

NOTES:
 N Indicates the number of blows required to drive the sampler 6" (or as noted) using a 140# hammer falling 30". Where blow count is not shown, sampler was levered, pushed or hand-driven.
 S Indicates Transverse Shearing Resistance in Lbs. per Sq. Ft. as determined by M.D.S.H. Standard Test.
 * Indicates no sample.
 All elevations are based on City of Detroit Datum.
 Information given on this sheet for Boring J-105 is taken from field reports only.

LEGEND

- Tree
- Fence
- Sewer Manhole
- Sewer Inlet or Catch Basin
- Water Gatewell and Valve
- RLC. Cable Manhole
- Fire Hydrant
- D.F.D. Alarm Box
- Test Hole for Soil Profile
- M.B.T. Cable Manhole
- Removed
- RLC. Light pole

SURVEY PLAN
 Scale: 1"=40'

NOTES:
 The topography shown represents conditions existing at the time the field survey was made. These conditions may have been altered by the operations of others before this work is started. Bench Marks are referenced to the City of Detroit Datum.
 The work covered by these plans includes the construction of the Proposed Bridge and placing slope protection to the limits shown. All other work is included in the road plans which are a part of this contract.
 Removal of fences and buildings is not a part of this contract.

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

APPROVED: *H. Conant*
 STRUCTURAL ENGINEER

JOB NO.
PW 990(4)

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

UNDERWOOD AVE. OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF SITE

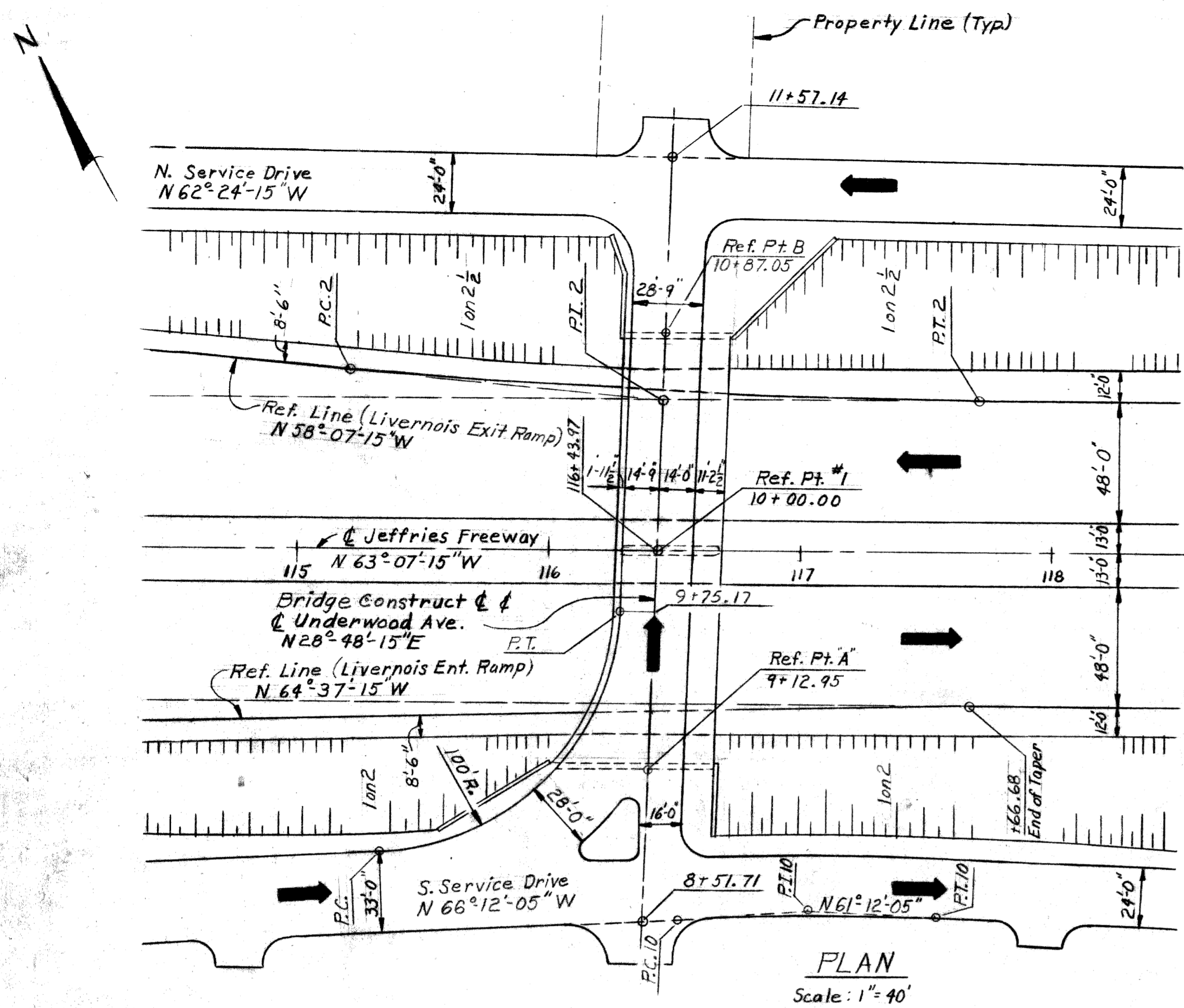
APPROVED: _____ DESIGN SUPERVISING ENGINEER

APPROVED: _____ DESIGN ENGINEER

CITY OF DETROIT

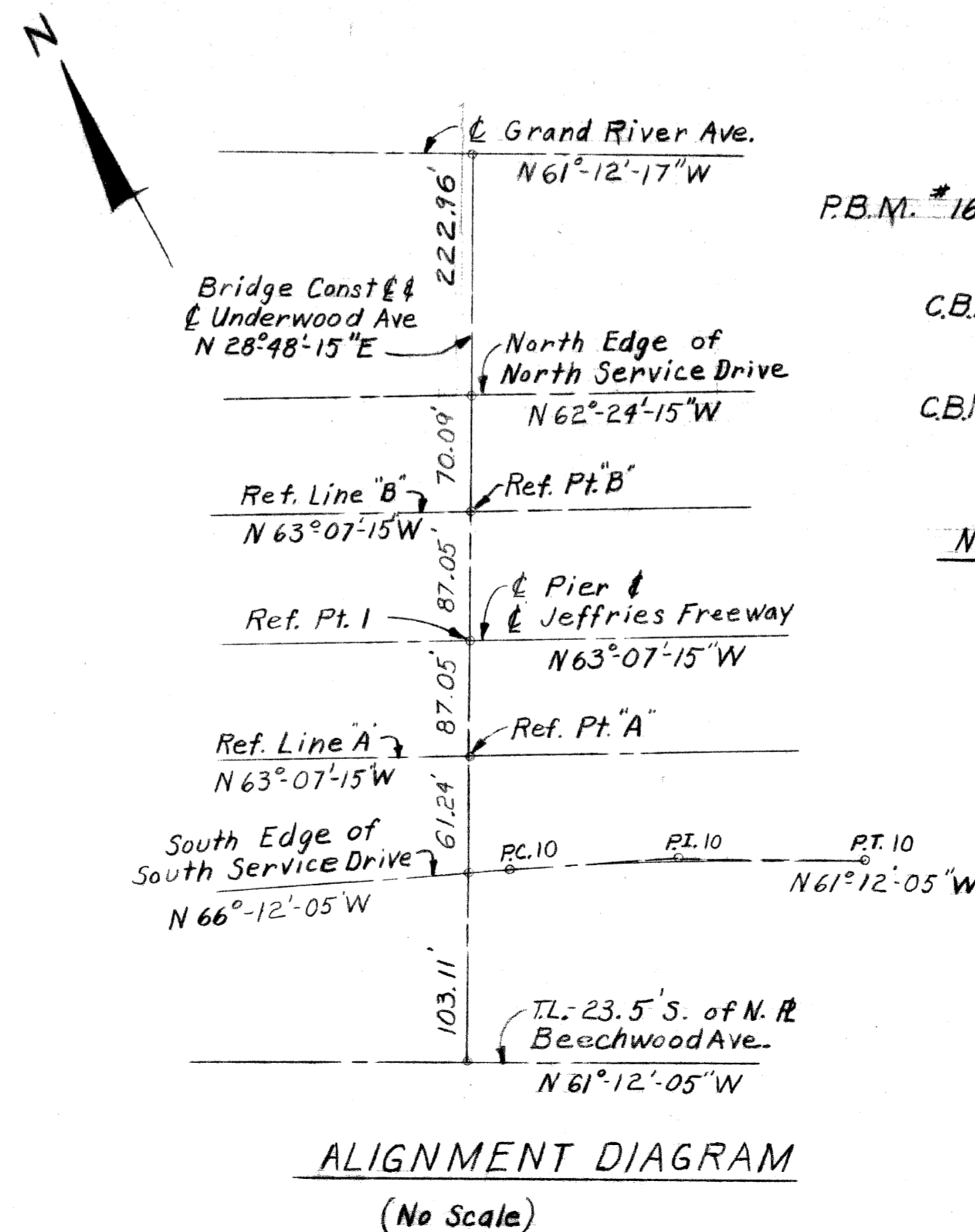
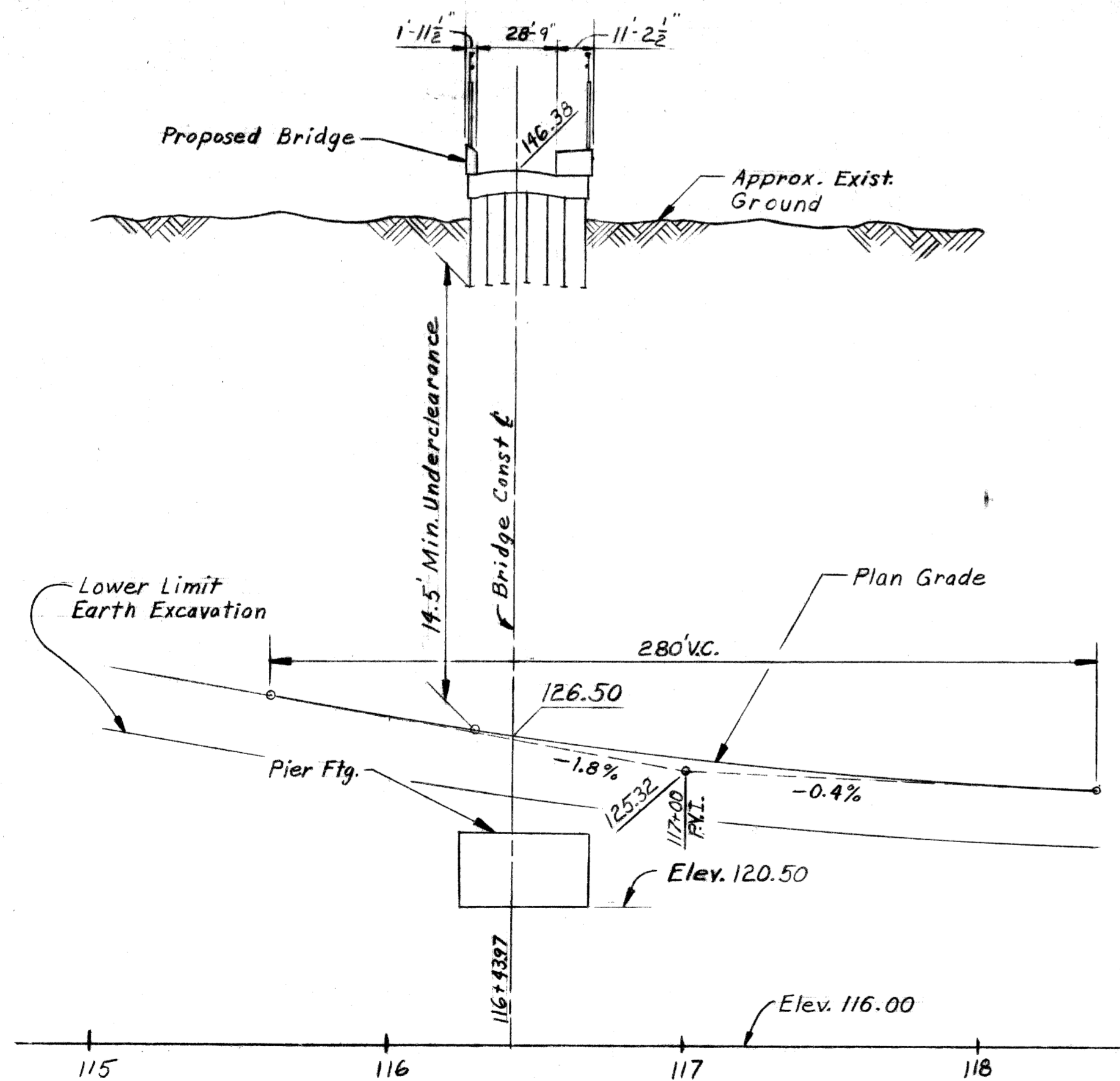
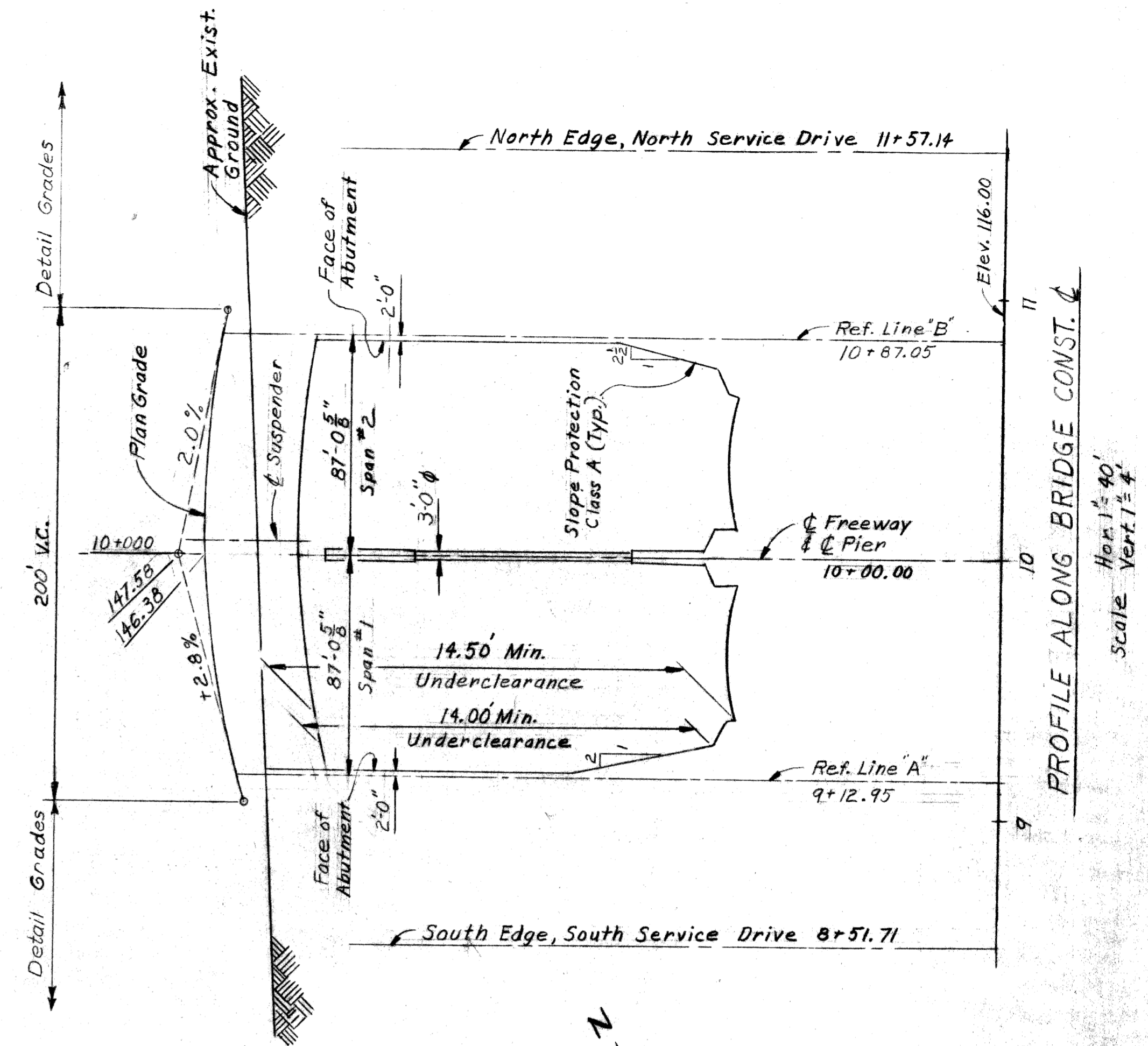
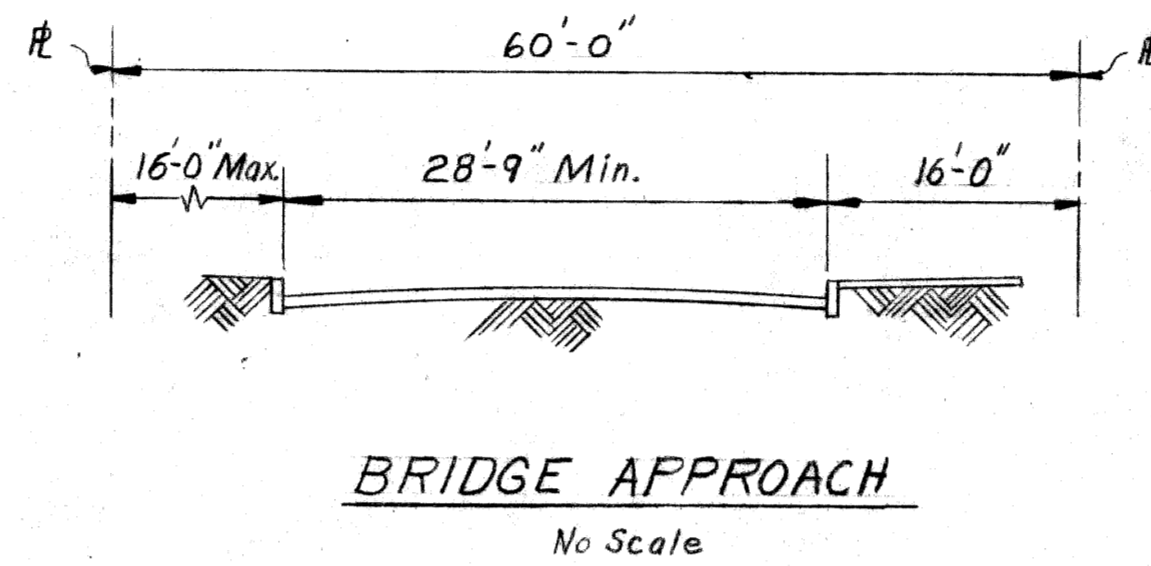
SQUAD BOSS	Watts
DRAWN BY	RRASIK 2/68
TRACED BY	
CHECKED BY	R.H. L.B.J. 3/68
SHEET	2 OF 20

S32 of 82123I



**CURVE DATA
LIVERNOIS EXIT RAMP**

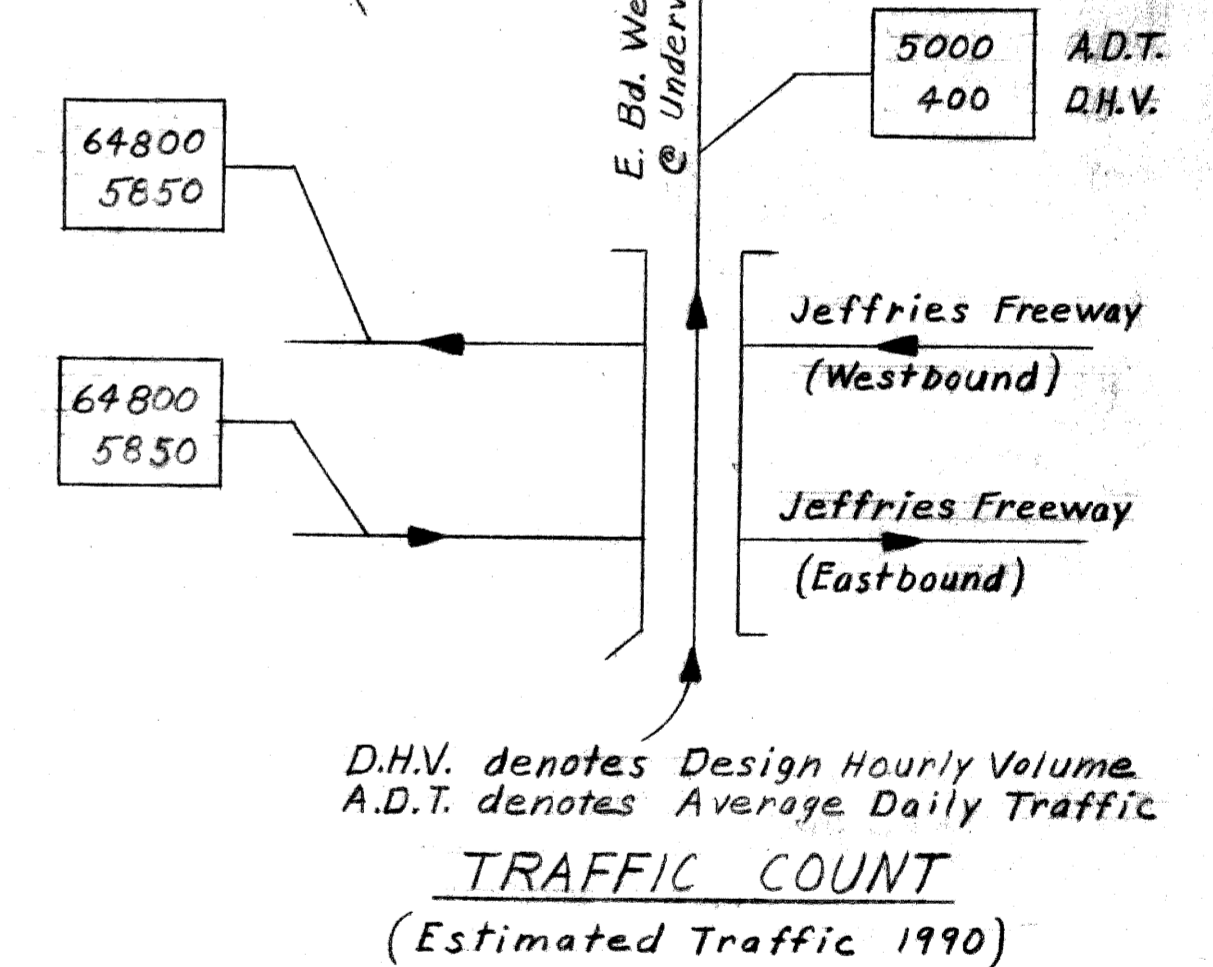
CURVE 2
 $\Delta = 5^\circ 00' 00''$
 $D = 2^\circ 00' 00''$
 $R = 2864.79'$
 $T = 125.08'$
 $L = 250.00'$
 $E = 2.73'$
 $PC = 115+20.15$
 $PI = 116+95.23$
 $PT = 117+70.15$



BENCH MARKS

- P.B.M. #16-252, City of Detroit Monument on N.W. Corner of Grand River and W. Chicago, Elev. 146.820
- C.B.M. #122 Arrow on Hydrant on N.E. Corner of Beechwood and Underwood, Elev. 146.71
- C.B.M. #123 Arrow on Hydrant on S.W. Corner of Grand River and Underwood, Elev. 149.96

Note:
 C.B.M. Denotes Construction Bench Mark
 P.B.M. Denotes Permanent Bench Mark
 Elevations are based on City of Detroit Datum.



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 CITY ENGINEERING OFFICE
 BUREAU OF HIGHWAY AND EXPRESSWAYS

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

NO.	DESCRIPTION	DATE	BY

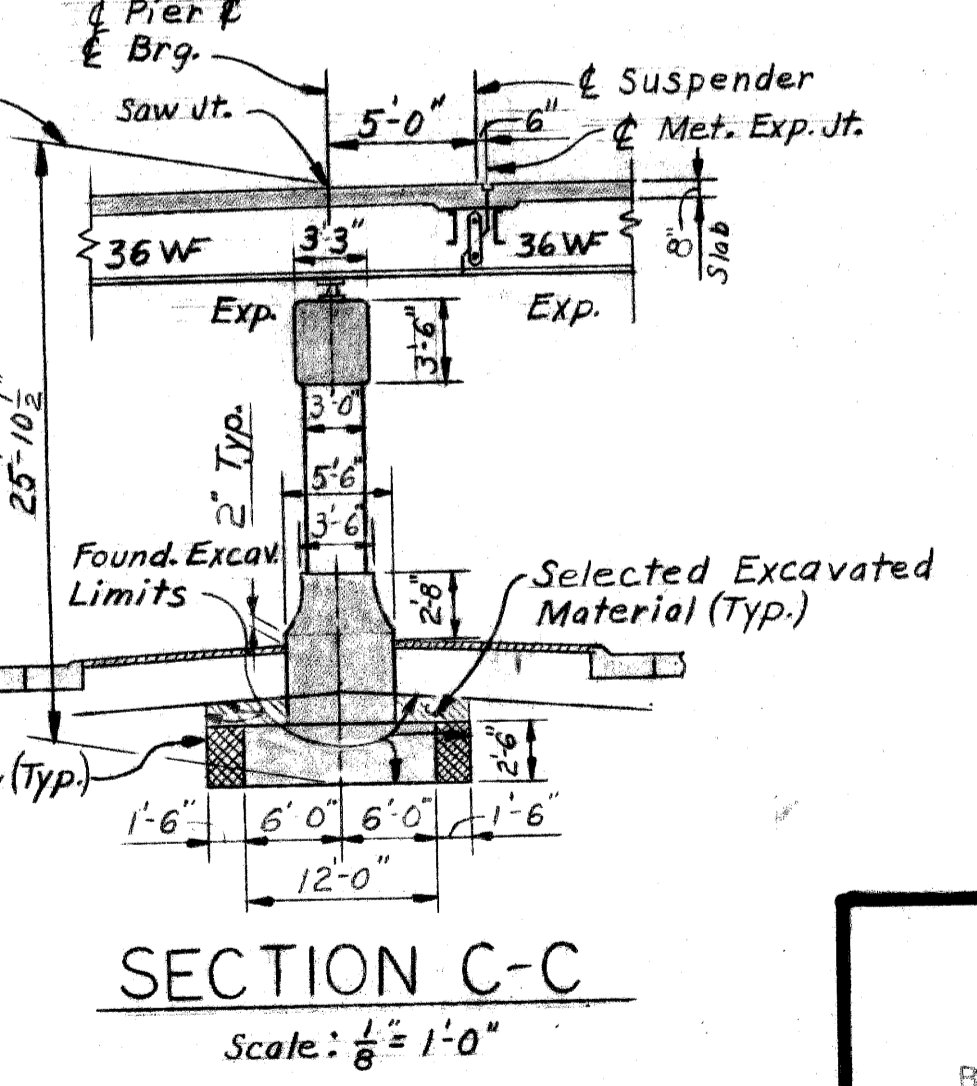
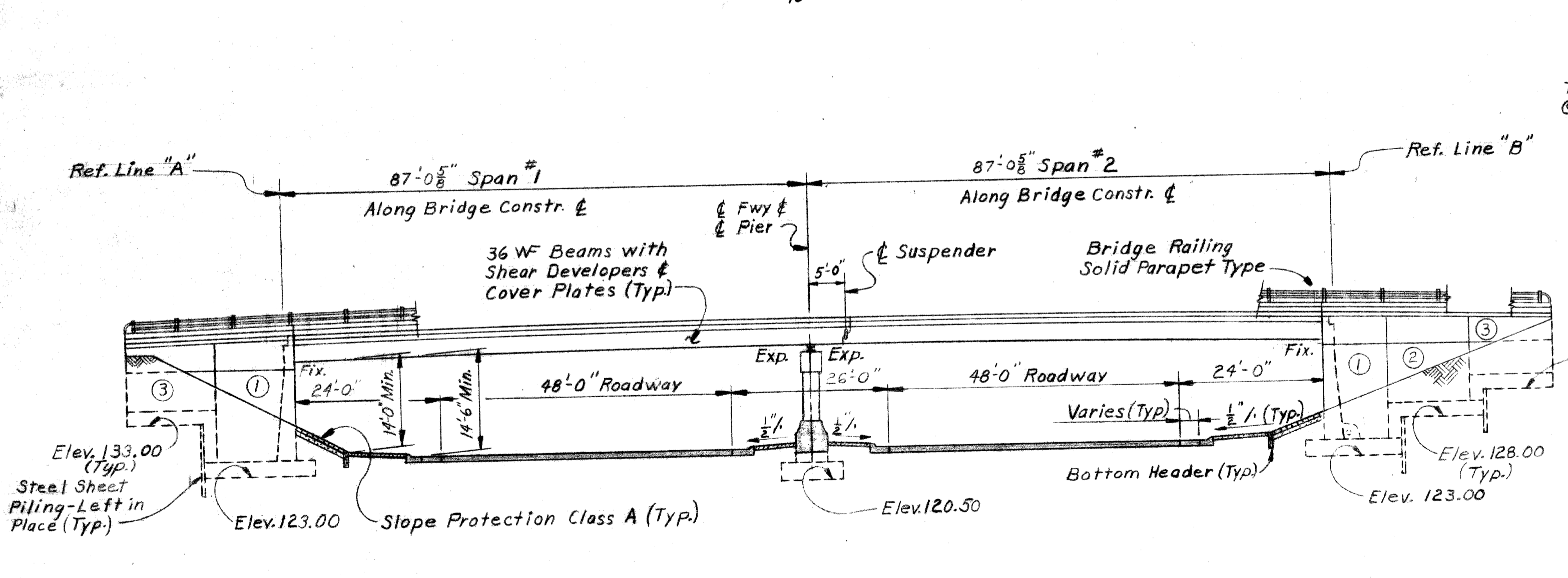
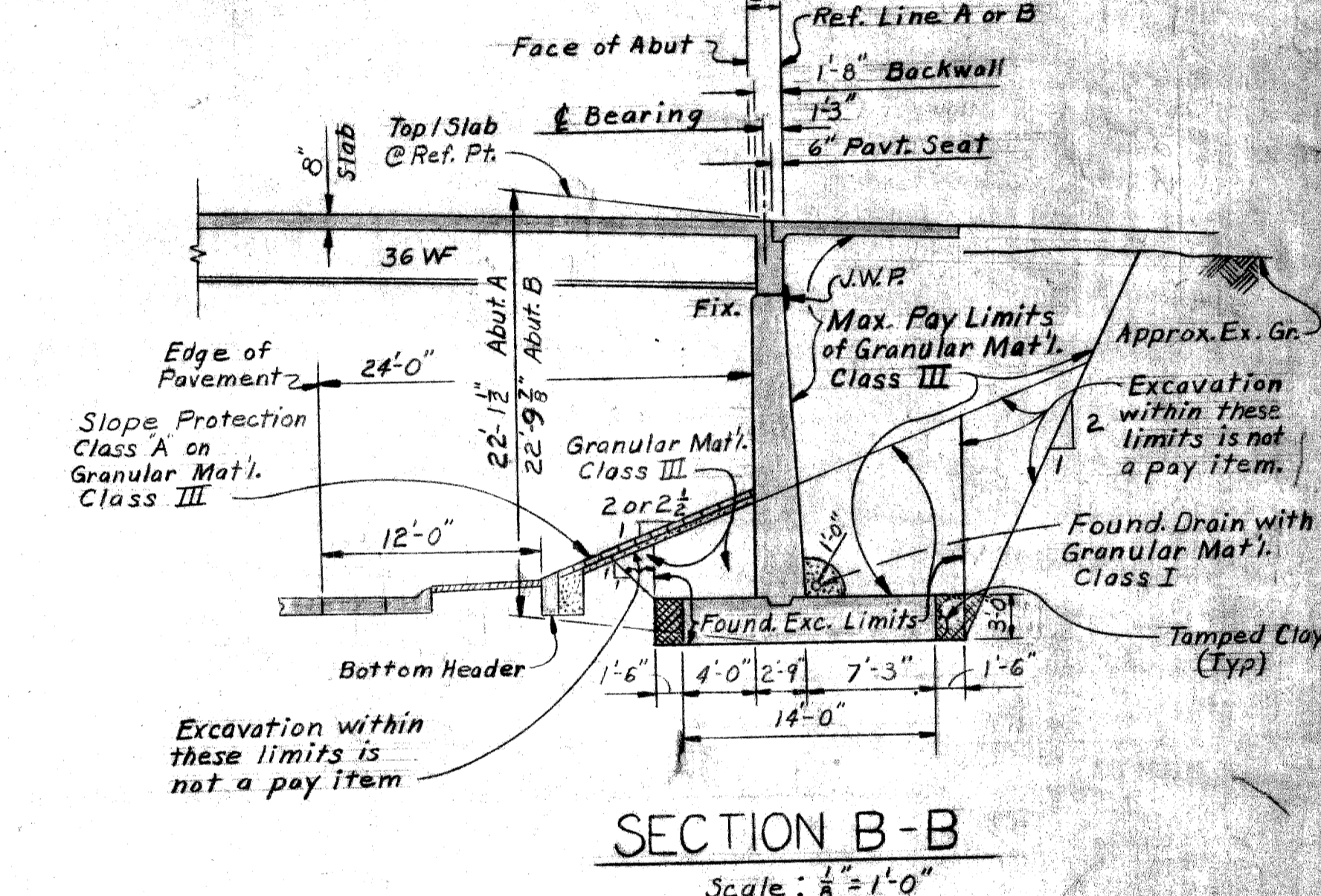
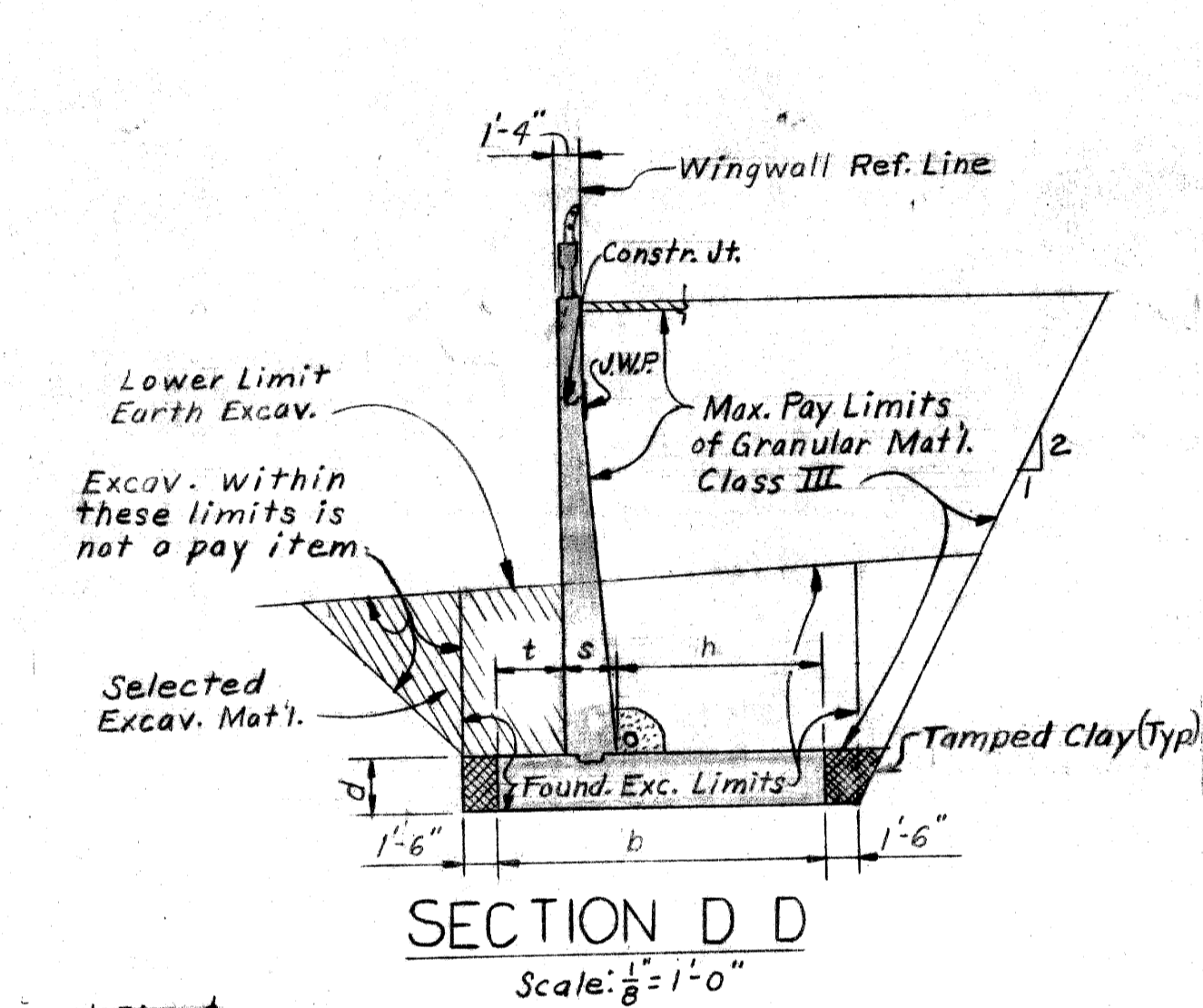
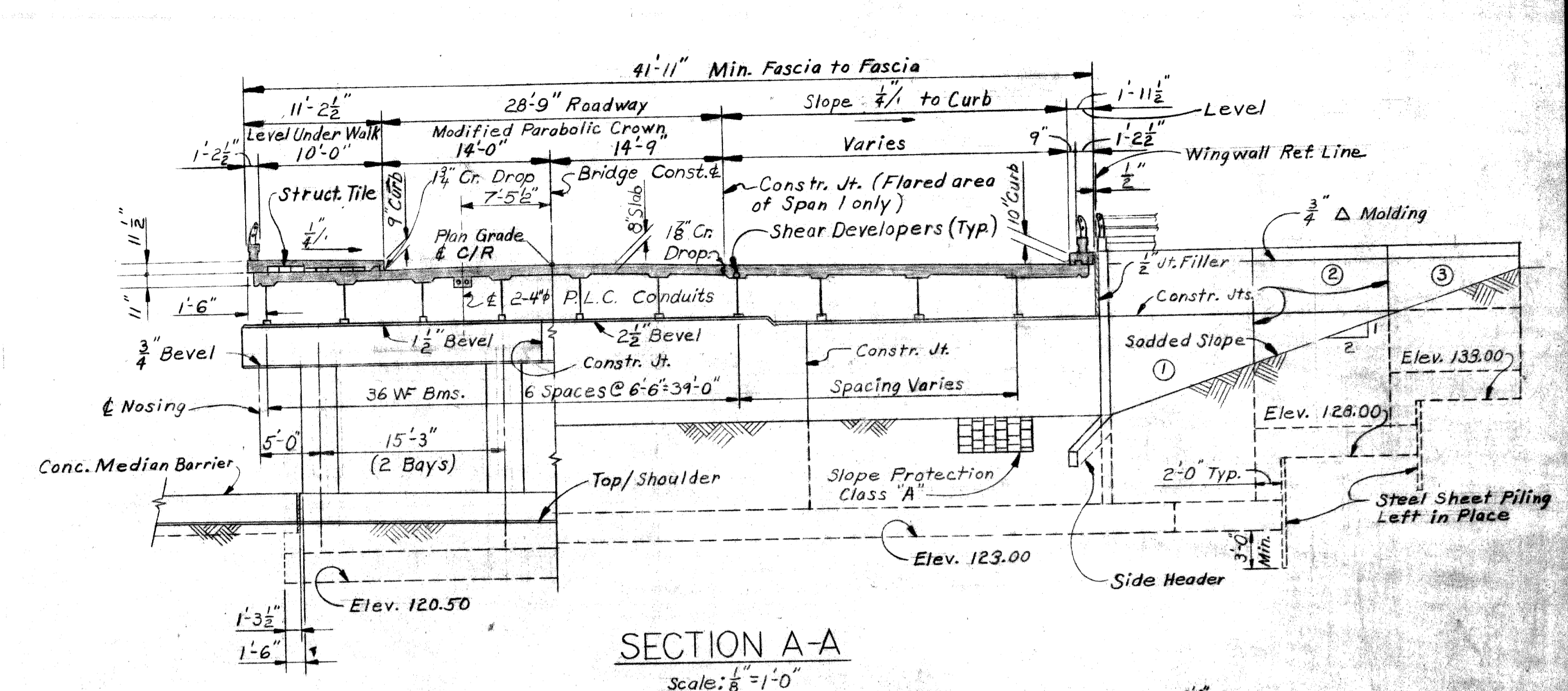
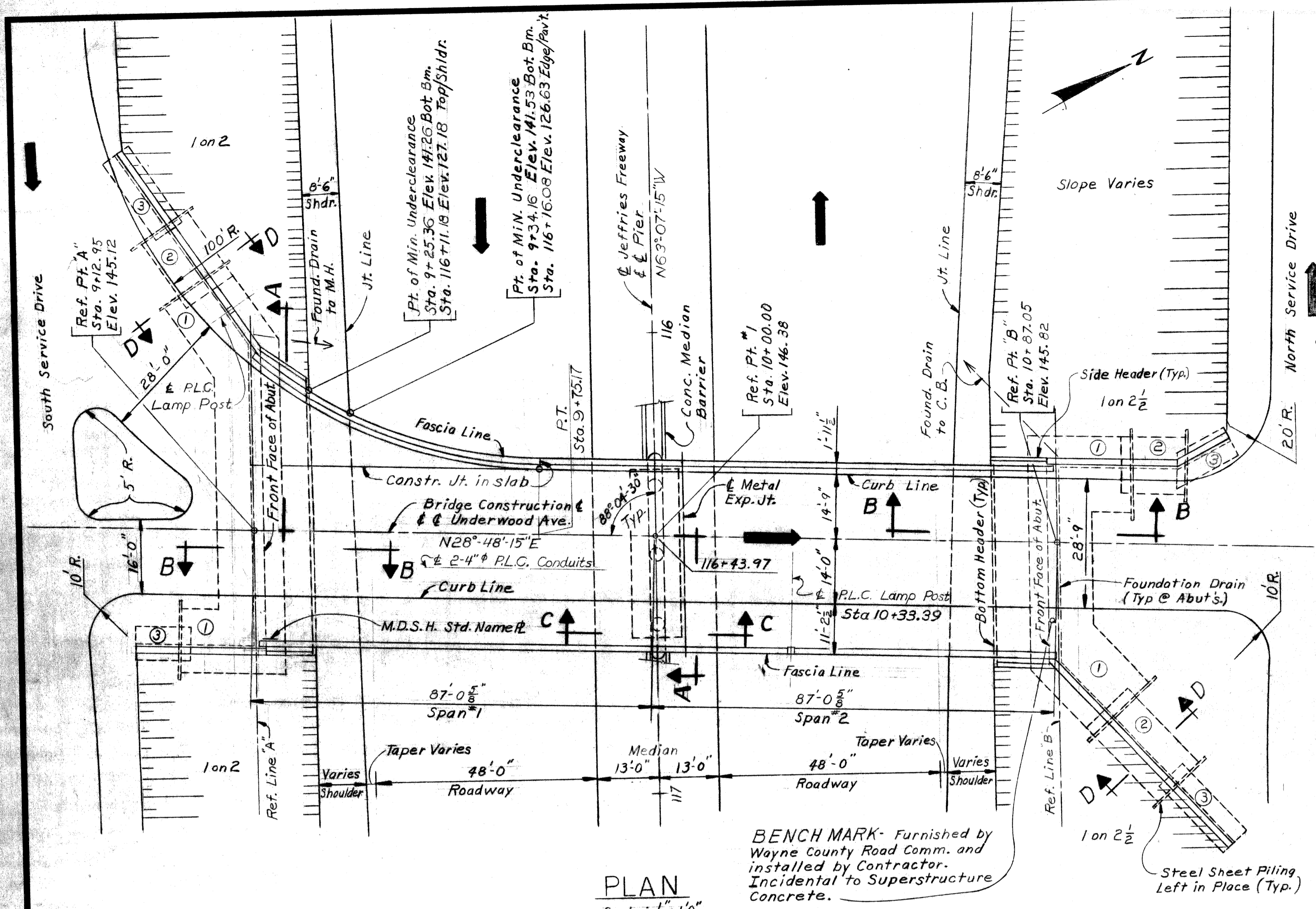
MICHIGAN DEPARTMENT OF STATE HIGHWAYS
 UNDERWOOD AVE. OVER
 THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

APPROVED: _____ DESIGN SUPERVISING ENGINEER
 APPROVED: _____ DESIGN ENGINEER

CITY OF DETROIT	
SQUAD BOSS	Walt
DRAWN BY	R. ROSIK 2/68
CHECKED BY	L.B.J. 2-68
SHEET	3 OF 20

S32 of 821231



GENERAL NOTES:
 The design of this structure is based on M.D.S.H. Specifications for the design of Highway Bridges, 1958 edition and current AASHTO Standard Specifications for Highway Bridges, H320-44 loading. Live load plus impact deflection equals $\frac{1}{4000}$ of span length and $\frac{1}{300}$ of cantilever arm.
 The top of roadway slab and tops of curbs are parallel to the vertical curve. Selected Excavated Material is incidental to Foundation Excavation. Tamped Clay is incidental to Foundation Excavation. Granular Material-Class I is incidental to Foundation Drain. For details of Slope Protection, see M.D.S.H. Standard Sh. "SP2". Granular Material-Class III Compacted in place (See Road Plans) 2000 Cu. Yds.

MISCELLANEOUS QUANTITIES		
ITEM	UNIT	AMOUNT
Slope Protection-Class A	Sq. Yds.	133
Slope Protection Header	Lin. Ft.	152
Foundation Drains	Lin. Ft.	50

WING WALL SCHEDULE					
Section	b	h	s	t	d
①	16'-0"	9'-0"	3'-0"	4'-0"	3'-0"
②	12'-0"	5'-6"	2'-6"	4'-0"	2'-6"
③	8'-0"	4'-6"	2'-0"	1'-6"	2'-0"

PLANS PREPARED BY
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APPROVED: *[Signature]*
 STRUCTURAL ENGINEER

JOB No.
PW 990(4)

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

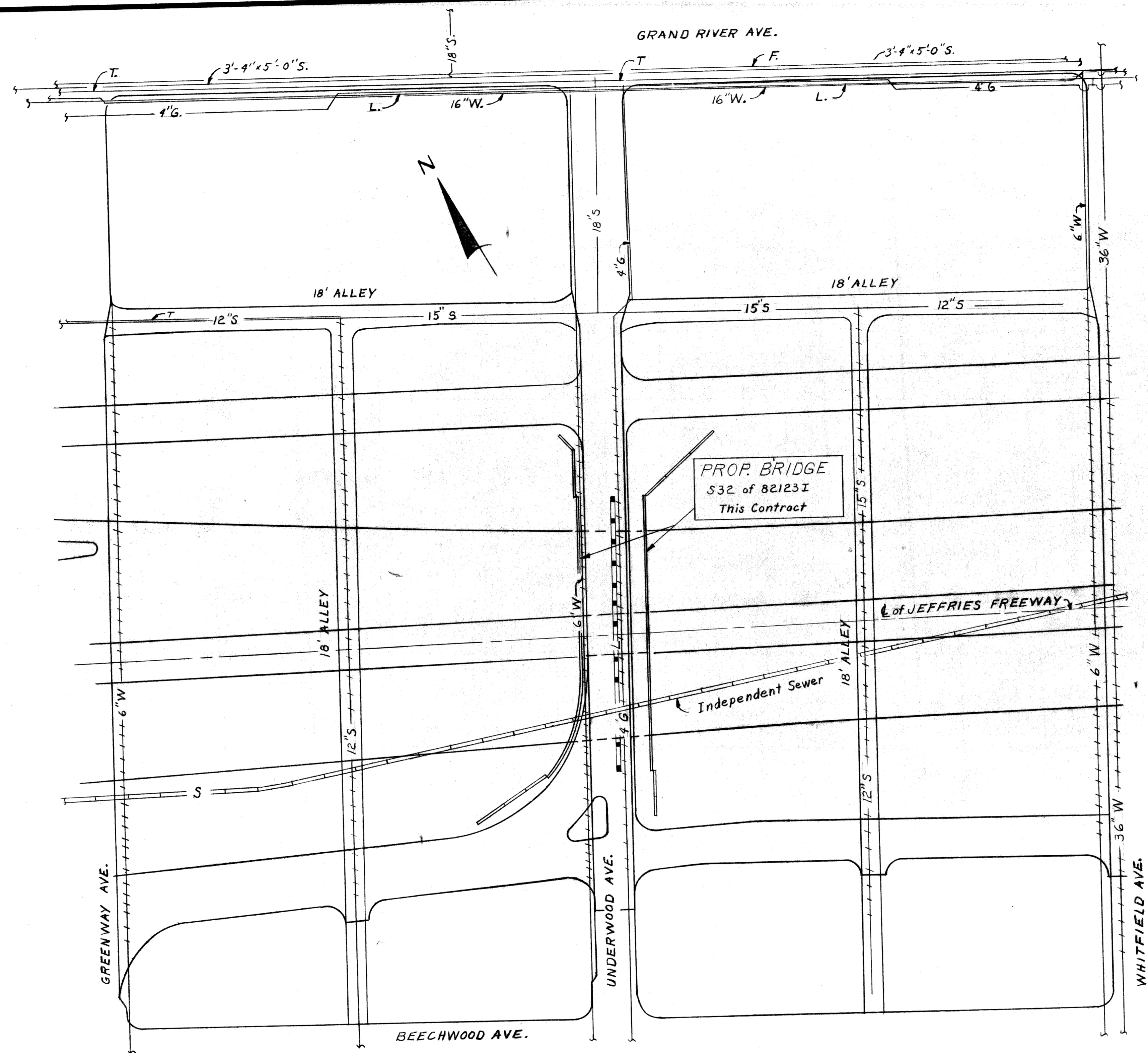
UNDERWOOD AVE. OVER THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF STRUCTURE

APPROVED: _____ DESIGN SUPERVISING ENGINEER

APPROVED: _____ DESIGN ENGINEER

CITY OF DETROIT
 SQUAD BOSS: *Watts*
 DRAWN BY: *R. Rozik* 3/68
 CHECKED BY: *L.B.J.*
 SHEET 4 OF 20
532 of 82123 I



SITUATION PLAN
SCALE: 1" = 40'-0"

LEGEND

UTILITY	Existing	Deleted or Abandoned	New Work by Others	New Work by Contractor
Michigan Consolidated Gas Co.	— G —	//// G ////		
Detroit Water Dept.	— W —	//// W ////		
Expwy. and City of Detroit Sewers	— S —	//// S ////	— S —	
Michigan Bell Telephone Co.	— T —	//// T ////		
Public Lighting Commission	— L —	//// L ////		— L —
Detroit Fire Dept.	— F —	//// F ////		

NOTE:
Bridge construction and utility alterations are included in package contract for control Section 82123 I.
The contractor shall locate all active underground utilities prior to starting work, and shall conduct his operations in such a manner as to insure that those utilities not requiring relocation will not be disturbed.

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

UNDERWOOD AVE. OVER
THE JEFFRIES FREEWAY IN DETROIT

**EXISTING UTILITIES AND
PROPOSED ALTERATIONS**

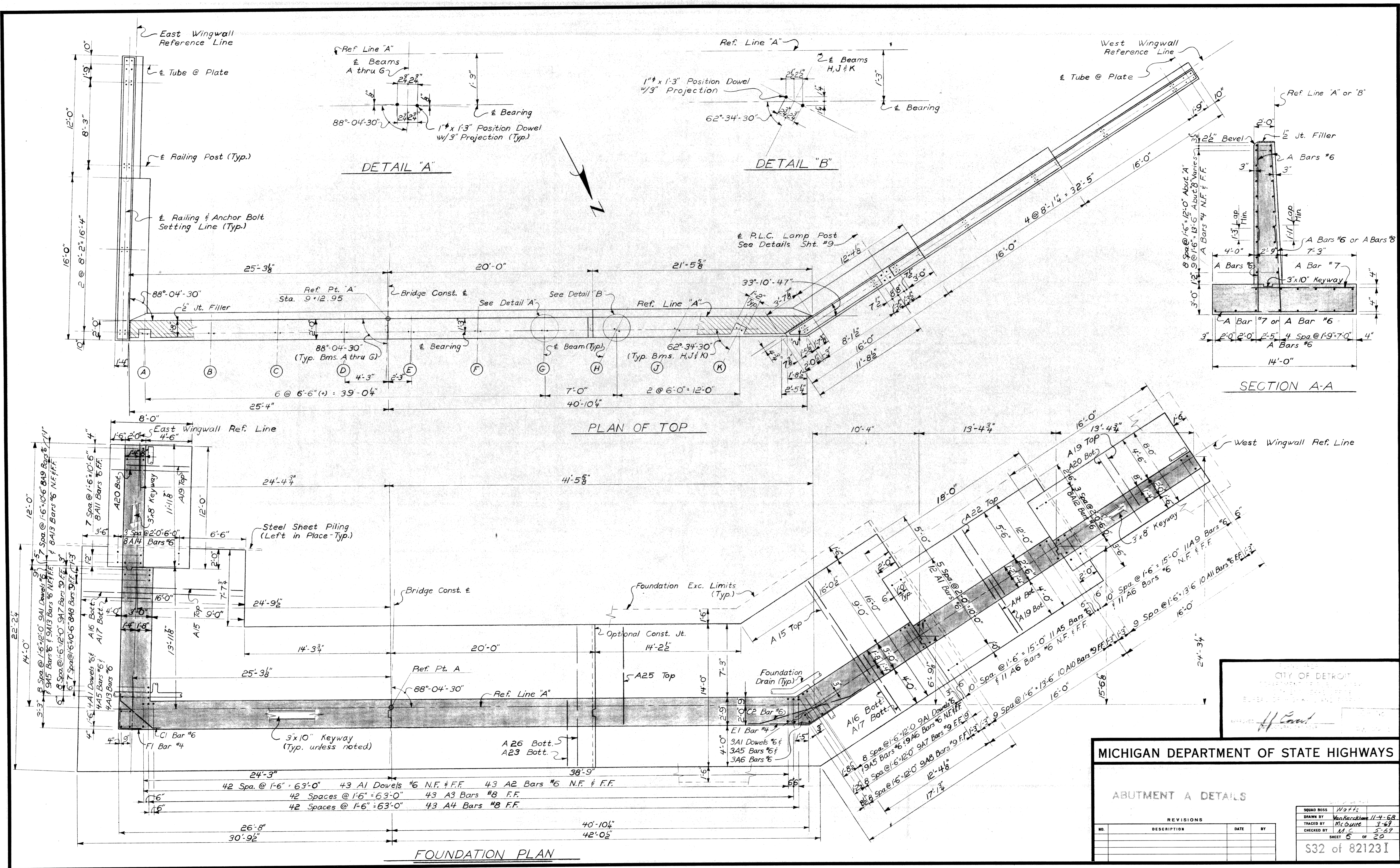
CITY OF DETROIT

SQUAD BOSS	W.H.S.	DATE	BY
DRAWN BY	R.ROSIK	5/68	
CHECKED BY	R.H.		
SHEET 5 OF 20			
S32 of 82123 I			

PLANS PREPARED BY
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BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *H. Cant*
STRUCTURAL ENGINEER

JOB No. PW 990(4)



CITY OF DETROIT
 ENGINEER
 H. G. Gault

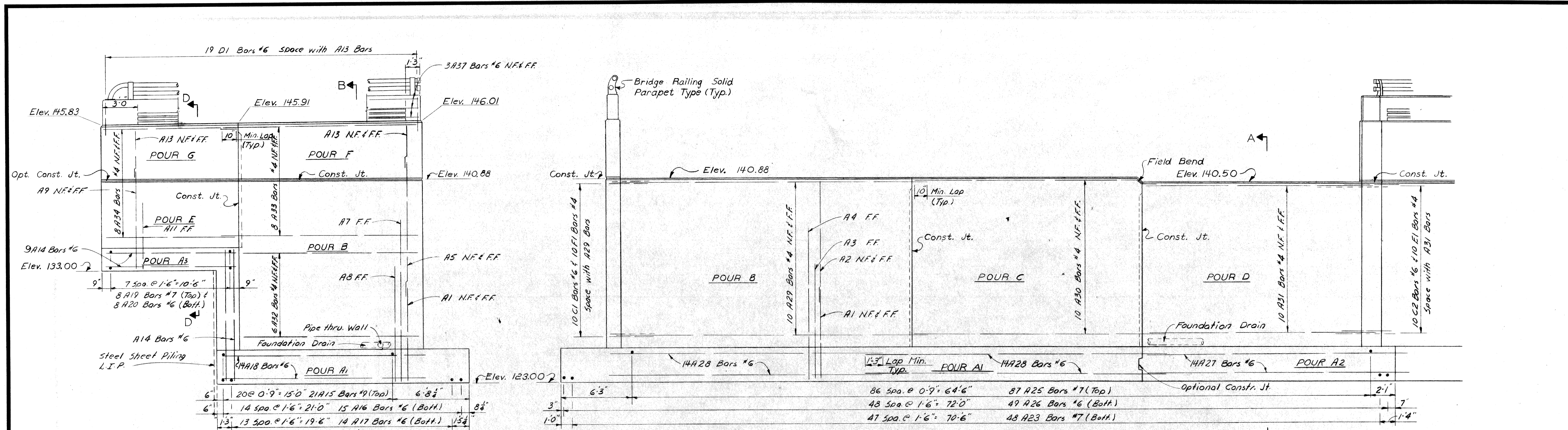
MICHIGAN DEPARTMENT OF STATE HIGHWAYS

ABUTMENT A DETAILS

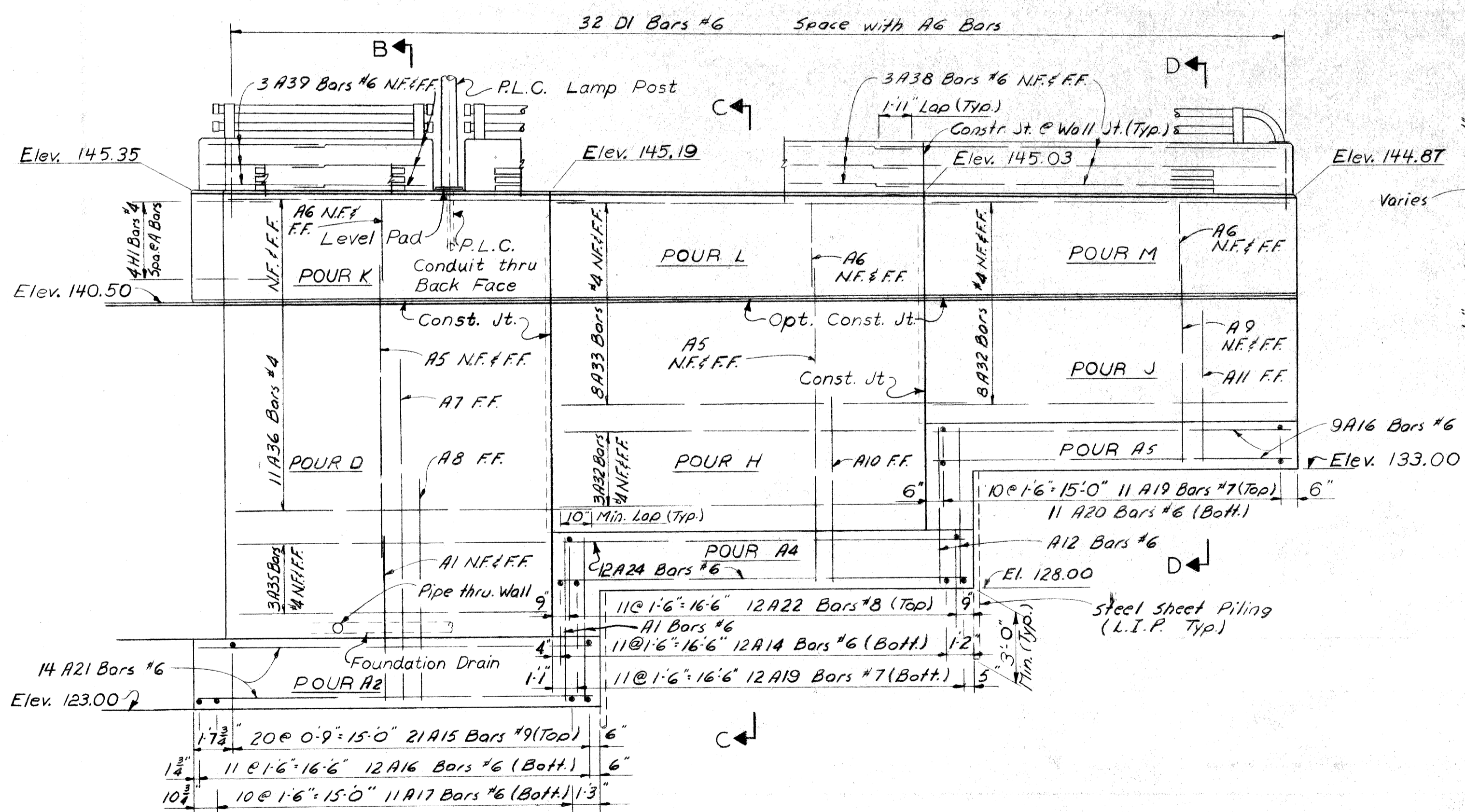
REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	W. J. J.
DRAWN BY	Van Kerkhove 11-4-68
TRACED BY	M. Gault 3-67
CHECKED BY	M. G. 5-67
SHEET	6 OF 20

S32 of 82123I

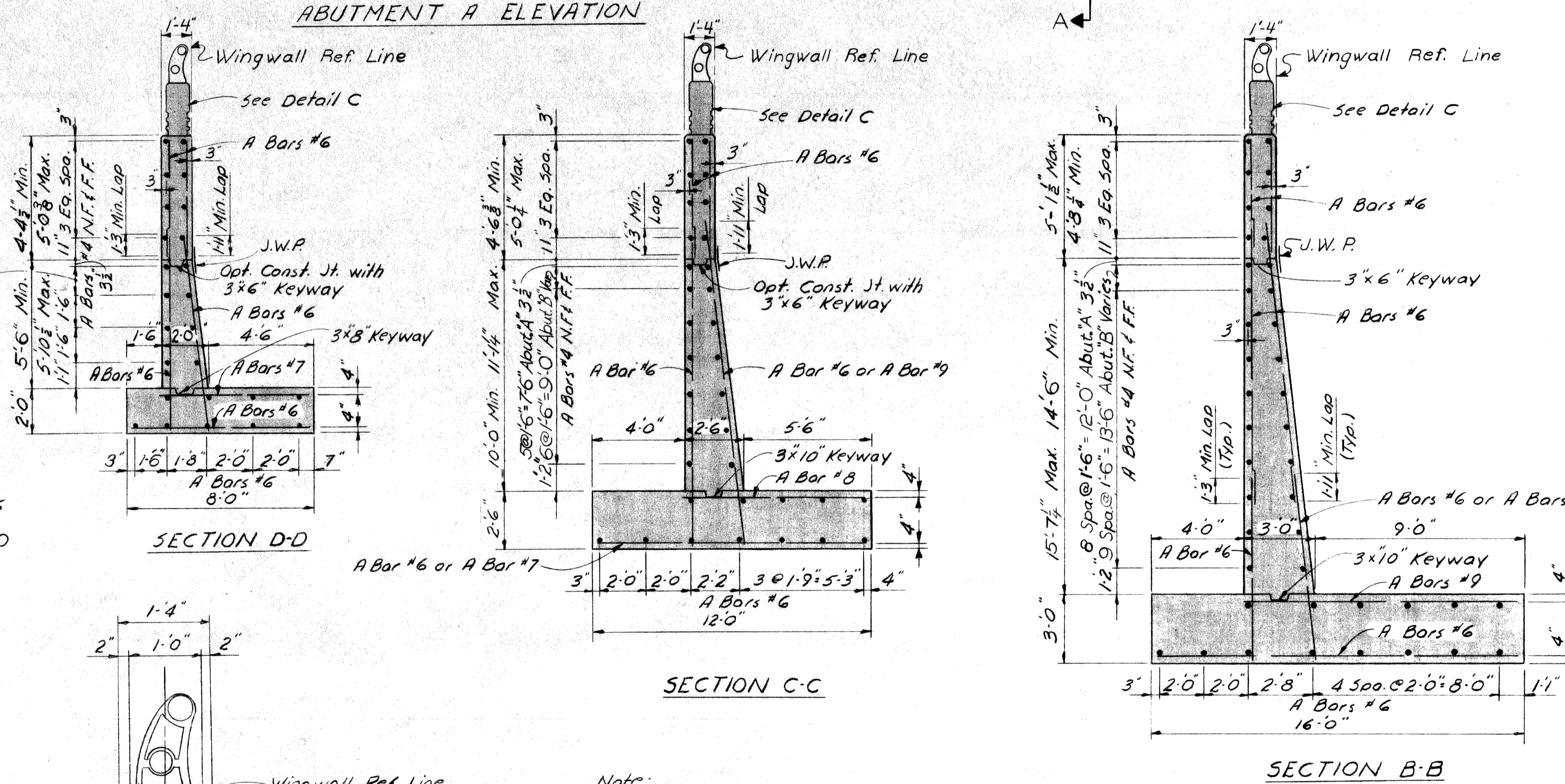


EAST WINGWALL ELEVATION



WEST WINGWALL ELEVATION

ABUTMENT A ELEVATION

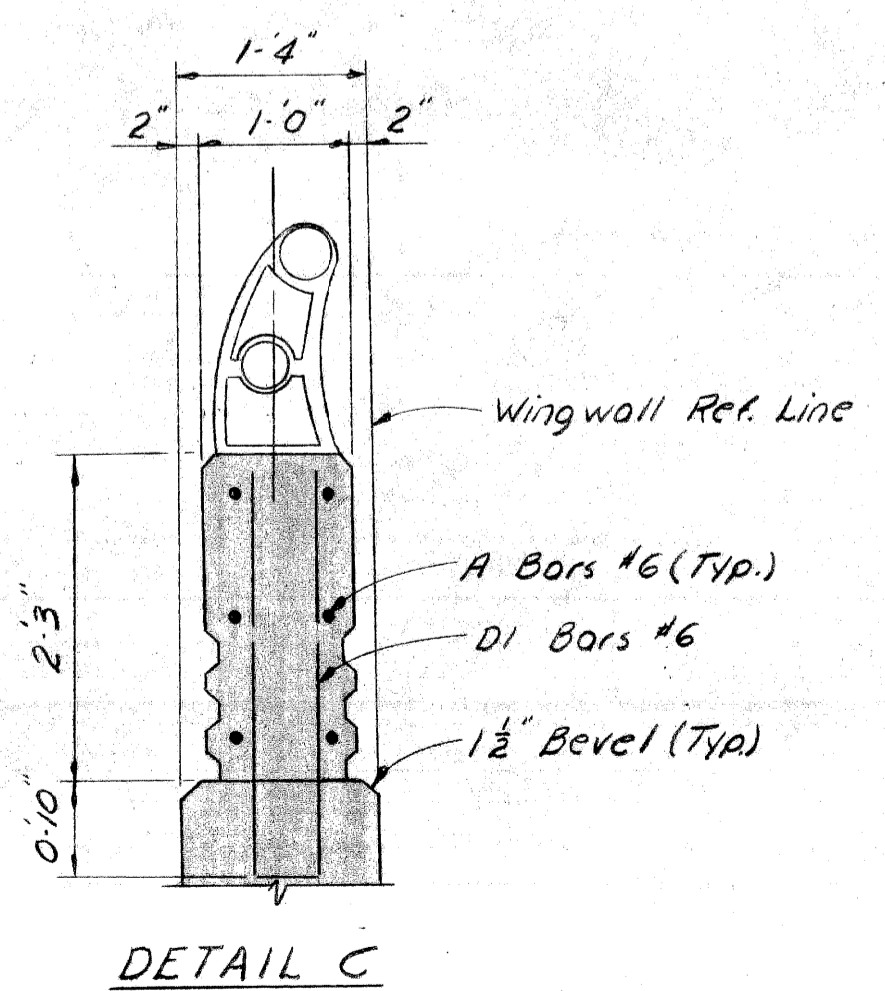


SECTION D-D

SECTION C-C

SECTION B-B

Note:
For Section A-A see sheet #6



DETAIL C

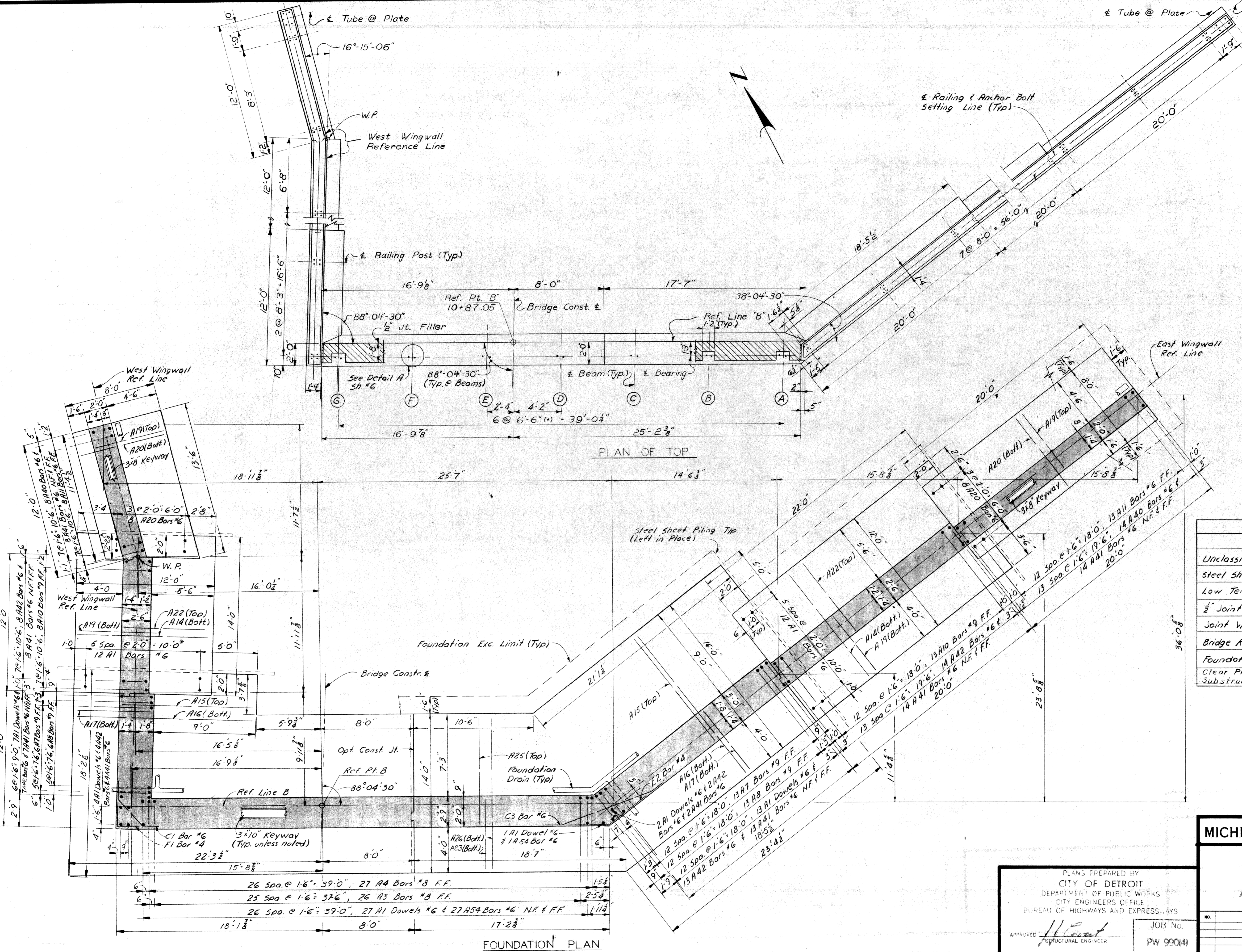
APPROVED: [Signature] STRUCTURAL ENGINEER
 JOB NO. PW 99041

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

ABUTMENT A DETAILS			
REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS: WATTS
 DRAWN BY: Van Kesteren 11-21-68
 TRACED BY: M. GIL 3-69
 CHECKED BY: M.C. 5-69
 SHEET 7 OF 20

S32 of 82123I



CONCRETE QUANTITIES (CU. YDS.)					
Pour	Location	Abut. A		Abut. B	
		A 6A	A 6AA	A 6A	A 6AA
A1	Abutment Footing	93.2	—	54.2	—
A2	" "	58.2	—	62.6	—
A3	Wingwall Footing	11.8	—	17.9	—
A4	" "	22.3	—	9.8	—
A5	" "	11.2	—	26.8	—
A6	" "	—	—	14.2	—
B	Abutment or Wingwall Stem	—	51.0	—	47.8
C	" "	—	26.2	—	47.6
D	" "	—	42.0	—	9.5
E	Wingwall Stem	—	4.4	—	4.1
F	" "	—	4.0	—	2.9
G	" "	—	2.9	—	2.8
H	" "	—	11.4	—	2.7
J	" "	—	5.4	—	15.8
K	" "	—	3.5	—	6.9
L	" "	—	3.6	—	4.8
M	" "	—	3.5	—	4.9
N	" "	—	—	—	4.9
Total Substructure Concrete		196.7	157.9	185.5	154.7

Bridge Parapet Concrete = 14.0 Cu. Yds. Gr. A 6AA is not a pay item.

MISCELLANEOUS QUANTITIES				
Item	Unit	Abut. A	Abut. B	Total
Unclassified Excavation	Cu. Yds.	880	830	1710
Steel Sheet Piling (L.I.P.)	Sq. Ft.	519	574	1093
Low Temp. Protection Substr.	Cu. Yds.	354.6	340.2	694.8
1/2" Joint Filler	Sq. Ft.	103	66	169
Joint Waterproofing	Sq. Ft.	198	236	434
Bridge Railing - Solid Parapet Type	Lin. Ft.	73.2	94.9	168.1
Foundation Drains	Lin. Ft.	16.9	16.8	33.7
Clear Protective Coating for Substructure Concrete	Sq. Yds.	88	88	176

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 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *[Signature]*
 STRUCTURAL ENGINEER

JOB No.
 PW 990(4)

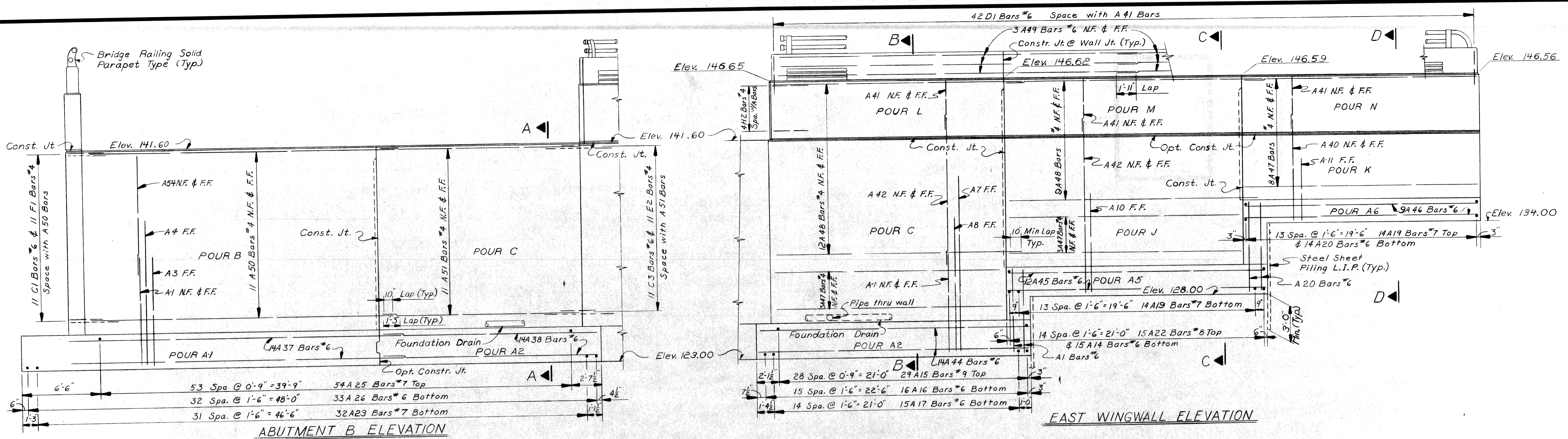
MICHIGAN DEPARTMENT OF STATE HIGHWAYS

ABUTMENT B DETAILS

NO.	REVISIONS	DATE	BY

SOBOD BOSS: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 SHEET 8 OF 20

S32 of 82123I

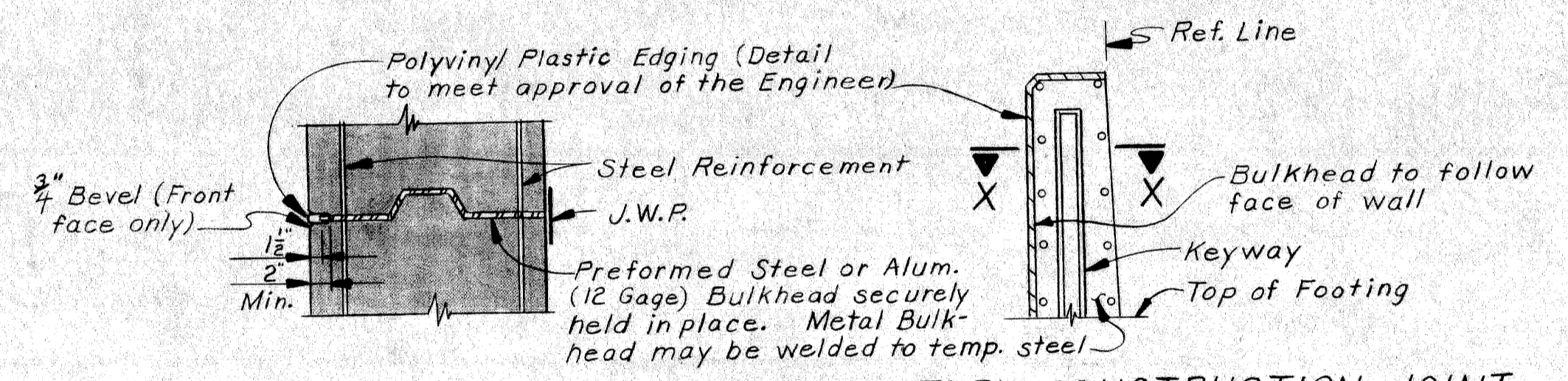


GENERAL NOTES

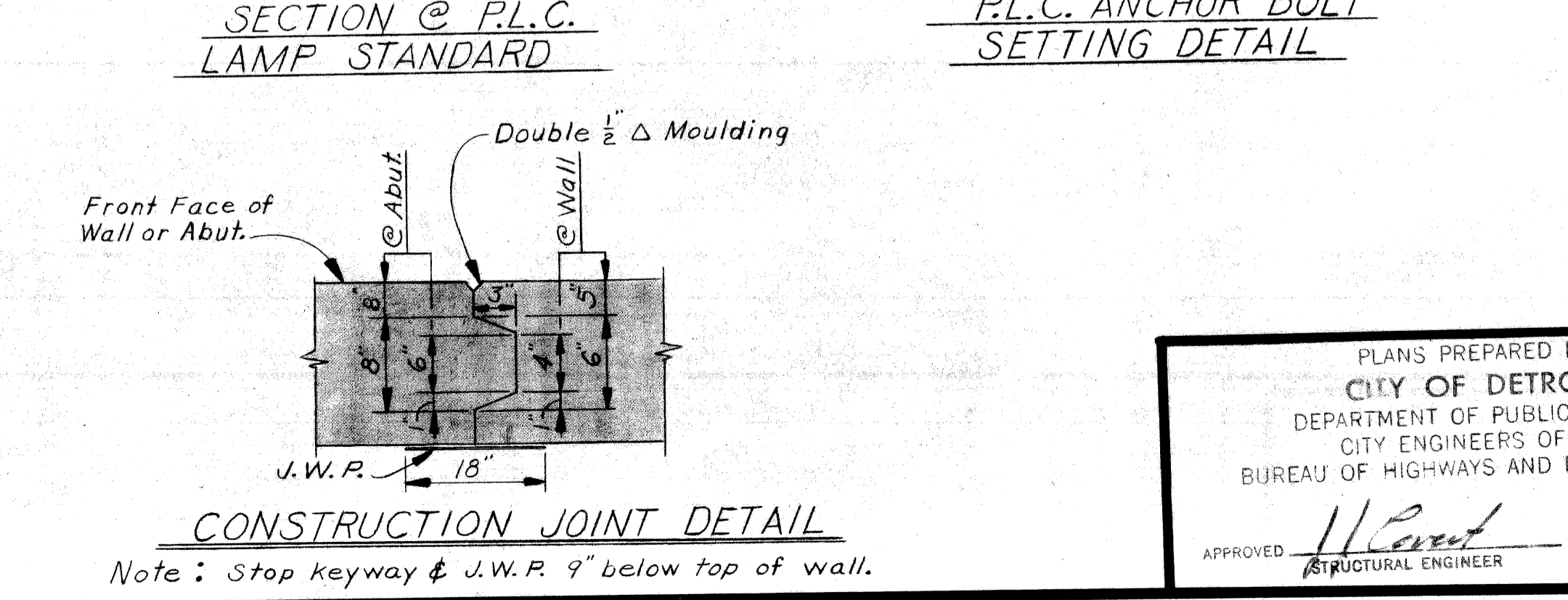
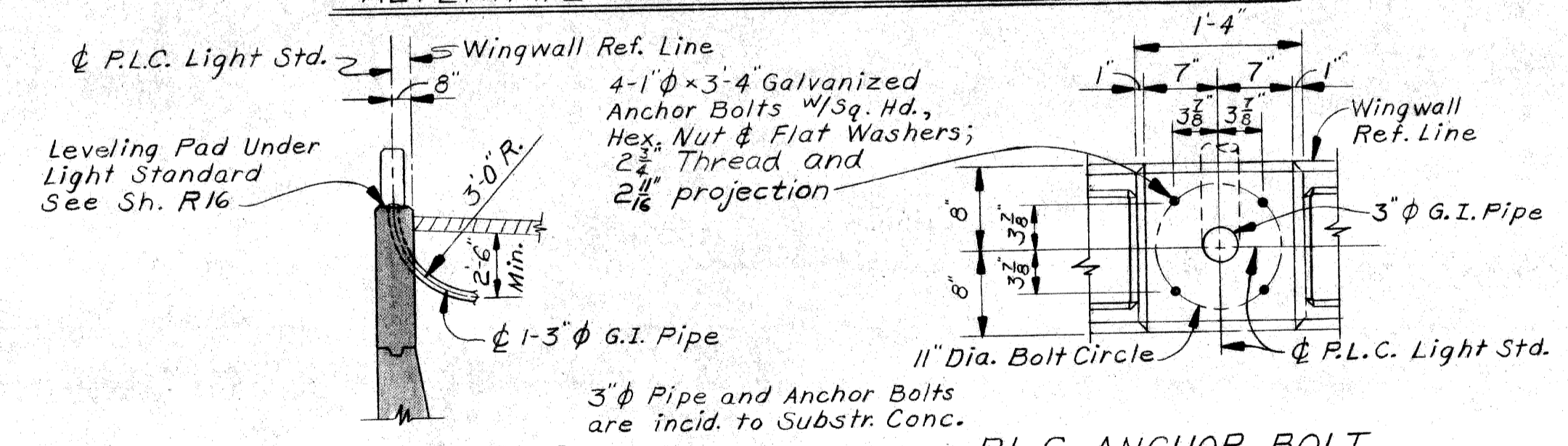
J.W.P. denotes Joint Waterproofing.
 N.F. denotes Near Face F.F. denotes Far Face.
 For Bevel, Molding, and Railing Details See Std. Sheet R16.
 No False Joints required between alternate railing posts.

Position dowels & railing anchor bolts shall be accurately set to a template.
 Maximum average foundation pressure D.L. only = 2850 psf.
 Maximum foundation pressure D.L. and L.L. = 4900 psf.
 Footing concrete quantities are computed on the basis of an outline 3/4" outside of the footing outline where the concrete is poured against Steel Sheet Piling Left in Place.
 No additional allowance will be made for concrete or excavation quantities regardless of the Steel Sheet Piling used.
 Cover Bridge seat and front face of Abut. wall between Fascia Lines with clear protective coating for substrate concrete to 6" below finished grade.
 For Section A-A See Sheet #6
 For Section B thru D See Sheet #7

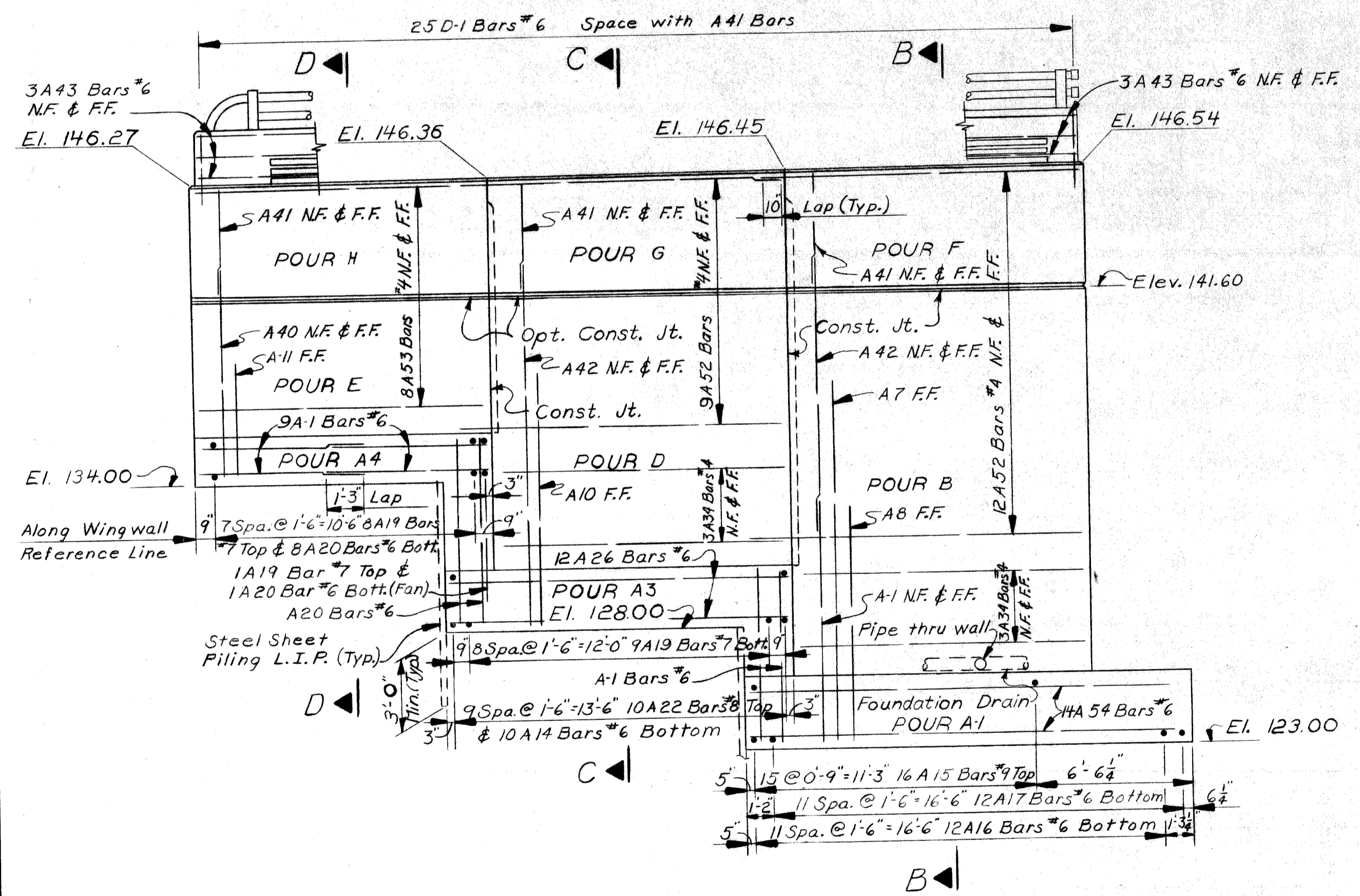
Steel sheet piling left in place shall be driven to its final penetration before adjacent concrete is poured. If it is necessary to lower the top of sheeting after the concrete has been poured, the excess shall be removed by cutting.



Note: The Metal Bulkhead may be used as alternate construction joint at contractor's expense. Care is to be used in casting concrete around bulkhead to prevent dislocation or misalignment of the bulkhead. Cut holes in metal bulkhead for reinforcing steel.



WEST WINGWALL ELEVATION



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 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: *[Signature]*
 STRUCTURAL ENGINEER

JOB NO. PW 990(4)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

ABUTMENT B DETAILS

CITY OF DETROIT

SQUAD BOSS: *Wolfs*

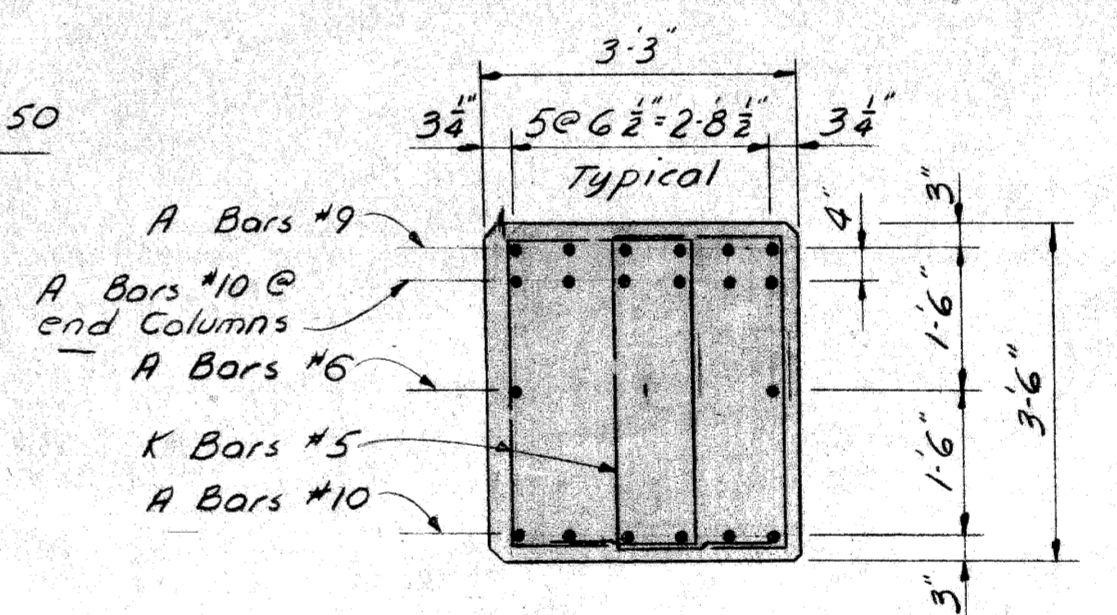
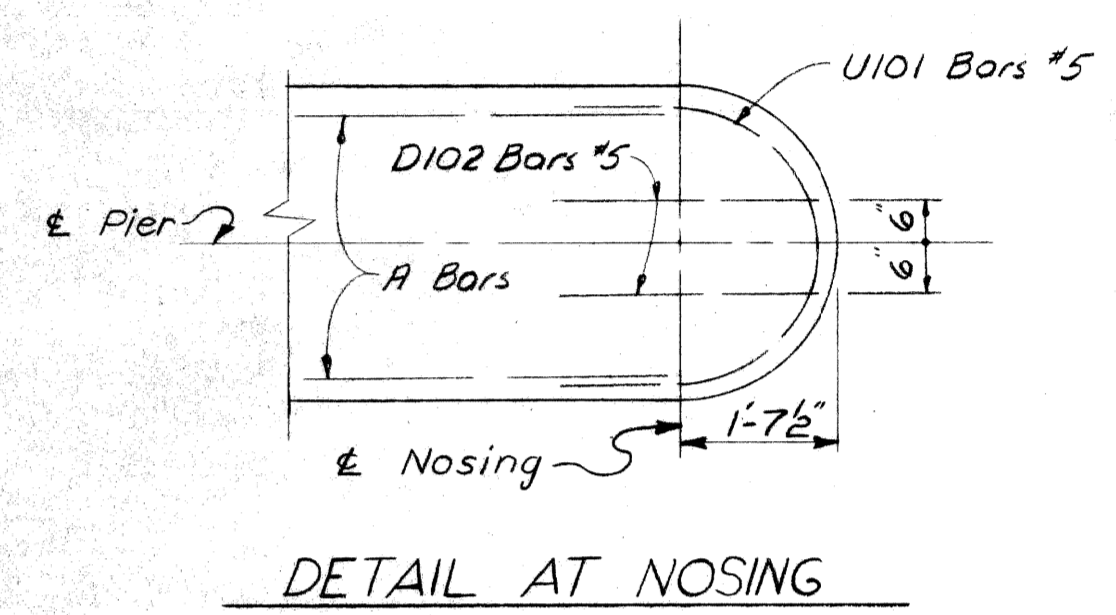
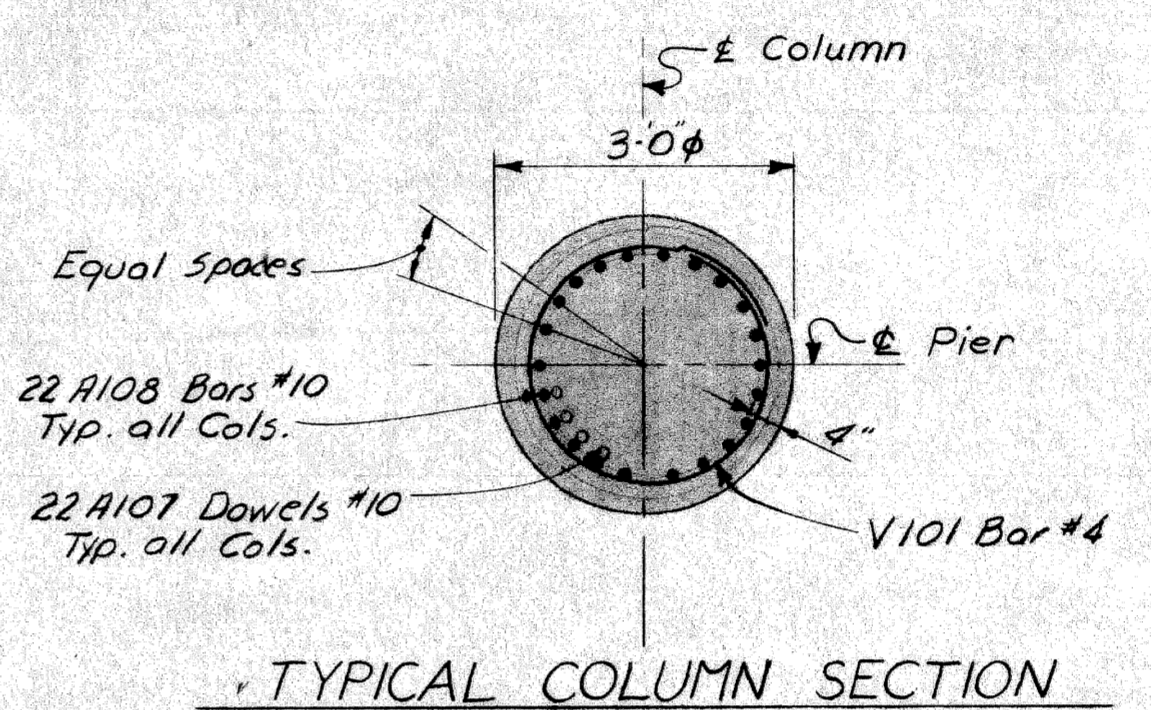
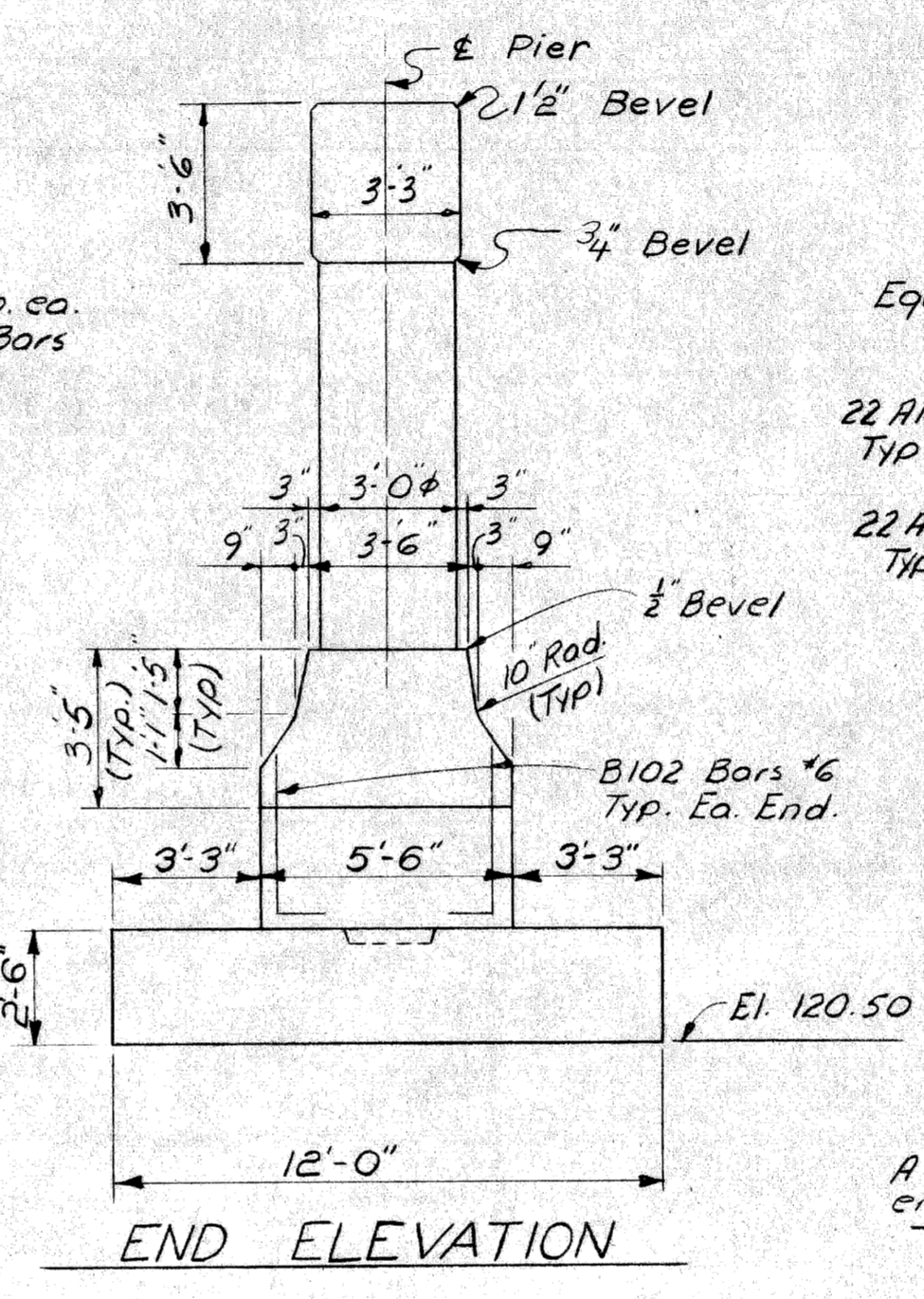
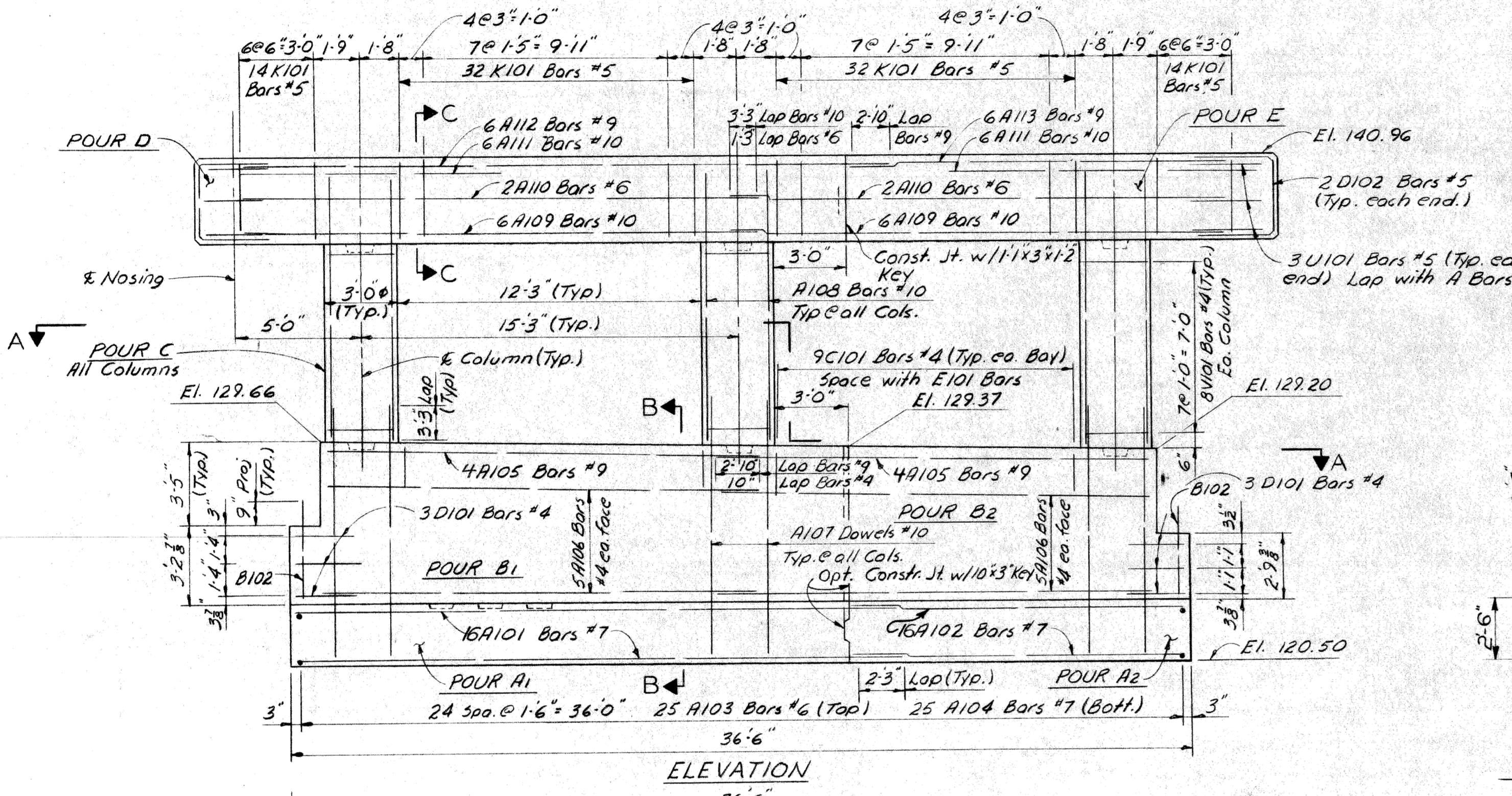
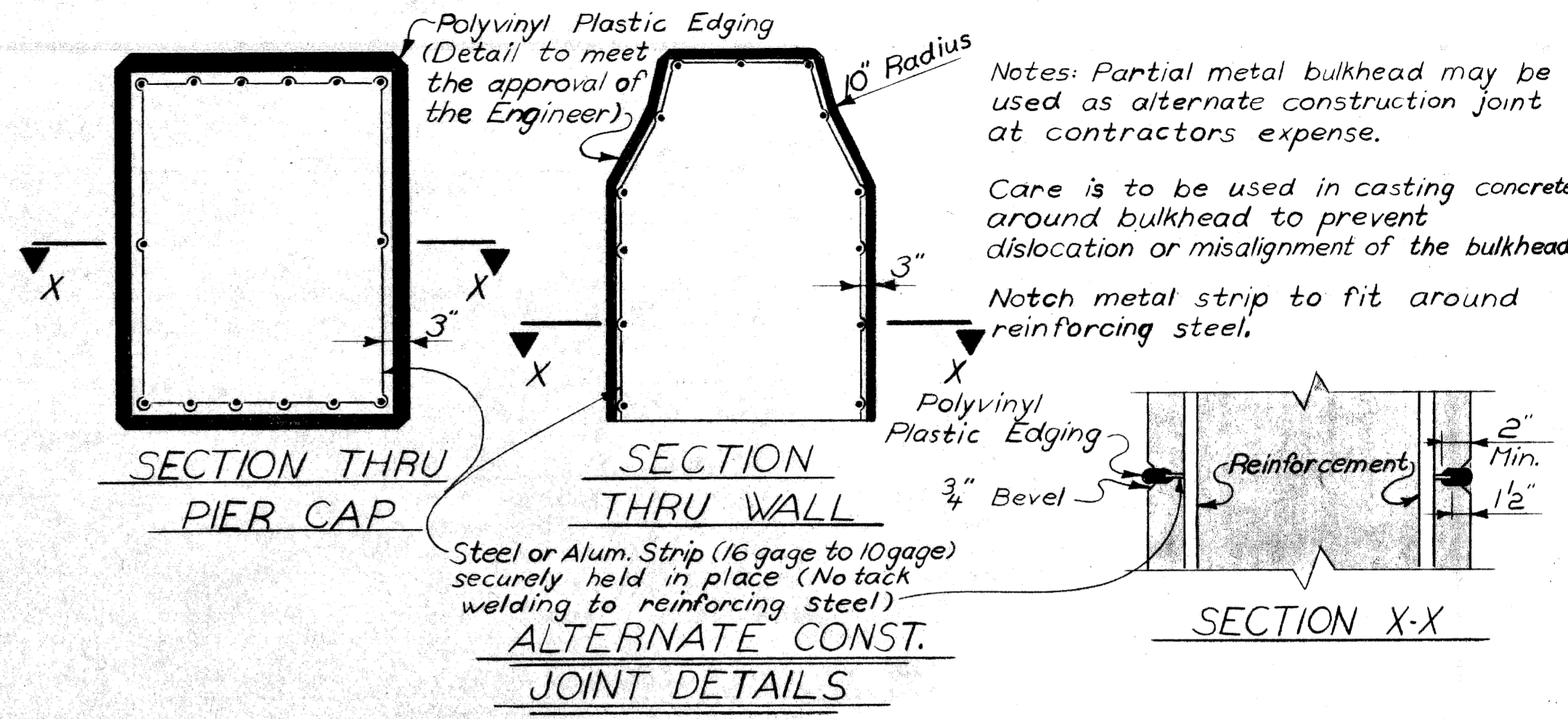
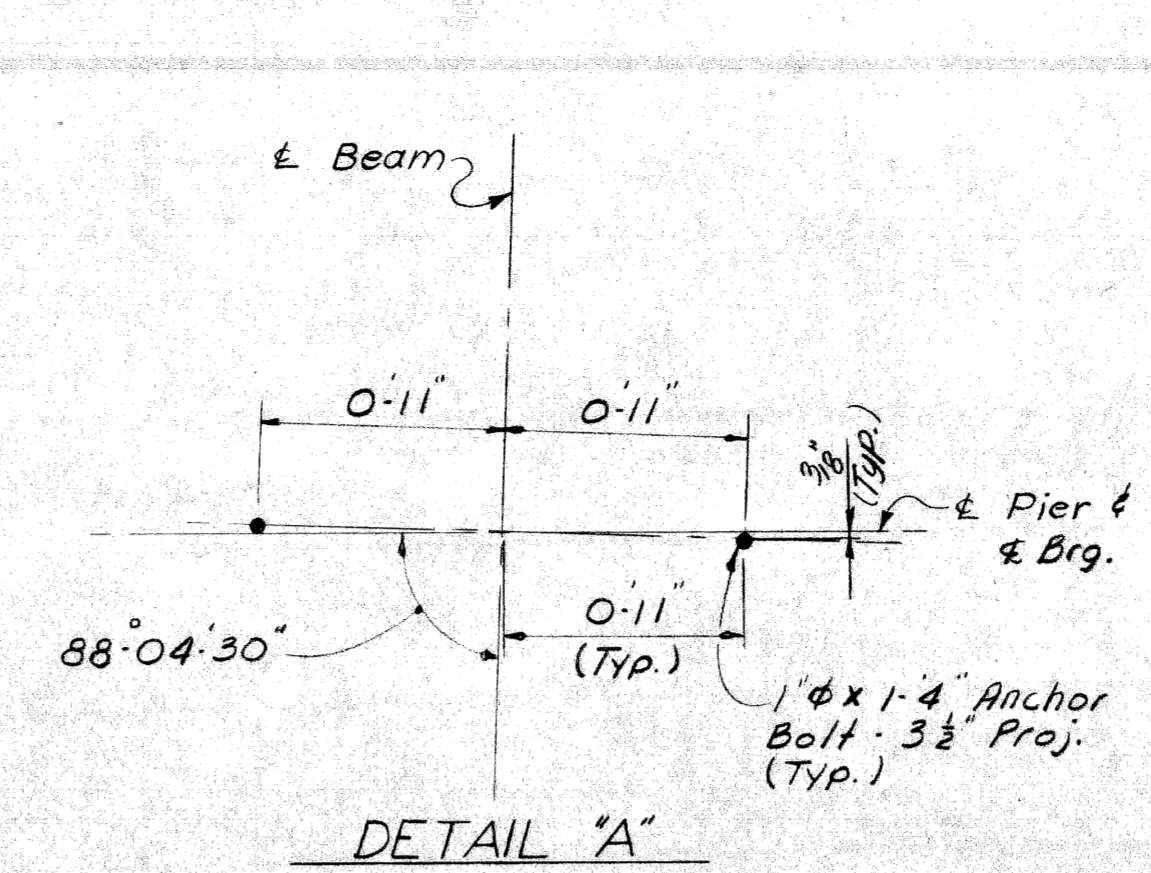
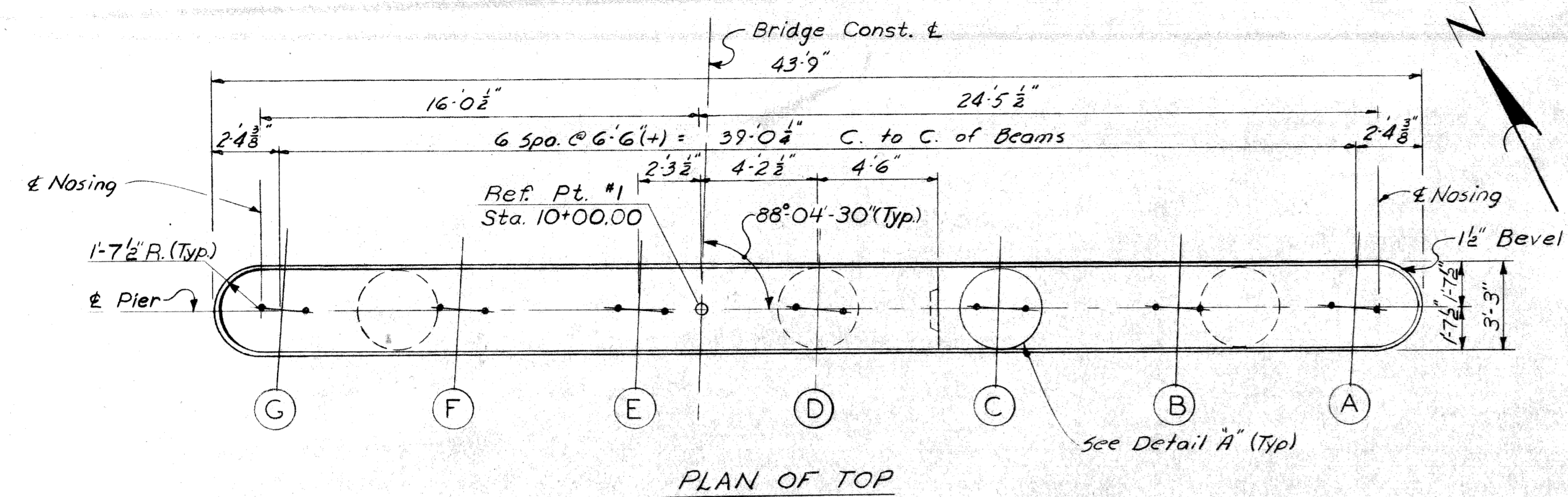
DRAWN BY: *Van Nardone* 12-2-68

CHECKED BY: *M.C.* 5-69

SHEET 9 OF 20

S32 of 821231

NO.	DESCRIPTION	DATE	BY



POUR	LOCATION	Grade A6A	Grade A6AA
A1	Footing	25.3	—
A2	"	15.3	—
B1	Wall	—	26.7
B2	"	—	15.2
C	Columns	—	6.3
D	Beam	—	11.0
E	"	—	7.2
Total		40.6	66.4

ITEM	UNITS	AMT.
Unclassified Excavation	Cu. Yds.	90
Low Temperature Protection	Cu. Yds.	107.0
Clear Protective Coating for Substructure Concrete	Sq. Yds.	125

GENERAL NOTES

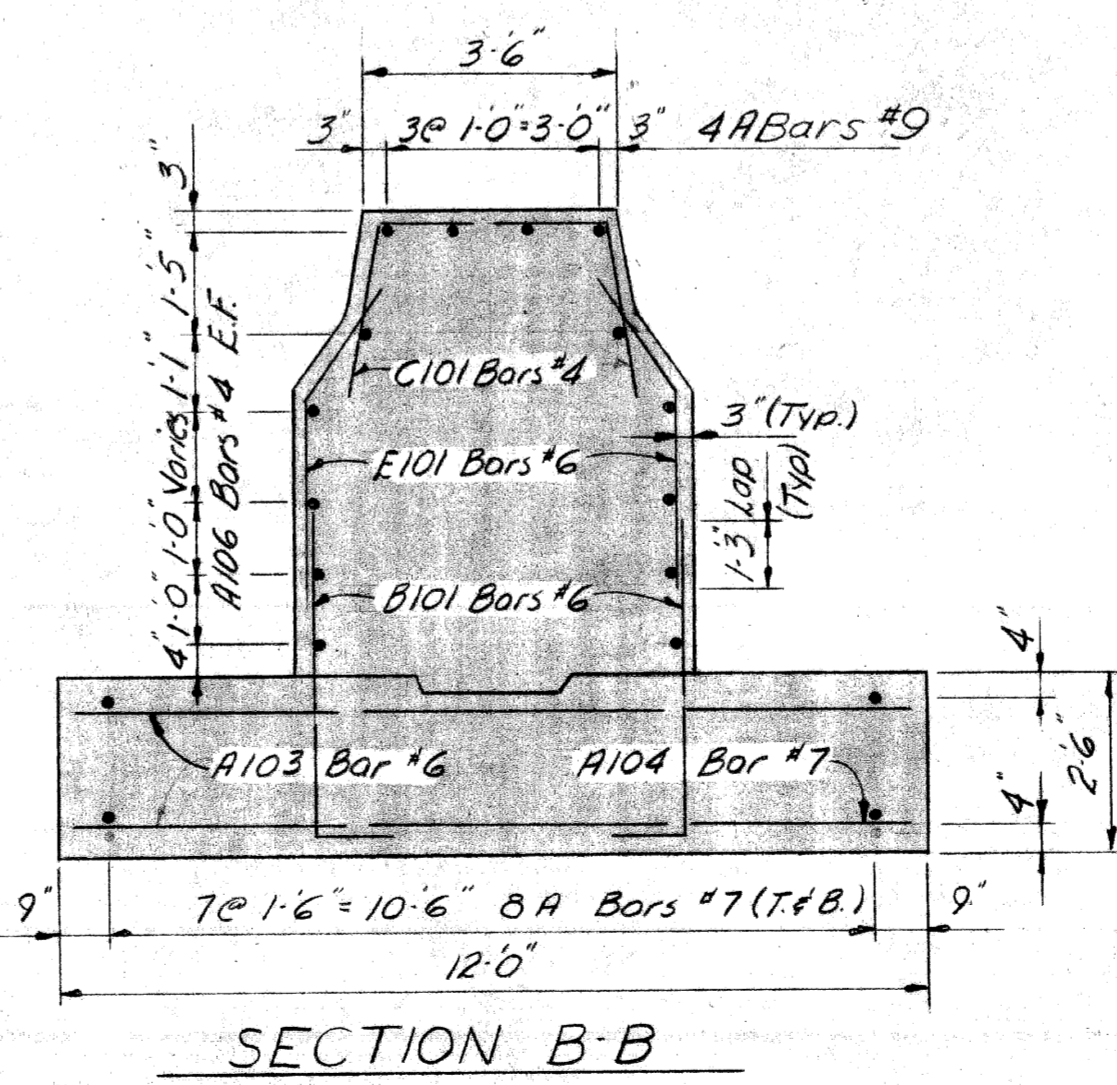
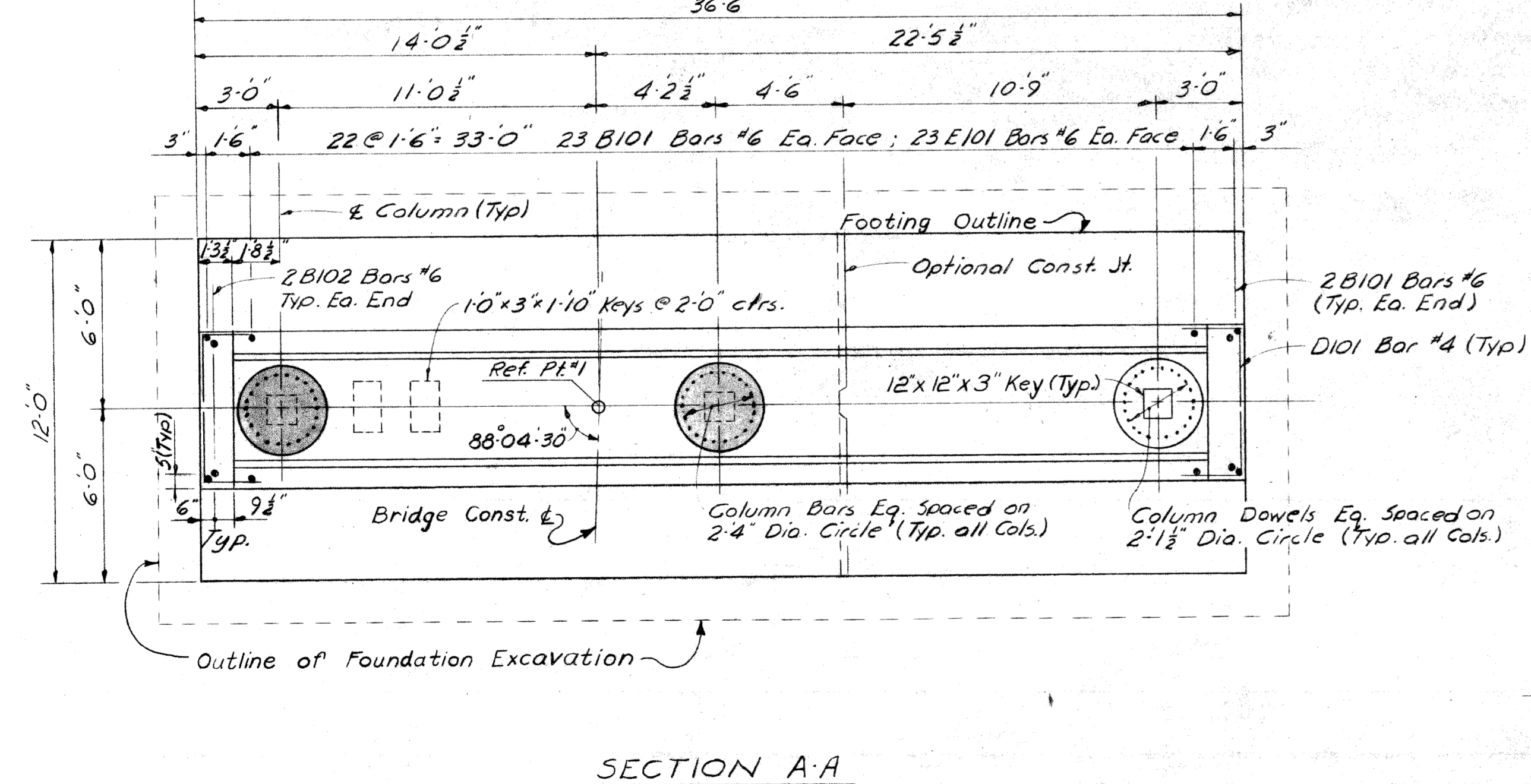
Cover entire pier with clear protective coating for substructure to 6" below finished grade.

For bevel and molding details see Std. Sht. R-16.

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 the anchor bolts.

Max. average foundation pressure D.L. only 3200 P.S.F.
Max. foundation pressure D.L. + L.L. 3700 P.S.F.



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

APPROVED: *H. Reed*
STRUCTURAL ENGINEER

JOB No. PW 990(4)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

PIER No. 1 DETAILS

REVISIONS			
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT

SQUAD BOSS: *1/27/55*

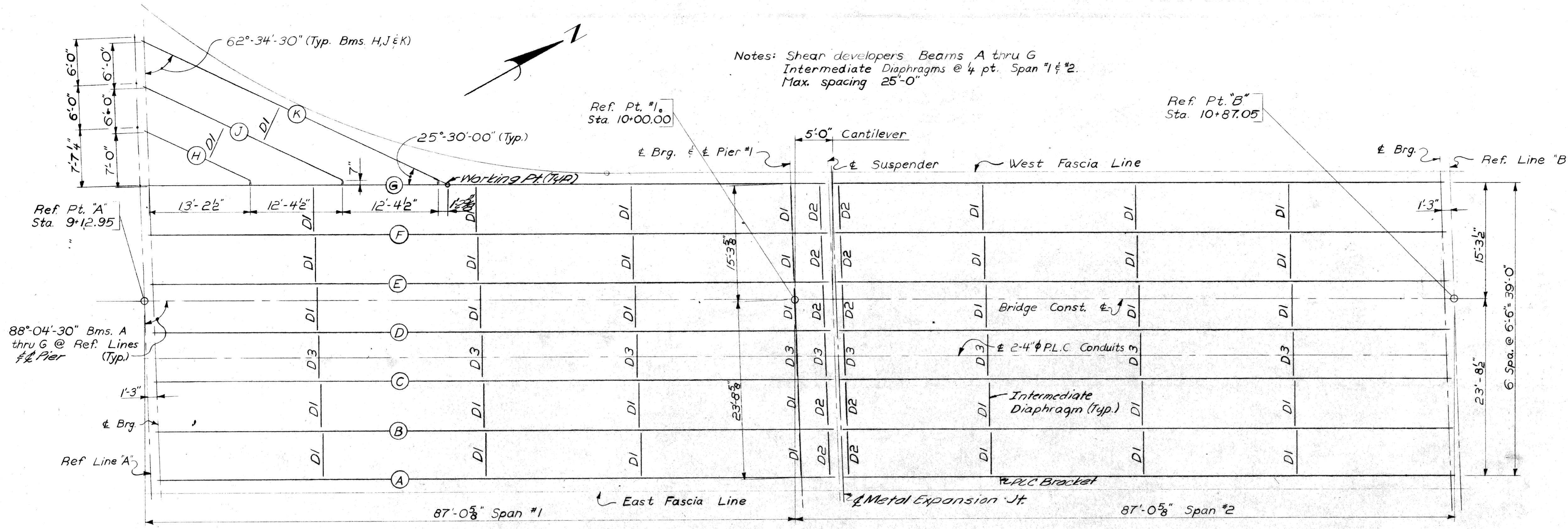
DRAWN BY: *Van Harkness* 10-28-68

TRACED BY: *A.G. V.M.* 3-69

CHECKED BY: *E.W.*

SHEET 10 OF 20

S32



STRUCTURAL STEEL NOTES

DESIGN: M.D.S.H. Specifications for Design of Highway Bridges, 1958 edition and current AASHTO Standard Specifications for Highway Bridges (HS20-44 Loading).

FABRICATION: M.D.S.H. Standard Specifications for Road and Bridge Construction - 1967 edition.

SHOP CONNECTIONS shall be welded as shown on Plans.

FIELD CONNECTIONS shall be bolted with 3/4" high-strength bolts, except as noted.

CAMBER: The beams are to have a camber as shown on the camber diagram. This camber is to be measured with the beam lying on its side. Allowable camber tolerance for the beams is ±1/4". Heating is to be used, if necessary, to assure camber permanency within the above tolerance. The calculated dead load deflection of the beams above is 5/8" Max. (Typ.) Span #1 & #2, except Bm G Span #1, 3/4" Max.

SOLE PLATES 3" or more in thickness may be built up by welding together plates not less than 1/2" in thickness. Edges must be beveled 4" and welded with a continuous weld for the full perimeter. Welds shall be ground flush with faces of plates.

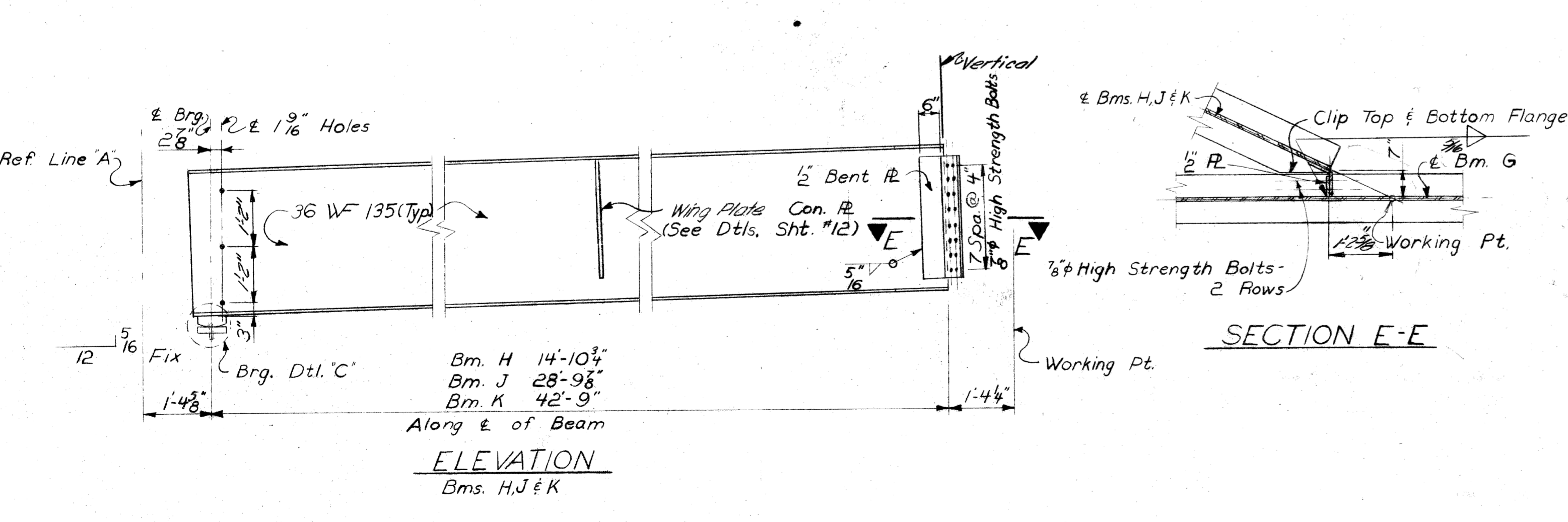
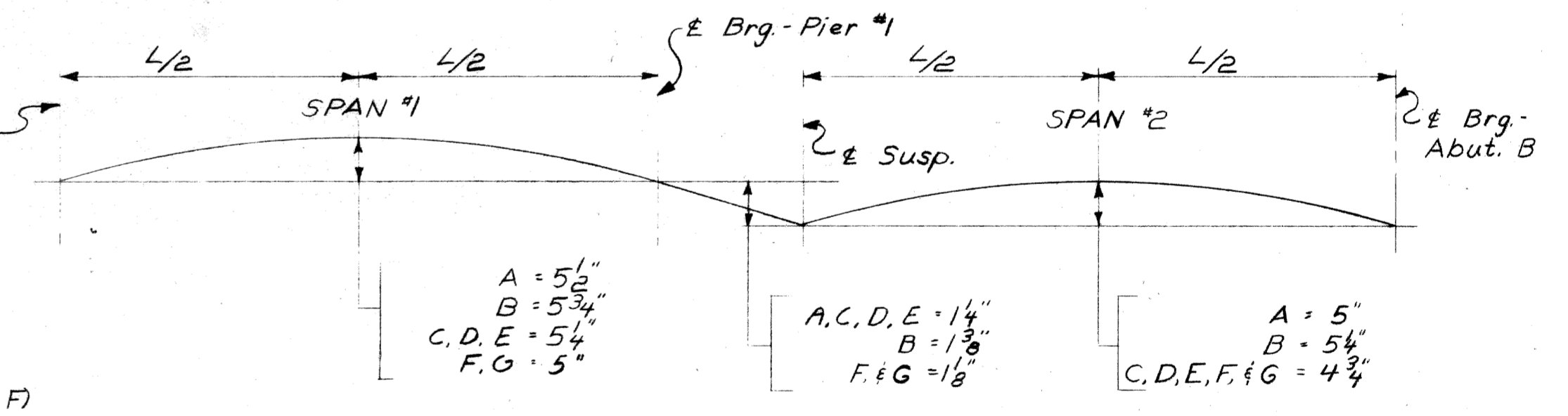
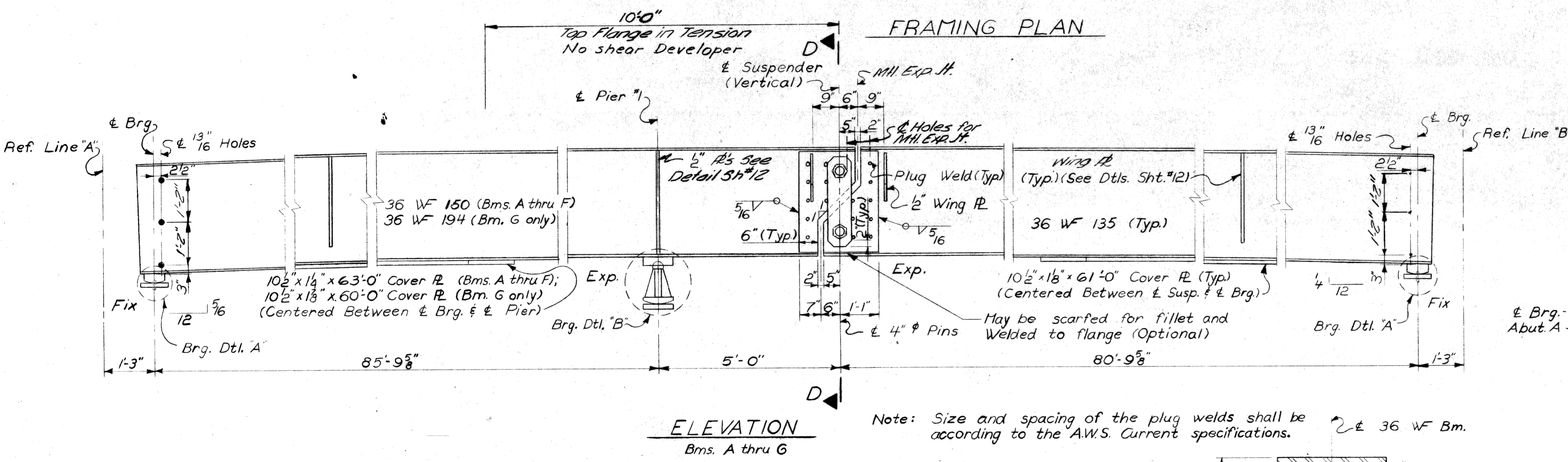
GALVANIZE: Position Dowels and Anchor Bolts (including nuts and washers) shall be galvanized in accordance with A.S.T.M. Designation A 153. All steel material used for bearings, with exception of portion welded to beams, shall be galvanized in accordance with A.S.T.M. Designation A123. Galvanizing shall be applied after fabrication of bearing. Mill scale and foreign material shall be removed prior to galvanizing.

WELDING: Magnetic particle inspection of welds is required and shall consist of 100% inspection of not less than one fabricated section selected at random for each ten sections or fractions thereof.

STEEL: All structural steel shall be unpainted A.S.T.M. Desig. A588. Steel in anchor bolts may be A.S.T.M. A-307. Steel for pins may be A.S.T.M. A-108 or A.S.T.M. A-235 (Class E). Bronze for washers shall be A.S.T.M. B100, Alloy No. 510 or No. 635.

QUANTITIES: The quantity "Structural Steel-Furnishing and Fabricating" includes:

Lead	110 lbs
Bronze	15 lbs
Steel	269,475 lbs.
Total Structural Steel-Furng and Fabg.	269,600 lbs.
Total Structural Steel, Erection	269,600 lbs.
Shear Developers	Lump Sum



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CITY OF DETROIT
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CITY ENGINEERS OFFICE
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APPROVED: [Signature]
STRUCTURAL ENGINEER

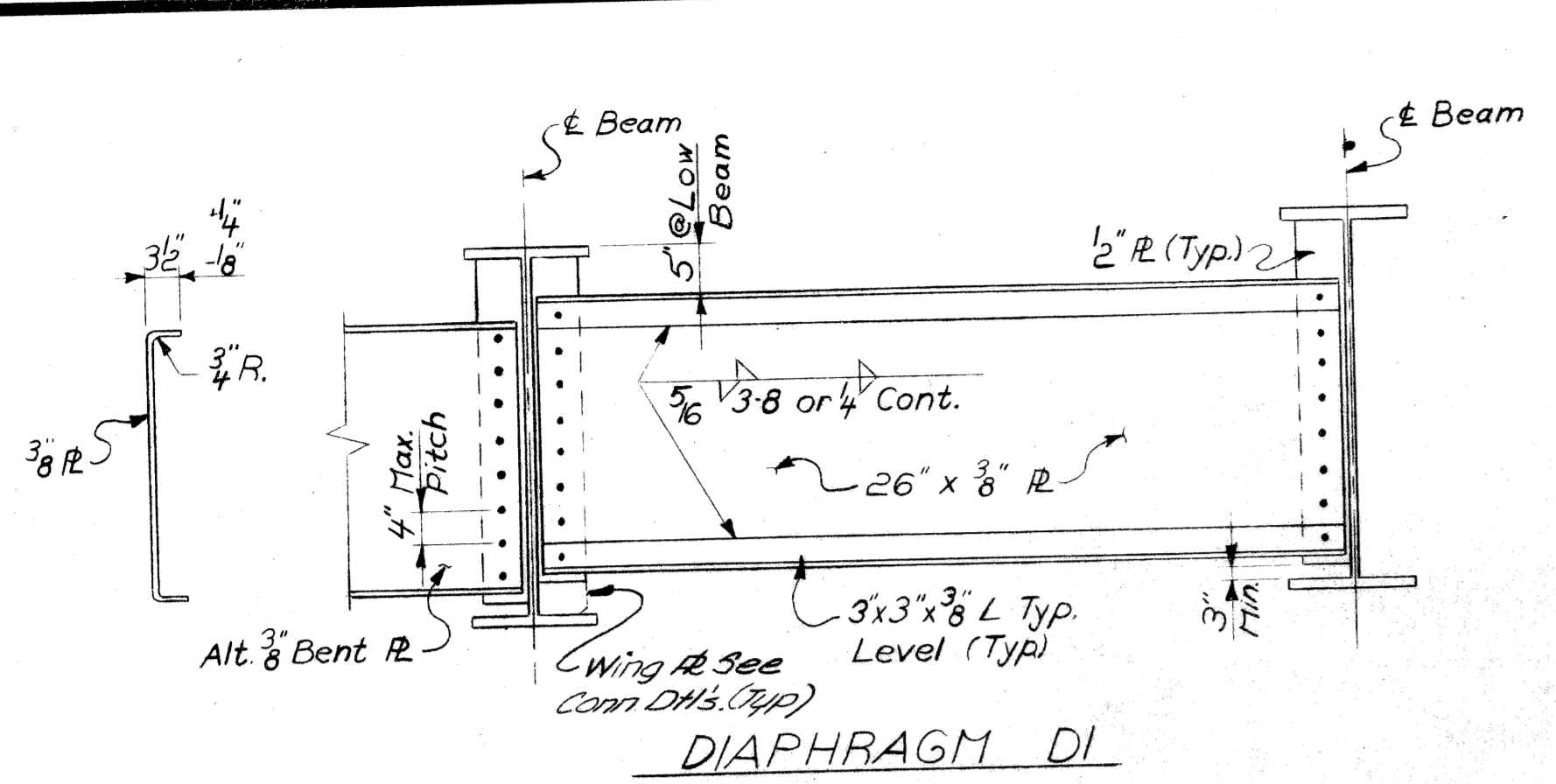
JOB No. PW 990(4)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

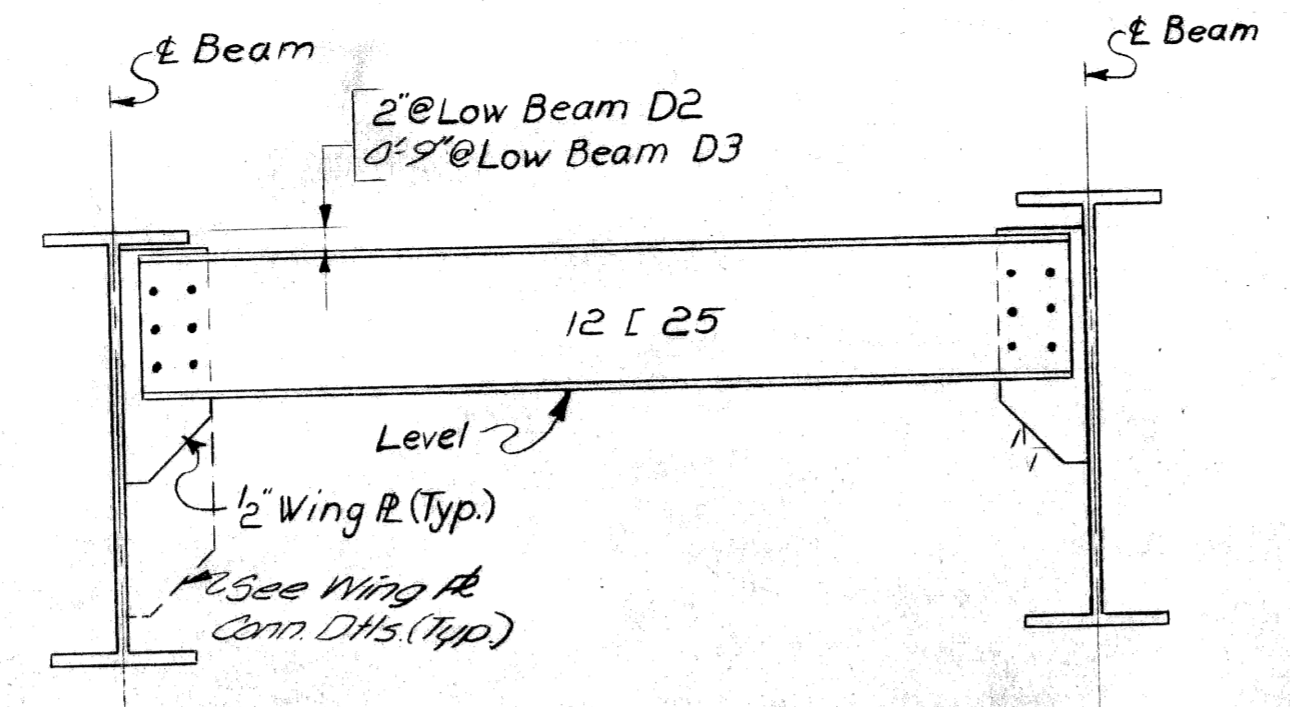
STRUCTURAL STEEL DETAILS

REVISIONS			
NO.	DESCRIPTION	DATE	BY

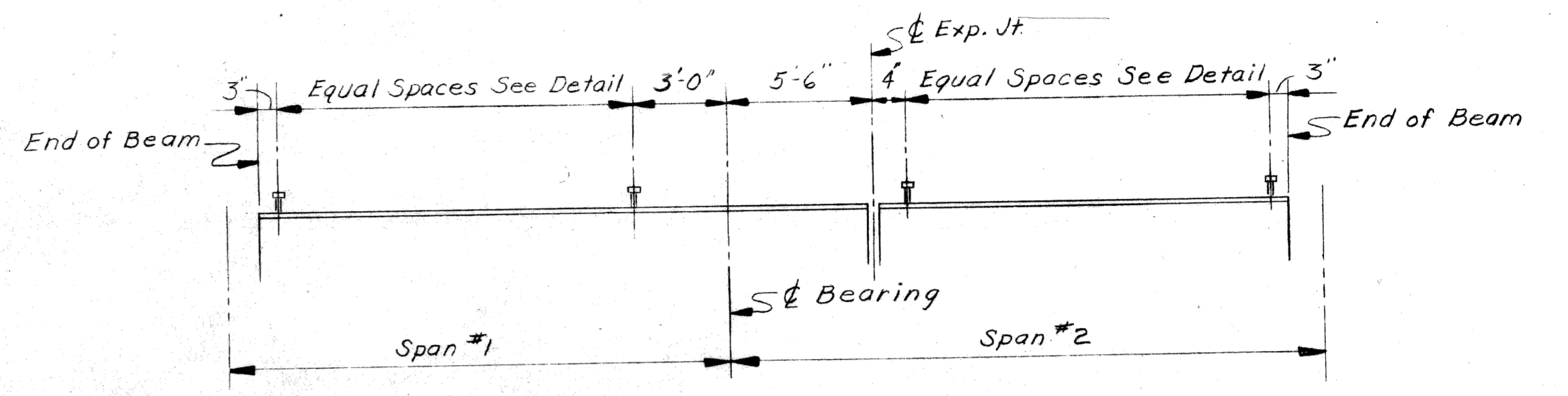
CITY OF DETROIT
DRAWN BY: Van Kerkhove 12-11-58
TRACED BY: Mc Gure 3-59
CHECKED BY: M.C. 5-69
SHEET 11 OF 20
S32 of 82123I



DIAPHRAGM D1

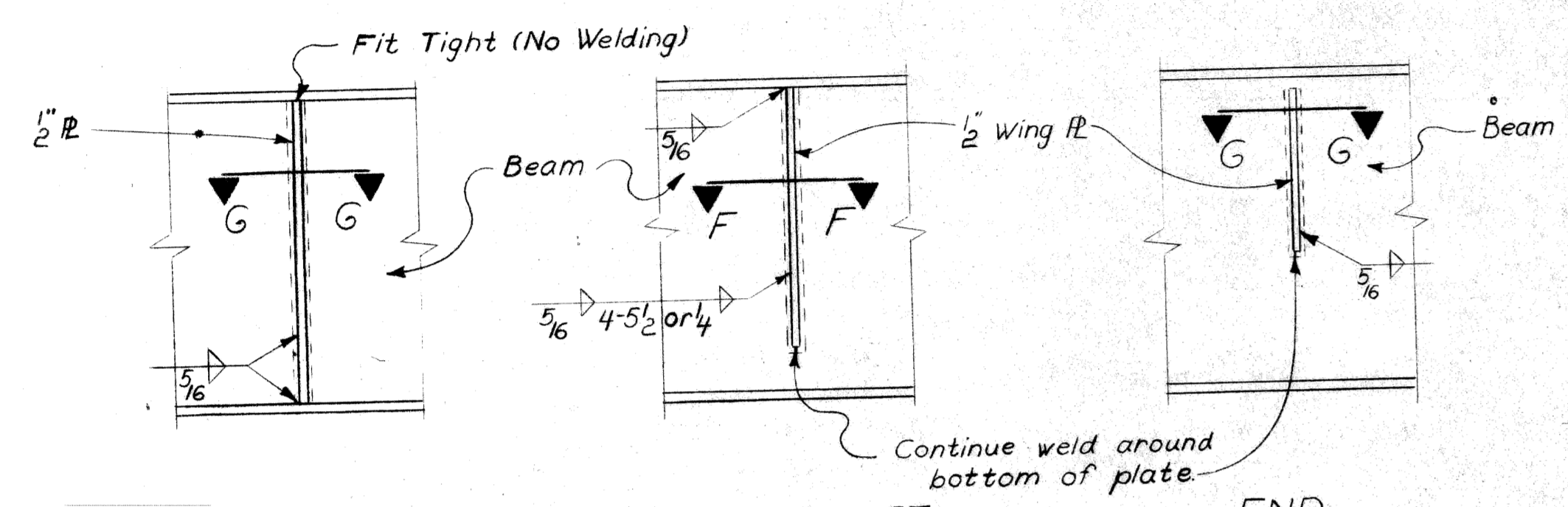


DIAPHRAGMS D2 & D3



SHEAR DEVELOPERS

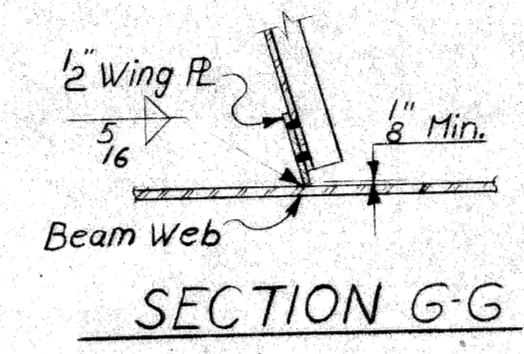
NOTE: Welding of shear developers is incidental to "Shear Developers". The weight of shear developers is not included in the weight of structural steel.



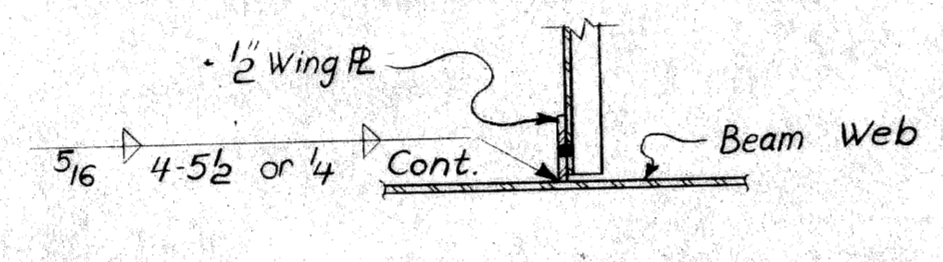
DIAPHRAGM CONN. AT PIER

INTERMEDIATE DIAPHRAGM CONN.

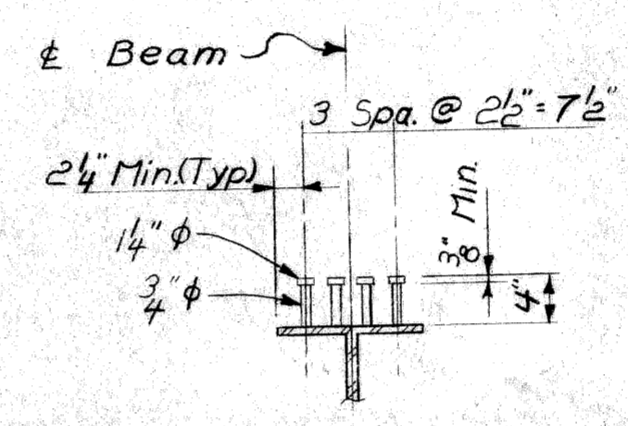
END DIAPHRAGM CONN. @ SUSPENDER



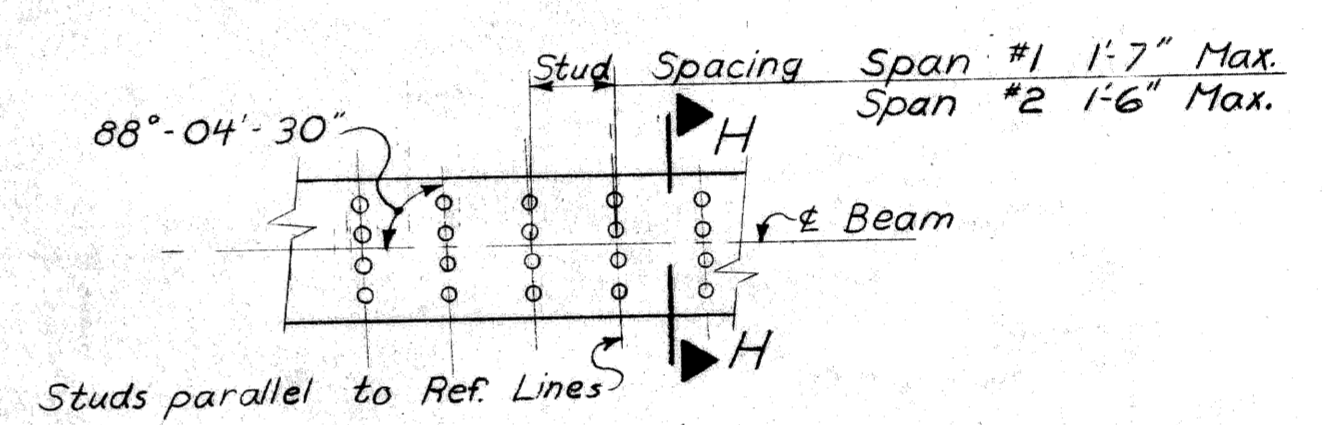
SECTION G-G



SECTION F-F



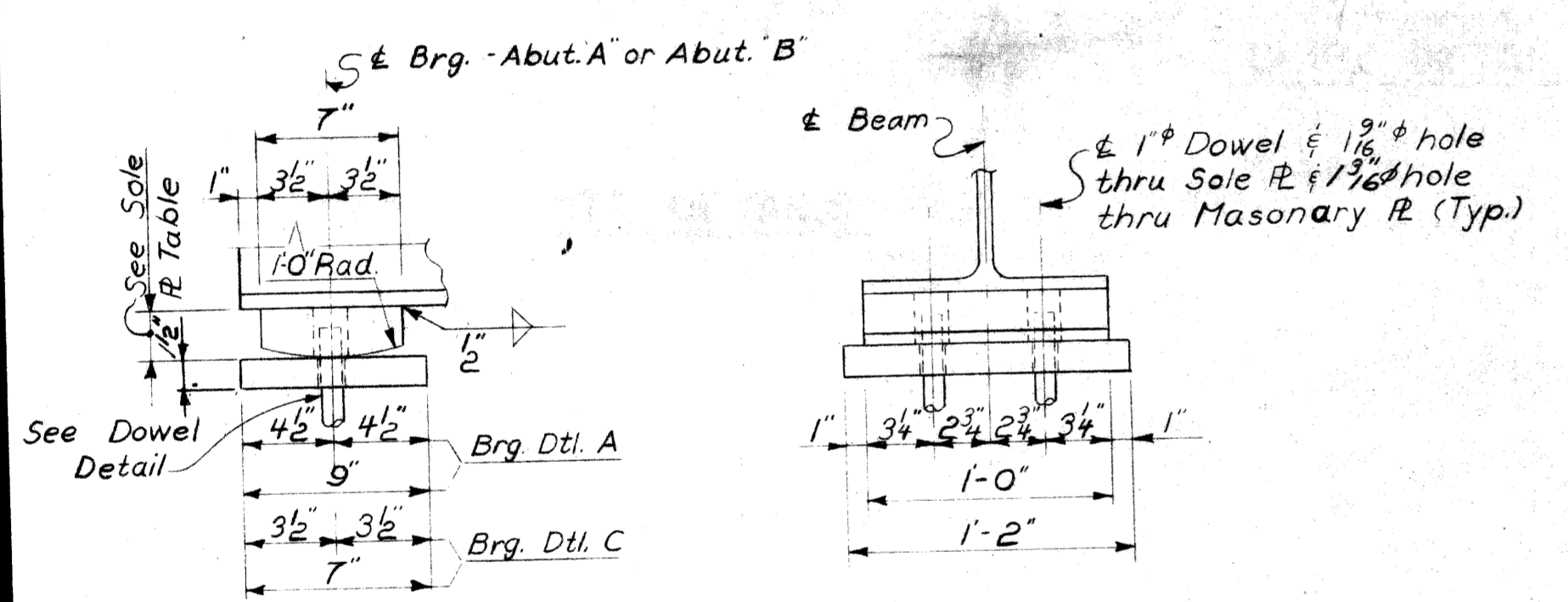
SECTION H-H



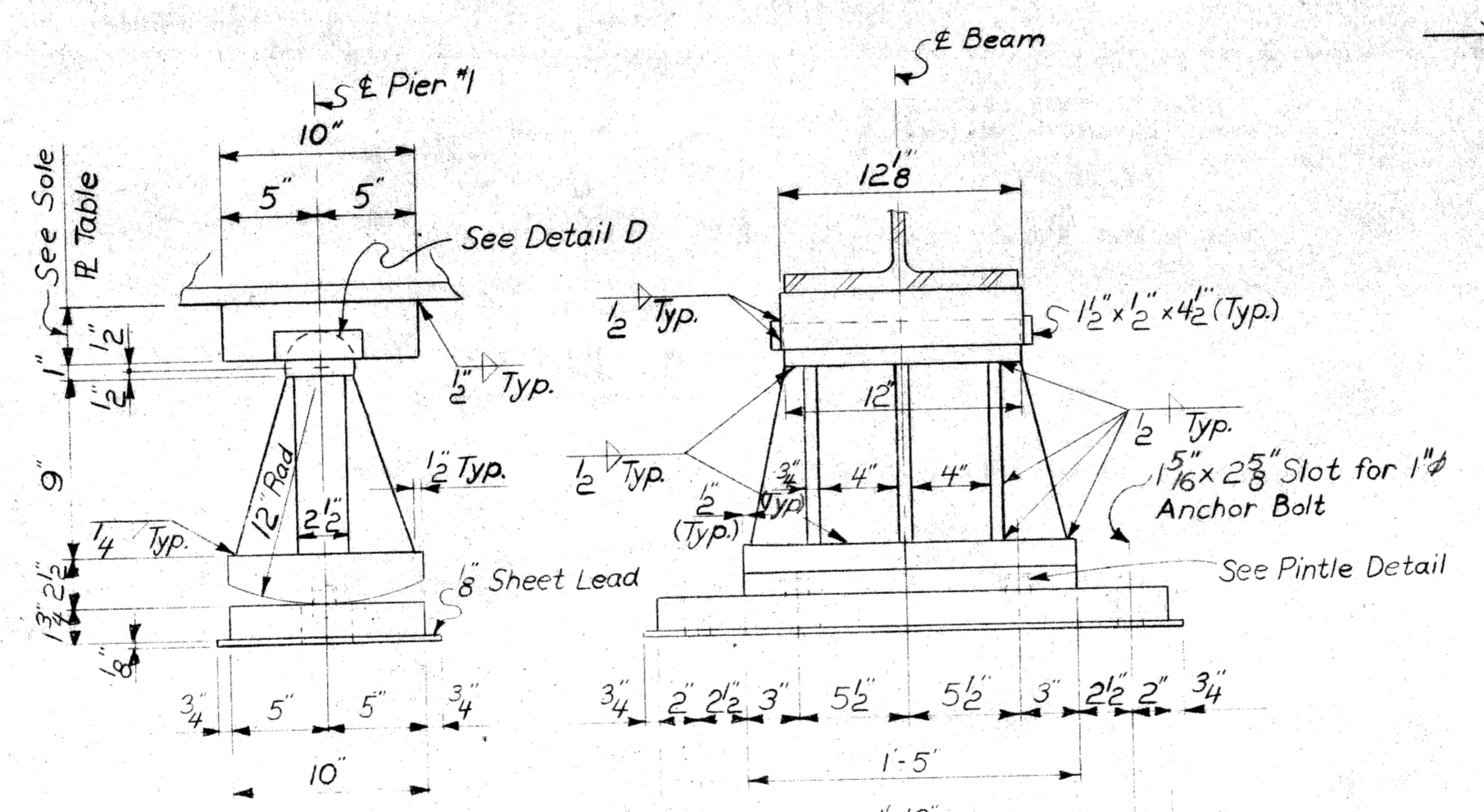
PLAN OF STUDS

BM.	ABUT. A	PIER	ABUT. B
A	3/4	3 3/4	2 1/2
B	3/4	3 3/4	2 1/2
C	3/4	4 1/4	3 1/4
D	4 1/2	5 1/4	4
E	4 1/2	5 1/4	4 1/4
F	3 3/4	4 1/2	3 1/2
G	2	3	2 3/4
H	5 3/4	-	-
J	4	-	-
K	2 1/2	-	-

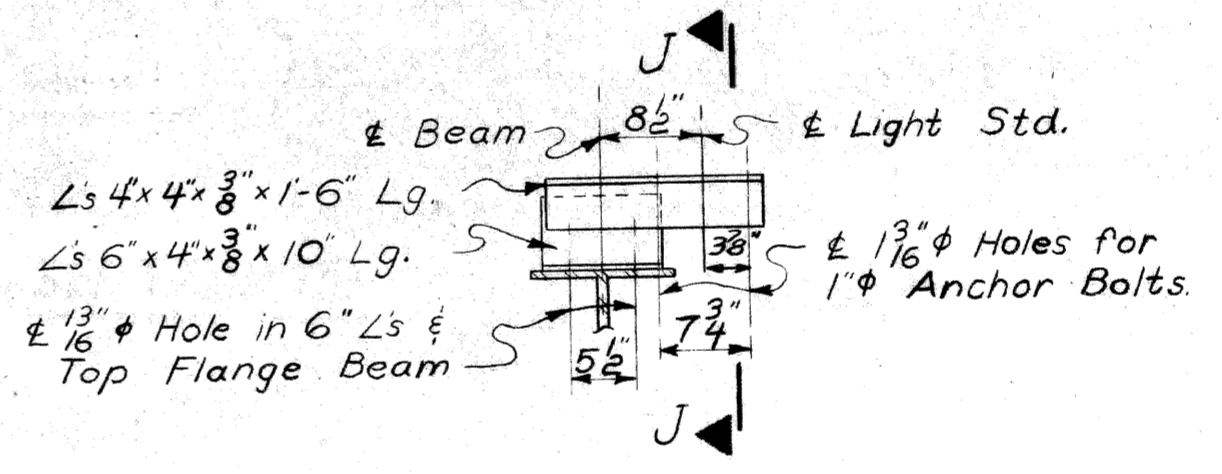
Note: Sole R. thicknesses are given in inches at & Bearings. Bevel sole R's as shown on the Beam Elevation.



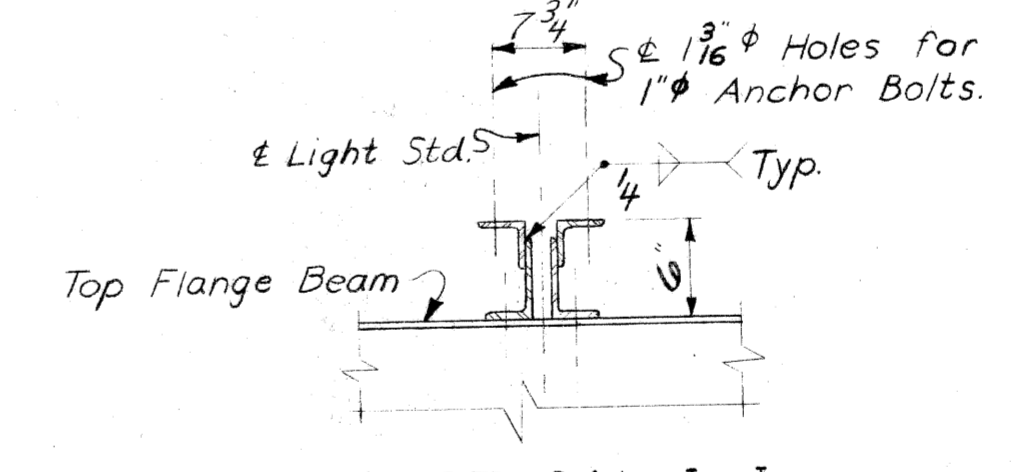
BEARING DETAILS A & C



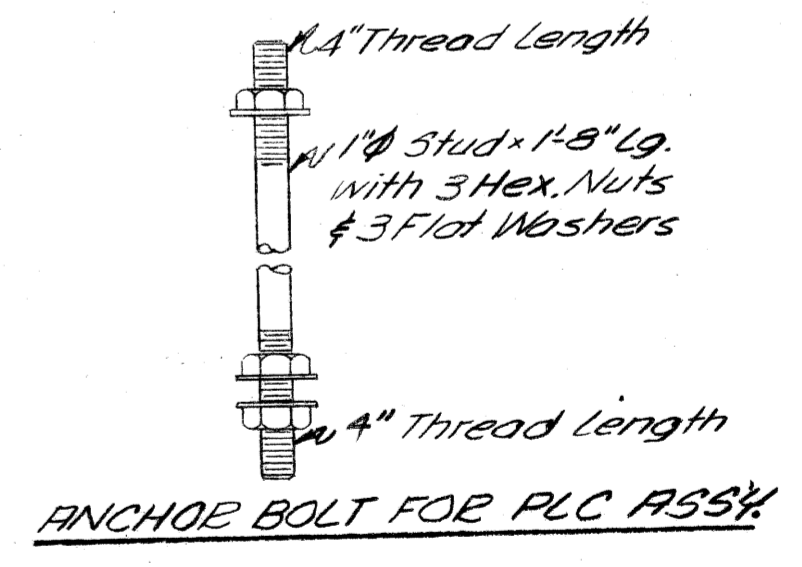
BEARING DETAIL B



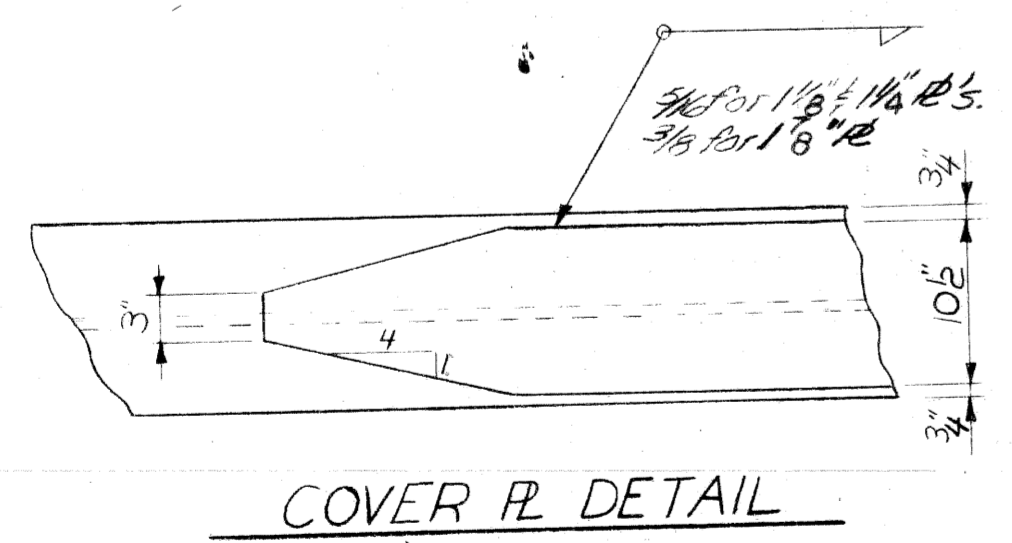
P.L.C. BRACKET ASSY.



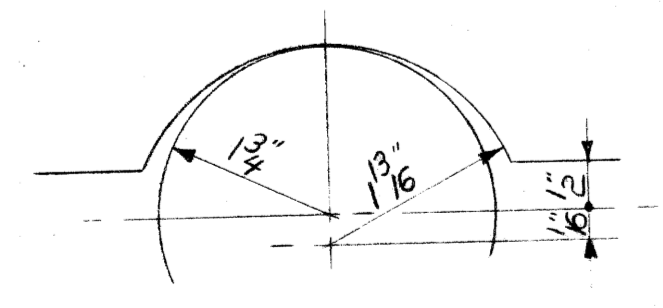
SECTION J-J For Location of Light Std. See Sheet #15



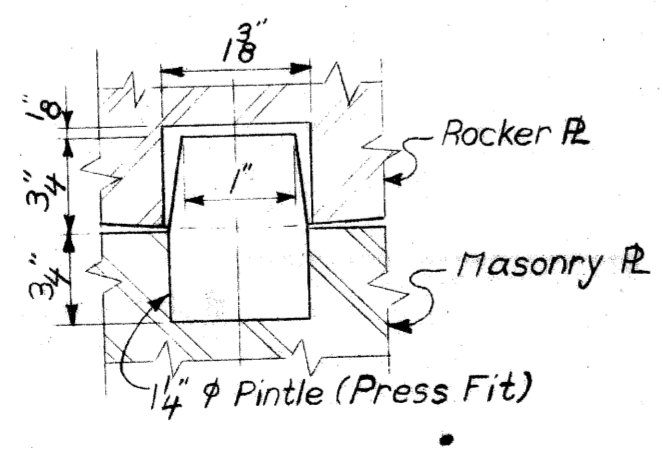
ANCHOR BOLT FOR PLC ASSY.



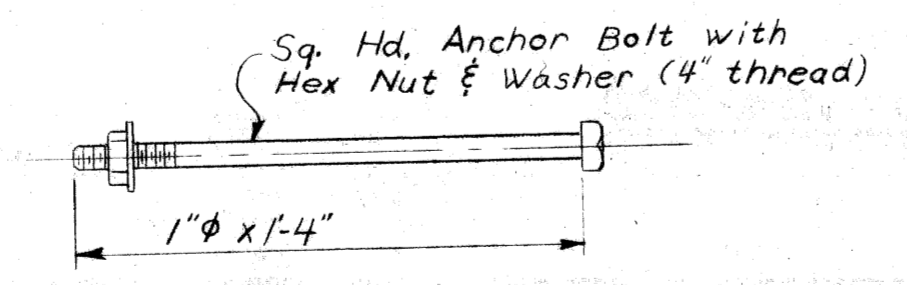
COVER PL DETAIL



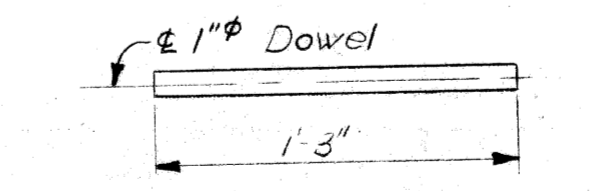
DETAIL D



PINTLE DETAIL



ANCHOR BOLT DETAIL



POSITION DOWEL DETAIL

Work this sheet with sheet #11.

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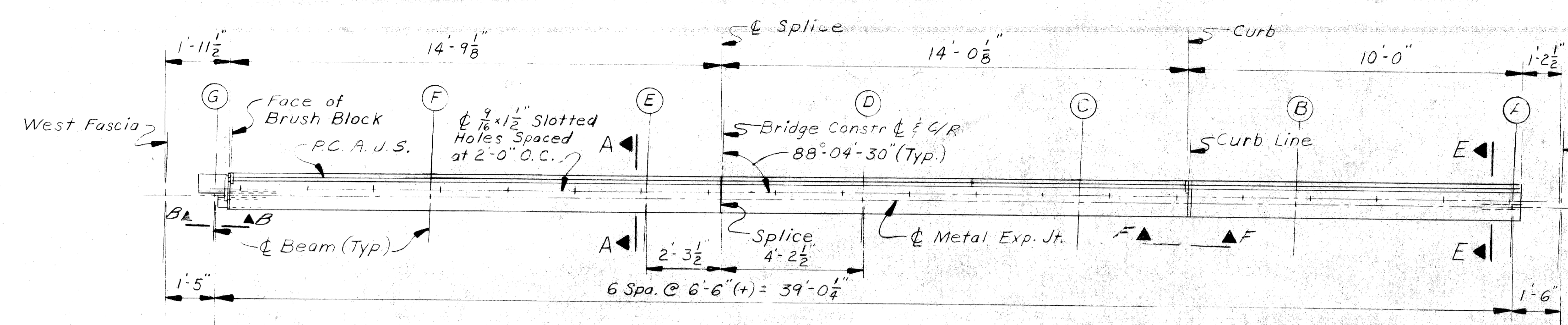
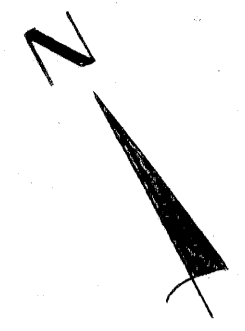
APPROVED: *H. J. ...*
STRUCTURAL ENGINEER

JOB No. PW 990141

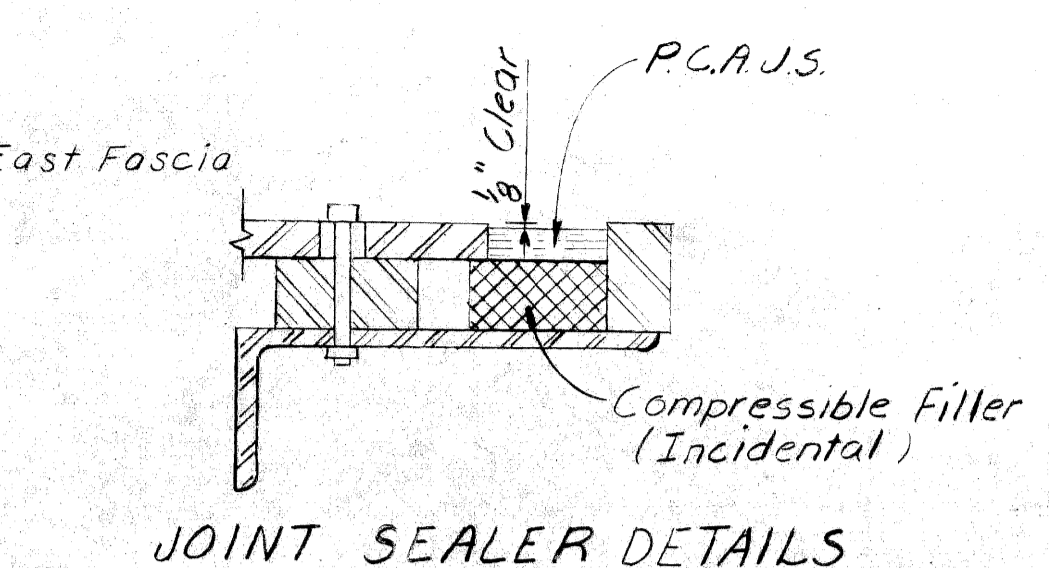
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	W. J. F.
DRAWN BY	Van Kerkhove 12-17-68
TRACED BY	McGure 3-69
CHECKED BY	M. C. 5-69
SHEET 12 OF 20	

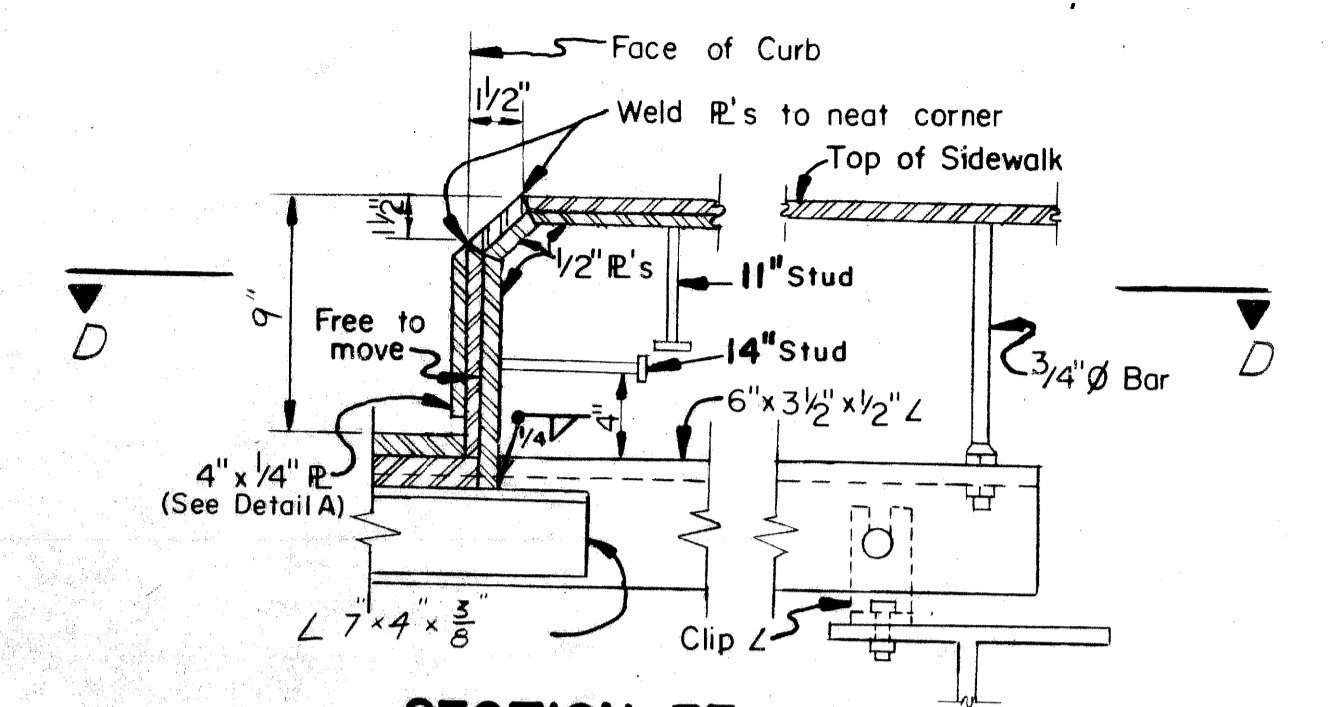
S32 of 82123I



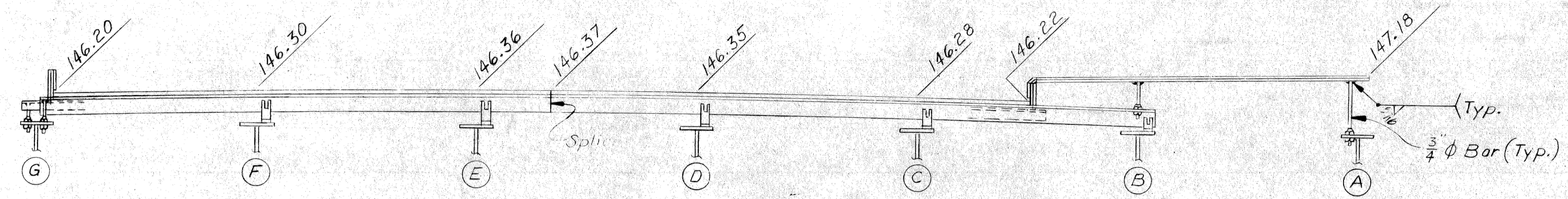
PLAN OF METAL EXP. JOINT



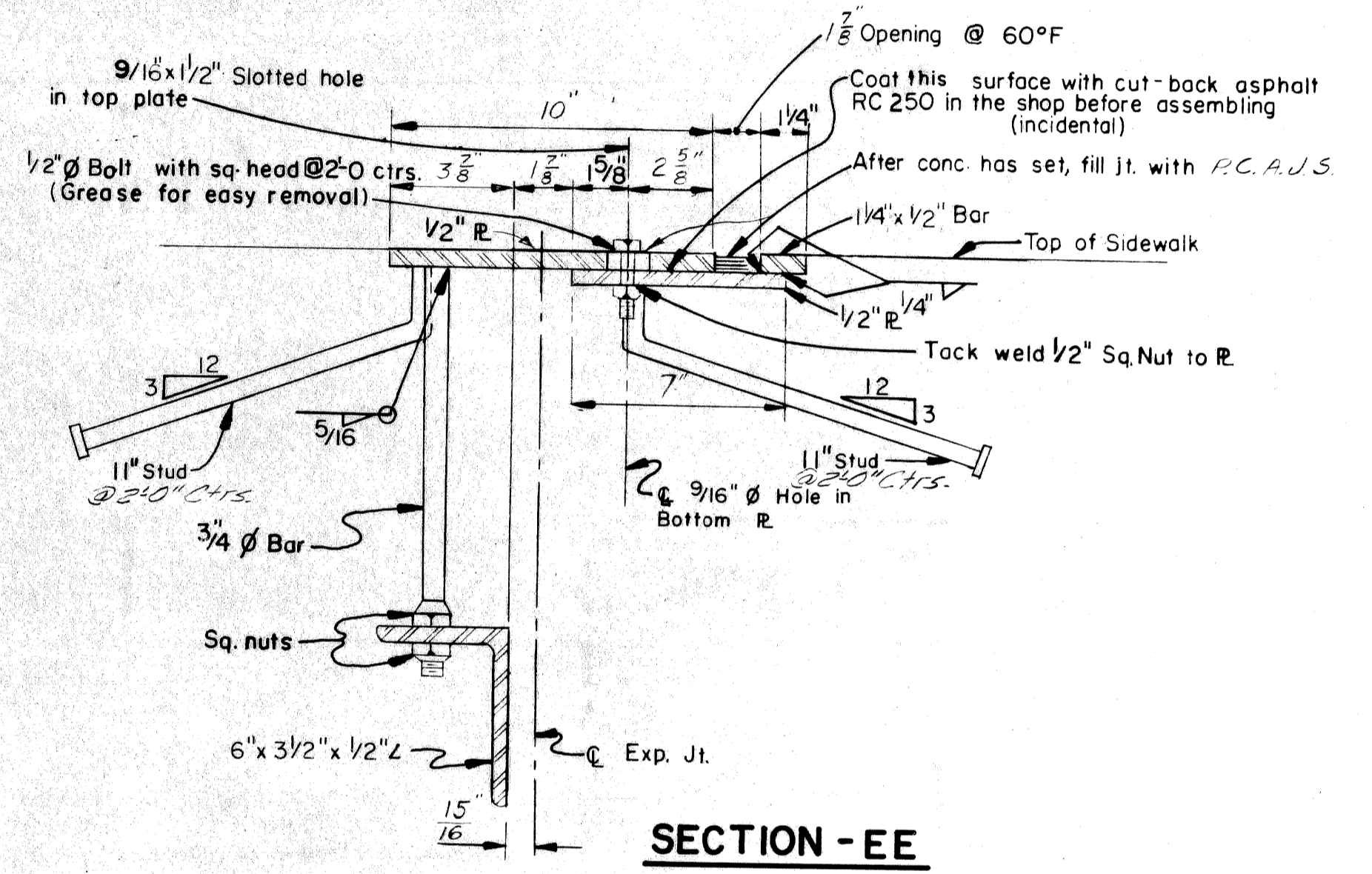
JOINT SEALER DETAILS



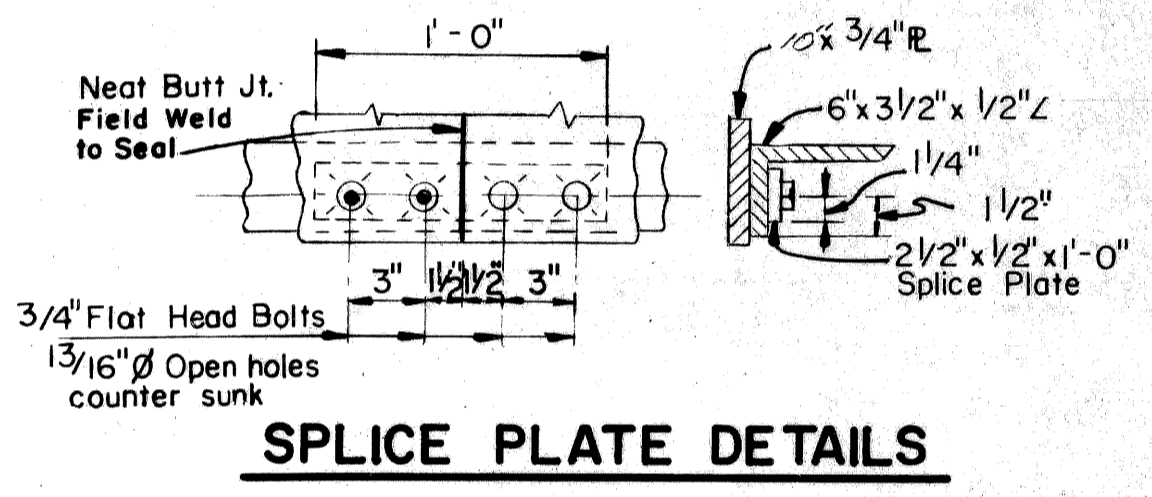
SECTION-FF



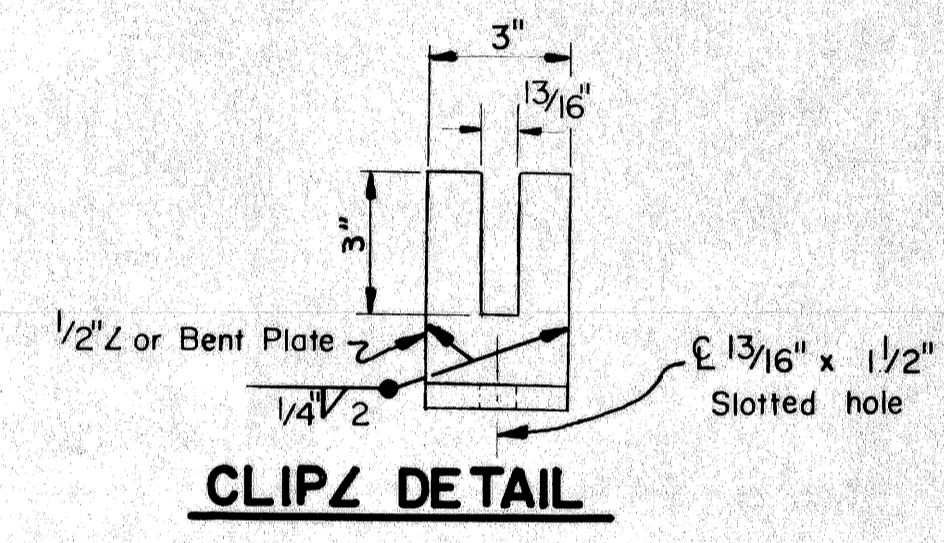
ELEVATION OF METAL EXP. JOINT



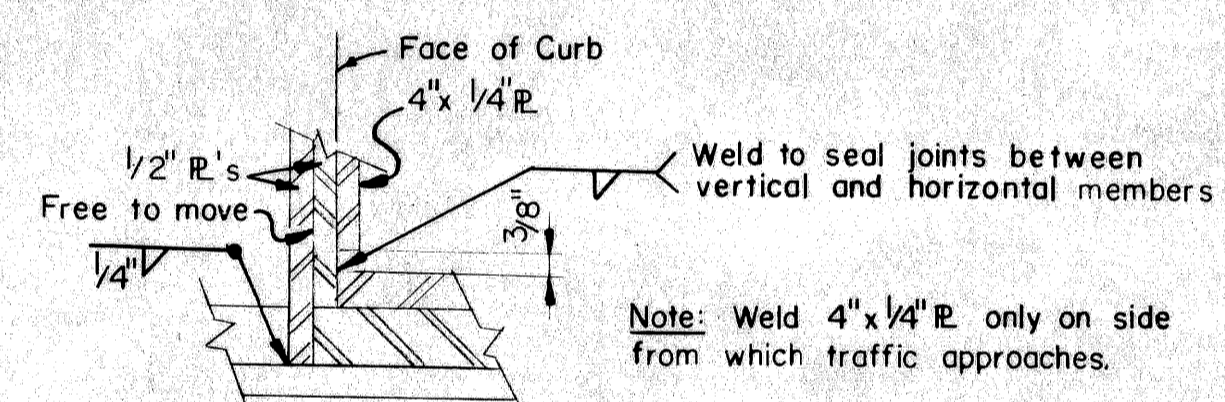
SECTION-EE



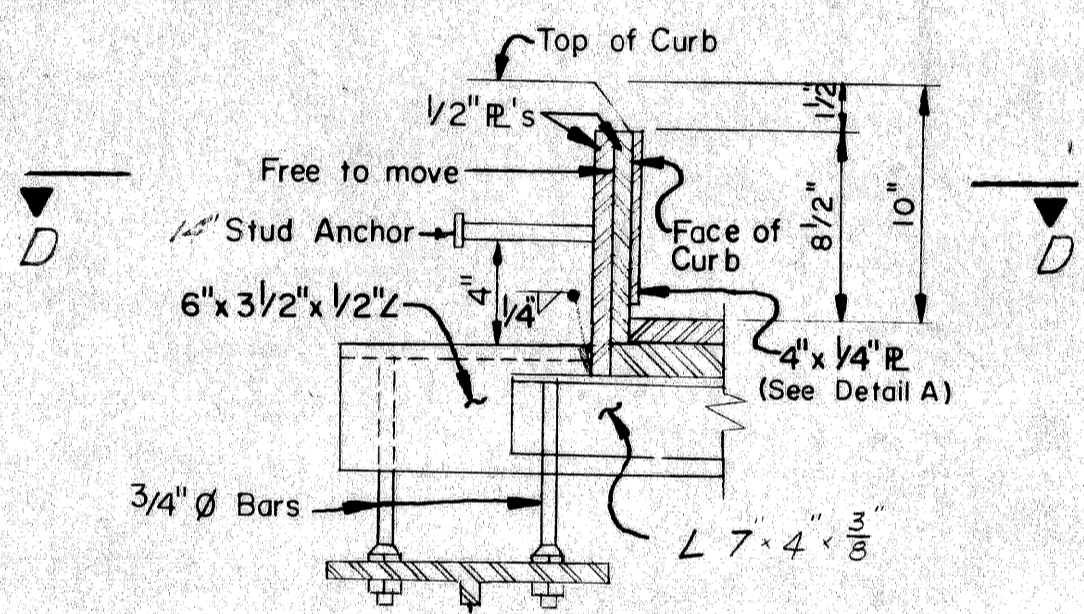
SPLICE PLATE DETAILS



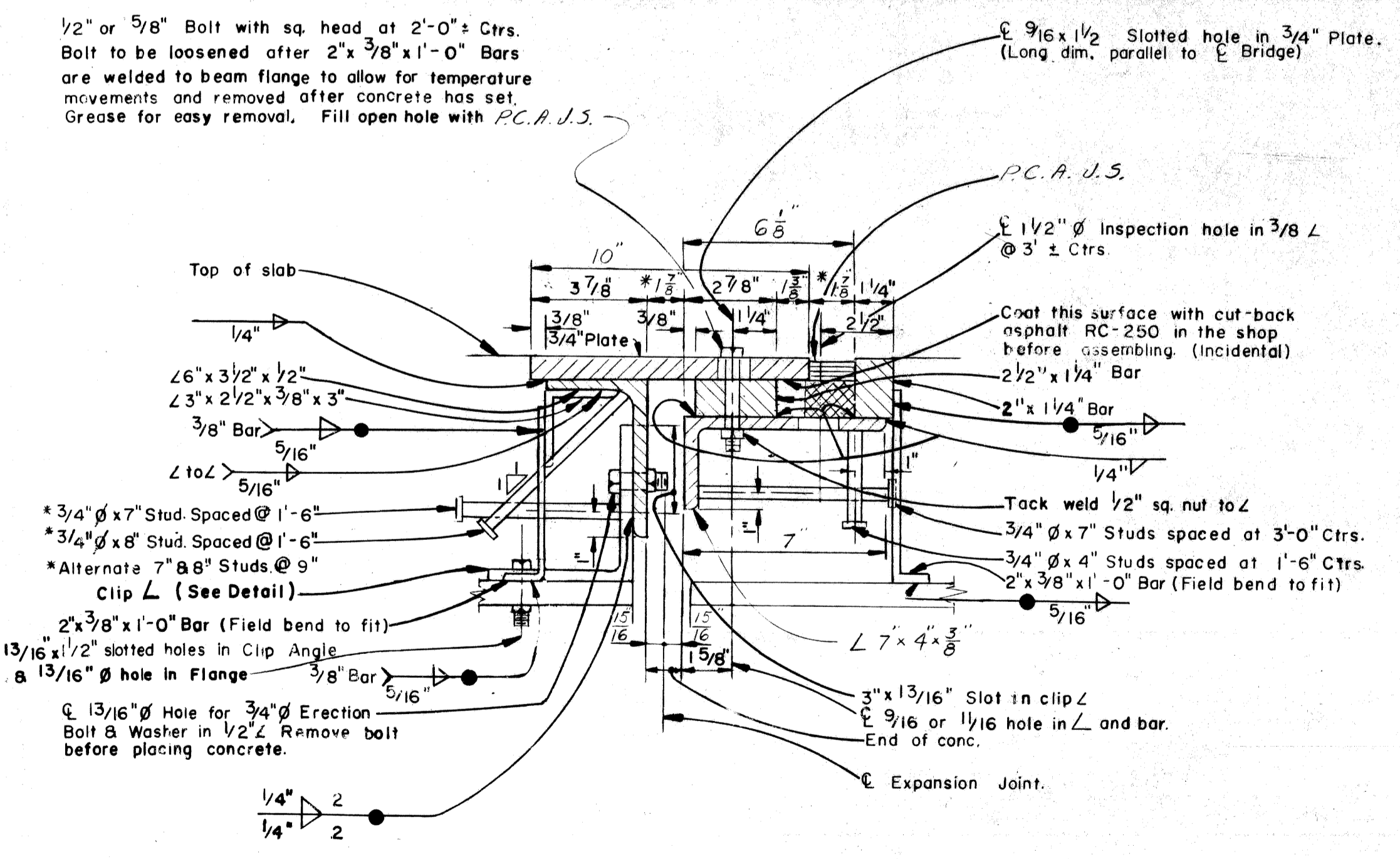
CLIP Z DETAIL



DETAIL A

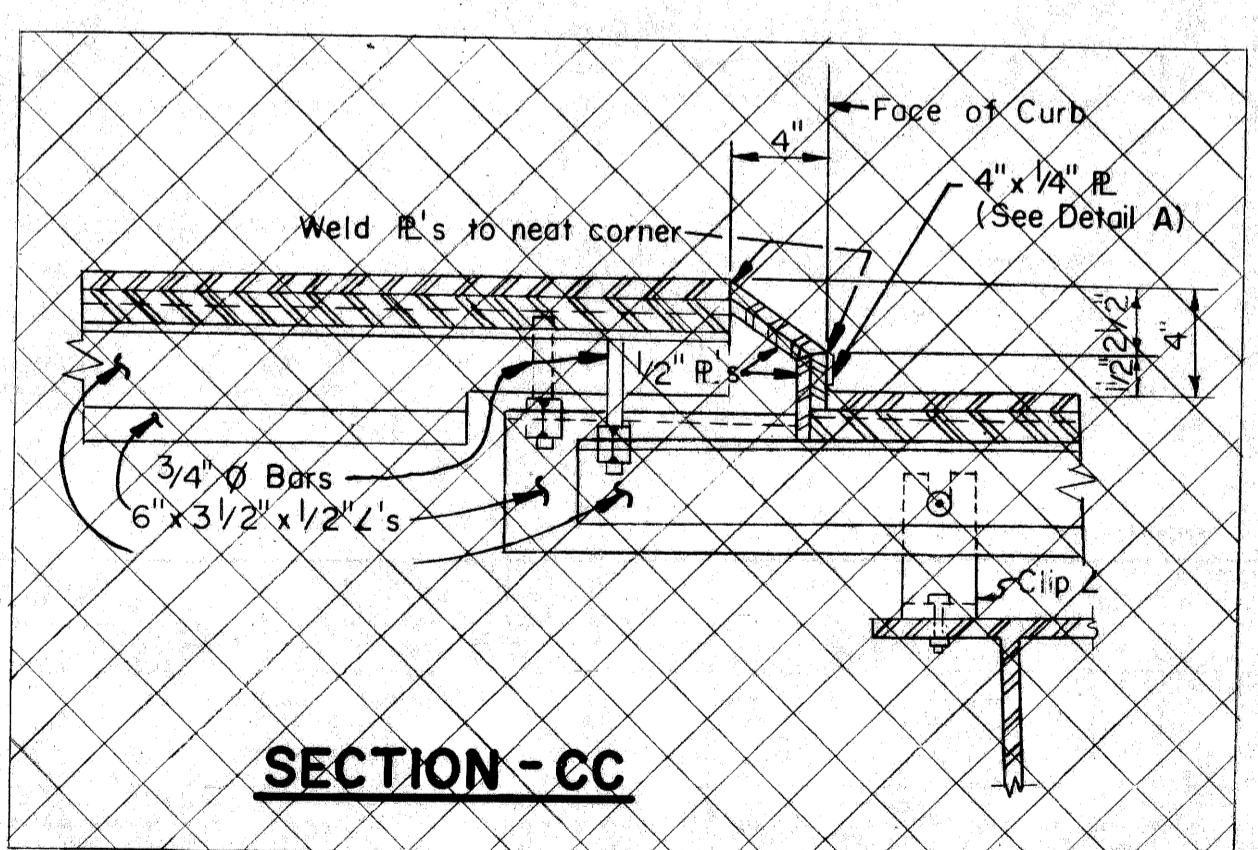


SECTION-BB

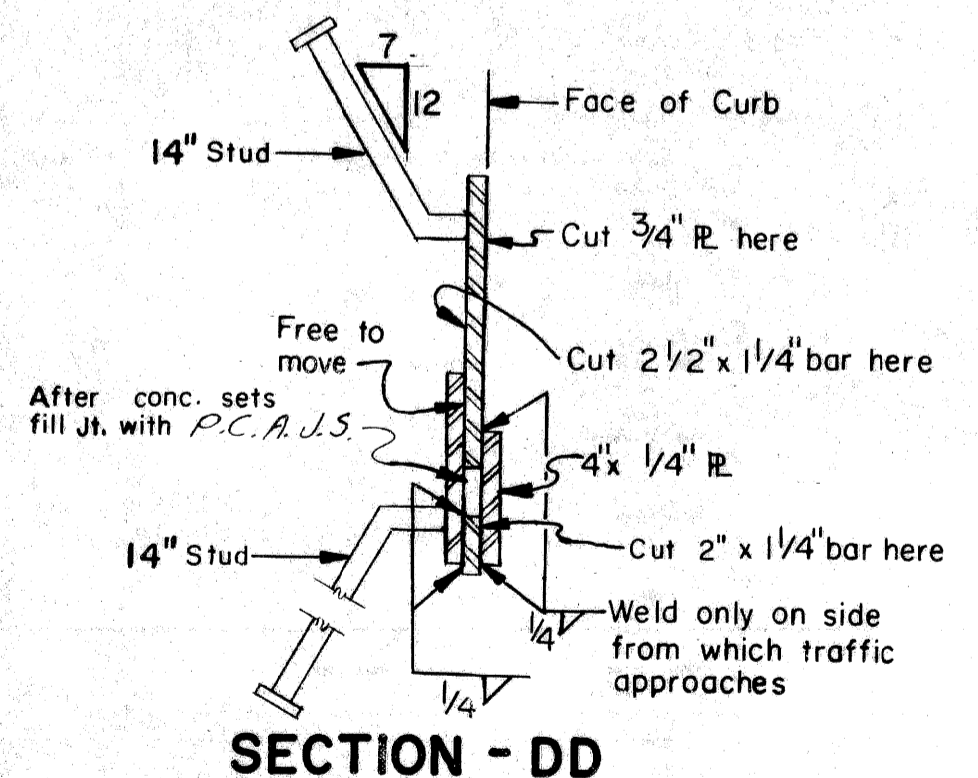


SECTION-AA

60° F.

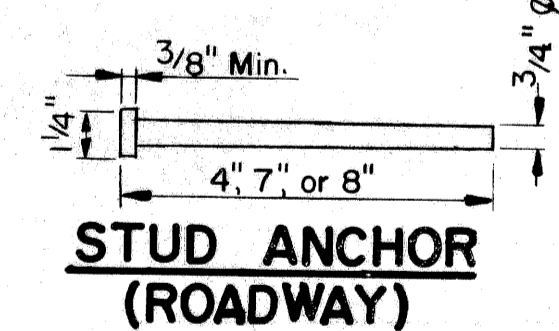


SECTION-CC

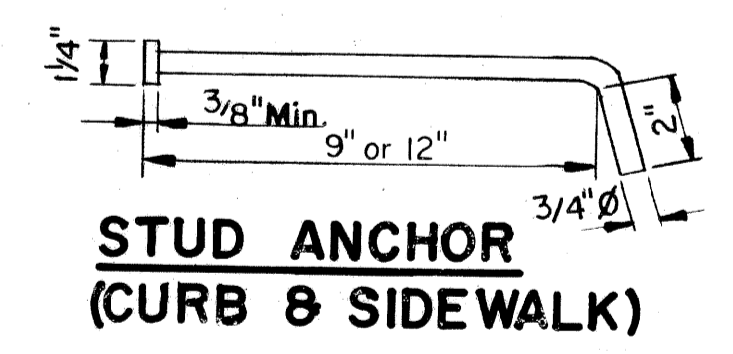


SECTION-DD

NOTES:
 The Metal Expansion Joint shall be bent in the shop to conform with the contour of the top of roadway slab.
 PC.A.U.S. is included in the Superstructure Quantities on sheet 16.
 Weight of Metal Expansion Joint 2750 lbs.
 Weight of Metal Expansion Joint is included in Structural Steel weight on sheet 11.
 PC.A.U.S. denotes Two Component Polyurethane Cold Applied Joint Sealer.



STUD ANCHOR (ROADWAY)

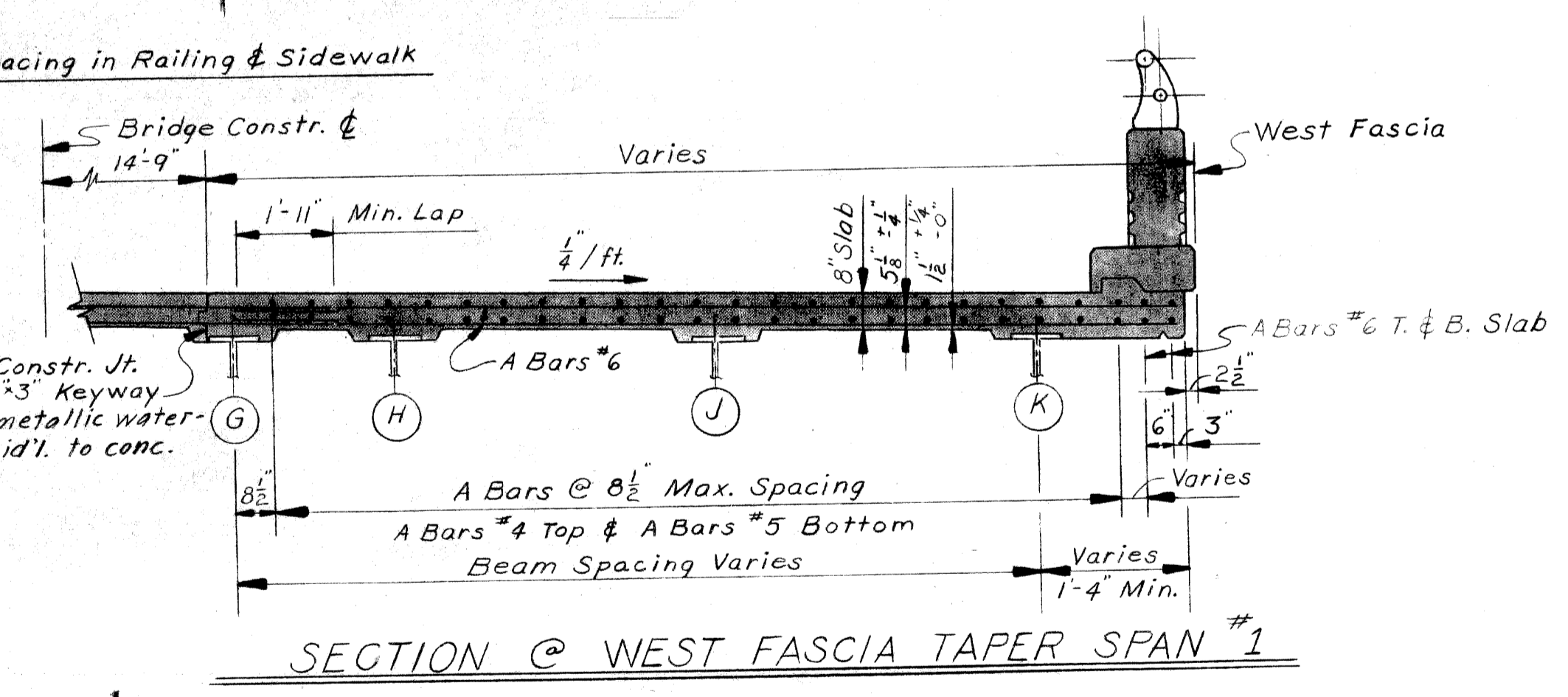
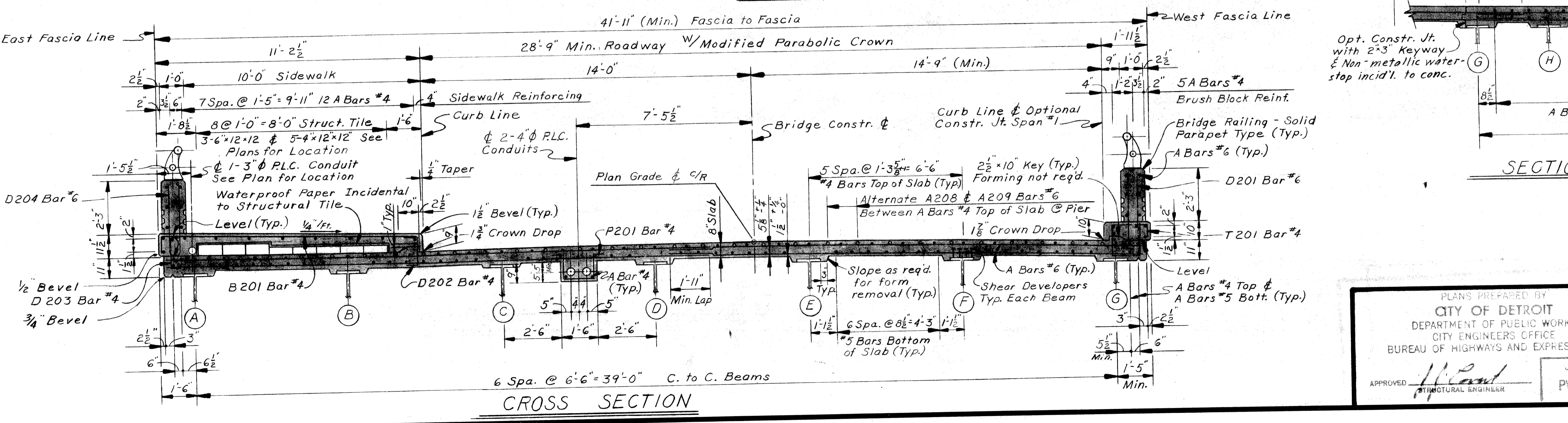
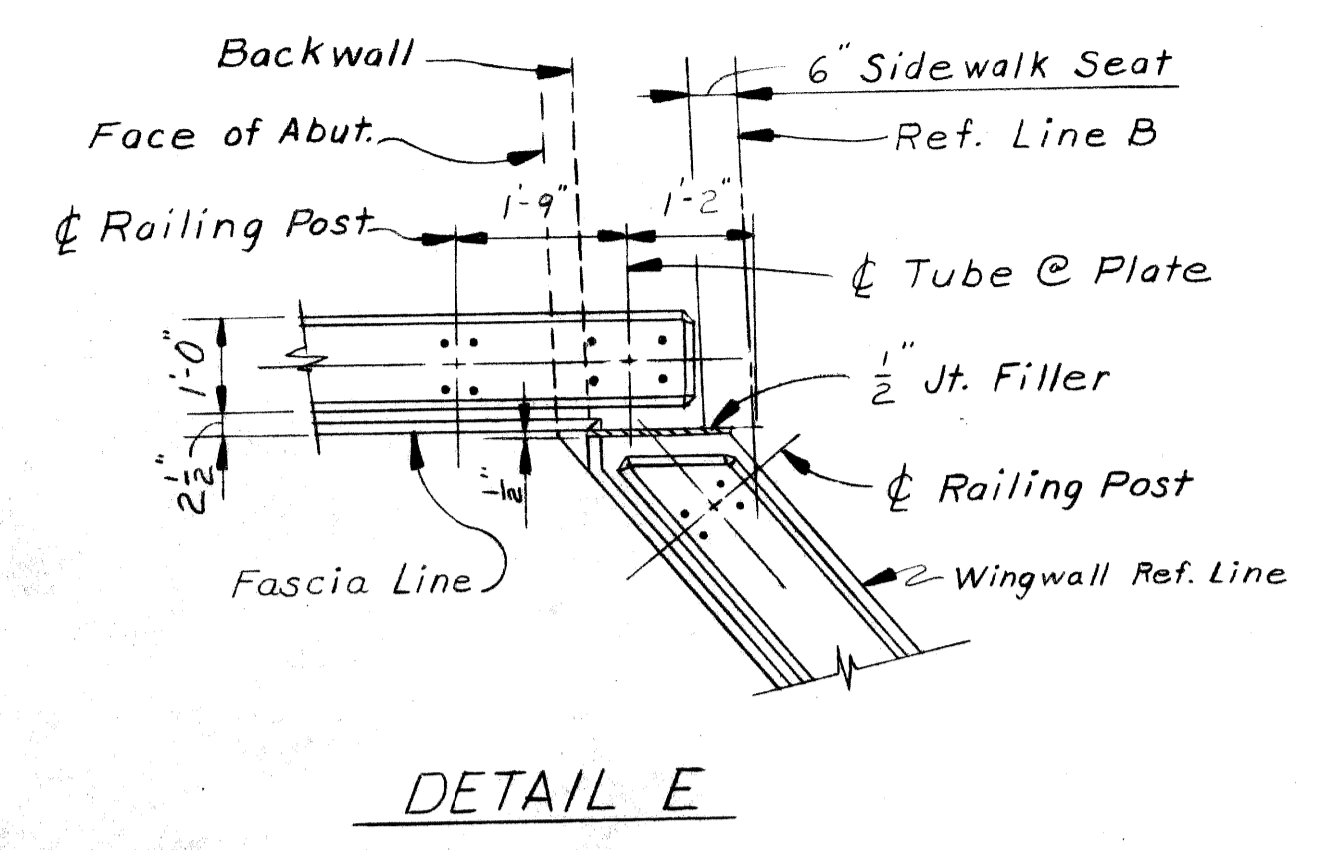
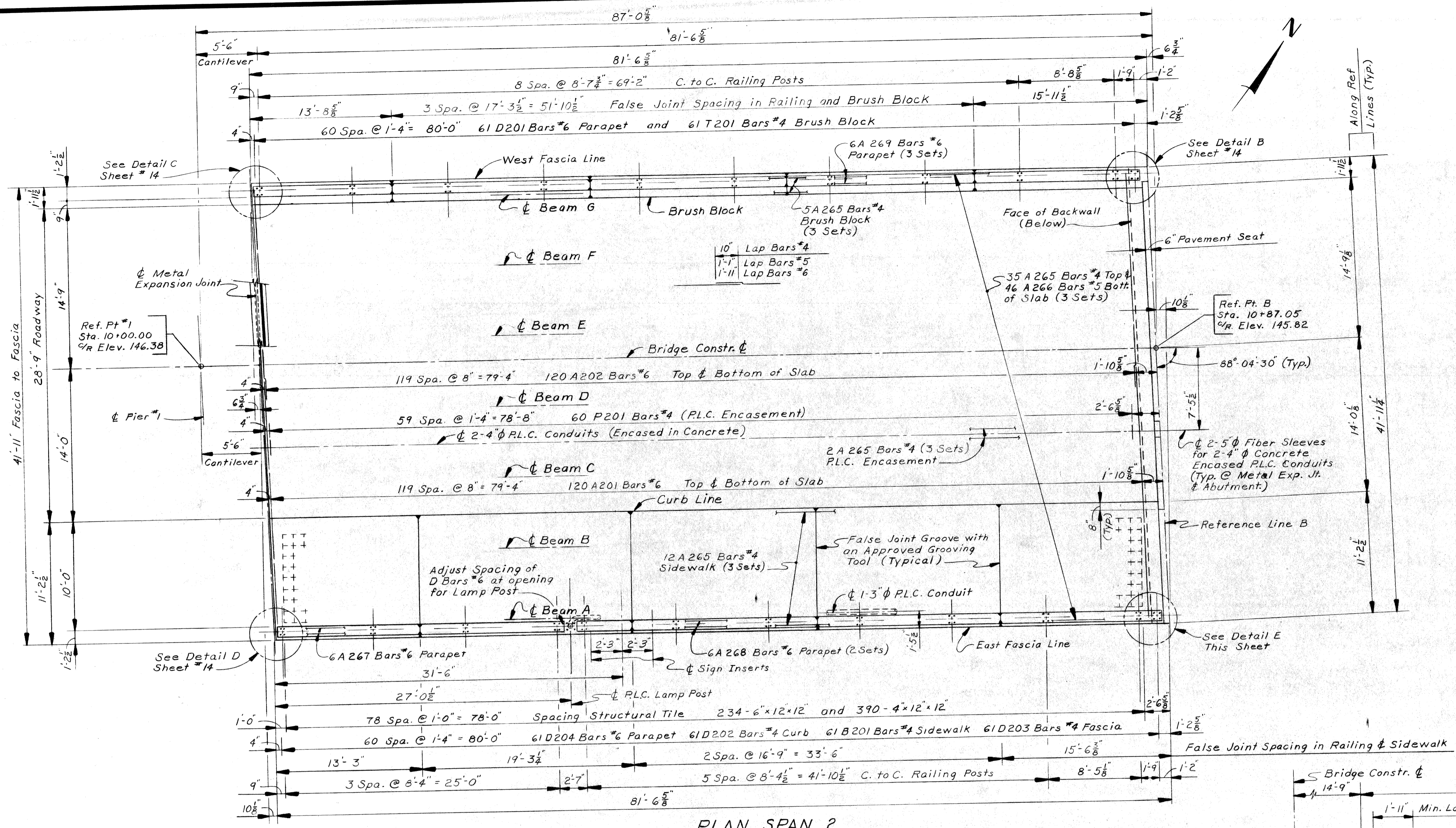


STUD ANCHOR (CURB & SIDEWALK)

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MICHIGAN DEPARTMENT OF STATE HIGHWAYS			
METAL EXPANSION JOINT DETAILS			
REVISIONS			
NO.	DESCRIPTION	DATE	BY

DRAWN BY	A Hopkins	1-6-68
TRACED BY	M. G. [Signature]	3-6-69
CHECKED BY	J. B. W.	
SHEET 13 OF 20		



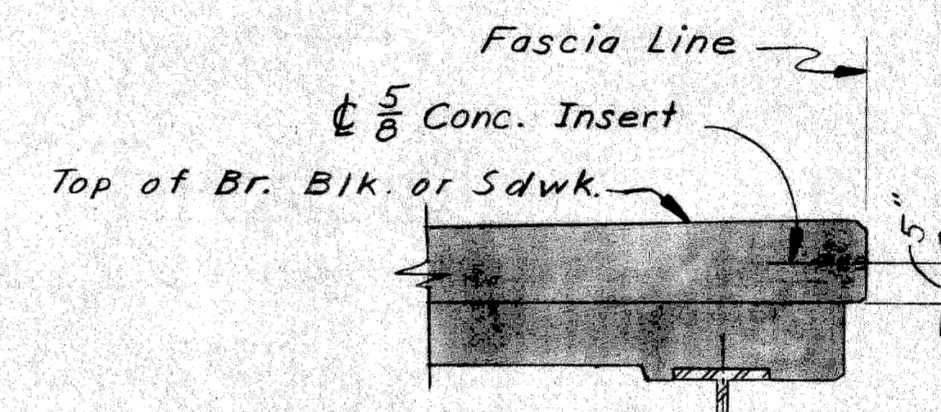
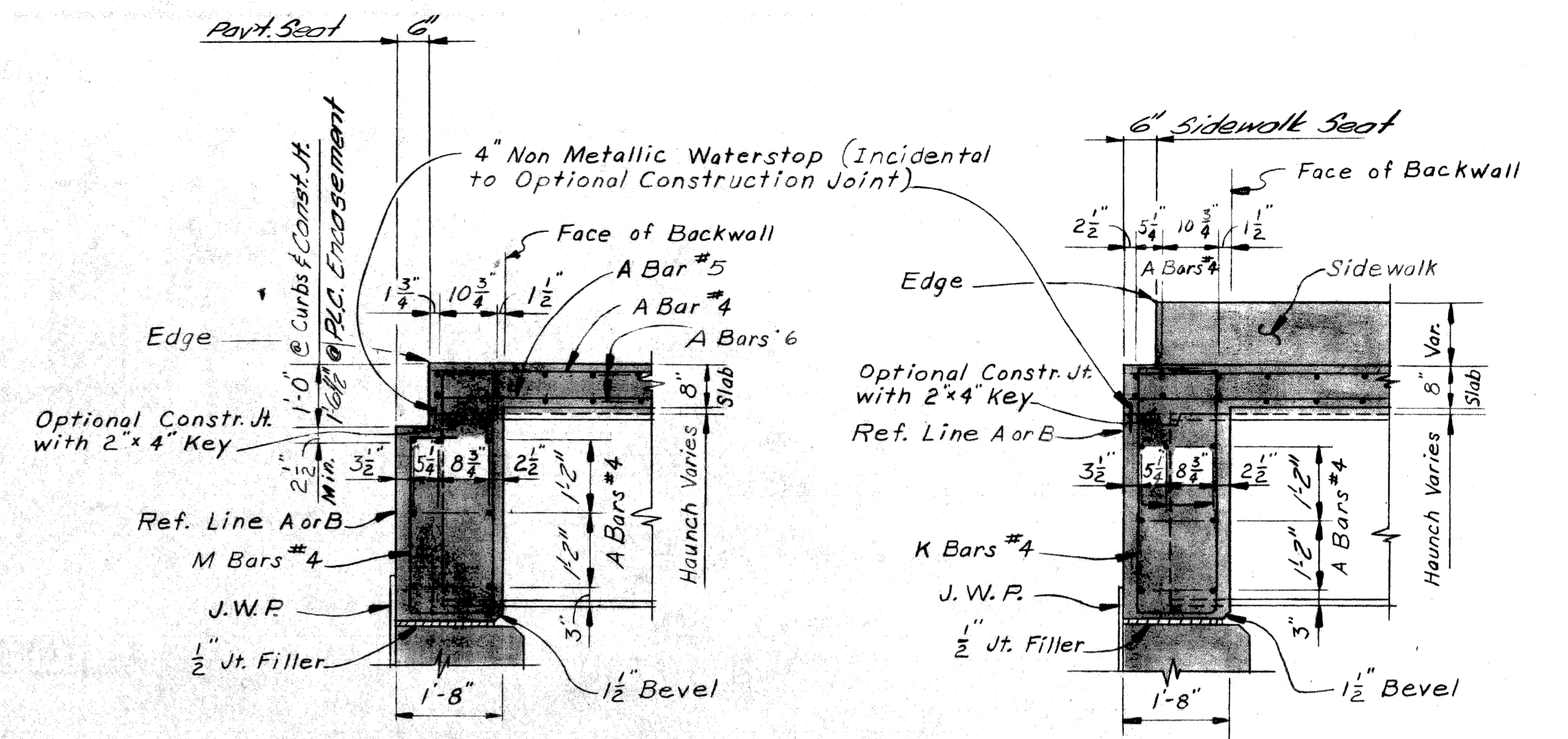
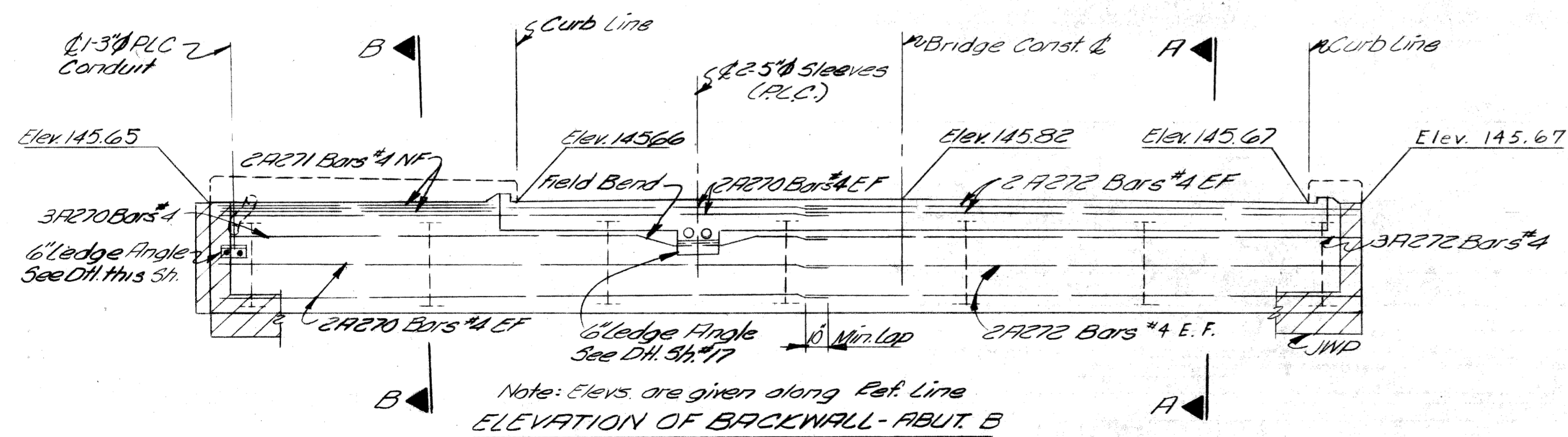
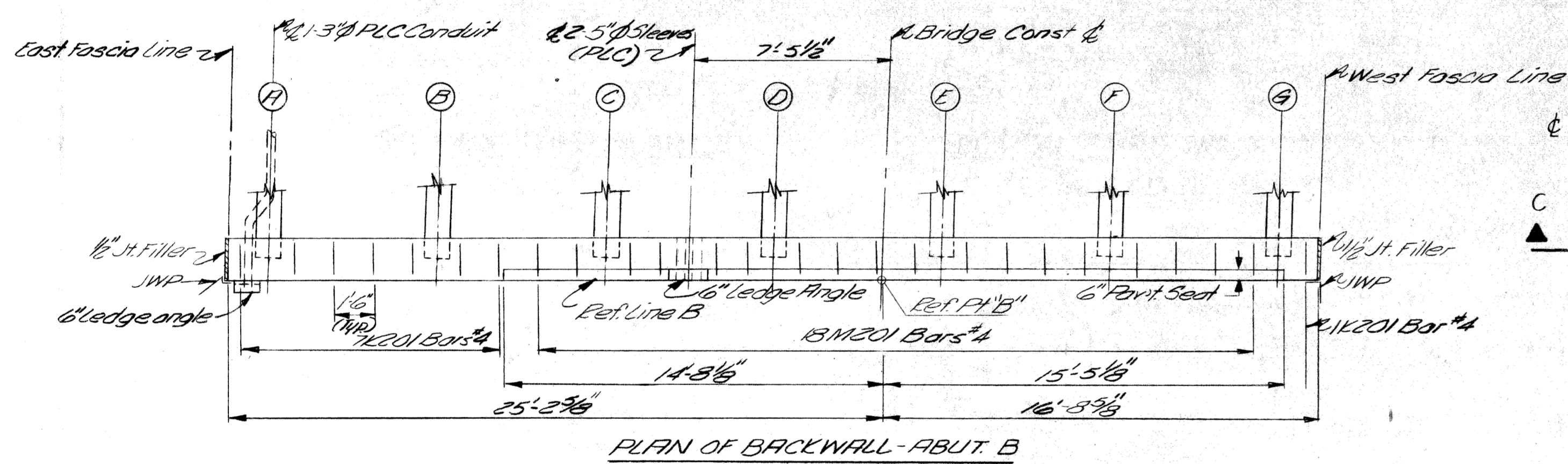
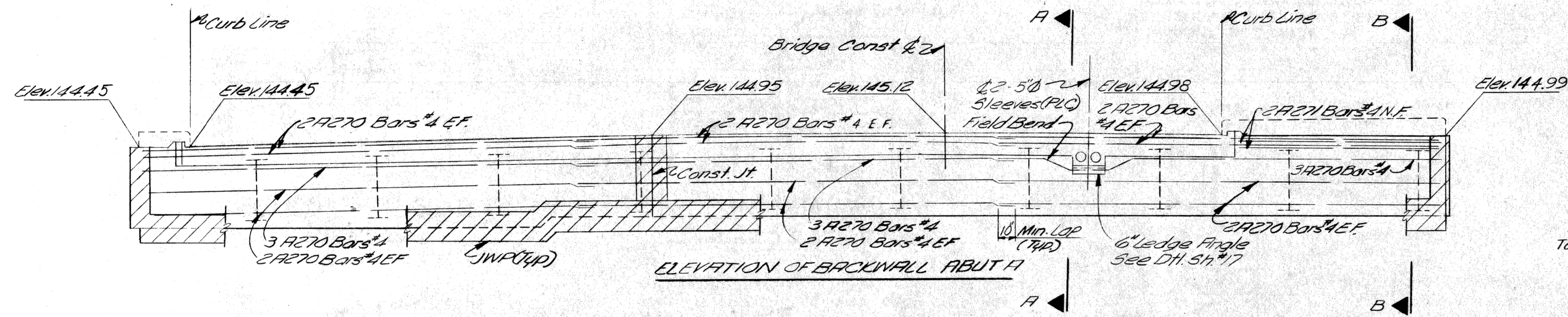
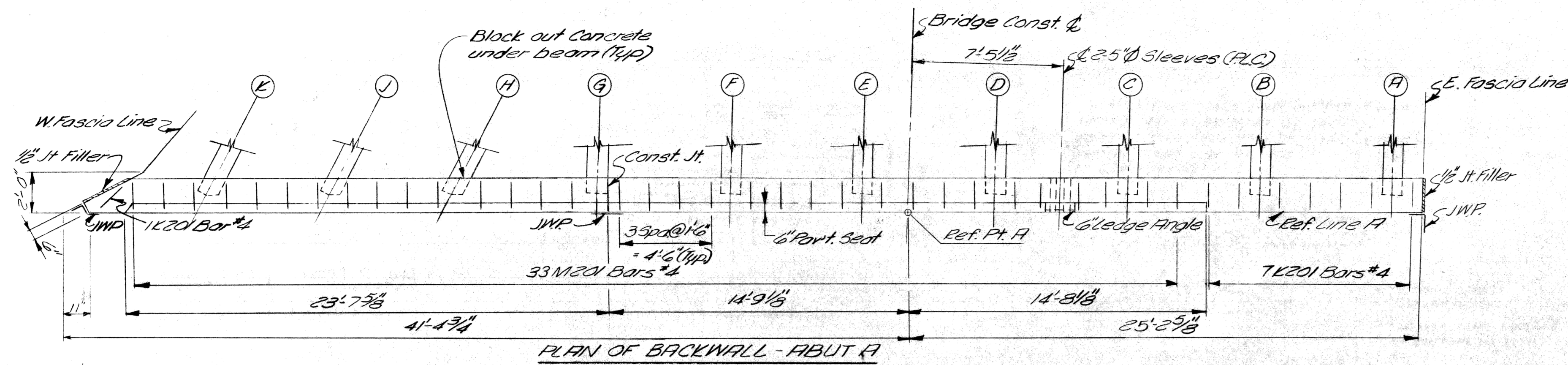
PLANS PREPARED BY
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APPROVED: *[Signature]*
 STRUCTURAL ENGINEER

JOB No.
 PW 990(4)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS			
SUPERSTRUCTURE DETAILS			
CITY OF DETROIT			
SQUAD BOSS	Watts		
DRAWN BY	M. Sore	3-69	
TRACED BY			
CHECKED BY	J. B. W.		
		SHEET 15 OF 20	
S32 of 82123 I			

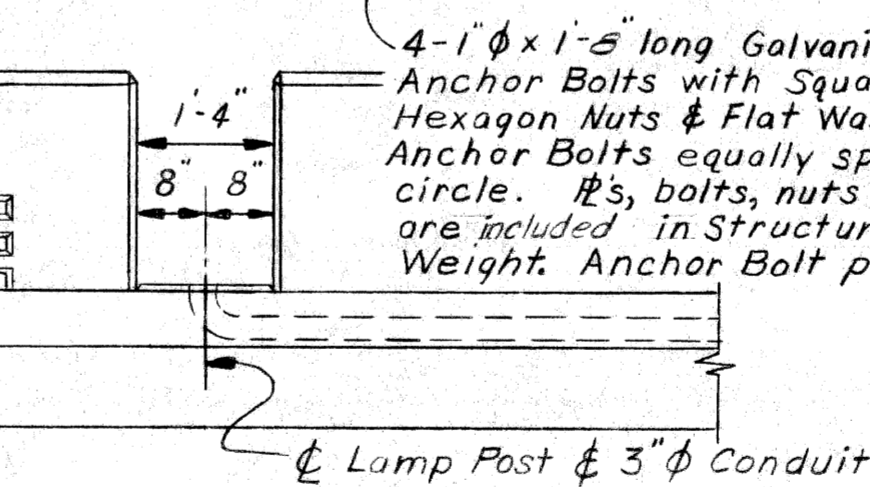
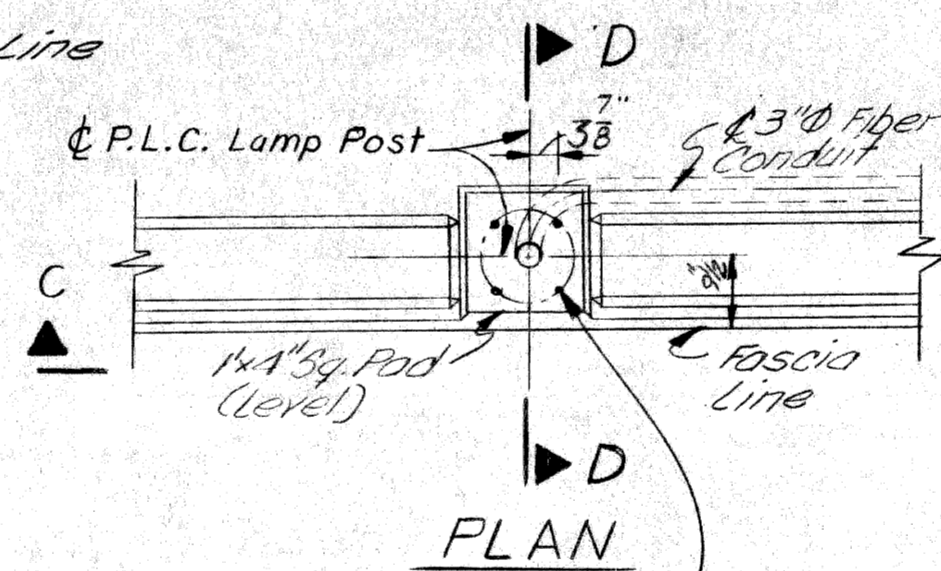
REVISIONS			
NO.	DESCRIPTION	DATE	BY



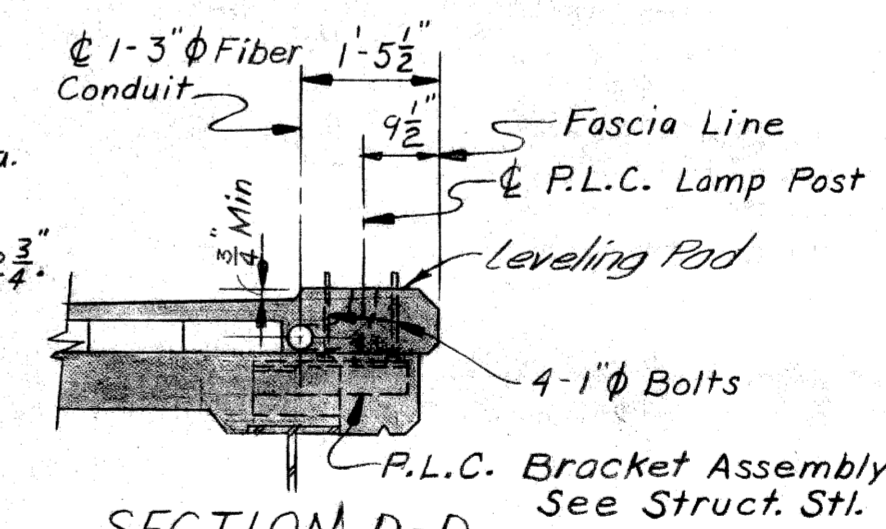
CLEARANCE SIGN INSERT DETAILS

NOTE: Inserts to be Truscon threaded inserts or approved equal and are to be provided with a suitable setting plug. Furnishing & placing concrete inserts is incid'l. to superstructure conc.

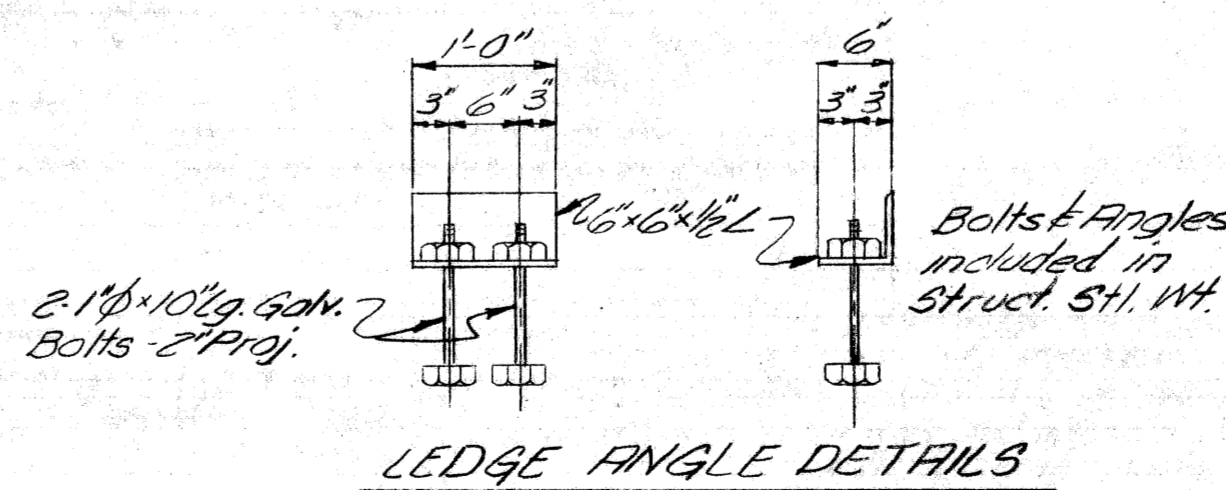
MISCELLANEOUS QUANTITIES		
ITEM	AMOUNT	UNIT
Water Reducing Retarding Admixture	Gal.	34
Protective Treatment for Bridge Decks	Sq Ft	7760
Structural Tile 4x12x12"	Each	840
Structural Tile 6x12x12"	Each	504
1/2" Joint Filler	Sq Ft	35
Joint Waterproofing	Sq Ft	192
Two Compon'g Polyurethane Cold Appl. Jt. Sealer	Lin Ft.	40
Bridge Railing - Solid Parapet Type	Lin Ft.	350.4
3" Conduits	Lin Ft.	56
4" Conduits	Lin Ft.	348



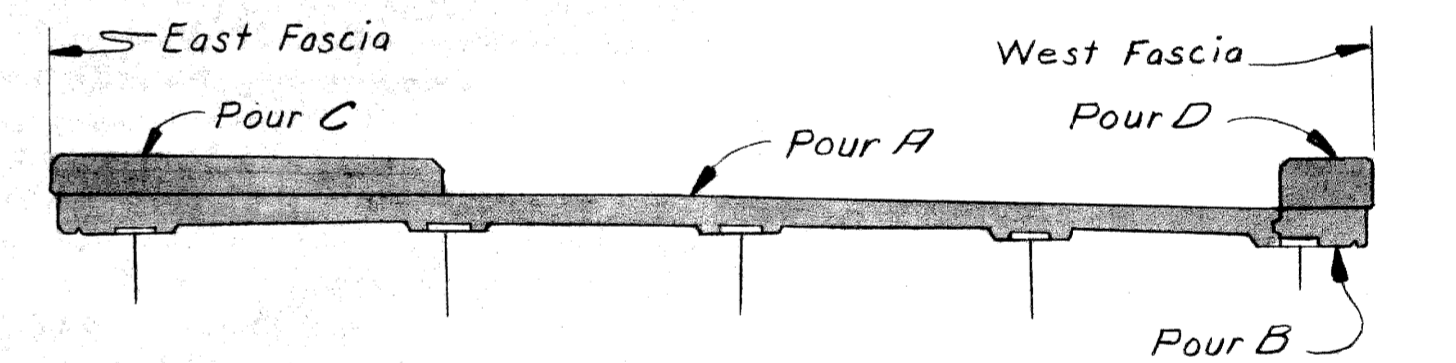
P.L.C. LAMP POST BASE DETAILS



SECTION D-D



LEDGE ANGLE DETAILS



POUR DIAGRAM

NOTE: Alphabetical designation of pours is not to be construed as a pour sequence.

CONCRETE QUANTITIES			
POUR	LOCATION	SPAN #1 CANTILEVER	SPAN #2 SUSPENDED
A	Slab	110.3	100.8
B	Slab Taper	22.3	-
C	Sidewalk	22.5	20.0
D	Brush Block	6.0	4.9
Total Superstructure Concrete G-R (GARA) 285,504 Yds.			

NOTE: Parapet Concrete Quantity = 292 Cu Yds. Incidental to Bridge Railing - Solid Parapet Type.

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JOB No. PW 990(14)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SUPERSTRUCTURE DETAILS

CITY OF DETROIT

REVISIONS

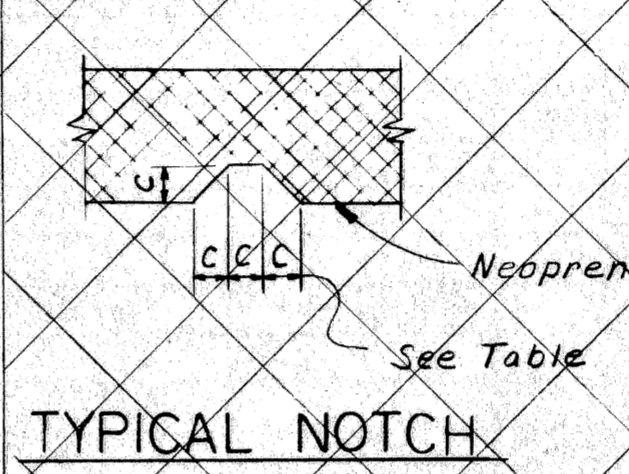
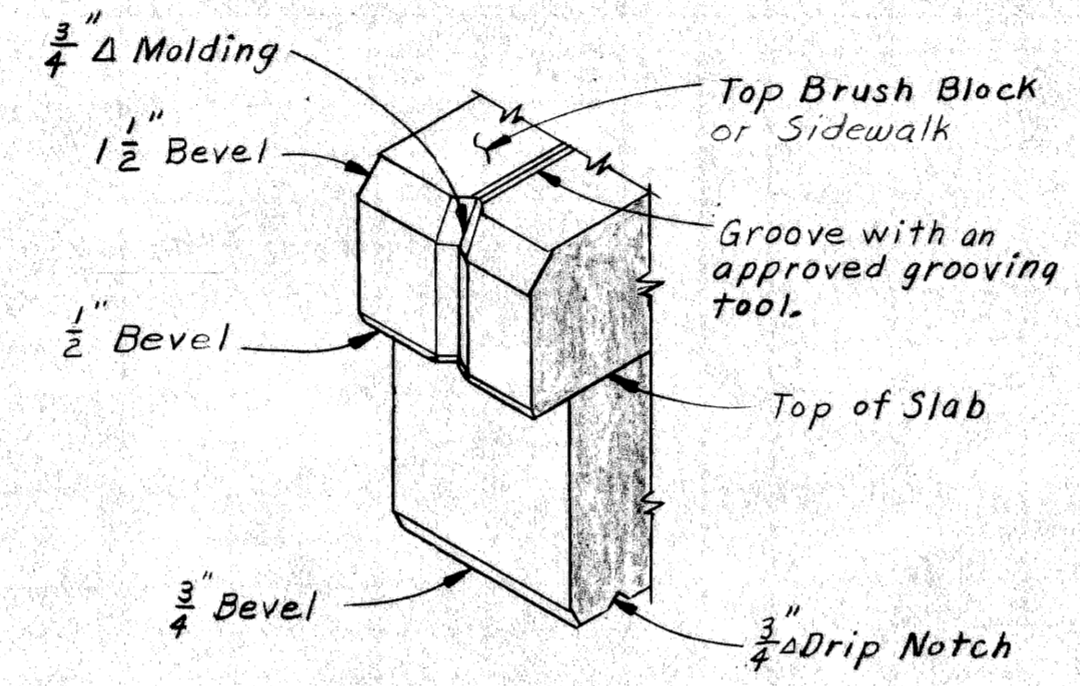
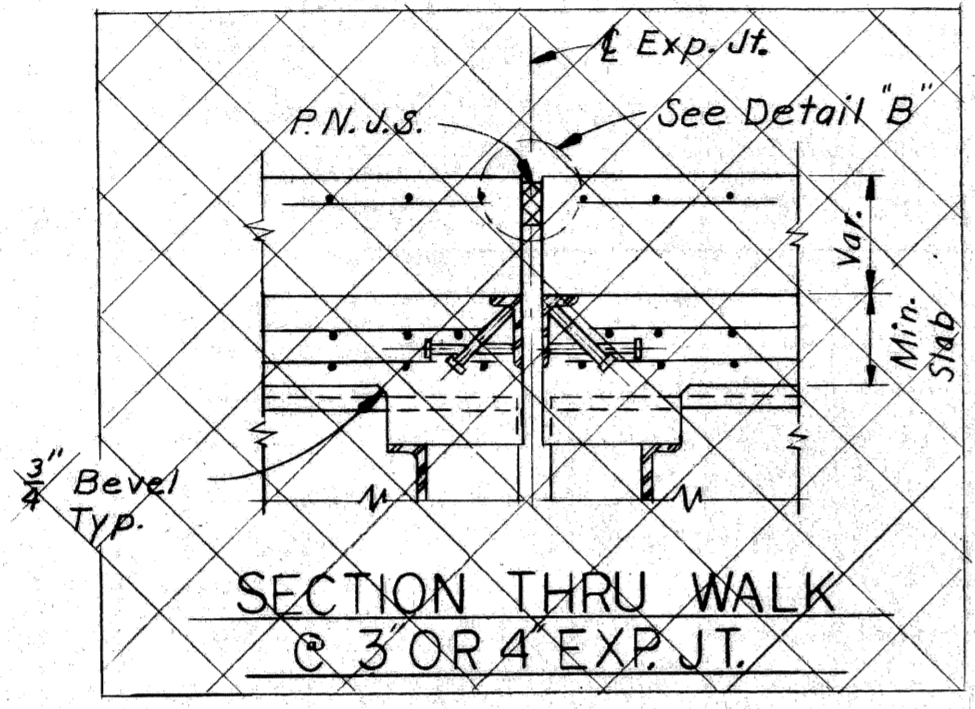
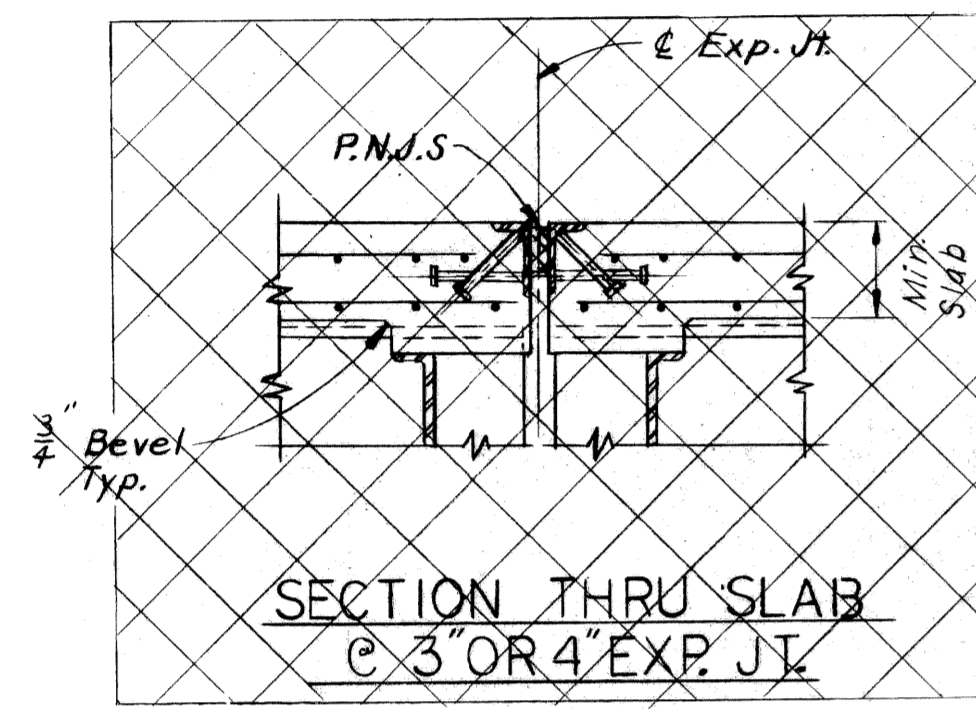
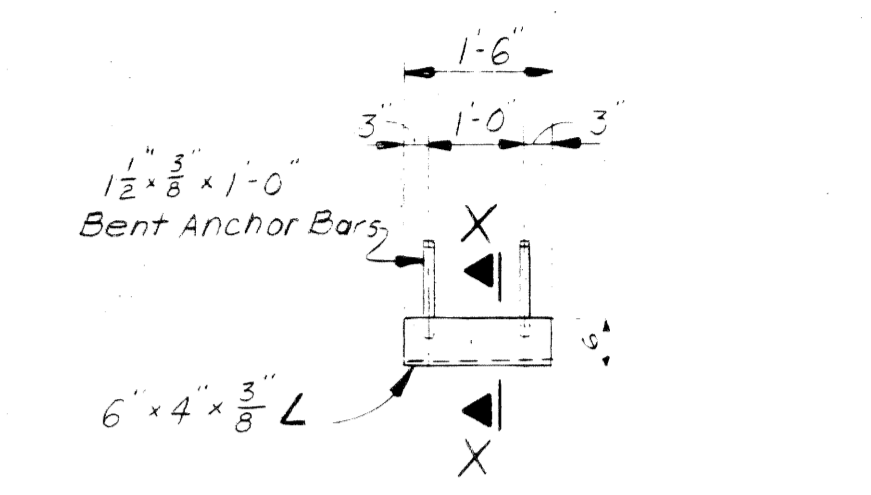
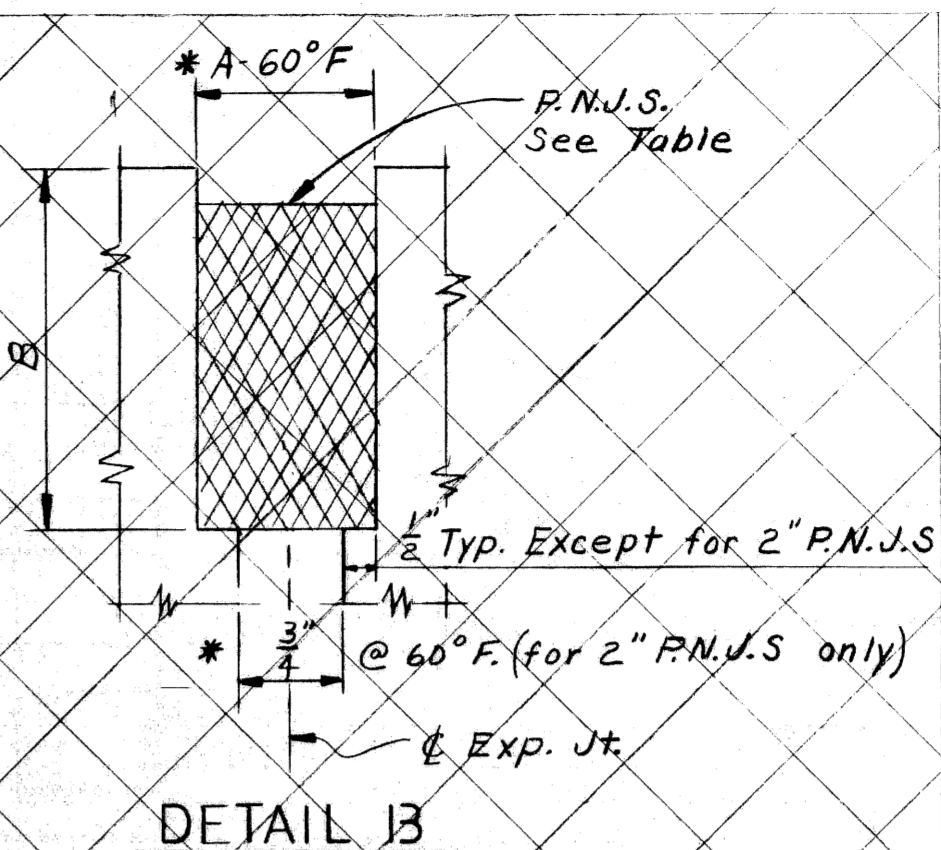
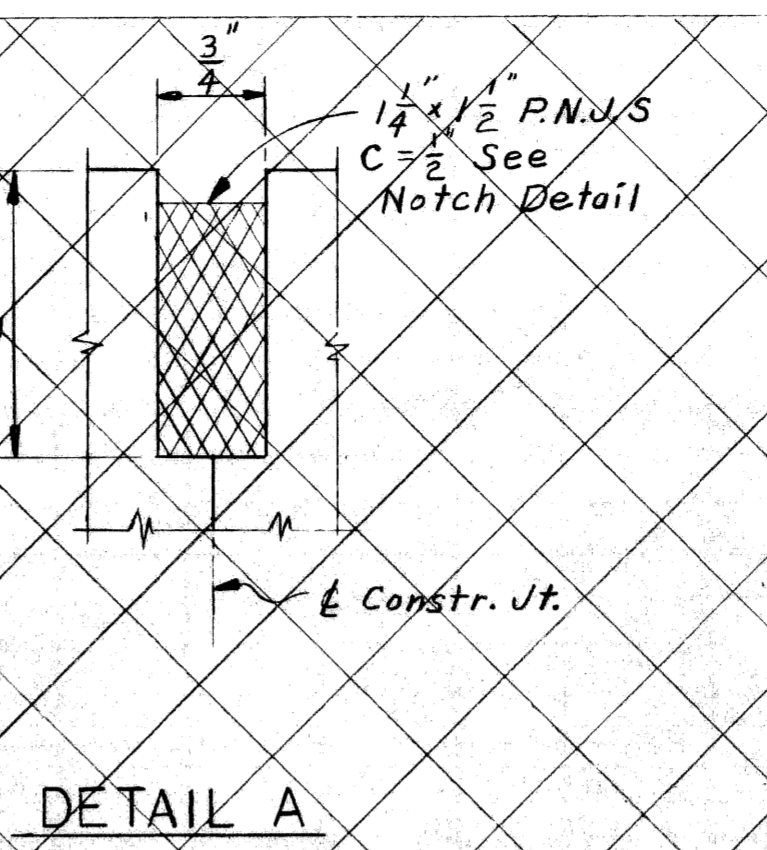
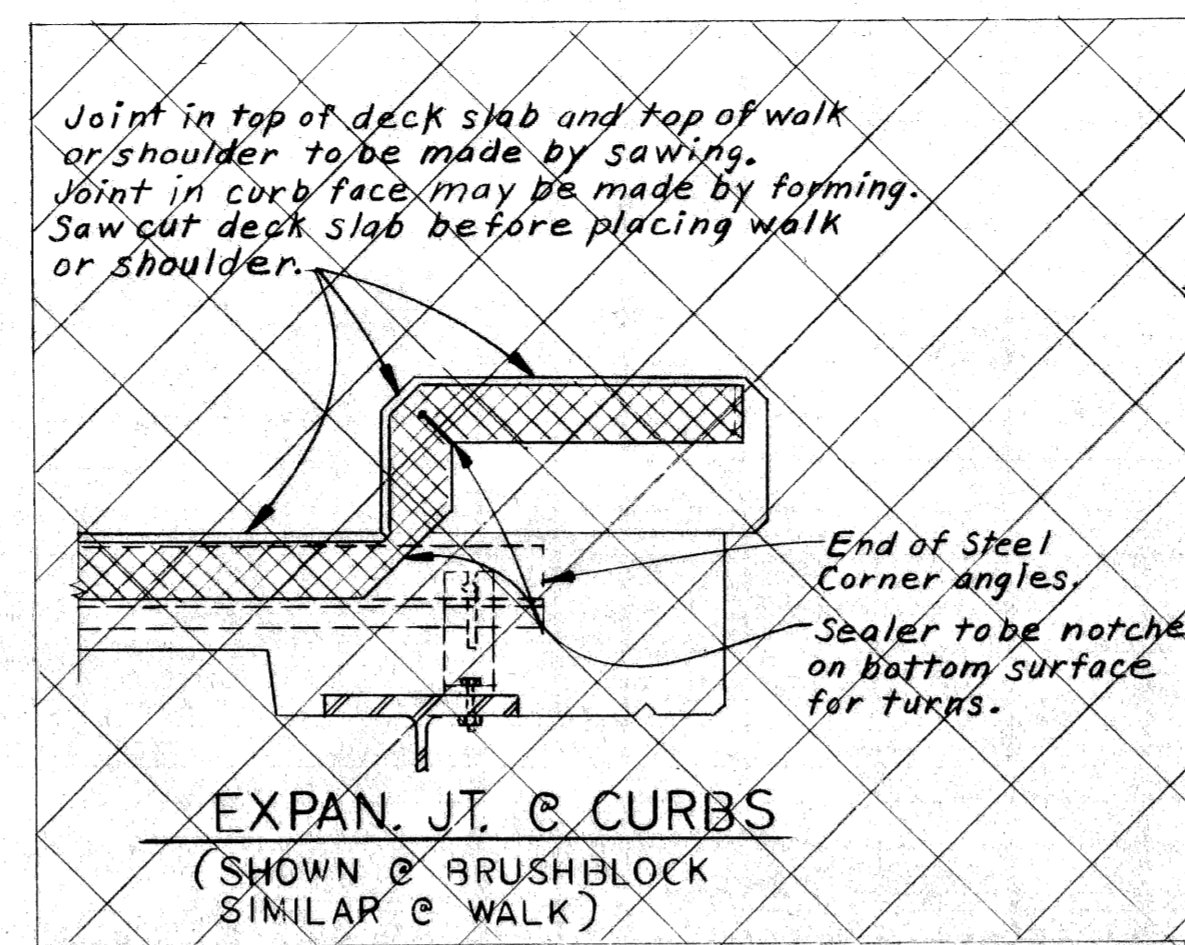
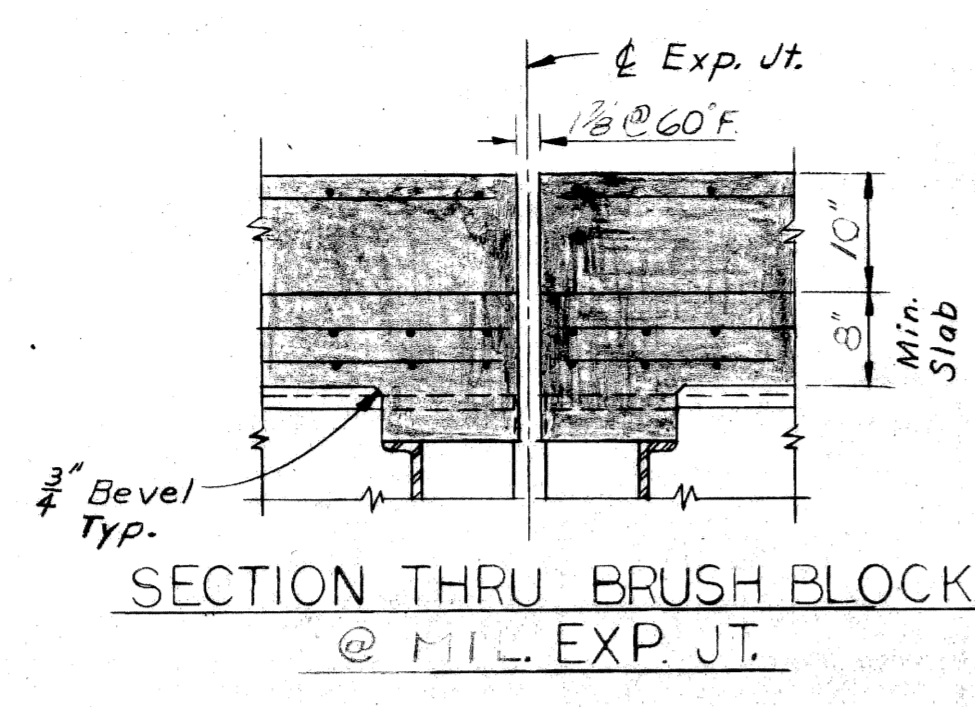
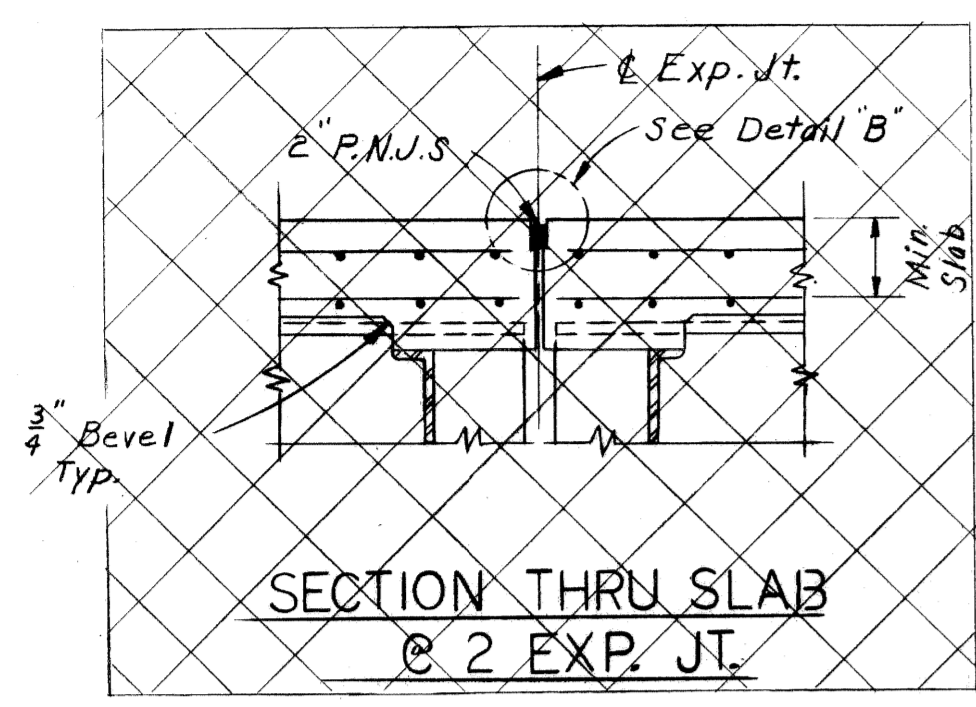
NO.	DESCRIPTION	DATE	BY

DRAWN BY: [Signature] 3/169

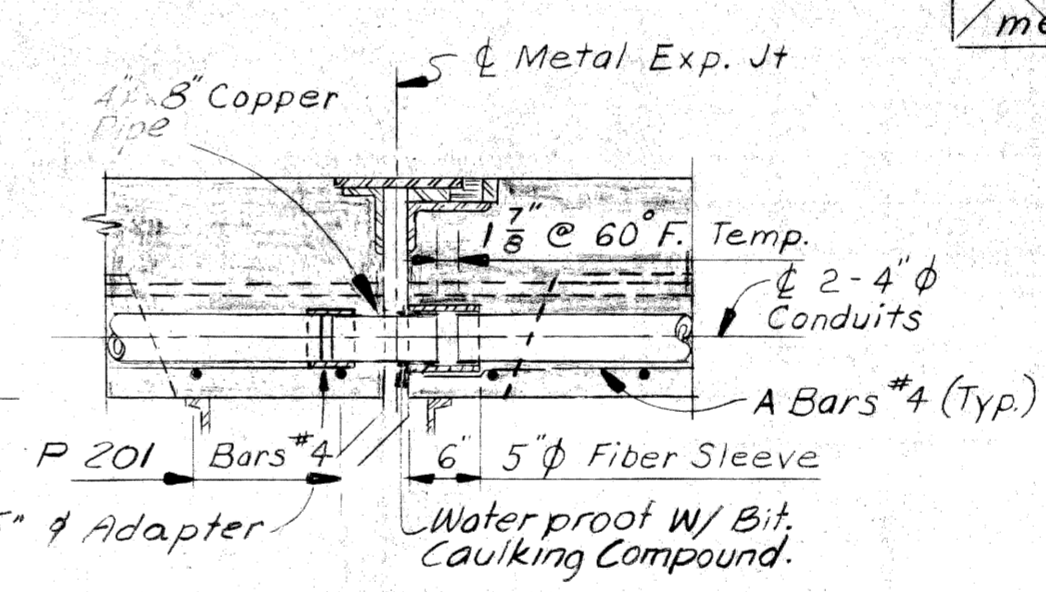
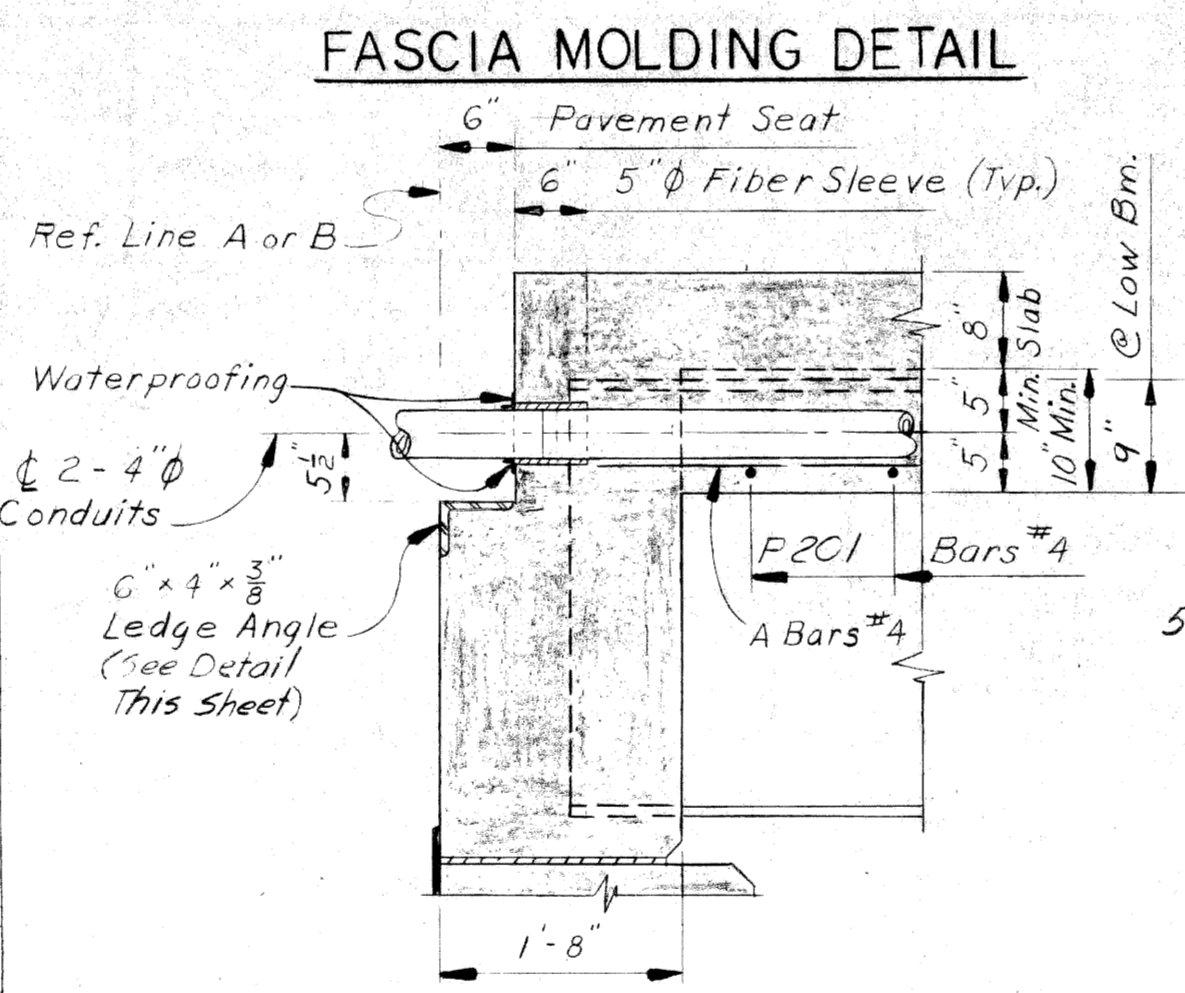
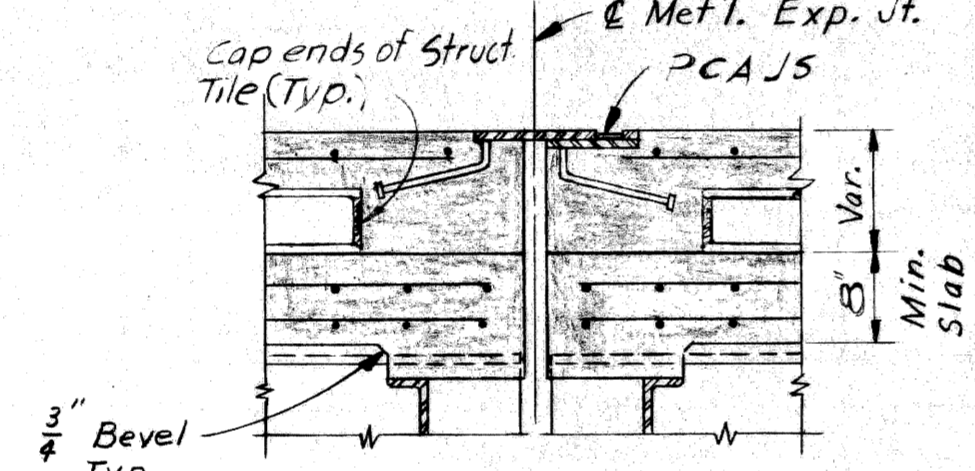
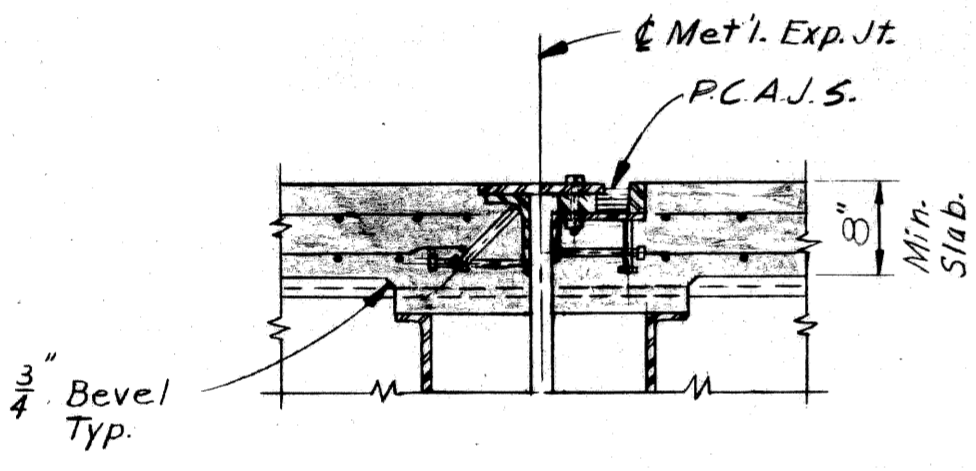
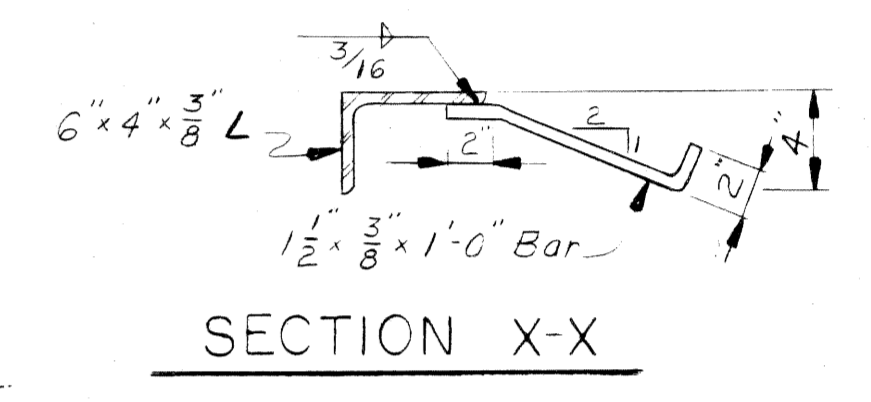
CHECKED BY: J.B.W.

SHEET 16 OF 20

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Joint Dimensions				
Sealer Size	Joint Size	A	B	C
2"	2"	1 1/4" ± 1/16"	2 3/4"	1"
3"	3 1/2"	2 1/8" ± 1/16"	4 3/8"	1 1/2"
4"	4 3/8"	2 1/4" ± 1/16"	5 3/4"	1 3/4"

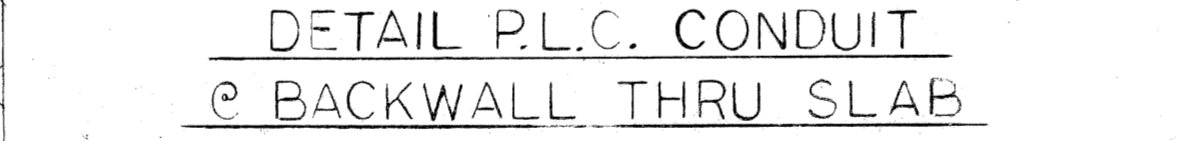
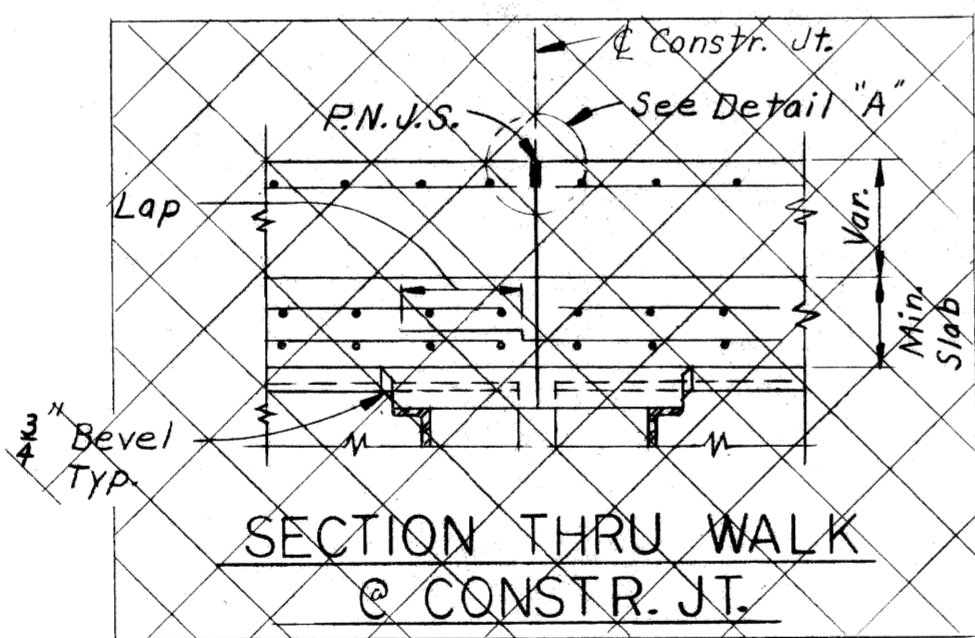
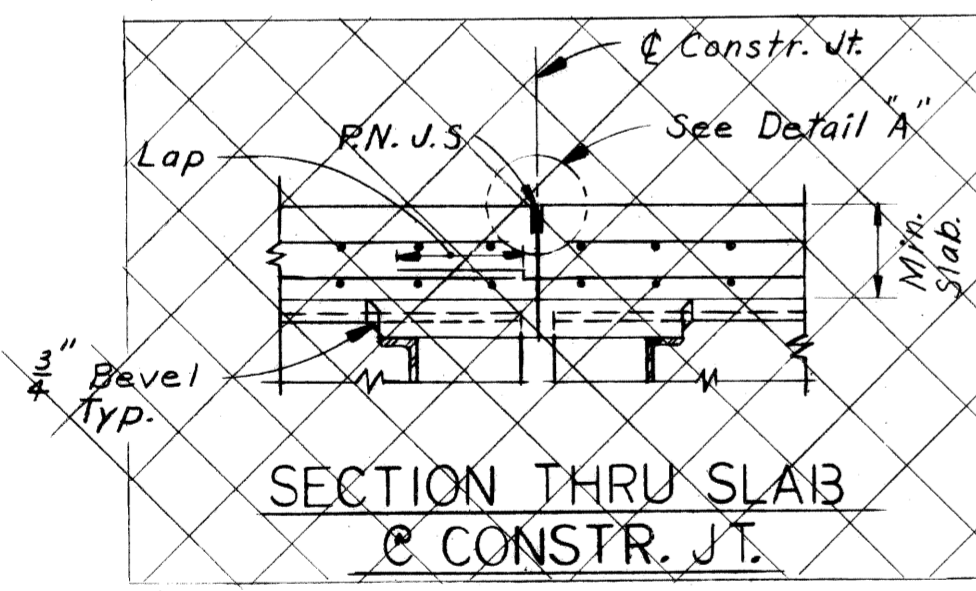


* Increase by 1/4" for each 10° of beam temperature below 60°F, for each 70' of slab length or decrease by 1/4" for each 10° of beam temperature above 60°F, for each 70' of slab length (slab length is measured at right angles to joint.)

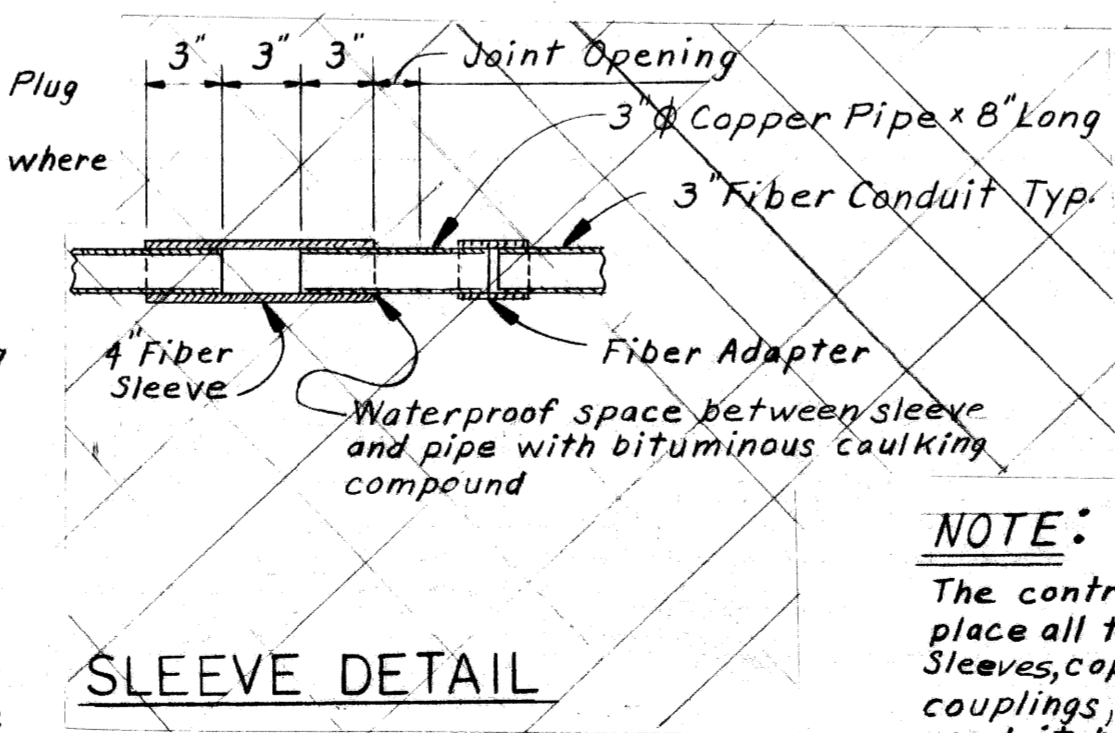
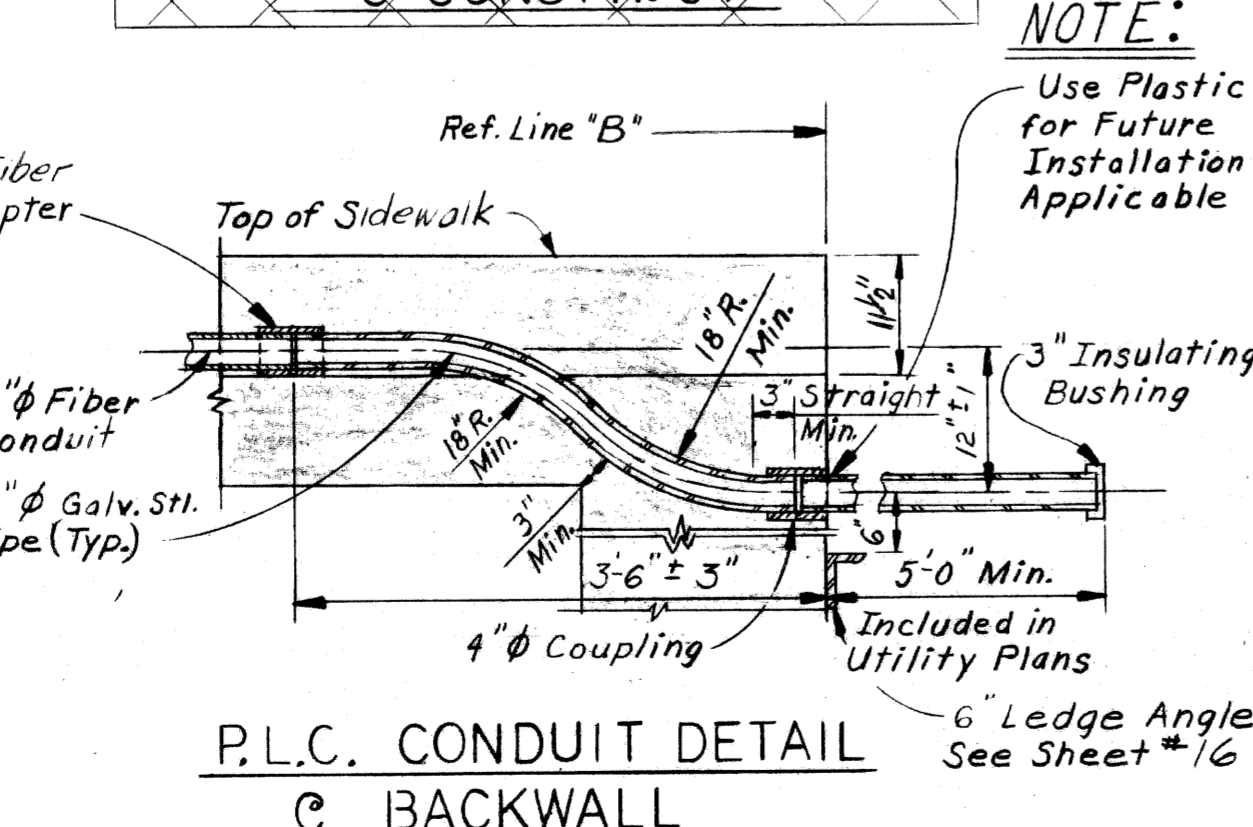
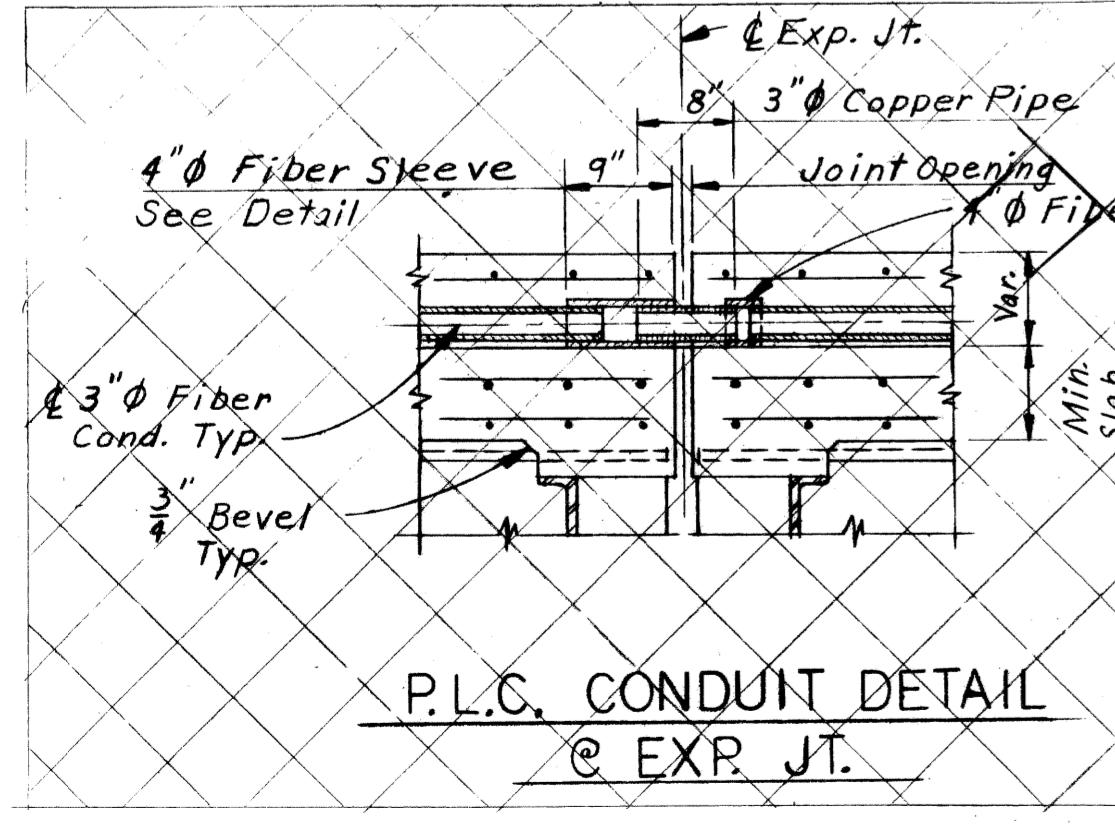
GENERAL NOTES

PL.C. denotes Public Lighting Commission. J.W.F. denotes Joint Waterproofing. N.F. denotes near face. E.F. denotes each face. H.P.R.A.T.F. denotes Hot Poured Rubber Asphalt Type Filler. For Bevel, Molding, and Railing details see M.D.S.H. Standard sheet R16. Sidewalk pours shall not be cast until slab concrete has attained at least 50% of its design strength as determined in Section 5.01.05 of the Standard Specifications. Edge and Groove denotes Edging and Grooving with an approved tool. P.C.A.J.S. denotes two Component Polyurethane Cold Applied Joint Sealer. For location of name plate and mounting details, see General Plan of Structure Sheet and Sheets R4 & R16. The contractor is to provide a sawed joint, 1/2" deep by 1/8" wide (min.) in the top of slab over and parallel to the center of pier. The sawed joint where called for on the plan is to be sawed before casting of sidewalk or brush block and is to be filled with P.C.A.J.S. The sawing and P.C.A.J.S. are incidental to concrete. Bridge Parapet shall conform to the details shown on Railing Standard R16 unless otherwise noted on plan.

Alphabetical designation of pours is not to be construed as a pour sequence. T denotes Top & E or Bot. denotes Bottom. Protective Treatment for Bridge Decks is to be applied to all superstructure concrete surfaces between Fascia Lines.



NOTE: 3/4" Sleeves, Adapter, Copper Pipe, & Waterproofing are incidental to 4" Conduit.



NOTE: The contractor will furnish and place all the materials. Sleeves, copper pipe, adapters, couplings, galvanized steel conduit, bushings, plug, and waterproofing are incidental to the item 3" Conduit.

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

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SUPERSTRUCTURE DETAILS

NO.	DESCRIPTION	DATE	BY

APPROVED: [Signature] STRUCTURAL ENGINEER

JOB NO. []

NO. []

DATE []

BY []

DESIGNED BY []

CHECKED BY []

SHEET 17 OF 20

512 11 1231

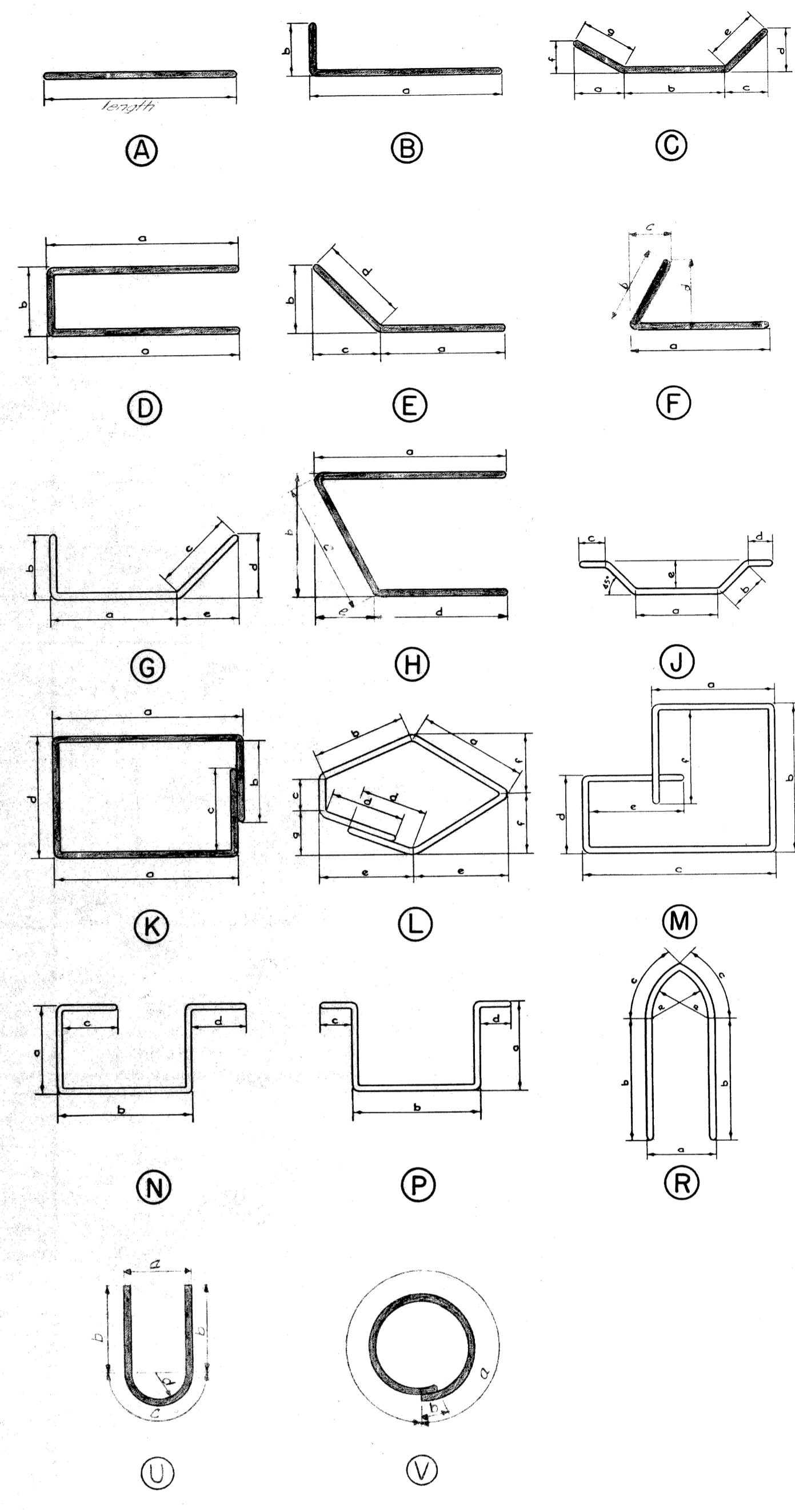
BAR	DIMENSIONS							SIZE	LENGTH	NO. REQ'D	TOTAL WT.
	a	b	c	d	e	f	g				
A1								#6	14'-0"	284	2120
A2								#6	12'-5"	143	1657
A3								#8	13'-3"	69	1330
A4								#8	12'-3"	70	2293
A5								#6	4'-10"	65	1442
A6								#6	3'-10"	65	571
A7								#9	16'-6"	37	2070
A8								#9	1'-2"	36	1163
A9								#6	2'-9"	38	536
A10								#9	17'-0"	31	1265
A11								#6	4'-0"	39	234
A12								#6	6'-2"	38	352
A13								#6	4'-6"	38	257
A14								#6	11'-8"	54	233
A15								#9	11'-3"	37	3176
A16								#6	15'-6"	64	1190
A17								#6	6'-2"	52	577
A18								#6	11'-1"	14	375
A19								#7	6'-3"	13	509
A20								#6	1'-5"	59	665
A21								#6	11'-0"	14	357
A22								#8	7'-2"	37	760
A23								#7	6'-3"	35	447
A24								#6	1'-6"	12	315
A25								#7	9'-0"	141	2810
A26								#6	13'-6"	24	1916
A27								#6	22'-0"	14	463
A28								#6	23'-0"	28	1051
A29								#4	27'-0"	20	361
A30								#4	21'-0"	20	281
A31								#4	20'-0"	20	267
A32								#4	15'-6"	34	352
A33								#4	17'-0"	32	363
A34								#4	11'-6"	25	215
A35								#4	13'-6"	6	54
A36								#4	15'-0"	22	220
A37								#6	32'-11"	20	314
A38								#6	18'-4"	26	716
A39								#6	5'-10"	12	105
A40								#6	9'-9"	44	611
A41								#6	4'-3"	134	355
A42								#6	15'-10"	90	2140
A43								#6	18'-6"	12	333
A44								#6	23'-0"	14	434
A45								#6	21'-6"	12	333
A46								#6	19'-6"	2	264
A47								#4	19'-6"	28	385
A48								#4	21'-0"	33	533
A49								#6	30'-0"	12	350
A50								#4	26'-8"	20	354
A51								#4	16'-9"	20	284
A52								#4	13'-0"	33	35
A53								#4	1'-3"	18	120
A54								#6	13'-0"	14	275

BAR	DIMENSIONS							SIZE	LENGTH	NO. REQ'D	TOTAL WT.
	a	b	c	d	e	f	g				
B1	0'-11"	4'-0"	0'-11"	1'-0"	1'-3"	3'-0"	1'-3"	#6	6'-6"	20	175
B2	1'-2"	2'-0"	1'-2"	0'-5"	1'-3"	0'-5"	1'-3"	#6	11'-8"	10	173
B3	1'-2"	2'-0"	1'-2"	0'-5"	1'-3"	0'-5"	1'-3"	#6	10'-8"	10	158
D1	2'-0"	3'-6"						#6	6'-2"	113	1023
E1	2'-0"	1'-2"	1'-2"	2'-0"				#4	4'-0"	10	27
E2	2'-0"	1'-4"	1'-4"	2'-0"				#4	4'-0"	10	27
F1	2'-0"	2'-0"	0'-0"	2'-0"				#4	4'-0"	20	53
H1	3'-3"	0'-0"	4'-0"	2'-0"	1'-3"			#4	6'-9"	4	18
H2	2'-8"	0'-0"	10'-6"	2'-0"	0'-5"			#4	5'-8 1/2"	4	15

BAR	DIMENSIONS							SIZE	LENGTH	NO. REQ'D	TOTAL WT.
	a	b	c	d	e	f	g				
F101								#7	25'-0"	18	813
F102								#7	13'-3"	16	433
F103								#6	11'-6"	25	432
F104								#7	11'-6"	25	533
F105								#9	18'-2"	3	194
F106								#4	17'-2"	20	222
F107								#11	12'-2"	60	3455
F108								#11	11'-7"	60	3148
F109								#11	22'-0"	12	1136
F110								#6	20'-0"	4	125
F111								#10	11'-0"	12	518
F112								#9	23'-0"	6	571
F113								#9	15'-6"	6	316
G101	4'-11"	0'-0"						#6	4'-7"	50	314
G102	3'-3"	0'-0"						#6	3'-9"	4	23
I101	0'-5 1/2"	3'-1 1/2"	0'-5 1/2"	2'-5 1/2"	2'-0"	2'-5 1/2"	3'-6"	#4	8'-1 1/2"	13	29
D101	1'-6"	4'-11"						#4	7'-0"	6	31
D102	2'-6"	3'-11"						#5	8'-0"	4	33
E101	3'-6"	11'-2 1/2"	1'-7 1/4"	2'-0"				#6	5'-8 1/2"	16	380
K101	3'-2 1/2"	1'-5 1/4"	1'-5"	1'-10"				#5	11'-0"	92	1056
U101	2'-9 1/4"	1'-0"	4'-4 1/2"	1'-4"				#5	6'-9 1/2"	6	42
V101	7'-0"	1'-0"						#4	8'-10"	24	142

PILE TOTAL 14,410 lbs.

BAR BENDING DIAGRAM



REINFORCEMENT

ABUTMENTS (Cont.)

PILE

ABUTMENT TOTAL 47,003 lbs.

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 are to be prefixed S32 as indicated.

See sheet #20 for Notes and Grand Total Steel Reinforcement
 Total steel reinforcement this sheet = 61,413 lbs.

DESIGNED BY
 CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF BRIDGE ENGINEERING
 APPROVED: [Signature]
 STRUCTURAL ENGINEER
 JOB NO. [Blank]
 DATE [Blank]

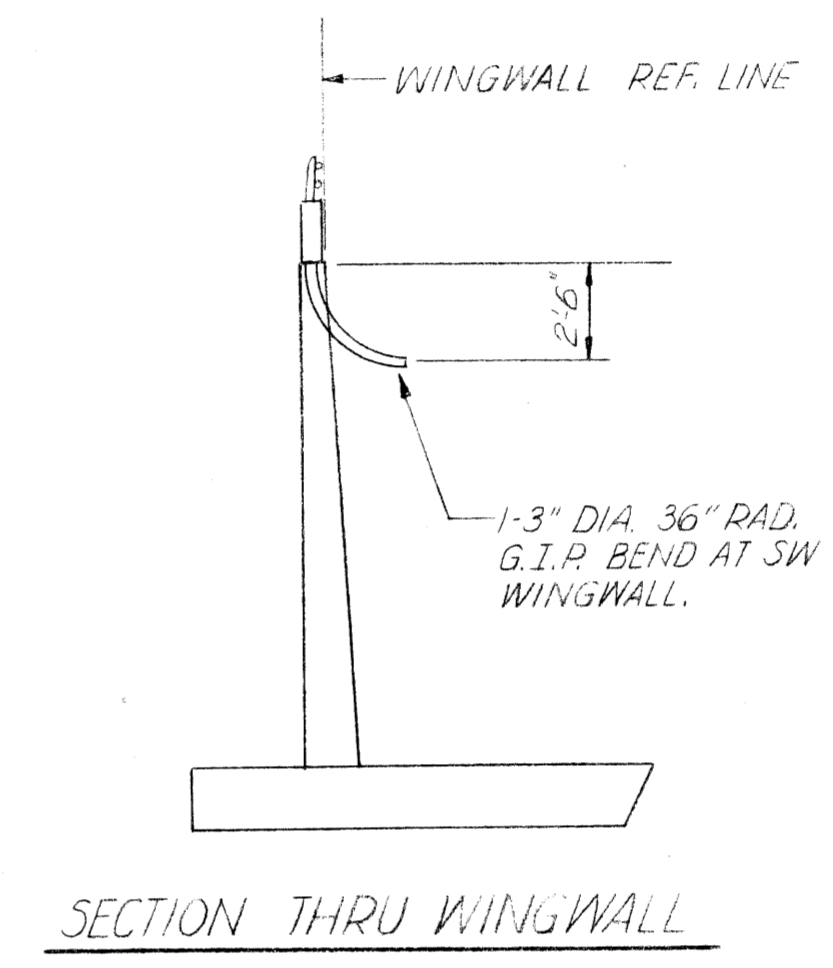
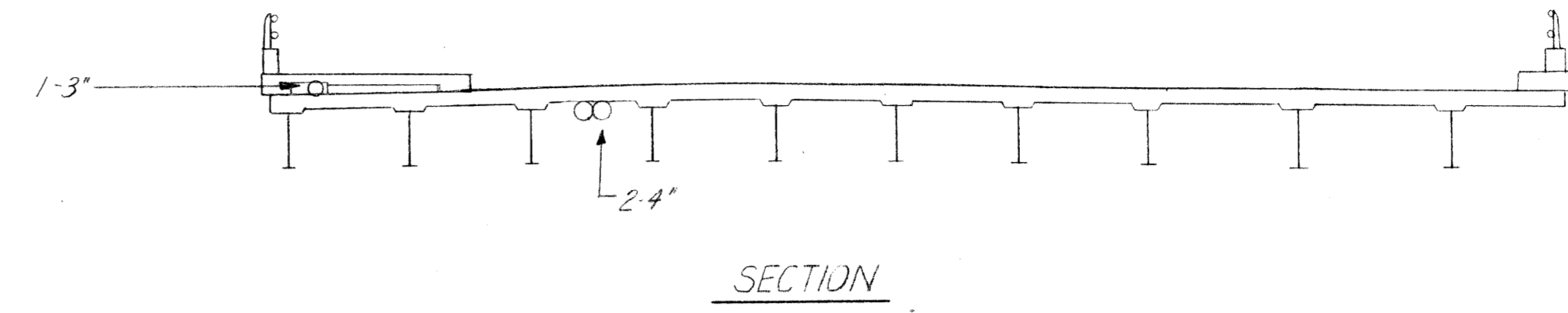
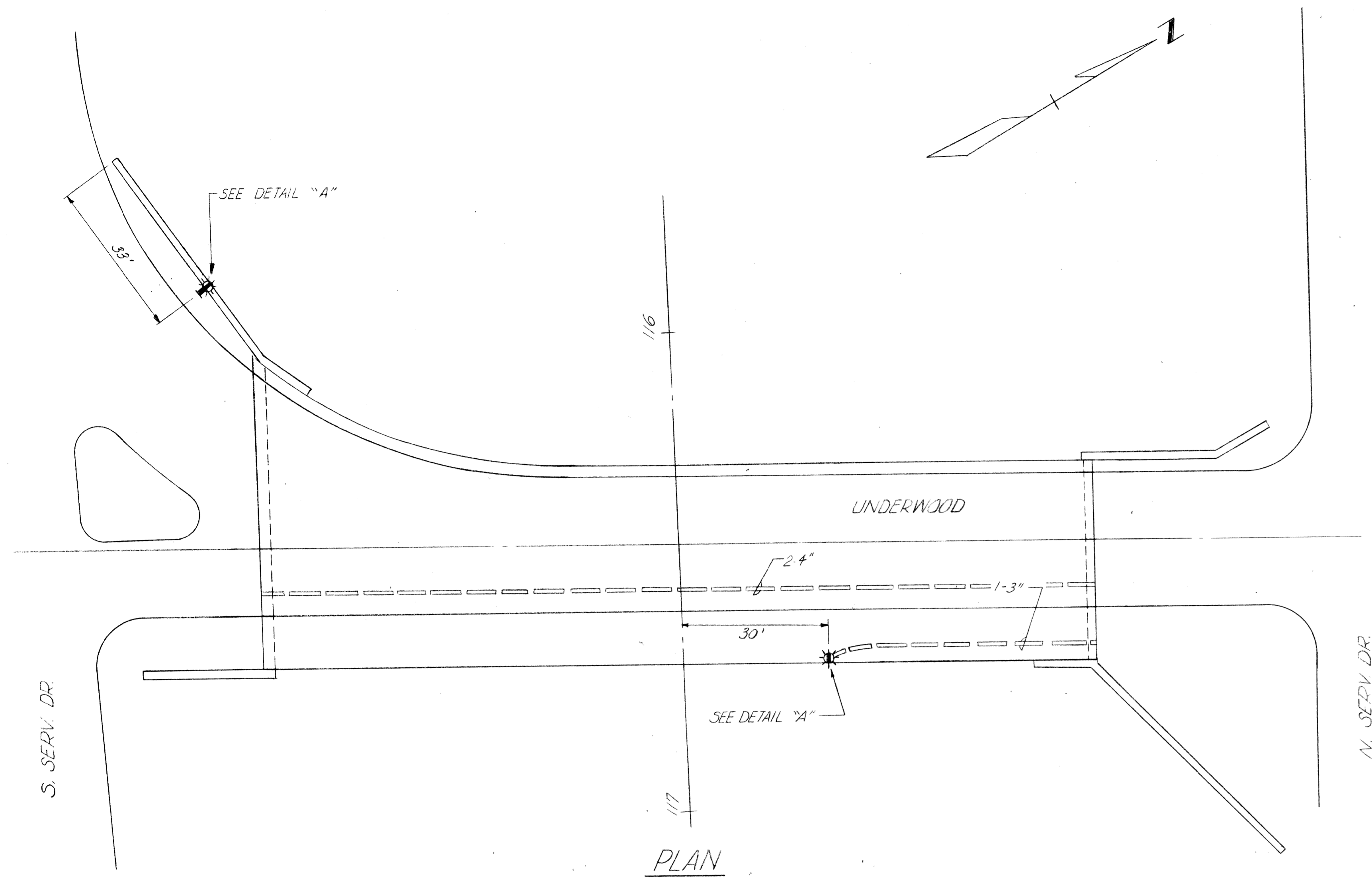
MICHIGAN STATE HIGHWAY DEPARTMENT

STEEL REINFORCEMENT DETAILS

NO.	DESCRIPTION	DATE	BY

REVISIONS

SOIAD BOSS [Blank]
 DRAWN BY [Blank]
 TRACED BY [Blank]
 CHECKED BY [Blank]
 SHEET 19 OF 20
 S32 of 821231

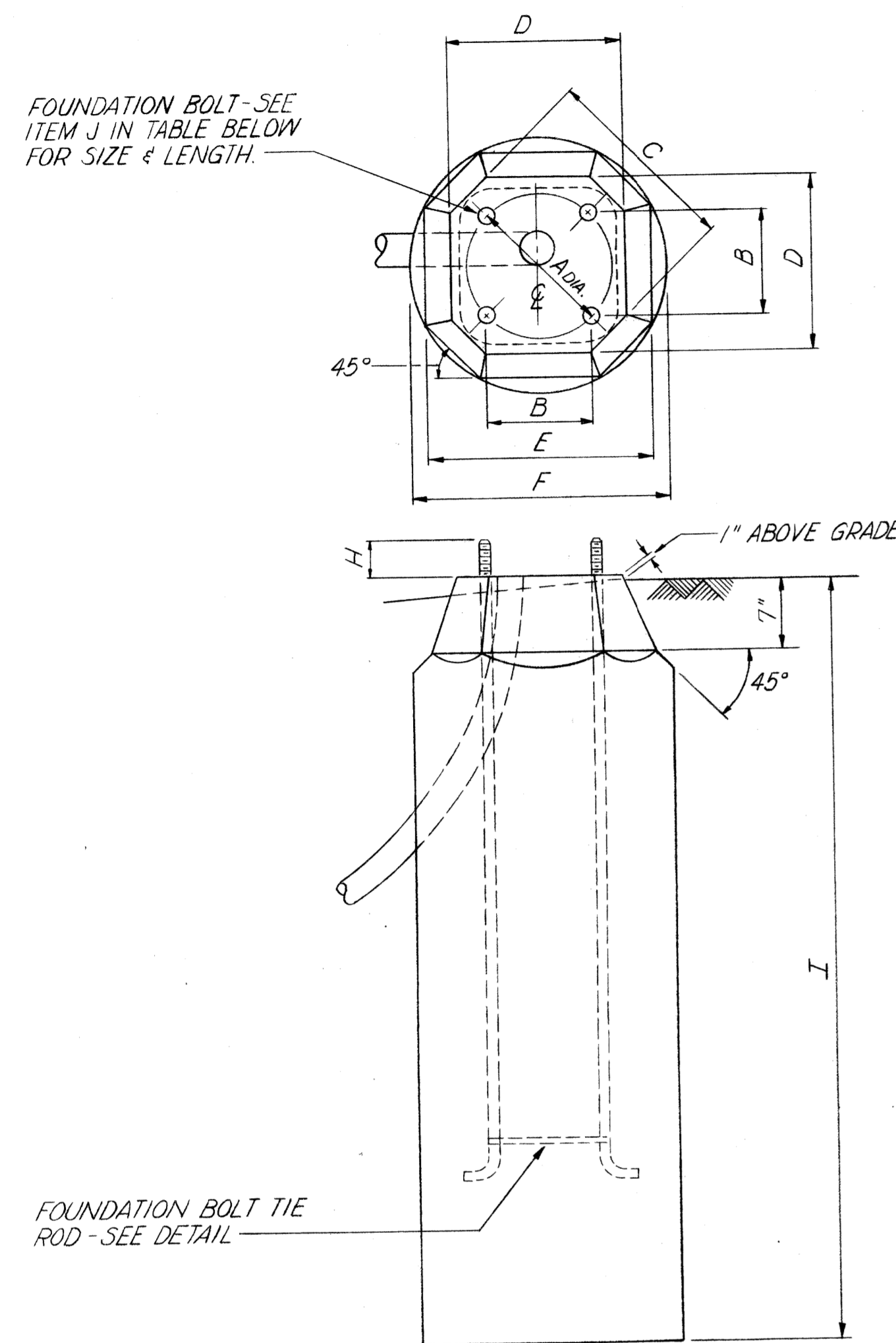


J-14

F. WATTS

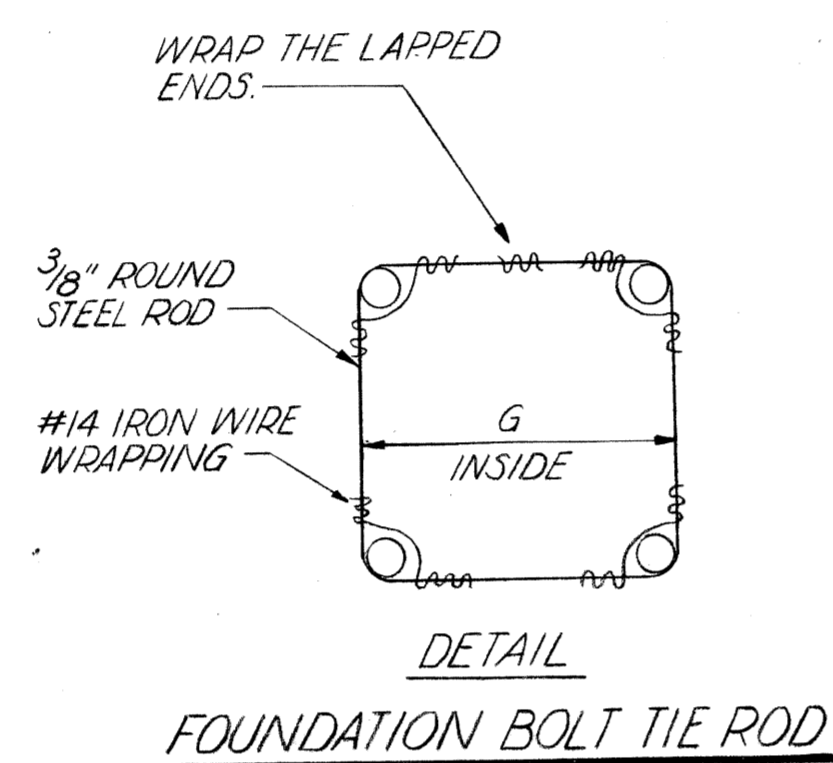
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4	MICH.				
ROUTE	STATE PROJECT	COUNTY		SHEET NO.	TOTAL SHEETS

B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY		SHEET NO.	TOTAL SHEETS



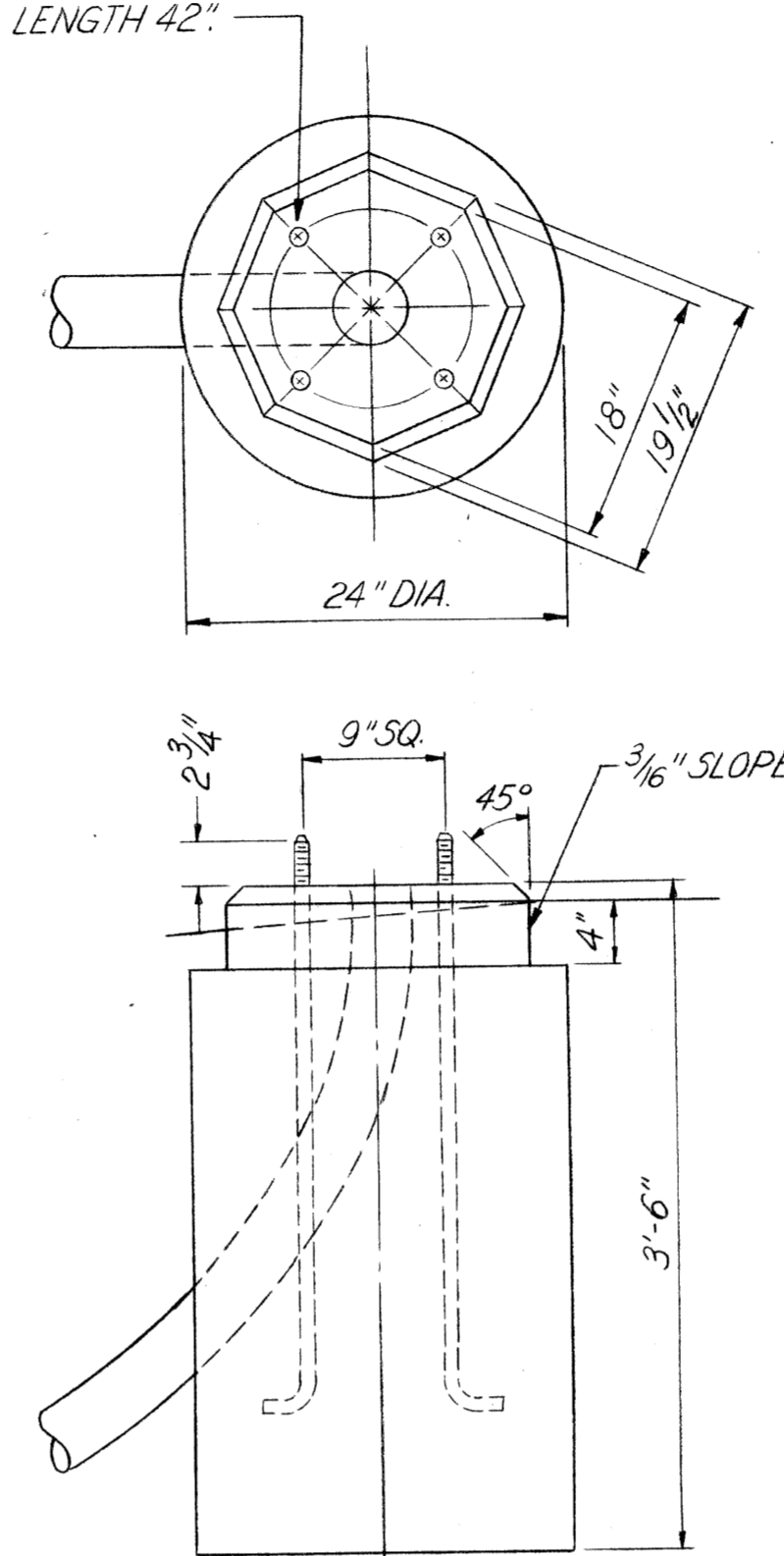
DETAIL "A", "B", "C", "D", "E" & "F"
TYPICAL LAMP POST FOUNDATION

FOUNDATION BOLT TIE ROD - SEE DETAIL

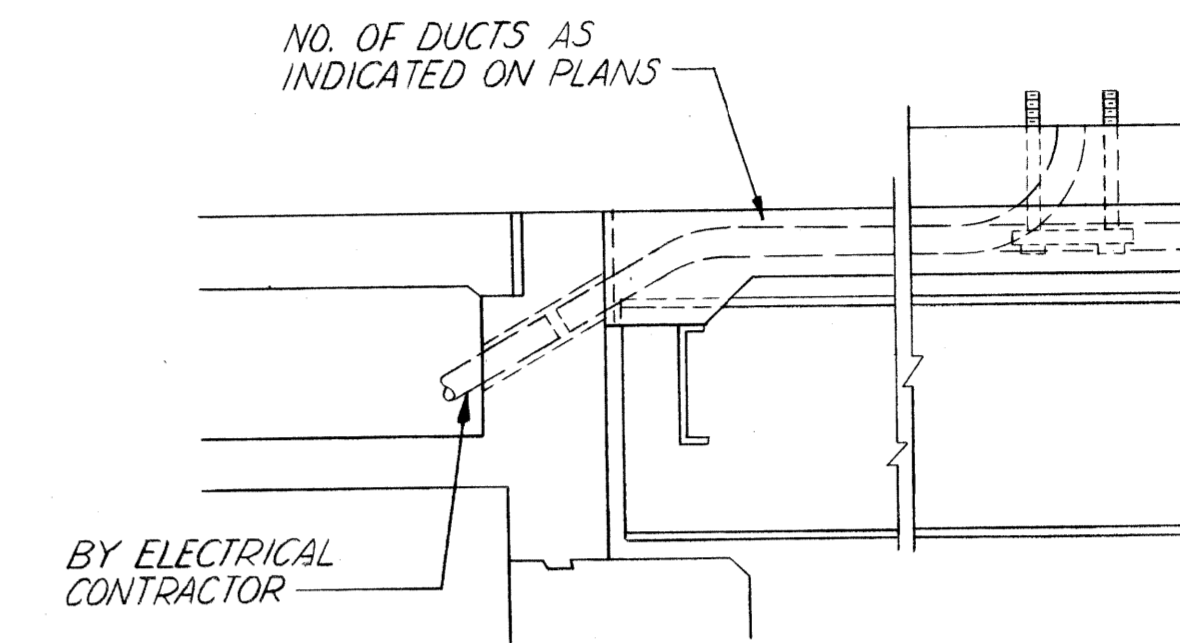


DETAIL
FOUNDATION BOLT TIE ROD

4-3/4" BOLTS ON 12 3/4" DIA.
BOLT CIRCLE EQUALLY SPACED, OVERALL LENGTH 42"



DETAIL "G"
T.S. PEDESTAL FOUNDATION



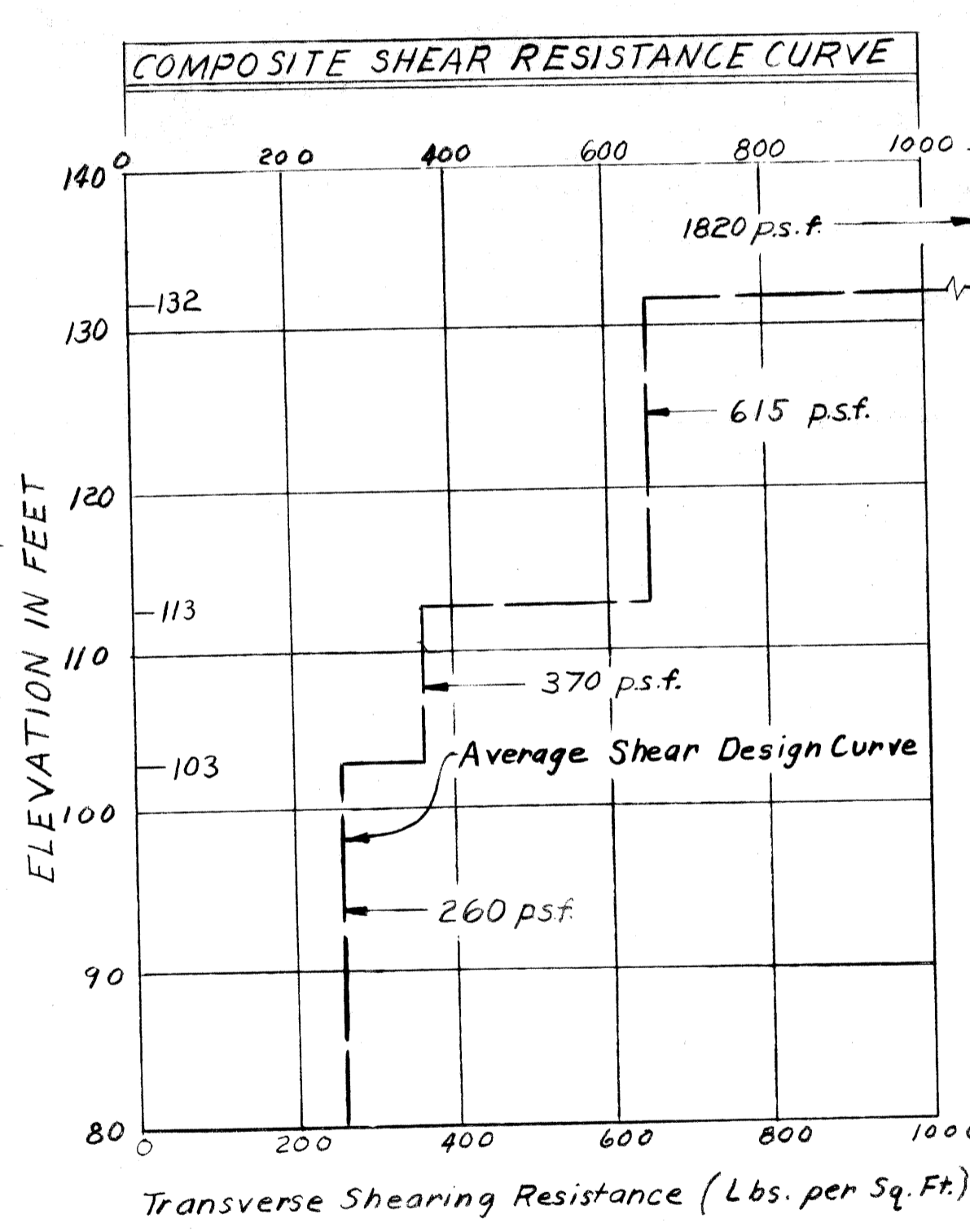
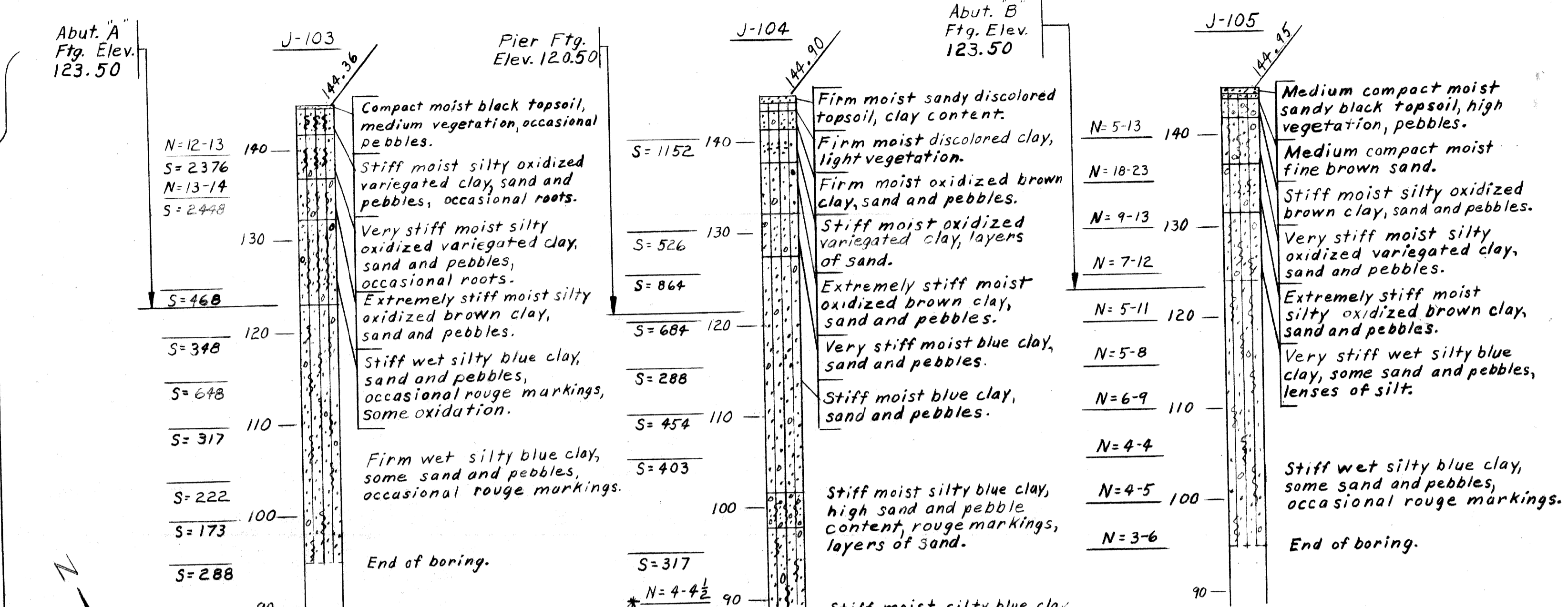
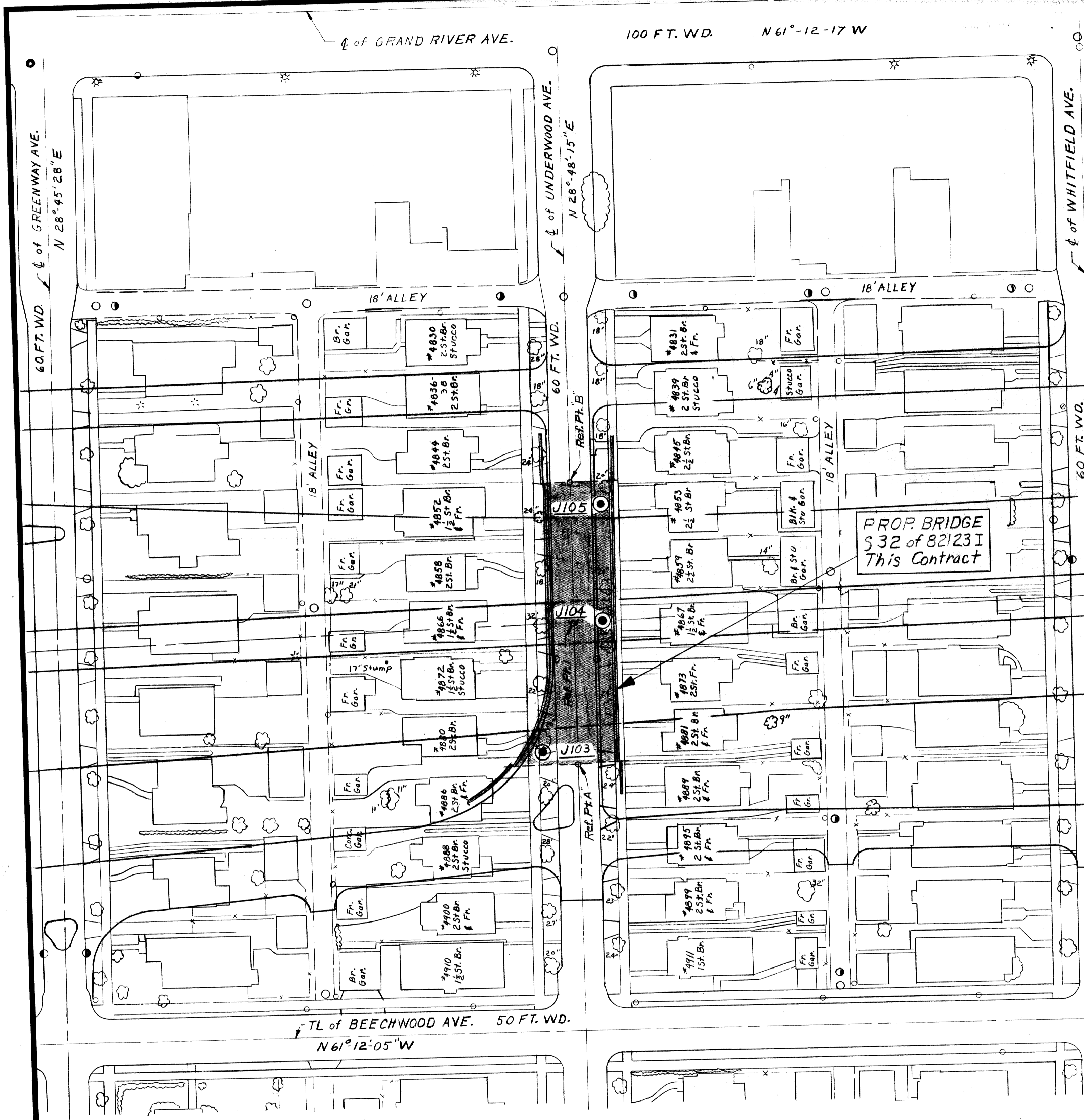
SECTION A-A

	A	B	C	D	E	F	G	H	I	J
DETAIL "A"	11"	7 3/4"	16 1/4"	13 1/2"	21 1/4"	26"	8 3/4"	2 1/16"	60"	1" x 60" 1" x 40"
* DETAIL "B"	13 1/2"	9 9/16"	19 1/2"	16 1/8"	21 3/8"	30"	11 1/16"	3 3/8"	72"	1 1/2" x 60"
DETAIL "C"	11"	7 3/4"	16 1/4"	13 1/2"	21 1/4"	26"	8 3/4"	2 1/16"	72"	1" x 60"
DETAIL "D"	11"	7 3/4"	16 1/4"	13 1/2"	21 1/8"	26"	9"	2 5/8"	72"	1 1/4" x 48"
DETAIL "E"	15"	10 7/8"		18"	20 5/8"	26"	11 5/8"	3"	60"	1" x 40"
DETAIL "F"	13 1/2"	9 9/16"	19 1/2"	16 1/8"	21 3/8"	33"	11 1/16"	3 3/8"	96"	1 1/2" x 60"

* FOR USE WITH 20 FT. OR 25 FT. MAST ARM ONLY

DRAWN BY C.E.A.	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS	FOUNDATION DETAILS
CHECKED BY	16580 WYOMING DETROIT, MICH. 48221	
APPROVED BY	FILE NO. CEA-0	DRWG. NO. CEA-00
DATE		

FILE NO.	STATE PROJECT	FEDERAL PROJECT	SHEET NO.
16580 WYOMING			



NOTES:
 N Indicates the number of blows required to drive the sampler 6" (or as noted) using a 140 lb hammer falling 30". Where blow count is not shown, sampler was levered, pushed or hand-driven.
 S Indicates Transverse Shearing Resistance in Lbs. per Sq. Ft. as determined by M.D.S.H. Standard Test.
 * Indicates no sample.
 All elevations are based on City of Detroit Datum.
 Information given on this sheet for Boring J 105 is taken from field reports only.

- ### LEGEND
- Tree
 - Fence
 - Sewer Manhole
 - Sewer Inlet or Catch Basin
 - Water Gatewell and Valve
 - RLC. Cable Manhole
 - Fire Hydrant
 - D.F.D. Alarm Box
 - Test Hole for Soil Profile
 - M.B.T. Cable Manhole
 - Removed
 - RLC. Lightpole

SURVEY PLAN
 Scale: 1" = 40'

NOTES:
 The topography shown represents conditions existing at the time the field survey was made. These conditions may have been altered by the operations of others before this work is started.
 Bench Marks are referenced to the City of Detroit Datum.
 The work covered by these plans includes the construction of the Proposed Bridge and slope protection to the limits shown. All other work is included in the road plans which are a part of this contract.
 Removal of fences and buildings is not a part of this contract.

APPROVED: _____		PW 990(4)	
REVISIONS			
NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

EAST BOUND WEST CHICAGO BLVD. CROSSING THE JEFFRIES FREEWAY IN DETROIT

GENERAL PLAN OF SITE

APPROVED: _____ DESIGN SUPERVISING ENGINEER

APPROVED: _____ ENGINEER OF DESIGN - CONSULTANTS

CITY OF DETROIT

SQUAD BOSS: Watts

DRAWN BY: RROSIAK 2/48

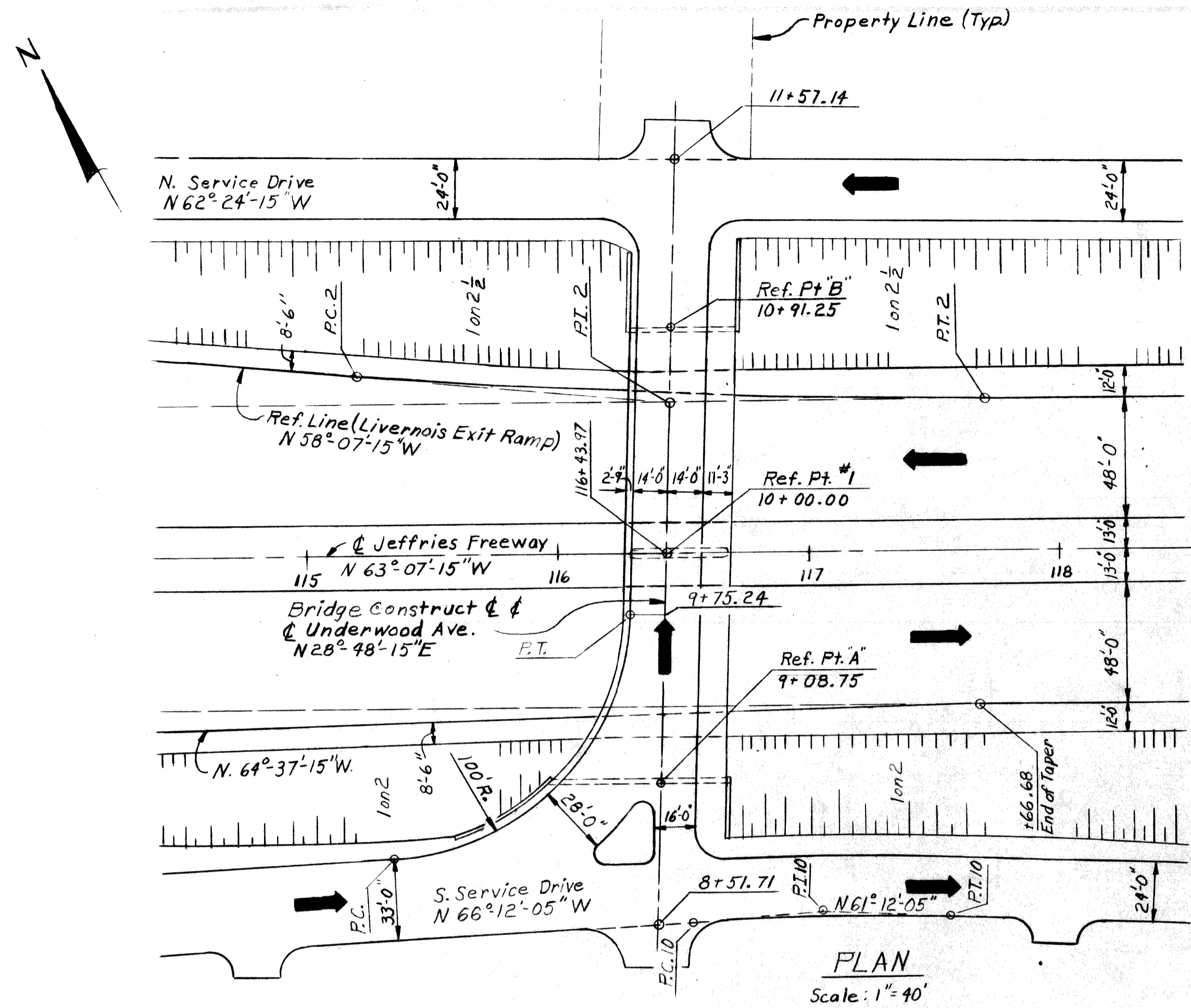
TRACED BY: _____

CHECKED BY: _____

SHEET 2 OF 5

S32 of 821231

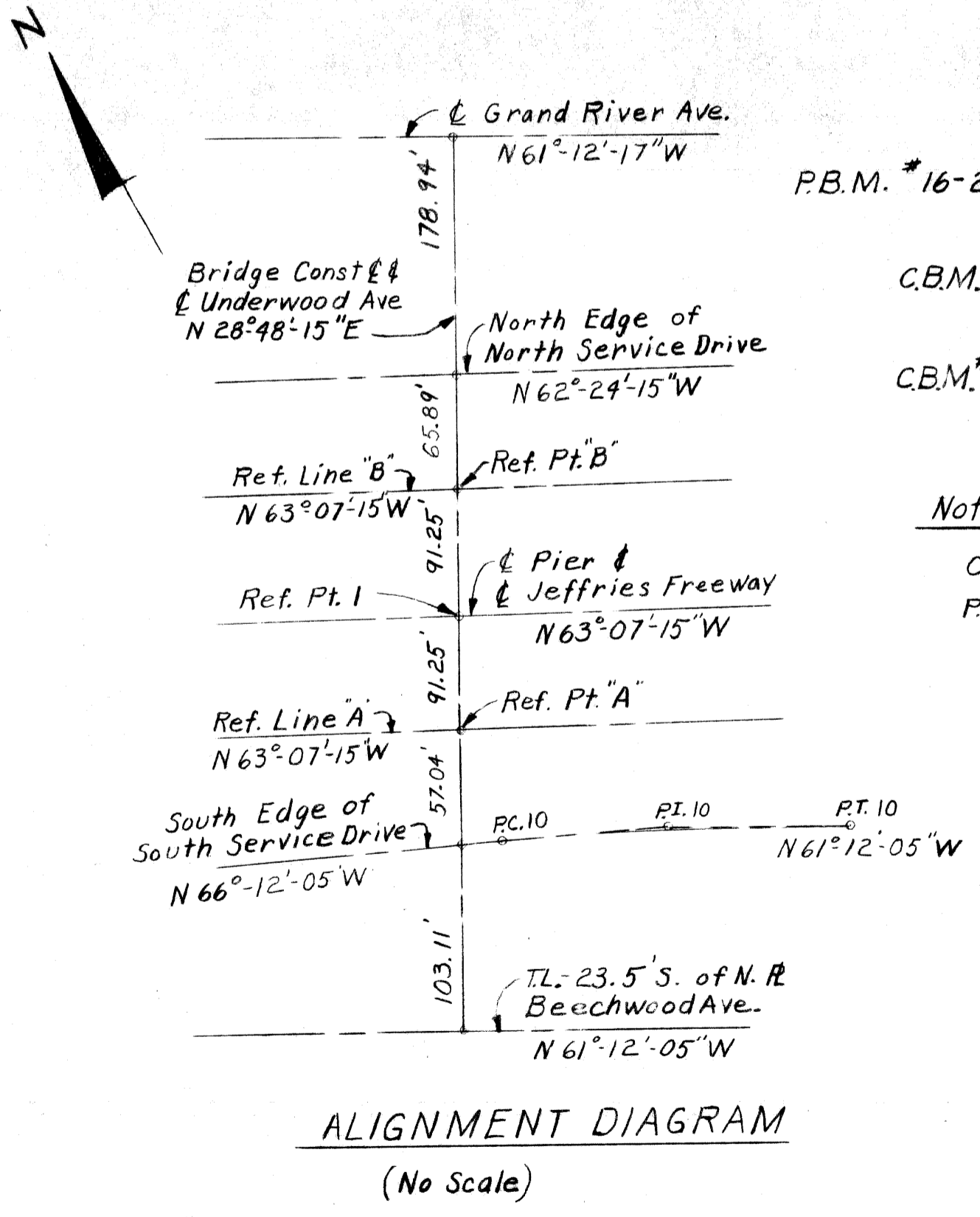
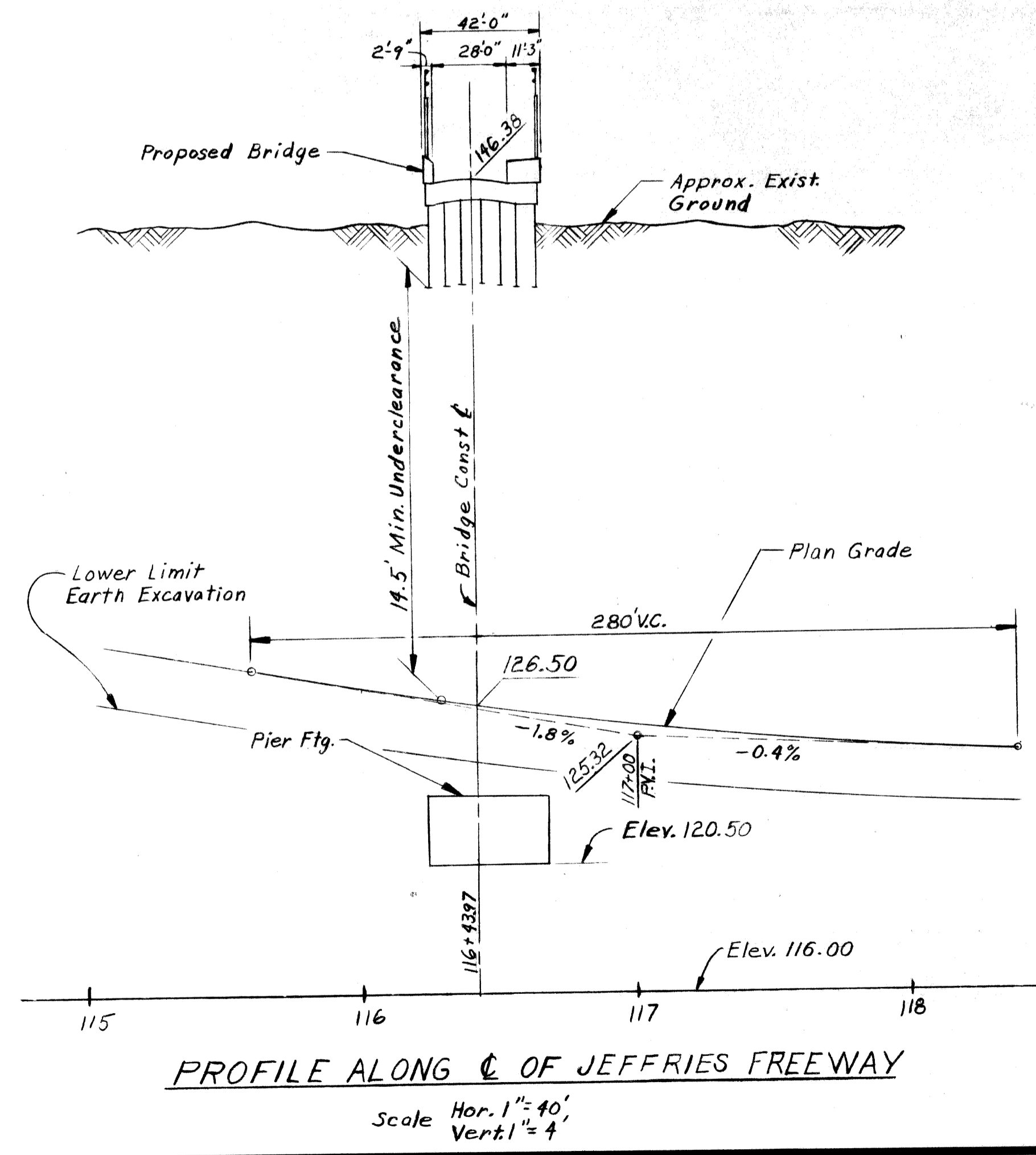
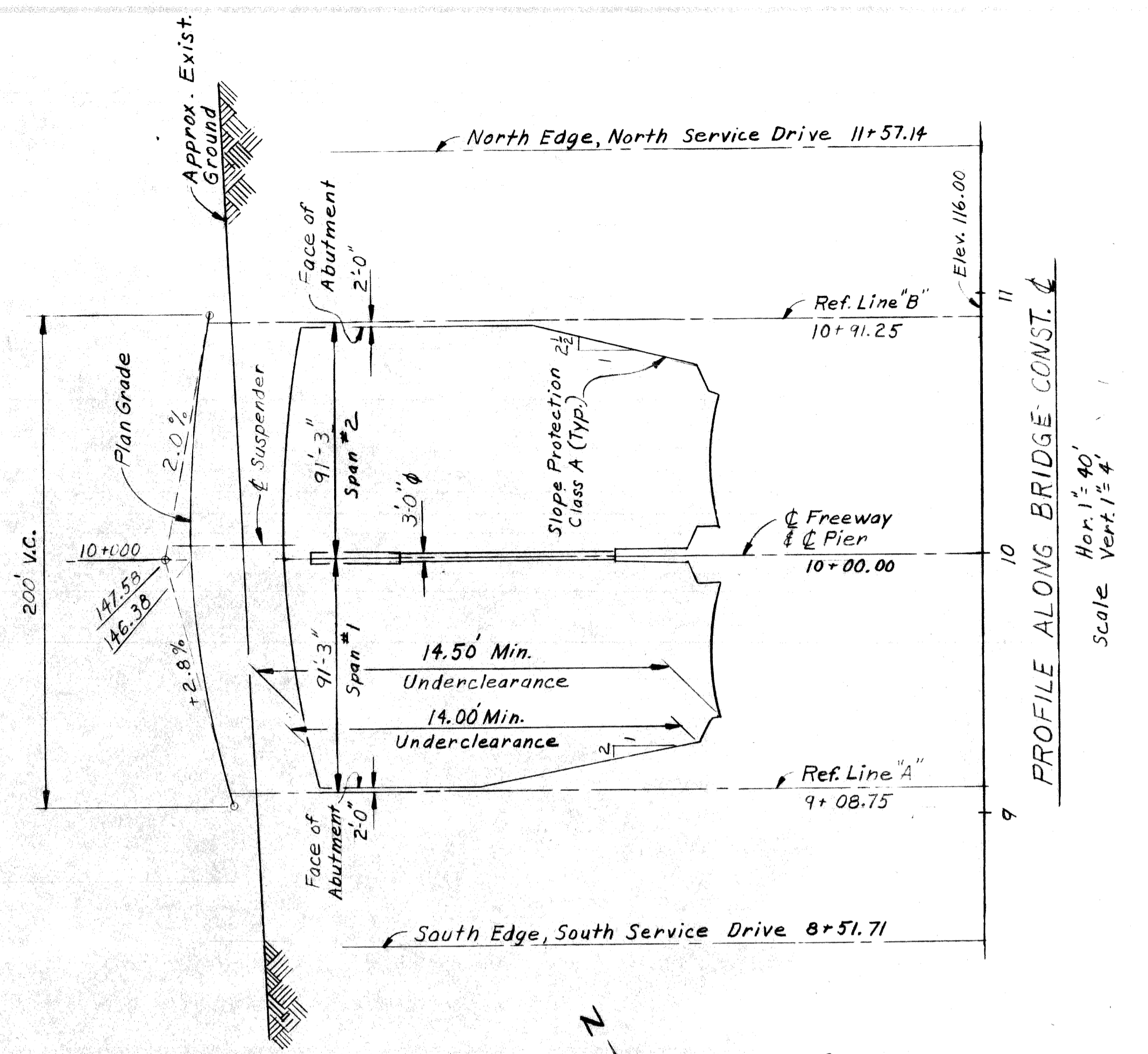
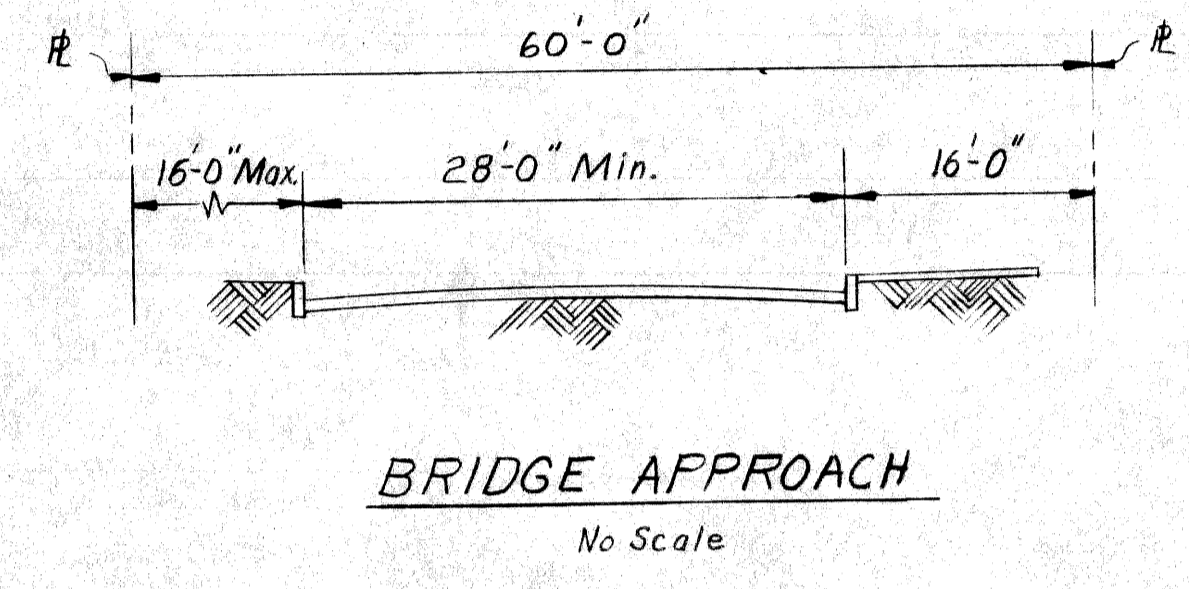
VOID



CURVE DATA
LIVERNOIS EXIT RAMP

CURVE 2

$\Delta = 5^{\circ}00'00''$
 $D = 2^{\circ}00'00''$
 $R = 2864.79'$
 $T = 125.08'$
 $L = 250.00'$
 $E = 2.73'$
 $PC = 115+20.15$
 $PI = 116+45.23$
 $PT = 117+70.15$



BENCH MARKS

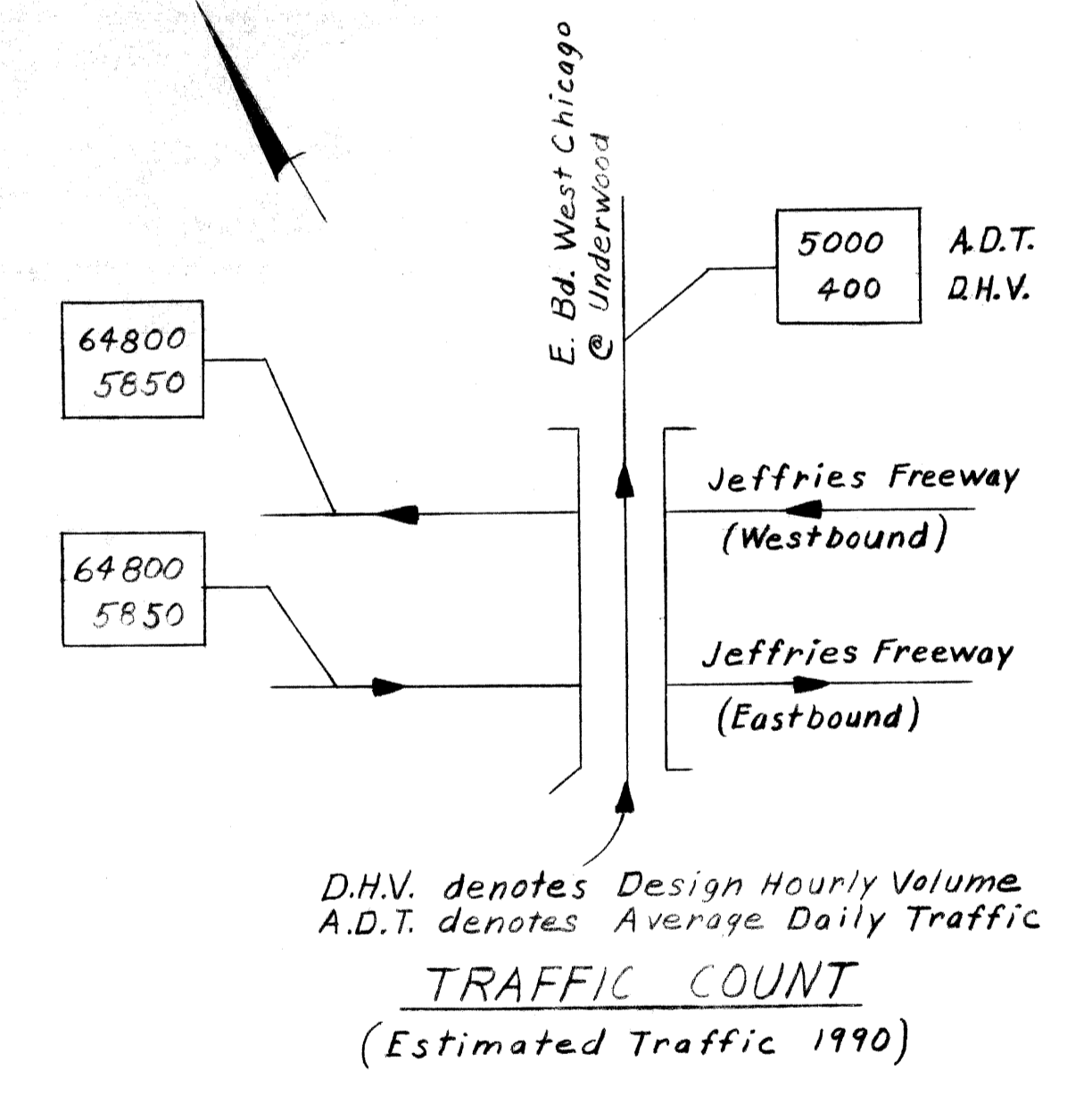
P.B.M. #16-252, City of Detroit Monument on N.W. Corner of Grand River and W. Chicago, Elev. 146.820

C.B.M. #122 Arrow on Hydrant on N.E. Corner of Beechwood and Underwood, Elev. 146.71

C.B.M. #123 Arrow on Hydrant on S.W. Corner of Grand River and Underwood, Elev. 149.96

Note:

C.B.M. Denotes Construction Bench Mark
 P.B.M. Denotes Permanent Bench Mark
 Elevations are based on City of Detroit Datum.



CITY OF DETROIT

PW 990(4)

NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

EAST BOUND WEST CHICAGO BLVD. CROSSING THE JEFFRIES FREEWAY IN DETROIT

GENERAL DRAWING

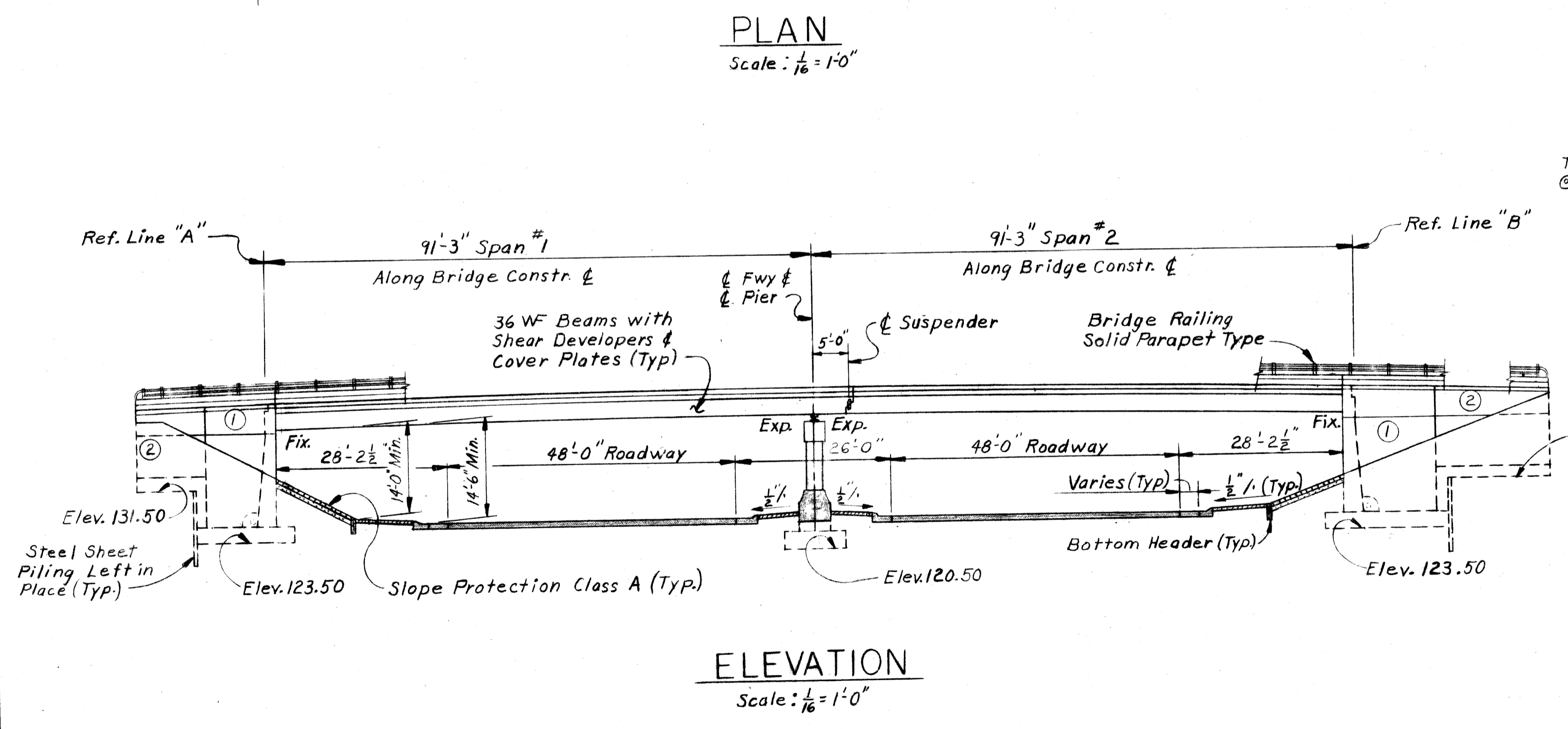
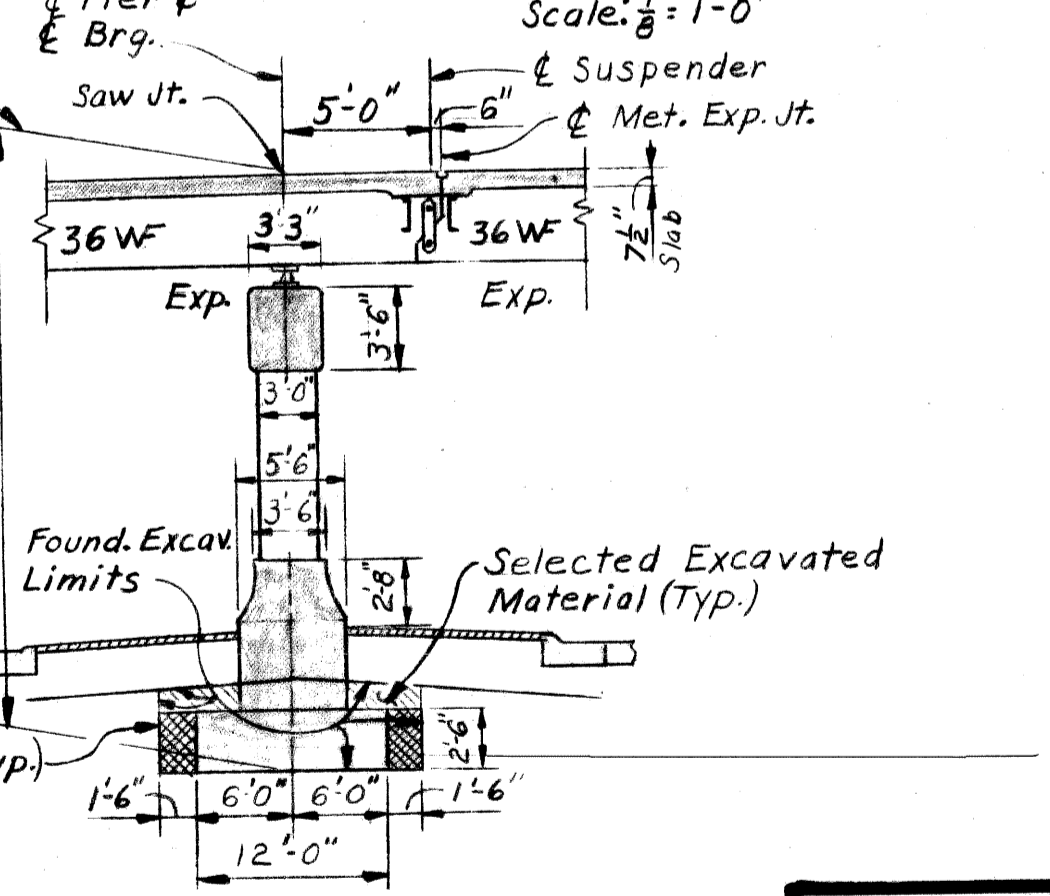
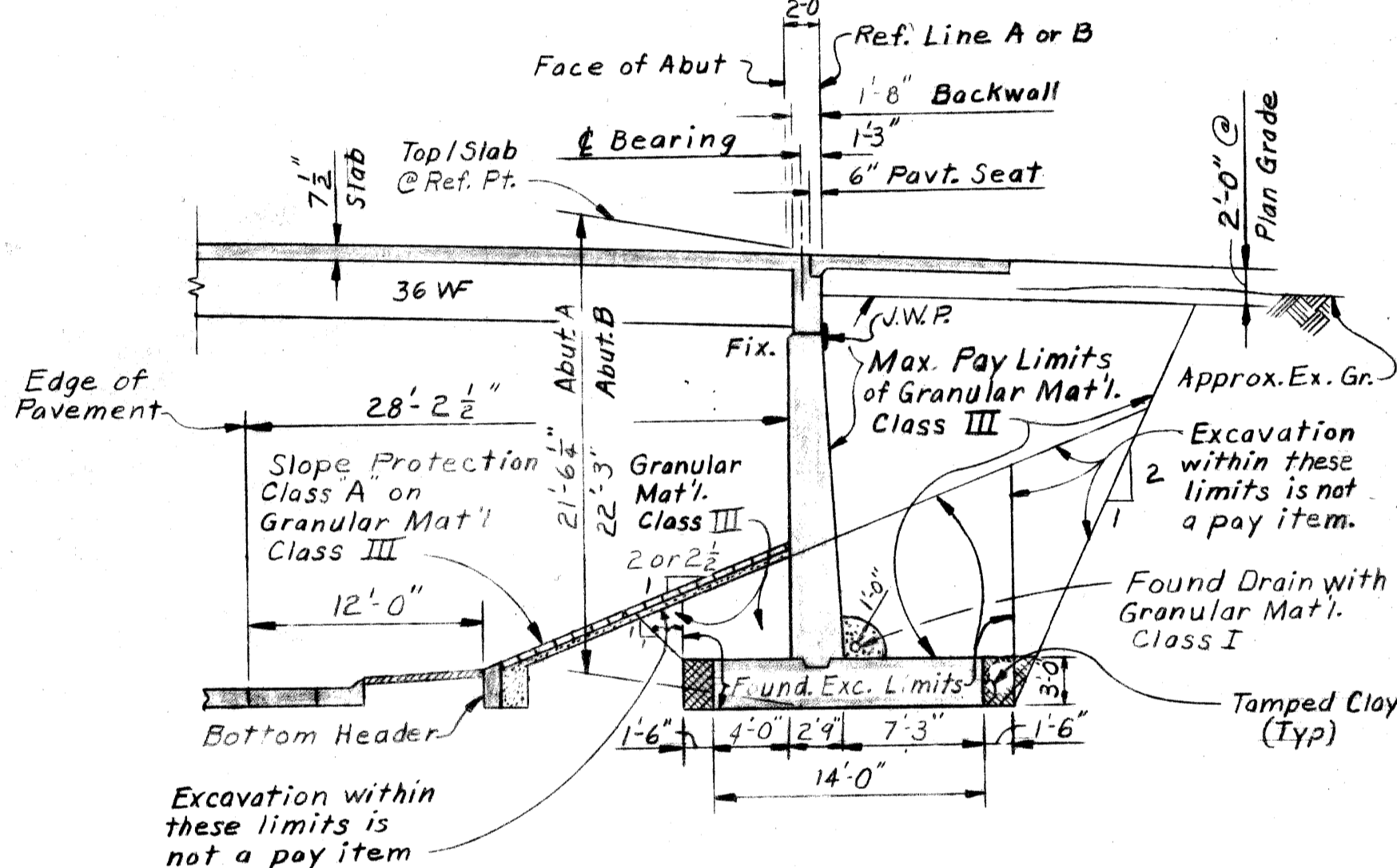
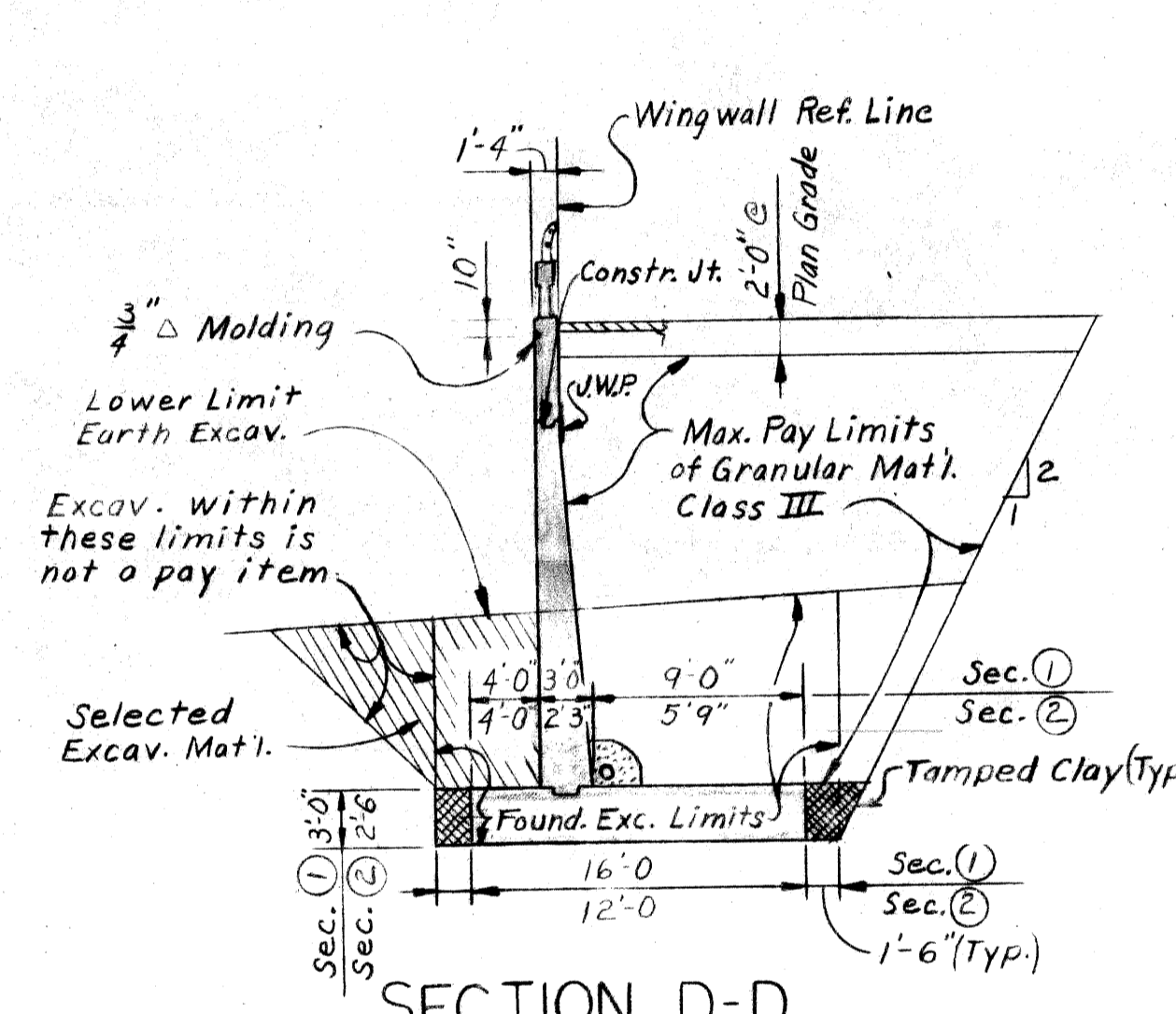
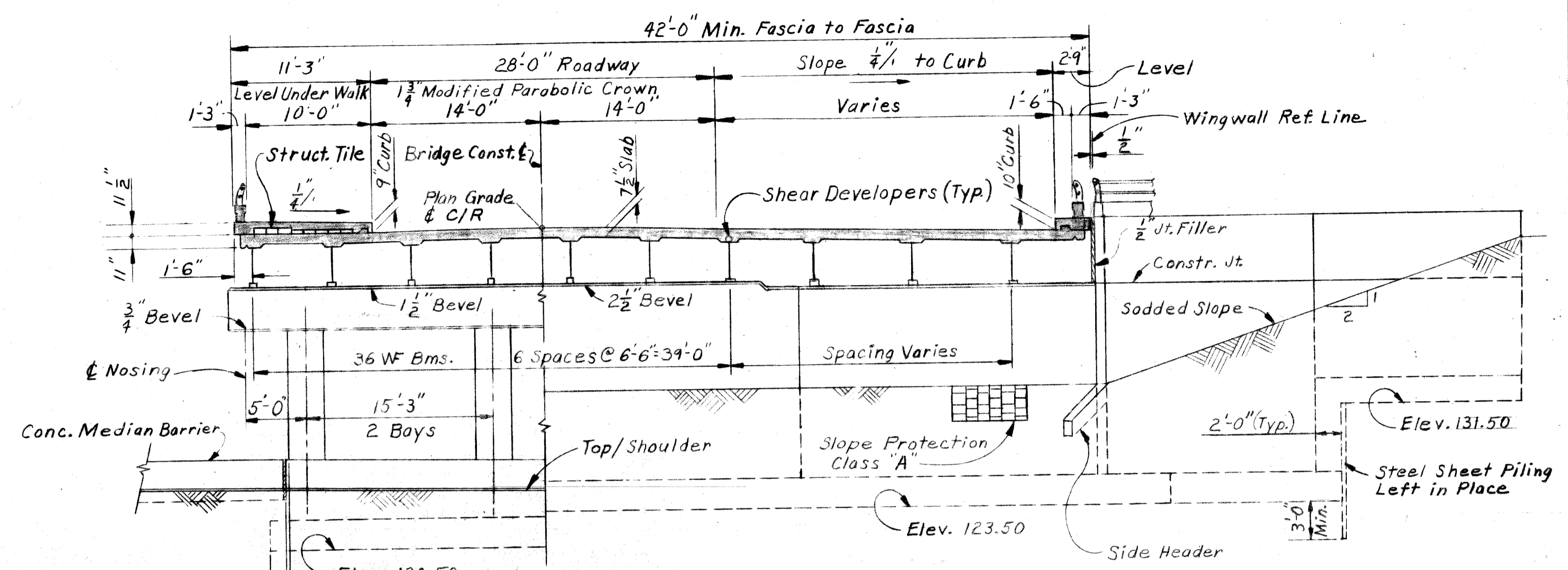
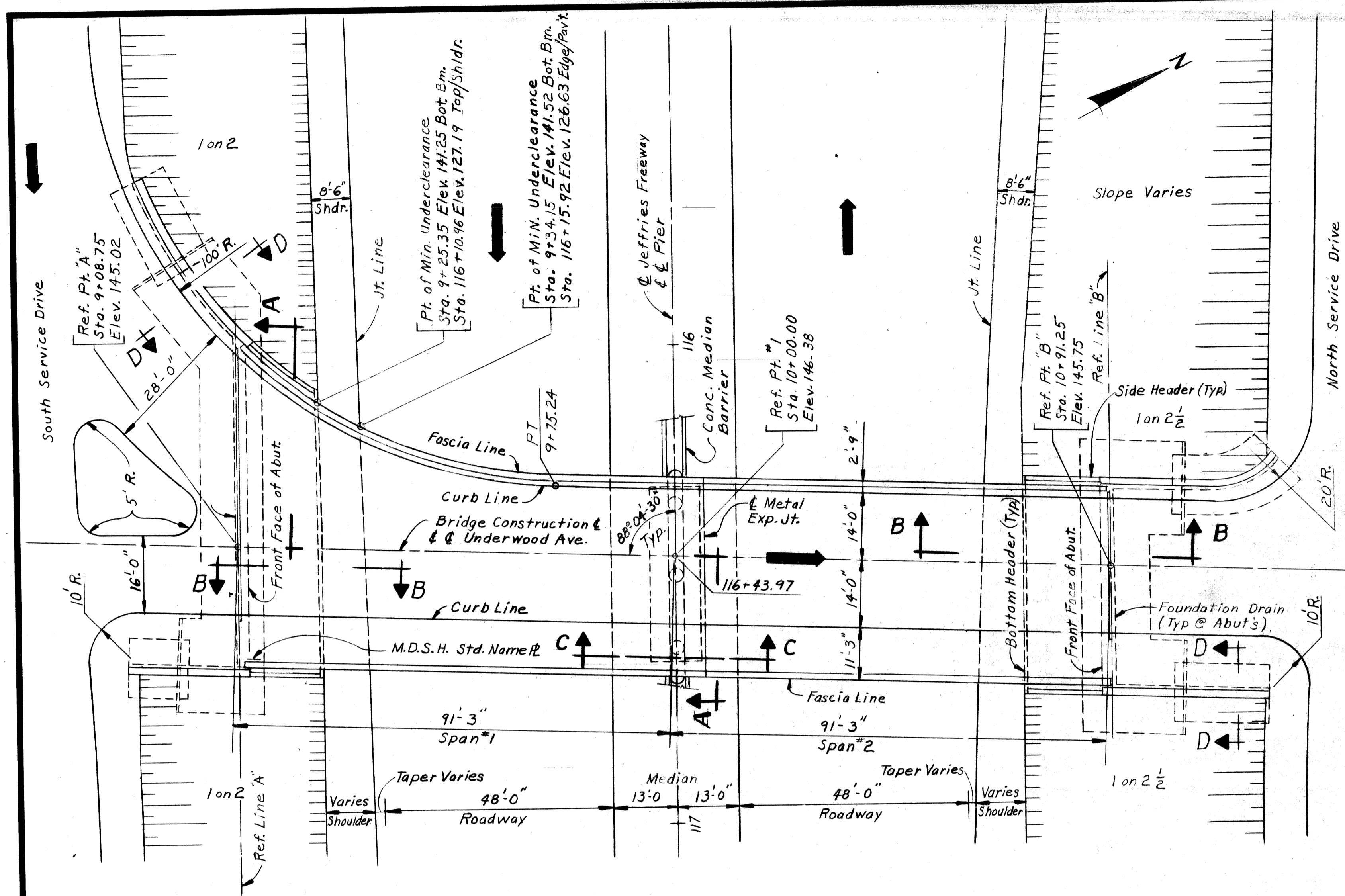
CITY OF DETROIT

SQUAD BOSS	W.H.L.
DRAWN BY	R. ROSIK 2/68
TRACED BY	
CHECKED BY	L.B.J. 2-68
SHEET	3 OF 5

APPROVED: _____ DESIGN SUPERVISING ENGINEER

APPROVED: _____ ENGINEER OF DESIGN - CONSULTANTS

S32 of 82123 I

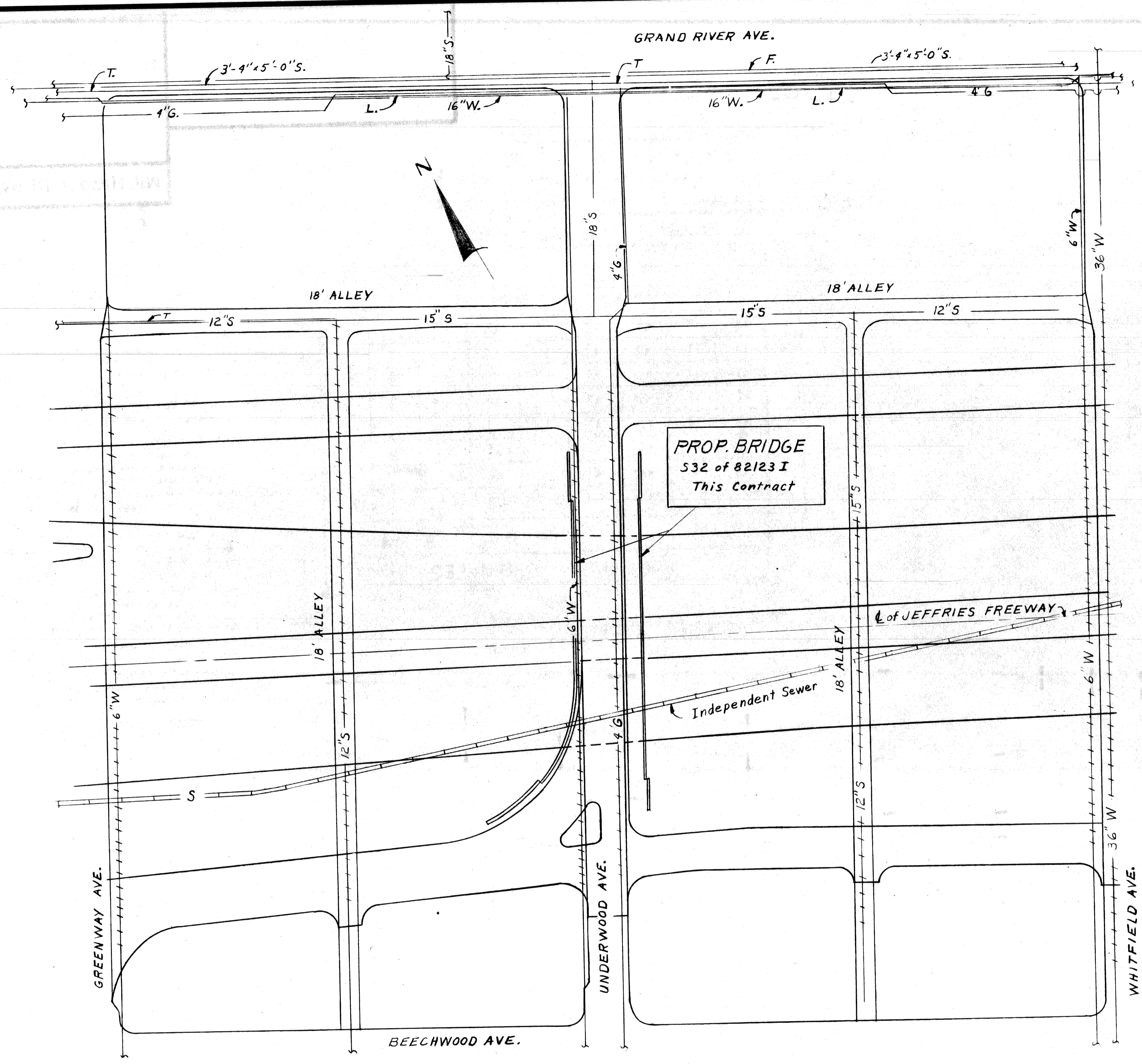


GENERAL NOTES:

The design of this structure is based on M.D.S.H. Specifications for the design of Highway Bridges, 1958 edition and current AASHTO Standard Specifications for Highway Bridges, HS20-44 loading. Live load plus impact deflection equals 1/800 of span length and 1/30 of cantilever arm.

The top of roadway slab and tops of curbs are parallel to the vertical curve. Selected Excavated Material is incidental to Foundation Excavation. Tamped Clay is incidental to Foundation Excavation. Granular Material-Class I is incidental to Foundation Drain. For details of Slope Protection, see M.D.S.H. Standard Sh. #SP2. Granular Material-Class III Compacted in place (See Road Plans) 1460 Cu. Yds. The design is based on a maximum foundation pressure of 5000 psf. (Abutts.) and 4800 psf. (Piers) based on D.L. and L.L. and a maximum average foundation pressure of 2100 psf. (Abutts.) and 3300 psf. (Piers based on D.L. only).

PLANS PREPARED BY CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS CITY ENGINEERS OFFICE BUREAU OF HIGHWAYS AND EXPRESSWAYS		MICHIGAN DEPARTMENT OF STATE HIGHWAYS EAST BOUND WEST CHICAGO BLVD. CROSSING THE JEFFRIES FREEWAY IN DETROIT	
APPROVED _____ STRUCTURAL ENGINEER	PW 990(4)	GENERAL PLAN OF STRUCTURE	
REVISIONS NO. DESCRIPTION DATE BY		APPROVED _____ DESIGN SUPERVISING ENGINEER	CITY OF DETROIT SQUAD BOSS <i>Watts</i> DRAWN BY <i>R. Rozak</i> 03/68 CHECKED BY <i>FW</i> SHEET 4 OF 5
		APPROVED _____ ENGINEER OF DESIGN * CONSULTANTS	S32 of 82123 I



SITUATION PLAN
SCALE: 1" = 40'-0"

LEGEND

UTILITY	Existing	Deleted or Abandoned	New Work by Others	New Work by Contractor
Michigan Consolidated Gas Co.	— G —	--- G ---	— G —	--- G ---
Detroit Water Dept.	— W —	--- W ---	— W —	--- W ---
Expwy. and City of Detroit Sewers	— S —	--- S ---	— S —	--- S ---
Michigan Bell Telephone Co.	— T —	--- T ---	— T —	--- T ---
Public Lighting Commission	— L —	--- L ---	— L —	--- L ---
Detroit Fire Dept.	— F —	--- F ---	— F —	--- F ---

NOTE:
Bridge construction and utility alterations are included in package contract for control Section 82123 I.
The contractor shall locate all active underground utilities prior to starting work, and shall conduct his operations in such a manner as to insure that those utilities not requiring relocation will not be disturbed.

VOID

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

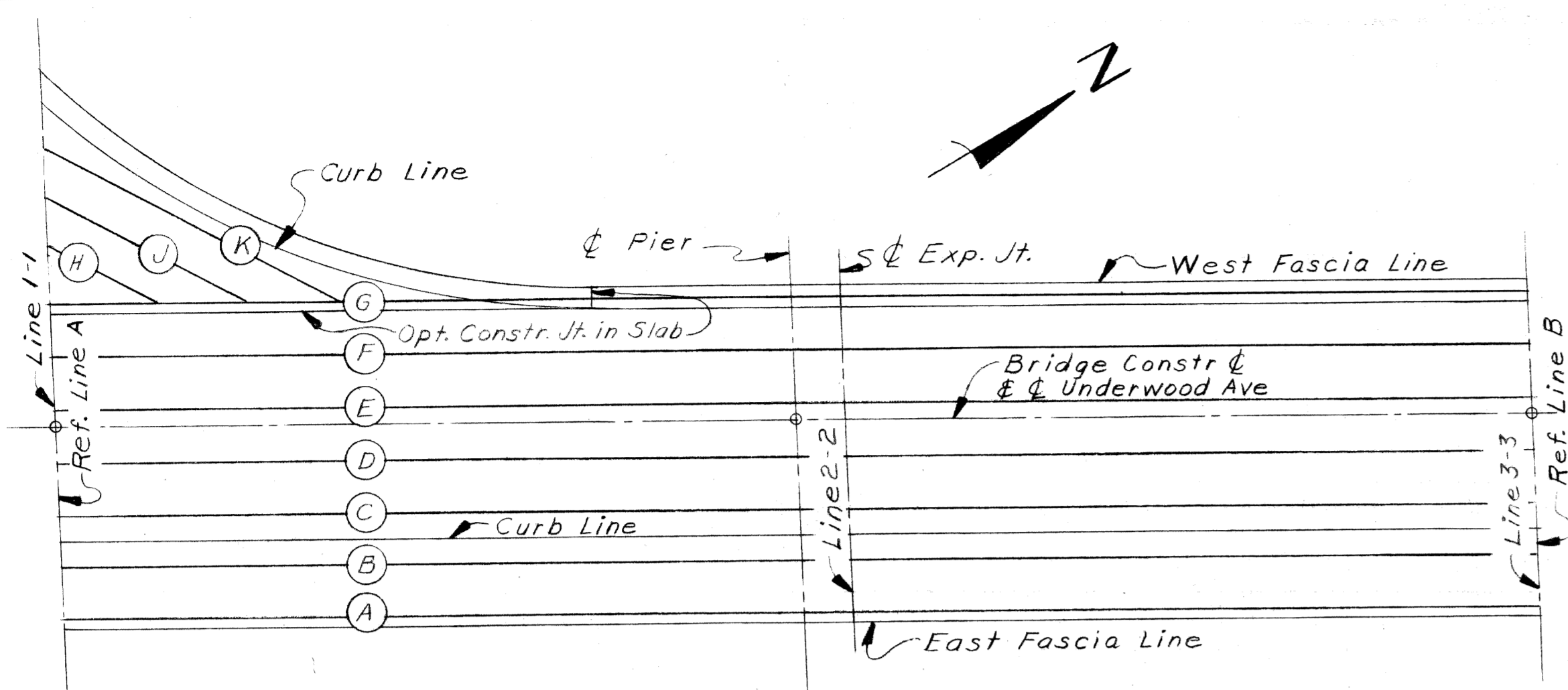
EAST BOUND WEST CHICAGO BLVD. CROSSING
THE JEFFRIES FREEWAY IN DETROIT

**EXISTING UTILITIES AND
PROPOSED ALTERATIONS**

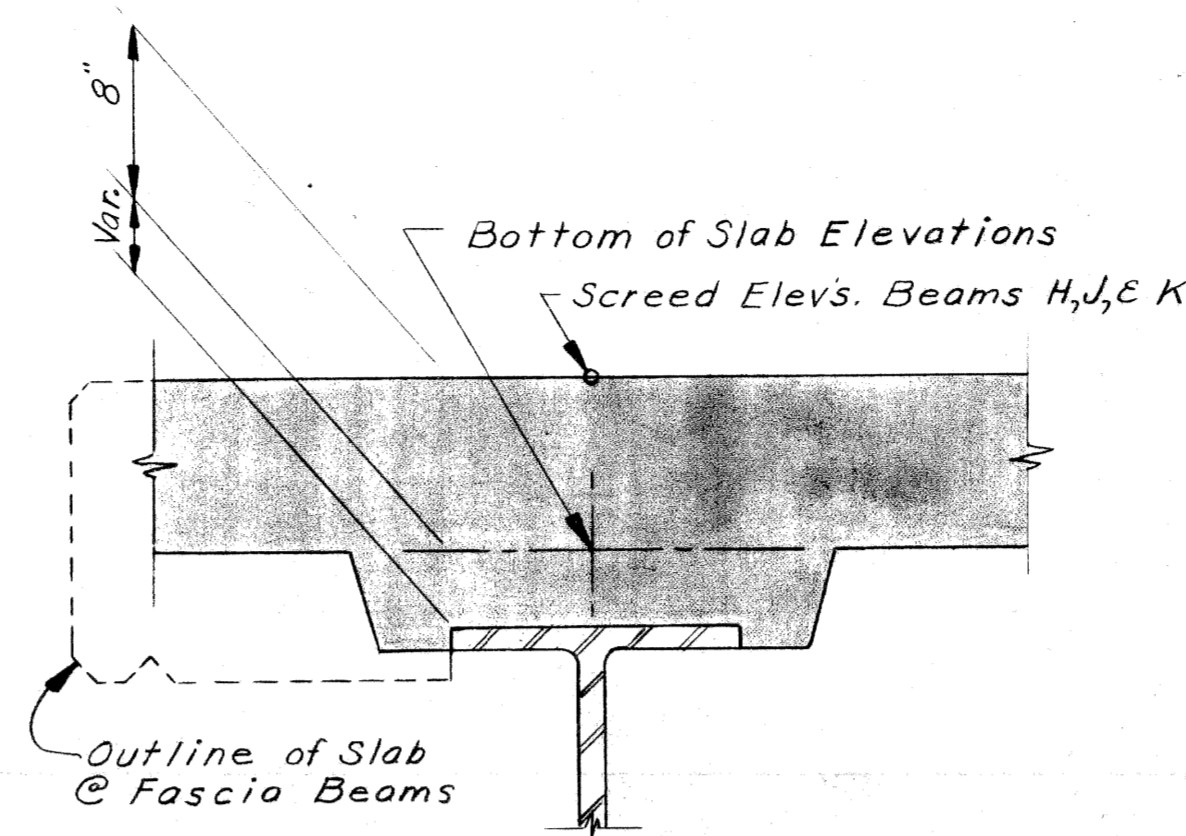
REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS DRAWN BY TRACED BY CHECKED BY SHEET 5 OF 5	CITY OF DETROIT DEPARTMENT OF HIGHWAYS BUREAU OF HIGHWAY AND BRIDGE DIVISION Job No. PW 990(4)
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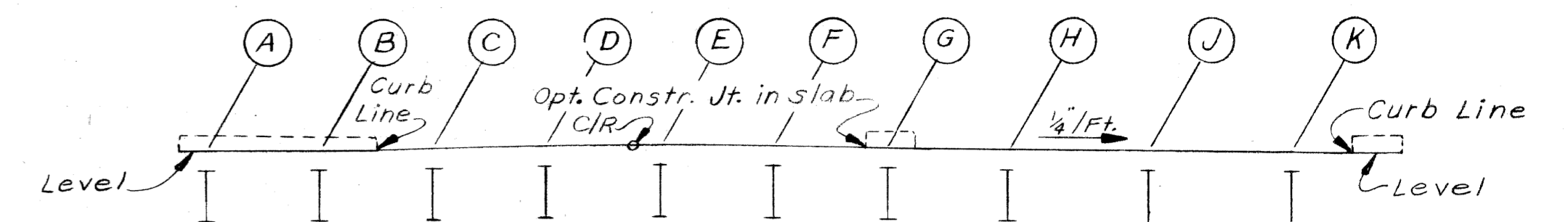
S32 of 82123 I



PLAN OF SLAB

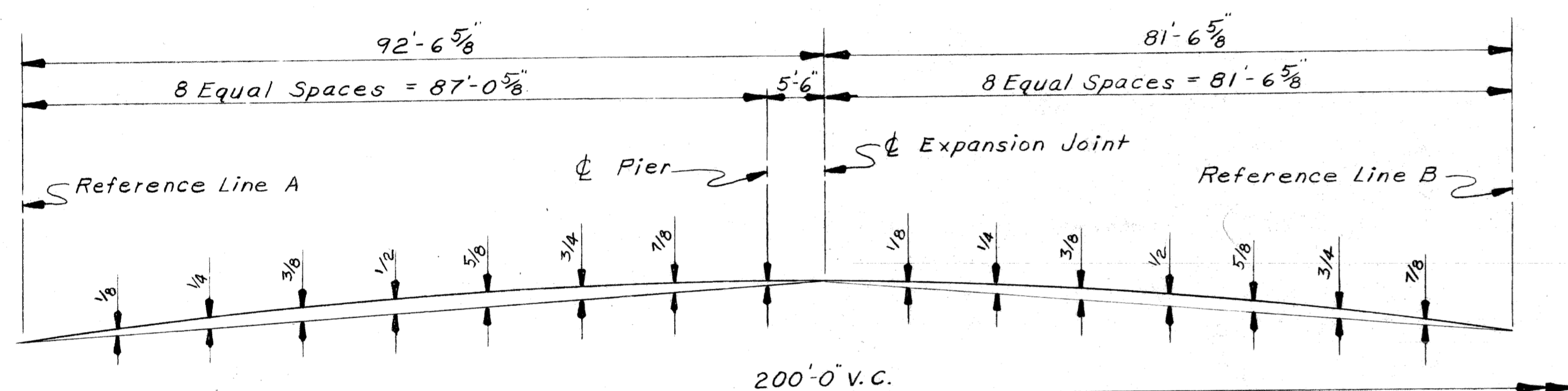


TYPICAL SECTION AT EACH BEAM



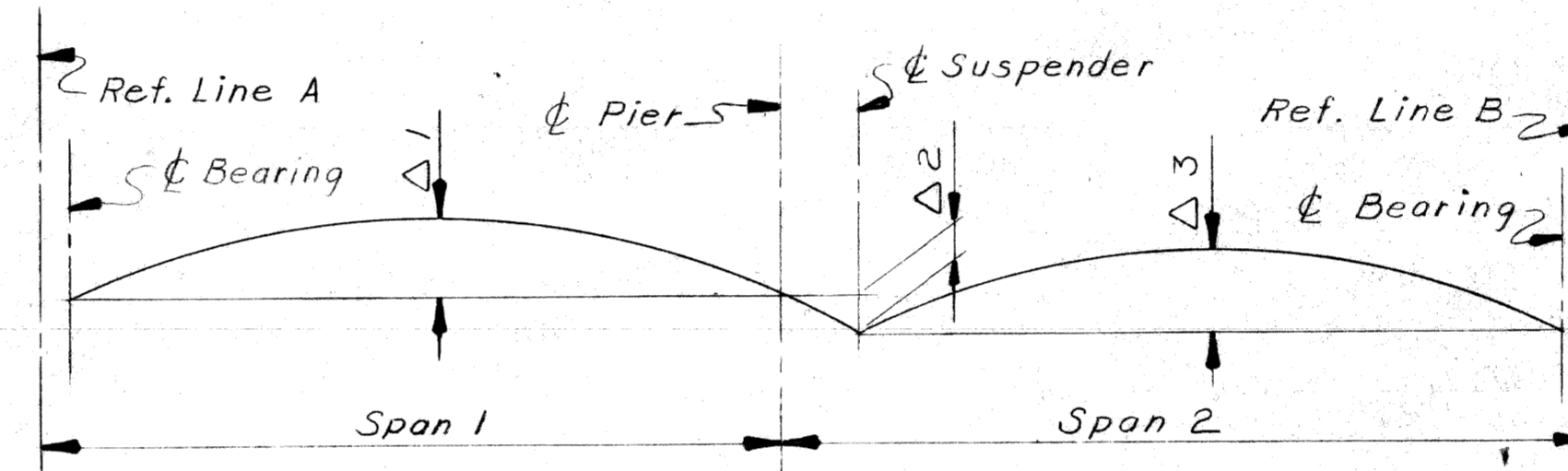
SCREED TEMPLATE
(Shown Normal to Bridge Constr. &)

SCREED TEMPLATE ELEVATIONS										
Line	A	B	C	D	E	F	G	H	J	K
1-1	145.00	144.99	145.03	145.10	145.11	145.04	144.94	144.78	144.65	144.52
2-2	146.23	146.23	146.28	146.35	146.37	146.30	146.21			
3-3	145.66	145.66	145.71	145.79	145.81	145.75	145.67			



TOP OF SLAB OFFSETS
(See Table Below)

TOP OF SLAB OFFSETS (FEET)																		
Beam	Ref. Line A	1/8	1/4	3/8	1/2	5/8	3/4	7/8	Exp. Joint	1/8	1/4	3/8	1/2	5/8	3/4	7/8	Ref. Line B	
B, G	0	.12	.22	.28	.30	.30	.25	.17	.06	0	.11	.19	.24	.25	.24	.19	0	
C, D, E, F	0	.11	.18	.24	.26	.25	.21	.15	.06	0	.09	.15	.19	.20	.19	.15	.09	0
A	0	.14	.24	.31	.34	.32	.27	.19	.07	0	.12	.20	.26	.28	.26	.20	0	



CAMBER DIAGRAM

CAMBER ORDINATES									
Bm.	Case I			Case II			Case III		
	Δ 1	Δ 2	Δ 3	Δ 1	Δ 2	Δ 3	Δ 1	Δ 2	Δ 3
G	4 3/8"	1"	4 1/2"	4"	1"	4"	2"	3/4"	2 1/2"
F	4 3/8"	1"	4 1/2"	4"	1"	3 7/8"	2 5/8"	3/4"	2 1/2"
E	4 5/8"	1 1/8"	4 1/2"	4 1/2"	1"	3 7/8"	2 7/8"	7/8"	2 1/2"
D	4 5/8"	1 1/8"	4 1/2"	4 1/2"	1"	3 7/8"	2 5/8"	3/4"	2 3/8"
C	4 5/8"	1 1/8"	4 1/2"	4 1/2"	1"	3 7/8"	2 5/8"	3/4"	2 3/8"
B	5 1/8"	1 1/4"	4 3/4"	4 3/4"	1 1/8"	4 3/8"	2 3/4"	7/8"	2 1/2"
A	4 7/8"	1 1/8"	4 1/2"	4 5/8"	1 1/8"	4 1/2"	2 5/8"	3/4"	2 3/8"

(Beams H, J, & K - Mill Camber Only)

GENERAL NOTES

Use longitudinal strike-off finishing machine in placing slab concrete, except area over beams H, J, & K, use hand screeding.
 Concrete in the suspended span is to be cast before concrete in the anchor span.
 Screed and Screed-Template Elevations are based on the condition that no deck concrete has been cast and that form-work, steel reinforcement, and shear developers are in place.
 Screeds affected by loads in the other span are to be set to the elevations shown before casting any concrete. After screeds are set, if a check indicates that less than the minimum slab thickness will be obtained, adjust the screeds accordingly.
 Top of Slab Offsets are measured from a straight line between transverse joints at equal intervals across spans and include vertical curve ordinates and allowance for deflections due to sidewalk, brush block and railings.
 Beam Camber Ordinates at the following cases:
 Case I Structural steel erected and no other loads applied.
 Case II Forms, shear developers, and steel reinforcement in place on structural steel. (All spans complete)
 Case III Deck concrete cast, sidewalk, brush block, and railing in place on structural steel. (All spans complete with forms removed.)
 Bottom of slab elevations are based on the condition that all structural steel has been erected, but no other loads applied. These elevations include allowance for deflections due to forms, steel reinforcement, deck concrete, sidewalk, brush block and railing.

BOTTOM OF SLAB ELEVATIONS																		
Bm.	Exp. Brg.	1/8	1/4	3/8	1/2	5/8	3/4	7/8	Exp. Pier	1/8	1/4	3/8	1/2	5/8	3/4	7/8	Exp. Brg.	
G	144.29	144.62	144.91	145.15	145.33	145.48	145.55	145.57	145.55	145.54	145.62	145.67	145.68	145.64	145.55	145.42	145.24	145.02
F	144.40	144.71	144.98	145.21	145.39	145.51	145.59	145.63	145.63	145.63	145.70	145.75	145.75	145.71	145.62	145.49	145.31	145.10
E	144.47	144.78	145.05	145.28	145.46	145.58	145.66	145.70	145.70	145.69	145.77	145.81	145.82	145.77	145.69	145.55	145.37	145.16
D	144.46	144.78	145.05	145.28	145.46	145.59	145.66	145.69	145.69	145.67	145.76	145.81	145.82	145.77	145.68	145.54	145.36	145.14
C	144.39	144.71	144.98	145.21	145.39	145.51	145.59	145.61	145.61	145.60	145.68	145.73	145.74	145.70	145.60	145.46	145.28	145.06
B	144.35	144.68	144.97	145.20	145.38	145.50	145.57	145.57	145.57	145.55	145.65	145.71	145.72	145.68	145.59	145.44	145.25	145.02
A	144.36	144.68	144.96	145.20	145.37	145.49	145.56	145.58	145.57	145.55	145.65	145.70	145.71	145.67	145.58	145.43	145.24	145.01

BOTTOM OF SLAB ELEVATIONS							
Bm.	Exp. Brg.	*7'-0"	14'-0"	21'-0"	28'-0"	35'-0"	Exp. Brg.
K	143.88	144.15	144.42	144.66	144.86	145.04	145.27
J	144.01	144.27	144.51	144.75			145.04
H	144.14	144.40					144.73

(Distance along Exp. Brg. from Exp. Bearing)

PLANS PREPARED BY
 CITY OF DETROIT
 DEPARTMENT OF PUBLIC WORKS
 CITY ENGINEERS OFFICE
 BUREAU OF HIGHWAYS AND EXPRESSWAYS
 APPROVED: [Signature] STRUCTURAL ENGINEER
 JOB No. PW 990(4)

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

SUPERSTRUCTURE DETAILS

REVISIONS

NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT
 SQUAD BOSS [Signature]
 DRAWN BY [Signature]
 TRACED BY [Signature]
 CHECKED BY [Signature]
 SHEET 18 OF 20
 532 of 821231