

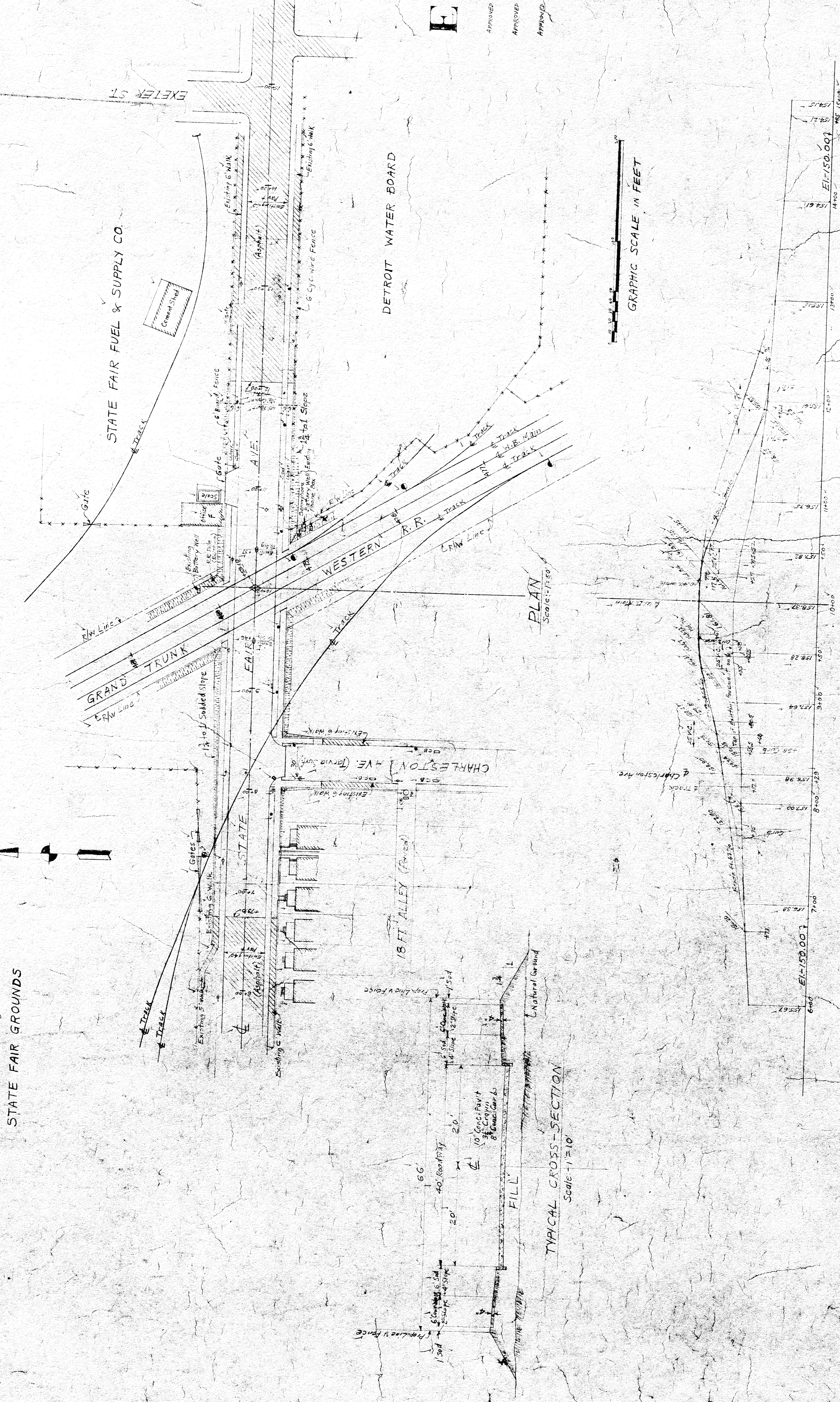
- LEGEND OF EXISTING UTILITIES**
- Markers
 - Fire Co. Pole
 - Detroit Electric Co. Pole
 - Club Catch Basins
 - All other Catch Basins
 - R.E. Co. Pole
 - Water Valve
 - Hydrant

EXHIBIT "C"

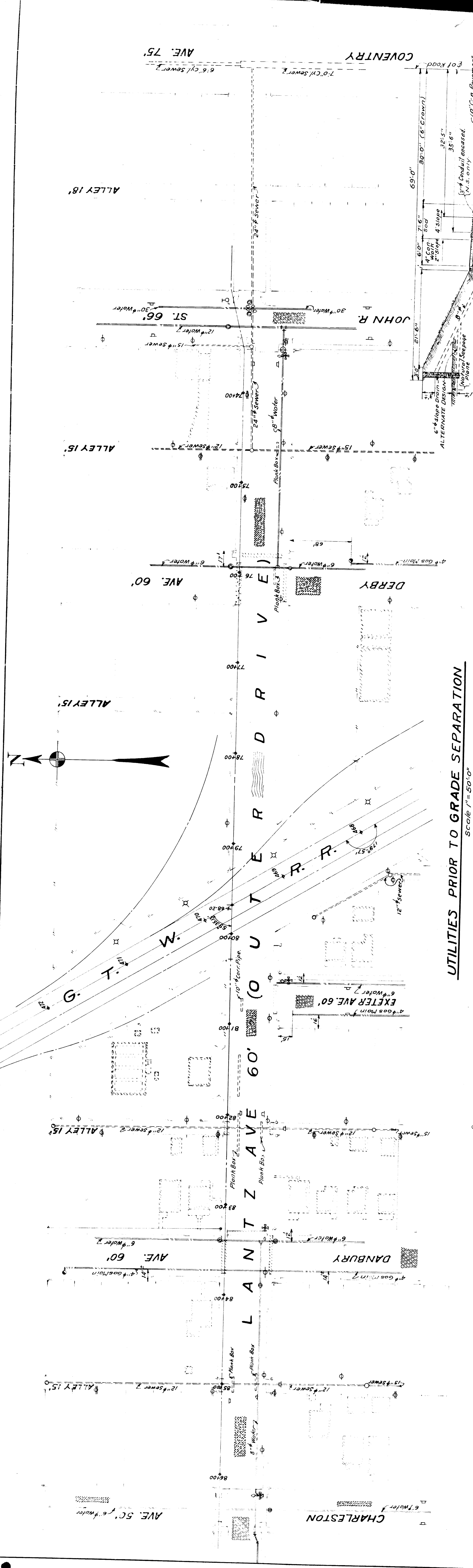
APPROVED: *Walter J. O'Brien*
 Engineer Manager for Wayne Co. Road Comm.
 APPROVED: *Edward N. Hines*
 Chief Engineer for Grand Trunk Western R.R.
 APPROVED: *John W. ...*
 City Engineer for City of Detroit

Elevations shown on this sheet are based on the City of Detroit Datum as derived from the G.T.W.R. (Elev. 228.86). To obtain elevations on Wayne County (Road 011) Datum add 488.278
 R.R. Bench Mark E.I. 158.874, 0.00 M.V. station of reference base, just south of State Fair grounds, east of G.W. Survey notes in Field Book #237
 Topography plotted from G.T.W.R.R. sketches

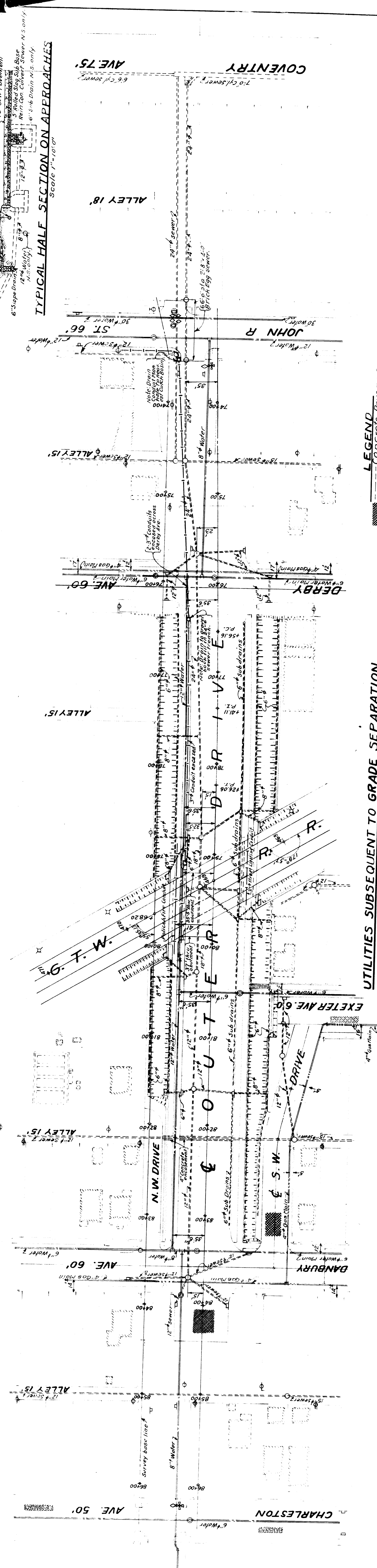
REVISIONS	BOARD OF
Cuts revised Sta. 5+2-38 Existing utility and buildings M.A.E. 5-28	WAYNE COUNTY ROAD COMMISSIONERS DETROIT, MICHIGAN MICHAEL J. O'BRIEN Chairman PETER M. SCHOENHEBERG Commissioner
JOB NO. 201	GENERAL PLAN - GRADE CHANGES ON STATE FAIR WAYS OUTER DRIVE - G.T.W.R.R. GA. (Grand Trunk Western R.R. Grade)
DATE 5-28-38	DATE 5-28-38



FOR AGREEMENT



UTILITIES PRIOR TO GRADE SEPARATION
Scale 1" = 50' 0"



UTILITIES SUBSEQUENT TO GRADE SEPARATION
Scale 1" = 50' 0"

P.W.A. DOCKET N° MICH. 1084 F

BOARD OF
WAYNE COUNTY ROAD COMMISSIONERS
DETROIT, MICHIGAN
MICHAEL J. O'BRIEN
CHAIRMAN

EDWARD N. HINES
VICE-CHAIRMAN

JOHN F. BREITING
COMMISSIONER

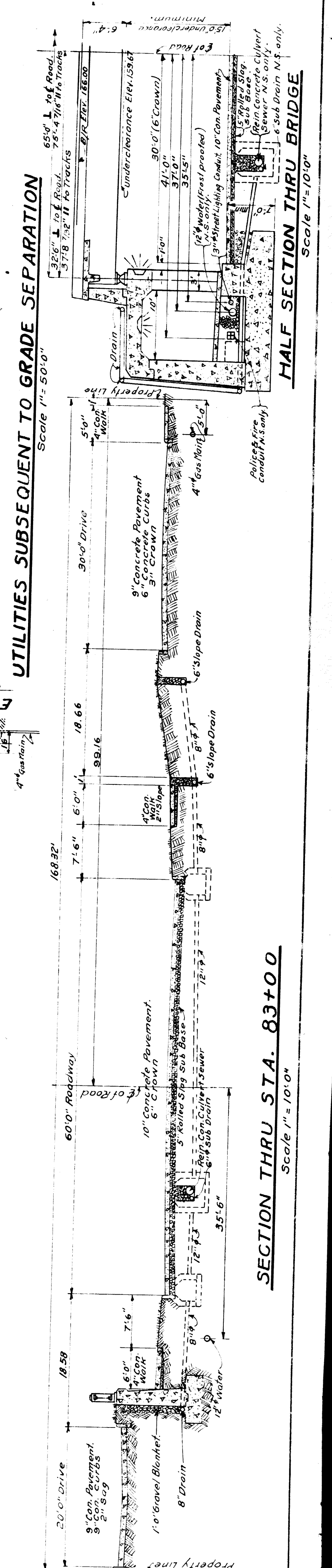
UTILITY PLAN
OUTER DRIVE - G.T.W.R. (DALLEY DIV.)
GRADE SEPN. N° 9

DESIGNED BY: *W. J. ...*
DRAWN BY: *F.V.T.*
DATE: 4-30-1938 SCALE: AS SHOWN
APPROVED: *W. J. ...*
APPROVED: *W. J. ...*

JOHN NO. 201

REVISIONS:
NO. 1: 4-30-1938
NO. 2: 5-1-1938
NO. 3: 5-1-1938
NO. 4: 5-1-1938
NO. 5: 5-1-1938
NO. 6: 5-1-1938
NO. 7: 5-1-1938
NO. 8: 5-1-1938
NO. 9: 5-1-1938
NO. 10: 5-1-1938

APPROVED: *W. J. ...*
APPROVED: *W. J. ...*



TYPICAL HALF SECTION ON APPROACHES
Scale 1" = 10' 0"

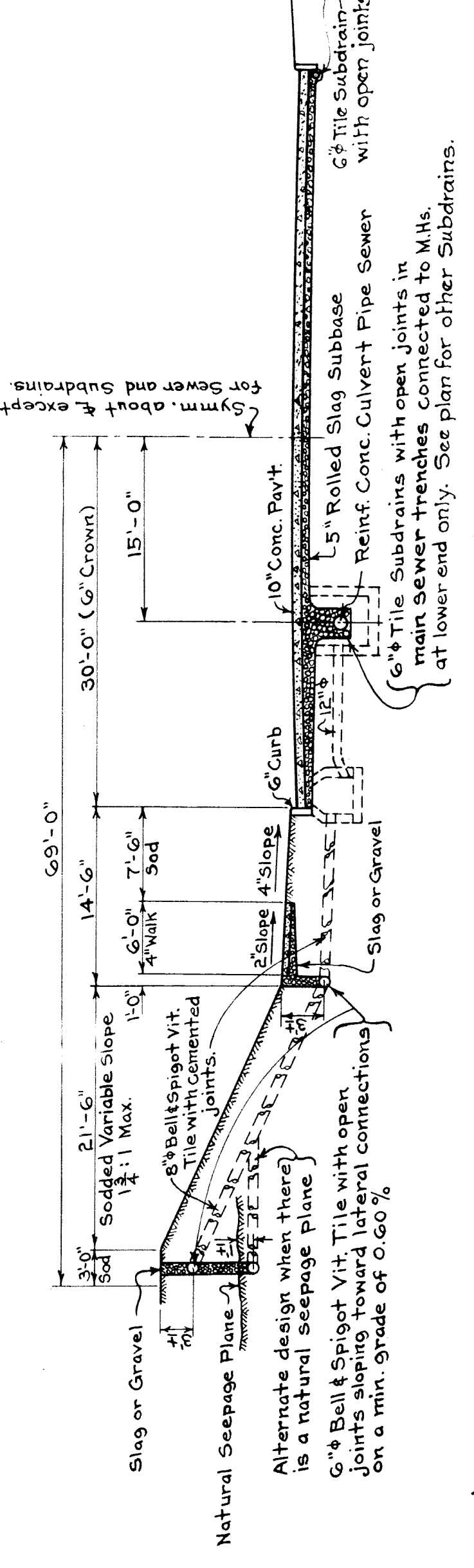
SECTION THRU STA. 83+00
Scale 1" = 10' 0"

- LEGEND**
- Concrete Pavement
 - Asphalt Pavement
 - Cindergraded Roadway
 - Not Graded Roadway
 - Water Mains
 - Sewers
 - Conduit
 - Water Valve Manhole
 - Sewer Manhole
 - Gas Valve Manhole
 - Gas Valve Off Valve
 - Catch Basin
 - Fire Hydrant
 - 7 1/2" Edison Pole
 - Utility Telegraph Pole
 - Fire Alarm Pole
 - Conduit Manhole

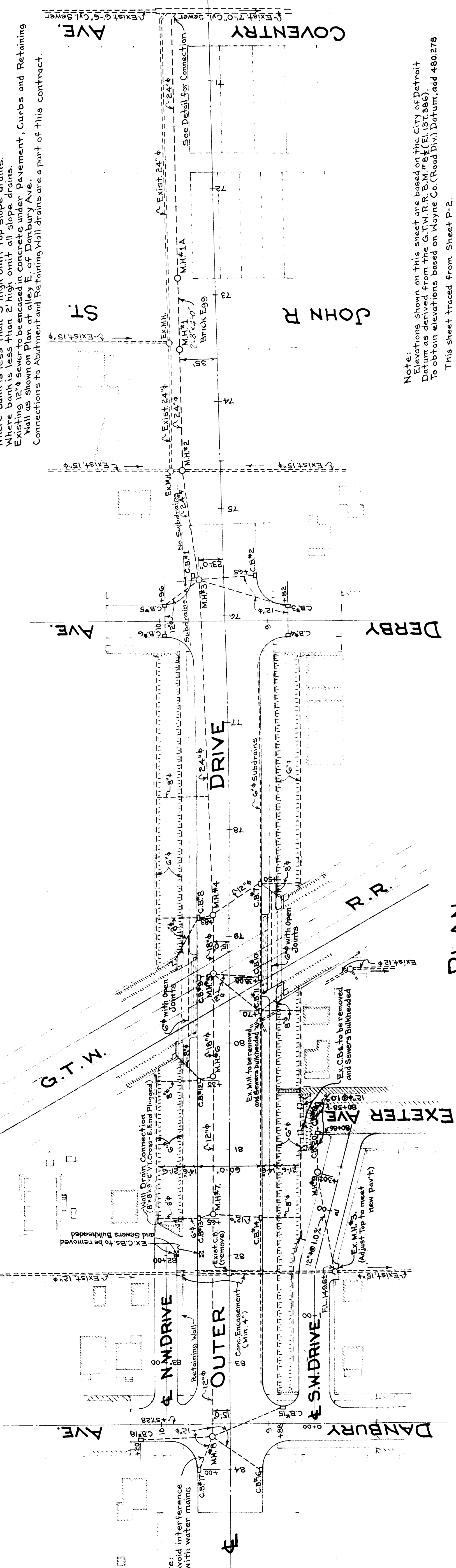
NOTES

Specifications - See Contract Documents.

Concrete: Grade "B" for 3,000 psi.
 Aggregate: Course - Designation C-2, Fine. Designation S-3.
 All pipes less than 12" shall be bell and spigot vitrified tile.
 The tops of drainage structures shall be set to conform with grades and elevations of surrounding pavement.
 The alignment of catch basin tops shall conform to the alignment of the curb.
 All sewers under sidewalks, curbs or pavement shall be backfilled with sand, slag or gravel.
 All manholes shall be backfilled with slag or gravel.
 The depth of slope drains shall be determined by the Engineer after the general cut has been made.
 Slope drains are only those drains in slopes running approximately parallel to the road. Connections to slope drains are considered a part of the general drainage system.
 Manholes shall be laid in the trenches of all main sewers where gravel subbase is used and along curbs where shown on Plan. Subdrains in sewer trenches shall be straight in alignment and grade and shall conform to the invert elevations of the corresponding sewers. Subdrains along curbs shall be laid low enough to drain subgrade. All subdrains shall be connected to catch basins or manholes at their lower ends only.
 Where Subdrains are used in sewer trenches, backfill may be made of sand except for details of drainage structures where Sheet No. 11 may be used.
 For details of drainage structures where Sheet No. 11 may be used.
 Where bank is less than 3' high omit top slope drains.
 Existing 12" sewer to be encased in concrete under pavement, curbs and Retaining Wall as shown on Plan of Alley E. of Danbury Ave.
 Connections to Abutment and Retaining Wall drains are a part of this contract.

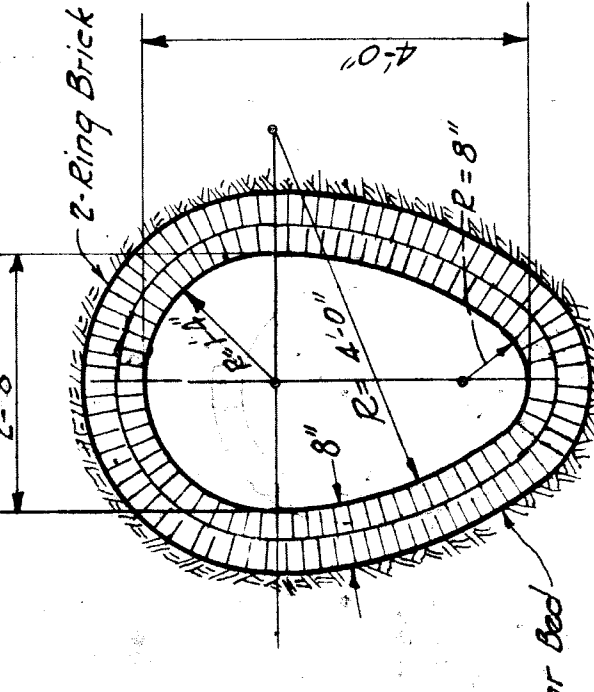


TYPICAL HALF SECTION ON APPROACHES
Scale: 1/2"=1'-0"

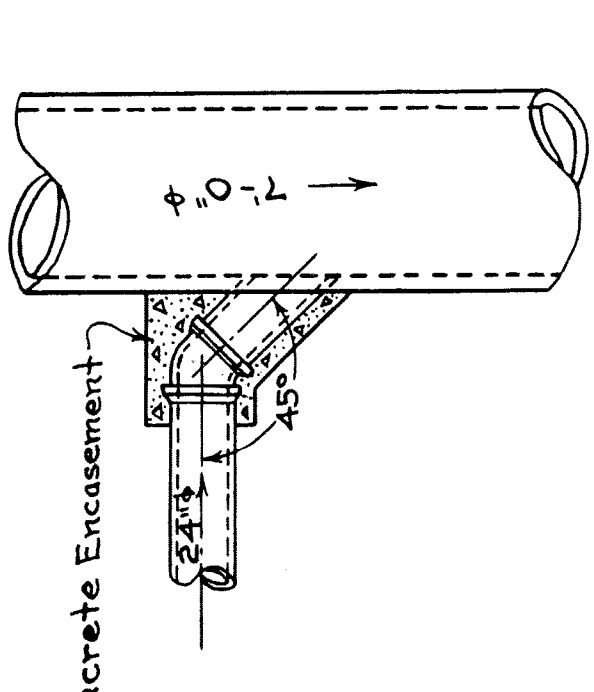


PLAN
Scale: 1/2"=50'

Legend:
 - - - - Proposed Sewers and Drains
 ===== Existing



SECTION OF BRICK EGG SEWER
Scale: 1/2"=1'-0"



CONNECTION DETAIL AT T' EXIST. SEWER
Scale: 3/8"=1'-0"

Note:
 Elevations shown on this sheet are based on the City of Detroit Datum as derived from the G.T.M.R.R. B.M. #84 (E.I. 57.286). To obtain elevations based on Wayne Co. (Road Div.) Datum, add 480.278.
 This sheet traced from Sheet P-2.

WAYNE COUNTY ROAD COMMISSIONERS
 DETROIT, MICHIGAN
 MICHAEL J. O'BRIEN, CHAIRMAN
 PETER M. SCHOENHERR, COMMISSIONER
 EDWARD N. HINES, VICE CHAIRMAN

DRAINAGE PLAN
OUTER DRIVE - G.T.W.R. (HOLLEY)
 GRADE SEPN.

BOARD OF
P.W.A. DOCKET NO MICH. 1084 F

REVISIONS
 Misc. Revisions G.J.P. 5/4
 6-2-38 G.J.P. 5/4
 Misc. Revisions G.J.P. 7/5
 7-8-38 M.C. 7/5
 2-2-39 M.C. 7/5
 7-5-41

JOB NO. 201
 DATE: 1-31-38
 DRAWN BY: G.J.P.
 CHECKED BY: G.J.P.
 SUPERVISOR: G.J.P.
 ENGINEER: G.J.P.

QUANTITIES

6" Vit. Tile Slope Drains (B&S) - 2,020 Lin. Ft.
 GENERAL DRAINAGE
 6" Vit. Tile Drains (B&S) from Lighting M.H.'s (see Sh. 10) - 40 "
 8" " " Connections to Slope Drains (B&S) - 1,410 "
 12" Reint. Conc. Culvert Pipe (B&S) - 410 "
 18" " " " (B&S) - 1,200 "
 24" " " " (B&S) - 152 "
 Manholes - 780
 Catch Basins - 20
 Concrete Encasement - 20 Cuyds.
 6" Vit. Tile under Awn. Walks & Mail Comms. (B&S) - 207 Lin. Ft.
 8" Vit. Egg Sewer (2 Ring Brick) - 66 "
 Plug - for 8" Vit. Tile - 1

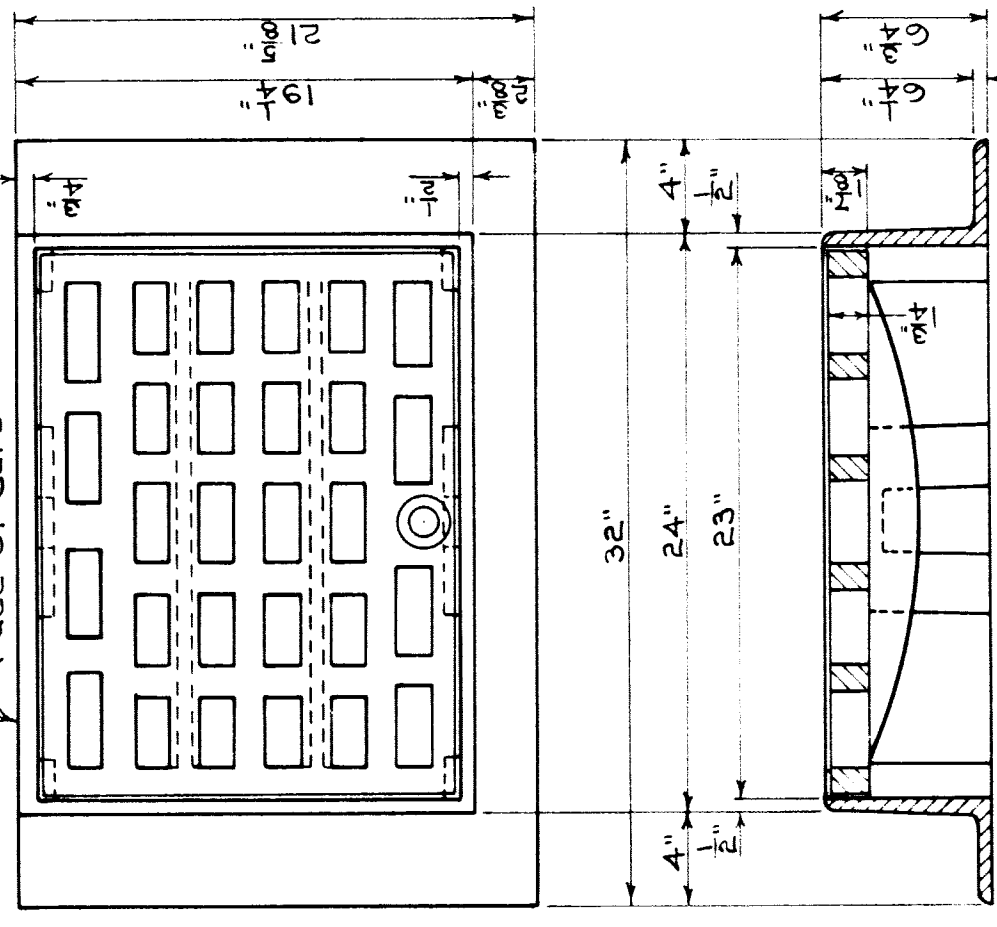
PROFILE ON Φ OF SEWER
 Scales: Horiz. 1"=50' Vert. 1"=5'

This profile view shows the vertical alignment of the sewer from station 70+00 to 84+00. It displays the ground surface, the sewer line, and the elevations of manholes and catch basins. Slopes are indicated as 2.0% and 0.3%.

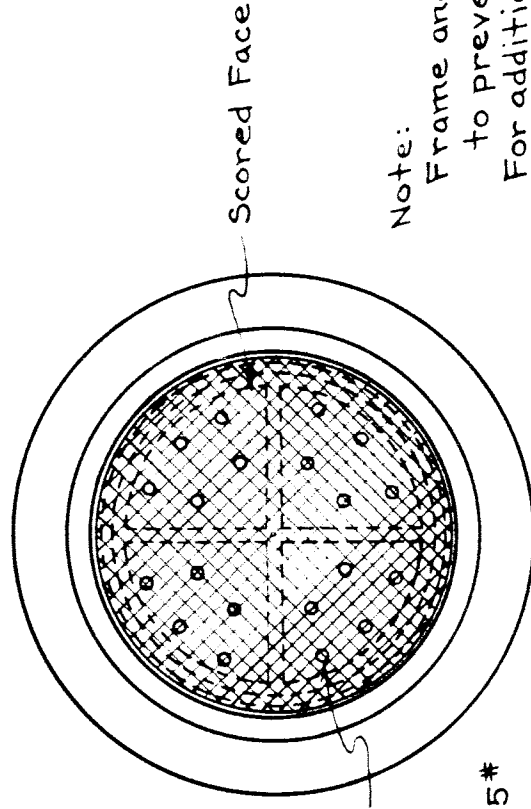
PROFILE ON Φ OF SEWER

This table provides the stationing and elevations for the sewer profile. It includes station numbers (e.g., 70+00, 75+00, 80+00, 84+00) and corresponding elevations for the ground surface and the sewer invert.

Frame and Cover must be ground to prevent rocking.
 Min. Weight = 270 #
 For additional details and dimensions see Road Dept. drawings.

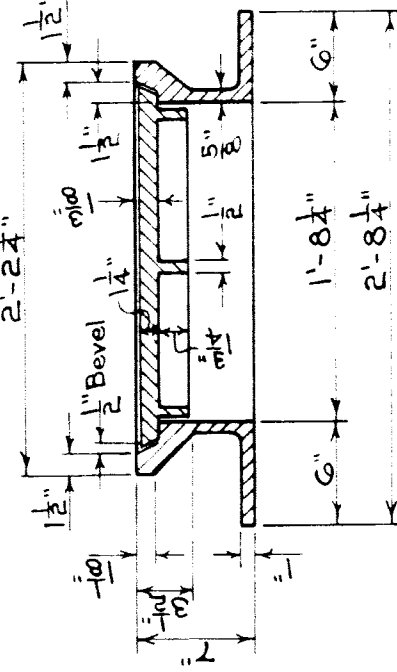


DETAIL OF STANDARD POOL GRATE FOR A CIRCULAR CATCH BASIN
 Scale: 1/2" = 1'-0"

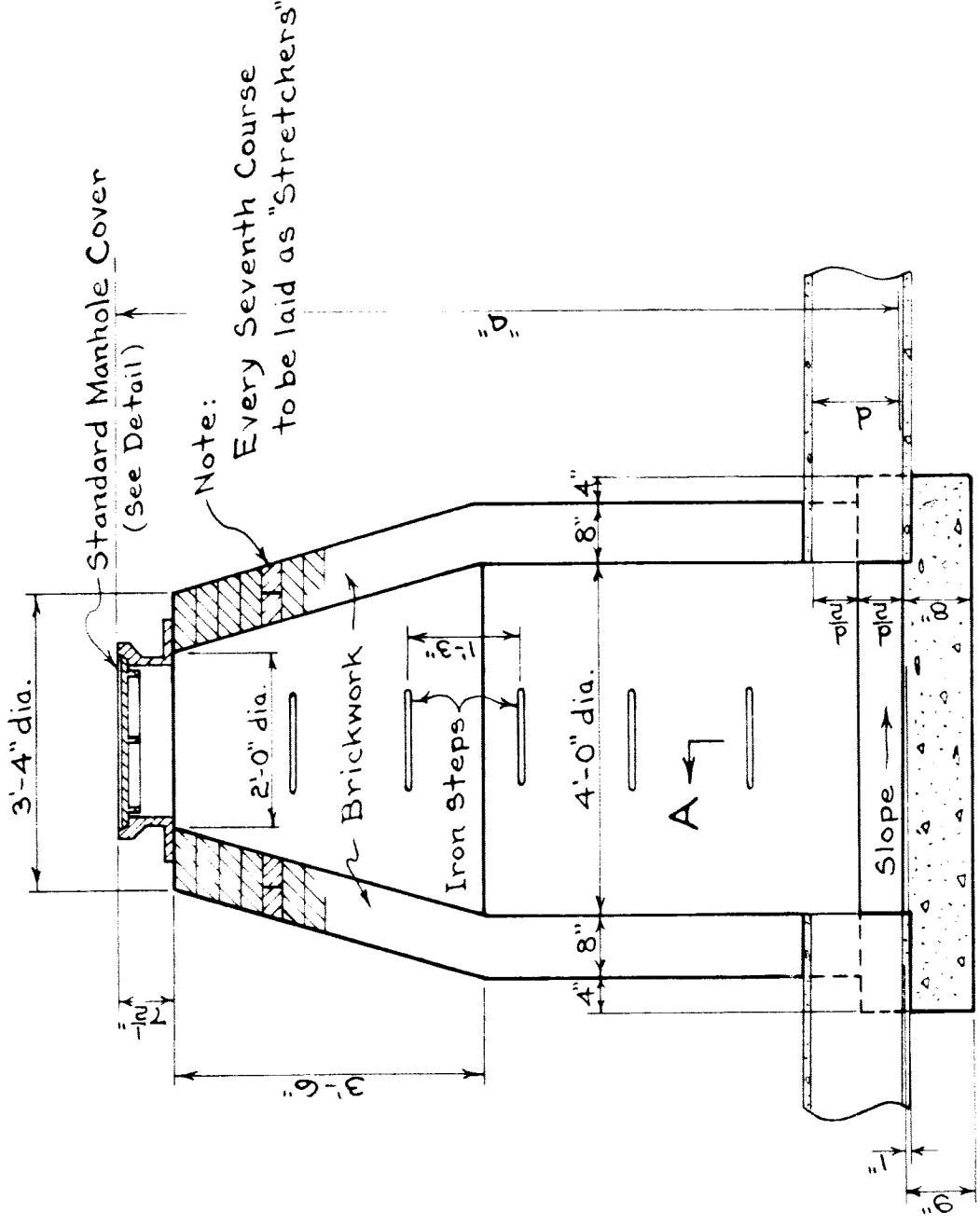


Note:
 Frame and Cover must be ground to prevent rocking.
 For additional details and dimensions see Road Dept. drawings.

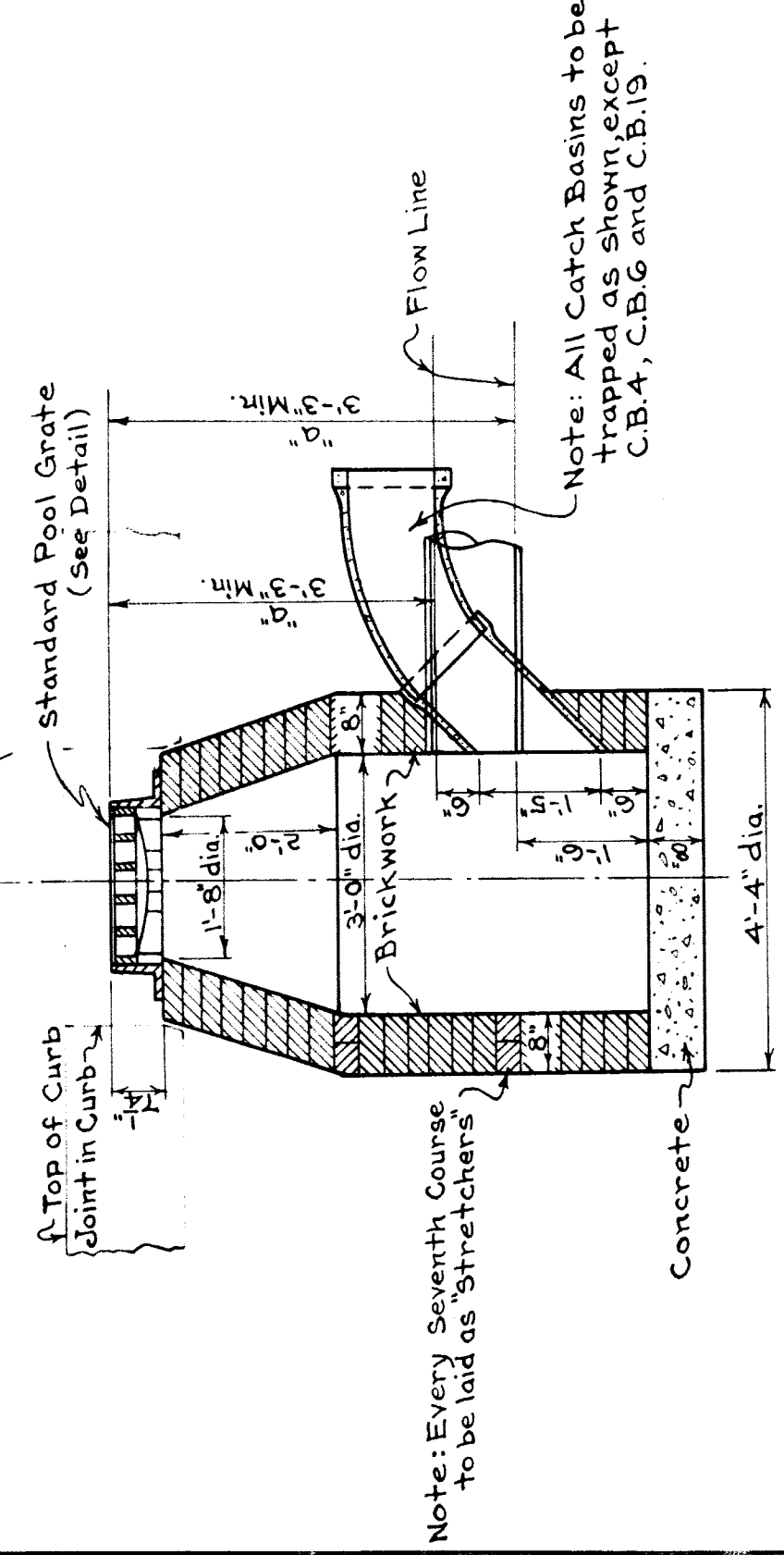
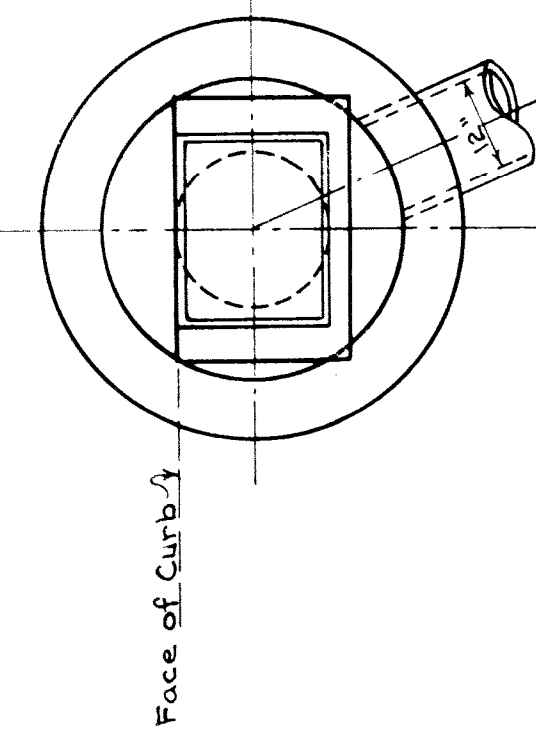
Min. Weight 405 #



DETAIL OF MANHOLE COVER
 Scale: 1" = 1'-0"

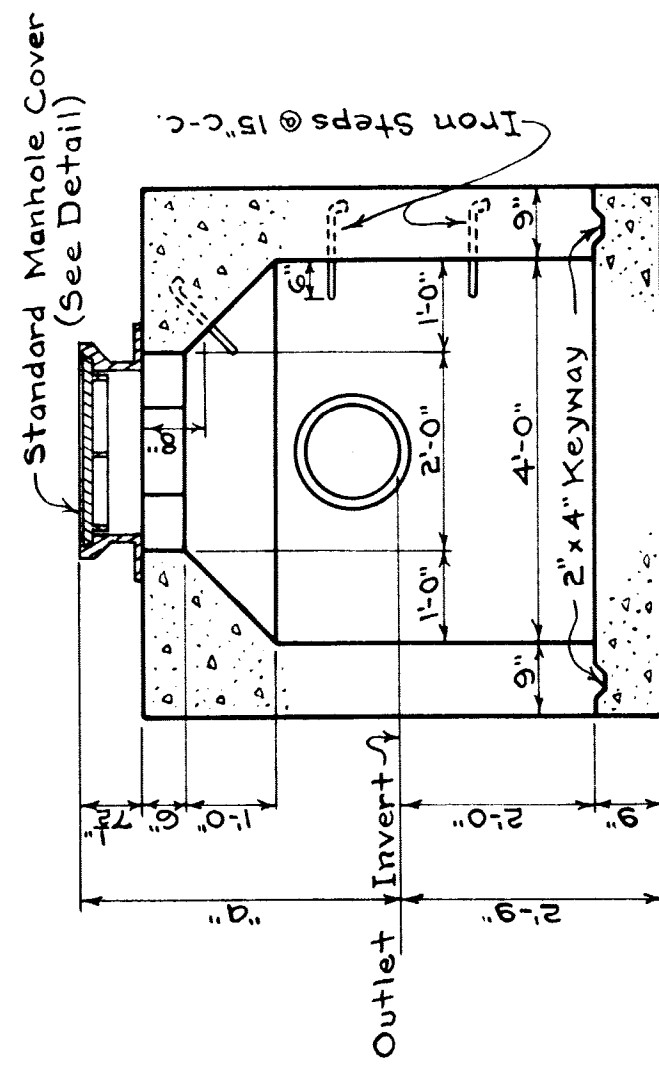
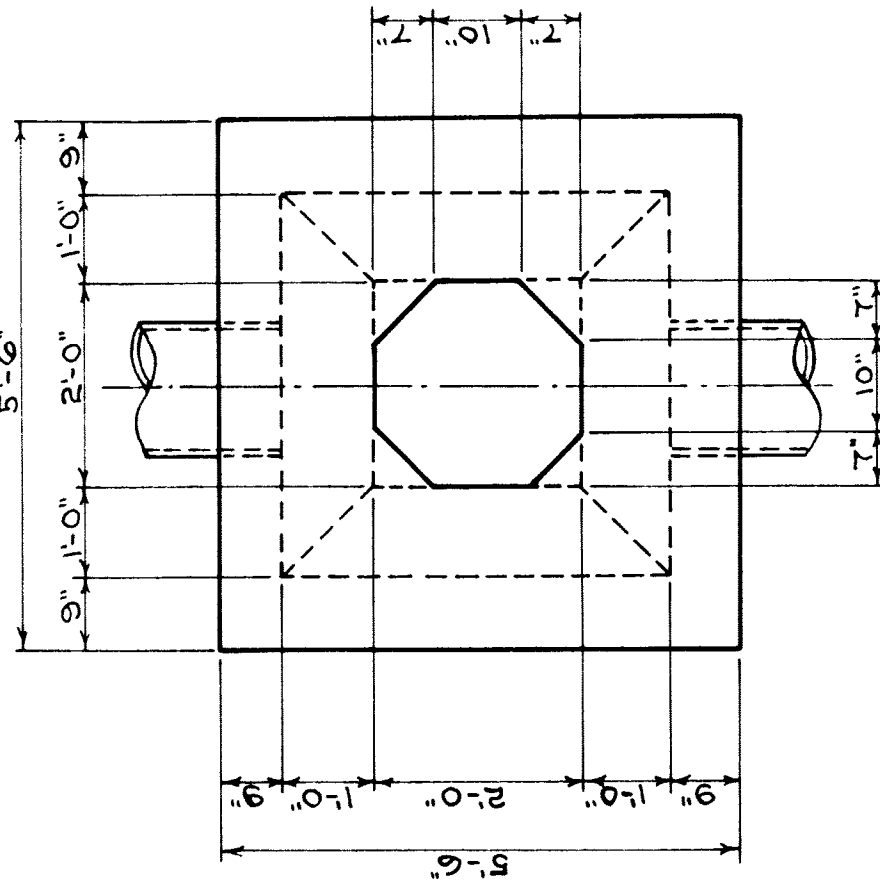


DEEP MANHOLE
 DETAIL C
 Scale: 1/2" = 1'-0"



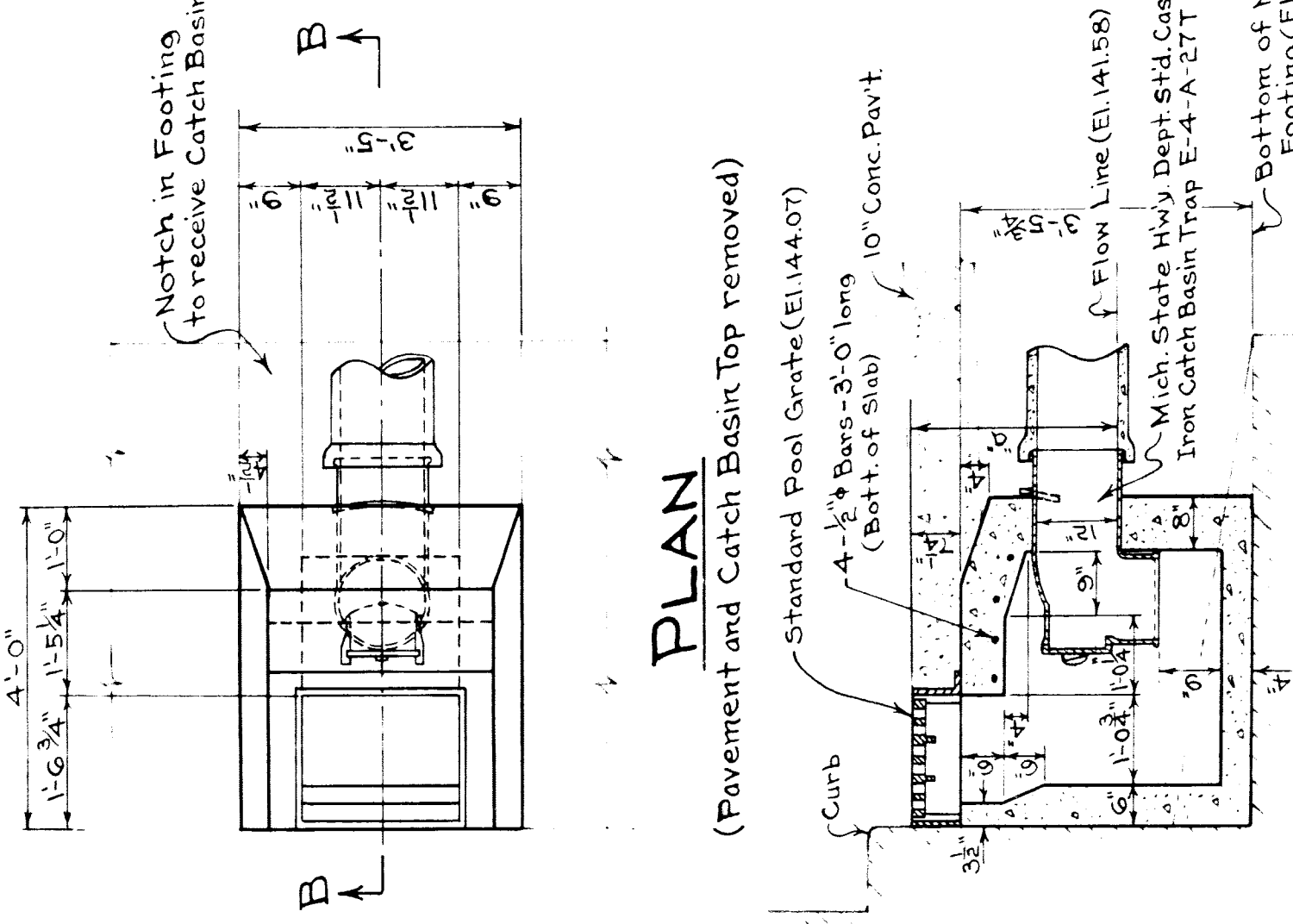
Note: C.B. to be plastered on the outside with a mortar of 1:3 mix, 1/2" thick.

STANDARD CATCH BASIN
 DETAIL A
 Scale: 1/2" = 1'-0"

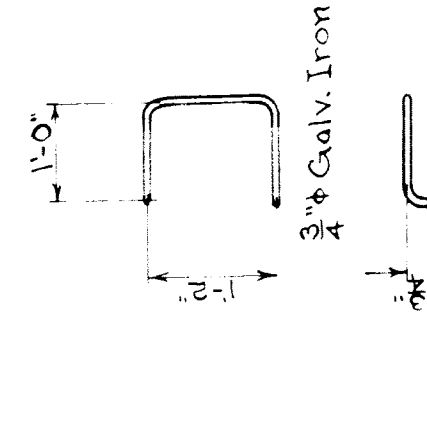


STANDARD SHALLOW MANHOLE
 DETAIL B
 Scale: 1/2" = 1'-0"

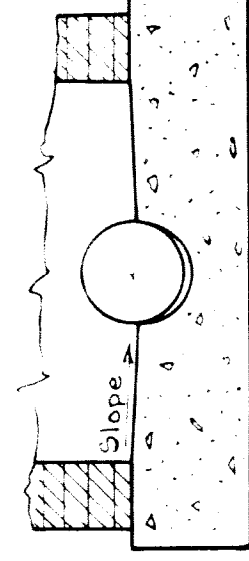
Note:
 Concrete quantities for Standard Shallow Manhole - (Pipe not omitted):
 for 4'-0" - 3'-0" = 250 Cu.Yds.
 for each additional foot of depth add = 0.528 Cu.Yds.



SECTION B-B
CATCH BASIN ON FOOTING
 DETAIL D
 Scale: 1/2" = 1'-0"



STEP DETAIL



SECTION A-A
 Scale: 1/2" = 1'-0"

DRAINAGE STRUCTURE	STATION	ELEV. OF TOP	ELEV. OF OUTLET INV.	DETAIL	YARDS OF CONCRETE	LOCATION
M.H.1	73+50	153.01	137.91	C	15.09	Outer Drive
M.H.2	74+64	153.01	138.55	C	14.75	"
M.H.3	75+68	152.01	138.56	C	13.44	"
M.H.4	78+80	144.78	139.49	B	5.23	"
M.H.5	79+35	144.46	140.09	B	4.37	"
M.H.6	80+32	145.28	140.37	B	4.91	"
M.H.7	81+62	148.88	143.36	C	5.52	"
M.H.8	83+70	154.45	147.48	C	6.97	"
M.H.9	2+301	150.51	150.51	C	4.49	S.W. Drive
M.H.1A	72+84	152.41	137.71	C	14.69	Outer Drive
C.B.1	75+65	151.91	148.65	A	3.25	Outer Drive
C.B.2	75+65	151.91	148.65	A	3.25	Outer Drive
C.B.3	81+82	151.81	148.00	A	3.80	Derby Ave.
C.B.4	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.5	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.6	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.7	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.8	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.9	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.10	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.11	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.12	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.13	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.14	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.15	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.16	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.17	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.18	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.19	81+82	151.51	148.25	A	3.25	Derby Ave.
C.B.20	81+82	151.51	148.25	A	3.25	Derby Ave.

QUANTITIES
 Total Concrete 34.11 Cu.Yds.
 Reinf. Steel (C.B.s) 94# 16 #
 Mich. State Hwy Dept. Std. Cast Iron Catch Basin Trap E-4-A-27T 2 Reqd.
 3/4" Galv. Iron Steps 63

For Drainage Quantities and Notes see Sheet #5
 P.W.A. DOCKET No. MICH. 1084 F

Checkers: B. Williams
 G.J.P. 5-19-38

WAYNE COUNTY ROAD COMMISSIONERS
 DETROIT, MICHIGAN
 MICHAEL J. O'BRIEN
 CHAIRMAN

PETER M. SCIDENHEP
 COMMISSIONER

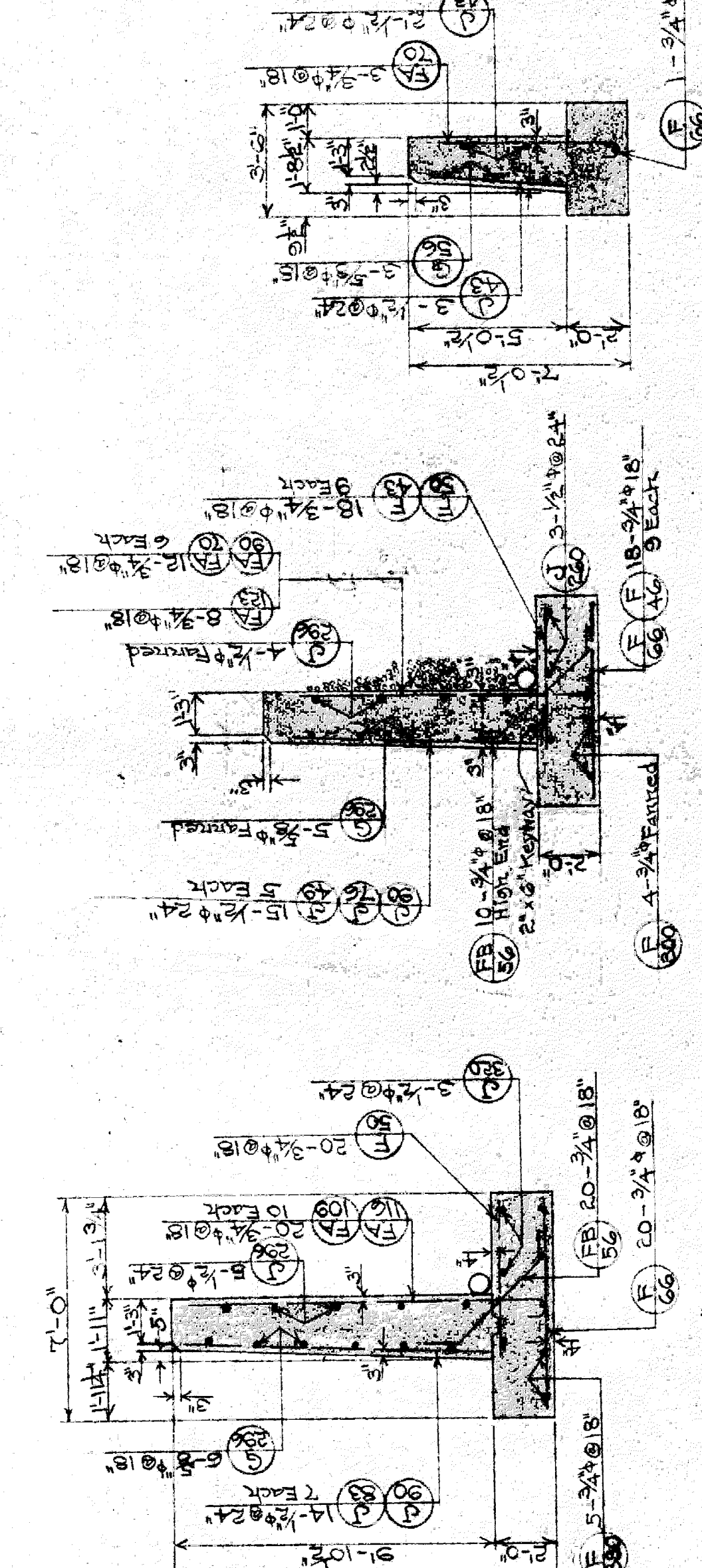
EDWARD N. PINES
 VICE CHAIRMAN

DR. JAMES G. J.P.
 AS SHOWN
 2-21-38

JOB No
 201

DRAINAGE STRUCTURES
 OUTER DRIVE - G.T.W.R.R. (MICH.)
 GRADE SEPN.

Note: - Deductions must be made from Bill of Bars on Sh. 7 for that section of wall East of Sta. 81+85. For these corrections see Issue # 2 of Sh. 7



SEC. F-F
Sta. 81+55 to Sta. 81+85
Scale: 1/4" = 1'-0"

SEC. G-G
East End to Sta. 81+55
Scale: 1/4" = 1'-0"

SEC. H-H
East End Returns
Scale: 1/4" = 1'-0"

QUANTITIES (This sheet only)

Concrete :- 30.6 Cu.Yds.
Footing Above Footing :- 34.7 " "
Total = 65.3 Cu.Yds.

Reinforcing Steel :- 2780 #
8" B's. Vit. Tile :- 60.0 Lir. Ft.
22 Ga. Soft sheet Copper-15" Wd. :- 10.0 Lir. Ft.
Handrail :- 41.75 Lir. Ft.

BENT BAR DETAILS
Not to scale

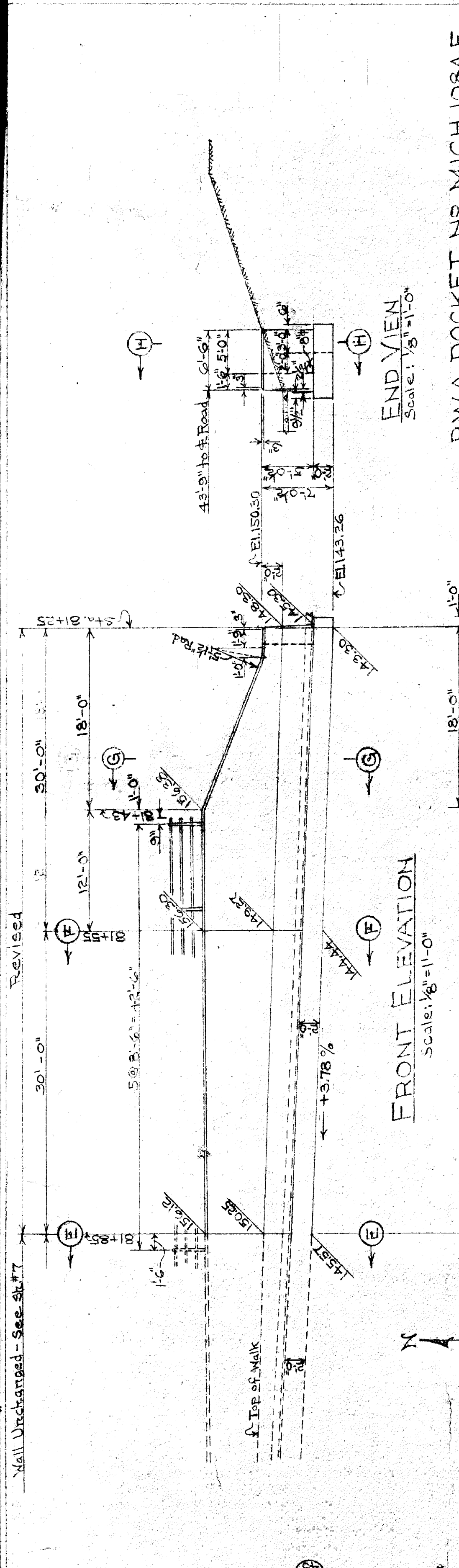
ESTIMATED CHANGE IN CONTRACT QUANTITIES

ITEM DESCRIPTION	INCREASED QUANTITIES	DECREASED QUANTITIES
B. Conc. Retaining Wall	49.5 Cu.Yds.	
C. Reinf. Steel Ret. Wall	2225 #	

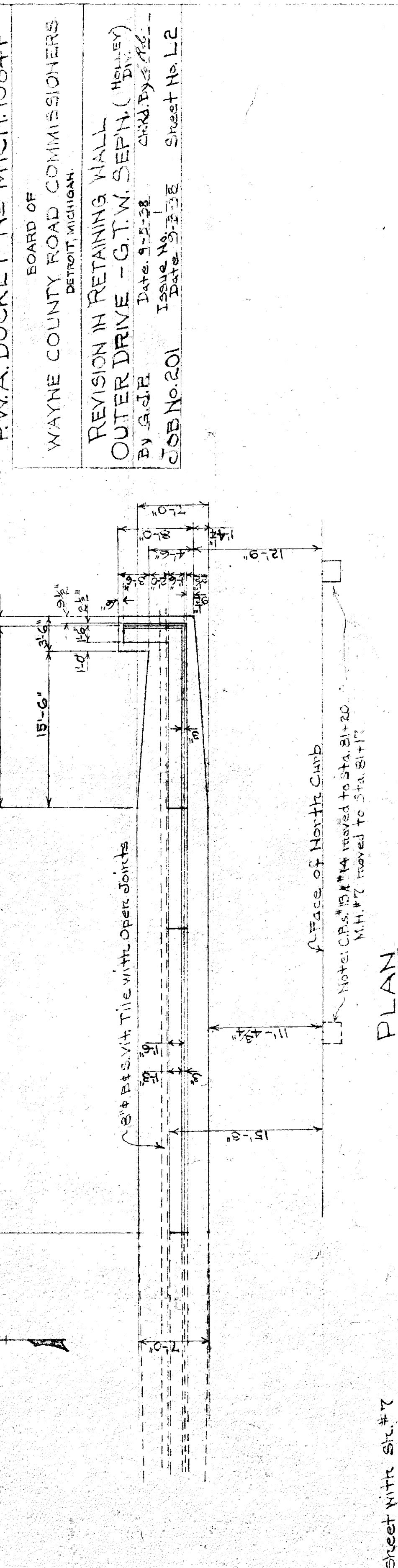
BILL OF BARS

MARK	NO.	SIZE	LENGTH	LOCATION
FA123	8	3/4"	12'-3"	Both. of Footings
FA16	10	"	11'-6"	"
FA109	10	"	9'-0"	"
FA90	6	"	9'-0"	"
FA70	9	"	7'-0"	"
FB56	30	"	5'-6"	"
FB300	4	"	23'-0"	"
FB30	5	"	30'-0"	"
FB6	20	"	6'-6"	"
FB46	20	"	4'-6"	"
FB50	29	"	5'-0"	Top
FB43	9	"	4'-3"	"
FB20	3	1/2"	22'-0"	"
FB260	3	"	26'-0"	"
FB296	1	5/8"	29'-6"	Start-Front Face
FB56	3	"	5'-6"	"
FB90	12	1/2"	9'-0"	"
FB283	7	"	8'-3"	"

Note: Work this sheet with sheet # 7



FRONT ELEVATION
Scale: 1/8" = 1'-0"



END VIEW
Scale: 1/8" = 1'-0"

Wall Unchanged - See Sh. # 7

Revised

P.W.A. DOCKET NO. MICH. 1084-F

BOARD OF
WAYNE COUNTY ROAD COMMISSIONERS
DETROIT, MICHIGAN.

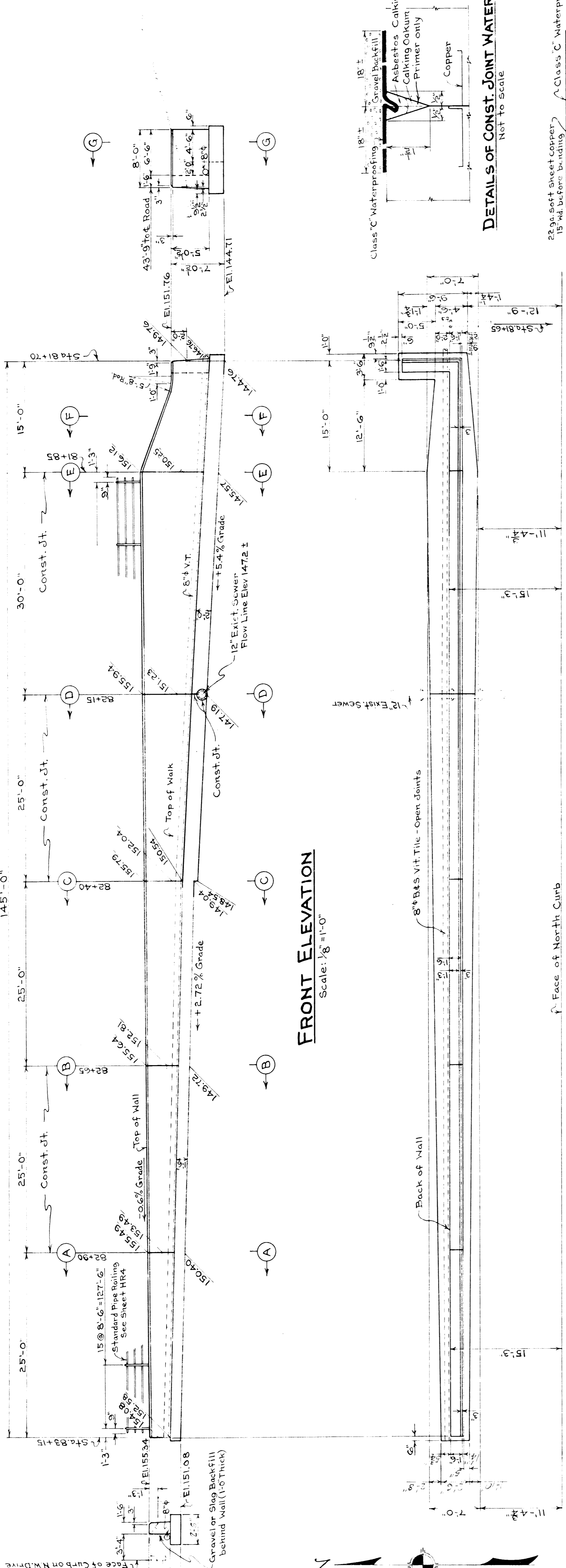
REVISION IN RETAINING WALL
OUTER DRIVE - G.T.W. SEPT. (HOLLEY DIV.)
By G.J.E. Date: 9-5-38
Issue No. 201 Date: 9-23-38 Sheet No. L2

PLAN

Note: CR. # 13 # 14 moved to Sta. 81+20
M.H. # 7 moved to Sta. 81+7

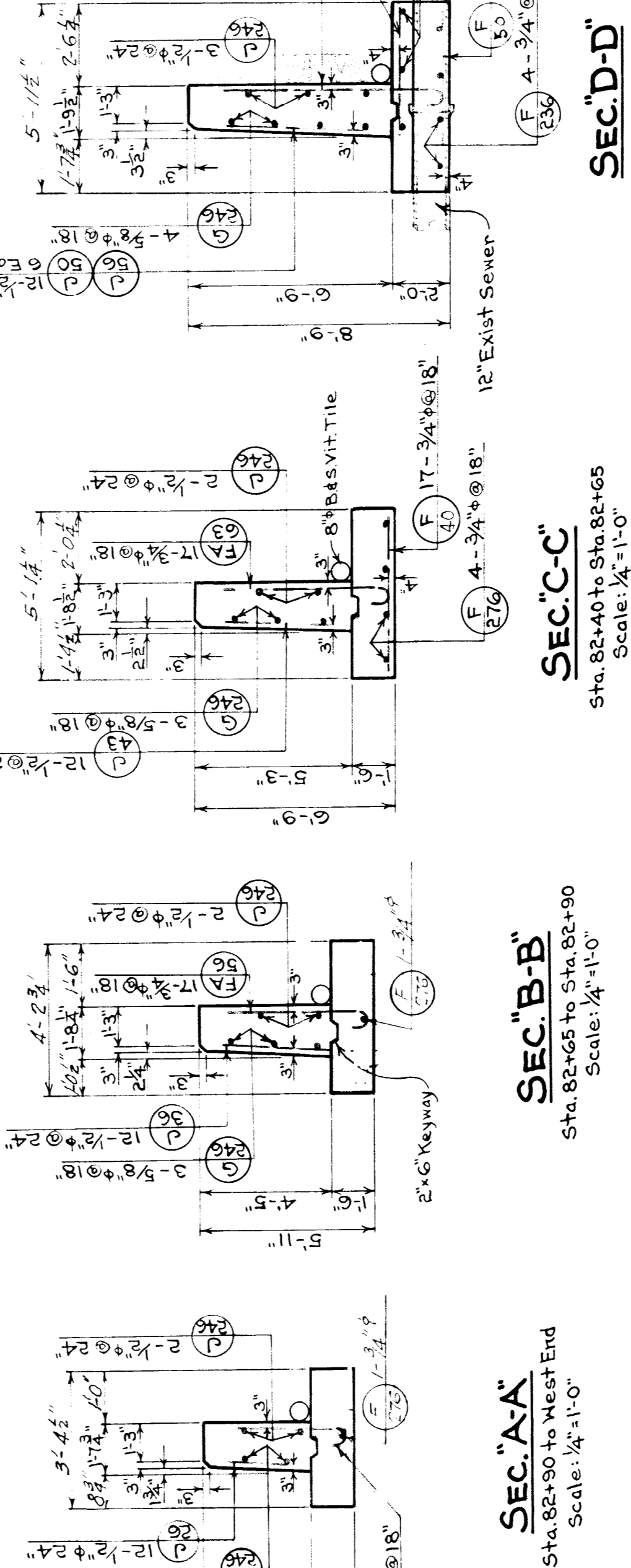
Face of North Curve

BILL OF REINFORCING BARS			
MARK NO.	SIZE	LENGTH	LOCATION
FA46	1/4"	4'-6"	Bottom of Footing
FA56	1/2"	5'-6"	"
FA63	1/2"	6'-6"	"
FA10	1/2"	7'-0"	"
FA80	3/4"	8'-0"	"
FA90	1/2"	9'-0"	"
FA99	10	9'-9"	"
FB56	20	5'-6"	"
FB76	6	27'-6"	"
FB36	4	23'-6"	"
FB36	5	30'-6"	"
FB70	4	17'-0"	"
FB90	1	9'-0"	"
FB7	1/2"	4'-6"	Bottom Top of Footing
FB50	3/4"	5'-6"	Bottom Top of Footing
FB10	10	6'-0"	"
FB6	10	6'-6"	"
FB3	25	4'-3"	Top of Footing
FB20	3	26'-0"	"
FB20	3	32'-0"	"
FB40	2	14'-0"	"
FB46	12	24'-6"	Stem - Front Face
FB36	5	29'-6"	"
FB46	4	14'-6"	"
FB6	3	7'-6"	"
FB36	12	2'-6"	"
FB43	16	4'-3"	"
FB50	6	5'-0"	"
FB56	6	5'-6"	"
FB66	7	7'-6"	"
FB60	4	6'-0"	"
FB49	4	4'-9"	"
FB36	9	29'-6"	Stem - Rear Face
FB40	3	14'-0"	"
FB66	2	6'-6"	"



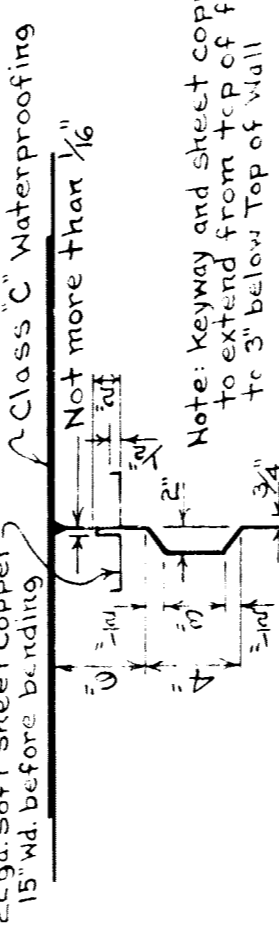
FRONT ELEVATION
Scale: 1/8"=1'-0"

PLAN
Scale: 1/8"=1'-0"



TYPICAL VERT. CONST. JOINT
Scale: 1"=1'-0"

DETAILS OF CONST. JOINT WATERPROOFING
Not to Scale



QUANTITIES

Concrete -	48.6 Cu.Yds.
Footing	48.6
Reinforcing Steel	3875 #
8" B x 8" Vit Tile	150 Lin. Ft
22 Ga. Soft Sheet Copper - 15" Wd.	26 Lin. Ft
Handrail (Complete)	129.0 Lin. Ft

Note: All posts shall be set plumb and the base of the post shall have a level bearing. The method of accomplishing this shall meet with the approval of the Engineer.
For detail of handrail see St. # HR4.
3/4" Bolts, 6" long, with Nuts & Washers

DETAIL OF POST SETTING
Scale: 3/4"=1'-0"

NOTES

Specifications: - See Contract Documents
Concrete - Grade "B" for 3000 W/c
Rubbing: All exposed surfaces shall be rubbed as soon as forms are removed. No cement grout shall be used on rubbed surfaces. Exposed corners: No exposed corners shall be beveled except where shown on plans, or at direction of Engineer.
Reinforcing Steel - All bars to be standard bars of U.S. Steel or equivalent. Bars shall be securely wired together at each intersection. At splices bars shall lap for a distance of 45 diameters, except where additional lap is required by the Plans or by the Engineer and be securely wired together. All bars shall be securely tagged before shipping to the job. No concrete shall be placed until bars to be encased are securely fastened in place.
Waterproofing: - The back of wall above footing shall be primed with a priming coat and finish coats of damp proofing cement as shown on plans. Backs of construction joints in walls shall be waterproofed with 22 ga. soft sheet copper, 15" wide, lapped with construction joints. Construction joints shall be located as shown and no others, will be allowed except by permission of the Engineer.
Sheet Copper - All copper sheets shall be riveted and brazed at splices.
Backfill: - A blanket of gravel or slag 12" thick shall be placed back of wall.

P.W.A. DOCKET NO. MICH.1084 F
BOARD OF
WAYNE COUNTY ROAD COMMISSIONERS
MICHIGAN
MICHAEL J. BIRCHER
CHAIRMAN
JOHN T. BRENNING
MEMBER

DETAILS OF RETAINING WALL
OUTER DRIVE - G.T. W.R.R. (Holley Dr.)
GRADE SEPARATION

JOHN F. BRENNING
G.D.P.
As Shown

JOHN F. BRENNING
G.D.P.
As Shown

JOHN F. BRENNING
G.D.P.
As Shown

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As Shown

JOHN F. BRENNING
G.D.P.
As Shown

JOHN F. BRENNING
G.D.P.
As Shown

JOHN F. BRENNING
G.D.P.
As Shown

JOHN F. BRENNING
G.D.P.
As Shown

JOHN F. BRENNING
G.D.P.
As Shown

JOHN F. BRENNING
G.D.P.
As Shown

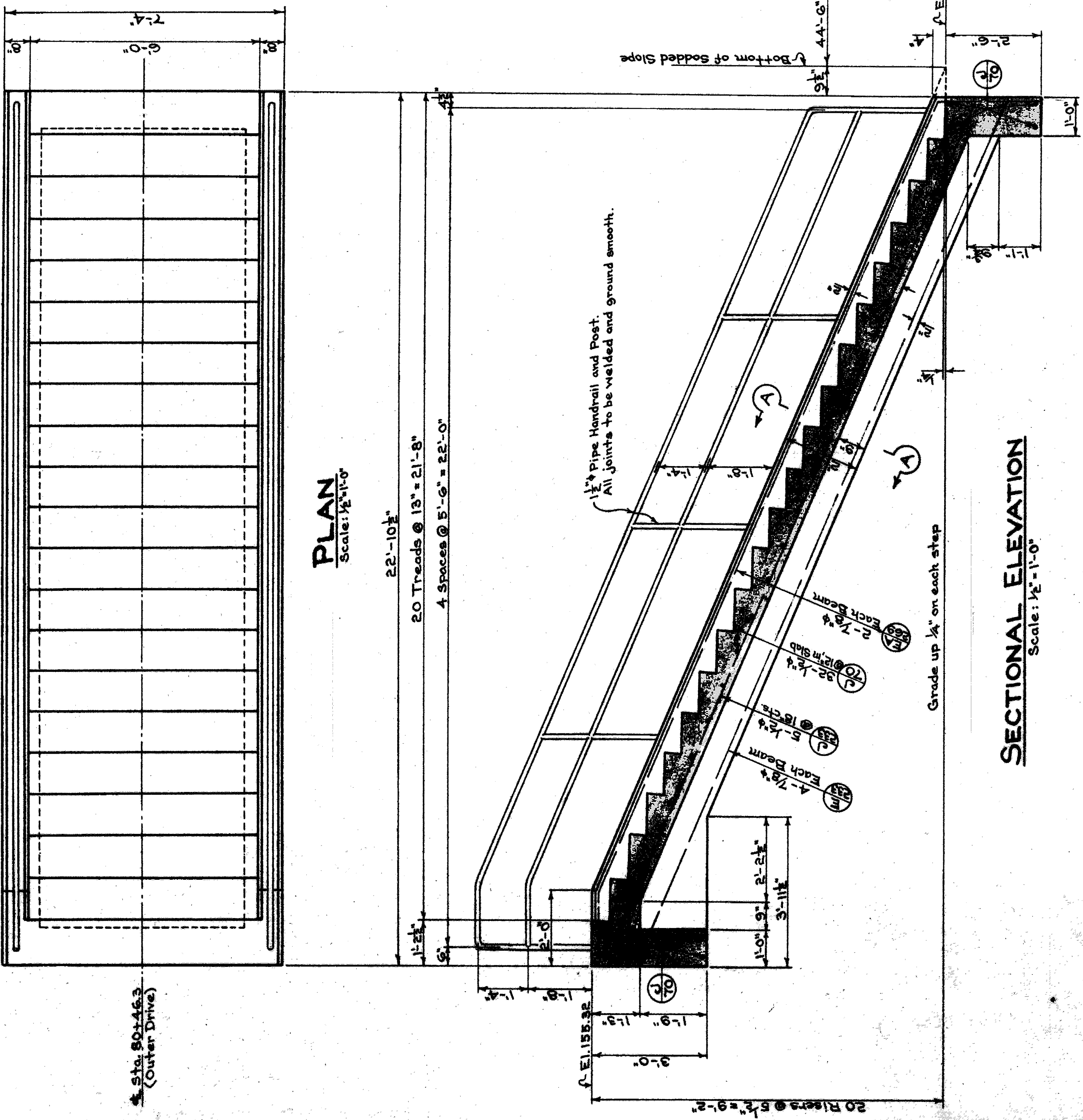
JOHN F. BRENNING
G.D.P.
As Shown

JOHN F. BRENNING
G.D.P.
As Shown

JOHN F. BRENNING
G.D.P.
As Shown

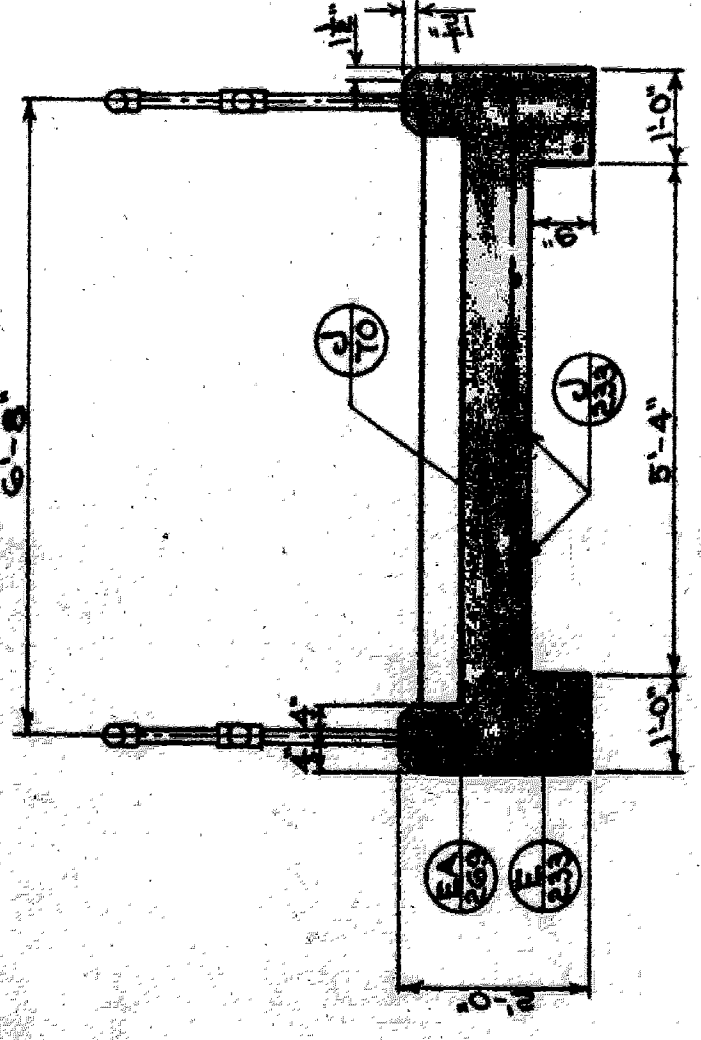
JOHN F. BRENNING
G.D.P.
As Shown

Sta. 80+46.3
(Outer Drive)

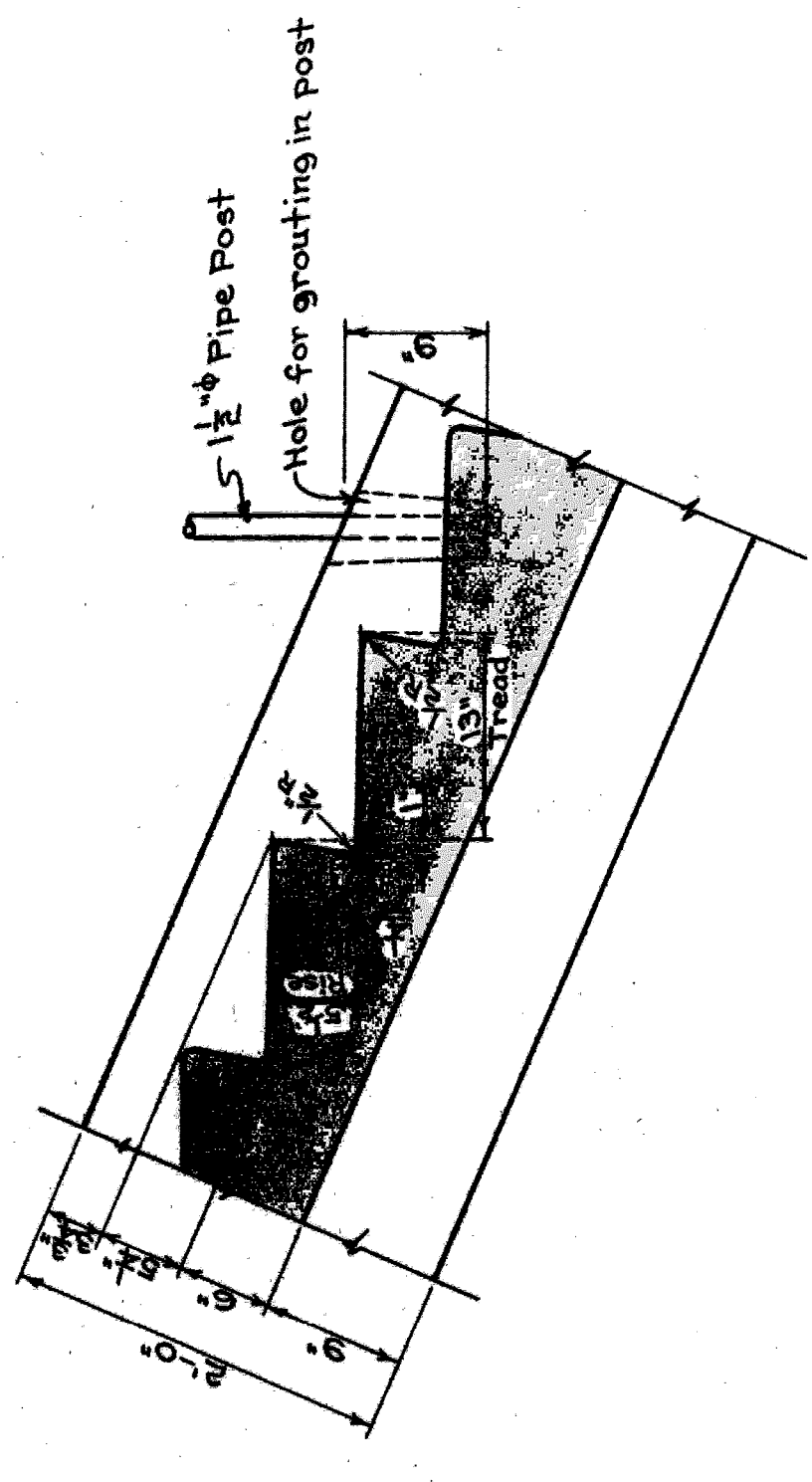


PLAN
Scale: 1/2" = 1'-0"

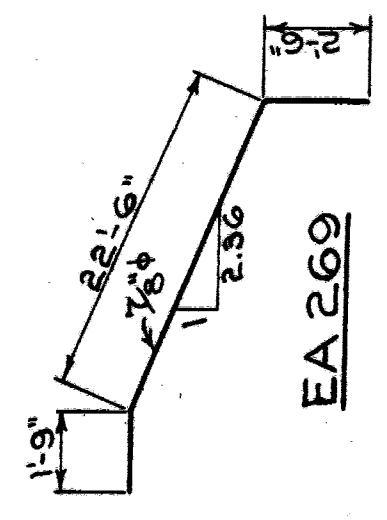
SECTIONAL ELEVATION
Scale: 1/2" = 1'-0"



SECTION A-A
Scale: 1/2" = 1'-0"



DETAIL OF STEPS AND POST SETTING
Scale: 1" = 1'-0"



EA 269

BILL OF REINFORCING BARS		
Mark	No.	Size Length Remarks
J70	32	1/2" 7'-0" Straight
E233	5	" 23'-3" "
E233	8	7/8" 23'-3" "
E269	4	" 26'-9" Bent

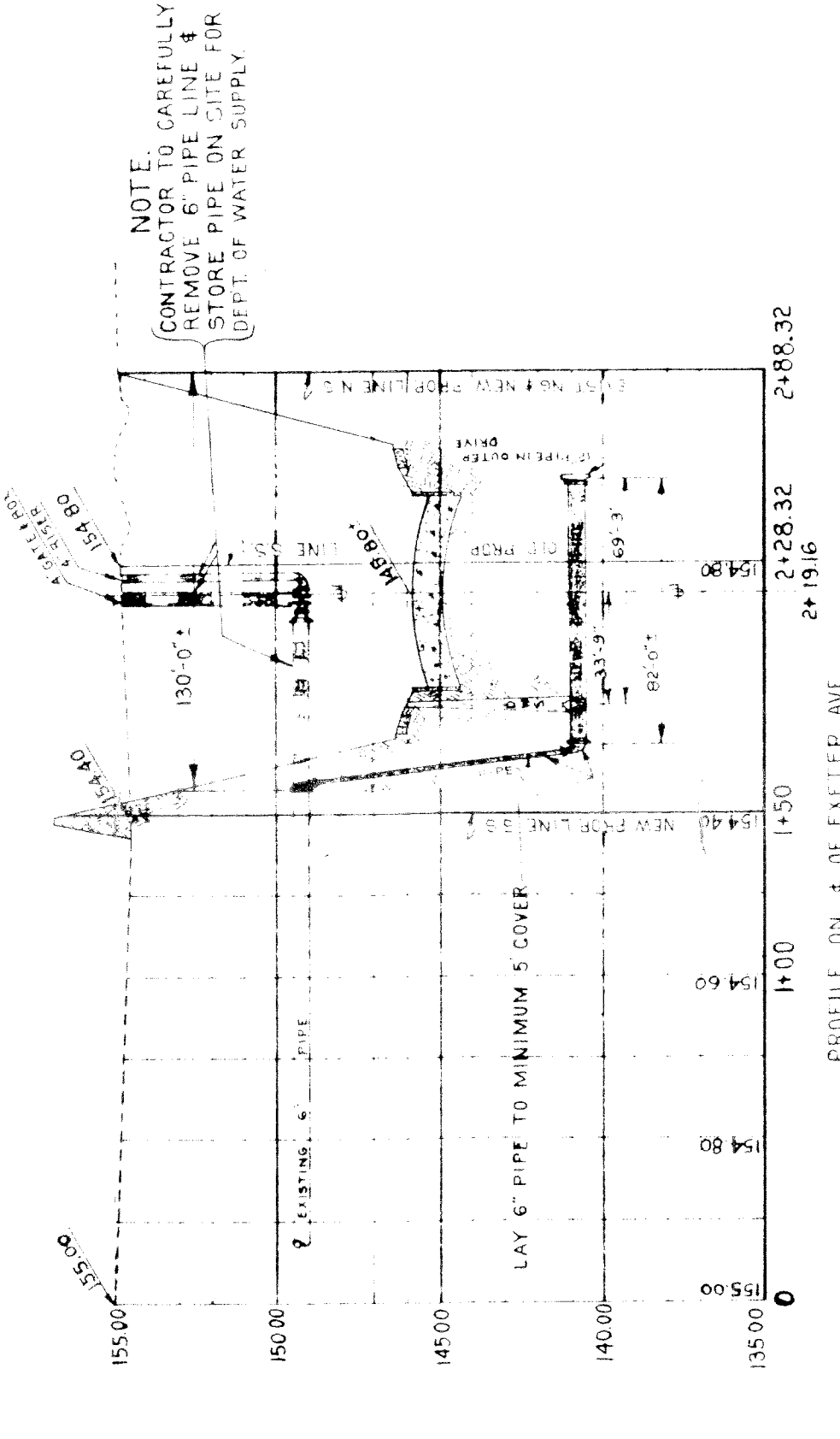
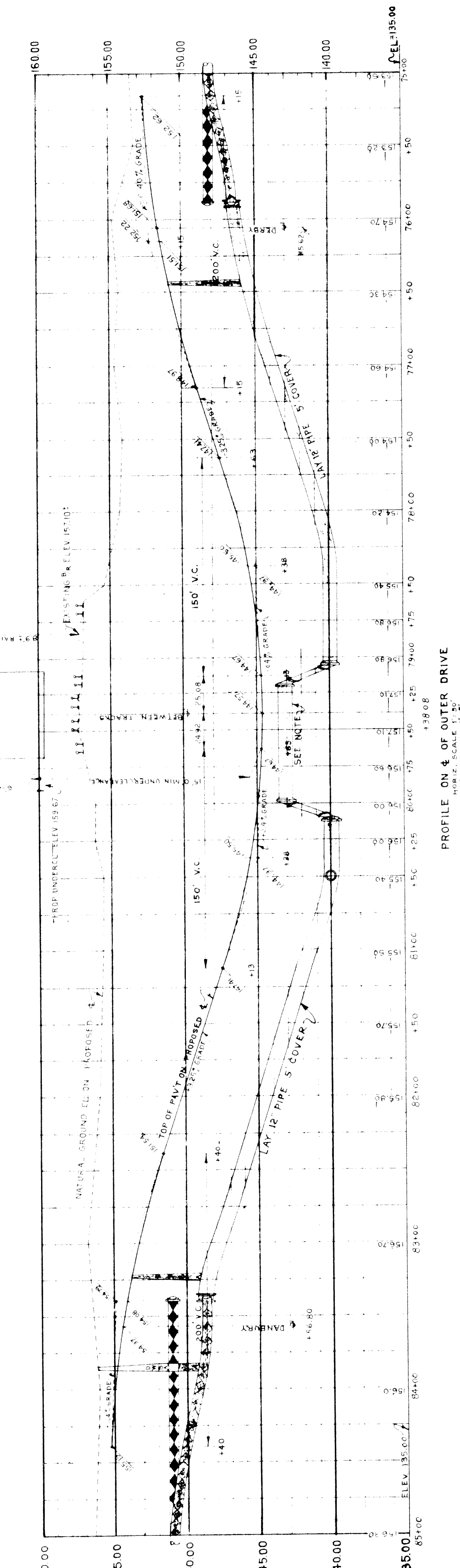
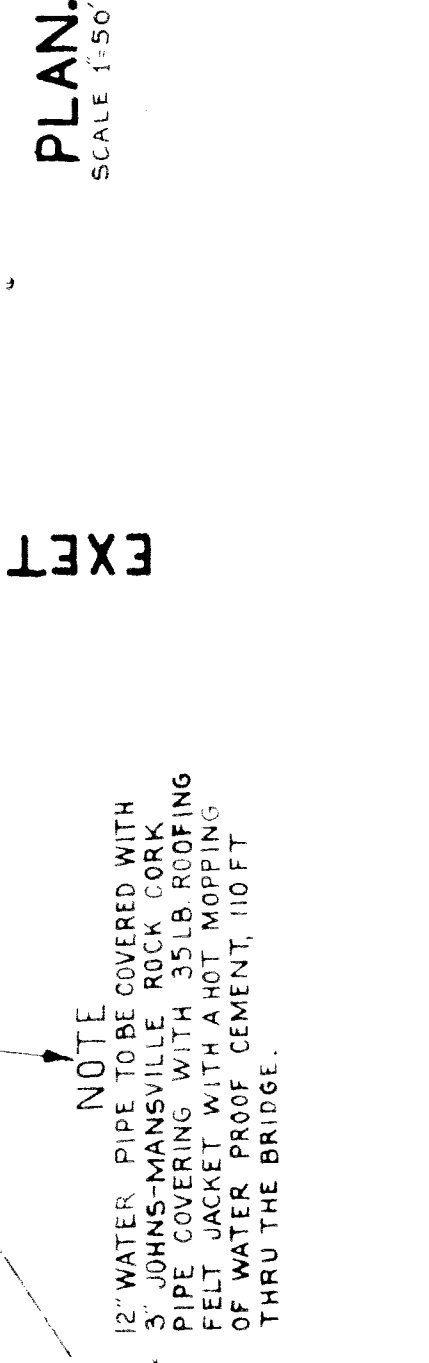
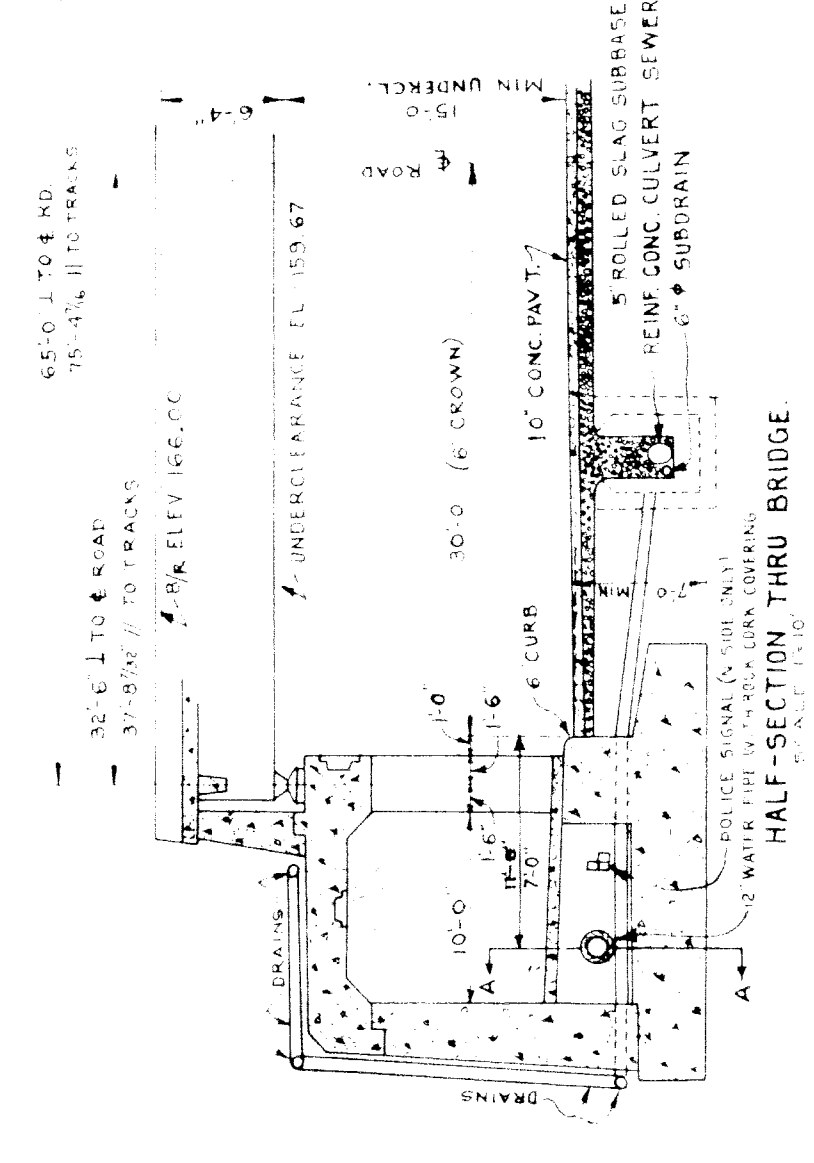
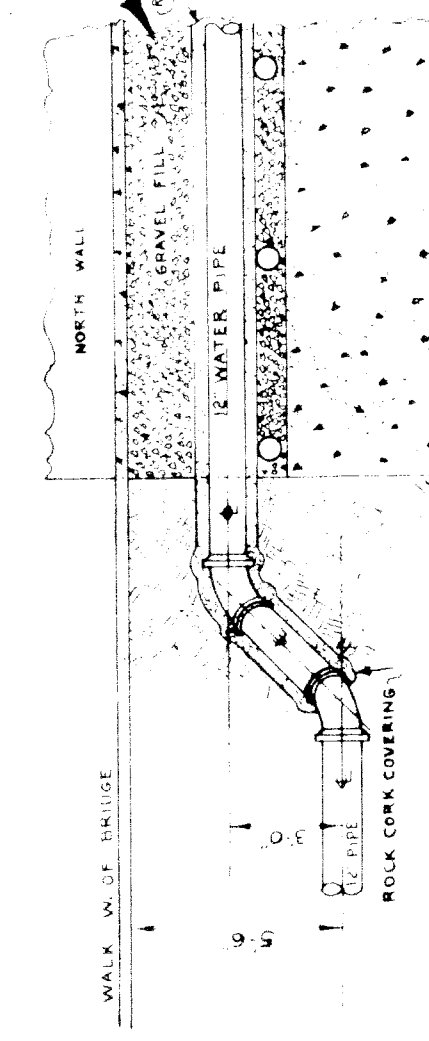
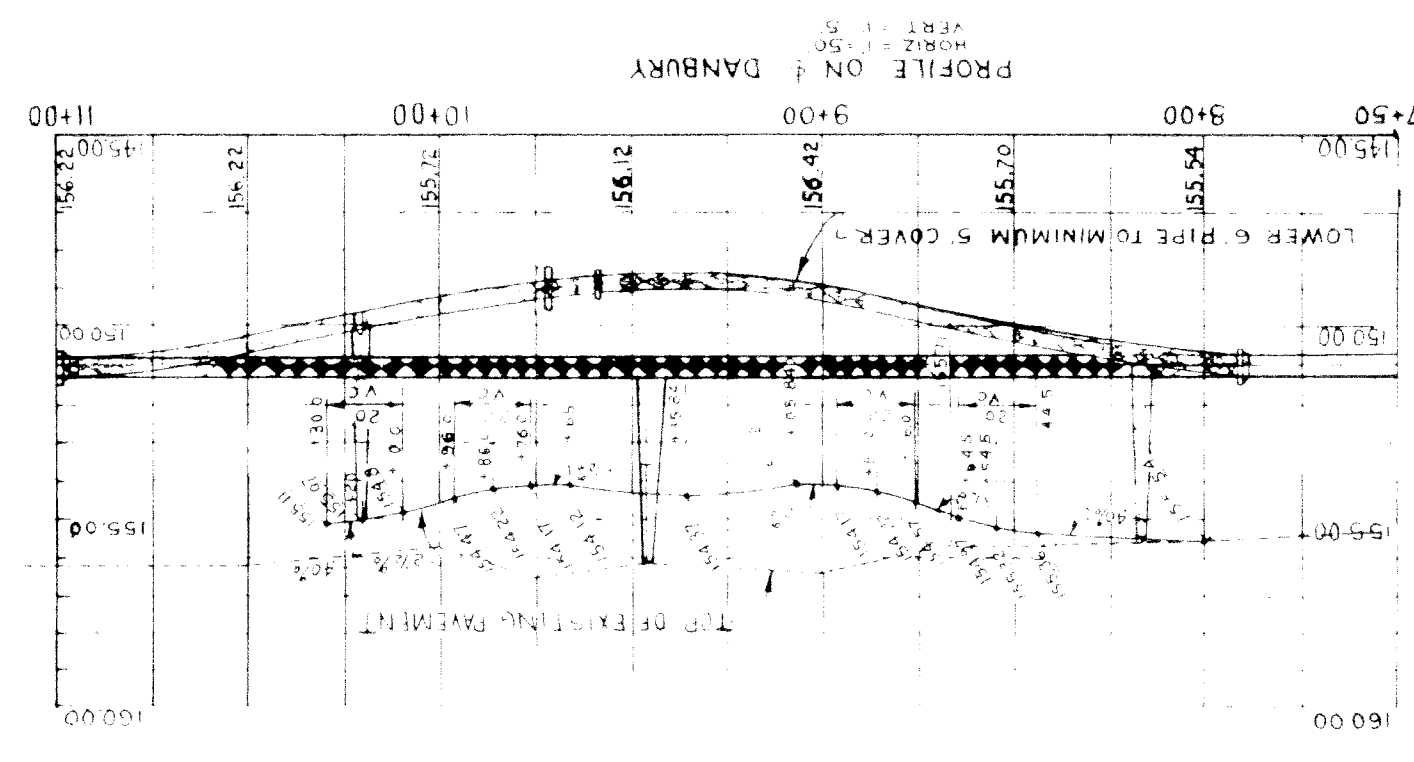
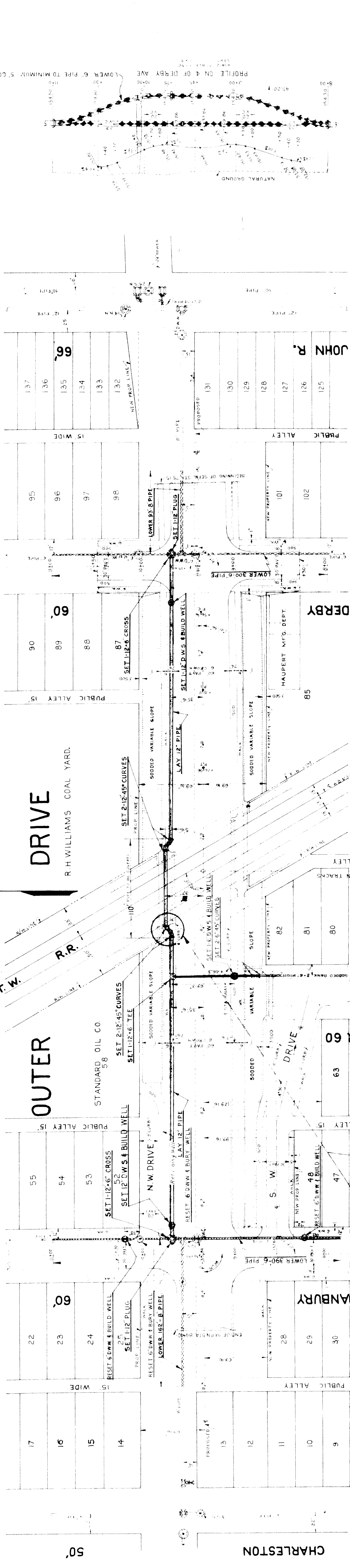
QUANTITIES	
Concrete	8.0 Cu. Yds.
Reinf. Steel	826 #
Handrail	48 Lin. Ft.

Note: For General Notes and Specifications see Sh. No. 7.

P.W.A. DOCKET N ^o MICH. 1084 F	
BOARD OF WAYNE COUNTY ROAD COMMISSIONERS DETROIT, MICHIGAN	
EDWARD N. HINES VICE-CHAIRMAN	JOHN F. BRENNING CHAIRMAN
MICHAEL J. O'BRIEN CONSULTANT	
STAIR DETAILS	
OUTER DRIVE - G.T.W.R.R. (MOLLEY DIV.)	
GRADE SEP'TN.	
DESIGNED BY: G.D.P.	CHECKED BY: S.L.
DATE: 4-29-39	SCALE: AS SHOWN
APPROVED: <i>[Signature]</i>	REG. CIV. ENR.
APPROVED: <i>[Signature]</i>	REG. CIV. ENR.
REVISIONS	
JOB NO. 201	DATE NO. 1
1-17	1938
SHEET NO. 8	

Work to be performed by Grading & Drainage Contractor:-
 Danbury Ave. - Lower 390' of 6" pipe
 Outer Drive - " 162' " " " (West of Danbury Ave.)
 Derby Ave. - " 93' " " " (East - Derby -)
 Derby Ave. - " 300' " " " (East - Derby -)
 (Distances are approximate)
 EXETER AVE. - " 394' " " " (East of Derby Ave.)
 Note: - Exact amount of pipe to be lowered is to be determined.
 Exact amount to provide 5' of cover is to be determined
 in the Field.

Laying of New Mains between mains on Danbury & Derby
 to be done by the Detroit Water Board.

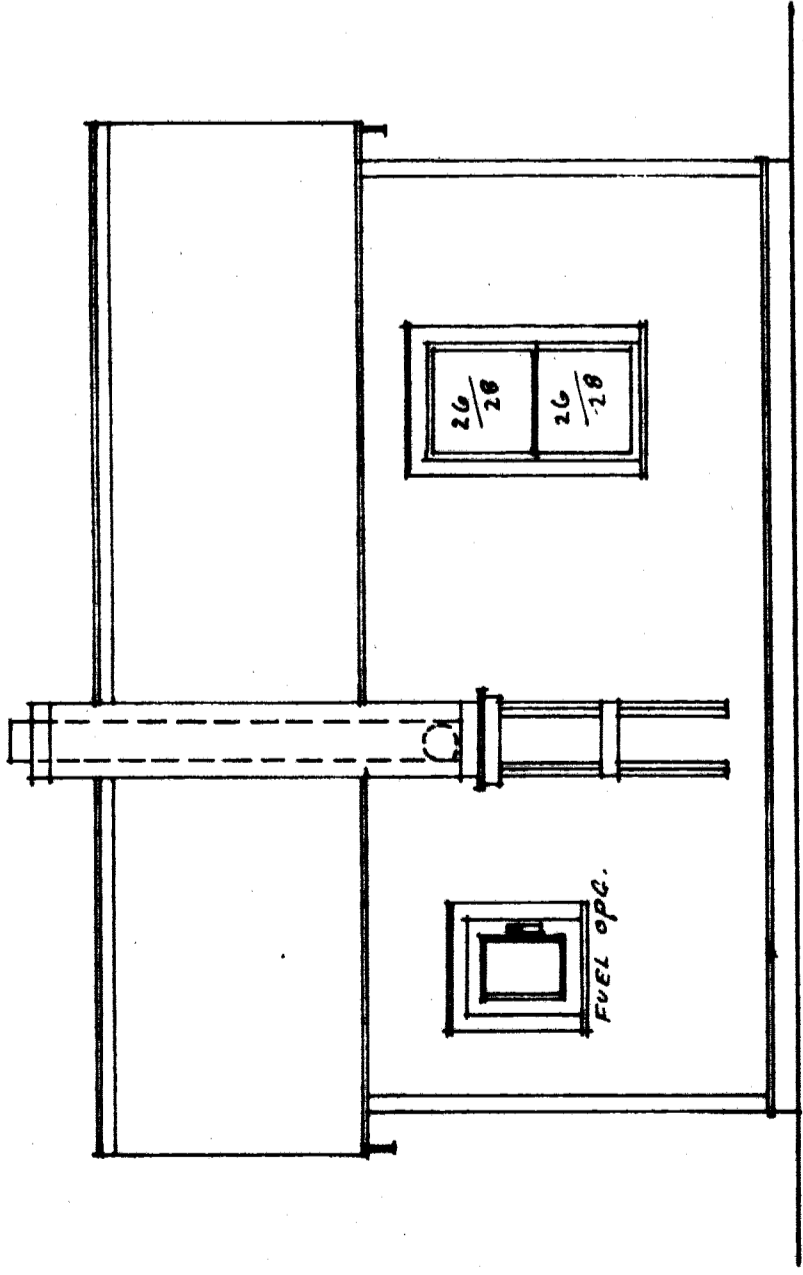


P.W.A. DOCKET NO. MICH. 1084 F

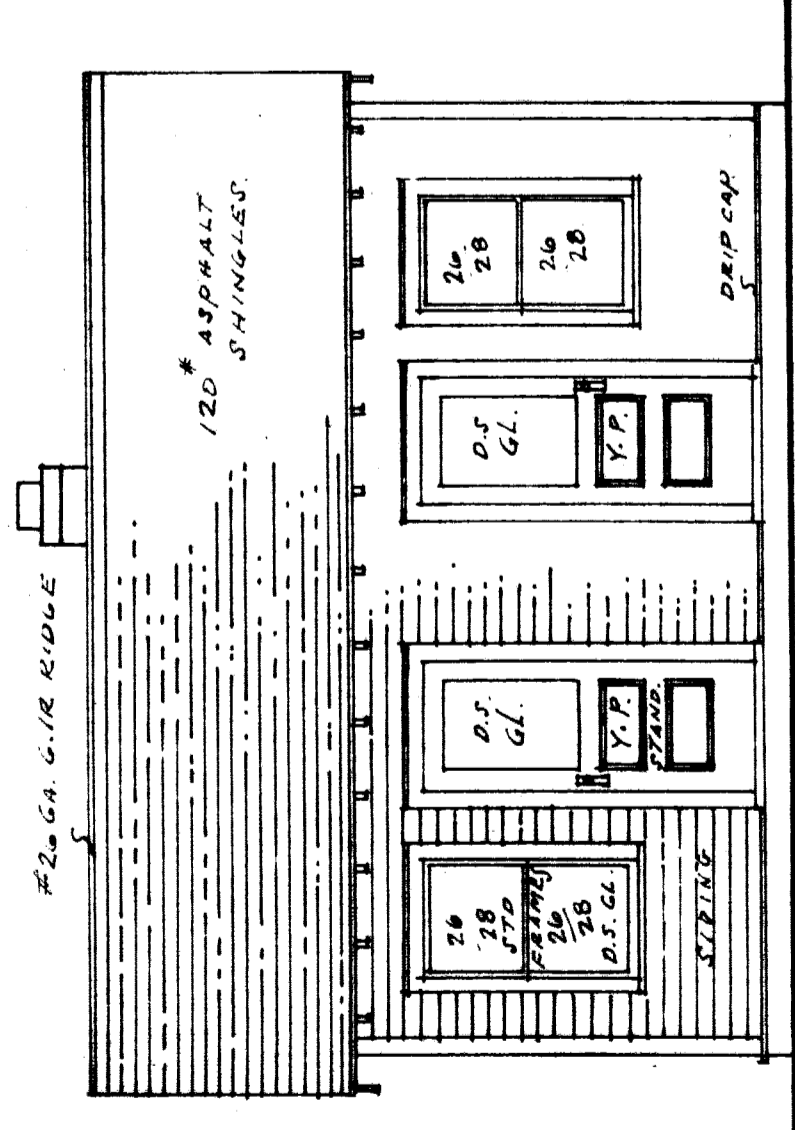
BOARD OF WAYNE COUNTY ROAD COMMISSIONERS
 DETROIT, MICHIGAN
 MICHAEL J. O'BRIEN
 CHARLES L. WILSON

WATER PIPE LAYOUT
 OUTER DRIVE - G.T.W.R. (HOLLEY)
 GRADE SEPARATION

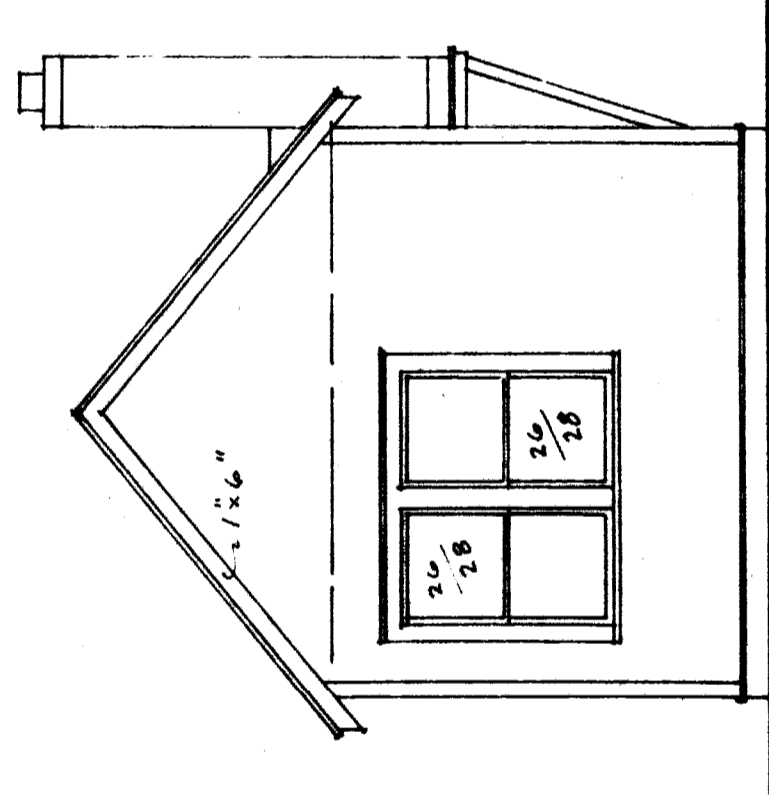
DESIGNED BY: Wessington, Detroit, Mich. (Hornshaw)
 DATE: May 23, 1938
 APPROVED: [Signature]
 ISSUE NO. 201
 DATE: [] [] []



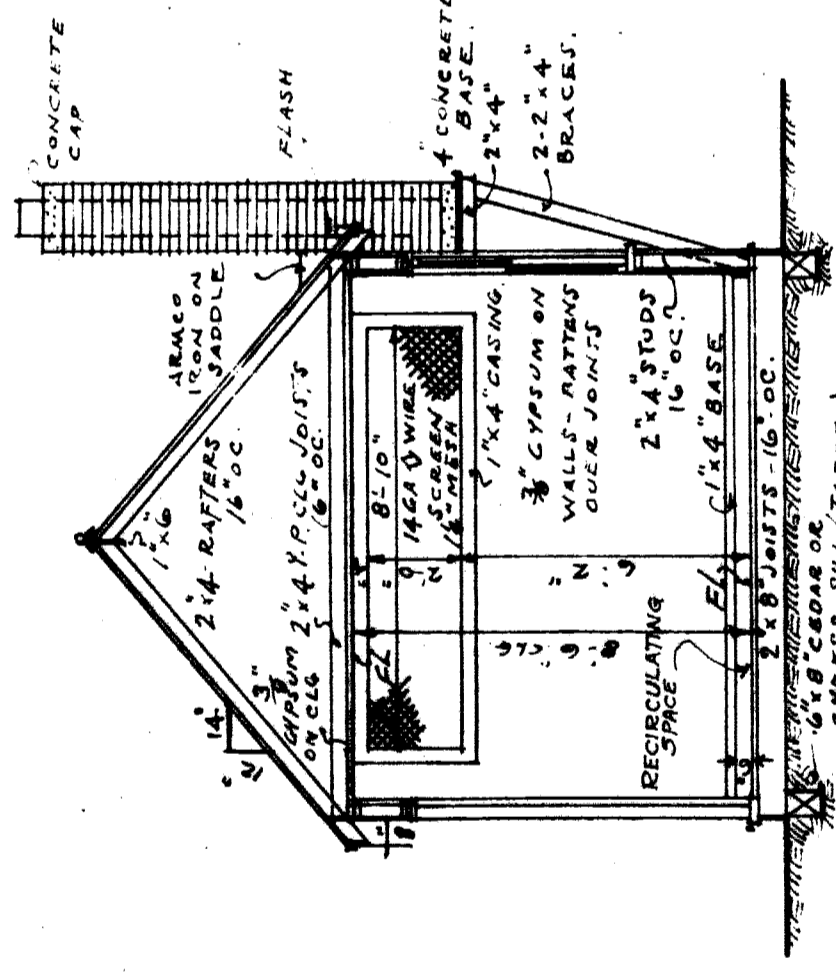
REAR.



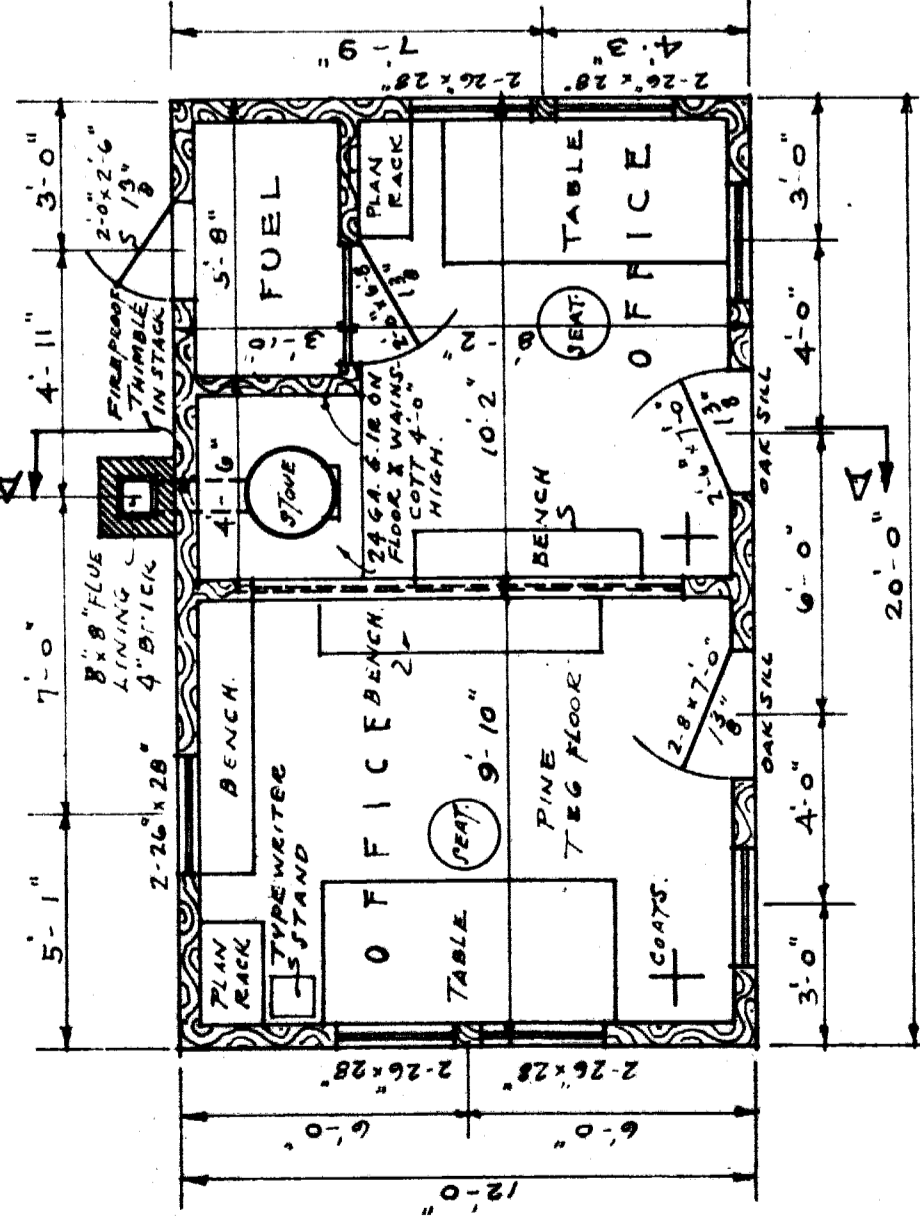
FRONT



SIDE



SECTION A A



PLAN

SCALE 1/4" = 1'-0"

- NOTE -

GENERAL REQUIREMENTS:

1. ONLY NEW MATERIALS & PREVIOUSLY UNUSED FIXTURES SHALL BE USED
2. ALL FRAMING LUMBER SHALL BE #2 YELLOW PINE. ALL EXTERIOR WOOD FINISH INCLUDING SASH SHALL BE WHITE PINE OR CYPRESS. SIDING SHALL BE SPRUCE OR FIR. INTERIOR FINISH LUMBER INCLUDING FINISH FLOORING SHALL BE NO. 1 YELLOW PINE
3. ALL INTERIOR SURFACES SHALL BE CEILED WITH 3/8" APPROVED GYPSUM BOARD EXCEPT WHERE OTHERWISE NOTED. ALL JOINTS TO BE FACED WITH 1/4" x 1 1/2" STRIP CLEATS
4. FULL SIZED WINDOWS TO BE CHECK RAILED & COUNTER BALANCED WITH C.I. WEIGHTS. 7 SETS OF WINDOW SHADES TO BE PROVIDED.
5. ALL EXTERIOR WOOD SURFACES & INTERIOR WALLS & CEILINGS TO RECEIVE TWO (2) COATS OF APPROVED PAINT, QUALITY & COLOR TO BE ACCEPTABLE TO THE ENGINEER. ALL INTERIOR WOOD FINISH INCLUDING FLOORS SHALL BE STAINED & FINISHED WITH TWO (2) COATS OF AN APPROVED VARNISH.
6. PROVIDE ALL NECESSARY HARDWARE FOR DOORS & WINDOWS. THE EXTERIOR DOORS ARE TO BE PROVIDED WITH CYLINDER LOCKS. PROVIDE FOUR (4) KEYS EACH FOR DOORS TO THE ENGINEERS OFFICES.

EQUIPMENT: THE CONTRACTOR SHALL PROVIDE:-

1. ONE (1) SHEET STEEL FIRST AID CABINET, APPROXIMATELY 18" x 24" FULLY EQUIPPED.
2. TWO (2) BENCHES, TWO (2) DRAFTING STOOLS
3. TWO (2) METAL WASTE BASKETS AND TWO (2) CUSPIDORS.
4. TWO (2) WATER PAILS AND A SUPPLY OF PAPER CUPS.
5. ONE (1) METAL WASH BASIN AND SUFFICIENT PAPER TOWELS & SOAP.
6. ONE (1) SANITARY LATRINE AS DESCRIBED IN THE SPECIFICATIONS.
7. TWO (2) TABLES 3' x 6' & TWO (2) PLAN FILES
8. PROVIDE SCREEN DOORS (STOCK PATTERN) WITH 16 MESH GALV. SCREEN WIRE CLOTH AT ENTRANCES - ALSO SCREENS FOR WINDOWS FULL HEIGHT.

LIGHTING:

1. ONE (1) DROP CORD (OVER TABLE) TWO (2) CEILING LIGHTS AND ONE (1) WALL SWITCH IN EACH ROOM.
2. ALL OUTLETS TO BE EQUIPPED WITH SHADES AND 100 WATT LAMPS. CONTRACTOR SHALL PROVIDE NECESSARY WIRING, FUSE BOX, SPARE FUSES AND BULBS.

SERVICE: CONTRACTOR SHALL FURNISH:-

1. TWO (2) DESK ATTACHED SINGLE PARTY TELEPHONE WITH LINES OF MICHIGAN BELL TELEPHONE COMPANY
2. FACILITIES FOR MAINTAINING A TEMPERATURE OF AT LEAST 72° IN ALL WEATHER.
3. REPAIR MAINTENANCE & JANITOR SERVICE TO BE PLACED ON SYSTEMATIC ROUTINE ACCEPTABLE TO THE ENGINEER.

P.W.A. DOCKET NO MICH.1084 F

REVISIONS:

BOARD OF WAYNE COUNTY ROAD COMMISSIONERS
DETROIT, MICHIGAN

MICHAEL J. O'BRIEN
CHARLES L. WILSON
JOHN F. BRENNING
COMMISSIONERS

ENGINEER'S FIELD OFFICE
OUTER DRIVE - G.T.W.R.R. (HOLLEY DIV)
GRADE SEPARATION

DESIGNED BY GEMMUN DRAWN BY D.E. CHECKED BY
DATE OCT. 19, 1937 SCALE AS SHOWN CORRECT

APPROVED [Signature] REG. CIV. ENG.

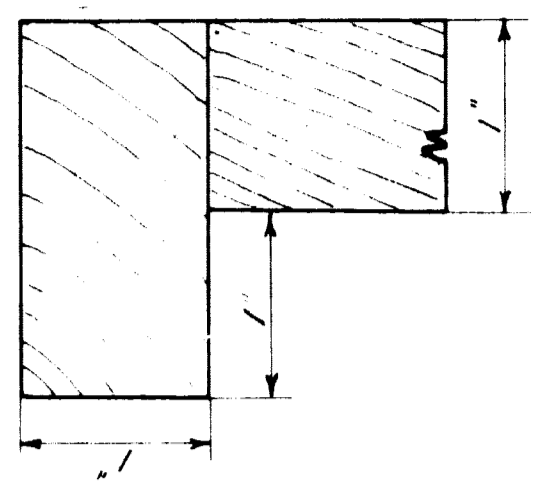
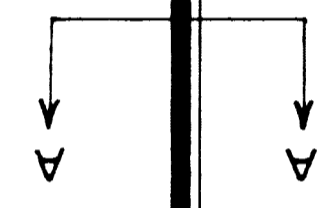
APPROVED [Signature] REG. CIV. ENG.

JOB NO
201

DATE 11 1938

SHEET NO 12

P. W. A.
FEDERAL EMERGENCY
ADMINISTRATION OF PUBLIC WORKS
OUTER DRIVE - GRAND TRUNK GRADE SEPN.
 PROJECT NO MICHIGAN 1084 F

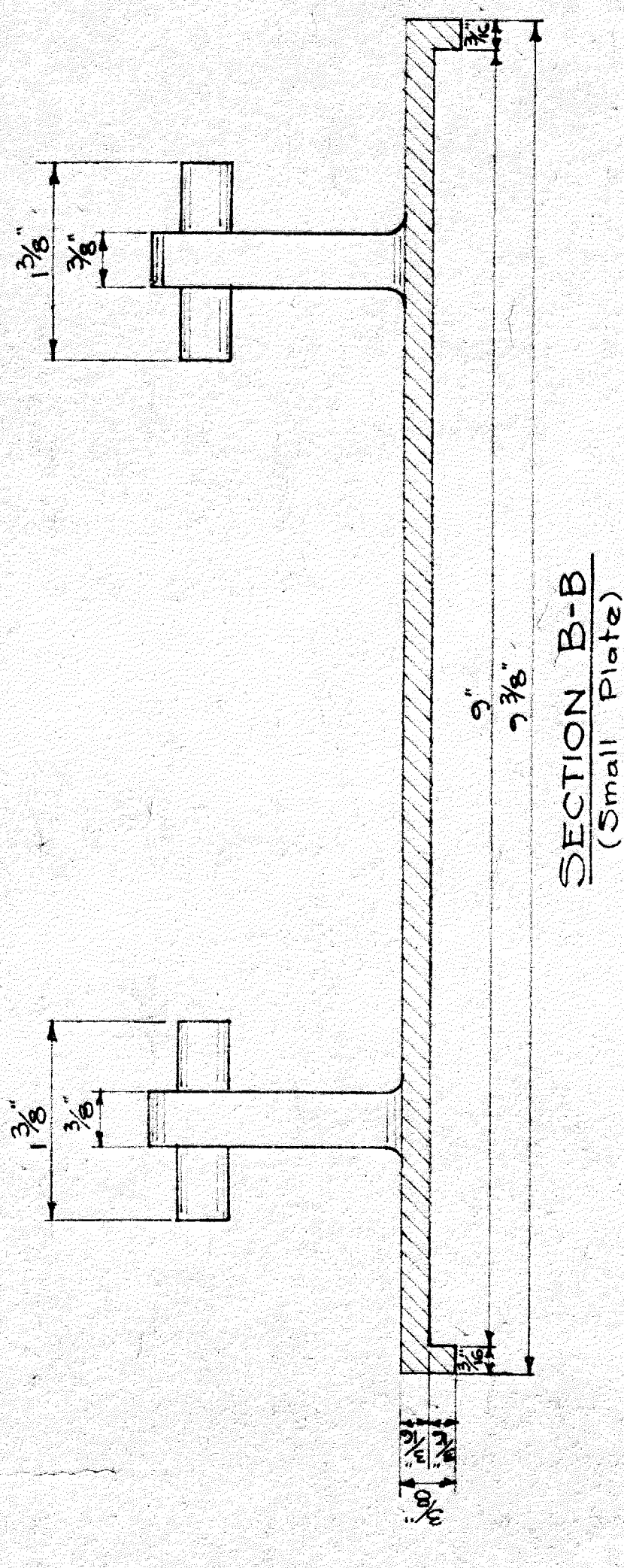
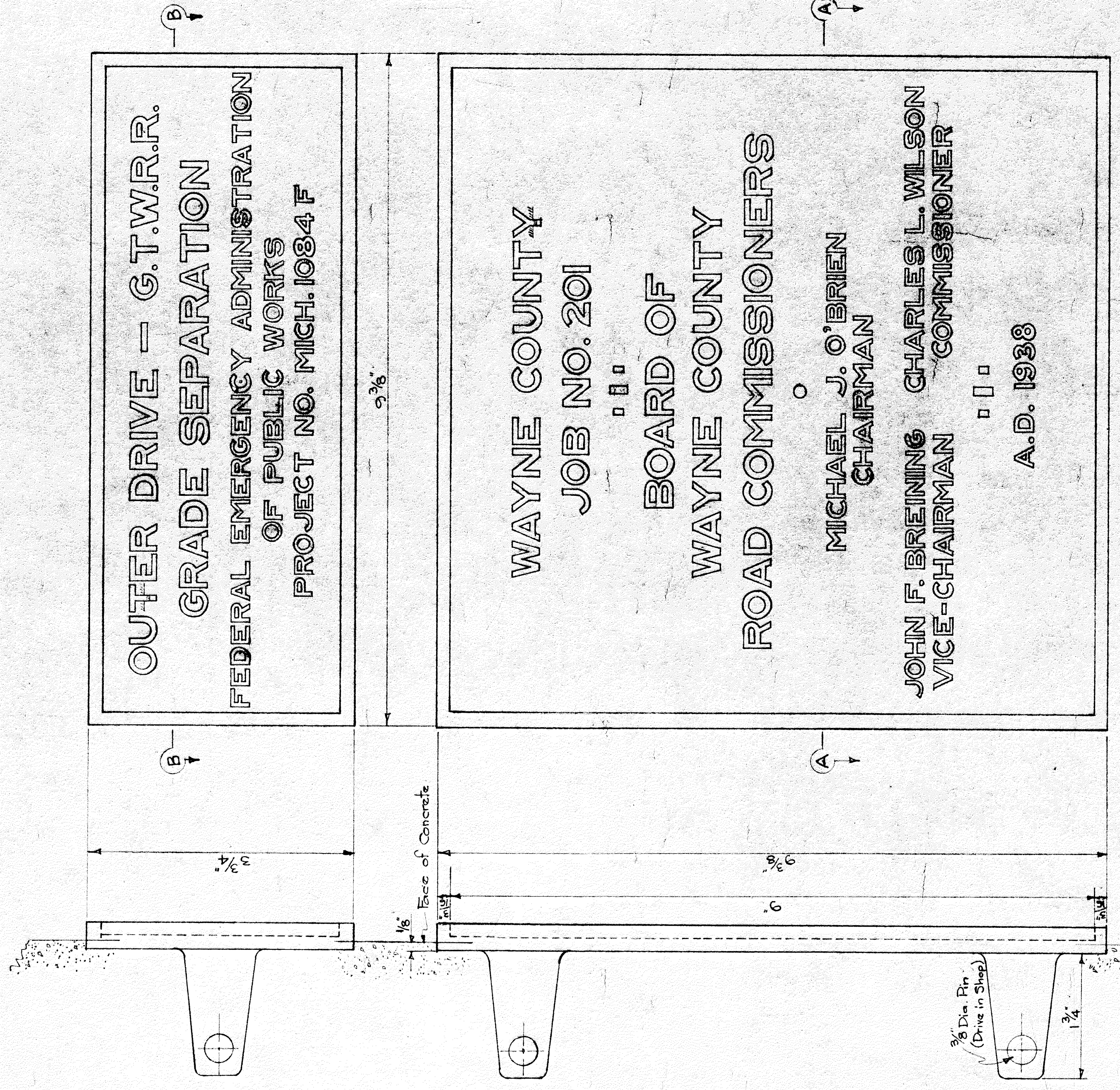


SEC. A-A

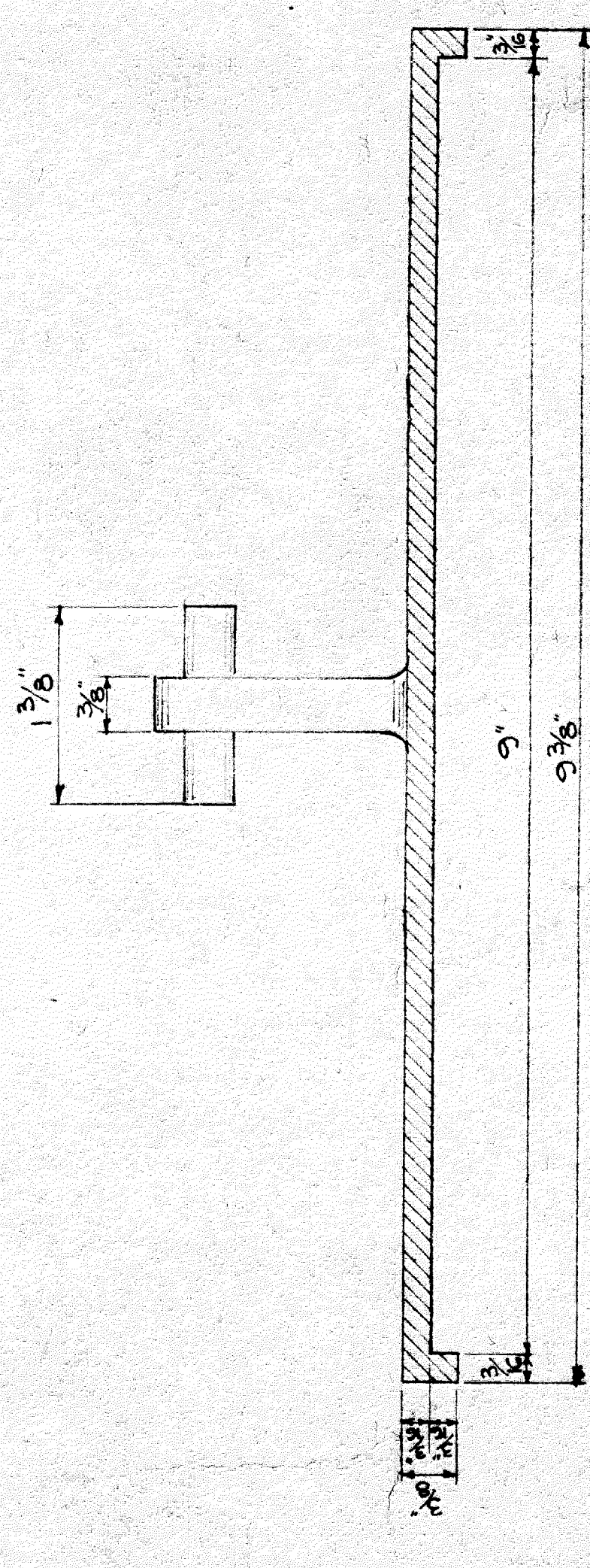
10'-0"

P.W.A. DOCKET NO MICH. 1084 F

REVISIONS	BOARD OF WAYNE COUNTY ROAD COMMISSIONERS DETROIT, MICHIGAN MICHAEL J. O'BRIEN CHAIRMAN CHARLES L. WILSON VICE-CHAIRMAN COMMISSIONER
JOB NO 201	PROJECT SIGN OUTER DRIVE - GT.W.R.R. (Holley) GRADE SEPN.
ISSUE NO	DESIGNED BY M.K. DATE 1-14-38 SCALE 1"=6" CHECKED BY APPROVED [Signature] PROJECT CHIEF DESIGNER APPROVED [Signature] BRIDGE ENGINEER REG. CIVIL ENG. APPROVED [Signature] ENGR. MANAGER REG. CIVIL ENG.
DATE	1938
	SHEET NO 13



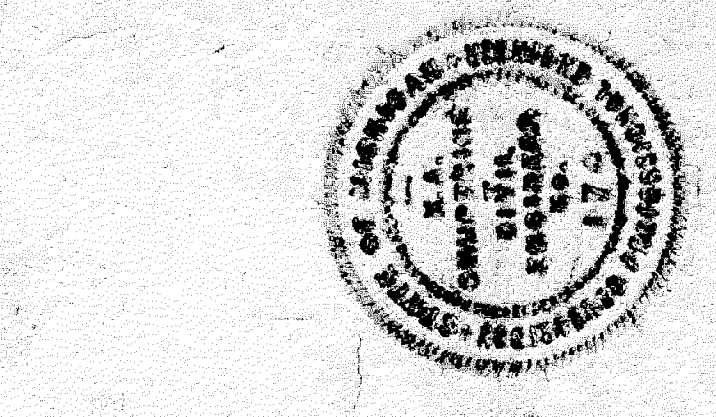
SECTION B-B
(Small Plate)



SECTION A-A
(Large Plate)

SPECIFICATION
 Name Plates shall be made of Bronze composed of 88% Copper, 10% Zinc, 2% Tin. Letters to set out as indicated on the drawing. The face of the letters and the borders of the plates to be burnished and the background to be stippled and to have a dark oxidized finish.

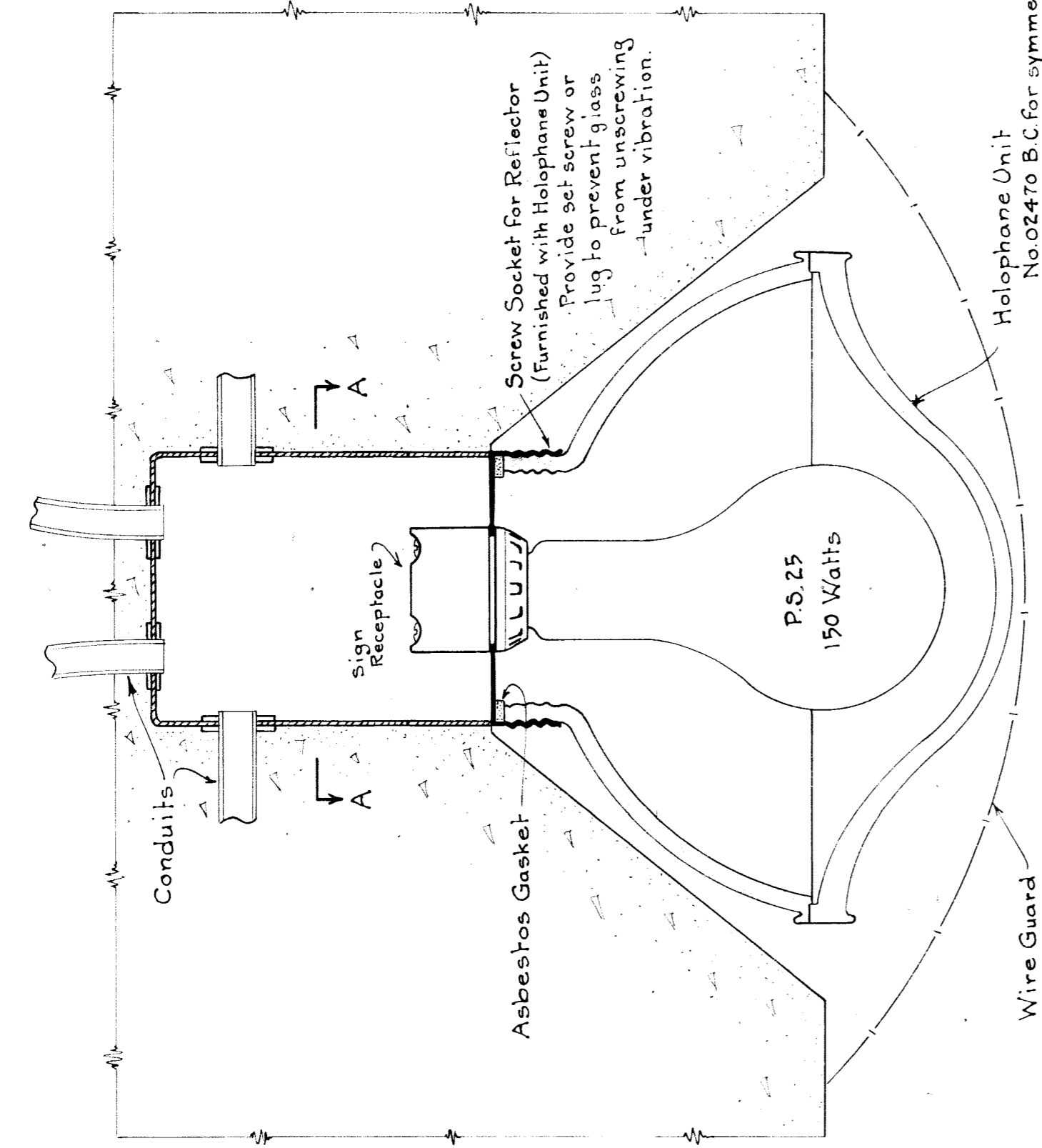
END VIEWS



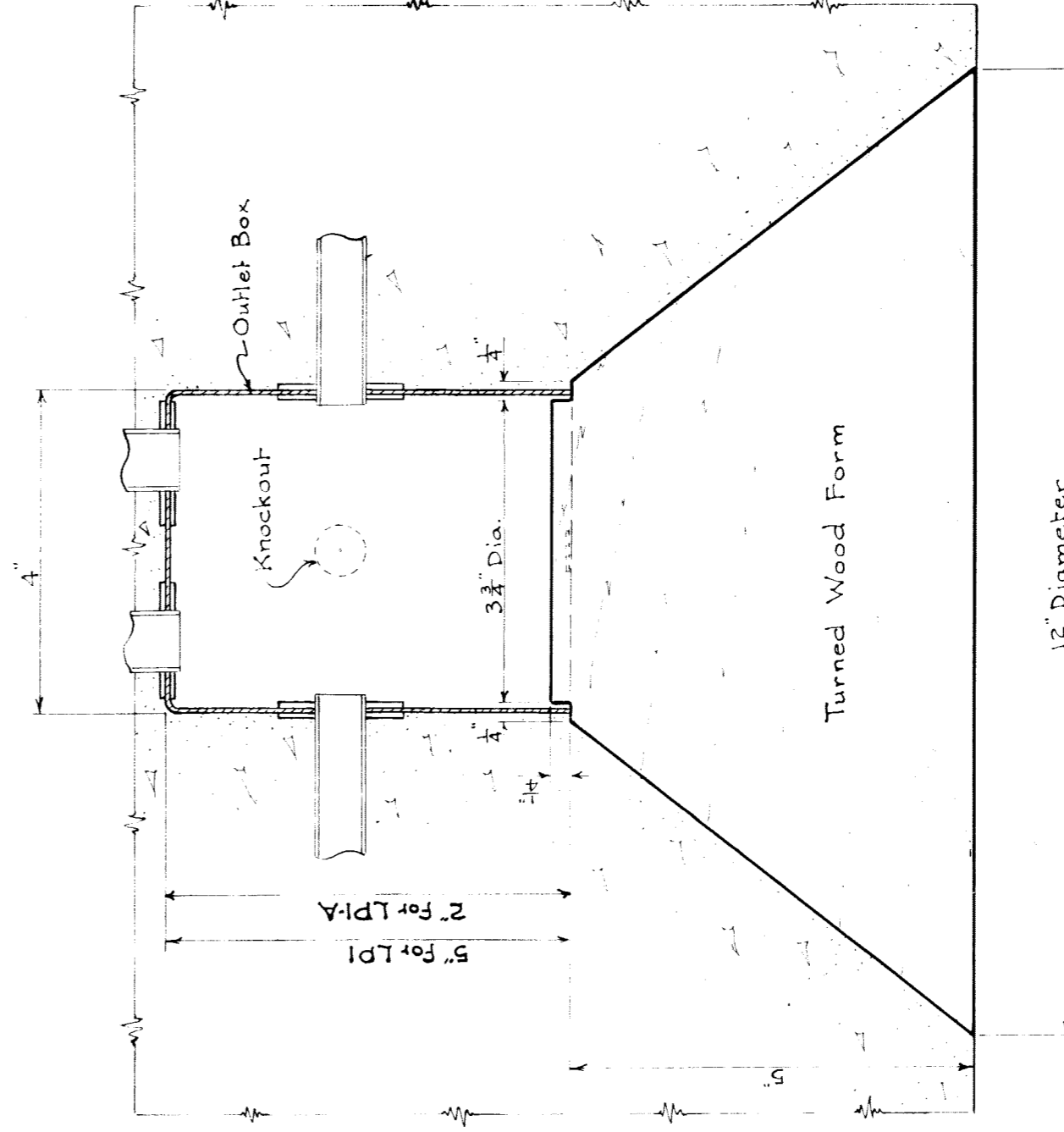
PWA DOCKET NO. MICH. 1084 F

REVISIONS	BOARD OF WAYNE COUNTY ROAD COMMISSIONERS DETROIT, MICHIGAN MICHAEL J. O'BRIEN CHAIRMAN JOHN F. BREINING VICE-CHAIRMAN CHARLES L. WILSON COMMISSIONER
JOB NO. 201	NAME PLATES OUTER DRIVE - G.T.W.R.R. (HOLLEY DV) GRADE SEPARATION
DATE 9-13-38	DRAWN BY: M.K. CHECKED BY: F.H.G. SCALE: Full Size. CORRECTED BY: M.K.
DATE 9-14-38	APPROVED: <i>M. J. O'Brien</i> M. J. O'Brien PROFESSIONAL ENGINEER

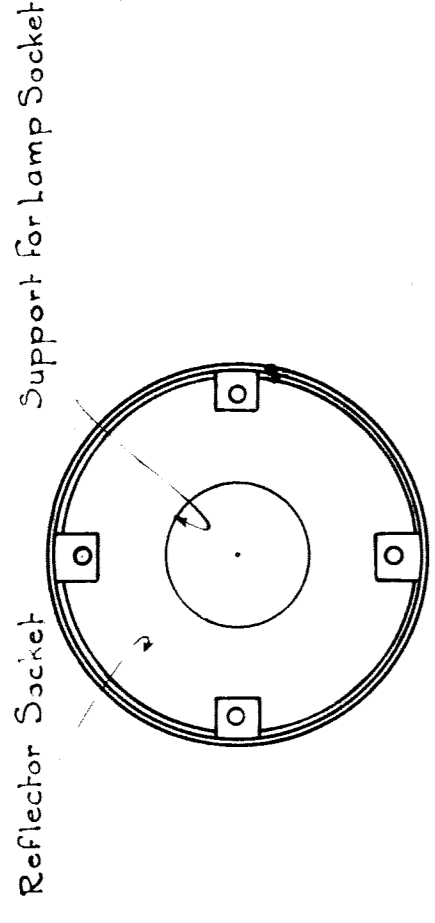
2 required of each as shown



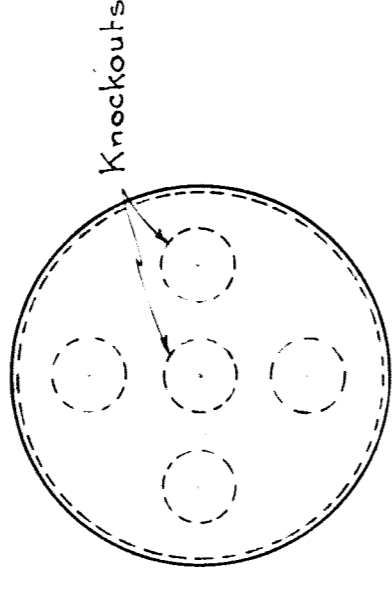
SECTION OF ASSEMBLY
Scale 6" = 1'-0"



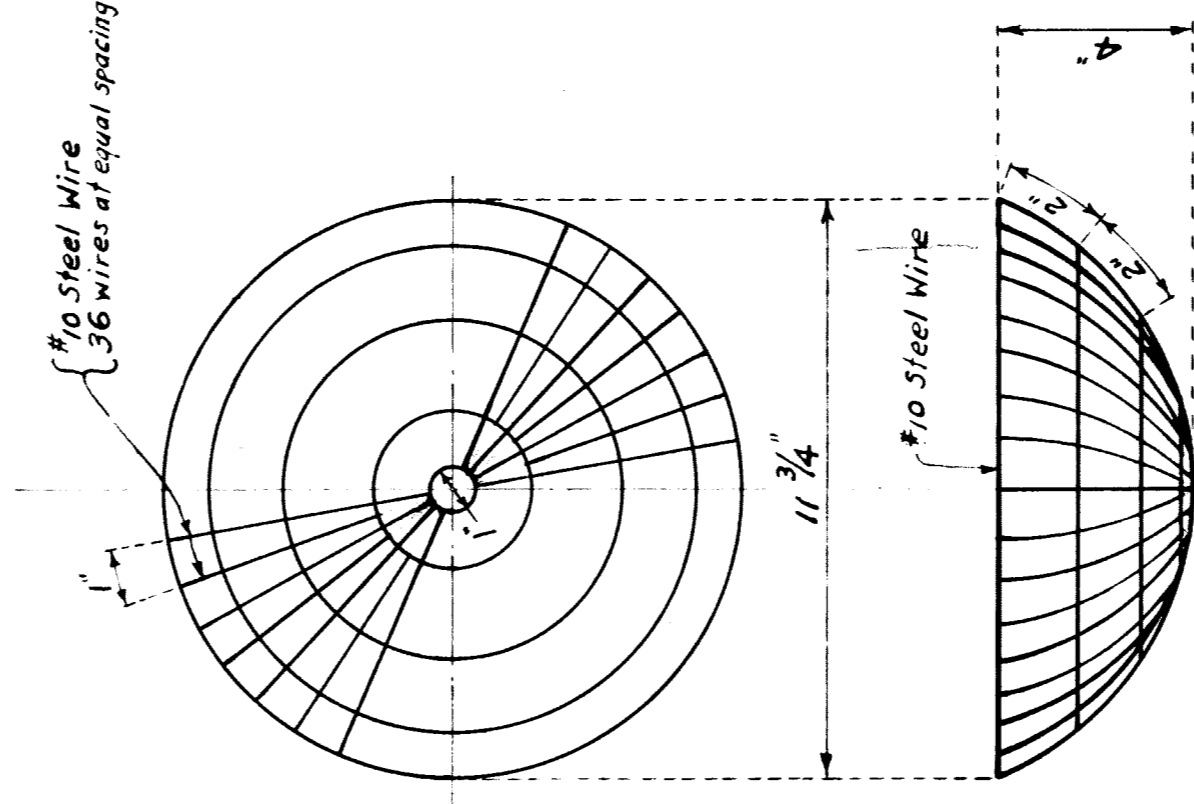
SECTION OF FORM AND OUTLET BOX.
Scale 6" = 1'-0"
SUBWAY LIGHTING UNIT-LP1 & LP1A



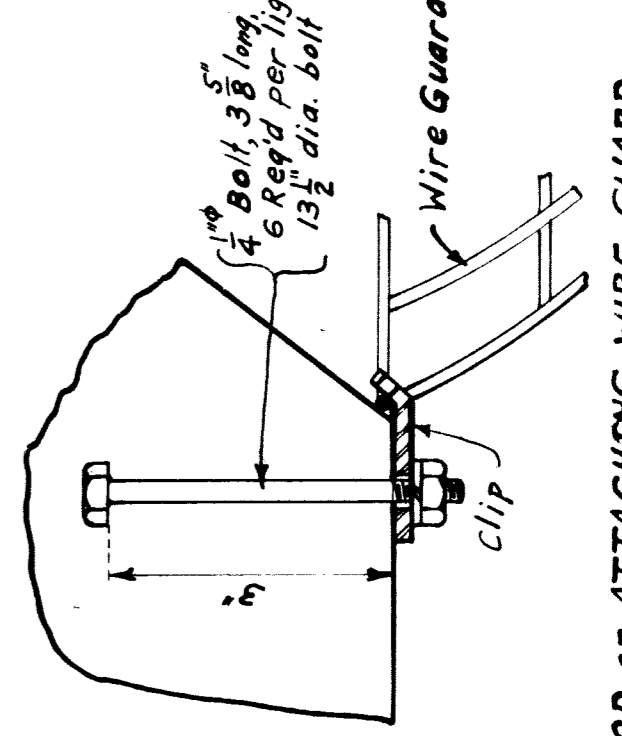
SECTION A-A



TOP VIEW

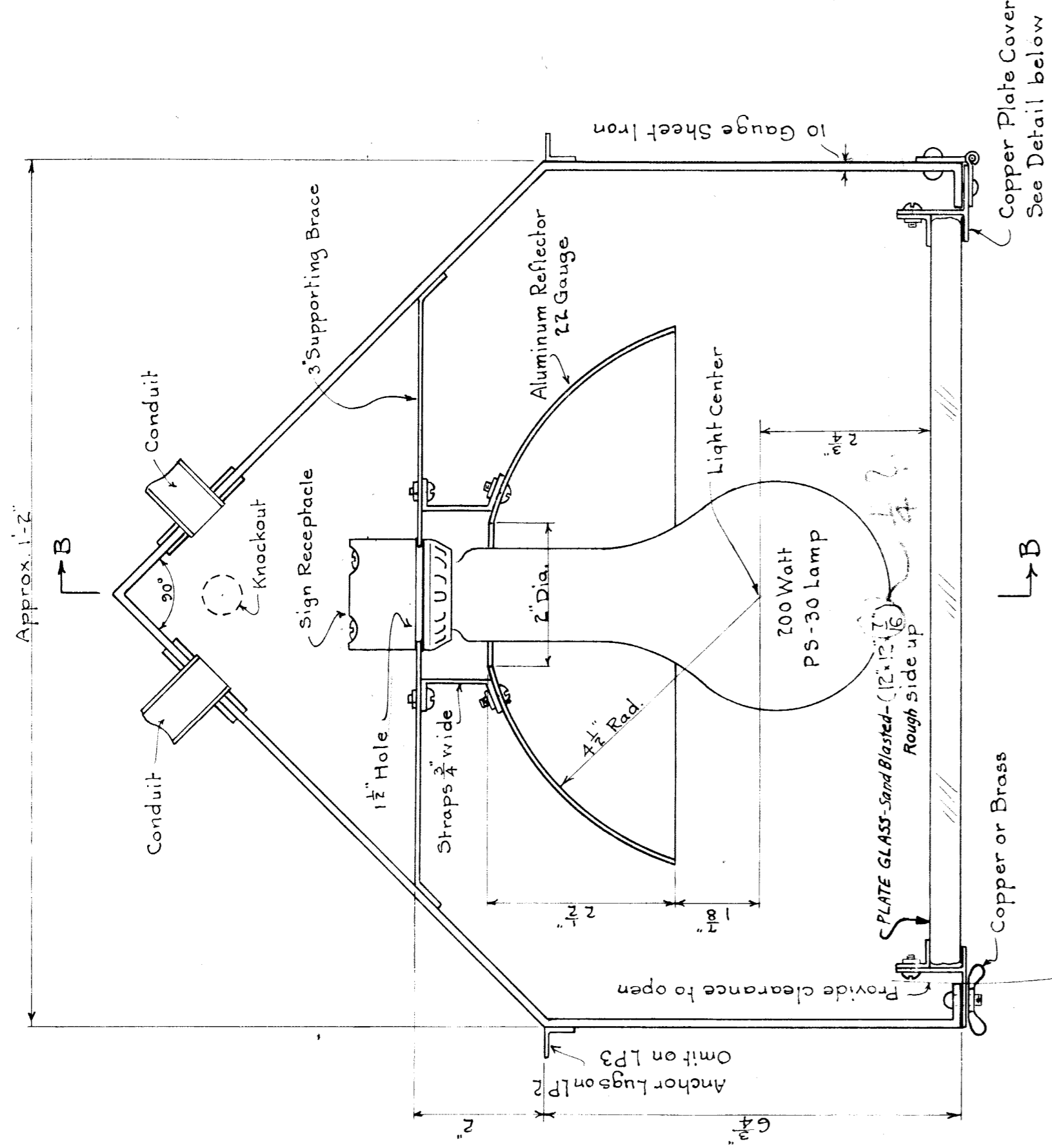


WIRE GUARD
FOR LIGHTING UNIT-LP1 & LP1A
Scale: 1-3/8" = 1'-0"



METHOD OF ATTACHING WIRE GUARD
Scale: 6" = 1'-0"

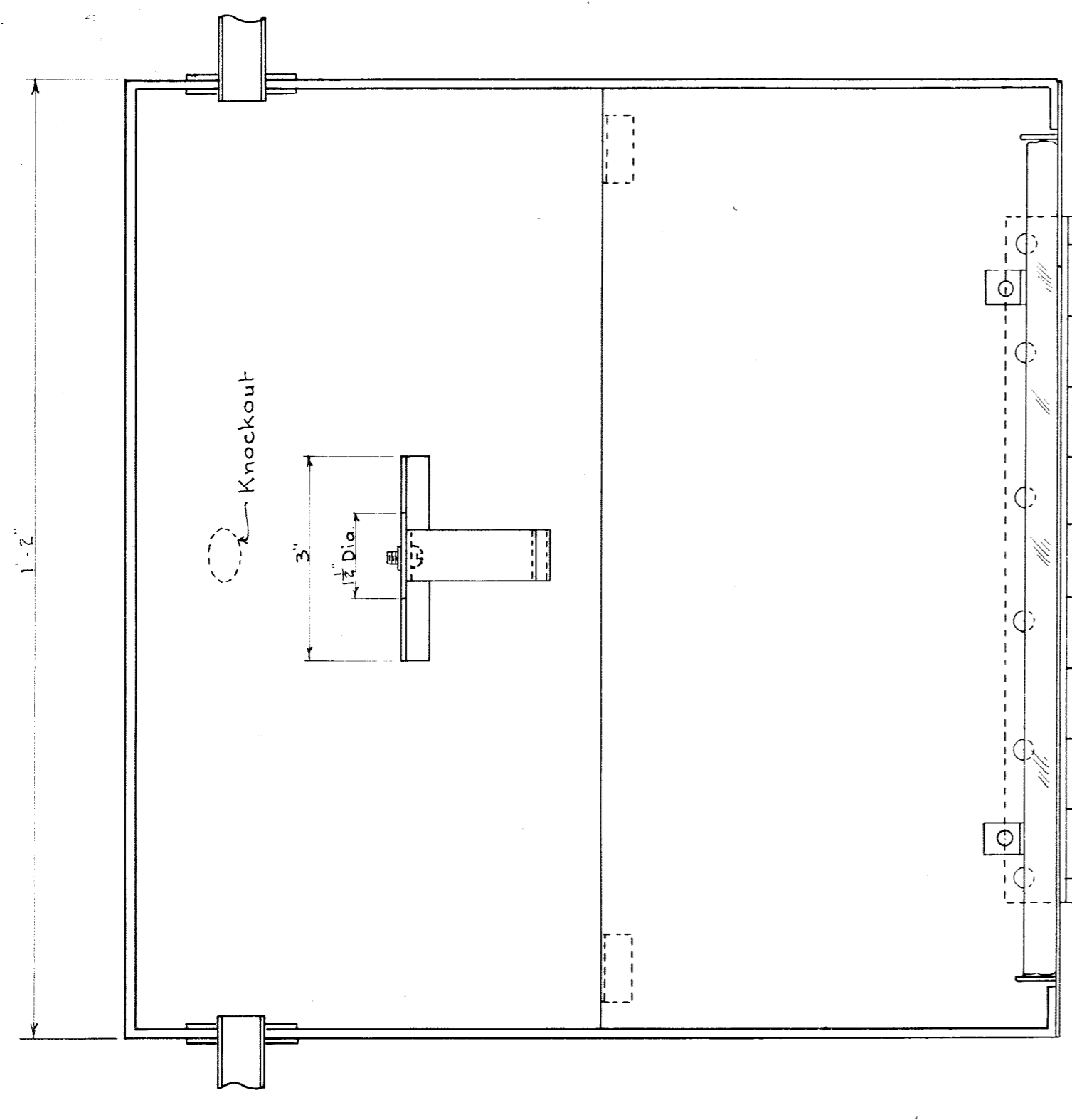
DETAIL OF CLIP FOR WIRE GUARD
MATERIAL - Brass
6 Reqd. per lighting unit



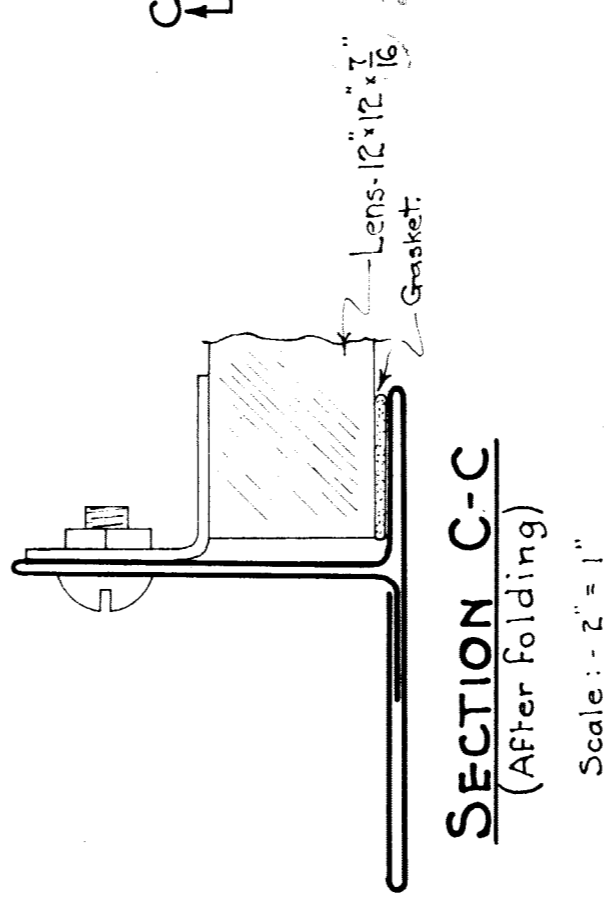
SECTION OF ASSEMBLY
Scale 6" = 1'-0"

Note: - All iron and steel surfaces to be covered with two coats of an approved gray paint. Boxes are to be encased in concrete, and shall be built water-tight.

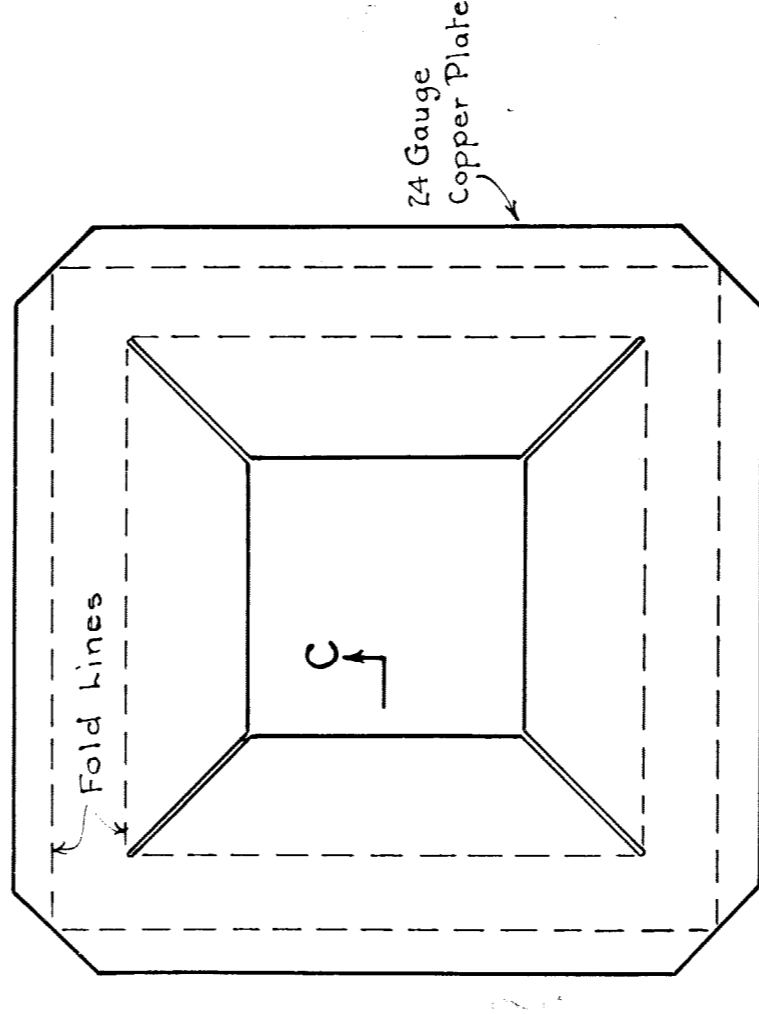
SUBWAY LIGHTING UNITS
LP2 - With Anchor Lugs
LP3 - Without Anchor Lugs

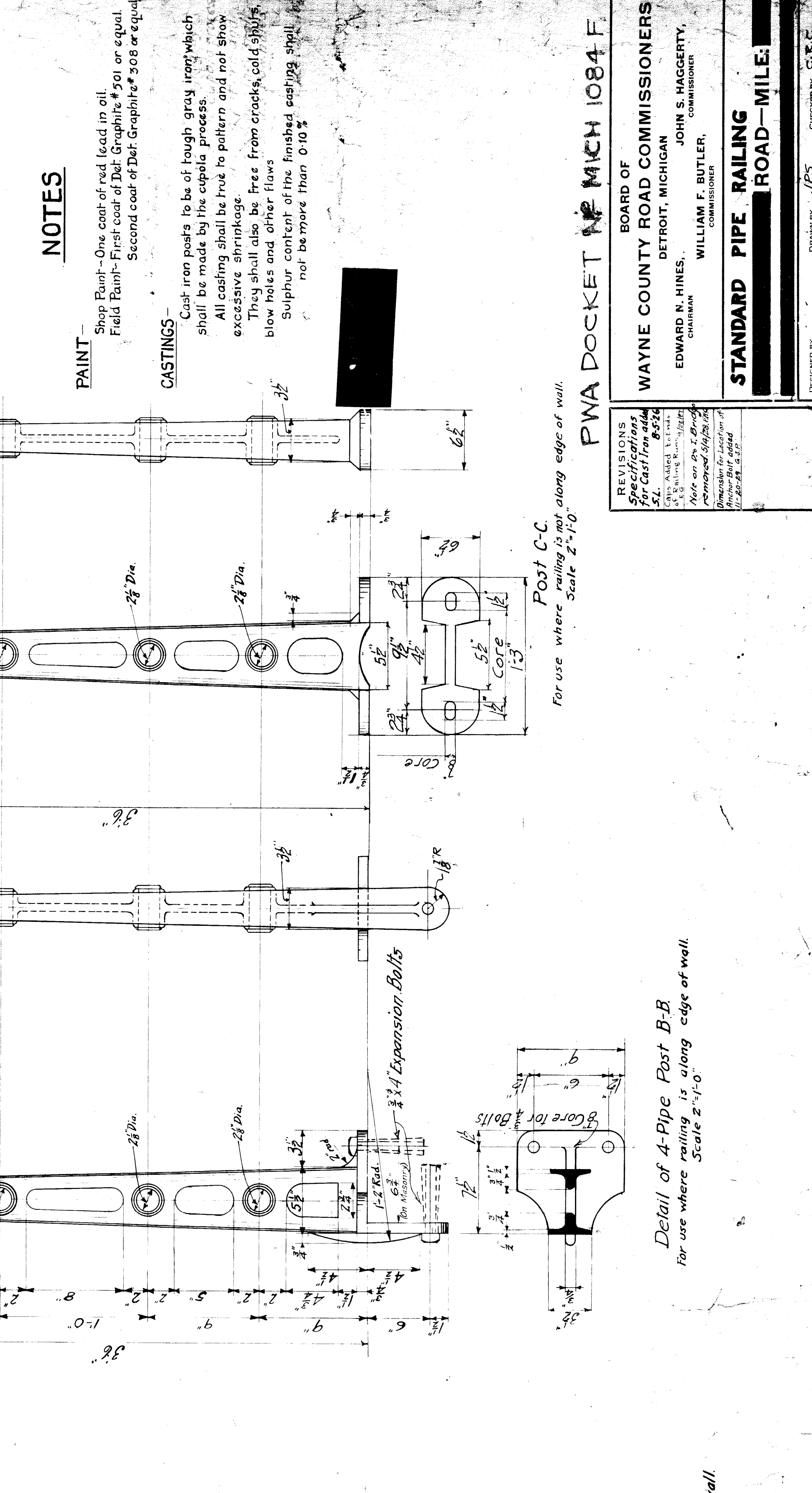
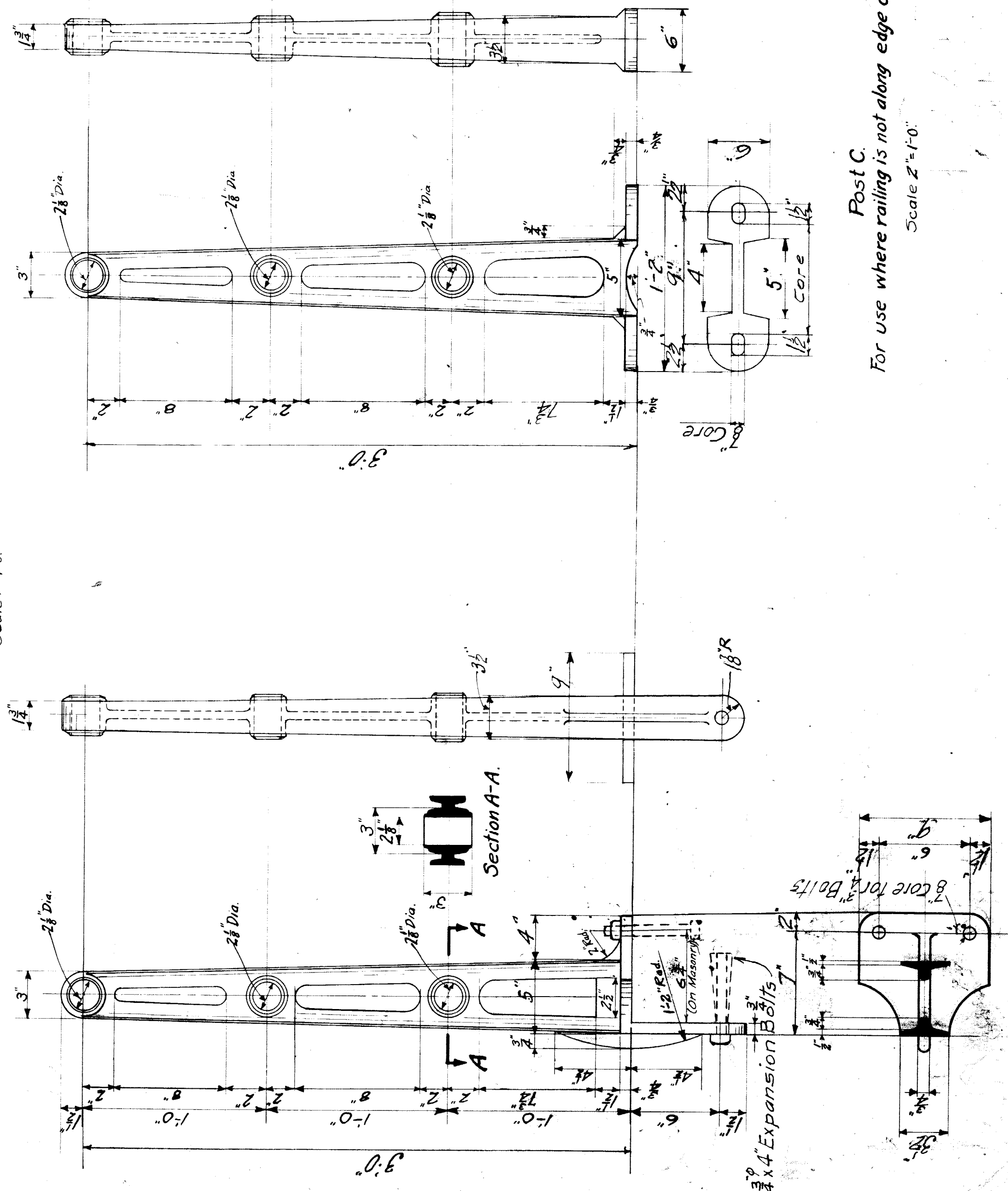
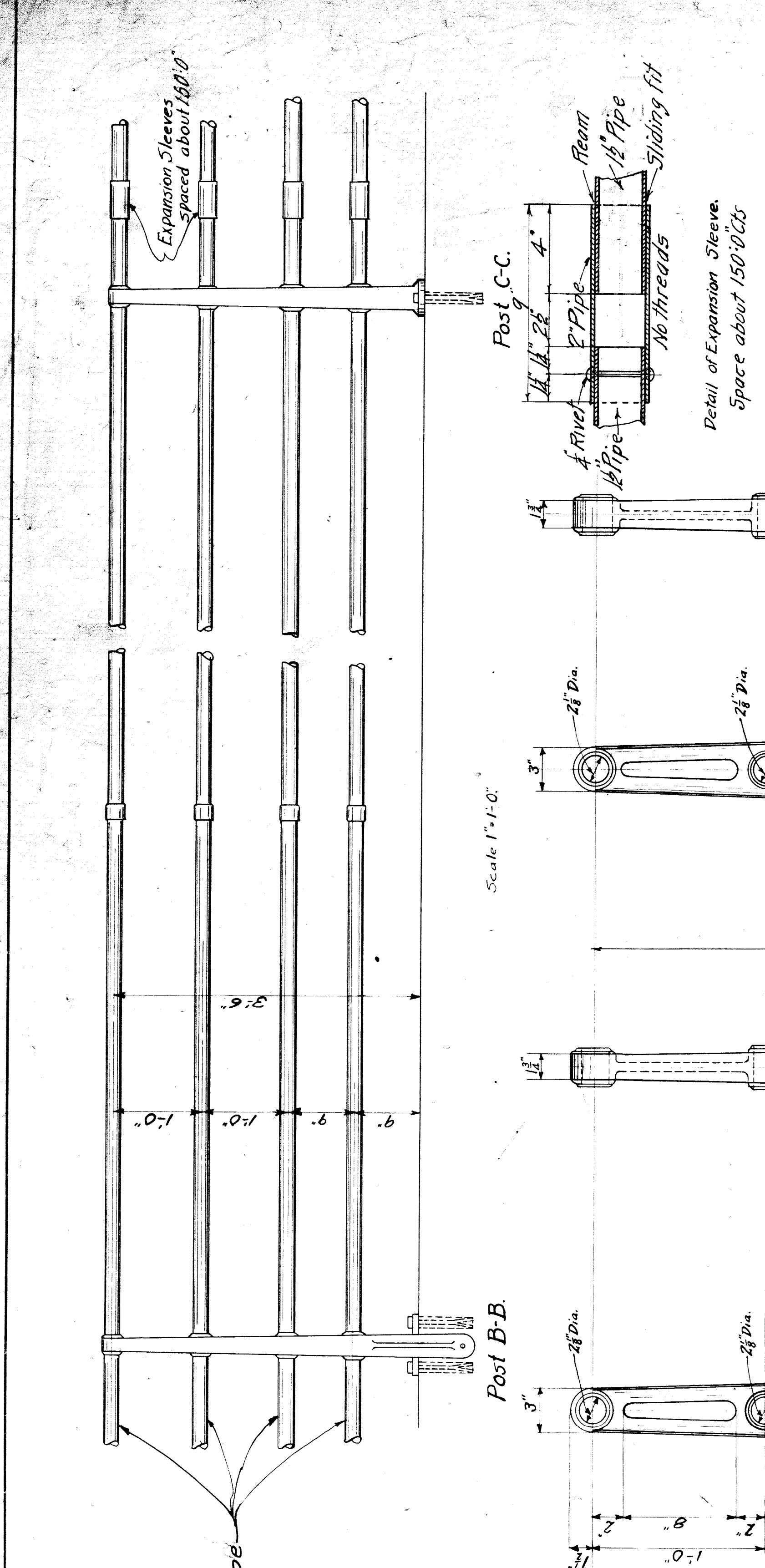
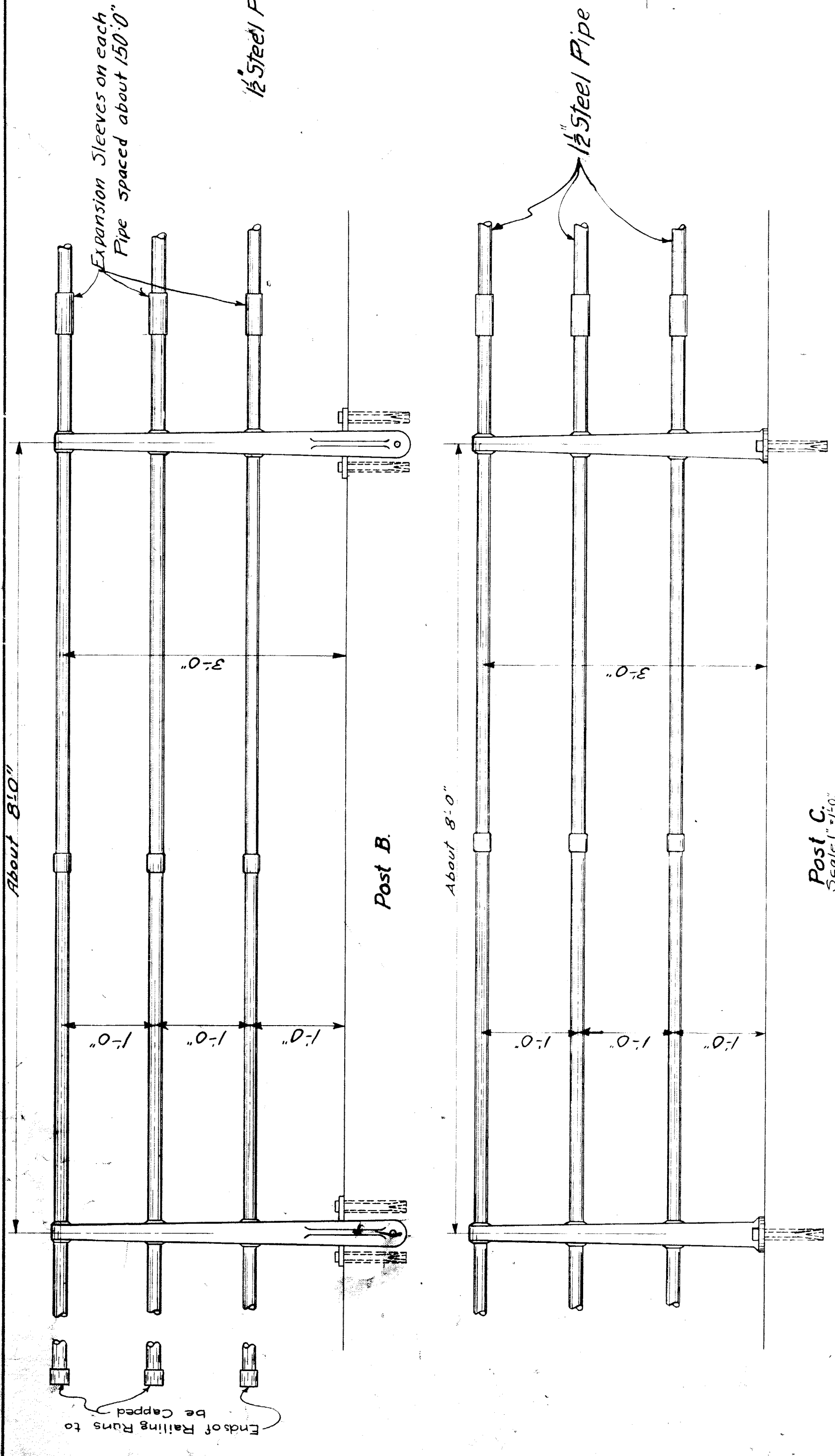


SECTION B-B THRU BOX
Scale 6" = 1'-0"



SECTION C-C
(After Folding)
Scale: 1-2" = 1'-0"





NOTES

PAINT—Shop Paint—One coat of red lead in oil.
Field Paint—First coat of Dist. Graphite #501 or equal.
Second coat of Dist. Graphite #308 or equal.

CASTINGS—Cast iron posts to be of tough gray iron which shall be made by the cupola process.
All castings shall be true to pattern and not show excessive shrinkage.
They shall also be free from cracks, cold shifts, blow holes and other flaws.
Sulphur content of the finished casting shall not be more than 0.10%.

Detail of Expansion Sleeve.
Space about 150°

PWA DOCKET # MICH 1084 F

BOARD OF
WAYNE COUNTY ROAD COMMISSIONERS
DETROIT, MICHIGAN

EDWARD N. HINES,
CHAIRMAN

JOHN S. HAGERTY,
COMMISSIONER

WILLIAM F. BUTLER,
COMMISSIONER

STANDARD PIPE RAILING ROAD-MILE:

DESIGNED BY: *V.P.S.* CHECKED BY: *C.R.S.*
DATE: *May 1, 1926* SCALE: *As shown*

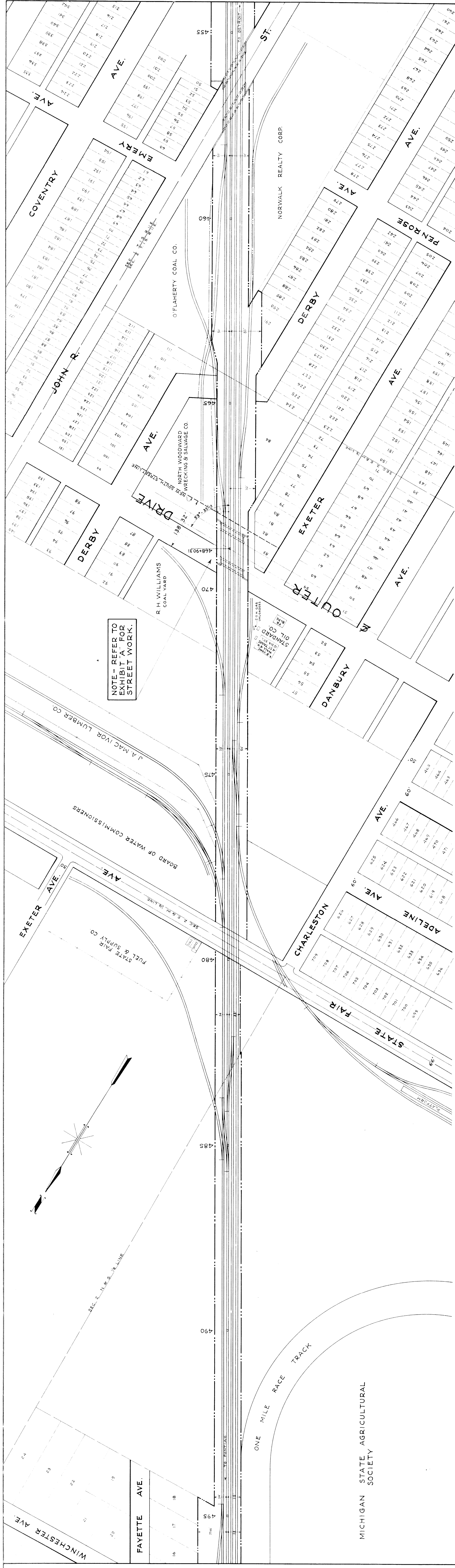
CORRECT: *W.F.B.* APPROVED: *W.F.B.*

ISSUED NO. **4**
DATE: *3-3-1930*

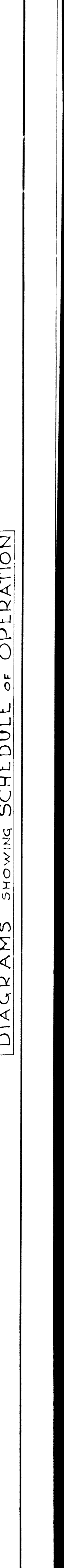
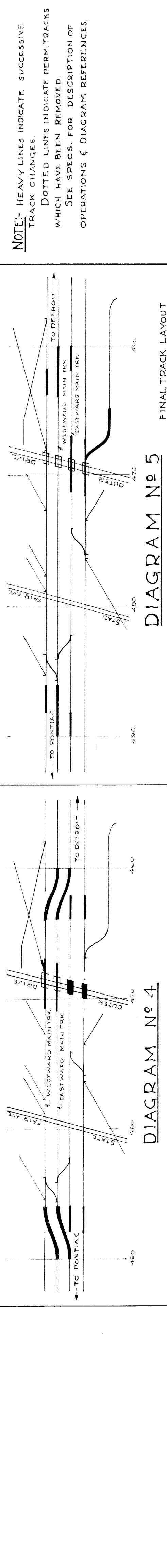
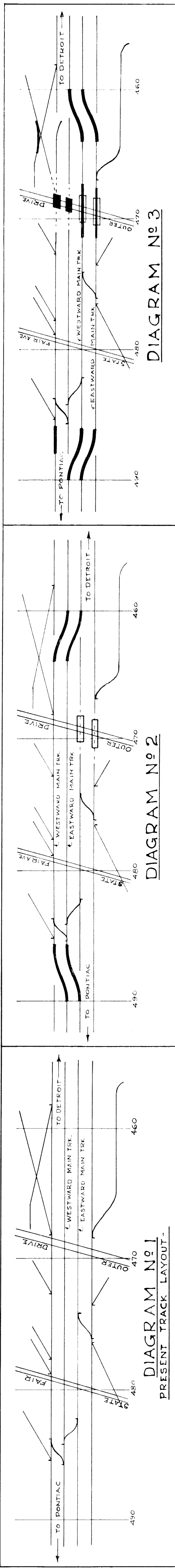
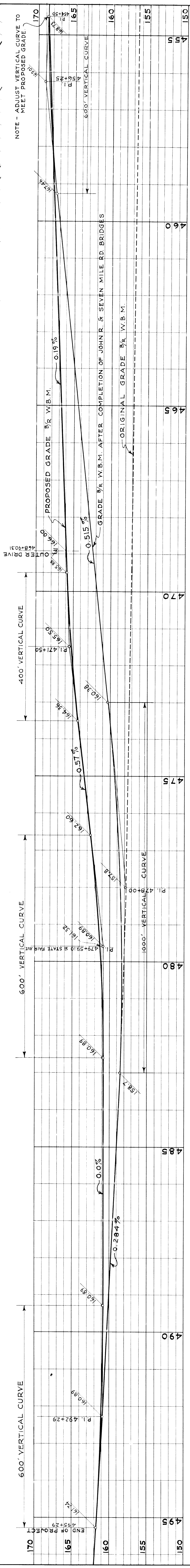
Detail of 4-Pipe Post B-B
For use where railing is along edge of wall.
Scale 2" = 1'-0"

Post C
For use where railing is not along edge of wall.
Scale 2" = 1'-0"

Details of 3-Pipe Post B
For use where railing is along edge of wall.
Scale 2" = 1'-0"



NOTE - REFER TO EXHIBIT 'A' FOR STREET WORK.



NOTE: HEAVY LINES INDICATE SUCCESSIVE TRACK CHANGES. DOTTED LINES INDICATE PERMITS WHICH HAVE BEEN REMOVED. SEE SPECS. FOR DESCRIPTION OF OPERATIONS & DIAGRAM REFERENCES.

EXHIBIT "B"

Approved: _____ Engineer, Manager for Wayne Co. Road Comm.
 Approved: _____ Chief Engineer for Grand Trunk Western R.R.
 Approved: _____ City Engineer for City of Detroit.

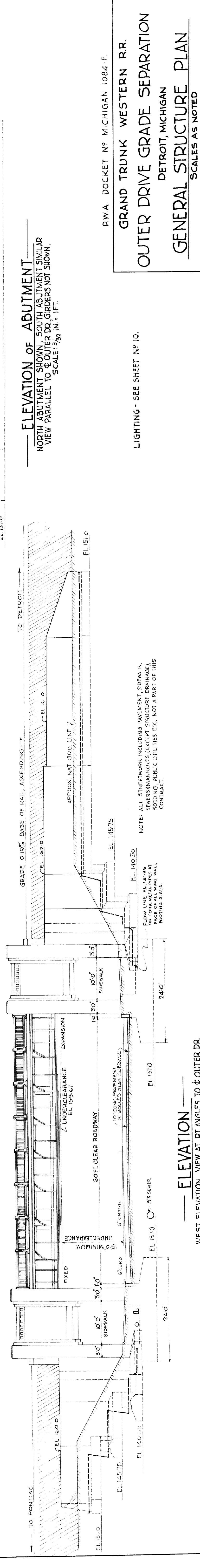
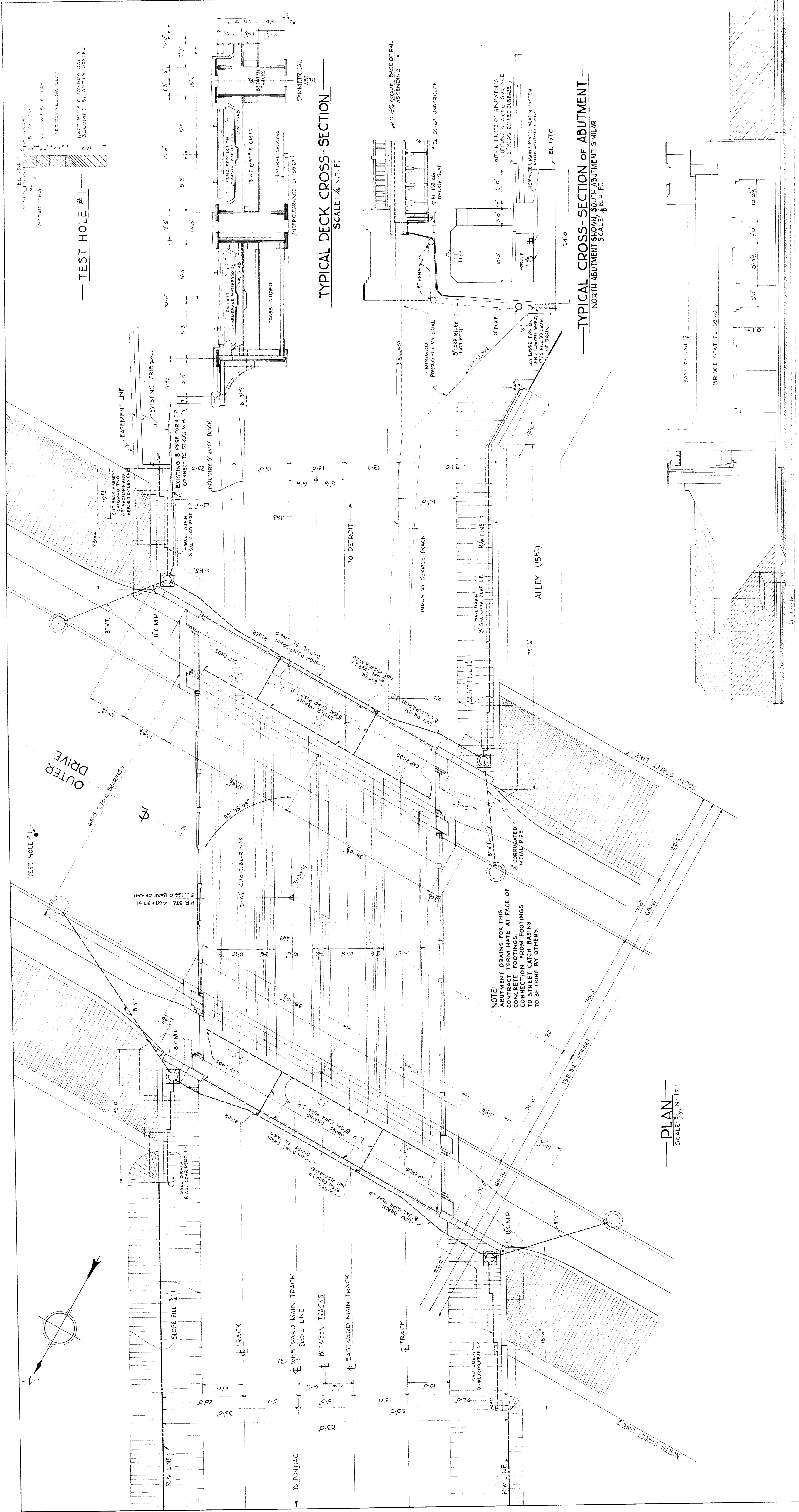
**GRAND TRUNK WESTERN RAILROAD
 OUTER DRIVE GRADE SEPARATION
 DETROIT, MICHIGAN
 TRACK PLAN & PROFILE**

SCALE - HORIZ. 1 IN. = 100 FT.
 VERT. 1 IN. = 5 FT.

DR. LWS. OFFICE OF CHIEF ENGINEER
 TR. LWS. DETROIT MICHIGAN
 CH. T.H.J. FEB. 4, 1938

PWA. DOCKET NO MICHIGAN 1084-F.
 REVISED AUG 23, 1938 OPERATING SCHEDULE ATTACHED PAGE 10.

SHEET 61 OF SHEETS



TEST HOLE #1

TYPICAL DECK CROSS-SECTION
SCALE: 1/4\"/>

TYPICAL CROSS-SECTION OF ABUTMENT
NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR
SCALE: 1/8\"/>

ELEVATION OF ABUTMENT
NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR
VIEW PARALLEL TO & OUTER DR. GIRDERS NOT SHOWN.
SCALE: 1/32\"/>

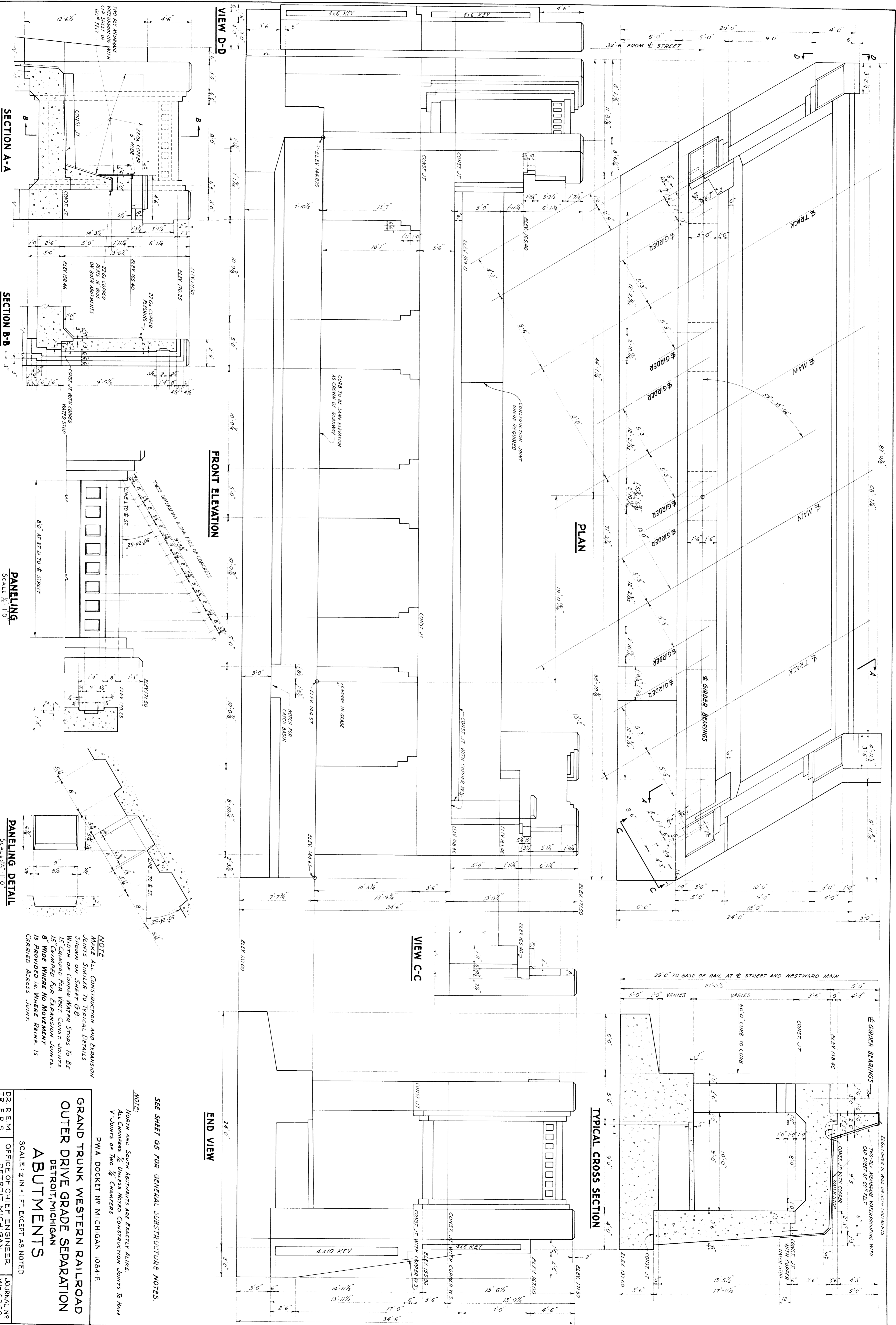
PLAN
SCALE: 3/32\"/>

ELEVATION
WEST ELEVATION VIEW AT RT. ANGLES TO & OUTER DR.
WING WALLS ADJACENT TO ABUTS EAST ELEV. SIMILAR
SCALE: 3/32\"/>

PWA DOCKET NO. MICHIGAN 1084-F.
GRAND TRUNK WESTERN R.R.
OUTER DRIVE GRADE SEPARATION
DETROIT, MICHIGAN
GENERAL STRUCTURE PLAN
SCALES AS NOTED

LIGHTING - SEE SHEET NO. 10.

DR. T.H.J. OFFICE OF CHIEF ENGINEER
TR. T.H.J. DETROIT, MICHIGAN
CH. R.A.V. MAY 10, 1938
JOURNAL NO. W-6257
FILE SHEETS
SHEET G2 OF



SECTION A-A

SECTION B-B

FRONT ELEVATION

PANELING

PANELING DETAIL

NOTE:
 MAKE ALL CONSTRUCTION AND EXPANSION JOINTS SIMILAR TO TYPICAL DETAILS SHOWN ON SHEET G 8.
 WIDTH OF COPPER WATER STOPS TO BE 15" GRIMMED FOR VERT. CONST JOINTS.
 8" WIDE WHERE NO EXPANSION JOINTS IS PROVIDED OR WHERE REINF. IS CARRIED ACROSS JOINT.

NOTE:
 NORTH AND SOUTH ABUTMENTS ARE EXACTLY ALIKE.
 ALL CHAMBERS 3/4" UNLESS NOTED. CONSTRUCTION JOINTS TO HAVE V-JOINTS OF TWO 3/4" CHAMBERS.
 PWA DOCKET NO MICHIGAN 1084-F.

**GRAND TRUNK WESTERN RAILROAD
 OUTER DRIVE GRADE SEPARATION
 DETROIT, MICHIGAN
 ABUTMENTS**

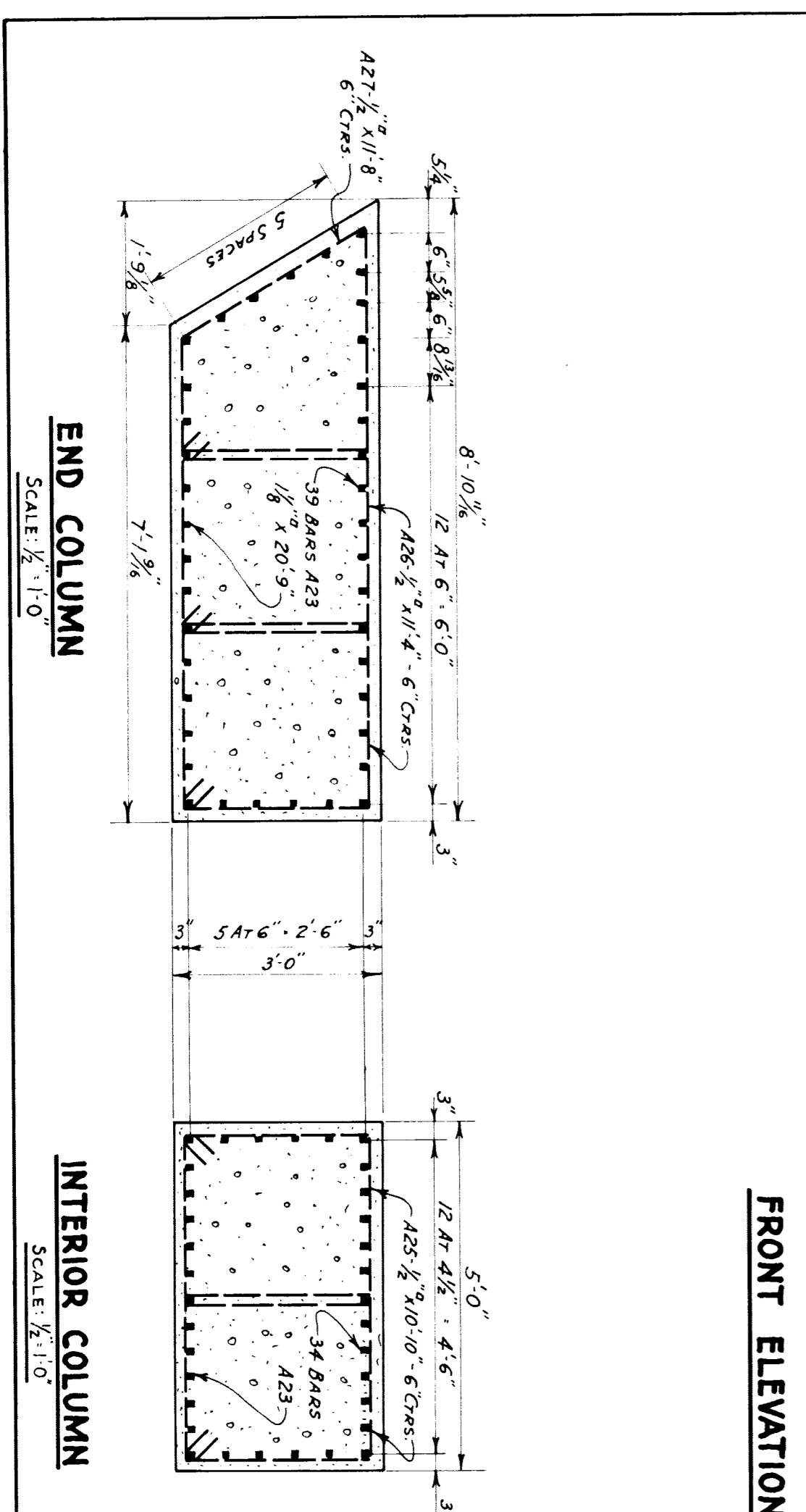
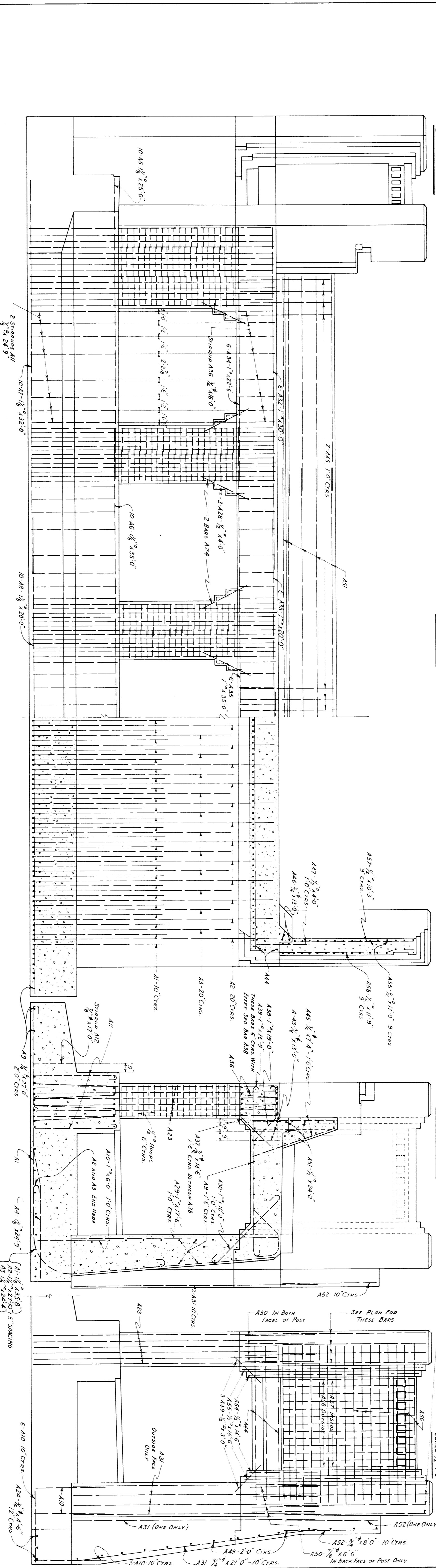
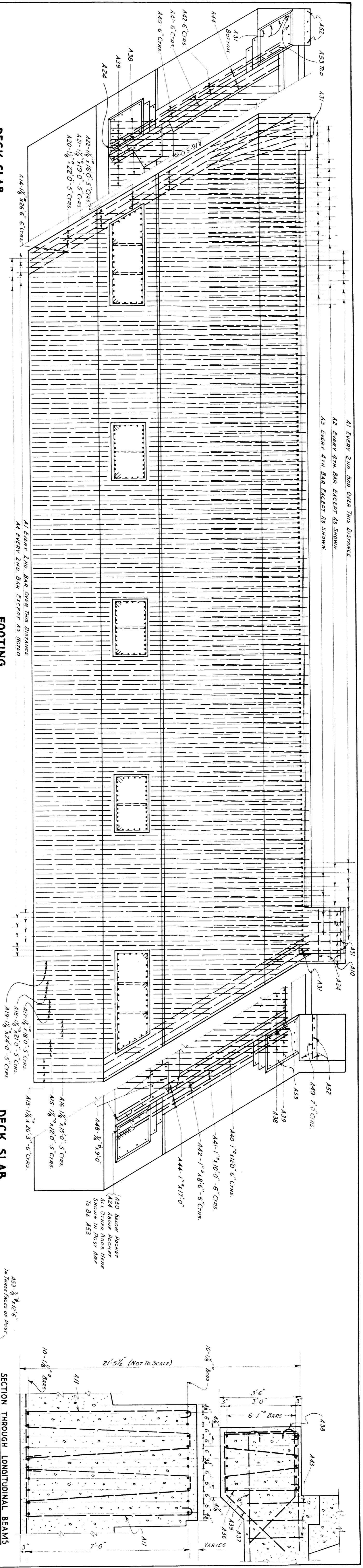
SCALE: 1/4" = 1'-0" EXCEPT AS NOTED

SEE SHEET G 5 FOR GENERAL SUBSTRUCTURE NOTES.

DR. R. M. TR. ERS., CH. R.A.W.
 OFFICE OF CHIEF ENGINEER
 DETROIT, MICHIGAN
 MAY 1938

JOURNAL NO. W-6360
 FILE

SHEET G 4 OF SHEETS

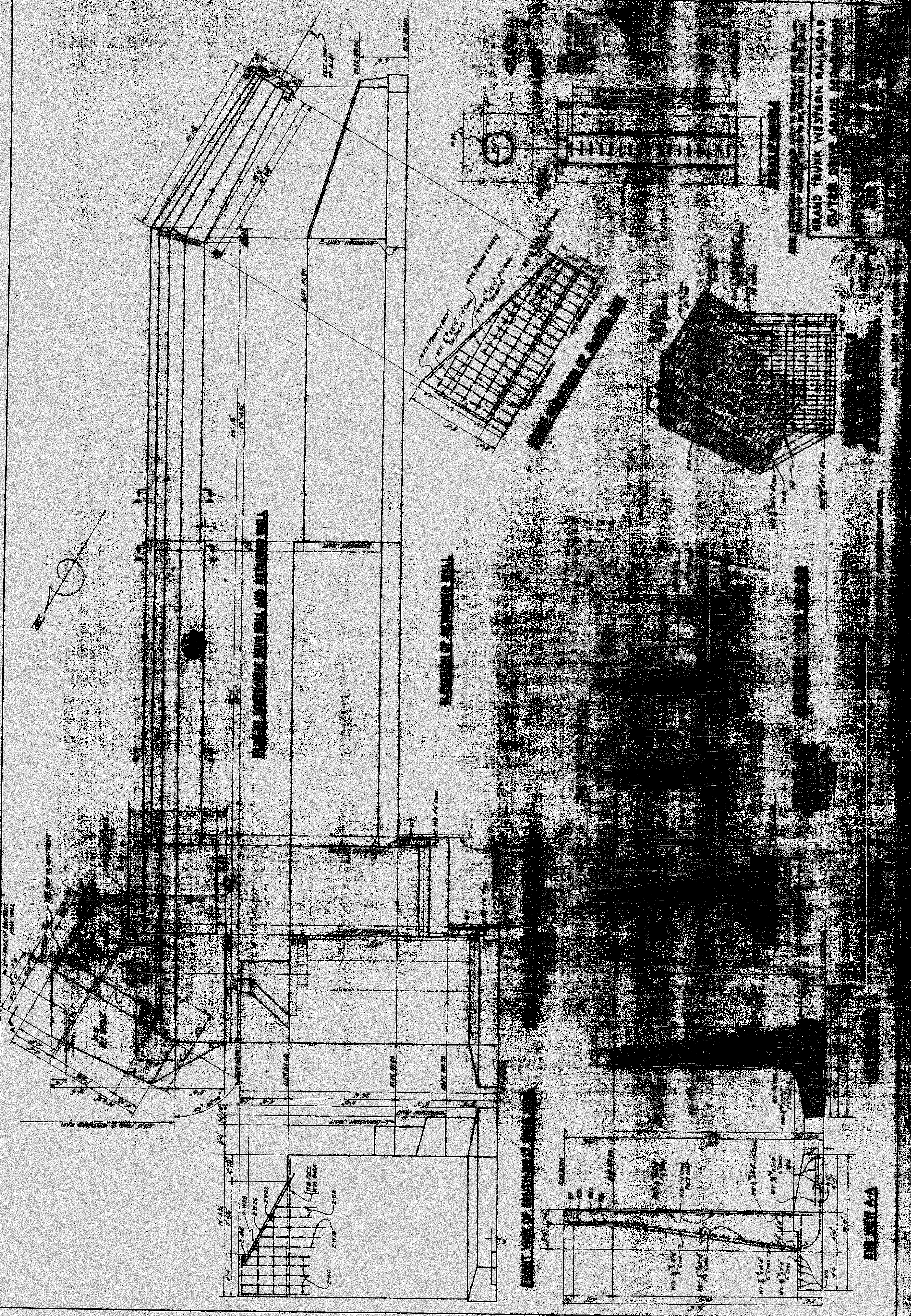


GENERAL NOTES

SPECIFICATIONS: - See "Contract Documents";
CONCRETE: - Grade B for 3000 ψ /s. Bevel exposed corners - $\frac{3}{8}$ " or less as required.
AGGREGATE: - Coarse: Designation, C-2.
Fire: - S-1.
REINFORCING STEEL: - All bars to be deformed bars of intermediate grade as specified in the A.S.T.M. Standard Specifications for Billet Steel Reinforcing Bars (Serial Designation A-15-35 and subsequent revisions)
 All bars shall be securely tagged before shipping to the job.
SHEET COPPER: - All copper sheets shall be riveted and brazed at splices.
LIGHTING: - See sheet #10.

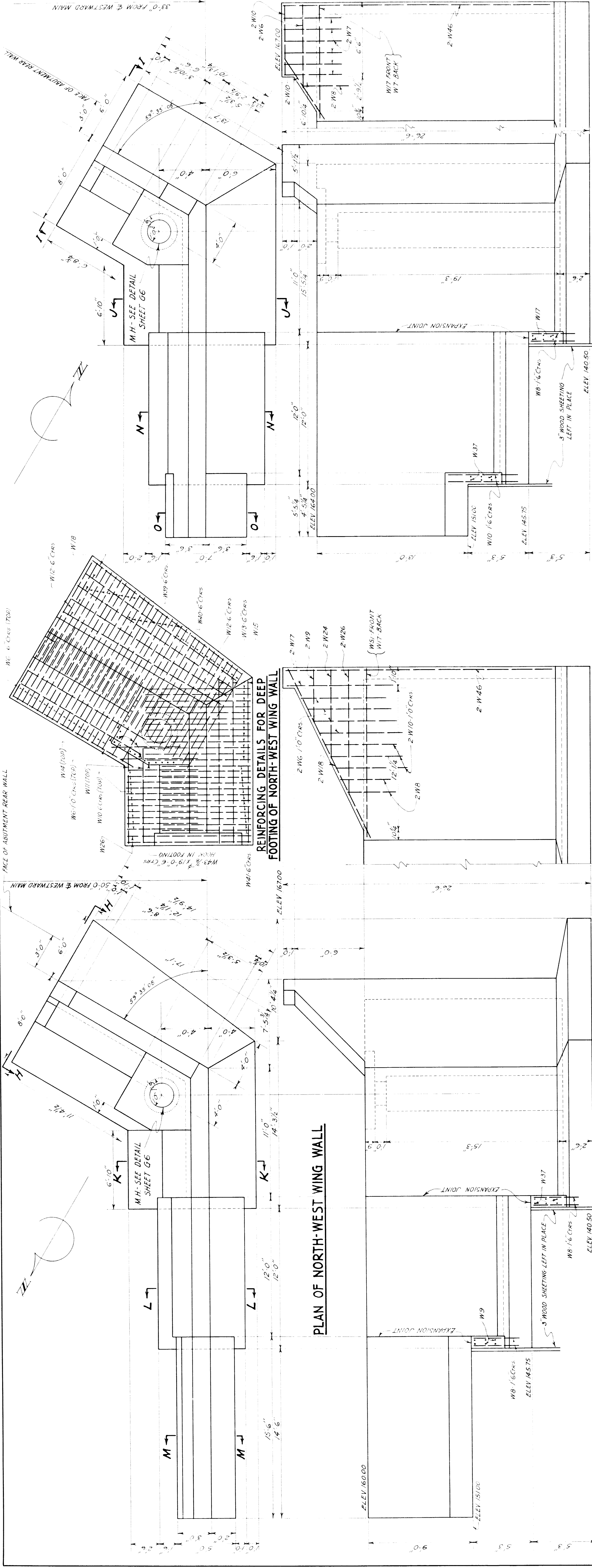
CONC FOOTINGS 6/2 Cu Yrs } 2 ABUTTS.
NEATWORK 683 " " " " }

GRAND TRUNK WESTERN RAILROAD
OUTER DRIVE GRADE SEPARATION
DETROIT, MICHIGAN
ABUTMENT REINFORCING
 SCALE: 1/2" IN. = 1 FT. EXCEPT AS NOTED
 P.W.A. DOCKET NO. MICHIGAN 1084-F.
 DR. REM. TR. ERS. CH. RAW. OFFICE OF CHIEF ENGINEER DETROIT, MICHIGAN MAY, 1938. JOURNAL NO. W-6261 FILE SHEET 65 OF SHEETS



GRAND TRUNK WESTERN RAILROAD
 CUTTER DRIVE GRADE RECONSTRUCTION
 DETAIL OF WALL

FILE XU100-20



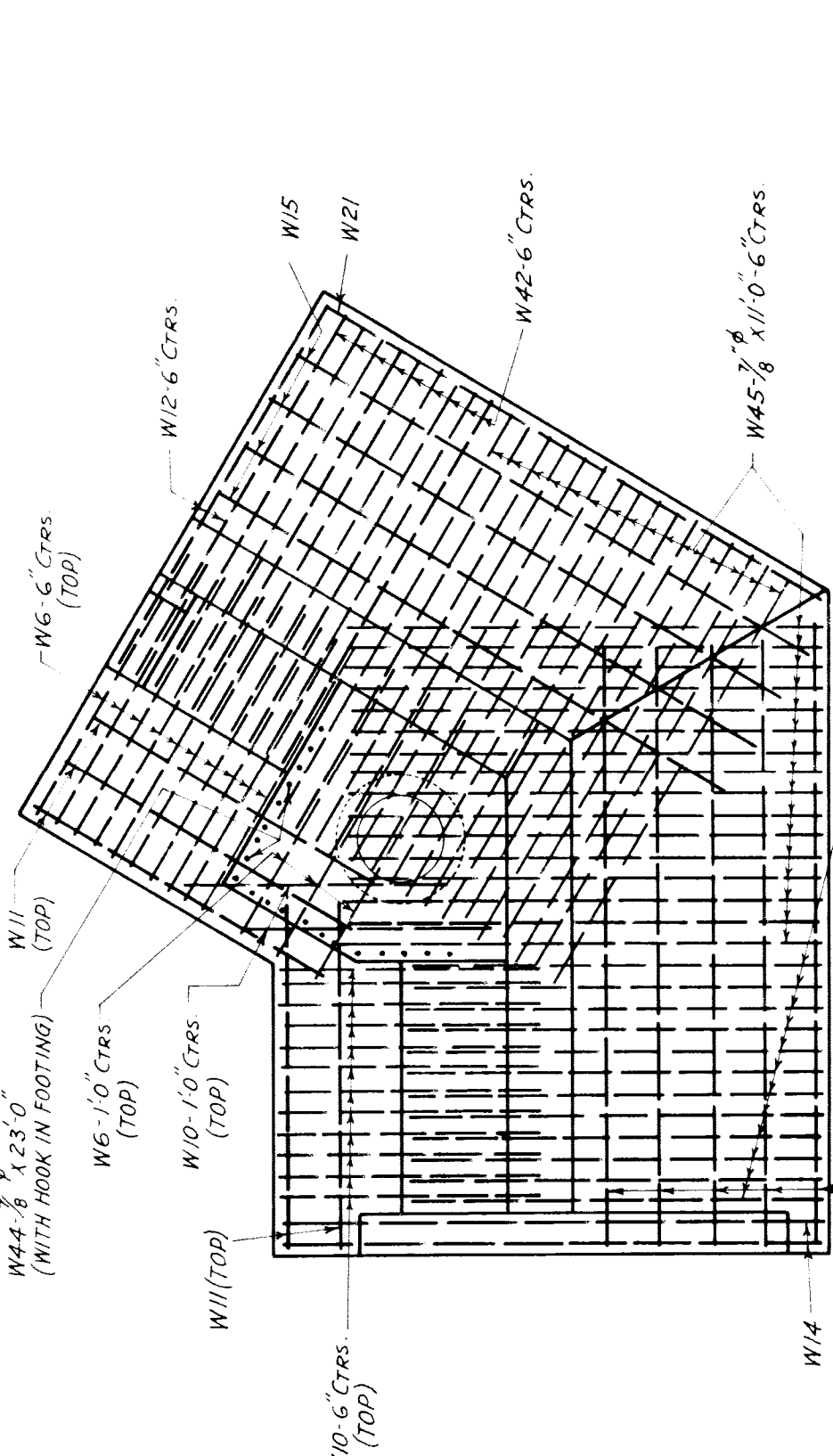
FRONT VIEW OF SOUTH-EAST WING WALL

SIDE VIEW OF SOUTH-EAST WING WALL

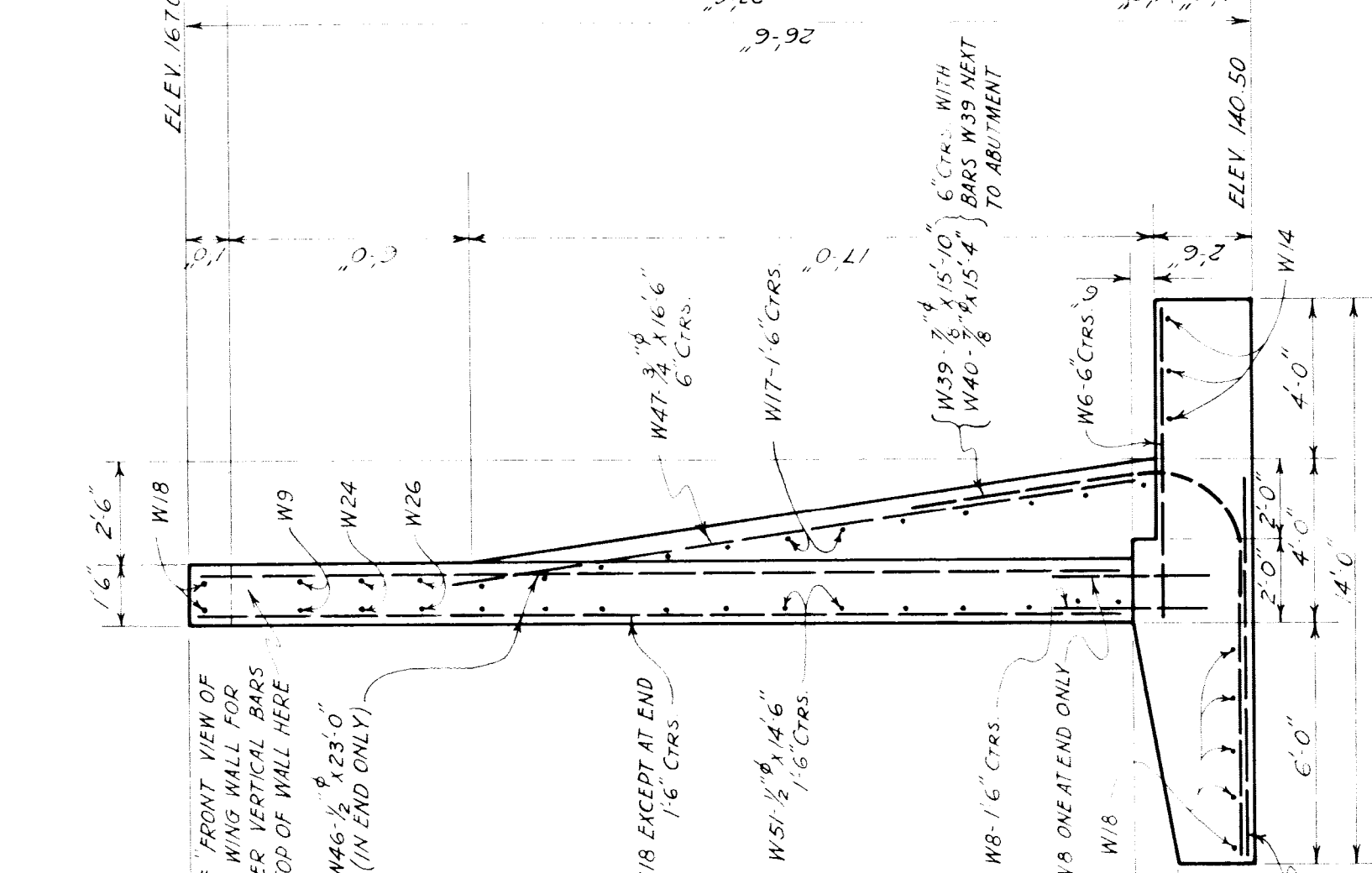
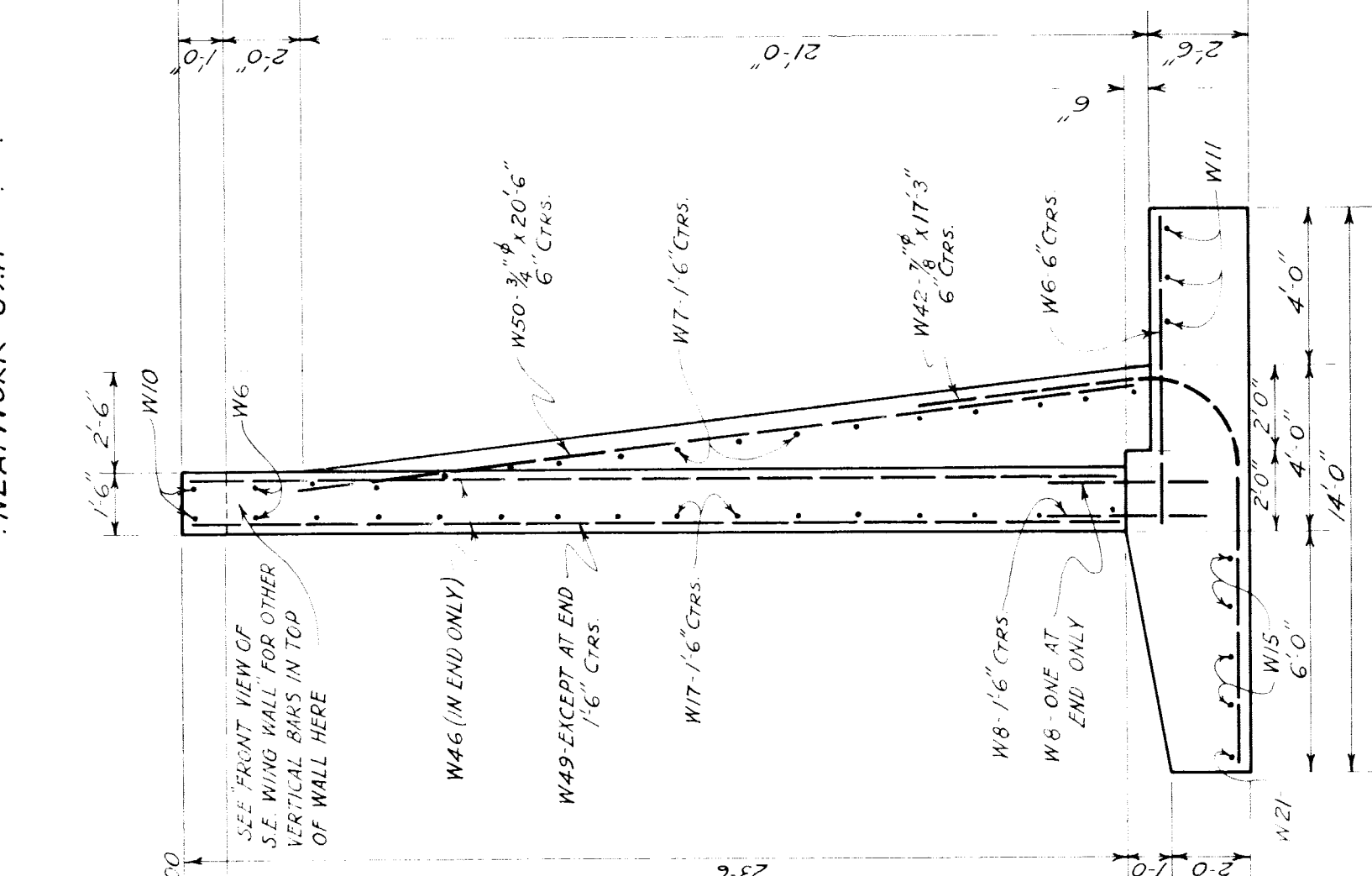
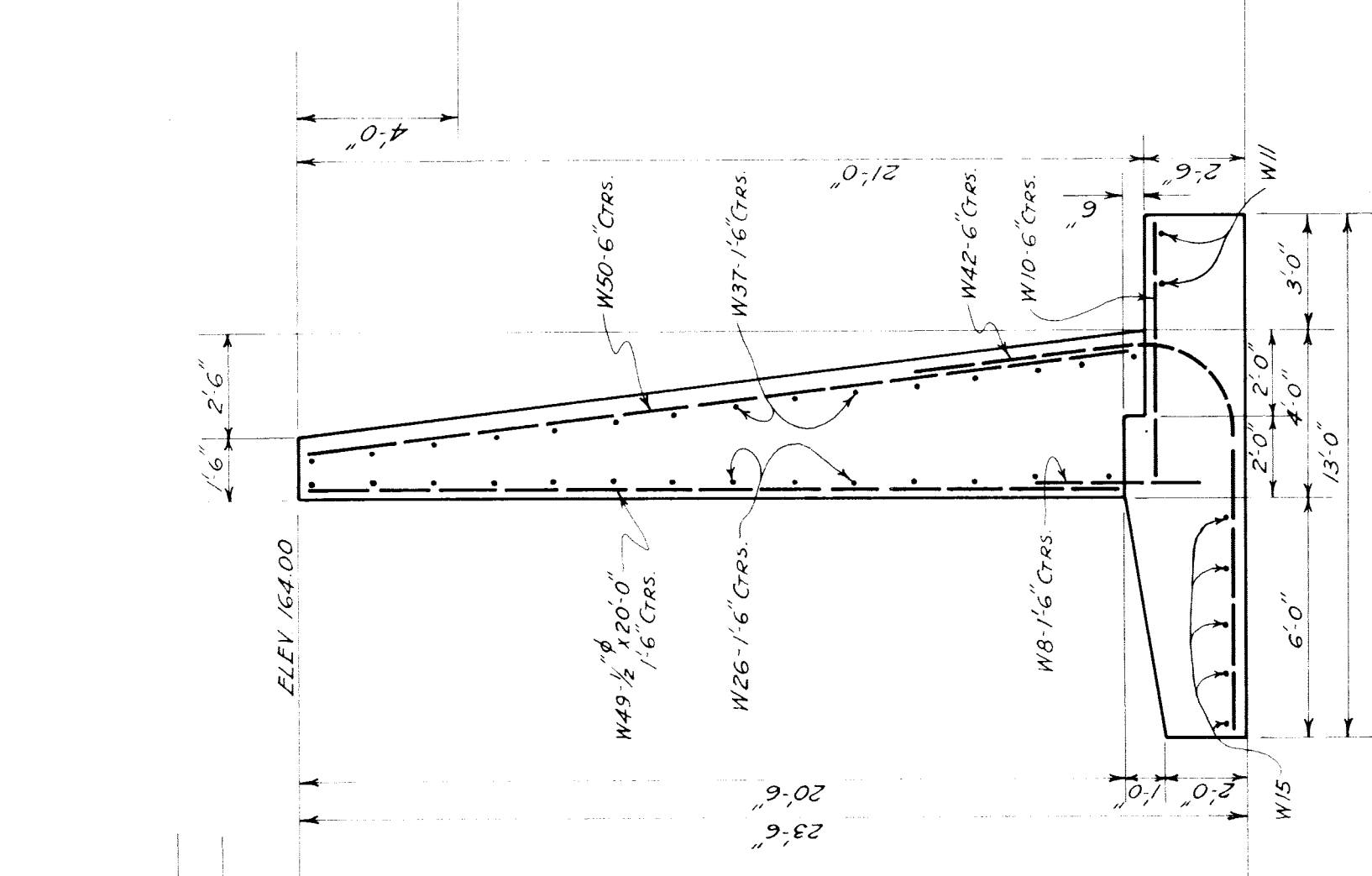
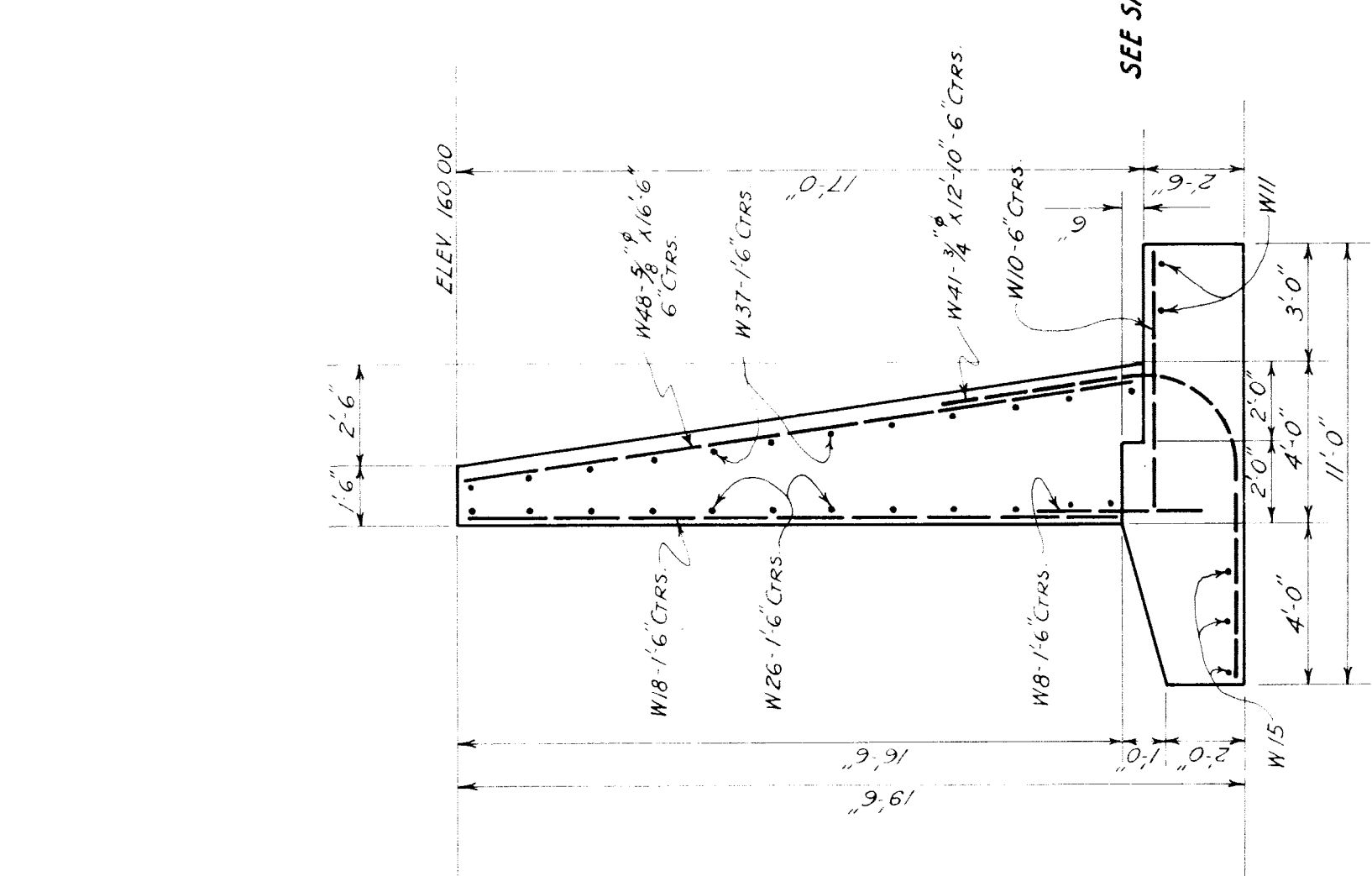
FRONT VIEW OF NORTH-WEST WING WALL

SIDE VIEW OF NORTH-WEST WING WALL

FRONT VIEW OF SOUTH-EAST WING WALL



REINFORCING DETAILS FOR DEEP FOOTING OF SOUTH-EAST WING WALL



GRAND TRUNK WESTERN RAILROAD
 OUTER DRIVE GRADE SEPARATION
 DETROIT, MICHIGAN
 NORTH-WEST WING WALL
 SOUTH-EAST WING WALL
 SCALE: 1/4" = 1'-0"

P.W.A. DOCKET NO. MICHIGAN 1084 F.

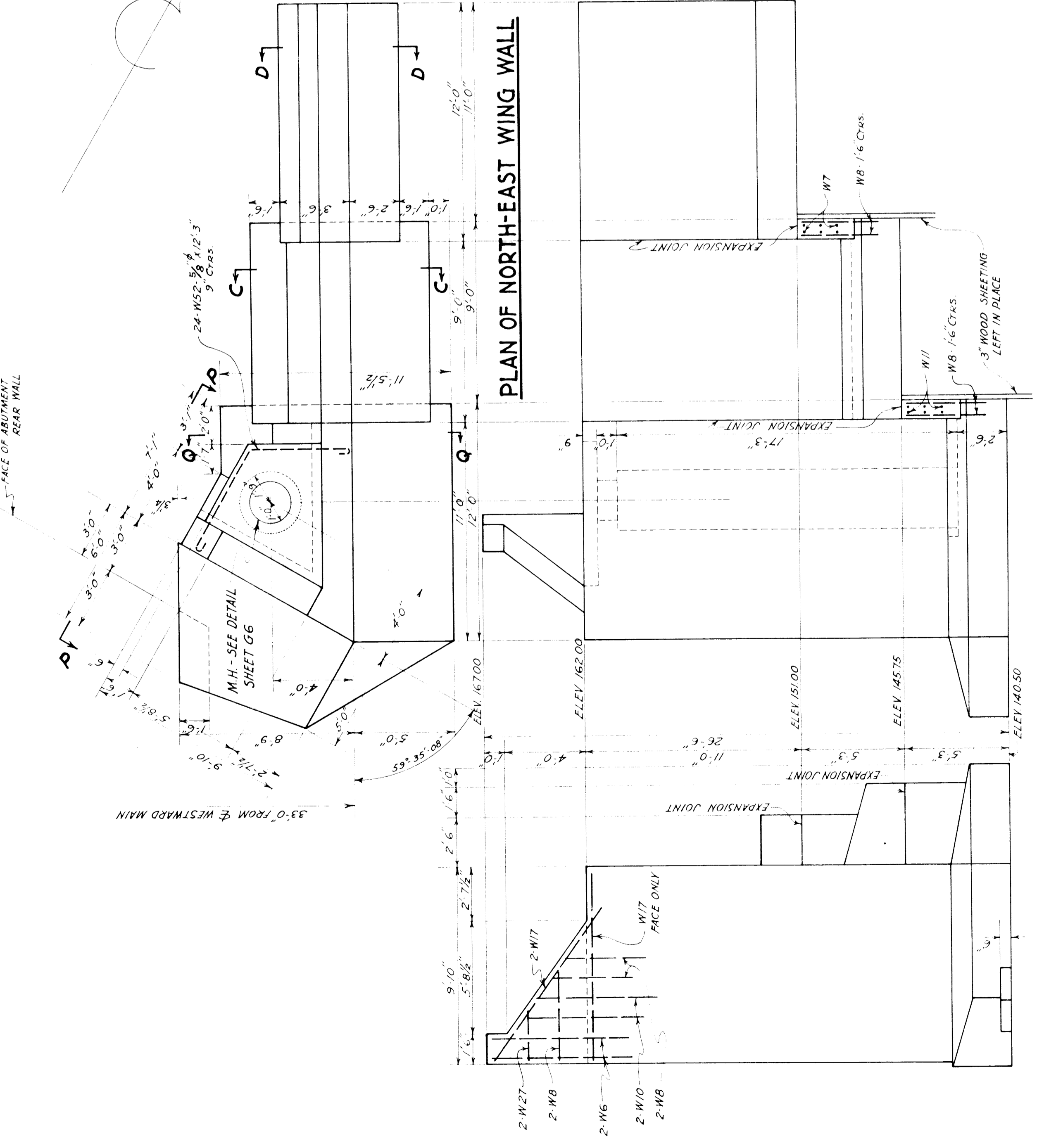
DR. R. E. M. OFFICE OF CHIEF ENGINEER
 TR. E. P. S. DETROIT, MICHIGAN
 CH. M. U. B. MAY, 1938

JOURNAL NO. V1 6 63
 SHEETS FILE

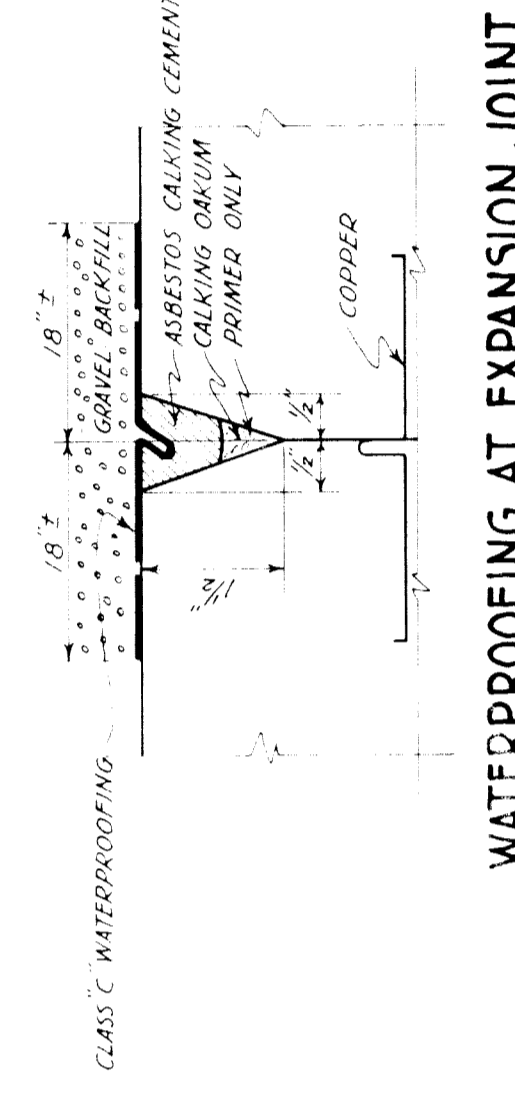
SEE SHEET G5 FOR GENERAL SUBSTRUCTURE NOTES.

NOTE:
 FOR SECTIONS L-L, M-M,
 N-N AND O-O, SEE
 SHEET JOURNAL NO. W-6264.

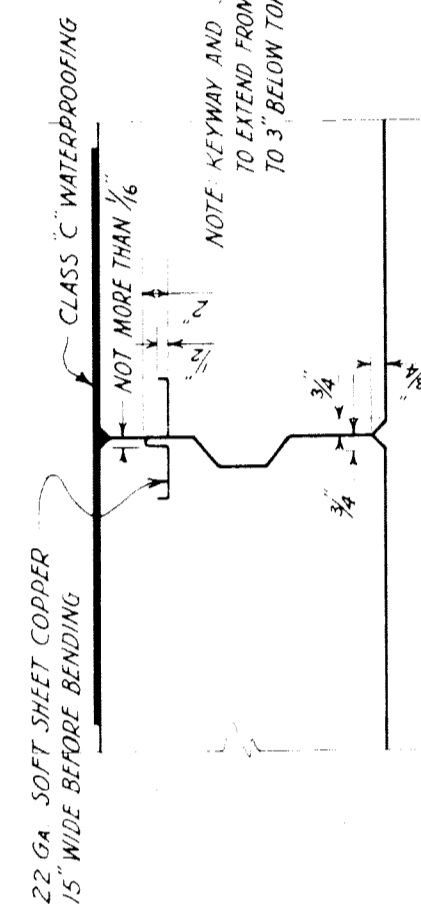
BAR DISTRIBUTION BY WINGS			
MARK	N.E.	S.E.	SW. TOTAL
W1	3		9
W2	2		2
W3	18		16
W4	16		40
W5	5	31	39
W6	12	30	70
W7	60	44	110
W8	60	44	110
W9	5	17	26
W10	5	17	26
W11	2	5	15
W12	16	16	20
W13	20	16	25
W14	4	6	7
W15	3	9	17
W16	16	17	33
W17	20	14	20
W18	20	19	62
W19	2	9	11
W20	2		2
W21	25		25
W22	14		24
W23	29		43
W24	2		20
W25	15	25	19
W26	15	19	17
W27	17	15	19
W28			14
W29			17
W30	2	2	24
W31			24
W32			21
W33			24
W34			21
W35			6
W36	12	9	21
W37	16	22	54
W38	29	21	50
W39			24
W40	8	24	24
W41	12		9
W42	12		12
W43	20	20	20
W44	20	20	20
W45	32	32	32
W46	2	2	4
W47	17		17
W48	12		12
W49			13
W50			20
W51	12		12
W52	24		24



REINFORCING DETAILS FOR DEEP FOOTING OF NORTH-EAST WING WALL



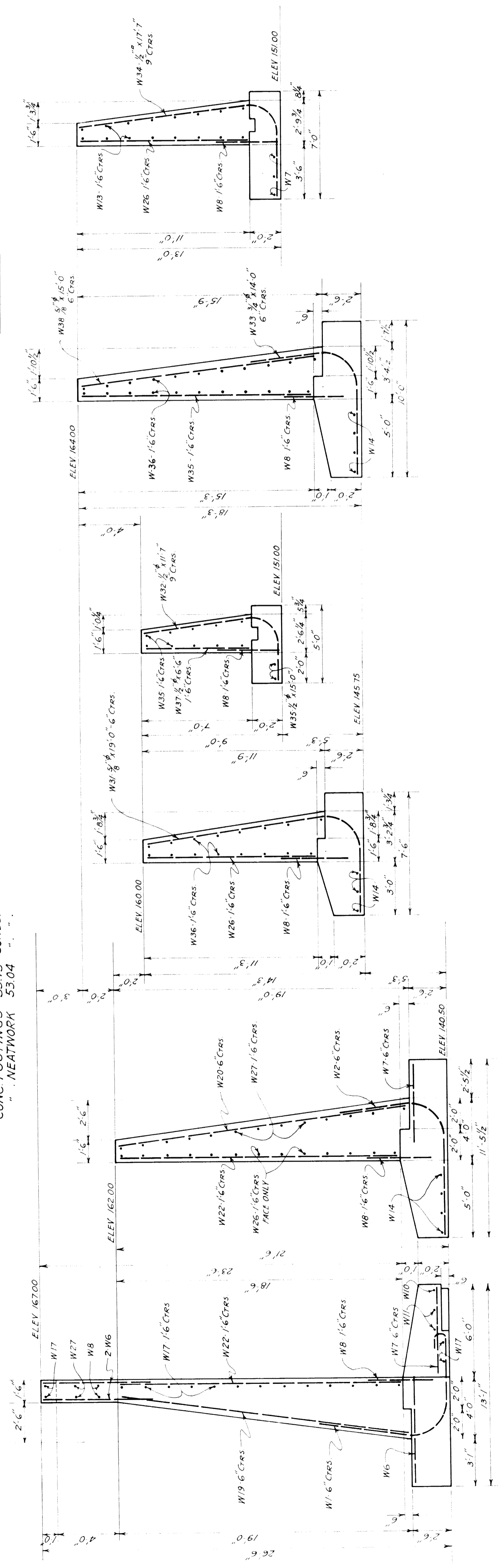
WATERPROOFING AT EXPANSION JOINT



TYPICAL VERT. CONST. JOINT

FRONT VIEW OF NORTH-EAST WING WALL

CONC. FOOTINGS 33.13 Cu Yds. NEATWORK 53.04

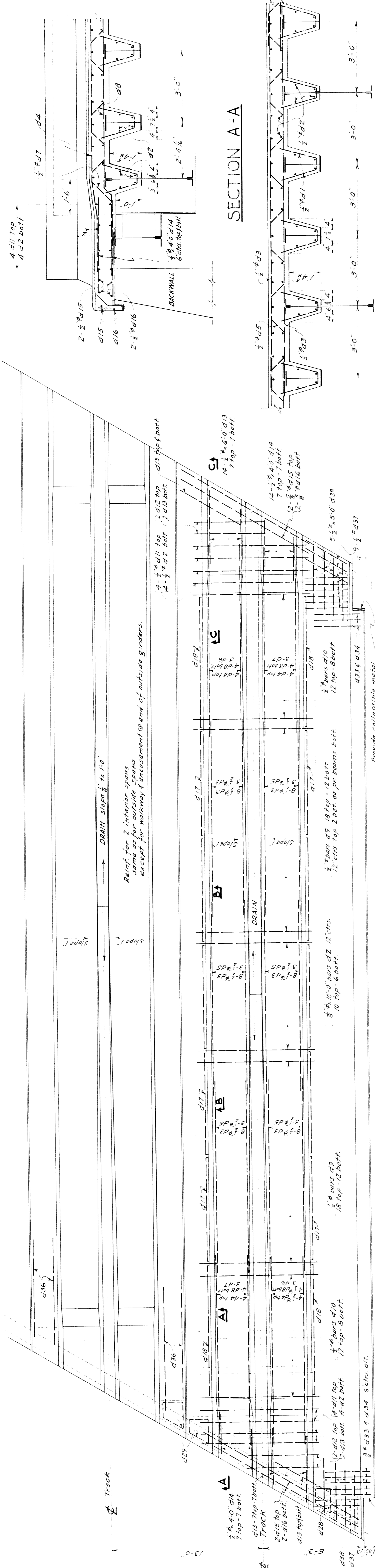


SEE SHEET G-5 FOR GENERAL SUBSTRUCTURE NOTES.
 NOTE: FOR SECTIONS C-C AND D-D, SEE SHEET JOURNAL NO W-6262.
 SECTIONS L-L, M-M, N-N AND O-O ARE TO BE USED WITH SHEET JOURNAL NO W-6263.

**GRAND TRUNK WESTERN RAILROAD
 OUTER DRIVE GRADE SEPARATION
 DETROIT, MICHIGAN
 NORTH-EAST WING WALL
 AND SECTIONS USED ELSEWHERE**

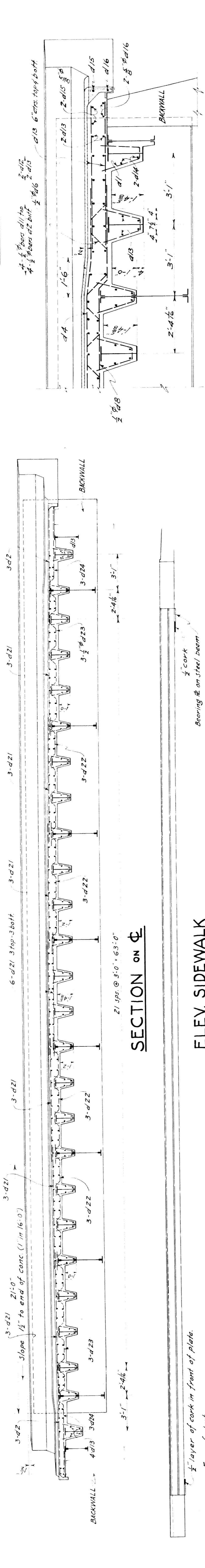
SCALE: 1/4" = 1'-0"
 OFFICE OF CHIEF ENGINEER
 DETROIT, MICHIGAN
 MAY 1938

JOURNAL NO
 W-6264
 FILE



PLAN

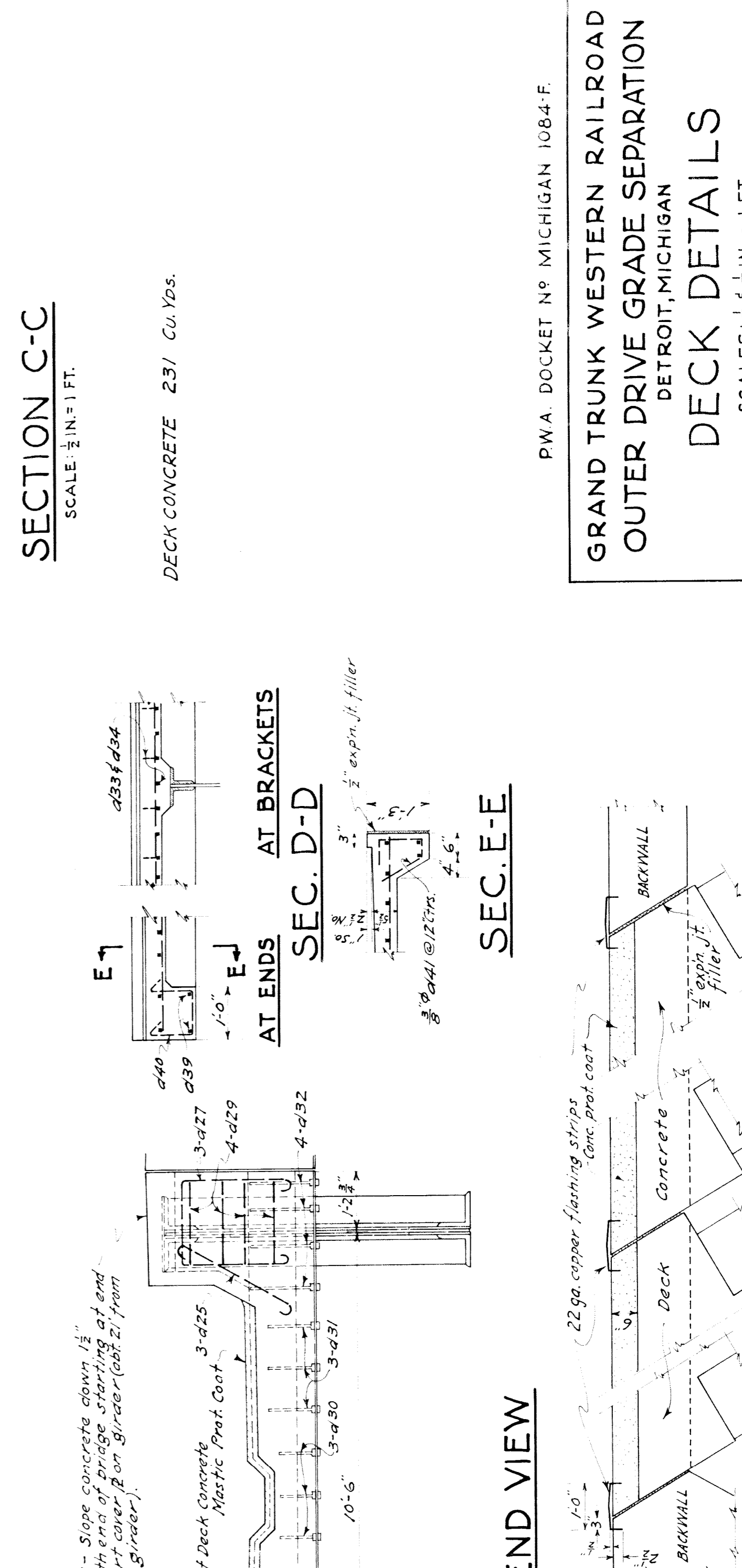
SECTION ON Φ



SECTION C-C

SCALE: $\frac{1}{2}$ " IN. = 1 FT.

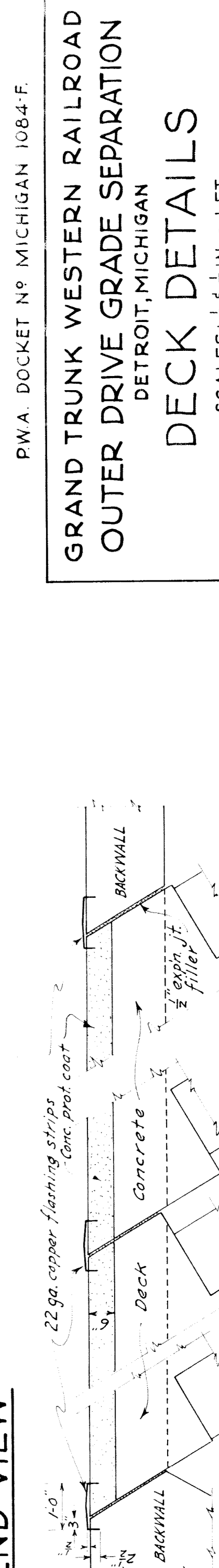
DECK CONCRETE 231 Cu. Yds.



TYPICAL CROSS-SECTION ON Φ GIRDER

SCALE: $\frac{1}{2}$ " IN. = 1 FT.

DECK CONCRETE 231 Cu. Yds.



TYPICAL SECTION THRU END ON Φ GIRDER

SCALE: $\frac{1}{2}$ " IN. = 1 FT.

DECK CONCRETE 231 Cu. Yds.



END VIEW

SCALE: $\frac{1}{2}$ " IN. = 1 FT.

DECK CONCRETE 231 Cu. Yds.

LIST OF REINFORCING BARS FOR ABUTMENTS

LOCATION	MK.	REQ. SIZE	TOTAL LENGTH	BENDING DIAGRAM
FOOTING	Q1	14	35'-8"	
FOOTING	Q2	94	27'-10"	
FOOTING	Q3	98	24'-4"	
FOOTING	Q4	148	24'-9"	
LONG INTG BEAM	Q5	40	25'-0"	STRAIGHT
"	Q6	20	35'-0"	STRAIGHT
"	Q7	40	32'-0"	STRAIGHT
"	Q8	20	20'-0"	STRAIGHT
LONGITUDINAL INTG BEAM	Q9	252	27'-0"	STRAIGHT
FOOTING	Q10	176	6'-0"	STRAIGHT
STIRRUPS FRG BEAM	Q11	128	24'-9"	SEE SECTION SHEET NO 5 W-6261
STIRRUPS-TOE OFFTG.	Q12	60	17'-0"	
FOOTING	Q13	6	26'-3"	
FOOTING	Q14	8	26'-5"	
FOOTING AT ENDS	Q15	6	12'-0"	
"	Q16	16	15'-0"	
"	Q17	8	18'-0"	
"	Q18	8	21'-0"	
"	Q19	8	24'-0"	
"	Q20	8	22'-0"	
"	Q21	8	19'-0"	
"	Q22	8	16'-0"	
COLUMNS	Q23	360	20'-9"	STRAIGHT
COL. TIES	Q24	42	4'-6"	STRAIGHT
COL. TIES	Q25	240	10'-10"	STRAIGHT
COL. TIES	Q26	160	11'-4"	STRAIGHT
COL. TIES	Q27	80	11'-8"	STRAIGHT
BRACKETS AT COLS.	Q28	48	4'-0"	
FACE OF BACKWALL	Q29	150	17'-6"	STRAIGHT
DIA. ACROSS AT TOP OF REAR WALL	Q30	150	10'-0"	STRAIGHT
AT WING CONNECTIONS	Q31	36	21'-0"	STRAIGHT
BEAM OVER ARCHES	Q32	24	30'-0"	STRAIGHT
"	Q33	12	20'-0"	STRAIGHT
"	Q34	24	22'-6"	STRAIGHT
"	Q35	12	35'-0"	STRAIGHT
STIRRUPS-BEAM OVER ARCHES	Q36	64	16'-0"	NOT MORE THAN 6"
DECK	Q37	82	14'-6"	
TRANS. DECK	Q38	84	19'-0"	

LIST OF REINFORCING BARS-ABUT. CONT'D.

LOCATION	MK.	REQ. SIZE	TOTAL LENGTH	BENDING DIAGRAM
TRANS. DECK	Q39	166	16'-9"	
DECK AT ENDS	Q40	8	12'-0"	
"	Q41	8	10'-0"	
"	Q42	8	8'-6"	
STIRRUPS-DECK	Q43	138	13'-0"	
DIAPHRAGM OF DECK	Q44	24	17'-0"	STRAIGHT
BACKWALL	Q45	240	7'-4"	STRAIGHT
DECK	Q46	8	13'-0"	STRAIGHT
DOVELS-END OF DECK	Q47	48	4'-0"	STRAIGHT
VERT. ENDS OF BACKWALL	Q48	34	9'-0"	STRAIGHT
DIAG. IN PORTAL	Q49	56	3'-0"	STRAIGHT
SPLICE BARS-PORTAL	Q50	52	6'-6"	STRAIGHT
LONG IN BACKWALL	Q51	66	24'-0"	STRAIGHT
CONN. TO WING WALL	Q52	20	8'-0"	STRAIGHT
END POSTS	Q53	76	12'-6"	STRAIGHT
VERT. PORTAL	Q54	8	14'-6"	STRAIGHT
PORTAL	Q55	8	15'-6"	STRAIGHT
"	Q56	136	17'-0"	STRAIGHT
"	Q57	52	10'-3"	STRAIGHT
"	Q58	52	11'-9"	STRAIGHT

LIST OF REINFORCING BARS FOR WING WALLS CONT'D.

LOCATION	MK.	REQ. SIZE	TOTAL LENGTH	BENDING DIAGRAM
N.E., N.W., S.E., S.W.	W28	68	2'-9"	
S.W.	W29	24	12'-6"	
N.E., N.W., S.E., S.W.	W30	8	8'-6"	
N.W.	W31	24	19'-0"	
"	W32	21	11'-7"	
S.E.	W33	24	14'-0"	
"	W34	8	17'-7"	
N.W., S.E.	W35	21	15'-0"	STRAIGHT
N.E., N.W., S.E.	W36	54	11'-6"	STRAIGHT
N.W., S.E.	W37	50	6'-6"	STRAIGHT
S.E.	W38	24	15'-0"	STRAIGHT
N.W.	W39	8	15'-0"	
"	W40	9	15'-4"	
"	W41	12	12'-10"	
S.E.	W42	20	17'-3"	
N.W.	W43	20	19'-0"	
S.E.	W44	20	23'-0"	STRAIGHT
"	W45	32	11'-0"	STRAIGHT
N.W., S.E.	W46	4	23'-0"	STRAIGHT
N.W.	W47	17	16'-6"	STRAIGHT
"	W48	12	16'-6"	STRAIGHT
S.E.	W49	13	20'-0"	STRAIGHT
"	W50	20	20'-6"	STRAIGHT
N.W.	W51	12	14'-6"	STRAIGHT
N.E.	W52	24	12'-3"	

LIST OF REINFORCING BARS FOR WING WALLS

LOCATION	MK.	REQ. SIZE	TOTAL LENGTH	BENDING DIAGRAM
N.E., S.W.	W1	12	15'-6"	
"	W2	4	16'-0"	
"	W3	36	13'-0"	
"	W4	56	14'-4"	
S.W.	W5	39	12'-10"	
N.E., N.W., S.E., S.W.	W6	70	7'-0"	STRAIGHT
N.E., S.E., S.W.	W7	55	5'-0"	STRAIGHT
N.E., N.W., S.E., S.W.	W8	274	4'-0"	STRAIGHT
N.W., S.W.	W9	14	4'-6"	STRAIGHT
N.E., N.W., S.E., S.W.	W10	63	6'-0"	STRAIGHT
"	W11	33	8'-0"	STRAIGHT
"	W12	54	9'-6"	STRAIGHT
"	W13	74	9'-0"	STRAIGHT
N.W., S.E., S.W.	W14	23	12'-0"	STRAIGHT
"	W15	29	14'-0"	STRAIGHT
N.E., S.W.	W16	33	21'-0"	STRAIGHT
N.E., N.W., S.E., S.W.	W17	57	9'-6"	STRAIGHT
N.W., S.W.	W18	81	16'-0"	STRAIGHT
N.E., S.W.	W19	11	18'-6"	STRAIGHT
"	W20	4	18'-6"	STRAIGHT
N.E., S.E., S.W.	W21	51	13'-0"	STRAIGHT
N.E., S.W.	W22	38	18'-0"	STRAIGHT
N.W., S.W.	W23	72	8'-6"	STRAIGHT
S.W.	W24	22	7'-6"	STRAIGHT
S.W.	W25	18	5'-6"	STRAIGHT
N.E., N.W., S.E., S.W.	W26	76	10'-6"	STRAIGHT
N.E., S.W.	W27	29	2'-0"	STRAIGHT

LIST OF REINFORCING BARS FOR DECK

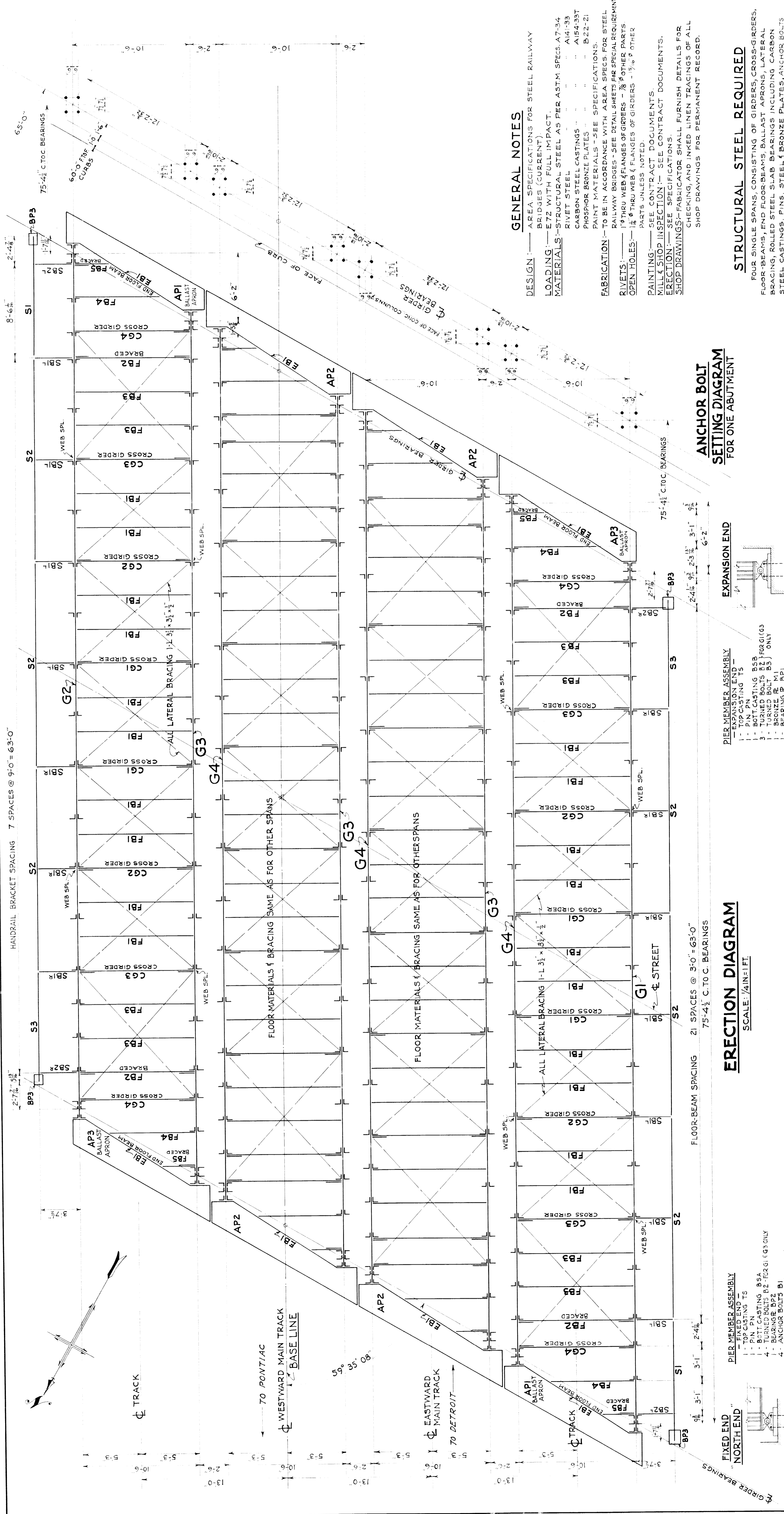
LOCATION	MK.	REQ. SIZE	TOTAL LENGTH	BENDING DIAGRAM
THRU FLOOR BEAMS	d1	632	3'-5"	
TRANSVERSE	d2	504	10'-0"	STRAIGHT
LONG. TOP & BOT.	d3	192	16'-6"	STRAIGHT
TOP AT ENDS	d4	64	16'-0"	STRAIGHT
LONGITUDINAL	d5	72	19'-0"	STRAIGHT
LONG. AT ENDS	d6	24	20'-2"	STRAIGHT
LONG. AT ENDS	d7	24	18'-9"	STRAIGHT
AT ENDS - BOT.	d8	64	17'-0"	STRAIGHT
TRANSVERSE T&B	d9	240	10'-3"	STRAIGHT
"	d10	160	10'-5"	STRAIGHT
"	d11	32	10'-4"	STRAIGHT
TRANS. AT ENDS	d12	16	6'-7"	STRAIGHT
AT ENDS	d13	176	6'-0"	STRAIGHT
"	d14	128	4'-0"	STRAIGHT
"	d15	24	14'-3"	STRAIGHT
LONG. BET. GUSSETS	d17	40	9'-4"	STRAIGHT
"	d18	16	11'-8"	STRAIGHT
THRU STEEL	d19	96	22'-0"	STRAIGHT
AT SIDES	d20	616	2'-6"	STRAIGHT
UNDER DRAIN	d21	96	10'-6"	STRAIGHT
"	d22	48	11'-3"	STRAIGHT
"	d23	24	14'-4"	STRAIGHT
AT ENDS	d24	24	8'-0"	STRAIGHT
"	d25	48	3'-9"	STRAIGHT
"	d26	12	6'-8"	STRAIGHT
"	d27	36	7'-1"	STRAIGHT
"	d28	16	6'-9"	STRAIGHT
THRU Z BAR	d30	24	0'-10"	STRAIGHT
"	d31	48	1'-2"	STRAIGHT
"	d32	60	1'-6"	STRAIGHT
TRANS. WALKWAY	d33	150	4'-9"	STRAIGHT
"	d34	150	5'-0"	STRAIGHT
THRU WALKWAY BEAM	d35	150	3'-5"	STRAIGHT
LONG. WALKWAY (GREN.)	d36	136	21'-0"	STRAIGHT
AT ENDS OF WALKWAY	d37	28	4'-0"	STRAIGHT
"	d38	20	5'-0"	STRAIGHT
"	d39	8	4'-9"	STRAIGHT
"	d40	12	2'-11"	STRAIGHT
"	d41	14	2'-2"	STRAIGHT
2800' OF 4x4 WIRE MESH - NO 8 GA.				

NOTE: - SEE SHEET G5 FOR GENERAL SUBSTRUCTURE NOTES.

REINFORCING STEEL QUANT.
 Abutts. 98.40 Tons.
 Deck 13.05
 W. Walls 9.67
 Total 121.12

PWA DOCKET NO MICHIGAN 1084-F
 GRAND TRUNK WESTERN RAILROAD
 OUTER DRIVE GRADE SEPARATION
 DETROIT, MICHIGAN
 REINFORCING BAR SCHEDULE
 NOT TO SCALE

DR. M. J. GREGG
 TR. L. W. S.
 CH. R. A. W.
 OFFICE OF CHIEF ENGINEER
 DETROIT, MICHIGAN
 MAY 1938
 JOURNAL NO
 W-6266
 FILE



GENERAL NOTES

DESIGN: AREA SPECIFICATIONS FOR STEEL RAILWAY BRIDGES (CURRENT)
 LOADING: E72 WITH FULL IMPACT.
 MATERIALS: STRUCTURAL STEEL AS PER ASTM SPECS. A7-34 RIVET STEEL " " A14-33 CARBON STEEL CASTINGS " " A154-33T PHOSPHOR BRONZE PLATES " " B22-21 PAINT MATERIALS - SEE SPECIFICATIONS.
 FABRICATION: TO BE IN ACCORDANCE WITH AREA SPECS. FOR STEEL RAILWAY BRIDGES - SEE DETAIL SHEETS FOR SPECIAL REQUIREMENTS.
 RIVETS: 1/4" THRU WEB & FLANGES OF GIRDERS - 7/8" OTHER PARTS OPEN HOLES: 1/8" THRU WEB & FLANGES OF GIRDERS - 9/16" OTHER PARTS UNLESS NOTED.
 PAINTING: SEE CONTRACT DOCUMENTS.
 MILL & SHOP INSPECTION: SEE CONTRACT DOCUMENTS.
 ERECTION: SEE SPECIFICATIONS.
 SHOP DRAWINGS: FABRICATOR SHALL FURNISH DETAILS FOR CHECKING, AND INKED LINES TRACINGS OF ALL SHOP DRAWINGS FOR PERMANENT RECORD.

STRUCTURAL STEEL REQUIRED

FOUR SINGLE SPANS, CONSISTING OF GIRDERS, CROSS-GIRDERS, FLOOR-BEAMS, END FLOOR-BEAMS, BALLAST APRONS, LATERAL BRACING, ROLLED STEEL SLAB BEARINGS INCLUDING CARBON STEEL CASTINGS, PINS, STEEL & BRONZE PLATES, ANCHOR BOLTS & CONNECTIONS. ALSO MATERIALS FOR TWO SIDEWALKS CONSISTING OF CANTILEVER BRACKETS, BEAM STRINGERS, PLATES AND BOLTS FOR HANDRAIL POST CONNECTIONS, BEARING PLATES, AND CONNECTIONS.

STRUCT. STEEL 347.4 TONS - (EXCL. OF HAND RAIL).
 CASTINGS 14.6 " "
 TOTAL 362. "

P.W.A. DOCKET NO MICHIGAN 1084-F.

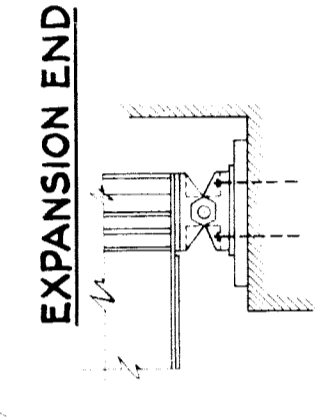
GRAND TRUNK WESTERN RAILROAD
 OUTER DRIVE GRADE SEPARATION
 DETROIT, MICHIGAN

STRUCTURAL STEEL
 ERECTION DIAGRAM
 SCALES AS NOTED

DR. T.H.J. OFFICE OF CHIEF ENGINEER JOURNAL NO
 TR. L.W.S. DETROIT, MICHIGAN W-6267
 CH. R.A.W. APRIL 21, 1938 FILE

SHEET G11 OF SHEETS

ANCHOR BOLT SETTING DIAGRAM FOR ONE ABUTMENT



- PIER MEMBER ASSEMBLY**
- 1 - EXPANSION END - PIN PINNING IS
 - 2 - TURNED BOLTS B5B
 - 3 - TURNED BOLTS B2 FOR G1, G3
 - 4 - ANCHOR BOLTS B1
 - 5 - BEARING PLATE BPI
 - 6 - ANCHOR BOLTS B1
 - 7 - TURNED BOLTS B2
 - 8 - TURNED BOLTS B2 FOR G2 (G4 ONLY)

ERECTION DIAGRAM
 SCALE: 1/4" = 1 FT.

FLOOR-BEAM SPACING 21 SPACES @ 3'-0" = 63'-0"
 75'-4 1/2" C.T.O.C. BEARINGS

TABLE OF STRESSES

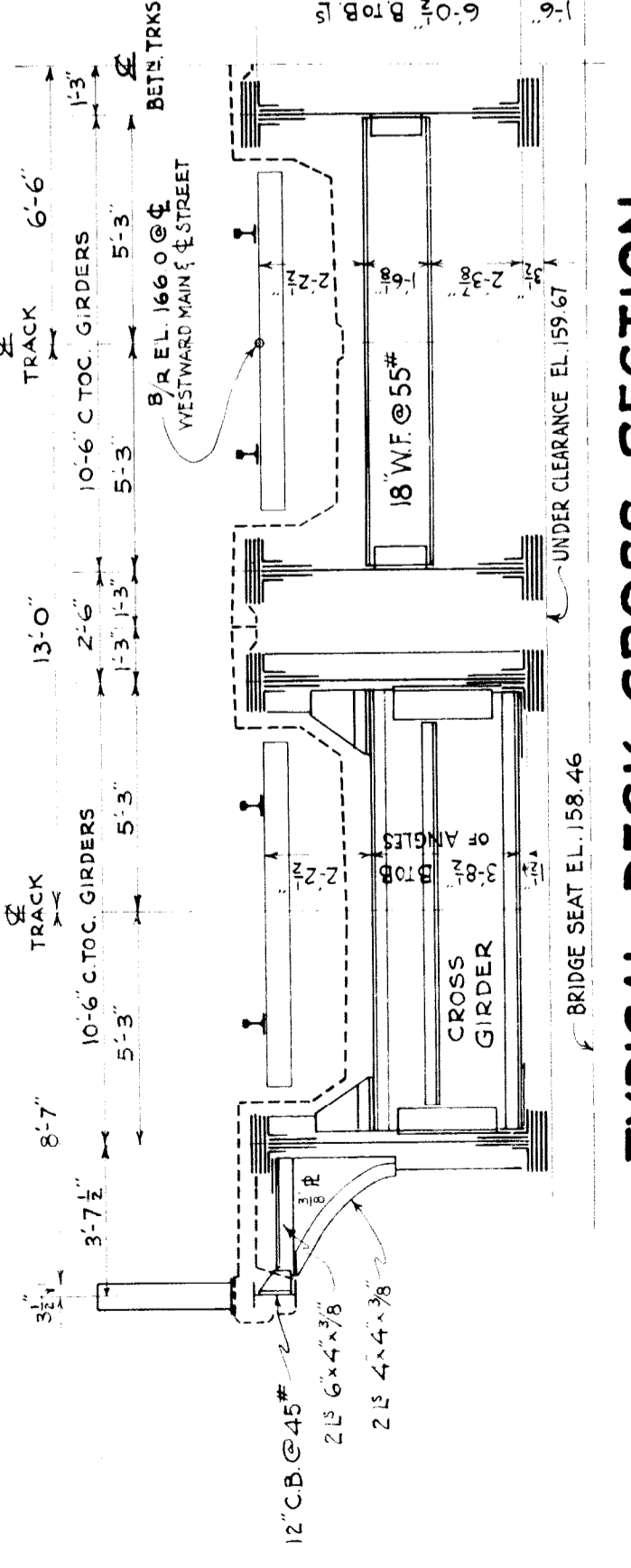
MEMBER	LOAD	MAX. MOMENT, FT. LB.	MAX. SHEAR, LB.	SECTION
GIRDERS G1 & G2	D.L.	2,845,000	150,600	WEB 72" x 5/8"
	L.L.	3,507,000	213,900	FLG. 15'-4 1/2" x 18 1/8" x 1/8"
	I.	2,248,000	136,800	SIDE 15'-4 1/2" x 15 1/8" x 3/8"
TOTAL	8,600,000	500,400	COVER 4" x 18 1/8" x 1/8" EACH FLG.	
GIRDERS G3 & G4	D.L.	2,475,000	131,000	WEB 72" x 5/8"
	L.L.	3,507,000	213,000	FLG. 15'-4 1/2" x 18 1/8" x 1/8"
	I.	2,248,000	136,800	SIDE 15'-4 1/2" x 15 1/8" x 3/8"
TOTAL	8,230,000	480,800	COVER 4" x 18 1/8" x 1/8" EACH FLG.	
FLOOR-BEAM	D.L.	16,600	7,900	18" WIDE FLANGE BEAM
	L.L.	59,500	21,600	@ 55# SEC. MOD. 982 IN ³
	I.	59,500	21,600	FLANGE 7 1/2" x 5/8" WEB 18 3/8" x 3/8"
TOTAL	135,600	51,100		

CROSS-GIRDER

WEB 44" x 3/8"
 FLG. 15' 4 1/2" x 4 1/2" x 1/2"

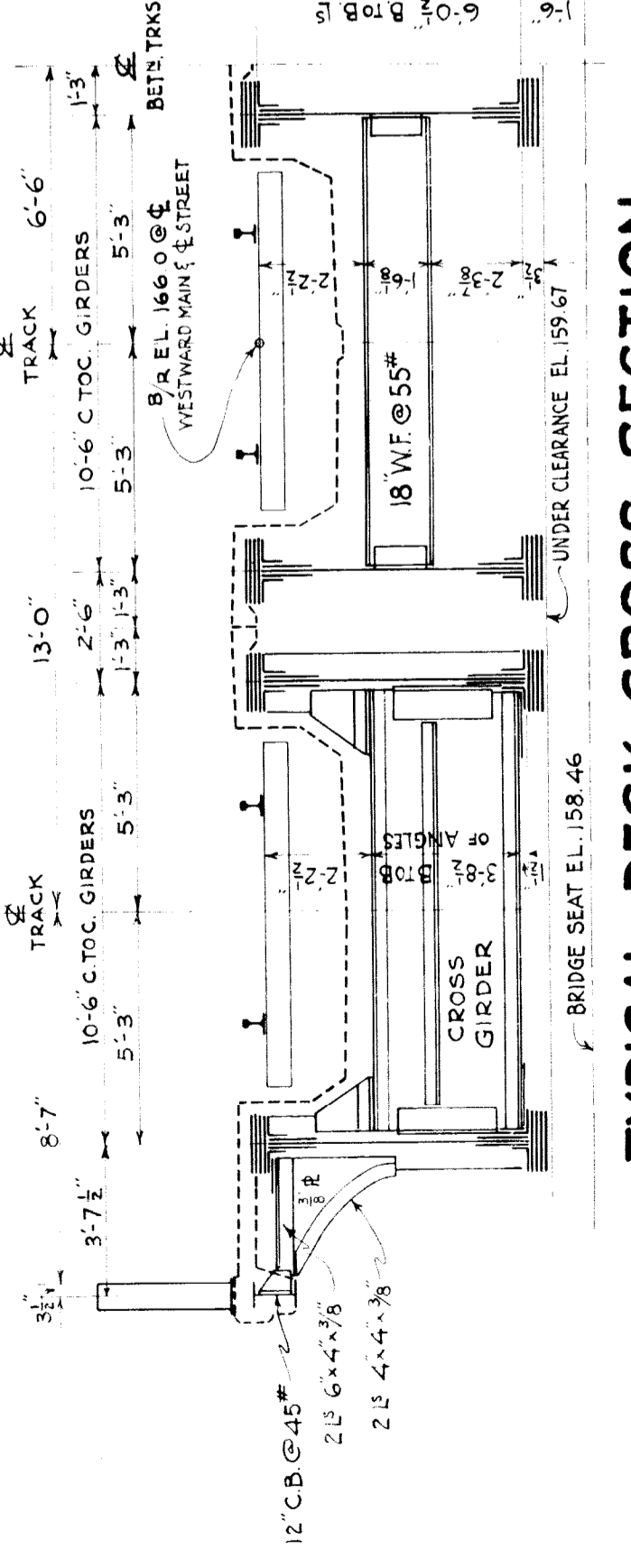
END FLOOR BEAM

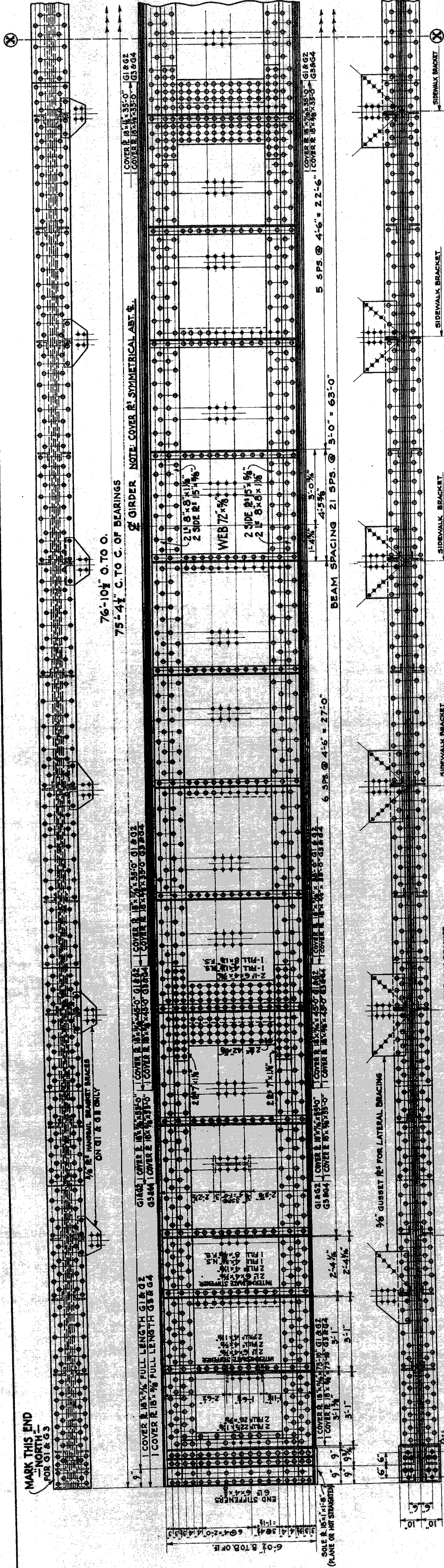
WEB 24" x 3/8"
 FLG. 15' 4 1/2" x 5" x 5/8"



FIXED END NORTH END

- PIER MEMBER ASSEMBLY**
- 1 - FIXED END -
 - 2 - TOP CASTING TS
 - 3 - PIN PINNING IS
 - 4 - TURNED BOLTS B5A
 - 5 - TURNED BOLTS B2 FOR G1, G3 ONLY
 - 6 - ANCHOR BOLTS B1
 - 7 - BEARING PLATE BPI
 - 8 - ANCHOR BOLTS B1
 - 9 - TURNED BOLTS B2 FOR G2 & G4 ONLY
 - 10 - TURNED BOLTS B2
 - 11 - TURNED BOLTS B2

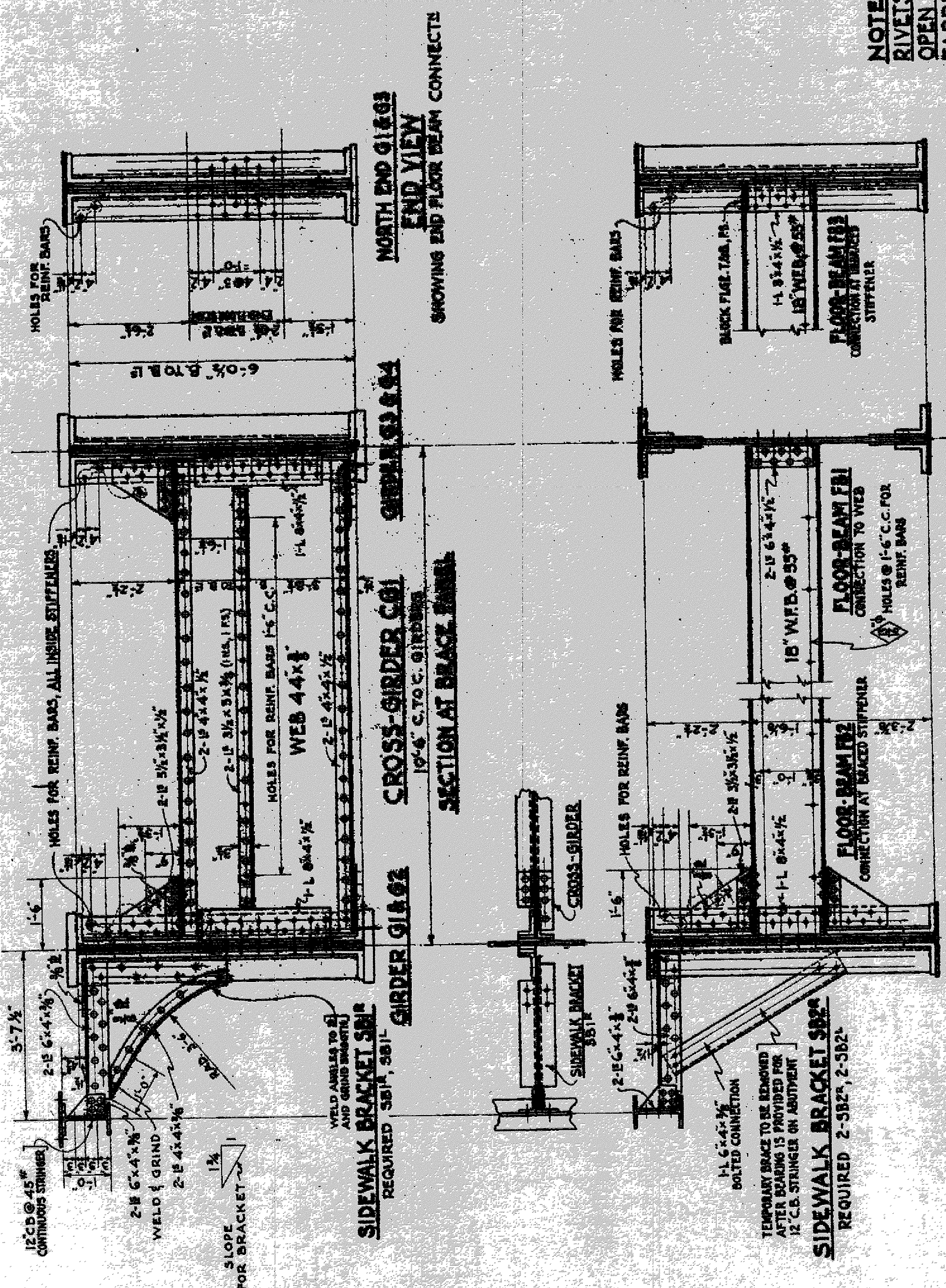
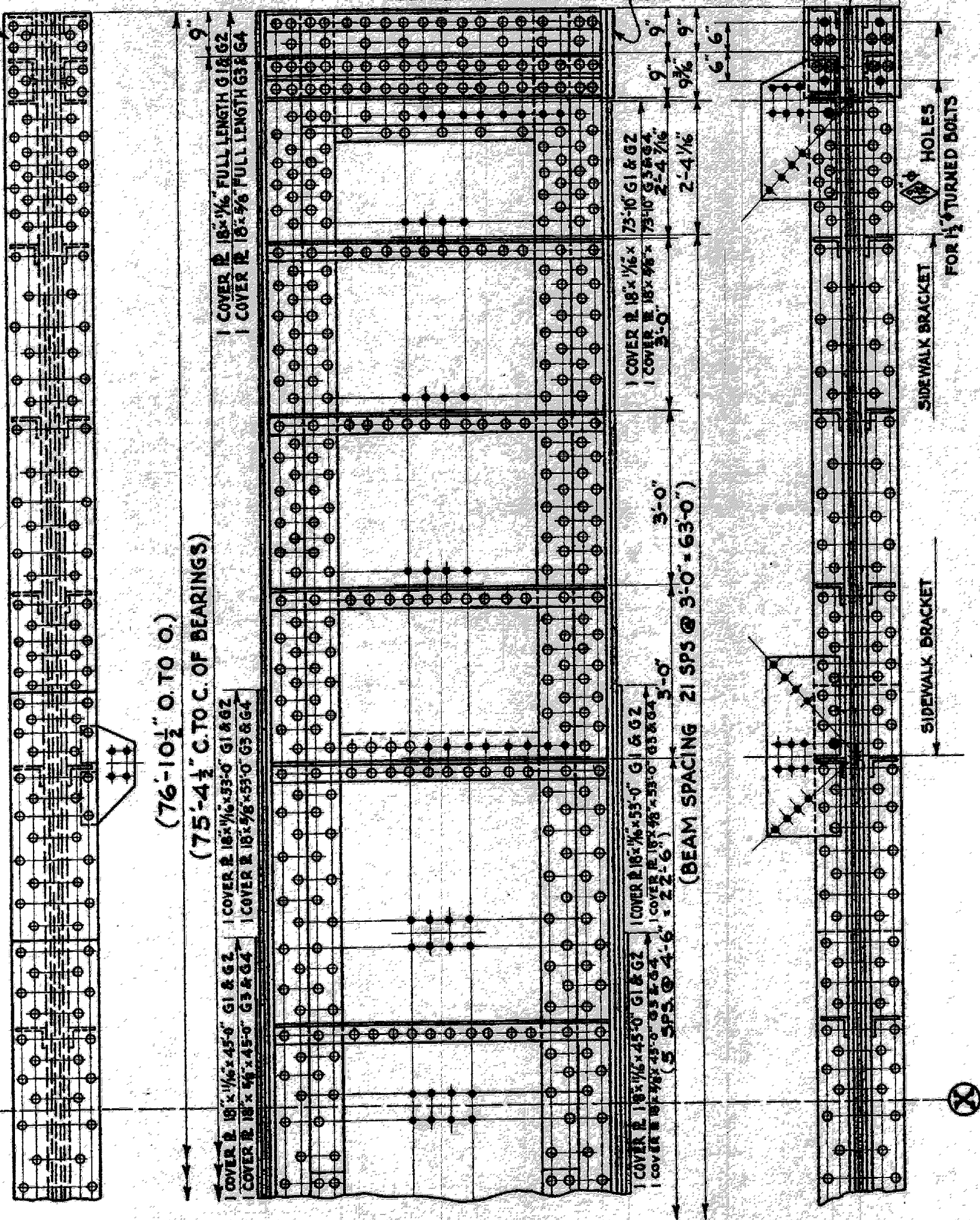




GIRDER G1

GIRDER G1, AS SHOWN - 1 REQUIRED
 GIRDER G2, SAME AS G1 EXCEPT DIRECTION MARK - 1 REQUIRED AND FLANGE COVER PLATES - 3 REQUIRED
 GIRDER G3, SAME AS G1 EXCEPT FOR SIDEWALK CONNECTIONS AND FLANGE COVER PLATES - 3 REQUIRED
 GIRDER G4, SAME AS G3 EXCEPT FOR DIRECTION MARK - 3 REQUIRED

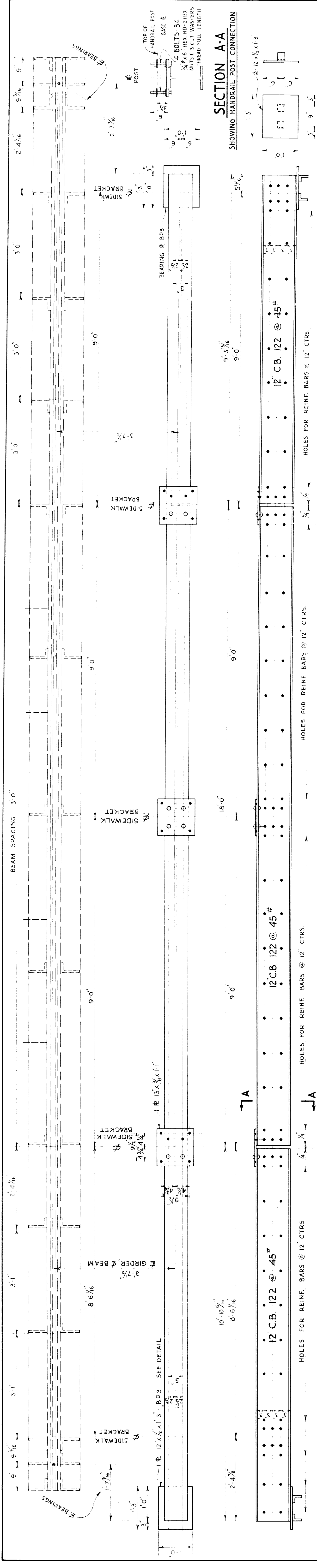
MARK THIS END
 - "NORTH" -
 FOR G2 & G4



NOTES
 RIVETS - 1/4 THRU WEB & FLANGES OF GIRDERS; 3/8 OTHER PARTS UNLESS NOTED OTHERWISE.
 OPEN HOLES - 1/4 THRU WEBS & FLANGES OF GIRDERS; 5/8 OTHER PARTS UNLESS NOTED OTHERWISE.
 FABRICATION - 1/4 HOLES IN GIRDER FLANGES AND HOLES IN 1/4 STIFFENER FILLS TO BE SUBDRILLED 3/8" AND REAMED TO SIZE AFTER ASSEMBLY. ALL OTHER HOLES FOR SHOP RIVETS TO BE SUB PUNCHED 3/8" SMALLER AND REAMED TO SIZE AFTER ASSEMBLY. HOLES FOR FIELD CONNECTIONS OF FLOOR-BEAMS, CROSS GIRDERS, AND END FLOOR-BEAMS TO BE SUB-PUNCHED 1/4" SMALLER AND REAMED TO SIZE THROUGH A METAL TEMPLATE 1/4" IN THICKNESS.

GIRDER CROSS-SECTIONS

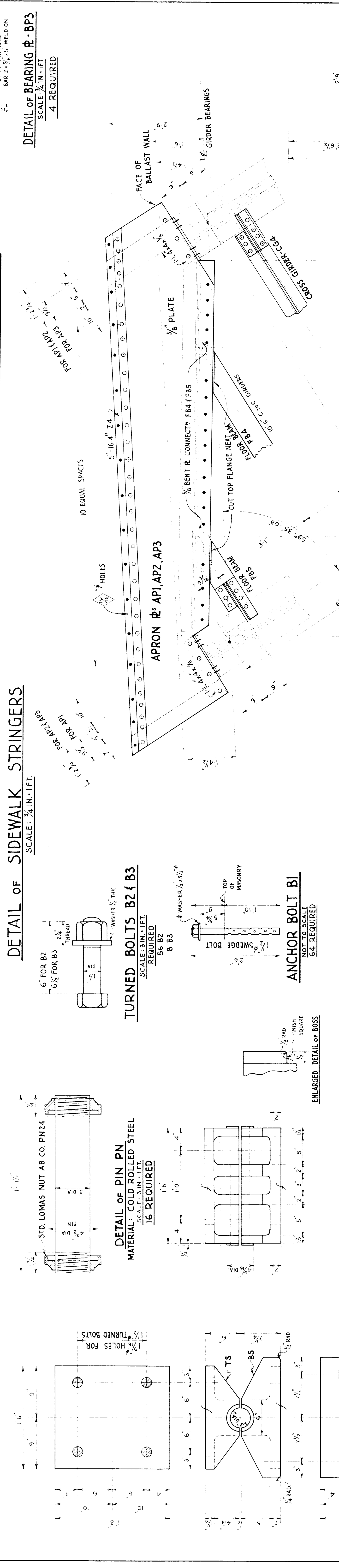
SHOWING STIFFENER PUNCHING, FLOOR-BEAM CONNECTIONS, BRACING & BRACKET DETAILS



SIDEWALK STRINGER - S1 - 2 REQ^d
 HOLES FOR REINF. BARS @ 12" CTRS.
 12 C.B. 122 @ 45#

SIDEWALK STRINGER - S2 - 6 REQ^d
 HOLES FOR REINF. BARS @ 12" CTRS.

SIDEWALK STRINGER - S3 - 2 REQ^d
 HOLES FOR REINF. BARS @ 12" CTRS.



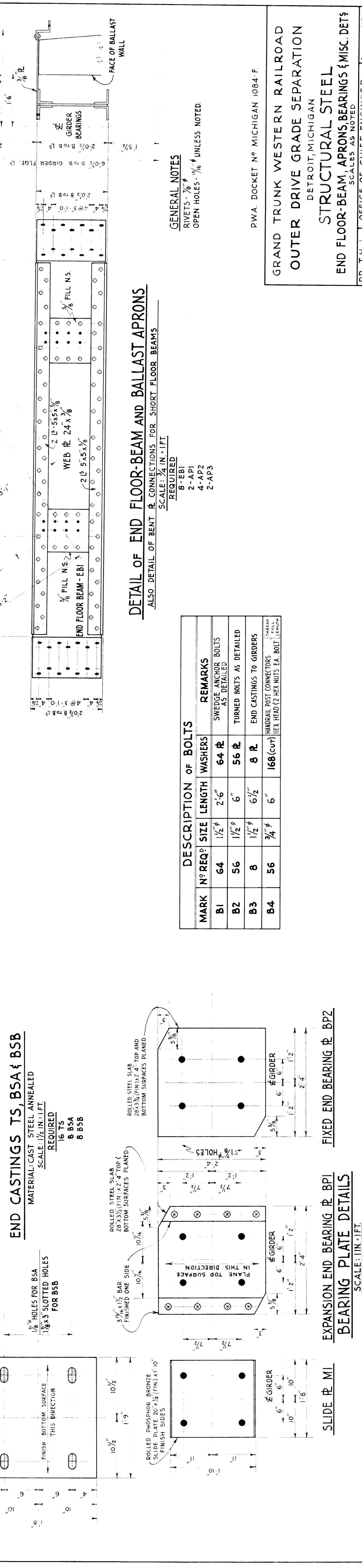
DETAIL OF SIDEWALK STRINGERS
 SCALE: 3/4" IN. = 1 FT.

TURNED BOLTS B2 & B3
 MATERIAL: COLD ROLLED STEEL
 SCALE: 3/4" IN. = 1 FT.
 16 REQUIRED

ANCHOR BOLT B1
 NOT TO SCALE
 64 REQUIRED

DETAIL OF PIN PN
 MATERIAL: COLD ROLLED STEEL
 SCALE: 3/4" IN. = 1 FT.
 16 REQUIRED

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



DETAIL OF END FLOOR-BEAM AND BALLAST APRONS
 ALSO: DETAIL OF BENT REINFORCEMENT CONNECTIONS FOR SHORT FLOOR BEAMS
 SCALE: 3/4" IN. = 1 FT.
 REQUIRED:
 8 - EBI
 2 - AP1
 4 - AP2
 2 - AP3

DETAIL OF BEARING @ B-P3
 SCALE: 3/4" IN. = 1 FT.
 4 REQUIRED

EXPANSION END BEARING @ BPI
 BEARING PLATE DETAILS
 SCALE: 1/2" IN. = 1 FT.
 REQUIRED: 8 M1 - 8 BPI - 8 BP2

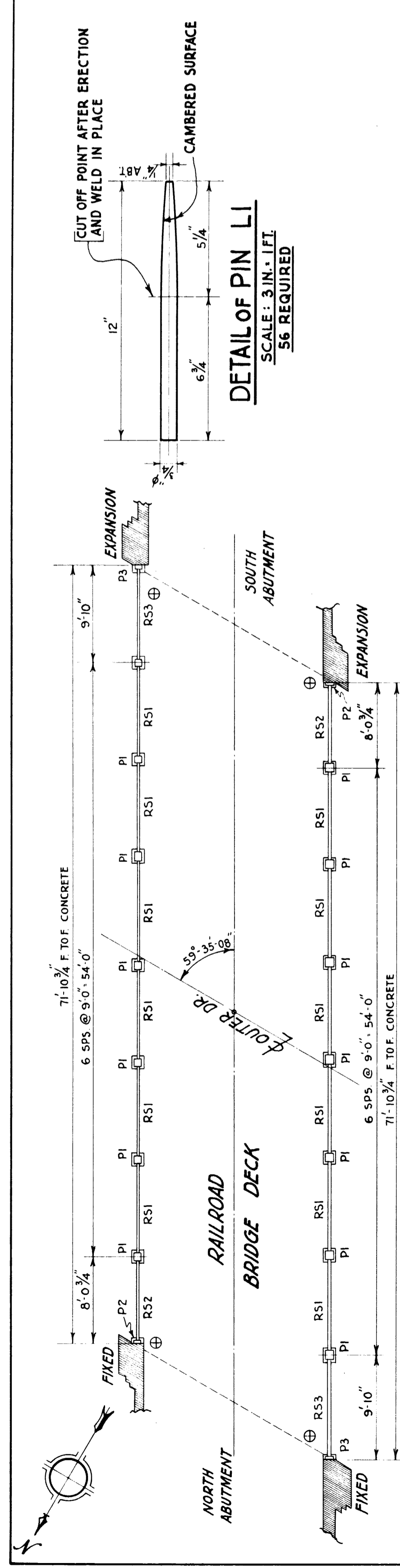
FIXED END BEARING @ BP2

SLIDE @ M1

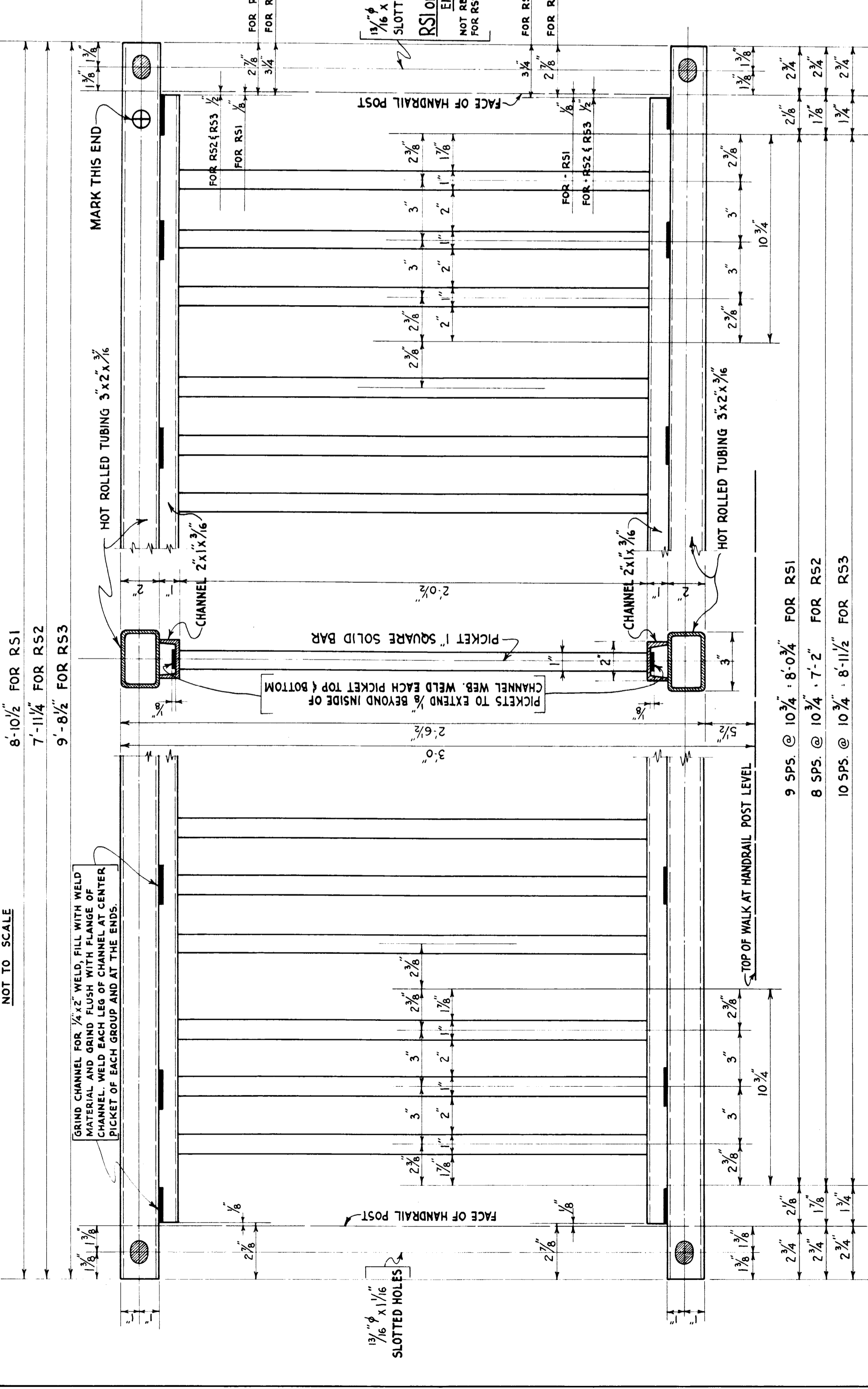
DESCRIPTION OF BOLTS			
MARK	N ^o REQ ^d	SIZE	REMARKS
B1	64	1/2" x 2'-6"	SWEDGE ANCHOR BOLTS AS DETAILED
B2	56	1/2" x 6"	TURNED BOLTS AS DETAILED
B3	8	1/2" x 6 1/2"	END CASTINGS TO GIRDERS
B4	56	3/4" x 6"	HANDRAIL POST CONNECTORS (HEX HEAD 1/2" HEX NUTS EA. BOLT LENGTH)

GENERAL NOTES
 RIVETS - 7/8"
 OPEN HOLES - 1/8" UNLESS NOTED

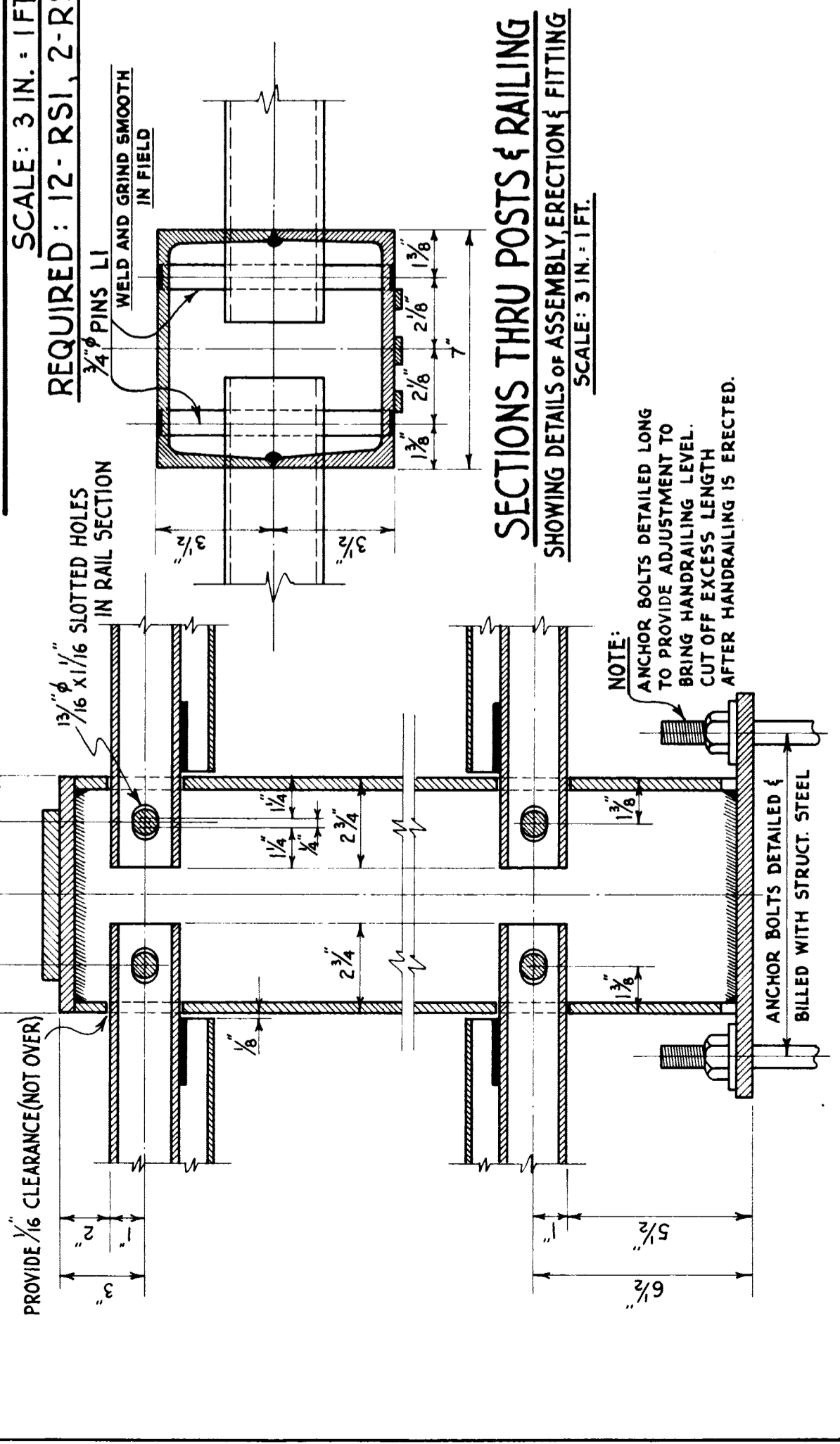
P.W.A. DOCKET NO. MICHIGAN 1084-F
 GRAND TRUNK WESTERN RAILROAD
 OUTER DRIVE GRADE SEPARATION
 DETROIT, MICHIGAN
STRUCTURAL STEEL
 END FLOOR-BEAM, APRONS, BEARINGS & MISC. DETAILS
 DR. T.H.U. OFFICE OF CHIEF ENGINEER
 TR. E.R.S. DETROIT, MICH.
 CH. R.A.W. APRIL 21, 1936
 JOURNAL NO. W-6269
 FILE SHEET G 13 OF SHEETS



ERECTION DIAGRAM
NOT TO SCALE

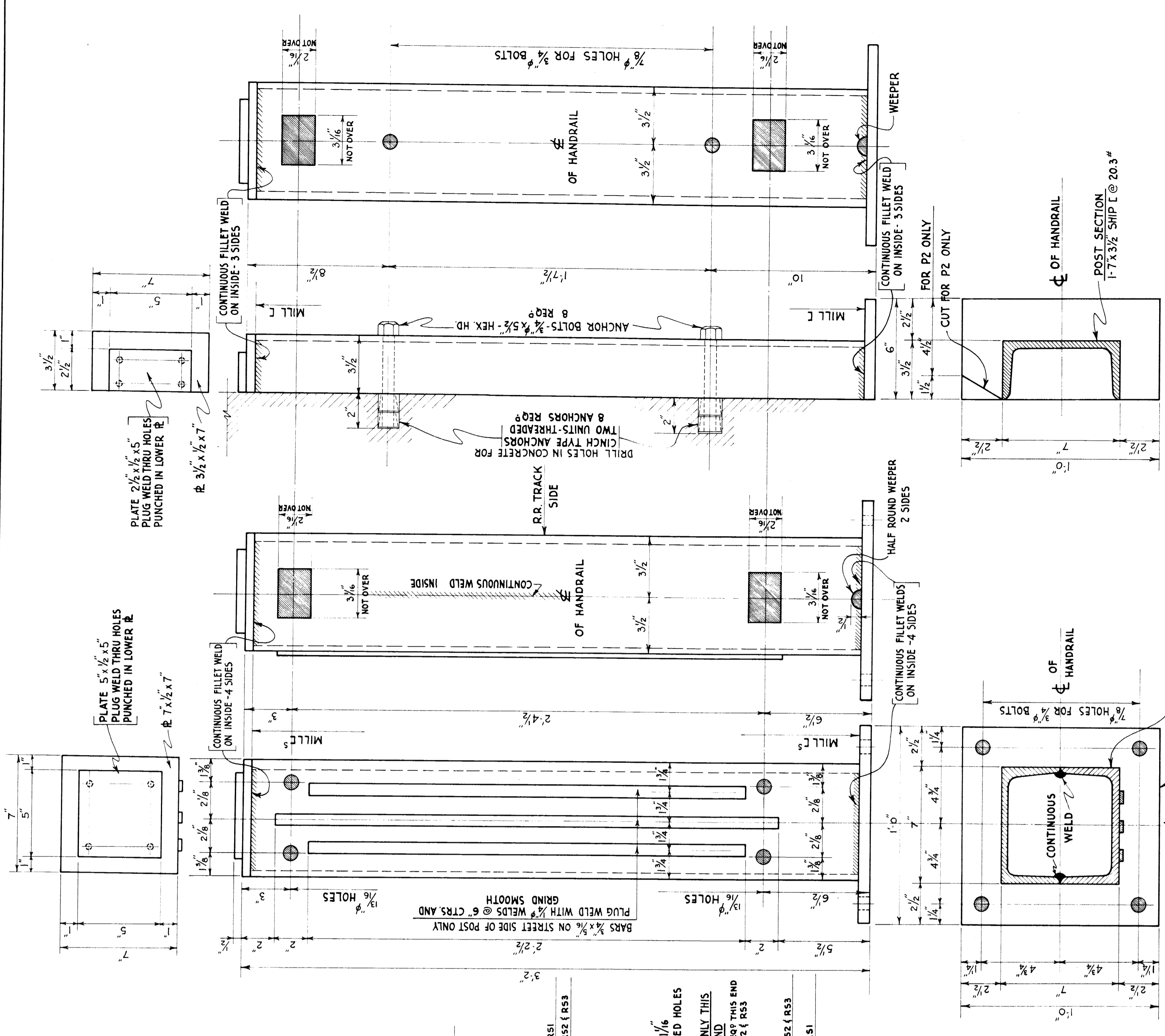


HANDRAIL SECTIONS RSI, RS2, RS3
SCALE: 3 IN. = 1 FT.
REQUIRED: 12-RSI, 2-RS2, 2-RS3.



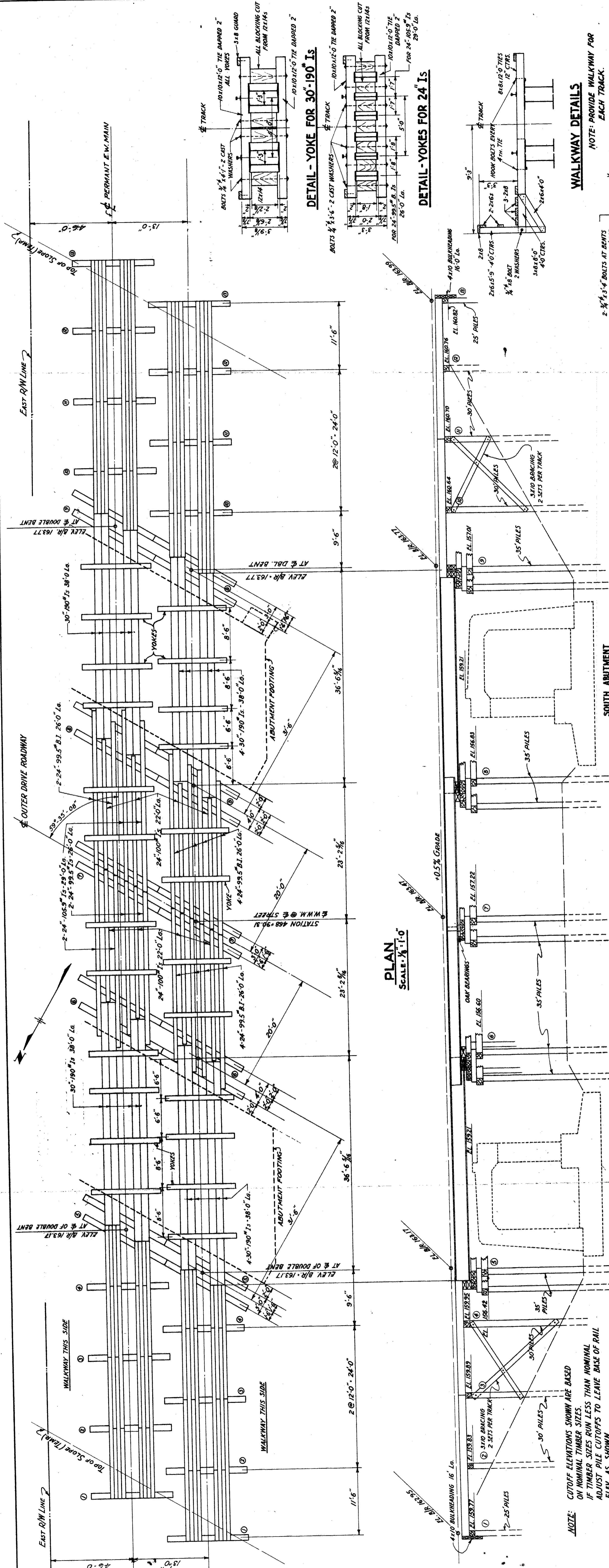
SECTIONS THRU POSTS & RAILING
SHOWING DETAILS OF ASSEMBLY, ERECTION & FITTING
SCALE: 3 IN. = 1 FT.

GENERAL NOTES
MATERIALS: TUBING SHALL BE HOT ROLLED MILD STEEL S.A.E. SPEC. 1010. ALL OTHER MATERIAL TO BE STRUCTURAL GRADE STEEL A.S.T.M. SPEC. A-7-34.
WELDING: SHALL CONFORM TO THE BEST PRACTICE FOR FUSION WELDING ALL WELDS SHALL BE NEATLY MADE - ON EXPOSED SURFACES THE WELDS SHALL BE GROUND FLUSH WITH THE SURFACE.
FABRICATION: ALL RAILS AND POSTS SHALL BE THOROUGHLY CLEANED TO REMOVE ALL OIL AND GREASE. POSTS SHALL BE HELD IN A TEMPLATE SO CONSTRUCTED AS TO PREVENT DISTORTION DURING WELDING.
SLOTS AND PIN HOLES SHALL BE CUT IN POSTS AFTER THE RAILING SECTIONS ARE COMPLETED SO THAT THE CORRECT LOCATION OF PIN HOLES MAY BE MADE.
THE CLEARANCE TO PERMIT SLIDING IN THE WALL OF THE POST SHALL BE HELD TO A MINIMUM.
SHOP ASSEMBLY: RAILING AND POSTS SHALL BE ASSEMBLED IN THE SHOP AND MATCH MARKED FOR FIELD ERECTION.
PAINTING: SEE CONTRACT DOCUMENTS.

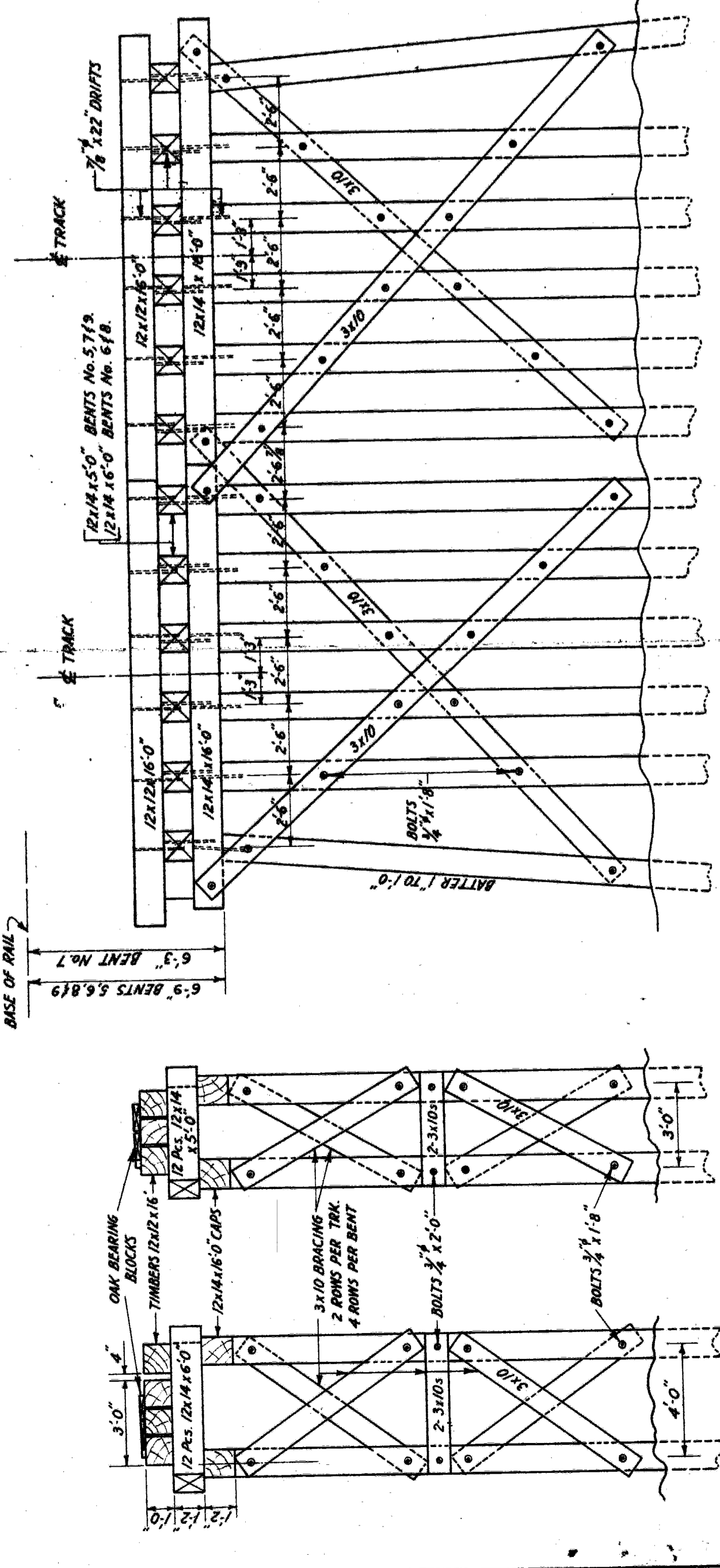


HANDRAIL POST - P1
SCALE: 3 IN. = 1 FT.
1/4 REQUIRED

HANDRAIL POST P2 & P3
SCALE: 3 IN. = 1 FT.
REQUIRED: 2-P2, 2-P3.

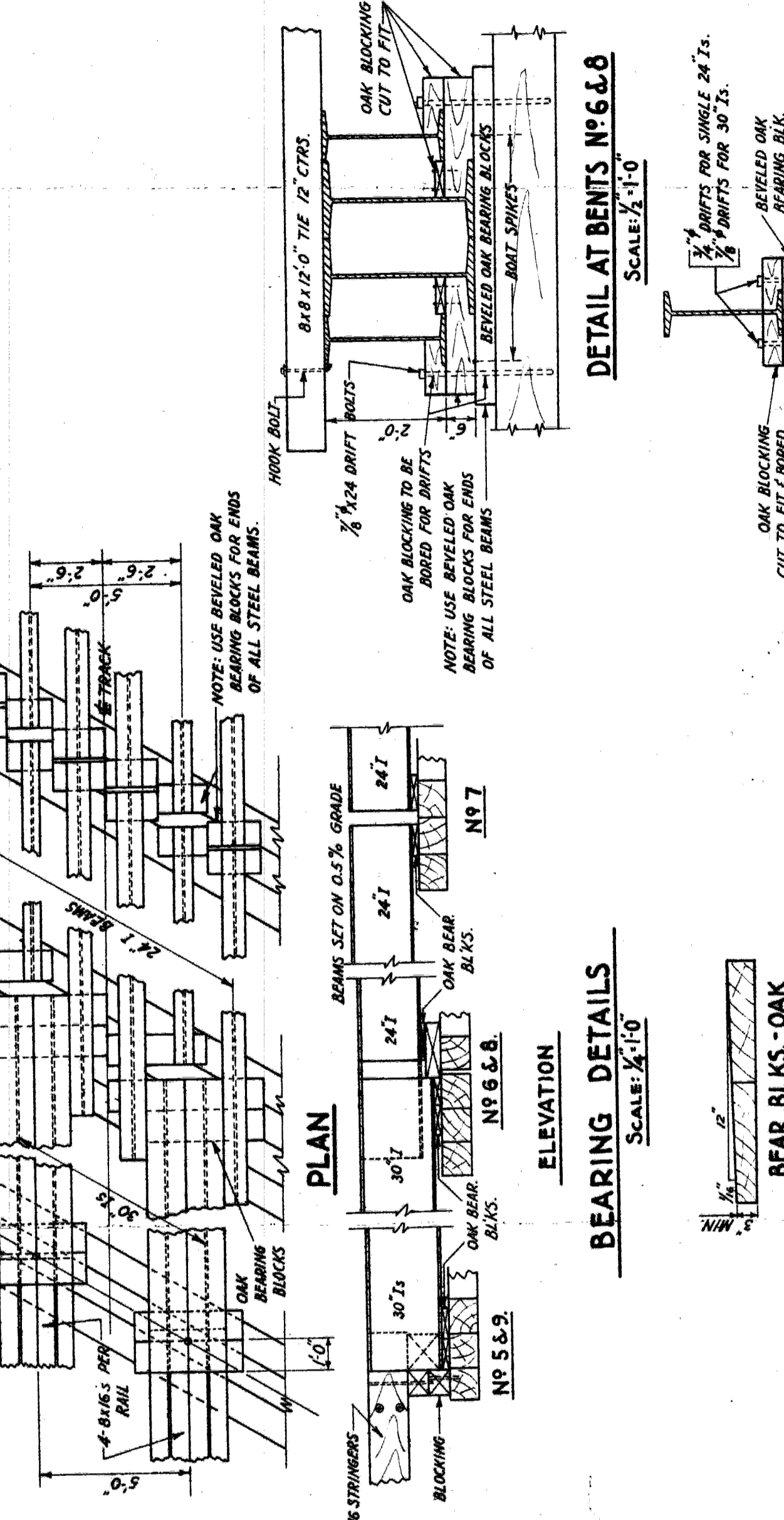


SECTIONAL ELEVATION
SCALE: 1/4" = 1'-0"



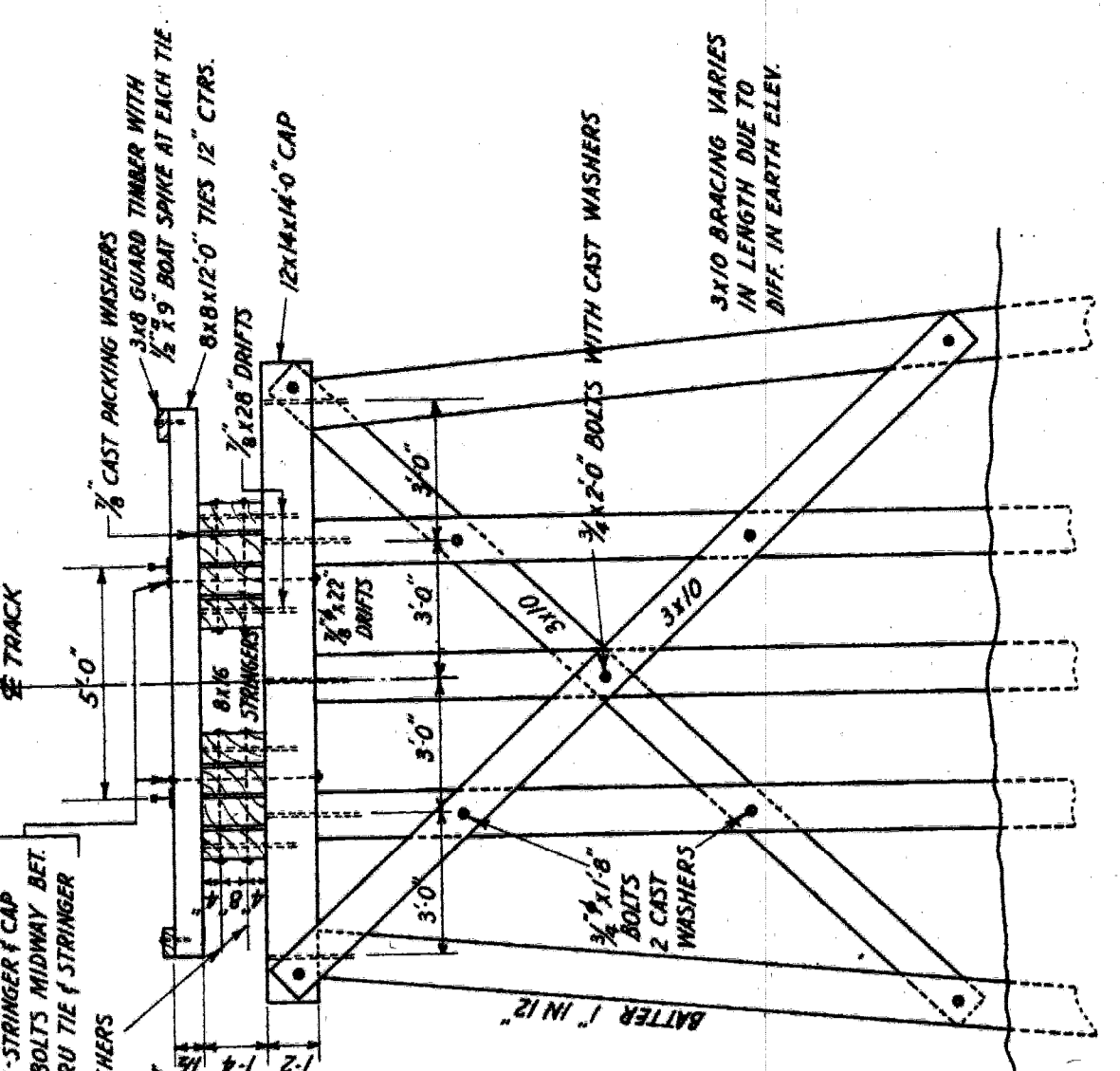
BENTS NO. 578 & 579
BENTS NO. 578 & 579
BENTS NO. 578 & 579
SCALE: 1/4" = 1'-0"

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



TYPICAL ANCHORAGE & BEAR. DETAIL
SCALE: 1/4" = 1'-0"

WALKWAY DETAILS
NOTE: PROVIDE WALKWAY FOR EACH TRACK.

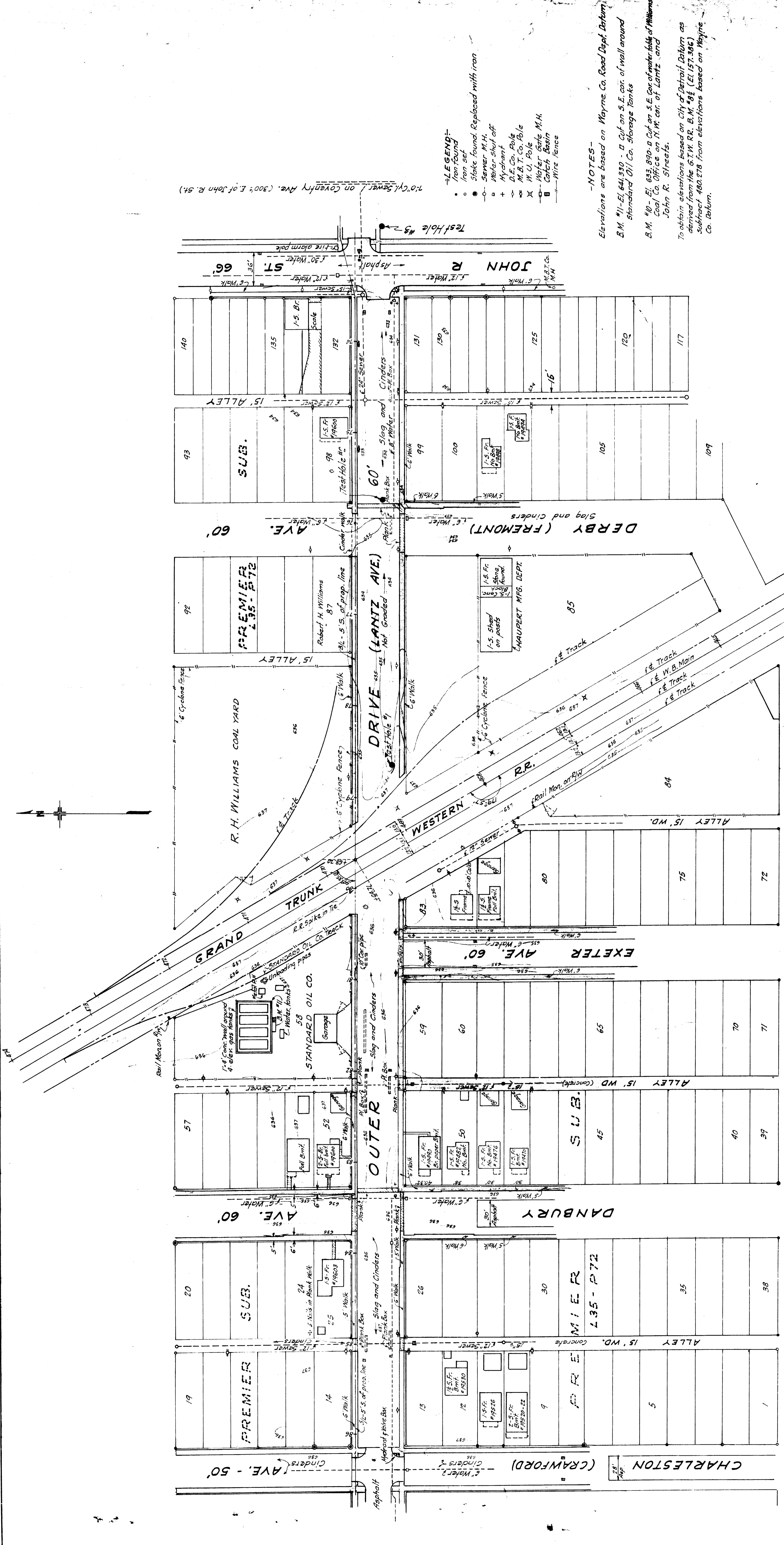


DETAILS - SQUARE BENTS
BENTS NO. 1, 2, 3, 4, 10, 11, 12, & 13
SCALE: 1/4" = 1'-0"

P.W.A. DOCKET NO. MICHIGAN 1084-F.
GRAND TRUNK WESTERN RAILROAD
OUTER DRIVE GRADE SEPARATION
DETROIT, MICHIGAN
DETAILS - TEMPORARY TRESTLE
SCALE: 1/4" = 1'-0"

DR. M.J.B. JR. CHIEF ENGINEER
TR. E.R.S. DETROIT, MICH.
C.E.P.A.W. APRIL 11, 1938.

NOTE: CUTOFF ELEVATIONS SHOWN ARE BASED ON NOMINAL TIMBER SIZES. IF TIMBER SIZES RUN LESS THAN NOMINAL, ADJUST PILE CUTOFFS TO LEAVE BASE OF RAIL ELEV. AS SHOWN.



- LEGEND**
- Iron found
 - Stake found. Replaced with iron
 - Meter M.H.
 - Meter Shut off
 - Hydrant
 - D.E. Co. Pole
 - M.B.T. Co. Pole
 - M.C. Pole
 - Water Gate M.H.
 - Catch Basin
 - Wire Fence

NOTES

Elevations are based on Wayne Co. Road Dept. Datum.

B.M. #11-El. 641.350 - 0 Cuff on S.E. cor. of wall around Standard Oil Co. Storage Tanks

B.M. #10-El. 633.990 - 0 Cuff on S.E. cor. of water table of Williams Coal Co. Office on N.W. cor. of Lantz and John R. Streets.

To obtain elevations based on City of Detroit Datum as derived from the G.T.W. RR. B.M. #83 (El. 157.386) subtract 480.278 from elevations based on Wayne Co. Datum.

P. W. A. DOCKET NO. MICH. 1084 F
Field Notes in Book No. 287

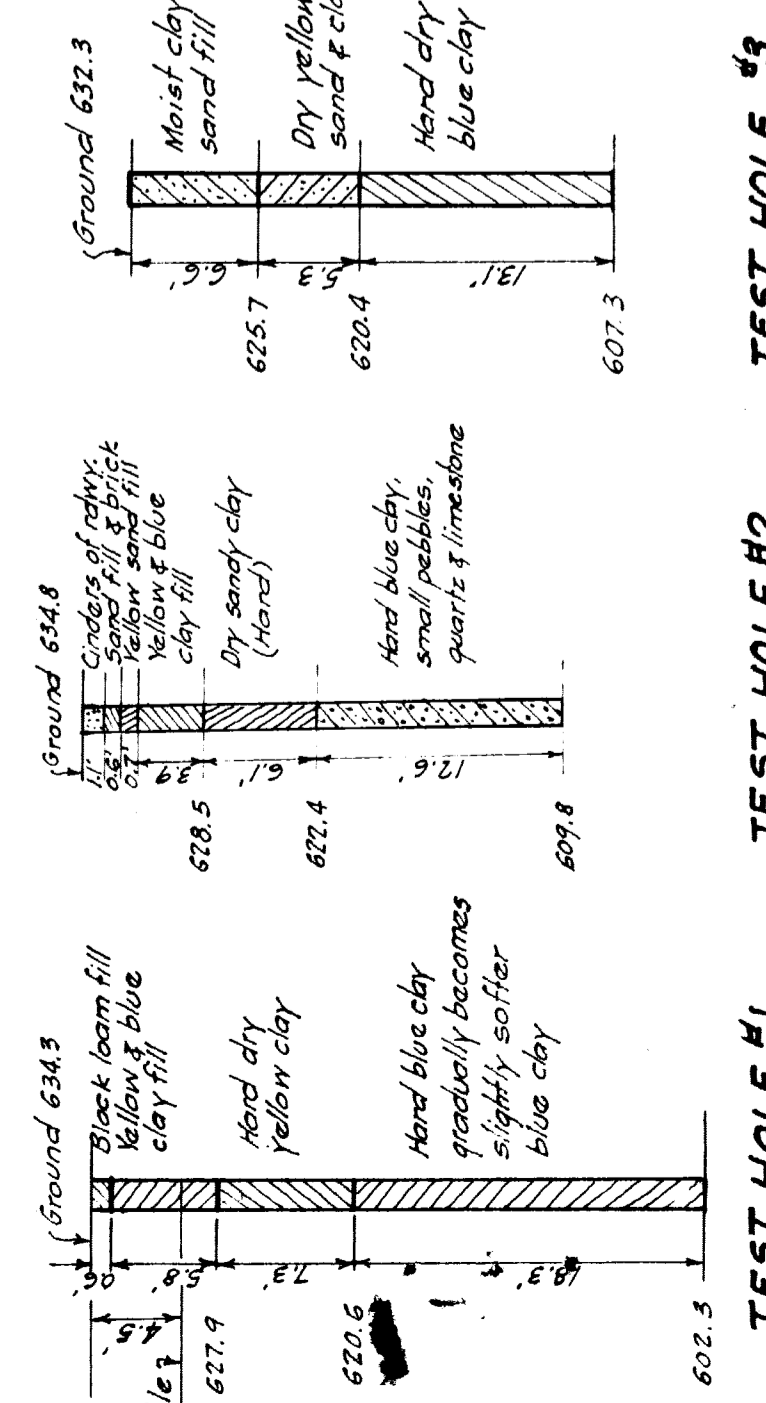
BOARD OF
WAYNE COUNTY ROAD COMMISSIONERS
DETROIT, MICHIGAN
MICHAEL J. O'BRIEN
CHAIRMAN
EDWARD N. HINES
VICE-CHAIRMAN
PETER M. SCHOENBERG
COMMISSIONER

SURVEY PLAN
OUTER DRIVE-G.T.W. R.R.
(HOLLEY DIV.)
GRADE SEPN.

DESIGNED BY
DATE: Sept. 15, 1936 SCALE: 1" = 50'
DRAWN BY: J.M.C.
CHECKED BY: J.M.C.
APPROVED: [Signature]
DATE: [Signature]

REVISIONS	CHECKED BY	DATE
1	J.M.C.	11/18-36
2	J.M.C.	1/15-37
3	J.M.C.	7/15-38

JOB NO.
201



TEST HOLE #1
41 S. of R. Sta. 18+65

TEST HOLE #2
30 S. of R. Sta. 15+15

TEST HOLE #3
30 S. of R. Sta. 12+13