

NOTES:
Blow Count - Indicates number of blows required to drive a sampler 6" (unless otherwise noted) using a 140 lb hammer falling 30".
P - Indicates sampler was pushed.
S - Indicates Transverse Shear Resistance in lbs./sq. ft. as determined by M.S.H.D. Standard Test.

GENERAL NOTES:
The work covered by these plans includes construction of the proposed bridge and placing slope protection to the limits shown. All other work is included in the Road Plans which are part of this contract.
Removal of fences and buildings, and other structures within the limits shown shall be the contractor's responsibility. The contractor shall locate all utility underground utilities prior to starting work, and shall conduct his own survey in such a manner as to insure that these utilities are not required relocation will not be disturbed.
Topography shown hereon represents conditions existing at the time the field survey was made. However, these conditions may have been materially altered by the operations of others before the work has been started.
Unsuitable material under Abutments A & B shall be removed and backfilled with Granular Material Class III compacted to 100% of its maximum unit weight.

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
ROOSEVELT AVE. PEDESTRIAN BRIDGE
CROSSING THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF SITE

APPROVED: _____
DESIGN SUPERVISING ENGINEER

APPROVED: _____
DESIGN ENGINEER

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

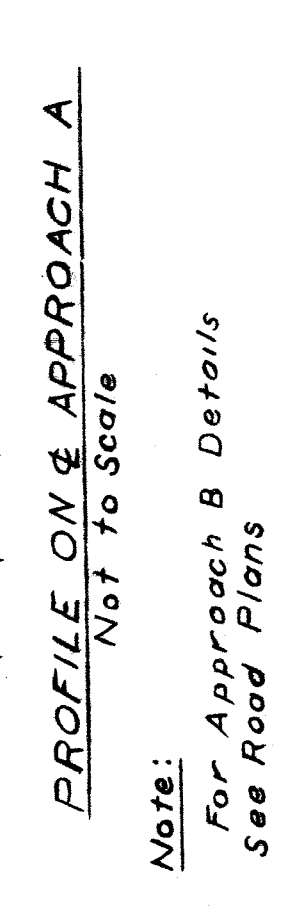
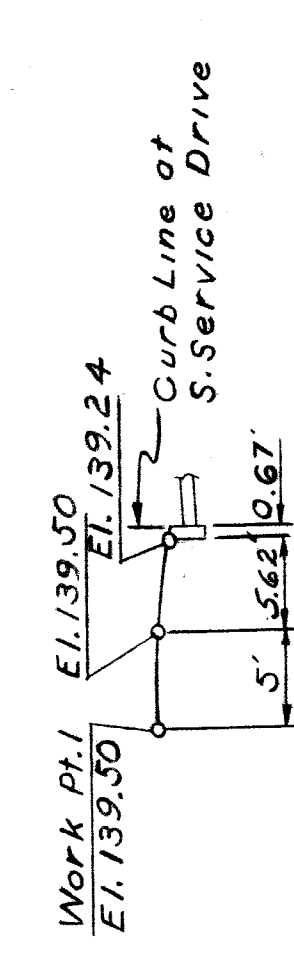
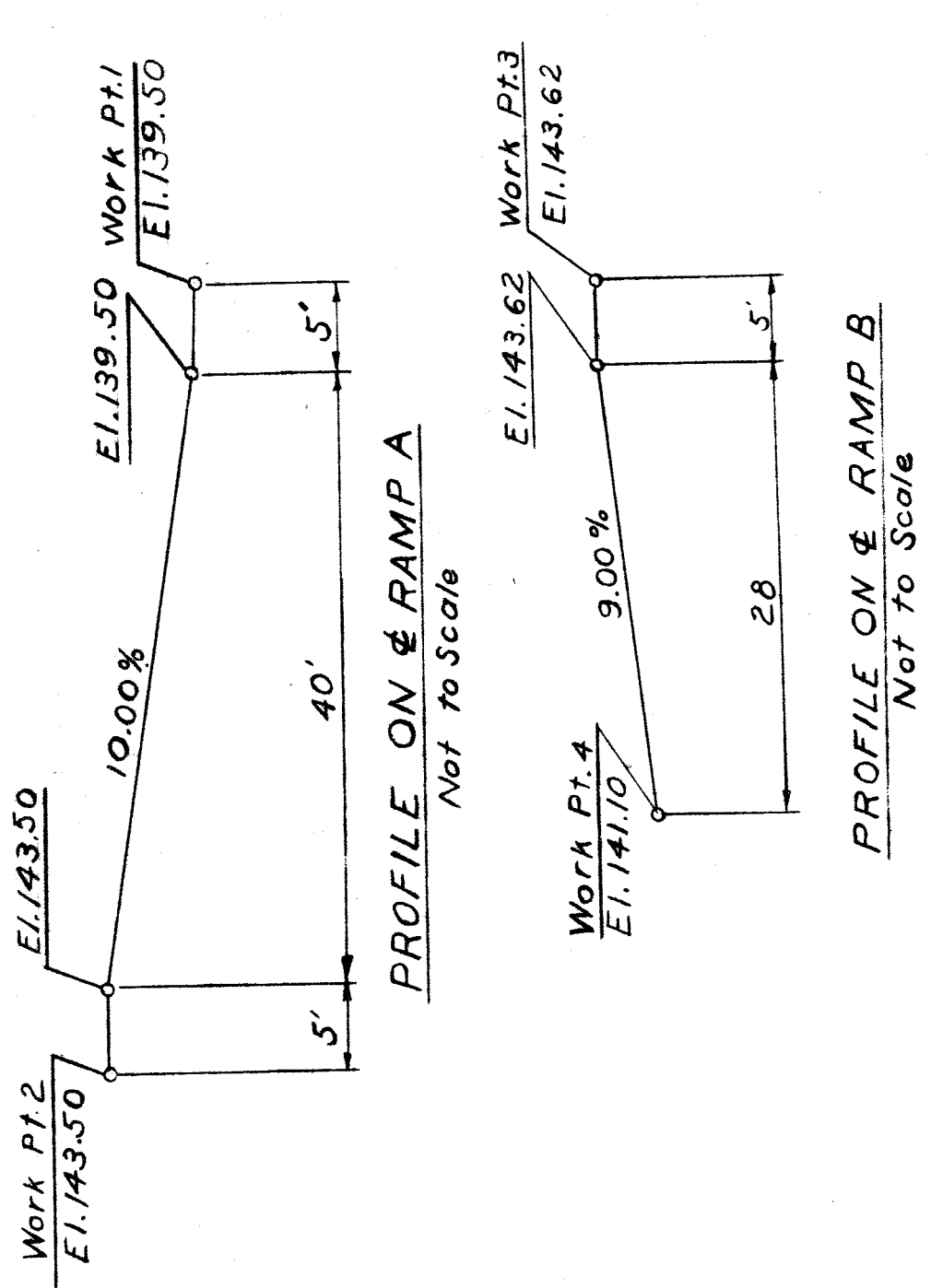
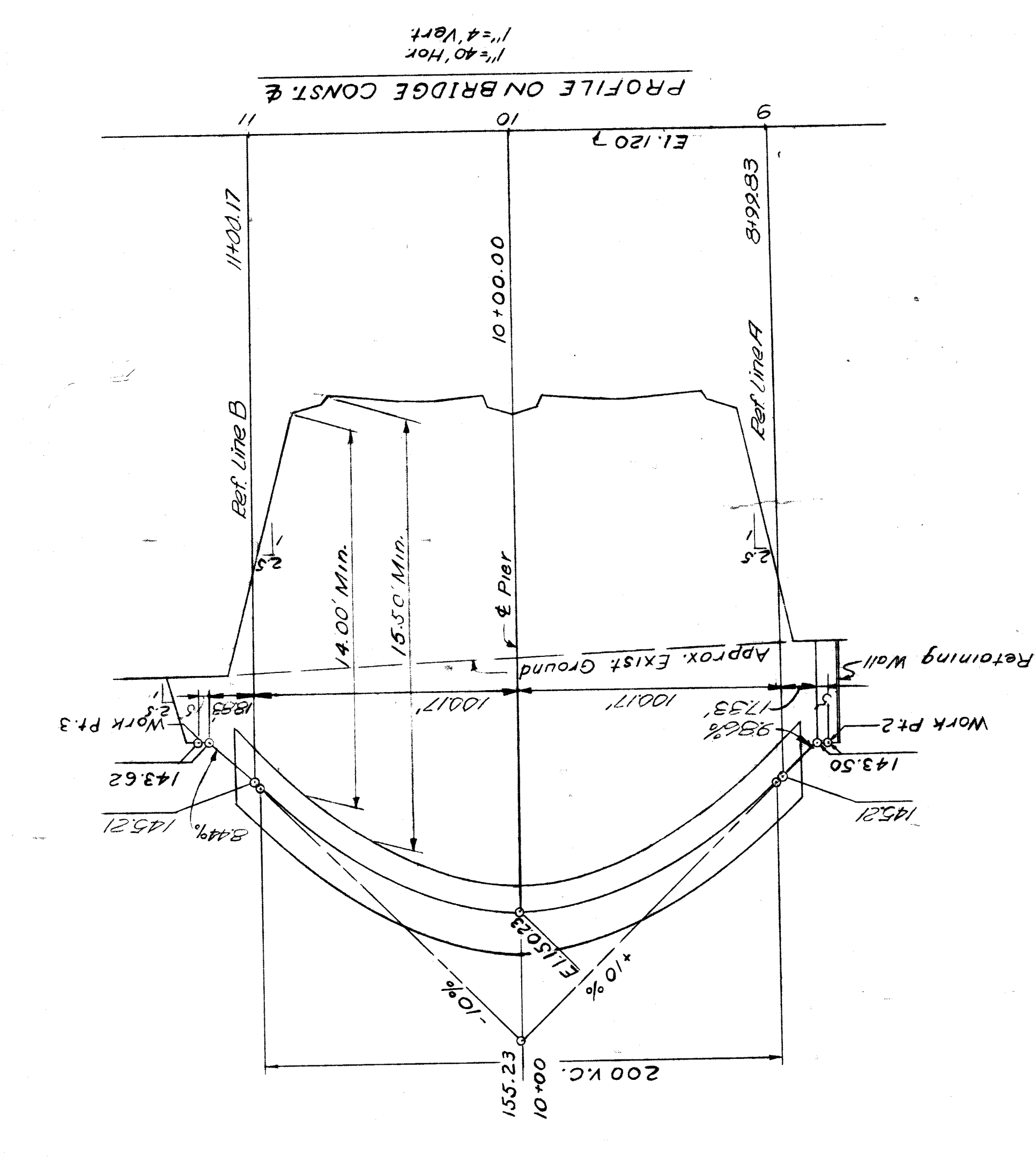
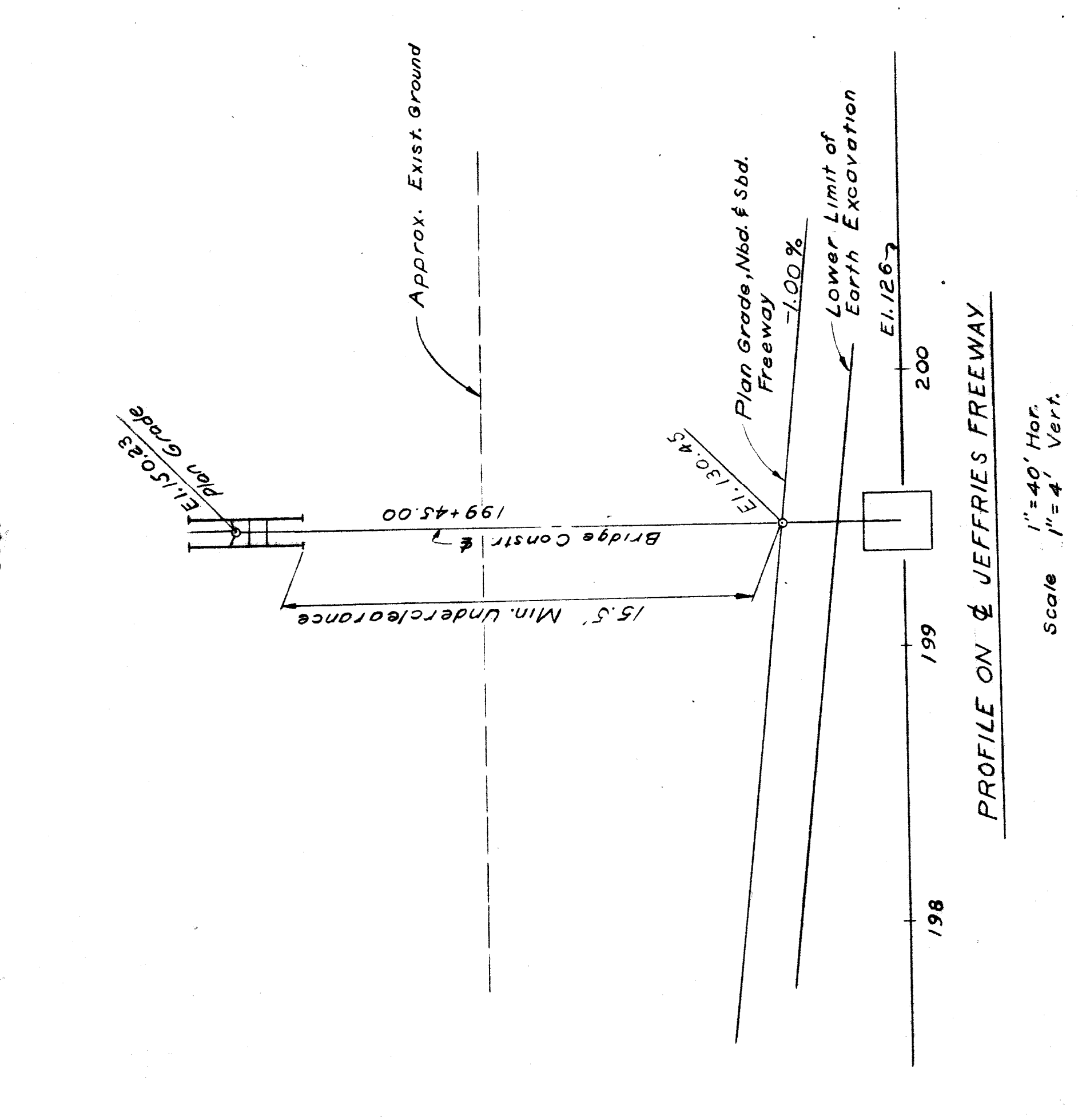
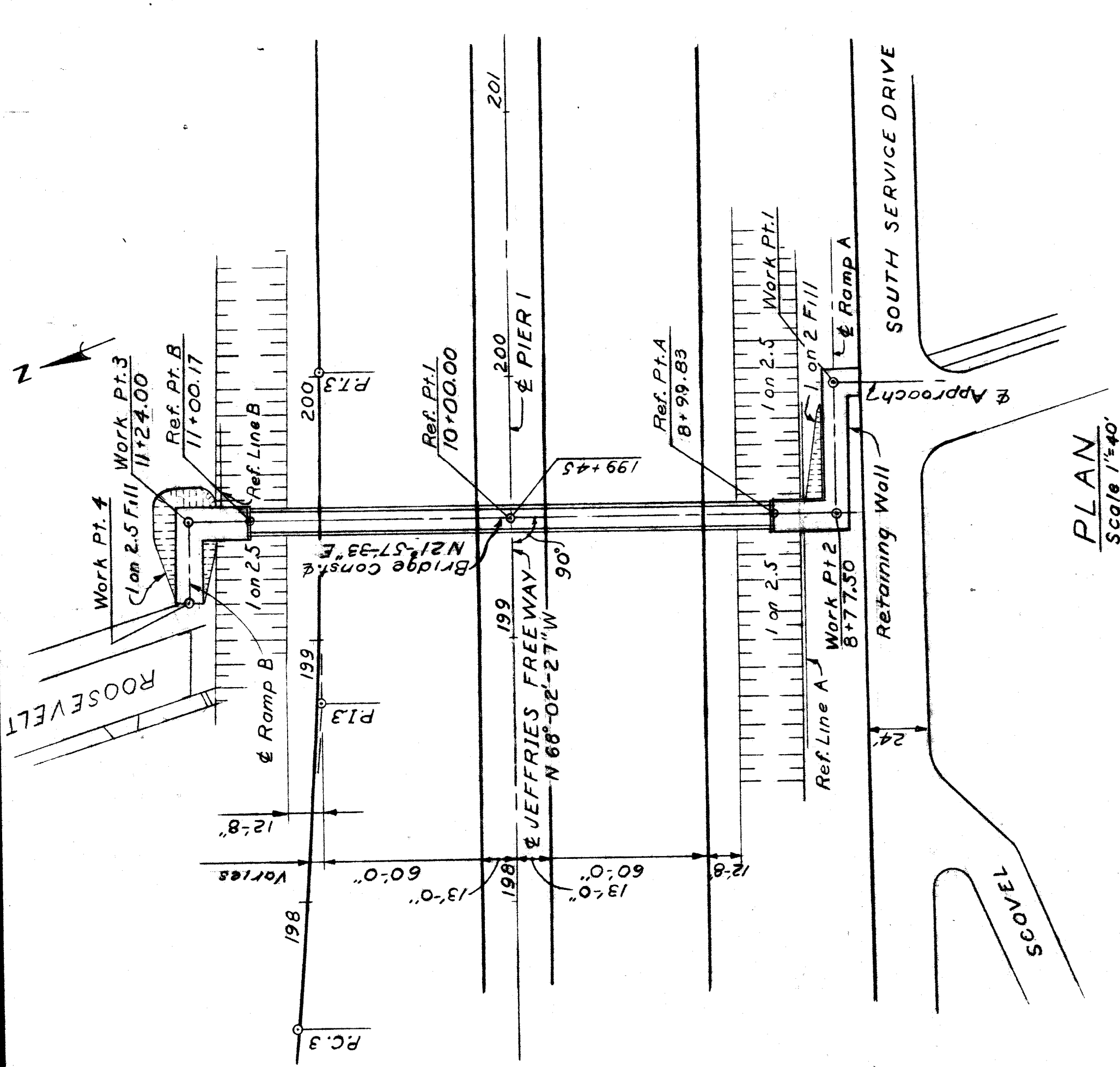
JOB NO.
PW 990(3)

DATE

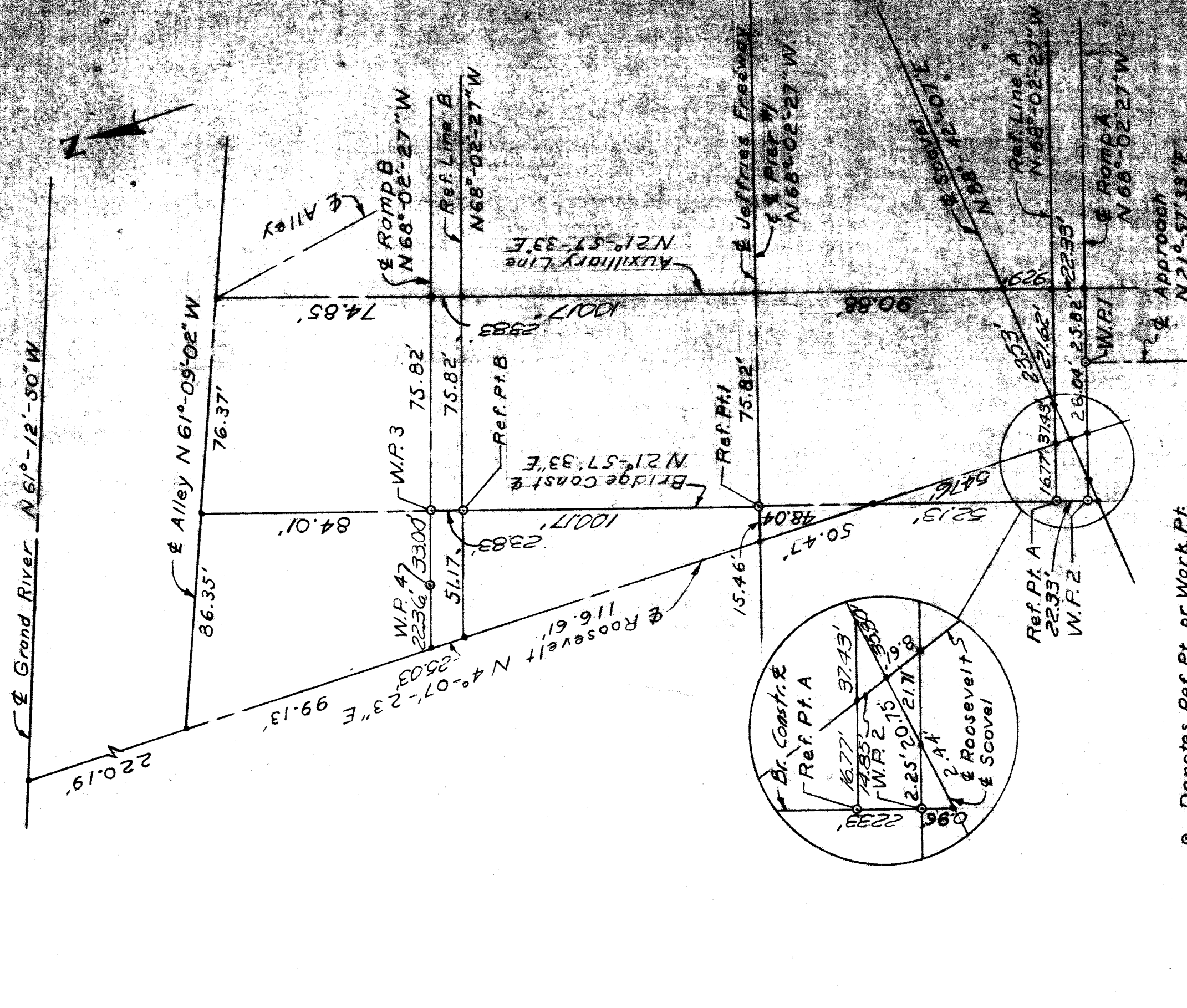
NO. _____
BY _____
DESCRIPTION

ROAD DIST. 2-6
DRAWN BY 2-6
CHECKED BY 2-6
DATE 2-6
SHEET 2-6

P06 of 821231



Note:
For Approach B Details
See Road Plans



o Denotes Ref. Pt. or Work Pt.
• Denotes intersection

ALIGNMENT DIAGRAM
No Scale

Construction Bench Marks:
C.B.M. 70 El. 141.18 Arrow on Hydrant NE Corner Eastern and Roosevelt.
C.B.M. 71 El. 144.94 Arrow on Hydrant N.W. Corner Roosevelt and Grand River.
C.B.M. 72 El. 143.21 Arrow on Hydrant N.W. Corner Scovel and Tofft.
Elevations refer to City of Detroit Datum, +79.703 feet above sea level.

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APPROVED: *[Signature]* STRUCTURAL ENGINEER
JOB NO. PW 990(3)

NO.	REVISIONS	DATE	BY

DESIGN SUPERVISING ENGINEER
APPROVED: _____
DESIGN ENGINEER
APPROVED: _____

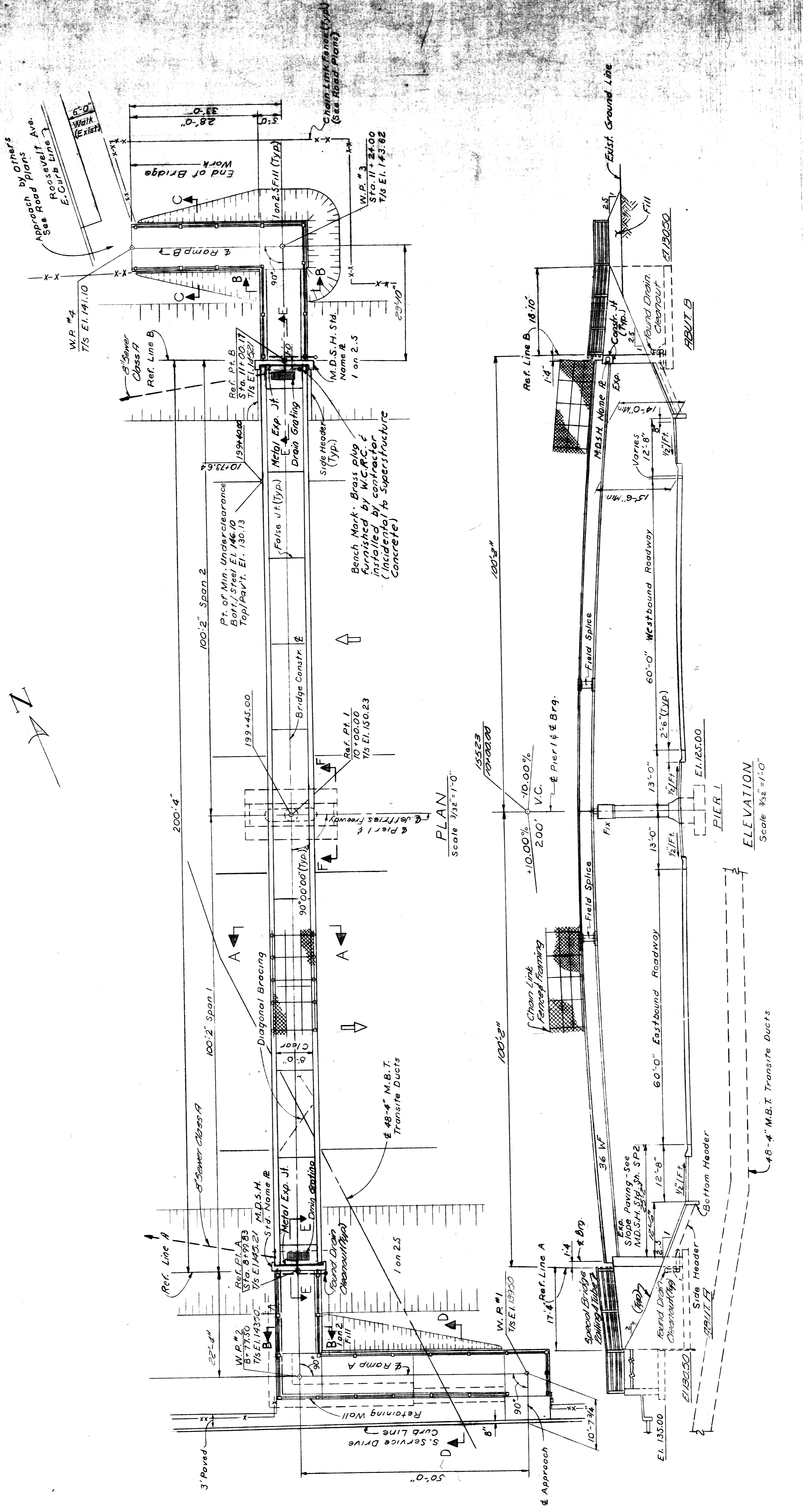
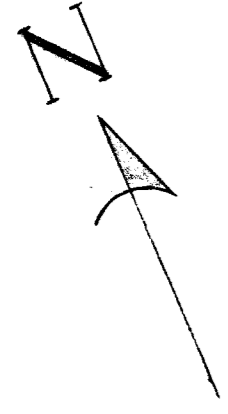
MICHIGAN STATE HIGHWAY DEPARTMENT
ROOSEVELT AVE. PEDESTRIAN BRIDGE
CROSSING THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

P06 of 82123J

Scale 1/4" = 4' Hor.
1" = 4' Vert.

PROFILE ON & APPROACH A



PLAN
Scale 3/32"=1'-0"

ELEVATION
Scale 3/32"=1'-0"

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
ROOSEVELT AVE PEDESTRIAN BRIDGE
CROSSING THE JEFFRIES FREEWAY IN DETROIT
GENERAL PLAN OF STRUCTURE

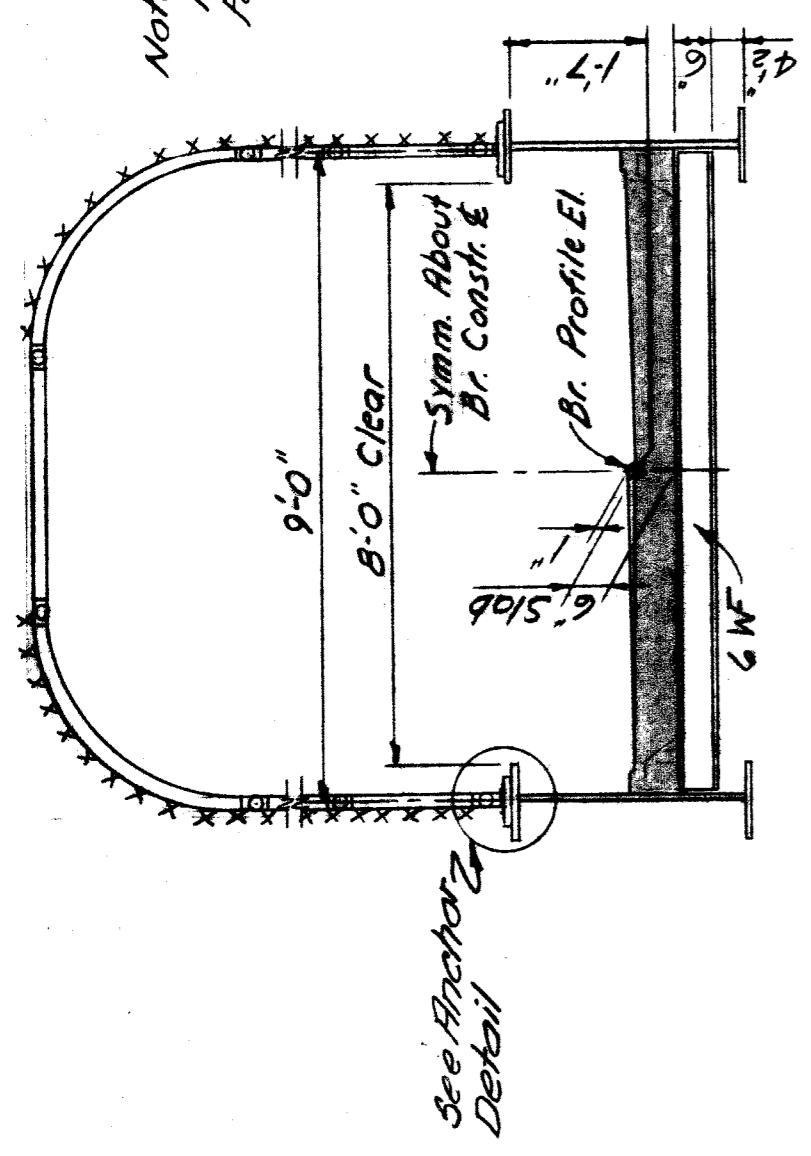
PLANS PREPARED BY
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APPROVED: *[Signature]*
STRUCTURAL ENGINEER
JOB No. PW 990(3)

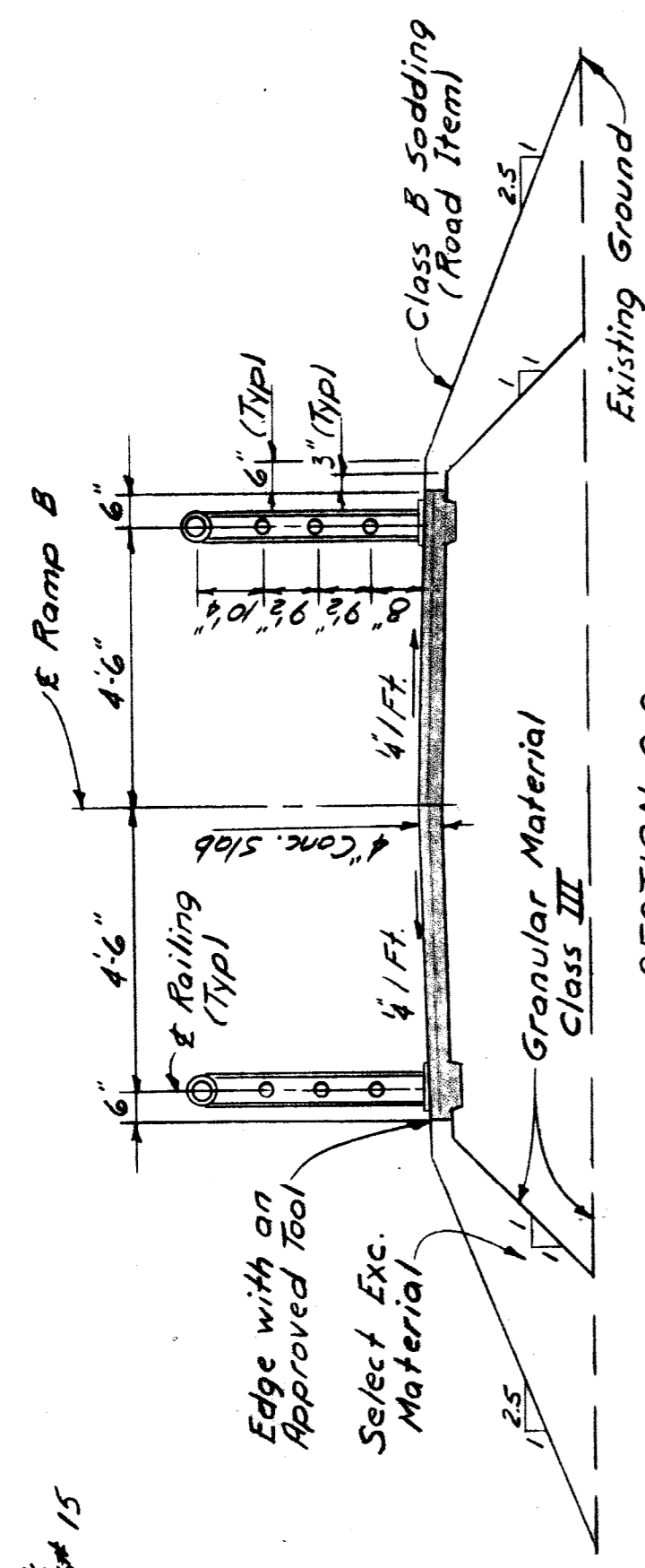
NO.	DESCRIPTION	DATE	BY

APPROVED _____
DESIGN SUPERVISING ENGINEER

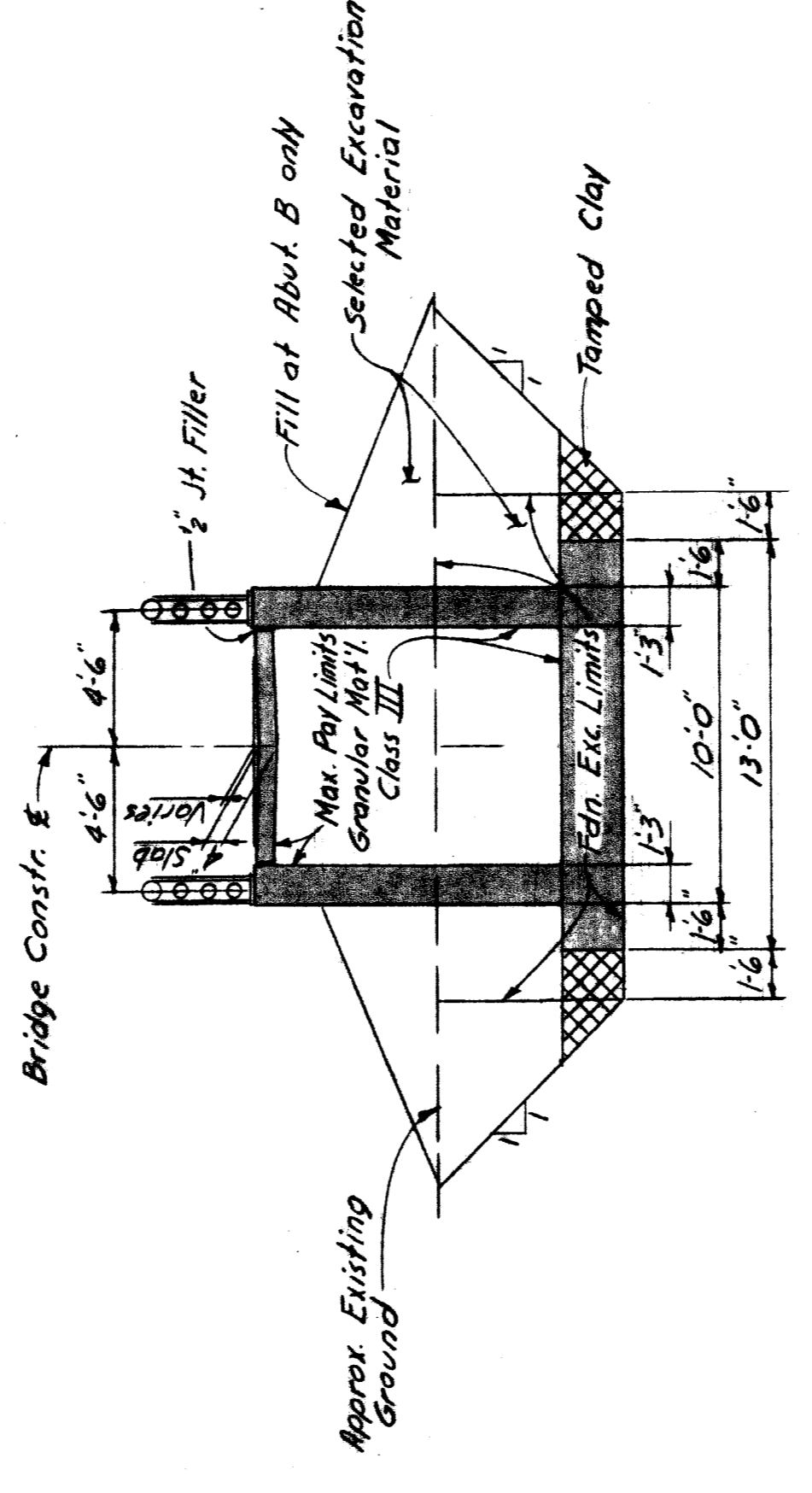
APPROVED _____
DESIGN ENGINEER



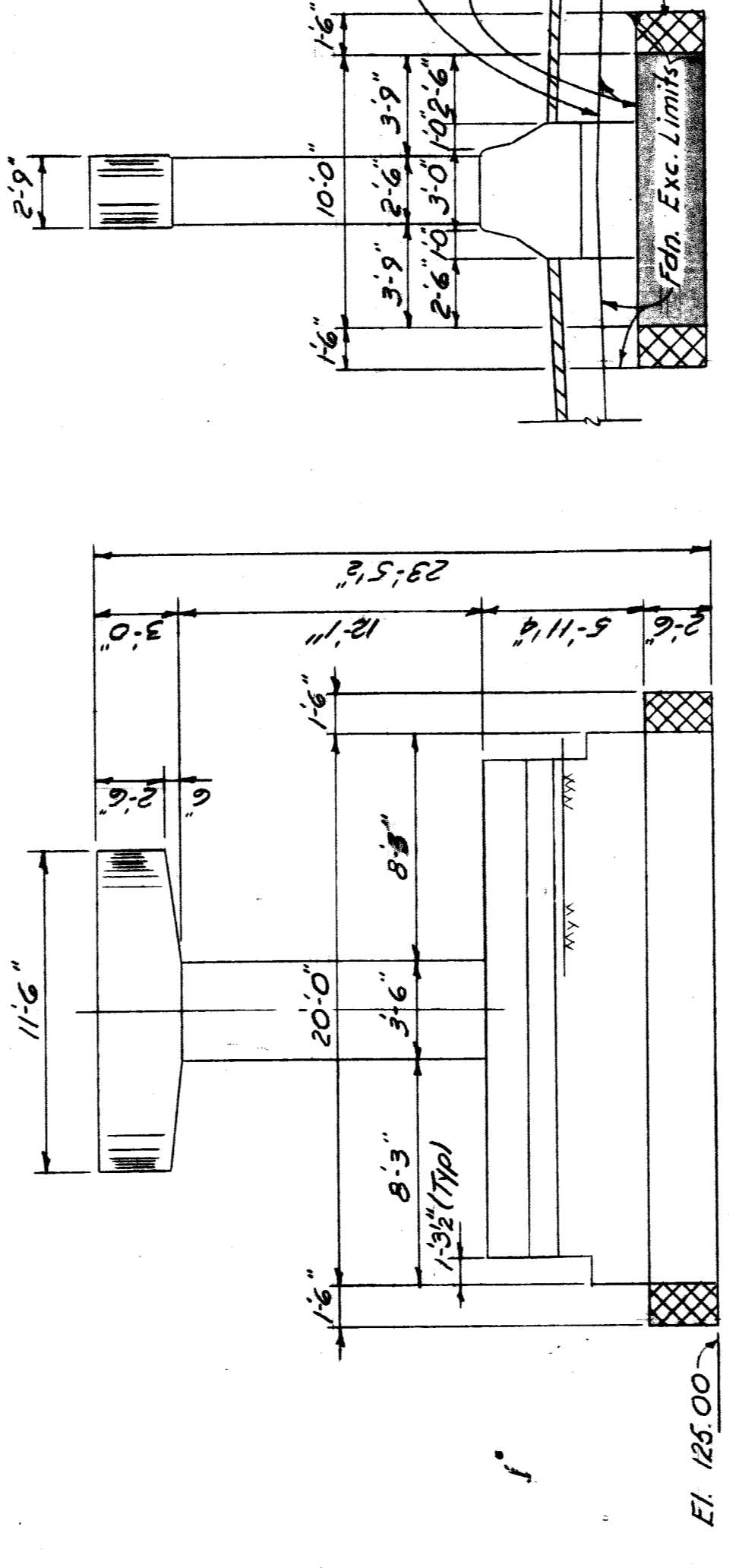
SECTION A-A
Scale: 3/8" = 1'-0"



SECTION C-C
Scale: 3/8" = 1'-0"

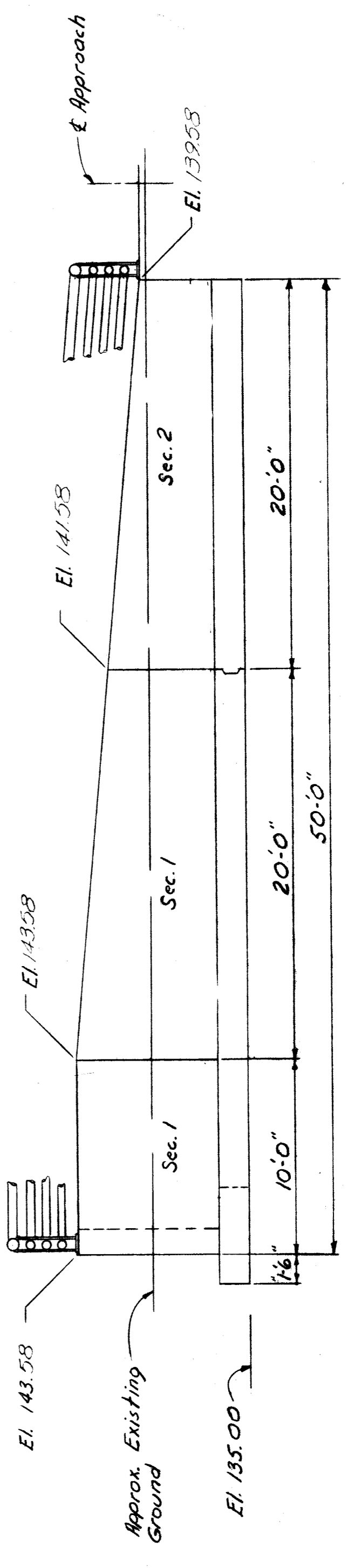


SECTION B-B
Scale: 3/8" = 1'-0"

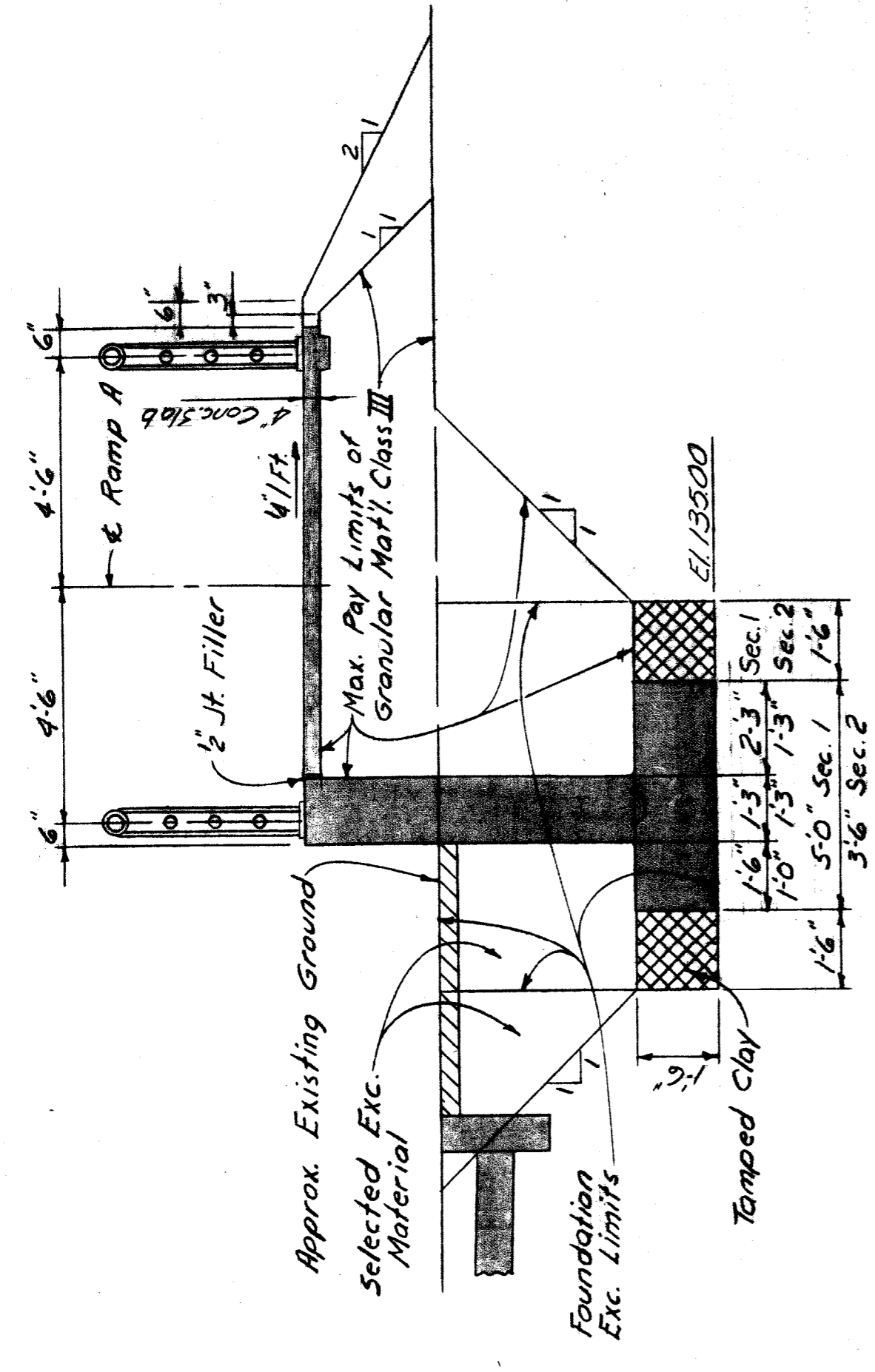


PIER ELEVATION
Scale: 3/8" = 1'-0"

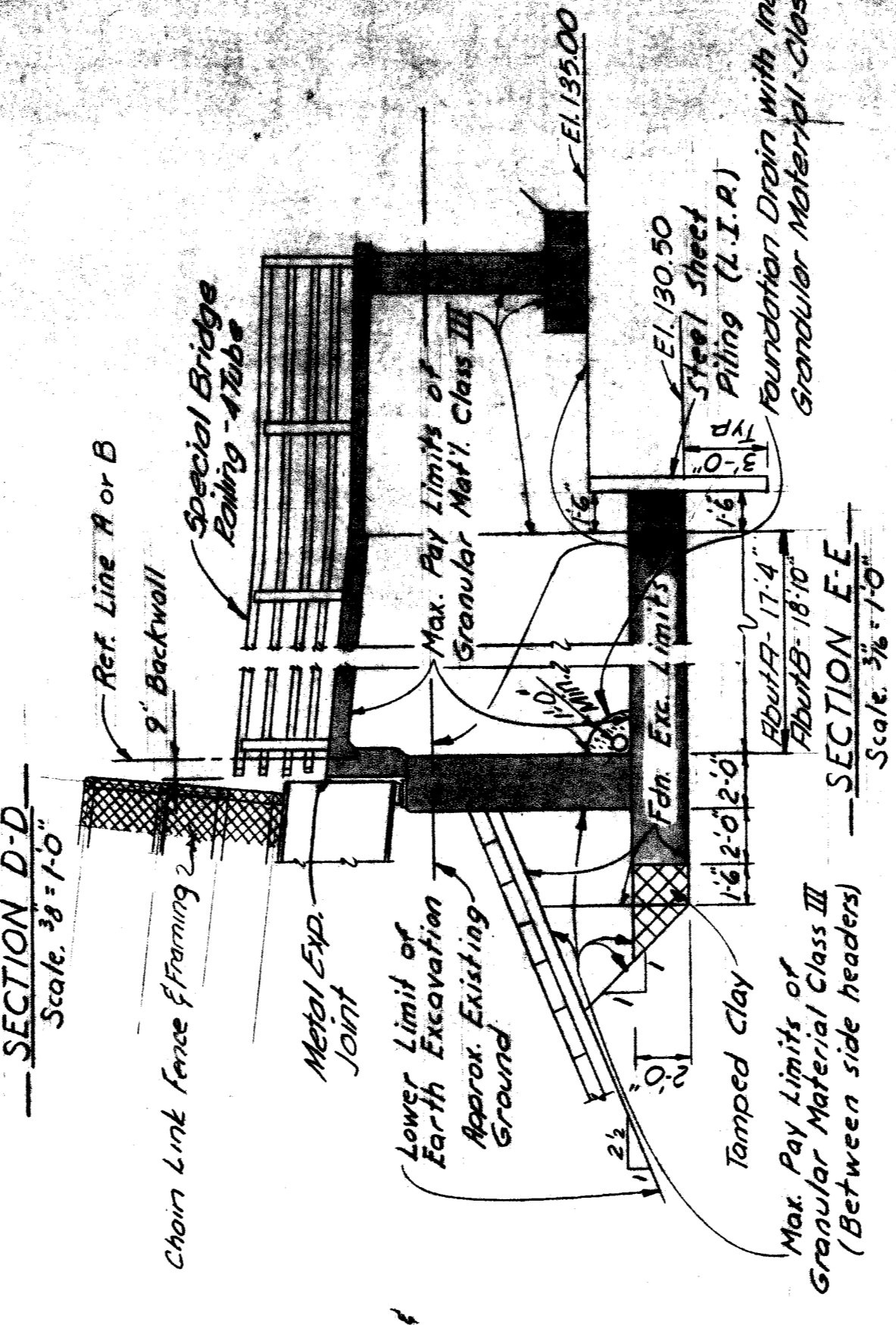
MISCELLANEOUS	QUANTITIES	UNIT	ABUT A	ABUT B	TOTAL
8" Sewer Class A	Lin. Ft.	55	50	105	
Slope Protection Class A	Sq. Yds.	14	14	28	
Slope Protection Header	Lin. Ft.	39	39	78	



ELEVATION AT RAMP A
Scale: 3/8" = 1'-0"



SECTION D-D
Scale: 3/8" = 1'-0"



SECTION E-E
Scale: 3/8" = 1'-0"

GENERAL NOTES:

The design of this structure is based on the M.D.S.H. Specifications for the design of Highway Bridges, 1958 edition and current A.A.S.H.O. Standard Specifications for Highway Bridges.
 Live Load: Concrete Slab & Floor Beams - 85 psf.
 Stringers - 85 psf.
 Alternate Live Loading - One 5 ton truck plus impact.
 The top of slab is parallel to the vertical curve and tangents.
 For details of Slope Protection, see Standard Sheet SP2.
 Tamped Clay and Selected Excavated Material are incidental to Unclassified Excavation.
 Granular Material, Class III is incidental to Foundation Drain
 Granular Material, Class III is included with Road Plans and 210 Cu. Yds.

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

PLANS PREPARED BY
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 BUREAU OF HIGHWAYS AND EXPRESSWAYS

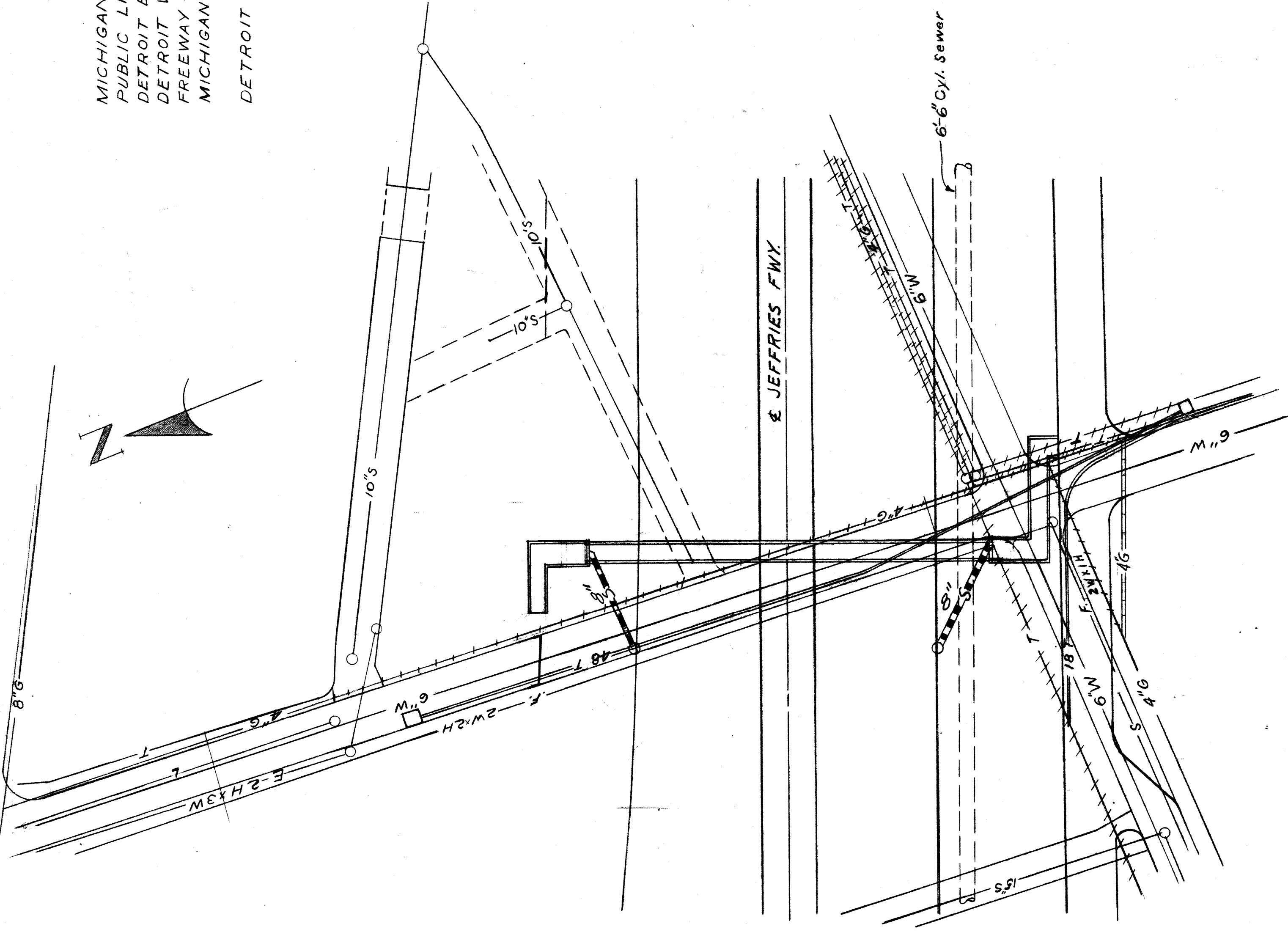
APPROVED: *H. Conrad* STRUCTURAL ENGINEER
 JOB NO. PW 99033

DESIGN SUPERVISING ENGINEER
 APPROVED: _____
 DESIGN ENGINEER
 APPROVED: _____

REVISIONS
 NO. DESCRIPTION DATE BY

ROOSEVELT AVE. PEDESTRIAN BRIDGE
 CROSSING THE JEFFRIES FREEWAY IN DETROIT
 GENERAL PLAN OF STRUCTURE

POB of 82123J



SITUATION PLAN
Scale 1"=40'

UTILITY

- MICHIGAN CONSOLIDATED GAS
- PUBLIC LIGHTING COMMISSION
- DETROIT EDISON COMPANY
- DETROIT WATER DEPARTMENT
- FREEMAN & CITY OF DETROIT SEWERS
- MICHIGAN BELL TELEPHONE COMPANY
- M.B.T. DUCT TUNNEL
- DETROIT FIRE DEPARTMENT

-LEGEND-

EXISTING

- G —
- L —
- E —
- W —
- S —
- T —
- F —

DELETED OR ABANDONED

- G ---
- T ---

NEW WORK BY OTHERS

- G ---

NEW WORK BY CONTRACTOR

- S ---

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

ROOSEVELT AVE. PEDESTRIAN BRIDGE
CROSSING THE JEFFRIES FREEWAY IN DETROIT

EXISTING UTILITIES AND PROPOSED ALTERATIONS

REVISIONS

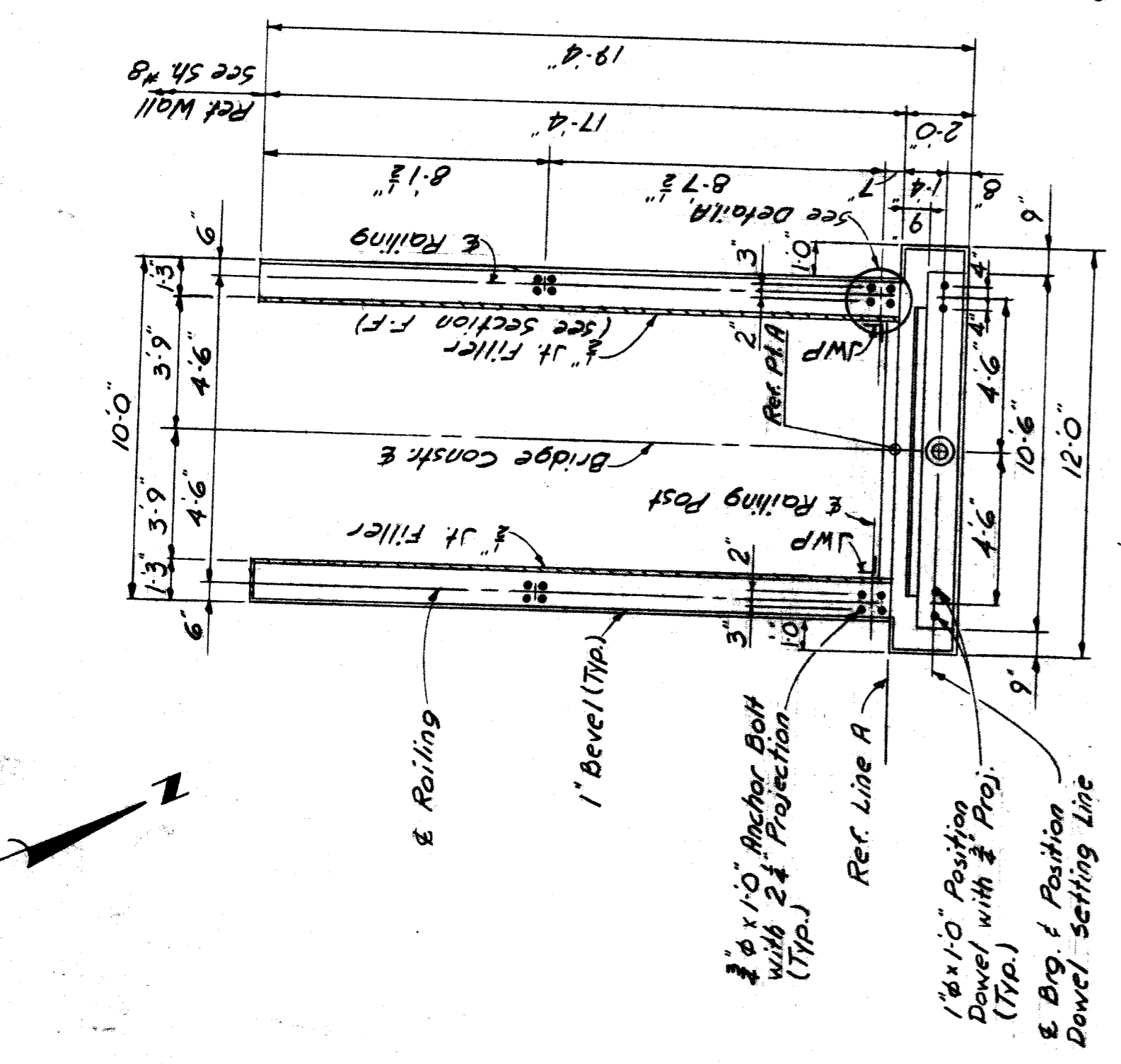
NO.	DESCRIPTION	DATE	BY

APPROVED: *H. Cant*
STRUCTURAL ENGINEER

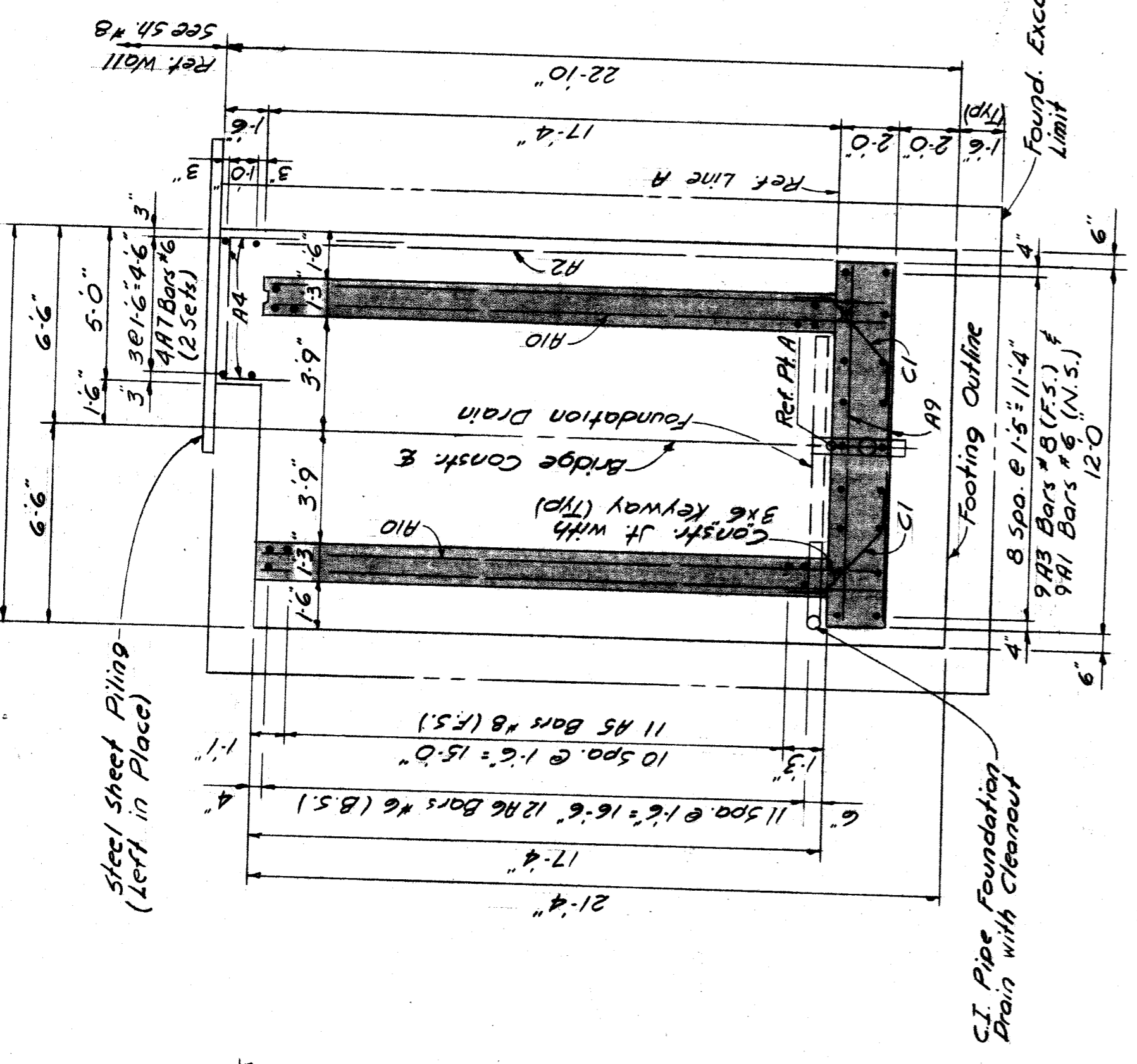
PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEERS OFFICE
BUREAU OF HIGHWAYS AND EXPRESSWAYS

JOB No. **PW 99033**

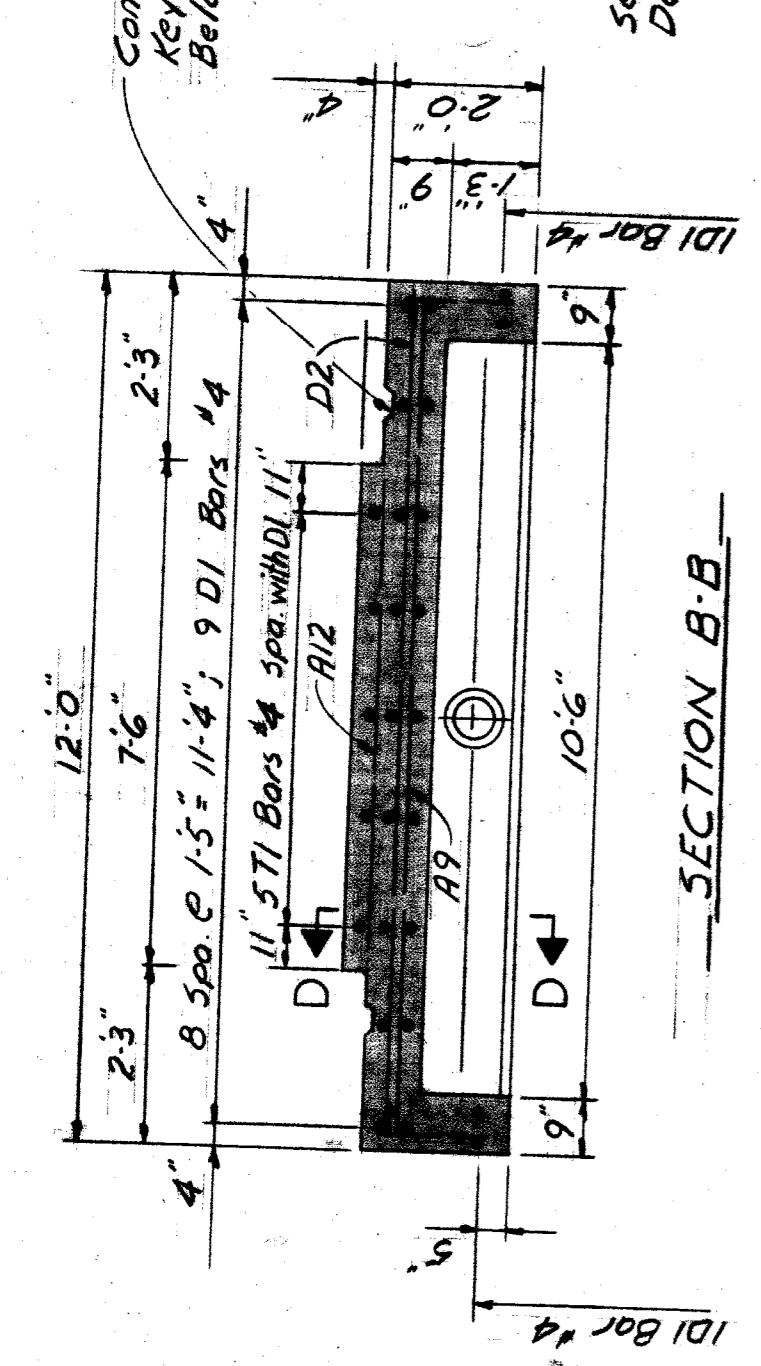
P06 of 82123J



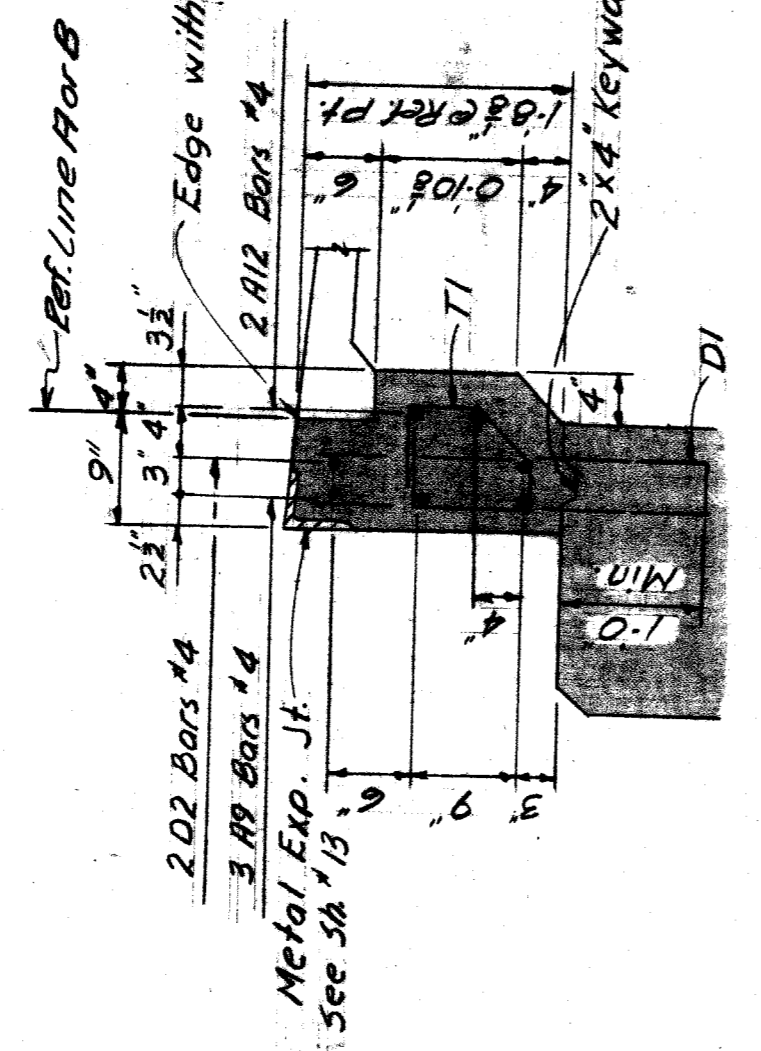
PLAN OF TOP



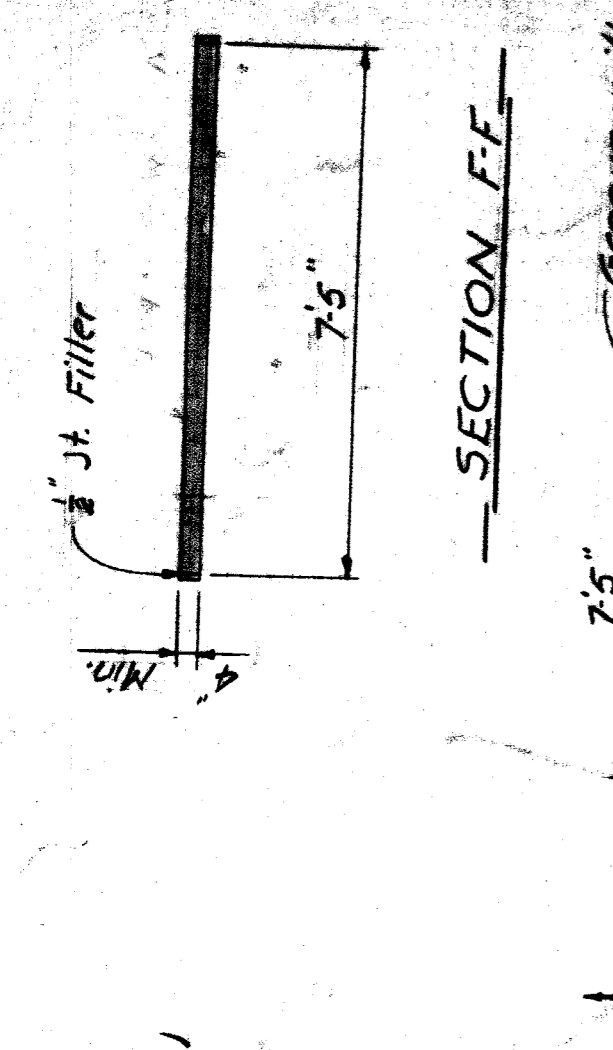
FOUNDATION PLAN



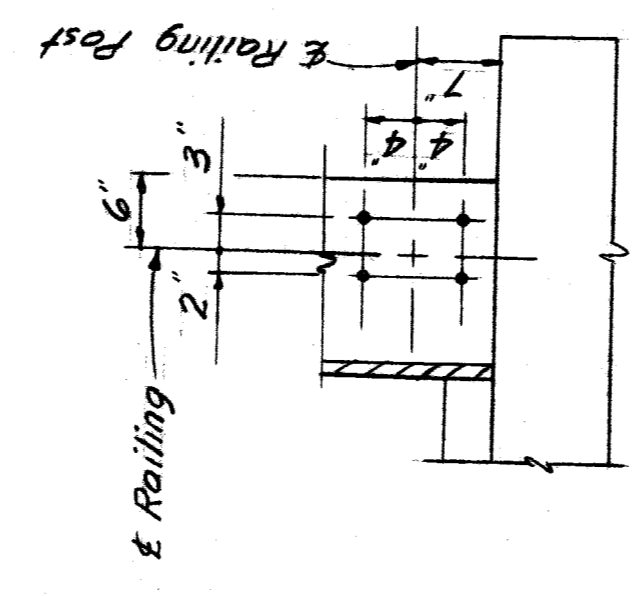
SECTION B-B



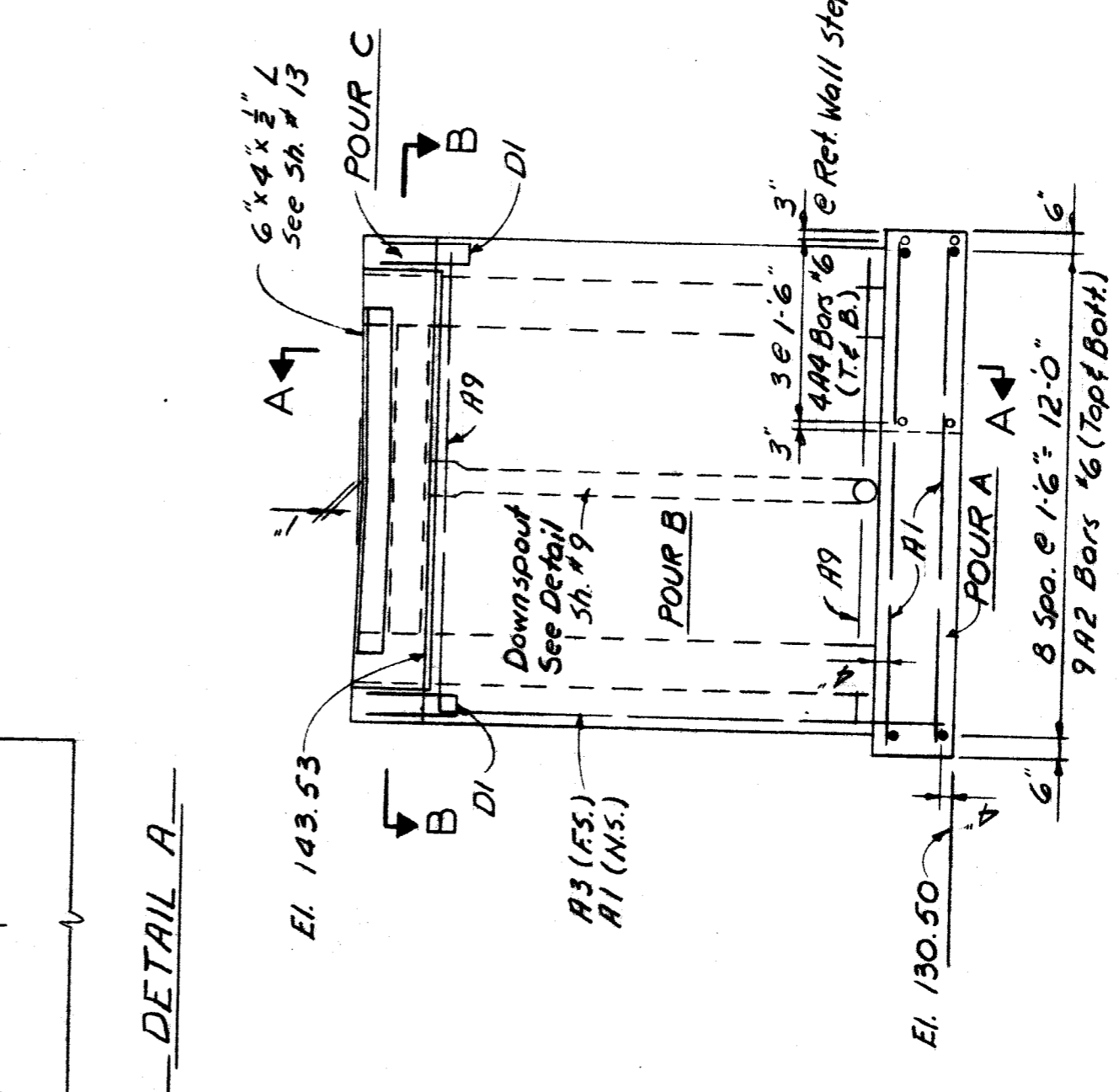
SECTION D-D



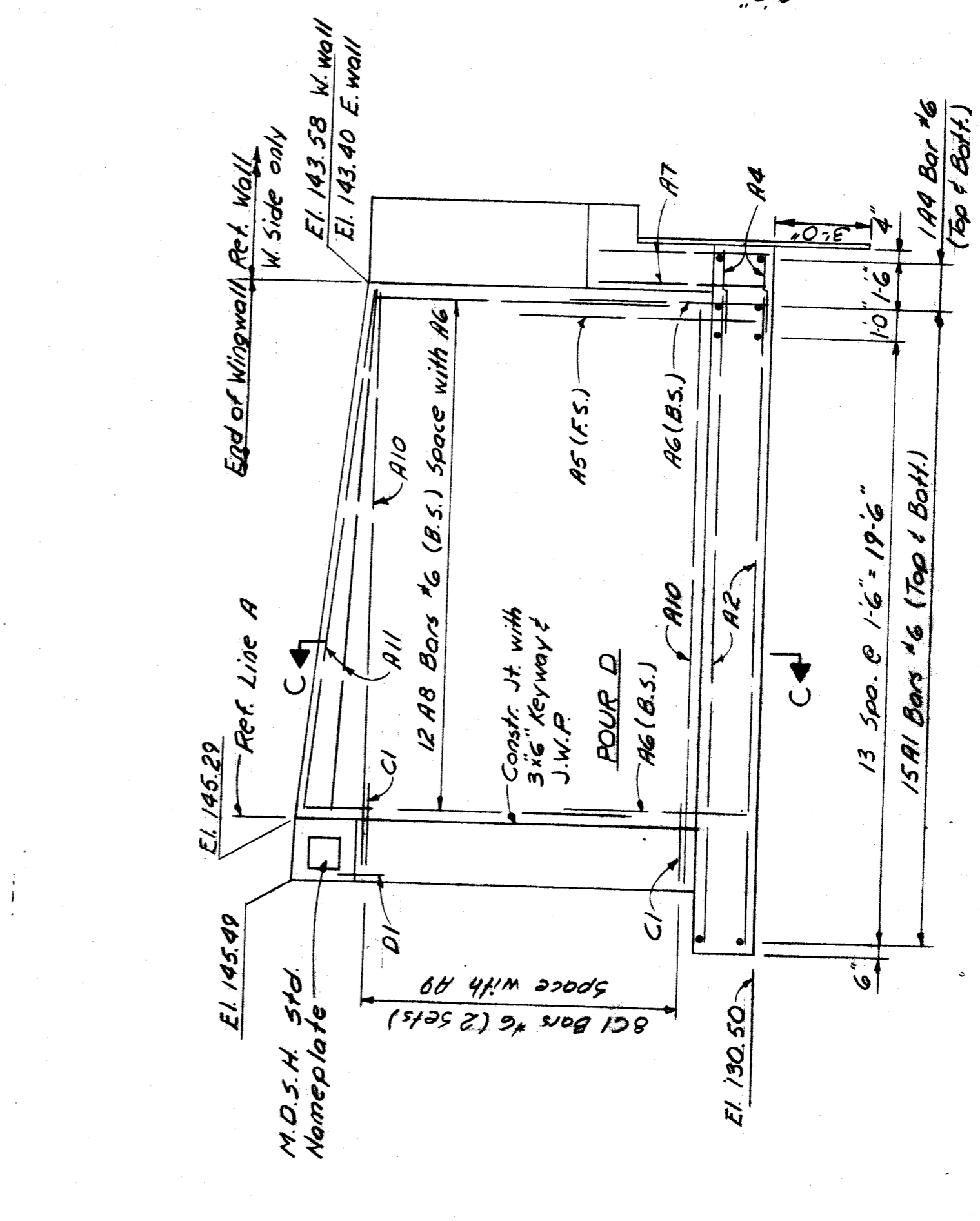
SECTION F-F



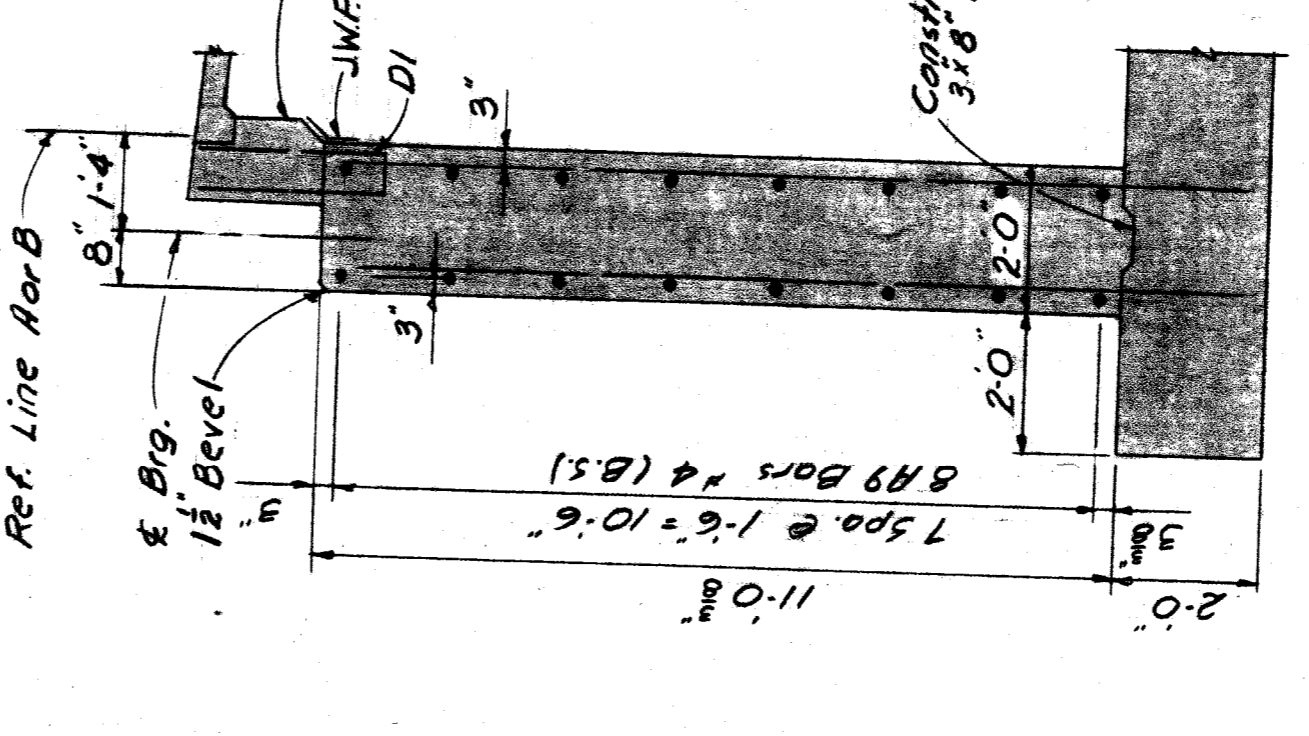
DETAIL A



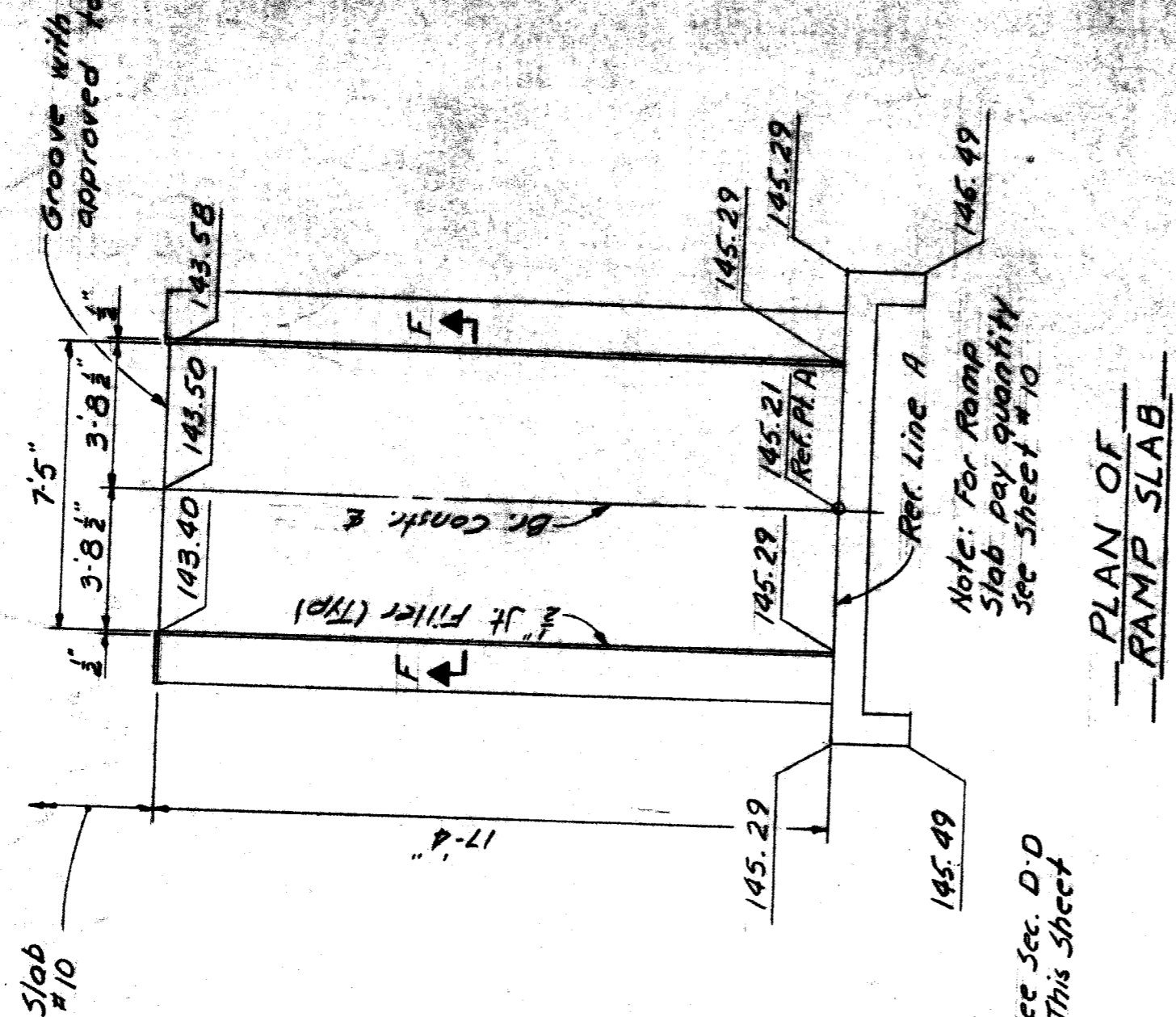
ELEVATION



SECTION C-C



SECTION A-A



PLAN OF RAMP SLAB

GENERAL NOTES:

J.W.P. denotes Joint Waterproofing
N.S. denotes Near Side, F.S. denotes Far Side
B.S. denotes Both Sides
For level, molding and name plate mounting details see Sd. sheet R11 or R12.
Plan of structure or name plate see General
Anchor Bolts and Position Dowels shall be set accurately to a template.
The Project Engineer shall adjust the spacing of reinforcing steel as required to permit placement of anchor bolts, position dowels and
The tops of Abutments A and B shall be given an application of protective sealant coating for concrete prior to placing masonry plates
Maximum average foundation pressure B.L. only = 1750 Lbs./sq. ft.
Maximum foundation pressure D.L. and L.L. = 2600 Lbs./sq. ft.
Cover face of Abut. with clear Protective Coating for Substructure concrete to 6" below finished grade.

Work this sheet with Sheets #9, #10

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
ROOSEVELT AVE. PEDESTRIAN BRIDGE
CROSSING THE JEFFRIES FREEWAY IN DETROIT

ABUTMENT DETAILS

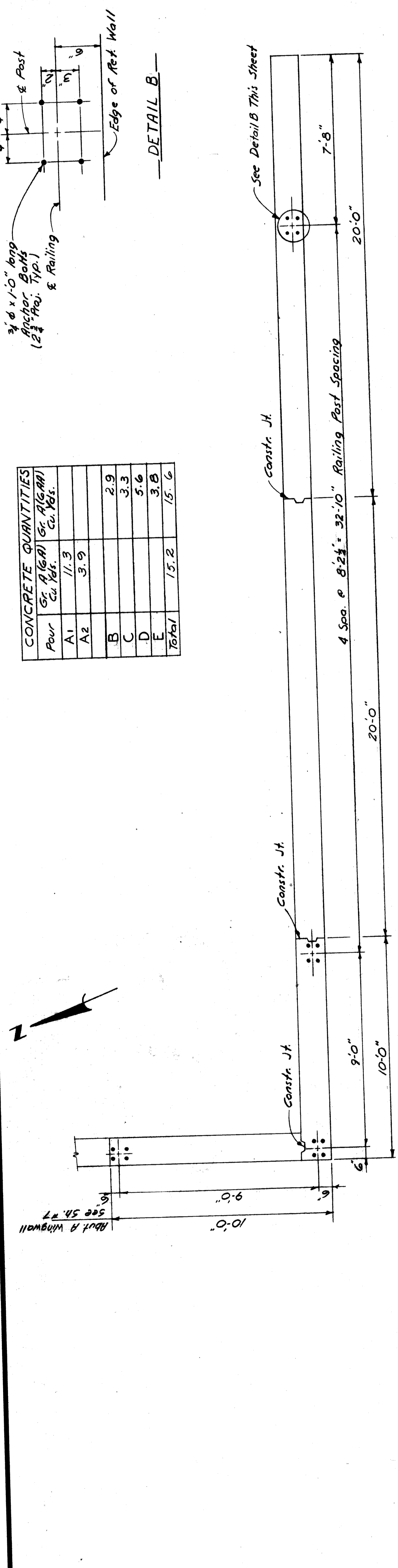
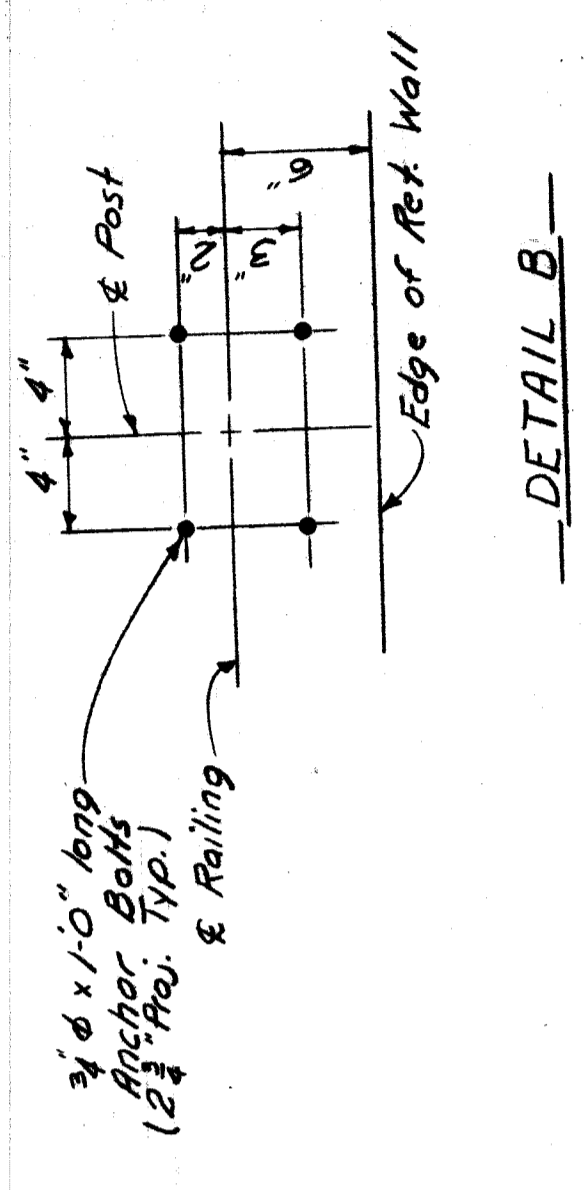
CITY OF DETROIT
ROAD DIST. 2-317
DATE 2-23
CHECKED BY P. G. B. 7-83
DESIGNED BY P. G. B. 7-83

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

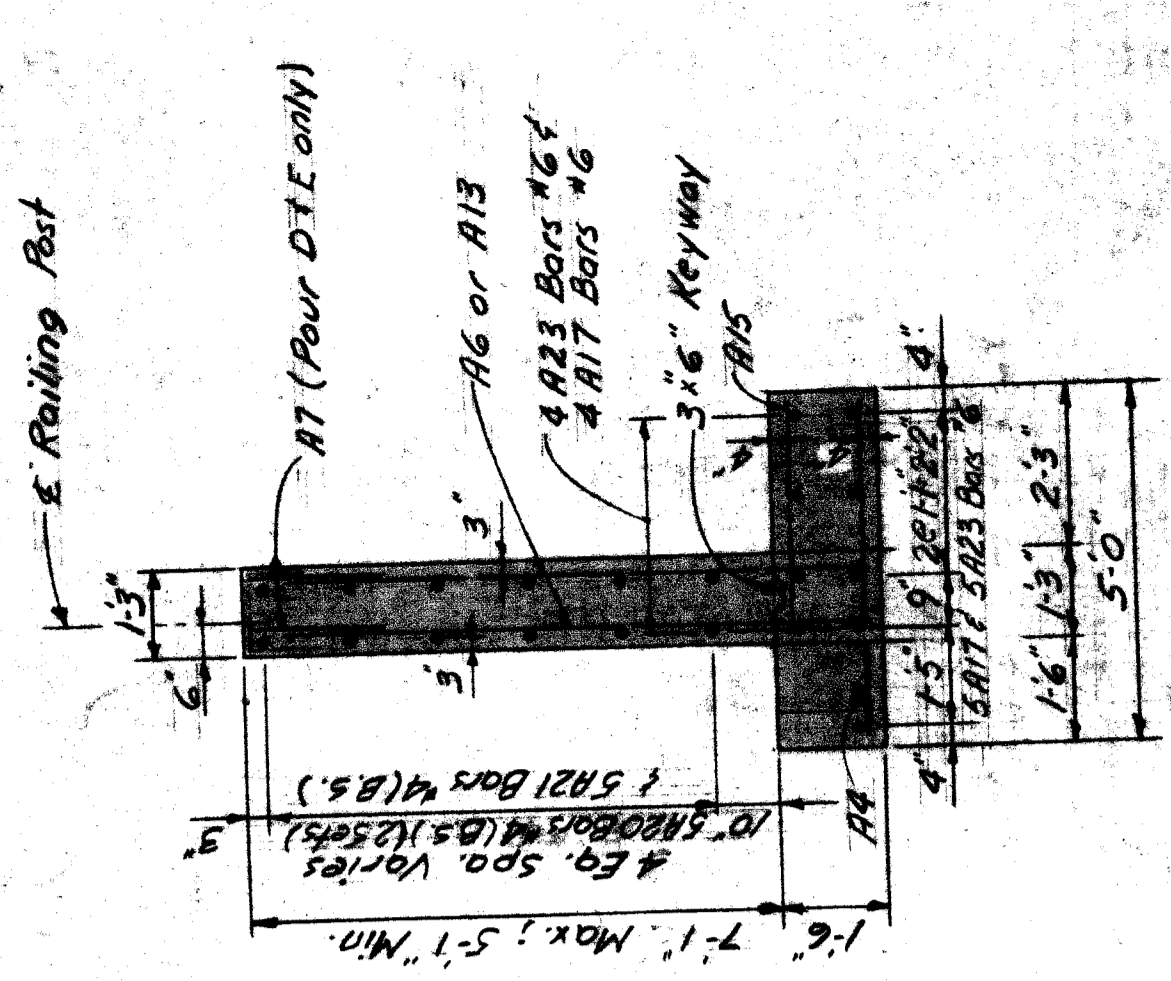
APPROVED: [Signature] STRUCTURAL ENGINEER

JOB No. PW 990(3)

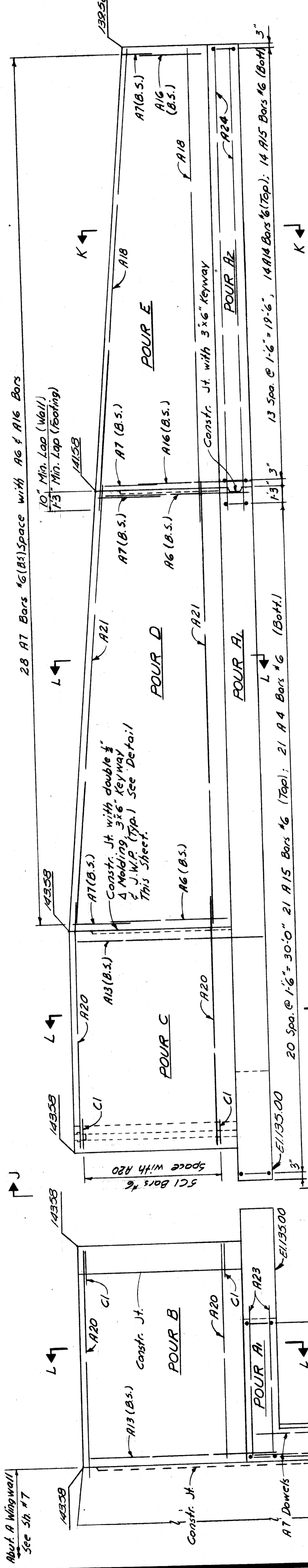
CONCRETE QUANTITIES		
Pour	Cu. Yds.	Gr. A (G.A.P.) Cu. Yds.
A1	11.3	
A2	3.9	
B		2.9
C		3.3
D		5.6
E		3.8
Total	15.2	15.6



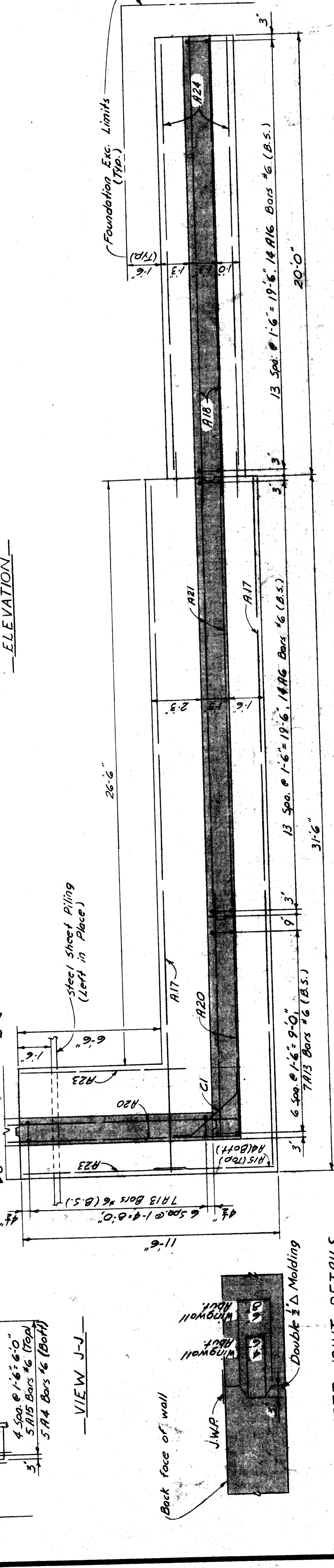
PLAN



SECTION L-L



ELEVATION



VERT. CONSTR. JOINT DETAILS

FOUNDATION PLAN

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

APPROVED: *H. Carl*
 STRUCTURAL ENGINEER

JOB NO. PW 990(3)

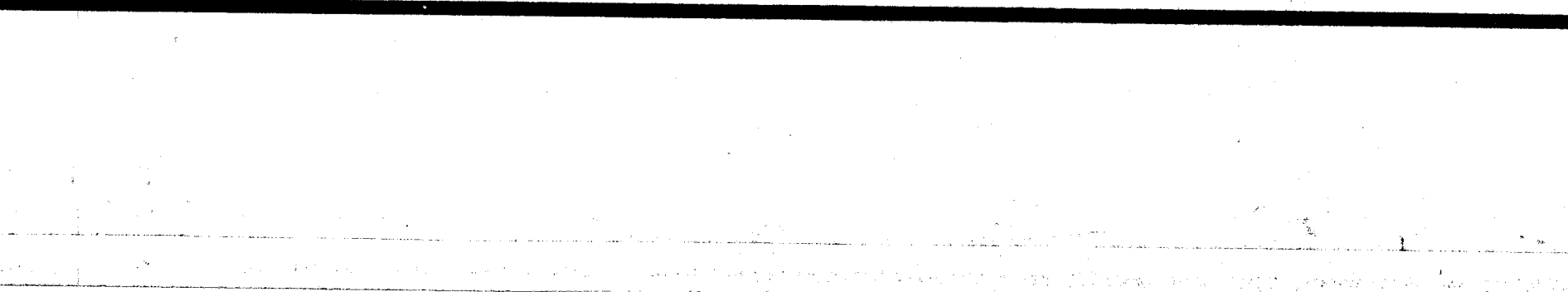
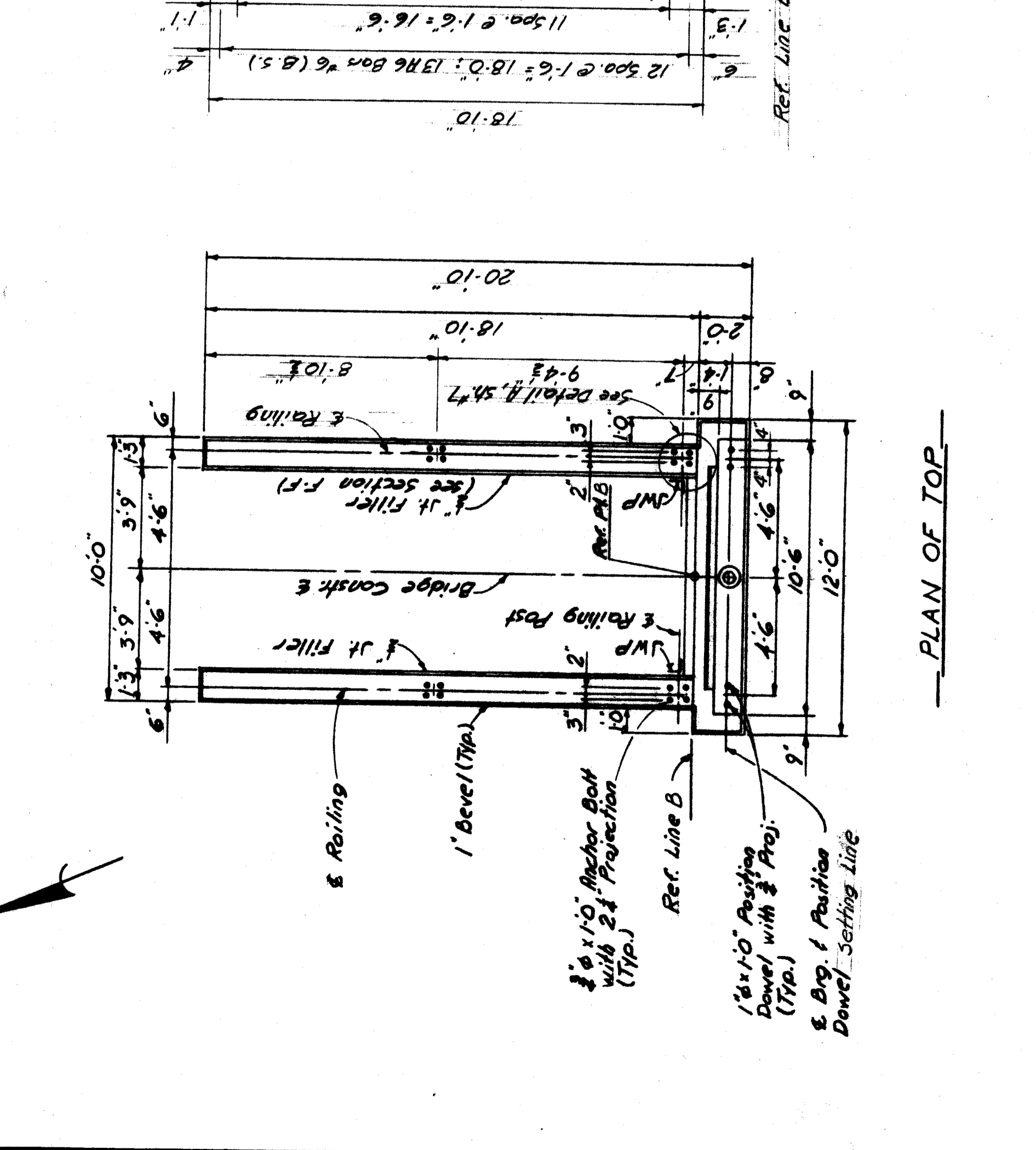
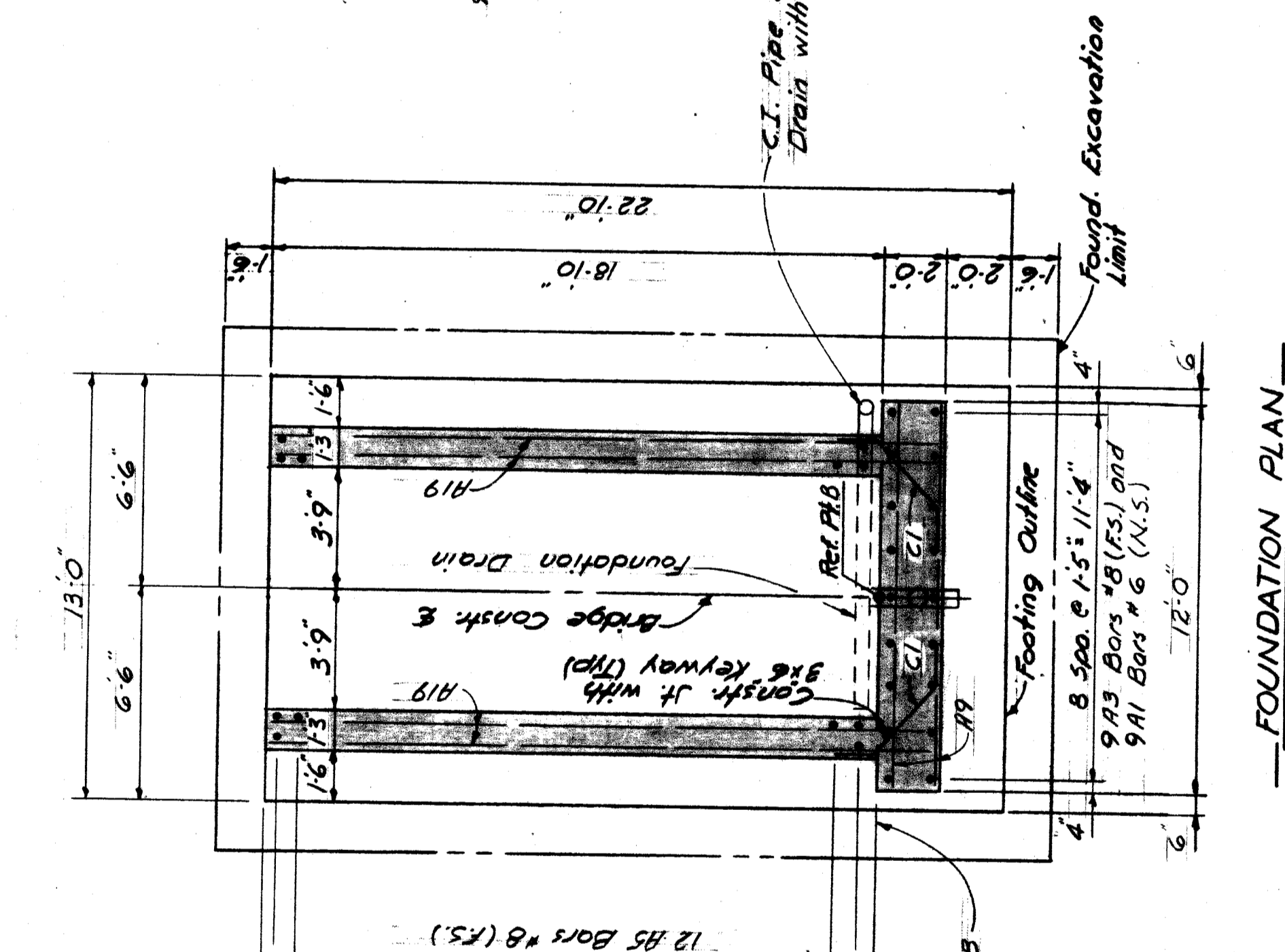
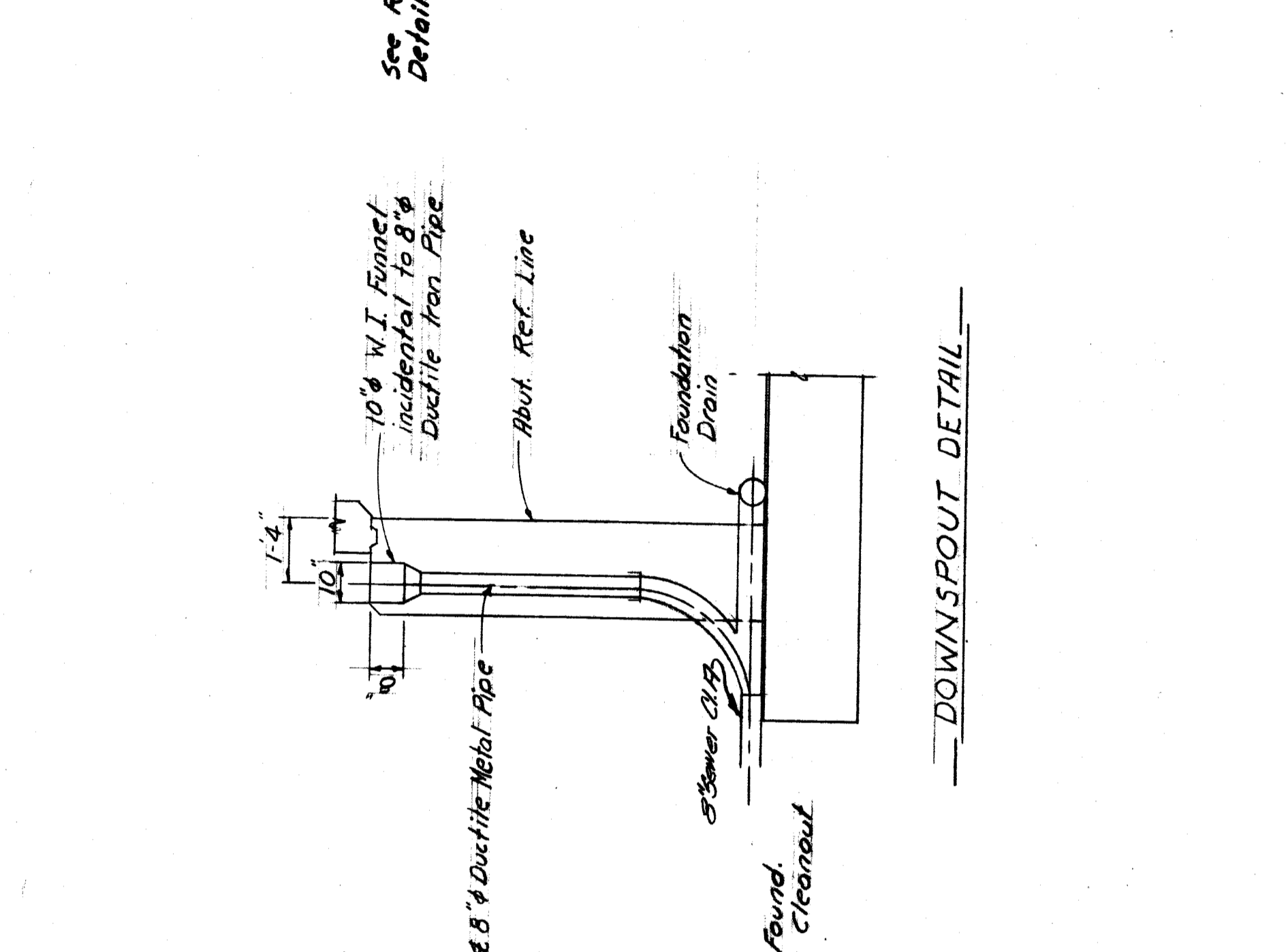
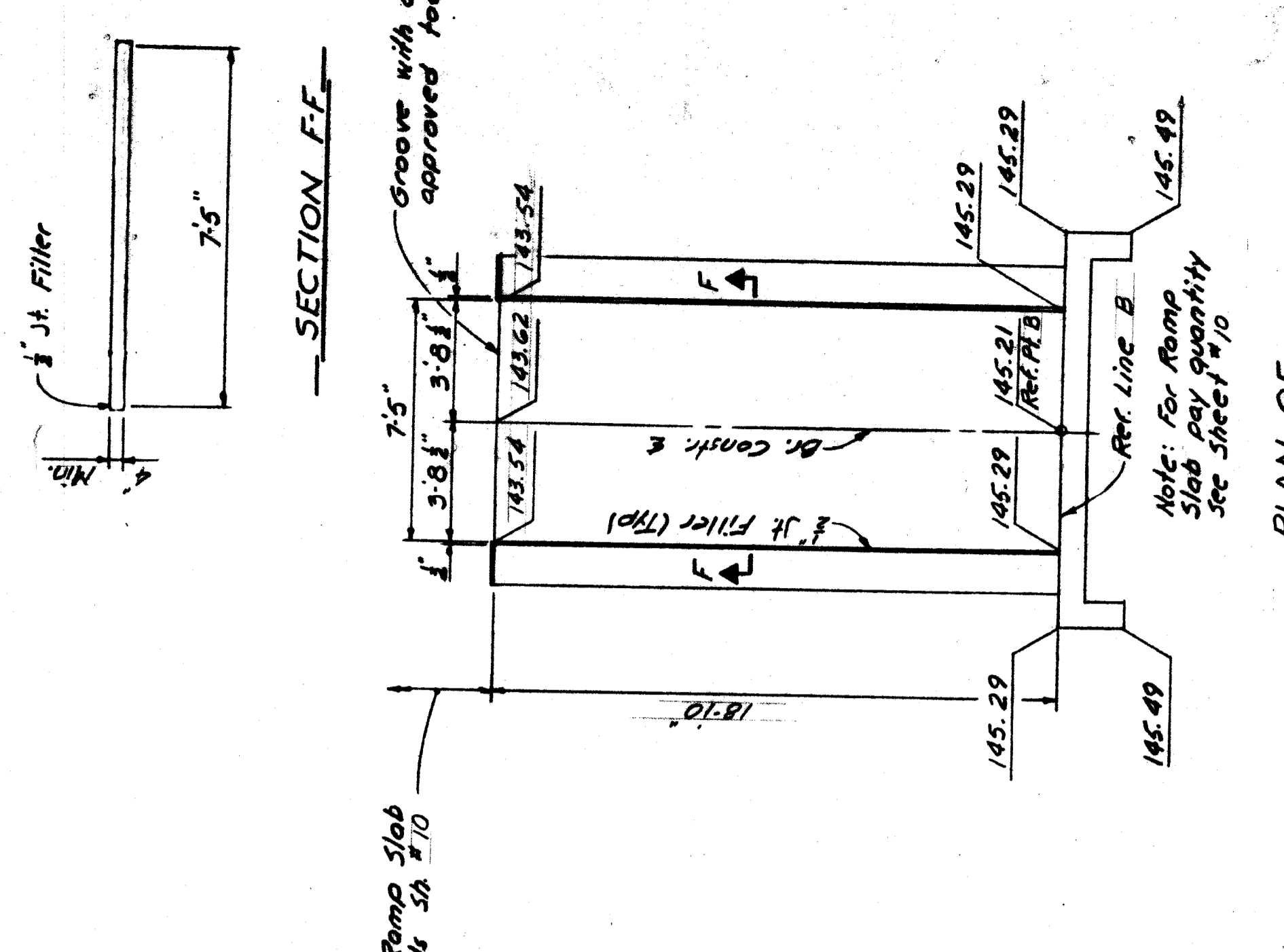
MICHIGAN DEPARTMENT OF STATE HIGHWAYS
 ROOSEVELT AVE. PEDESTRIAN BRIDGE
 CROSSING THE JEFFERIES FREEWAY IN DETROIT

ABUTMENT DETAILS

REVISIONS

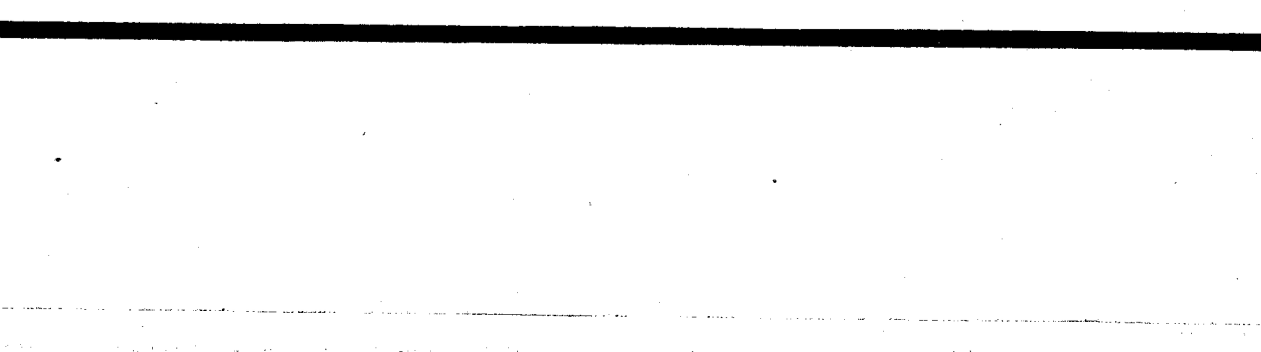
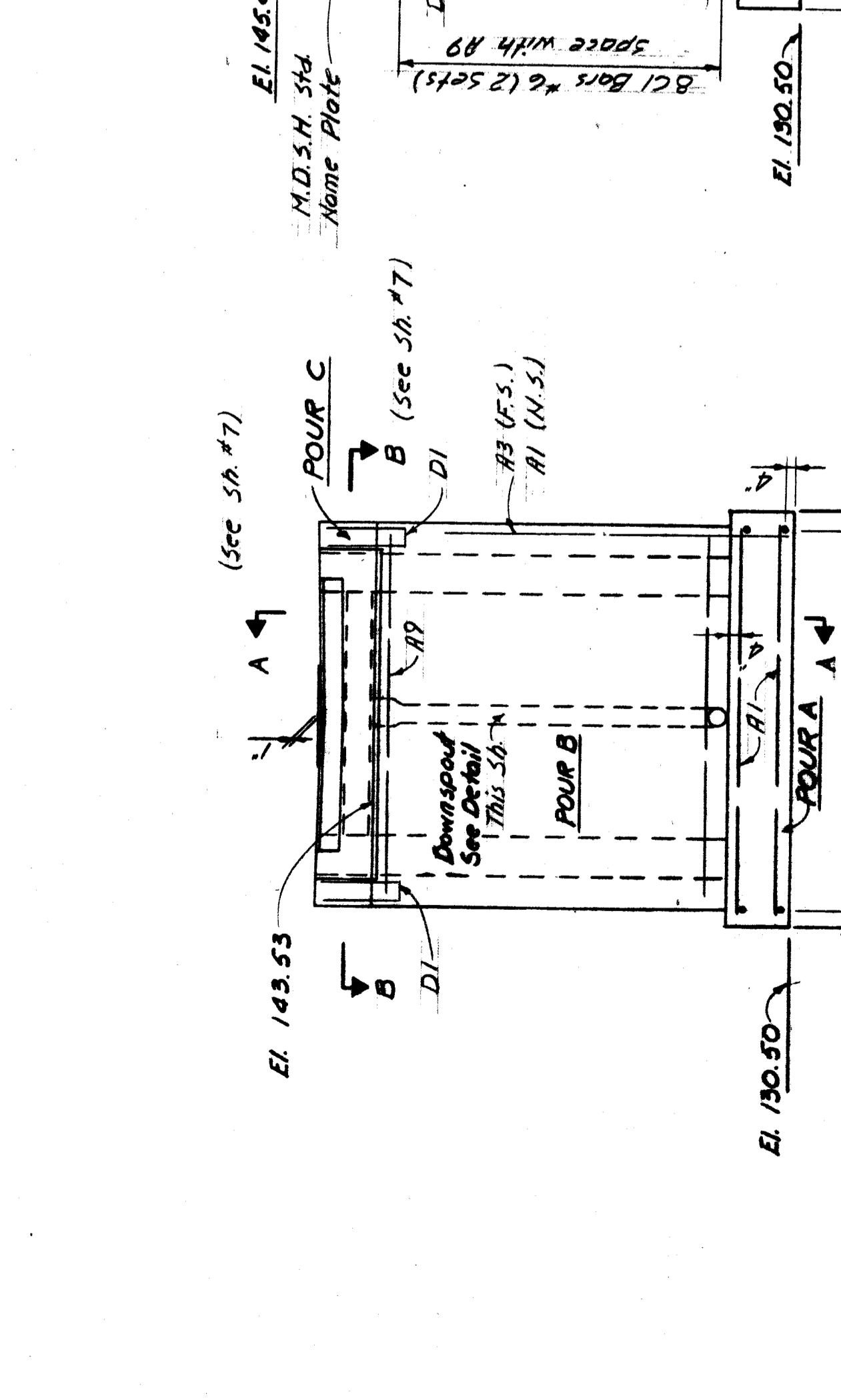
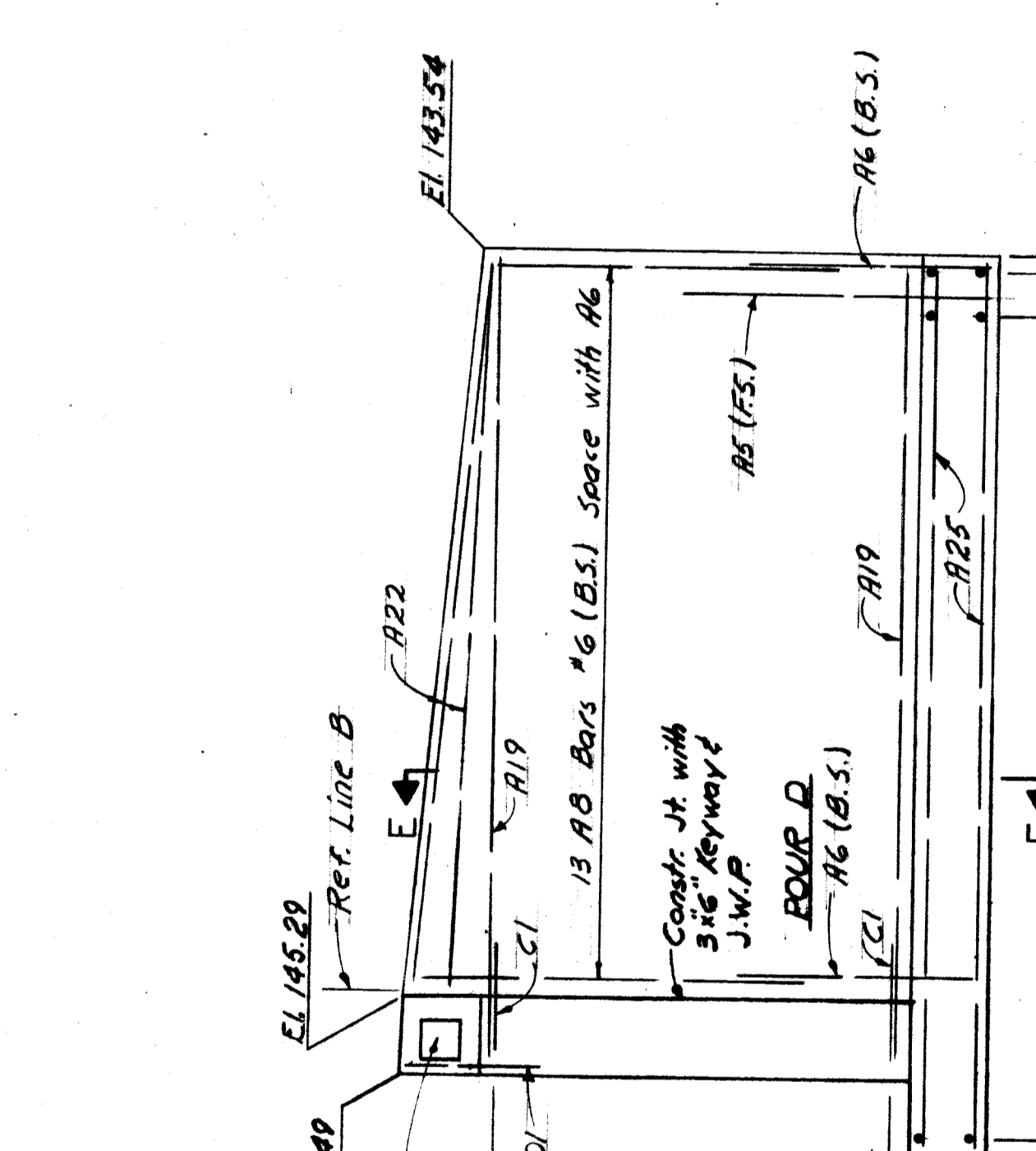
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT
 DRAWN BY: L. J. ...
 CHECKED BY: F. J. ...
 SHEET 5 OF 7
 P06 of 82123J



Pour Location	Abut. A	Abut. B
A Footing	21.1	22.0
Total Gr. A(B&A)	43.1 Cu Yds.	
B Abutment stem	9.8	9.8
C Backwalls	0.8	0.8
D Wingwalls	19.0	20.8
Total Gr. A(B&A)	61.0 Cu Yds.	

Item	Abut. A	Abut. B	Total
Unclassified Excavation	Cu. Yds. 19.8	12.5	32.3
Protective Sealant Coating	Sq. Ft. 13	13	26
Low Temperature Protection	Cu. Yds. 81	54	135
3/8" Joint Filler	Sq. Ft. 32	14	46
Joint Waterproofing	Sq. Ft. 95	52	147
Foundation Drain	Lin. Ft. 13	13	26
8" Overite Metal Pipe	Lin. Ft. 12	12	24
Steel Sheet Piling Left-in-Place	Sq. Ft. 79	—	79
Clear Prot. Coating for Substr. Concrete	Sq. Ft. 10.5	10.5	21



MICHIGAN DEPARTMENT OF STATE HIGHWAYS

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

APPROVED: *[Signature]*
CIVIL ENGINEER

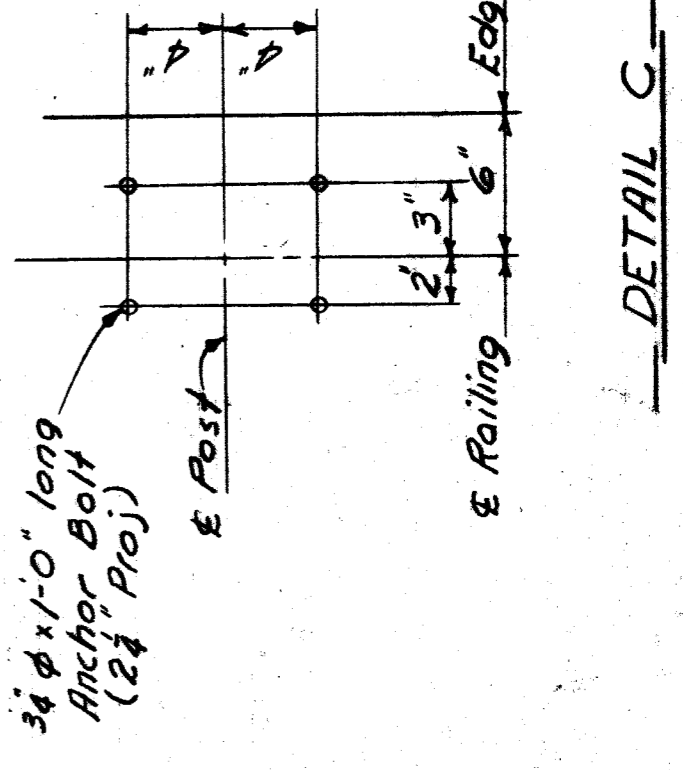
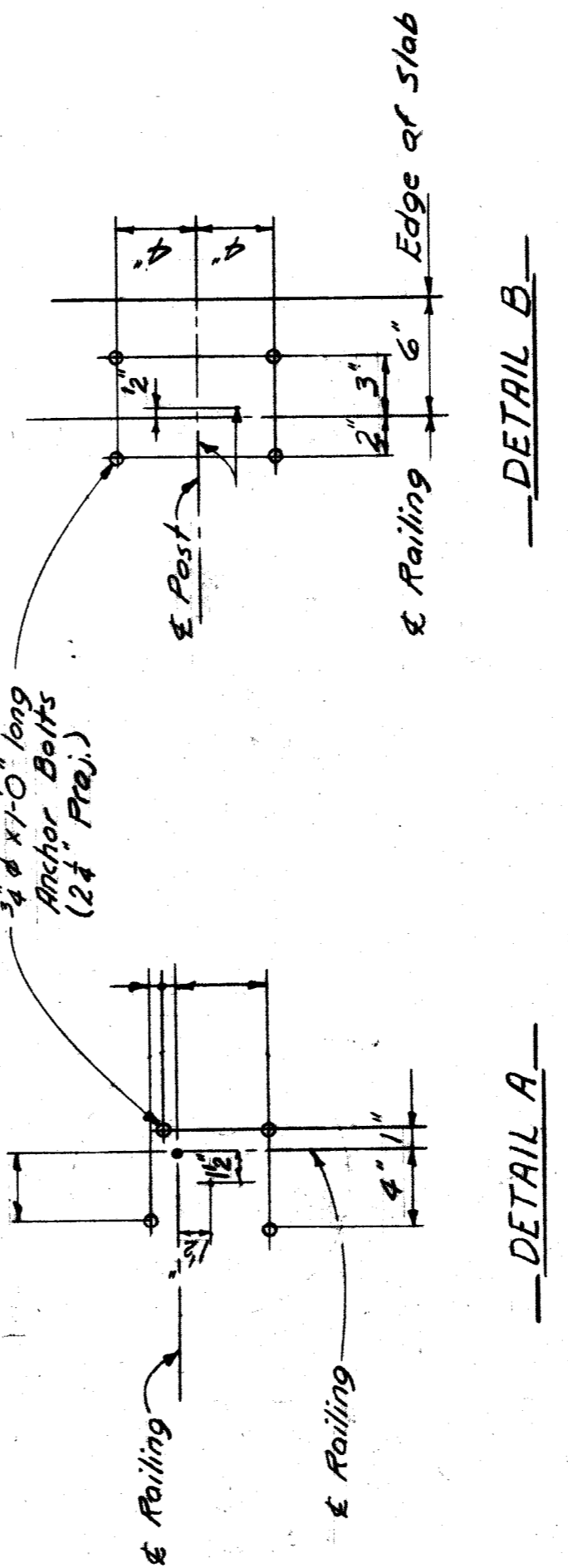
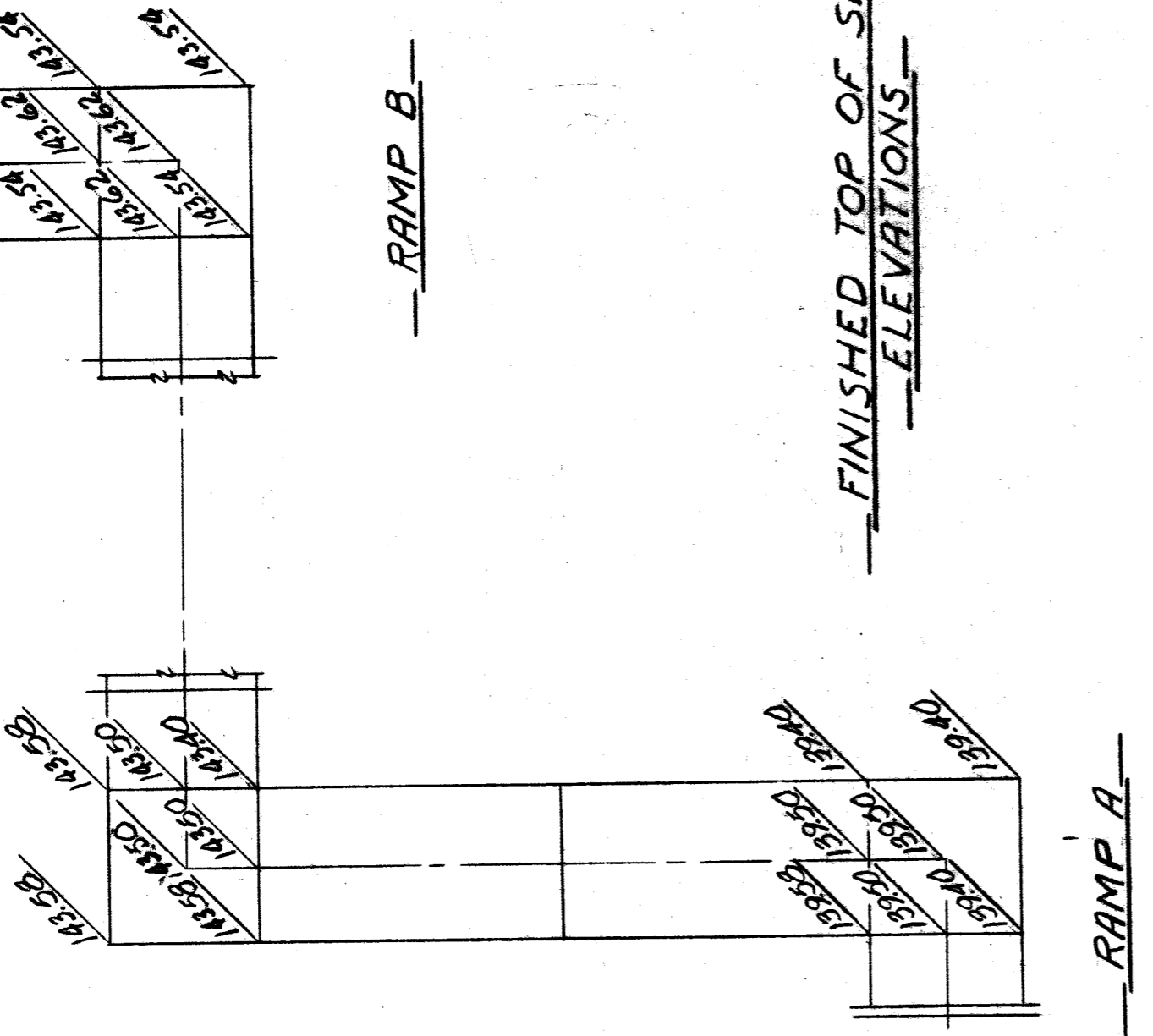
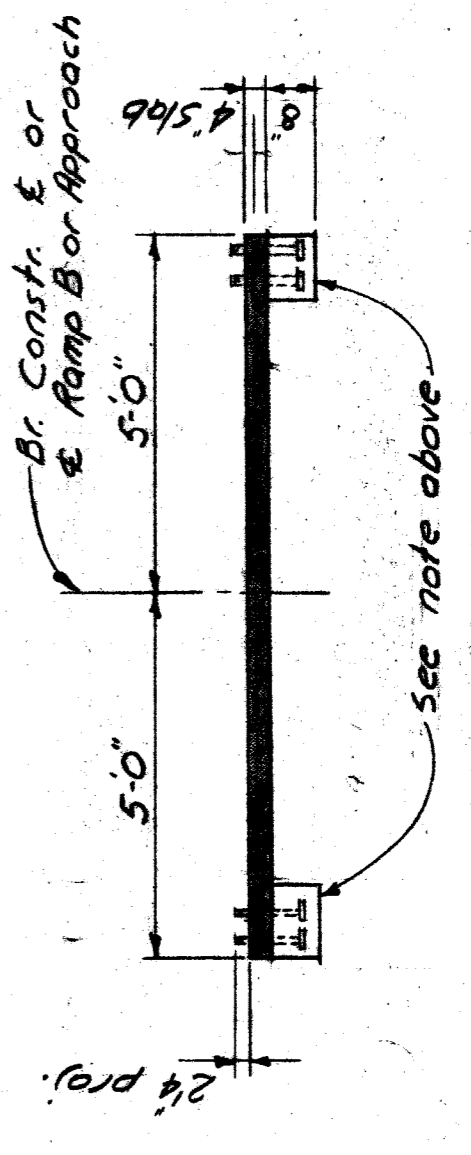
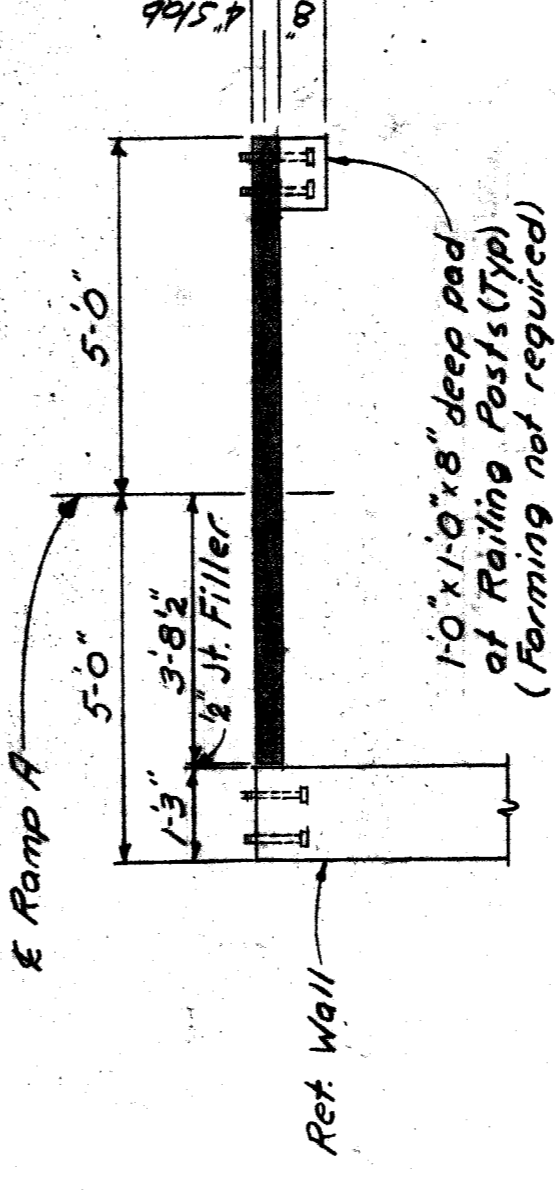
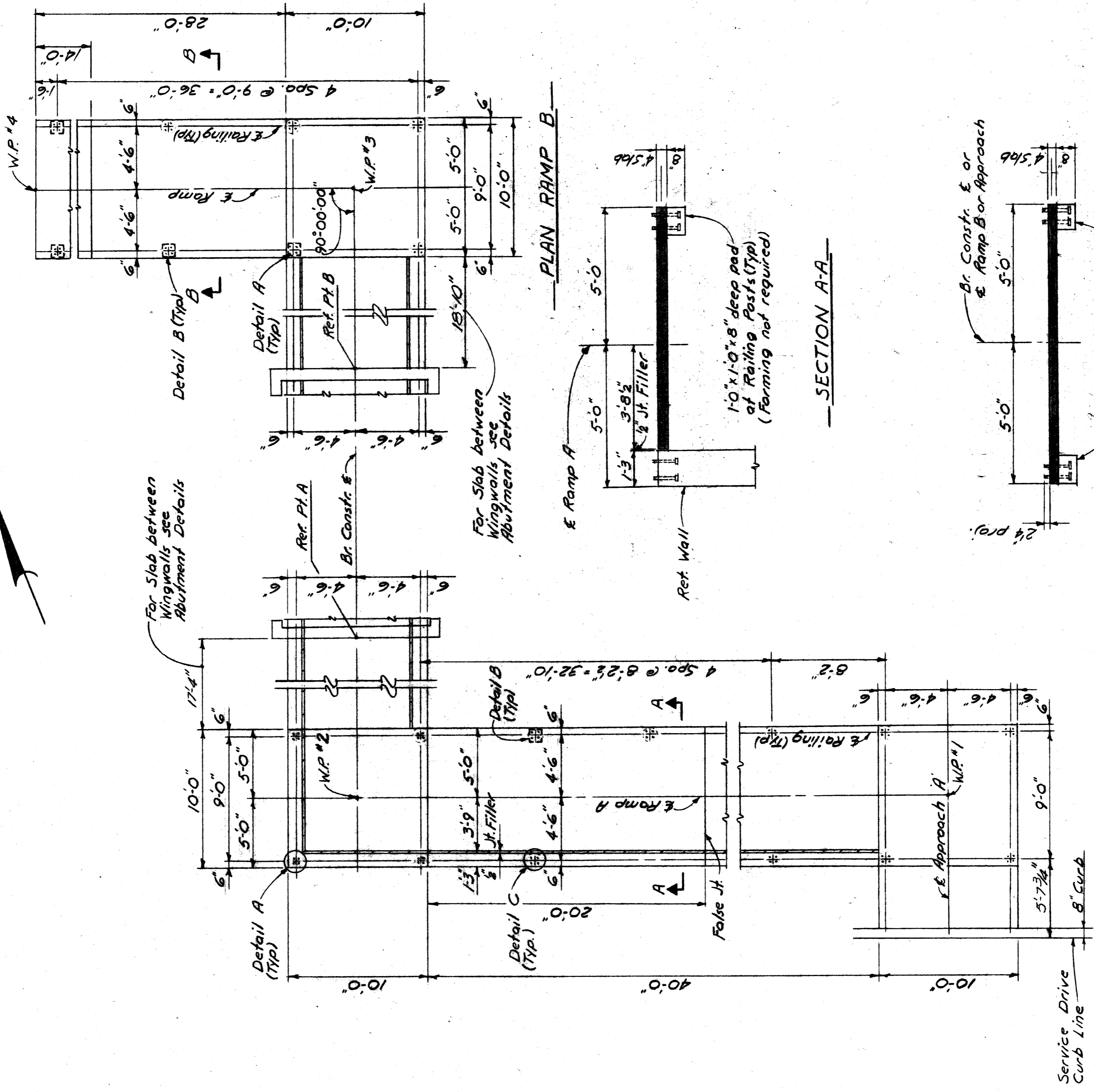
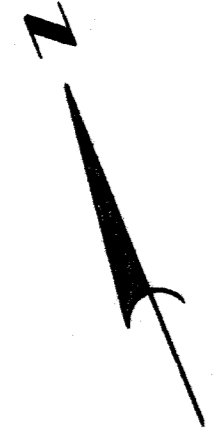
JOB No.
PW 990(3)

ABUTMENT DETAILS

NO.	REVISIONS	DATE	BY

NO.	REVISIONS	DATE	BY

P06 of 82123J



Notes:
 N.S. & F.S. denotes near side and far side.
 Form false joints by grooving with an approved tool.
 Excavation for railing post foundations is incidental.

Grade A (GAA) Conc. - Substr. (Cu. Yds.)		
Location	Ramp A	Ramp B
Ramp Slabs	9.2	6.9
Total	16.1	

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
 ROOSEVELT AVE PEDESTRIAN BRIDGE
 CROSSING THE JEFFRIES FREEWAY IN DETROIT

RAMP DETAILS

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

APPROVED: *[Signature]* STRUCTURAL ENGINEER

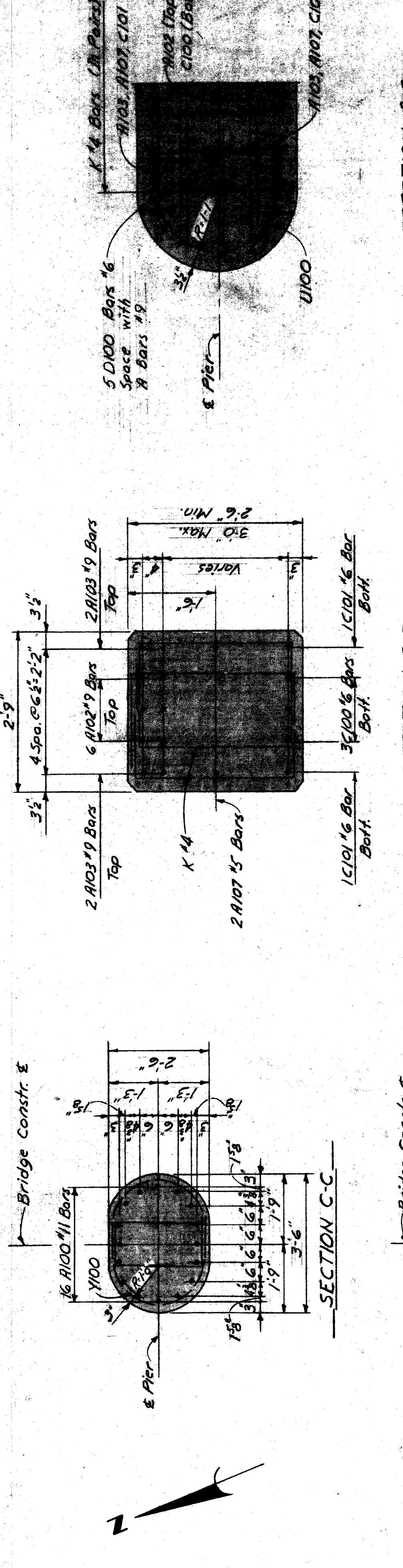
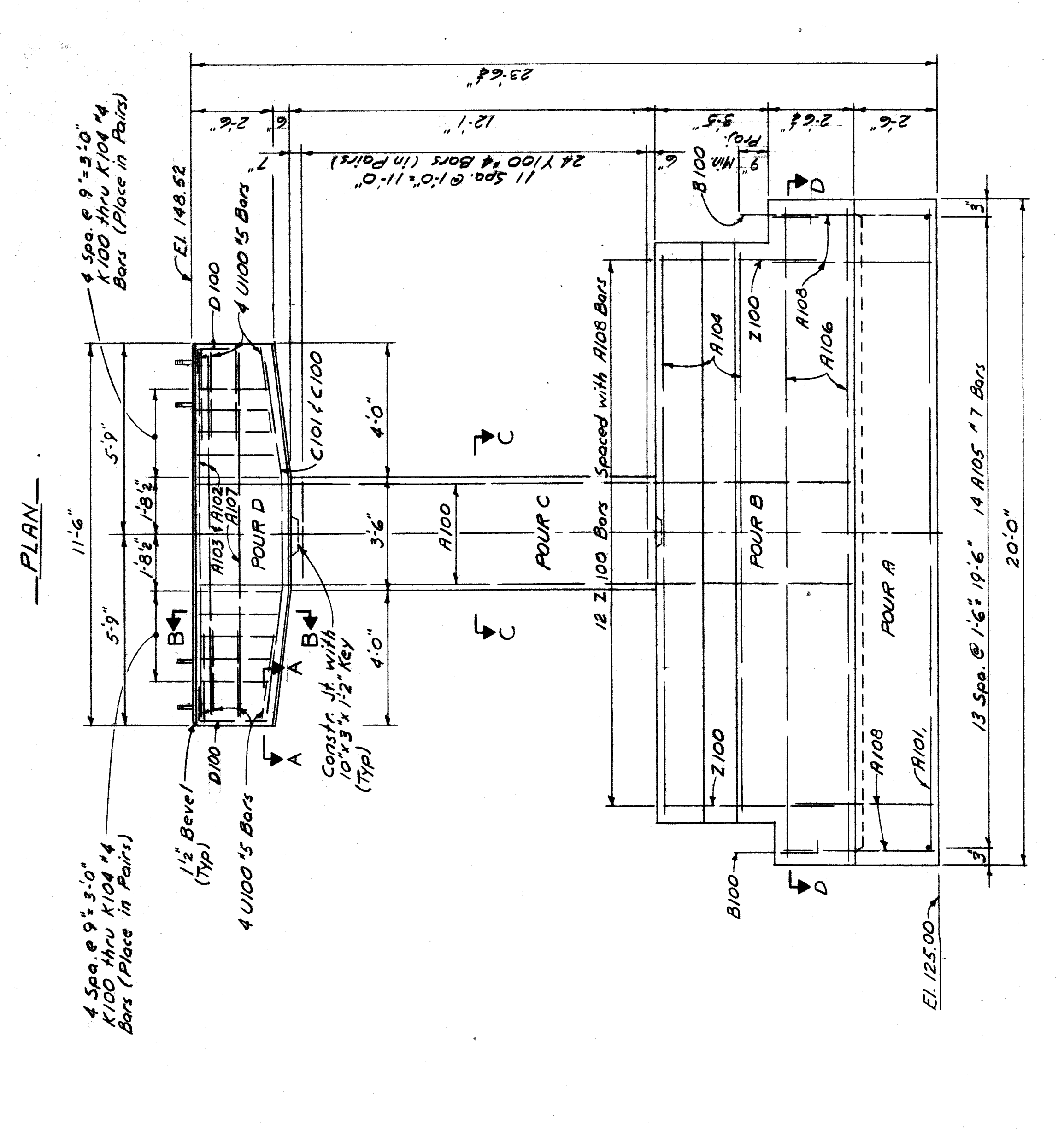
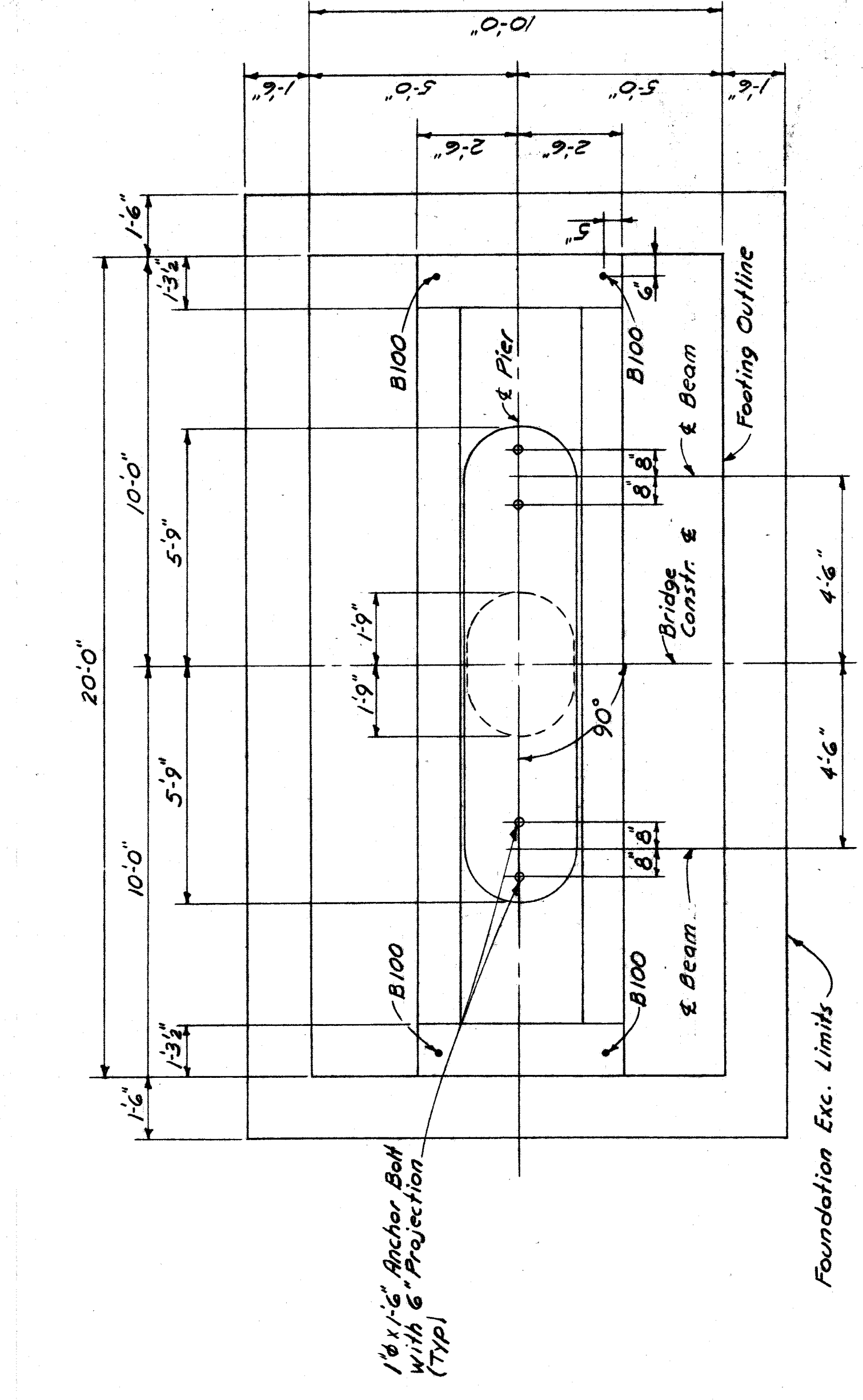
JOB No. PW 990(3)

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT
 DRAWN BY: *[Signature]* 4.64
 CHECKED BY: *[Signature]* 4.64
 SHEET NO. OF 16

P06 of 821231



CONCRETE QUANTITIES CU YDS.

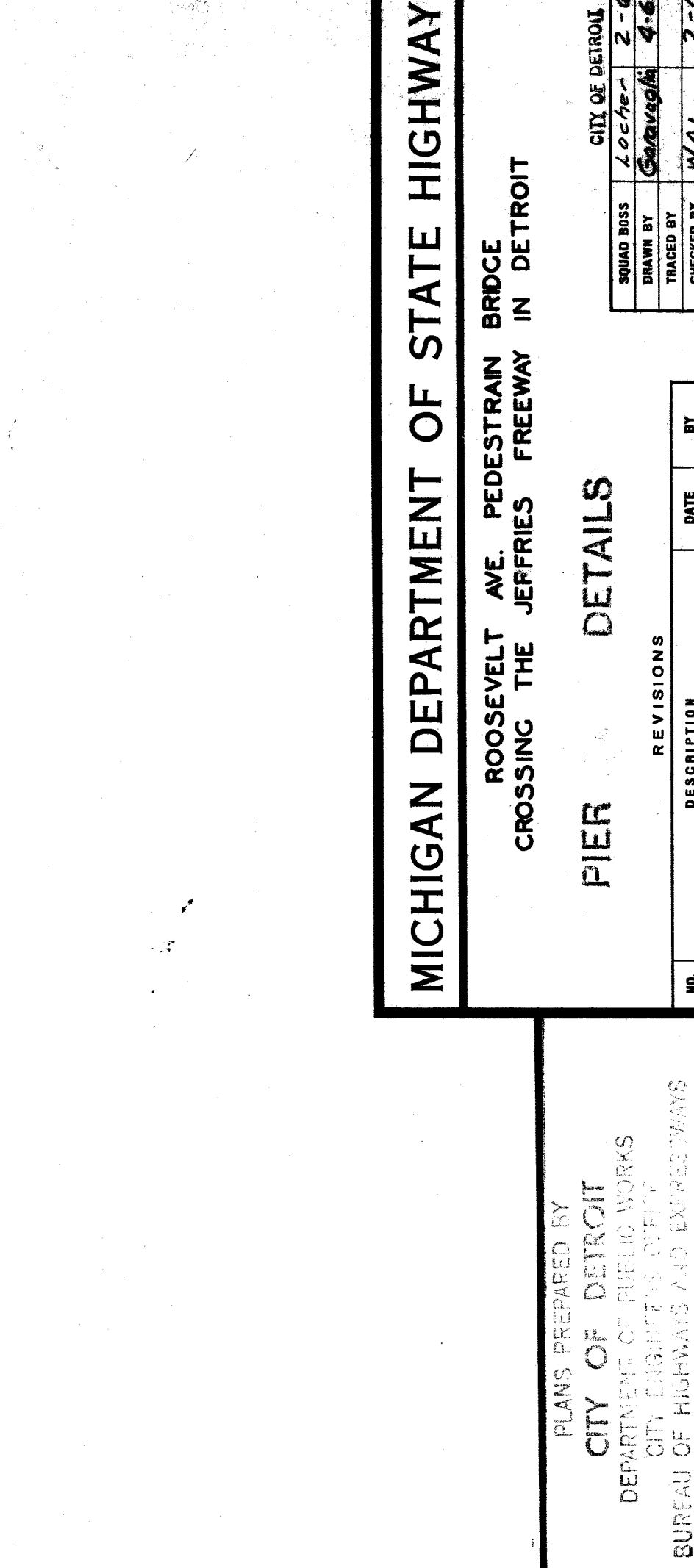
Pour	Location	Gr. A (GA)	Gr. A (GA)
A	Footings	18.5	18.3
B	Barrier		3.3
C	Column		3.2
D	Cap		18.5
Total Grade A (GA)		18.5	44
Total Grade A (GA)		24.8	44

MISCELLANEOUS QUANTITIES

Item	Unit	Amount
Unclassified Excavation	Cu. Yds.	36
Low Temperature Protection	Cu. Yds.	43
Clear Prot. Coating for Substr. Conc.	Sq. Yds.	44

GENERAL NOTES:

For bevel and molding details see Std. Sheet R11 and R12. Anchor Bolts shall be set accurately to a template. The Project Engineer shall adjust the spacing of the reinforcing steel as required to permit placing of anchor bolts. Maximum average foundation pressure D.L. only = 1800 Lbs./Sq. Ft. Maximum foundation pressure D.L. and L.L. = 2250 Lbs./Sq. Ft. Cover entire pier with clear protective coating for substructure concrete to 6" below finished grade.



MICHIGAN DEPARTMENT OF STATE HIGHWAYS

ROOSEVELT AVE. PEDESTRIAN BRIDGE
CROSSING THE JEFFRIES FREEWAY IN DETROIT

PIER DETAILS

PLANS PREPARED BY
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER
BUREAU OF HIGHWAYS AND FREEWAYS

APPROVED
H. Conrad
STRUCTURAL ENGINEER

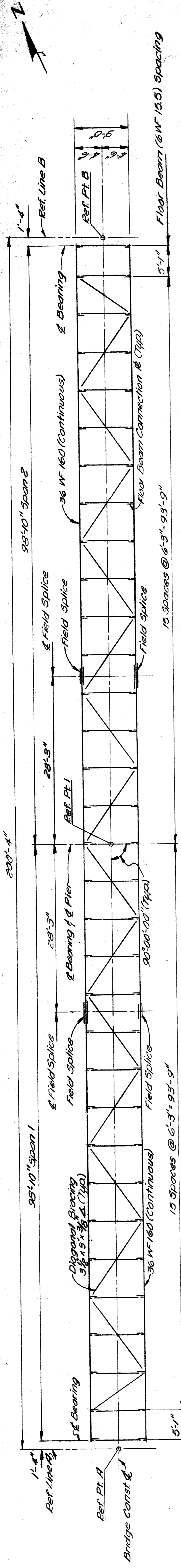
JOB No. PW 990(3)

REVISIONS

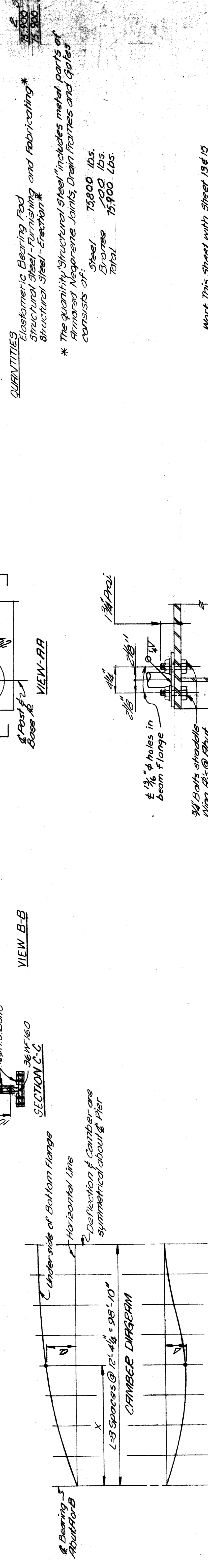
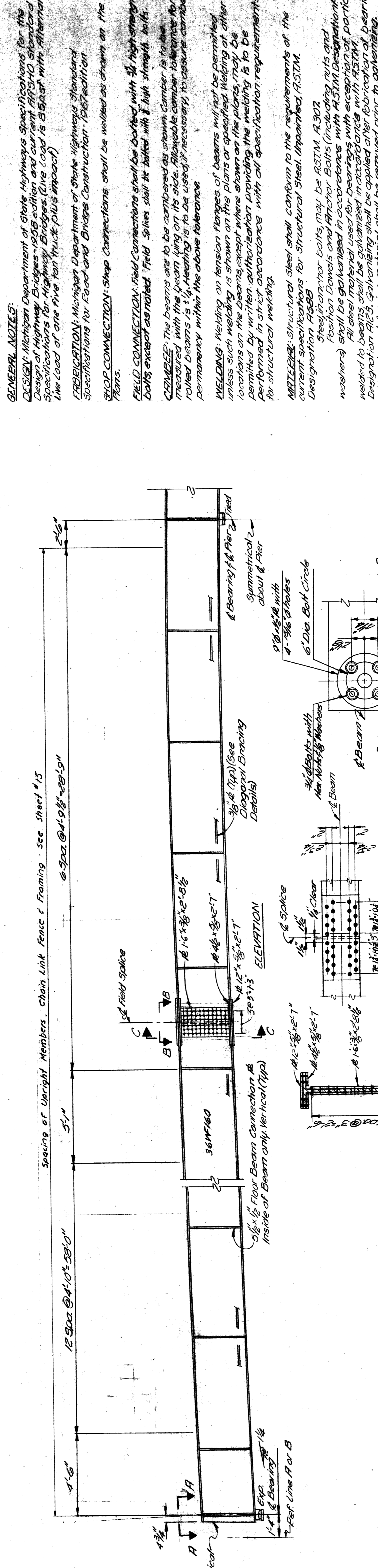
NO.	DESCRIPTION	DATE	BY
1			
2			
3			

CITY OF DETROIT
SQUAD BSS 2-69
DRAWN BY S. W. L. 4-68
CHECKED BY W. A. L. 2-69
SHEET 11 OF 16

P06 of 82123J



ERECTION PLAN



1/2	0	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1
	0	1-2	2-3	3-4	3-9	4-3	4-7	4-10	4-10
$\Delta Bm.Ht$	0	4	8	12	15	18	21	24	27
ΔDL	0	0	0	0	0	0	0	0	0

NOTE: Camber ordinate '3' includes allowance for vertical curve and ΔDL . $\Delta Bm.Ht$ = Deflection due to weight of steel beam only. ΔDL = Deflection due to weight of structural steel, slab and railing.

GENERAL NOTES:
DESIGN: Michigan Department of State Highways Specifications for the Design of Highway Bridges - 1958 edition and current AASHTO Standard Specifications for Highway Bridges (Live Load is 80kft with Alternate Live load of one five ton truck plus impact)
FABRICATION: Michigan Department of State Highways Standard Specifications for Food and Bridge Construction 1967 Edition
SHOP CONNECTIONS: Shop connections shall be welded as shown on the Plans.
FIELD CONNECTIONS: Field connections shall be bolted with 3/4 high strength bolts except as noted. Field splices shall be bolted with 3/4 high strength bolts.
CAMBER: The beams are to be cambered as shown. Camber is to be measured with the beam lying on its side. Allowable camber tolerance for rolled beams is 1/4. Heating is to be used, if necessary, to assure camber permanency within the above tolerance.
WELDING: Welding on tension flanges of beams will not be permitted unless such welding is shown on the plans or specified. Welding at other locations on the beams, except where shown on the plans, may be permitted by written authorization providing the welding is to be performed in strict accordance with all specification requirements for structural welding.
MATERIALS: Structural steel shall conform to the requirements of the current specifications for Structural Steel, Unpainted, ASTM Designation A36. Steel anchor bolts, may be ASTM A307. Position Dowels and Anchor Bolts (including nuts and washers) shall be galvanized in accordance with ASTM Designation A153. All steel material used for bearings with exception of portion welded to beams shall be galvanized in accordance with ASTM Designation A123. Galvanizing shall be applied after fabrication of bearing. Mill scale and foreign material shall be removed prior to galvanizing.

QUANTITIES
 Electromer Bearing Rod 300 Lbs.
 Structural Steel - Furnishing and Fabricating* 15,900 Lbs.
 Structural Steel - Erection* 7,800 Lbs.
 * The quantity "Structural Steel" includes metal parts of Arched Neoprene Joints, Drain Frames and Gates consists of:
 Steel 75,800 Lbs.
 Bolts 100 Lbs.
 Total 75,900 Lbs.

Work This Sheet with Sheet 13 of 13

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
 ROOSEVELT AVE. PEDESTRIAN BRIDGE
 CROSSING THE JEFFRIES FREEWAY IN DETROIT

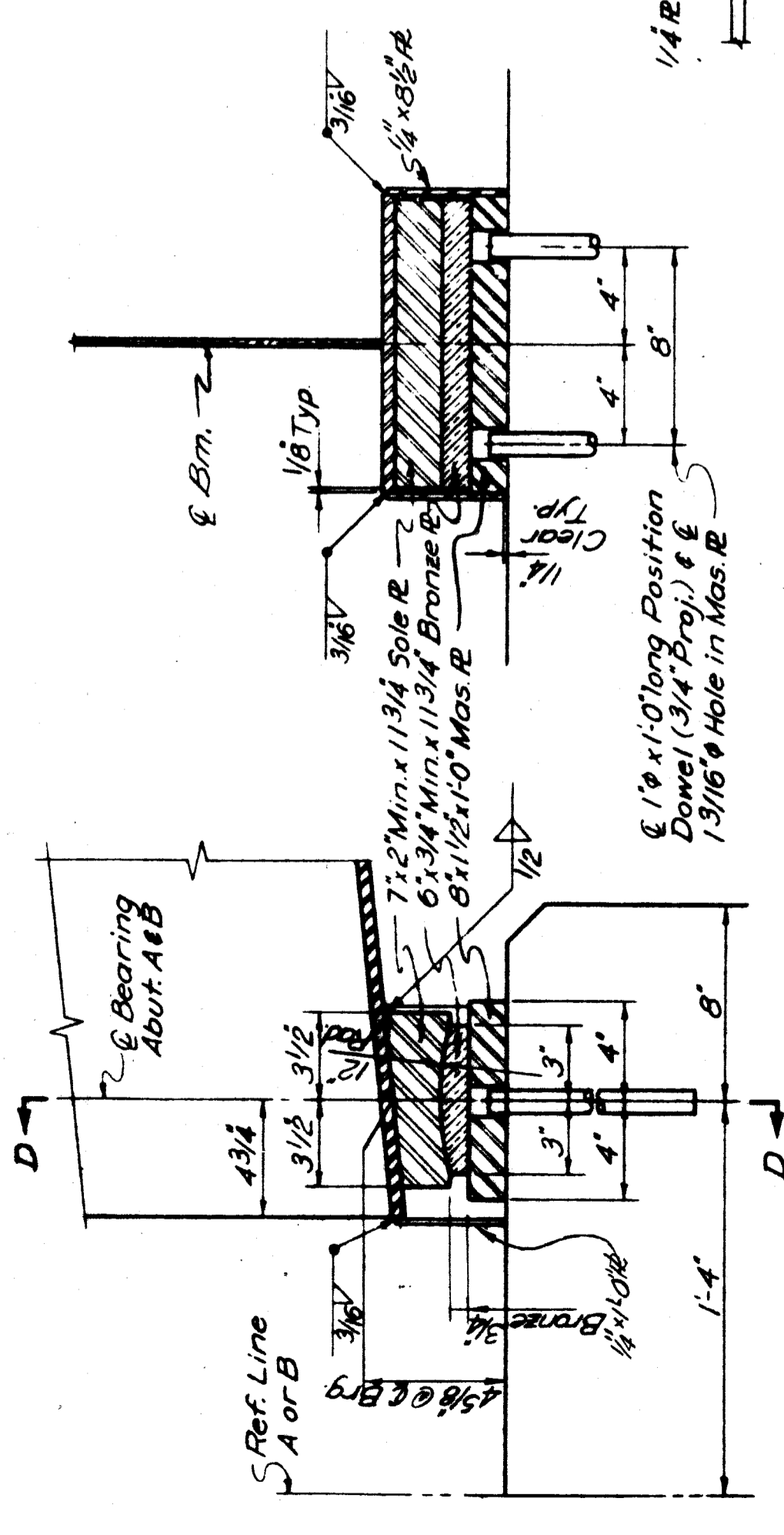
STRUCTURAL STEEL DETAILS

NO.	REVISIONS	DATE	BY

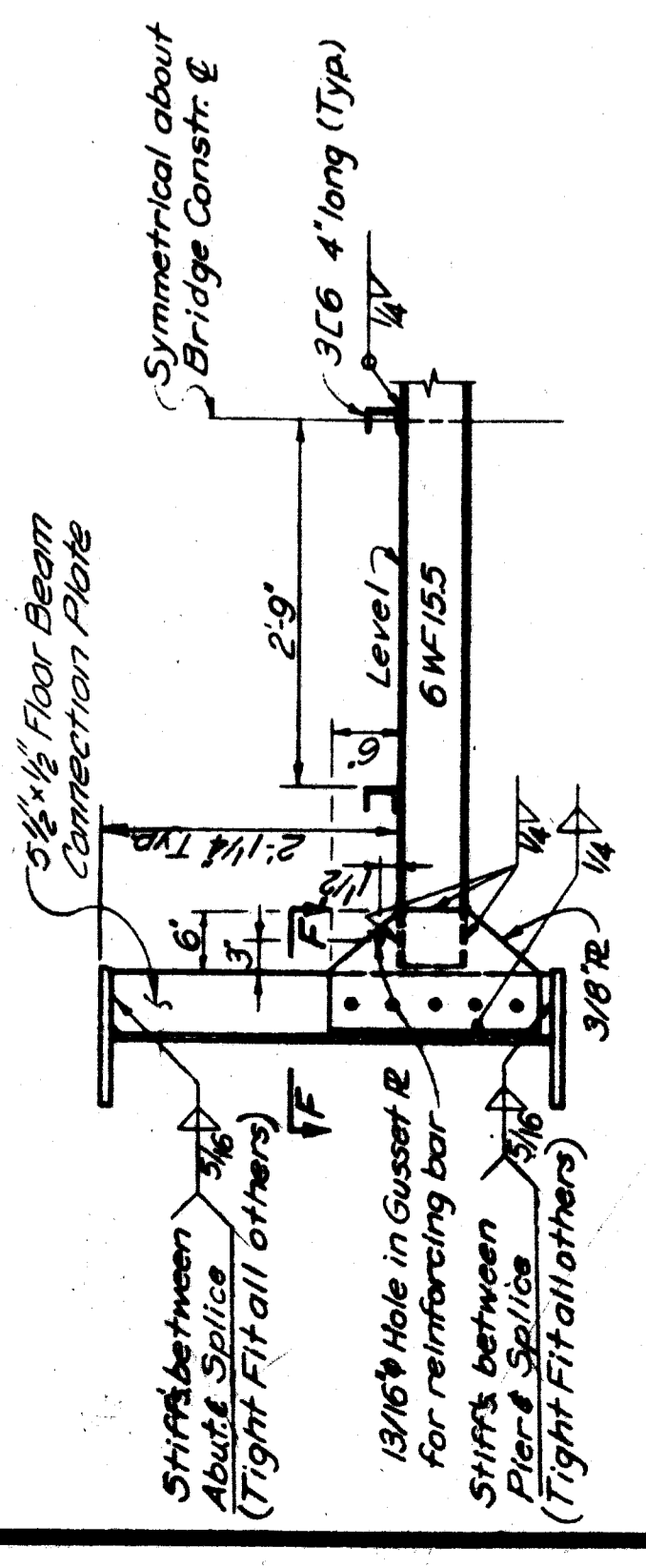
PLANS PREPARED BY
CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *[Signature]* STRUCTURAL ENGINEER
 JOB No. PW 990(3)

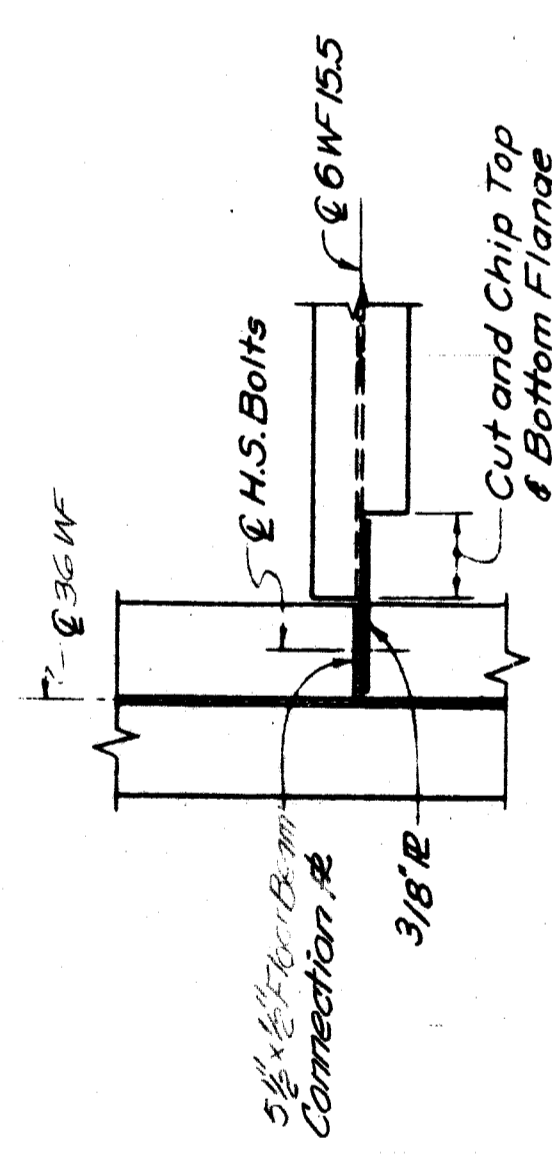
P06 of 82123J



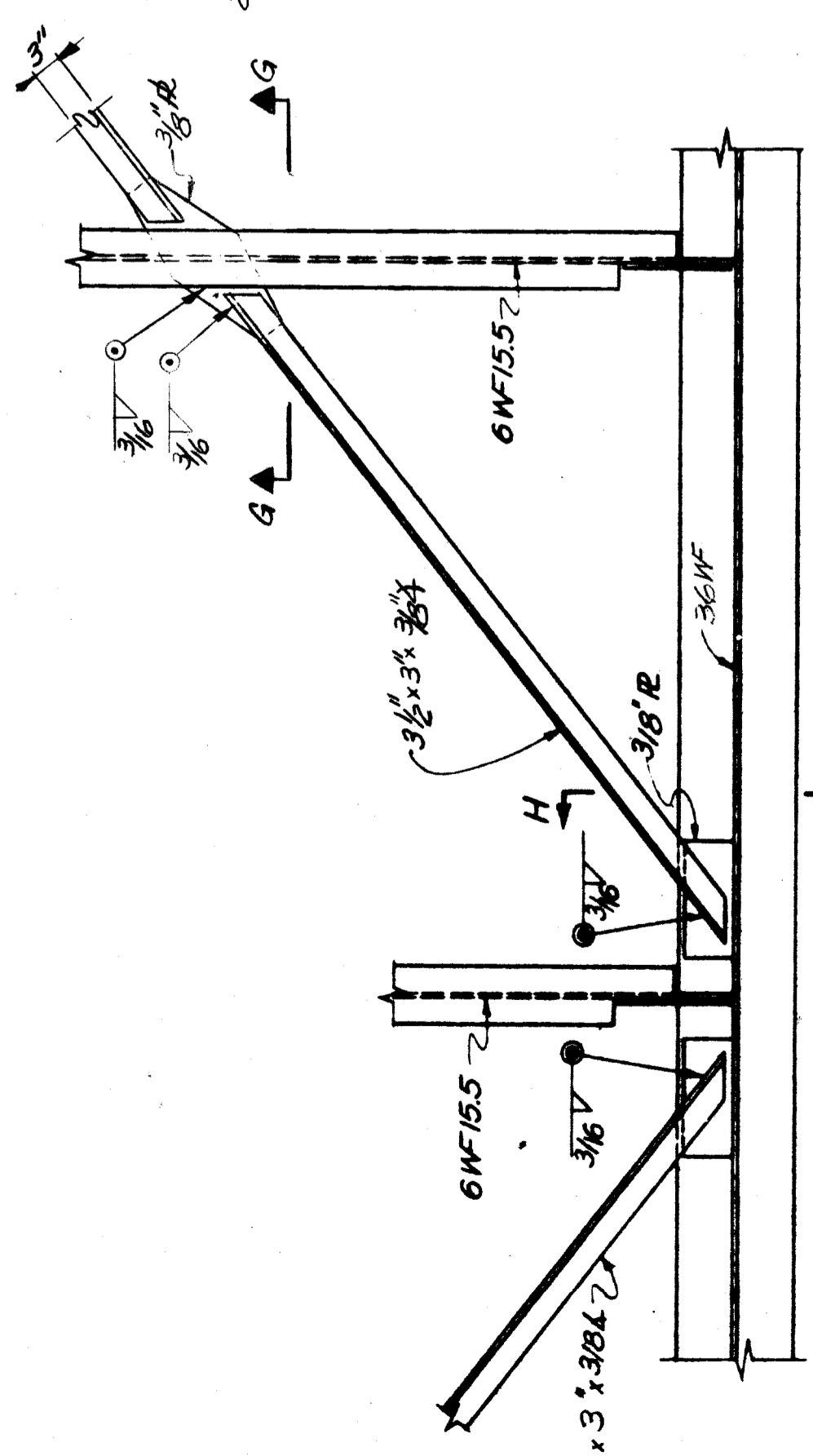
SECTION D-D
ABUTMENT BEARING DETAILS



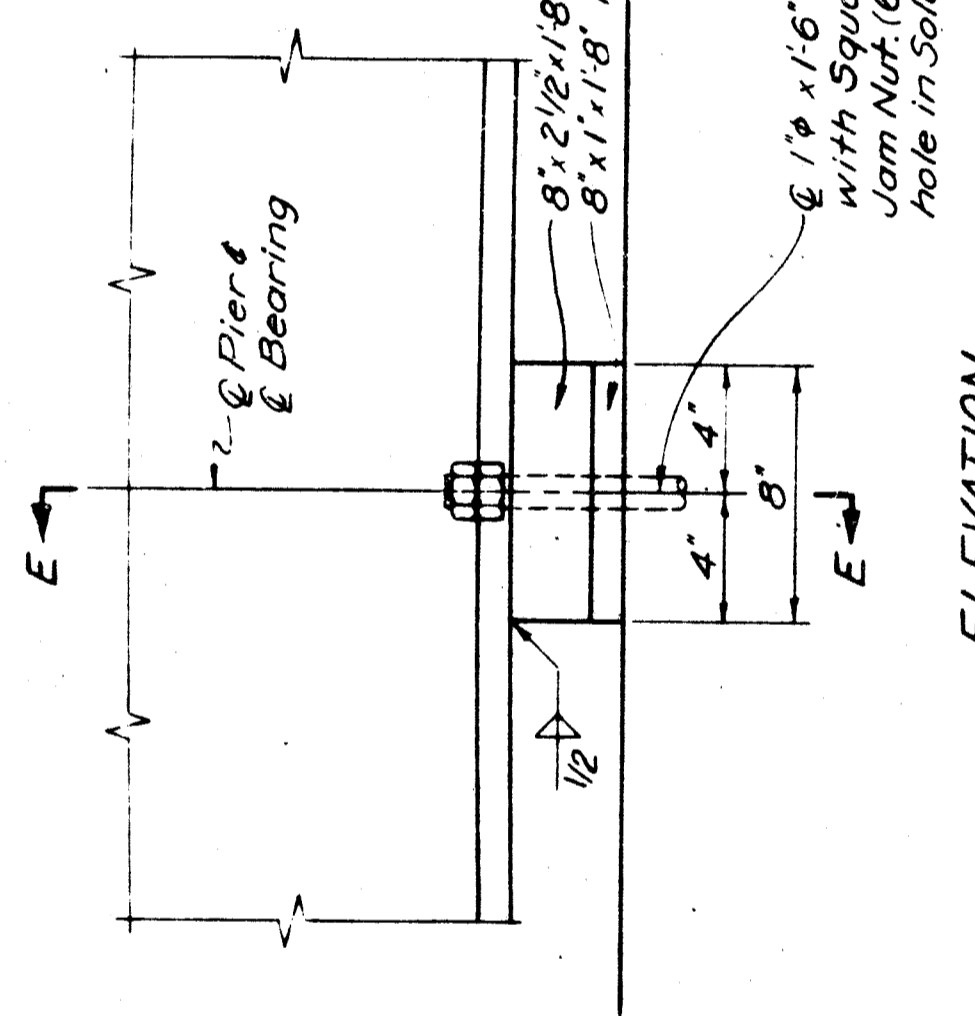
TYPICAL HALF SECTION



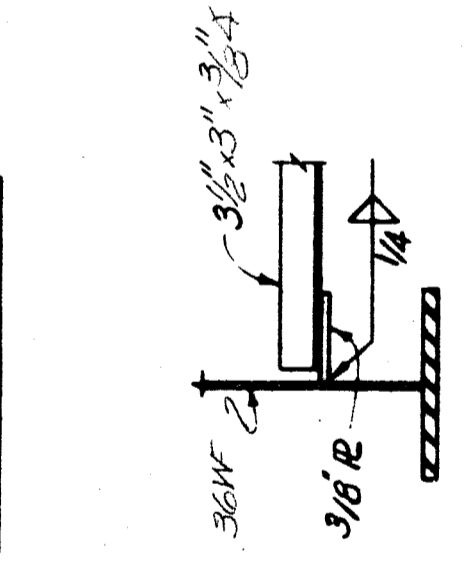
SECTION F-F
CORNER DETAIL



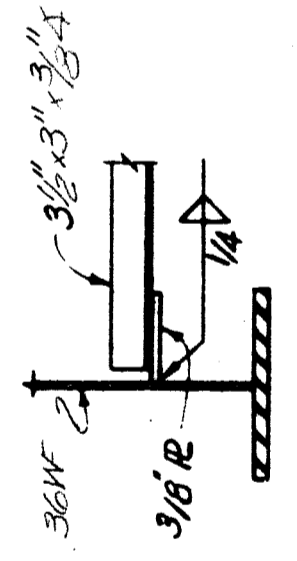
LATERAL BRACING DETAILS



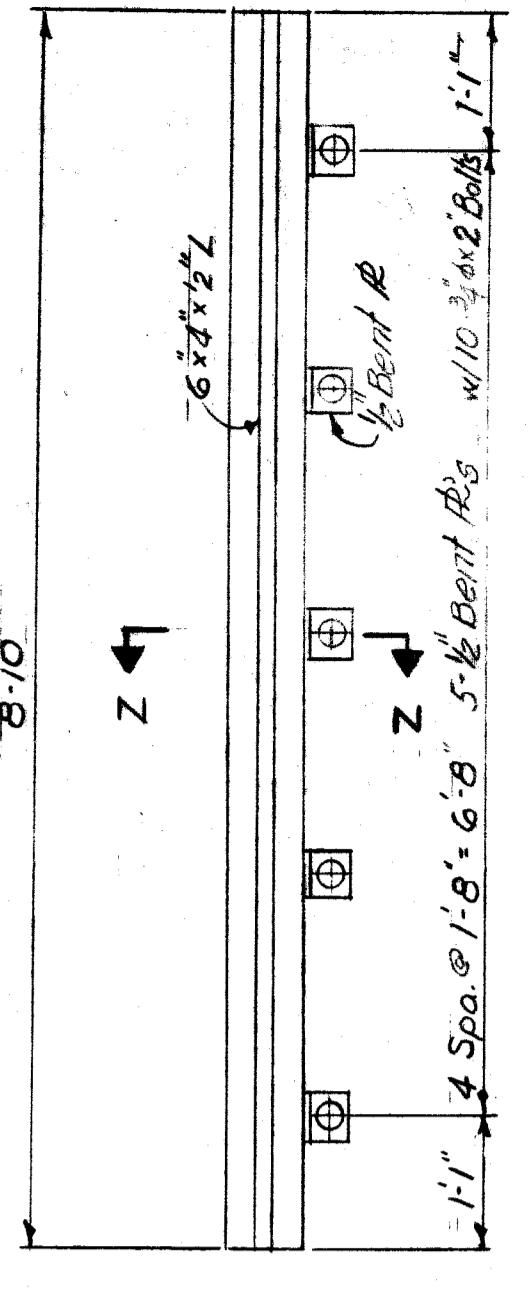
SECTION E-E
PIER BEARING DETAILS



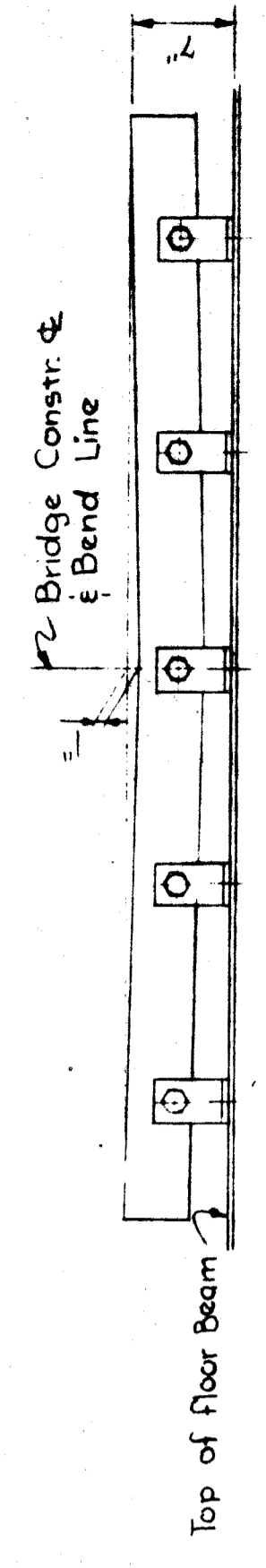
SECTION G-G



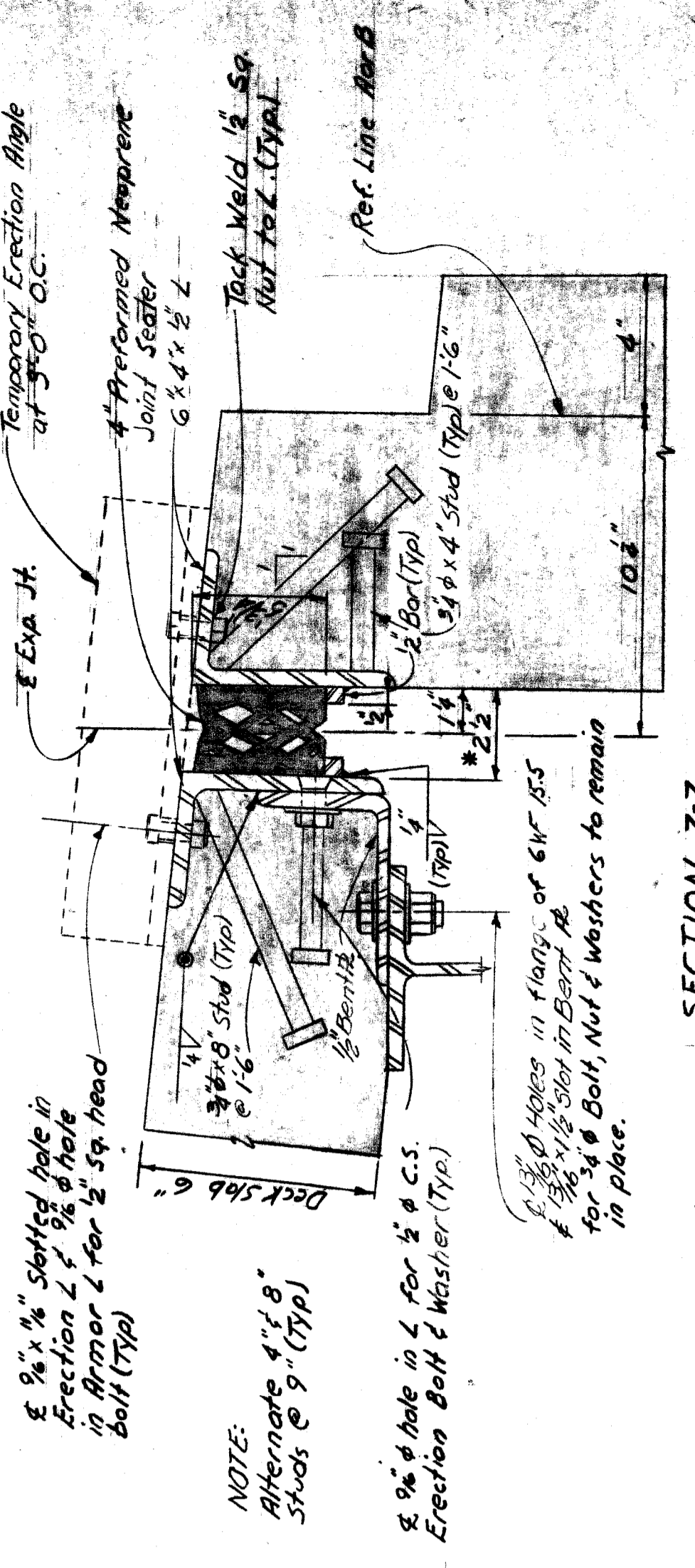
SECTION H-H



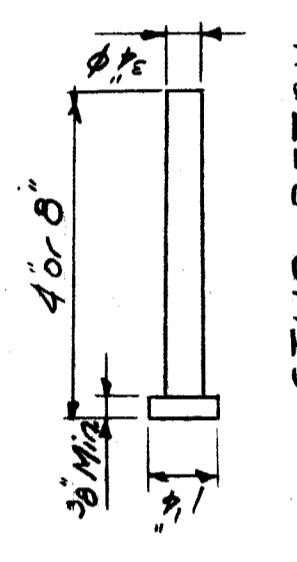
METAL EXPANSION JOINT - PLAN
2 Required



ELEVATION



SECTION Z-Z



STUD DETAIL

* Increase by 1/8 for each 10° of beam temperature below 60°F. For each 10° of slab length or decrease by 1/8 for each 10° of beam temperature above 60°F. For each 10° of slab length. (Slab length is measured at right angles to joint)

Work this Sheet with Sheet #12

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

APPROVED: *[Signature]*
STRUCTURAL ENGINEER

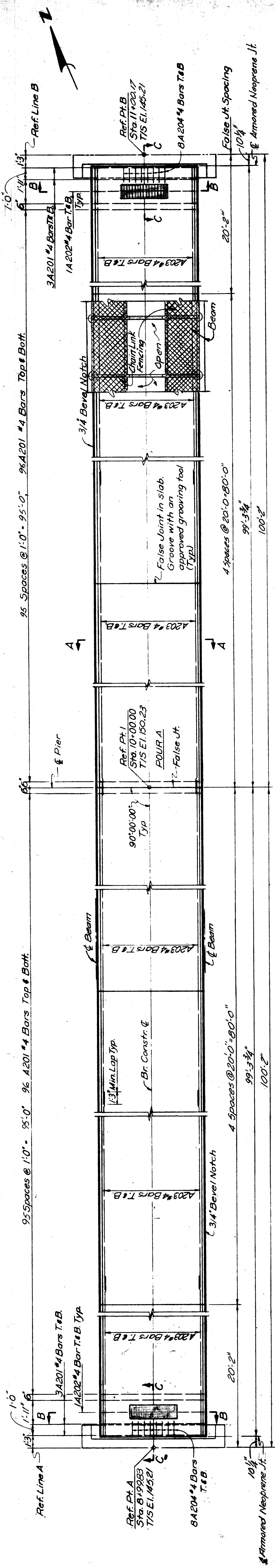
JOB No. PW 990(3)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
ROOSEVELT AVE. PEDESTRIAN BRIDGE
CROSSING THE JEFFRIES FREEWAY IN DETROIT

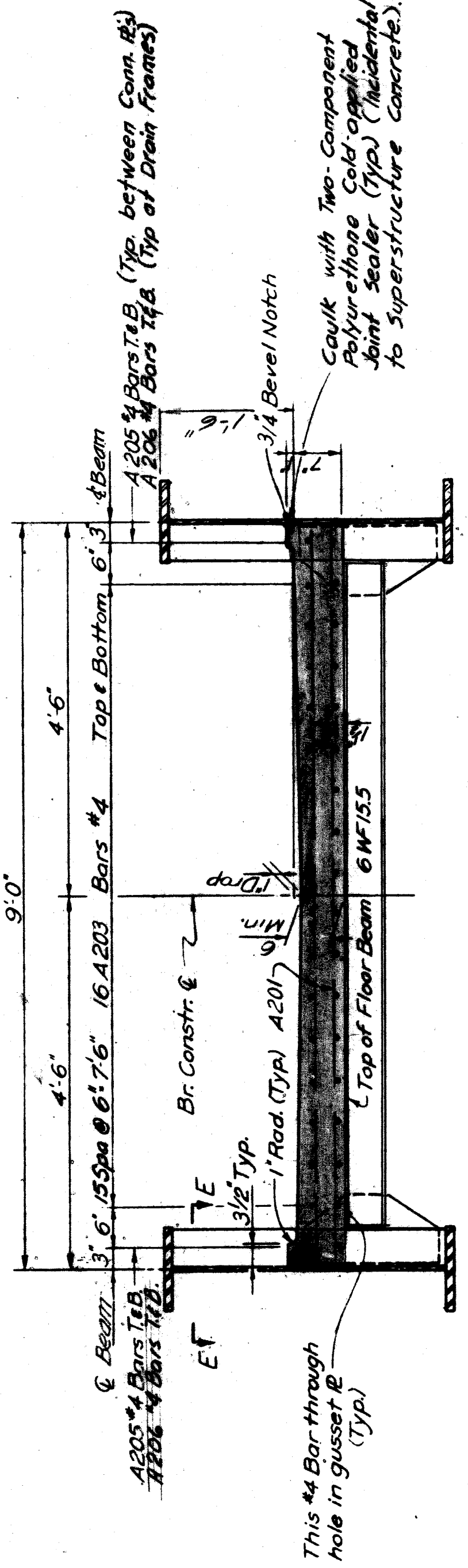
STRUCTURAL STEEL DETAILS

NO.	REVISIONS	DATE	BY
1	AS SHOWN	2-29	[Signature]
2	REVISED	2-29	[Signature]
3	REVISED	2-29	[Signature]

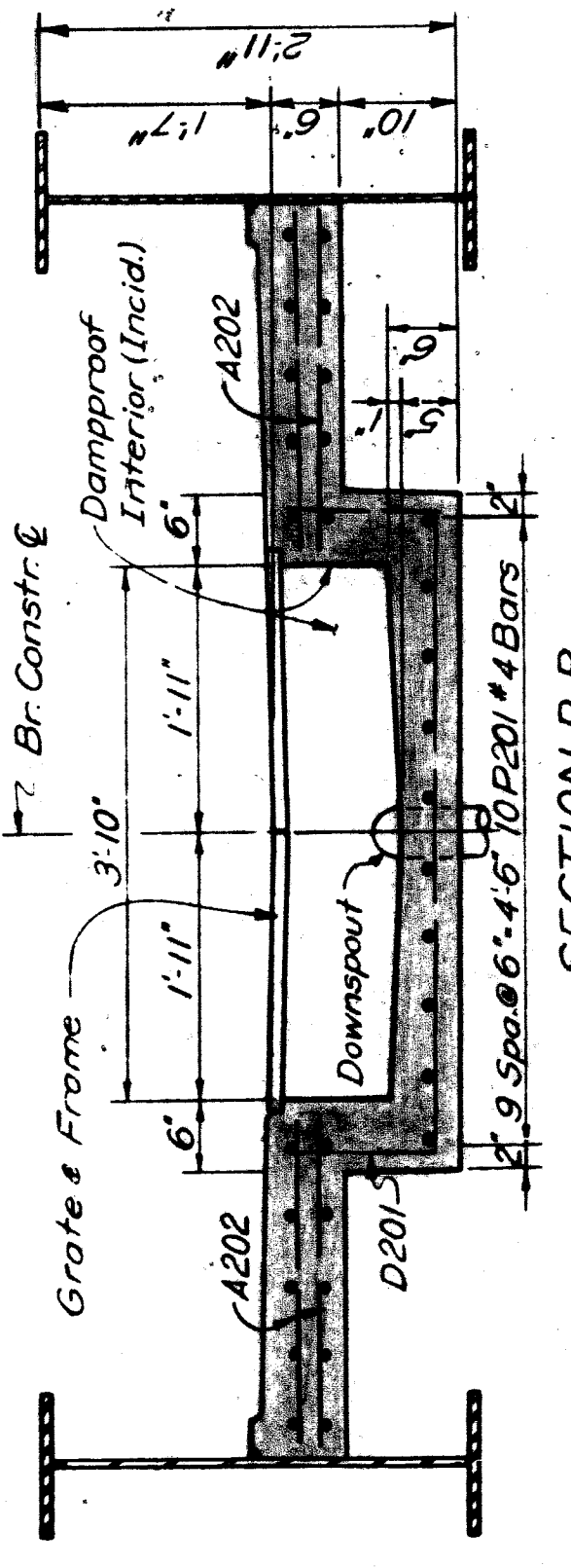
CITY OF DETROIT
JOB No. PW 990(3)
P06 of 82123J



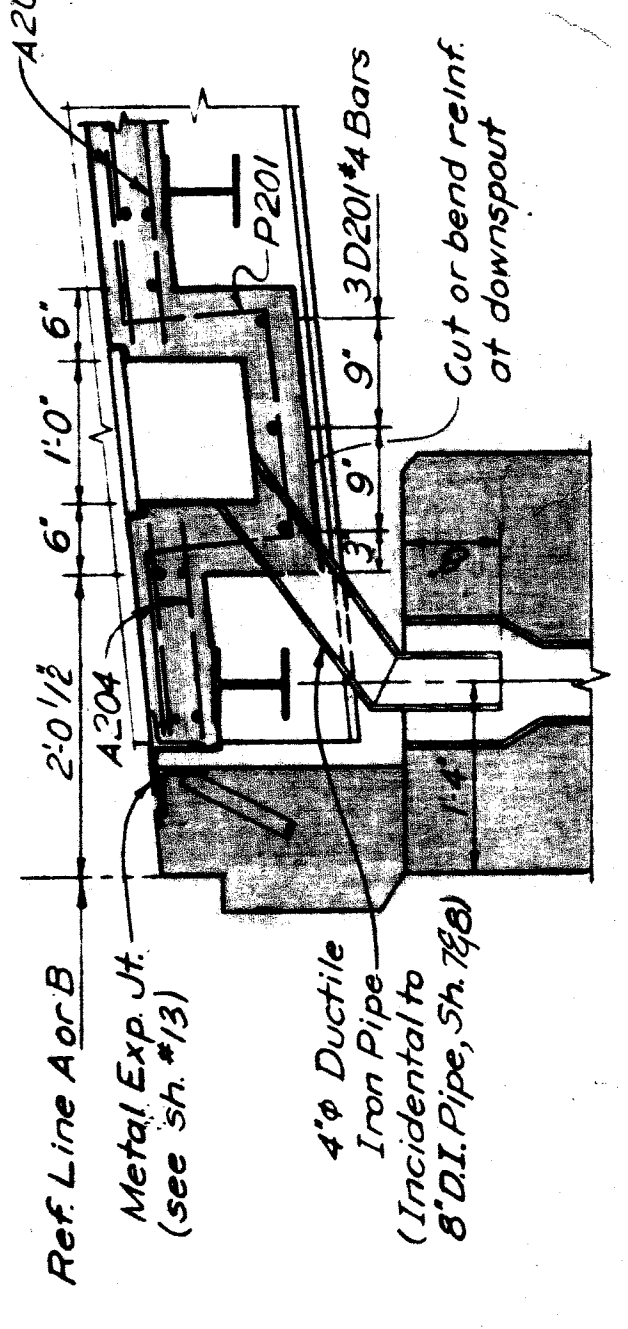
PLAN



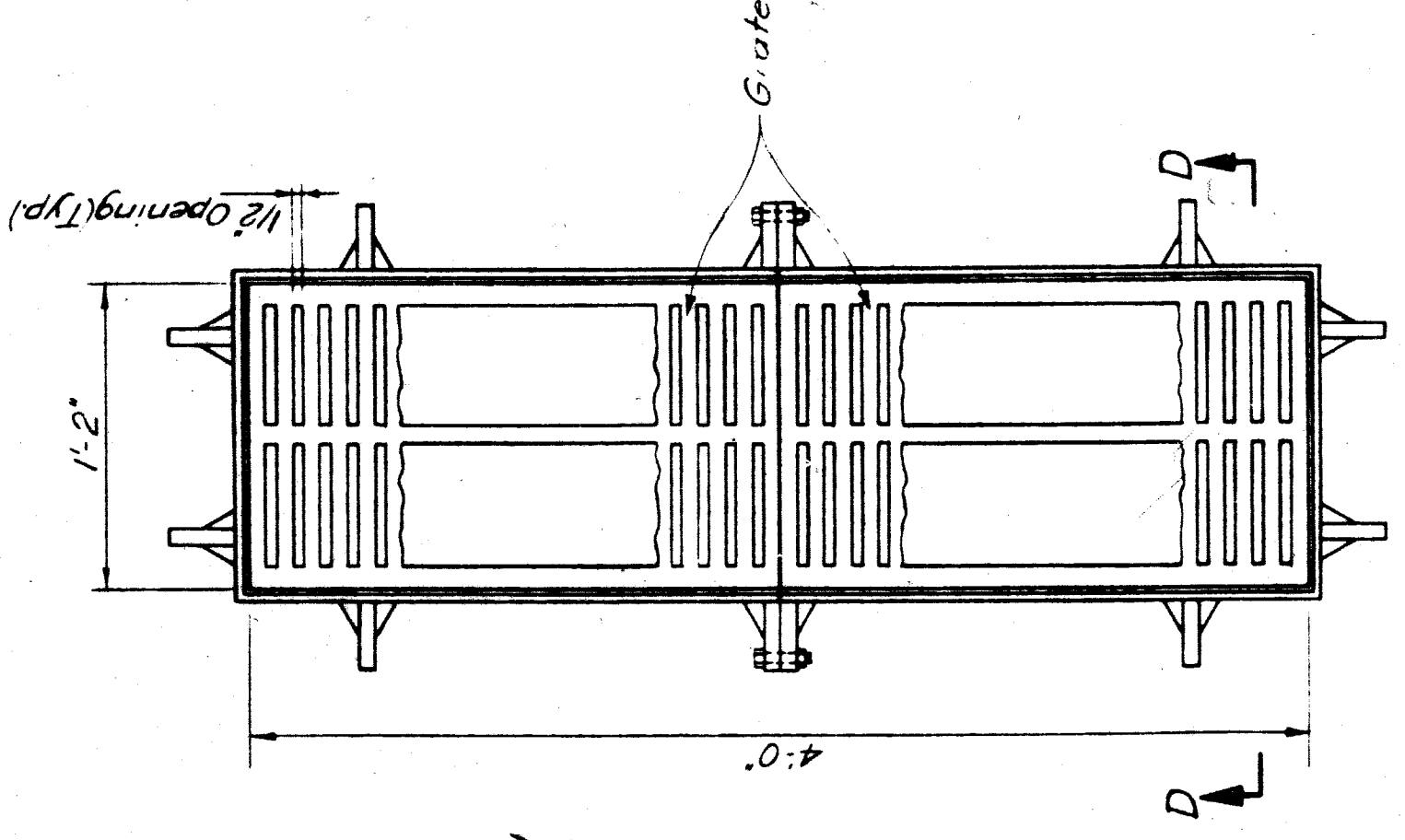
SECTION A-A



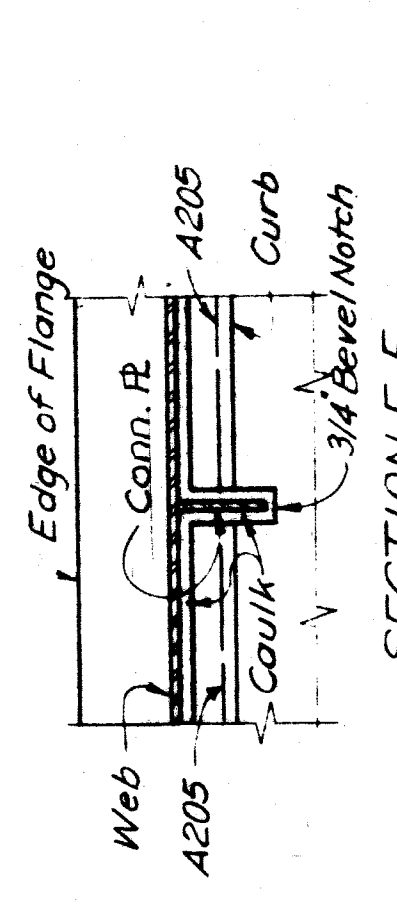
SECTION B-B



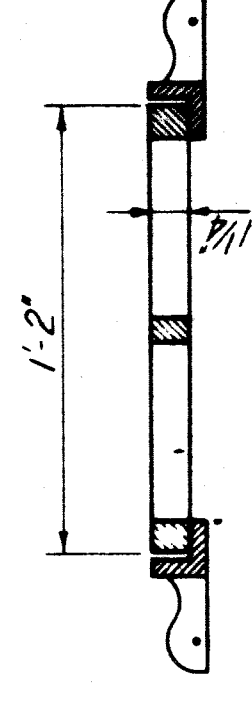
SECTION C-C



PLAN



SECTION E-E



SECTION D-D

CONCRETE QUANTITIES GRADE A (6AA)	
POUR	CU.YDS.
A	37.0
TOTAL	37.0

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

4 Frames with anchors and 4 Gratings are required. Material is to be Gray Iron conforming to A.S.T.M. Spec A48-56 or Ductile Iron conforming to A.S.T.M. Spec A139-55. Weight of Grates and Frames is included in Structural Steel Weight. Grates shall be bolted to Frames.

DRAIN FRAME & GRATING DETAILS

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
 ROOSEVELT AVE. PEDESTRIAN BRIDGE
 CROSSING THE JEFFRIES FREEWAY IN DETROIT

SUPERSTRUCTURE DETAILS

NO.	REVISIONS	DATE	BY

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

APPROVED: *[Signature]* CIVIL ENGINEER
 JOB NO. PW 990(3)

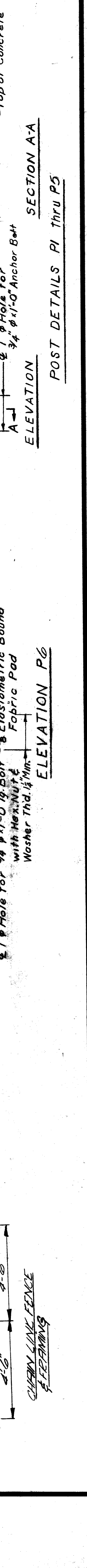
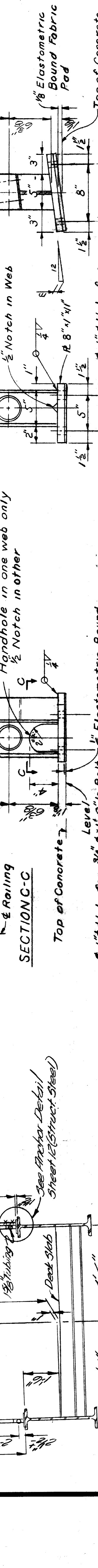
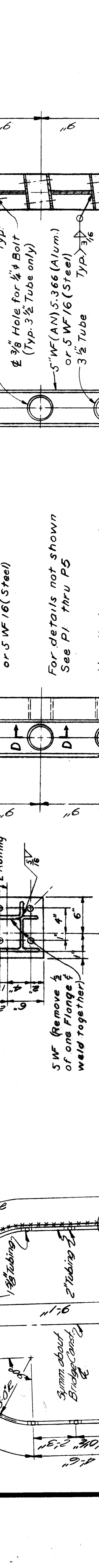
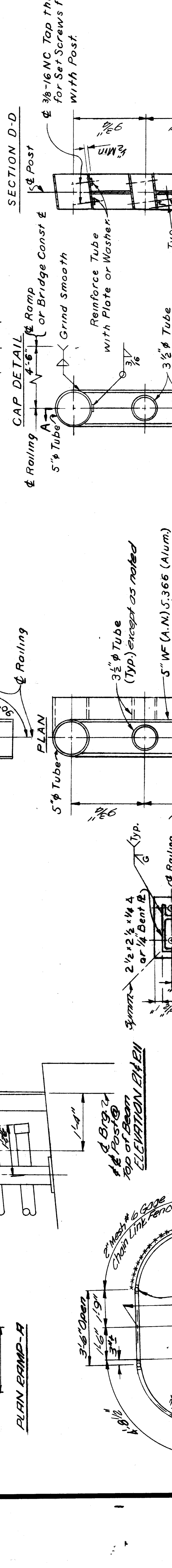
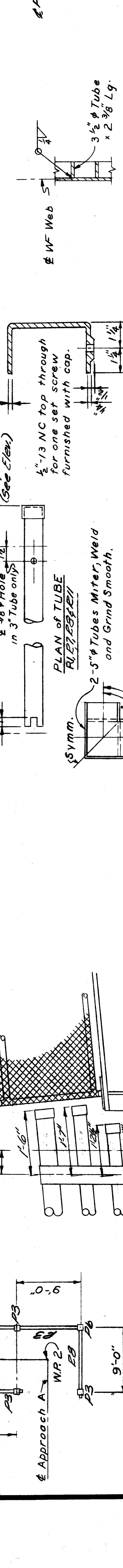
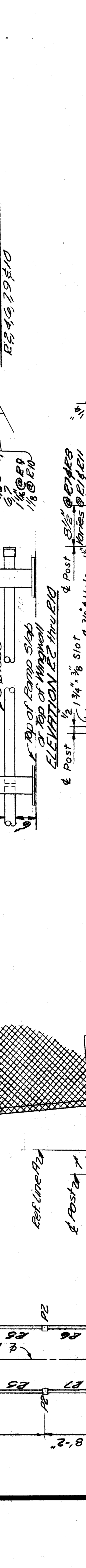
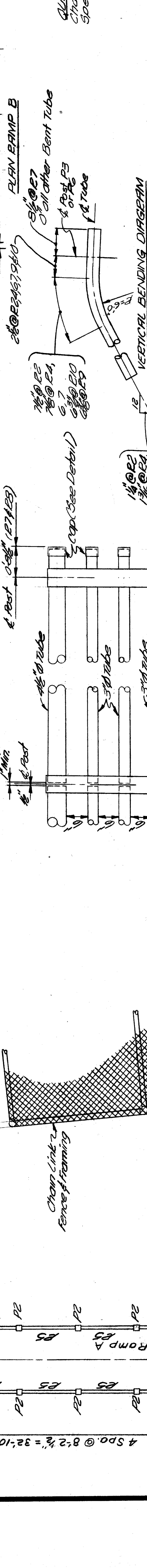
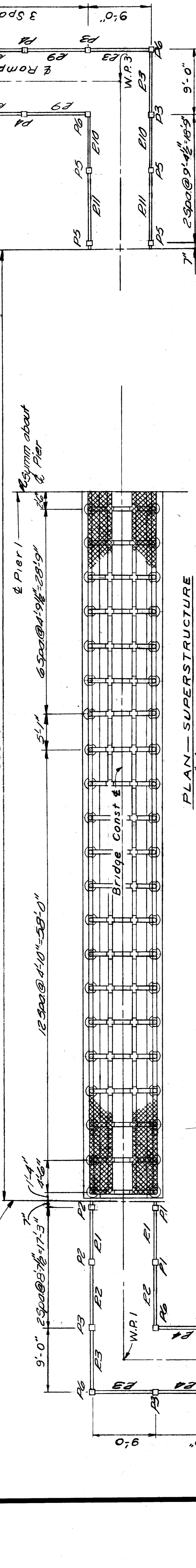
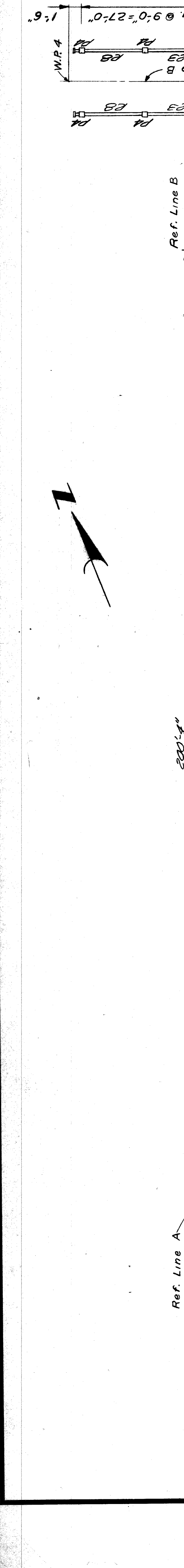
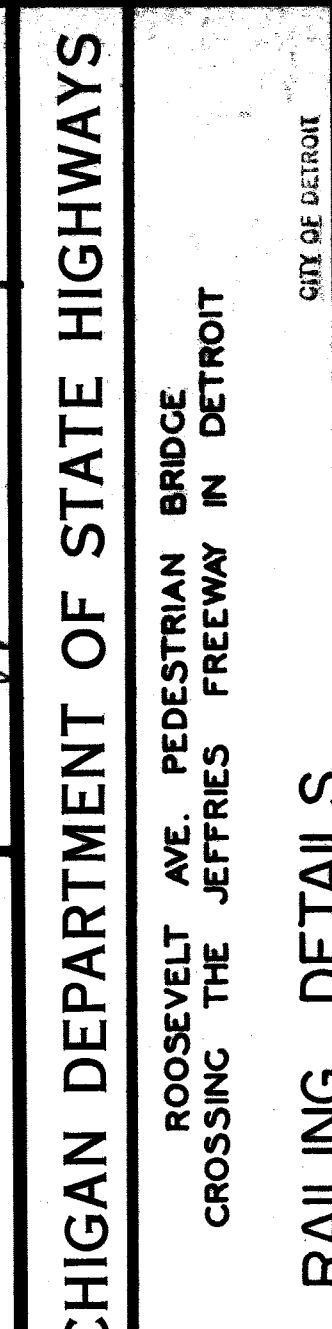
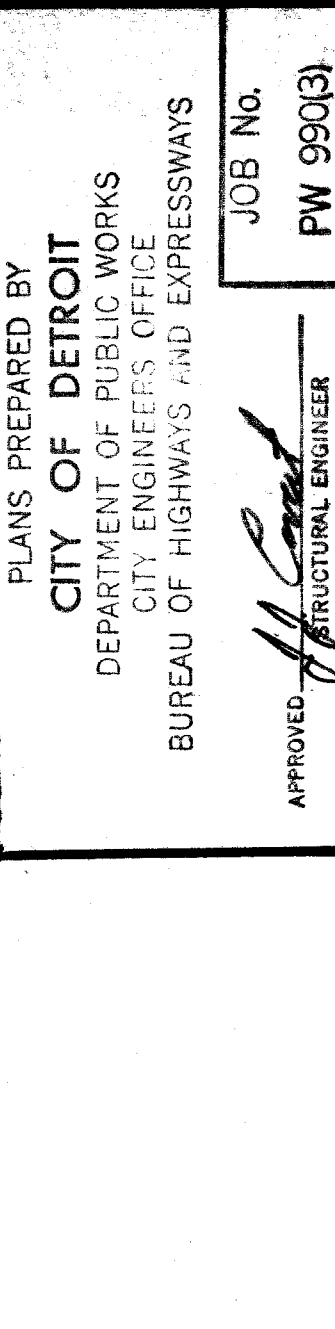
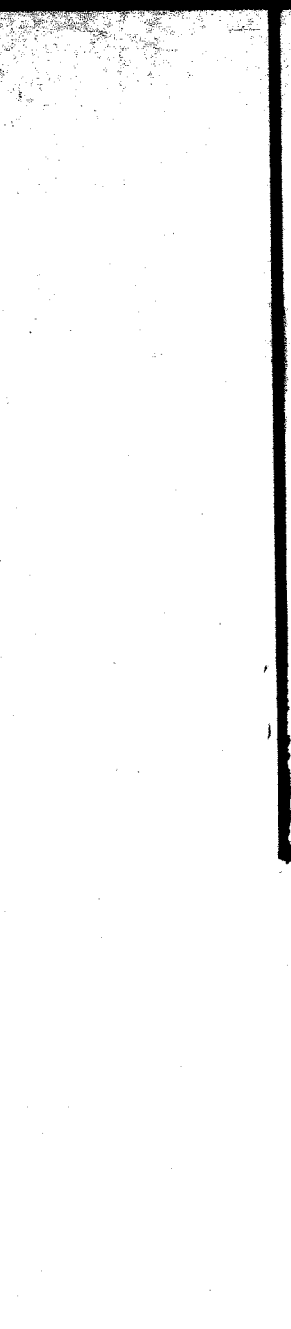
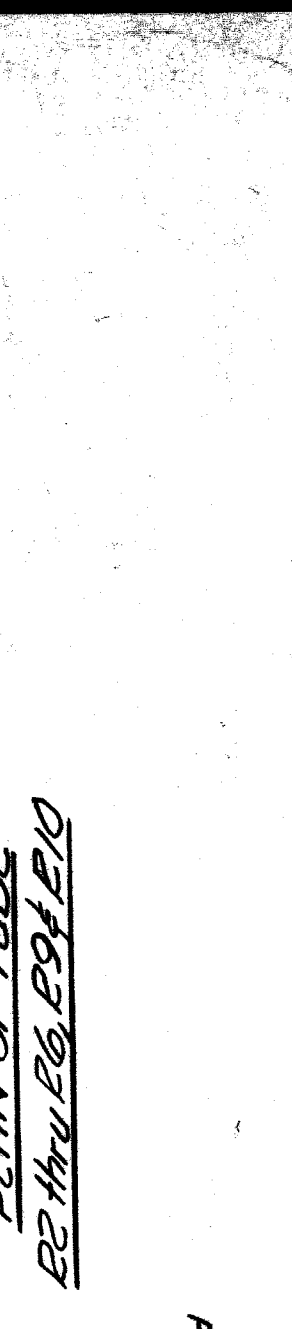
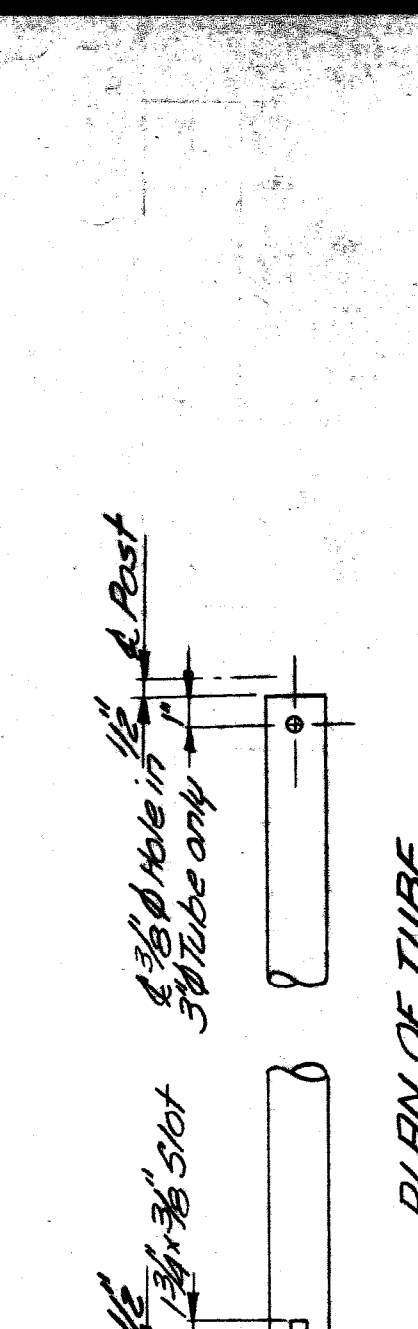
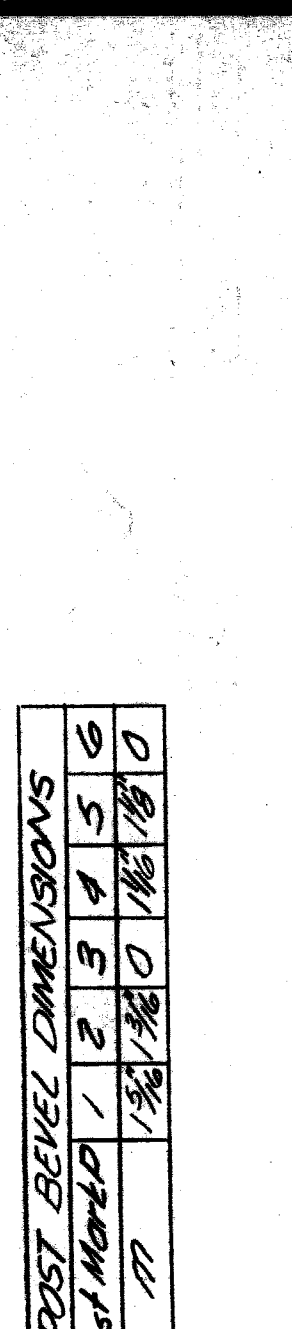
DATE: 12-2-63
 DRAWN BY: K.M.M. 2-63
 CHECKED BY: J.A.L. 2-63
 DESIGNED BY: J.C.G. 2-63

PO6 of 82123J

NOTES
 Enclosure Posts are to be normal to the deck slab.
 Ramp railing may be either aluminum alloy 6061-T6 (ASTM B221) or steel galvanized in accordance with ASTM A123.
 Chain link fence shall be No. 6 gage 2" mesh and shall conform to the M.D. Standard Specifications, Sect. 7-22.05. The fence material is to be adequately fastened to all tubing in the frame.
 Nominal 2" tubing shall be 2" outside diam steel pipe or tubing weighing 2.7 lbs. per ft., galvanized.
 Nominal 1 1/2" tubing shall be 1 1/2" outside diam steel pipe or tubing weighing 2.7 lbs. per ft., galvanized.
 All tubing shall be furnished with suitable connections and its min. weight shall be within 5% of the weight specified.
 All components are to be galvanized (Anchor Bolts, Nuts & Washers galvanized in accordance with ASTM designation A153). Galvanizing on Ramp Railing shall be done after fabrication.
 Anchor Bolts, Nuts & Washers are to be ASTM A307 steel.
 Ramp Railing Tube diam. are OD and wall thickness shall be 1/8" for all tubes.
 All distances shown on Plan are horizontal distances.
 Ry length is measured out to out of metal.

QUANTITIES
 Chain Link Fence & Framing
 Sectional Bridge railing-fabrication & Erection & Tube 2772000
 19282000

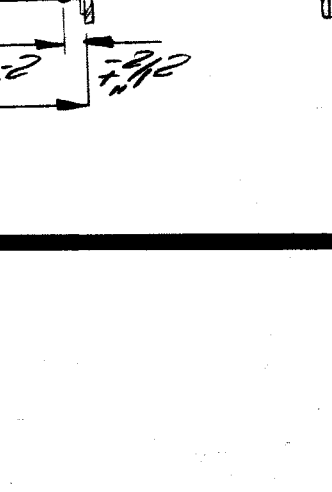
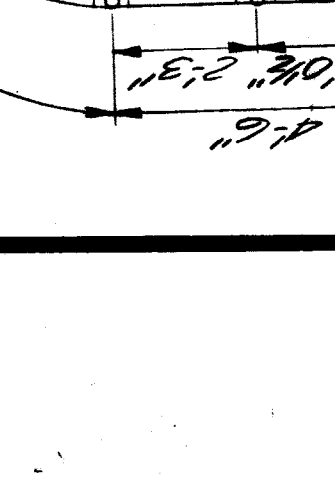
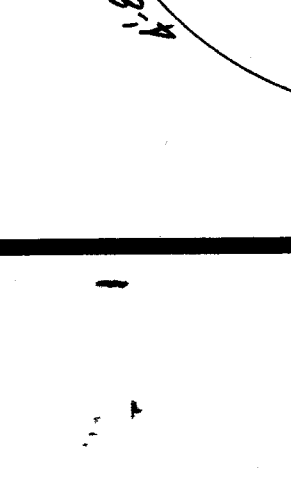
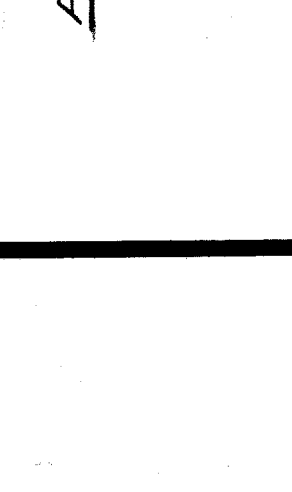
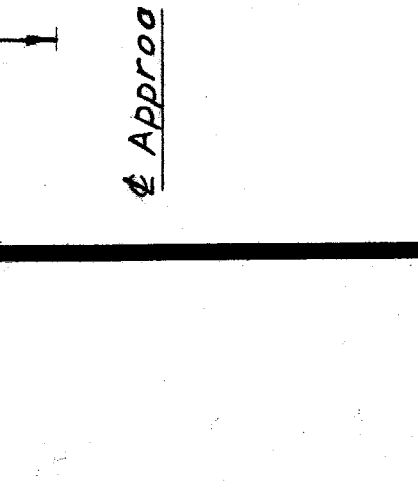
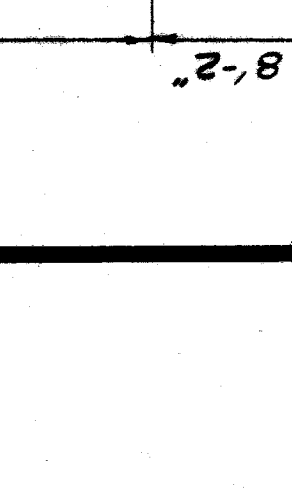
RAIL BEVEL DIMENSIONS					
Post Material	1	2	3	4	5
	1/2"	3/8"	3/4"	1 1/8"	1 1/2"
	1/2"	3/8"	3/4"	1 1/8"	1 1/2"



NOTES
 Ramp railing may be either aluminum alloy 6061-T6 (ASTM B221) or steel galvanized in accordance with ASTM A123.
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 All components are to be galvanized (Anchor Bolts, Nuts & Washers galvanized in accordance with ASTM designation A153). Galvanizing on Ramp Railing shall be done after fabrication.
 Anchor Bolts, Nuts & Washers are to be ASTM A307 steel.
 Ramp Railing Tube diam. are OD and wall thickness shall be 1/8" for all tubes.
 All distances shown on Plan are horizontal distances.
 Ry length is measured out to out of metal.

QUANTITIES
 Chain Link Fence & Framing
 Sectional Bridge railing-fabrication & Erection & Tube 2772000
 19282000

RAIL BEVEL DIMENSIONS					
Post Material	1	2	3	4	5
	1/2"	3/8"	3/4"	1 1/8"	1 1/2"
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 Ramp Railing Tube diam. are OD and wall thickness shall be 1/8" for all tubes.
 All distances shown on Plan are horizontal distances.
 Ry length is measured out to out of metal.

PLANS PREPARED BY
 CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
 APPROVED: [Signature]
 STRUCTURAL ENGINEER
 JOB No. PW 990(3)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS
 ROOSEVELT AVE. PEDESTRIAN BRIDGE
 CROSSING THE JEFFRIES FREEWAY IN DETROIT

RAILING DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT
 SHEET 2-62
 DRAWN BY: D.S.L./J.M.
 CHECKED BY: W.A.L.
 SHEET 2-63 OF 2-63

POST DETAILS P1 thru P5
ELEVATION

SECTION A-A
ELEVATION

SECTION C-C
ELEVATION

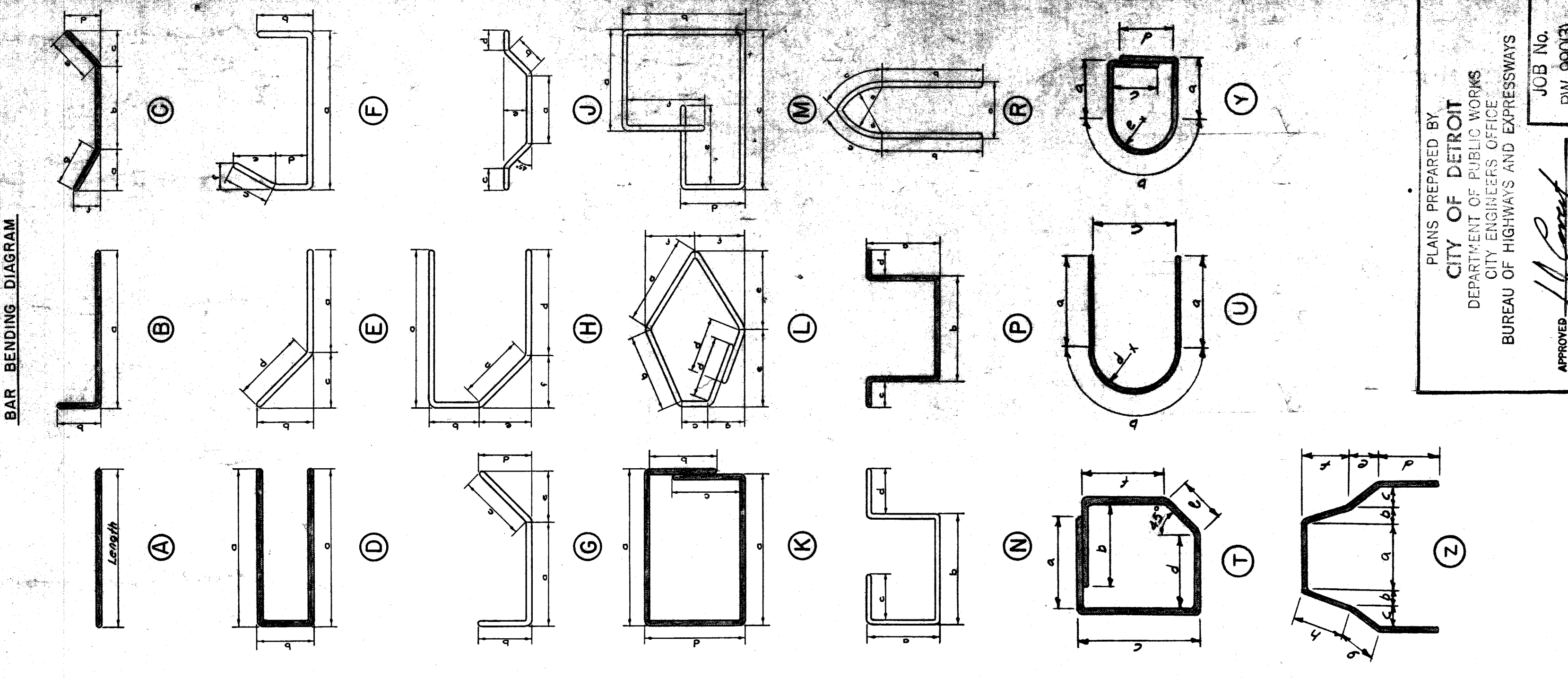
SECTION P1 thru P5
ELEVATION

SECTION P6
ELEVATION

BAR	DIMENSIONS							NO. REQ'D	TOTAL WT.
	a	b	c	d	e	f	g		
A1								80	1502
A2								18	561
A3								18	601
A4								36	243
A5								46	932
A6								64	539
A7								100	1840
A8								38	292
A9								32	421
A10								8	90
A11								4	19
A12								28	336
A13								14	42
A14								40	180
A15								28	168
A16								9	419
A17								8	112
A18								32	433
A19								20	187
A20								10	130
A21								8	98
A22								9	101
A23								7	226
A24								18	602
A25									
C1	0.7	2.10	0.7	0.7	0.10	0.7	0.10	37	250
D1	2.54	0.43						22	77
D2	1.6	11.6						4	39
T1	0.7	0.7	0.10	0.34	0.58	0.54		10	22
Total Abutments = 11266									

BAR	DIMENSIONS							NO. REQ'D	TOTAL WT.
	a	b	c	d	e	f	g		
A100								16	1764
A101								13	1091
A102								6	219
A103								4	119
A104								8	204
A105								14	272
A106								4	117
A107								2	18
A108								28	84
B100	2.6	0.94						4	20
C100	3.78	3.6	3.78	0.58	3.78	0.58	3.78	3	48
C101	2.74	3.6	2.74	0.4	2.78	0.4	2.78	2	26
D100	3.02	2.0						10	120
K100	2.78	1.54	1.54	1.98				4	27
K101	2.64	1.54	1.54	1.98				4	26
K102	2.58	1.54	1.54	1.98				4	26
K103	2.48	1.54	1.54	1.98				4	25
K104	2.38	1.54	1.54	1.98				4	24
L100	1.7	3.5	2.78	1.04				8	55
Y100	1.16	3.48	1.54	1.58	1.08			24	136
Z100	2.44	0.3	0.9	2.84	1.1	1.18	1.38	12	102
Total Pier = 4523									

BAR	DIMENSIONS							NO. REQ'D	LENGTH	SIZE	TOTAL WT.
	a	b	c	d	e	f	g				
A201								8.6	396	2249	
A202								2.3	8	12	
A203								34.0	192	4361	
A204								1.3	32	27	
A205								6.0	120	481	
A206								4.9	8	25	
D201	1.14	4.78						6.9	6	27	
P201	1.0	1.78	0.114	0.114				5.6	20	73	
Total Superstructure = 7255											



Note: -
 All right angle bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.
 All bar numbers shown on this sheet to be prefixed P06.

TOLERANCES IN CUTTING AND BENDING BARS ARE AS ESTABLISHED IN MANUAL OF STANDARD PRACTICE OF THE CONCRETE REINFORCING STEEL INSTITUTE AND DETAILING MANUAL OF THE AMERICAN CONCRETE INSTITUTE.
 Grand Total Steel Reinforcement 23,044 #

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

APPROVED: *[Signature]*
 STRUCTURAL ENGINEER
 JOB No. PW 9903

MICHIGAN STATE HIGHWAY DEPARTMENT
 ROOSEVELT AVE. PEDESTRIAN BRIDGE
 CROSSING THE JEFFRIES FREEWAY IN DETROIT
 STEEL REINFORCEMENT DETAILS

DATE OF DETROIT: 2-69
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 SHEET 16 OF 16

NO. _____ DATE _____ BY _____
 REVISIONS DESCRIPTION

P06 of 82123J