

MICHIGAN
STATE HIGHWAY DEPARTMENT

JOHN C. MACKIE

STATE HIGHWAY COMMISSIONER

GENERAL NOTES

Except where otherwise indicated on these Plans or in the Proposal and Supplemental Specifications contained therein, all materials and workmanship shall be in accordance with the Michigan State Highway Department's Standard Specifications for Road and Bridge Construction, 1960 Edition.

The design of this structure is based on the Michigan State Highway Department's Specifications for the design of Highway Bridges, 1958 Edition.

BI of 82-22-2, C2

SHEET NO.	DESCRIPTION
A	TITLE SHEET
B	BILL OF MATERIAL
1	SCHEMATIC WIRING DIAGRAM
2	SCHEMATIC WIRING DIAGRAM
3	SCHEMATIC WIRING DIAGRAM
4	CONDUIT DIAGRAM
5	CABLES AND DUCTS
6	CONTROL STAND AND CONTROL PANELS
7	BRAKE THRUSTORS-GENERAL LAYOUT
8	BRAKE THRUSTORS-ASSEMBLIES AND DETAILS
9	BRAKE THRUSTORS-ASSEMBLIES AND DETAILS
10	SUPERSTRUCTURE & ELECTRICAL EQUIP. - EXISTING
11	ELECTRICAL EQUIPMENT & HOUSES & ENCLOSURE WALL - EXISTING
12	ELECTRICAL EQUIPMENT & HOUSES & ENCLOSURE WALL - EXISTING
13	HOUSES & ENCLOSURE WALL - EXISTING

PLANS OF PROPOSED BRIDGES
STATE PROJECT MBI of 82-22-2
TOLEDO - DETROIT ROAD
CITY OF DETROIT WAYNE COUNTY



NOTE:
Where the following items are called for on the Plans, they are to be constructed according to the Standard Plan given below opposite each item, unless otherwise indicated.

STANDARD PLANS TO BE PRINTED

SHEET NO.	TITLE

STANDARD PLANS NOT TO BE PRINTED

SHEET NO.	TITLE

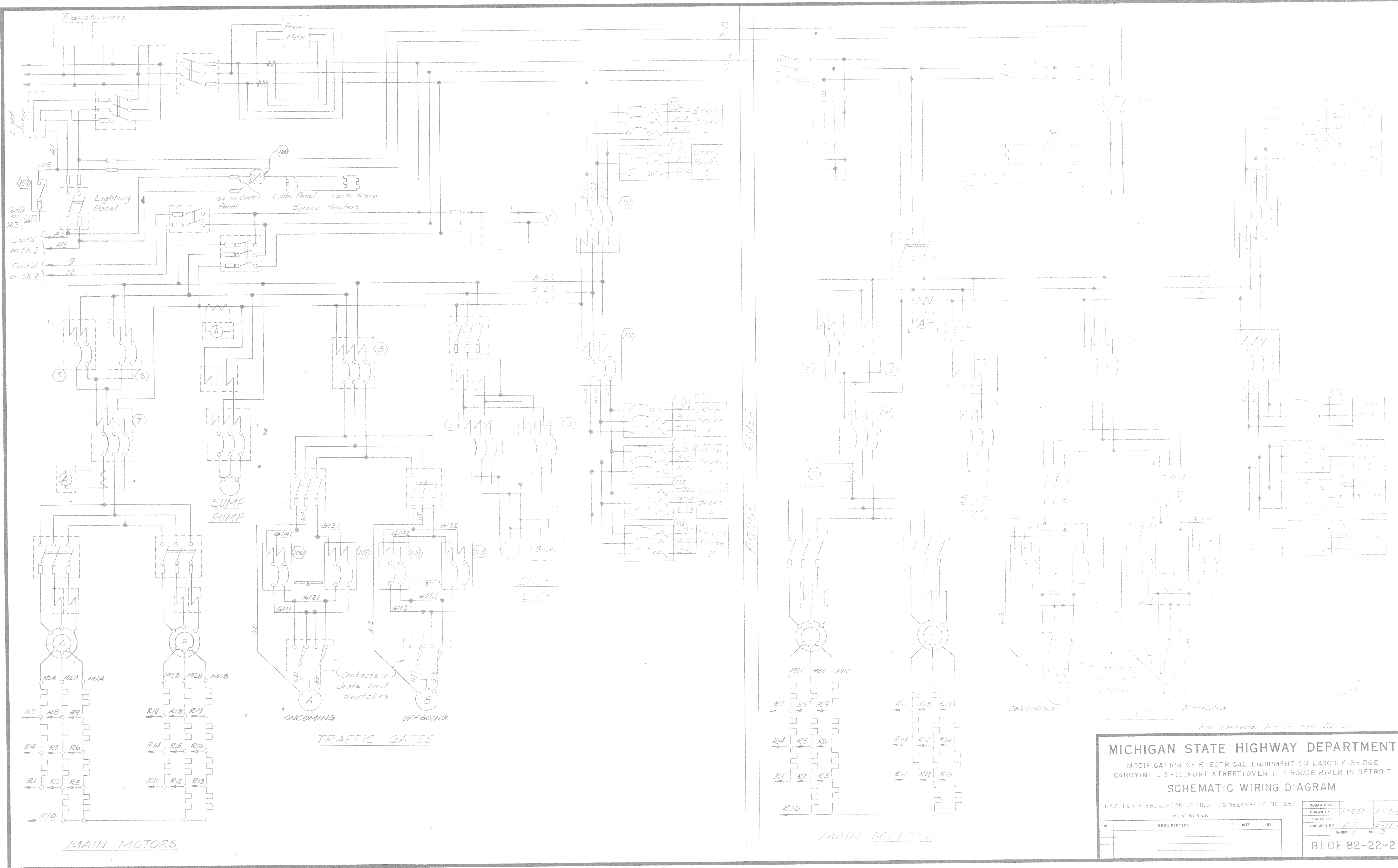
CONTROL SECTION NO. 82071

CONTRACT FOR	
DIVISION APPROVAL	
CHECKED ASST. ENGINEER OF DESIGN <i>M. G. Jones</i>	9-20-60 DATE
RECOMMENDED FOR APPROVAL ENGINEER OF BRIDGE AND ROAD DESIGN <i>H. K. ...</i>	9-23-60 DATE
RECOMMENDED FOR APPROVAL TRAFFIC ENGINEER <i>Harold H. Baumbach</i>	9-23-60 DATE
OFFICES OF DESIGN AND CONSTRUCTION	
APPROVED CONSTRUCTION ENGINEER <i>G. J. ...</i>	10/15/60 DATE
APPROVED CHIEF DESIGN ENGINEER <i>J. M. ...</i>	9/13/60 DATE
STATE HIGHWAY DEPARTMENT APPROVAL	
APPROVED STATE HIGHWAY COMMISSIONER JOHN C. MACKIE	
BY DIRECTOR OF ENGINEERING-CHIEF ENGINEER <i>J. E. Meyer</i>	10/3/60 DATE
PLANS PREPARED BY	DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS
APPROVED	
DIVISION ENGINEER	DATE

BI of 82-22-2, C2

654-2

654-2
BI of 82-22-2, C2
654-2



For General Notes see Sh. 3

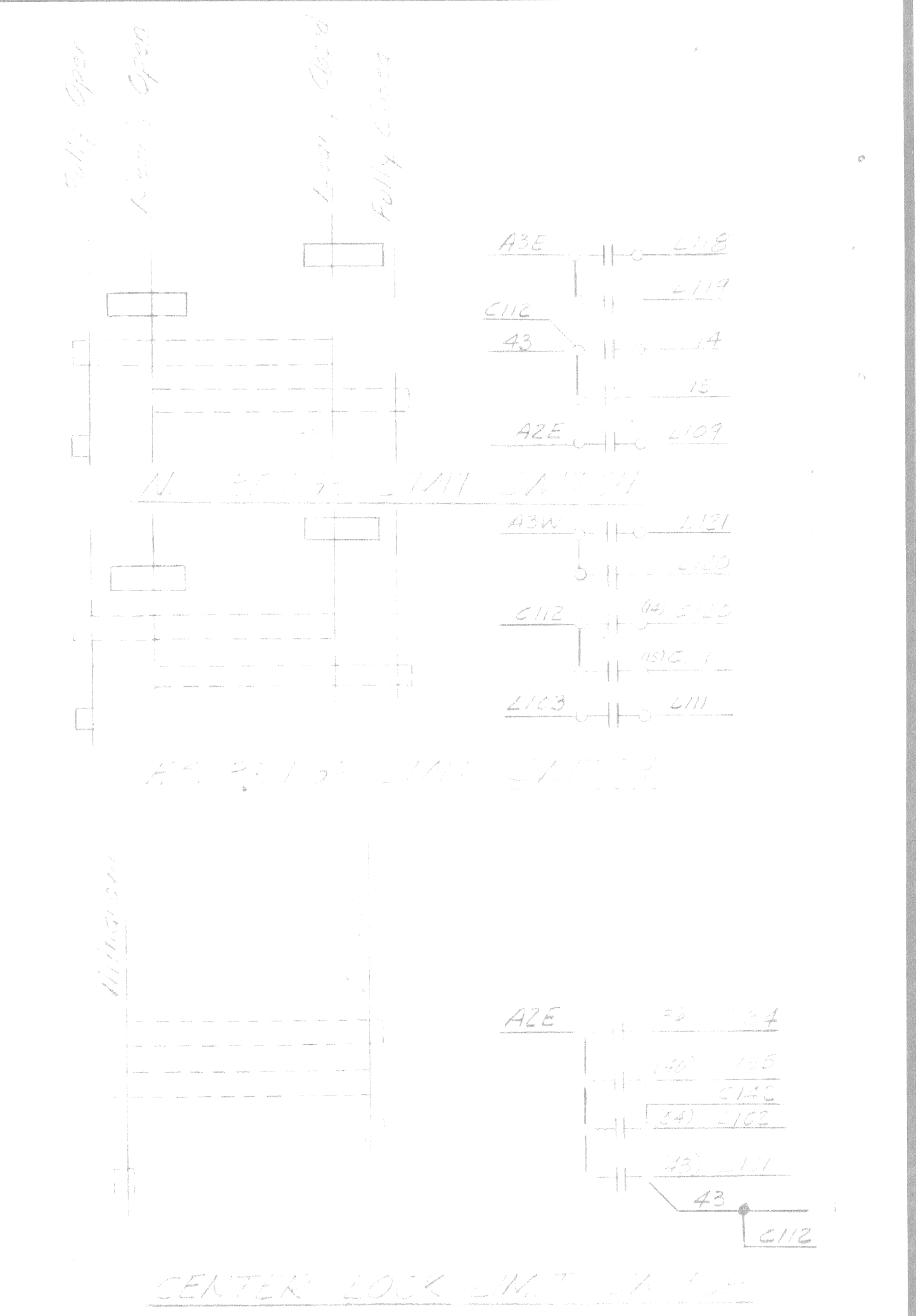
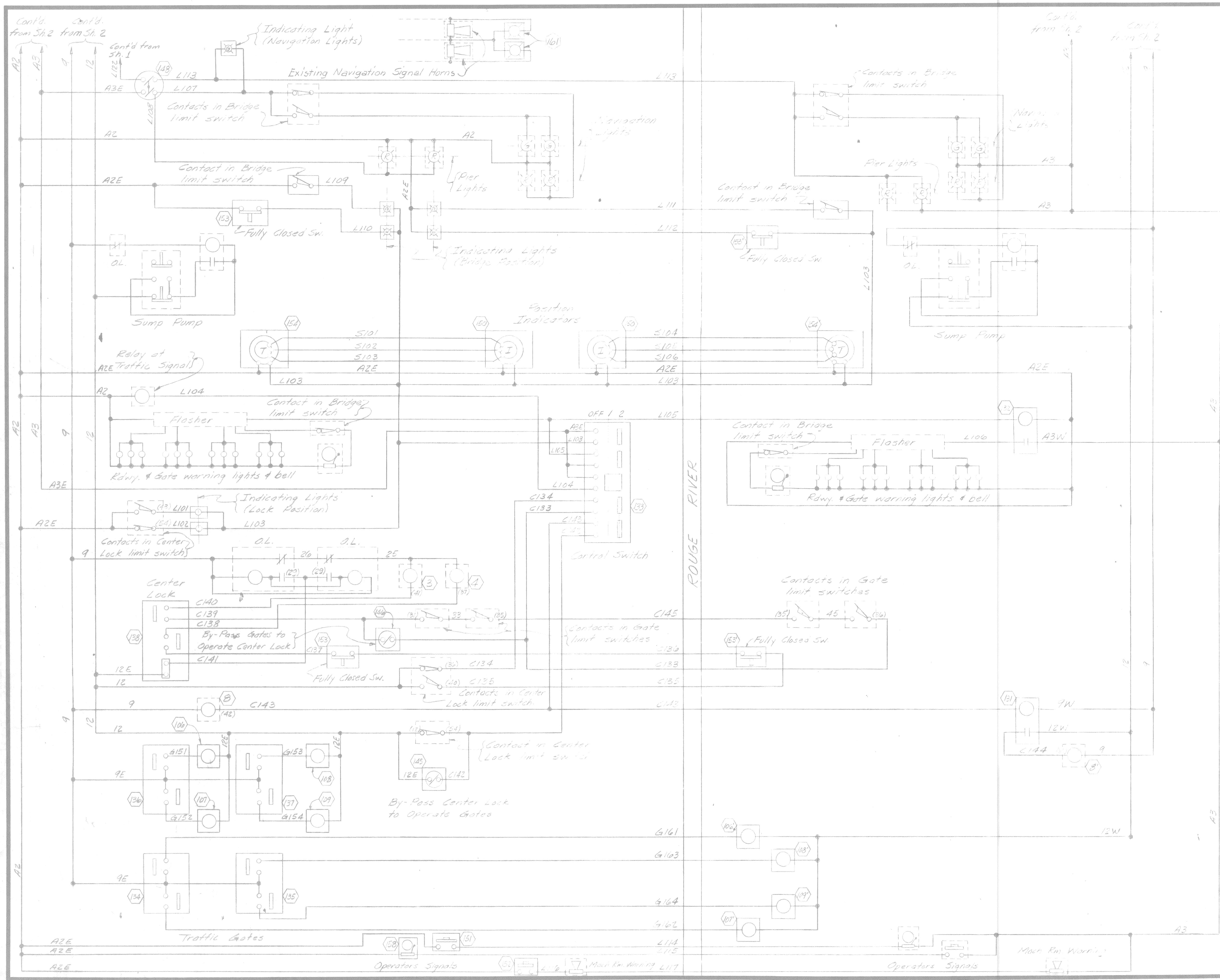
MICHIGAN STATE HIGHWAY DEPARTMENT
 MODIFICATION OF ELECTRICAL EQUIPMENT ON BASCULE BRIDGE
 CARRYING U.S.-25 (FORT STREET) OVER THE ROUGE RIVER IN DETROIT
SCHEMATIC WIRING DIAGRAM

HAZLET & ERDAL-CONSULTING ENGINEERS-FILE NO. 357

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	P.F.D.	6-9-60	
DRAWN BY			
TRACED BY			
CHECKED BY	S.T.	10-17-60	
			SHEET 1 OF 3

B1 OF 82-22-2



GENERAL NOTES:

N.S. denotes Near Side or River East
 F.S. denotes Far Side of River (West)
 Wire Numbers: One digit numbers indicate existing wires and three digit numbers indicate new wires except as follows:
 Wires 9E & 12E and 9W & 12W indicate new wires to be run from the apparatus shown to the terminal strip on the existing N.S. switchboard and the existing F.S. switchboard respectively. Wires A3E & A3E and A3W indicate new wires to be run from the apparatus shown to the existing N.S. lighting cabinet and the existing F.S. lighting cabinet respectively. Wire A3E indicates a new wire to be run from the apparatus shown to say convenient terminal connecting existing wire A1.
 Apparatus: Existing apparatus is outlined with broken lines. New apparatus is outlined with solid lines.
 Prime marks denote F.S. apparatus identical to N.S. apparatus.
 Numbers shown in parenthesis at terminals of existing apparatus indicate the wire number of an existing wire connected thereto.

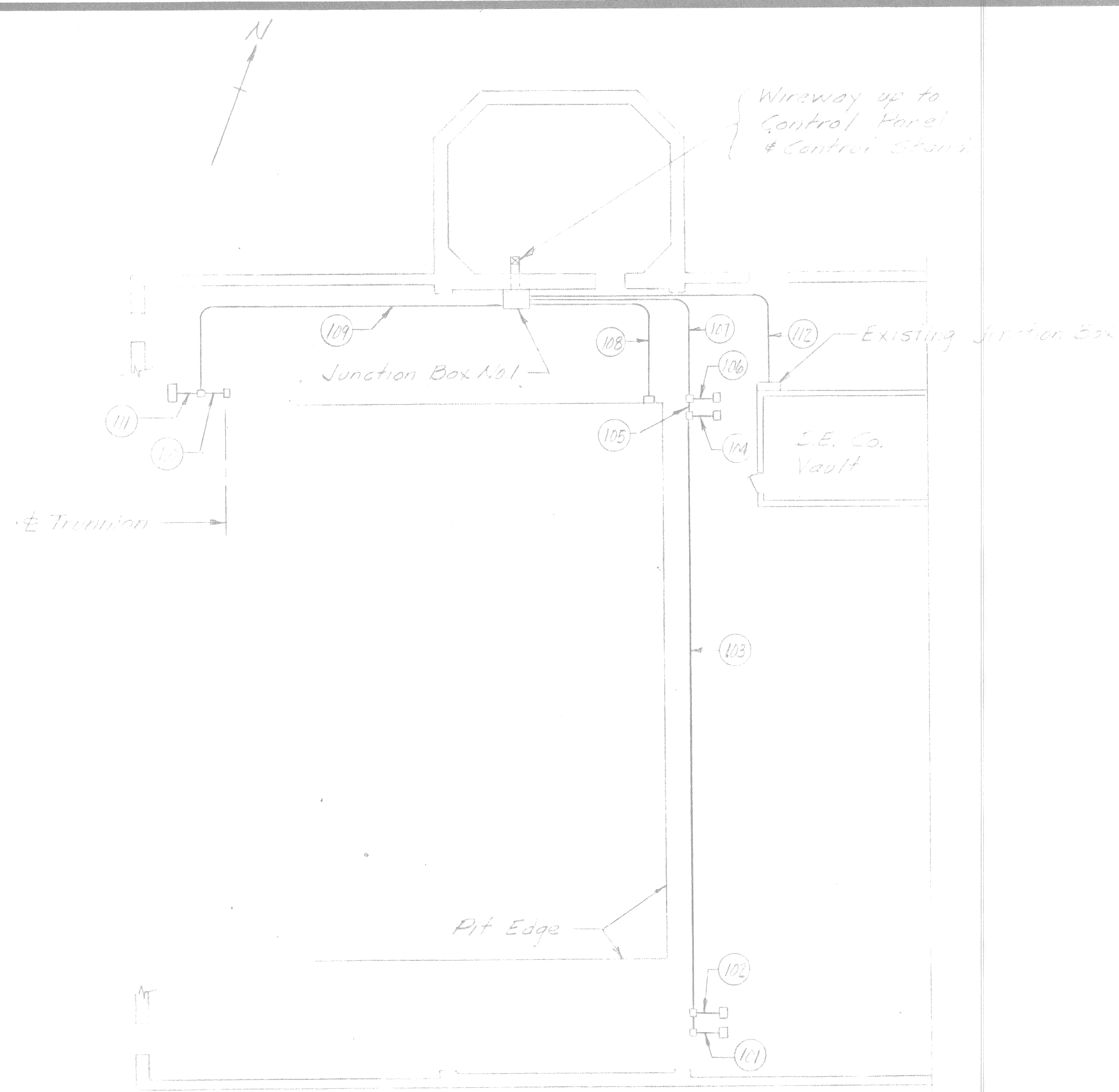
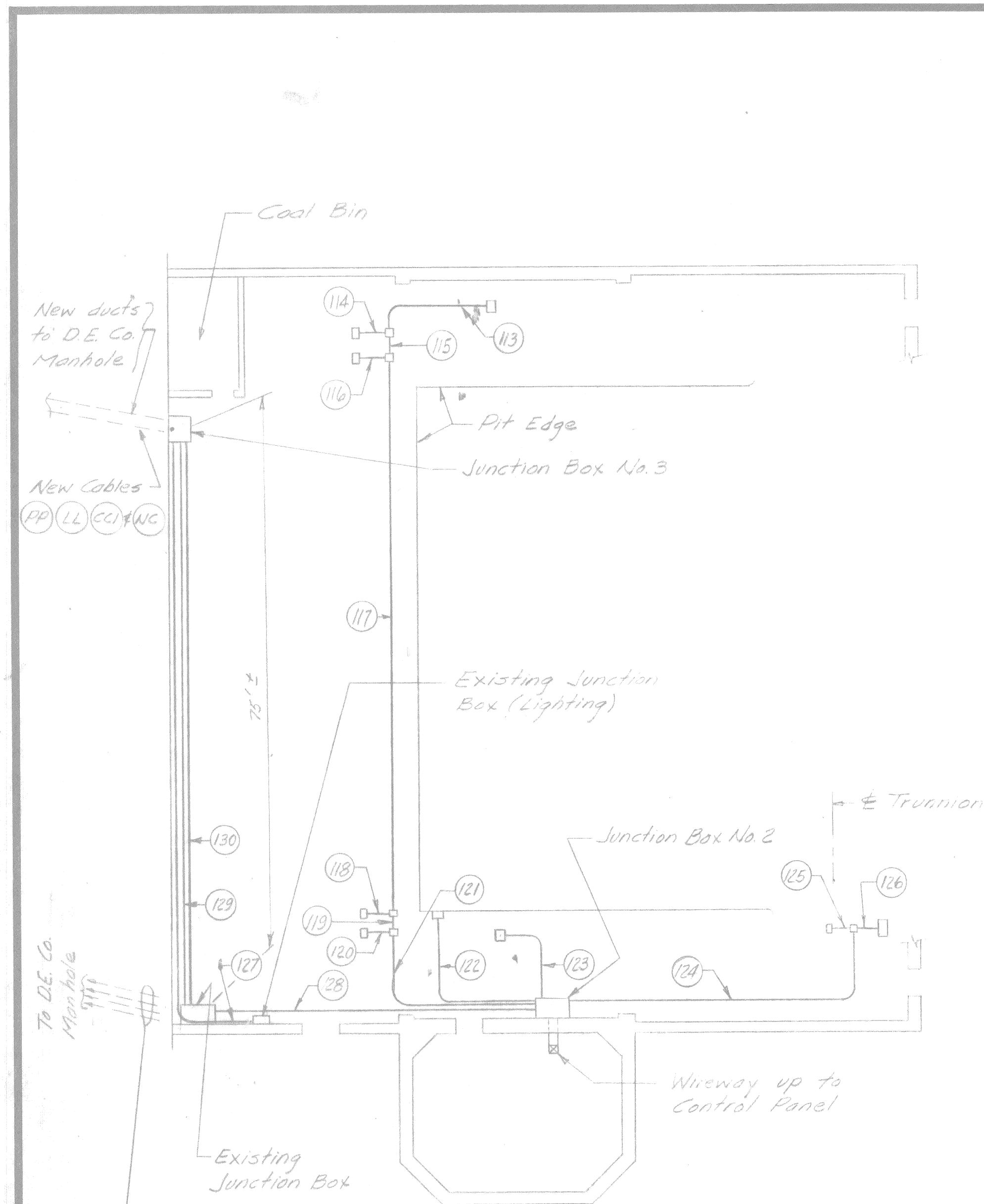
MICHIGAN STATE HIGHWAY DEPARTMENT
 MODIFICATION OF ELECTRICAL EQUIPMENT ON BASCULE BRIDGE
 CARRYING U.S.-25 (FORT STREET) OVER THE ROUGE RIVER IN DETROIT
SCHEMATIC WIRING DIAGRAM

HAZELET & ERDAL-CONSULTING ENGINEERS-FILE NO. 357

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BSS			
DRAWN BY	EED	6-7-60	
TRACED BY			
CHECKED BY	R.T.	6-12-60	
SHEET 3		OF 13	

BI OF 82-22-2

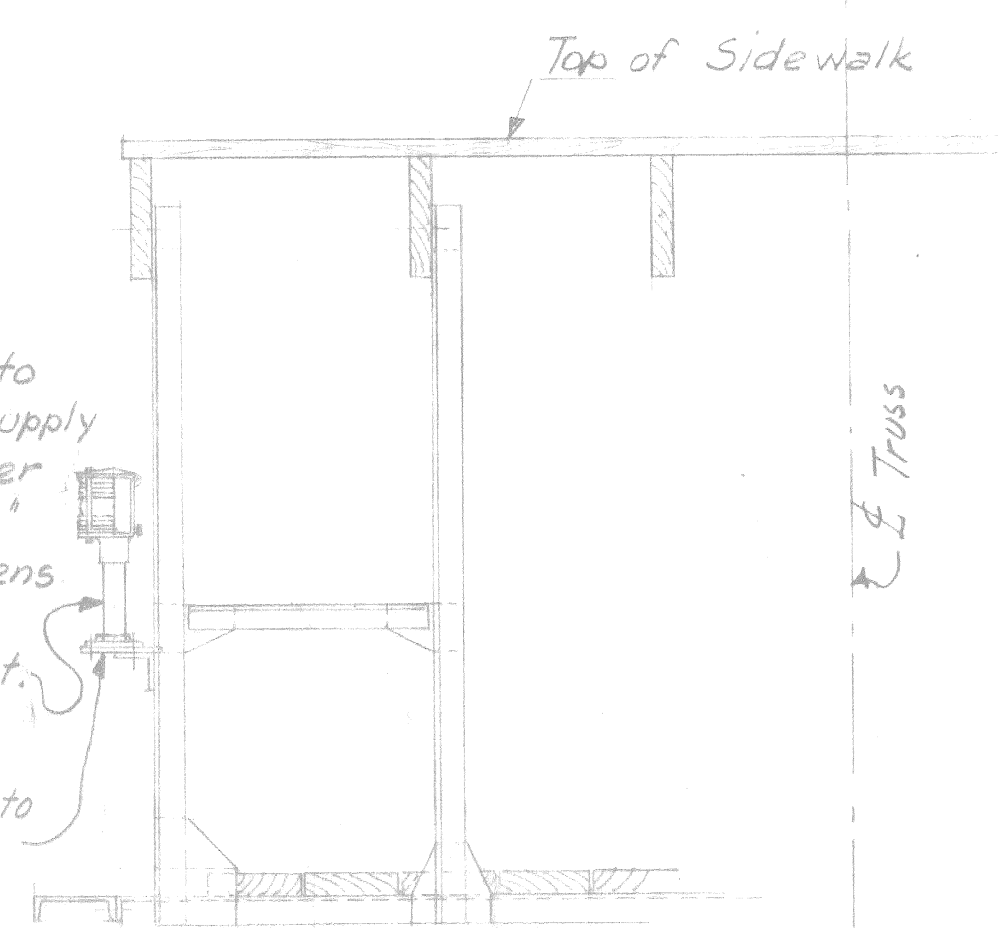


WEST PIER

EAST PIER

- EXISTING CABLES**
- 1-3 cond. 600 MCM (200 each) (P)
 - 1-4 cond. #4 (L)
 - 2-12 cond. #12 (C1 & C2)

Signal Light equal to Western Railroad Supply Comp. Standard Pier Light fitted with 8" 180° Fresnel clear lens. Locate to clear existing equipment.



NAVIGATION SIGNAL LIGHT (Item 161) MOUNTING DETAIL
(One reqd Upstream, One reqd Downstream)

CABLE SCHEDULE						
CABLE		CONTENTS				
CABLE MARK	WIRE NO	WIRE SIZE	NO	SIZE	VOLT	WIRE NUMBER
NC	37	12	24	12	220	12E, C102, C104, C107, C108, C110, C111, C112, C115, C119, C120, C133, C135, C136, C143, C145, G161, G162, G163, G164, R111, R112, R113, R114
CCI	12	12	6	12	110	L105, L111, L112, L113, L120, L121
			7	12		7 Spares
			8	12	110	A2E, L105, L114, L115, L117, S104, S105, S106
PP	3	600MCM	4	12	220	4 Spares
LL	4	4	4	4	110	A1, A2, 2 Spares

NO.	MARK	WIRE NO	WIRE SIZE	NO	SIZE	VOLT	WIRE NUMBER	DESCRIPTION
111	1/2	3	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
112	1/2	3	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
113	1/2	3	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
114	1/2	3	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
115	1/2	3	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
116	1/2	3	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
117	1/4	9	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
118	1/2	3	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
119	1/4	12	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
120	1/2	3	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
121	1/4	15	12	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	220	A2E, A2E, A2E, A2E, L109, L115, L119, S107, S108, S109	Emergency Brake "E"
122	1/4	4	12	110	L103, L112, C135, C136	110	L103, L112, C135, C136	F.S. Fully Closed Switch
123	1/2	3	12	220	B204, B205, B206	220	B204, B205, B206	Motor Brake "C"
124	1/4	12	12	110	A2E, A2E, L103, L111, L120, L121, L121, S104, S105, S106, C111, C112, C120	110	A2E, A2E, L103, L111, L120, L121, L121, S104, S105, S106, C111, C112, C120	F.S. Position Transmitter
125	3/4	5	12	110	A2E, L103, L111, L120, L121	110	A2E, L103, L111, L120, L121	F.S. Bridge Limit Switch
126	1	8	12	220	C111, C112, C120	220	C111, C112, C120	F.S. Bridge Limit Switch
127	1	4	4	110	A1, A2, 2 Spares	110	A1, A2, 2 Spares	
128	2 1/2	38	12	110	A2E, L103, L111, L120, L121, L112, L113, L114, L115, L117, L120, L121, S104, S105, S106, 12E, C102, C104, C107, C108, C110, C111, C112, C115, C119, C120, C133, C135, C136, C143, C145, G161, G162, G163, G164, R111, R112, R113, R114	110	A2E, L103, L111, L120, L121, L112, L113, L114, L115, L117, L120, L121, S104, S105, S106, 12E, C102, C104, C107, C108, C110, C111, C112, C115, C119, C120, C133, C135, C136, C143, C145, G161, G162, G163, G164, R111, R112, R113, R114	To existing Junction Box No. 3
129	2 1/2	38	12	220	Same as center No. 128	220	Same as center No. 128	To existing J.E. at Abut.
130	3/2	3	220	220		220		To Van Pan. Switch

MICHIGAN STATE HIGHWAY DEPARTMENT
MODIFICATION OF ELECTRICAL EQUIPMENT ON BASCULE BRIDGE CARRYING U.S.-25 (FORT STREET) OVER THE ROUGE RIVER IN DETROIT

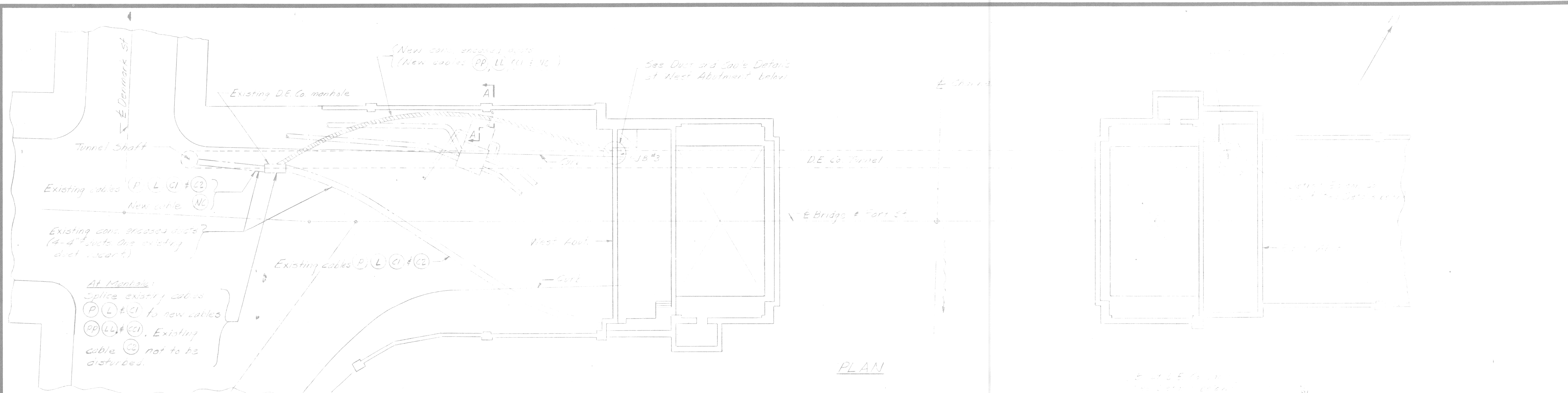
CONDUIT DIAGRAM

HAZEL BERT R. ERICA CONSULTING ENGINEERS - FILE NO. 357

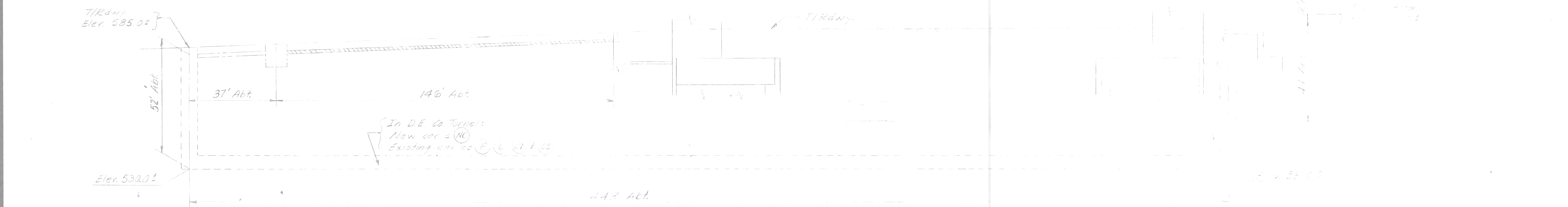
SQUAD BOSS: R.T. 10-16-50
DRAWN BY: R.T. 10-16-50
TRACED BY: R.T. 10-20-50
CHECKED BY: R.T. 10-20-50
SHEET 4 OF 13

NO. DESCRIPTION DATE BY

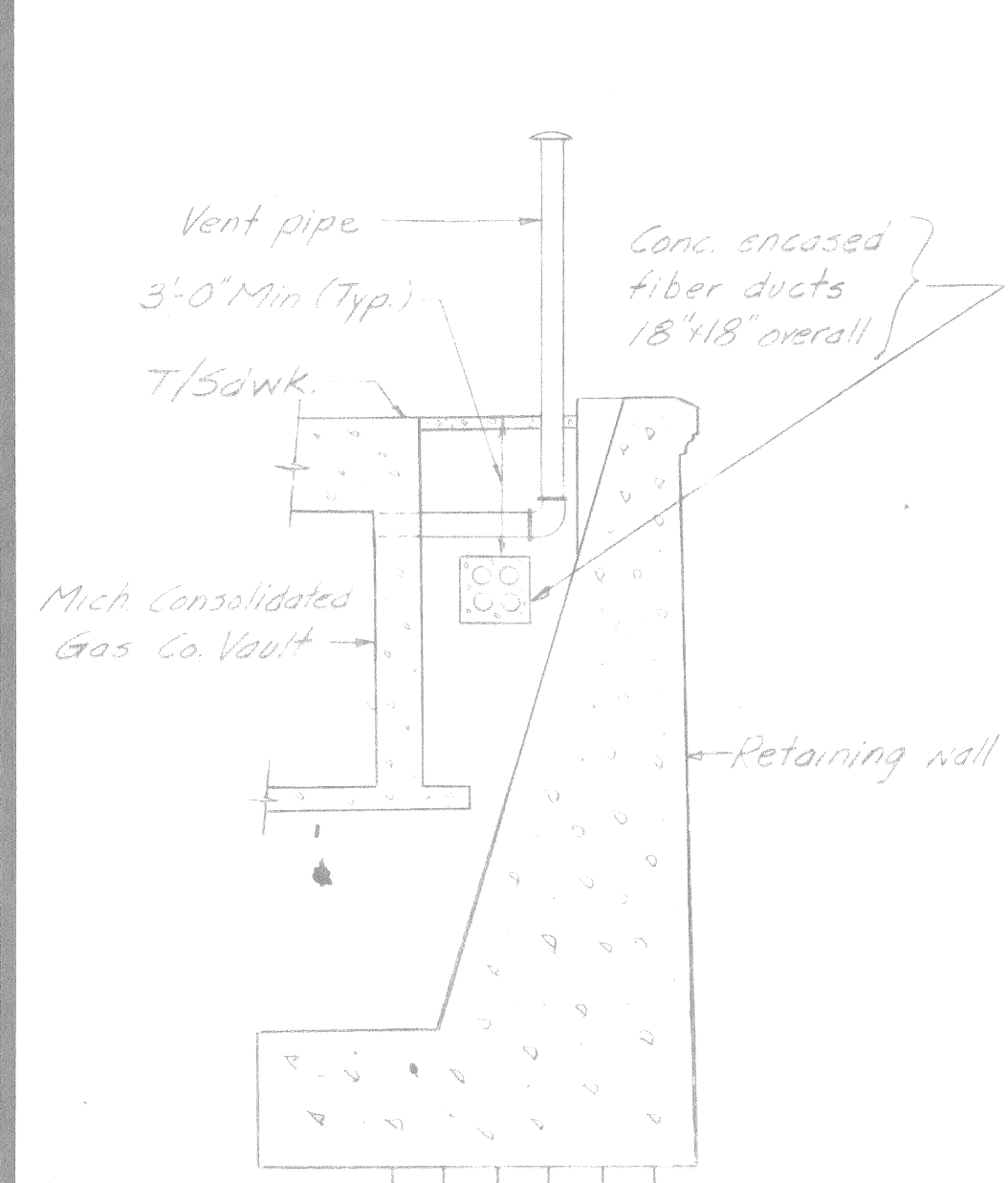
BI OF 82-22-2



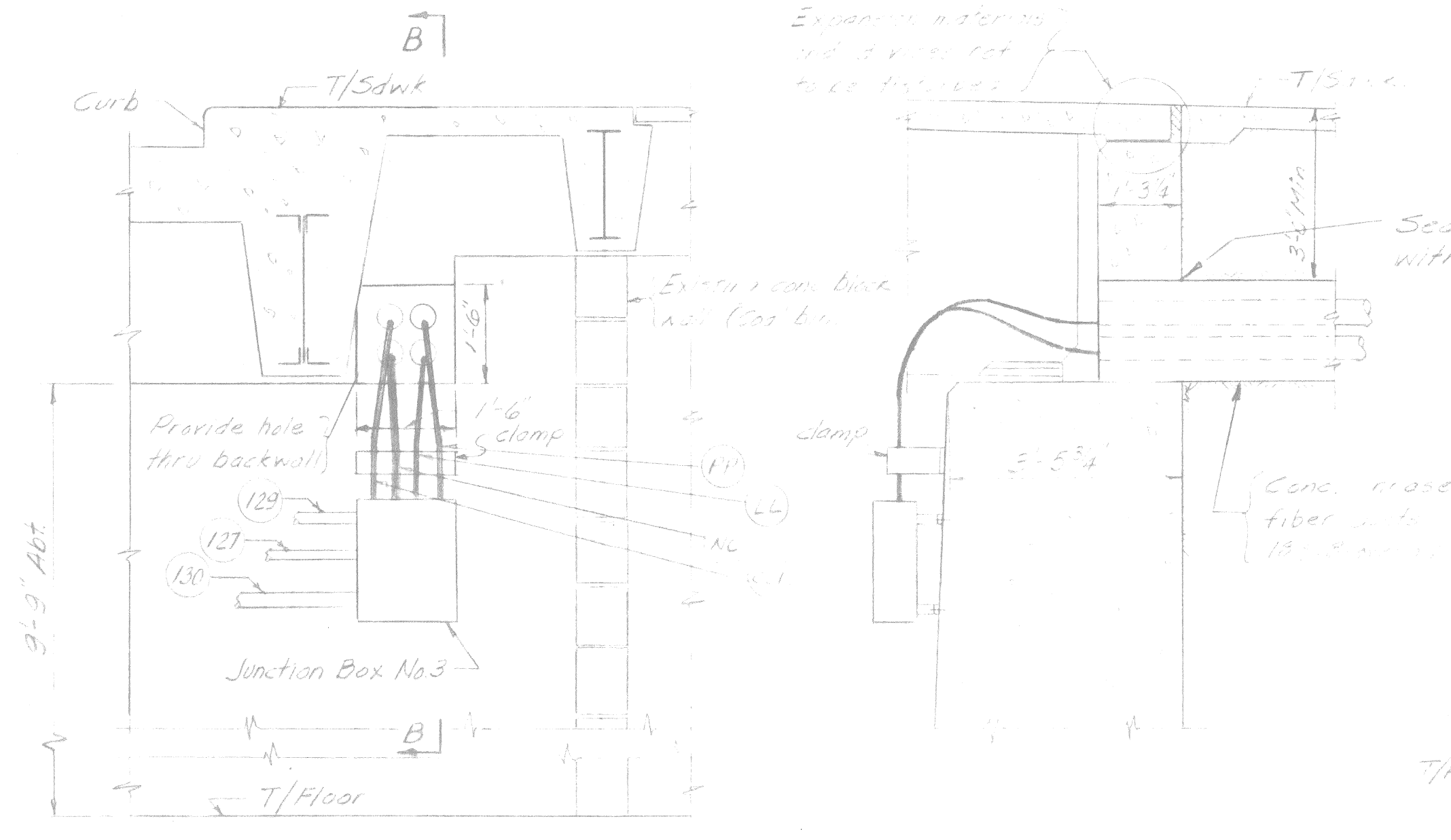
PLAN



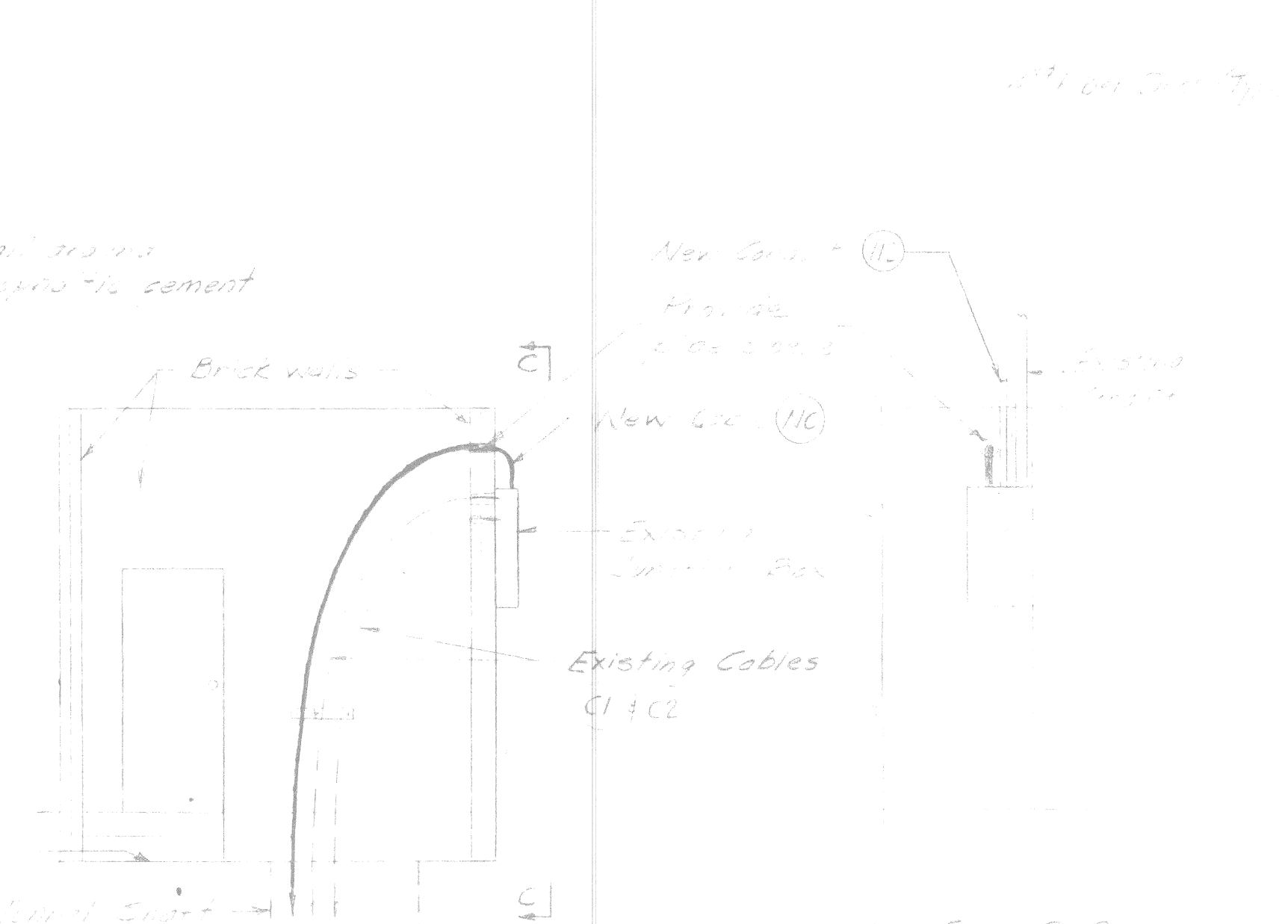
ELEVATION



SECTION A-A



ELEV. (From Panel) SECTION B-B DUCT AND CABLE DETAILS AT WEST ABUTMENT



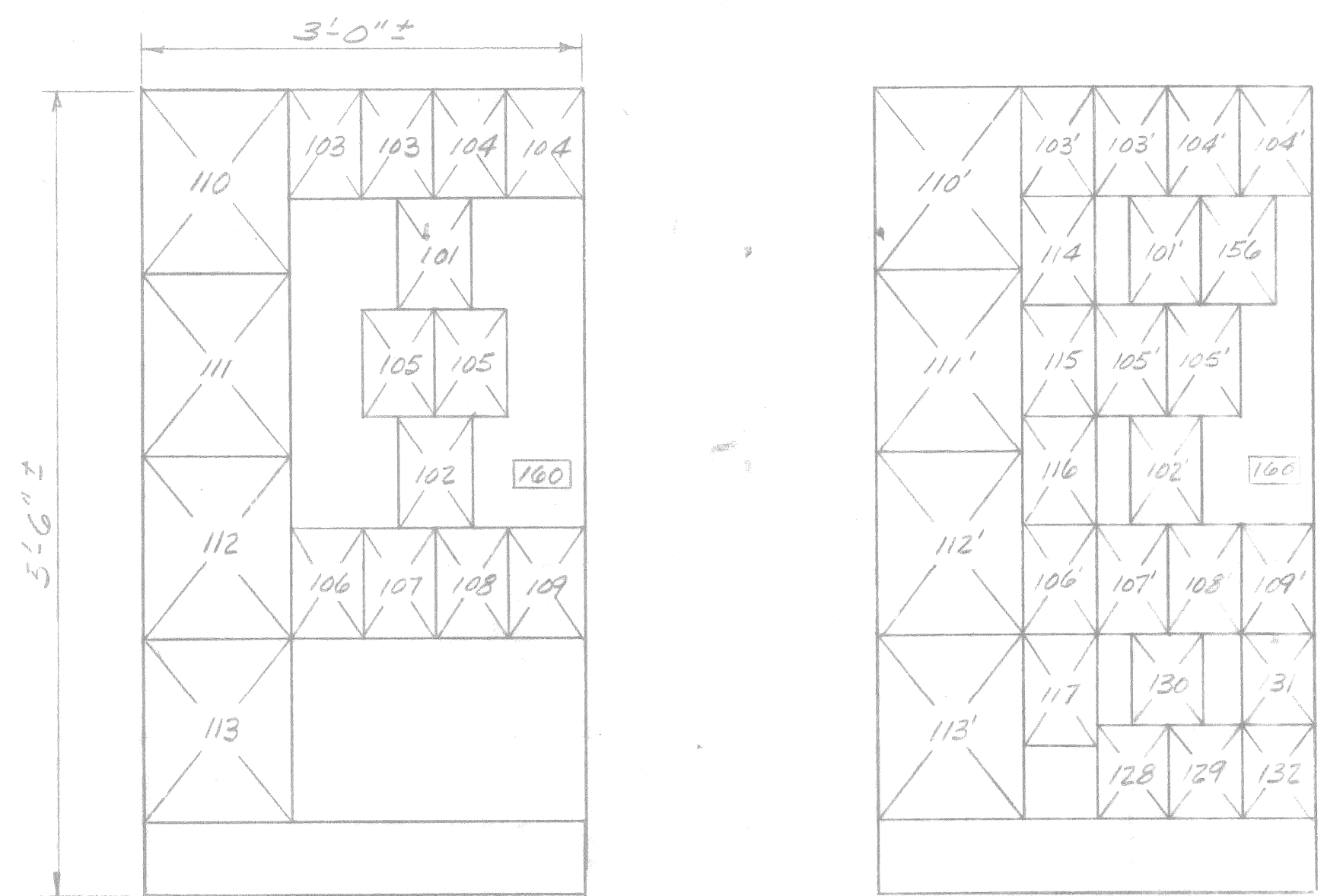
INTERIOR ELEV. DETAILS - DETROIT EDISON CO. VAULT

MICHIGAN STATE HIGHWAY DEPARTMENT
 MODIFICATION OF ELECTRICAL EQUIPMENT ON BASCULE BRIDGE
 CARRYING U.S-25(FORT STREET)OVER THE ROUGE RIVER IN DETROIT
CABLES AND DUCTS
 HAZLET & ERDOL-CONSULTING ENGINEERS-FILE NO. 357

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS		
DRAWN BY		
TRACED BY		
CHECKED BY		
SHEET		
OF		

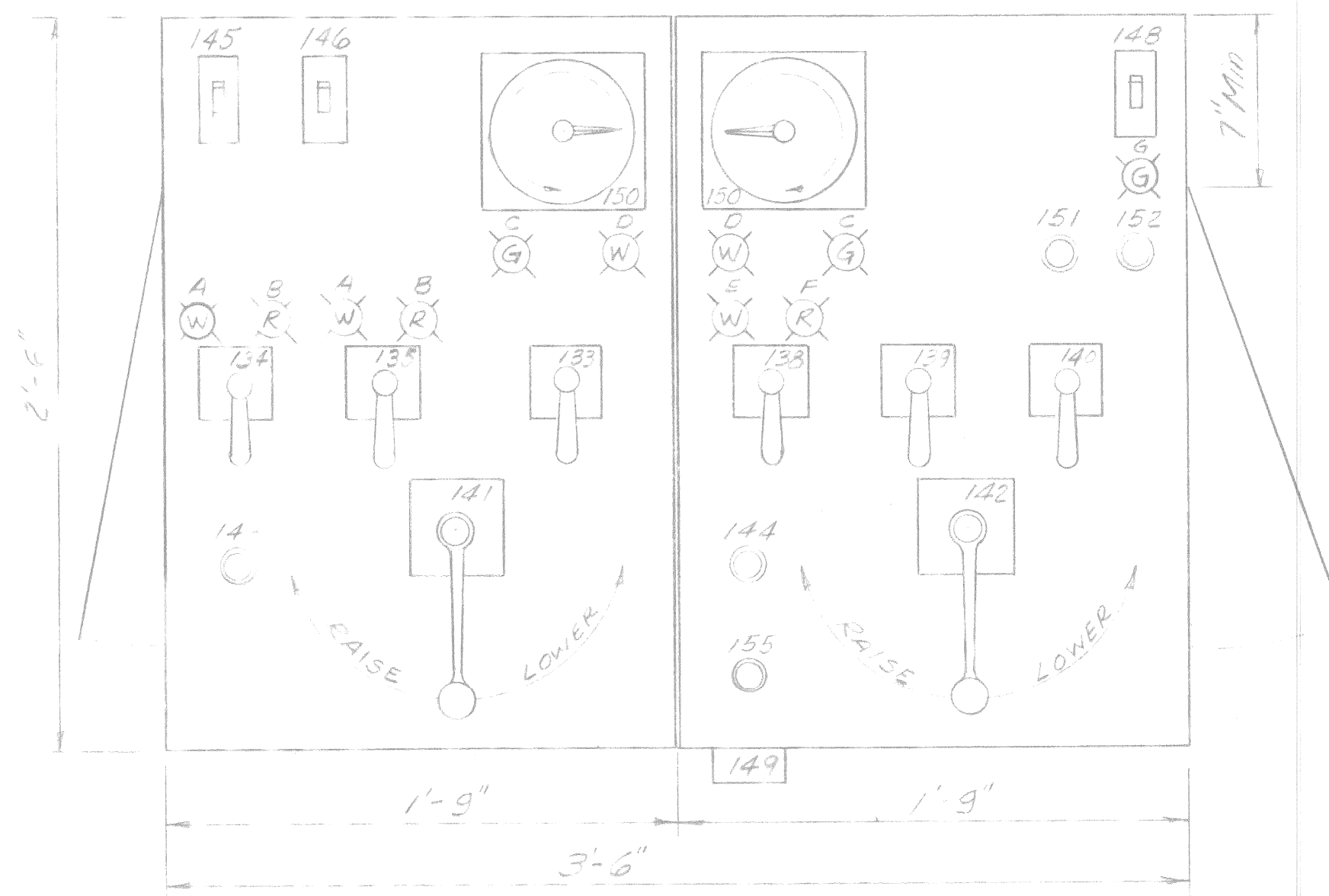
BI OF 82-22-2



NEAR SIDE PANEL

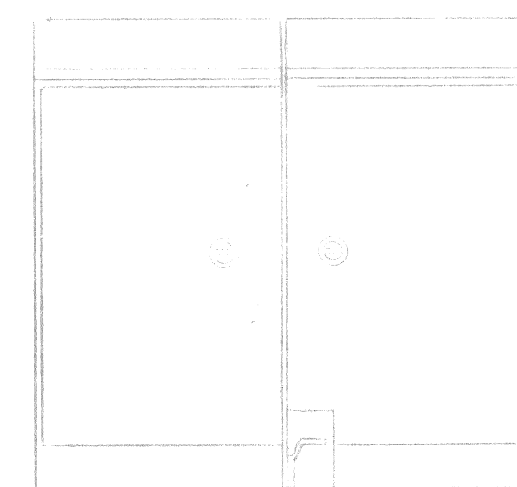
FAR SIDE PANEL

CONTROL PANELS

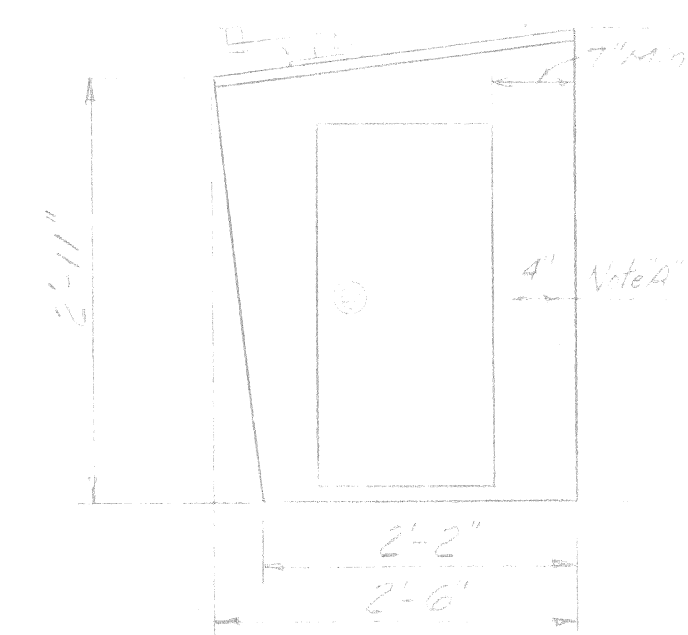


PLAN - CONTROL STAND

Note: The Control Stand, to be built in two halves shall not be fabricated until the Contractor has verified the method of entry of the disassembled halves into the Operators Room.



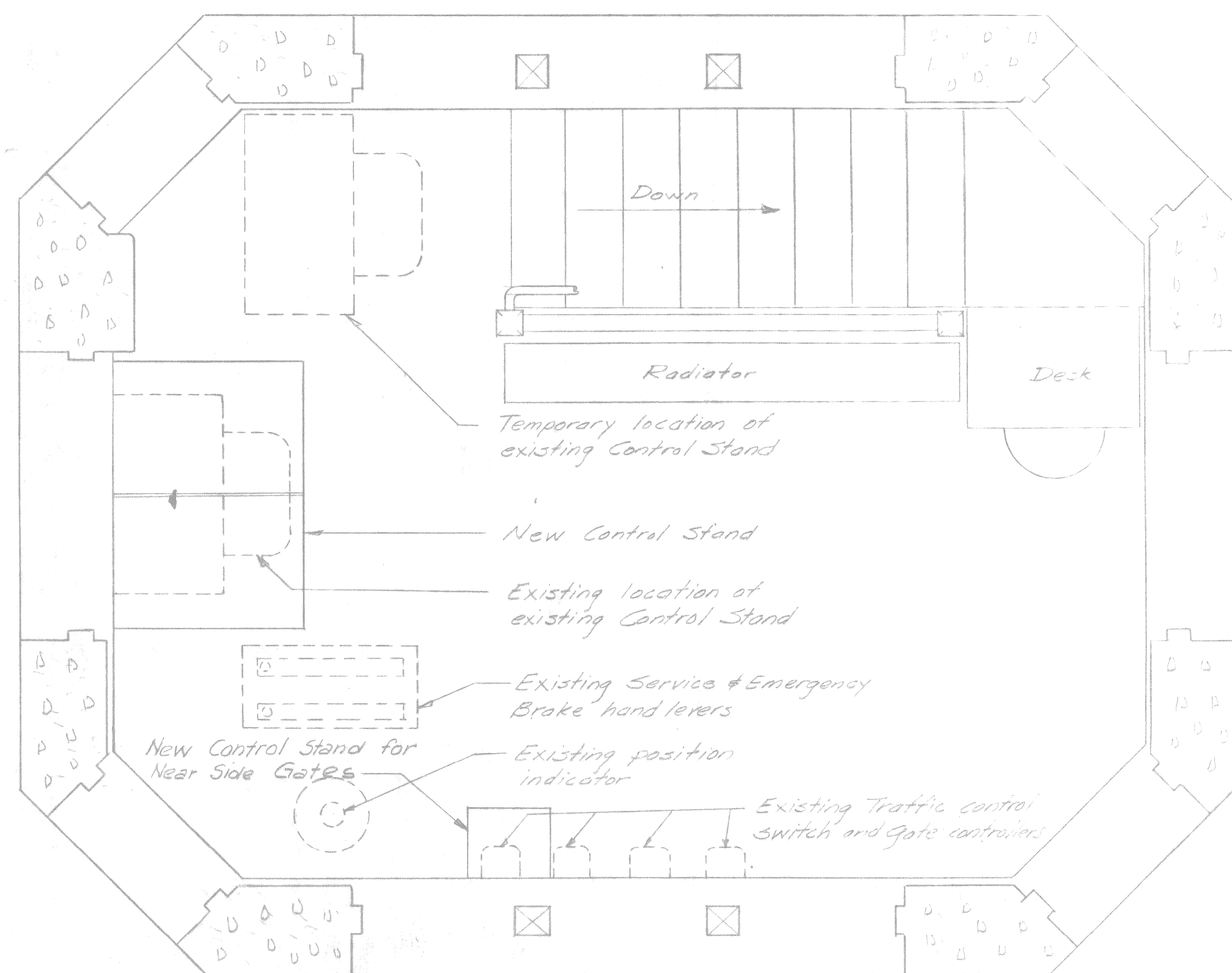
FRONT ELEV



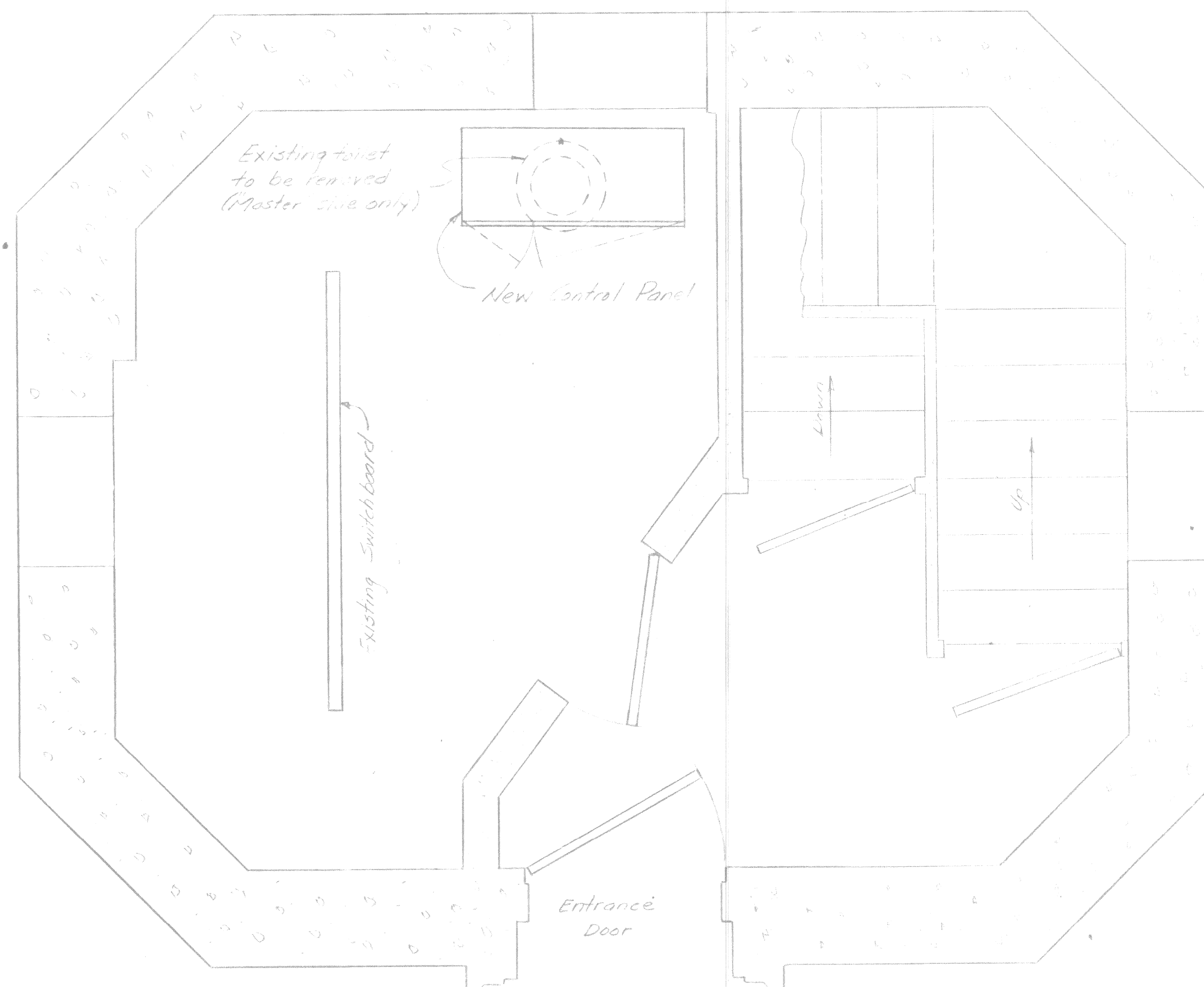
SIDE ELEV

ITEM	NAME/PLATE MARKINGS
A	90° - Up
B	Gates Down
C	Last Full Over
D	Last Fully Closed
E	Center Lock Driver
F	Center Lock Withdrawn
G	Navigation Lights
145	Central Circuit
147	Oncoming Gate - Far Side
148	Outgoing Gate - Far Side
149	Oncoming Gate - Near Side
150	Outgoing Gate - Near Side
151	Center Lock
152	Emergency Brake - Near Side
153	Emergency Brake - Far Side
154	Near Side Main Motor Controller
155	Far Side Main Motor Controller
156	Reduced Power (Raise) - Near Side
157	Reduced Power (Raise) - Far Side
158	By-Pass Center Lock for Gate Operation
159	By-Pass Gates for Center Lock Operation
160	Navigation Lights
161	Operator's Signal
162	Machinery Area Warning
163	Seating

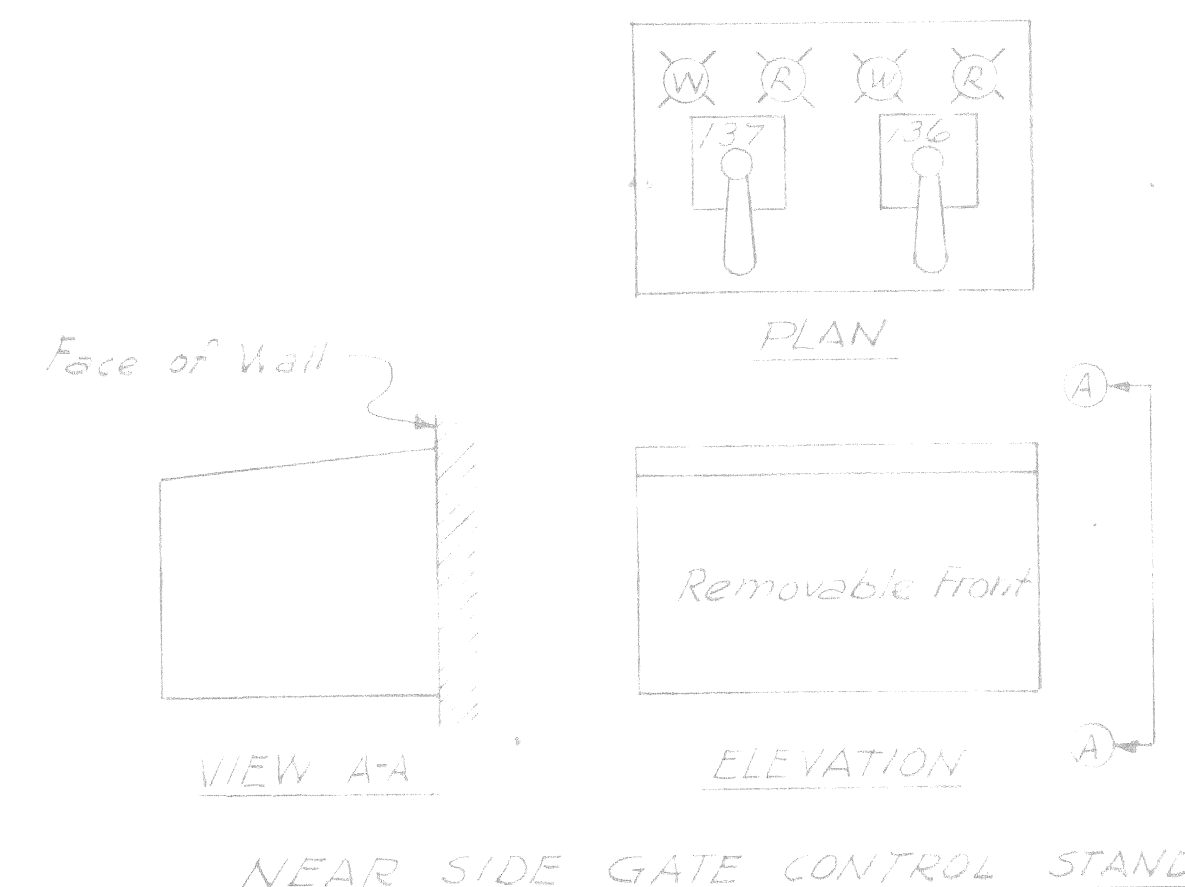
Note "A": Leave clear of equipment and framing for removal and entry of conduit (both sides).



PLAN - OPERATORS ROOM - "MASTER" SIDE (EAST)



PLAN - SWITCHBOARD ROOM



NEAR SIDE GATE CONTROL STAND

MICHIGAN STATE HIGHWAY DEPARTMENT
 MODIFICATION OF ELECTRICAL EQUIPMENT ON BASCULE BRIDGE
 CARRYING U.S.-25(FORT STREET)OVER THE ROUGE RIVER IN DETROIT
 CONTROL STAND AND CONTROL PANELS

HALELETT & ERDAL-CONSULTING ENGINEERS-FILE NO.357

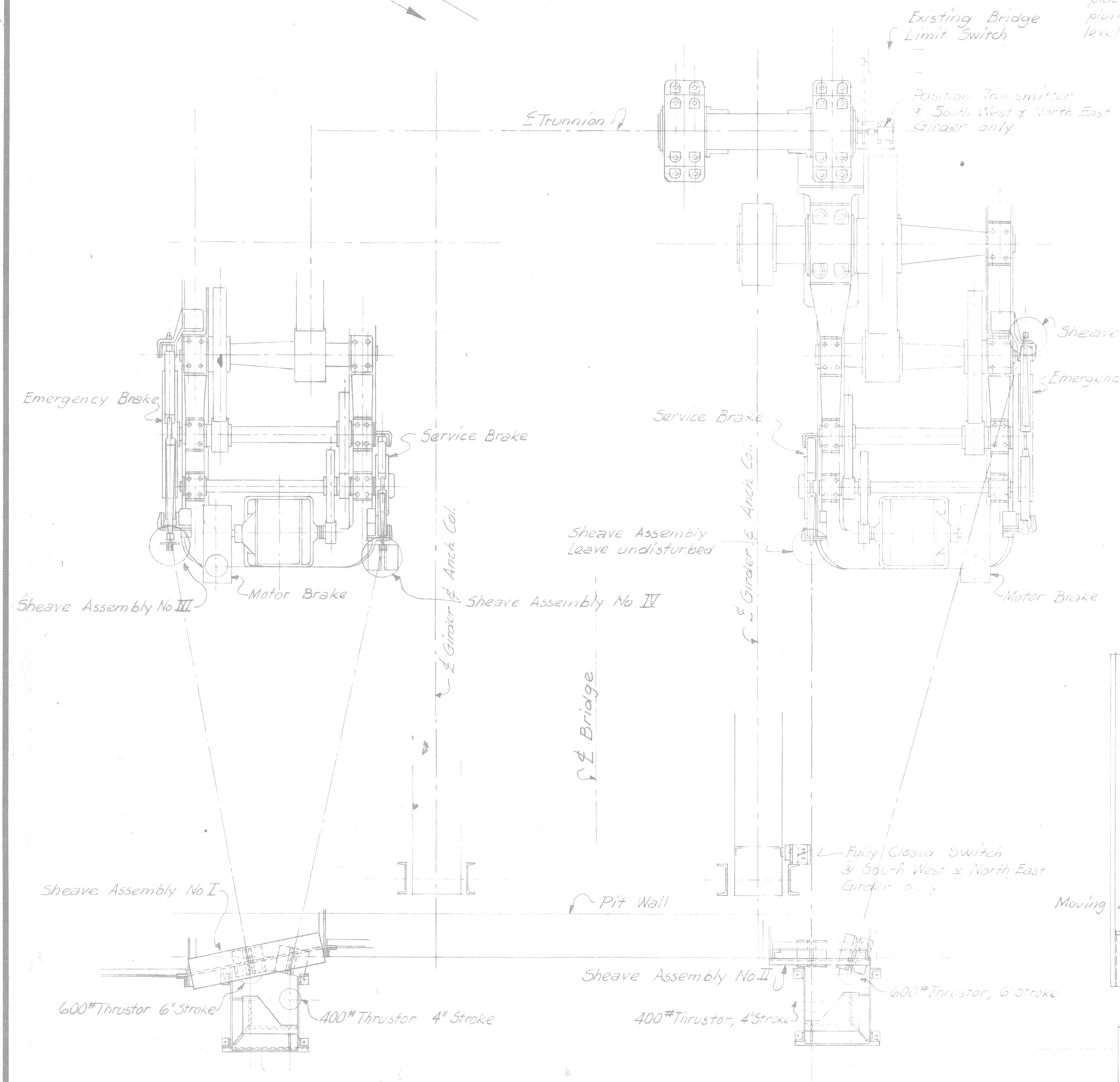
REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	
DRAWN BY	R.S.D. 6-17-60
TRACED BY	
CHECKED BY	R.T. 6-20-60
SHEET	6 OF 13

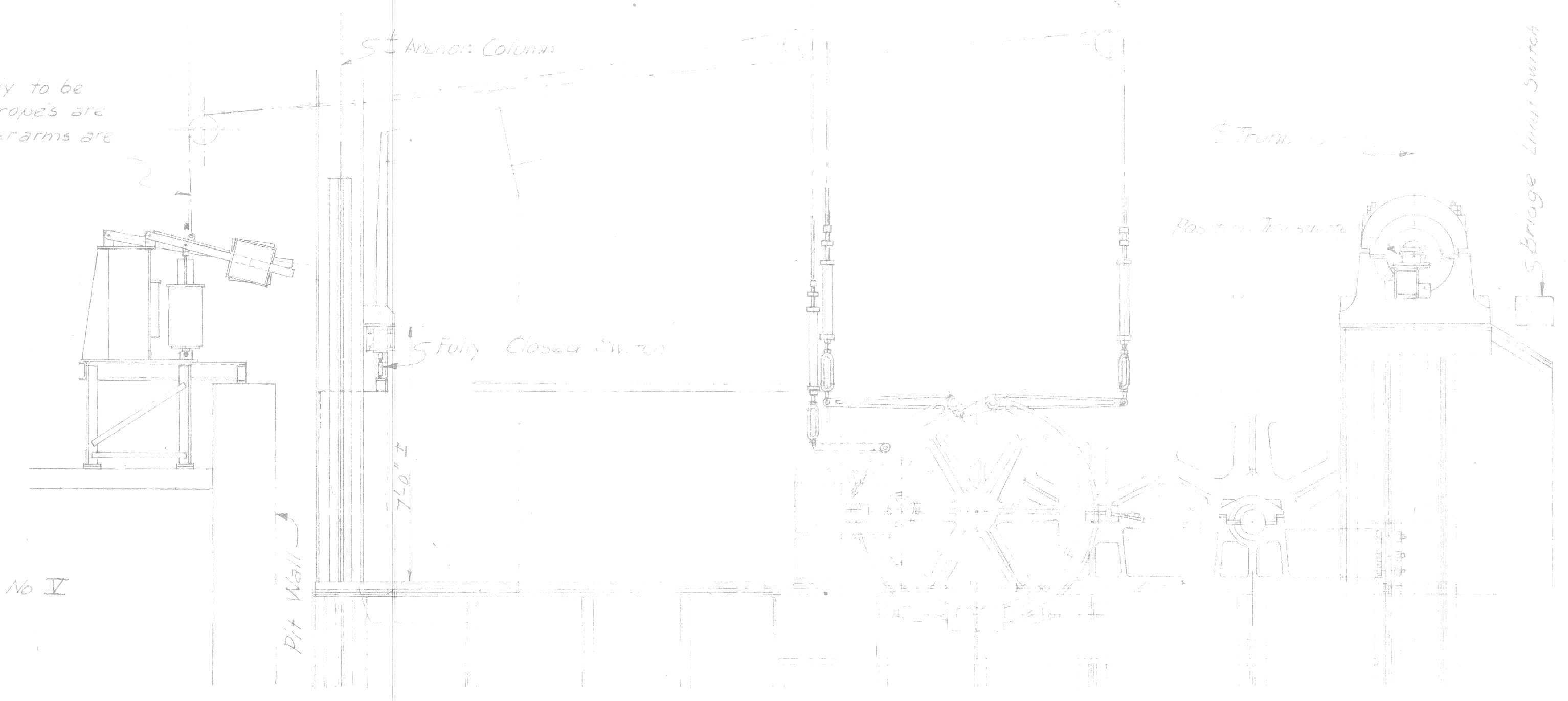
BI OF 82-22-2

North for East Pier ← → North for West Pier

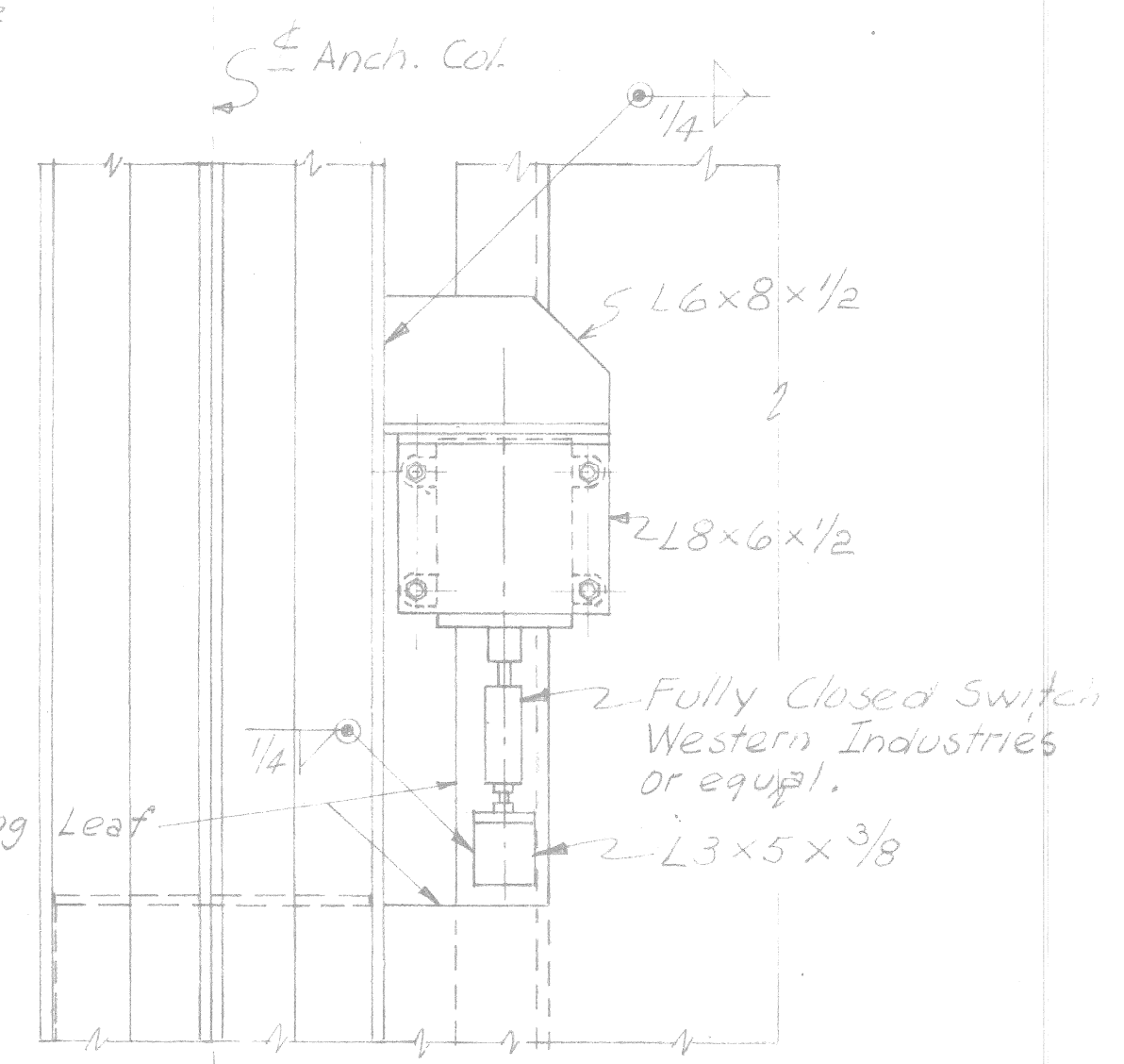
Notes
 Thruster assembly to be placed so that ropes are plain when lever arms are level



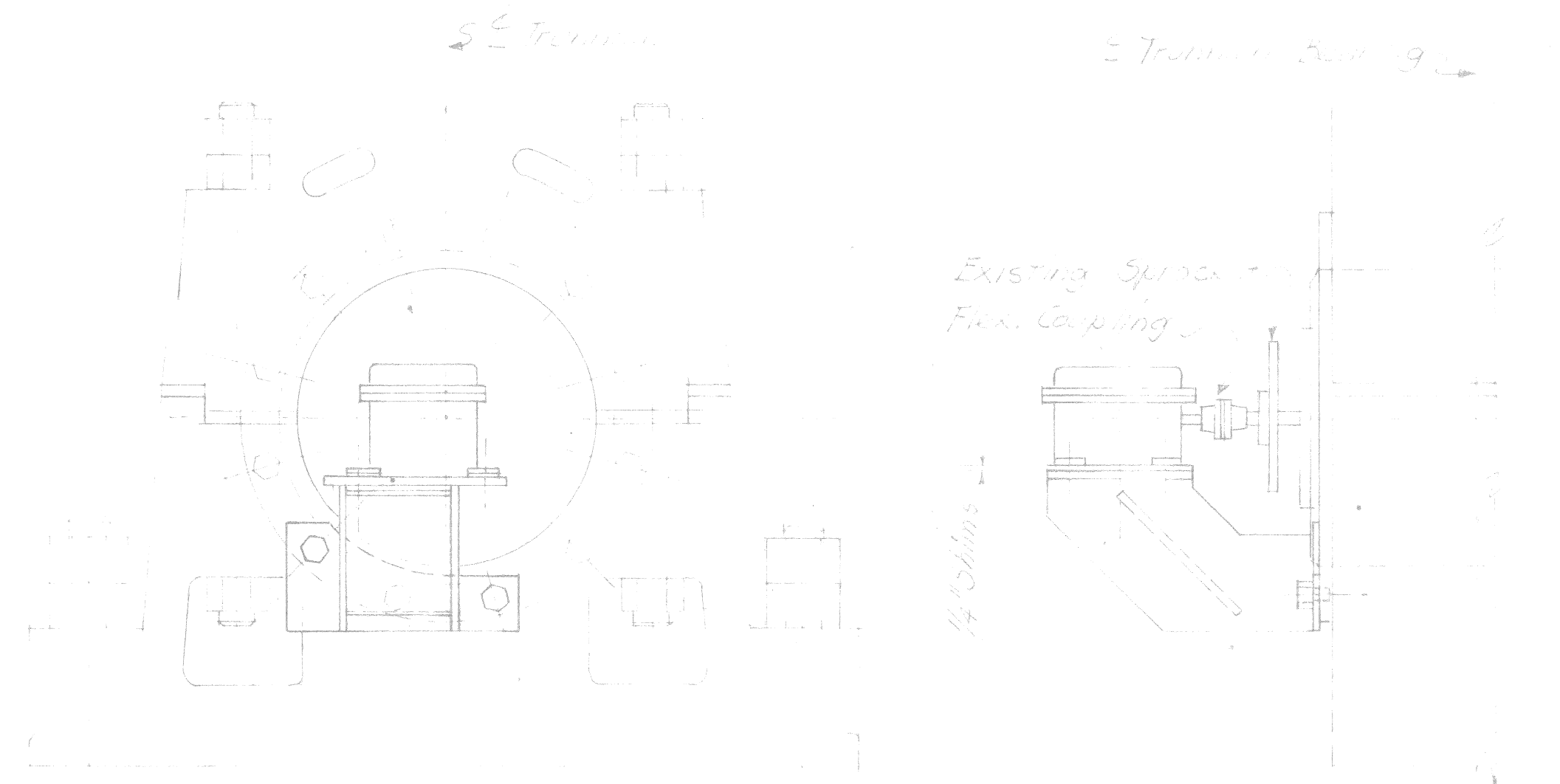
PLAN



ELEVATION



SUPPORT FOR FULLY CLOSED SWITCH



SUPPORT FOR POSITION TRANSMITTER
 (3/4" Plate Weld all over)

MICHIGAN STATE HIGHWAY DEPARTMENT

MODIFICATION OF ELECTRICAL EQUIPMENT ON BASCULE BRIDGE CARRYING U.S.-25 (FORT STREET) OVER THE ROUGE RIVER IN DETROIT

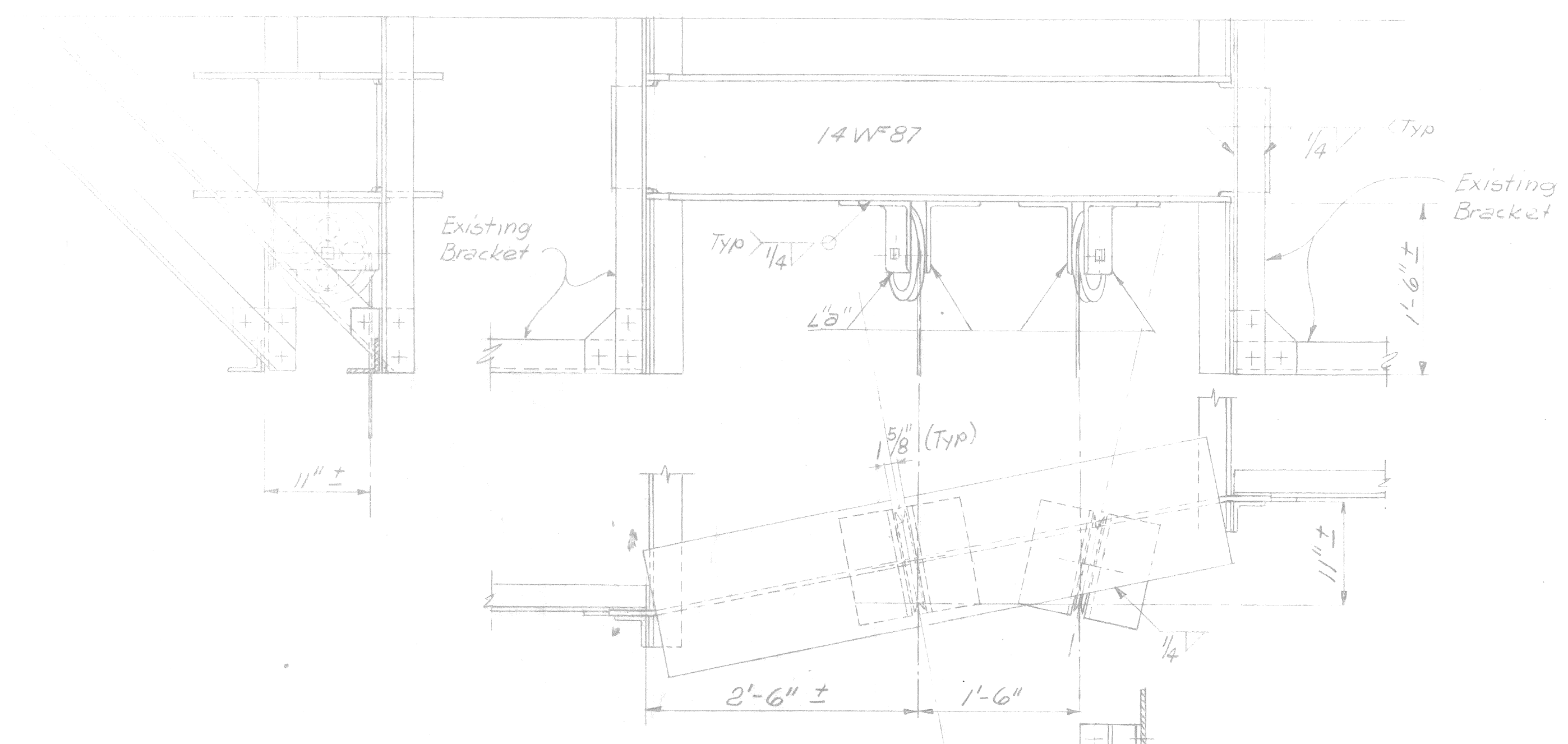
BRAKE THRUSTERS-GENERAL LAYOUT

HAZELTINE & ERDAL-CONSULTING ENGINEERS-FILE NO. 357

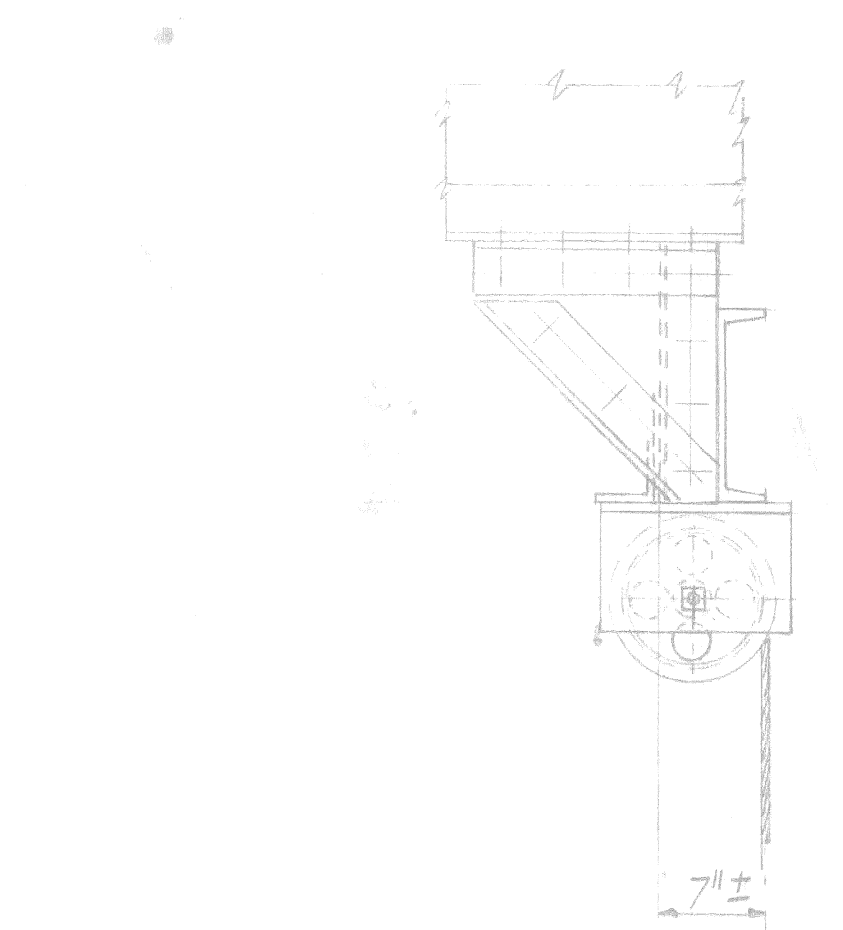
REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS			
DRAWN BY	R.T.	6-20-60	
TRACED BY			
CHECKED BY	RED	6-20-60	
SHEET	7	OF 13	

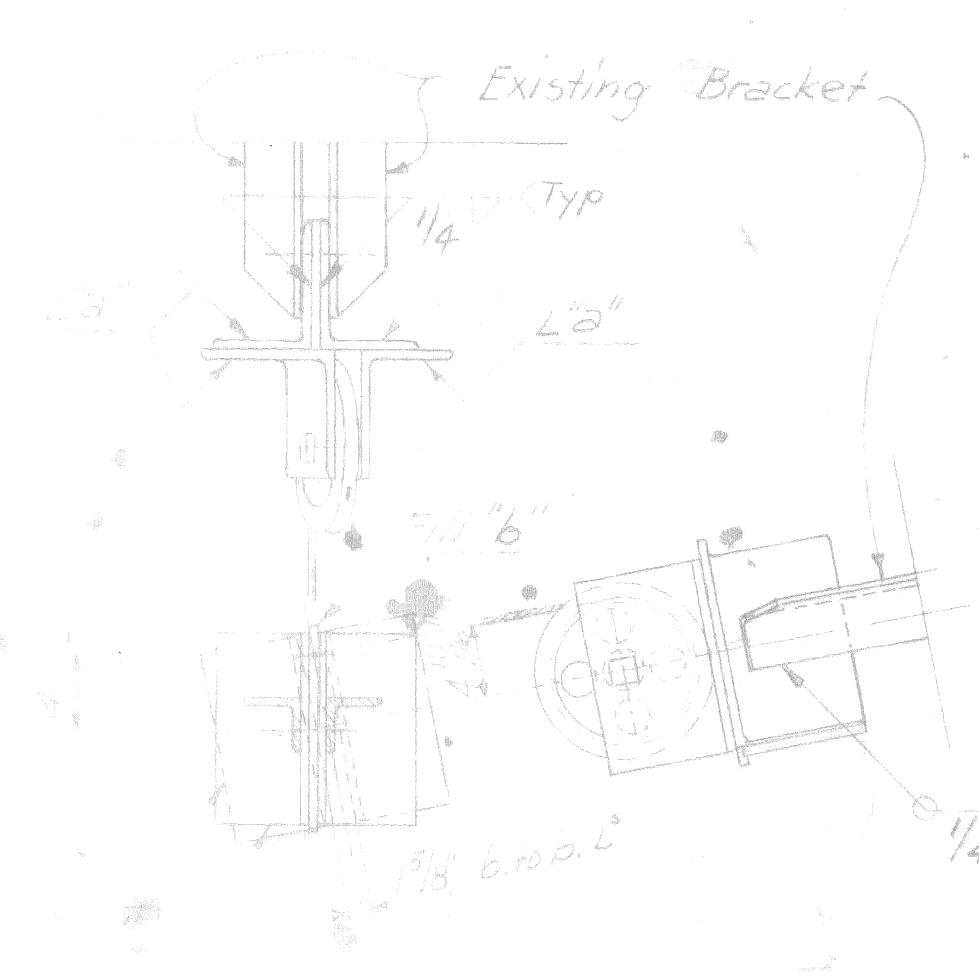
BI OF 82-22-2



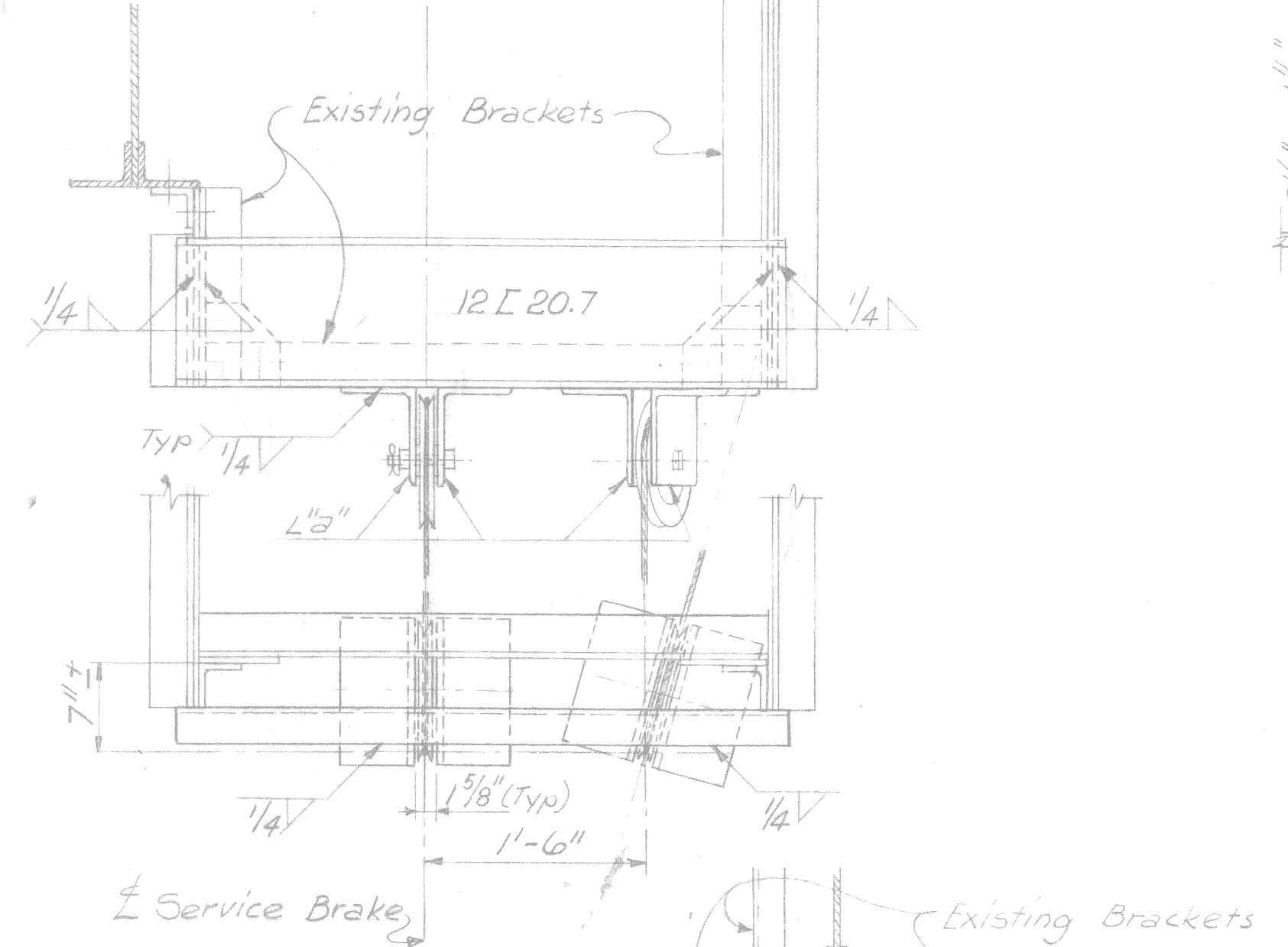
SHEAVE ASSEMBLY No I



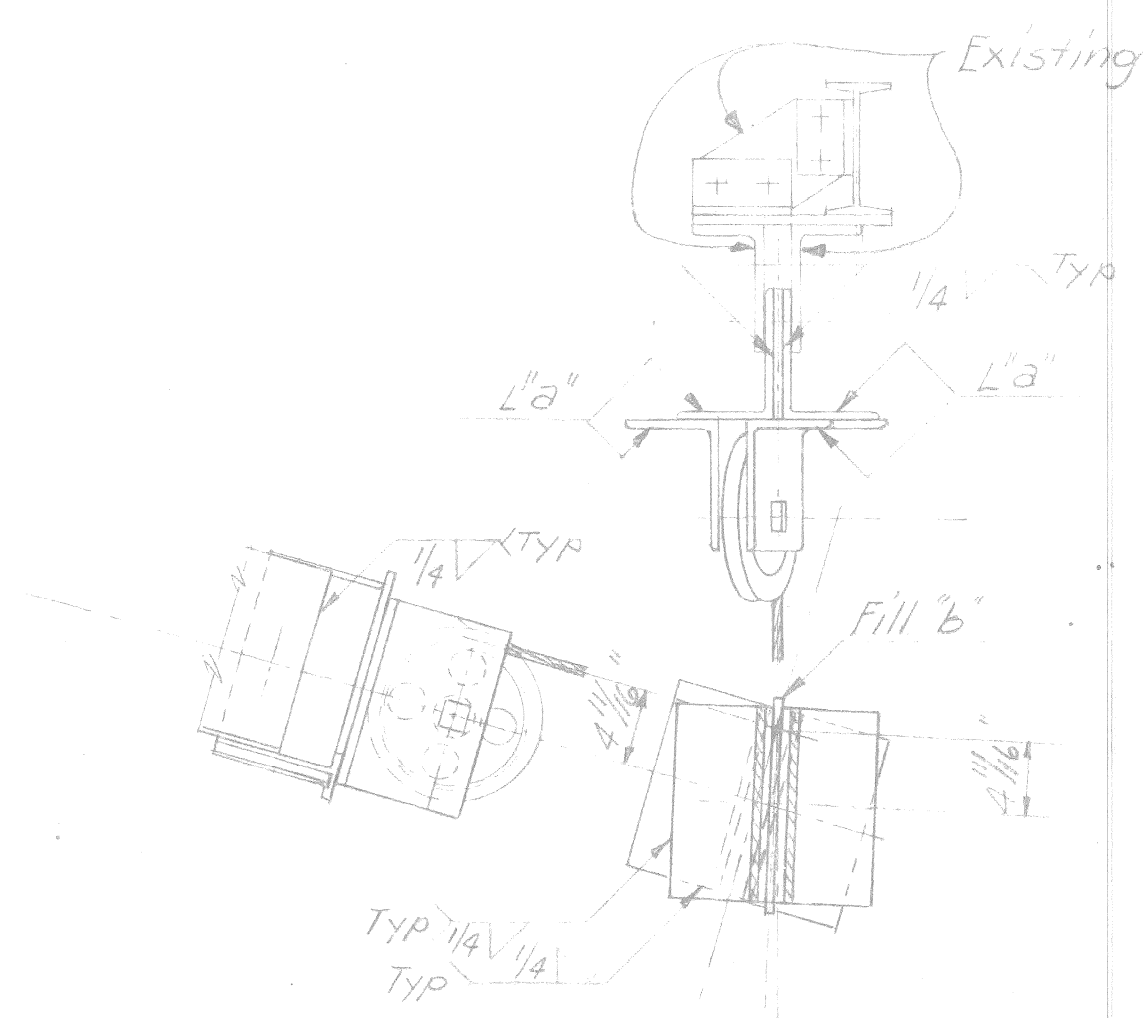
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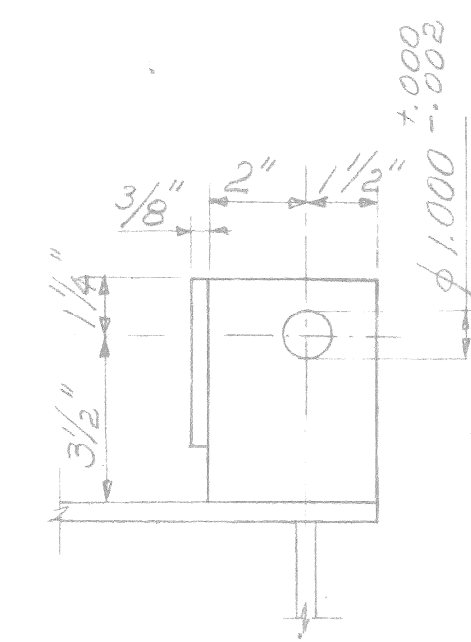
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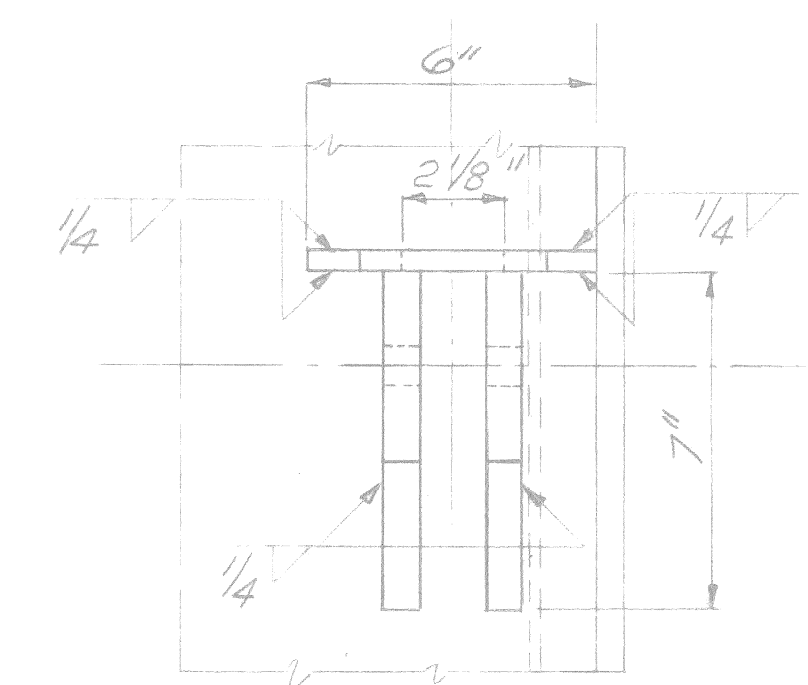
SHEAVE ASSEMBLY No IV



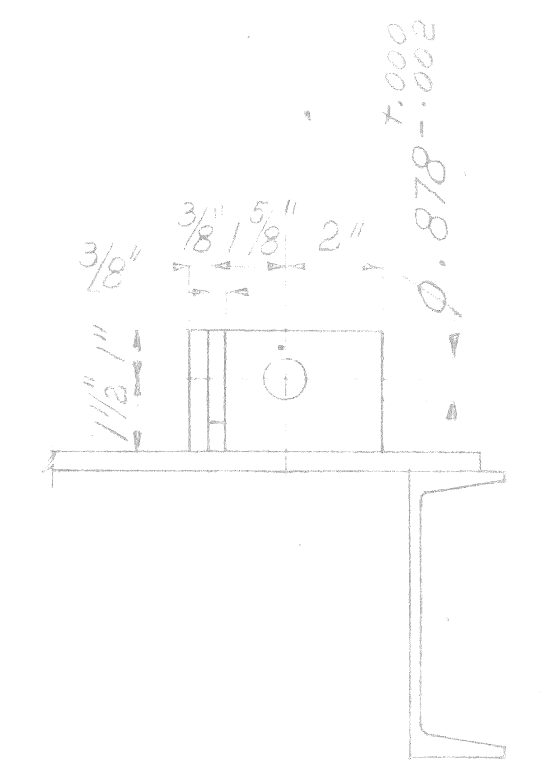
SHEAVE ASSEMBLY No V



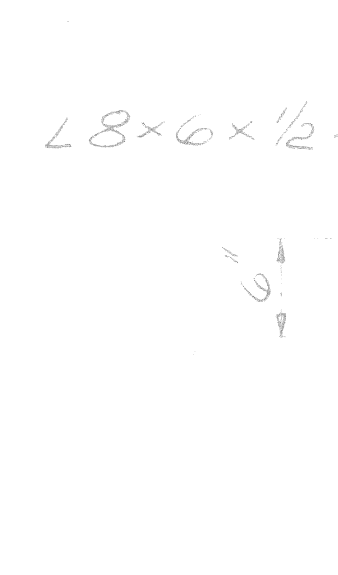
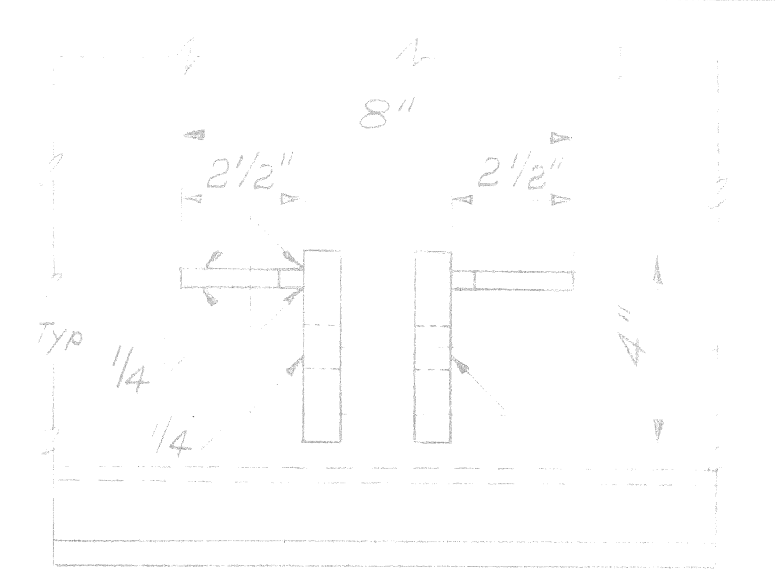
BEARING "e"



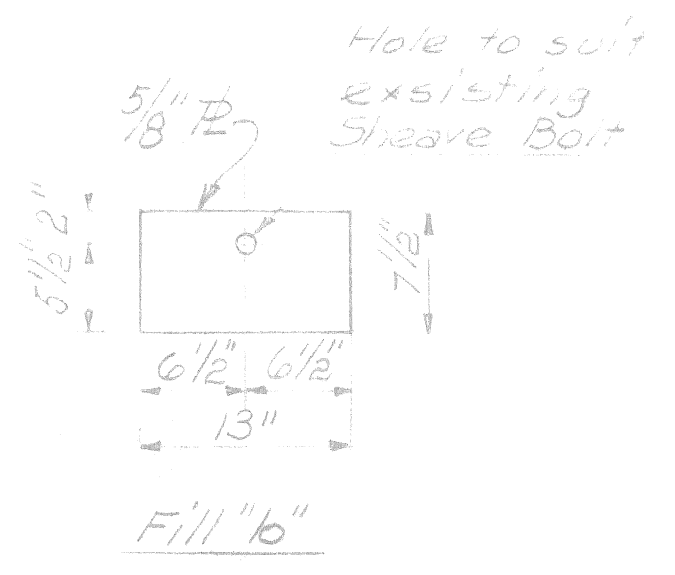
BEARING "d"



BEARING "b"



Hole to suit existing Sheave Bolt
 L 3"



Fill "b"

Note:
 All sheaves to be 9" φ
 All sheave bolts to be 7/8" φ
 Sheaves and Bolts to be selected from those sheave assemblies whose use is to be discontinued

MICHIGAN STATE HIGHWAY DEPARTMENT

MODIFICATION OF ELECTRICAL EQUIPMENT ON BASCULE BRIDGE CARRYING U.S.-25 (FORT STREET) OVER THE ROUGE RIVER IN DETROIT.
 BRAKE THRUSTORS-ASSEMBLIES AND DETAILS.

HAZLET & ERDAL CONSULTING ENGINEERS - FILE NO. 357

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS		
DRAWN BY		
CHECKED BY		
SHEET		