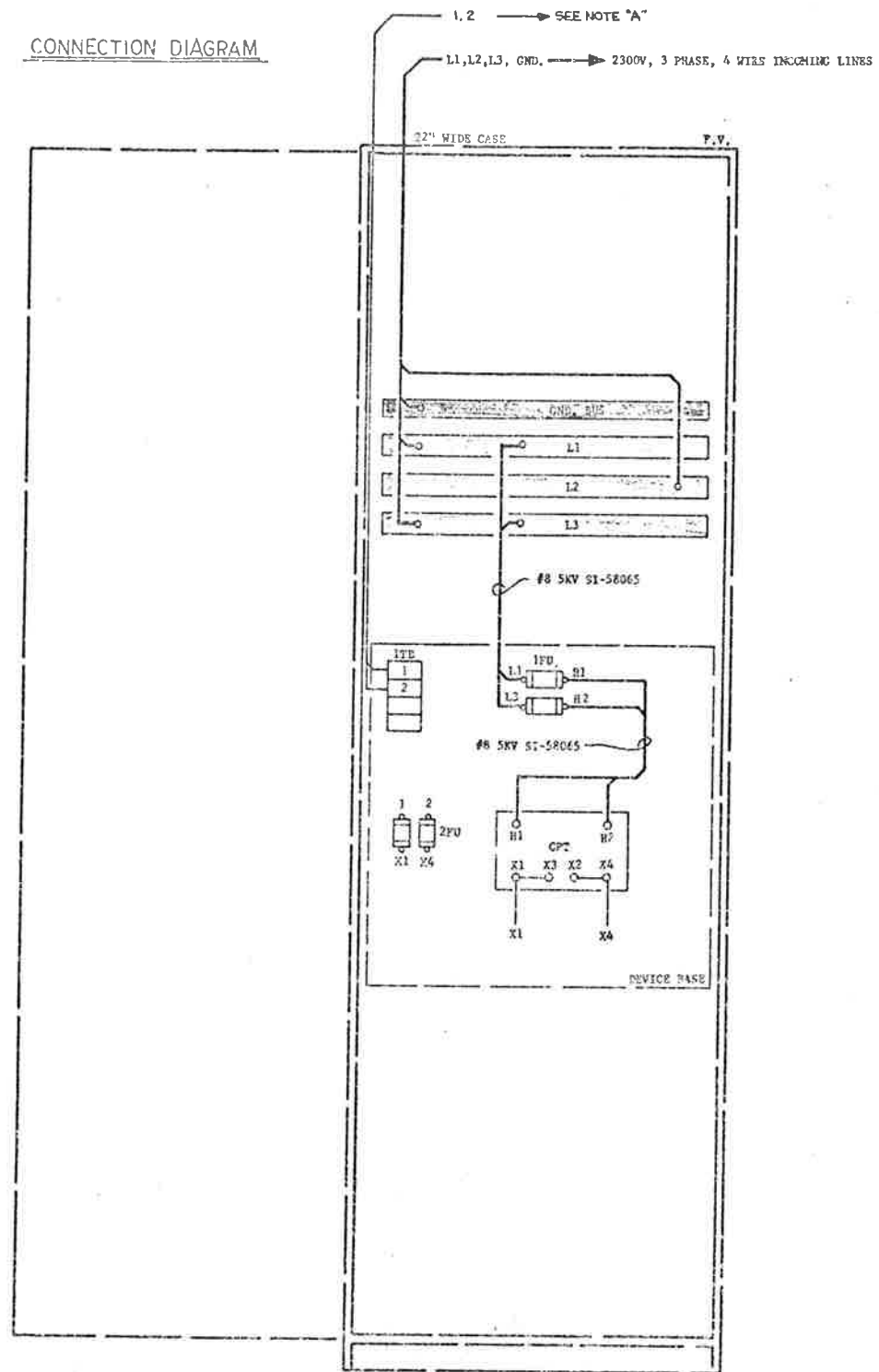
1A-22(A) (9/64)

6 - 2/PHASE - 10 OHM HEATER RTD'S - COPPER RTD'S & SPACE HEATER LEADS TERMINATE IN SAME ACC. BOX

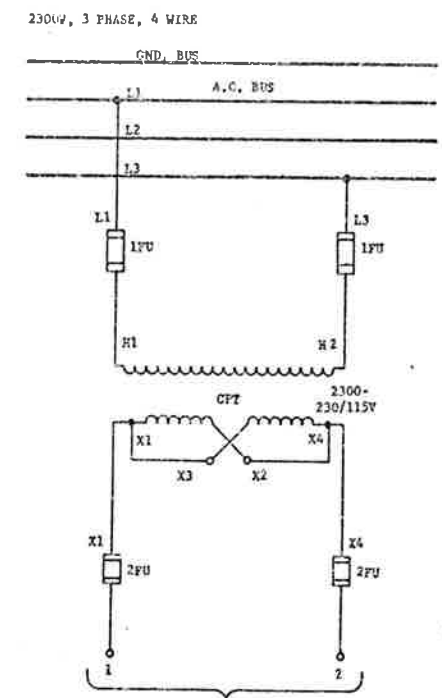
FINAL



CONNECTION DIAGRAM



ELEMENTARY DIAGRAM



NOTE "A" FOR LINRUP E-1A & W-1A TO LOCAL CONTROL BOARD EXHAUST FAN CONTROL
FOR LINRUP E-1B & W-1B TO LOCAL CONTROL BOARD SUPPLY FAN CONTROL

WIRE TABLE

WIRE NO.	LOCATION	WIRE SIZE & CLASS
X1	CPT: 2FU	
X4	CPT: 2FU	
1	1FB: 2FU	
2	1FB: 2FU	

PART NO.	DESCRIPTION	CPT SIZE & RATING	1FU FUSE	2FU	TERMINALS
1	INC. LINE CONDT. E-1A	1KVA 2300-230/115V	SIZE A2E SF60A8002	20 AMP	LIMITAMP TO RIGHT
2	INC. LINE CONDT. W-1B	1KVA 2300-230/115V	SIZE A2E SF60A8002	20 AMP	LIMITAMP TO RIGHT
3	INC. LINE CONDT. W-1E	1KVA 2300-230/115V	SIZE A2E SF60A8002	20 AMP	LIMITAMP TO LEFT
4	INC. LINE CONDT. W-1B	1KVA 2300-230/115V	SIZE A2E SF60A8002	20 AMP	LIMITAMP TO LEFT

ABBREVIATIONS
 FU----- FUSE
 CPT----- CONTROL POWER TRANSFORMER
 TB----- TERMINAL BOARD

Check the accuracy of the information given in this connection diagram with the actual wiring in the field. If any discrepancy is noted, it should be reported immediately to the project engineer. All work should be done in accordance with the applicable code books and standards. The architect's selection of Shop Details or General Notes shall prevail over the details shown in this diagram. The contractor shall be responsible for the correct installation of all equipment shown herein. The contractor shall be responsible for the correct installation of all equipment shown herein. The contractor shall be responsible for the correct installation of all equipment shown herein.

STEARNIS-ROGER ENGINEERS, LTD.
 301 E. 7th St. - 6th Floor
 ST. LOUIS, MO.

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 Howard Elect. & Mech. Co.
 Proj. Mgr.

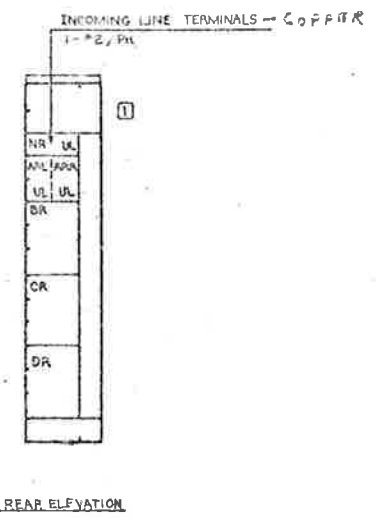
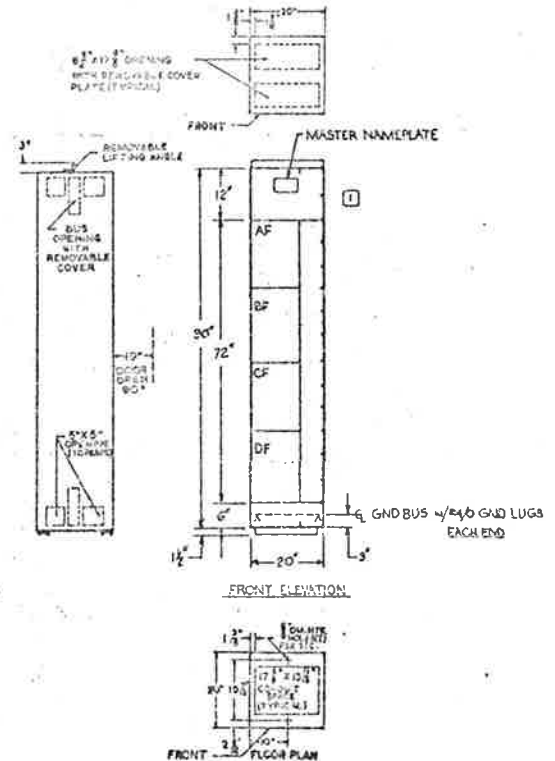
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 D.O.N.

7-143
 7-304

FINAL

7700 LINE MOTOR CONTROL CENTER

PROJECT NO.	170-3(122)	104	208
LOCATION	COLORADO		



SPECIFICATIONS

FINISH - LIGHT GRAY (ASA-R)

NEMA CLASSIFICATION: CLASS 1 TYPE B WIRING, NEMA LOCKED BACK-TO-BACK ENCLOSURE.

MOTOR CONTROL CENTER TO BE 30 INCHES DEEP.

UNIT IDENTIFICATION ENGRAVED NAMEPLATES

POWER SUPPLY: 3 PHASE 3 WIRE 480 VOLT 60 HZ

CONTROL: (UNLESS OTHERWISE NOTED)

SOURCE TRANSFORMER OPT 120 VOLT 60 HZ

HORIZONTAL MAIN BUS RATED 600 AMPS, MAXIMUM

600 VOLTS AND BRACED FOR 22,000 AMPS, RMS SYM.

VERTICAL BUS RATED 300 AMPS, IN SECTION 1F, 1R

VERTICAL BUS RATED 450 AMPS, IN SECTION

VERTICAL BUS RATED 600 AMPS, IN SECTION

600V MAX AND BRACED FOR 22,000 AMPS, RMS SYMMETRICAL

LOWEST UNIT RATING 14,000 AMPS, RMS SYMMETRICAL

GROUND BUS TO BE 1 1/2 X 2" COPPER

NEUTRAL BUS TO BE X (NONE)

MAIN BUS TO BE () COPPER (X) ALUMINUM, WITH PLATED JOINTS (1)

VERT. BUS TO BE () COPPER (X) ALUMINUM, WITH PLATED JOINTS

THIS CONTROL CENTER CAN BE SAFELY APPLIED ON SYSTEMS HAVING A MAXIMUM AVAILABLE SHORT CIRCUIT CURRENT NOT IN EXCESS OF THAT AS SHOWN IN THE LOWEST UNIT RATING.

ONLY THREE WIRES CHECKED IN BLOCK APPLY

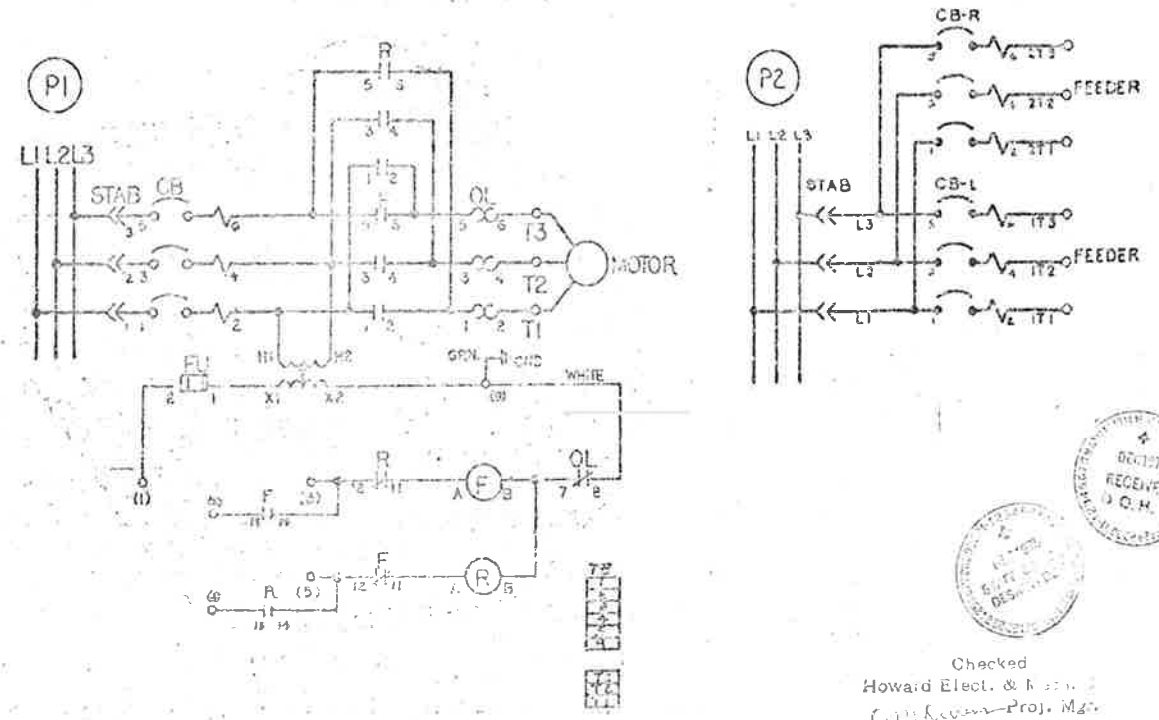
- CALIF. CODE APPLIES TO THIS MCC WITH THE EXCEPTION OF HINGED TERMINAL BOARDS. SEE DWG. 2984500
- CALIF. CODE APPLIES TO THIS MCC WITH HINGED TERMINAL BOARDS ON ALL DRAW-OUT UNITS AND BUSHMAN #312 REMOVABLE BLADE SWITCH BLOCKS ON DOCT-ON UNITS. SEE DWG. 2984500
- ALL STARTERS FURNISHED WITH AMP/INT-COMPENSATED OVERLOADS.
- UNIT NAMEPLATES SHALL BE ENGRAVED WITH 1/8" HIGH WHITE LETTERS ON BLACK BACKGROUND.
- INDIVIDUAL CONTROL POWER TRANSFORMER SIZE:
 - a) ALL SIZE 1 - 50VA
 - b) ALL SIZE 2 - 100VA
 - c) ALL SIZE 3 EXCEPT RWR & 2S-1W-200VA
 - d) ALL SIZE 4 EXCEPT RWR-250VA
 - e) SIZE 3 AND 4 RWR AND ALL SIZE 5-50VA PLUS AN INTERPOSING RELAY, CAT. # CR120E1025.
 - f) SIZE 3 2S-1W-250VA
- FUSIBLE DISCONNECTS SHALL HAVE FUSE CLIPS SIZED FOR:
 - MCC FUSES FURNISHED BY _____
 - CLASS J FUSES FURNISHED BY _____
 - DUAL ELEMENT FUSES FURNISHED BY _____
 - OTHER _____
- MCC SHALL BE PROVIDED WITH PROVISION FOR FUTURE EXTENSION ON:
 - LEFT END
 - RIGHT END
 - BOTH ENDS
- UNIT _____ FURNISHED WITH _____ KVA _____ 60 HZ TRANSFORMER WITH _____ VOLT PRI. AND _____ VOLT SECONDARY
- WHEN ACTUAL MOTOR DATA IS NOT RECEIVED BEFORE SHIPMENT OF THIS PANEL, OVERLOAD HEATERS WILL BE SUPPLIED FOR NOMINAL FULL LOAD CURRENT OF MOTOR AT 1800 RPM AND 40°C RISE. CUSTOMER ASSUMES RESPONSIBILITY FOR PROPER REPLACEMENT OF OVERLOAD RELAY HEATERS FOR THOSE UNITS WHICH DO NOT AGREE WITH ACTUAL MOTOR NAMEPLATE DATA.
- THOSE SECTIONS AND UNITS OF THIS MCC THAT ARE SUFFICED WITH THE SYMBOL U.L. ARE LISTED BY UNDERWRITERS LABORATORIES, INC. AND WILL BEAR A U.L. LABEL. ALL OTHER SECTIONS AND UNITS WILL BE MANUFACTURED TO CONFORM AS CLOSELY AS PRACTICABLE TO U.L. STANDARDS BUT WILL NOT BEAR A U.L. LABEL.

- ADDITIONAL NOTES**
- (1) - MASTER NAMEPLATES SHALL BE 5" X 5" ENGRAVED WITH 3/32" HIGH WHITE LETTERS ON BLACK BACKGROUND, ENGRAVED AS FOLLOWS:
- MCC-1 1 EAST VENT. BLDG
180V MOTOR CONTROL CENTER No. 5
SOUTH TUNNEL
- MCC-2 1 WEST VENT. BLDG.
180V MOTOR CONTROL CENTER No. 5
SOUTH TUNNEL
- (2) - THIS DRAWING REPRESENTS TWO IDENTICAL MOTOR CONTROL CENTERS EXCEPT FOR UNIT & MASTER NAME PLATES. UNIT NAMEPLATE MARKINGS SHOWN ARE FOR MCC-1; FOR MCC-2, SUBSTITUTE "W" FOR "E" IN FAN DESIGNATION NAMEPLATES: "W3-5", "WE-5", ETC.
- (3) - SWITCH HANDLES SHALL BE LOCKABLE IN THE "ON" OR "OFF" POSITION



UNIT NO.	UNIT FUNCTION	SIZE	VOLT	HP	MOTOR FLA	CIRC. BREAK OR FUS. OVER TRIP (A)	HEATER OR 125-	PUSH BUTTON	SELECTOR POSITION	PILOT LIGHT	TOTAL INFLX.	CONNECTION DIAGRAM SYMBOL NO.	NAMEPLATE MARKING			U.L. CODE
													1ST LINE	2ND LINE	3RD LINE	
AF	DRY CONTACT	1	115	2.3	15	1000A					1	P1	DRY CONTACT	DRY CONTACT		A
BF	DRY CONTACT	1	115	2.3	15	1000A					1	P1	DRY CONTACT	DRY CONTACT		A
CF	DRY CONTACT	1	115	2.3	15	1000A					1	P1	DRY CONTACT	DRY CONTACT		A
DF	DRY CONTACT	1	115	2.3	15	1000A					1	P1	DRY CONTACT	DRY CONTACT		A
CR	DRY CONTACT	1	115	2.3	15	1000A					1	P1	DRY CONTACT	DRY CONTACT		A
DR	DRY CONTACT	1	115	2.3	15	1000A					1	P1	DRY CONTACT	DRY CONTACT		A

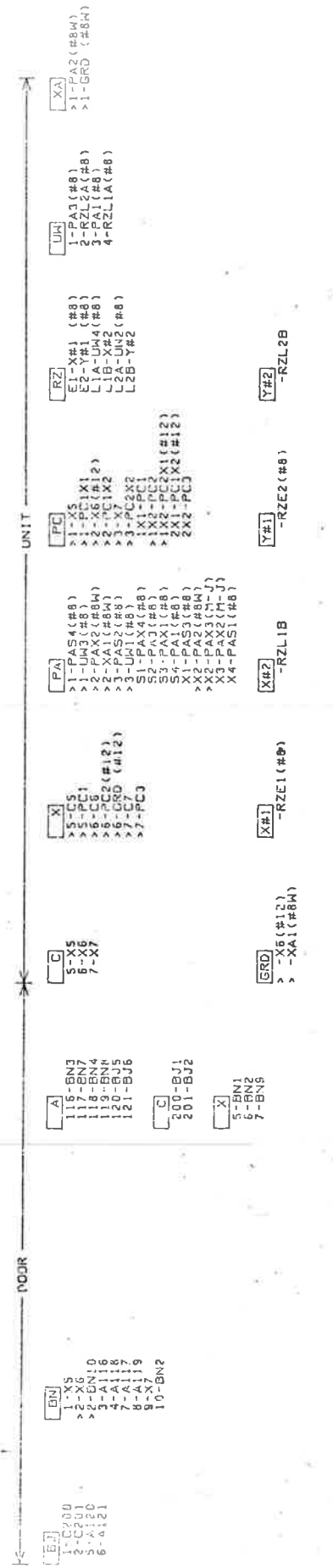
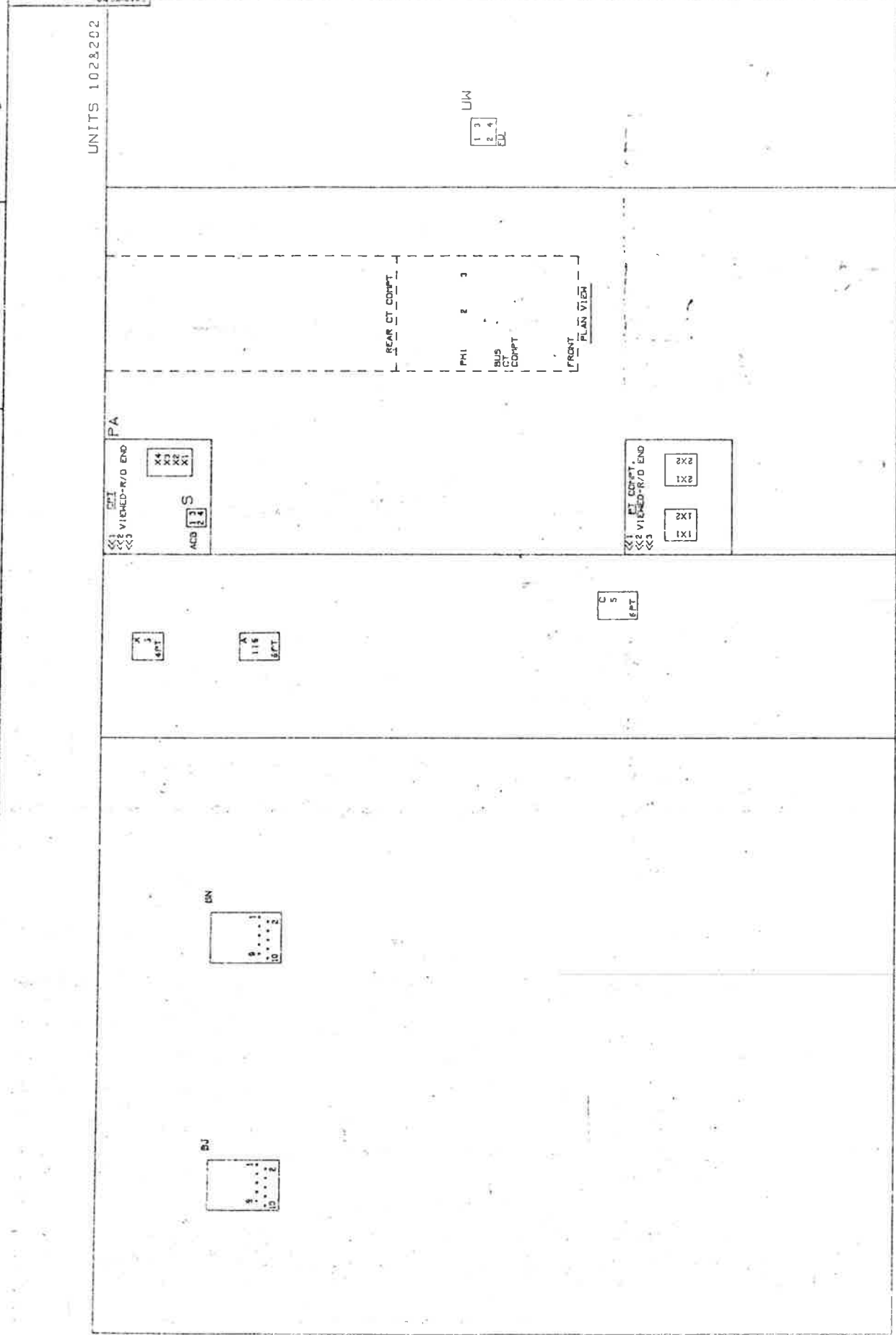
MFG CODE
U - SEE NOTES 1 & 2



Checked
Howard Elect. & Mfg.
Howard Elect. & Mfg. Co.

HOWARD ELECTRIC / GESCO	PROJECT NO. 170-3(122)	DATE 12/9/75	BY R. DEWITT
REV. 1	REV. 2	REV. 3	REV. 4
REV. 5	REV. 6	REV. 7	REV. 8
REV. 9	REV. 10	REV. 11	REV. 12
REV. 13	REV. 14	REV. 15	REV. 16
REV. 17	REV. 18	REV. 19	REV. 20
REV. 21	REV. 22	REV. 23	REV. 24
REV. 25	REV. 26	REV. 27	REV. 28
REV. 29	REV. 30	REV. 31	REV. 32
REV. 33	REV. 34	REV. 35	REV. 36
REV. 37	REV. 38	REV. 39	REV. 40
REV. 41	REV. 42	REV. 43	REV. 44
REV. 45	REV. 46	REV. 47	REV. 48
REV. 49	REV. 50	REV. 51	REV. 52
REV. 53	REV. 54	REV. 55	REV. 56
REV. 57	REV. 58	REV. 59	REV. 60
REV. 61	REV. 62	REV. 63	REV. 64
REV. 65	REV. 66	REV. 67	REV. 68
REV. 69	REV. 70	REV. 71	REV. 72
REV. 73	REV. 74	REV. 75	REV. 76
REV. 77	REV. 78	REV. 79	REV. 80
REV. 81	REV. 82	REV. 83	REV. 84
REV. 85	REV. 86	REV. 87	REV. 88
REV. 89	REV. 90	REV. 91	REV. 92
REV. 93	REV. 94	REV. 95	REV. 96
REV. 97	REV. 98	REV. 99	REV. 100

REF. NO. OF SHEET	DIVISION	EXT. DIST. NO.	NO. OF SHEETS	TOTAL SHEETS
	CONT. ON SHEET 3	120-21-020	106	208



1. THIS DRAWING SHOWS ELECTRICAL CONNECTIONS ON THE UNIT LOCATION. IT APPLIES TO THE UNIT IN THE DRAWING. 2. THIS DRAWING DOES NOT SHOW ELECTRICAL CONNECTIONS OF WIRING AND/OR TO THE POWER SOURCE. 3. INTERNAL ELECTRICAL CONNECTIONS ARE NOT SHOWN. 4. WIRING CONNECTIONS TO THE UNIT ARE SHOWN WITH THE APPROPRIATE SYMBOLS. 5. WIRING CONNECTIONS TO THE UNIT ARE SHOWN WITH THE APPROPRIATE SYMBOLS. 6. WIRING CONNECTIONS TO THE UNIT ARE SHOWN WITH THE APPROPRIATE SYMBOLS. 7. WIRING CONNECTIONS TO THE UNIT ARE SHOWN WITH THE APPROPRIATE SYMBOLS.

STEARNS-ROEDER ARCHITECTS, LTD.
 7-18-27
 of. CPJ



Approved
 Howard Elect. & Mech. Co.
 Proj. No.

ITEM	0136D1245
FRONT VIEW	0136D1245
SHEET NO.	0136D1245
CHECKED BY	HOWARD ELECT. & MECH. CO.
DATE	7-18-27
APPROVALS	
SYMBOLS DEPARTMENT	0136D1245

UNITS 1038203

A

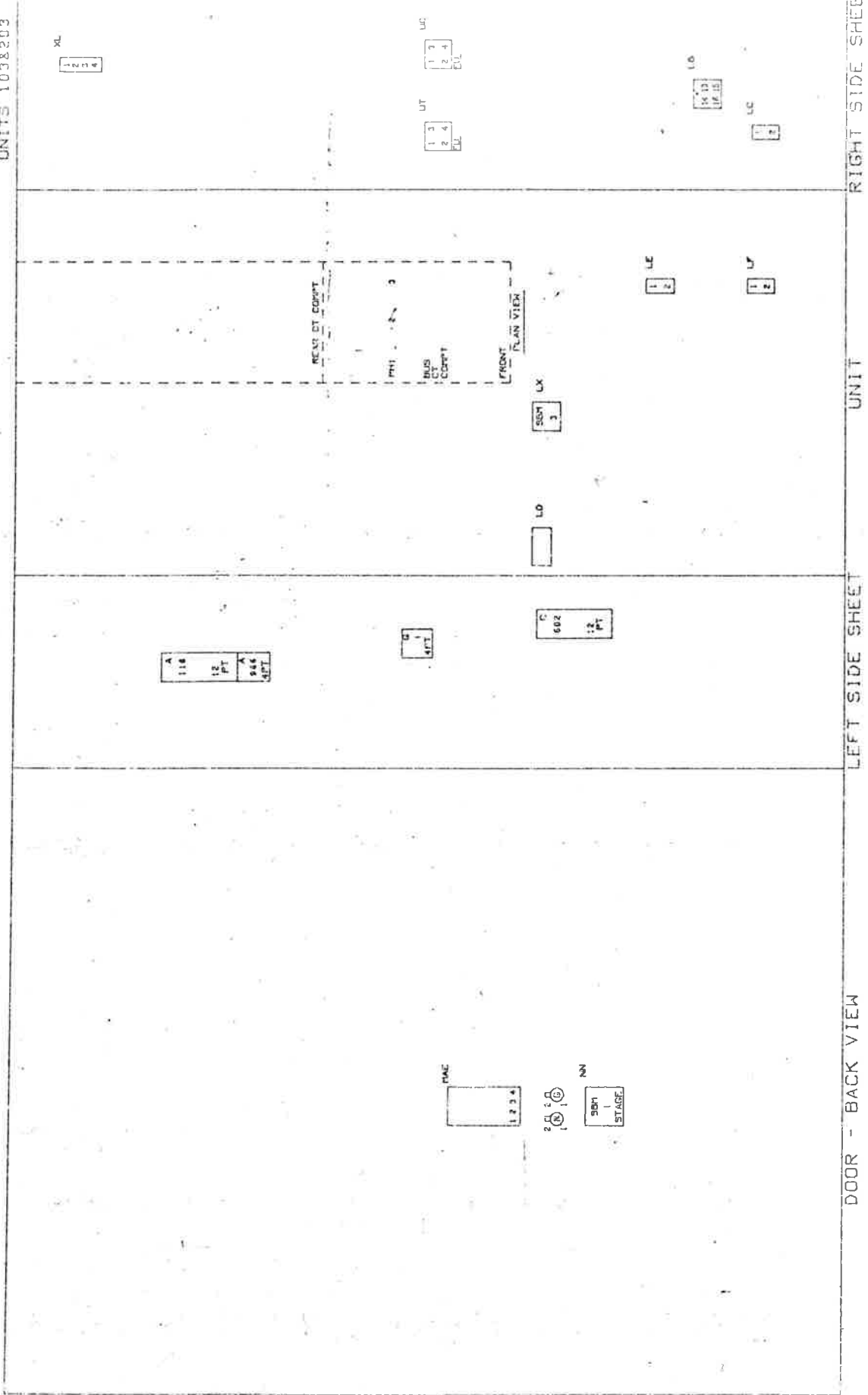
B

C

D

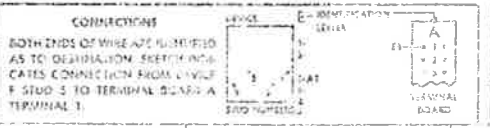
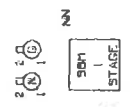
E

1/2" = 1'-0"



- UNIT
- 1-UC4
 - 2-UC1
 - 3-UC10
 - 4-UC20
 - 5-UC30
 - 6-UC20
 - 7-UC20
 - 8-UC2
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 - 100-UC65

114
12 PT
144
144



1. THIS DRAWING SHOWS ELECTRICAL CONNECTIONS ONLY. THE EXACT LOCATION OF THE DEVICES SHOULD BE DETERMINED FROM THE FIELD.

2. ALL DEVICES SHOULD BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

3. ALL DEVICES SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC).

4. ALL DEVICES SHOULD BE INSTALLED IN ACCORDANCE WITH THE LOCAL ELECTRICAL CODES.

THIS DRAWING IS THE PROPERTY OF SHEAR & AMUNDSON ARCHITECTS, LTD. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF SHEAR & AMUNDSON ARCHITECTS, LTD.

DATE: 7-17-08

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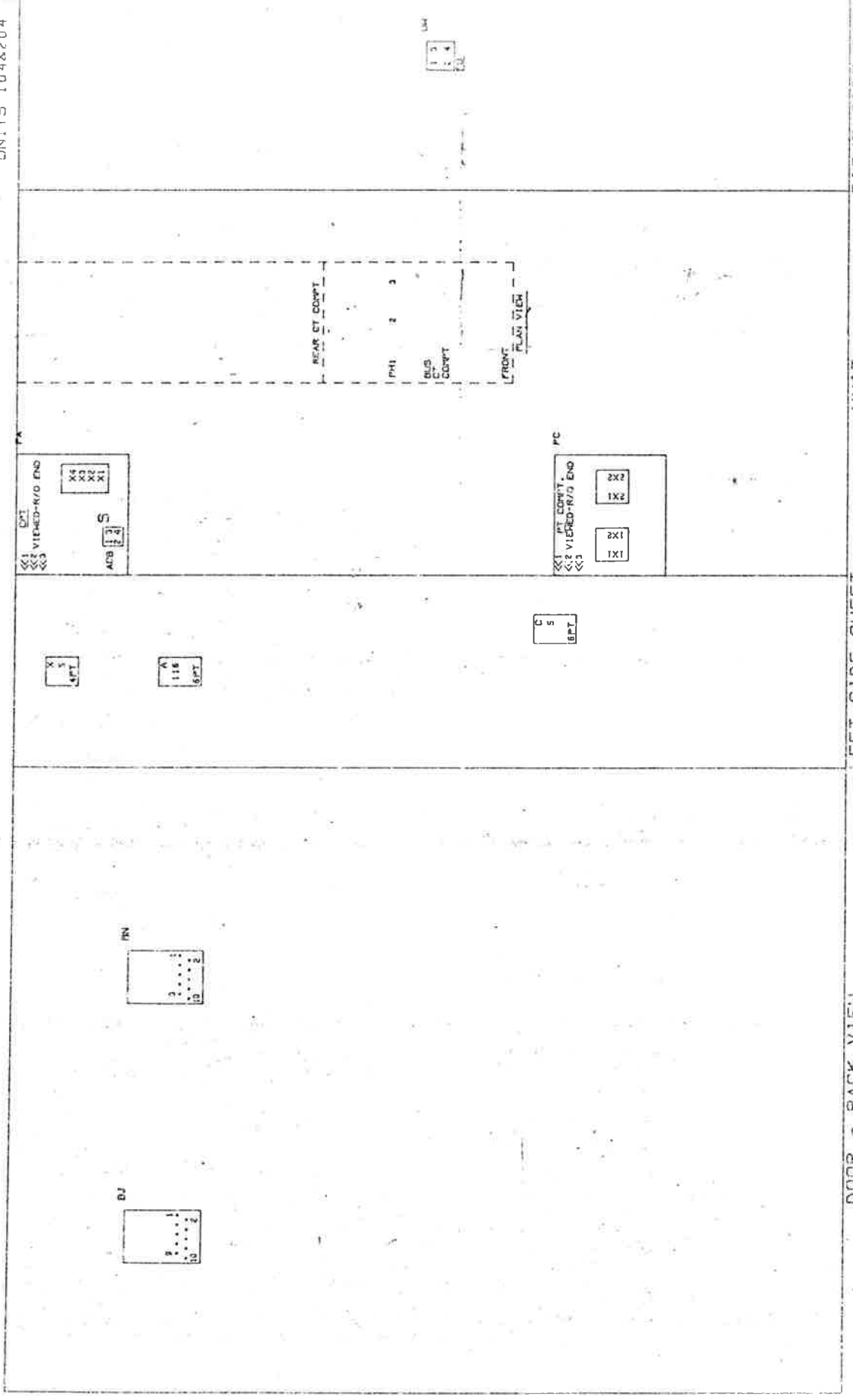


Approved
 Howard Elect. & M...
 Prof. Eng.

PROJECT NO.	170-81 2008
SHEET NO.	107
DATE	9/4/2008
DESIGNED BY	J. J. ...
CHECKED BY	J. J. ...
DATE	9/4/2008
PROJECT NO.	170-81 2008
SHEET NO.	107
DATE	9/4/2008
DESIGNED BY	J. J. ...
CHECKED BY	J. J. ...
DATE	9/4/2008

REVISED BY	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLOMBO	170-31 1220	108	209

UNITS 104&204



RIGHT SIDE SHEET

UNIT

LEFT SIDE SHEET

DOOR - BACK VIEW

- BU 1-BU1
- BU 2-BU2
- BU 3-BU3
- BU 4-BU4
- BU 5-BU5
- BU 6-BU6
- BU 7-BU7
- BU 8-BU8
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- BU

REV.	DATE	BY	CHKD.	REASON

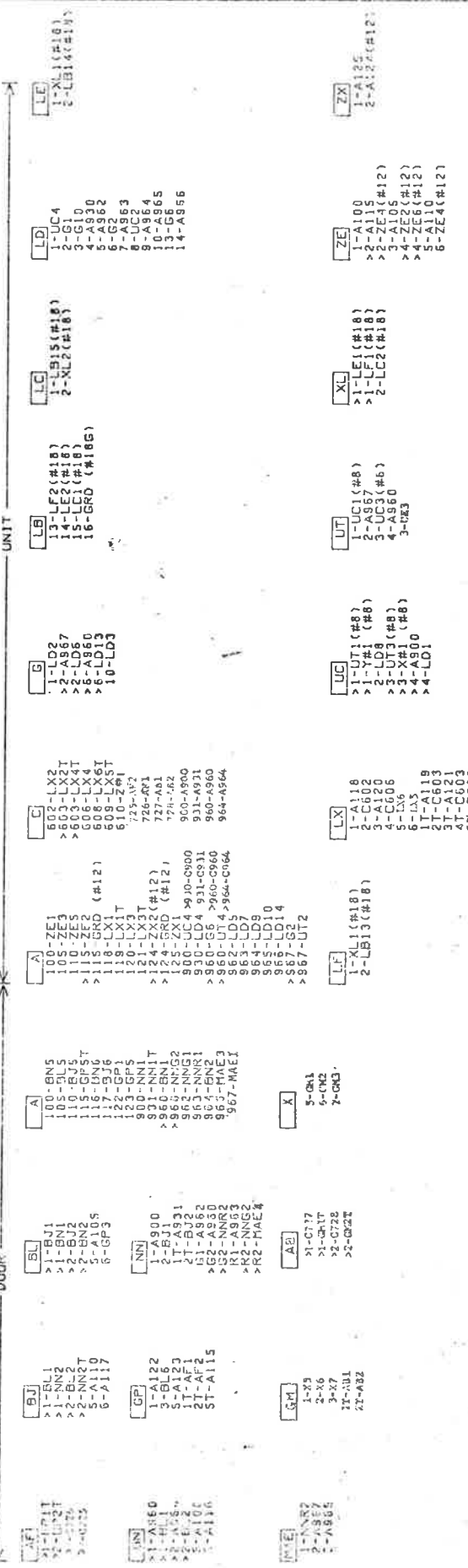
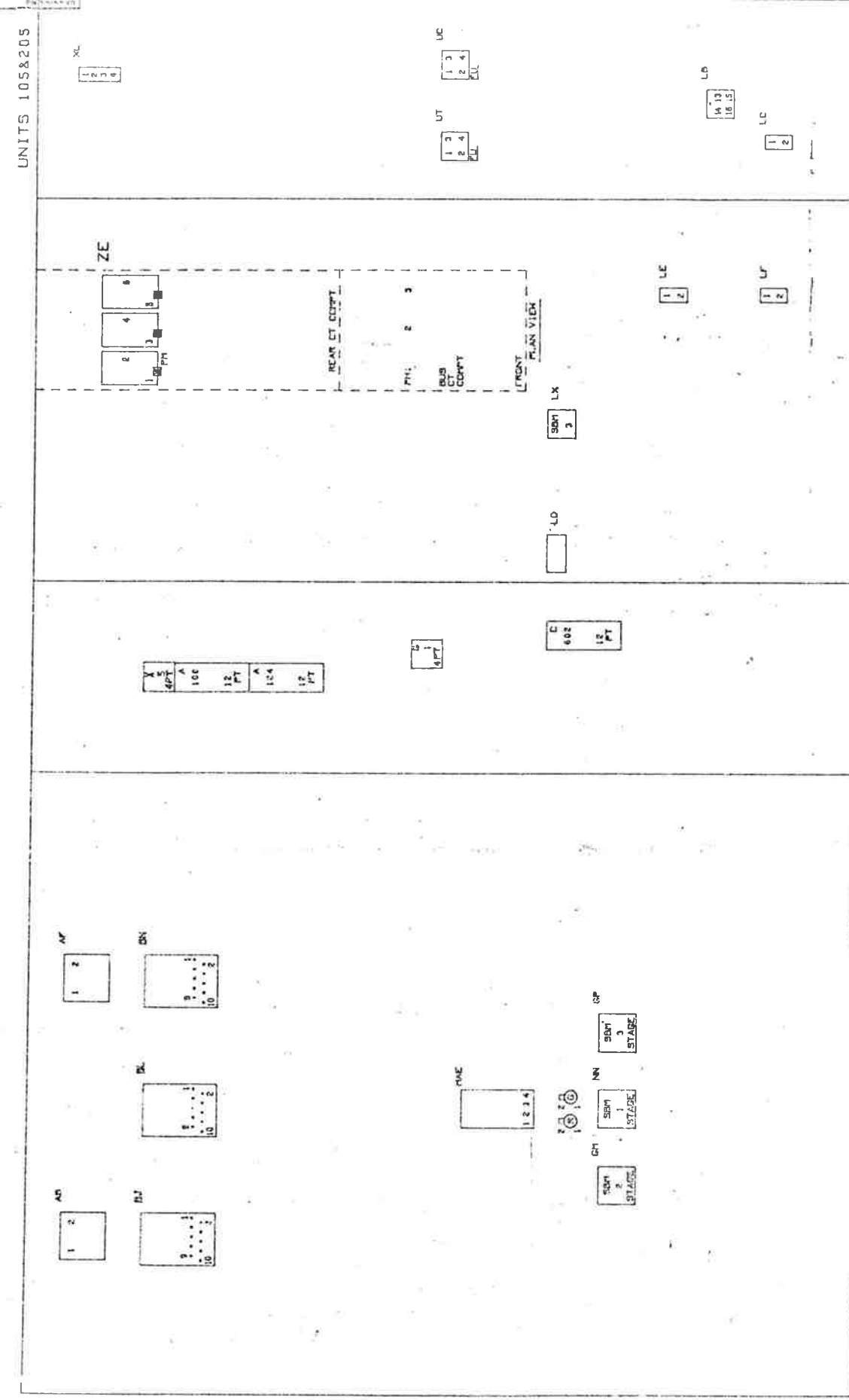
UNITS 105&205

RIGHT SIDE SHEET

UNIT

LEFT SIDE SHEET

DOOR - BACK VIEW



Check for errors by comparing with the design outline of this drawing and every other drawing in the project. Check for errors in the design outline and design of the drawing. Check for errors in the design of the drawing and design of the drawing. Check for errors in the design of the drawing and design of the drawing. Check for errors in the design of the drawing and design of the drawing.



JUN 23 1977

Approved
Howard Elect. & Mech. Co.
Prof. Mr.

- 1. THIS DRAWING SHOWS ELECTRICAL CONNECTIONS ONLY. THE EXACT LOCATION AND APPROPRIATE IDENTIFICATION OF THE EQUIPMENT IS TO BE DETERMINED BY THE ARCHITECT'S DRAWINGS.
- 2. NUMBERING CHECKS ARE AS FOLLOWS: 1. NUMBERING OF THE EQUIPMENT IS TO BE DETERMINED BY THE ARCHITECT'S DRAWINGS.
- 3. INTERNAL CONNECTIONS OF THE EQUIPMENT ARE INDICATED WITH THE STANDARD SYMBOLS.
- 4. DEVICE NUMBERS AND IDENTIFICATIONS ARE AS A STANDARD.

NO.	DESCRIPTION	DATE	BY	CHKD.
1				
2				
3				
4				

0136D1245

PROJECT NO.	UNIT NO.	TOTAL SHEETS
170-31 1020	110	208

UNIT 101 & UNIT 201

A

116-102A116
117-102A117
118-103A120
119-103A121
120-103A931
121-103D3
122-103A930
123-103D4
124-102A118
125-102A119
126-102A120
127-102A121
128-103A119
129-103A118

Y

5-102 & 202X5
6-102 & 202X6
7-102 & 202X7

UNIT 102 & UNIT 202

A

116-101A116
117-101A117
118-101A122
119-101A123
120-101A124
121-101A125

X

5-101 & 201X5
6-101 & 201X6
7-101 & 201X7

UNIT 103 & UNIT 203

A

118-101A931
119-101A930
120-101A118
121-101A119
122-101A121
123-101A120

UNIT 104 & UNIT 204

A

116-105A116
117-105A117
118-105A122
119-105A123
120-105A124
121-105A125

Y

5-105 & 205X5
6-105 & 205X6
7-105 & 205X7

UNIT 105 & UNIT 205

A

116-104A116
117-104A117
118-103D5
119-103D6
120-103D3
121-103D4
122-104A118
123-104A119
124-104A120
125-104A121
126-103D2
127-103D1

X

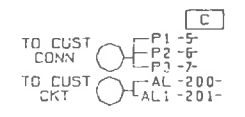
5-104 & 204X5
6-104 & 204X6
7-104 & 204X7

XL

1-103XL1
2-103XL2

Z#1

1-105Z#1 (#8)

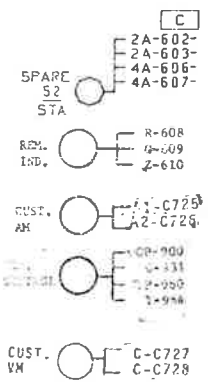


X#1

-105X#1 (#8)

Y#1

-105Y#1 (#8)



XA

1-103D9 (#8W)

X#2

-104&204X#2

Y#2

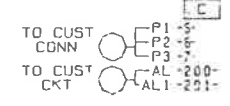
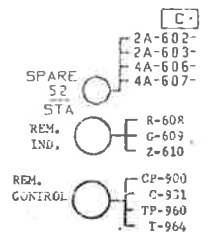
-104&204Y#2

D

1-105A931
2-105A930
3-101A120
4-105A120
5-101A121
6-105A121
7-105A118
8-105A119
9-102XA1 (#8W)

XL

1-101XL1
1-105XL1
2-101XL2
2-105XL2



XA

1-103D9

X#2

-102&202X#2

Y#2

-102&202Y#2

XL

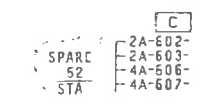
1-103XL1
2-103XL2

X#1

-101X#1 (#8)

Y#1

-101Y#1 (#8)



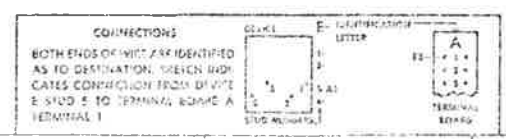
Check for safety by comparing with the original concept of this project and by reference to the code and data in the General Division & other data. It is the responsibility of the user to provide the correct and complete data for the project. The user must provide the correct and complete data for the project. The user must provide the correct and complete data for the project.

STEARN-ROGER ARCHITECTS, LTD.
Date 1-18-77 by DPW

FINAL

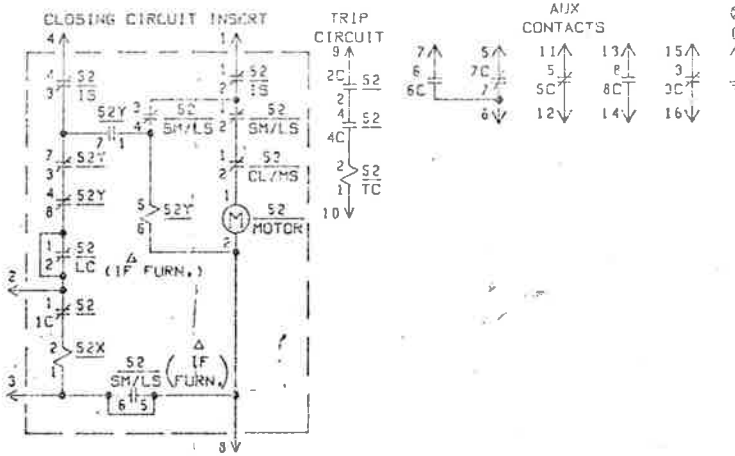
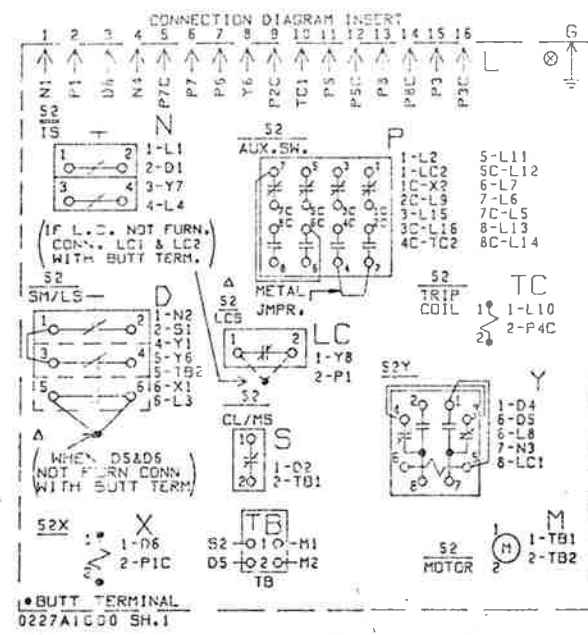
JUN 28 1977

Approved
Edward Elect. & Mech. Co.
Prin. Mgr.



- THIS DRAWING SHOWS ELECTRICAL CONNECTIONS ONLY. THE EXACT LOCATION OF APPARATUS SHOULD BE OBTAINED FROM THE JUMPED DRAWING AND THE WIRELY CONNECTIONS OF LEADS AND DO NOT NECESSARILY REPRESENT CONDUIT.
- INTERNAL CONNECTIONS OF DEVICES ARE INCLUDED WITH THE ELEMENTARY DIAGRAM.
- DEVICE FUNCTION NUMBERS AND ABBREVIATIONS ARE AS A STANDARD.

REV.	DESCRIPTION	DATE
1	ISSUED	01/18/77
2	REVISED	06/28/77
3	REVISED	06/28/77
4	REVISED	06/28/77
5	REVISED	06/28/77
6	REVISED	06/28/77
7	REVISED	06/28/77
8	REVISED	06/28/77
9	REVISED	06/28/77
10	REVISED	06/28/77

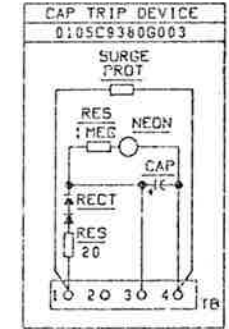
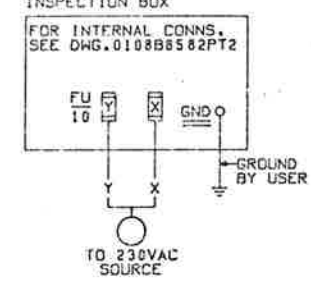


CONTACTS	POSITIONS
HANDLE END	NO. 1 2 3 4 5 6
1T	1 X
2T	2 X
3T	3 X
4T	4 X
5T	5 X
6T	6 X

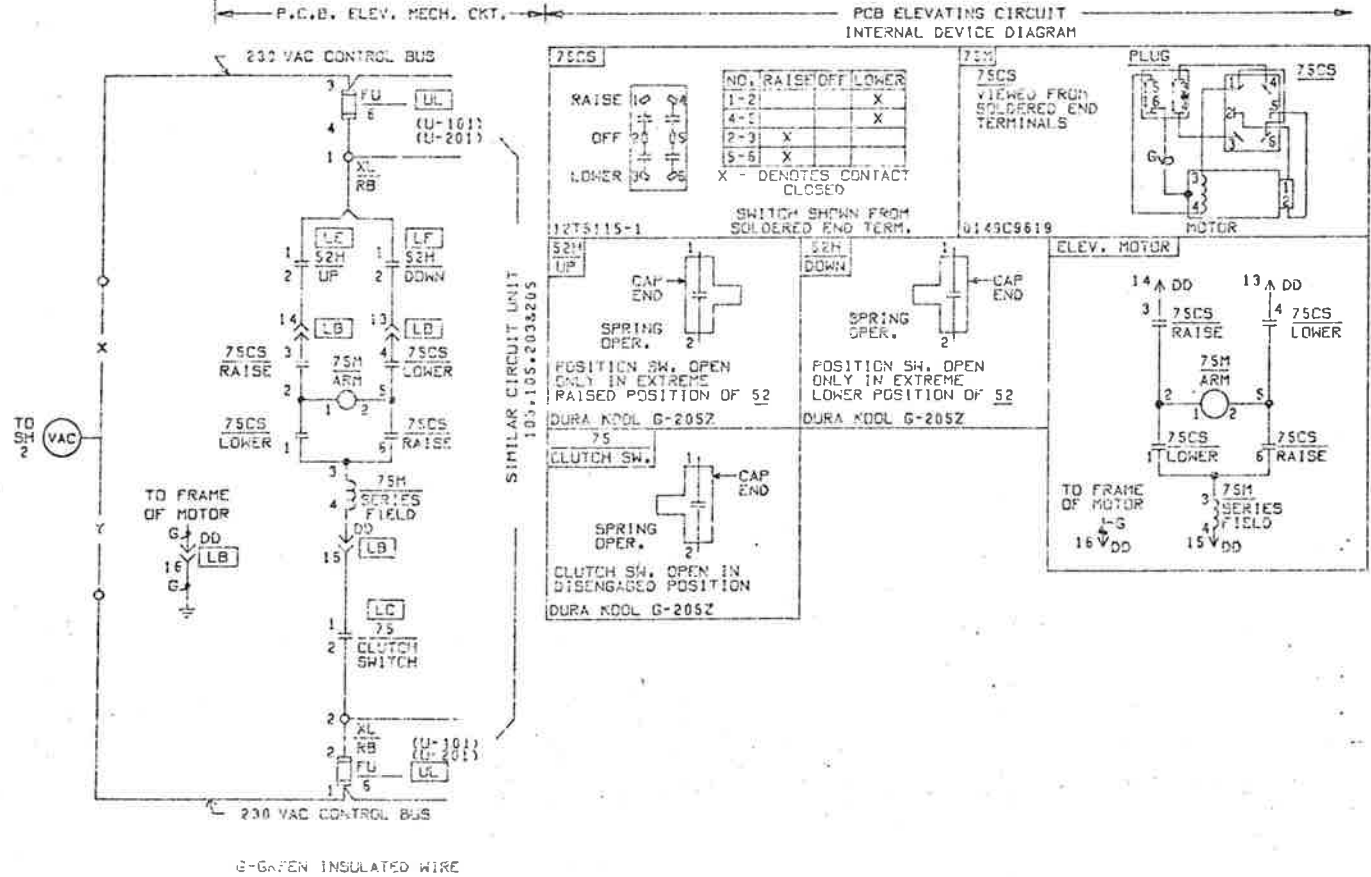
CONTACTS	POSITIONS
HANDLE END	NO. 1 2 3 4 5 6
1T	1 X
2T	2 X
3T	3 X
4T	4 X
5T	5 X
6T	6 X

CONTACTS	POSITIONS
HANDLE END	NO. 1 2 3 4 5 6
1T	1 X X X X X
2T	2 X X X X X
3T	3 X X X X X
4T	4 X X X X X
5T	5 X X X X X
6T	6 X X X X X

CONTACTS	POSITIONS
HANDLE END	NO. 1 2 3 4 5 6
1T	1 X X X X X
2T	2 X X X X X
3T	3 X X X X X
4T	4 X X X X X
5T	5 X X X X X
6T	6 X X X X X



- NOTES
- S2 CLOSING LATCH MONITORING SWITCH IS CLOSED WHEN LATCH IS CAPABLE OF BLOCKING FULLY CHARGED CLOSING SPRINGS.
 - S2:5 INTERLOCK SWITCH CLOSED WHEN S2 IS IN FULLY RAISED OR FULLY LOWERED POSITION.
 - S2 LIMIT SWITCH FOR SPRING CHARGING MOTOR - CONTACTS (1-2) (3-4) OPEN AND CONTACT (5-6) CLOSED WHEN SPRINGS ARE FULLY CHARGED.
 - S2X SPRING RELEASE COIL OPERATES LATCH WHICH RELEASES CLOSING SPRINGS TO CLOSE S2.
 - S2/LCS & 5-6 OF S2/SH/L5 NOT FURN. ON THIS RED.
 - GROUND PIN USED FOR INSPECTION BOX ONLY.



Over the years, our reputation for reliability and quality has grown. We are proud to be a part of the General Electric family. Our products are designed to meet the most demanding conditions. We are committed to providing the best service and support to our customers. We are a leader in the industry and we are proud to be a part of the General Electric family.

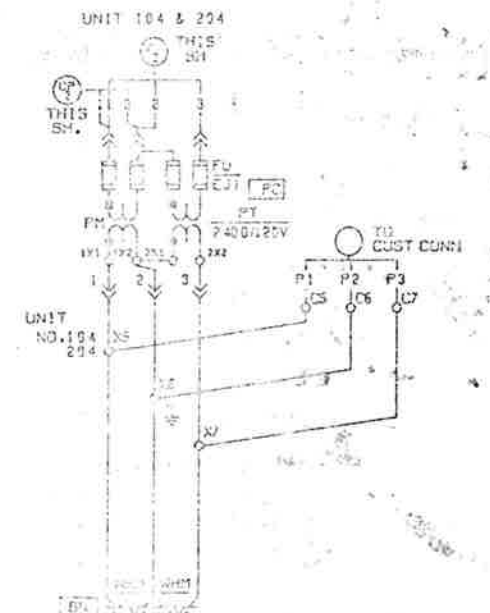
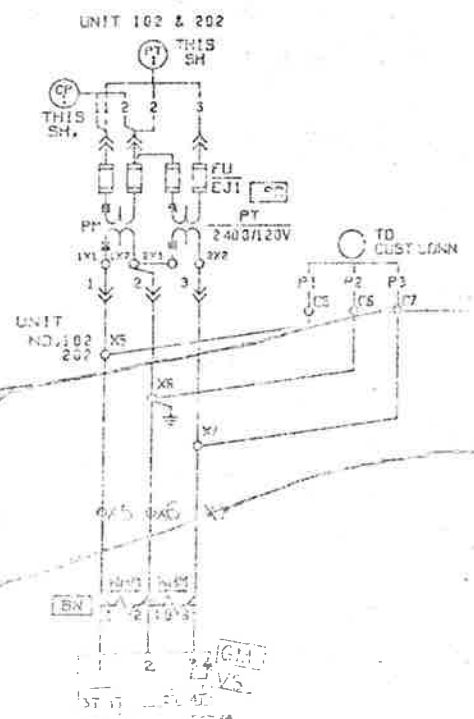
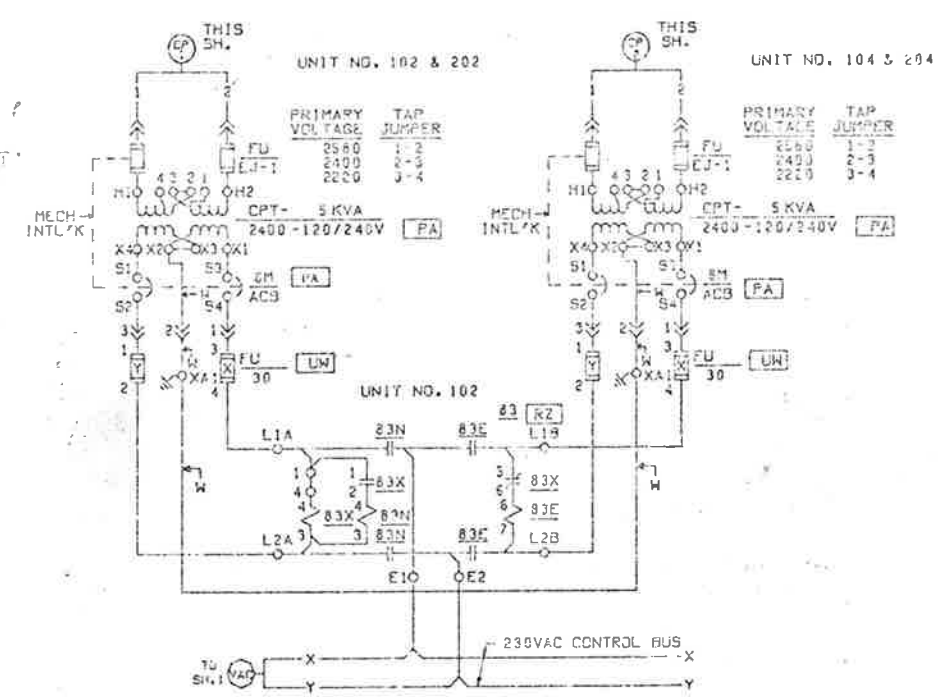
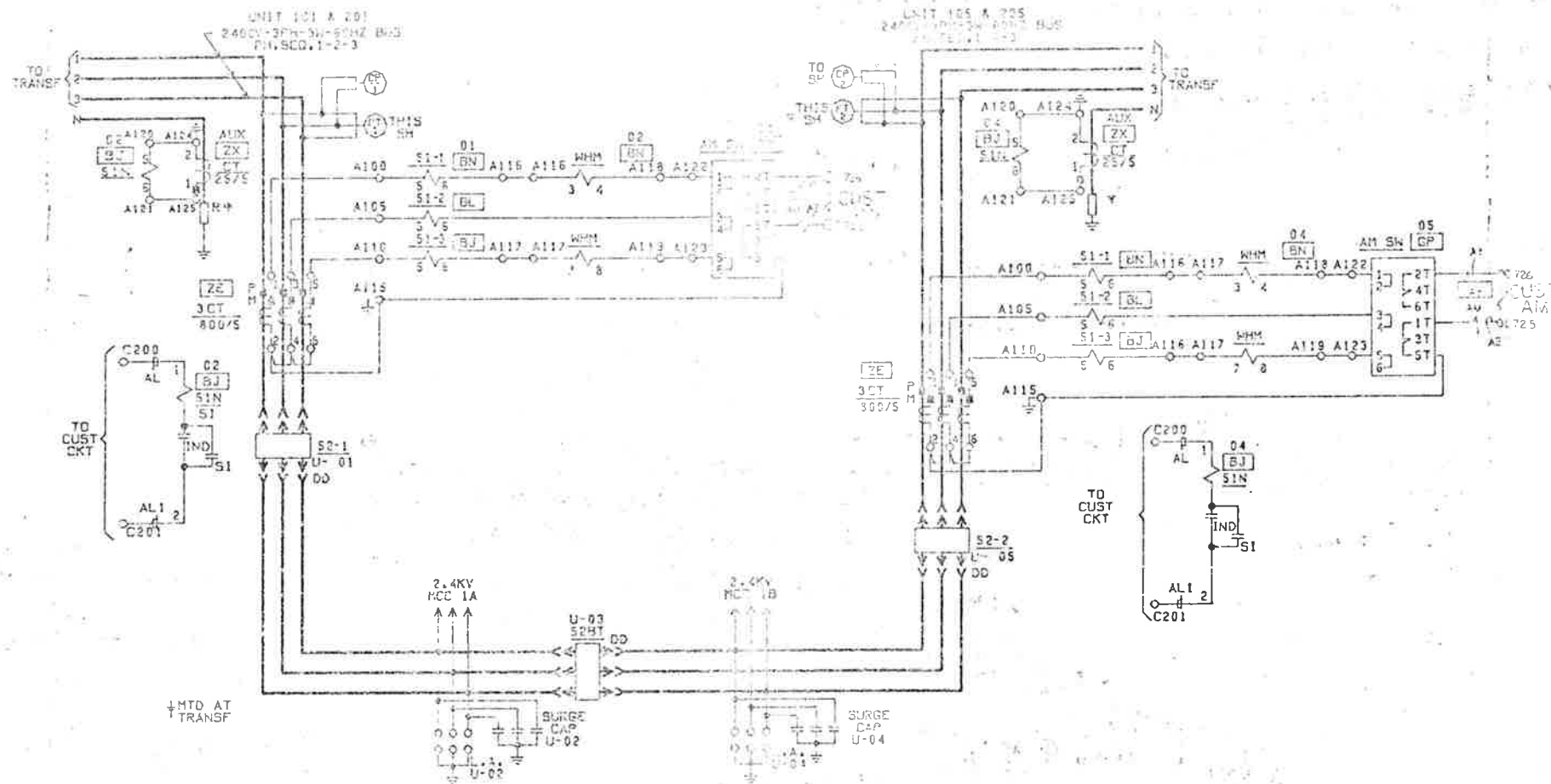


EISENHOWER TUNNEL
 PROJECT NUMBER 170-3(82)220
 STATE OF COLORADO
 TITLE SHEET
 HOWARD ELECT. & MATH.
 Proj. M2



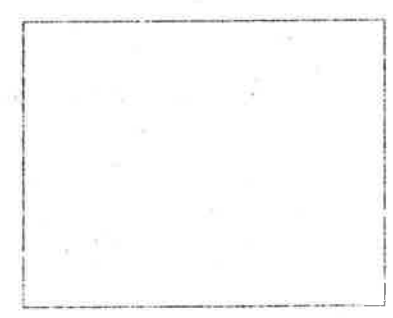
1. THIS DRAWING SHOWS THE CONNECTIONS ONLY. THE EXACT WIRING IS TO BE DETERMINED BY THE FIELD ENGINEER.
 2. WIRING SHOULD BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND ALL APPLICABLE LOCAL ORDINANCES.
 3. ALL WIRING SHOULD BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND ALL APPLICABLE LOCAL ORDINANCES.
 4. ALL WIRING SHOULD BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND ALL APPLICABLE LOCAL ORDINANCES.

DESIGNED BY	0136D1576
PROJECT NO.	170-3(82)220
CONTRACT NO.	0136D1576
DATE	1-10-77



THIS DRAWING IS THE PROPERTY OF THE STATE OF COLORADO AND IS LOANED TO YOU FOR YOUR INFORMATION ONLY. IT IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE STATE OF COLORADO. ANY REPRODUCTION OR COPIING OF THIS DRAWING WITHOUT THE WRITTEN PERMISSION OF THE STATE OF COLORADO IS STRICTLY PROHIBITED.

DATE: 7-16-67

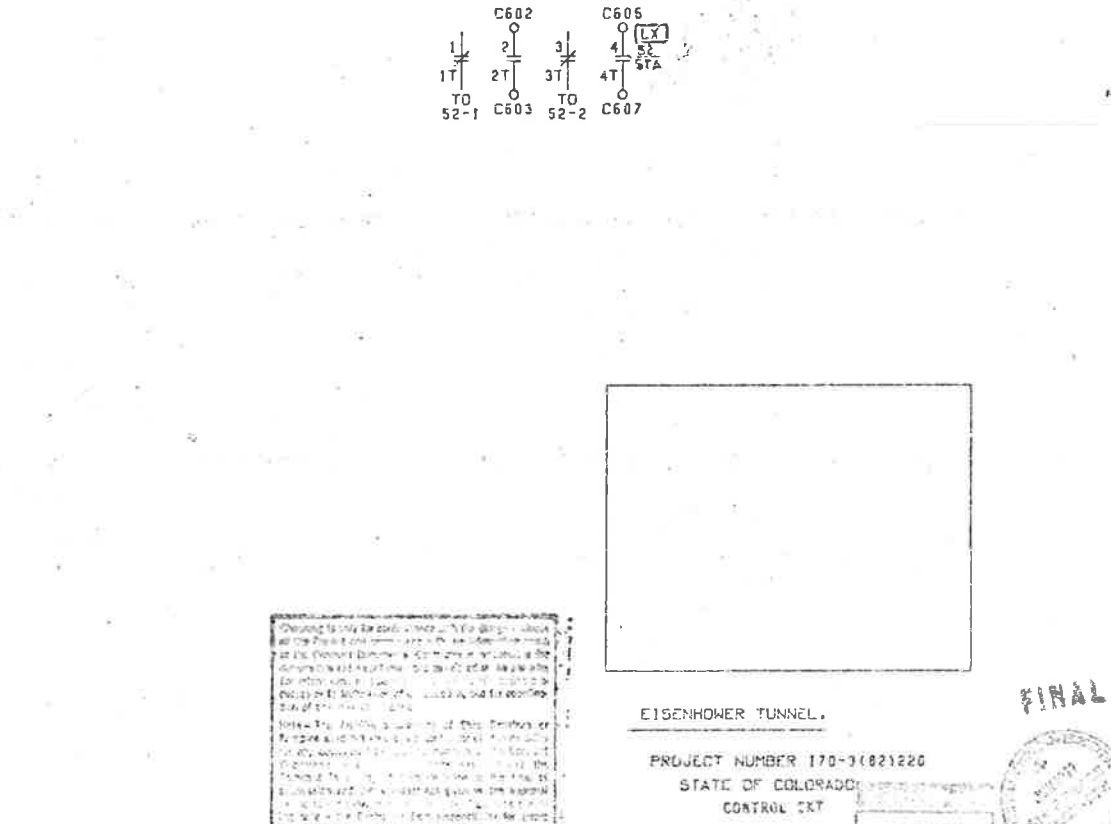
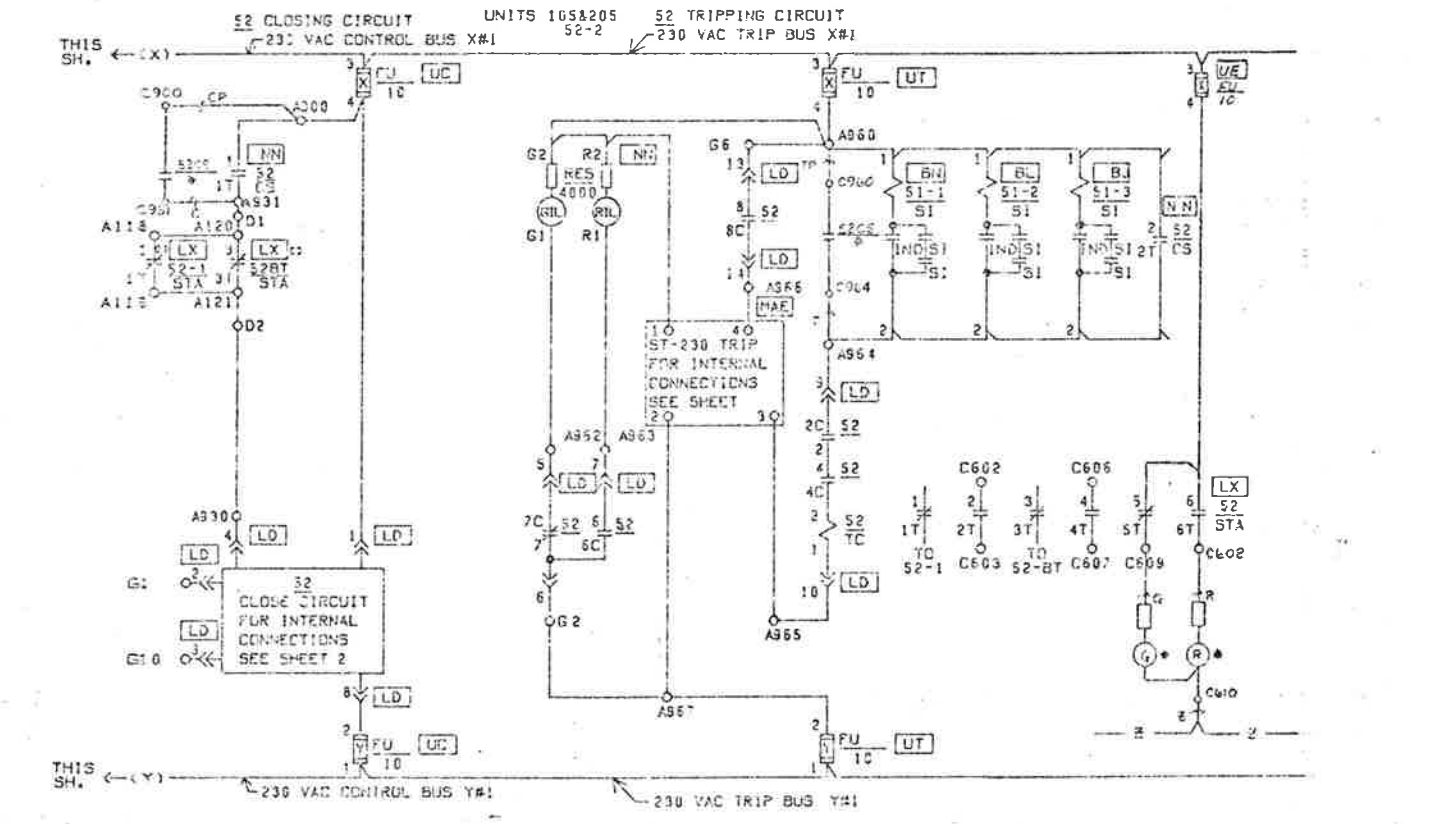
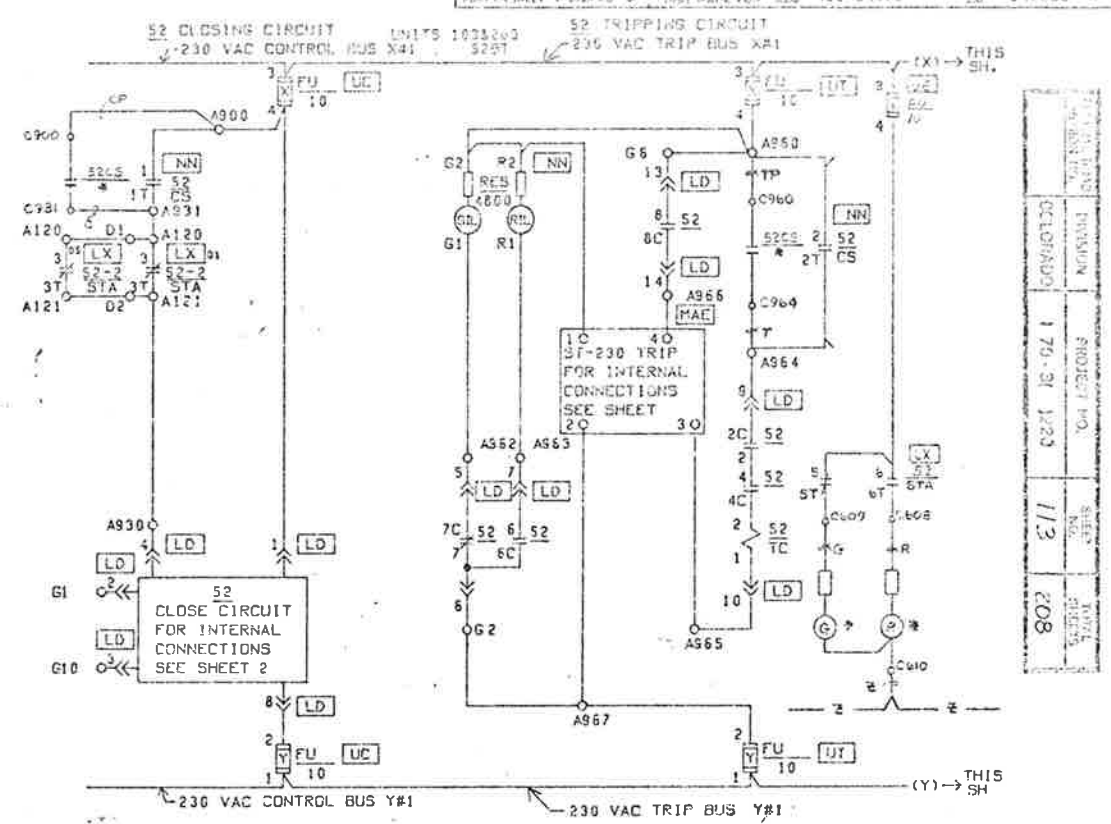
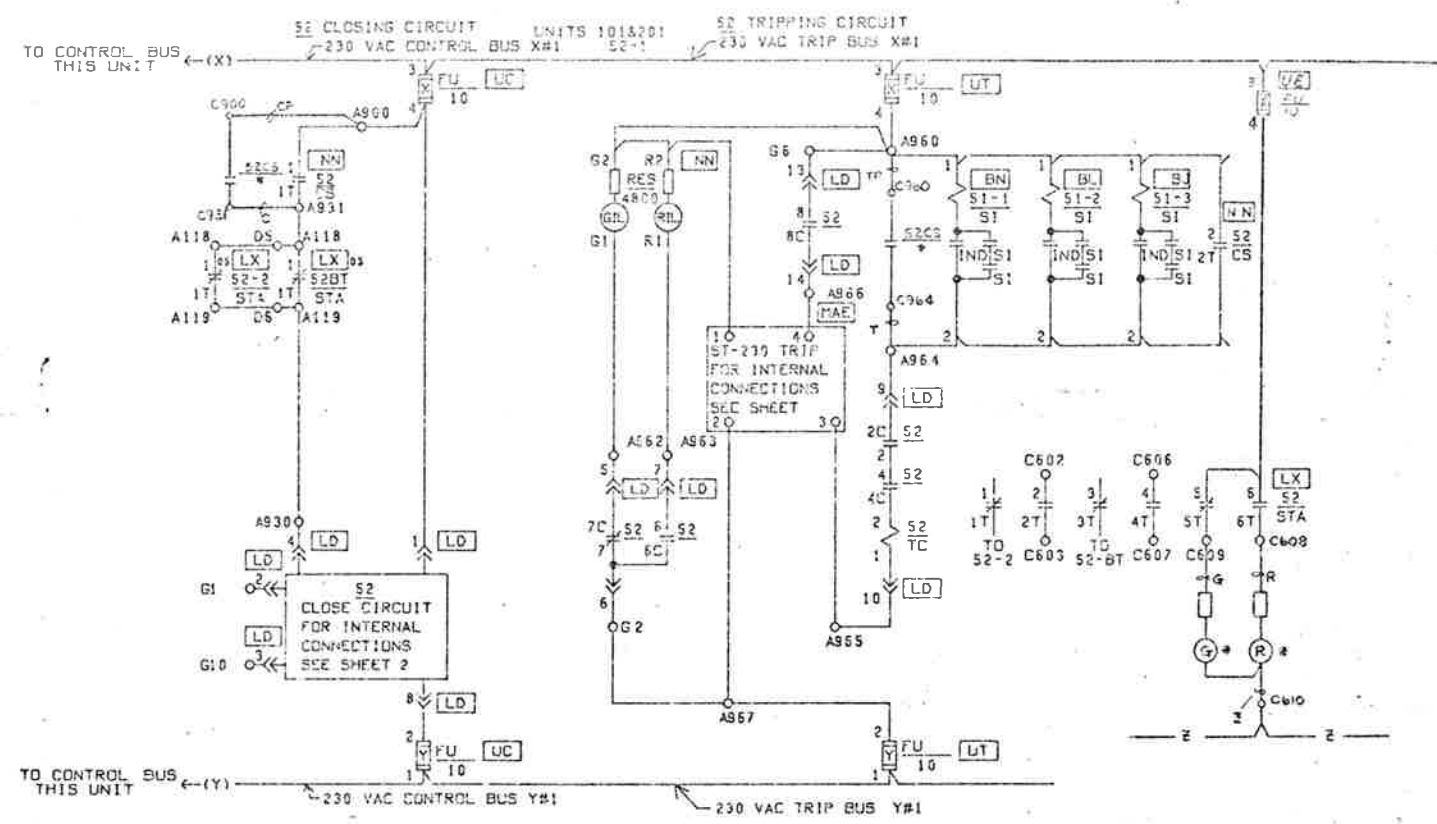


EISENHOWER TUNNEL
 PROJECT NUMBER 176-3(12)220
 STATE OF COLORADO
 POWER DIVISION

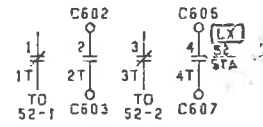


1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE ALARMS CODE (NFPA).
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE ALARMS CODE (NFPA).
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE ALARMS CODE (NFPA).
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE ALARMS CODE (NFPA).

REVISION	DATE



PROJECT NO.	170-31222
DATE	1/3
REVISION	208



Check this drawing for errors...
 Notes: The following are the duties of the Engineer...
 1. To prepare and check all drawings...
 2. To supervise the construction...
 3. To inspect the work...
 4. To certify the work...
 5. To prepare and check all drawings...
 6. To supervise the construction...
 7. To inspect the work...
 8. To certify the work...



EISENHOWER TUNNEL,
 PROJECT NUMBER 170-31222
 STATE OF COLORADO
 CONTROL CKT



CONNECTIONS:
 BOTH ENDS OF WIRE ARE IDENTIFIED AS TO DESTINATION BY THE DEVICE CROSS CONNECTION FROM DEVICE LISTED TO TERMINAL BOARD & TERMINAL I

REVISION:
 DATE: 1/3/68
 BY: [Signature]

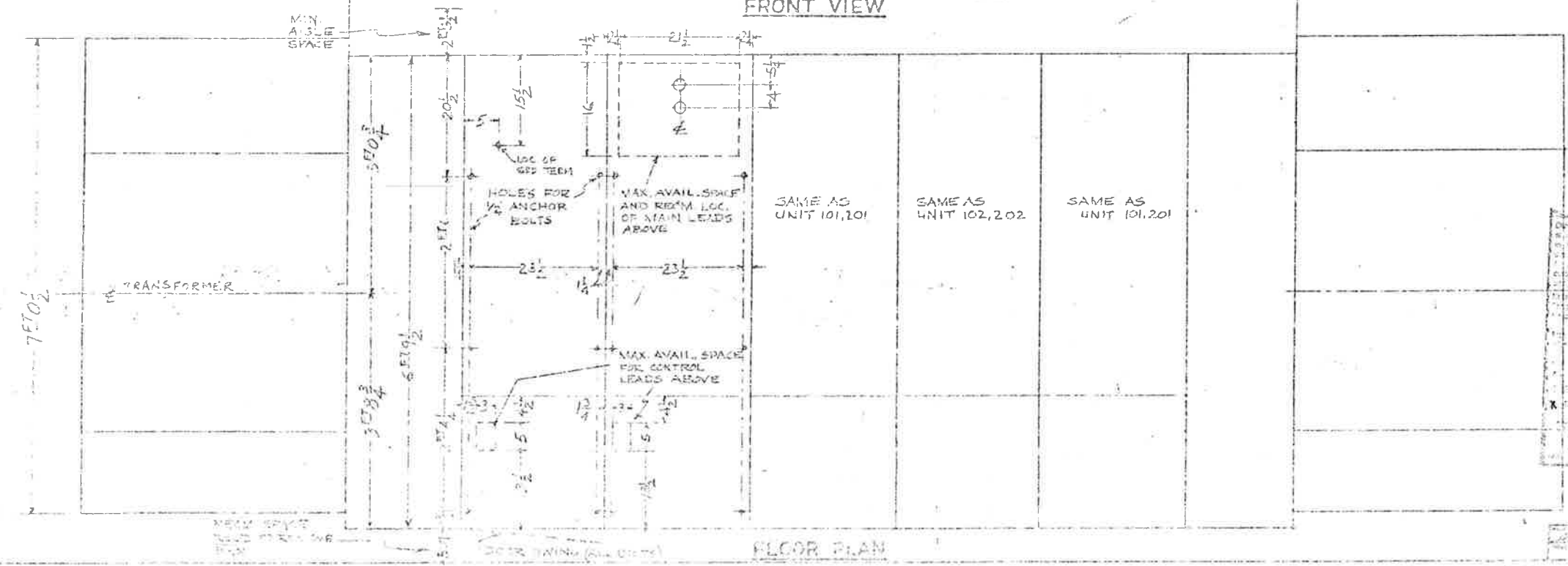
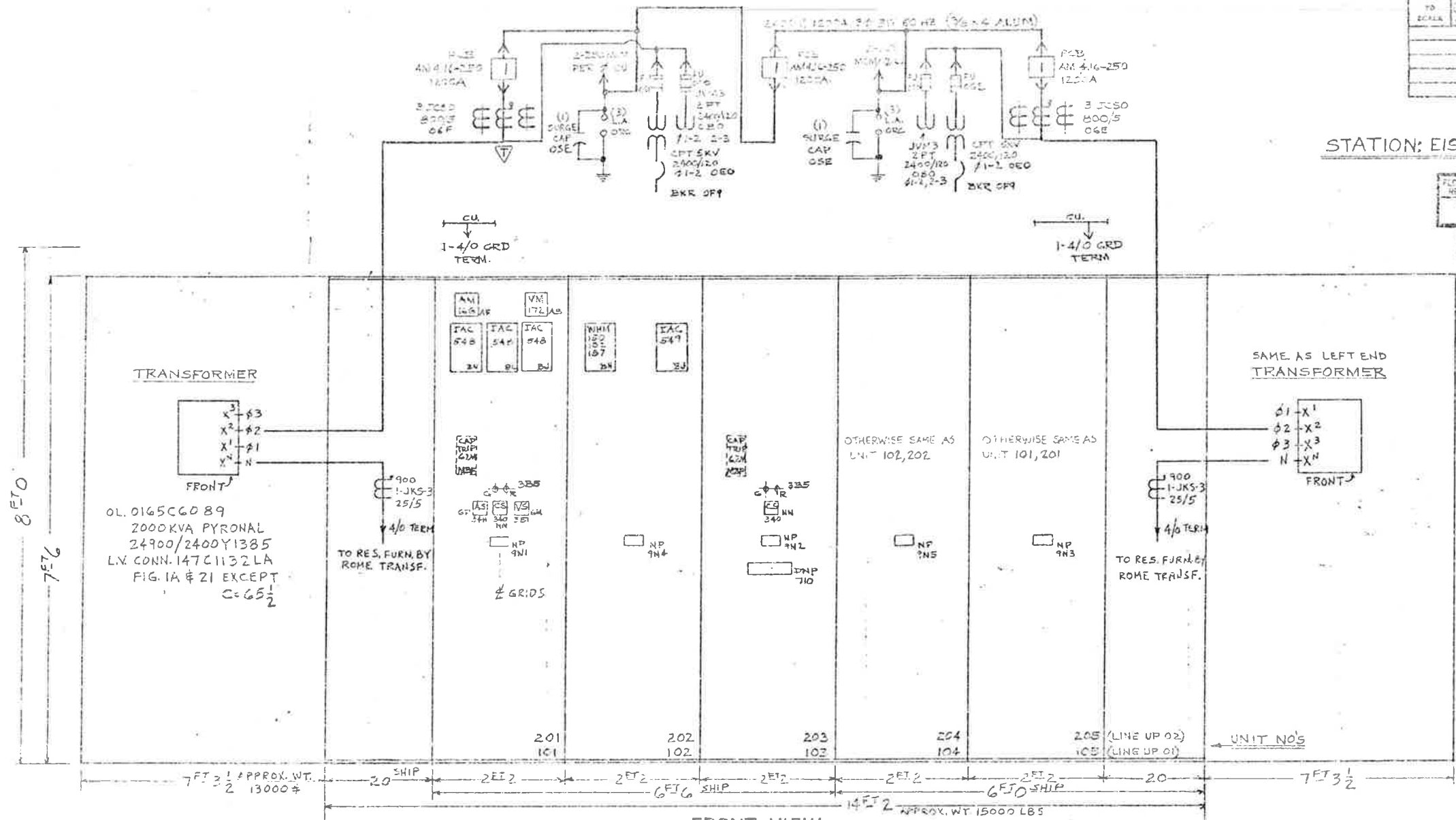
DESCRIPTION:
 1. THIS DRAWING IS ELECTRICAL CONNECTIONS ONLY. THE EXACT LOCATION OF APPARATUS IS NOT SHOWN.
 2. WIRE ROUTING IS NOT SHOWN UNLESS OTHERWISE NOTED.
 3. WIRE CONNECTIONS TO TERMINAL BOARD & TERMINAL I ARE SHOWN.
 4. DEVICE FUNCTION, NUMBER AND ASSIGNMENT ARE AS PER STANDARD.

COMPANY	GENERAL ELECTRIC
PROJECT NO.	170-31222
DATE	1/3/68
REVISION	208
ENGINEER	[Signature]
PROJECT NO.	170-31222
DATE	1/3/68
REVISION	208

DRAWING NO.	0116RD914	TITLE	METAL-CLAD SWITCHGEAR
IN. NO.			
SCALE			

STATION: EISENHOWER TUNNEL, EAST PORTAL

PROJECT NO.	DIVISION	SHEET NO.	TOTAL SHEETS
170-3(1)220	COLORADO	114	203

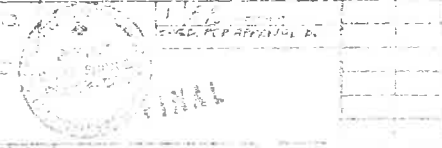


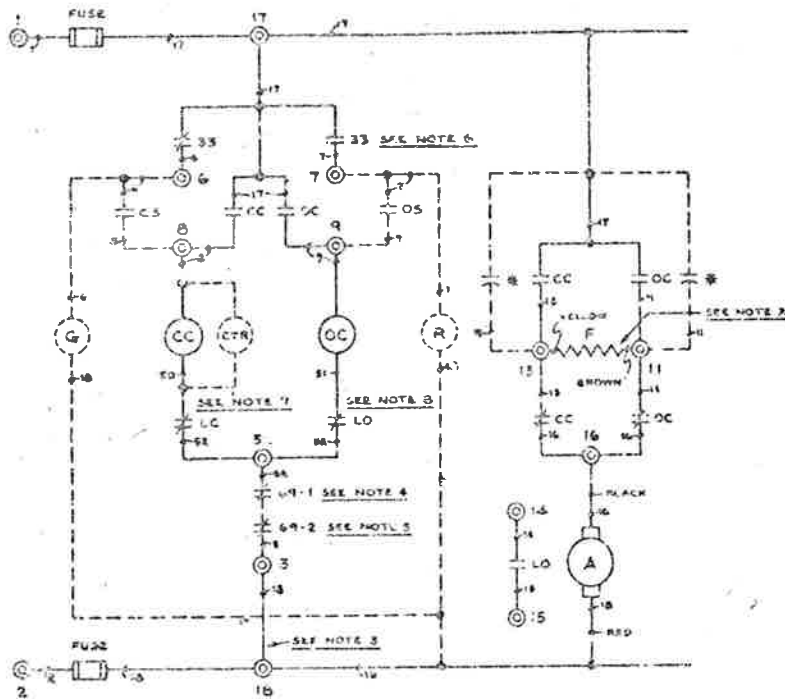
EAST PORTAL EISENHOWER TUNNEL
PROJECT NO. 170-3(82) 220
STATE OF COLORADO
2.4 KV POWER CENTER NO. 1



Approved
Howard Elect. & Mech. Co.
Proj. Man.

NOTES:
1- WHEN SHIPPING SHALL BE PROVIDED TO PROTECT THE UNIT FROM DAMAGE AND TO PROTECT THE UNIT FROM MOISTURE.
2- ALL THE FIELD COMPONENTS SHALL HAVE INSULATION FLUENCY INSIDE OF THE UNIT AS SHOWN ON THE DRAWING.
3- ALL THE FIELD COMPONENTS SHALL HAVE INSULATION FLUENCY INSIDE OF THE UNIT AS SHOWN ON THE DRAWING.



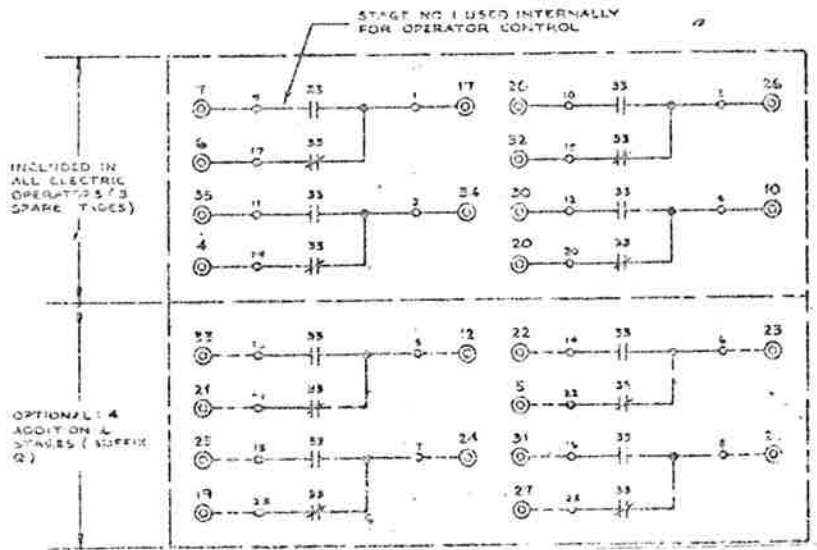


- LEGEND**
- CC CLOSING CONTACTOR COIL
 - OC OPENING CONTACTOR COIL
 - A ARMATURE OF REVERSIBLE MOTOR
 - F SERIES FIELD OF REVERSIBLE MOTOR
 - CS CLOSING SWITCH
 - OS OPENING SWITCH
 - CTR OPERATION COUNTER
 - G GREEN INDICATING LIGHT (LOAD INTERRUPTER OPEN)
 - R RED INDICATING LIGHT (LOAD INTERRUPTER CLOSED)
 - 33 OPERATOR AUXILIARY SWITCH (SEE NOTE 6)
 - 69-1 MANUAL OPERATOR INTERLOCK
 - 69-2 KEY INTERLOCK SWITCH - OR MECHANICAL INTERLOCK SWITCH
 - LC CLOSING CIRCUIT LIMIT SWITCH
 - LO OPENING CIRCUIT LIMIT SWITCH
 - ⊙ TERMINAL POINT ON OPERATOR UNIT
 - TERMINAL POINT ON OPERATOR AUXILIARY SWITCH
 - CAPACITOR USED ON SUFFIX A, B, & C ONLY

SUFF

J
J
M
M
Q

P O I



- NOTES**
1. BROKEN LINES INDICATE WIRING OF OPTIONAL ITEMS.
 2. REVERSE FIELD LEADS FOR OPPOSITE ROTATION AS REQUIRED FOR APPLICATION OF INVERTED SWITCHES. (SUFFIX-H)
 3. JUMPER BETWEEN 18 AND 3 REMOVED FOR INSERTION OF EXTERNAL INTERLOCKS IF APPLIED. SEE INTERCONNECTION WIRING DIAGRAM FOR DETAILS.
 4. 69-1 SHOWN WITH MANUAL ACCESS COVER CLOSED.
 5. 69-2 SHOWN IN UNLOCKED POSITION.
 6. SNAP ACTION AT END OF OPENING AND CLOSING OPERATIONS. (SHOWN IN THE OPERATOR OPEN POSITION)
 7. LC SHOWN IN UNACTUATED POSITION - ACTUATED ONLY IN FULLY CLOSED POSITION.
 8. LO SHOWN IN UNACTUATED POSITION - ACTUATED ONLY IN FULLY OPEN POSITION.

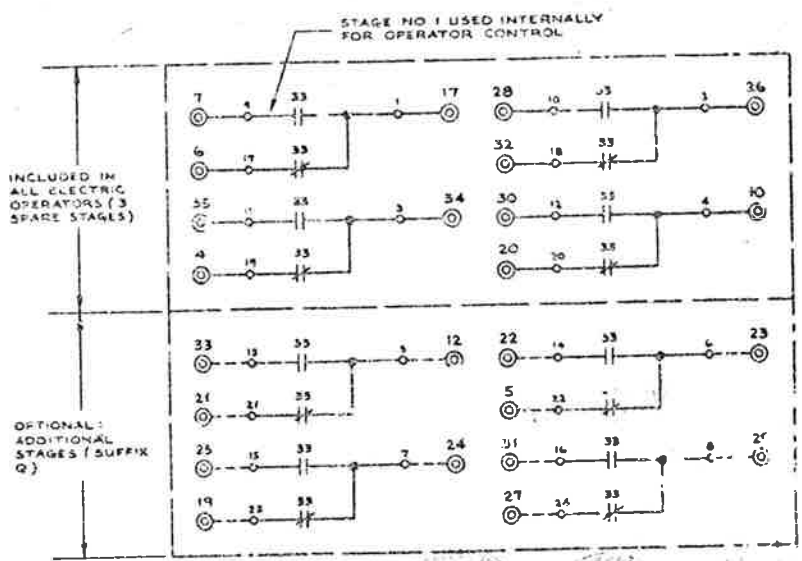
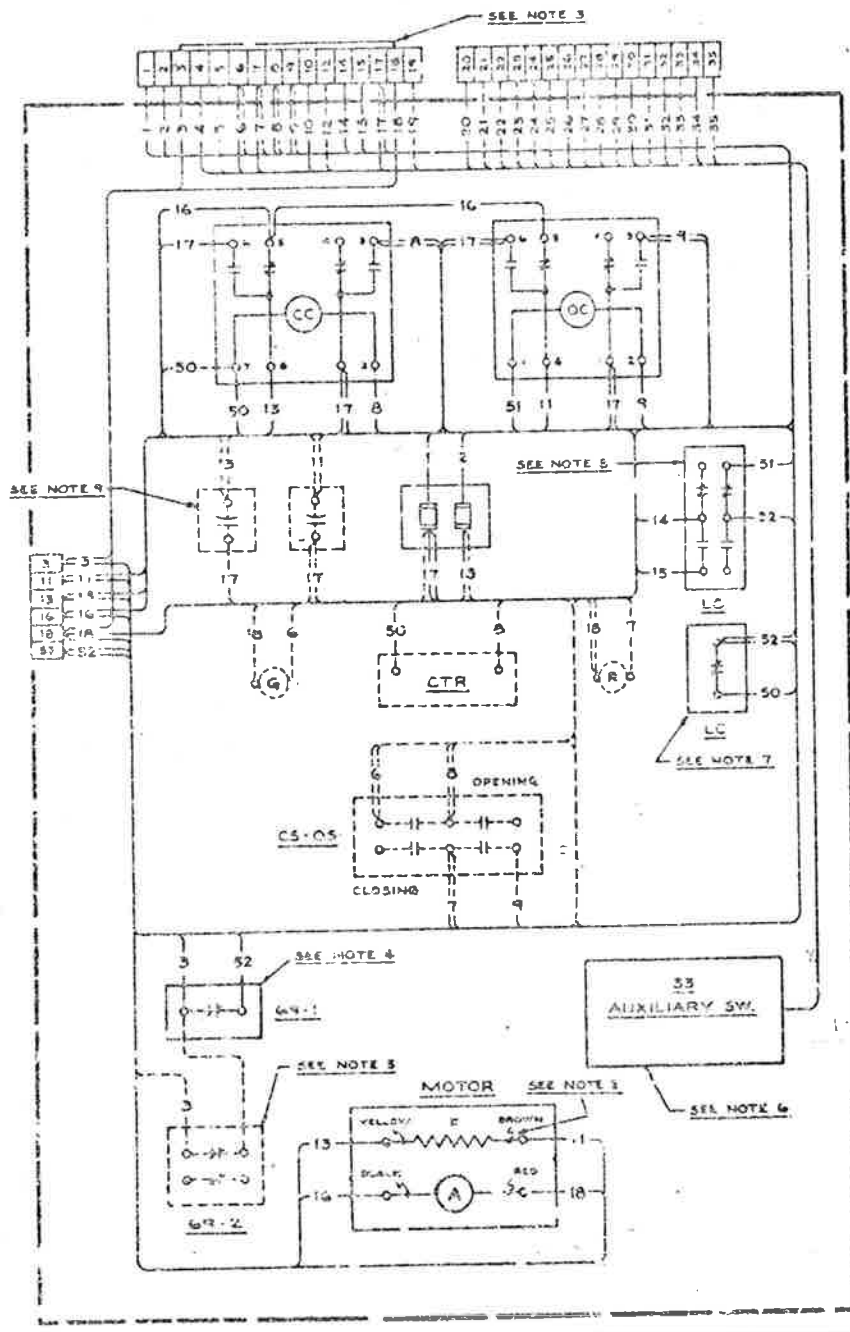
SUFFIX	VOLTS	TYPE
A	48 VDC	FR 2A
E	120 VDC	FR 2A
C	250 VDC	FR 1A
D	120 VAC	FR 4A
E	240 VAC	FR 2A
V	14 VDC	FR 1A

PROPRIETARY STATEMENT
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MATERIALS QUANTITY _____ DATE _____
 SBC ELECTRIC COMPANY - CHICAGO
 Specialists in High Voltage Circuit Breakers
 SCHEMATIC WIRING DIAGRAM
 FOR 115V 50/60 Hz
 CDR-707



UNLESS OTHERWISE SPECIFIED DIMENSIONS TO BE IN FRACTIONAL DIMS TO 1/16" ANGLES TO 1/8" CAST DIMS TO 3/16"



CDR-708
170-31 1220
1/6
CDR-708

NOTES:

1. BROKEN LINES INDICATE WIRING OF OPTIONAL ITEMS.
2. REVERSE FIELD LEADS FOR OPPOSITE ROTATION AS REQUIRED APPLICATION ON INVERTED SWITCHES. (SUFFIX H)
3. JUMPER BETWEEN 19 AND 5 REMOVED FOR INSTALLATION OF FLY INTERLOCKS IF APPLIED. SEE INTERCONNECTION WIRING DIAGRAM FOR DETAILS.
4. 69-1 SHOWN WITH MANUAL ACCESS COVER CLOSED.
5. 69-2 SHOWN IN UNLOCKED POSITION.
6. SNAP ACTION AT END OF OPENING AND CLOSING OPERATIONS. (SHOWN IN THE OPERATOR OPEN POSITION)
7. LC SHOWN IN UNACTUATED POSITION - ACTUATED ONLY IN FULLY CLOSED POSITION.
8. LO SHOWN IN UNACTUATED POSITION - ACTUATED ONLY IN OPEN POSITION.
9. CAPACITORS USED ON SUFFIX L, S, & C ONLY.

Checked
Howard Elect. & Mech. Co.
Chicago, Ill.

PROPRIETARY STATEMENT
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MATERIAL	DESCRIPTION	QUANTITY	REMARKS

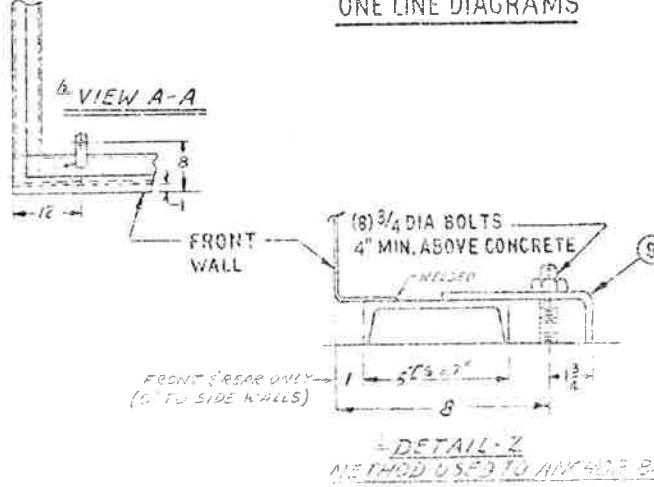
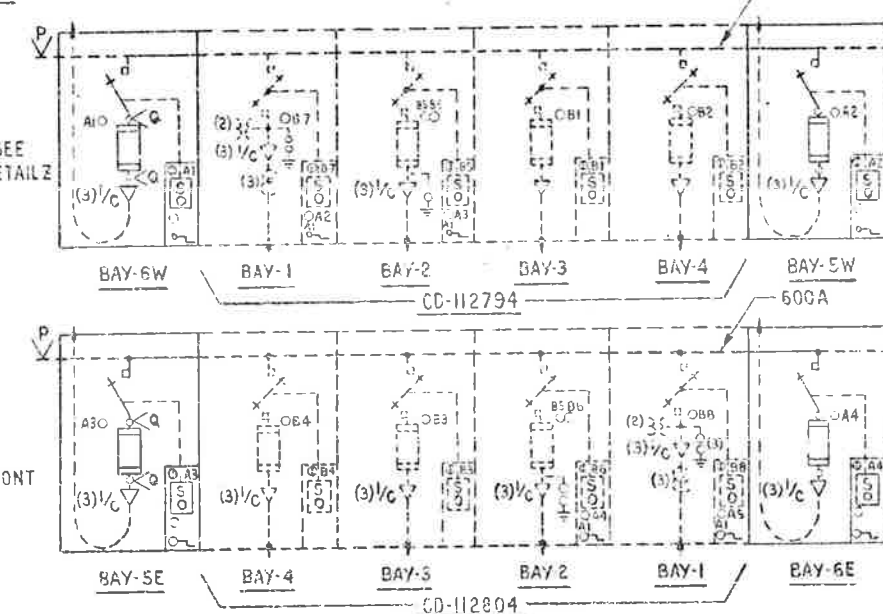
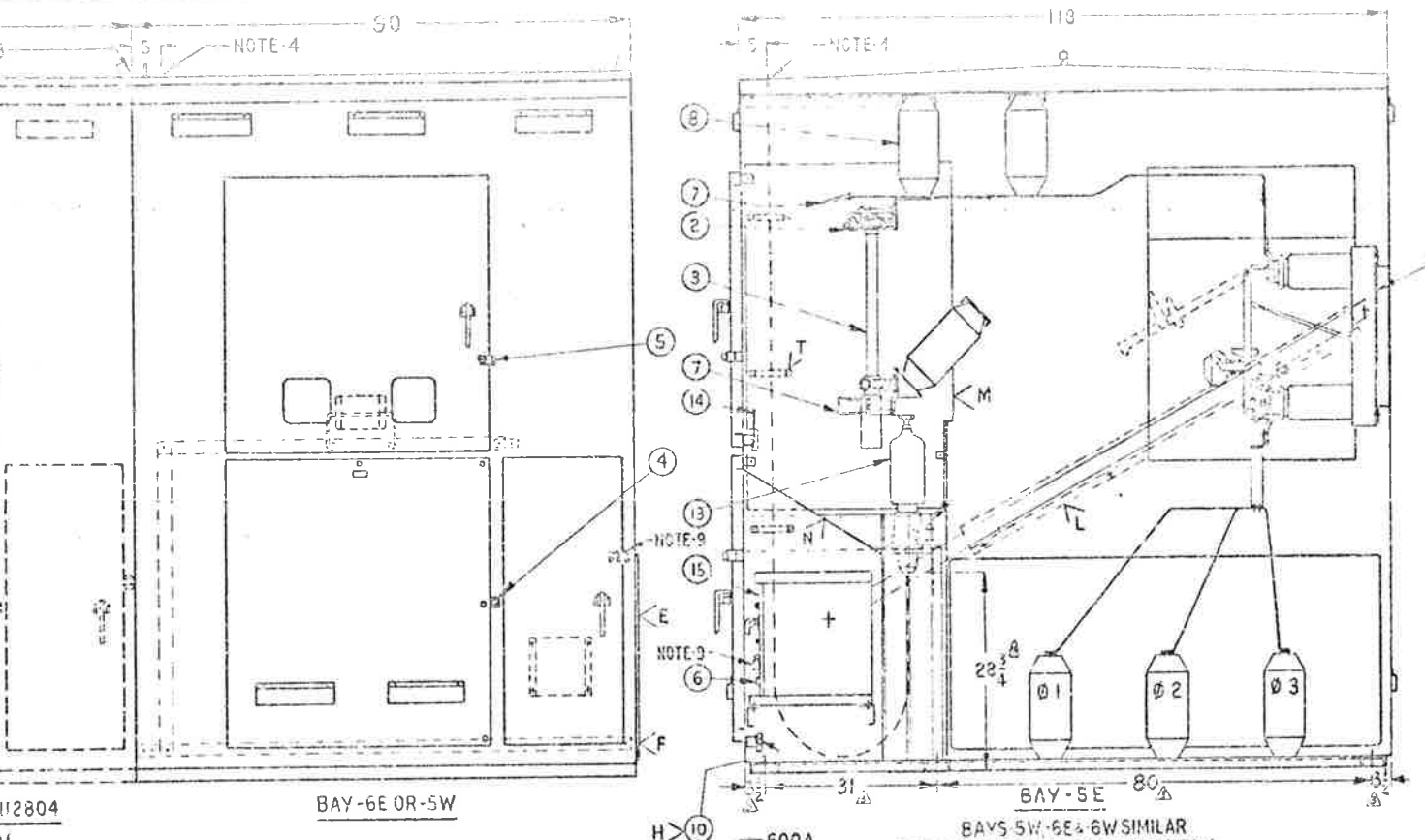
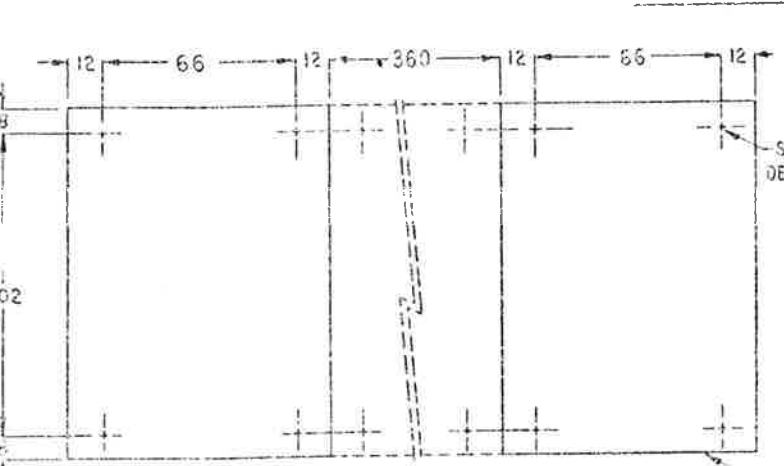
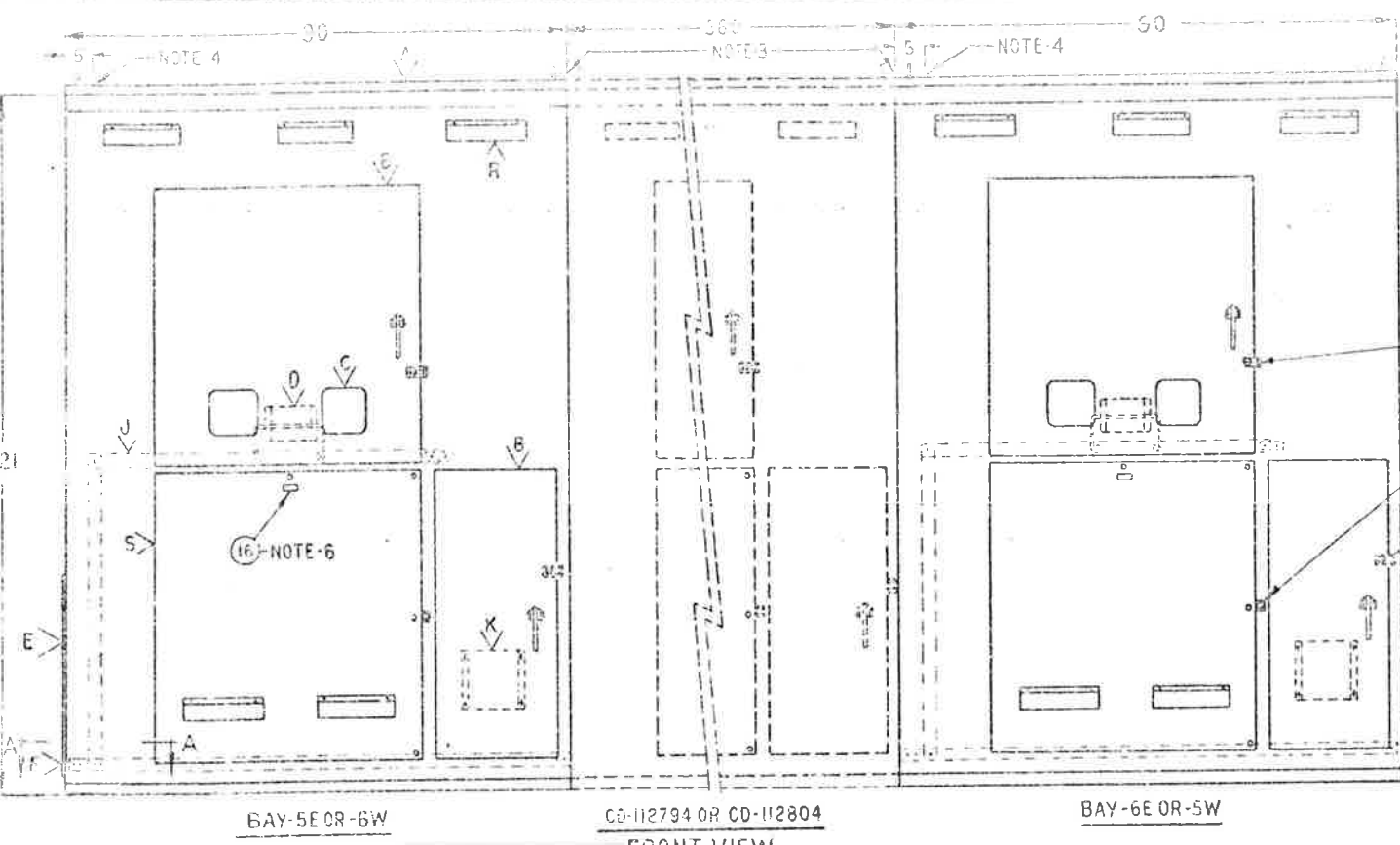
DESCRIPTION: S&W ELECTRIC COMPANY - CHICAGO
Specialists in High Voltage Circuit Interruption

DETAIL WIRING DIAGRAM FOR ELECTRIC OPERATOR

CDR-708

REVISION: 1
DATE: 12/25/62

REVISION: 1 FROM DRAWING DATED 12/25/62



ITEM	QUANTITY	PART NO.	DESCRIPTION
1	2	234014R2	INTERRUPTER SWITCH, 3 POLE, 600A
2	6	8200R2-3103	SN-5 POWER FUSE LIVE PARTS 500A
3	6	2803M1	SN-55 FUSE HOLDER, NON-DISCONNECT
4	2	CDA-1600-1	KEY OPERATED SHARLOCK
5	2	TYPE-D	KIRK KEY INTERLOCK
6	2	135003-F	KIBA KEY INTERLOCK
7	6	GSD-10615-2	GROUND RING
8		9785	LAPP BUS SUPPORT
9	8	QCD-1805	ANCHOR BRACKET
10	2	4742	CABLE CONNECTOR, #2-500 MCM
11			
12			
13	6	NT-19241R	60W 1/2 PH. W/SB, 250 MCM, STYLE 18
14	2	QC-4545	AERIAL LUGS CAT. NO. A-522-5
15	2	38760-BGHLUM	GROUND BAIL
16	16	ISET	SWITCH OPERATOR, 125 VDC
			ENGRAVED PLASTIC NAMEPLATES

NOTE TO D.O.H.
AS PER INSPECTION TRIP ON 5/13/76 BUS CONNECTIONS AND JOINTS IN THE REAR OF THE SWITCHGEAR ARE SILVER COATED USING INSTEAD OF THE METCO PASTE INSTEAD OF SILVER PLATED.

DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
COLORADO	170-31 1230	117	208

REVISIONS
MAY 18 1976
Checked
Howard Elect. & Mech. Co.
Prof. Mgr.
NAMEPLATE DATA
CATALOG NUMBER-----CD-159894
KV, NOMINAL-----34.5
KV, MAX. DESIGN-----38
KV, BIL-----200
MAIN BUS CONTINUOUS RATING, AMPERES-----600
SHORT CIRCUIT RATING, MVA THREE-PHASE SYM. AT RATED NOM. VOLTAGE-----1000
AMPERES INTERRUPTING, RMS ASYM-----28,000
AMPERES MOMENTARY, RMS ASYM-----40,000
AMPERES FAULT CLOSING, RMS ASYM-----28,000

- NOTES:
- ALL HANDLES HAVE PROVISIONS FOR PADLOCKING.
 - KEY INTERLOCKS PREVENT ACCESS TO FUSES UNTIL INTERRUPTER SWITCH IS LOCKED OPEN.
 - EACH BAY TO BE SHIPPED SEPARATELY.
 - APPROXIMATE PROJECTION OF CABLE CENTERLINES. KNOCKOUTS BY OTHERS.
 - CUSTOMER TO FURNISH CABLE INFORMATION FOR POTHEADS. INFORMATION TO INCLUDE TYPE & O.D. CONDUCTOR SIZE & MATERIAL.
 - ENGRAVED PLASTIC NAMEPLATE 1" X 2 1/2", THREE LINES SPACED 7/32" APART, AND 5/32" HIGH BLACK LETTERS ON WHITE BACKGROUND TO READ AS FOLLOWS:
BAY-5E "POWER CENTER NO.1"-TRANSFORMER 1B-"SOUTH TUNNEL"
BAY-6E "POWER CENTER NO.1"-TRANSFORMER 1A-"SOUTH TUNNEL"
BAY-5W "POWER CENTER NO.1"-TRANSFORMER 1B-"SOUTH TUNNEL"
BAY-6W "POWER CENTER NO.1"-TRANSFORMER 1A-"SOUTH TUNNEL"
 - S&C TO FURNISH AND SHIP LOOSE ALL NECESSARY HARDWARE AND SPLICE PLATES FOR ASSEMBLY TO EXISTING CD-112794 OR CD-112804.
 - ITEM 15 FURNISHED, INSTALLED AND WIRED BY S&C. PER: CDR-707 SCHEMATIC WIRING DIAGRAM. QCDR-2250 INTERCONNECTION WIRING DIAGRAM. CDR-708 DETAIL WIRING DIAGRAM.
 - S&C TO MAKE PROVISIONS FOR TYPE D INTERLOCKS ON SWITCH OPERATOR AND OPERATOR DOOR, FURTHER COORDINATION BY OTHERS.
 - ALL SWITCH AND FUSE PADS AND ALL BUS JOINTS TO BE SILVER PLATED. SEE NOTE.

REVISIONS		PRINT IDENTIFICATION	
NO.	DATE	BY	DESCRIPTION
1	12-10-75	E.T.	ADDED NOTES 9 & 10, CND 708 TO NOTE 3, KNOCKOUTS BY OTHERS TO NOTE 4, QTY OF 2 TO ITEMS 5 & 6, AND LETTER CODE T
			CHANGED CABLE EXIT FROM OUT BOTTOM TO OUT THE TOP, NOTE 2 WAS CUSTOMER TO SPECIFY KEY INTERLOCK COORDINATING INFORMATION AND SCHEME AND NOTE 4 AND QTY NUMBER ACCORDING TO MAPLED UP PRINT, ALSO ITEM 10 WAS 4715 AND ITEM 11 WAS 134814R2 AND BUS WAS ALUMINUM
			DELETED ITEMS 11 CDA 1664-1 & ITEM 12 502 114C PENETRATOR A.
			ADDED DIMENSIONS TO DET. 2 AND ADDED VIEW A-A.
			CHANGED CABLE SPACE FROM 33 3/4 TO 68 3/4 IN DET. 2, R.H. SIDE VIEW BAY-5E. ADDED LOCATIONS OF 5.

PRINT IDENTIFICATION		PRINT IDENTIFICATION	
NO.	DATE	BY	DESCRIPTION
1	12-10-75	E.T.	ADDED NOTES 9 & 10, CND 708 TO NOTE 3, KNOCKOUTS BY OTHERS TO NOTE 4, QTY OF 2 TO ITEMS 5 & 6, AND LETTER CODE T

BAY 112794 REINFORCED SHEET 55 OF 57 BUS COPPER	FINISH 60 WASHAKO 031-008 112794 GRAY ALL 12-61 08 001-31	UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN FRACTIONAL INCHES UNLESS OTHERWISE NOTED BREAK ALL DIMENSIONS REMOVE ALL DIMENSIONS	S&S ELECTRIC COMPANY GENERAL OFFICES • CHICAGO Switching and Protection
-------------------------------------------------------	--------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------

34.5KV 2BAYS INDOOR METAL ENCLOSED SWITCHGEAR	1261599400 CD-159894
--------------------------------------------------	-------------------------

- LETTER CODE:
- V. OUTDOOR ROOF ON INDOOR GEAR
 - W. DOOR
 - X. WINDOWS
 - Y. FUSE POTTILL CONTAINER
 - Z. FUTURE EXTENSION COVER PLATE
 - AA. KNOCKOUT FOR FUTURE GROUND BUS EXTENSION
 - AB. GROUND CONNECTOR, (EACH BAY 1 REQUIRED)
 - AC. CONTINUOUS GROUND BUS, 600 AMP AT
 - K. INSTRUCTION BOOK HOLDER
 - L. CHAIN GRAB, (ALL BAYS)
 - M. BENELEX BARRIER
 - N. STEEL PARTITION
 - P. FUTURE EXTENSION
 - Q. GROUND POINT
 - R. FILTERED LOUVERS WITH EXTERNAL ACCESS, FRONT & REAR
 - S. REMOVABLE CABLE GUIDE

GENERAL ELECTRIC

75068066

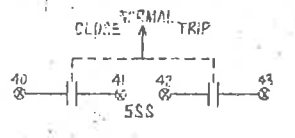
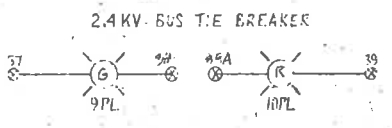
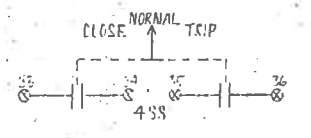
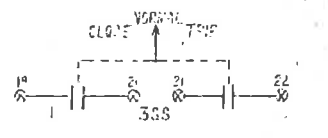
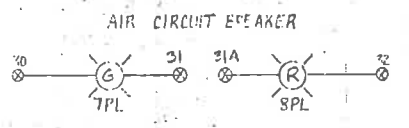
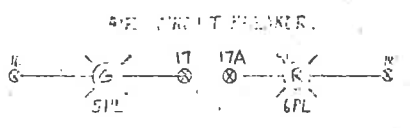
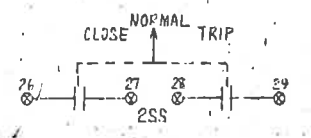
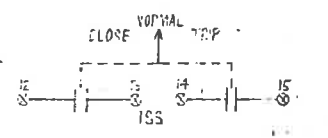
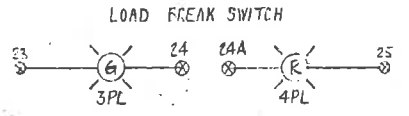
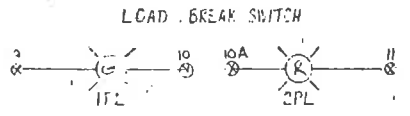
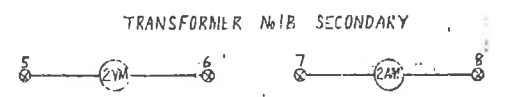
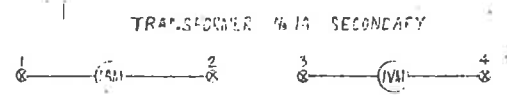
UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING -

APPLIED PRACTICES	SUPPLIES	FACTORS	TERMINALS	APPLIES
✓				

ELEMENTARY

FIRST MADE FOR DA14300042 & DA143020043
 FINE CONTROL BASES (WEST & EAST)
 I 70-3 (82) 220
 JOB NAME LISENHOFF TUNNEL
 CONTRACTOR HOWARD ELECTRIC
 CUSTOMER GESCO
 CUSTOMER'S P.O. 325-397097D
 AT ATOX 432-9407D

FEDERAL ROAD REGION T.O.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1)220	118	



- NOMENCLATURE
- AM - AMMETER
 - PL - PILOT LIGHT
 - SS - SELECTOR SWITCH
 - VM - VOLTMETER
 - ⊙ - TERMINAL END POINT

Contractor to verify compliance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be furnished and correct at the job site for information that pertains solely to the fabrication process or to the design of construction and for coordination of the work of all trades.

Note - The Architect's checking of Shop Drawings or Samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has indicated the deviation in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's checking relieve the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

Rejected Make Corrections Noted

No Exception Taken Revise and Resubmit

STEARNS-ROGER ARCHITECTS, LTD.

Date 8-6-77 By OPW

RECEIVED
 APR 29 1977
 Stearns-Roger Architects

Approved
 Howard Elect. & Mech. Co.
 Proj. Mgr.

REVISIONS	PRINTS TO
1	

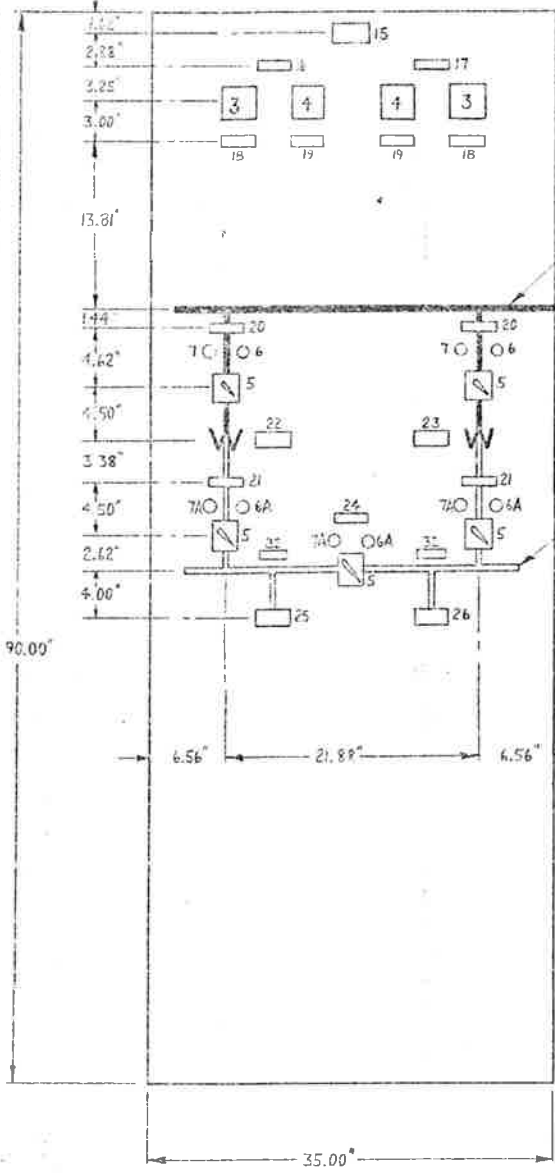
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8/22/77	OPW	8/22/77	OPW
DATE BY	APPROVED	DATE BY	APPROVED
8/29/77	OPW	8/29/77	OPW

OUTLINE

POWER CONTROL BOARD WEST

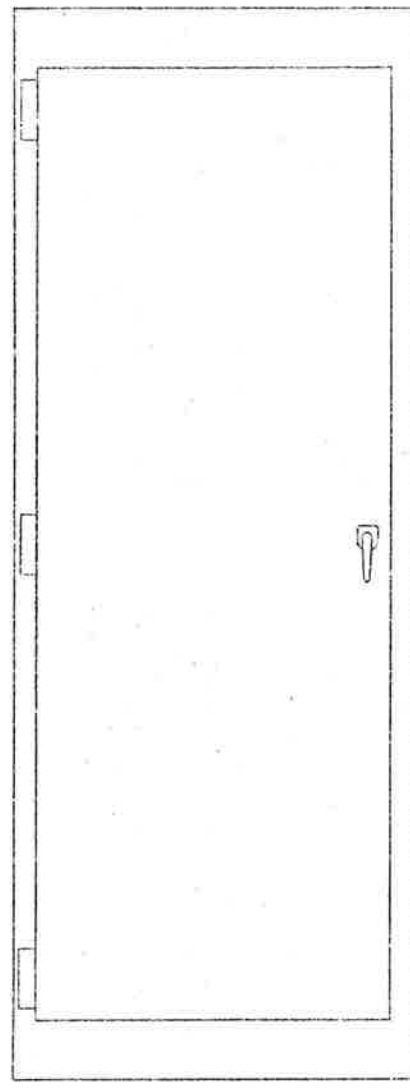
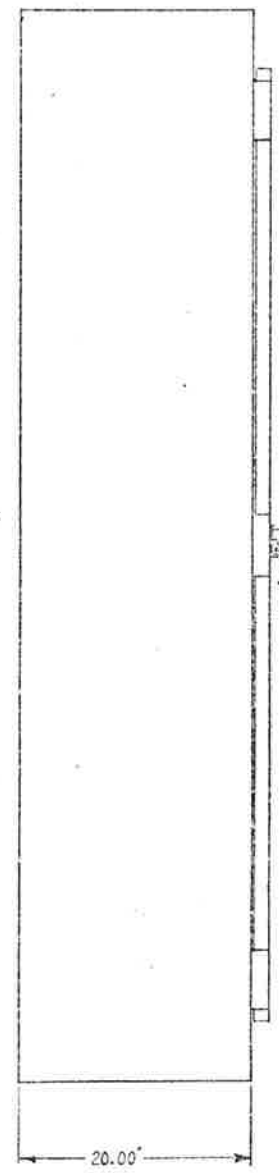
170-3 (22) 220
 EISENHOWER TUNNEL
 HOWARD ELECTRIC
 GESCO
 325-397097D
 432-94070

FEDERAL ACQUISITION REGISTRY NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3 (22) 220	119	208



MIMIC BUS & SYMBOLS
 3/8" W X 1/16" D RED
 LAMINATED PLASTIC

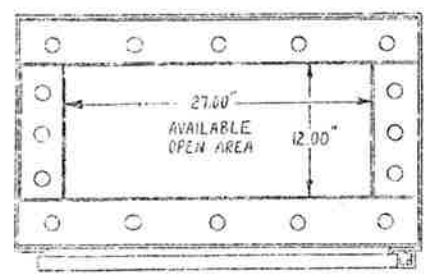
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 LAMINATED PLASTIC



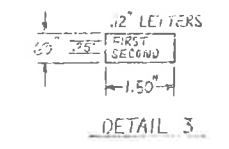
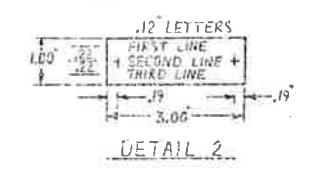
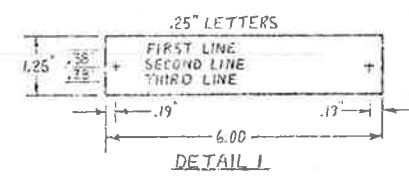
REAR VIEW

RIGHT SIDE VIEW

FRONT VIEW



BOTTOM VIEW



Equipment List

Item	Qty.	Manuf.	Part No.	Description
3	2	G.E.	50421111000	Switch, 150 VA, 125V, 15A
4	2	G.E.	50421111000	Switch, 150 VA, 125V, 15A
5	5	G.E.	50421111000	Switch, 150 VA, 125V, 15A
6	2	G.E.	50421111000	Switch, 150 VA, 125V, 15A
7	2	G.E.	50421111000	Switch, 150 VA, 125V, 15A
30	5	G.E.	CR15120	Terminal board, 30A, 250V, 11 slots

Hardware Schedule

Item	Qty.	Description	Manuf.	Part No.	Description
15	1	Knob	Knob	60111111	Knob
16	1	Knob	Knob	60111111	Knob
17	1	Knob	Knob	60111111	Knob
18	2	Knob	Knob	60111111	Knob
19	2	Knob	Knob	60111111	Knob
20	1	Knob	Knob	60111111	Knob
21	2	Knob	Knob	60111111	Knob
22	1	Knob	Knob	60111111	Knob
23	1	Knob	Knob	60111111	Knob
24	1	Knob	Knob	60111111	Knob
25	1	Knob	Knob	60111111	Knob
26	1	Knob	Knob	60111111	Knob
27	1	Knob	Knob	60111111	Knob
28	1	Knob	Knob	60111111	Knob
29	1	Knob	Knob	60111111	Knob
30	1	Knob	Knob	60111111	Knob
31	1	Knob	Knob	60111111	Knob
32	1	Knob	Knob	60111111	Knob
33	1	Knob	Knob	60111111	Knob
34	1	Knob	Knob	60111111	Knob

- Notes
1. Manufacture components to G. E. specifications.
 2. Components may be substituted if approved by the Engineer.
 3. Components shall be marked to match schedule.
 4. All items shall be marked with the name of the manufacturer on the back of the component.

ITEM	QTY.	MANUF.	CAT. NO.	DESCRIPTION
6A	3	G.E.	01606700606	SAME AS ITEM 6 EXCEPT 250VAC
7A	3	G.E.	01606700606	SAME AS ITEM 7 EXCEPT 250VAC

APPROVED
 APR 20 1977
 HOWARD ELECTRIC
 54-77 070
 620-32

FINAL



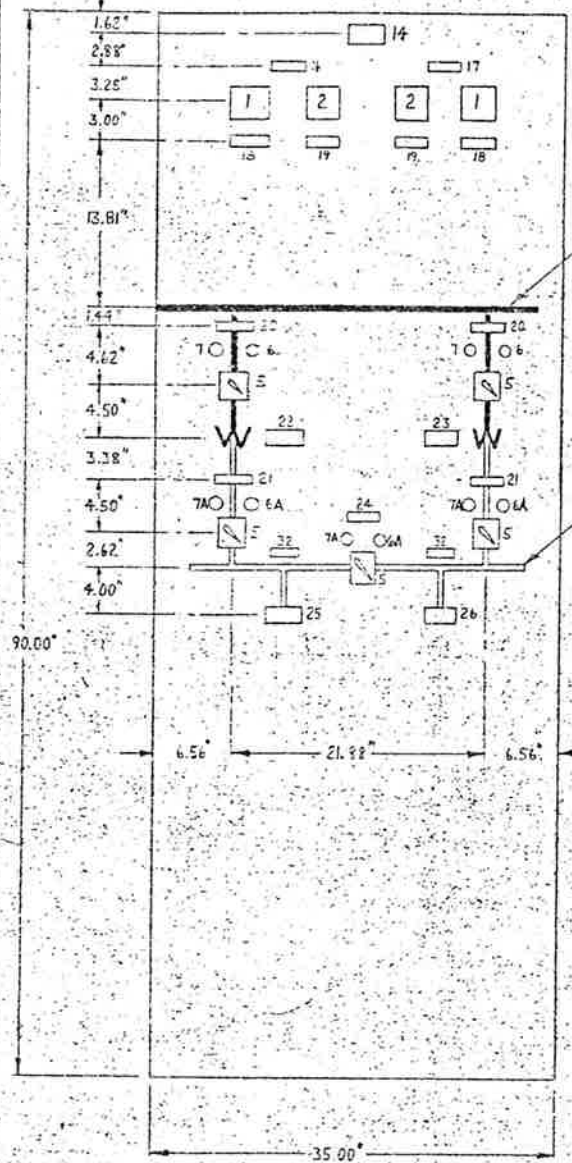
Approved
 Howard Elect. & Mech. Co.
 Proj. Mgr.

REVISIONS

NO.	DESCRIPTION	DATE
1	As shown	4/19/77

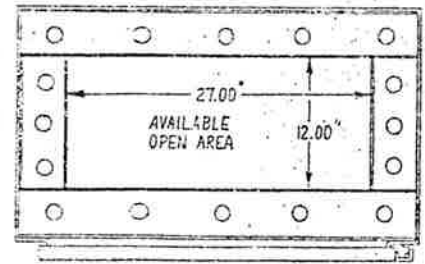
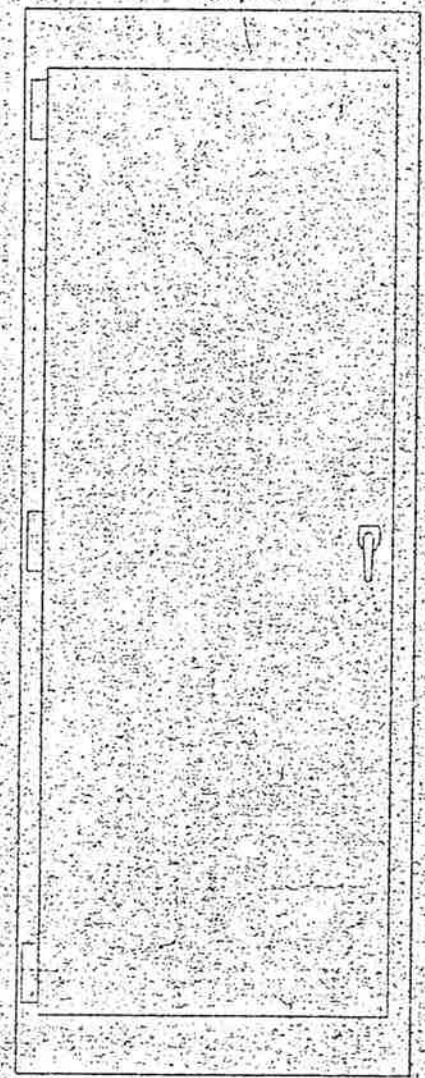
I 70-3 (R2) 220
 FOR NAME: EISENHOWER TUNNEL
 CONTRACTOR: HOWARD ELECTRIC
 CUSTOMER: GESCO
 CUSTOMER'S P.O. NO.: 325-397027D
 G.E. REQ. NO.: 432-9407D

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	I 70-3 (R2) 220	120	208



MIMIC BUS & SYMBOLS
 3/8" W X 1/16" D. RED
 LAMINATED PLASTIC

MIMIC BUS & SYMBOLS
 3/8" W X 1/16" D. GREEN
 LAMINATED PLASTIC



Item	Qty.	Mfr.	Cat. No.	Description
1	2	G.E.	50-171141LSSN	Ammeter, transformer rated 0-5 Amps, with scale 0-500 Amps AC
2	2	G.E.	50-171031PZVJ	Voltmeter, transformer rated 0-150 volts, with scale 0-3KV AC
5	5	G.E.	75468200191	Switch, type SS1, 2 stage
6	2	G.E.	91169670003E	Pilot Light, type ET-10, Red, 125V DC
7	2	G.E.	011696700030	Pilot light, type ET-16, green, 125V DC
38	5	G.E.	CR151826	Terminal board, 30A., 600V, 14 points

Item	Qty.	First Line	Second Line	Third Line	Detail
14	1	Entr	Building	Stunnel	1
16	1	Transformer	No. 1A	Secondary	2
17	1	Transformer	No. 1B	Secondary	2
19	2	Ammeter			2
20	2	Voltmeter			2
21	2	Lead	break	switch	2
22	1	Air	Circuit	Breaker	2
23	1	Transformer	No. 1A		2
24	1	Transformer	No. 1B		2
25	1	2.4 Kv Bus	Tie	Breaker	2
26	1	MC 10			2
27	1	MC 10			2
28	2	2.4 Kv Bus			3

Notes:
 1. Nameplate materials: G.E. AT20504, 3/16"
 2. Non-removable doors on back side, open bottom
 3. Materials: #120 B2A34, finished to match existing
 4. Terminal boards, item 38, to be located on right side of enclosure as viewed from rear.

ITEM	QTY	MFR.	CAT. NO.	DESCRIPTION
6A	3	G.E.	011686700066E	SAVE AS ITEM 6 EXCEPT 230VAC
7A	3	G.E.	011686700066D	SAVE AS ITEM 7 EXCEPT 230VAC

RECEIVED
 APR 29 1977
 STEARNS-ROGER ARCHITECTS

FINAL
 APR 27 1977
 STAFF DESIGN-COM

Approved:
 Howard Elect. & Mech. Co.
 Proj. Mgr.

REVISIONS	POINTS TO
1. [Signature]	

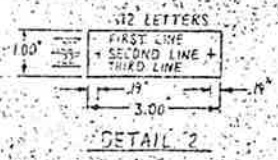
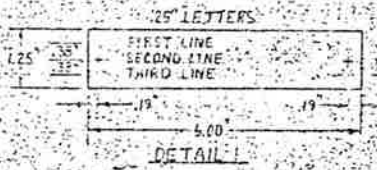
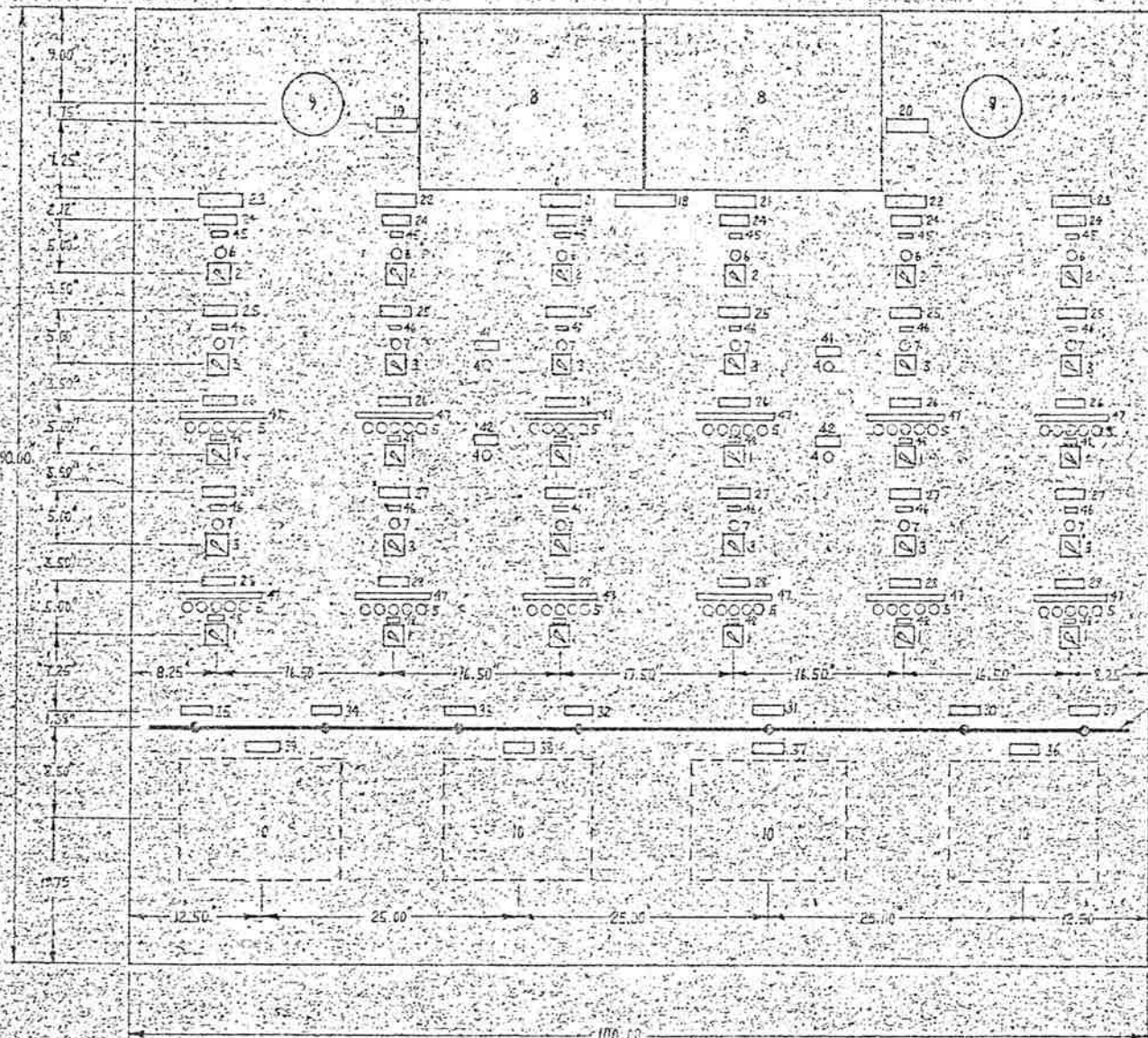


Table with 4 columns: APPLIED FUNCTION, CHECKED, PROJECT NO., and SHEET NO. Row 1 contains checkmarks and values 170-301230 and 121.

TITLE: OUTLINE FAN CONTROL BOARD

ITEM NO. I70-8 (R) 220
AS NAME EISENHOWER TUNNEL
CONTRACTOR HOWARD ELECTRIC
CUSTOMER GESCO
CONTRACT NO. 225-397697D
C.E. NO. 432-94070

Table with 4 columns: DIVISION, PROJECT NO., SHEET NO., and REV. NO. Values: COLORADO, 170-301230, 121, 203.



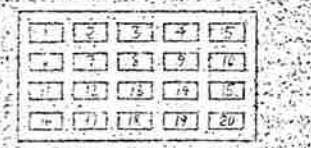
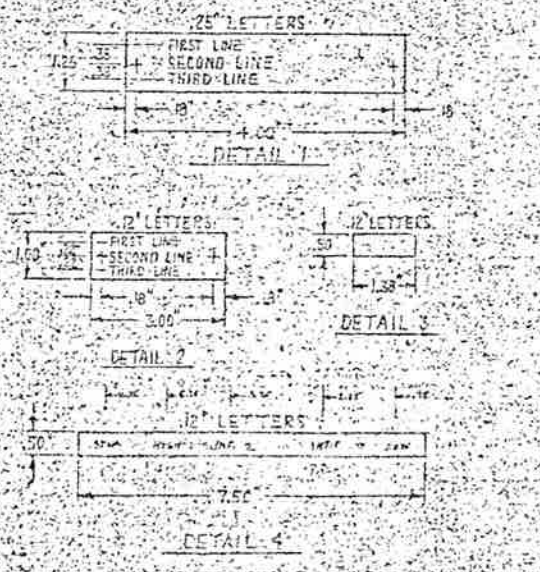
FRONT VIEW

EQUIPMENT LIST table with columns: ITEM, QTY, MFG, CATALOG NUMBER, and DESCRIPTION. Lists items like switches, pilot lights, annunciators, and relays.

MANIPULATE SCHEDULE

MANIPULATE SCHEDULE table with columns: ITEM, QTY, FIRST LINE, SECOND LINE, and THIRD LINE. Lists various controls for fans, supply fans, and emergency lights.

Check for correct location... STEARNS-ROSEN ENGINEERS LTD.



WEST SIDE ANNUNCIATOR



EAST SIDE ANNUNCIATOR

ANNUNCIATOR WINDOW ENGRAVING (WEST SIDE) table with 3 columns: WINDOW, FIRST LINE, and SECOND LINE. Lists messages for supply fans, transformer failure, and emergency lights.

ANNUNCIATOR WINDOW ENGRAVING (EAST SIDE) table with 3 columns: WINDOW, FIRST LINE, and SECOND LINE. Lists messages for supply fans, transformer failure, and emergency lights.

- 1. MANIPULATE MATERIAL... 2. NON-REMOVABLE... 3. ENGRAVING... 4. MANIPULATE... 5. ALERT LIGHT... 6. GREEN - STOP... 7. RED - ALARM... 8. YELLOW - INTERMEDIATE #1... 9. PURPLE - INTERMEDIATE #2... 10. DETECTOR... 11. 12-15 PULL TO START

FINAL APR 29 1967 STEARNS-ROSEN ENGINEERS LTD.

Approved: Howard Elect. & Mech. Co. Proj. Mgr.

DESCRIPTION OF POINTS, REVISED, and PRINTS TO GO tables. Includes dates and drawing numbers.

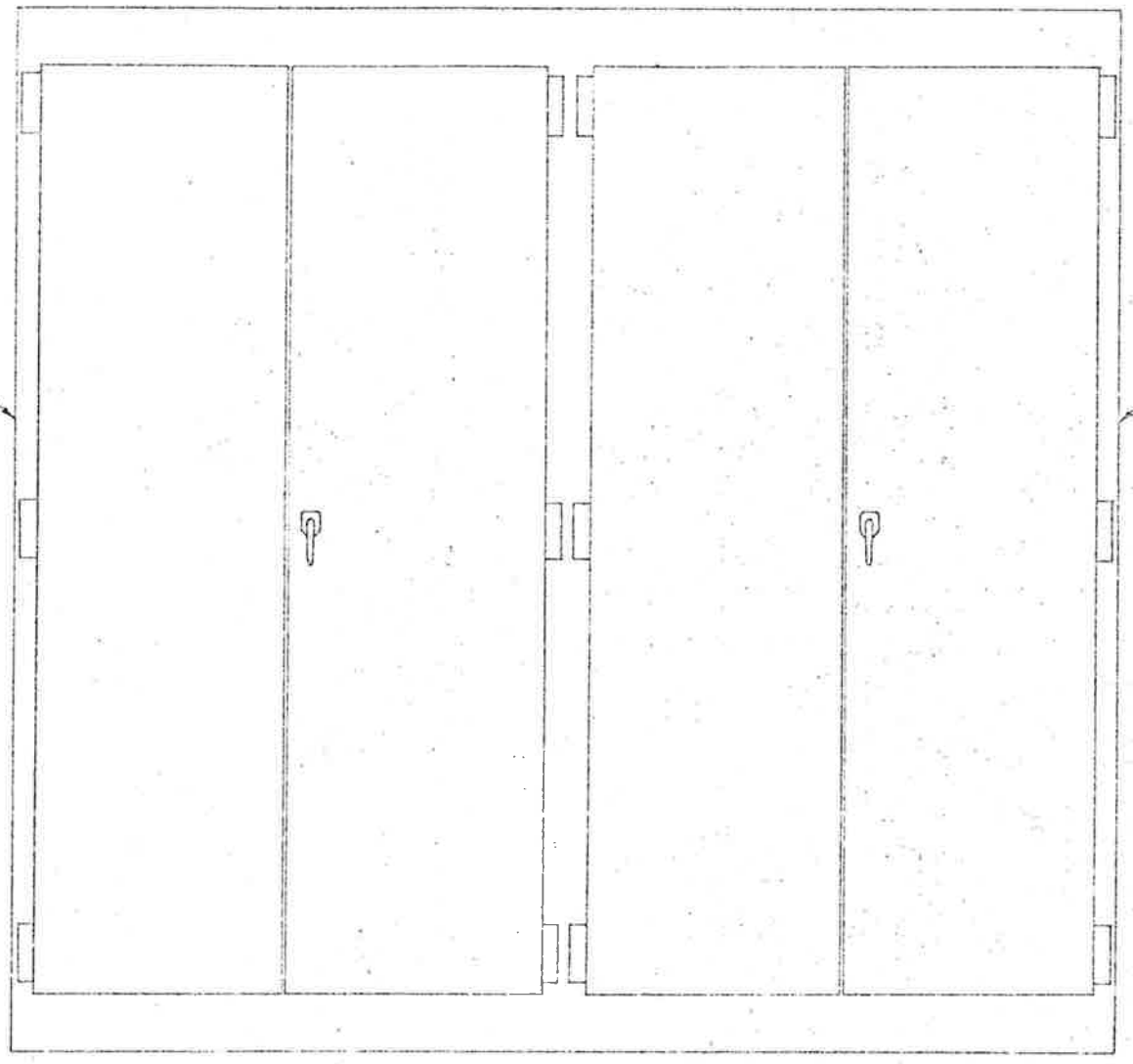
APPROVED PROJECT	DATE	BY	SCALE
✓			

1940-1945
 E. STEARNS-ROGER ARCHITECTS
 1000-10th Street, N.W.
 WASHINGTON, D.C. 20037
 TELEPHONE: 332-3447

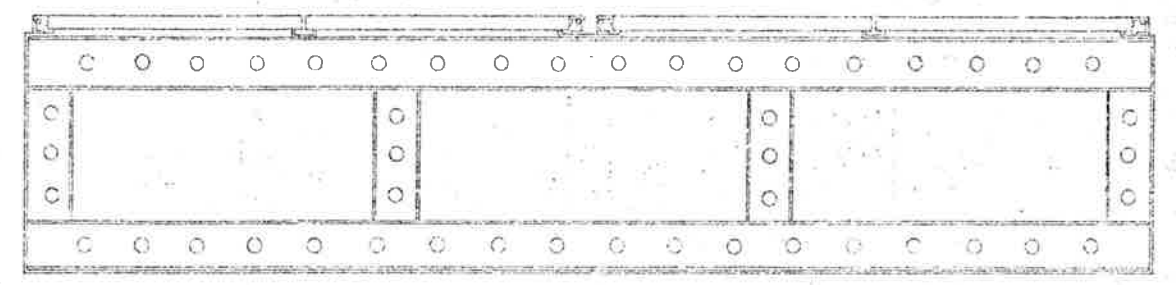
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET	TOTAL SHEETS
	COLORADO	170-31 1220	122	208



NOTE 6
 (SH.1)



NOTE 6
 (SH.1)



Check for compliance with the following specifications...
 The Architect shall be responsible for the design and construction of the cabinet...
 STEARNS-ROGER ARCHITECTS, LTD.
 5/16/77 by DRW
 2/24
 6/30/77

FINAL



Approved
 Howard Elect. & Mech. Co.
 Proj. Mgr.

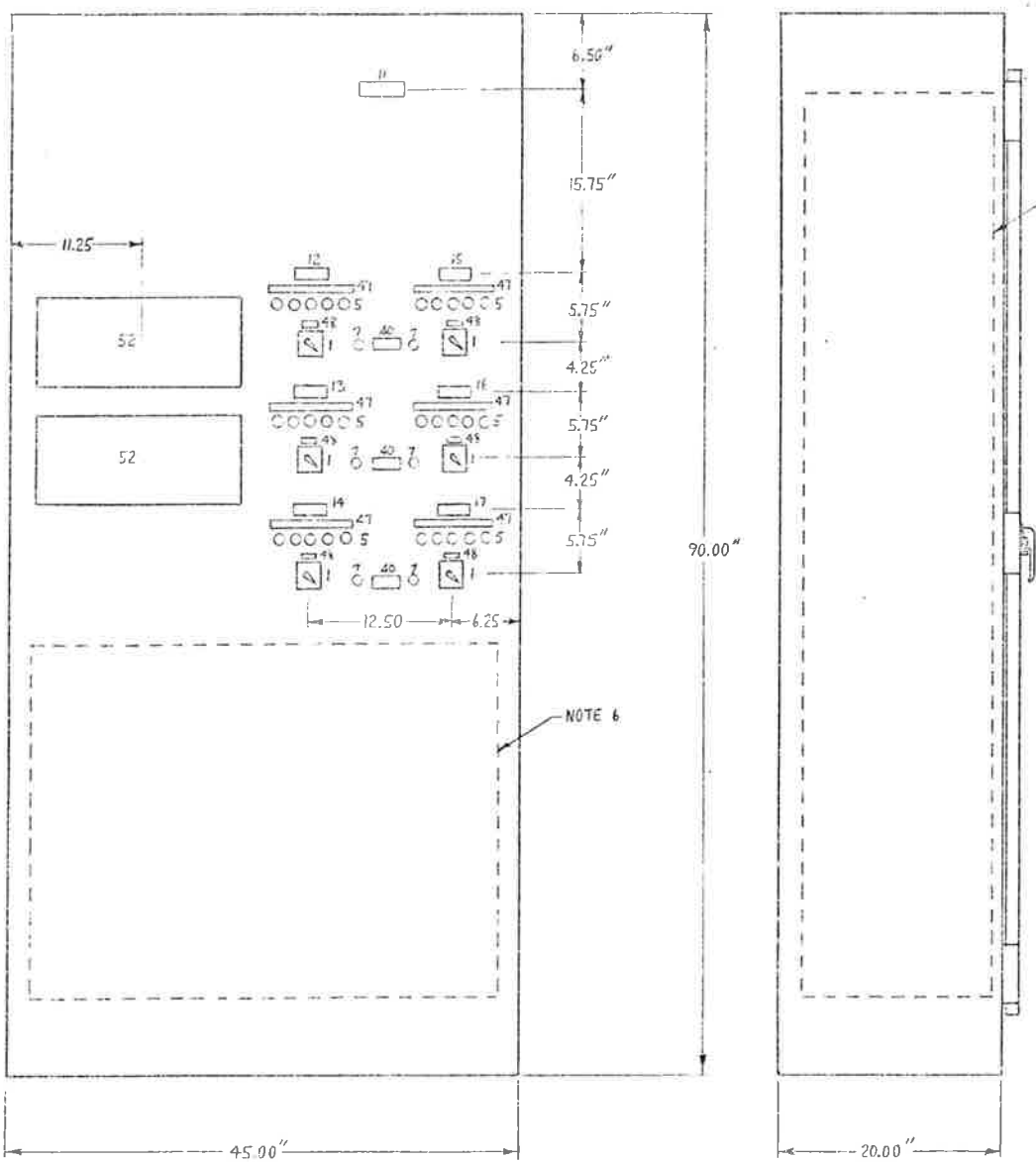
DESCRIPTION OF GROUPS	QUANTITY	UNIT PRICE	TOTAL

APPROVED	DATE	BY
✓		

OUTLINE

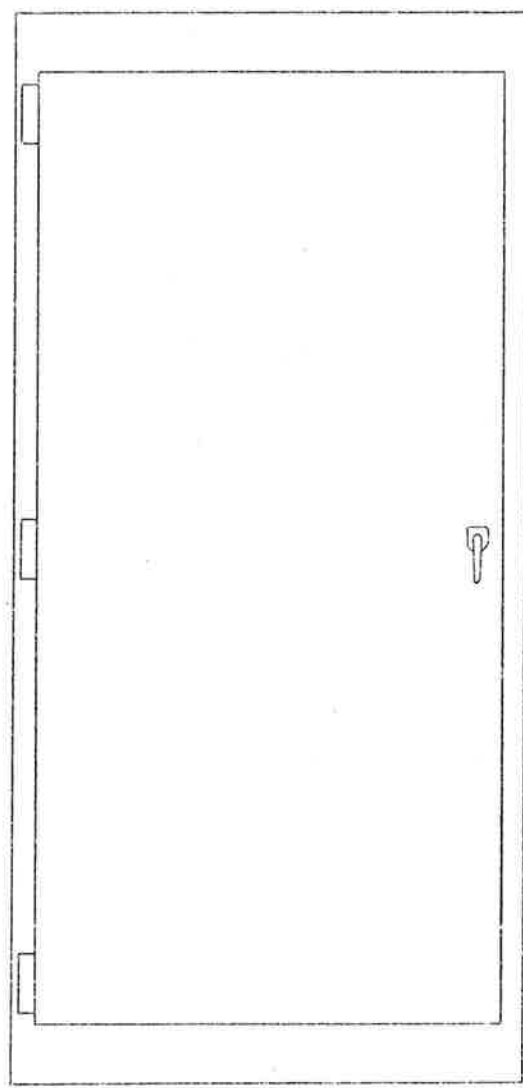
170-3 (B2) 220
JOB NAME EISENHOWER TUNNEL
CONTRACTOR HOWARD ELECTRIC
CUSTOMER GESCO
CUSTOMER'S P.O. 225-3970970
G.E. REQ# 432-94070

FEDERAL PROJ. REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1)220	123	208

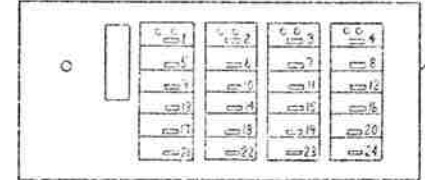


NOTE 7

NOTE 6



REAR VIEW



ITEM 52

ALARM/CONTROLLER NAMEPLATE SCHEDULE (UPPER)

N. P. No.	First Line	Second Line
1	Fan W55	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 W56	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 W57	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

ALARM/CONTROLLER NAMEPLATE SCHEDULE (LOWER)

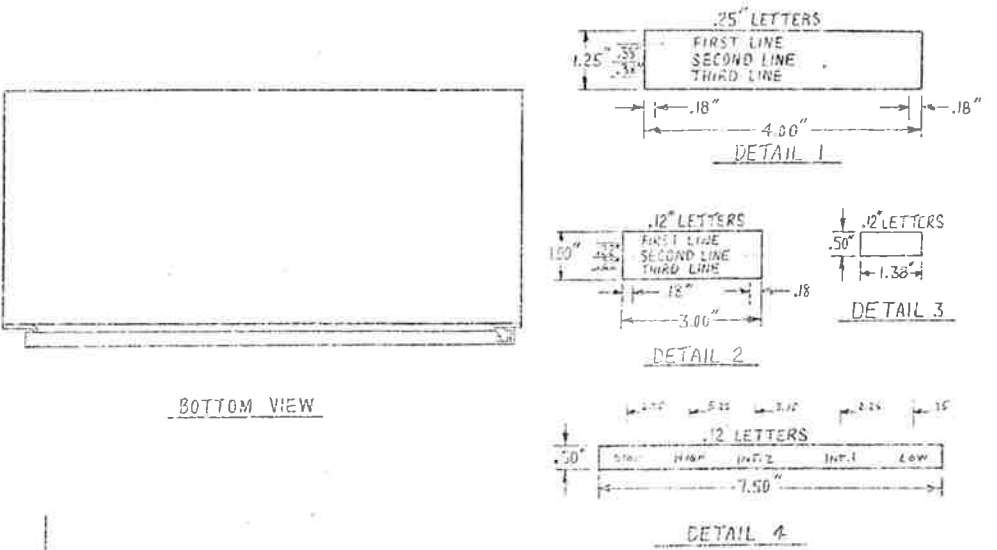
N. P. No.	First Line	Second Line
1	Fan W55	Bearing No. 1
2		Bearing No. 2
3		Bearing No. 3
4		Bearing No. 4
5		Bearing No. 5
6		Bearing No. 6
7		Bearing No. 7
8		Bearing No. 8
9	Fan W56	Bearing No. 1
10		Bearing No. 2
11		Bearing No. 3
12		Bearing No. 4
13		Bearing No. 5
14		Bearing No. 6
15		Bearing No. 7
16		Bearing No. 8
17	Fan W57	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

Equipment List

Item	Qty	Mfg.	Cat. No.	Description
1	6	GE	75ABSK 291P1	Switch type SP-10, 7 stage
5	30	GE	011084-708G5	Pilot light, type BI-10, 120V AC (note 5)
7	6	GE	011084-708G5B	Pilot light, type BI-10, 120V AC, green
43	24	GE	CR120A0402AA	Relay, 2KV, 4 N.O. & 4 N.C., 120V, 60 HZ coil
44	4	GE	CR120A03902AA	Relay, 2KV, 3 N.O. & 3 N.C., 120V, 60 HZ coil
49	6	GE	CR122A02402AA	Time delay relay (TDO), 2KV, 1 N.O. & 1 N.C. time, 1 N.O. & 1 N.C. inst., 120V, 60 HZ coil
50	6	Zenith	Model B-1	Flasher relay, open form, 60 pulses/min., 125V, 60 HZ coil
51	12	GE	CR151A125	Terminal board, 600V, 23A, box locs, 25 point
52	2	Sigma	Series 4321	Indicating multi-point alarm/controller
53	18	GE	CR120A03002AA	Relay, 2KV, 2 N.O., 120V, 60 HZ coil
54	6	Agastat	70H 2NF	Time delay relay (TDO) 4 pole, 120V, 60 HZ coil
55	3	GE	CR120A01102AA	Relay, 2KV, 1 N.O. & 1 N.C., 120V, 60 HZ coil
56	6	GE	GE8421-3	Fuse block, 250V, 1-30A, 2 pole black phenolic
57	12	Bussmann	PKWS	Fuse, 250V, 5A

Nameplate Schedule

Item	Qty	First Line	Second Line	Third Line	Detail
11	1	Local	Control Board		1
12	1	Supply Fan 5	Control		2
13	1	Supply Fan 6	Control		2
14	1	Supply Fan 7	Control		2
15	1	Exhaust Fan 5	Control		2
16	1	Exhaust Fan 6	Control		2
17	1	Exhaust Fan 7	Control		2
43	3	Control	Alarm, Stop		1
47	6	STOP-HIGH-INT	2 - 10V, 1 - LOW		4
48	6	Call to Start			3



Notes

- Nameplate material: G. E. A1980A, 1/16"
- Non-removable doors on back side.
- Enclosure: #120 H8A3A, finish to match existing.
- Nameplate, item 11, to be 6" wide.
- Pilot light colors to be as follows:
Green - Stop
Red - High
Amber - Intermediate #2
Blue - Intermediate #1
White - Low

- Interior Baseplate, 20" high x 41" wide, for mounting of fan relays.
- Interior Baseplates (each side), 27" high x 17" wide, for mounting of fan relays, terminal boards and fuse blocks. Terminal boards and fuse blocks to be located on upper portions of baseplates/incoming wiring from top.

APR 29 1977
STANDARD ELECTRIC PRODUCTS, LTD.
#224 630.32

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DESIGN-DOCK

Approved
Howard Elect. & Mech. Co.
Proj. Mgr.

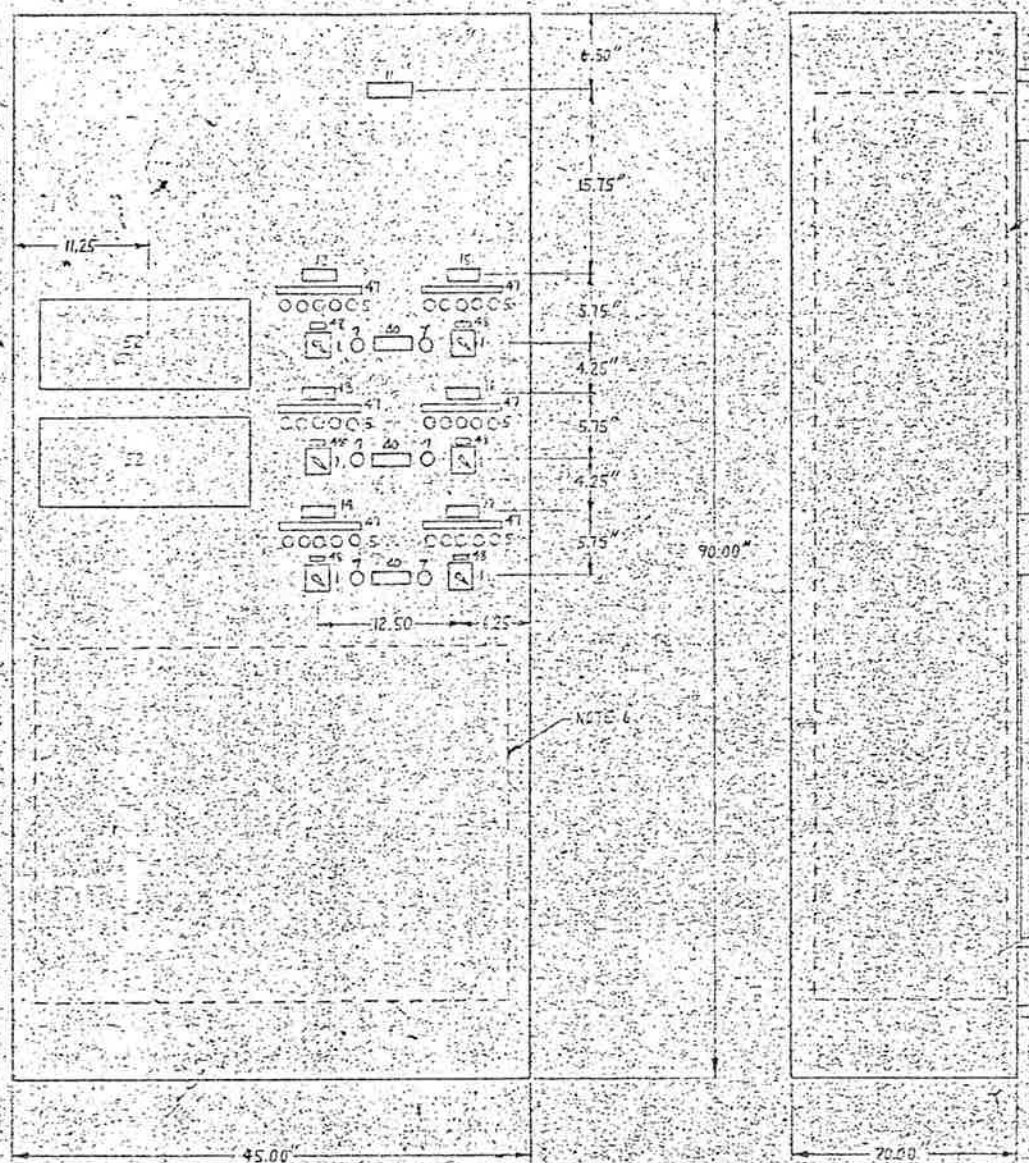
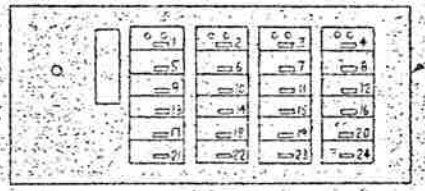
REVISIONS	PRINTS TO
1	
2	
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7	
8	
9	
10	

OUTLINE

FIRST MADE FOR DATA 170045
LOCAL CONTR. BOARD EAST

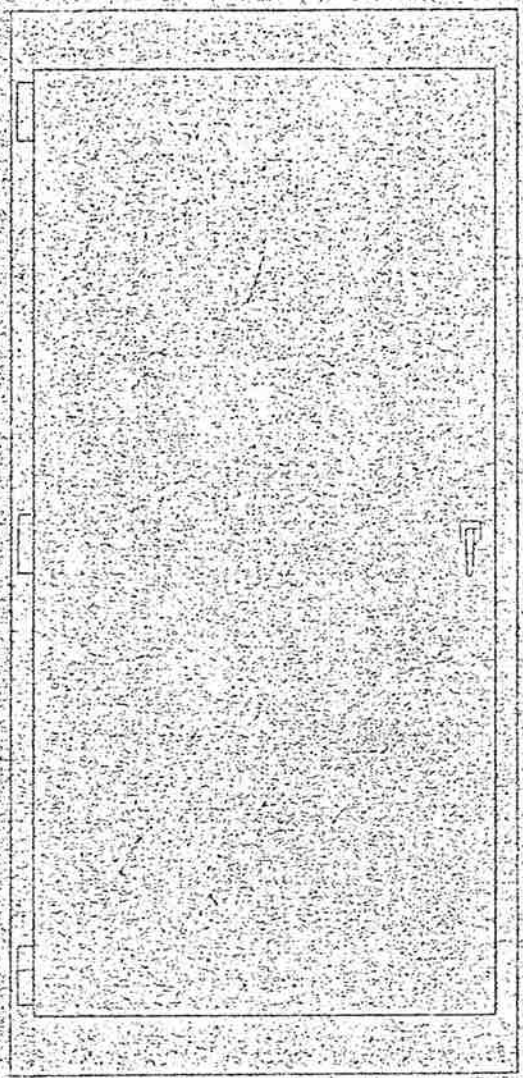
I70-3 (82) 220
JOB NAME EISENHOWER TUNNEL
CONTRACTOR HOWARD ELECTRIC
CUSTOMER GESCO
CUSTOMER'S P.O. 325-3970370
GE REQ. #32-94070

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	I70-3 (J220)	124	208



NOTE 1

NOTE 6



REAR VIEW

Component List

Item No.	Qty	Part No.	Description
1	1	755400291P2	Switch type 56-10, 7 stage
2	1	U118E70545	pilot light, type ET-10, 120V AC (note 5)
3	1	U118E70545	pilot light, type ET-10, 120V AC, green
4	1	CR12A04107AA	Relay, 300V, 4 N.C., 4 N.O., 120V, 60 Hz coil
5	1	CR12A04107AA	Relay, 300V, 2 N.O., 2 N.C., 120V, 60 Hz coil
6	1	CR12A0280AA	Time delay relay, (1000), 300V, 1 N.O., 4 N.C. threads, 1 N.O., 2 J.N.C. threads, 120V, 60 Hz coil
7	1	Model B-3	Flasher relay, open rear, 60 pulses/min, 120V, 60 Hz coil
8	1	CR12A125	Terminal board, 300V, 75A, max load, 25 point
9	1	CR12A125	Terminal board, 300V, 75A, max load, 25 point
10	1	CR12A0005AA	Relay, 300V, 2 N.O., 120V, 60 Hz coil
11	1	7012AB	Time delay relay (1000) 4 pole, 120V, 60 Hz coil
12	1	CR12A01102AA	Relay, 300V, 1 N.O., 1 N.C., 120V, 60 Hz coil
13	1	CR6621-3	Fuse block, 250V, 1-30A, 2 pole-black phenolic
14	1	XXXXXX	Fuse, 250V, 5A

Alarm Controller Nameplate Schedule

Item	Qty	First Line	Second Line	Third Line	Detail
11	1	Local	Control Board		1
12	1	Supply Fan 3	Control		2
13	1	Supply Fan 5	Control		2
14	1	Supply Fan 7	Control		2
15	1	Exhaust Fan 3	Control		2
16	1	Exhaust Fan 5	Control		2
17	1	Exhaust Fan 7	Control		2
18	1	Control	Available		2
19	1	STOP-40-INT. 2	INT. 2 - LOW		4
20	1	Pull to Start			3

ALARM CONTROLLER NAMEPLATE SCHEDULE (UPPER)

N. P. No.	First Line	Second Line
1	FAN EES	Bearing No. 1
2		Bearing No. 2
3		Bearing No. 3
4		Bearing No. 4
5		Bearing No. 5
6		Bearing No. 6
7		Bearing No. 7
8		Bearing No. 8
9	FAN EES	Bearing No. 1
10		Bearing No. 2
11		Bearing No. 3
12		Bearing No. 4
13		Bearing No. 5
14		Bearing No. 6
15		Bearing No. 7
16		Bearing No. 8
17	FAN EET	Bearing No. 1
18		Bearing No. 2
19		Bearing No. 3
20		Bearing No. 4
21		Bearing No. 5
22		Bearing No. 6
23		Bearing No. 7
24		Bearing No. 8

ALARM CONTROLLER NAMEPLATE SCHEDULE (LOWER)

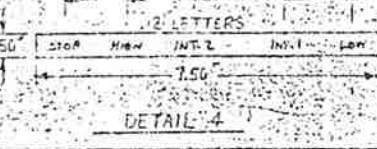
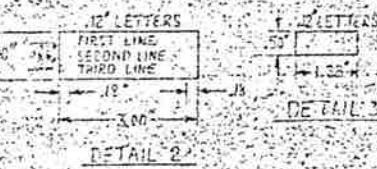
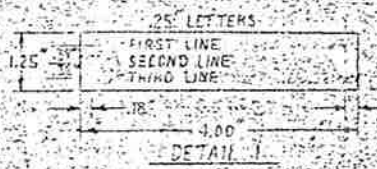
N. P. No.	First Line	Second Line
1	FAN ESS	Bearing No. 1
2		Bearing No. 2
3		Bearing No. 3
4		Bearing No. 4
5		Bearing No. 5
6		Bearing No. 6
7		Bearing No. 7
8		Bearing No. 8
9	FAN ESS	Bearing No. 1
10		Bearing No. 2
11		Bearing No. 3
12		Bearing No. 4
13		Bearing No. 5
14		Bearing No. 6
15		Bearing No. 7
16		Bearing No. 8
17	FAN EST	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

Check this drawing for compliance with the design concept of the project and the specifications of the equipment to be used. The contractor is responsible for the selection of the equipment to be used and for the selection of the materials to be used. The contractor is also responsible for the selection of the colors to be used for the nameplates. The contractor is also responsible for the selection of the type of the nameplates to be used.

NOTES

- Nameplate material: 1/8" x 1/4" x 1/8" (1/8" thick)
- Non-removable doors on back side
- Enclosures: 1/4" BA3A finish to site
- Nameplate, item 11, to be 1/2" wide
- Nameplate colors to be as follows:
Green - Stop
Red - High
Amber - Intermediate #2
Blue - Intermediate #1
White - Low

- Interior baseplate, 20" high x 41" wide for mounting of fan relays
- Interior baseplates (each side), 7 1/2" high x 17" wide, for mounting of fan relays, terminal boards and fuse blocks
- Interior doors and fuse blocks to be located on upper portion of baseplate, locking wiring from top



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Howard Electric & Mech. Co.
Approved
Prof. Eng.

Table with columns: REGION, DIVISION, PROJECT NO., SHEET NO., TOTAL SHEETS. Values: COLORADO, 170-3, 1220, 125, 208.

ABBREVIATIONS

- List of abbreviations: L (LOW SPEED), I1 (INTERMEDIATE SPEED), H (HIGH SPEED), etc.

NOTES

- Notes regarding control representation and wire numbering conventions.

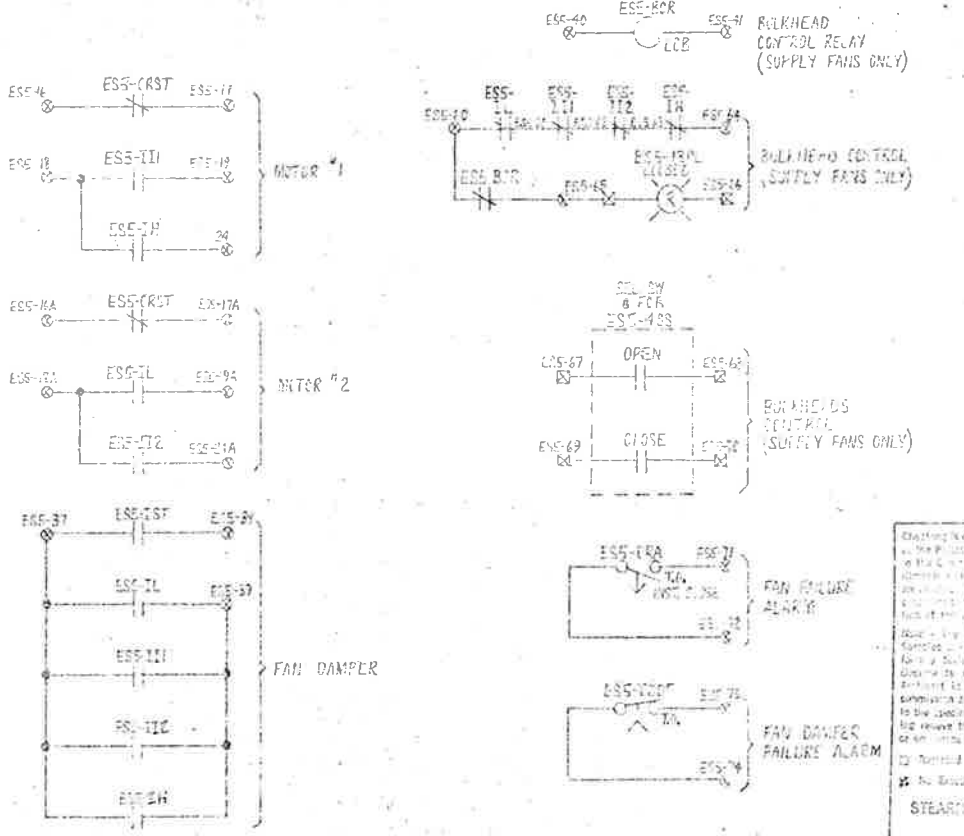
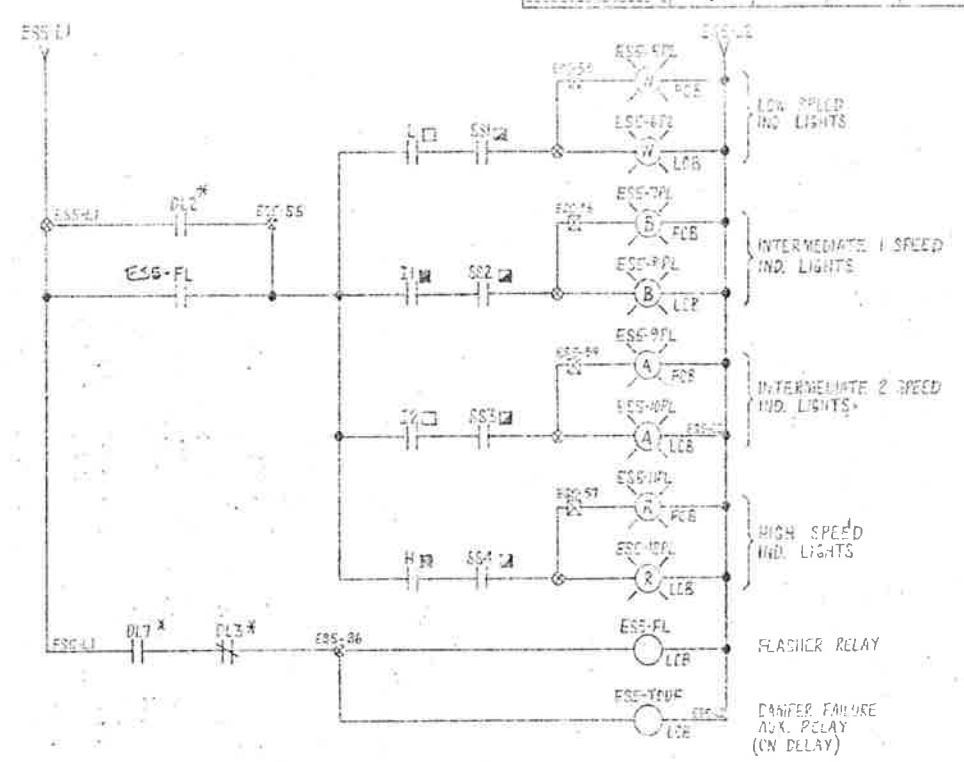
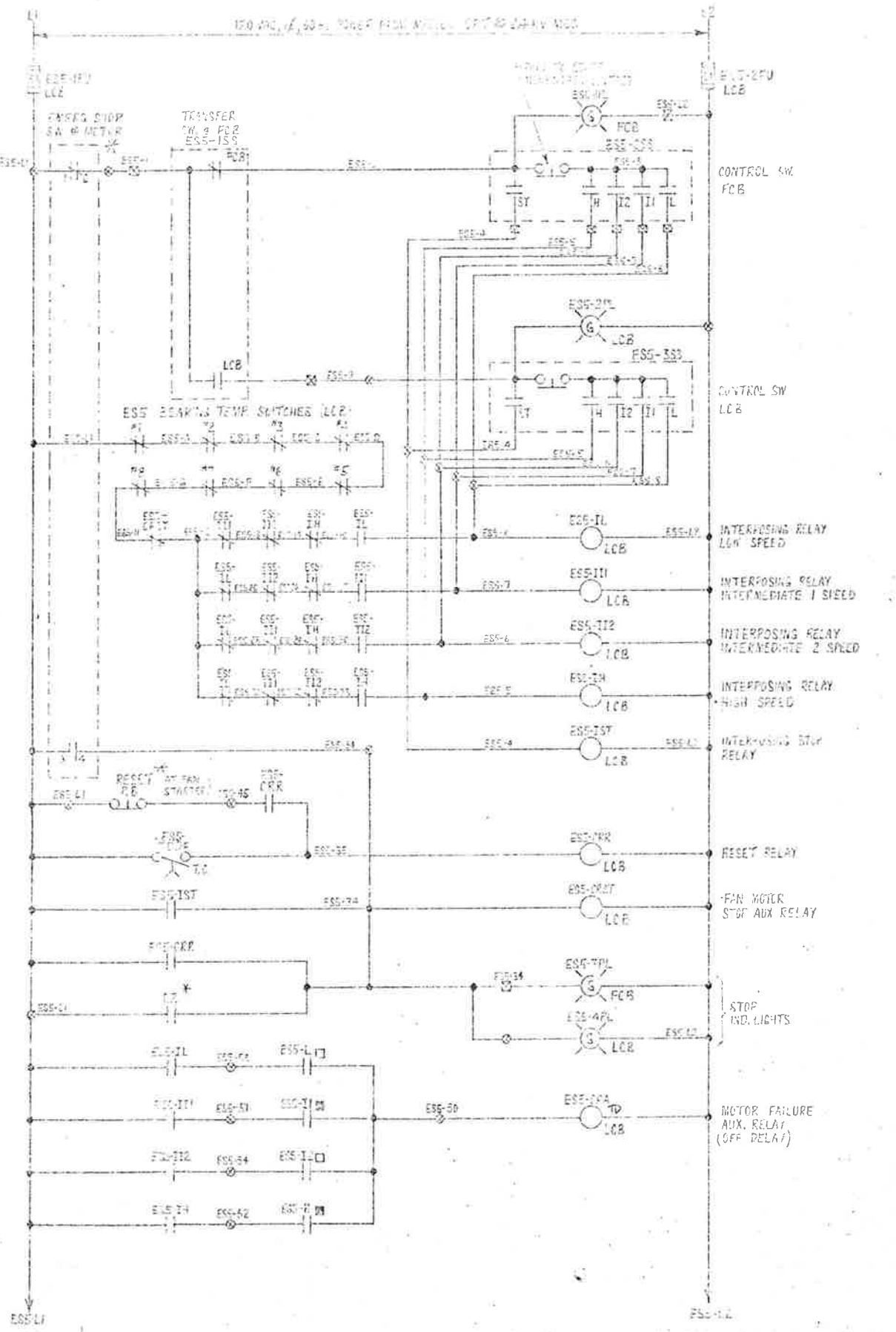
Legend table for wire numbers and prefixes: WIRE, PREFIX, EAST SUPPLY FAN #1, etc.

APR 23 1977

FINAL



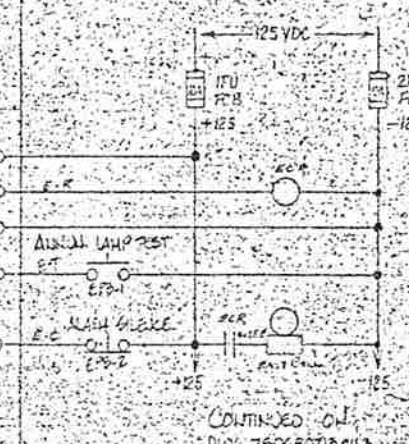
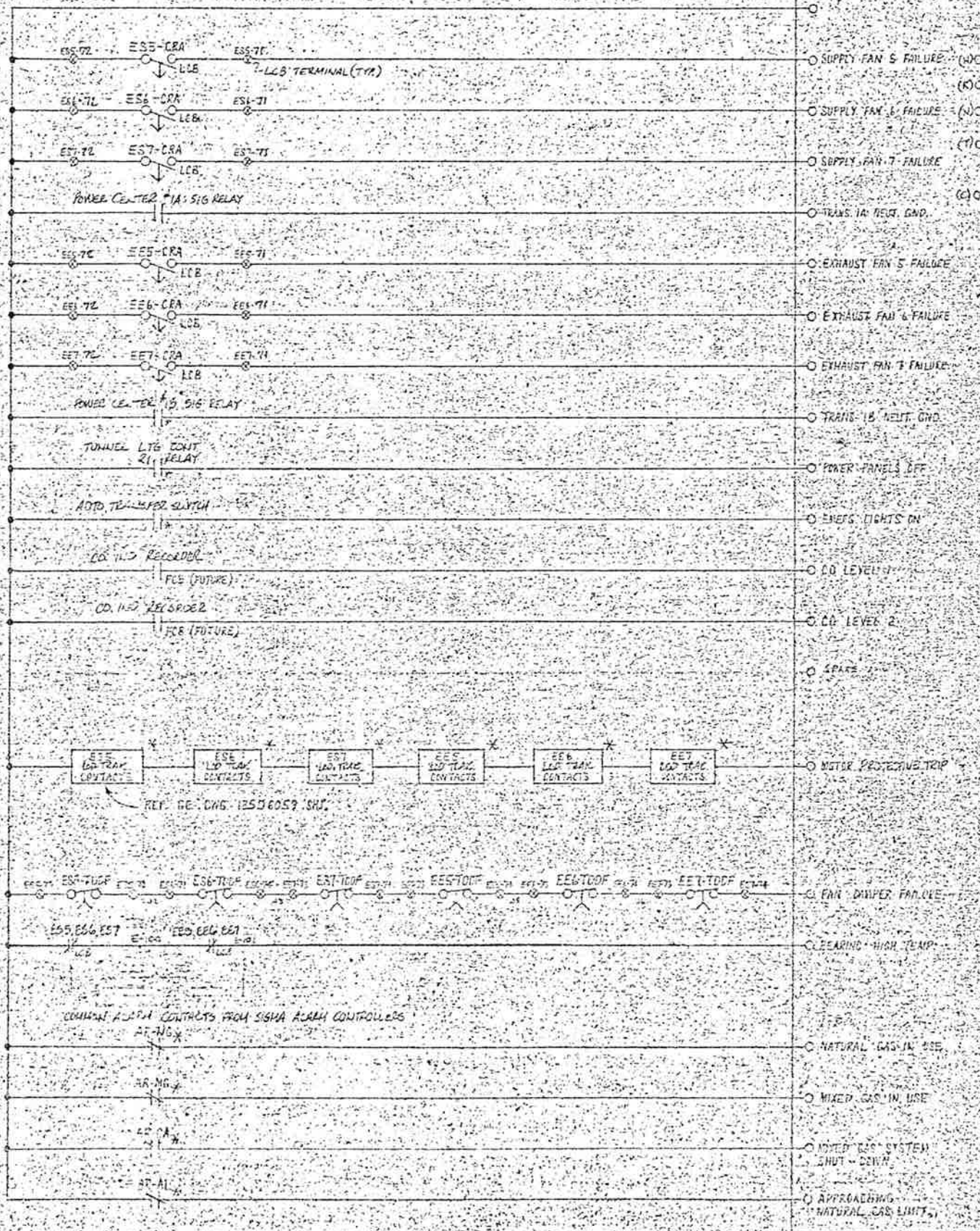
Approval and revision table with columns: DESCRIPTION OF WORK, DESIGNER, DATE, etc.



Checking is only done on the control circuit... STEARNS-ROGER ARCHITECTS, LTD.

EAST VENTILATION BUILDING ANNUNCIATION

EAST ANNUNCIATOR AT FCP



GENERAL ELECTRIC 150680713

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING DIMENSIONS

APPLIED MATERIALS	SELECTED	POSITION	TERMINAL	WIRE
	✓			

ELEMENTARY
 FIRST MADE FOR: 02/43000/41 44 45
 LEAD CONTROL BOARD, LOCAL CONTROL BOARD (EAST VENT)
 ITO-3 (S2) 220
 KB RAIL EISENHOWER TUNNEL
 CONTRACTOR: HOWARD ELECTRIC
 CUSTOMER: GESCO
 CUSTOMER'S P.O. 225-3970970
 GE FILE: 132-95070

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1220)	126	208

Change is only for construction when it is not covered by the drawings and specifications. The contractor shall be responsible for the interpretation of the drawings and specifications. The contractor shall be responsible for the interpretation of the drawings and specifications. The contractor shall be responsible for the interpretation of the drawings and specifications.

Note: The contractor shall be responsible for the interpretation of the drawings and specifications. The contractor shall be responsible for the interpretation of the drawings and specifications. The contractor shall be responsible for the interpretation of the drawings and specifications.

STEARN-ROGER ARCHITECTS, LTD.
 APR 29 1977



Approved
 Howard Elect. & Mech. Co.
 Proj. Mgr.

DESCRIPTION OF CHANGES	REVISIONS	DATE	BY
	1	4/29/77	CPD
	2	5/1/77	CPD
	3	5/1/77	CPD

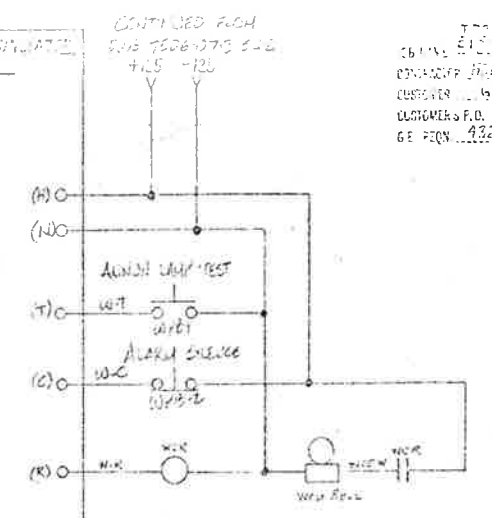
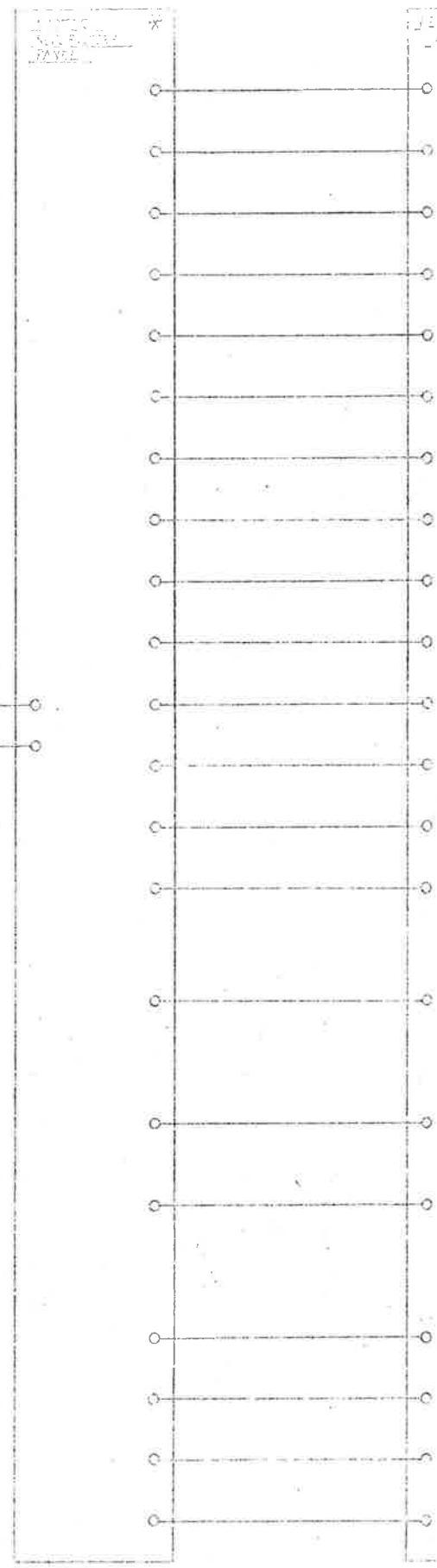
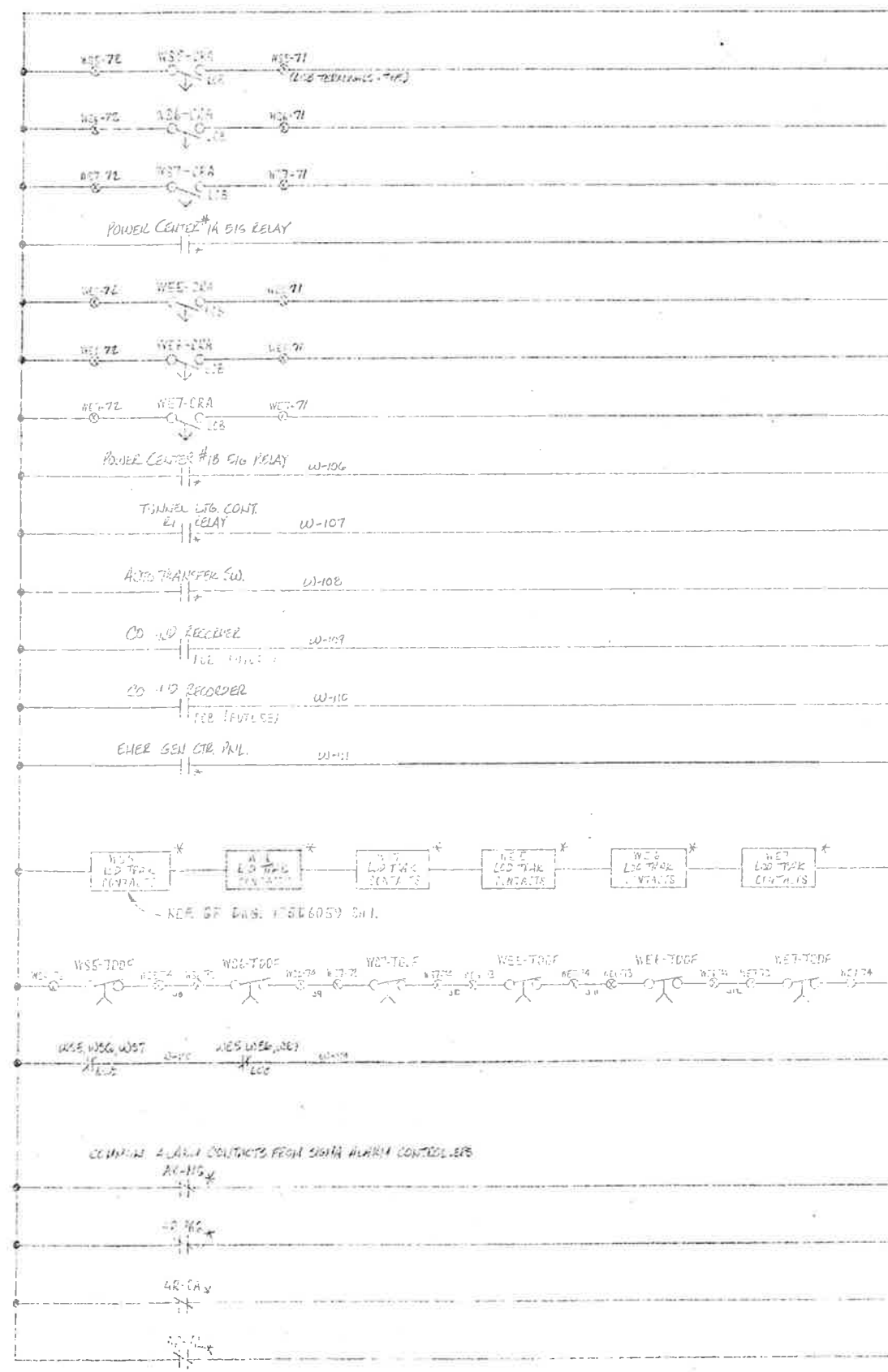
DATE: P. HOGAN 5-7-77
 DRAWN: 5/19/77

C.P.O.
 VAN NUYS CA

150680713

DATE	DIVISION	PROJECT NO.	DATE
170-21-2220		127	209

- SEMI-TELEPHONE PANEL
- SUPPLY FAN 5 FAILURE
- SUPPLY FAN 6 FAILURE
- SUPPLY FAN 7 FAILURE
- TRANS. 1A NEUT. GND.
- EXHAUST FAN 5 FAILURE
- EXHAUST FAN 6 FAILURE
- EXHAUST FAN 7 FAILURE
- TRANS. 1B NEUT. GND.
- POWER PANELS OFF
- THEES LIGHTS ON
- CO LEVEL 1
- CO LEVEL 2
- EMER. GEN.
- METER PROTECTIVE TRIP
- FLY DAMPER FAILURE
- BEARING'S HIGH TEMP.
- NATURAL GAS IN USE
- MIXED GAS IN USE
- MIXED GAS SYSTEM SWITCH - OPEN
- ADJUSTING NATURAL GAS LIGHT

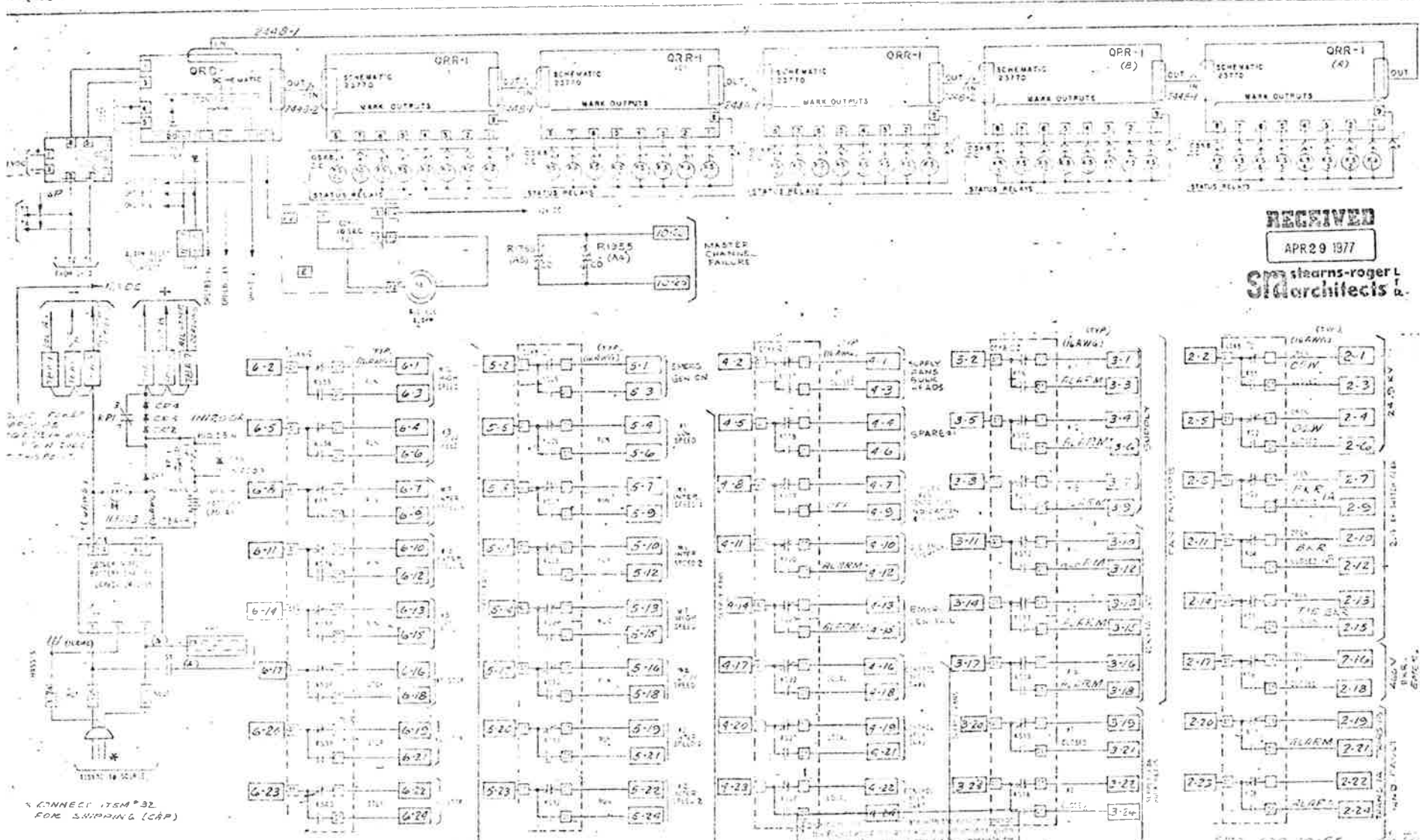


Approved
Howard Elect. & Mech. Co.
A. H. ...



DESCRIPTION OF GROUP	REVISIONS	DATE
	1. ...	
	2. ...	
	3. ...	

PROJECT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
170-31	COLORADO	1220	128	



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 stearns-roger L
 architects

CONNECT ITEM #32 FOR SHIPPING (CAP)

UNLESS OTHERWISE INDICATED
 DENOTES TWISTED PAIR WIRES RUN SEPARATELY - 16AWG
 DENOTES ASBESTOS WIRE

UNLESS OTHERWISE INDICATED
 DENOTES TWISTED PAIR WIRES RUN SEPARATELY - 16AWG
 DENOTES ASBESTOS WIRE

STEARNS-ROGER ARCHITECTS, LTD.
 1000 17th St. N.W.
 Denver, Colorado 80202
 Tel. 333-3333

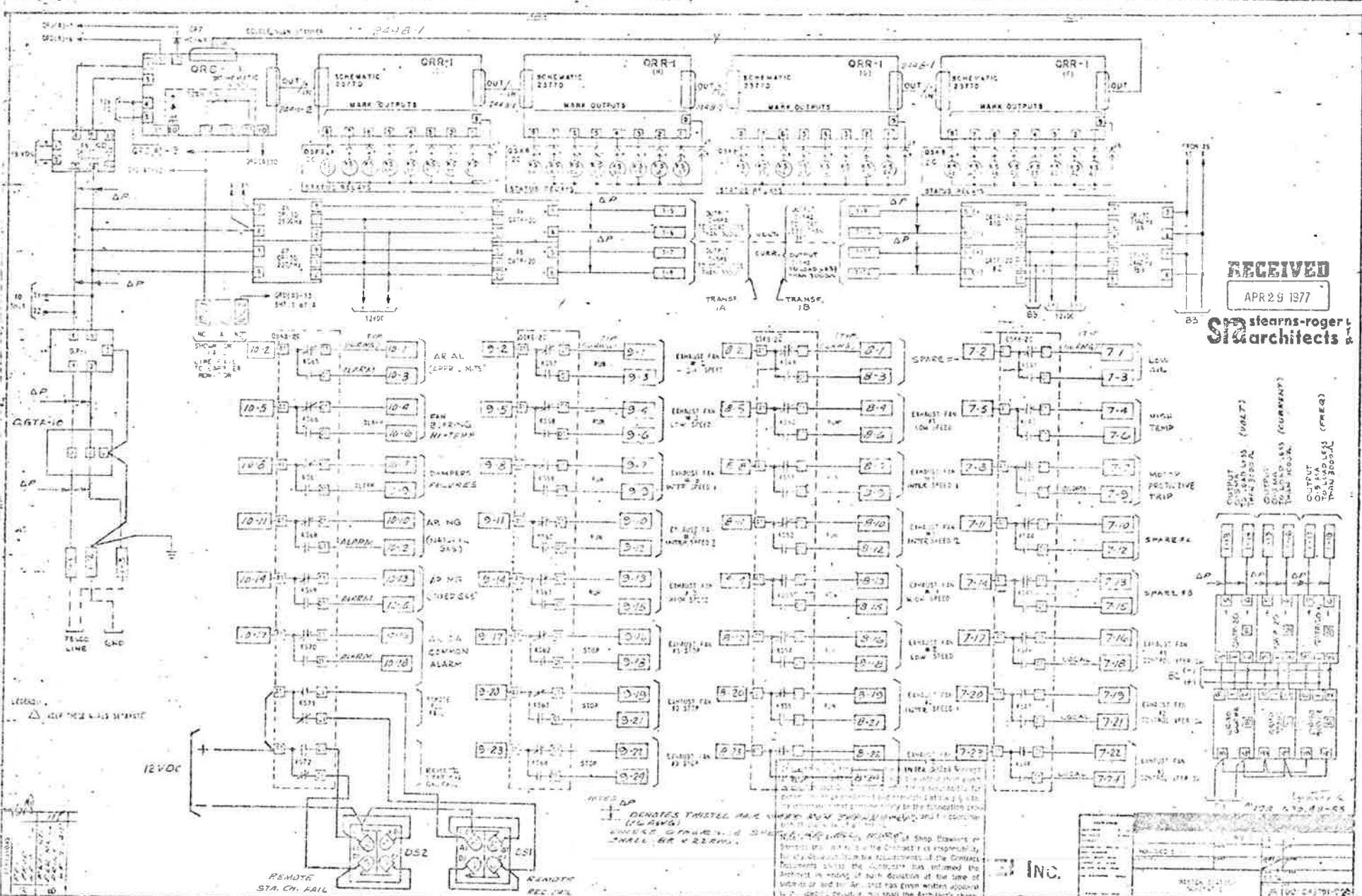
STEARNS-ROGER ARCHITECTS, LTD.
 1000 17th St. N.W.
 Denver, Colorado 80202
 Tel. 333-3333

Approved
 Howard Ewert & M.
 Proj. No.



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PROJECT NO.	170-3(1220)	SHEET NO.	129
DIVISION		TOTAL SHEETS	



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SIA architects

INC.

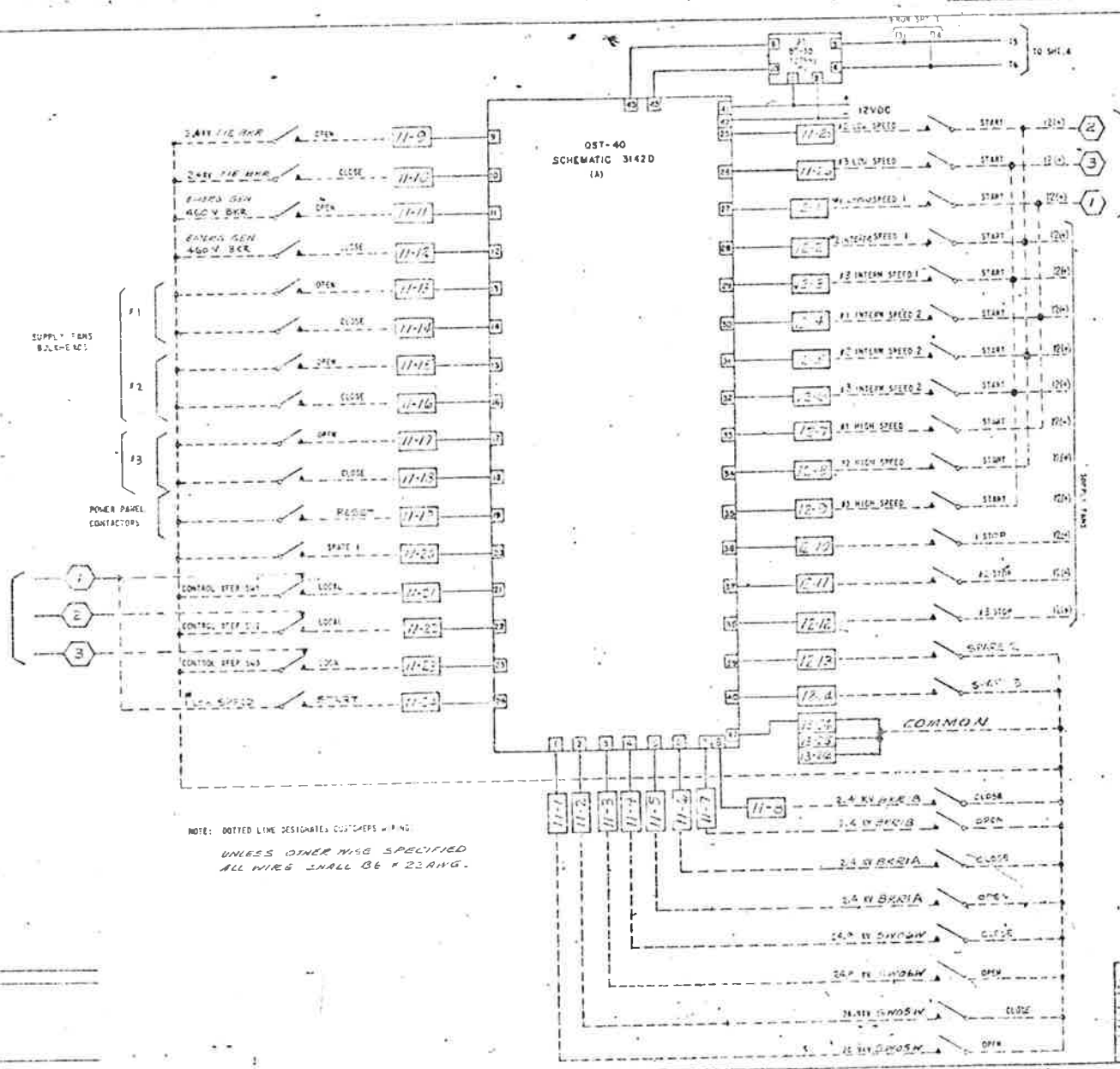
Approved
Howard E. ...
Plat. Mgr.

STEARNIS-ROGER ARCHITECTS, LTD.

APR 1977
STEARNIS-ROGER ARCHITECTS, LTD.



PROJECT NO.	DWG. NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
170-31-1200	170-31-1200	170-31-1200	130	



SHEET 3

Drawings are only in conformity with the design concept of the client and do not constitute a contract. The contractor is responsible for making the drawings conform to the actual conditions of the site. The architect is not responsible for any errors or omissions in the drawings or for any damage to the property of the client or for any delay in the construction of the work.

Note: The Architect's drawings of this drawing or sample are not to be used for any purpose other than the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's checking relieve the Contractor from responsibility for errors or omissions in the Shop Drawings or work.

Rejected Make Corrections Noted
 No Exceptions Review and Approved

STEARNS-ROGER ARCHITECTS, LTD.

Date 5-4-77 By D.P.W.

APR 29 1977

STEARNS-ROGER ARCHITECTS LTD.

FINAL

APR 1977

STA. BRIDGE DESIGN-DOH

INC. 478 638-835

APR 1977

APR 1977

APR 1977

Approved

Edward Elect. & Mech.

1001 M

DATE	1917
NO.	131
PROJECT	1220
DIVISION	131
COLORADO	1220
PROJECT NO.	1220
SHEET NO.	131
TOTAL SHEETS	131

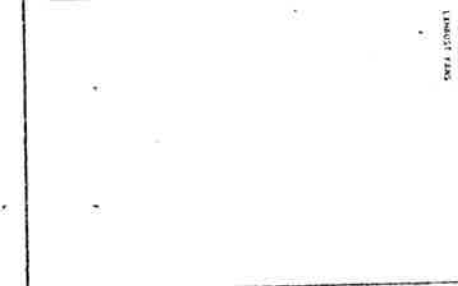
APR 29 1917

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 APR 29 1917
 STEARNS-ROGER ARCHITECTS & ENGINEERS
 DESIGN - ARCHITECTS
 APR 1917

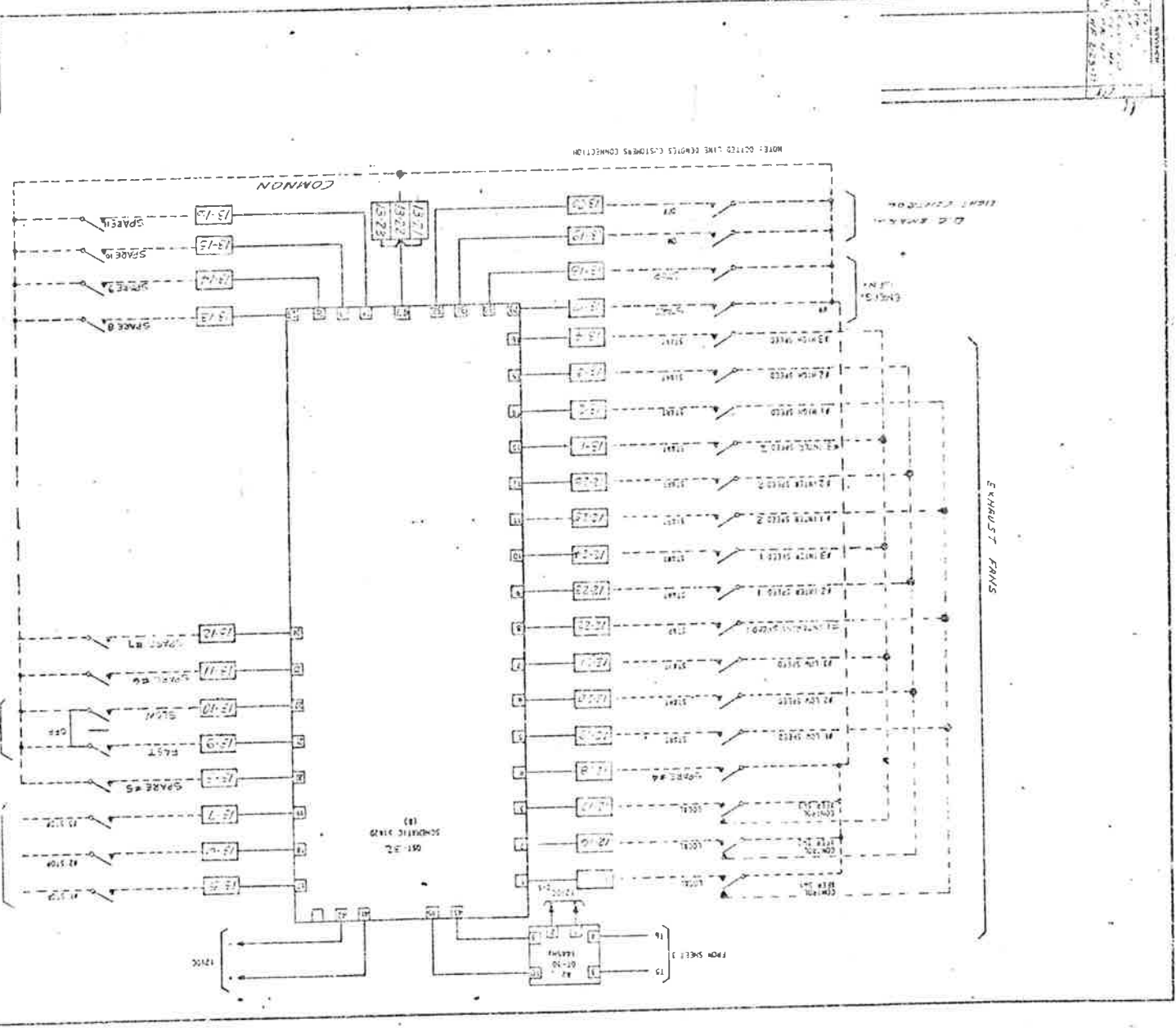
FINAL

NOTE: UNLESS OTHERWISE SPECIFIED ALL WIRE SHALL BE #22 AWG

STEARN'S-ROGER ARCHITECTS, LTD.
 5-17
 87-20
 131



PROJECT NO.	1220
SHEET NO.	131
TOTAL SHEETS	131



EXHAUST FANS

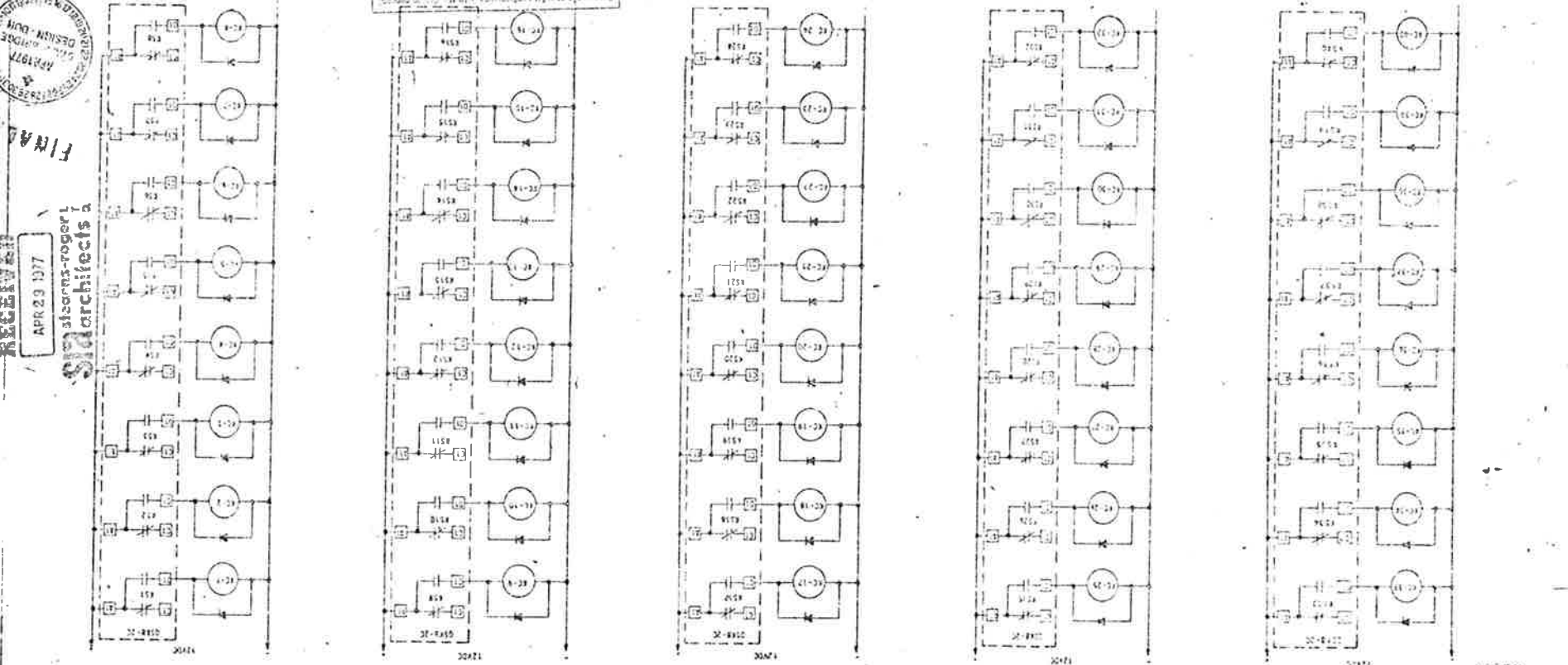
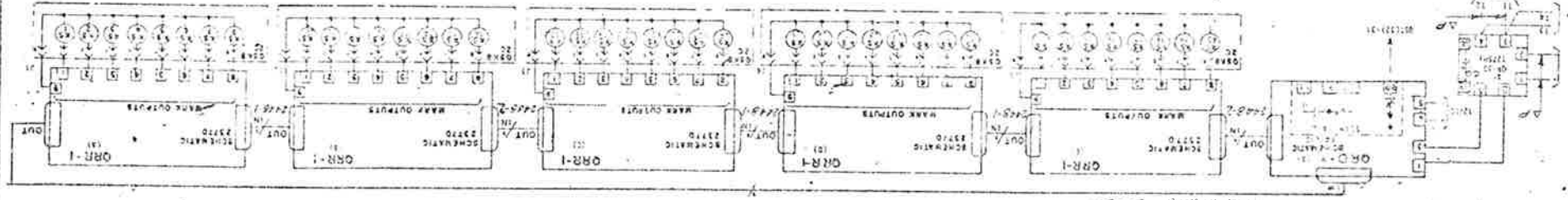
SPACE #1
 SPACE #2
 SPACE #3
 SPACE #4
 SPACE #5
 SPACE #6
 SPACE #7
 SPACE #8
 SPACE #9
 SPACE #10

1200
 FROM SHEET 130

NOTE: CONTROL LINE EXHAUST FANS CONNECTION

COMMON

PROJECT NO.	170-31-220
PROJECT NAME	COLONADO
DATE	1/32



NO.	170-31-220
DATE	1/32

Approved
 H.W. & M. Elect. & Mech. Co.
 Prof. M. J.



RECEIVED
 APR 29 1937
 H.W. & M. Elect. & Mech. Co.

5-4-31
 H.W. & M. Elect. & Mech. Co.
 Prof. M. J.

DEVELOP THESE DRAWINGS
 SEPARATELY, LEAVE
 UNLESS OTHERWISE SPECIFIED
 ALL DIMENSIONS IN INCHES

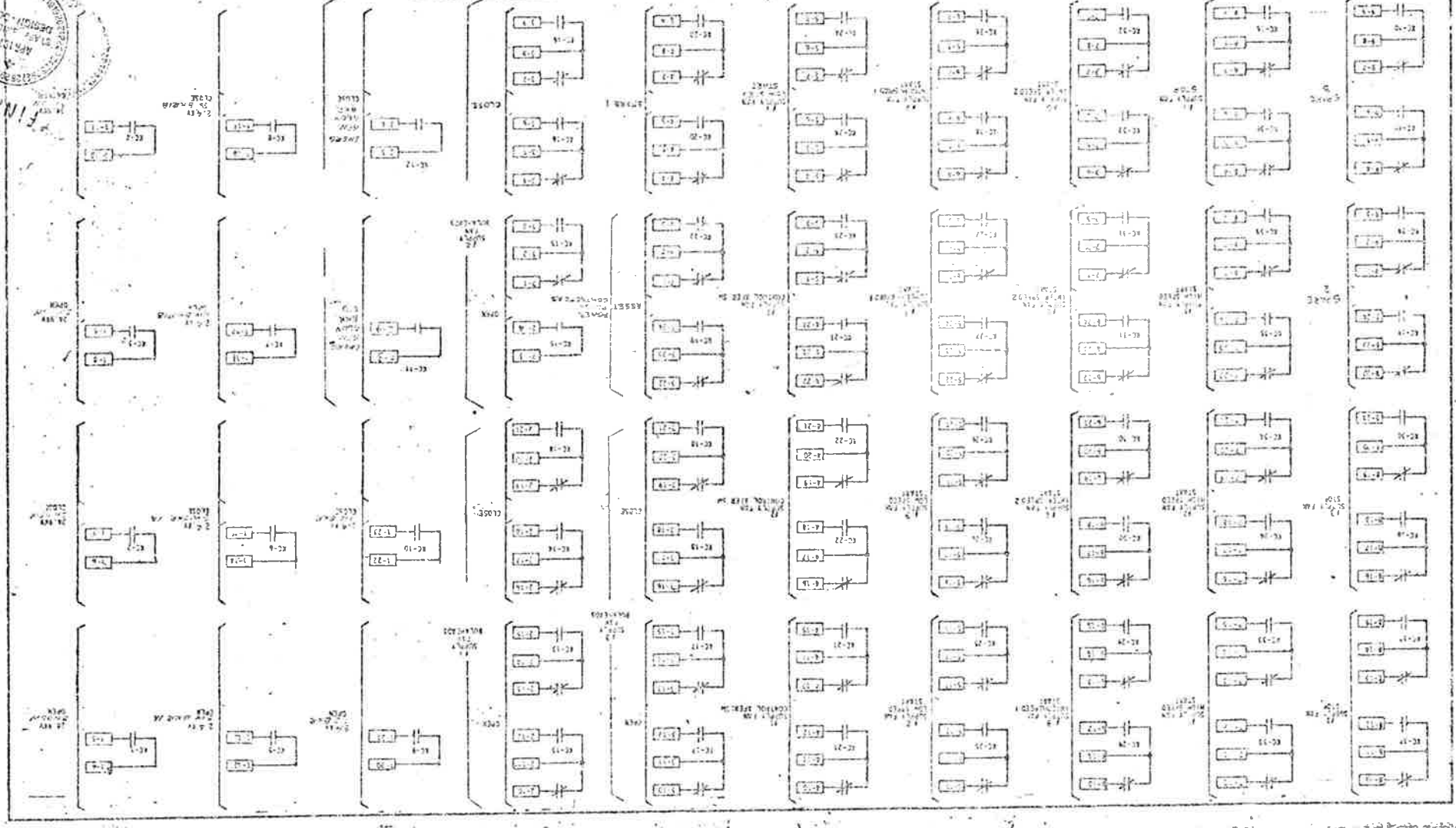
NO. 170-31-220
 APR 29 1937
 H.W. & M. Elect. & Mech. Co.

Approved: _____
 Howard Brown & Sons, Inc.
 12-15-1934

STEARNS ROBINSON ARCHITECTS, LTD.
 12-15-1934

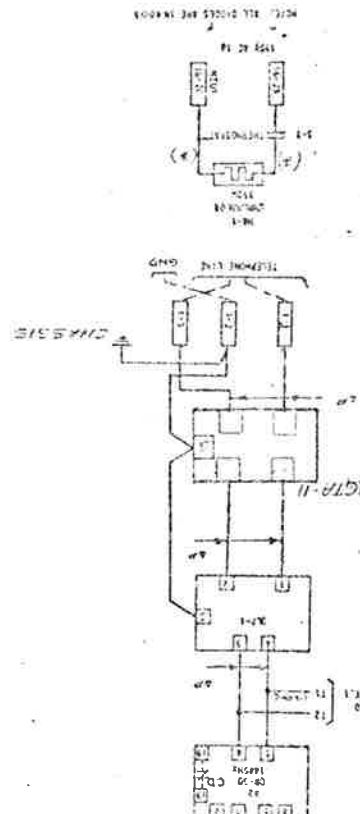
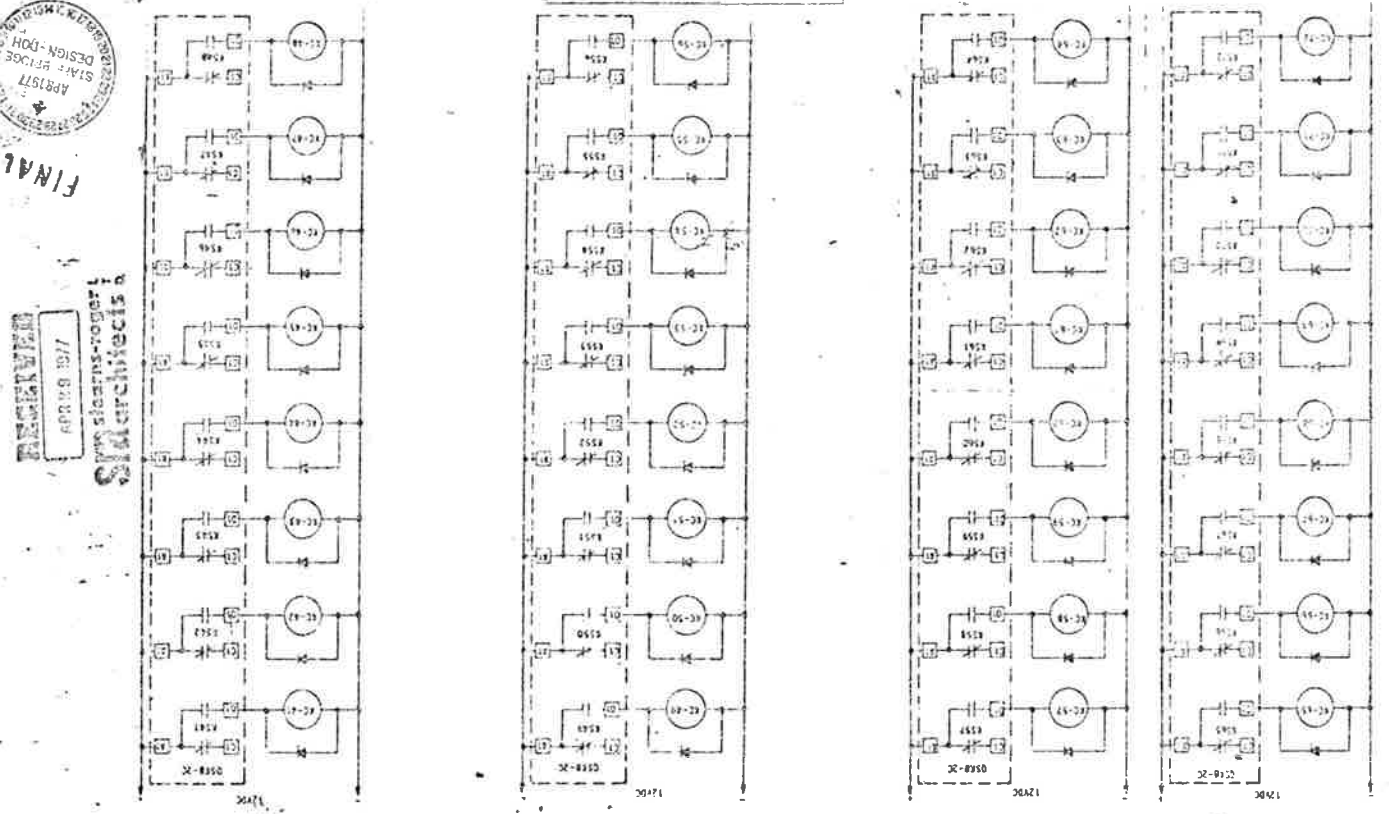
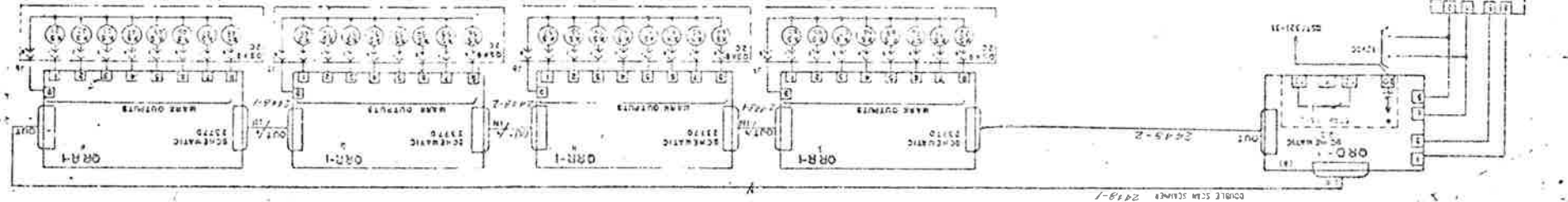
5-1-37

UNLESS OTHERWISE SPECIFIED
 ALL WIRING SHALL BE IN PIPES



PROJECT NO.	133
DIVISION	120-34 1200
DATE	12-15-1934
BY	ME: G. M.

COLLECTOR	170-36-1283	134
DIVISION	PROJECT NO.	



DATE	170-36-1283
BY	
FOR	
APPROVED	

Approved
 HOWARD ELECT. & MACH.
 Prof. 447

STEARNS-ROGER ARCHITECTS, LTD.
 100-45 170th St.
 Corona, N.Y.

APR 19 1977
 STEARNS-ROGER ARCHITECTS
 STAFF ARCHITECT
 DESIGN - DOR
 FINAL

UNLESS OTHERWISE SPECIFIED ALL
 DIMENSIONS SHALL BE IN INCHES
 (K) DENOTES HELIXES WIRE

DOUBLE SCREW SCHEMATIC 2489-1

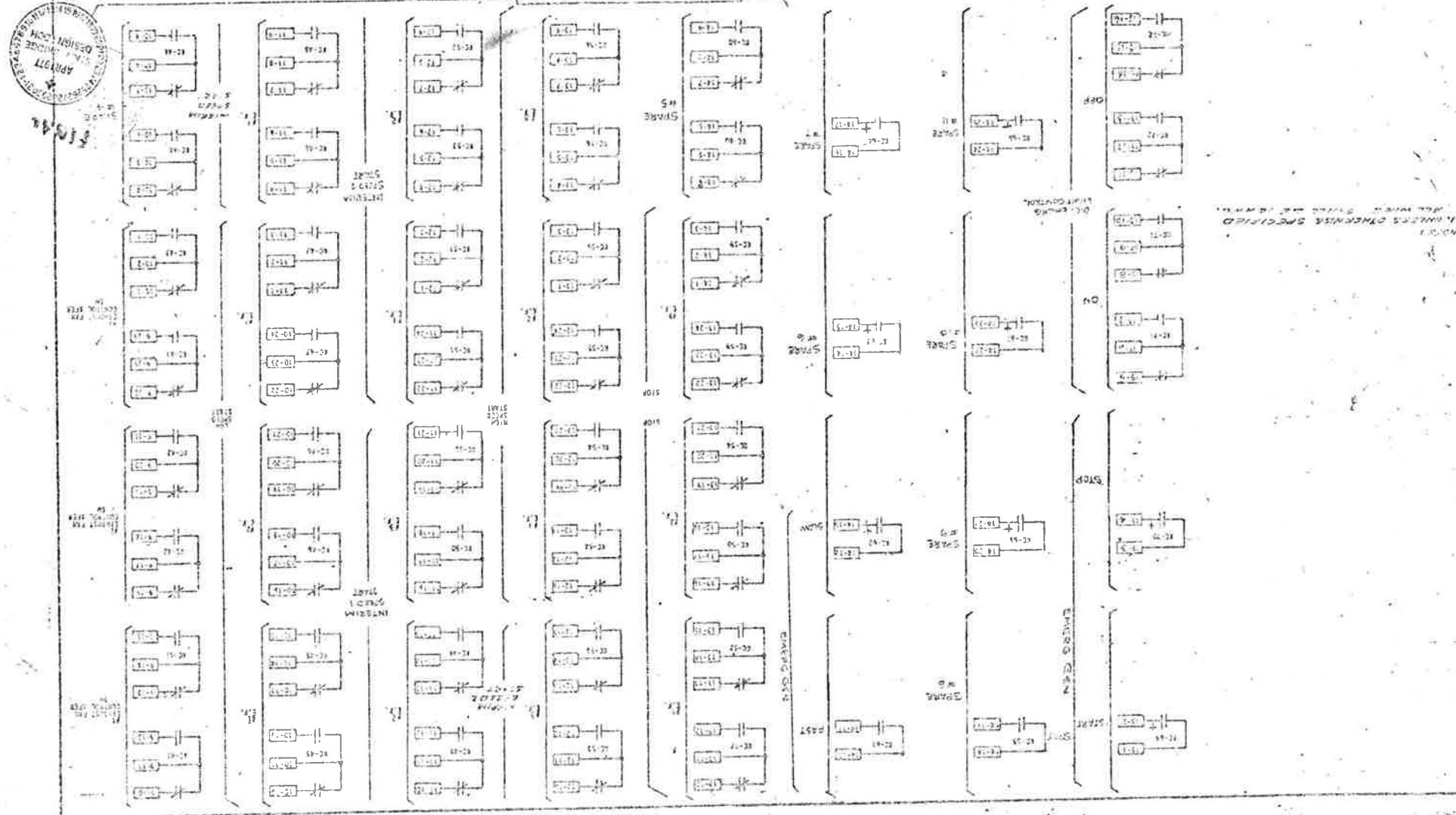
APPROVED

STEINNS-ROGER ARCHITECTS, LTD.
 200 Madison Ave., New York 17, N.Y.
 100-100-1000

DATE: 1-20-51

PROJECT NO. 135

APR 29 1951



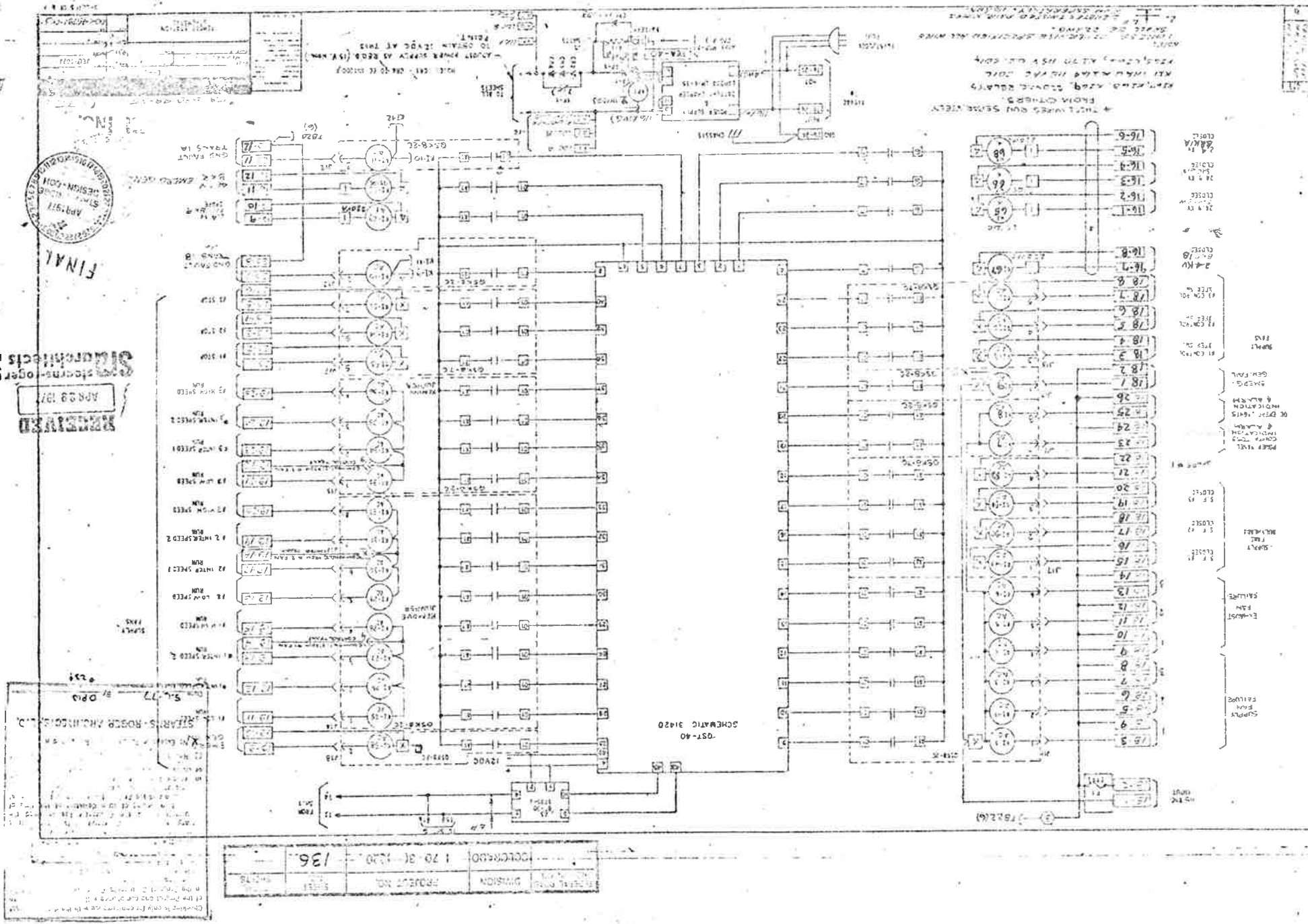
APR 29 1951

STEINNS-ROGER ARCHITECTS, LTD.

PROJECT NO. 135

DATE: 1-20-51

Approved
 HOWARD ELECT. & MESH.
 Proj. 1420



RECEIVED
 APR 28 1931
 STEARN-S-ROGER ARCHITECTS, INC.

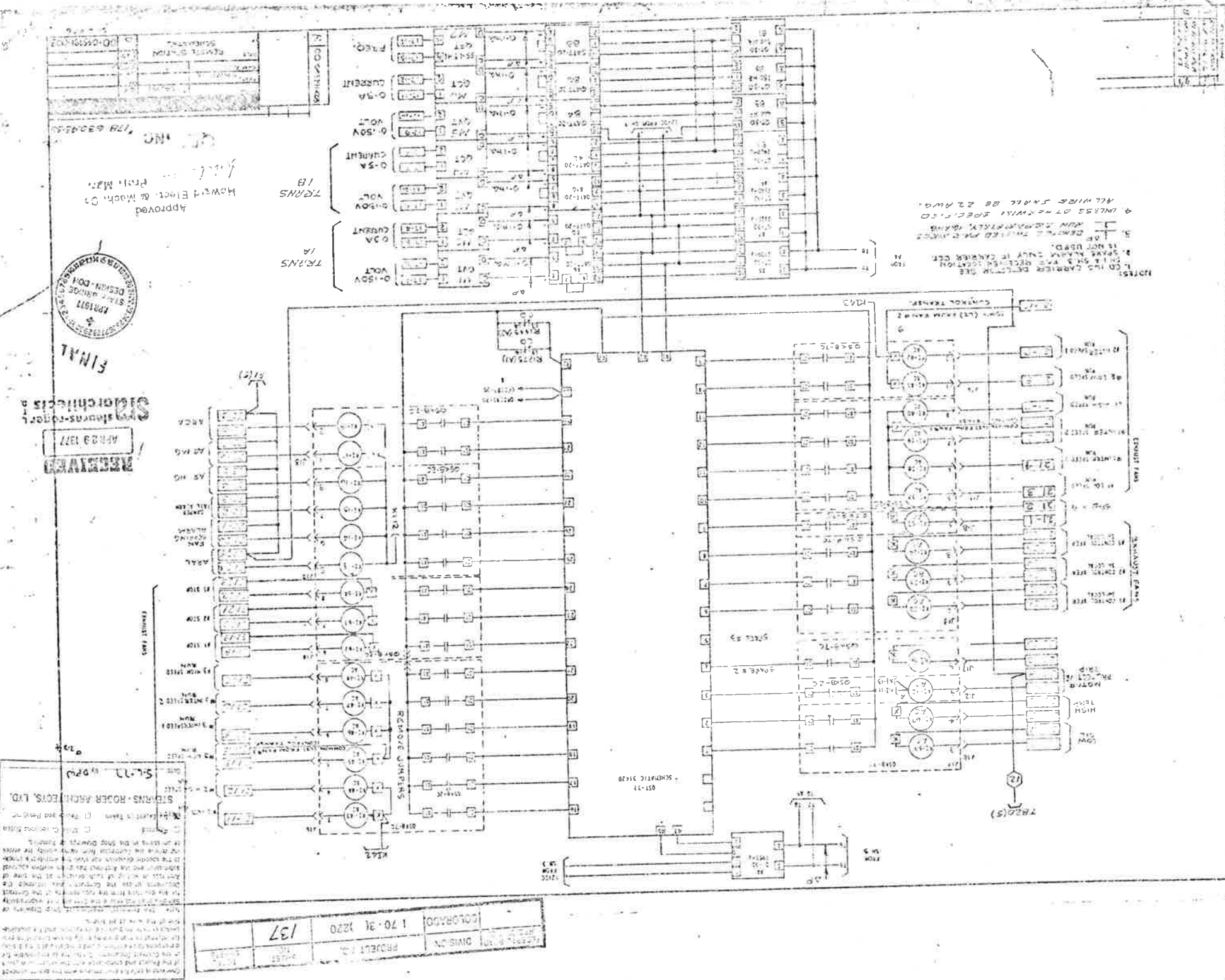
RECEIVED
 APR 28 1931
 STEARN-S-ROGER ARCHITECTS, INC.

RECEIVED
 APR 28 1931
 STEARN-S-ROGER ARCHITECTS, INC.

CORRECTED 1-20-31-1930 136
 PROJECT NO. 136
 DIVISION
 DATE 1-20-31-1930

SCHEMATIC 31420

1522(a)



NOTES:
 1. FOR THE CARRIER DETECTOR SEE
 2. SEE THE MAINS WIRE CONNECTION
 3. SEE THE MAINS WIRE CONNECTION
 4. ALL WIRE SHALL BE 22 AWG.
 5. UNLESS OTHERWISE SPECIFIED

Approved
 Howard Elect. & Mach. Co.
 Phil. Pa.

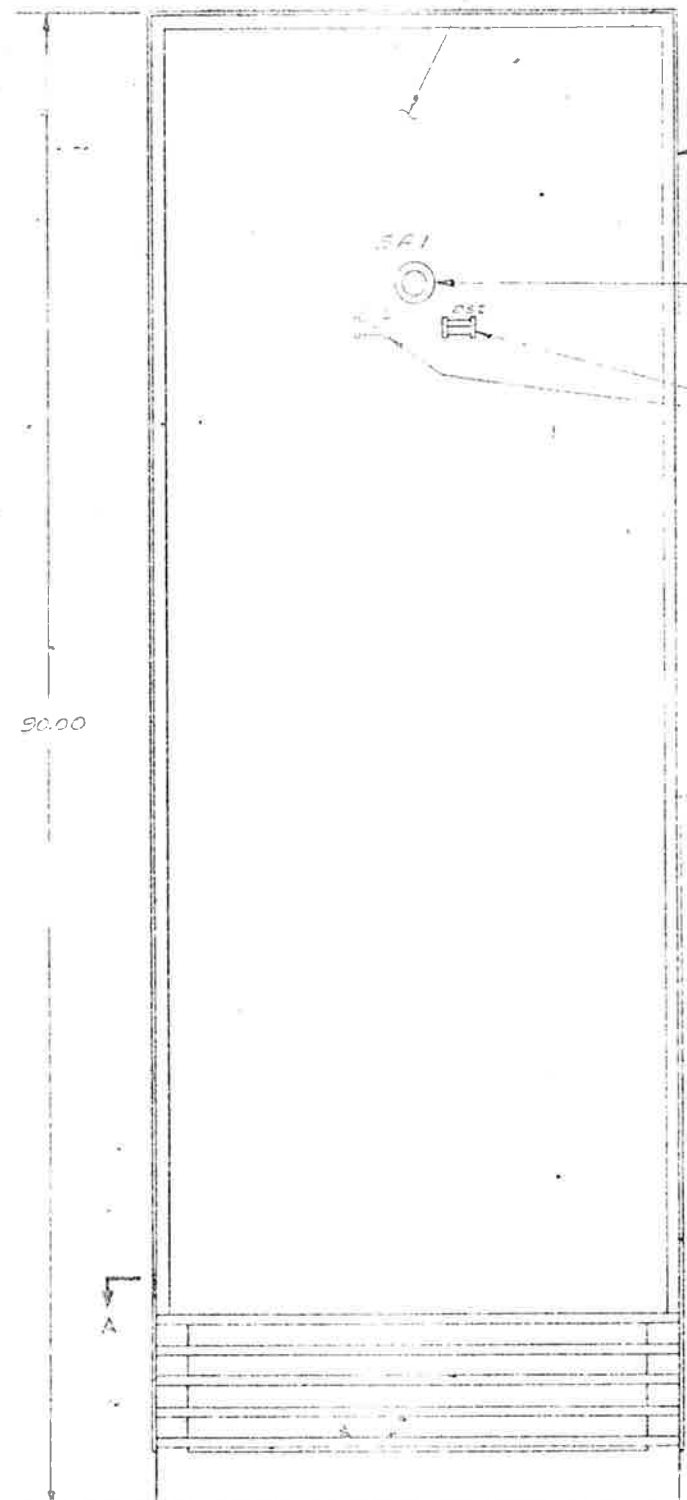
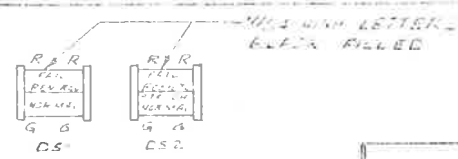


FINAL

RECEIVED
 APR 29 1927
 Sigmund R. Steinhilber, Architect

STUBBS - ROBER ARCHT. ENGRS. LTD.
 51-77 W 2nd St.
 NEW YORK, N. Y.

PROJECT NO.	170-31 1220
DIVISION	137
DATE	
BY	
CHECKED	
APPROVED	



90.00

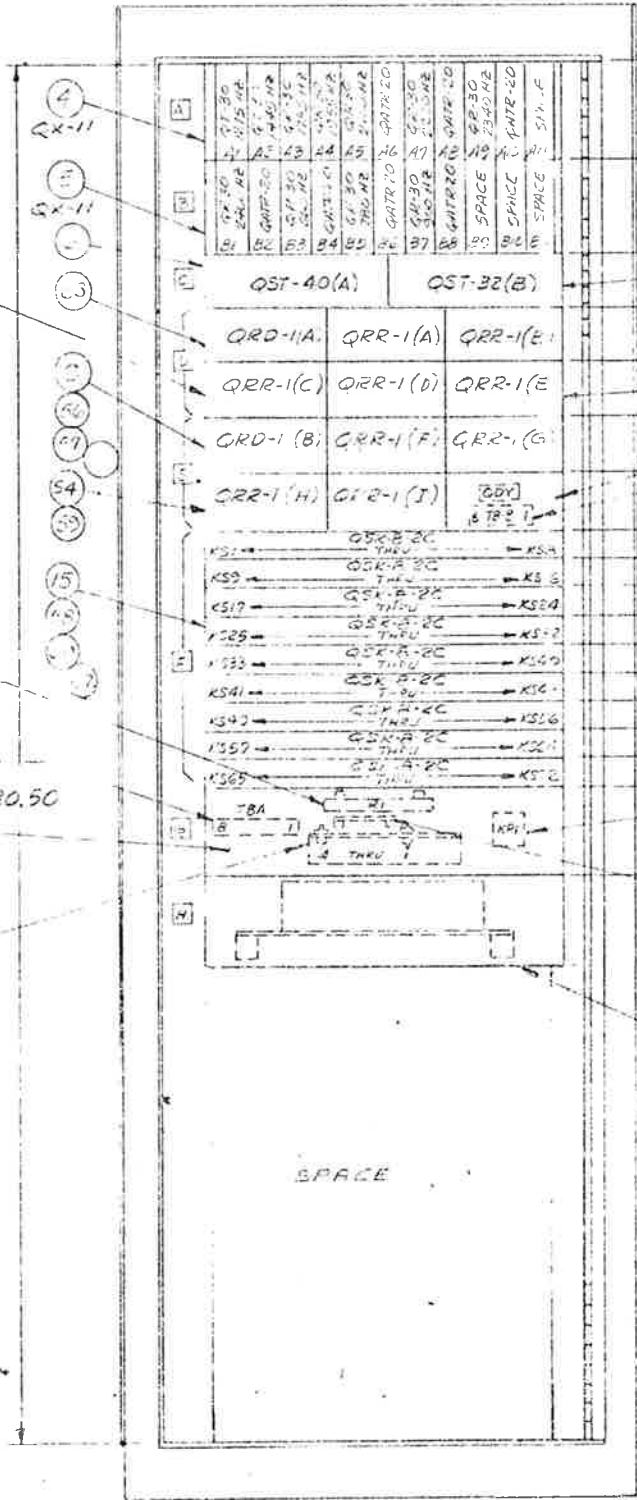
QC-195-2 CABINET
(FINISH ANSI-61)

501ALERT

RESISTOR, PWR RI
10 OHMS, 25 WATTS

KULKA TERM. BLK
GC2-B

DIODES, G.E.
NO. H1200-A (4) MTD
ON HEAT SINK
DWG. NO. 9731A



CABINET - FRONT
DOOR REMOVED

BATTERY, NI-CAD
MFG NO. MDP7 (10AH)

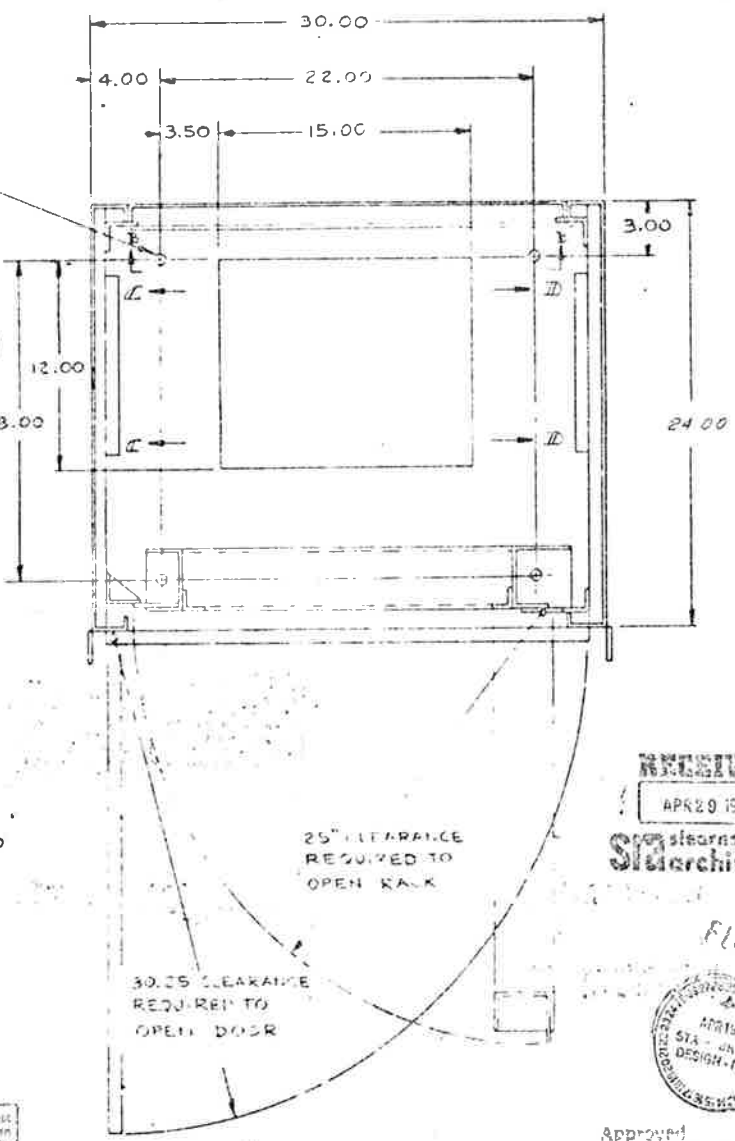
.75 DIA. HOLE
(4 REQ'D.)

KULKA TERM. BLK
NO. 600Y-6

P4B RELAY
NO. PR-110YO

KEYSTONE BOARD
NO. 15232

POWER SUPPLY
LAMBDA 10 LM-D-15



RECEIVED
APR 20 1977
SITARNS-ROGER ARCHITECTS

FINAL
APR 1977
SITARNS-ROGER ARCHITECTS

Approved
Magard Elmer N. M...
SITARNS-ROGER ARCHITECTS

WIKES
THERMOSTAT
CHROMALOX
MINIDY BOX

Looking to City Electric...
Note - The Architect's...
SITARNS-ROGER ARCHITECTS, LTD.
Sole: S-L-77

BOTTOM OF
PANEL

NEA EX, CHROMALOX
NO. OT-1003
KULKA TERM.
BLOCK 25 PINS

VIEW A-A

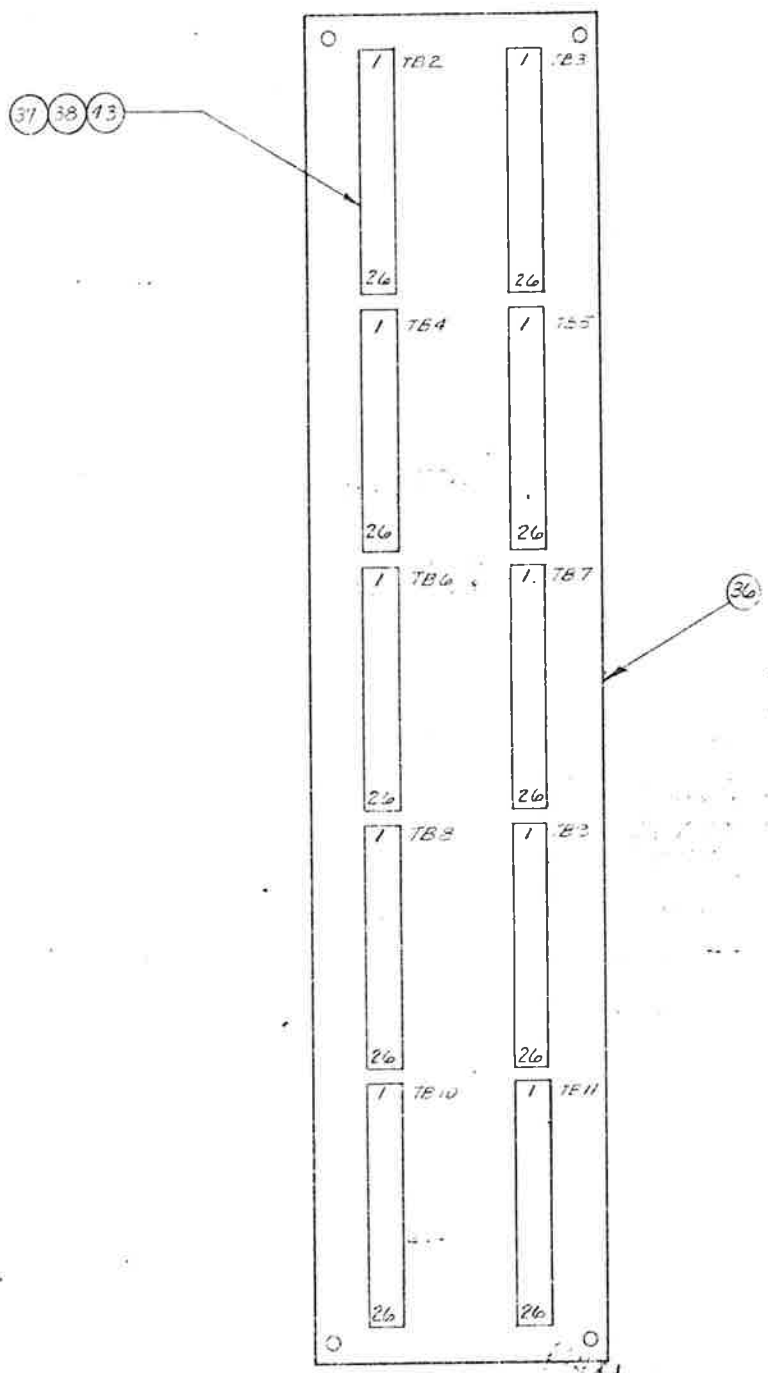
#173 (30.48-55)

NO.	DESCRIPTION	QTY	UNIT
26	TR13	1	
27	TR13	1	
28	TR1	1	
41	WIKES		
42	THERMOSTAT		
43	CHROMALOX		
44	MINIDY BOX		
45	BATTERY		
46	DIODES		
47	RESISTOR		
48	RELAY		
49	KEYSTONE BOARD		
50	POWER SUPPLY		
51	DIODES		
52	RESISTOR		
53	RELAY		
54	KEYSTONE BOARD		
55	POWER SUPPLY		
56	DIODES		
57	RESISTOR		
58	RELAY		
59	KEYSTONE BOARD		
60	POWER SUPPLY		
61	DIODES		
62	RESISTOR		
63	RELAY		
64	KEYSTONE BOARD		
65	POWER SUPPLY		
66	DIODES		
67	RESISTOR		
68	RELAY		
69	KEYSTONE BOARD		
70	POWER SUPPLY		
71	DIODES		
72	RESISTOR		
73	RELAY		
74	KEYSTONE BOARD		
75	POWER SUPPLY		
76	DIODES		
77	RESISTOR		
78	RELAY		
79	KEYSTONE BOARD		
80	POWER SUPPLY		
81	DIODES		
82	RESISTOR		
83	RELAY		
84	KEYSTONE BOARD		
85	POWER SUPPLY		
86	DIODES		
87	RESISTOR		
88	RELAY		
89	KEYSTONE BOARD		
90	POWER SUPPLY		
91	DIODES		
92	RESISTOR		
93	RELAY		
94	KEYSTONE BOARD		
95	POWER SUPPLY		
96	DIODES		
97	RESISTOR		
98	RELAY		
99	KEYSTONE BOARD		
100	POWER SUPPLY		

CABINET - FRONT



VIEW B-B



Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and corrected at the job site. The Architect shall retain a key to the fabrication processes or to technicians of construction and for coordination of the work of all trades.

Note - The Architect's checking of Shop Drawings or Samples shall not relieve the Contractor of its primary liability for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of such check and the Architect has given written approval to the specific deviation, nor shall the Architect's checking relieve the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

Rejected With Corrections Made
 No Exception Taken Revise and Resubmit

STEARNS-ROGER ARCHITECTS, LTD.
 Date: 4-11-71 By: DPW

LABEL CHART	
PART NO.	DESCRIPTION
22937A	TB1-TB11, DS1, DS2, SA-1, TB A, TB B, KP 1 RI

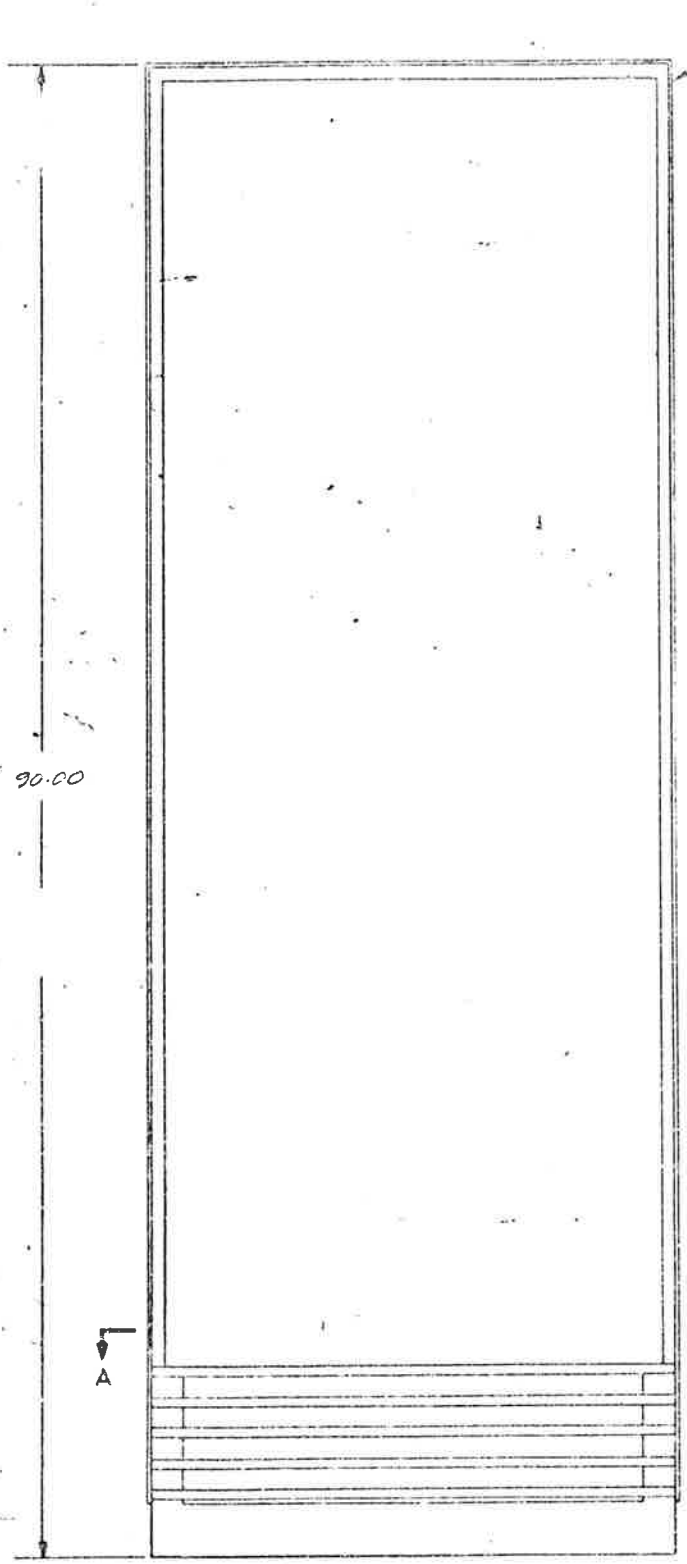
APR 23 1971
 STEARNS-ROGER ARCHITECTS

RAFFLE PANEL
 VIEW D-D

ITEM	REQ	NO	DATE
TOLERANCES			
PRACTICAL	<input type="checkbox"/>		
ARCHITECT	<input type="checkbox"/>		
AS SHOWN	<input type="checkbox"/>		
UNLESS OTHERWISE SPECIFIED			
WORK FINISH			
BRASS WITH ZINC			
AS SHOWN			
POWER PAINT FINISH			
ALL OTHERS SPECIFIED			

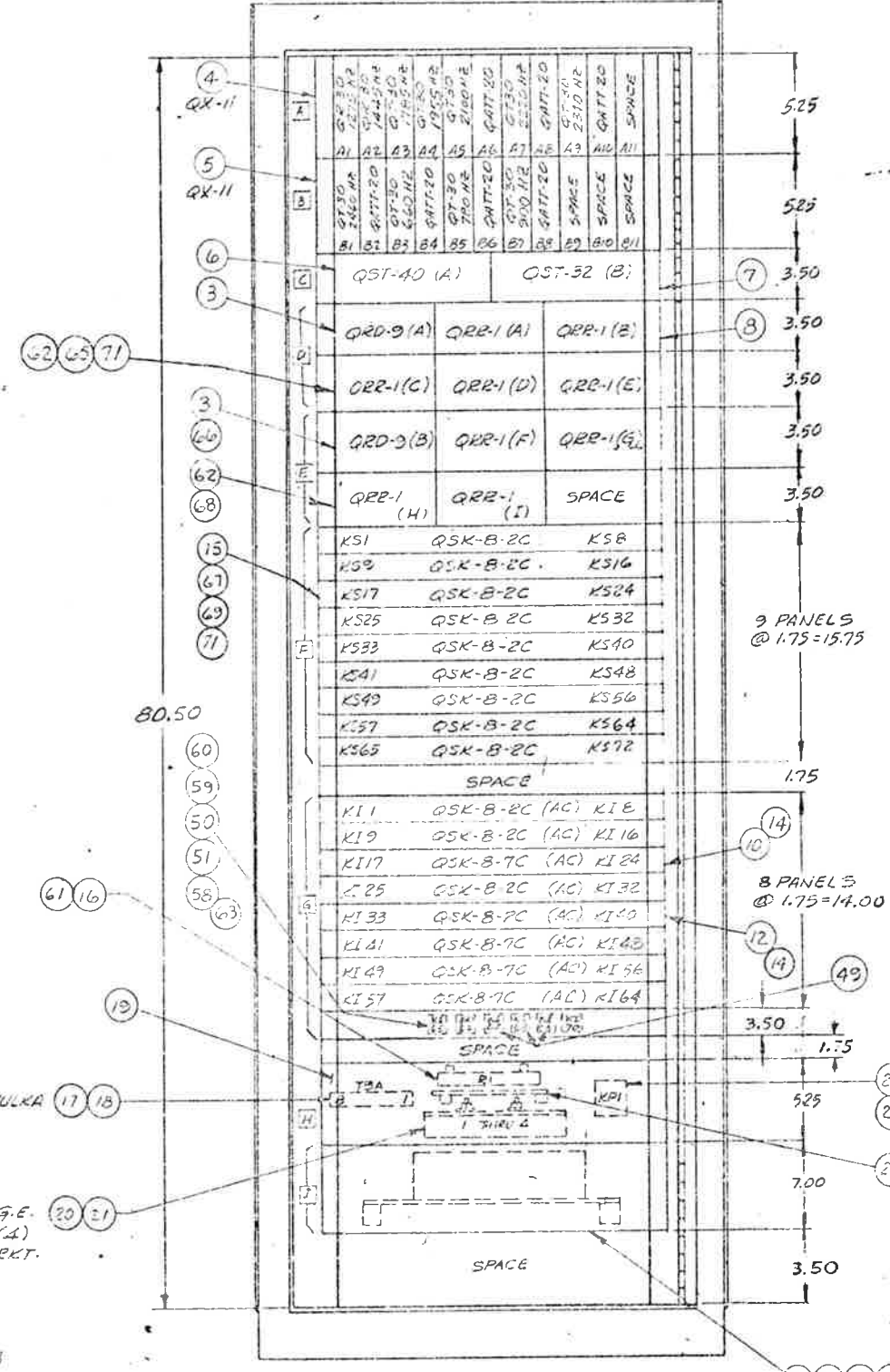
178 630.48-55





CABINET - FRONT

2 QCT9S-2 CABINET (FINISH ANSI-G)



CABINET - FRONT
DOOR REMOVED

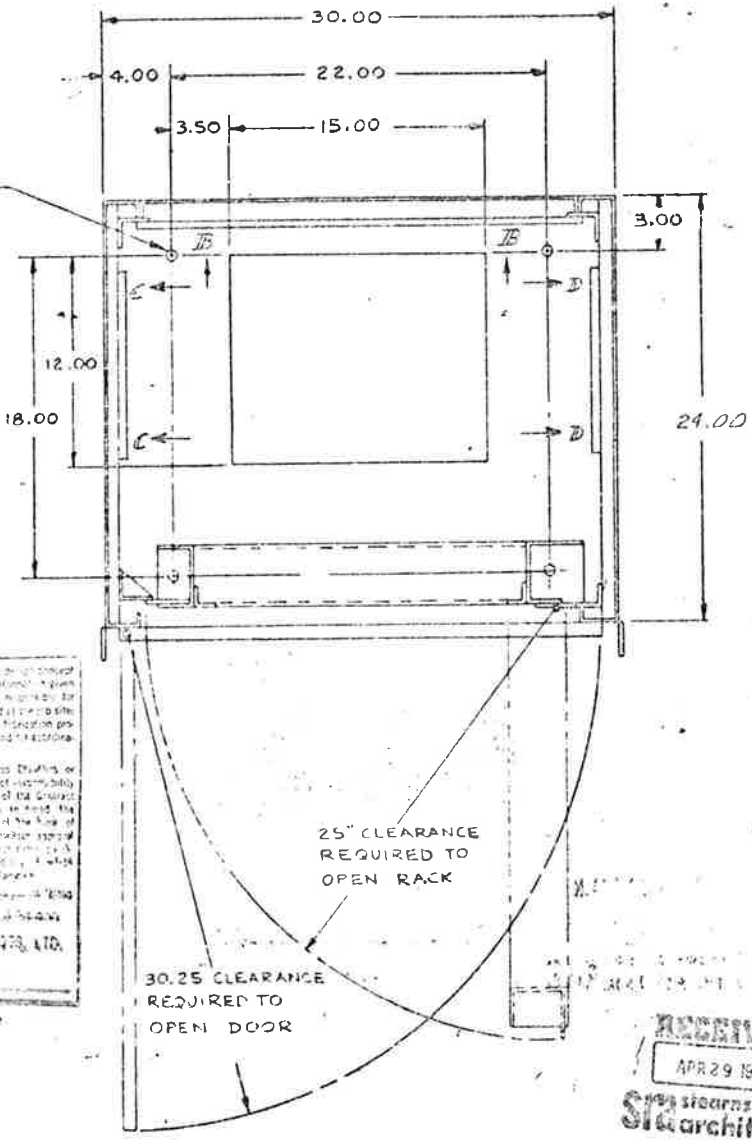
KI-1 THRU KI-44 T154-CC-115VAC
KI-47, 48, 69 T154-CC-220VAC
KI-65, KI-66, KI-70, 71 T154-CC-115VDC

Checking is fully for compliance with the design of the Project or in compliance with the contract. In the Contract Documents, Contractor is responsible for dimensions to be confirmed and correct all on site for information that pertains to the fabrication process or to the work of the Contractor and the location of the work of all trades.

Note - The Architect's selection of Shop Drawings or Samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has in hand the Architect's written approval of such deviation at the time of submission and the Architect has not written approval to the contrary. The Contractor shall be responsible for any omissions in the Shop Drawings or Samples.

Revised: _____
No Contract Task: _____

STEARNS-ROGER ARCHITECTS, LTD.
Date: 5-4-77 by DPW



SECTION A-A

NOTE:
1. FOR VIEWS B-B, C-C AND D-D SEE SHEET 2.

RECEIVED
APR 29 1977
Stearns-Roger Architects

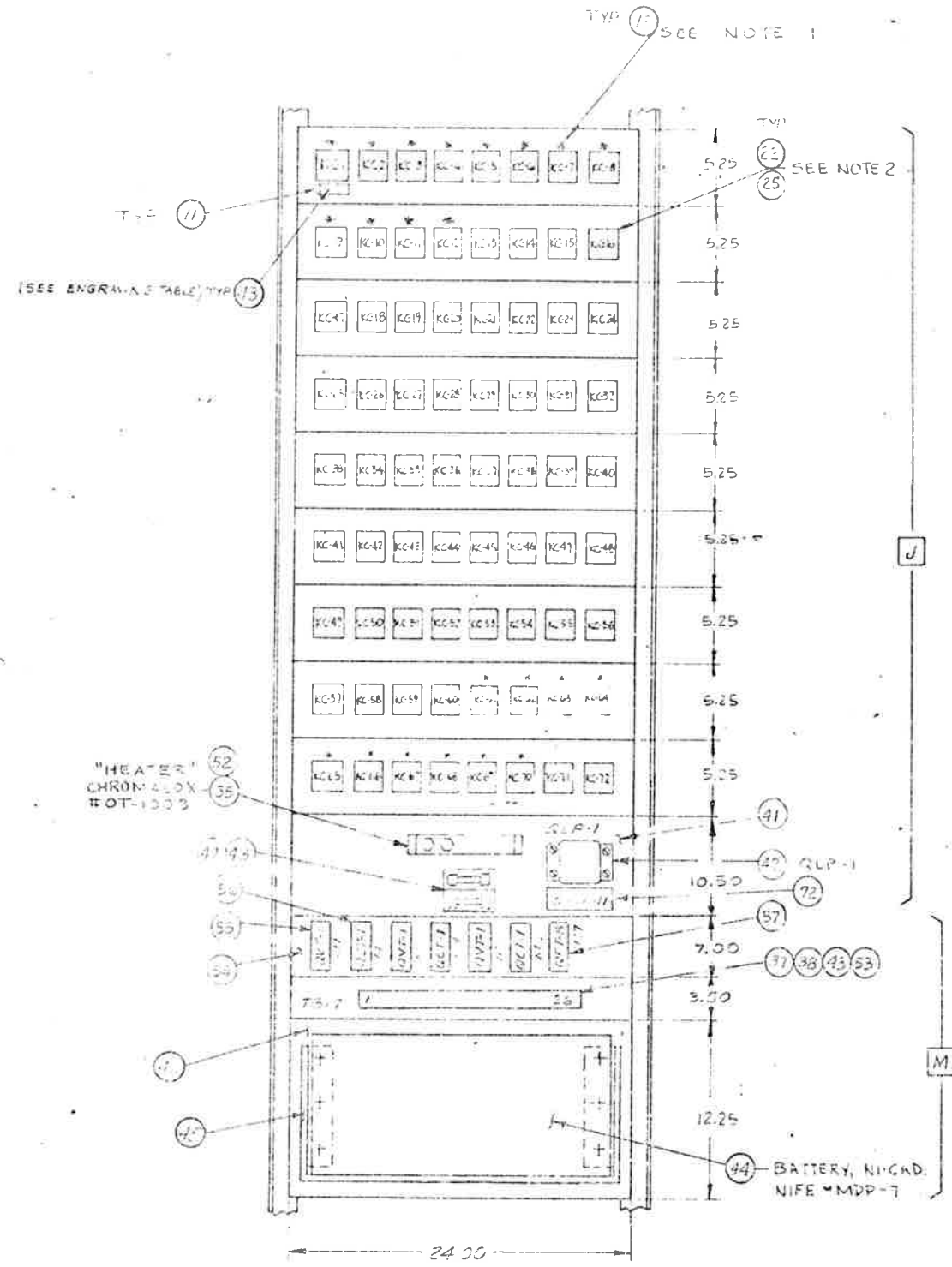
FINAL
APR 1977
STEARNS-ROGER ARCHITECTS

Approved:
Howard Blatt, S. Mech. E.
E. J. Blatt

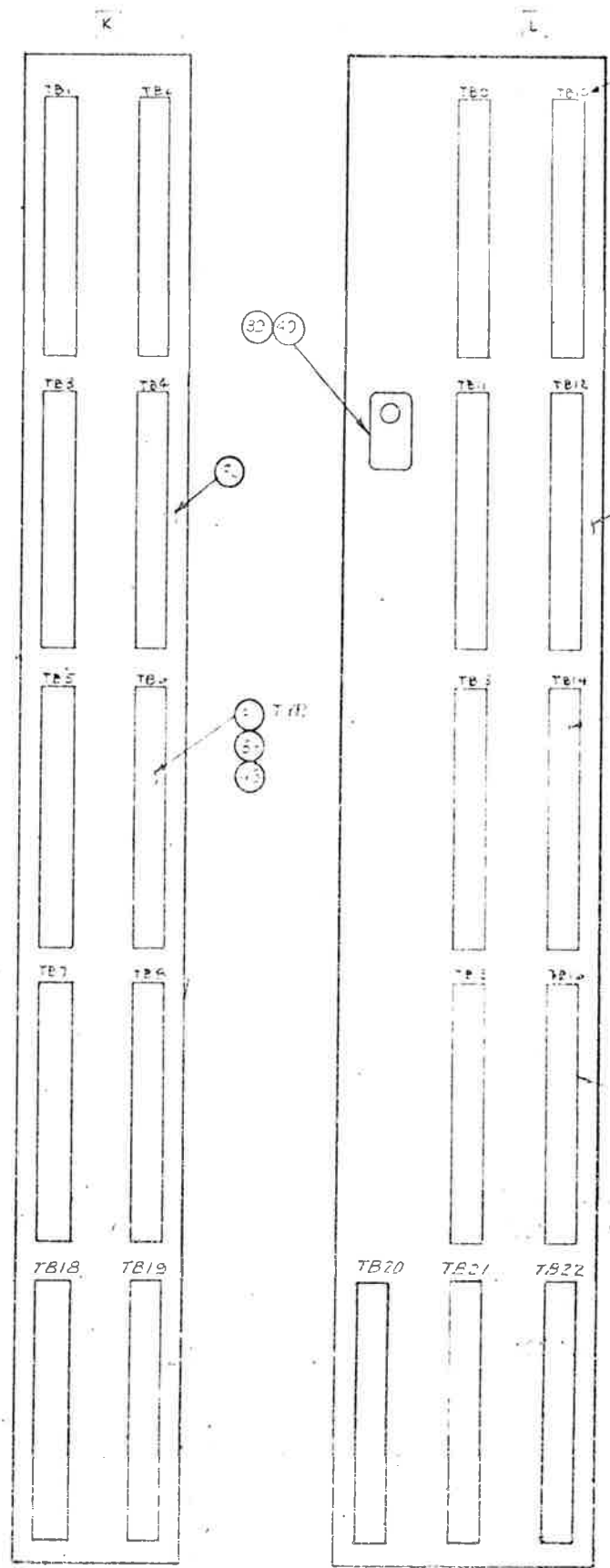
QEI INC.

PROJECT:	NOVARD ELECTRIC
DATE:	APR 1977
BY:	DPW
CHECKED BY:	DPW
APPROVED BY:	DPW
PROJECT NO.:	175 550.48-55
SHEET NO.:	A

RELEASED TO
PRODUCTION
DATE: 9/8/76



VIEW B-B



VIEW D-D

VIEW C-C

DA: NC	125 - CHART
22991A	KC1 THRU KC72 TB1 THRU TB22 TBA, R1, KPI, SLP1 C57K-11, W1, HRU M7

Checking is to be done in accordance with the design concept of this project and shall be the responsibility of the Contractor. The Contractor shall be responsible for any defect in the work done at the Contractor's expense. The Contractor shall indemnify the Architect in writing of any liability at the time of completion of the project and shall be held responsible for the specific deviation or shall the Architect's liability to relieve the Contractor from responsibility for work or omission in the shop drawings or details.

Request of Change
 No Exception Taken
 No Change
 No Change and Resubmit

STEARNS-ROGER ARCHITECTS, LTD.
 2134
 APR 29 1977

NOTES:

1. ASTERISK (*) DENOTES RELAYS THAT ARE TO BE PRD3D40 12VDC
2. ALL UNMARKED RELAYS ARE TO BE PR11DYO 12VDC



Approved: Howard E. ...

CSI Inc.

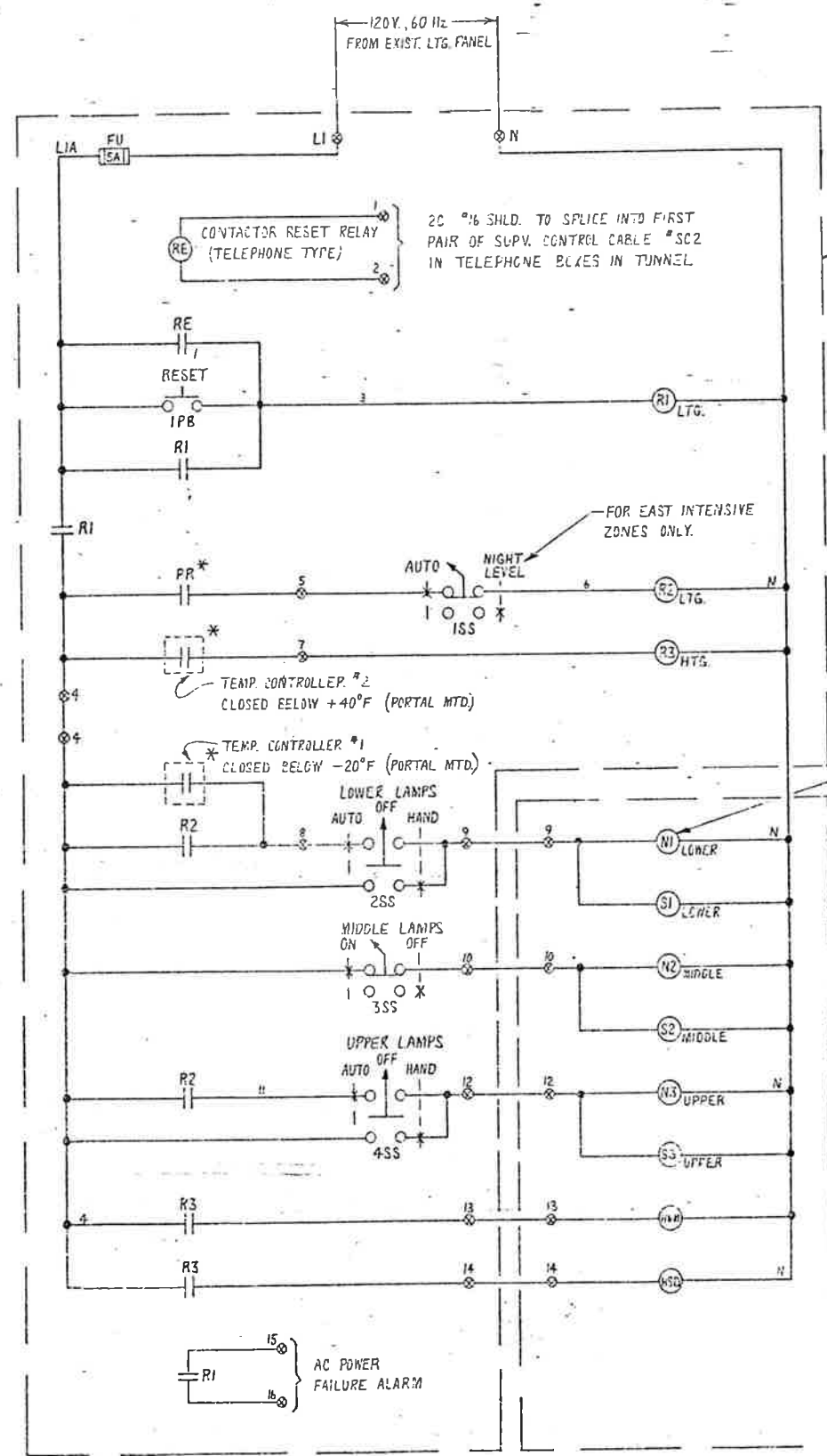
ITEM	NO.	DATE	BY	REVISION
1	1	APR 1977	DCH	DESIGN
2	2			
3	3			
4	4			
5	5			

178 630.48-55

JOHN F. EISENHOWER TUNNEL
 CONTRACTOR: HOWARD ELECTRIC CO.
 ARCHITECT: GESCO
 CUSTOMER'S P.O. 325-397097D
 G.P. NO. 432-94072
 PROJ. No. I70-3(82)220

Checked
 Howard Elect. & Mech. Co.
 Proj. Mgr.

FORMAL REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
170-31	1220	142	208	

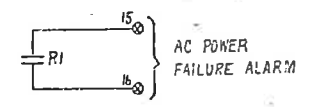


LIGHTING & HEATING RELAY & CONTROL CABINET
 DA143E90134 (EAST)
 DA143E90135 (WEST)

LIGHTING CONTACTOR COIL (TYP.)

LIGHTING & HEATING CONTACTOR PANEL
 DA143E90132 (EAST) &
 DA143E90133 (WEST)

WATER MAIN HEATING CONTACTOR
 SEEPAGE & DRAIN HEATING CONTACTOR



EAST INTENSIVE ZONES LIGHTING & HEATING CONTROL CIRCUITS
 (WEST INTENSIVE ZONES SIMILAR EXCEPT AS NOTED)

- SYMBOLS
- FUSE - FUSE
 - N - CONTACTOR
 - IPB - PUSHBUTTON
 - R - RELAY
 - RE - RELAY
 - S - CONTACTOR
 - SS - SELECTOR SWITCH
 - HW/M - CONTACTOR
 - HSC - CONTACTOR
 - ⊙ - TERMINAL BOARD POINT
 - * - OFF PANEL DEVICE

Checking is only for conformance with the design concept of the Project and does not constitute a warranty or representation by the Contractor or the Architect. The Contractor is responsible for providing information that pertains to the fabrication process or to the construction of the work, and for coordination of the work of all trades.
 Note - The Architect's checking of Shop Drawings or Samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval to the Shop Drawing, or until the Architect's checking reveals the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.
 Rejected Make Corrections Noted
 No Exception Taken Revise and Resubmit
 STANIS - ROGER ARCHITECTS, LTD.
 Date: 2-28-75 By: SPJ

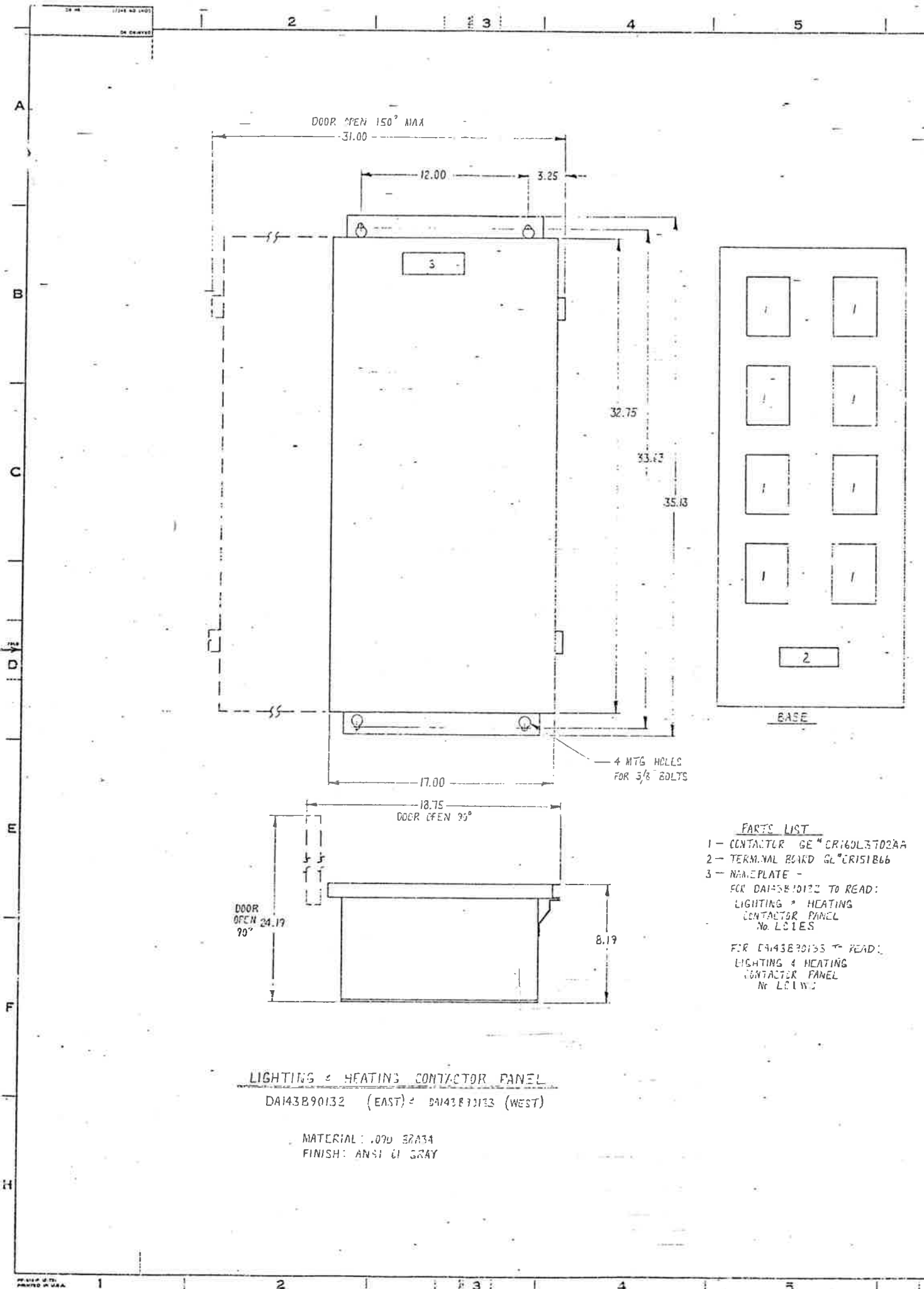
STANIS - ROGER ARCHITECTS, LTD.
 3120 EAST 10TH AVENUE
 DENVER, COLORADO 80202

DATE: 2-28-75 BY: SPJ

DESCRIPTION OF GROUPS	REVISIONS	REVISED TO
	1	1/19/75

DATE: 2-28-75 BY: SPJ

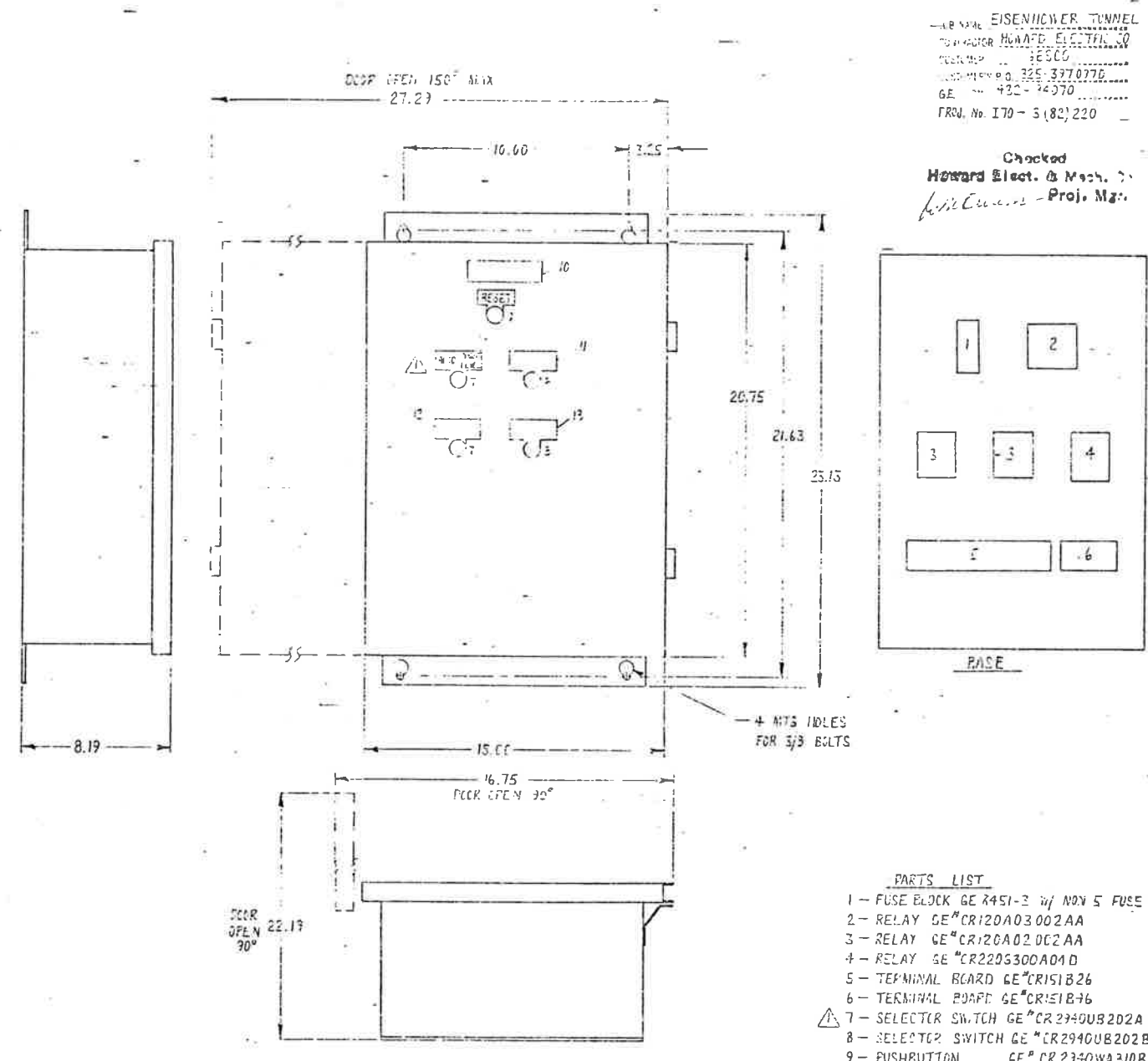
75D680558	1
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LIGHTING & HEATING CONTACTOR PANEL
 DA143B90132 (EAST) & DA143B90133 (WEST)

MATERIAL: 3090 S2A34
 FINISH: ANSII G1 GRAY

- PARTS LIST**
- 1 - CONTACTOR GE CR16DL3T02AA
 - 2 - TERMINAL BOARD GE CR151B66
 - 3 - NAMEPLATE -
 FOR DA143B90132 TO READ:
 LIGHTING & HEATING
 CONTACTOR PANEL
 No. L01ES
- FOR DA143B90133 TO READ:
 LIGHTING & HEATING
 RELAY & CONTROL PANEL
 No. L01WS



LIGHTING & HEATING RELAY & CONTROL PANEL
 DA143B90134 (EAST) & DA143B90135 (WEST)

- PARTS LIST**
- 10 - NAMEPLATE -
 FOR DA143B90134 TO READ:
 LIGHTING & HEATING
 RELAY & CONTROL PANEL
 No. L01ES
 - 11 - NAMEPLATE - UPPER LAMPS, AUTO-OFF HAND
 - 12 - NAMEPLATE - MIDDLE LAMPS, ON-OFF
 - 13 - NAMEPLATE - LOWER LAMPS, AUTO-OFF HAND

MATERIAL: 3090 S2A34
 FINISH: ANSII G1 GRAY

EISENHOWER TUNNEL
 GE MOTOR MOUNTED ELECTRICAL
 WORKSHOP 38500
 WORKING NO. 325-3770776
 GE 432-44370
 FRW, No. I70-5(82)220

Checked
 Howard Elect. & Mech. Co.
 Proj. Mgr.

REGIONAL NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-31-1220	143	208

- PARTS LIST**
- 1 - FUSE BLOCK GE R451-2 w/ NOV 5 FUSE
 - 2 - RELAY GE CR120A03002AA
 - 3 - RELAY GE CR120A02002AA
 - 4 - RELAY GE CR220S300A01D
 - 5 - TERMINAL BOARD GE CR151B26
 - 6 - TERMINAL BOARD GE CR151B76
 - 7 - SELECTOR SWITCH GE CR2940UB202A
 - 8 - SELECTOR SWITCH GE CR2940UB202B
 - 9 - PUSHBUTTON GE CR2340WA310B

NOTE: THIS DRAWING IS SUBJECT TO THE GENERAL CONDITIONS OF THE CONTRACT DOCUMENTS AND THE SPECIFICATIONS OF THE PROJECT. THE ARCHITECT'S OFFICE SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS DRAWING OR FOR THE CONSTRUCTION OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF THE EQUIPMENT. THE ARCHITECT'S OFFICE SHALL NOT BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF THE EQUIPMENT.

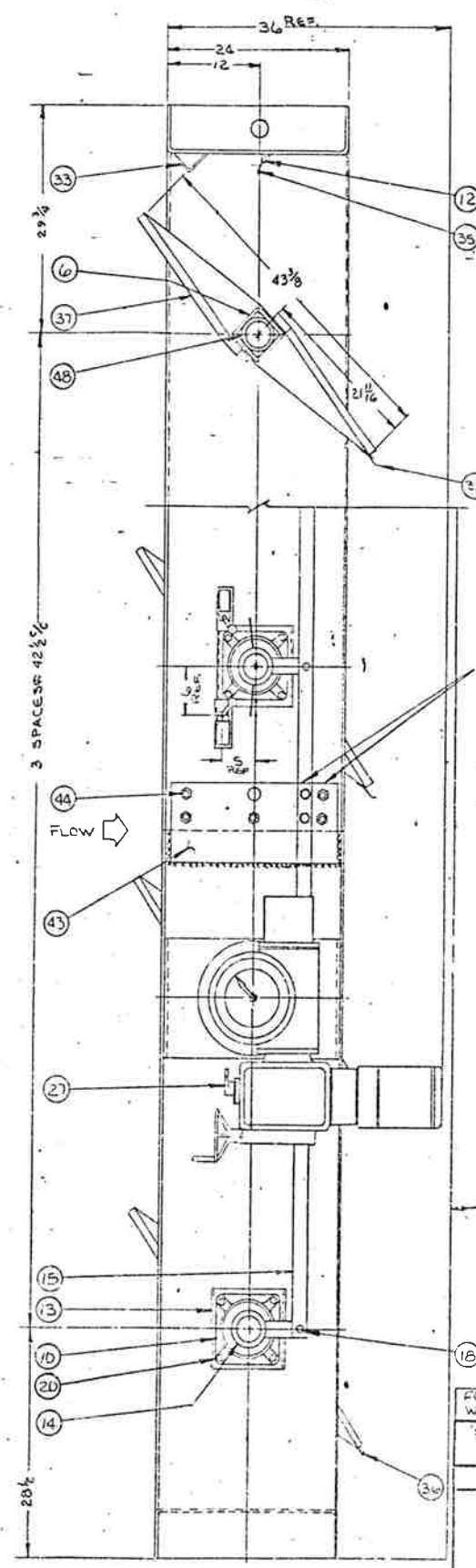
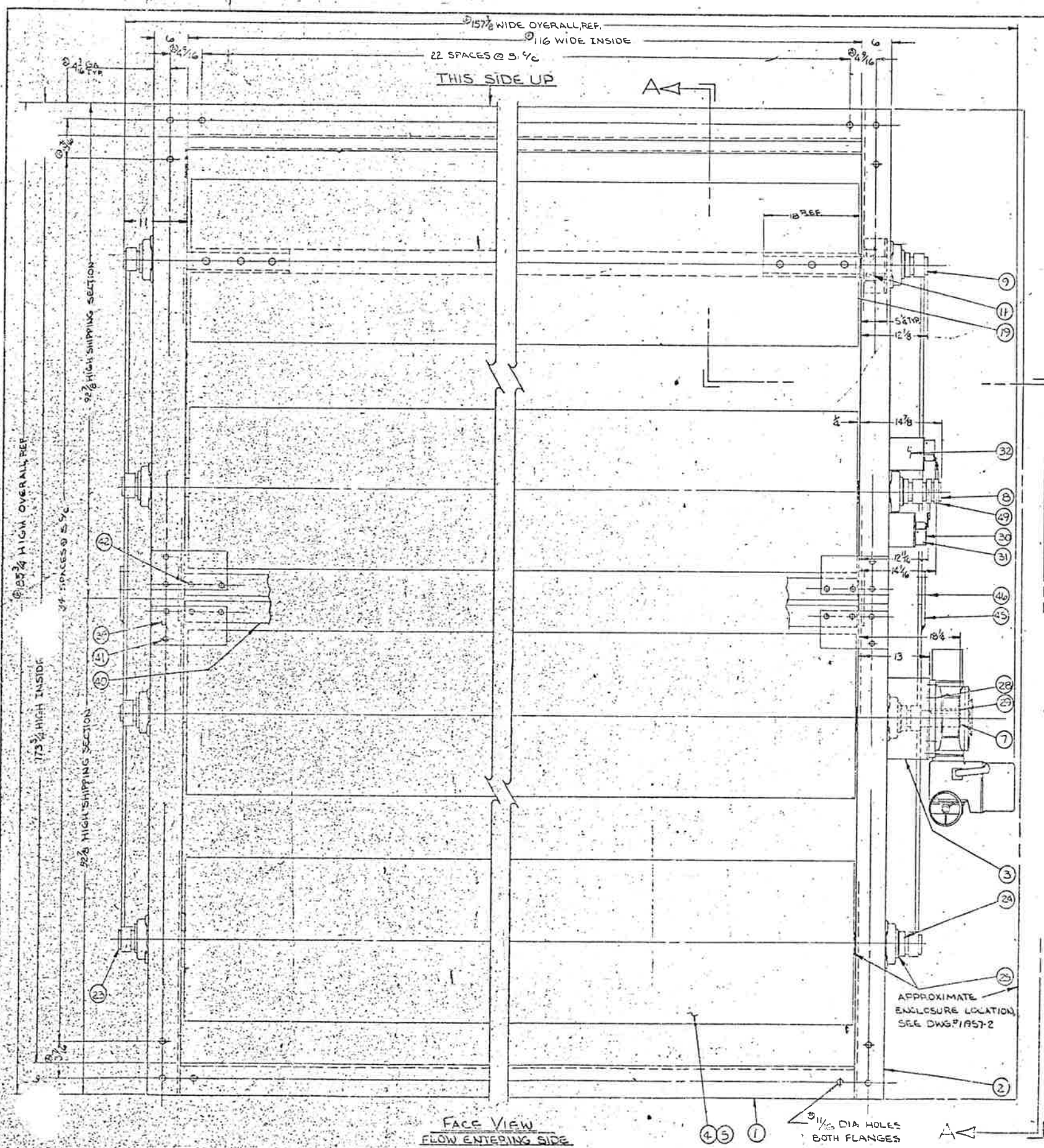
REVISIONS

DATE: FEB 19 1976

STEARNIS-ROGER ARCHITECTS & ENGINEERS

FINAL

NO.	DESCRIPTION OF GROUPS	REVISIONS	DATE	BY
1				
2				



FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1220)	144	208

- SPECIFICATIONS**
- FRAME: 24 X 6 X 3/8 STEEL CHANNEL (1) (2)
 - BLADES: 10 GA. STEEL AIRFOIL (4) (5)
 - AXLES: TYPE 303 S.S. STUDS (7) (8) (9) WITH 1/4" STEEL REINFORCING TUBES (6)
 - BEARINGS: SELF-LUBRICATING CARTRIDGE (10) WITH DOUBLE GLAND STUFFING BOXES (11)
 - LINKAGE: HEAVY DUTY CARBON STEEL WITH S.S. PINS & O.I.B. BEARINGS
 - SEALS: 301 S.S. BWMA TYPE
 - FINISH: STEEL SURFACE OF DAMPERS TO BE CLEANED WITH POWER TOOL BRUSH FOR REMOVAL OF MILL SCALE, RUST AND ANY OTHER FOREIGN MATTER. AFTER CLEANING GIVE ONE (1) PRIME COAT OF DEREKA M-50 56351 OR EQUAL AND ONE (1) FINISH COAT OF DECOSTEEL ALKYD NO. 595, COLOR TO BE 56-5 GREEN. EACH COAT TO HAVE A MINIMUM DRY FILM THICKNESS OF 1.5 MILS
 - OPERATOR: LIMITORQUE 1H2BC/SMB-00/10, 460 V, 60 CYCLE, 3 PHASE WITH MANUAL OVERRIDE.

① LIMIT SWITCH: TWO (2) ALLEN BRADLEY 1802-T

Drawings are only for construction with the design concept of the Project and components in the information given in the Contract Documents. Contractor is responsible for dimensions, materials and workmanship. It is the contractor's responsibility to check the drawings and specifications for errors and omissions. The contractor shall be responsible for any errors or omissions in the drawings and specifications. The contractor shall be responsible for any errors or omissions in the drawings and specifications. The contractor shall be responsible for any errors or omissions in the drawings and specifications.

- NOTES**
- ① (1) NO. REQUIRED: SIX (6) DAMPERS TOTAL, THREE (3) RIGHT HAND, AS SHOWN, & THREE (3) LEFT HAND OPPOSITE AS SHOWN.
 - ② (2) DAMPERS ARE VERTICALLY MOUNTED WITH HORIZONTAL FLOW.
 - ③ (3) TAG DAMPERS: SUPPLY FAN DAMPERS.
 - ④ (4) DAMPERS WILL BE SHIPPED IN TWO SECTIONS (1W & 2H)
 - ⑤ (5) ALL WELDING WILL BE PERFORMED IN ACCORDANCE WITH AMV'S STANDARD WELD DWS #10151, UNLESS OTHERWISE SPECIFIED.
 - ⑥ (6) SEE DWG. #11957-1 & -2 FOR OPER. ENCLOSURE ASSEMBLY.
 - ⑦ (7) DESIGN CRITERIA:
 - MAX. DIFF. PRESS. = 9" H₂O
 - MAX. TEMP. = 90°F
 - MIN. TEMP. = -70°F
 - MAX. VELOCITY = 3551 AFPM
 - MAX. LEAKAGE = 1865 ACFM @ 9" H₂O & 90°F
 - MAX. TORQUE = 17,550" LB
 - ⑧ (8) ESTIMATED WEIGHT OF EACH DAMPER IS 6800 LBS.

ROCKY MOUNTAIN AIRCOOL
P.O. # 1101
HOWARD MECHANICAL CO.
P.O. # 1451
EISENHOWER TUNNEL
AMV QUOTE 7090-1
AMV JOB NO. 90358

FOR RECORD
DEC 1 1976
A W & V
Approved
Howard Elect. & Mech. Co.
Proj. Mgr.

FOR AMV USE ONLY
WORK BY SHOP BM #11957-101

TOLERANCE	DIMENSION
±.001 - .010	UP TO 6"
±.001 - .020	6" TO 12"
±.001 - .030	12" TO 24"
±.001 - .040	ABOVE 24"
±.001 - 15 DEG.	ANY SPECIFIED ANGLE
REF.	GIVEN AS SHOP AID
±.001 - 1/16" TRUE LOCATION	DIMENSIONS MAY VARY ALL MOUNTING HOLES

REVISION	DATE	BY
E		HANDWHEEL LOCATION REVISED
D		OPERATOR CLARIFICATION
C		PER APPROVAL
B		PER APPROVAL
A		CHG. WIDTH 116 3/8 TO 116 1/8 174 TO 173 3/4 REMOVED ITEM 1

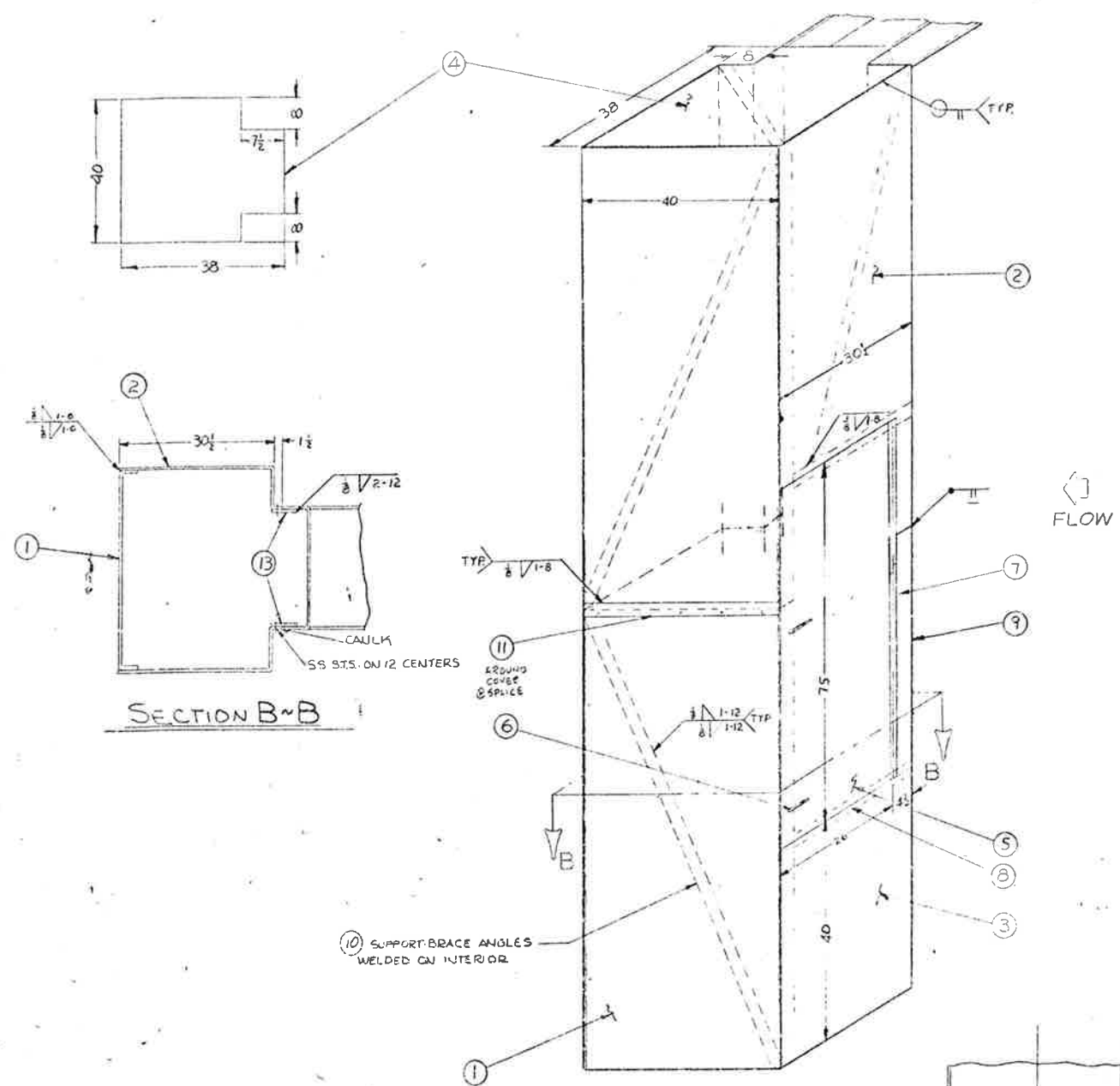
AMV american warming and ventilating inc
1017 E. 14th St. Topeka, Kan. 66604

THIS DRAWING AND THE INFORMATION CONTAINED THEREON IS THE PROPERTY OF AMERICAN WARMING AND VENTILATING, INC. AND CANNOT BE REPRODUCED IN WHOLE OR IN PART, NOR DELIVERED TO OTHERS WITHOUT THE EXPRESS WRITTEN PERMISSION OF AMERICAN WARMING AND VENTILATING, INC.

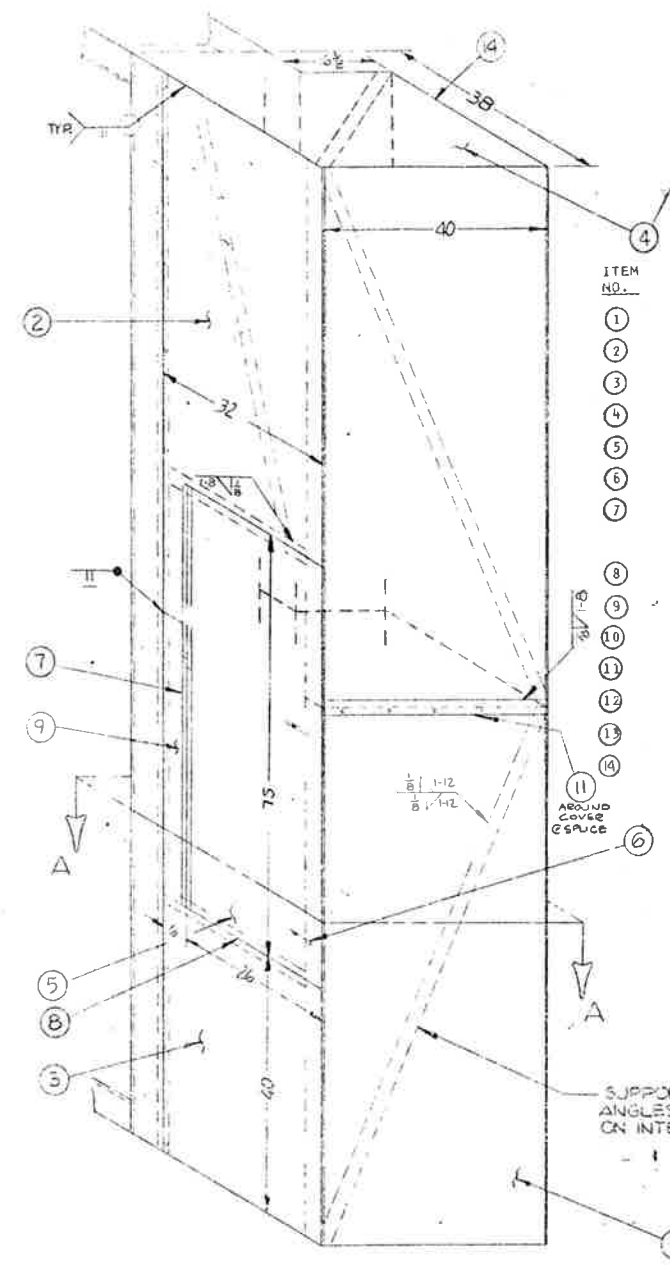
DAAP-3274 HD DAMPER WITH LIMITORQUE OPERATOR & BWMA SEALS "SUPPLY FAN DAMPERS"	①
CKD. BY WP	APPD. BY JWP 9/14
DRN. BY WP	DWG. NO. 11957
DATE 7-30-75	REV. E

PROJECT NO.	170-31 1220	145	208
DIVISION	COLLEGE		

STEARN-ROUGER AIR SYSTEMS, LTD.
 1-5-79
 640.25 (a)1
 #253

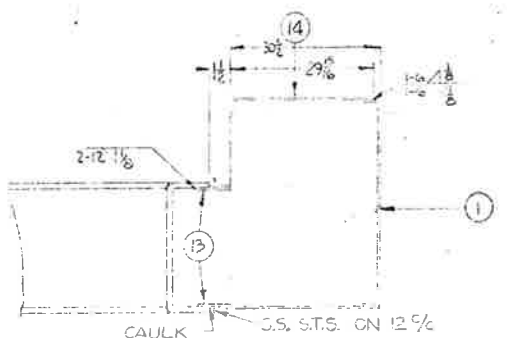
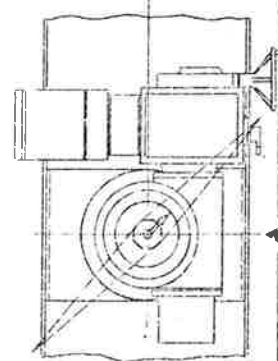


POSITION 'A' OPERATOR HOUSING



POSITION 'B' OPERATOR HOUSING

SEE DRAWING NO. 11957-3 FOR OPERATOR MOUNTING POSITION



BILL OF MATERIAL

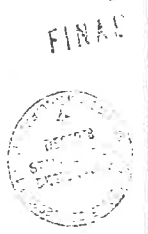
ITEM NO.	QTY PER DPR.	# OF DPRS.	TOTAL QTY.	MATERIAL
1	1	3	3	12 GA. GALV. STEEL
2	2	3	6	12 GA. GALV. STEEL
3	2	3	6	12 GA. GALV. STEEL
4	2	3	6	12 GA. GALV. STEEL
5	1	3	3	12 GA. GALV. STEEL
6	2	3	6	-----
7	1	3	3	GALV. STEEL
8	2	3	6	12 GA. GALV. STEEL
9	1	3	3	12 GA. GALV. STEEL
10	8	3	24	1 X 1 X 3/16 STEEL
11	1	3	3	12 GA. GALV. STEEL
12	1	3	3	12 GA. GALV. STEEL
13	4	3	12	16 GA. STEEL
14	2	3	6	12 GA. GALV. STEEL

VENTLOCK HINGE #102
 BRAUN HINGE #4813-E
 .090 GA. X 3" WIDE X
 X 72 LG. W/ 1/4" PIN

FINISH: STEAM CLEANED, & PRIME COAT, DEREKA 5772
 RED GALVANIZED PRIMER, FINISH COAT, #20140
 MED. BROWN. TO MATCH SPEC. ON DWG. 11957-3

PLANT NOTE
 ASSEMBLE COVERS TO THE DAMPERS. BEFORE SHIPPING,
 REMOVE COVERS. SHIP COVERS IN TWO PIECES WITH DOOR
 SHIPPED LOOSE FOR INSTALLATION IN FIELD BY OTHERS.

ROCKY MOUNTAIN AIRCOLD
 P.O. #3503
 HOWARD MECHANICAL CO.
 P.O. #H-1461
 EISENHOWER TUNNEL
 ANY QUOTE 2090-1
 ANY JOB NO. 90058



NOV 27 1978

Approved
 Howard Elect. & Mech. Co.
 Proj. Mgr.

STANDARD MANUFACTURING TOLERANCES UNLESS OTHERWISE SPECIFIED DWG DIMENSIONS ARE IN INCHES

TOLERANCE	DIMENSION
±.0001	UP TO .2
±.0002	.2 TO .12
±.0003	.12 TO .24
±.0004	ABOVE .24
±.0005	ANY SPECIFIED ANGLE
±.0006	0° TO 90°
±.0007	90° TO 180°
±.0008	180° TO 270°
±.0009	270° TO 360°

REVISION	DATE	BY
F HANDWHEEL LOCATION REVISED		
E OPERATOR CLARIFICATION		
D DOOR SIZE CHANGE		
C PAINT SPEC. ADDED		
B REDRAWN		

AMERICAN WARMING AND VENTILATING INC.
 1017 FUMMIT ST.
 TOLEDO, OHIO

OPERATOR ENCLOSURE ASSY FOR EVASE STACK DAMPER-DWG. 11957-1

CKD BY: <i>OWM</i>	APPD. BY: <i>EDV</i>
DWN. BY: <i>TRP</i>	DWG. NO. 11957-1
DATE: 3-24-78	REV: IF

BILL OF MATERIAL

ITEM NO.	QTY PER DPR.	# OF DPRS.	TOTAL QTY.	MATERIAL
1	1	3	3	12 GA. GALV. STEEL
2	2	3	6	12 GA. GALV. STEEL
3	2	3	6	12 GA. GALV. STEEL
4	2	3	6	12 GA. GALV. STEEL
5	1	3	3	12 GA. GALV. STEEL
6	2	3	6	-----
7	1	3	3	GALV. STEEL
8	2	3	6	12 GA. GALV. STEEL
9	1	3	3	12 GA. GALV. STEEL
10	8	3	24	1 X 1 X 3/16 STEEL
11	1	3	3	12 GA. GALV. STEEL
12	1	3	3	12 GA. GALV. STEEL
13	4	3	12	16 GA. STEEL

VENTLOCK HINGE #102
 BRAUN HINGE #4813-E
 .090 GA. X 3" WIDE X
 50 LG. W/ 1/4" PIN

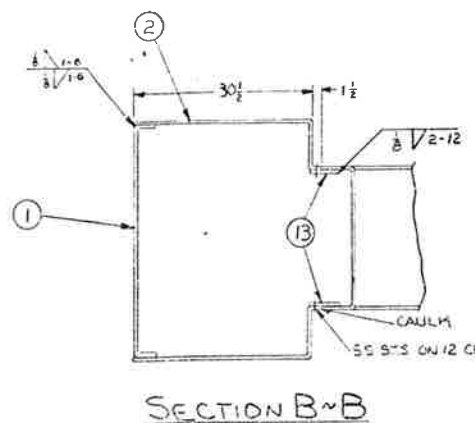
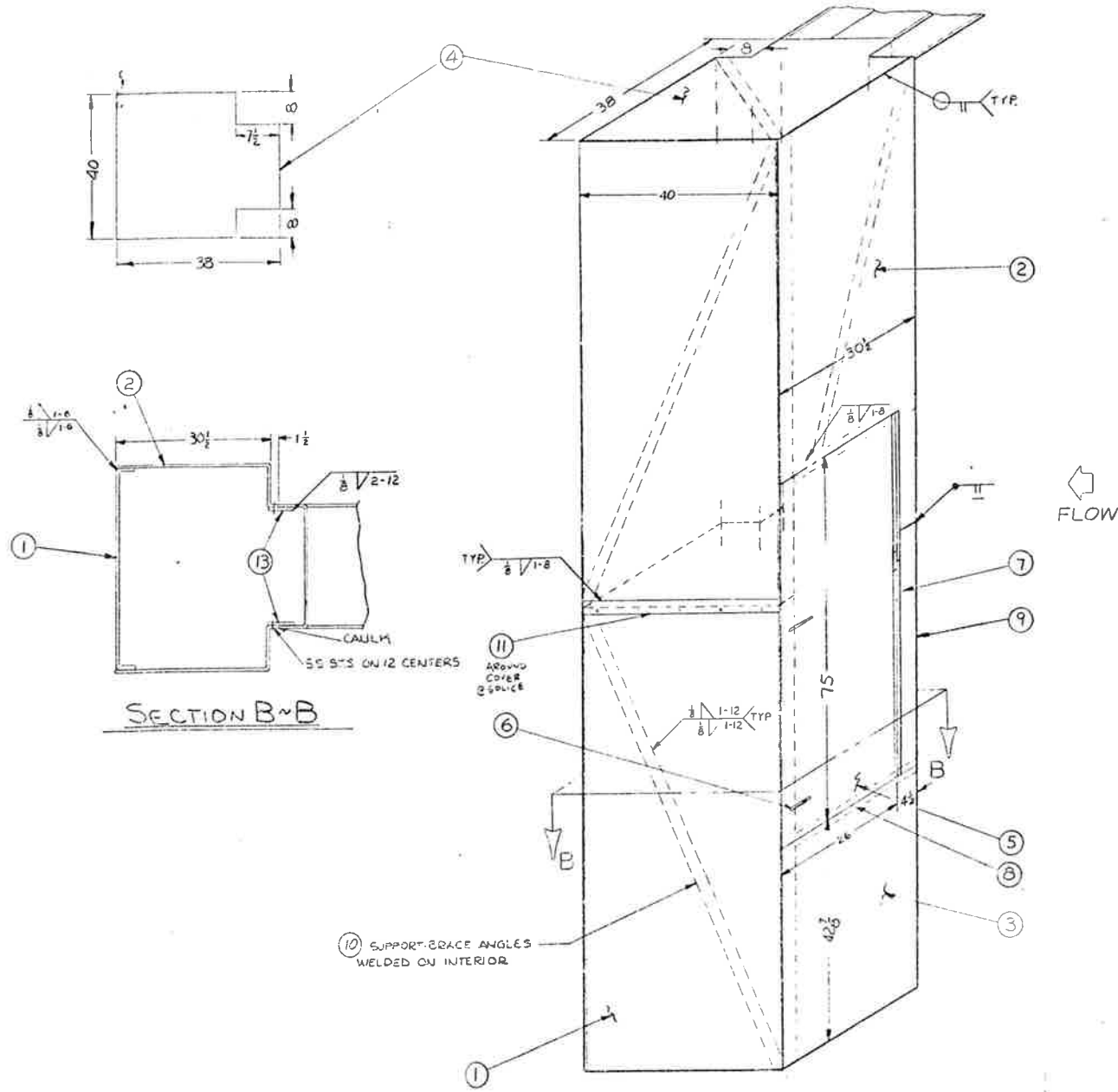
FINISH: STEAM CLEANED, & PRIME COAT, DEREKA 5772
 RED GALVANIZED PRIMER, FINISH COAT, #20140
 MED. BROWN. TO MATCH SPEC. ON DWG. 11957-3

PLANT NOTE
 ASSEMBLE COVERS TO THE DAMPERS. BEFORE SHIPPING,
 REMOVE COVERS. SHIP COVERS IN TWO PIECES WITH DOOR
 SHIPPED LOOSE FOR INSTALLATION IN FIELD BY OTHERS.

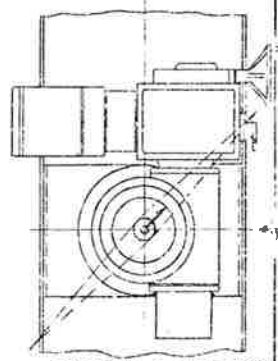
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1)220	146	208

Check this drawing for compliance with the provisions of the Federal and State laws and regulations governing the design and construction of structures and equipment for the use of the public. The Engineer's responsibility is limited to the design and construction of the structure and equipment shown on this drawing. He is not responsible for the design and construction of any other part of the structure or equipment. The Engineer's liability is limited to the amount of the contract price. The Engineer's liability is not limited by the amount of the contract price. The Engineer's liability is not limited by the amount of the contract price. The Engineer's liability is not limited by the amount of the contract price.

STEARNIS-ROGER ARCHITECTS, LTD.
Date: 1-5-79 By: FID



POSITION 'A' OPERATOR HOUSING



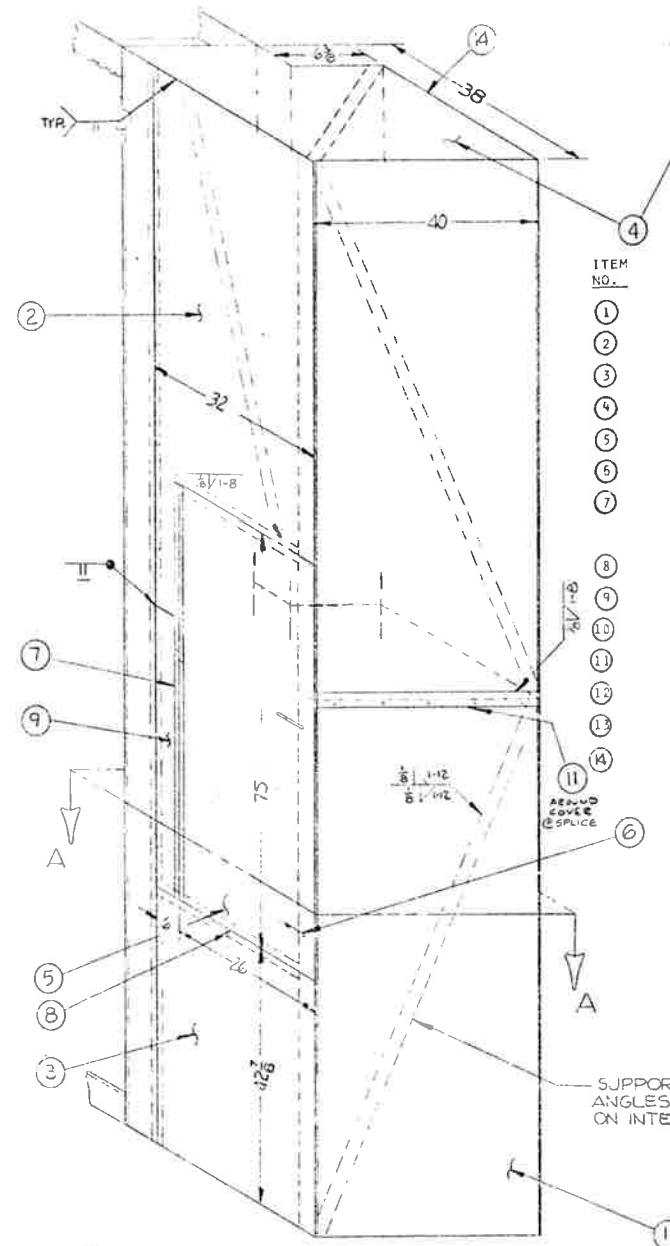
BILL OF MATERIAL

ITEM NO.	QTY PER DPR.	# OF DPRS.	TOTAL QTY.	MATERIAL
1	1	3	3	12 GA. GALV. STEEL
2	2	3	6	12 GA. GALV. STEEL
3	2	3	6	12 GA. GALV. STEEL
4	2	3	6	12 GA. GALV. STEEL
5	1	3	3	12 GA. GALV. STEEL
6	2	3	6	-----
7	1	3	3	GALV. STEEL
8	2	3	6	12 GA. GALV. STEEL
9	1	3	3	12 GA. GALV. STEEL
10	1	3	3	12 GA. GALV. STEEL
11	1	3	3	12 GA. GALV. STEEL
12	4	3	12	16 GA. STEEL

VENTLOCK HINGE #102
BRAUN HINGE #4513-E
.090 GA. X 3" WIDE X
56 LG. W/ 1/4" PIN

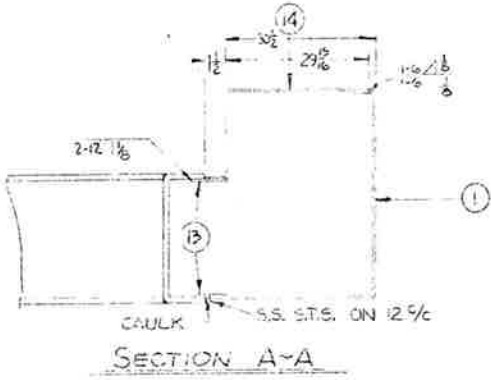
FINISH: STEAM CLEANED & PRIME COAT, DERFKA 5770
RED GALVANIZED PRIMER FINISH COAT, DERFKA 5770
ALKYD NO. 555, COLOR SG-5 GREEN TO MATCH SPEC
ON DWG. 11957

PLANT NOTE: ASSEMBLY COVERS TO THE DAMPERS. BEFORE SHIPPING, REMOVE COVERS. 54" COVERS IN TWO PIECES WITH DOOR SHIPPED LOOSE FOR INSTALLATION IN FIELD BY OTHERS.



POSITION 'B' OPERATOR HOUSING

SEE DRAWING NO. 11957 FOR OPERATOR MOUNTING POSITION



BILL OF MATERIAL

ITEM NO.	QTY PER DPR.	# OF DPRS.	TOTAL QTY.	MATERIAL
1	1	3	3	12 GA. GALV. STEEL
2	2	3	6	12 GA. GALV. STEEL
3	2	3	6	12 GA. GALV. STEEL
4	2	3	6	12 GA. GALV. STEEL
5	1	3	3	12 GA. GALV. STEEL
6	2	3	6	-----
7	1	3	3	GALV. STEEL
8	2	3	6	12 GA. GALV. STEEL
9	1	3	3	12 GA. GALV. STEEL
10	8	3	24	1 X 1 X 3/16 STEEL
11	1	3	3	12 GA. GALV. STEEL
12	1	3	3	12 GA. GALV. STEEL
13	4	3	12	16 GA. STEEL
14	2	3	6	12 GA GALV STEEL

640.09 (a)1
253

VENTLOCK HINGE #102
BRAUN HINGE #4513-E
.090 GA. X 3" WIDE
X 72 LG. W/ 1/4" PIN

FINISH: STEAM CLEANED & PRIME COAT, DERFKA 5770
RED GALVANIZED PRIMER FINISH COAT, DERFKA 5770
ALKYD NO. 555, COLOR SG-5 GREEN TO MATCH
SPEC ON DWG. 11957

PLANT NOTE: ASSEMBLY COVERS TO THE DAMPERS. BEFORE SHIPPING, REMOVE COVERS. 54" COVERS IN TWO PIECES WITH DOOR SHIPPED LOOSE FOR INSTALLATION IN FIELD BY OTHERS.

ROCKY MOUNTAIN AIRCOLD
P.O. #3563
HOWARD MECHANICAL CO.
P.O. #M-1461
EISENHOWER TUNNEL
AWV QUOTE 2090-1
AWV JOB NO. 90358

Approved
Howard Elect. & Eng.
H.M. Howard Proj. Mgr.

ISSUED
NOV 27 1978
AMERICAN WARMING AND VENTILATING INC.

STANDARD MANUFACTURING TOLERANCES UNLESS OTHERWISE SPECIFIED. Dwg. DIMENSIONS ARE IN INCHES.

TOLERANCE	DIMENSION
±.015	UP TO 6"
±.030	6" TO 12"
±.045	12" TO 24"
±.075	ABOVE 24"
±.015 DEG.	ANY SPECIFIED ANGLE
±.015	ALL DIMENSIONS MAY VARY
±.016 TRUE LOCATION	ALL MOUNTING HOLES

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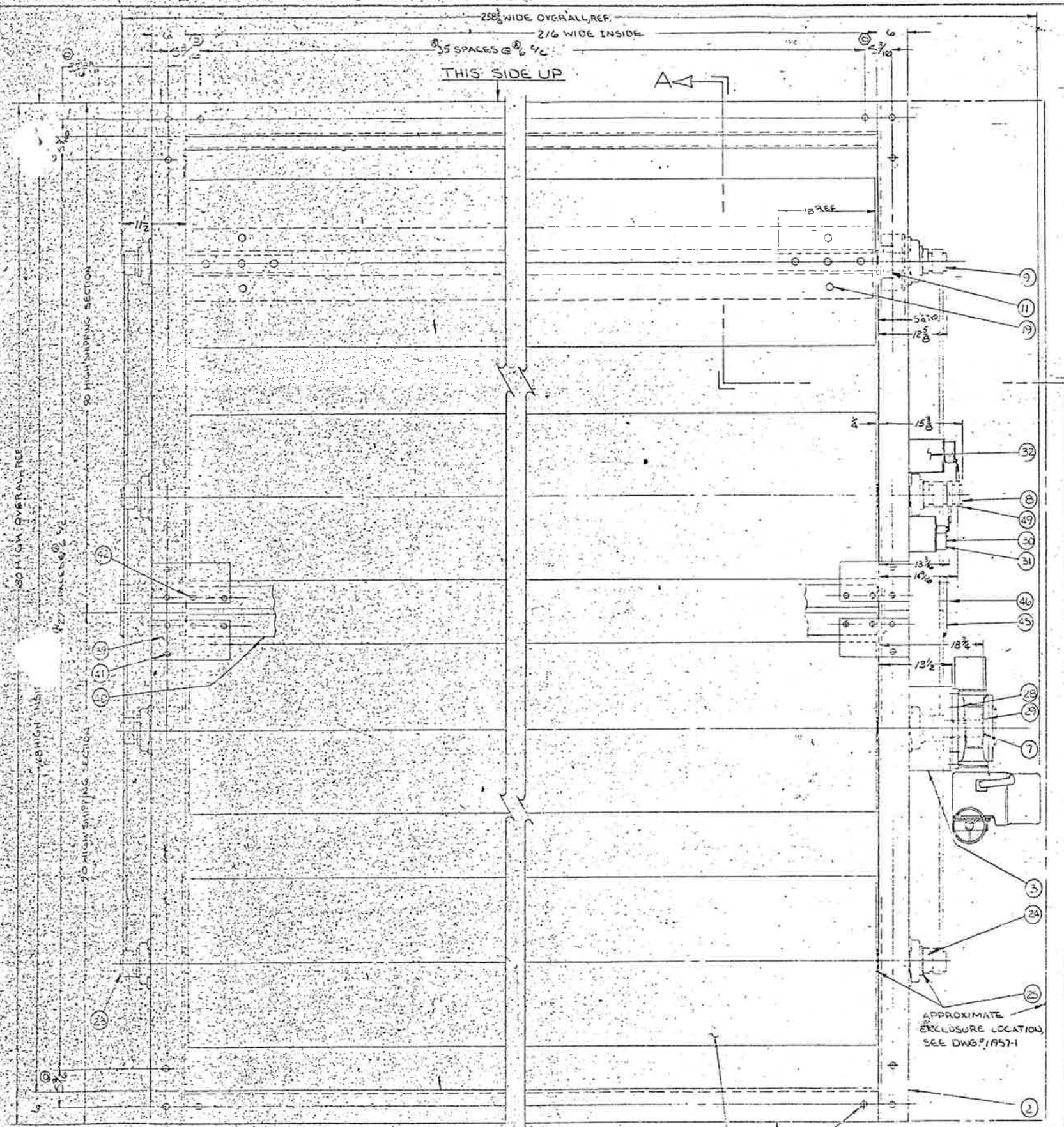
REVISION	DATE	BY	
F			HANDWHEEL LOCATION REVISED
E			OPERATOR CLARIFICATION
D			DOOR SIZE CHANGE
C			PAINT SPEC. ADDED
B			REDRAWN

AMV american warming and ventilating inc.
1017 SUMMIT ST. COLEDO, OHIO

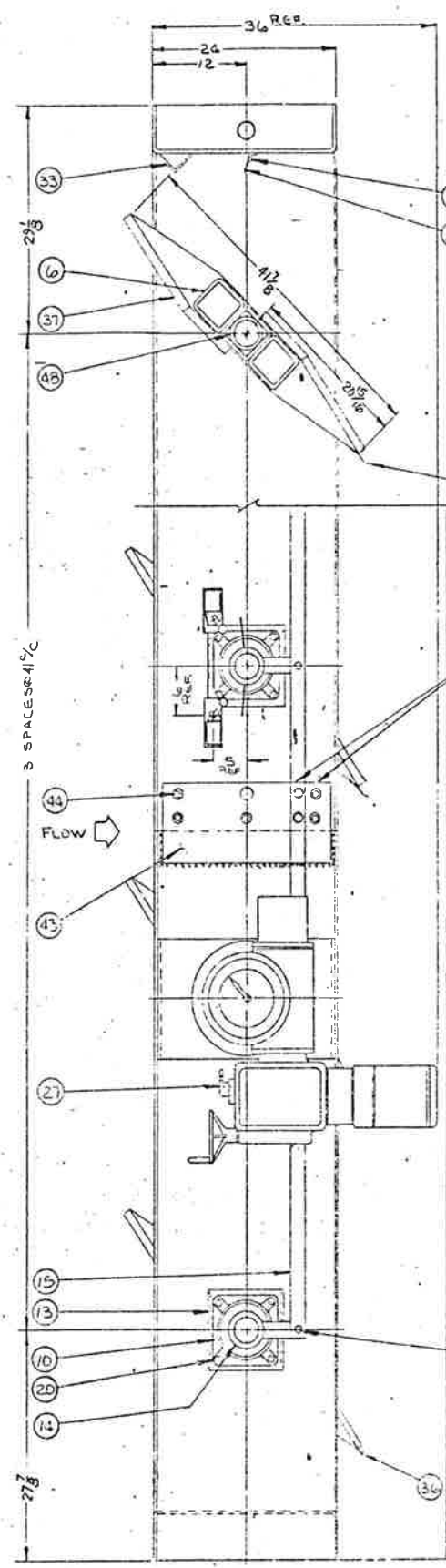
OPERATOR ENCLOSURE ASS'Y FOR SUPPLY FAN DAMPER - DWG 11957

CKD BY <i>OWM</i>	APPD. BY <i>EDV</i>
DRN BY <i>TMB</i>	DWG. NO. 11957-2
DATE 3-24-78	REV. 7

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	
	COLORADO	170-3()220	147	208



FACE VIEW
FLOW ENTERING SIDE



SECTION A-A

W/OPERATOR ON R.H. SIDE AS VIEWED FROM FLOW ENTERING FACE. POSITION B OPERATOR REQ'D. MOUNTED AS SHOWN.

- SPECIFICATIONS**
- FRAME: 24 X 6 X 3/8 STEEL CHANNEL (1) (2)
 - BLADES: 10 GA. STEEL AIRFOIL (4) (5)
 - AXLES: TYPE 303 S.S. STUBS (7) (8) (9) WITH 1/4\" STEEL REINFORCING TUBES (6)
 - BEARINGS: SELF-LUBRICATING CARTRIDGE (10) WITH DOUBLE GLAND STUFFING BOXES (11)
 - LINKAGE: HEAVY DUTY CARBON STEEL WITH S.S. PINS & O.I.B. BEARINGS
 - SEALS: 301 S.S. BWVA TYPE
 - FINISH: STEEL SURFACE OF DAMPERS TO BE CLEANED WITH POWER TOOL BRUSH FOR REMOVAL OF MILL SCALE, RUST AND ANY OTHER FOREIGN MATTER. AFTER CLEANING, GIVE ONE (1) PRIME COAT OF DEREKAL 10-59 46351 OR EQUAL AND ONE (1) FINISH COAT OF A PAINT CONFORMING TO FEDERAL SPECIFICATION TT-E-5-2, CLASS C, ENAMEL SEMI-GLOSS, CLASS A AIR DRYING COLOR HD-20140 MEDIUM BROWN. EACH COAT TO HAVE A MINIMUM DRY FILM THICKNESS OF 1.5 MILS.
 - OPERATOR: LIMITORQUE #H2BC/SMB-00/10, 460 V, 60 CYCLE, 3 PHASE WITH MANUAL OVERRIDE
 - LIMIT SWITCH: TWO (2) ALLEN BRADLEY 1802-

SEALWELD IN FIELD BY OTHERS AFTER ASS'Y

- NOTES**
- (1) NO. REQUIRED: SIX (6) DAMPERS TOTAL, SHOWN, & THREE (3) LEFT HAND, OPPOSITE AS SHOWN.
 - (2) DAMPERS ARE VERTICALLY MOUNTED WITH HORIZONTAL FLOW.
 - (3) TAG DAMPERS: EVASE STACK DAMPERS.
 - (4) DAMPERS WILL BE SHIPPED IN TWO SECTIONS (1W X 2H)
 - (5) ALL WELDING WILL BE PERFORMED IN ACCORDANCE WITH AWS'S STANDARD WELD DNG. #10151, UNLESS OTHERWISE SPECIFIED.
 - (6) SEE DWG. #11957-1 & -2 FOR OPEP. ENCLOSURE ASSEMBLY.
 - (7) DESIGN CRITERIA: MAX. DIFF. PRESS. = 9\" H₂O.
MAX. TEMP. = 90°F. MIN. TEMP. = -25°F
MAX. VELOCITY = 1984 ACPH
MAX. LEAKAGE = 2310 ACFM @ 9\" H₂O @ 90°
MAX. TORQUE = 17990\" LB
 - (8) ESTIMATED WEIGHT OF EACH DAMPER IS 13,500 LBS.

Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and corrected at the job site for agreement of the contractor to the design concept. The contractor shall be responsible for coordination of the work with the owner's schedule.

Note: The contractor shall be responsible for the selection of materials and the quality of workmanship for any work not specifically shown in the Contract Documents. The contractor shall be responsible for the selection of materials and the quality of workmanship for any work not specifically shown in the Contract Documents. The contractor shall be responsible for the selection of materials and the quality of workmanship for any work not specifically shown in the Contract Documents.

Approved: **STERN-ROGER ARCHITECTS, LTD.**
Date: 6-14-77

ROCKY MOUNTAIN AIRCOLD - P.O. #3503 HOWARD MECHANICAL CO. P.O. #M-1461 EISENHOWER TUNNEL. ANY QUOTE 2090-7 ANY JOB NO. 90058

Approved: Howard Elect. & Mech. Co. Proj. Mgr.
FOR RECORD
DEC 1 1976
MAY 27 1977
A W & V architects

FOR AWV USE ONLY
WORK: 77 SHOP BM #11957-3-101

TOLERANCE	DIMENSION
±.004 - .015	UP TO 6"
±.005 - .032	6" TO 12"
±.006 - .118	12" TO 24"
±.008 - .114	24" TO 48"
±.009 - 2 DEG	ANY SPECIFIED ANGLE
REF.	ANY GIVEN AS SHOP AID
±.004 - .116	TRUE LOCATION - ALL MOUNTING HOLES

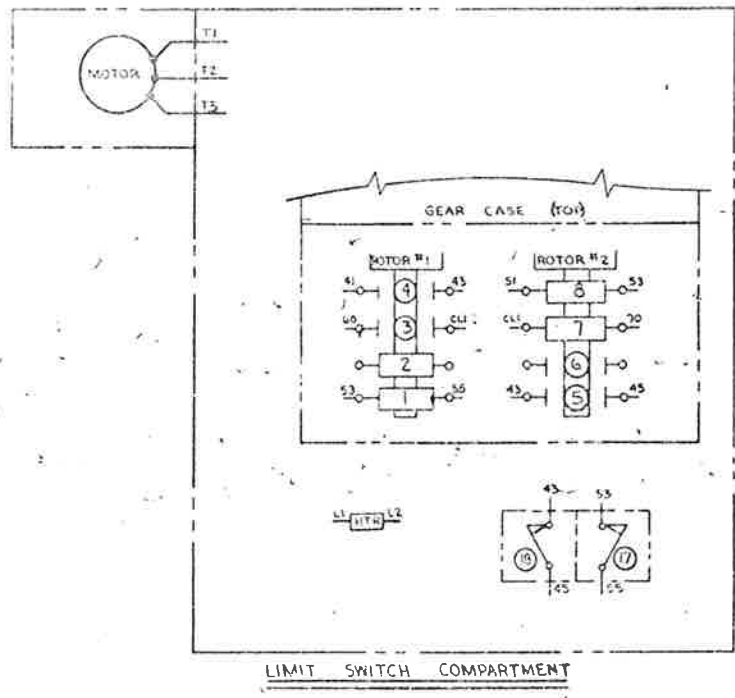
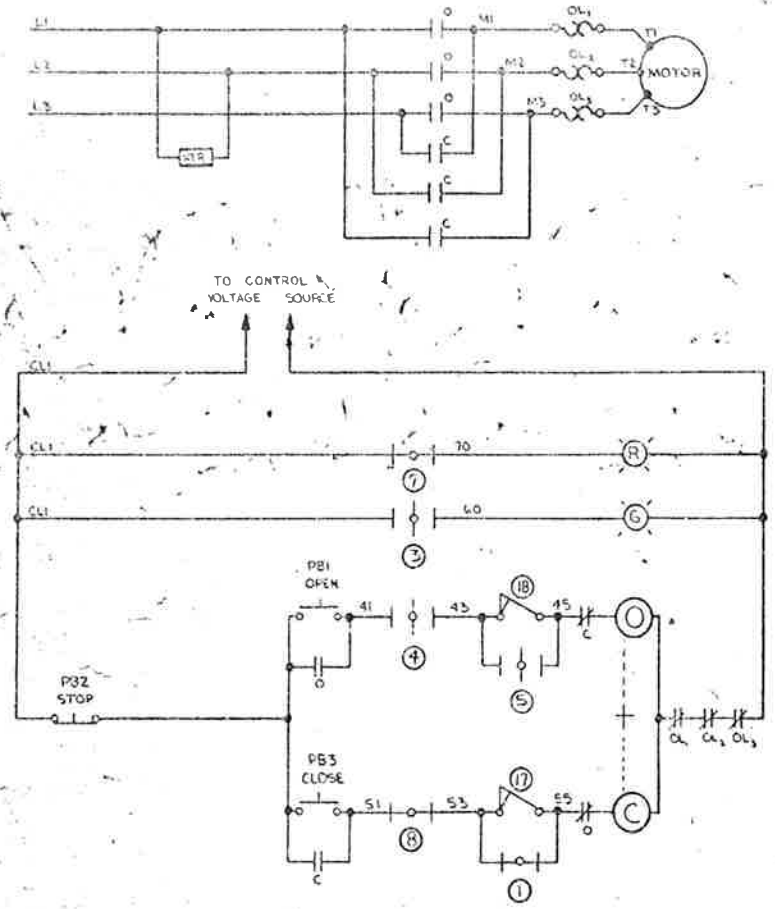
REVISION	DATE	BY
F		HANDWHEEL LOCATION REVISED
E		OPERATOR CLARIFICATION
D		MTG. HOLE SIZES LINES
C		PER APPROVAL
B		PER APPROVAL
A		REMOVED SCHEDULE, CHANGED MTG. HOLE DIA. & GA. LINE

AWV american warming and ventilating inc.
1017 SUMMIT ST. TOLEDO, OHIO

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CKD. BY: <i>awp</i>	APPD. BY: <i>awp</i>	REV
DRN. BY: <i>awp</i>	DWG. NO. 11957-3	E
DATE: 7-30-75		

REVISED	ISSUES	PROJECT	NO.	DATE
		15-476-1001	148	ZOR



APPROVED FOR FABRICATION 2-19-76 Bob Callahan

VALVE SHOWN IN FULL OPEN POSITION

CONTACT	LIMIT SWITCH CONTACT DEVELOPMENT		FUNCTION
	FULL OPEN	FULL CLOSED	
1			BY-PASS CIR.
2			SPARE
3			IND. LIGHT
4			OPEN LIMIT
5			BY-PASS CIR.
6			SPARE
7			IND. LIGHT
8			CLOSE LIMIT

- (1) CLOSING TORQUE SWITCH INTERRUPTS CONTROL CIRCUIT IF MECHANICAL OVERLOAD OCCURS DURING CLOSING CYCLE
- (2) OPENING TORQUE SWITCH INTERRUPTS CONTROL CIRCUIT IF MECHANICAL OVERLOAD OCCURS DURING OPENING CYCLE

NOTES:
 1 - CLOSED CONTACT
 2 - OPEN CONTACT
 3 WIRE 43, 45, 53, + 55 BETWEEN TORQUE SWITCHES + LIMIT SWITCHES BY LIMITORQUE CORP. ALL OTHER WIRING BY OTHERS.

LEGEND:
 I - MECHANICAL INTERLOCK
 C - CLOSE CONTACT
 O - OPEN CONTACT
 ⊖ - CLOSING COIL
 ⊕ - OPENING COIL
 OL - OVERLOAD RELAY (1, 2, 3)
 PB1 - OPEN PUSHBUTTON
 PB2 - STOP PUSHBUTTON
 PB3 - CLOSE PUSHBUTTON
 ⊕ - GREEN INDICATING LIGHT
 ⊖ - RED INDICATING LIGHT
 HTR - SPACE HEATER PROVIDED FOR ALL EXPLOSION PROOF UNITS OR WHEN REQUIRED.

FOR SUGGESTED OPERATION ONLY, NOT SUPPLIED BY LIMITORQUE CORP.

SUPERSEDES B-90803

LIMITORQUE CORPORATION
LIMITORQUE WIRING DIAGRAM

DATE 5-16-77 DWG. NO. 15-476-1001-3

9/30/75 DATE BY MJL

CUST. NAME Waldron Industries, Inc.
 P.O. NO. W-6204
 S.O. NO.
 LIMTORQUE ORDER NO. 392572
 VALVE SIZE B/P
 UNIT SIZE SMB-00 w/H2BC Manual Assem. Vos. (6) A
 ENCLOSURE Weatherproof
 MOTOR SIZE 10" # RPM 1800
 PHASE 3 CYCLE 60 VOLT 460

APPROX. MOTOR RATINGS
 FULL LOAD 2.3
 LOCKED ROTOR 11.9
 HORSEPOWER .7
 TAG OR VALVE MARK NO. "#90058 Rocky Mt. Air Cold"

CERTIFIED FOR CONSTRUCTION
 LIMITORQUE CORPORATION
 (THIS SPACE FOR LIMITORQUE OFFICE USE ONLY)

ORIG. NO. 15-476-1001-5

Approved
 Howard E. et. & Mech. Co.
 Proj. Mgr.

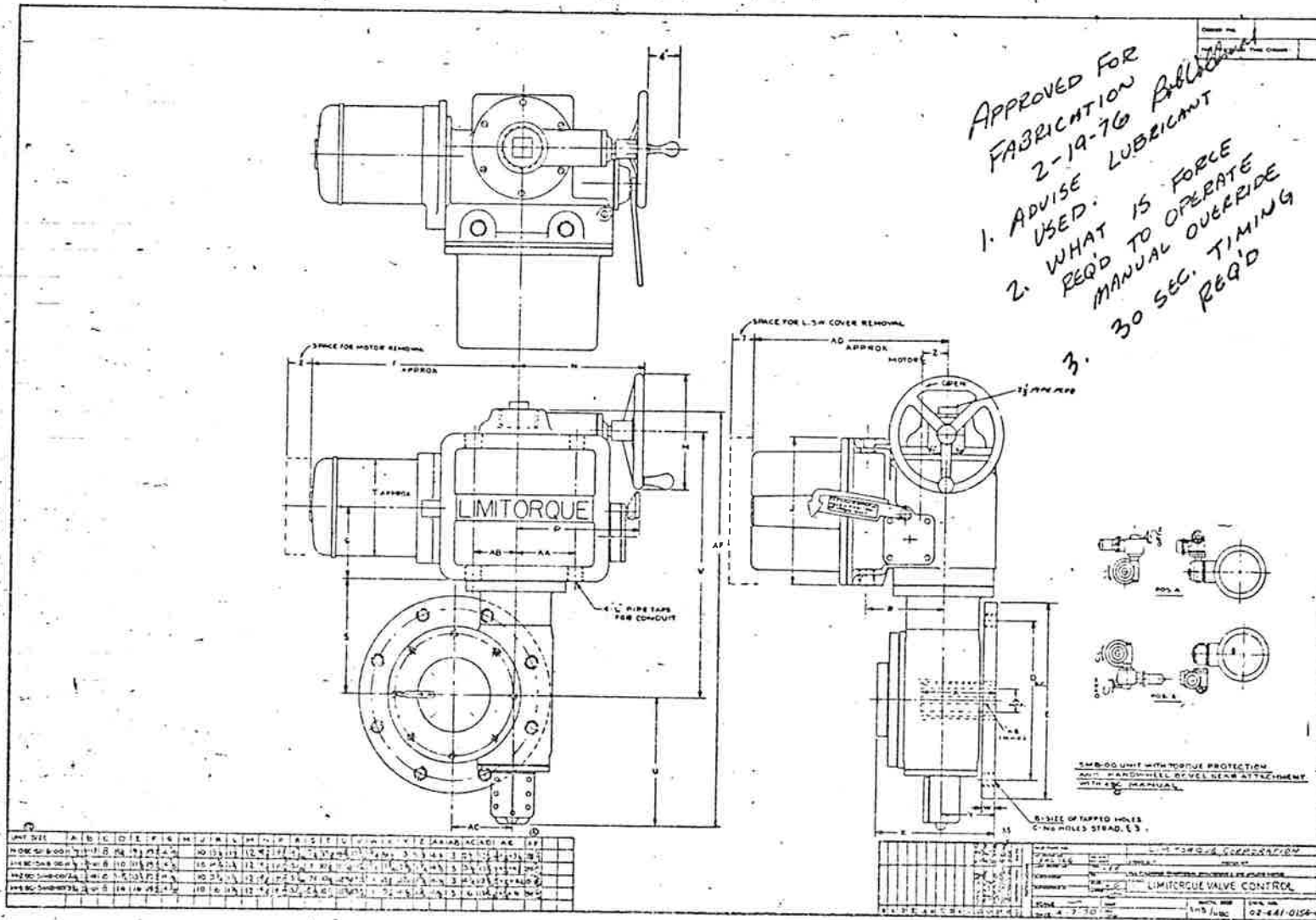


FOR RECORD
 EEC 11976

A W & V

STANDARD ARCHITECTS, LTD.
 MAY 14 1977

STANDARD ARCHITECTS, LTD.
 MAY 27 1977



FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1220)	145	203

9/30/75 DATE BY HJT

CUST. NAME	Waldron Industries, Inc.
P.O. NO.	W-6204
S.O. NO.	
LIMITORQUE ORDER NO.	392572
VALVE SIZE	B/F
UNIT SIZE	SMB-00 w/HZBC Manual Assem. Pos. (S) A
ENCLOSURE	Weatherproof (S) B
MOTOR SIZE	1D" # RPM 1800
PHASE	3 CYCLE 60 VOLT 460
APPROX. MOTOR RATINGS	
FULL LOAD	2.3
LOCKED ROTOR	11.9
HORSEPOWER	.7
TAG OR VALVE MARK NO.	#90058 Rocky Mt. Air Cold
CERTIFIED FOR CONSTRUCTION LIMITORQUE CORPORATION (THIS SPACE FOR LIMITORQUE OFFICE USE ONLY)	

FORM 847 REV. 5/67

Approved
 Howard Elect. & Mech. Proj. Mgr.

FOR RECORD

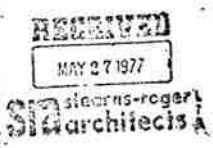
DEC 1 1976

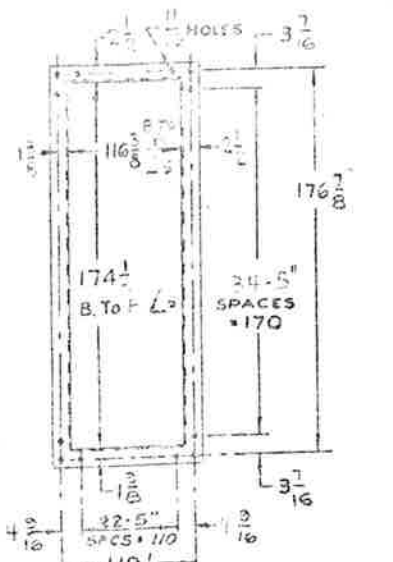
A W & V

Checking is only for conformance with the design contract of the Project and compliance with the information given in the Contract Documents. It does not constitute a warranty or endorsement of the quality of the work or the fitness for any particular purpose. The Architect is not responsible for errors or omissions in the design or construction of the work or for any damage to property or persons resulting therefrom.

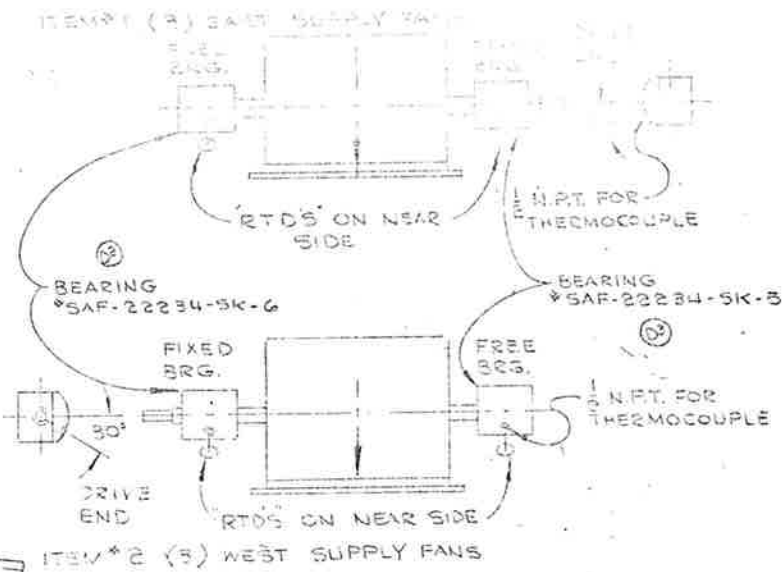
STEARNIS-ROBERT ARCHITECTS, LTD.

under 19.77

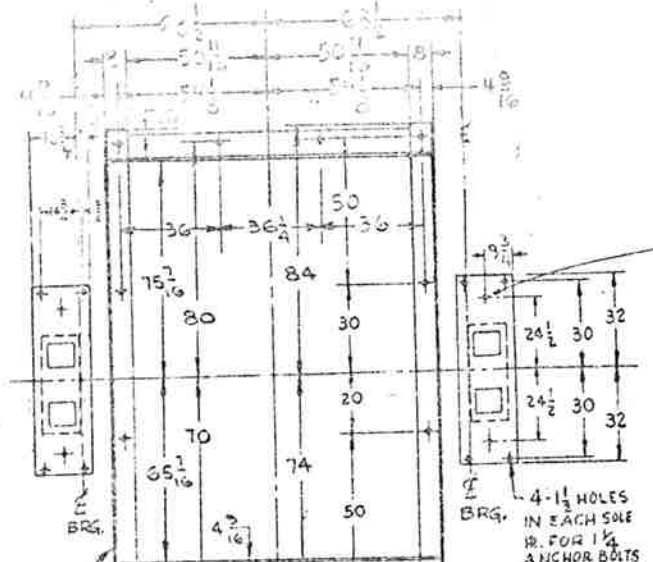




DETAIL OF OUTLET FLANGE
2 1/2 x 2 1/2 x 3/8 L's

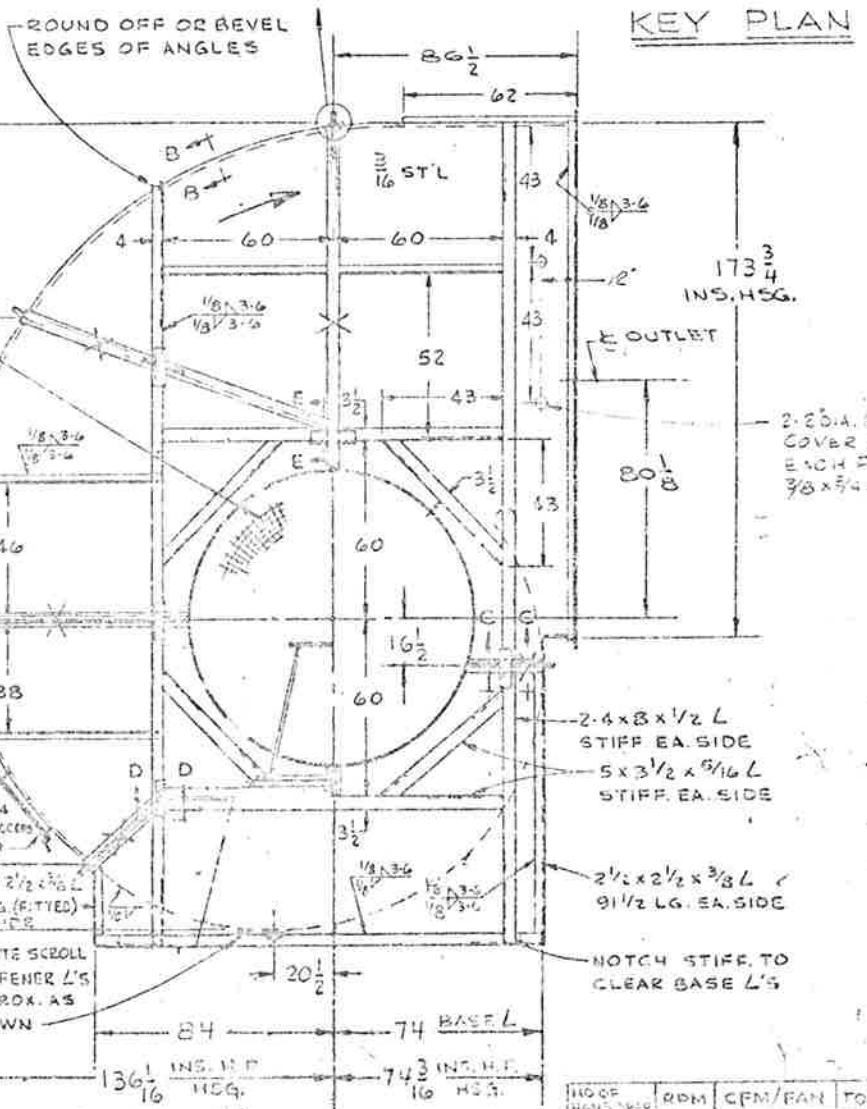


5/16 x 5/16 NOTCH SIDE SHEETS TO CLEAR SPLIT L'S
3/16 x 2 1/2 NOTCH TO CLEAR STIFF L'S.



PLAN OF BASE

CUST. TO DRILL & REAM DOWEL HOLE LOCATED IN BOTTOM OF PED. & SOLE PL. (AFTER FIELD ALIGNMENT)



KEY PLAN

ROUND OFF OR BEVEL EDGES OF ANGLES

2-B x 4 x 1/2 L's 158 LG.
2-B x 4 x 1/2 L's 118 LG (NOTCH & FIT AT ASSY.)

*NOTE:
FIXED BRG, SHAFT EXT, ON THIS SIDE WITH FREE BRG. & MAGNETIC PICK UP ON OPP SIDE FOR CCW FANS ITEM # 1

Checked
Howard Elect. & Mach. Co.
Proj. Mgr.

FOR GENERAL NOTES SEE DRWG. 503-AD-5135



2-2 DIA. HOLE EACH SIDE OF FAN HSG. COVER WITH BRASS OR ALUM. PLATE EACH FASTENED TO SIDE SHFT WITH 3/8 x 3/4 LG CAP SCREW W/ NUT

4.0000
5.5000-0005
1 1/4 x 5/8 KWY.
Ø LG. KEY

FREE BRG.

6" SKF SPHERICAL ROLLER BRGS.
MAGNETIC PICK-UP SENSOR BY OTHERS SPROCKET & P.T. BY I.P.D.

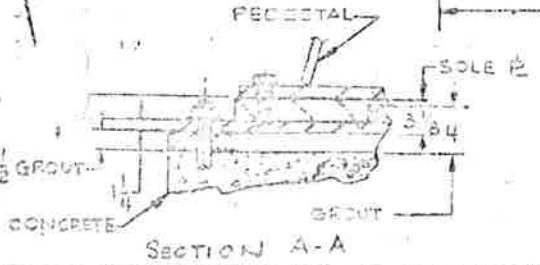
DOWEL BRG. TO PED. & PED. TO SOLE PL. AFTER FIELD ALIGNMENT. 3/8 DRILL & REAM (PER FOOT) FOR #7 TAPER DOWEL PIN

ITEM # 2
3-CW FANS REQ'D.
TAG : ONE EACH - WS-5 WS-6, WS-7
ITEM # 1
3 CCW FANS REQ'D.
OPR. SHOWN SEE NOTE # 4
TAG : ONE EACH - ES-3, ES-6, ES-7
SUPPLY FAN

SEE NOTE # 4

10,300 10,300
2" M.P.T. DRAIN CONN. (CAPPED)
BOT. OF FAN BASE ANGLE
COLORADO HWY. DEPT. PROJ. 1-70-3(82)-220
FOR B/M SEE DRWG. NO.

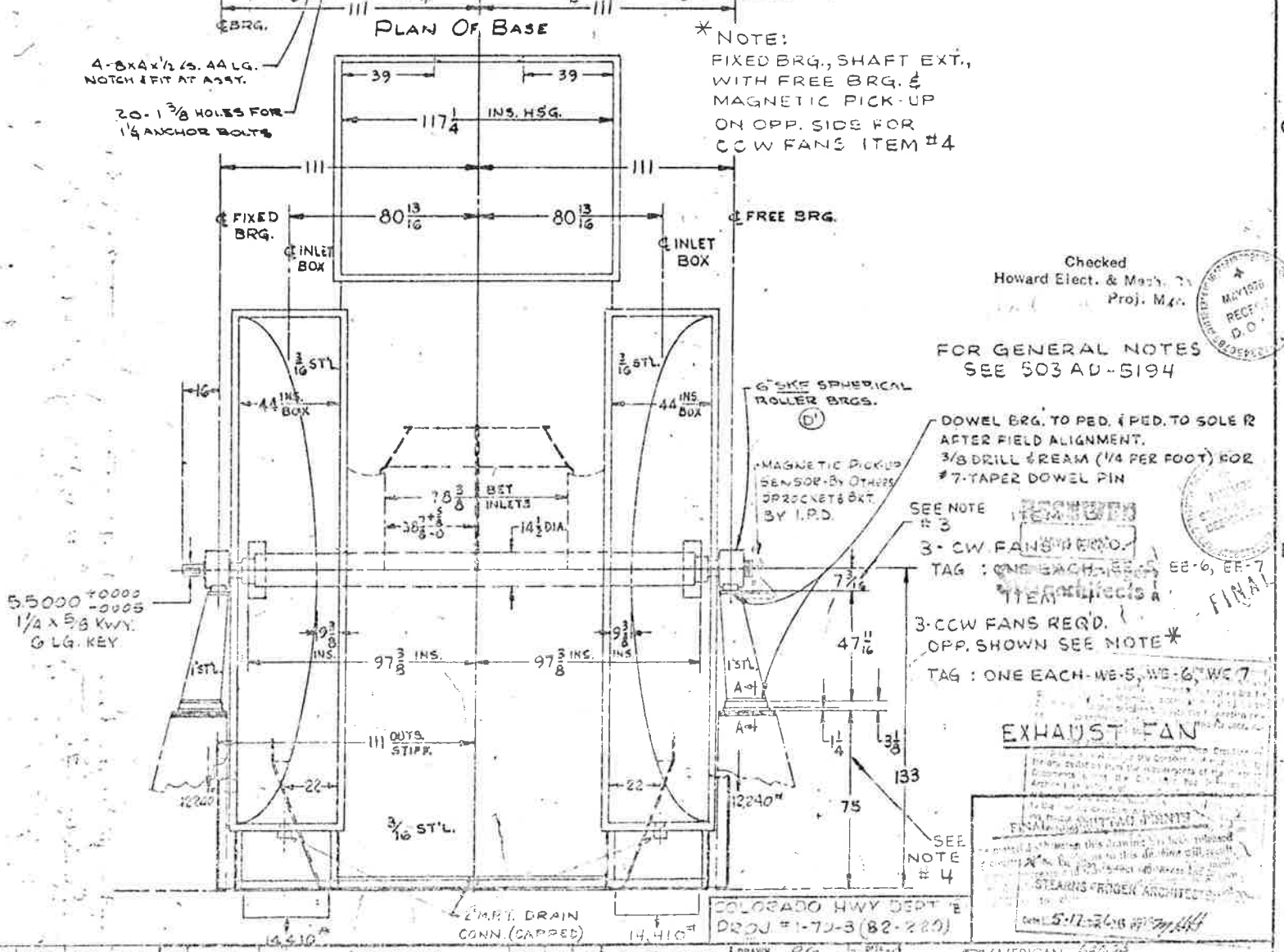
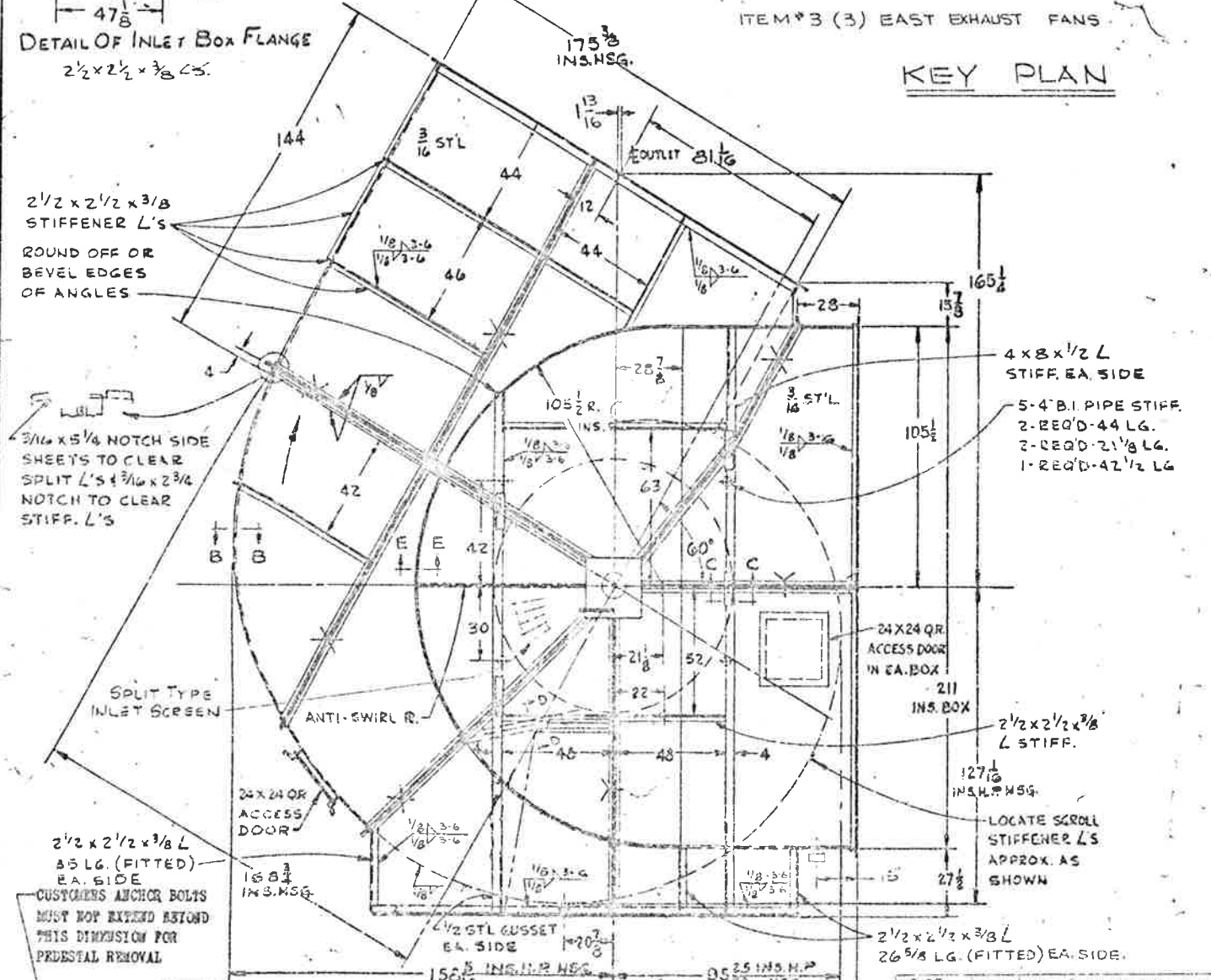
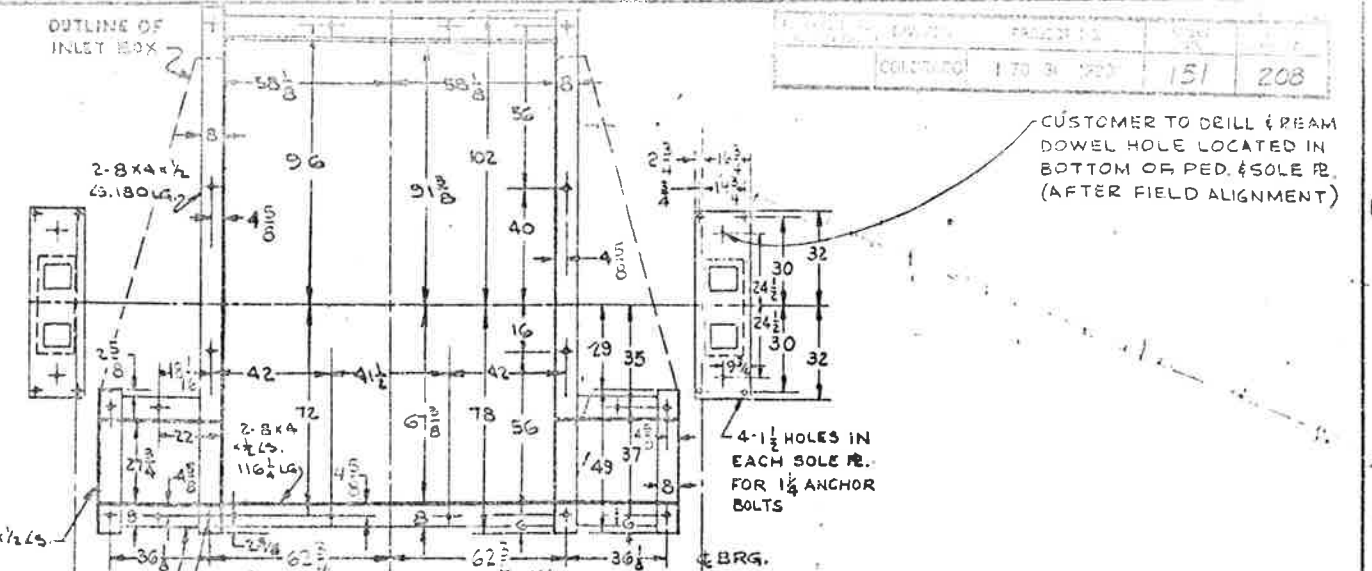
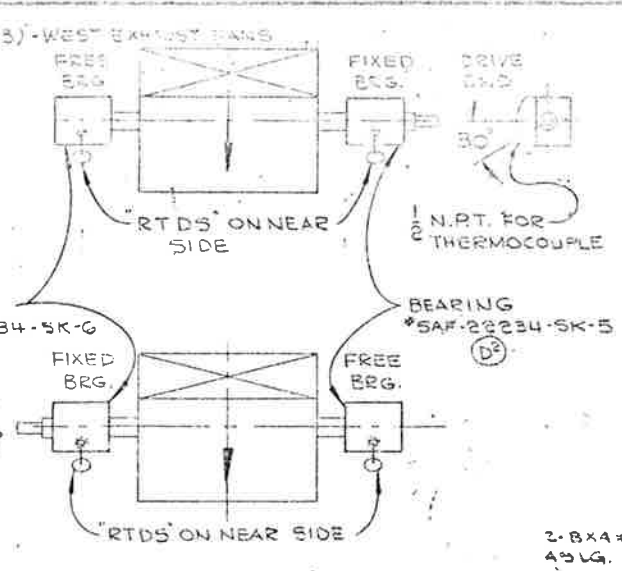
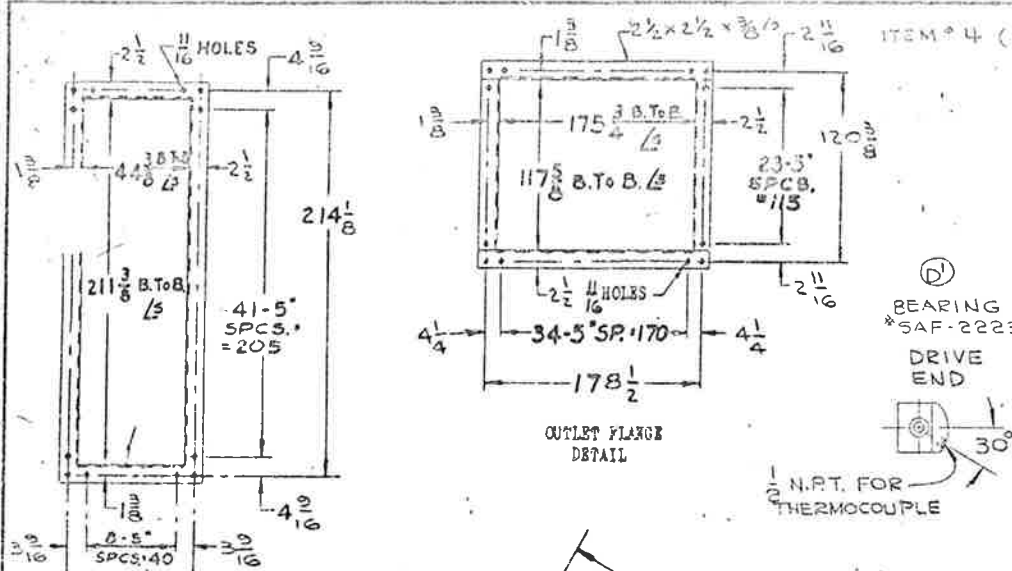
CUST'S ANCHOR BOLTS MUST NOT EXTEND BY MORE THAN THIS DIMENSION FOR PEDESTAL REMOVAL.



SECTION A-A

NO	REV	DATE	DESCRIPTION	CHK.	APP.	TOLERANCE UNLESS OTHERWISE SPECIFIED
1			INITIAL DESIGN			
2			REVISED			
3			REVISED			
4			REVISED			
5			REVISED			
6			REVISED			
7			REVISED			
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96			REVISED			
97			REVISED			
98			REVISED			
99			REVISED			
100			REVISED			

AMERICAN STANDARD INDUSTRIAL PRODUCTS DIVISION
TITLE # 11-1 SERIES AT BASE PART 3
FOR EISENPOWER TUNNEL VENTILATOR
E-INV-ED, COLOR 110
SALES ORDER NO. 11-1
DRAWING NUMBER
503-AD-5135



NO. OF FANS PER	RPM	CFM/FAN	TOTAL CFM	S.R.	T.P. BHP	REV.	ACR.	DATE	CHK. APD.	TOLERANCE UNLESS OTHERWISE SPECIFIED
3	555	460,000	1,380,000	7.73	5.3	A				±.0005
2	555	300,000	600,000	4.8	3.5	B				±.001
2	330	215,000	430,000	2.99	2.4	C				±.001
2	253	270,000	540,000	1.66	1.7	D				±.001
2	165	150,000	300,000	1.0	1.0					±.001
2	165	150,000	300,000	1.0	1.0					±.001

NO.	DESCRIPTION	DATE	CHK. APD.
1	ISSUED FOR REVIEW	7/27/70	
2	ISSUED FOR FABRICATION	7/28/70	
3	ISSUED FOR CONSTRUCTION	7/28/70	

Checked
 Howard Elect. & Mech. Co.
 Proj. Mgr.

FOR GENERAL NOTES
 SEE 503 AD-5194

DOWEL BRG. TO PED. & PED. TO SOLE PLATE AFTER FIELD ALIGNMENT.
 3/8 DRILL & REAM (1/4 PER FOOT) FOR #7-TAPER DOWEL PIN

SEE NOTE #3

3- CW FANS REQ'D. TAG: ONE EACH WE-5, WE-6, WE-7

3- CCW FANS REQ'D. OPP. SHOWN SEE NOTE #4

EXHAUST FAN

AMERICAN STANDARD PRODUCTS DIVISION

TYPE #1172 SERIES AF 3600-B ARLY B

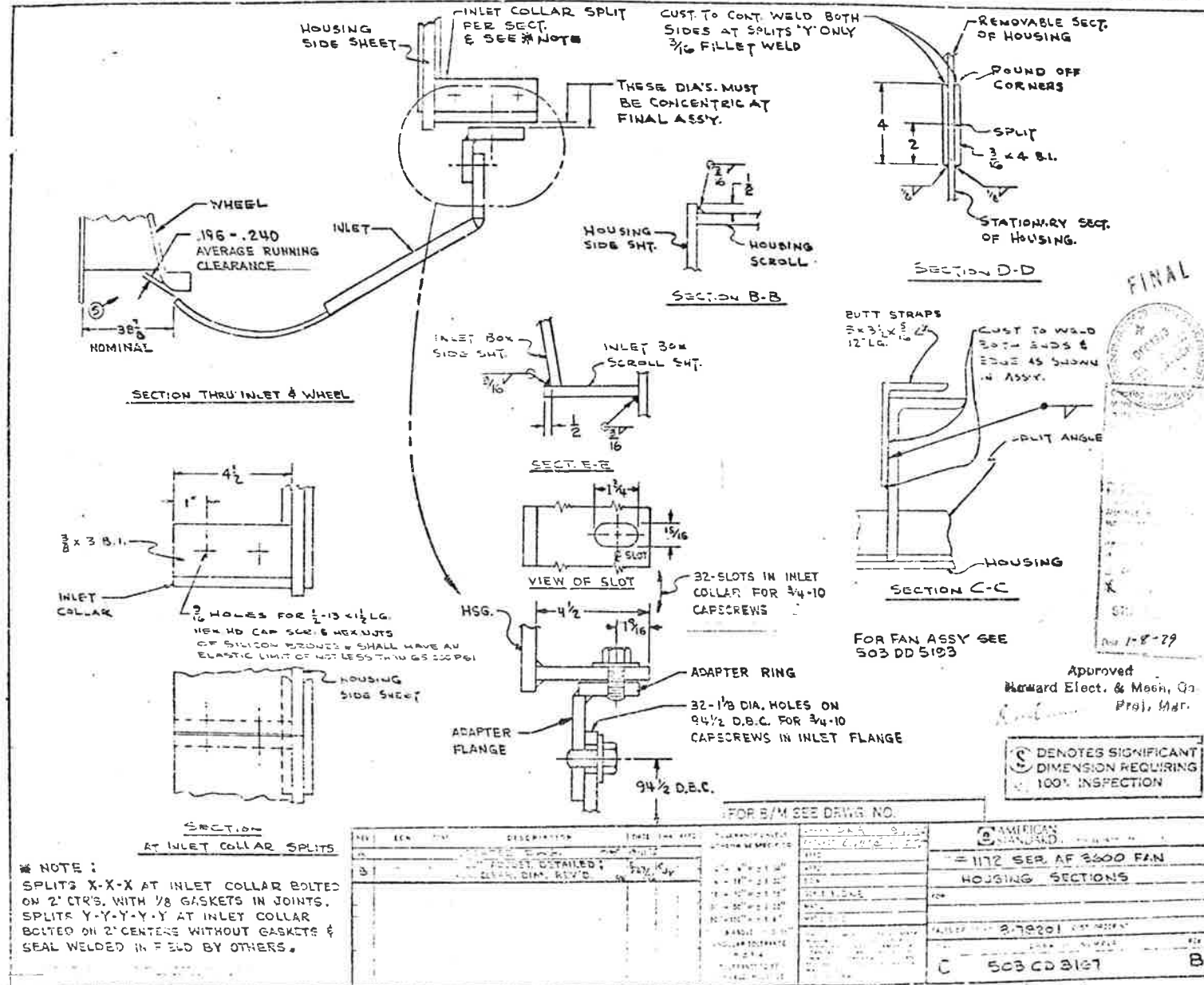
FOR EISENHOWER TUNNEL VENTILATION

SALES ORDER NO. 3-78201 CUST. ORDER NO. M-1456

DRAWING NUMBER

60000-5193

PROJECT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
170-31	1220	152		



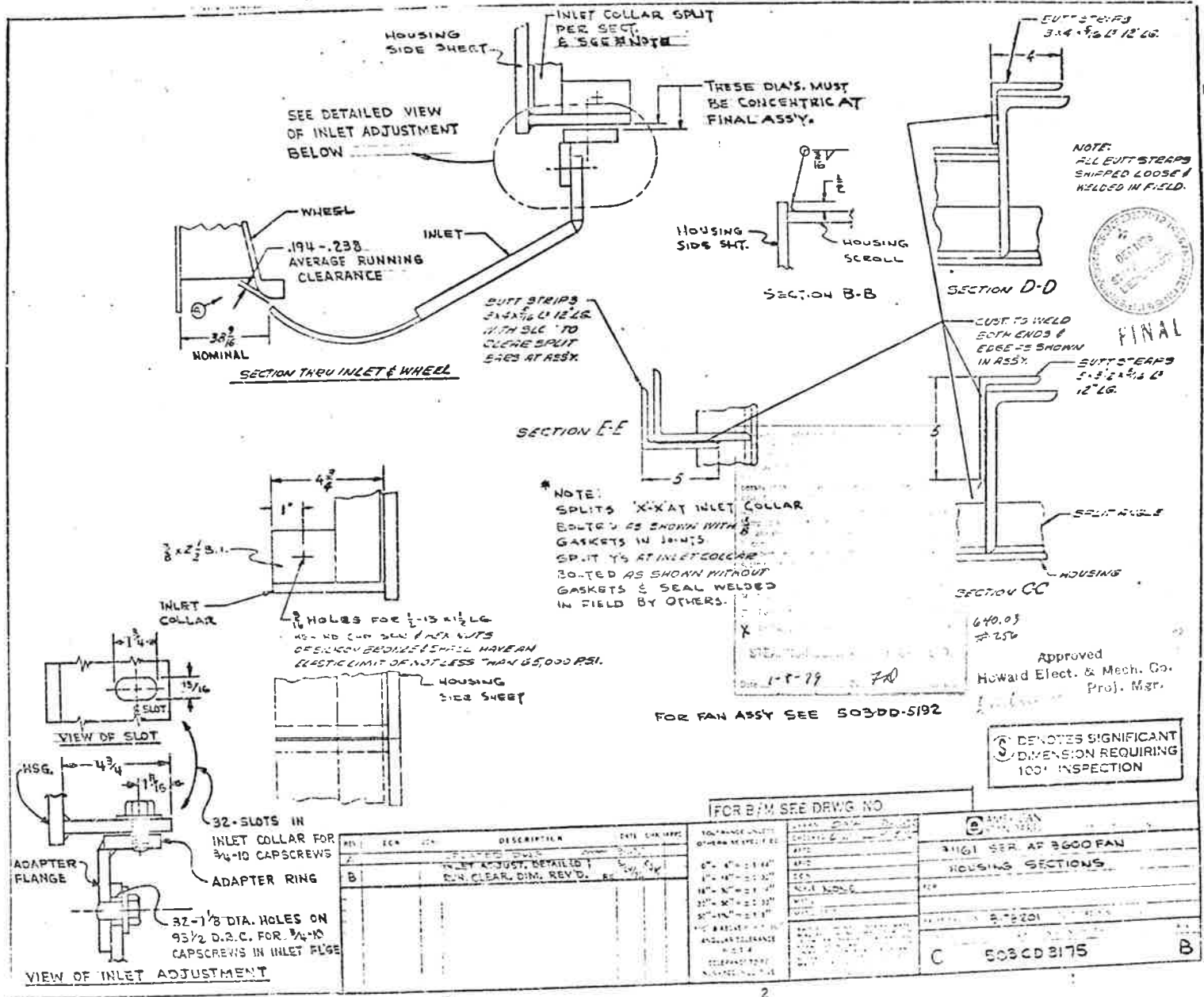
FINAL



C DENOTES SIGNIFICANT DIMENSION REQUIRING 100% INSPECTION

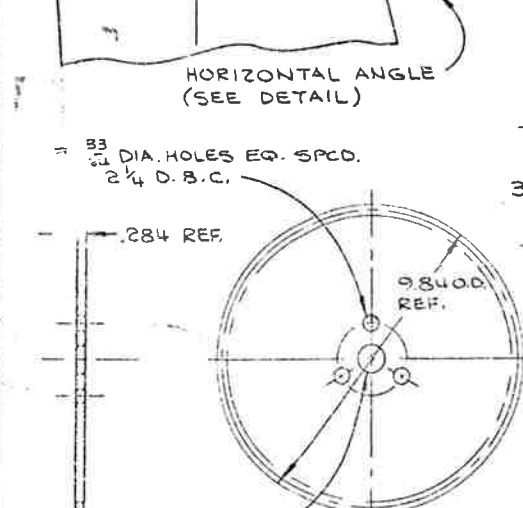
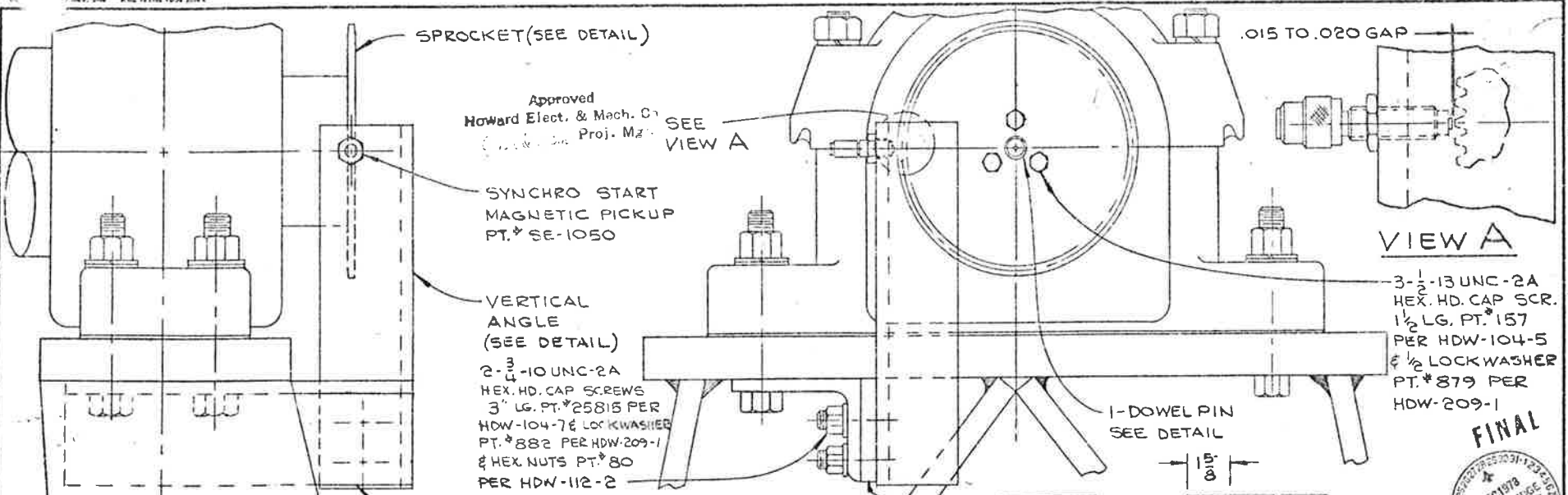
REV.	CON.	DESCRIPTION	DATE	BY	CHKD.	APP'D.
1		FOR B/M SEE DRWG. NO.				
2		FOR B/M SEE DRWG. NO.				

DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
COLORADO	173131 1222	153	

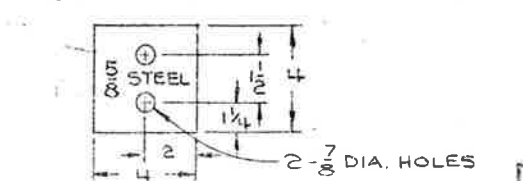


REV.	DATE	DESCRIPTION	BY	CHKD.	APPD.	QUANTITY	DATE	REMARKS
B		INLET ADJUST. DETAILED DIA. CLEAR. DIM. REV'D.						

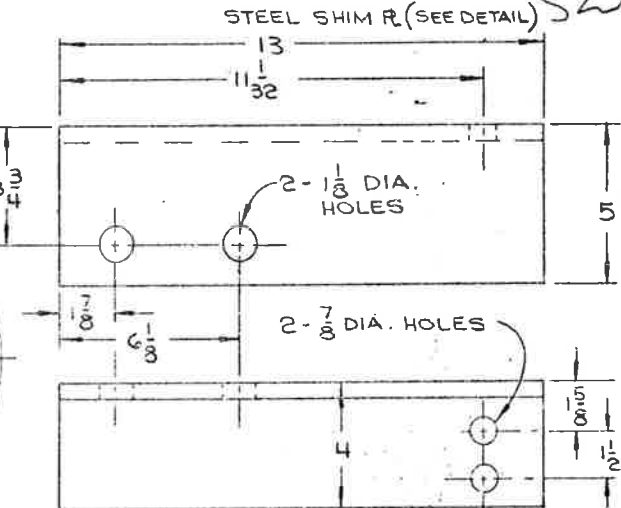
31161 SER. AF 3600 FAN HOUSING SECTIONS
5-2201
503CD3175



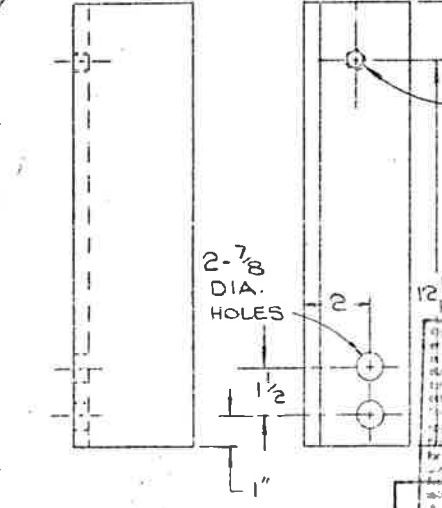
SPROCKET
 MAKE FROM BROWNING PT. 40-A-60
 TYPE-A 60 TEETH 1/4" STOCK BORE
 9.554 PITCH DIA. 1-REQ'D. PER FAN



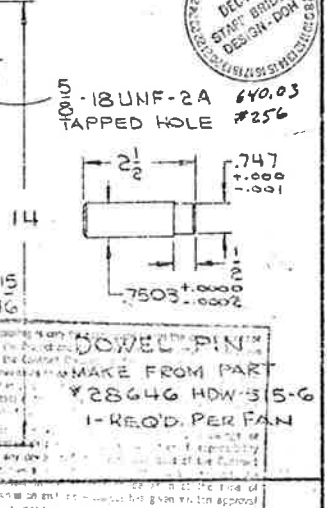
SHIM PLATE DETAIL
 1-REQ'D. PER FAN



VERTICAL ANGLE
 MATL. 3/8 X 3/8 X 1/2 STEEL ANGLE
 1-REQ'D. PER FAN



DOWEL PIN
 MAKE FROM PART
 #28646 HDW-315-6
 1-REQ'D. PER FAN



TAPPED HOLE
 5/16 UNF-2A
 2 1/2

REV.	BY	DATE	CHK.	APPD.	DESCRIPTION
A	N. LUTZ	3-18-76			MAG. PICKUP RELATED HOLES ADDED TO ANGLES. SHIM PLATE ADDED. ALSO
B	N. LUTZ	3-22-76			HORIZONTAL & VERT. ANGLE 2 HOLES REMOVED & HOLE C WNS 16-35 REF'D. TO 12-24

REV.	BY	DATE	CHK.	APPD.	DESCRIPTION
A	N. LUTZ	3-18-76			MAG. PICKUP RELATED HOLES ADDED TO ANGLES. SHIM PLATE ADDED. ALSO
B	N. LUTZ	3-22-76			HORIZONTAL & VERT. ANGLE 2 HOLES REMOVED & HOLE C WNS 16-35 REF'D. TO 12-24

REV.	BY	DATE	CHK.	APPD.	DESCRIPTION
A	N. LUTZ	3-18-76			MAG. PICKUP RELATED HOLES ADDED TO ANGLES. SHIM PLATE ADDED. ALSO
B	N. LUTZ	3-22-76			HORIZONTAL & VERT. ANGLE 2 HOLES REMOVED & HOLE C WNS 16-35 REF'D. TO 12-24

PROJECT NO.	170-3(1220)
SHEET NO.	154

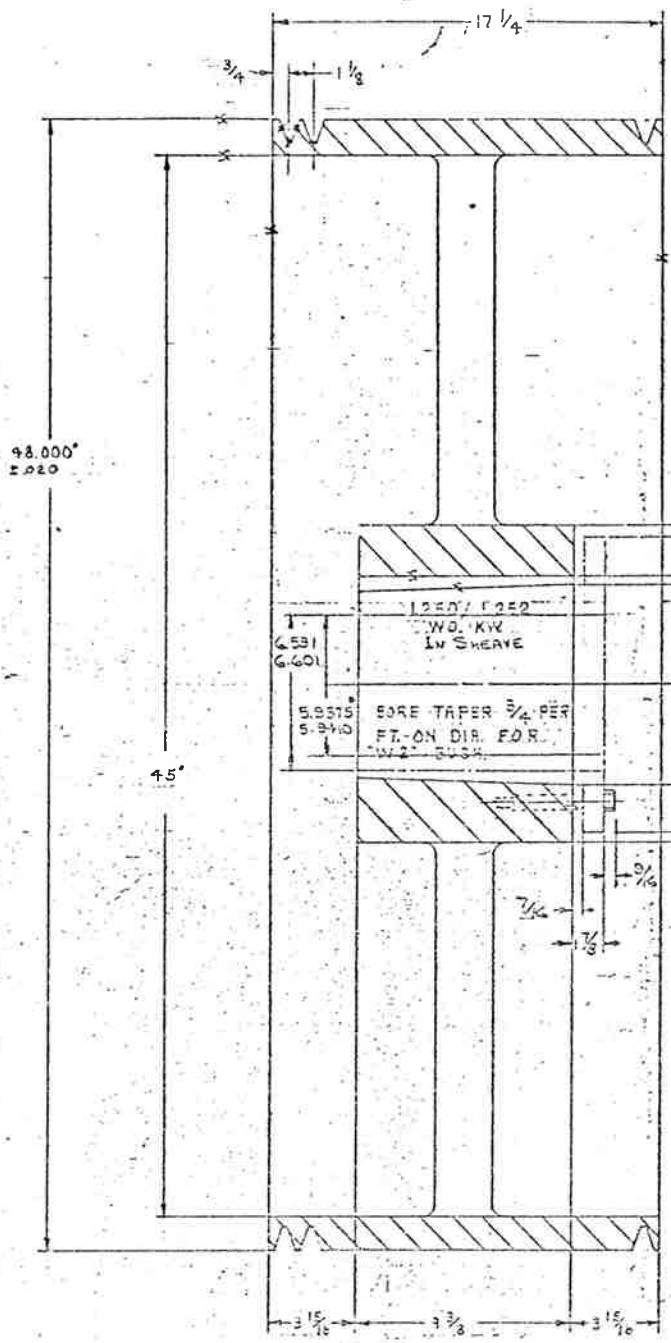
SALES ORDER NO.	3-78201
CUST. ORDER NO.	M-1455

DRAWING NUMBER	503-CD-5272
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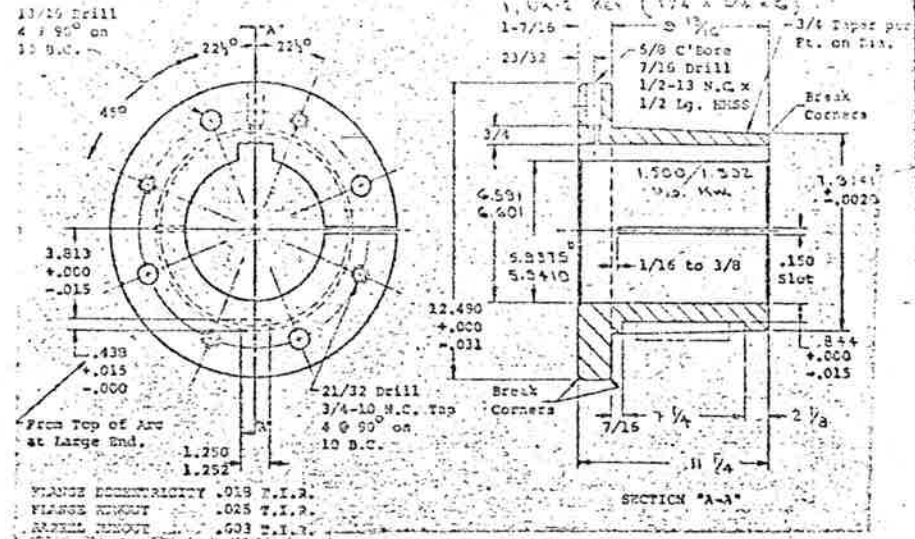


AMERICAN STANDARD INDUSTRIAL PRODUCTS DIVISION
 MOUNTING BRACKETS & DETAILS
 FOR MAGNETIC PICKUPS
 JOB: EISENHOWER TUNNEL VENTILATION
 SALES ORDER NO. 3-78201 CUST. ORDER NO. M-1455
 DRAWING NUMBER 503-CD-5272

OD ECCENTRICITY .017 T.I.R.
FACE RUNOUT .020 T.I.R.

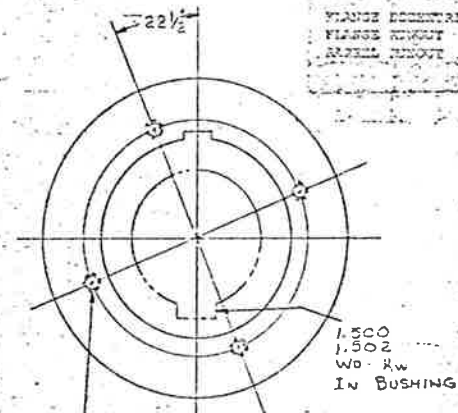


15 STD. 42" "8V"
INDUSTRY STD GROOVES



STD. W2 x 5 15/16 B. BUSHING

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1220)	155	208



2 1/32" DRILL x 2 1/2" DP
3/4-10 N.C. THP x 1 3/4" DP
4 @ 90° ON 10 B.C.

Checked only for conformance with the design details of the project and other data with the information given in the Contract Documents. Contractor is responsible for providing to the Architect and Consultant all the information necessary to complete the design and for the coordination of the work of all trades.

Note - The Architect's issuing of Shop Drawings or Samples shall not constitute the Contractor's responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given its approval to the specific deviation, nor shall the Architect's checking relieve the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

Rejected Make Corrections Noted
 No Exception Taken Fix and Resubmit

STEARNS-ROGER ARCHITECTS, LTD.
Date: 2-13-76 By: *W. Blank*

RECEIVED
FEB 11 1976
Stearns-Roger Architects, Ltd.

T-132
640

Checked
Howard Elect. & Mech. Co.
Proj. Mgr.

DATE	BY	REVISION
10/15/75	W.B.	1

WB-2075-SK R2

BROWNING MANUFACTURING COMPANY, HAVESVILLE, MICHIGAN	
ITEM NO.	110-00X150R1VX "W2" E.
QUANTITY	1000
DESCRIPTION	SPCL SNEAVE
DATE	10/15/75
BY	W.B.
FOR	WESTERN BELTING COMPANY
PROJECT	110-00X150R1VX "W2" E.
LOCATION	110-00X150R1VX "W2" E.
DATE	10/15/75
BY	W.B.
FOR	WESTERN BELTING COMPANY

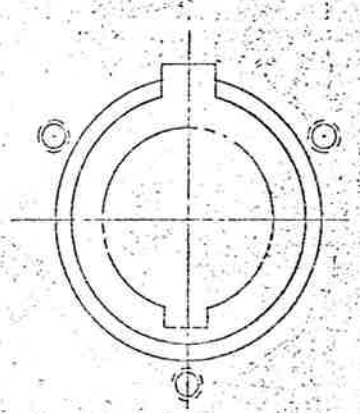
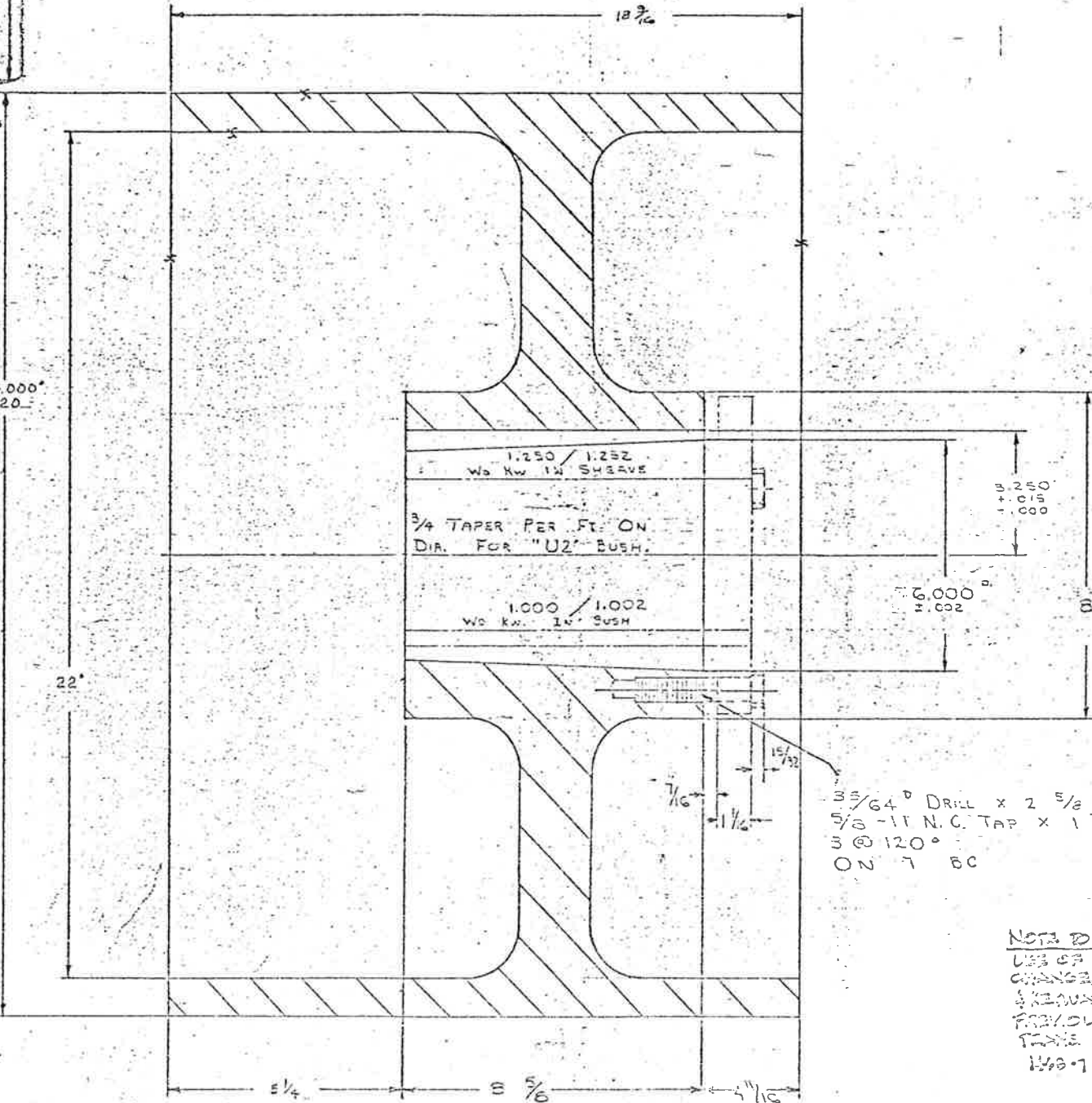
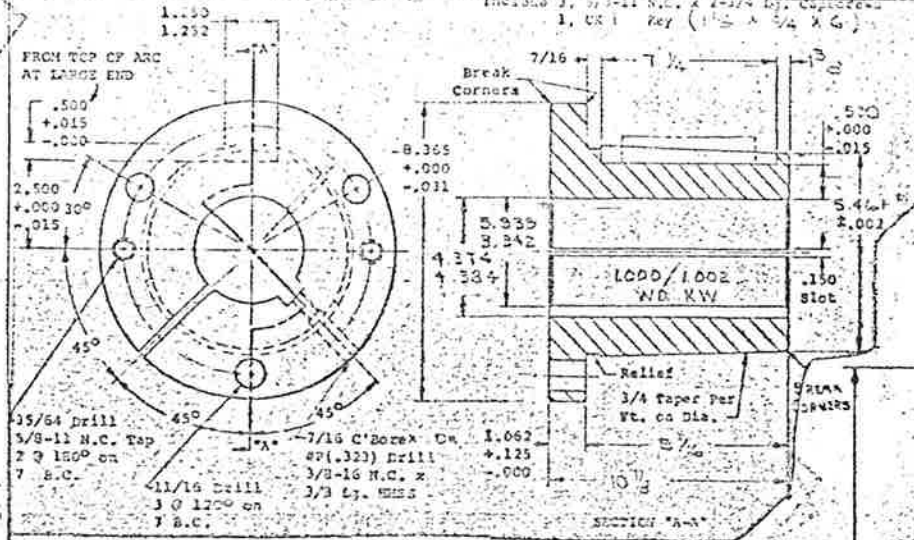
3 FINISHED SURFACES

PROJECT NO. 170-3(1220)
LIGHT ON - GREEN POWER NEWARK TUNNEL
DATE: 2-13-76 BY: W.B.



OO ECCENTRICITY .001 T.I.R.
FACE RUNOUT .001 T.I.R.
HUB ECCENTRICITY .002 T.I.R.

DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
COLORADO	170-B(1)220	156	208



35/64 DRILL x 2 5/8 DF
5/8-11 N.C. TAP x 1 1/2 DR.
3 @ 120°
ON 7 BC

NOTE TO CONTRACTOR:
USE OF TAPER LOCK HUBS
CHANGES SHIP TOLENS
& DIMENSIONS
PREVIOUSLY SUBMITTED ON
TABLE 6127, YOUR DWG.
149-7

Checking is only for conformance with the user's concept of use. The user is responsible for the design and construction of the shaft. The user is responsible for the design and construction of the shaft. The user is responsible for the design and construction of the shaft.

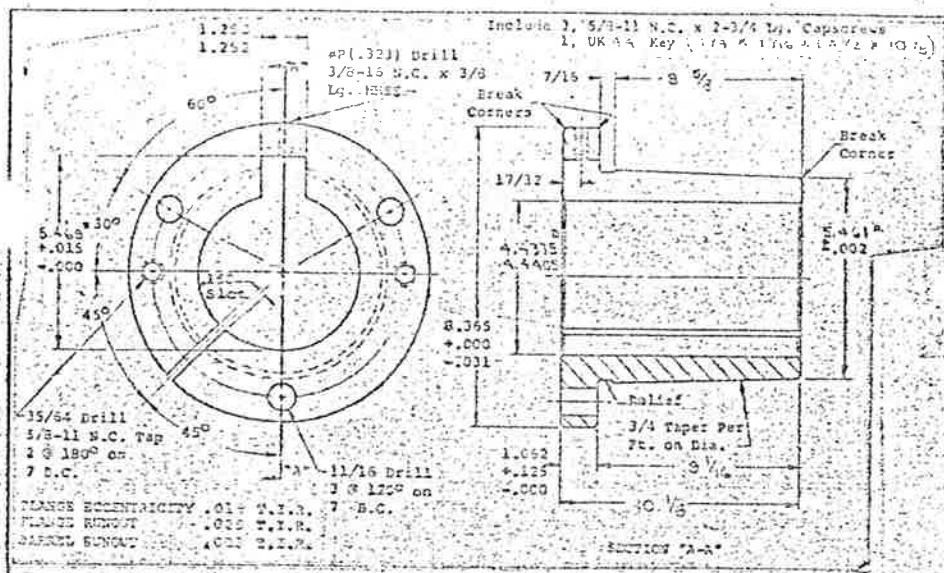
STEARNES-ROGERS ARCHITECTS, LTD.
DR. ENG. W. W. WILLIAMS

T-132
240

Checked
Howard Elect. & Mech. Co.
Proj. Mgr.

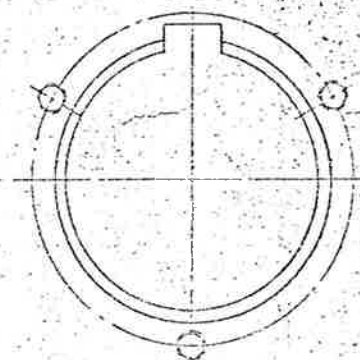
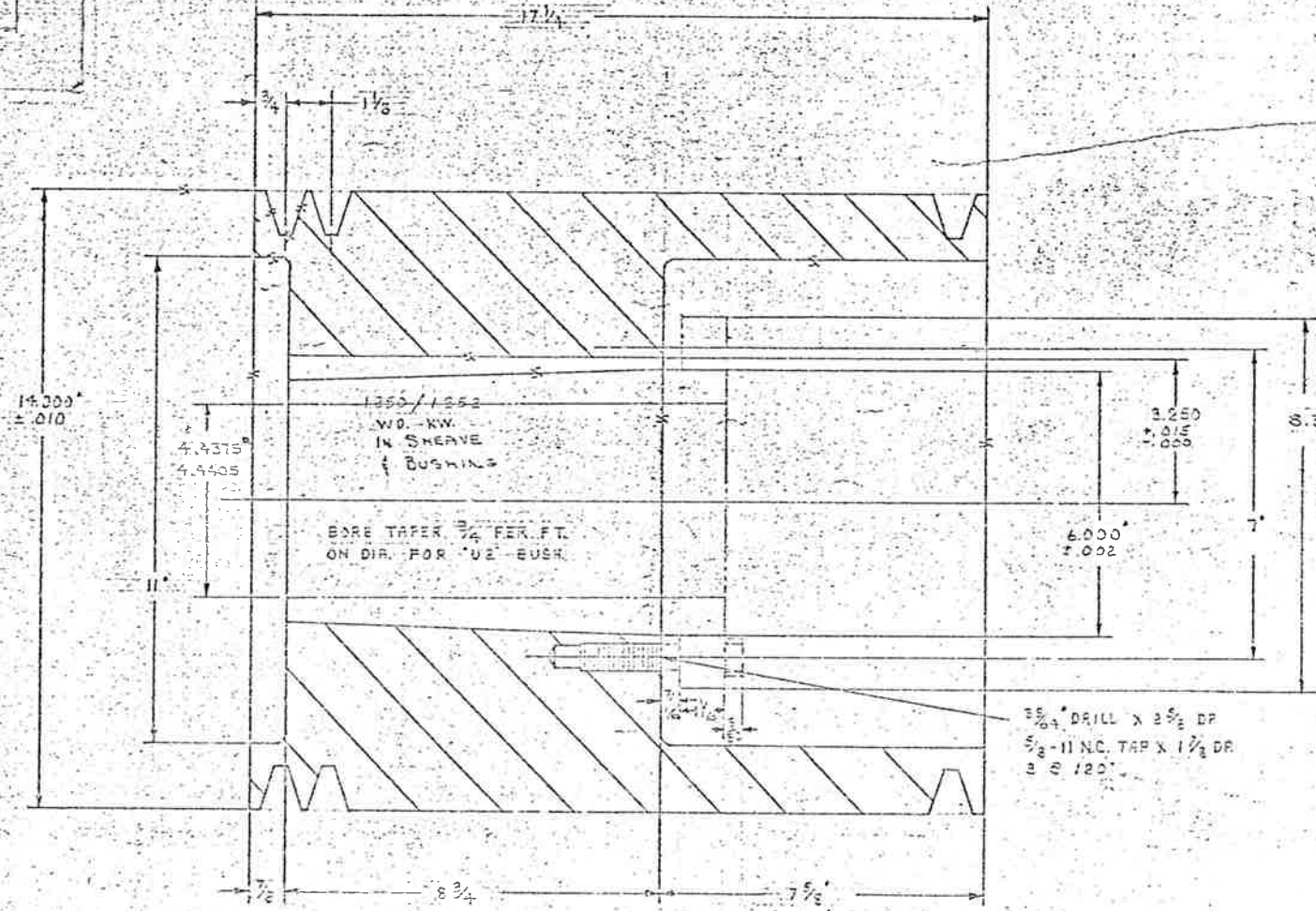
BROWNING MANUFACTURING COMPANY, MAYFIELD, KENTUCKY	
24 BORE WITH FILE X 3/16 E HUBS SLIT HUBS TOLEN	WESTERN BEARING COMPANY
WESTERN BEARING COMPANY	WESTERN BEARING COMPANY





REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-31 1220	157	208

Std. U2 x 4-1/2" D. Bushing



There is no liability for any errors or omissions in the design or construction of the Project and the information shown on the drawings is intended for general information only and is not to be used for any other purpose without the written consent of the Engineer or Architect.

Note - The Engineer and Architect are not responsible for any errors or omissions in the design or construction of the Project which may be caused by the Contractor or any other party.

STEVENSON & ROGER ARCHITECTS, LTD.

2020-76, 2020-76

RECEIVED
FEB 11 1973
S. STEVENSON & ROGER ARCHITECTS

Checked
Howard Elect. & Mch. Co.
Industrial Proj. Mgr.

7-32
2/10

SOLID WEB

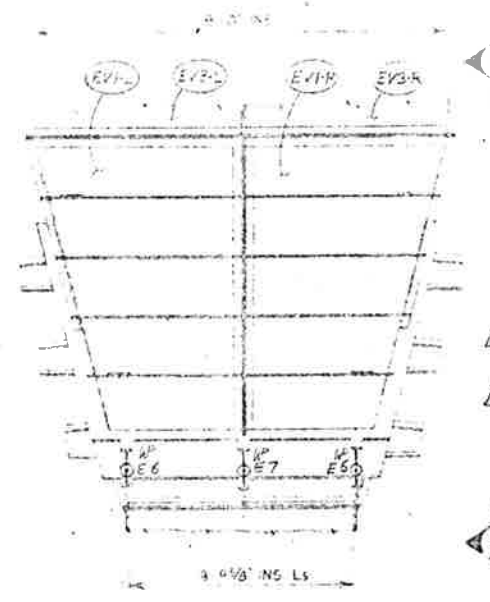
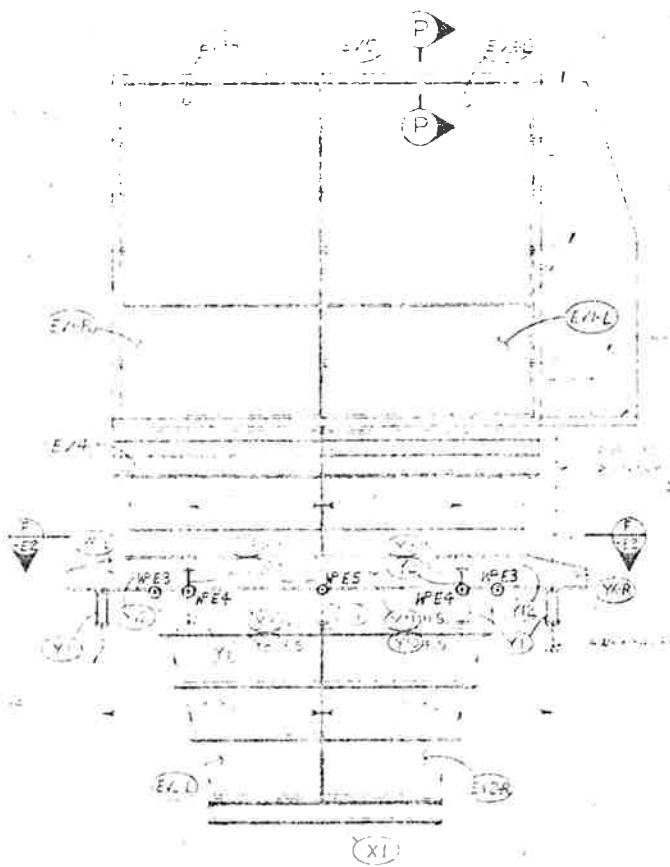
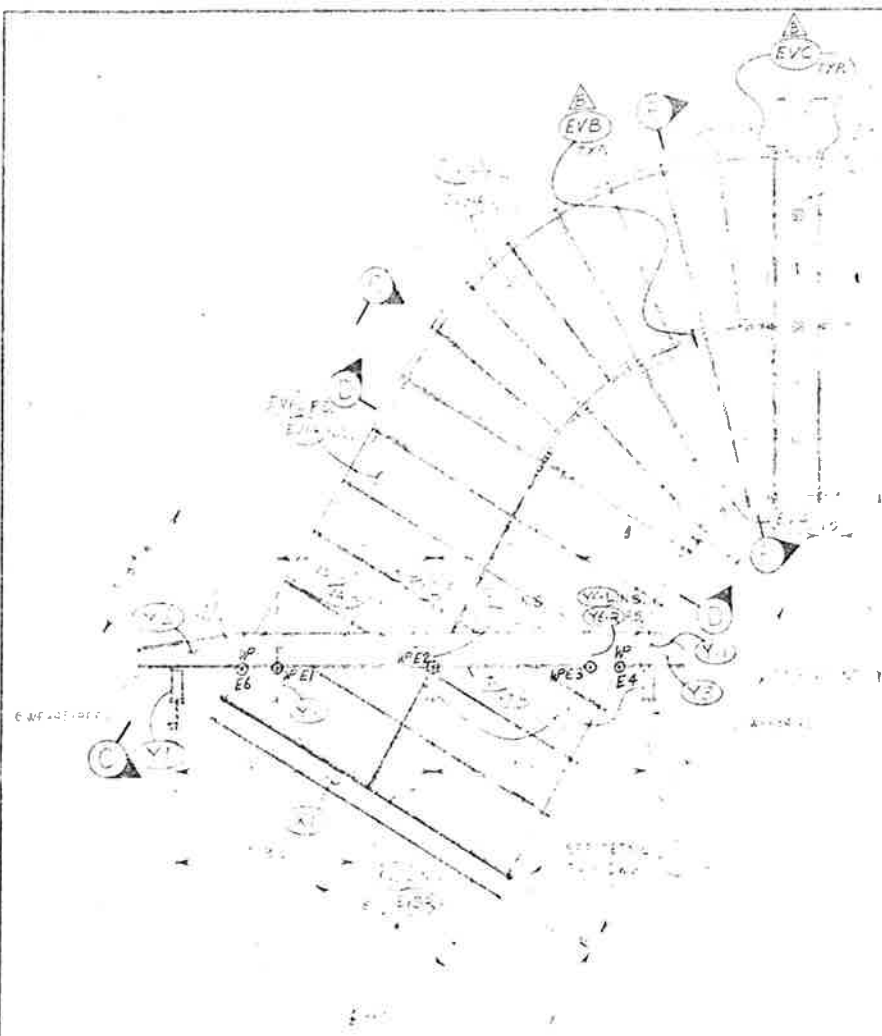
ORDER NO. WB-2077-31	REV. 3
DRAWING MANUFACTURING COMPANY, MANAGED BY STEVENSON & ROGER ARCHITECTS, LTD.	
PROJECT NO. WB-2077-31	TITLE INDUSTRIAL PROJECT
DATE FEB 11 1973	SCALE AS SHOWN
DRAWN BY J. B. ROBERTS	CHECKED BY H. W. HOWARD
DESIGNED BY J. B. ROBERTS	APPROVED BY H. W. HOWARD
PROJECT NO. WB-2077-31	DATE FEB 11 1973
FINISHED SURFACES	

STEVENSON & ROGER ARCHITECTS, LTD.
LOCATION - 1400 E. BROADWAY, DENVER, CO.
CONTENTS - 1400 E. BROADWAY, DENVER, CO.



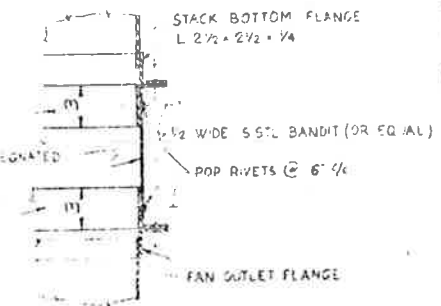
SHIP NO	MARK	PC	DESCRIPTION	D2771	PC
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6	EVI-L	EVASE SECTION	-13
6	E1-R	E1 S	-13
6	E2-L	E2 S	-13
6	E2-R	E2 S	-14
6	E3-L	E3 S	-16
6	E3-R	E3 S	-16
6	EVA	E S	-13
6	EVS	EVASE SECTION	-20
6	XI	FLEXIBLE JOINT	-3
500	EVB	EVASE ERECTION BOLTS	-13
330	EVC	DAMPER ERECTION BOLTS	-20



VIEW C

FRONT ELEVATION



DETAIL I
FLEXIBLE JOINT XI
SCALE 1/2" = 1'-0"

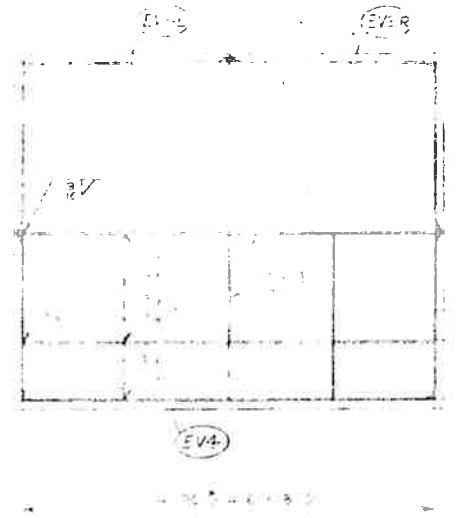
SECTION A AS SHOWN
STEARN'S-ROGER DWG M-3
SECTION B
STEARN'S-ROGER DWG M-3



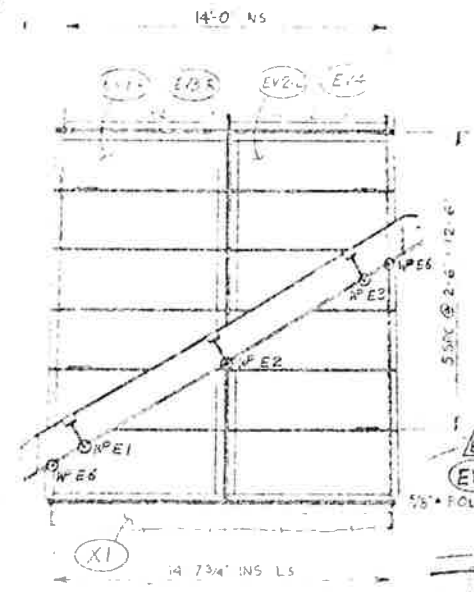
SECTION C



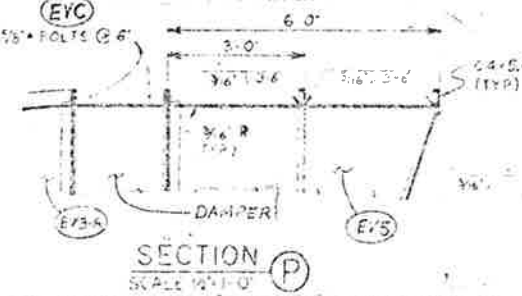
ERECTION DETAIL



SECTION E



VIEW H



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

REF.: STEARN'S-ROGER DWGS M-3S & M-6S.

- NOTES: 1. WORK THIS DWG WITH D2771-E2 & D2771-E3.
- 2. WP'S E1 THROUGH E7 LOCATED ON SKIN PLATE AT BOTTOM OF SUPPORT COLLAR.

NO.	DATE	REVISIONS
1	1-12-75	155 205

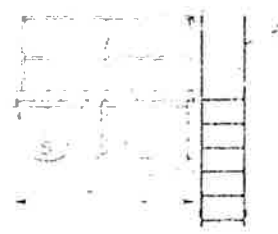
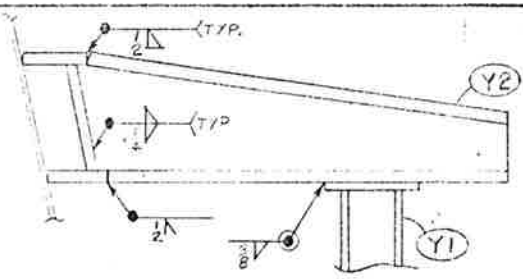
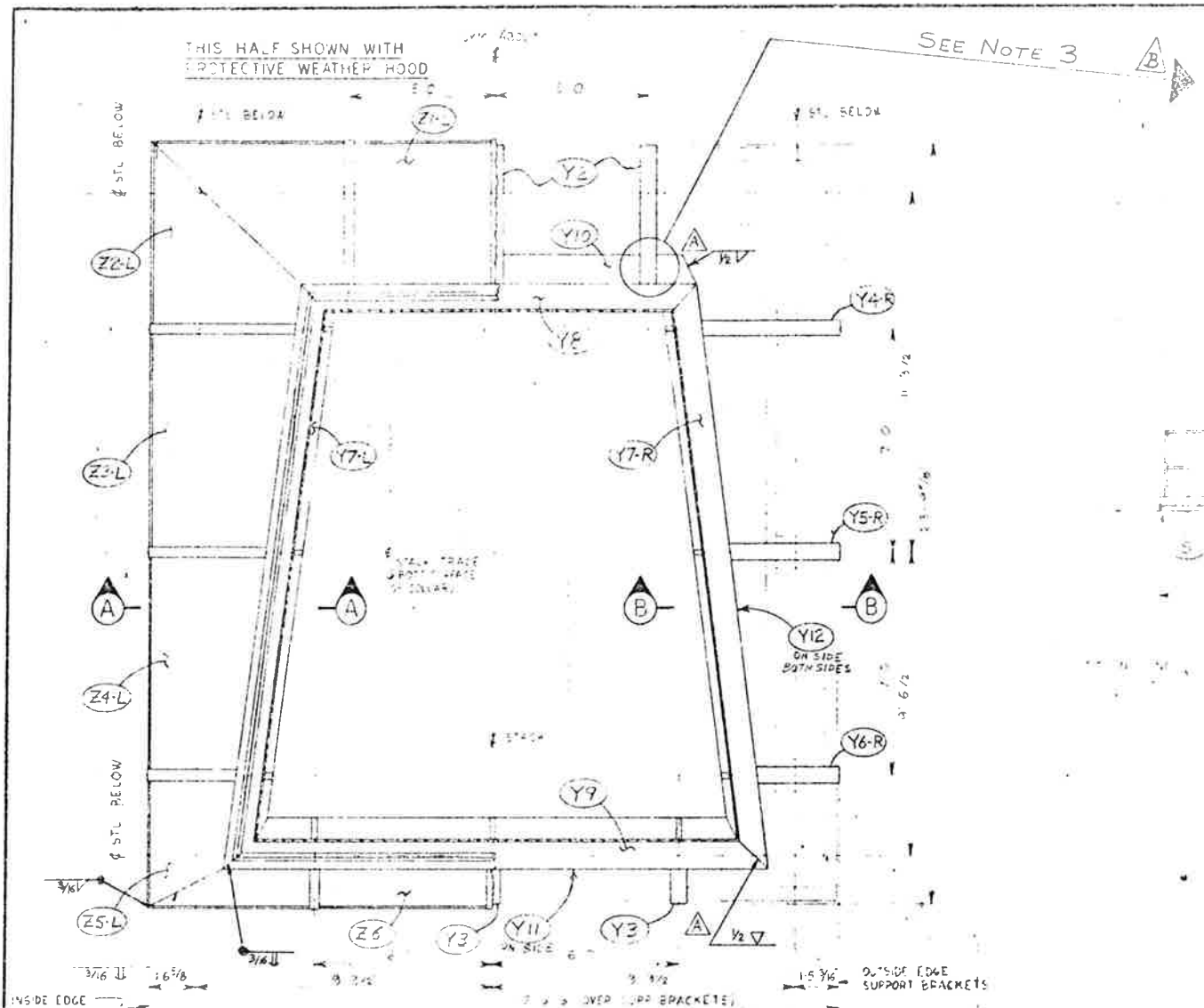
PHIL LEAMANT
EATON METAL PRODUCTS CO.

NO	DATE	REVISIONS
1	12-12-75	ADDED ERECTION BOLTS
2	11-11-75	ADDED LOCATIONS OF WP'S E1 THROUGH E7

EATON METAL PRODUCTS CO.
DENVER, COLORADO SALT LAKE CITY, UTAH

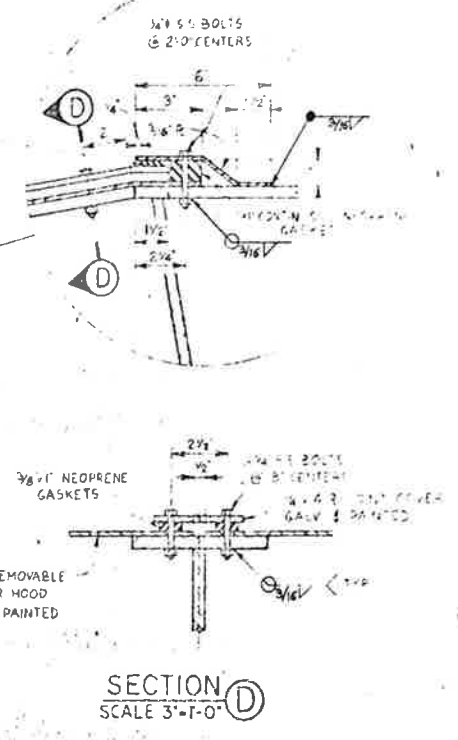
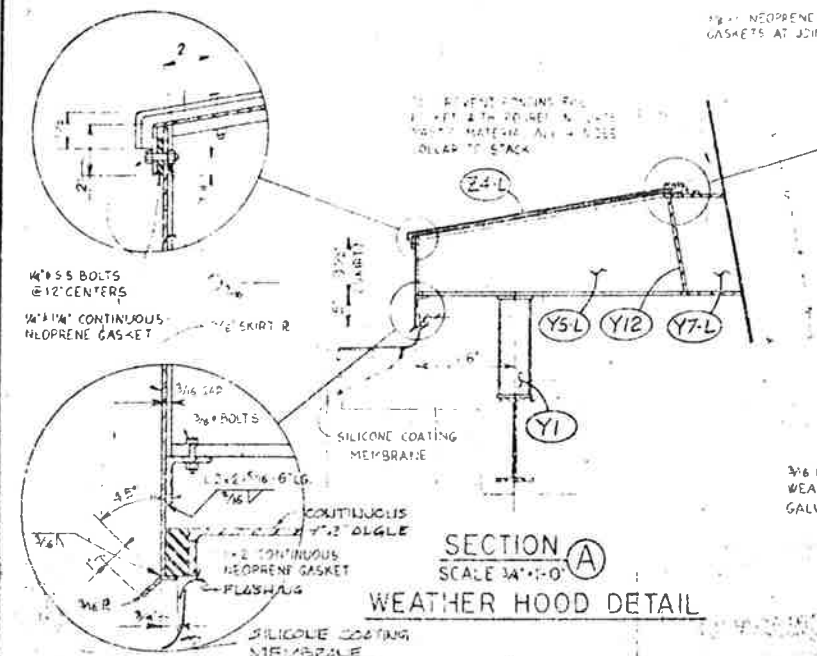
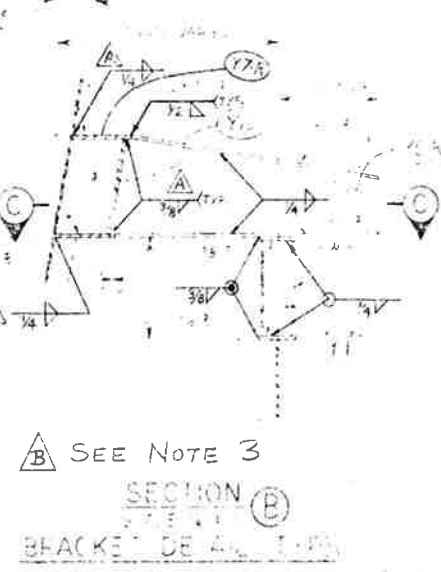
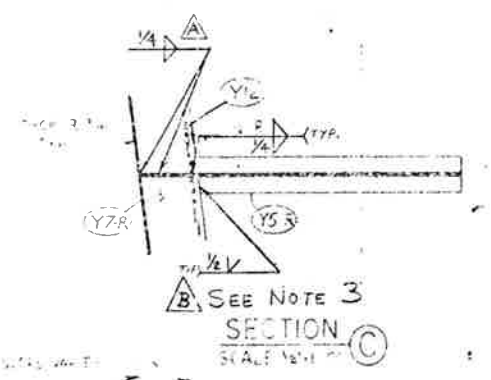
DRN BY: [Signature] DATE: [Blank] SHOP NO: 3957
CHKD BY: [Signature] DATE: [Blank] D2771-E1

SHIP PC	MARK	CLASS PC	DESCRIPTION	QUANTITY	LENGTH
5	S		PLATFORM	1	
12	T		BEAMS	2	
5	U		VALLES	3	
	Y1		SUPPORT LEG	4	
	Y2		SUPPORT BRACKET	4	
	Y3		SUPPORT BRACKET	4	
	Y4-R		SUPPORT BRACKET	4	
	Y4-L		SUPPORT BRACKET	4	
	Y5-R		SUPPORT BRACKET	4	
	Y5-L		SUPPORT BRACKET	4	
	Y6-R		SUPPORT BRACKET	4	
	Y6-L		SUPPORT BRACKET	4	
	Y7-R		SUPPORT COLLAR	5	
	Y7-L		SUPPORT COLLAR	5	
	Y8-R		SUPPORT COLLAR	5	
	Y8-L		SUPPORT COLLAR	5	
	Y9		SUPPORT COLLAR	5	
	Y10		SUPPORT COLLAR	5	
	Y11		SUPPORT COLLAR	5	
	Y12		SUPPORT COLLAR	5	
	Z1-R		WEATHER HOOD PANEL	6	
	Z1-L		WEATHER HOOD PANEL	6	
	Z2-R		WEATHER HOOD PANEL	6	
	Z2-L		WEATHER HOOD PANEL	6	
	Z3-R		WEATHER HOOD PANEL	7	
	Z3-L		WEATHER HOOD PANEL	7	
	Z4-R		WEATHER HOOD PANEL	9	
	Z4-L		WEATHER HOOD PANEL	9	
	Z5-R		WEATHER HOOD PANEL	8	
	Z5-L		WEATHER HOOD PANEL	8	
	Z6		WEATHER HOOD PANEL	8	



LADDER & SERVICE PLATFORM

SECTION F
DWG. D2771-E1
STACK SUPPORT
SCALE 3/8"=1'-0"



REF: STEARNS-ROGER DWG. M-75.
 NOTES: 1. WORK THIS DWG WITH D2771-E1 & D2771-E3
 2. DUCT SYM. ABOUT E WITH RESPECT TO L-HAND & R-HAND PIECES.
 3. SHOP WELD PC'S Y4, Y5, & Y6 TO EVASE BOX ER-1. FIELD WELD PC'S Y1, Y2, & Y3 TO EVASE BOX ER-1.

EATON METAL PRODUCTS CO.
 CERTIFIED CORRECT
 Howard Mechanical

NO	DATE	REVISIONS
5	5-25-76	CHANGED TO SHOW EMP SHOP WELDS. SEE NOTE 3.
4	4-12-76	CHANGED TO SHOW EMP SHOP WELDS.

CHECKER: _____
 APPROVAL: _____
 FINAL APPROVAL: _____

PRINT RECORD PAINT NOTE SHOP DATE

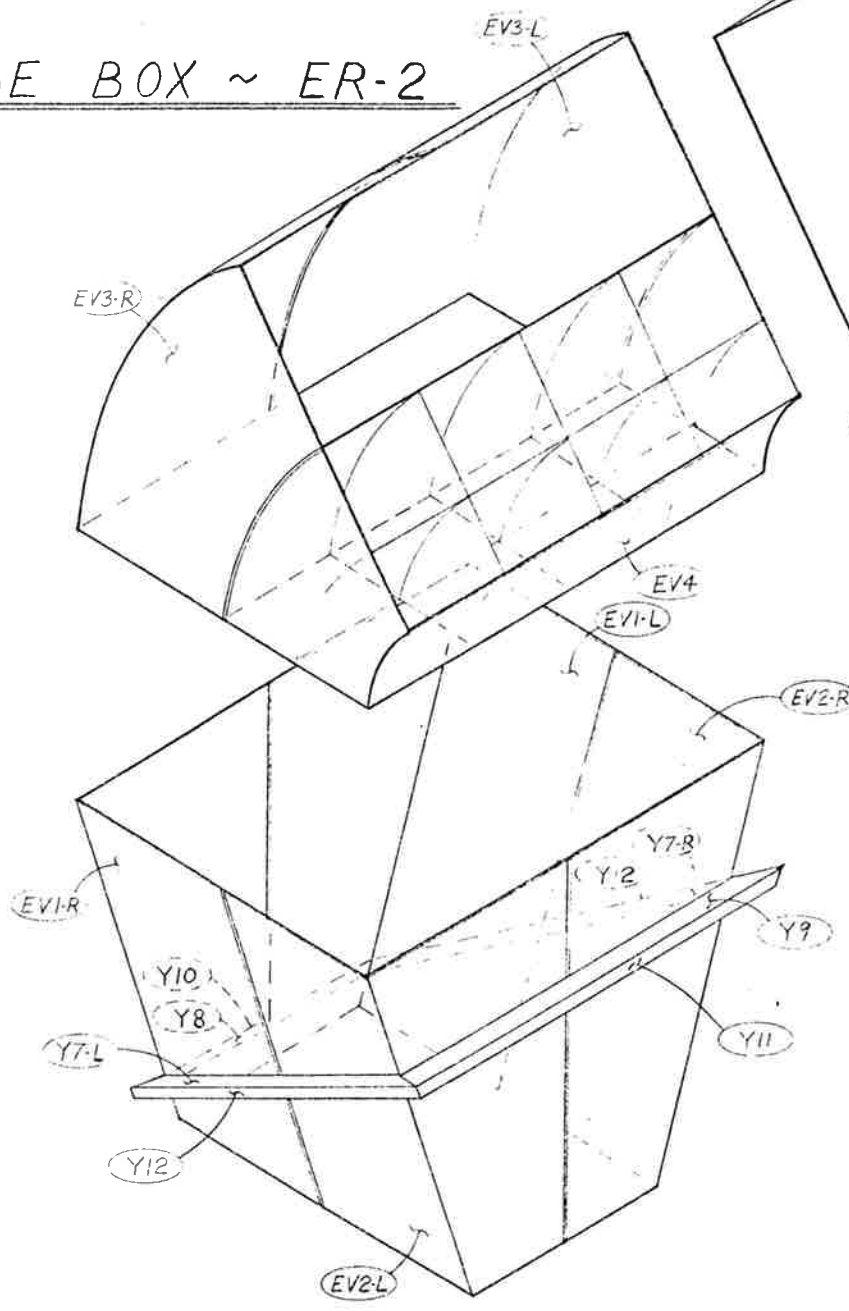
EATON METAL PRODUCTS CO.
 DENVER, COLORADO SALT LAKE CITY, UTAH

EVASE STACK SUPPORT, WEATHER HOOD, LADDER, & SERVICE PLATFORM ERECTION DETAILS
 HOWARD MECHANICAL

DATE: 10-22-75
 SHOP NO: 3959
 REV: D2771-E2

SHIP PC	MARK	ASSEM PC	DESCRIPTION	LENGTH	
				FT	IN
6	ER-1		EVASE BOX		
6	ER-2		EVASE BOX		
6	EV5		EVASE BOX		

6 ~ EVASE BOX ~ ER-2



6 ~ EVASE BOX ~ EV5

DAMPEN BETWEEN ER-2 & EV5

6 ~ EVASE BOX ~ ER-1

- NOTES:
1. SEE DWG D2771-E1 FOR E/M LISTING & DETAIL DWG. LOCATIONS.
 2. SEE DWG D2771-E1 & DETAIL DWG'S FOR WP LOCATIONS & DIMENSIONS.
 3. SEE DWG. D2771-E1 FOR SHOP WELDS.

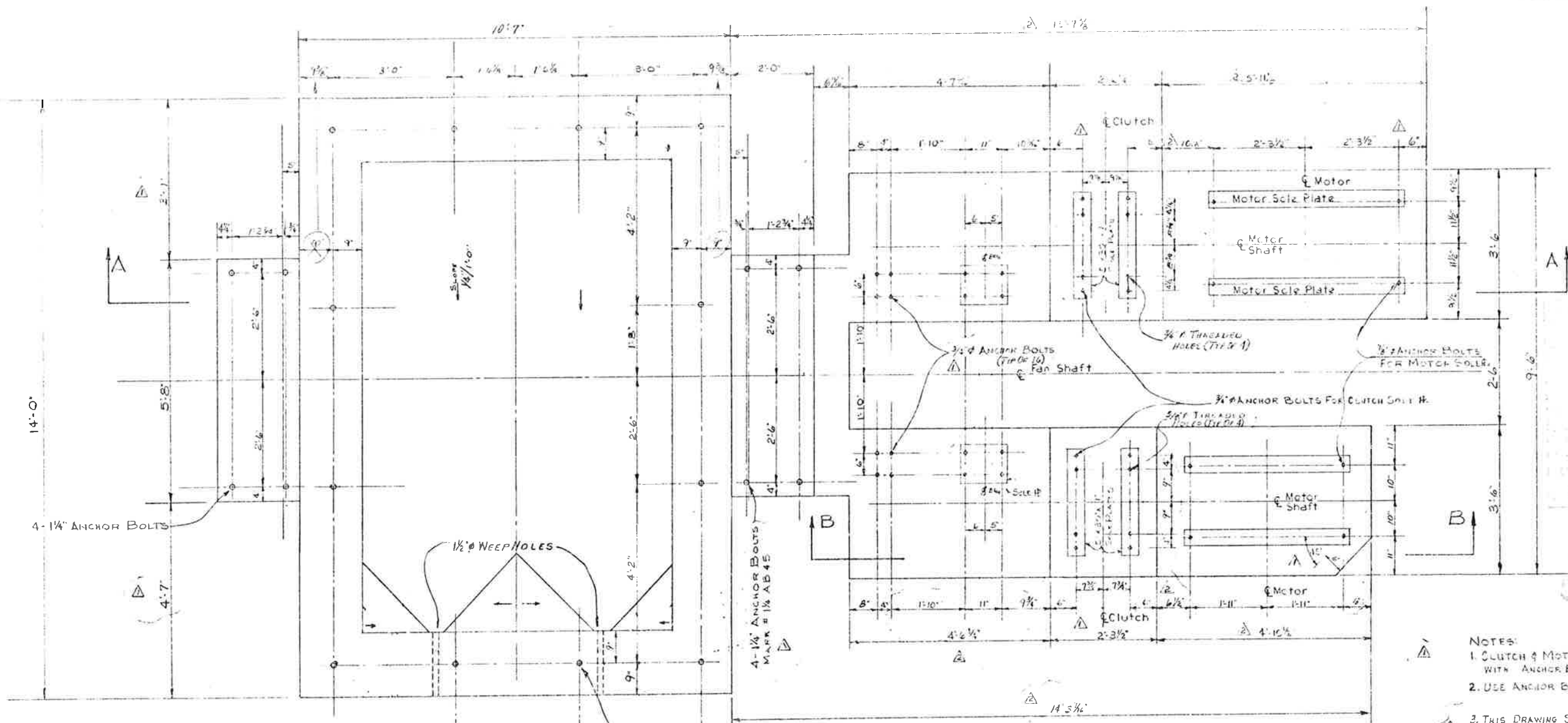
APPROVED: [Signature]
DATE: 11-12-75

NO	DATE	REVISIONS	
		PRINT	RECORD
CHECKER		PAINT NOTE	
APPROVAL		SHOP	DATE
FINAL APPROVAL			

EATON META. PRODUCTS CO.
 DENVER, COLORADO SALT LAKE CITY, UTAH

EVASE STACK BOX ASSEMBLIES
 EISENHOWER TUNNEL
 HOWARD MECHANICAL

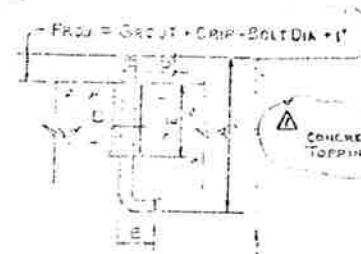
DRN BY BRENTAKI	DATE 9-13-75	SHIP NO 3957	REV D2771-E4
CHKD BY SA	DATE 10-3-75		



- NOTES:
1. CLUTCH & MOTOR SHALL BE ANCHORED WITH ANCHOR BOLTS.
 2. USE ANCHOR BOLTS PER DETAIL THIS DWG.
 3. THIS DRAWING SUPERCEDES ALL PREVIOUS SHOP DRAWINGS.

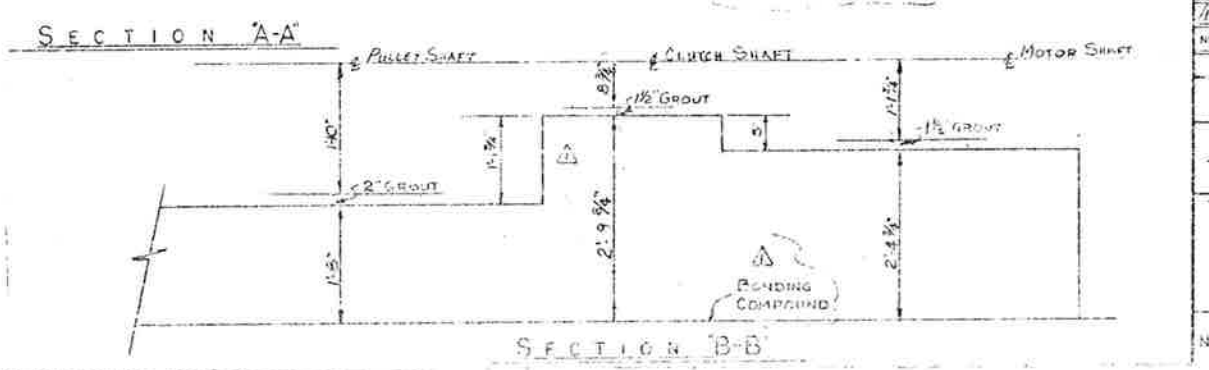
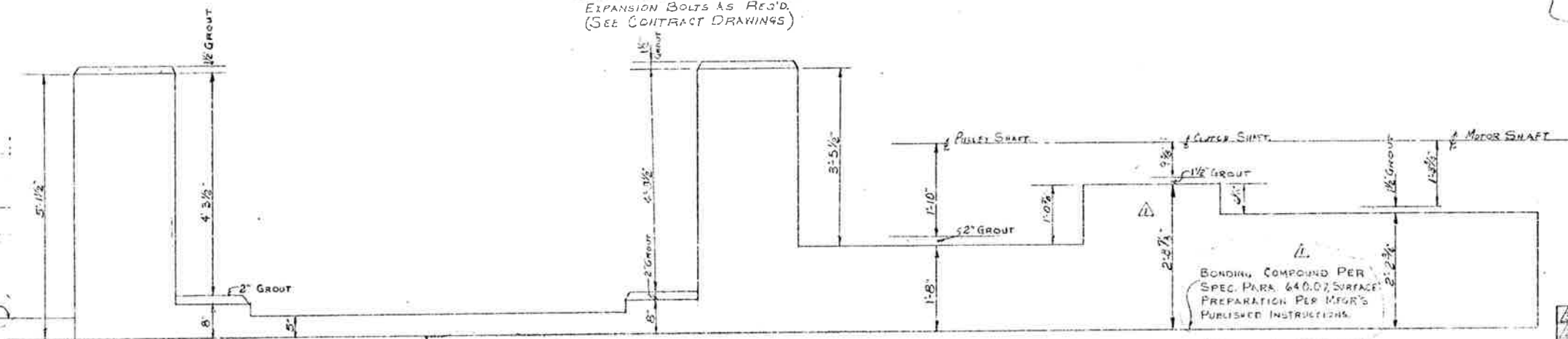
2-10-76
T-130
JLH

ANCHOR BOLT SCHEDULE
SUPPLY FAN & MOTOR BASES ONLY



LENGTH TO BE DETERMINED IN FIELD

Quantity	Size Dia	Length	From	To	Remarks
-0-	3/8"	2'	3"	1 1/2"	None Req'd.
48	3/8"	2 1/4'	4"	4 1/4"	FOR CLUTCH
48	3/8"	*	4"	4 1/2"	FOR MOTORS
48	1 1/8"	4 1/2'	5"	3"	FOR THE PULLEYS
91	3/8"	4'	2 1/2"	2"	FOR PULLEY SHAFTS

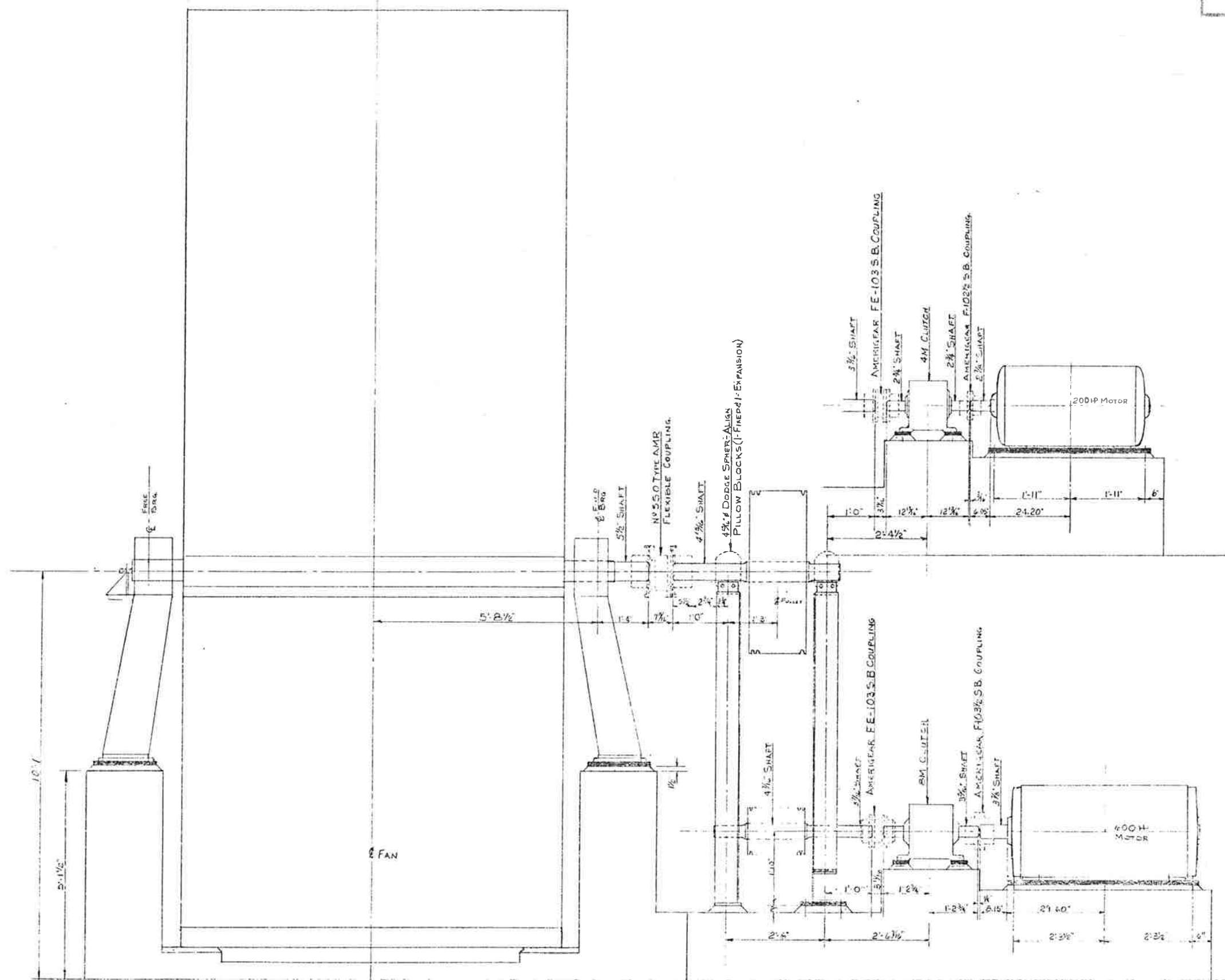


FINAL

RECEIVED
O.S.H.

CHANGED ANCHOR BOLT SCHEDULE (ADDED NOTE #3)	2-23-76	JLH	
CHANGED DIMENSIONS	12-5-76	JLH	
REVISED PER STEERING ROOM COMMENTS	11-19-76	JLH	
NO.	DESCRIPTION	DATE	BY
REVISIONS			
HOWARD MECHANICAL COMPANY			
8301 WEST ALAMEDA AVE. DENVER, COLORADO 80226			
PROJECT NUMBER NO. 1-70-3(62)-220			
JOB: EISENHOWER TUNNEL VENTILATION			
TITLE:			
MOTOR & FAN BASES FOR FANS WS-5, WS-6 & WS-7 AS SHOWN ES-5, ES-6 & ES-7 ON HAND			
SCALE	DRAWN BY	CHECKED BY	DATE
NO SCALE	RAYW		10-15-76
			1453-1

MISSING
sheet 85



Checking is only for compliance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for providing to the Engineer and Architect all the data and information that may be required for the design and construction of the work of all trades.

Note: The Architect's specification of Shop Drawings or Details shall be subject to the Contractor's responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has obtained the Architect's written approval of such deviation at the time of submittal and the Architect has given written approval to the specific deviation, nor shall the Architect's check release the Contractor from responsibility for errors or omissions in the Shop Drawings or Details.

Rejected Make Corrections Noted
 No Exception Taken Revise and Resubmit

STEARNS-ROGER ARCHITECTS, LTD.
 Date: 1-7-76 *[Signature]*

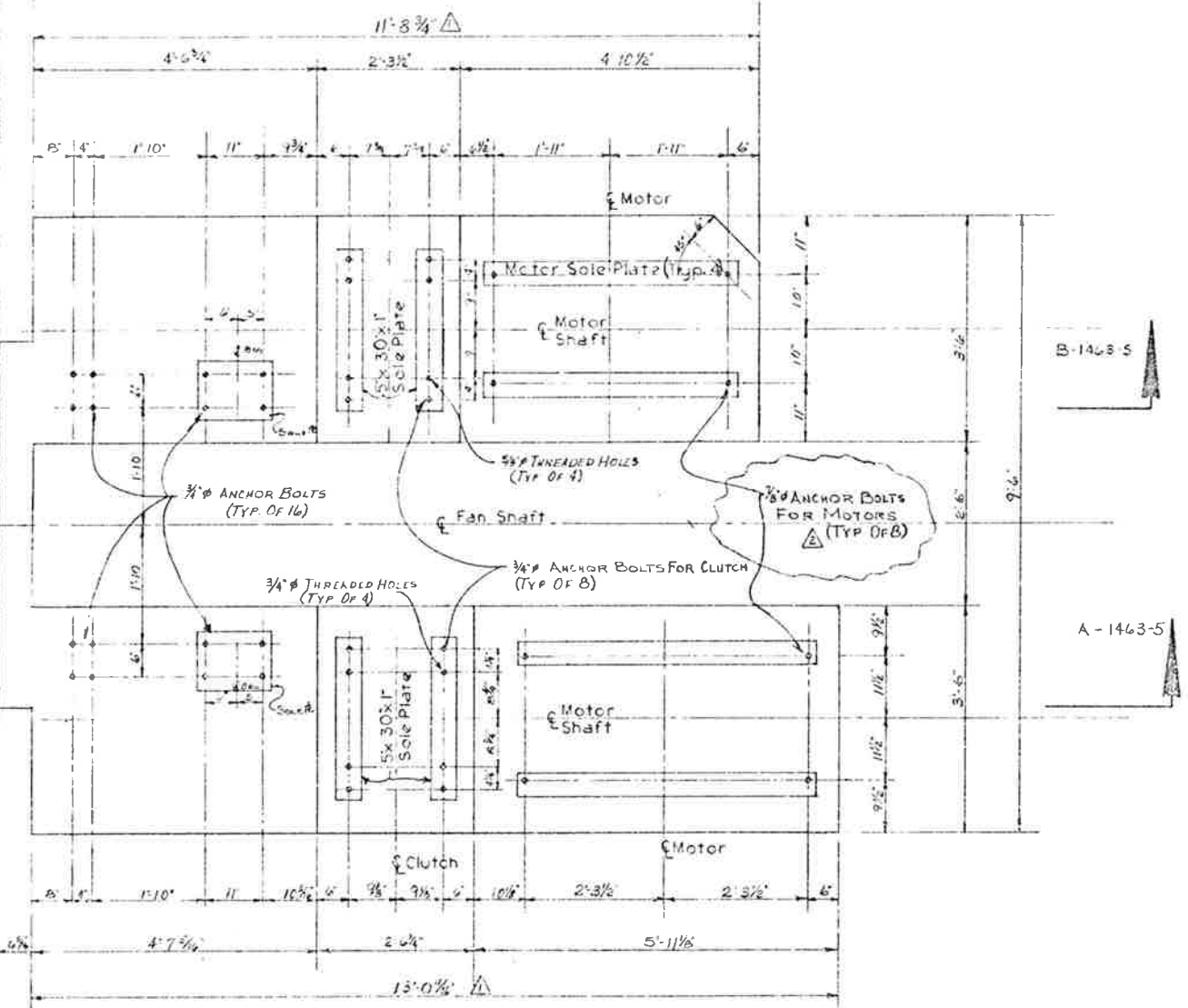
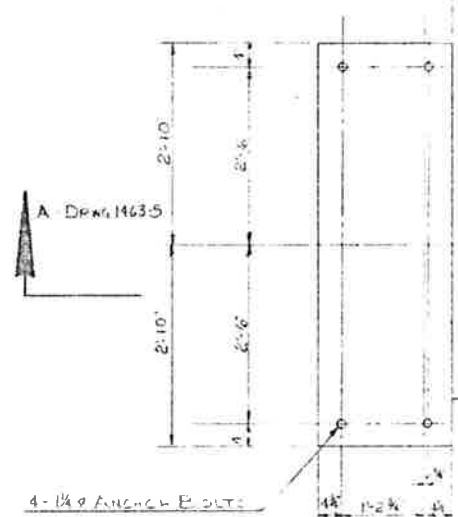
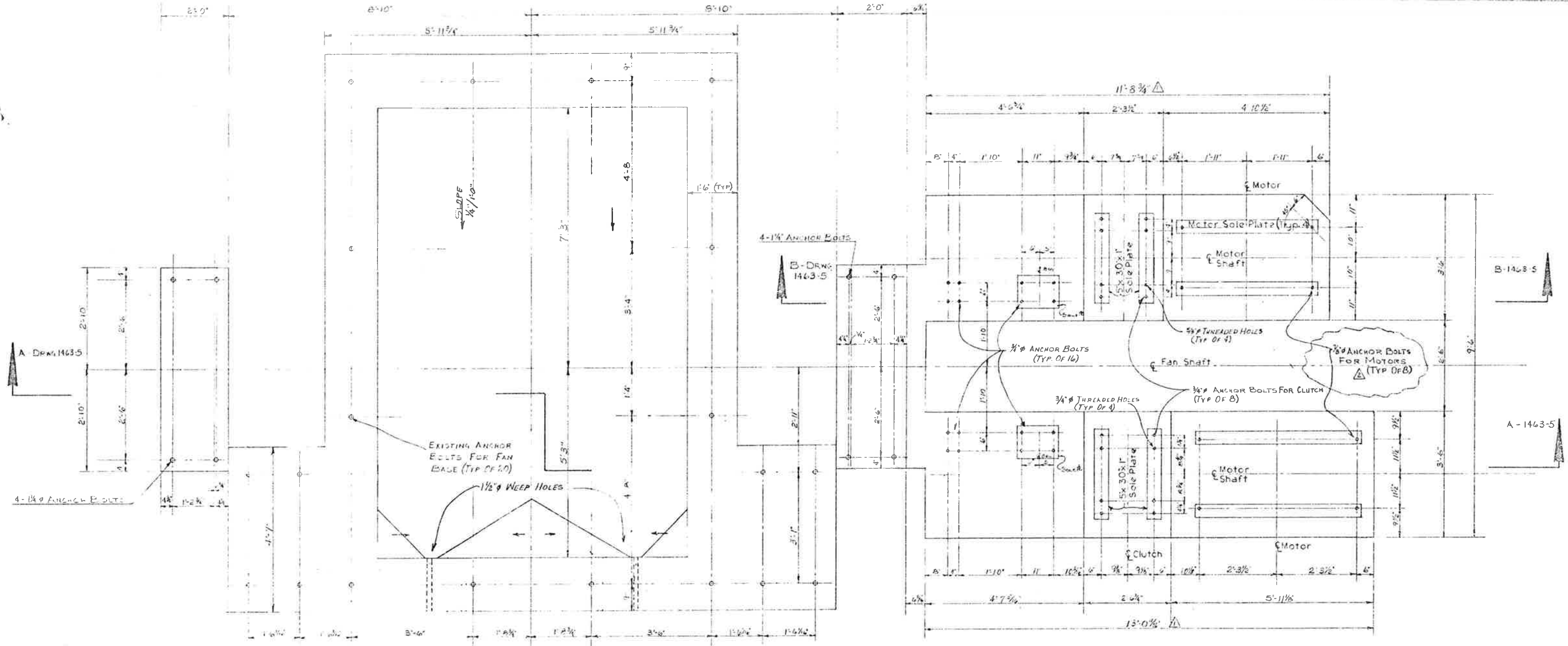
RECEIVED
 DEC 9 1975

Stearns-Roger Architects

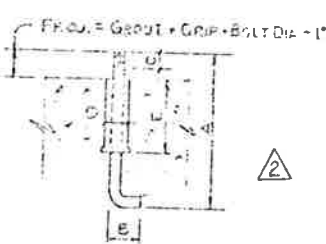
Checked
 Howard Eleet. & Mech. Co.
 Proj. Mgr. *[Signature]*



NO.	DESCRIPTION	DATE	BY
REVISIONS			
HOWARD MECHANICAL COMPANY 6701 WEST ALAMEDA AVE. DENVER, COLORADO 80236 PROJECT: <i>[Project Name]</i> 170-31-203			
FOR ENGINEER TURNED VENTILATION			
TITLE: ELEVATION OF MOTORS BASE WITH FAN PROTECTION			
SCALE	DRAWN BY	CHECKED BY	DATE



ANCHOR BOLT SCHEDULE
EXHAUST FAN & MOTOR BASES ONLY



SIZE	DIAM.	LENGTH	HOOK	THREAD	WELD	WELD	REMARKS
		A	B	C	D	E	
0	3/8"	22"	3"	3"	1 1/2"	6"	NONE REQ'D.
48	3/8"	24"	4"	4 1/4"	2"	8"	FOR CLUTCH
48	7/8"	30"	4"	4 1/2"	2 1/2"	12"	FOR MOTORS
48	1 1/8"	45"	5"	5"	3"	15"	FOR FAN PIERCINGS
96	3/4"	24"	4"	4 1/4"	2"	8"	FOR FAN SUPPORTS

NOTES
 1. CLUTCH (MOTOR SHALL BE ANCHORED WITH ANCHOR BOLTS.
 2. THIS DRAWING SUPERCEDES ALL PREVIOUS SHOP DRAWINGS.

APPROVED FOR CONSTRUCTION
 1/23/76
 DM

2-10-76 JM

T-30
 2/1/80

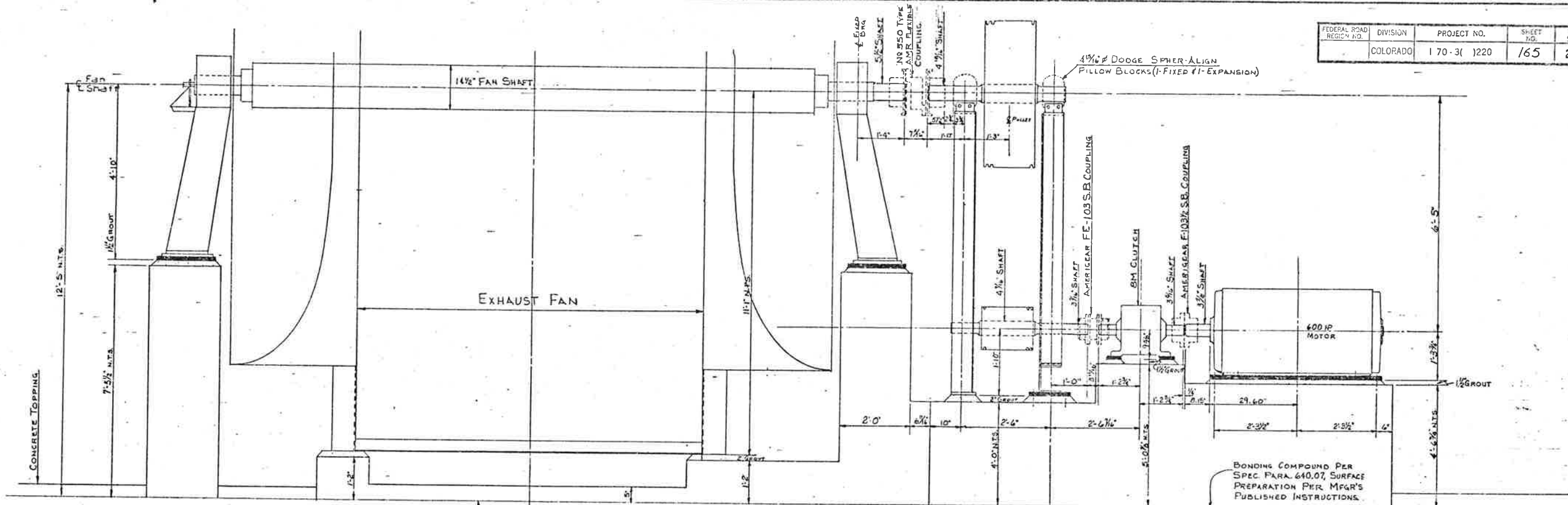
NO.	DESCRIPTION	DATE	BY
1	ADDED ANCHOR BOLT SCHEDULE, CHANGED SIZE OF MOTOR ANCHOR BOLTS, VERIFIED APPROVAL DATE	11-22-76	DM
2	REVISED DIMENSIONS	1-6-76	DM

HOWARD MECHANICAL COMPANY
 8701 WEST ALAMEDA AVE., DENVER, COLORADO 80221
 PROJECT NO. 1-70-5(62)-220
 JOB: EISENHOWER TUNNEL VENTILATION

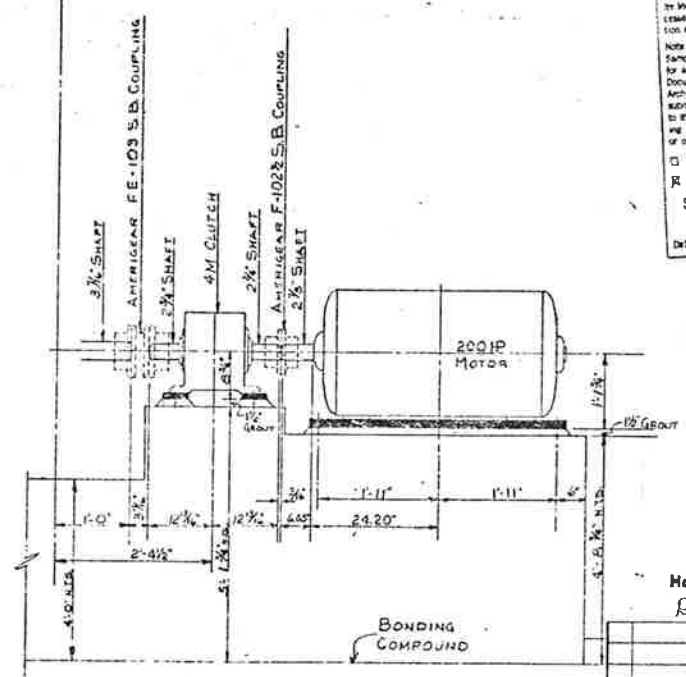
EXHAUST FAN AND MOTOR BASES
 FOR FANS 22-0, 22-6 & 22-7 AT 12-10-75
 E.E.S., 22-6 & FE-7 OFF-HAND

SCALE: DRAWN BY: CHECKED BY: DATE: DRAWING NO.
 None | RAYW | 12-10-75 | 1463-4

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(220)	165	208



SECTION A-A
TOP OF EXISTING STRUCT. CONC. SLAB



SECTION B-B

Checking is only for conformance with the design content of the Contract Documents. Contractor is responsible for conformance to the contract and standard of the job site. Information that pertains solely to the contractor's practices or to the contractor's construction and for coordination of the work of all trades.

Note - The Architect's checking of these drawings or samples shall not constitute the Contractor's responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's check release the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

Rejected Make Corrections Resubmit
 No Exception Taken Review and Resubmit

STEARNS-ROGER ARCHITECTS, LTD.
 Date: 1-2-76

RECEIVED
 JAN 08 1976
 STEARNS-ROGER ARCHITECTS

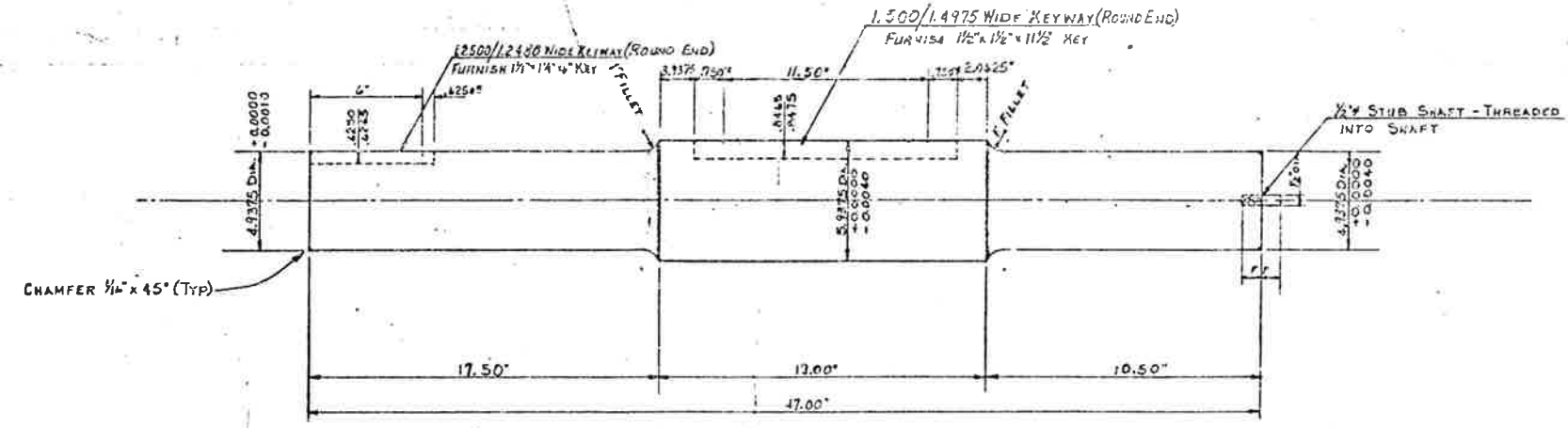
JAN 1976
 RECEIVED
 D.O.H.

Checked
 Howard Elect. & Mech. Co.
 pmlwum Proj. Mgr.

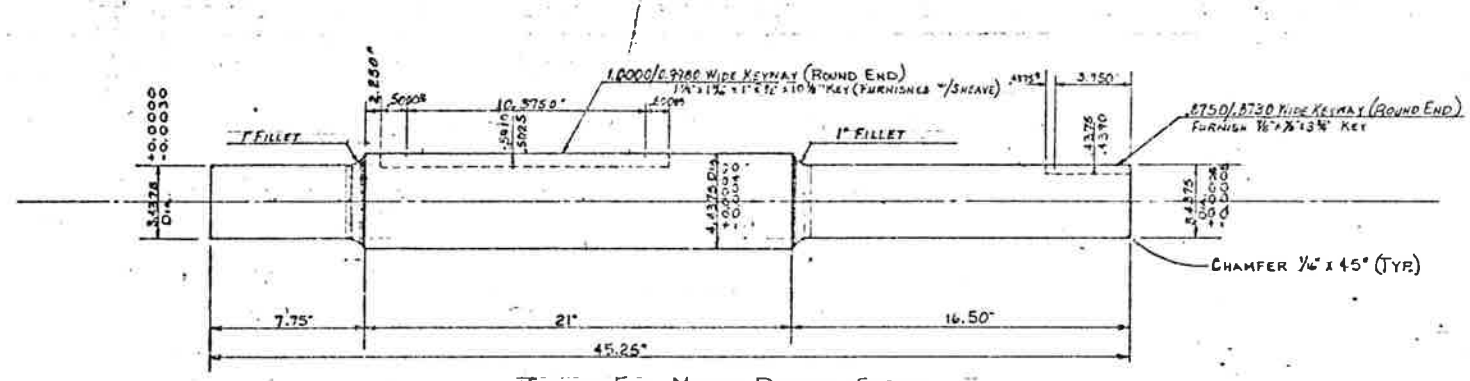
FINAL
 FINAL

NO.	DESCRIPTION
REVISIONS	
HOWARD MECHANICAL COMPANY 6701 WEST ALAMEDA AVE. DENVER, COLORADO 80228	
PROJECT NO: 1-70-3(220)	
JOB: EISENHOWER TUNNEL VENTILATION	
TITLE: EXHAUST FAN AND MOTOR BASES	
SCALE	DRAWN BY
3/4" = 1'-0"	RAYK
CHECKED BY	DATE
	12-11-75
DRAWING NO.	
1463-5	

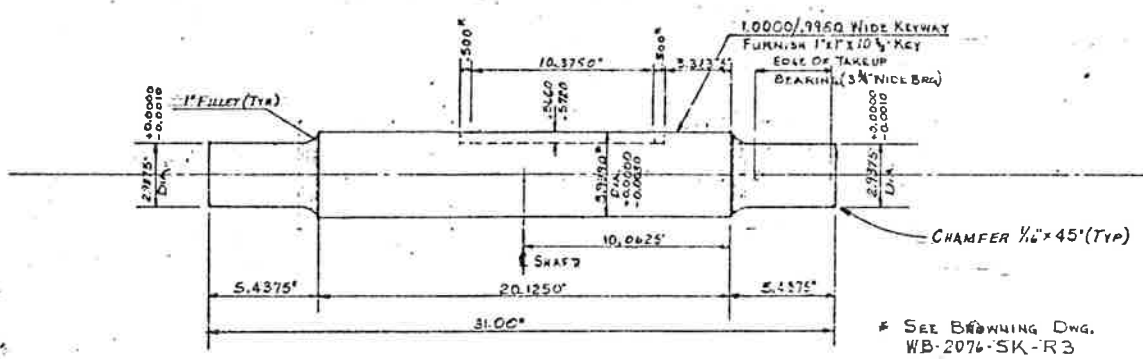
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(82)-220	166	208



SHAFT FOR 48" DRIVE SHEAVE
12 REQUIRED



SHAFT FOR MOTOR DRIVEN SHEAVE
24 REQUIRED



SHAFT FOR IDLER SHEAVE
12 REQUIRED

* SEE DRAWING DWG. WB-2076-SK-R3 FOR BORE SIZE

8. Shafts shall be annealed steel (AISI - 1042 or 1045) and conform to ASTM A575 and Federal Specification QQ-S-630. The design of the shafts shall be based on unit stresses not in excess of thirty percent of the elastic limit of the material. Specimens machined from full size prolongations of the shaft material shall show the following:

minimum properties:

Tensile Strength	80,000 pounds
Elastic Limit, Per Square Inch	44,000 pounds
Elongation in Two Inches	16 percent
Reductions in Area	40 percent

Shafts shall be machined throughout their entire length with maximum fillet radius and shall be free from pipes, pits, cracks, tool marks or other imperfections. The tolerance in shaft diameters and finish shall conform to the requirements of mating components, including couplings, bearings, seals and sheaves.

Checking is only for conformance with the design amount of the Project and does not constitute an approval of the Contractor's work. The Contractor is responsible for the accuracy of the dimensions and for the workmanship of the work at all times.

Note: The Architect's checking of Shop Drawings or Details shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submittal and the Architect has given written approval to the same. The Contractor shall be responsible for any errors or omissions in the Shop Drawings or Details.

Accepted Make Corrections Noted
 No Exception Taken Review and Re-submit

STEARN'S-ROGER ARCHITECTS, LTD.
Date: 4-5-76 by: [Signature]

RECEIVED
APR 01 1976
STEARN'S-ROGER ARCHITECTS
4160
640.05(C)B
APR 1976
RECEIVED
O.P.
STAFF IN CHARGE
DESIGN - DOW

Checked
Howard Elect. & Mech. Co.
- [Signature] Proj. Mgr. FINAL

DIMENSIONS REVISED PER FINAL SUBMITTAL 1/25/76	
COORDINATED & APPROVED SHAFT DRG 3-2-76	
NO.	DATE BY
REVISIONS	
HOWARD MECHANICAL COMPANY 8701 WEST ALAMEDA AVE. DENVER, COLORADO 80221	
PROJECT NO: 170-3(82)-220	
JOB: EISENHOWER TUNNEL VENTILATION	
TITLE: SHEAVE SHAFT DETAILS	
SCALE	DRAWN BY
NONE	RAYK
CHECKED BY	DATE
	1-9-76
DRAWING NO.	
	1463-7

CERTIFIED PRINT

YOUR P.O. 10-2324

OUR ORDER RE-2324-01

REXNORD INC.
COUPLING DIVISION
P.O. BOX 549
WARREN, PA. 16365

PER TWO 1/10/76
REVISED TWO 2/9/76
REUSED TWO 3/10/76

22077

306 42

11955-14

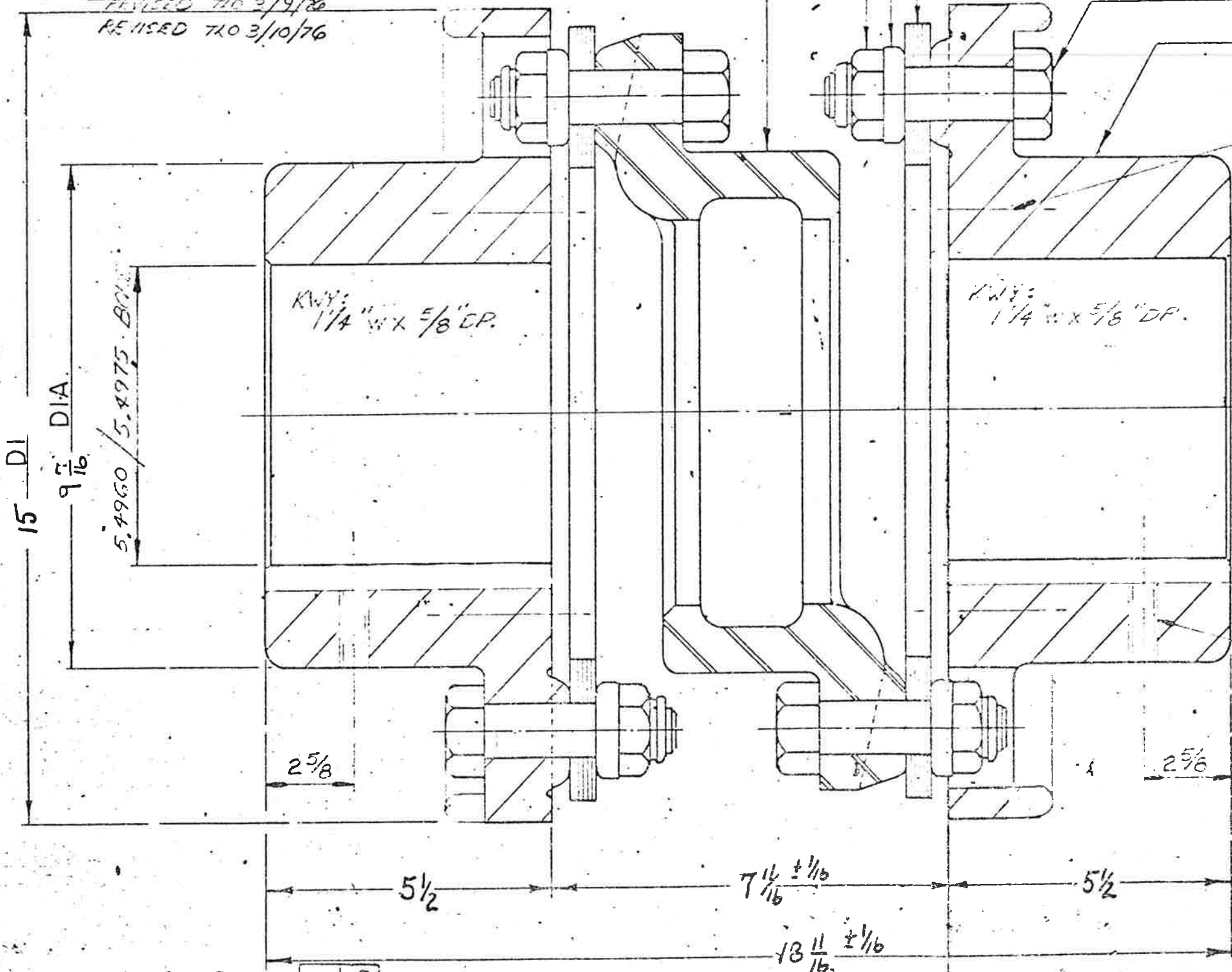
10920

10962 - 525 THK.

10921

21647

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
COLORADO		170-31 1220	167	



2) PULLER BOLT HOLES (2 EACH)
20° TAPER 3/4-10 x 7/8 DP.
ON 7 1/2" B.C. LOCATE 1ST HOLE
50° TO K.W.Y.

Checking is not for performance...
SIGNED: F. Schhardt
DATE: 2/21/79

1) 3/4-10 UNC. SS #264
(EX. HOLE, LOC. 9/K.W.Y. 640.056) +



Approved:
Howard Elect. & Mech. Co.
Proj. Mgr.

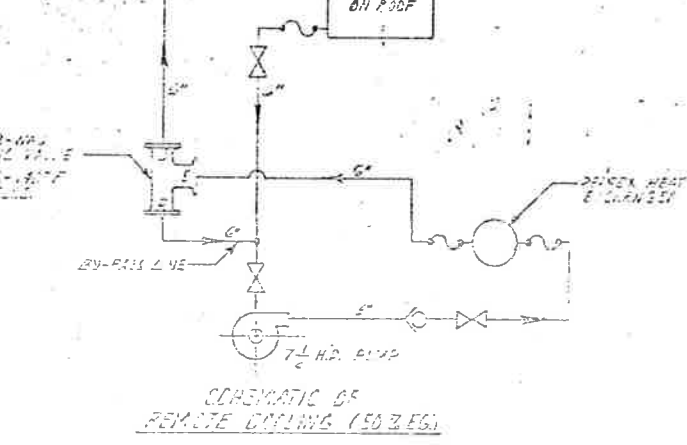
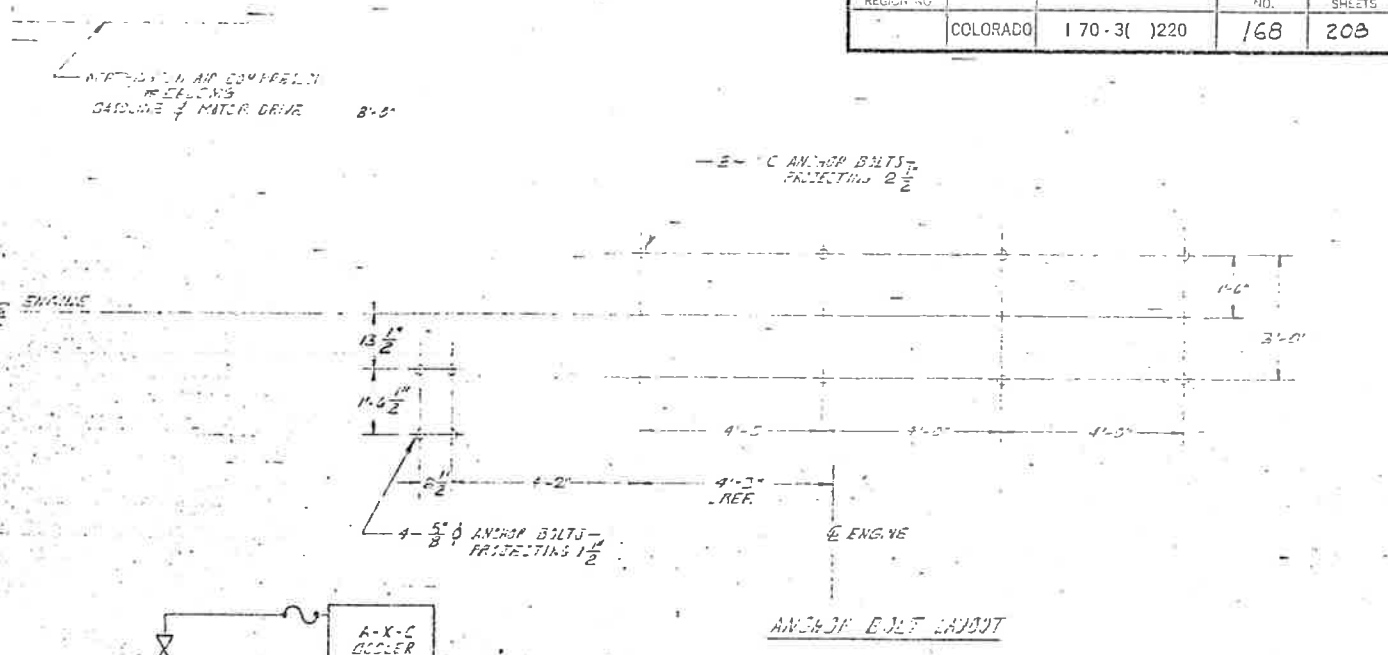
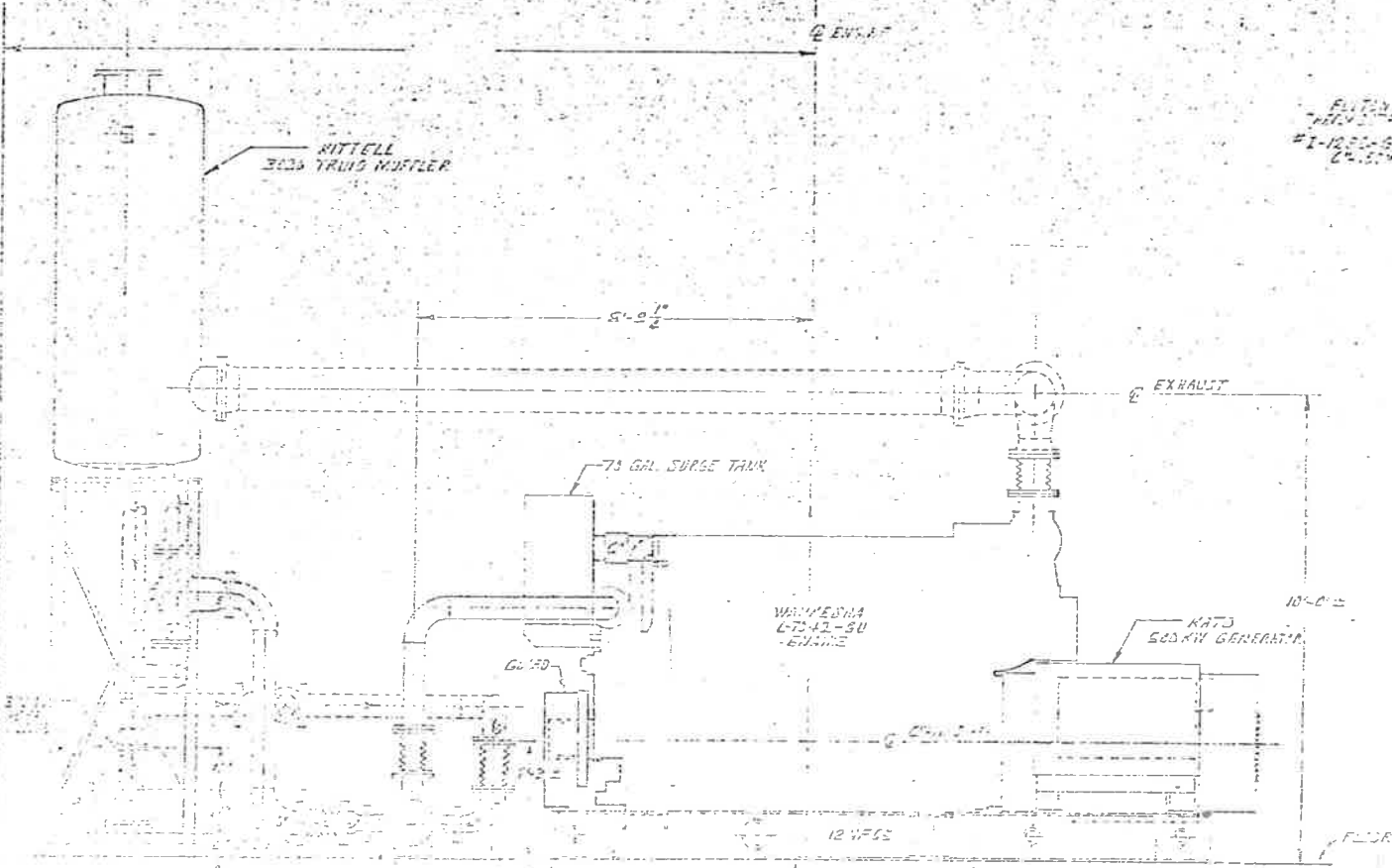
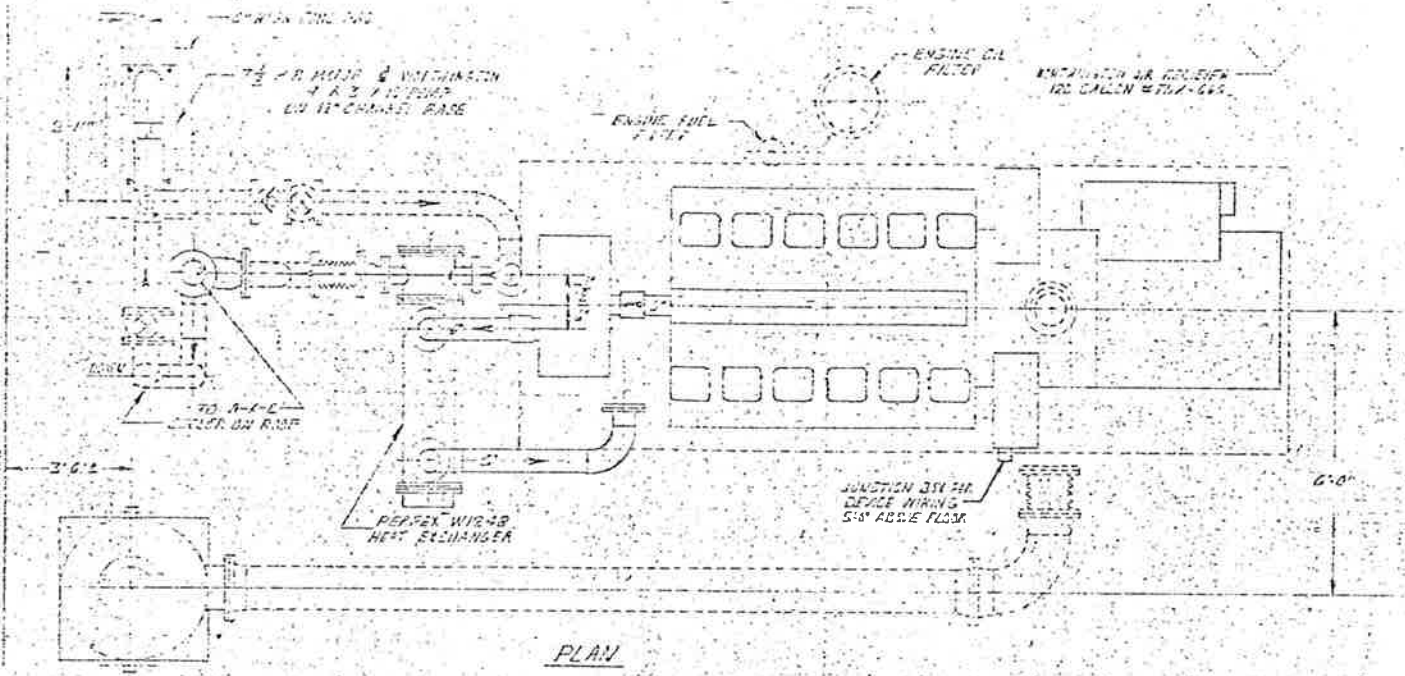
SECTIONAL ASSEMBLY
ST'D No 550 AMR CPLG.

DUP. TRACING IN 10 9

D	A	9/11/76	RE 2324	DRAWN W/S	THOMAS FLEXIBLE COUPLING CO.	22077
E	B			TRACED TEW	WARREN, PA.	
	C			CHECKED	SCALE NONE	

DATE 2-10-48

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1220)	168	208



Checking is only for compliance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for determining the accuracy and applicability of the information that pertains solely to the fabrication processes or to techniques of construction, and for coordination of the work of all trades.

Note - The Architect's checking of Shop Drawings or similar shall not release the Contractor of responsibility for any deviations from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviations at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's checking release the Contractor from responsibility for errors or omissions in the Shop Drawings or samples.

Rejected Make Corrections Noted

No Exception Taken Revise and Resubmit

STEARNIS-ROGER ARCHITECTS, LTD.

Date: 3-10-76

RECEIVED

MAR 01 1976

STEARNIS-ROGER ARCHITECTS, LTD.

RECEIVED

MAR 1976

D.O.H.

FINAL

RECEIVED

MAR 1976

STATE BUILDING DESIGN DIV.

POWER APPLICATION & MTS. CO. DENVER COLO

DATE: 3-10-76

BY: [Signature]

PROJECT: [Blank]

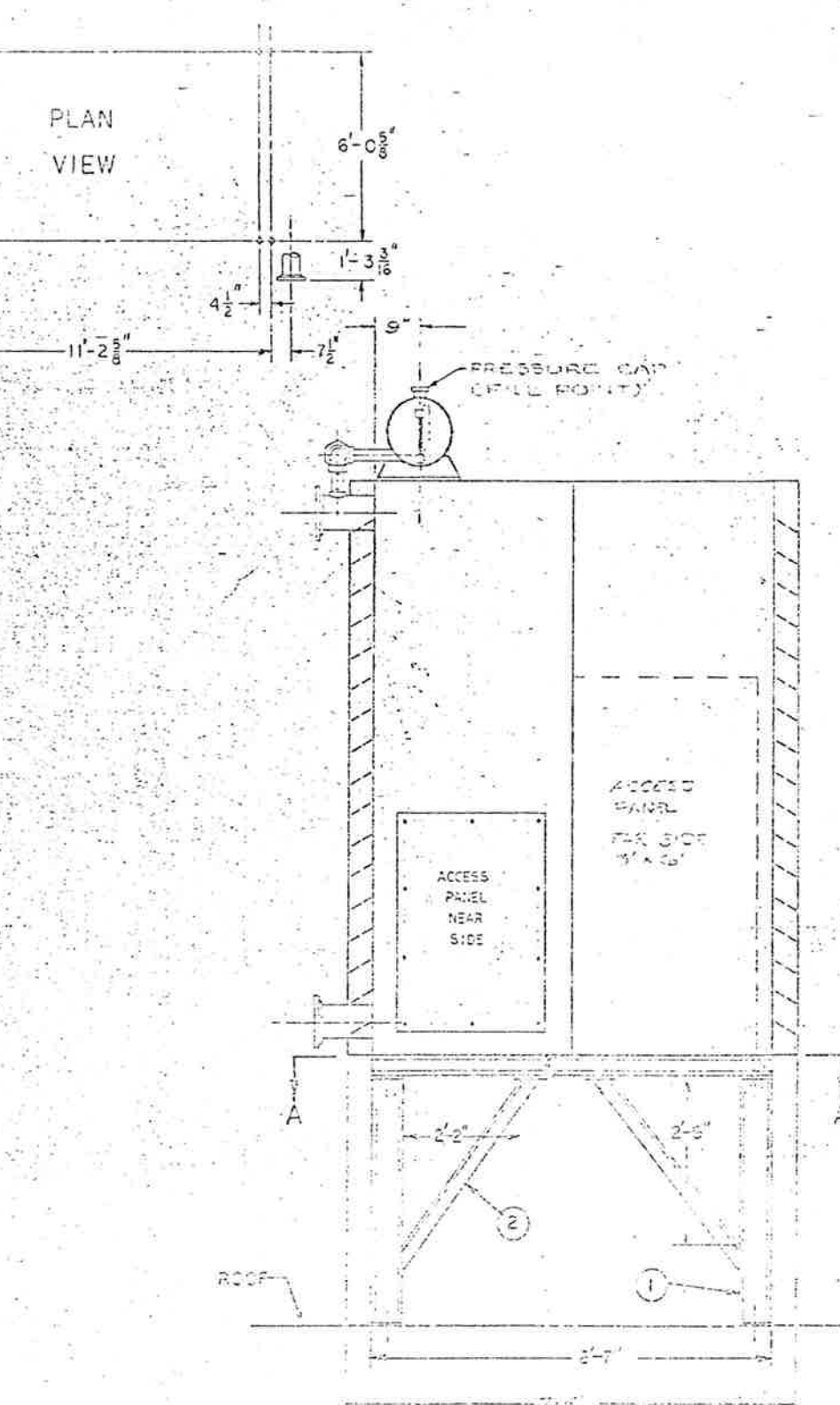
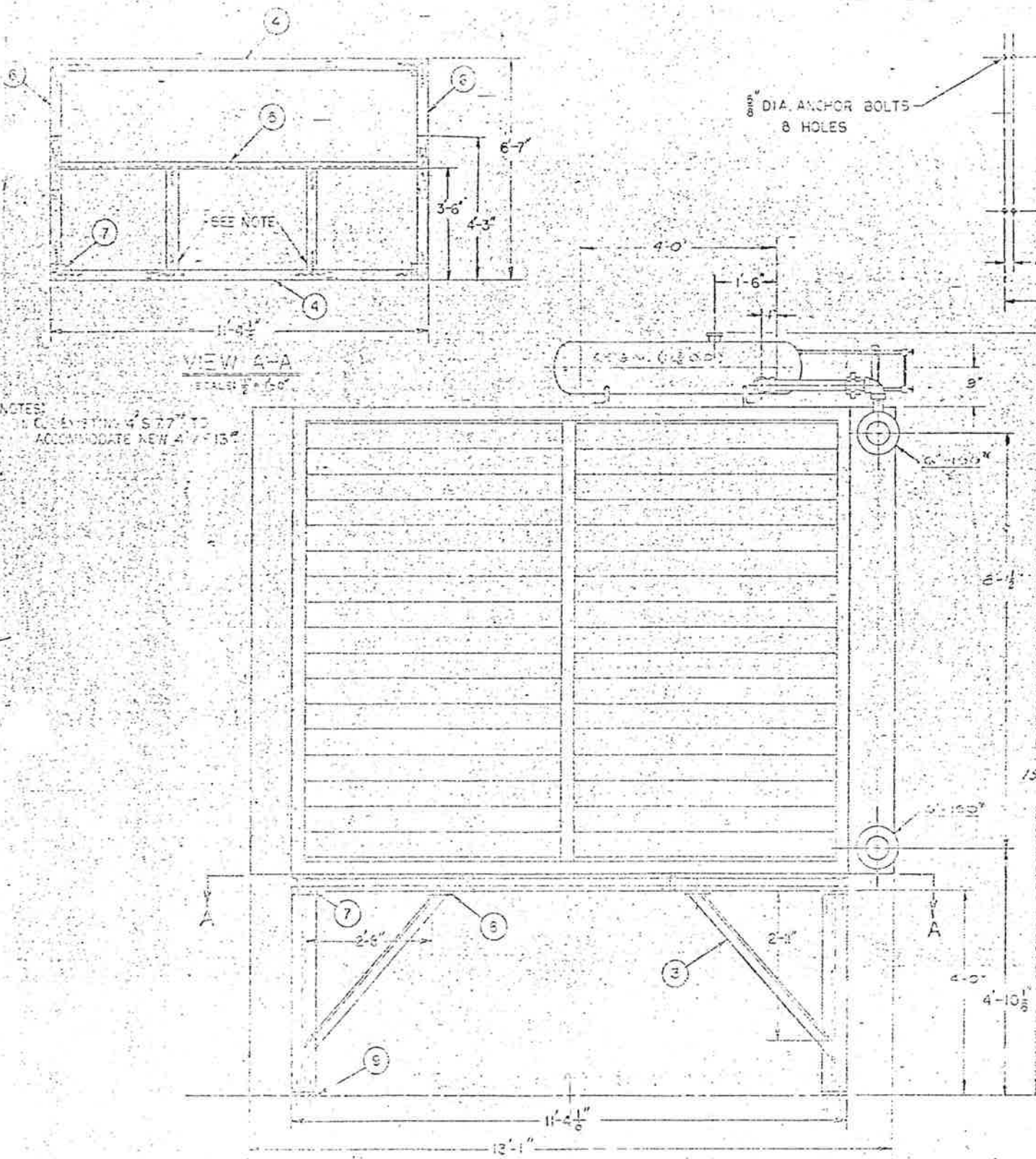
LOCATION: [Blank]

SCALE: [Blank]

DESIGNER: [Blank]

CHECKER: [Blank]

APPROVER: [Blank]



REVISION BLOCK				
REV. DATE	SUBJECT		SHEET NO.	TOTAL SHEETS
R4-12376	VIEW A-A & BILL OF MATERIAL ADDED.		169	208

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1220)	169	208

NOTES:
1. CONCRETE TO ACCOMMODATE NEW 4' x 13' WINDOW.

Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for checking to be confirmed and corrected as the job progresses or to techniques of construction and for coordination of the work of all trades.

Note - The Architect's checking of Shop Drawings or Samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation. The Architect's checking relieves the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

Rejected Make Corrections Noted
 No Exception Taken Revise and Resubmit

STEARNS-ROGER ARCHITECTS, LTD.
 Date: 3-10-76 By: *W.H. Johnson*

RECEIVED
 MAR 01 1976
 STEARNS-ROGER ARCHITECTS

T-144
#641

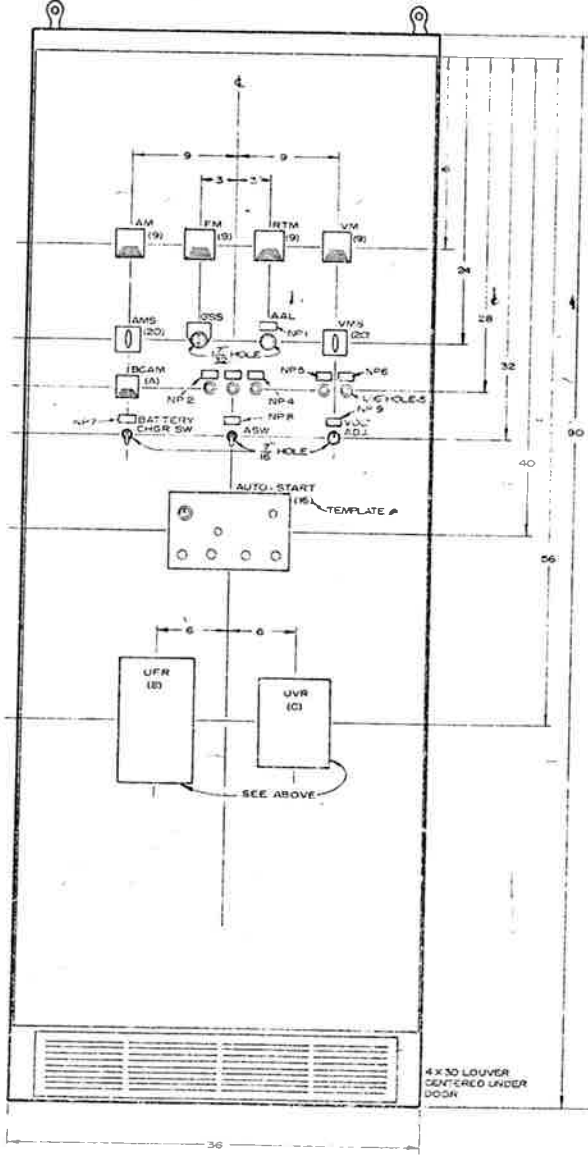
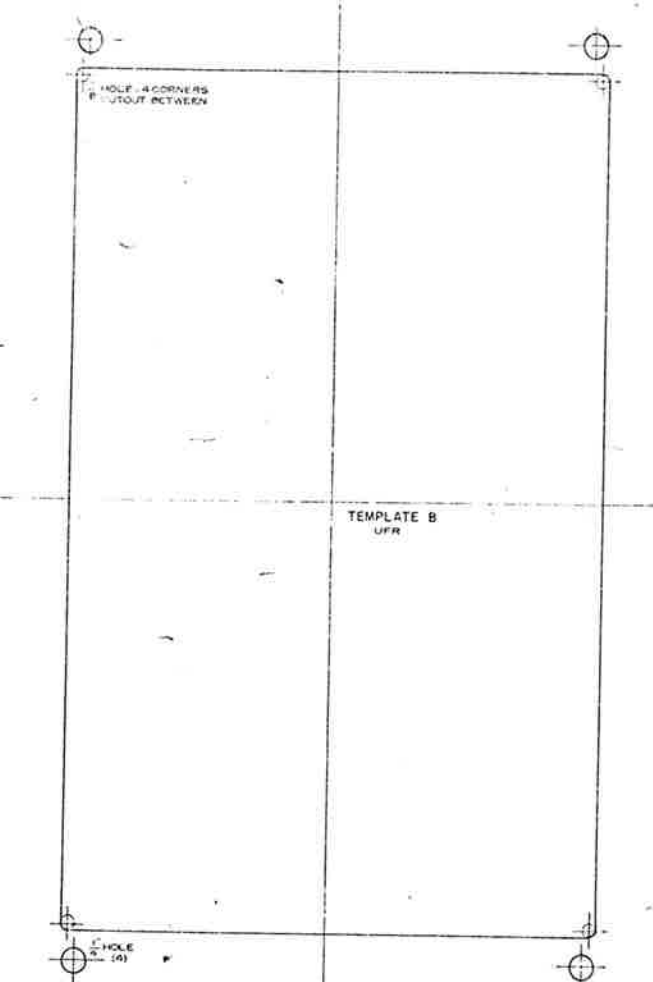
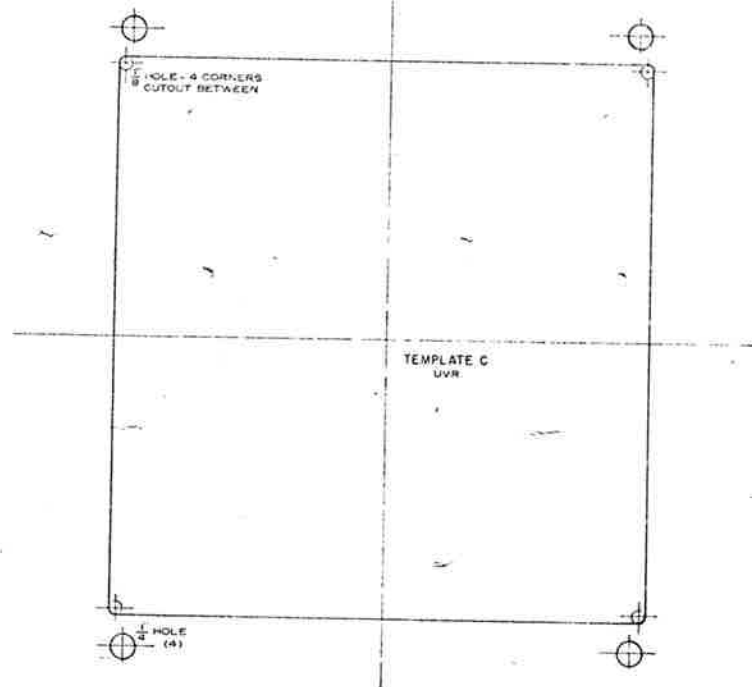
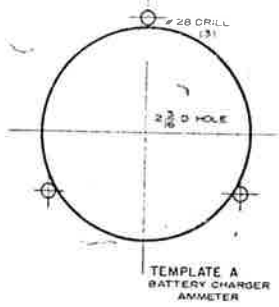
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9	3/8" PLATE X 6 1/2" SQ.	4
8	1/2" PLATE X 4" X 6" LG.	8
7	1/2" PLATE X 6 1/2" SQ.	4
6	4-13" WF X 25" LG.	2
5	4-7.25" B X 10-1/2" LG.	2
4	4-13" WF X 10-1/2" LG.	2
3	3" X 3" X 1/4" L X 4-6 1/4" LG.	4
2	3" X 3" X 1/4" L X 4-1/2" LG.	4
1	6-25" WF X 3-10-1/2" LG.	2

BILL OF MATERIAL (COVER SUPPLY)

NOTE: BIDDING TOTAL WEIGHT INCLUDING BRACKETS & WELDERS.

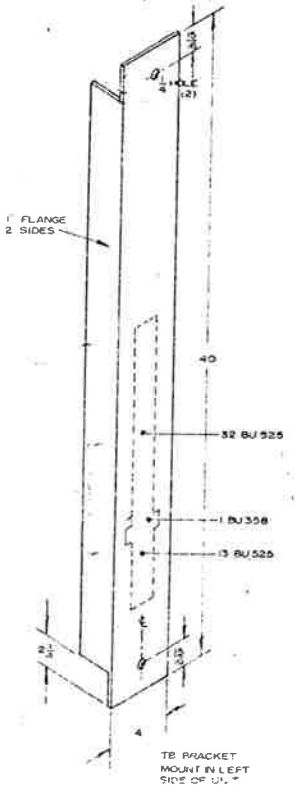
NO. AND ELECTRICAL PANELS
 30 1-8748

NO. AND ELECTRICAL PANELS
 30 1-8748
 MAR 1976 RECEIVED D.O.H.
 FINAL

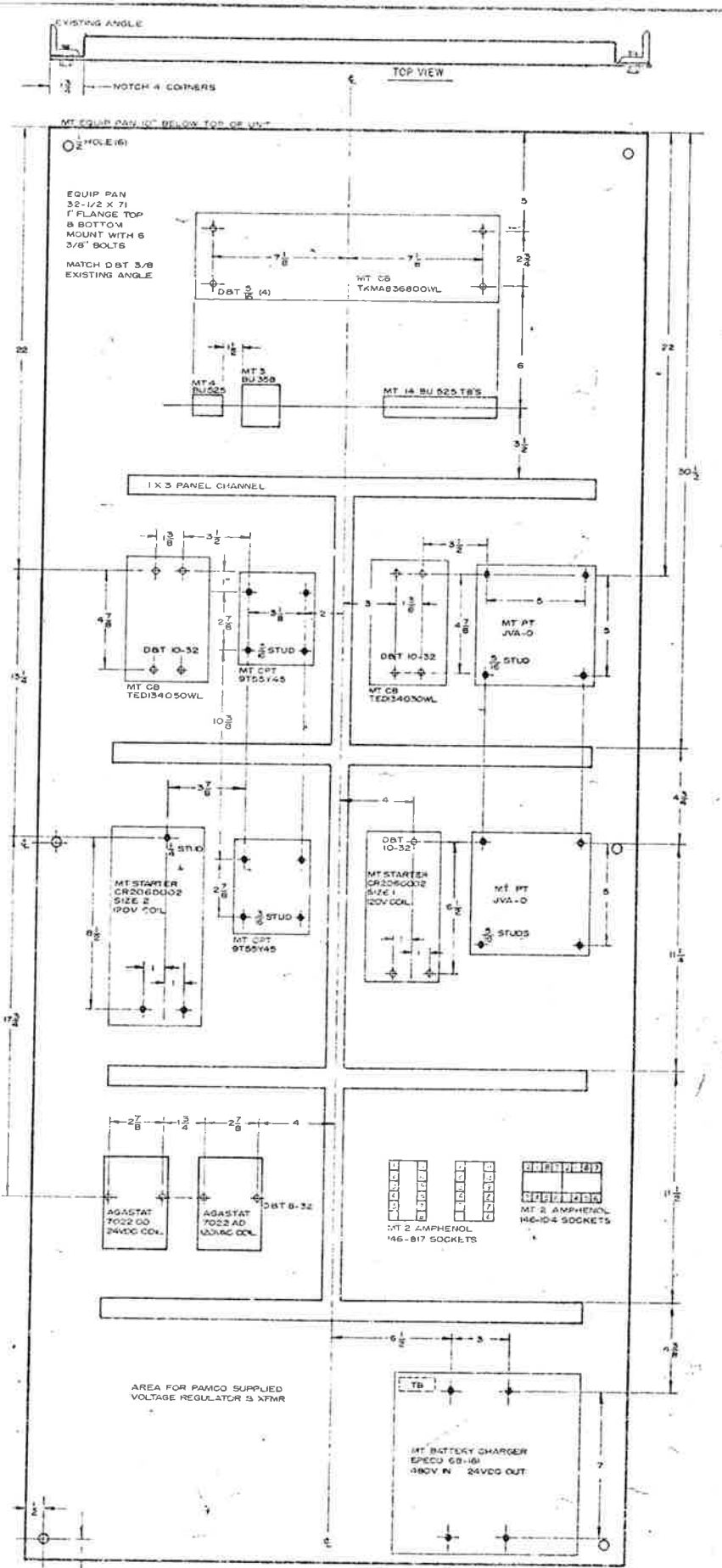


- NAMEPLATES
 NP 1 ALARM
 2 APPROACHING LOW OIL PRESSURE
 3 ALARM SILENCED
 4 APPROACHING HIGH WATER TEMP
 5 CIRCUIT BREAKER CLOSED
 6 CIRCUIT BREAKER OPEN
 7 BATTERY CHARGER
 8 ALARM SILENCE SWITCH
 9 VOLTAGE ADJUST

NOTE - REMOVE EXISTING DOOR LATCH MECHANISM & REPLACE WITH HOFFMAN



STANDARD ELECTRIC CO.
 1/9/72
 641.07(4) # 259



PROJECT
 171
 209

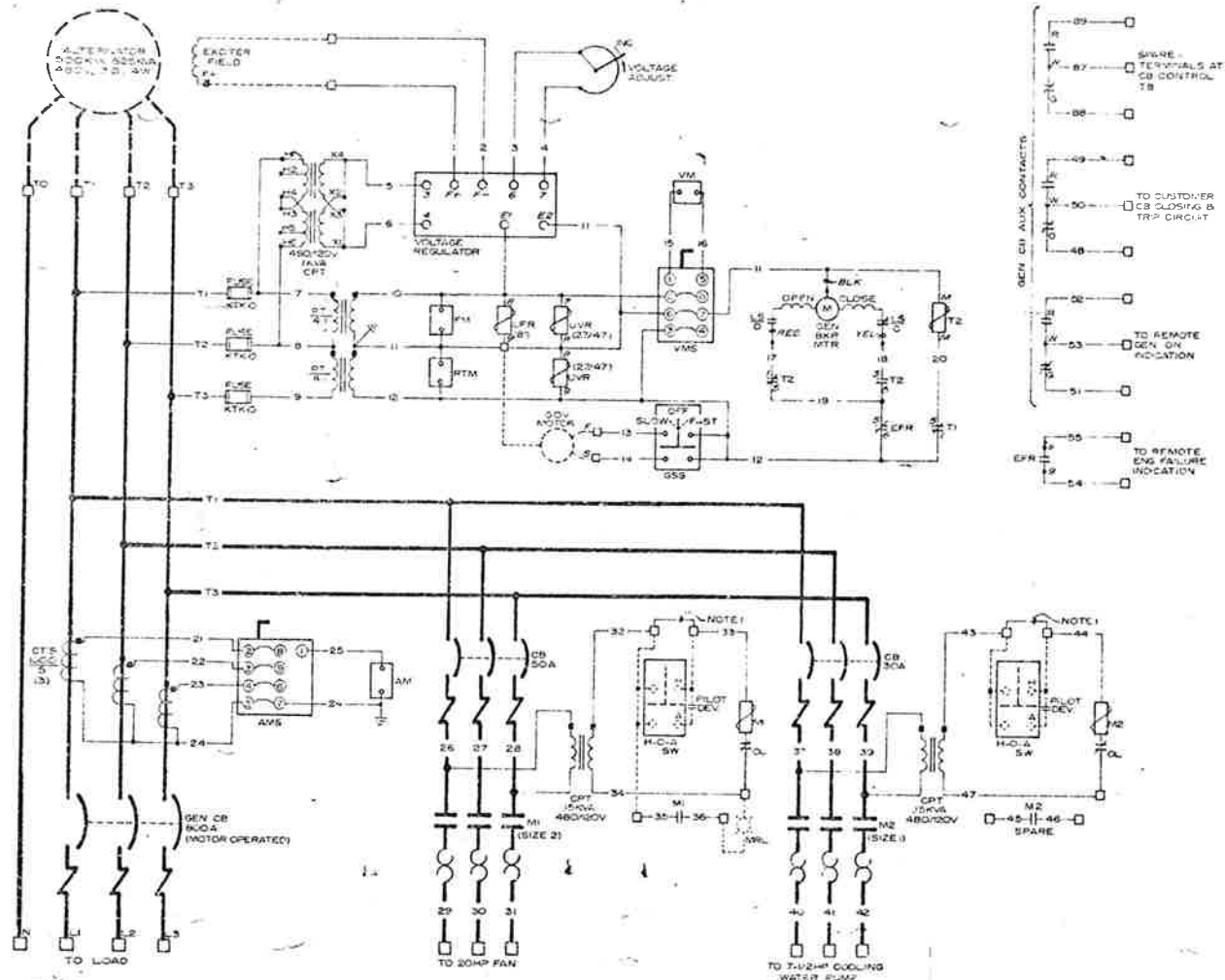
Approved
 Howard Elect. & Mech. Co.
 Prof. Mgr.

REV	DATE	BY	APPROVED	DESCRIPTION

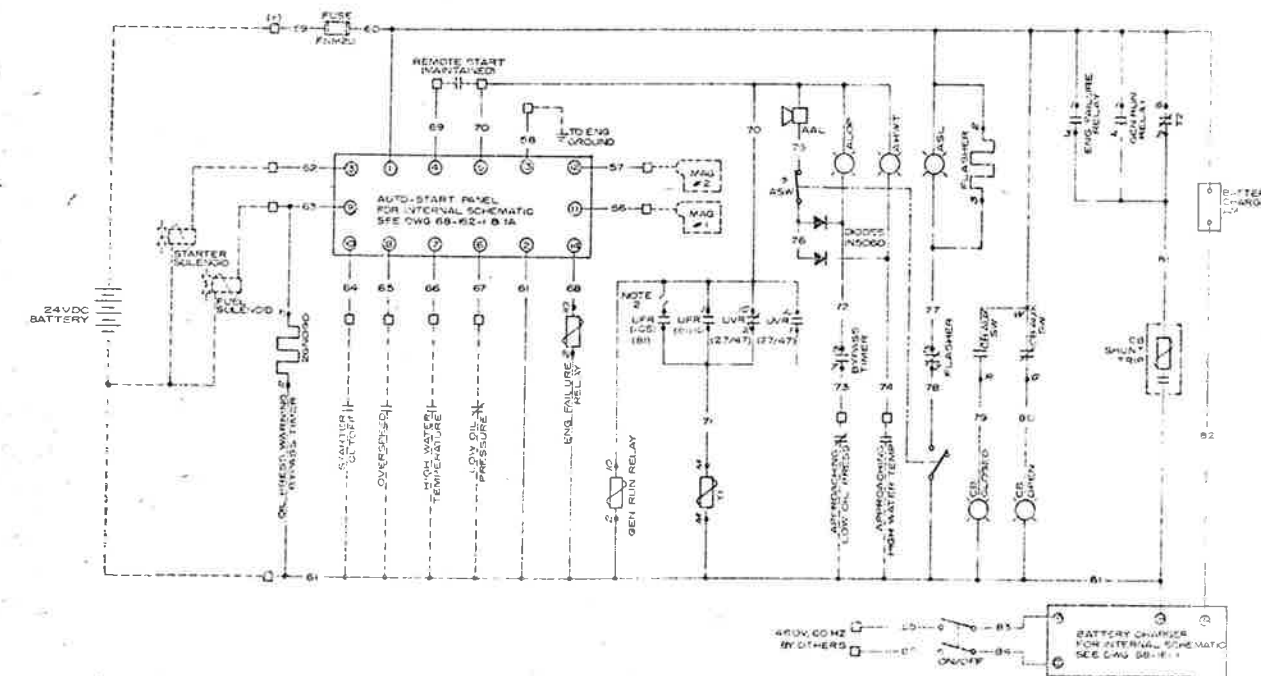
THIS PRINT LOANED IN CONFIDENCE, SUBJECT TO RETURN ON DEMAND AND UNDER THE EXPRESS CONDITION THAT IT NOT BE USED, REPRODUCED OR IN ANY MANNER DISSEMINATED TO ANY OTHER PERSON OR ORGANIZATION WITHOUT THE WRITTEN PERMISSION OF ELECTRIC POWER EQUIPMENT CO.

TITLE ENCLOSURE AND EQUIP LAYOUT	SCALE NONE	DESIGNED BY PAMCO	DRAWN BY G.F.C.	CHECKED BY G.F.C.	DATE 1/9/72
-------------------------------------	---------------	----------------------	--------------------	----------------------	----------------

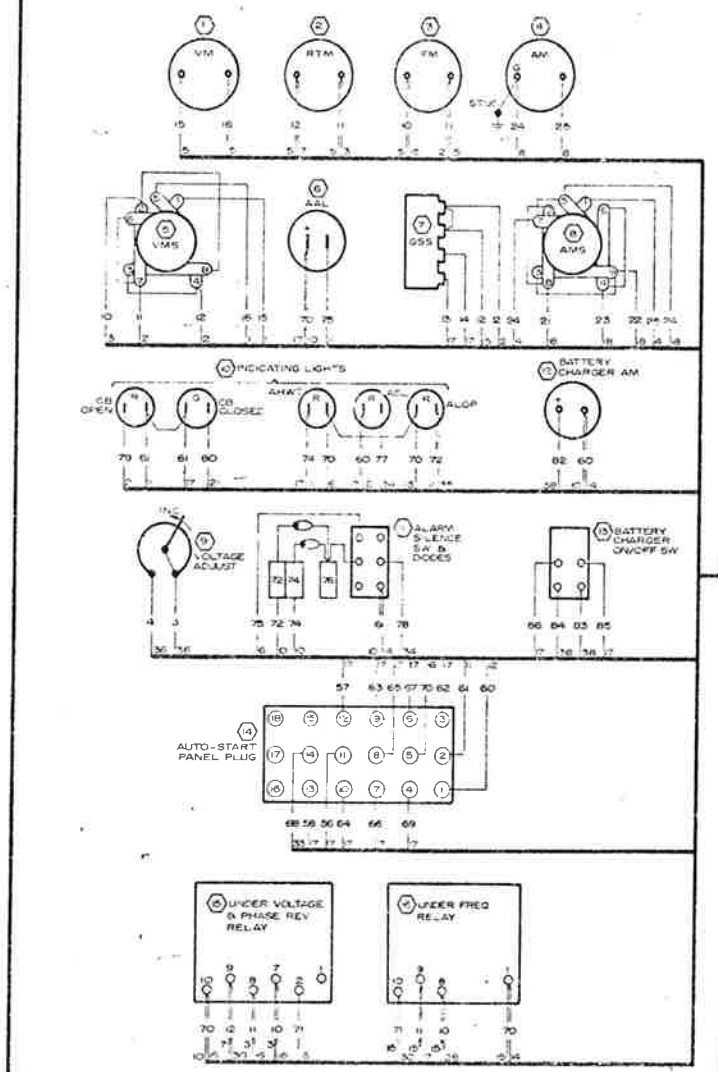
ELECTRIC POWER EQUIPMENT CO.
 171 EAST 22nd AVE
 COMMERCIAL DISTRICT
 NEW YORK, N.Y. 10011



AC SCHEMATIC



DC SCHEMATIC



DOOR-REAR VIEW

NOTES:

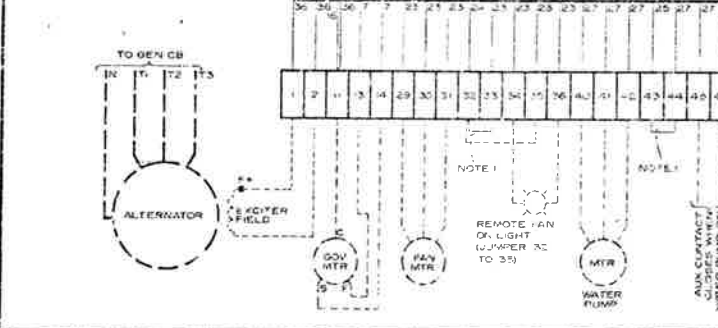
- FOR REMOTE MOTOR OPERATION, REMOVE DESIGNATED JUMPER AT INTERCONNECTION TERMINAL BLOCK AND WIRE IN H-O-A SWITCH, PLOT DEVICE, AND LIGHT AS SHOWN IN SCHEMATIC
- AT UNDER FREQUENCY RELAY, INTERNAL INSTANTANEOUS SEAL-IN CONTACT (ICS) MUST BE DISCONNECTED TO ALLOW AUTOMATIC RESET OF T1 ON NORMAL START UP
- T1 TIME DELAY ON DROP OUT ADJUSTABLE 2.5 TO 50 SEC. 24VDC COIL. T2 TIME DELAY ON DROP OUT ADJUSTABLE 2.5 TO 50 SEC. 120VAC COIL
- ALL DEVICES SHOWN OFF AND/OR DE-ENERGIZED
- DENOTES CUSTOMER DEVICES AND WIRES

TIMER OPERATION

T1 ALLOWS VOLTAGE & FREQUENCY TO STABILIZE AFTER ENGINE START BEFORE ALLOWING UFR (B) & UFR (27/47) TO FUNCTION

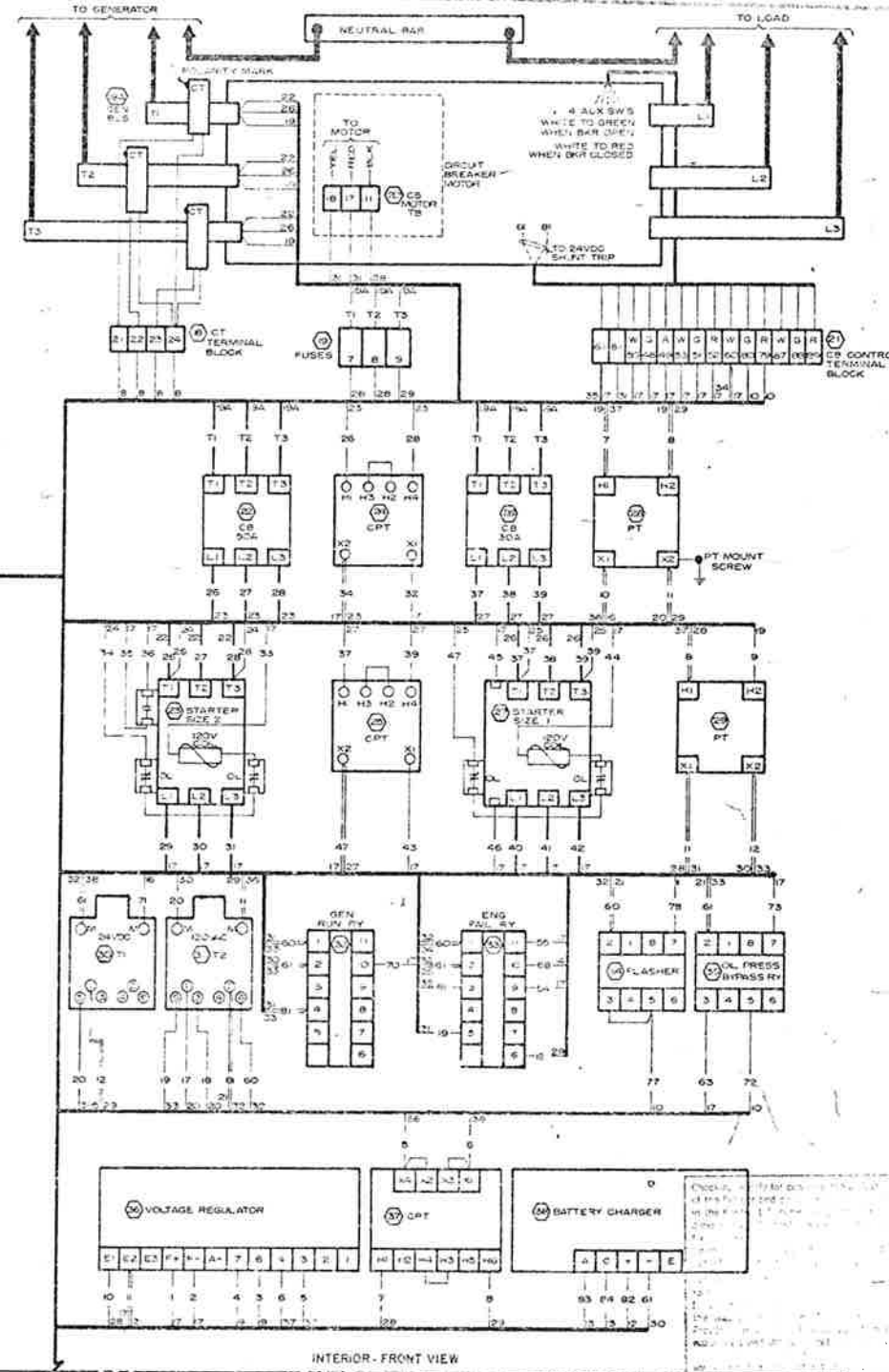
T2 PREVENTS UFR (B) & UFR (27/47) FROM TRIPPING THE GENERATOR CIRCUIT BREAKER DURING MOMENTARY VOLTAGE & FREQUENCY EXCURSIONS

BOTH TIMERS TIME DELAY ON DE-ENERGIZATION, ADJUSTABLE 5 TO 90 SECONDS

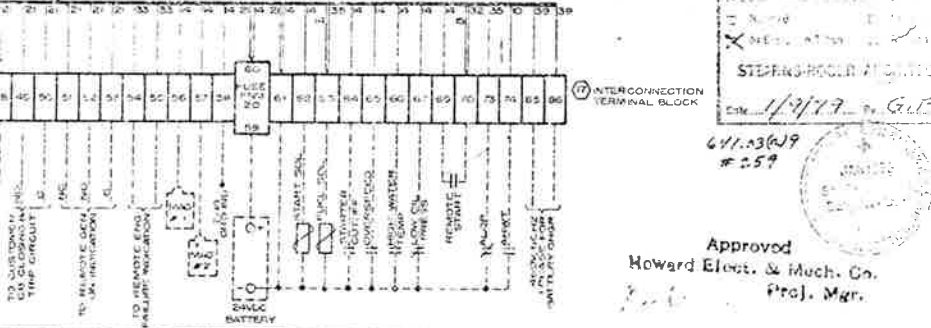


ABBREVIATIONS:

AAL AUDIBLE ALARM
 AHWT APPROXIMATING HIGH WATER TEMPERATURE
 ALOP APPROXIMATING LOW OIL PRESSURE
 AM AMMETER
 ASW SWITCH
 ASB ALARM SILENCED LIGHT
 ATW ALARM SILENCE SWITCH
 C CLIPSE
 CB CIRCUIT BREAKER
 CPT CONTROL POWER TRANSFORMER
 CT CURRENT TRANSFORMER
 EFR ENGINE FAILURE RELAY
 FM FREQUENCY METER
 GSS GOVERNOR SPEED SWITCH
 HGS HAND-OFF-AUTO SWITCH
 LS LIMIT SWITCH
 M MAGNETIC STARTER
 O OIL
 OPLN OVERLOAD
 MFL MOTOR RUN LIGHT (OILTEMPER + STALLED)
 PT POTENTIAL TRANSFORMER
 R/TM TIME METER
 SW SWITCH
 T THERMISTOR (SEE NOTE 2)
 UFR UNDER FREQUENCY RELAY
 UVR UNDER VOLTAGE / OVERVOLTAGE RELAY
 VM VOLTMETER
 VMS VOLTMETER SWITCH



INTERIOR-FRONT VIEW



REVISIONS:

REV	DATE	BY	APPROVED	DESCRIPTION

THIS PRINT LOANED IN COMPLIANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION'S POLICY ON THE REUSE OF PRINTS. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

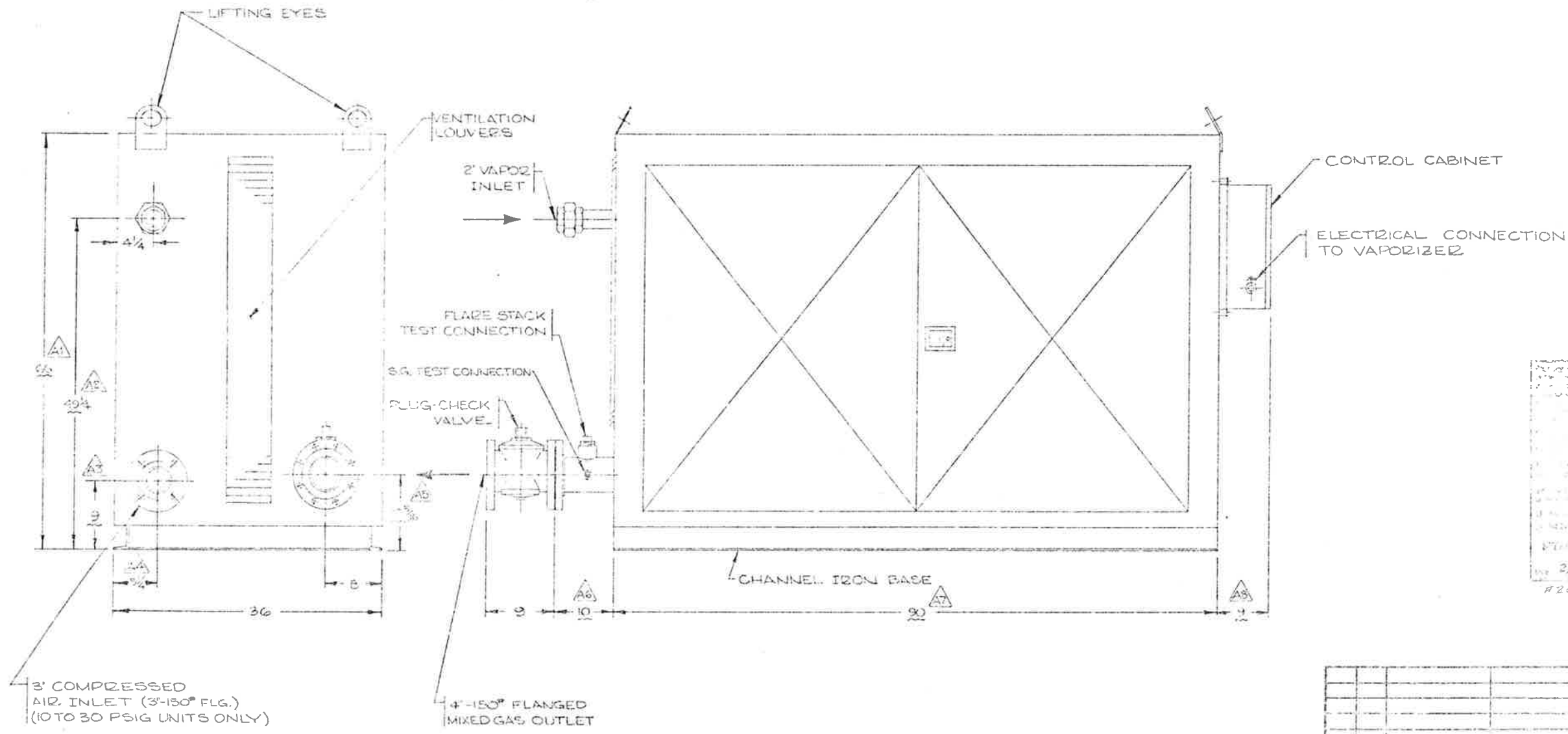
GENERATOR CONTROL
 800VA, 60/40VA, 480V, 60Hz
 3E, 4N, 4C, 4D

ELECTRIC POWER EQUIPMENT CO.
 150 EAST 48th AVE. COMMERCIAL DISTRICT
 NEW YORK, N.Y. 10017
 (212) 697-1100

1. DIM. 10 WAG: 8
2. DIM. 10 WAG: 8
3. DIM. 9 WAG: 7
4. DIM. 9 WAG: 7
5. DIM. 10 WAG: 8
6. DIM. 10 WAG: 8
7. DIM. 10 WAG: 8
8. DIM. 9 WAG: 7

EFFECTIVE ALL UNITS

PROJECT NO.	170 21 1200	SHEET NO.	173	TOTAL SHEETS	208
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APPROVED

Checked by: [Signature]

Date: 2/2/79

PROJECT NO. 170 21 1200

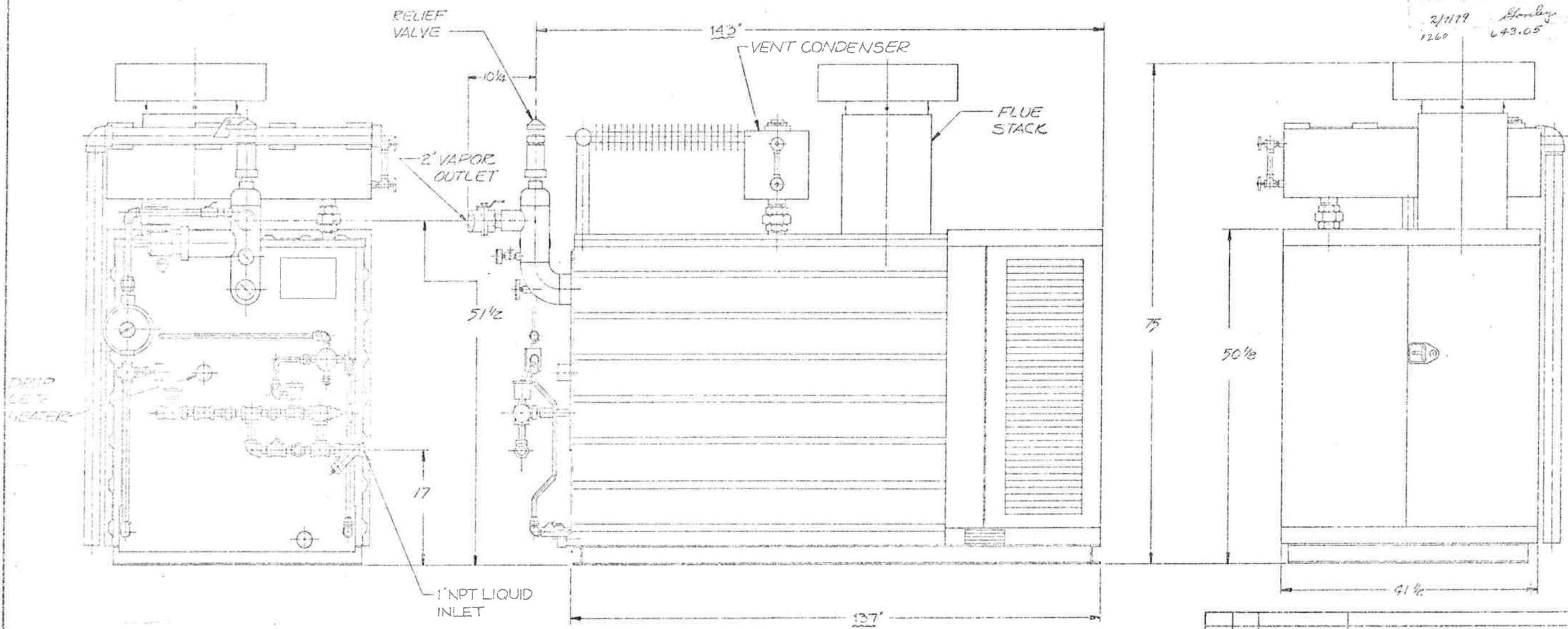
SHEET NO. 173

REV.	DESCRIPTION	DATE

DESIGNER		DATE	
CHECKED		DATE	
TOLERANCES			

PROJECT	174	208
DATE	170	170

2/11/79
1260
Handley
643.05



NOTE:
1. A CLEARANCE OF 11'-6" SHOULD BE LEFT BETWEEN END OF VAPORIZER (PROPANE HEADER END), & ANY FIXED STRUCTURE FOR REMOVAL OF PLATE COILS

APPROVED
[Signature]

DATE				

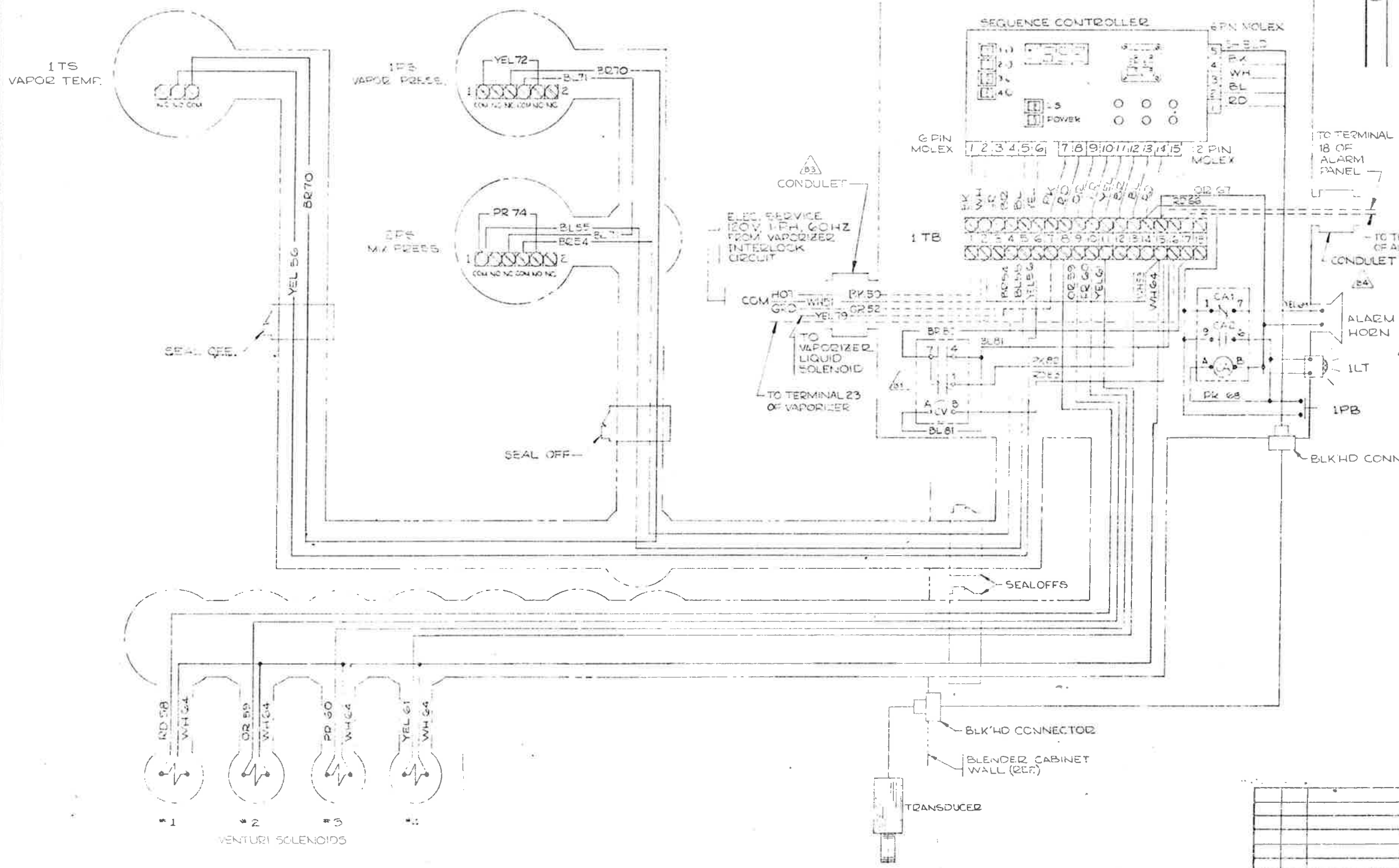
TOLERANCES
 X =
 XX =
 XXX =
 FRACTIONS =
 ANGLES = 0.1°
 UNLESS OTHERWISE SPECIFIED

10-10
PROPANE
EQUIPMENT



DESIGNER	DIVISION	PROJECT NO.	REV.	DATE
BRENNER	COLORADO	170-31-1223	172	208

SYMBOL	REVISIONS DESCRIPTION	REV. BY	APPROVED
A	1. RELAY (A WAS CR B. 2 SET POINTS WERE CONNECTED TO TERMINAL 18 - WIRE (BL) WAS CONNECTED TO TERMINAL 18	T.V.W. 3/23/76	GTL 3-23-76
B	1. ADDED CV RELAY & RELATED WIRING. 2. ADDED NOTES 4 & 5 3. CONDULET WAS SEAL OFF 4. ADDED CONDULET TO ALARM PANEL.	T.V.W. 3/17/76	GTL 3-17-76

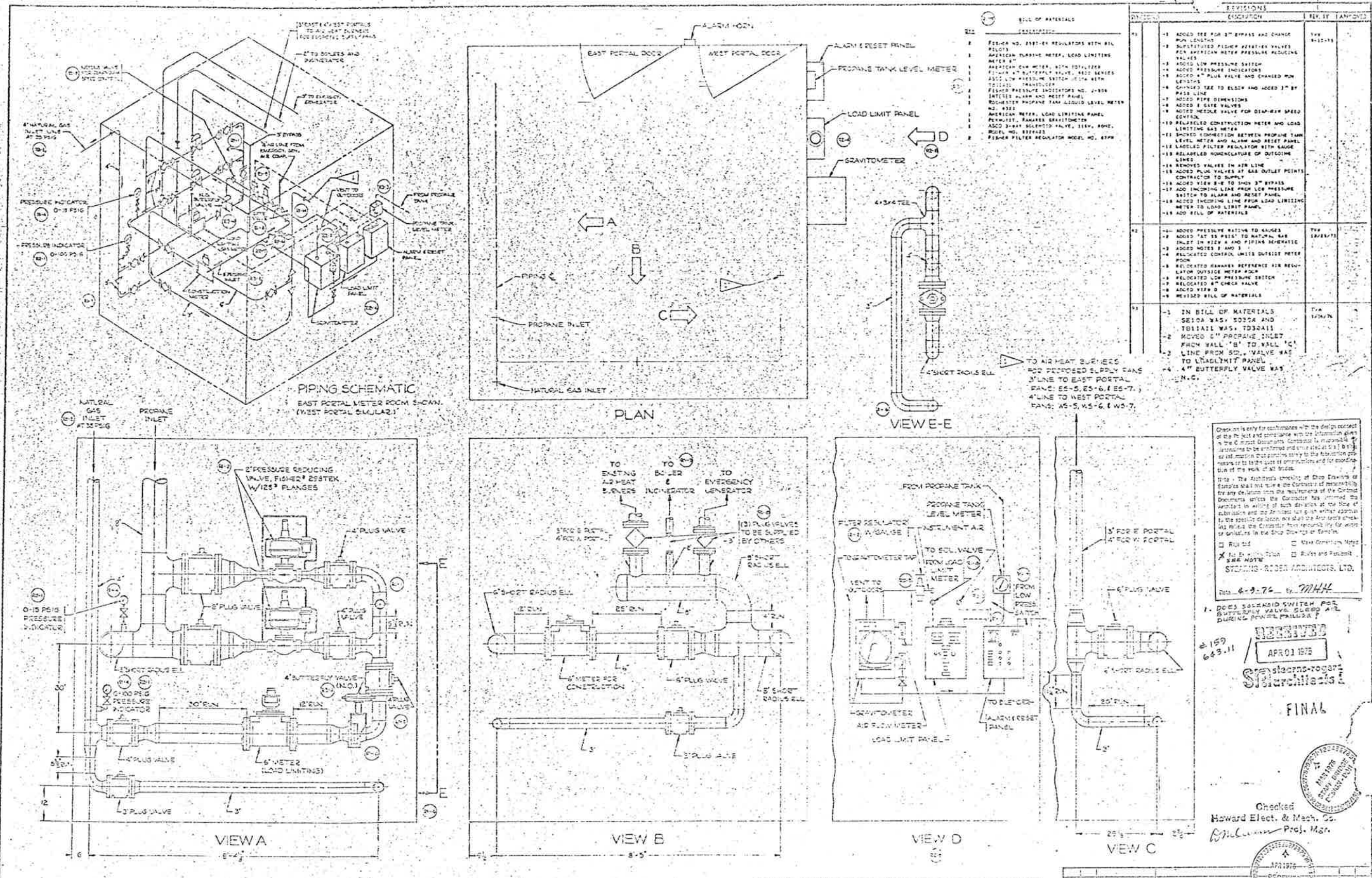


- NOTES:**
- COLOR CODE
BK BLACK
BR BROWN
BL BLUE
GR GREEN
PK PINK
RD RED
OR ORANGE
PR PURPLE
YEL YELLOW
WH WHITE
 - ALL WIRE TO BE 18GA. EXCEPT BK 50, WH 5, GR 52 & YEL 79 WHICH ARE TO BE 16 GA
 - SEAL OFFS TO BE FILLED WITH 'CHICO' TYPE 'A' SEALING COMPOUND.
 - INDICATES FIELD WIRING.
 - FOR FIELD WIRING SEE DWG. JC-1516-E

STANDARD ELECTRIC & CHEMICAL, LTD.
2/1/79
#260 643.06



PART NUMBER		DESCRIPTION		QTY	UNIT
BILL OF MATERIAL					
TOLERANCES					
FRACTIONS					
ANGLES					
EXCEPT AS NOTED					
UNITED STATES OF AMERICA					
DATE	REV.	BY	APP.	DATE	REV.
INTEREX BINARY BLENDER WIRING DIAGRAM SPECIAL PRINT FOR JC3-J-5018					
DOIS-701					



REV.	DESCRIPTION	DATE
1	ADDED 1/2" FOR 3" BRASS AND CHANGE PIPE LENGTHS	1/11/76
2	SUBSTITUTED FISHER BUTTERFLY VALVES FOR AMERICAN METER PRESSURE REDUCING VALVES	
3	ADDED LOW PRESSURE SWITCH	
4	ADDED PRESSURE INDICATOR	
5	ADDED 4" BUTTERFLY VALVE AND CHANGED PIPE LENGTHS	
6	CHANGED SIZE TO ELBOW AND ADDED 3" BY PIPE LINE	
7	ADDED PIPE DIMENSIONS	
8	ADDED 1 GATE VALVE	
9	ADDED NEEDLE VALVE FOR DIAPHRAGM SPEED CONTROL	
10	RELEASED CONSTRUCTION METER AND LOAD LIMITING GAS METER	
11	SHOWN CONNECTION BETWEEN PROPANE TANK LEVEL METER AND ALARM AND RESET PANEL	
12	LOCATED FILTER REGULATOR WITH GAUGE	
13	RELABELED NOMENCLATURE OF OUTSIDE LINES	
14	REMOVED VALVES IN AIR LINE	
15	ADDED PLUG VALVES AT GAS OUTLET POINTS. CONTRACTOR TO SUPPLY	
16	ADDED VIEW D TO SHOW 3" BRASS	
17	ADD INCHING LINE FROM LOW PRESSURE SWITCH TO ALARM AND RESET PANEL	
18	ADD INCHING LINE FROM LOAD LIMITING METER TO LOAD LIMIT PANEL	
19	ADD BILL OF MATERIALS	
20	ADDED PRESSURE RATING TO GAUGES	1/11/76
21	ADDED "AT 25 PSIG TO NATURAL GAS INLET IN VIEW A AND PIPING GENERATED	
22	ADDED NOTES E AND I	
23	RELOCATED CONTROL UNITS OUTSIDE METER ROOM	
24	RELOCATED SHARERS REFERENCE FOR REGULATOR OUTSIDE METER ROOM	
25	RELOCATED LOW PRESSURE SWITCH	
26	RELOCATED 2" CHECK VALVE	
27	ADDED VIEW D	
28	REVISED BILL OF MATERIALS	
29	IN BILL OF MATERIALS SECTION WAS: 5027A AND 7011A1 WAS: 7030A11	1/11/76
30	MOVED 2" PROPANE INLET FROM WALL "B" TO WALL "C"	
31	LINE FROM SD., VALVE WAS TO LOAD LIMIT PANEL	
32	4" BUTTERFLY VALVE WAS N.C.	

Checked by: [Signature] only for conformance with the design content of the P.E. and compliance with the information given in the Contract Documents. Contractor is responsible for any deviations from the requirements of the Contract Documents unless the Contractor has advised the Architect in writing of such deviation at the time of submission and the Architect has given written approval in the specific situation. No liability shall be assumed by the Contractor for errors or omissions in the Shop Drawings or for coordination of the work of all trades.

The Architect's checking of Shop Drawings or Samples shall not constitute the Contractor's responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has advised the Architect in writing of such deviation at the time of submission and the Architect has given written approval in the specific situation. No liability shall be assumed by the Contractor for errors or omissions in the Shop Drawings or for coordination of the work of all trades.

Righted Used Generation Meter
 Not to be Fabricated Rules and Penwork
 SEE NOTE
 STANTIS-ROGER ARCHITECTS, LTD.

Date: 4-9-76 by: M.H.H.

1. DOES SOLENOID SWITCH FOR BUTTERFLY VALVE SLEEP AIR DURING POWER FAILURE?

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APR 01 1976
S. Stantis-Roger Architects
FINAL

Checked
Howard Elect. & Mech. Co.
Proj. Mgr.

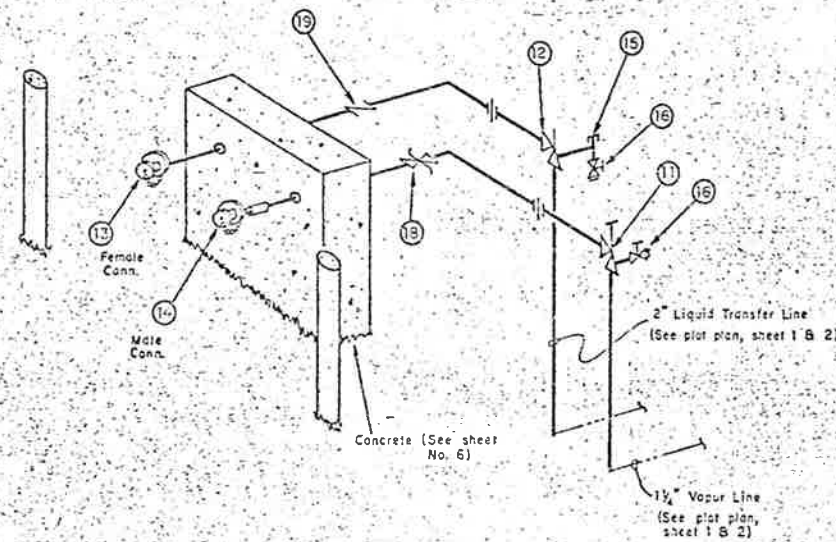
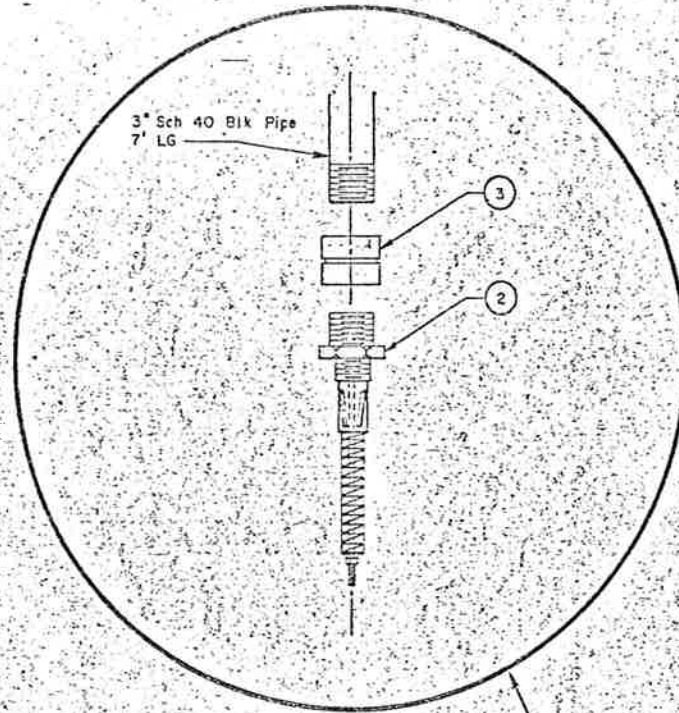
FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1)220	176	208

- NOTES:**
- 1) PLUS VALVE DIMENSIONS BASED ON P.W. L'PULL SARAMA'S SITE
 - 2) --- INDICATES FIELD W RING.
 - 3) THE FOLLOWING ITEMS OF EQUIPMENT ARE TO BE LOCATED OUTSIDE EXISTING METER ROOMS:
 - a) INTERIOR ALARM RESET PANEL
 - b) INTERIOR METER LOAD LIMITING PANEL
 - c) GRAVIMETER
 - d) WHEATON LIQUID W. B. METER
 - e) 2000 L.W. PRESSURE SWITCH
 - f) FISHER REGULATOR

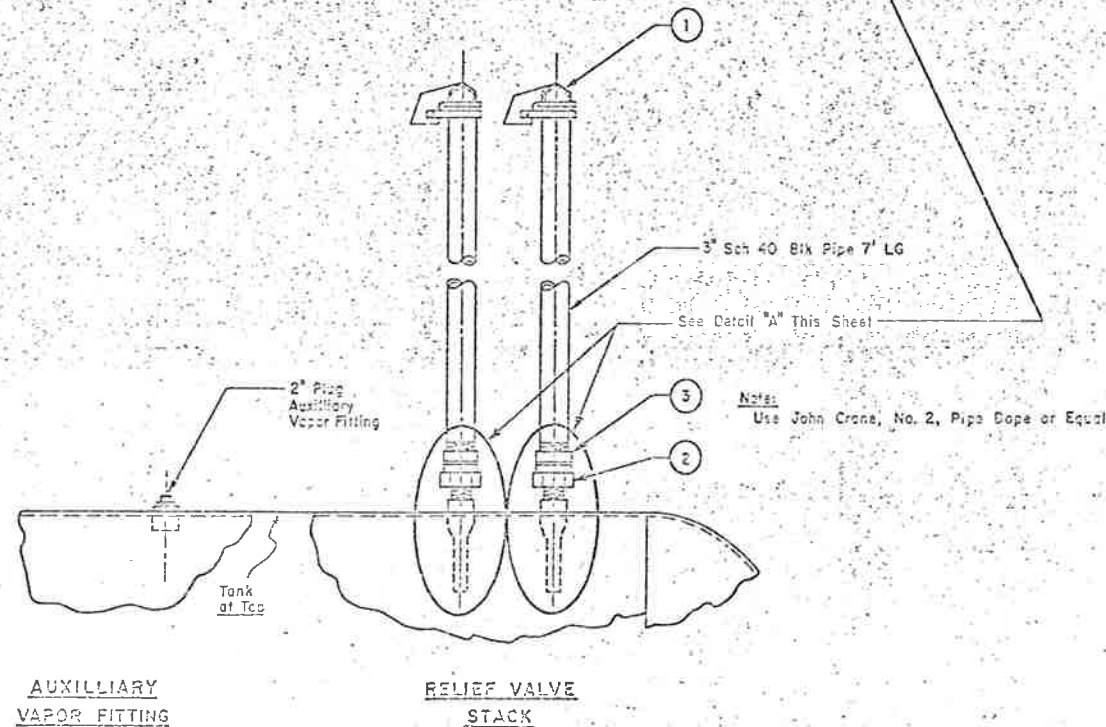
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APR 1976
JE-156-M

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	I 70-3(1) 220	177	208

LIST OF MATERIAL FURNISHED BY CONTRACTOR				
QTY.	SIZE	DESCRIPTION		
1	1/4"	Tee, BMI, 300#		
10 FT.	2"	Pipe, Sch. 80		
10 FT.	1 1/4"	Pipe, Sch. 80		
2	1/4"	Pipe Cop, BMI, 300#		
2	2"	Elbow, 90°, BMI, 300#		
2	1 1/4"	Elbow, 90°, BMI, 300#		
1	2"	Union, BMI, 300#		
1	1 1/4"	Union, BMI, 300#		
1	1 1/4"	Coupling, BMI, 300#		



MECHANICAL DETAIL OF PIPING & FITTING TRUCK
TRANSPORT UNLOADING STATION



AUXILLIARY
VAPOR FITTING

RELIEF VALVE
STACK

STANDARD PIPE & FITTING TRIM OF RELIEF VALVES & STACKS
FOR 21000 GAL. (WC) PROPANE TANK

Check this only for compliance with the design concept of the project and comply with the information given in the Contract Documents. Contractor is held to the full responsibility of the design and construction of the work shown in this drawing and is to be held responsible for the work of all trades.

Note: The Architect's obligation of design is limited to the design of the structure and the mechanical, electrical and plumbing systems shown on the drawings. The Contractor has a bonded obligation to the Commission when the Contractor has a bonded obligation in writing of such design at the time of award of the contract. The Architect's obligation is limited to the design of the structure and the mechanical, electrical and plumbing systems shown on the drawings. The Contractor has a bonded obligation to the Commission when the Contractor has a bonded obligation in writing of such design at the time of award of the contract.

Requested Make Necessary Notes
 No Exception Taken Proceed as Shown

STEARNS-ROGER ARCHITECTS, LTD.
 4-9-76 M.H.H.

RECEIVED
 APR 01 1976
 STEARNS-ROGER ARCHITECTS & ENGINEERS

FINAL

4-9-76
 #159

Checked
 Howard Elect. & Mech. Co.
 Proj. Mgr.

RECEIVED
 APR 1976
 STEARNS-ROGER ARCHITECTS & ENGINEERS

RECEIVED
 D. O. M.

Approval:

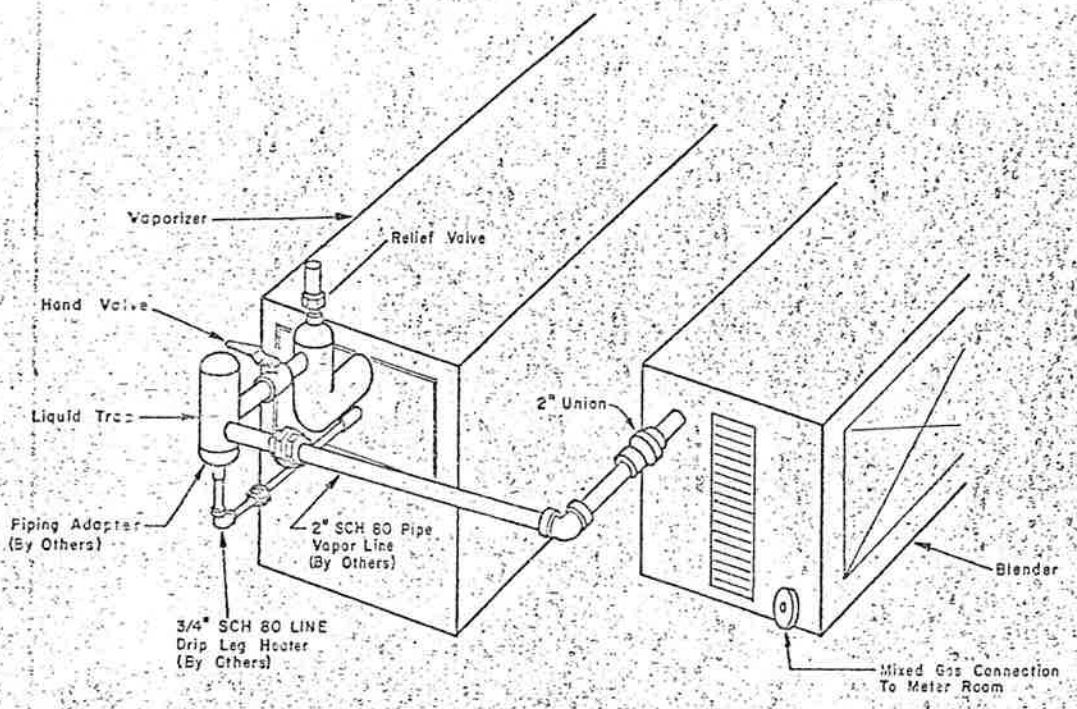
Date:

PROJECT NO. I 70-3(2) 220
 EISENHOWER MEMORIAL TUNNEL-B&B
 TANK PIPING DETAIL

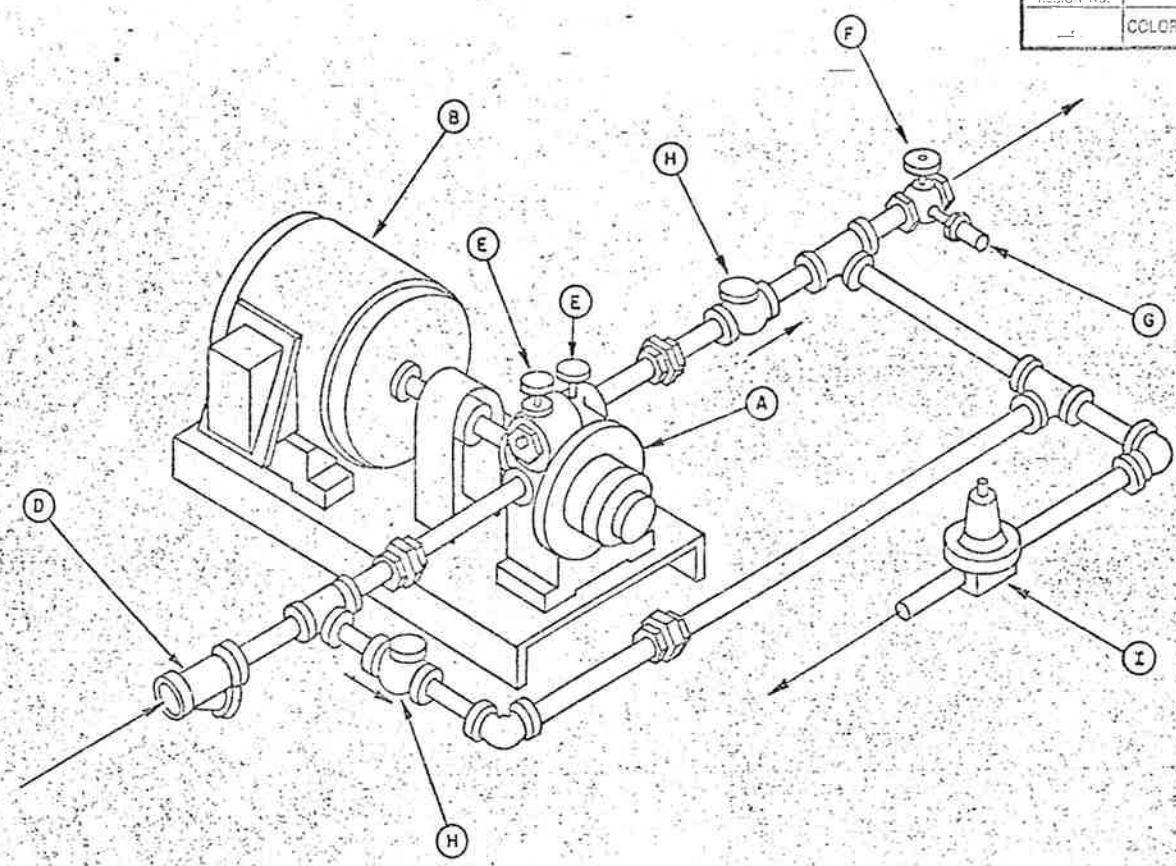
Stearns-Roger, Inc.
 303-422-7207

Scale: None | FC No. M-416 | Drawing: EI 1005
 Date: 5-13-76 | Approved: | Sheet: 5 | Proj. No.: 8-5-76

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1)220	178	208



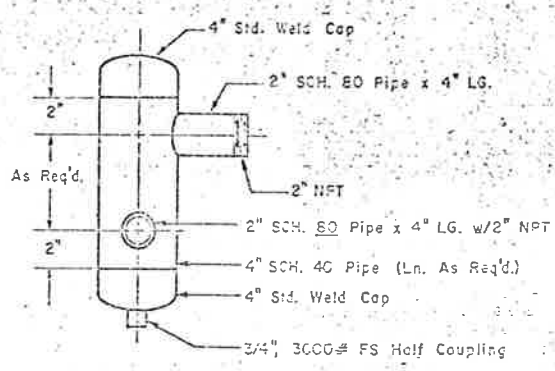
VAPORIZER - BLENDER INTERCONNECTION
HP 70 TO B 447



LIQUID PUMP
LSP 50-110

Note: For Manufacturers & Model Numbers see pump submittal.

ITEM NO.	QUANTITY	DESCRIPTION
A	1	LP Gas Liquid Pump
B	1	3 Hp. 1800 RPM 450V/3 PH/60HZ XP Electric Motor
C	1	Starter in Nemo 7 HSNG w/Disconnect (Not Shown)
D	1	Liquid Inlet Strainer
E	2	0-300 PSIG Liquid Filled Pressure Gauges
F	1	Globe Valve
G	1	Hydrostatic Relief Valve
H	2	ACO WOG Check Valve
I	1	Back Pressure Regulator



HYDROSTATIC TEST AT 375 PSIG

Contract is only for performance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for verifying the information and for the safety of the information process. It is the contractor's responsibility to coordinate the work of all trades.

Yes - The Architect's checking of this Division of work shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given a final approval to the specific deviation. It is the Contractor's responsibility for errors or omissions in the Shop Drawings or Samples.

Reported Make Corrections Shown
 No Exception Taken Revoke and Resubmit

STEARNS-ROGER ARCHITECTS, LTD.
 Date: 4-9-76 by: M.H.H.

RECEIVED
 APR 01 1976
 STEARNS-ROGER ARCHITECTS, LTD.

FINAL

Checked
 Howard Elect. & Mech. Co.
 Project Mgr.



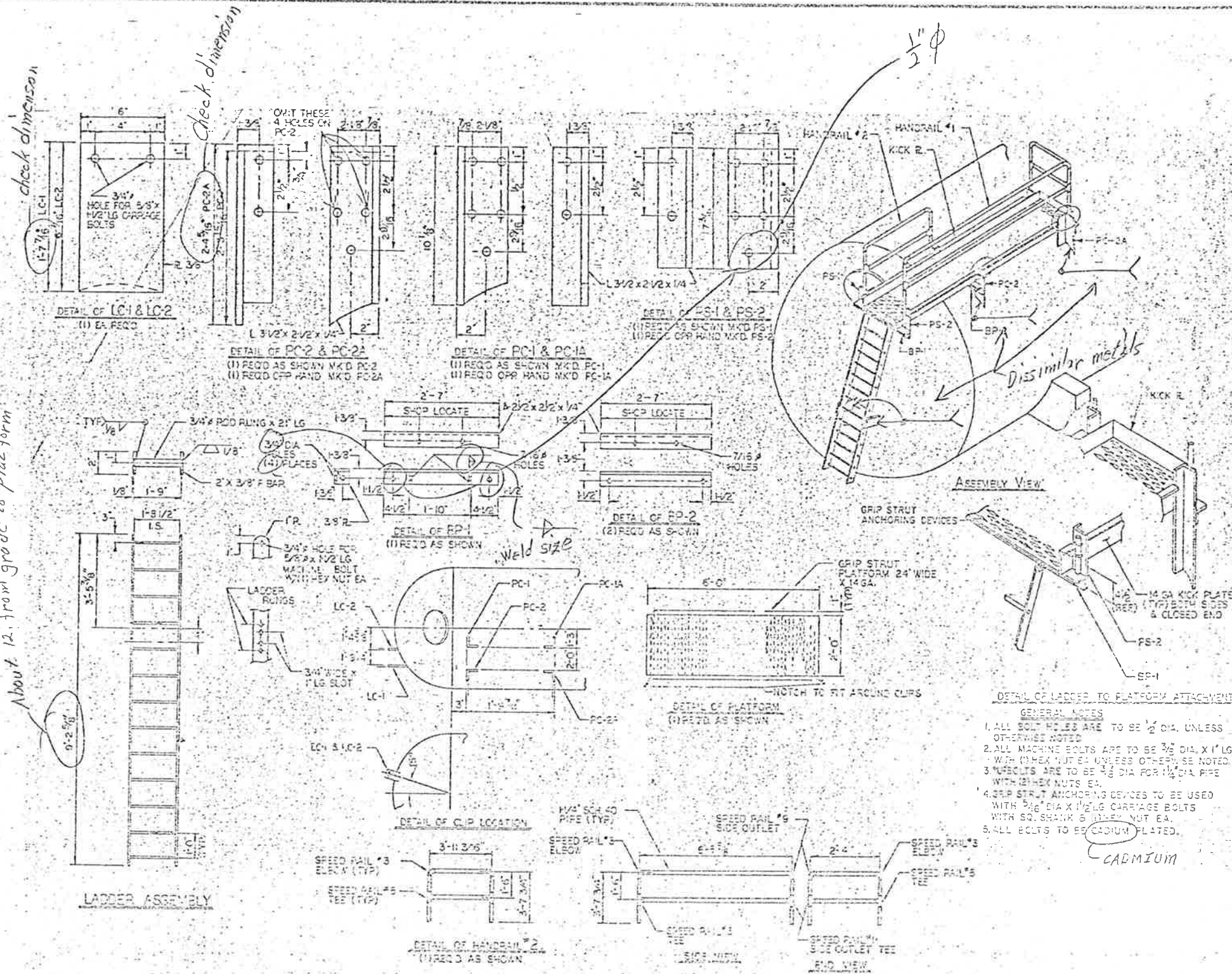
Approved: _____

Date: _____

Environmental, Inc.
 5765 Wadsworth Blvd., Arvada, Colorado 80002
 303-423-7197

PROJECT NO. 170-3(1)220
 EISENHOWER MEMORIAL TUNNEL - 2nd SOLE
 EQUIPMENT FILING DETAIL

Station Name: _____ PG. No. M 1415 Drawing: E1 1004
 Date: 7-8-76 Approved: _____ Sheet: 4 Rev. No. 1 B-8-76



Check this only for compliance with the design details of the Project. It is the responsibility of the Contractor to ensure that the work is done in accordance with the approved design and specifications. The Engineer is not responsible for any errors or omissions in the design or construction of the project.

Checked by: *Howard Elect. & Mech. Co.*
 Project Mgr: *Robert J. Mason*

RECEIVED
 APR 1976
 STRUCTURE GROUP

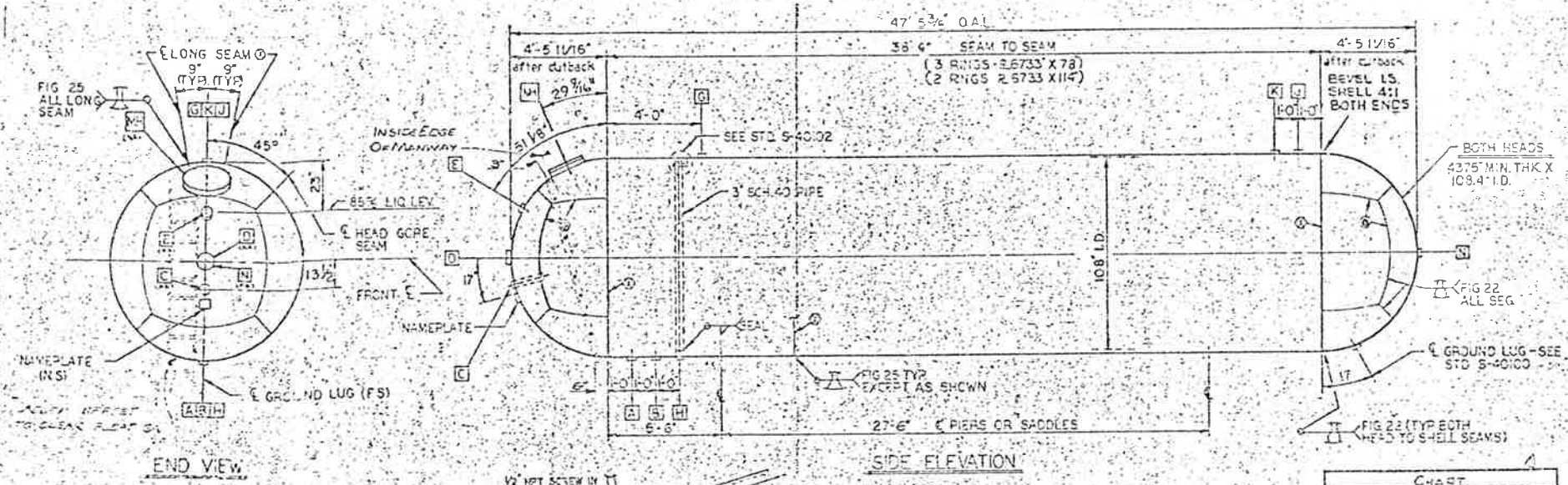
REVIEWED
 D.O.H. STATE OF COLO.
 STAFF BRIDGE DESIGN
 By: *SFC* Date: *4-23-76*

APPROVAL: _____
 DATE: _____
 RECEIVED
 APR 1976
 D.O.H.

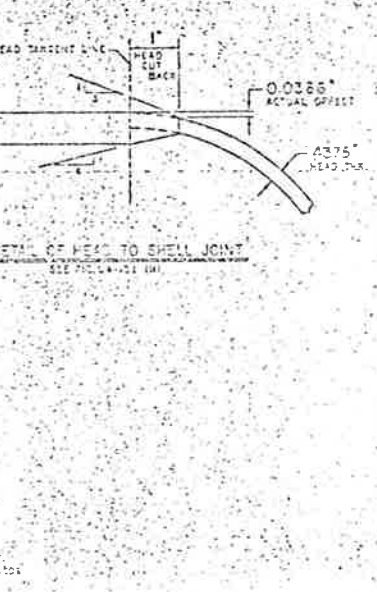
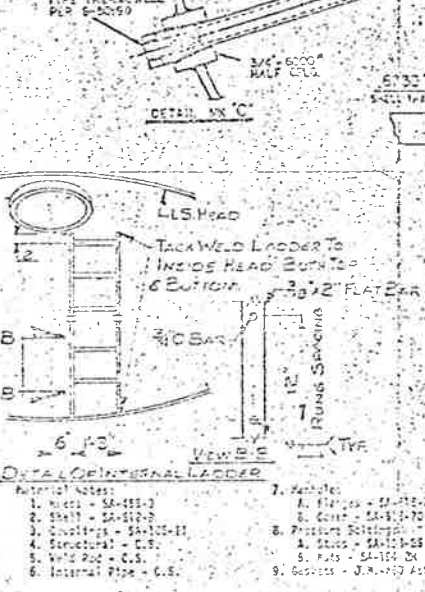
TRINITY INDUSTRIES, INC.
 100 S. STATE ST. DENVER, CO. 80202
 303-733-1100
 10-5-03

PROJECT NO. 170-31 1220
 DESIGNER: *John J. Mason*
 DATE: *4-15-76*
 CHECKED: *Howard Elect. & Mech. Co.*
 DATE: *4-23-76*

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-S-1020	131	208



- GENERAL NOTES**
- Opening "A": See Detail. Fill pipe with grease before installing thermometer.
 - Opening "B":
 - Opening "C": Furnish with pipe as shown. See Std. S-4010 for pipe support clip.
 - Opening "D": All openings in a curved surface are long outside curvature.
 - Steel die stencil "100" alongside opening "A" and "B".
 - All hard heads are to be alternated.
 - LPG relief required is 19916.
 - LPG relief furnished is 23350.
 - Openings "A", "B", "C", "D": These openings are to be set flush inside.
 - Opening "E": See Std. S-4010 for special clip detail.
 - Opening "F": When fittings are furnished provide (1) 3/4" x 1/2" x 1/4" aluminum valve and (2) 1/4" bottom mounted brass gauge of 10-2000.
 - Provide Ladder & Platform Per DWG S-3033.



TRINITY INDUSTRIES, INC.
Dallas, Texas

INSPECTOR'S STAMP

SEE CHART

CHART

SIGN	SYMBOL	MEANING
1007347	1007347	761C9
1007348	1007348	761C9

Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for accuracy to be confirmed and provided at the job site. No information that pertains solely to the fabrication process is to be taken out of context and for circulation of the work of all trades.

Note - The Applicant's ordering of Shop Drawings or Samples shall not constitute a contract of responsibility for any deviations from the requirements of the Contract Documents. The Contractor has informed the Applicant in writing of such deviation at the time of submission and the Applicant has given written approval to the specific deviation, but shall not be held liable for errors or omissions in the Shop Drawings or Samples.

Rejected Make Corrections Noted

No Exception Taken Rejected and Resubmit

STARNES-ROBER ENGINEERS, LTD.

Date: 4-9-76 by M.H.H.

APPROVED

APR 01 1976

STARNES-ROBER ENGINEERS, LTD.

NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
1	1 1/2\"/>				

Note: a. For valve manufacturer B, model number and valve identification submitted.
b. For description of 25% Fixed Level of valve see valve identification submitted.

Environment, Inc.

10810 - 21000 W.G. S.M.T. BULK STORAGE TANK

Scale: NONE PG. NO. 131 OF 138 Drawing: 811000

Date: 7-11-75

PROJECT NO. 170-S-1020
SITE: HOWARD ELECT. & MECH. CO. TUNNEL - 844 3110
TANK SUBMITTAL

QTY	QTY	DESCRIPTION	QTY
4	4	#4 LOCK WASHER	149
4	4	#4-40 HEX NUT	148
4	4	#4 40x1/2 MACHINE SCREW	147
4	4	#4 5 NUT HEX	145
4	4	1/4-20 NUT HEX	144
4	4	#4 WASHER LOCK	141
4	4	1/4 WASHER LOCK	40
4	4	1/4 WASHER LOCK	139
4	4	1/4 WASHER BEVEL	138
1	1	1" VALVE SOLENOID ASCO # 8210554	135
3	3	3/4" VALVE SOLENOID ASCO # 8210095	132
1	1	2" VALVE PLUG G-BECK FMI # 30" PL 8000 WND	133
1	1	1" VALVE GLOBE 400# REGO # A7807 AP	32
3	3	3/4" VALVE GLOBE 400# REGO # A7805 A	31
1	1	2 1/2" VALVE BUTTERFLY DENCO W/ FLANGE	30
1	1	1" VALVE BALL VALVE BUREAU CLINCHER # 2111	29
1	1	1/2" VALVE BALL VALVE BUREAU CLINCHER # 2111	28
1	1	3/8" VALVE BALL VALVE BUREAU CLINCHER # 2111	27
6	6	1/4" VALVE NEEDLE VALVE BOULTON # P-250-FM	26
1	1	1/4" VALVE HYDROSTATIC RELIEF 150# SET. REGO # B8422-50	25
1	1	2" UNION 300# BMI	24
1	1	1" UNION BALL W/ L-E 300# BMI	23
3	3	3/4" UNION BALL W/ L-E 300# BMI	22
11	11	1/2" UNION STR. W/ L-E CONDUIT, CH# UNY-105	20

02-01 PART NUMBER
07Y REC

QTY	QTY	DESCRIPTION	QTY
1	1	TRANSFORMER CASE ASSEMBLY C402V	117
1	1	1/2" O.D. COPPER TUBE, SOFT REFER. 80, A-	116
1	1	TRANSFORMER CASE MICRO ELECTRONICS	115
1	1	60IT	114
1	1	SWITCH PRESS. REL. 0-200" L-E MODEL	113
1	1	J-110A # 867	112
1	1	SWITCH PRESS. REL. 0-300" L-E MODEL	111
1	1	J-110A # 866	110
1	1	SWITCH TEMP. 0-215" L-E MODEL 310	109
1	1	SEAL W/ A SWITCH	108
1	1	* SEAL O-RING # 5-6	107
4	4	1/4" x 3/8" CAP SCREW CAD P.L.D.	106
4	4	1/4" x 1/2" CAP SCREW ALLEN - 840	105
4	4	1/4" x 1/2" CAP SCREW CAD P.L.D.	104
1	1	* REGULATOR FISHER # 61 - PRESSURE LOADED, 1/2" ORIFICE, 1/2" ON SEAT	103
1	1	* REGULATOR FISHER # 61 - 3/4" ORIFICE	102
1	1	NYLON SEAT 20-100# SPRING	101
1	1	* REGULATOR FISHER # 61 - 1/2" ORIFICE	100
1	1	NYLON SEAT 21-80# SPRING	99
1	1	* REGULATOR FISHER # 61 - 3/8" ORIFICE	98
1	1	NYLON SEAT 20-100# SPRING	97
1	1	* REGULATOR FISHER # 61 - 1/2" ORIFICE	96
1	1	NYLON SEAT 21-80# SPRING	95
1	1	* REGULATOR FISHER # 61 - 3/8" ORIFICE	94
1	1	NYLON SEAT 20-100# SPRING	93
1	1	* REGULATOR FISHER # 61 - 1/2" ORIFICE	92
1	1	NYLON SEAT 21-80# SPRING	91
1	1	* REGULATOR FISHER # 61 - 3/8" ORIFICE	90
2	2	1/2" PLUG SQ HD, BMI	89
1	1	1/2" PLUG SQ HD, BMI	88
1	1	1/2" PLUG SQ HD, BS	87
1	1	* 1/2" NIPPLE, SCH. 80, WELDED S-OP CUT	86
1	1	2x1/2" NIPPLE, SCH. 80, WELDED S-OP CUT	85
1	1	2x1/2" NIPPLE, SCH. 80, WELDED S-OP CUT	84
1	1	2x3/4" NIPPLE, SCH. 80, WELDED S-OP CUT	83
1	1	1 1/2 x 3/4	82
1	1	1 1/2 x 1/2	81
1	1	1 1/2 x 1/8	80
1	1	1 1/2 x 1/8	79
1	1	1 x 7/8	78
2	2	1 x 3	77
2	2	1 x 2 1/2	76
1	1	1 x 2	75
3	3	3/4 x 8 1/2	74
2	2	3/4 x 7 1/2	73
1	1	3/4 x 7 1/2	72
3	3	3/4 x 3	71
3	3	3/4 x 2 1/2	70
2	2	3/4 x 2	69
1	1	3/4 x 1 1/2	68
1	1	1/4 x 1 1/2 NIPPLE, SCH. 80, WELDED	67
1	1	* 1/4" NIPPLE, SCH. 80, WELDED	66
1	1	* 1/4" NIPPLE, SCH. 80, WELDED	65
1	1	* 1/4" NIPPLE, SCH. 80, WELDED	64
1	1	* 1/4" NIPPLE, SCH. 80, WELDED	63
2	2	GAUGE, TEMP. 50-300# F & NPT 1/4" STEM	62
1	1	TELE. TUBE LN-250	61
1	1	GAUGE, PRESS. 0-300 PSI, 1/4" x 1/4" B.C.	60
1	1	LIQUID FILLED UNITS NPT # 226X807	59
1	1	GAUGE, PRESS. 0-10 PSI, 1/2" x 1/4" B.C.	58
1	1	LIQUID FILLED, UN. TUBED NPT # 226X8-8PSI	57
1	1	* 1/2" BELL CONDUIT, CH# EL-19	56
10	10	CONNECTOR, TUBE, 50" TELL. 1/2" UNPT, 1/2" TUBE	55
1	1	GYROLOC # 6LX14	54
1	1	2" COUPLING, 300# BMI	53
4	4	2" COUPLING, 150# BMI	52
1	1	2" COUPLING, 150# BMI	51
1/2	1/2	1/2" CONDUIT 2" RIGID ALUMINUM	50
1/2	1/2	1/2" CONDUIT WATER-PROOF FLEXIBLE, ELECTROFLEX TYPE LA-11	49
2	2	CONNECTOR 2" LIQUID TUBE 50" TELL. T48#5252	48
1	1	1" CROSS, 300# BMI	47
3	3	1/2" CROSS, 300# BMI	46
1	1	1/2" CROSS, 300# BMI	45
1	1	2" CAP PIPE 300# BMI	44
2	2	BOX, CONDUIT 2" CH# ELAT-16	43
1	1	BOX, CONDUIT 2" CH# ELAT-16	42

02-01 PART NUMBER
07Y REC

NOTES:
NOT SHOWN

STEARNS-ROSSER ARCHITECTS, LTD.
#260 643.06

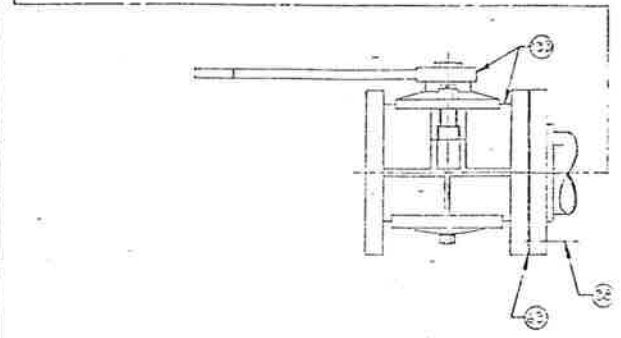
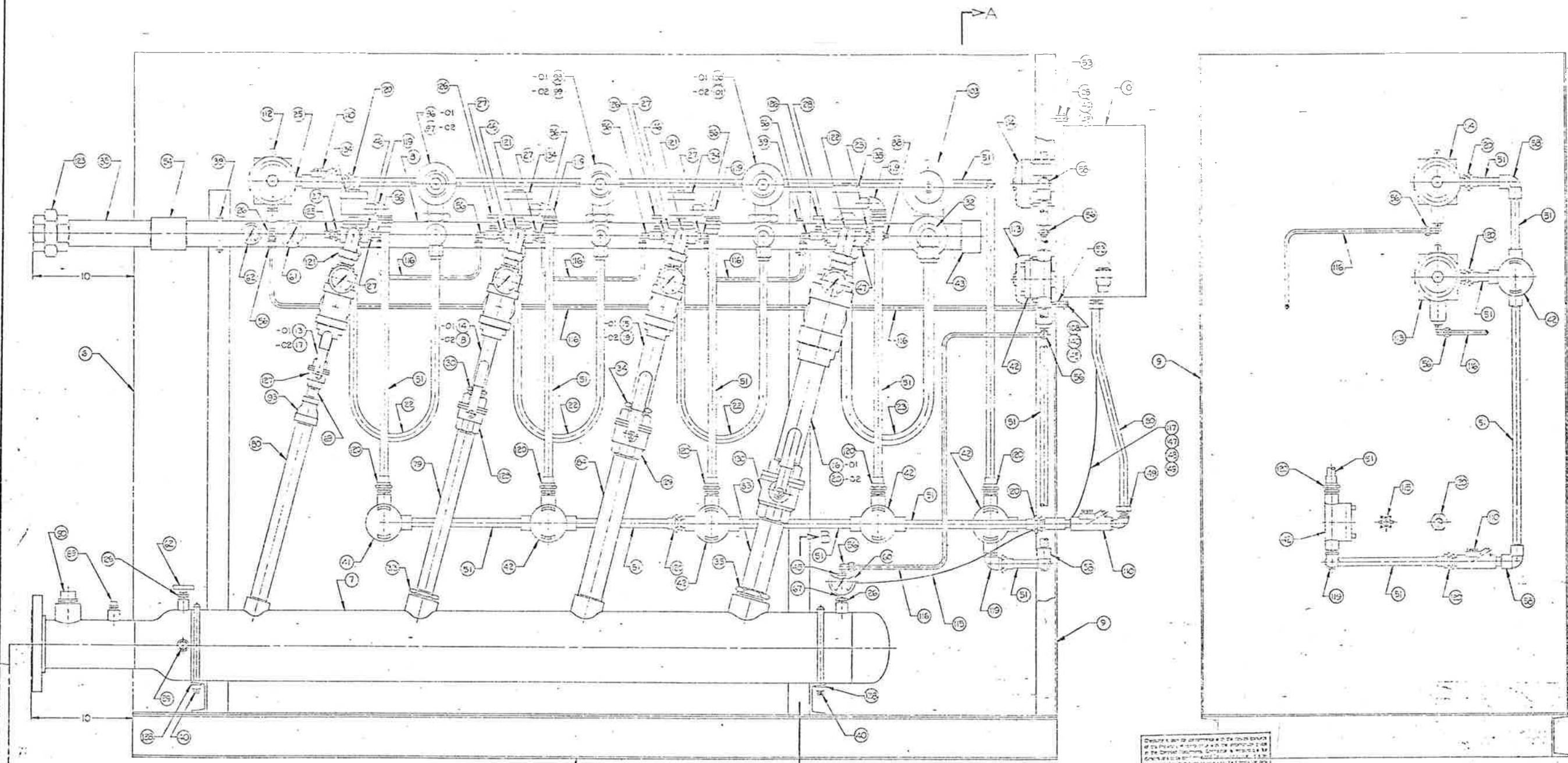
QTY	QTY	DESCRIPTION	QTY
2	2	2" U-BOLT NUTS	1
2	2	2" U-BOLT NUTS	1
8	8	1/2" x 1 1/4" STUD BOLTS & NUTS CAD P.L.D. B-7	1
2	2	2x2 BUSHING, BMI	1
1	1	2x1 1/2 BUSHING, BMI	1
1	1	2x1 1/2 BUSHING, BMI	1
2	2	2x1 FLEX BUSHING, F.S.	1
3	3	1 1/2" BUSHING, BMI	1
1	1	1 1/2" BUSHING, BMI	1
1	1	1 x 1 1/2 BUSHING, BMI	1
2	2	1 x 1 1/2 BUSHING, BMI	1
2	2	1 x 1 1/2 BUSHING, BMI	1
2	2	1 x 1 1/2 BUSHING, BMI	1
2	2	1 x 1 1/2 BUSHING, BMI	1
1	1	1/2" x 1 1/2 BUSHING CONDUIT, CH# RE-21	1
1	1	1/2" x 1 1/2 BUSHING, BMI	1
1	1	016-405-02 1" U-TUBE ASSY.	1
3	3	016-405-01 1" U-TUBE ASSY.	1
1	1	011-303-08 820 VENTURI ASSY.	1
1	1	011-303-06 815	1
1	1	011-303-04 810	1
1	1	011-303-02 815	1
1	1	011-303-07 820	1
1	1	011-303-05 815	1
1	1	011-303-03 810	1
1	1	011-303-01 815 VENTURI ASSY.	1
1	1	03-301-01 CONTROL BOX ASSY.	1
1	1	06-404-01 BASE S.B. ASSY.	1
1	1	06-405-01 MASTER MANIFOLD S.B. ASSY.	1
1	1	06-402-01 1" RED GAS MANIFOLD S.B. ASSY.	1
1	1	06-301-01 GAS NET ASSY.	1
1	1	017-201-02 8447-8 PSI BINARY BLENDED FINAL ASSY.	1
1	1	017-201-01 8447-8 PSI BINARY BLENDED FINAL ASSY.	1

Approved
[Signature]
[Signature]

INTEREX
Information Systems, Inc.

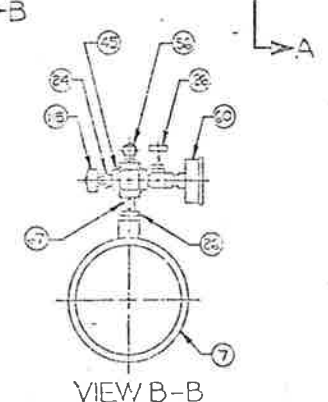
INTEREX BINARY BLENDED
MODEL 8447 FINAL ASSEMBLY
(SPECIAL FOR EISENHOWER)

FIGURE
E017-201
1.3



- 1 - O1 ASSY.
- 2 - O2 ASSY.

SEE SHT. 3 FOR PLAN VIEW



Describe in detail the assembly of the main body of the gun, showing the various parts and their assembly relationships. The drawing is a technical drawing of a gun mechanism, showing the various parts and their assembly relationships. The drawing is a technical drawing of a gun mechanism, showing the various parts and their assembly relationships.

2/17/79
 623-02
 Approved
 11242nd Street, N. W. Miami, FL
 Proj. M-88

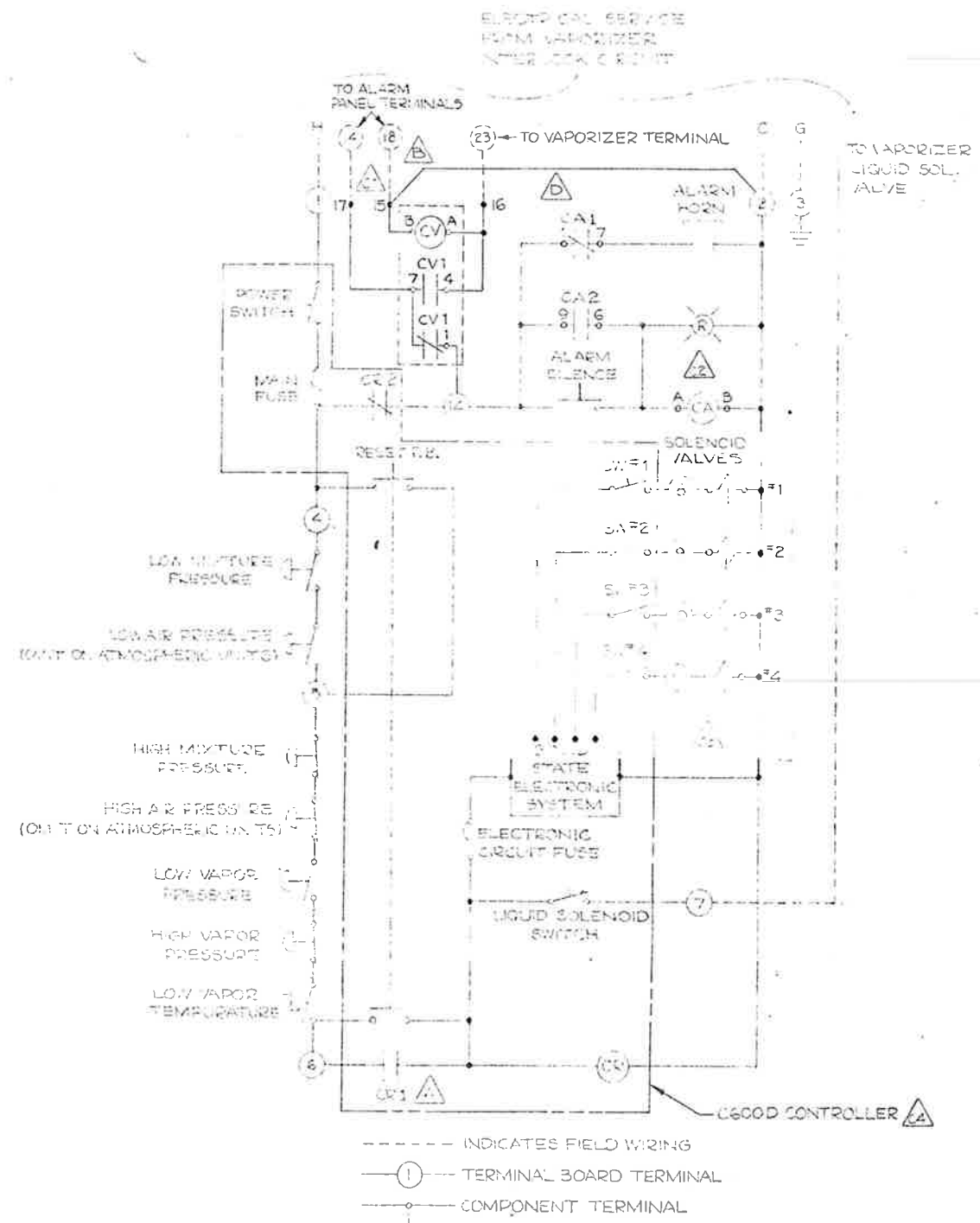
VIEW A-A

SEE SHT. 1 FOR BILL OF MATERIAL

TOLERANCES	
ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED	FRACTIONS
XX ± .001	ANGLES ± .010°
XX ± .002	EXCEPT AS NOTED
XX ± .005	
XX ± .010	
XX ± .015	
XX ± .020	
XX ± .030	
XX ± .040	
XX ± .050	
XX ± .060	
XX ± .070	
XX ± .080	
XX ± .090	
XX ± .100	

INTEREX
 INTEREX BINARY BLEND
 MODEL 2447 FINAL ASSY.
 SPECIAL FOR ESSEI HOVER TN.

EO17-201
 2.3



REVISIONS			
SYM/ZONE	DESCRIPTION	REV. BY	APPROVED
A	RELOCATED C600	T.M.W.	GTL
B	ADDED CV RELAY AND TERMINALS 16, 17, AND 18	T.M.W. 3/22/76	GTL 3-22-76
C	1. TERMINAL 5 WAS 18 2. ADDED COMPONENT TERMINAL NUMBERS TO 'CA' RELAYS 3. DELETED SW #5 & #6 AND SOLENOIDS #5 & #7 4. OUTLINED ITEMS INCLUDED IN C600 CONTROLLER	T.M.W. 3/16/76	GTL 3-17-76
D	1. ADDED GROUND WIRE FROM TERMINAL 2 TO TERMINAL 15.	GTL 12-21-76	GTL 12-21-76

DATE	BY	PROJECT	REV.	NO.
DEC 21 1976	170	1270	185	208

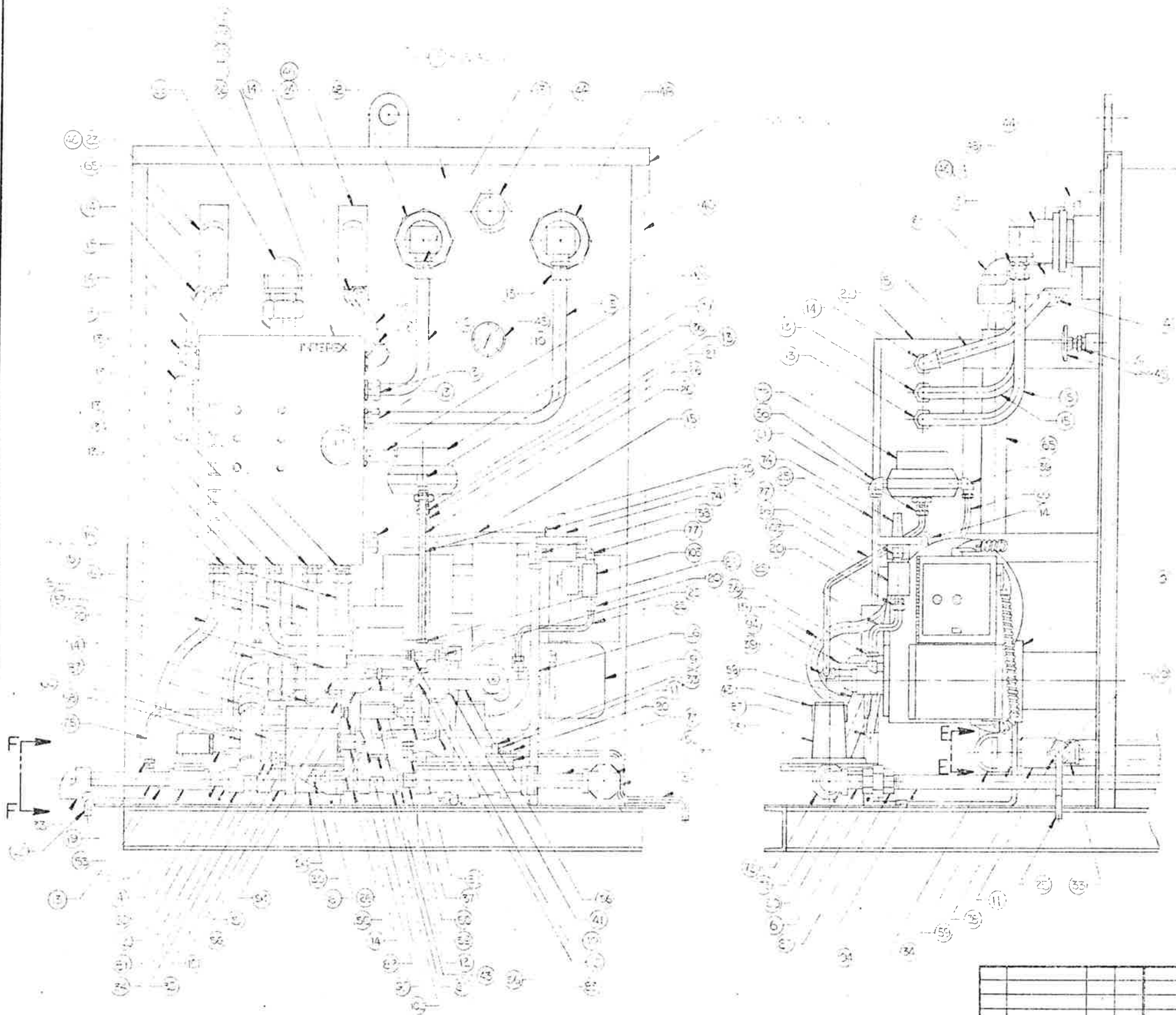
2/7/79
#260 643.66

TOLERANCES		BILL OF MATERIAL	
X ±		QTY.	DESCRIPTION
XX ±		PART NUMBER	ZONE ITEM
XXX ±		DESCRIPTION	
FRACTIONS ±		DESCRIPTION	
ANGLES ± 0°30'		DESCRIPTION	
EXCEPT AS NOTED		DESCRIPTION	
FINISH:		DESCRIPTION	
USED ON		DESCRIPTION	

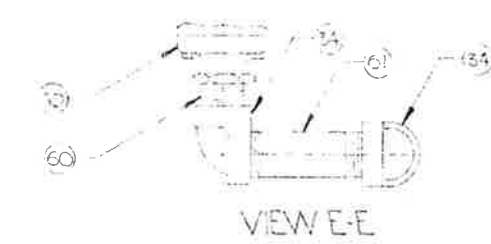
ADCN

187	208
-----	-----

SYM/ZONE	REVISIONS		
	DESCRIPTION	REV. BY	APPROVED



2/7/79
2265 64305



NOTE:
THIS DWG. SHOWS
BARRIER END ONLY

QTY. REQ'D.	PART NUMBER	DESCRIPTION	ZONE	ITEM

SEE SHIT FOR B&M			

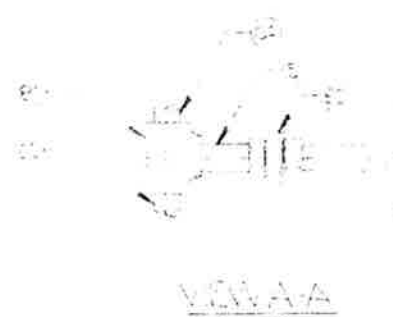
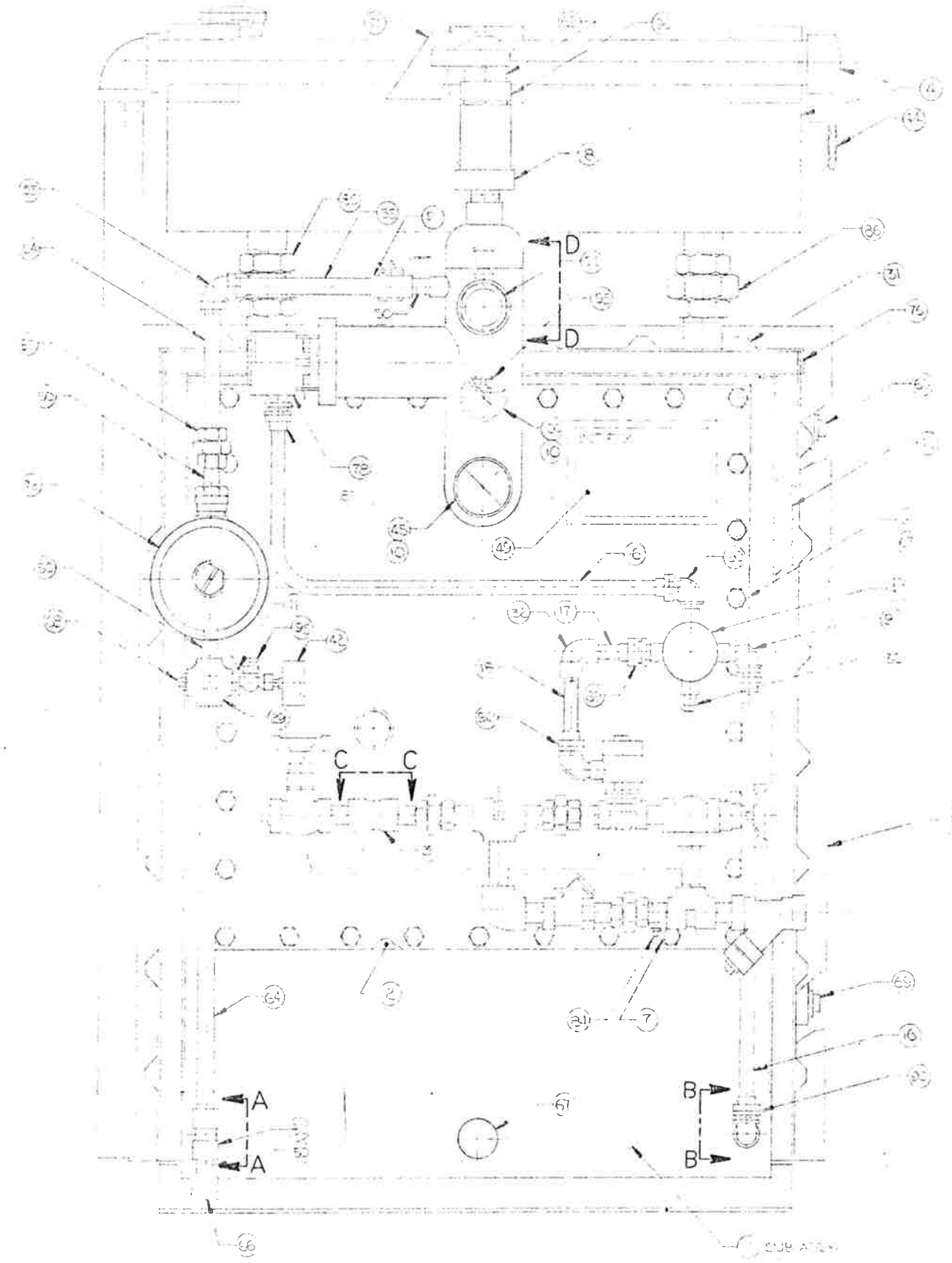
TOLERANCES			BILL OF MATERIAL	
X =			Drawn By: RD/END	Date: 2/7/79
XX =		Checked By: D. 63	Scale: 1/2" = 1'-0"	
XXX =		Approved: D. 63		
FRACTIONS =				
ANGLES = 0/30				
EXCEPT AS NOTED				
FINISH:				

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ADCN.

SYMBOL	DIVISION	PROJECT NO.
	REGULAR	170-2-100

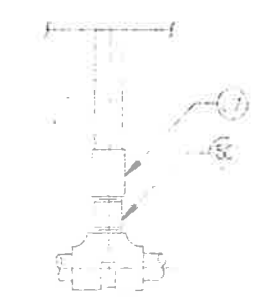
REVISIONS			
SYM/ZONE	DESCRIPTION	REV. BY	APPROVED



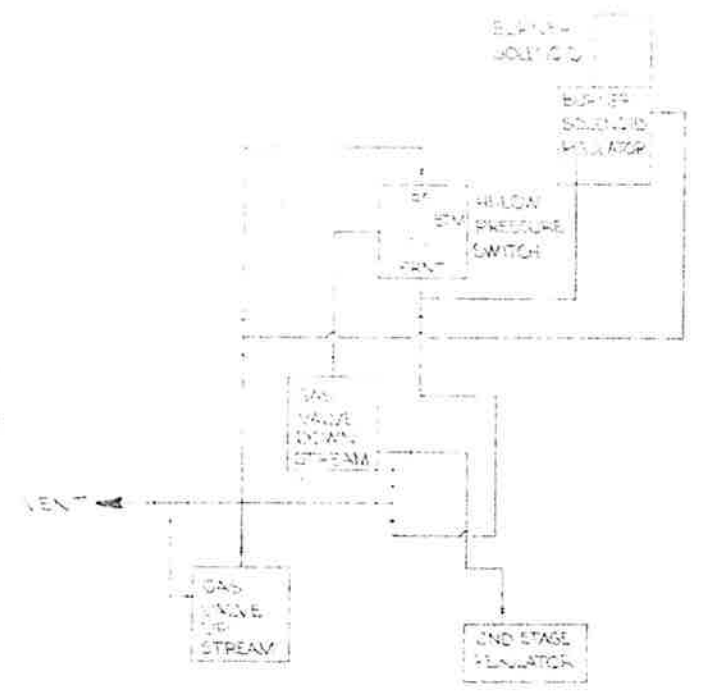
VIEW A-A



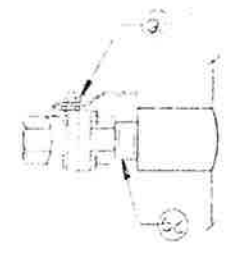
VIEW B-B



VIEW C-C



COPPER TUBING BLOCK DIAGRAM

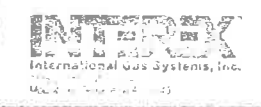


VIEW D-D

2/7/79
#260
643.05
Gentry
FIM

QTY.	REQ'D.	PART NUMBER	DESCRIPTION	ZONE	ITEM

TOLERANCES		DATE		DESCRIPTION	
X =					
XX =					
XXX =					
FRACTIONS =					
ANGLES = 0.30°					
EXCEPT AS NOTED					
FINISH:					
USED ON:					



HP 70 VAPORIZER
FINAL ASSY

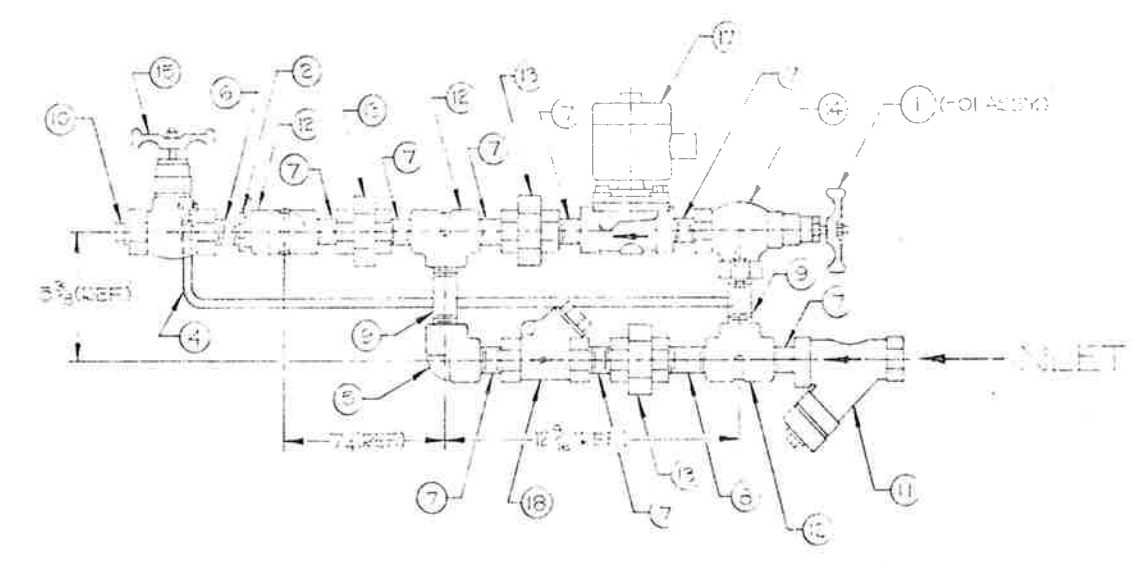
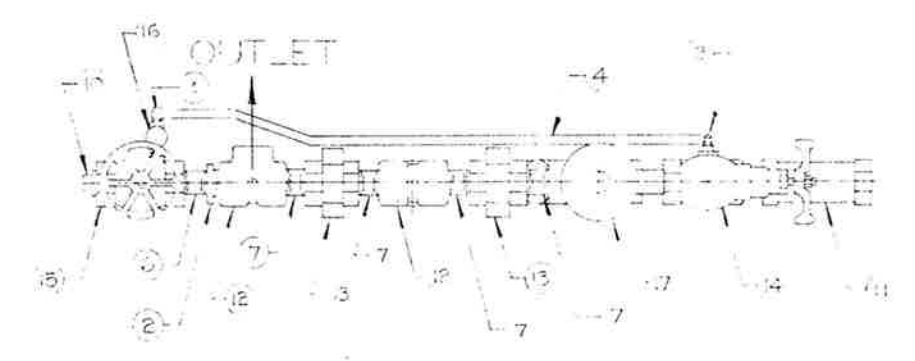
Part Number
1048-201

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ADCN

REVISIONS				
SYM	ZONE	DESCRIPTION	REV. BY	APPROVED
		ADDED TO THE QUANT. LIST ITEM 2	PLONS	

139 203



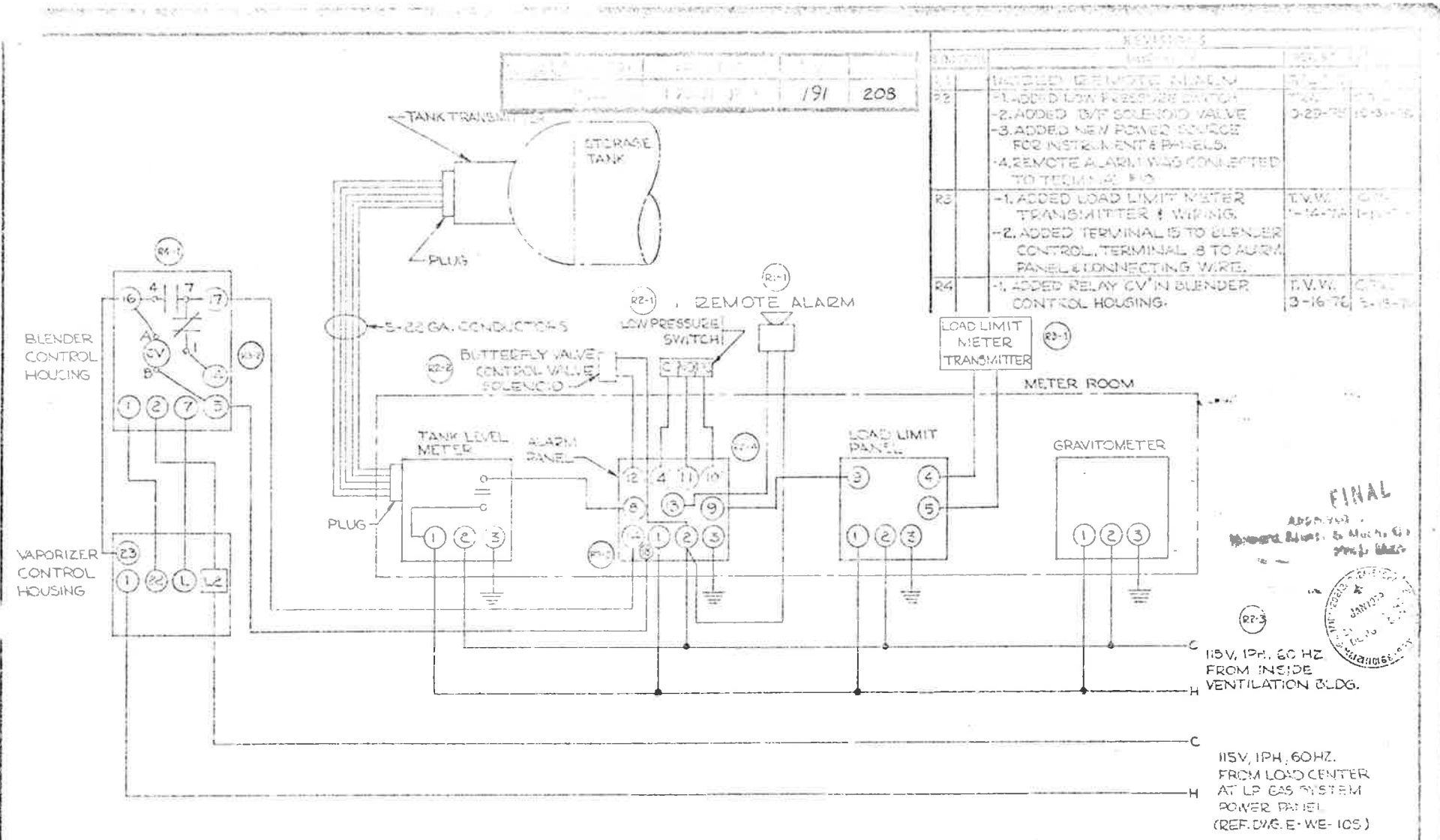
2/7/79 *Barley*
1000 *64205*

QTY.	REQ'D.	PART NUMBER	DESCRIPTION	ZONE	ITEM
					1
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					99
					100

TOLERANCES			Drawn By: _____ Date: 7/2/79 Checked By: _____ Scale: _____ Approved: _____ J.S.N.			
X = _____ XX = _____ XXX = _____ FRACTIONS = _____ ANGLES = 0°30' EXCEPT AS NOTED			Drawing Number: 3049-30 Original E.T. Serial No.: _____ Size: _____ Sheet Number: _____			
DATE: _____	FINAL PRODUCT: _____	ITEM: _____	QUANT. ASST.: _____	INLET ASSEMBLY: _____	ITEM: _____	QUANT. ASST.: _____
USED CN						

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ADCN.



REV.	DESCRIPTION	DATE	BY
R1	INSTALLED REMOTE ALARM		
R2	-1. ADDED LOW PRESSURE SWITCH -2. ADDED B/VF SOLENOID VALVE -3. ADDED NEW POWER SOURCE FOR INSTRUMENT PANELS. -4. REMOTE ALARM WAS CONNECTED TO TERMINAL #10	3-22-78	10-3-78
R3	-1. ADDED LOAD LIMIT METER TRANSMITTER & WIRING -2. ADDED TERMINAL 15 TO BLENDER CONTROL, TERMINAL 8 TO ALARM PANEL & CONNECTING WIRE.	F.V.W. 1-14-78	1-14-78
R4	-1. ADDED RELAY CV IN BLENDER CONTROL HOUSING.	F.V.W. 3-16-78	3-16-78

FINAL
 APPROVED
 [Signature]
 [Stamp]

2/7/79
 4260 643111

REV.	DATE	BY	DESCRIPTION

TOLERANCES	
X ±	
XX ±	
XXX ±	
FRACTIONS ±	
ANGLES = 90°	
EXCEPT AS NOTED	
FINISH	

DESIGNED BY	CHECKED BY	DATE

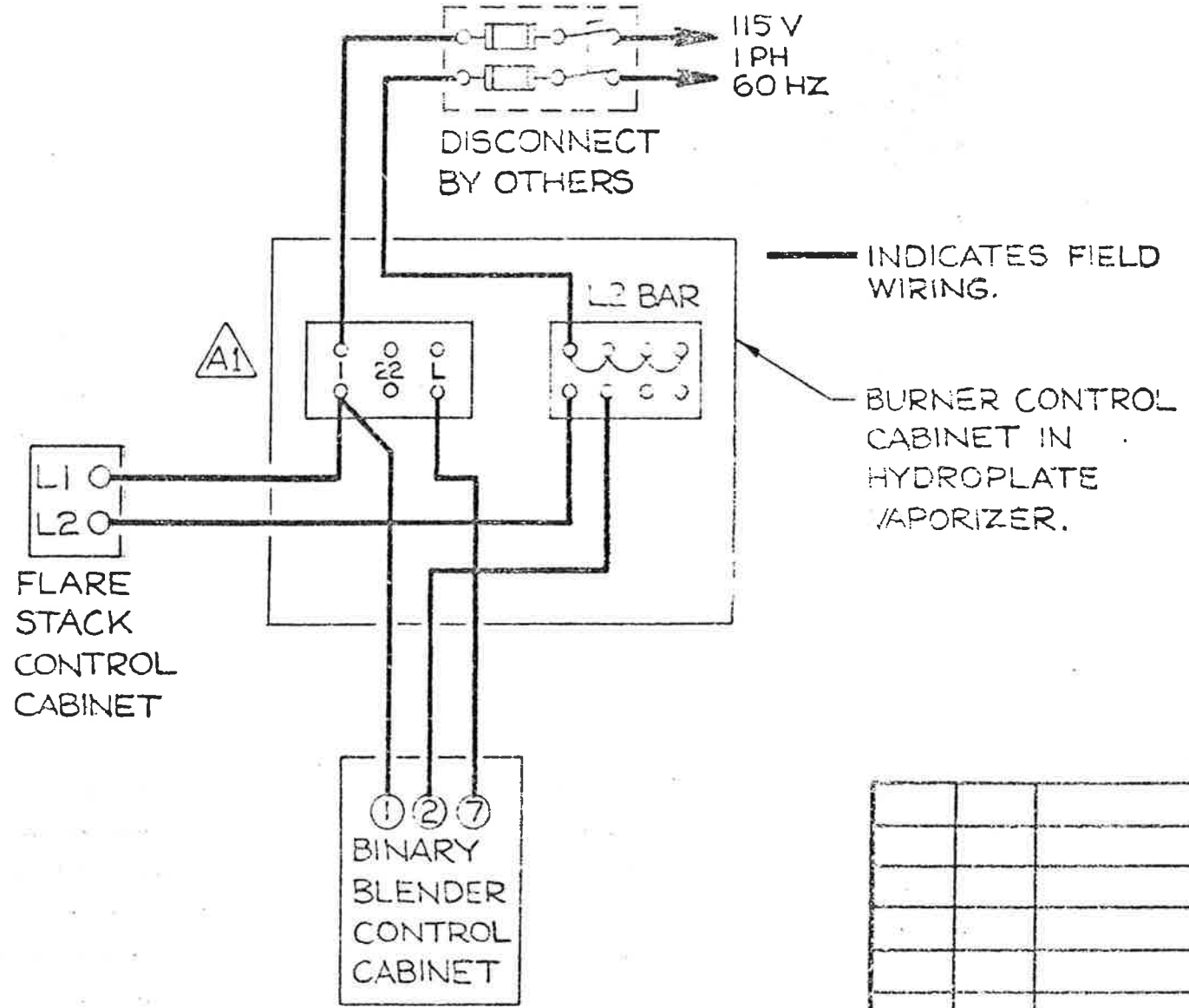
Drawing Number: **JC-1516-E**
 Revision: **C 2**

QTY.	RECD.	PART NUMBER	DESCRIPTION	ZONE	REQD.

This drawing is the property of [Company Name] and is not to be reproduced or used in any manner without the written permission of [Company Name].

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3()220	192	208

SYMBOL		DESCRIPTION	DATE	APPROVED
A		INTERNAL L WAS: 24	T.V.W. 5/19/75	<i>Walt</i>



ELECTRIC SERVICE REQUIRED, 115 V SINGLE PHASE, 60 HZ, 10 AMPS

Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that it pertains solely to the fabrication process or to techniques of construction; and for coordination of the work of all trades.

Contractor's checking of Shop Drawings or Samples shall not relieve the Contractor of responsibility for compliance with the requirements of the Contract Documents. The Contractor is informed that the Architect's checking of such deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's checking relieve the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

Rejected Make Corrections Noted
 No Exception Taken Revisa and Resubmit

STEARN'S-ROGER ARCHITECTS, LTD.

Date: 2/7/79 Approved By: *[Signature]*
 #260
 643.05



QTY. REQ'D.	PART NUMBER	DESCRIPTION	ZONE	ITEM

DASH NO.	FINAL PRODUCT	ITEM	QTY. PER ASSY.	NEXT ASSEMBLY	ITEM	QTY. PER ASSY.

TOLERANCES

X ±

.XX ±

.XXX ±

FRACTIONS ±

ANGLES ± 0°30'

EXCEPT AS NOTED

FINISH:

INTEREX
 International Gas Systems, Inc.
 7116 230th S.W. Suite 205
 Mountlake Terrace WA 98043

Drawn By: *[Signature]* Date: 2-5-75
 Checked By: *[Signature]* Scale: *[Signature]*
 Approved: *[Signature]* Job No.:
 ORIGINAL EFF. SERIAL NO.:

FIELD WIRING FOR SINGLE PHASE HYDROPLATE VAPORIZERS WITH BINARY BLENDER.

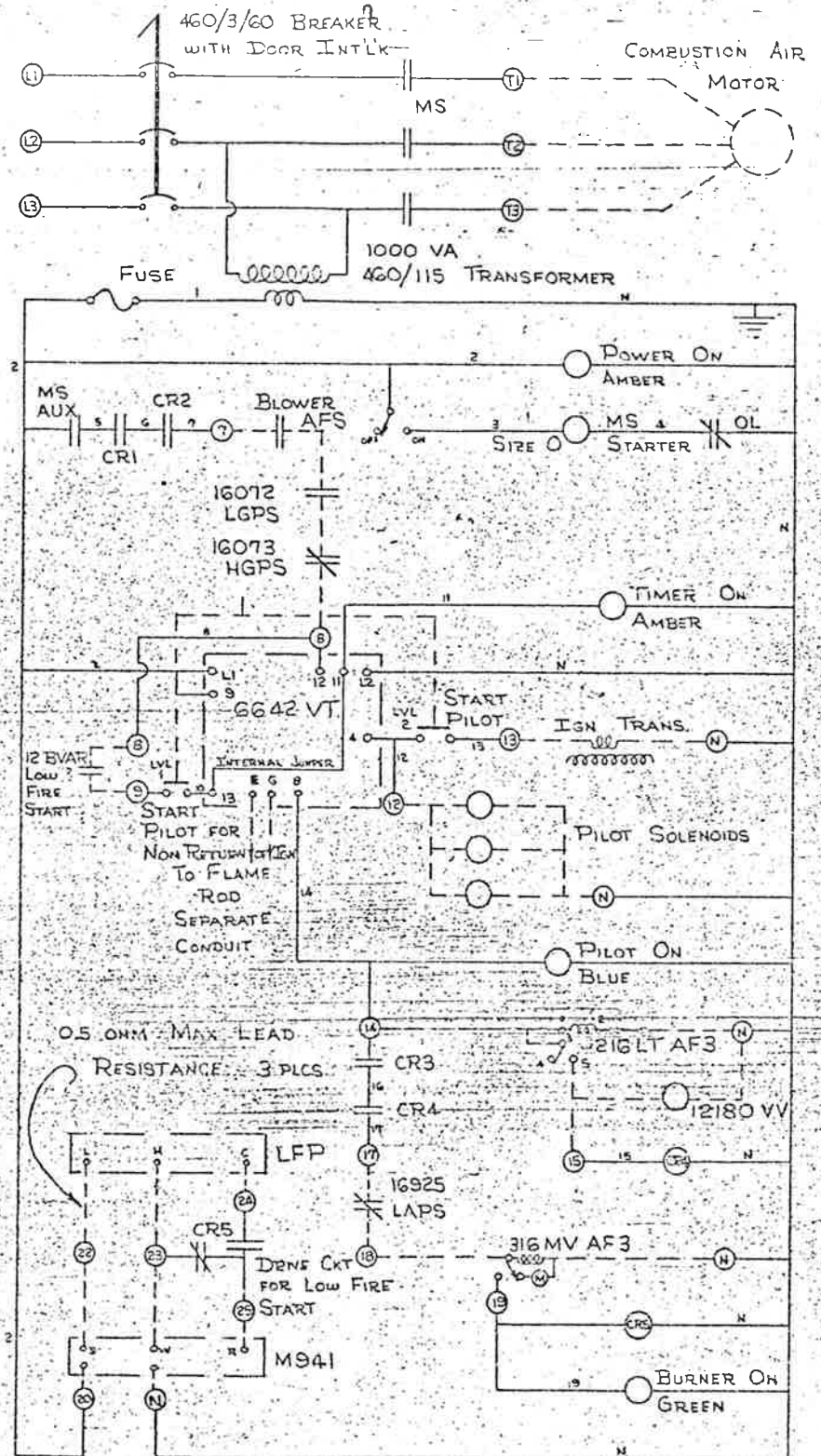
Drawing Number: **B041-701**

Size: 11 x 17 Sheet Number: 1 of 1 Revision: A

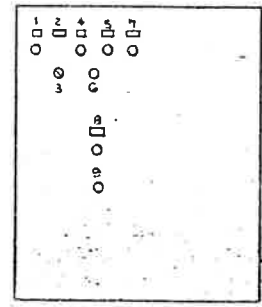
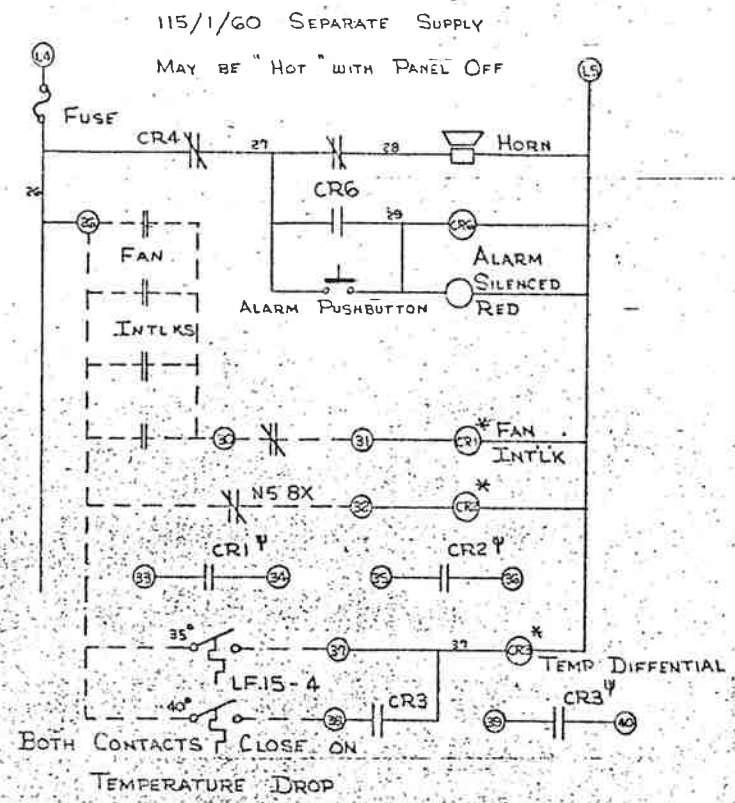
1-76

ADCN

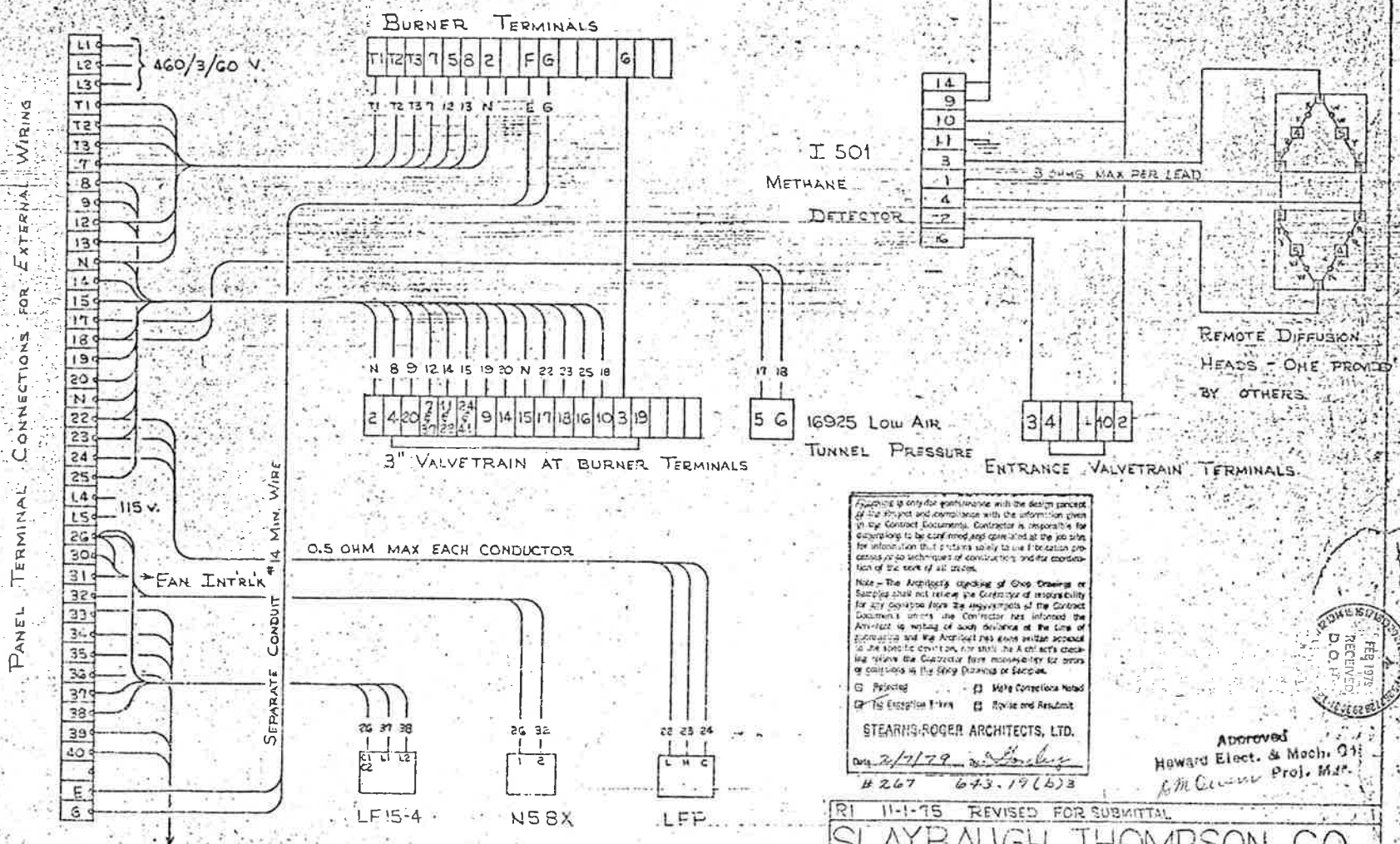
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	1 70-3/ 1220	193	208



○ PANEL TERMINALS
 — PANEL WIRING
 - - - EXTERNAL WIRING BY OTHERS
 * CR1, CR2, CR3 RELAYS IN 2 OF 4 PANELS, ONE AT EACH END OF TUNNEL. SPARE CONTACTS Ψ TO BE FIELD WIRED BY OTHERS TO ALTERNATE PANELS.



- NAMEPLATES
1. "POWER ON"
 2. "COMBUSTION BLOWER"
 3. "OFF ON"
 4. "TIMER ON"
 5. "PILOT ON"
 6. "START PILOT" PB
 7. "BURNER ON"
 8. "ALARM SILENCED"
 9. "SILENCE ALARM" PB



Approved
 Howard Elect. & Mech. Co.
 Proj. M.I.

STEARNIS-ROGER ARCHITECTS, LTD.
 Date: 2/17/79
 # 267 673-19(6)3

RI 11-1-75 REVISED FOR SUBMITTAL

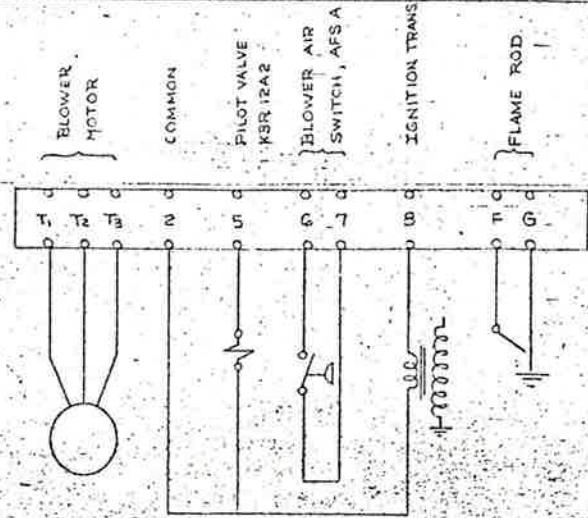
SLAYBAUGH THOMPSON CO

CONTROL PANEL WIRING DIAGRAM - M1490

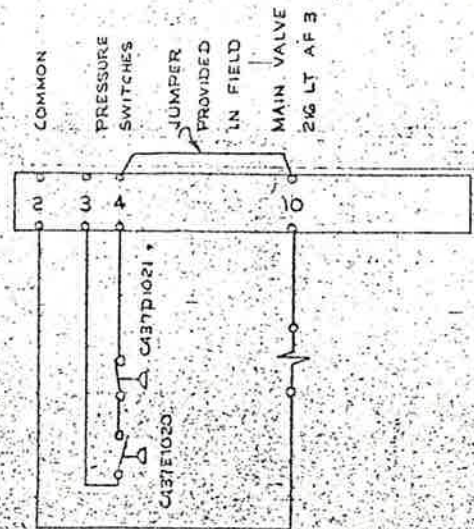
HOWARD	DRAWN	DATE	DWG 505
ELECTRIC	URSA	3-20-75	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3(1)220	194	208

PANEL INTERCONNECTIONS



BURNER TERMINALS IP643.19 (b)2



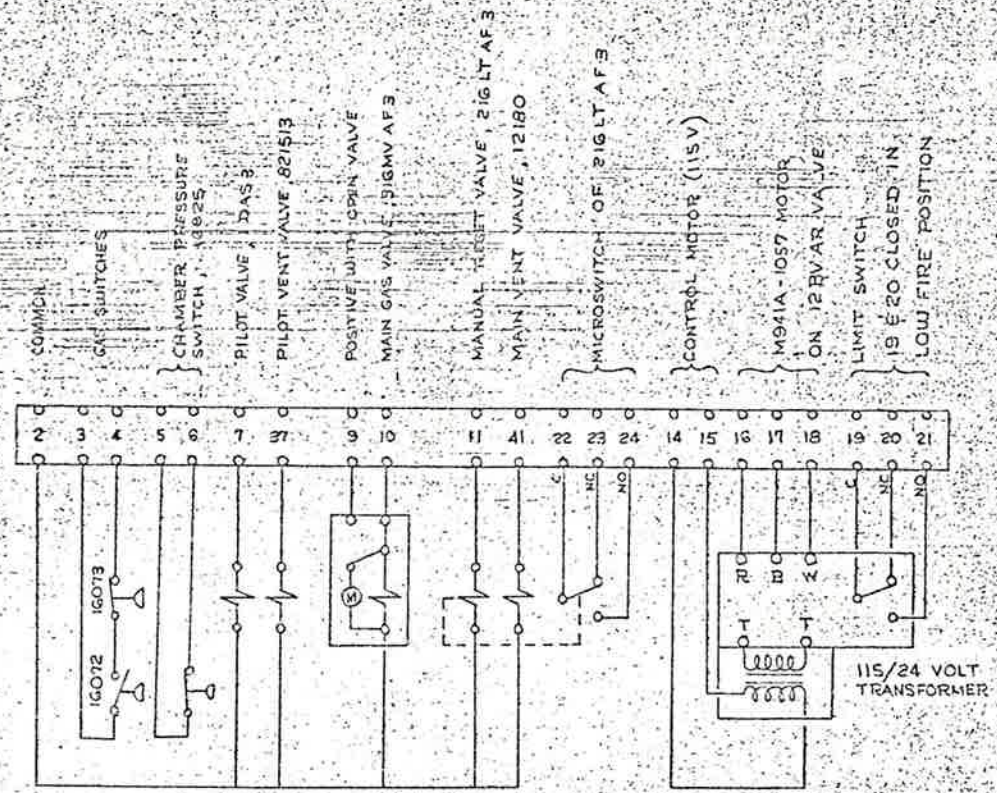
ENTRANCE VALVETRAIN TERMINALS IP643.19 (a)

PANEL "A" WITH FAN INTERLOCK, N5-8X, & LF15-4 INPUTS

TERMINAL	CONNECT	To
33		
34	"	"
35	"	"
36	"	"
39	"	"
40	"	"

PANEL "B" WITH "A" INPUTS

TERMINAL
26
31
26
32
26
37



3" VALVETRAIN TERMINALS IP643.19 (b)1

JUMPER WIRES TO BE ADDED IN THE FIELD

TERMINALS:

4 - 19
2 - 15
7 - 37
11 - 22
24 - 41

Checking is only for conformance with the design content of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and controlled at the job site for information that pertains to field location, progress or to deviations of construction and for construction of the work of all trades.

Note - The Architect's checking of Shop Drawings or Services shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has obtained the Architect's written approval of such deviation at the time of submittal and the Architect has given written approval to the specific deviation, nor shall the Architect's checking relieve the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

Rejected Made Corrections Noted
 No Exception Taken Review and Resubmit

STEARNS-ROGER ARCHITECTS, LTD.
 Date: 2/7/78
 #267 643.19 (b)3

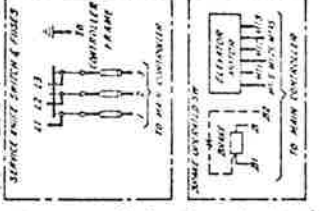
Approved
 Howard Elect. & Mech. Co.
 I. M. ... Proj. Mgr.

REVISION	12-20-70	DELETED JUMPER 18-10 MAIN VALVETRAIN TERMINALS
SLAYBAUGH THOMPSON CO.		
BURNER, VALVETRAIN, PANEL TERMINALS		
HOWARD ELECTRIC	DRAWN LIST	DATE DWG 505A

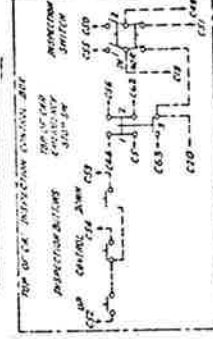
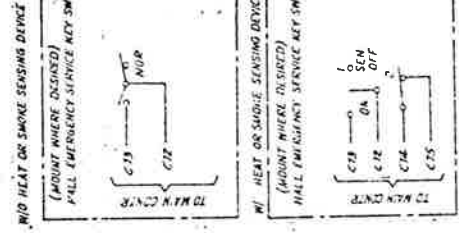
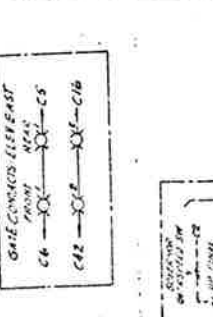
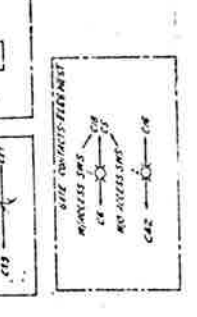
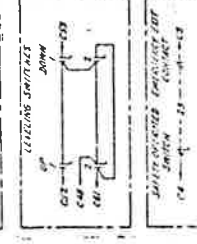
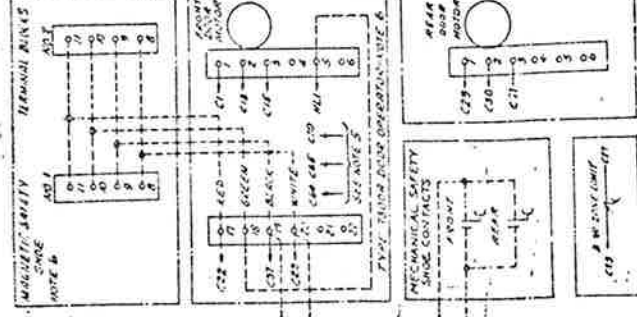
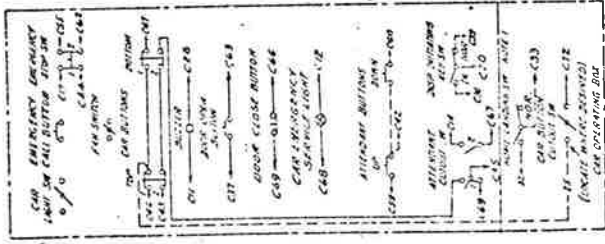
SEE SHEETS

MACHINE ROOM WIRING

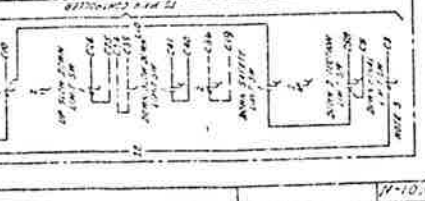
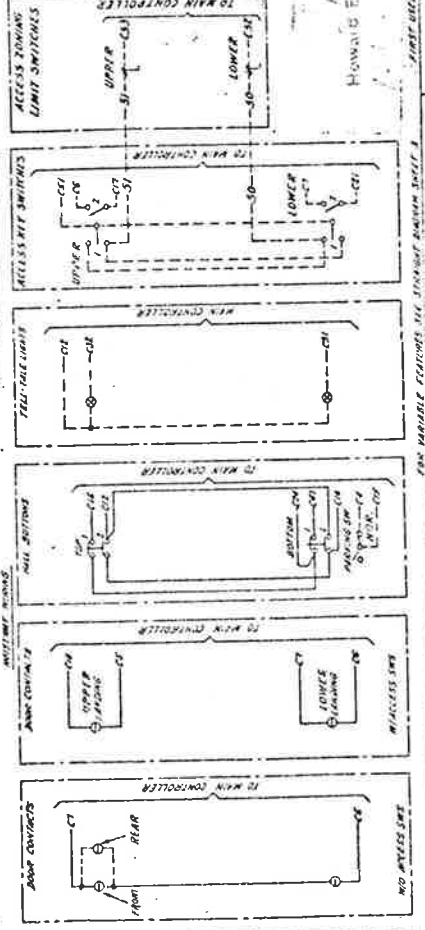
CABLE TRAILING CABLE WIRING	
TO MAIN CONTROL	TO MAIN CONTROL
10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100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



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

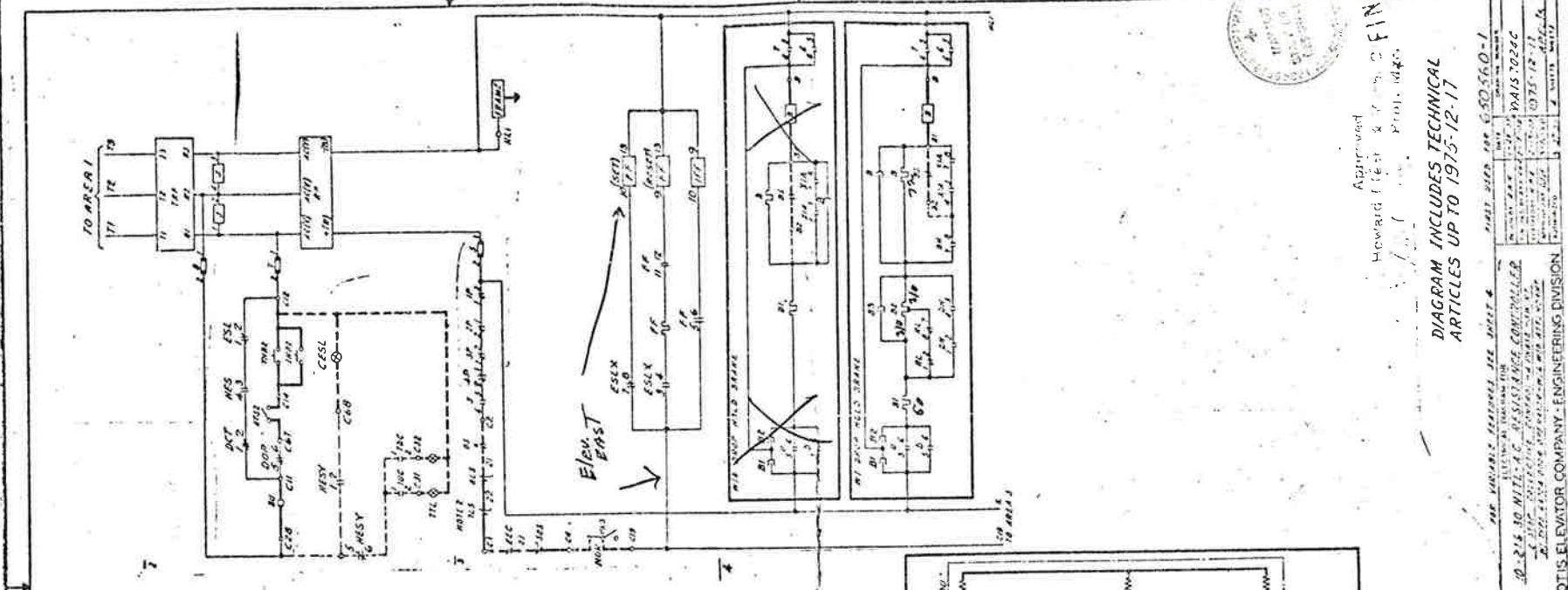
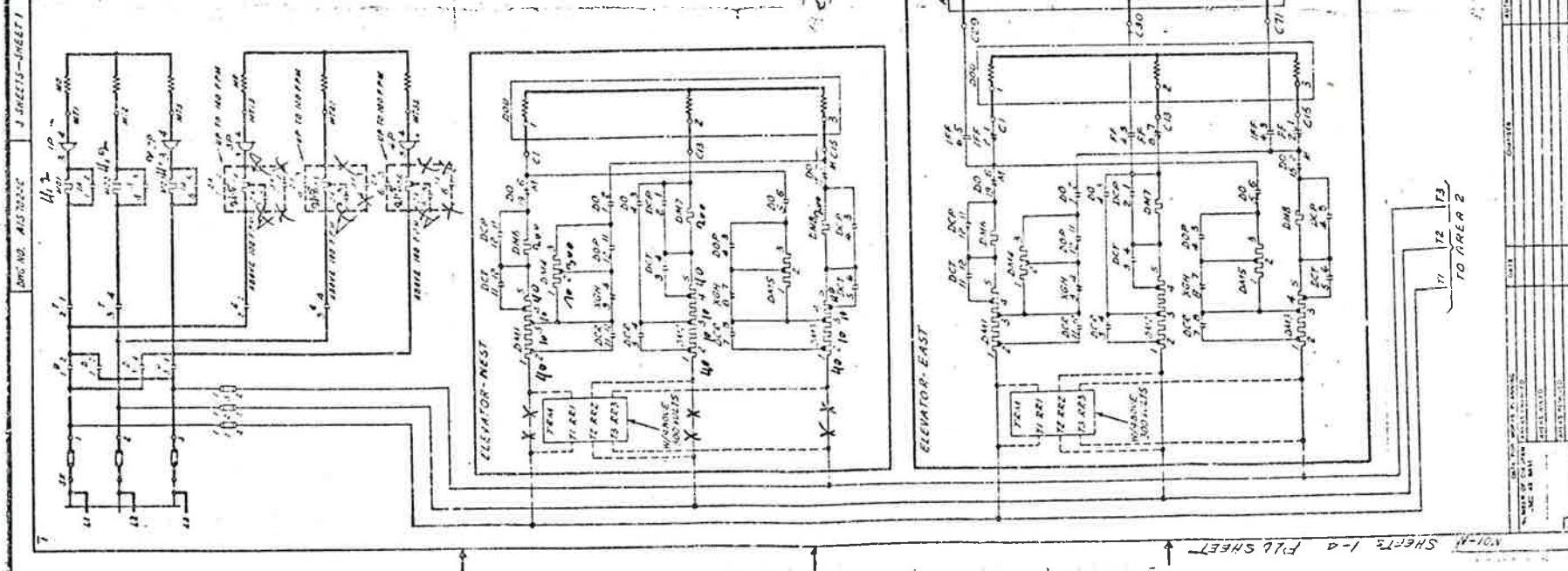


GENERAL INFORMATION
 A - WIND HEAT OR SMOKE SENSING DEVICE
 B - MECHANICAL SAFETY
 C - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
 D - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
 E - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
 F - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
 G - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
 H - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
 I - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
 J - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
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 M - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
 N - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
 O - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.
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 Z - ALL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS.



HOWARD E. EDWARDS
 PROFESSIONAL ENGINEER
 STATE OF MARYLAND
 LICENSE NO. 195-31-1220
 PROJECT NO. 195-31-1220
 SHEET NO. 208
 TOTAL SHEETS 208

DATE	DESCRIPTION
195-31-1220	PROJECT NO.
195	SHEET NO.
208	TOTAL SHEETS



761-N SHEETS 1-4 FLD SHEET

Approved
Howard (10/12/21) FIN 1

DIAGRAM INCLUDES TECHNICAL
ARTICLES UP TO 1975-12-17

DRAWING NO. A102024C			SHEET NO. 208		
PROJECT NO. 170-34 1230			DATE 196		
DIVISION COLGRIFFS			PROJECT NO.		
OTIS ELEVATOR COMPANY - ENGINEERING DIVISION			DRAWING NO. A102024C		
DESIGNED BY			CHECKED BY		
DRAWN BY			APPROVED BY		
DATE			DATE		
SCALE			SCALE		
MATERIAL			MATERIAL		
REVISIONS			REVISIONS		
REVISIONS			REVISIONS		
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REVISIONS			REVISIONS		

REVISIONS	DATE	BY

DRAWING NO. A102024C

SHEET NO. 208

SHEETS 1-4 FLD SHEET

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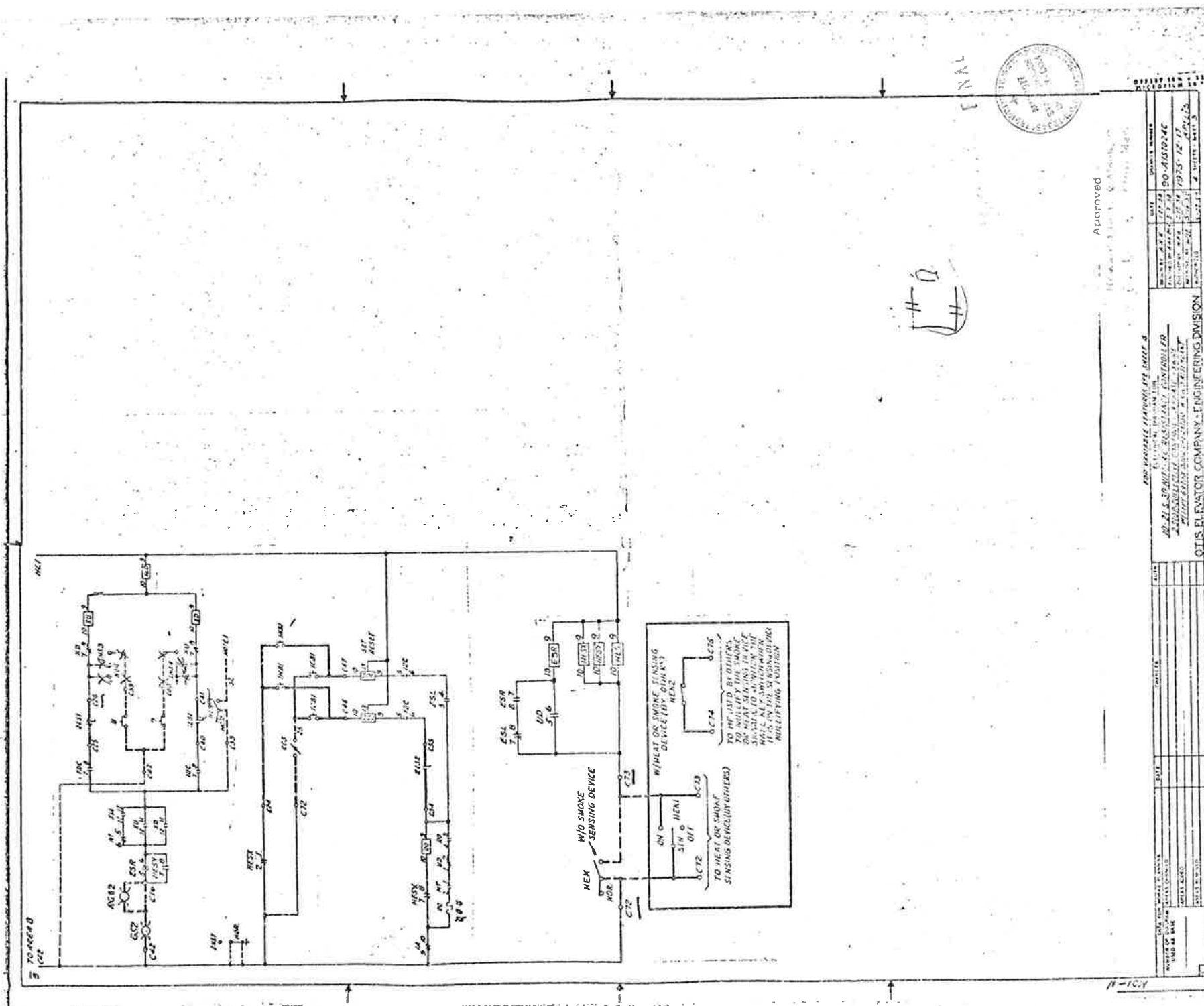
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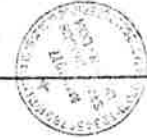
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SHEETS 1-4 FLD SHEET

SHEET NO. 208



11



Approved _____

DATE _____

BY _____

FOR PROJECT: 170-31-1220

PROJECT NO. 198

SHEET NO. 203

OTIS ELEVATOR COMPANY - ENGINEERING DIVISION

APPROVED: _____

DATE: _____

BY: _____

FOR PROJECT: 170-31-1220

PROJECT NO. 198

SHEET NO. 203

OTIS ELEVATOR COMPANY - ENGINEERING DIVISION

PROJECT NO.	170-31-1220
SHEET NO.	198
TOTAL SHEETS	203

NAME OF FIELD APPARATUS	TYPE	LOCATION
...
...
...

NAME OF FIELD APPARATUS	BRIDGE CONTACT NUMBERING AND LOCATION						BRIDGE CONTACT NUMBERING AND LOCATION					
	1	2	3	4	5	6	7	8	9	10	11	12
...
...
...

REVISION	DATE	BY	DESCRIPTION
1
2

7 - REAR RECEIVER

ADDITIONAL MAIN CONNECTOR TERMINALS 20-23

LEFT SIDE READING UP FROM THE BOTTOM START TERMINAL STUDS.

20 21 22 23

WT1 WT2 WT3 WT4

WT5 WT6 WT7 WT8



WARRANT NUMBER
...
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GENERAL INFORMATION

A - SYMBOLS SHOWN IN BRACKETED [] ARE PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER.

B - ALL SYMBOLS SHOWN IN BRACKETED [] ARE PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER.

C - THE MAIN CONNECTOR IS A MAIN TERMINAL IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER.

D - THE MAIN CONNECTOR IS A MAIN TERMINAL IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER.

E - THE MAIN CONNECTOR IS A MAIN TERMINAL IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER.

F - THE MAIN CONNECTOR IS A MAIN TERMINAL IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER.

G - THE MAIN CONNECTOR IS A MAIN TERMINAL IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER. IN PLACED IN THE MAIN CONNECTOR AS INDICATED BY THE WATER.

NOTE 1 - ON RIGHT HAND SIDE CONNECT TO STUD 21, C&E TO STUD 8 & C&O TO STUD 10.

NOTE 2 - ON LEFT HAND SIDE CONNECT TO STUD 4, C&E TO STUD 21 & C&O TO STUD 10.

NOTE 3 - ON LEFT HAND SIDE OF DOOR, FACE DOORS FROM CAR STOP & IF THEY OPEN TO THE RIGHT THEY ARE LEFT HAND AND IF TO THE LEFT THEY ARE LEFT HAND.



OTIS ELEVATOR COMPANY - ENGINEERING DIVISION

10-21-A-30 NUCLEAR RESISTANCE CONTROLLER

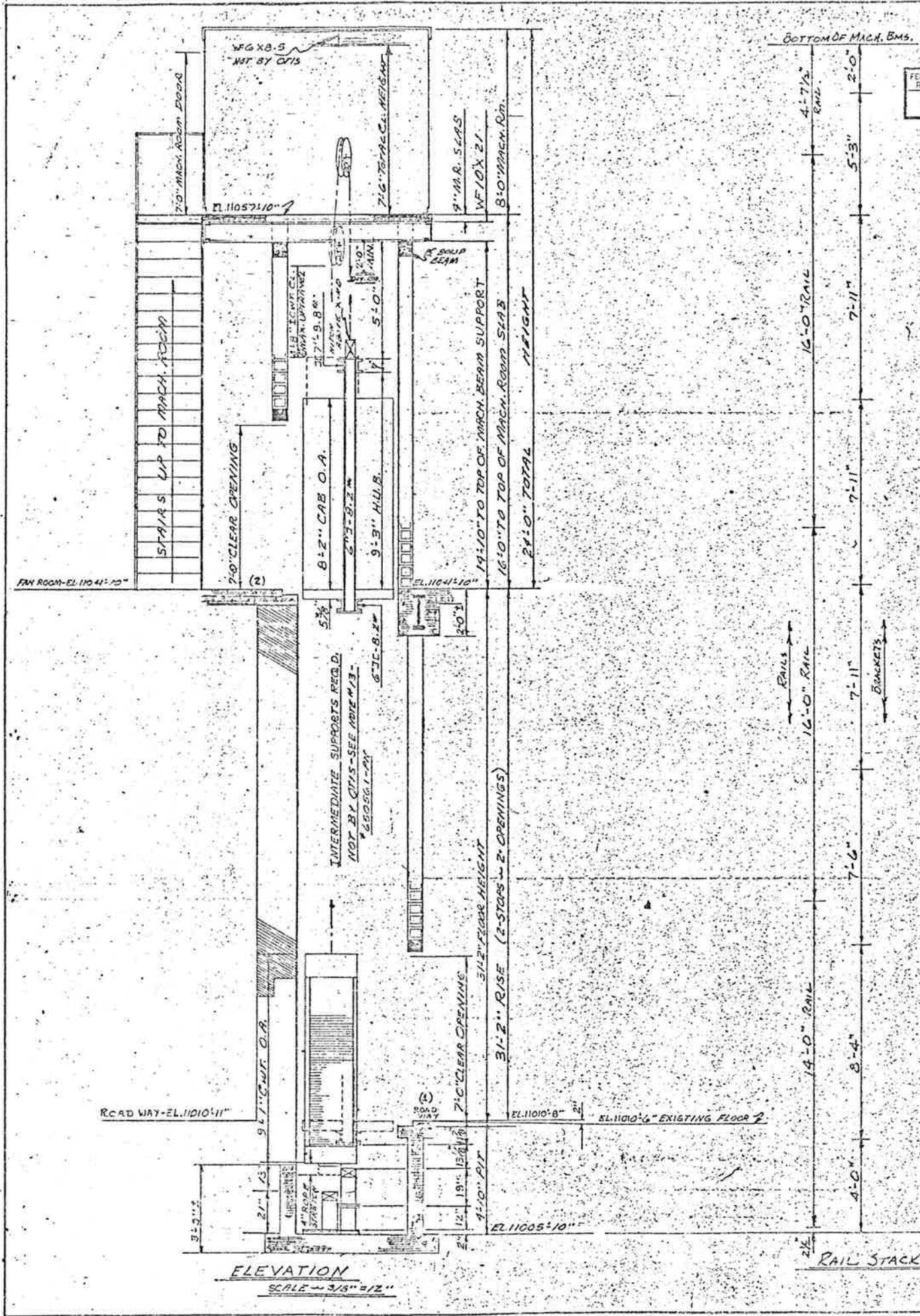
DATE: 10-15-70

BY: ...

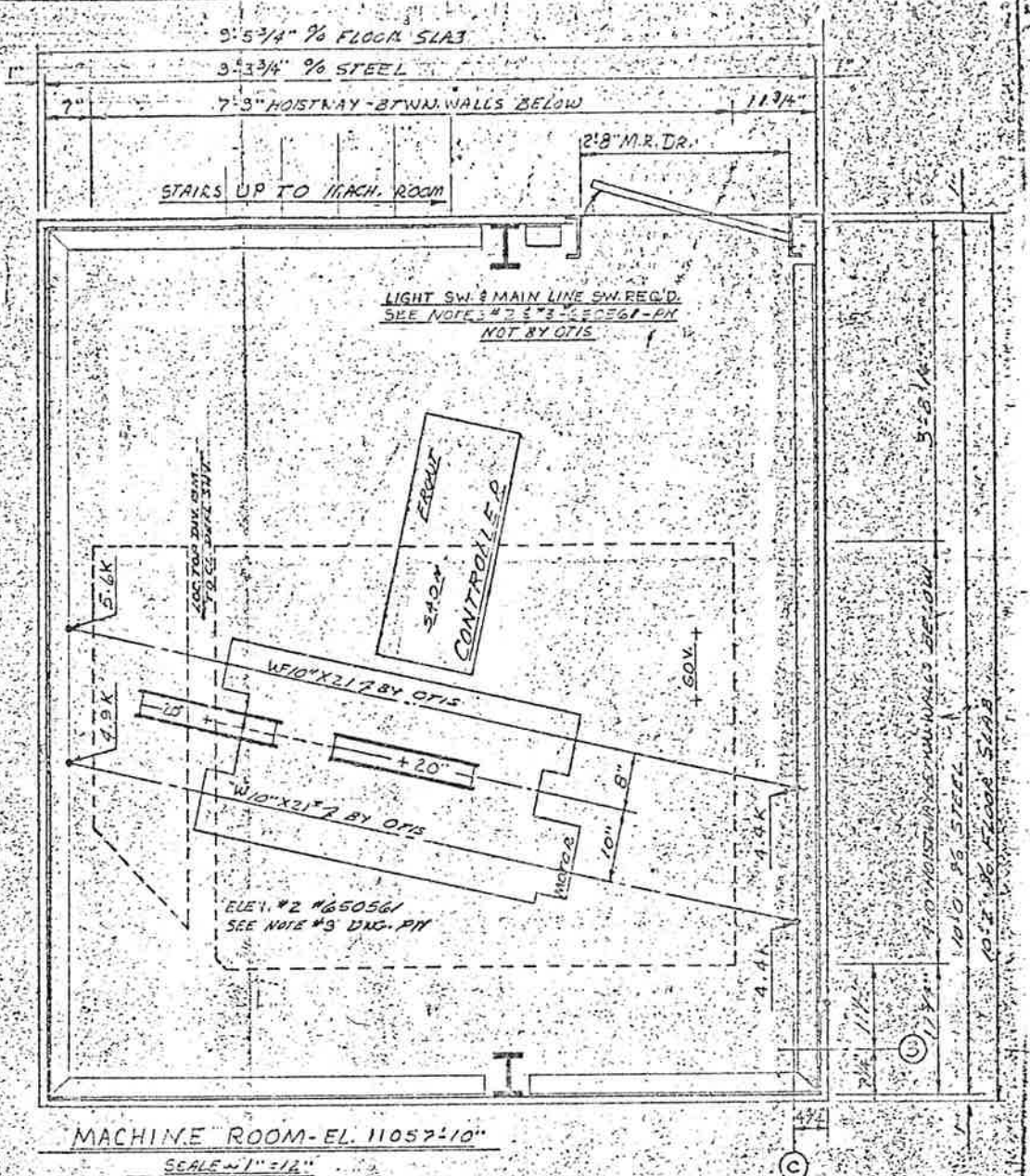
CHECKED: ...

PROJECT NO.	DIVISION	ROOM NO.	FLOOR	DATE
...
...

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-31220	200	208



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



MACHINE ROOM - EL. 11057'-10"
SCALE = 1" = 12"

ELEVATOR @ EAST PORTAL

NO.	REVISIONS
1	REVISED PER PERMITS
2	REVISED PER PERMITS
3	REVISED PER PERMITS
4	REVISED PER PERMITS
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18	REVISED PER PERMITS
19	REVISED PER PERMITS
20	REVISED PER PERMITS

OTIS ELEVATOR COMPANY, DALLAS, TEXAS REGION	
TYPE: ELEV. ONE (1) PASSENGER ELEVATOR	BUILDING: GISENHOWER MEMORIAL TUNNEL
TYPE: MACH. GEARED S.W.T.	LOCATION: NEAR DILLON, COLORADO
LOAD-SPEED: 1200 @ 100 F.P.M.	CONT. WITH: DOWNWARD ELECTRIC BRAKE
OPERATION: TWO STOP COLLECTIVE	OWNER: STATE OF COLORADO
CONTROL: RESISTANCE	ARCHT: STEARNS-ROGER
	CONSULTING ENG.:
	DATED-PRELIM. 10-3-75 FINAL
	DFTS N.A.M.Y. CHECKED BY JRM
	SCALE AS NOTED - SALES 110650561

Check by only for conformance with the design shown in the Contract Documents. Contractor is responsible for dimensions to be confirmed and checked at the job site. It is understood that permit is solely the responsibility of the contractor or his subcontractors and the execution of the work of all trades.

Note - The Architect's checking of Shop Drawings or Samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has obtained the Architect's written approval of such deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's checking relieve the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

Rejected Make Corrections Noted

No Exception Taken Revise and Resubmit

STEARNS-ROGER ARCHITECTS, LTD.

DATE: 2-2-76 BY: G.B.

137 6440

FEB 19 1976

FINAL

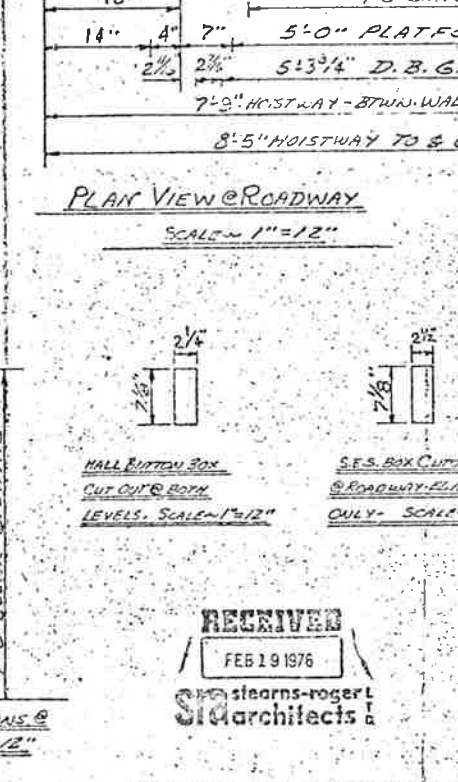
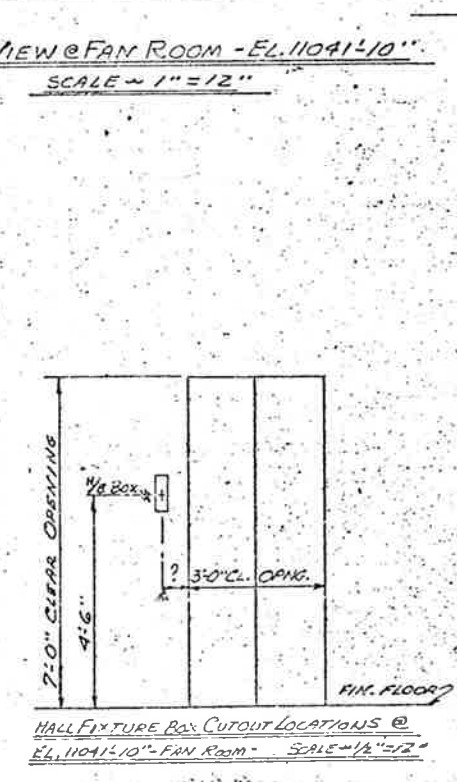
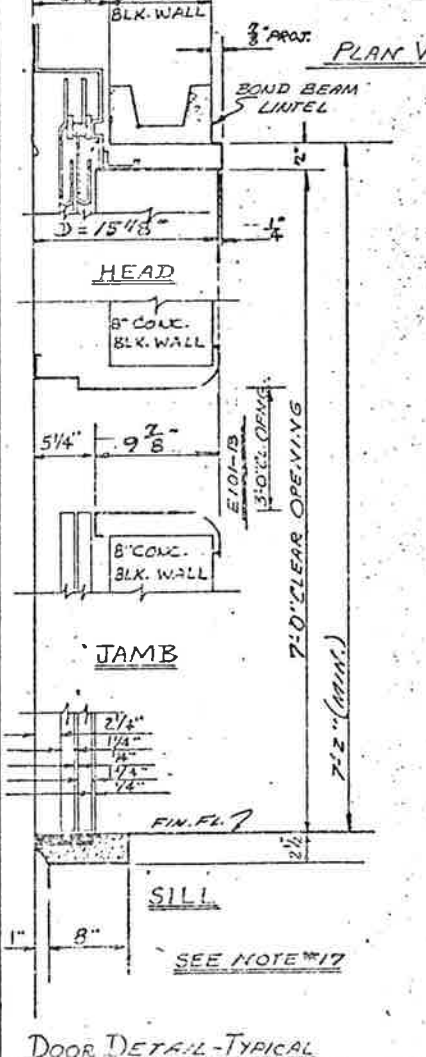
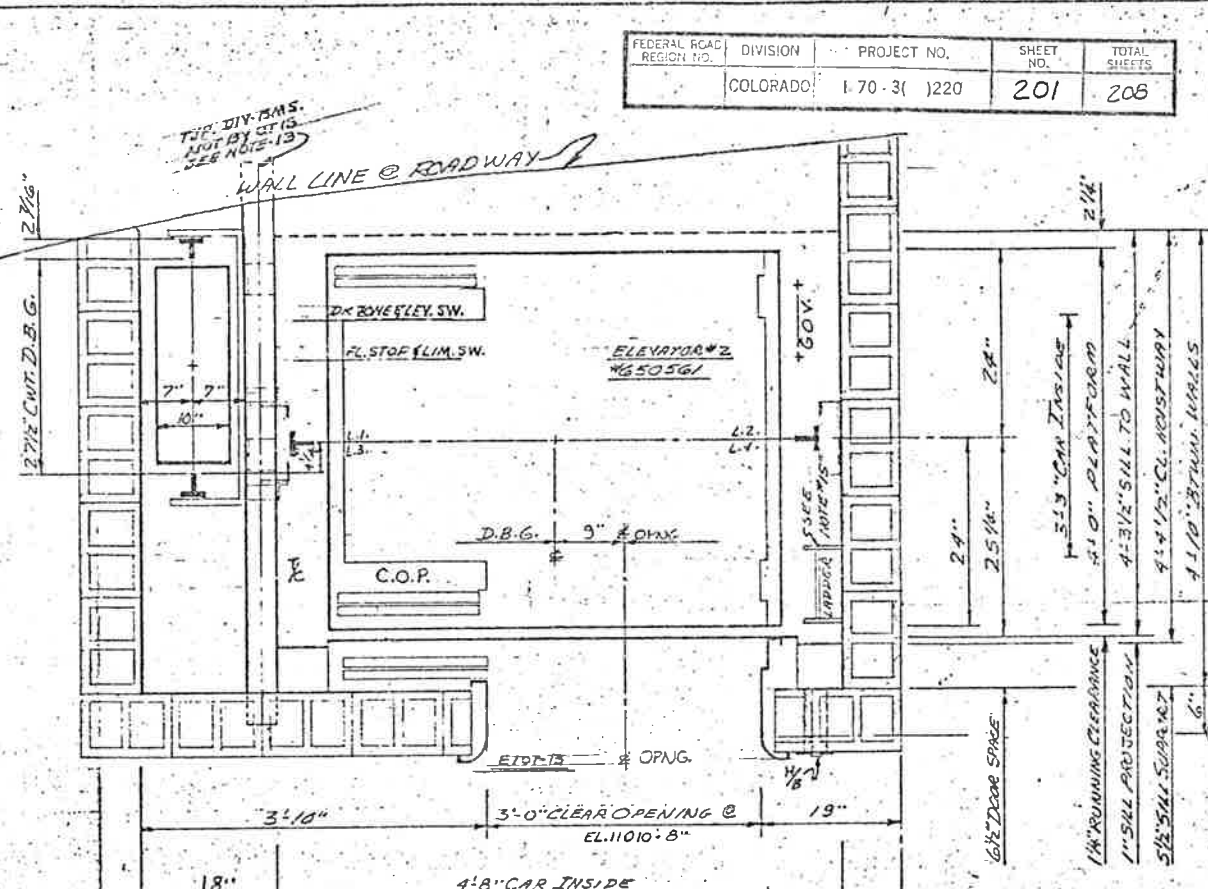
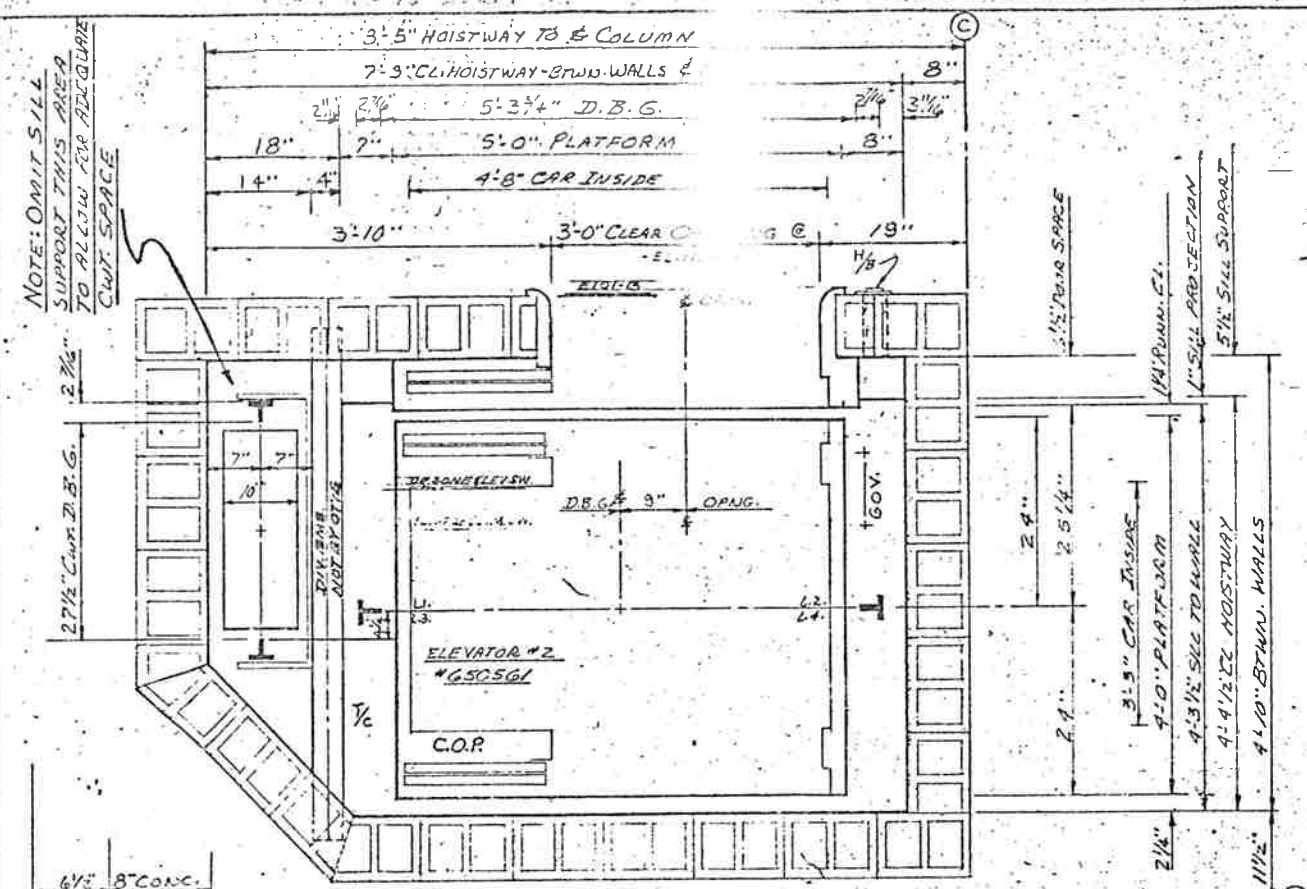
STEARNS-ROGER ARCHITECTS

Checked by: Howard Alect. & Messing

Project Mgr. R.M. ...

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	1-70-3(1)220	201	208

CONTRACT DATA	
CONTRACT NUMBER	650561
MACHINE - TYPE	1447
MOTOR SIZE	60FS
DRIVER/ROPE DIA.	20"
TYPE GROOVE	90°
DRUM DIA.	20"
CONTROLLER - MOTION	10WTL
OPERATIONAL	
SELECTOR	
MOTOR GENERATOR	
CAR GOVERNOR	R
CWT GOVERNOR	
GOV. ROPE - NO. DIAM. TYPE	1-3/8" - BM 4
APPROX. LENGTH	120
HOIST ROPE NO. DIAM. TYPE	3-1/2" - BM 1
LOAD PER ROPE	1537
ALLOWABLE LOAD	1824
APPROX. LENGTH	65
SERVICE - MAX. AV. - INT.	AVR. PASS.
ARC OF CONTACT	113°
TRACTION - MAX. RIG. D.	1.19
AVAILABLE	1.30
COMPENSATION - TYPE	
NO. SIZE - TYPE	
APPROX. LENGTH	
PLATFORM - TYPE	6183PH
CAR SAFETY	6197A-A
CWT SAFETY	
CAR BUFFERS - TYPE	320AY 2 - SPRING
NO. & STROKE	1-4 1/4"
CWT BUFFERS - TYPE	320AY 2 - SPRING
NO. & STROKE	1-4 1/4"
CWT. D.I.G. - WIDTH	27 1/2" X 10"
CWT. UPR. SIZE - LGTH	9'0" X 6"
RAILS - QUANT. - PAT. NO.	345 DR 3
SOT. WTL. - QUANT. - PAT. NO.	
CAR RAILS - SIZE - WT./FT.	#2 - 8"
CWT. RAILS - SIZE - WT./FT.	#2 - 8"



Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for any omissions to be corrected and corrected at the job site. Information that pertains solely to the physical and construction of the work of all trades.

Note - The Architect's checking of Shop Drawings or Samples does not release the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall the Architect's checking release the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

Approved: _____
Date: 3-2-76

Checked: Howard Elect. & Mech. Co. Proj. Mgr.

- IMPORTANT**
- DIMENSIONAL DATA ON LAYOUT COMPLES WITH THE AMERICAN NATIONAL STANDARD SAFETY CODE A17.1, AND/OR 7 CODE.
- PROVIDE THE FOLLOWING PREPARATORY WORK AS REQUIRED BY THE GOVERNING CODE OR AUTHORITY
- SUITABLE MACHINE ROOM - WITH LEGAL ACCESS, HEAT AND VENTILATION.
 - SUITABLE LIGHT AND CONVENIENCE OUTLETS IN MACHINE ROOM WITH LIGHT SWITCHES LOCATED WITHIN 18" OF LOCK JAMB SIDE OF ACCESS DOOR.
 - FUSED MAIN LINE SWITCH FOR EACH ELEVATOR WITH FEEDER OR BRANCH WIRING CIRCUIT TO CONTROLLER.
 - CAR LIGHT SUPPLY IN MACHINE ROOM FOR LIGHTING OF EACH ELEVATOR WITH WIRING TO EACH CONTROLLER.
 - CONVENIENCE OUTLET AND LIGHT FIXTURE IN PIT WITH SWITCH ADJACENT TO ACCESS DOOR OR LADDER.
 - HOISTWAY - TROLLEY LEAM FOR A MAXIMUM NET LIVE LOAD OF 2200 LBS. TO BE LOCATED PER THIS DRAWING.
 - REINFORCED CONCRETE SLAB AT THE TOP OF THE HOISTWAY, CONCRETE SLAB NOT TO BE INSTALLED UNTIL ELEVATOR EQUIPMENT IS IN PLACE.
 - ACCESS TO CAR GOVERNOR.
 - VENTING OF HOISTWAY.
 - BUILDING STRUCTURE FOR SUPPORTS OF ELEVATOR MACHINE, BUFFER, RAILS, AND DOOR.
 - ALL THE LOADS SHOWN ON THESE DRAWINGS INCLUDE ALLOWANCE FOR IMPACT, EXCEPT AS NOTED. DRY PIT REINFORCED TO SUSTAIN VERTICAL FORCE OF: _____ LBS. ON EACH CAR RAIL.
 - RAIL AND BUFFER FORCES DO NOT OCCUR SIMULTANEOUSLY.
 - APPROPRIATE SUPPORTS FOR RAIL FASTENINGS NOT TO EXCEED A VERTICAL SAGGING OF 1/4" PER CAR RAIL AND 1/2" FOR CWT RAILS.
 - FIXED VERTICAL IRON LADDER TO PIT EXTENDING 30" MIN. ABOVE SILL AND BOTTOM RAIL ENCL. SPACE, IF LOCATED IN THE PLAY VIEW.
 - FOR HORIZONTAL SLIDING ASSEMBLED ELEVATOR HOISTWAY DOORS, THE ENTRANCE WALLS MUST NOT BE CONSTRUCTED UNTIL HOISTWAY DOOR JAMBS AND SILL ARE SET.
 - OUTLETS TO ACCOMMODATE HALL BUTTONS AND IRON FIXTURES, AND PATENTING AFTER FIXTURES ARE SET.

ESTIMATED WEIGHTS	
ENCL. DOORS - PROF. DIV.	1520
PLATFORM TOTAL	625
MISCELLANEOUS	610
CARFRAME & SAFETY	650
TOTAL CAR	3405
OVERBALANCE	480
W.T.C. WIGHT	10
TOTAL CWT	3895
LOAD ON CAR SAFETY	4625
RESULTANT 1/2 LOAD	2312.5
WEIGHT OF MACHINE	1530
POWER	4.52 V 3 PH 4 W 60 HZ LIGHT 120 V

DIVISIONS	
DOORS, ORDERED M.R. FIN. L.S. EQUIP.	
RAILS, REVISED, REVISIONS ALL REV. TO	
INDUCTION TIME, NOT USED FOR 2 STOP	
ADAPT. STAIRS FOR LINE DESIGN	
STAIRS (REVISED & REVISIONS)	

APPROVAL: _____

THIS ARRANGEMENT AND SUPPLEMENTARY NOTES APPROVED

SIGNED: _____ DATE: _____

GUARANTEE

3 CLEAR PLUMB HOISTWAY WITH VARIATIONS FROM THE FIGURE SHOWN NOT TO EXCEED 1" AT ANY POINT IN THE FIRST 20 FEET AND 1/2" INCH INCREASE FOR EACH ADDITIONAL FOOT UP TO A MAXIMUM DEVIANCE OF 3 INCHES.

SIGNED: _____ DATE: _____

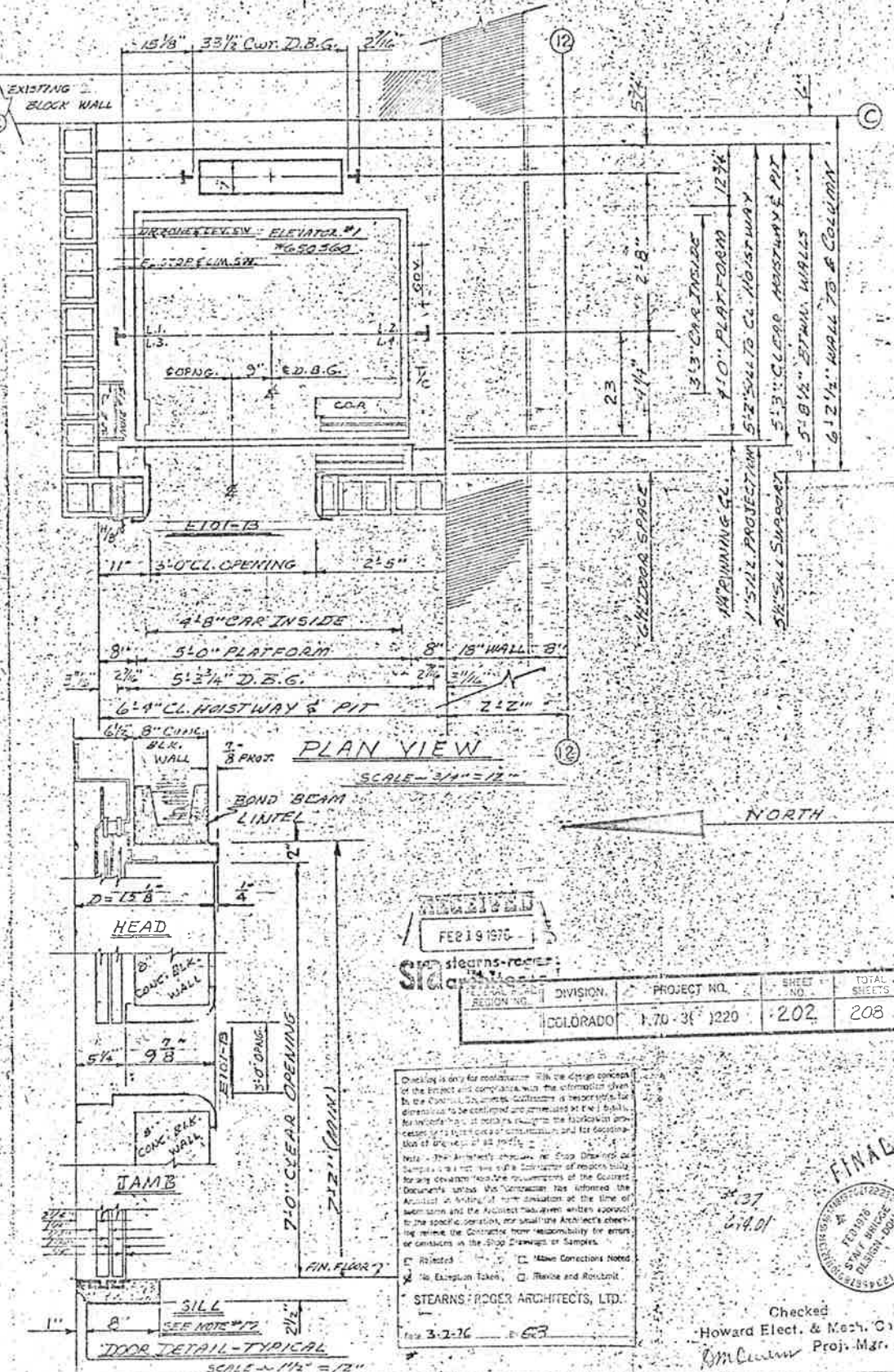
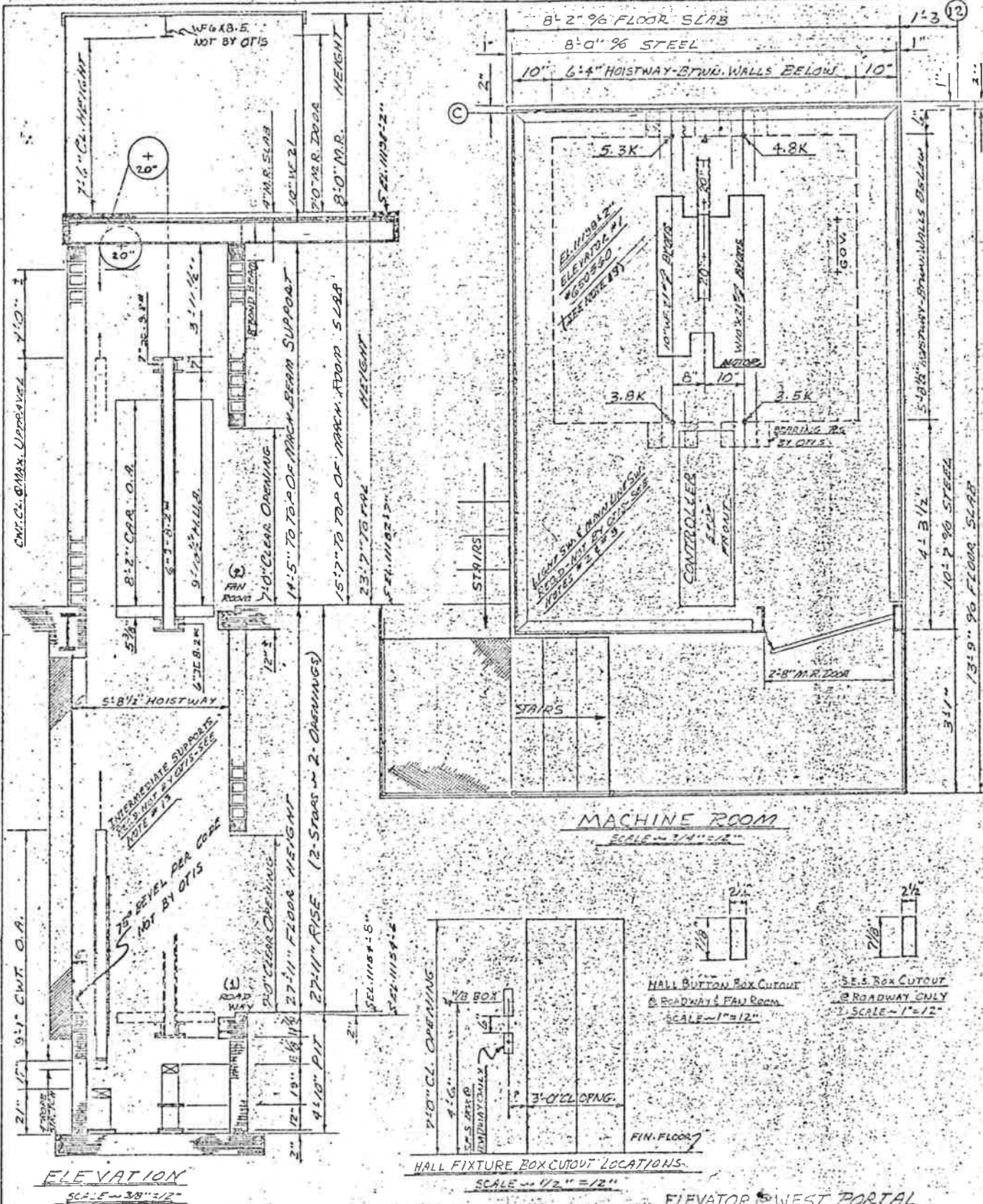
SOURCE OF LAYOUT DATA: (BOOK PLANS) SHEET 545 WITH SPEC.

OTIS ELEVATOR COMPANY DALLAS - TEXAS REGION	
TYPE	ONE WAY PASSENGER ELEVATOR
TYPE	MACH. GEARED S.W.T. 14
LOAD SPEED	1200' @ 100 F.P.M.
OPERATION	TWO STOP - COLLECTIVE
CONTROL	RESISTANCE
BUILDING	BISE - TUNNEL
LOCATION	NEAR DILLON, COLORADO
CONT. WITH	CONTRACTOR
OWNER	STATE OF COLORADO
ARCHITECT	STEARNES-ROGER
GATED - PRELIM.	10-3-75 FINAL
DFTS	N.E.M.Y.
SCALES	NOTED SALES NO. 650561

Dwg. No. 650561-PN

CONTRACT DATA	
CONTRACT NUMBER	650560
MACHINE TYPE	14AT
MOTOR SIZE	6055
DRIVE/GEAR - DIA.	20"
TYPE GROOVE	90°
DR. WHEEL - DIAMETER	20"
CONTROLLER - ACTION	10N1TL
OPERATIONAL	
SELECTOR	
MOTOR GENERATOR	
CAR GOVERNOR	R
CMT. GOVERNOR	
GOV. ROPES - NO. DIA. TYPE	1-3/8" - 8M4
APPROX. LENGTH	110'
HOIST ROPES NO. DIA. TYPE	3-1/2" - 8M1
LOAD PER ROPE	1375
ALLOWABLE LOAD	1824
APPROX. LENGTH	60'
SERVICE - MAX. - AVER. - INT.	AVER. PASS.
ASC. OF CONTACT	162°
TRACTION - MAX. REQ'D.	1.22
AVAILABLE	1.37
COMPENSATION - TYPE	
NO. SIZE - TYPE	
APPROX. LENGTH	
PLATFORM - TYPE	6183AH
CAR SAFETY	6182A-A
CMT SAFETY	
CAR BUFFERS - TYPE	320AY 2 SPRING
NO. & STROKE	1-1/4"
CMT BUFFERS - TYPE	320AY 1 SPRING
NO. & STROKE	1-1/4"
CMT O.S.G. - WIDTH	33 1/2" X 7"
CMT UFF. SIZE - LGTH.	9'0" X 6"
ROLLERS - QUANT. - PAT. NO.	345D.B.G.
BOT. WTS. - QUANT. - PAT. NO.	
CAR RAILS - SIZE - WT./FT.	#2-8"
CMT RAILS - SIZE - WT./FT.	#2-8"

- IMPORTANT**
1. DIMENSIONAL DATA ON LAYOUT COMPLIES WITH THE AMERICAN NATIONAL STANDARD SAFETY CODE A17.1 AND/OR CODE _____
2. PROVIDE THE FOLLOWING PREPARATORY WORK AS REQUIRED BY THE GOVERNING CODE OR AUTHORITY:
1. INSTALLE MACHINE ROOM - _____
 2. SURFACE LIGHT AND CONVEYANCE OUTLET TO MACHINE ROOM DATA LIGHT SWITCHES LOCATED WITHIN 12" OF LOCK JAMB SIDE OF DOORS/DOOR.
 3. FUSED MAIN LINE SWITCH FOR EACH ELEVATOR WITH FEEDER OR BRANCH WIRING CIRCUIT TO CONTROLLER.
 4. _____
 5. CAR LIGHT SUPPLY IN MACHINE ROOM FOR LIGHTING OF EACH ELEVATOR WITH WIRES TO EACH CONTROLLER.
 6. _____
 7. CONVEYANCE OUTLET AND LIGHT FIXTURE IN PIT WITH SWITCH ACCESSIBLE TO ACCESS DOOR OR LADDER.
 8. HOISTS - TRIPLE BEAM FOR A MAXIMUM NET LINE LOAD OF 2000 LBS. IS TO BE LOCATED NEAR THIS DRAWING.
 9. REINFORCED CONCRETE SLAB AT THE TOP OF THE HOISTWAY. CONCRETE SLAB NOT TO BE INSTALLED UNTIL ELEVATOR EQUIPMENT IS IN PLACE.
 10. ACCESS TO CAR BETWEEN GOVERNOR AND _____
 11. VENTING OF HOISTWAY.
 12. BUILDING STRUCTURE FOR SUPPORTS OF ELEVATOR MACHINE ROOMS TO BE DESIGNED IN ACCORDANCE WITH THE GOVERNMENT AND LOCAL CODES. ALL LOADS SHOWN ON THESE DRAWINGS INCLUDE ALLOWABLE IMPACT, EXCEPT AS NOTED.
 13. _____
 14. _____
 15. _____
 16. FIXED VERTICAL IRON LADDER TO PIT EXTENDING 90" MIN. ABOVE ELEVATOR BOTTOM TERMINAL ENTRANCE, AS LOCATED IN THE PLAN VIEW.
 17. _____
 18. _____
 19. _____
 20. _____
 21. _____
 22. _____
 23. _____
 24. _____
 25. _____
 26. _____
 27. _____
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 49. _____
 50. _____



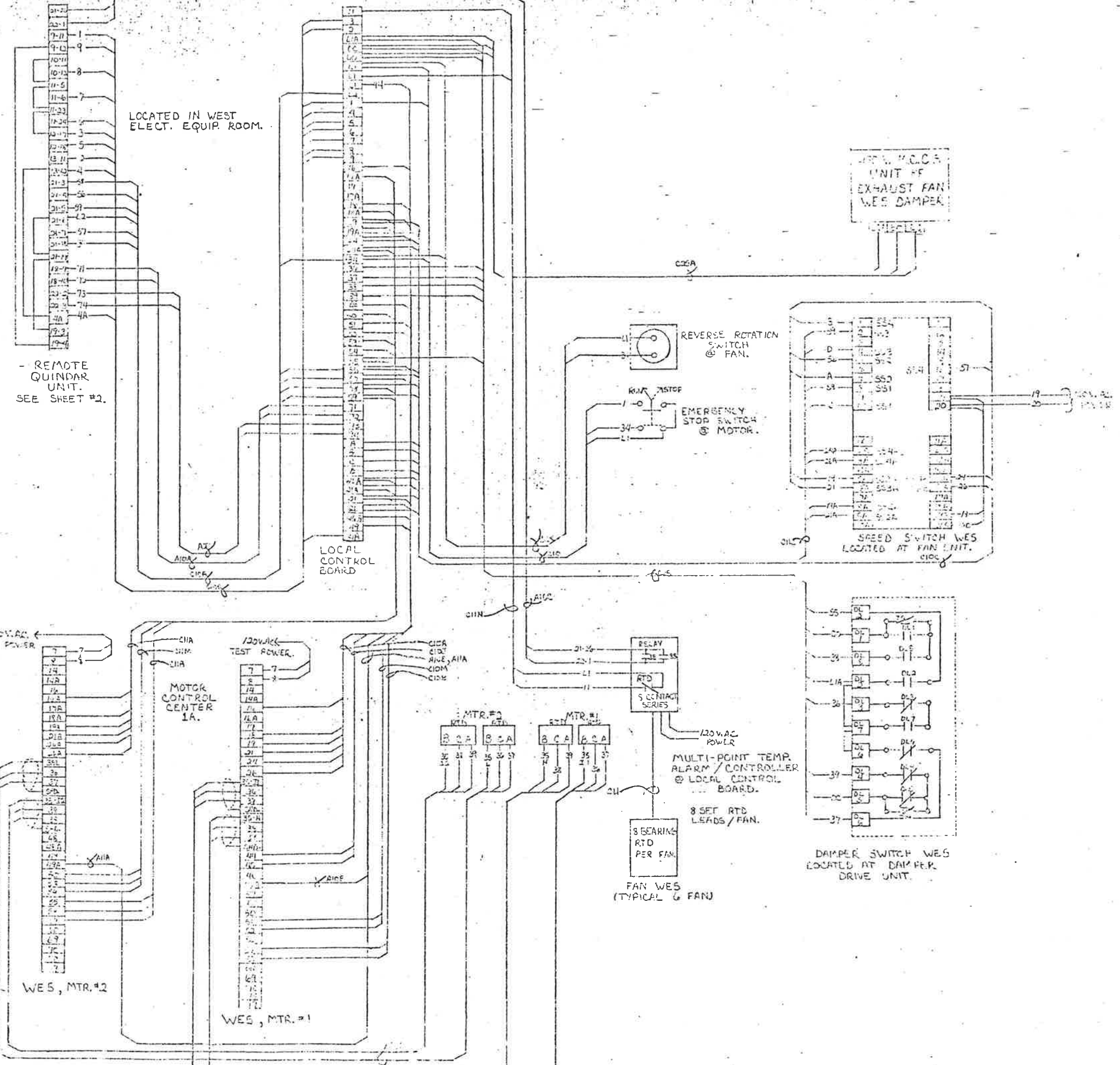
RECEIVED
FEB 19 1976
SIA

REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
10	COLORADO	170-311220	202	208

Checked: Howard Elect. & Mech. Co. Proj. Mgr.

ESTIMATED WEIGHTS		APPROVAL	
ENCL. - DOORS - PROT. DEV.	1195	APPROVED	DATE
PLATFORM TOTAL	580	SIGNED	DATE
MISCELLANEOUS	480	GUARANTEE	DATE
CARFRAME & SAFETY	650		
TOTAL CAR	2905		
OVERLAP	480		
NET WT.	10		
TOTAL CAT.	3395		
LOAD ON CAR SAFETY	4125		
RESULTANT 1/2 LOAD	7550		
WEIGHT OF MACHINE	1530		
POWER 450 V 3 PH 4 W 50 HZ LIGHT 120 V			

OTIS ELEVATOR COMPANY		APPROVAL	
TYPE	CNCL. PASSENGER ELEVATOR	APPROVED	DATE
TYPE	GEARED 5/16" S.P.	SIGNED	DATE
LOAD SPEED	1200' @ 100 F.P.M.		
OPERATION	TWO STOP - COLLECTIVE		
CONTROL	RESISTANCE		



LOCATED IN WEST ELECT. EQUIP. ROOM.

- REMOTE QUINDAR UNIT. SEE SHEET #2.

WES, M.C.C.A. UNIT OF EXHAUST FAN WES DAMPER

NOTES:
 1. SPEED INDICATION "J" BOX, REVERSE ROTATION SWITCH, R.T.D.'S. AND DAMPER SWITCH ARE TYPICAL FOR ALL UNITS.

Checking is only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and corrected at the job site for information. It is the Contractor's responsibility to coordinate all work with the project manager and for coordination of the work at all times.

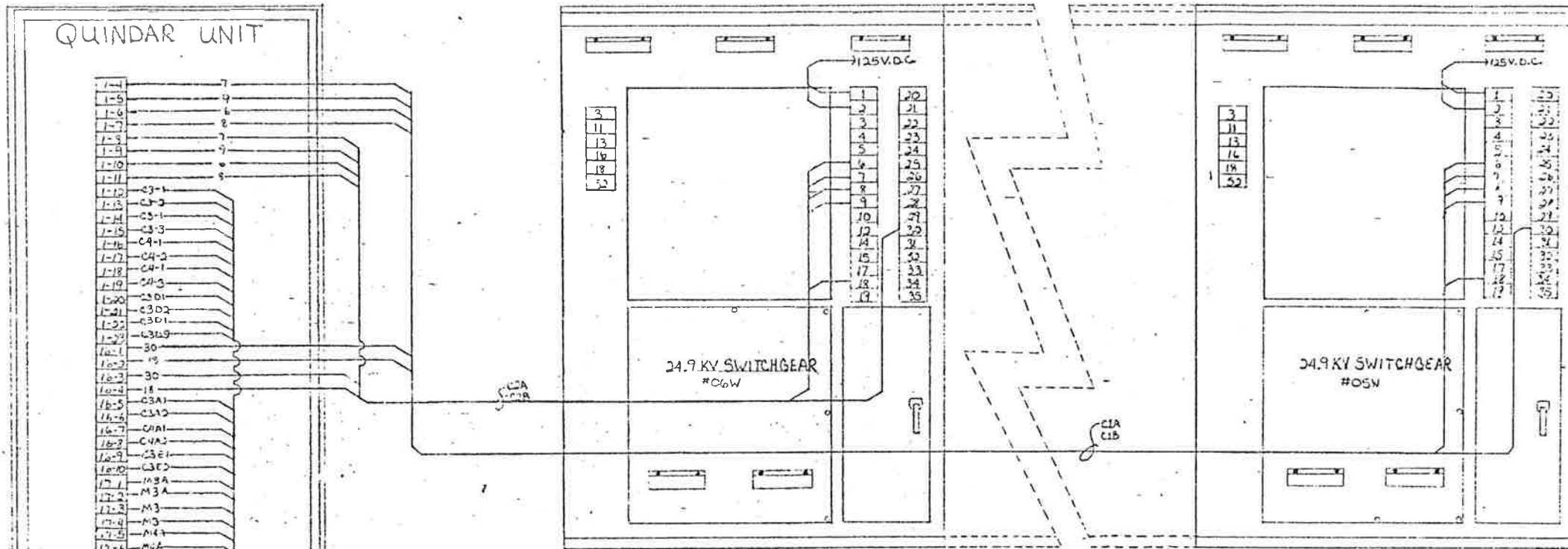
Note - The Architect's drawing of Shop Drawings or Samples shall not release the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of the submission and the Architect has given written approval in writing to such deviation. It is the Contractor's responsibility to release the Contractor from responsibility for the errors or omissions in the Shop Drawings or Samples.

Rejected Make Correction/Revise
 No Exception Taken Revise and Resubmit

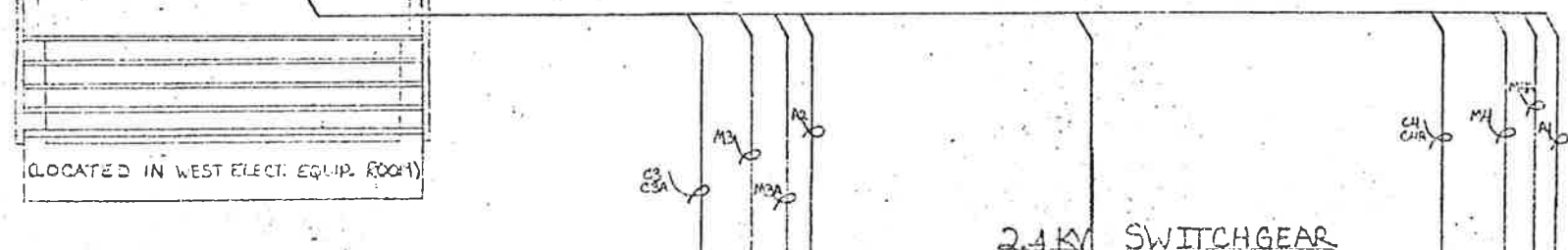
STEARNS-ROGER ARCHITECTS, LTD.
 Date: 8/21/79

FINAL
 AUG 1979
 STAFF BRIDGE
 DESIGN - COH

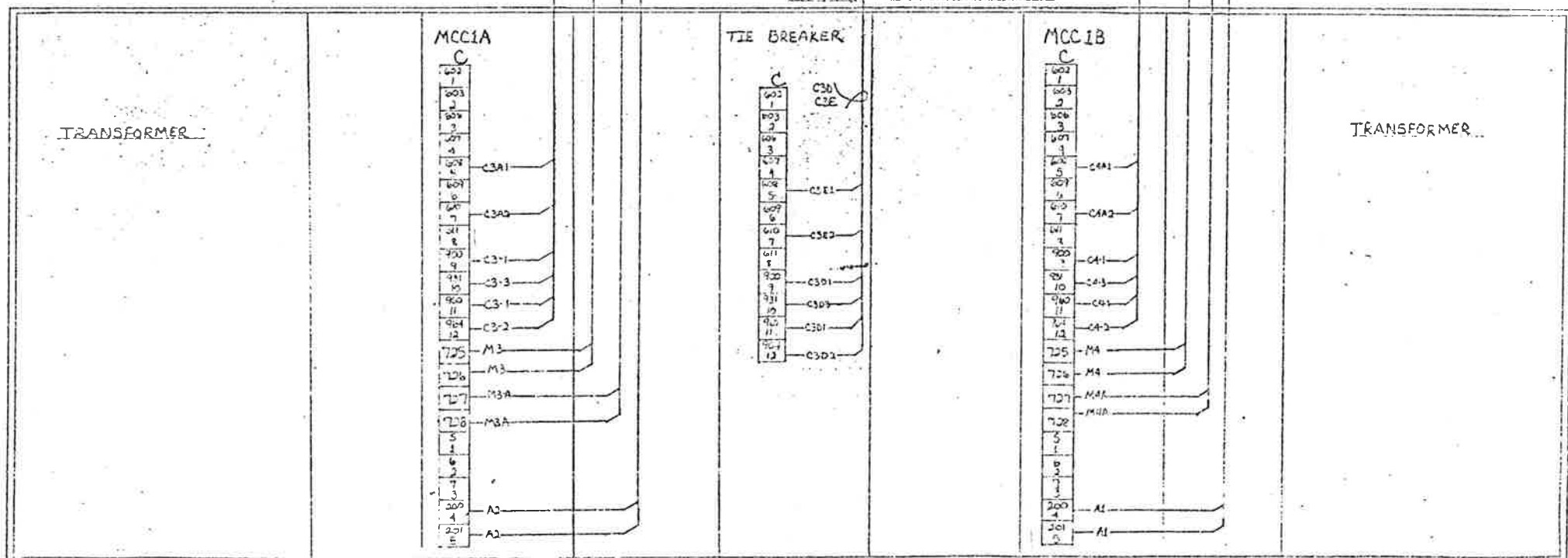
Howard Elect. & Mfg. Co., Inc.
 Proj. Eng.



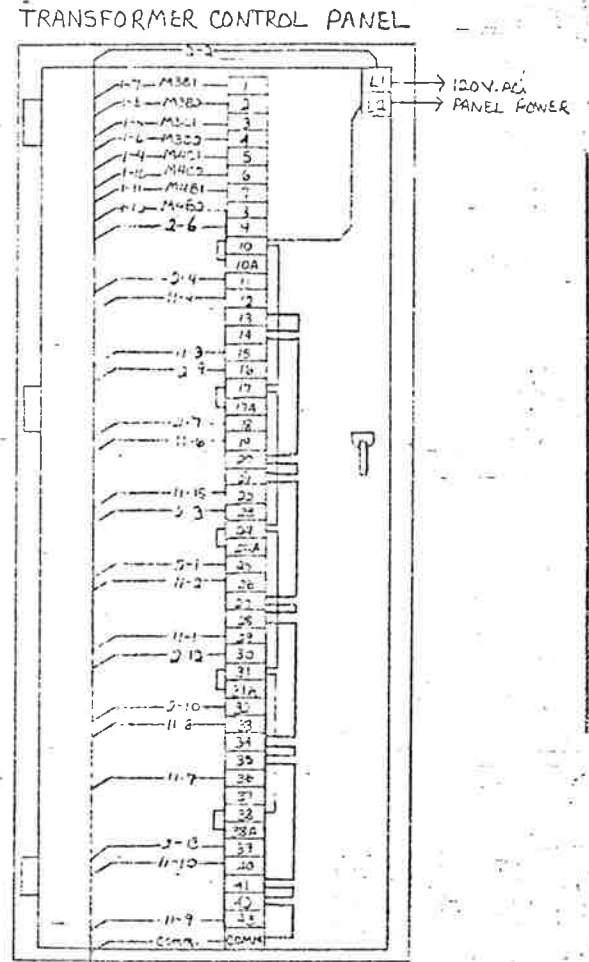
(LOCATED IN WEST ELECT. EQUIP. ROOM)



(LOCATED IN WEST ELECT. EQUIP. ROOM)



(LOCATED IN WEST ELECT. EQUIP. ROOM)



(LOCATED IN EAST CONTROL ROOM)

TO MASTER EE QUINDAR (SEE DRW. PPT-05)

FEDERAL ROAD	DIVISION	PROJECT NO.	SHEET	TOTAL
COLO. ROAD	170-31821220	205	208	

Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and indicated on the job site for actual construction. It is not an endorsement or a technical approval of construction and for coordination of the work of the contractor.

Note: The Architect's checking of Shop Drawings or similar drawings shall not constitute an assumption of responsibility for any deviation from the requirements of the Contract Documents. The Architect is not to be held responsible for any deviation from the requirements of the Contract Documents in writing of such deviation at the time of submission and the Architect has given written approval to the contractor's shop drawings.

By: [Signature] Date: 8/31/79

Revised: []
 No Exception Taken: []
 Make Corrections Noted: []
 Revise and Resubmit: []

STEARNES-ROGER ARCHITECTS, LTD.

Approved
 Howard Elect. & Mech. Co.
 Project Mgr.

FINAL

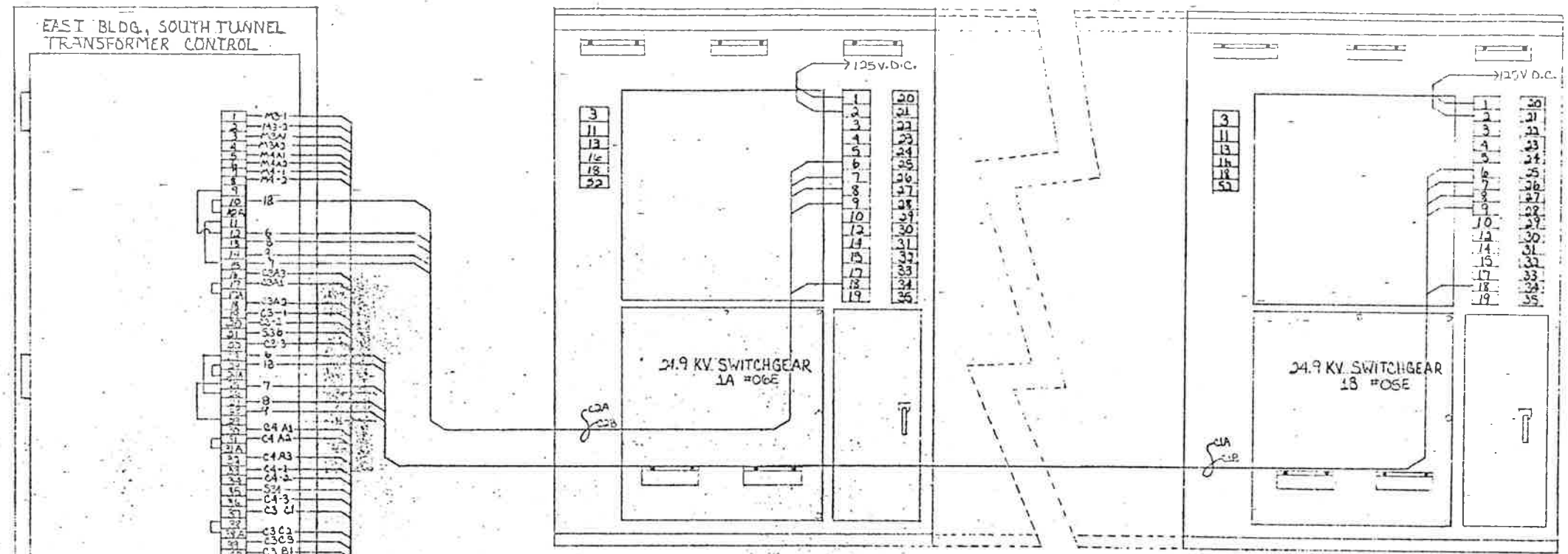
STATE OF COLORADO
 DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND BORE
 WEST BLDG., SOUTH TUNNEL
 TRANSFORMER CONTROL

PROJECT NO. 170-31821220
 DRAWN: KB
 CHECKED: ELS
 SCALE: NOT TO SCALE

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS
 EISENHOWER MEMORIAL TUNNEL
 SECOND BORE
 WEST BLDG., SOUTH TUNNEL
 TRANSFORMER CONTROL

PROJECT NO. 170-31821220
 DRAWN: KB
 CHECKED: ELS
 SCALE: NOT TO SCALE

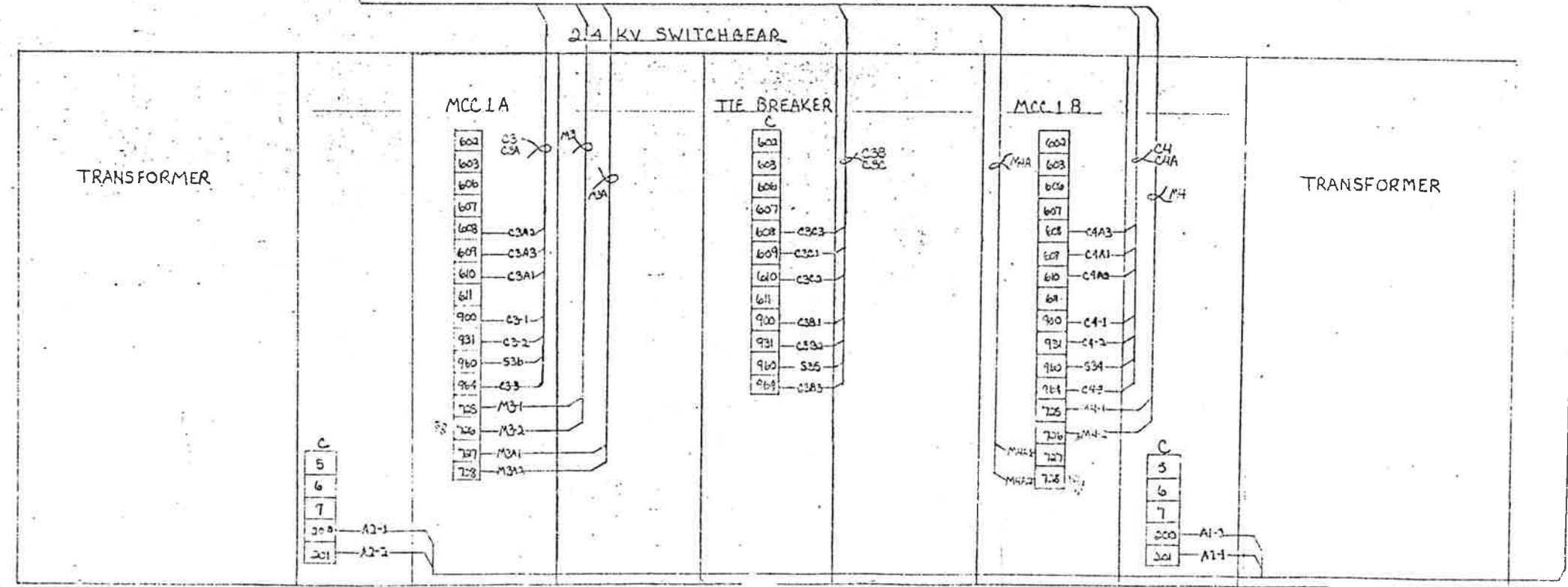
FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	170-3182(220)	206	208



(LOCATED IN EAST ELECT. EQUIP. ROOM)

(LOCATED IN EAST CONTROL ROOM)

TO ANNUNCIATOR PANEL
IN CONTROL ROOM.
(SEE DRW. PPT-05)



(LOCATED IN EAST ELECT EQUIP. ROOM)

Checking is only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and corrected at the job site for information that may be required for construction purposes or to determine the location and the coordination of the work of all trades.

Note - The Architect's checking of Shop Drawings or Samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents which the Contractor has returned, the Architect in writing of such deviation at the time of submission and the Architect has given written approval of the same. The Contractor shall be responsible for errors or omissions in the Shop Drawings or Samples.

Rejected More Corrects Noted
 No Exception Taken Revise and Resubmit

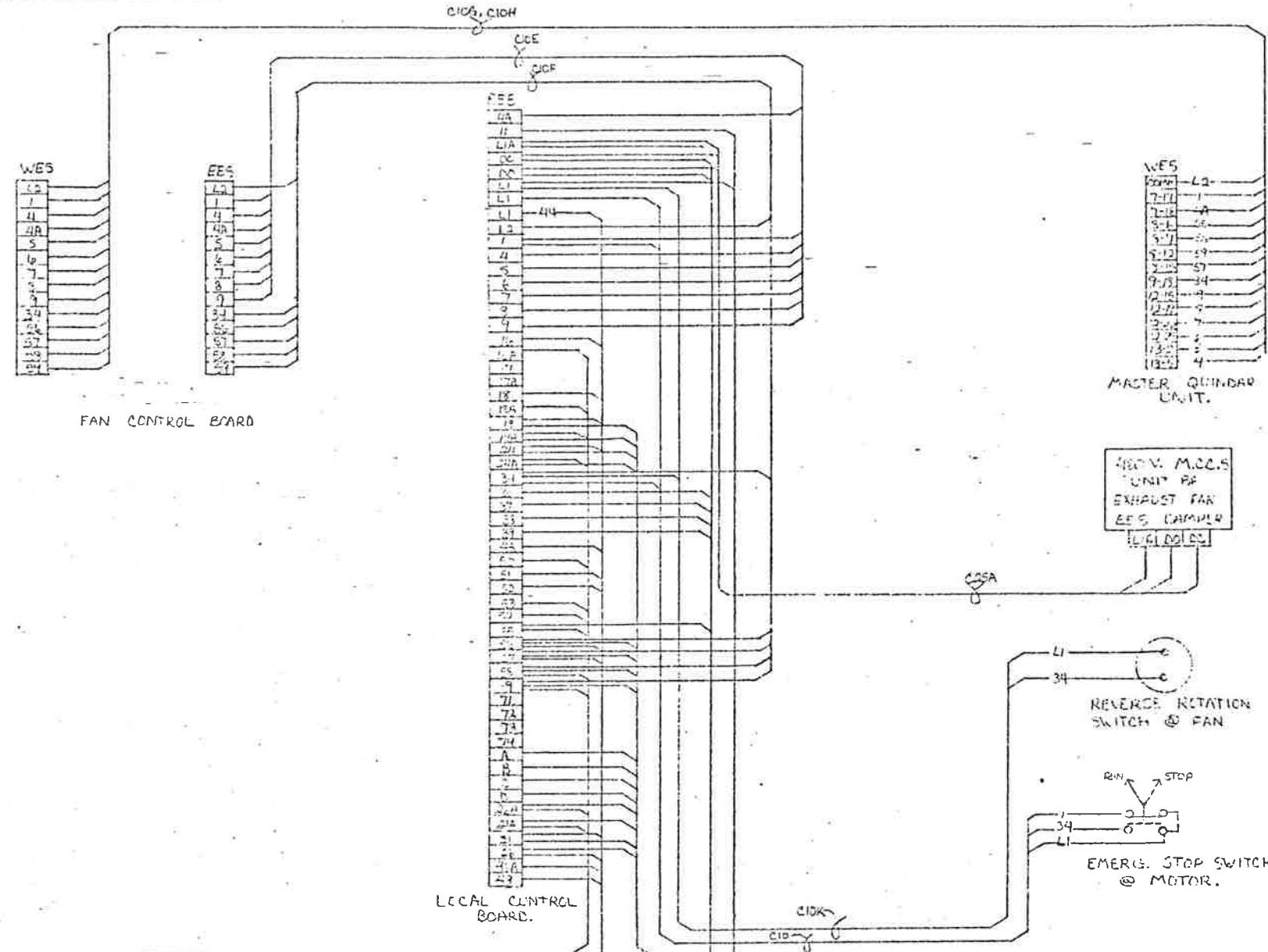
STEARNS-ROGER ARCHITECTS, LTD.
 Date: 8/31/79 By: *[Signature]*



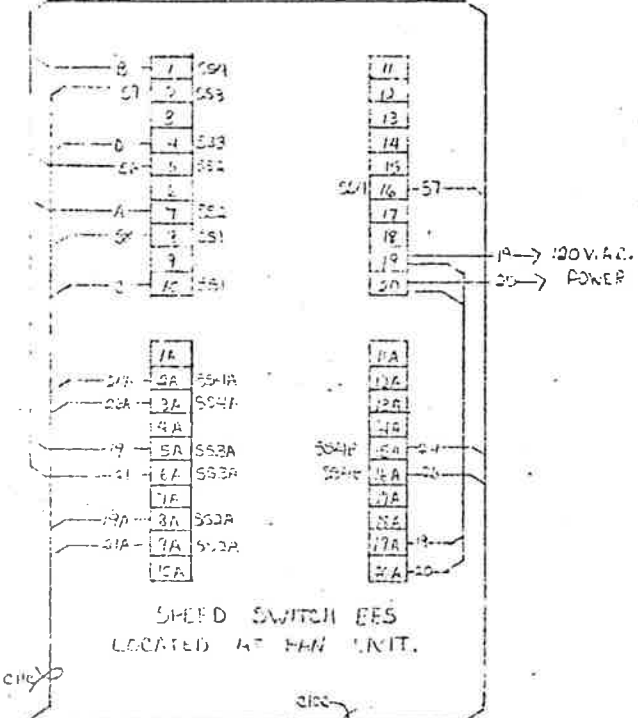
Approved
 Howard Elect. & Mech. Co.
 Proj. Mgr.

STATE OF COLORADO - DEPARTMENT OF HIGHWAYS EISENHOWER MEMORIAL TUNNEL SECOND BLDG.			
EAST BLDG., SOUTH TUNNEL TRANSFORMER CONTROL			
PROJECT NO.	170-3182(220)	SHT. NO.	206
DRAWN BY	1 KB	CHECKED BY	2 CB
SCALE	NOT TO SCALE	DATE	8/31/79
		BY	PPT-03

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	-170-3(62)220	207	208



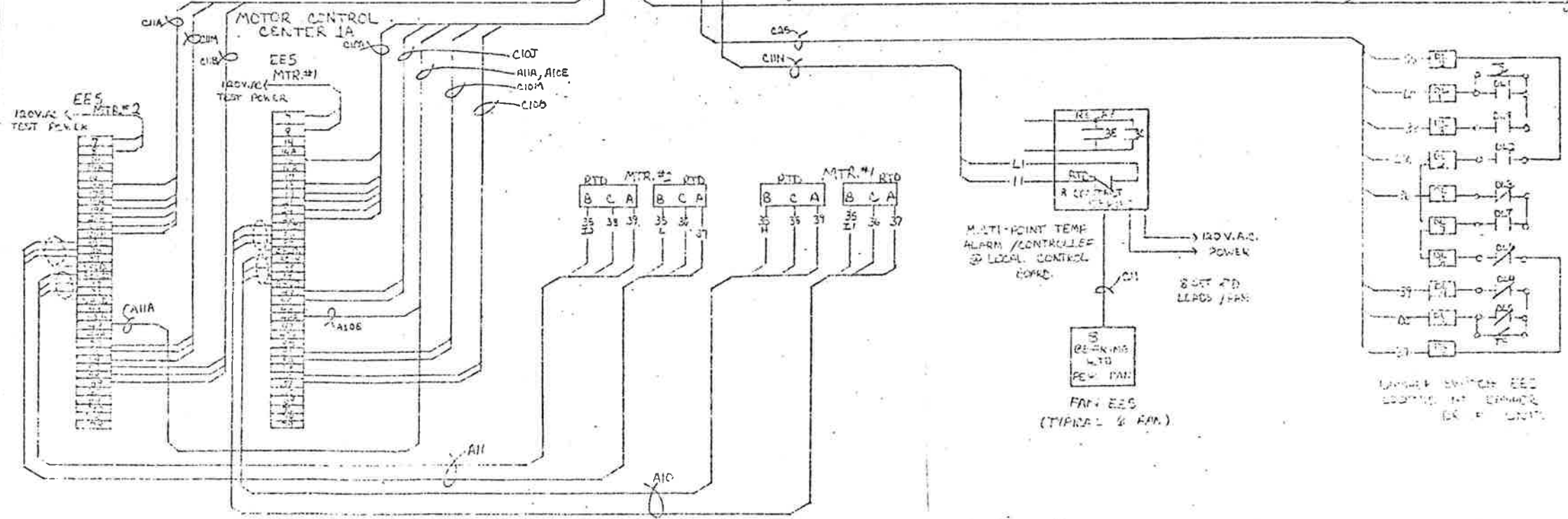
- NOTES:
1. FES CONTROL CONNECTIONS TYPICAL FOR ALL EAST FAN UNITS.
 2. SEE PPT-01, SHT. #1 FOR CONNECTIONS AT SPEED INDICATION "3" BOX, REVERSE ROTATION SWITCH, R.T.D.'S, AND DAMPER SWITCH.
 3. WES CONTROL CONNECTIONS TYPICAL FOR ALL WEST FAN UNITS.



Checking is only to conform with the design concept of the Project and does not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents. The Contractor is responsible for the accuracy of all dimensions, materials, and workmanship at the job site. The Architect's checking of Shop Drawings or Samples will not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission and the Architect has given written approval. The Contractor shall be responsible for errors or omissions in the Shop Drawings or Samples.

Rejected Make Correction Noted
 No Exception Taken Revise and Resubmit

STEARN'S-ROGER ARCHITECTS, LTD.
 Date: 8/31/79 by: [Signature]



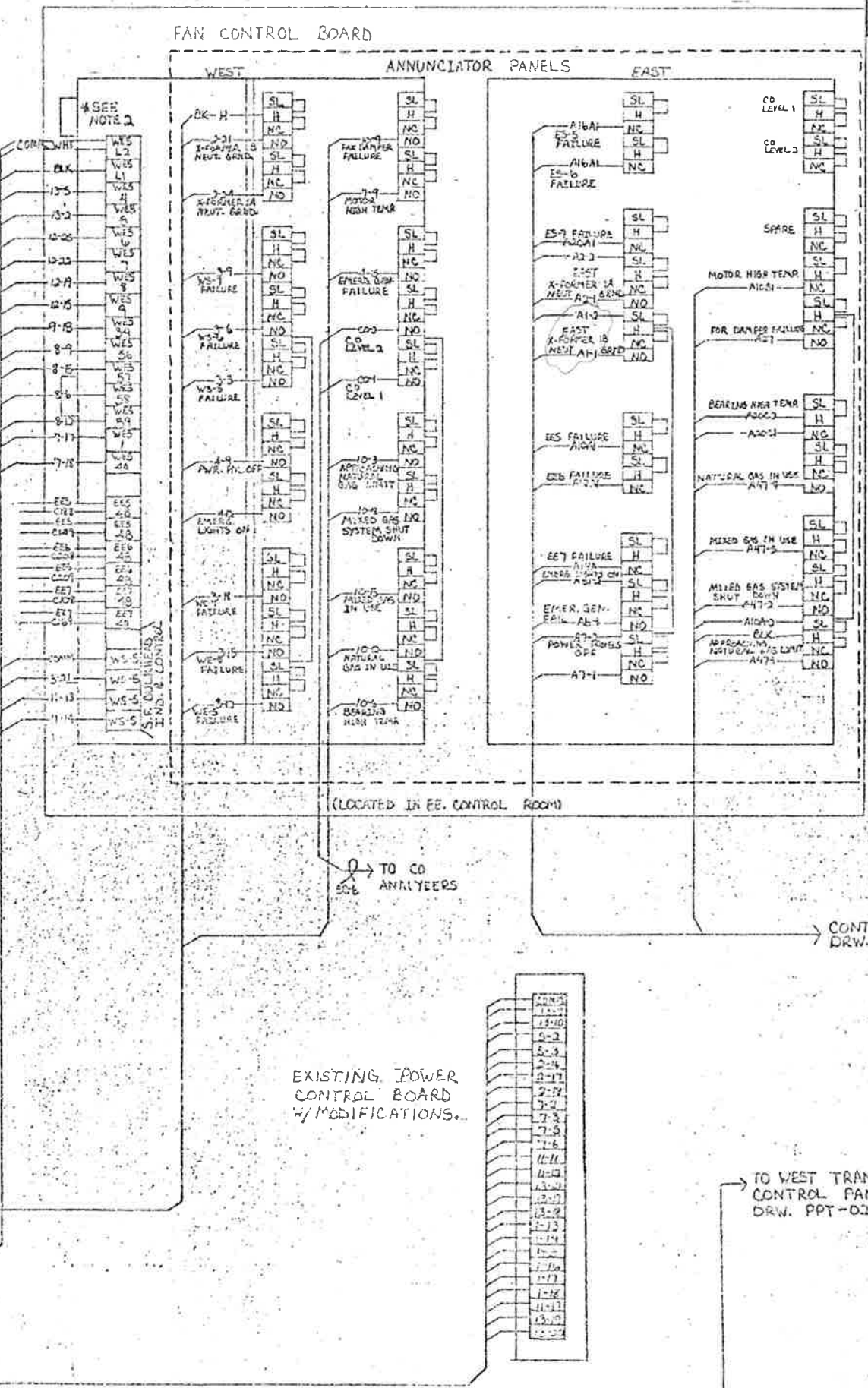
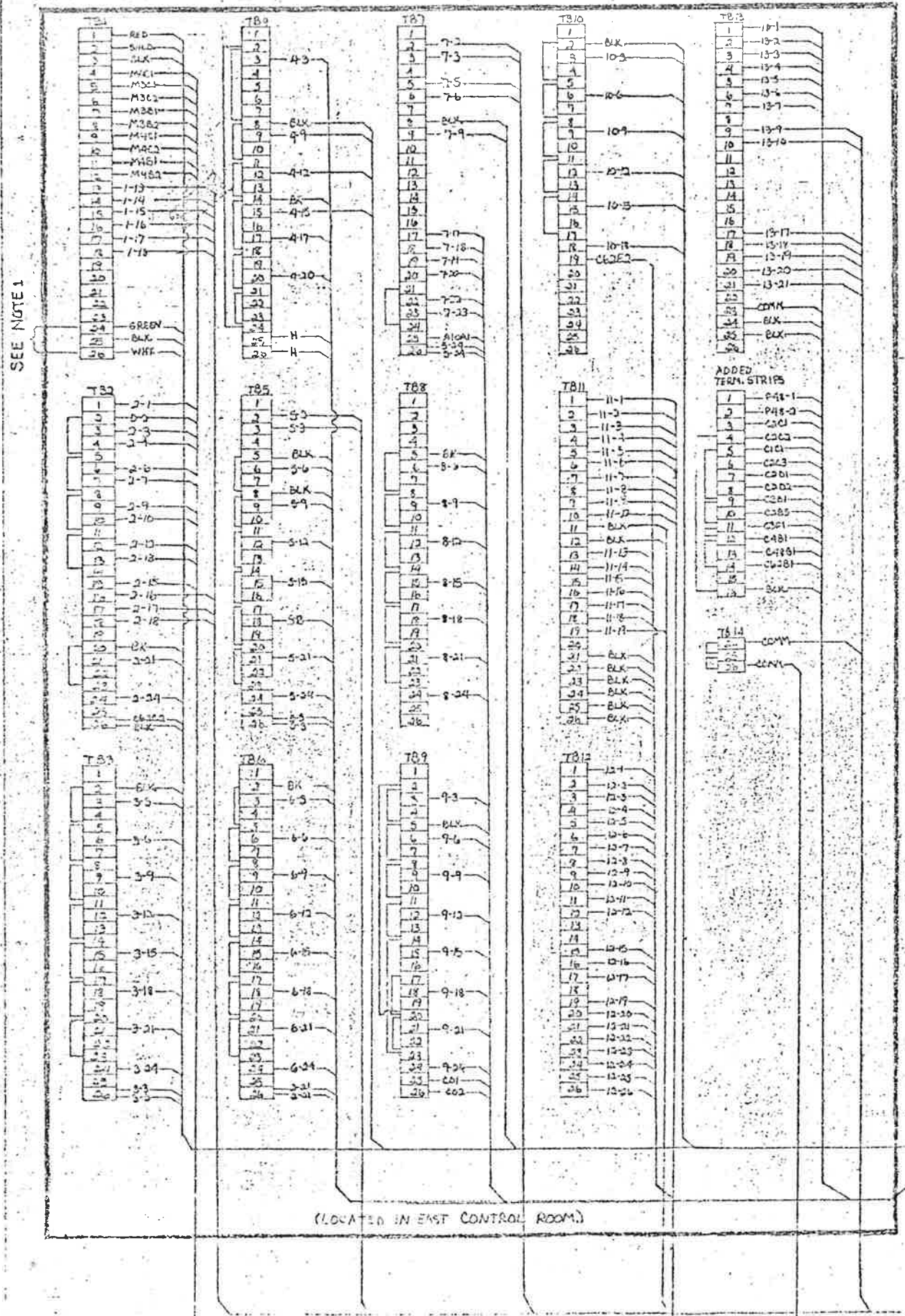
Approved
 Howard Elect. & Mech. Co.
 Prof. Mar.
 [Signature]

EAST FAN UNIT WIRING TYPICAL

WEST FAN UNIT WIRING TYPICAL

MASTER QUINDAR UNIT

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	I 70-3(2)220	208	208



- NOTES:
1. TB1-24, 25, AND 26 ARE ON 120 VOLT POWER.
 2. WES CONNECTIONS ARE TYPICAL FOR ALL UNITS.
 3. SEE DRW. PPT-04 FOR DETAIL WIRING.

Overseer is only responsible for the design and construction of the project and does not accept any responsibility for the design or construction of the project. The Contractor is responsible for the design and construction of the project and for the safety of the project. The Contractor is responsible for the design and construction of the project and for the safety of the project.

STEARNES ROGER ARCHITECTS, LTD.
Date: 8/31/79



Approved
Howard Elect. & Mech. Co.
Prj. Eng.

STATE OF COLORADO DEPARTMENT OF HIGHWAYS
EISENHOWER MEMORIAL TUNNEL
SECOND BOSS

CONTROL ROOM
QUINDAR UNIT

PROJECT NO.	I 70-3(2)220	SHEET NO.	208
DRAWN BY	ELB	CHECKED BY	ELB
SCALE	NOT TO SCALE	DATE	8/31/79

SEE NOTE 1

SEE NOTE 2

(LOCATED IN WEST CONTROL ROOM)

(LOCATED IN EAST CONTROL ROOM)

EXISTING POWER CONTROL BOARD W/MODIFICATIONS.

CONTINUED ON
DRW. PPT-04, SHT. #1.

TO WEST TRANSFORMER CONTROL PANEL;
DRW. PPT-02.

TO CO ANALYZERS