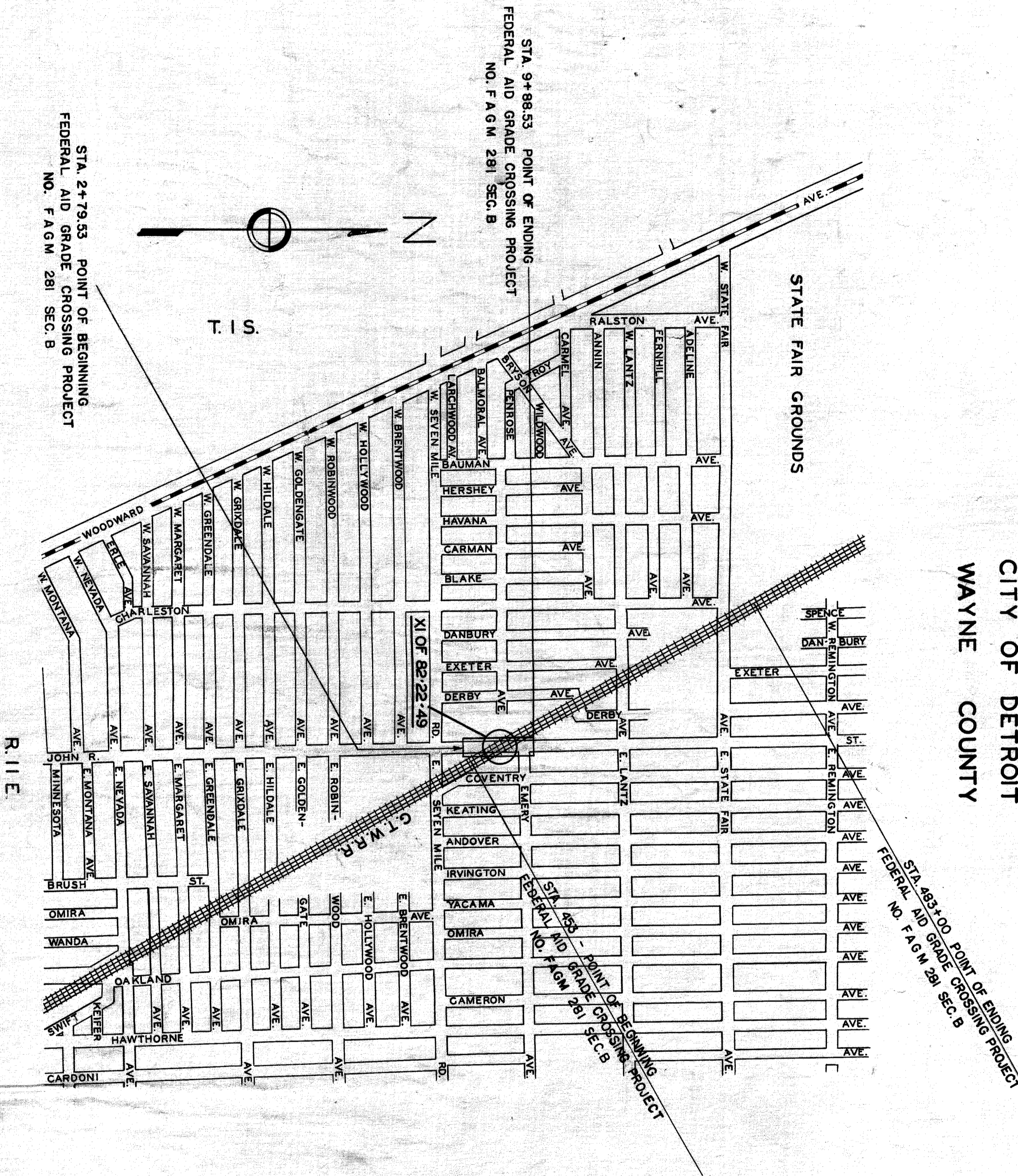


MICHIGAN
STATE HIGHWAY DEPARTMENT
MURRAY D. VAN WAGONER
COMMISSIONER

PLAN AND PROFILE OF PROPOSED

FEDERAL AID GRADE CROSSING PROJECT
NO. FAGM 281 SEC. B
DETROIT - ROCHESTER ROAD
CITY OF DETROIT
WAYNE COUNTY

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STREET PLAN & PROFILE
3	BILL OF MATERIAL
4	RAILWAY TRACK PLAN & PROFILE - STA. 440 TO 455
5	" " " " STA. 455 TO 470
6	" " " " STA. 470 TO 485
7	TYPICAL CROSS SECTIONS OF RIGHT OF WAY
8	SCHEDULE OF OPERATION DIAGRAM
9	CONCRETE CRIB WALLS
10	GENERAL STRUCTURE PLANS
11	TEMPORARY OPERATING TRESTLE
12	" " " " DETAILS
13	ABUTMENT DETAILS
14	" " " " "
15	" " " " "
16	" " " " "
17	WING WALL DETAILS
18	" " " " "
19	STRUCTURAL STEEL - ERECTION DIAGRAM
20	PL. GIRDER, FLOOR BEAMS & DETAILS
21	SIDEWALK & HANDRAIL DETAILS
22	END FLOOR BEAM, BEARINGS & MISC. DETAILS
23	DECK DETAILS
24	SCHEDULE OF REINFORCING STEEL
A.S-39	STANDARD LIGHTING UNIT H.M.36



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 Standard Specifications for Road and Bridge Construction, 1934 Edition as amended by Errata and Changes of October 10, 1935.

The Contractor shall assume complete responsibility for all scaled dimensions. Dimensions which are omitted or needed to complete the work will, when available, be furnished by the Engineer.

The character of all materials and extent thereof as shown by barings has been obtained by methods and means believed to be reliable. The exactness of this information is, however, in no case guaranteed.

The design of this structure is based on the American Railway Engineering Association Specifications for Steel Railway Bridges 1935 Edition (E72 Loading).

All concrete except cribs shall be Grade "A" and Coarse Aggregate shall be Class "G", except that for superstructure, which shall be Class "F".

All joint filler shall be cork.

All sheet copper shall be 16 ounce and all joints or laps in copper waterstops are to be soldered and left water tight.

All exposed concrete corners shown square on the plans shall be chamfered with a 1/2" triangular molding.

The stationing as shown for the intersection of the centerline of highway and centerline of track is believed to be correct. It shall, however, be checked at the time of starting construction and the structure shall be staked out using the actual centerline of highway and track if the plan stationing is found to be incorrect.

CHECKED
W. X. Swine
CHIEF DRAFTSMAN
DATE 8-27-35

CONTRACT
RECOMMENDED FOR APPROVAL
APPROVED
MURRAY D. VAN WAGONER
STATE HIGHWAY COMMISSIONER

BRIDGE ENGINEER
APPROVED
DATE 8-3-35

M X10F 82-22-49

X10F 82-22-49

ITEM	UNIT	QUANTITY	ESTIMATE	FINAL
1 Earth Excavation	Cu. Yds.	11,190	+ 405	
2 Porous Filling Material	Cu. Yds.	391,500	- 4378	
3 TEMPORARY TREESTE				
a Timber Piles-Furnished	Lin. Ft.	9,790	- 1903	
b Timber Piles-Driven	Lin. Ft.	8,779	- 1089	
c Structural Timber-Furnished	M.B.M.	146.8	+ 222	
d Structural Timber-Erected	M.B.M.	107.970	- 63,900	
e Scaffolding-Fabrication	Lbs.	651,900	+ 6,100	
f Structural Steel-Erection	"	13,900	- 6,100	
g Miscellaneous Hardware	"			
4 Cofferdams	Lump Sum			
5 Timber Sheet Piling Left in Place	Sq. Ft.	396		
6 Foundation Excav -Unclassified	Cu. Yds.	1710		
West Abutment	"	102		
Northwest Wingwall	"	102		
Southwest Wingwall	"	20		
East Abutment	"	550		
West Abutment	"	42		
Southwest Wingwall	"	337		
East Abutment	"	45		
Williams Coal Co.	"	41		
Standard Oil Co.	"			
7 Concrete-Grade A-Substructure	Cu. Yds.	2349.0		
West Abutment	"	1011.0		
Northwest Wingwall	"	131.0		
Southwest Wingwall	"	40.0		
Northwest Wingwall	"	925.0		
Southwest Wingwall	"	160.0		
8 Concrete-Grade A-Substructure	Cu. Yds.	226.0		
Williams Coal Co.	"	54.0		
Haugert Manufacturing Co.	"	40.0		
Williams Coal Co.	"	8.5		
Standard Oil Company	"	5.5		
9 Concrete-Grade A-Substructure	Cu. Yds.	54.0		
Haugert Manufacturing Co.	"	40.0		
Williams Coal Co.	"	8.5		
Standard Oil Company	"	5.5		
10 Cement	Bbls.	3,943.0		
West Abutment	"	1,512.5		
Northwest Wingwall	"	196.5		
Southwest Wingwall	"	69.0		
East Abutment	"	1,402.0		
Southwest Wingwall	"	242.0		
Superstructure	"	339.0		
Cribwall Footing-Haugert Mfg. Co.	"	192.5		
Williams Coal Co.	"	8.0		
Standard Oil Co.	"	1.5		
11 Steel Reinforcement	Pounds	336,263		
West Abutment	"	159,677		
Northwest Wingwall	"	7,750		
East Abutment	"	148,733		
Northwest Wingwall	"	2,652		
Superstructure	"	8,140		
Cribwall Footing-Haugert Mfg. Co.	"	1,353		
Williams Coal Co.	"	1,907		
Standard Oil Co.	"	1,907		
12 Structural Steel-Fabrication	Pounds	932,277		
and Erection	"	170,446		
13 Railing	Lin. Ft.			
14 Field Painting-Structural Steel	Lump Sum			
15 Rubbed Surface Finish	Sq. Ft.	12,865		
West Abutment	"	5,775		
Northwest Wingwall	"	745		
Southwest Wingwall	"	5,380		
Northwest Wingwall	"	5,280		
Superstructure	"	860		
16 Sheet Copper	Lbs.	1,030		
17 1/2" Joint Filler-Cork	Sq. Ft.	140		
18 Waterproofing Backs of Walls	Sq. Ft.	5,860		
and Abutments	"	2,817		
West Abutment & Wingwalls	"	2,817		
East Abutment & Wingwalls	"			
19 Membrane Waterproofing	Sq. Ft.	10,660		
West Abutment and Wingwalls	"	4,389		
East Abutment and Wingwalls	"	4,262		
Superstructure	"	2,009		
20 60# Felt Cap Sheet Protection	Sq. Ft.	4,798		
West Abutment	"	2,399		
East Abutment	"	2,399		
21 Asphalt Mastic Protection Course	Sq. Ft.	3,332		
22 Bituminous Coating along	Lump Sum			
Grider Ranges	"			
23 Concrete Cribwalls	Sq. Ft.	3248		
Haugert Mfg. Company	"	2,779		
Williams Coal Company	"	460		
Standard Oil Company	"	279		
24 8" Corr. Metal Pipe Parapeted	Lin. Ft.	1432		
25 8" Corr. Metal Pipe	Lin. Ft.	128		
26 10" Corr. Metal Pipe	Lin. Ft.	196		
27 Grade Separation Lighting	Lump Sum			
28 Hoisting & Housing Concrete	Cu. Yds.	1195.0		
West Abutment	"	373.2		
East Abutment	"	457.2		
Southwest Wingwall	"	166.0		
Northwest Wingwall	"	190.0		
Cribwall Footings	"	208.6		
29 Fencing	Lump Sum			
30 Sodding	Sq. Yds.	6920		

DATE

PLAN EXTRAS.

NO.	DESCRIPTION	UNIT	ESTIMATE	FINAL
1/592				
35702	Additional Structural Steel required for redesigned Temporary Trestle. Which eliminated the use of the Seven Mile Road Steel in the Trestle.	Lbs.		223,933
2441				
226				
40				
4108				
339963				
934856				
17046				
10046				
14757				
1030				
140				
5860				
10060				
4798				
3332				
10046				
277				
1432				
128				
123				
10046				
1202				
10046				
3757				

APPROVED: *W. N. S. Swinney* 6-27-37

PREPARED BY: *W. N. S. Swinney* 6-27-37

CHIEF ENGINEER: *W. N. S. Swinney* 6-27-37

DESIGNED BY: *W. N. S. Swinney* 6-27-37

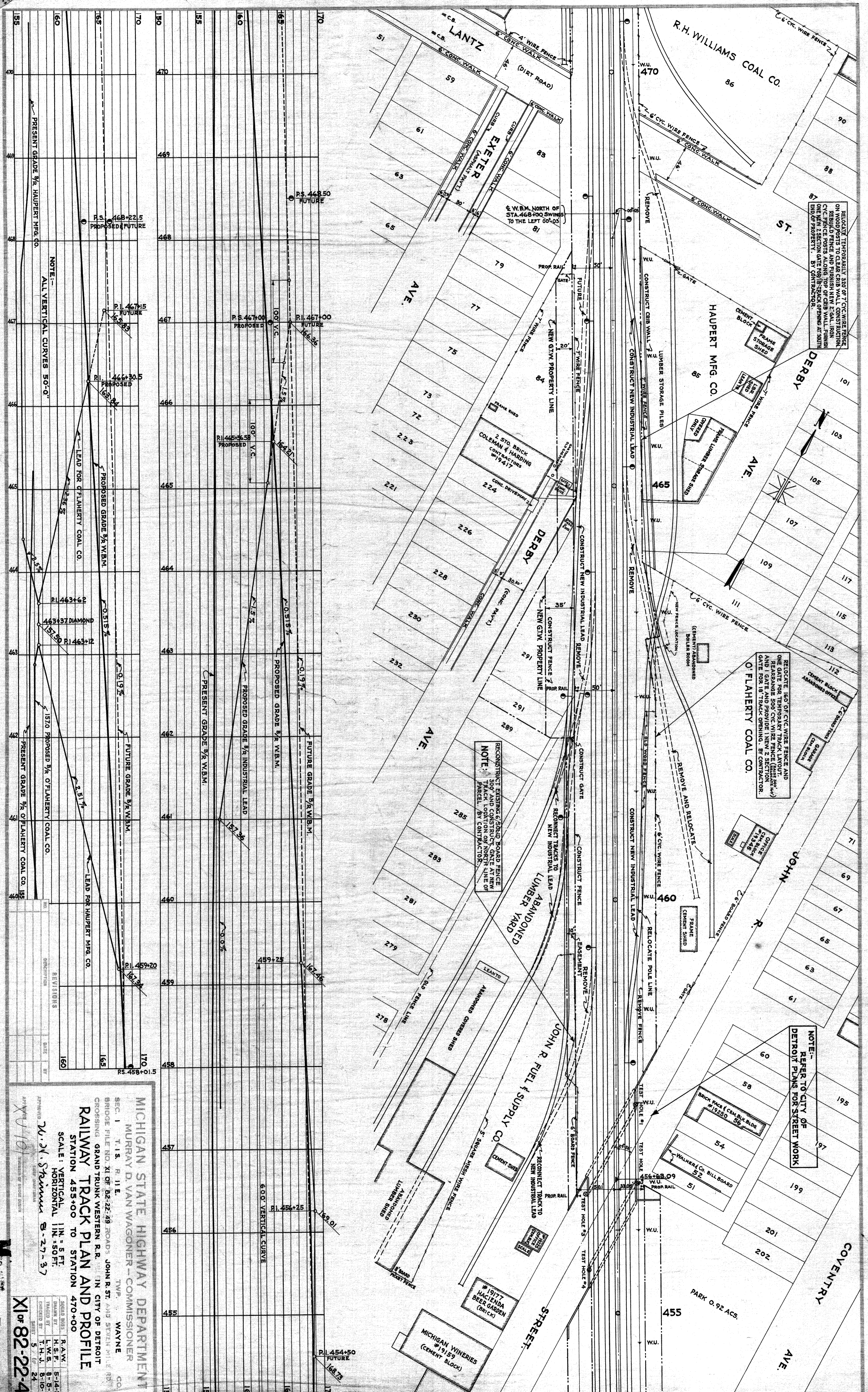
DATE: 6-27-37

FILED

NO. 82-22-49

MICHIGAN STATE HIGHWAY DEPARTMENT
MURRAY D. VAN WAGONER - COMMISSIONER
TWP. WAYNE CO.
SEC. 1 T. 15 S. R. 11 E.
BRIDGE FILE NO. XI OF 82-22-49 ROAD JOHN R. STEELE
CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT

BILL OF MATERIAL



RELOCATE TEMPORARILY 320' OF 7' CYC WIRE FENCE ON WOOD PILES TO CLEAR CIB WALL CONSTRUCTION. CIB FENCE POSTS ALONG TOP OF CIB WALL. FURNISH ONE NEW 2 SECTION GATE FOR 18' TRACK OPENING AT SOUTH END OF PROPERTY. BY CONTRACTOR.

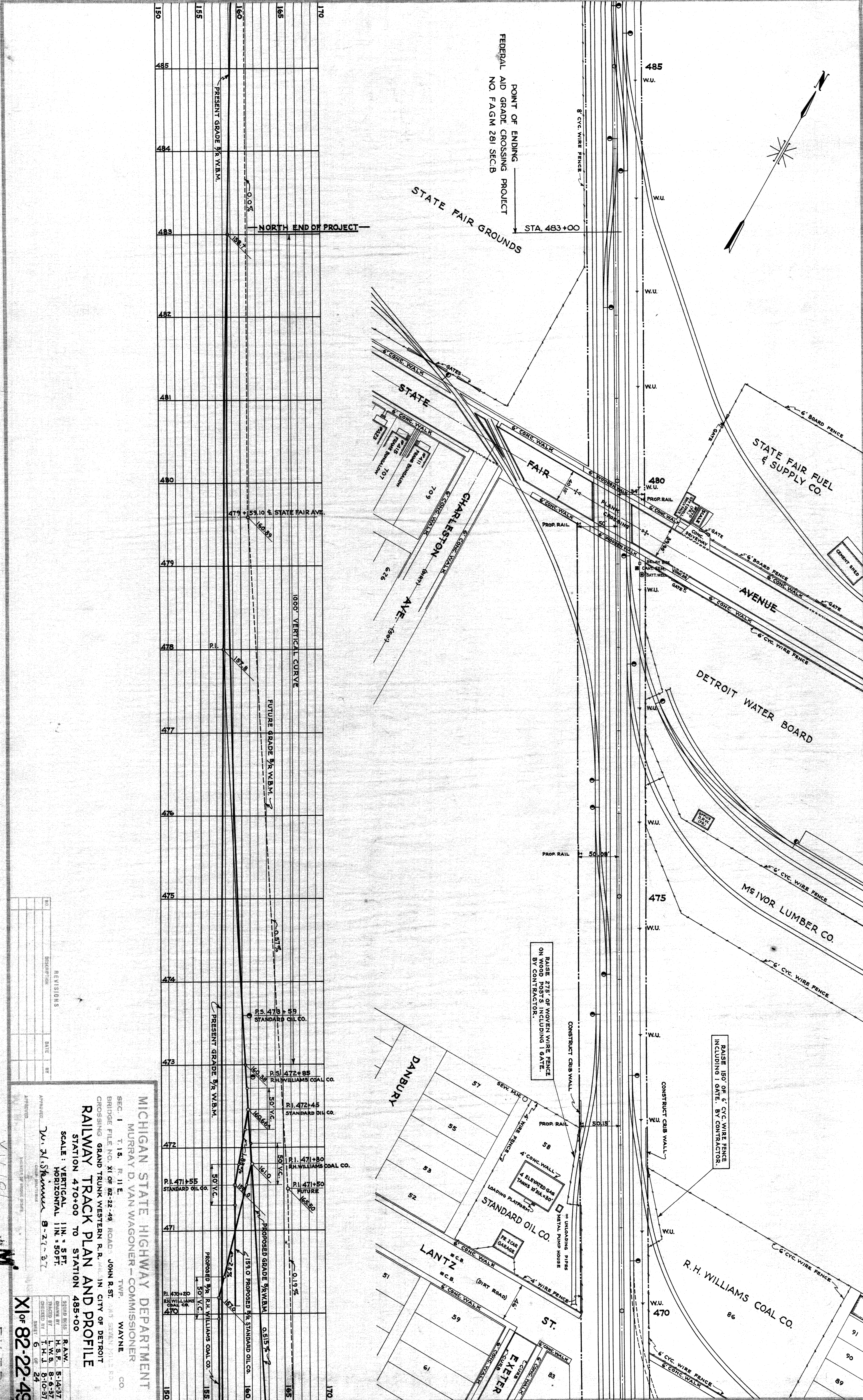
RELOCATE 160' OF 6' CYC WIRE FENCE AND ONE GATE FOR TEMPORARY TRACK LAYOUT. REARRANGE 500' CYC WIRE FENCE (SEE PLAN) AND 1 GATE AND PROVIDE 1 NEW 2 SECTION GATE FOR 18' TRACK OPENING. BY CONTRACTOR.

NOTE:- REFER TO CITY OF DETROIT PLANS FOR STEEL WORK

NOTE: RECONSTRUCT EXISTING 6' SOLID BOARD FENCE 300' AND CONSTRUCT GATE AT NEW PARCEL. BY CONTRACTOR.

MICHIGAN STATE HIGHWAY DEPARTMENT
 MURRAY D. VAN WAGONER - COMMISSIONER
 SEC. 1 T. 1 S. R. 11 E.
 BRIDGE FILE NO. XI OF B2-22-49 ROAD'S JOHN R. ST. AND SEVEN MILE RD.
 CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT
RAILWAY TRACK PLAN AND PROFILE
 STATION 455+00 TO STATION 470+00
 SCALE: VERTICAL 1" = 5 FT.
 HORIZONTAL 1" = 50 FT.
 DRAWN BY H.S.F. 5-14-37
 CHECKED BY T.H.J. 8-10-37
 APPROVED BY W.D. Starnum 8-27-37

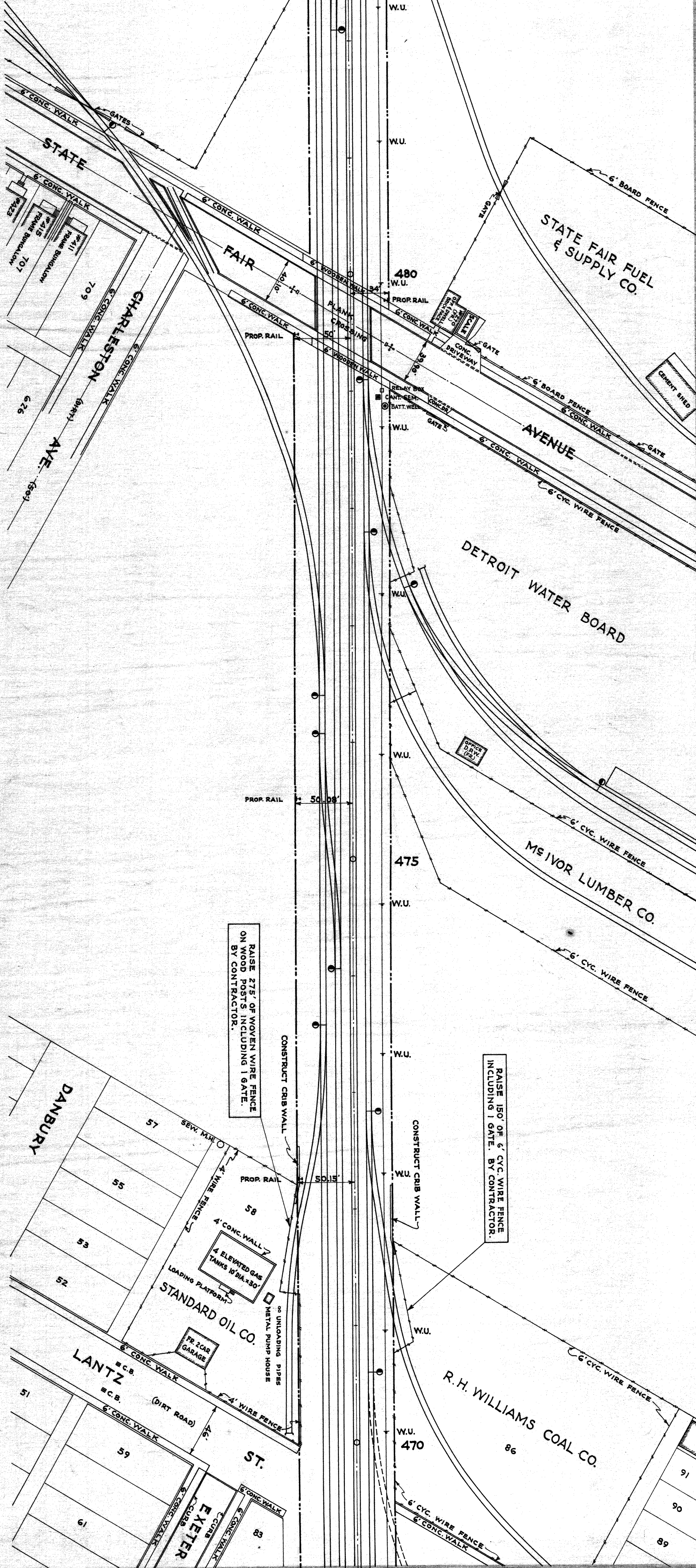
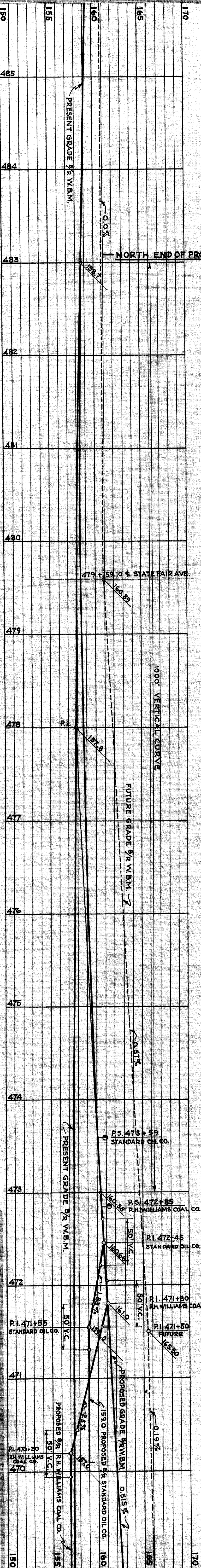
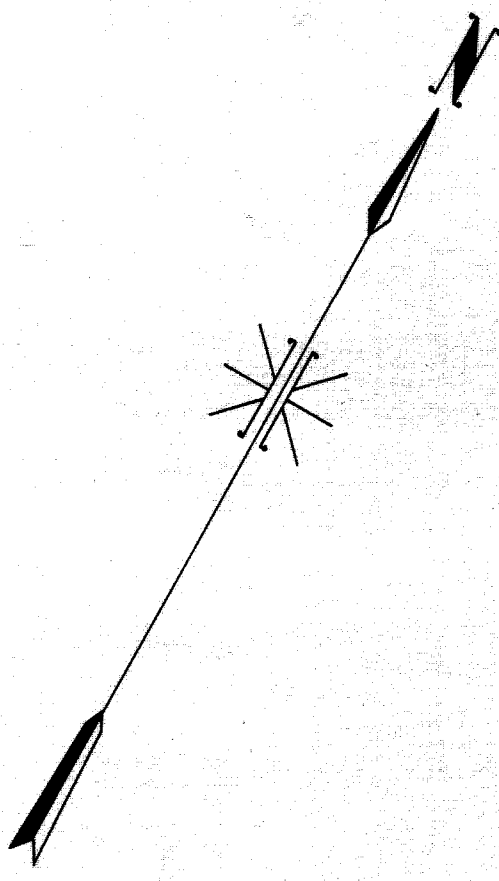
FILED
 XI OF 82-22-49



POINT OF ENDING
FEDERAL AID GRADE CROSSING PROJECT
NO. FAGM 281 SEC.B
STA. 483+00

STATE FAIR GROUNDS

NORTH END OF PROJECT



RAISE 275' OF WOMEN WIRE FENCE ON WOOD POSTS INCLUDING 1 GATE. BY CONTRACTOR.

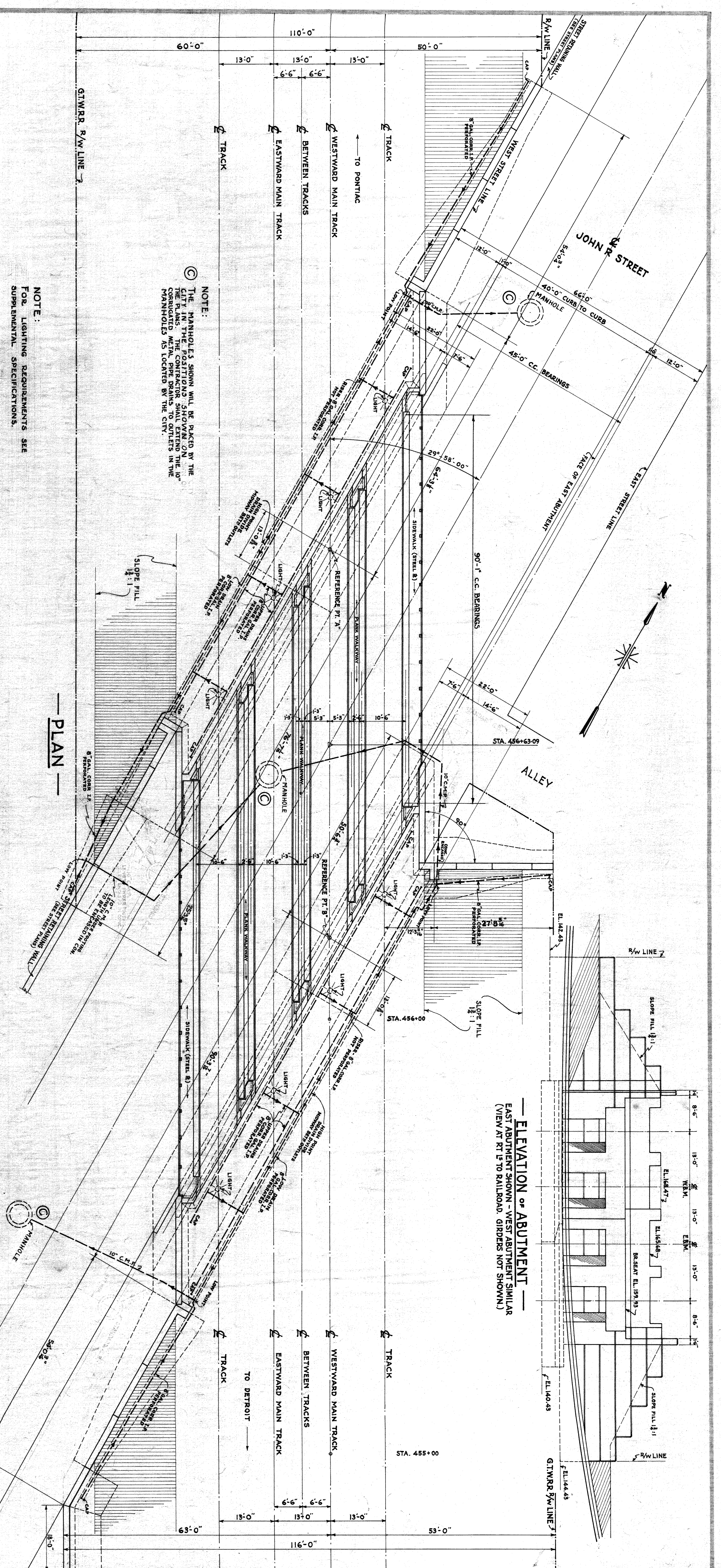
RAISE 150' OF 6" CYC WIRE FENCE INCLUDING 1 GATE. BY CONTRACTOR.

MICHIGAN STATE HIGHWAY DEPARTMENT
MURRAY D. VAN WAGONER - COMMISSIONER
SEC. 1 T. 15. R. 11 E.
BRIDGE FILE NO. XI OF 82-22-49 ROAD: JOHN R. ST. 245 SEVEN MILE S. CO.
CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT
RAILWAY TRACK PLAN AND PROFILE
STATION 470+00 TO STATION 485+00
SCALE: VERTICAL 1" = 5 FT.
HORIZONTAL 1" = 50 FT.
APPROVED: J.W. Stimmer 8-27-37
DRAWN BY: R.A.W. 5-14-37
CHECKED BY: L.W.S. 8-6-37
DESIGNED BY: T.H.J. 5-10-37
SHEET 6 OF 24

REVISIONS

NO.	DESCRIPTION	DATE	BY

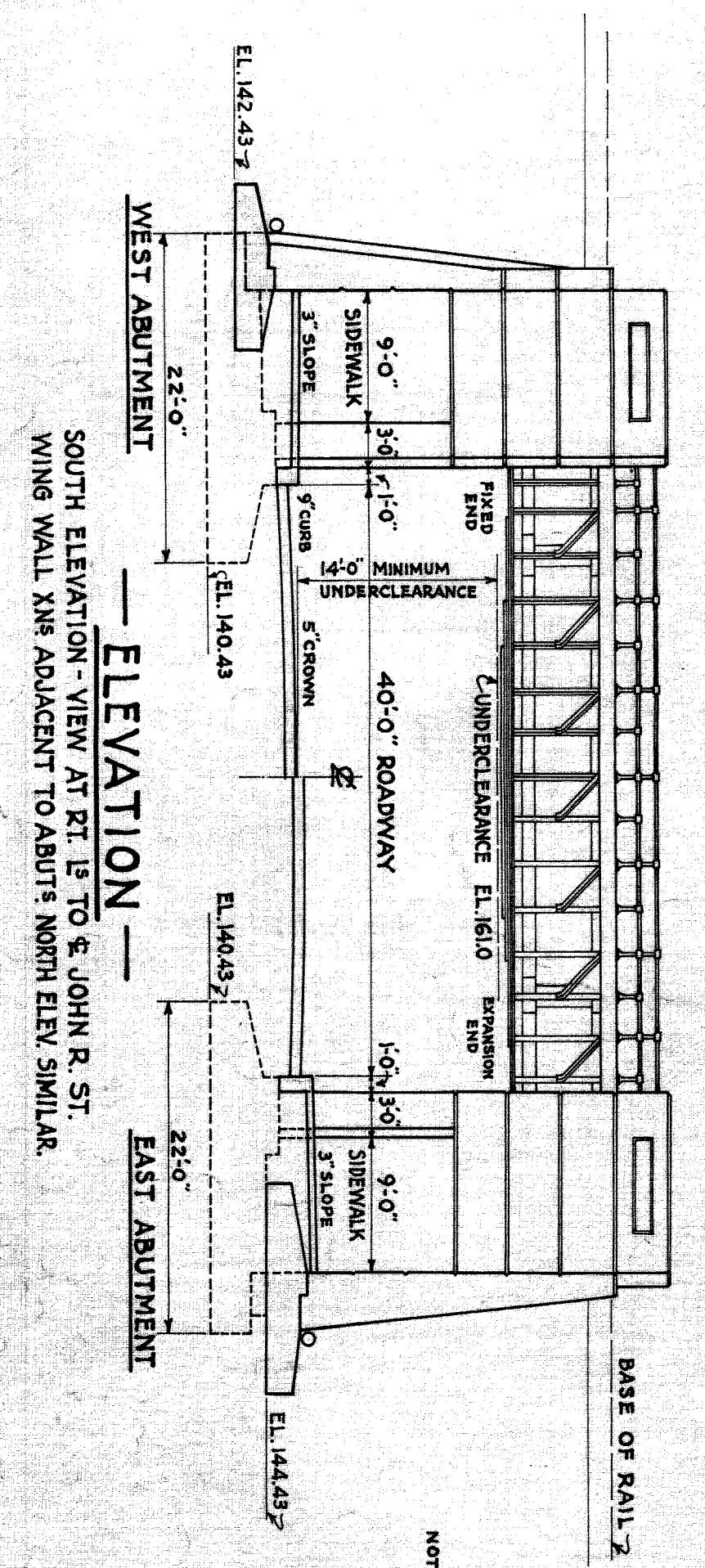
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X1 of 82-22-49



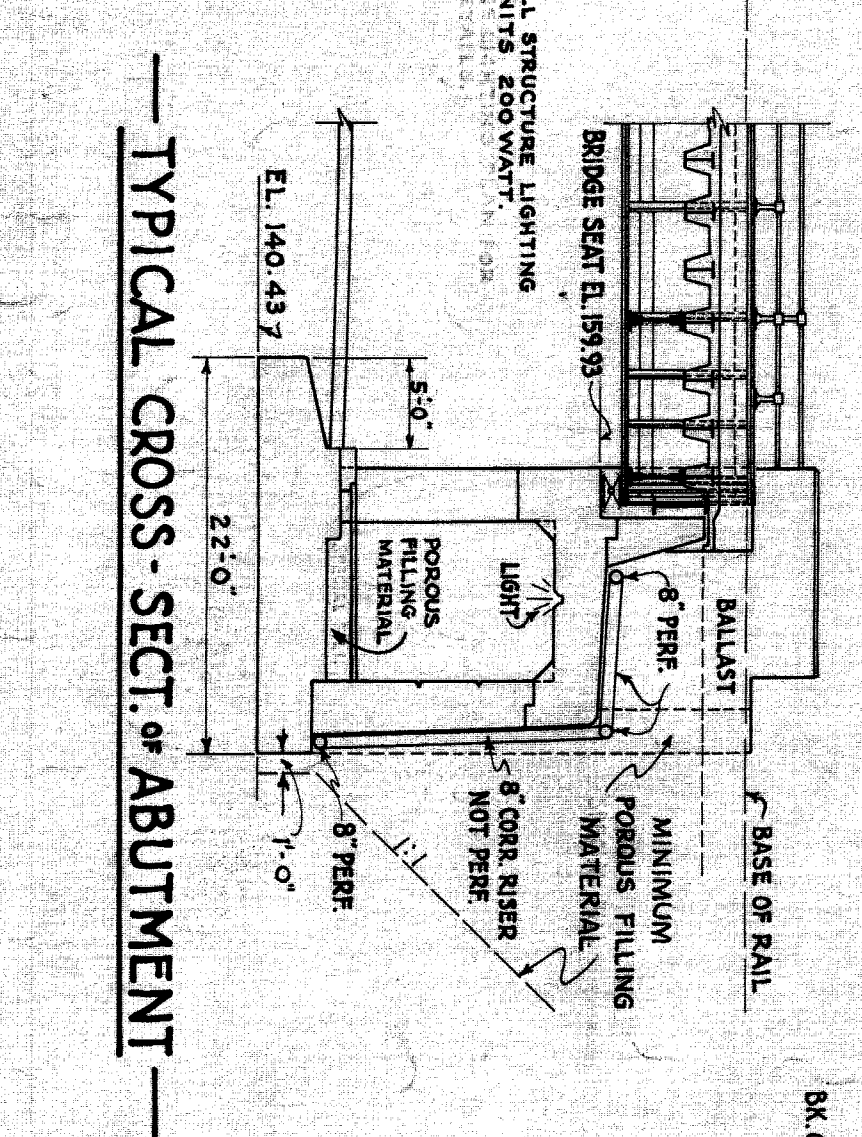
PLAN

NOTE:
 THE MANHOLES SHOWN WILL BE PLACED BY THE CITY IN THE POINTS SHOWN. THE MANHOLES IN THE POINTS SHOWN WILL BE PLACED BY THE CITY. CORRUGATED METAL PIPE DRAINS TO OUTLETS IN THE MANHOLES AS LOCATED BY THE CITY.

NOTE:
 FOR LIGHTING REQUIREMENTS SEE SUPPLEMENTAL SPECIFICATIONS.

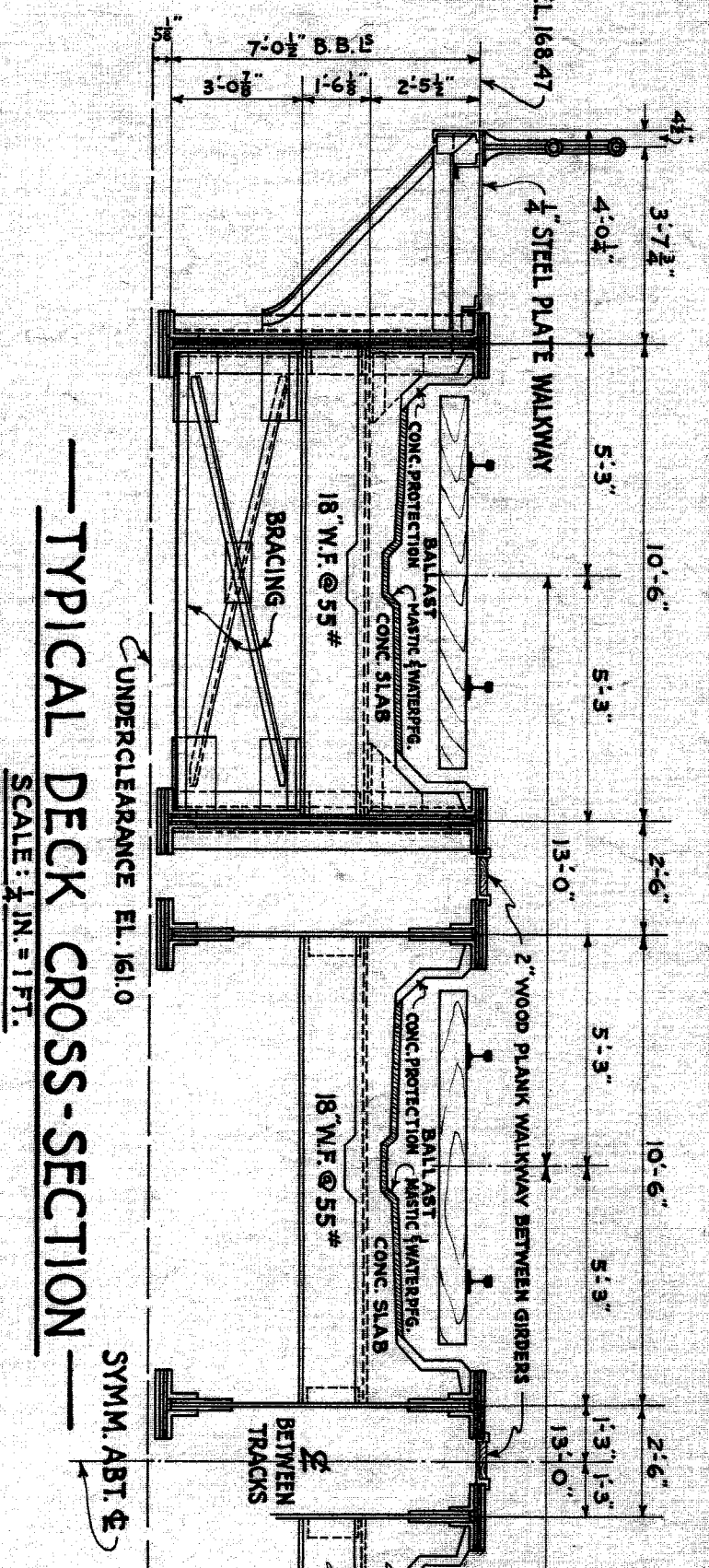
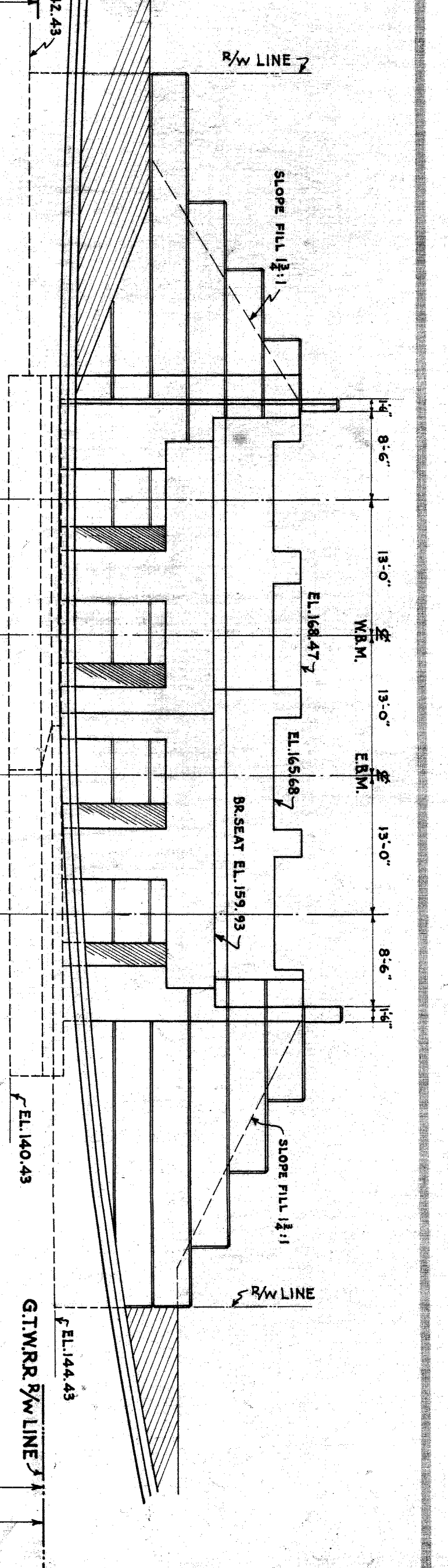


ELEVATION - WEST ABUTMENT



TYPICAL CROSS-SECT. OF ABUTMENT

ELEVATION OF ABUTMENT - EAST ABUTMENT SHOWN - WEST ABUTMENT SIMILAR (VIEW AT RT 1/2 TO RAILROAD. GIRDERS NOT SHOWN.)



TYPICAL DECK CROSS-SECTION

REVISIONS

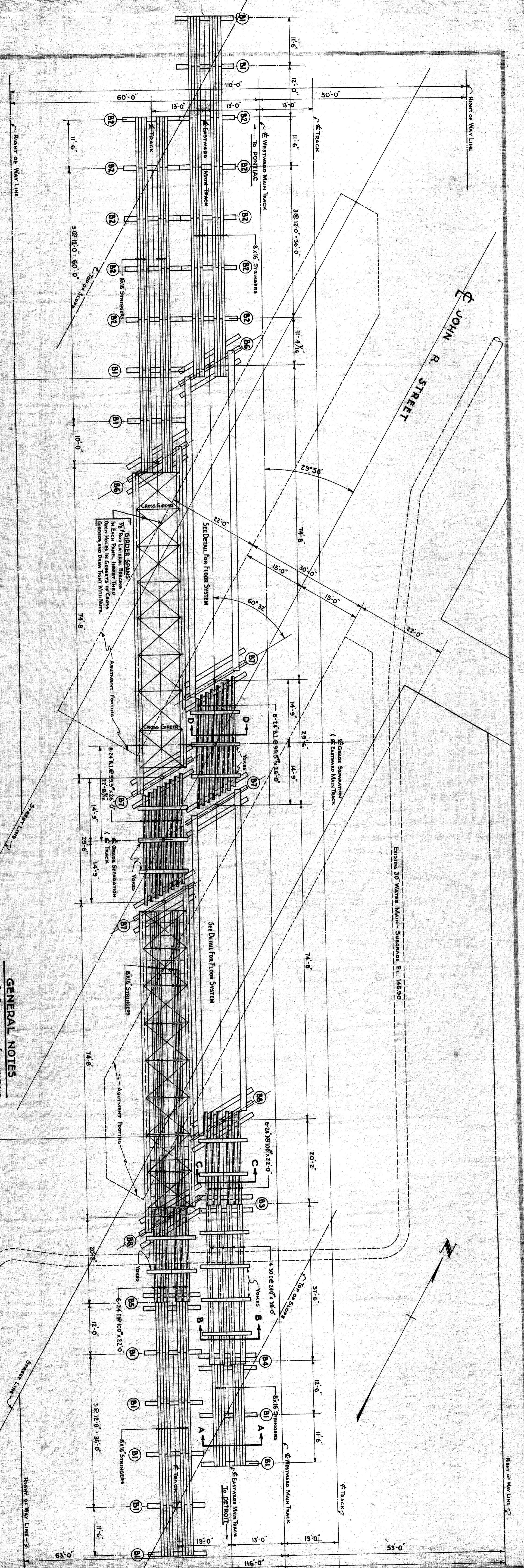
NO.	DESCRIPTION	DATE	BY
C	Changed Location of Drain Outlets	5-10-39	L.C.G.

MICHIGAN STATE HIGHWAY DEPARTMENT
 MURRAY D. VAN WAGONER - COMMISSIONER
 SEC. 1 T-15 R. II E.
 BRIDGE FILE NO. XI OF 82-22-49 ROAD JOHN R. STREET
 CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT
 WAYNE CO.
 GENERAL STRUCTURE PLAN
 SCALE: 3/4" = 1'-0" EXCEPT AS NOTED

APPROVED: W. J. Spillman 8-27-37
 SUPERVISOR OF BRIDGE ENGINEERING

DESIGNED BY: R.A.W. 6-30-37
 DRAWN BY: T.H.J. 6-30-37
 CHECKED BY: L.V.S. 7-20-37
 CORRECTED BY: N.O.D. 7-20-37
 SHEET NO. 24

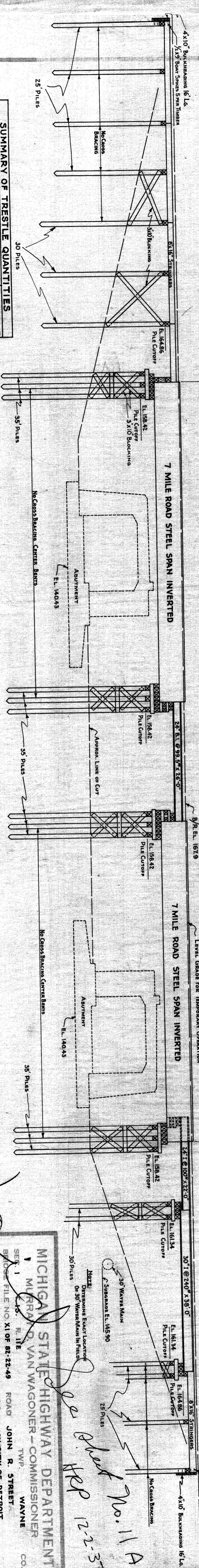
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 FILED
 82-22-49



PLAN OF TEMPORARY TRESTLES

GENERAL NOTES

MATERIALS: See Supplemental Specifications. SIZE OF TIMBERS FIGURED 1/2 LESS THAN NORMAL SIZE. CAPS ARE TO BE SET ON EDGE. PILES TO BE CURVED. DO NOT PILE. STRUCTURAL STEEL: STEEL BEAMS MAY BE OBTAINED FROM PULASKI GIRDER SPANS TO BE FURNISHED BY STATE HIGHWAY DEPT. EXCLUSIVE OF BOLTS FOR FIELD CONNECTIONS. SUPPLEMENTAL SPECIFICATIONS. REVISIONS: See Supplemental Specifications. IF TIMBERS VIEW IN DETAIL FOR PILE CURVE ELEVATION AND DETAIL OF BLOCKING OVER CAPS.



ELEVATION OF TRESTLE ON EASTWARD MAIN TRACK

SUMMARY OF TRESTLE QUANTITIES

PILING FURNISHED	9700 LF
TIES	8770 LF
STRINGERS	46000 BF
CAPS AND CRIB TIMBERS	40300 BF
BRACING AND GD. TIMBERS	5600 BF
WALKING AND GD. TIMBERS	8500 BF
BLOCKING	5500 BF
MISC. IRON	13900 #
STEEL BEAMS SPANS	104270 #
TURNED BOLTS FOR GIRDER SPANS	651900 #
	3700 #

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	Trestle Changed to omit use of 7 in. flat steel	12-27-37	HBP

MICHIGAN STATE HIGHWAY DEPARTMENT
MR. R. VAN WAGONER - COMMISSIONER
 ROAD JOHN R. STREET
 CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT
 TWP. WAYNE CO.

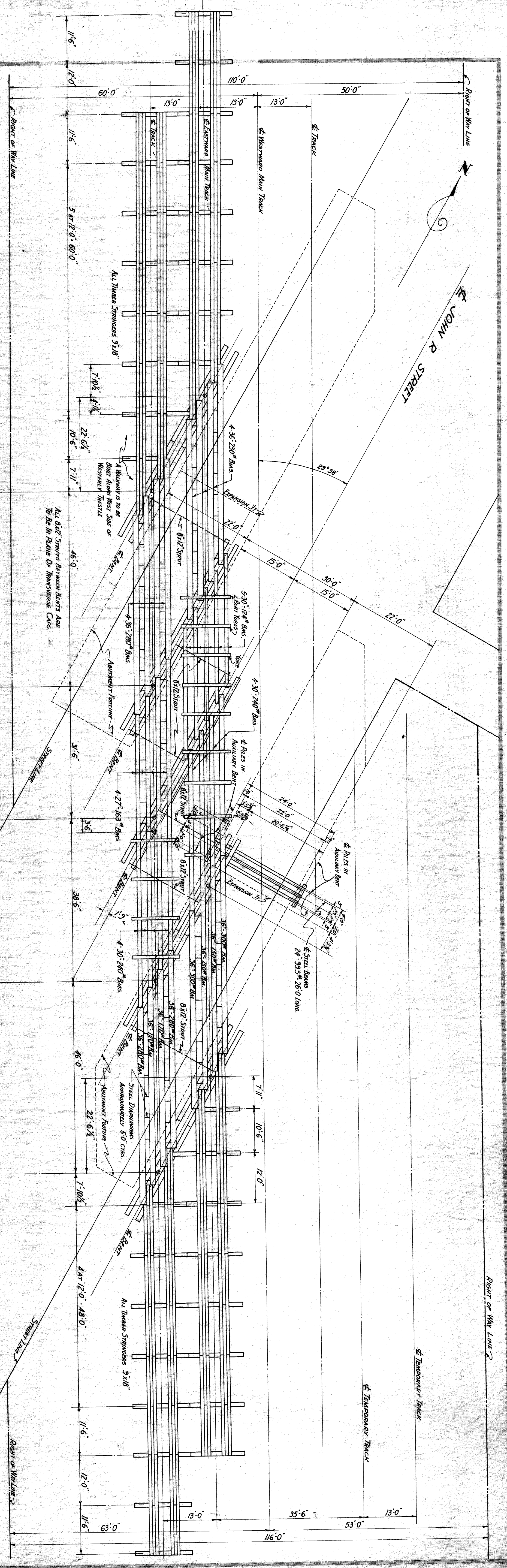
TEMPORARY OPERATING TRESTLE
 SCALE: 3/8" = 1' FT.

APPROVED: *[Signature]* 7-11-37
 DATE: 8-27-37

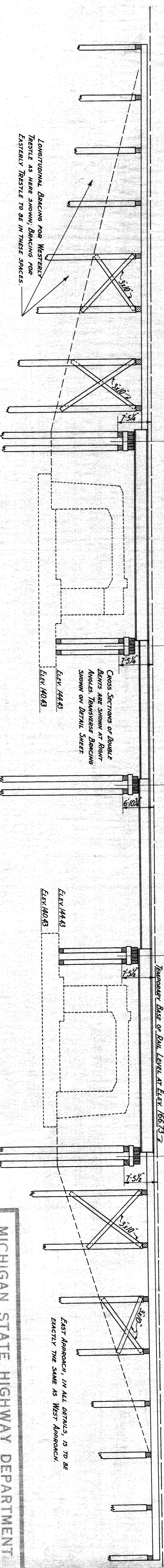
DESIGNED BY: *[Signature]*
 CHECKED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 SUPERVISOR: *[Signature]*

NO. 11A
 HBP 12-2-37

FILED
 82-22-49
 11 of 24



PLAN OF TEMPORARY TRETTLES



LONGITUDINAL SECTION OF WESTERLY TRESTLE ON TRACK

SUMMARY OF TRETTLE QUANTITIES

ITEM	UNIT	TOTAL
Timber Piles - Furnished	Lin. Ft.	8197
Timber Piles - Driven	Lin. Ft.	7681
Structural Timber - Furnished	M.B.M.	169
Structural Timber - Erected	M.B.M.	169
Structural Steel - Fabrication and Erect.	Lbs.	331,903
Miscellaneous Hardware	Lbs.	20,000
Additional Concrete in Footings	Cu Yds.	11

GENERAL NOTES

SEE SPECIFICATIONS FOR MATERIAL AND REMOVAL. SIZE OF TIMBERS ARE TAKEN 1/2" LESS THAN NOMINAL SIZE. CAPS ARE TO BE SET ON EDGE. PILING IS TO BE CUT OFF, NOT PULLED. IF TIMBERS VARY IN DEPTH, ADJUST PILE CUTOFF ELEVATION AND DEPTH OF ROCKING OVER CAPS. RAILROAD WILL FURNISH 30" 240# AND 24" 99.5# STEEL BEAMS; CONTRACTOR WILL FURNISH ALL OTHER STEEL BEAMS FOR TEMPORARY TRESTLE.

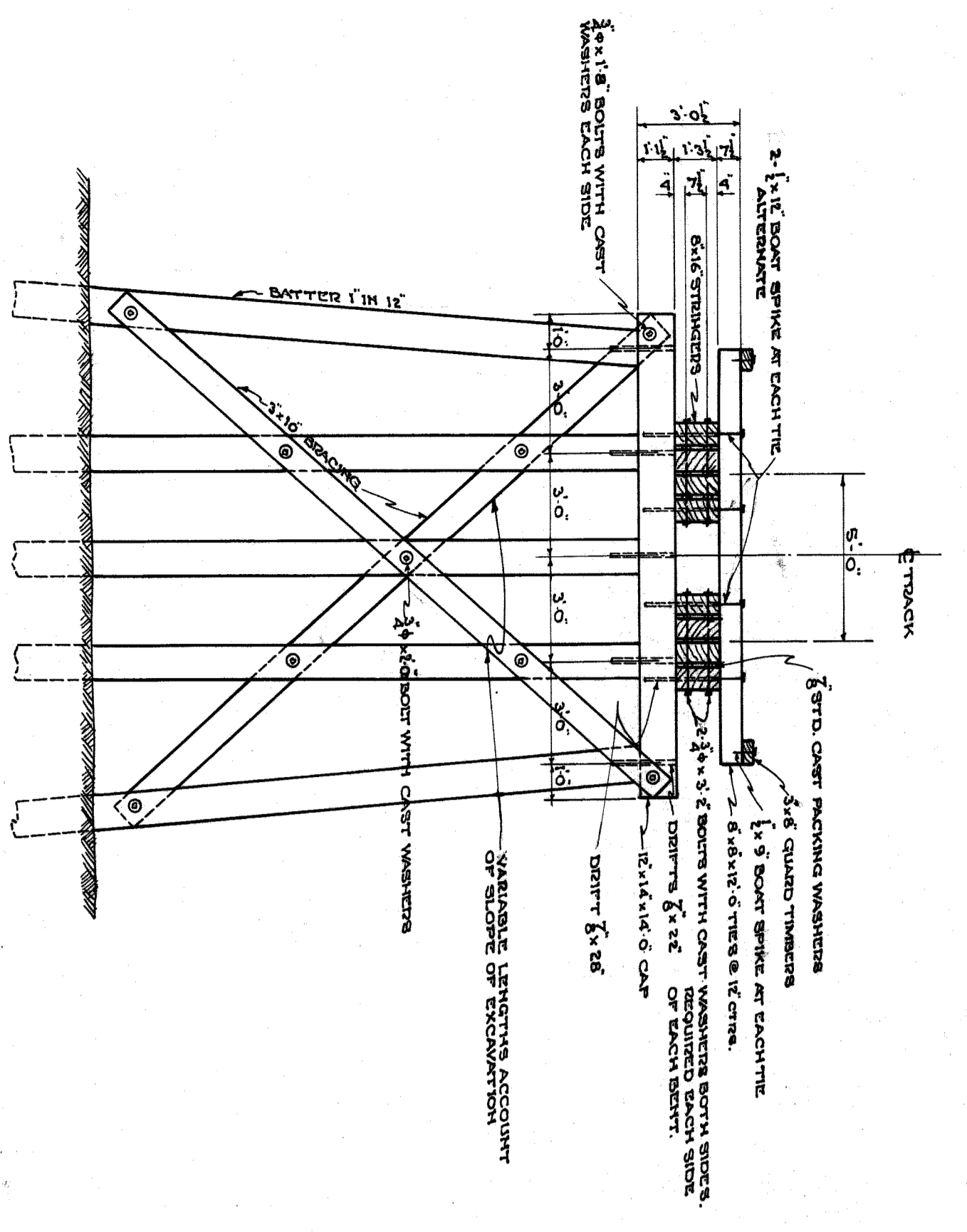
REVISIONS

NO.	DESCRIPTION	DATE	BY
1	Added Trestle Quantities	7-31-36	J.A.R.
2	Change Steel Beam from 30" 240# to 24" 99.5#	3-7-38	H.C.R.

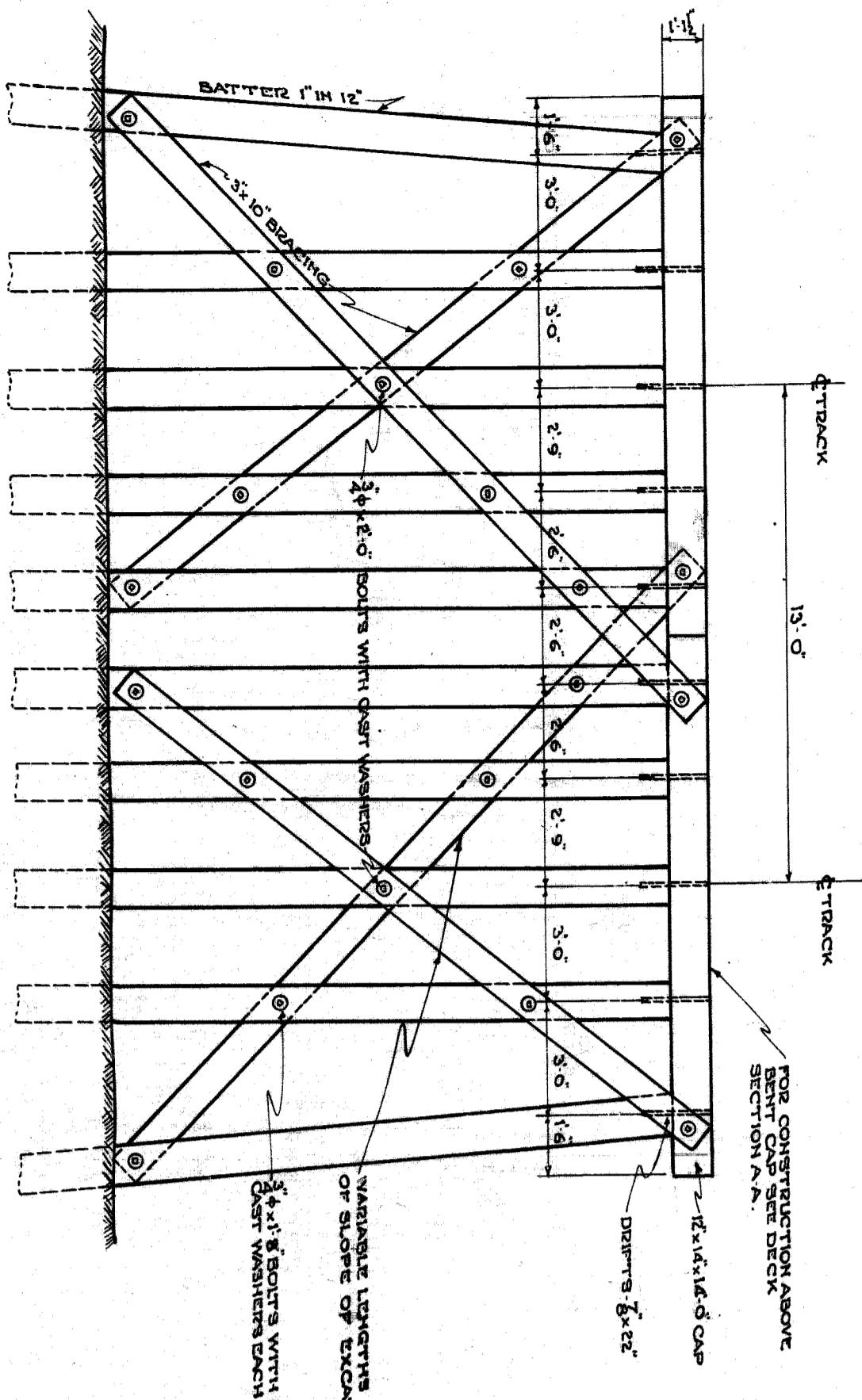
MICHIGAN STATE HIGHWAY DEPARTMENT
 MURRAY D. VAN WAGONER - COMMISSIONER
 TWP. WAYNE CO.
 SEC. 1 T. 15 S. R. 11 E ROAD JOHN R STREET A.
 BRIDGE FILE NO. XI OF 62-22-49 GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT
 CROSSING
 TEMPORARY OPERATING TRESTLE
 SCALE: 3/8" = 1'-0"

APPROVED: [Signature]
 DATE: 1-15-35
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 REVISIONS: [Signature]
 SCALE: 3/8" = 1'-0"

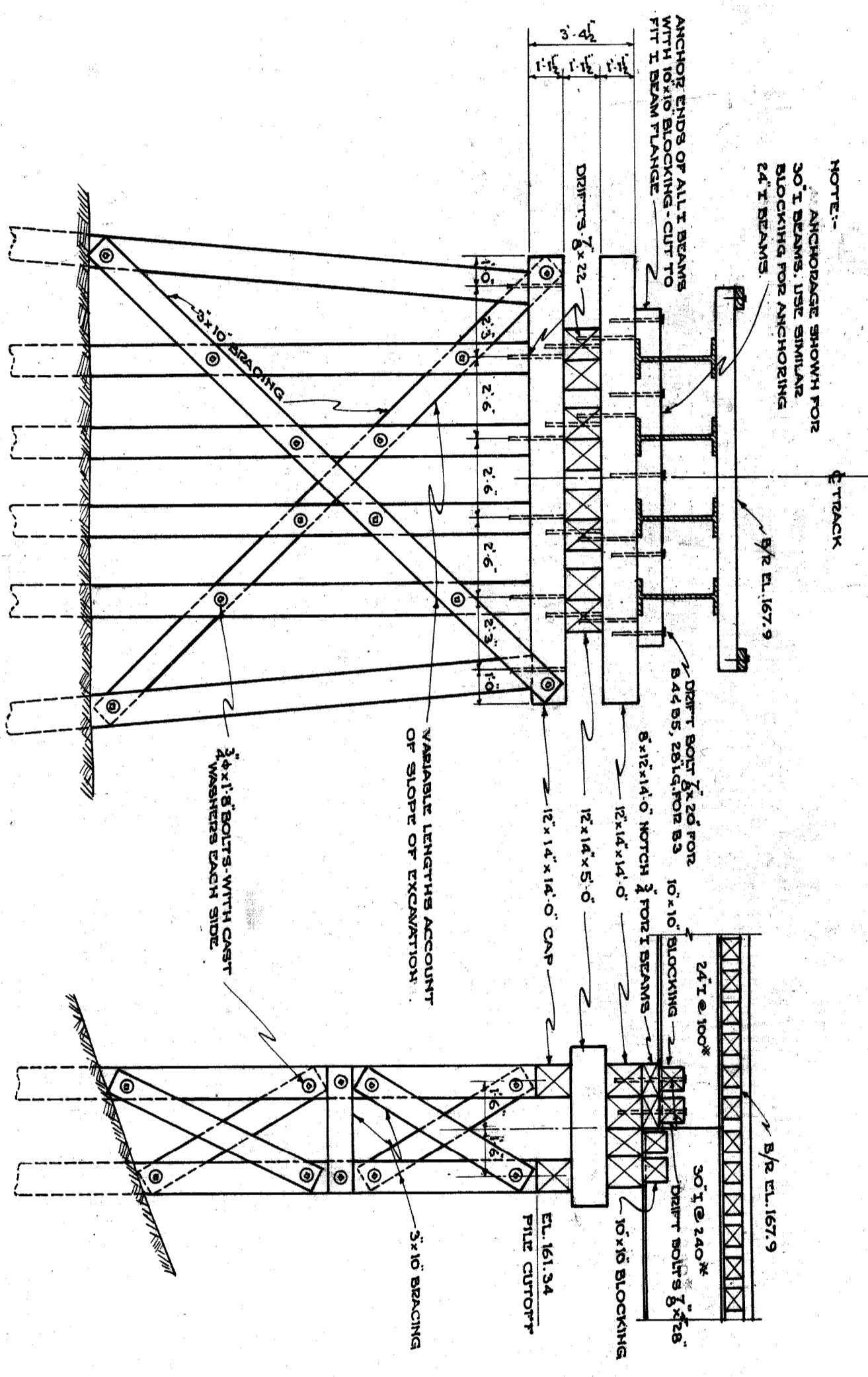
NO. 11 OF 62-22-49



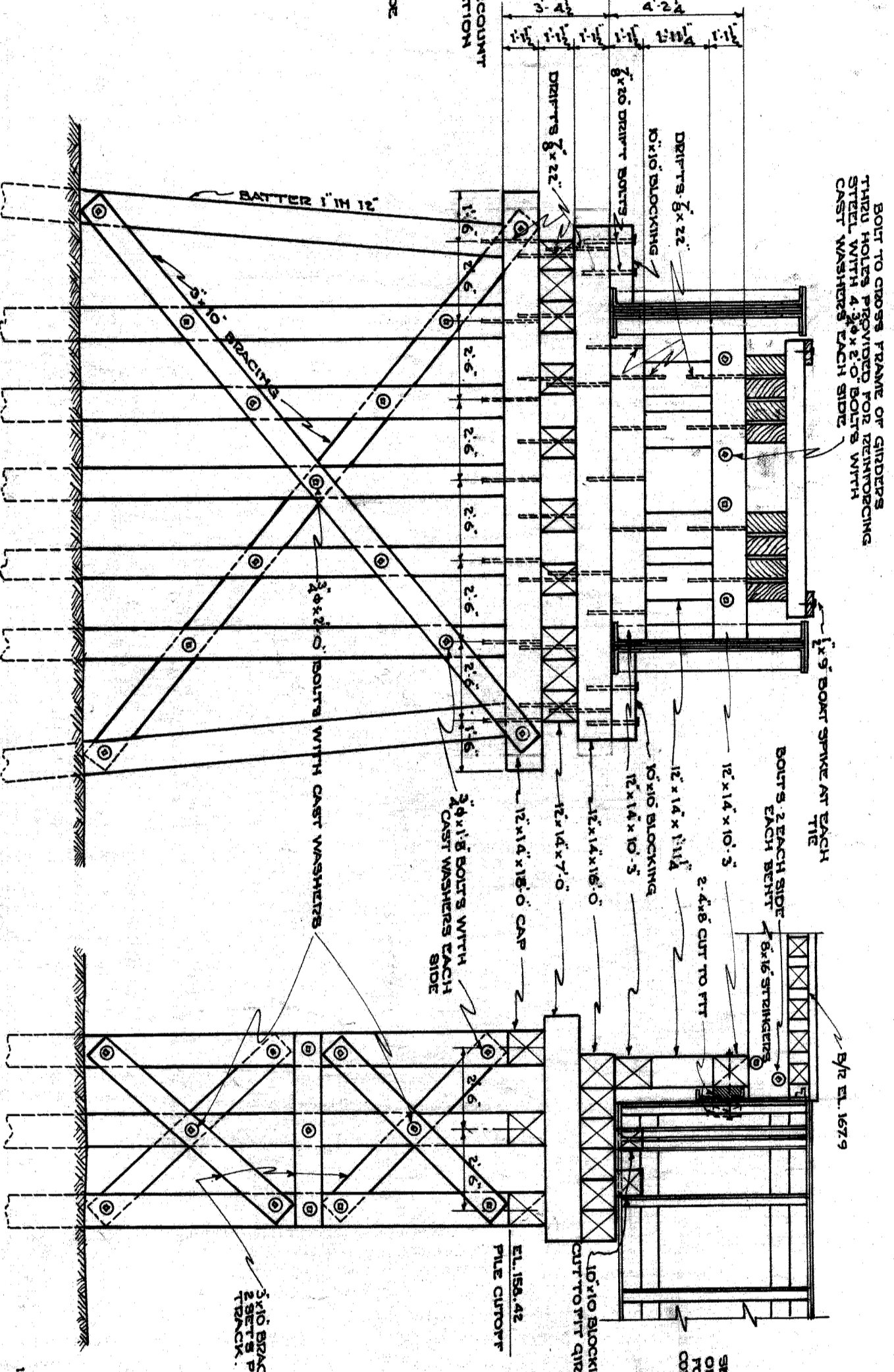
DECK SECTION AA & DETAIL OF BENT B1



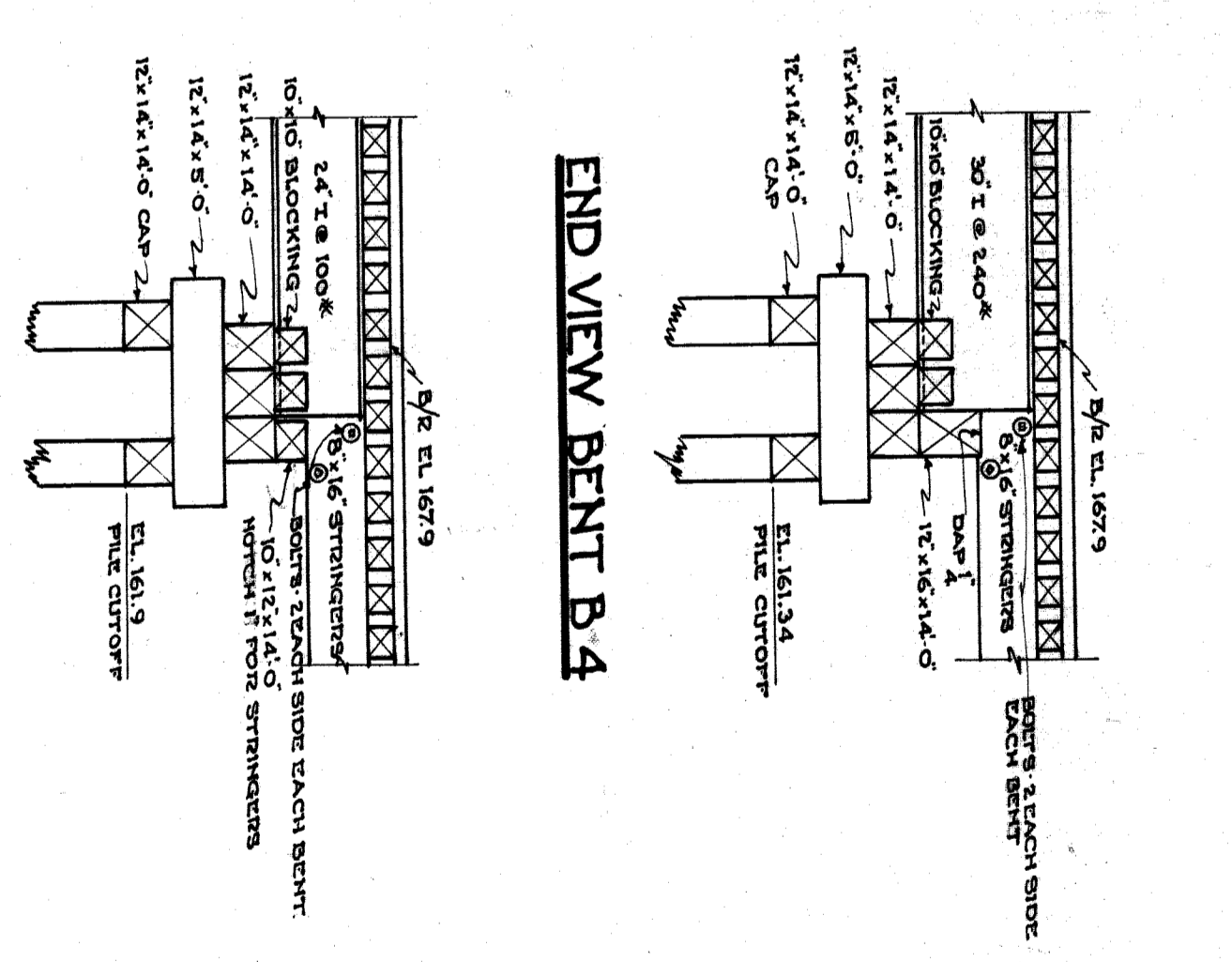
SINGLE 5 PILE BENT



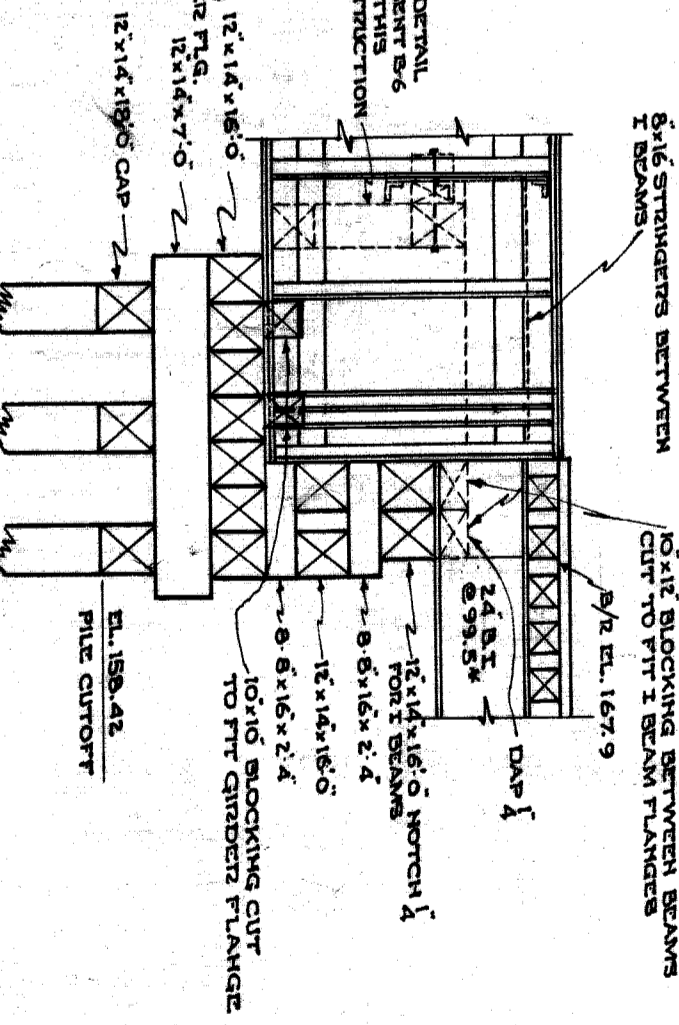
DOUBLE 6 PILE BENT



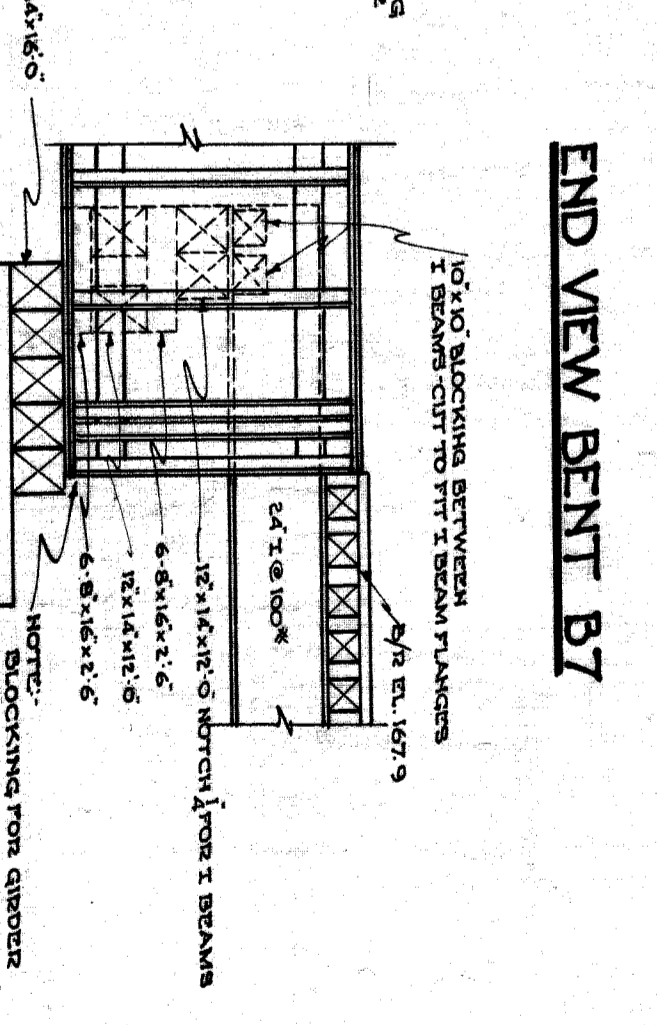
TRIPLE 7 PILE BENT



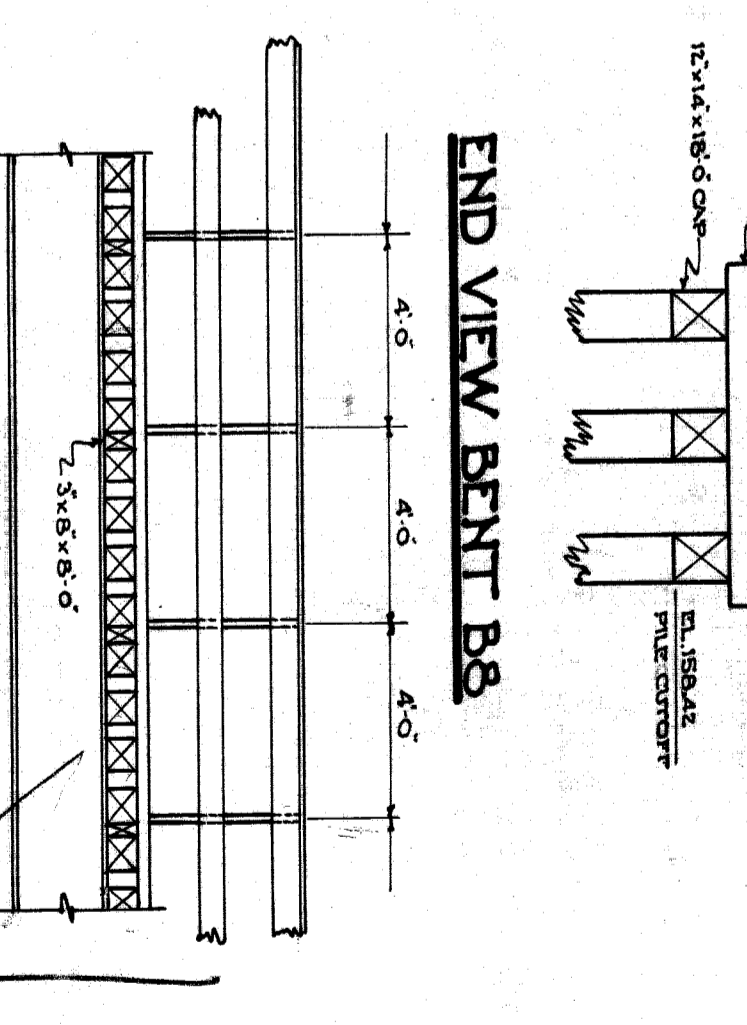
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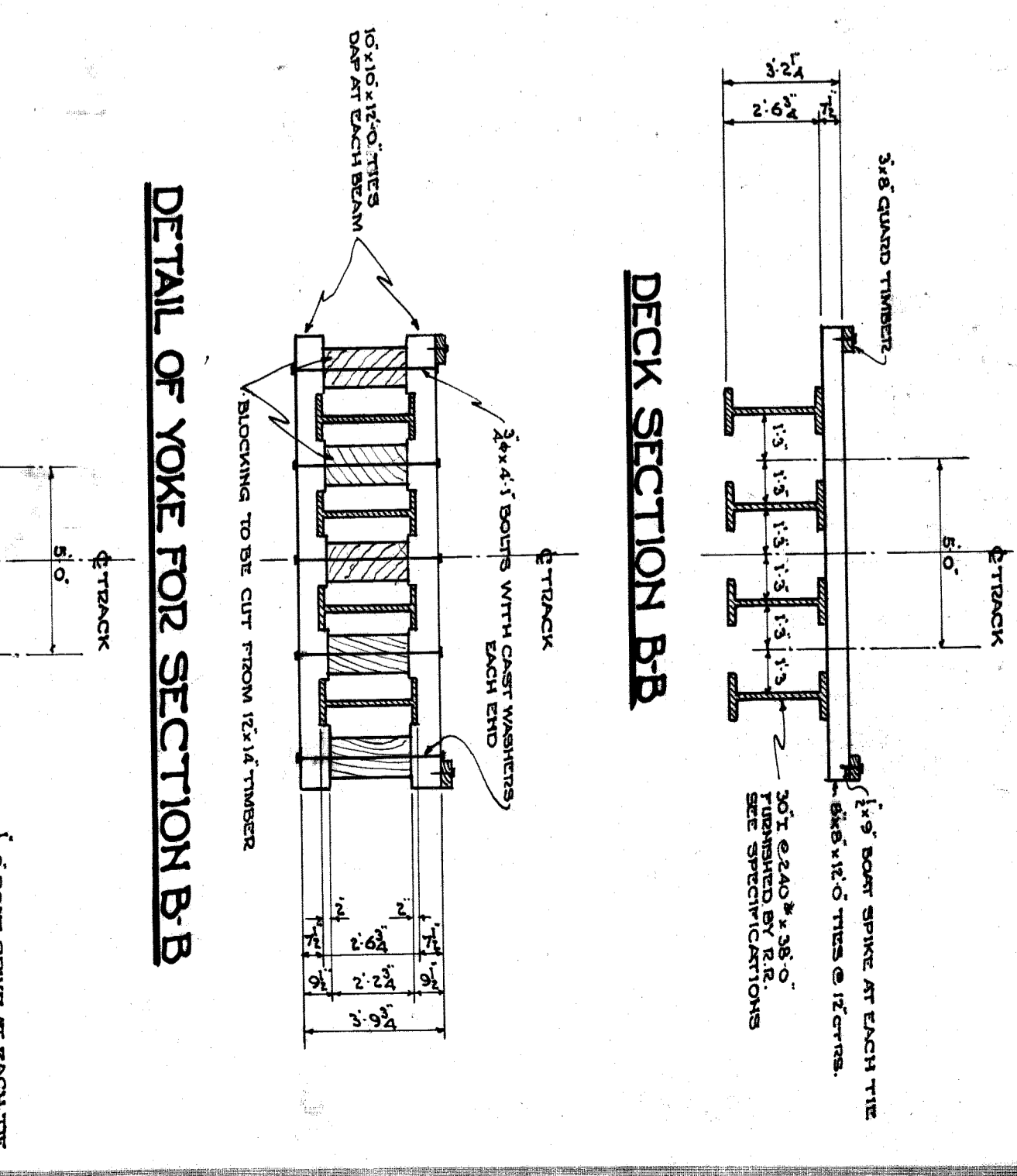
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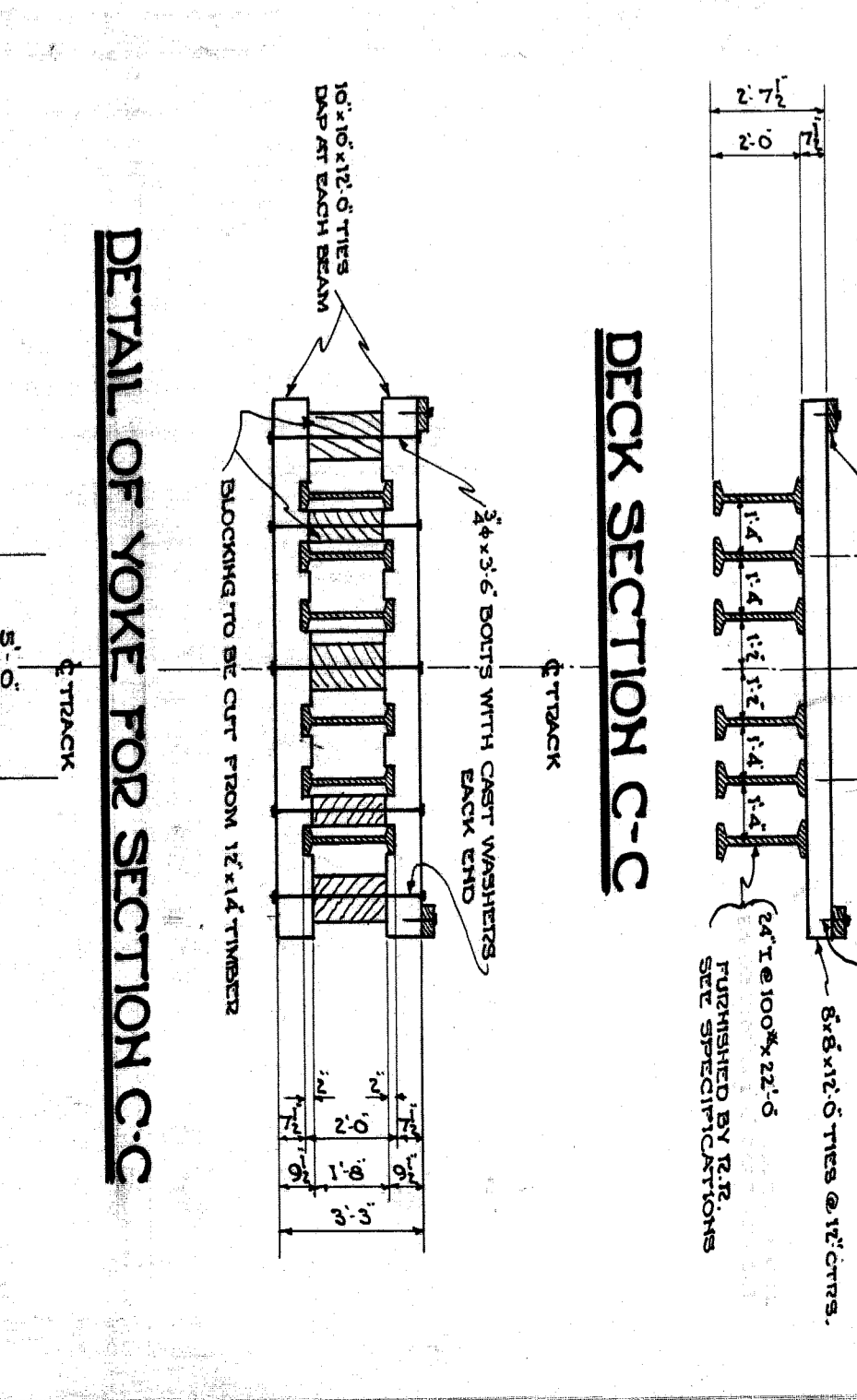
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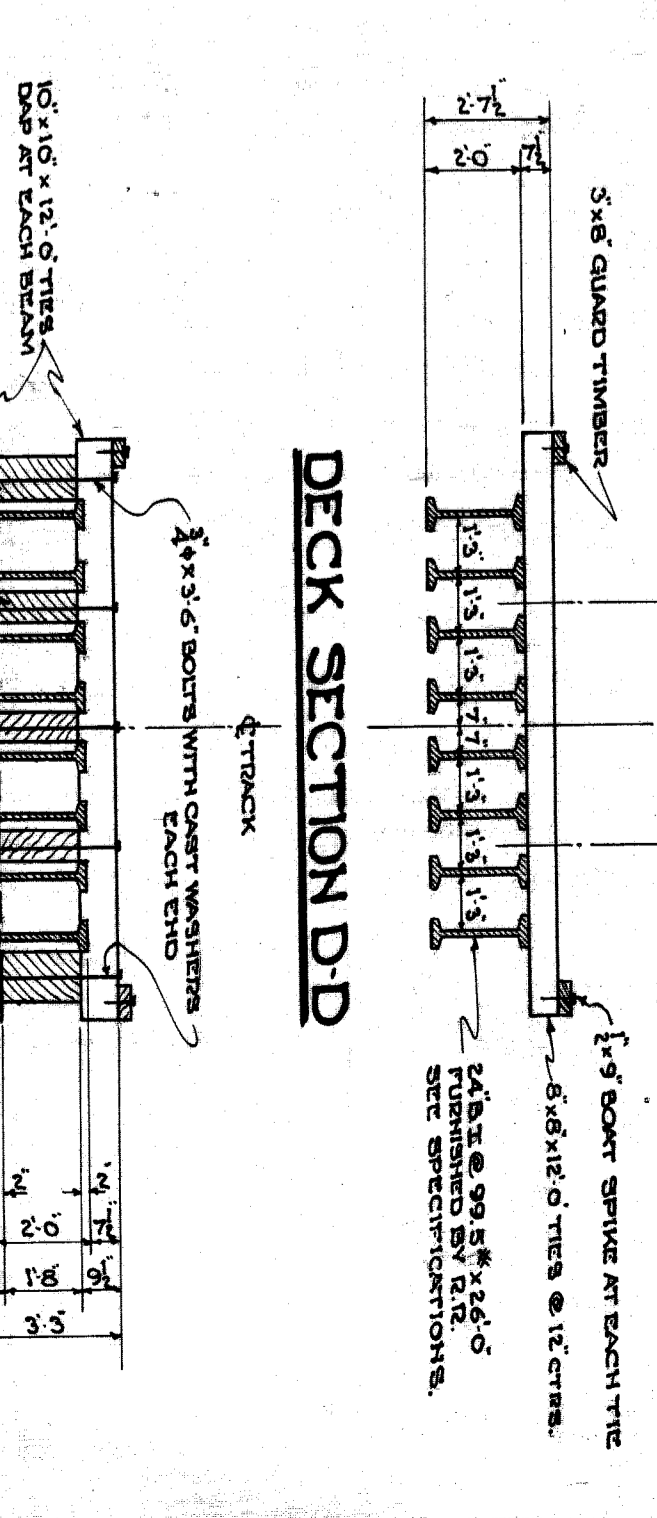
END VIEW BENT B8



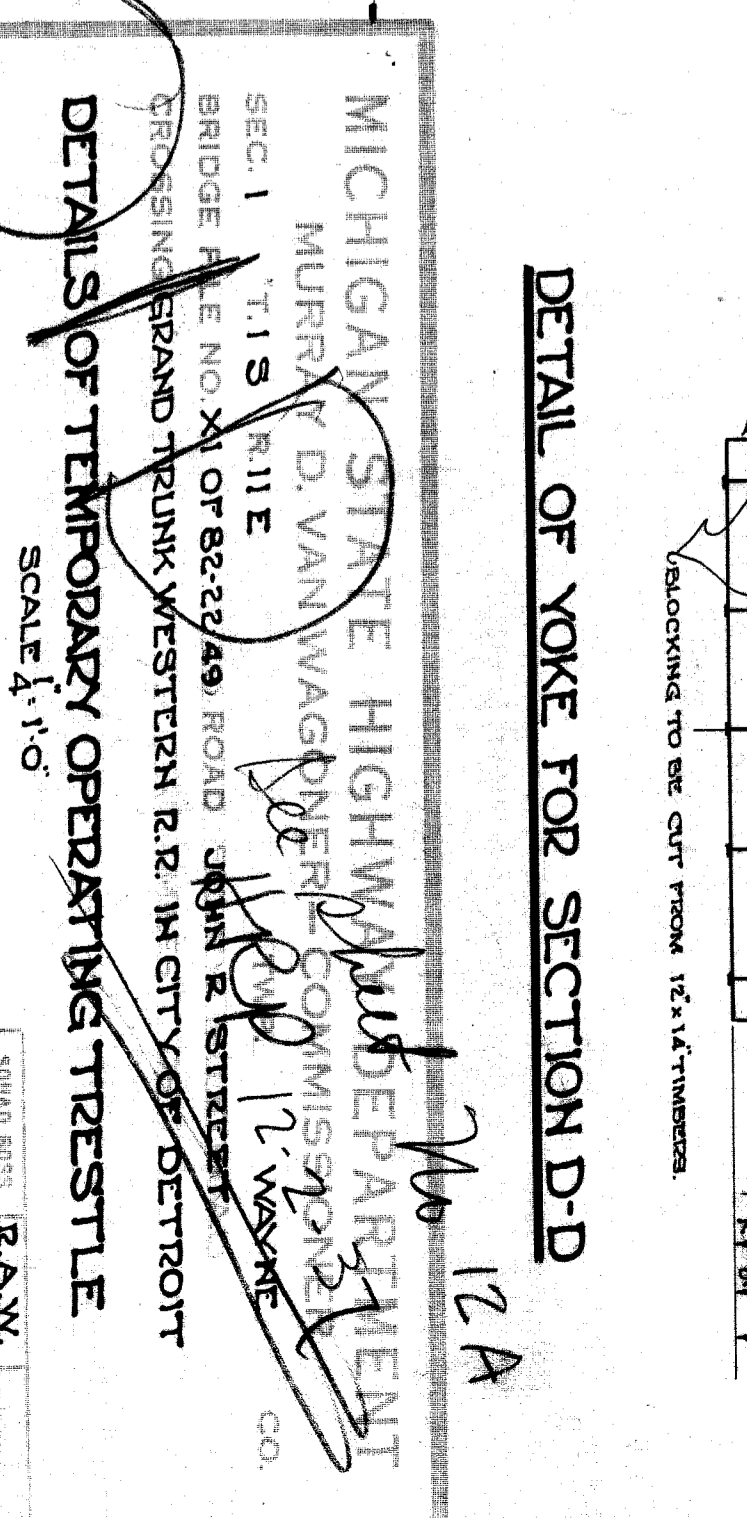
DECK SECTION B-B



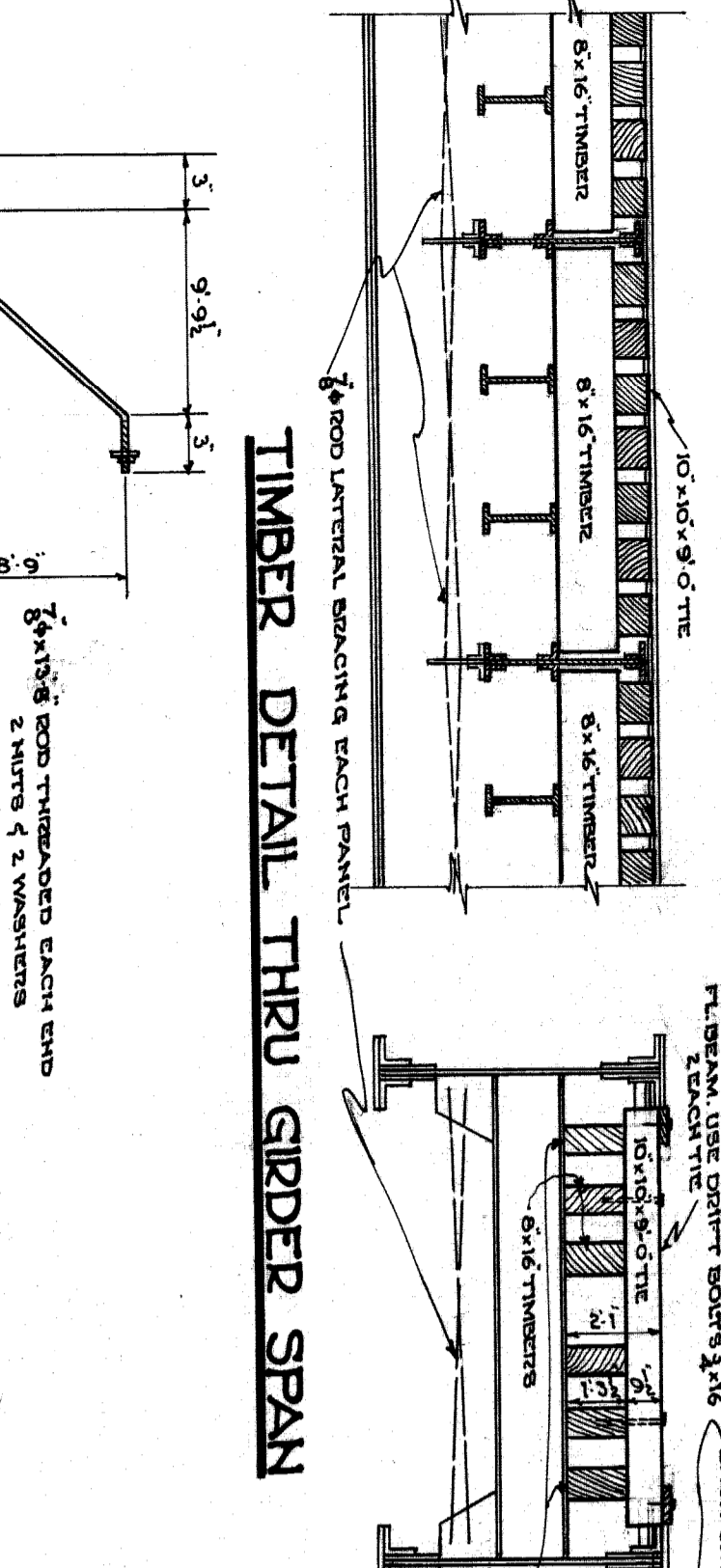
DECK SECTION C-C



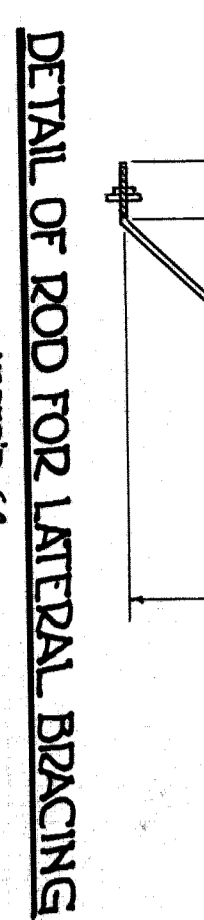
DECK SECTION D-D



DETAIL OF YOKE FOR SECTION D-D



TIMBER DETAIL THRU GIRDER SPAN



DETAIL OF ROD FOR LATERAL BRACING

REVISIONS

NO.	DESCRIPTION	DATE	BY
1	As Issued		
2	Use of 100% Steel	12-23-37	W.R.P.

MICHIGAN STATE HIGHWAY DEPARTMENT
 MURRAY D. VAN WAGENEN, COMMISSIONER
 SEC. 1 T. 15 R. 12 W. 2
 BRIDGE NO. 82-22-49 ROAD 12.1 MI. WEST OF
 CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT

DETAILS OF TEMPORARY OPERATING TRRESTLE
 SCALE 1/16"

W. M. Spitzer, S-27-37
 ENGINEER OF BRIDGE DESIGN

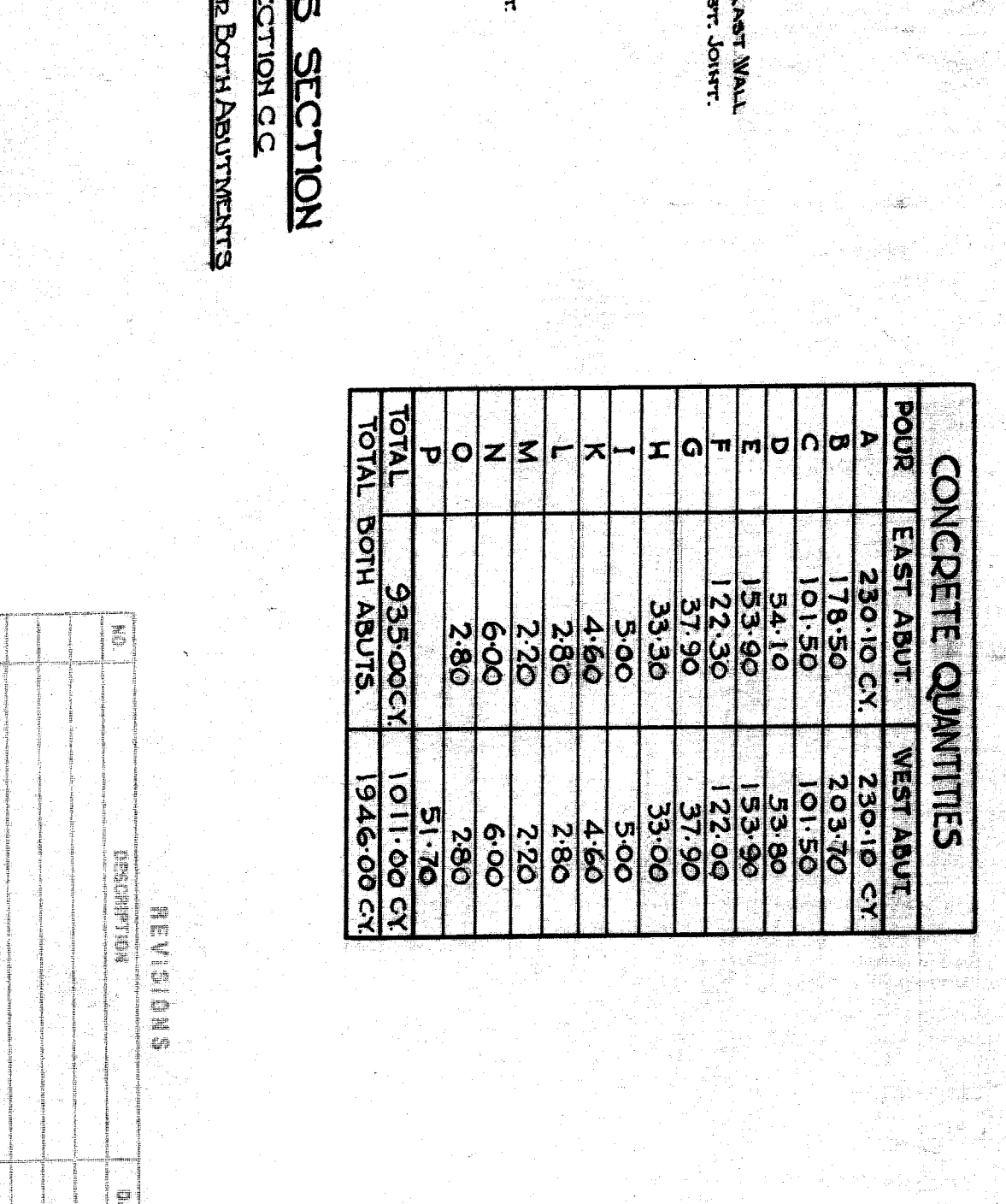
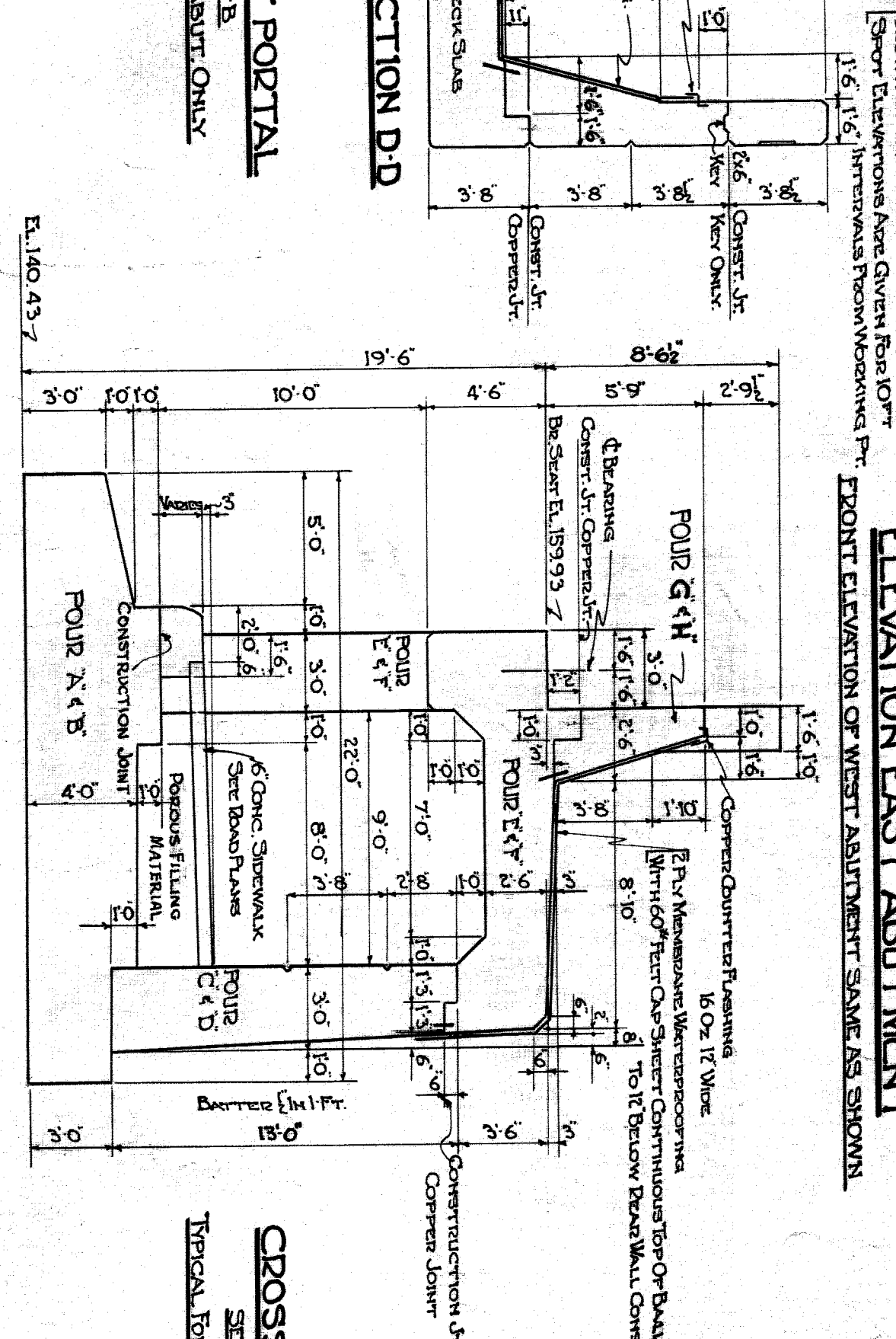
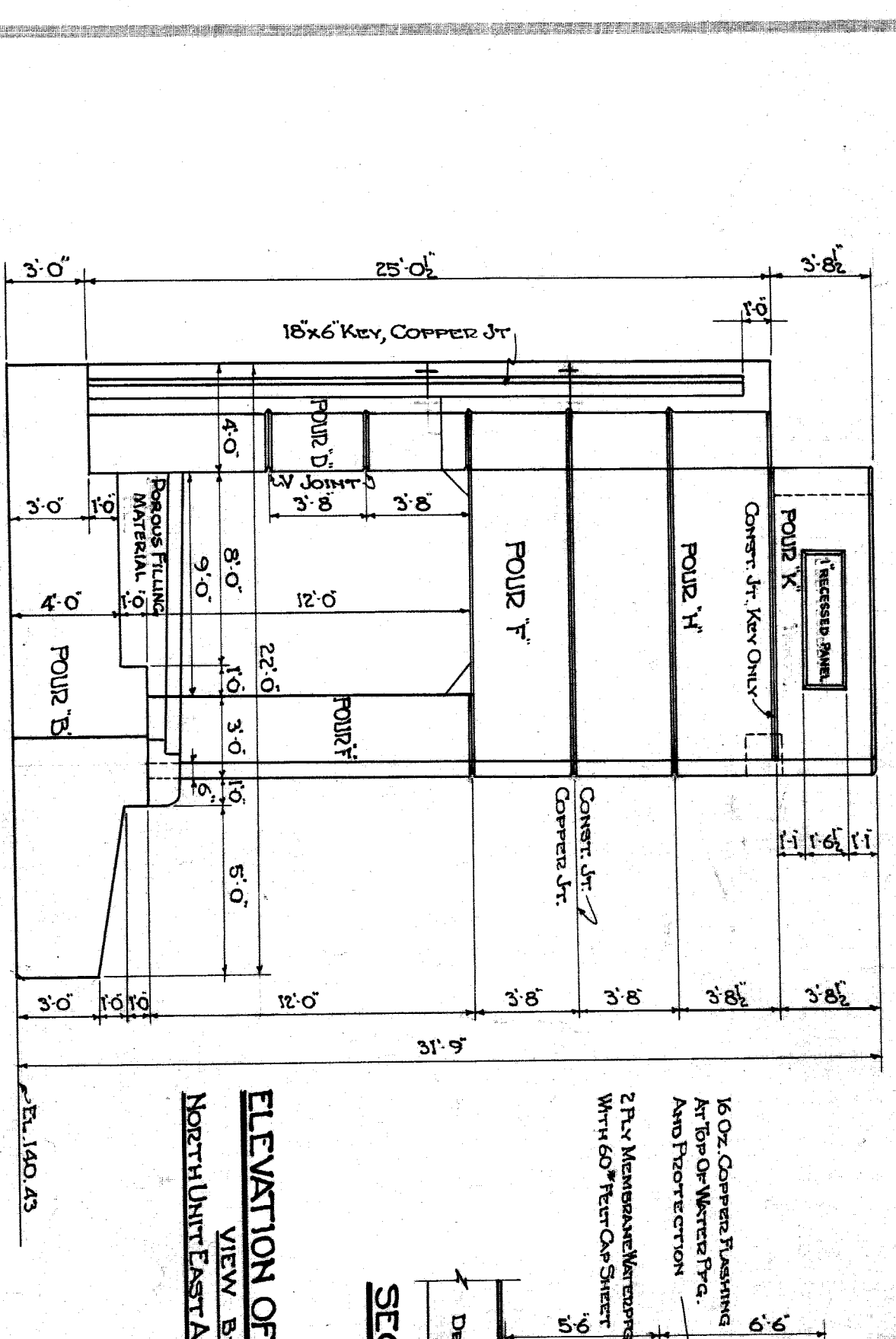
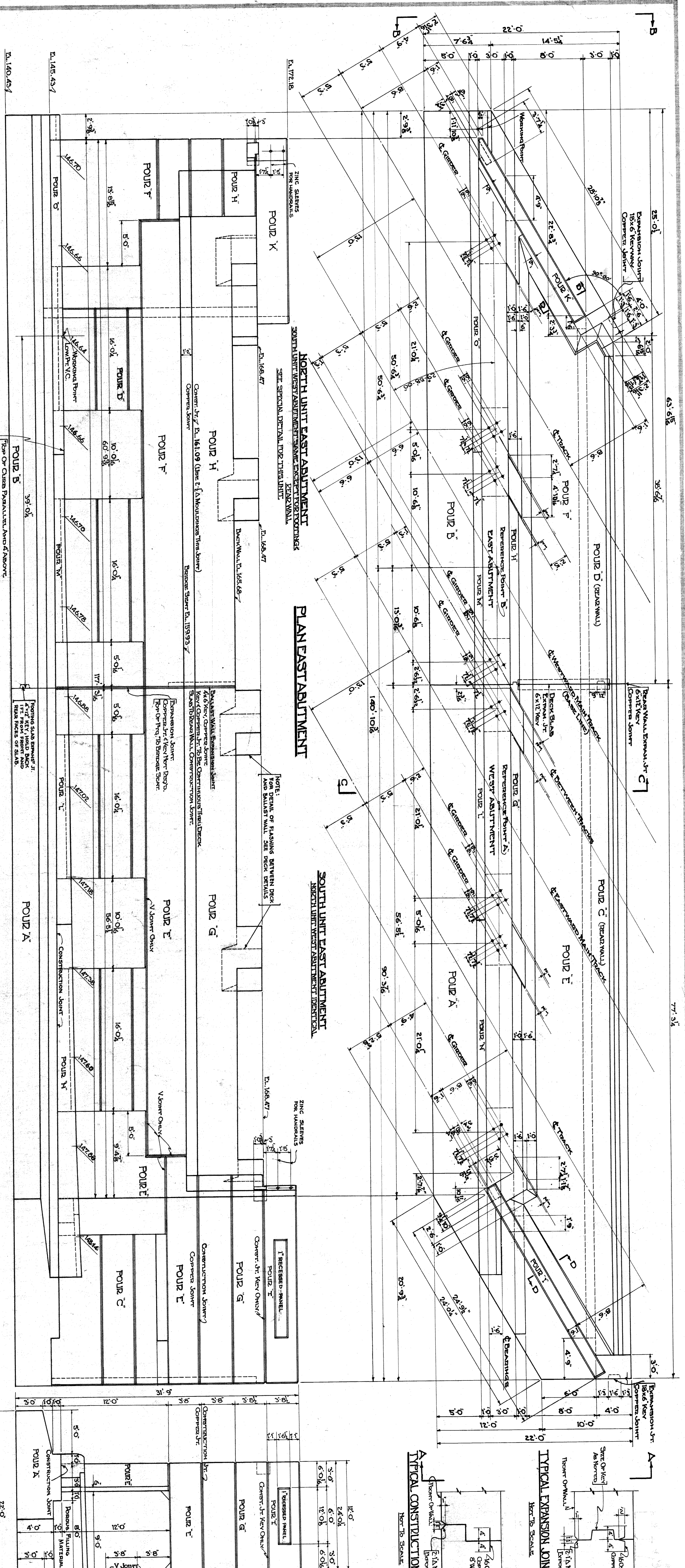
APPROVED: [Signature]

NO. 12 A

DATE: 8-12-1937

FILED: 8-12-1937

NO. 82-22-49



CONCRETE QUANTITIES			
POUR	EAST ABUT.	WEST ABUT.	
A	230.10 CY	230.10 CY	
B	178.50	203.70	
C	101.50	101.50	
D	34.10	53.90	
E	153.80	153.80	
F	122.50	124.00	
G	57.50	57.50	
H	33.50	33.00	
I	5.00	5.00	
J	4.60	4.60	
K	2.80	2.80	
L	2.20	2.20	
M	6.00	6.00	
N	6.00	6.00	
O	2.80	2.80	
P	935.00 CY	1011.00 CY	
TOTAL	3335.00 CY	1946.00 CY	

DETAIL OF EDGE OF CURB

DETAIL OF V JOINTS

ELEVATION OF PORTAL

ELEVATION OF EAST ABUTMENT

CROSS SECTION

CONCRETE QUANTITIES

REVISIONS

ABUTMENT DETAILS

TYPICAL CONSTRUCTION AT DETAIL

TYPICAL EXPANSION JOINT DETAIL

TYPICAL FOR SOUTH UNIT EAST ABUTMENT AND NORTH UNIT WEST ABUTMENT

MICHIGAN STATE HIGHWAY DEPARTMENT
MURRAY D. VAN WAGONER - COMMISSIONER

SEC. 1 T.15 R.11E
BRIDGE FILE NO. XI OF 82-22-49 ROAD JOHN R. ST. S.W.A.
CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT
WYANT CO.

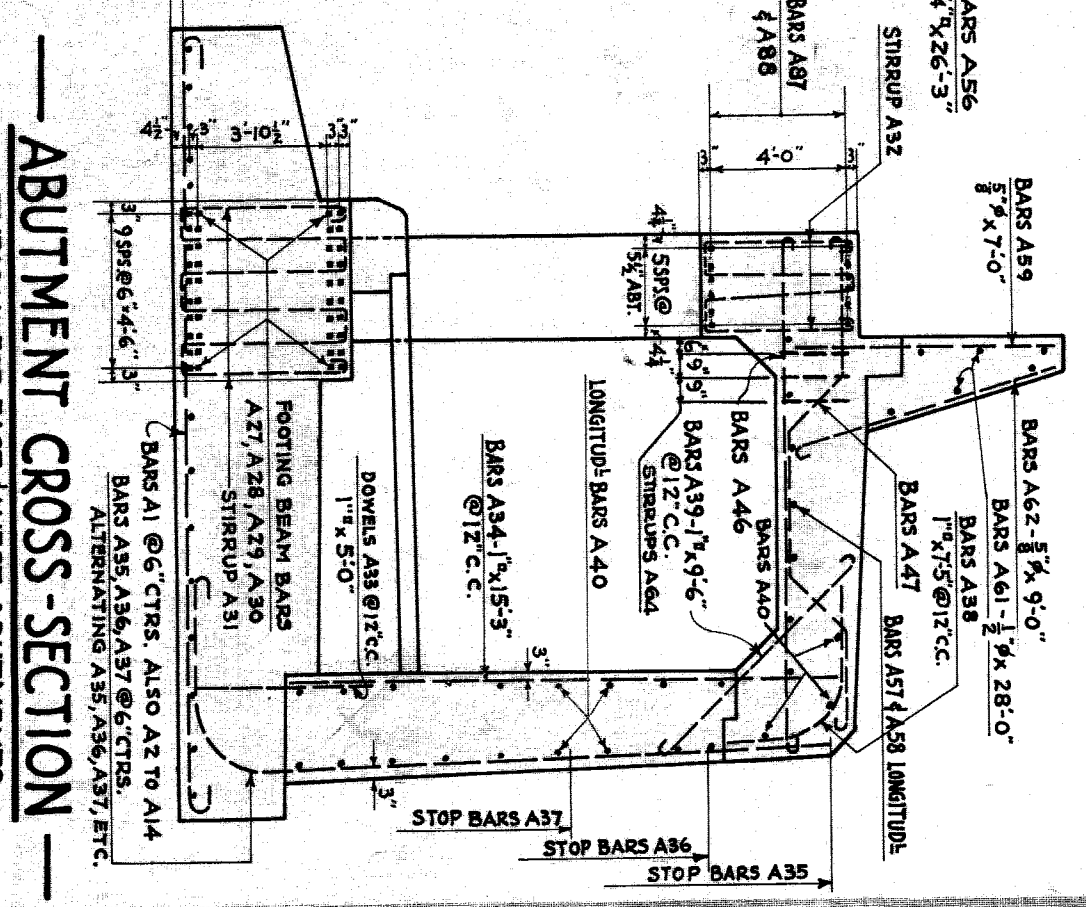
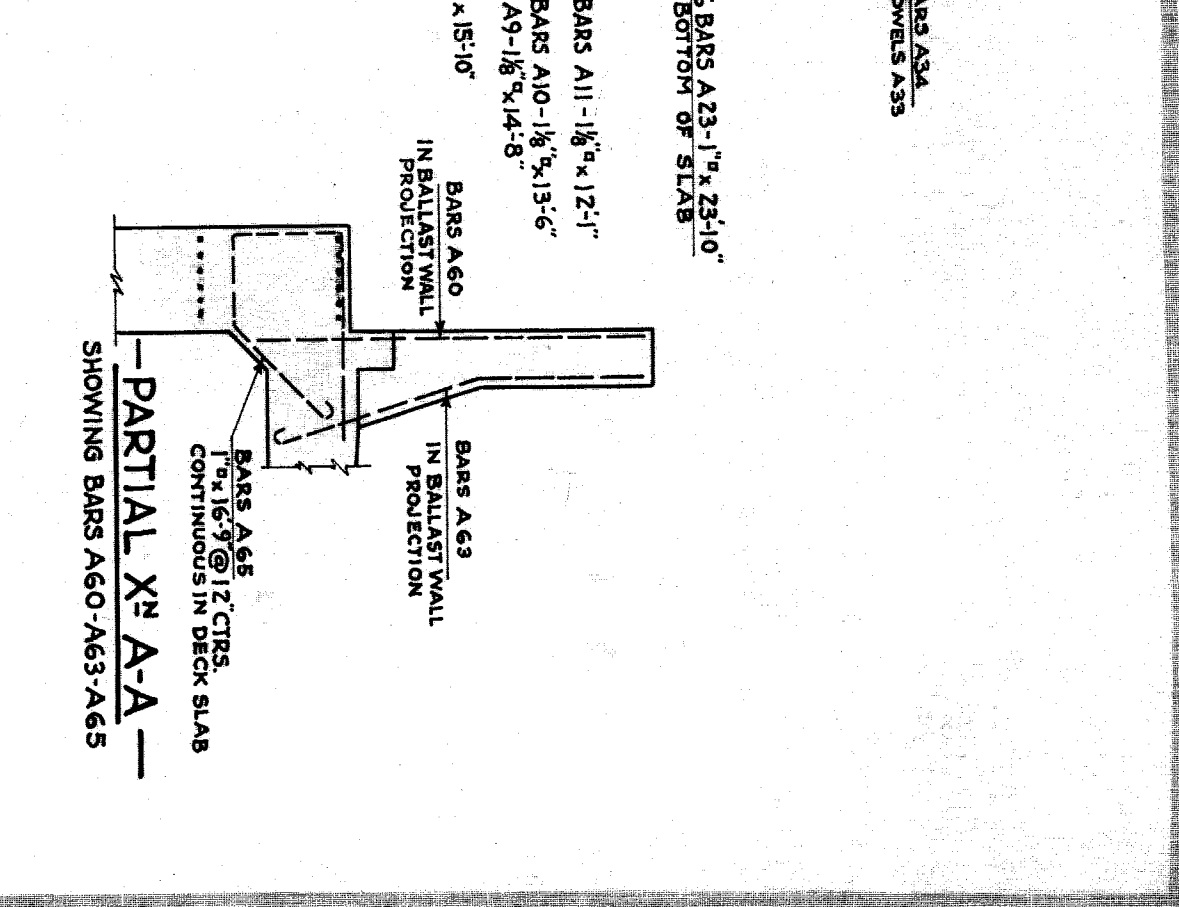
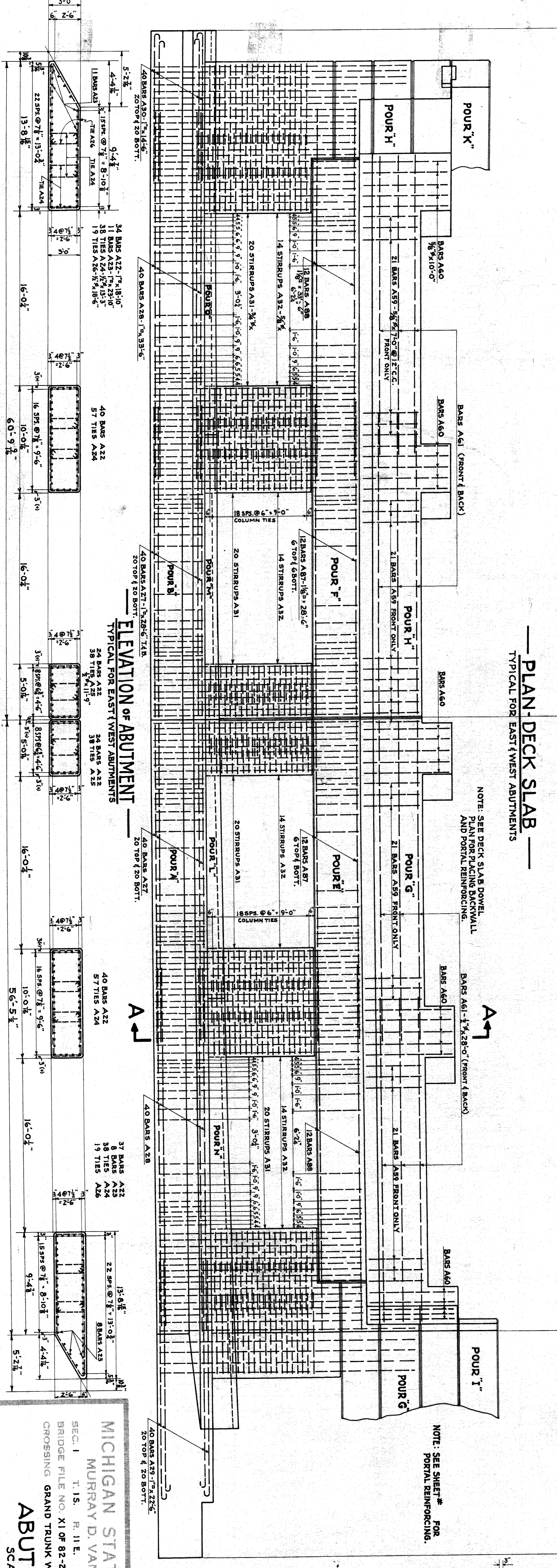
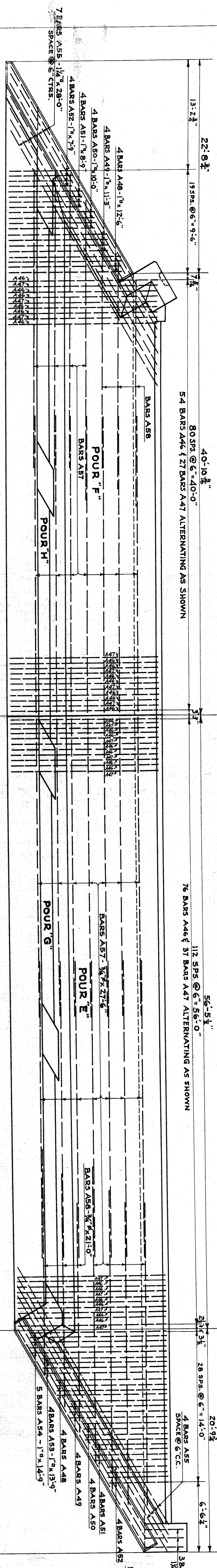
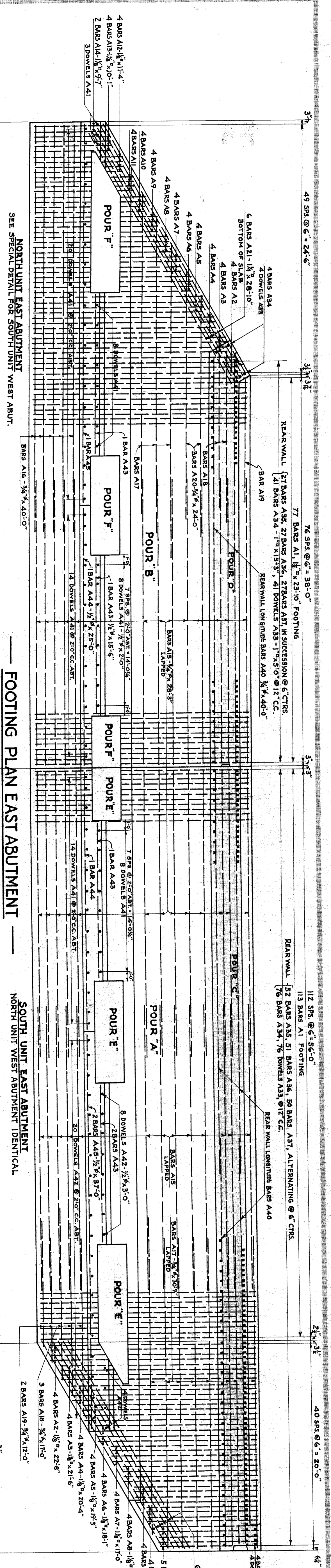
SCALE: 1/8" = 1'-0"

APPROVED: *M. J. Spurr* 5-27-37

DESIGNED BY: T.H.H. 7-15-36
CHECKED BY: M.J.B. 7-28-36
DRAWN BY: T.H.H. 7-7-36
SHRUBB & SONS, INC. DETROIT, MICH.

NO. 13 OF 24

FILED



CROSS-SECTION OF COLUMNS

TYPICAL FOR EAST WEST ABUTMENTS

PLAN DECK SLAB

TYPICAL FOR EAST WEST ABUTMENTS

FOOTING PLAN EAST ABUTMENT

SEE SPECIAL DETAIL FOR SOUTH UNIT WEST ABUT.

ELEVATION OF ABUTMENT

TYPICAL FOR EAST WEST ABUTMENTS

REVISIONS

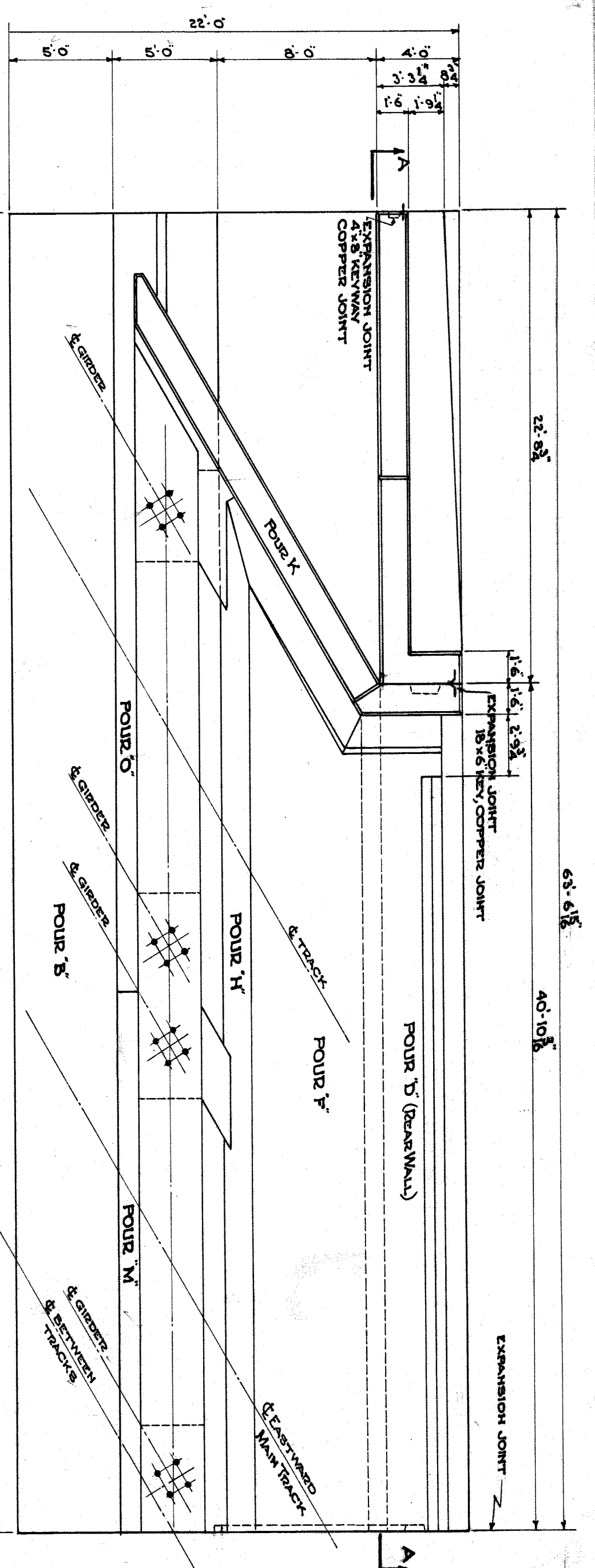
NO.	DESCRIPTION	DATE	BY

MICHIGAN STATE HIGHWAY DEPARTMENT
 MURRAY D. VAN WAGONER - COMMISSIONER
 SEC. 1 T. 15. R. 11 E.
 BRIDGE FILE NO. XI OF 82-22-49 ROAD JOHN R. STREET
 CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT
 ABUTMENT DETAILS
 SCALE: 1/8" = 1 FT.

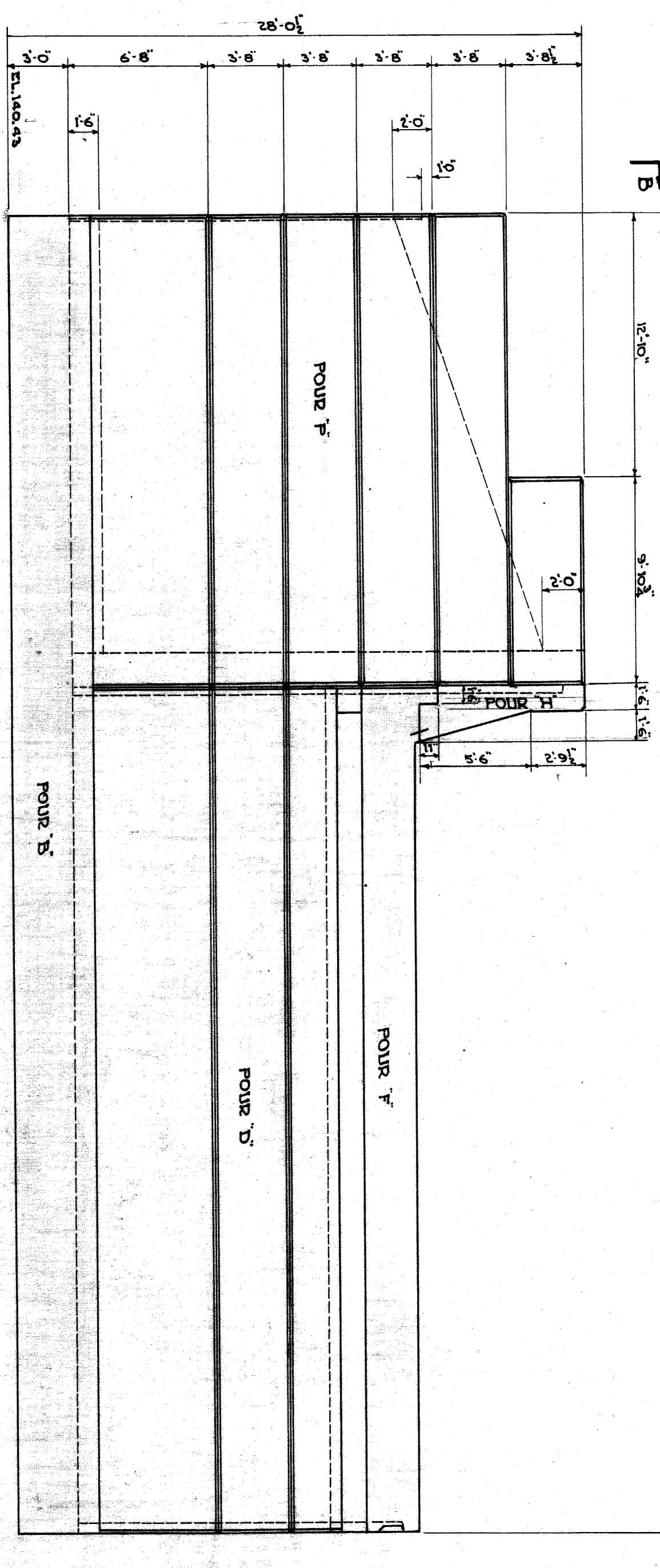
APPROVED: *W. N. Spawmer* 8-22-37
 DRAWN BY: *W. N. Spawmer*
 CHECKED BY: *M. J. D.*
 SHEET 14 OF 24

FILED

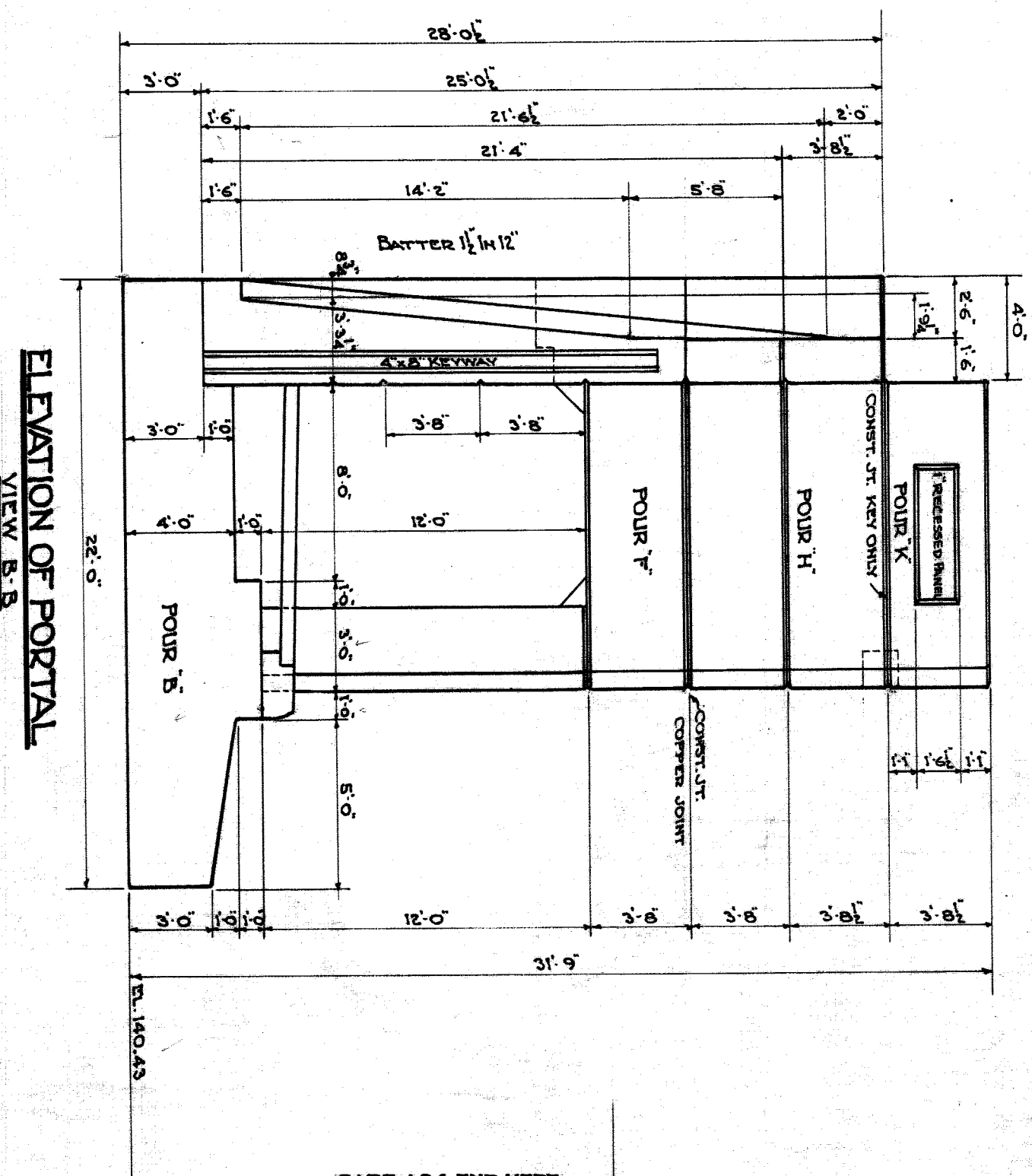
82-22-49



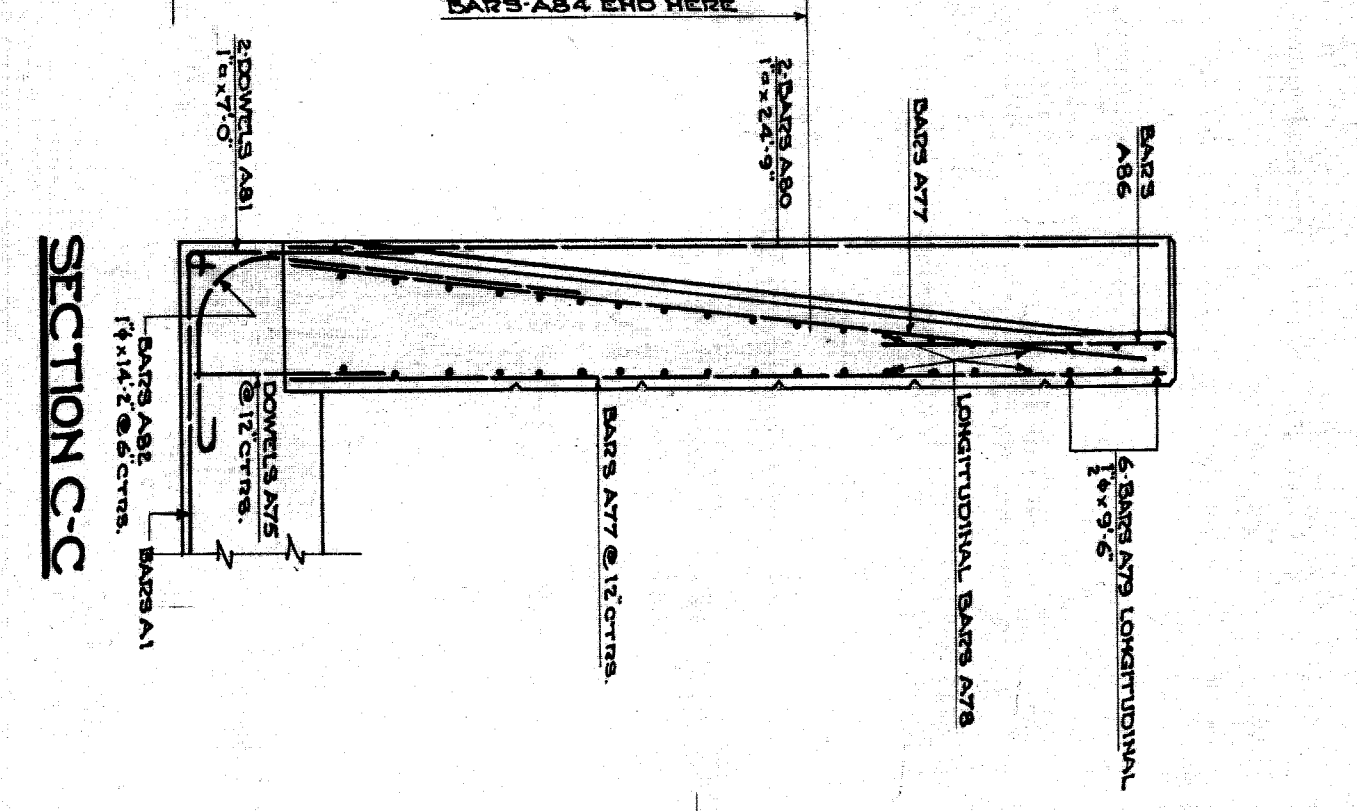
PLAN - SOUTH UNIT - WEST ABUTMENT
DETAILS & DIMENSIONS NOT SHOWN - SAME AS NORTH UNIT EAST ABUTMENT



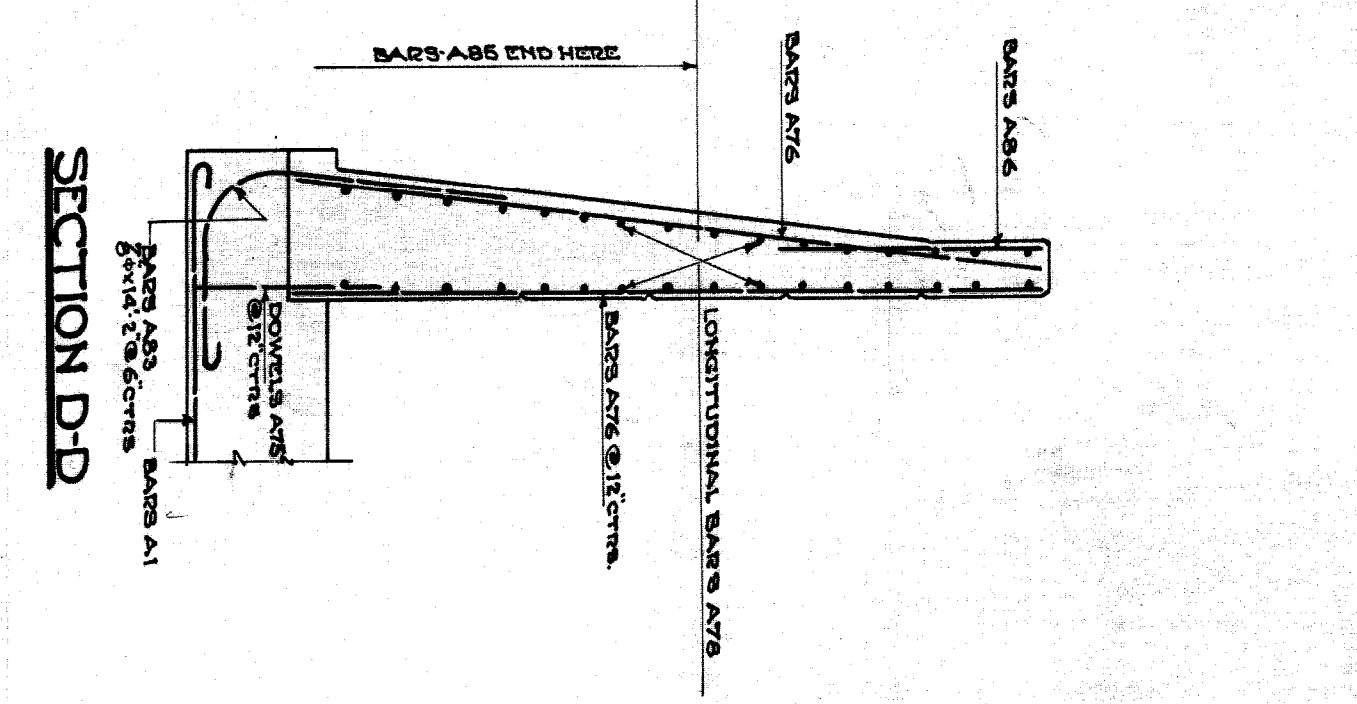
ELEVATION OF REAR WALL - SOUTH UNIT - WEST ABUTMENT
SECTION A-A



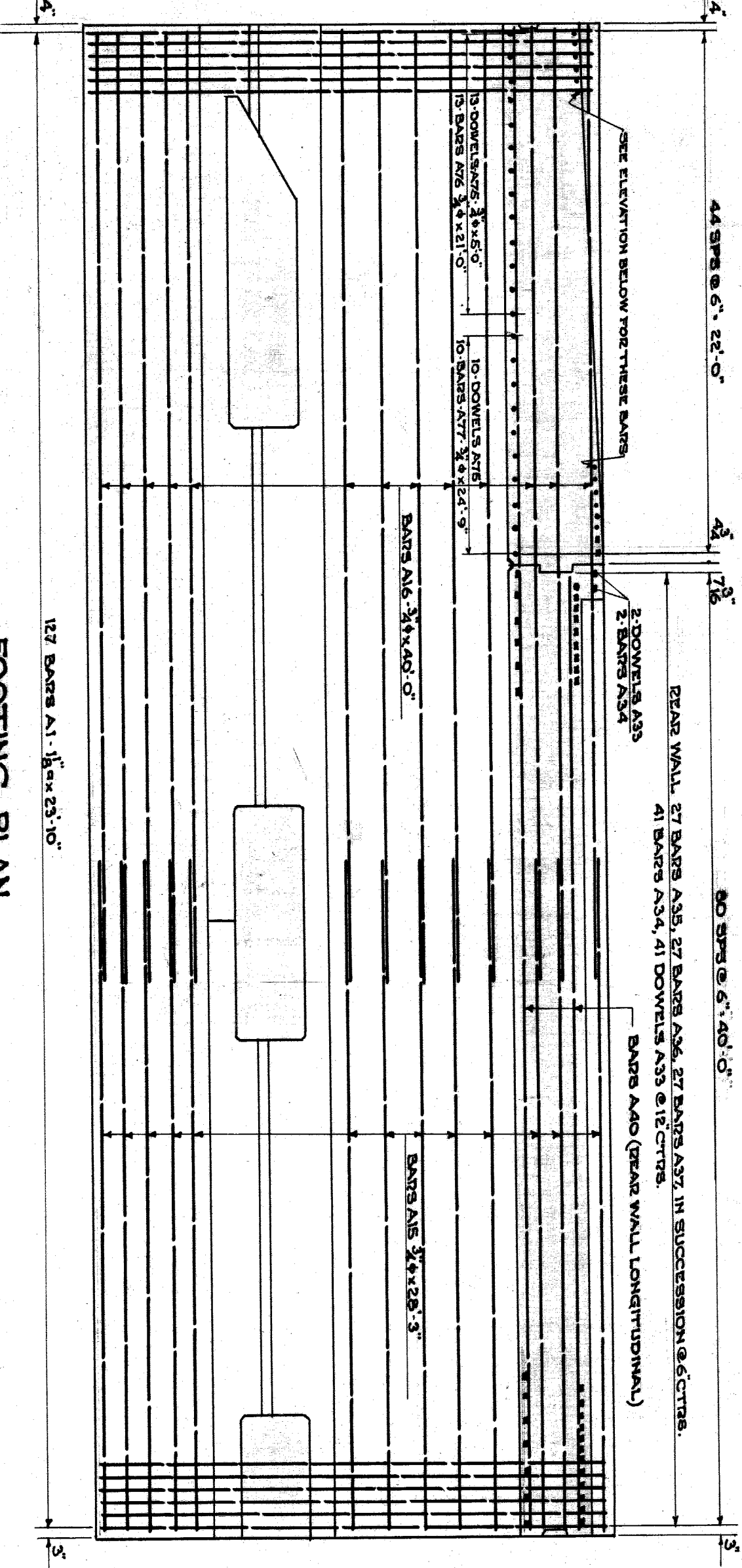
ELEVATION OF PORTAL
VIEW S-S



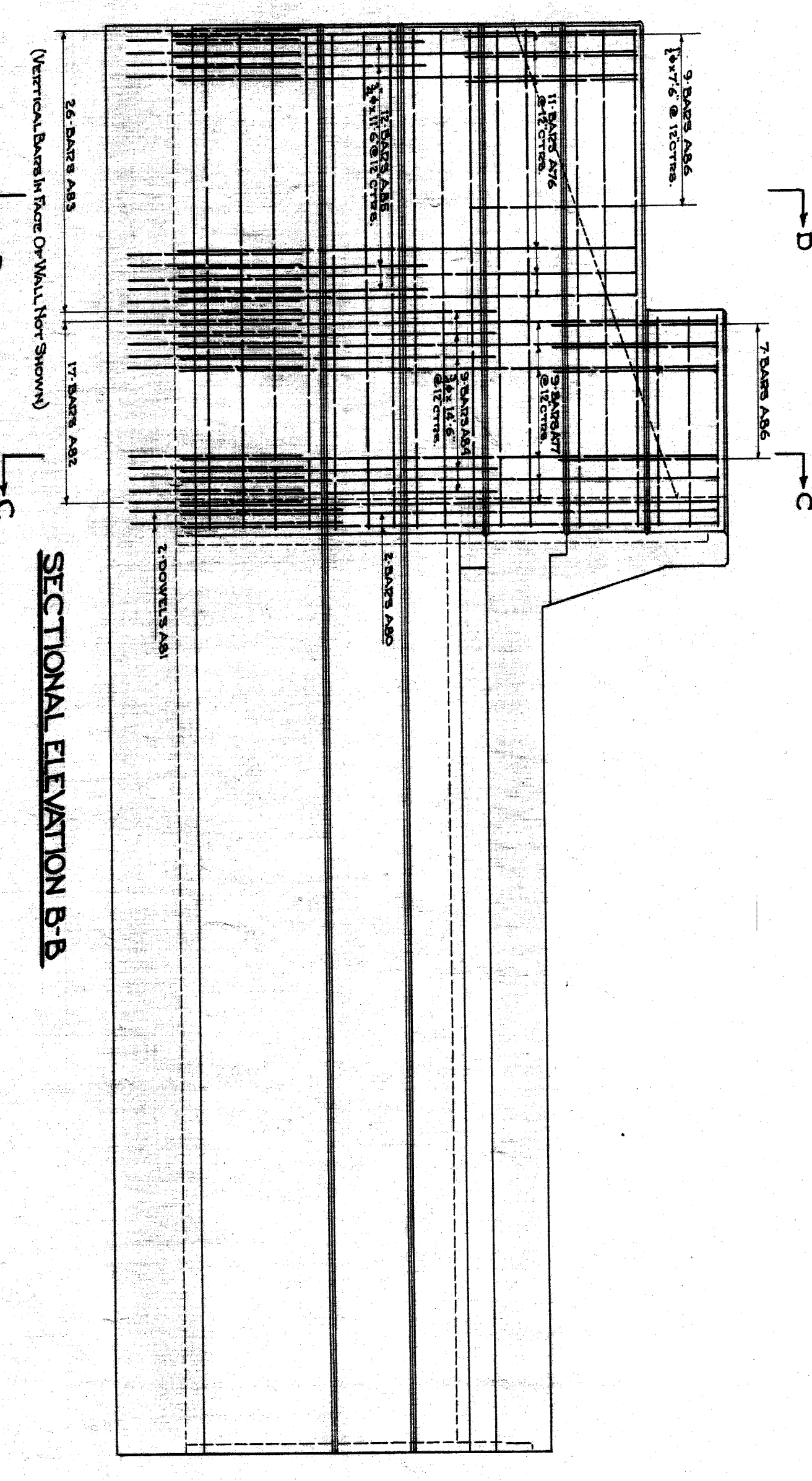
SECTION C-C



SECTION D-D



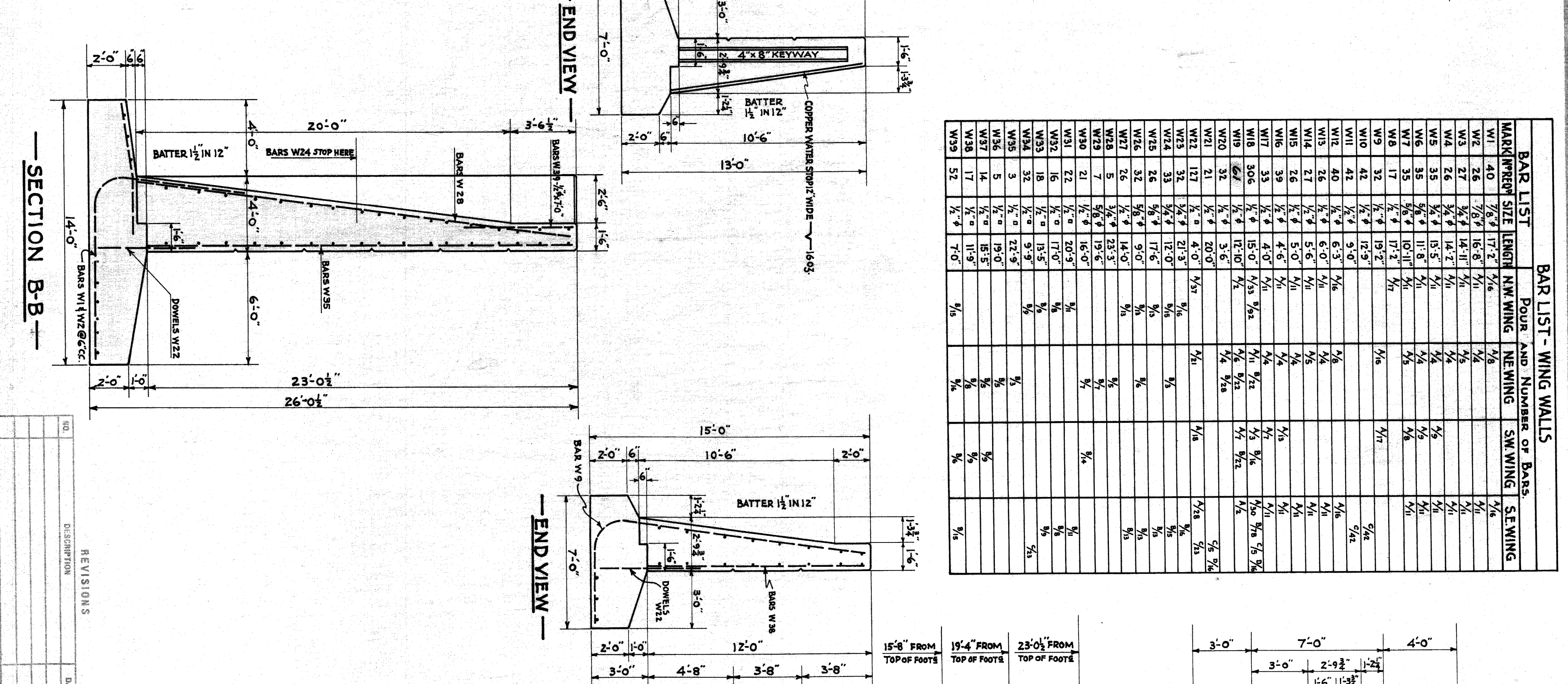
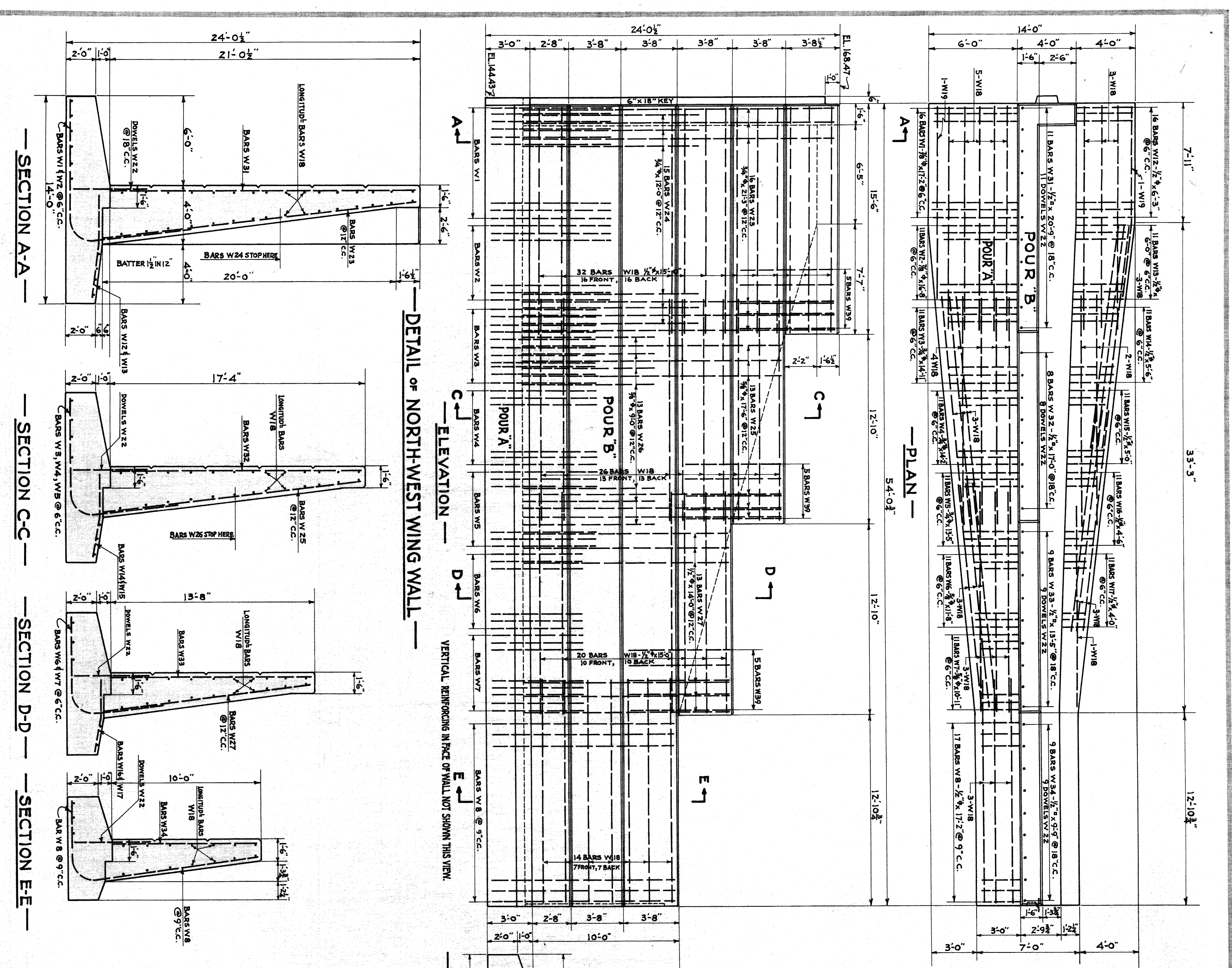
FOOTING PLAN
REINFORCING NOT SHOWN SAME AS NORTH UNIT - EAST ABUTMENT.



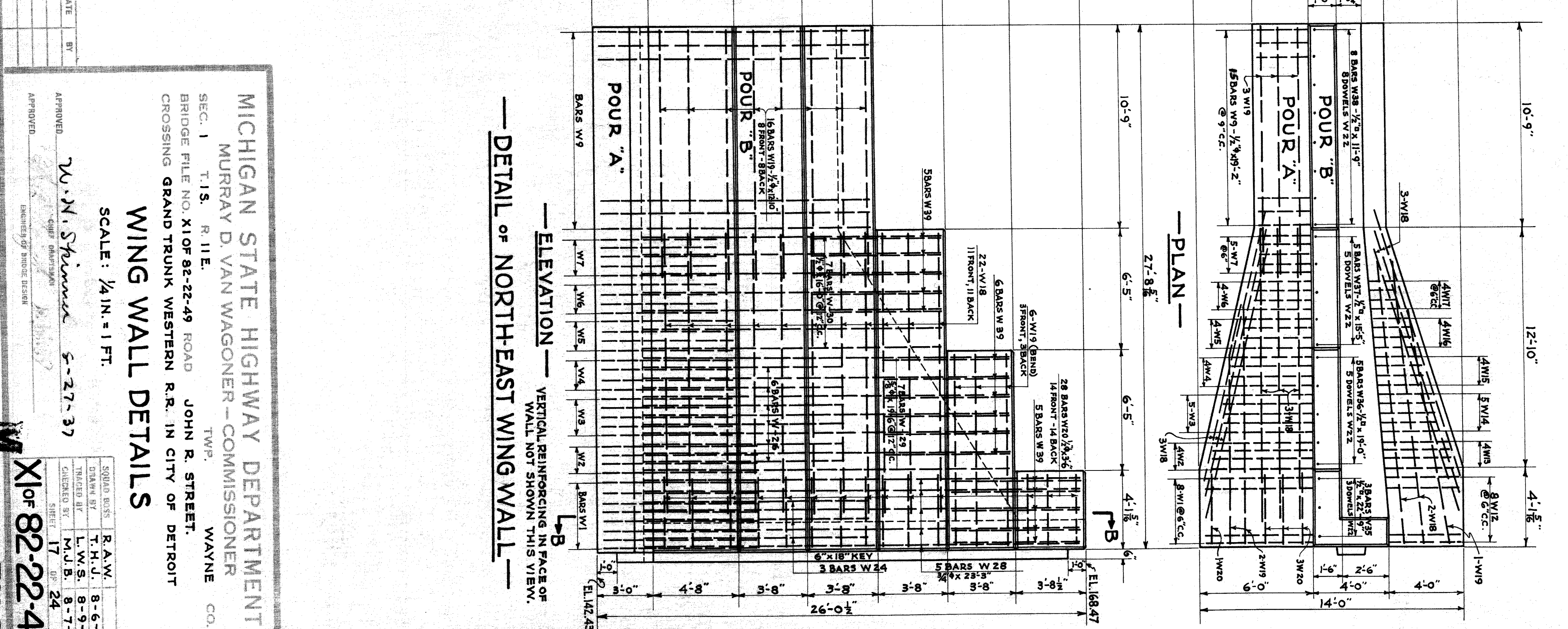
SECTIONAL ELEVATION B-B

BAR LIST FOR ABUTMENTS			
BAR LIST	EST. ABUTMENT	WEST ABUTMENT	
MARK	HEIGHT/DEPTH	LENGTH	FOUR-PURPOSE BARS
A1	450	18'	1/2"
A2	12	21.6	1/2"
A3	12	19.2	1/2"
A4	12	19.2	1/2"
A5	12	19.2	1/2"
A6	12	19.2	1/2"
A7	12	19.2	1/2"
A8	12	19.2	1/2"
A9	12	19.2	1/2"
A10	12	19.2	1/2"
A11	12	19.2	1/2"
A12	12	19.2	1/2"
A13	12	19.2	1/2"
A14	12	19.2	1/2"
A15	12	19.2	1/2"
A16	12	19.2	1/2"
A17	12	19.2	1/2"
A18	12	19.2	1/2"
A19	12	19.2	1/2"
A20	12	19.2	1/2"
A21	12	19.2	1/2"
A22	12	19.2	1/2"
A23	12	19.2	1/2"
A24	12	19.2	1/2"
A25	12	19.2	1/2"
A26	12	19.2	1/2"
A27	12	19.2	1/2"
A28	12	19.2	1/2"
A29	12	19.2	1/2"
A30	12	19.2	1/2"
A31	12	19.2	1/2"
A32	12	19.2	1/2"
A33	12	19.2	1/2"
A34	12	19.2	1/2"
A35	12	19.2	1/2"
A36	12	19.2	1/2"
A37	12	19.2	1/2"
A38	12	19.2	1/2"
A39	12	19.2	1/2"
A40	12	19.2	1/2"
A41	12	19.2	1/2"
A42	12	19.2	1/2"
A43	12	19.2	1/2"
A44	12	19.2	1/2"
A45	12	19.2	1/2"
A46	12	19.2	1/2"
A47	12	19.2	1/2"
A48	12	19.2	1/2"
A49	12	19.2	1/2"
A50	12	19.2	1/2"
A51	12	19.2	1/2"
A52	12	19.2	1/2"
A53	12	19.2	1/2"
A54	12	19.2	1/2"
A55	12	19.2	1/2"
A56	12	19.2	1/2"
A57	12	19.2	1/2"
A58	12	19.2	1/2"
A59	12	19.2	1/2"
A60	12	19.2	1/2"
A61	12	19.2	1/2"
A62	12	19.2	1/2"
A63	12	19.2	1/2"
A64	12	19.2	1/2"
A65	12	19.2	1/2"
A66	12	19.2	1/2"
A67	12	19.2	1/2"
A68	12	19.2	1/2"
A69	12	19.2	1/2"
A70	12	19.2	1/2"
A71	12	19.2	1/2"
A72	12	19.2	1/2"
A73	12	19.2	1/2"
A74	12	19.2	1/2"
A75	12	19.2	1/2"
A76	12	19.2	1/2"
A77	12	19.2	1/2"
A78	12	19.2	1/2"
A79	12	19.2	1/2"
A80	12	19.2	1/2"
A81	12	19.2	1/2"
A82	12	19.2	1/2"
A83	12	19.2	1/2"
A84	12	19.2	1/2"
A85	12	19.2	1/2"
A86	12	19.2	1/2"
A87	12	19.2	1/2"
A88	12	19.2	1/2"
A89	12	19.2	1/2"
A90	12	19.2	1/2"
A91	12	19.2	1/2"
A92	12	19.2	1/2"
A93	12	19.2	1/2"
A94	12	19.2	1/2"
A95	12	19.2	1/2"
A96	12	19.2	1/2"
A97	12	19.2	1/2"
A98	12	19.2	1/2"
A99	12	19.2	1/2"
A100	12	19.2	1/2"

MICHIGAN STATE HIGHWAY DEPARTMENT
 MURRAY D. VAN WAGONER - COMMISSIONER
 SEC. 1 T-18 RITE ROAD JOHN R STREET
 BRIDGE FILE NO. X1 OF 82-22-49
 CROSSING GRAND TRUNK WESTERN RR. IN CITY OF DETROIT
 ABUTMENT DETAILS
 SCALE: 1/8" = 1'-0"
 APPROVED: *W. N. Skirrow* 5-27-37
 DRAWN BY: T.H.J. JUN 1937
 CHECKED BY: W.M.F. JULY 1937
 SHEET 15 OF 24
 FILED: 82-22-49

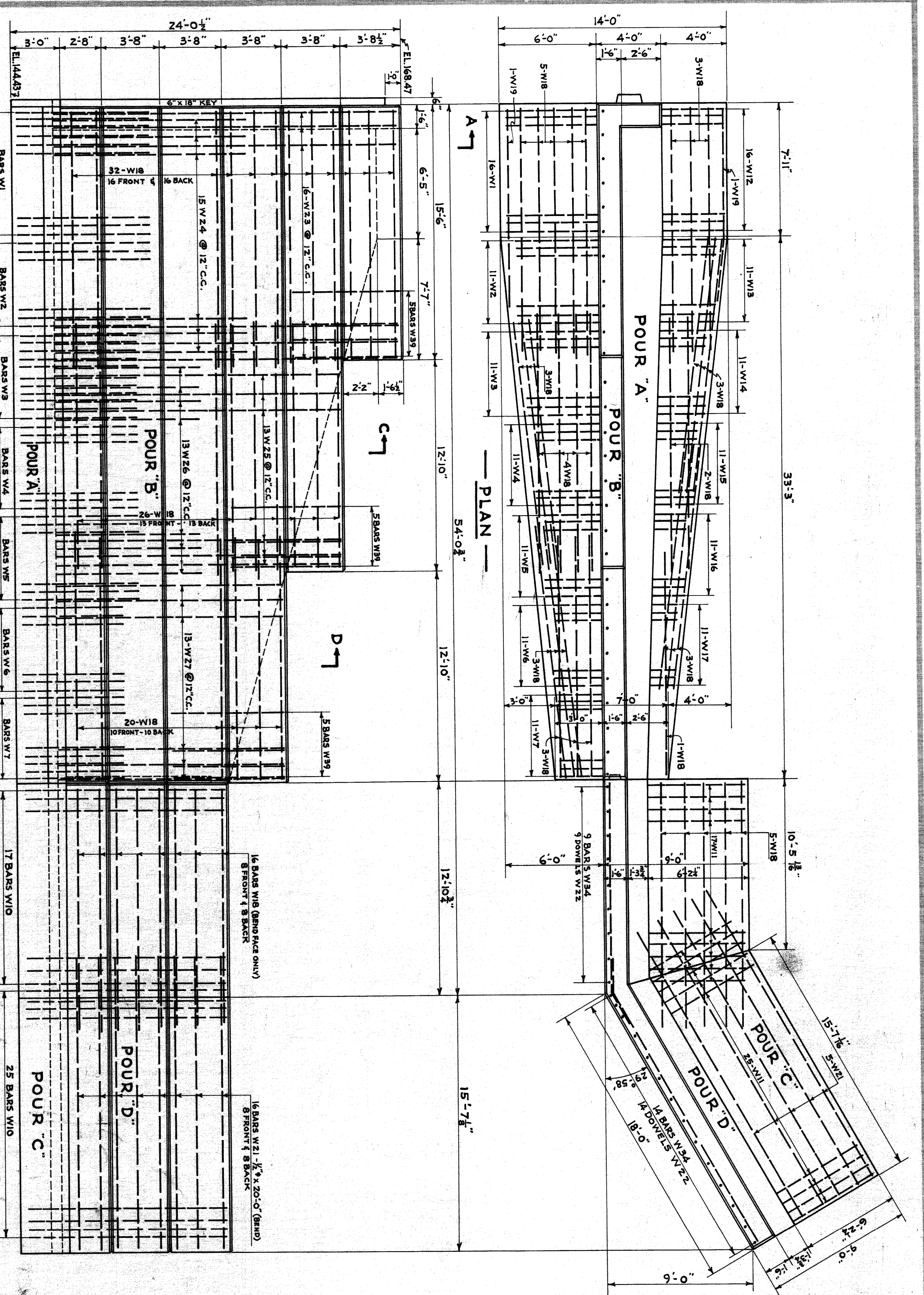


BAR LIST		BAR LIST - WING WALLS				
MARK	REIN. SIZE	LENGTH	N.W. WING	N.E. WING	SW. WING	SE. WING
W1	40	7/8"	17'-2"	1/4	1/4	1/4
W2	24	5/8"	15'-8"	1/4	1/4	1/4
W3	24	5/8"	14'-7"	1/4	1/4	1/4
W4	24	5/8"	14'-7"	1/4	1/4	1/4
W5	35	5/8"	13'-5"	1/4	1/4	1/4
W6	35	5/8"	13'-5"	1/4	1/4	1/4
W7	35	5/8"	13'-5"	1/4	1/4	1/4
W8	35	5/8"	13'-5"	1/4	1/4	1/4
W9	35	5/8"	13'-5"	1/4	1/4	1/4
W10	35	5/8"	13'-5"	1/4	1/4	1/4
W11	41	5/8"	13'-5"	1/4	1/4	1/4
W12	41	5/8"	13'-5"	1/4	1/4	1/4
W13	41	5/8"	13'-5"	1/4	1/4	1/4
W14	41	5/8"	13'-5"	1/4	1/4	1/4
W15	41	5/8"	13'-5"	1/4	1/4	1/4
W16	41	5/8"	13'-5"	1/4	1/4	1/4
W17	41	5/8"	13'-5"	1/4	1/4	1/4
W18	41	5/8"	13'-5"	1/4	1/4	1/4
W19	41	5/8"	13'-5"	1/4	1/4	1/4
W20	41	5/8"	13'-5"	1/4	1/4	1/4
W21	41	5/8"	13'-5"	1/4	1/4	1/4
W22	41	5/8"	13'-5"	1/4	1/4	1/4
W23	41	5/8"	13'-5"	1/4	1/4	1/4
W24	41	5/8"	13'-5"	1/4	1/4	1/4
W25	41	5/8"	13'-5"	1/4	1/4	1/4
W26	41	5/8"	13'-5"	1/4	1/4	1/4
W27	41	5/8"	13'-5"	1/4	1/4	1/4
W28	41	5/8"	13'-5"	1/4	1/4	1/4
W29	41	5/8"	13'-5"	1/4	1/4	1/4
W30	41	5/8"	13'-5"	1/4	1/4	1/4
W31	41	5/8"	13'-5"	1/4	1/4	1/4
W32	41	5/8"	13'-5"	1/4	1/4	1/4
W33	41	5/8"	13'-5"	1/4	1/4	1/4
W34	41	5/8"	13'-5"	1/4	1/4	1/4
W35	41	5/8"	13'-5"	1/4	1/4	1/4
W36	41	5/8"	13'-5"	1/4	1/4	1/4
W37	41	5/8"	13'-5"	1/4	1/4	1/4
W38	41	5/8"	13'-5"	1/4	1/4	1/4
W39	41	5/8"	13'-5"	1/4	1/4	1/4
W40	41	5/8"	13'-5"	1/4	1/4	1/4
W41	41	5/8"	13'-5"	1/4	1/4	1/4
W42	41	5/8"	13'-5"	1/4	1/4	1/4
W43	41	5/8"	13'-5"	1/4	1/4	1/4
W44	41	5/8"	13'-5"	1/4	1/4	1/4
W45	41	5/8"	13'-5"	1/4	1/4	1/4
W46	41	5/8"	13'-5"	1/4	1/4	1/4
W47	41	5/8"	13'-5"	1/4	1/4	1/4
W48	41	5/8"	13'-5"	1/4	1/4	1/4
W49	41	5/8"	13'-5"	1/4	1/4	1/4
W50	41	5/8"	13'-5"	1/4	1/4	1/4



MICHIGAN STATE HIGHWAY DEPARTMENT
 MURRAY D. VAN WAGONER - COMMISSIONER
 SEC. 1 T.I.S. R.I.I.E.
 BRIDGE FILE NO. X10F82-22-49 ROAD JOHN R. STREET.
 CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT
 WAYNE CO.
 WING WALL DETAILS
 SCALE: 1/4" = 1' FT.
 APPROVED: W. N. Spina 5-27-37
 DATE: 5-27-37
 BY: BT
 REVISIONS: DISPOSITION
 NO.

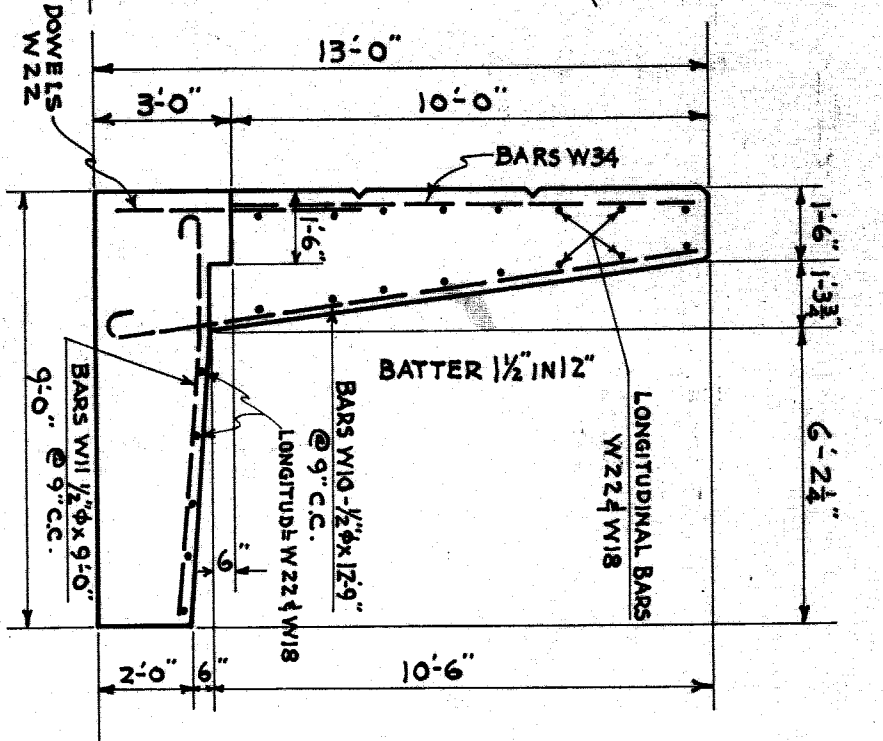
X10F 82-22-49
 FILED



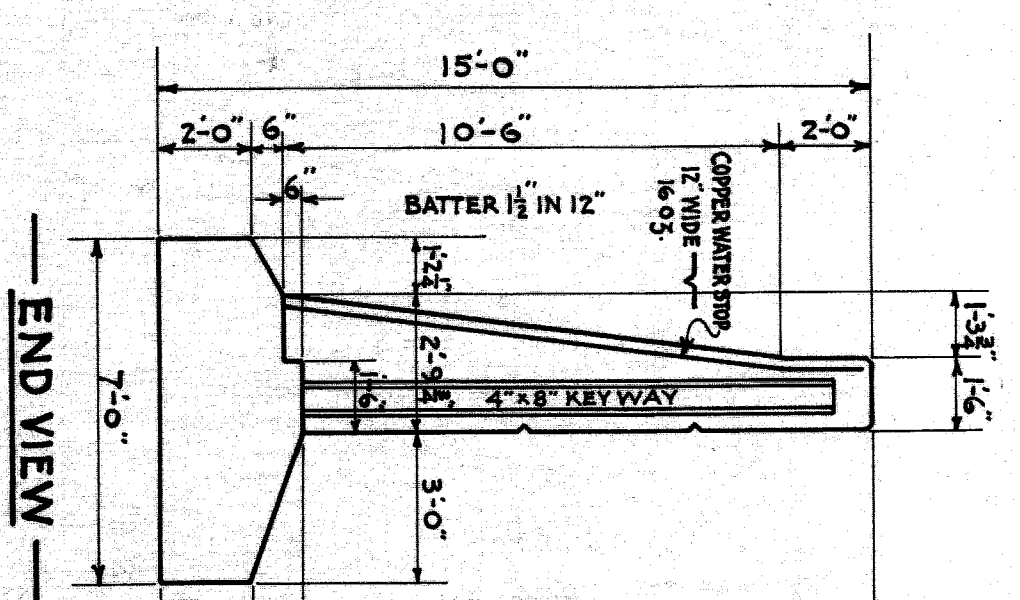
NOTE: SECTIONS A-A, C-C, D-D ARE IDENTICAL WITH SIMILAR X'S OF NORTHWEST WING WALL. SEE SHEET #

DETAIL OF SOUTHEAST WING WALL

VERTICAL REINFORCING IN FACE OF WALL NOT SHOWN THIS VIEW.

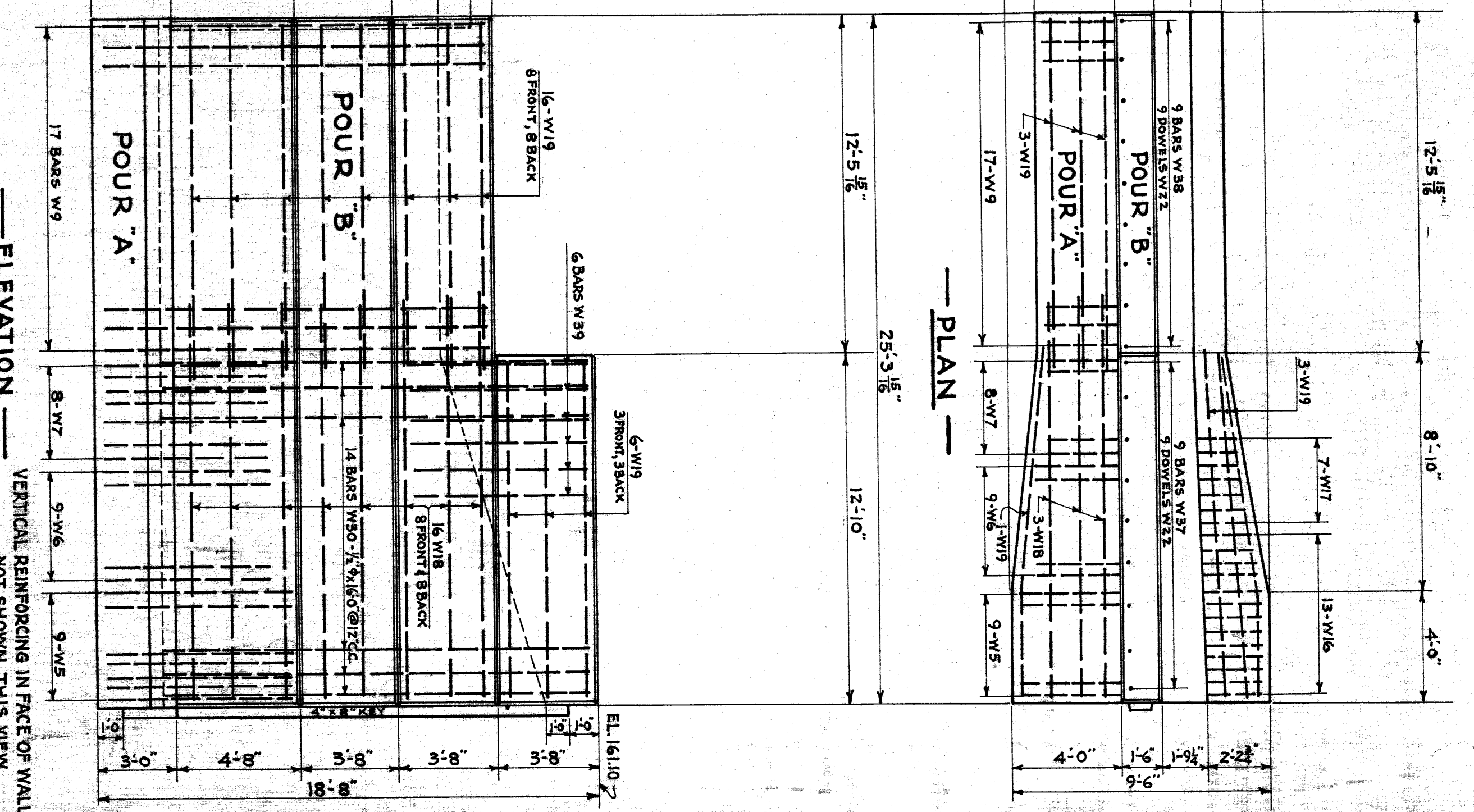


END VIEW



END VIEW

DETAIL OF SOUTHWEST WING WALL



CONCRETE QUANTITIES

POUR	N.E. WING	N.W. WING	S.E. WING	S.W. WING
A	25.00	51.20	42.70	18.70
B	41.00	79.80	69.30	27.30
C			23.00	23.00
D	66.00	131.00	160.00	46.00
TOTAL	132.00	262.00	395.00	115.00
TOTAL FOR ALL FOUR WING WALLS	403.00			

MICHIGAN STATE HIGHWAY DEPARTMENT
 MURRAY D. VAN WAGONER - COMMISSIONER
 SEC. 1 T.I.S. R.11E. TWP. WAYNE CO.
 BRIDGE FILE NO. X10F 82-22-49 ROAD JOHN R. STREET
 CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT

WING WALL DETAILS

SCALE: 1/4" = 1 FT.

REVISIONS

NO.	DESCRIPTION	DATE	BY

APPROVED: *W. J. Skinnis* 8-27-37

DESIGNED BY: *W. J. Skinnis*

CHECKED BY: *M. C. B.*

DATE: 8-27-37

APPENDIX: *W. J. Skinnis*

SCALE: 1/4" = 1 FT.

FILED

X10F 82-22-49

GENERAL NOTES

- DESIGN: A.R.E.A. SPECIFICATIONS FOR STEEL RAILWAY BRIDGES 1935.
- LOADING: E 72 WITH FULL IMPACT.
- MATERIALS: STRUCTURAL STEEL AS PER A.S.T.M. SPECIFICATION A7-34.
- RIVET STEEL A141-33.
- CARBON STEEL CASTINGS A154-33T.
- PHOSPHOR BRONZE PLATES B22-21.
- PAINT: MATERIALS AS PER MICHIGAN STATE HIGHWAY DEPT. SPECIFICATIONS.
- FABRICATION: TO BE IN ACCORDANCE WITH A.R.E.A. SPECIFICATIONS FOR STEEL RAILWAY BRIDGES 1935. SEE DETAIL SHEETS FOR SPECIAL REQUIREMENTS.
- RIVETS: 1" THRU WEB & FLANGES OF GIRDERS; 7/8" OTHER PARTS.
- OPEN HOLE: 5/16" THRU WEB & FLANGES OF GIRDERS; 1/4" OTHER PARTS, UNLESS NOTED OTHERWISE.
- PAINTING: TO BE IN ACCORDANCE WITH M.S.H.D. STANDARD SPECIFICATIONS AS MODIFIED BY SUPPLEMENTAL SPECIFICATIONS.
- MILL AND SHOP INSPECTION: BY MICHIGAN STATE HIGHWAY DEPARTMENT.
- ERECTION: TO BE IN ACCORDANCE WITH A.R.E.A. SPECIFICATIONS FOR STEEL RAILWAY BRIDGES 1935.

SHOP DRAWINGS: FABRICATOR SHALL FURNISH DETAILS FOR CHECKING AND INKED LINES. TRACINGS OF ALL SHOP DRAWINGS FOR PERMANENT RECORDS.

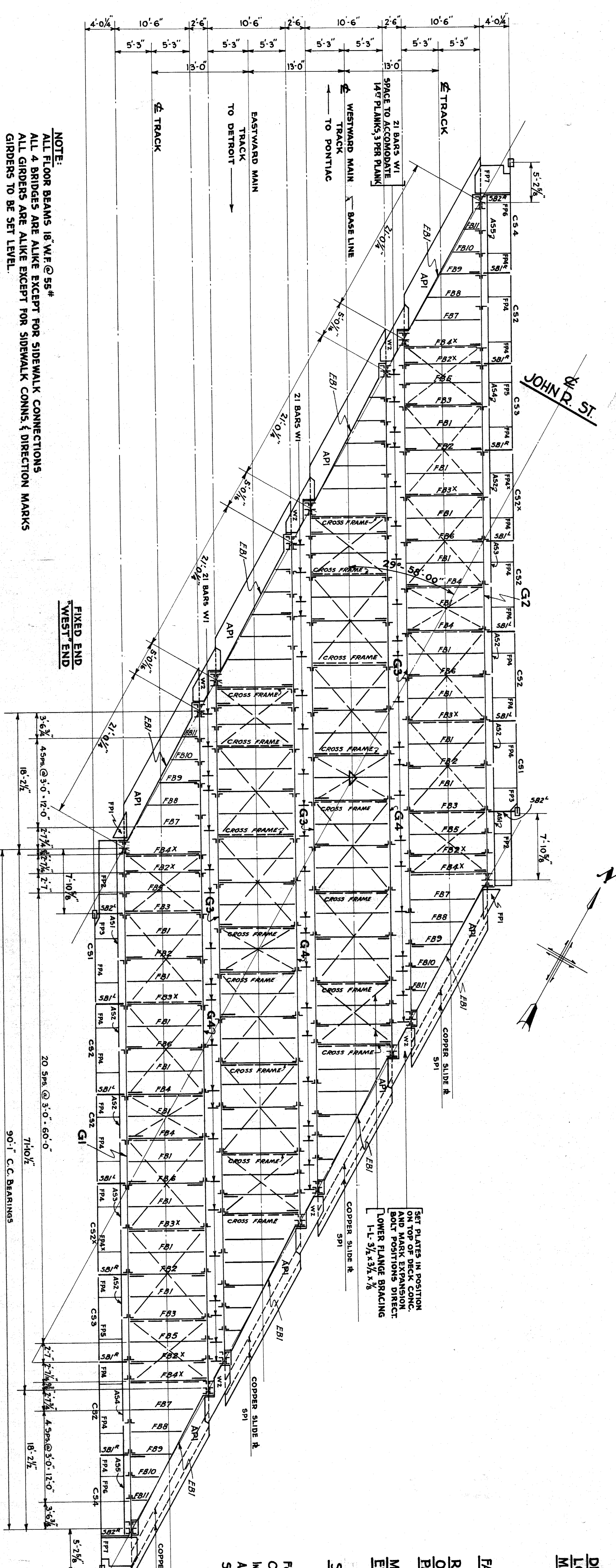
STRUCTURAL STEEL REQUIRED

FOUR SINGLE SPANS, CONSISTING OF GIRDERS, FLOOR BEAMS, END FLOOR BEAMS, BALLAST APRONS, CROSS AND LATERAL BRACING, WALKWAY PLATES AND BARS, ROUTED STEEL SLAB BEARINGS, INCLUDING CARBON STEEL CASTINGS, PINS, STEEL & PHOSPHOR BRONZE PLATES, ANCHOR BOLTS AND CONNECTIONS. ALSO MATERIAL FOR TWO SIDEWALKS CONSISTING OF CANTILEVER BRACKET CHANNEL AND ANGLE STRAINERS, FLOOR PLATES, HANDRAIL BARS, PIPE RAILS & CONNECTIONS.

ESTIMATED WEIGHT

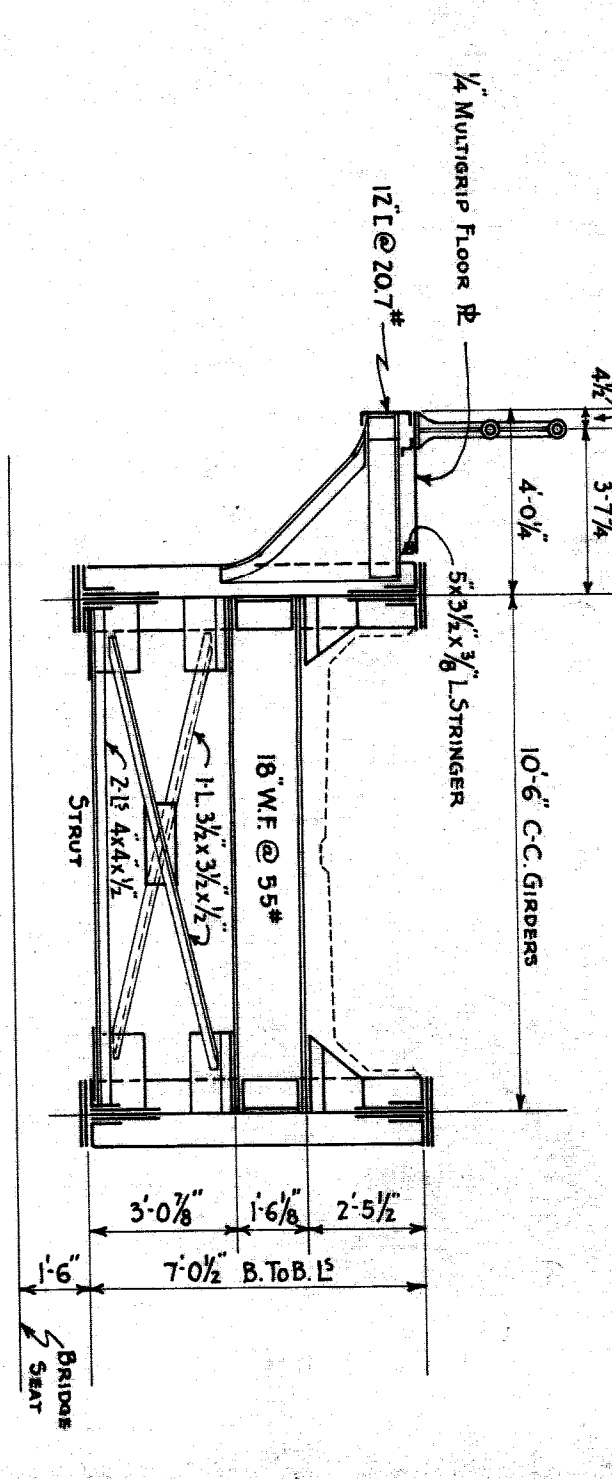
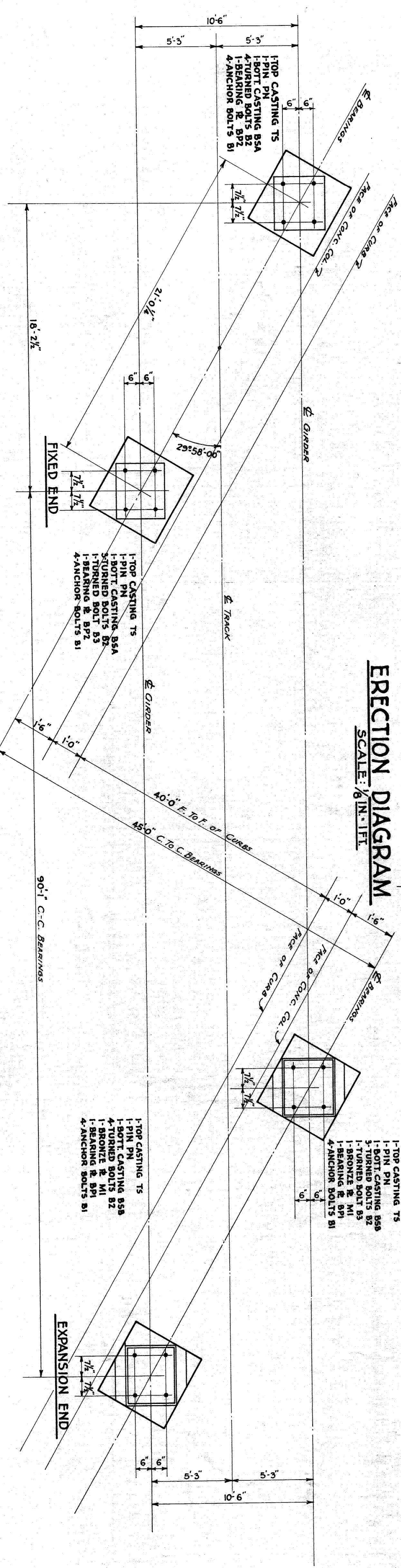
STRUCTURAL STEEL	918,669 LB.
CAST CARBON STEEL	13,336 LB.
PHOSPHOR BRONZE PLS.	272 LB.
TOTAL	932,277 LB.

(WTS. DO NOT INCLUDE LABORATORY MATERIAL.)



NOTE:
ALL FLOOR BEAMS 18" W.F. @ 55#
ALL 4 BRIDGES ARE ALIKE EXCEPT FOR SIDEWALK CONNECTIONS
ALL GIRDERS ARE ALIKE EXCEPT FOR SIDEWALK CONNS. & DIRECTION MARKS
GIRDERS TO BE SET LEVEL.

ERECTION DIAGRAM
SCALE: 1/8" = 1'-0"



TYPICAL DECK CROSS-SECTION
SECTION AT BRACE PANEL FOR ONE SPAN CARRYING SIDEWALK
OTHER SPANS SIMILAR
SCALE: 1/4" = 1'-0"

ANCHOR BOLT SETTING DIAGRAM & ASSEMBLY OF PIER MEMBERS
DIAGRAM FOR ONE BRIDGE ONLY - OTHER BRIDGES SIMILAR
NOT TO SCALE

TABLE OF STRESSES

MEMBER	LOAD	MAX. MOMENT, FT. LBS.	MAX. SHEAR, LBS.	SECTION
GIRDER	D.L.	3,848,000		WEB - 1 @ 84" x 7/8"
	L.L.	4,806,900		FLANGE - 4 @ 8" x 8" x 1/2"
	TOTAL	8,654,900		SIDE BR - 4 @ 18" x 7/8"
FLOOR BEAM	D.L.	16,600		1 @ 18" WIDE FLANGE BEAM
	L.L.	59,500		@ 55# SEC. MOD. 98.2 IN.
	TOTAL	76,100		FLANGE 7 1/2" x 7/8" WEB 18" x 7/8"

REVISIONS

NO.	DESCRIPTION	DATE	BY

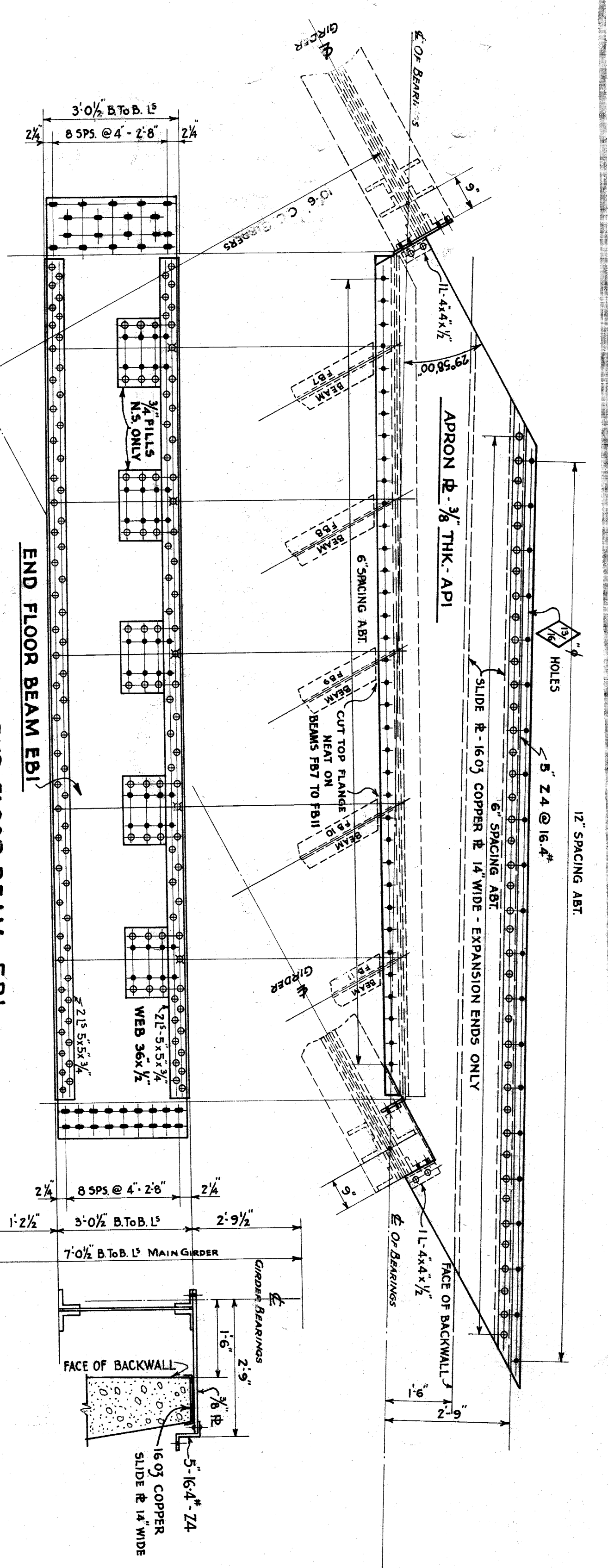
MICHIGAN STATE HIGHWAY DEPARTMENT
MURRAY D. VAN WAGONER - COMMISSIONER
WAYNE CO.

SEC. 1 T. 15. 1 R. 11E
BRIDGE FILE NO. XI OF 82-22-49 ROAD
CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT

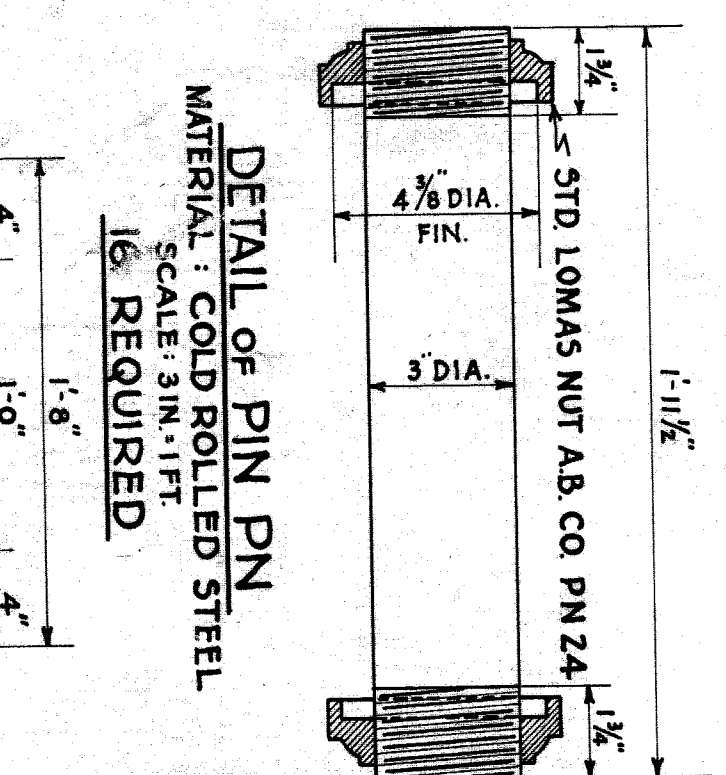
JOHN R. ST.
WAYNE CO.

APPROVED: *J. X. Spawell* 8-22-37
DRAWN BY: T.H.V. 5-1-37
CHECKED BY: E.R.S. 5-25-37
DESIGNED BY: R.A.W. 7-12-37
SHEET 19 OF 24

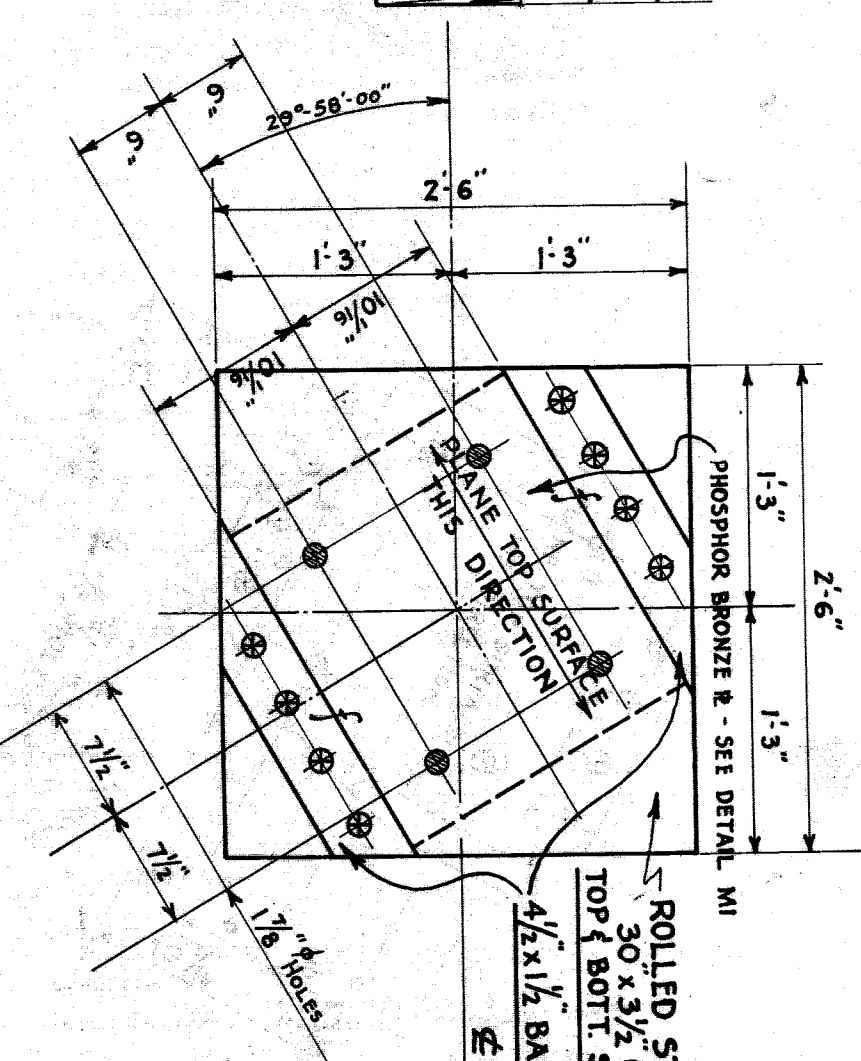
FILED 82-22-49



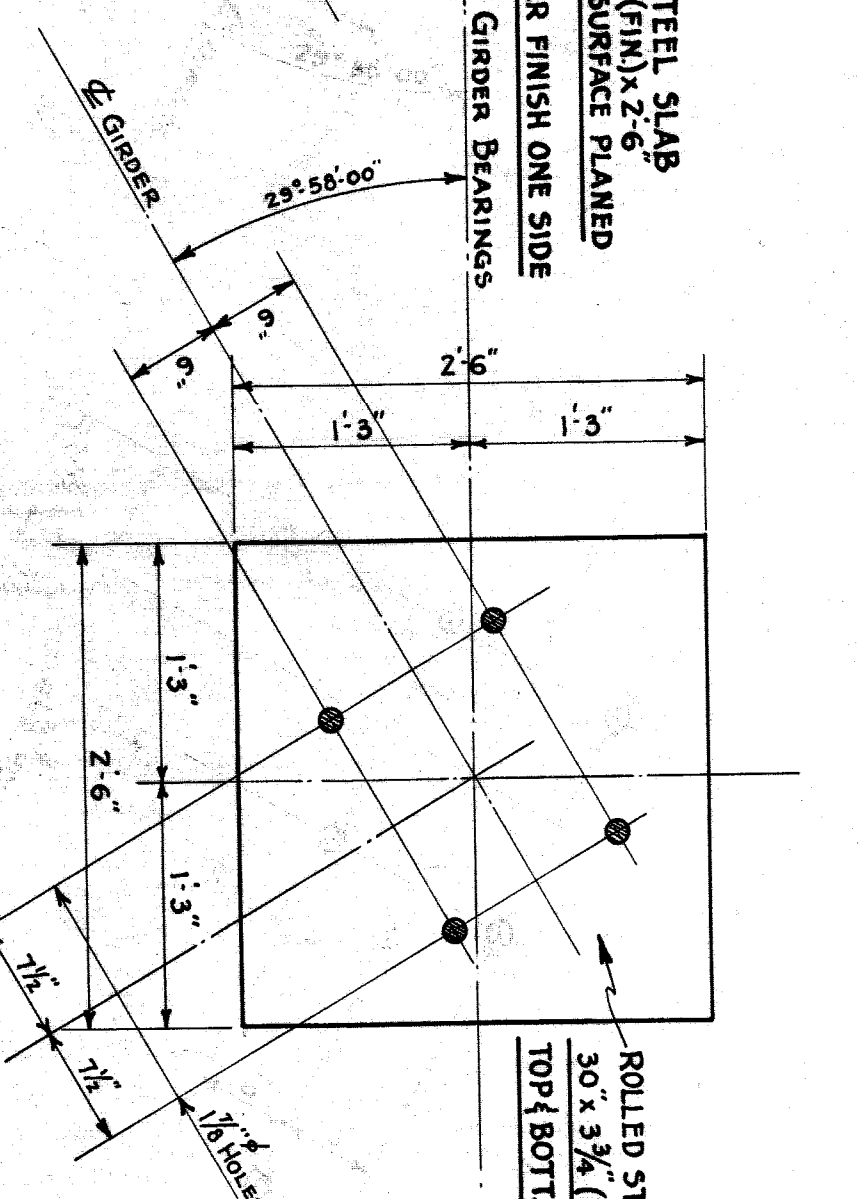
**DETAIL OF END FLOOR BEAM EB1
BALLAST APRON API & SLIDE PLATE SPI**
REQUIRED: 8 EB1, 8 API, 4 SPI
SCALE: 1/2 IN. = 1 FT.



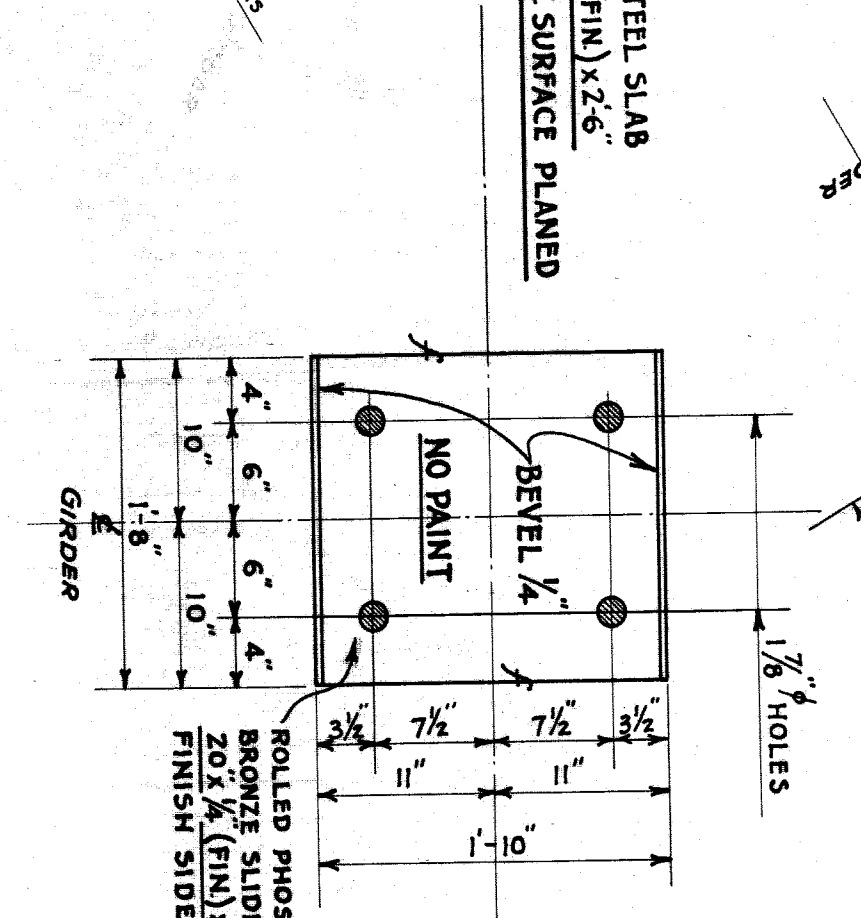
**DETAIL OF PIN PIN
MATERIAL: COLD ROLLED STEEL
SCALE: 3/16 IN. = 1 FT.
16 REQUIRED**



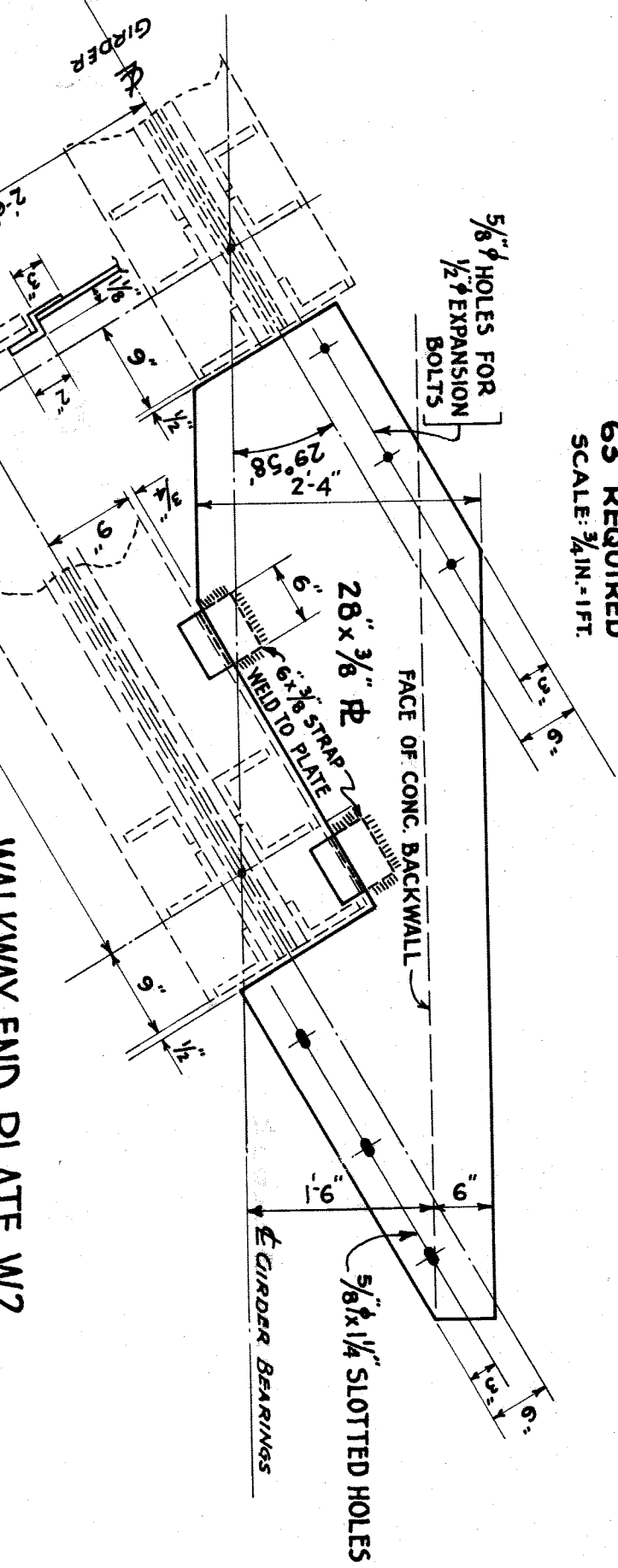
EXPANSION END BEARING EB BPI



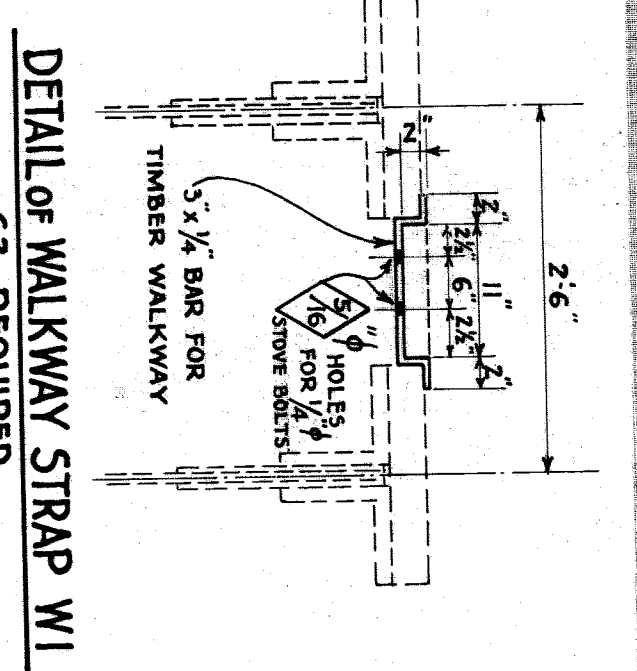
**FIXED END BEARING EB BPZ
BEARING PLATE DETAILS**
SCALE: 1 IN. = 1 FT.
REQUIRED: 8BP1, 8BP2, 8M1.



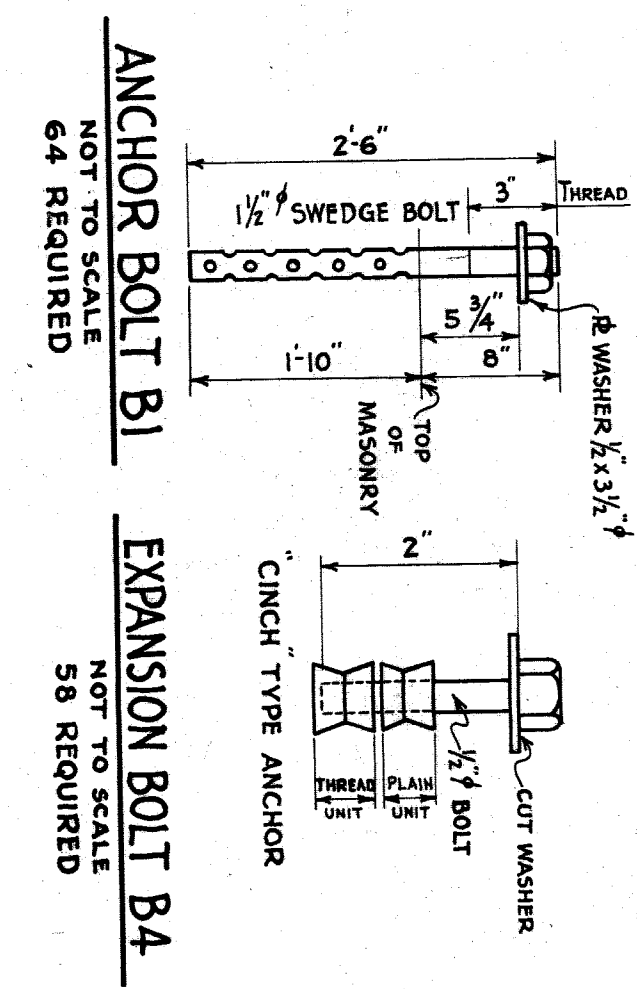
SLIDE S MI



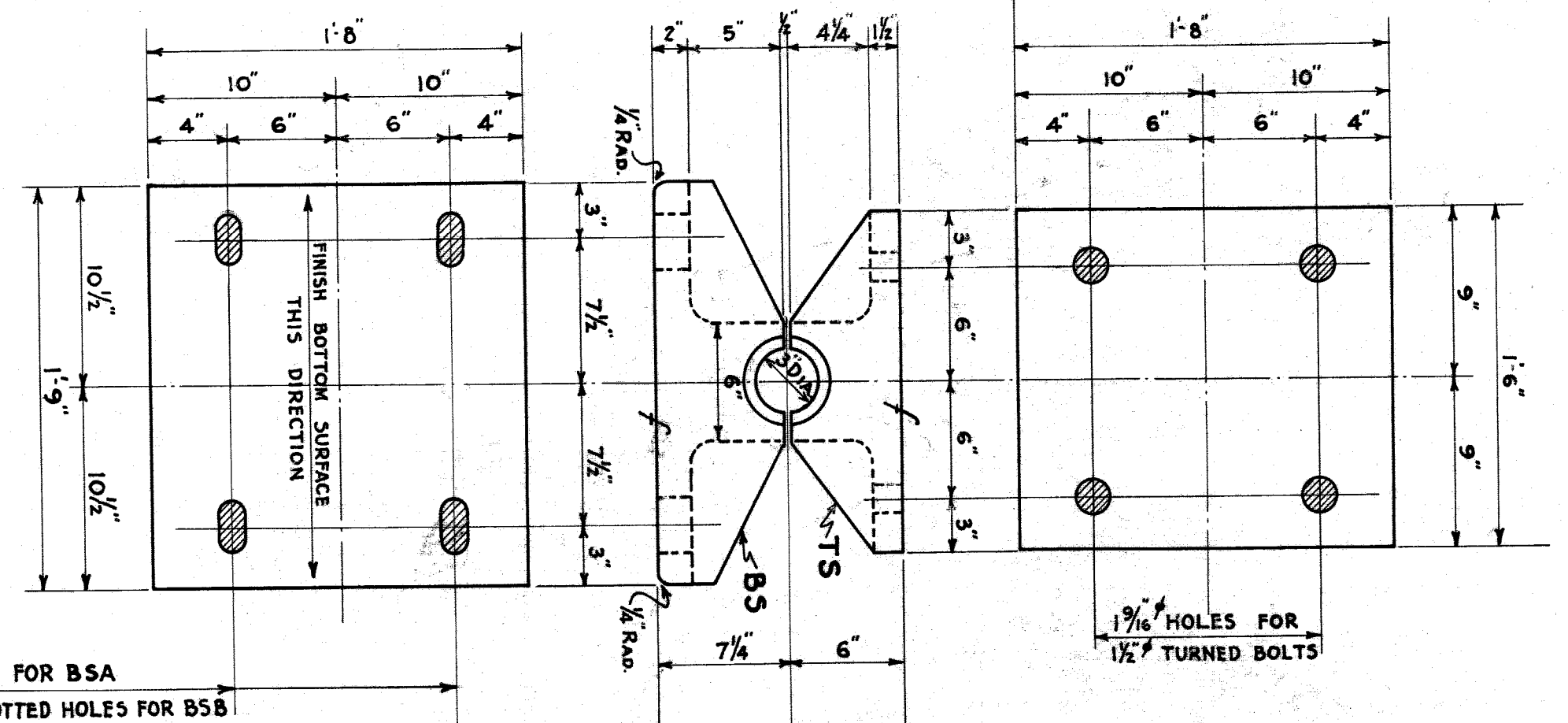
**WALKWAY END PLATE WZ
6 REQUIRED
SCALE: 1/4 IN. = 1 FT.**



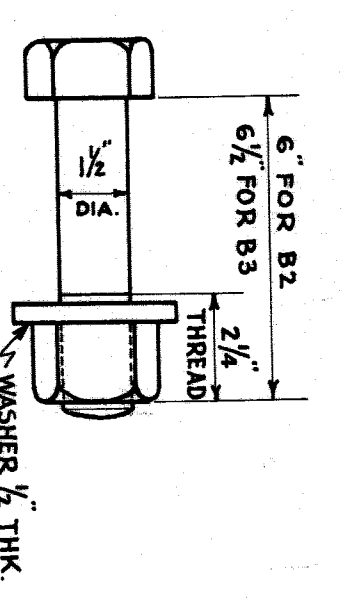
**DETAIL OF WALKWAY STRAP W1
63 REQUIRED
SCALE: 1/2 IN. = 1 FT.**



**ANCHOR BOLT B1
NOT TO SCALE
64 REQUIRED**
**EXPANSION BOLT B4
NOT TO SCALE
58 REQUIRED**



**END CASTINGS TS, BSA & BSB
MATERIAL: CAST STEEL ANNEALED
SCALE: 1/2 IN. = 1 FT.
REQUIRED:
16 TS
8 BSA
8 BSB**



**TURNED BOLTS B2 & B3
SCALE: 3/16 IN. = 1 FT.
REQUIRED:
56 B2
56 B3**

MARK	NO REQ'D	SIZE	LENGTH	WASHERS	REMARKS
B1	64	1/2"	2'-6"	64 #	SWEDGE ANCHOR BOLTS AS DETAILED
B2	56	1/2"	6"	56 #	TURNED BOLTS AS DETAILED
B3	8	1/2"	6 1/2"	8 #	END CASTINGS TO GIRDERS
B4	58	1/2"	2"	58 (CUT)	EXPANSION BOLT - 2 UNIT TYPE AS DETAILED - MAINWAY SIDE ONLY TO CONK
B5	8	3/4"	1'-0"	16 (CUT)	CHANNEL STRINGER TO CONK - AS DETAILED
B6	28	3/4"	2 1/4"	28 (CUT)	MACHINE BOLTS - HEX HD & NUT
B7	24	3/4"	2 1/2"	24 (CUT)	HANDHILL POSTS TO BE FASTENERS
B8	52	3/4"	2 3/4"	52 (CUT)	

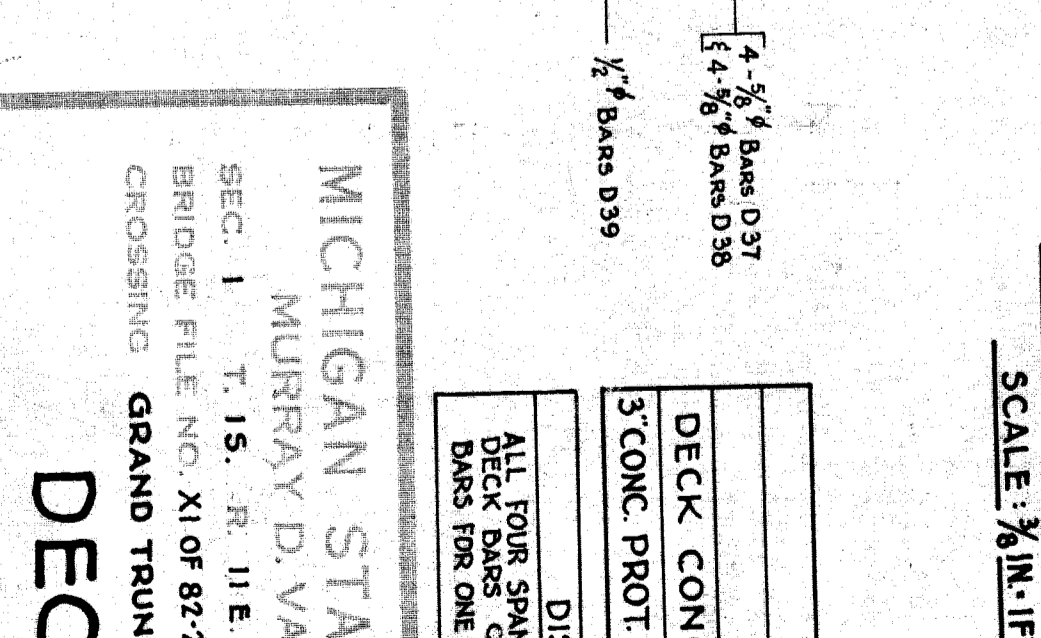
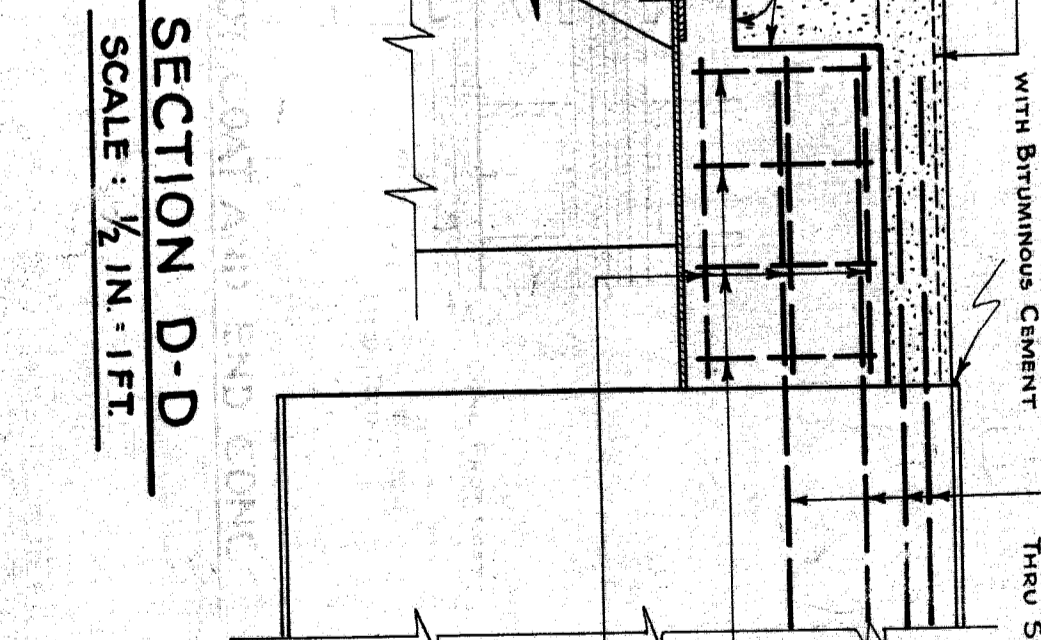
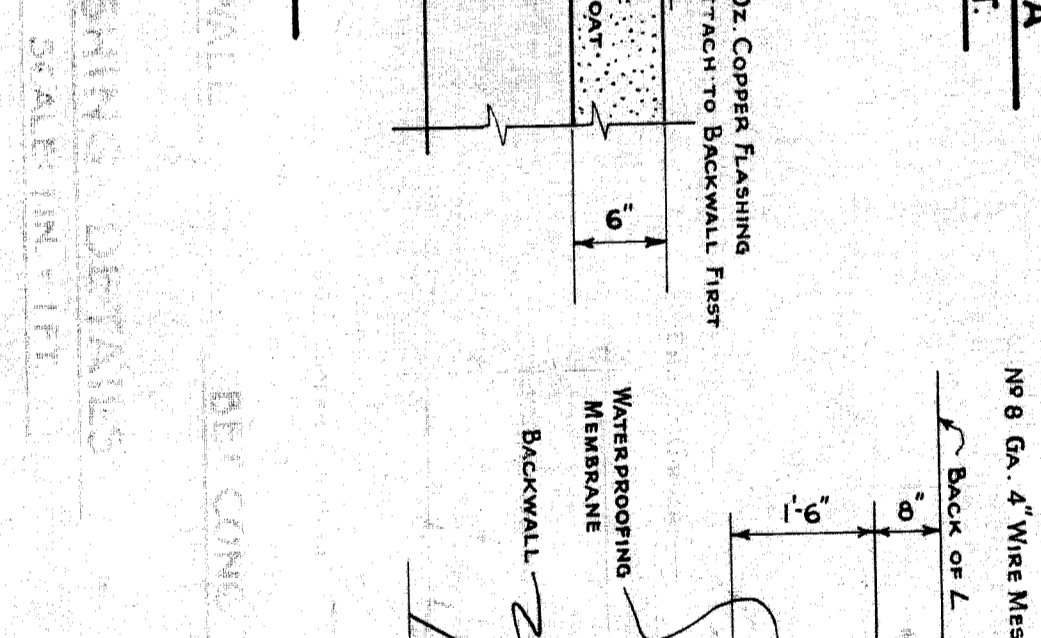
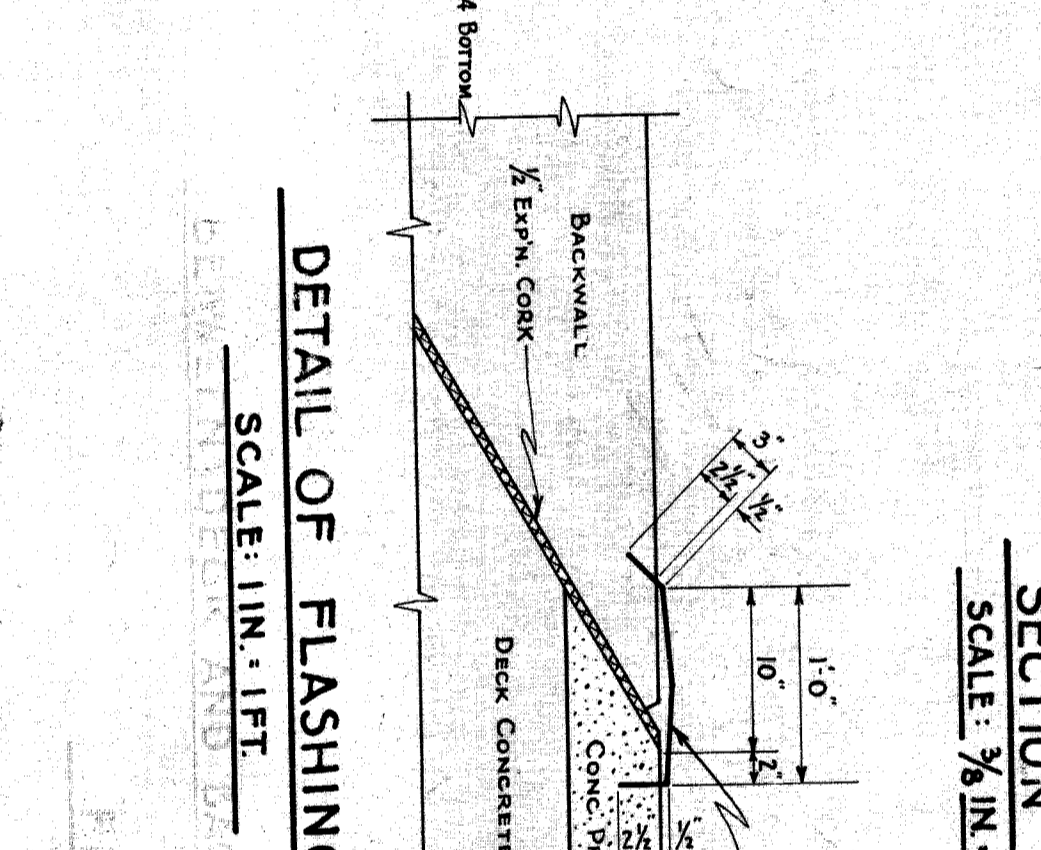
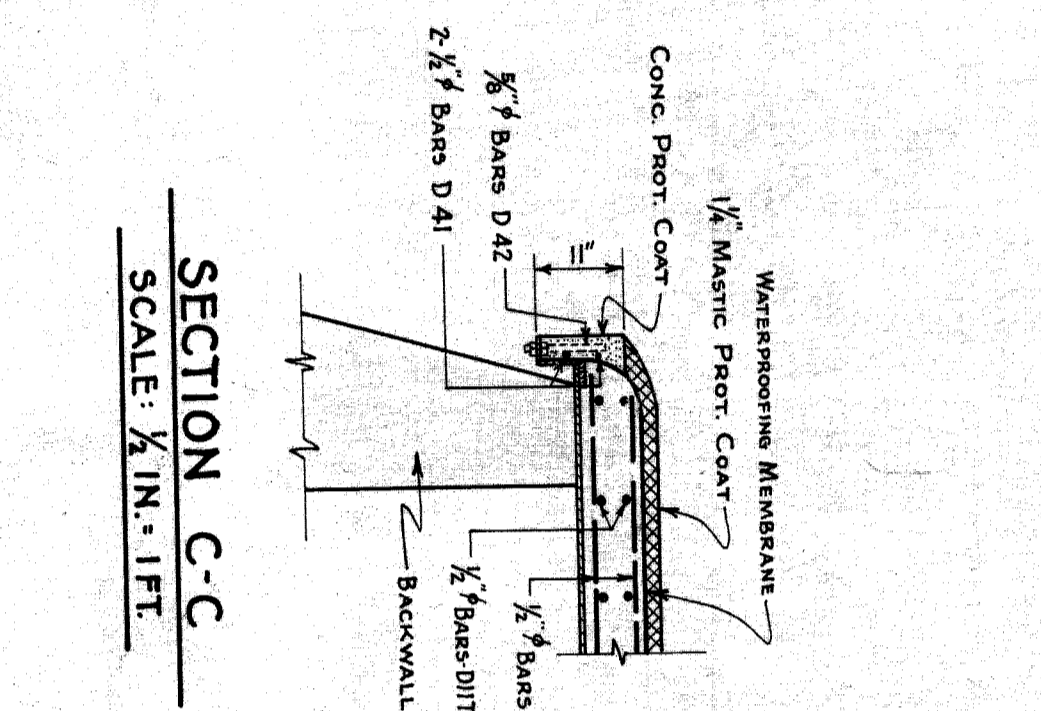
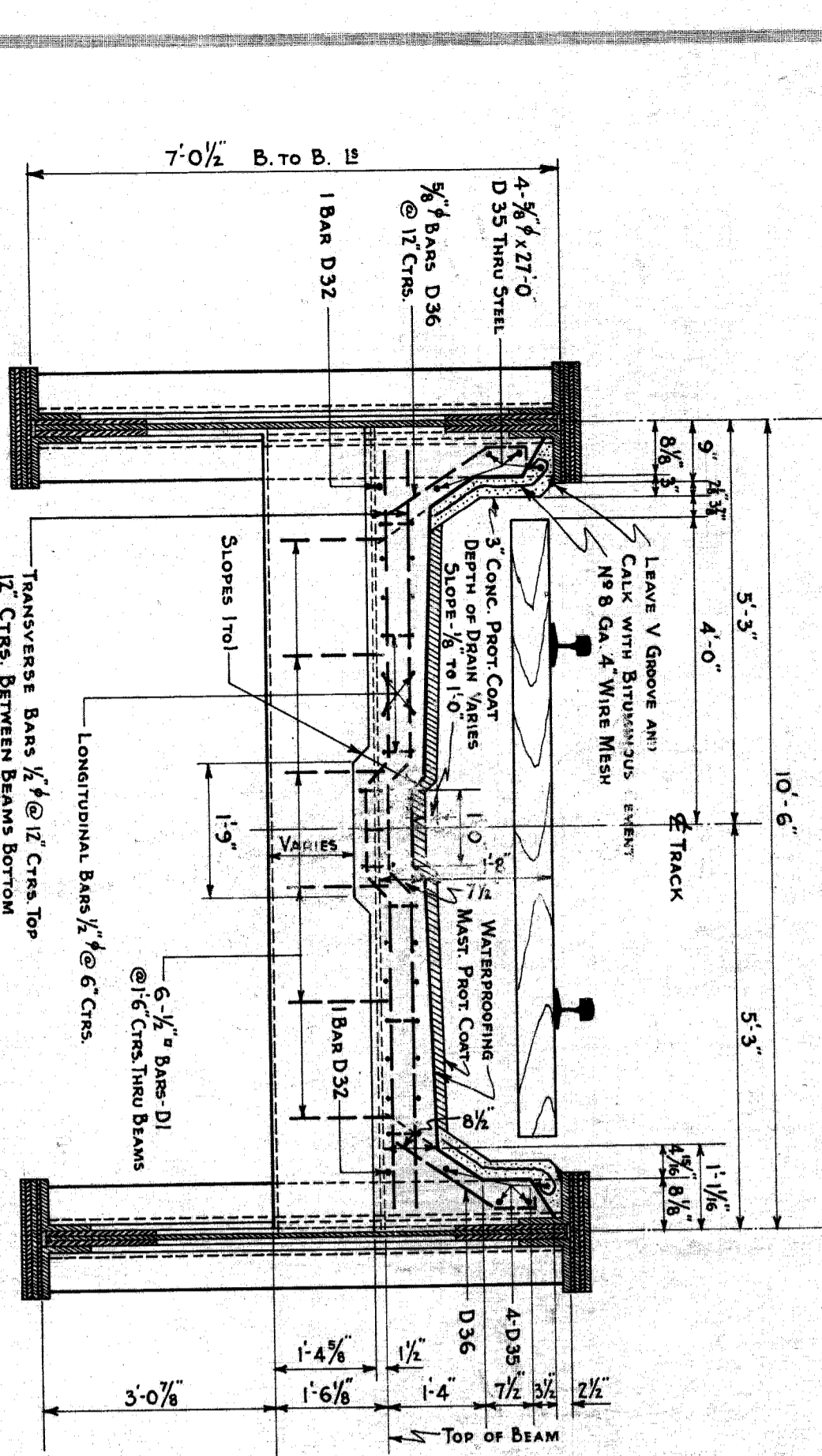
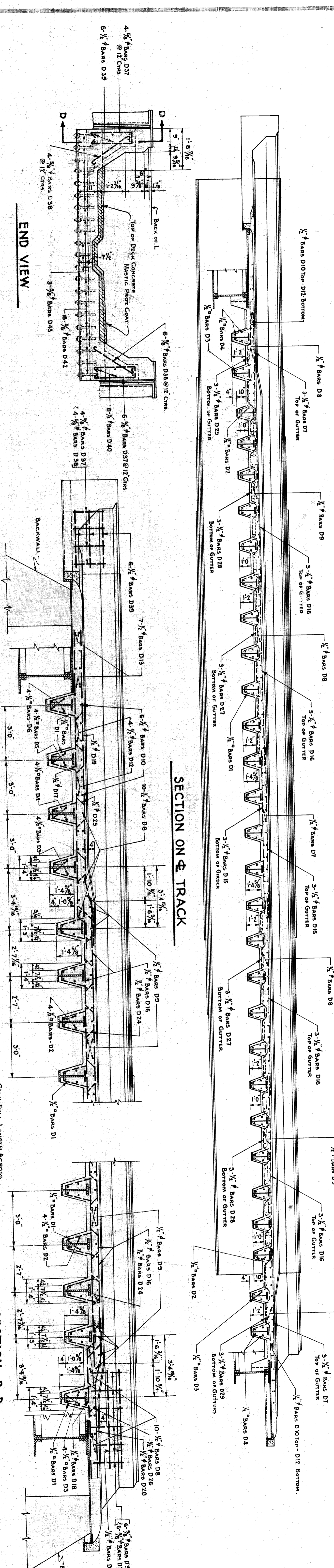
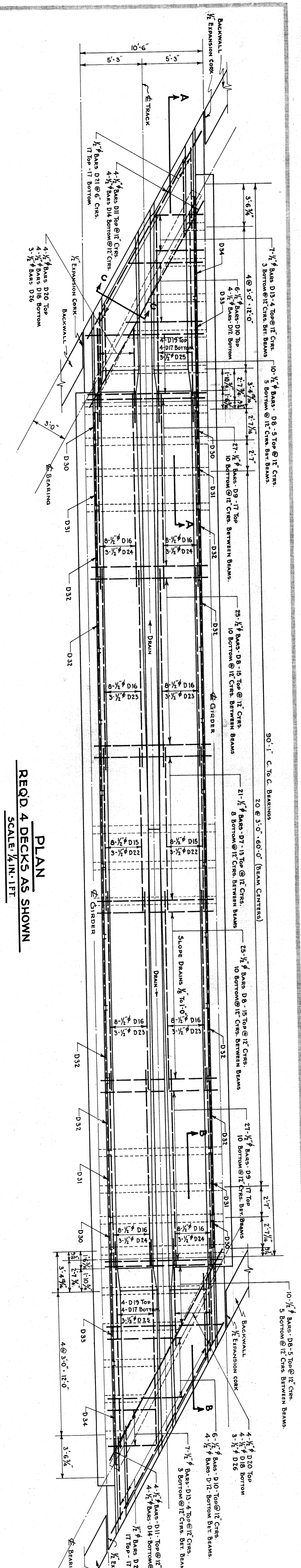
NOTES:
RIVETS: 7/8"
OPEN HOLES: 1/8"
SCALES AS SHOWN.

NO	REVISIONS	DATE	BY
10			

MICHIGAN STATE HIGHWAY DEPARTMENT
MURRAY D. VAN WAGONER - COMMISSIONER
TWP. WAYNE CO.
SEC. 1 T. 15. R. 11E
BRIDGE FILE NO. XI OF 82-22-49 ROAD
CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT
END FLOOR BEAM, BEARINGS & MISCEL. DETAILS

APPROVED: *W. M. Starnes* 5-27-37
DRAWN BY: R.A.W. 5-3-37
CHECKED BY: E.H.S. 5-14-37
DESIGNED BY: F.A.M. 7-9-37
DATE: 22

FILE NO. **82-22-49**



CONCRETE QUANTITIES

DECK CONCRETE	ONE SPAN	TOTAL 4 SPANS
5150	Cu. Yd.	20600
500	Cu. Yd.	2000

DISTRIBUTION OF DECK BARS BY POURS

ALL FOUR SPANS ARE IDENTICAL. EACH SPAN ASSUMED AS ONE POUR.
DECK BARS CONSIST OF BARS D1 TO D10, INCLUSIVE.
BARS FOR ONE DECK CONSIST OF 1/2 OF EACH TYPE AS PER SCHEDULE

NOTE: SEE STRUCTURAL STEEL DETAILS BACKWALL.

REVISIONS

NO.	DESCRIPTION	DATE	BY

APPROVED: *W. J. Spencer* 8-27-37

DESIGNED BY: *W. J. Spencer*

CHECKED BY: *R. S. ...*

DATE: 8-27-37

MICHIGAN STATE HIGHWAY DEPARTMENT
MURRAY D. VAN WAGONER - COMMISSIONER

SEC. 1 T. 15. R. 11 E.
BRIDGE FILE NO. XI OF 87-22-49 ROAD JOHN R. ST. WAYNE CO.

CROSSING GRAND TRUNK WESTERN R.R. IN CITY OF DETROIT

DECK DETAILS

SCALE: AS SHOWN

APPROVED: *W. J. Spencer* 8-27-37

DESIGNED BY: *W. J. Spencer*

CHECKED BY: *R. S. ...*

DATE: 8-27-37

FILED

BAR LIST-ABUTMENTS

MARK	NO	REQD SIZE	TOTAL LENGTH	BENDING DIAGRAM	WEIGHT
A1	430	1 1/8"	23'-10"		44092
A2	12	1 1/8"	22'-8"		1171
A3	12	1 1/8"	21'-6"		1100
A4	12	1 1/8"	20'-4"		1050
A5	12	1 1/8"	19'-3"		994
A6	12	1 1/8"	18'-1"		876
A7	12	1 1/8"	17'-0"		818
A8	12	1 1/8"	15'-10"		757
A9	12	1 1/8"	14'-8"		697
A10	12	1 1/8"	13'-6"		728
A11	14	1 1/8"	12'-1"		195
A12	4	1 1/8"	10'-1"		174
A13	4	1 1/8"	9'-7"		82
A14	2	1 1/8"	28'-3"		3310
A15	76	1/2"	18'-6"		1081
A16	18	3/4"	40'-0"		878
A17	19	3/4"	30'-9"		204
A18	8	3/4"	17'-0"		90
A19	5	3/4"	12'-0"		72
A20	2	3/4"	24'-0"		919
A21	6	1 1/4"	18'-10"		25481
A22	398	1"	23'-10"		4051
A23	50	1"	23'-10"		4051
A24	380	1/2"	13'-3"		3363
A25	152	1/2"	11'-9"		1193
A26	76	1/2"	18'-6"		939
A27	160	1"	28'-6"		15504
A28	160	1"	33'-6"		18224
A29	80	1"	27'-6"		6120
A30	80	1"	14'-6"		3944
A31	160	3/4"	32'-3"		7750
A32	112	3/4"	19'-9"		2307
A33	248	1"	5'-0"		4216
A34	248	1"	15'-3"		12859
A35	158	1/8"	23'-4"		15861
A36	156	1/8"	20'-4"		13647
A37	154	1/8"	16'-0"		10603
A38	234	1"	7'-5"		5903
A39	234	1"	9'-6"		7558
A40	126	3/4"	40'-0"		7570
A41	150	3/4"	2'-0"		200
A42	64	3/4"	3'-0"		128
A43	10	3/4"	15'-6"		104
A44	4	3/4"	25'-0"		67
A45	6	3/4"	37'-0"		148

BAR LIST-ABUTMENTS

MARK	NO	REQD SIZE	TOTAL LENGTH	BENDING DIAGRAM	WEIGHT
A46	260	1"	15'-9"		13923
A47	128	1"	17'-1"		7433
A48	16	1"	12'-6"		680
A49	16	1"	11'-3"		612
A50	16	1"	10'-0"		544
A51	16	1"	8'-9"		476
A52	16	1"	7'-9"		422
A53	8	1"	13'-9"		374
A54	10	1"	14'-9"		502
A55	22	1 1/4"	28'-0"		3773
A56	6	1 1/4"	26'-3"		837
A57	58	3/4"	27'-6"		2396
A58	12	3/4"	21'-0"		379
A59	168	5/8"	7'-0"		1227
A60	50	5/8"	10'-0"		522
A61	48	5/8"	28'-0"		898
A62	168	5/8"	9'-0"		1577
A63	50	5/8"	11'-3"		1150
A64	114	1/2"	10'-0"		762
A65	218	1"	16'-9"		17415
A66	11	7/8"	11'-2"		251
A67	72	7/8"	14'-11"		2196
A68	70	3/4"	8'-6"		894
A69	94	3/4"	10'-9"		1518
A70	16	3/4"	14'-3"		342
A71	23	3/4"	11'-9"		406
A72	50	3/4"	25'-0"		835
A73	24	3/4"	23'-0"		369
A74	14	3/4"	18'-0"		168
A75	23	3/4"	5'-0"		173
A76	24	3/4"	21'-0"		757
A77	19	3/4"	24'-9"		706
A78	32	3/4"	22'-0"		470
A79	6	3/4"	9'-6"		38
A80	2	1"	24'-9"		168
A81	2	1"	7'-0"		48
A82	17	1"	14'-2"		643
A83	26	7/8"	14'-2"		753
A84	9	3/4"	14'-6"		196
A85	12	3/4"	11'-6"		207
A86	16	3/4"	7'-6"		80
A87	48	1 1/8"	28'-6"		5857
A88	48	1 1/8"	33'-6"		6919
TOTAL					302400

BAR LIST - WING WALLS

MARK	NO	REQD SIZE	TOTAL LENGTH	BENDING DIAGRAM	WEIGHT
W1	40	3/4"	12'-6"		1404
W2	25	3/4"	16'-11"		886
W3	21	3/4"	14'-2"		503
W4	32	3/4"	13'-5"		705
W5	32	3/4"	11'-8"		416
W6	32	3/4"	10'-1"		399
W7	17	3/4"	17'-2"		195
W8	32	3/4"	19'-2"		410
W9	42	3/4"	12'-9"		388
W10	42	3/4"	9'-0"		253
W11	42	3/4"	6'-3"		167
W12	40	3/4"	6'-0"		104
W13	26	3/4"	5'-6"		99
W14	27	3/4"	5'-6"		87
W15	26	3/4"	5'-0"		117
W16	39	3/4"	4'-6"		88
W17	33	3/4"	4'-0"		3066
W18	306	3/4"	15'-0"		523
W19	61	3/4"	12'-10"		75
W20	32	3/4"	20'-0"		281
W21	21	3/4"	4'-0"		432
W22	127	3/4"	21'-3"		1021
W23	32	3/4"	21'-3"		595
W24	33	3/4"	17'-6"		475
W25	26	3/4"	9'-0"		300
W26	32	3/4"	14'-0"		713
W27	26	3/4"	23'-3"		142
W28	5	3/4"	19'-6"		224
W29	7	3/4"	16'-0"		388
W30	21	3/4"	20'-9"		231
W31	22	3/4"	17'-0"		205
W32	16	3/4"	13'-5"		265
W33	18	3/4"	27'-9"		58
W34	32	3/4"	27'-9"		81
W35	3	3/4"	15'-5"		183
W36	5	3/4"	15'-5"		170
W37	14	3/4"	11'-9"		243
W38	17	3/4"	7'-0"		243
W39	52	3/4"	7'-0"		16292
TOTAL					162392

SUMMARY OF REINFORCING BAR WEIGHTS
 ABUTMENTS 302,400#
 WING WALLS 16,232#
 DECK 28,806#
 GRAND TOTAL 347,438#

NOTE: SEE GRID WALL DETAILS SHEET * FOR ADDITIONAL STEEL REQUIRED

BAR LIST - DECK

MARK	NO	REQD SIZE	TOTAL LENGTH	BENDING DIAGRAM	WEIGHT
D1	720	1/2"	3'-5"		2093
D2	400	1/2"	10'-0"		3400
D3	32	1/2"	8'-0"		218
D4	32	1/2"	6'-3"		170
D5	32	1/2"	4'-9"		129
D6	32	1/2"	3'-3"		88
D7	108	1/2"	10'-0"		727
D8	280	1/2"	10'-2"		3400
D9	216	1/2"	10'-4"		1910
D10	48	1/2"	6'-8"		1483
D11	32	1/2"	20'-2"		215
TOTAL					432

BAR LIST - DECK (cont)

MARK	NO	REQD SIZE	TOTAL LENGTH	BENDING DIAGRAM	WEIGHT
D12	32	1/2"	4'-0"		139
D13	56	1/2"	20'-0"		429
D14	32	1/2"	13'-8"		806
D15	88	1/2"	16'-8"		3395
D16	304	1/2"	16'-8"		390
D17	32	1/2"	18'-2"		197
D18	32	1/2"	9'-2"		377
D19	32	1/2"	11'-7"		195
D20	32	1/2"	9'-1"		1276
D21	272	1/2"	7'-0"		248
D22	24	1/2"	15'-5"		248
D23	48	1/2"	18'-10"		606
D24	48	1/2"	18'-9"		603
D25	24	1/2"	19'-10"		319
D26	24	1/2"	10'-6"		169
D27	24	1/2"	17'-7"		283
D28	24	1/2"	17'-7"		283
D29	24	1/2"	10'-9"		173
D30	16	1/2"	2'-11"		31
D31	16	1/2"	5'-11"		63
D32	72	1/2"	6'-4"		305
D33	8	1/2"	9'-9"		52
D34	8	1/2"	9'-1"		49
D35	128	3/8"	27'-0"		3594
D36	744	3/8"	2'-4"		1803
D37	80	3/8"	4'-7"		381
D38	80	3/8"	2'-6"		208
D39	48	1/2"	3'-0"		96
D40	48	1/2"	5'-0"		