

STATE OF MICHIGAN  
DEPARTMENT OF STATE HIGHWAYS

PLANS OF PROPOSED BRIDGES

MICHIGAN PROJECT I-96-4(77)230  
STATE PROJECT BI 82123-046

JEFFRIES FREEWAY  
WAYNE COUNTY  
CITY OF DETROIT

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 Department of State Highways' Standard Specifications for Road and Bridge Construction, 1967 Edition.

The design of these structures is based on the Michigan Department of State Highways' Specifications for the design of Highway Bridges, 1958 Edition and current AASHTO Standard Specifications for Highway Bridges, HS2-44 Loading.  
Live load plus impact deflection: 1/1000 of span length and 1/350 of cantilever arm.  
The character of all materials and the extent thereof as shown by borings has been obtained by methods and from sources believed to be reliable. The exactness of this information is, however, in no case guaranteed.

All exposed concrete corners shown square on the Plans shall be beveled with 1/2" triangular moldings except as otherwise noted.

The stationing as shown on these Plans for the intersection of the centerline of bridge and roadway is believed to be correct. It shall, however, be checked at the time of starting construction and if the stationing shown on the plans is incorrect it shall be reported to the Design Office at Lansing and the structure shall be staked out using the actual intersection of the centerline of bridge and roadway as the control point.

The contractor shall contact all Utility Companies regarding their facilities prior to starting work.

The following items shown in these plans are to be constructed with the road work: Bridge approach curb and gutter, catch basins, inlets, culverts, sewers, C.M.P., temporary detours, earth excavation and any other items not listed in the bill of materials.

The existing structures shall be checked at the time of starting construction to see that its relationship to the proposed work is as shown on these plans and any differences requiring changes in the new work shall be reported to the Design Office.

The grades and stresses of the structural materials used in these structures are as follows:  
Concrete, Grade A  $f'_c = 3000$  psi.  
Steel Reinforcement; Intermediate or Hard Grade  $f_y = 50000$  psi.  
Structural Steel: A988  $f_y = 27,000$  psi.

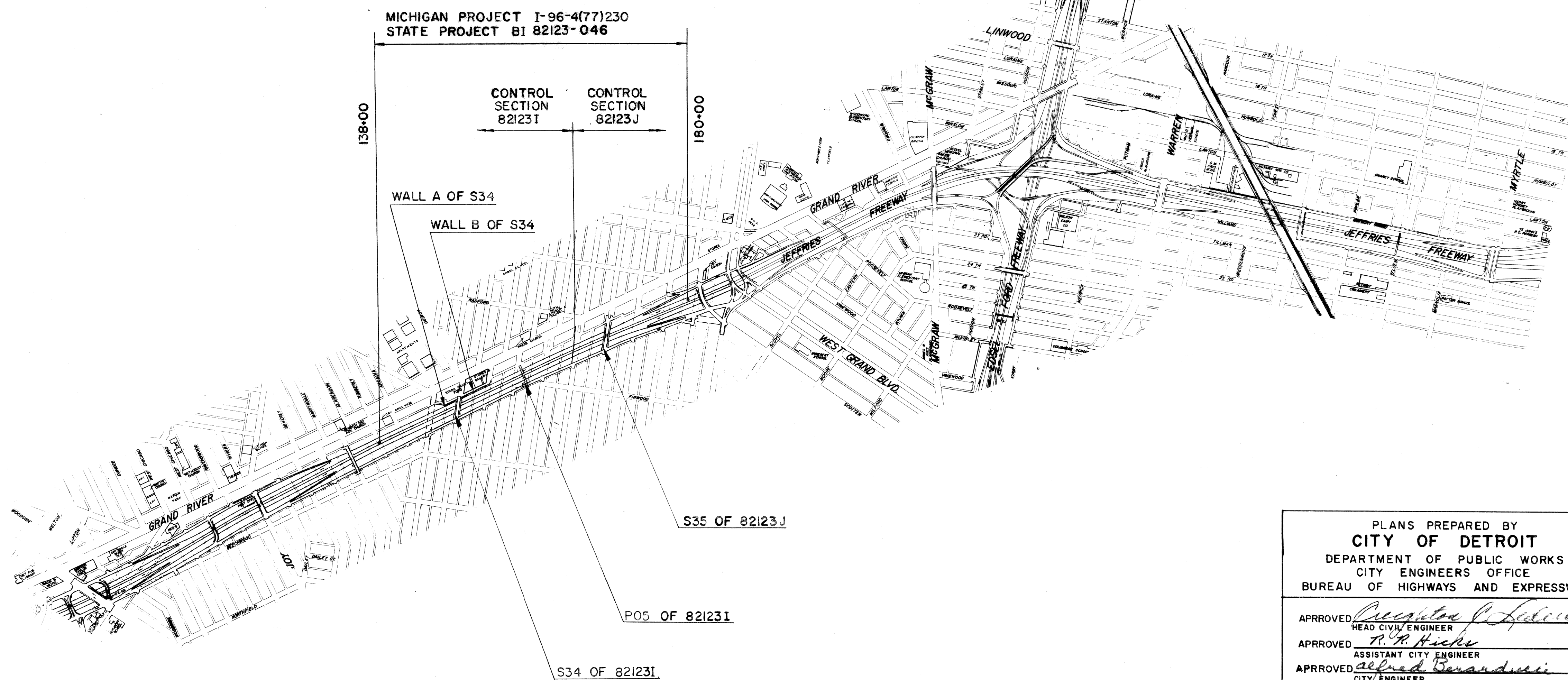
NOTE  
Where the following items are called for on the Plans, they are to be constructed according to the Standard Plan given below opposite each item, unless otherwise indicated.

STANDARD PLANS TO BE PRINTED

SHEET NO.	TITLE
RI6	Bridge Railing, Drain Casting, Bar Chair, Molding & Bevel Details
SP2	Standard Slope Paving Details

STANDARD PLANS NOT TO BE PRINTED

SHEET NO.	TITLE



PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *Richard J. Anderson*  
HEAD CIVIL ENGINEER  
APPROVED: *R. R. Hicks*  
ASSISTANT CITY ENGINEER  
APPROVED: *Alfred Beranducci*  
CITY ENGINEER

ITEM NO. 1144

CONTRACT FOR STRUCTURES		
APPROVALS		
CHECKED	DESIGN ENGINEER	DATE
RECOMMENDED FOR APPROVAL	ENGINEER OF BRIDGE AND ROAD DESIGN	DATE
RECOMMENDED FOR APPROVAL	TRAFFIC DIVISION	DATE
RECOMMENDED FOR APPROVAL	CONSTRUCTION DIVISION	DATE
RECOMMENDED FOR APPROVAL	CHIEF-BUREAU OF ENGINEERING	DATE

DEPARTMENT OF STATE HIGHWAYS  
HENRIK E. STAFSETH - STATE HIGHWAY DIRECTOR

APPROVED BY: \_\_\_\_\_ DEPUTY STATE HIGHWAY DIRECTOR \_\_\_\_\_ DATE

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
BUREAU OF PUBLIC ROADS

APPROVED: \_\_\_\_\_ FOR THE DIVISION ENGINEER \_\_\_\_\_ DATE

STATE PROJECT NO.	FEDERAL PROJECT	SHEET NO.
BI 82123-046	I-96-4(77)230	1

STATE PROJECT NO. BI 82123-046

IVANHOE AVE. PEDESTRIAN BRIDGE P05 OF 82123I	
SHEET No	DESCRIPTION
2	GENERAL PLAN OF SITE
3	GENERAL DRAWING
4	GENERAL PLAN OF STRUCTURE
5	EXISTING UTILITIES AND PROPOSED ALTERATIONS
6	ABUTMENT A DETAILS
7	RAMP DETAILS
8	ABUTMENT B DETAILS
9	PIER DETAILS
10-11	STRUCTURAL STEEL DETAILS
12	SUPERSTRUCTURE DETAILS
13	RAILING DETAILS
14	BRIDGE ENCLOSURE DETAILS
15	STEEL REINFORCEMENT DETAILS

MAPLEWOOD AVE. BRIDGE S34 OF 82123I	
SHEET No	DESCRIPTION
2	GENERAL PLAN OF SITE
3	LOG OF SOIL BORINGS
4	GENERAL DRAWING
5-7	GENERAL PLAN OF STRUCTURE
8	EXISTING UTILITIES AND PROPOSED ALTERATIONS
9-12	ABUTMENT DETAILS
13	PIER DETAILS
14-16	STRUCTURAL STEEL DETAILS
17	METAL EXPANSION JOINT DETAILS
18-22	SUPERSTRUCTURE DETAILS
23	STEEL REINFORCEMENT DETAILS
24-27	RETAINING WALL A DETAILS
28-33	RETAINING WALL B DETAILS
34	STEEL REINFORCEMENT DETAILS

PACIFIC AVE. BRIDGE S35 OF 82123J	
SHEET No	DESCRIPTION
2	GENERAL PLAN OF SITE
3	GENERAL DRAWING
4	GENERAL PLAN OF STRUCTURE
5	EXISTING UTILITIES AND PROPOSED ALTERATIONS
6	FOUNDATION PILING DETAILS
7-11	ABUTMENT DETAILS
12	PIER DETAILS
13-15	STRUCTURAL STEEL DETAILS
16	METAL EXPANSION JOINT DETAILS
17-21	SUPERSTRUCTURE DETAILS
22	STEEL REINFORCEMENT DETAILS

SHEET No	DESCRIPTION
1	TITLE SHEET
1a	INDEX SHEET
1b	QUANTITY SHEET
R16	BRIDGE RAILING, DRAIN CASTING, BAR CHAIR, MOLDING AND BEVEL DETAILS
SP2	STANDARD SLOPE PAVING DETAILS

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

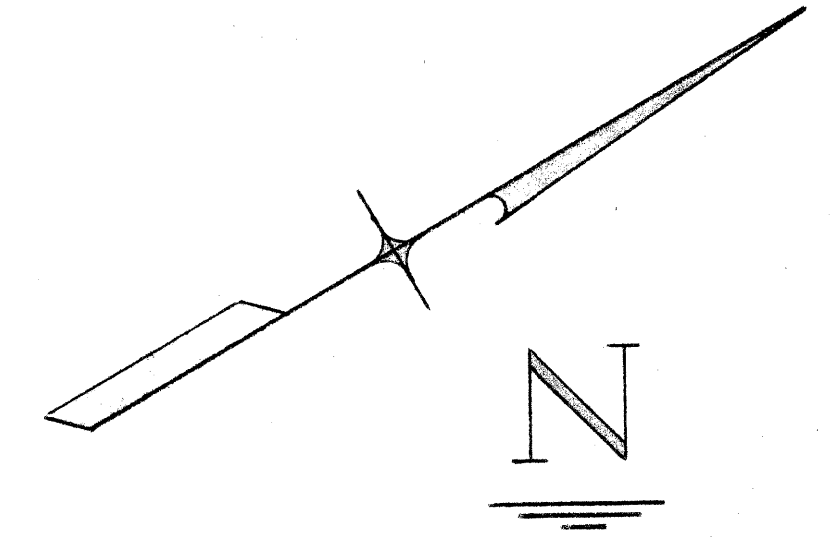
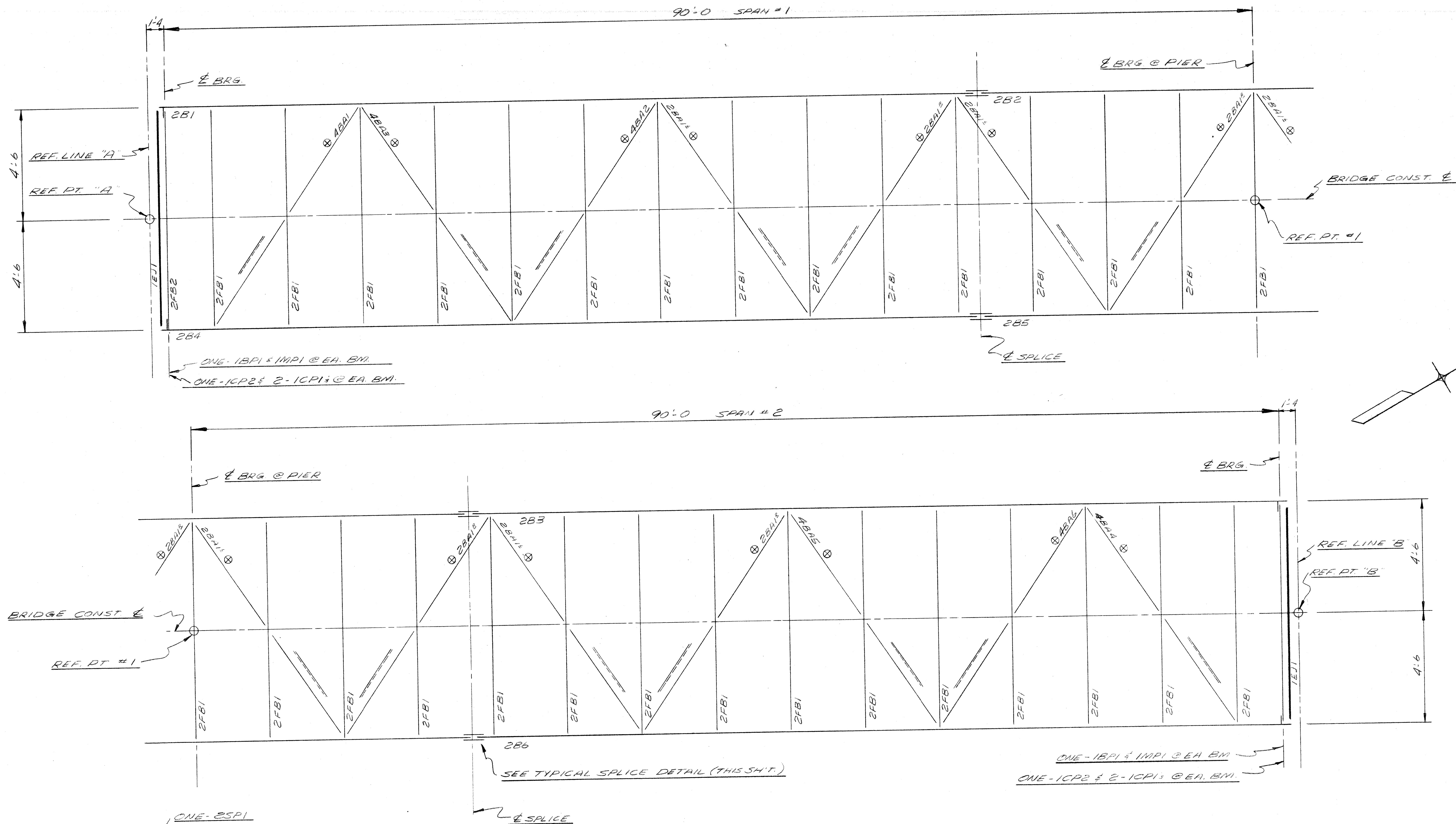
APPROVED *H. Card*  
STRUCTURAL ENGINEER

JOB No.  
PW 990(4)

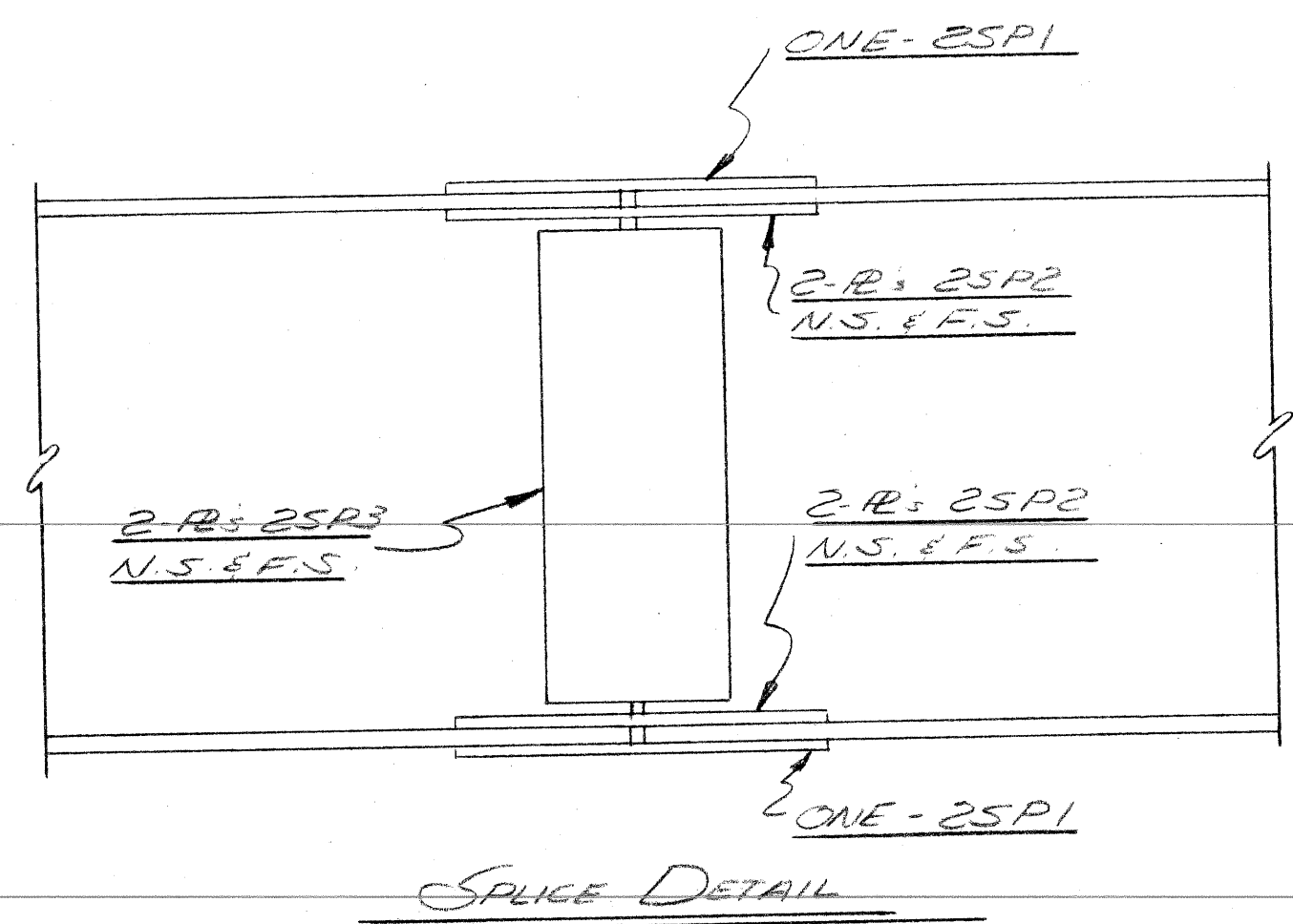
MICHIGAN DEPARTMENT OF STATE HIGHWAYS	
JEFFRIES FREEWAY IN DETROIT	
INDEX SHEET	
CITY OF DETROIT	
SQUAD BOSS	<i>STURN</i> 2-69
DRAWN BY	<i>M.M.</i> 2/69
TRACED BY	-
CHECKED BY	<i>ZHS</i> 2-69
SHEET	10 OF
P05 & S34 OF 82123I S35 OF 82123J	

REVISIONS			
NO.	DESCRIPTION	DATE	BY





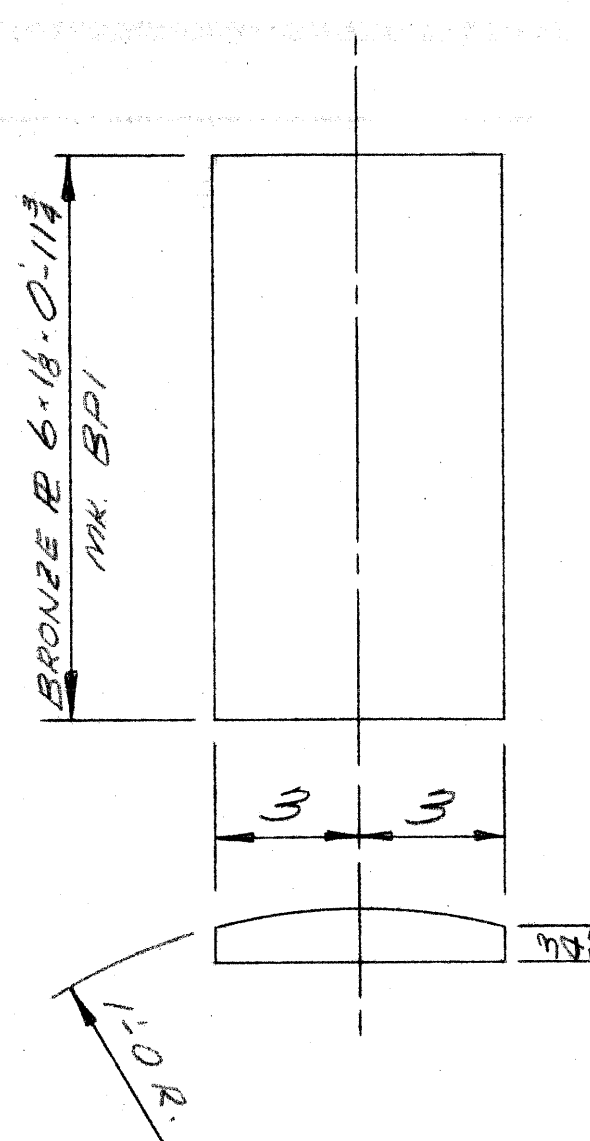
ERECTION DIAGRAM



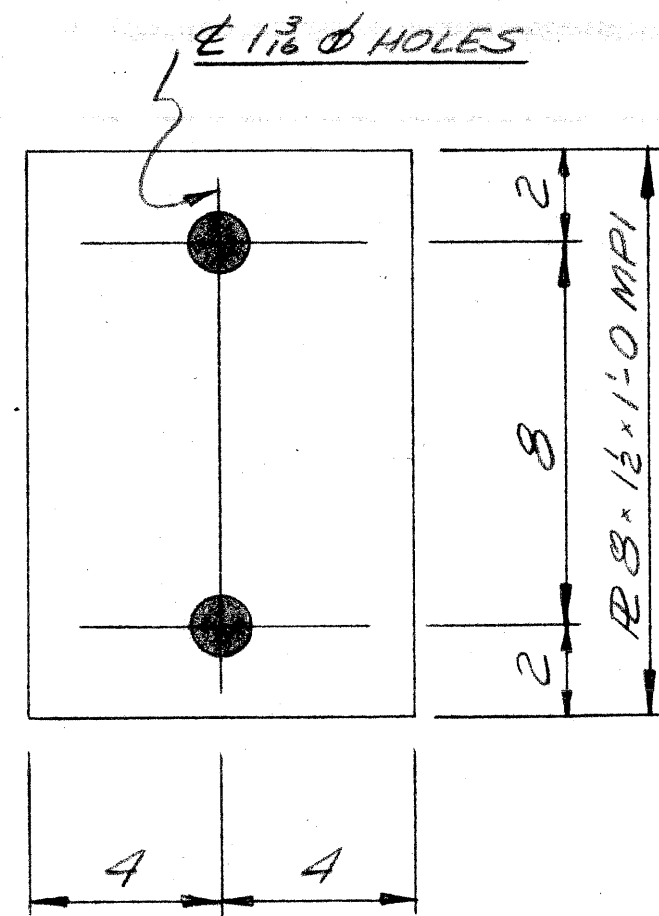
SPICE DETAIL

APPROVED  
 APR 18 1970  
*J. J. Cook*  
 MICH. DEPT. OF STATE HIGHWAYS

REVISION				F. YEAGER BRIDGE & CULVERT COMPANY	
NO.	DESCRIPTION	DATE	BY	1701 KEARNEY ST. - PORT HURON, MICH	
				BRIDGE P05-82123 I	
				WYANDHOE AVE PEDESTRIAN BRIDGE OVER JEFFRIES FREEWAY IN DETROIT	
				C.A. HULL CO. CONTR.	
				DATE 2-11-70	JOB NO. 5-4708
				BY D. LEFFLER	EI SHEET

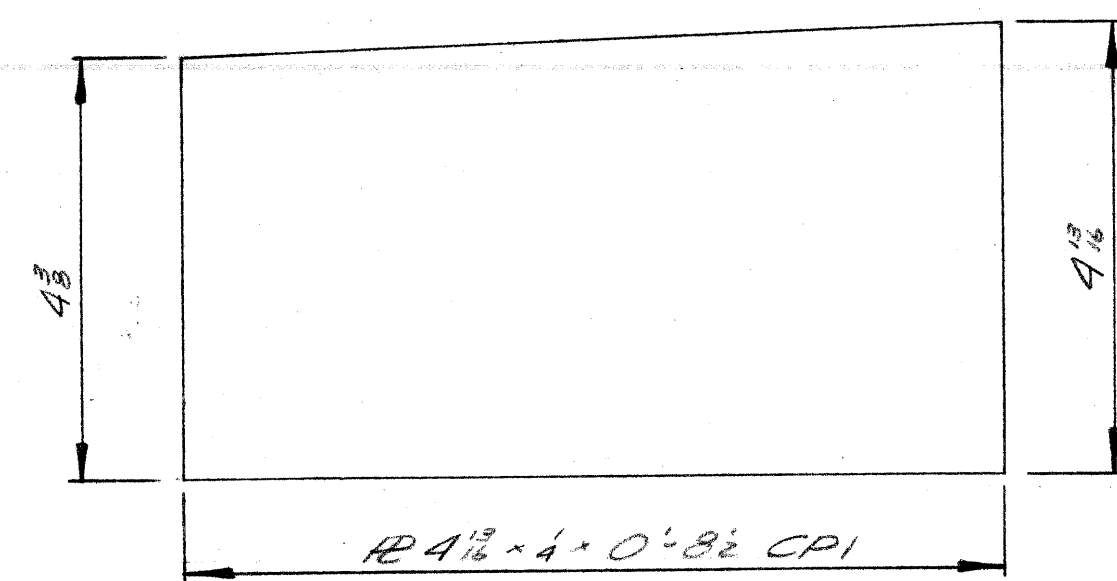


4 - BRONZE B'S REQ'D. AS SHOWN - MK. 1BPI



4 - MASONRY B'S REQ'D. AS SHOWN - MK. 1MPI

GALV. AFTER FAB. A.S.T.M. A-123



8 - CLOSURE B'S REQ'D. AS SHOWN - MK. 1CPI

PLAIN MAT.

4 - R 4 1/2" x 4" x 1'-0" 1CPE

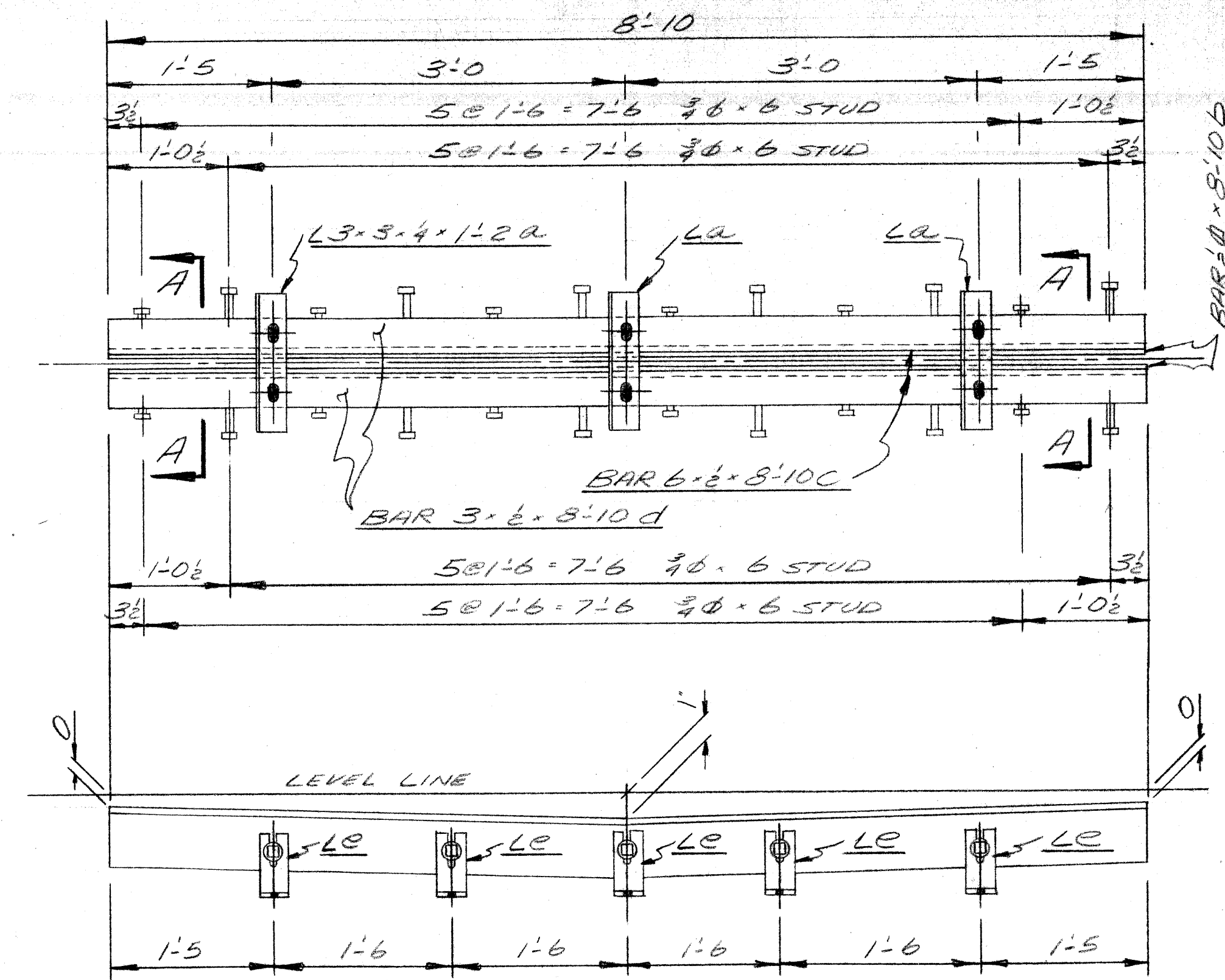
DRAIN FRAMES & GRATES

2 - A.S.T.M. A48-56 GRAY IRON; OR A339-55 DUCTILE IRON DRAINAGE FRAMES & GRATES (1'-2" x 1'-4" x 0")

CT.	SHIP	WEATH-R TYPE FIELD BOLTS, NUTS, & WAS.
10	11	3/8" x 2" H. HEX HD. H.S. BOLT; H. HEX NUT
310	326	3/8" x 2 1/2" do do
224	235	3/8" x 3 1/2" do do
240	252	3/8" x 2 1/4" do do
320	337	3/8" H. FL. WASHERS
464	437	3/8" do

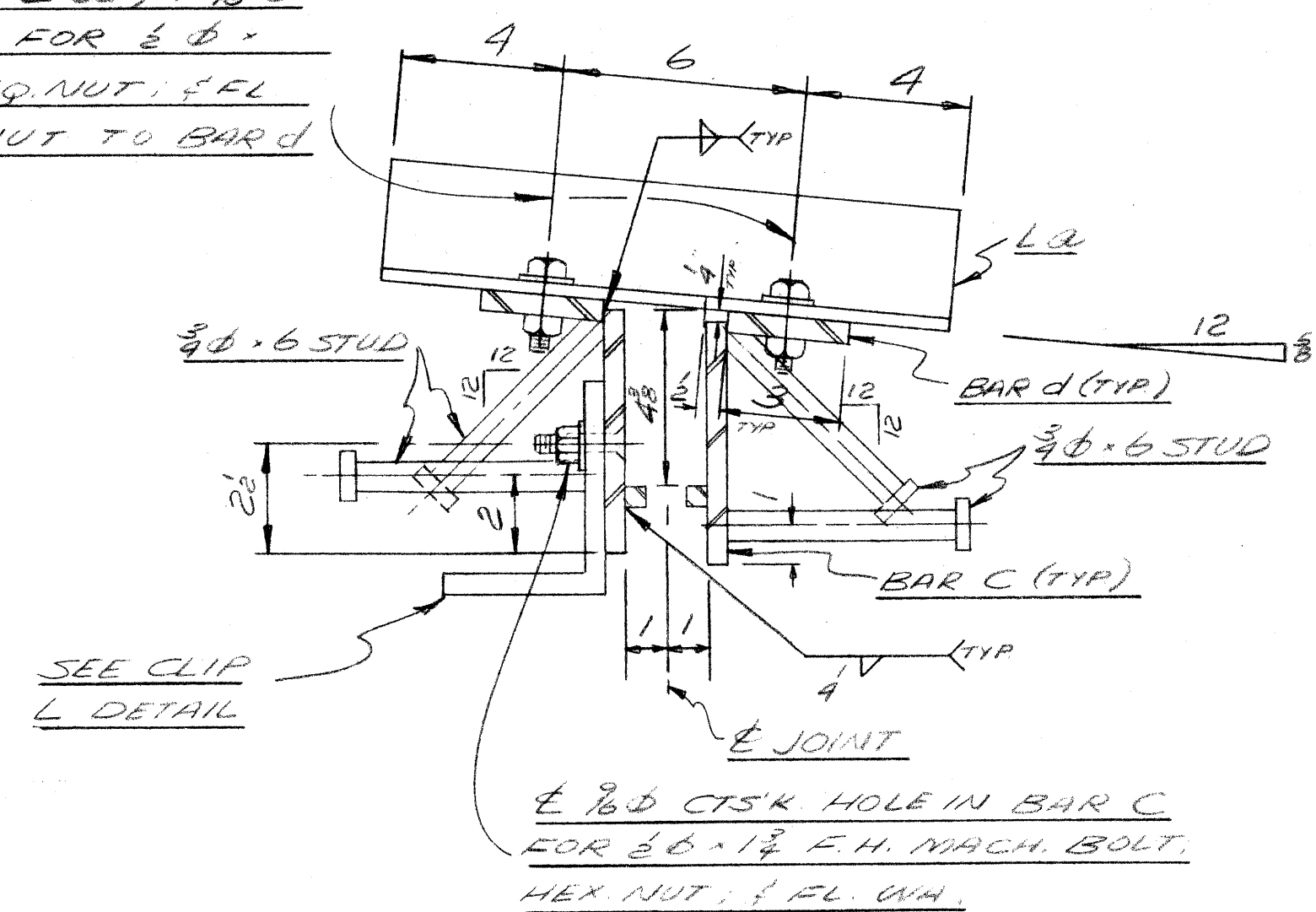
NON-PAYWEIGHT SHOP FIT-UP BOLTS

16 - 3/8" x 2 1/2" STD. SQ. HD. MACH. BOLT; STD. HEX. NUT
64 - 3/8" x 3/4" do do

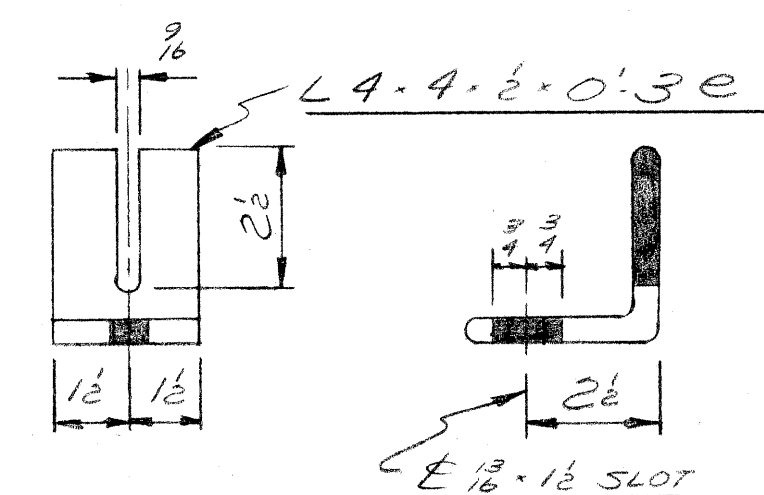


2 - EXP. JTS. REQ'D. AS SHOWN & NOTED - MK. 1EJ1

1/8" x 1/8" SLOTS IN L.A. & 1/8" HOLES IN BAR D FOR 3/8" x 1/2" SQ. HD. BOLT; SQ. NUT; & FL. WASH. TACK WELD NUT TO BAR D



SECTION A-A



CLIP ANGLE DETAIL

**APPROVED**

APR 16 1970

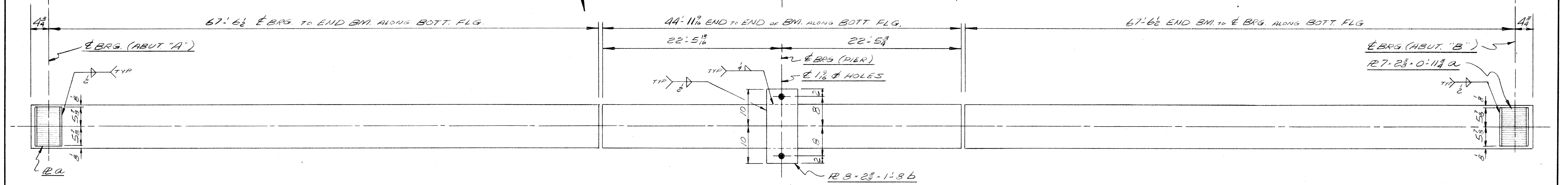
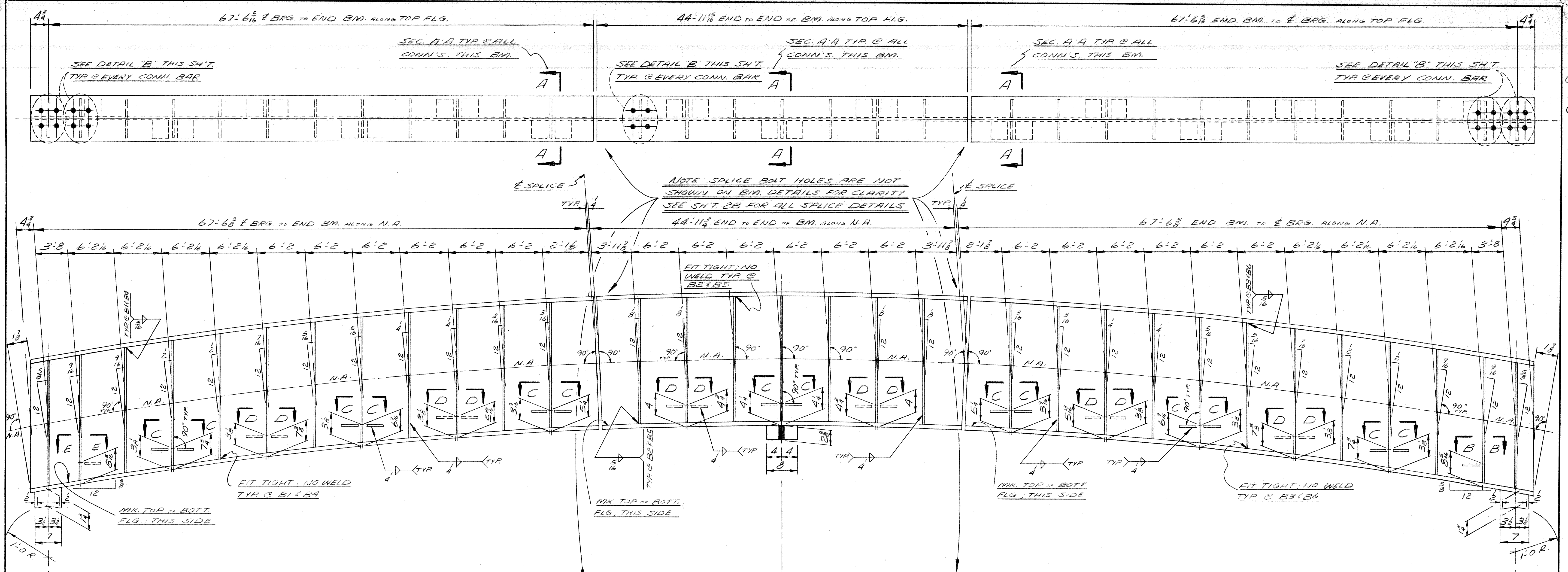
J. J. Cook

MICH. DEPT. OF STATE HIGHWAYS

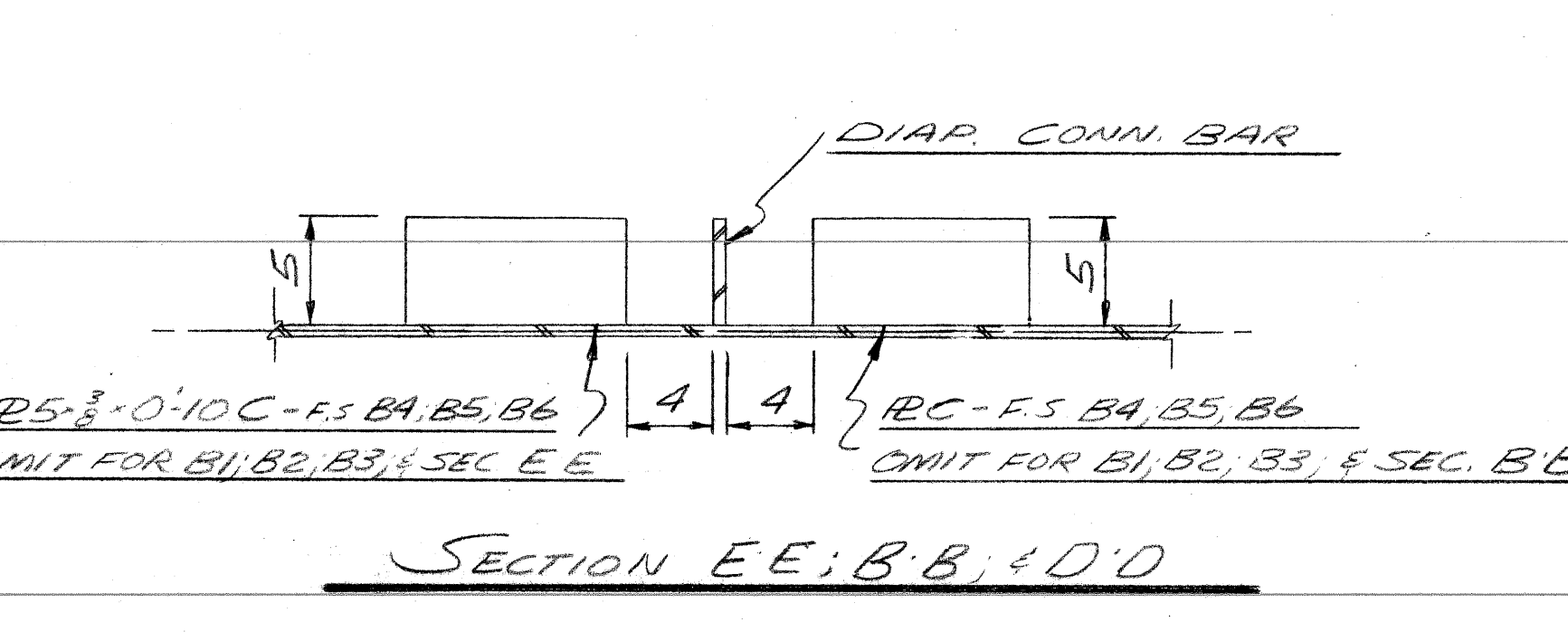
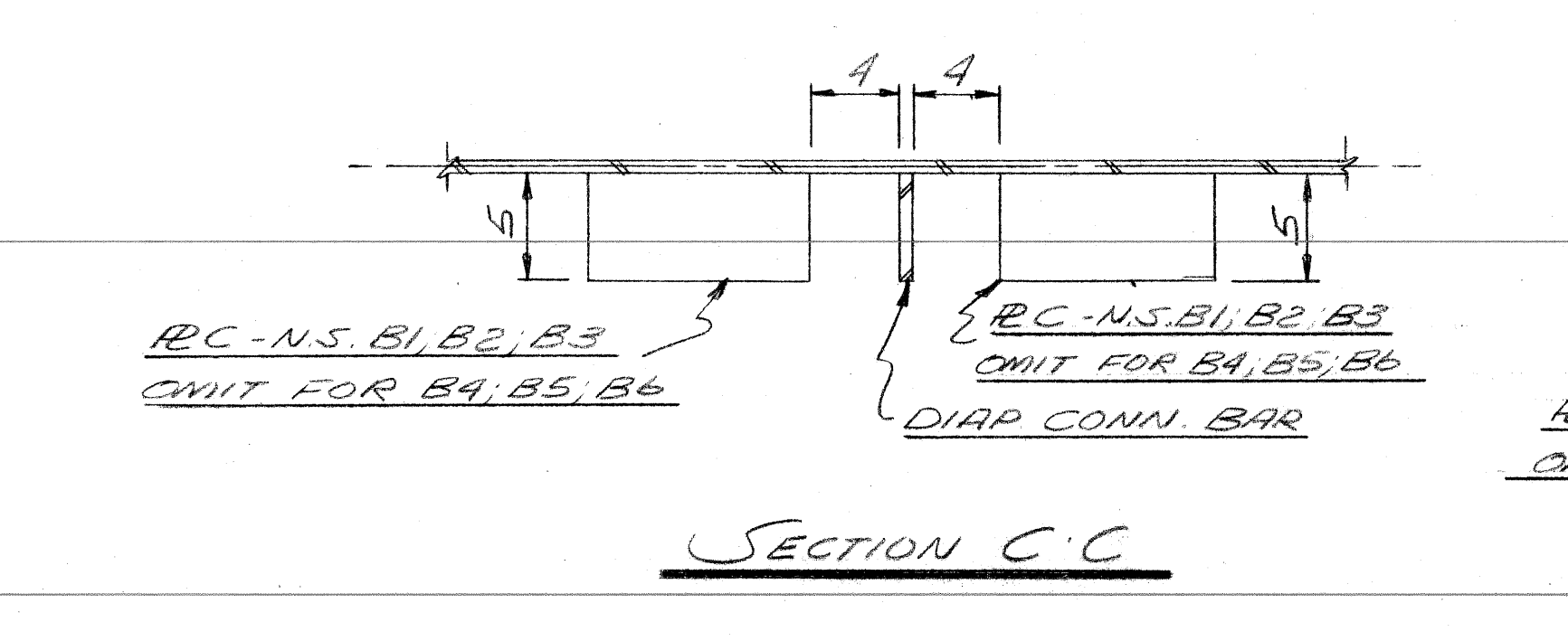
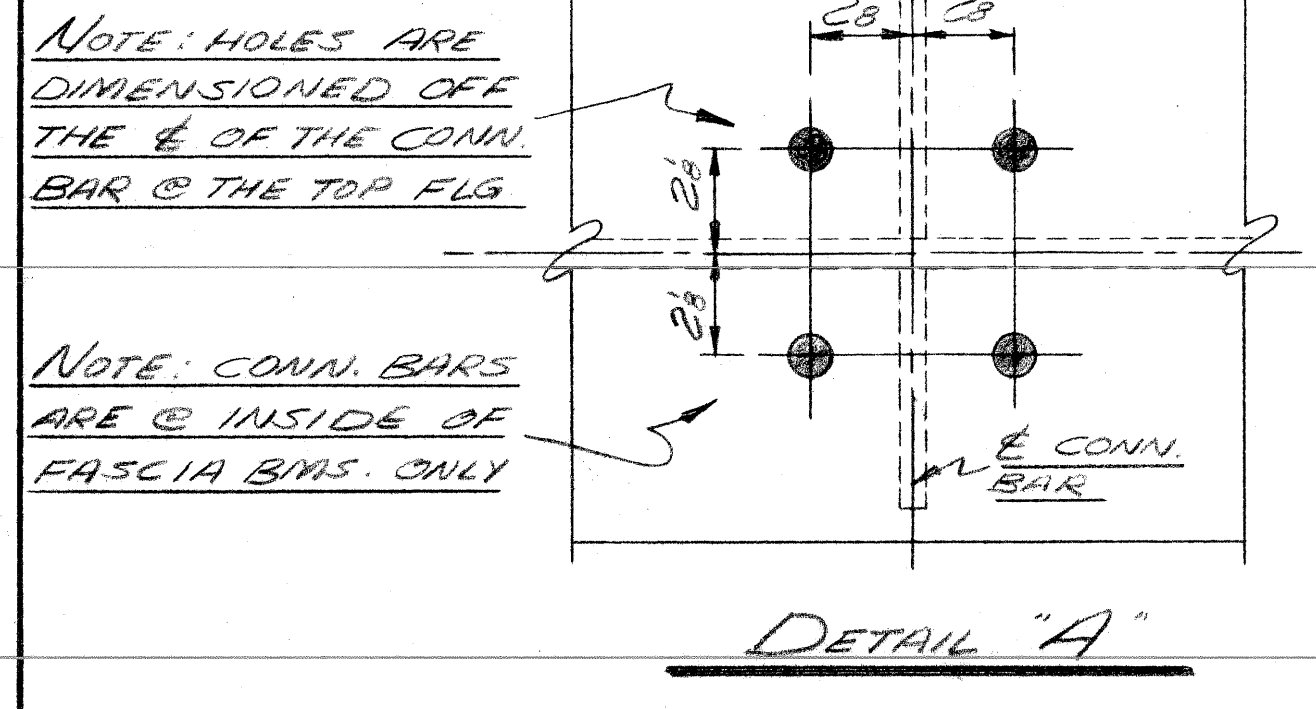
SEE SH'T. # 28 FOR SHOP NOTES

REVISION				F. YEAGER	
NO.	DESCRIPTION	DATE	BY	BRIDGE & CULVERT COMPANY	
				1701 KEARNEY ST. - PORT HURON, MICH.	
				BRIDGE POS-82183 I	
				IVANHOE AVE PEDESTRIAN BRIDGE OVER JEFFRIES FREEWAY IN DETROIT	
				C.A. HULL CO. CONT'R.	
				DATE 2-23-70	JOB NO. 5-4708
				BY D. LEFFLER	SHEET 1 OF 4





- ONE - BEAM (36 WF 150 - 67'-11 1/4 : CAMBERED) REQ'D AS SHOWN & NOTED - MK. 281
- ONE - do do do - MK. 284
- ONE - BEAM (36 WF 150 - 67'-11 1/4 : CAMBERED) REQ'D AS SHOWN & NOTED - MK. 283
- ONE - do do do - MK. 285
- ONE - BEAM (36 WF 150 x 44'-11 1/8 : CAMBERED) REQ'D AS SHOWN & NOTED - MK. 282
- ONE - do do do - MK. 285



REVISION			
NO.	DESCRIPTION	DATE	BY

APR 18 1970  
J. J. Cook  
MICH. DEPT. OF STATE HIGHWAYS

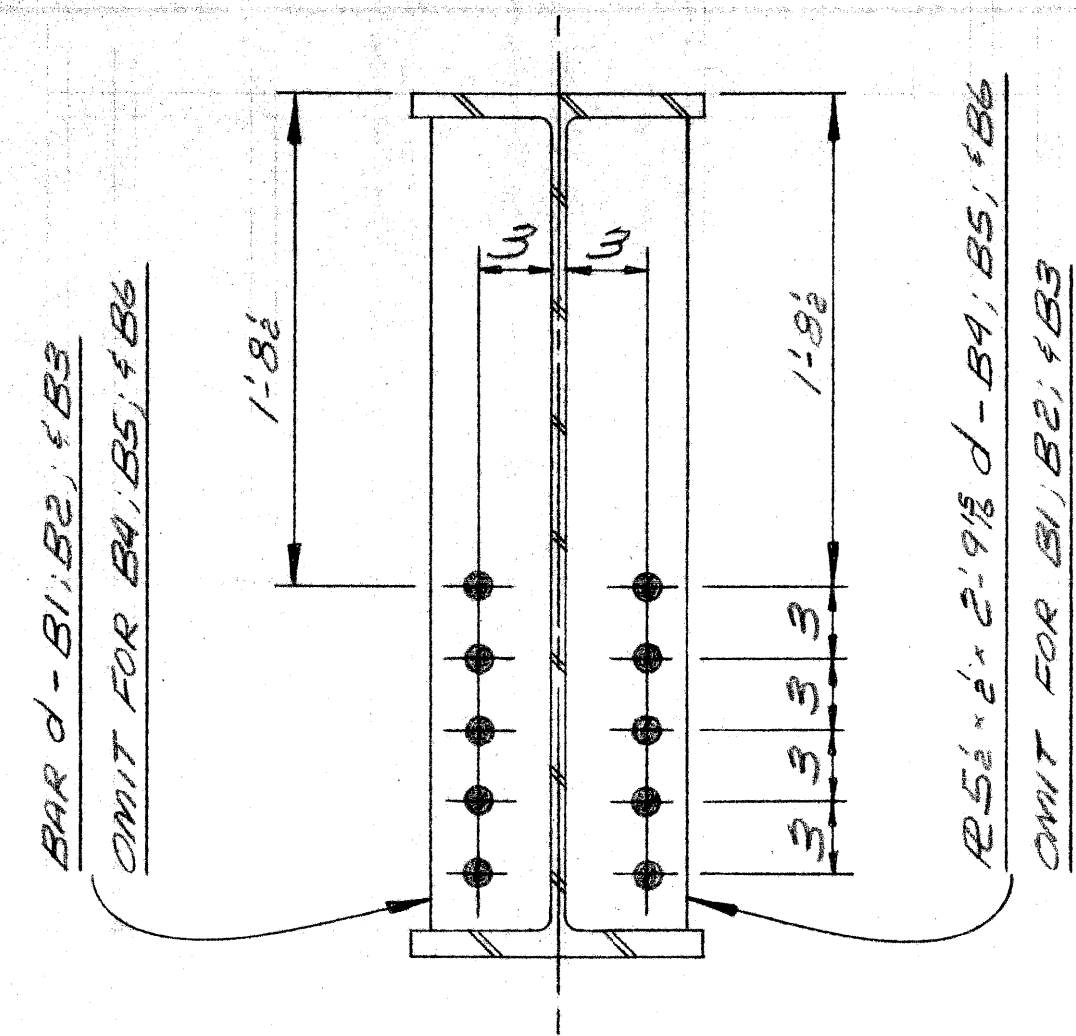
SEE SH'T. # 2B FOR SHOP NOTES

**F. YEAGER**  
**BRIDGE & CULVERT COMPANY**  
1701 KEARNEY ST. - PORT HURON, MICH

BRIDGE POS-82183 I  
IYANHOE AVE. PEDESTRIAN BRIDGE OVER  
JEFFERIES FREEWAY IN DETROIT  
C.A. HULL CO. CONTR.

DATE 2-18-70      JOB NO. 5-4708      SHEET 2A of 4  
BY D. LEFFLER



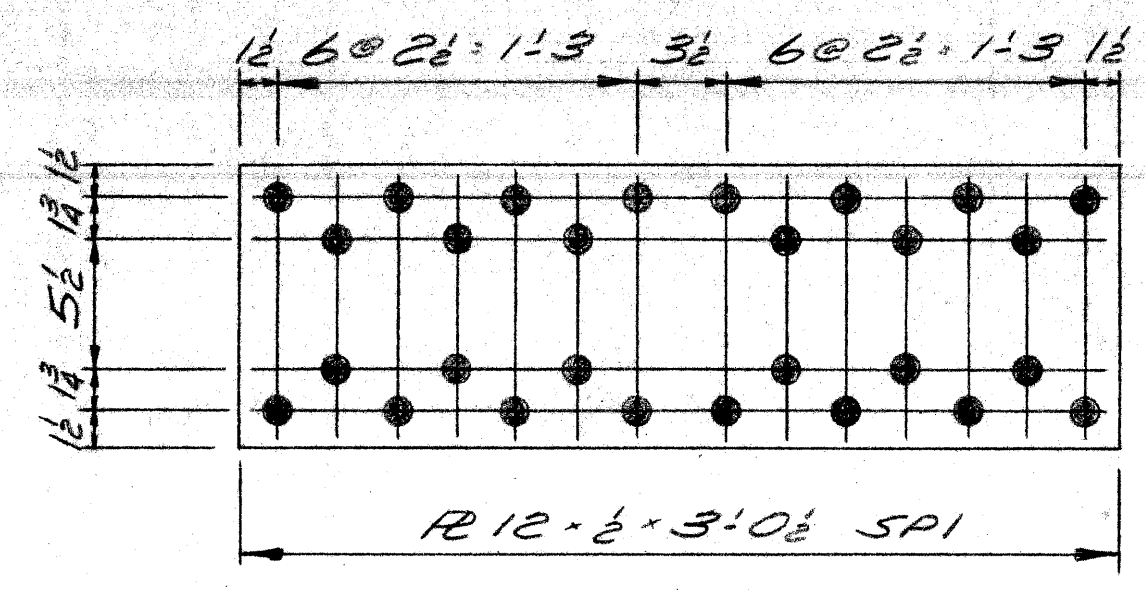


**SECTION A-A**  
TYP. SP PLACES

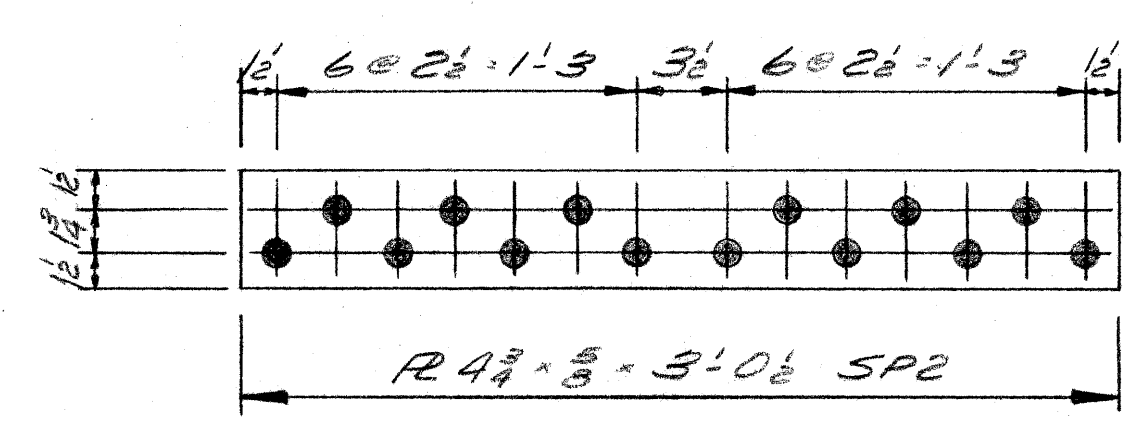
NOTE: HORIZ. CONN. REC NOT SHOWN IN SECTION

**ANCHOR BOLTS**  
A-307 STEEL  
4- 1" x 1-6 STD. SQ. HD. BOLT; STD. HEX. NUT  
4- 1" JAM NUT  
GALV. PER A.S.T.M. A-153

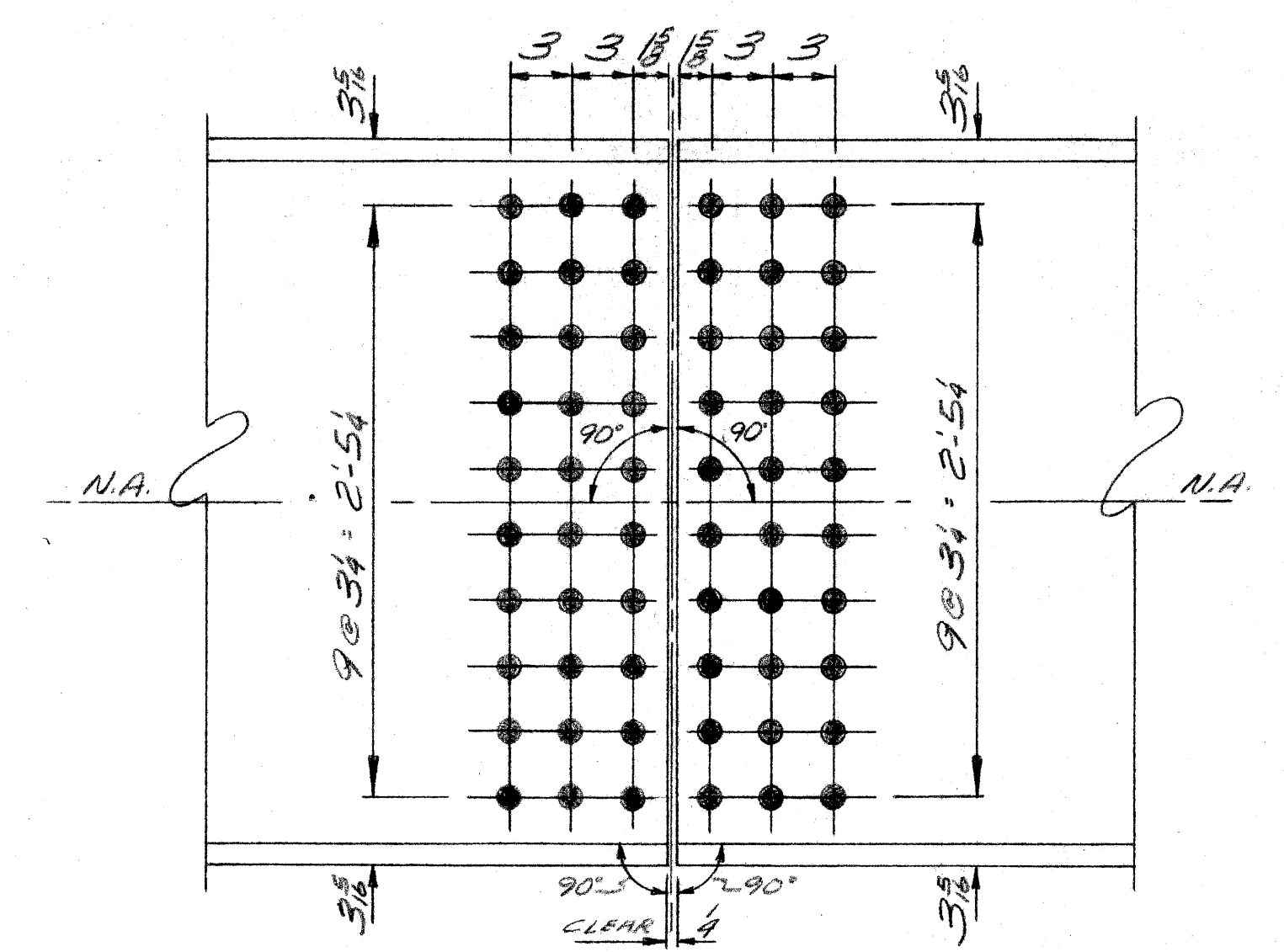
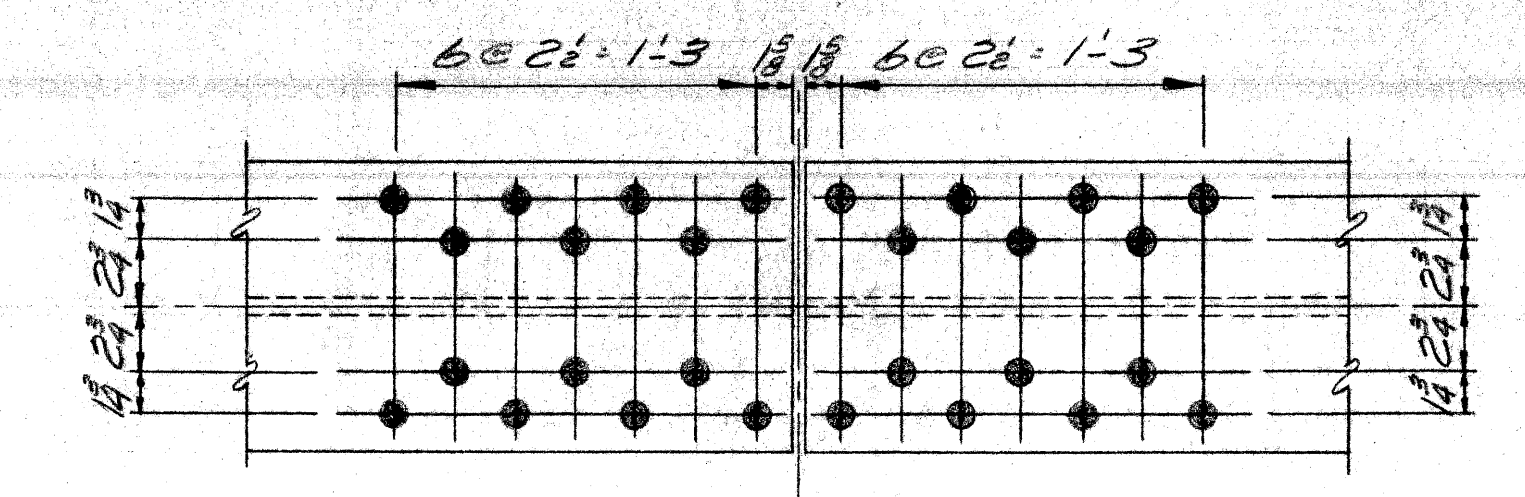
**PLAIN MATERIAL**  
A-36 STEEL  
8- BAR 1" x 1-0 (POS. DONUT) MK. 2PDI  
GALV. PER A.S.T.M. A-153



**8- SPLICE RE'S REQ'D. AS SHOWN - MK. 2SP1**



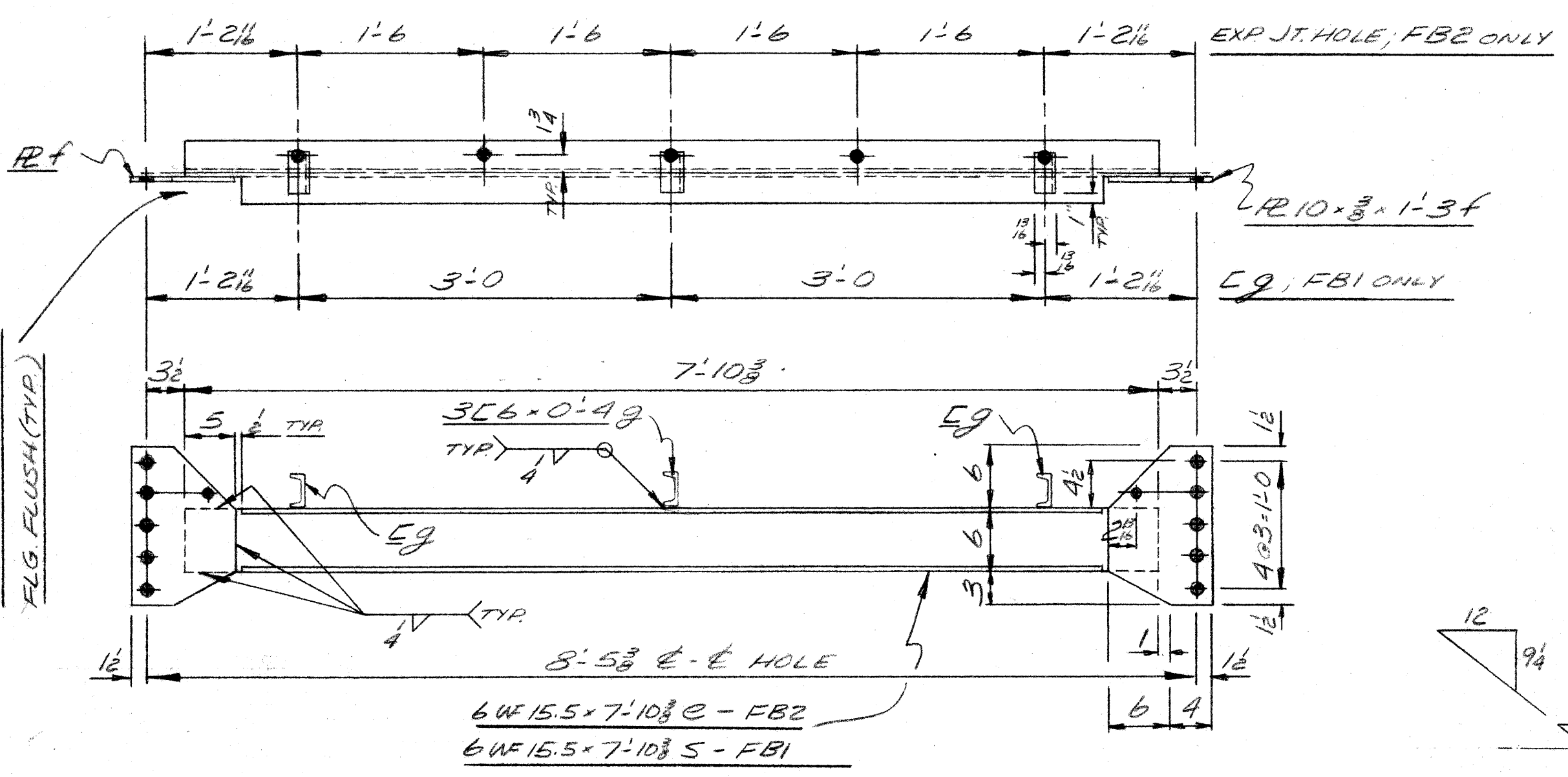
**16- SPLICE RE'S REQ'D. AS SHOWN - MK. 2SP2**



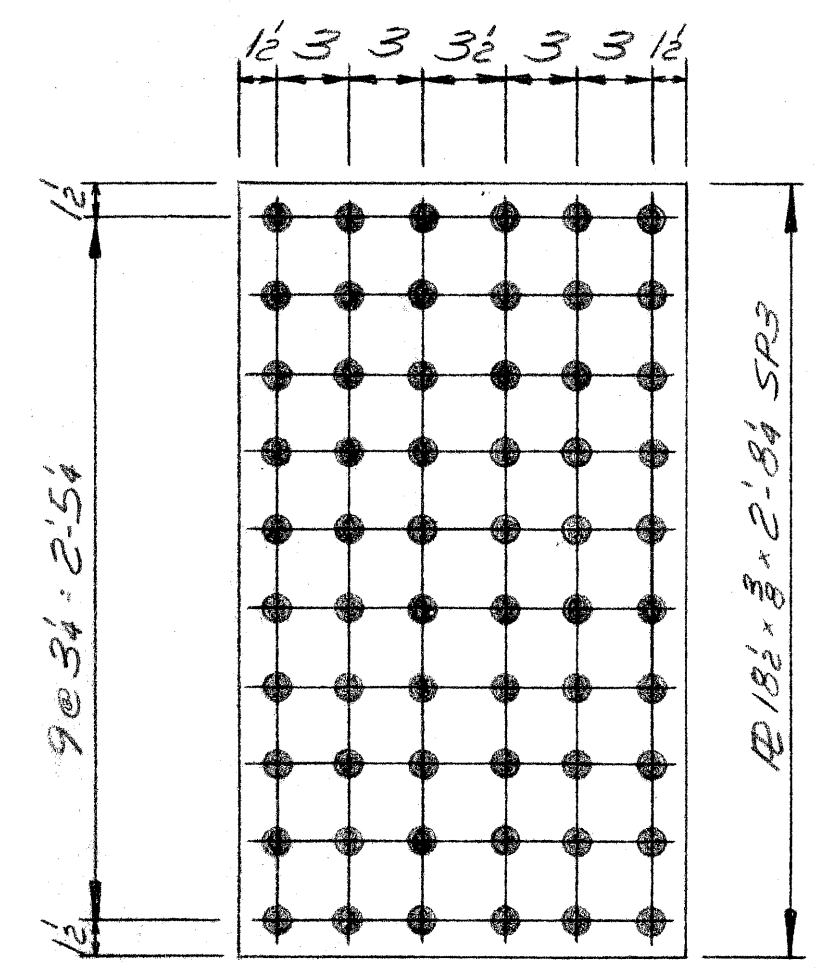
SEE SHOP NOTES FOR HOLE SIZE  
TYPICAL FIELD SPLICE DETAIL

**SHOP NOTES**

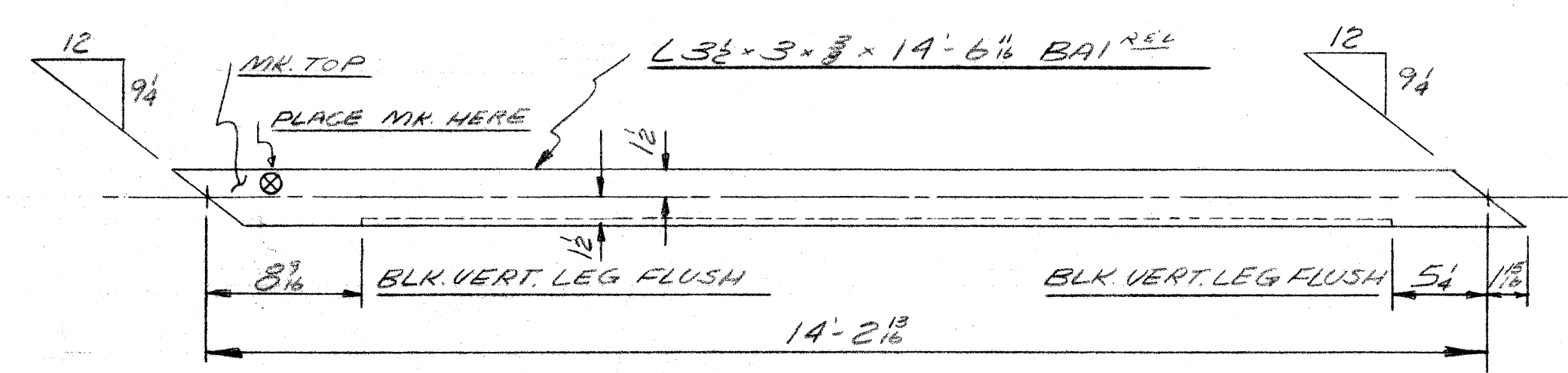
FABRICATE PER M.D.S.H. 1967 SPEC'S.; STRUCTURAL STEEL SHALL BE A-588(UN) AND PAINTING IS REQ'D.; NO ROUNDING OF EDGES IS REQ'D.; PLAIN MATERIAL ONLY AS INDICATED IN DETAILS; OPEN HOLES SHALL BE 1 1/8" EXCEPT FIELD SPLICE COMPONENTS WHICH SHALL BE SUB-PUNCHED OR SUB-DRILLED AND THEN REAMED TO 1 1/8" OR DRILLED FROM THE SOLID TO 1 1/8" WITH THE BEAMS SHOP ASSEMBLED; SHOT-BLAST BEAMS ONLY; CAMBER BEAMS AS INDICATED IN CAMBER DIAGRAM; CAMBER TOLERANCE IS +/- 4"; ALL WELDS SHALL BE MADE WITH RACO WELDING WIRE; SEE DETAIL OF LIFTING LUGS FOR THE HANDLING OF STRINGERS;



**29- FLOOR BEAMS REQ'D. AS SHOWN & NOTED - MK. 2FB1**  
2- do do do - MK. 2FB2



**8- SPLICE RE'S REQ'D. AS SHOWN - MK. 2SP3**

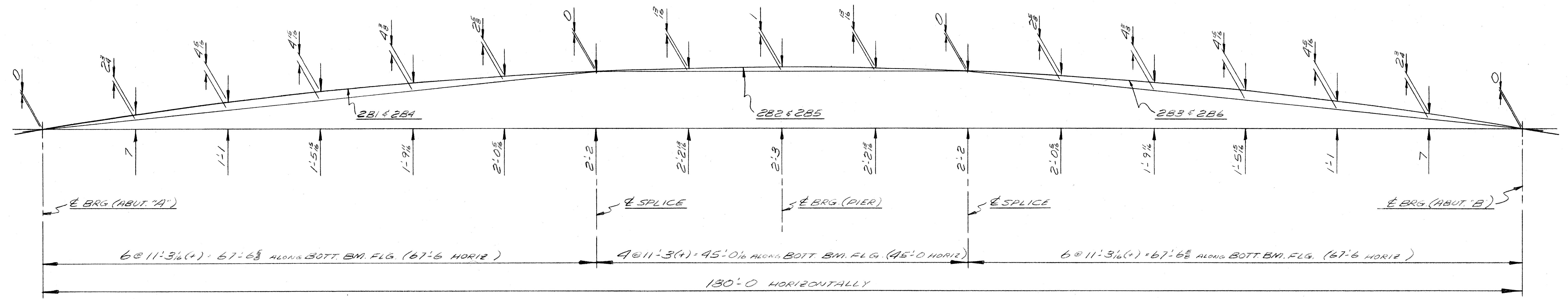


**A- BRACING ANGLES REQ'D AS SHOWN - MK. 2BA1**  
4- do do do - MK. 2BA2

**APPROVED**  
APR 16 1970  
J. J. Cook  
MICH. DEPT. OF STATE HIGHWAYS

REVISION				F. YEAGER	
NO.	DESCRIPTION	DATE	BY	BRIDGE & CULVERT COMPANY	
				1701 KEARNEY ST. - PORT HURON, MICH.	
				BRIDGE P05-82123 I	
				IVANHOE AVE PEDESTRIAN BRIDGE OVER	
				JEFFERIES FREEWAY IN DETROIT	
				C.A. HULL CO. CONTR.	
				DATE 2-20-70	SHEET 28 OF 4
				BY D. LEFFLER	JOB NO. 5-4708

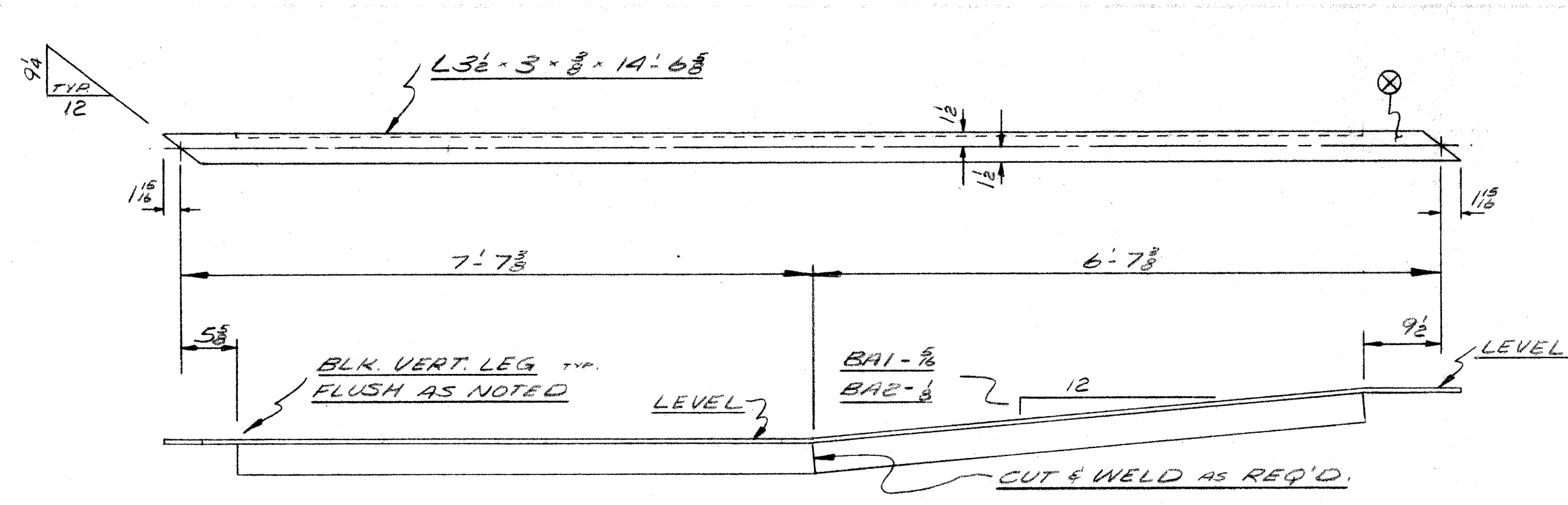




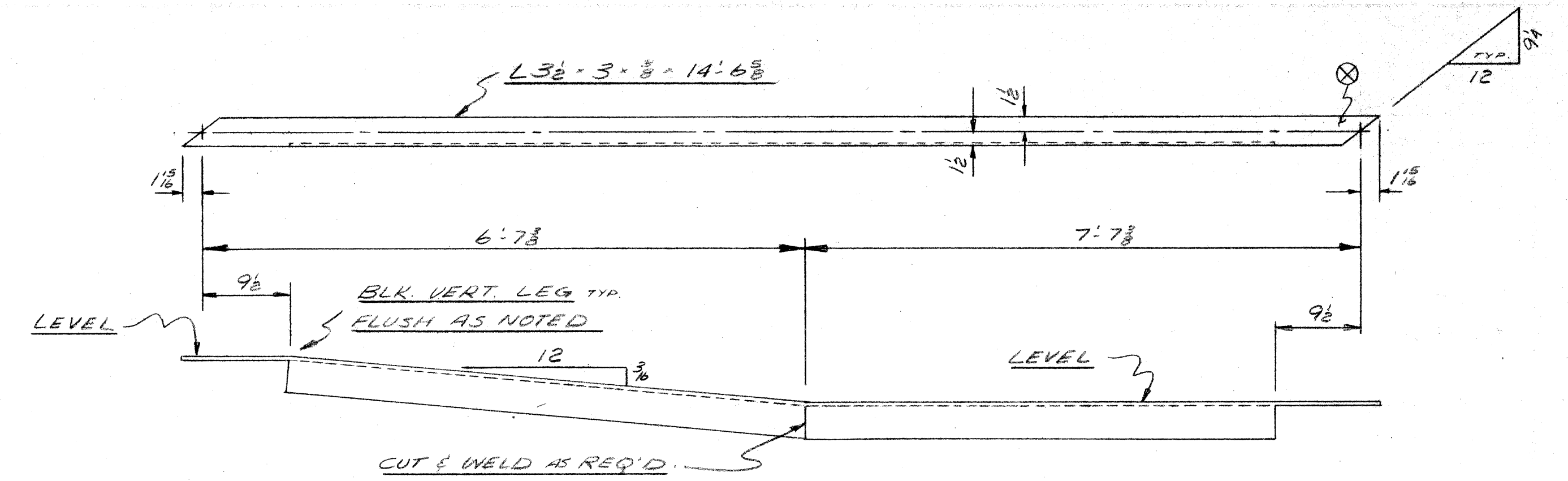
CAMBER DIAGRAM  
 MEASURE W/ B.M. LYING ON ITS SIDE

APPROVED  
 APR 1 8 1970  
*J. J. Cook*  
 MICH. DEPT. OF STATE HIGHWAYS

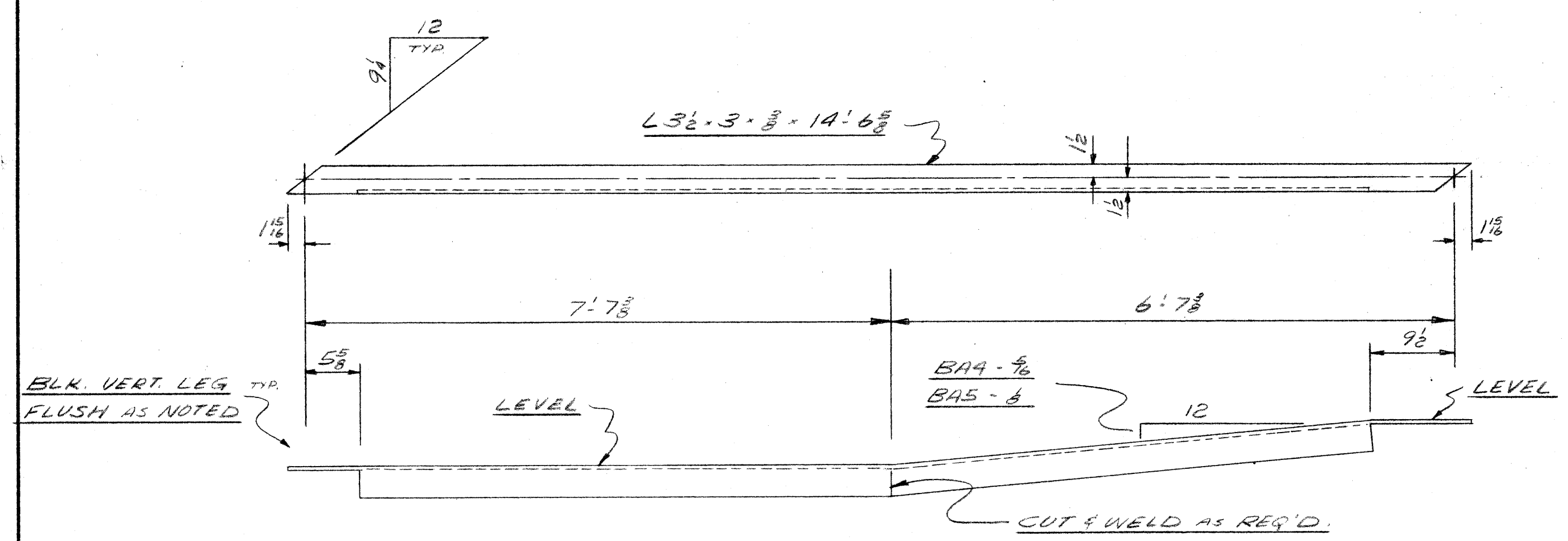
REVISION				F. YEAGER BRIDGE & CULVERT COMPANY	
NO.	DESCRIPTION	DATE	BY	1701 KEARNEY ST. - PORT HURON, MICH.	
				BRIDGE P05-82183 I	
				IVANHOE AVE. PEDESTRIAN BRIDGE OVER JEFFRIES FREEWAY IN DETROIT	
				C.A. HULL CO. CONTR.	
				DATE 2-24-70	JOB NO. 5-4708
				BY D. LEFFLER	SHEET 3 of 4



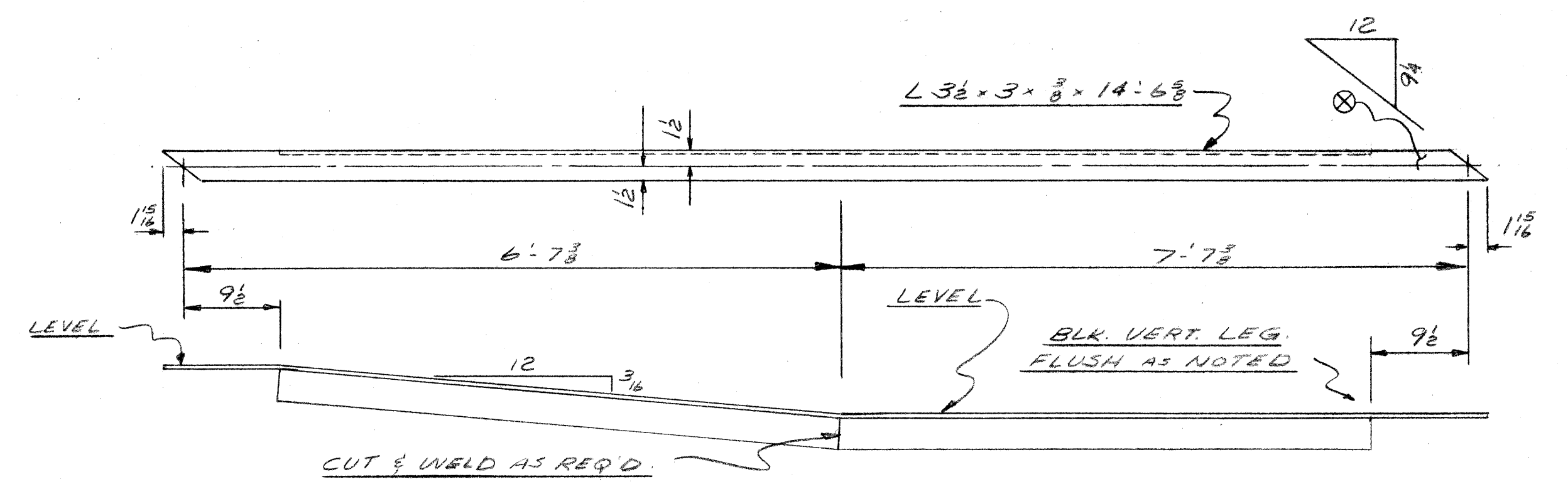
ONE - BRACING ANGLE REQ'D AS SHOWN & NOTED - MK. 4BA1  
 ONE - do do do - MK. 4BA2



ONE - BRACING ANGLE REQ'D AS SHOWN & NOTED - MK. 4BA3



ONE - BRACING ANGLE REQ'D AS SHOWN & NOTED - MK. 4BA4  
 ONE - do do do - MK. 4BA5



ONE - BRACING ANGLE REQ'D AS SHOWN & NOTED - MK. 4BA6

APPROVED

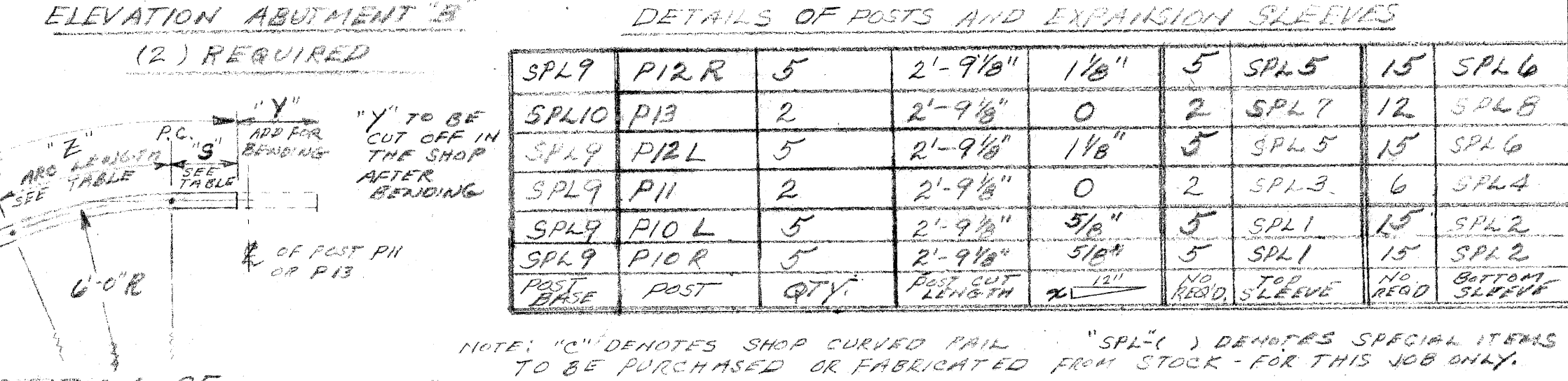
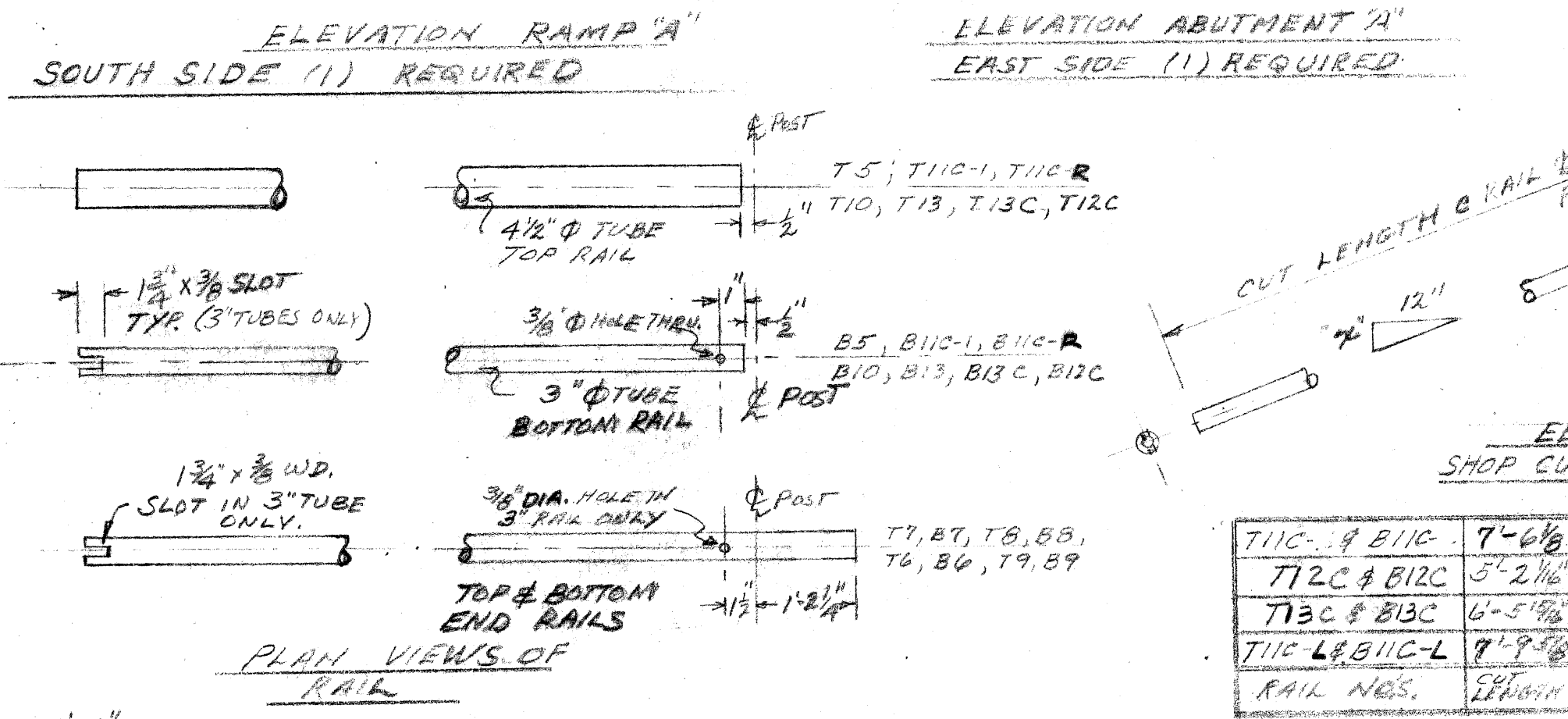
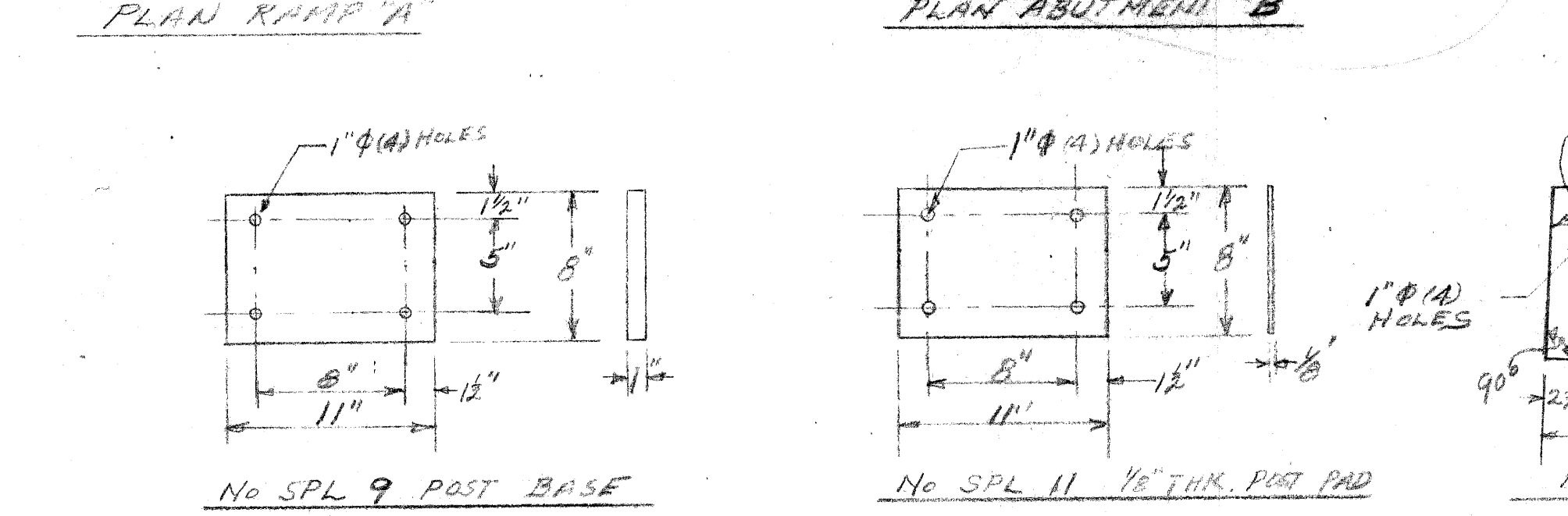
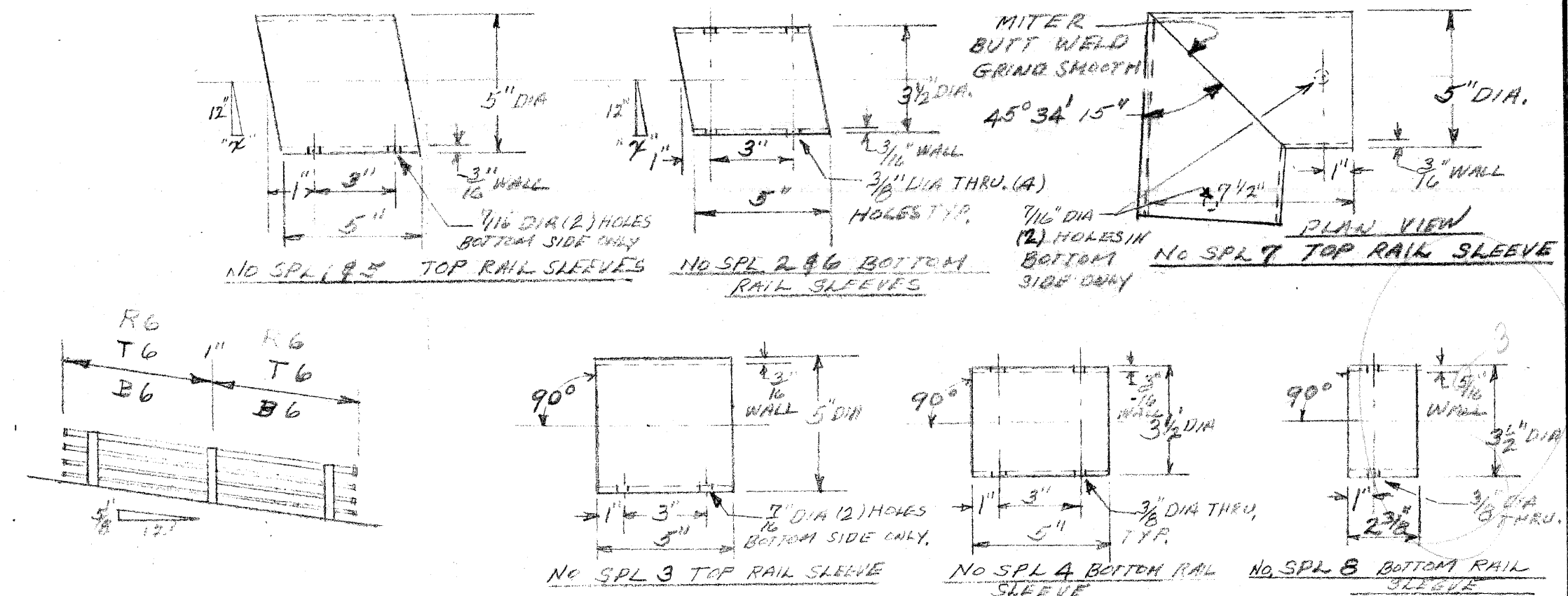
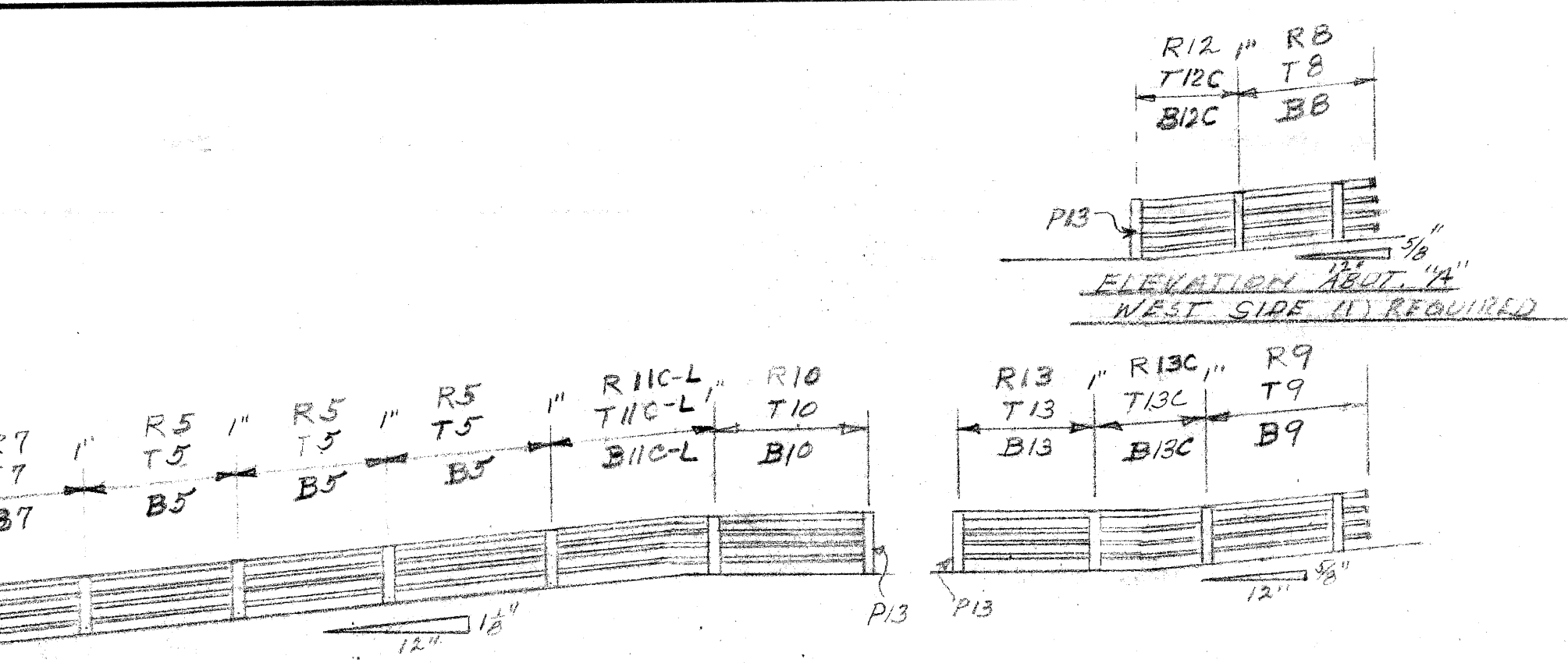
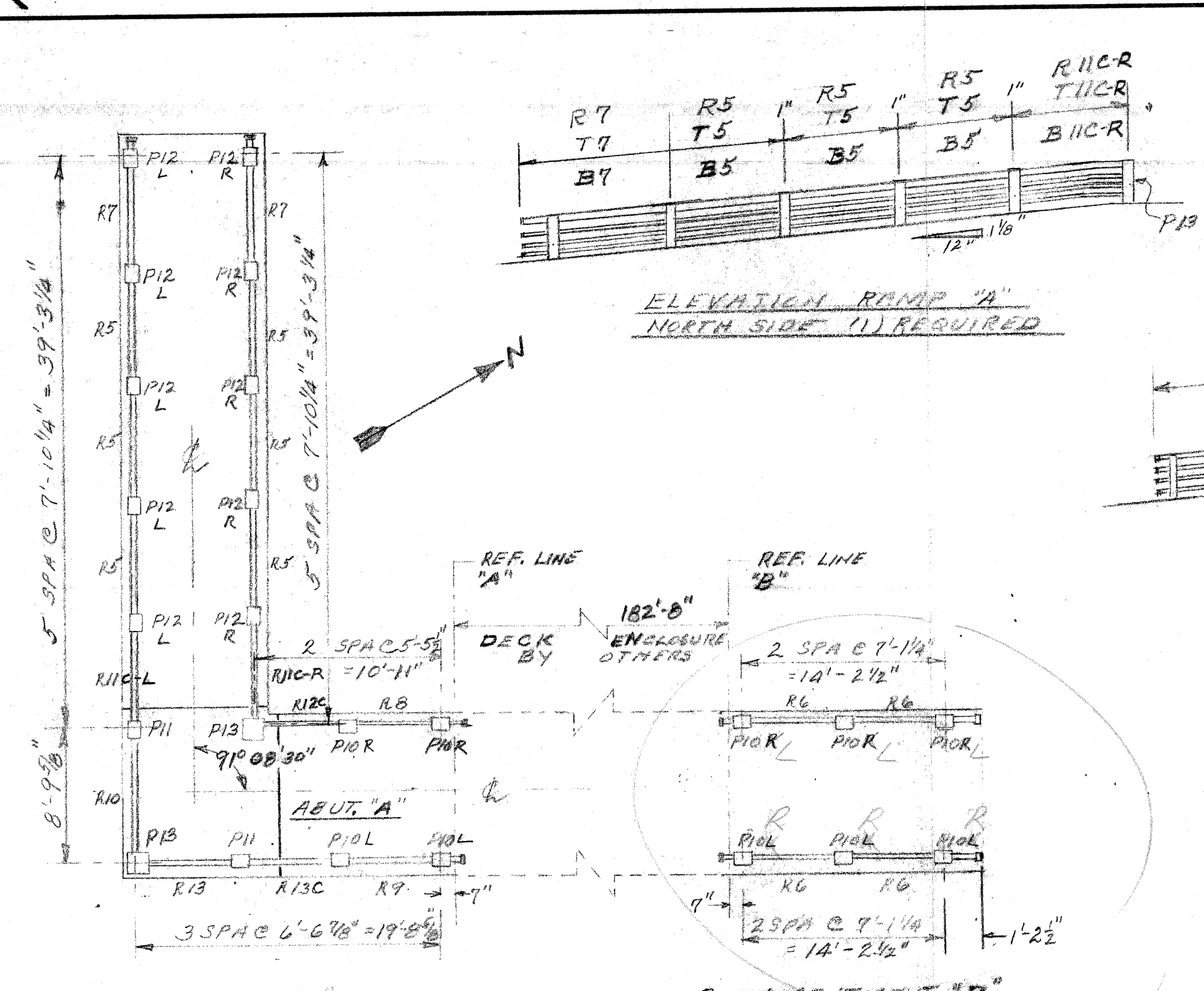
APR 16 1970

*J. J. Cook*

SEE SH. # 2B FOR SHOP NOTES  
 MICH. DEPT. OF STATE HIGHWAYS

REVISION				F. YEAGER	
NO.	DESCRIPTION	DATE	BY	BRIDGE & CULVERT COMPANY	
				1701 KEARNEY ST. - PORT HURON, MICH	
				BRIDGE POS-82123 I	
				IVANHOE AVE. PEDESTRIAN BRIDGE OVER	
				JEFFRIES FREEWAY IN DETROIT	
				C.A. HULL CO. CONT'R.	
				DATE 4-9-70	JOB NO. 5-4708
				BY DLEFFLER	SHEET 4 of 4

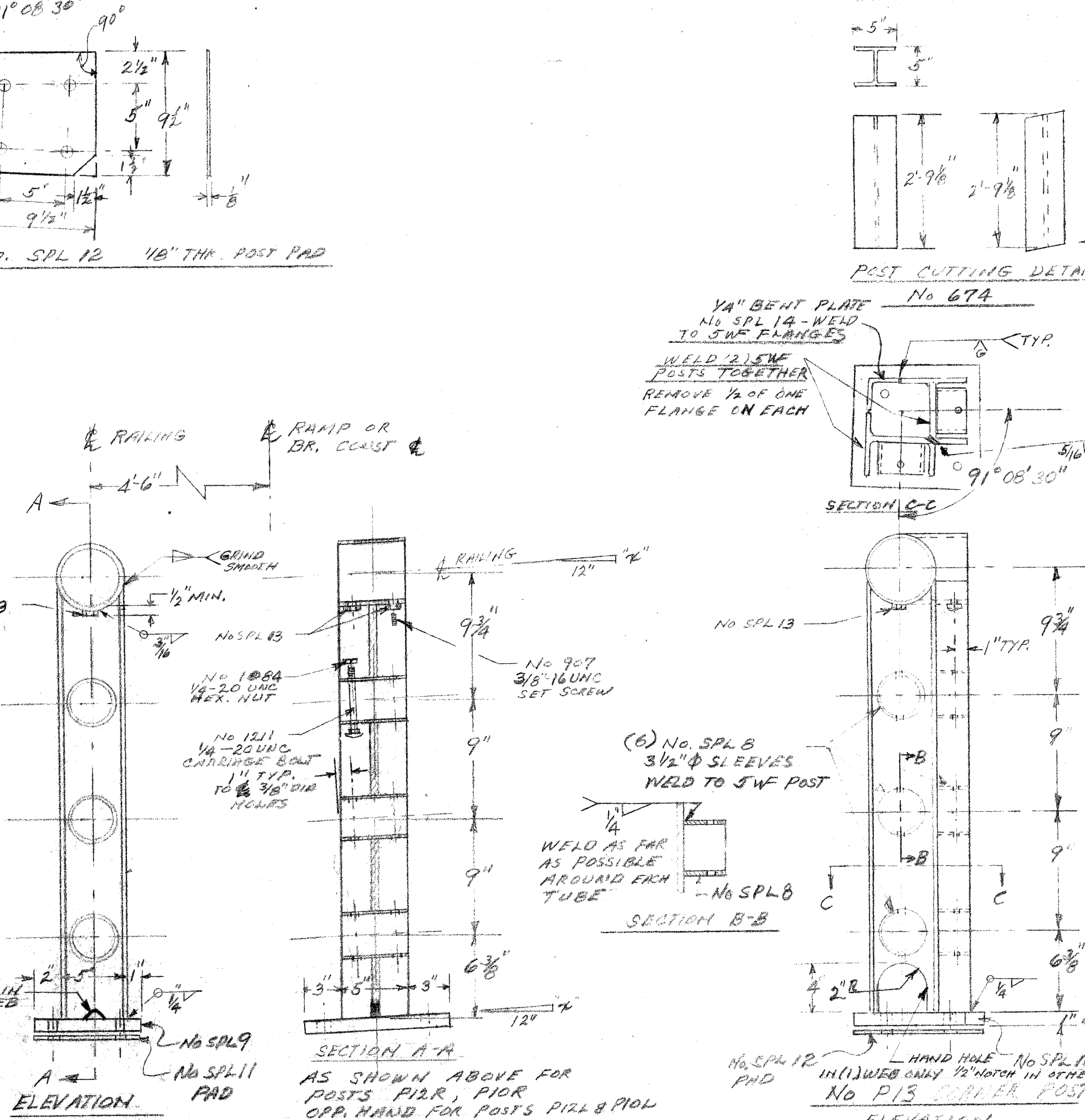
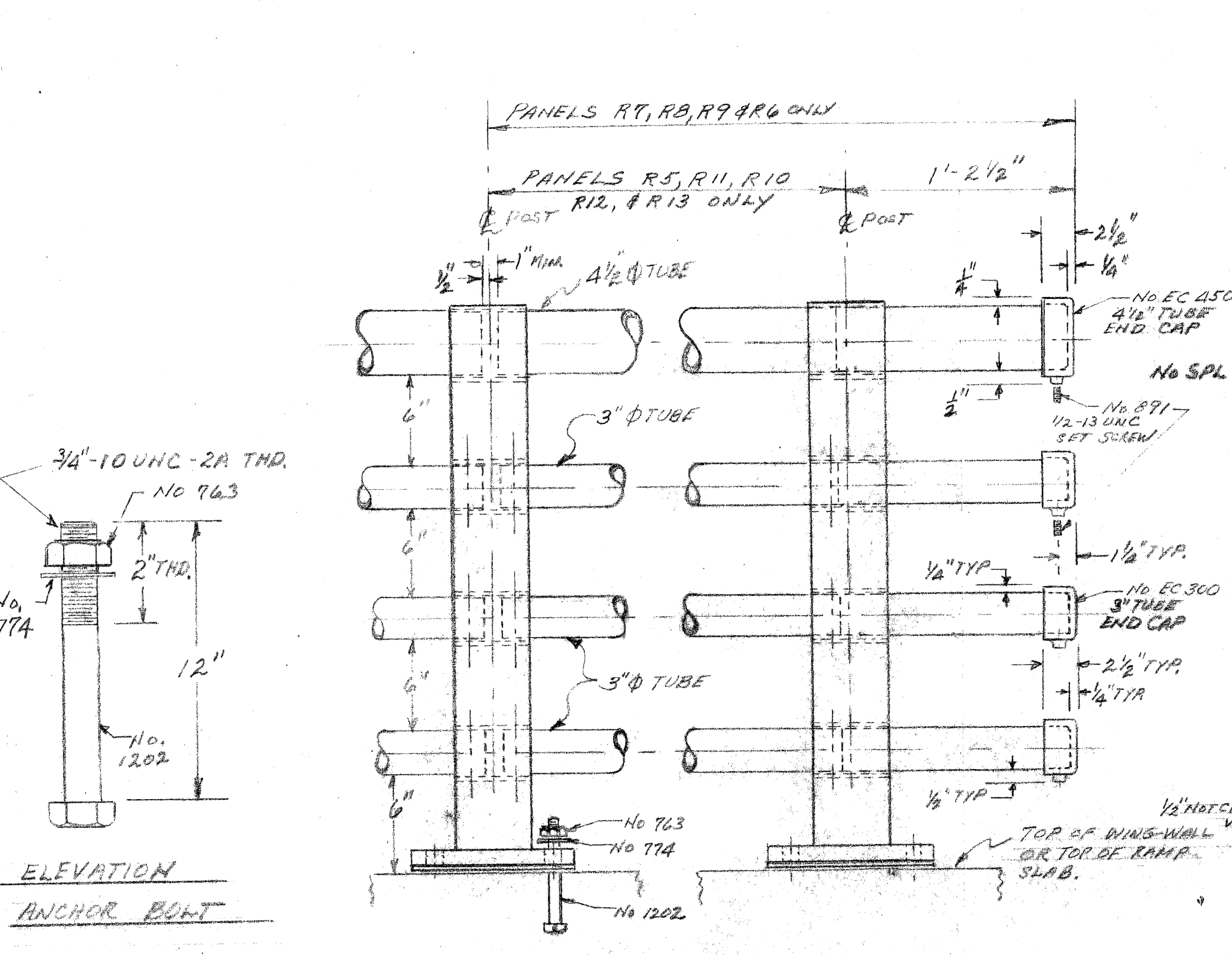




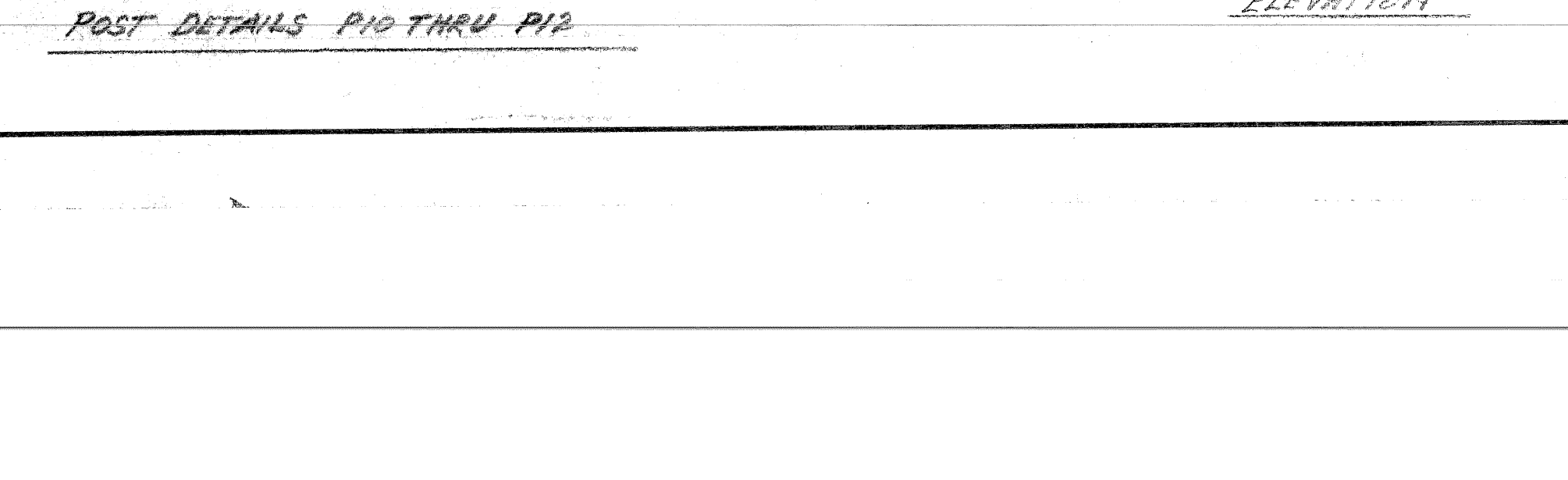
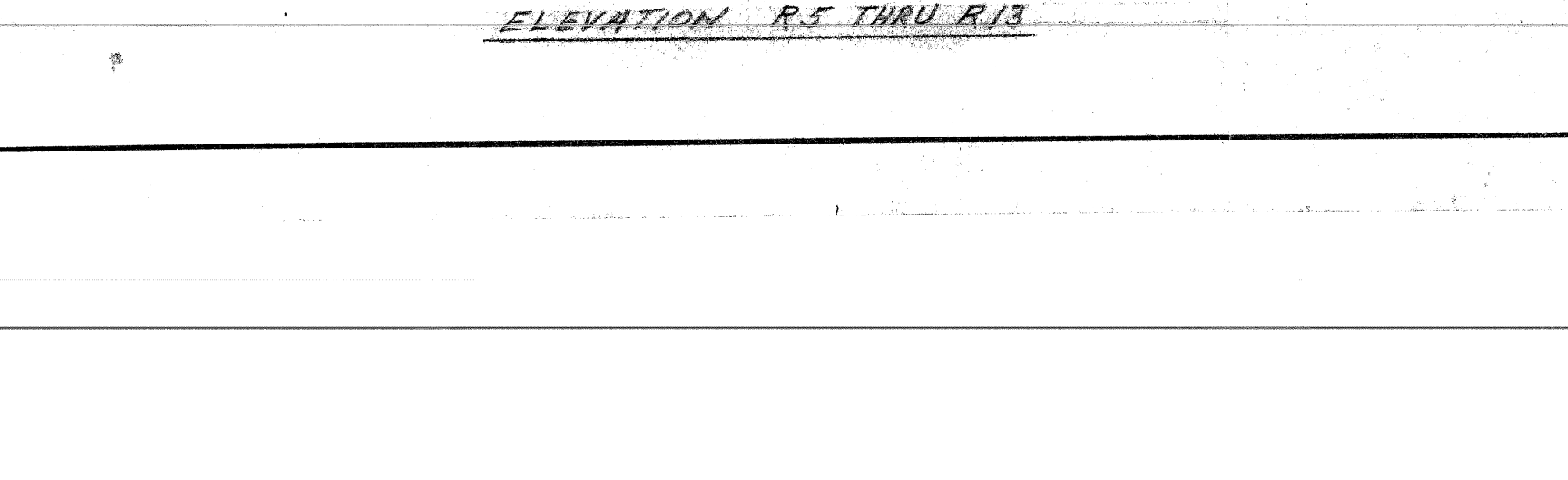
DETAILS OF POSTS AND EXPANSION SLEEVES

SPL#	POST	QTY	SIZE	TYPE	SPL#	POST	QTY	SIZE	TYPE
SPL9	P12,R	5	2'-9 7/8"	1 1/2"	SPL5	P15	5	2'-9 7/8"	1 1/2"
SPL10	P13	2	2'-9 7/8"	0	SPL7	P12	2	2'-9 7/8"	1 1/2"
SPL4	P12,L	5	2'-9 7/8"	1 1/2"	SPL5	P15	5	2'-9 7/8"	1 1/2"
SPL9	P11	2	2'-9 7/8"	0	SPL3	P13	2	2'-9 7/8"	1 1/2"
SPL9	P10,L	5	2'-9 7/8"	5/8"	SPL1	P15	5	2'-9 7/8"	1 1/2"
SPL9	P10,R	5	2'-9 7/8"	5/8"	SPL1	P15	5	2'-9 7/8"	1 1/2"

NOTE: "C" DENOTES SHOP CURVED RAIL. "SPL" DENOTES SPECIAL ITEMS TO BE PURCHASED OR FABRICATED FROM STOCK FOR THIS JOB ONLY.



ITEM	QTY	ITEM	QTY	ITEM	QTY	ITEM	QTY
1	R11C-R	1	711C-R	7'-6 1/2"	3	B11C-R	7'-6 1/2"
1	R8	1	T8	6'-9 3/8"	3	B8	6'-9 3/8"
1	R12C	1	T12C	5'-2 1/16"	3	B12C	5'-2 1/16"
4	R6	4	T6	8'-3 3/8"	12	B6	8'-3 3/8"
1	R9	1	T9	7'-5 3/4"	3	B9	7'-5 3/4"
1	R13C	1	T13C	6'-5 1/16"	3	B13C	6'-5 1/16"
1	R3	1	T13	6'-3 3/8"	3	B13	6'-3 3/8"
1	R10	1	T10	8'-6 1/2"	3	B10	8'-6 1/2"
1	R11C-L	1	T11C-L	7'-9 5/8"	3	B11C-L	7'-9 5/8"
6	R5	6	T5	7'-9 1/2"	18	B5	7'-9 1/2"
2	R7	2	T7	9'-0 1/2"	6	B7	9'-0 1/2"



POST CUTTING DETAIL No. 674

SECTION C-C

SECTION B-B

SECTION A-A

SECTION D-D

SECTION E-E

SECTION F-F

SECTION G-G

SECTION H-H

SECTION I-I

SECTION J-J

SECTION K-K

SECTION L-L

SECTION M-M

SECTION N-N

SECTION O-O

SECTION P-P

SECTION Q-Q

SECTION R-R

SECTION S-S

SECTION T-T

SECTION U-U

SECTION V-V

SECTION W-W

SECTION X-X

SECTION Y-Y

SECTION Z-Z

OFFICE COPY

3/1/70 JHB

LOCATION: IVANHOE AVE PEDESTRIAN BRG. OVER JEFFRIES FREEWAY

CONTRACTOR: C. A. HULL CO.

DISTRIBUTOR: HARRY T. WARD CO. P.O. 110 T.W.H.-426

STATION

DATE: 2-23-70

DESIGN: R.E.S.

CHECKED: JAK

TITLE: ALUMINUM BRIDGE RAILING

WAYNE CO., MICH. - CITY OF DETROIT

REVISIONS

howe 4673

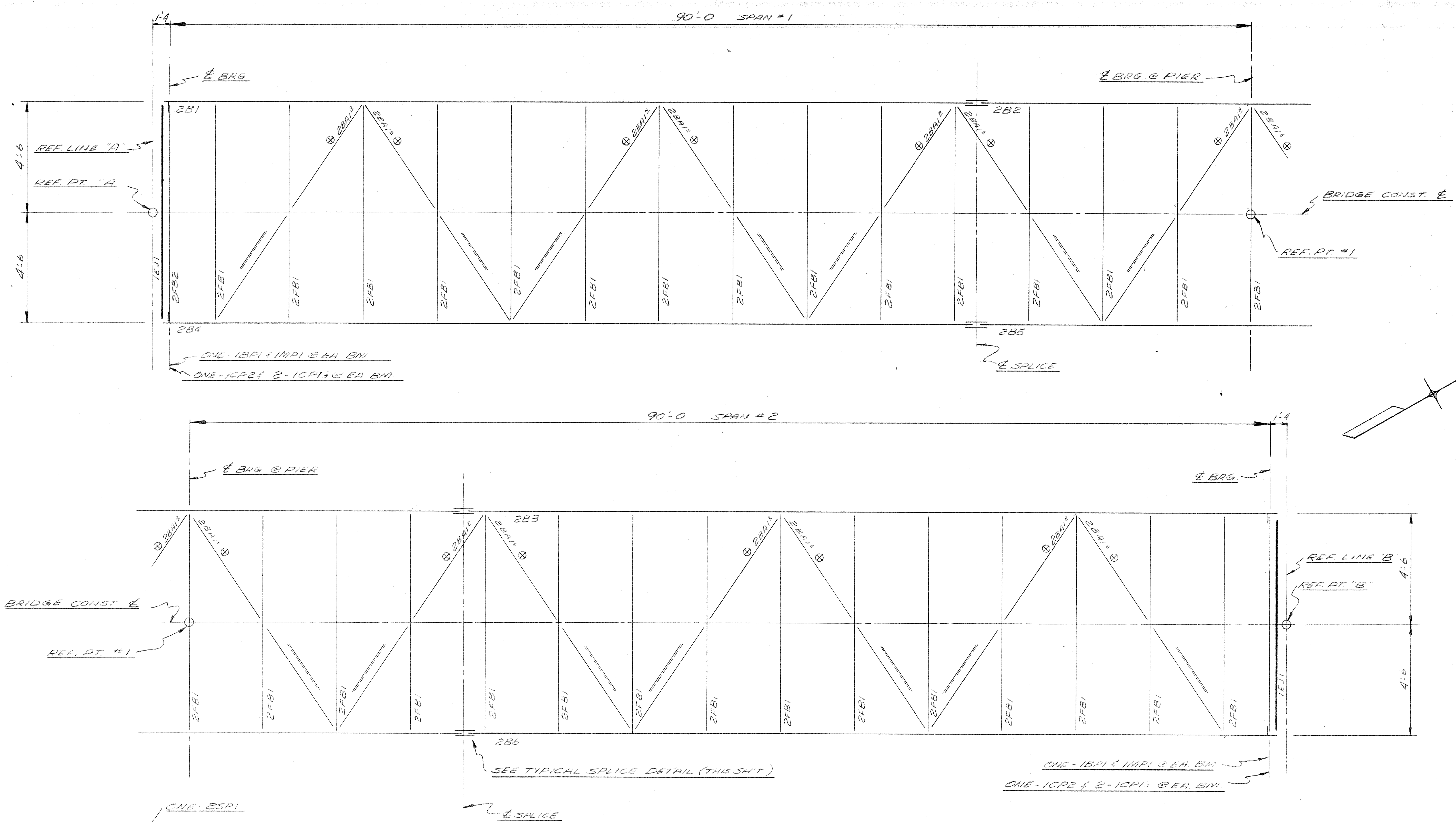
engineering co., inc.

5800 MASSACHUSETTS AVE. INDIANAPOLIS, INDIANA 46218

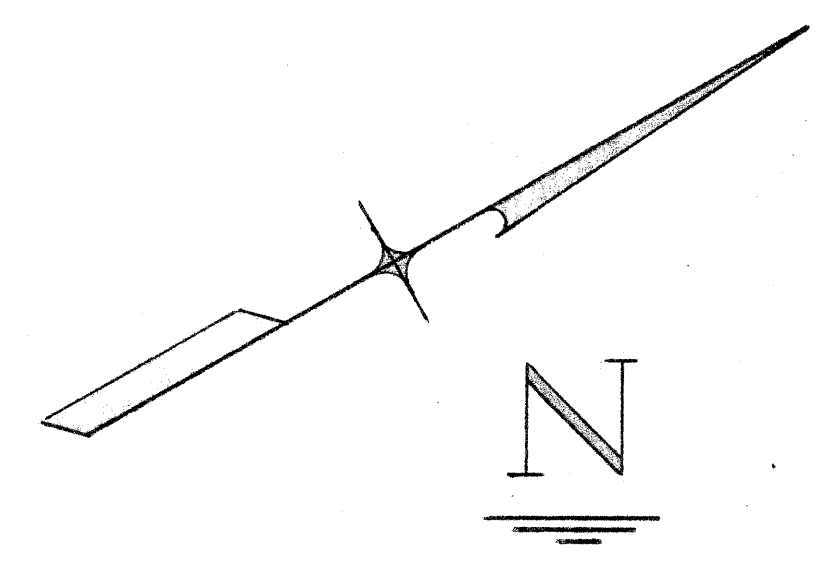
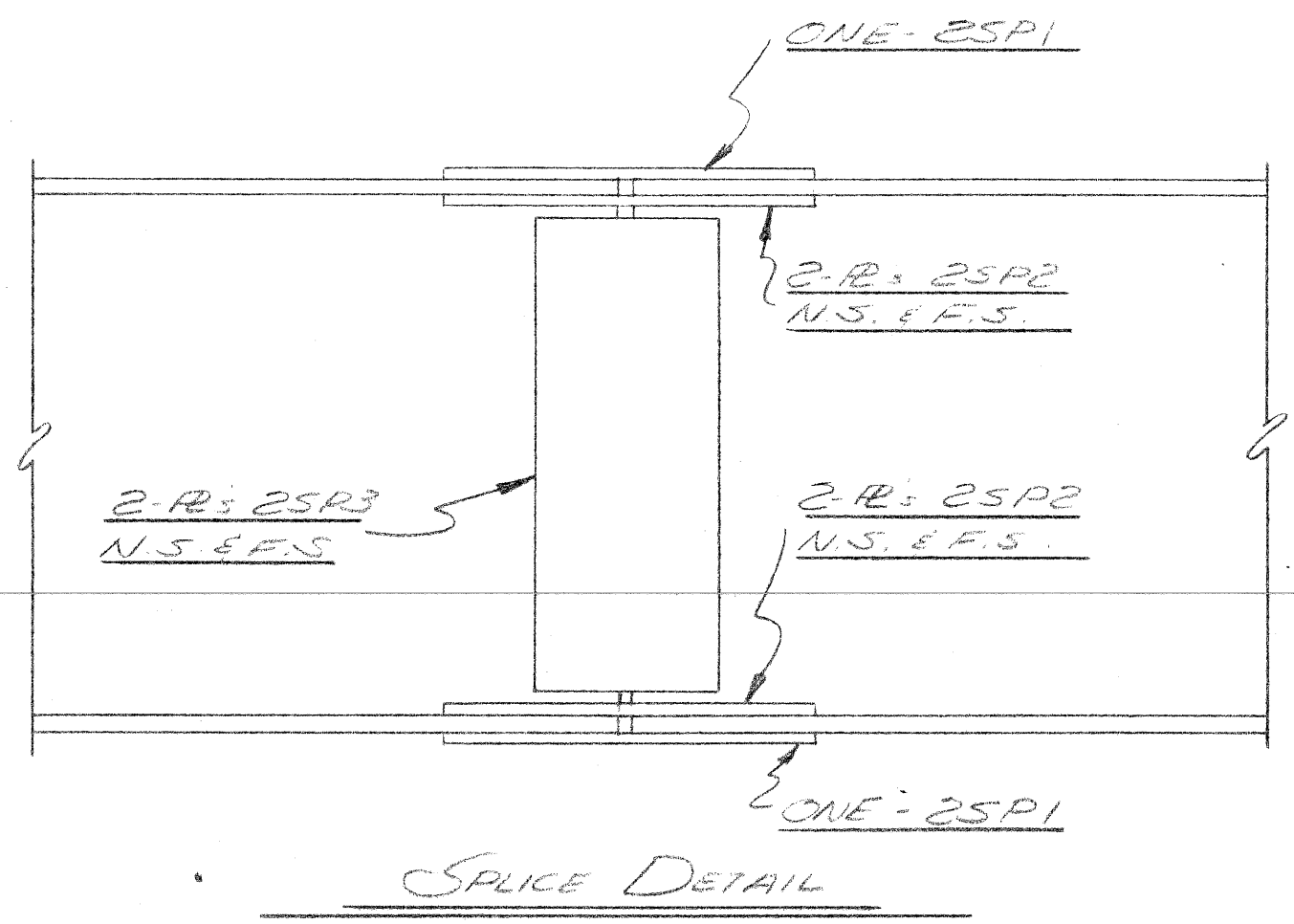
MSDH PROJ. POS. OF 82123.T

SHT. 1 OF 1





ERECTION DIAGRAM



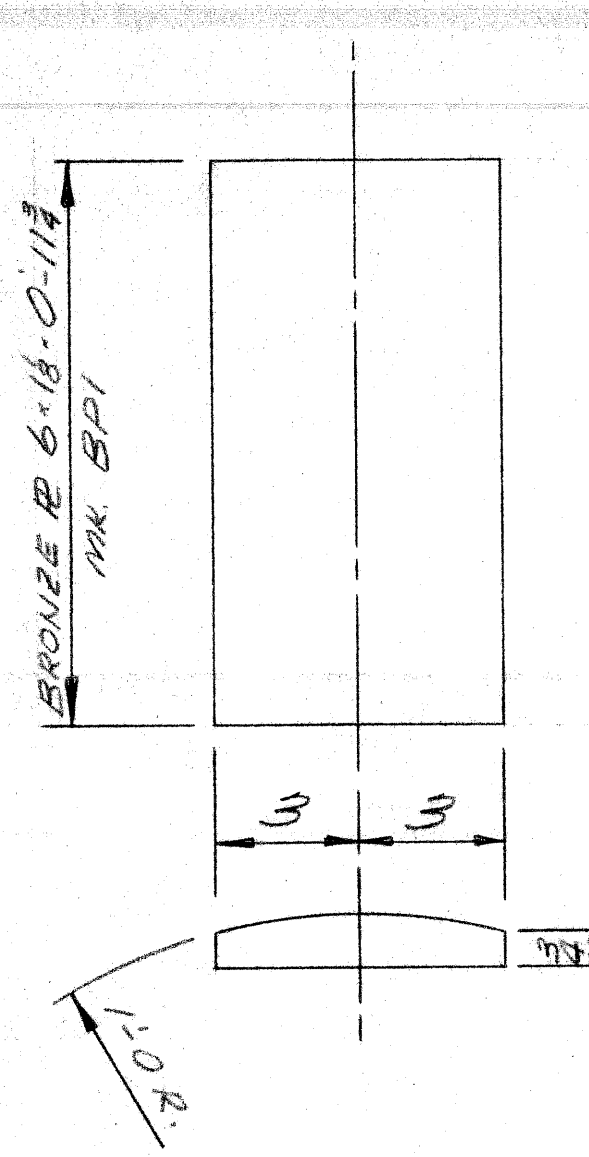
OFFICE COPY  
IHS 3/1/70

REVISION			
NO.	DESCRIPTION	DATE	BY

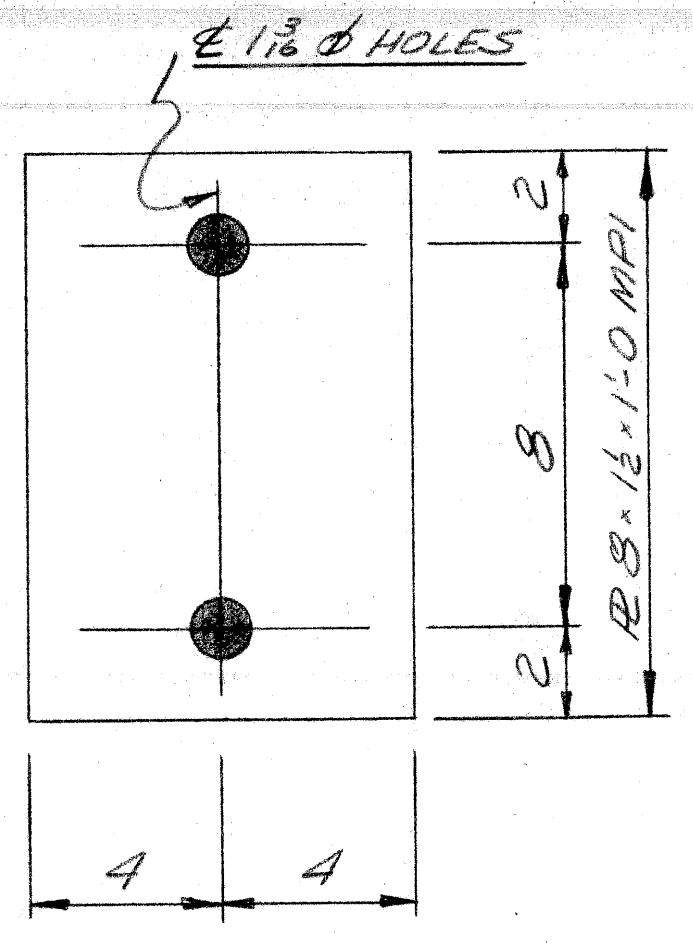
  

<b>F. YEAGER</b>		
<b>BRIDGE &amp; CULVERT COMPANY</b>		
1701 KEARNEY ST.		PORT HURON, MICH.
<u>BRIDGE POS-82123 I</u>		
WANNODE AVE PEDESTRIAN BRIDGE OVER JEFFRIES FREEWAY IN DETROIT		
<u>C.A. HULL CO. CONT'R.</u>		
DATE 2-11-70	JOB NO. 5-4708	SHEET E1
BY D. LEFFLER		

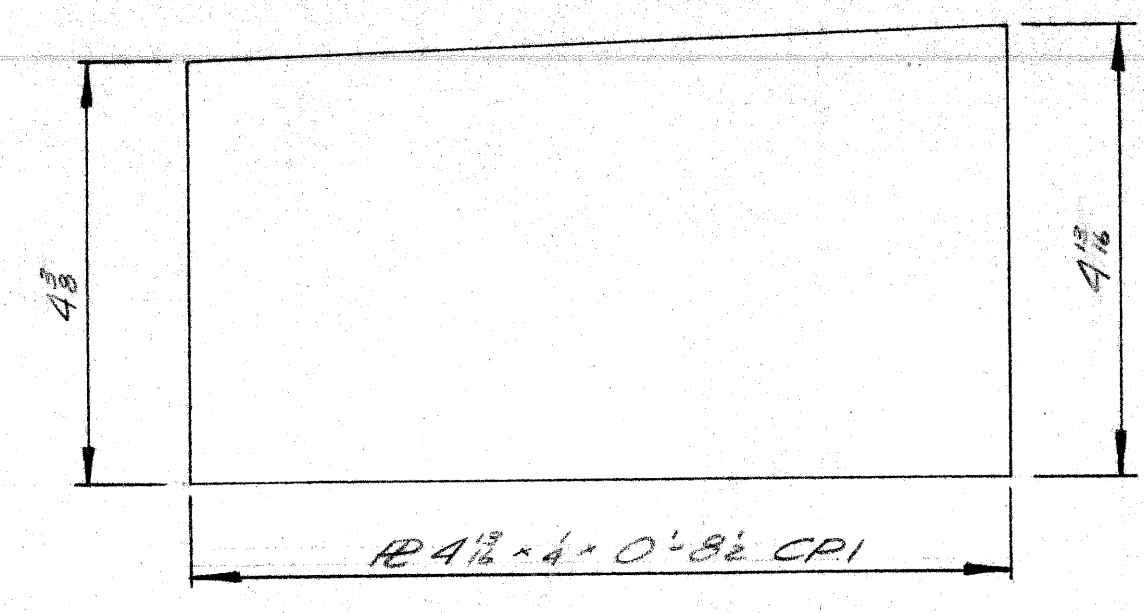




4- BRONZE PLATE REQ'D. AS SHOWN - MK. 1BPI

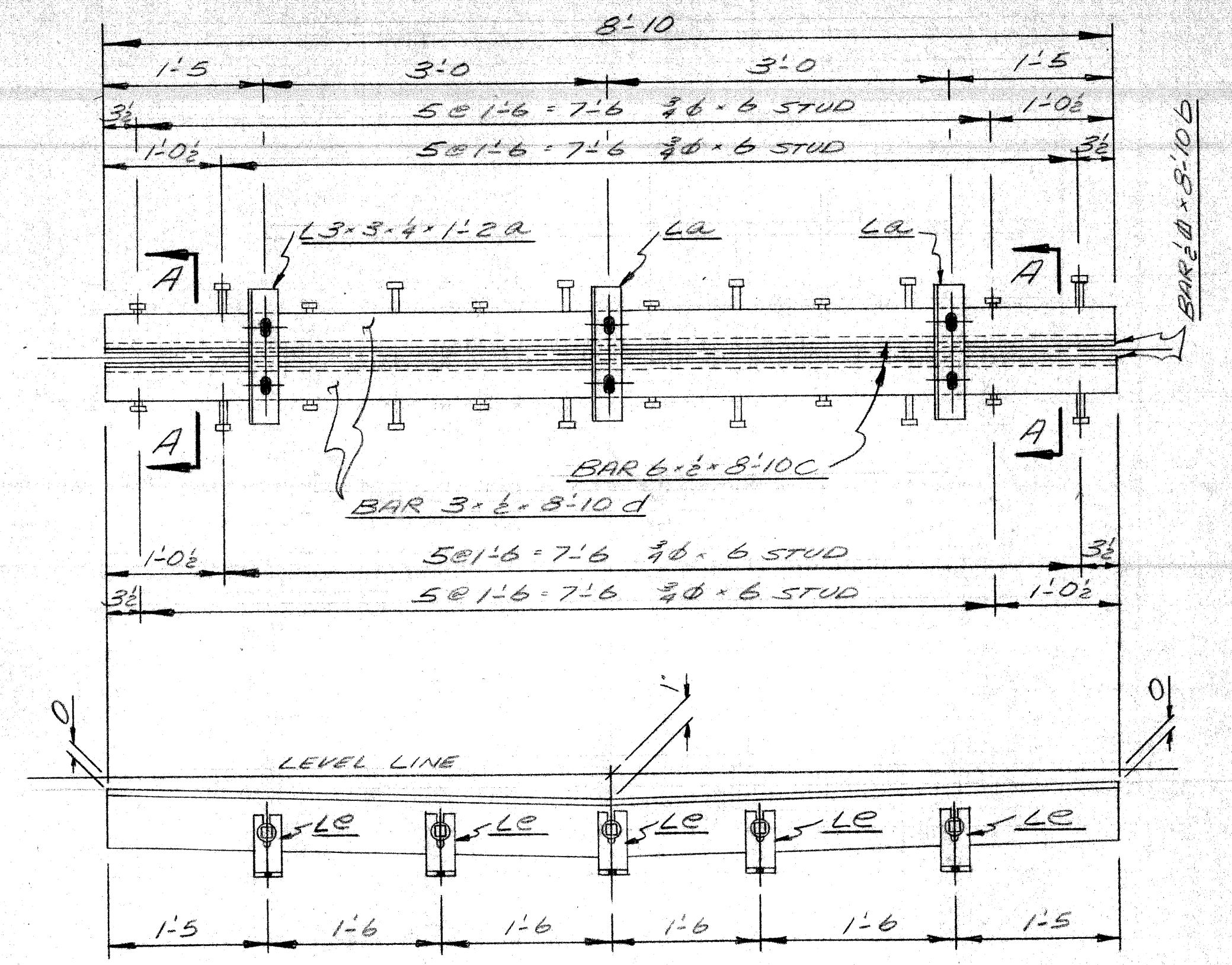


4- MASONRY PLATE REQ'D. AS SHOWN - MK. 1MPI  
GALV. AFTER FAB. A.S.T.M. A-123



8- CLOSURE PLATE REQ'D. AS SHOWN - MK. 1CPI

PLAIN MAT.  
4- R 4 3/4\"/>



2- EXP. JTS. REQ'D. AS SHOWN & NOTED - MK. 1EJ1

DRAIN FRAMES & GRATES

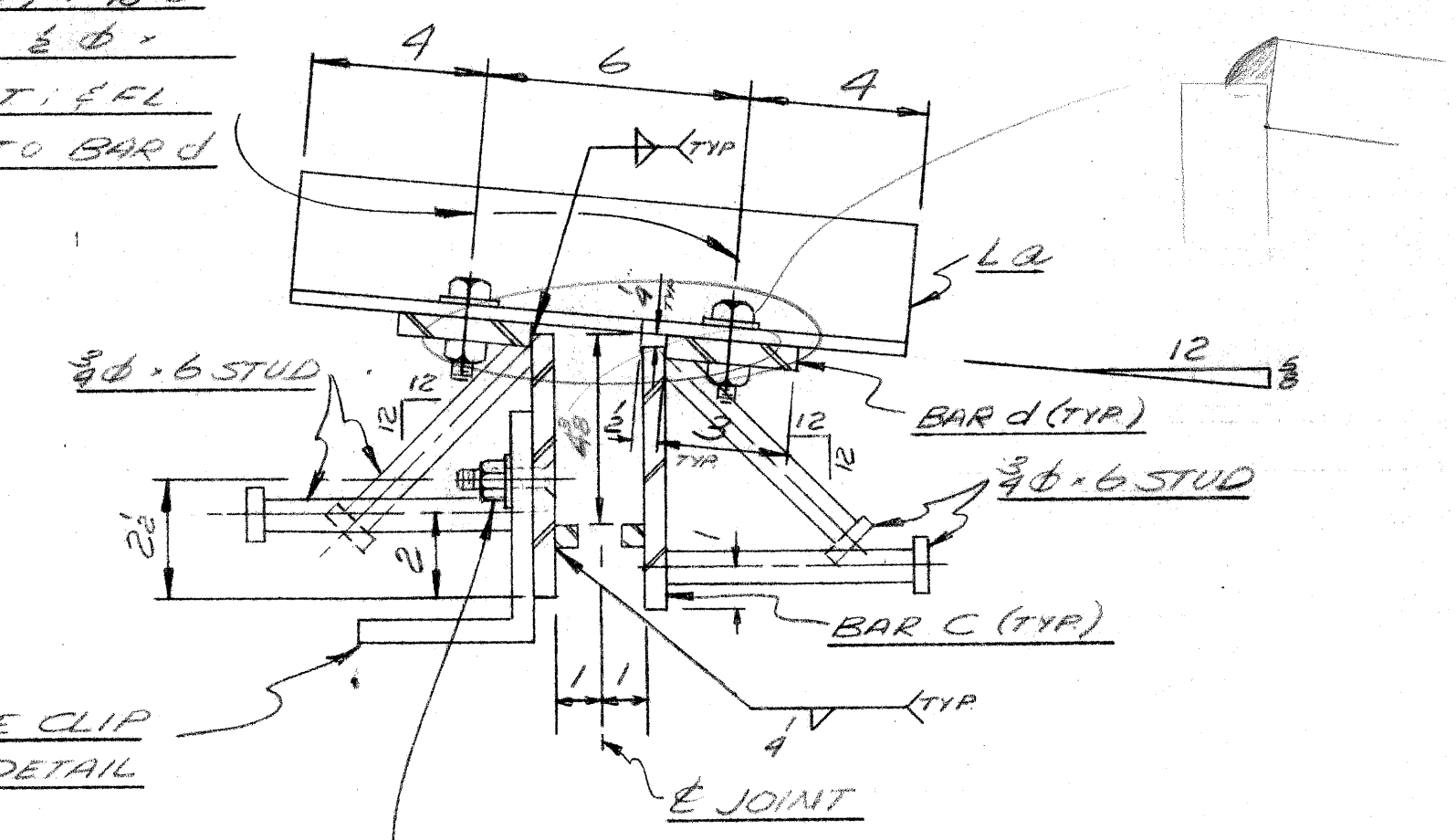
2- A.S.T.M. A48-56 GRAY IRON, OR A339-55 DUCTILE IRON DRAINAGE FRAMES & GRATES (1'-2\"/>

CT.	SHIP	WEATH-R TYPE FIELD BOLTS, NUTS, & WAS.
10	11	3/8\"/>
310	326	3/8\"/>
224	235	3/8\"/>
240	252	3/8\"/>
320	337	3/8\"/>
464	437	3/8\"/>

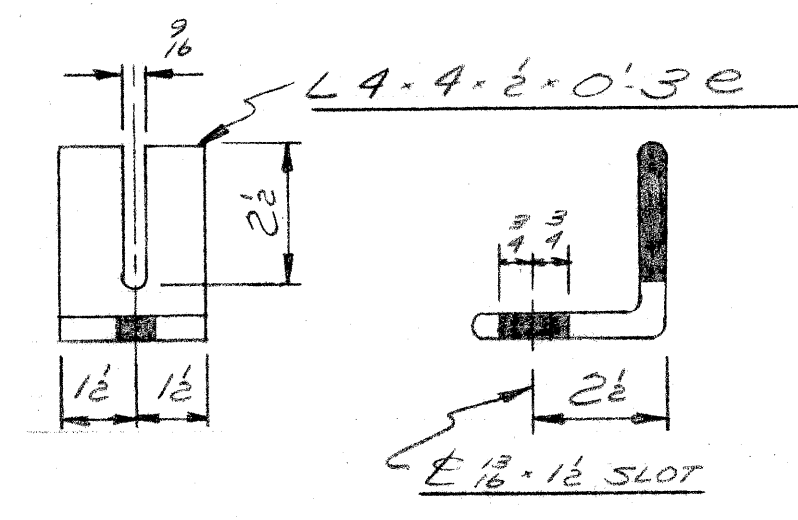
NON-PAYWEIGHT SHOP FIT-UP BOLTS

16	3/8\"/>
64	3/8\"/>

1/2\"/>



SECTION A-A

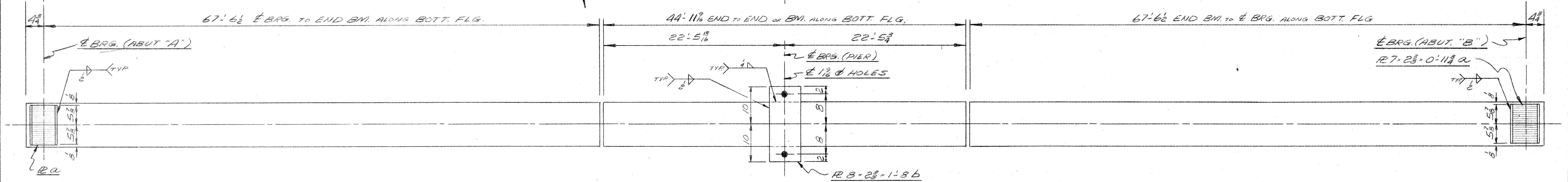
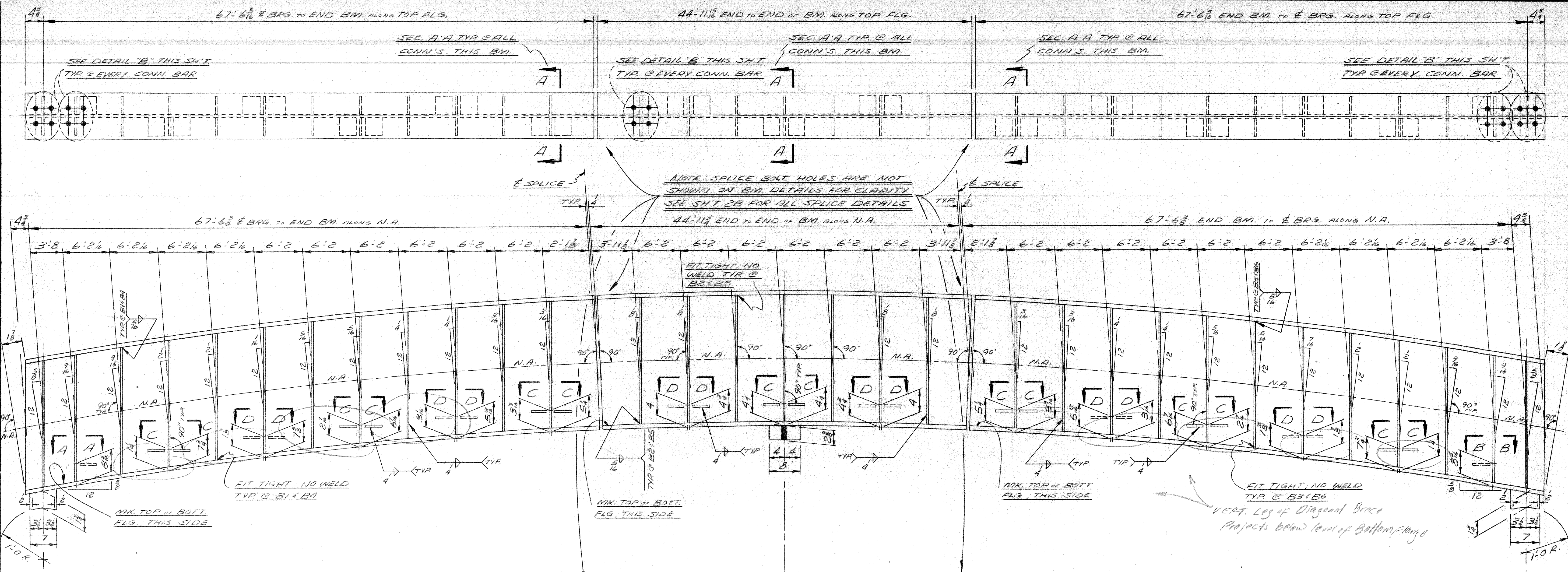


CLIP ANGLE DETAIL

SEE SH'T. # 2B FOR SHOP NOTES

REVISION				F. YEAGER	
NO.	DESCRIPTION	DATE	BY	BRIDGE & CULVERT COMPANY	
				1701 KEARNEY ST. - PORT HURON, MICH.	
				BRIDGE D05-82123 I	
				IVANHOE AVE PEDESTRIAN BRIDGE OVER JEFFRIES FREEWAY IN DETROIT	
				C.A. HULL CO. CONT'R.	
				DATE 2-23-70	JOB NO. 5-4708
				BY D. LEFFLER	1 of 3

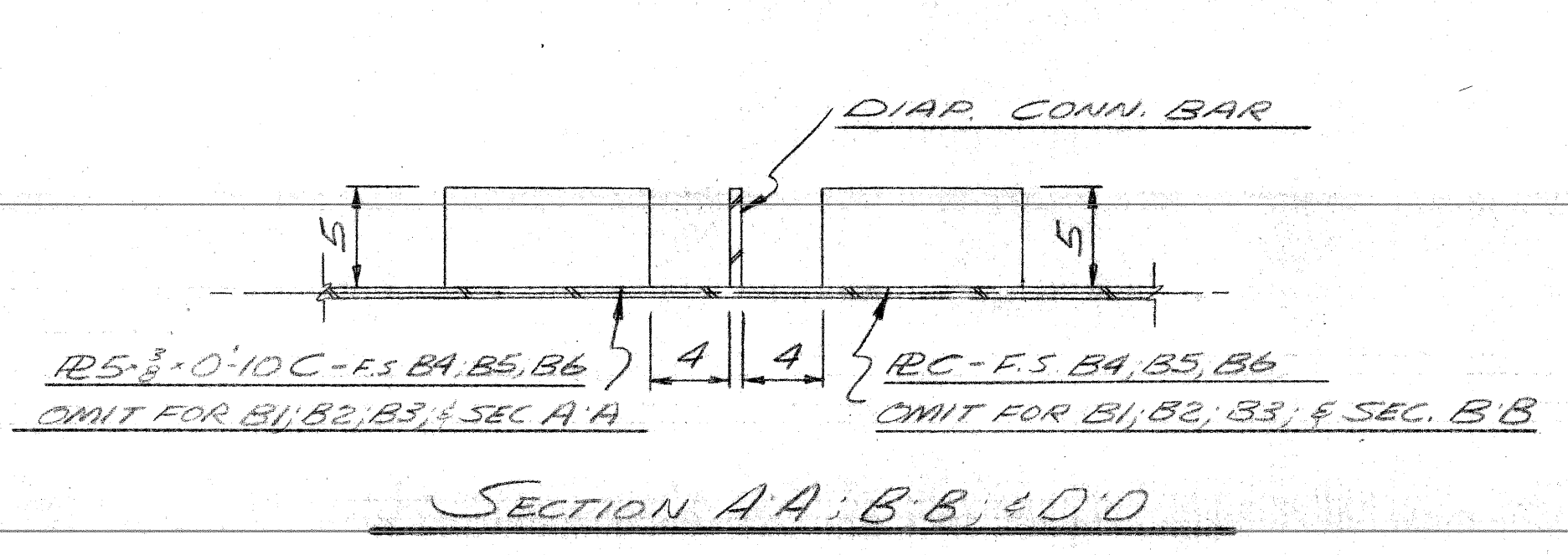
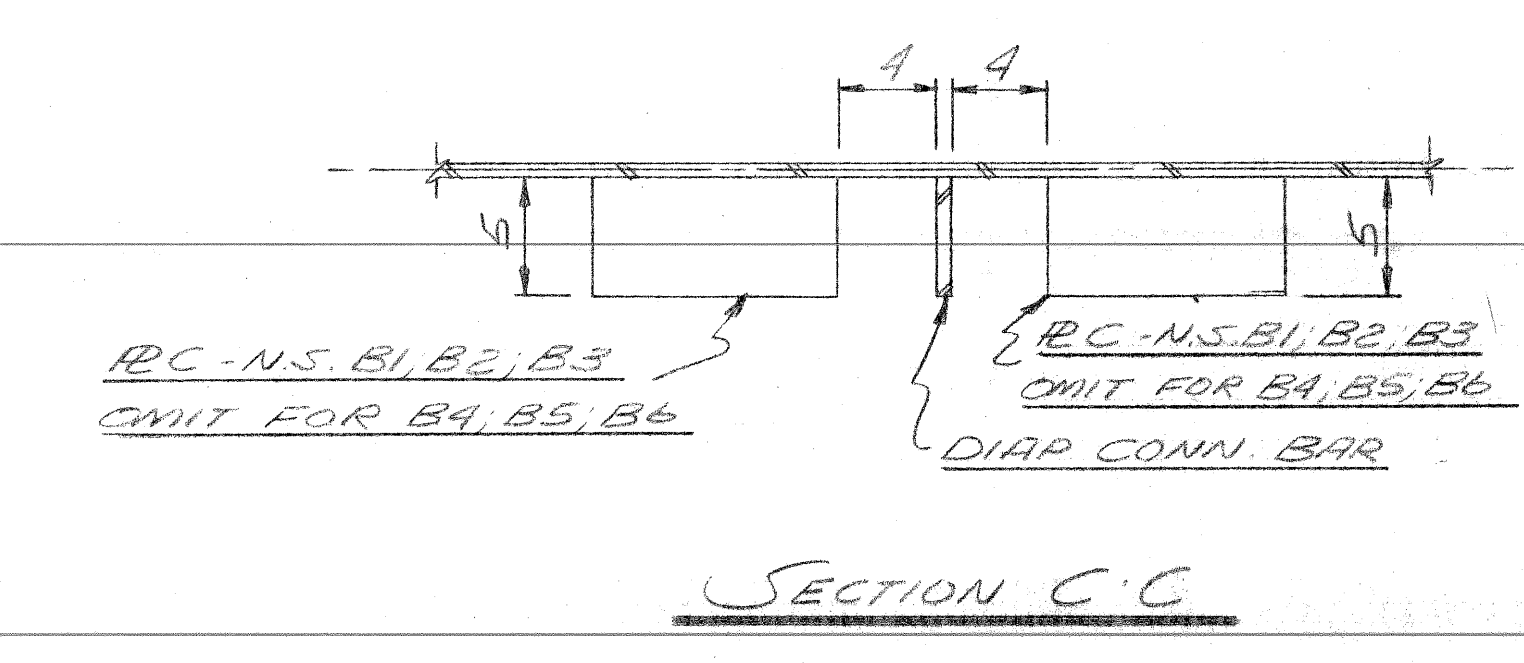
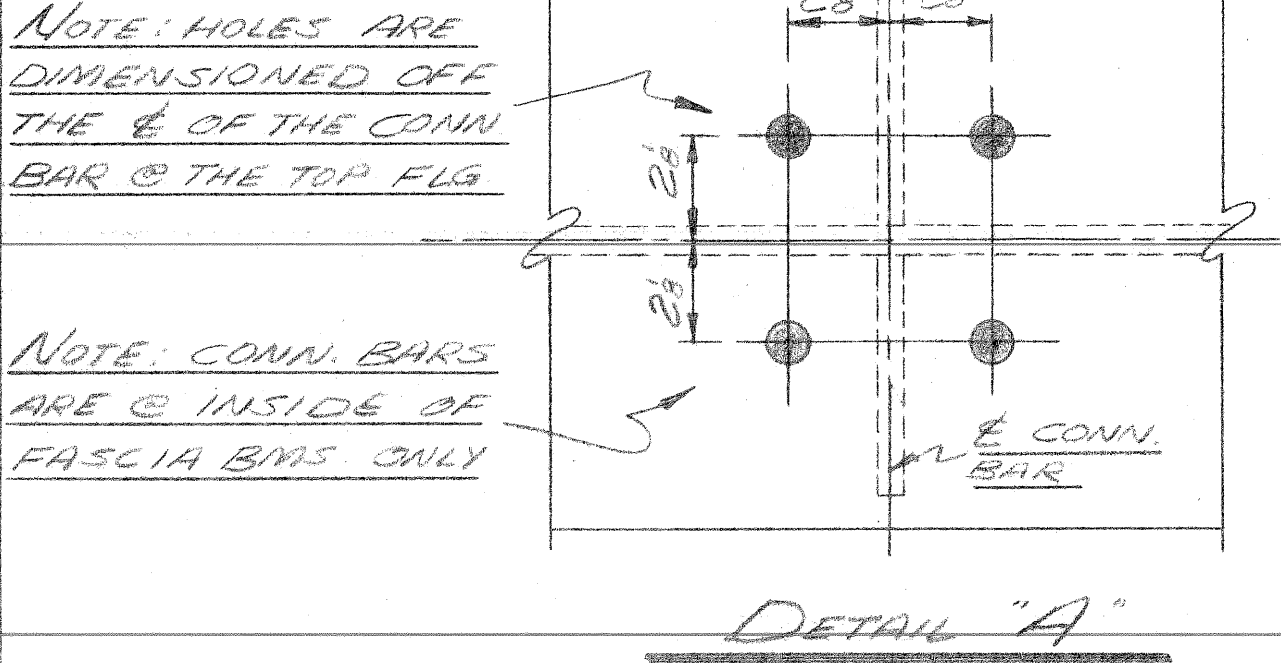




ONE - BEAM (36 WF 150 - 67'-11 1/4\" : CAMBERED) REQ'D AS SHOWN & NOTED - MK. 2B1  
 ONE - do do do do - MK. 2B4

ONE - BEAM (36 WF 150 - 67'-11 1/4\" : CAMBERED) REQ'D AS SHOWN & NOTED - MK. 2B3  
 ONE - do do do do - MK. 2B6

ONE - BEAM (36 WF 150 - 44'-11 1/8\" : CAMBERED) REQ'D AS SHOWN & NOTED - MK. 2B2  
 ONE - do do do do - MK. 2B5



REVISION			
NO.	DESCRIPTION	DATE	BY

**F. YEAGER**  
**BRIDGE & CULVERT COMPANY**  
 1701 KEARNEY ST. - PORT HURON, MICH

*BRIDGE POS-82123 I*  
 IVANHOE AVE. PEDESTRIAN BRIDGE OVER  
 JEFFRIES FREEWAY IN DETROIT

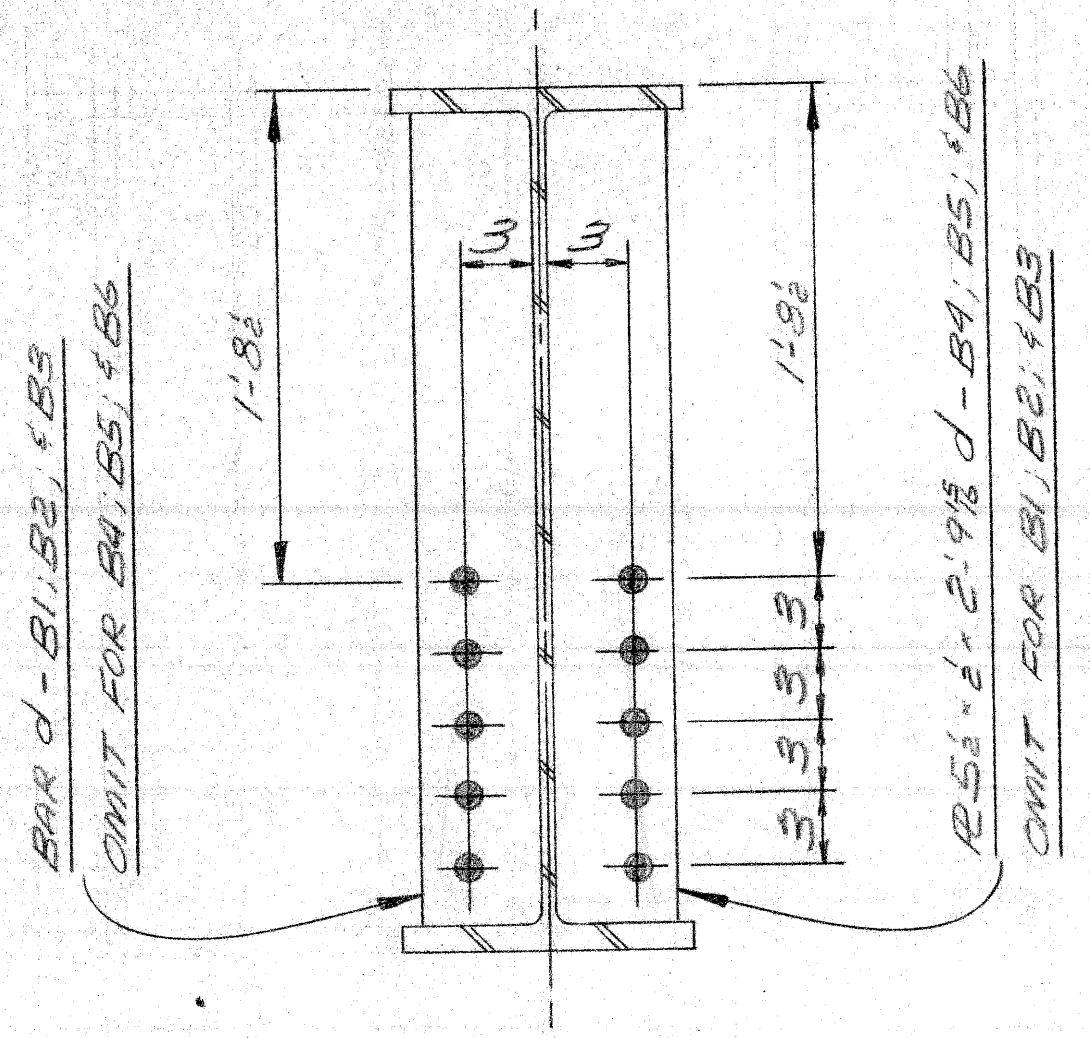
C.H. HULL CO. CONTR.

DATE 2-18-70 JOB NO. 5-4708 SHEET 2A OF 3  
 BY D. LEFFLER

Fix Section Notations

SEE SH.T. # 2B FOR SHOP NOTES



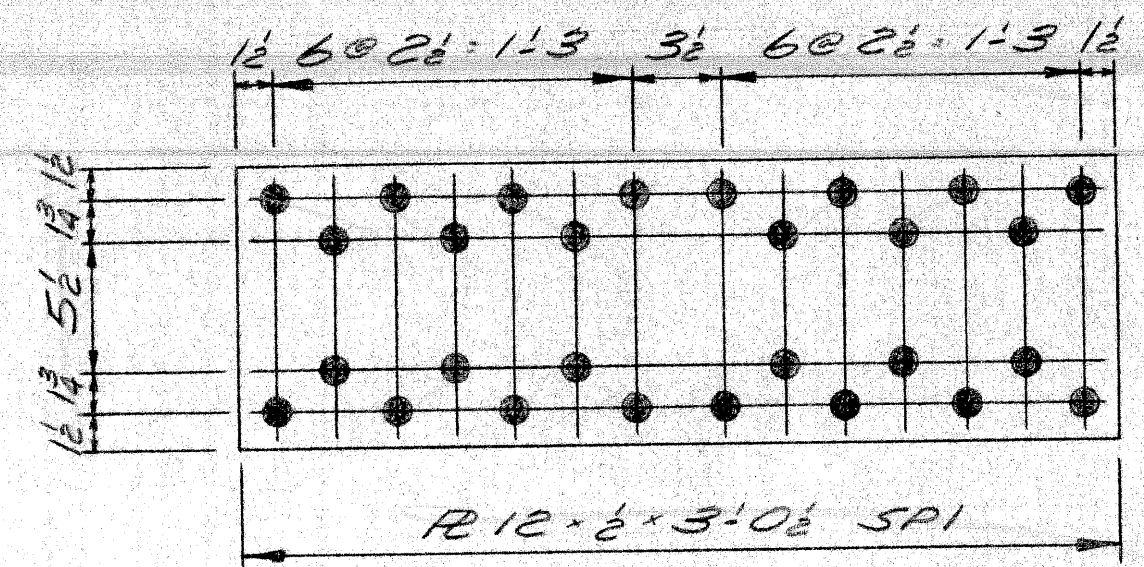


**SECTION A-A**  
TYP 31 PLACES

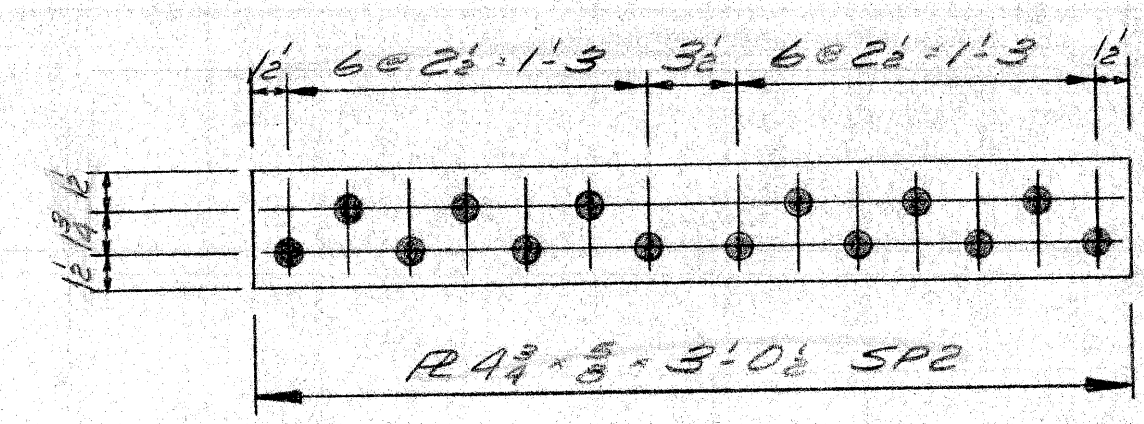
NOTE: HORIZ. COIN. REIN. NOT SHOWN IN SECTION

**ANCHOR BOLTS**  
A-301 STEEL  
A- 1"Ø x 1-6 STD. SQ. HD. BOLT; STD. HEX NUT  
A- 1"Ø JAM NUT  
GALV. PER A.S.T.M. A-153

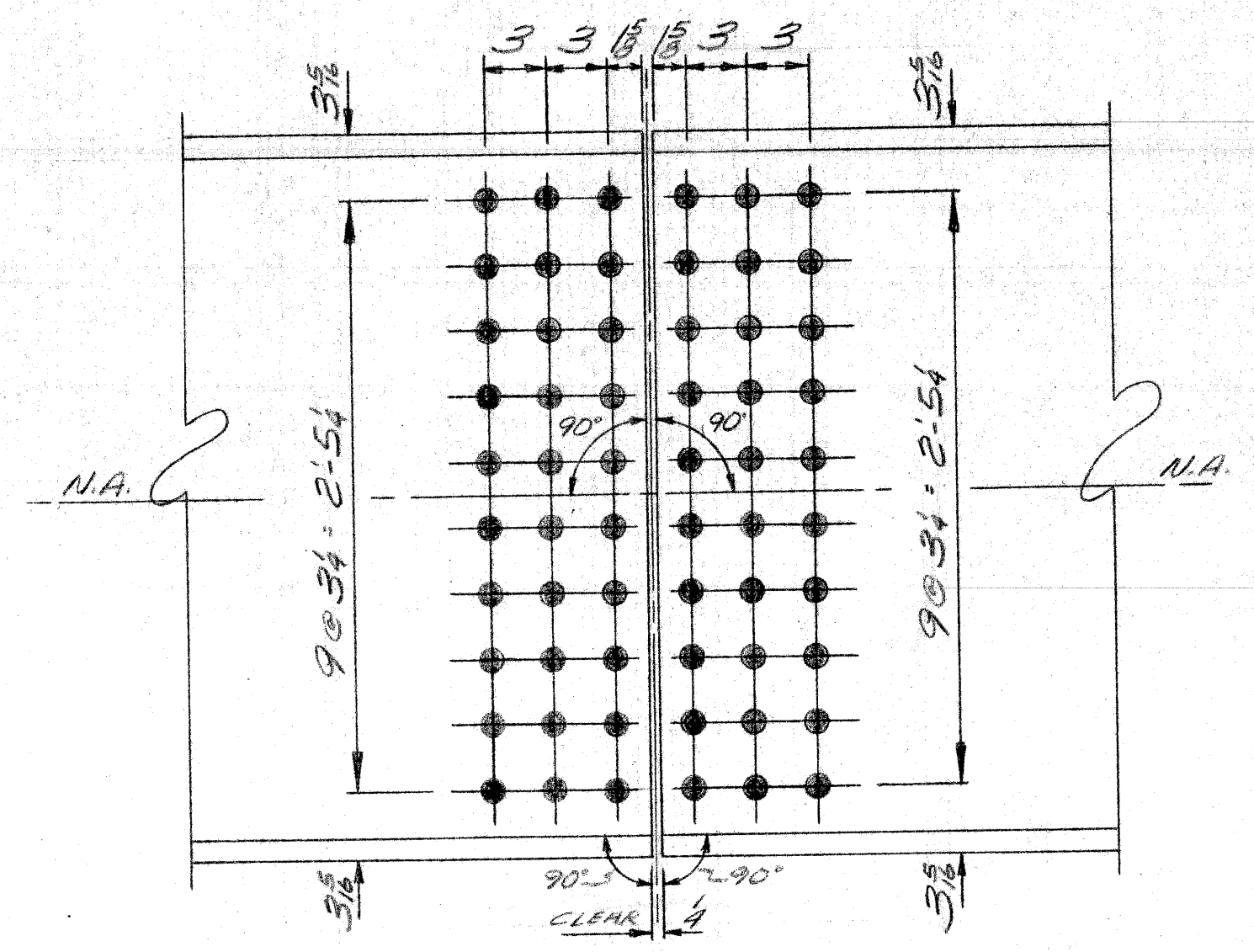
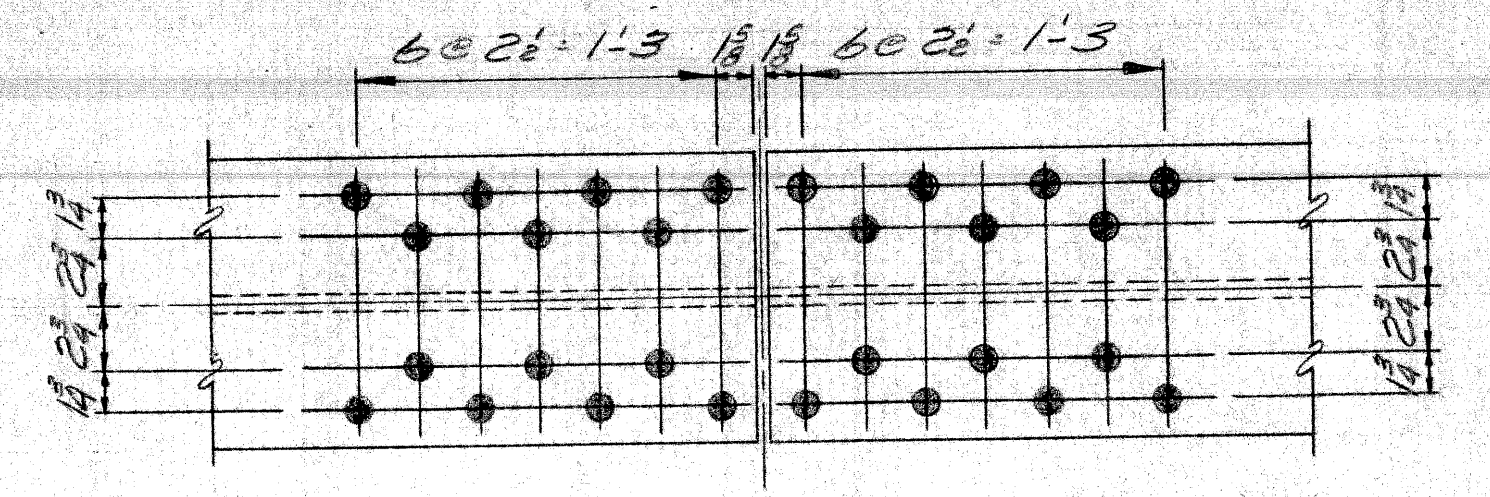
**PLAIN MATERIAL**  
A-36 STEEL  
B- BAR 1"Ø x 1-0 (POS. DWEL) MK. 2PDI  
GALV. PER A.S.T.M. A-153



**8- SPLICE RE'S REQ'D. AS SHOWN - MK 2SP1**



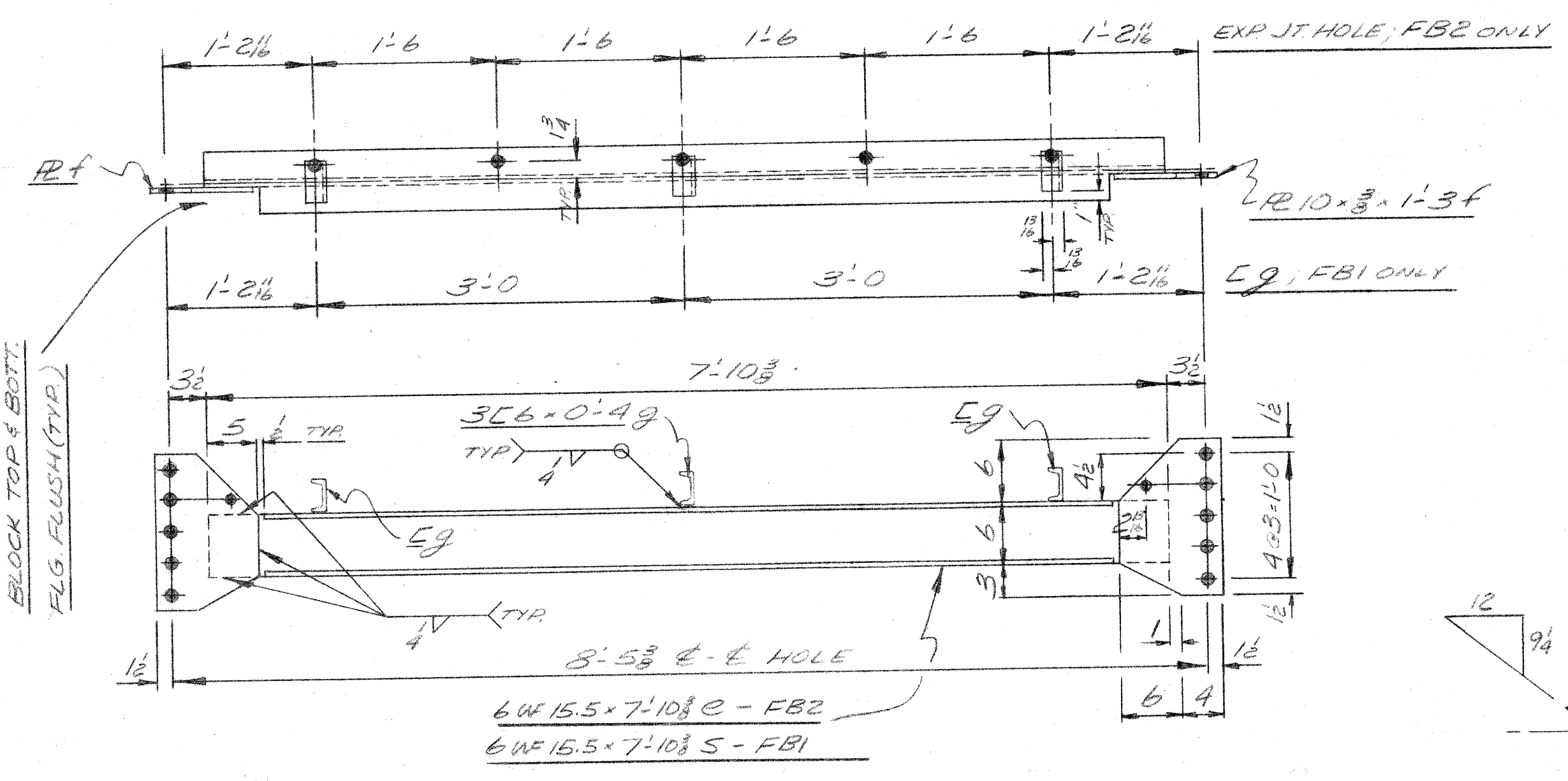
**16- SPLICE RE'S REQ'D. AS SHOWN - MK 2SP2**



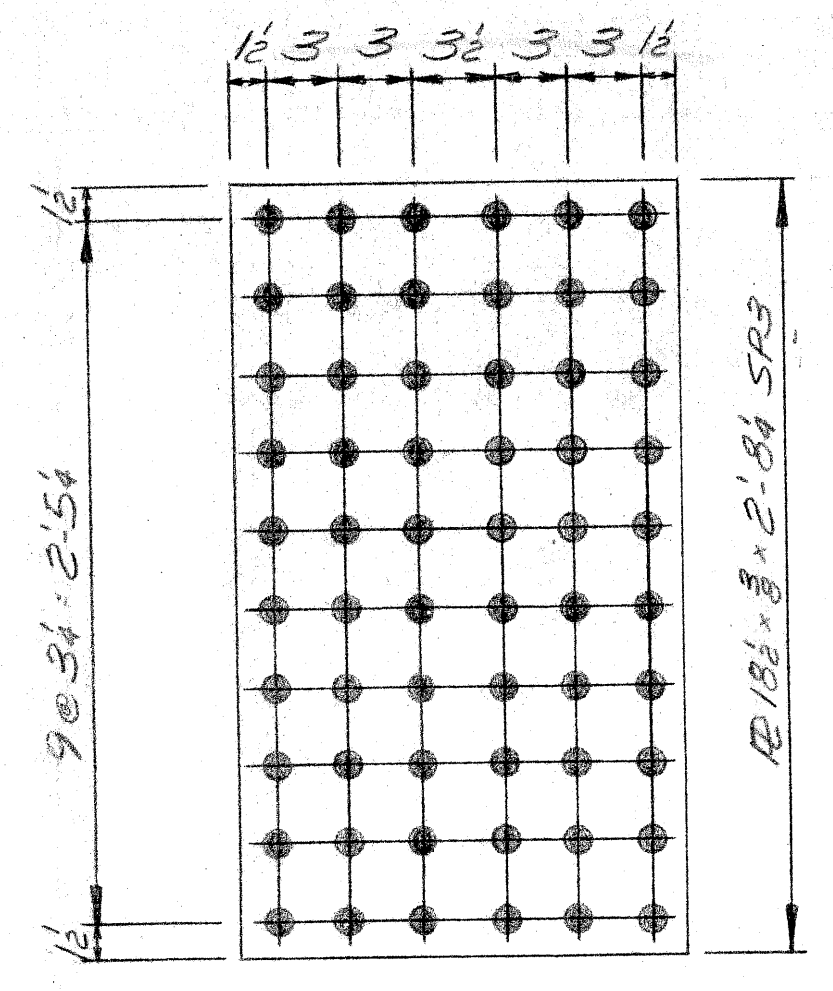
SEE SHOP NOTES FOR HOLE SIZE  
**TYPICAL FIELD SPLICE DETAIL**

**SHOP NOTES**

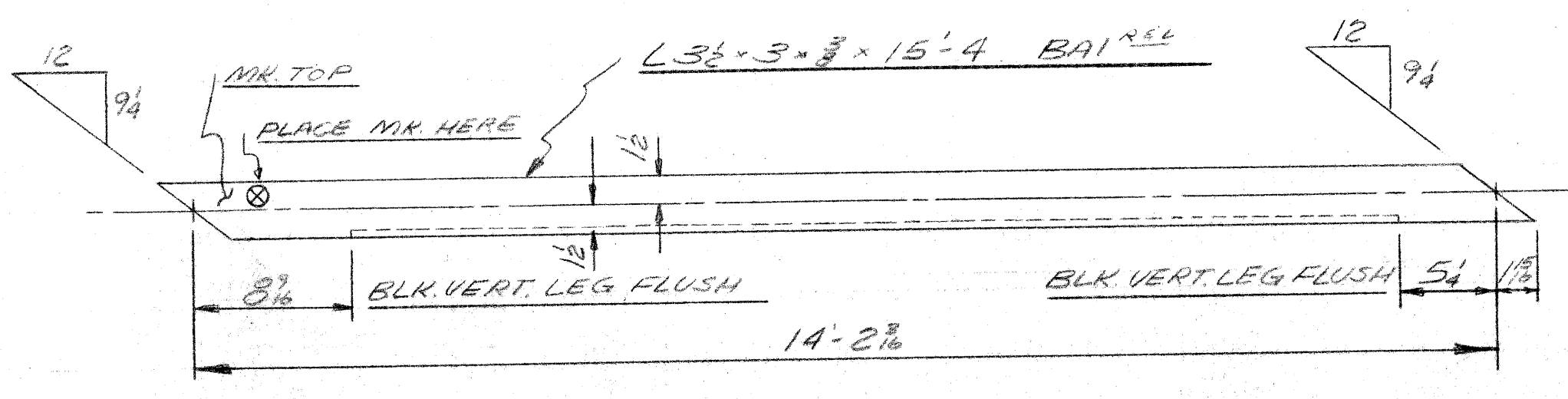
FABRICATE PER M.D.S.H. 1967 SPEC'S.; STRUCTURAL STEEL SHALL BE A-588(U)NO PAINTING IS REQ'D.; NO ROUNDING OF EDGES IS REQ'D.; PLAIN MATERIAL ONLY AS INDICATED IN DETAILS; OPEN HOLES SHALL BE 1/8 Ø EXCEPT FIELD SPLICE COMPONENTS WHICH SHALL BE SUB-PUNCHED OR SUB-DRILLED AND THEN REAMED TO 1/8 Ø OR DRILLED FROM THE SOLID TO 1/8 Ø WITH THE BEAMS SHOP ASSEMBLED; SHOT BLAST BEAMS ONLY; CAMBER BEAMS AS INDICATED IN CAMBER DIAGRAM; CAMBER TOLERANCE IS ± 4"; ALL WELDS SHALL BE MADE WITH RACO WELDING WIRE; SEE DETAIL OF LIFTING LUGS FOR THE HANDLING OF STRINGERS



**29-FLOOR BEAMS REQ'D. AS SHOWN & NOTED - MK. 2FB1**  
2- do do do - MK. 2FB2



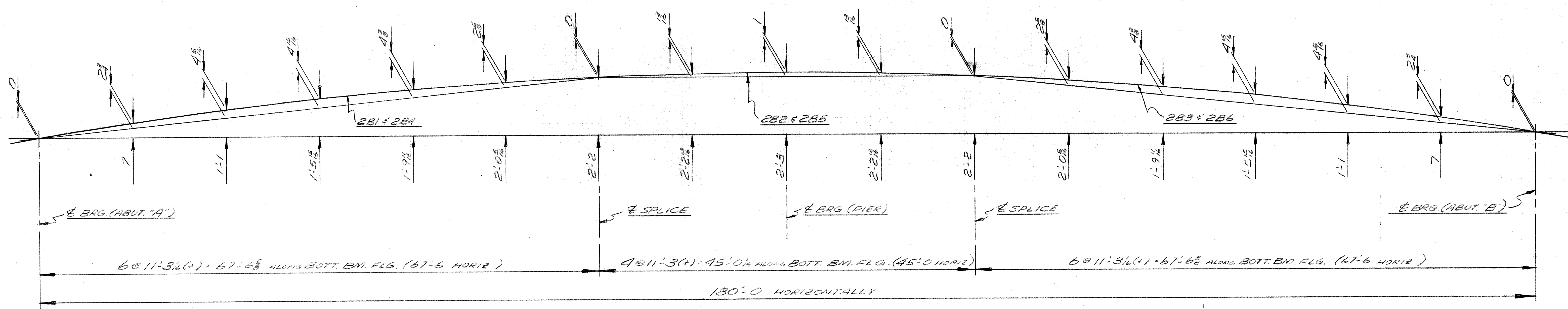
**8- SPLICE RE'S REQ'D. AS SHOWN - MK 2SP3**



**7-BRACING ANGLES REQ'D AS SHOWN - MK. 2BA1**  
7- do do do - MK 2BA2

REVISION				F. YEAGER	
NO.	DESCRIPTION	DATE	BY	BRIDGE & CULVERT COMPANY	
				1701 KEARNEY ST. - PORT HURON, MICH	
				BRIDGE POS-82123 I	
				IVANHOE AVE PEDESTRIAN BRIDGE OVER	
				JEFFRIES FREEWAY IN DETROIT	
				C.A. HULL CO. CONTR.	
				DATE 2-20-70	JOB NO.
				BY D LEFFLER	5-4708
					SHEET 28 OF 3



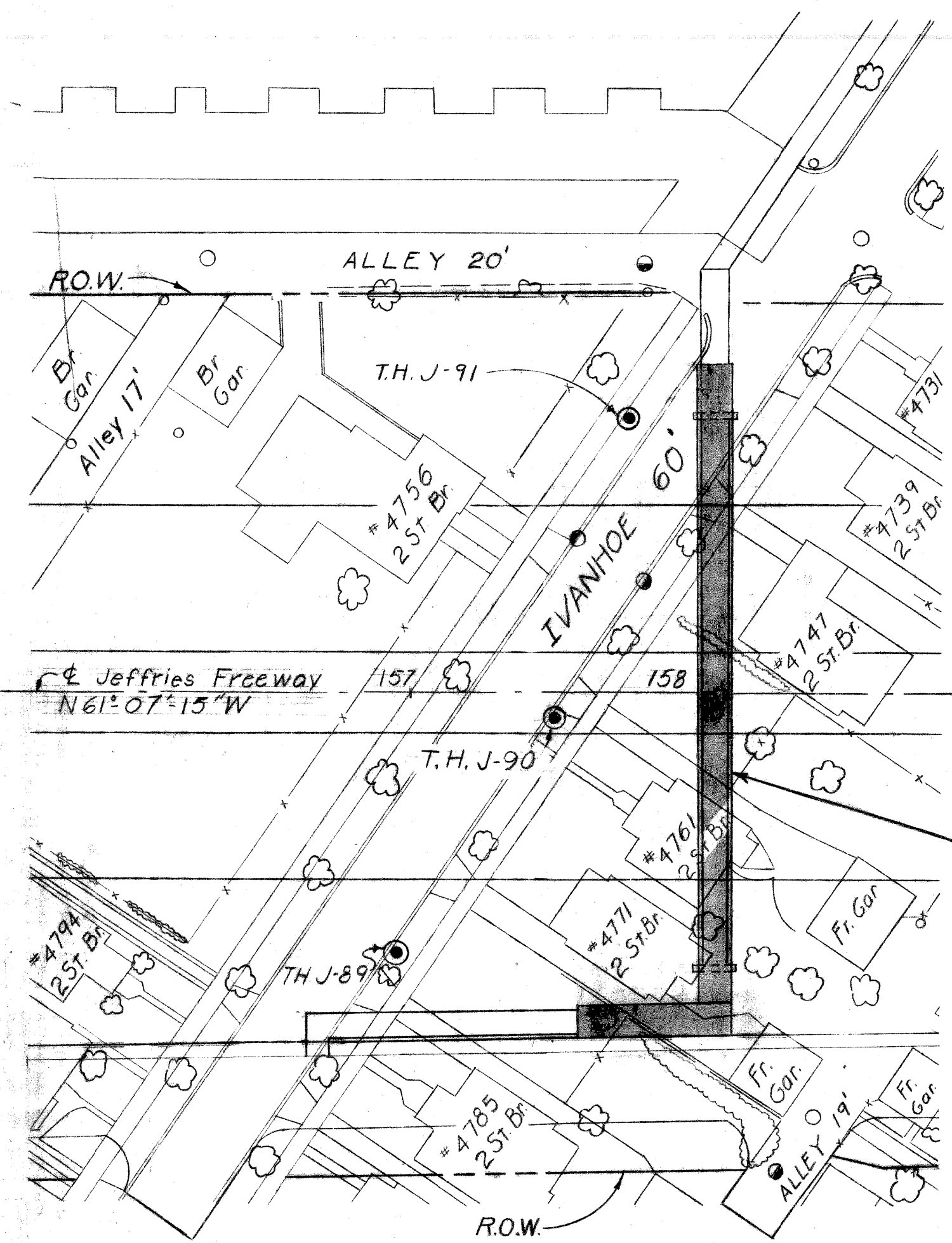


CAMBER DIAGRAM  
 MEASURE W/ B.M. LYING ON ITS SIDE

REVISION				F. YEAGER	
NO.	DESCRIPTION	DATE	BY	BRIDGE & CULVERT COMPANY	
				1701 KEARNEY ST. — PORT HURON, MICH.	
				BRIDGE POS-82123 I	
				IVANHOE AVE. PEDESTRIAN BRIDGE OVER	
				JEFFRIES FREEWAY IN DETROIT	
				C.A. HULL CO. CONT'R.	
				DATE 2-24-70	JOB NO.
				BY D. LEFFLER	5-4708
					SHEET 3 of 3



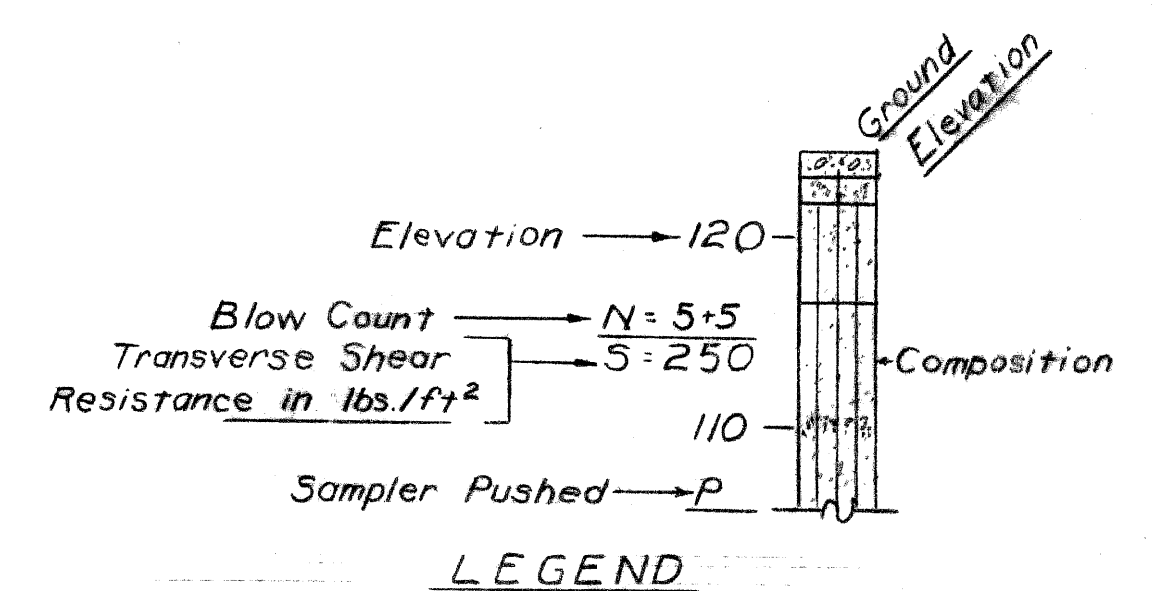
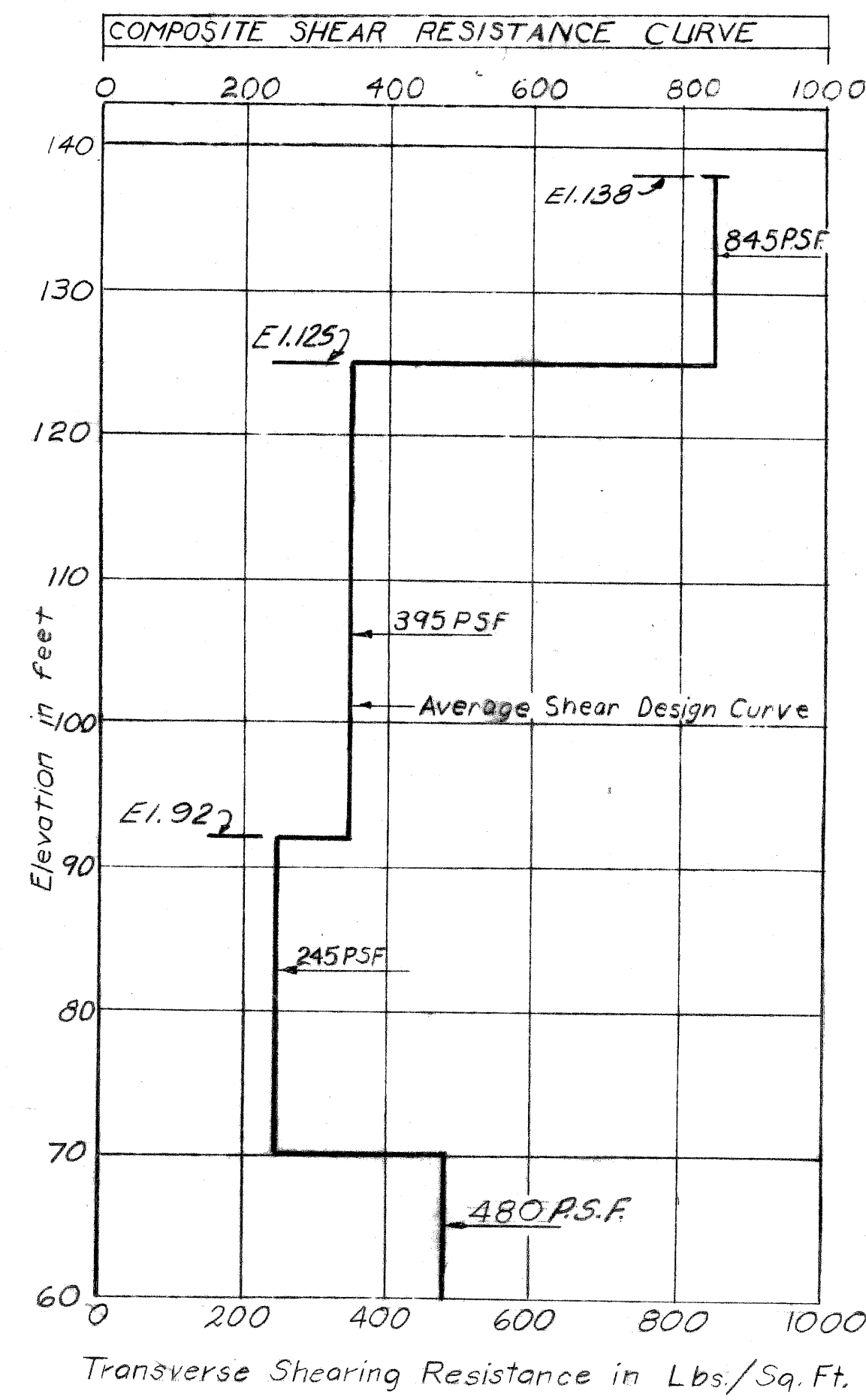
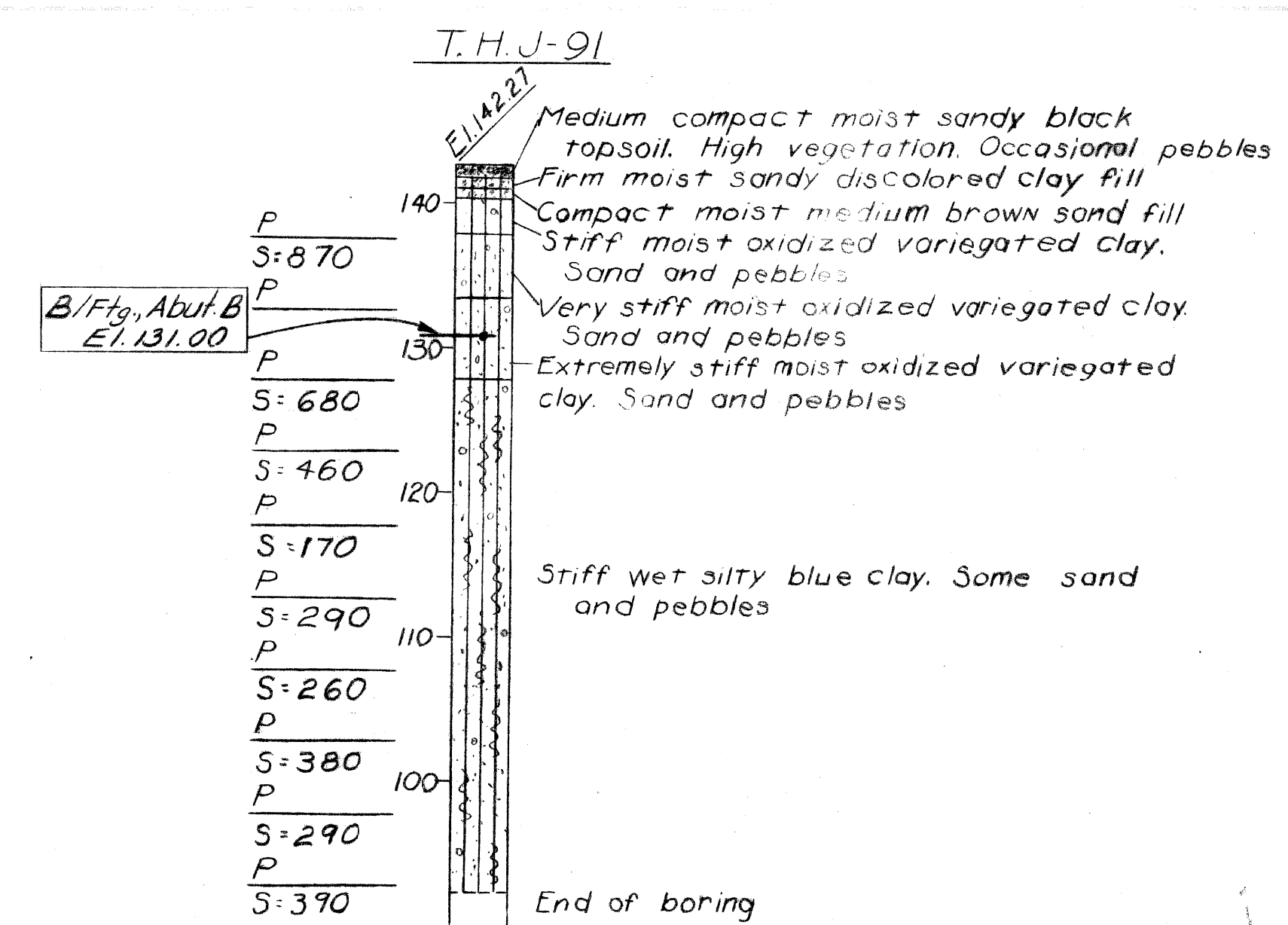
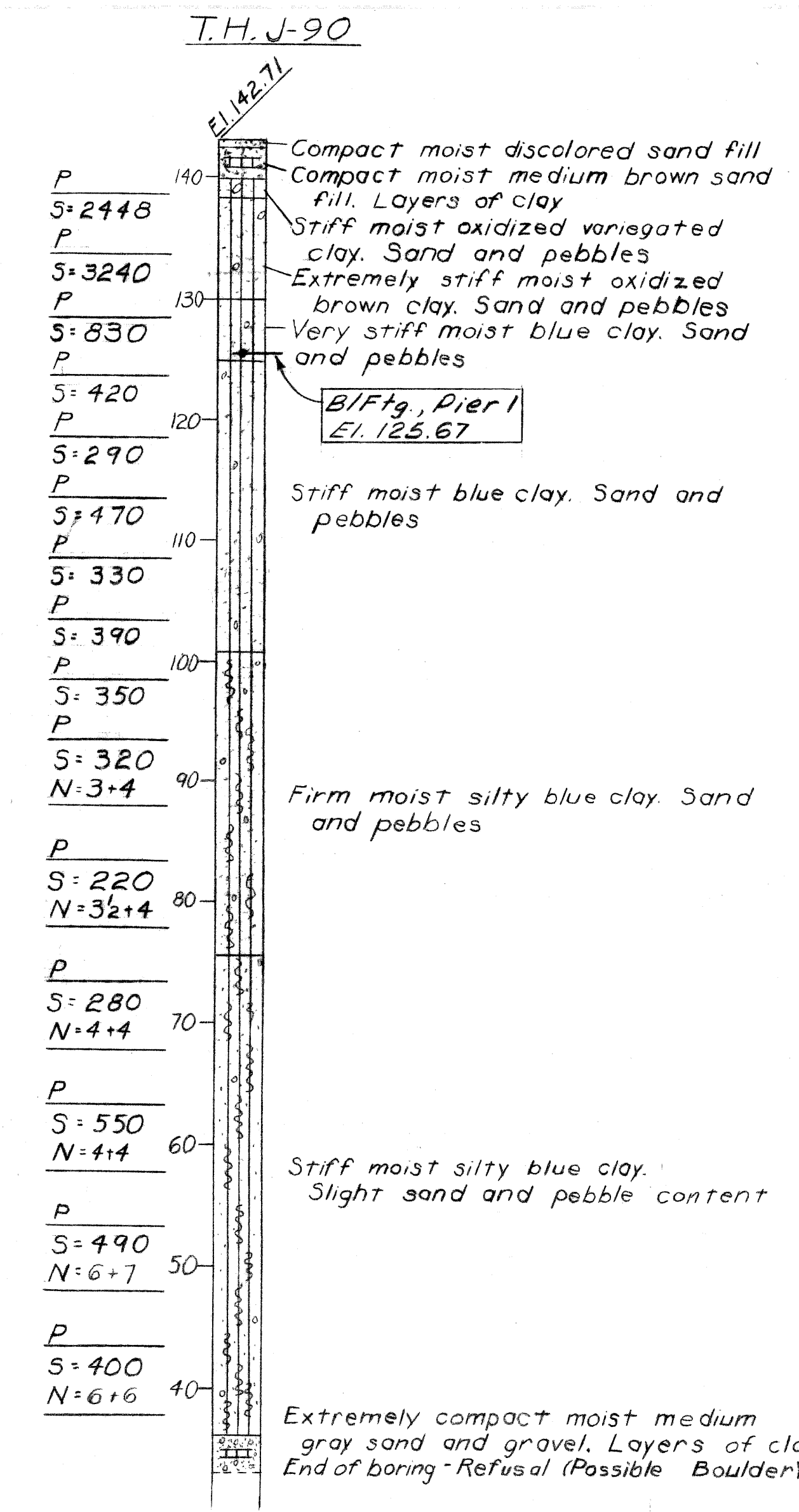
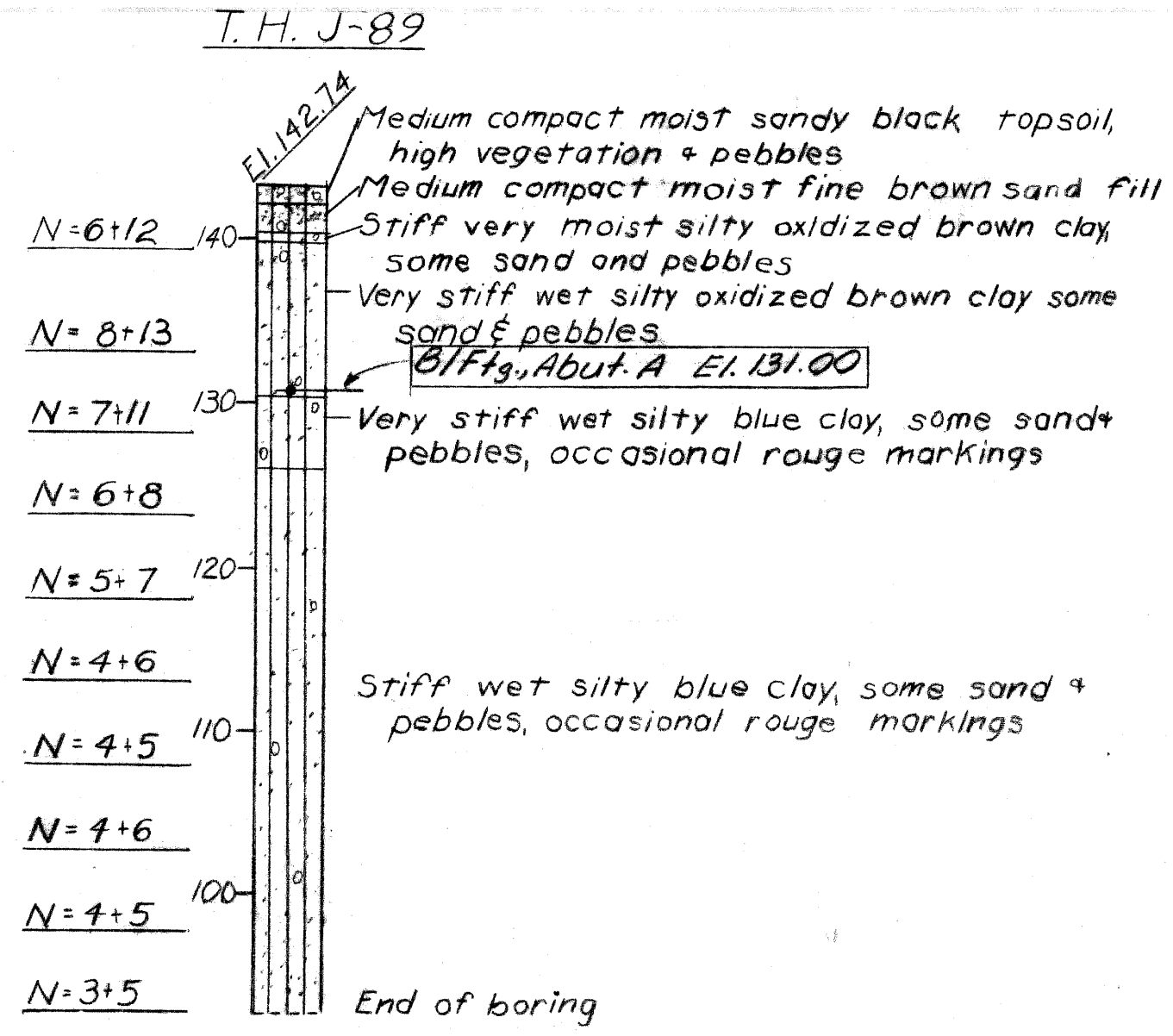
LOG OF SOIL BORINGS



SURVEY PLAN  
Scale: 1"=40'

UTILITY LEGEND

- Sewer Manhole
- Sewer Inlet or Catch Basin
- ⊙ Test Hole for Soil Profile
- ⊗ 12" Tree (Size)
- Fence



GENERAL NOTES:

The work covered by these plans includes construction of the proposed bridge and placing slope protection to the limits shown. All other work is included in the Road Plans which are a part of this contract.

Removal of fences and buildings is not part of this contract.

The contractor shall locate all active underground utilities prior to starting work, and shall conduct his operations in such a manner as to insure that those utilities not requiring relocation will not be disturbed.

Datum refers to City of Detroit datum.

Topography shown hereon represents conditions existing at the time the field survey was made. However, these conditions may have been materially altered by the operations of others before the work has been started.

NOTES:

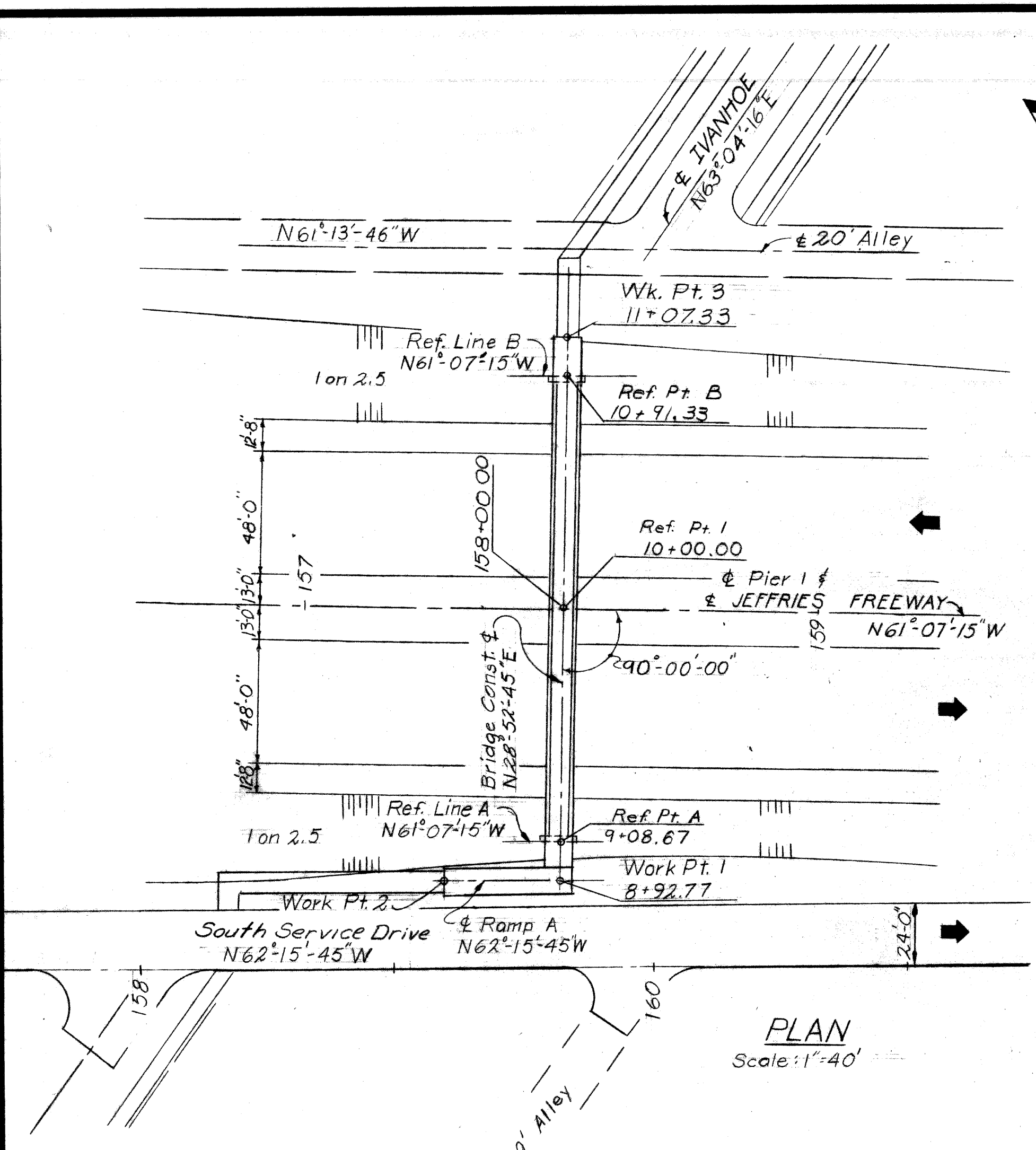
N Indicates number of blows required to drive a sampler 1'-0" with a 140" hammer falling 30". Count made at 6" intervals.

S Indicates Transverse Shearing Resistance in lbs./ft.<sup>2</sup> as determined by M.S.H.D. Standard Test.

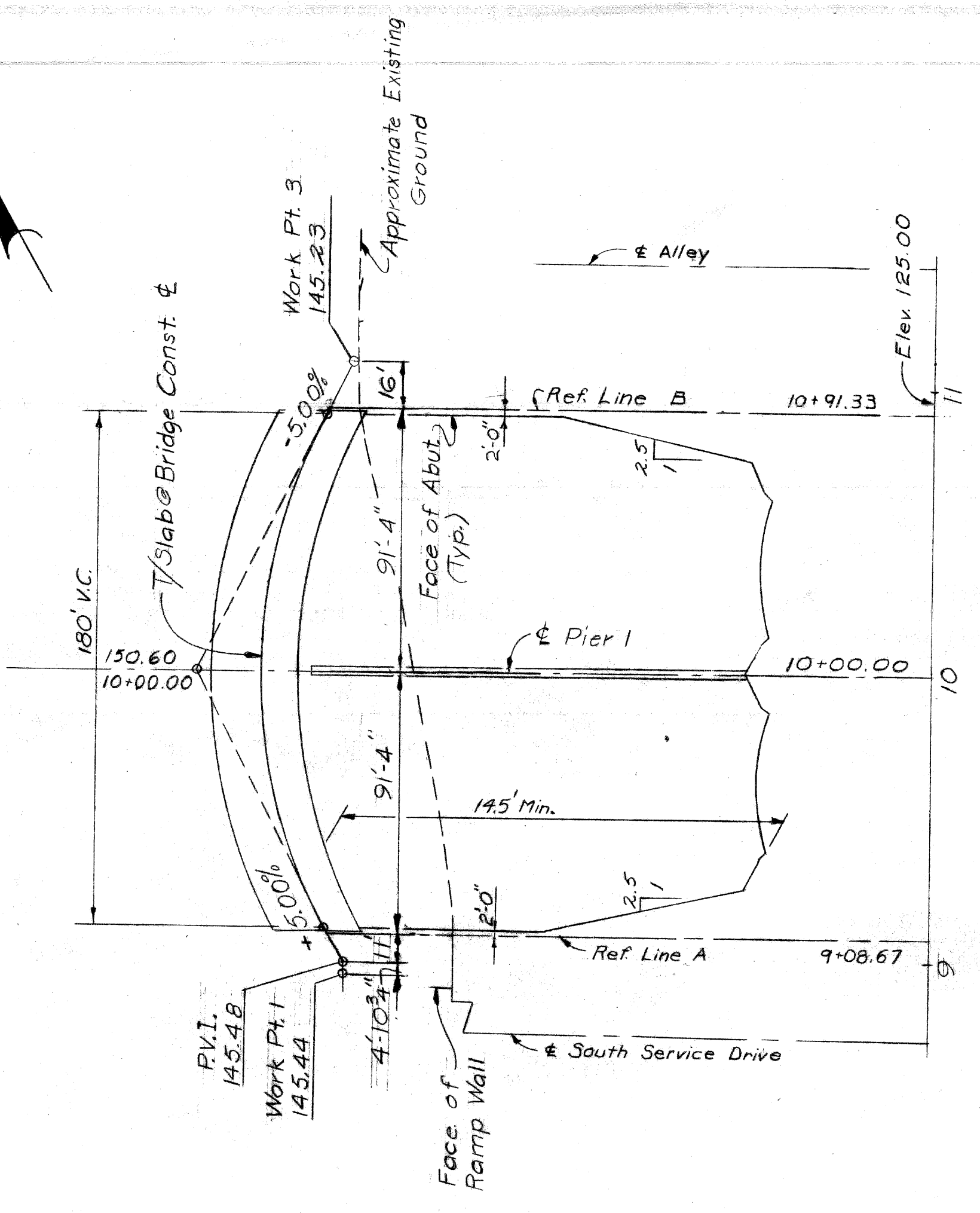
P Indicates sampler was pushed.

PLANS PREPARED BY <b>CITY OF DETROIT</b> DEPARTMENT OF PUBLIC WORKS CITY ENGINEERS OFFICE BUREAU OF HIGHWAYS AND EXPRESSWAYS		<b>MICHIGAN DEPARTMENT OF STATE HIGHWAYS</b> IVANHOE AVE. PEDESTRIAN BRIDGE OVER JEFFRIES FREEWAY IN DETROIT <b>GENERAL PLAN OF SITE</b>	
APPROVED: <i>J. J. Conit</i> STRUCTURAL ENGINEER	JOB No. <b>PW 99041</b>	APPROVED: _____ DESIGN SUPERVISING ENGINEER	APPROVED: _____ DESIGN ENGINEER
REVISIONS NO. DESCRIPTION DATE BY		CITY OF DETROIT SQUAD BOSS: <i>S. S. S.</i> DRAWN BY: <i>Hopkins</i> TRACED BY: _____ CHECKED BY: <i>G. Mann</i> SHEET 2 of 15	
		<b>P05 of 82123 I</b>	

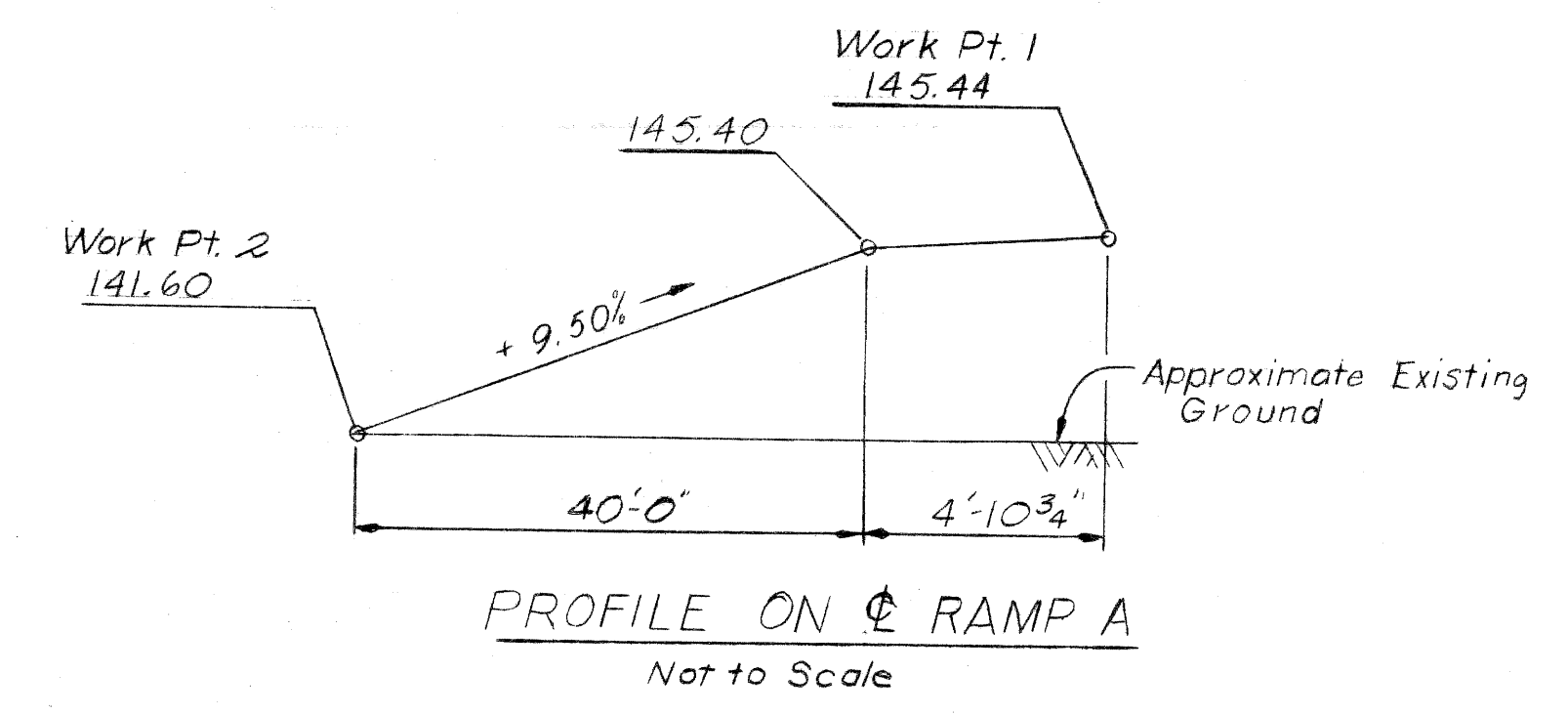




PLAN  
Scale: 1"=40'



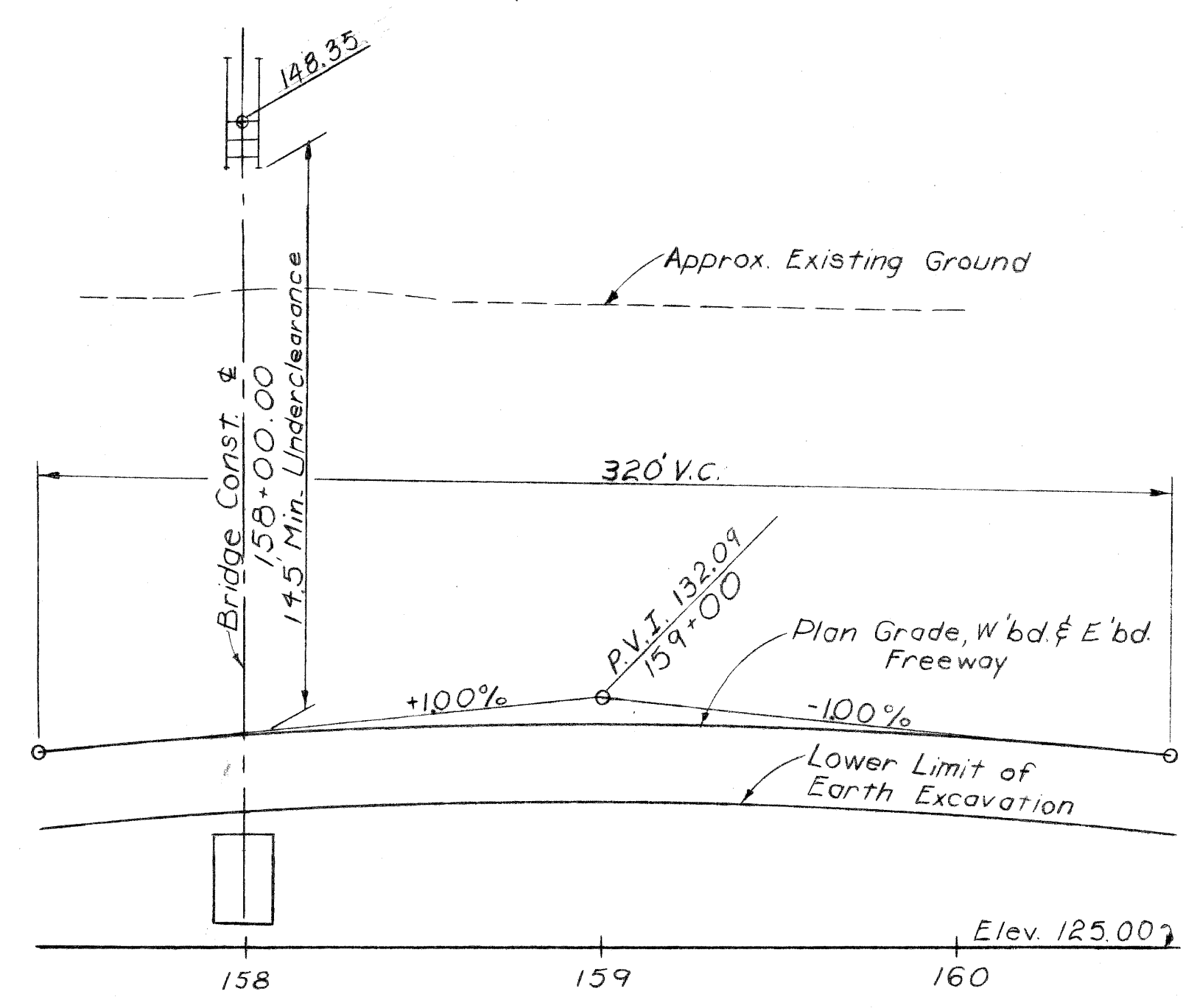
PROFILE on Br. CONST. &  
Scale: 1"=4' Horiz.  
1"=4' Vert.



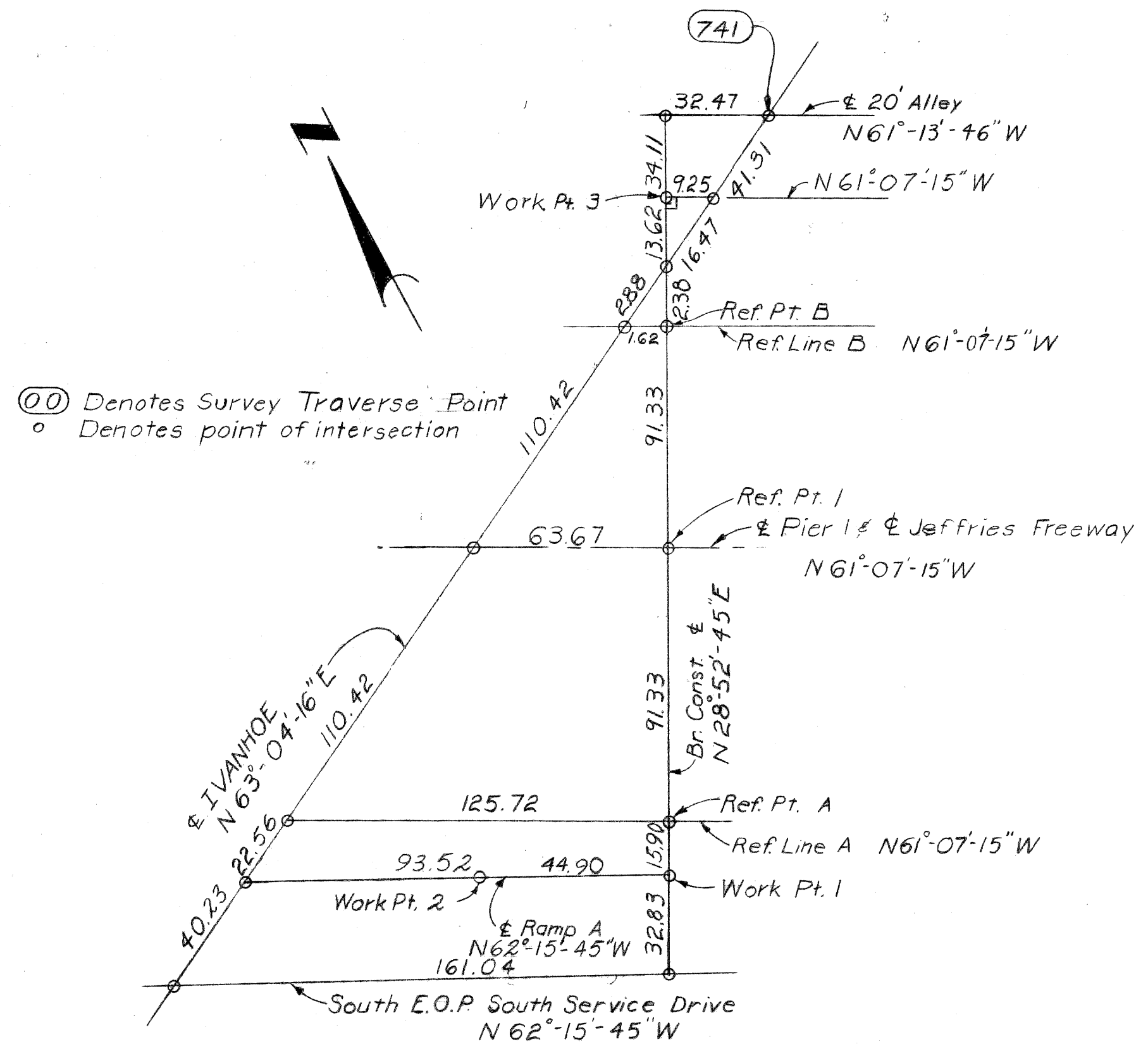
PROFILE ON & RAMP A  
Not to Scale

CONSTRUCTION BENCH MARKS

- C.B.M. 98 El. 146.24 S.W. Cor. Grand River and Ivanhoe
  - C.B.M. 99 El. 146.85 S.E. Cor. Grand River and Spokane
  - C.B.M. 133 El. 144.69 in front of 4892 Ivanhoe
  - C.B.M. 134 El. 145.92 in front of 4826 Spokane
- C.B.M. 98,99,133+134 are Arrow on Hydrant  
Elevations refer to City of Detroit Datum, 479.755 ft. above sea level.



PROFILE on & JEFFRIES FREEWAY  
Scale: 1"=40' Hor  
1"=4' Vert.



ALIGNMENT DIAGRAM  
Not to Scale

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *H. Cant*  
STRUCTURAL ENGINEER

JOB No.  
PW 99041

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

IVANHOE AVE. PEDESTRIAN BRIDGE  
OVER JEFFRIES FREEWAY IN DETROIT

CITY OF DETROIT

GENERAL DRAWING

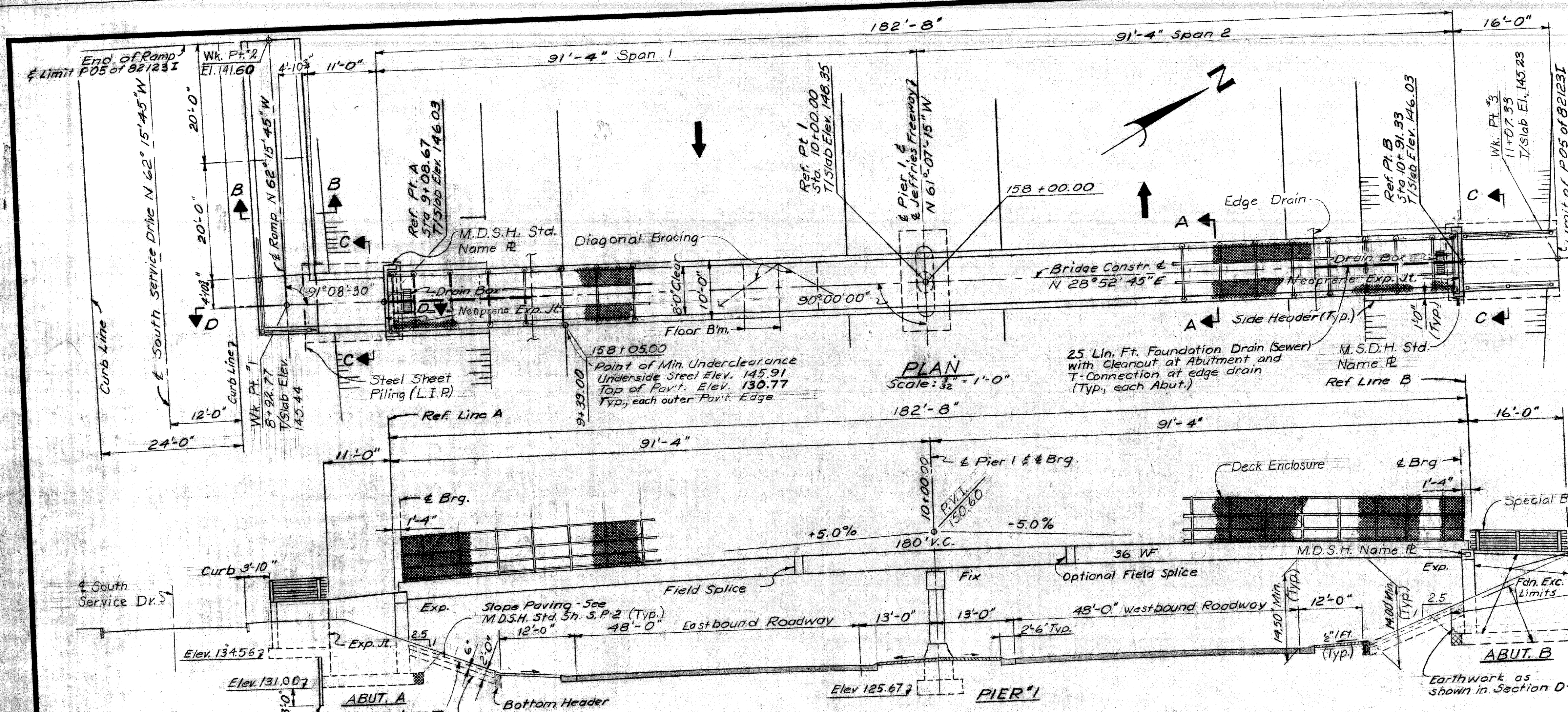
APPROVED: \_\_\_\_\_  
DESIGN SUPERVISING ENGINEER

APPROVED: \_\_\_\_\_  
DESIGN ENGINEER

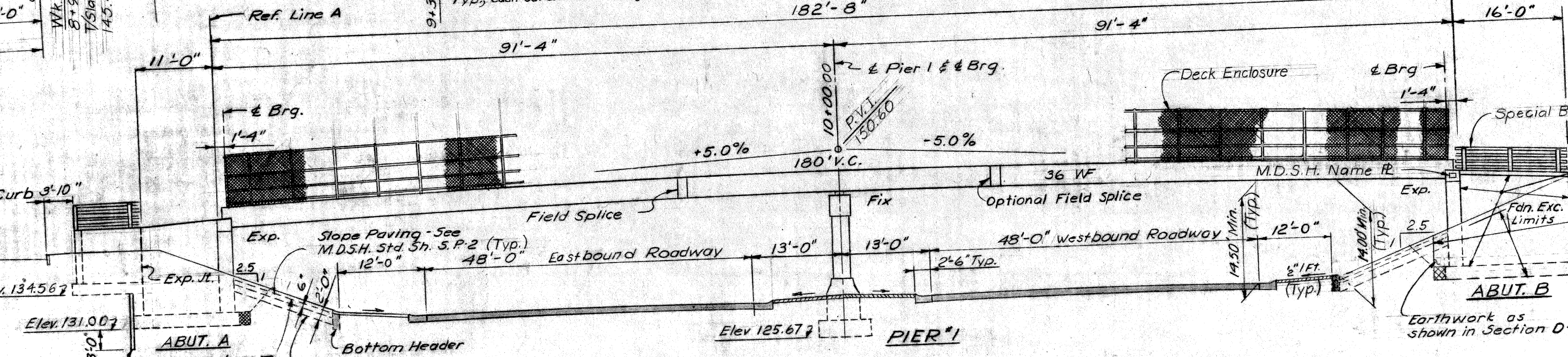
SQUAD BOSS	DATE
STURN	5-68
WAL	3-68
HODGINS	3-68
G. Moran	5-68

SHEET 3 OF 15  
P05 of 821231

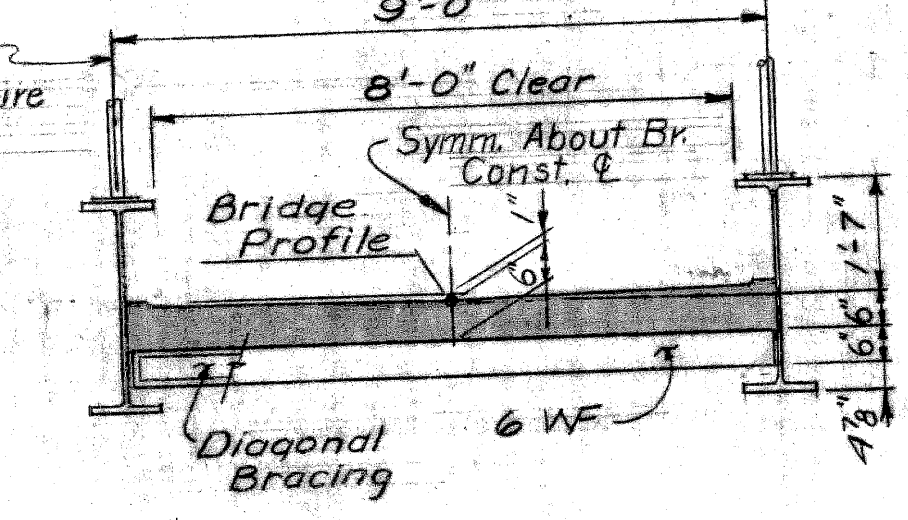




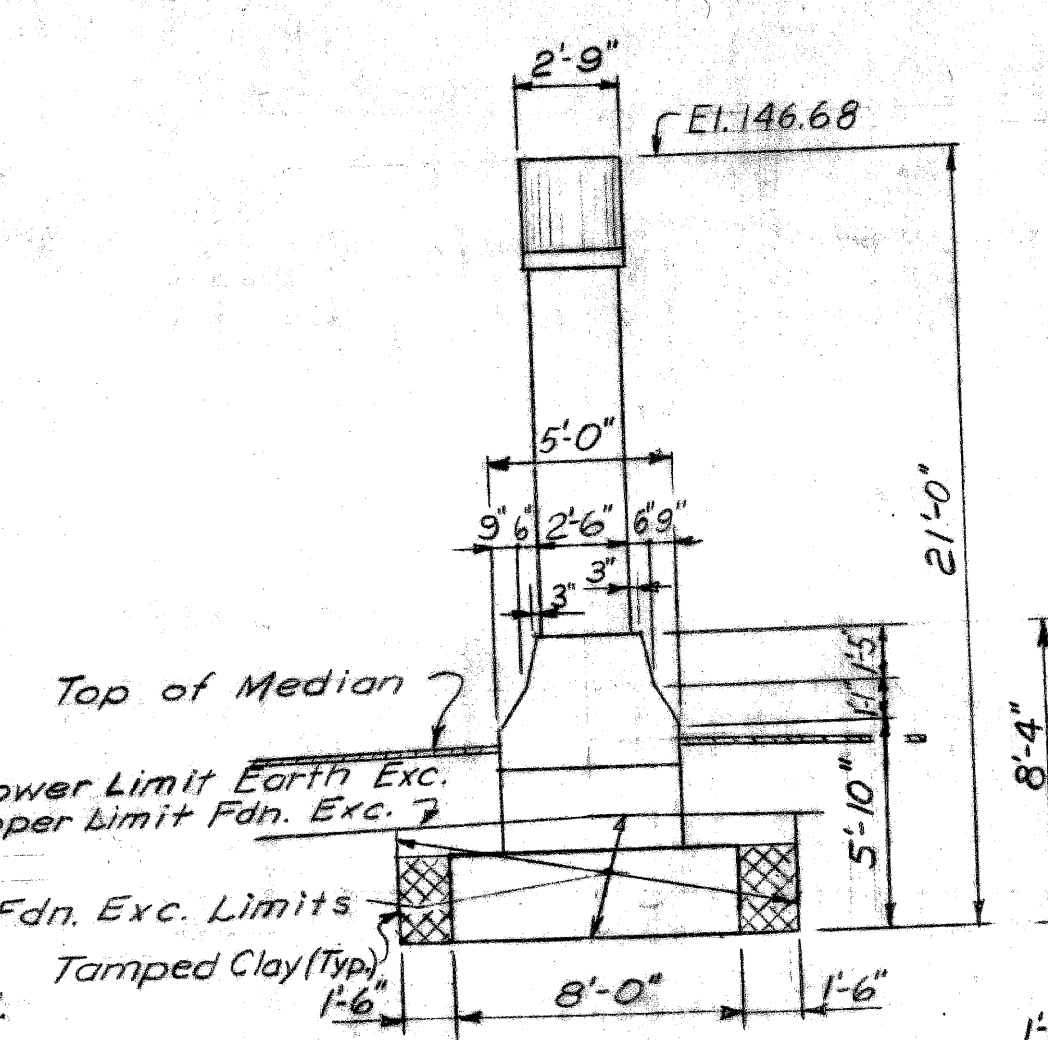
**PLAN**  
Scale: 1/32" = 1'-0"



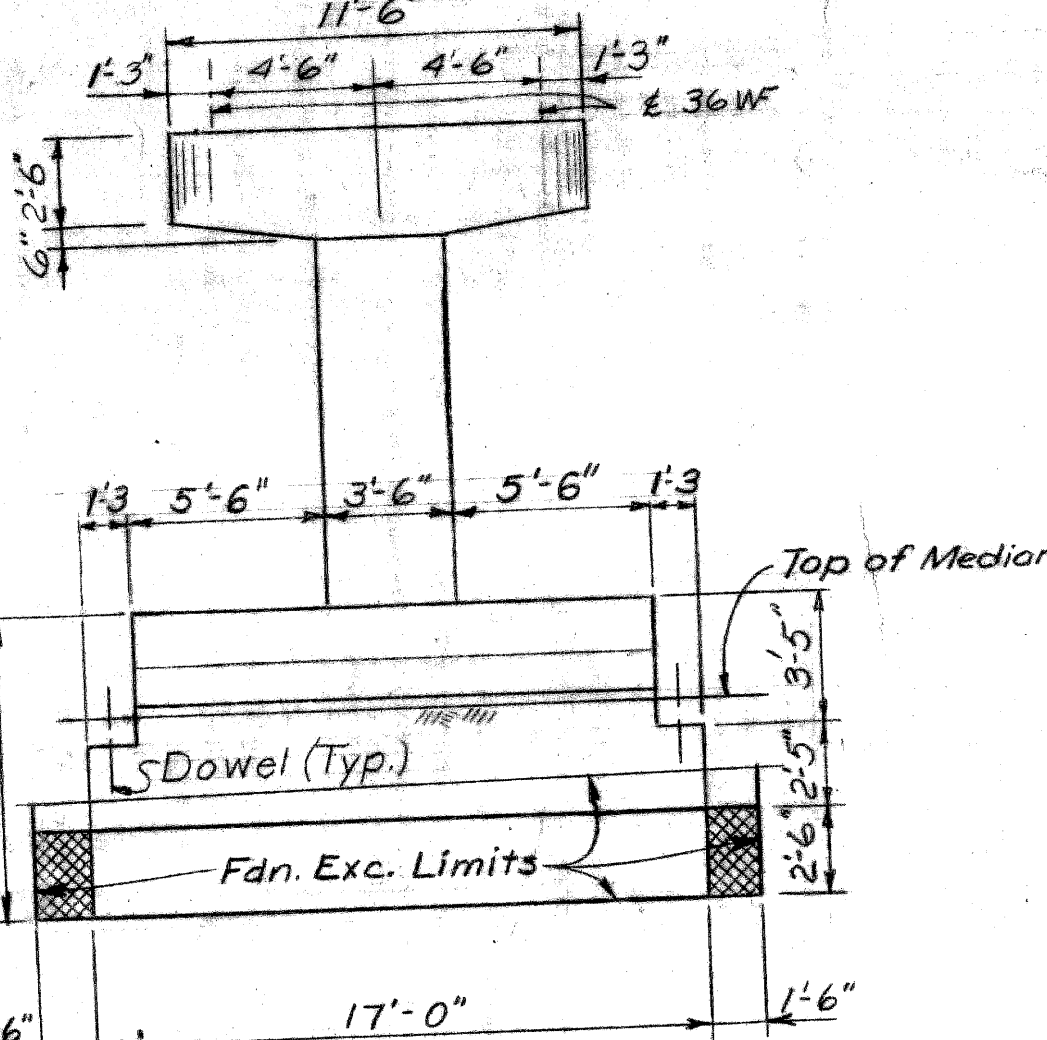
**ELEVATION**  
Scale: 1/32" = 1'-0"



**SECTION A-A**  
Scale: 1/8" = 1'-0"

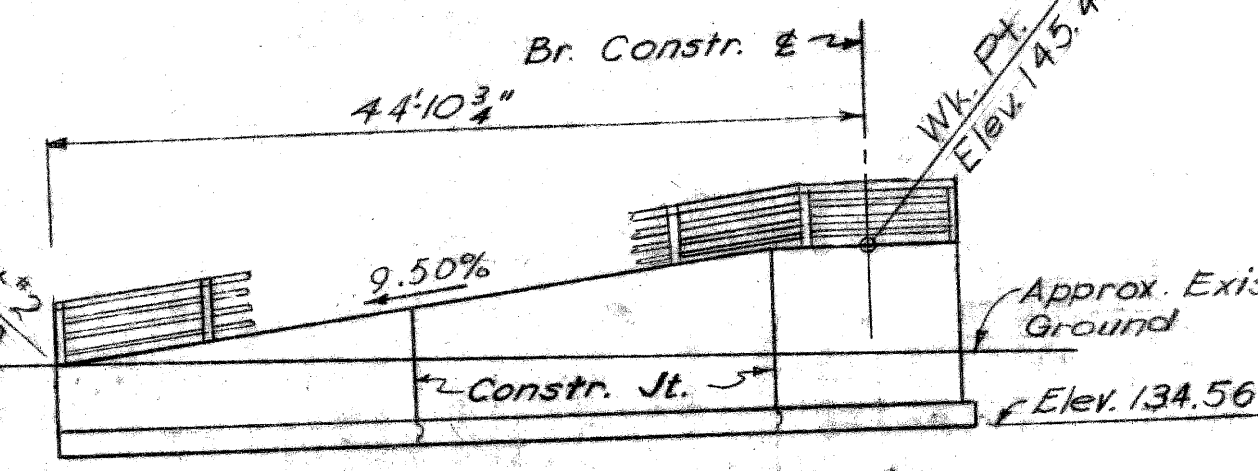


**PIER END VIEW**  
Scale: 1/16" = 1'-0"

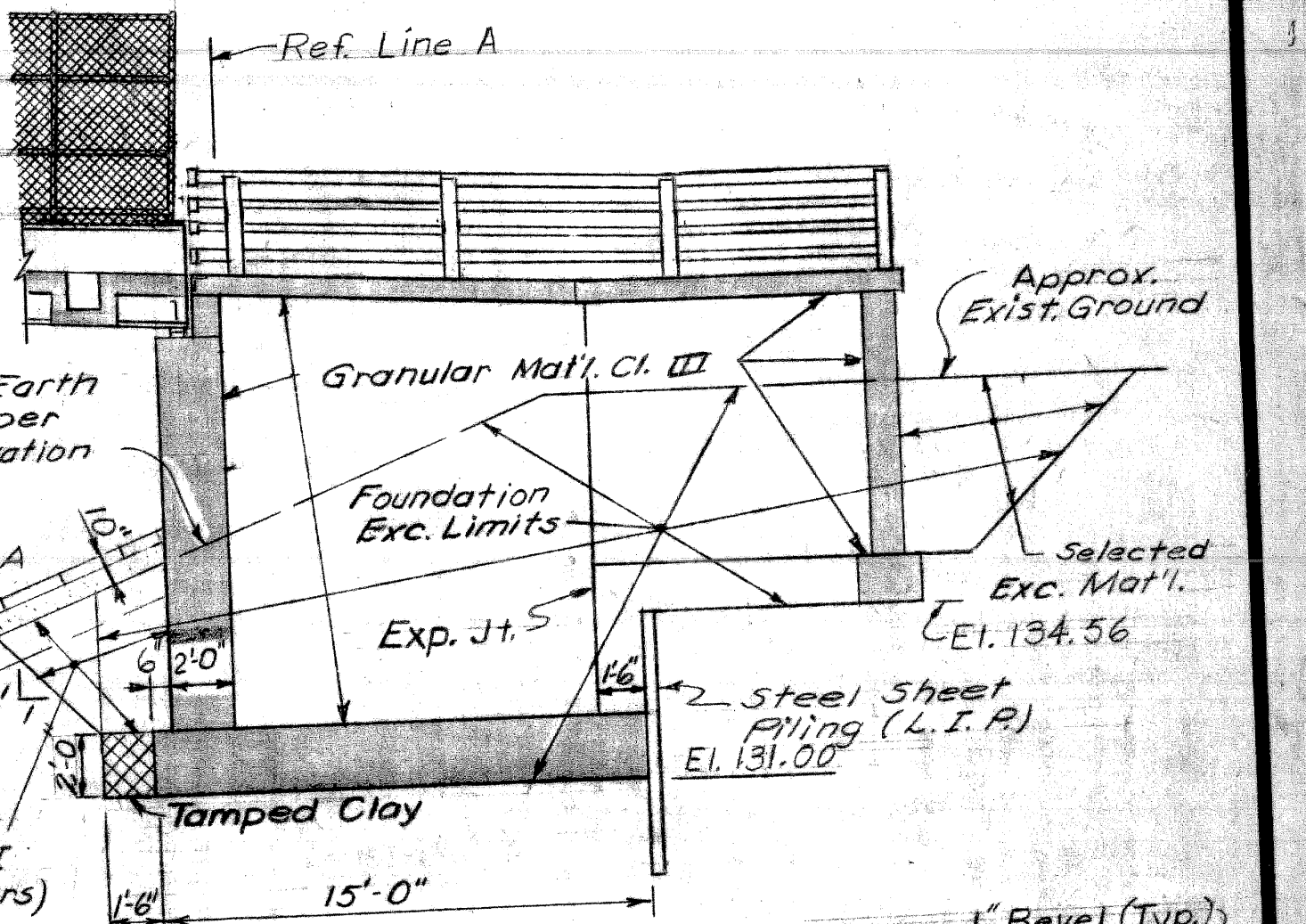


**PIER ELEVATION**  
Scale: 1/16" = 1'-0"

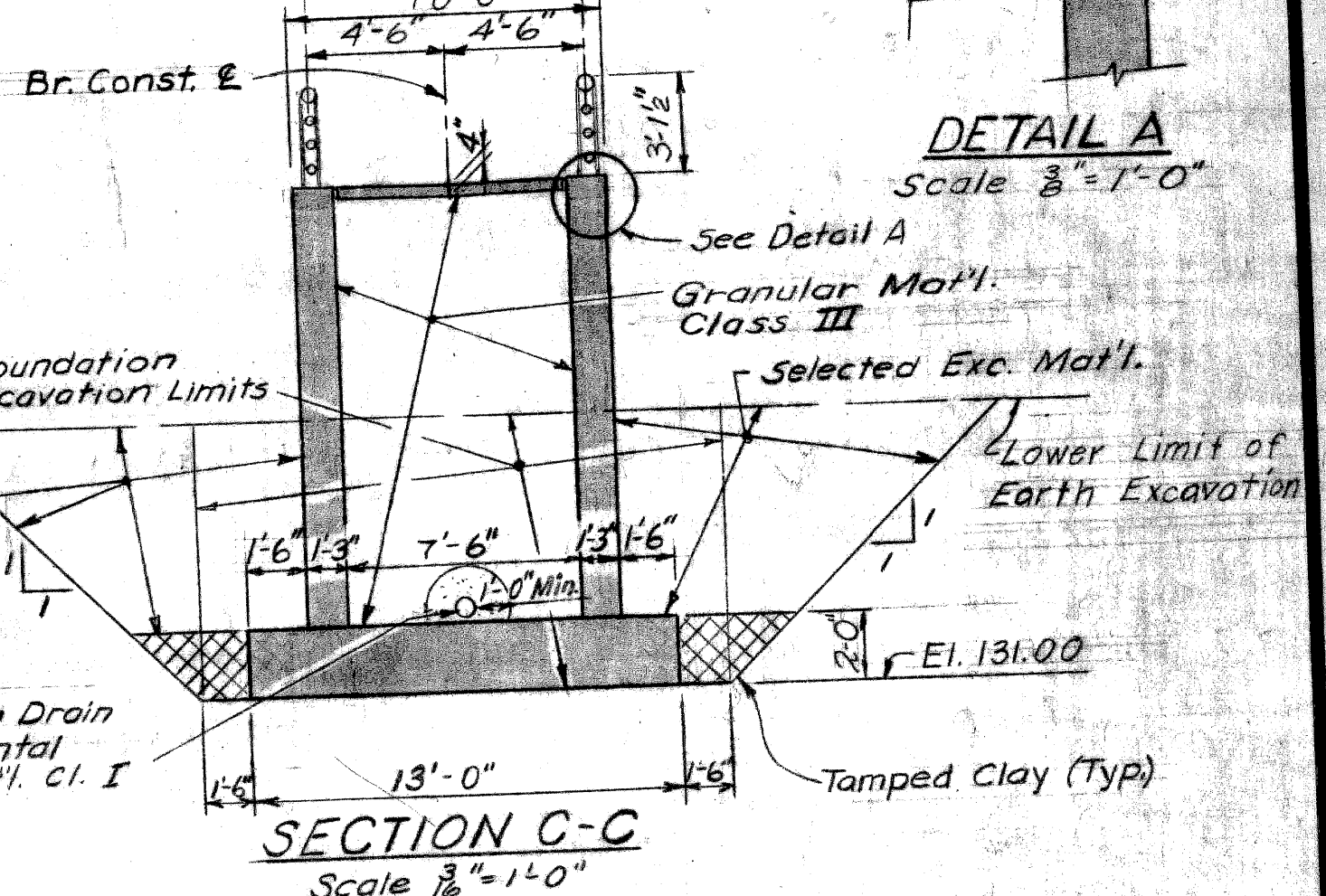
MISCELLANEOUS QUANTITIES				
Item	Unit	Abut. A	Abut. B	Total
Foundation Drains	Lin. Ft.	25	25	50
Slope Protection Class A	Sq. Yds.	23	23	46
Slope Protection Header	Lin. Ft.	45	45	90



**ELEVATION RAMP A**  
Scale: 1/32" = 1'-0"



**SECTION D-D**  
Scale: 1/8" = 1'-0"



**SECTION C-C**  
Scale: 1/8" = 1'-0"

**GENERAL NOTES**

The design of this structure is based on the M.D.S.H. Specifications for the Design of Highway Bridges, 1958 Edition and current AASHTO Standard Specifications for Highway Bridges.

Live Load: 85 P.S.F.  
Alternate Live Load: One 5-Ton Truck plus impact.

For Slope Protection Details see Std. Sh. S.P.2

Tamped clay & Selected Excavated Material are incidental to Unclassified Excavation.

Granular Material Class I incidental to Fdn. Drains.

Granular Material Class III billed on Road Plans.

Estimated Amount is: Abutment A & Ramp = 150 Cu. Yds.  
Abutment B = 55 Cu. Yds.  
Slope Protection = 20 Cu. Yds.  
Total = 225 Cu. Yds.

See Road Drawings for details of approach sidewalks.

Note:  
The contractor shall be responsible for providing adequate protection of bottoms and sides of the excavation against damage by personnel, equipment and water.

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: [Signature] STRUCTURAL ENGINEER

JOB No. PW 9904

NO.	DESCRIPTION	DATE	BY

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

**MANHOE AVE. PEDESTRIAN BRIDGE  
OVER JEFFRIES FREEWAY IN DETROIT**

**GENERAL PLAN OF STRUCTURE**

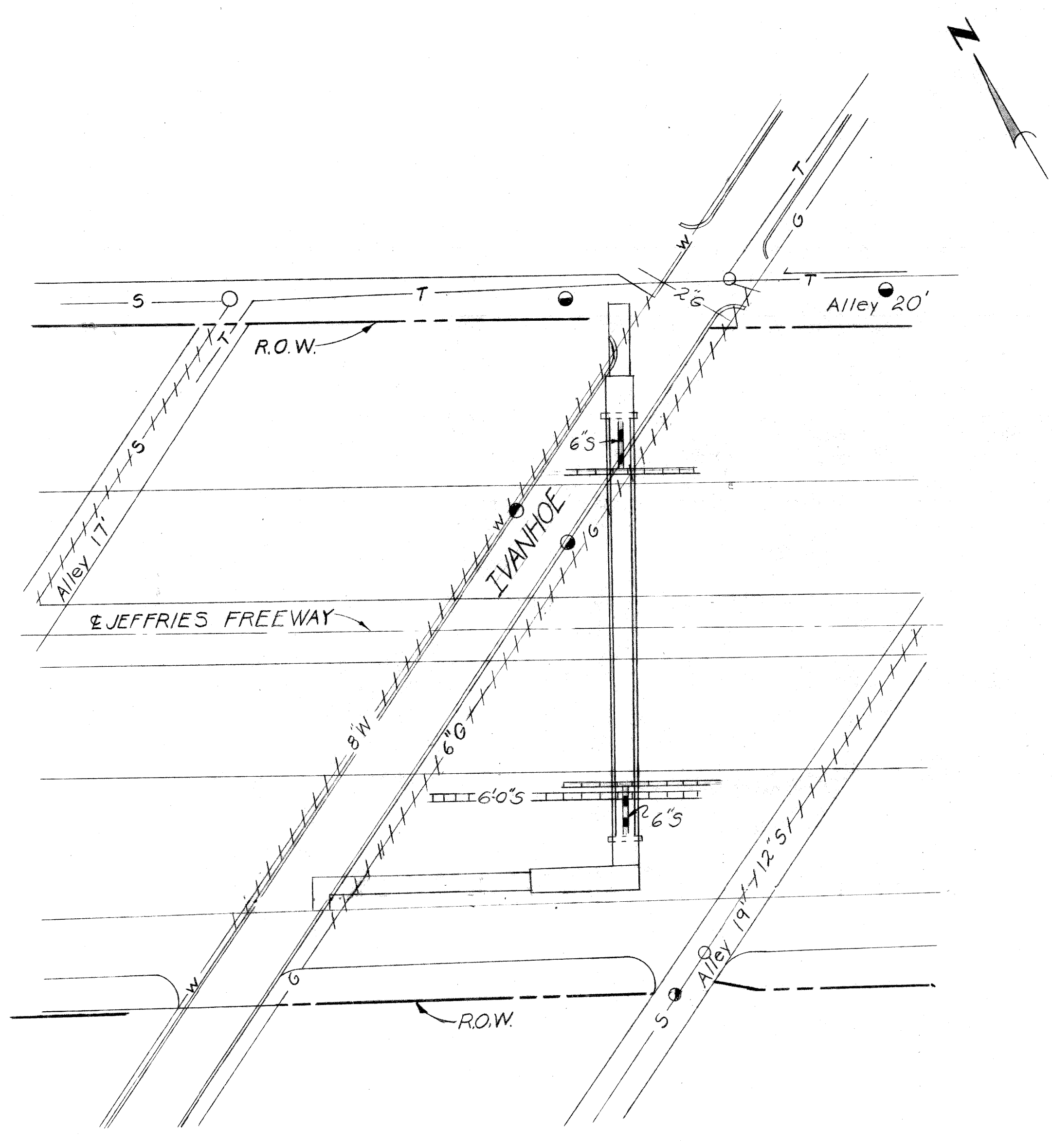
APPROVED: \_\_\_\_\_ DESIGN SUPERVISING ENGINEER

APPROVED: \_\_\_\_\_ DESIGN ENGINEER

SOBAC BOSS: SPURN 568  
DRAWN BY: W.A.L. 5768  
CHECKED BY: G. Malnar 5188  
SHEET 4 OF 16

**P05 of 821231**





**SITUATION PLAN**  
Scale: 1" = 40'

**LEGEND**

<u>UTILITY</u>	<u>EXISTING</u>	<u>DELETE OR ABANDONED</u>	<u>NEW WORK BY OTHERS</u>	<u>NEW WORK BY CONTRACTOR</u>
DETROIT WATER DEPARTMENT	—W—	- - - W - - -	= = = S = = =	= = = S = = =
FREWAY & CITY OF DETROIT SEWERS	—S—	- - - S - - -		
MICHIGAN CONSOLIDATED GAS CO.	—G—	- - - G - - -		
MICHIGAN BELL TELEPHONE CO.	—T—			
PUBLIC LIGHTING COMMISSION	—L—			
DETROIT EDISON COMPANY	—E—			

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED *H. Paul*  
STRUCTURAL ENGINEER

JOB No.  
PW 990(4)

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

IVANHOE AVE. PEDESTRIAN BRIDGE  
OVER JEFFRIES FREEWAY IN DETROIT

**EXISTING UTILITIES AND  
PROPOSED ALTERATIONS**

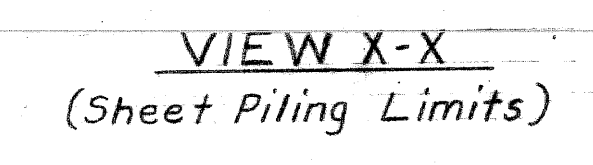
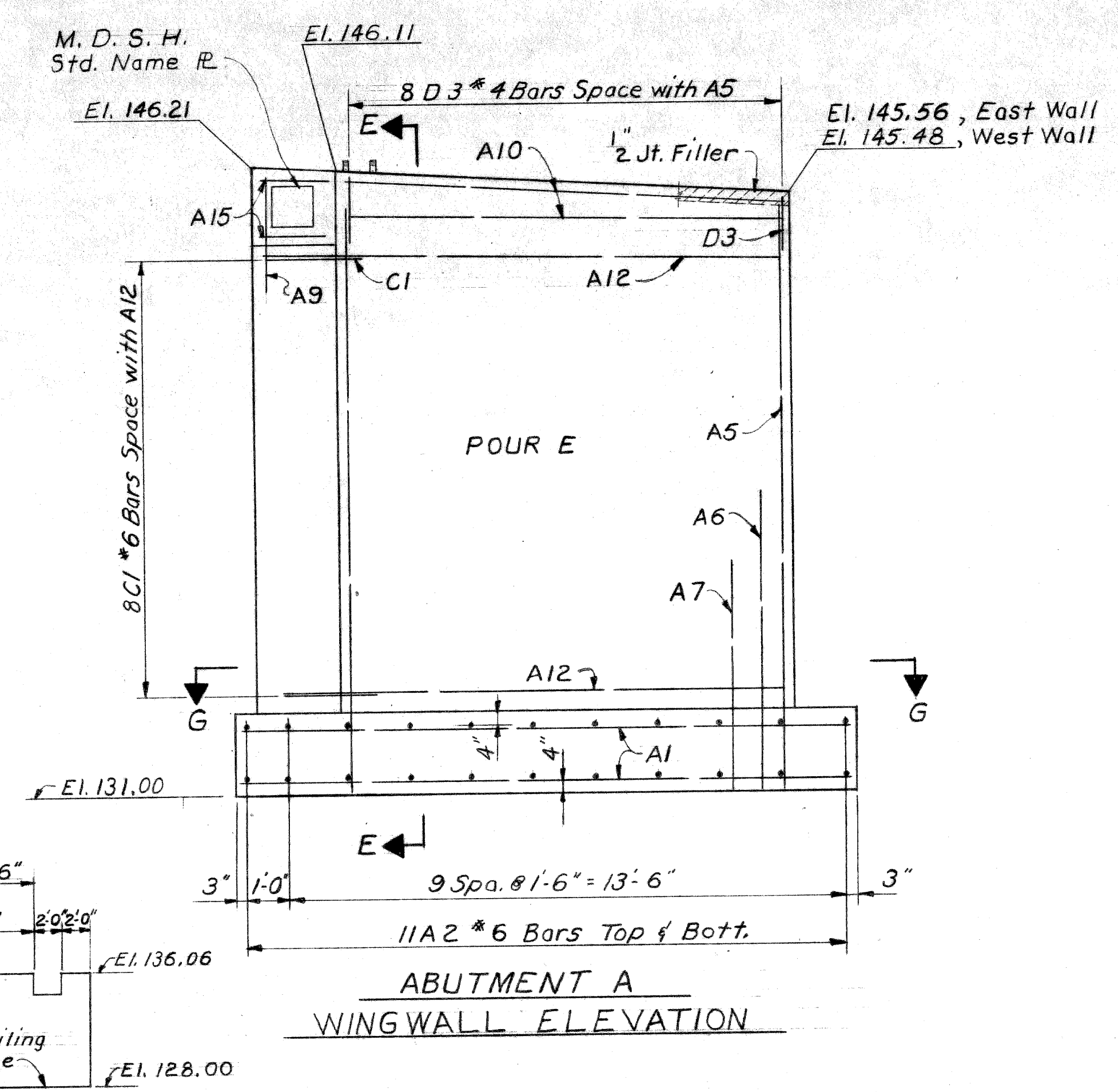
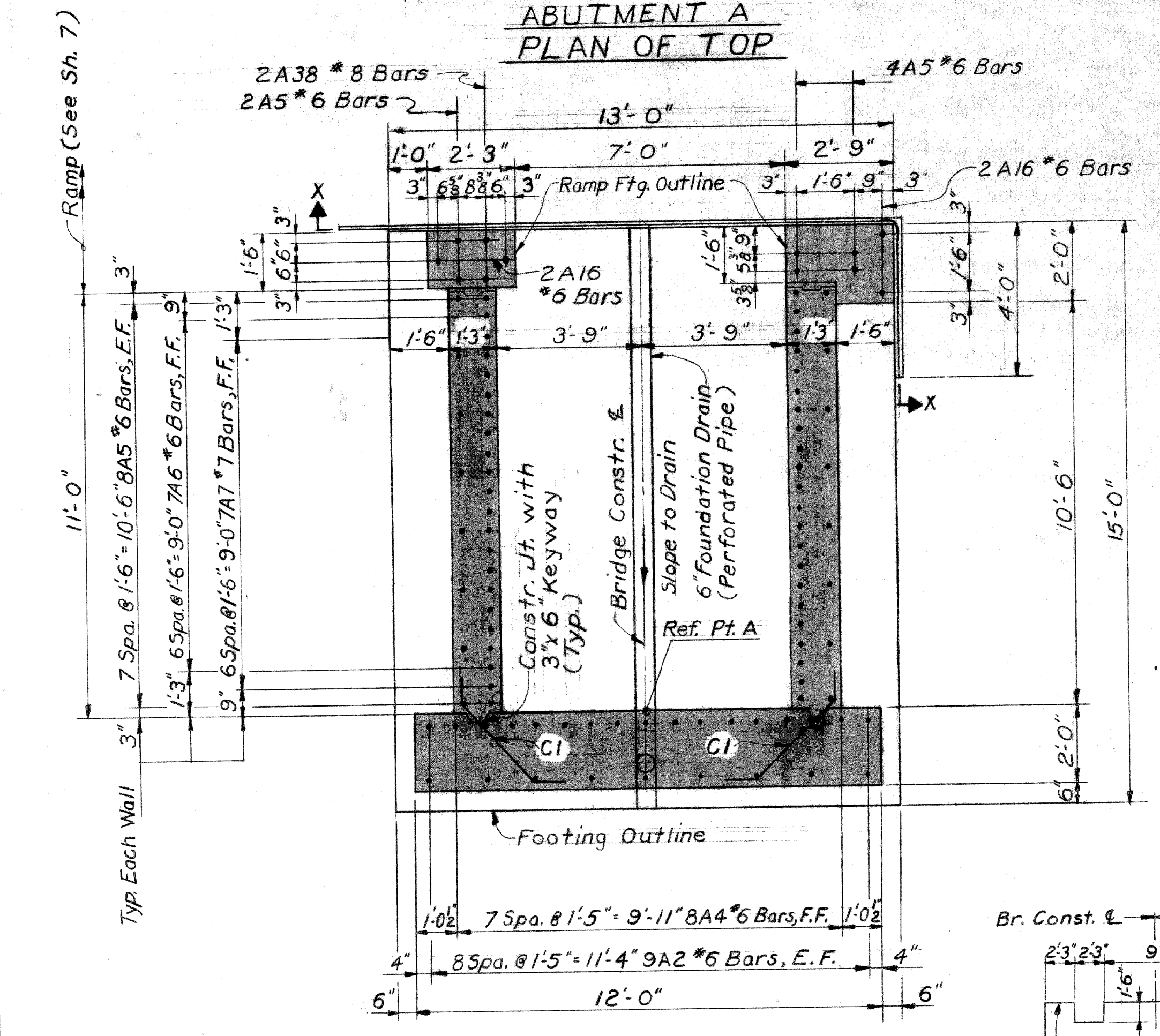
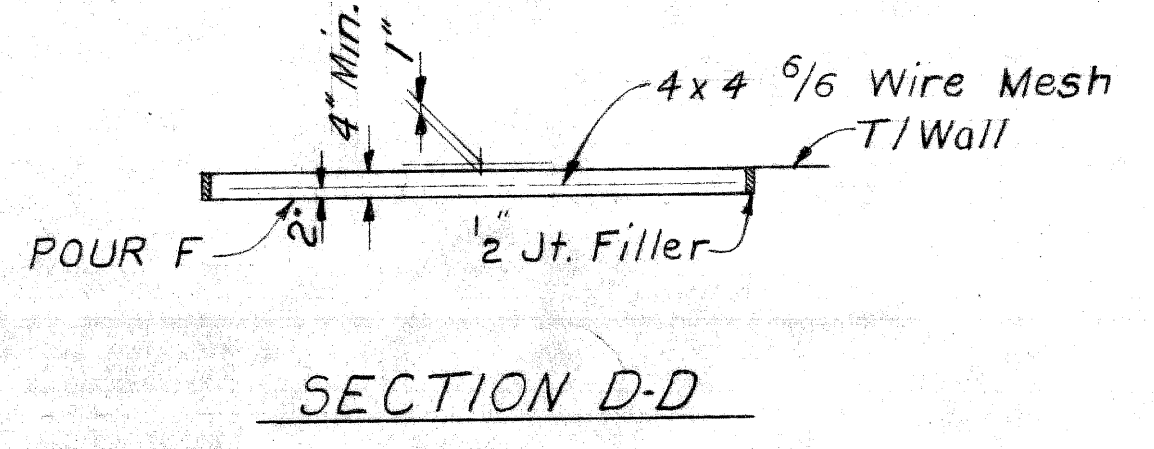
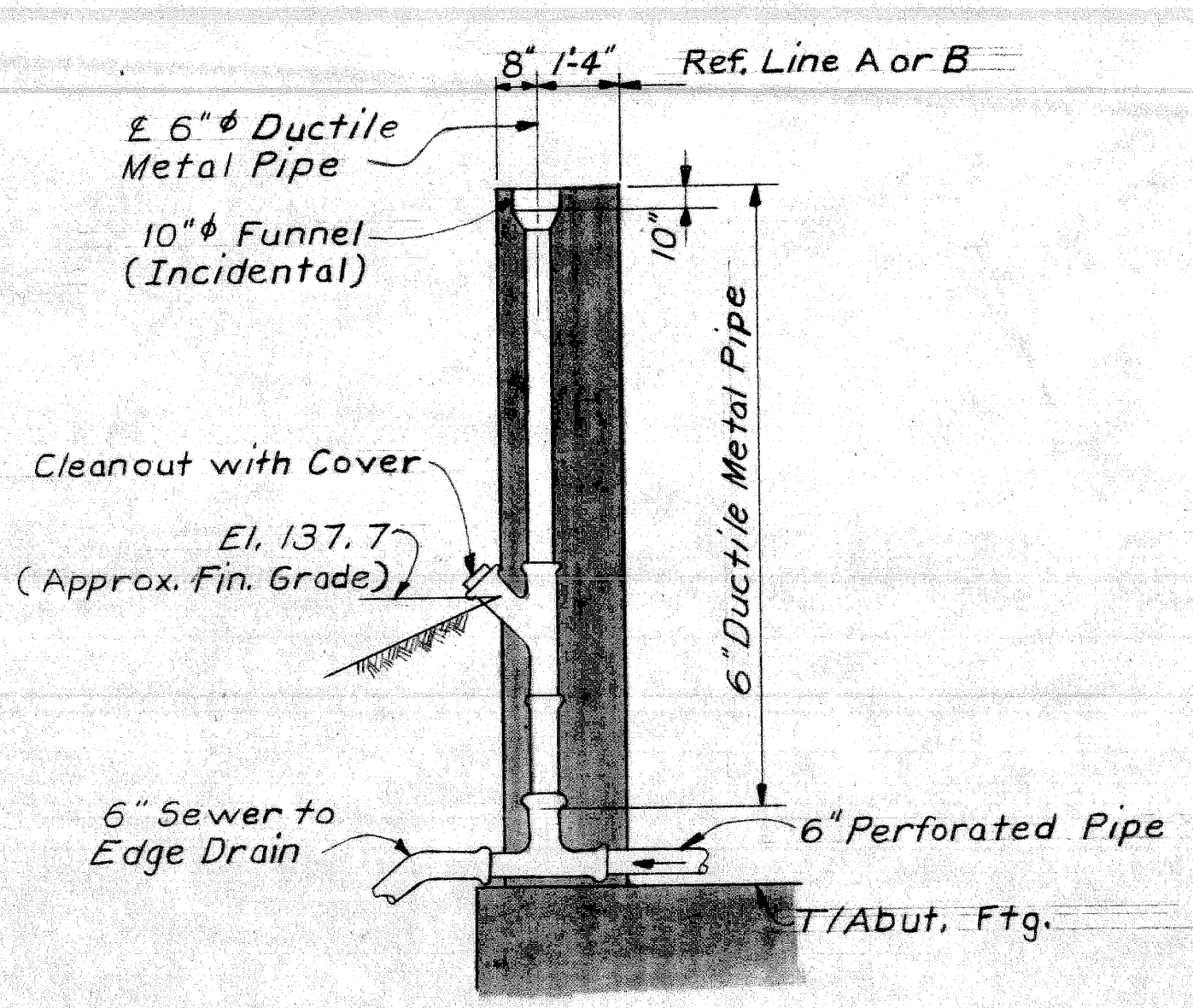
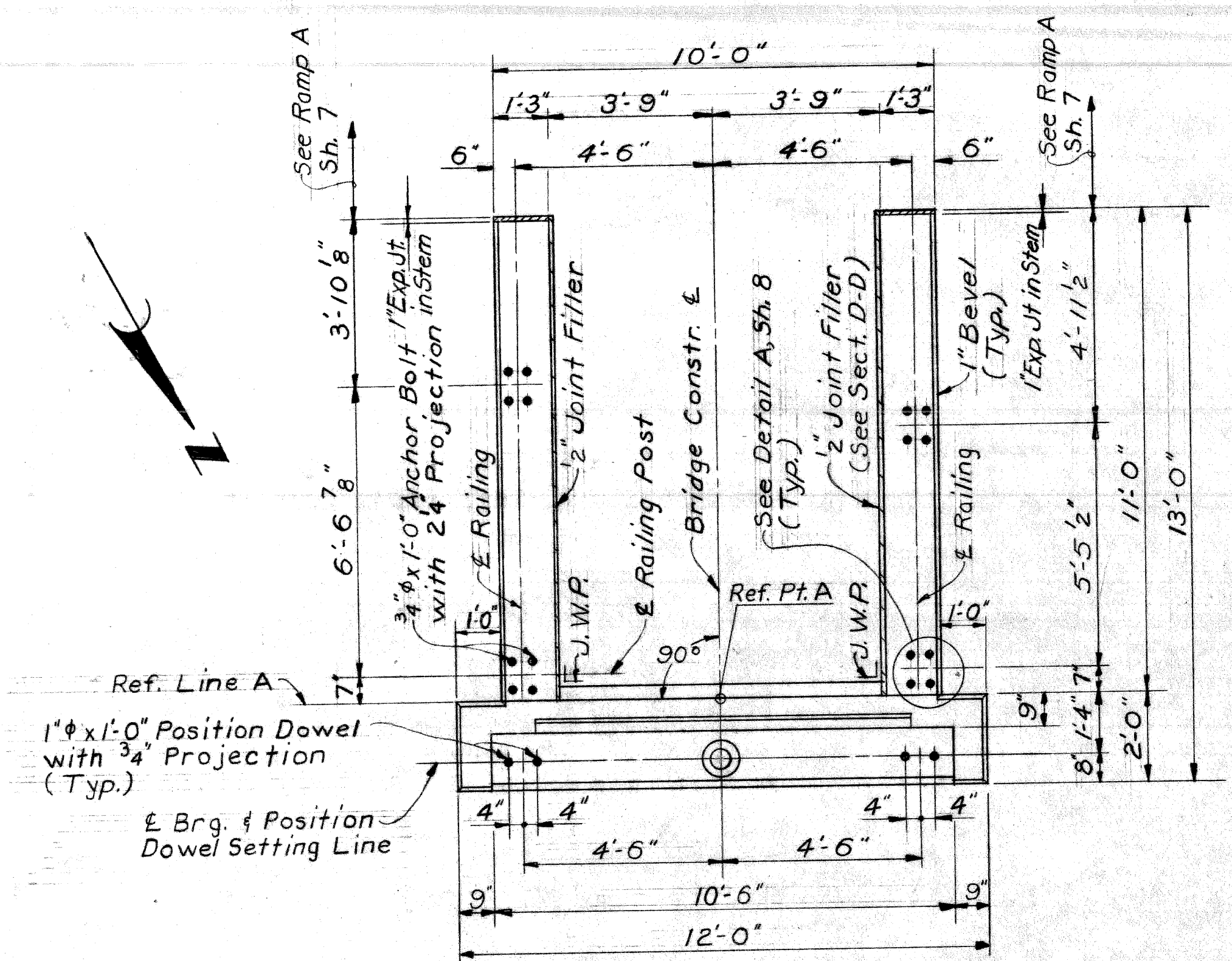
REVISIONS

NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	STURM	5-68
DRAWN BY	HODKINS	2-68
TRACED BY		
CHECKED BY	IHK	4-68
SHEET	5	OF 15

P05 of B21231





Loc	ABUTMENT A		RAMP		ABUTMENT B	
	A(6A)	A(6AA)	A(6A)	A(6AA)	A(6A)	A(6AA)
B	14.4	—	11.7	—	17.8	—
C	—	10.1	—	30.0	—	10.1
D	—	.8	—	.8	—	.8
E	—	13.0	—	—	—	18.8
F	—	1.0	—	4.9	—	1.5
Total	14.4	24.9	11.7	35.7	17.8	31.2
Grade A(6A) Concrete Substructure					43.9 Cu. Yds.	
Grade A(6AA) Concrete Substructure					91.8 Cu. Yds.	

ITEM	UNIT	AMOUNT			
		Abut. A	Ramp	Abut. B	Total
Unclassified Excavation	Cu. Yds.	90	190	130	410
Steel Sheet Piling Left in Place	Sq. Ft.	140	—	—	140
Protective Sealant Coating for Concrete	Sq. Ft.	13	—	13	26
Clear Protective Coating for Substr. Conc.	Sq. Yds.	15	—	15	30
Low Temp. Protection-Substructure	Cu. Yds.	39.3	47.4	49.0	135.7
Welded Wire Mesh	Sq. Ft.	80	390	120	590
1/2" Joint Filler	Sq. Ft.	9	36	15	60
1" Joint Filler	Sq. Ft.	30	—	—	30
Joint Waterproofing	Sq. Ft.	40	60	40	140
6" Ductile Metal Pipe	Lin. Ft.	10	—	10	20
Foundation Drains	Lin. Ft.	15	53	18	86

**GENERAL NOTES:**  
 J.W.P. denotes Joint Waterproofing.  
 E.F. denotes Each Face, F.F. denotes Far Face, O.F. denotes Outside Face, and I.F. denotes Inside Face.  
 For bevel, molding, and name plate-mounting details, see standard sheet R16.  
 For name plate location, see General Plan of Structure.  
 Anchor Bolts and Position Dowels shall be accurately set to a template. Adjust the spacing of the reinforcing steel as required to permit placing of anchor bolts.  
 Field-bend reinforcing to clear drain.  
 The tops of Abutments shall be given an application of protective sealant coating for concrete prior to placing masonry plates.  
 Footing concrete quantities are computed on the basis of an outline 34" outside of the footing outline where the concrete is poured against Steel Sheet Piling left in place. No additional allowance will be made in concrete or excavation quantities regardless of steel sheet piling used.  
 Steel sheet piling left in place shall be continuous interlock type, either new or used, in good condition, weighing not less than 22 pounds per square foot of wall, and shall be furnished with suitable connecting and corner pieces. Ladle analysis and mill reports are not required for steel used in Sheet Piling.  
 Steel sheet piling left in place shall be driven to its final penetration before adjacent concrete is poured. If it is necessary to lower the top of sheeting after the concrete has been poured, the excess shall be removed by cutting.  
 Ramp footings are to be poured against undisturbed soil. No allowance will be made in concrete quantities due to excavation outside of the footing neat lines.  
 Maximum average foundation pressure D.L. only = 2100 P.S.F.  
 Maximum foundation pressure D.L. and L.L. = 4100 P.S.F.  
 The front face of abutments above tops of footings between wing wall returns shall be given an application of Clear Protective Coating for Substr. Concrete.

Work sheets 6, 7 & 8 together  
 PLANS PREPARED BY  
**CITY OF DETROIT**  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS  
 APPROVED: *H. Carst*  
 STRUCTURAL ENGINEER

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**  
 IVANHOE AVE. PEDESTRIAN BRIDGE  
 OVER JEFFRIES FREEWAY IN DETROIT

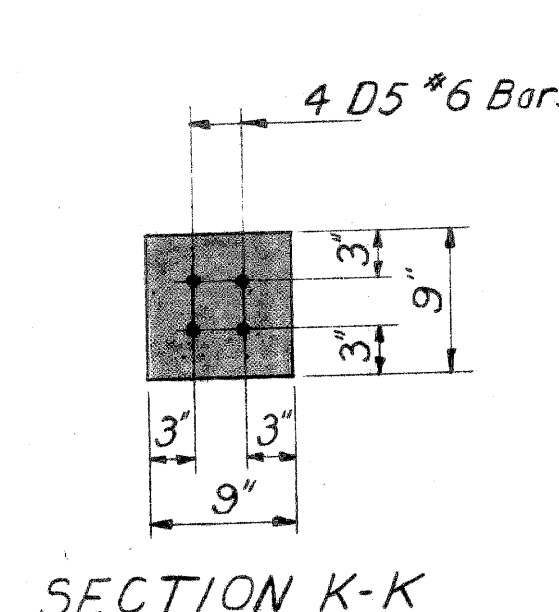
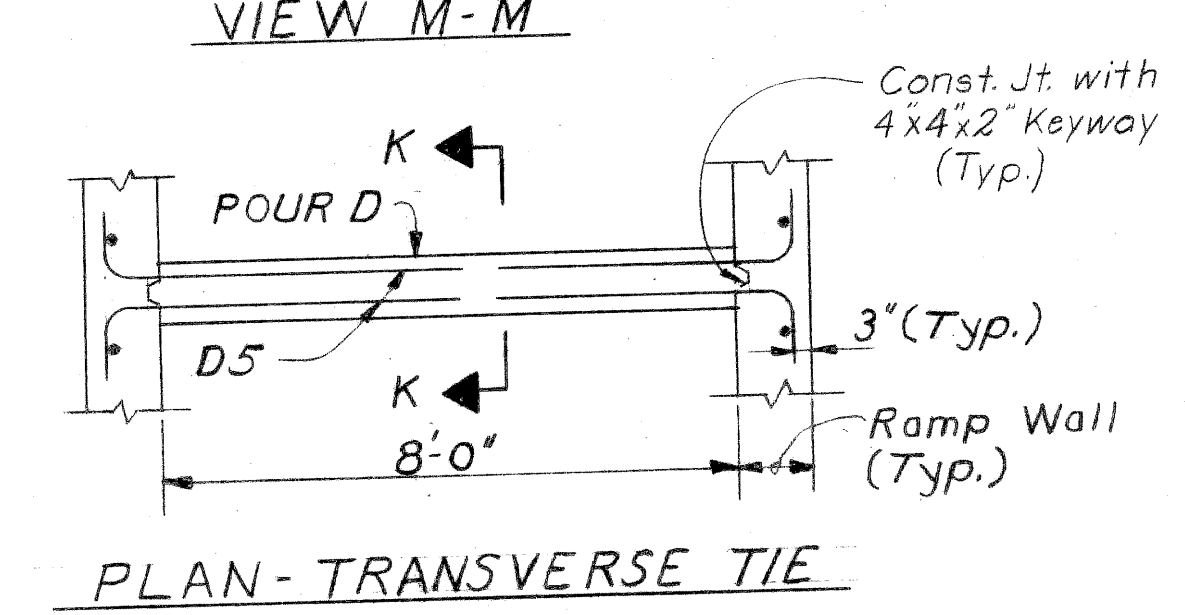
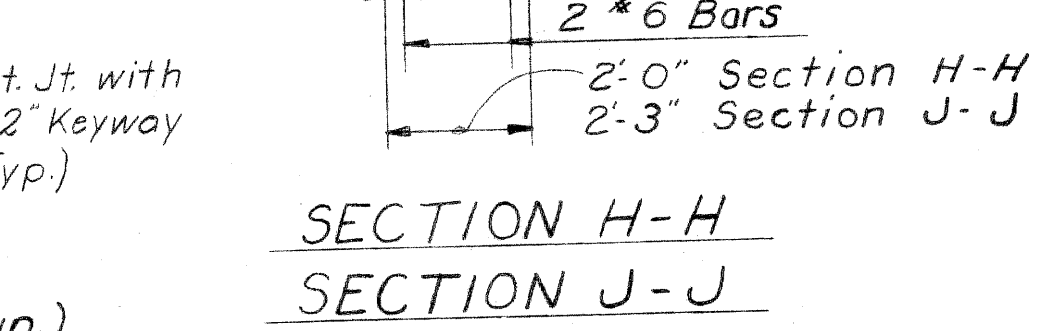
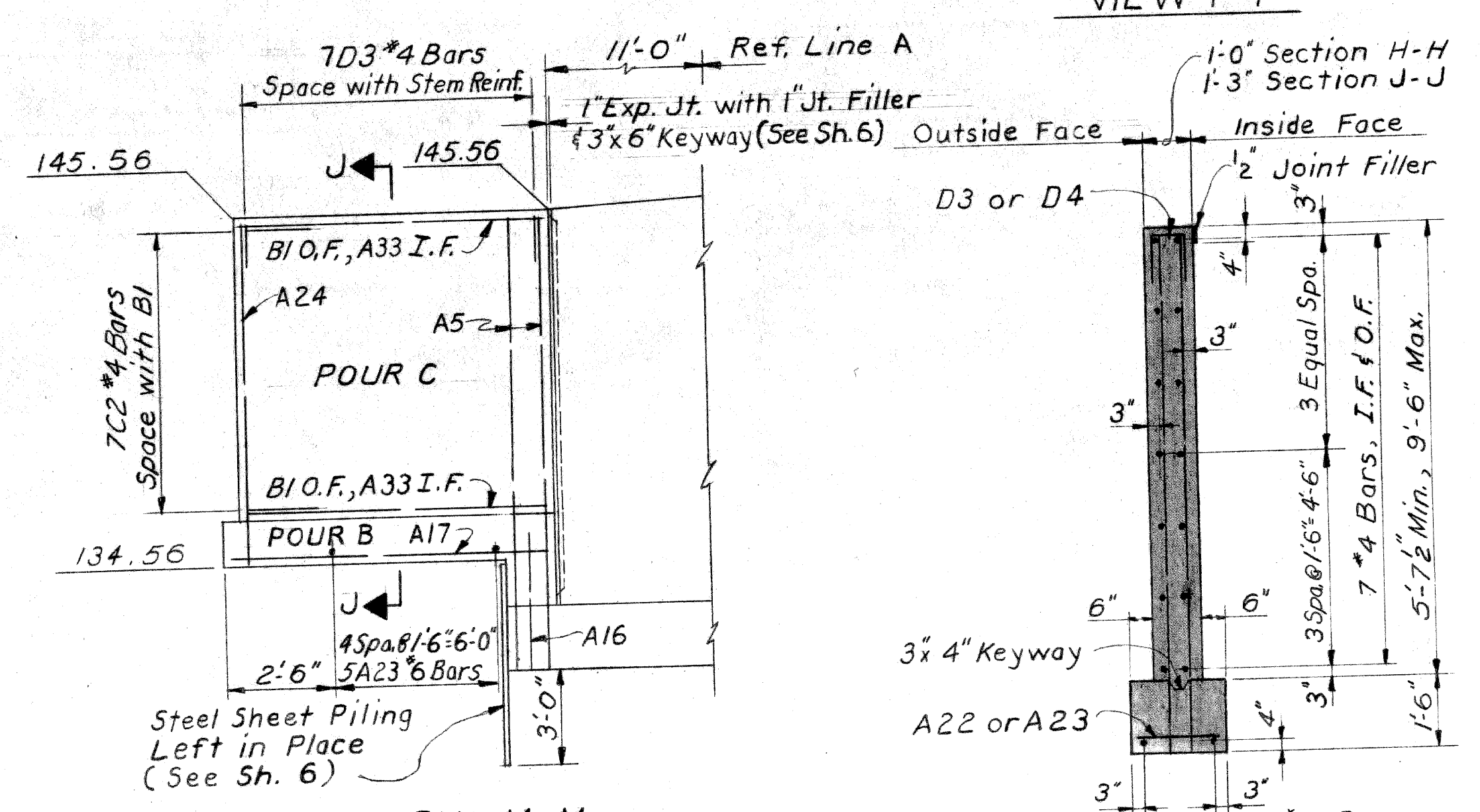
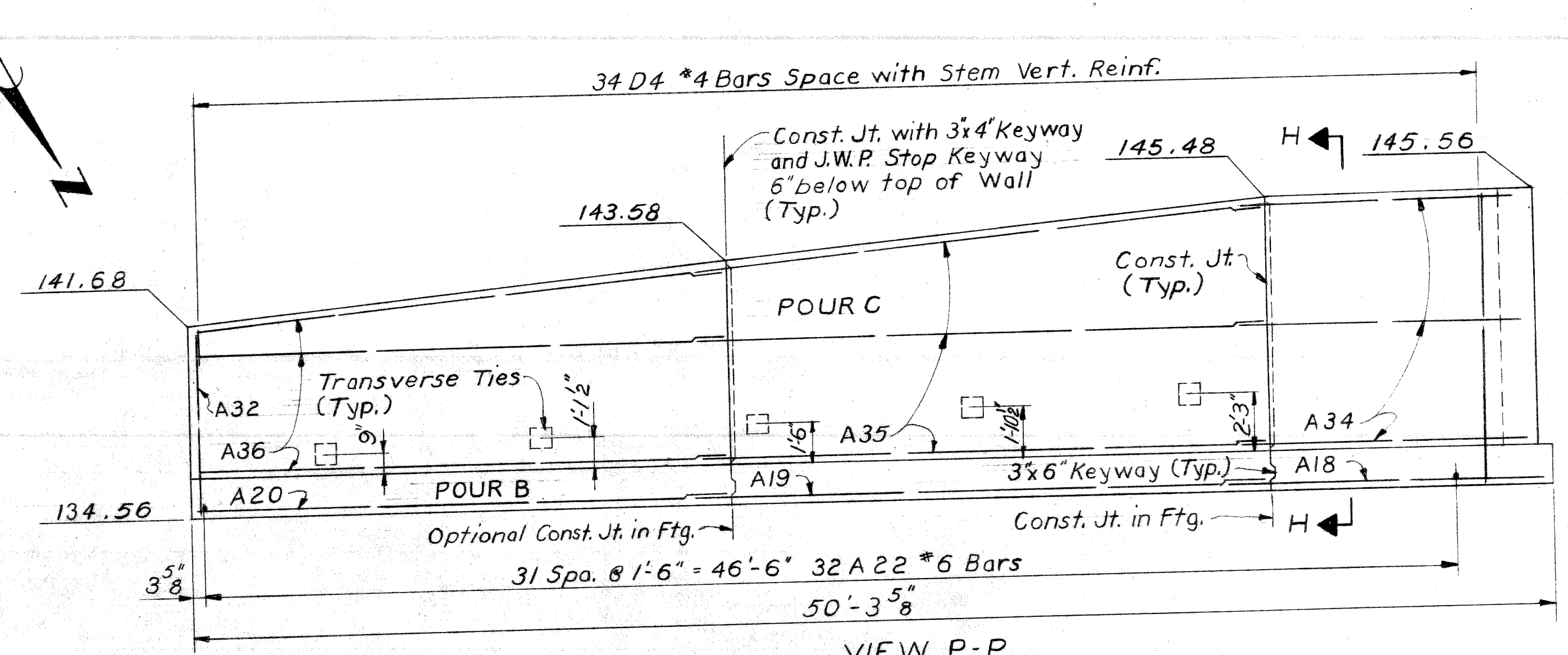
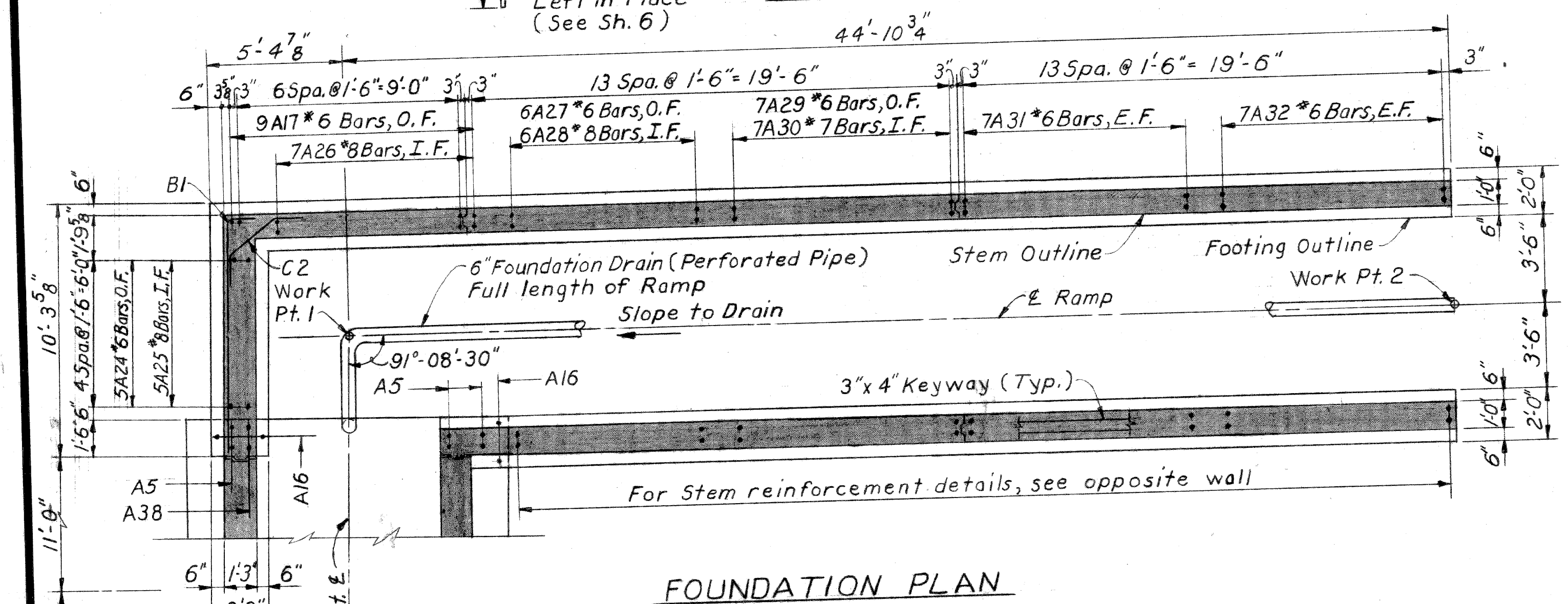
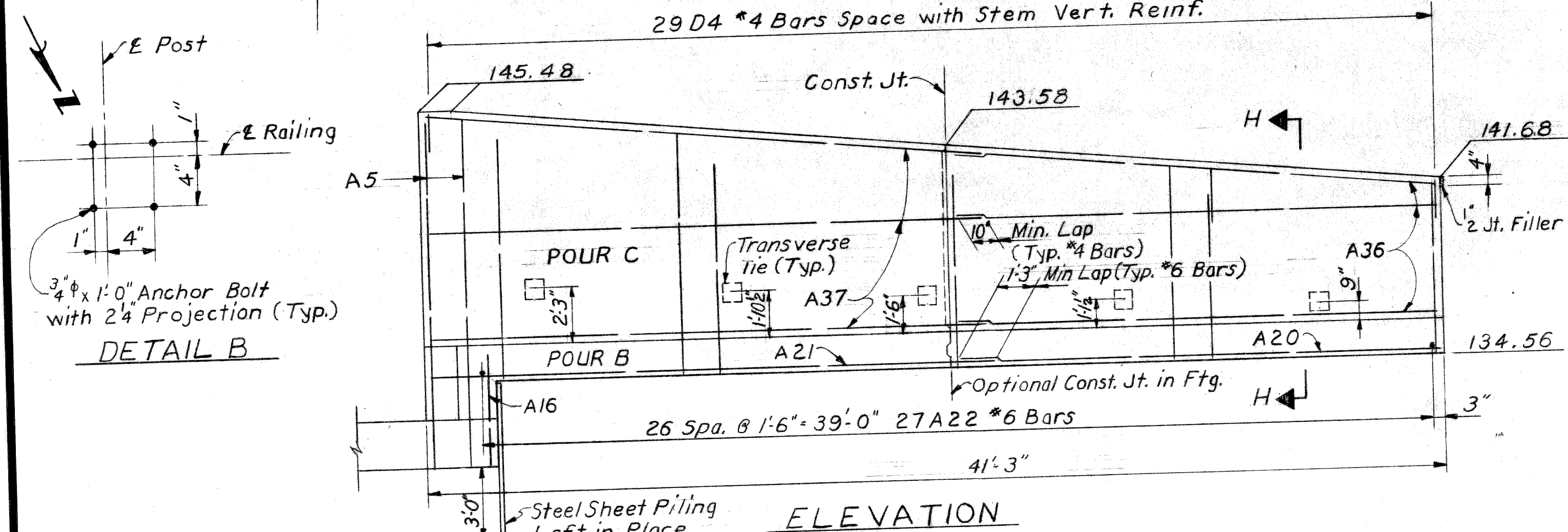
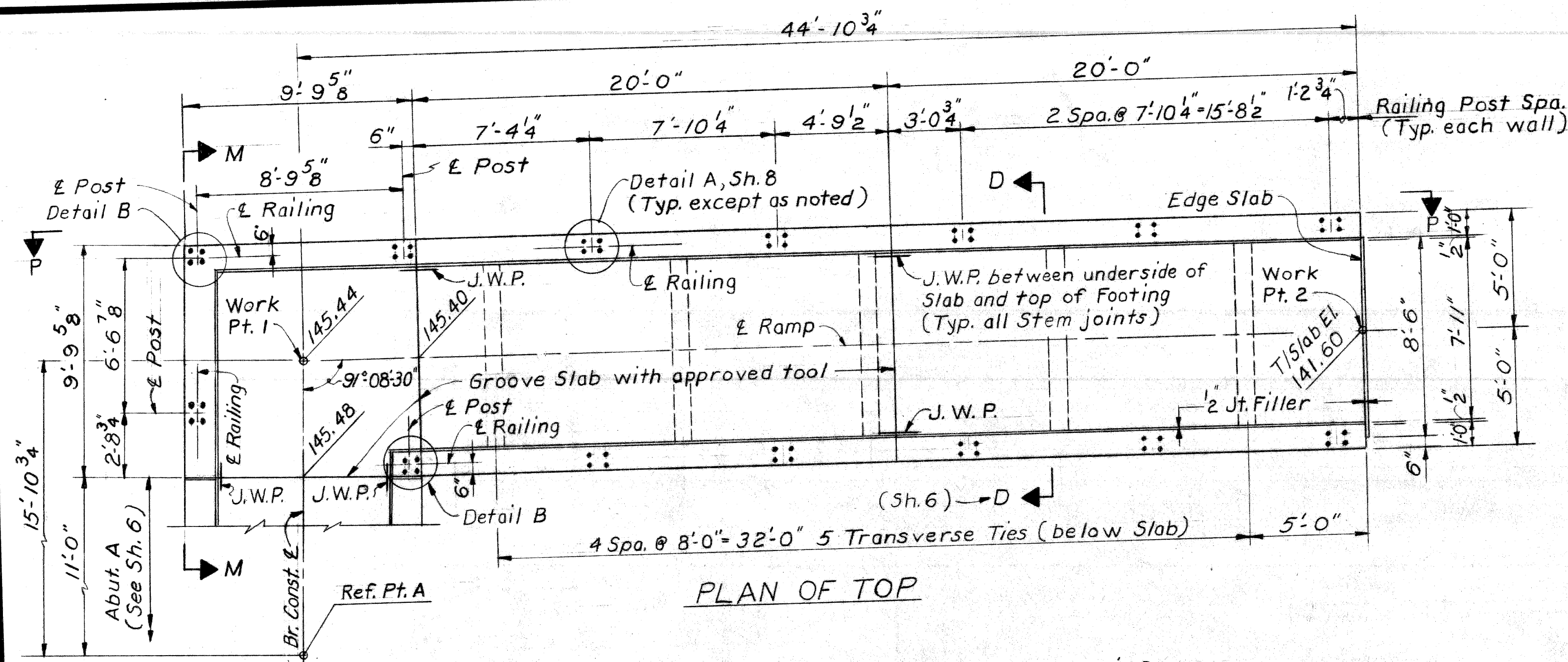
**ABUTMENT A DETAILS**

NO.	DESCRIPTION	DATE	BY

JOB No. PW 59044

CITY OF DETROIT  
 SQUAD BOSS: *Spolan* 10-6-8  
 DRAWN BY: *J.H.S.* 8-6-8  
 CHECKED BY: *J.H.K.* 8-6-8  
 SHEET 6 OF 15  
**P05 of 821231**





Work sheets 6, 7, 8 together  
 PLANS PREPARED BY  
**CITY OF DETROIT**  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**  
 IVANHOE AVE. PEDESTRIAN BRIDGE  
 OVER JEFFRIES FREEWAY IN DETROIT

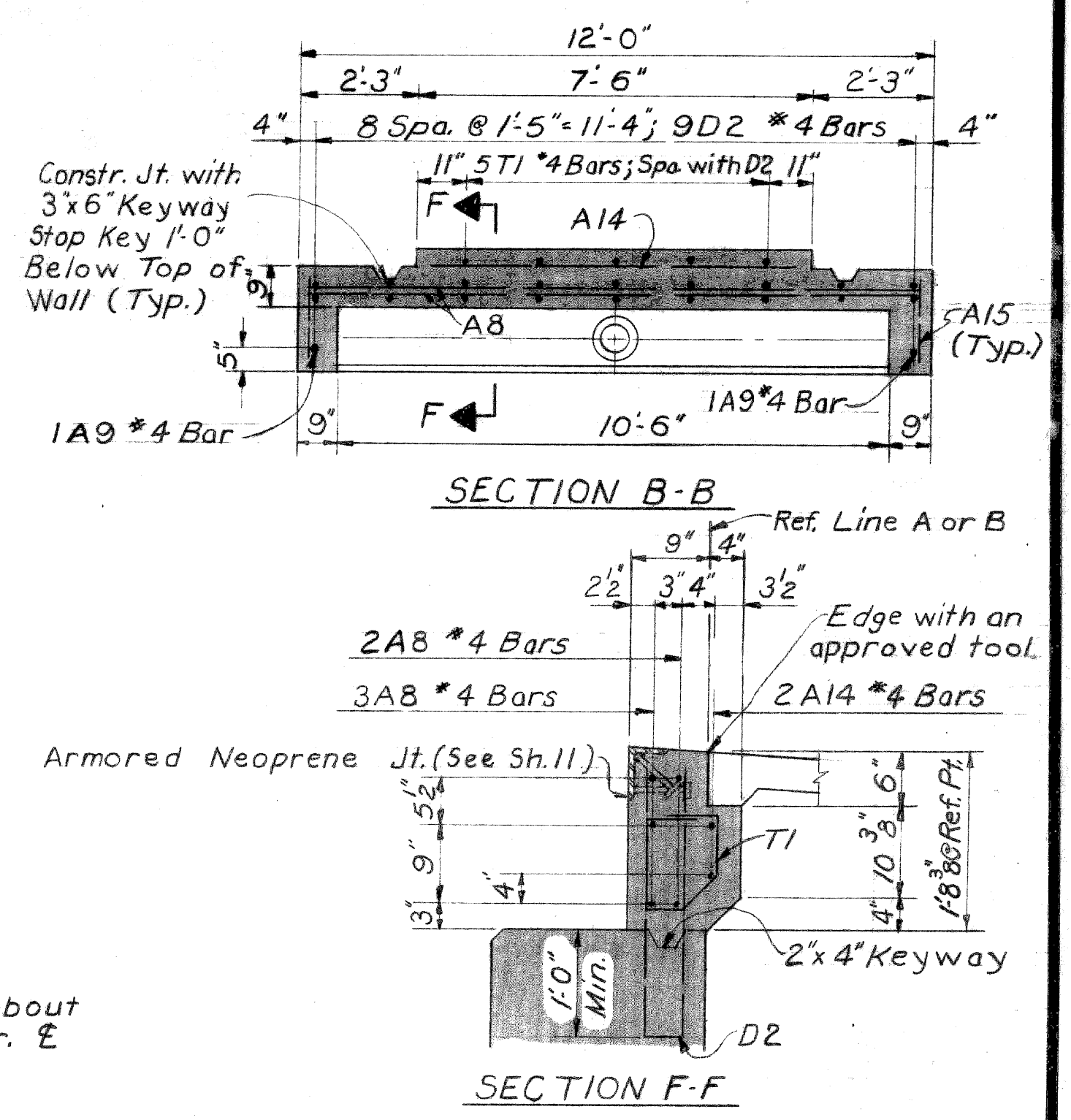
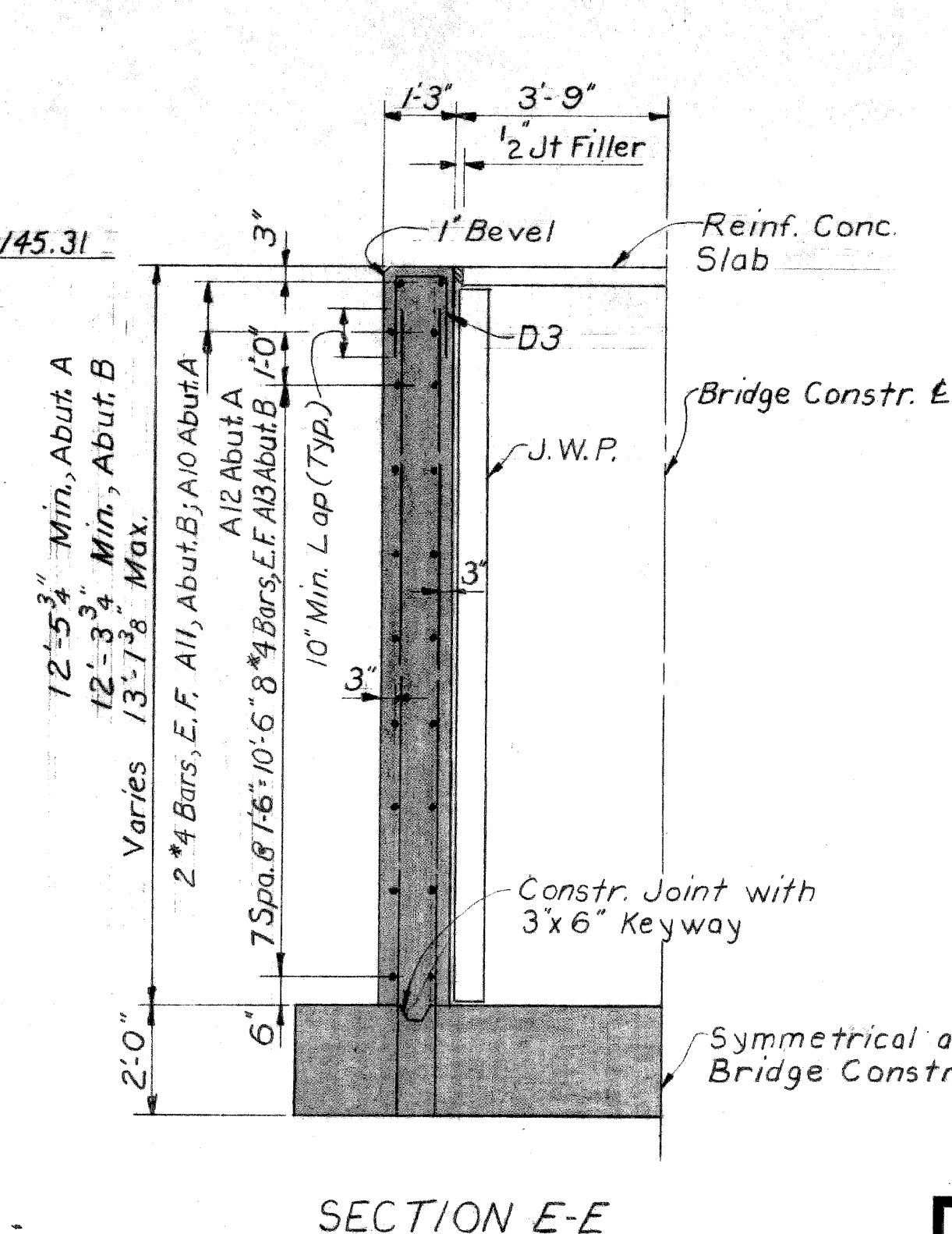
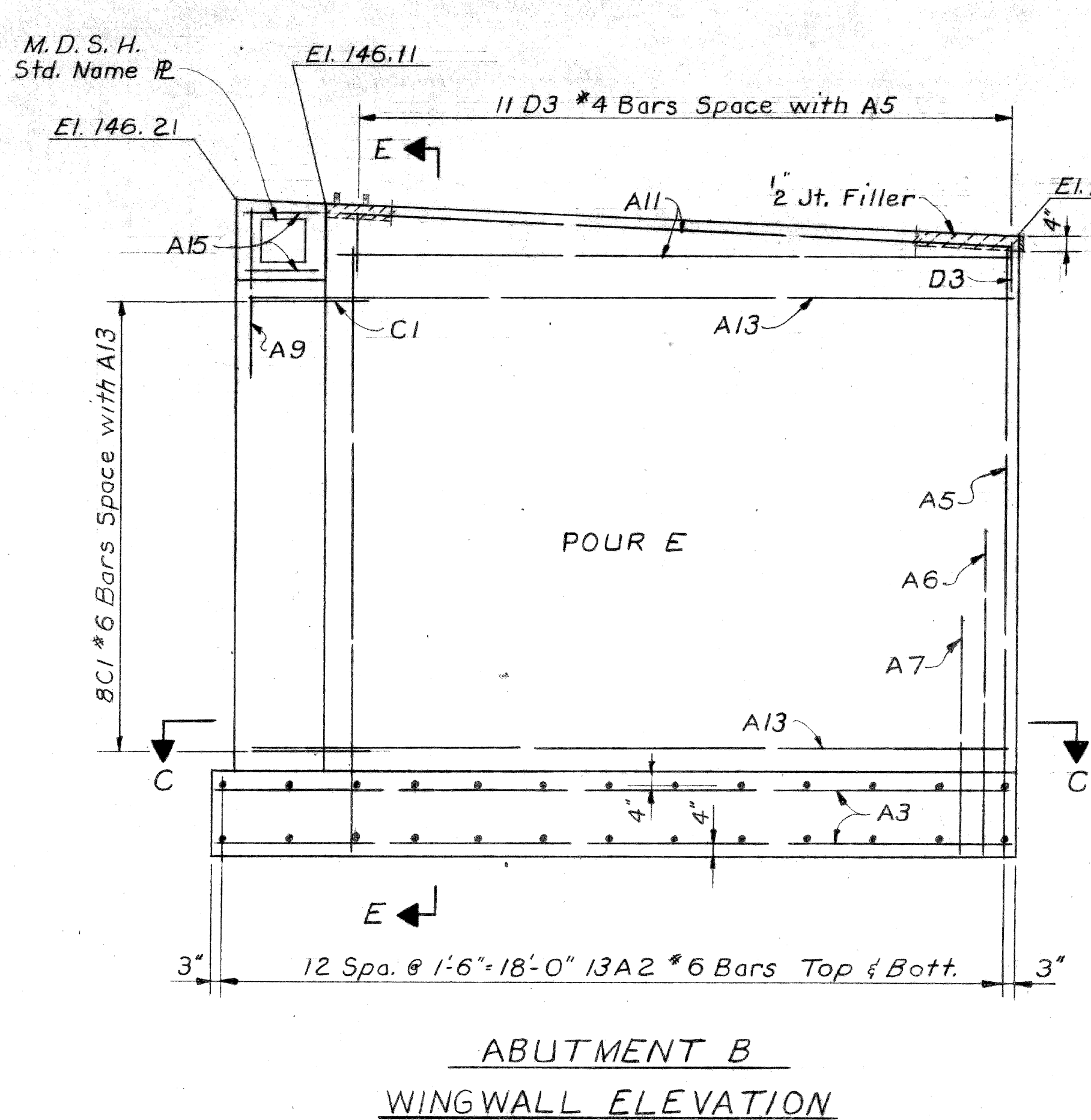
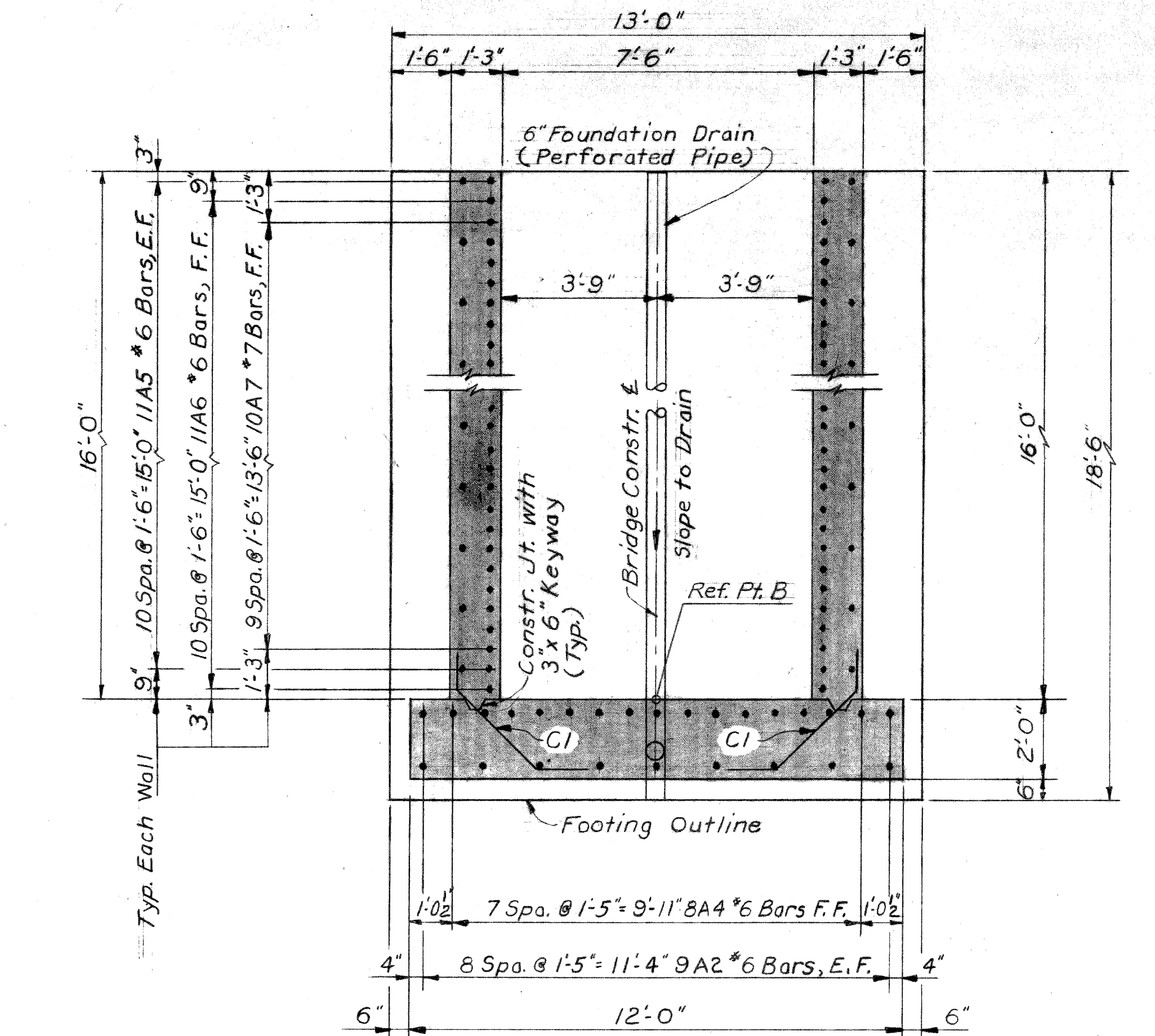
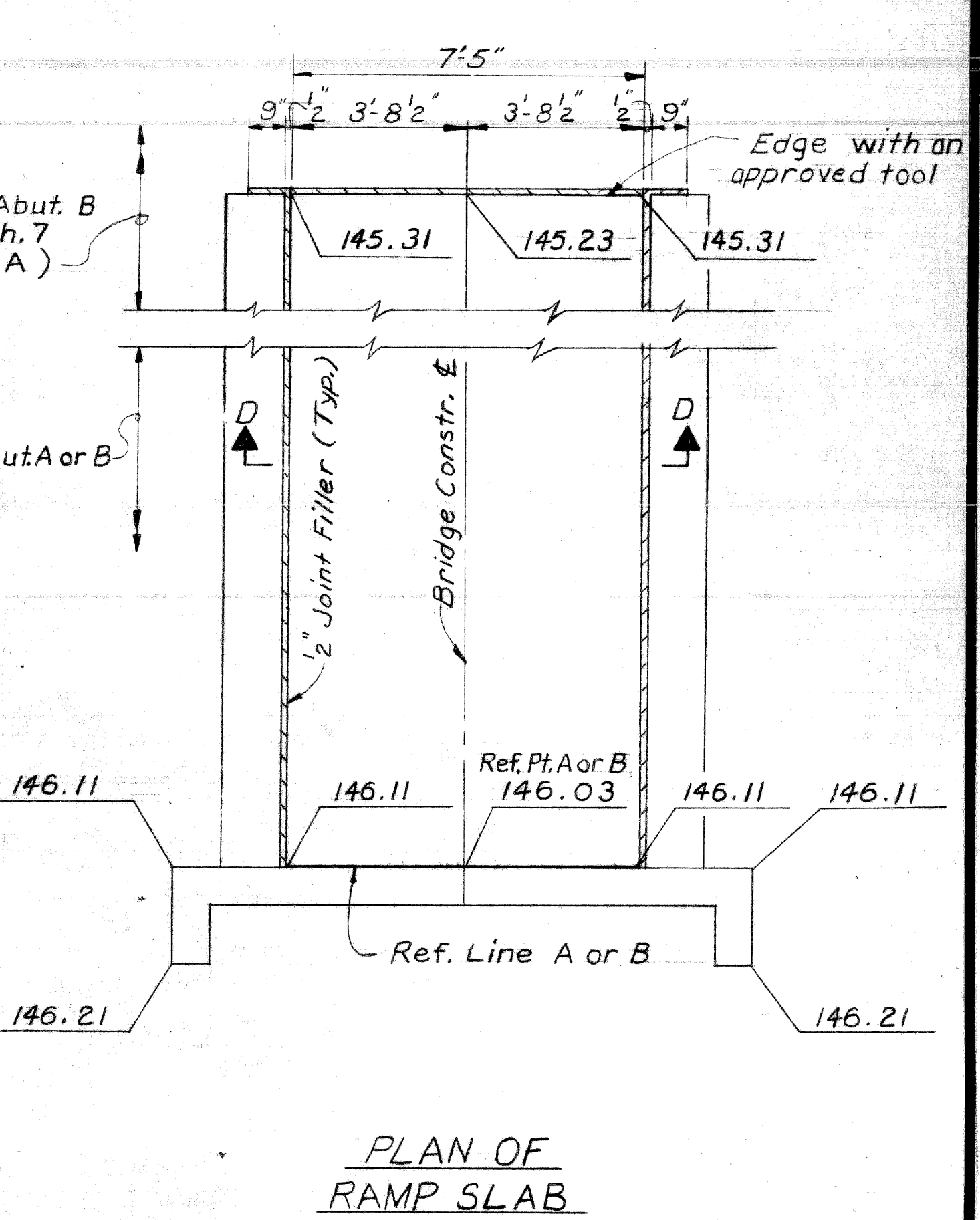
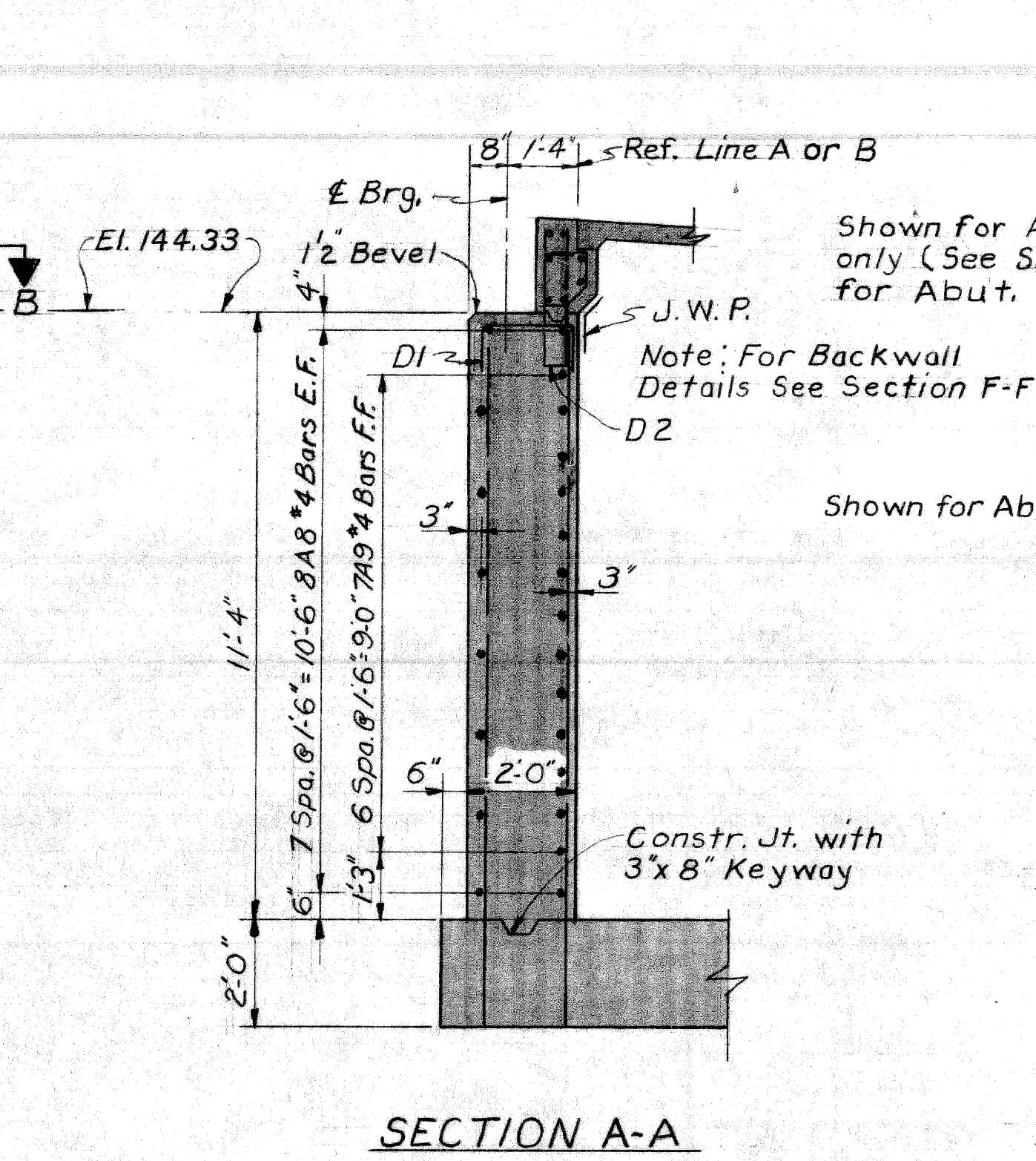
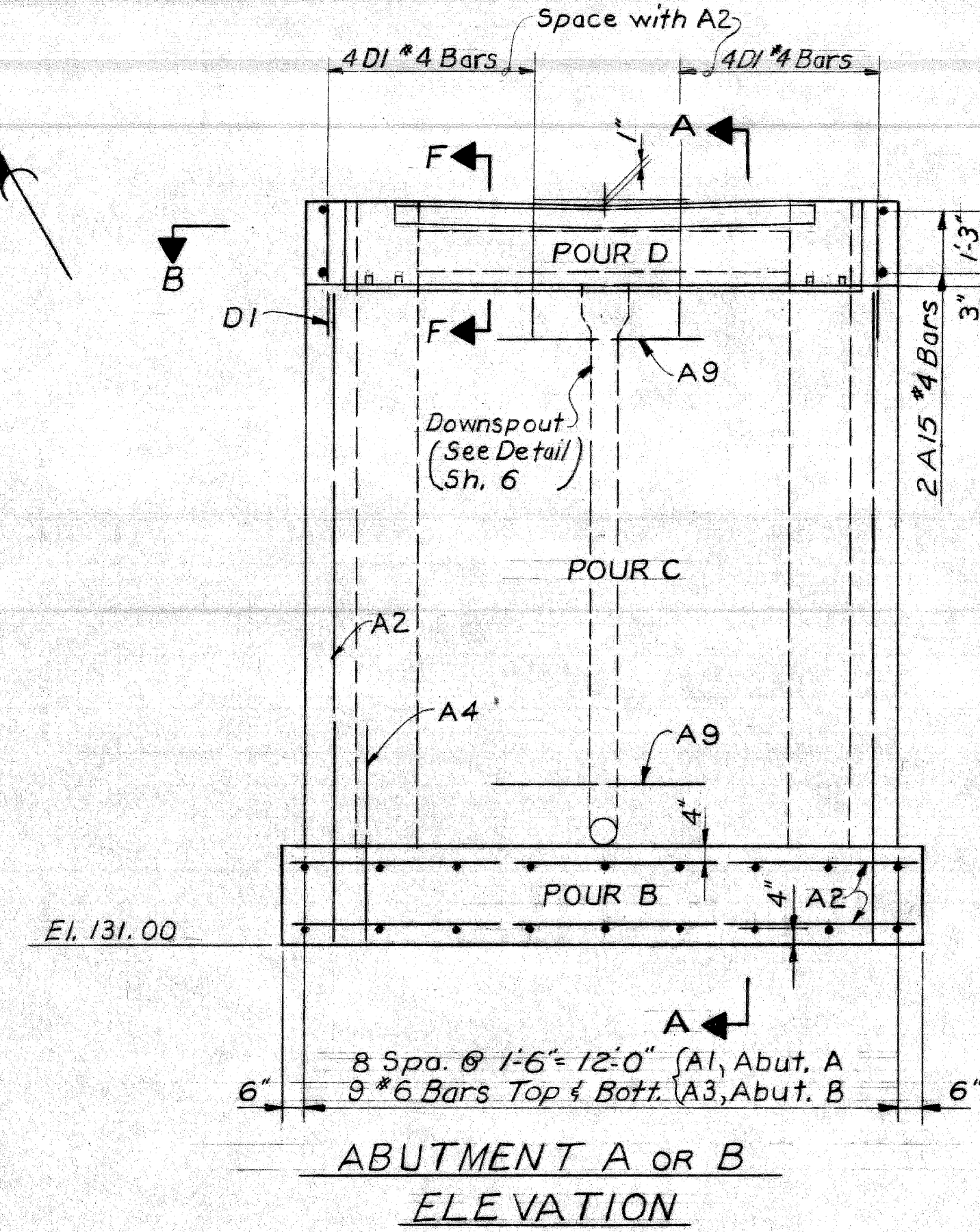
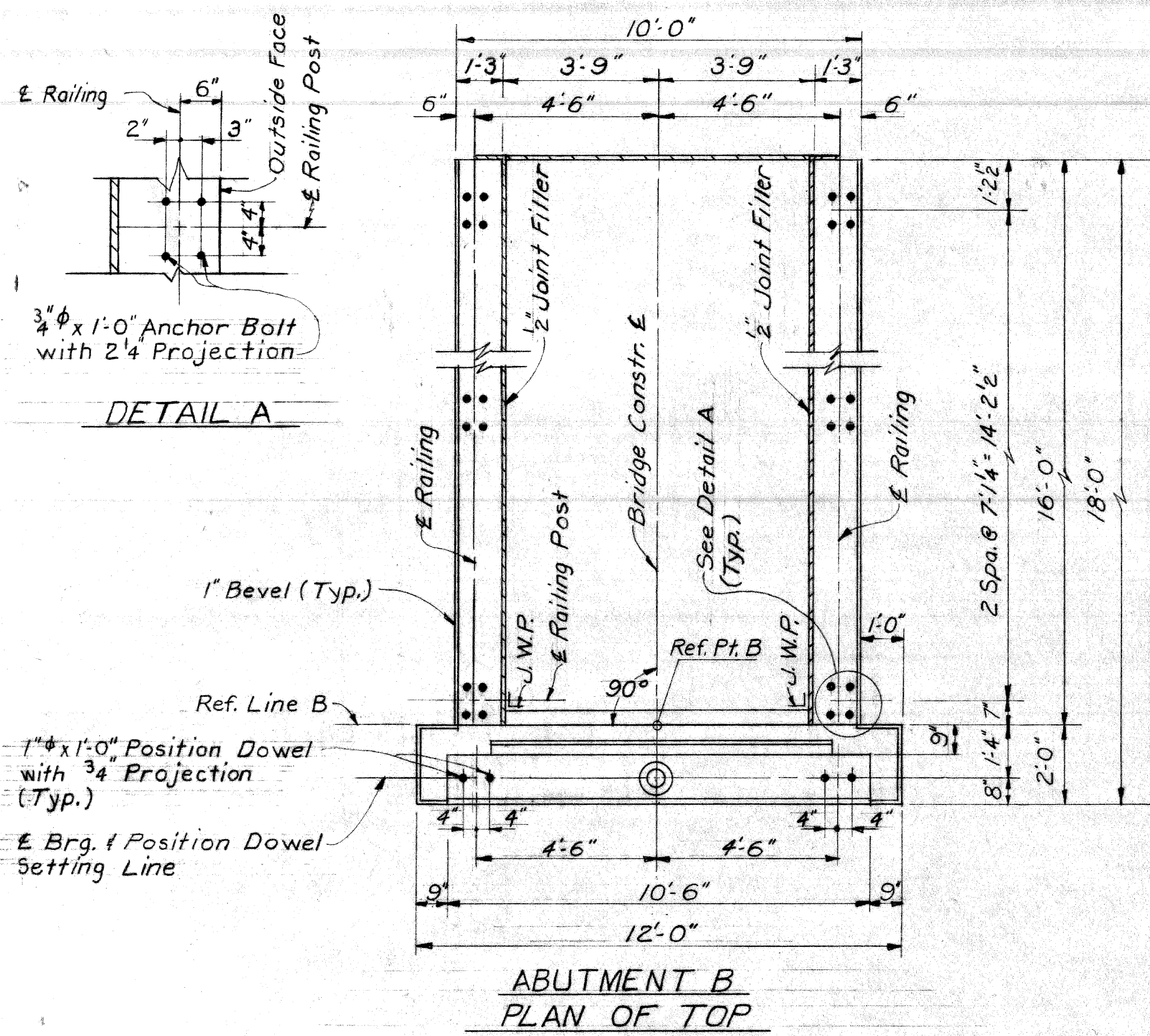
**RAMP DETAILS**

NO.	DESCRIPTION	DATE	BY

APPROVED: [Signature] STRUCTURAL ENGINEER  
 JOB No. PW 990141

CITY OF DETROIT  
 SQUAD BOSS: SPURN 10-68  
 DRAWN BY: Z.H.S. 8-68  
 TRACED BY: Jones 8-68  
 CHECKED BY: Z.H.K. 8-68  
 SHEET 7 OF 15  
**P05 of 821231**





Work sheets 6, 7, & 8 together

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *[Signature]*  
STRUCTURAL ENGINEER

JOB No. PW 990(4)

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

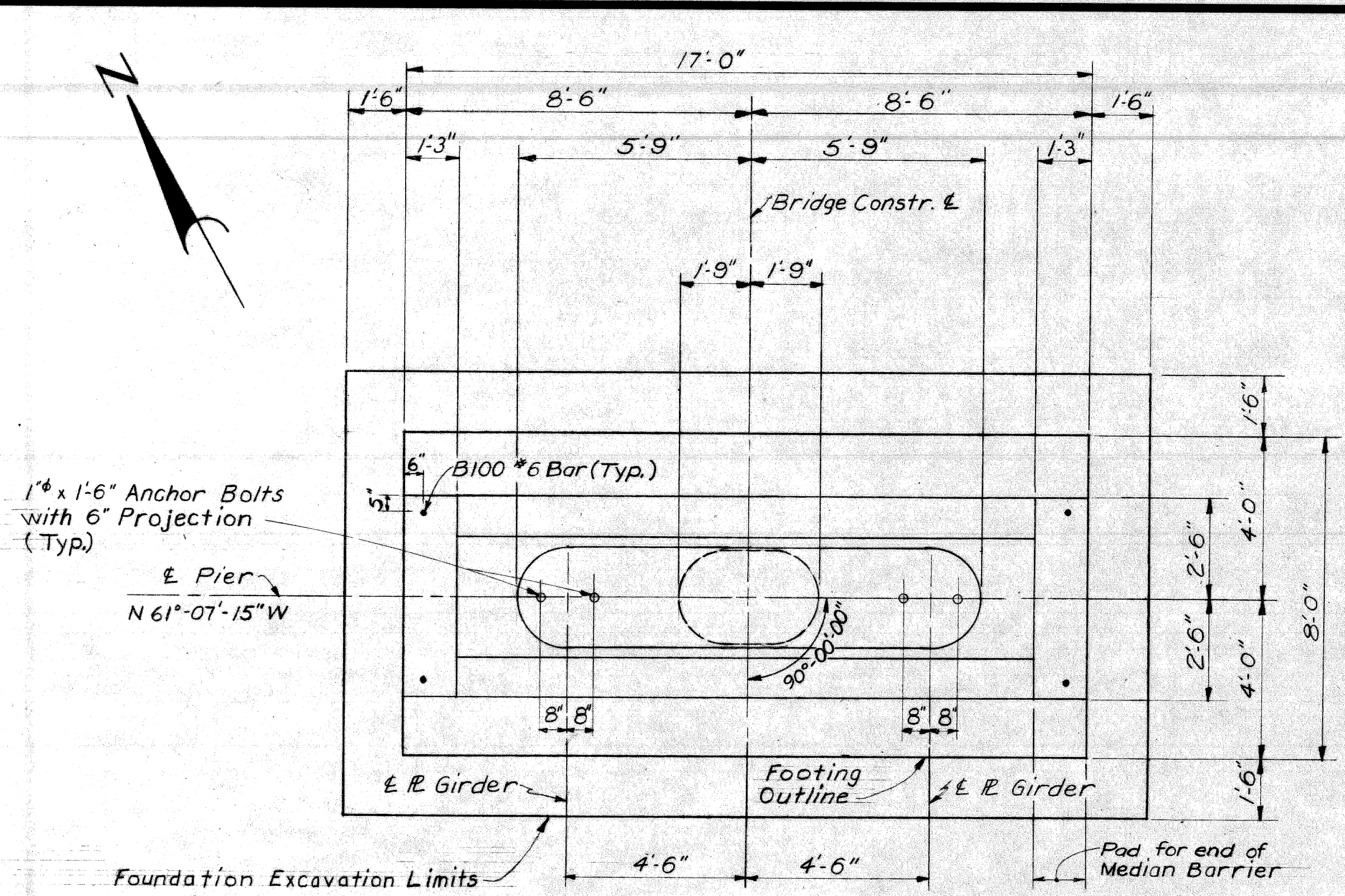
IVANHOE AVE. PEDESTRIAN BRIDGE  
OVER JEFFRIES FREEWAY IN DETROIT

**ABUTMENT B DETAILS**

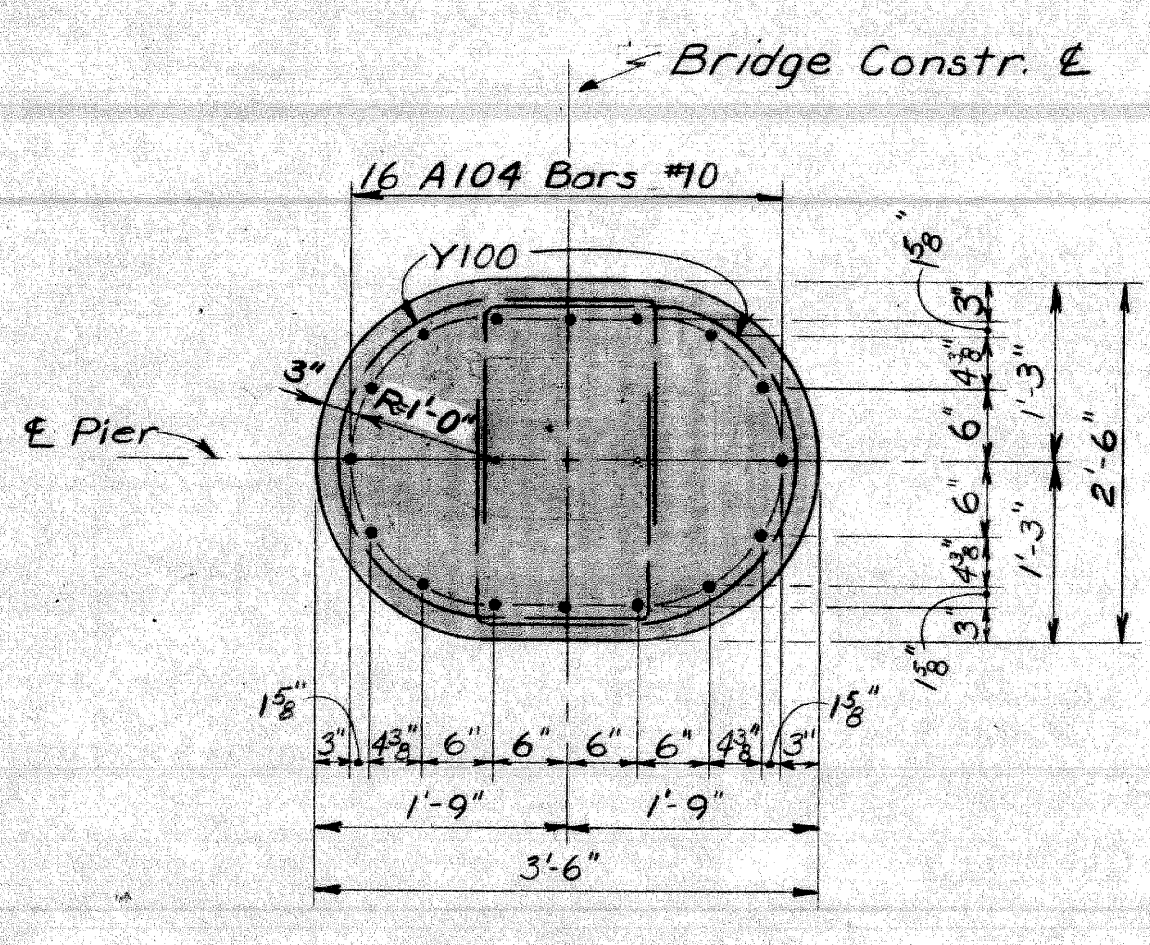
REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS: *[Signature]* 10-68  
DRAWN BY: *[Signature]* 8-68  
CHECKED BY: *[Signature]* 8-68  
SHEET 8 OF 15  
PO5 of 821231

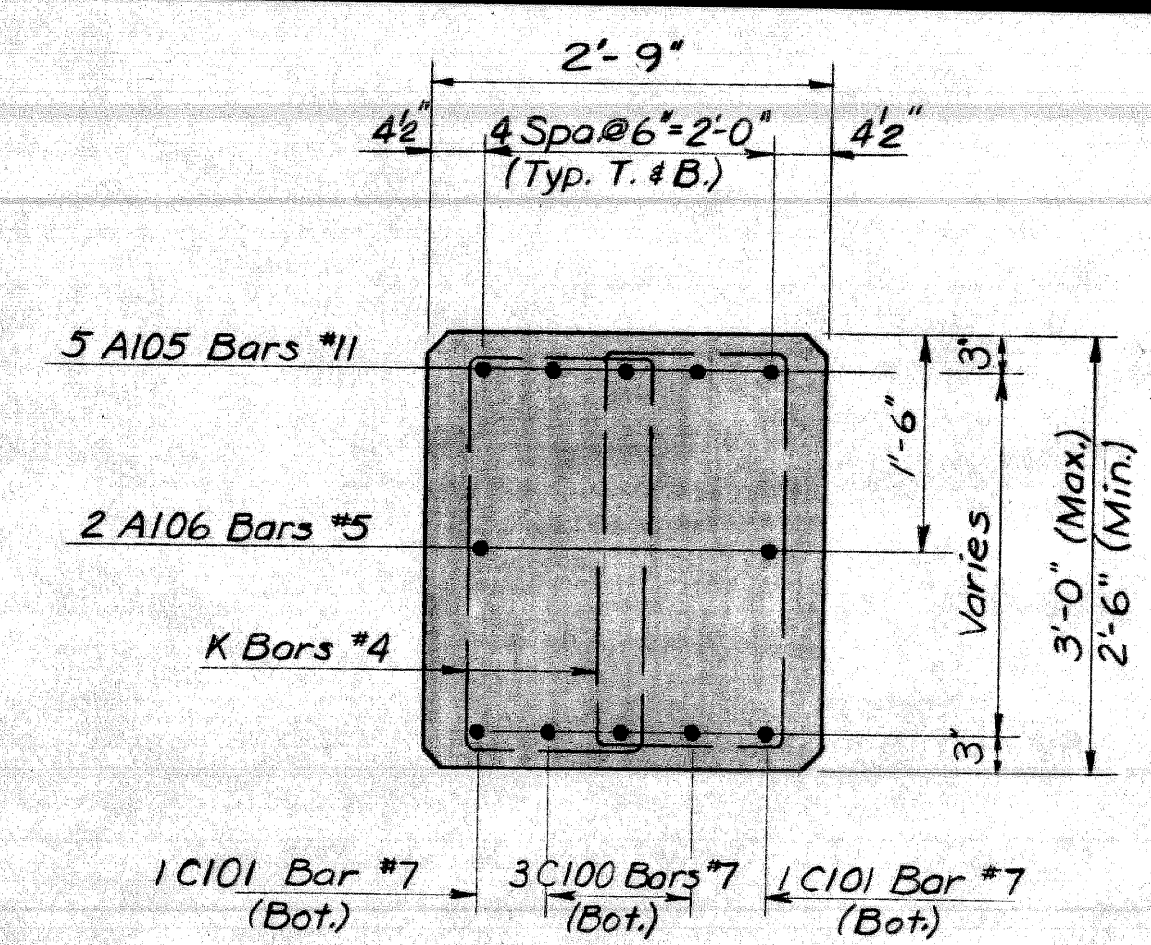




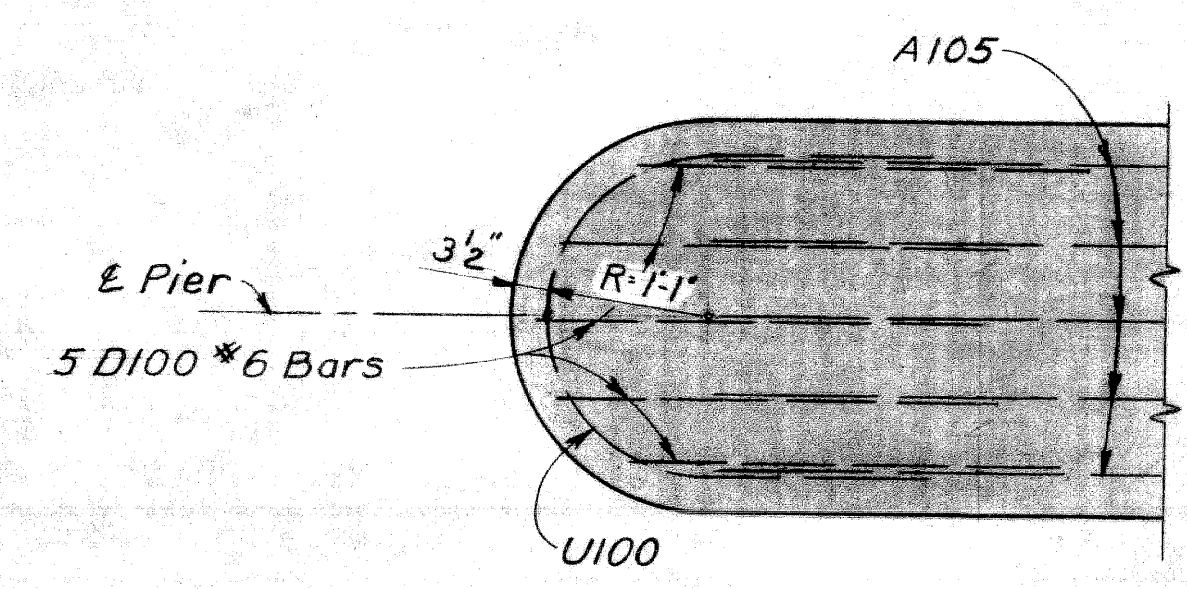
PLAN



SECTION C-C



SECTION B-B



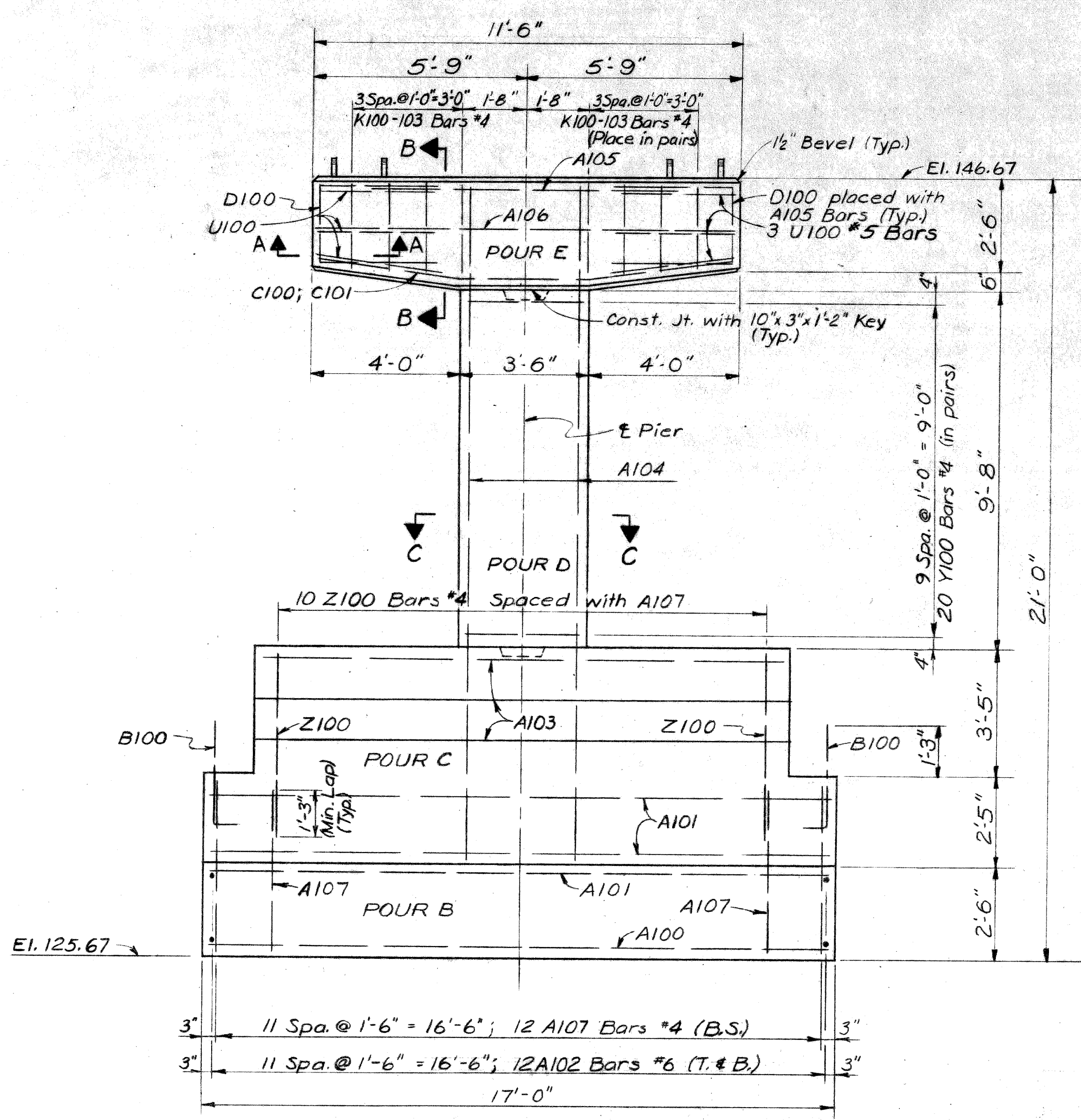
SECTION A-A

CONCRETE QUANTITIES (CU. YDS.)			
Pour	Location	Gr. A(6A)	Gr. A(6AA)
B	Footing	12.6	—
C	Barrier	—	14.8
D	Column	—	2.7
E	Cap	—	3.2
Total Grade A(6A)		= 12.6 Cu. Yds.	
Total Grade A(6AA)		= 20.7 Cu. Yds.	

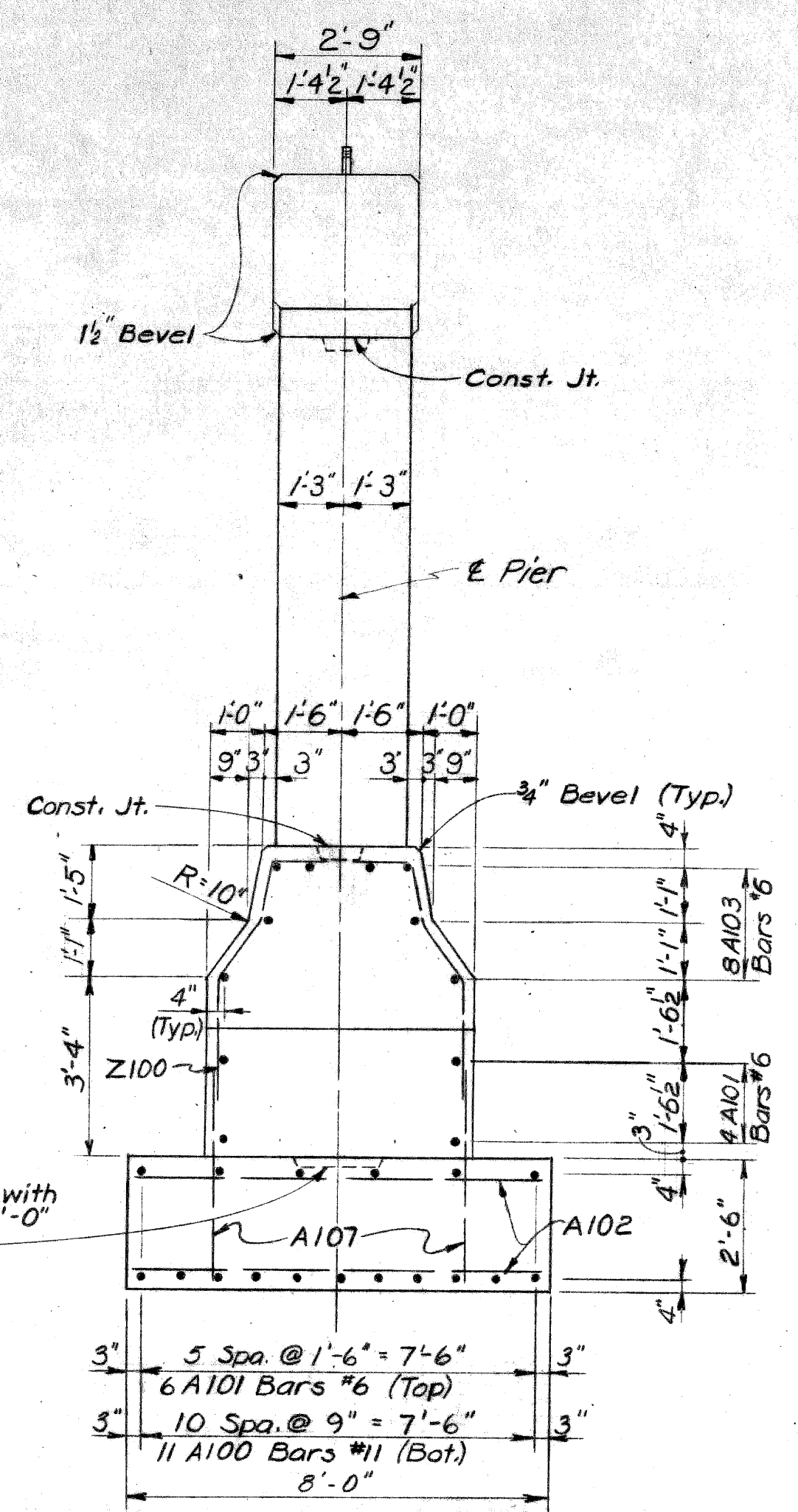
MISCELLANEOUS QUANTITIES		
Item	Unit	Amount
Unclassified Excavation	Cu. Yds.	35
Clear Protective Coating for Substr. Conc.	Sq. Yds.	57
Low Temperature Protection Substructure	Cu. Yds.	333

**GENERAL NOTES:**

For bevel and molding details see Std. Sheet R16  
 Anchor Bolts shall be set accurately to a template.  
 Adjust the spacing of the reinforcing steel as required to permit placing of anchor bolts.  
 Maximum average foundation pressure D.L. only = 2100 Lbs./Sq. Ft.  
 Maximum foundation pressure D.L. and L.L. = 2500 Lbs./Sq. Ft.  
 The complete exposed surface of the pier concrete above top of footing shall be given an application of Clear Protective Coating for Substructure Concrete.



ELEVATION



END VIEW

PLANS PREPARED BY  
**CITY OF DETROIT**  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *H. Conant*  
 STRUCTURAL ENGINEER

JOB No.  
**PW 99044**

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

IVANHOE AVE. PEDESTRIAN BRIDGE  
 OVER JEFFRIES FREEWAY IN DETROIT

**PIER DETAILS**

REVISIONS

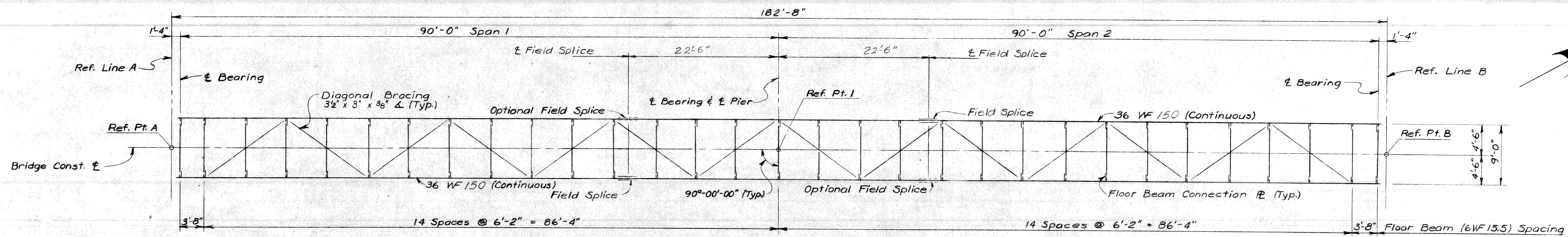
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

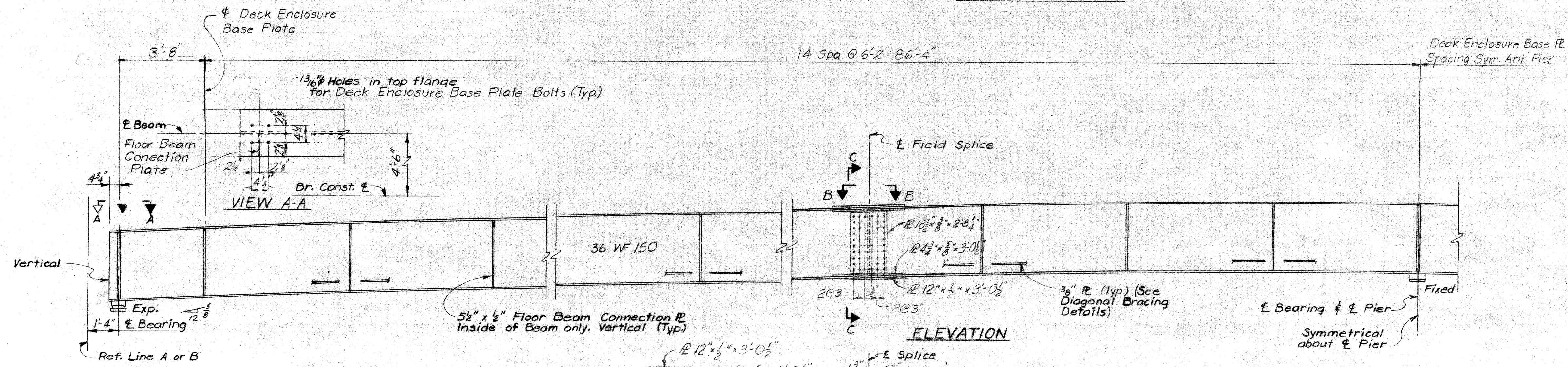
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DRAWN BY	G. Mohan	8-68
TRACED BY	A. Morten	8-19-68
CHECKED BY	L. H. K.	8-68
SHEET	9	OF 13

**P05 of 82123I**

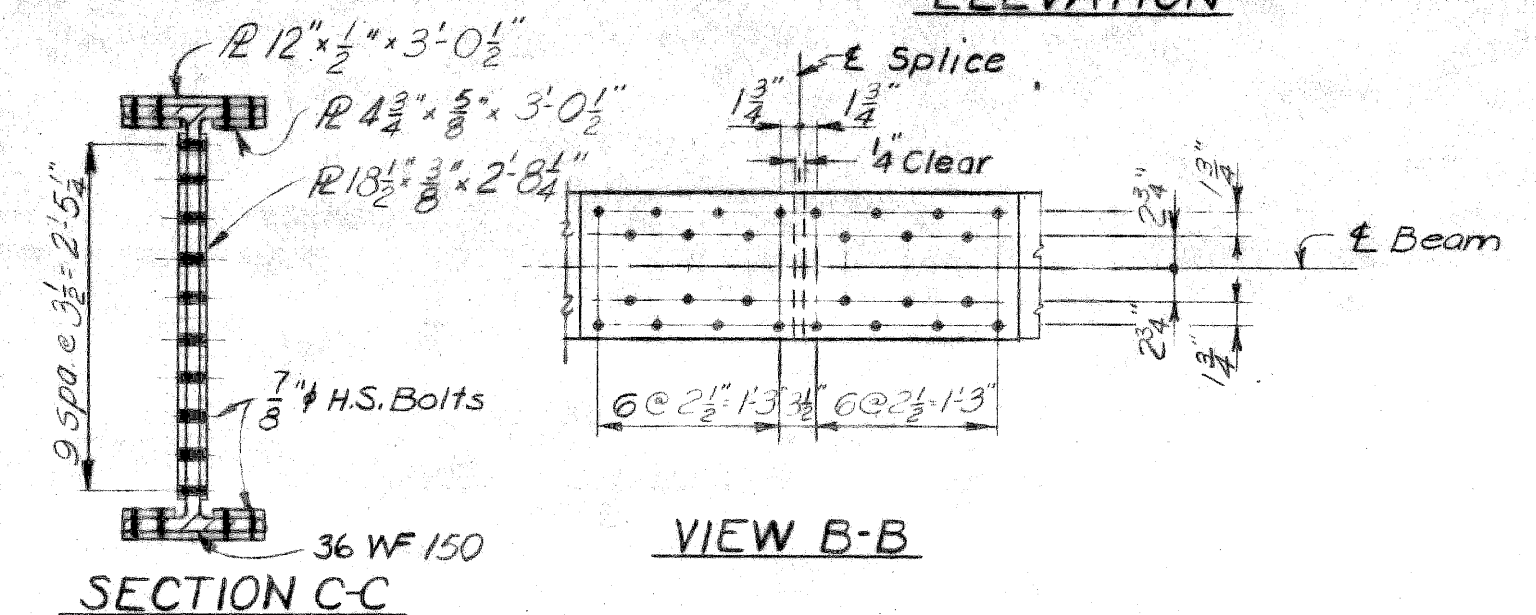




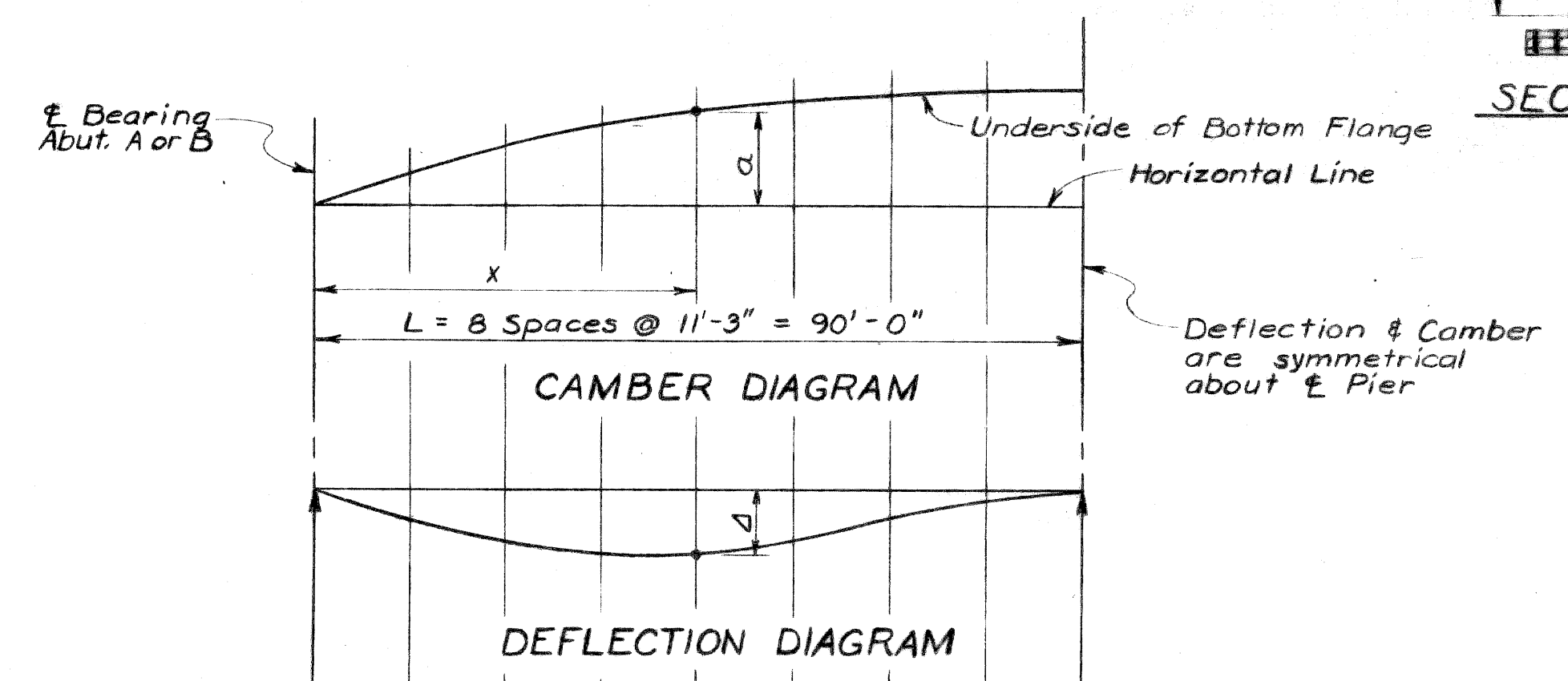
ERECTION PLAN



ELEVATION



SECTION C-C



X/L	0	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1
a	0	7"	1'-1"	1'-5 1/8"	1'-9 3/8"	2'-0 3/8"	2'-2"	2'-2 1/8"	2'-3"
ΔBm. Wt.	0	2 1/16"	3 1/16"	7 1/16"	7 1/16"	5 1/16"	2 1/16"	2 1/16"	0
ΔD.L.	0	4 1/16"	1 3/16"	1 3/16"	1 7/16"	1 7/16"	4 1/16"	2 1/16"	0

NOTE:  
 Camber ordinate "a" includes allowance for vertical curve and ΔD.L.  
 ΔBm. Wt. = Deflection due to weight of Steel beam.  
 ΔD.L. = Deflection due to weight of Structural Steel, Slab and Deck Enclosure.

**GENERAL NOTES:**  
**DESIGN:** Michigan Department of State Highways Specifications for the Design of Highway Bridges - 1958 edition and current AASHTO Standard Specifications for Highway Bridges. (Live Load is 85 ps.f. with Alternate Live Load of one five ton truck plus impact.)  
**FABRICATION:** Michigan Department of State Highways Standard Specifications for Road and Bridge Construction - 1967 edition.  
**SHOP CONNECTIONS:** Shop Connections shall be welded as shown on the plans.  
**FIELD CONNECTIONS:** Field Connections shall be bolted with 3/4" high-strength bolts, except as noted.  
**CAMBER:** The beams are to be cambered as shown. Camber is to be measured with the beam lying on its side. Allowable camber tolerance for rolled beams is 1/4". Heating is to be used, if necessary, to assure camber permanency within the above tolerance.  
**REAMING:** Where reaming of holes for field connections is required, such holes shall be sub-punched or sub-drilled 1/4" smaller than the finished hole.  
**WELDING:** Welding on tension flanges of beams will not be permitted unless such welding is shown on the plans or specified. Welding at other locations on the beams, except where shown on the plans, may be permitted by written authorization providing the welding is to be performed in strict accordance with all specification requirements for structural welding.  
**STEEL:** Structural Steel shall conform to the requirements of the current specifications for Structural Steel. Unpainted, A.S.T.M. Designation A588. Steel in Anchor Bolts may be A.S.T.M. A307. All steel material used for bearings with exception of portion welded to beam, shall be galvanized in accordance with ASTM Designation A123. Galvanizing shall be applied after fabrication of bearing. Mill scale and foreign material shall be removed prior to galvanizing. Position Dowels and Anchor Bolts (including nuts and washers) shall be galvanized in accordance with ASTM Designation A153.

**QUANTITIES:**  
 Elastomeric Bearing Pad 2 Sq. Ft.  
 Structural Steel-Furnishing and Fabricating\* 68000 Lbs.  
 Structural Steel-Erection\* 68000 Lbs.  
 \*The quantity "Structural Steel" includes metal parts of Armored Neoprene Joints, Drain Frames and Grates, and consists of:  
 Steel 67900 Lbs.  
 Bronze 100 Lbs.

Work this sheet with Sheet 11

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**  
 IVANHOE AVE. PEDESTRIAN BRIDGE  
 OVER JEFFRIES FREEWAY IN DETROIT

**STRUCTURAL STEEL DETAILS**

CITY OF DETROIT  
 PLANS PREPARED BY  
**CITY OF DETROIT**  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: [Signature] STRUCTURAL ENGINEER

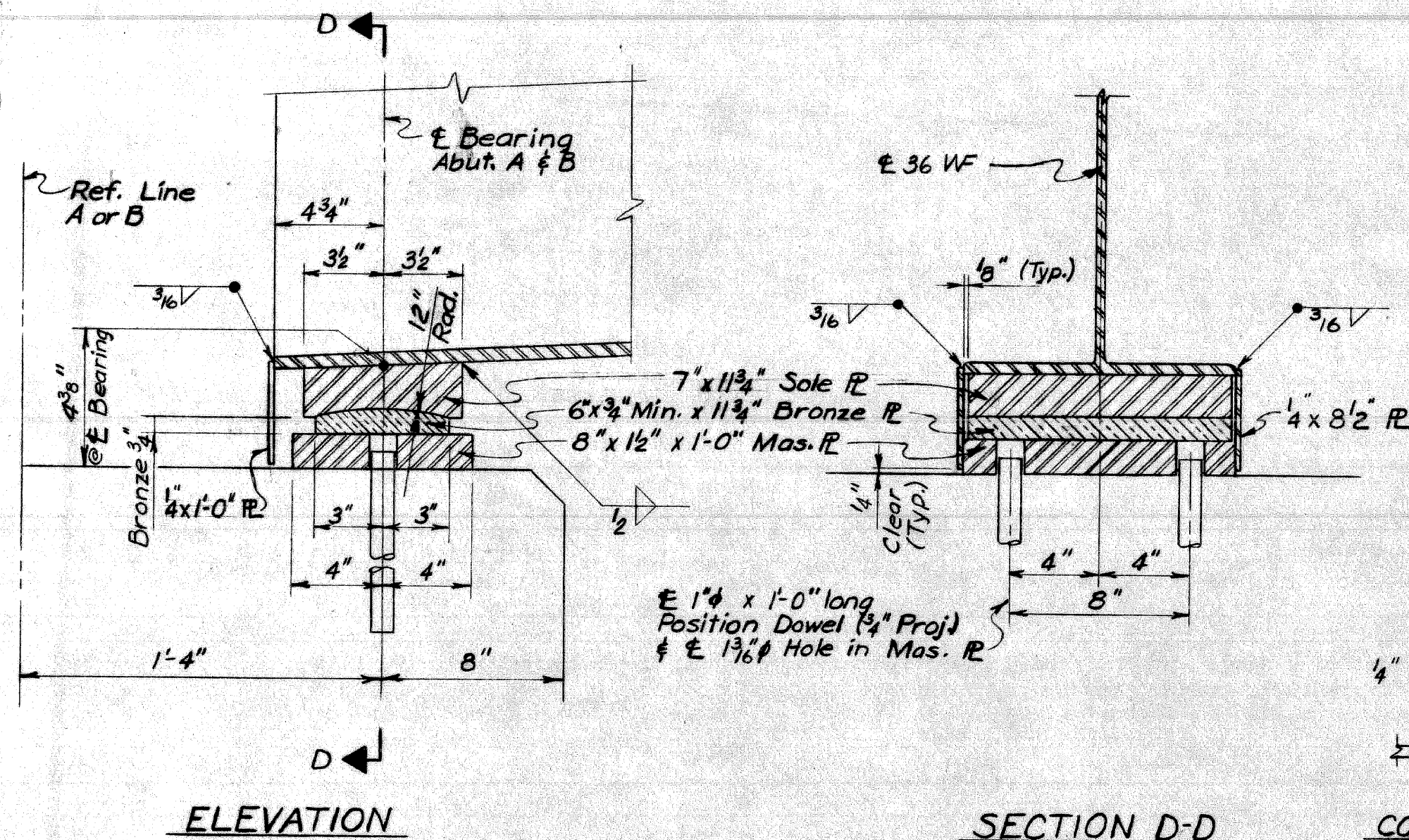
JOB No. PW 9901A

NO.	DESCRIPTION	DATE	BY

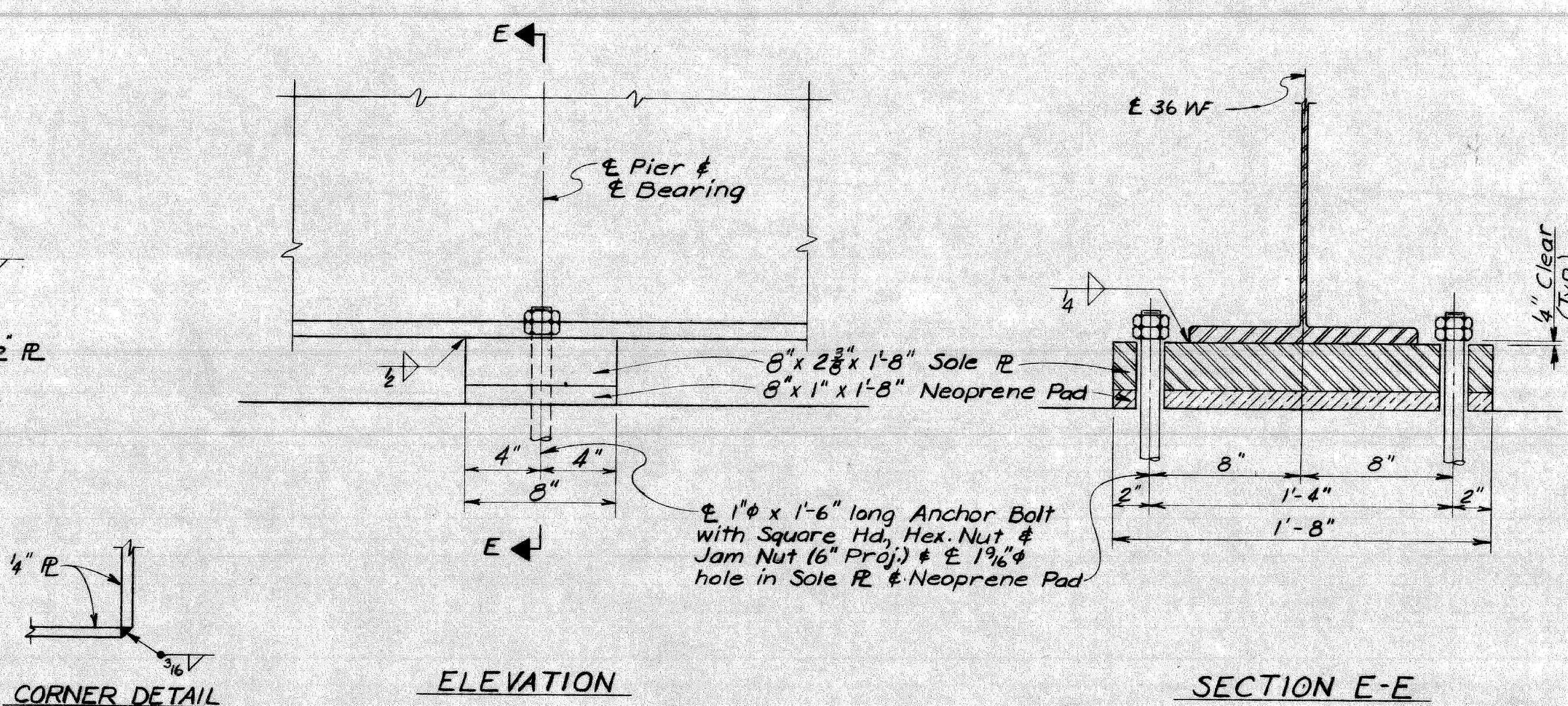
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 DRAWN BY: [Signature] G. 68  
 TRACED BY: A. Marten 6/68  
 CHECKED BY: G. Molnar 8-68  
 SHEET 10 OF 15

PO5 of 821231

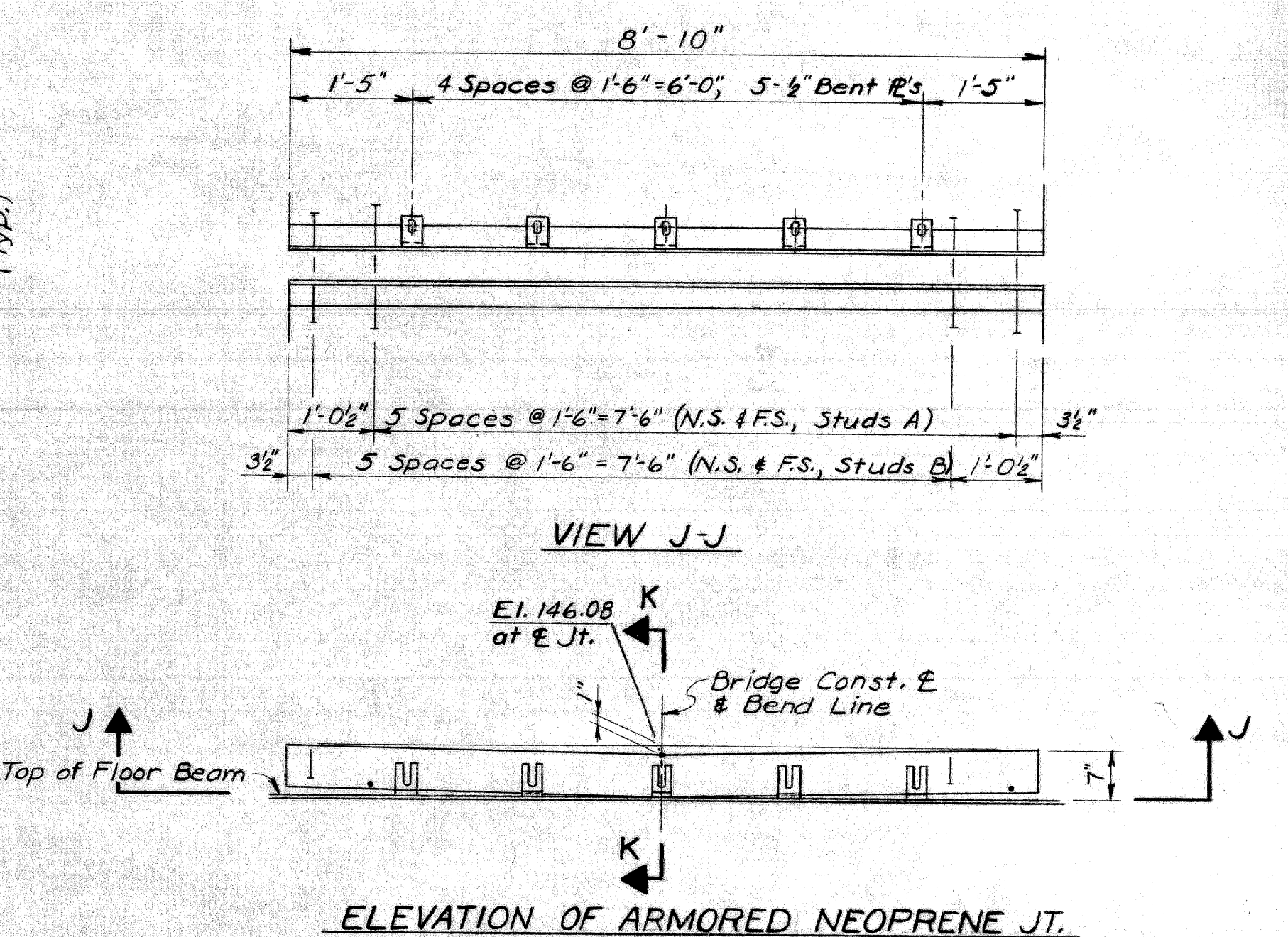




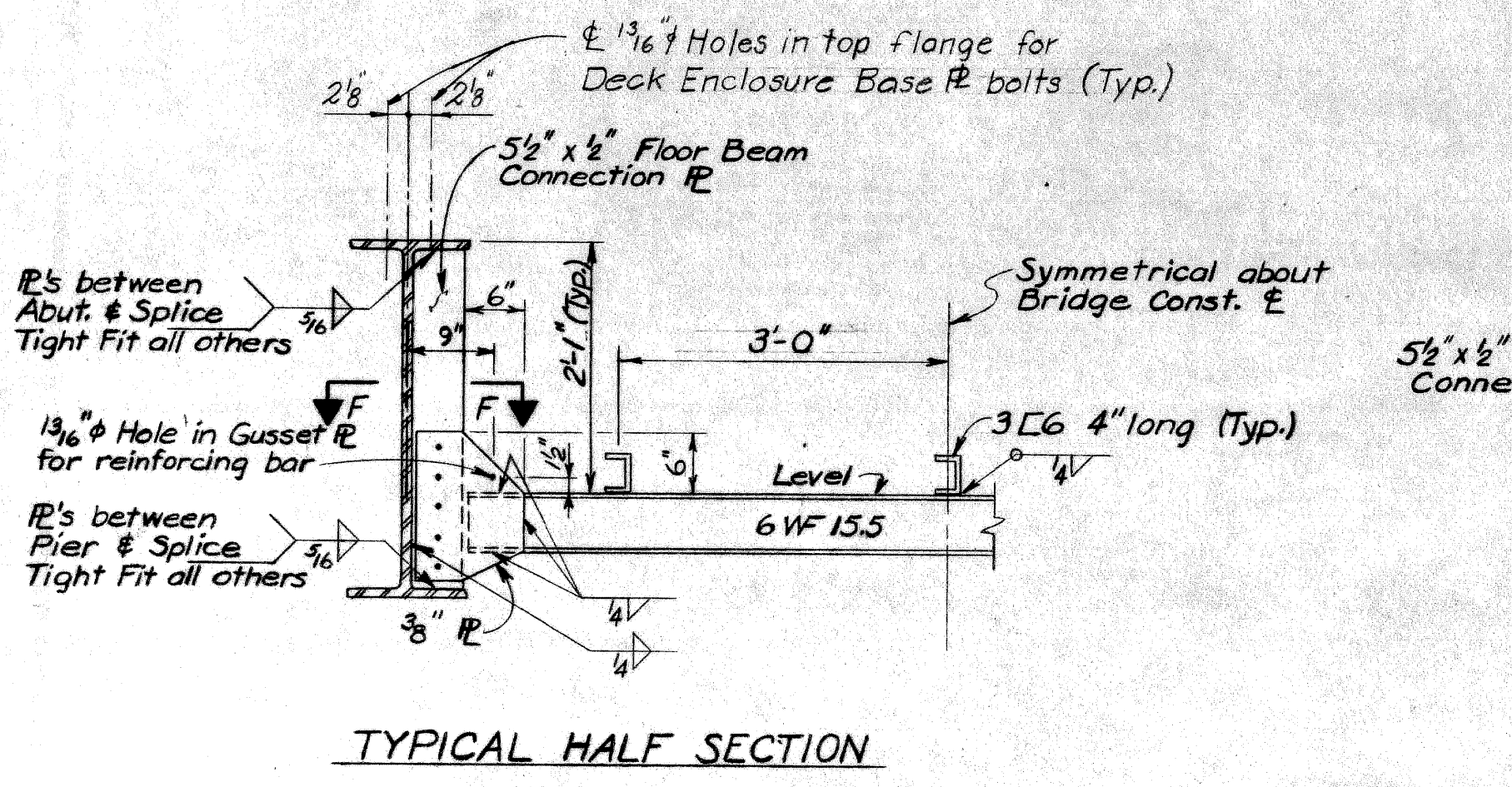
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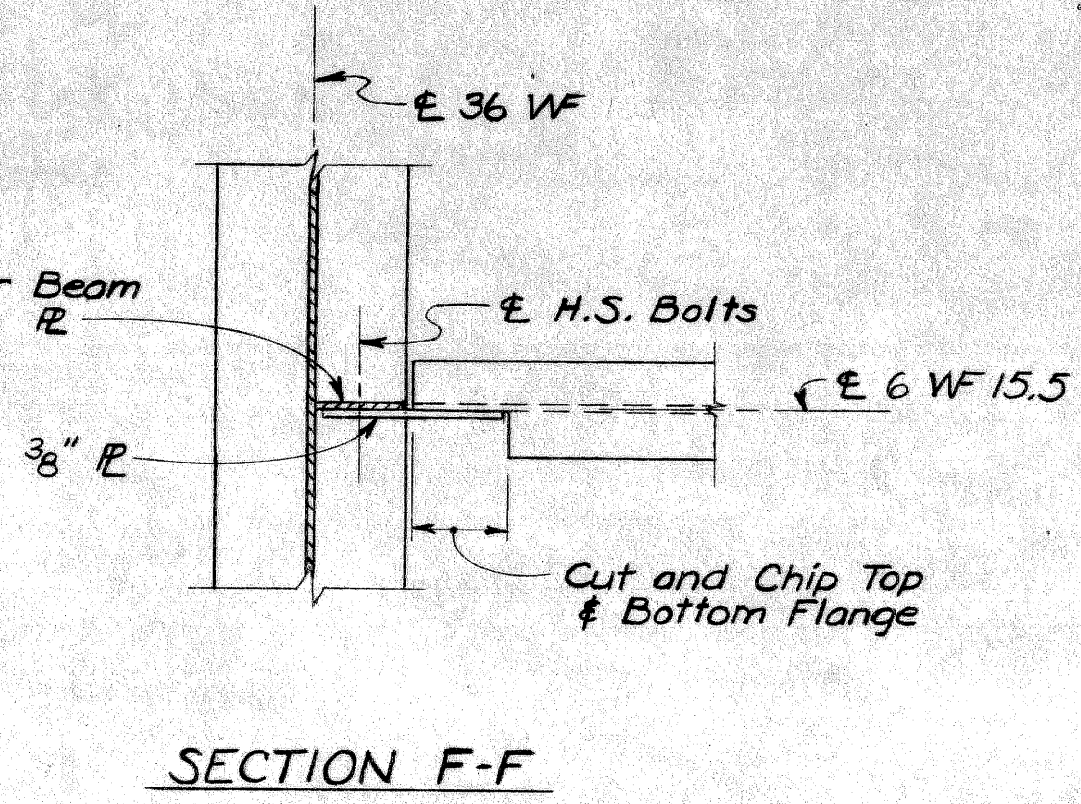
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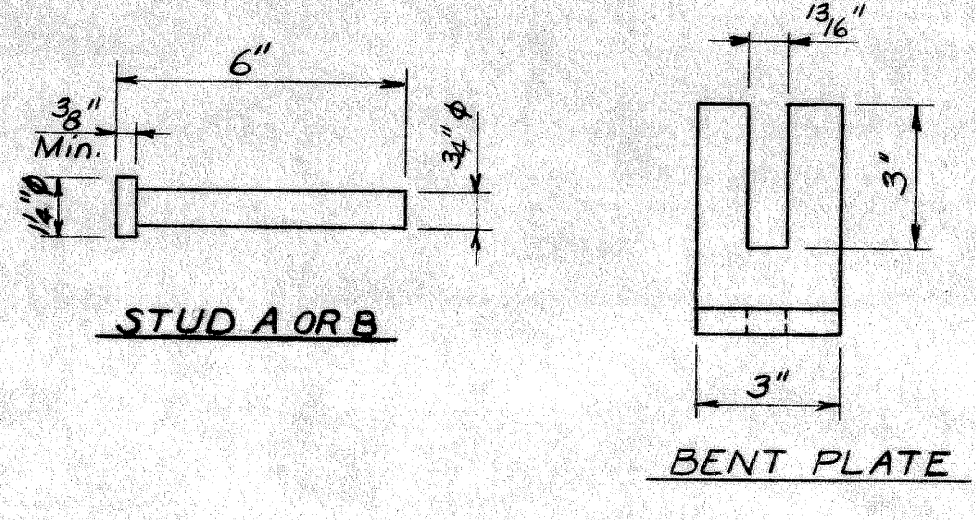
**ELEVATION OF ARMORED NEOPRENE JT.**



**TYPICAL HALF SECTION**

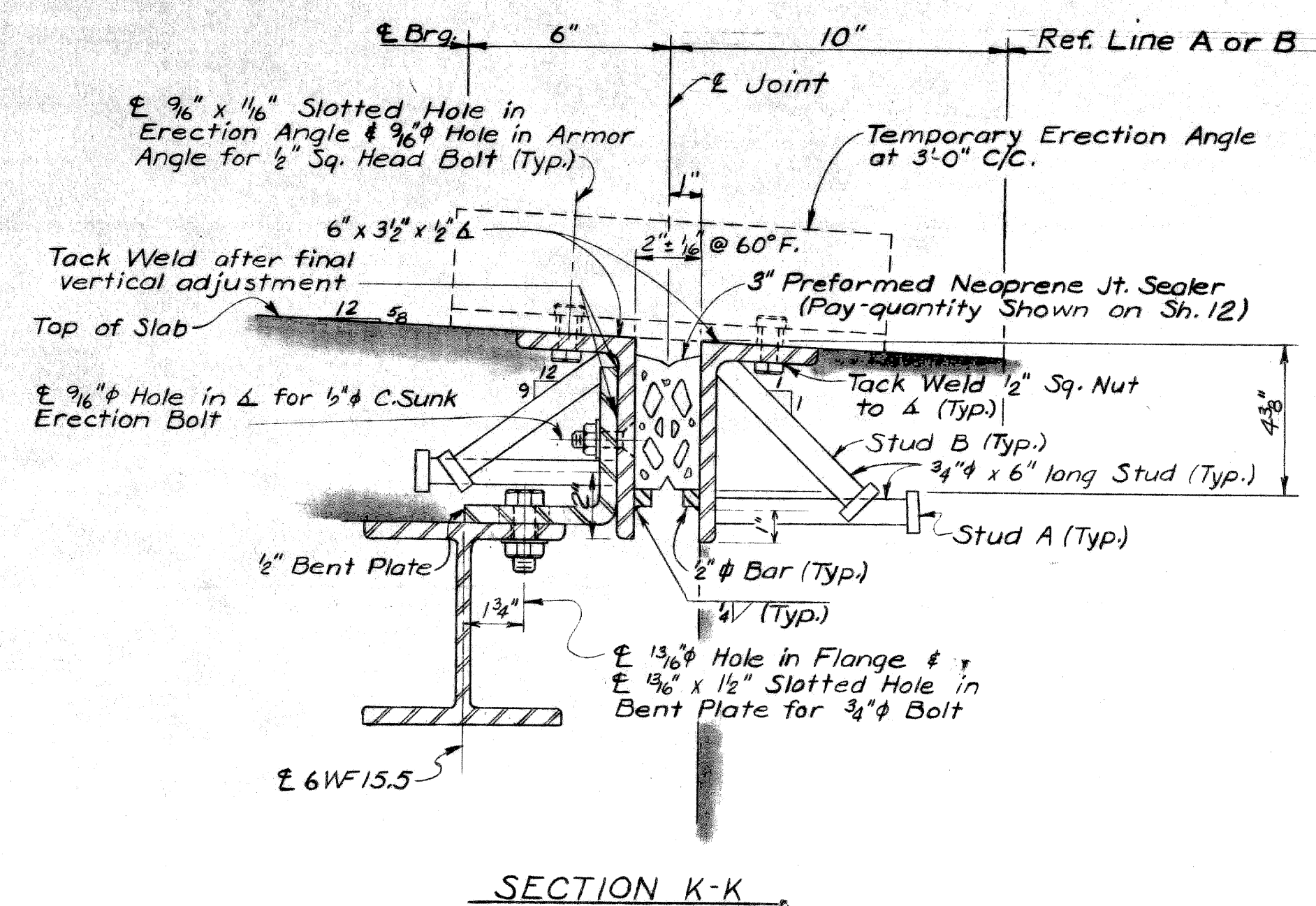


**SECTION F-F**

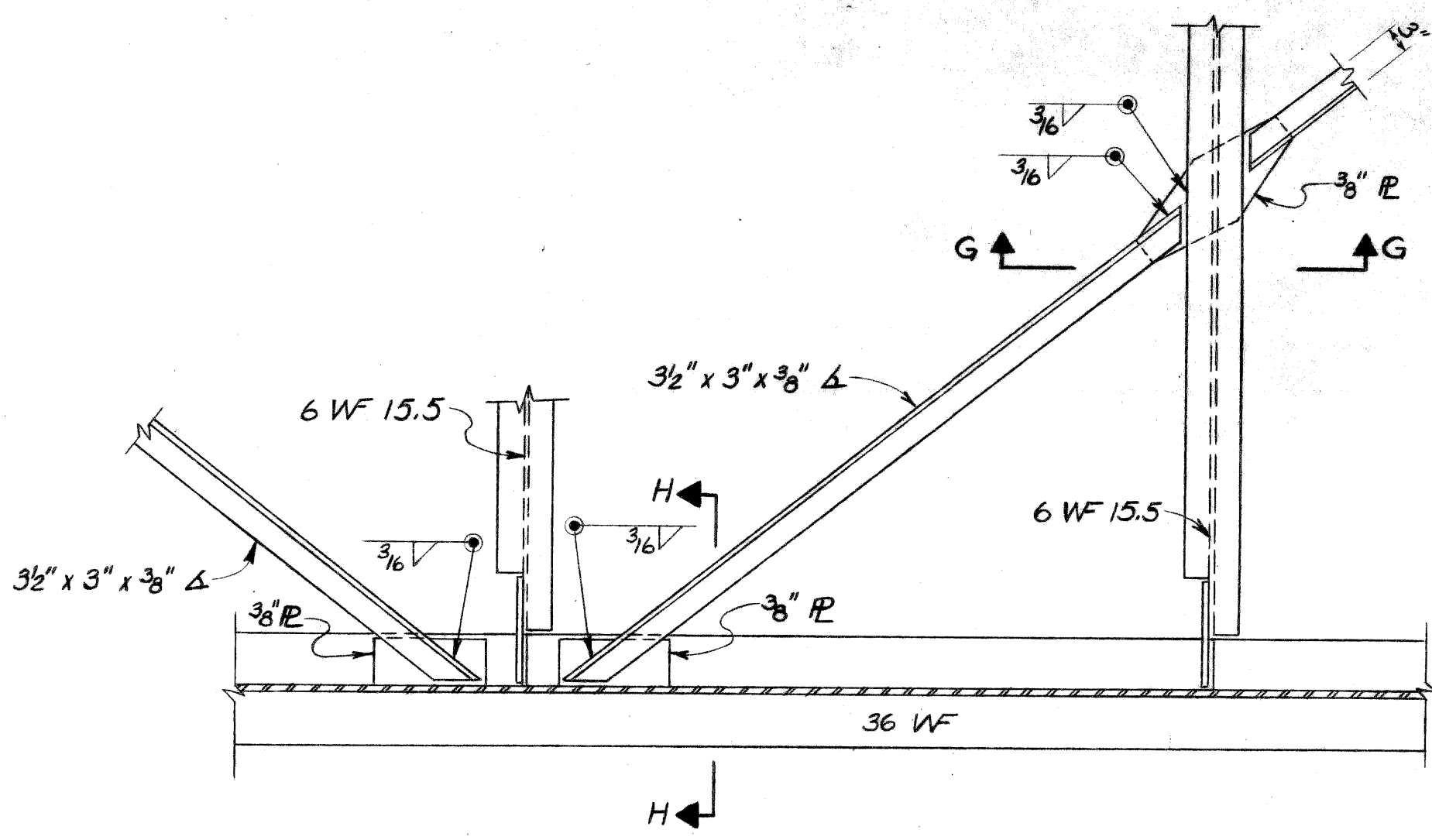


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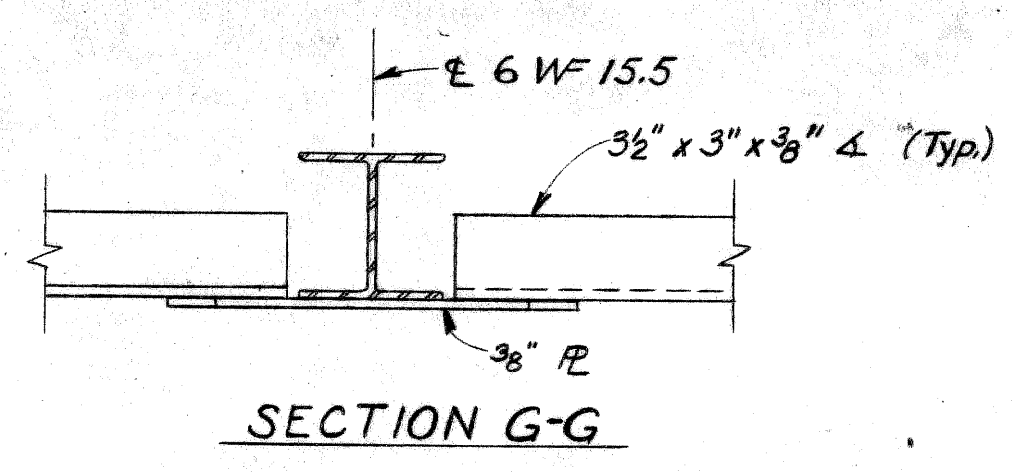
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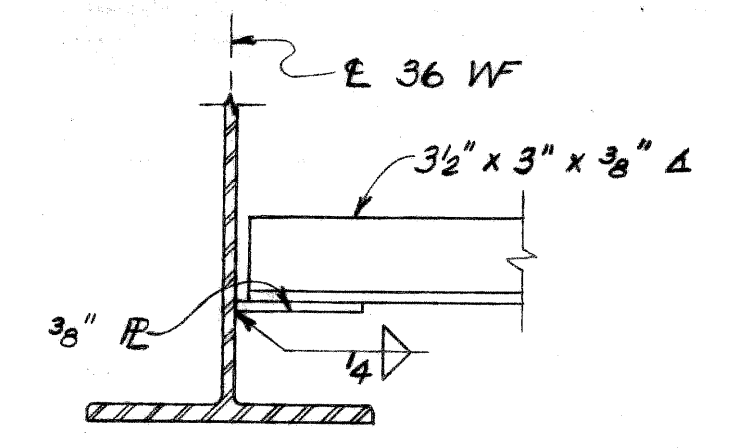
**SECTION K-K**



**DIAGONAL BRACING DETAILS**



**SECTION G-G**



**SECTION H-H**

Work this sheet with Sheet 10

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

IVANHOE AVE. PEDESTRIAN BRIDGE  
OVER JEFFRIES FREEWAY IN DETROIT

**STRUCTURAL STEEL DETAILS**

CITY OF DETROIT

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *H. Carst*  
STRUCTURAL ENGINEER

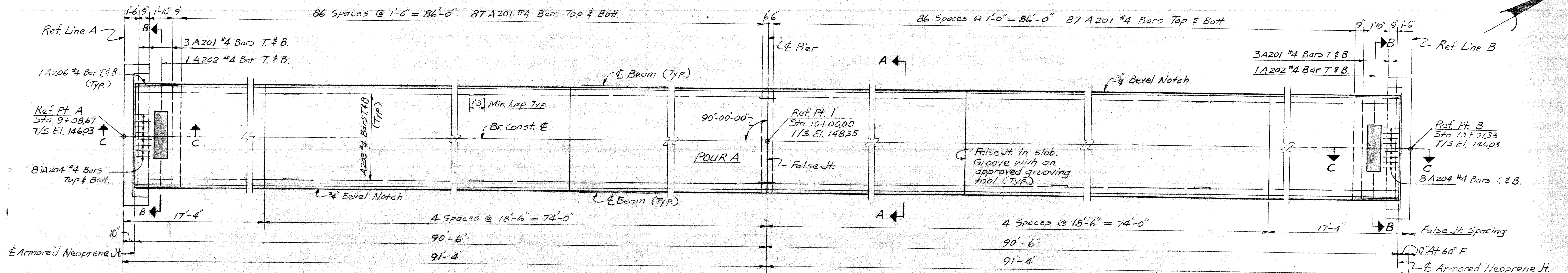
JOB No. PW 99

NO.	DESCRIPTION	DATE	BY

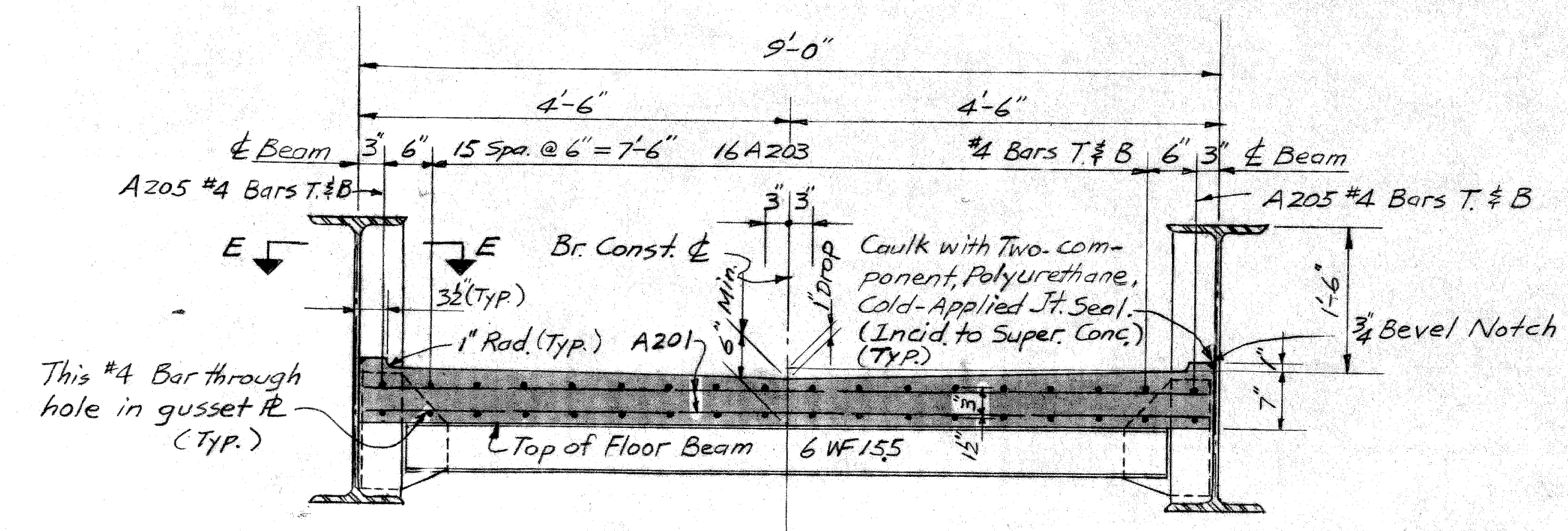
REVISIONS	DATE	BY

DRAWN BY: A. Martin 7-68  
 TRACED BY: G. Molnar 8-68  
 CHECKED BY: G. Molnar 8-68  
 SHEET 11 OF 15  
**PO5 of 821231**

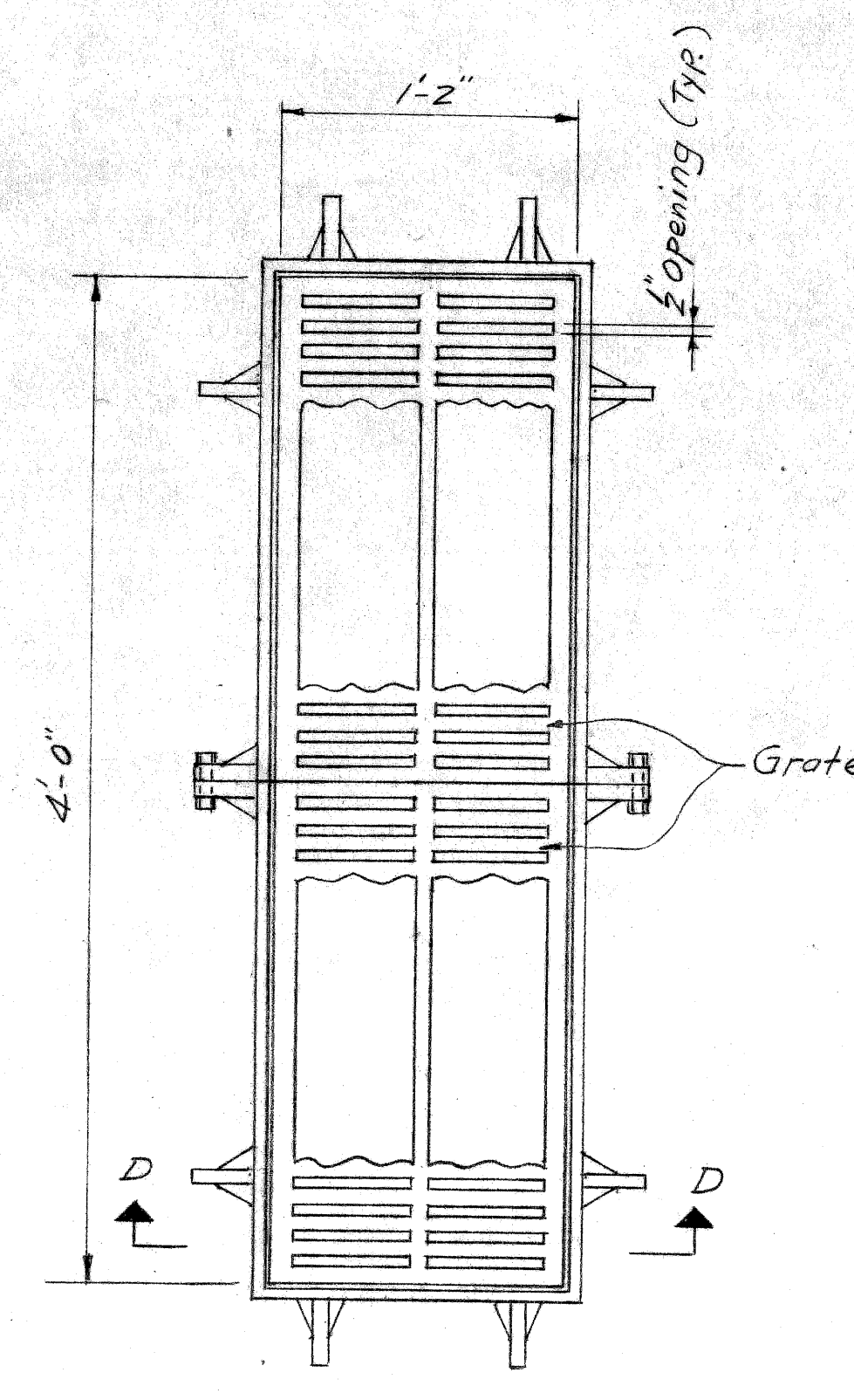




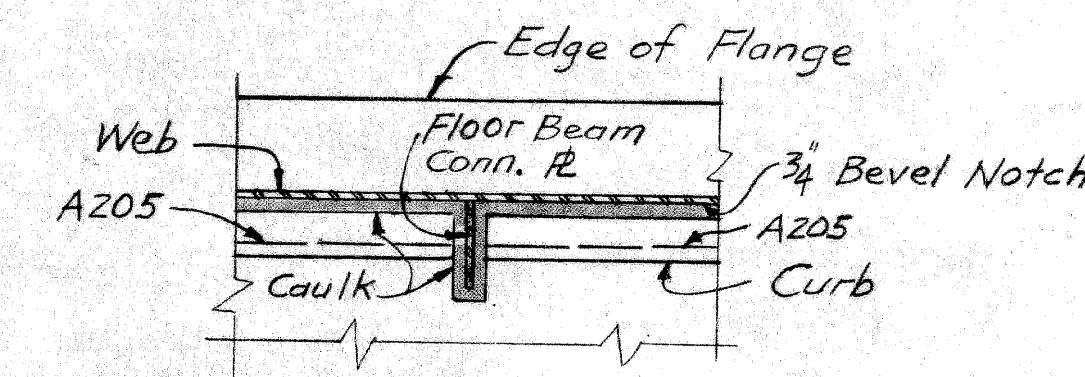
PLAN



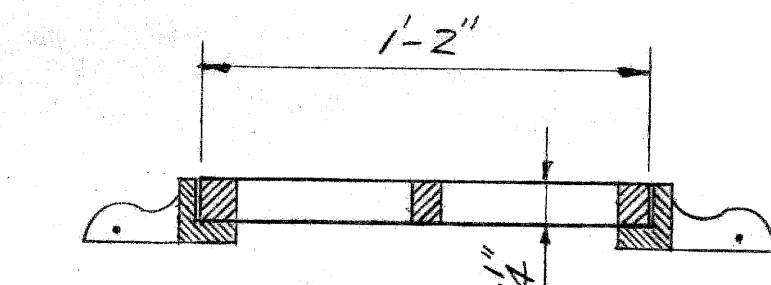
SECTION A-A



PLAN



SECTION E-E



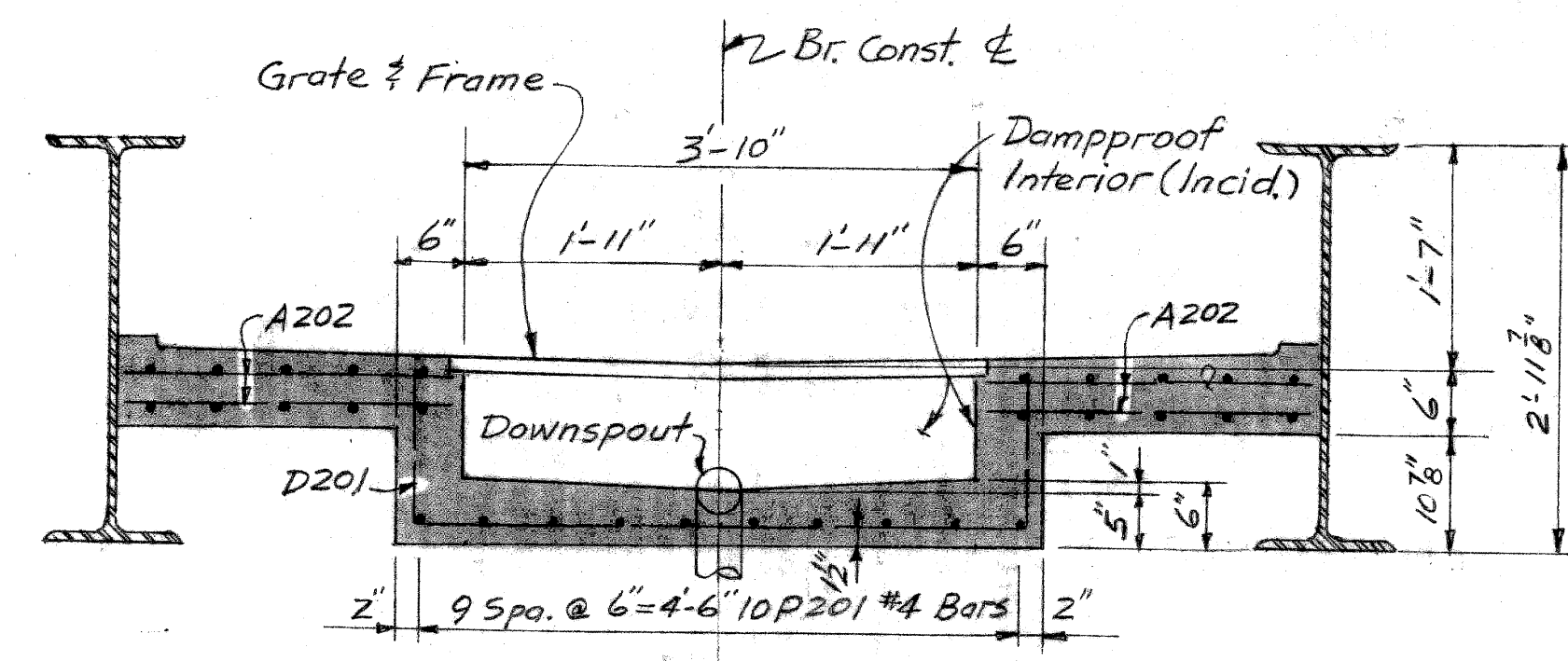
SECTION D-D

CONCRETE QUANTITIES GRADE A (6AA)	
POUR	CU. YDS.
A	33.3
TOTAL	33.3

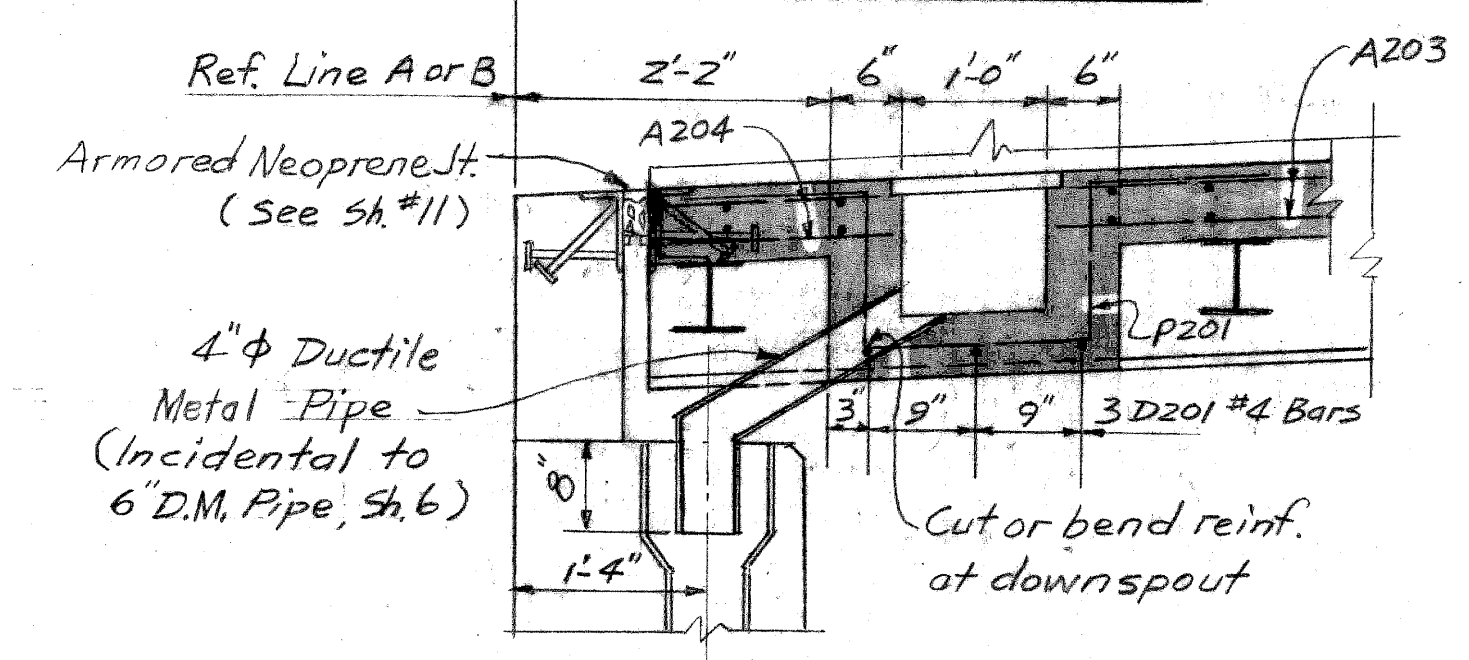
MISCELLANEOUS QUANTITIES		
Item	Unit	Amount
Water Reducing Retarding Admixture	Gals.	5
3" Preformed Neoprene Joint Sealer	Lin. Ft.	18

4 Frames with anchors and 4 Gratings are required. Material is to be Gray Iron conforming to A.S.T.M. Spec. A 48-56 or Ductile Iron conforming to A.S.T.M. Spec. A 339-55. Weight of Grates and Frames is included in Structural Steel Weight. Grates shall be bolted to Frames.

DRAIN FRAME & GRATING DETAILS



SECTION B-B



SECTION C-C

PLANS PREPARED BY  
 CITY OF DETROIT  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *H. Paul*  
 STRUCTURAL ENGINEER

JOB No. PWT 9904

MICHIGAN DEPARTMENT OF STATE HIGHWAYS  
 IVANHOE AVE. PEDESTRIAN BRIDGE  
 OVER JEFFRIES FREEWAY IN DETROIT

**SUPERSTRUCTURE DETAILS**

REVISIONS

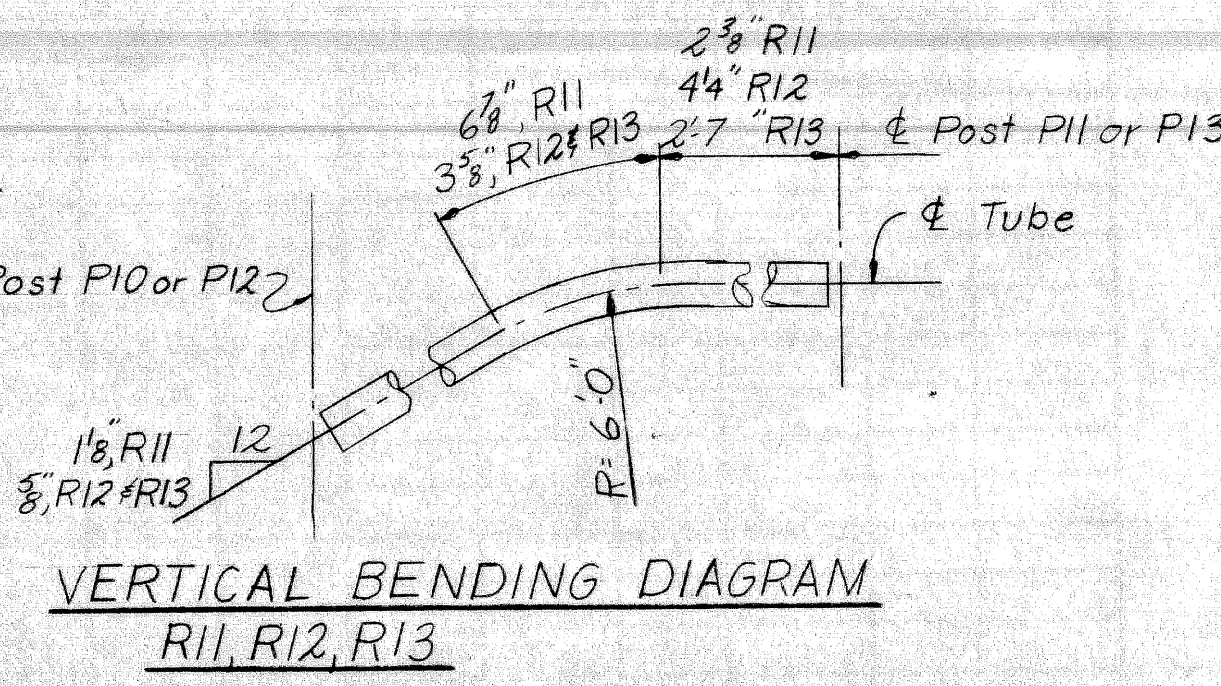
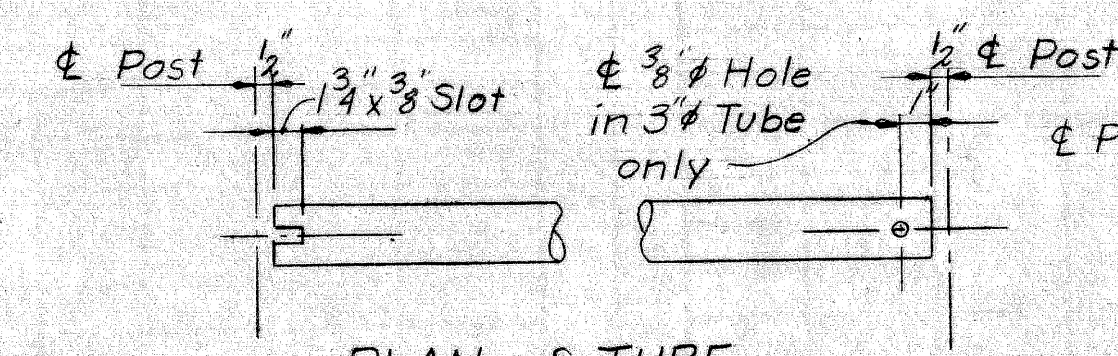
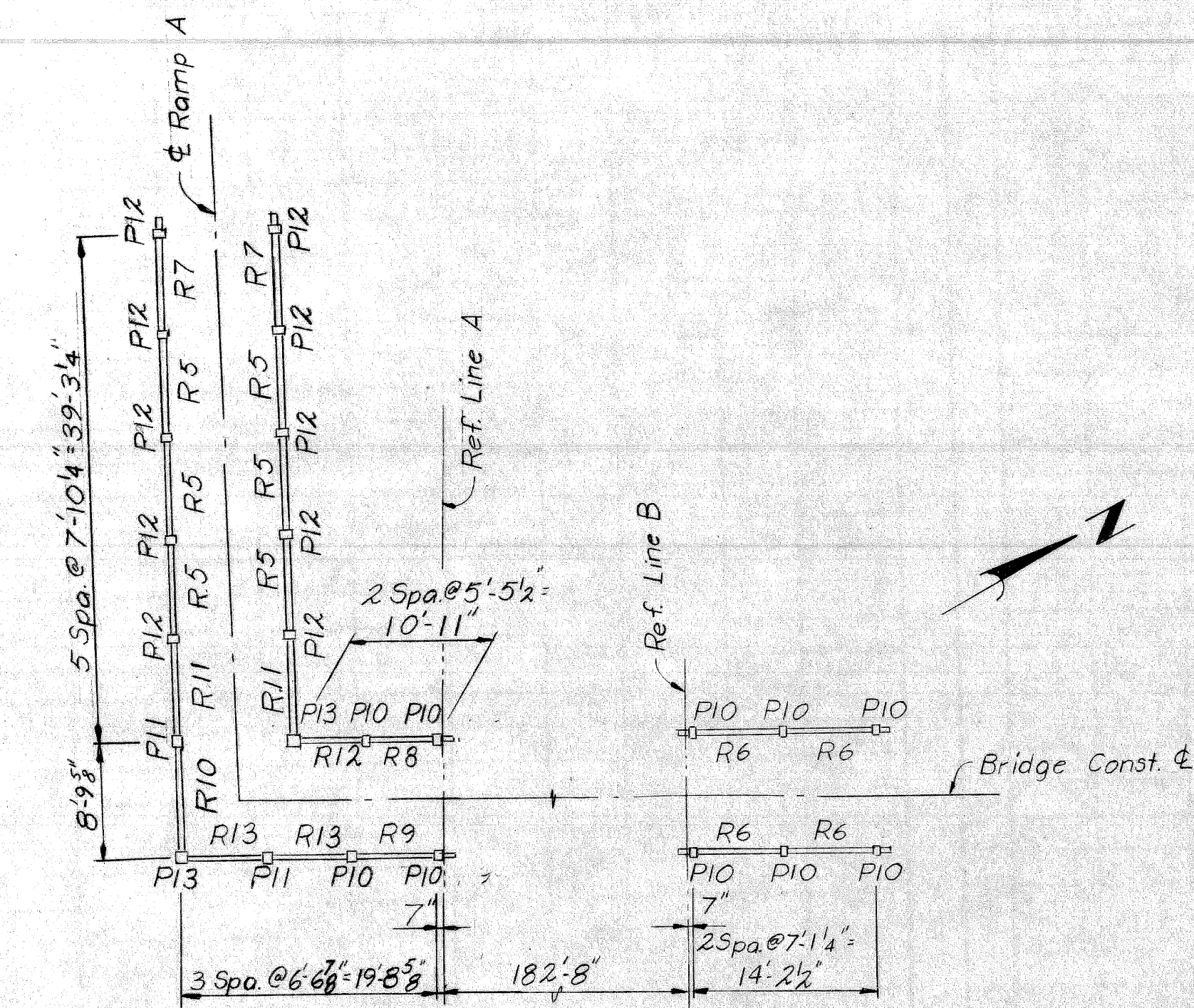
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS	DATE	NO.

SHEET 12 OF 15  
 P05 of 821231





**Notes:**  
 Railing may be either aluminum alloy 6061 T6 (ASTM B235) or steel galvanized in accordance with ASTM A123.  
 Bolts, Nuts and washers shall be steel galvanized in accordance with ASTM A153 and are incidental to the pay quantity.  
 Galvanizing shall be done after fabrication.  
 Dimensions are horizontal along  $\phi$  railing.  
 Pay length is measured out to out of metal with no deduction for expansion openings.  
 Tube diameters are O.D. and wall thickness shall be  $\frac{3}{16}$  for all tubes.

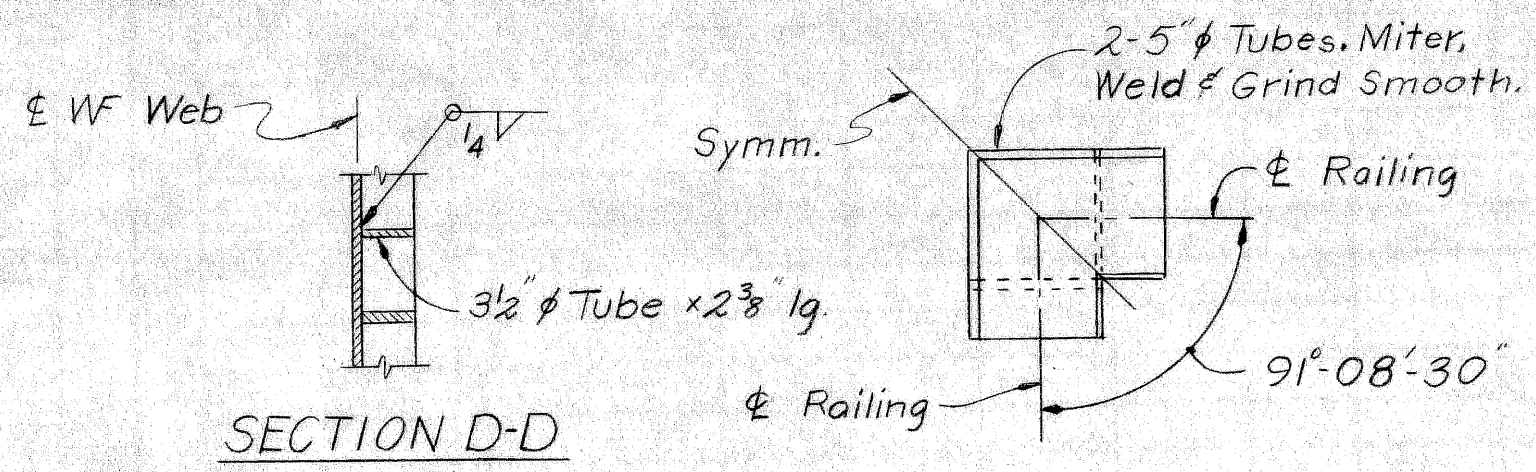
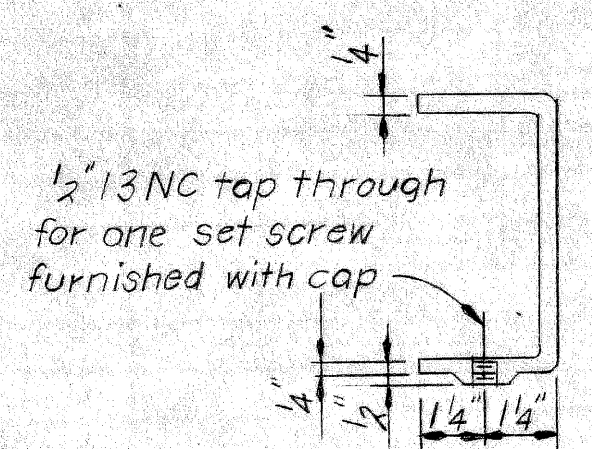
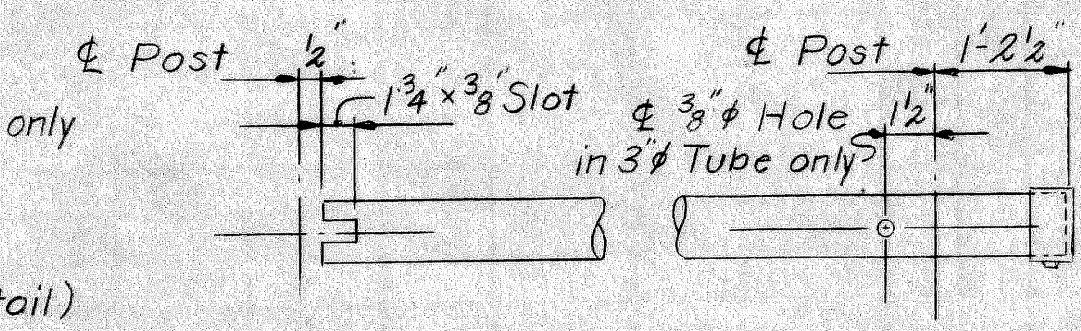
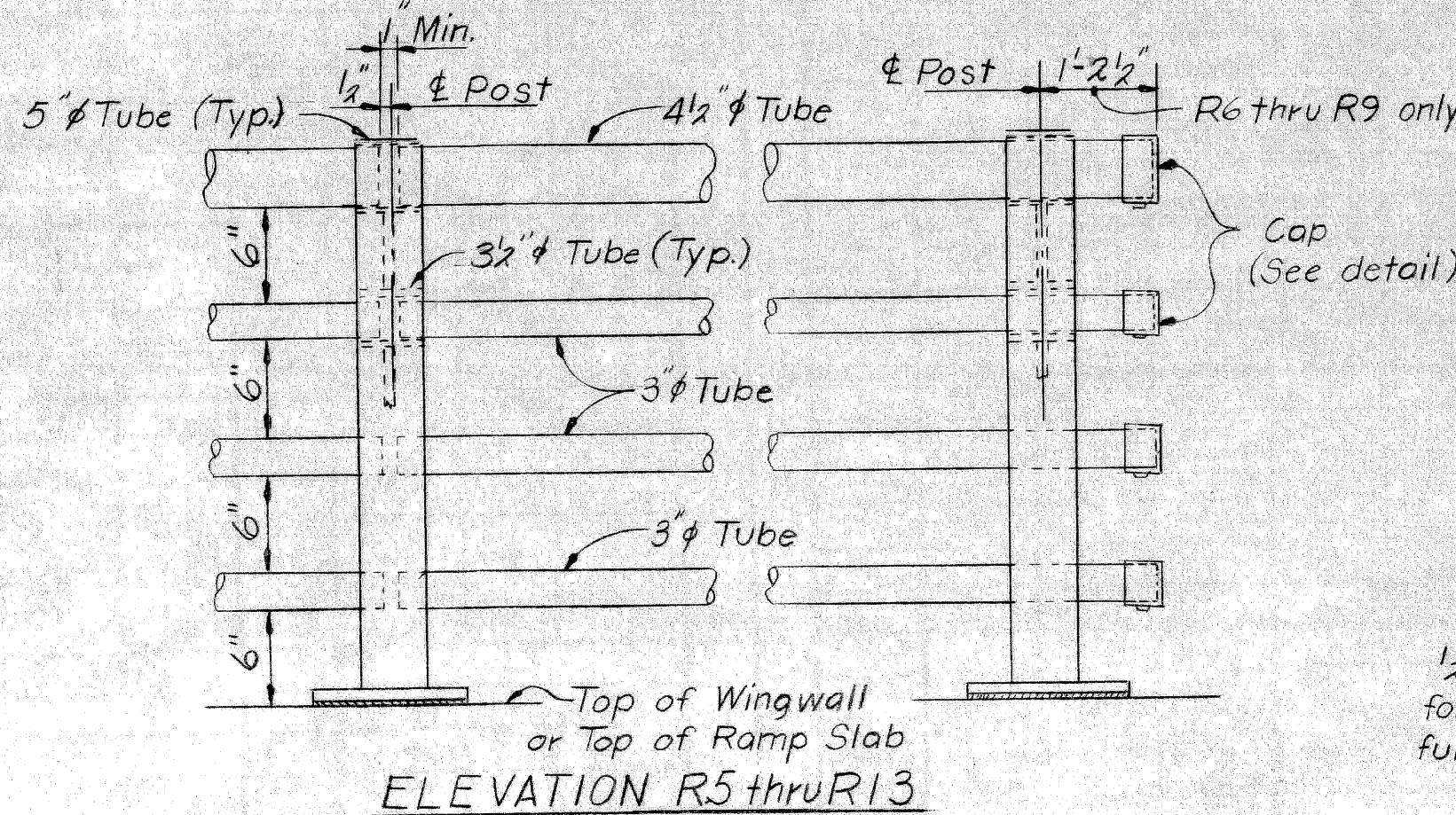
PLAN-RAMP A

PLAN ABUTMENT B

PLAN of TUBE  
 R5, R10 thru R13

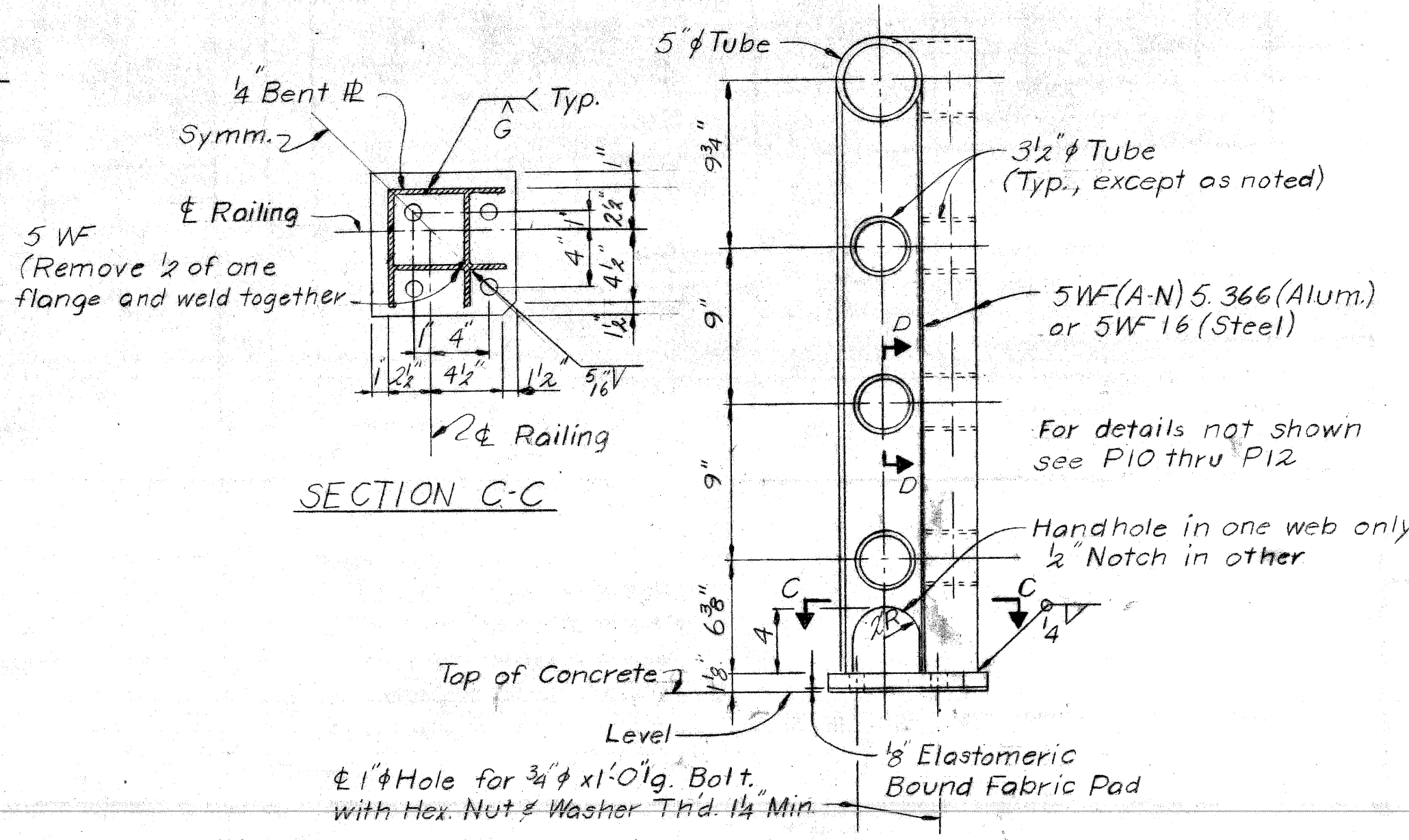
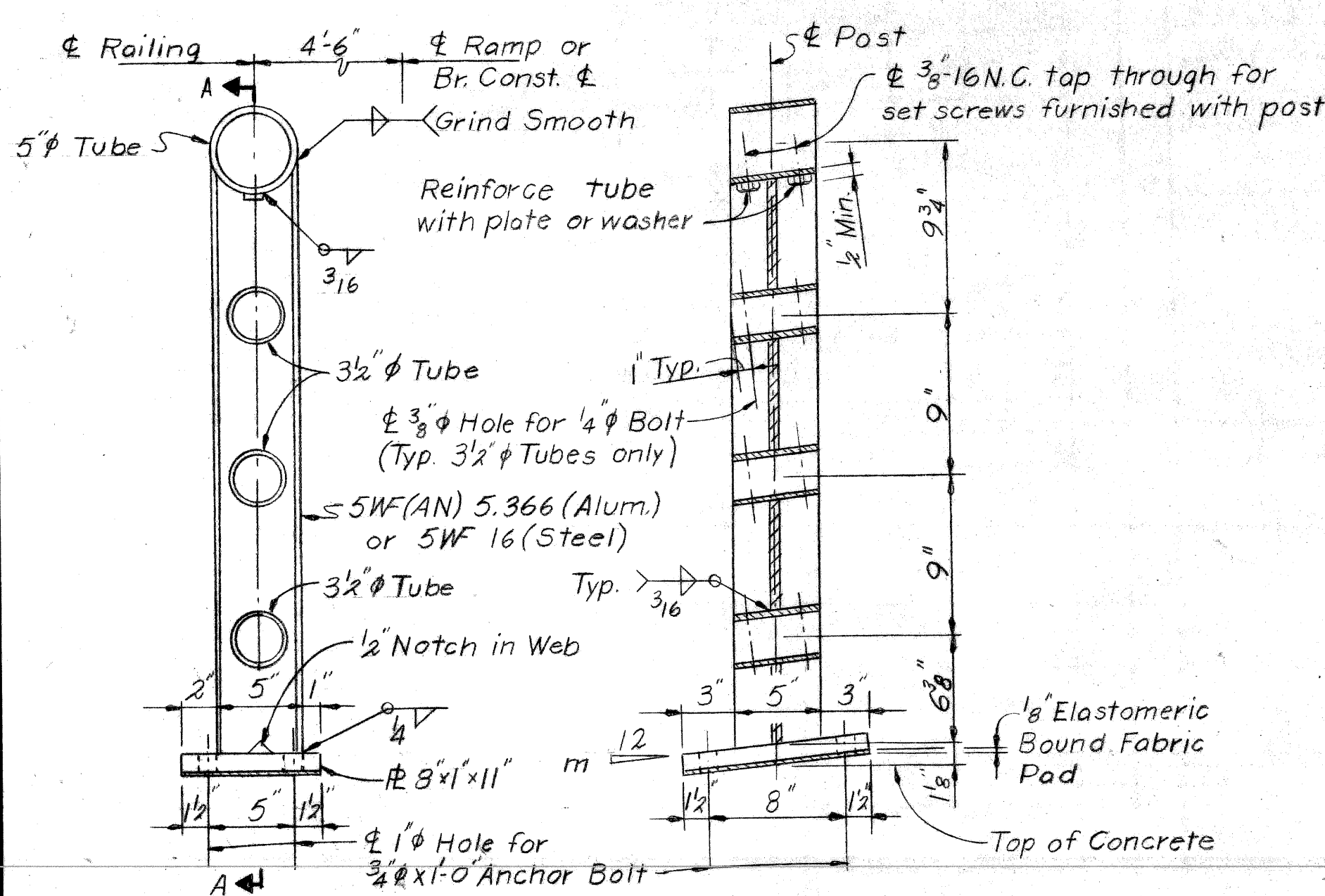
VERTICAL BENDING DIAGRAM  
 R11, R12, R13

POST BEVEL DIMENSIONS				
Post Mark P	10	11	12	13
m	$\frac{5}{8}$	0	$\frac{1}{8}$	0



**QUANTITIES**

Special Bridge Railing-Fabrication & Erection 4 Tube 156.1 Lin. Ft.



PLANS PREPARED BY  
**CITY OF DETROIT**  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS' OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *J. H. Conant*  
 STRUCTURAL ENGINEER

JOB No.  
 PW 99047

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

IVANHOE AVE. PEDESTRIAN BRIDGE  
 OVER JEFFRIES FREEWAY IN DETROIT

**RAILING DETAILS**

REVISIONS			
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT			
SQUAD BOSS	STVEN	10-68	
DRAWN BY	E.C.	6-68	
TRACED BY	E.C.	6-68	
CHECKED BY	J.W.K.	6-68	
SHEET 13 OF 15			

P05 of 821231



BAR	DIMENSIONS							SIZE	LENGTH	NO. REQ'D	TOTAL WT.
	a	b	c	d	e	f	g				
A1	14'-6"							#6	14'-6"	18	392
A2	12'-6"							#6	12'-6"	84	1577
A3	18'-0"							#6	18'-0"	18	487
A4	5'-6"							#6	5'-6"	16	132
A5	14'-0"							#6	14'-0"	82	1724
A6	7'-6"							#6	7'-6"	36	406
A7	5'-3"							#7	5'-3"	34	365
A8	11'-6"							#4	11'-6"	42	323
A9	4'-0"							#4	4'-0"	18	48
A10	10'-6"							#4	10'-6"	8	56
A11	15'-6"							#4	15'-6"	8	83
A12	12'-6"							#4	12'-6"	32	267
A13	17'-6"							#4	17'-6"	32	374
A14	7'-0"							#4	7'-0"	4	19
A15	1'-6"							#4	1'-6"	8	8
A16	4'-9"							#6	4'-9"	4	29
A17	9'-9"							#6	9'-9"	11	161
A18	11'-6"							#6	11'-6"	2	35
A19	21'-3"							#6	21'-3"	2	64
A20	19'-6"							#6	19'-6"	4	117
A21	22'-6"							#6	22'-6"	2	68
A22	1'-6"							#6	1'-6"	59	133
A23	1'-9"							#6	1'-9"	5	13
A24	10'-0"							#6	10'-0"	5	75
A25	10'-0"							#8	10'-0"	5	134
A26	9'-9"							#8	9'-9"	7	182
A27	9'-6"							#6	9'-6"	12	171
A28	9'-6"							#8	9'-6"	12	304
A29	8'-6"							#6	8'-6"	14	179
A30	8'-6"							#7	8'-6"	14	243
A31	7'-9"							#6	7'-9"	28	326
A32	6'-9"							#6	6'-9"	28	284
A33	9'-3"							#4	9'-3"	7	43
A34	10'-9"							#4	10'-9"	14	101
A35	21'-0"							#4	21'-0"	14	196
A36	19'-6"							#4	19'-6"	28	365
A37	22'-3"							#4	22'-3"	14	208
A38	14'-0"							#8	14'-0"	2	75
B1	9'-3 1/2"	1'-0"						#4	10'-3"	7	48
C1	7"	2'-10"	7"	7"	10"	7"	10"	#6	4'-6"	32	216
C2	8 1/2"	2'-3"	8 1/2"	8 1/2"	1'-0"	8 1/2"	1'-0"	#4	4'-3"	7	20
D1	1'-5"	1'-6"						#4	4'-3"	16	45
D2	2'-5 3/4"	4 1/2"						#4	5'-3"	18	63
D3	1'-9 1/2"	9"						#4	4'-3"	45	128
D4	2'-0 1/2"	6"						#4	4'-6"	63	189
D5	10 1/8"	9'-6 3/4"						#6	11'-3"	20	338
T1	7"	7"	10 1/2"	3 1/4"	5 1/2"	5 3/4"		#4	3'-3"	10	22

ABUTMENT TOTAL = 10,836 Lbs

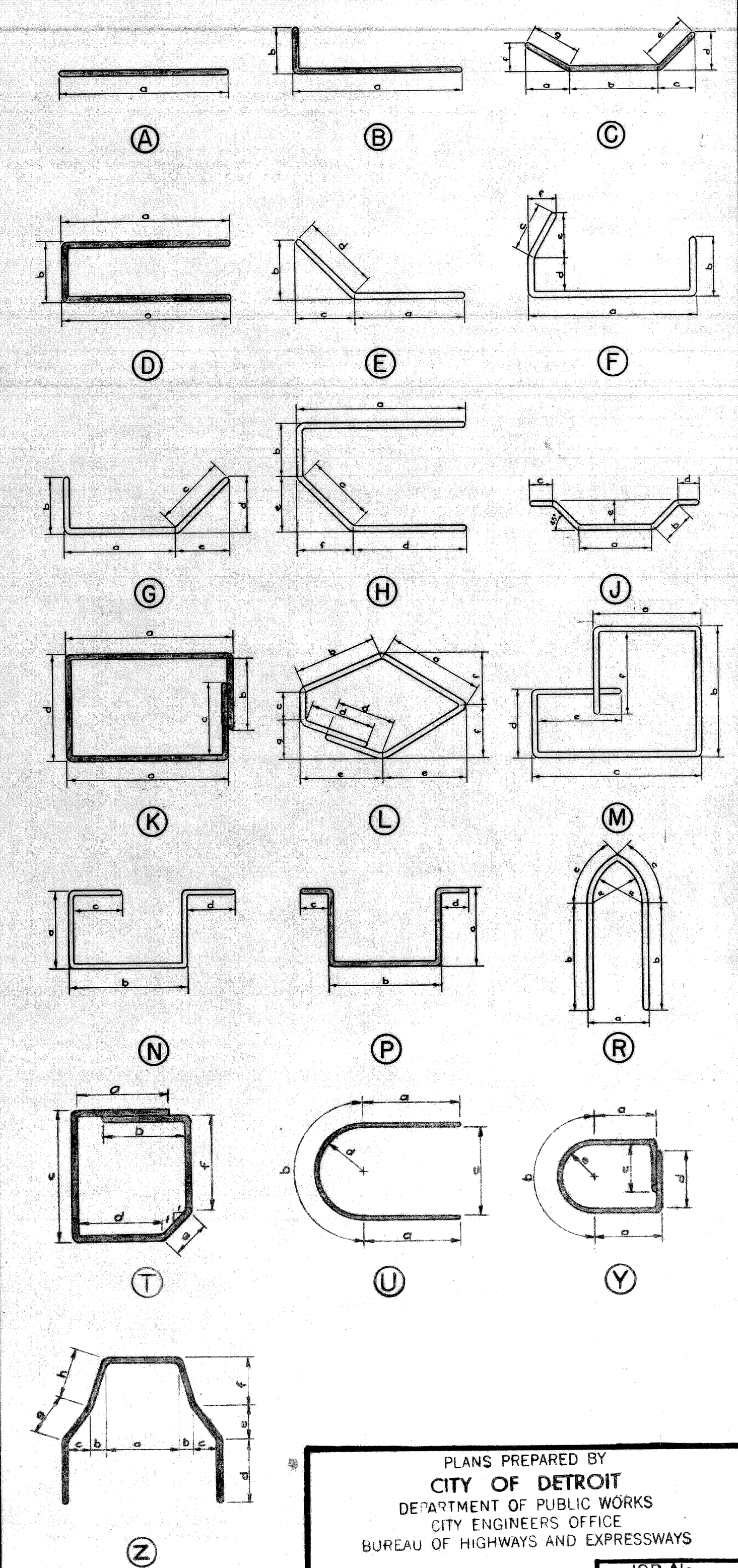
BAR	DIMENSIONS							SIZE	LENGTH	NO. REQ'D	TOTAL WT.
	a	b	c	d	e	f	g				
A100	16'-6"							#11	16'-6"	11	964
A101	16'-6"							#6	16'-6"	10	248
A102	7'-6"							#6	7'-6"	24	270
A103	14'-0"							#6	14'-0"	8	168
A104	18'-3"							#10	18'-3"	16	1256
A105	8'-9"							#11	8'-9"	5	232
A106	8'-9"							#5	8'-9"	2	18
A107	4'-6"							#4	4'-6"	24	72
B100	2'-6"	9 3/4"						#6	3'-3"	4	20
C100	3'-7 1/2"	3'-6"	3'-7 1/2"	5 3/8"	3'-7 1/2"	5 3/8"	3'-7 1/2"	#7	10'-9"	3	66
C101	2'-7 1/4"	3'-6"	2'-7 1/4"	4"	2'-7 1/2"	4"	2'-7 1/2"	#7	8'-9"	2	36
D100	3'-0 3/4"	2'-0"						#6	8'-0"	10	120
K100	2'-8 1/2"	1'-1 3/4"	1'-1 5/8"	1'-5 3/8"				#4	9'-0"	4	24
K101	2'-6 3/8"	1'-1 3/4"	1'-1 3/8"	1'-5 3/8"				#4	8'-9"	4	23
K102	2'-5 1/2"	1'-1 3/4"	1'-1 5/8"	1'-5 3/8"				#4	8'-6"	4	23
K103	2'-3 5/8"	1'-1 3/4"	1'-1 5/8"	1'-5 3/8"				#4	8'-3"	4	22
U100	1'-7"	3'-5"	2'-1 1/2"	1'-0 3/4"				#5	6'-7"	6	41
Y100	1'-1 1/2"	3'-4 3/8"	1'-5 3/8"	1'-5 3/8"	1'-0 3/8"			#4	8'-6"	20	114
Z100	2'-4 3/4"	3"	9"	2'-8 1/4"	1'-1"	1'-7 1/8"	1'-3 1/2"	#4	12'-9"	10	85

PIER TOTAL = 3,802 Lbs

BAR	DIMENSIONS							SIZE	LENGTH	NO. REQ'D	TOTAL WT.
	a	b	c	d	e	f	g				
A201	8'-6"							#4	8'-6"	360	2044
A202	2'-3"							#4	2'-3"	8	12
A203	31'-3"							#4	31'-3"	192	4008
A204	1'-3"							#4	1'-3"	32	27
A205	6'-0"							#4	6'-0"	112	449
A206	3'-3"							#4	3'-3"	8	17
D201	1'-14"	4'-7 1/2"						#4	6'-9"	6	27
P201	1'-0 1/4"	1'-7 1/2"	1'-4"	1'-4"				#4	6'-3"	20	84

SUPERSTRUCTURE TOTAL = 6,668 Lbs

BAR BENDING DIAGRAM



PLANS PREPARED BY  
**CITY OF DETROIT**  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *H. Carout*  
 STRUCTURAL ENGINEER

JOB No.  
 PW 9904

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

IVANHOE AVE. PEDESTIAN BRIDGE  
 OVER JEFFRIES FREEWAY IN DETROIT

**STEEL REINFORCEMENT DETAILS**

CITY OF DETROIT

SQUAD BOSS: *S. L. M.* 10-68  
 DRAWN BY: *A. M. M.* 8-68  
 TRACED BY: *A. M. M.* 8-68  
 CHECKED BY: *S. L. M.* 8-68

NO. DESCRIPTION DATE BY

SHEET 15 OF 15

P05 of 821231

Note:—

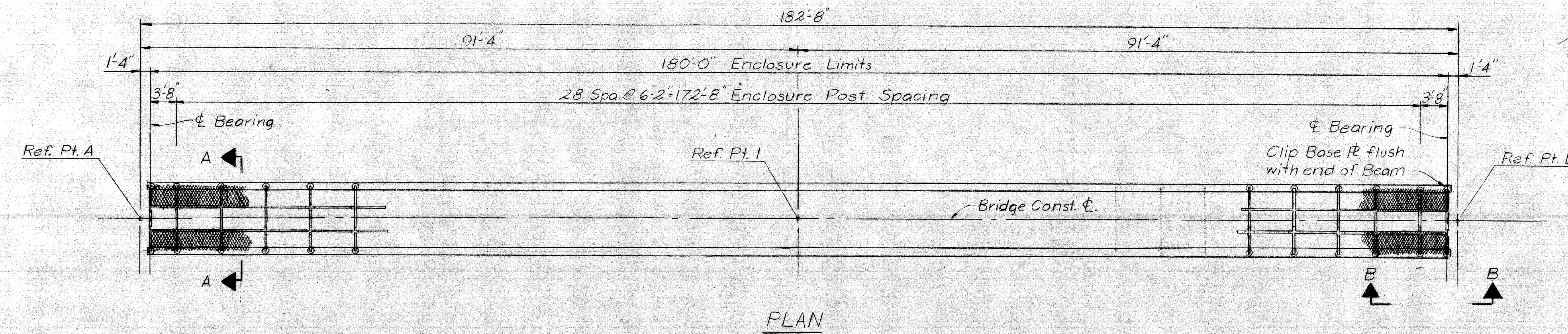
All right angle bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.

Tolerances in cutting and bending bars are as established in Manual of Standard practice of the Concrete Reinforcing Steel Institute and Detailing Manual of the American Concrete Institute.

Grand Total Steel Reinforcement 21,306 Lbs.

All bar numbers shown on this Sheet shall be prefixed P05. Steel for reinforcement shall be intermediate or hard grade only.



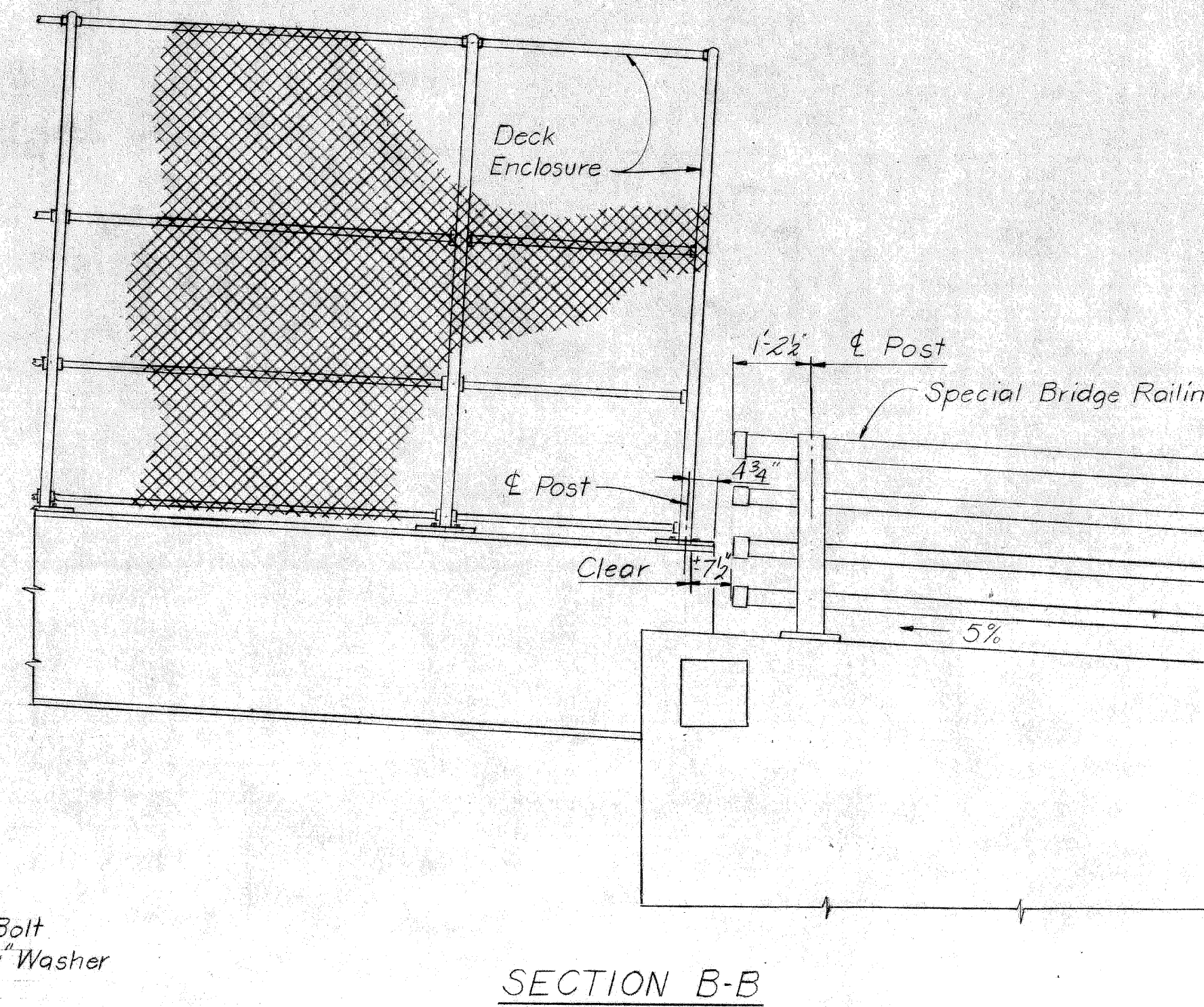
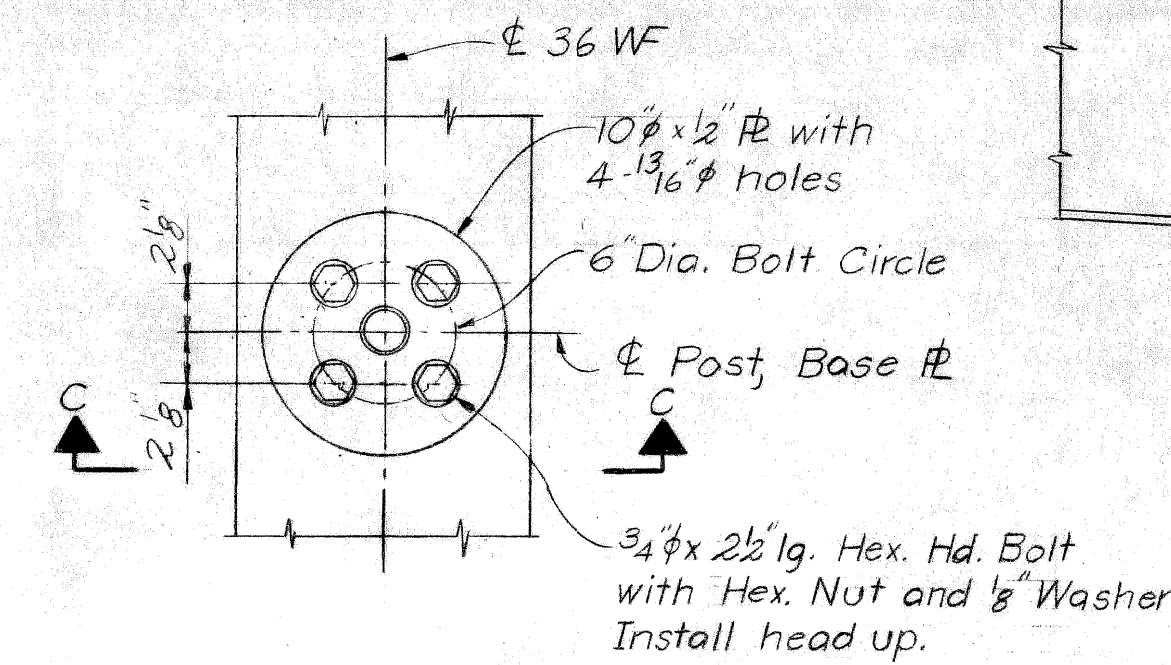
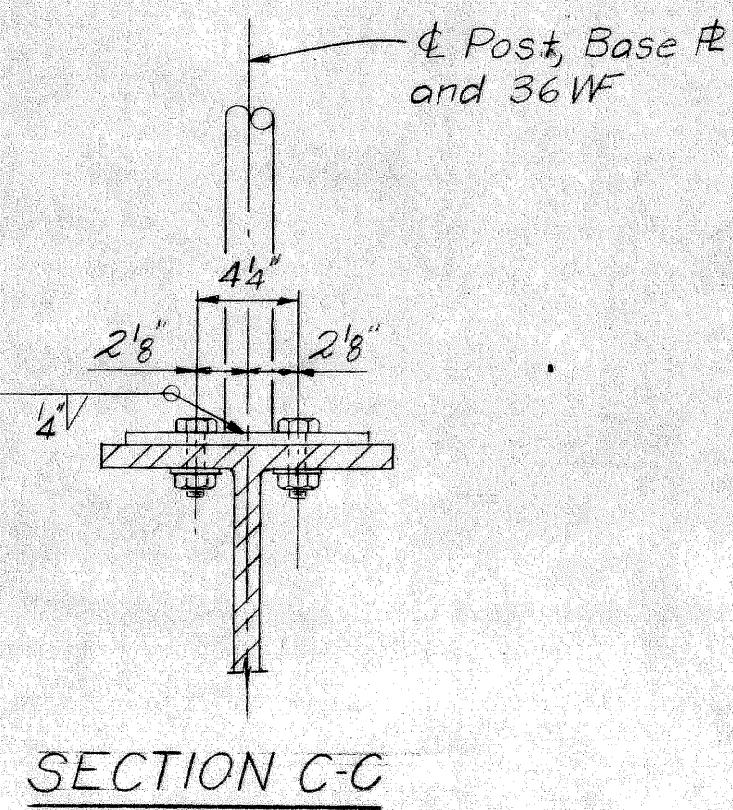
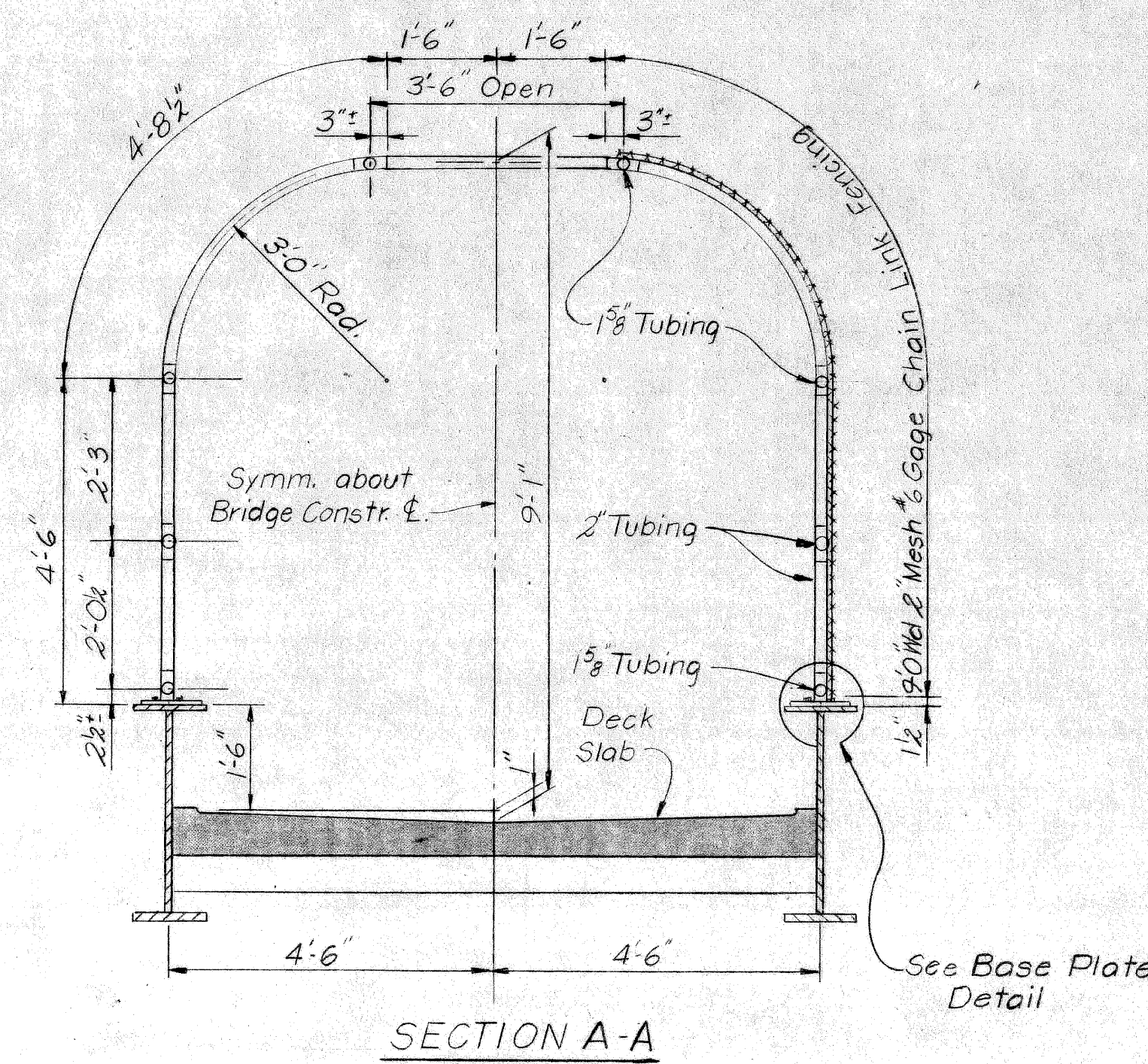


**Notes:**

- Enclosure Posts shall be normal to the top flange.
- Chain Link Fence shall be No. 6 gage, 2" Mesh, and shall conform to the M.D.S.H. Standard Specifications, Sect. 7.22.04. The Fence material shall be adequately fastened to all tubing in the frame.
- Nominal 2" Tubing shall be 2" outside diam. steel pipe or tubing weighing 2.72 lbs. per ft., galvanized.
- Nominal 1 1/2" Tubing shall be 1 1/2" outside diam. steel pipe or tubing weighing 2.27 lbs. per ft., galvanized.
- All Tubing shall be furnished with suitable connections and its min. weight shall be within 5% of the weight specified.
- All Components shall be galvanized. Bolts, Nuts and Washers shall be galvanized in accordance with A.S.T.M. designation A153 and are incidental to the Chain Link Fence
- Bolts, Nuts and Washers for base plate shall be A.S.T.M. A307 steel.
- All distances shown on Plan are horizontal distances.

**QUANTITIES**

Chain Link Fence and Framing 180 Lin. Ft.



**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**  
 IVANHOE AVE. PEDESTRIAN BRIDGE  
 OVER JEFFRIES FREEWAY IN DETROIT  
**BRIDGE ENCLOSURE DETAILS**

PLANS PREPARED BY  
 CITY OF DETROIT  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: [Signature] STRUCTURAL ENGINEER  
 JOB No. PW 990(4)

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DRAWN BY	
TRACED BY	L.G. 3-69
CHECKED BY	
SHEET	14 OF 15

POS of 82123I