

CONVENTIONAL SIGNS

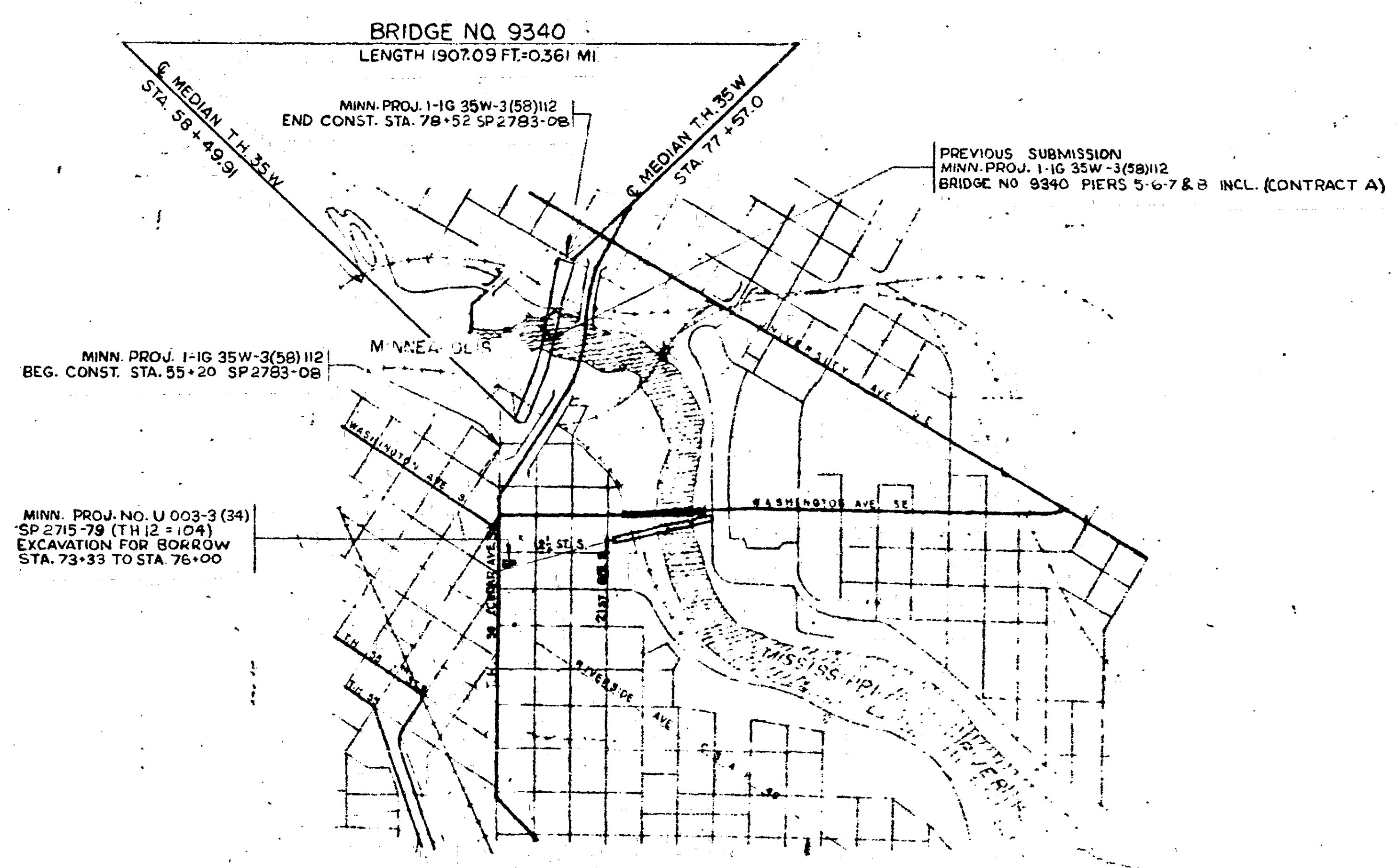
STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
 CONSTRUCTION PLAN FOR BRIDGE NO. 9340 - BALANCE OF BRIDGE AND APPROACHES (CONTRACT B)
TRUNK HIGHWAY NO. 35W = 394

BETWEEN WASHINGTON AVE. ON THE WEST BANK OF THE MISSISSIPPI RIVER AND UNIVERSITY AVE. ON THE EAST BANK OF THE MISSISSIPPI RIVER
 From A POINT 296.03' EAST & 296.28' NO. OF JCT. OF 1ST ST. SO. & 14TH AVE. SO. To A POINT 328.48' SO & 135.95' WEST OF JCT. OF UNIVERSITY AVE. & 9TH AVE. S.E.

MINNESOTA PROJECT 1-IG 35W-3(58)112				STATE PROJECT NO. 2783-08 (T.H. 35W=394)			
GROSS LENGTH	FEET	MILES		GROSS LENGTH	FEET	MILES	
BRIDGES LENGTH	1907.0	0.361		BRIDGES LENGTH	1907.0	0.361	
EXCEPTIONS LENGTH	FEET	MILES		EXCEPTIONS LENGTH	FEET	MILES	
NET LENGTH	FEET	MILES		NET LENGTH	FEET	MILES	
MINNESOTA PROJECT U 003-3(34) LENGTH				STATE PROJECT NO. 2715-79 (TH 12=104) LENGTH			

LAYOUT
 Scale 1 inch = 100 feet

LIST OF SHEETS	
GRADING & APPROACHES	1 THRU 31
BRIDGE 9340	1 THRU 94



PIT DATA

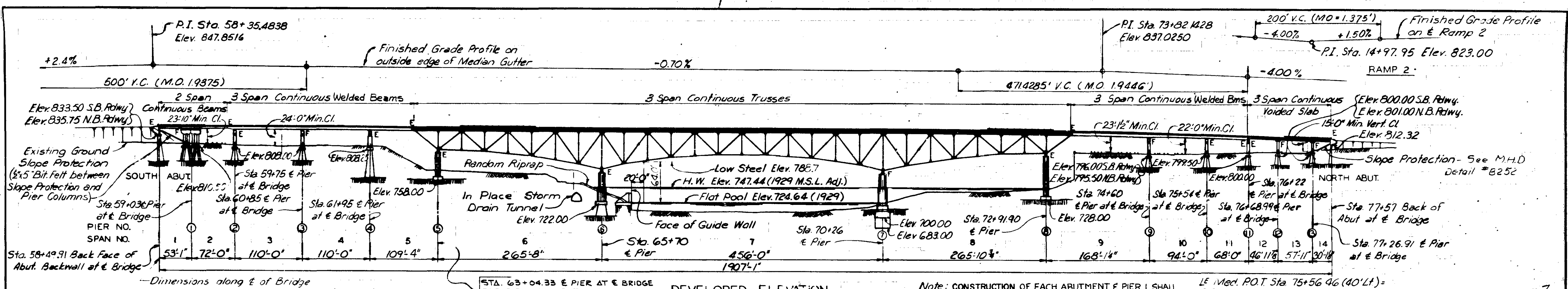
PIT NO.	located in
PIT NO.	located in Dead Head
PIT NO.	located in Dead Head
PIT NO.	located in Dead Head
PIT NO.	located in Dead Head

DESIGN DESIGNATION

ADT (1962)	= 66,200	Design Speed-50 MPH
ADT (1975)	= 79,500	Based on Stopping Sight Distance
DHV	= 8,700	Height of Eye-3.75' Height of Object-0.50'
D	58%	
T	6%	

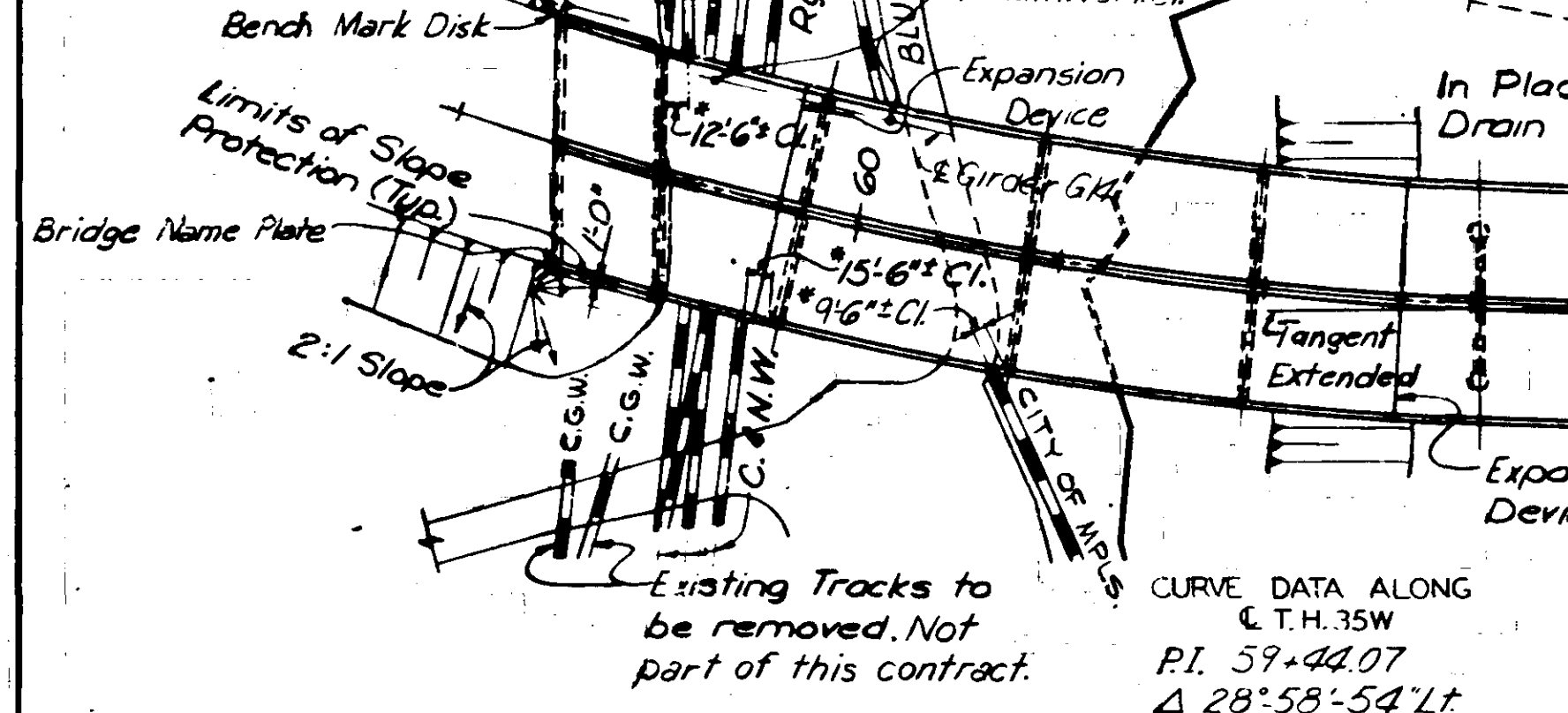
Right of Way Approval: *Lee A. K... 6/18/65*
 Recommended for Approval: *A. C. LaPointe 6-18-65*
 Recommended for Approval: _____
 Recommended for Approval: *N. J. Thompson 6/18/65*
 Approved: *6/18 1965 D.T. Burns*

DEPARTMENT OF COMMERCE
 BUREAU OF PUBLIC ROADS
 APPROVED: _____



Pier No.	1	2	3	4	9	10	11	12	13	SO. ABUT. NO. ABUT.
* Top of Ground Elev. for Structural Excavation	816.2	813.5	814.5	814.5	814.0	804.5	806.0	808.0	811.0	840.3

* QUANTITY OF CLASS IV EXCAVATION IS COMPUTED WITH THE ELEVATIONS SHOWN FOR EACH SUBSTRUCTURE UNIT AS THE UPPER LIMIT.

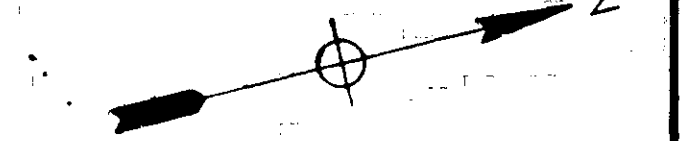


STA. 63+04.33 @ PIER AT & BRIDGE SEE PIER DETAILS FOR POSITION OF PIEK AND PIER LAYOUT, SHEET B2.

DEVELOPED ELEVATION

Note: CONSTRUCTION OF EACH ABUTMENT & PIER I SHALL NOT BE STARTED UNTIL THE APPROACH FILL AT THAT SUBSTRUCTURE HAS BEEN CONSTRUCTED TO THE FULL HEIGHT AND CROSS SECTION.

LE Med. P.O.T. Sta. 75+56.96 (40' LT) = P.C. Ramp 1 Sta. 10+00



CURVE DATA RAMP 1

PI 11+54.2229
 Δ 9° 14' 00" LT
 D 3° 00' 00"
 T 154.22'
 L 307.77'
 P.C. 10+00
 P.T. 13+07.78

CURVE DATA ALONG & T.H. 35 W

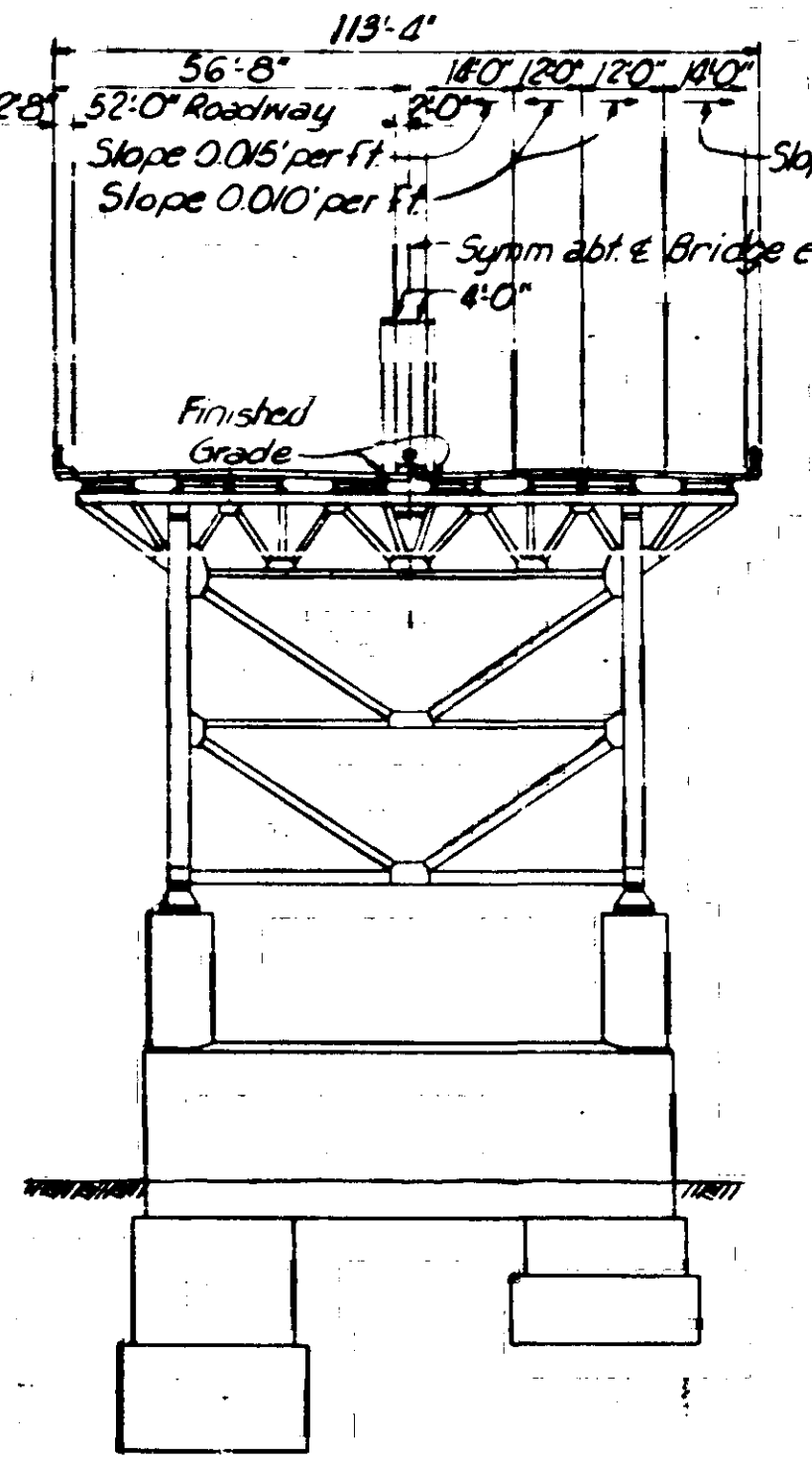
PI 79+09.30
 Δ 13° 59' 00" RT
 D 2° 45' 00"
 T 255.51'
 L 508.48'

CURVE DATA RAMP 2

PI 12+73.65
 Δ 12° 43' 04" RT
 D 2° 20' 00"
 T 278.65'
 L 645.05'
 P.C. 10+00
 P.T. 15+45.05

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BENCH MARKS

B.M. #4 Elev. 820.82 (1929 Adj.)
 Top Hydt. 150' RT. @ Sta. 59+00
 B.M. #5 Elev. 778.41 (1929 Adj.)
 Top of Concrete Post 200' RT. @ Sta. 62+00
 B.M. #7 Elev. 743.64 (1929 Adj.)
 Spk. in PP 163' LT. @ Sta. 70+30
 B.M. #8 Elev. 807.97 (1929 Adj.)
 Spk. in Ctwd. 15' LT. @ Sta. 76+10
 All bridge elevations are based on 1929 Adj.

NOTES

Abutments and Piers shall be at positions shown in Elevation for steel spans measured at normal temperature of 45°F
 Navigation lights not shown.

DESIGNED BY
SVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

T. H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340
 T.H. 35W OVER RAILROADS, BLUFF ST., MISSISSIPPI RIVER AND 2ND ST. S.E. IN MINNEAPOLIS
 53-72-110-110-71 WELDED BEAM SPANS
 266-456-266 DECK TRUSS SPANS
 130-94-68 WELDED BEAM SPANS
 47-58-30 VOIDED SLAB SPANS
 2-52' ROADWAYS, 2-16" SAFETY CURBS,
 4' RAISED MEDIAN

GENERAL PLAN AND ELEVATION
 SEC. 24 & 25 T29N R24 W
 HENNEPIN COUNTY
 APPROVED - 6-18-65
A. E. Mannes DEPUTY CHIEF ENGINEER
J. T. Ruess ENGINEER

I hereby certify that this plan was prepared under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

A. E. Mannes
 Date 3-4-1965 Reg. No. 5789

CONTRACT B

CONTRACT B CONSISTS OF CONSTRUCTING SOUTH AND NORTH ABUTMENTS, PIERS 1, 2, 3, 4, 9, 10, 11, 12 AND 13, AND SUPERSTRUCTURE.

MICRO-FILMED

Drawn By: H. P. Maloney, Oct. 1963
 Checked By: A. E. Mannes, Sept. 1964
 2083
 635619

GENERAL NOTES

CONSTRUCTION: The "Standard Specifications for Highway Construction" dated January 1, 1964 shall apply.

DESIGN: In accordance with Division I of the A.A.S.H.O. "Standard Specifications for Highway Bridges", 1961 Edition and 1961 and 1962 Interim Specifications. H20-S16-44 live load and alternate loading designated in P.P.M. 20-4, Section 4C. No impact on substructure units.

ROADWAY WEARING SURFACE: The roadway slab as detailed includes a 1/2" wearing surface placed monolithically with the slab.

FOUNDATION: Steel piles shall be driven to rock and to sustain a minimum bearing as indicated on the plans. See special provisions.

REINFORCEMENT STEEL: Reinforcement bars shall comply with M.H.D. Specification 3301 and bar details with A.C.I. 315 (latest edition). Dimensions for reinforcing steel on the Plans are to the centerline of bar except where the clear distance is noted from the face of concrete. Dimensions on bar bending details are out-to-out except as noted. All reinforcing bars to be lapped a minimum of 30 diameters. Reinforcing bars heavier than No. 11 shall comply with A.A.S.H.O. M174-60 or A.S.T.M. A408.

BEVELED EDGES: All exposed edges of concrete shall be beveled 3/4" unless otherwise noted.

ANCHOR BOLT HOLES: Holes shall be drilled in substructure units and anchor bolts set in place after girders and truss spans have been erected.

STRUCTURAL STEEL: See Sheet 40 for Structural Steel Notes for Approach Spans and Sheet 21 for Truss Span Notes.

GALVANIZING: Payment for galvanizing will be considered as fully covered under contract prices for other items.

ERECTION: Before ordering material, the Contractor shall submit to the Engineer for approval complete plans of his proposed erection scheme showing erection loads and stresses at critical sections. Erection stresses shall be composed of the dead load stress of the structure and erection equipment plus the stress from a 45 pound wind on the structure, as defined in the A.A.S.H.O. Standard Specifications, and on the erection equipment. Erection stresses shall not exceed the normal unit stresses by more than 33%. No payment will be made for any extra material required due to erection conditions. Approval of the erection plans shall not be considered as relieving the Contractor of full responsibility for the practicability and safety of the erection schemes used.

PAINT: Paint all structural metals except galvanized or metallized material as follows:
 Shop coat - Shop coat primer, orange M.H.D. 3509
 First field coat - Bridge paint, maroon intermediate field coat, M.H.D. 3515.
 Second field coat - Bridge paint, buff intermediate field coat, M.H.D. 3517.
 Third field coat - Bridge paint, dark green finish coat, M.H.D. 3524.
 Exposed metallized surfaces of all girders at hinges shall be given the three coats of field paint.
 See Special Provisions for painting.

EXISTING UNDERGROUND FACILITIES: Underground facilities, structures and utilities have been plotted from available surveys and records; and, therefore, their locations must be considered approximate only. It is possible there may be others, the existence of which is presently not known or shown. It is the Contractor's responsibility to determine their existence and exact location and to avoid damage thereto.

WHEREVER THE WORD "GIRDER" APPEARS, IT SHALL MEAN "BEAMS."

THE FOLLOWING LINES SHALL BE CURVED IN ACCORDANCE WITH ALIGNMENT DATA:
 GIRDERS IN SOUTH APPROACH SPANS;
 STRINGERS IN TRUSS SPANS;
 OUTSIDE EDGES OF SLAB;
 INSIDE AND OUTSIDE EDGES OF CURB AND MEDIAN.

SUMMARY OF QUANTITIES FOR ENTIRE BRIDGE

Item No.	Description	Quantities			Unit
		Substr.	Superstr.	Total	
2401.521	Structure Excavation (Class U.E.)	3497	---	3497	Cu. Yd.
* 514.601	Slope Paving	1180	---	1180	Sq. Yd.
2452.520	Steel Test Piles in Place, 18 feet long	2	---	2	Pile
2452.520	Steel Test Piles in Place, 20 feet long	12	---	12	Pile
2452.520	Steel Test Piles in Place, 26 feet long	4	---	4	Pile
2452.520	Steel Test Piles in Place, 30 feet long	4	---	4	Pile
2452.520	Steel Test Piles in Place, 52 feet long	2	---	2	Pile
2452.520	Steel Test Piles in Place, 55 feet long	2	---	2	Pile
2452.509	Steel Piling Delivered	398244	---	398244	Lb.
2452.510	Steel Piling Driven	9063	---	9063	Lin. Ft.
2452.526	Loading Tests	ONE	---	ONE	Pile
2401.501	Concrete Mix No. 1A6	561	---	561	Cu. Yd.
2401.501	Concrete Mix No. 3Y6	1121	5765	6886	Cu. Yd.
2401.501	Concrete Mix No. 3Y60	---	734	734	Cu. Yd.
2401.539	Reinforcement Bars Delivered	312 220	2261 700	2573 920	Lb.
2401.540	Reinforcement Bars Placed	312 220	2261 700	2573 920	Lb.
2431.501	Three-Ply Joint Waterproofing	115	190	305	Lin. Ft.
2402.593	Fixed Bearing Assemblies (Type 1)	---	10	10	Unit
2402.593	Fixed Bearing Assemblies (Type 2)	---	10	10	Unit
2402.593	Fixed Bearing Assemblies (Type 3)	---	2	2	Unit
2402.593	Fixed Bearing Assemblies (Type 4)	---	11	11	Unit
2402.594	Expansion Bearing Assemblies (Type 5)	---	14	14	Unit
2402.594	Expansion Bearing Assemblies (Type 6)	---	10	10	Unit
2402.594	Expansion Bearing Assemblies (Type 7)	---	4	4	Unit
2402.594	Expansion Bearing Assemblies (Type 8)	---	4	4	Unit
2402.594	Expansion Bearing Assemblies (Type 9)	---	14	14	Unit
2402.594	Expansion Bearing Assemblies (Type 10)	---	34	34	Unit
2402.594	Expansion Bearing Assemblies (Type 11)	---	4	4	Unit
2402.594	Expansion Bearing Assemblies (Type 12)	---	8	8	Unit
2402.594	Expansion Bearing Assemblies (Type 13)	---	4	4	Unit
2402.594	Expansion Bearing Assemblies (Type 14)	---	4	4	Unit
2402.594	Expansion Bearing Assemblies (Type 15)	---	4	4	Unit
2402.594	Expansion Bearing Assemblies (Type 16)	---	39	39	Unit
2402.594	Expansion Bearing Assemblies (Type 17)	---	4	4	Unit
2402.593	Fixed Bearing Assemblies (Type 18)	---	2	2	Unit
2402.594	Expansion Bearing Assemblies (Type 19)	---	2	2	Unit
2402.594	Expansion Bearing Assemblies (Type 20)	---	4	4	Unit
2402.532	Furnishing Structural Steel (3306)	---	6228600	6228600	Lb.
*2402.532	Furnishing Structural Steel (3309)	---	1521600	1521600	Lb.
2402.532	Furnishing Structural Steel (3310)	---	1000400	1000400	Lb.
2402.532	Furnishing Structural Steel (3318)	---	57200	57200	Lb.
2402.533	Erecting Structural Metals	---	8807800	8807800	Lb.
2476.501	Painting Metal Structures	---	ONE	ONE	Structure
2402.577	STANDARD NAME PLATES	---	2	2	UNIT
2402.583	Ornamental Metal Paving	---	3998	3998	Lin. Ft.
*402.631	MEDIAN BARRIER (TYPE, METAL)	---	1884	1884	Lin. Ft.
*401.602	COMPRESSION JOINT SEALER (TYPE I)	---	1634	1634	LIN. FT.
*502.671	Drainage System	---	ONE	ONE	System
*2545.501	Electric Lighting System	---	ONE	ONE	System
*401.601	FIELD OFFICE FACILITIES	---	ONE	ONE	LUMP SUM
*402.691	EXPANSION ASSEMBLY (TYPE I)	---	ONE	ONE	ASSEMBLY
*402.691	EXPANSION ASSEMBLY (TYPE II)	---	ONE	ONE	ASSEMBLY
*402.691	EXPANSION ASSEMBLY (TYPE III)	---	ONE	ONE	ASSEMBLY

* See Special Provisions

REVISION	BY	CK'D	DATE
CHANGE PAY ITEM NUMBER FOR DRAINAGE SYSTEM	TJH	RET	8-4-65

DESIGN DATA

1961 A.A.S.H.O. Design Specifications and 1961 and 1962 Interim Specifications.
 H20-S16-44 Loading and alternate loading designated in P.P.M. 20-4, Section 4C.
 Allowable Design Stresses:
 f_c = 1600 psi n=8 (Based on f_c = 4,000 psi)
 f_s = 20,000 psi Intermediate grade reinforcement
 f_s = 20,000 psi Structural Steel M.H.D. 3306
 f_s = 27,000 psi Structural Steel M.H.D. 3309
 f_s = 45,000 psi Structural Steel M.H.D. 331B
 Structural Steel M.H.D. 3310 as follows:
 f_s = 27,000 psi 3/4" thickness and under.
 f_s = 24,000 psi over 3/4" to 1 1/2" thickness incl.
 f_s = 22,000 psi over 1 1/2" to 4" thickness incl.

Drawn By: G.R. Shanika - Sept. 1964
 Reviewed By: R.F. Beck - Nov. 1964
 Checked By: R.F. Beck - Nov. 1964
 2083
 65577

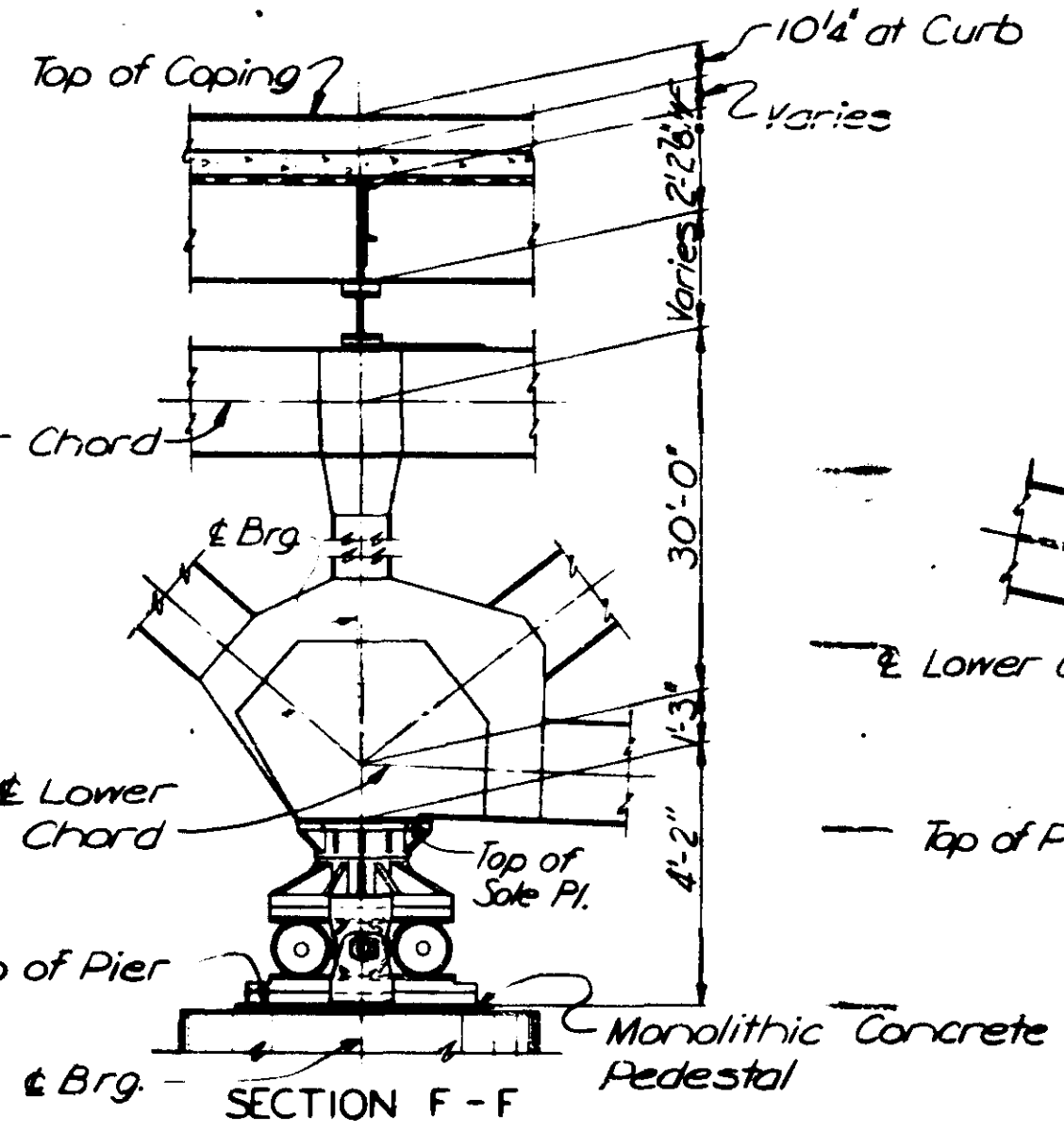
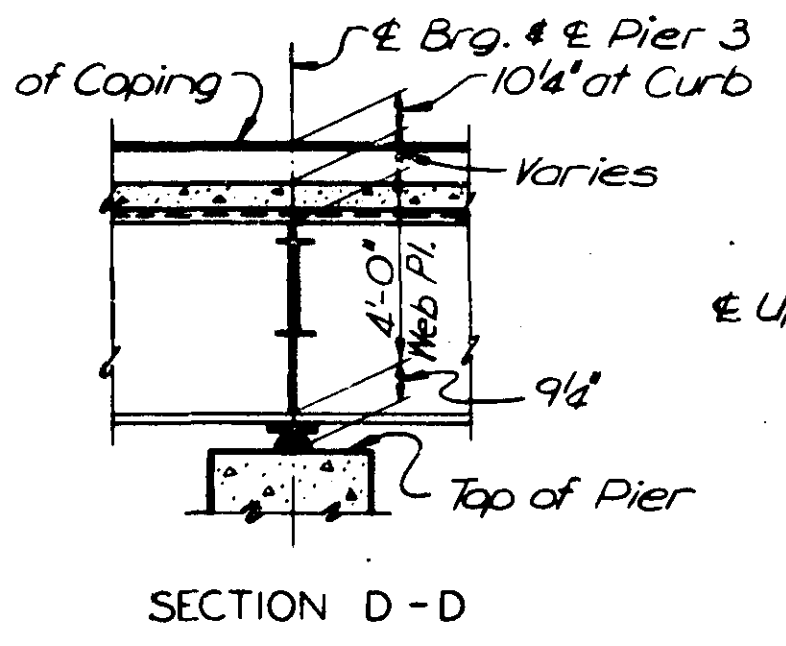
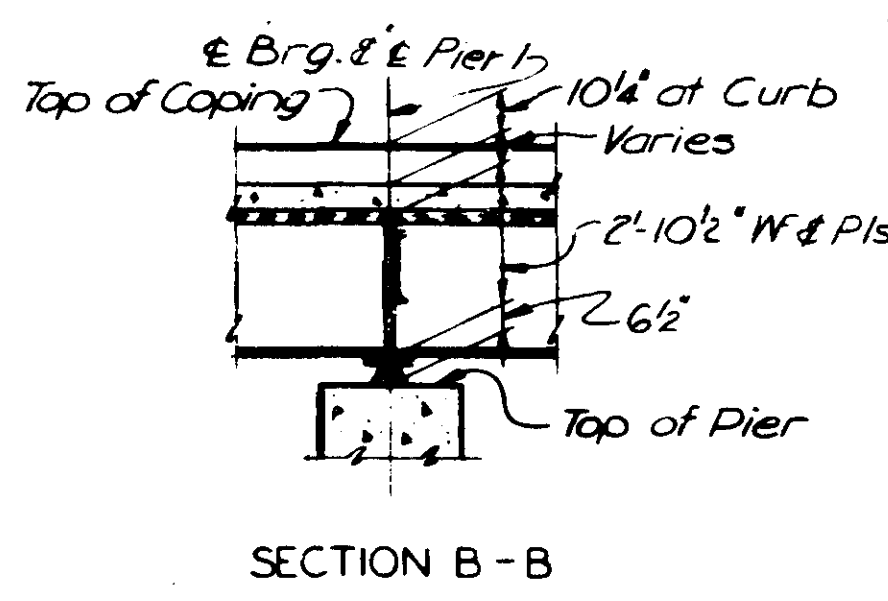
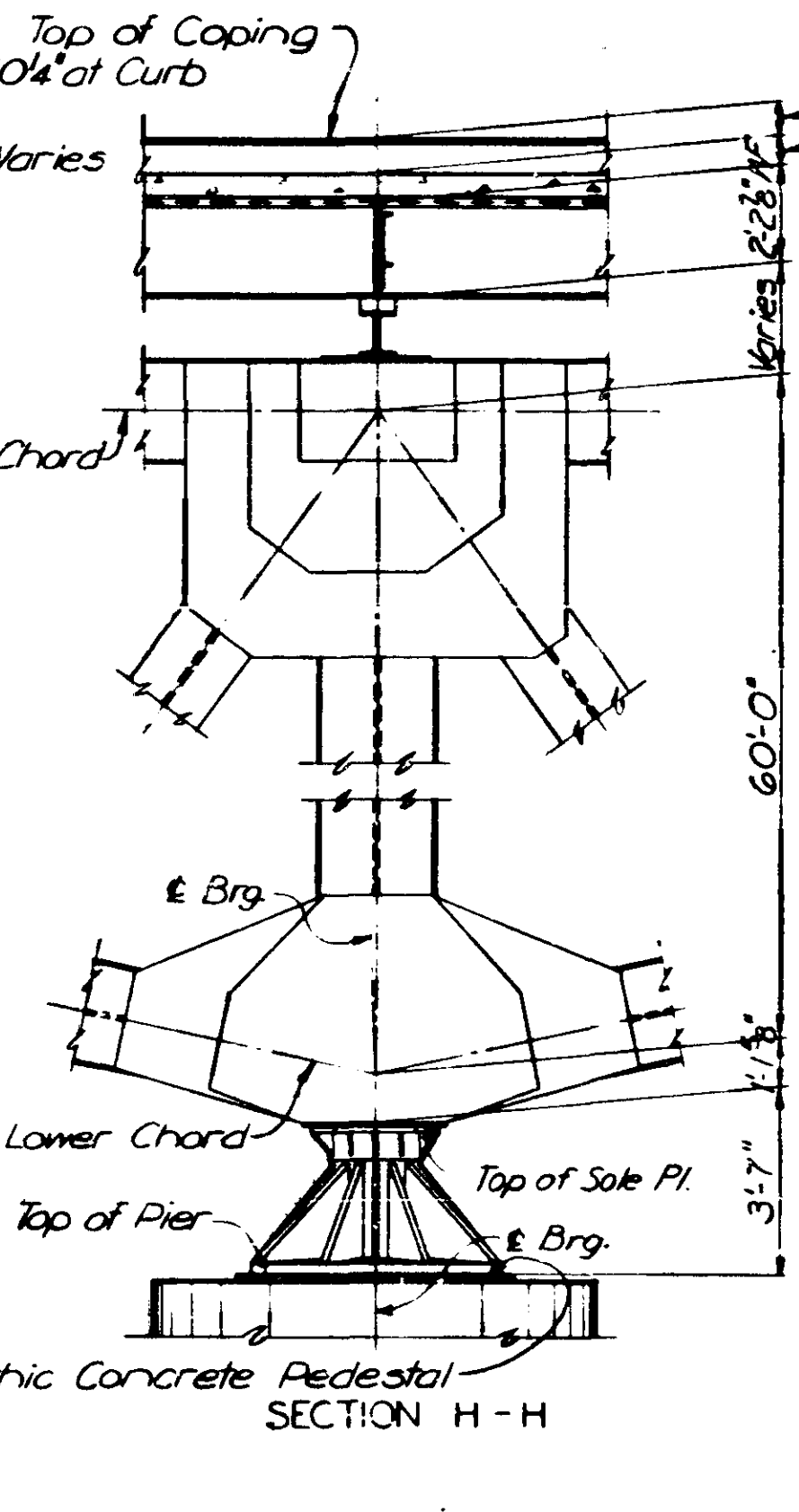
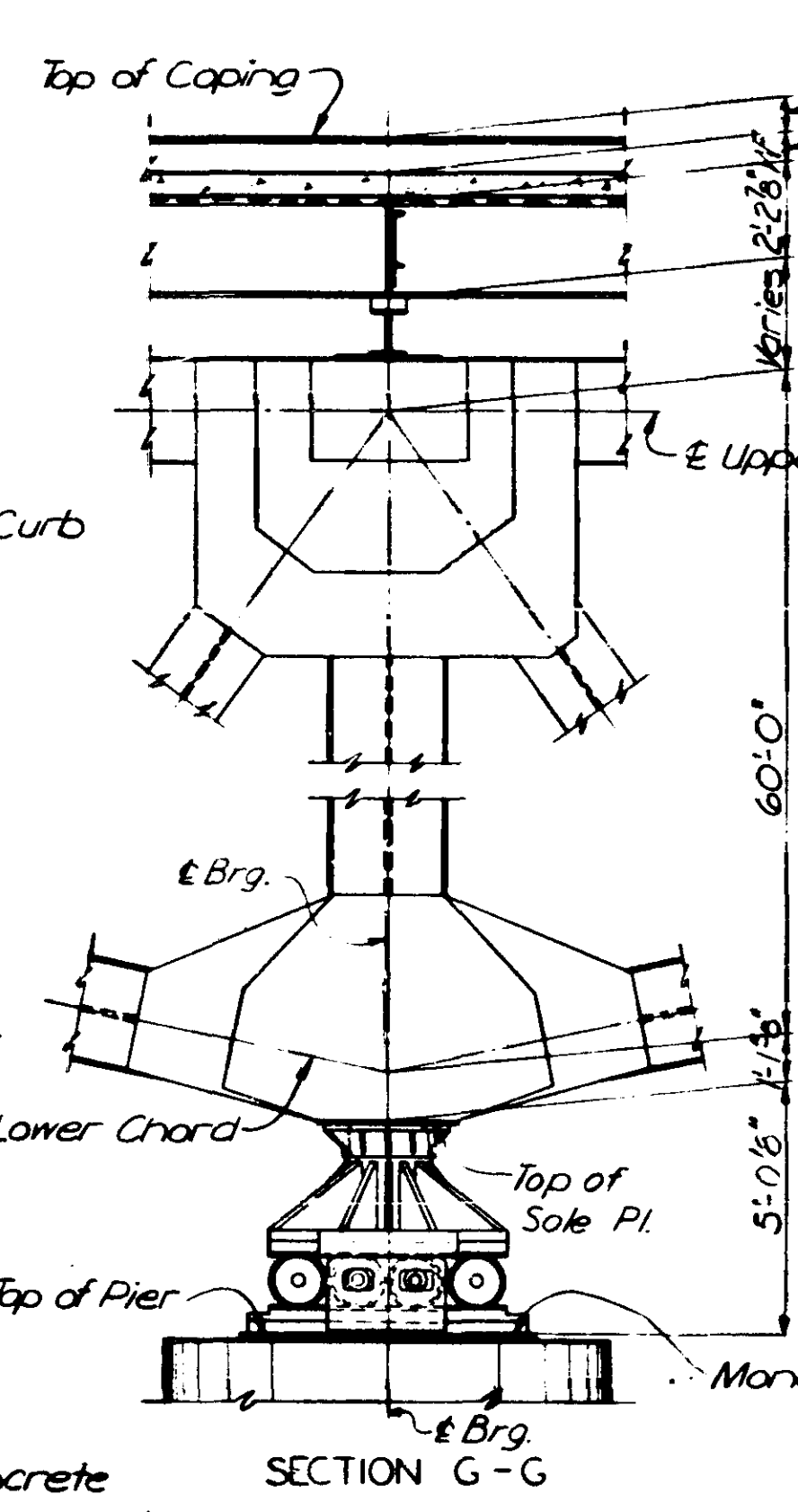
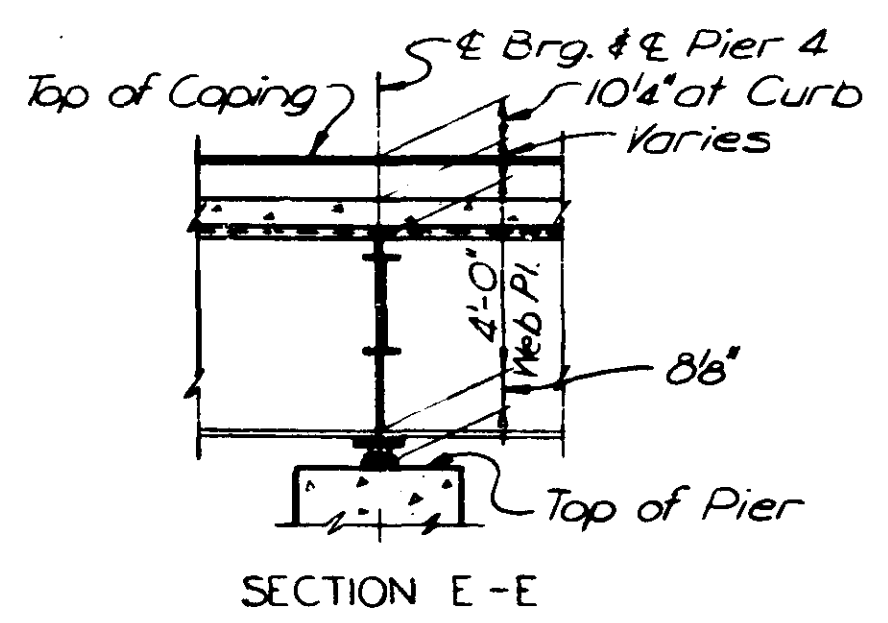
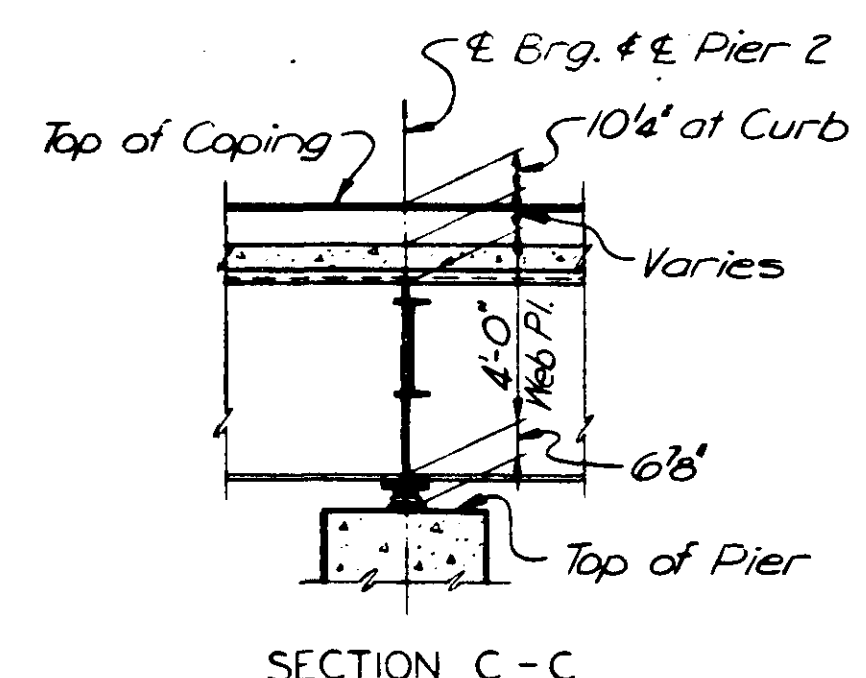
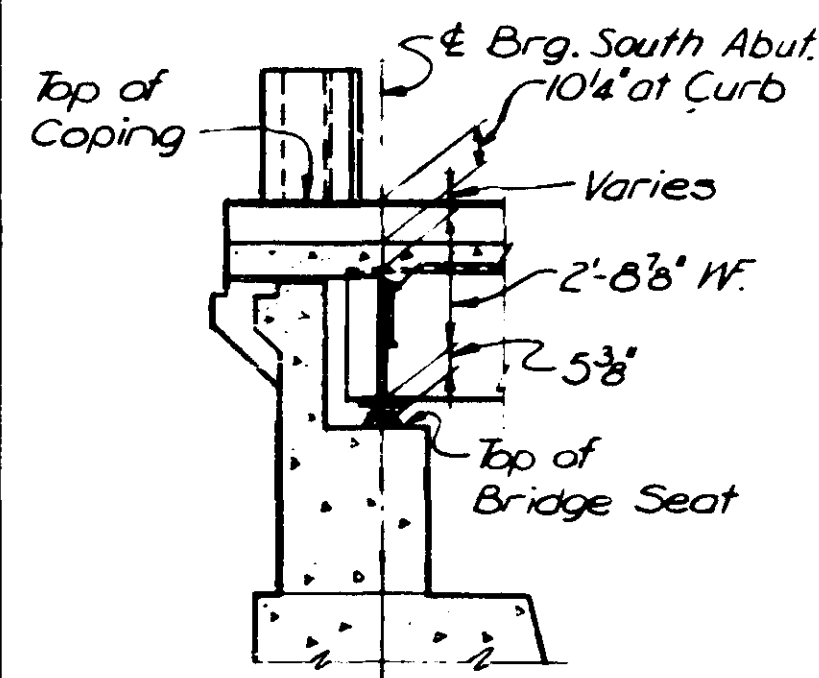
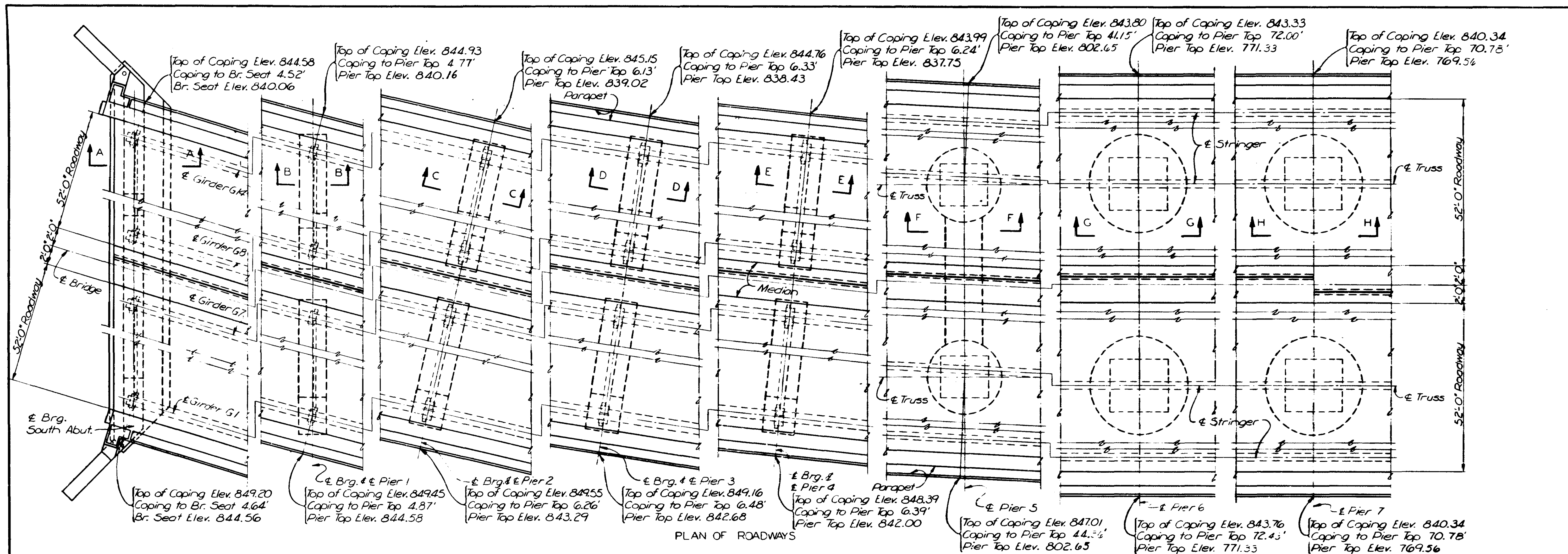
DESIGNED BY
 SVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

T. H. BOW
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

GENERAL NOTES
 AND QUANTITIES

APPROVED - 6-18-65



NOTES
Handrail not shown in plan.
Handrail and parapet not shown in sections.

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SVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

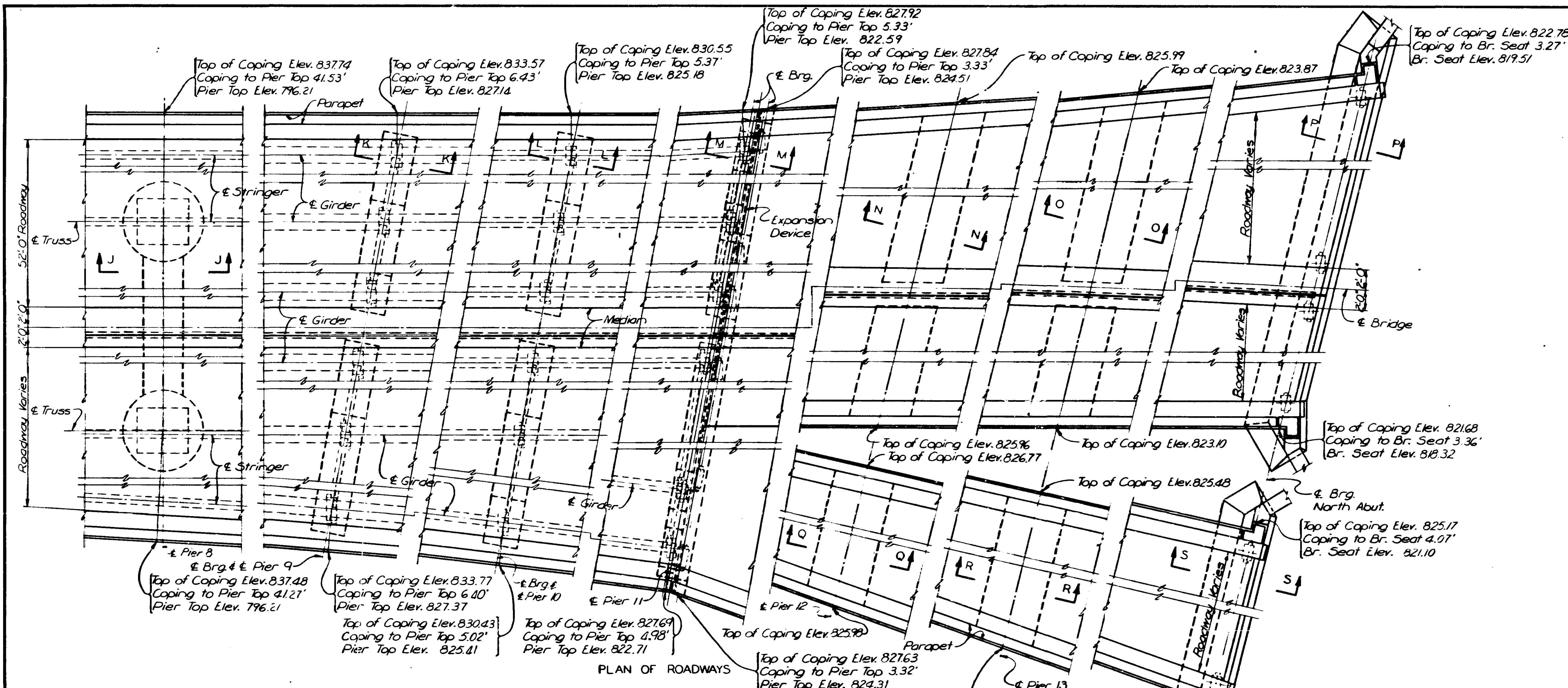
T. H. SHW
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

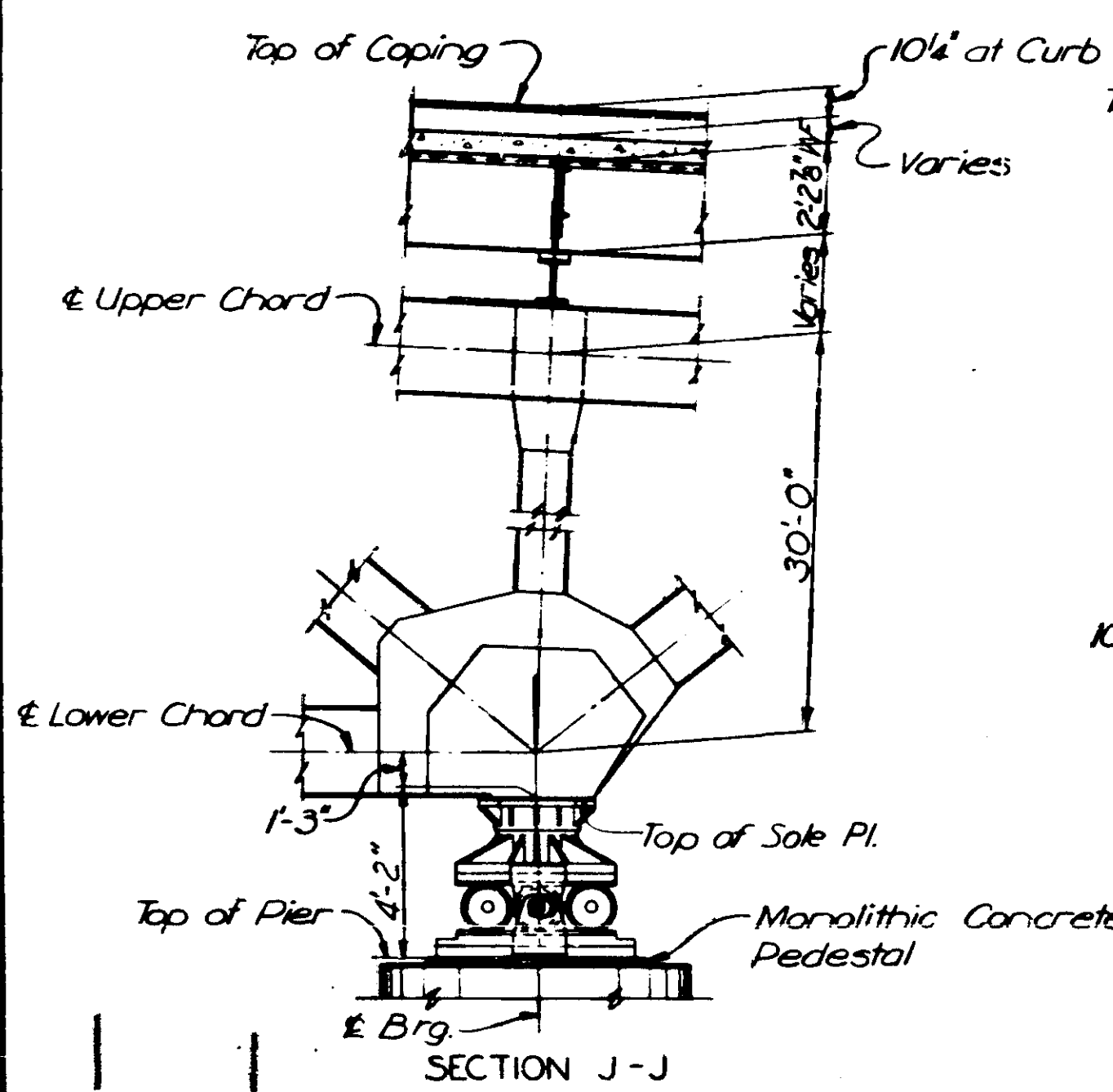
DECK DETAILS AT
PIERS AND ABUTMENTS

APPROVED - 6-18-65

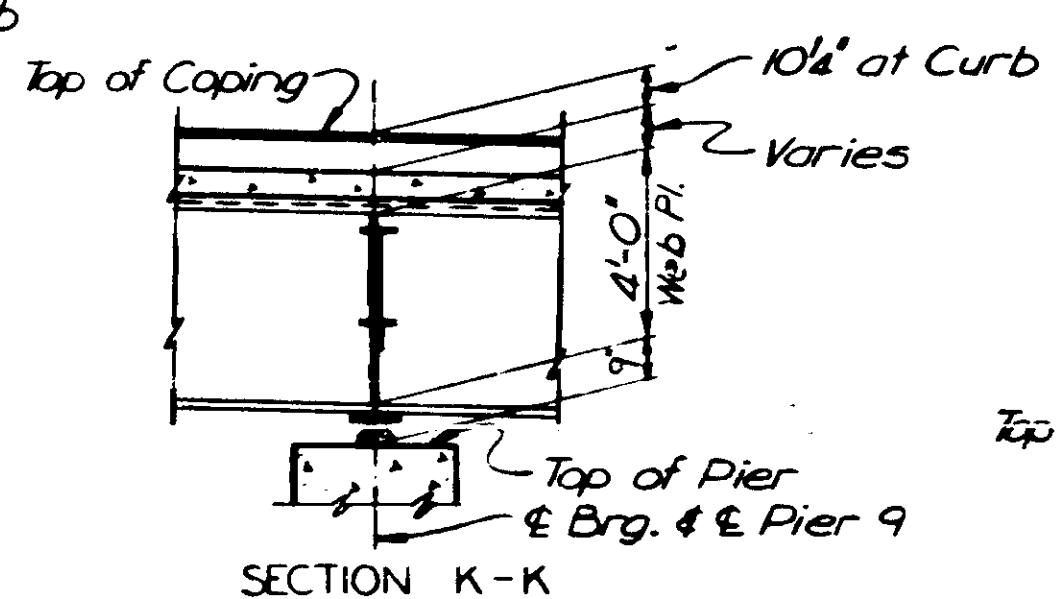
Drawn by: G. J. Doe, April 1964
Checked by: R. F. Beck, Sept. 1964
2083
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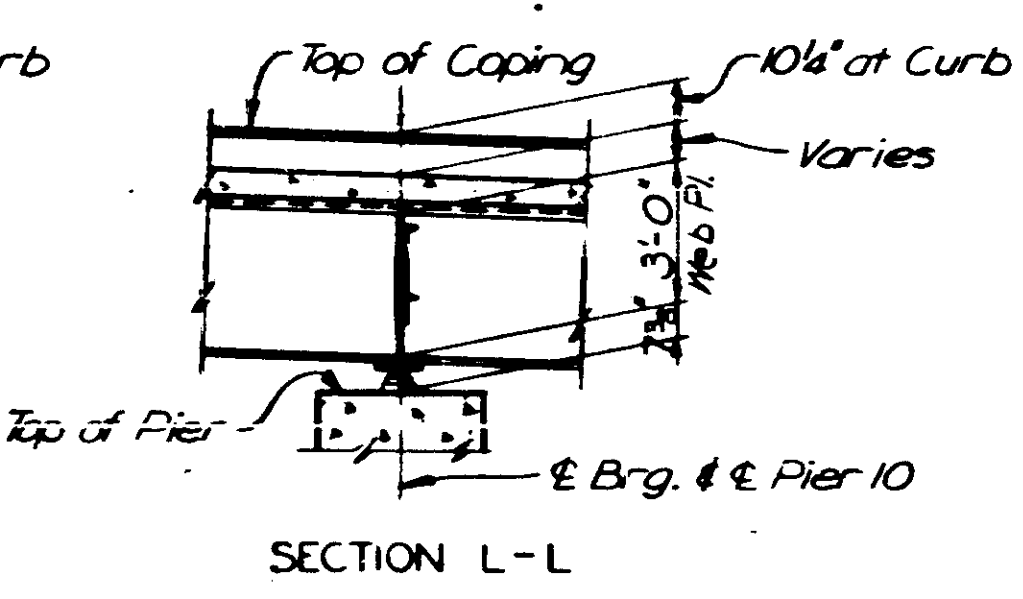
PLAN OF ROADWAYS



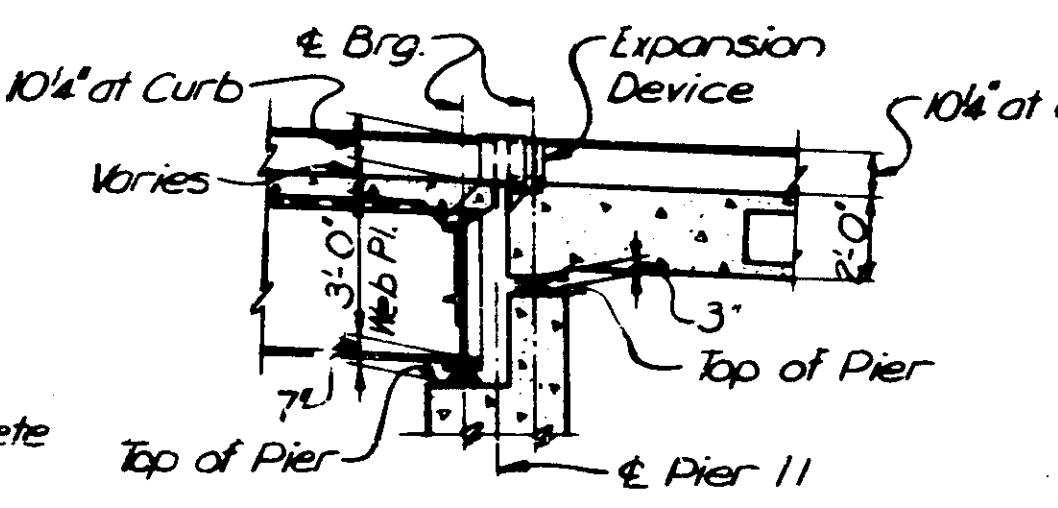
SECTION J-J



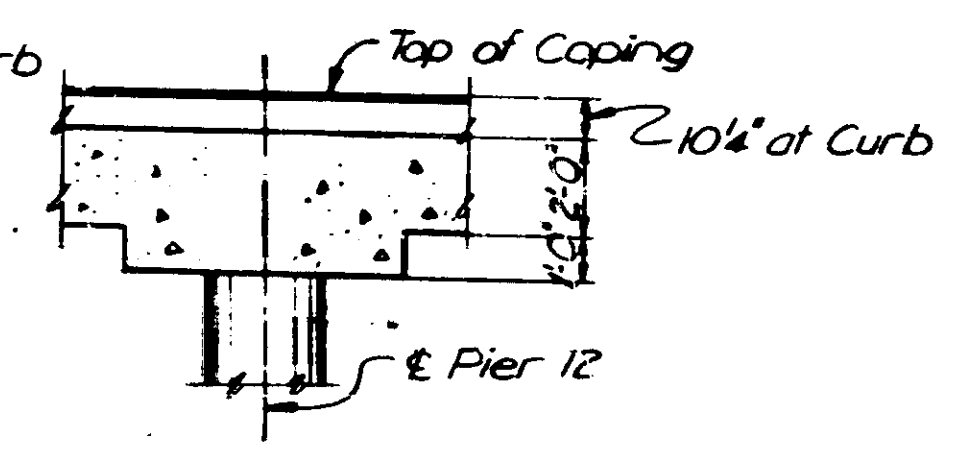
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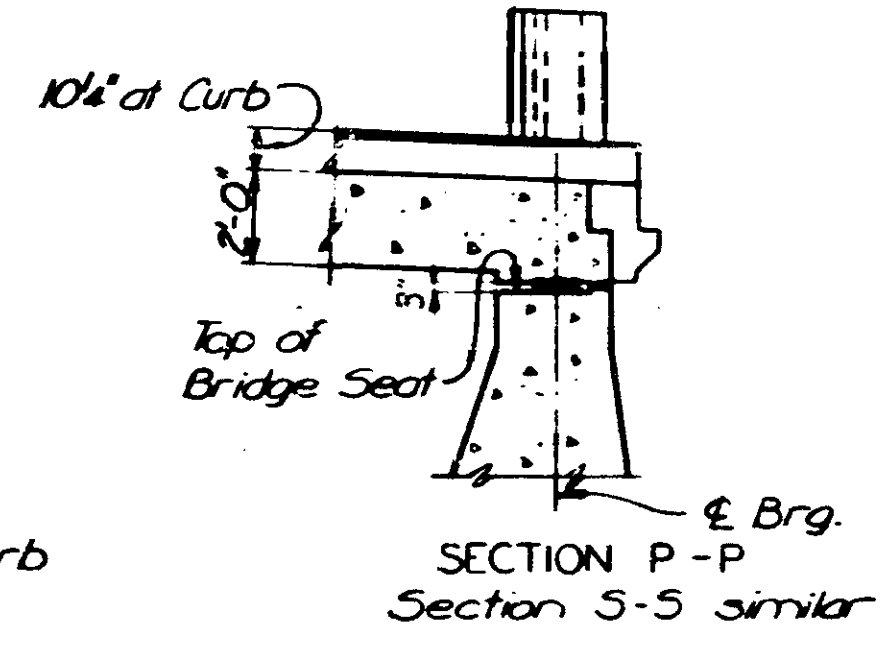
SECTION L-L



SECTION M-M



SECTION N-N
Section O-O, Q-Q and R-R are similar.



SECTION P-P
Section S-S similar

NOTES

Handrail not shown in plan.
Handrail and parapet not shown in sections.

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SVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

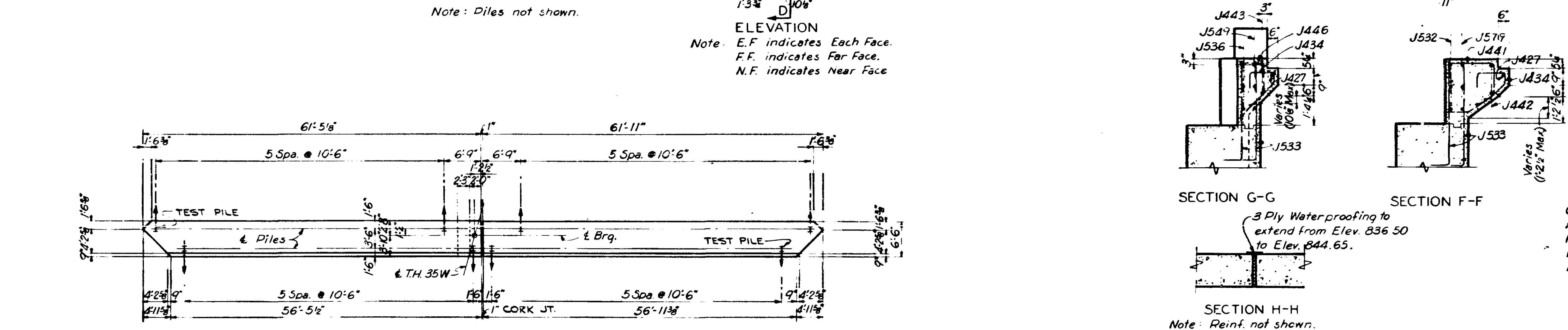
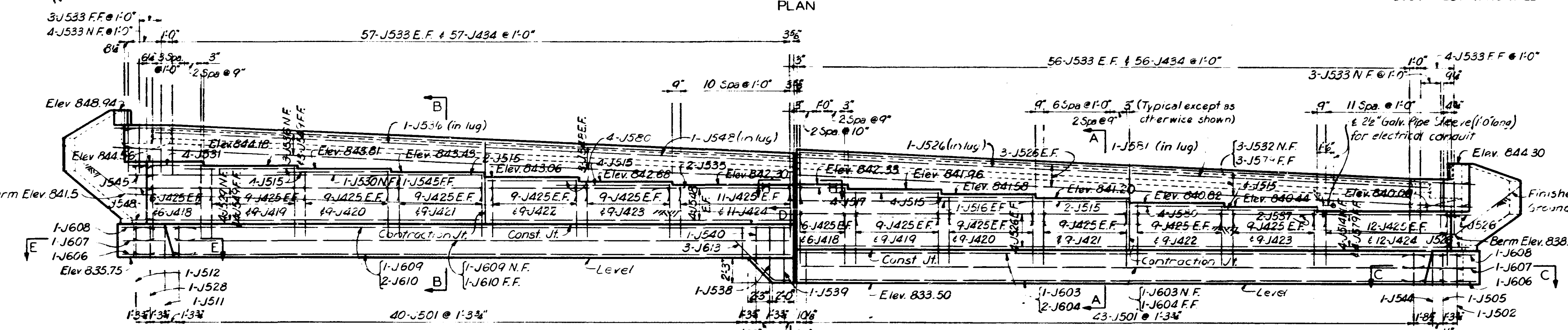
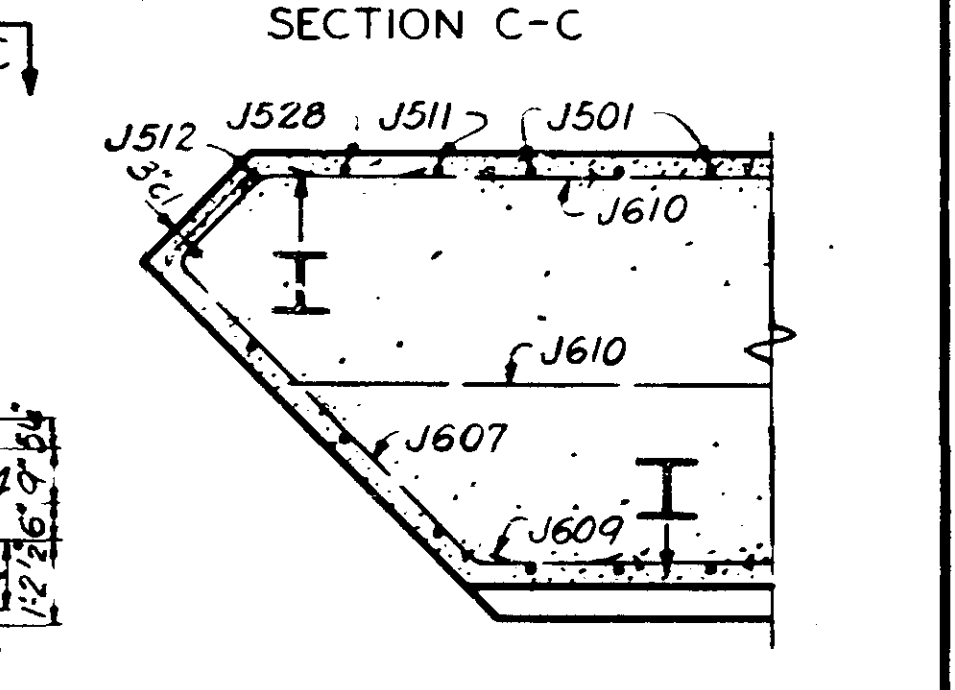
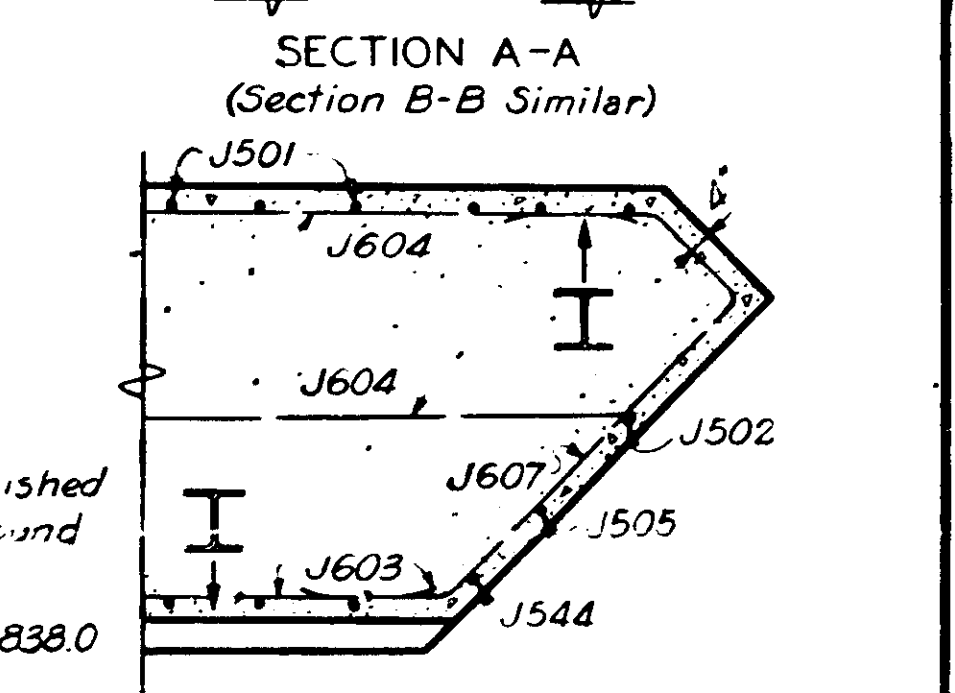
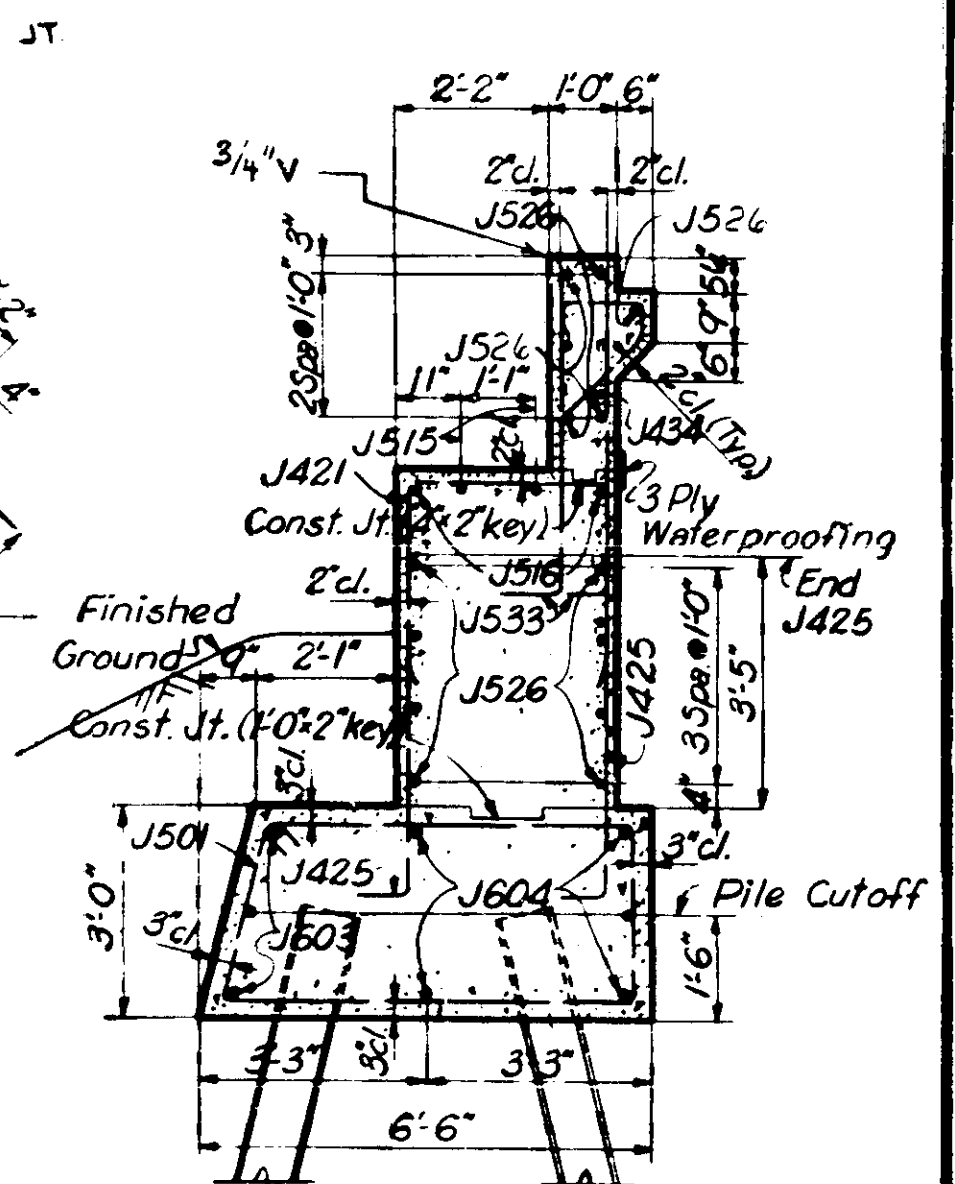
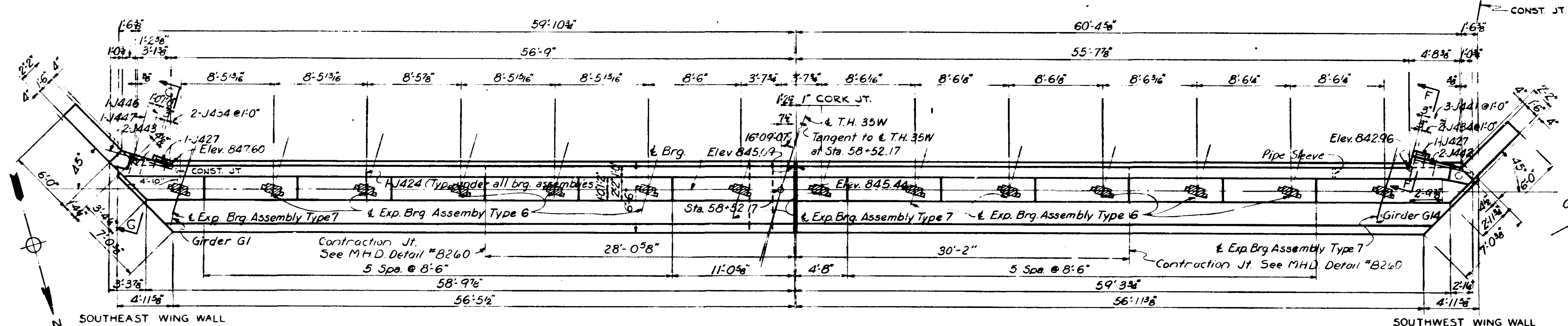
T. H. 35W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DECK DETAILS AT
PIERS AND ABUTMENTS

APPROVED - 6-18-65

Drawn by: G. J. Dee, April 1964
 Checked by: R. F. Beck, Sept. 1964
 2083
 645289

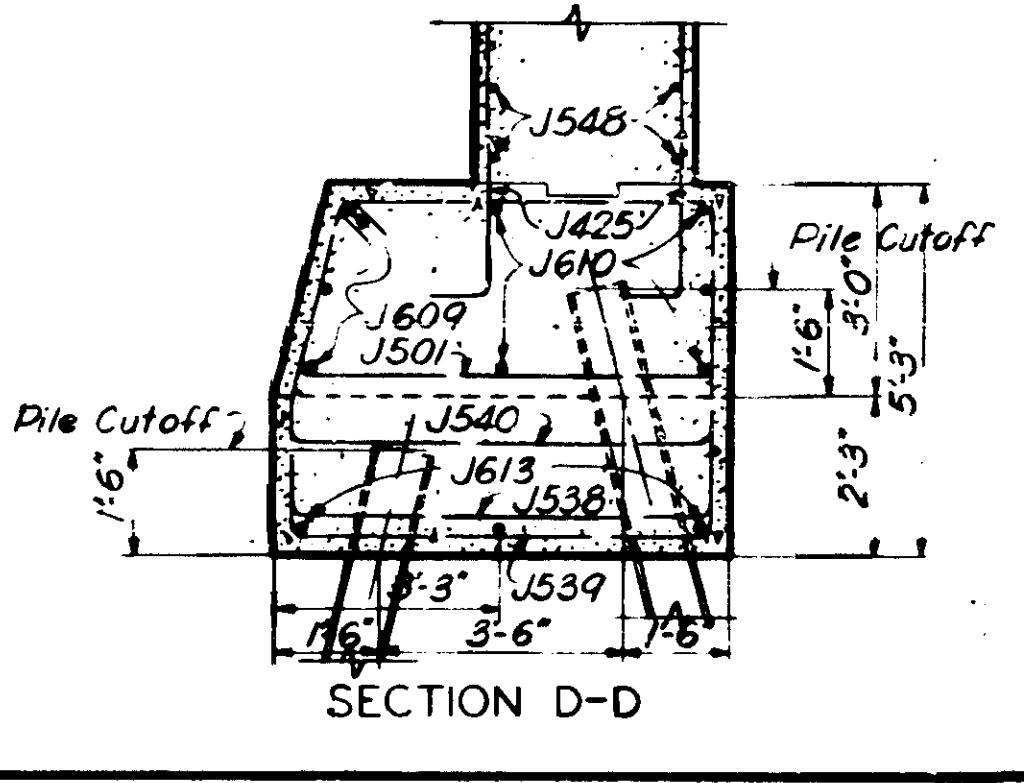
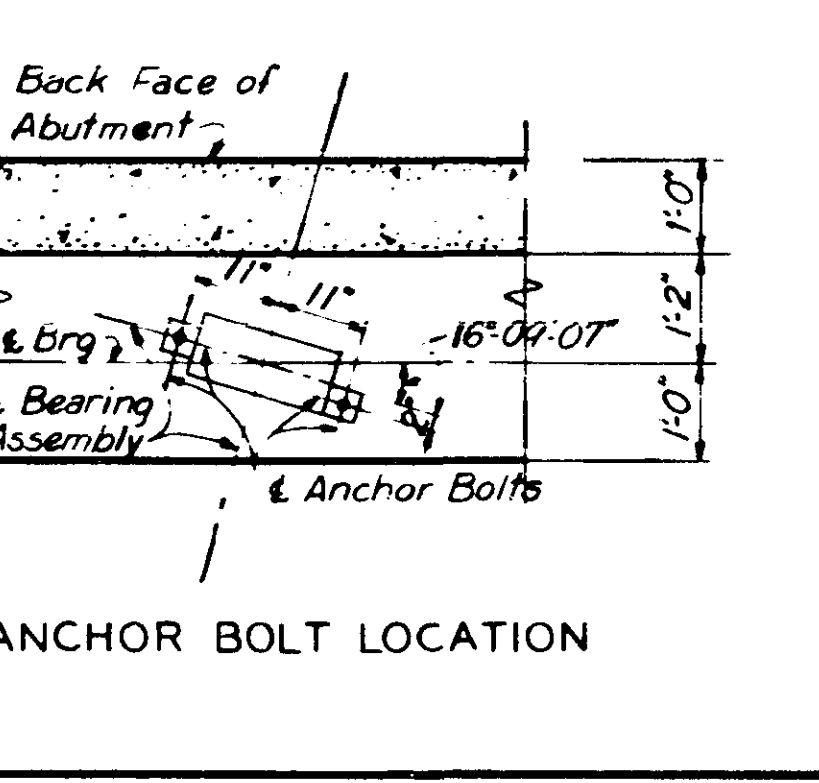


NOTES
 Concrete in footing to be Mix 1A6.
 All other concrete in Abutment to be Mix 2VE.
 For details of wing walls see Sheet 6.
 For summary of quantities and bill of reinforcement see Sheet 6.

Pile Notes
 2 Steel Test Pile, 55 feet long
 11 Steel Piles, est. length 49 feet
 11 Steel Piles, est. length 47 feet
 24 Steel Piles req'd for South Abutment
 All piles to be 10BP42.
 Estimated penetration 1 foot less than length given.
 All Piles to be driven to a minimum bearing of 55 tons per pile.
 Piles marked thus → to be battered 3 in 12 in direction shown.
 Pile spacing shown is measured at bottom of footing.
 For pile splice see M.H.D. Detail "B221."

Computed Pile Loads	Tons / Pile
Dead Load	20
Live Load	8
Overturning	6
Total	34

Note: Bridge seat reinf. shall be carefully placed to avoid interference with drilling holes for anchor bolts. The superstructure beams shall be erected in final position prior to drilling holes for and placing anchor bolts.



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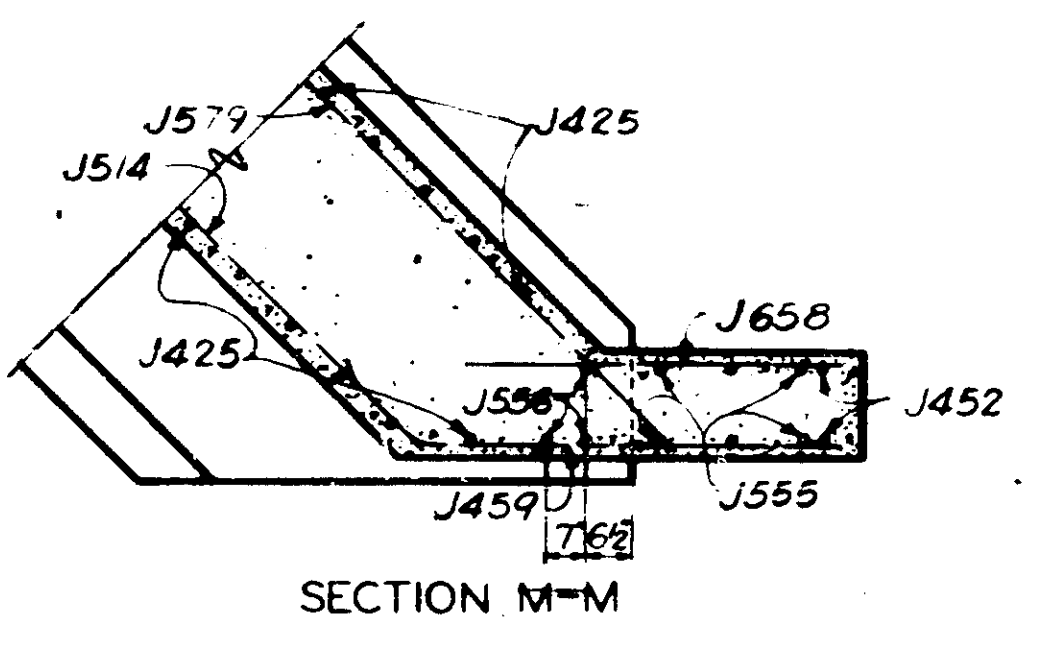
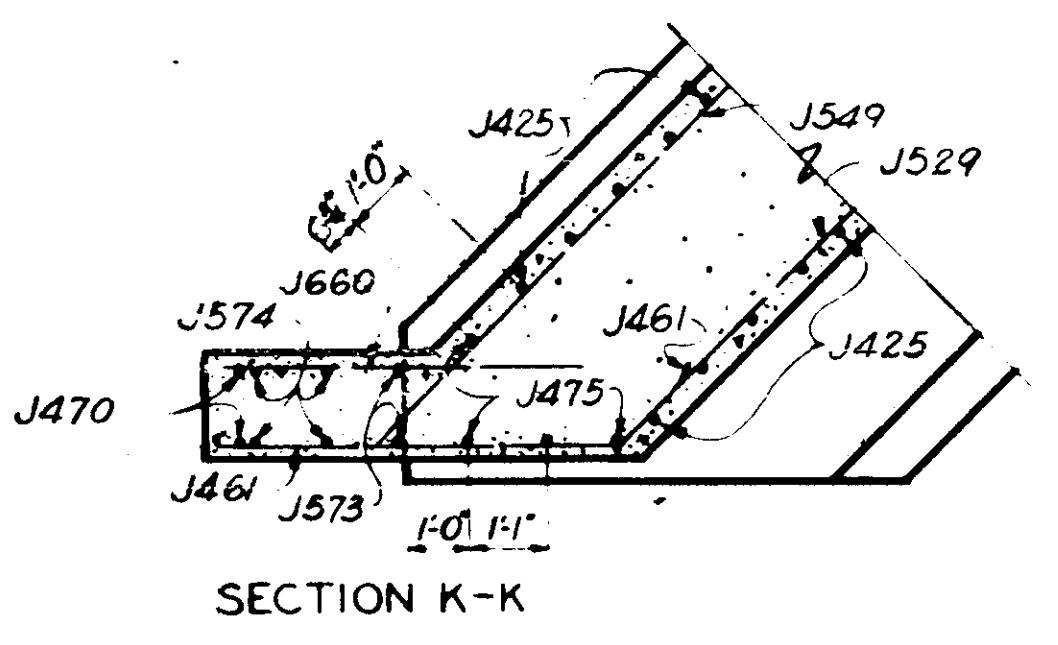
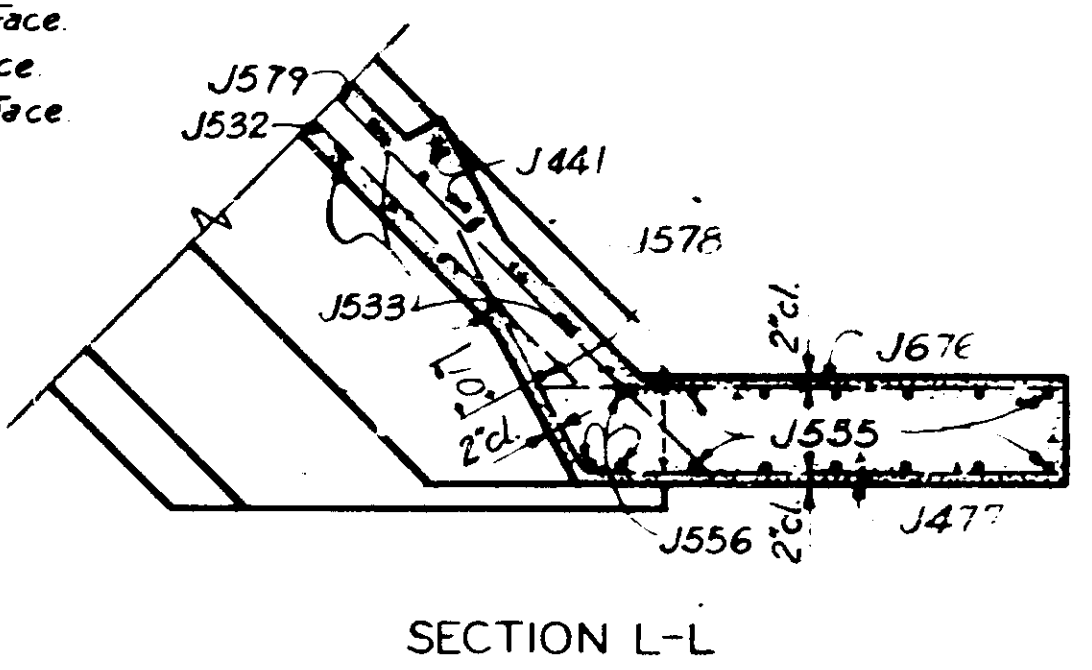
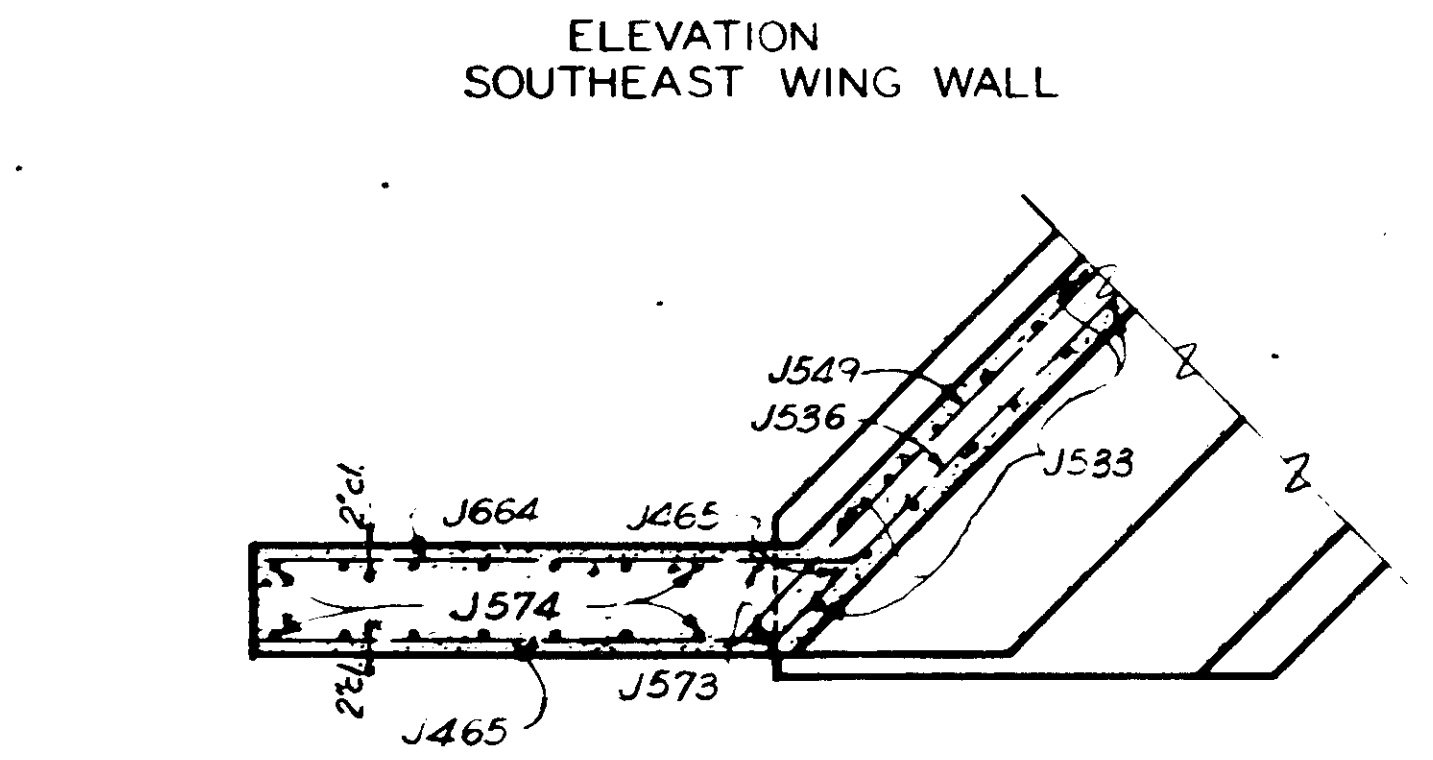
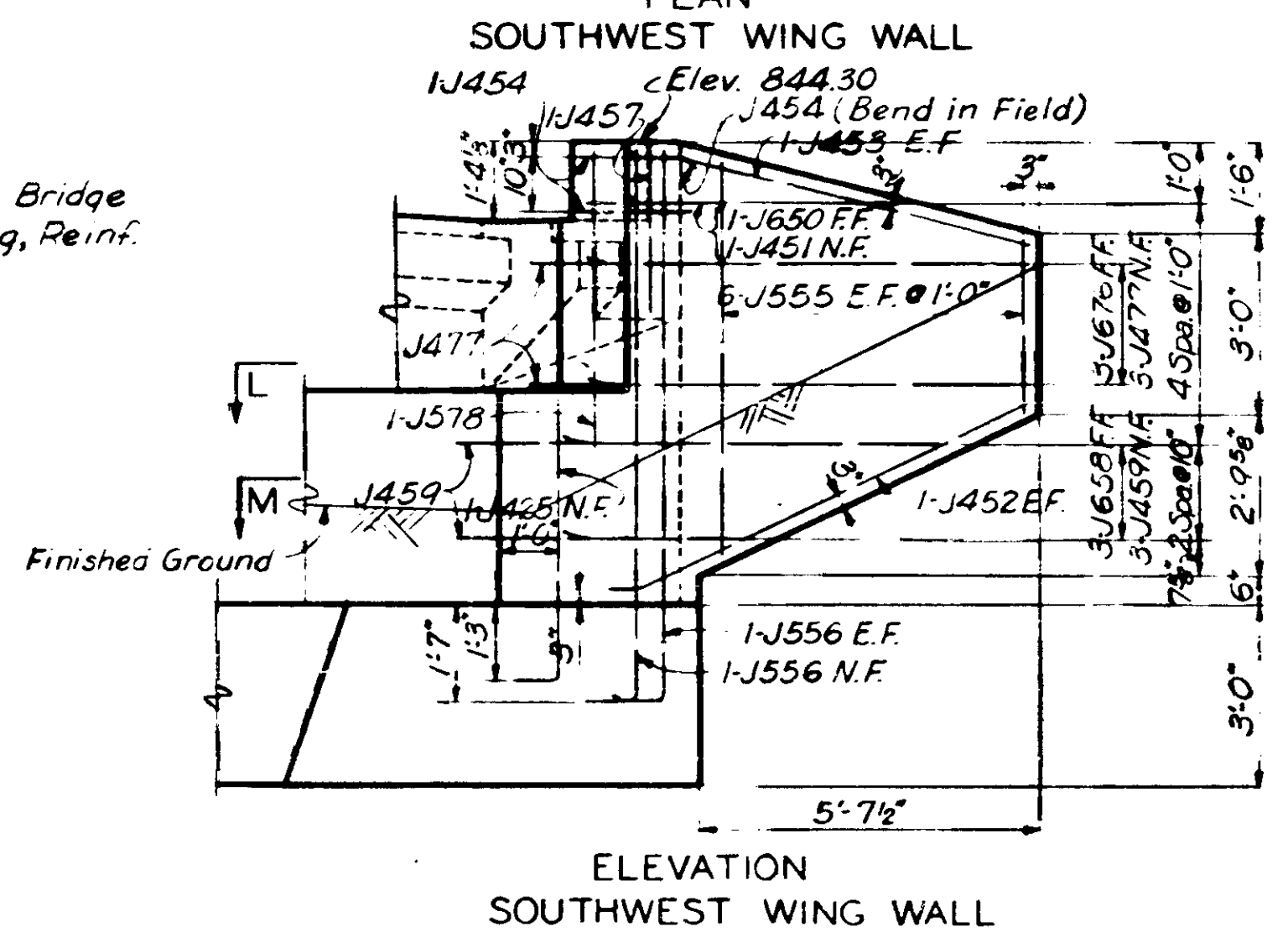
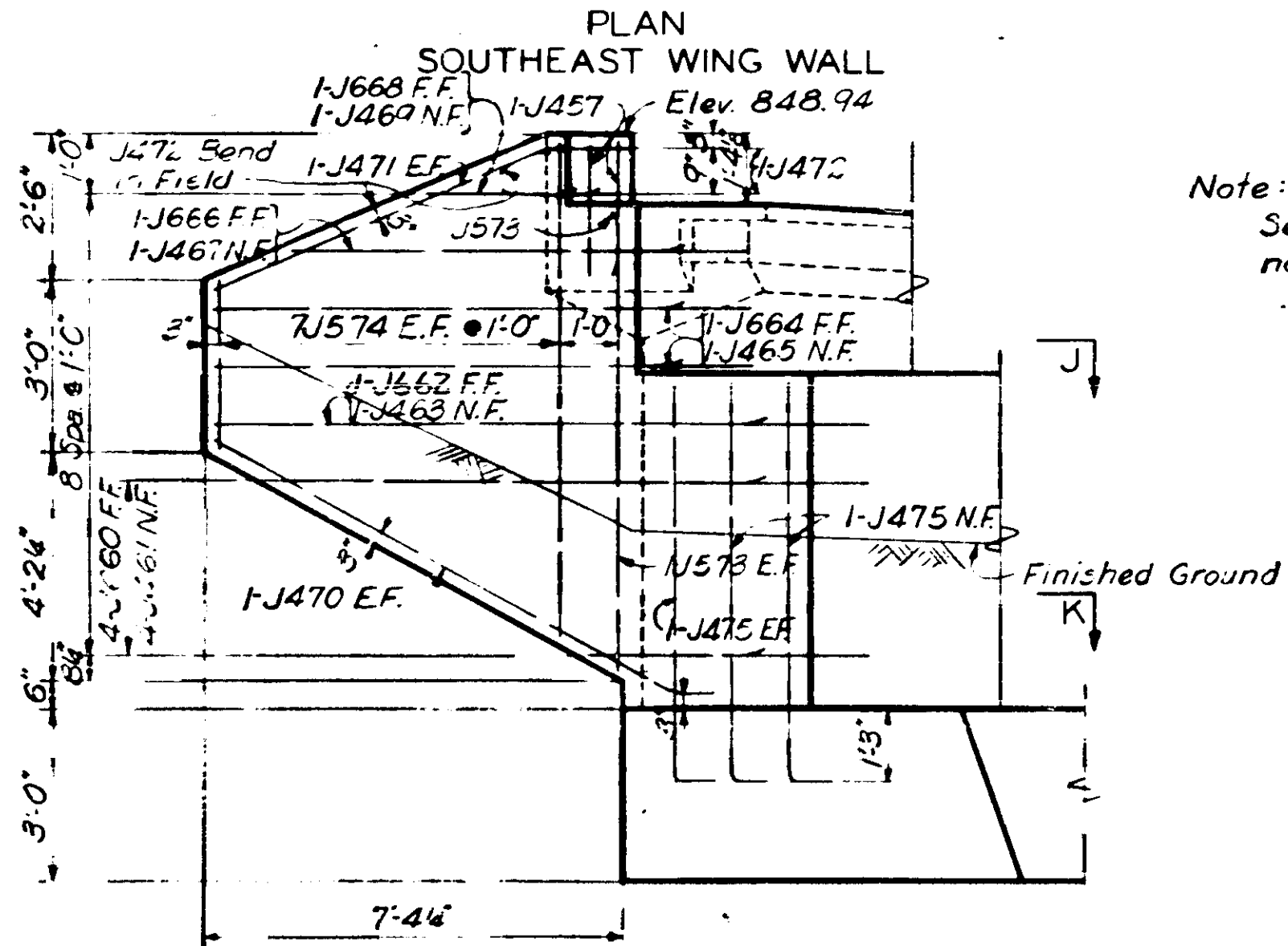
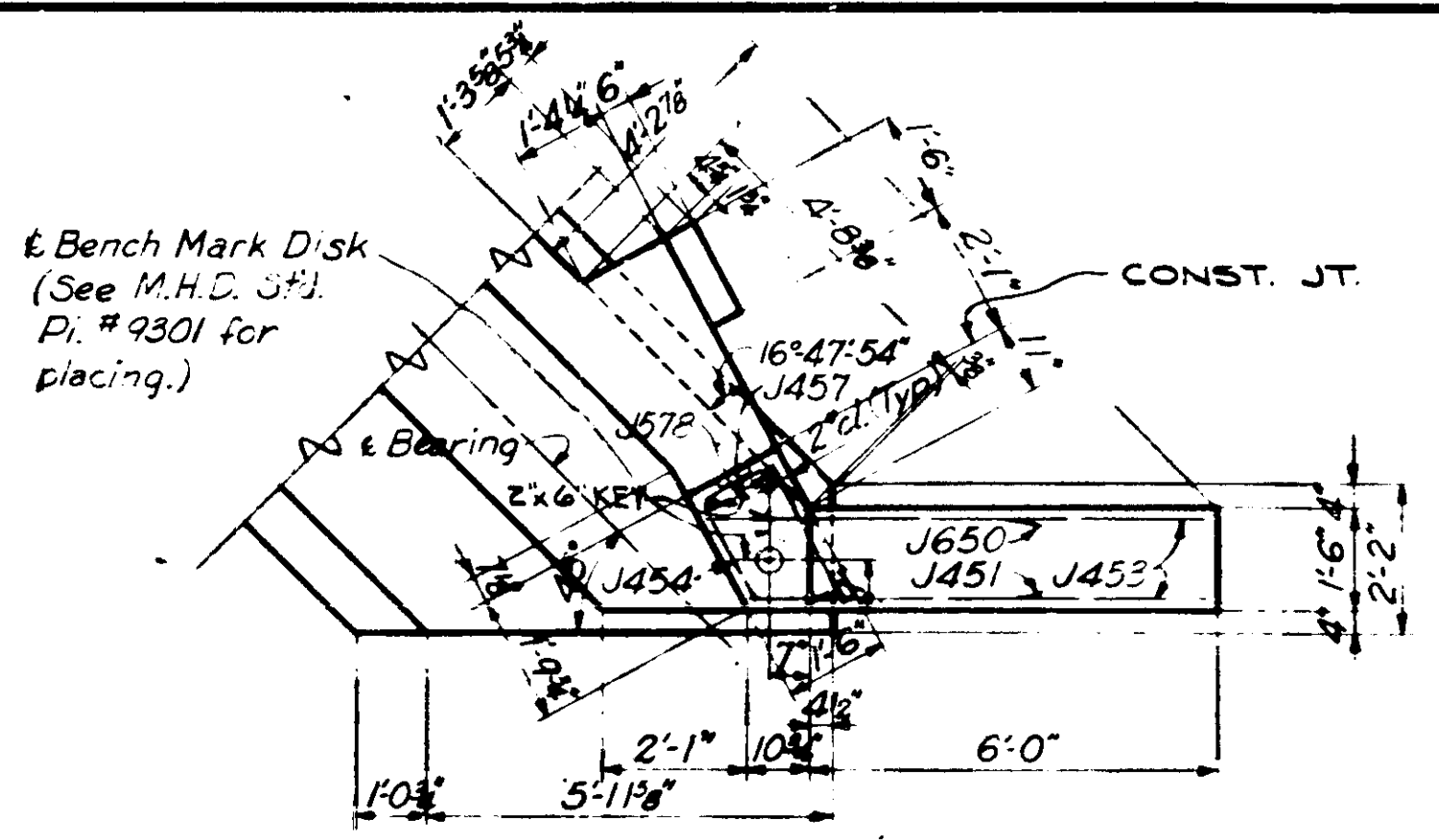
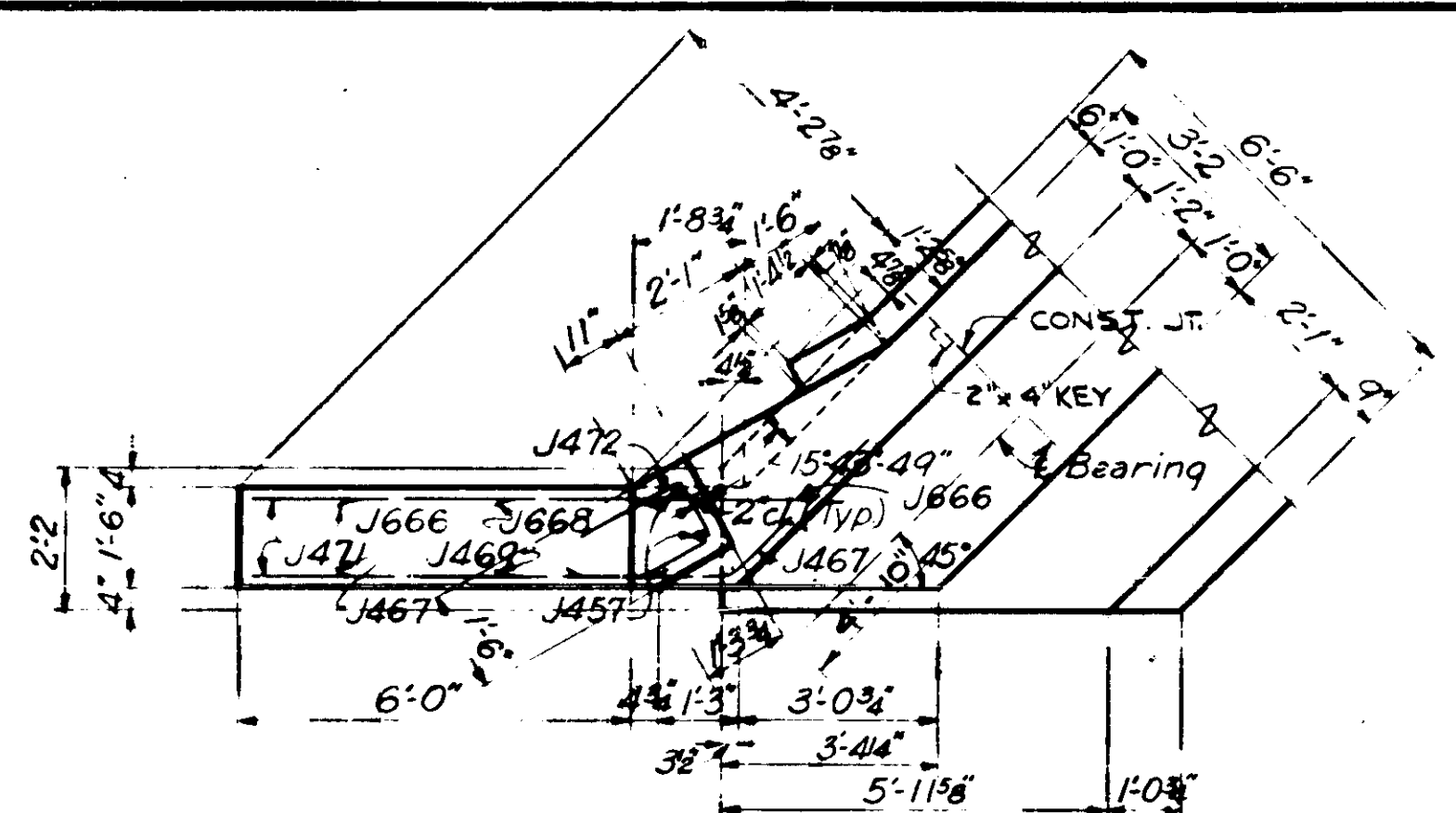
BRIDGE NO. 9340

SOUTH ABUTMENT

APPROVED - 6-18-65

Drawn by: A. Myers, Feb. 1964
 Checked by: R. F. Beck, June 1964
 2083
 64513

Drawn by: A. Myers, April, 1964
 Checked by: R.F. Beck, May 1964
 2083
 643191



BILL OF REINFORCEMENT FOR SOUTH ABUTMENT

Mark	Length	Shape	Location	Mark	Length	Shape	Location
J501	18.3"	Str.	Footing	J441	3"	Str.	Backwall
J502	17.4"	Bent	do	J442	2"	Str.	do
J503	12.0"	Bent	do	J443	2"	Str.	do
J504	26.6"	Str.	do	J444	2"	Str.	do
J505	59.10"	Str.	do	J445	1"	Str.	Footing
J506	14.6"	Bent	do	J446	1"	Str.	Bridge Seat
J507	12.1"	Bent	do	J447	1"	Str.	Backwall
J508	11.1"	Bent	do	J448	1"	Str.	do
J509	11.9"	Bent	do	J449	13"	Str.	Br Seat & Bkwall
J510	59.0"	Str.	do	J450	7"	Str.	do
J511	16.0"	Bent	do	J451	1"	Str.	Wing Wall
J512	11.0"	Bent	do	J452	1"	Str.	do
J513	6.9"	Bent	do	J453	2"	Str.	do
J514	29.1"	Str.	Bridge Seat	J454	2"	Str.	do
J515	9.11"	Str.	do	J455	12"	2 of 3 Bars	2.9" to 6.6"
J516	29.10"	Str.	do	J456	3"	Str.	do
J517	4.4"	Str.	do	J457	3"	Str.	do
J518	9.10"	Bent	do	J458	2"	Str.	do
J519	9.2"	Bent	do	J459	3"	6 of 3 Bars	3.0" to 6.4"
J520	8.4"	Bent	do	J460	3"	6 of 3 Bars	5.5" to 8.6"
J521	7.8"	Bent	do	J461	4"	6 of 4 Bars	3.0" to 8.8"
J522	6.10"	Bent	do	J462	1"	Str.	do
J523	6.1"	Bent	do	J463	1"	Str.	do
J524	3.4"	Bent	do	J464	2"	Str.	do
J525	5.4"	Bent	do	J465	2"	Str.	do
J526	29.11"	Str.	Br Seat & Bkwall	J466	1"	Str.	do
J527	1.2"	Str.	Backwall	J467	1"	Str.	do
J528	13.6"	Bent	Footing	J468	1"	Str.	do
J529	3.5"	Str.	Bridge Seat	J469	1"	Str.	do
J530	30.5"	Str.	do	J470	2"	Str.	do
J531	5.0" to 7.10"	Str.	do	J471	2"	Str.	do
J532	30.8"	Str.	Backwall	J472	2"	Str.	do
J533	5.7"	Bent	do	J473	2"	Str.	do
J534	4.1"	Bent	do	J474	14"	2 of 7 Bars	2.9" to 8.5"
J535	12.6"	Str.	Bridge Seat	J475	4"	Str.	do
J536	3.0"	Str.	Backwall	J476	3"	Str.	do
J537	15.6"	Str.	Bridge Seat	J477	3"	Str.	do
J538	2.7"	Bent	Footing	J478	1"	Str.	do
J539	21.11"	Bent	do	J479	1"	Str.	Br Seat & Bkwall
J540	18.11"	Bent	do	J480	8"	Str.	Bridge Seat
				J481	1"	Str.	Back wall

SUMMARY OF QUANTITIES FOR SOUTH ABUTMENT

Structure Excavation (Class UE)	735 CuYd
10 BFD2 Steel Test Piles in Place (55' long) 2 Pile	
10 BFD2 Steel Piling Delivered	44352 Lbs.
Reinforcement Bars	9570 Lbs.
Concrete Mix 46	83 CuYd
Concrete Mix 316	87 CuYd
3 Ply Joint Waterproofing	115 Lin.Ft.
1 Bench Mark Disk (Sta. Pl. #9300)	
28-14 Anchor Bolts (Included in Bearing Assemblies)	
CORK JOINT FILLER	

Exclusive of Test Pile.
 State will furnish disk. Payment for placing disk will be included in price bid for other items.
 TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
 SEE CORK JOINT FILLER SUMMARY ON SHEET 63

Mark	A	B
J425	8 1/4"	4'-8"
J433	10 1/4"	4'-3"
J556	10 1/4"	9'-3"
J475	8 1/4"	6'-11"

Mark	A	B
J502	2'-6"	3'-0"
J505	2'-6"	4'-3"
J511	2'-6"	5'-0"
J512	2'-6"	2'-6"
J422	2'-10"	2'-0"
J442	2'-10"	1'-7"
J443	2'-10"	1'-3"

Mark	A	B	C	D	E	F
J434	8 1/4"	1'-2"	7"	1'-8"	1'-2"	1'-2"
J446	8 1/4"	1'-4"	1'-5"	1'-10"	1'-4"	1'-4"
J447	8 1/4"	1'-7"	1'-5"	2'-3"	1'-7"	1'-7"

Mark	A	B	C	D
J613	5'-0"	1'-9"	3'-6"	3'-6"
J452	1'-3"	7'-3"	1'-12"	6'-8"
J453	9"	6'-0"	8 1/4"	2'-8"
J459	1'-3"	4'-2 1/2"	1'-3"	10'-2"
J461	1'-3"	3'-0"	1'-6"	10'-2"
J463	1'-3"	10'-6"	10'-2"	10'-2"
J464	1'-11"	8'-5"	1'-4"	1'-4"
J465	1'-3"	7'-3"	10'-2"	10'-2"
J466	1'-11"	7'-2"	1'-4"	1'-4"
J467	1'-3"	6'-2"	10'-2"	10'-2"
J470	1'-3"	9'-0"	1'-1"	7'-2"
J477	3'-8"	6'-7"	1'-8 1/2"	3'-3"

Mark	A	B	C	D
J604	6'-6"	1'-11"	1'-4 1/2"	1'-4 1/2"
J607	6'-0"	2'-3"	1'-7"	1'-7"
J608	5'-6"	2'-7"	1'-10"	1'-10"

NOTES
 Work this sheet with Sheet 5.

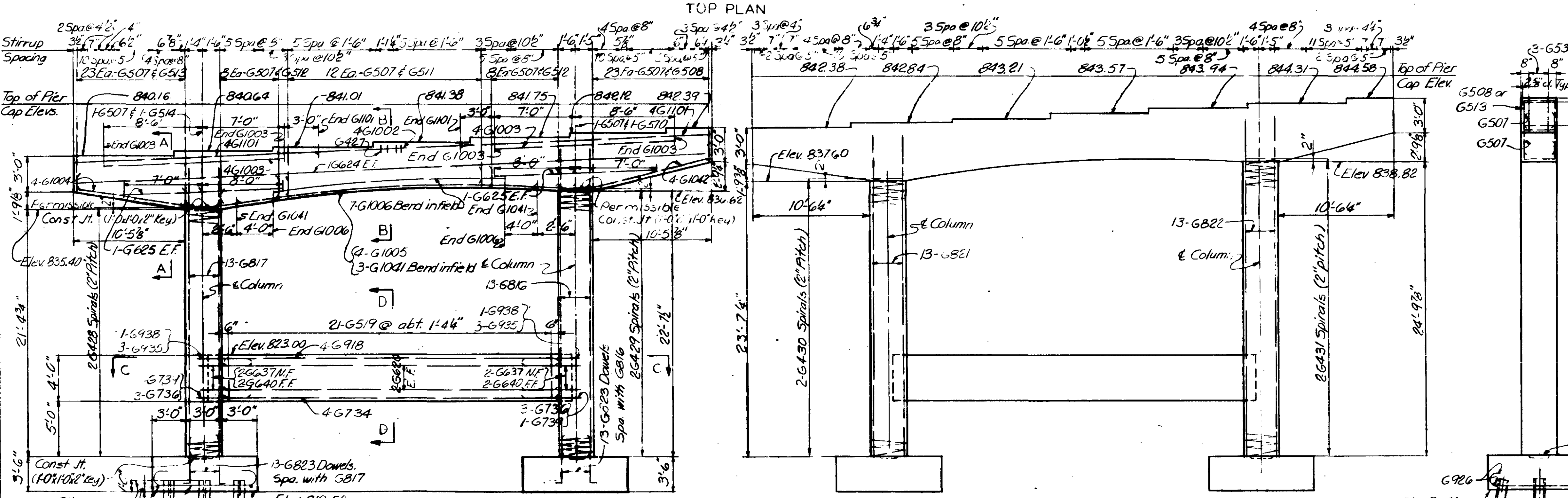
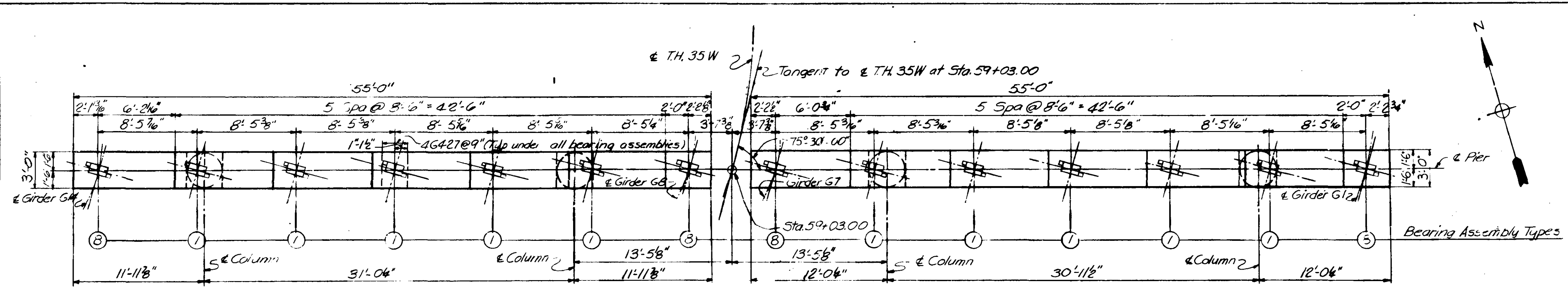
DESIGNED BY
 SVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

T. H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

SOUTH ABUTMENT

APPROVED - 6-18-65



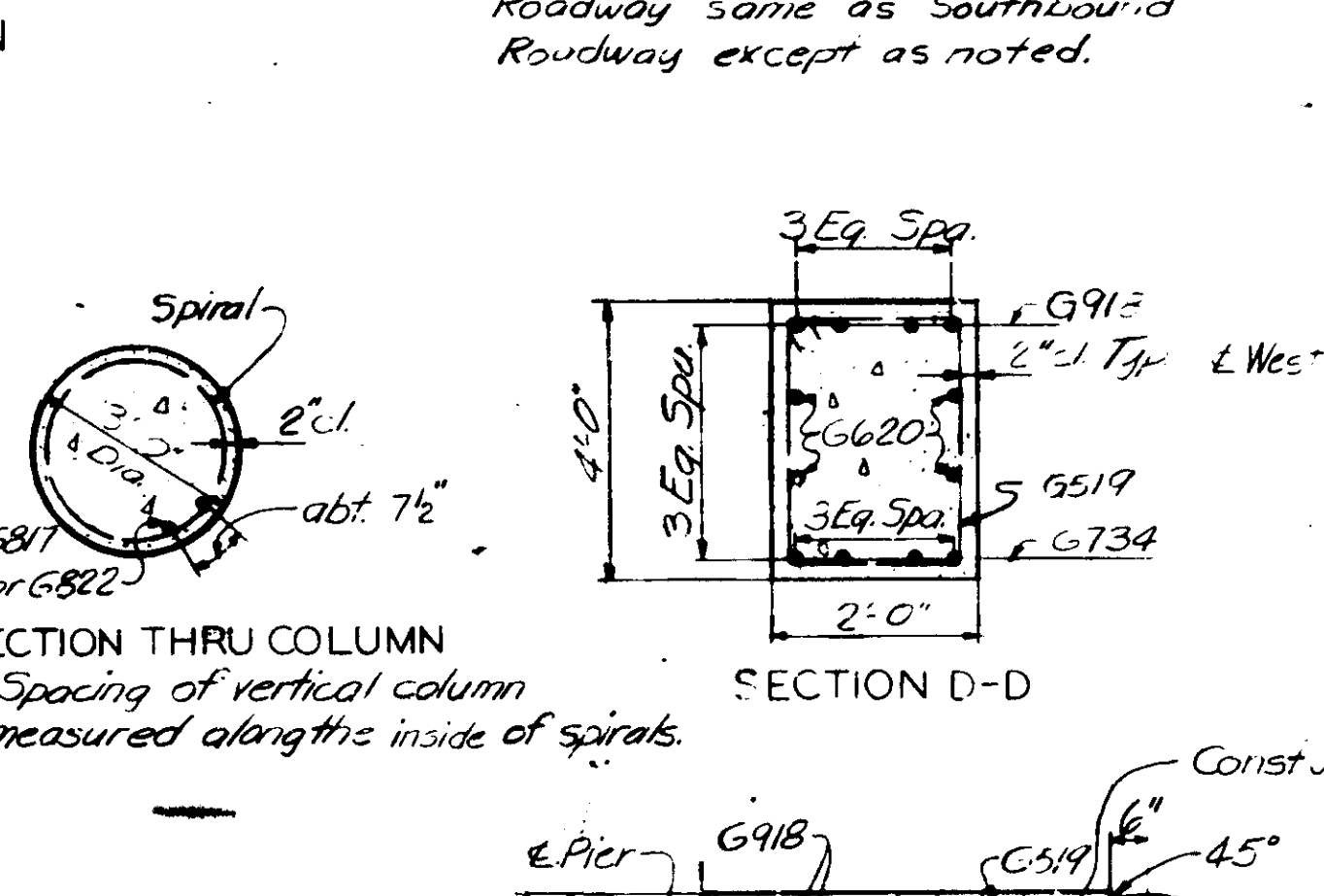
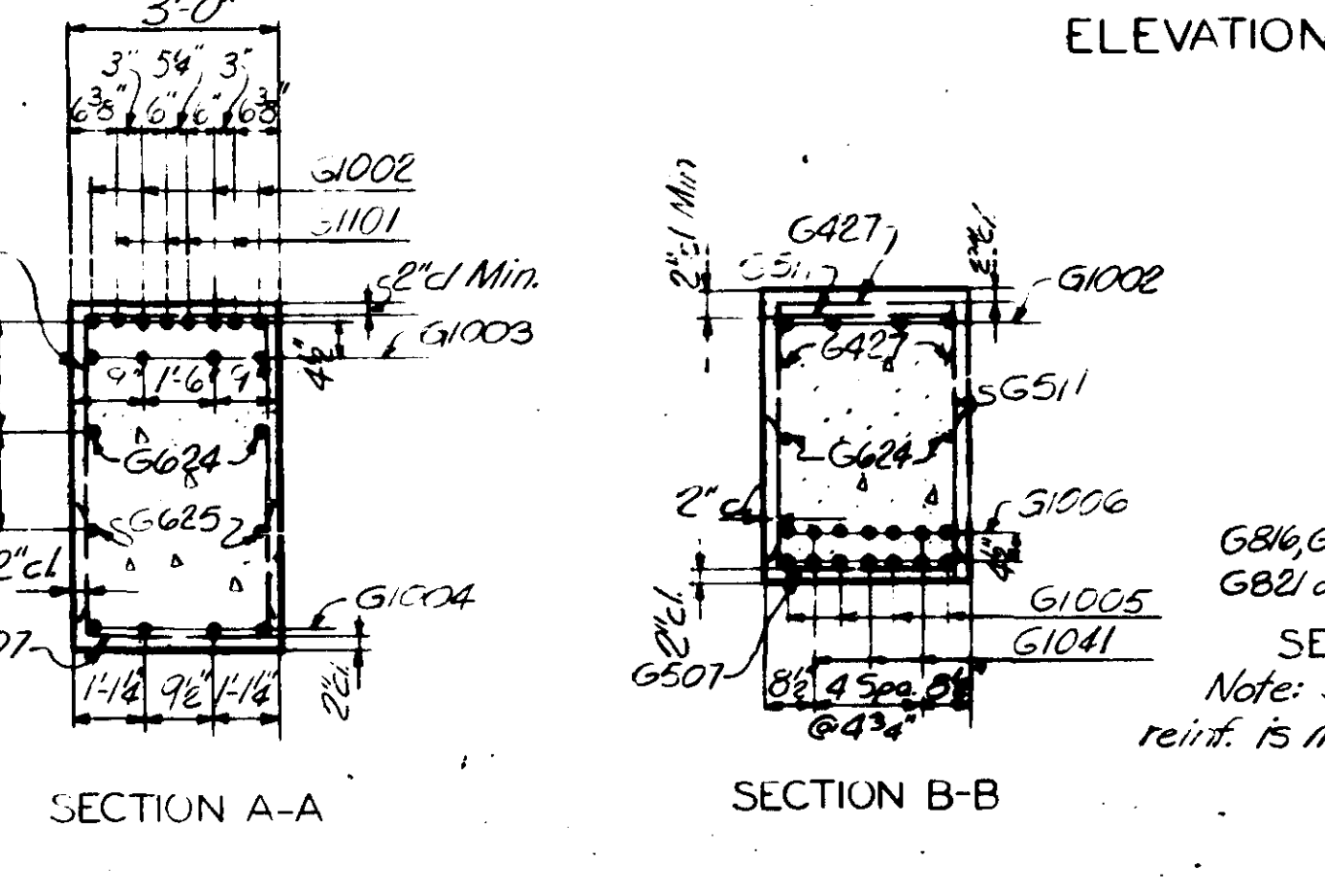
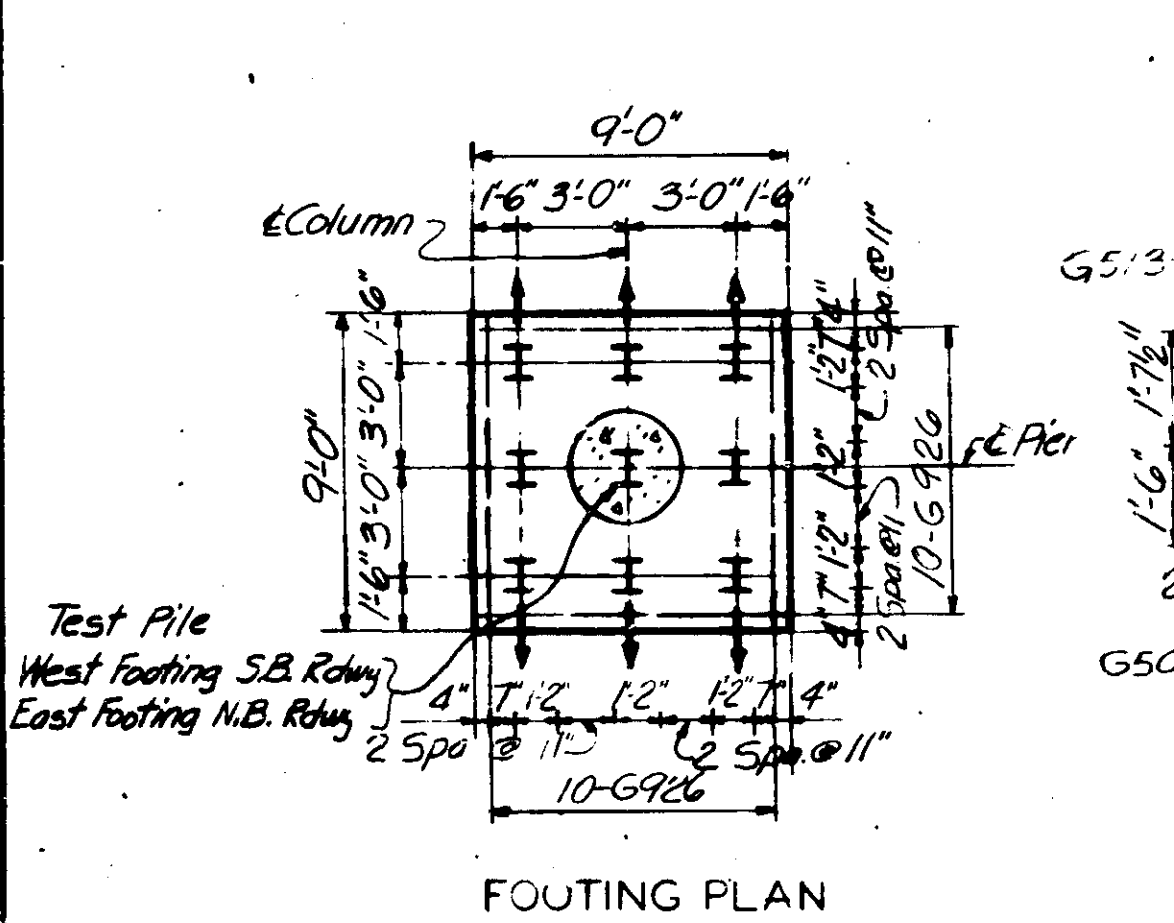
NOTE: Outside diameter of dowel circle to be 2" less than inside diameter of spiral reinf.

NOTE: Footing details shown are typical.

NOTE: E.F. indicates Each Face, S.B. indicates Southbound, N.B. indicates Northbound.

NOTE: Reinforcing and details for Northbound Roadway same as Southbound Roadway except as noted.

NOTE: Collision wall not shown.

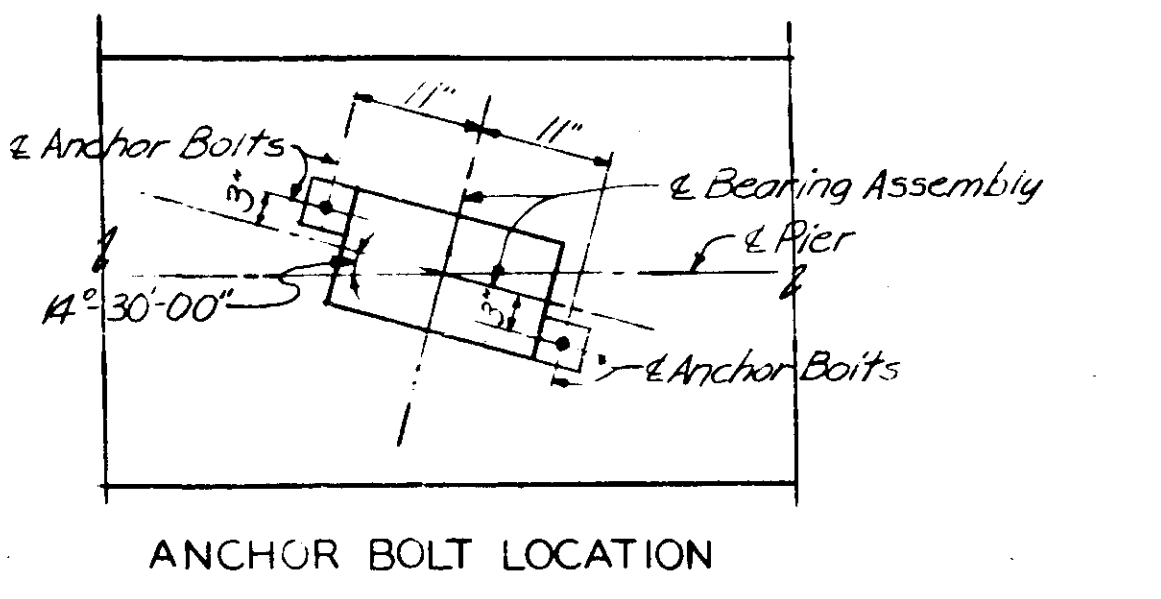


FOOTING PLAN

Pile Note:
 2 Steel Test Piles 30 feet long.
 34 Steel Piles, estimated length 84 feet
 36 Steel Piles reqd. for Pier 1
 All piles to be 10BP42
 Estimated penetration 1ft less than length given.
 Piling to be driven to a minimum bearing of 55 tons per pile.
 Piles marked thus → to be battered 2in/12 in direction shown.
 Pile spacing shown is measured at bottom of footing.
 For Pile splice see M.H.D. Detail "B221."

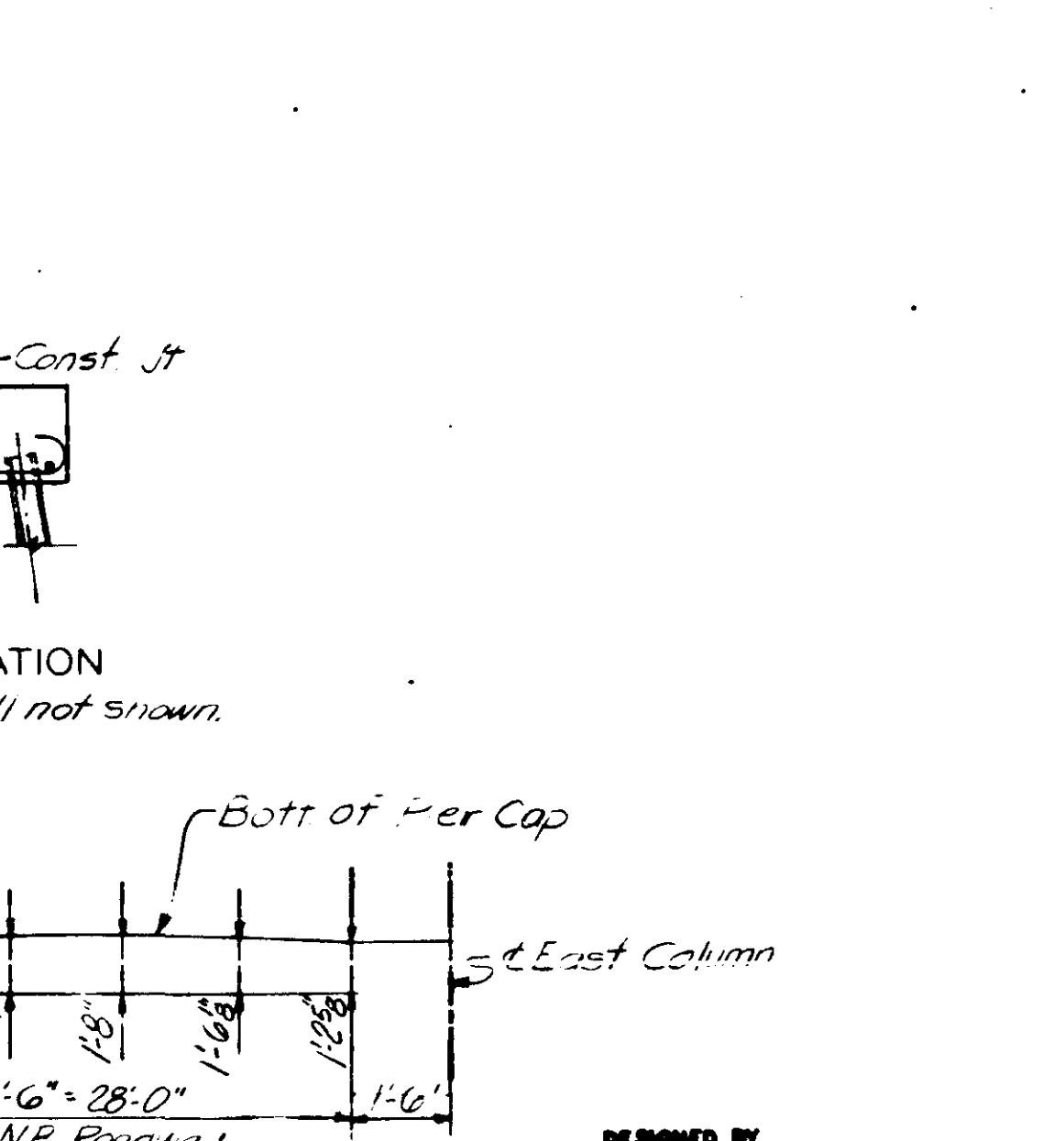
LOADS REDUCED BY 25% FOR GROUP III LOADING

Computed Pile Loads	Tons / Pile
Dead Load	25
Live Load	8
TOTAL	41



NOTES

Concrete in footings to be Mix 1A6.
 Concrete in columns, collision wall and pier cap to be Mix 316.
 The superstructure beams shall be erected in final position prior to drilling holes for and placing anchor bolts.
 Reinf. in pier caps shall be carefully placed to avoid interference with drilling holes for anchor bolts.
 Spirals shall be spliced by lapping with one another a min. of 2 complete turns.
 For bill of reinforcement and summary of quantities see Sheet 10.



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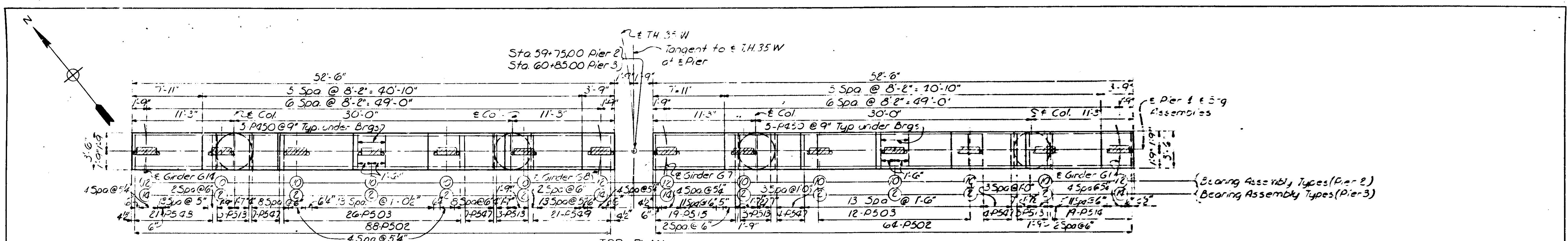
BRIDGE NO. 9340

MICRO-FILMED

PIER I

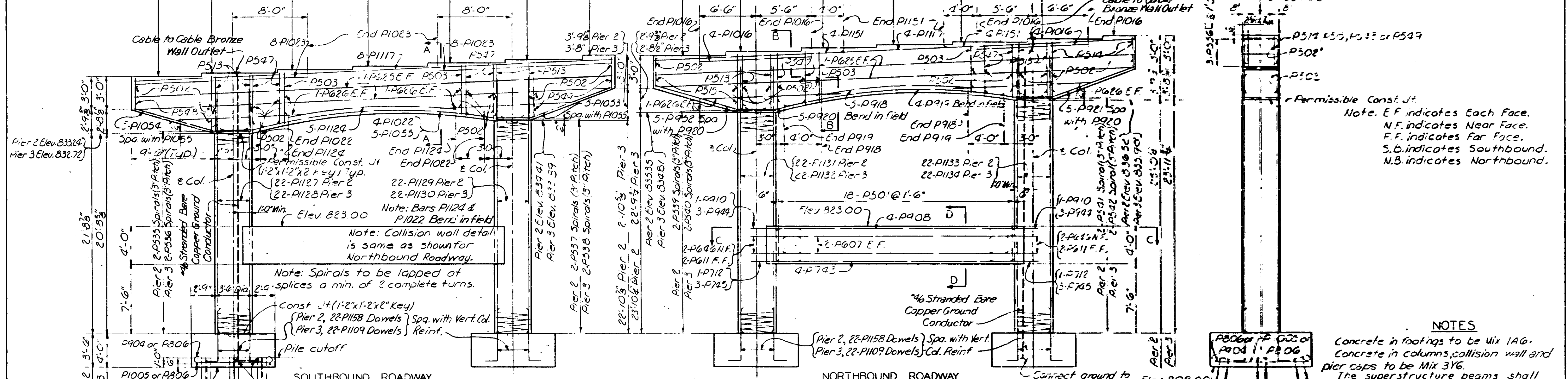
APPROVED - 6-18-65

Drawn by: J.L. Matthews, Feb. 1964
 Checked by: R.F. Beck, June 1964



TOP PLAN

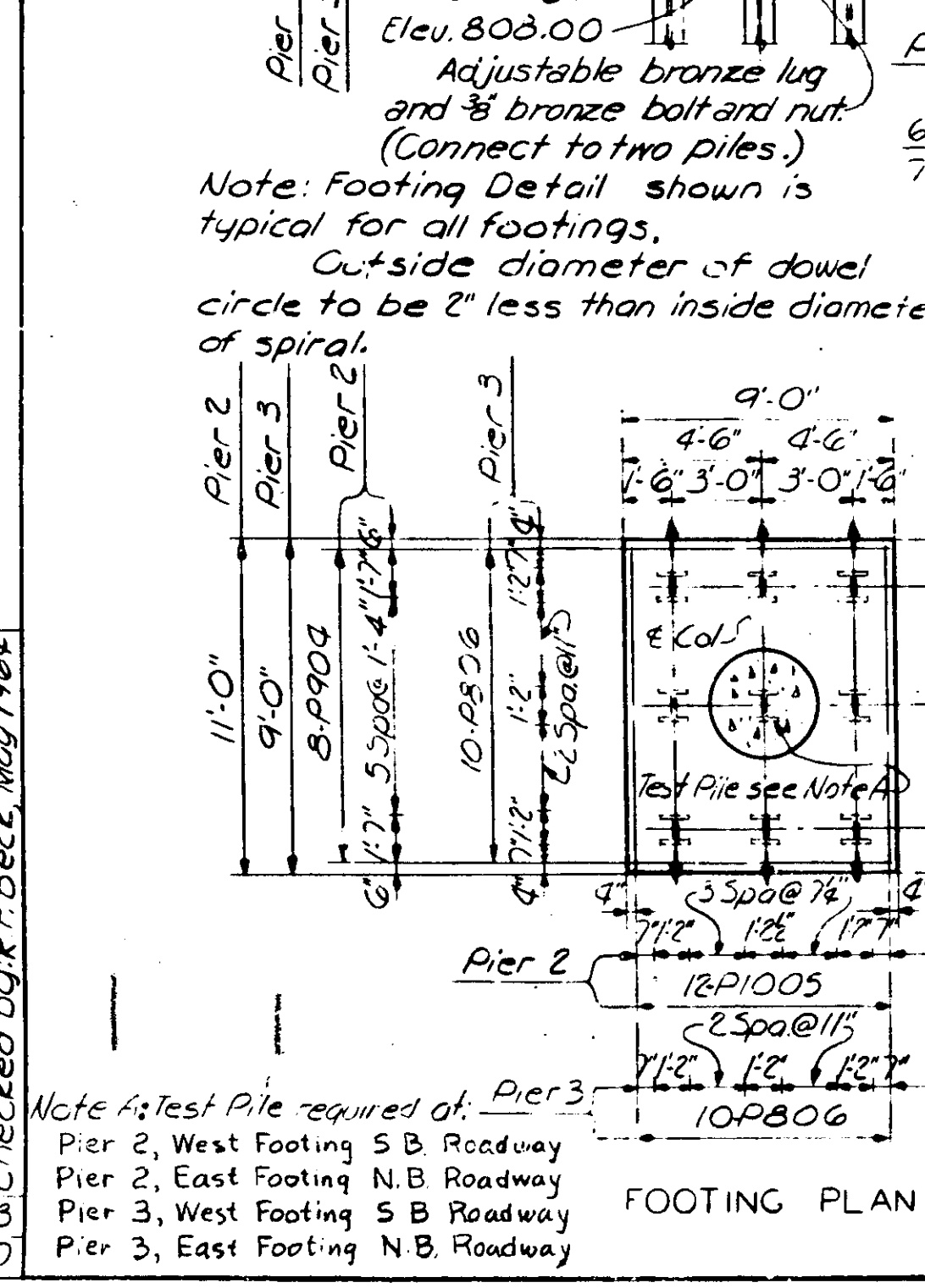
839.02	839.33	839.71	840.10	840.46	840.82	841.17	841.13	841.49	841.85	842.21	842.57	842.93	843.29	Top of Cap. Elev. Pier 2
838.03	838.66	839.22	839.58	839.94	840.30	840.56	840.52	840.95	841.31	841.67	842.03	842.39	842.68	Top of Cap. Elev. Pier 3



NOTE: E.F. indicates Each Face.
 N.F. indicates Near Face.
 F.F. indicates Far Face.
 S.B. indicates Southbound.
 N.B. indicates Northbound.

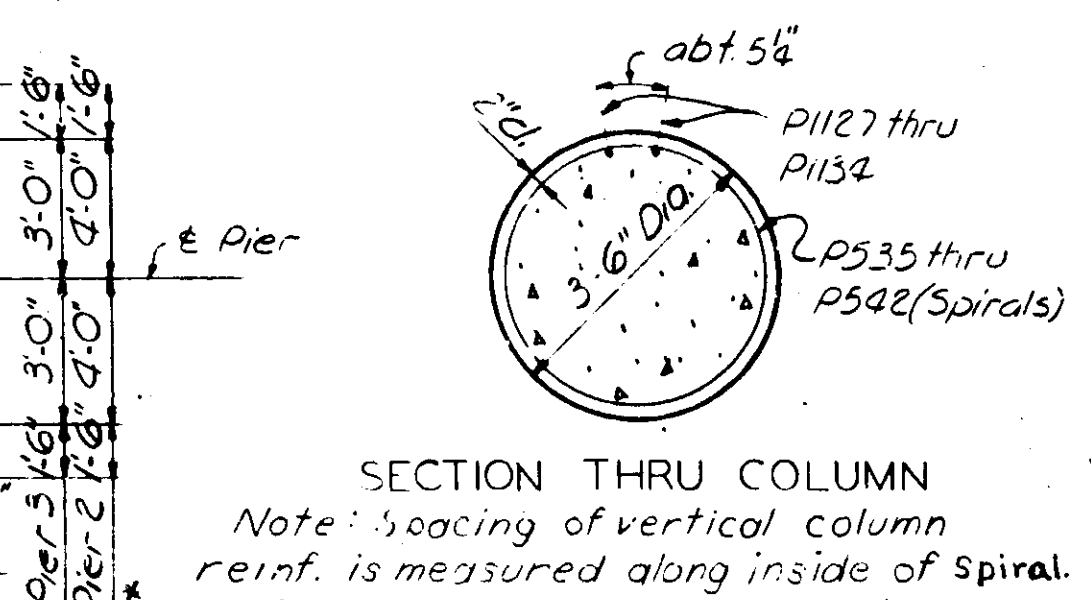
NOTES

Concrete in footings to be Mix 1A-G.
 Concrete in columns, collision wall and pier caps to be Mix 3Y-G.
 The superstructure beams shall be erected in final position prior to drilling holes for and placing anchor bolts.
 Reinforcing in pier caps shall be carefully placed to avoid interference with drilling holes for anchor bolts.
 For Bill of Reinf see Sheet 10.
 For Summary of Quantities see Sheet 10.



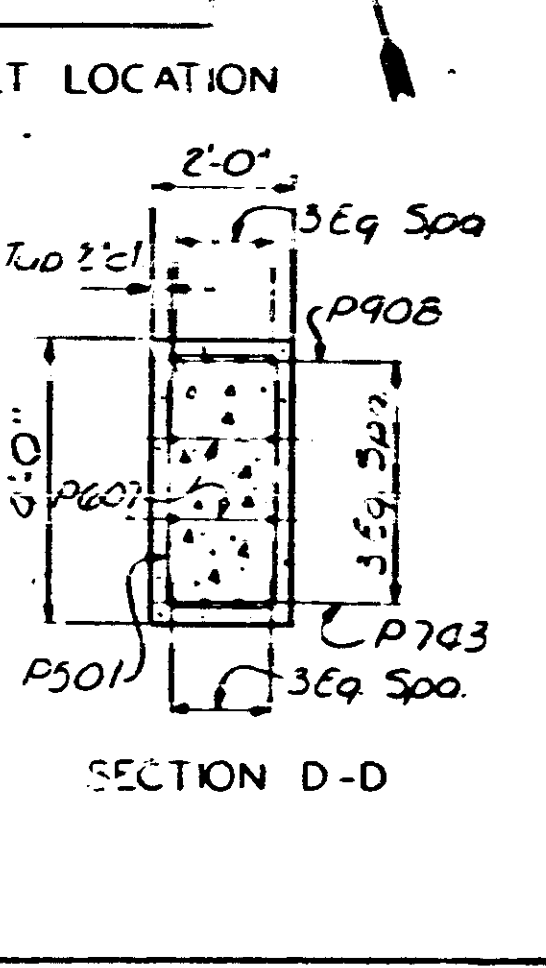
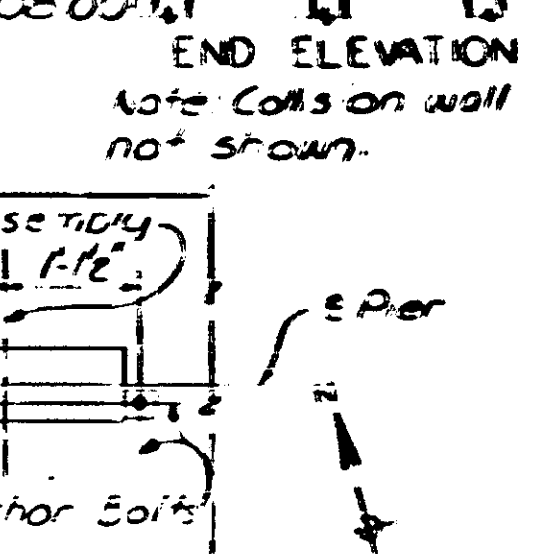
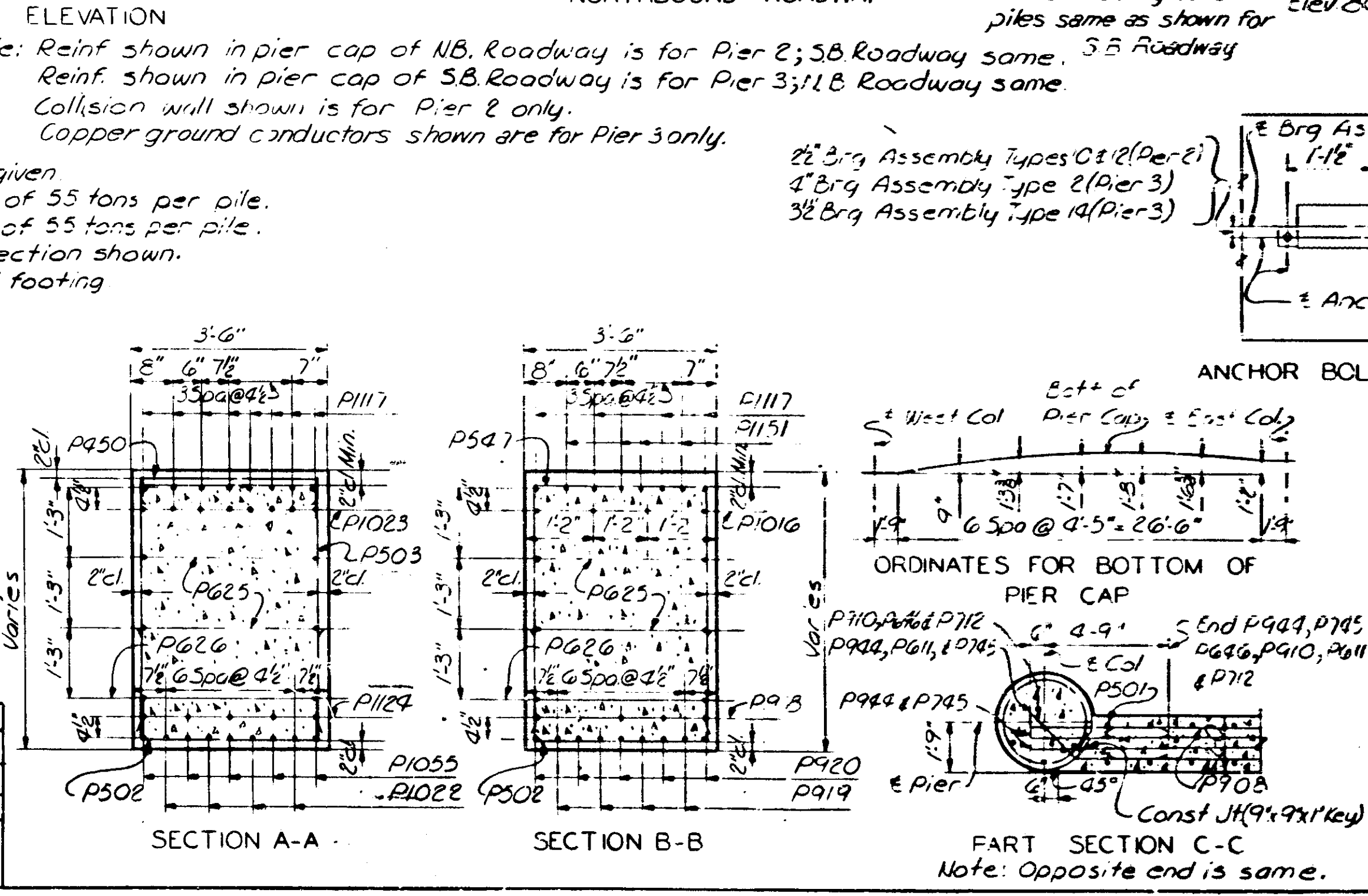
Pile Notes

4 Steel Test Piles, 26 feet long.
 6B Steel Piles, Estimated Length 21 feet.
 72 Steel Piles required for Piers 2 & 3
 All Piles to be 10B942.
 Estimated penetration 1 foot less than length given.
 Piling for Pier 2 to be driven to a min. bearing of 55 tons per pile.
 Piling for Pier 3 to be driven to a min. bearing of 55 tons per pile.
 Piles marked thus → to be battered 2 in 12 in direction shown.
 Pile spacing shown is measured at bottom of footing.
 For pile splice see M.H.D. Detail "B221."



* Computed Pile Loads

	Tons / Pile	
	Pier 2	Pier 3
Dead Load	30	36
Live Load	10	10
TOTAL	50	56



Drawn by H.L. Murch, Feb. 1964
 Checked by R.F. Beck, May 1964

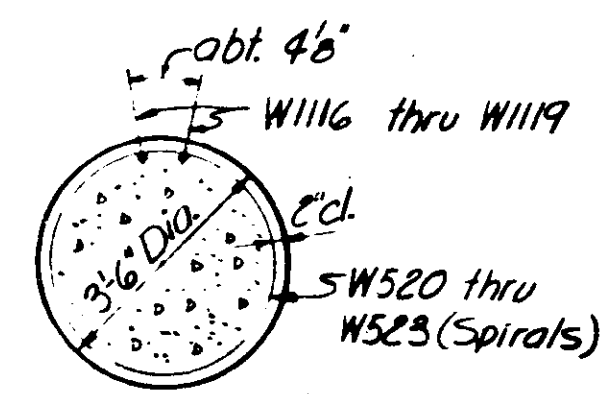
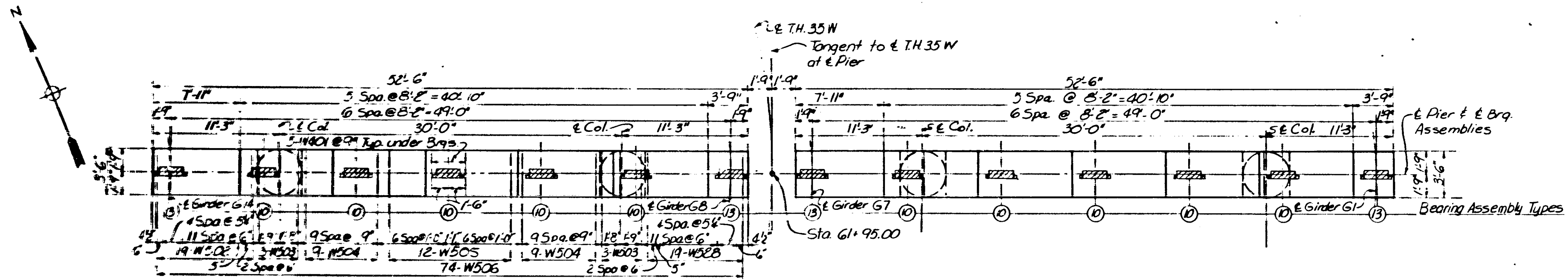
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 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

T.H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

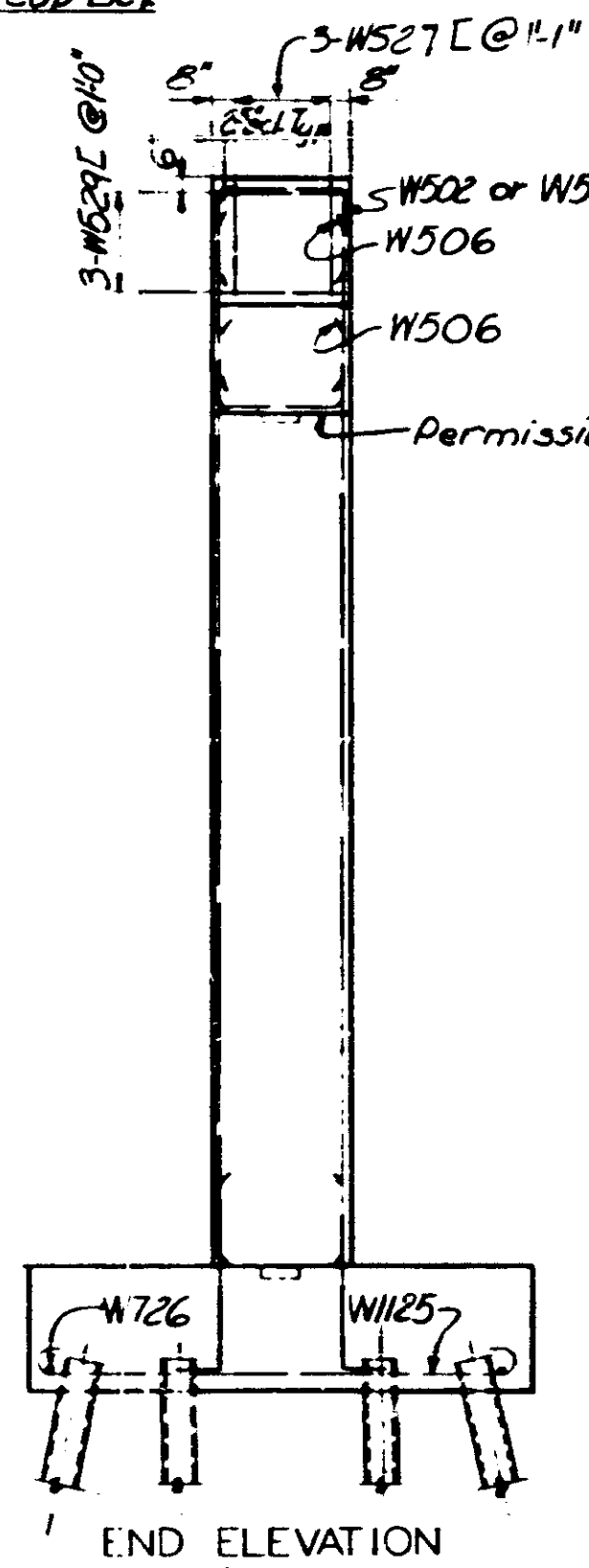
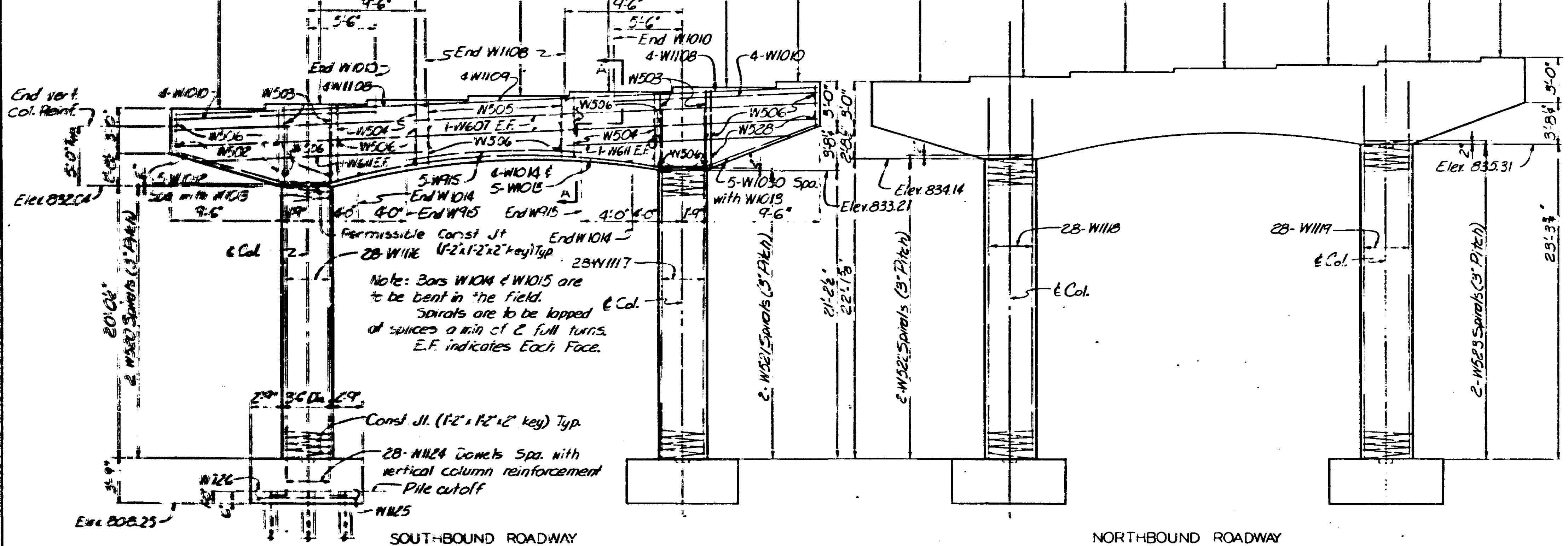
BRIDGE NO. 9340

PIERS 2 & 3

APPROVED - 6-18-65



83775 83817 83853 83889 83925 83961 83990 83985 84028 84064 84100 84135 84171 84200 Top of Cap Elev



NOTES

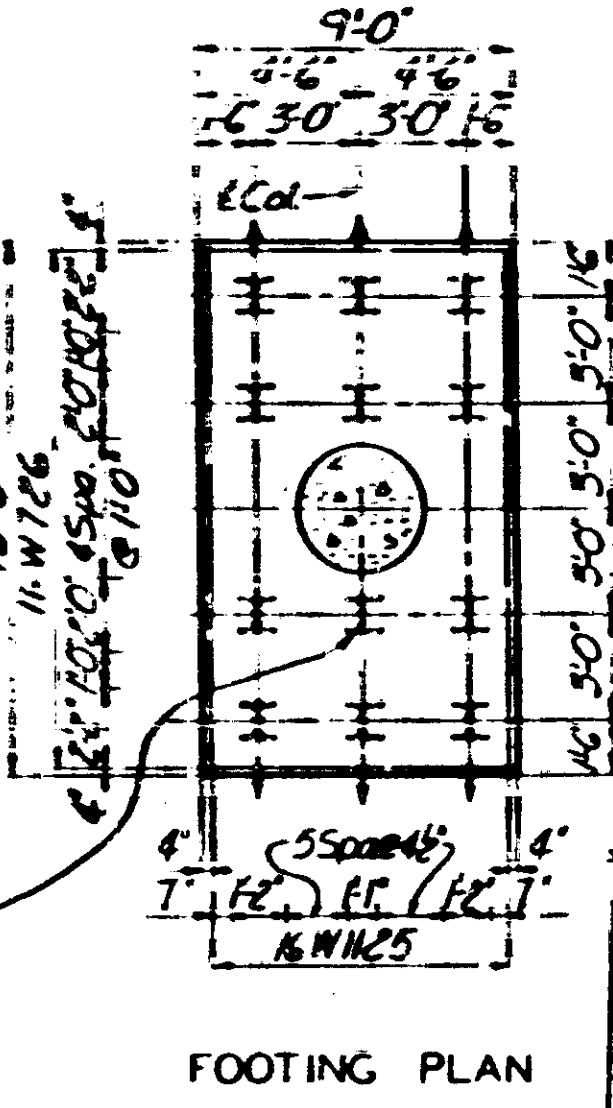
Concrete in footings to be Mix 1A6.
Concrete in columns and pier caps to be Mix 316.
The superstructure beams shall be erected in final position prior to drilling holes for and placing anchor bolts.
Reinforcing in pier caps shall be carefully placed to avoid interference with drilling holes for anchor bolts.
For Bill of Reint see Sheet 10.
For Summary of Quantities see Sheet 10.

Pile Notes

2 Steel Test Piles, 52 feet long.
46 Steel Piles, 48' long.
25 Steel Piles req'd for Pier 4.
All Piles to be IOBP42.
Estimated penetration 1 foot less than length given.
Piling to be driven to a min. bearing of 37 tons per pile.
Piles marked thus → are to be battered 2 in 12 in the direction shown.
Pile spacing is measured at bottom of footing.
For pile splice see M.H.D. Detail "B221".

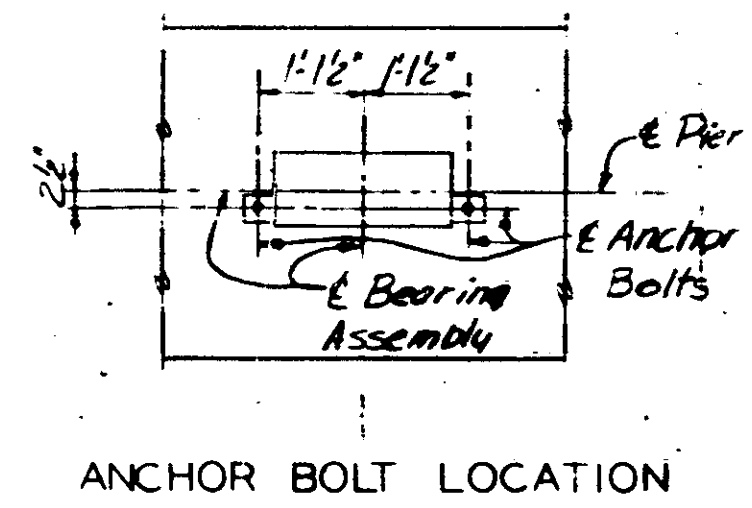
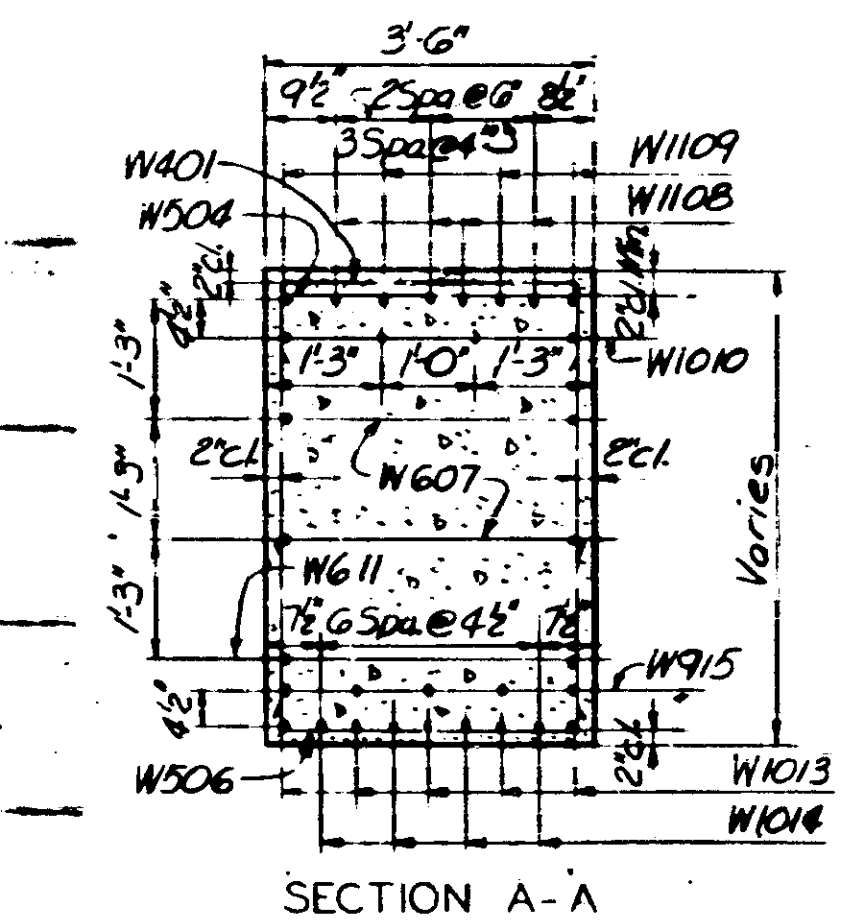
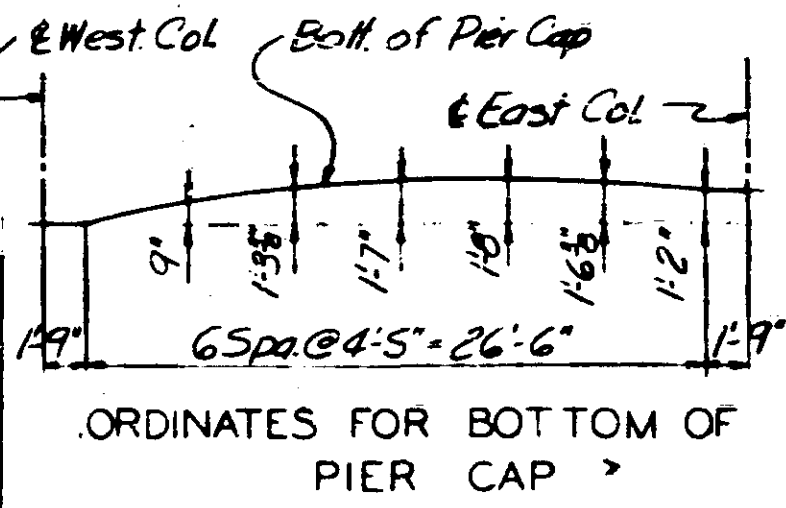
Note: Footing detail is typical for all footings.
Outside diameter of dowel circle is to be 2" less than inside diameter of spiral.

Test Pile, East Footing of the Northbound Roadway and West Footing of the Southbound Roadway



* LOADS REDUCED 25% FOR GROUP III LOADING

Computed Pile Loads	Tons / Pile
Dead Load	26
Live Load	6
TOTAL	37



Drawn by: John H. Dennis, Nov. 1964
Checked by: R.F. Beck, Nov. 1964
2085
645664

DESIGNED BY
SVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

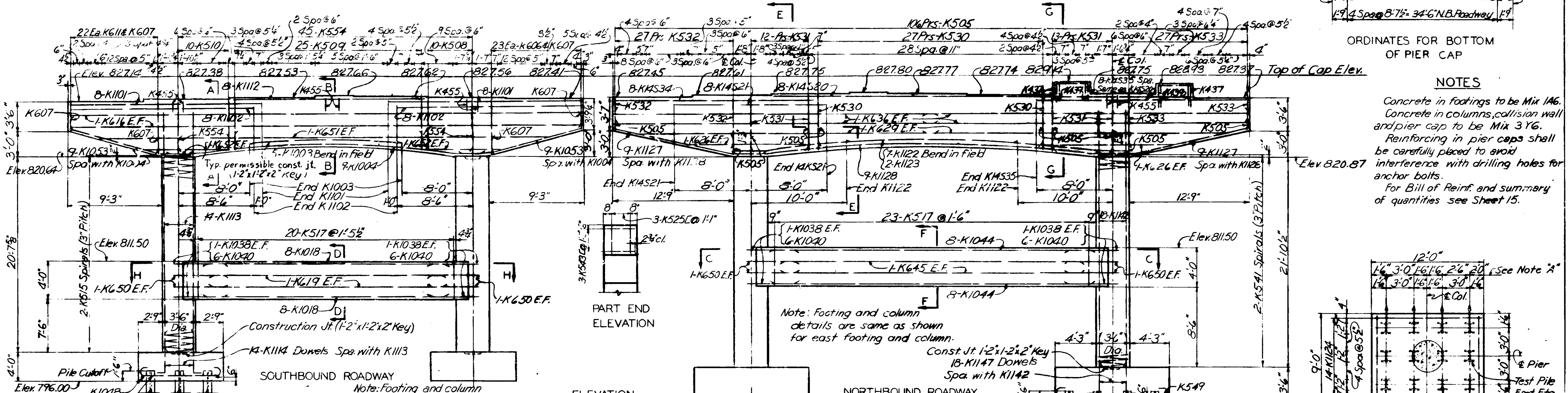
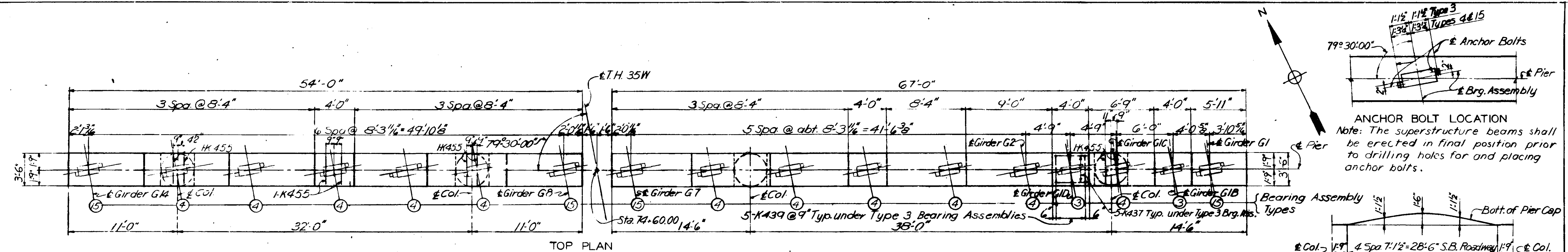
T.H.38W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

MICRO-FILMED

PIER 4

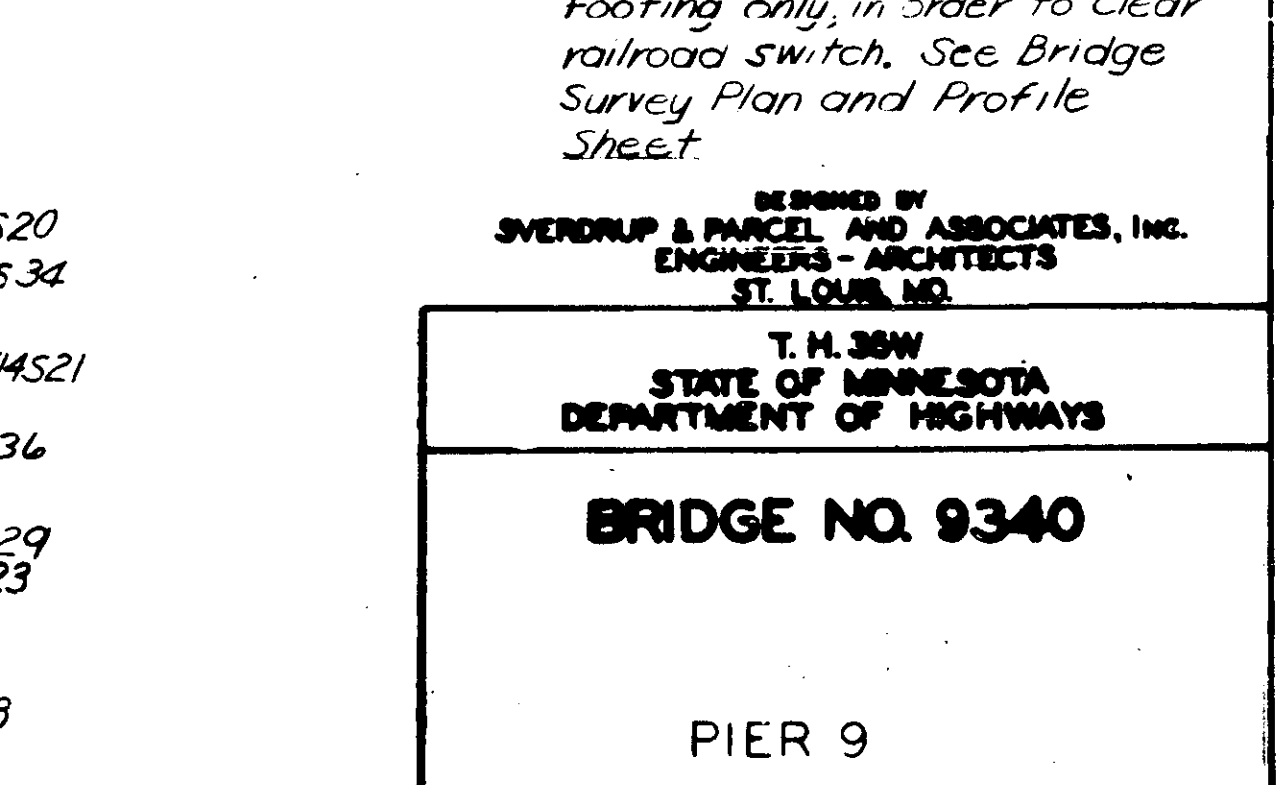
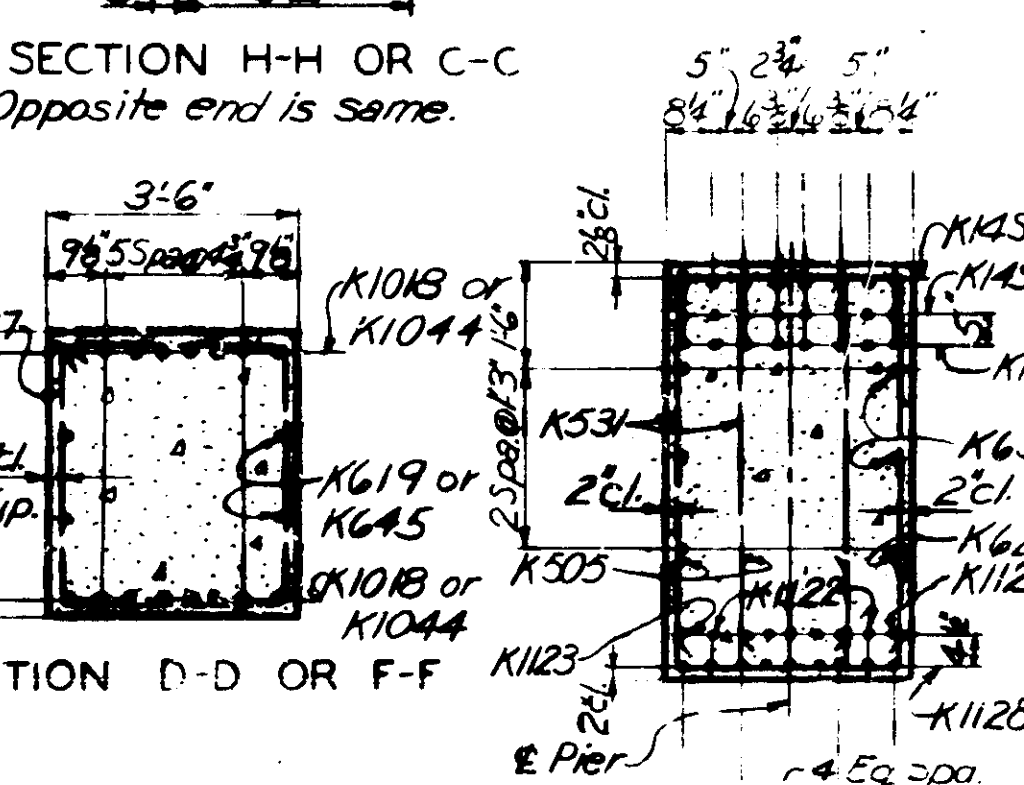
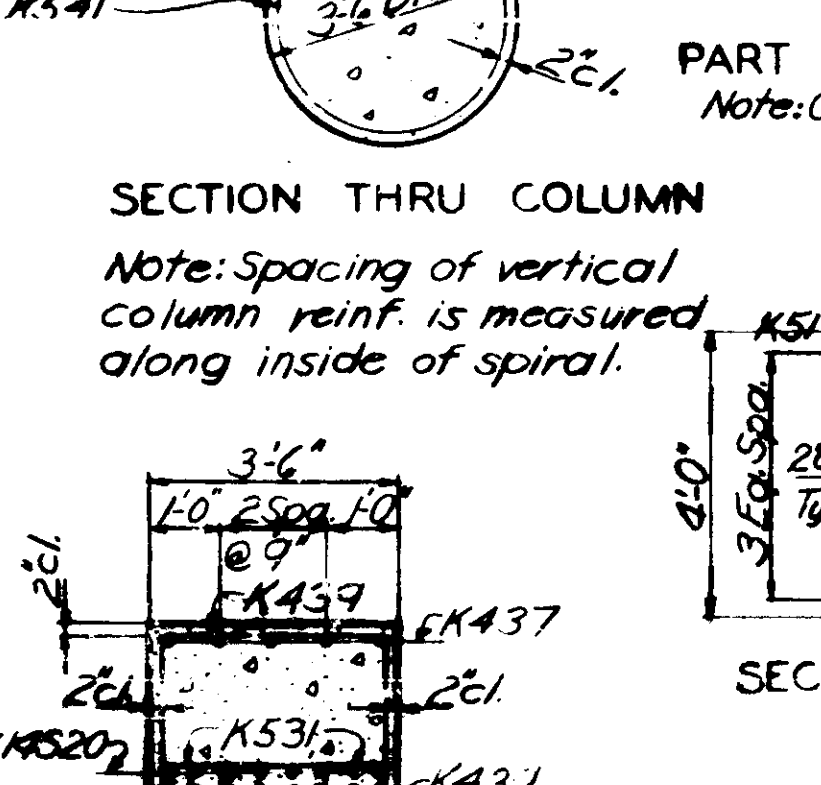
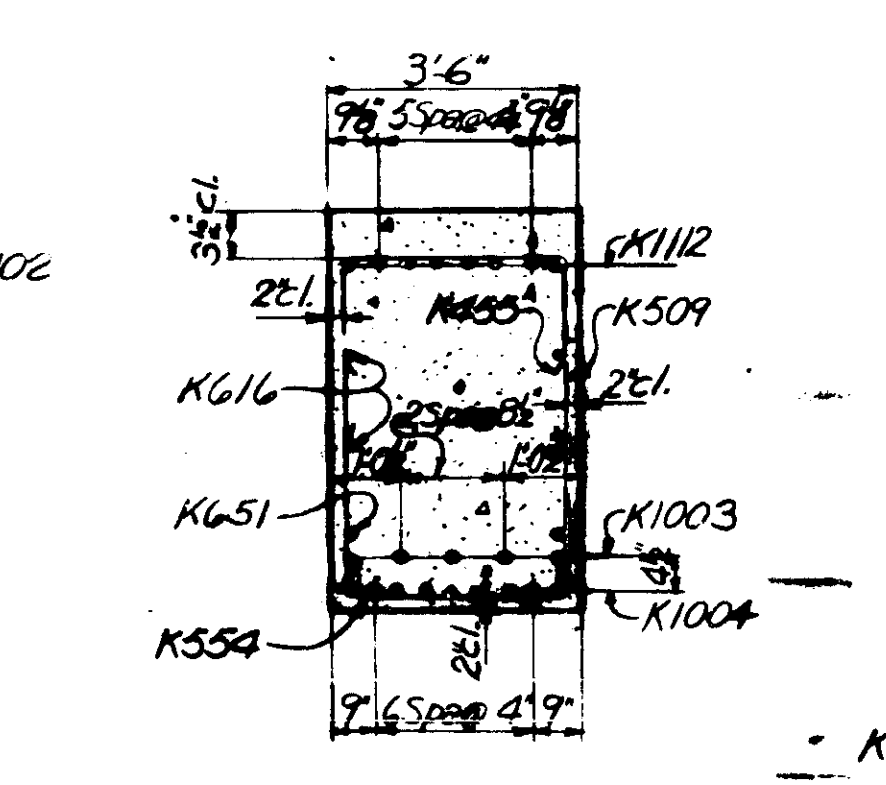
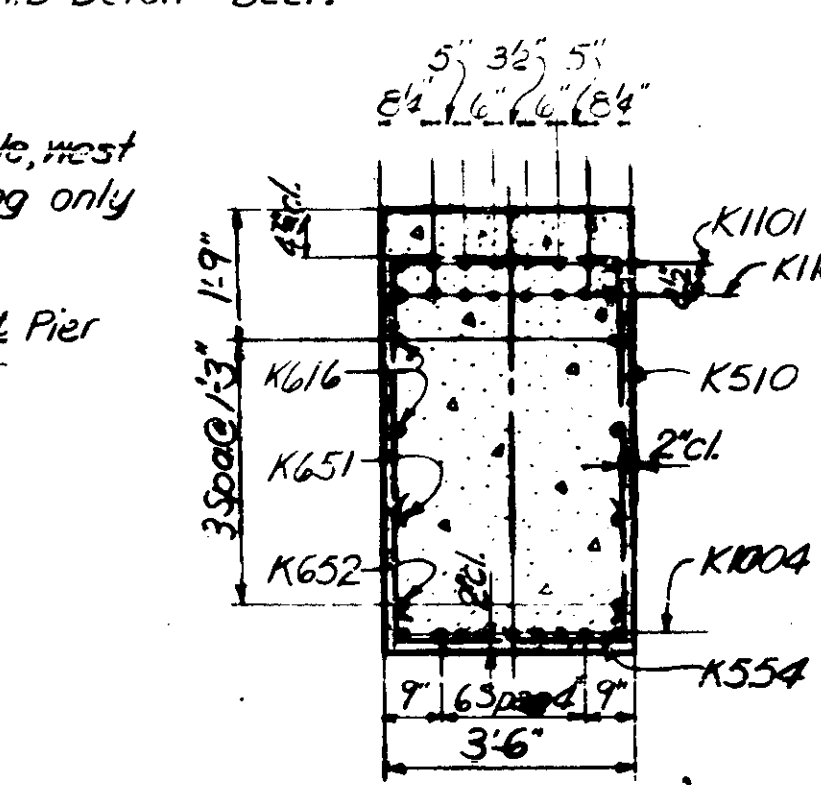
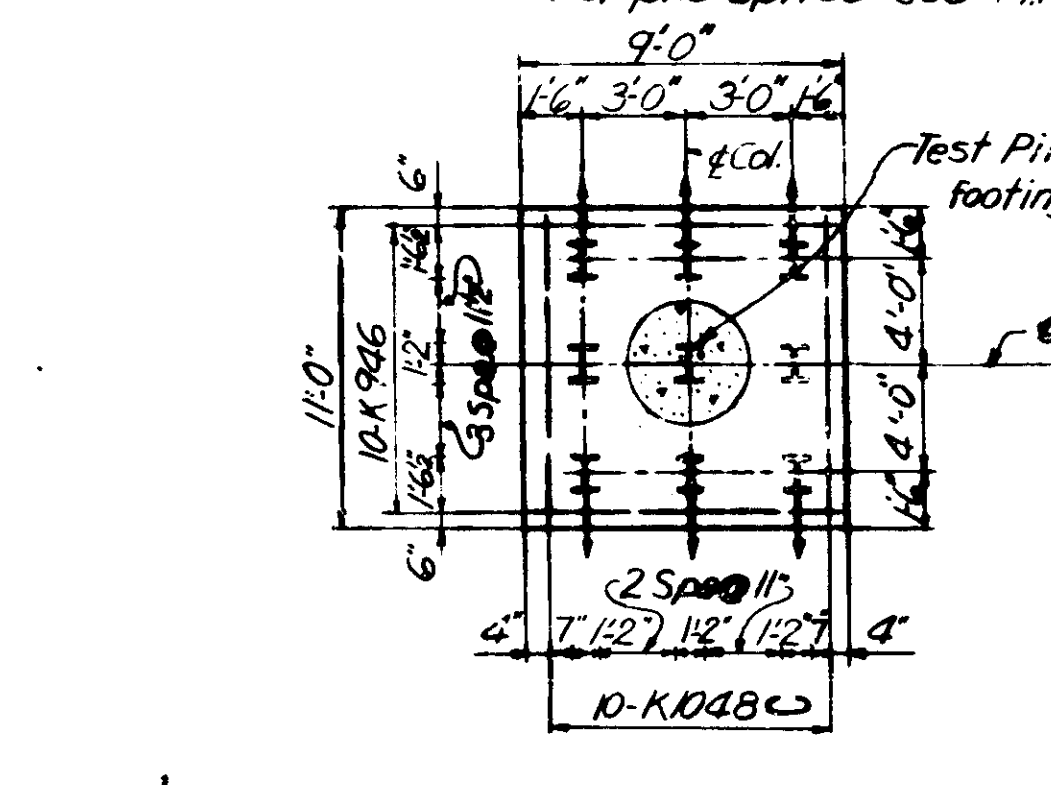
APPROVED - 6-18-65



PILE NOTES
 2 Steel Test Piles, 20 ft. long.
 40 Steel Piles, Estimated Length 15 ft.
 42 Steel Piles, required for Pier 9
 All piles to be 10BPA2.
 Estimated penetration 1 ft. less than length given.
 Piling to be driven to a min. bearing of 55 tons per pile.
 Piles marked thus \rightarrow to be battered 2 in 12 in direction shown.
 Pile spacing is measured at bottom of footing.
 For pile splice see M.H.D. Detail #B221.

Note: Footing and column details are same as shown for west footing and column.

Note: Spirals to be lapped at splices a minimum of 2 complete turns. Outside diameter of donut circle to be 2" less than inside diameter of spiral.
 E.F. indicates Each Face.
 S.B. indicates Southbound.
 N.B. indicates Northbound.



* Computed Pile Loads	Tons/Pile	
	N.B. RWY.	S.B. RWY.
Dead Load	40	42
Live Load	9	10
TOTAL	55	55

LOADS REDUCED BY 25% FOR GROUP III LOADING*

Drawn by: J.L. Matthews, Feb. 1964
 Checked by: R.F. Beck, Sept. 1964
 2083
 CAS90

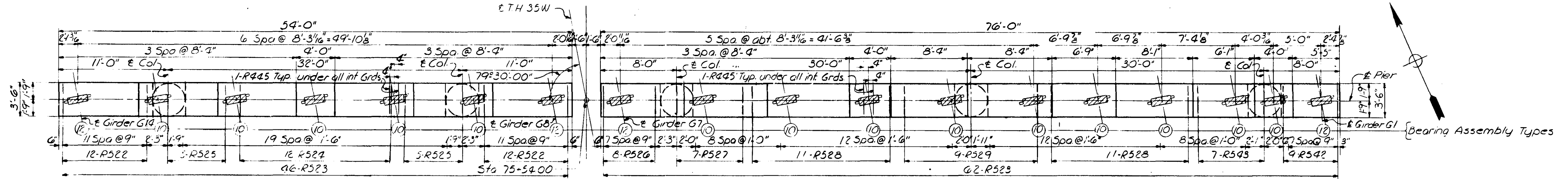
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 ST. LOUIS, MO.

T.H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

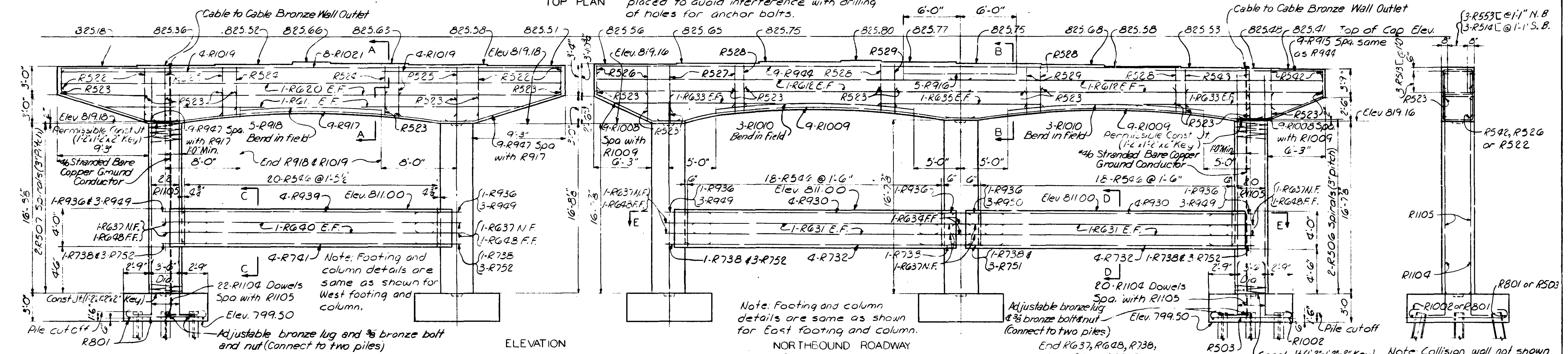
BRIDGE NO. 9340

PIER 9

APPROVED - 6-18-65



Note: Reinf. in pier caps shall be carefully placed to avoid interference with drilling of holes for anchor bolts.



Note: Outside diameter of dowel circle to be 2" less than inside diameter of spiral.

SOUTHBOUND ROADWAY

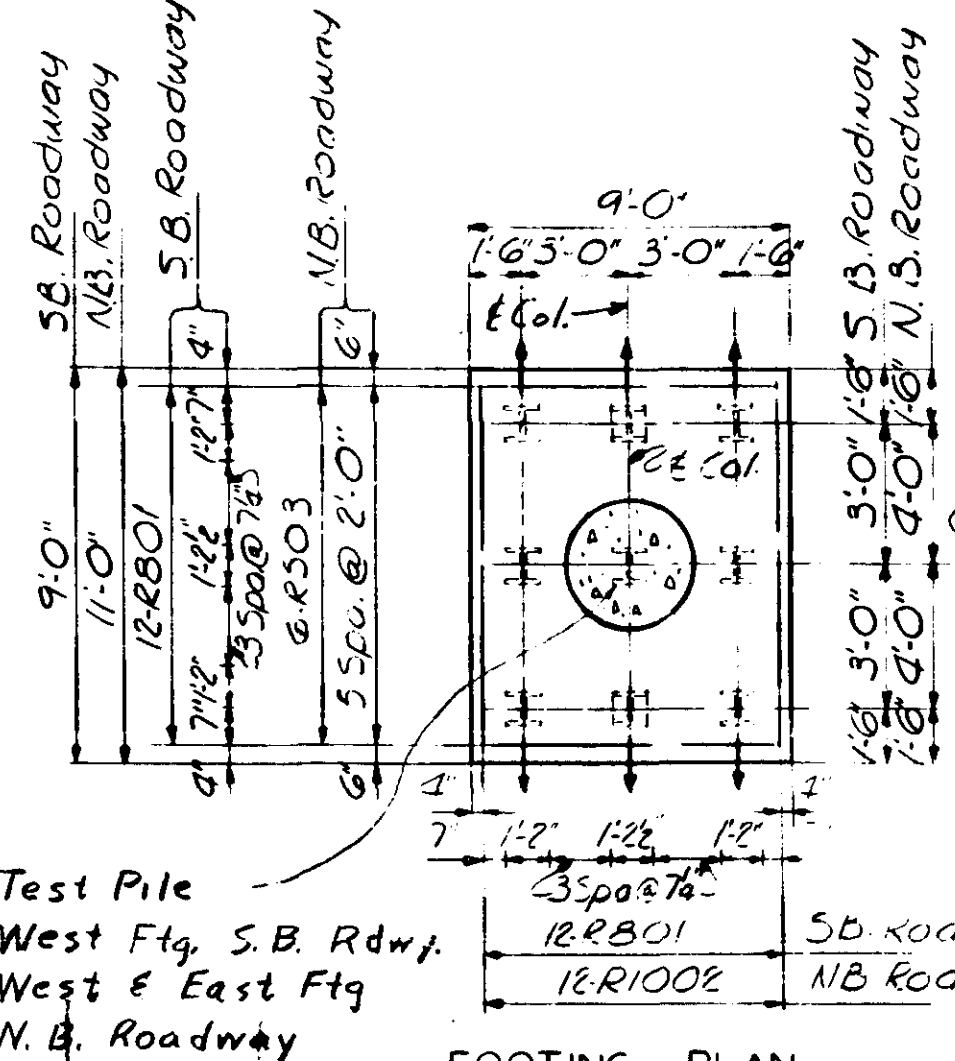
Note: Footing and column details are same as shown for West footing and column.

Note: Footing and column details are same as shown for East footing and column.

Adjustable bronze lug & 3/8" bronze bolt & nut (Connect to two piles)

Note Collision wall not shown

Pile Notes
 3 Steel Test Pile, 20 ft
 42 Steel Piles, Estimated Length 14 ft long.
 45 Steel Piles, required for Pier 10
 All piles to be 10B P42
 Estimated penetration 1 ft less than length given.
 Piling to be driven to a min bearing of 45 tons per pile.
 Piles marked thus → to be battered 2 in 12 in direction shown.
 Pile spacing shown is measured at bottom of footing.
 For pile splice see M.H.D. Detail "B221".



FOOTING PLAN

SECTION THRU COLUMN
 Note: Spacing of vertical column reinf. is measured along inside of spiral.

SECTION A-A

SECTION B-B

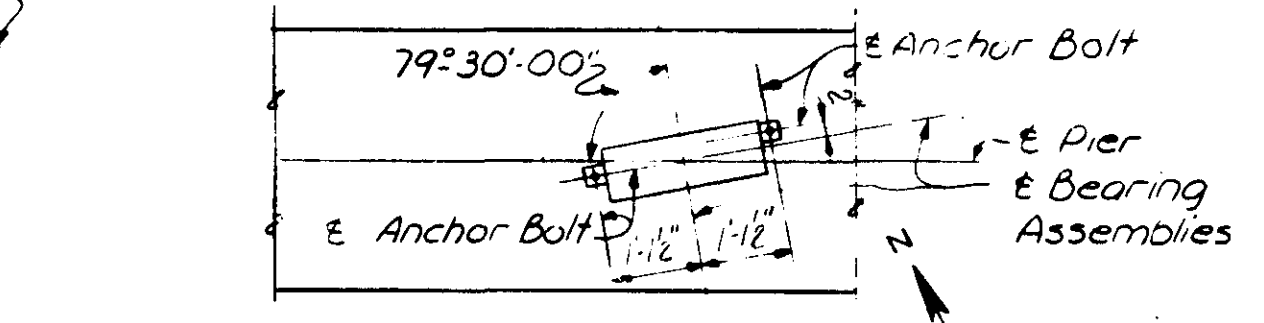
Note: S.B. indicates Southbound
 N.B. indicates Northbound.
 E.F. indicates Each Face.
 N.F. indicates Near Face.
 F.F. indicates Far Face.

*LOADS REDUCED BY 25% FOR GROUP III LOADING

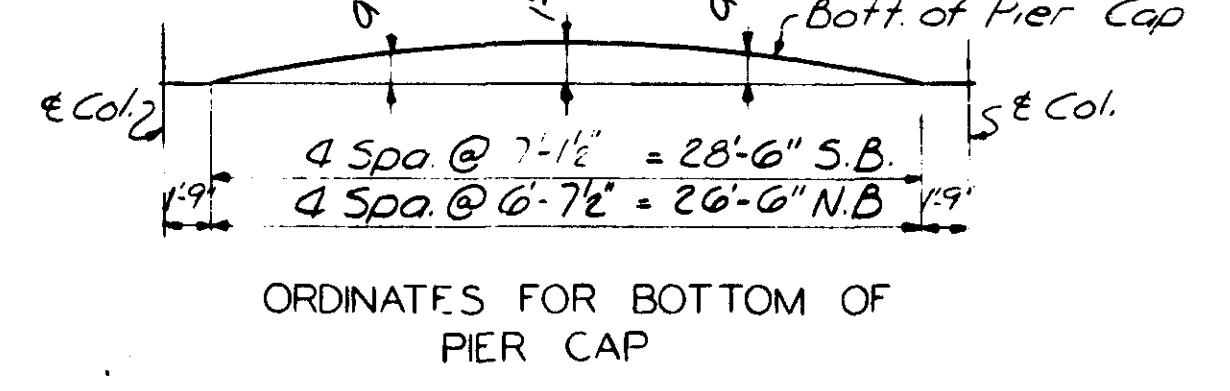
* Computed Pile Loads	Tons/Pile	
	N.B. Rdwy.	S.B. Rdwy.
Dead Load	28	27
Live Load	11	10
TOTAL	44	50

PART SECTION E-E

NOTES
 Concrete in footings to be Mix 1A6
 Concrete in columns, collision wall and pier cap to be 3Y6
 For Bill of Reinf. see Sheet 15.
 For Summary of Quantities see Sheet 15.



ANCHOR BOLT LOCATION
 Note: The superstructure beams shall be erected in final position prior to drilling holes for and placing anchor bolts.



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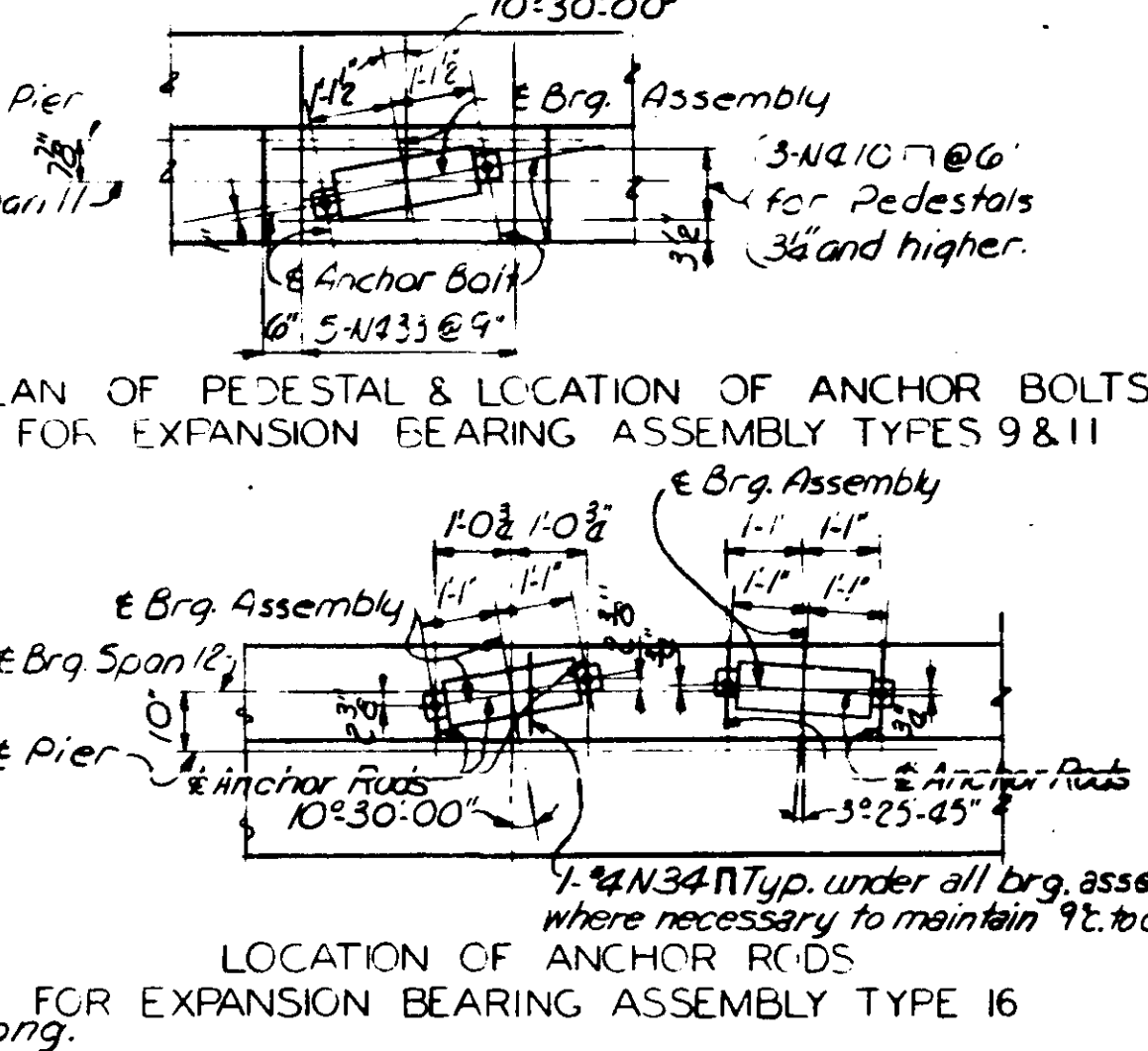
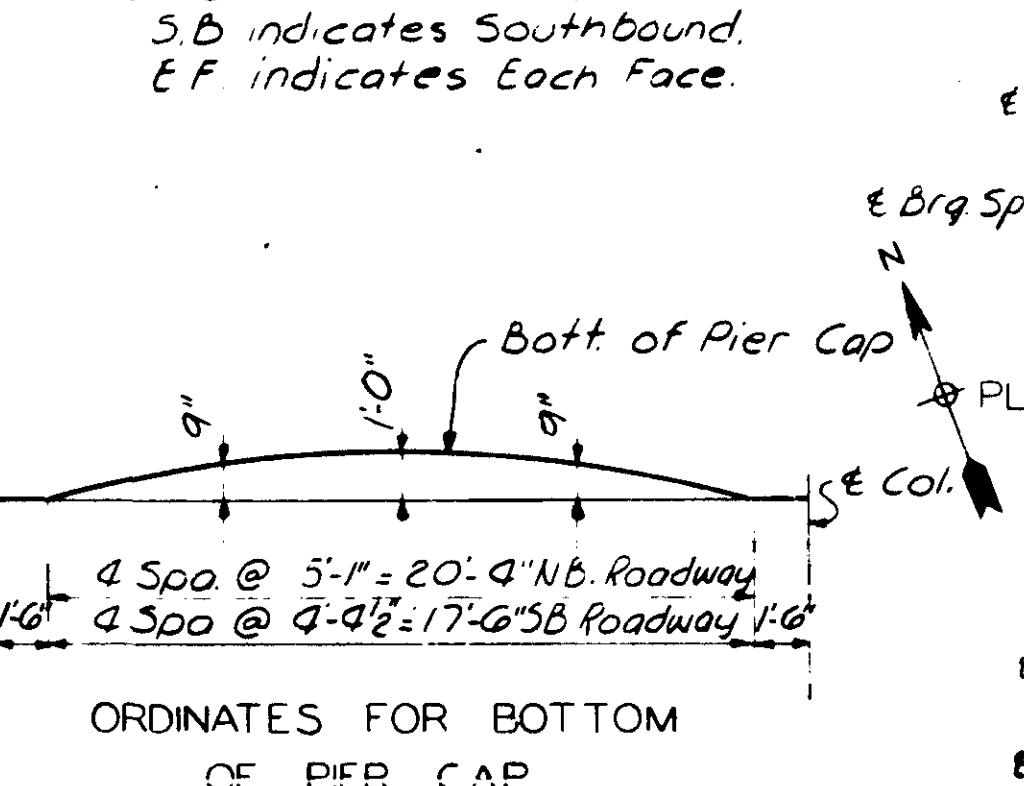
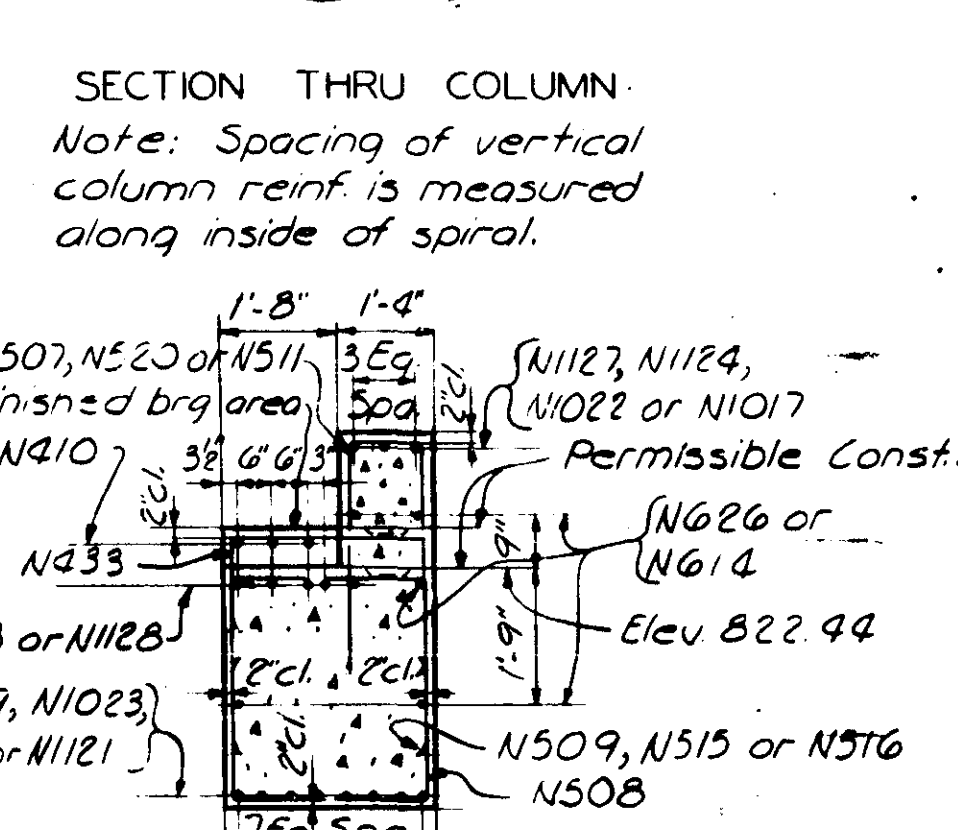
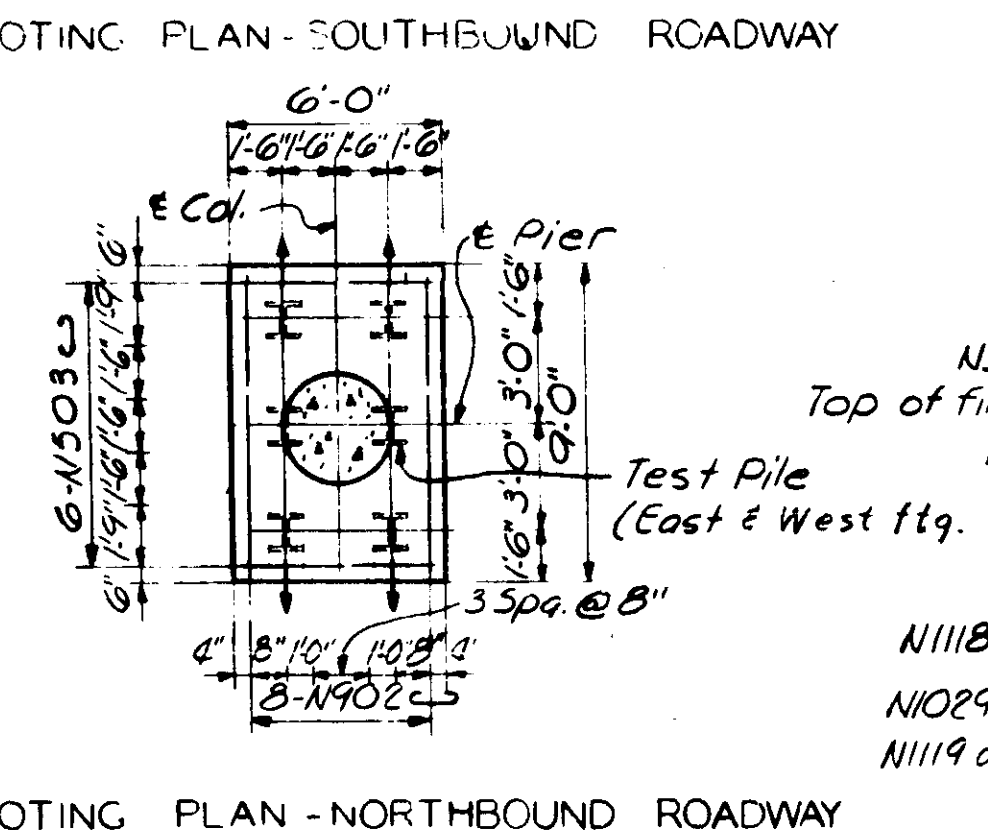
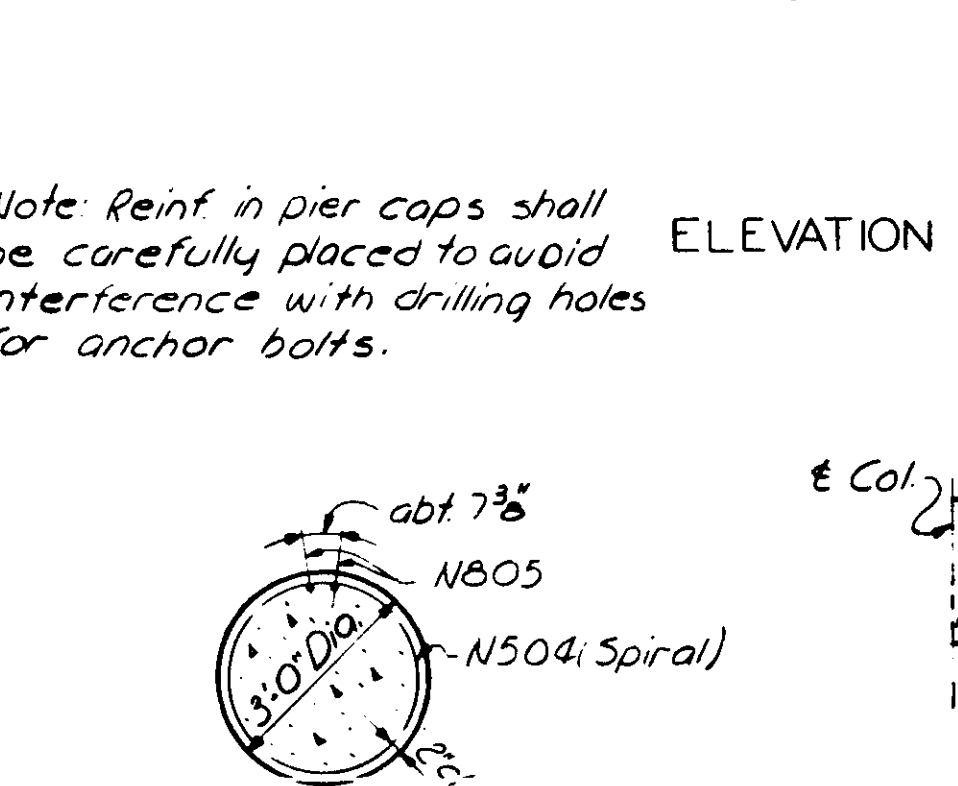
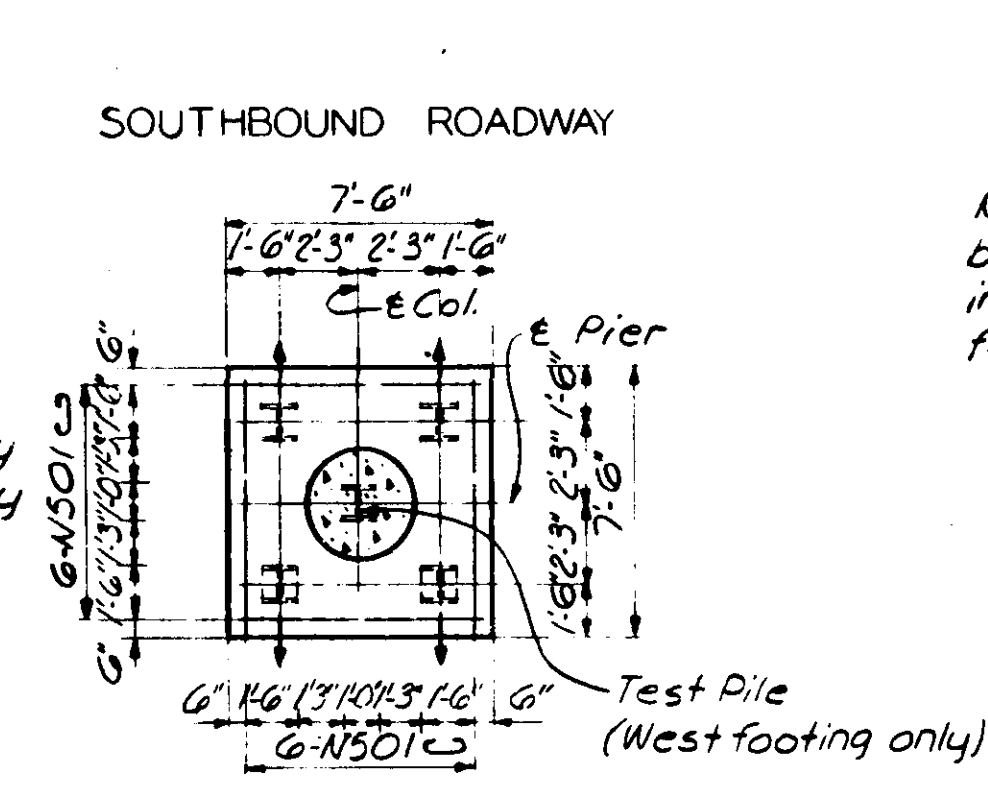
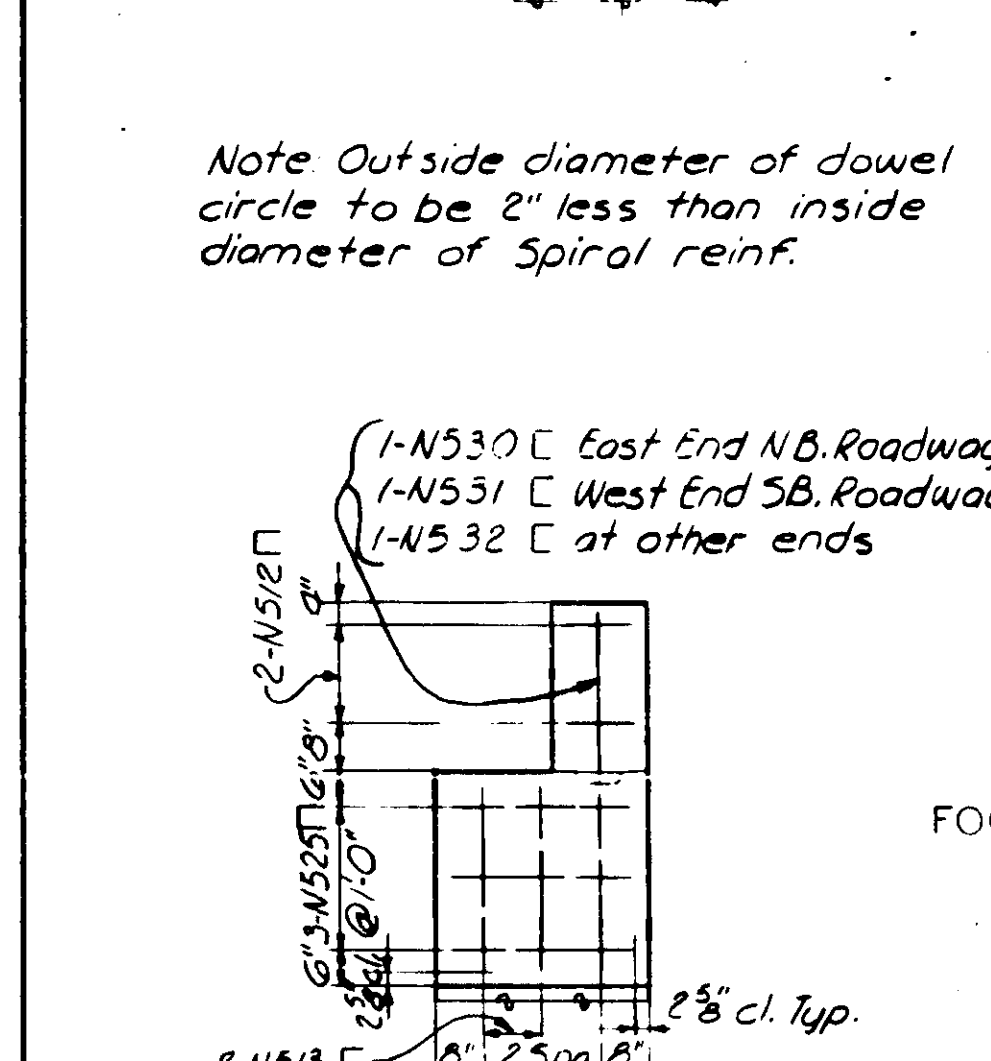
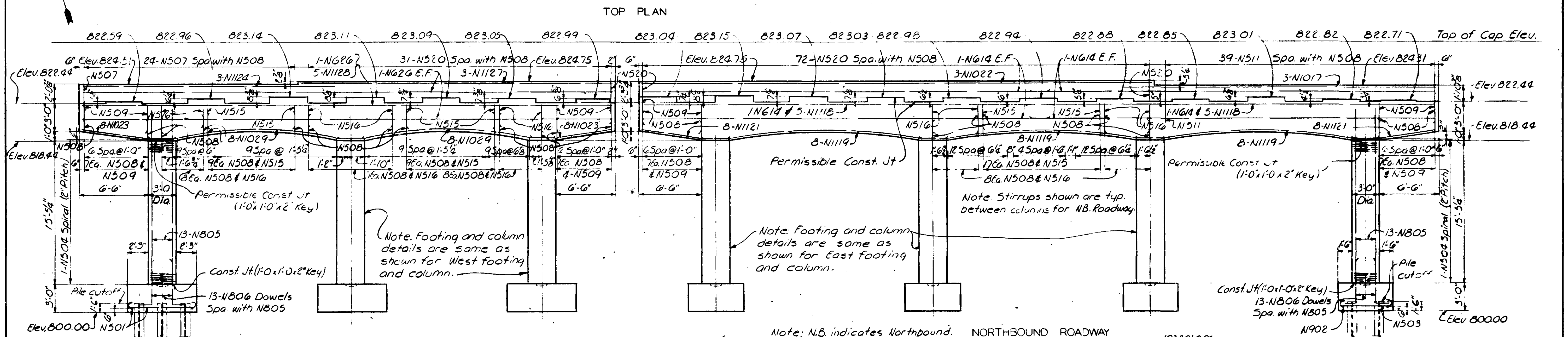
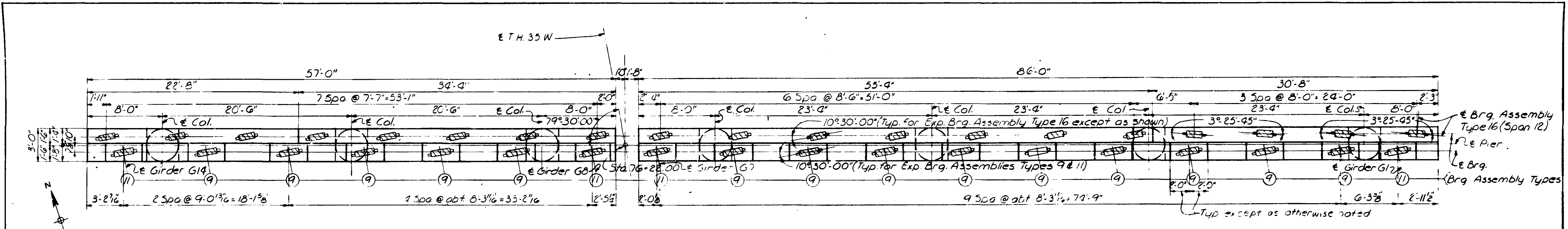
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BRIDGE NO. 9340

PIER 10

APPROVED - 6-18-65

Drawn by: H.L. Murphy, Feb 1964
 Checked by: R.F. Beck, May 1964
 2083
 645101



NOTES

Concrete in footings to be Mix 1A6.
 Concrete in columns and pier caps to be Mix 3Y6.
 For Bill of Reinf. see Sheet 15.
 For Summary of Quantities see Sheet 15.
 Concrete pedestals under bearing assemblies are to be placed monolithically with cap.
 Anchor rods for Brg Assembly Type 16 are to be cast in place.
 The superstructure beams shall be erected in final position prior to drilling holes for and placing anchor bolts.

PILE NOTES

3 Steel Test Piles, 20ft. long.
 36 Steel Piles Estimated Length 14ft.
 39 Steel Piles required for Pier 11.
 All piles to be 10BP42.
 Estimated penetration 1ft. less than length given.
 Piling for footings of the Northbound Roadway to be driven to a min. bearing of 55 tons per pile.
 Piling for footings of the Southbound Roadway to be driven to a min. bearing of 46 tons per pile.
 Piles marked thus → to be battered 2in12 in direction shown.
 Pile spacing shown is measured at bottom of footing.
 For pile splice see M.H.D. detail "B221."

Drawn by: H.L. Murphy, Feb. 1964
 Checked by: R.F. Beck, May 1964
 2083
 645112

* Computed Pile Loads	Tons / Pile	
	N.B. Rdwy.	S.B. Rdwy.
Dead Load	23	26
Live Load	24	15
TOTAL	52	46

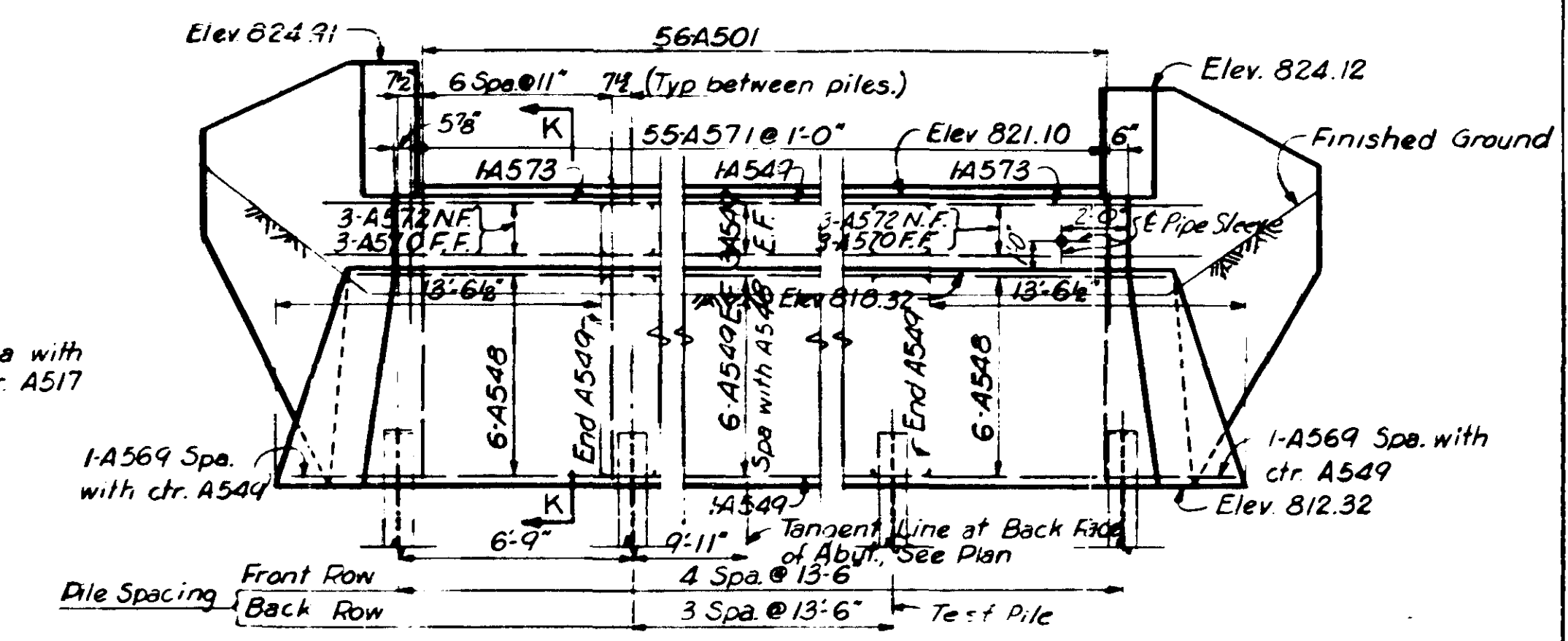
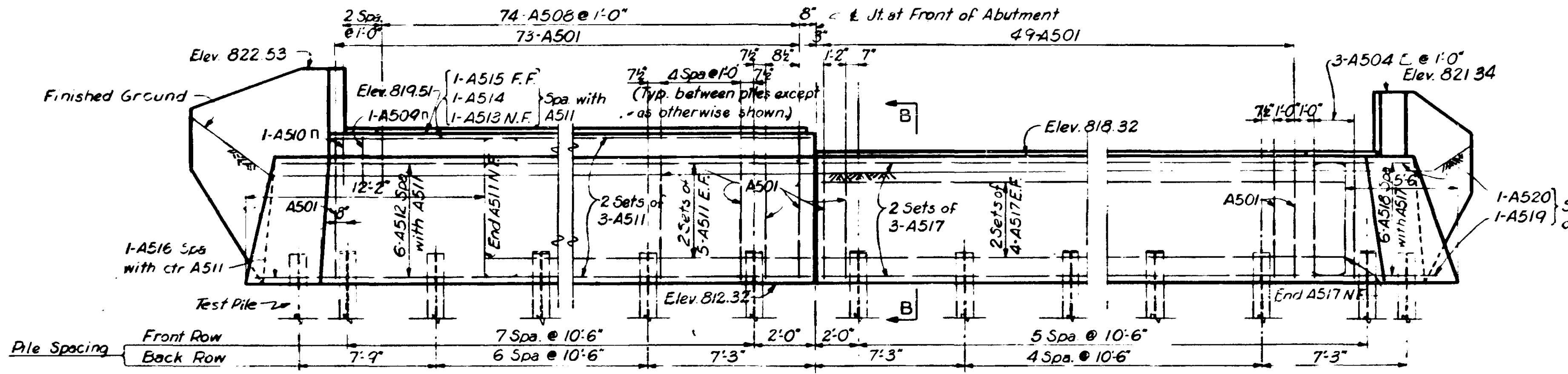
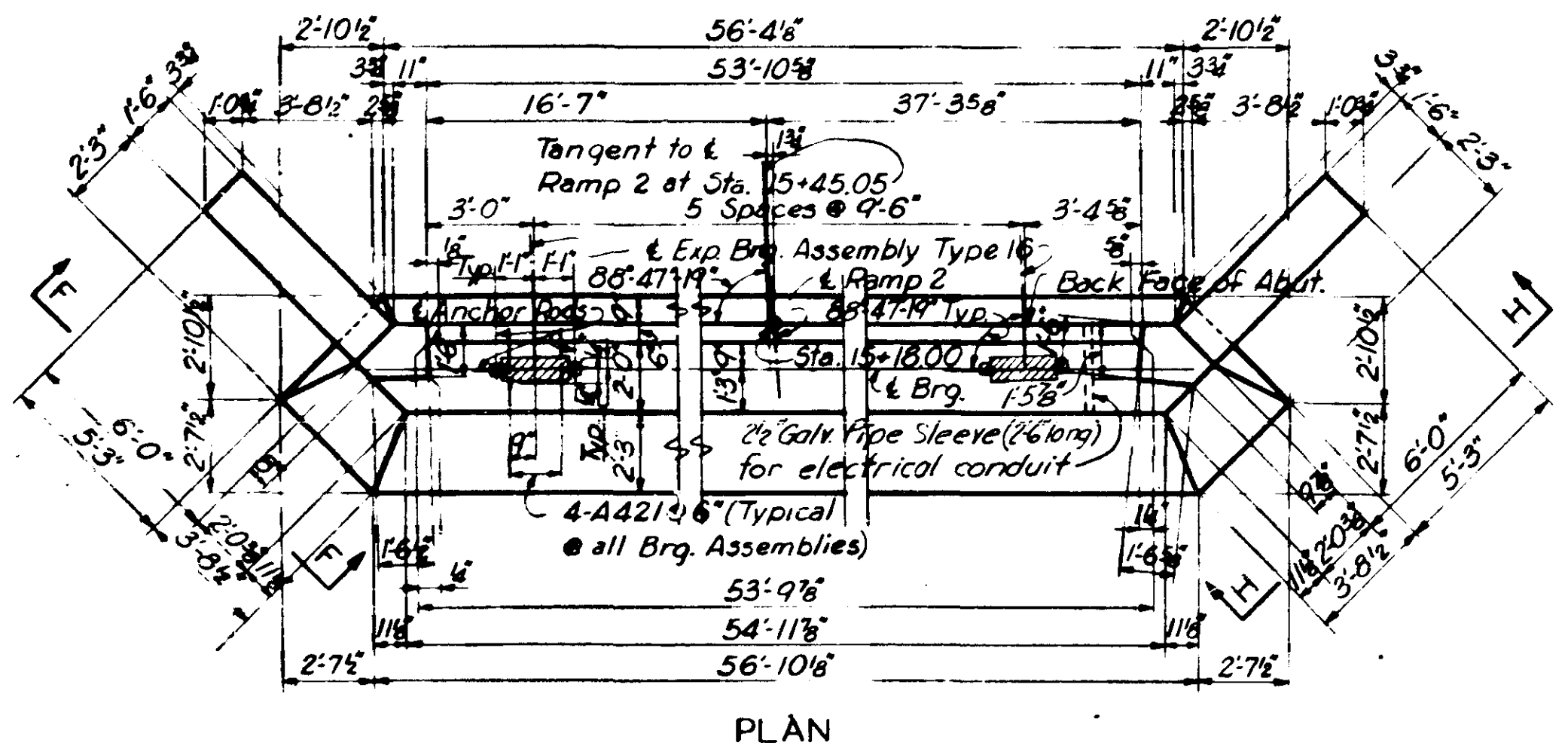
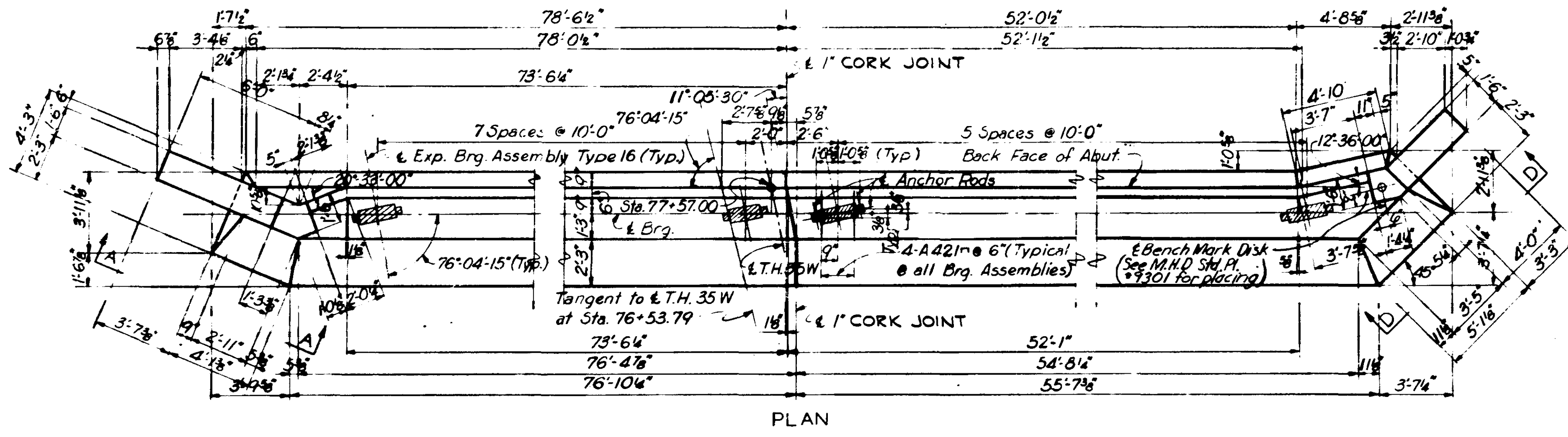
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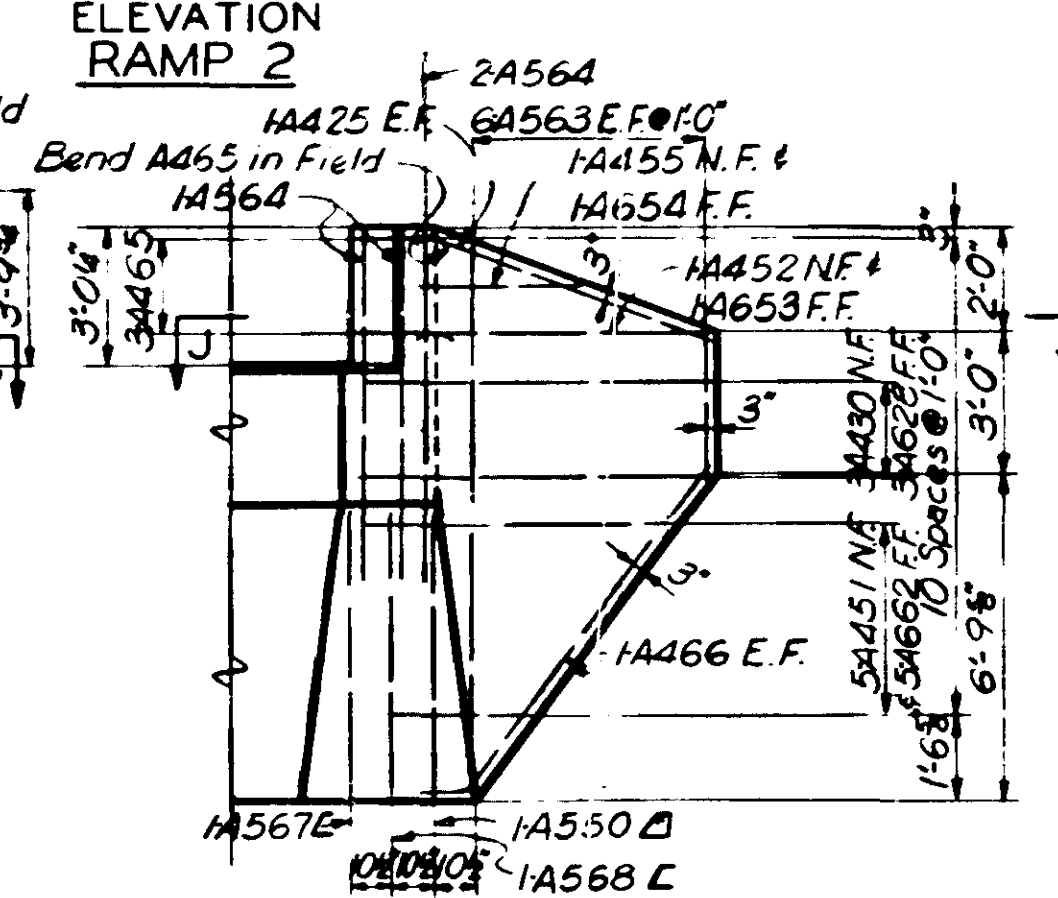
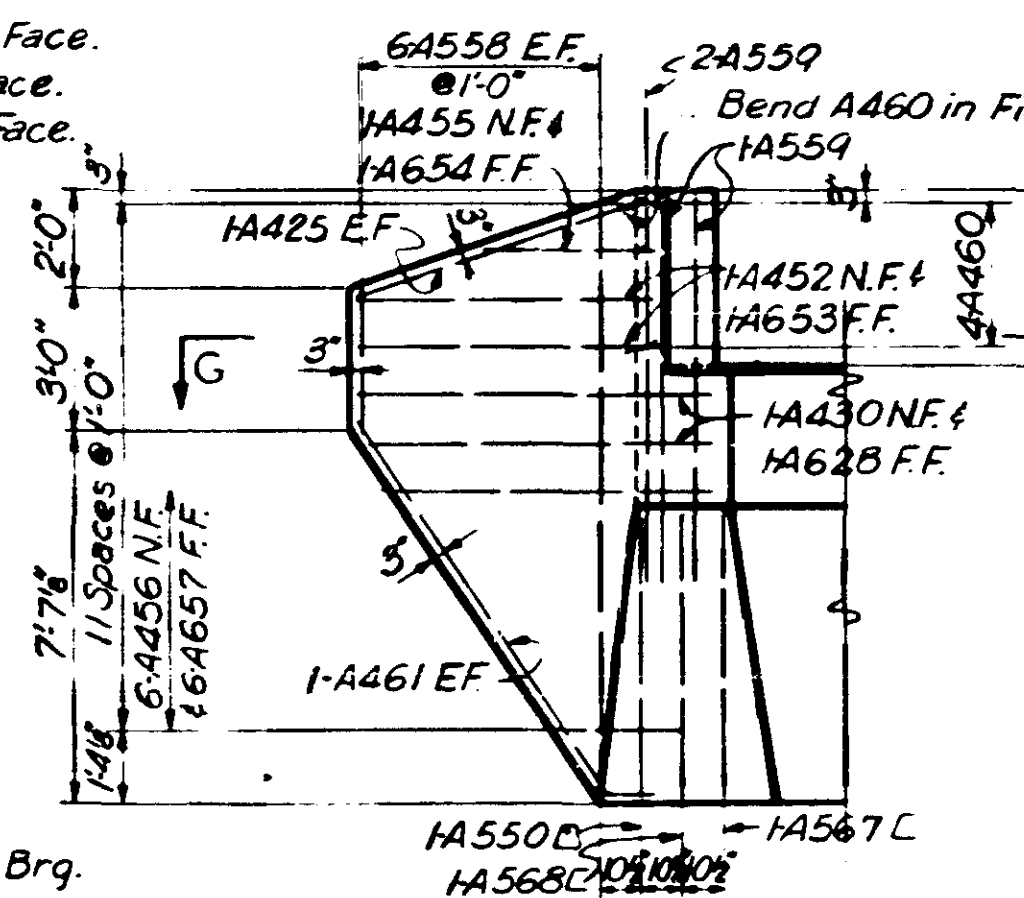
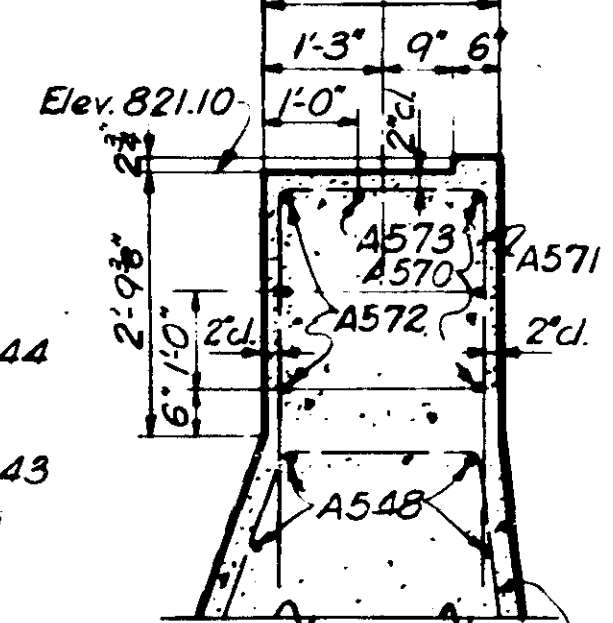
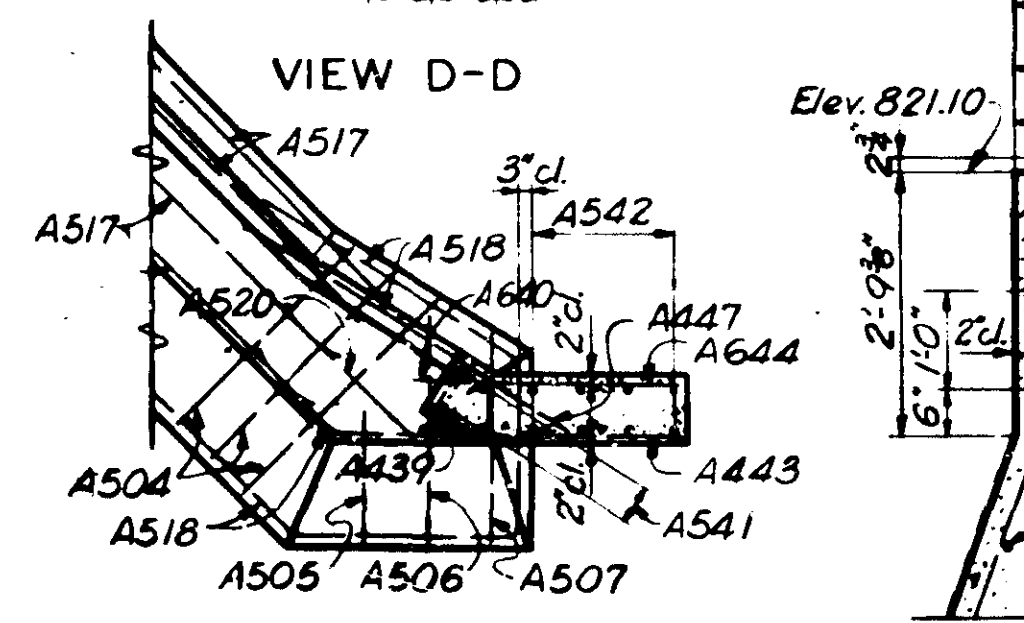
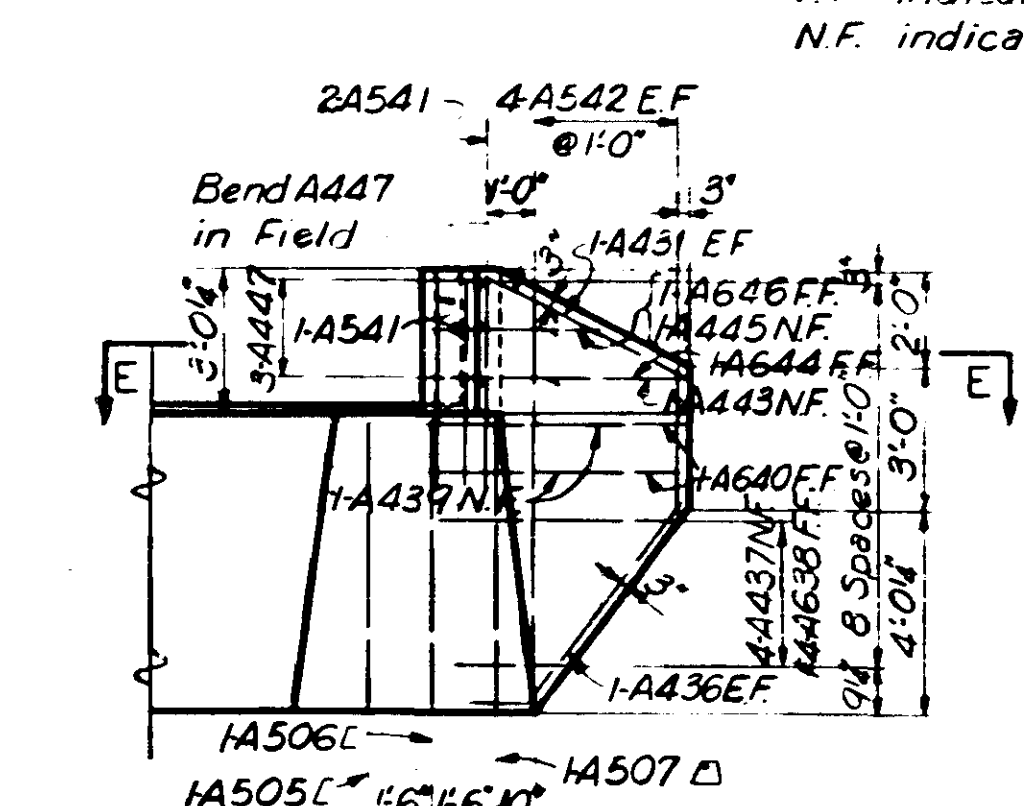
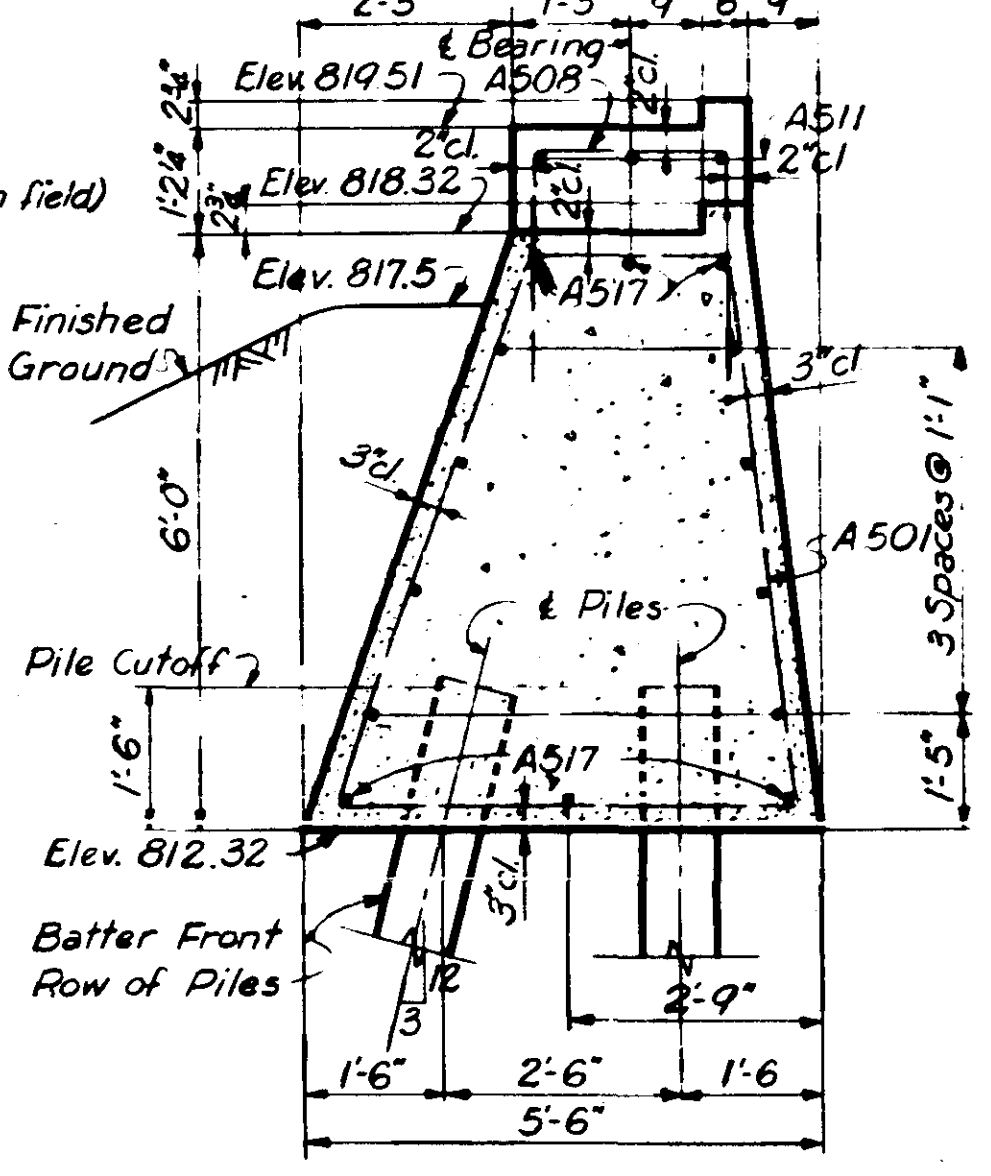
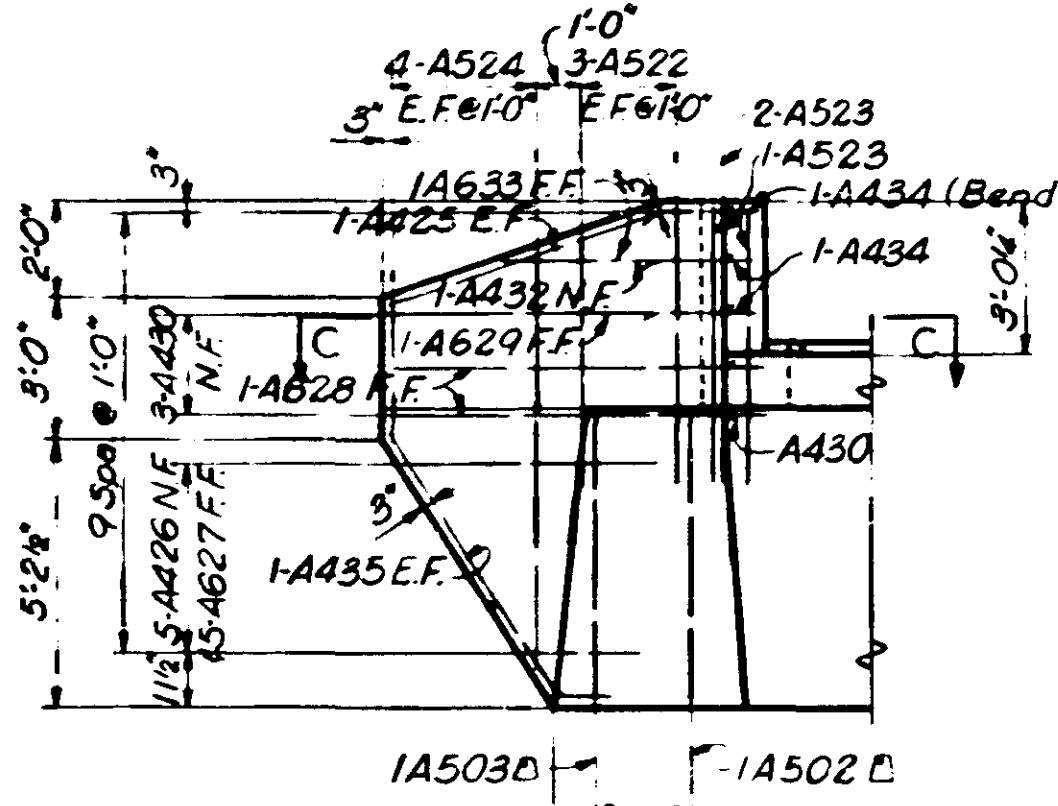
BRIDGE NO. 9340

PIER 11

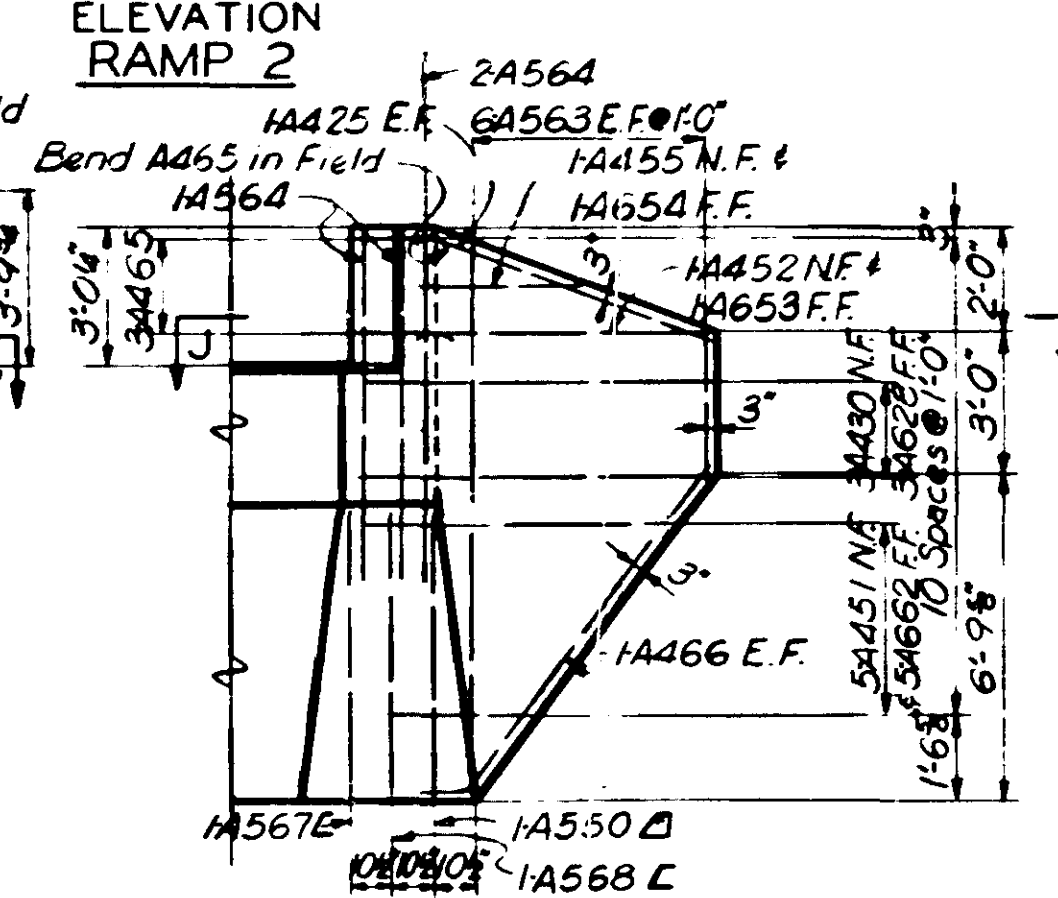
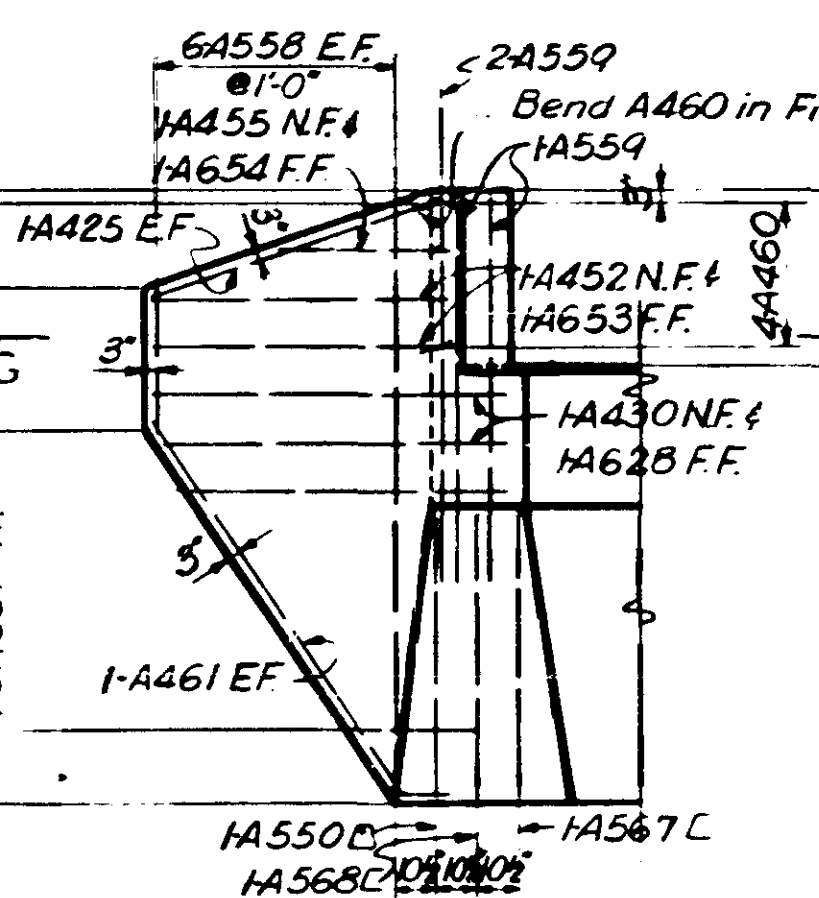
APPROVED - 6-18-65



ELEVATION NORTHBOUND AND SOUTHBOUND ROADWAYS



ELEVATION RAMP 2



Pile Notes
 2 Steel Test Piles, 30 feet long.
 35 Steel Piles, Estimated Length 26 feet
 37 Steel Piles Req'd for North Abutments
 All piles to be 10BP42.
 Estimated penetration 1 foot less than length given.
 All piles to be driven to a minimum bearing of 55 tons per pile.
 Piles in front row to be battered 3 in 12 as shown in Section B-B
 For pile splice see M.H.D. Detail #8221

Computed Pile Load	Tons / Pile
Dead Load	17
Live Load	10
Overturning	12
Total	39

Note: Section J-J opposite hand and similar.

NOTES
 For bill of reinforcement and Summary of Quantities see Sheet 15.
 All Concrete to be Mix 3Y6.
 Anchor rods for bearing assemblies, Type 16, are to be cast in place.
 Stirrups may be shifted slightly to clear Anchor Rods.

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 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

NORTH ABUTMENT

APPROVED - 6-18-65

Drawn by: A. Myers, Mar 1964
 Checked by: R. F. Beck, June 1964

BILL OF REINFORCEMENT FOR PIER 9

Table with columns: Mark, Size, Series, Length, Shape, Location. Lists reinforcement details for Pier 9.

BILL OF REINFORCEMENT FOR PIER 10 (CONT'D)

Table with columns: Mark, Size, Series, Length, Shape, Location. Lists reinforcement details for Pier 10.

BILL OF REINFORCEMENT FOR N. ABUTMENT (CONT'D)

Table with columns: Mark, Size, Series, Length, Shape, Location. Lists reinforcement details for North Abutment.

BILL OF REINFORCEMENT FOR PIER 10

Table with columns: Mark, Size, Series, Length, Shape, Location. Lists reinforcement details for Pier 10.

BILL OF REINFORCEMENT FOR PIER II

Table with columns: Mark, Size, Series, Length, Shape, Location. Lists reinforcement details for Pier II.

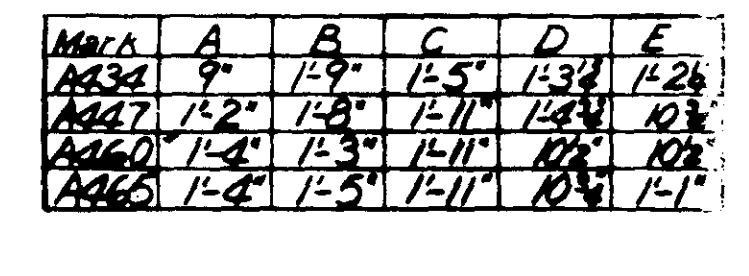
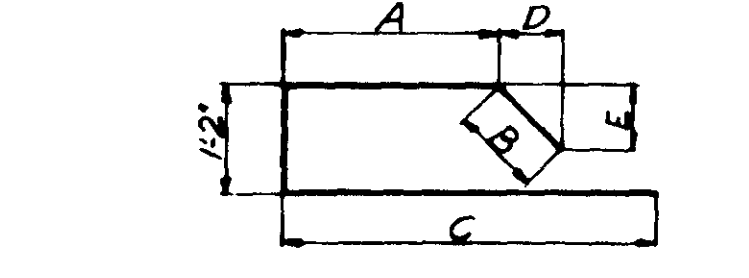
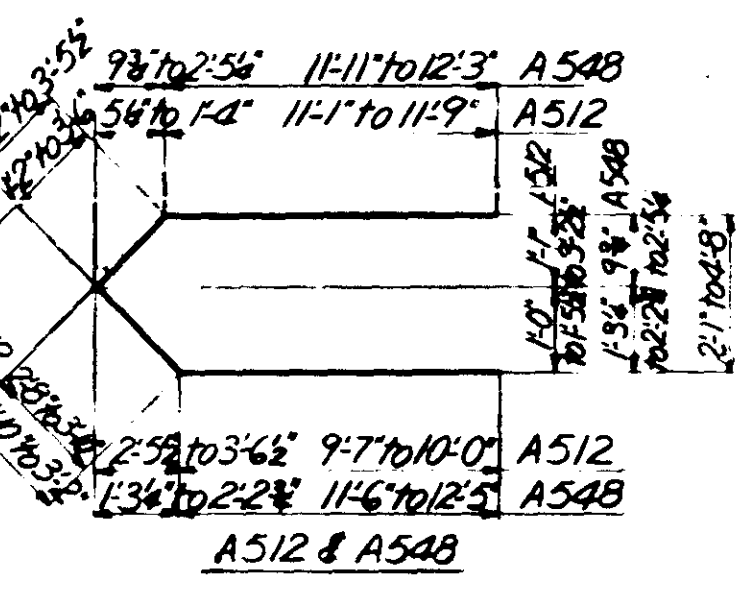
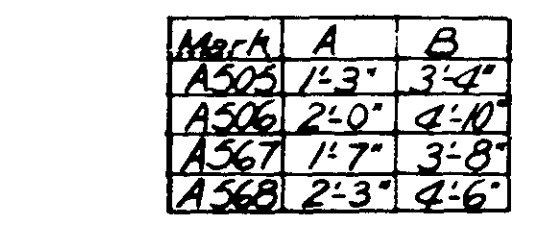
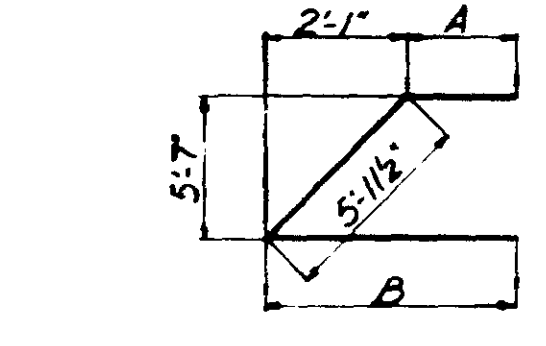
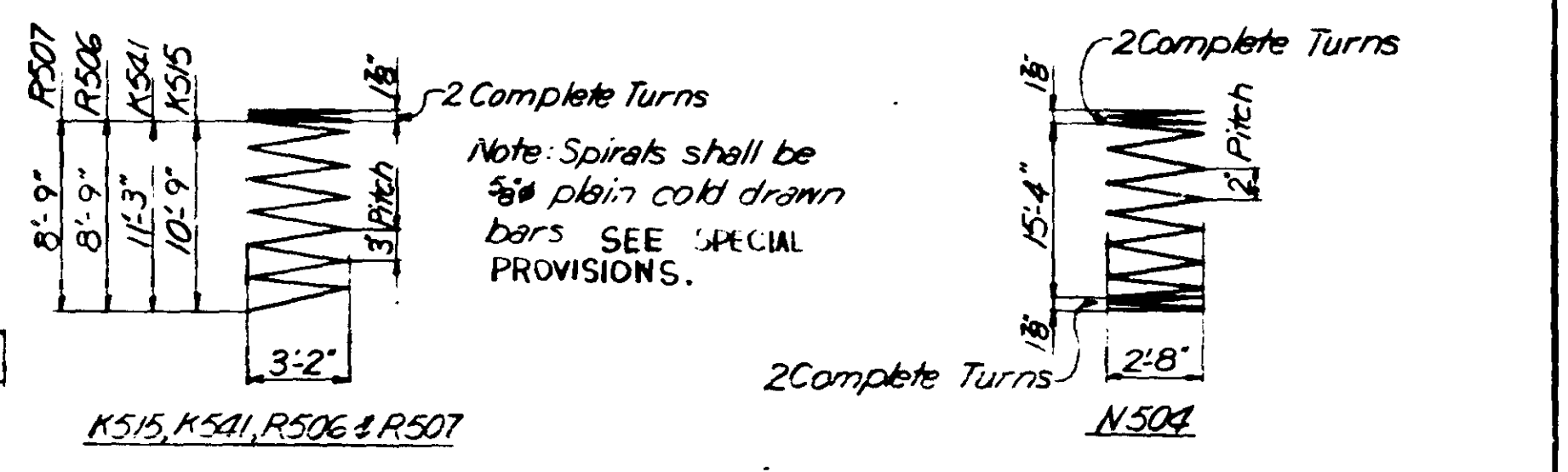
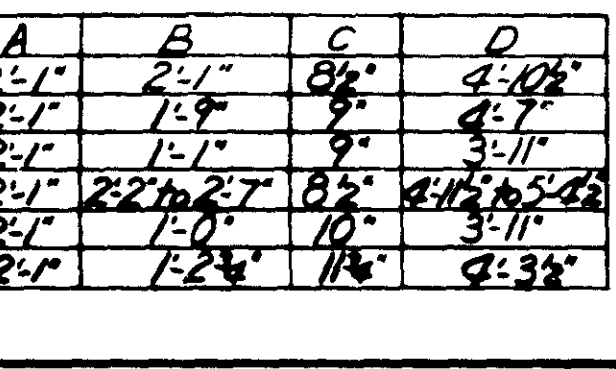
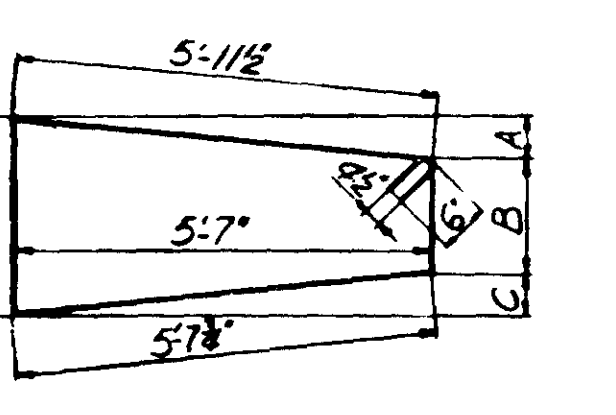
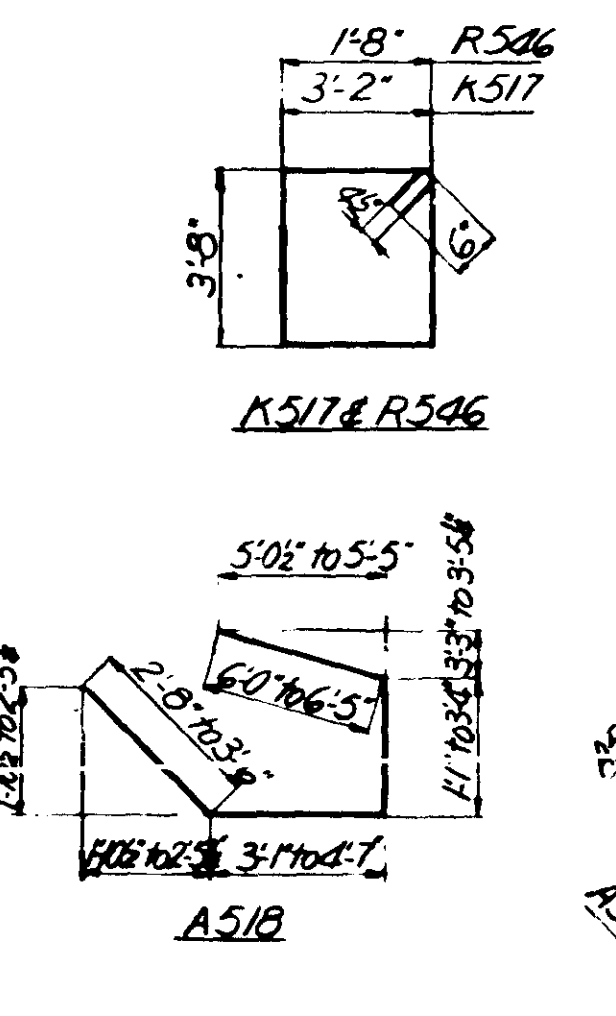
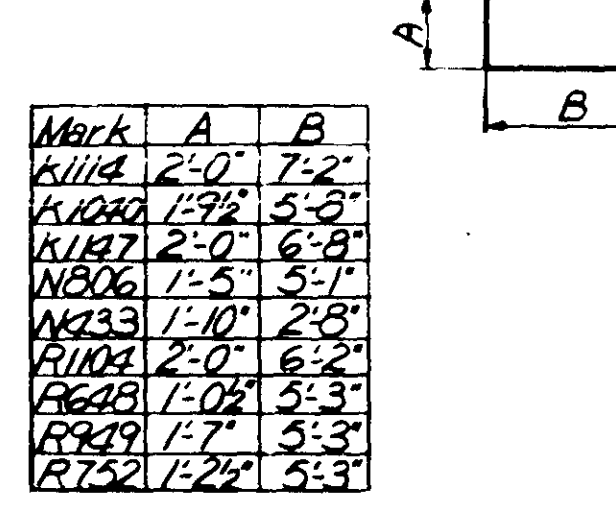
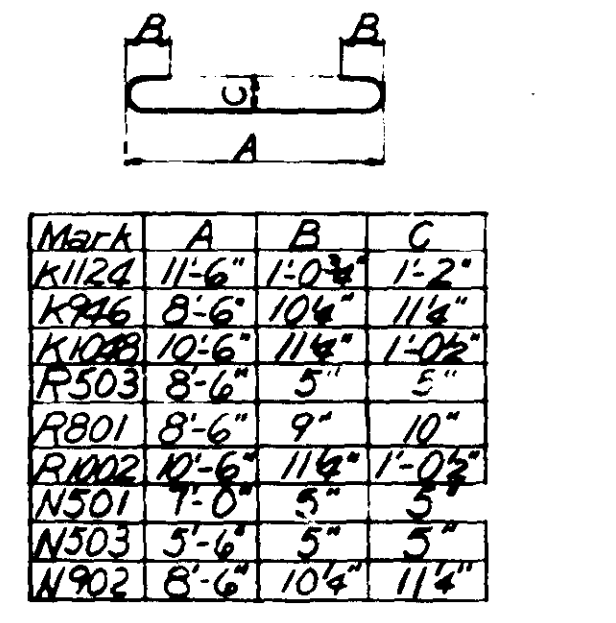
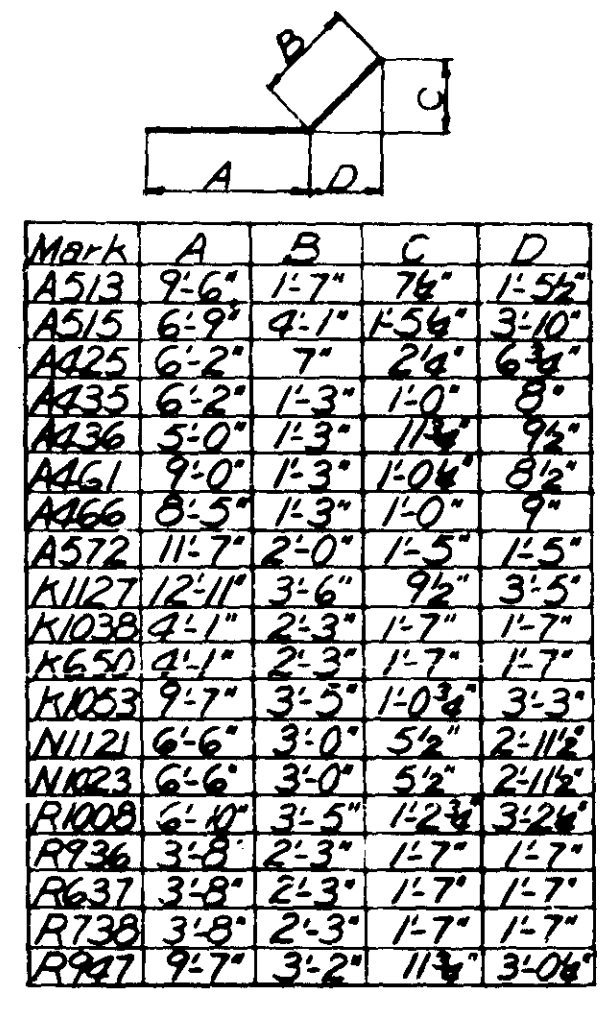
BILL OF REINFORCEMENT FOR N. ABUTMENT

Table with columns: Mark, Size, Series, Length, Shape, Location. Lists reinforcement details for North Abutment.

SUMMARY OF QUANTITIES FOR PIERS 9,10,11 AND NORTH ABUTMENT

Summary table with columns: Description, Pier 9, Pier 10, Pier 11, North Abutment. Lists quantities for various materials.

Exclusive of Test Piles. To be included in price bid for other items. State will furnish disk. Payment for placing disk will be included in price bid for other items. SEE CORK JOINT FILLER SUMMARY ON SHEET 63.

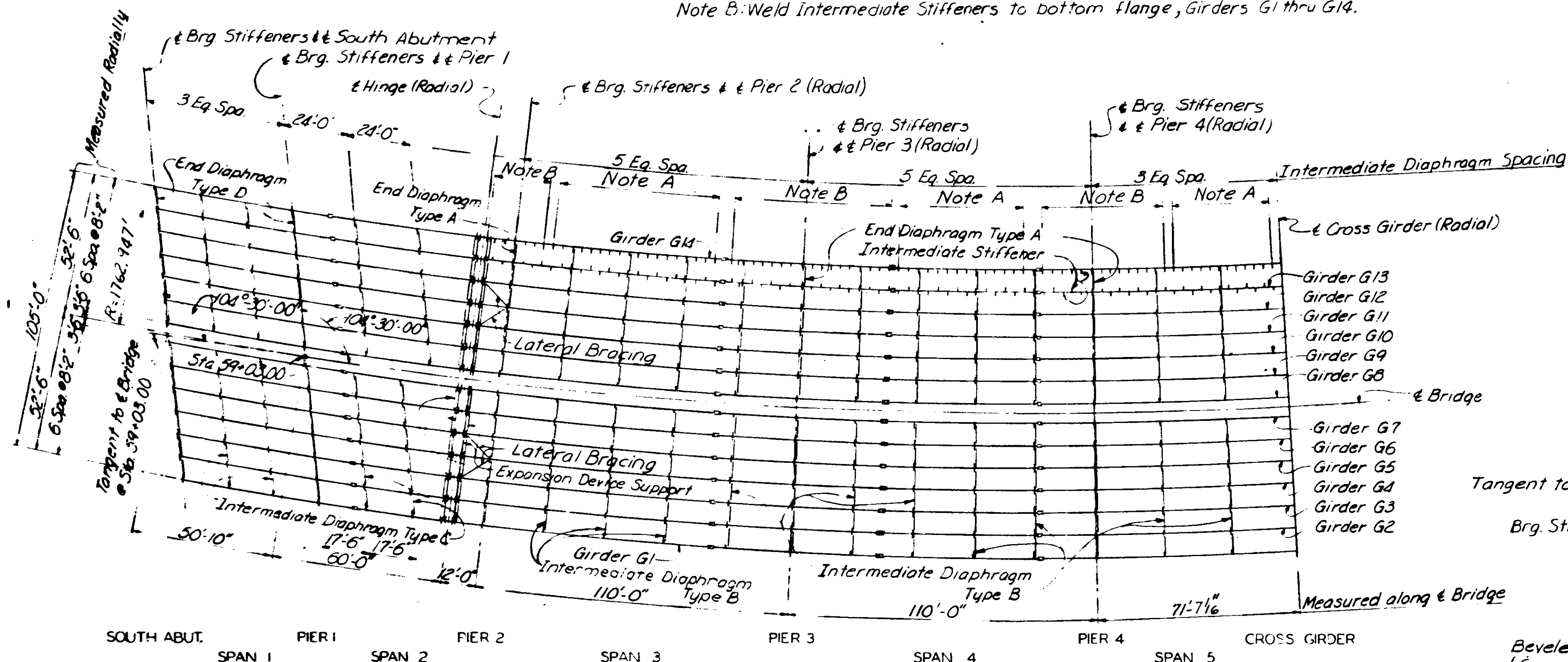


Drawn By: G.R. Shanley, Sept. 1964. Checked By: R.F. Beck, Oct. 1964.

BRIDGE NO. 9340. BAR LIST AND QUANTITIES PIERS 9 THRU 11 AND NORTH ABUTMENT. APPROVED - 6-18-65. SHEET 16 OF 94. 9340

Note A: Weld Intermediate Stiffeners to top flange, Girders G1 thru G14

Note B: Weld Intermediate Stiffeners to bottom flange, Girders G1 thru G14.



Note: Intermediate Stiffeners for Girders G1 and G14 shall be Pl. 4"x8". FRAMING PLAN

Space as shown for G14 and normal to web.

Intermediate Stiffeners for Girders G2 thru G13 shall be Pl. 4"x8".

Space as shown for G13 and normal to web.

Diaphragms in Spans 1 and 2 shall be placed parallel to Pier 1.

Diaphragms in Spans 3, 4 and 5 shall be placed radially.

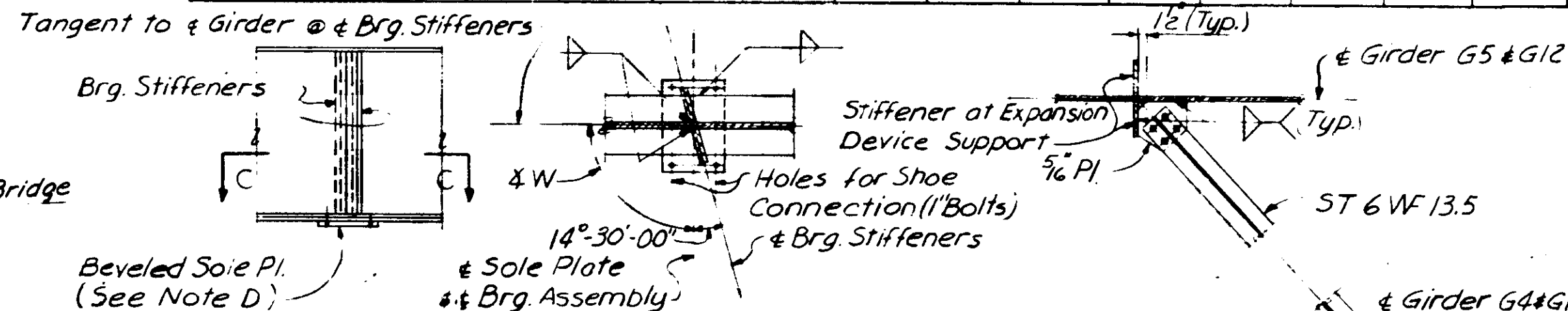
For diaphragm details see Sheet 17.

Note: Diaphragms may be shifted slightly to clear Field Splices.

Note: Shear Connectors may be omitted over flange splice plates.

TABLE OF VARIABLE DIMENSIONS AND ANGLES

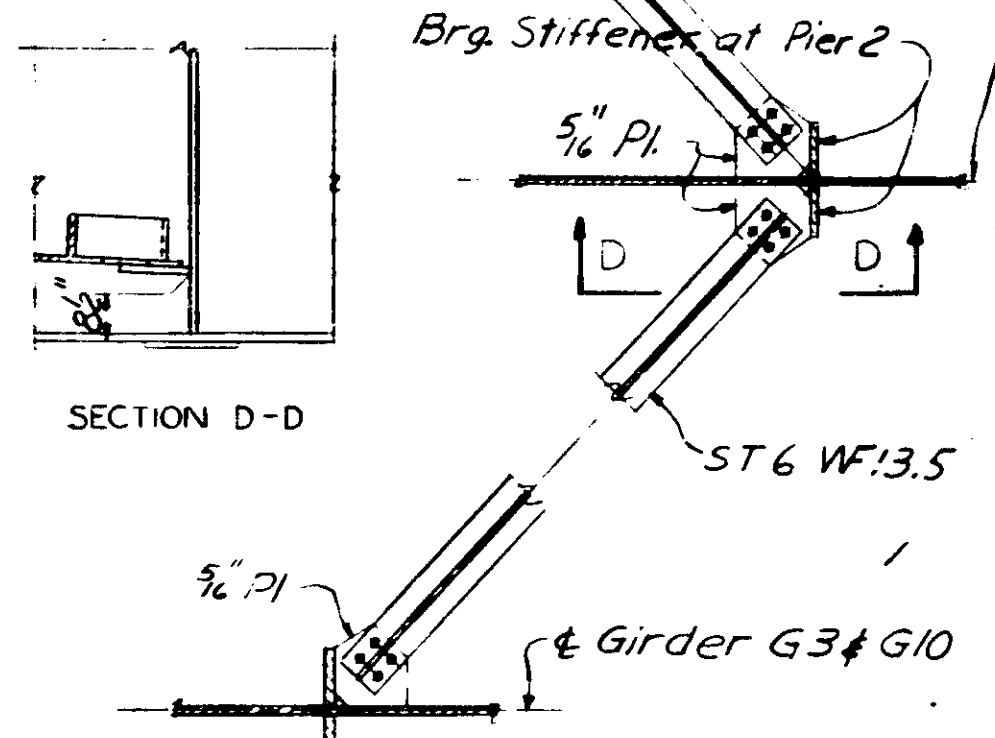
Dim	Girder													
	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14
A	50'-8"	50'-8"	50'-9"	50'-9"	50'-9"	50'-9"	50'-9"	50'-10"	50'-10"	50'-10"	50'-10"	50'-10"	50'-11"	50'-11"
B	48'-2"	50'-0"	51'-0"	53'-8"	55'-6"	57'-4"	59'-2"	60'-9"	62'-7"	64'-5"	66'-3"	68'-1"	69'-11"	71'-9"
C	12'-4"	12'-3"	12'-2"	12'-2"	12'-1"	12'-0"	12'-0"	11'-11"	11'-11"	11'-10"	11'-9"	11'-9"	11'-8"	11'-7"
D	115'-3"	12'-9"	112'-5"	111'-8"	111'-2"	110'-2"	109'-4"	109'-4"	108'-9"	108'-5"	108'-5"	107'-8"	107'-2"	106'-8"
E	13'-11"	13'-11"	13'-11"	13'-11"	13'-11"	13'-11"	14'-0"	14'-0"	14'-0"	14'-0"	14'-0"	14'-0"	14'-0"	14'-0"
F	73'-8"	73'-4"	73'-0"	72'-8"	72'-4"	72'-0"	71'-8"	71'-5"	71'-3"	70'-9"	70'-5"	70'-1"	69'-9"	69'-5"
G	30'-8"	30'-8"	30'-1"	30'-9"	30'-9"	30'-9"	30'-9"	30'-10"	30'-10"	30'-10"	30'-10"	30'-11"	30'-11"	30'-11"
H	6"6"	10"6"	12"6"	14"6"	16"6"	18"6"	20"6"	22"6"	24"6"	26"6"	29"6"	31"6"	33"6"	35"6"
J	19	20	22	24	25	27	29	30	31	33	34	35	37	39
K	19'-10"	19'-9"	19'-7"	19'-6"	19'-5"	19'-4"	19'-3"	19'-2"	19'-0"	18'-11"	18'-10"	18'-9"	18'-8"	18'-6"
L	58'-3"	57'-8"	57'-0"	56'-5"	55'-10"	55'-5"	54'-8"	54'-2"	53'-6"	52'-11"	52'-4"	51'-9"	51'-2"	50'-6"
M	45'-11"	45'-3"	44'-7"	43'-10"	43'-2"	42'-5"	41'-9"	41'-1"	40'-5"	39'-8"	39'-0"	38'-3"	37'-7"	36'-11"
N	78'-3"	78'-9"	78'-3"	78'-8"	78'-8"	78'-8"	71'-8"	71'-8"	70'-9"	69'-9"	69'-9"	68'-8"	68'-2"	67'-6"
P	59'-3"	58'-9"	58'-3"	57'-8"	57'-2"	56'-8"	56'-2"	55'-9"	55'-3"	54'-9"	54'-9"	53'-8"	53'-2"	52'-6"
R	48'-5"	48'-4"	48'-0"	47'-8"	47'-4"	47'-0"	46'-8"	46'-5"	46'-3"	45'-9"	45'-5"	45'-1"	44'-9"	44'-5"
S	18'-2"	20'-0"	21'-0"	23'-8"	25'-6"	27'-4"	29'-2"	30'-9"	32'-7"	34'-5"	36'-3"	38'-1"	39'-11"	41'-9"
T	29	29	29	28	28	28	27	27	27	26	26	26	25	25
U	9'-2"	10'-0"	10'-10"	11'-8"	12'-6"	13'-4"	14'-2"	14'-9"	15'-7"	16'-5"	16'-9"	17'-7"	18'-5"	19'-3"
V	89'-34'	89'-35'	89'-40'	89'-44'	89'-48'	89'-53'	89'-58'	90'-01'	90'-04'	90'-07'	90'-11'	90'-14'	90'-18'	90'-21'
W	89'-34'	89'-35'	89'-40'	89'-44'	89'-48'	89'-53'	89'-58'	90'-01'	90'-04'	90'-07'	90'-11'	90'-14'	90'-18'	90'-21'
X	23	23	23	22	22	21	21	21	20	20	20	19	19	19



ELEVATION SECTION C-C

INTERMEDIATE SUPPORT PIER 1

Note: Beveled edge of stiffeners to fit flush against girder web.



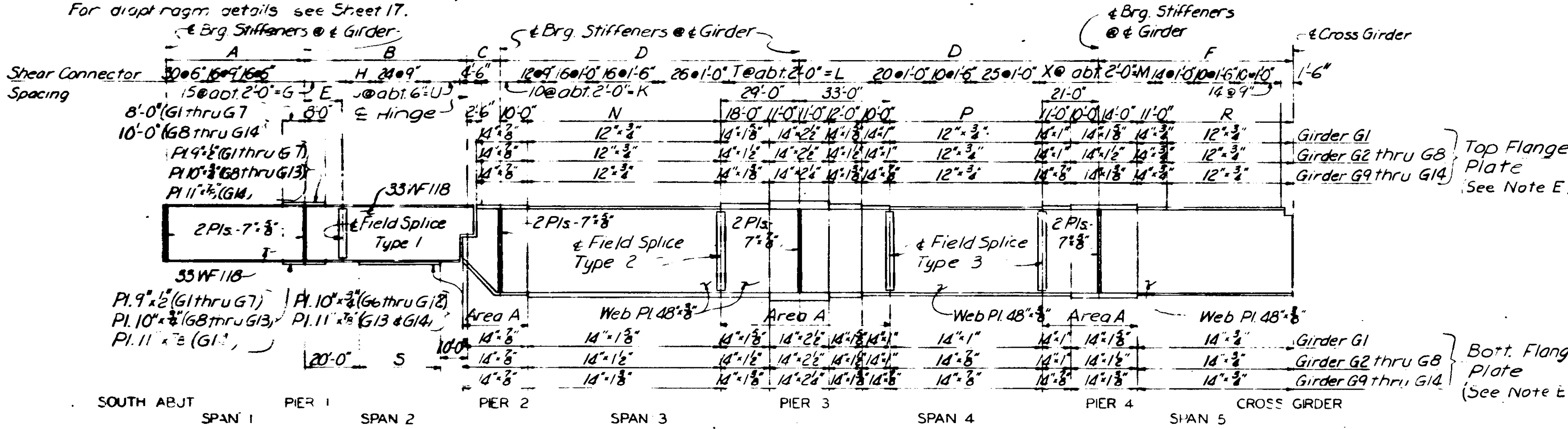
Note C: Weld Intermediate Stiffeners to top or bottom flange of girders as indicated on Framing Plan. Size of fillet welds shall be same as indicated in Table on Sheet 41. Where not welded to flange plates Intermediate Stiffeners shall be fitted to form a tight fit.

Note D: Sole Plate to be 3/8" thick at Sole Plate. Other dimensions same as Plate A shown on Brg. Assemblies. Holes in Sole Plate to match holes in Pl. A.

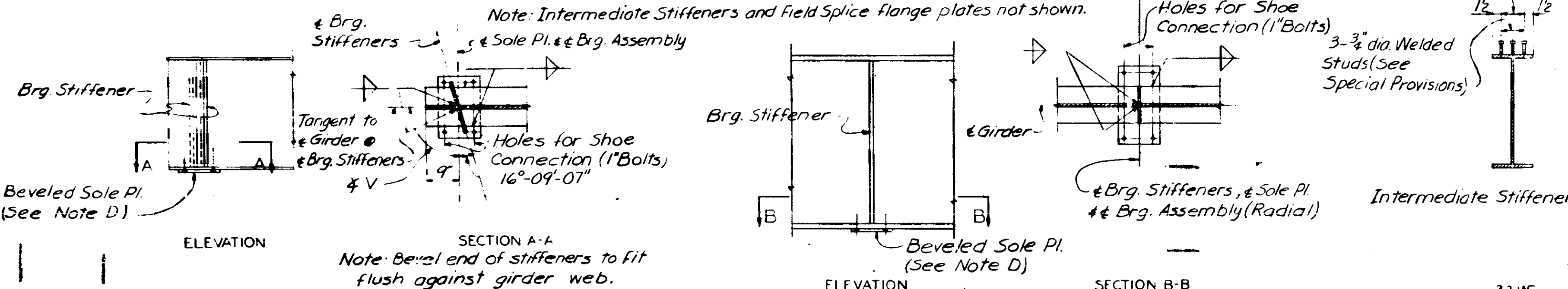
Note E: Flange Plates for welded curved girders shall be preformed to proper curvature before welding to web plates. This may be done by heating, mechanical bending, or flame cutting. Regardless of method used measurement for payment will be based upon the net cross sectional area after forming.

LATERAL BRACING Note: For elevation of Expansion Device Support see Sheet 18.

NOTES See Sheet 40 for Structural Steel Notes. Work this Sheet with Sheets 17 E 18. All longitudinal dimensions are measured horizontally along Girder.



GIRDER ELEVATION



ELEVATION

SECTION A-A

Note: Bevel end of stiffeners to fit flush against girder web.

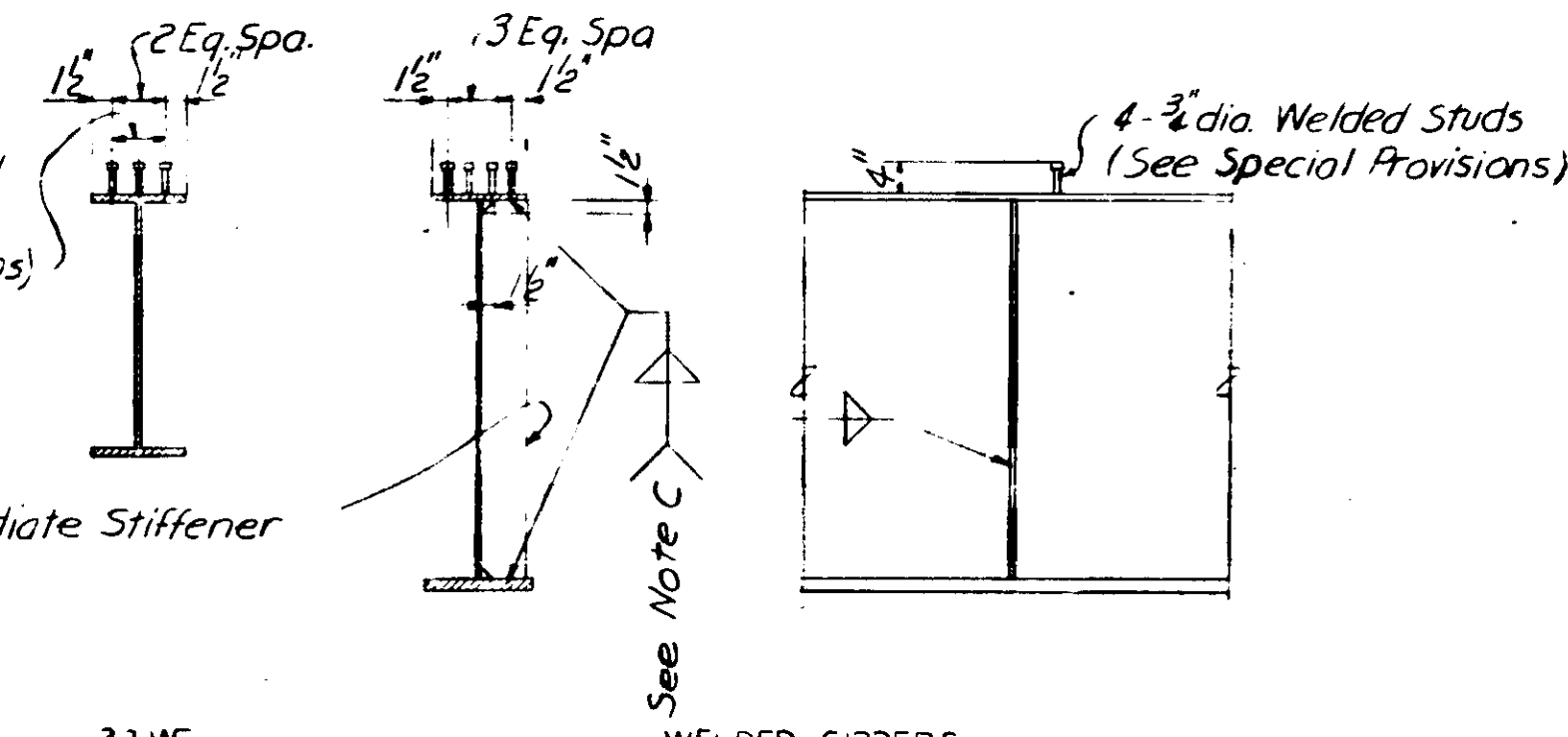
ELEVATION

SECTION B-B

INTERMEDIATE SUPPORT

PIERS 2, 3 & 4

Note: Bevel end of Stiffeners to fit flush against girder web plate.



ELEVATION

SECTION C-C

33 WF

WELDED GIRDERS

SHEAR CONNECTORS

INTERMEDIATE STIFFENERS

Note: Weight of Welded Studs to be included in the weight of Structural Steel M.H.D. 3306.

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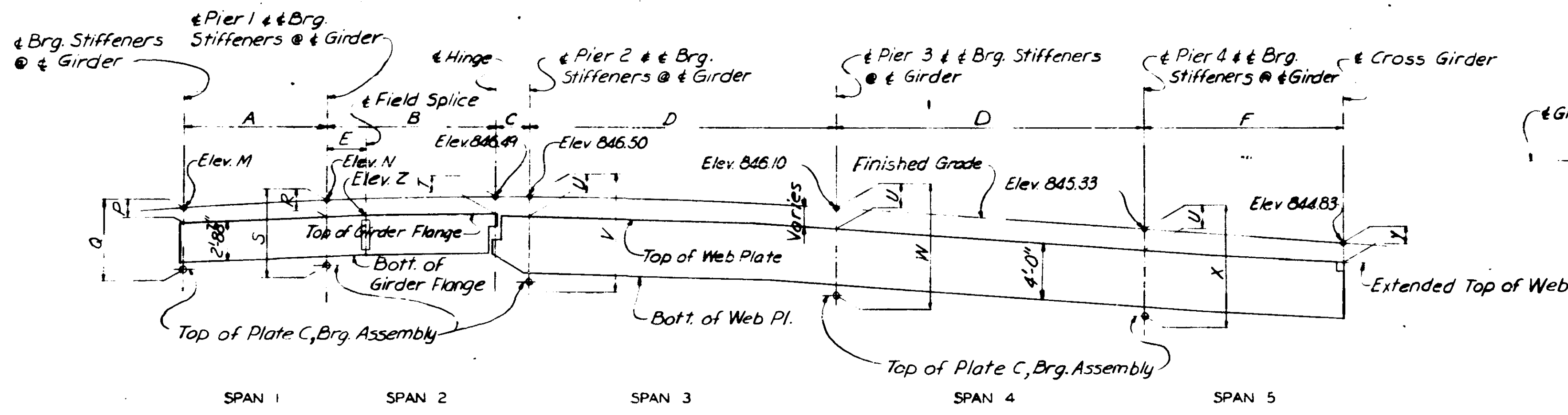
T.H. 35W STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

SOUTH APPROACH SPANS STRUCTURAL STEEL DETAILS

APPROVED - 6-18-65

Drawn by: D. Pearson, Feb. 1964
Checked by: W.J. Gaudin, May 1964
2083
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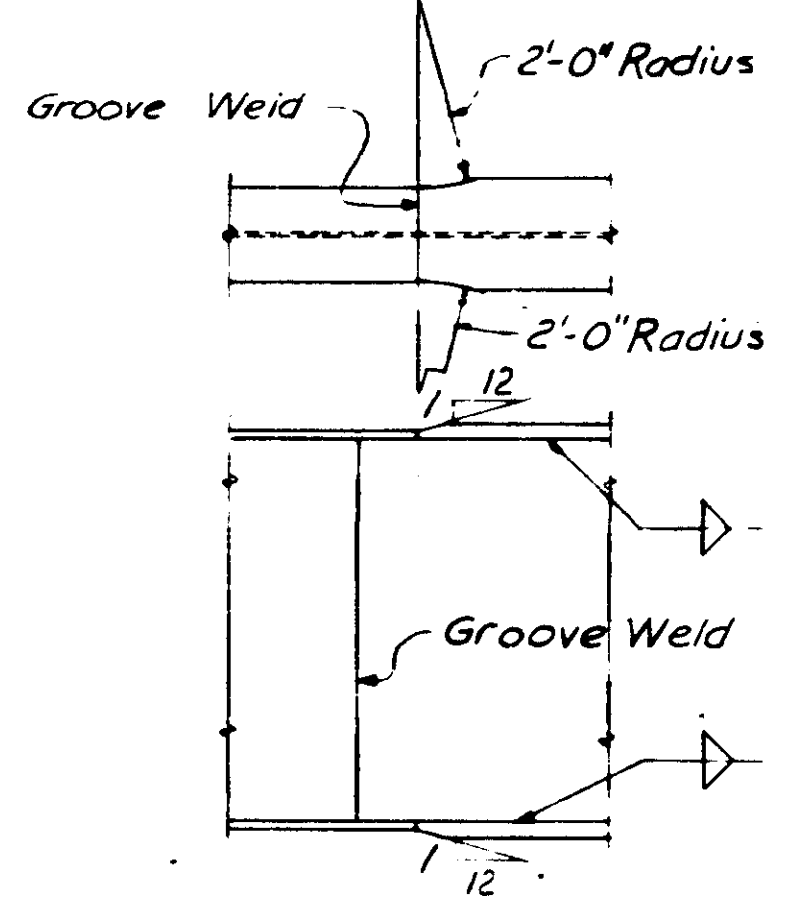
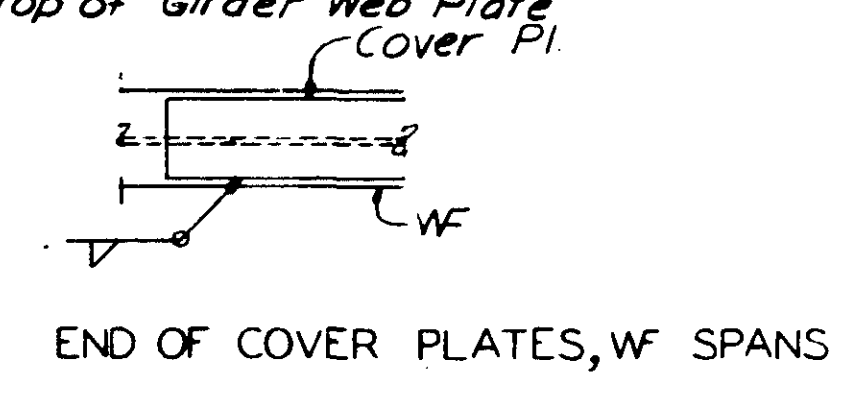


Note: Dimension Y locates final extended Top of Web at Cross Girder and is to be used for purposes of fabrication. Web connection to Cross Girder shall allow for camber of Cross Girder. See Sheet 19.

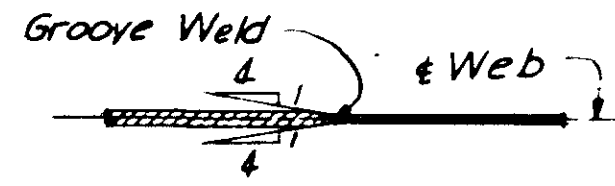
TABLE OF VARIABLE ELEVATIONS & DIMENSIONS

Girder	Elev. M	Elev. N	P	Q	R	S	T	U	V	W	X	Y	Elev. Z
G1	846.15	846.40	1'-7 1/2"	1'-4 1/2"	1'-6 1/2"	1'-6 3/4"	1'-6 1/2"	2'-11 1/2"	3'-1 1/2"	3'-0 1/2"	1'-2 1/2"	847.95	
G2	846.14	846.39	1'-2 1/2"	1'-8 1/2"	1'-1 1/2"	1'-10 1/2"	1'-11 1/2"	1'-10 1/2"	5'-4 1/2"	3'-5 1/2"	3'-8 1/2"	847.58	
G3	846.12	846.30	1'-10 1/2"	2'-1 1/2"	1'-9 1/2"	2'-3 3/4"	1'-9 1/2"	7'-8 1/2"	3'-8 1/2"	3'-10 1/2"	3'-9 1/2"	847.22	
G4	846.10	846.30	1'-6 1/2"	2'-5 1/2"	1'-5 1/2"	2'-7 1/2"	1'-5 1/2"	4'-0 1/2"	4'-2 1/2"	4'-1 1/2"	1'-3 1/2"	846.85	
G5	846.09	846.37	1'-8 1/2"	2'-9 1/2"	1'-7 1/2"	2'-11 1/2"	1'-7 1/2"	8'-4 1/2"	4'-5 1/2"	4'-6 1/2"	4'-5 1/2"	846.49	
G6	846.07	846.35	2'-8 1/2"	3'-2 1/2"	3'-4 1/2"	3'-4 1/2"	3'-4 1/2"	5'-9 1/2"	4'-9 1/2"	4'-11 1/2"	4'-9 1/2"	846.12	
G7	846.05	846.35	6'-8 1/2"	3'-6 1/2"	7'-8 1/2"	3'-8 1/2"	7'-8 1/2"	9'-8 1/2"	5'-1 1/2"	5'-3 1/2"	5'-2 1/2"	845.76	
G8	846.04	846.34	6'-8 1/2"	3'-6 1/2"	7'-8 1/2"	3'-8 1/2"	7'-8 1/2"	9'-8 1/2"	5'-1 1/2"	5'-3 1/2"	5'-2 1/2"	845.79	
G9	846.02	846.33	10'-8 1/2"	3'-10 1/2"	11'-8 1/2"	4'-0 1/2"	11'-8 1/2"	1'-1 1/2"	5'-5 1/2"	5'-7 1/2"	5'-5 1/2"	845.43	
G10	846.00	846.32	12'-8 1/2"	4'-2 1/2"	13'-8 1/2"	4'-4 1/2"	13'-8 1/2"	1'-5 1/2"	5'-9 1/2"	5'-11 1/2"	5'-10 1/2"	845.06	
G11	845.98	846.31	1'-7 1/2"	4'-6 1/2"	1'-8 1/2"	4'-9 1/2"	1'-8 1/2"	1'-9 1/2"	6'-2 1/2"	6'-3 1/2"	6'-2 1/2"	844.69	
G12	845.96	846.30	1'-11 1/2"	4'-11 1/2"	2'-0 1/2"	4'-11 1/2"	2'-0 1/2"	2'-2 1/2"	6'-6 1/2"	6'-8 1/2"	6'-6 1/2"	844.33	
G13	845.94	846.29	2'-5 1/2"	5'-3 1/2"	2'-4 1/2"	5'-5 1/2"	2'-4 1/2"	2'-6 1/2"	6'-10 1/2"	7'-0 1/2"	6'-11 1/2"	843.96	
G14	845.92	846.28	2'-8 1/2"	5'-7 1/2"	2'-9 1/2"	5'-10 1/2"	2'-9 1/2"	2'-10 1/2"	7'-3 1/2"	7'-4 1/2"	7'-3 1/2"	843.59	

Note: (-) indicates Top of Girder Flange or Top of Girder Web Plate is higher than Finished Grade.



SHOP SPLICES AND FLANGE TO WEB WELD WELDED GIRDERS. Note: For table of "Size of Flange to Web Fillet Weld of Main Structural Members" see Sheet 41.

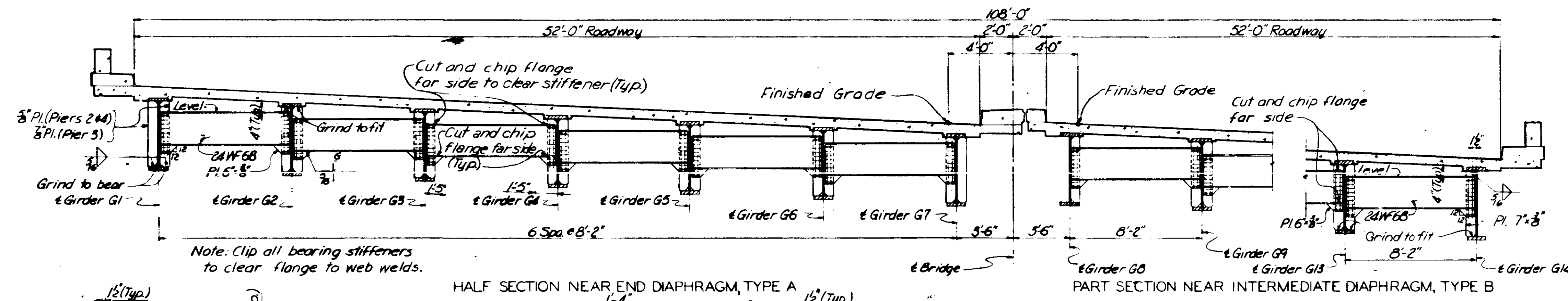


SHOP WEB SPLICE NEAR HINGE

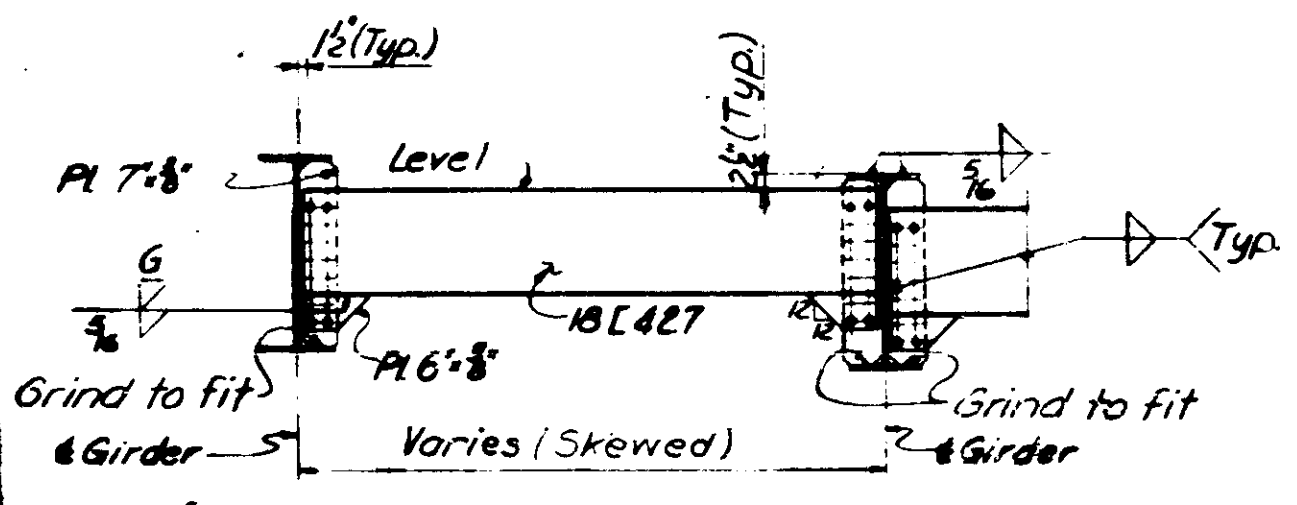
Type	Girder	PI G	PI H	Fill PI J	Fill PI K	L	M
1	G1	62x8	14x18	12x8	---	5	5
2	G2 thru G8	62x8	14x18	12x8	---	4	5
3	G9 thru G14	62x8	14x18	12x8	---	4	5
3	G1	62x8	14x18	12x8	14x8	3	3

FIELD SPLICES

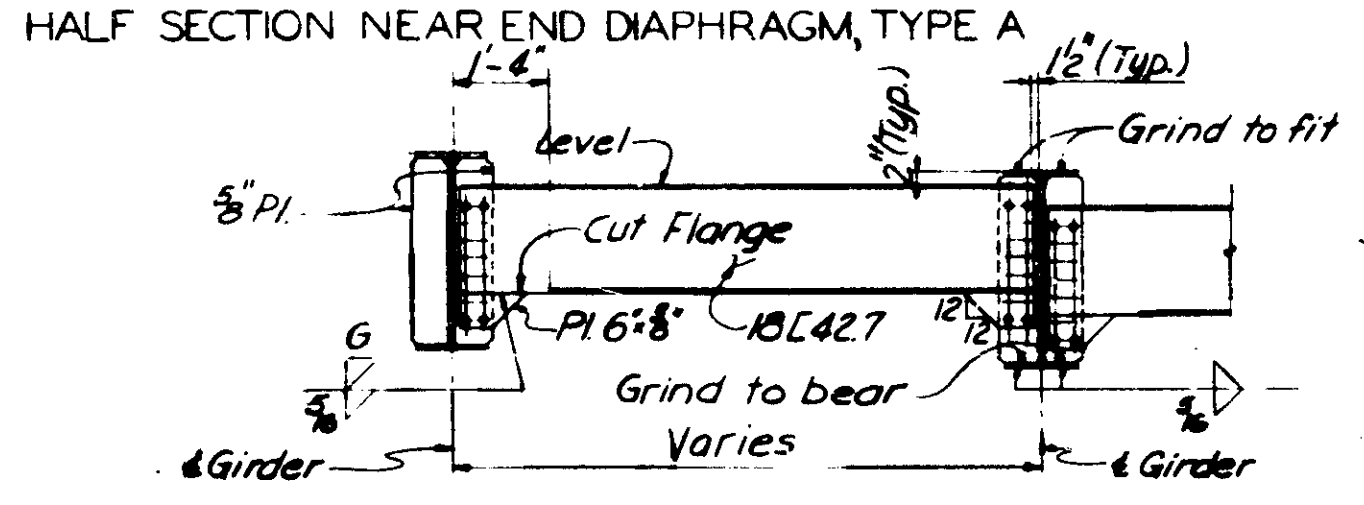
Note: Grind edge of flange splice plates to fit flange to web weld or WF fillet.



Note: Clip all bearing stiffeners to clear flange to web welds.

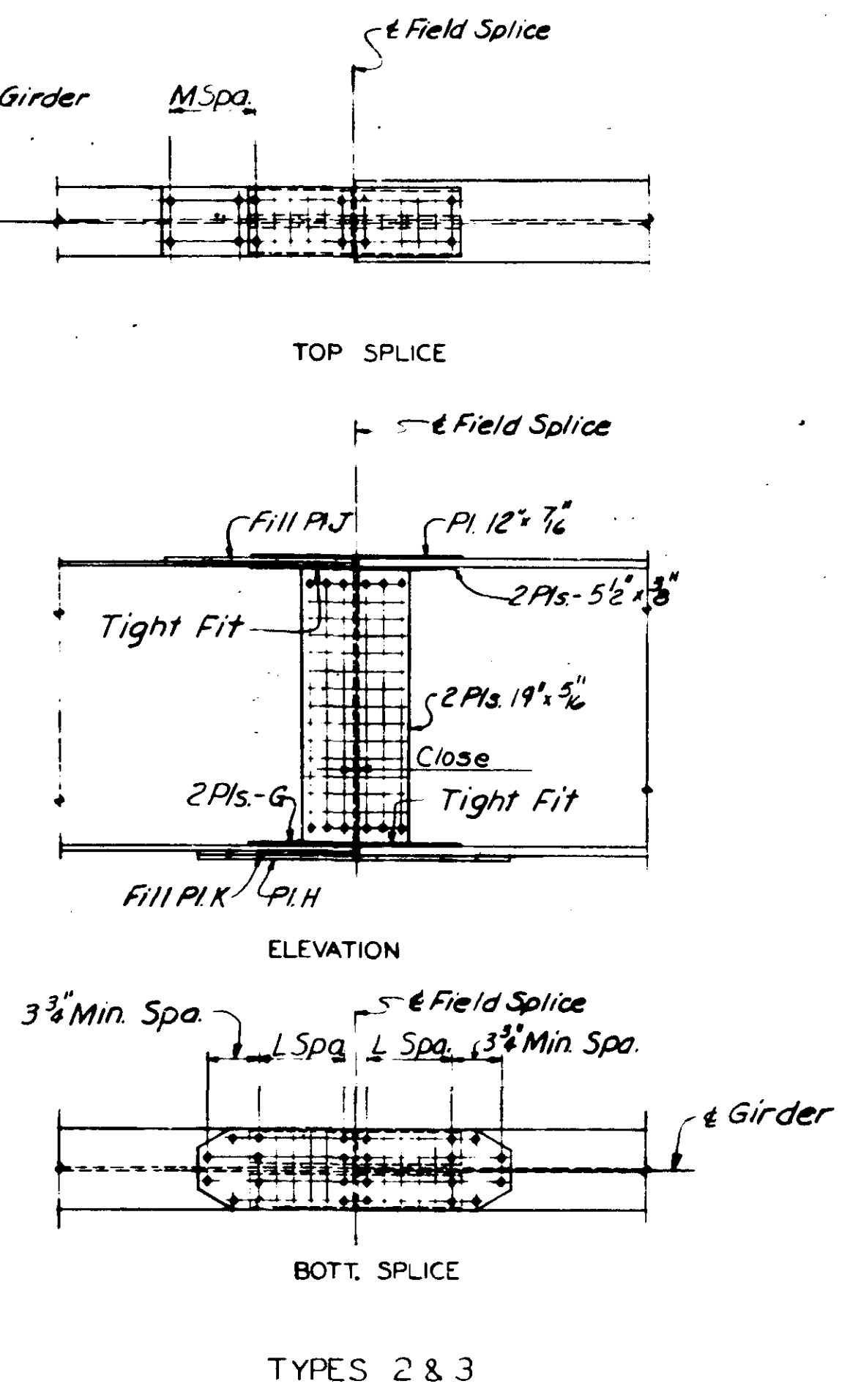


INTERMEDIATE DIAPHRAGM, TYPE C



END DIAPHRAGM, TYPE D

DIAPHRAGMS



TOP & BOTT. SPLICES

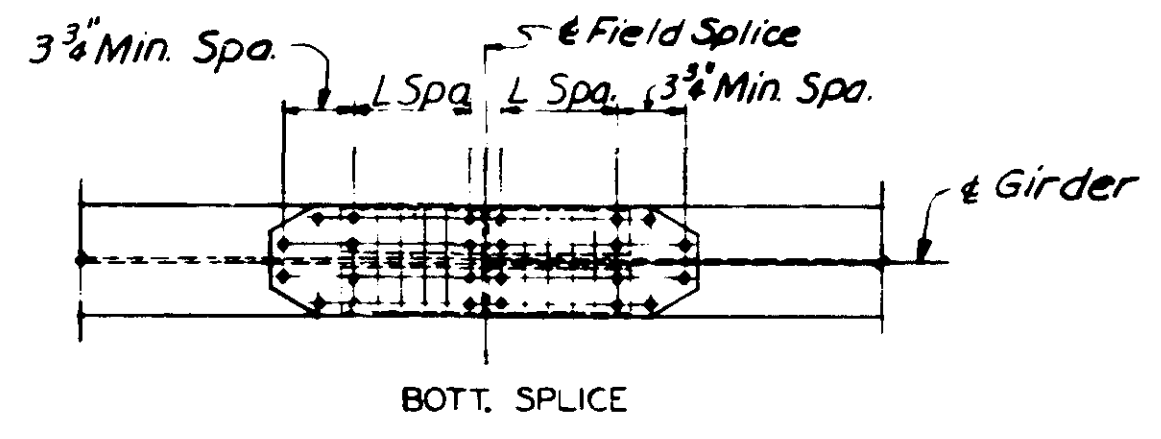
TOP SPLICE

ELEVATION

TYPE 1

ELEVATION

TYPES 2 & 3



NOTES

For Structural Steel Notes see Sheet 40. For Camber Diagrams see Sheet 18.

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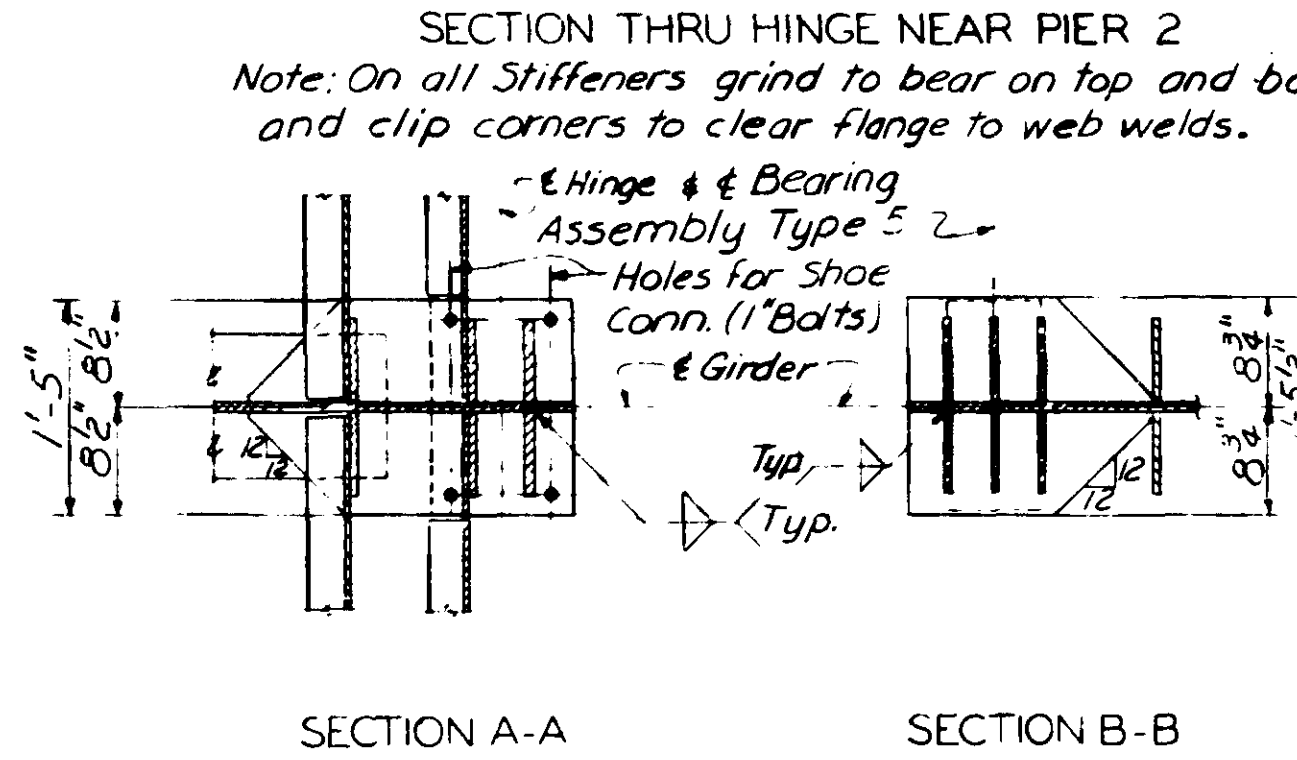
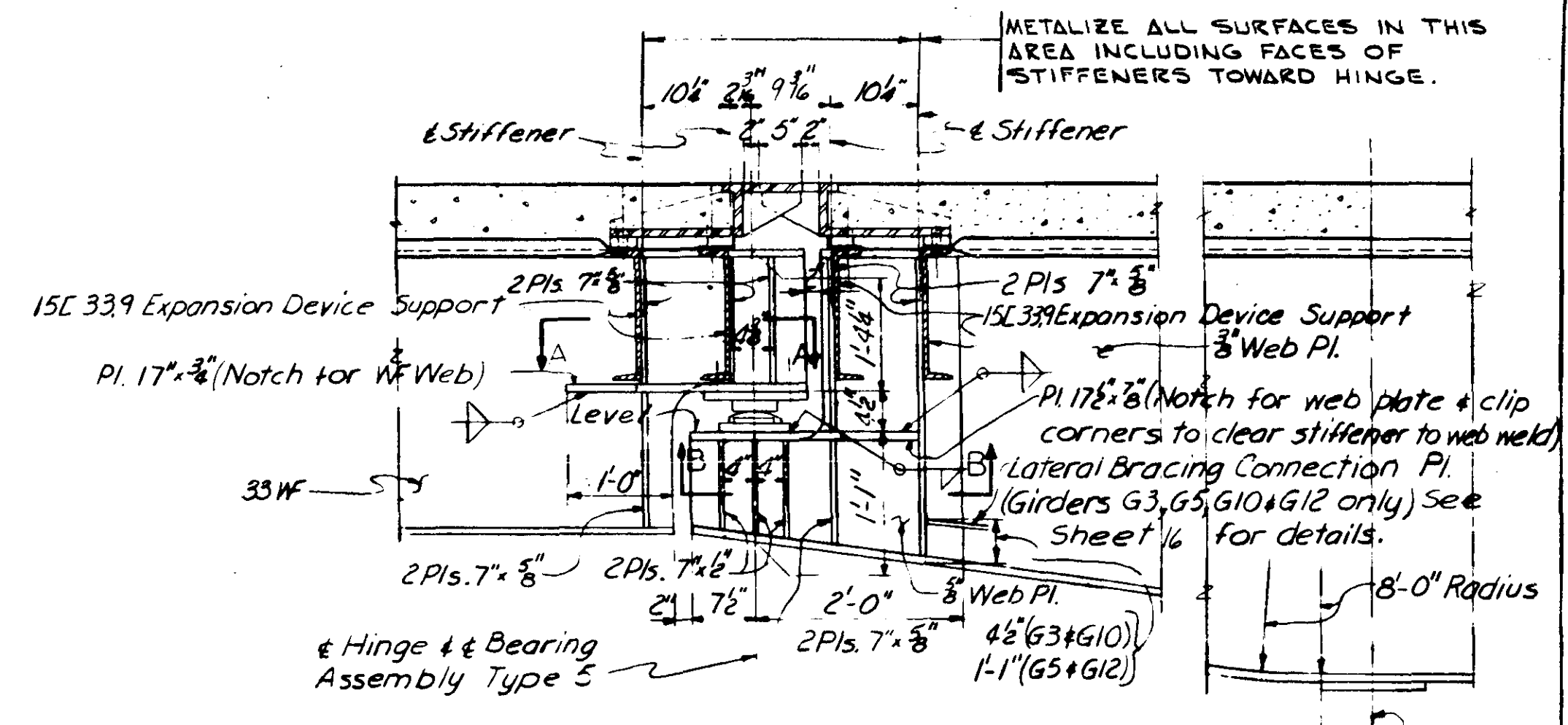
BRIDGE NO. 9340

SOUTH APPROACH SPANS STRUCTURAL STEEL DETAILS

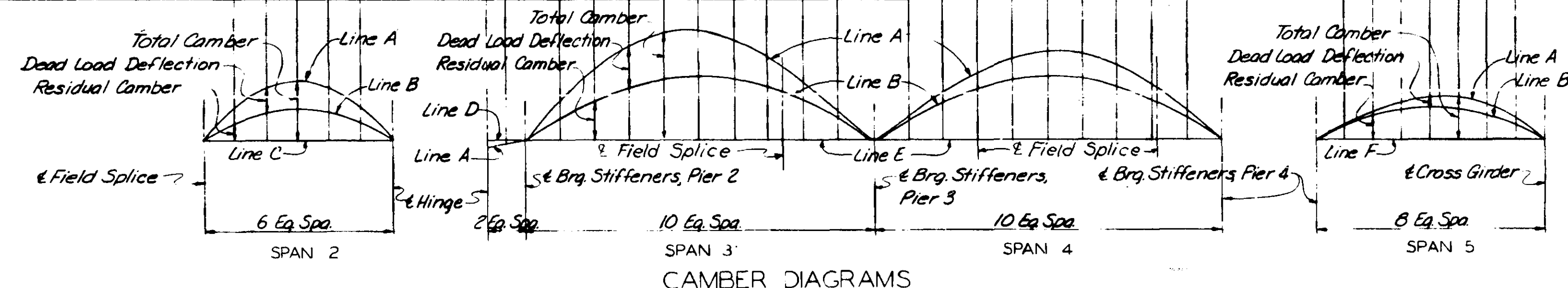
APPROVED - 6-18-65

Drawn by: D. Pierson, Feb 1964
Checked by: W. J. Gaddis, May 1964

Girder G1	Total Camber	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	Dead Load Deflection	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"
	Residual Camber	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"



Note: For details of Expansion Device Support see Sheet 50.
For details of Bearing Assembly Type 5 see Sheet 72.
For Structural Steel Notes see Sheet 40.



NOTE: THE ENGINEER WILL CHECK THE ELEVATIONS AT FIELD BEAM SPLICES AFTER ERECTION. IF VERTICAL ADJUSTMENT IS REQUIRED AT THESE POINTS, AS DETERMINED BY THE ENGINEER, IT SHALL BE DONE BEFORE THE SPLICES ARE RIVETED OR BOLTED INTO FINAL POSITION.

Line A indicates top of Wide Flange or top of Plate Girder web plate before dead load deflection occurs.
Line B indicates top of Wide Flange or top of Plate Girder web plate after calculated dead load deflection has occurred under full dead load.
Line C is a line connecting top of Wide Flange at ϵ Field Splice and at ϵ Hinge.
Line D is a line connecting extended top of Plate Girder web plate at ϵ Hinge and at ϵ Brg. Stiffeners, Pier 2
Line E parallels Finished Grade and coincides with top of Plate Girder web plate at ϵ Brg. Stiffeners. Finished Grade is partly parabolic.
Line F is a line connecting top of Plate Girder web plate at ϵ Brg. Stiffeners, Pier 4 and extended top of Plate Girder web plate at ϵ Cross Girder.
Provide 5'-0" tangent on each side of ϵ welded girder field splice.

Drawn by: D. Pierson, Apr. 1964
Checked by: W. J. Goodale, May 1964

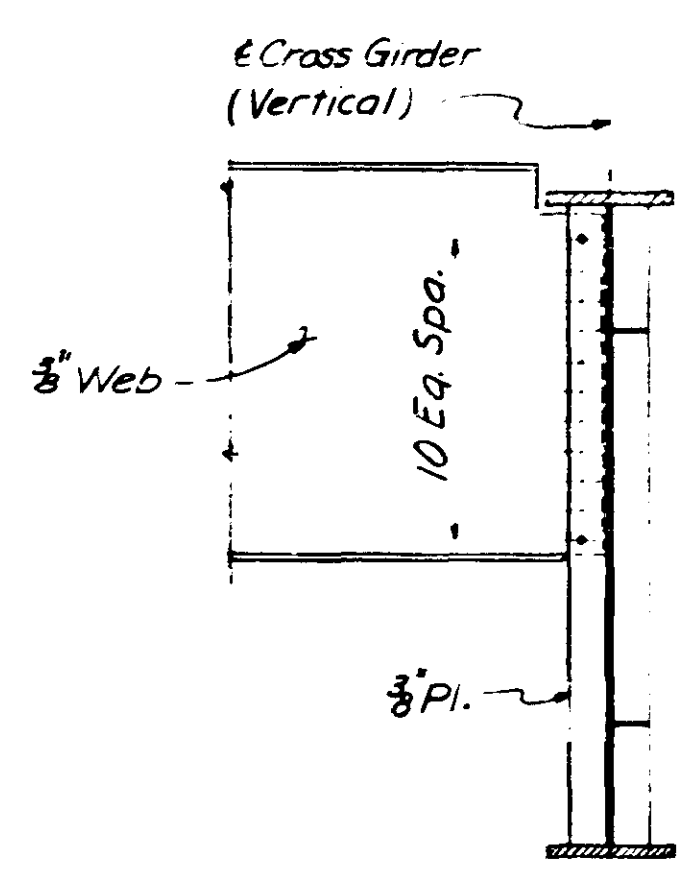
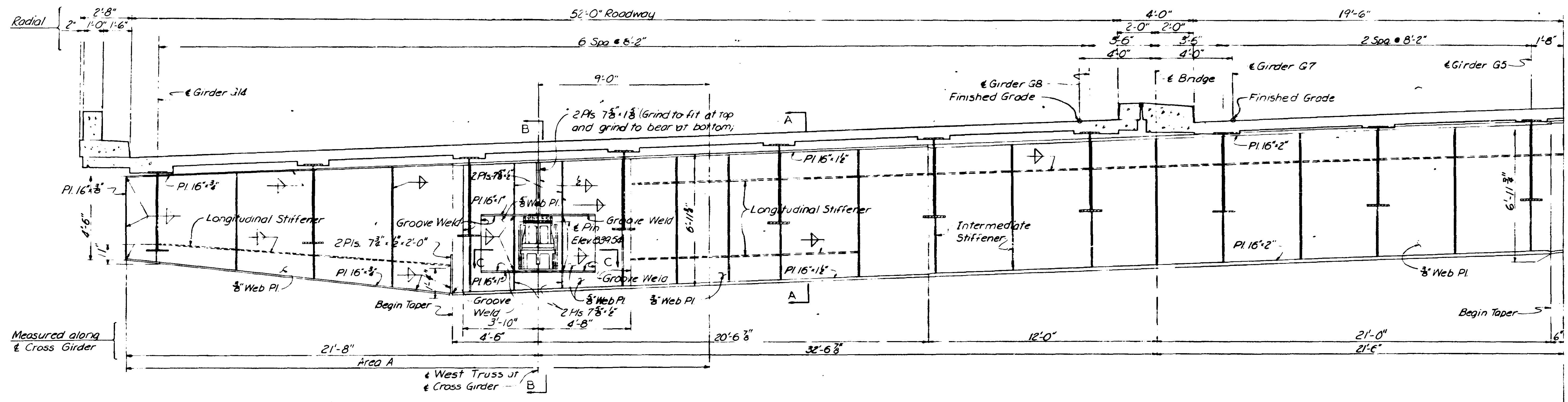
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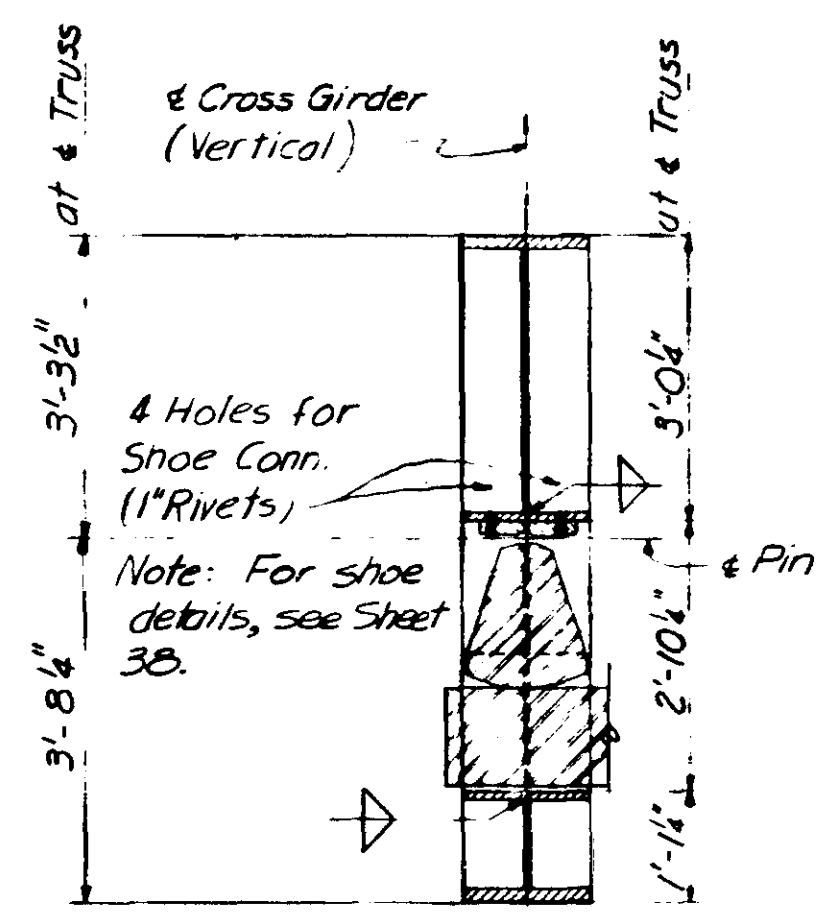
BRIDGE NO. 9340

SOUTH APPROACH SPANS
STRUCTURAL STEEL DETAILS

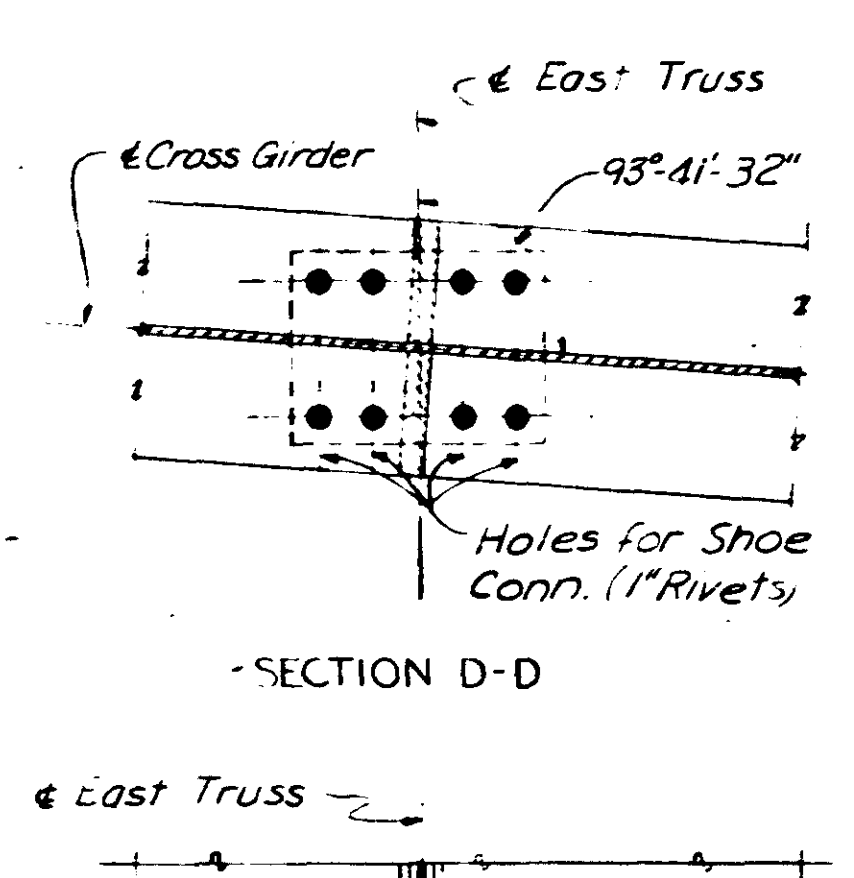
APPROVED - 6-18-65



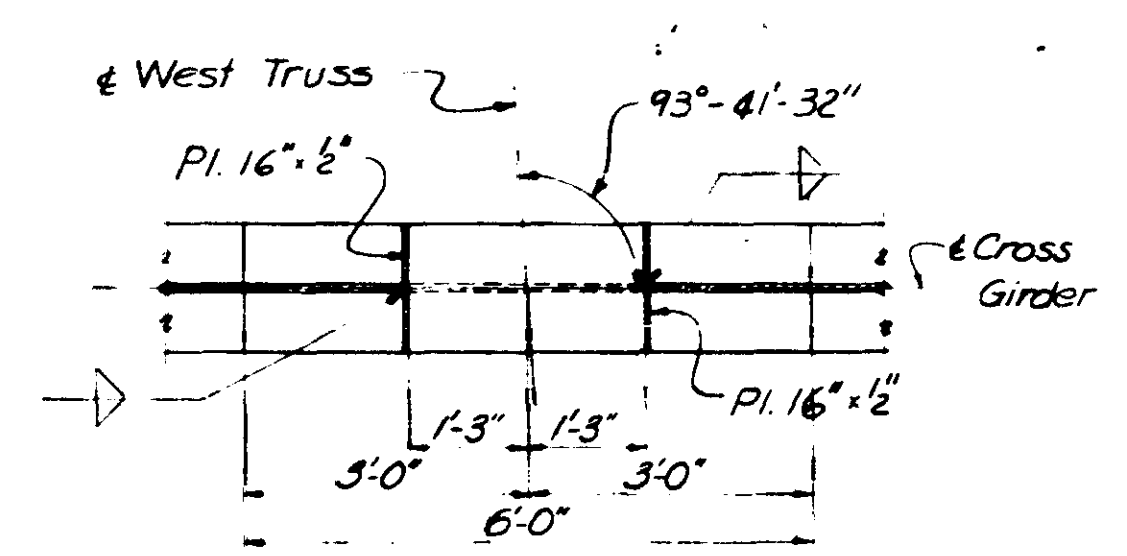
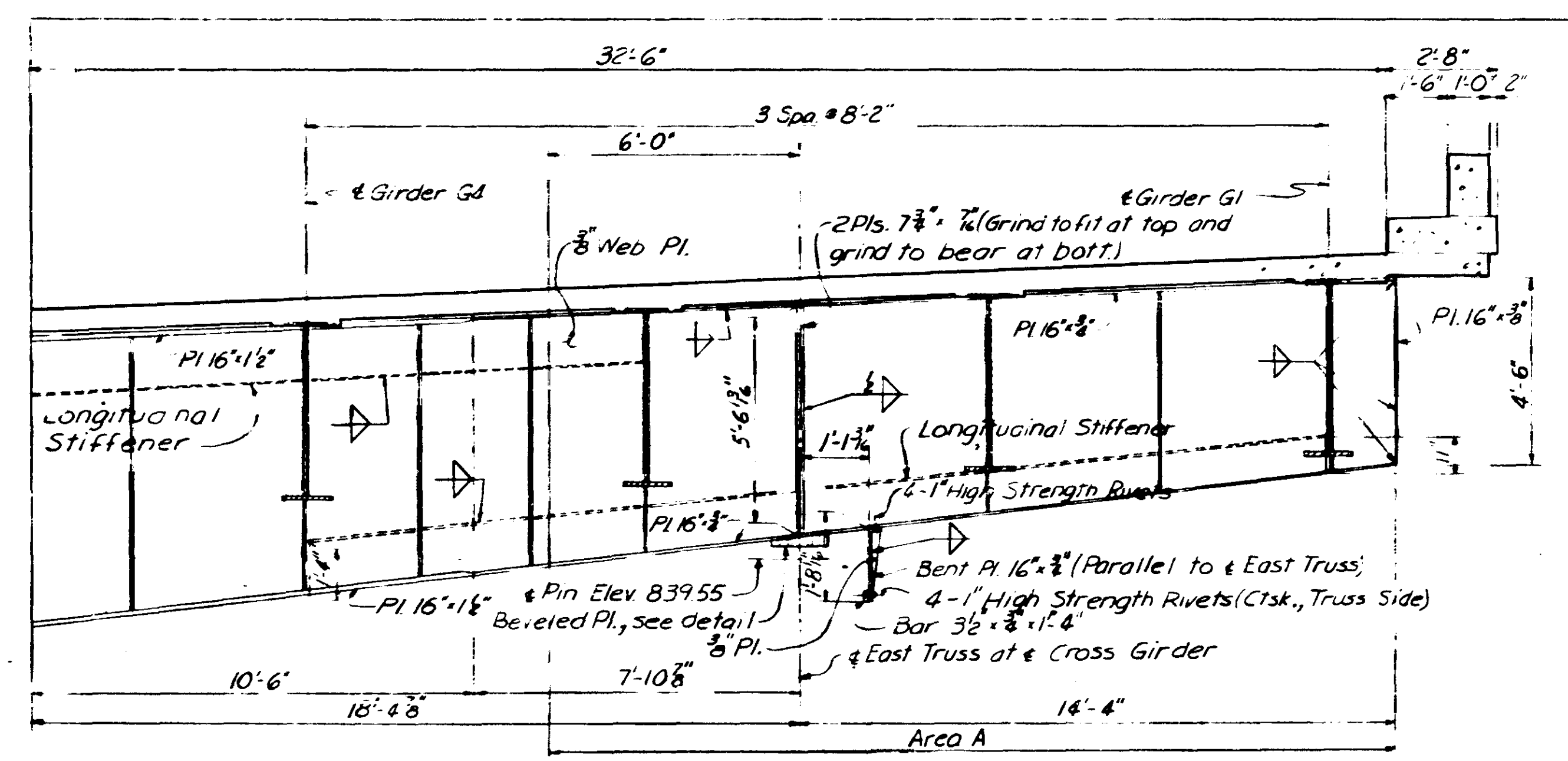
SECTION A-A
Note: Slab and Expansion Device not shown.



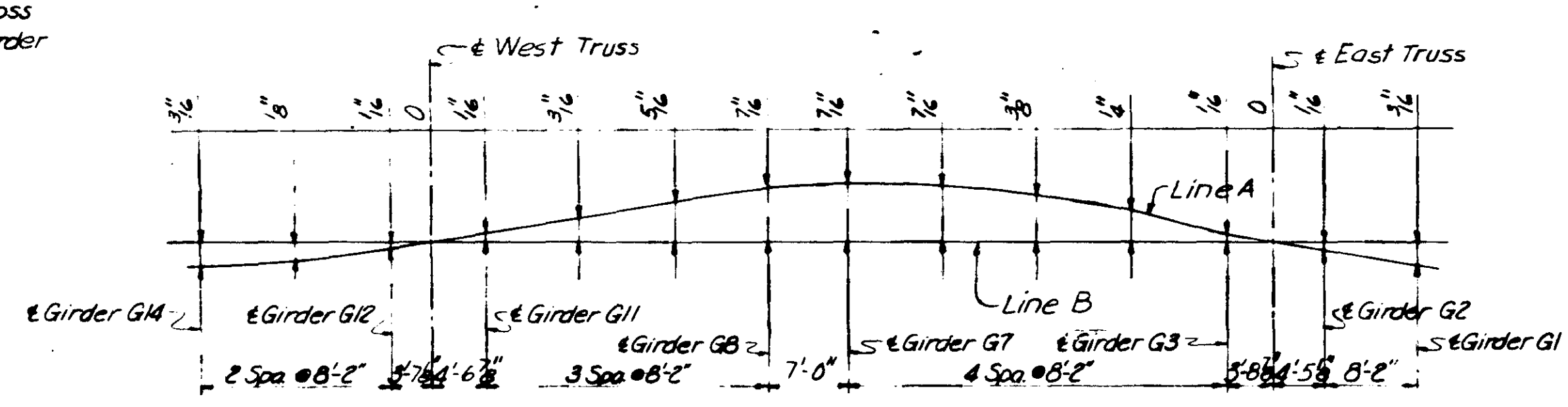
SECTION B-B
Note: Slab and Expansion Device not shown.



DETAIL OF BEVELED PLATE



SECTION C-C
Note: Shoe not shown.



CAMBER DIAGRAM
Note: Line A represents top of top flange before dead load deflection occurs.
Line B represents top of top flange in its final position.
Allowance shall be made in Girder connections for Camber Ordinates shown above.

NOTES

See Sheet 40 for Structural Steel Notes.
Intermediate Stiffeners to be 2Pls. $4\frac{1}{2} \times \frac{3}{8}$ Space at each girder and equally between girders as shown.
Longitudinal Stiffeners are Pl. $4\frac{1}{2} \times \frac{3}{8}$ and are to be at locations shown.
Top of top Flange of Cross Girder to be on a constant slope of .0376' per ft. for entire length.
Pin elevations given are the theoretical final elevations after all Truss Dead Load Deflection has occurred.
For Expansion Device details, see Sheet 51.
Clip corners on all stiffeners to clear flange to web welds.

Drawn by: D. Pierson, Mar. 1964
 Checked by: W.J. Goodale, June 1964
 2083
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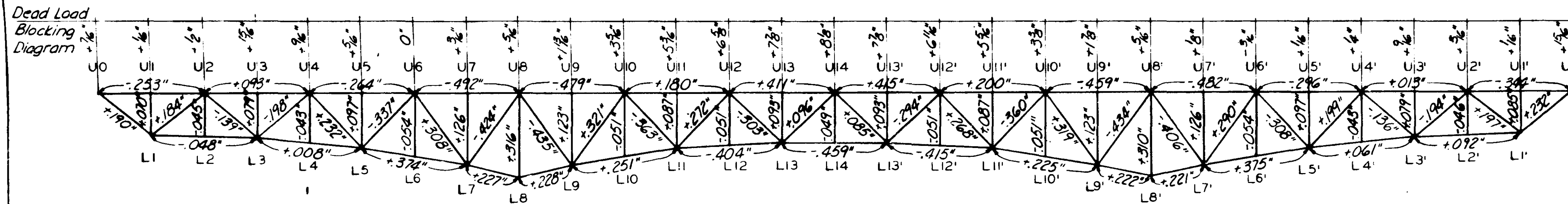
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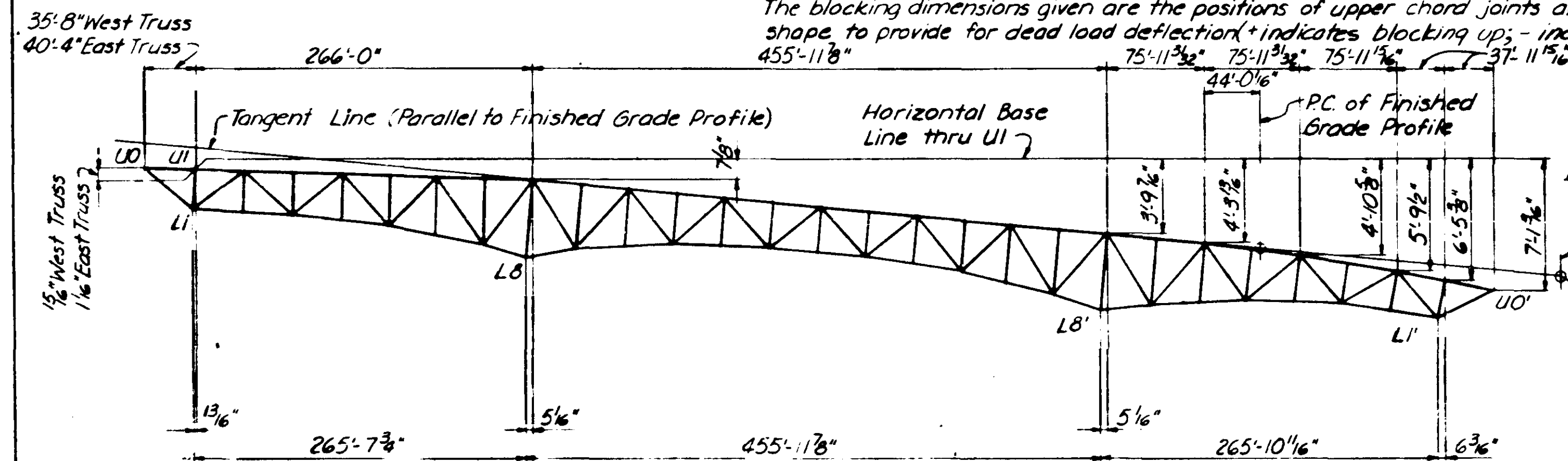
SOUTH APPROACH SPANS
 STRUCTURAL STEEL DETAILS

APPROVED - 6-18-65



DEAD LOAD CAMBER DIAGRAM

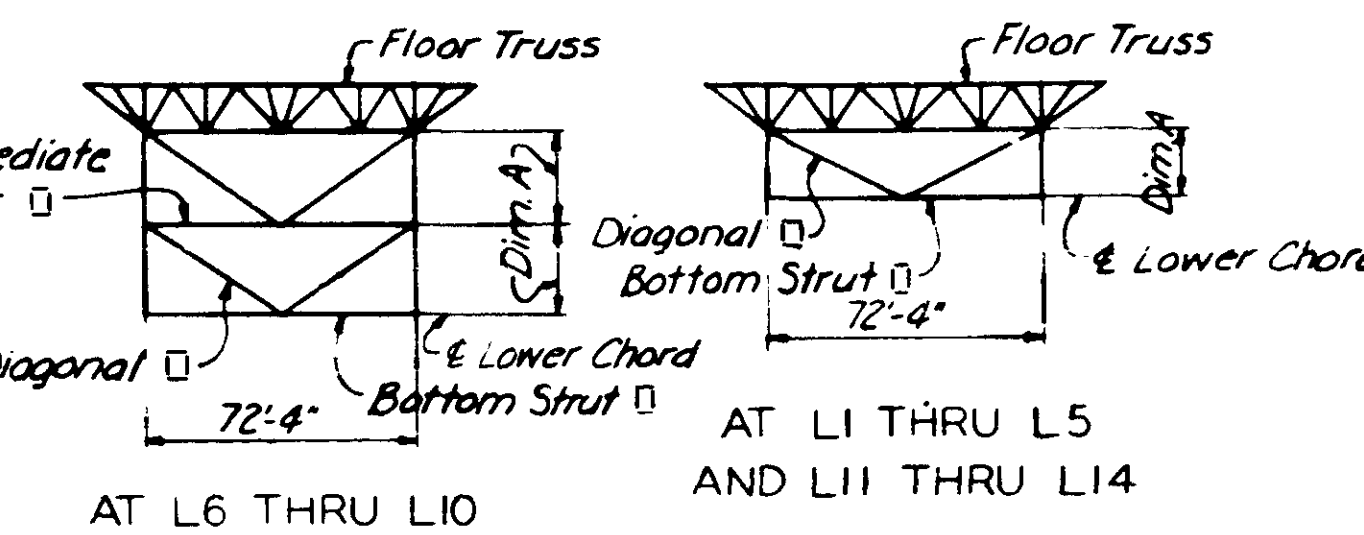
Note: Lengths of members to be computed for geometric shape of truss and the corrections indicated are to be applied to these lengths. + indicates lengthening, - indicates shortening. The blocking dimensions given are the positions of upper chord joints above or below the geometric shape, to provide for dead load deflection; + indicates blocking up; - indicates blocking down.



TRUSS LAYOUT

Note: Dimensions of truss shown for this layout and dimensions shown on Elevation of Truss, Sheet 20, are for the geometric shape after calculated deflection has occurred.

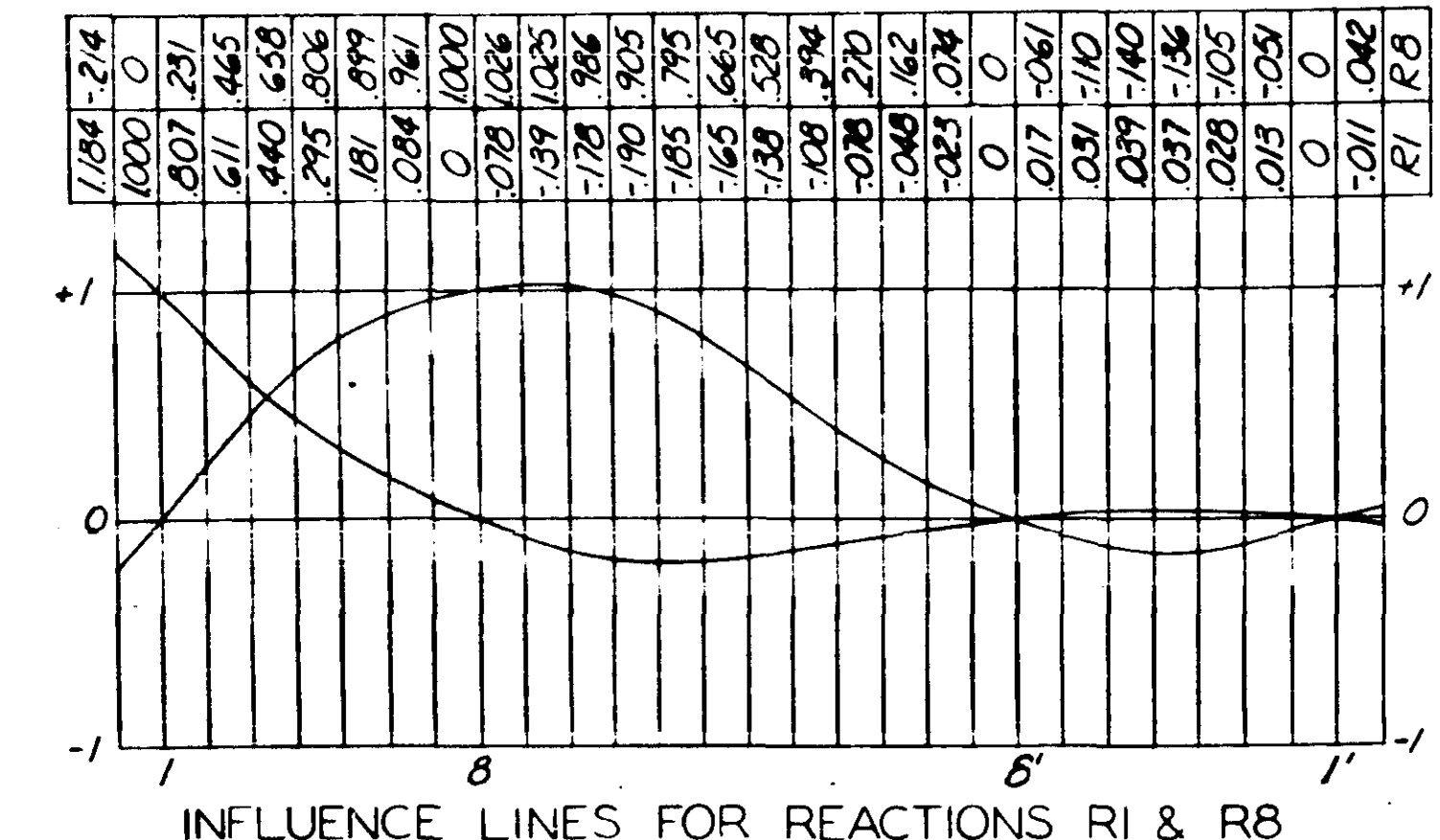
All chords are to be straight between splice points. The distance center to center of panel points measured along the ϵ of upper chord to be 38'-0". Posts, hangers and floor trusses from U1 thru U7 and at U5' are normal to upper chord; all others are normal to Finished Grade Profile.



AT L6 THRU L10 AND L11 THRU L14

TABLE OF MEMBERS			
Panel Pt.	Inter. Strut	Bottom Strut	Diagonal
L2 thru L5 & L11 thru L14	—	2 Pcs. 14" x 12" 2 Cov. Pcs. 12" x 12"	2 Pcs. 12" x 8" 2 Cov. Pcs. 12" x 8"
L6, L7, L9 & L10	—	do	do
L1	—	2 Pcs. 15" x 4" 2 Cov. Pcs. 12" x 8"	2 Pcs. 12" x 8" 2 Cov. Pcs. 12" x 8"
L8	—	2 Pcs. 14" x 8" 2 Cov. Pcs. 12" x 8"	2 Pcs. 14" x 8" 2 Cov. Pcs. 12" x 8"

Panel Pt.	Dim A
L1	19'-9 3/8"
L2	21'-0 9/8"
L3	22'-2 7/8"
L4	25'-10 3/8"
L5	29'-6 3/8"
L6	17'-10 1/8"
L7	20'-10 3/8"
L8	24'-10 3/8"
L9	20'-6 3/8"
L10	17'-8 3/8"
L11	29'-7 3/8"
L12	27'-8 3/8"
L13 & L14	25'-9 3/8"



INFLUENCE LINES FOR REACTIONS R1 & R8

TRUSS SPAN NOTES

GENERAL NOTES: See Sheet 2.
 MATERIALS: Material marked (A5) shall be High Strength Structural Steel conforming to the following:
 Pcs. 3/4" and under ----- MHD 3310
 Pcs. over 3/4" ----- MHD 3309
 Material marked (A7) shall be High Strength Alloy Steel conforming to MHD 3318.
 All other material shall conform to Structural Steel MHD 3306.

RIVETS Rivet sizes are as noted on drawings. All 7/8" rivets shall be carbon steel rivets conforming to M.H.D. 3316, Type I. All 1" rivets shall be high strength low alloy steel rivets conforming to M.H.D. 3316, Type II, with alternate material requirements of ASTM Designation A406. Rivet values for 1" rivets shall be as given in A.A.S.H.O. 14.3.A.

BOLTS: High strength bolts shall conform to M.H.D. 3391B, Style II. Bolt sizes are as noted on the drawings.

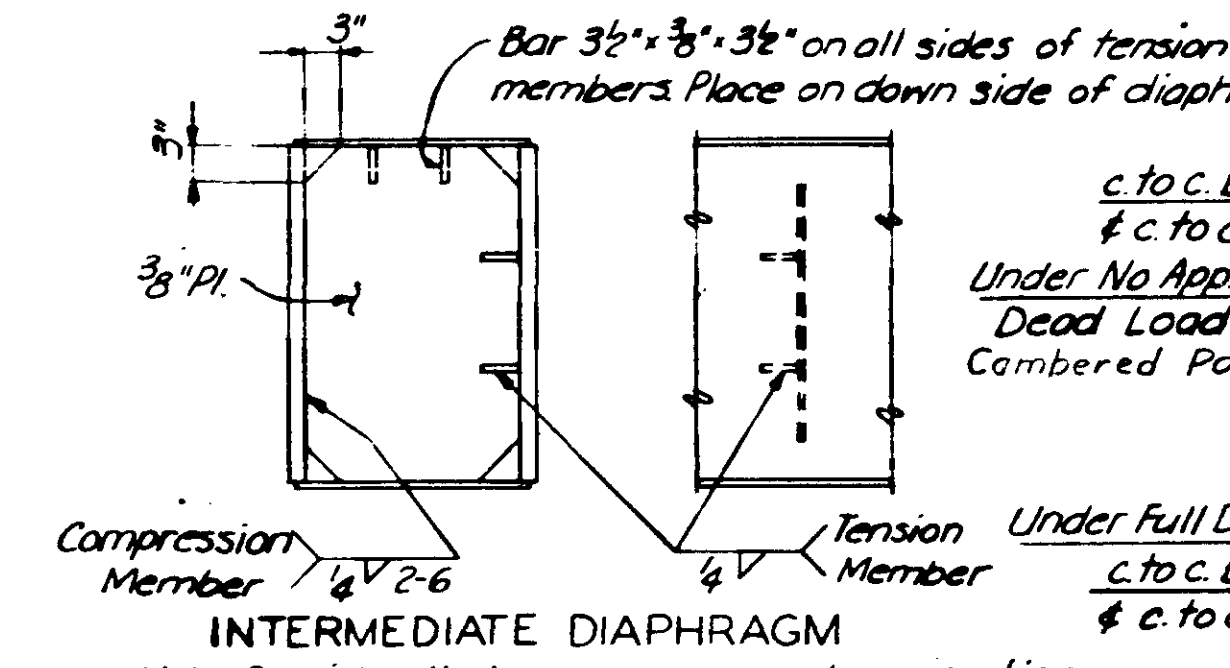
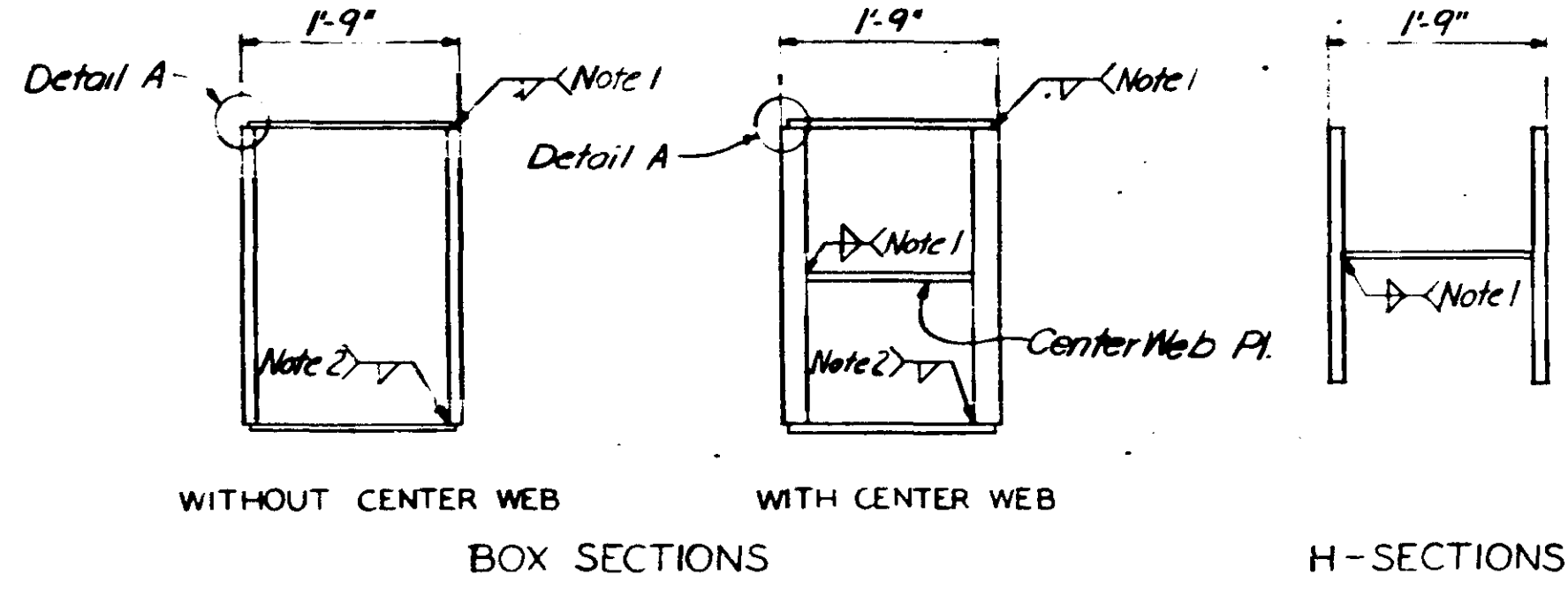
DETAILS: All field connections shall be riveted unless otherwise noted on the drawings. Where desired shop and field rivets may be interchanged.

Welded Diaphragms are required in all box members made up of four plates; see 'Typical Truss Details'.

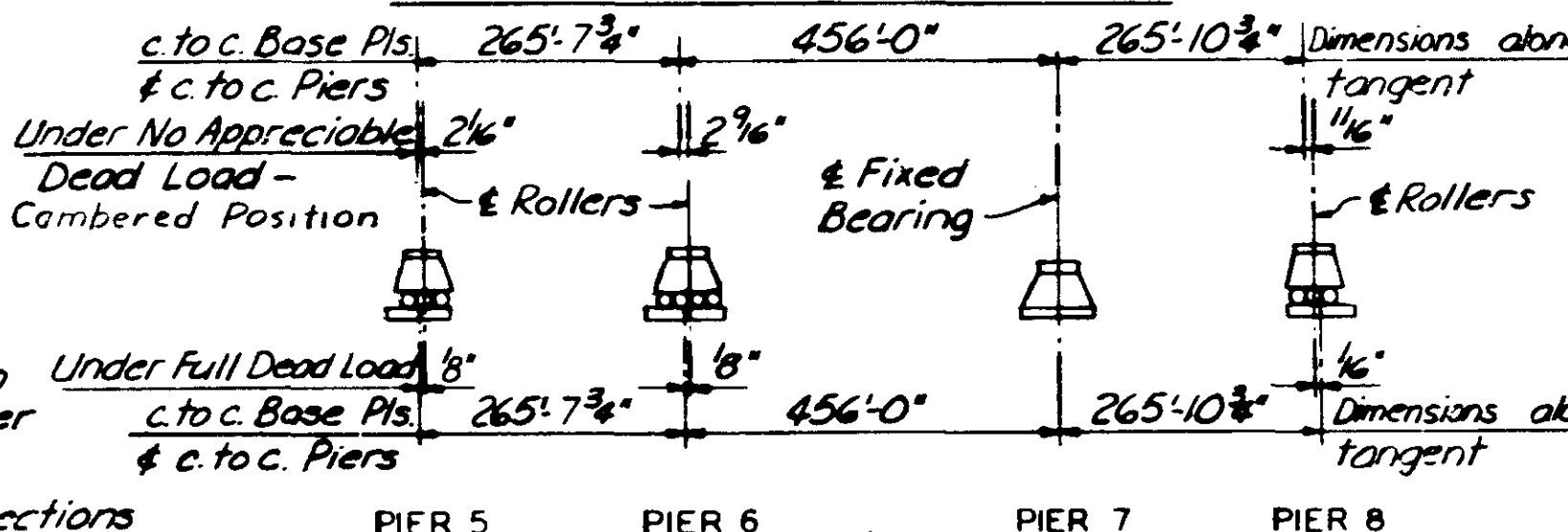
Optional shop groove welded butt joint splices will be permitted only in plates of truss members over 40 feet long, and only one splice will be permitted in each plate. Side plates shall be spliced not closer than 4'-0" from the splice in its companion side plate. Cover plates and web plates shall be spliced 6" minimum from a side plate splice. Cover plate splices shall be located in the middle half of the space between perforations.

NET SECTION: In tension members (N) indicates the number of holes out to maintain net section. Where "M.N.S." is noted, sufficient pitch shall be provided to maintain net section in a staggered chain of holes on the face indicated.

CAMBER: Main trusses shall be cambered for the design Dead Load.



PORTALS AND SWAY FRAMES



BEARINGS SETTING DIAGRAM

Note: For setting of rollers at temperatures other than 45° normal, see Bearing Assembly Notes, Sheet 3B.

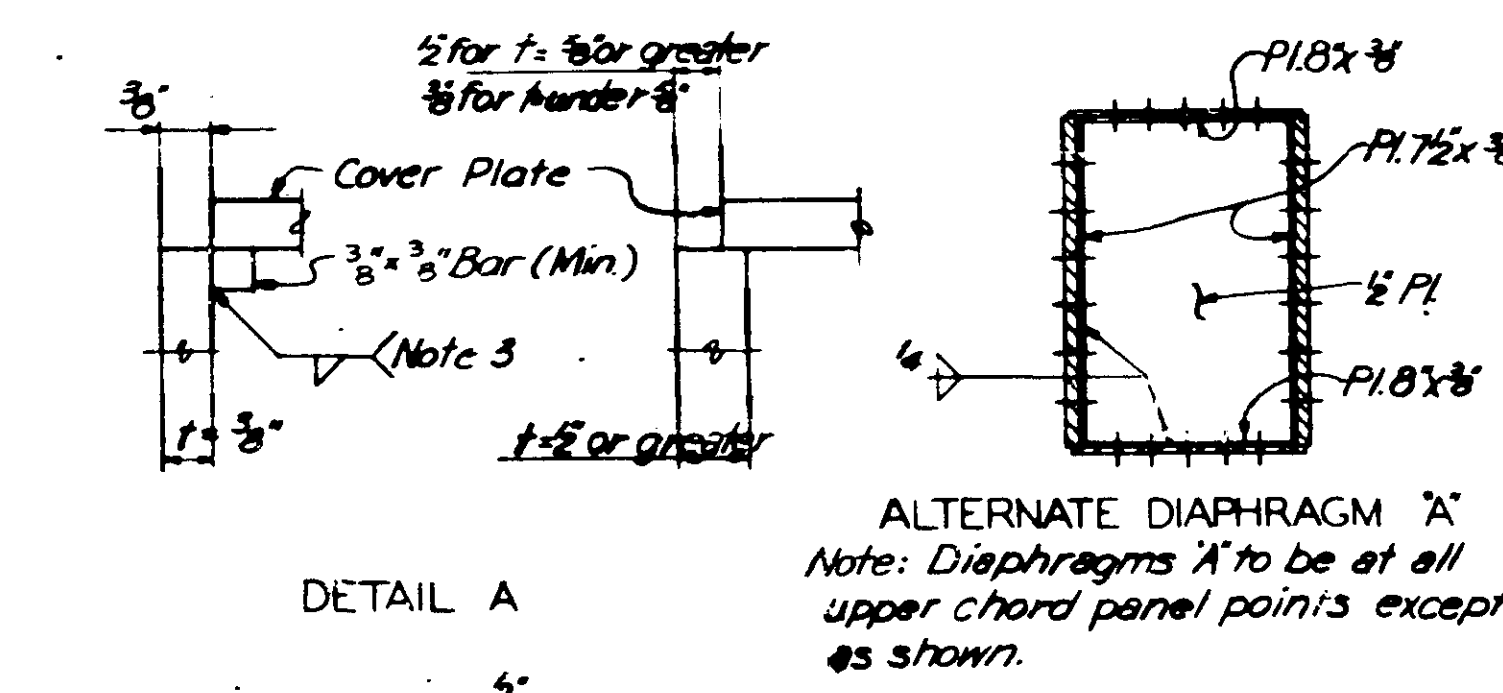
TRUSS WELDING NOTES

- Use Table of Minimum Fillet Weld Sizes.
- The inside fillet weld shall be the size shown in Table of Minimum Fillet Weld Sizes and shall extend from the end of the member to 1'-0" beyond the edge of the gusset plate on the following members:
 A. All diagonal members
 B. All box section verticals (posts and hangers)
 C. Chord members at U0, L1, L8, L8', L1' and U0'.
- The 3/8" x 3/8" bar is required as a backup bar for welding. The bar is to be continuous and may be tack welded to either the side plate or cover plate. The backup bars shall be omitted for the length of inside fillet welds called for by Note 2.

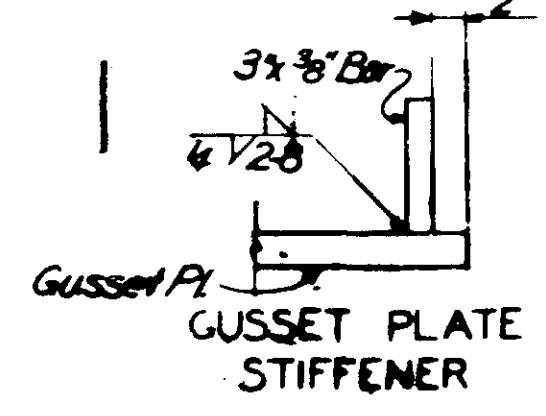
Material Thickness of Thicker Part Joined to 1/8" Incl.	Minimum Size Fillet Weld
Over 1/8" to 1/4"	3/16"
Over 1/4" to 3/8"	1/4"
Over 3/8"	5/16"

Note A: Seal Diaphragms shall not have corners clipped and shall be welded all around open end side with 1/4" fillet weld to seal member.

Steel	TABLE OF WIDTH TO THICKNESS RATIOS FOR PLATES			
	Main Members & Diaphragms	Flattened Cuts	Plates Supported on one edge	Plates Supported on one edge
MHD 3306	30.5	38	42	11.5
MHD 3309	26	34	42	10
MHD 3310	26	34	42	10



ALTERNATE DIAPHRAGM 'A'
 Note: Diaphragms 'A' to be at all upper chord panel points except as shown.



Note: Details shown are for all truss members. Welding details for bracing members same, except that inside fillet weld as shown by Note 2 shall extend from the end of the member to the seal diaphragm and the 3/8" x 3/8" back up bar shall terminate at the inside face of the seal diaphragm.

PERF COVER PLATES: Provide 10" x 20" Perforations at 3'-6" centers in both cover plates of all truss box members except those in the top chord. In the top chord members provide 10" x 20" perforations at about 3'-6" centers in the bottom cover plate only.

Perforations in the bracing members shall be as noted on the drawings.

In members in which both cover plates are perforated the perforations shall be opposite in the two cover plates of the same member.

LOCAL BUCKLING REQUIREMENTS: Elements of compression members shall be limited to the following width to thickness ratios as shown in table at left. For compression members in which the stress is less than the allowable, the width to thickness ratios in table at left may be multiplied by the factor $\sqrt{F/F_a}$ where p = allowable unit stress ($4 = 0$) and F_a = actual unit stress. The use of this factor shall be limited to relatively low stressed members.

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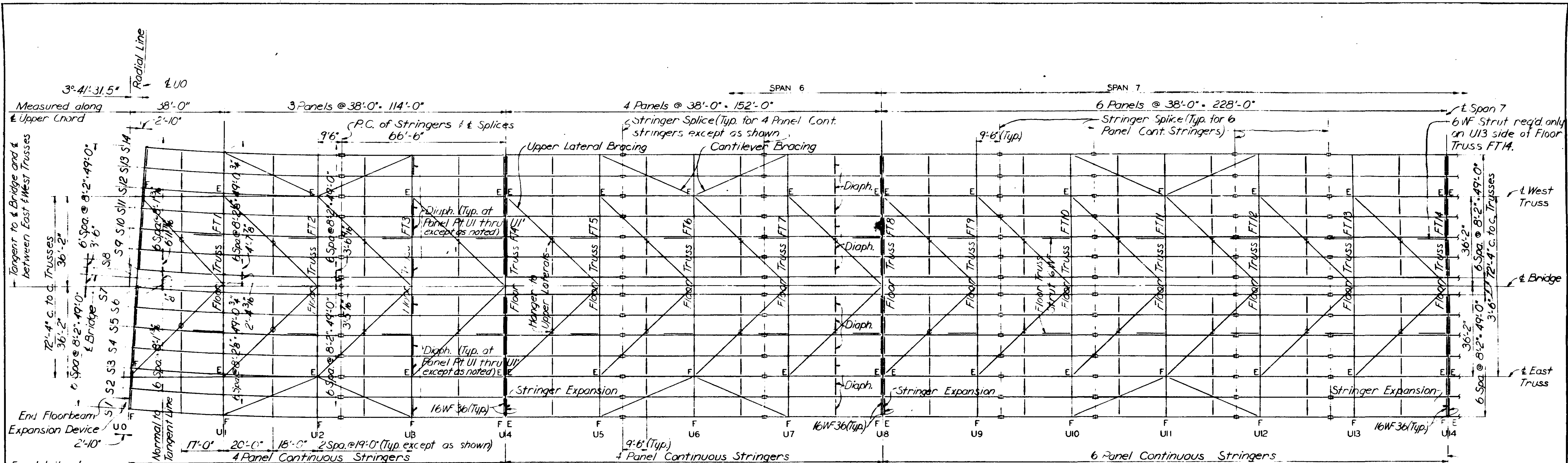
T. H. BOW
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 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DECK TRUSS SPANS
 STRESS SHEET

APPROVED - 6-18-65

Drawn by: W.J. Gabels, March, 1964
 Checked by: T.V. Dillon, Apr. 1964
 2083
 45186



PART PLAN OF FLOOR FRAMING

Note: Stringers - 27WF94
 Stringer Diaphragms - 15L33.9 except as noted.
 Upper Lateral Hangers - 24x4x3/8. See Sheet 23 for details.

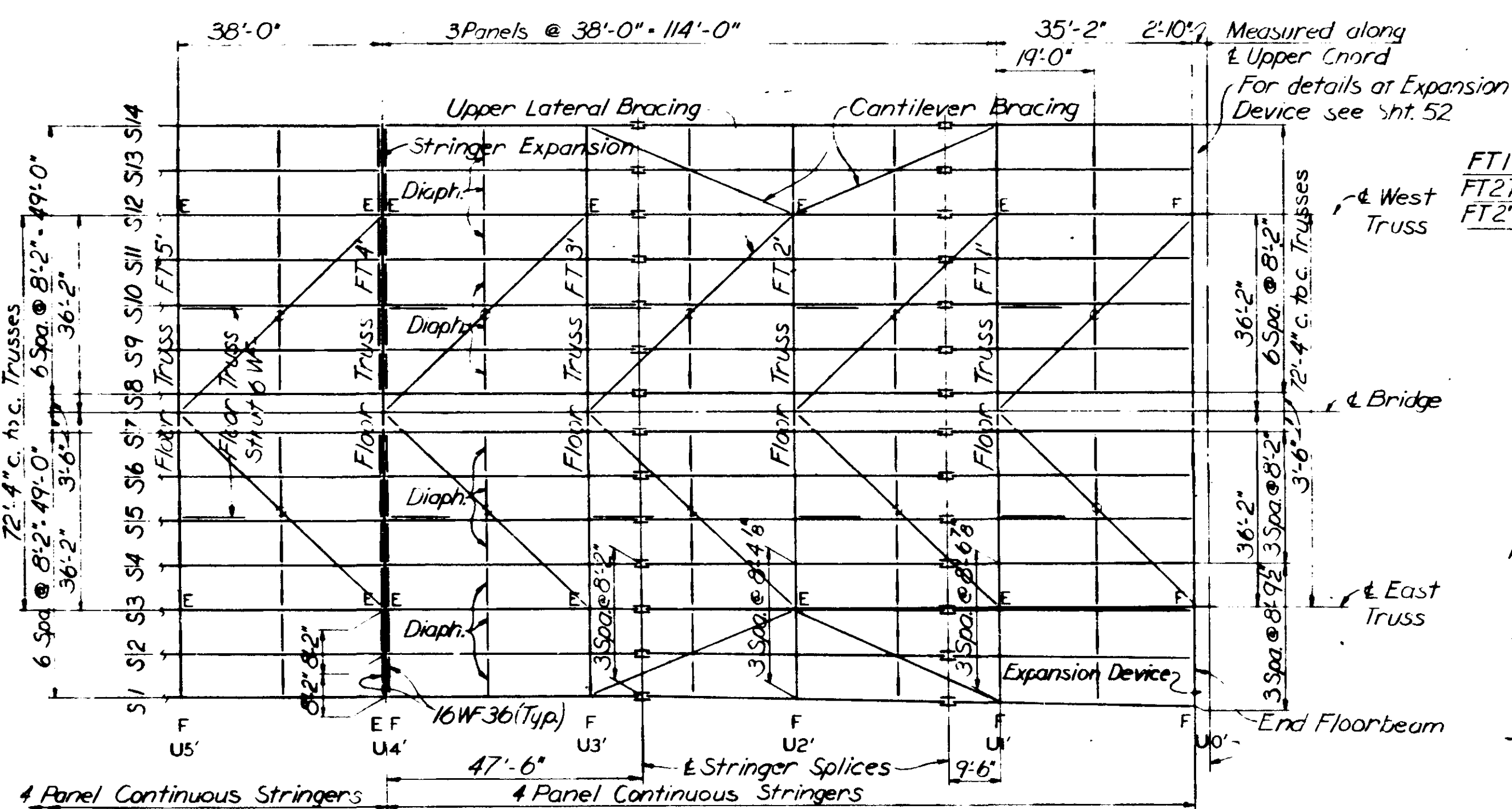
Note: F or E shown for stringers represent Fixed or Expansion conditions of connecting stringers to Floor Truss. Those shown for Stringer S1 are typical for all stringers except S3 and S12. Stringers S3 and S12 are as shown in plans.

Notes U4-U14 Symm. abt. Span 7 except as shown or noted. Panels U0-U4 and U0'-U4' to be as shown and noted.

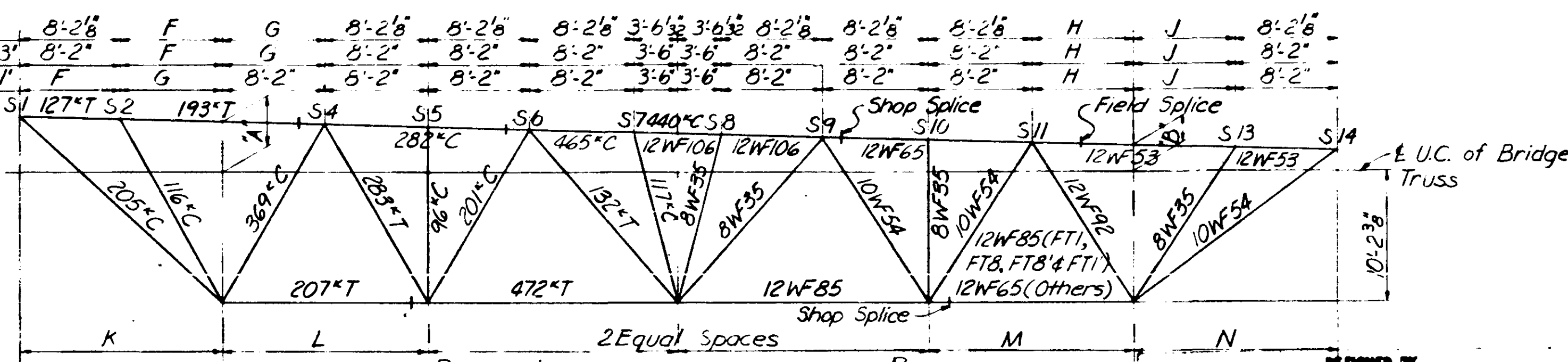
NOTES

For General Notes, see Sheet 2.
 For details of Floor Truss FT1 thru FT7, see Sheet 24.
 For details of Floor Truss FT8 thru FT11, see Sheet 25.

For details of Expansion Device see Sheet 51



PART PLAN OF FLOOR FRAMING



Note: Stresses shown are max. for DL+LL+I for FT9 and are used for all floor trusses
 C = Compression; T = Tension

TABLE OF VARIABLE DIMENSIONS

Floor Truss	F	G	H	J	K	L	M	N	P	R
FT1	7'-0 3/8	9'-3 7/8	6'-11 3/4	9'-4 1/2	15'-2 5/8	17'-5 1/8	15'-1 7/8	17'-6 5/8	37'-3 3/32	35'-0 5/32
FT2	8'-1 1/8	8'-2 1/8	8'-1 7/8	8'-2 1/8	16'-3 7/8	16'-4 7/8	16'-3 7/8	16'-4 7/8	36'-2 9/16	36'-1 7/8
FT3 to FT3'	8'-2	8'-2	8'-2	8'-2	16'-4	16'-4	16'-4	16'-4	36'-2	36'-2
FT2'	8'-4 1/8	8'-6 1/4	8'-2	8'-2	16'-10 3/8	16'-4	16'-4	16'-4	36'-2	36'-2
FT1'	8'-6 7/8	8'-11 3/4	8'-2	8'-2	17'-6 5/8	16'-4	16'-4	16'-4	36'-2	36'-2

Note: For Dimensions A and B for FT1 thru FT7, see Sheet 24.
 Dimensions A and B are equal for FT8 thru FT11.
 Provide 1/2" parabolic camber at center of each floor truss for length center to center main trusses only.

LAYOUT AND STRESSES OF FLOOR TRUSSES

DESIGNED BY
 SVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

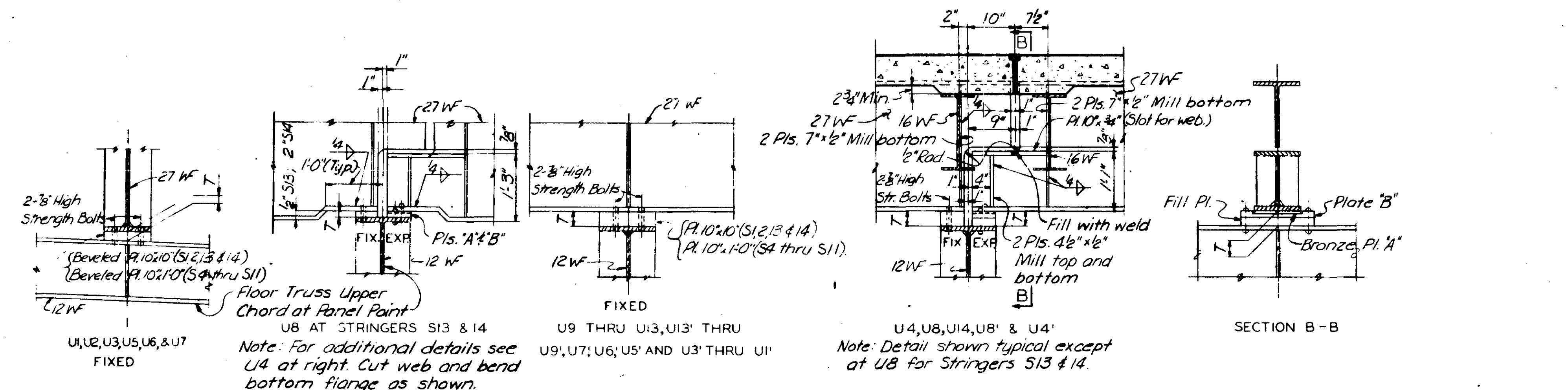
T. H. 38W
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BRIDGE NO. 9340

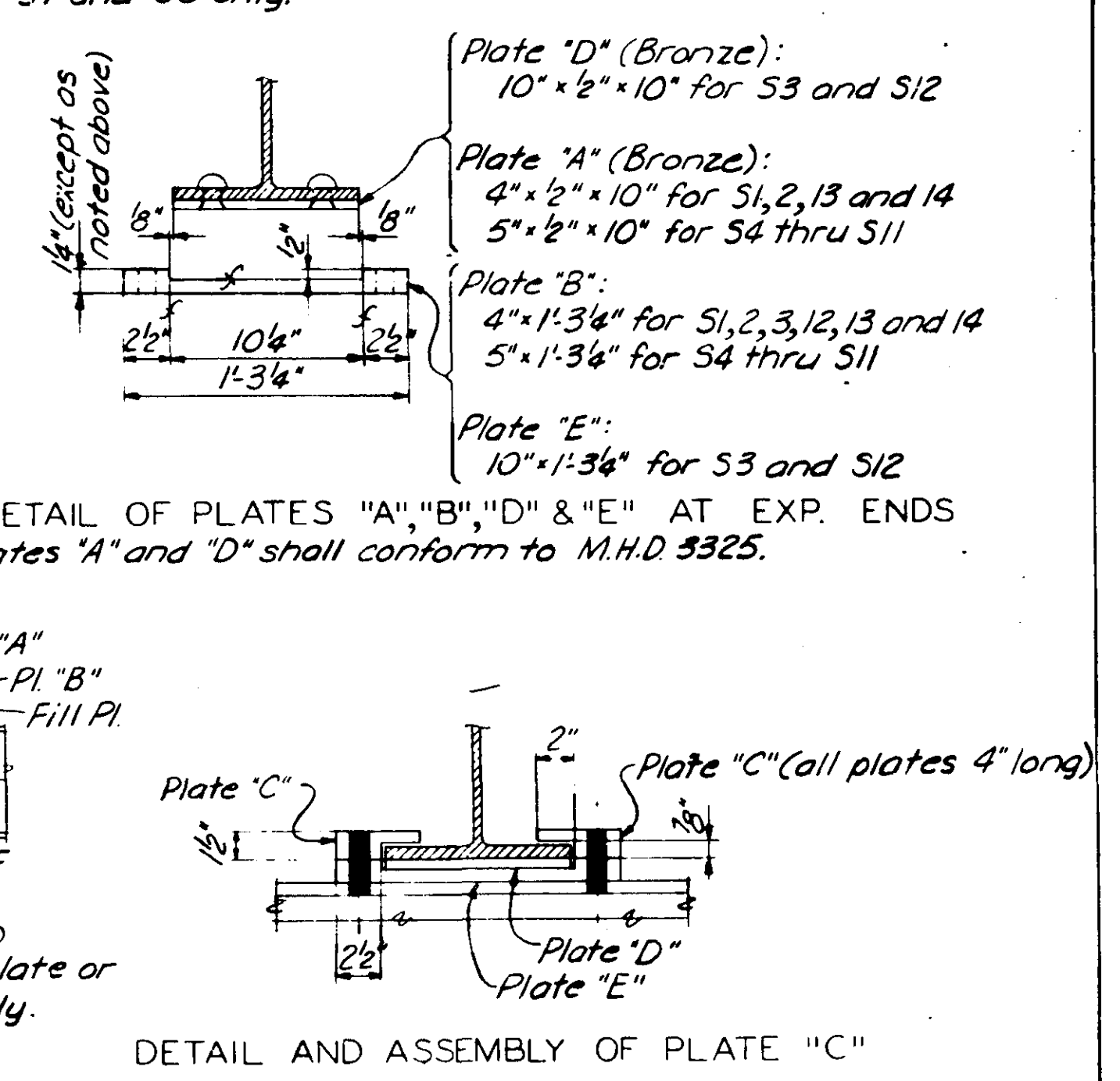
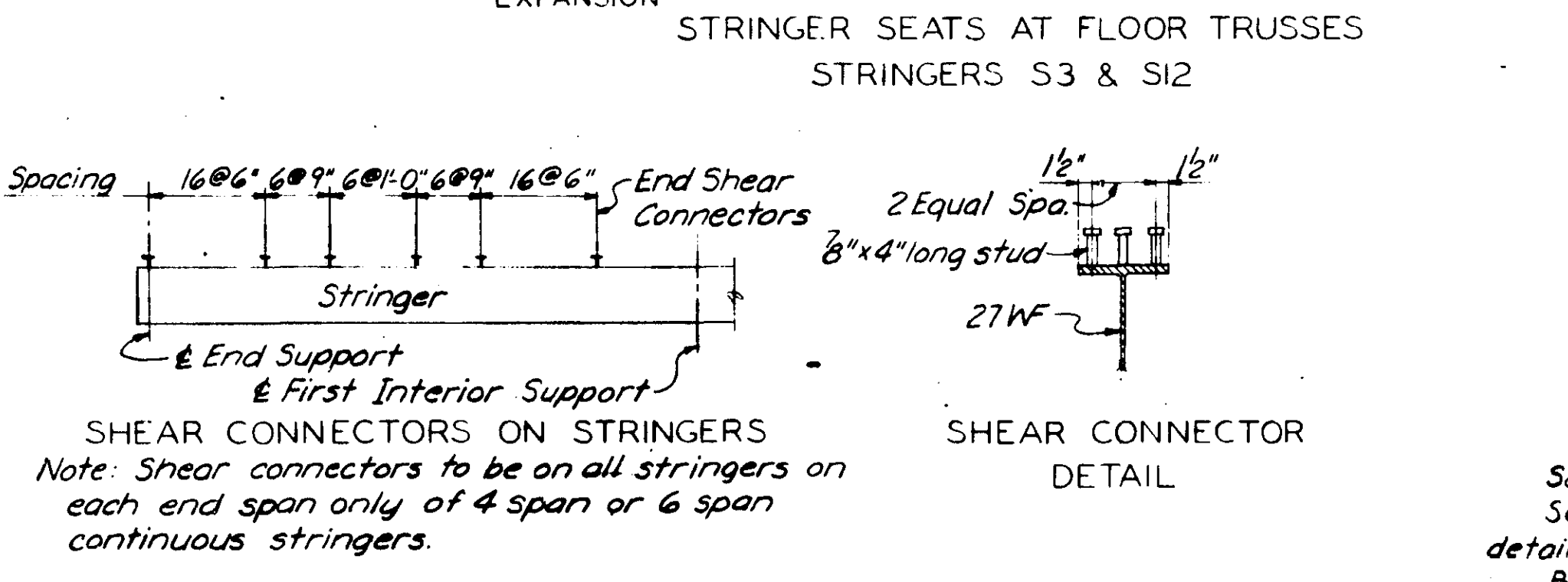
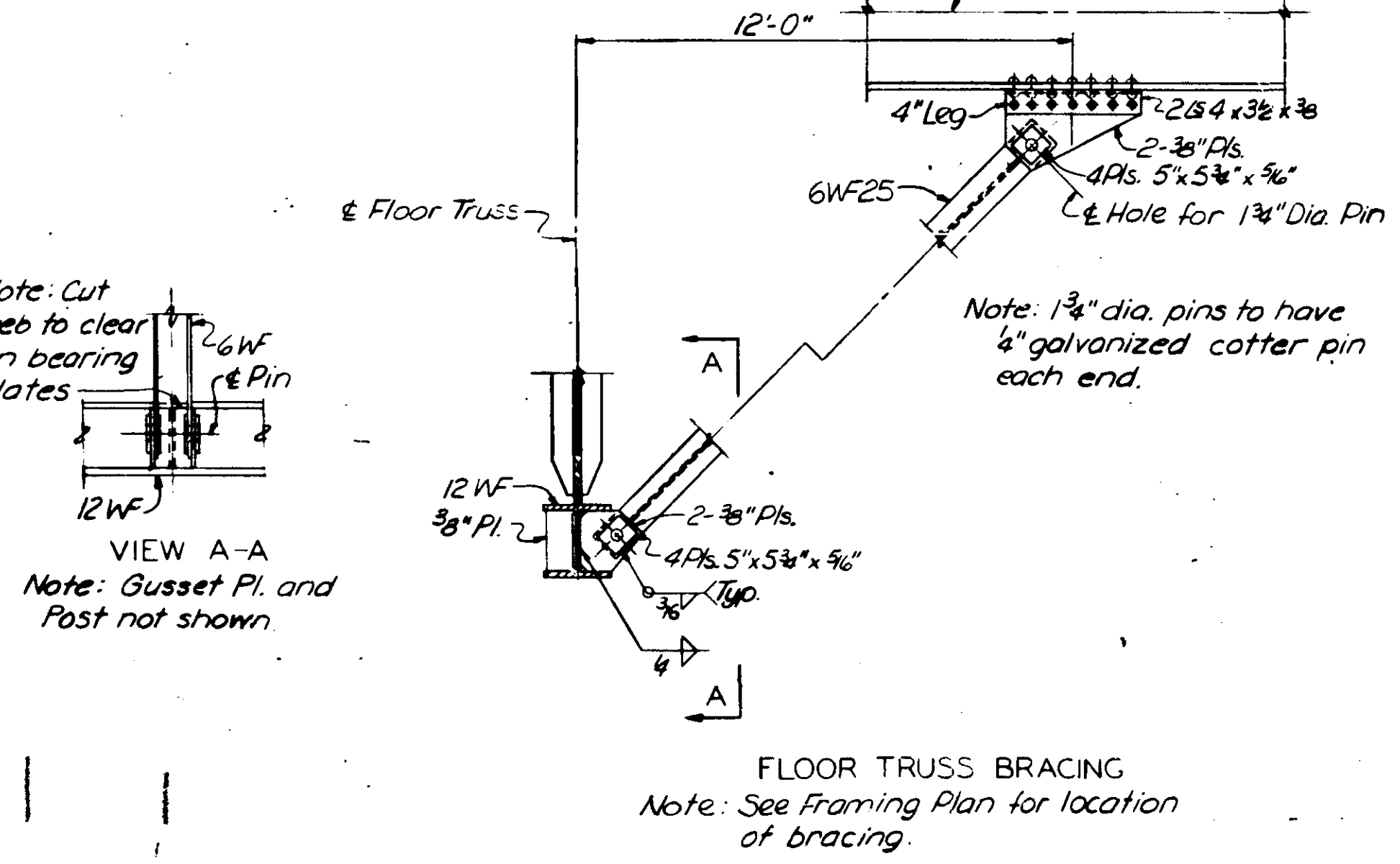
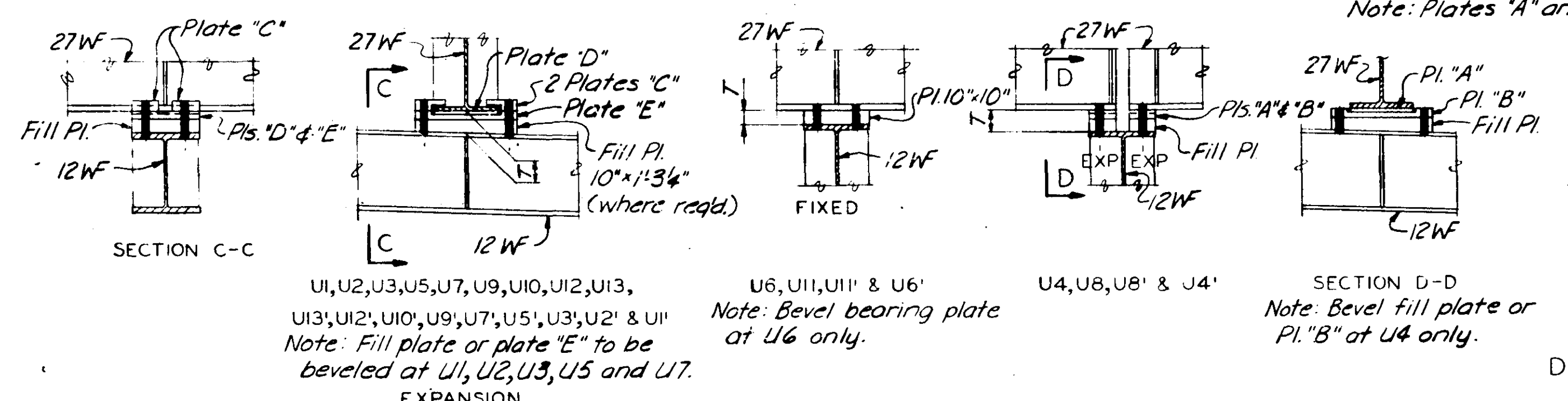
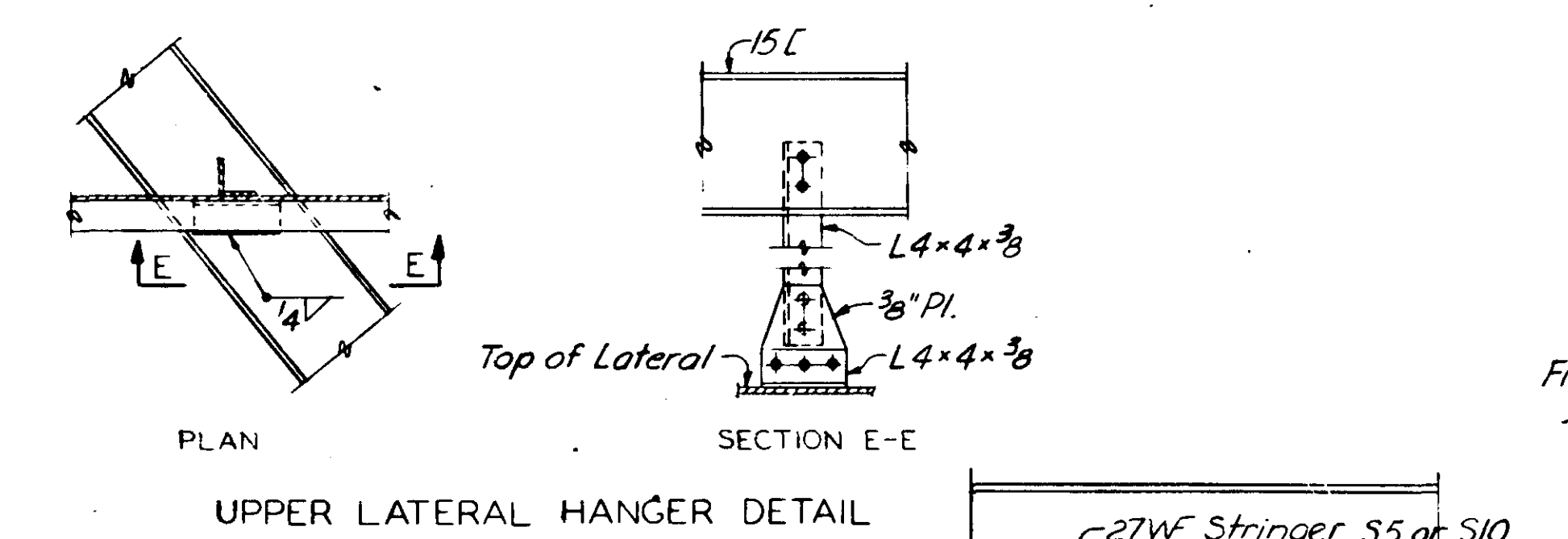
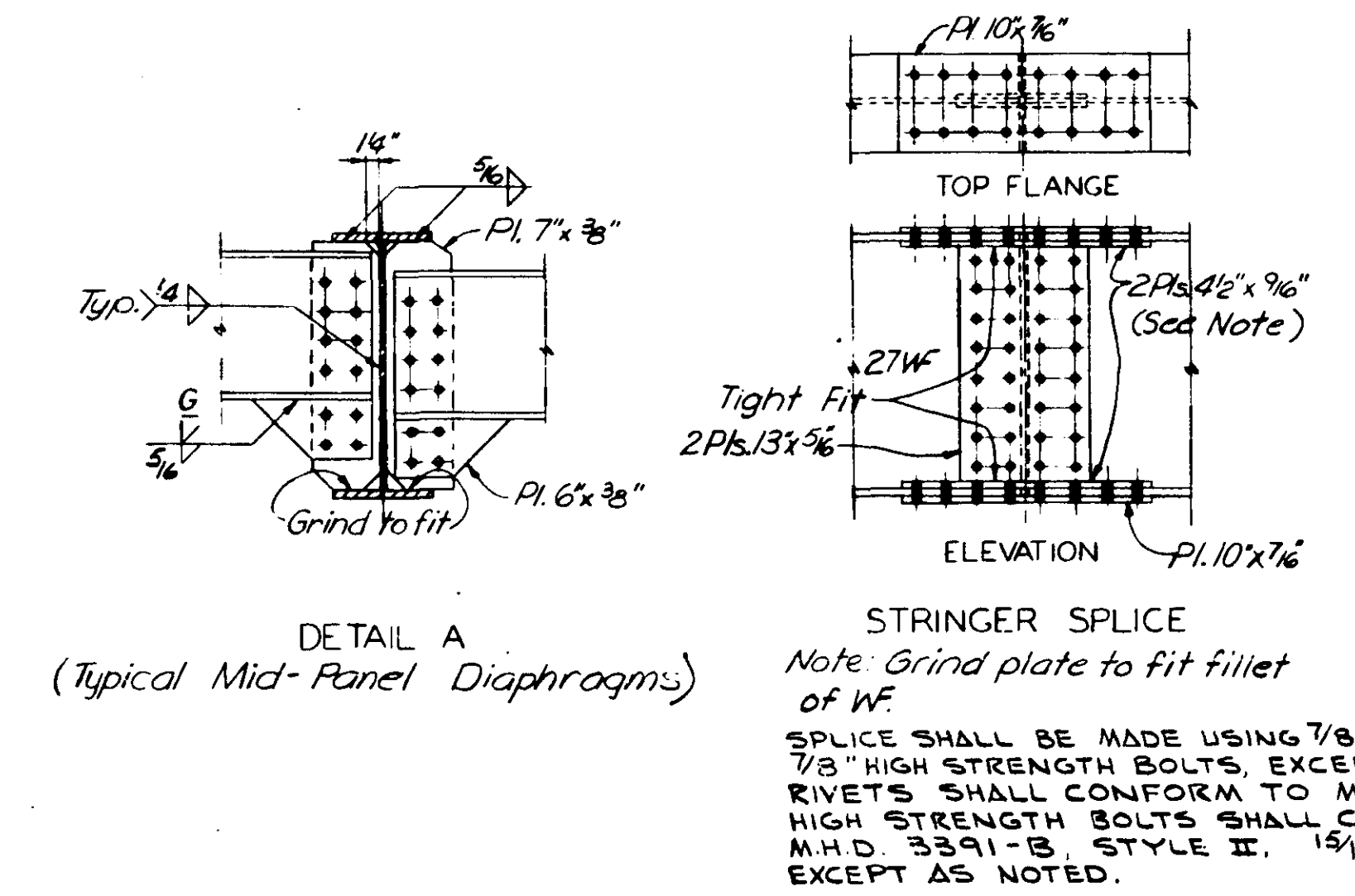
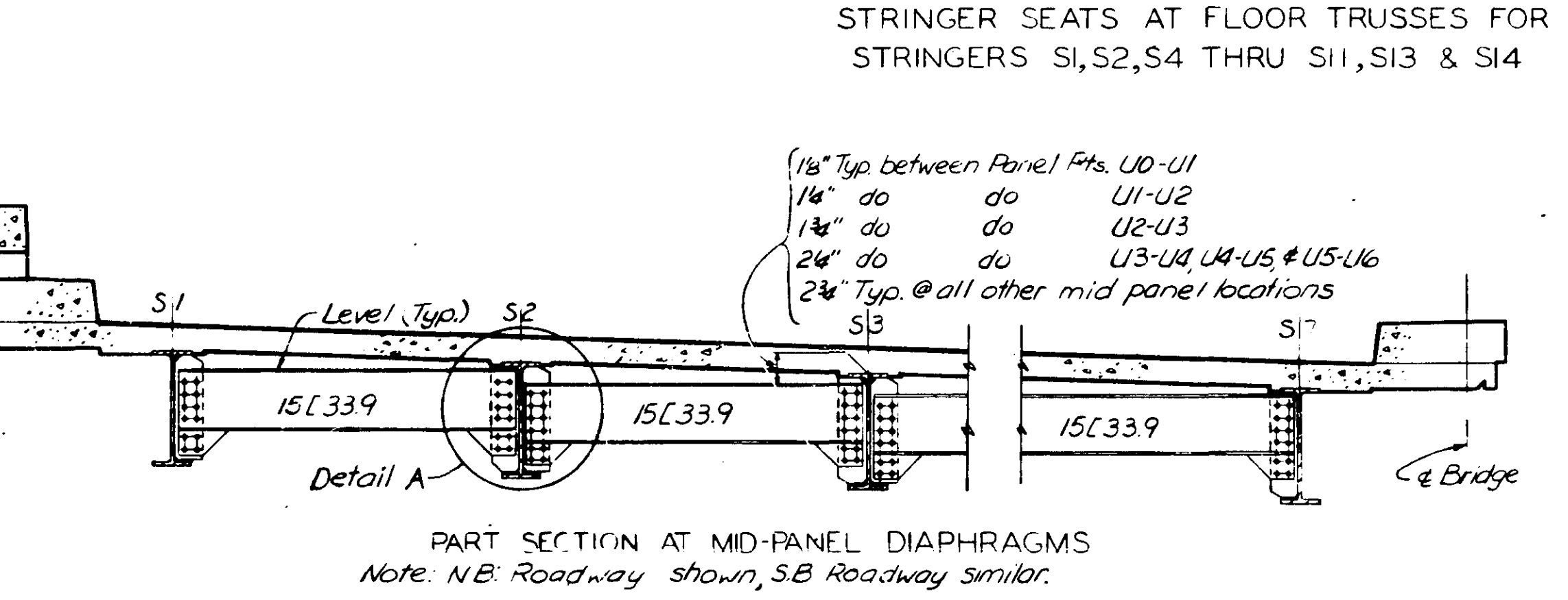
DECK TRUSS SPANS
 FRAMING PLAN AND
 FLOOR TRUSS LAYOUT

APPROVED - 6-18-65

Drawn by: C.J. Reuter, Oct. 1963
 Checked by: T.V. Dillon, Apr. 1964
 2083
 635689



Floor Truss	Panel Point	Dimension "T"													
		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14
FT1	U1	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT2	U2	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT3	U3	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT5	U5	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT6	U6	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT7	U7	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT8	U8	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT9	U9	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT10-6	U10-6'	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT5'	U5'	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT4'	U4'	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT3'	U3'	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT2'	U2'	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT1'	U1'	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT4(S)*	U4	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
FT4(N)**	U4	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"



NOTES
 See Sheet 21 for Truss Span Notes.
 See Sheets 26 & 27 for stringer connection details at End Floorbeams
 Bronze plates shall be paid for as Structural Steel MHD 3306.
 All rivets to be 8".

Drawn by: T.F. Hoosic, March 1964
 Checked by: T.V. Dillon, Apr. 1964
 2083
 64S151

DESIGNED BY
 SVERDRUP & PARCELL ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

T. H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DECK TRUSS SPANS
 STRINGER DETAILS

APPROVED - 6-18-65

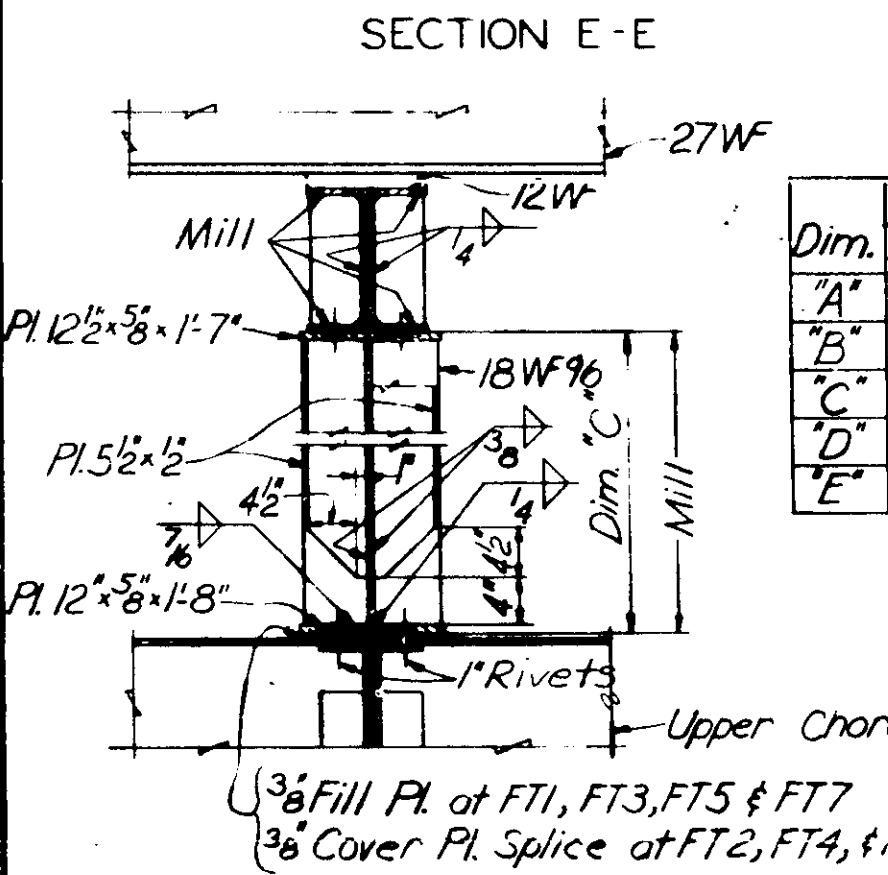
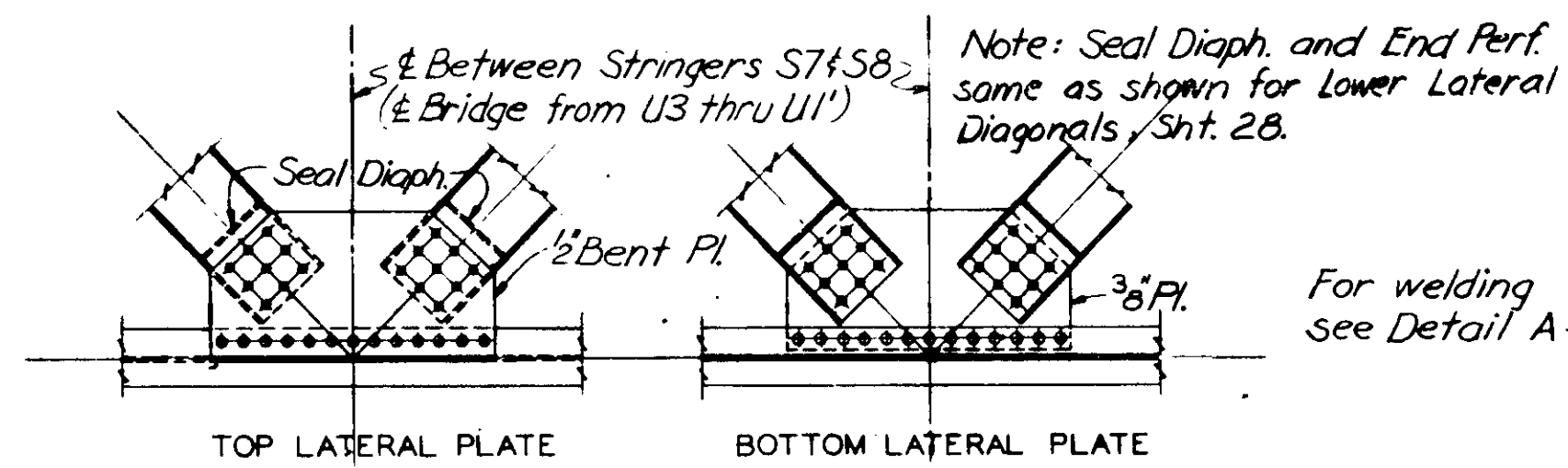
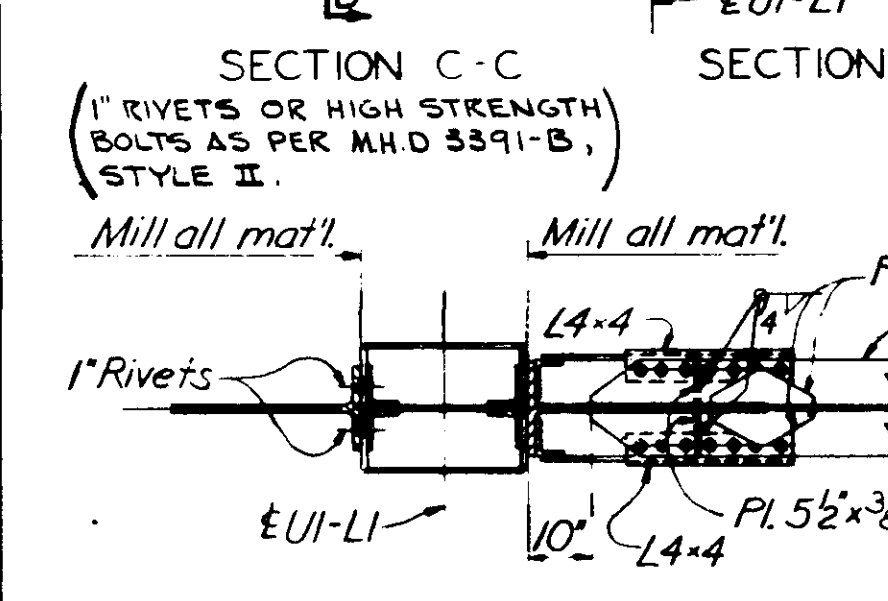
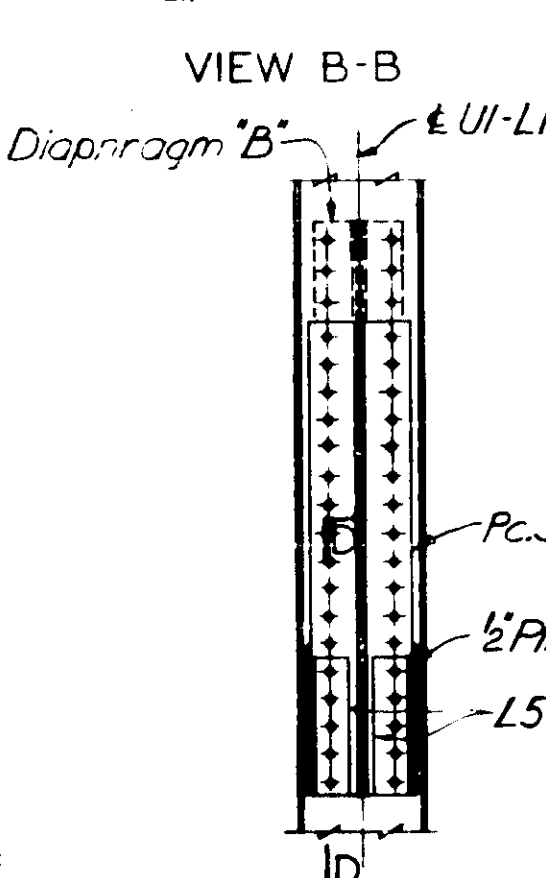
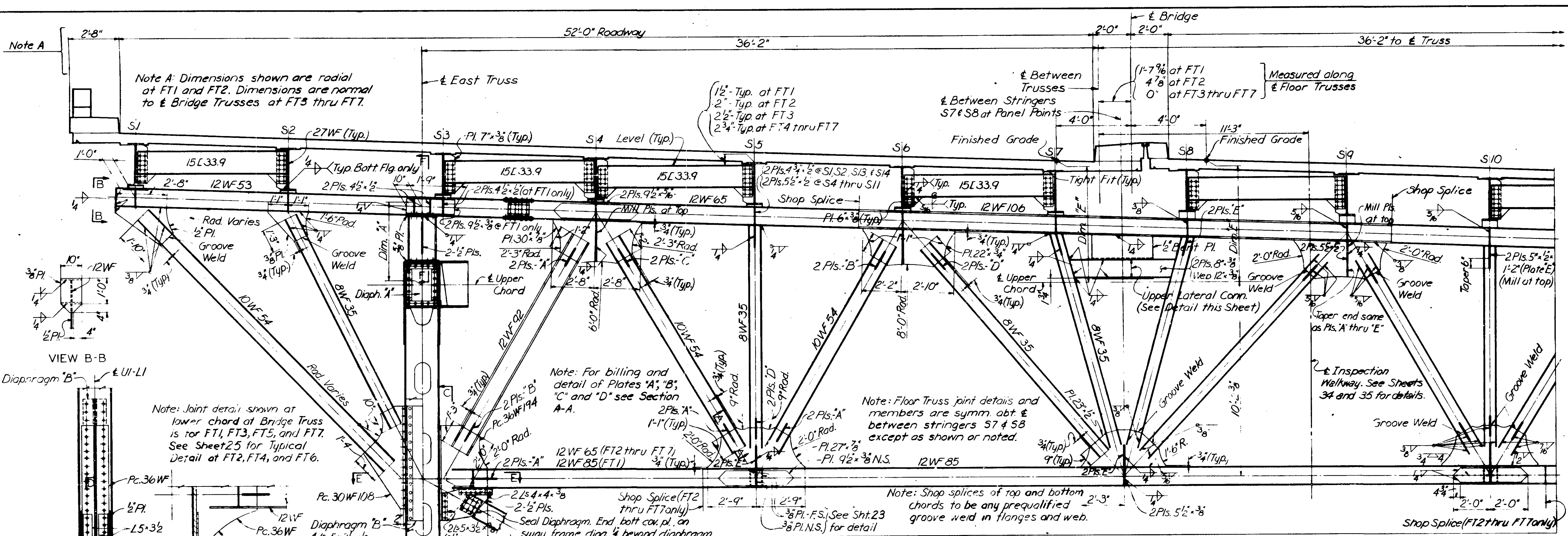
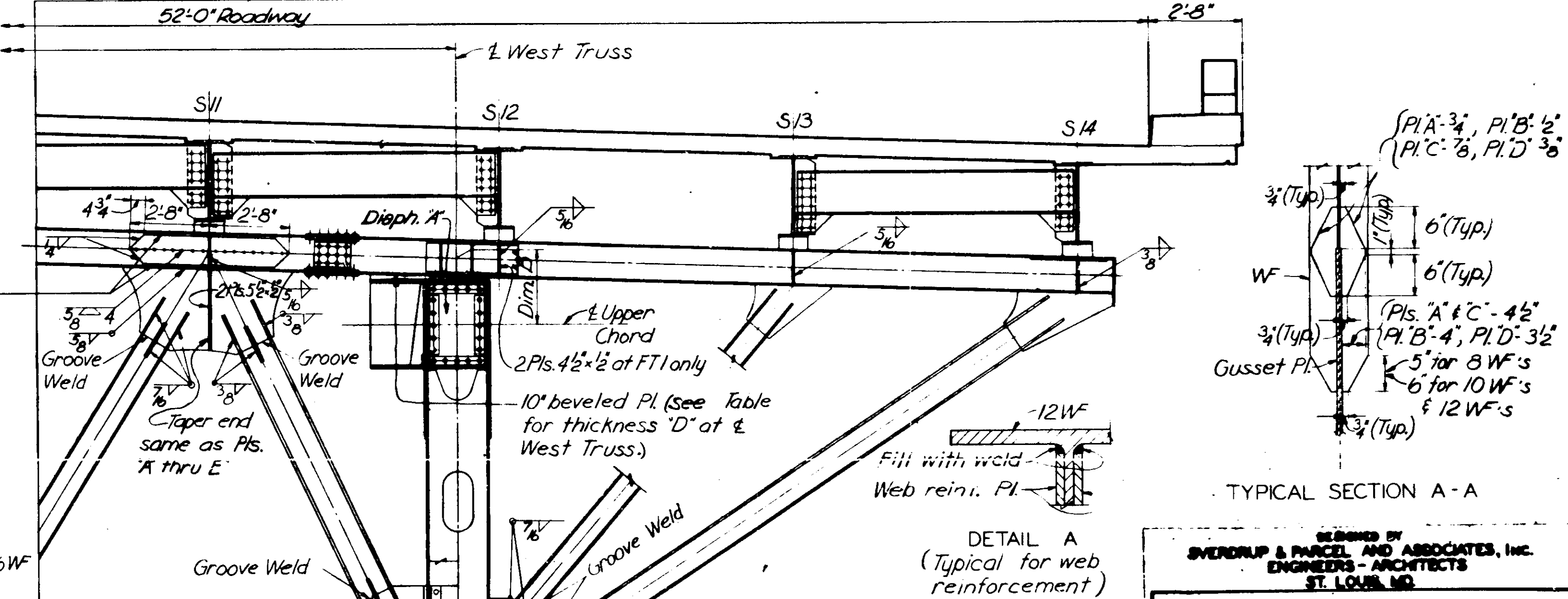
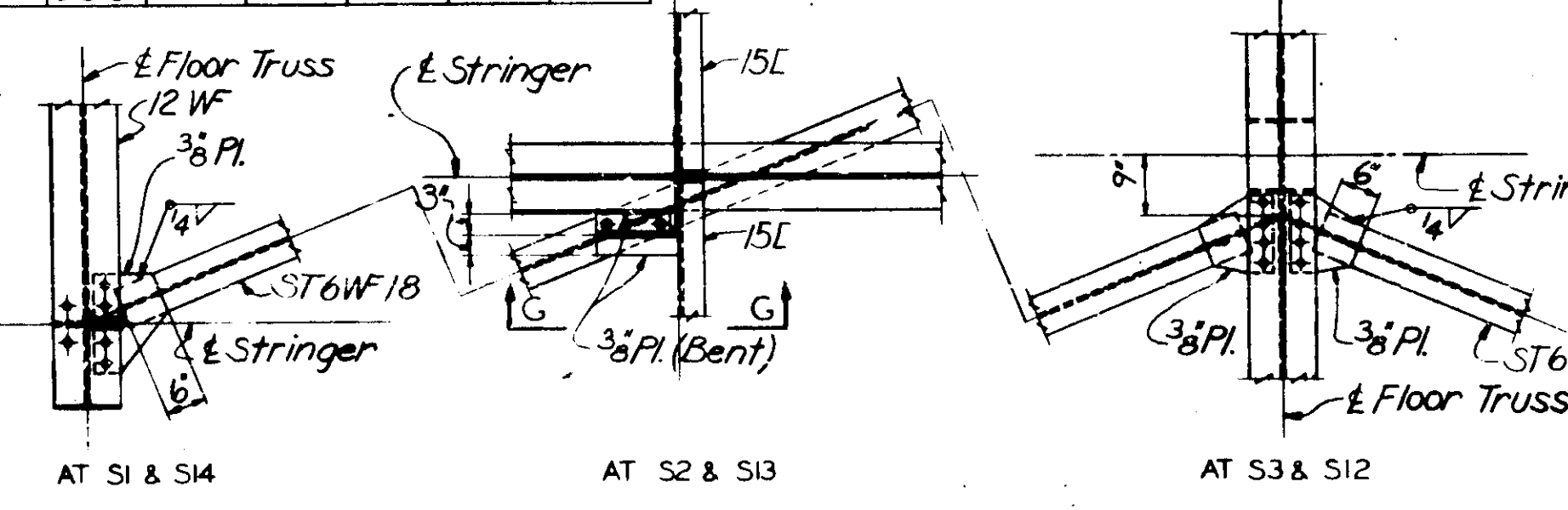
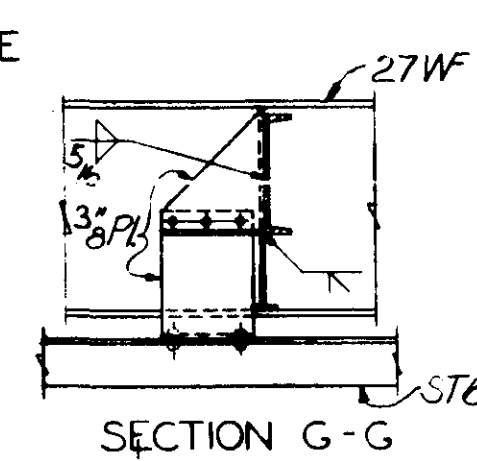


TABLE OF VARIABLE DIMENSIONS

Dim.	FT1	FT2	FT3	FT4	FT5	FT6	FT7
A	4'-11"	3'-8"	3'-4"	3'-0"	2'-9"	2'-6"	2'-3"
B	1'-9"	1'-9"	1'-9"	1'-10"	1'-9"	1'-9"	1'-9"
C	2'-4"	1'-11"	1'-8"	1'-4"	1'-0"	0'-9"	0'-6"
D	3"	1/4"	1"	1/4"	3/4"	3/4"	3/4"
E	6'-6"	6'-3"	6'-1"	5'-11"	5'-9"	5'-7"	5'-5"

Note: All dimensions in table are measured at & Bridge Truss at Panel Points.



NOTES

For General Notes, see sheet 2
 All rivets "B" unless otherwise noted.
 For mat'l. and details of field splice of top chord between Str. S3-S4 and S11-S12, see sheet 25. Holes for field rivets are to be subpunched or sub-drilled to 1 1/8" and reamed in field to 1 3/8".
 All stiffener plates to web of 12 WF of top chord of floor truss under each stringer and bottom chord as shown to be milled top and bottom. Do not weld to flanges.
 For layout of floor trusses, see sheet 22
 For stringer diaphragms at U4, see sheet 25

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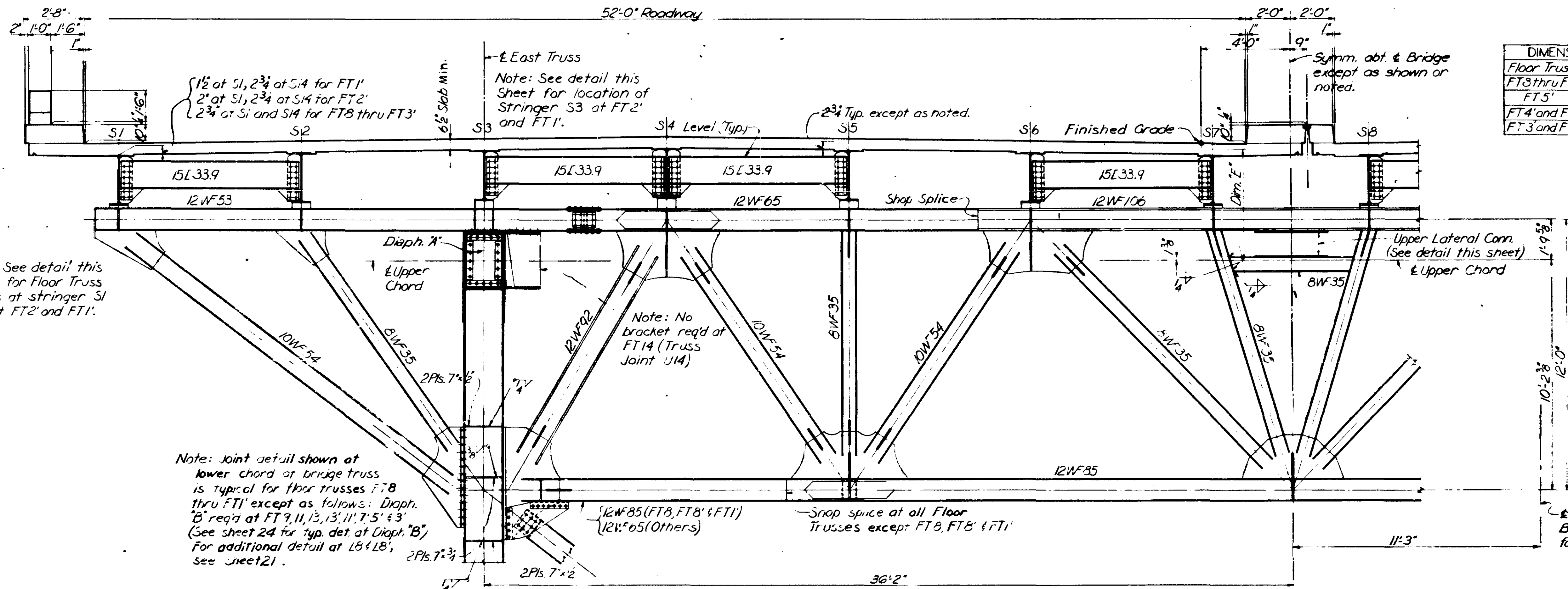
T. H. JEW
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DECK TRUSS SPANS
 FLOOR TRUSS DETAILS

APPROVED - 6-18-65

Drawn by: C.J. Reuter, Dec. 1963
 Checked by: T.V. Dillon, Apr. 1964



DIMENSIONS - 'E'	
Floor Truss	Dimension
FT3 thru FT6	5'-2 7/8"
FT5	5'-3 1/8"
FT4 and FT2	5'-2 7/8"
FT3 and FT1	5'-3 1/8"

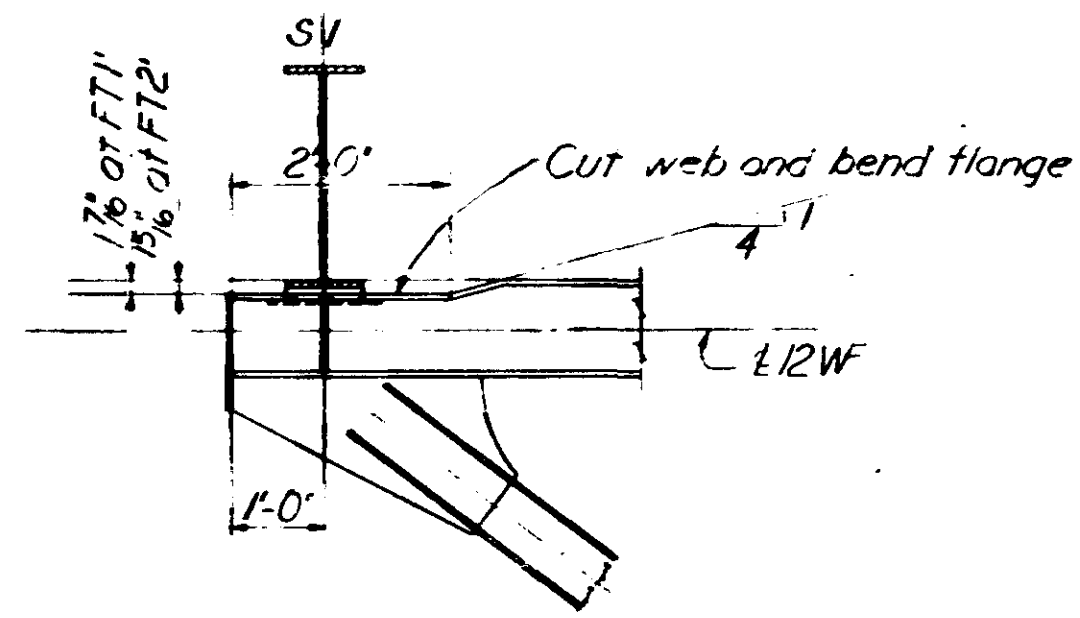
Note: See detail this sheet for Floor Truss details at stringer S1 only at FT2 and FT1.

Note: Joint detail shown at lower chord of bridge truss is typical for trusses FT8 thru FT11 except as follows: Diaph. 'B' req'd at FT9, 11, 13, 13', 11', 7', 5' & 3' (See sheet 24 for typ. det. at Diaph. 'B') For additional detail at LB & LB', see sheet 21.

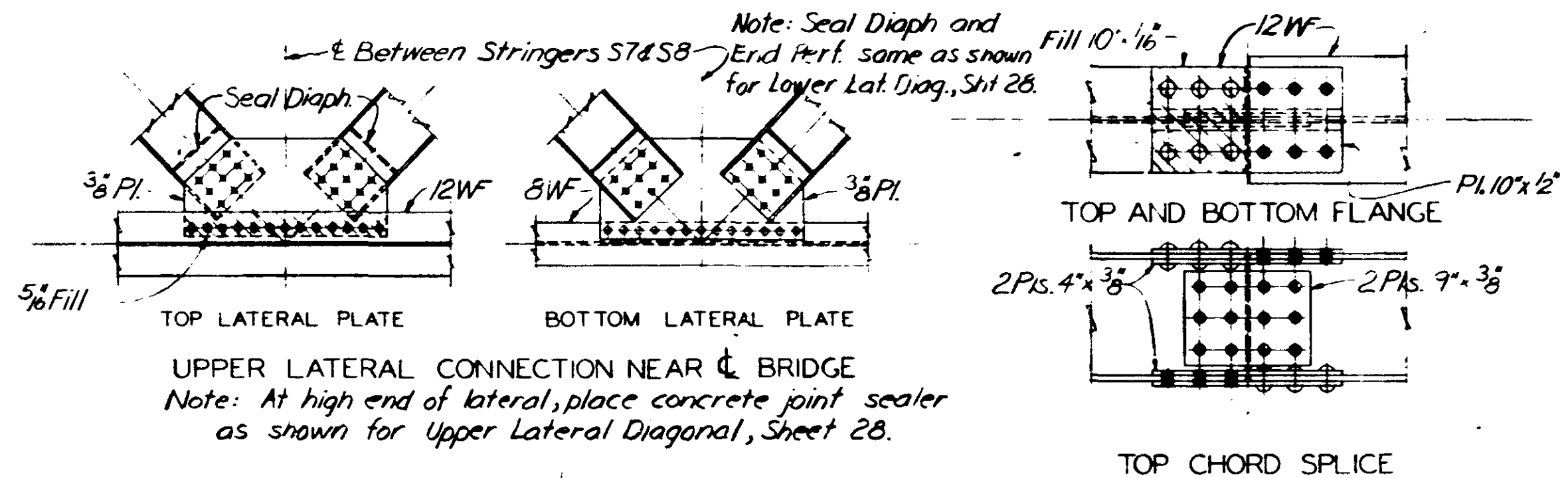
Note: See detail this sheet for location of Stringer S3 at FT2 and FT1.

Note: No bracket req'd at FT14 (Truss Joint U14)

Inspection Walkway this side of Bridge only. See Sheets 34 and 35 for details.

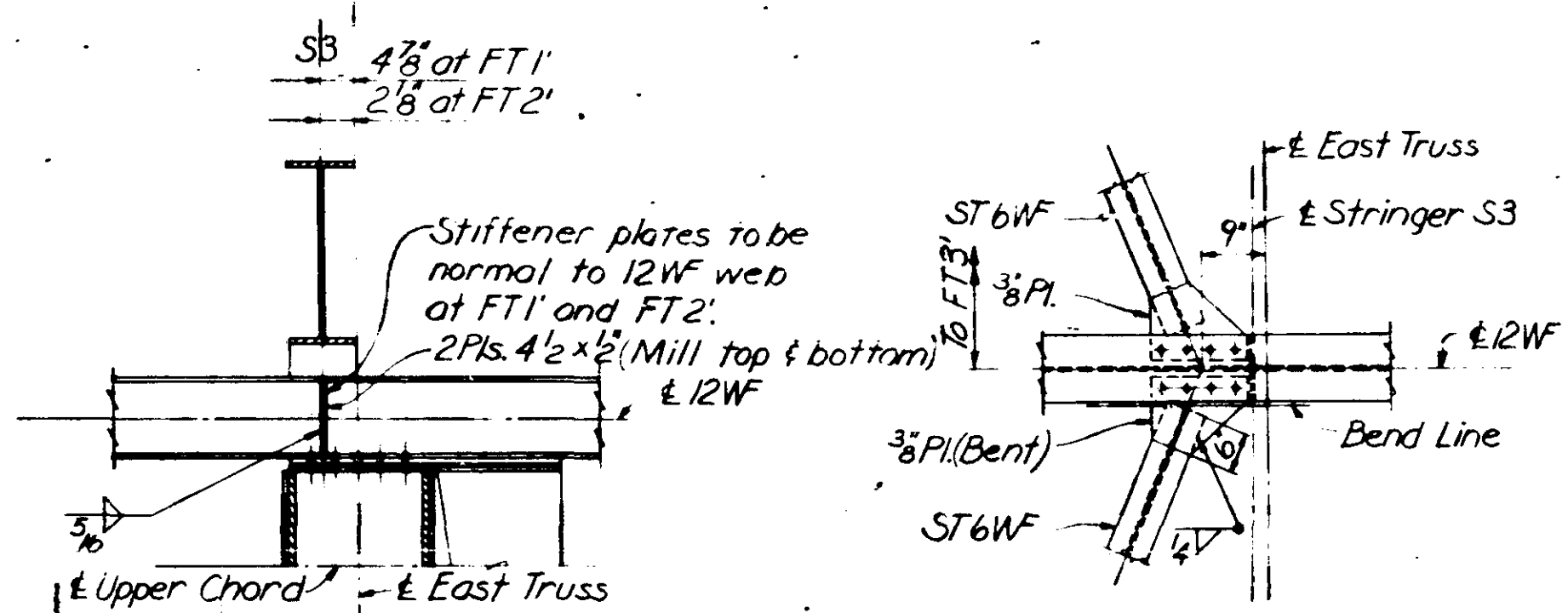


FLOOR TRUSS FT2' & FT1' AT STRINGER S1
Note: Shown for FT1. Similar and as noted for FT2'.



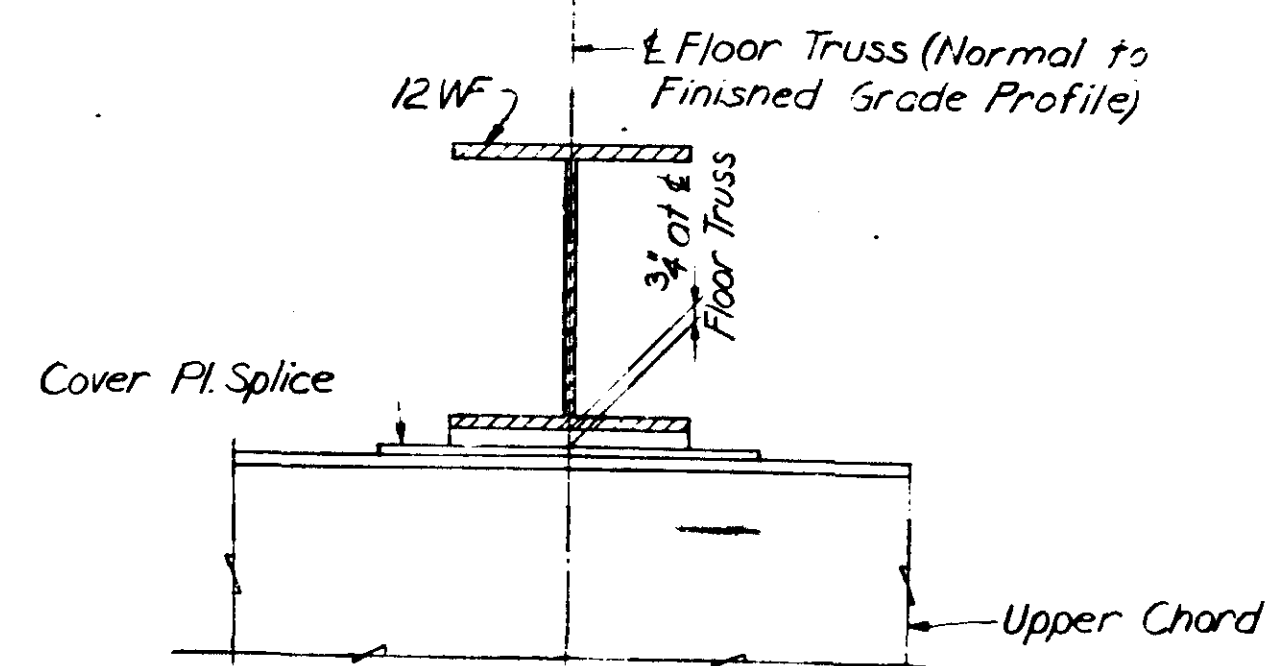
CROSS SECTION AT FLOOR TRUSS FT12
Cross Section at Floor Truss FT8 thru FT11 and FT13 thru FT1' similar except as shown or noted.

NOTES
For General Notes, see sheet 2.
Material, dimensions and details not shown are to be same as for Floor Trusses FT1 thru FT7, sheet 24.
For layout of Floor Trusses, see sheet 22.
Work this sheet with sheet 24.

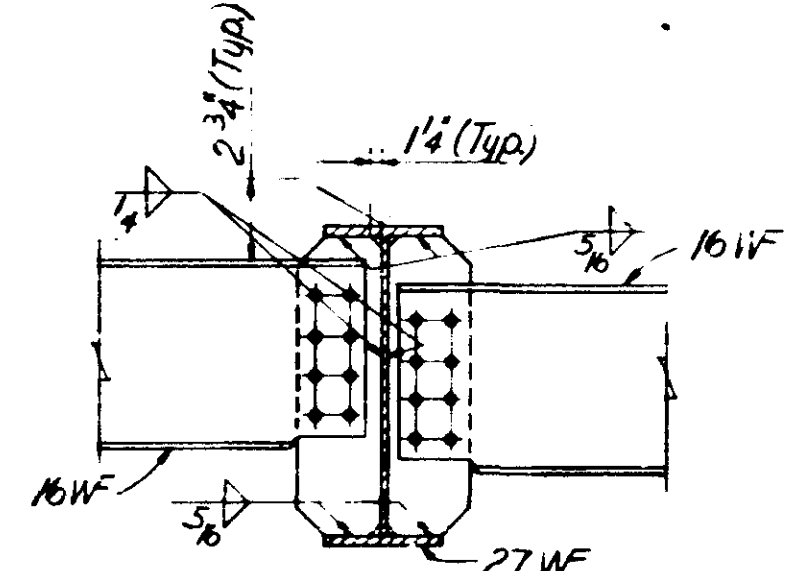


FLOOR TRUSS FT2' & FT1' AT STRINGER S3
Note: Shown for FT1. Similar and as noted for FT2'.

CANTILEVER BRACING CONN. AT STRINGER S3 AT FT2'



FILL PLATE DETAIL AT U8, U4' & U2'



TYP. STRINGER DIAPHRAGM CONN. AT U4, U8, U14, U8' & U4'
Note: For location and additional details see Framing Plan, Sheet 22 and Stringer Details, Sheet 23.

Drawn by: C. J. Heuter, Nov. 1963
 Checked by: T. V. Dillon, Apr. 1964
 2083
 635726

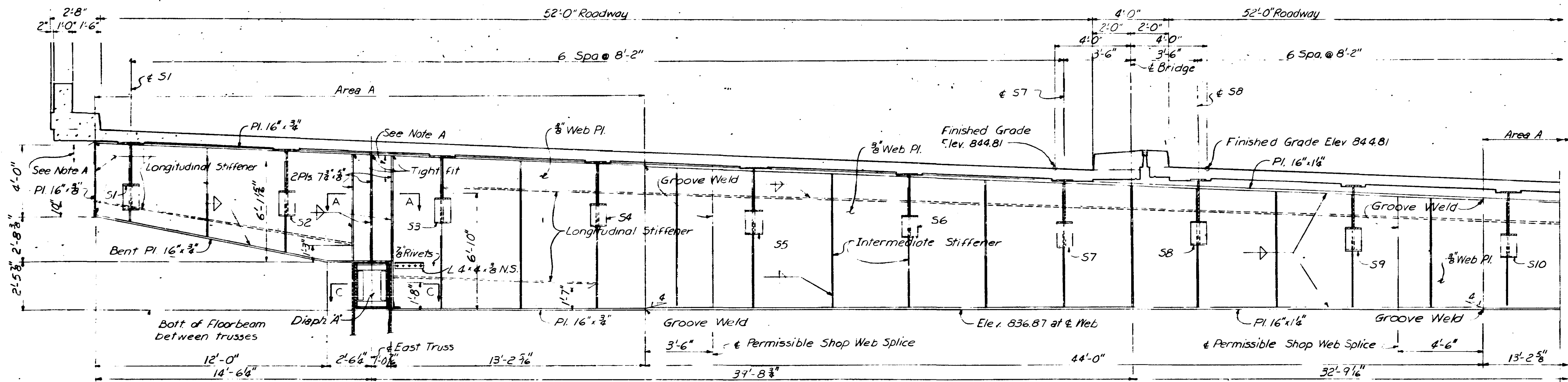
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 DEPARTMENT OF HIGHWAYS

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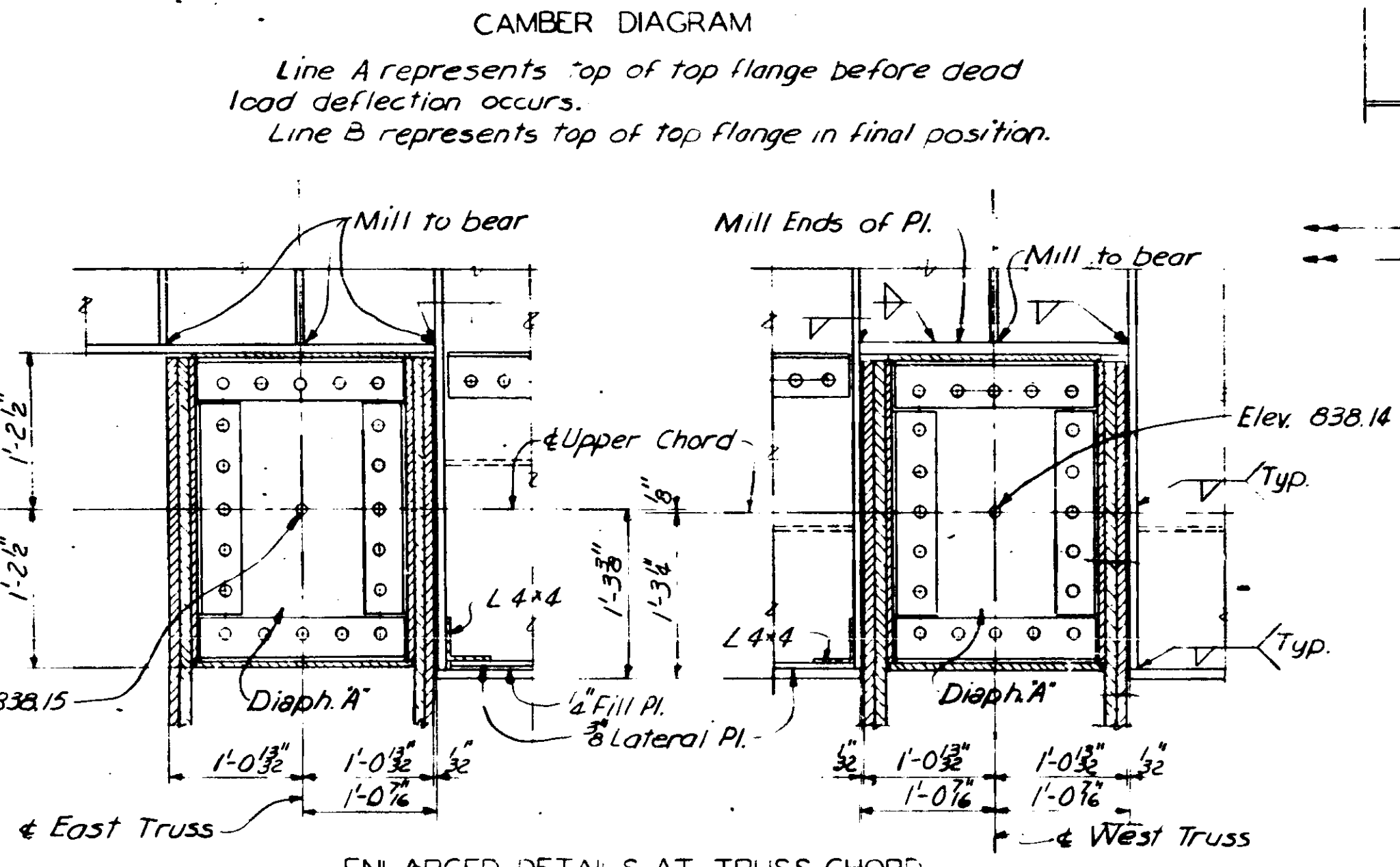
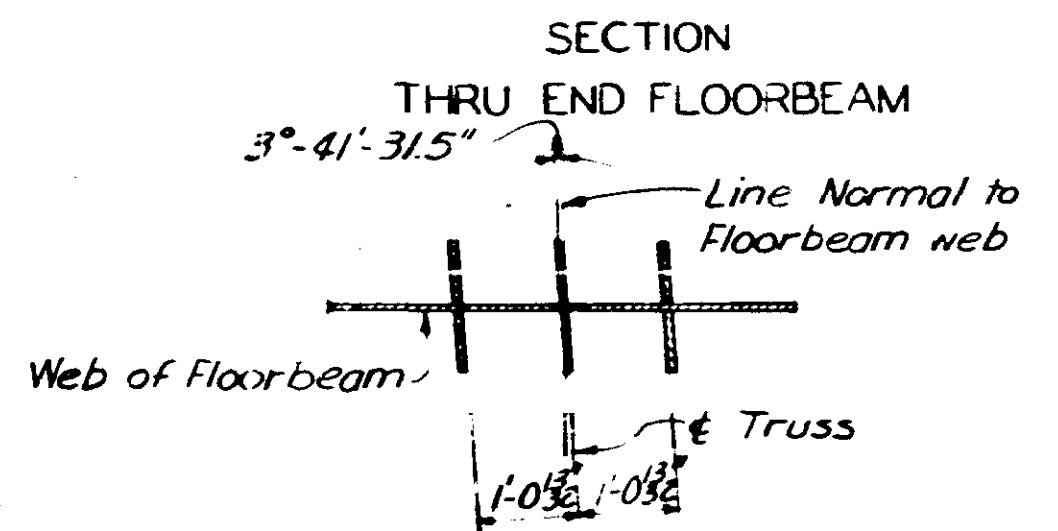
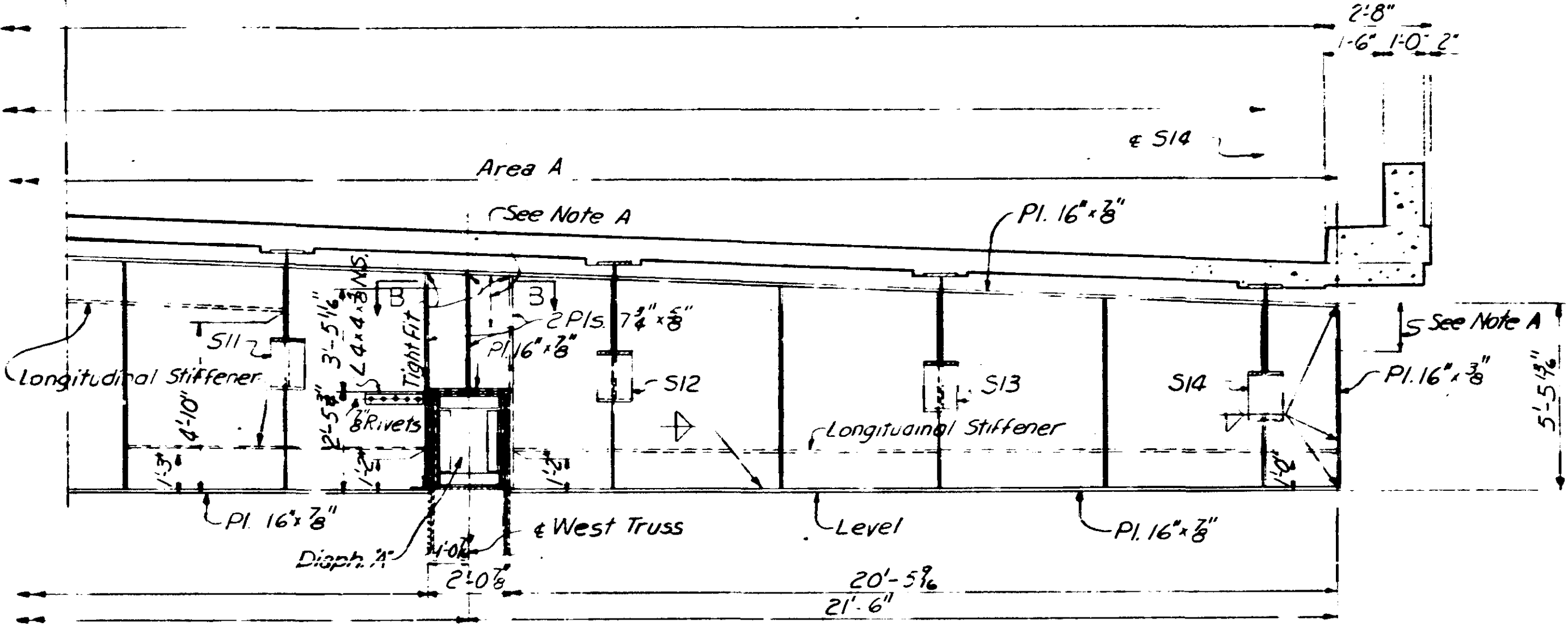
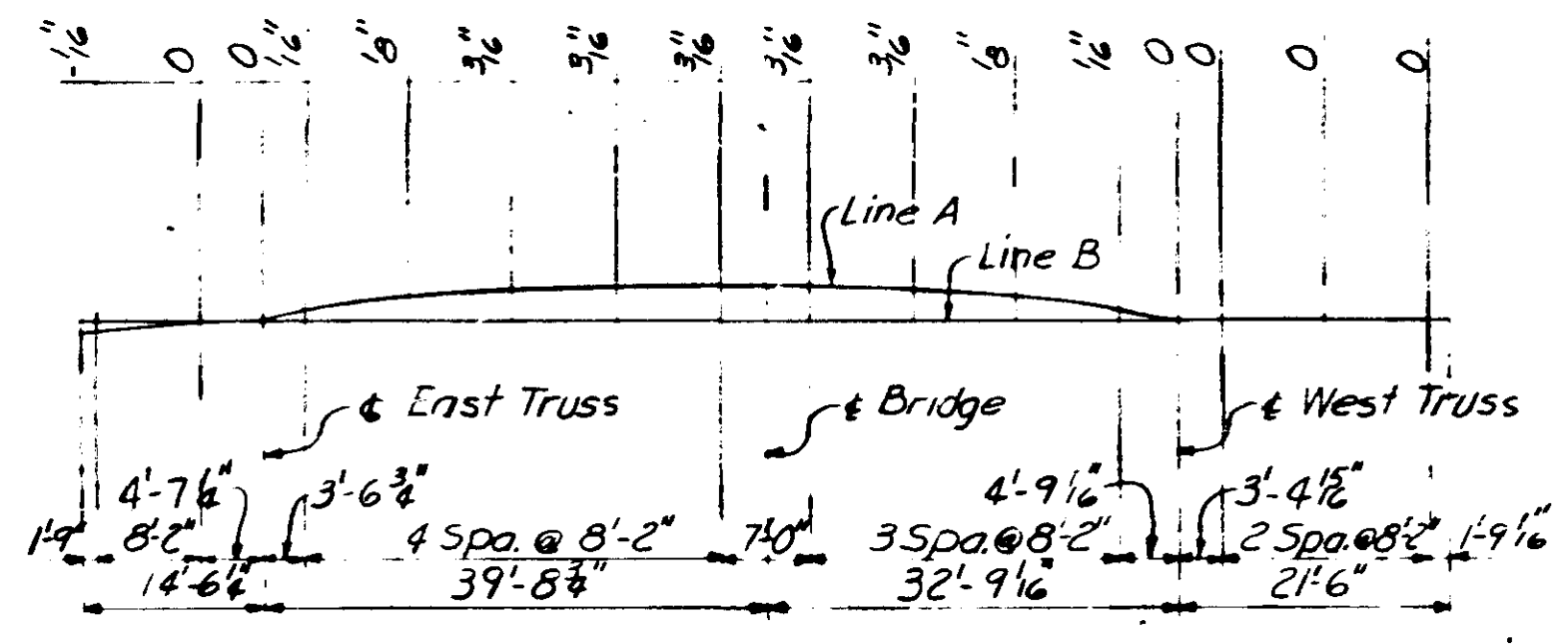
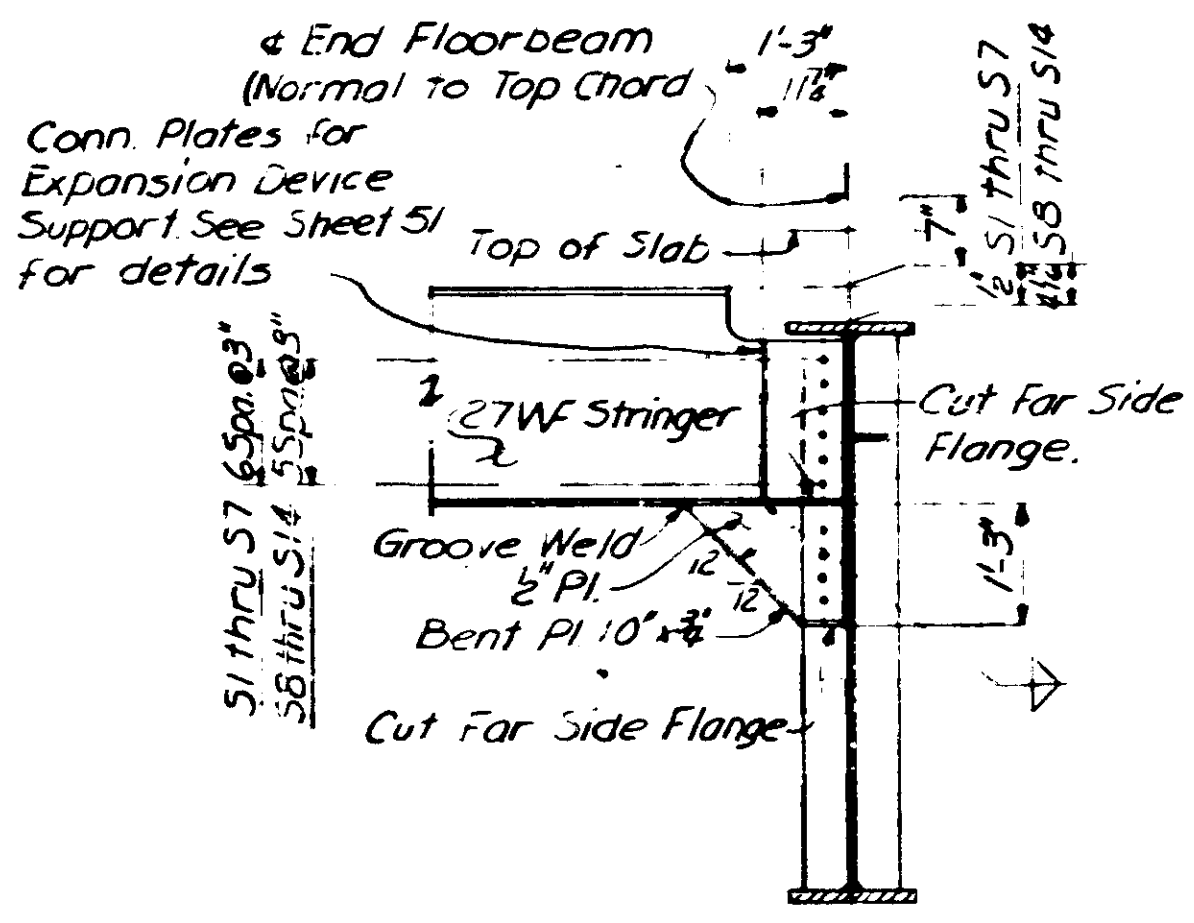
DECK TRUSS SPANS
 FLOOR TRUSS DETAILS

APPROVED - 6-18-65



Note:
 Longitudinal Stiffeners to be Pl. 4 $\frac{1}{2}$ " x $\frac{3}{8}$ " and to be at locations shown.
 Intermediate Stiffeners to be 2 Pls. 5 $\frac{1}{2}$ " x $\frac{3}{8}$ " Space normal to web of floorbeam at each stringer and equally between stringers as shown.

Note A: Cut Pls. on far side to clear flume.



END FLOORBEAM NOTES
 See Sheet 40 for Structural Steel Notes.
 All dimensions shown are measured horizontally along ϵ of web of floorbeam.
 For Expansion Device and Flume Details see Sheet 51.
 Top and bottom flanges of floorbeam are to be cambered for full dead load deflections as shown in Camber Diagram.
 For floorbeam connections to upper chord of East and West Truss and lateral connection details, see Sheet 28.

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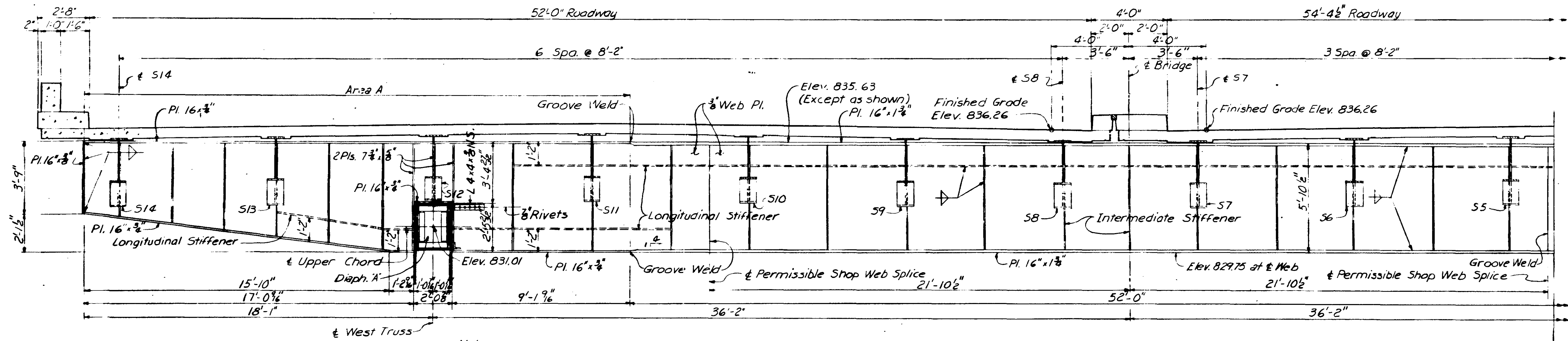
T. H. 33W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DECK TRUSS SPANS
 END FLOORBEAM - SOUTH END

APPROVED - 6-18-65

Drawn by: Godefrids & Deering, Apr. 1964
 Checked by: T.V. Dillon, May 1964
 2083
 645230



Note:
Longitudinal Stiffeners to be Pl. 4 1/2 x 3/8 and to be at locations shown
Intermediate Stiffeners to be 2Pls 4 1/2 x 3/8
Space at each Stringer and equally between stringers.

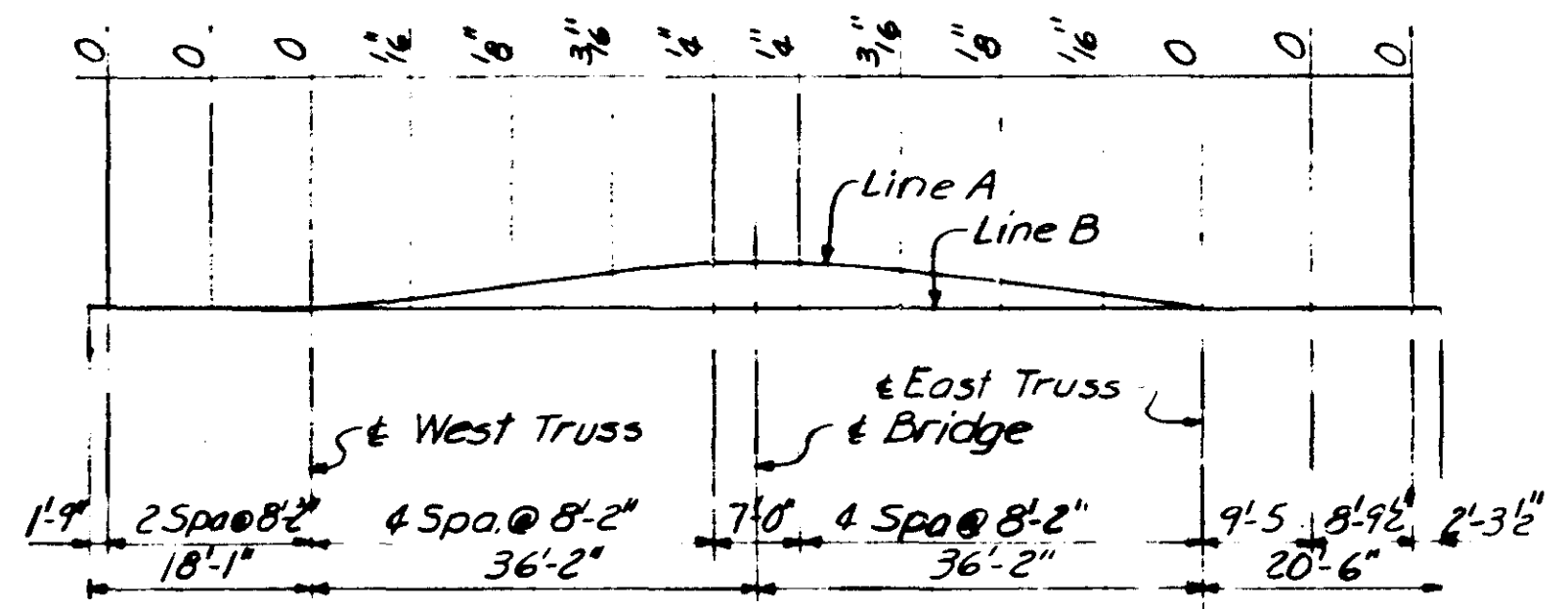
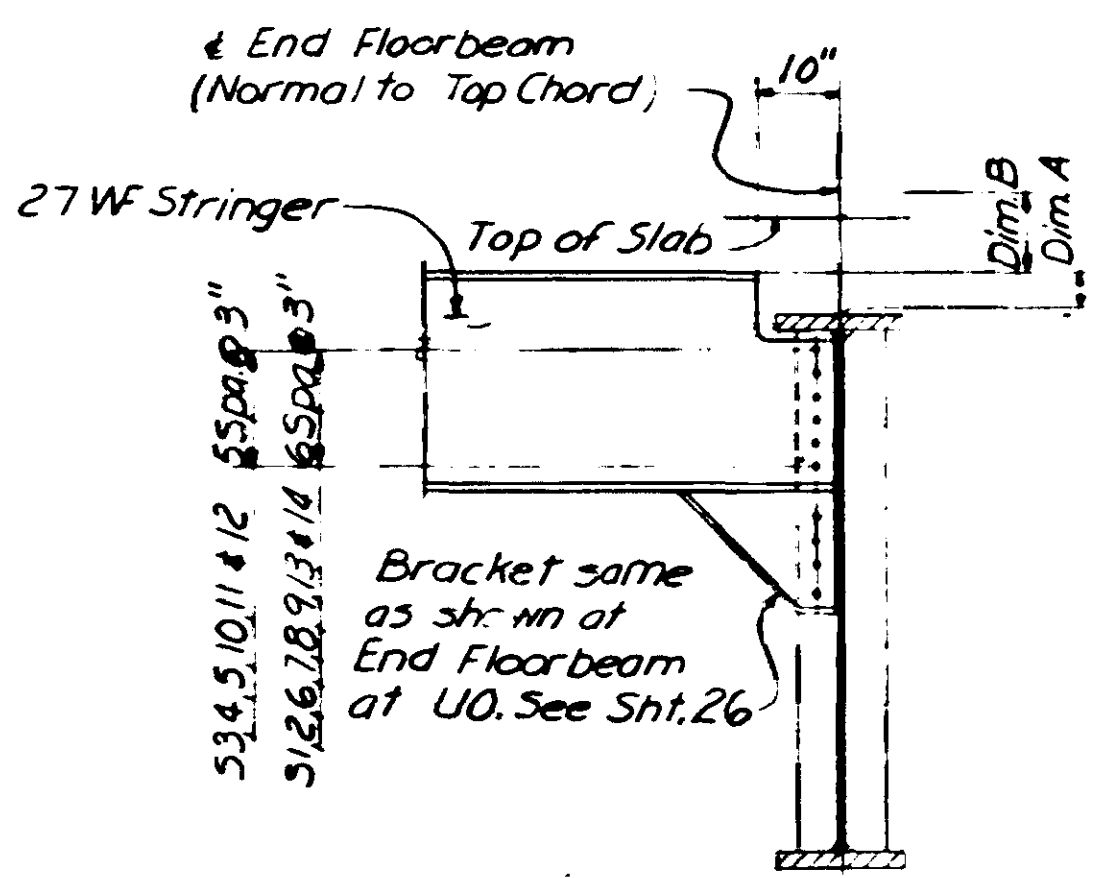
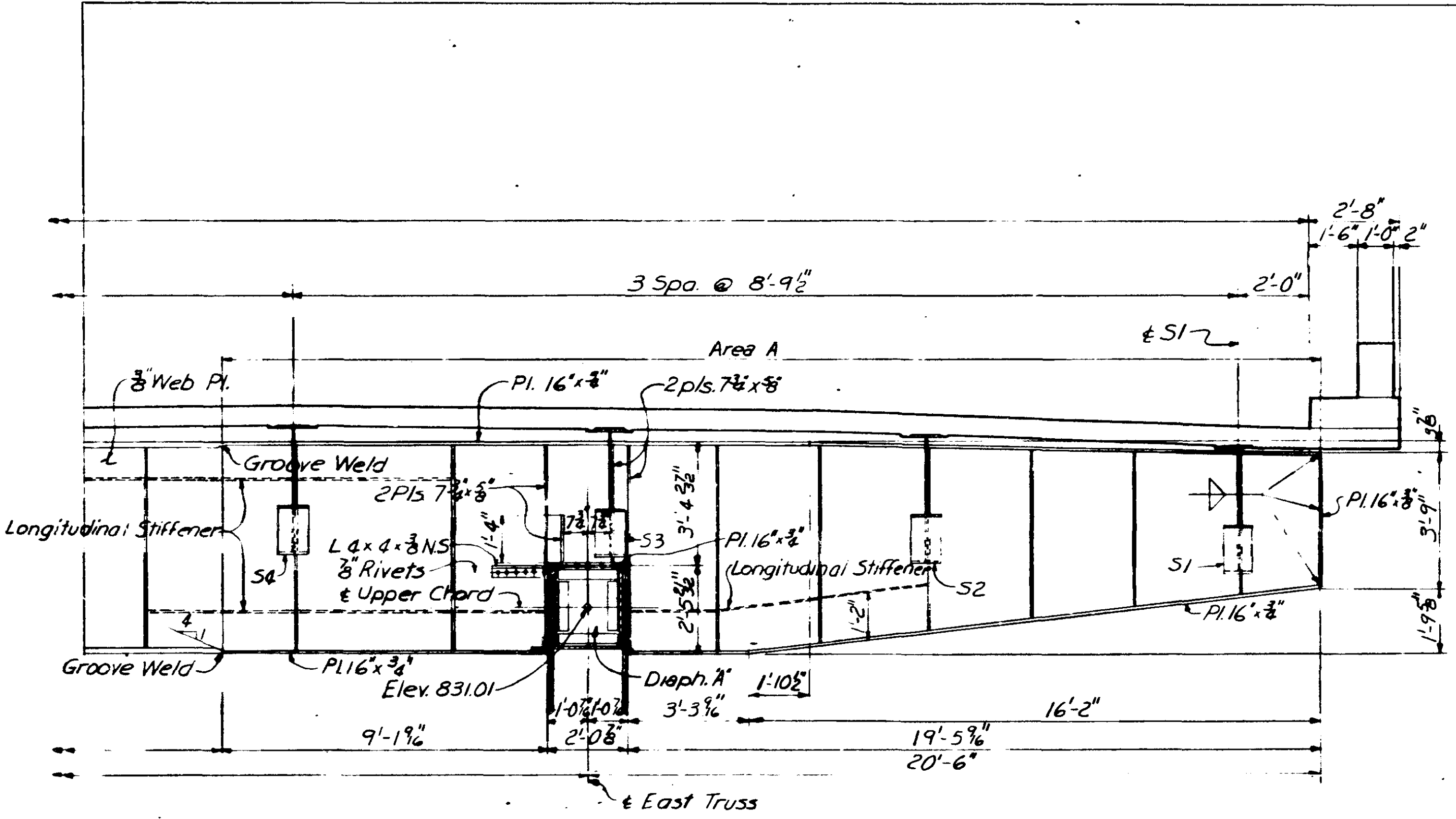


TABLE OF VARIABLE DIMENSIONS														
Stringer	51	52	53	54	55	56	57	58	59	510	511	512	513	514
Dim. A	11 1/2"	22 1/2"	31 1/2"	43 1/2"	53 1/2"	72 1/2"	72 1/2"	21 1/2"	33 1/2"	43 1/2"	53 1/2"	21 1/2"	7 1/2"	
Dim. B	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"



END FLOORBEAM NOTES
See Sheet 40 for Structural Steel Notes.
For typical details at Truss Chord, see "Enlarged Details at Truss Chord," Sheet 26.
For Expansion Device and Flume Details, see Sheet 52.

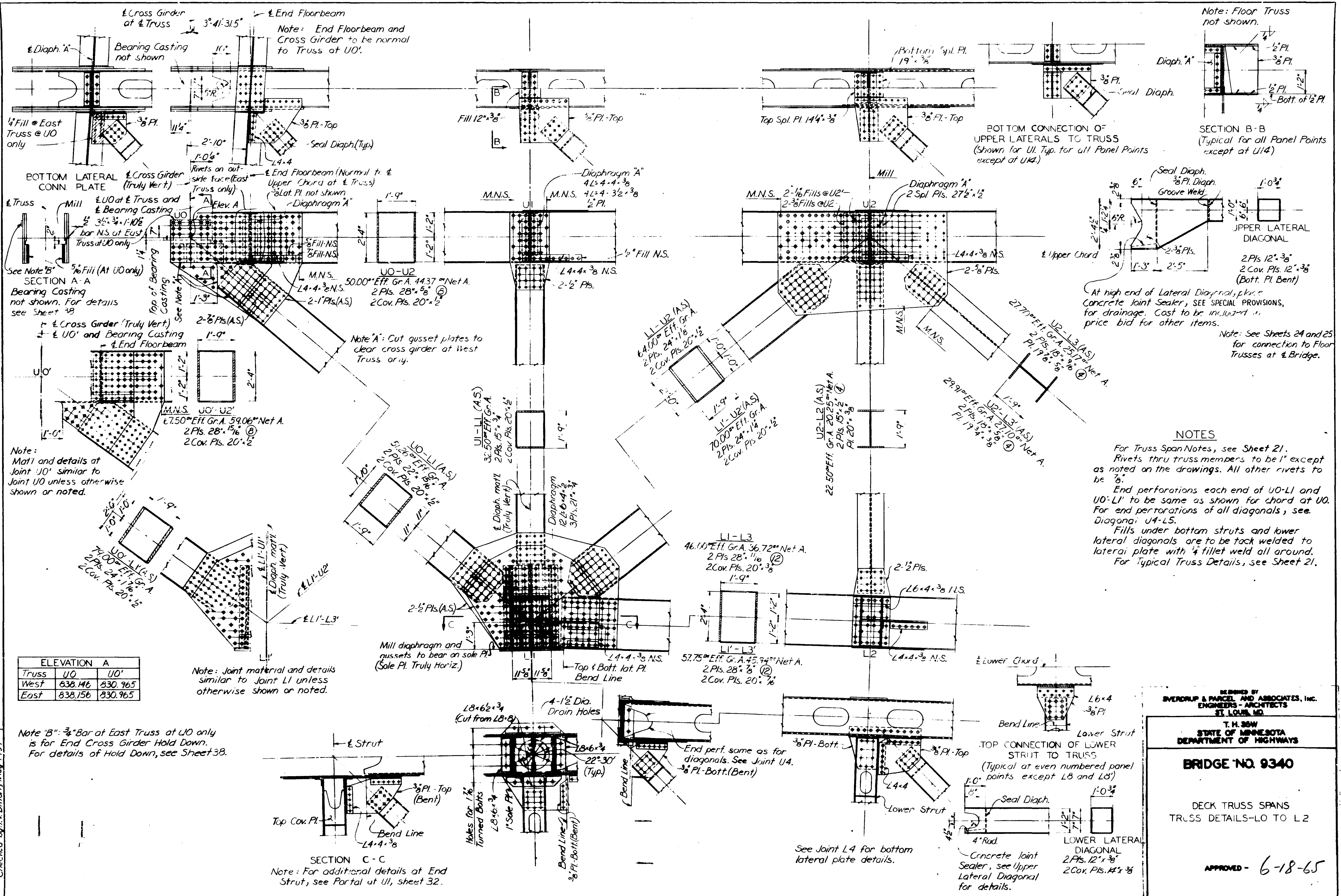
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DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DECK TRUSS SPANS
END FLOORBEAM-NORTH END

APPROVED - 6-18-65

Drawn by: D.E. Erano, May 1964
Checked by: T. J. Dillon, May 1964
2053
675294



Note: Floor Truss not shown.

SECTION B-B
(Typical for all Panel Points except at U14)

UPPER LATERAL DIAGONAL
2 PIs 12" x 3/8"
2 Cov. PIs 12" x 3/8"
(Bott. Pl. Bent)

At high end of Lateral Diagonal, place Concrete Joint Sealer, SEE SPECIAL PROVISIONS, for drainage. Cost to be included in price bid for other items.

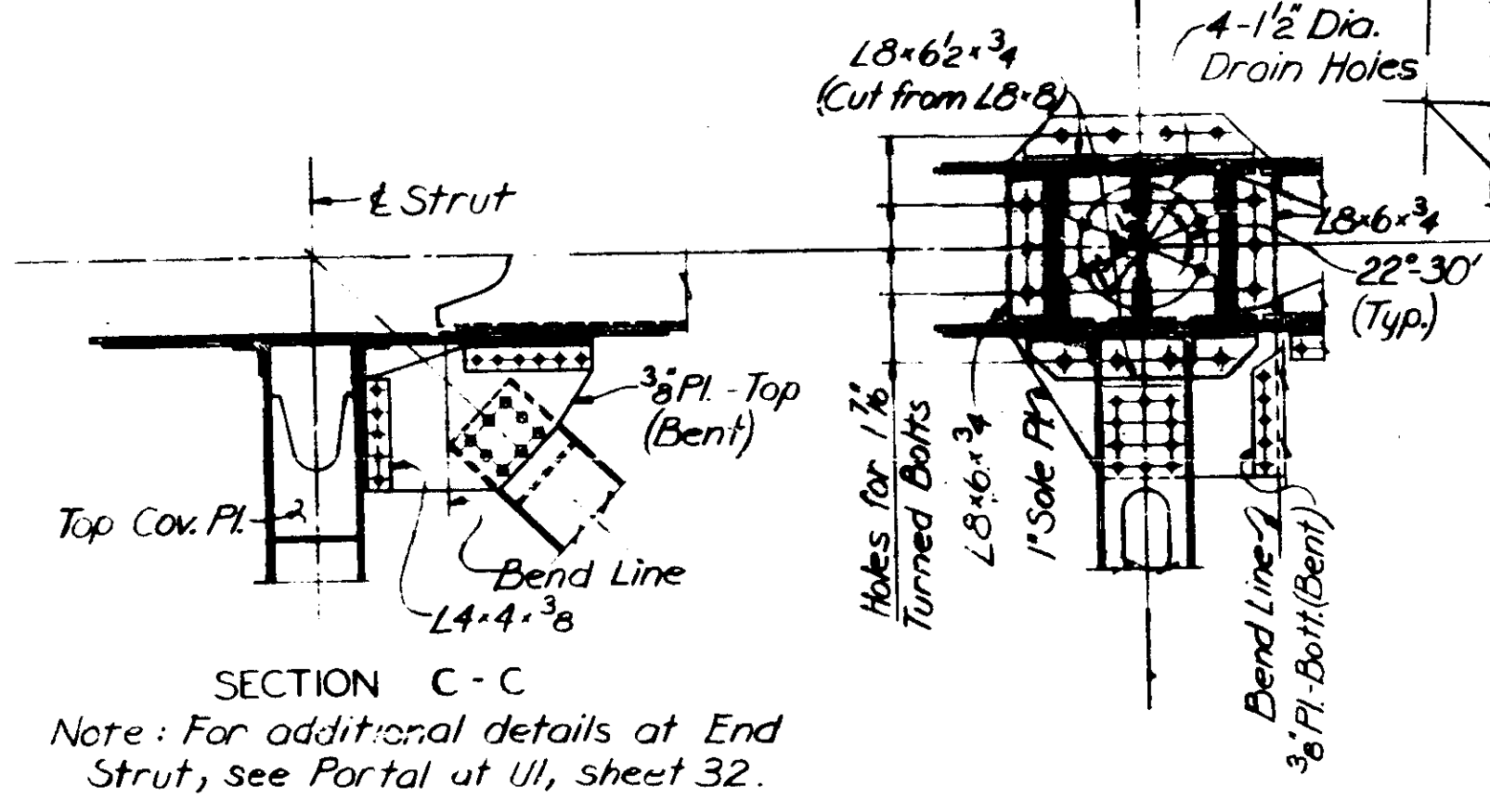
Note: See Sheets 24 and 25 for connection to Trusses at Bridge.

NOTES

For Truss Span Notes, see Sheet 21.
Rivets thru truss members to be 1" except as noted on the drawings. All other rivets to be 3/8".
End perforations each end of UO-L1 and UO-L1' to be same as shown for chord at UO. For end perforations of all diagonals, see Diagonal U4-L5.
Fills under bottom struts and lower lateral diagonals are to be tack welded to lateral plate with 1/4 fillet weld all around.
For Typical Truss Details, see Sheet 21.

ELEVATION A		
Truss	UO	UO'
West	838.146	830.965
East	838.156	830.965

Note 'B': 3/4" Bar at East Truss at UO only is for End Cross Girder Hold Down. For details of Hold Down, see Sheet 38.



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SVERDRUP & PARCEL AND ASSOCIATES, INC.
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ST. LOUIS, MO.

T. H. BOW
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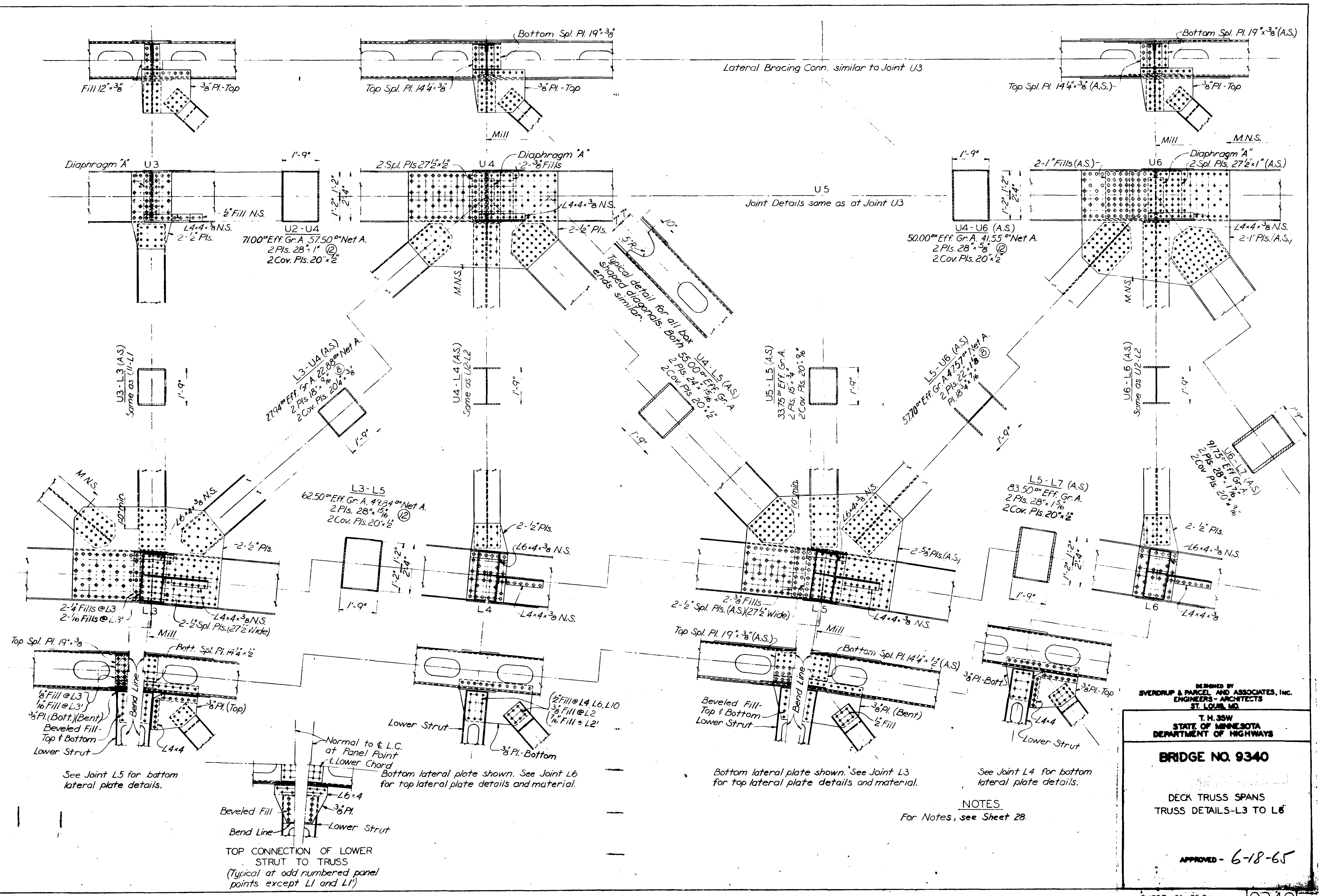
BRIDGE NO. 9340

DECK TRUSS SPANS
TRUSS DETAILS-LO TO L2

APPROVED - 6-18-65

Drawn by: C.J. Reuten, Nov. 1963
 Checked by: T.V. Dillon, May 1954
 2083
 635674

Drawn by: C.J. Reuter, Dec. 1963
 Checked by: T.D. Dillon, May 1964
 2083
 633725



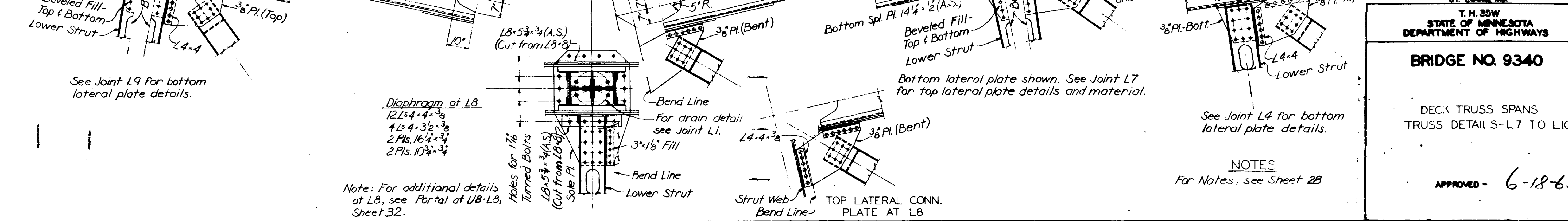
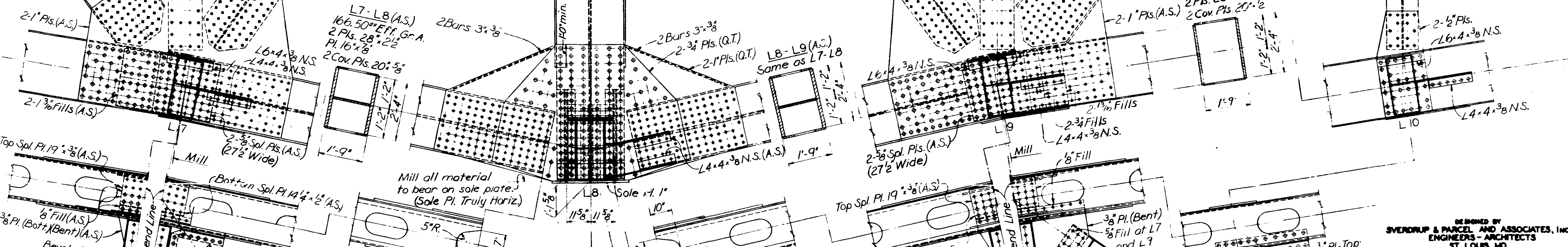
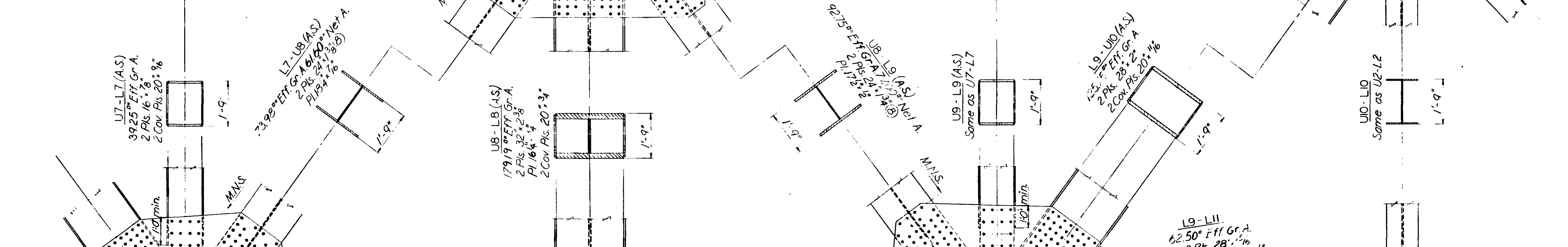
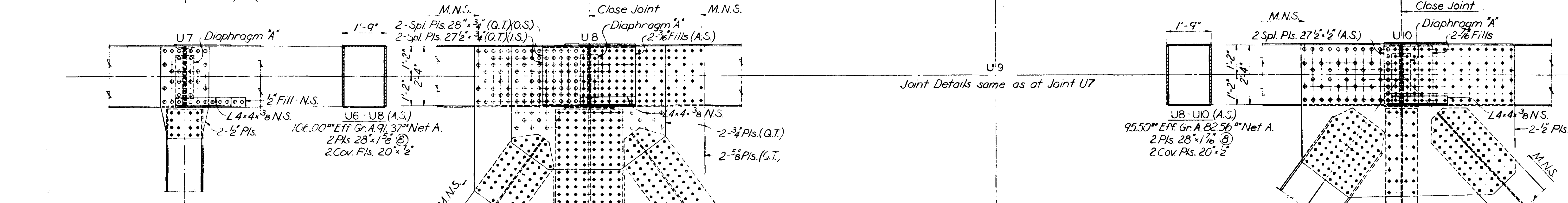
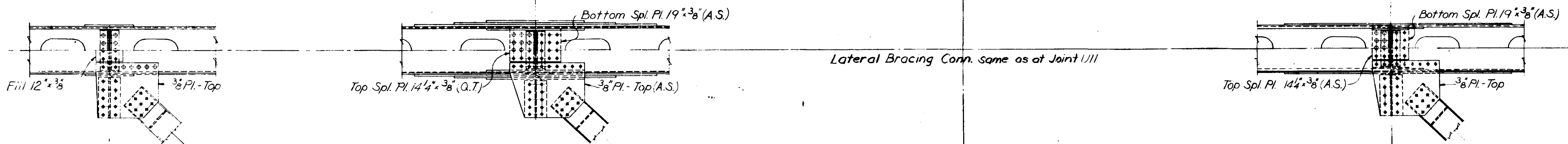
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BRIDGE NO. 9340

DECK TRUSS SPANS
 TRUSS DETAILS-L3 TO L6

APPROVED - 6-18-65



Note: For additional details at L8, see Portal at UB-L8, Sheet 32.

Lateral Bracing Conn. same as at Joint U11

Joint Details same as at Joint U7

Bottom lateral plate shown. See Joint L7 for top lateral plate details and material.

See Joint L4 for bottom lateral plate details.

NOTES
For Notes, see Sheet 28

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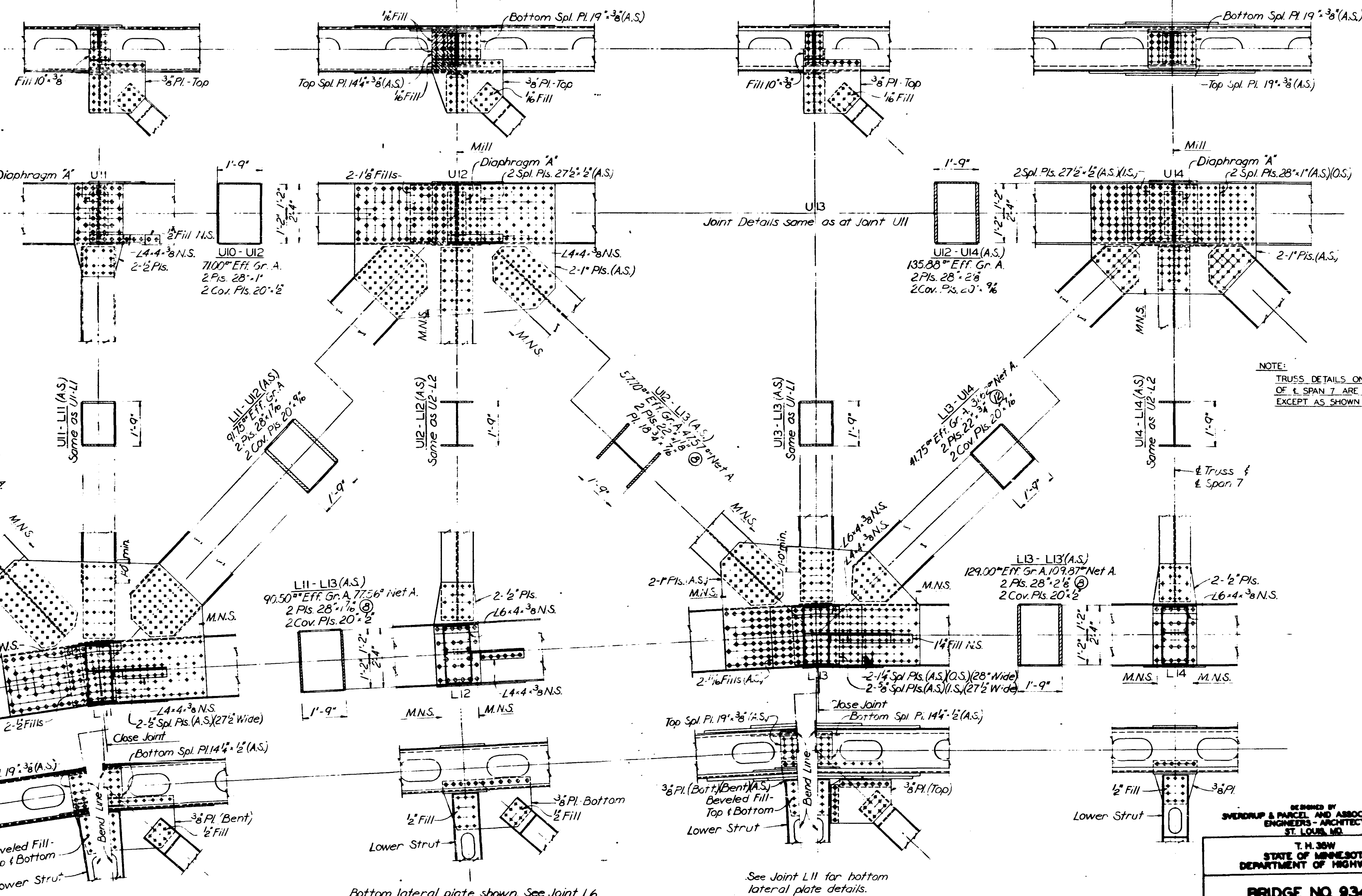
T. H. 35W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DEC. TRUSS SPANS
TRUSS DETAILS - L7 TO L10

APPROVED - 6-18-65

Drawn by: C.J. Reuter, Dec. 1963
Checked by: T.K. Dillon, May 1964
2083
635921



NOTE:
TRUSS DETAILS ON EACH SIDE OF L SPAN 7 ARE SIMILAR EXCEPT AS SHOWN OR NOTED

Bottom lateral plate shown. See Joint L7 for top lateral plate details and material.

Bottom lateral plate shown. See Joint L6 for top lateral plate details and material.

See Joint L11 for bottom lateral plate details.

NOTES
For Notes, see Sheet 28.

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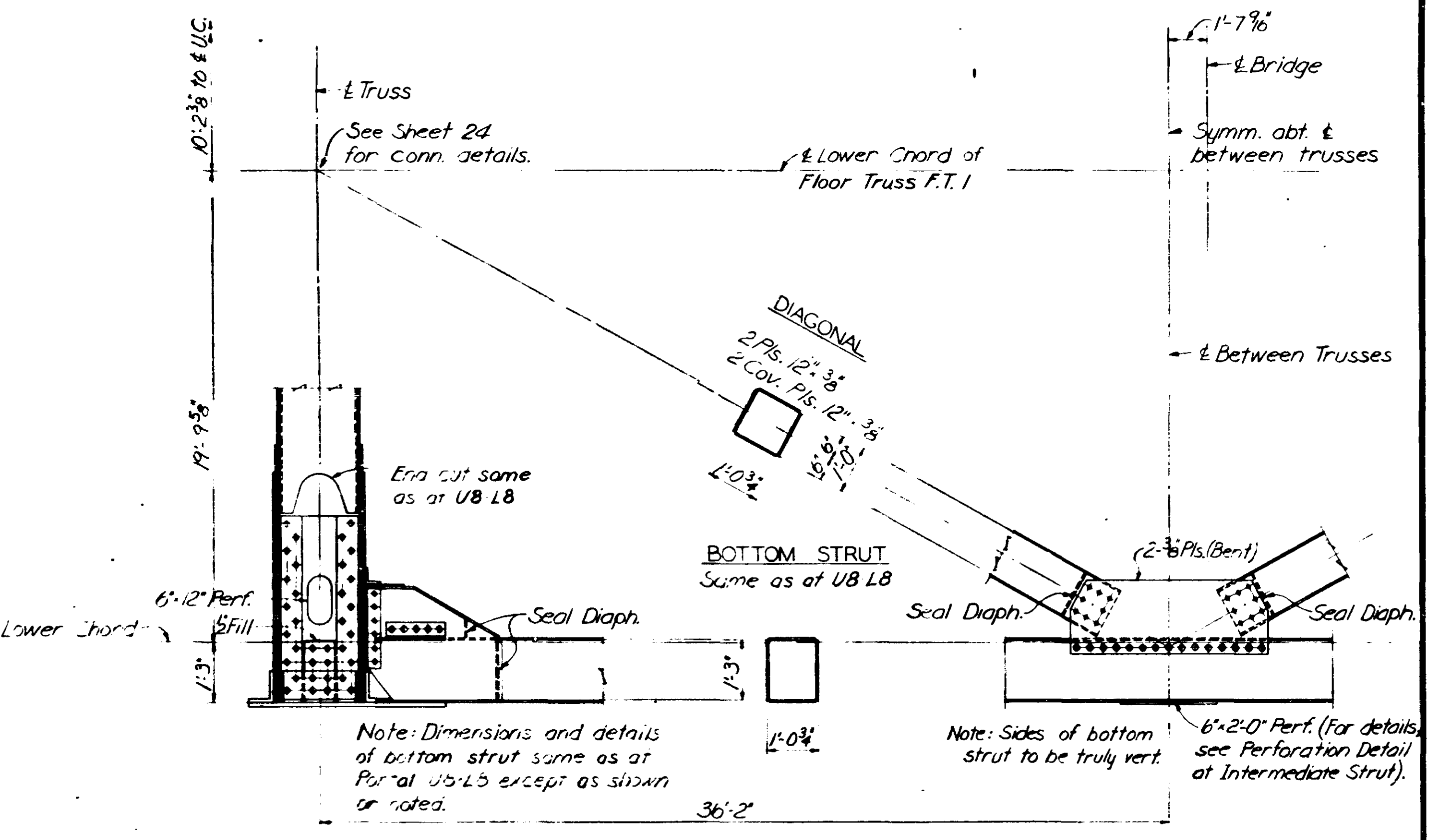
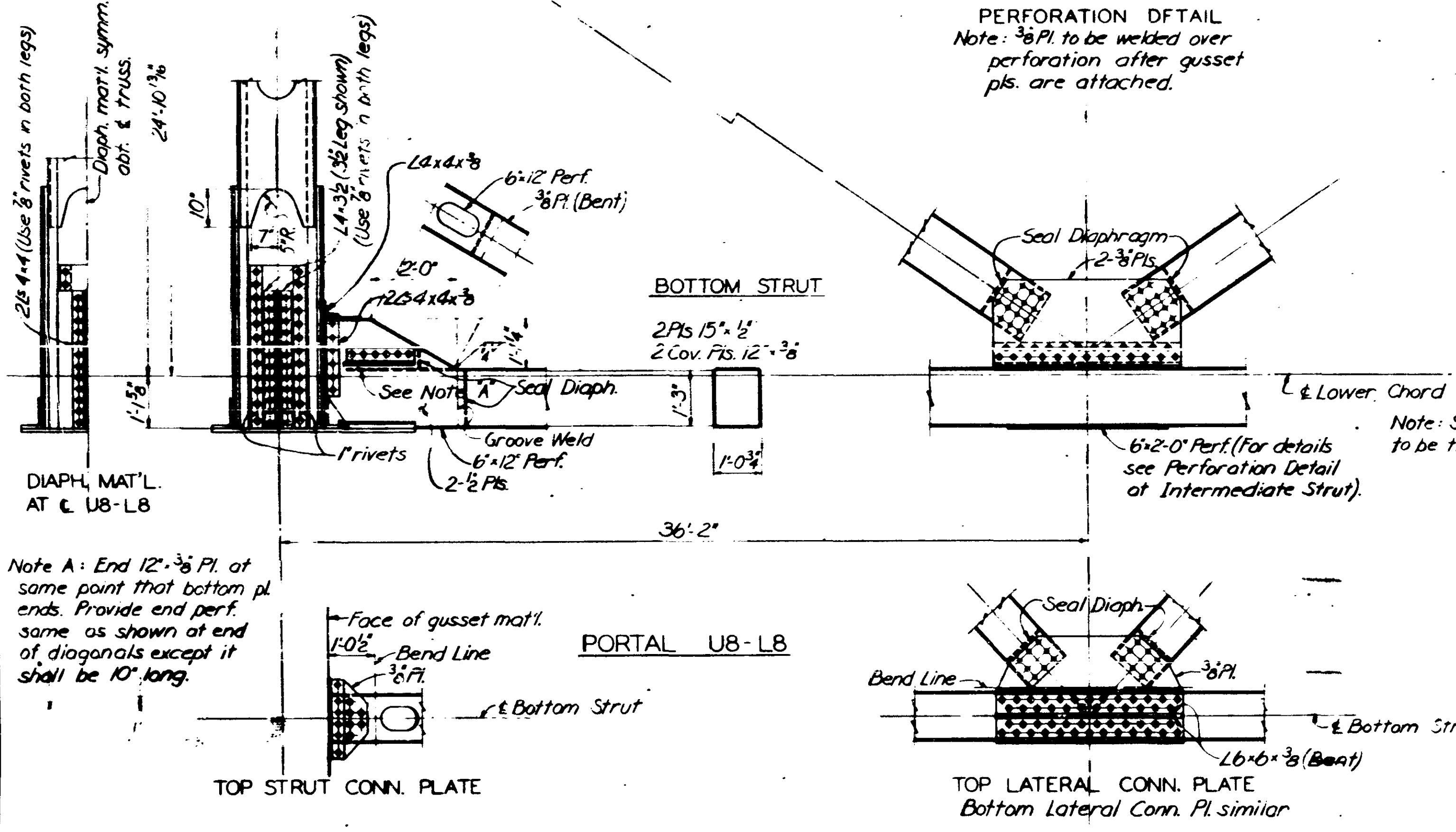
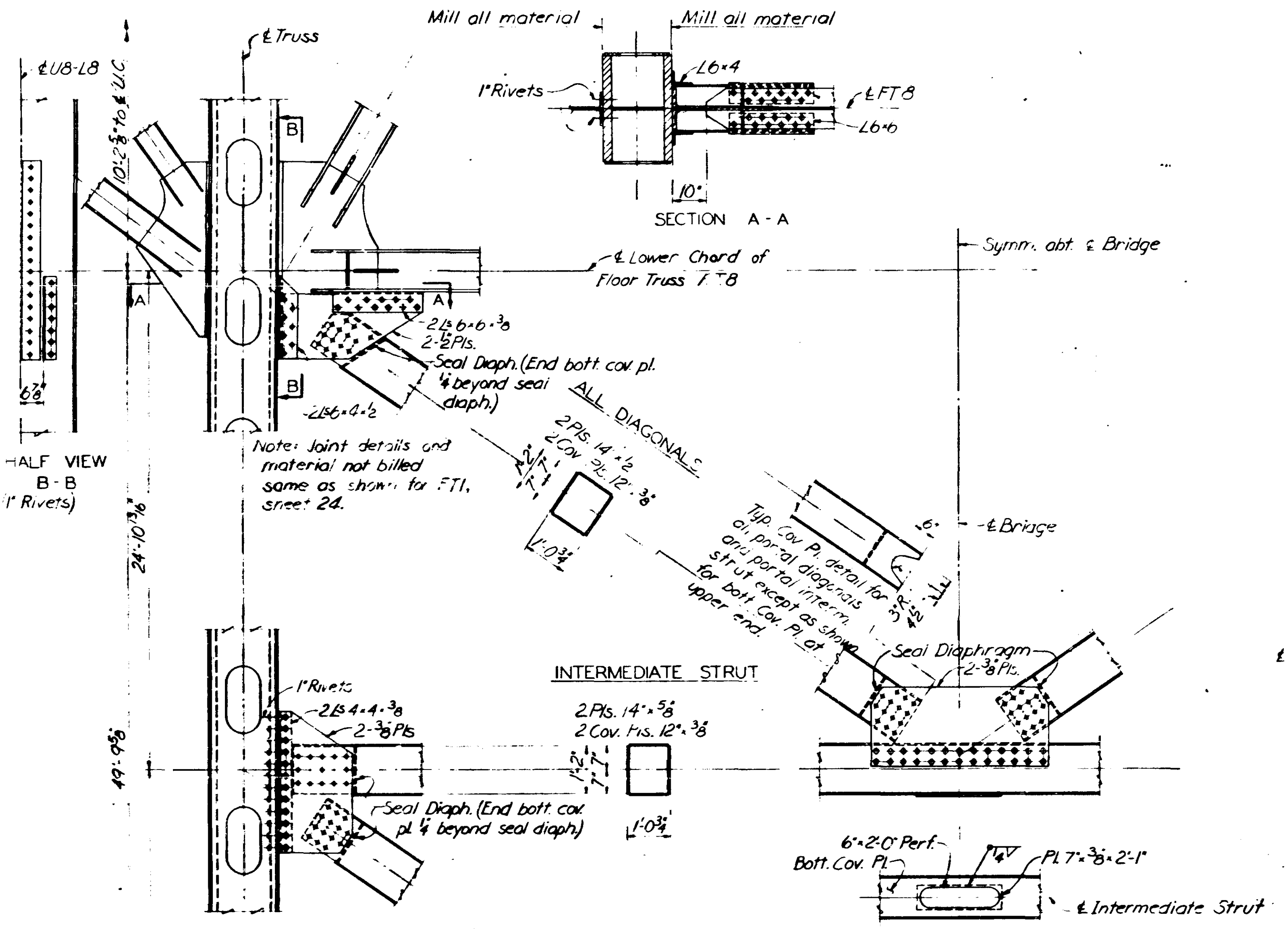
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DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DECK TRUSS SPANS
TRUSS DETAILS-L11 TO L14

APPROVED - 6-18-65

Drawn by: C. J. Reuter, Dec 1963
Checked by: T. V. Dillon, May 1964
2083
64543



NOTES
 For Truss Span Notes, see Sheet 21.
 All rivets to be 3/8 unless noted.
 For walkways, ladders and platforms see Sheets 34 and 35.
 For diaphragm details, see Intermediate Diaphragm, Sheet 21.
 For end details of lower lateral diagonals, see Sheet 28.

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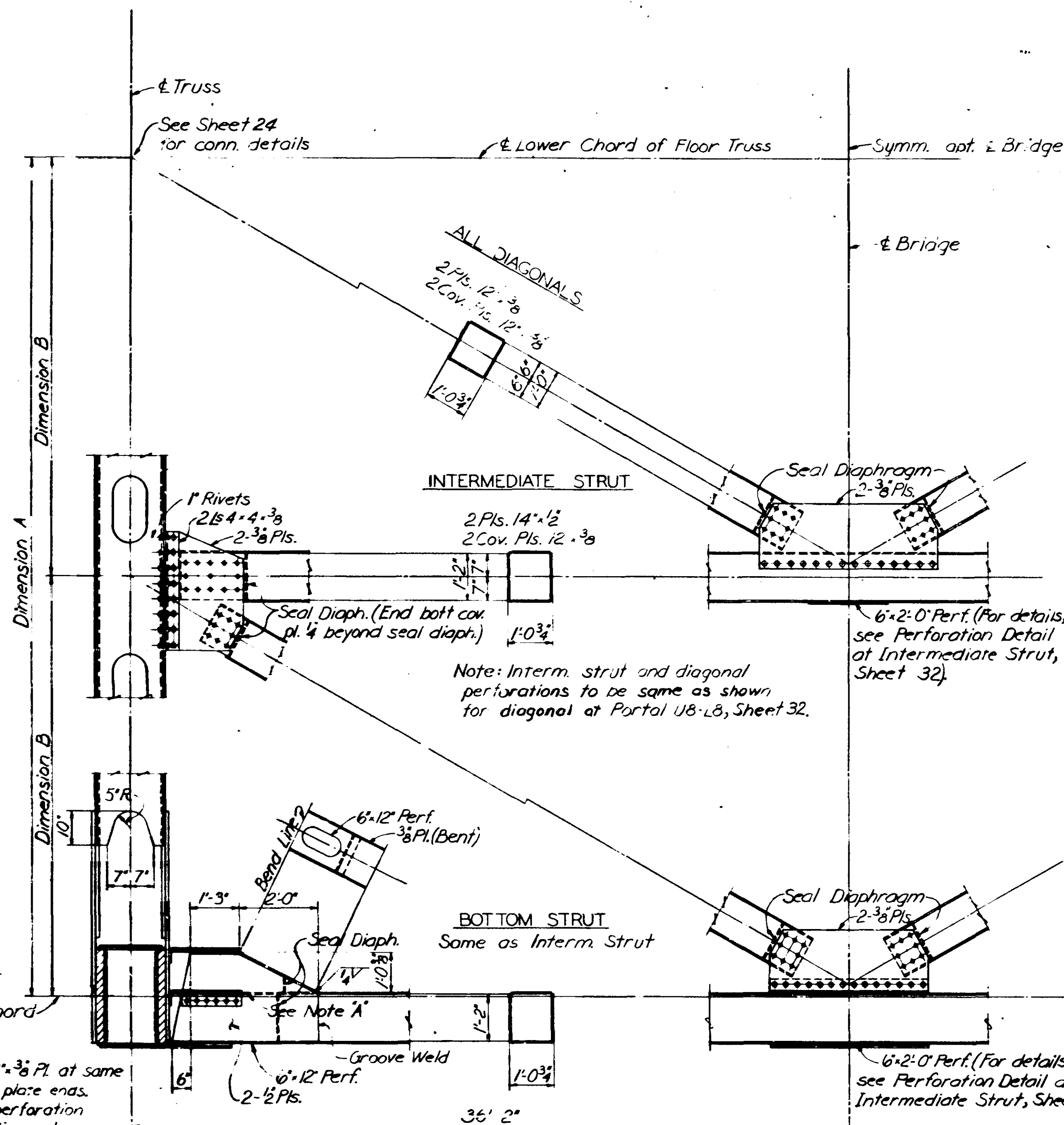
BRIDGE NO. 9340

DECK TRUSS SPANS
 PORTALS UI AND U8

APPROVED - 6-18-65

SHEET 32 OF 94

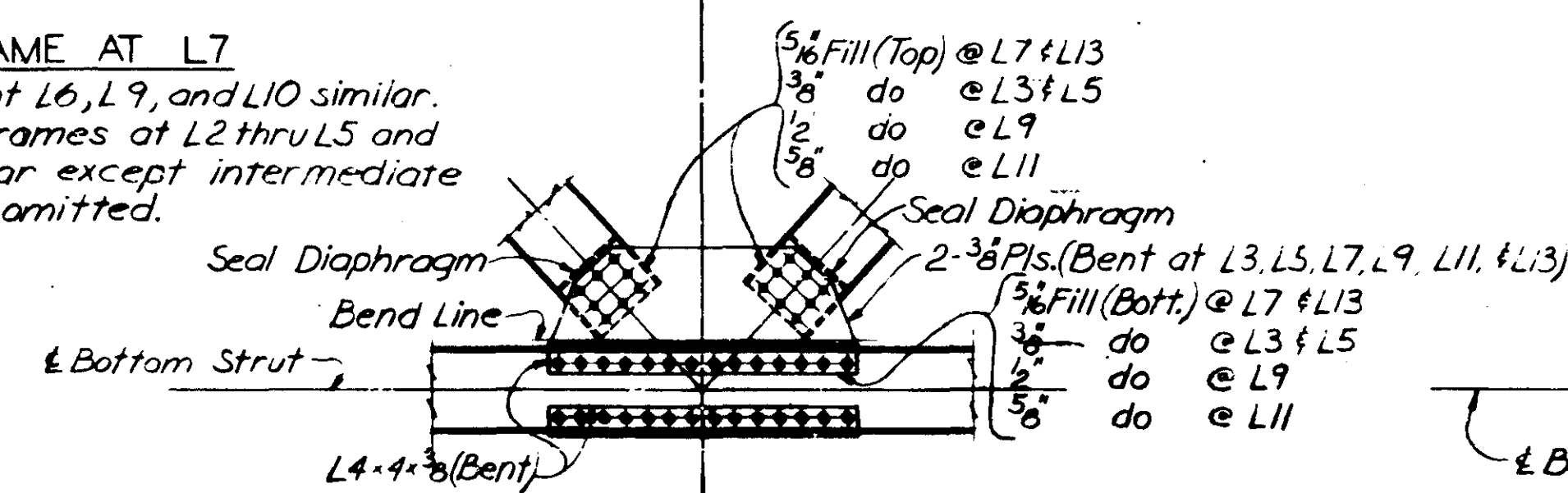
Drawn by: C. J. Reuter, March 1964
 Checked by: T. V. Dillon, May 1964
 2083
 64S/80



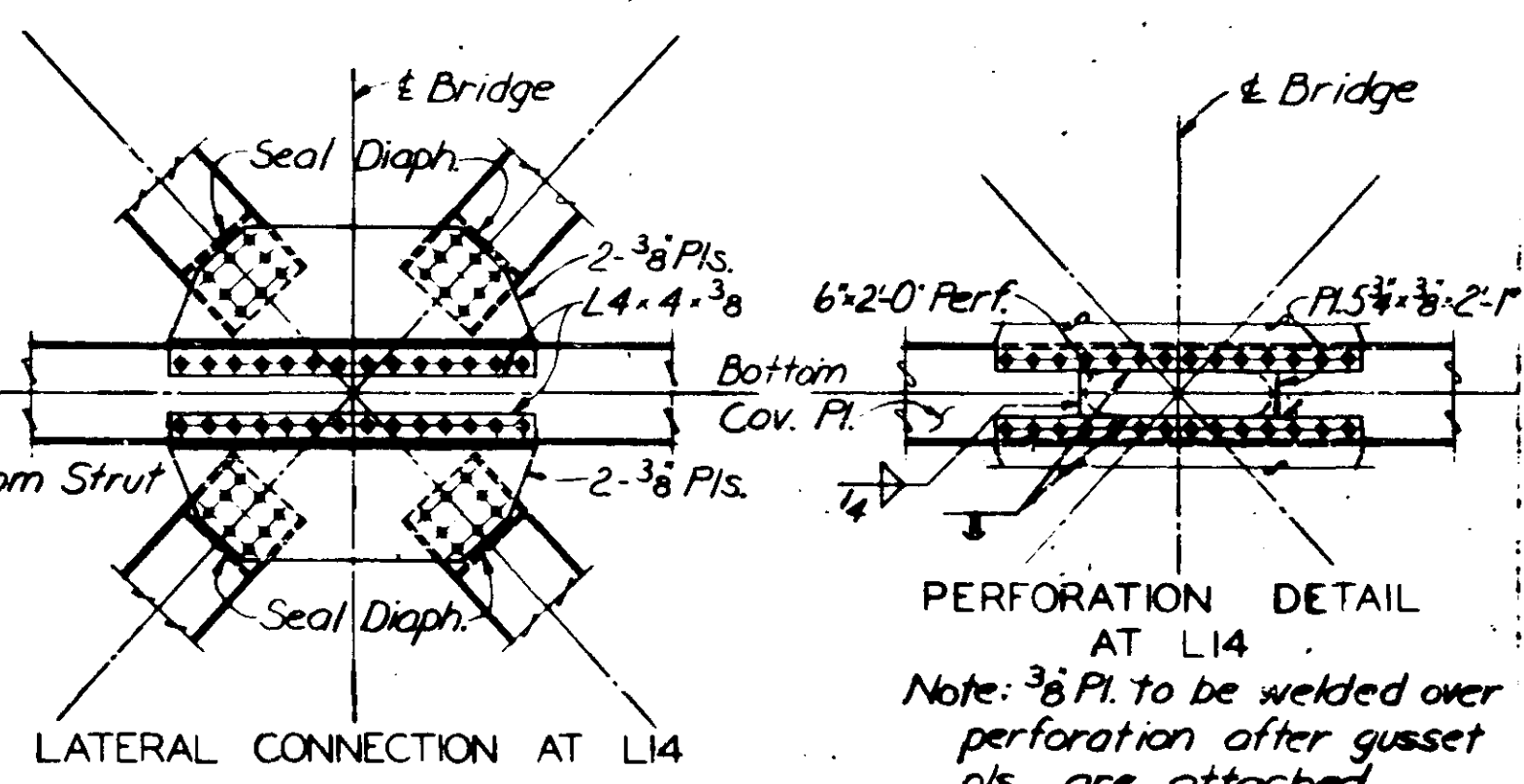
Panel Point	Dim. A	Dim. B
2	21'-0 5/8"	---
3	22'-2 5/8"	---
4	25'-10 5/8"	---
5	29'-6 5/8"	---
6	35'-8 5/8"	17'-10 1/16"
7	41'-9 5/8"	20'-10 1/16"
9	41'-1 5/8"	20'-0 5/8"
10	35'-4 5/8"	17'-8 5/8"
11	29'-7 5/8"	---
12	27'-8 5/8"	---
13 & 14	25'-9 5/8"	---

Note A: End 12" x 3/8" Pl. at same point that top plate ends. Provide end perforation same as for diagonals on Portal UB-LB except it shall be 10' long.

SWAY FRAME AT L7
Sway Frames at L6, L9, and L10 similar.
Note: Sway frames at L2 thru L5 and L11 thru L14 similar except intermediate strut to be omitted.



LATERAL CONNECTION PLATES
(Typical except at L14)
Note: All fills to be tack welded to lateral plate with 1/4" fillet weld all around.



NOTES
For Truss Span Notes, see Sheet 21.
All rivets to be 3/8" unless noted.
For diaphragm details, see Intermediate Diaphragm, Sheet 21.
For end details of lower lateral diagonals, see Sheet 28.

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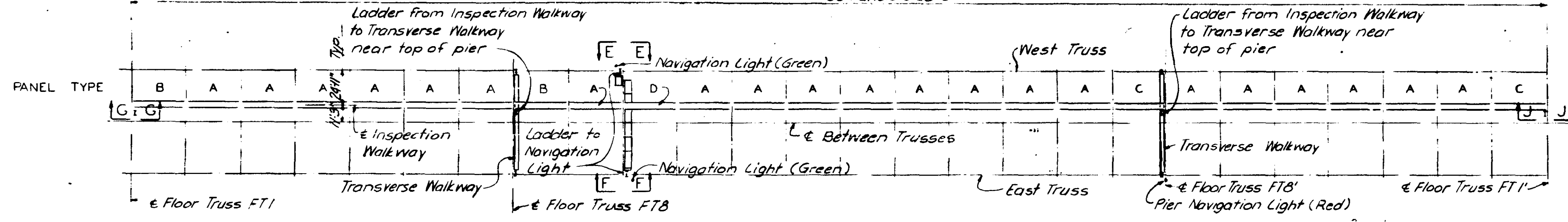
BRIDGE NO. 9340

DECK TRUSS SPANS
SWAY FRAMES

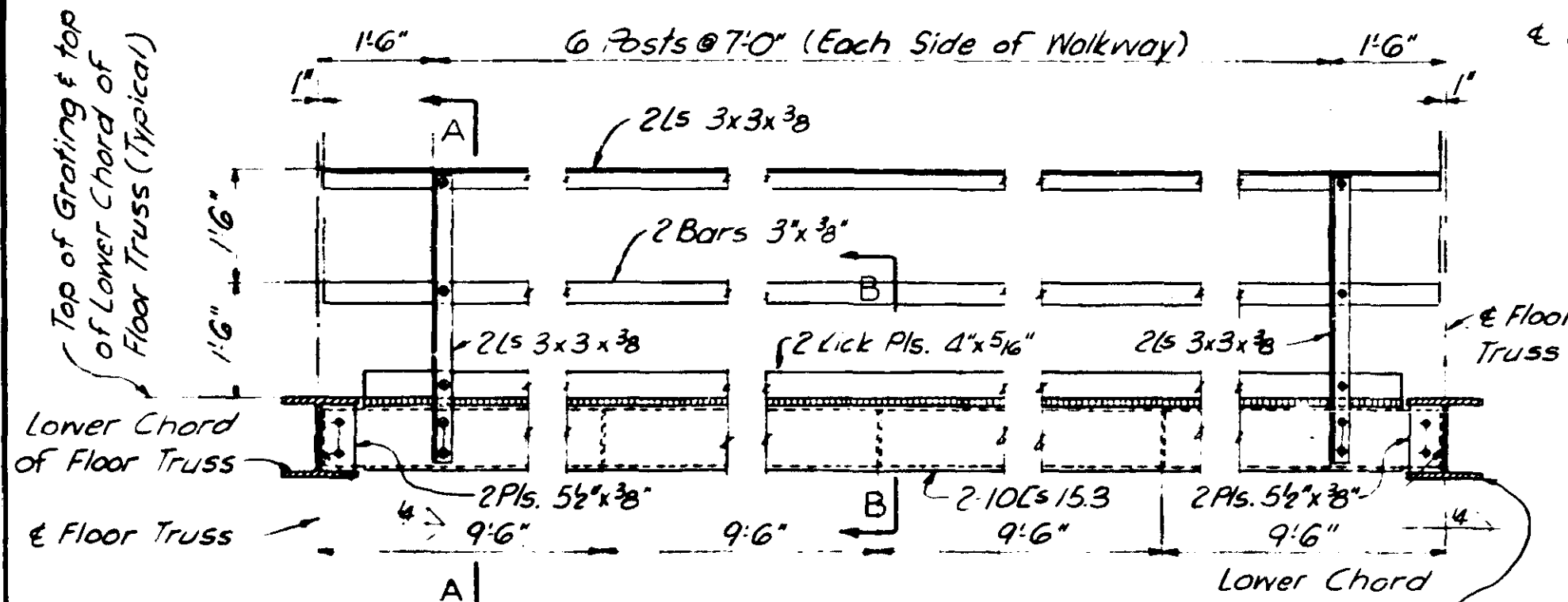
APPROVED - 6-18-65

Drawn by: C. J. Reuter, 11/21/64
Checked by: T. V. Dillon, 10/1/64
2083
645268

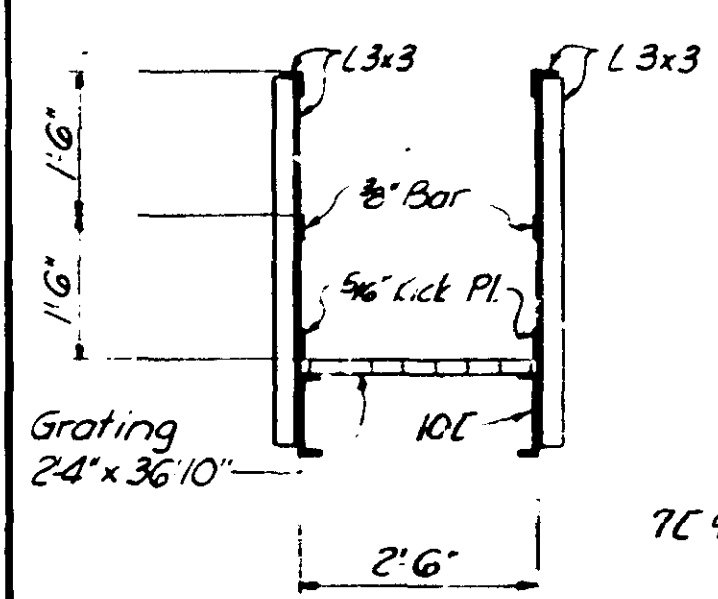
26 Panels @ 38'-0"



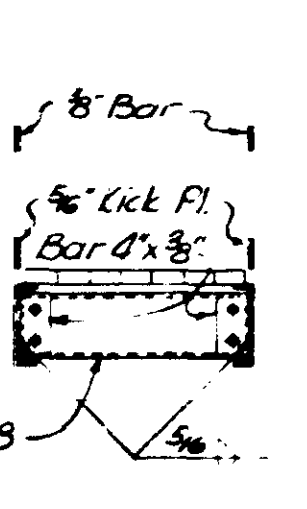
PLAN OF INSPECTION WALKWAY



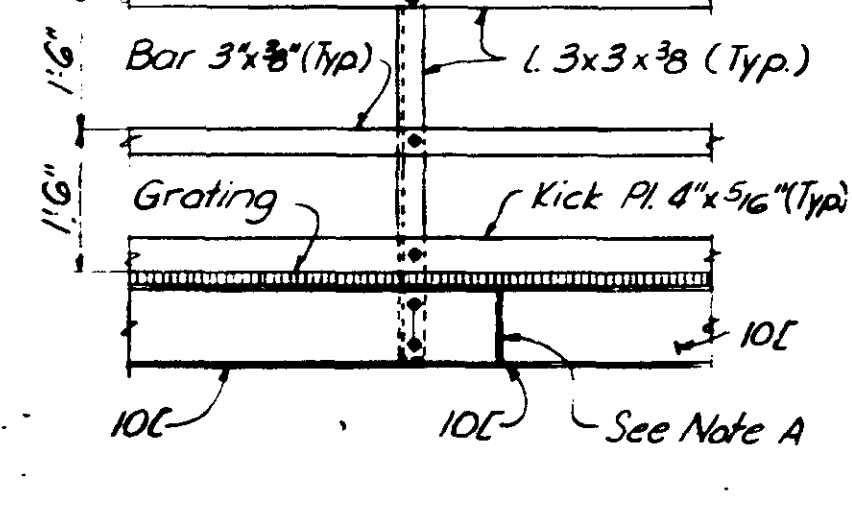
ELEVATION OF PANEL A
(21 Panels Required)



SECTION A-A

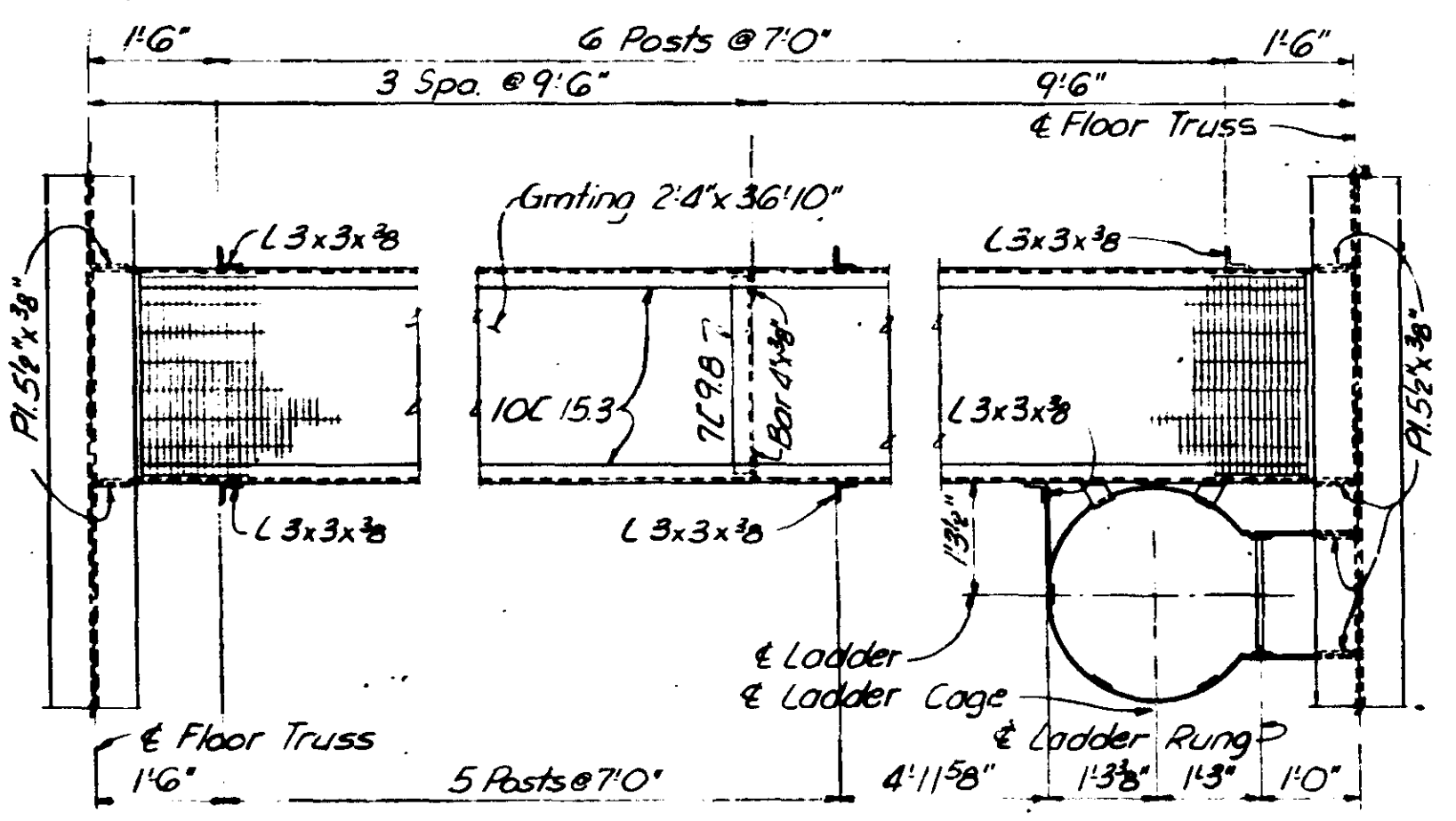


SECTION B-B



SECTION C-C

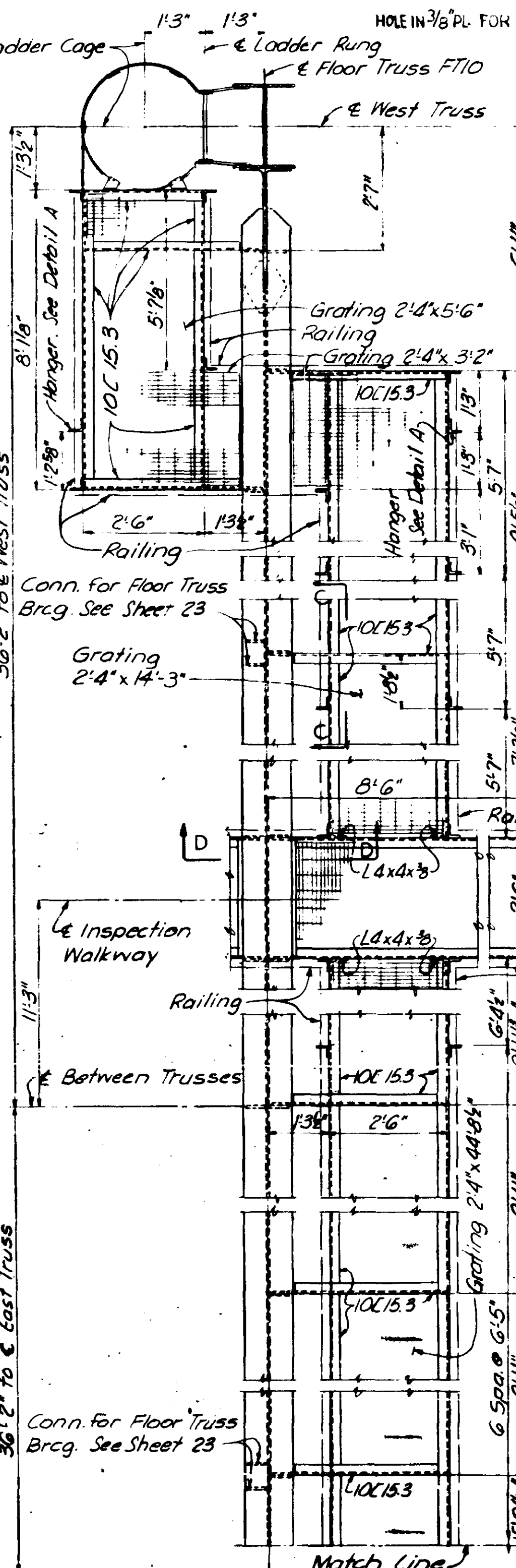
Note A: Shop weld all 10C's at all contact points. Typical for all transverse walkway platforms.



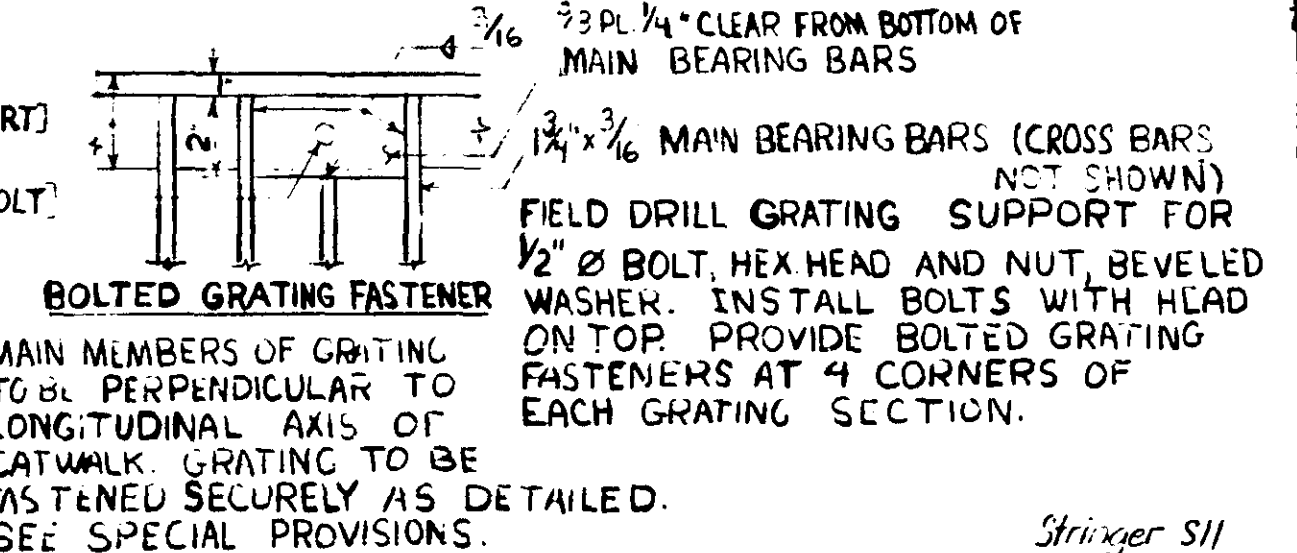
PLAN OF PANEL C

Note: Plan of Panel B opposite hand. 2 Panel C required. 2 Panel B required.

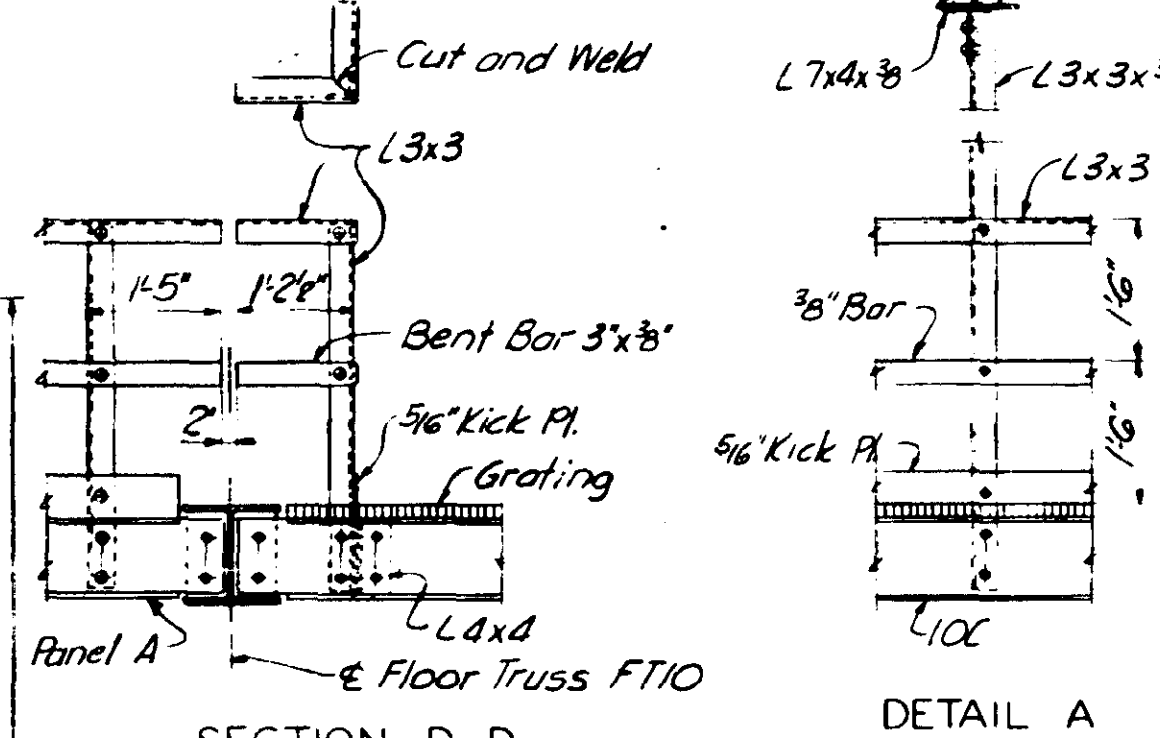
Note: Elevation of Panels B and C same as Panel A except as shown in Sections G-G, H-H or J-J.



PLAN OF PANEL D AND TRANSVERSE WALKWAY

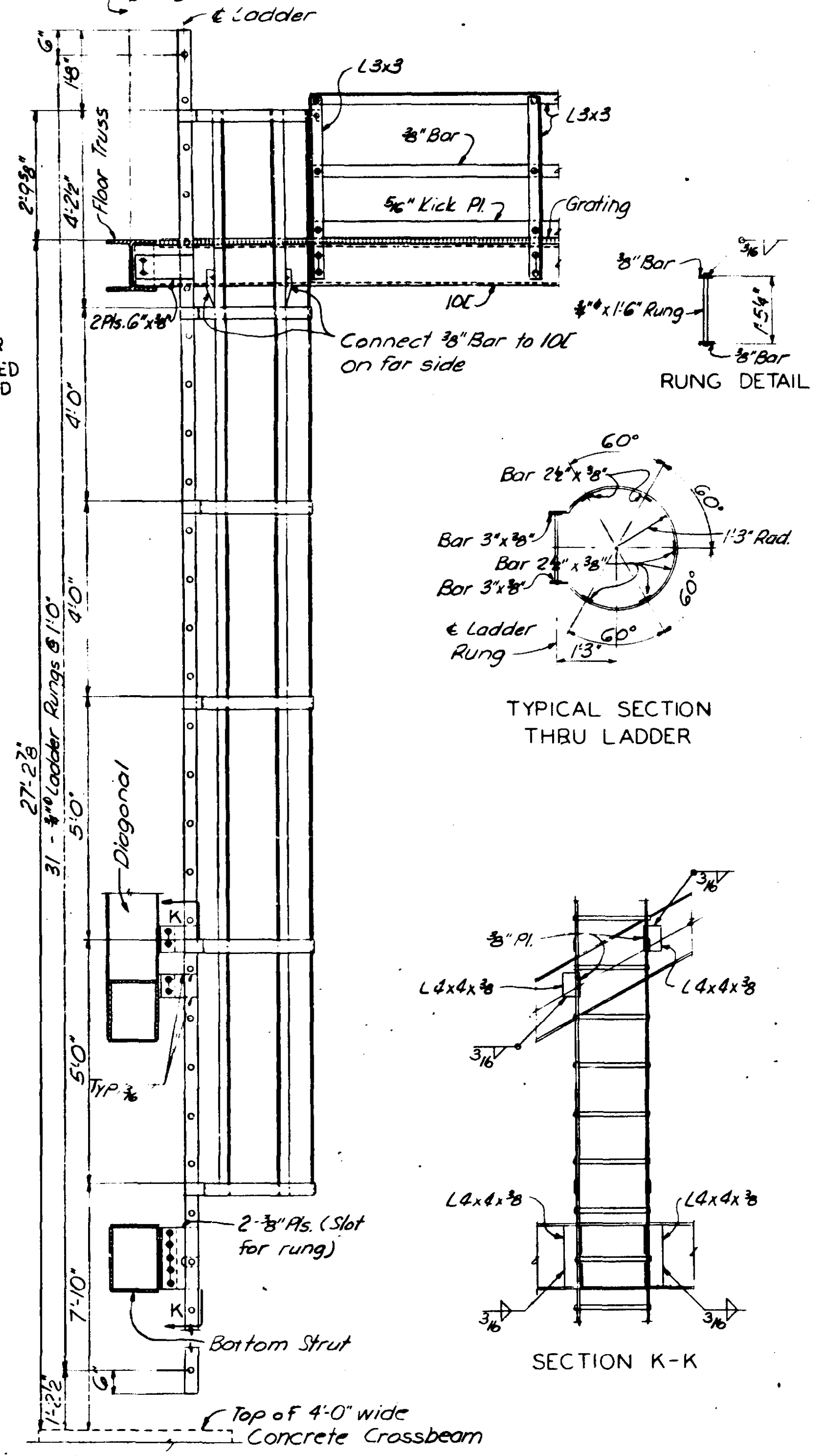


FIELD DRILL GRATING SUPPORT FOR 1/2" Ø BOLT, HEX HEAD AND NUT, BEVELED WASHER. INSTALL BOLTS WITH HEAD ON TOP. PROVIDE BOLTED GRATING FASTENERS AT 4 CORNERS OF EACH GRATING SECTION.

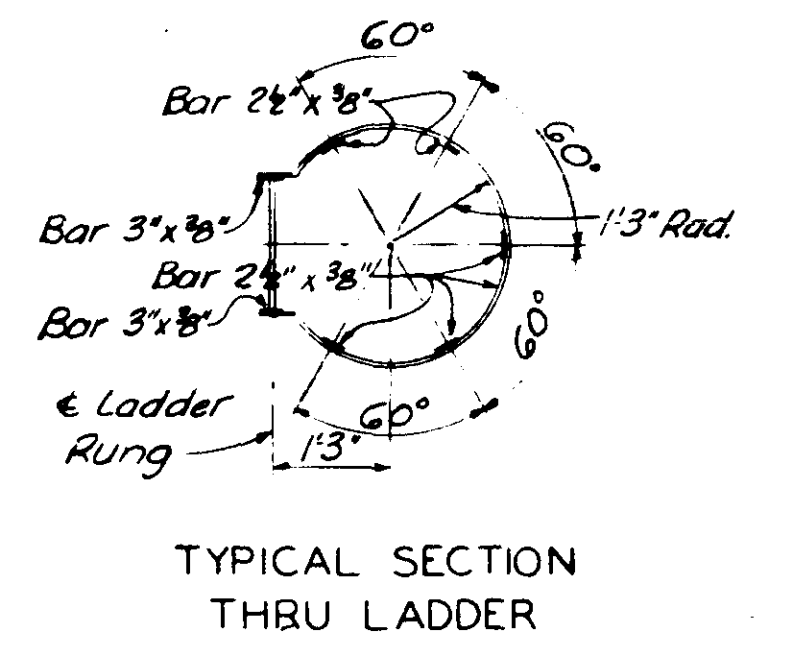


SECTION D-D

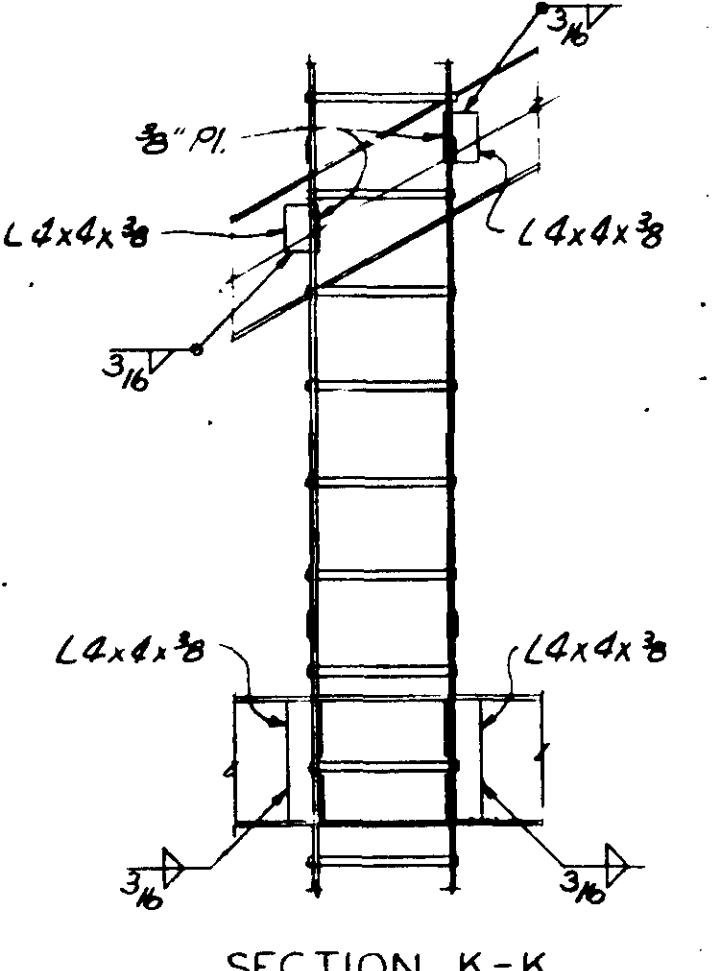
DETAIL A



SECTION G-G
SECTION J-J



RUNG DETAIL



TYPICAL SECTION THRU LADDER

NOTES:
 WORK THIS SHEET WITH SHEET 35.
 GRATING SHALL BE OF WELDED STEEL RECTANGULAR SHAPED CONSTRUCTION AND SHALL WEIGH NOT LESS THAN 12.3 LBS./FT.² AMPLE CLEARANCE SHALL BE ALLOWED FOR EXPANSION OF THE GRATING.
 GRATING MAIN BEARING BARS SPACED AT 13 1/2" AND CROSS BARS SPACED AT 4".
 THE WEARING SURFACE OF THE MAIN BEARING BARS AND CROSS BARS SHALL BE PLAIN SURFACED.
 LADDER CAGES ARE TO BE SHOP WELDED TO LADDER RAILS WITH MIN. 3/16" FILLET WELD ALL AROUND.
 ALL RIVETS TO BE 3/4" UNLESS OTHERWISE NOTED.
 ALL GRATING AND STEEL IN INSPECTION WALKWAY AND LADDERS SHALL BE PAID FOR AS STRUCTURAL STEEL M.H.D. 3306 AND ALL MATERIAL TO BE M.H.D. 3306.
 ALL GRATING, LADDERS, AND CAGES TO BE HOT-DIP GALVANIZED AFTER FABRICATION PER M.H.D. 3394.
 ALL HARDWARE TO BE GALVANIZED PER M.H.D. 3392.

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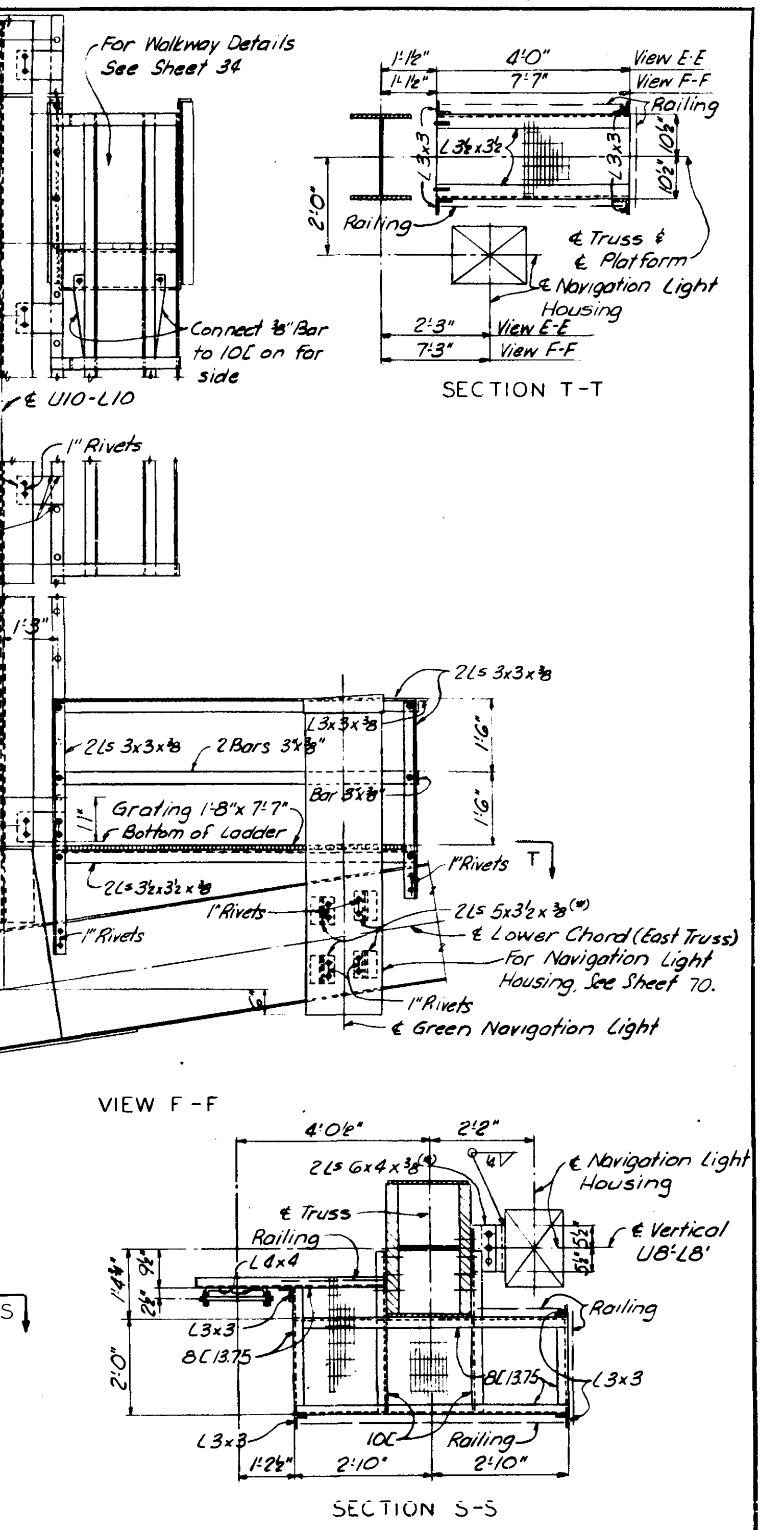
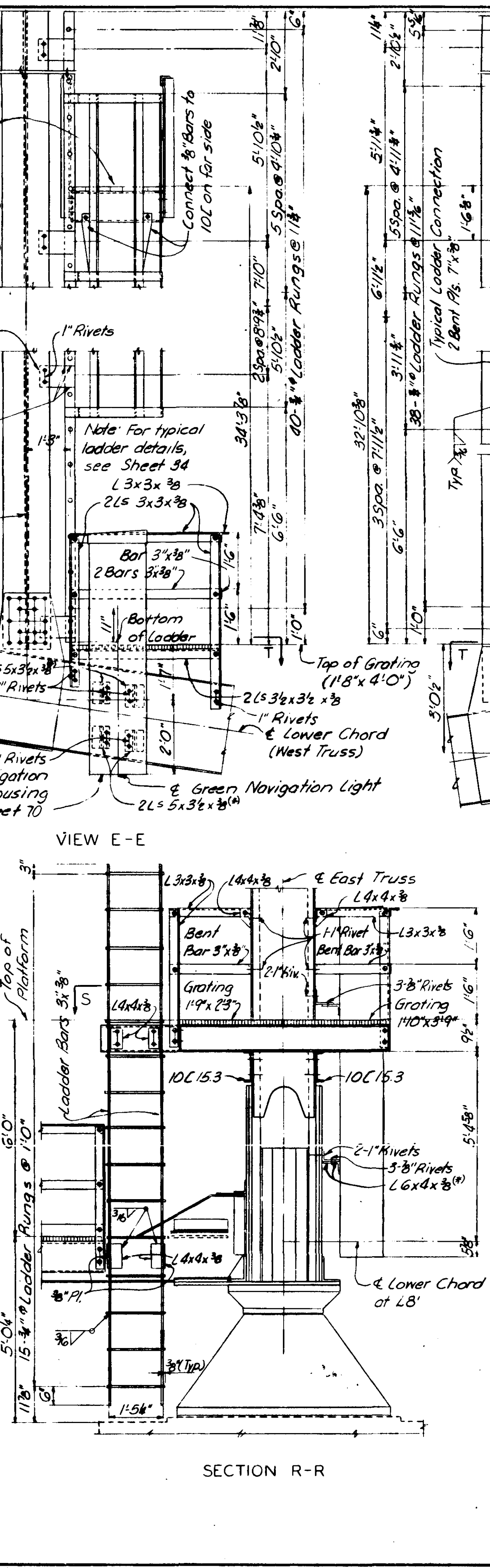
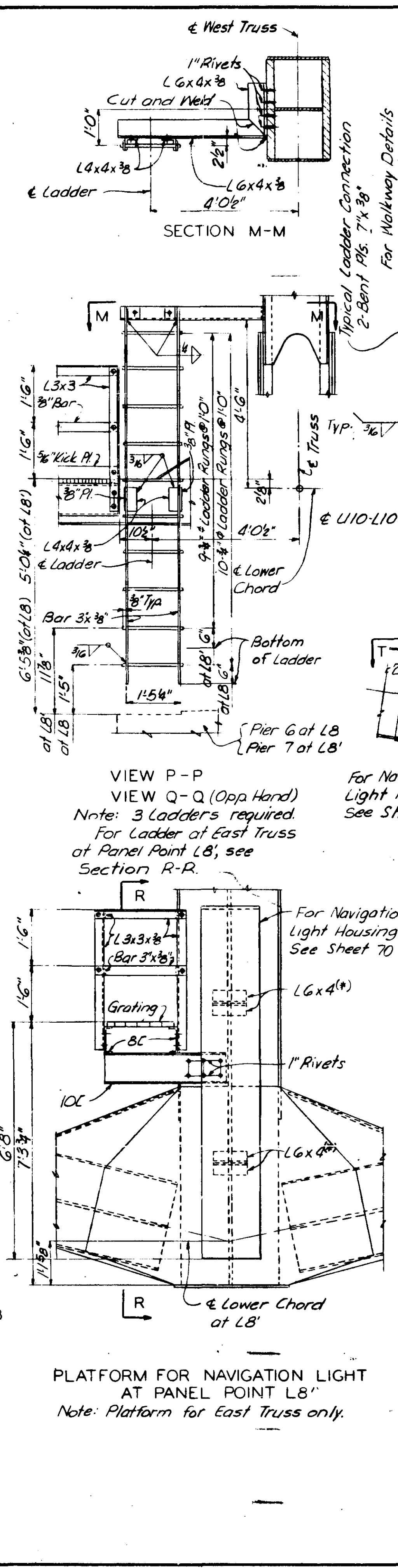
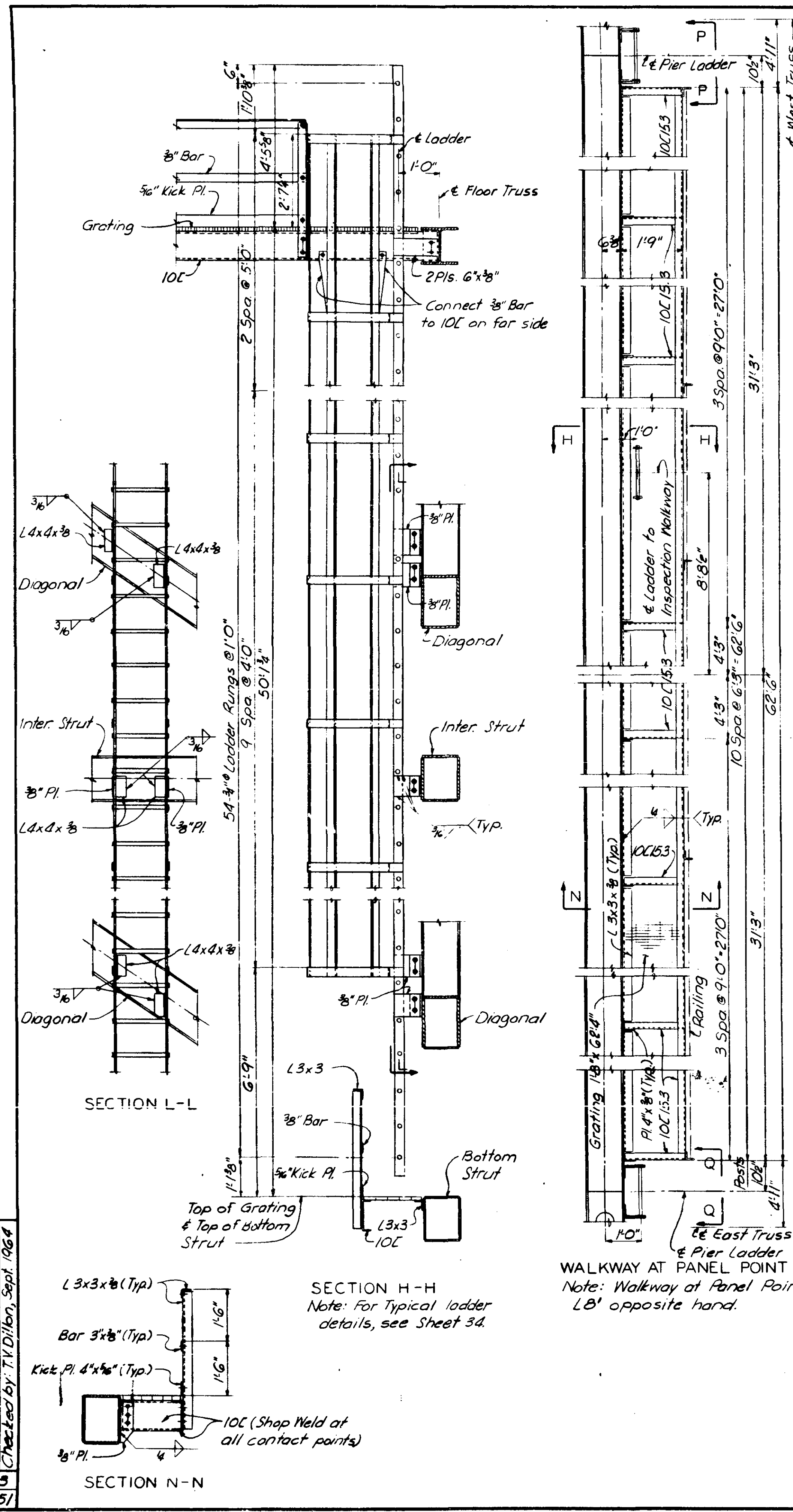
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BRIDGE NO. 9340

DECK TRUSS SPANS
 INSPECTION WALKWAY DETAILS

APPROVED - 6-18-65

Drawn by: H.P. McElroy, Aug. 1964
 Checked by: T.V. Dillon, Sept. 1964
 2083
 245560



NOTES
 Work this sheet with Sheet 34.
 For additional Navigation Lighting Details, see Sheets 68, 69 & 70.
 All grating and steel in platforms and ladders except as noted with (*) shall be paid for as Structural Steel M.H.D. 3306.
 Cost of furnishing and installing the angles marked (*) and the Navigation Light Housings shall be included in the price bid for "Electrical Lighting System."

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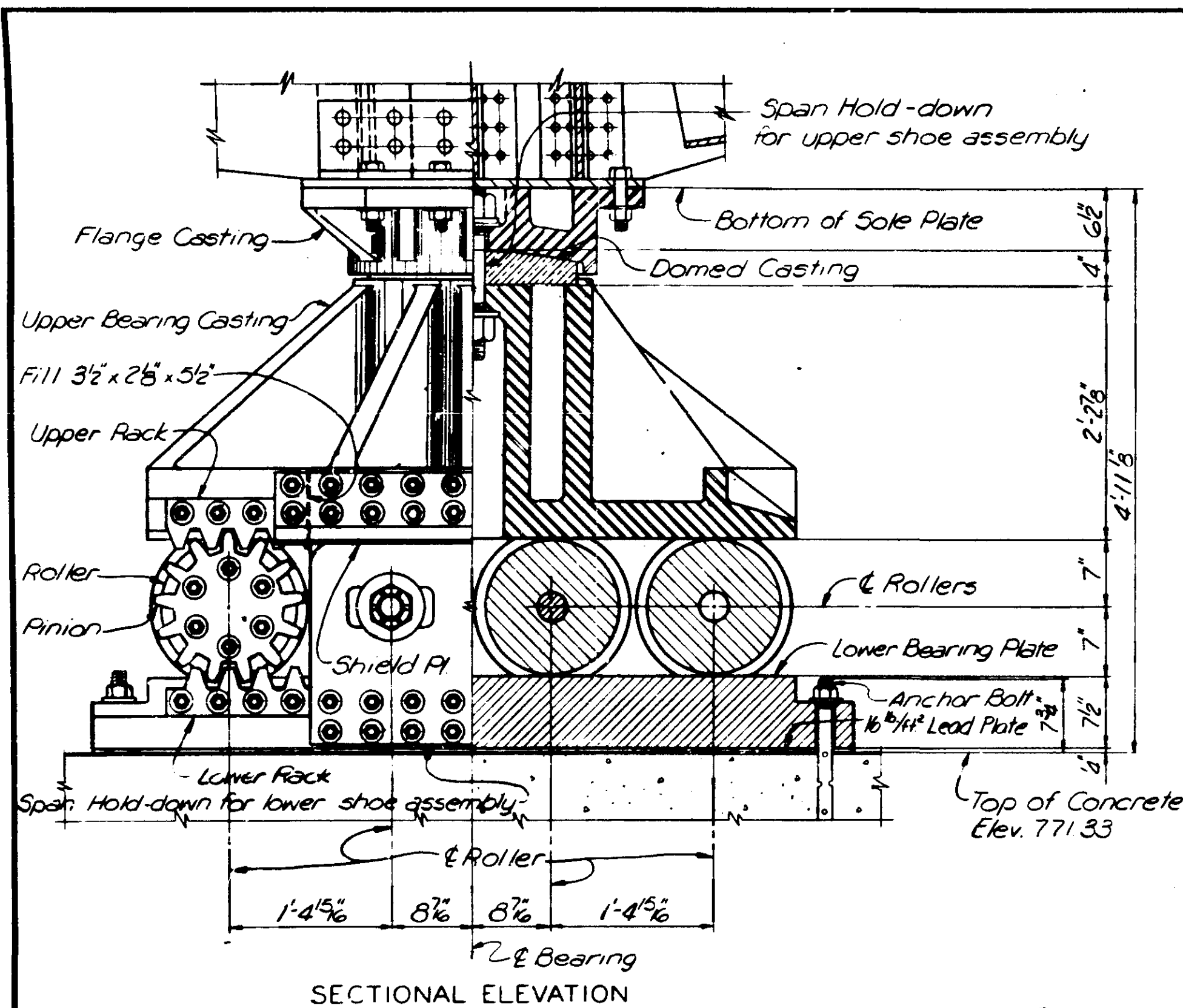
T. H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

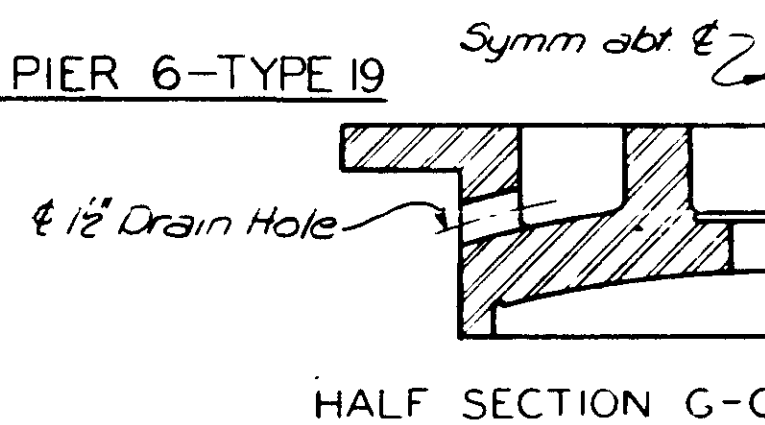
DECK TRUSS SPANS
 INSPECTION WALKWAY DETAILS

APPROVED - 6-18-65

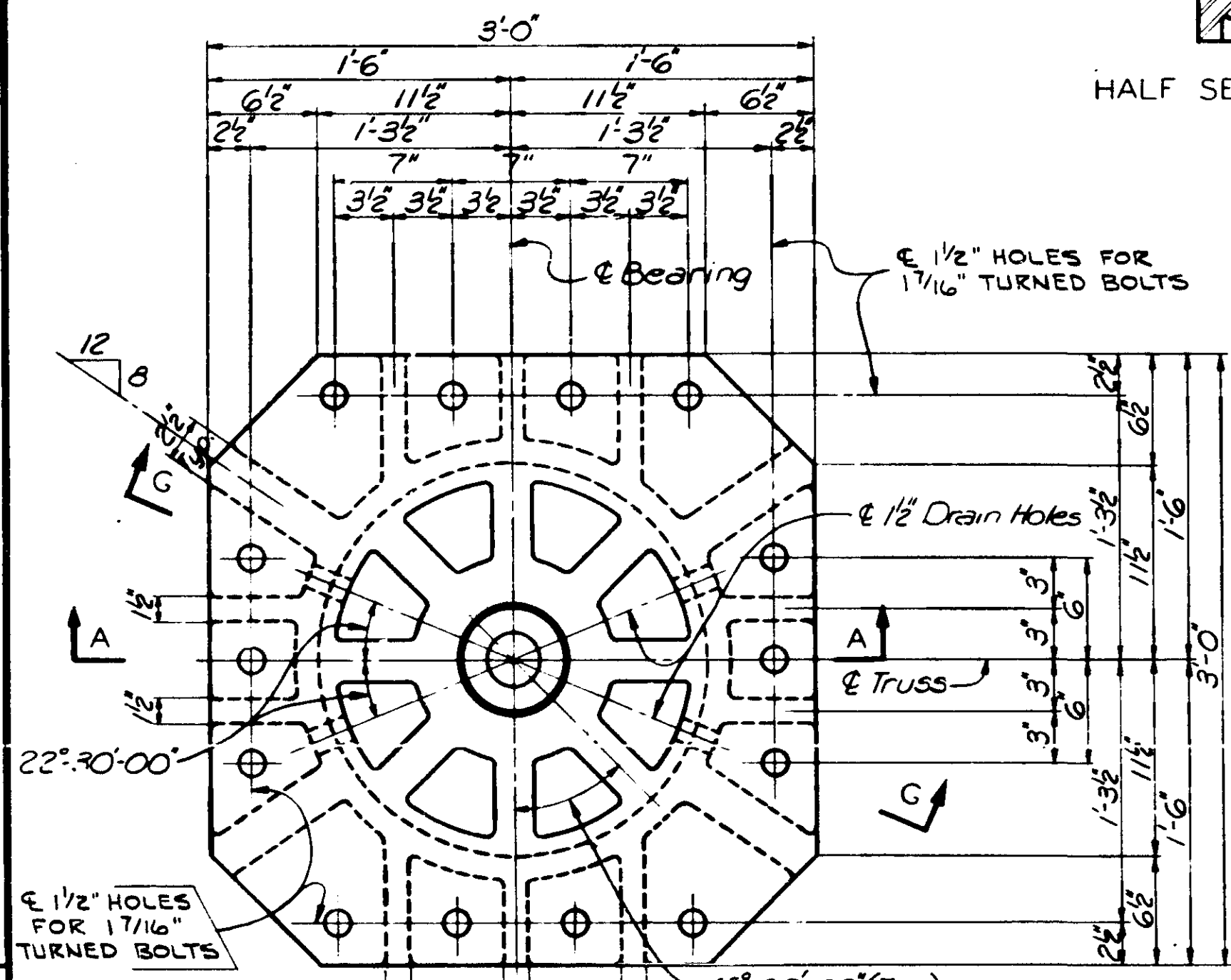
Drawn by: H.P. McInerney, Aug. 1964
 Checked by: T.V. Dillon, Sept. 1964
 2083
 225551



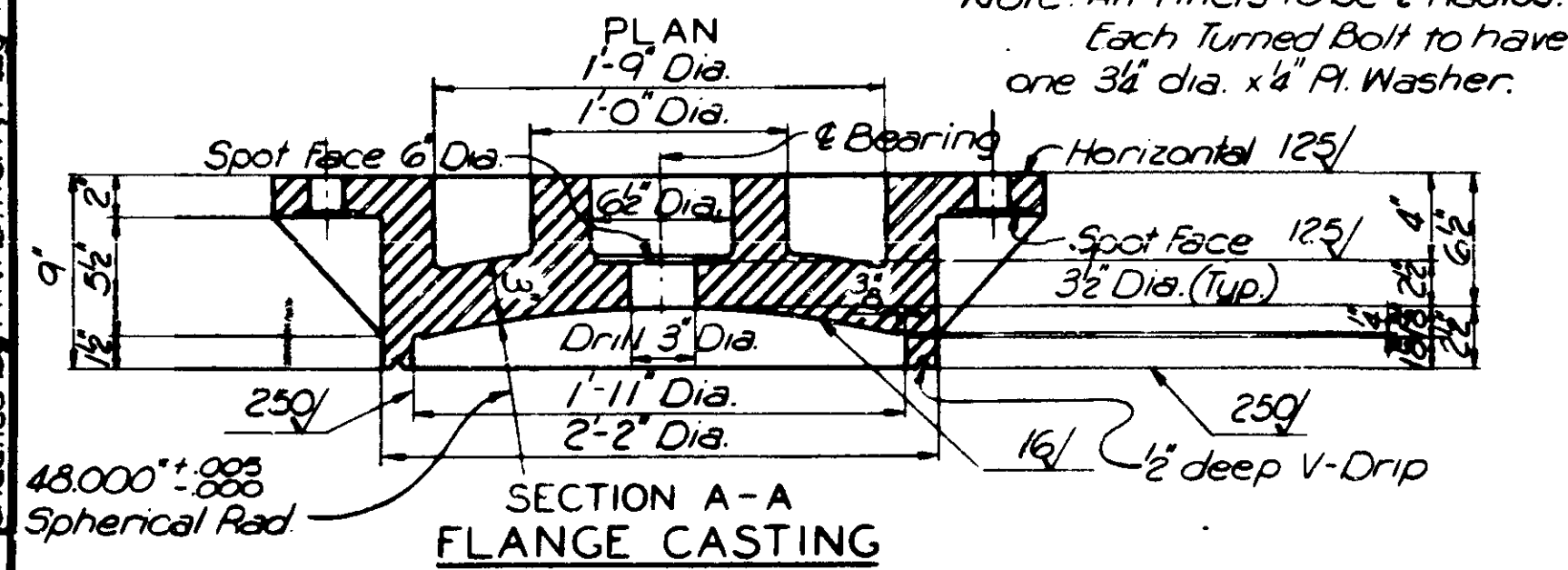
SECTIONAL ELEVATION
EXPANSION BEARING ASSEMBLY FOR PIER 6-TYPE 19
(2 Assemblies required)



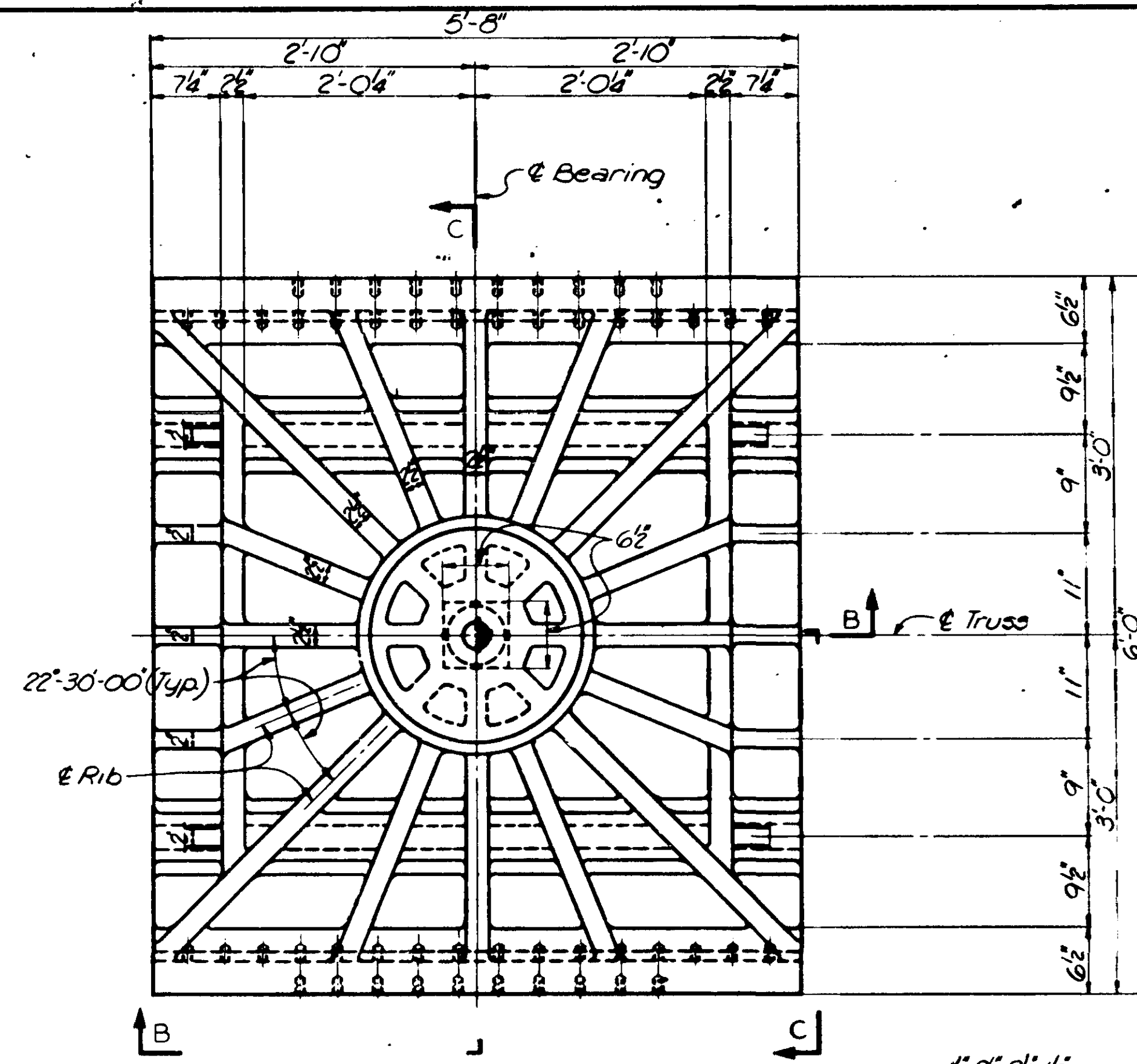
HALF SECTION G-G



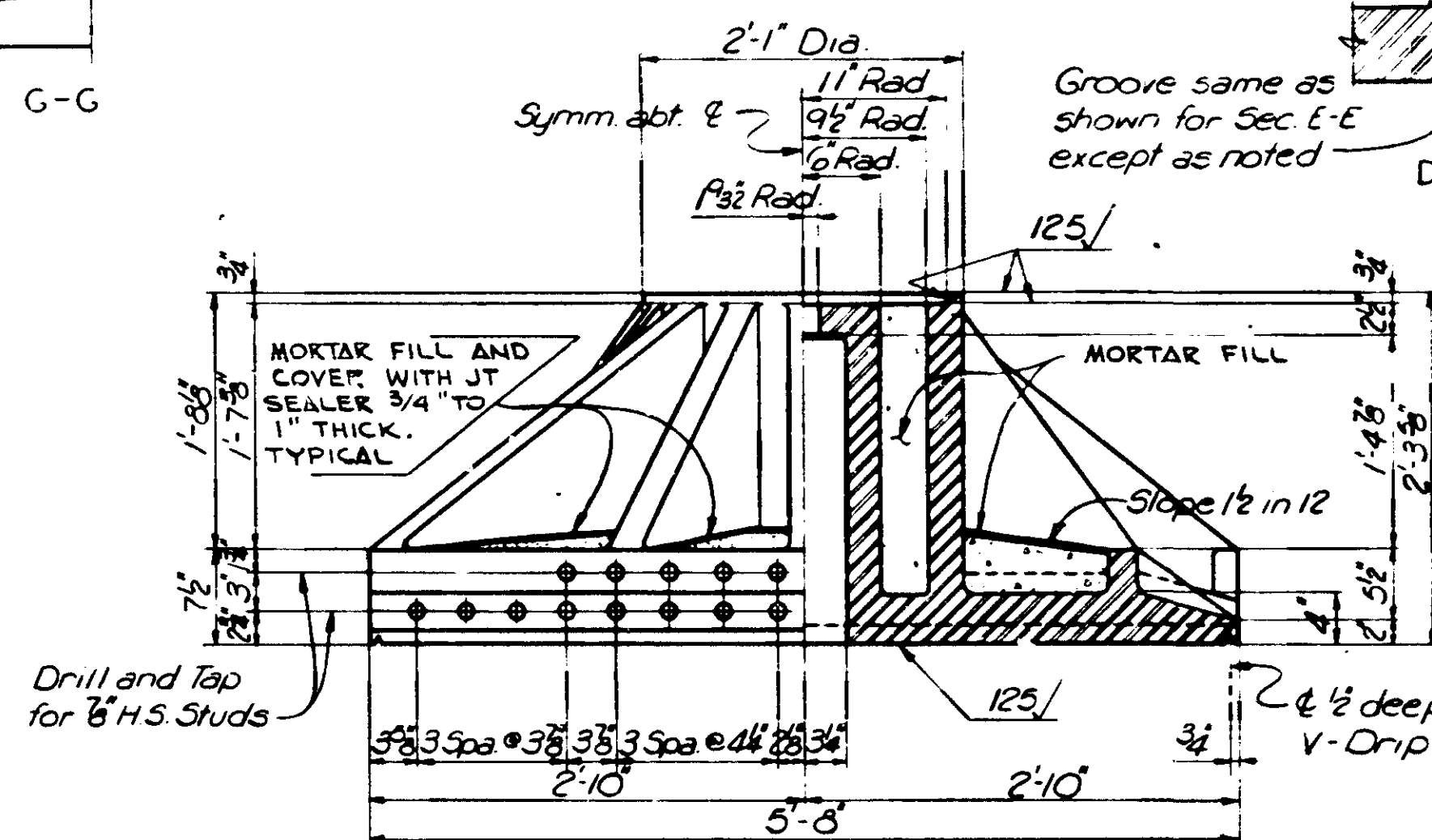
PLAN
Note: All Fillets to be 1/2\"/>



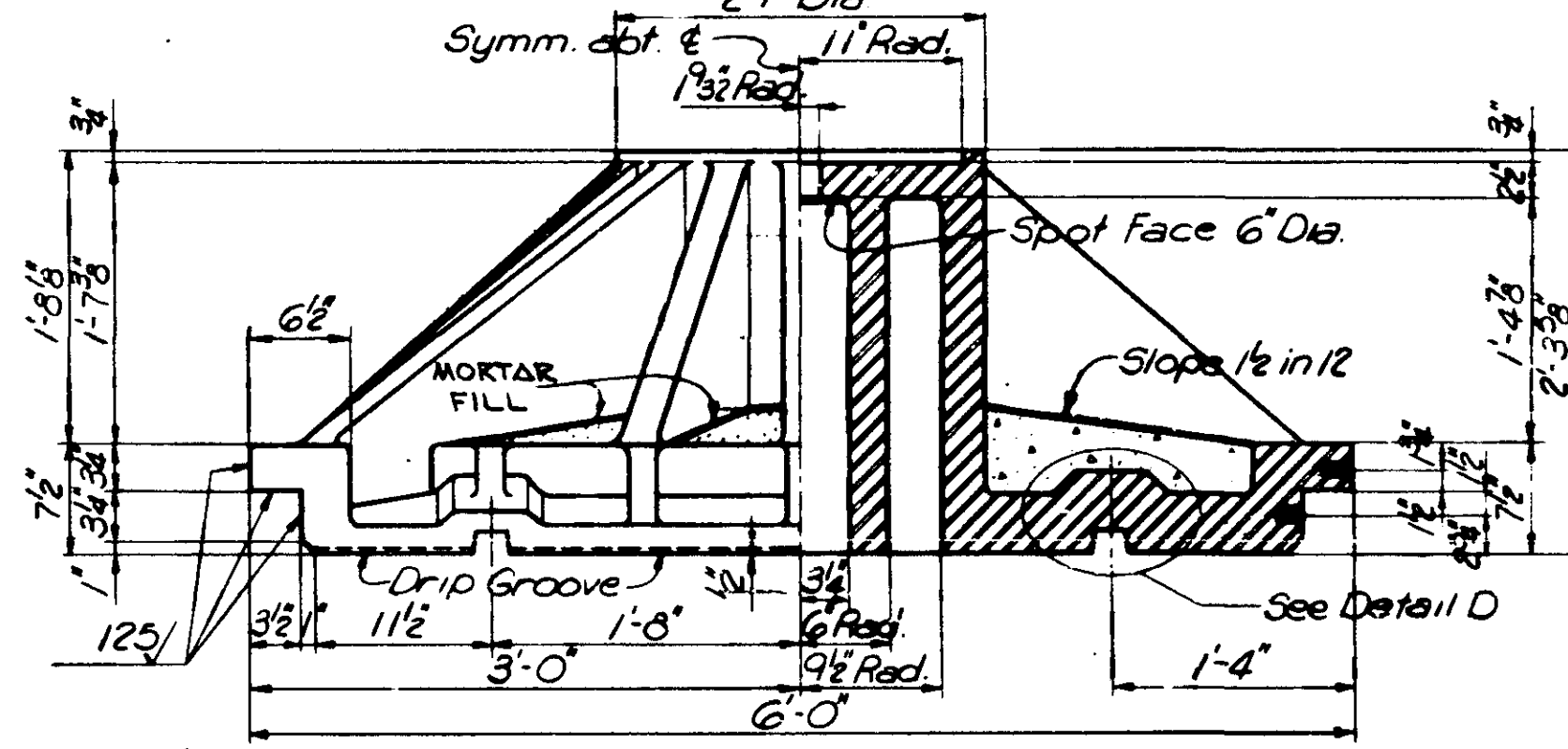
SECTION A-A
FLANGE CASTING



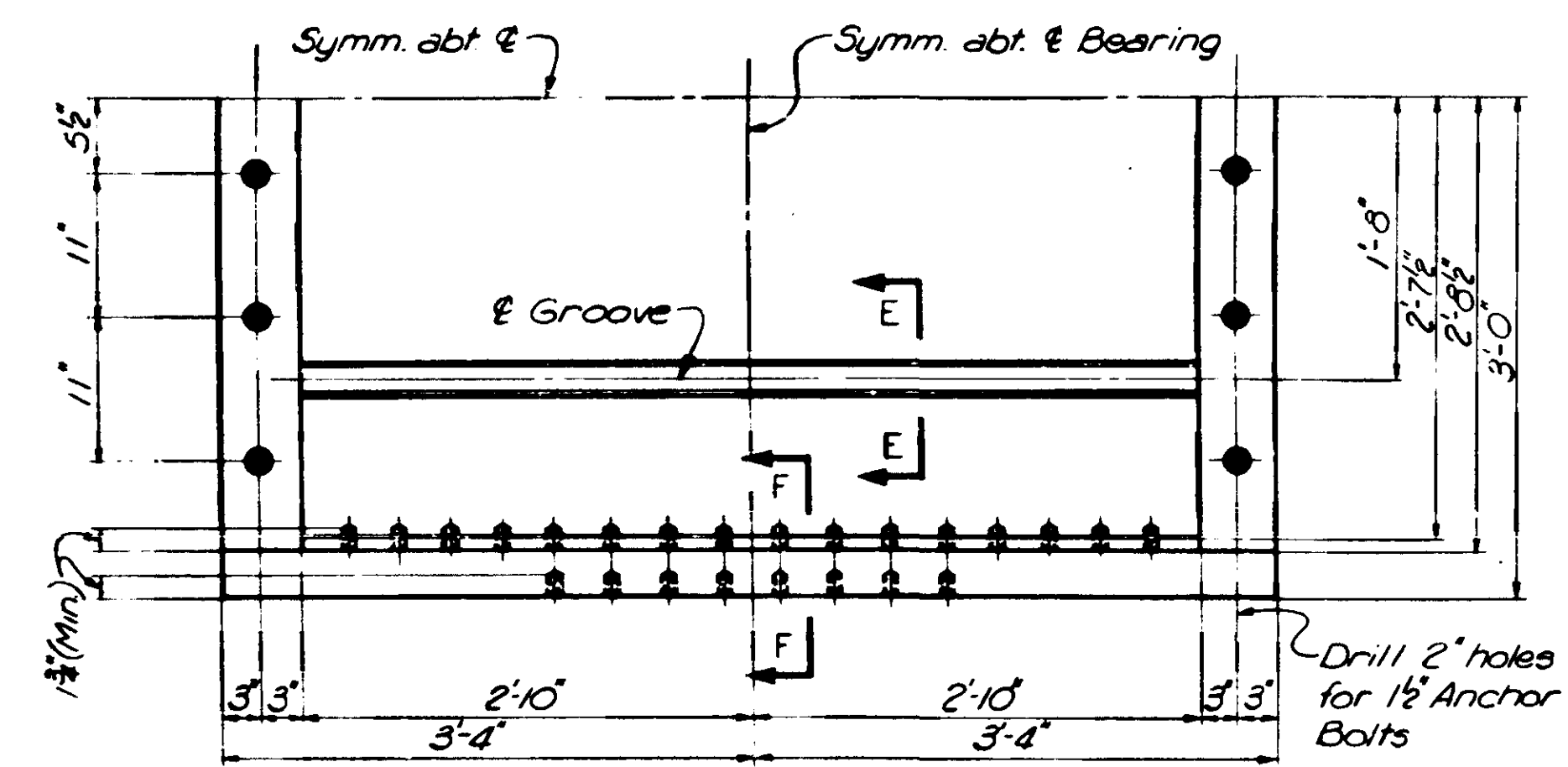
PLAN
Note: All Fillets to be 1/2\"/>



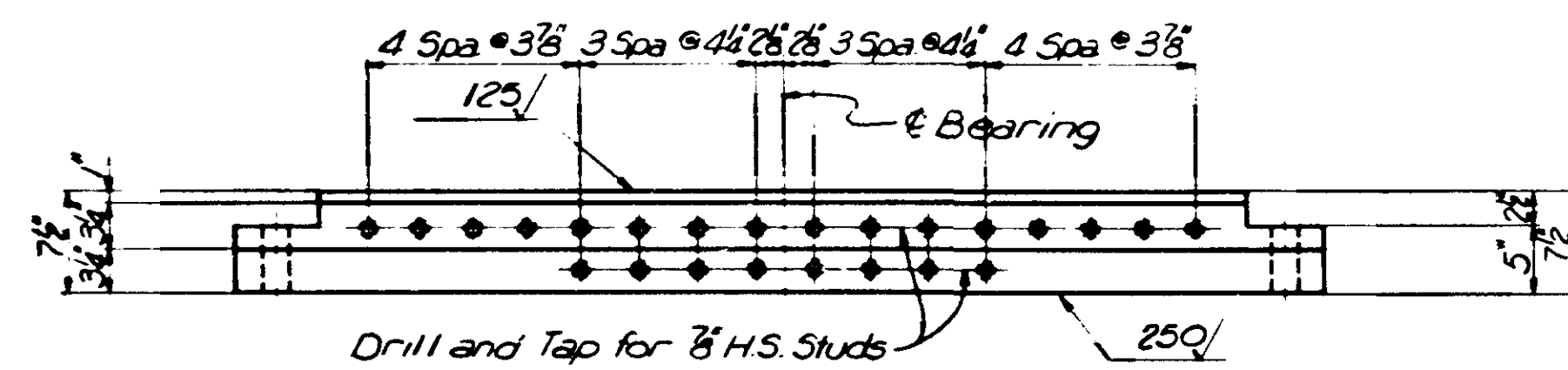
SECTION B-B
UPPER BEARING CASTING



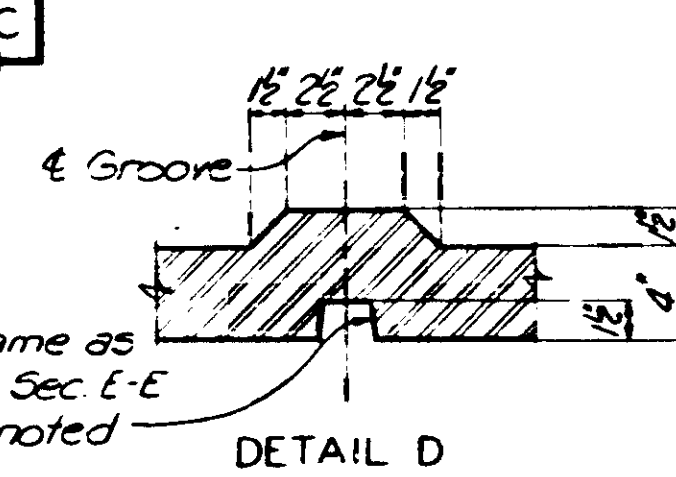
SECTION C-C
UPPER BEARING CASTING



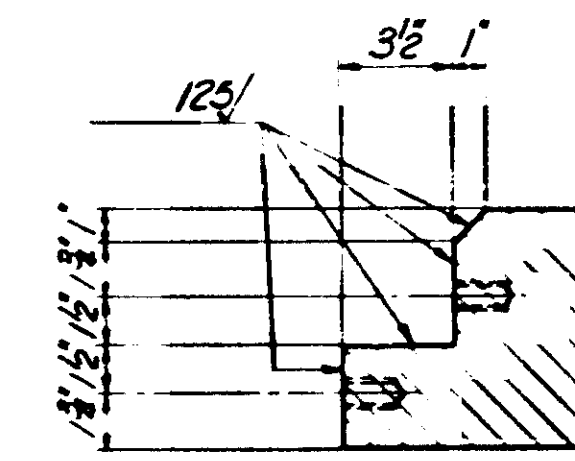
HALF PLAN



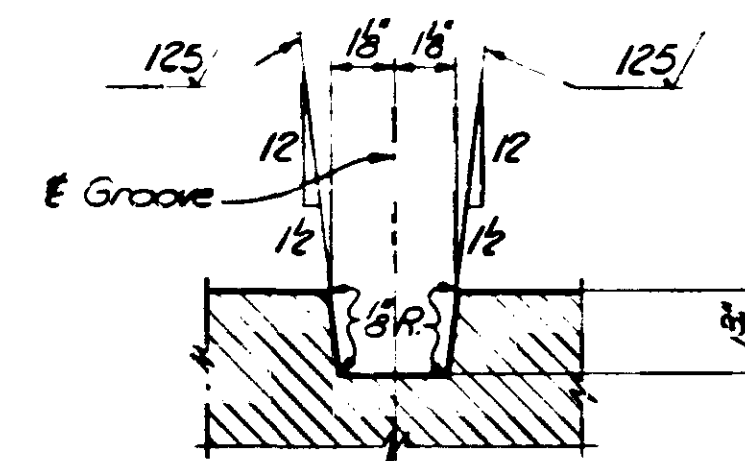
ELEVATION



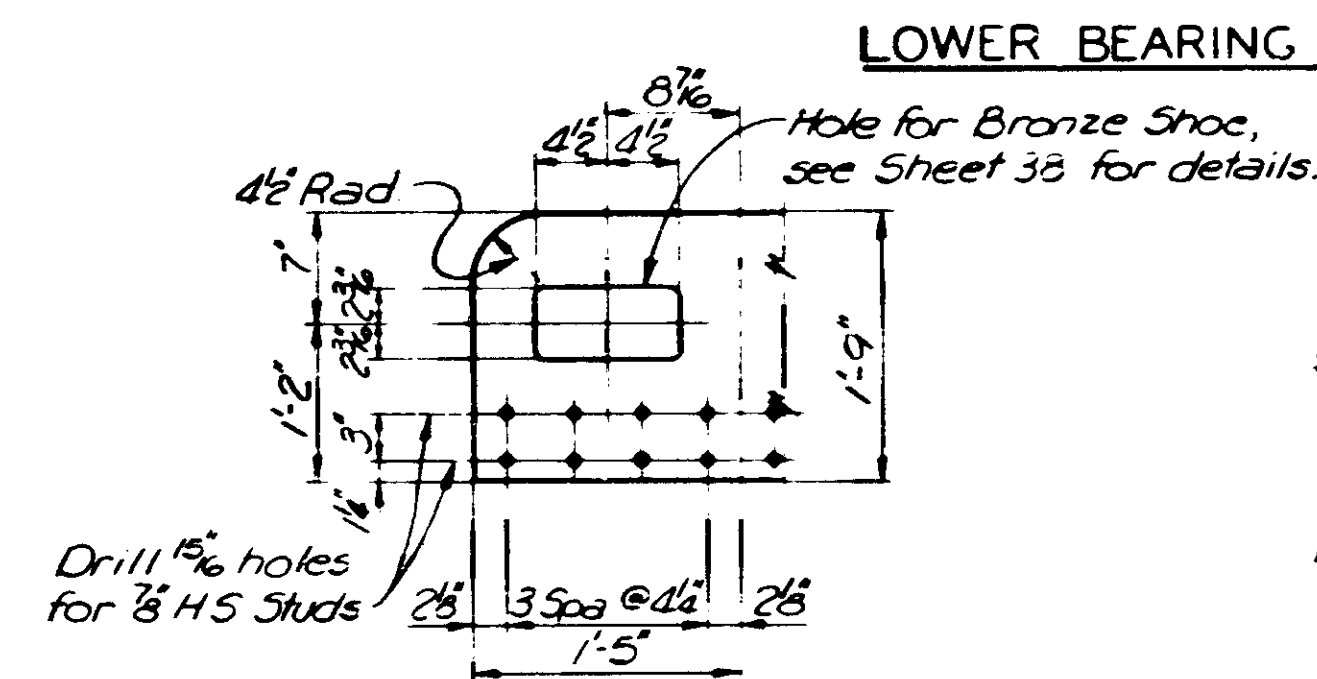
DETAIL D



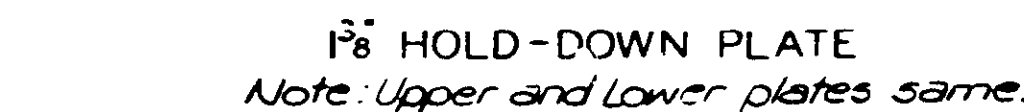
SECTION F-F



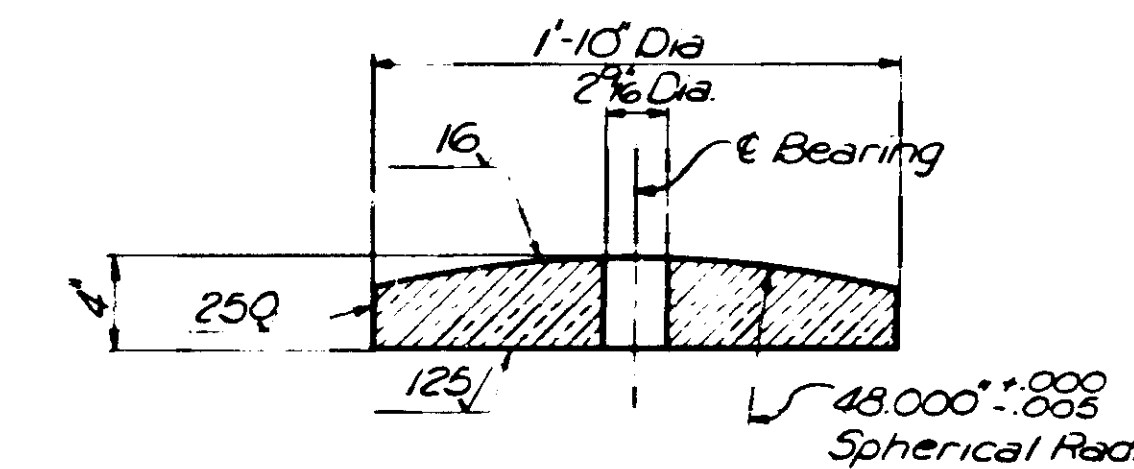
SECTION E-E



LOWER BEARING PLATE



1/8\"/>



SECTION THRU
DOMED CASTING

- NOTES**
- For Bearing Assembly Notes, see Sheet 38.
 - For Hold-down assembly details, see Sheet 38.
 - For Rack, Pinion, Roller and Anchor Bolt details, see Sheet 37.
 - For Table of Materials, see Sheet 38.

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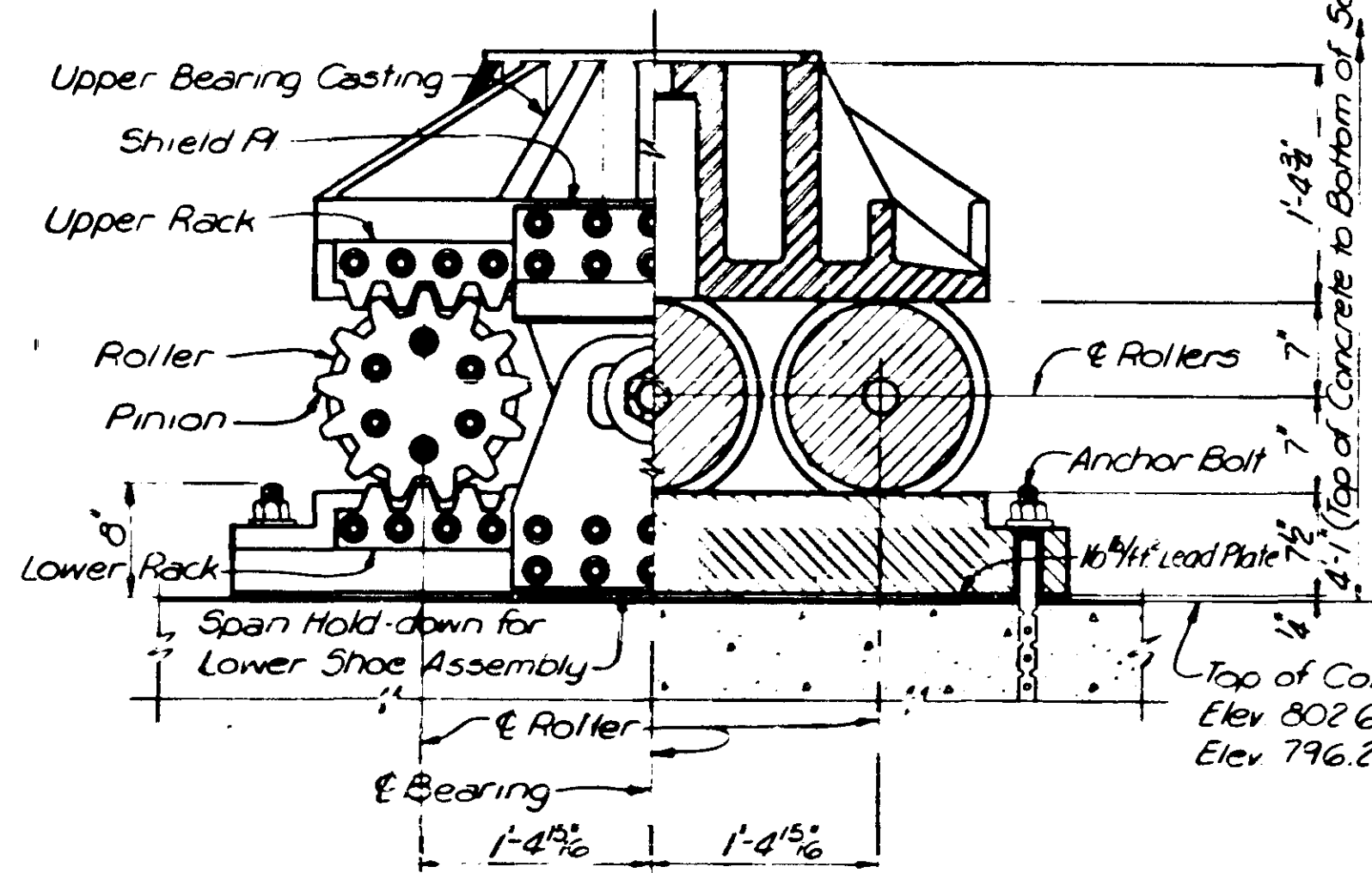
BRIDGE NO. 9340

DECK TRUSS SPANS
BEARING ASSEMBLIES

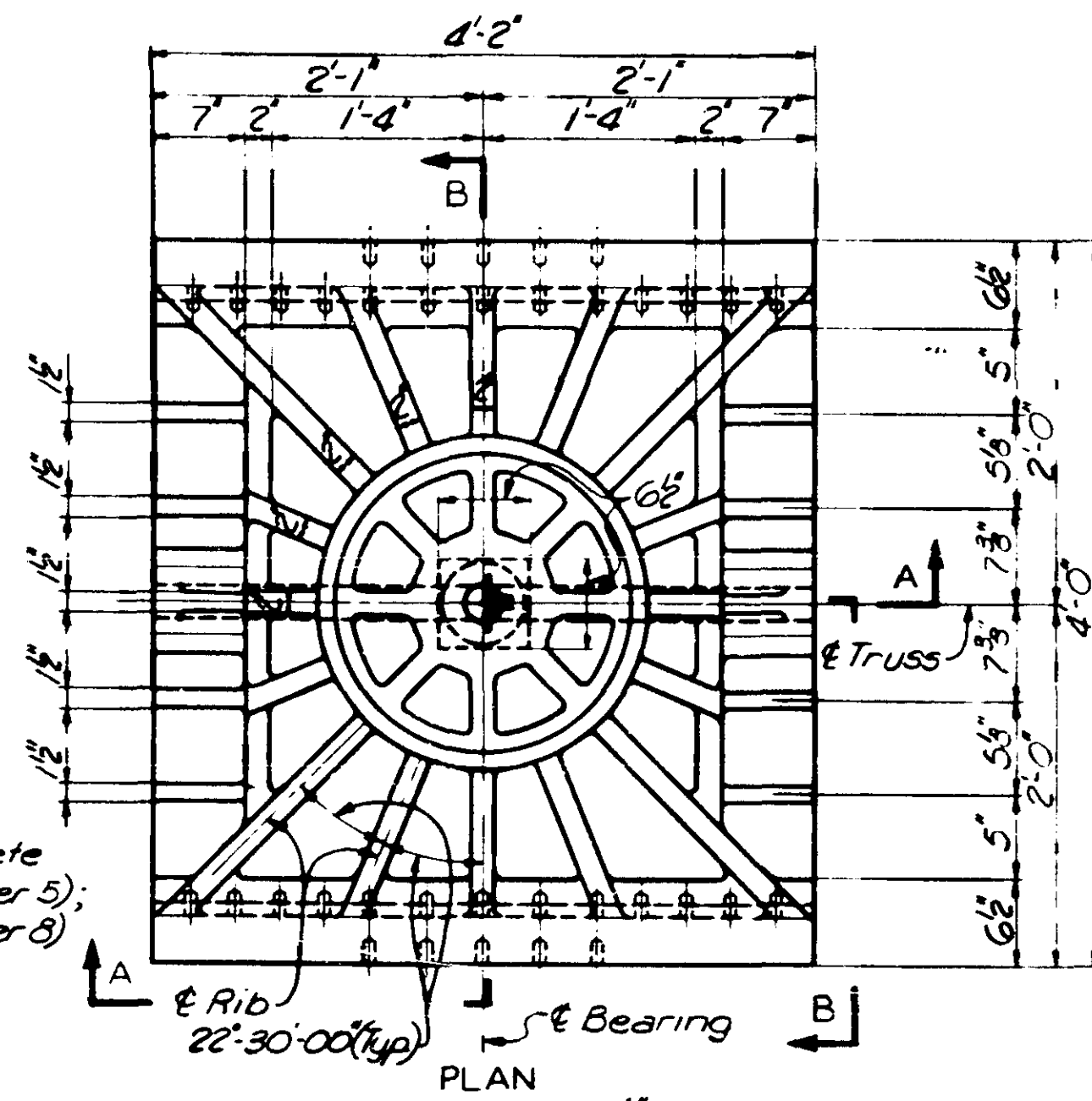
APPROVED - 6-18-65

Drawn by: D.J. Comotto, Apr. 1964
Checked by: T.V. Dillon, May 1964

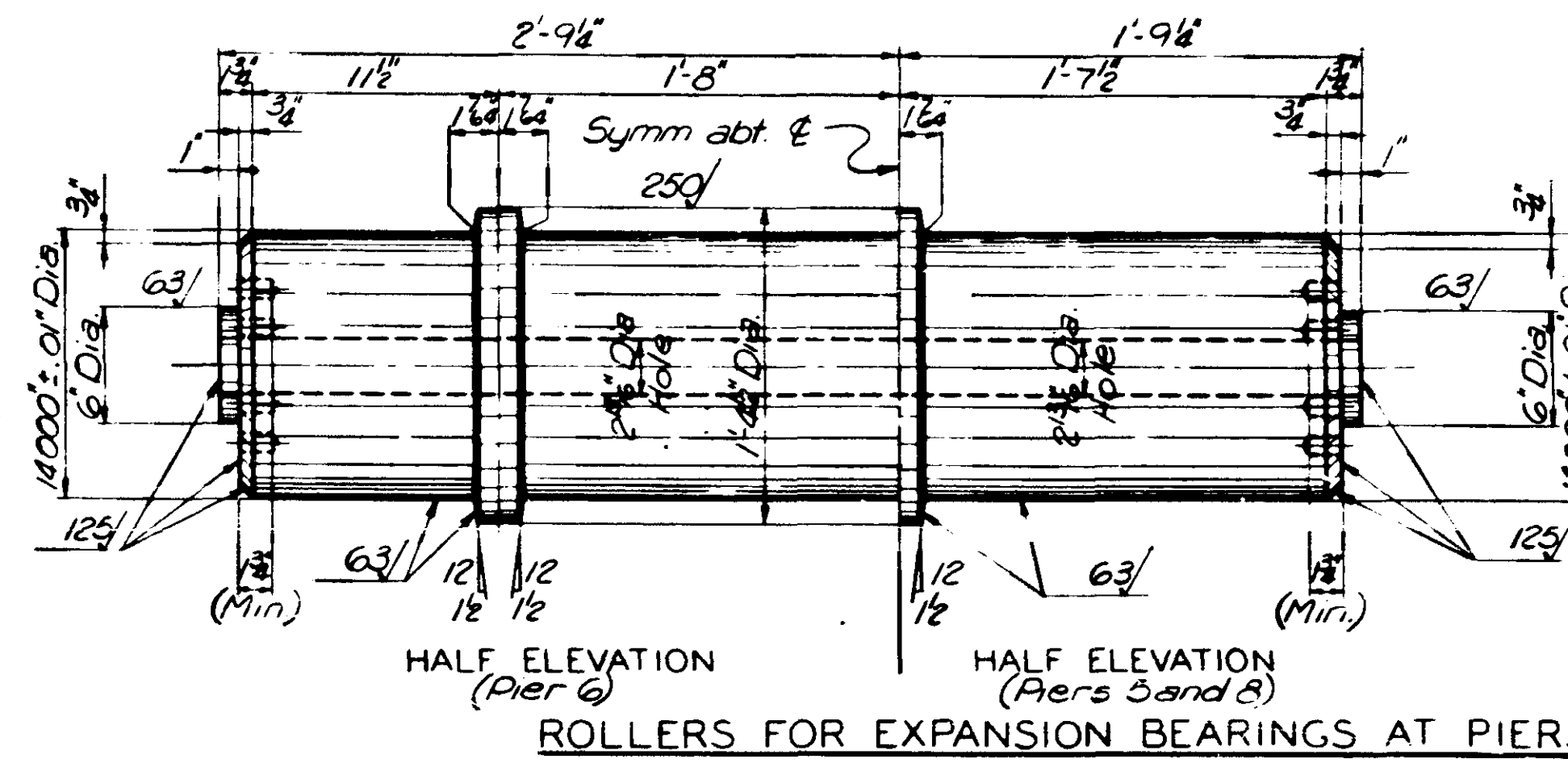
Note: Flange Casting, Domed Casting, and Span Hold-down for Upper Bearing Assembly are the same as Expansion Bearings for Pier 6.



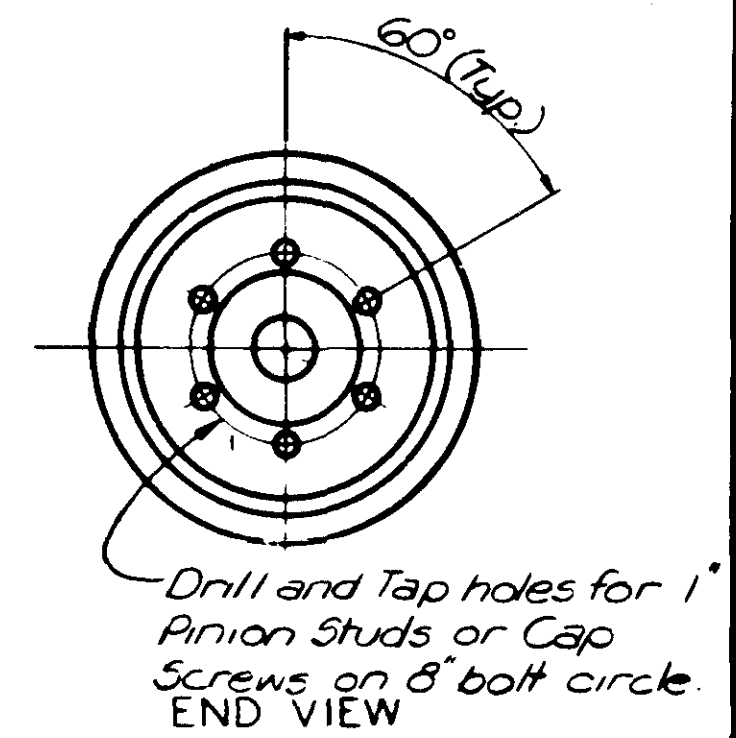
SECTIONAL ELEVATION
EXPANSION BEARING ASSEMBLY FOR PIERS 5 AND 8-TYPE 17
(4 Assemblies required)



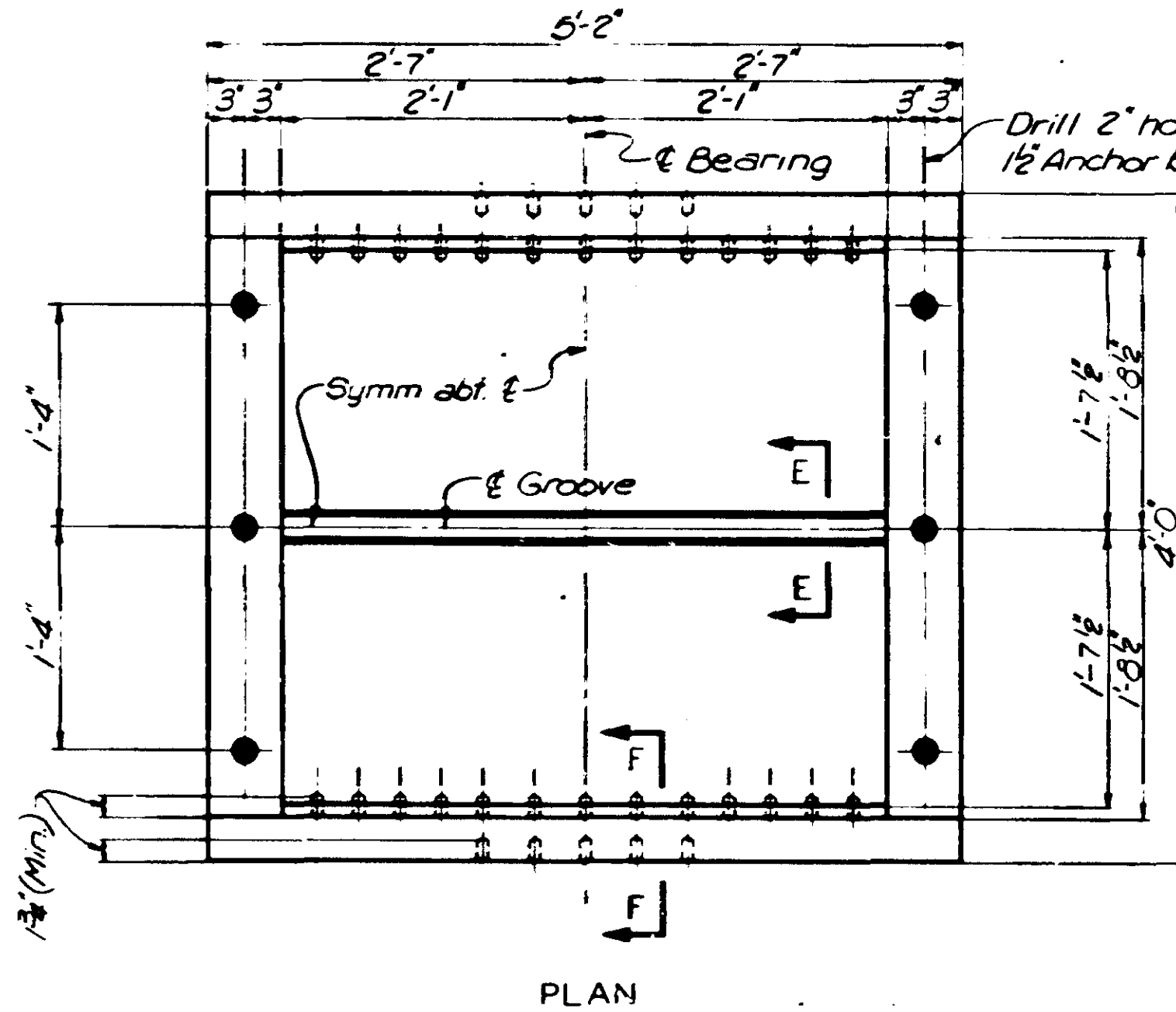
PLAN
Note: All fillers to be 1/2\"/>



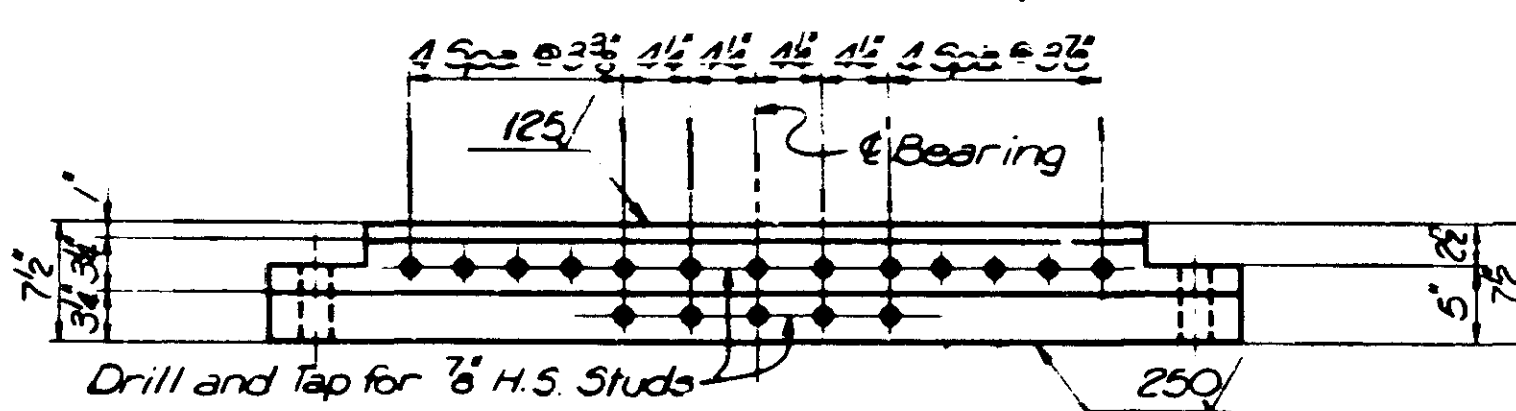
HALF ELEVATION (Pier 6) HALF ELEVATION (Piers 5 and 8)
ROLLERS FOR EXPANSION BEARINGS AT PIERS 5, 6 AND 8



Drill and Tap holes for 1\"/>

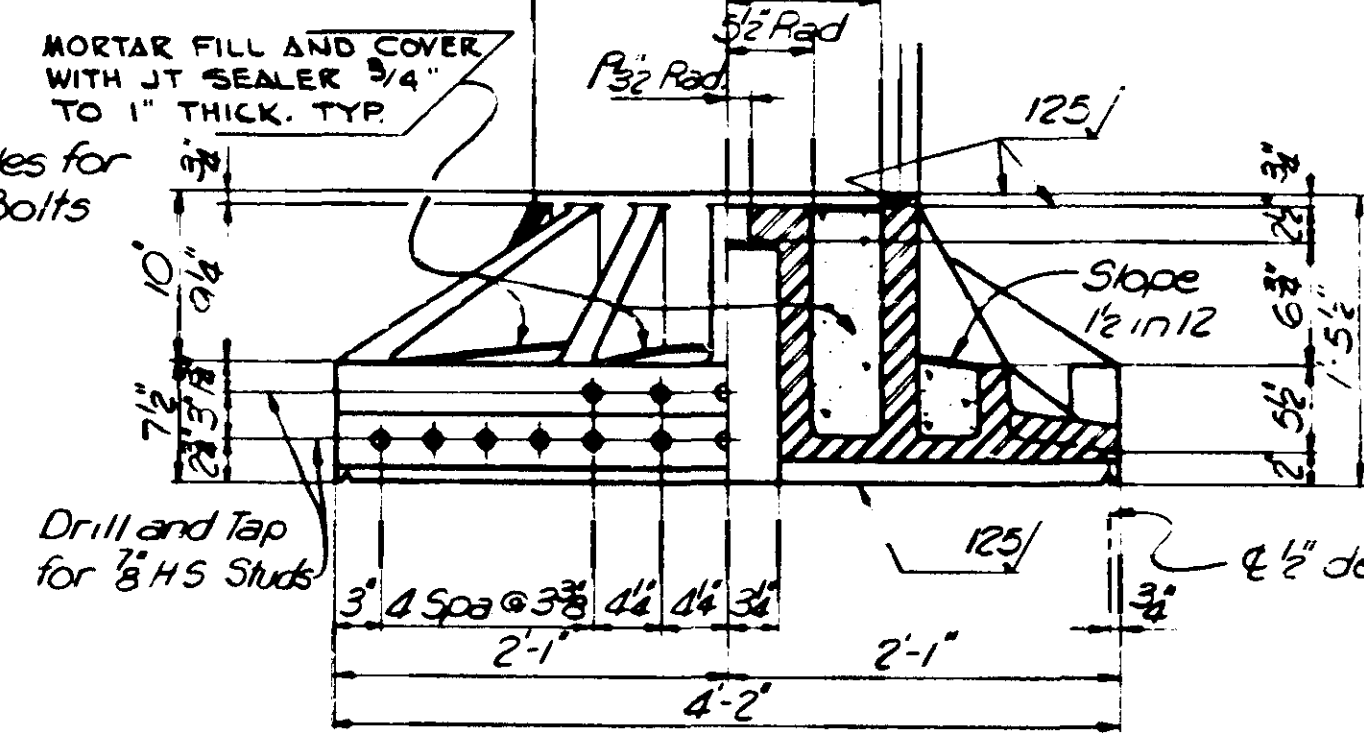


PLAN

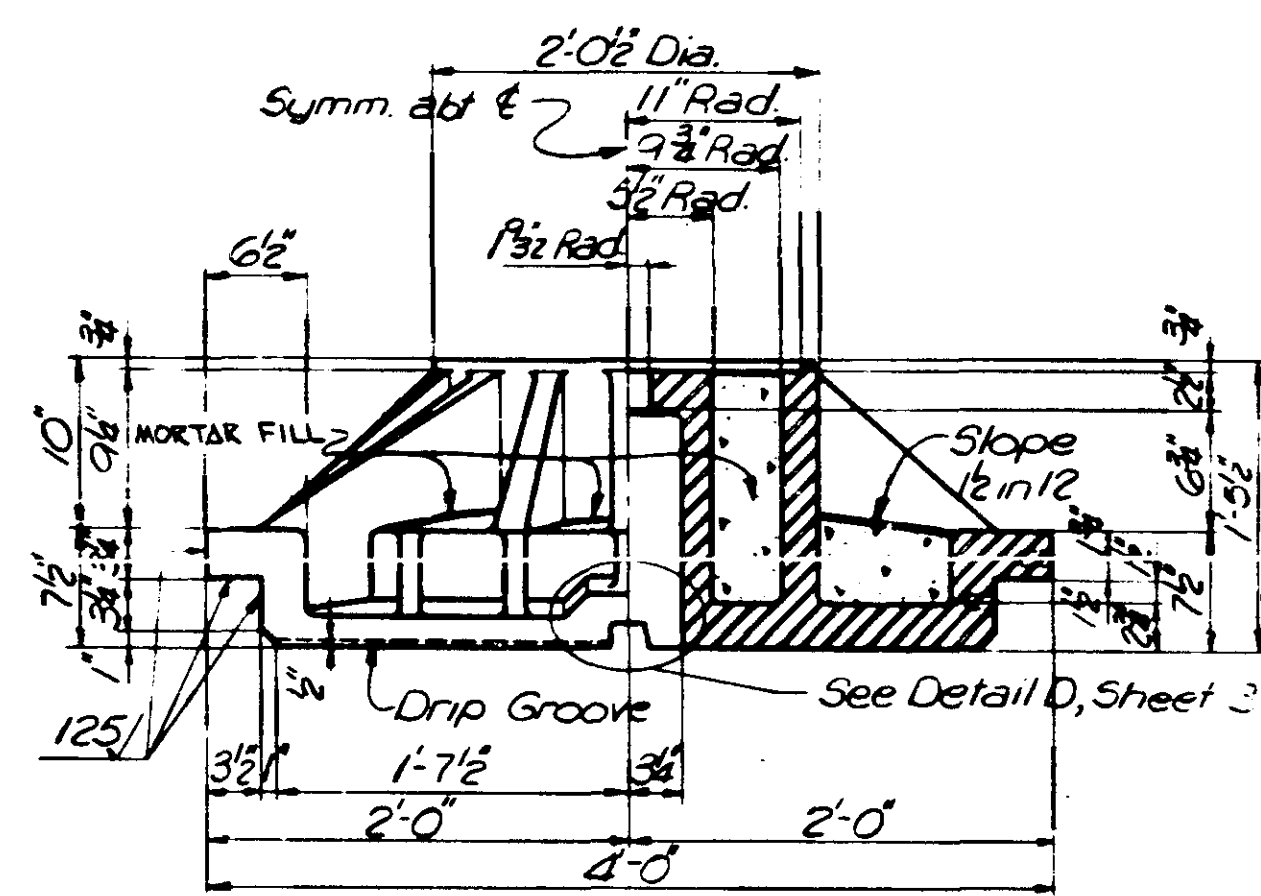


ELEVATION
LOWER BEARING PLATE

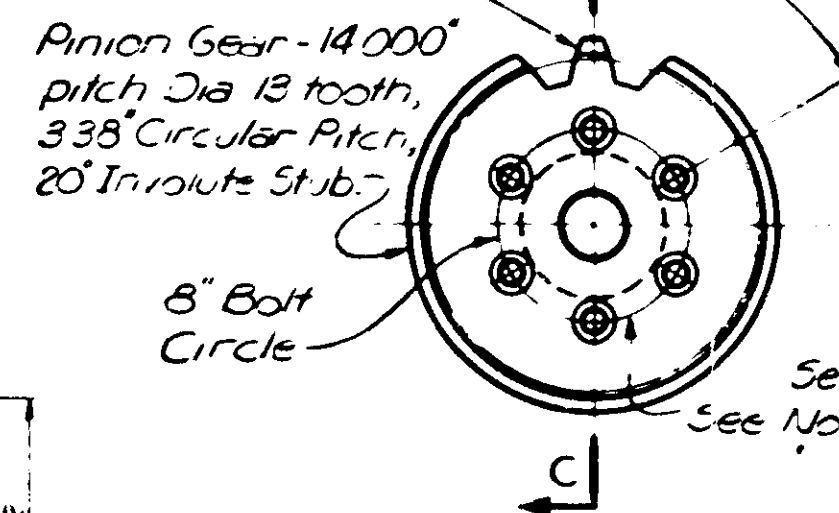
Note: See Sheet 36 for Section E-E and Section F-F.



SECTION A-A

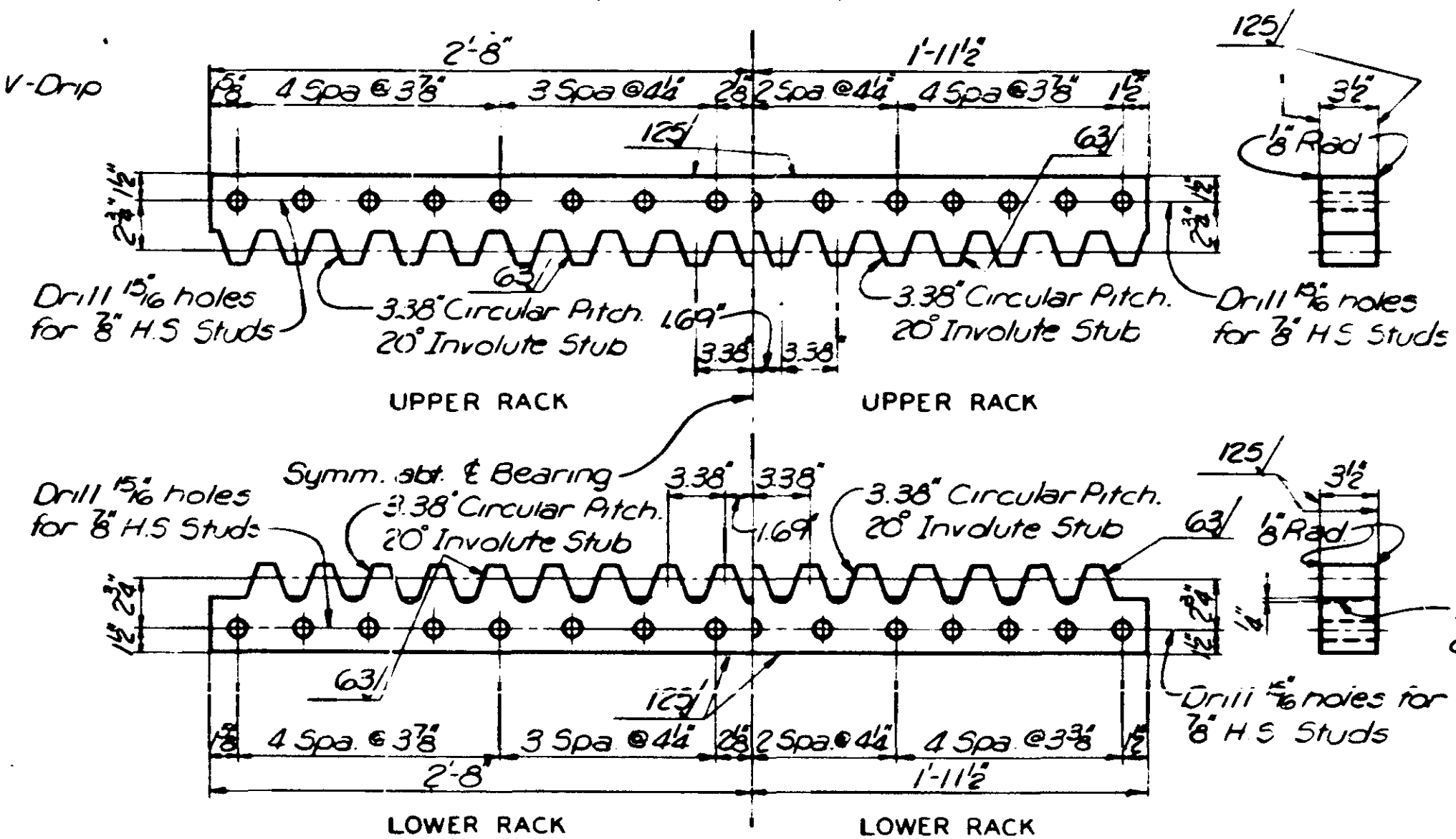


SECTION B-B
UPPER BEARING CASTING

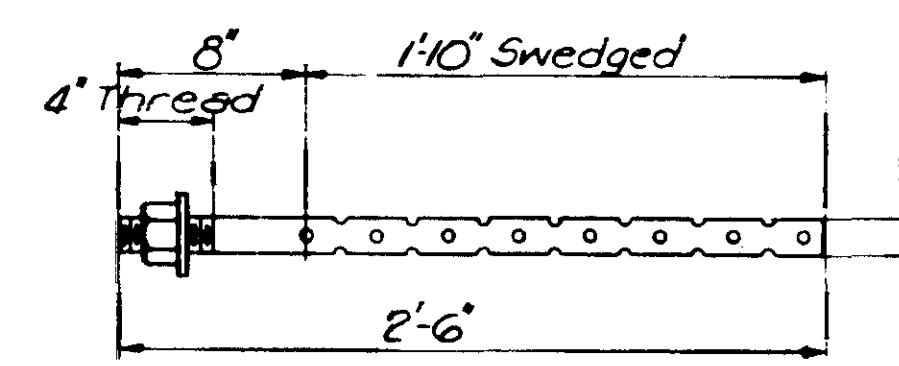


PINION

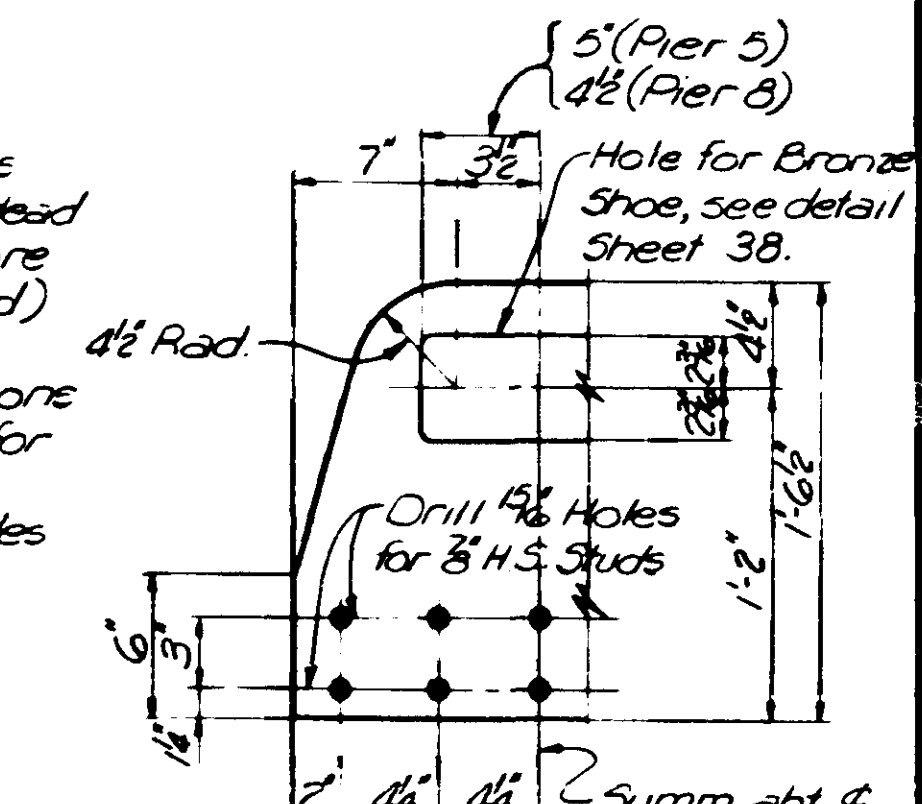
Note: Pinion shown for Span Hold-down, others similar.



HALF ELEVATION (Pier 6) HALF ELEVATION (Piers 5 and 8) END VIEW
RACKS FOR EXPANSION BEARINGS AT PIERS 5, 6 AND 8



ANCHOR BOLTS
(See Sheet 38 for number required)



1 1/2\"/>

NOTES
For Bearing Assembly Notes, see Sheet 38.
For Hold-down Assembly details, see Sheet 38.
For Table of Material, see Sheet 38.

Drawn by: D.J. Cornetto, Apr. 1964
Checked by: T.V. Dillon, May 1964

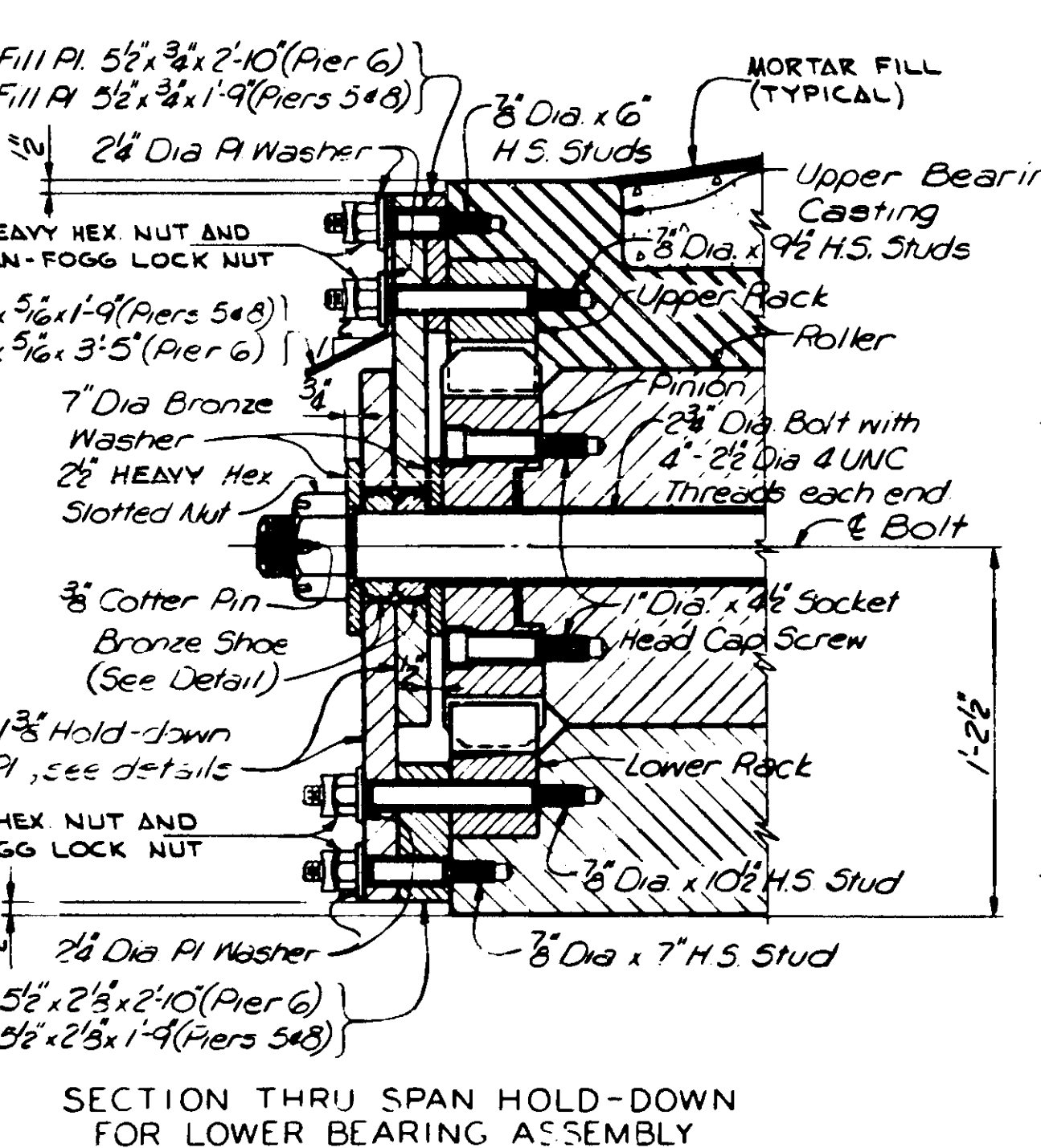
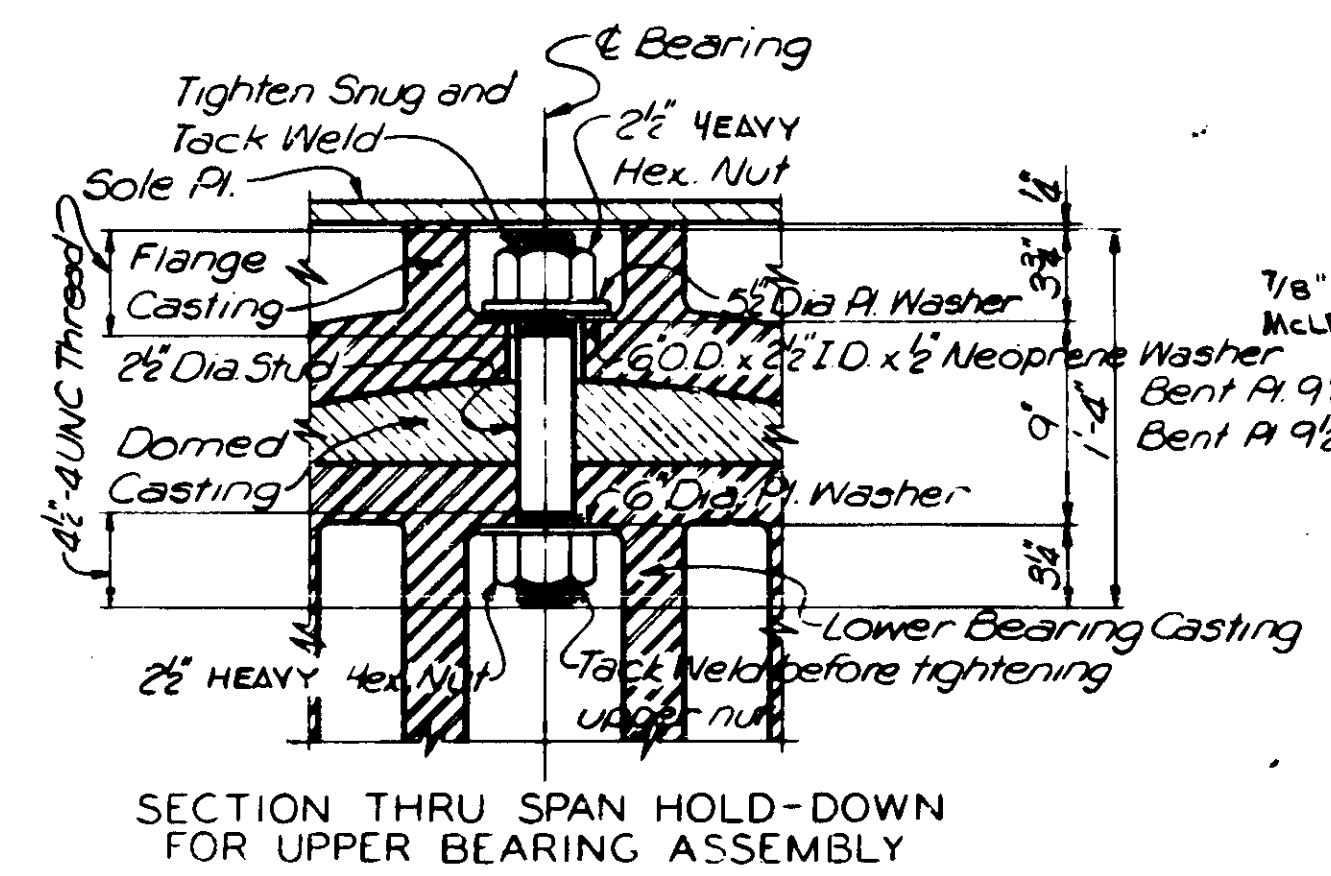
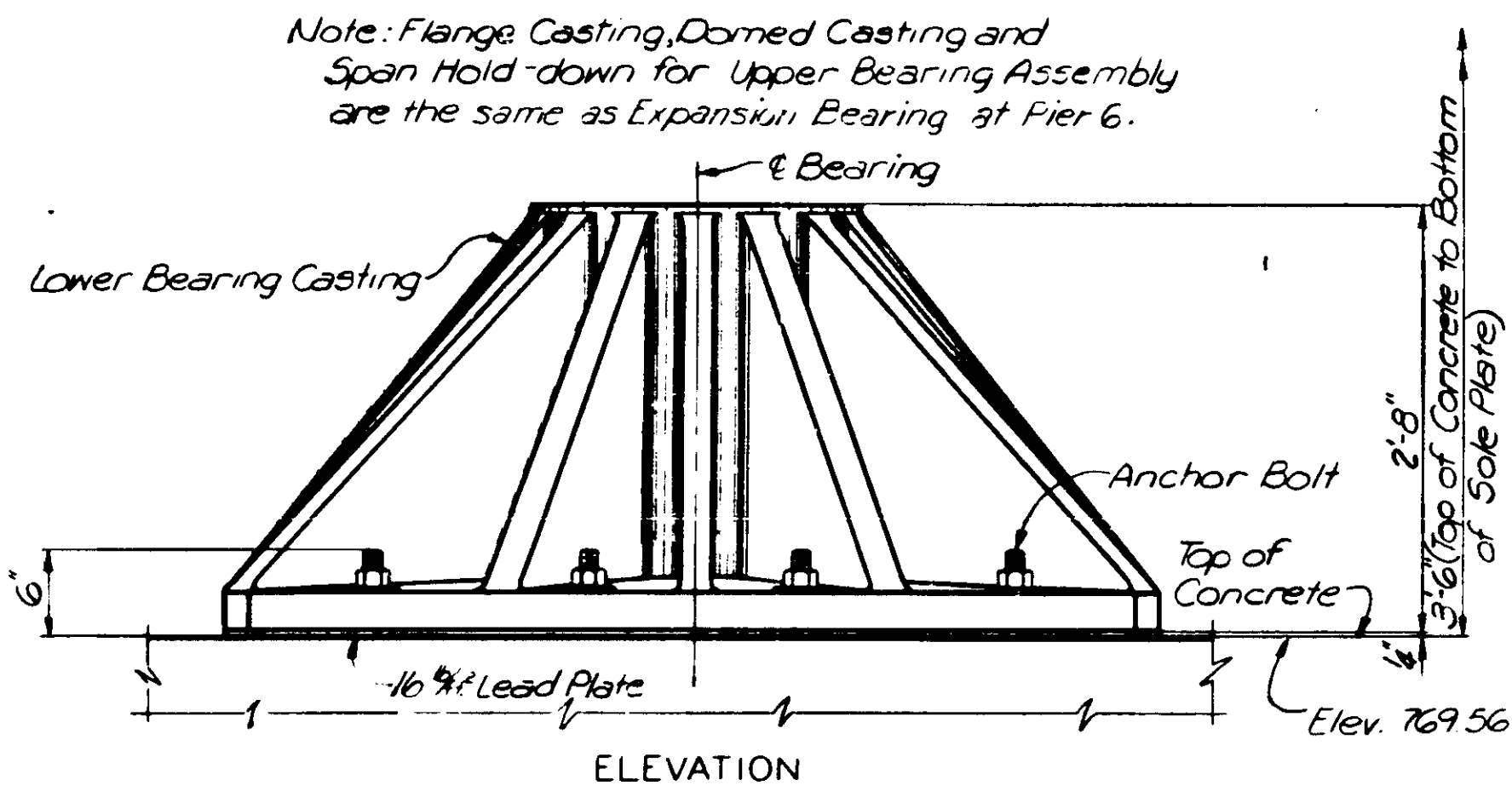
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BRIDGE NO. 9340

DECK TRUSS SPANS
BEARING ASSEMBLIES

APPROVED - 6-18-65



BEARING ASSEMBLY NOTES

For General Notes, see Sheet 2.

The microinch symbol for surface finishes is in accordance with A.S.A.

Set expansion rollers or rockers as shown in Bearing Assemblies at 45°F under dead load of steel. Use coefficient of expansion $w = 0.0000065$ for temperature effect.

Paint Bearing Assemblies same as Structural Steel except pin holes, pins and spherical areas of domed and upper bearing castings, which are to be protected as per MHD 2476.3B2(b) and (6).

The price bid for Bearing Assemblies shall include all materials (anchor bolts, sheet lead and tap bolts connecting bearings to truss, but not rivets connecting bearings to truss and cross girders at UO and UO') for each type as noted and shown.

All Bearing Assemblies at Piers shall be shop assembled and match-marked.

Main material for Bearing Assemblies at Piers are as shown in table below. Other material shall be as follows:

Expansion Bearings at Panel Points UO and UO'

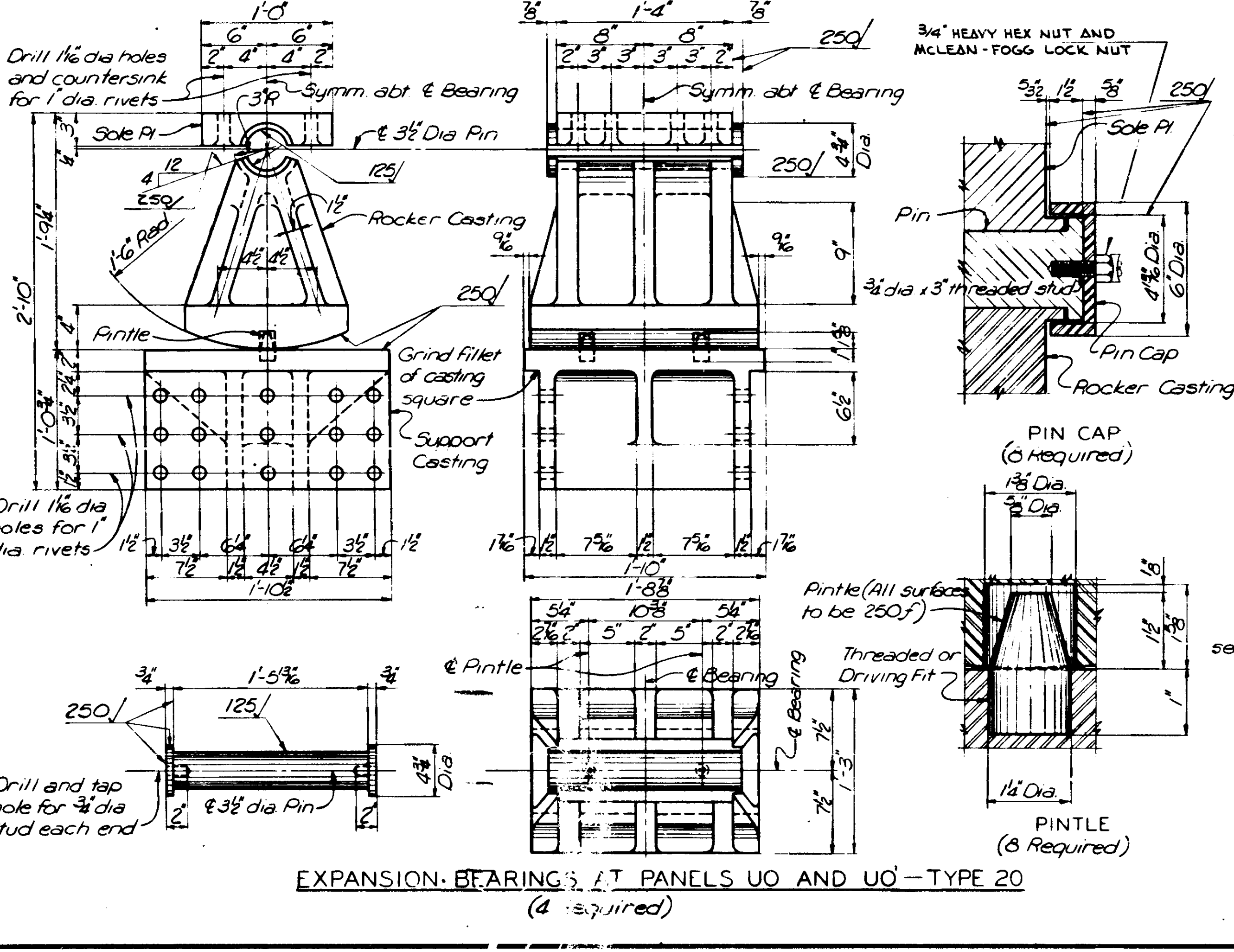
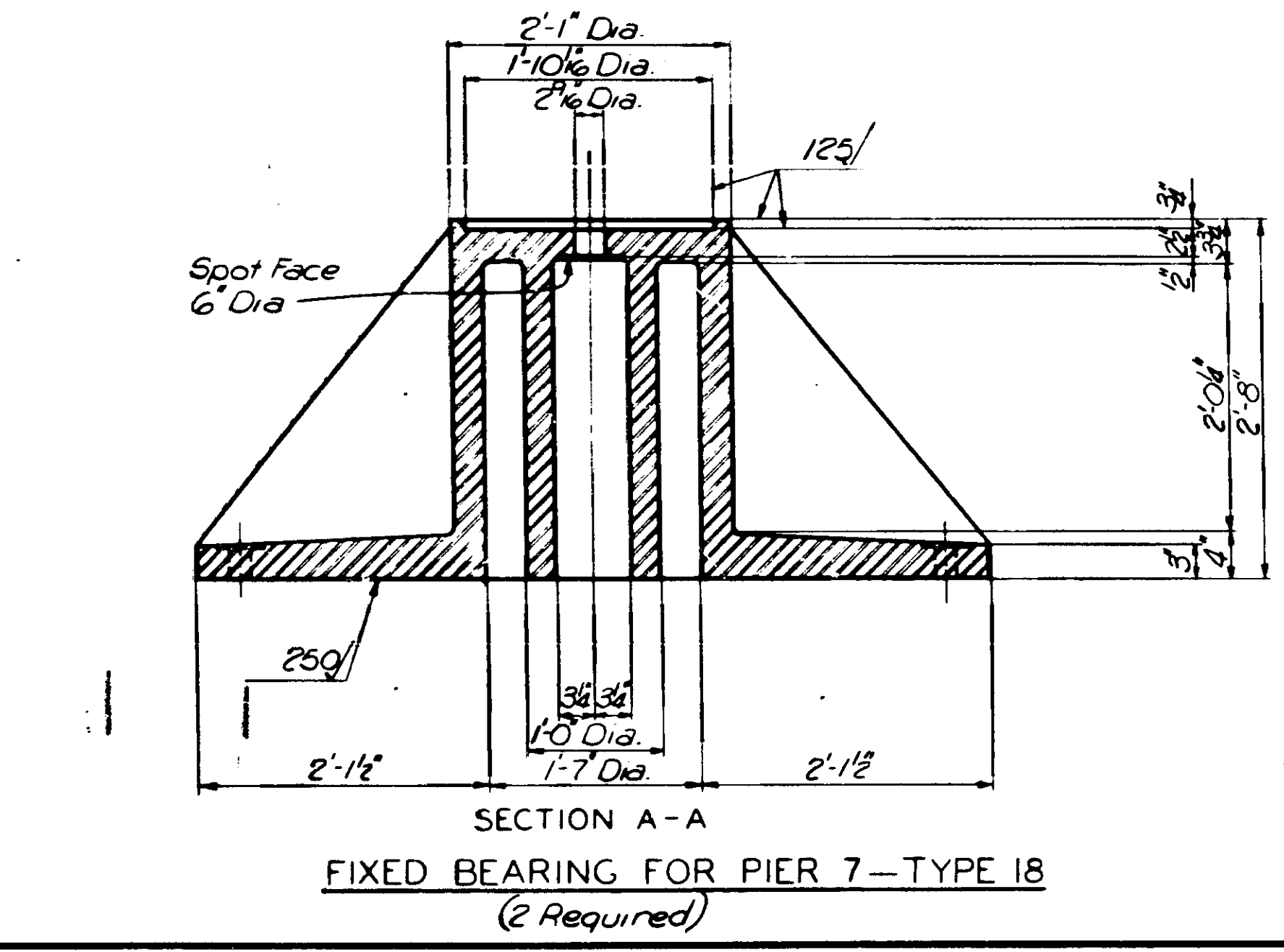
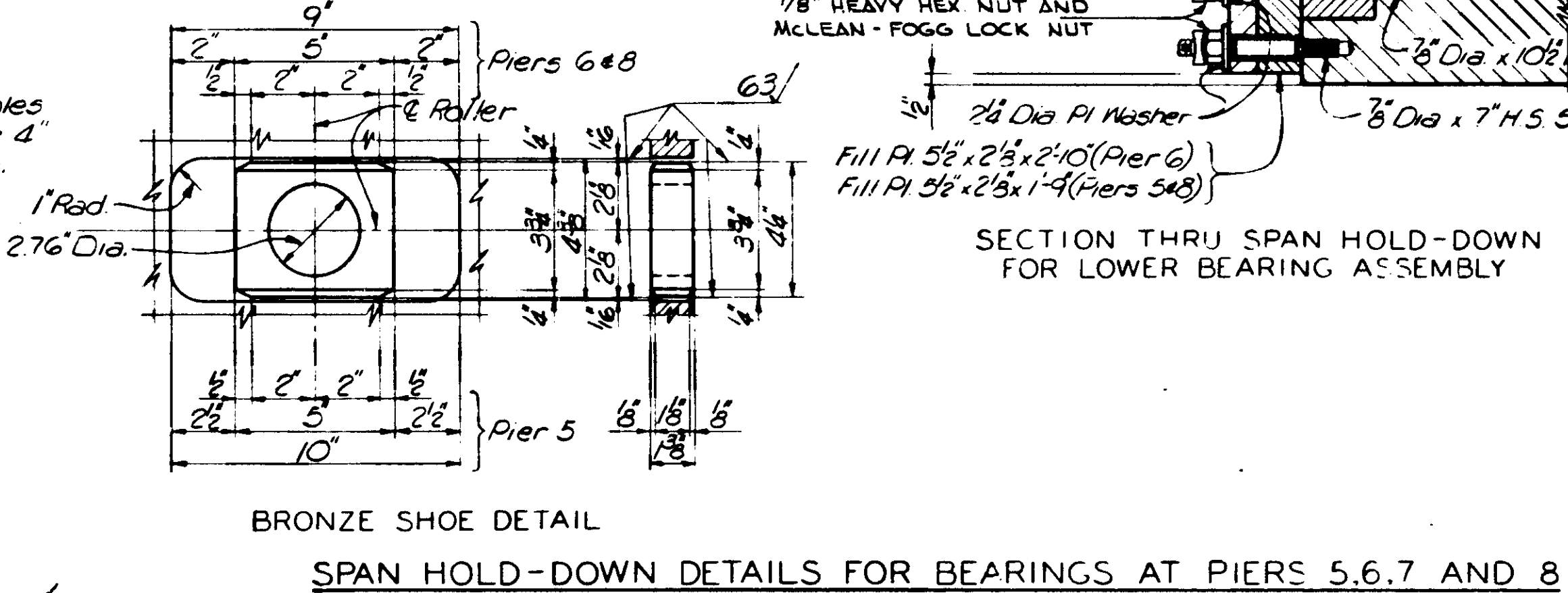
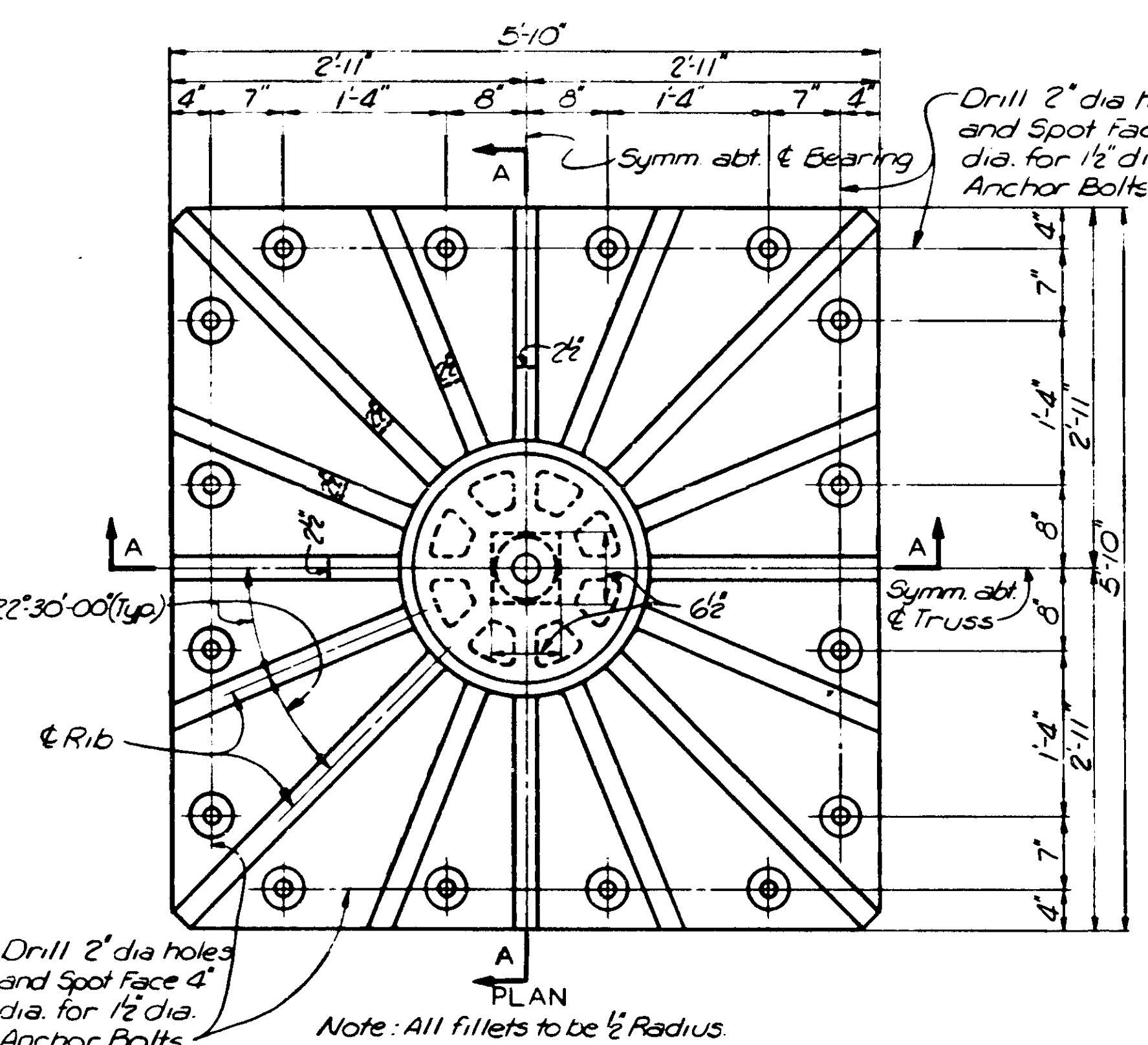
- Sole Plate ----- Alloy Steel (MHD 3309)
- Rocker Casting ----- Alloy Steel Casting (MHD 3323)
- Support Casting ----- Alloy Steel Casting (MHD 3325)
- 3 1/2 Dia Pin ----- Alloy Steel (MHD 3313, Type III)
- Pin Cap ----- Carbon Steel Casting (MHD 3322, Grade 70-36)
- Studs and Nuts ----- Structural Bolts (MHD 3391, Type A)
- Piniles ----- Cold Finished Alloy Bar Steel (MHD 3314, Type II)

Expansion Bearings at Piers 5, 6 and 8

- 7 Dia Bronze Washers ----- Wrought Bronze Plates, (MHD 3325)
- 7/8 H.S. Studs, with nuts and washers, and Socket Head Cap Screws ----- COLD FINISHED BAR STEEL (M.H.D. 3314, TYPE II)
- 2 1/2 Dia Bolts ----- Cold Finished Bar Steel (MHD 3314, Type II)

Expansion and Fixed Bearings at Piers 5, 6, 7 and 8

- 2 1/2 Dia. Hold-down Studs ----- Alloy Steel (MHD 3314, Type III)
- 1 1/2 Turned Bolts ----- Cold Finished Alloy Steel (MHD 3391-F)



Item	Number Required				Material
	Pier 5	Pier 6	Pier 7	Pier 8	
Flange Casting	2	2	2	2	Alloy Steel Casting (MHD 3323)
Domed Casting	2	2	2	2	Alum. Bronze Casting, ASTM B 48-52, Alloy 90-10
Upper Brg. Casting	2	2	2	2	Alloy Steel Casting (MHD 3323)
Lower Brg. Casting	—	—	2	—	Alloy Steel Casting (MHD 3325)
Lower Brg. Plate	2	2	—	2	Q-T High Strength Alloy Steel (MHD 3318)
Roller	6	8	—	6	Alloy Steel Forging, ASTM A237-63, Class D
Pinion	12	16	—	12	Alloy Steel Forging (MHD 3315, Type II)
Upper Rack	4	4	—	4	Structural Steel (MHD 3306)
Lower Rack	4	4	—	4	Structural Steel (MHD 3306)
Bronze Shoe	8	16	—	8	Wrought Bronze Plates (MHD 3325)
Anchor Bolts	12	24	32	12	Structural Bolts (MHD 3391-A)

NOTES

For details of Anchor Bolts, see Sheet 37.

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ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

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STATE OF MINNESOTA
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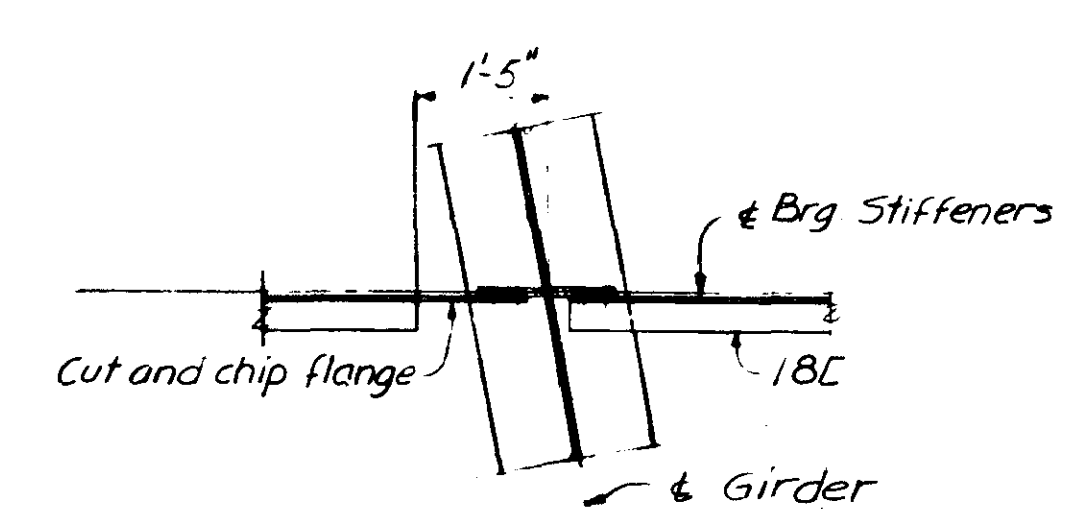
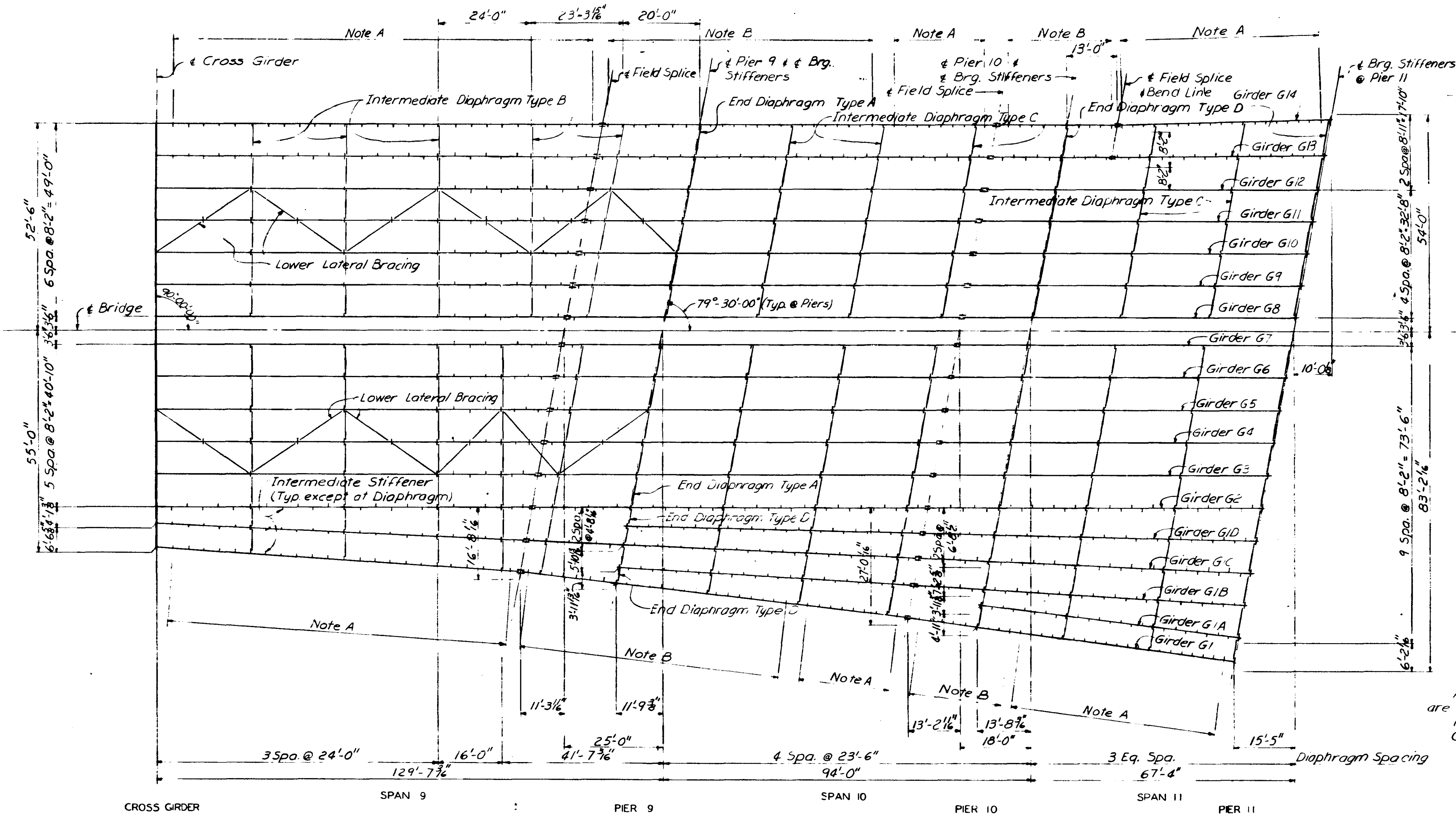
BRIDGE NO. 9340

DECK TRUSS SPANS
BEARING ASSEMBLIES

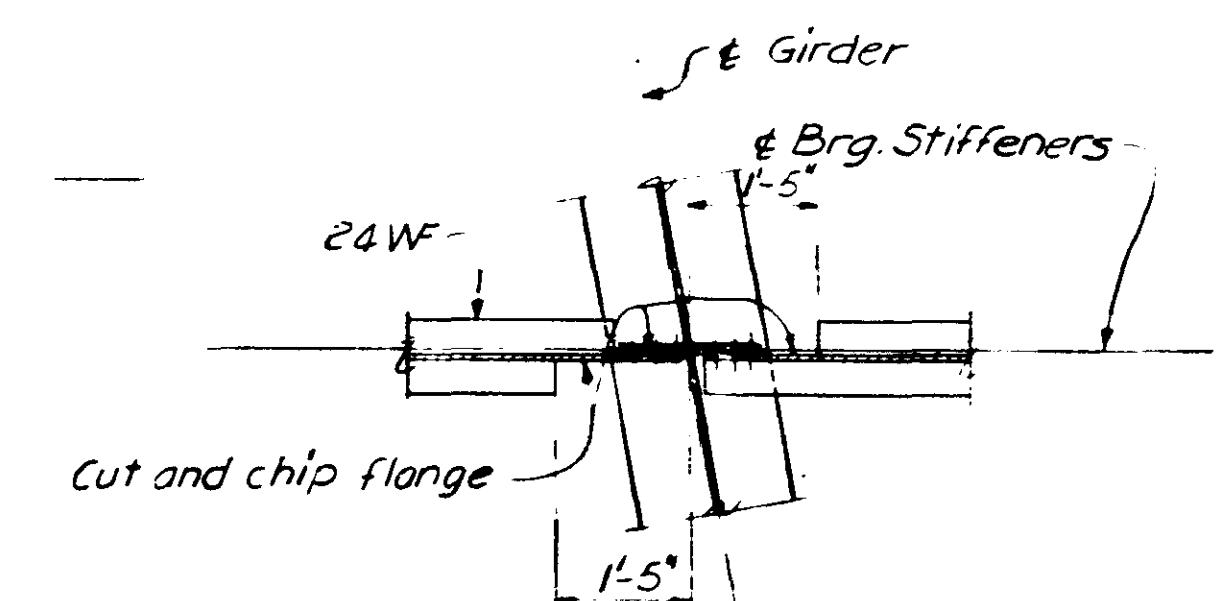
APPROVED - 6-18-65

Drawn by: D. J. Cornotto, Apr. 1964
 Checked by: T. V. Dillon, May 1964
 2083
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Note A: Weld Intermediate Stiffeners to top flange Girders G1 thru G14
 Note B: Weld Intermediate Stiffeners to bottom flange Girders G1 thru G14



SECTION A-A

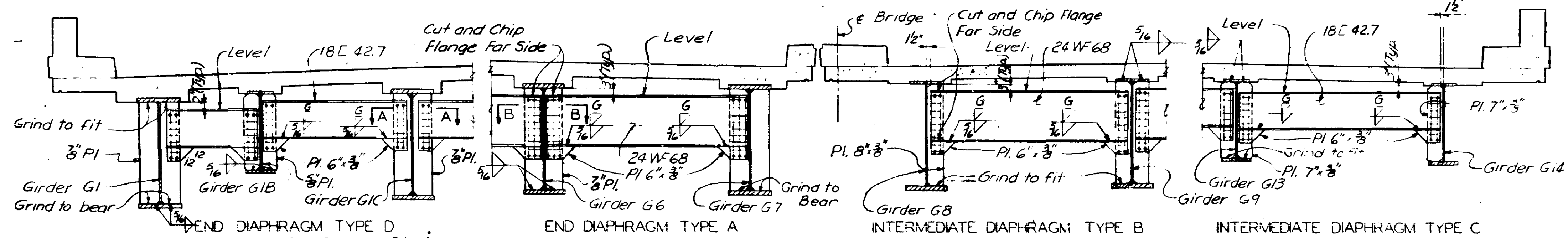


SECTION B-B

NOTES

All longitudinal and transverse dimensions shown are horizontal.
 For Structural Steel Notes see Sheet 40.
 Clip bearing stiffeners to clear flanges to web welds.

FRAMING PLAN
 Note: Intermediate Stiffeners for all girders to be Pl. 4" x 3/8". Space Intermediate Stiffeners for Girders G3 thru G12 same as G2 except as shown.



Note: Diaphragm for Pier 9 shown. Diaphragms for Piers 10 & 11 similar except at Pier 11 18C to be on down station side as shown in Framing Plan.

Drawn By: D.E. DiFranco, Feb. 64.
 Checked By: W.J. Goodrich, Apr. 1964.

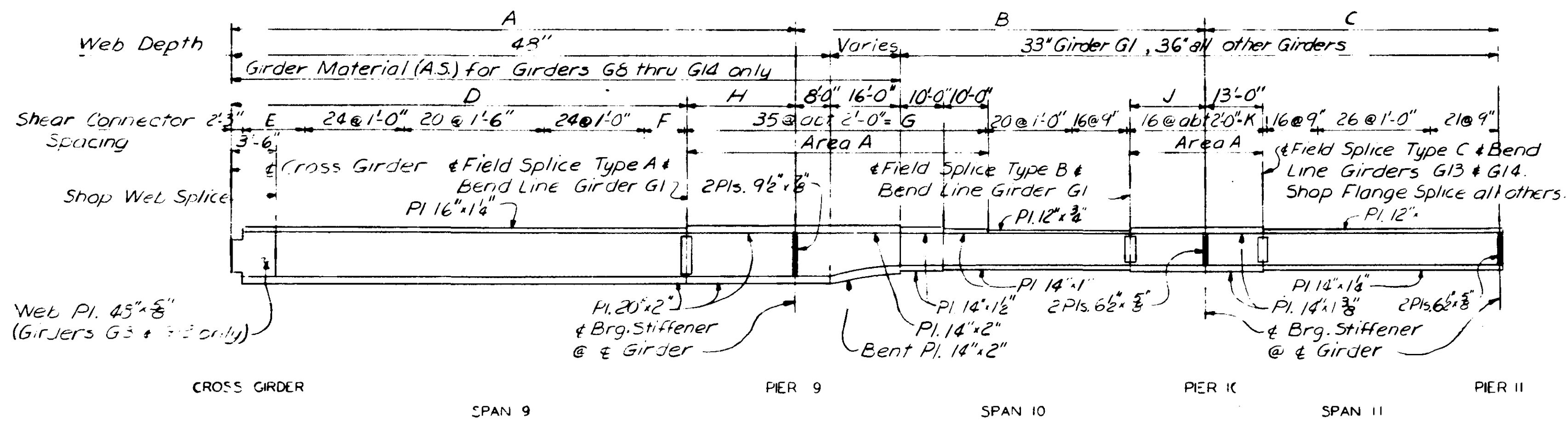
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T. H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

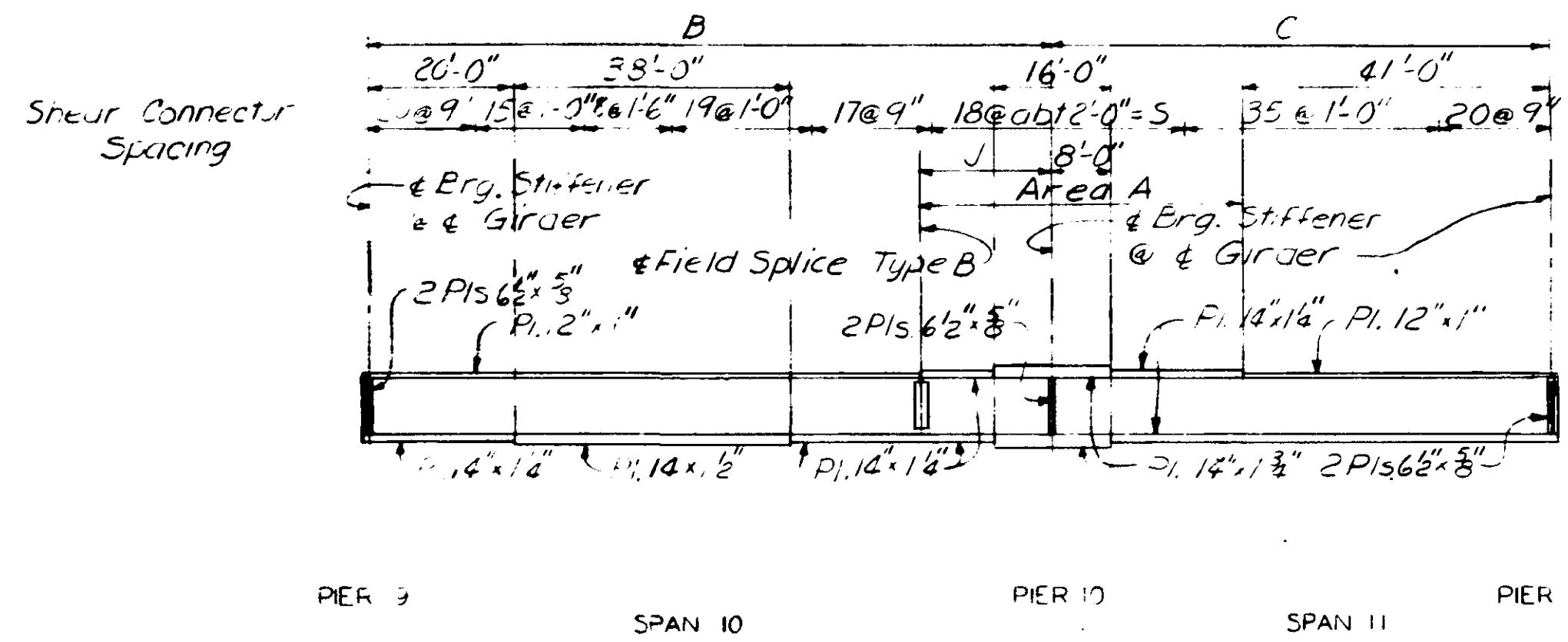
BRIDGE NO. 9340

NORTH APPROACH GIRDER SPANS
 STRUCTURAL STEEL DETAILS

APPROVED - 6-18-65

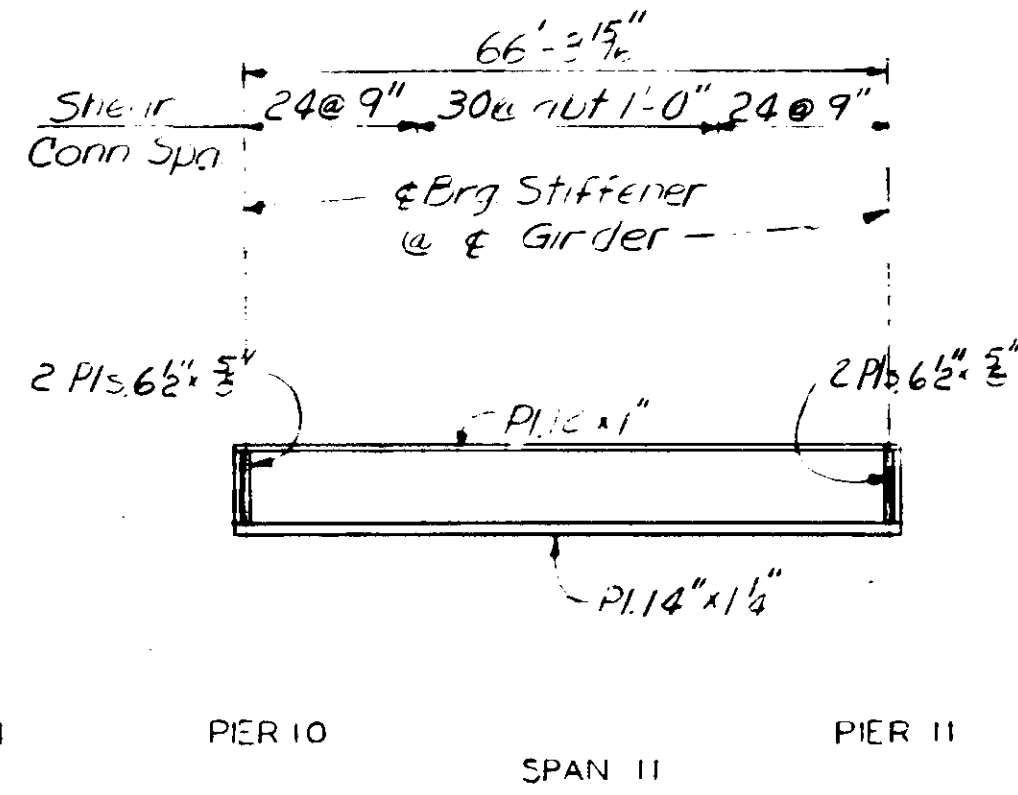


ELEVATION - GIRDERS G1 THRU G14 & G1C
 Note: Field Splice Flange Plates and Intermediate Stiffeners not shown.
 Shear Connectors may be omitted over flange splice plates.
 Web plates to be 3/8" thick except as noted.



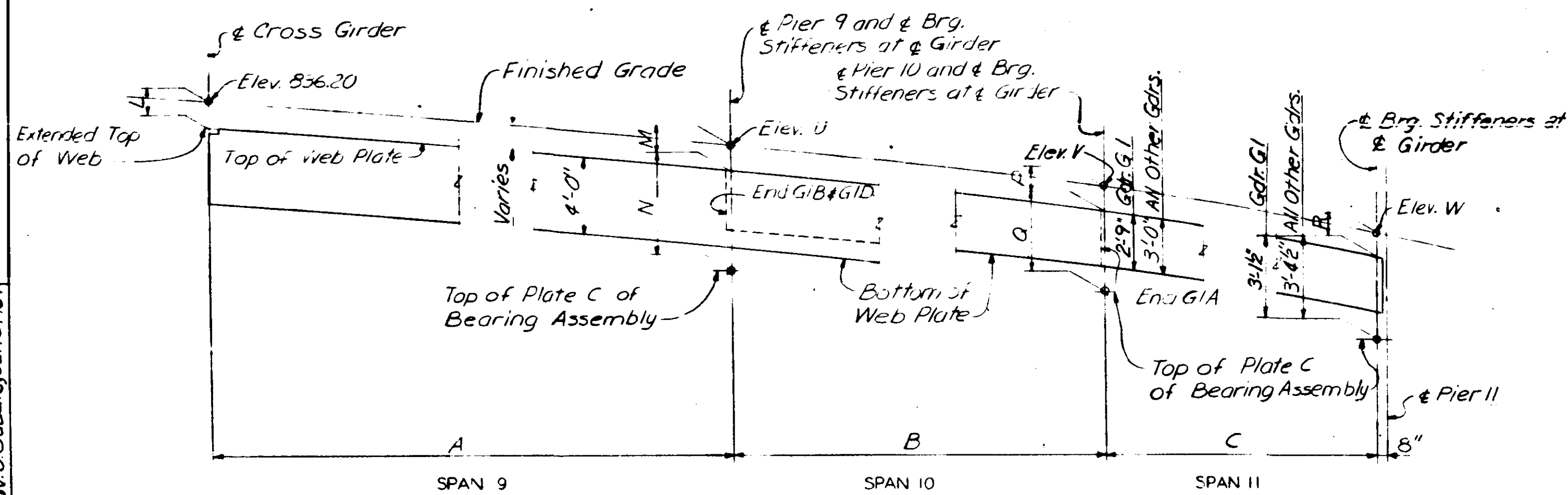
ELEVATION - GIRDERS G13 & G14

Note: Web Plate 3/8" x 36"
 Field Splice Flange plates and Intermediate Stiffeners not shown.
 Shear Connectors may be omitted over flange splice plates.



ELEVATION - GIRDER G1A

Note: Web Plate 3/8" x 36"
 Intermediate Stiffeners not shown.



GIRDER LAYOUT

Note: Dimension L locates the final extended Top of Web at Cross Girder and is to be used for purposes of fabrication. Web connections to Cross Girder shall allow for Camber of Cross Girder, see Sheet 43.

Girder	VARIABLE DIMENSIONS																
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
G 4	139'-3 1/2"	94'-0"	67'-7 1/2"	114'-3 1/2"	25'-0"	20'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-10 1/2"	10 7/8"	10 7/8"	4'-5 1/2"	10 7/8"	3'-4 3/8"	10 7/8"	
G 3	137'-9 1/2"	94'-0"	67'-5 1/2"	112'-9 1/2"	25'-0"	19'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-8 1/2"	8 3/4"	8 3/4"	4'-5 1/2"	8 3/4"	3'-4 3/8"	6 3/4"	
G 2	136'-3 3/4"	94'-0"	67'-4"	111'-3 3/4"	25'-0"	18'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	7 3/4"	7 3/4"	4'-5 1/2"	7 3/4"	3'-4 3/8"	5 3/4"	
G 1	134'-9 1/2"	94'-0"	67'-4"	109'-9 1/2"	22'-0"	17'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	6 3/8"	6 3/8"	4'-5 1/2"	6 3/8"	3'-4 3/8"	6 3/8"	
G 0	133'-3 3/4"	94'-0"	67'-4"	108'-3 3/4"	21'-0"	16'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	7 3/8"	7 3/8"	4'-5 1/2"	7 3/8"	3'-4 3/8"	7 3/8"	
G 9	131'-9 1/2"	94'-0"	67'-4"	106'-9 1/2"	20'-0"	15'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	8 3/8"	8 3/8"	4'-5 1/2"	8 3/8"	3'-4 3/8"	8 3/8"	
G 8	130'-3"	94'-0"	67'-4"	105'-3"	19'-0"	14'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	10 1/8"	10 1/8"	4'-5 1/2"	10 1/8"	3'-4 3/8"	10 1/8"	
G 7	128'-11 1/2"	94'-0"	67'-4"	103'-11 1/2"	18'-0"	13'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	10 1/2"	10 1/2"	4'-5 1/2"	10 1/2"	3'-4 3/8"	10 1/2"	
G 6	127'-5 1/2"	94'-0"	67'-4"	102'-5 1/2"	17'-0"	12'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	9 7/8"	9 7/8"	4'-5 1/2"	9 7/8"	3'-4 3/8"	9 7/8"	
G 5	125'-11 1/2"	94'-0"	67'-4"	100'-11 1/2"	17'-0"	10'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	8 3/8"	8 3/8"	4'-5 1/2"	9 1/4"	3'-4 3/8"	11 1/2"	
G 4	124'-4 1/2"	94'-0"	67'-4"	99'-4 1/2"	16'-0"	9'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	8 3/8"	8 3/8"	4'-5 1/2"	9 3/4"	3'-4 3/8"	11'-0 1/2"	
G 3	122'-10 1/2"	94'-0"	67'-4"	97'-10 1/2"	15'-0"	8'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	9 1/4"	9 1/4"	4'-5 1/2"	9 1/4"	3'-4 3/8"	11'-1 1/2"	
G 2	121'-4 1/2"	94'-0"	67'-4"	96'-4 1/2"	14'-0"	7'-0"	69'-3 1/2"	25'-0"	18'-0"	31'-7"	10 1/8"	10 1/8"	4'-5 1/2"	11 1/2"	3'-4 3/8"	11'-3 1/2"	
G 1C	119'-9 1/2"	93'-4"	66'-10 1/2"	94'-10 1/2"	13'-0"	6'-0"	69'-3 1/2"	24'-0"	17'-10 1/2"	30'-5 1/2"	10 1/2"	10 1/2"	4'-5 1/2"	11'-2 1/2"	3'-4 3/8"	11'-5 3/8"	
G 1	8'-1 1/2"	92'-8 1/2"	66'-3 1/2"	93'-5 1/2"	11'-0"	6'-0"	69'-3 1/2"	24'-7 1/2"	17'-8 1/2"	29'-2 1/2"	11 1/8"	11 1/8"	4'-5 1/2"	3'-1 3/8"	11'-3 1/2"		
G 1D		93'-7 1/2"	67'-0 1/2"						17'-11 1/2"				8"	3'-0 1/2"	3'-5"	1'-0 1/2"	36'-11 1/2"
G 1B		93'-1 1/2"	66'-8 1/2"						17'-10 1/2"				10 1/2"	3'-4 1/2"	3'-5"	8 3/8"	36'-1 3/8"
G 1A													1'-4 1/2"	3'-4 1/2"	11 1/8"		

STRUCTURAL STEEL NOTES FOR APPROACH SPANS

GENERAL NOTES: See Sheet 2.

DIMENSIONS: All longitudinal and transverse dimensions are measured horizontally, except as noted. Girders are shown in the normal position at a temperature of 45°F.

MATERIAL: Material marked (A.S.) shall conform to Structural Steel M.H.D. 3310, except for splash plates and flumes which shall conform to Structural Steel M.H.D. 3309. All other material shall conform to Structural Steel M.H.D. 3306.

RIVETS: Rivets shall be 3/4" dia except as noted. High Strength Rivets shall conform to M.H.D. 3316, Type IX; all other rivets shall conform to M.H.D. 3316, Type I. 15/16" Ø HOLES EXCEPT AS NOTED.

CAMBER: Span 1 will not be cambered but where beams have small residual camber, they shall be selected before fabrication so that any camber is placed at the top of the beam assembly. All other spans see Camber Diagram.

PAINTING: See General Notes

BOLTS: 7/8" High Strength Bolts may be used in lieu of rivets at acute angle diaphragm connections and for all field splices except Type 4. High Strength Bolts shall conform to M.H.D. 3319/B, Style II. 15/16" Ø HOLES EXCEPT AS NOTED.

WELDING: Groove welds in flange and web shall be ground flush.

Fillet welds to be 1/4 inch except as noted. See Table on Sheet 41.

For all non-destructive weld testing required by the contract see Special Provisions.

FABRICATION: All connections shall be riveted except as shown and noted.

Bearing Stiffeners, Cross Girders, Diaphragms and Field Splices to be placed vertically.

Intermediate Stiffeners shall be spaced equally between Bearing Stiffeners

and Diaphragms but may be shifted slightly to clear rivets and plates in field splices.

Flange splice plates shall be Universal Mill Plates.

Full assembly reaming will be required as per M.H.D. 2471.3E id.

The position of girder splices shall be substantially as shown, but may be shifted slightly in either direction. Shop splices are optional.

NOTES

All longitudinal dimensions are measured horizontally along centerline of Girder
 For Camber Diagrams see Sheet 42.

Girder	ELEVATIONS		
	Elev. U	Elev. V	Elev. W
G 4	832.75	829.66	827.04
G 3	832.80	829.71	827.12
G 2	832.84	829.77	827.19
G 1	832.89	829.82	827.25
G 0	832.93	829.88	827.31
G 9	832.98	829.93	827.37
G 8	833.02	829.99	827.43
G 7	833.06	830.03	827.48
G 6	833.10	830.08	827.54
G 5	833.14	830.14	827.60
G 4	833.19	830.19	827.66
G 3	833.23	830.24	827.73
G 2	833.27	830.30	827.79
G 1C	833.32	830.36	827.91
G 1	833.34	830.43	827.94*
G 1D	833.37	830.34	827.85
G 1B	833.33	830.41	827.92*
G 1A		830.42	827.93*

*Indicates Finished Grade along Ramp 2.

Drawn by: D.E. D'Eranno, Feb. 64
 Checked by: W.J. Gaskis, June 1964
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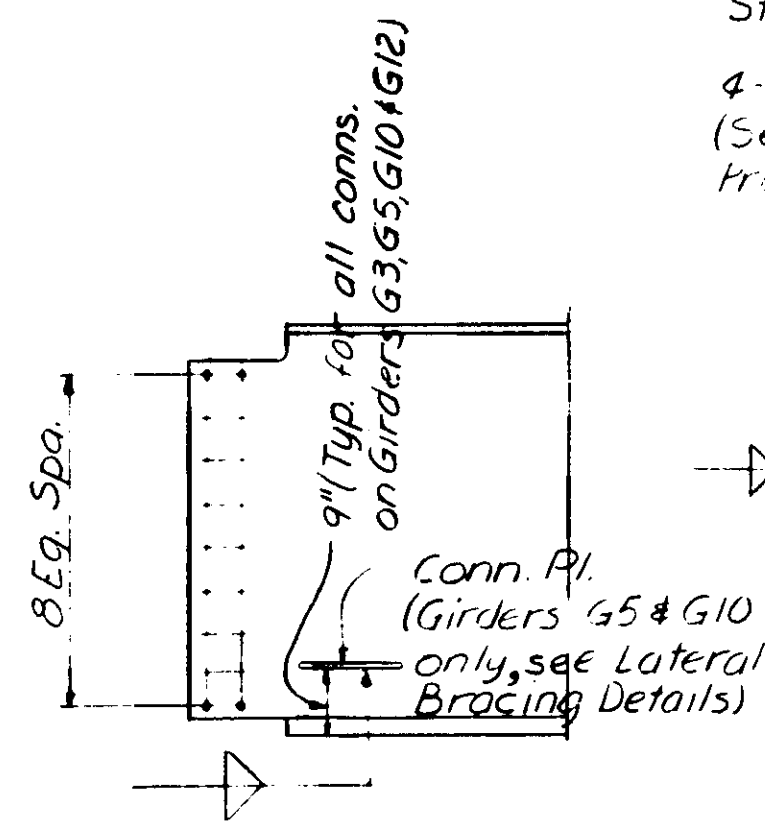
DESIGNED BY
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 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

NORTH APPROACH GIRDER SPANS
 STRUCTURAL STEEL DETAILS

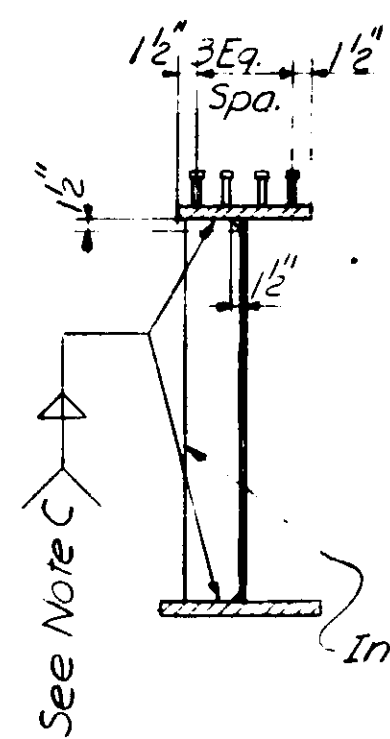
APPROVED - 6-18-65



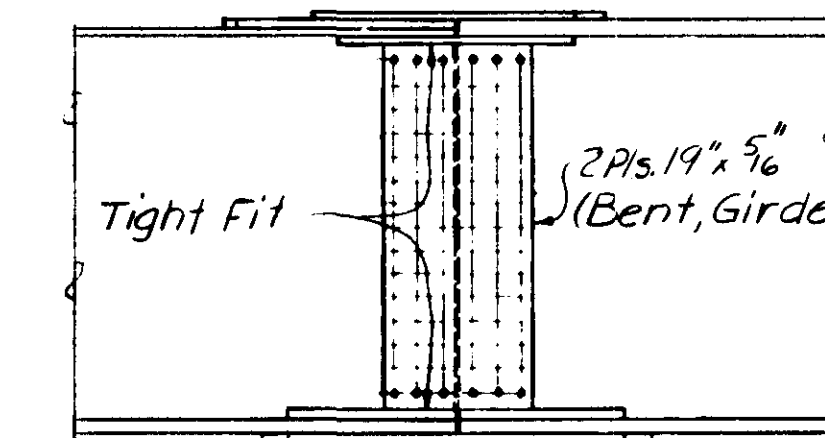
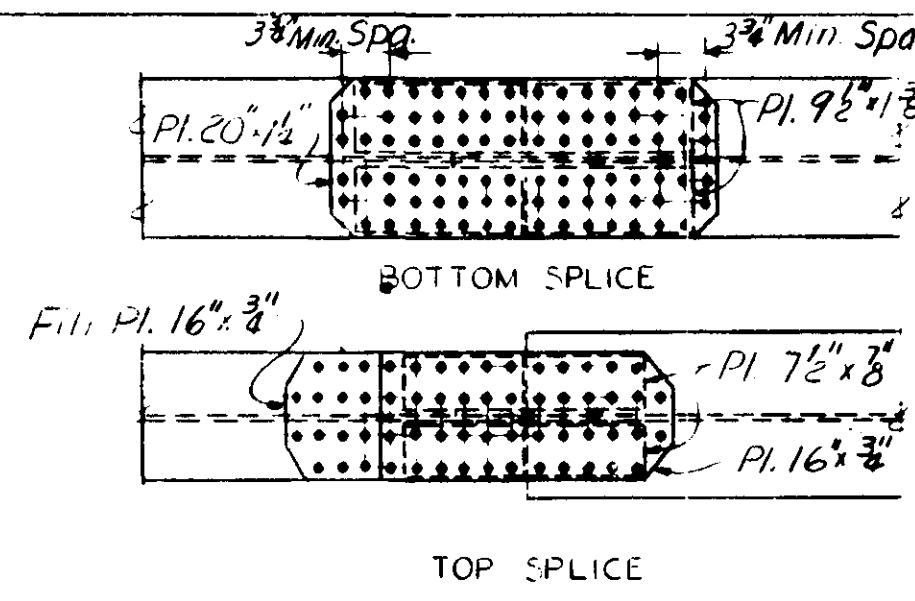
END SUPPORT CROSS GIRDER (Typical for All Girders except G3 and G12)

Note: Weight of welded studs to be included in the weight of Structural Steel M.H.D. 3306.

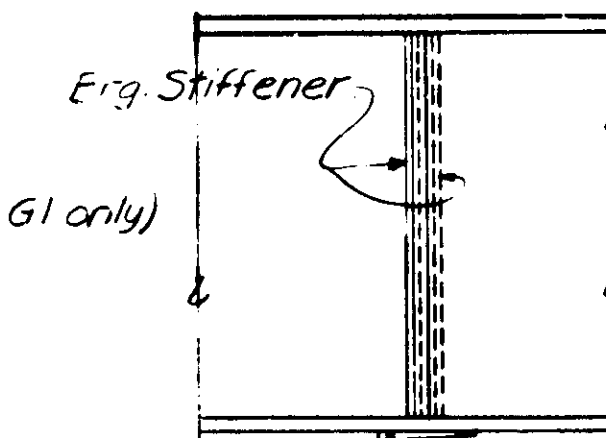
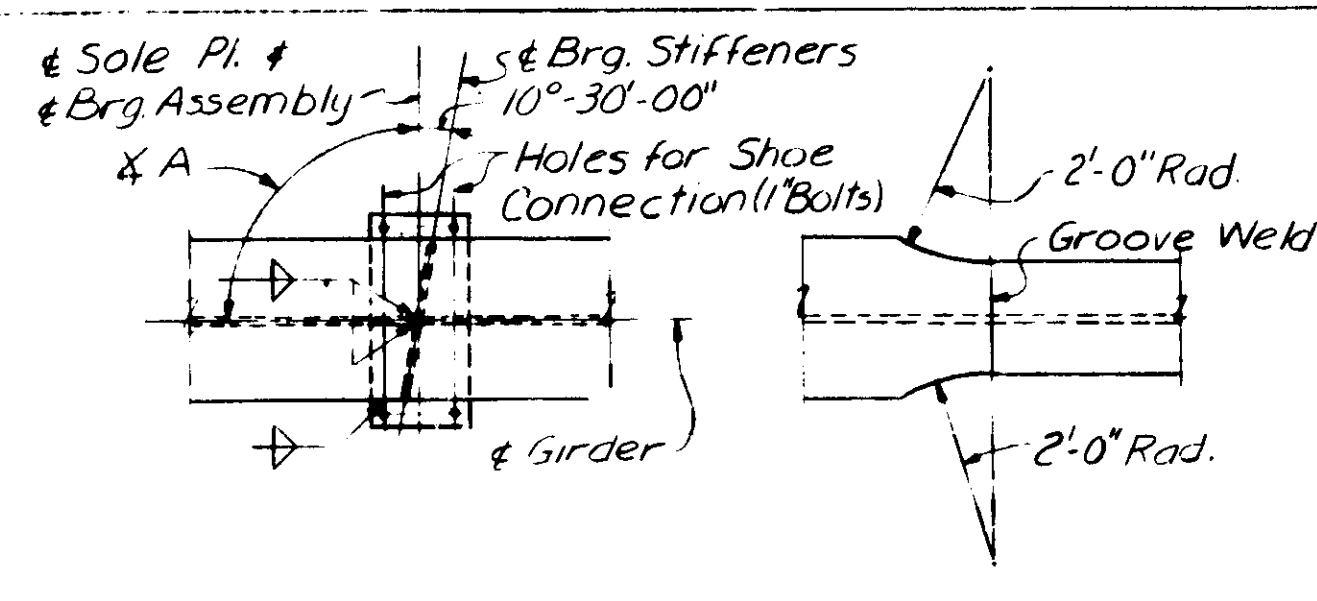
4-3/4" Welded Studs (See Special Provisions)



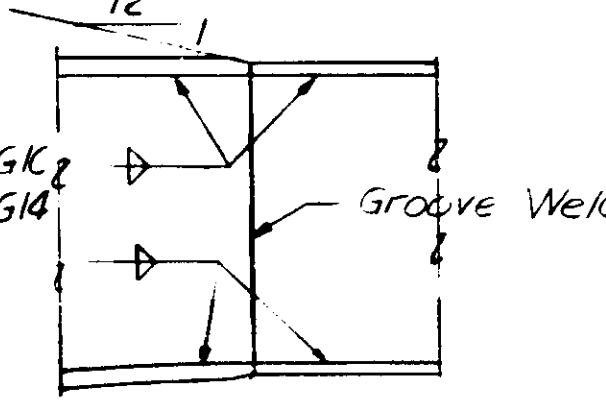
SHEAR CONNECTORS INTERMEDIATE STIFFENERS



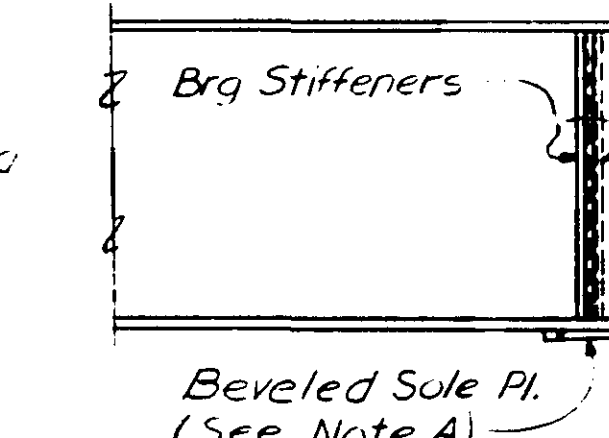
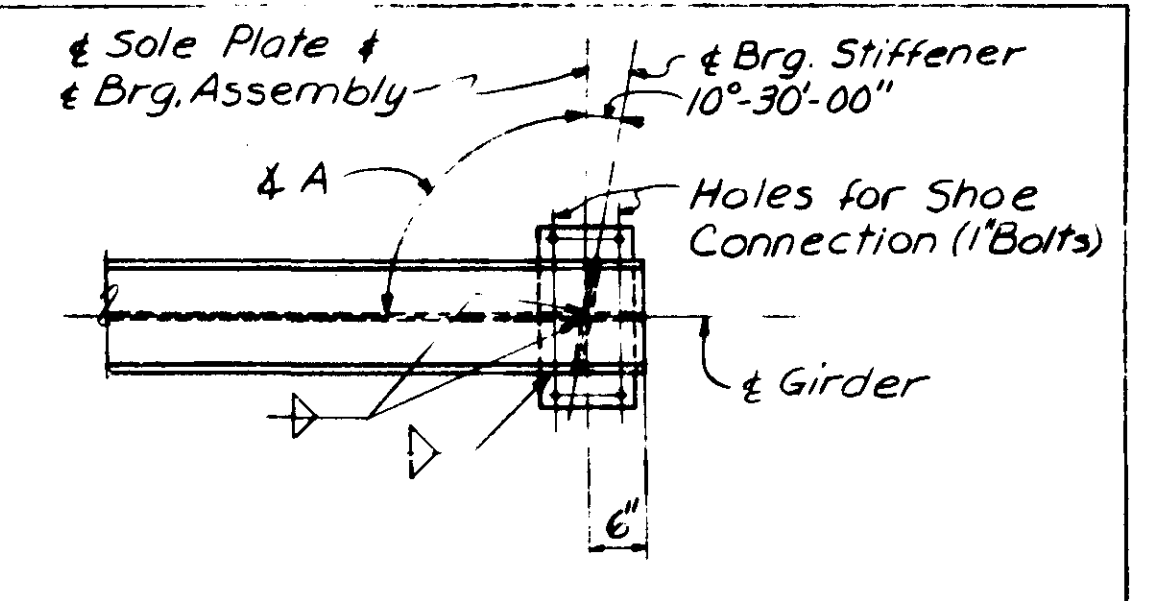
FIELD SPLICE TYPE A Note: Splice material for Girders G2 thru G14 only to be A.S.



INTERMEDIATE SUPPORT PIER 9 & 10



SHOP SPLICES AND FLANGE TO WEB WELD Note: Notch 3/4" stiffener 1/2" at intersection of flange and web.



END SUPPORT PIER II

Note C: Weld Intermediate stiffeners to top or bottom flange of girders as indicated on Framing Plan. Size of fillet welds shall be the same as indicated in Table below. Where not welded to flange plates, Intermediate Stiffeners shall be fitted to form a tight fit.

GIRDER DETAILS

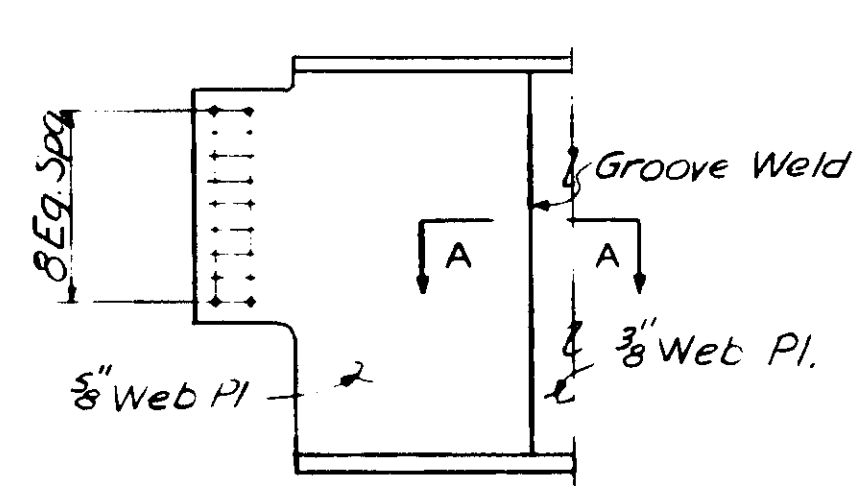
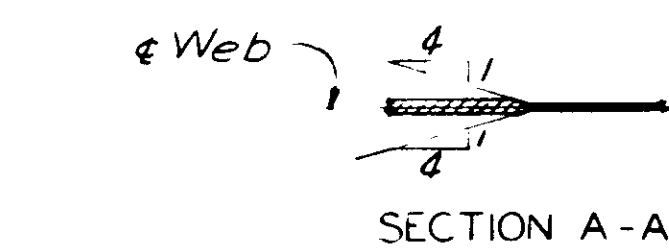
Note: Details shown are typical for all girders unless otherwise shown or indicated.

Girder	ANGLE A							
	G1	G1A	G1B	G1C	G1D	G2 thru G12	G13	G14
Pier 9	84°-02'-53"		86°-40'-48"	87°-29'-54"	88°-45'-13"	90°-00'-00"	90°-00'-00"	90°-00'-00"
Pier 10	81°-53'-48"	82°-59'-54"	86°-40'-48"	87°-29'-54"	88°-45'-13"	90°-00'-00"	90°-00'-00"	90°-00'-00"
Pier 11	81°-53'-48"	82°-59'-54"	86°-40'-48"	87°-29'-54"	88°-45'-13"	90°-00'-00"	90°-47'-20"	91°-34'-24"

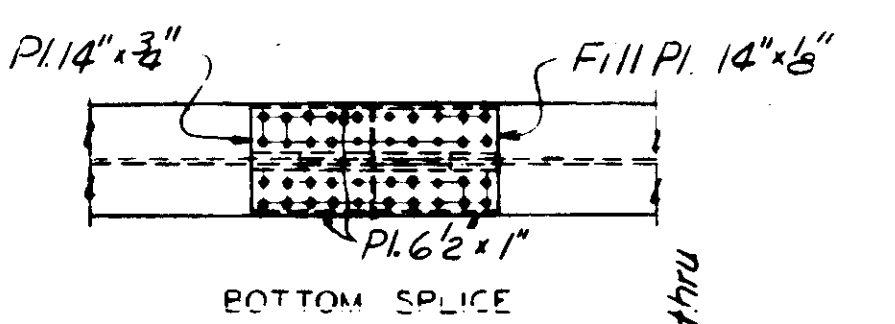
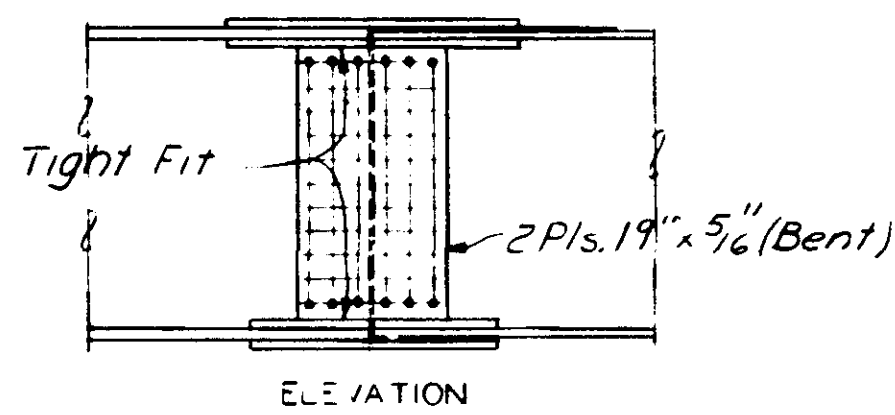
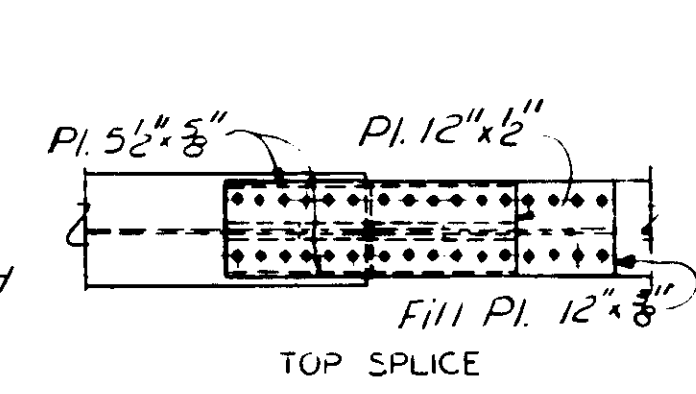
NOTES

Grind edge of flange splice plates to fit flange to web weld.
Bevel end of brg. stiffeners to fit flush against web plate.
For Structural Steel Notes, see Sheet 40.

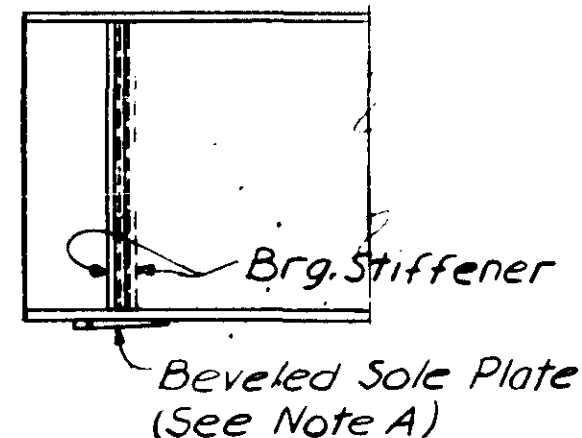
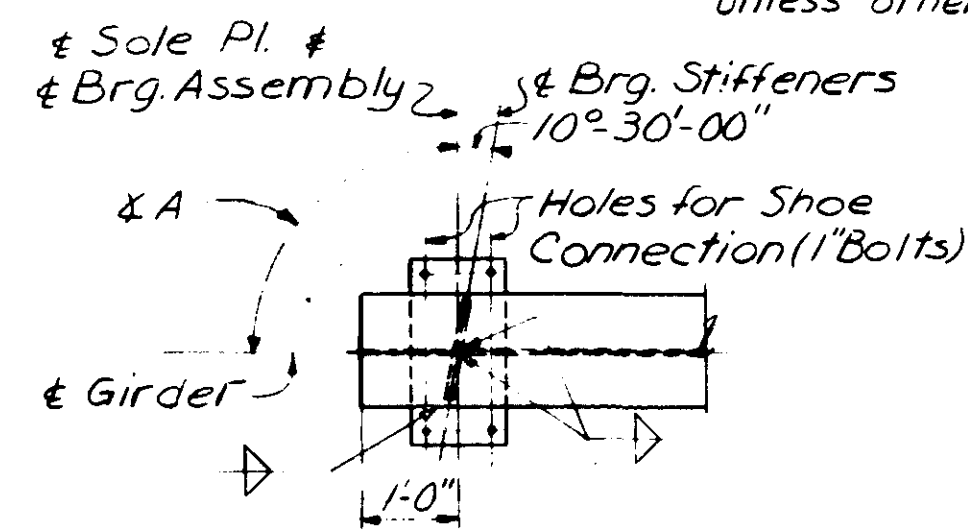
Note A: Sole Plate to be 3/4" thick at Sole Plate. Other dimensions same as Plate A shown on bearing assemblies. Holes in Sole Pl. to match holes in Pl. A. Material for Sole Pls. shall be same as the flange pl. to which they are connected.



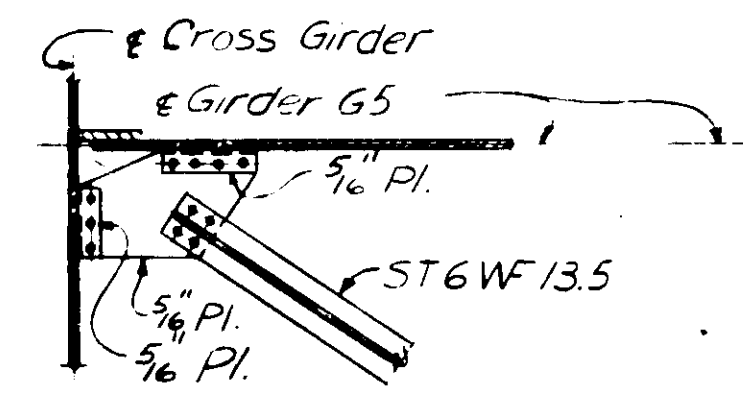
END SUPPORT CROSS GIRDER (Girders G3 and G12)



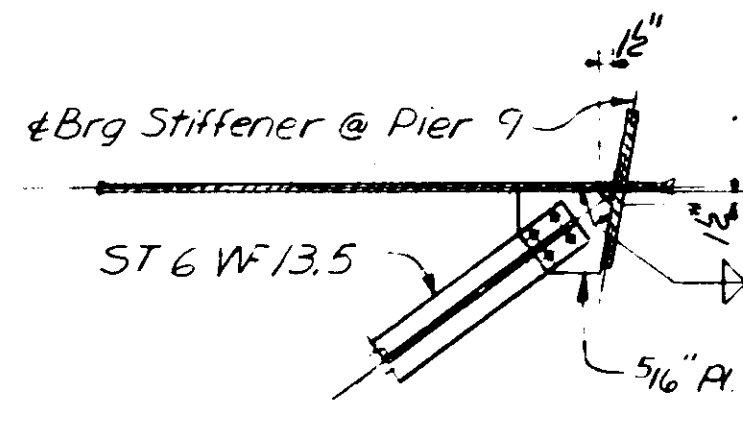
FIELD SPLICE TYPE C Girders G1A, G1B and G1D only



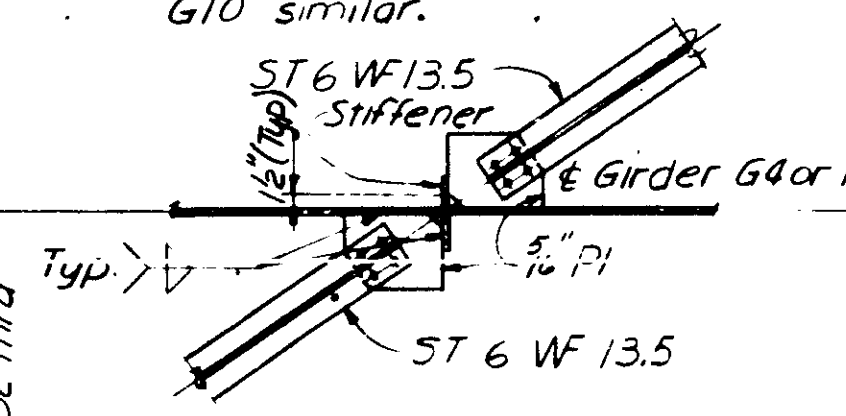
END SUPPORT PIERS 9 & 10 Girders G1A, G1B and G1D only



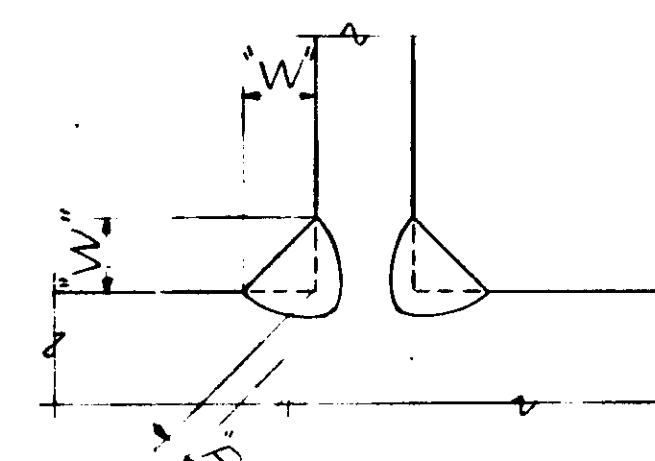
LATERAL CONNECTION AT CROSS GIRDER Note: Girder G5 shown Girder G10 similar.



LATERAL CONNECTION PIER 9 Note: Girder G5 shown, Girder G10 similar



LATERAL CONNECTION AT GIRDERS G4 & G11 Note: Girders G5 and G12 shown Girders G3 and G10 same by 180° rotation.



SHAPE OF WEB PLATE - SPAN 10

SIZE OF FLANGE TO WEB FILLET WELD OF MAIN STRUCTURAL MEMBERS		
Flange Thickness Inches	Size Fillet Weld "W" Inches	Min. Weld Per. "P" Inches
To 3/4 incl.	5/8	1/8
Over 3/4 to 1 1/2	3/4	1/8
Over 1 1/2 to 2 1/4	3/4	3/8
Over 2 1/4 to 6	1/2	3/8

Drawn by D.E. DeRamos, Mar. 1964
Checked by M.J. Goodrich, June 64
2063
645/46

DESIGNED BY SVENDRUP & PARCEL AND ASSOCIATES, INC. ENGINEERS - ARCHITECTS ST. LOUIS, MO.

T. H. JOSEPH STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

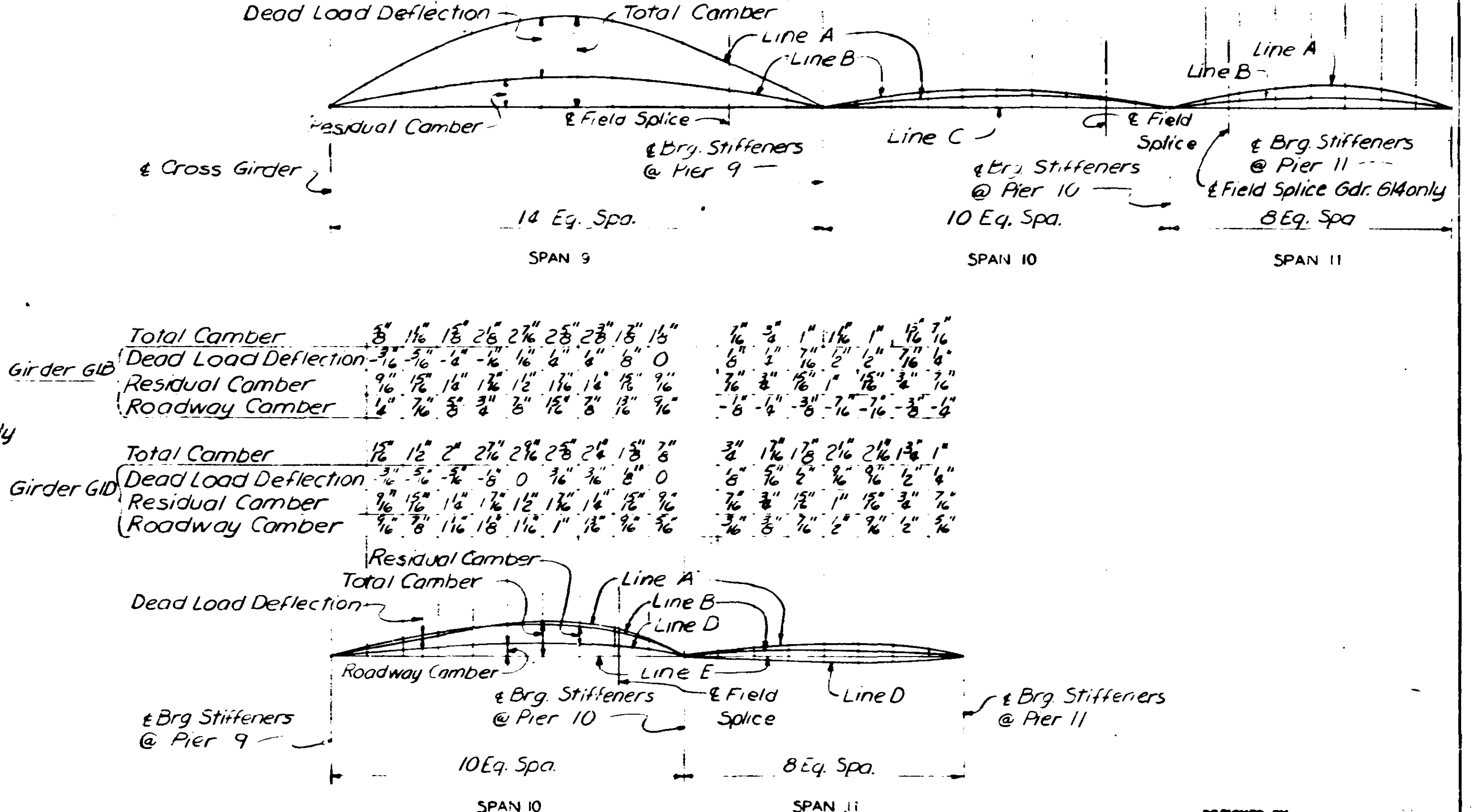
NORTH APPROACH GIRDER SPANS STRUCTURAL STEEL DETAILS

APPROVED - 6-18-65

Girder G1	Total Camber	1/16 3/16 4/16 5/16 6/16 6/16 6/16 5/16 4/16 3/16 2/16 1/16	1/16 1/8 2/16 2/16 2/16 2/16 2/16 2/16 2/16 2/16 1/16 1/16	5/16 5/16 5/16 1/16 1/16 5/16 5/16 5/16 5/16 5/16 5/16 5/16
	Dead Load Deflection	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0
	Residual Camber	1/16 3/16 4/16 5/16 6/16 6/16 6/16 5/16 4/16 3/16 2/16 1/16	1/16 1/8 2/16 2/16 2/16 2/16 2/16 2/16 2/16 2/16 1/16 1/16	5/16 5/16 5/16 1/16 1/16 5/16 5/16 5/16 5/16 5/16 5/16 5/16
	Roadway Camber	1/16 3/16 4/16 5/16 6/16 6/16 6/16 5/16 4/16 3/16 2/16 1/16	1/16 1/8 2/16 2/16 2/16 2/16 2/16 2/16 2/16 2/16 1/16 1/16	5/16 5/16 5/16 1/16 1/16 5/16 5/16 5/16 5/16 5/16 5/16 5/16

Girder G6	Total Camber	1/16 3/16 4/16 5/16 6/16 6/16 6/16 5/16 4/16 3/16 2/16 1/16	1/16 1/8 2/16 2/16 2/16 2/16 2/16 2/16 2/16 2/16 1/16 1/16	5/16 5/16 5/16 1/16 1/16 5/16 5/16 5/16 5/16 5/16 5/16 5/16
Girder G7	Total Camber	1/16 3/16 4/16 5/16 6/16 6/16 6/16 5/16 4/16 3/16 2/16 1/16	1/16 1/8 2/16 2/16 2/16 2/16 2/16 2/16 2/16 2/16 1/16 1/16	5/16 5/16 5/16 1/16 1/16 5/16 5/16 5/16 5/16 5/16 5/16 5/16

Girder G13	Total Camber	1/16 3/16 4/16 5/16 6/16 6/16 6/16 5/16 4/16 3/16 2/16 1/16	1/16 1/8 2/16 2/16 2/16 2/16 2/16 2/16 2/16 2/16 1/16 1/16	5/16 5/16 5/16 1/16 1/16 5/16 5/16 5/16 5/16 5/16 5/16 5/16
Girder G14	Total Camber	1/16 3/16 4/16 5/16 6/16 6/16 6/16 5/16 4/16 3/16 2/16 1/16	1/16 1/8 2/16 2/16 2/16 2/16 2/16 2/16 2/16 2/16 1/16 1/16	5/16 5/16 5/16 1/16 1/16 5/16 5/16 5/16 5/16 5/16 5/16 5/16



NOTE: THE ENGINEER WILL CHECK THE ELEVATIONS AT FIELD BEAM SPLICES AFTER ERECTION. IF VERTICAL ADJUSTMENT IS REQUIRED AT THESE POINTS, AS DETERMINED BY THE ENGINEER, IT SHALL BE DONE BEFORE THE SPLICES ARE RIVETED OR BOLTED INTO FINAL POSITION.

CAMBER DIAGRAMS

Line A indicates top of web plate before dead load deflection occurs.
 Line B indicates top of web plate after calculated dead load deflection has occurred under full dead load.
 Line C parallels Finished Grade and coincides with the top of web plate at & Bearing Stiffeners. (Note: Finished Grade is partly parabolic.)
 Line D indicates shape of top of roadway along & Girder.
 Line E is a line connecting top of web at Cross Girder and at Bearing Stiffeners. Provide 5'-0" tangent each side of & field splice.

Drawn by D.E. Erramo, Mar. 1964
 Checked by W.J. Gaddis, June 1964
 2083
 64S177

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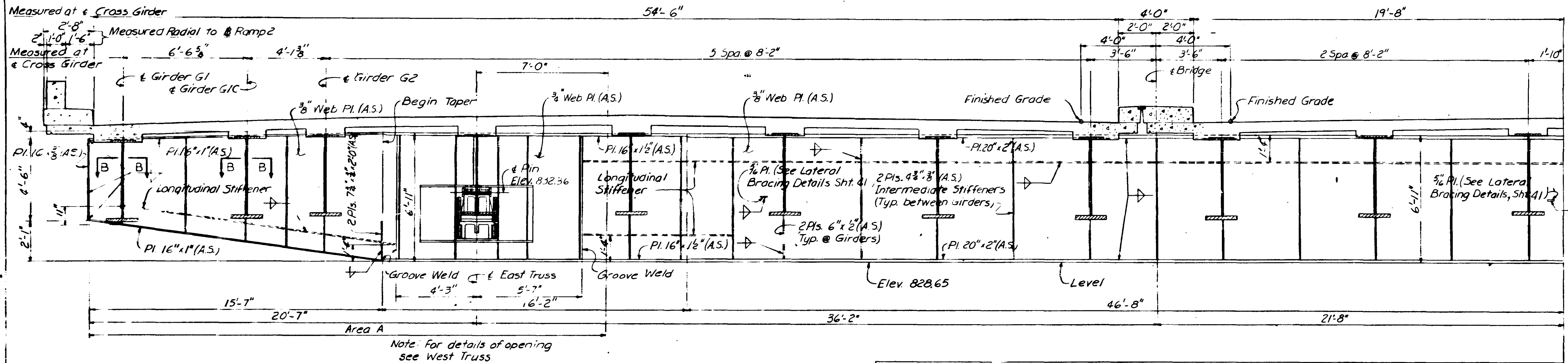
BRIDGE NO. 9340

NORTH APPROACH GIRDER SPANS
 STRUCTURAL STEEL DETAILS

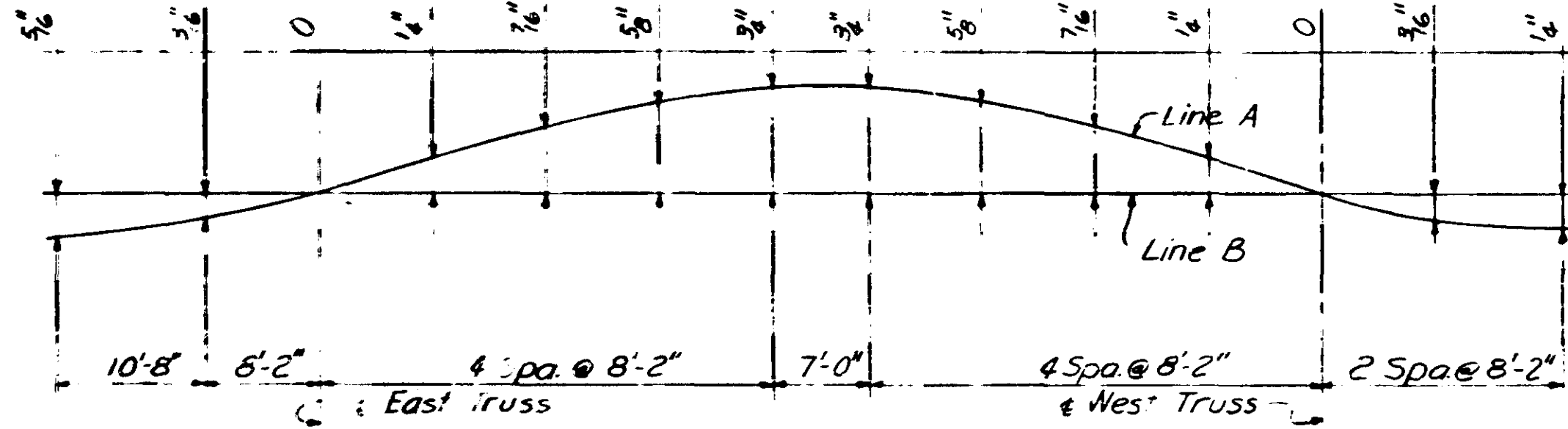
APPROVED - 6-18-65

SHEET 42 OF 94

9340

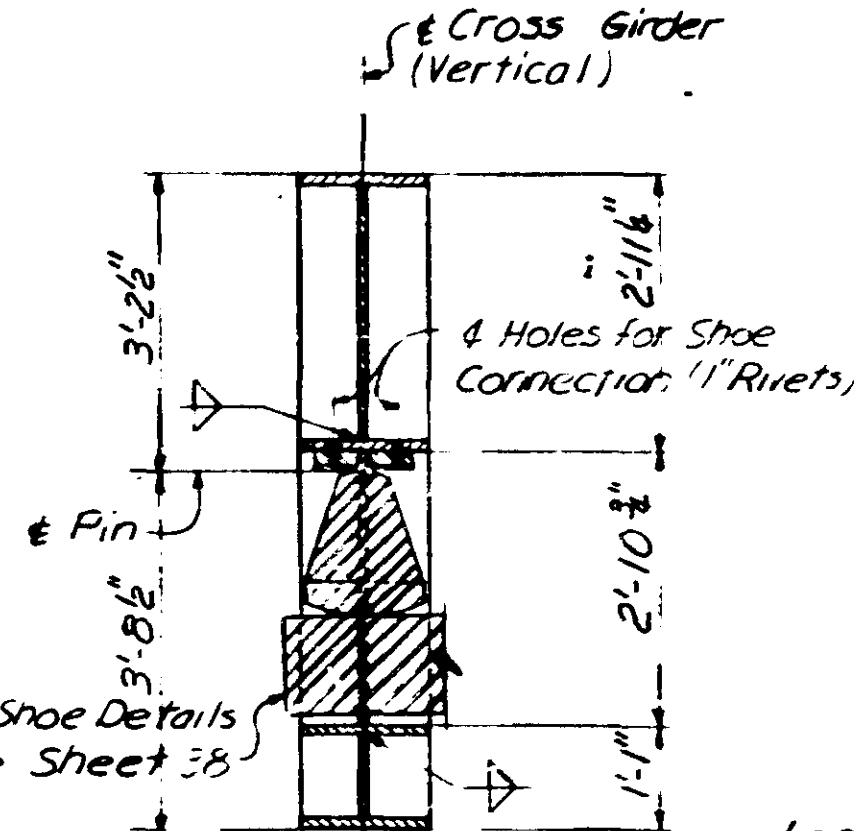


Note: For details of opening see West Truss.



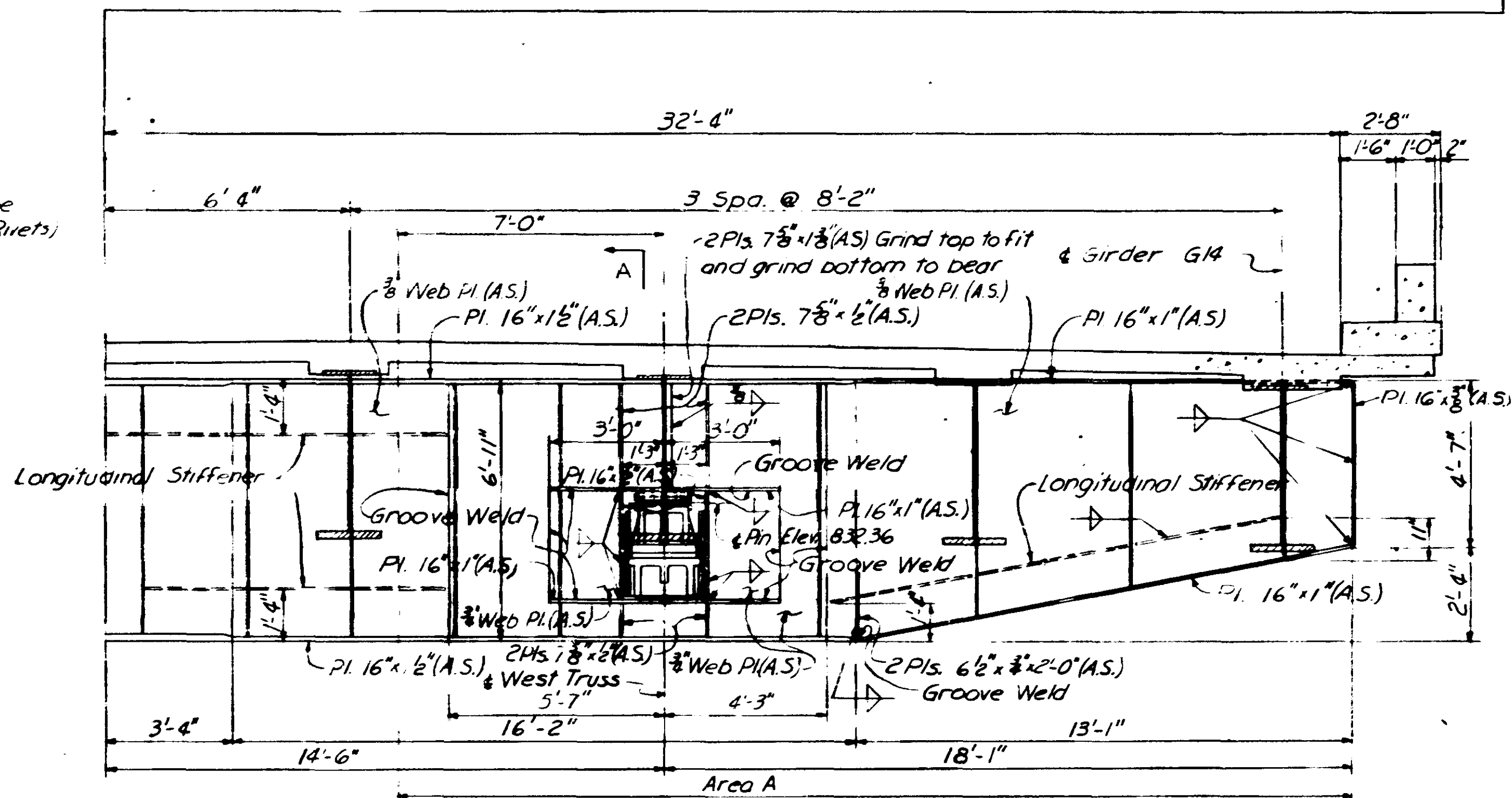
CAMBER DIAGRAM

Note: Line A represents top of top flange before dead load deflection occurs.
 Line B represents top of top flange in its final position.
 Allowance shall be made in Girder connections for Camber Ordinates shown above.



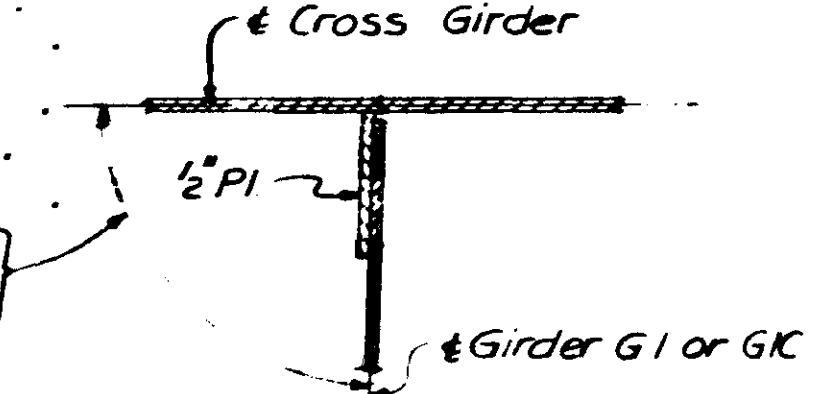
SECTION A-A

Note: Slab and Expansion Device not shown.



NOTES

Note: See Sheet 40 for Structural Steel Notes.
 Intermediate Stiffeners to be equally spaced between Girders.
 For applicable girder details and longitudinal girder connections see Sheet 41.
 Longitudinal Stiffeners are PI 4 3/8" x 3/8" (A.S.) and are to be at locations shown.
 Pin Elevations given are the theoretical Final Elevation after all Truss Dead Load Deflection has occurred.
 For Expansion Device Details see Sheet 52.
 Clip corners on all stiffeners to clear flange to web welds.



SECTION B-B

Note: All other girders normal to Cross Girder.

Drawn by D.E. D'Eranno, Mar. 1964
 Checked by W.J. Goodfellow, May 1964

2083
 645161

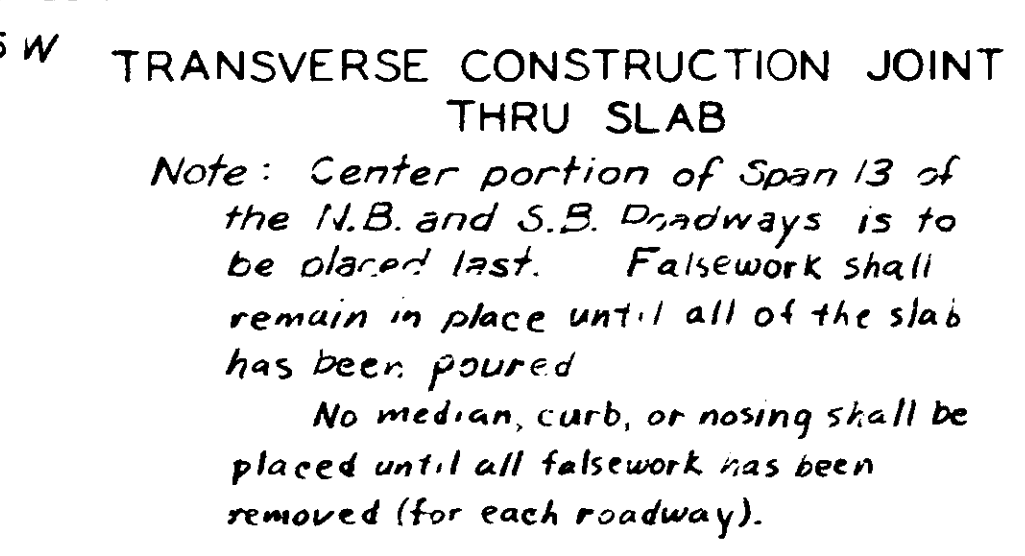
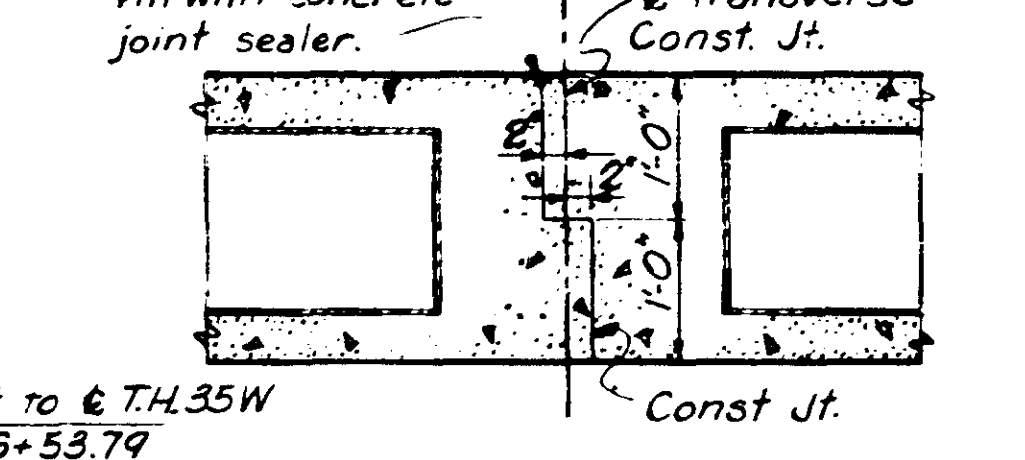
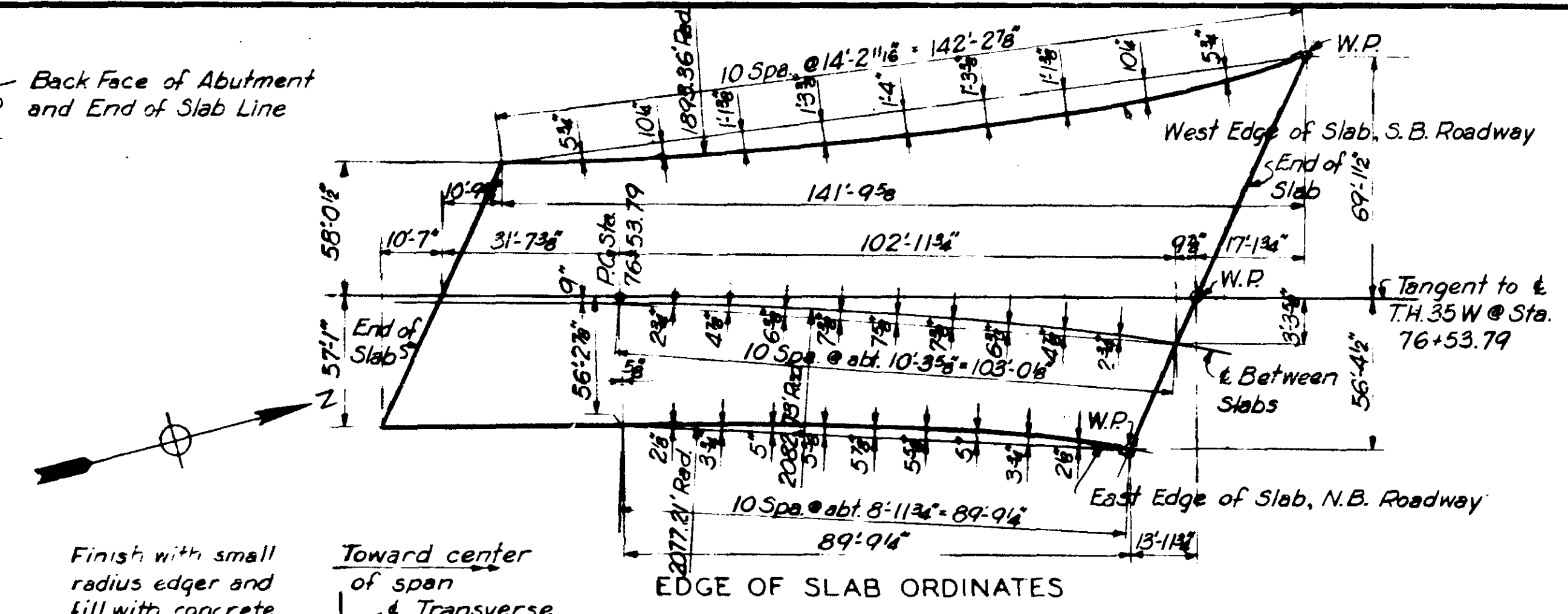
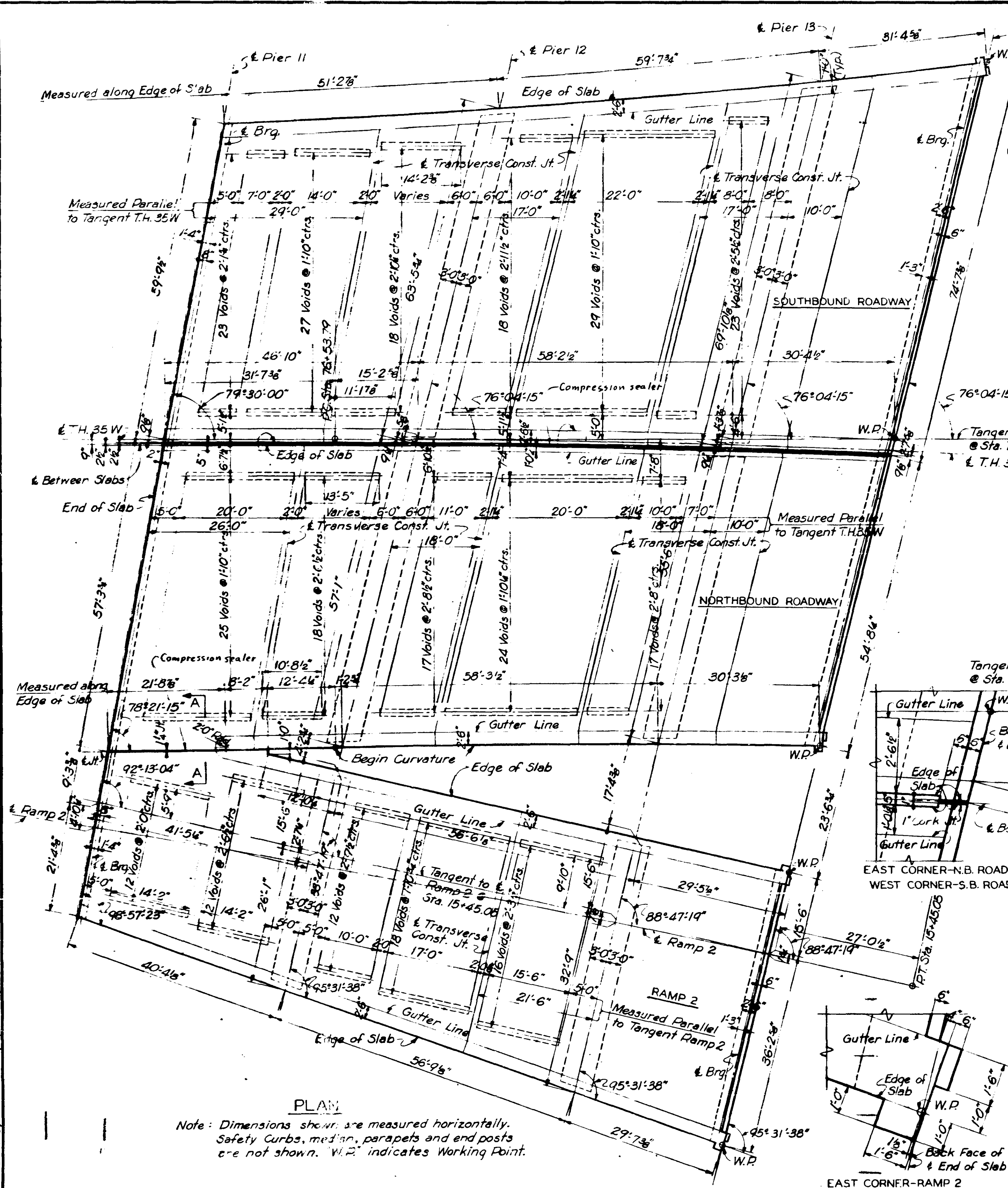
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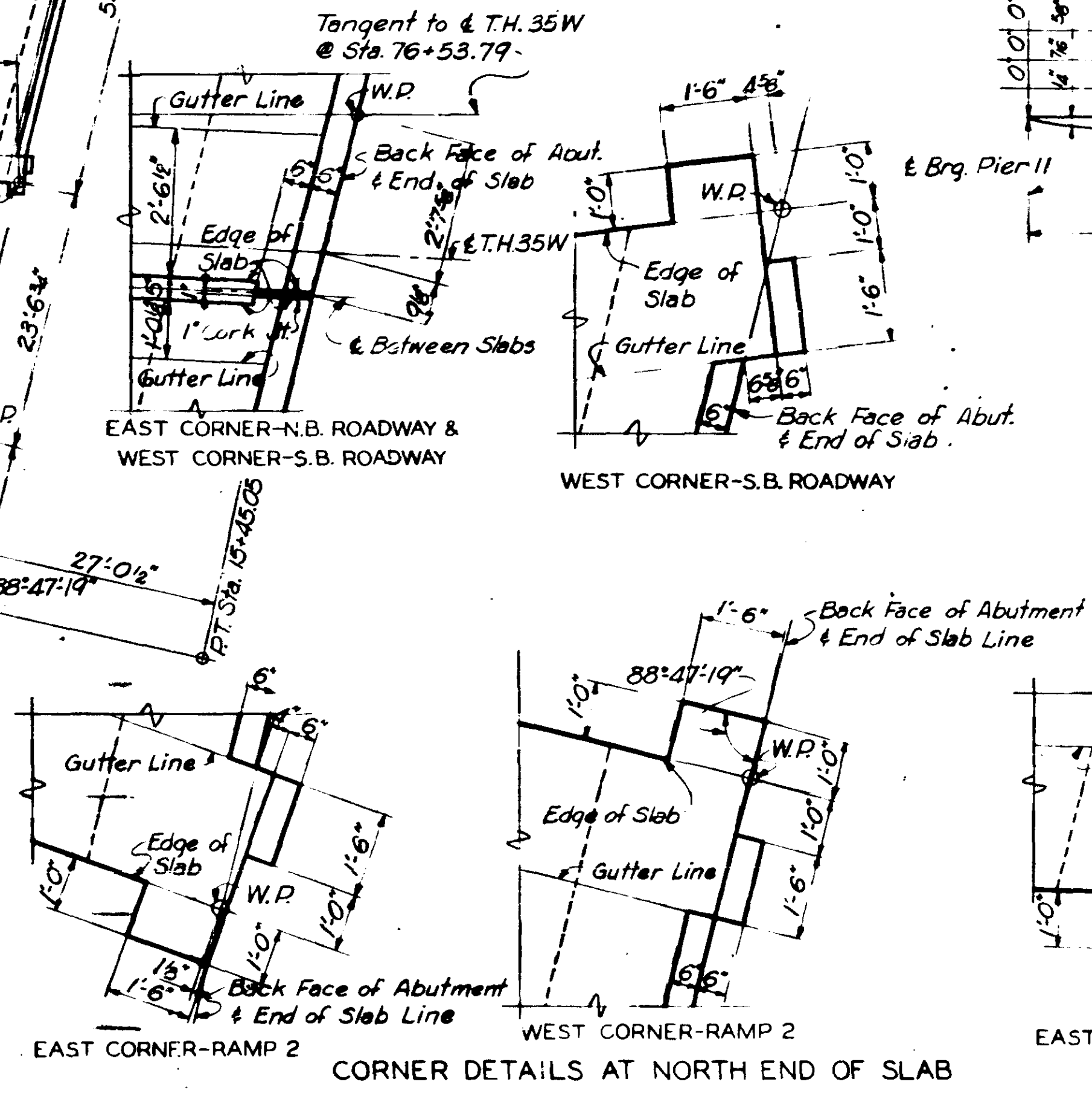
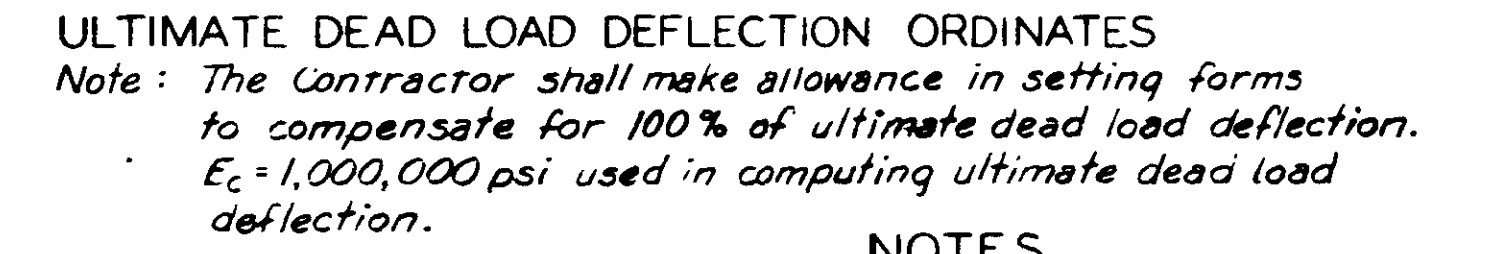
BRIDGE NO. 9340

NORTH APPROACH GIRDER SPANS
 STRUCTURAL STEEL DETAILS

APPROVED - 6-18-65



Station	S.B. Roadway	N.B. Roadway	Ramp 2
0+0.0	0' 0"	0' 0"	0' 0"
1+0.0	1' 11 1/2"	1' 11 1/2"	1' 11 1/2"
2+0.0	2' 23"	2' 23"	2' 23"
3+0.0	3' 34 1/2"	3' 34 1/2"	3' 34 1/2"
4+0.0	4' 46"	4' 46"	4' 46"
5+0.0	5' 57 1/2"	5' 57 1/2"	5' 57 1/2"
6+0.0	6' 69"	6' 69"	6' 69"
7+0.0	7' 80 1/2"	7' 80 1/2"	7' 80 1/2"
8+0.0	8' 92"	8' 92"	8' 92"
9+0.0	9' 103 1/2"	9' 103 1/2"	9' 103 1/2"
10+0.0	10' 115"	10' 115"	10' 115"
11+0.0	11' 26 1/2"	11' 26 1/2"	11' 26 1/2"
12+0.0	12' 38"	12' 38"	12' 38"
13+0.0	13' 49 1/2"	13' 49 1/2"	13' 49 1/2"
14+0.0	14' 61"	14' 61"	14' 61"
15+0.0	15' 72 1/2"	15' 72 1/2"	15' 72 1/2"
16+0.0	16' 84"	16' 84"	16' 84"
17+0.0	17' 95 1/2"	17' 95 1/2"	17' 95 1/2"
18+0.0	18' 107"	18' 107"	18' 107"
19+0.0	19' 118 1/2"	19' 118 1/2"	19' 118 1/2"
20+0.0	20' 130"	20' 130"	20' 130"
21+0.0	21' 41 1/2"	21' 41 1/2"	21' 41 1/2"
22+0.0	22' 53"	22' 53"	22' 53"
23+0.0	23' 64 1/2"	23' 64 1/2"	23' 64 1/2"
24+0.0	24' 76"	24' 76"	24' 76"
25+0.0	25' 87 1/2"	25' 87 1/2"	25' 87 1/2"
26+0.0	26' 99"	26' 99"	26' 99"
27+0.0	27' 110 1/2"	27' 110 1/2"	27' 110 1/2"
28+0.0	28' 122"	28' 122"	28' 122"
29+0.0	29' 133 1/2"	29' 133 1/2"	29' 133 1/2"
30+0.0	30' 145"	30' 145"	30' 145"
31+0.0	31' 56 1/2"	31' 56 1/2"	31' 56 1/2"
32+0.0	32' 68"	32' 68"	32' 68"
33+0.0	33' 79 1/2"	33' 79 1/2"	33' 79 1/2"
34+0.0	34' 91"	34' 91"	34' 91"
35+0.0	35' 102 1/2"	35' 102 1/2"	35' 102 1/2"
36+0.0	36' 114"	36' 114"	36' 114"
37+0.0	37' 125 1/2"	37' 125 1/2"	37' 125 1/2"
38+0.0	38' 137"	38' 137"	38' 137"
39+0.0	39' 148 1/2"	39' 148 1/2"	39' 148 1/2"
40+0.0	40' 160"	40' 160"	40' 160"
41+0.0	41' 71 1/2"	41' 71 1/2"	41' 71 1/2"
42+0.0	42' 83"	42' 83"	42' 83"
43+0.0	43' 94 1/2"	43' 94 1/2"	43' 94 1/2"
44+0.0	44' 106"	44' 106"	44' 106"
45+0.0	45' 117 1/2"	45' 117 1/2"	45' 117 1/2"
46+0.0	46' 129"	46' 129"	46' 129"
47+0.0	47' 140 1/2"	47' 140 1/2"	47' 140 1/2"
48+0.0	48' 152"	48' 152"	48' 152"
49+0.0	49' 163 1/2"	49' 163 1/2"	49' 163 1/2"
50+0.0	50' 175"	50' 175"	50' 175"
51+0.0	51' 28 1/2"	51' 28 1/2"	51' 28 1/2"
52+0.0	52' 40"	52' 40"	52' 40"
53+0.0	53' 51 1/2"	53' 51 1/2"	53' 51 1/2"
54+0.0	54' 63"	54' 63"	54' 63"
55+0.0	55' 74 1/2"	55' 74 1/2"	55' 74 1/2"
56+0.0	56' 86"	56' 86"	56' 86"
57+0.0	57' 97 1/2"	57' 97 1/2"	57' 97 1/2"
58+0.0	58' 109"	58' 109"	58' 109"
59+0.0	59' 120 1/2"	59' 120 1/2"	59' 120 1/2"
60+0.0	60' 132"	60' 132"	60' 132"
61+0.0	61' 143 1/2"	61' 143 1/2"	61' 143 1/2"
62+0.0	62' 155"	62' 155"	62' 155"
63+0.0	63' 166 1/2"	63' 166 1/2"	63' 166 1/2"
64+0.0	64' 178"	64' 178"	64' 178"
65+0.0	65' 189 1/2"	65' 189 1/2"	65' 189 1/2"
66+0.0	66' 201"	66' 201"	66' 201"
67+0.0	67' 212 1/2"	67' 212 1/2"	67' 212 1/2"
68+0.0	68' 224"	68' 224"	68' 224"
69+0.0	69' 235 1/2"	69' 235 1/2"	69' 235 1/2"
70+0.0	70' 247"	70' 247"	70' 247"
71+0.0	71' 258 1/2"	71' 258 1/2"	71' 258 1/2"
72+0.0	72' 270"	72' 270"	72' 270"
73+0.0	73' 281 1/2"	73' 281 1/2"	73' 281 1/2"
74+0.0	74' 293"	74' 293"	74' 293"
75+0.0	75' 304 1/2"	75' 304 1/2"	75' 304 1/2"
76+0.0	76' 316"	76' 316"	76' 316"
77+0.0	77' 327 1/2"	77' 327 1/2"	77' 327 1/2"
78+0.0	78' 339"	78' 339"	78' 339"
79+0.0	79' 350 1/2"	79' 350 1/2"	79' 350 1/2"
80+0.0	80' 362"	80' 362"	80' 362"
81+0.0	81' 373 1/2"	81' 373 1/2"	81' 373 1/2"
82+0.0	82' 385"	82' 385"	82' 385"
83+0.0	83' 396 1/2"	83' 396 1/2"	83' 396 1/2"
84+0.0	84' 408"	84' 408"	84' 408"
85+0.0	85' 419 1/2"	85' 419 1/2"	85' 419 1/2"
86+0.0	86' 431"	86' 431"	86' 431"
87+0.0	87' 442 1/2"	87' 442 1/2"	87' 442 1/2"
88+0.0	88' 454"	88' 454"	88' 454"
89+0.0	89' 465 1/2"	89' 465 1/2"	89' 465 1/2"
90+0.0	90' 477"	90' 477"	90' 477"
91+0.0	91' 488 1/2"	91' 488 1/2"	91' 488 1/2"
92+0.0	92' 500"	92' 500"	92' 500"
93+0.0	93' 511 1/2"	93' 511 1/2"	93' 511 1/2"
94+0.0	94' 523"	94' 523"	94' 523"
95+0.0	95' 534 1/2"	95' 534 1/2"	95' 534 1/2"
96+0.0	96' 546"	96' 546"	96' 546"
97+0.0	97' 557 1/2"	97' 557 1/2"	97' 557 1/2"
98+0.0	98' 569"	98' 569"	98' 569"
99+0.0	99' 580 1/2"	99' 580 1/2"	99' 580 1/2"
100+0.0	100' 592"	100' 592"	100' 592"



NOTES

All concrete in slab to be Mix 3Y6.
 For summary of quantities see Sheet 45.
 For Section A-A see Sheet 46.
 For concrete placing sequence see Sheet 60.

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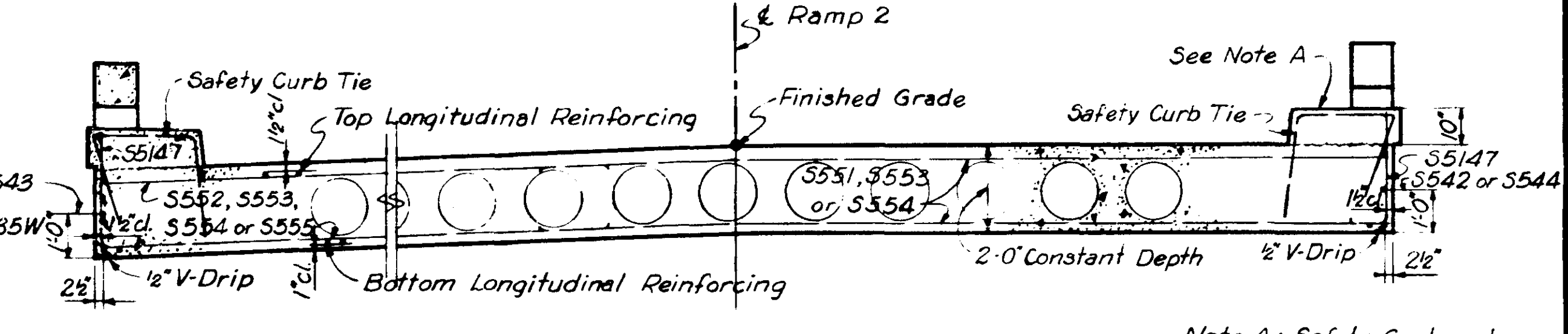
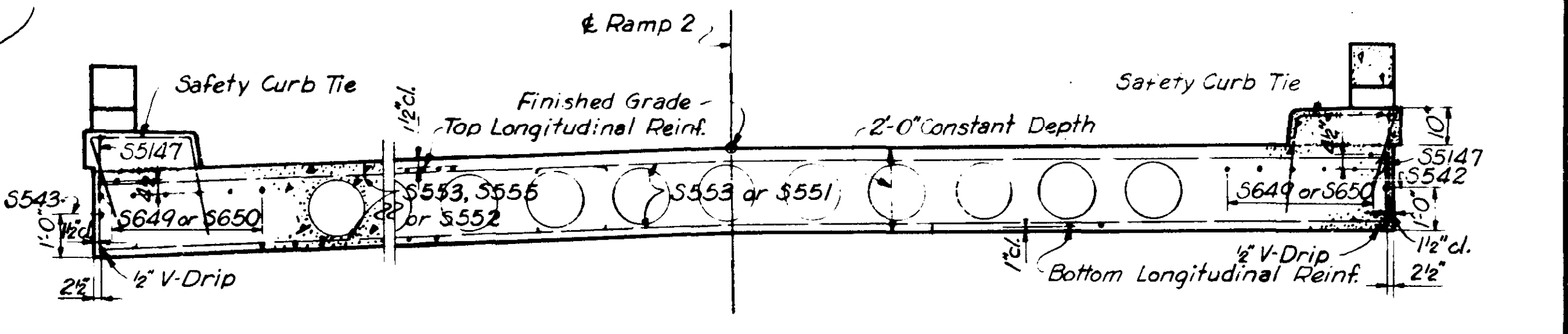
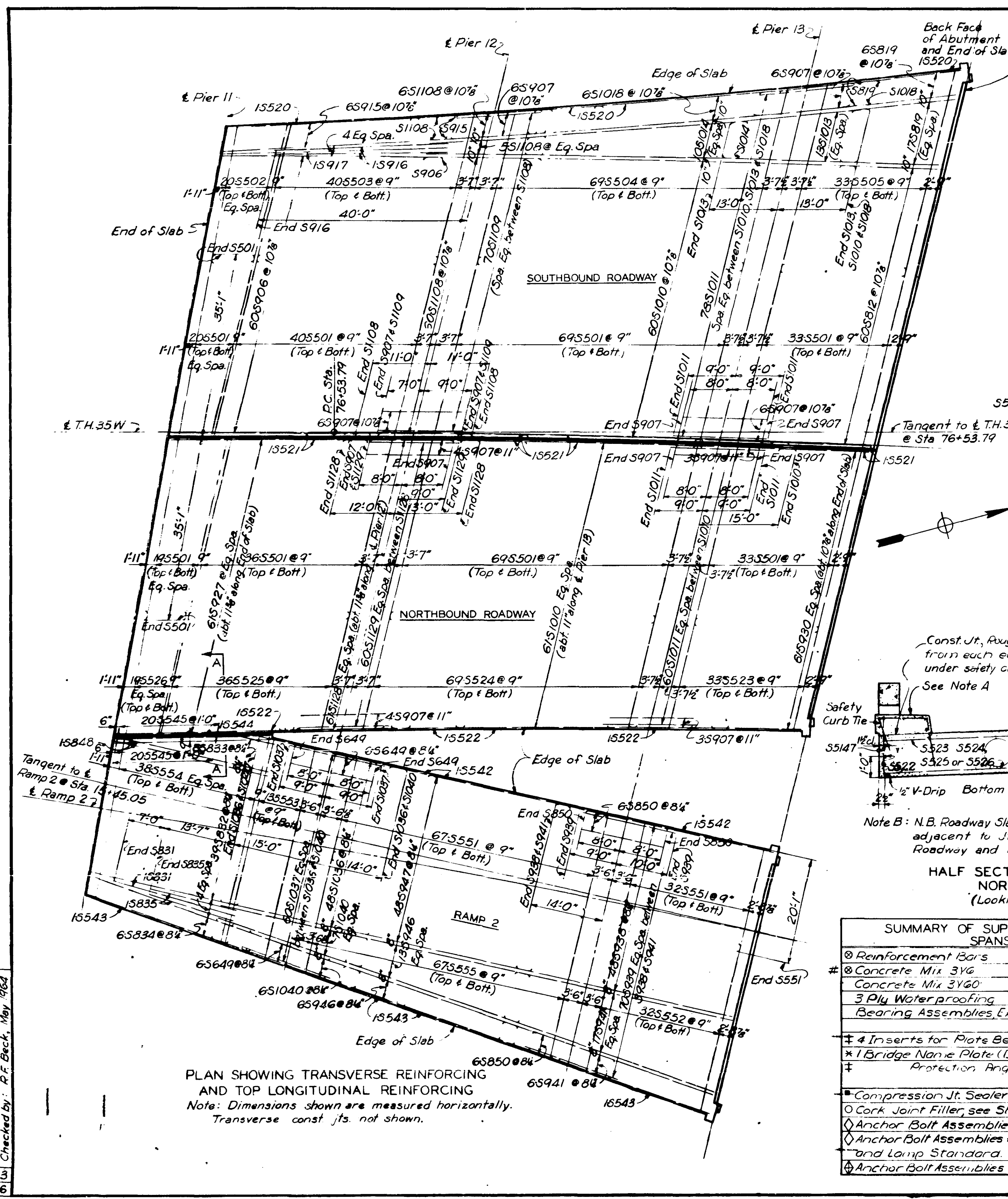
BRIDGE NO. 9340

NORTH APPROACH VOIDED
 SLAB SPANS
 SLAB DETAILS

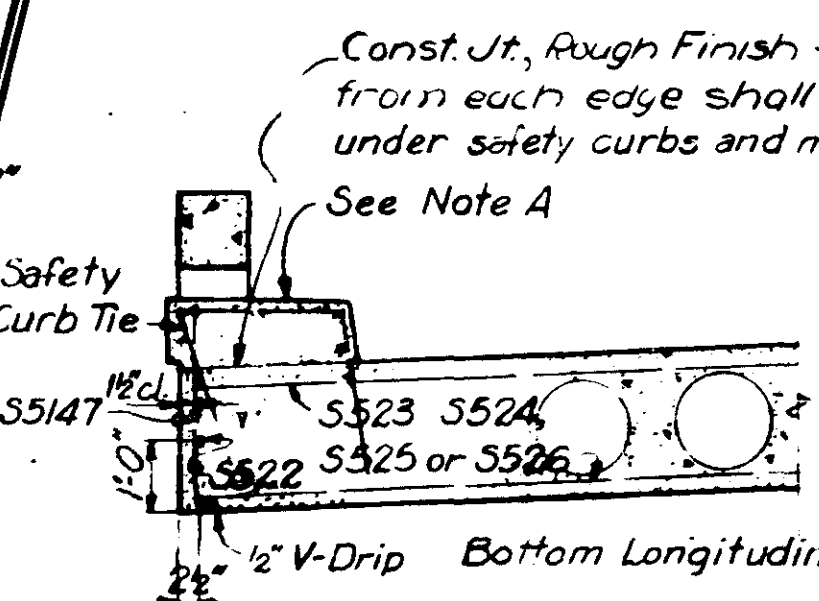
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Drawn by: A. Myers, Feb. 1964
 Checked by: R.F. Beck, Apr. 1964

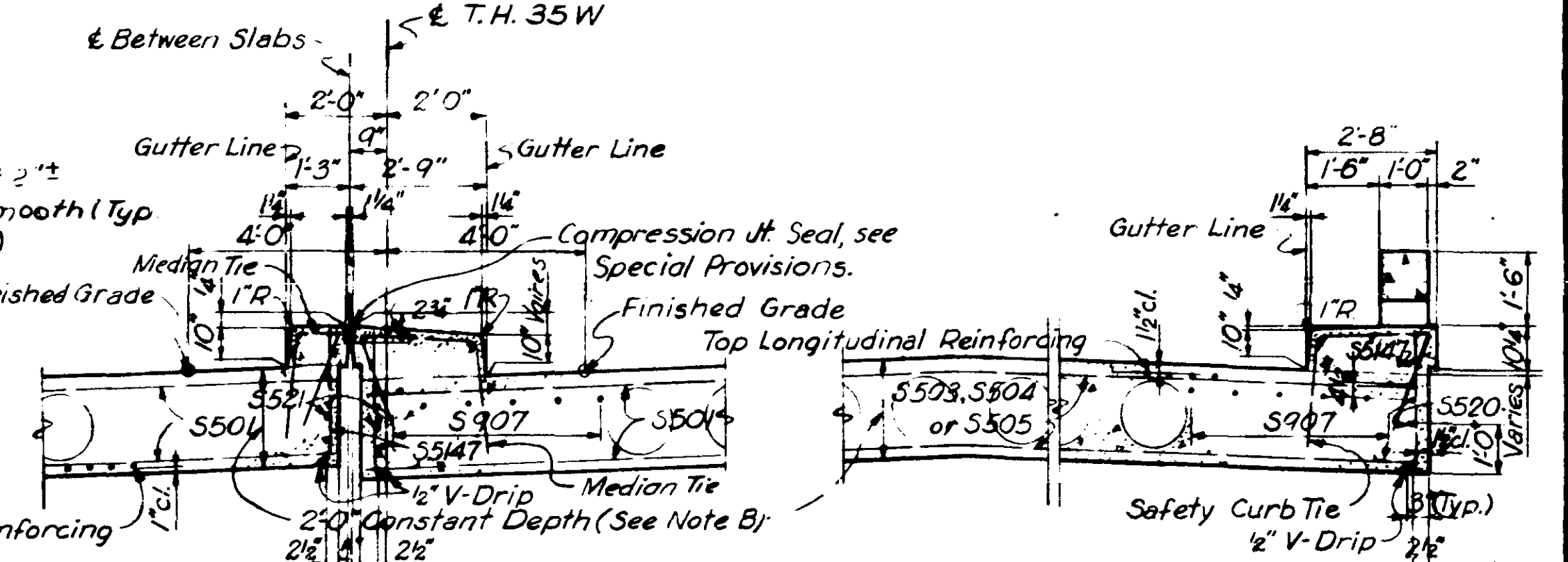
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Note A: Safety Curb and Parapet shown does not apply for Span 12, See Section A-A.



Note B: N.B. Roadway Slab thickness varies adjacent to JT between N.B. Roadway and Ramp 2, see Sheet 67.



Note: Parapet and safety curb dimensions shown are typical unless otherwise shown.

SUMMARY OF SUPERSTRUCTURE QUANTITIES SPANS 12, 13 AND 14	
⊗ Reinforcement Bars	435,050 Lbs.
⊗ Concrete Mix 3Y6	1,561 Cu.Yds.
⊗ Concrete Mix 3Y60	80 Cu.Yds.
3 Ply Water proofing	190 Lin.Ft.
Bearing Assemblies, Expansion, Type 1G	39 Units
‡ 4 Inserts for Plate Beam Guardrail (Detail #B46)	
* 1 Bridge Name Plate (Detail #2100)	
‡ Protection Angle (Detail #B 209)	
■ Compression Jt. Sealer	165 LIN. FT.
○ Cork Joint Filler, see Sheet 63	
◇ Anchor Bolt Assemblies for handrail posts	47 Units
◇ Anchor Bolt Assemblies for combined handrail and Lamp Standard	3 Units
◇ Anchor Bolt Assemblies for Guardrail Post	12 Units

NOTES

For Bill of Reinforcement see Sheet 47.

Work this sheet with Sheets 44 & 46.

CONCRETE QUANTITY DOES NOT INCLUDE VOIDS.

○ To be included in price bid for other items.

‡ To be included in weight of Structural Steel M.H.D. 330G.

* For Bridge No. 9340, F.A.I. 35W-3-58 DATED 1967

◇ Quantity shown includes reinf. and concrete in columns of bents, see Sheet 48.

◇ Included in price bid for Ornamental Metal Railing.

◇ Included in price bid for Structural Plate Beam Guardrail.

■ SEE SUMMARY ON SHEET 63.

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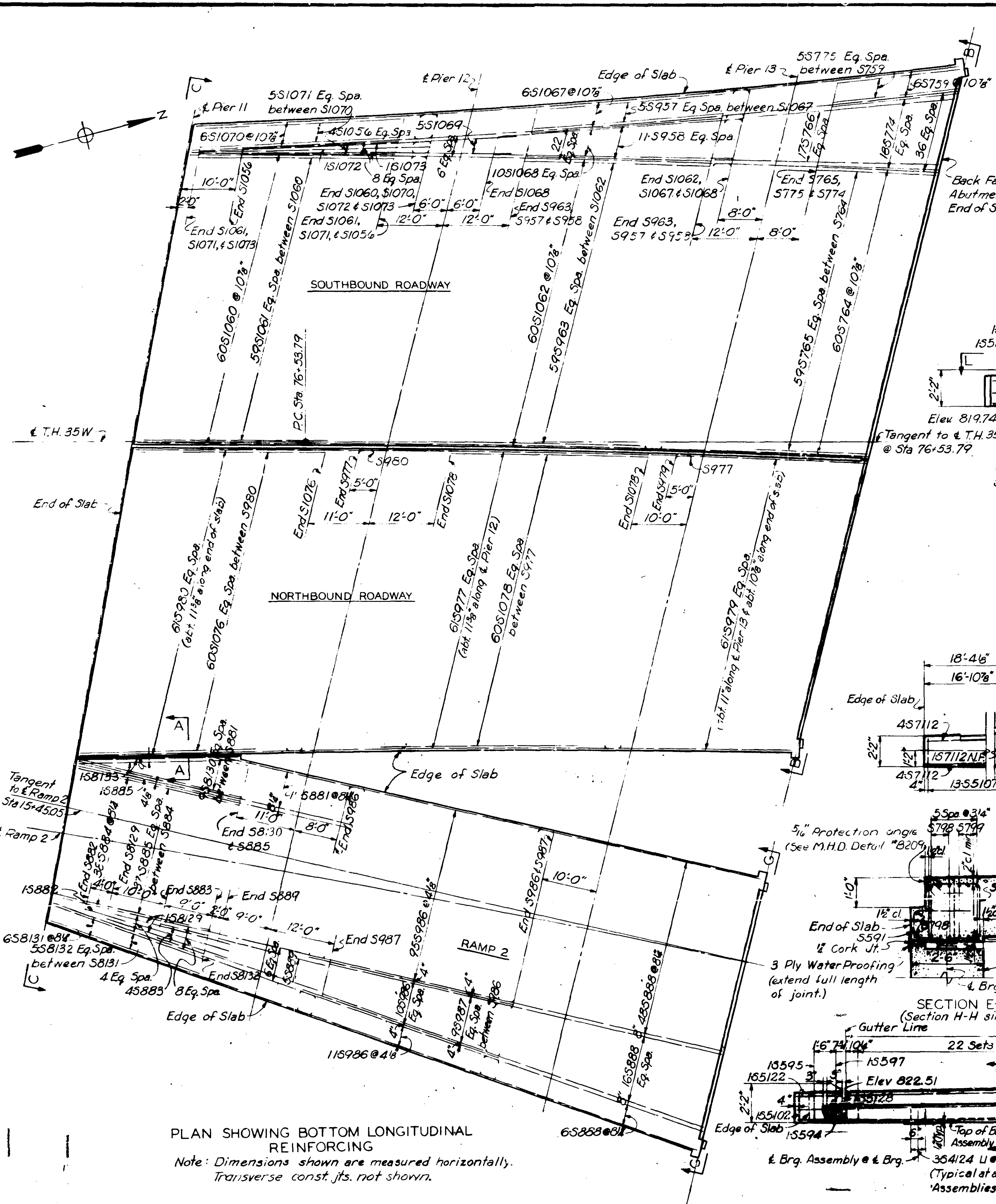
BRIDGE NO. 9340

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SLAB SPANS
SLAB DETAILS.

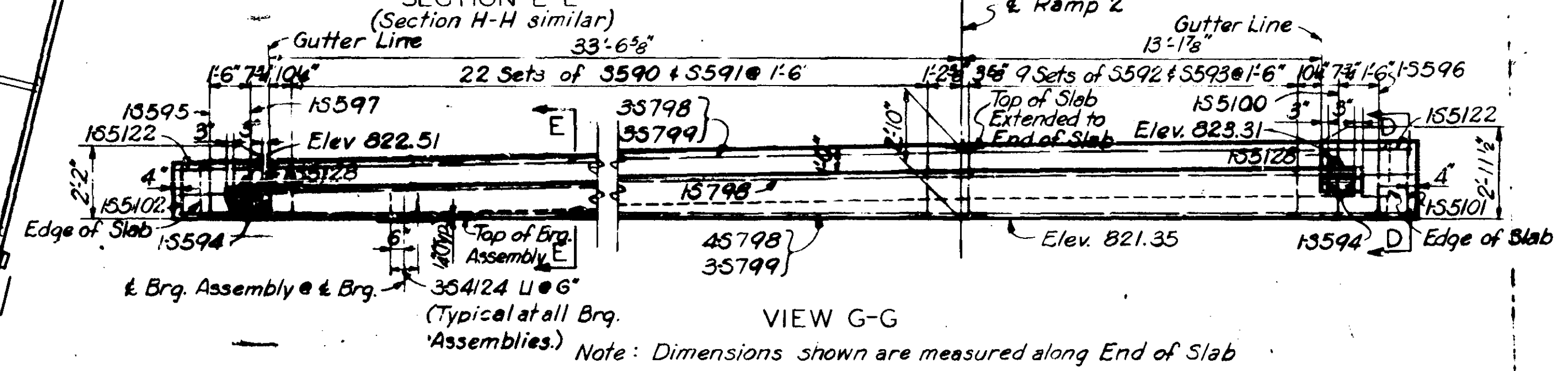
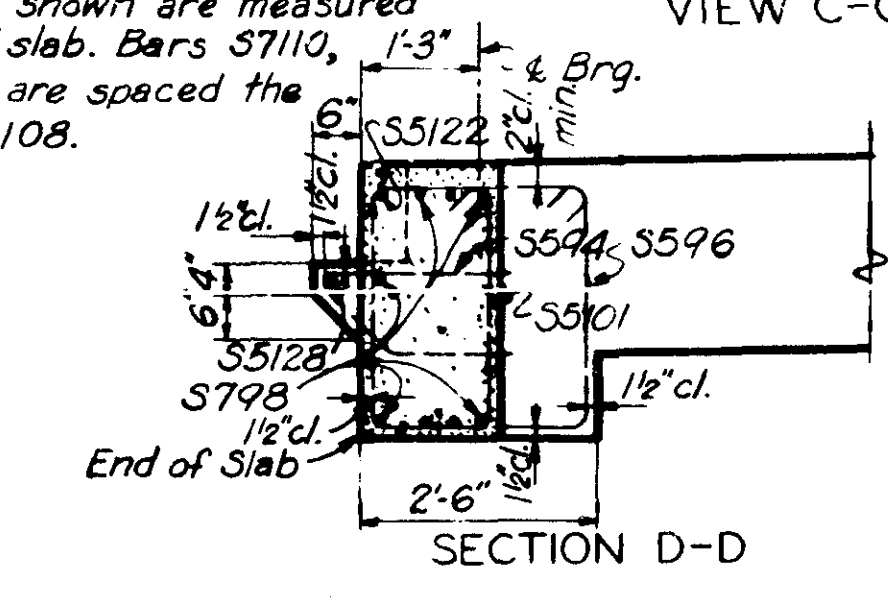
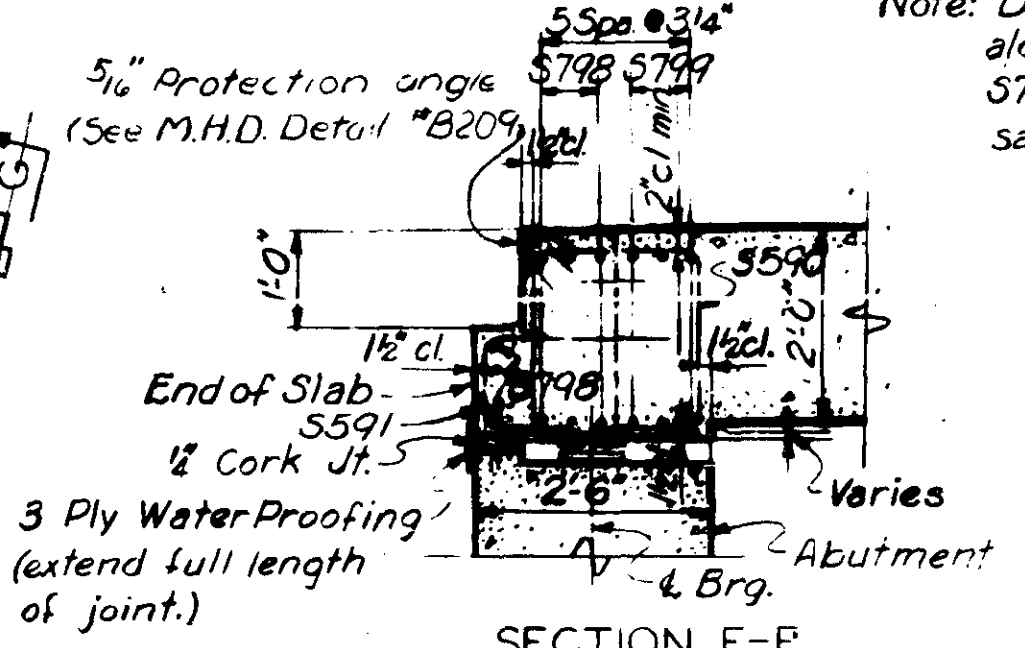
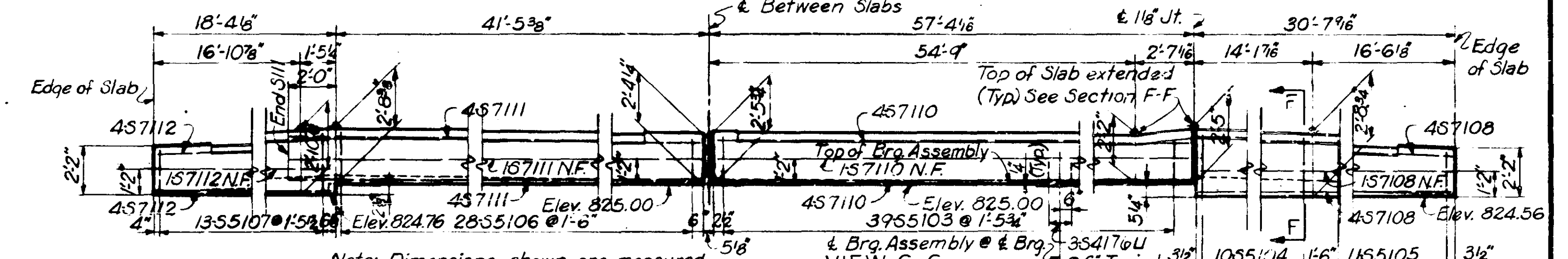
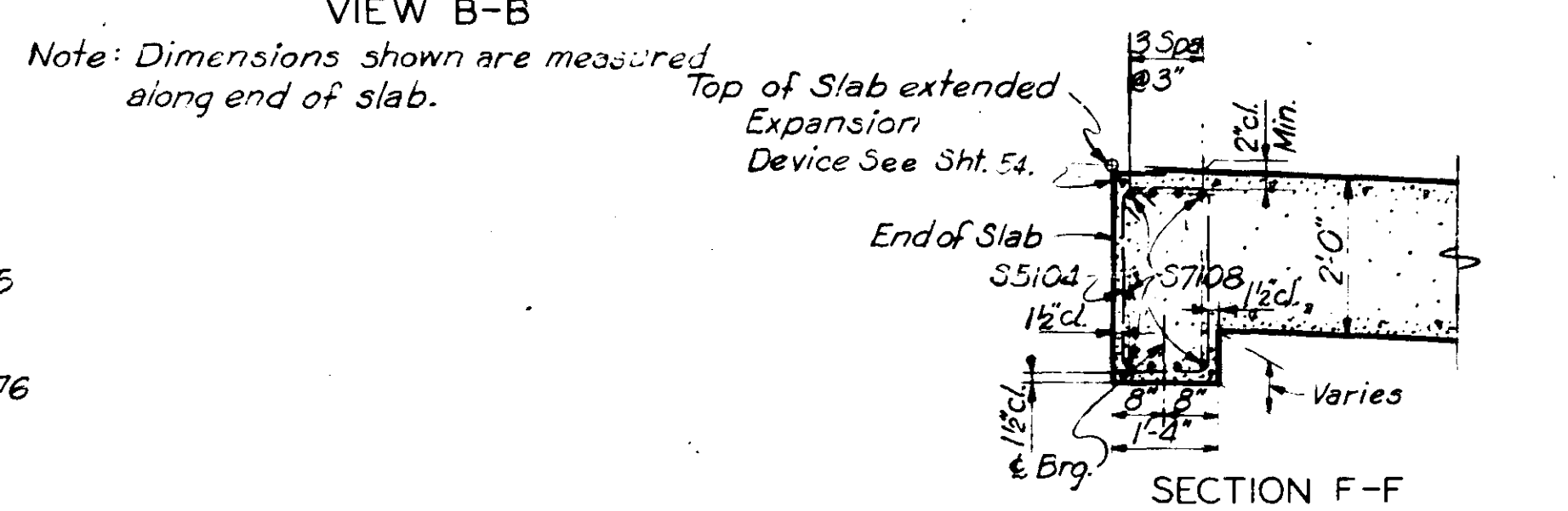
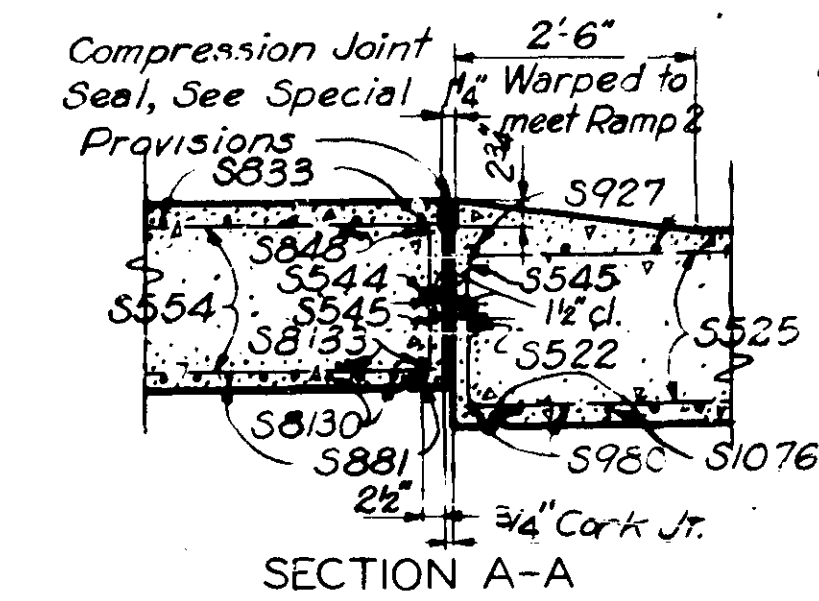
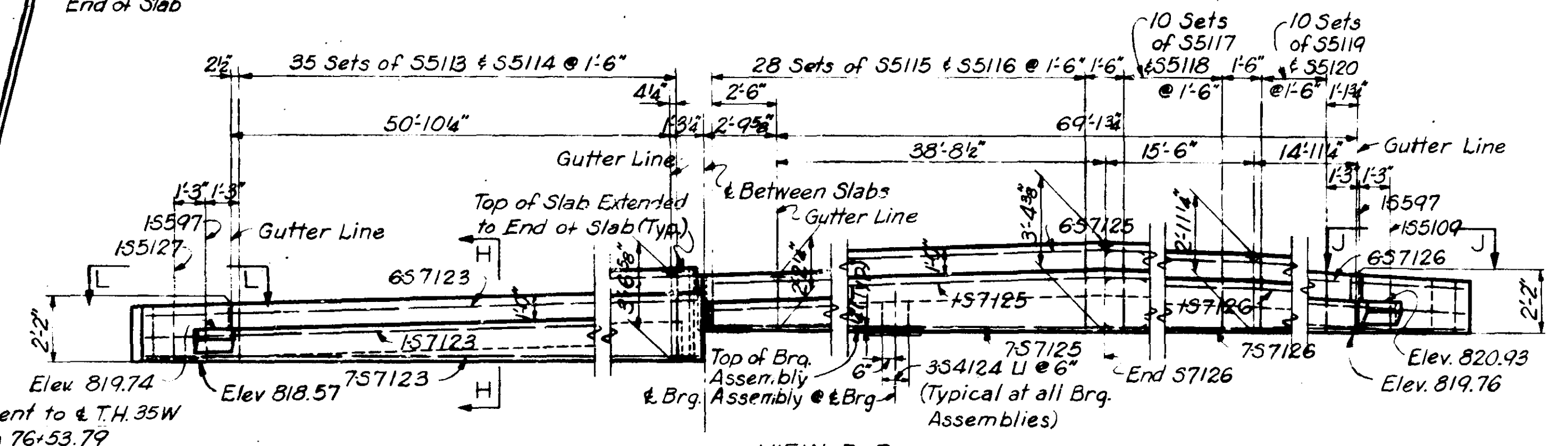
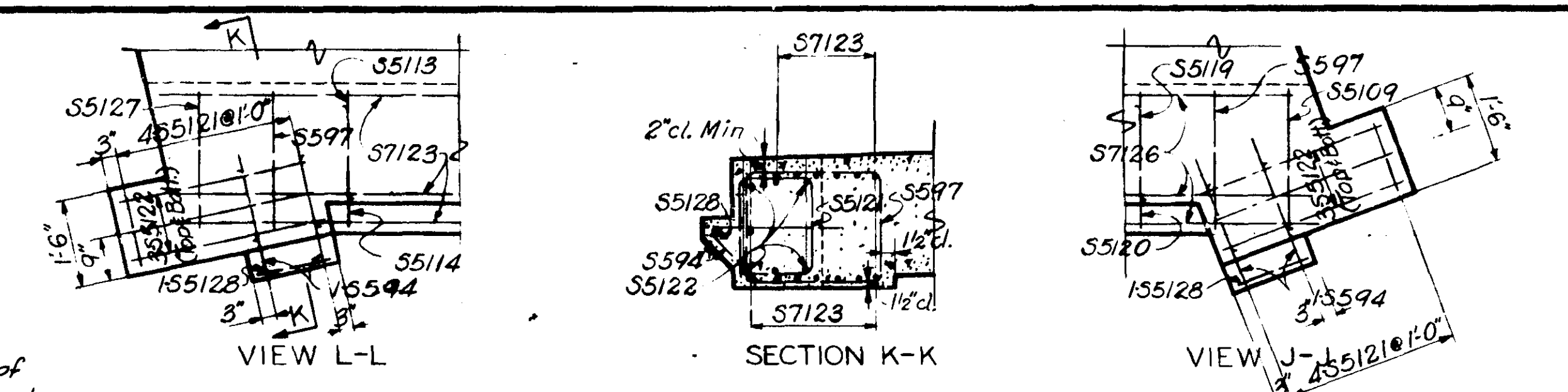
APPROVED - 6-18-65

PLAN SHOWING TRANSVERSE REINFORCING AND TOP LONGITUDINAL REINFORCING
Note: Dimensions shown are measured horizontally. Transverse const jts. not shown.

Drawn by: A. Myers, Feb. 1964
Checked by: P.F. Beck, May 1964
2053
64576



PLAN SHOWING BOTTOM LONGITUDINAL REINFORCING
 Note: Dimensions shown are measured horizontally. Transverse const. jts. not shown.



NOTES
 For Bill of Reinforcement see Sheet 47.
 Work this sheet with Sheets 44 & 45.
 N.F. indicates Near Face.

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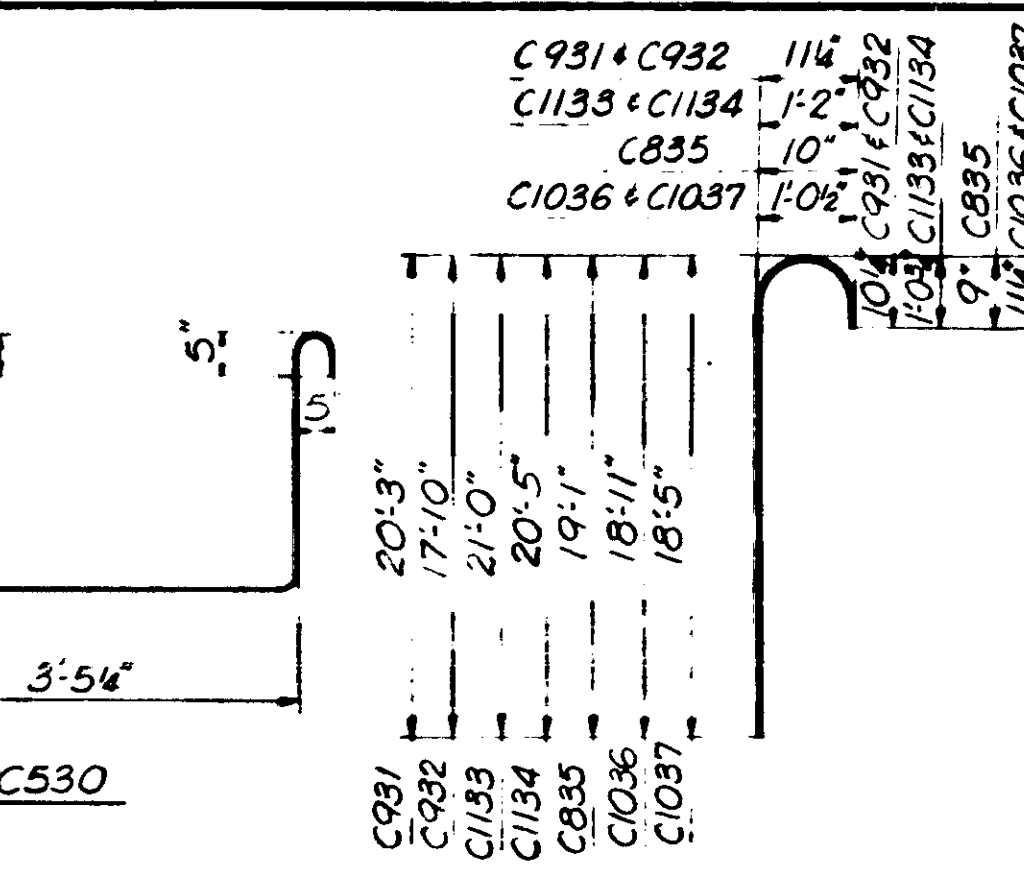
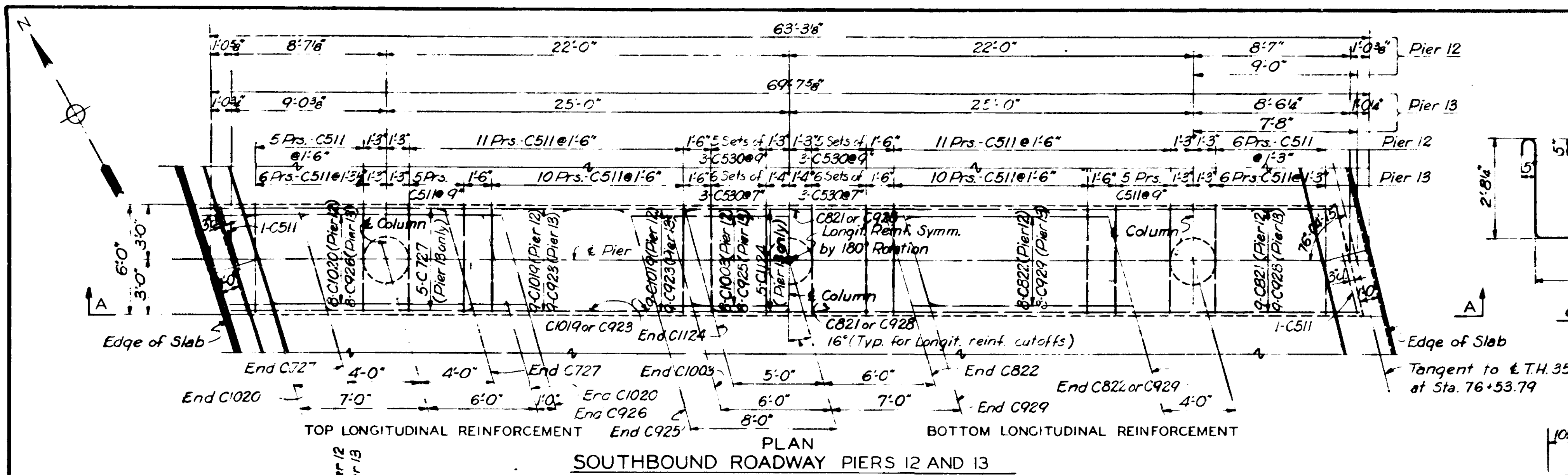
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BRIDGE NO. 9340

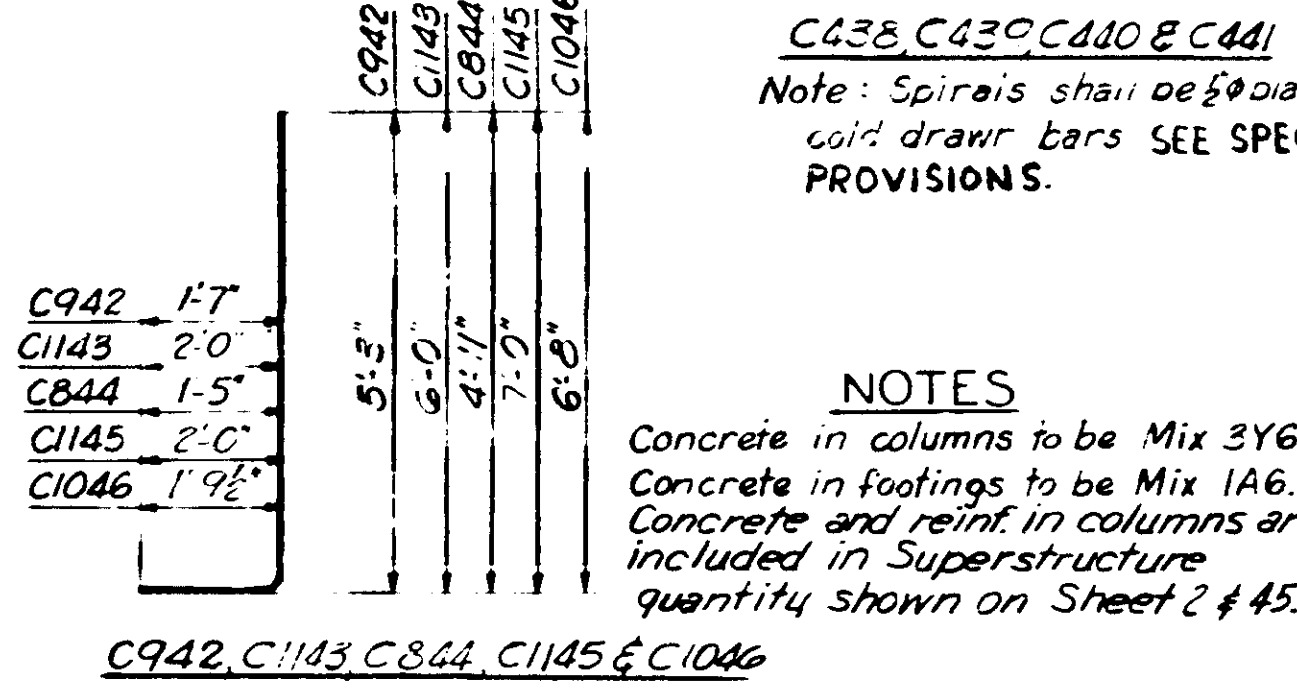
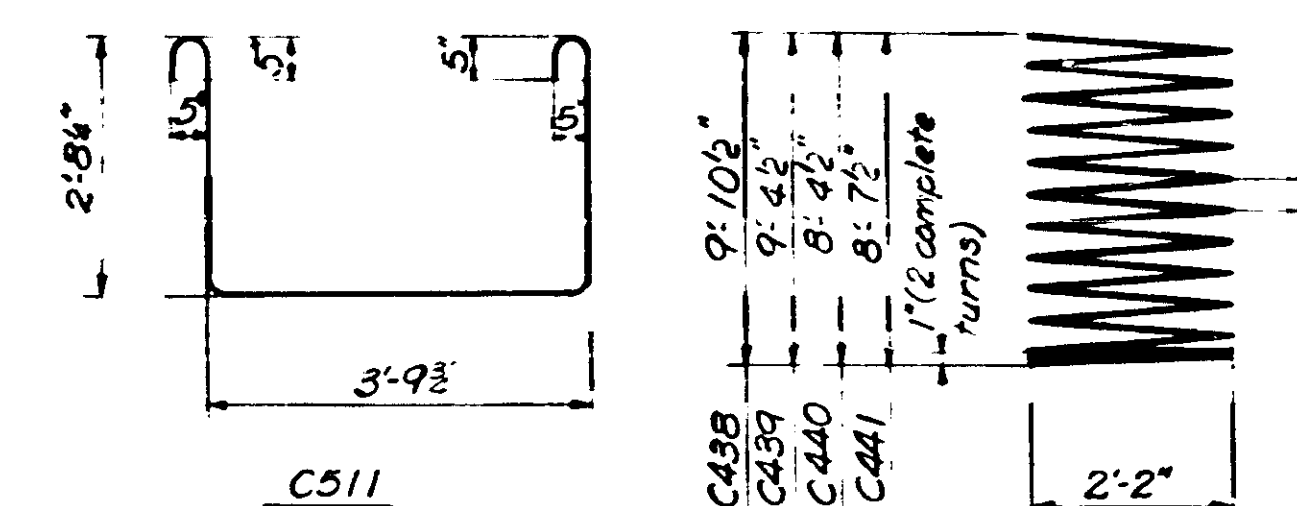
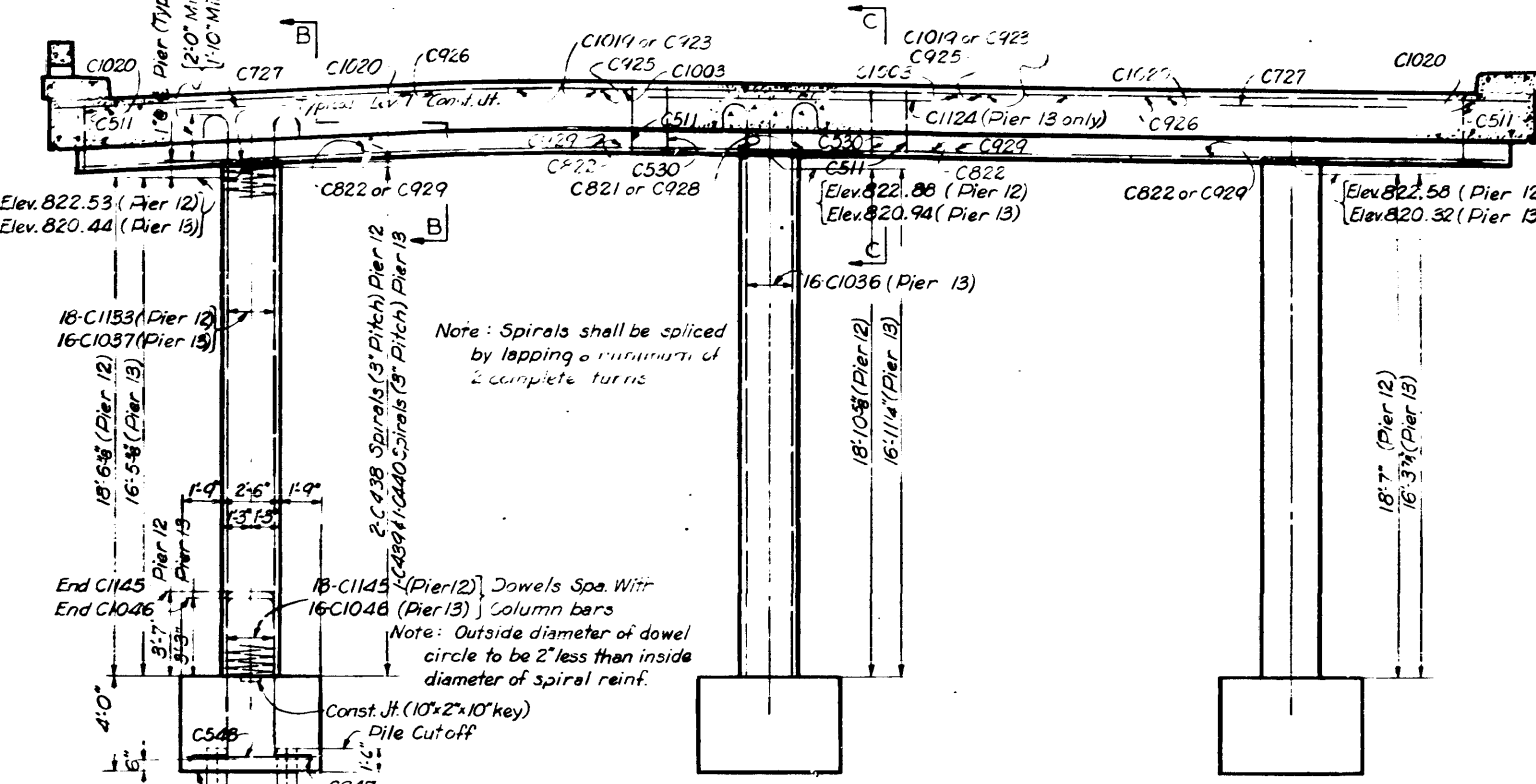
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 SLAB SPANS
 SLAB DETAILS

APPROVED - 6-18-65

Drawn by: A. Myers, Feb. 1964
 Checked by: R.F. Beck, May 1964
 2083
 64586



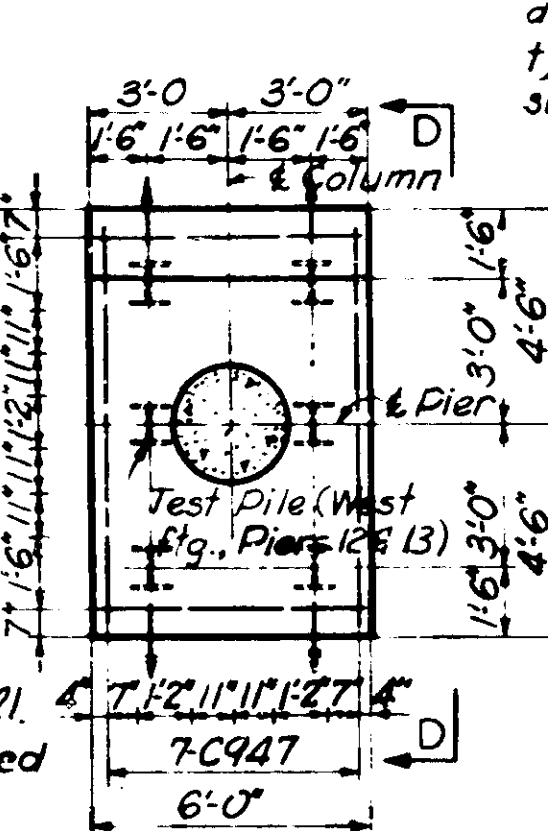
BILL OF REINFORCEMENT FOR PIERS 12 & 13						
Bar No.	Qty	Size	Length	Shape	Location	
C901	9	9	56'-6"	Str.	Cross Beam	
C1002	8	10	10'-0"	Str.	do	
C1003	24	10	12'-0"	Str.	do	
C704	9	7	54'-4"	Str.	do	
C705	16	7	11'-6"	Str.	do	
C906	9	9	5'-11"	Str.	do	
C907	8	9	10'-0"	Str.	do	
C908	16	9	11'-0"	Str.	do	
C709	7	7	53'-0"	Str.	do	
C710	16	7	11'-0"	Str.	do	
C511	48	5	10'-4"	Bent	do	
C912	9	9	41'-4 1/2"	Str.	do	
C713	20	7	7'-0"	Str.	do	
C914	32	9	13'-0"	Str.	do	
C1015	10	10	9'-0"	Str.	do	
C1016	8	10	16'-0"	Str.	do	
C917	9	9	47'-0"	Str.	do	
C718	7	7	45'-0"	Str.	do	
C1019	27	10	23'-3"	Str.	do	
C1020	16	10	13'-0"	Str.	do	
C821	18	8	31'-10"	Str.	do	
C822	16	8	12'-0"	Str.	do	
C923	27	9	25'-0"	Str.	do	
C1124	5	11	10'-0"	Str.	do	
C925	8	9	16'-0"	Str.	do	
C926	16	9	16'-6"	Str.	do	
C727	10	7	8'-0"	Str.	do	
C928	18	9	35'-4"	Str.	do	
C929	16	9	14'-0"	Str.	do	
C530	66	5	10'-0"	Bent	do	
C931	54	9	21'-6"	Bent	Column	
C932	54	9	19'-1"	Bent	do	
C1133	72	11	22'-7"	Bent	do	
C1134	18	11	22'-5"	Bent	do	
C835	30	8	20'-2"	Bent	do	
C1036	16	10	20'-4"	Bent	do	
C1037	32	10	19'-10"	Bent	do	
C438	16	4	27'-4"	Bent	do	
C439	6	4	26'-8"	Bent	do	
C440	10	4	23'-5"	Bent	do	
C441	2	4	24'-3"	Bent	do	
C942	108	9	6'-10"	Bent	Footing	
C1143	36	11	8'-0"	Bent	do	
C844	30	8	6'-0"	Bent	do	
C1145	54	11	9'-0"	Bent	do	
C1046	48	10	8'-0"	Bent	do	
C947	119	9	11'-0"	Bent	do	
C548	136	5	5'-6"	Str.	do	



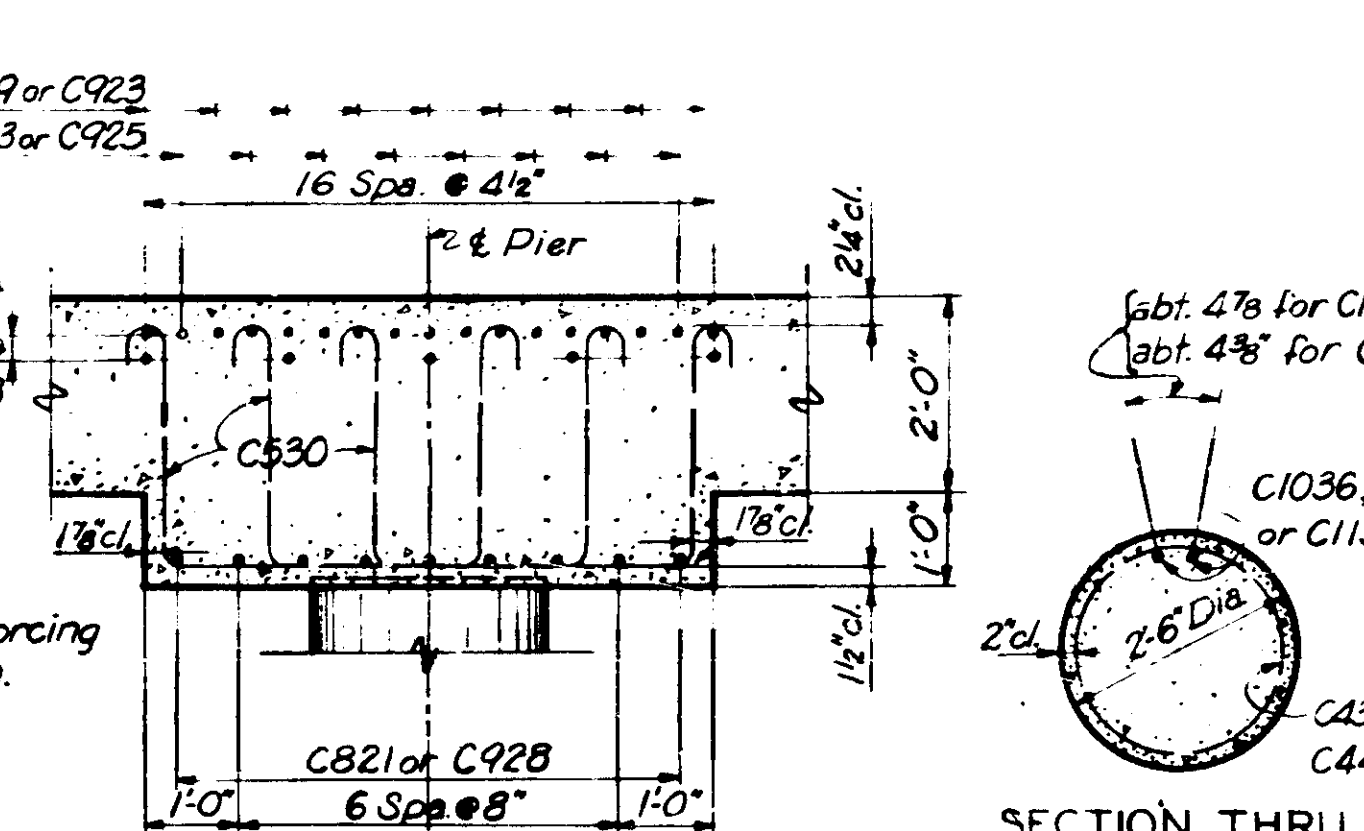
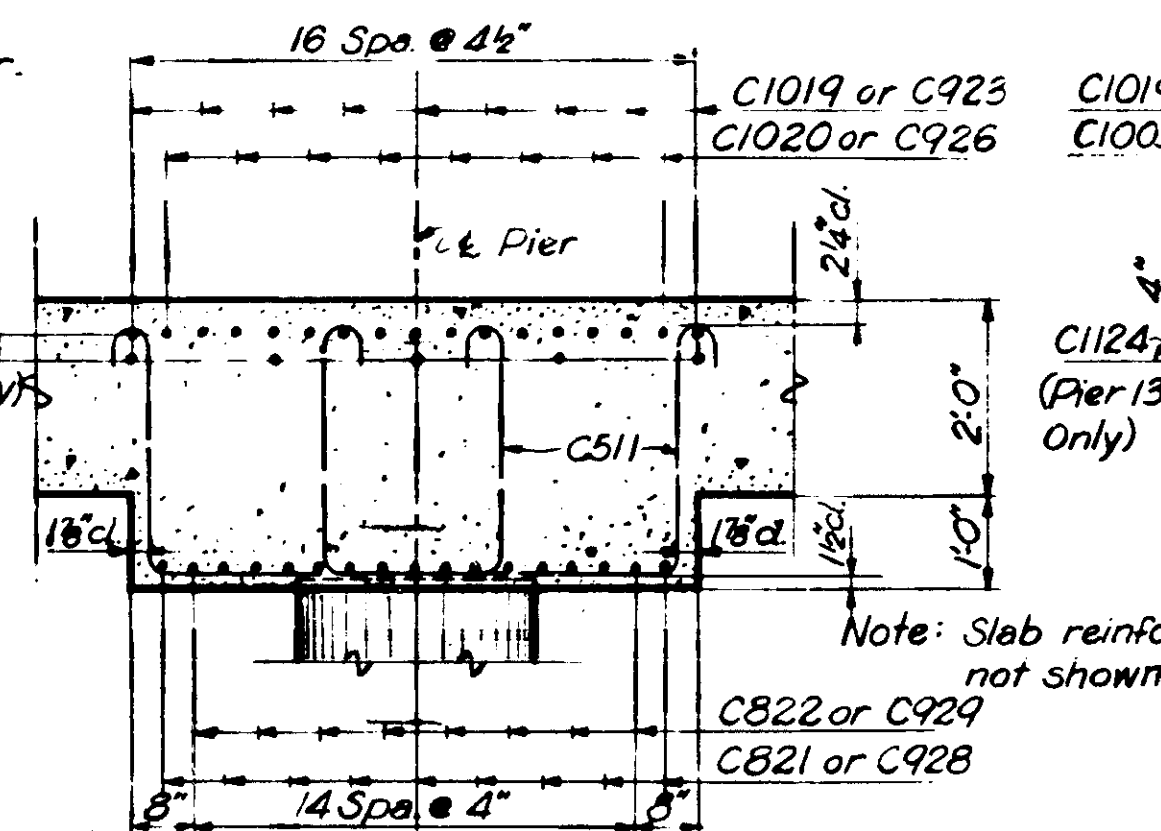
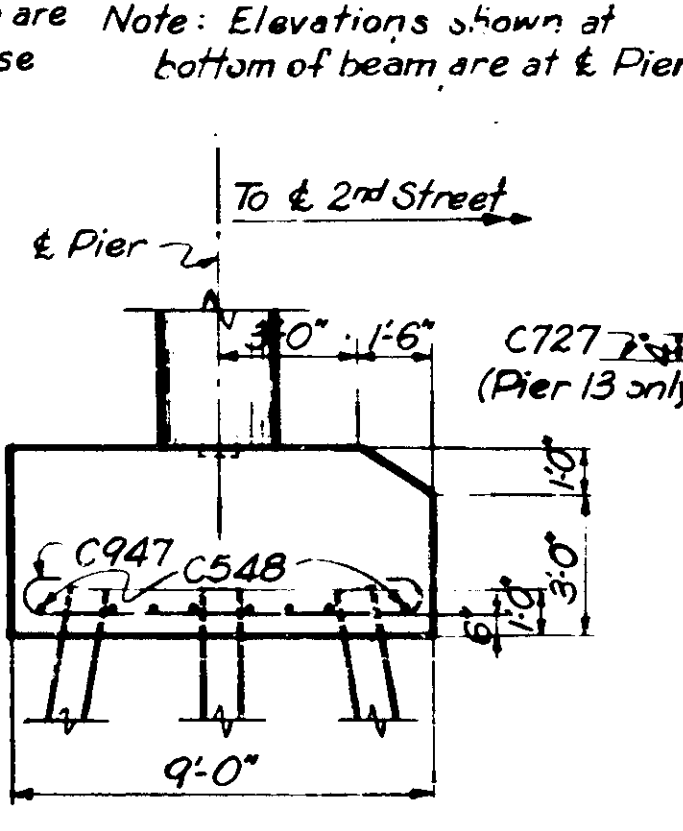
SUMMARY OF QUANTITIES FOR PIERS 12 & 13		
Structure Excavation (Class UE)	605 Cu. Yds.	
10BP42 Steel Piling Delivered	57624 lbs.	
10BP42 Steel Test Piles in Place (20' long)	4 Piles	
10BP42 Steel Test Piles in Place (18' long)	2 Piles	
Reinforcement Bars	14120 lbs.	
Concrete Mix No. 1A6	111 Cu. Yds.	

o Exclusive of Test Piles.

Pile Notes
 2 Steel Test Pile, 18 feet long
 34 Steel Piles, Est. Length 13 feet
 35 Steel Piles req'd for Piers 12 & 13 of the Southbound Roadway
 All piles to be 10BP42.
 Estimated penetration 1 ft. less than length given.
 All Piles to be driven to a minimum bearing of 55 tons per pile.
 Piles marked thus → to be battered 2 in 12 in direction shown.
 For pile splice see M.H.D. Detail B221.
 Pile spacing shown is measured at bottom of footing.



Computed Pile Loads	Tons/Pile
Dead Load	40
Live Load	15
Total	55



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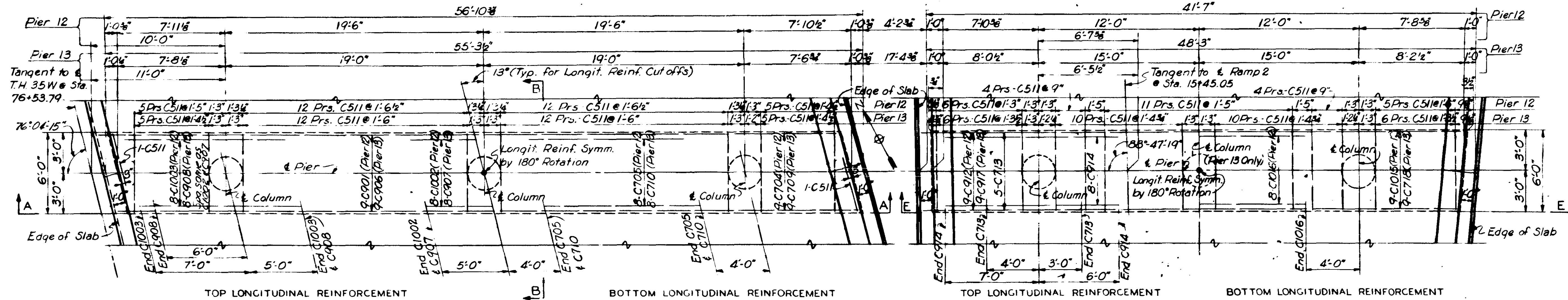
T. H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

NORTH APPROACH VOIDED
 SLAB SPANS
 PIERS 12 AND 13

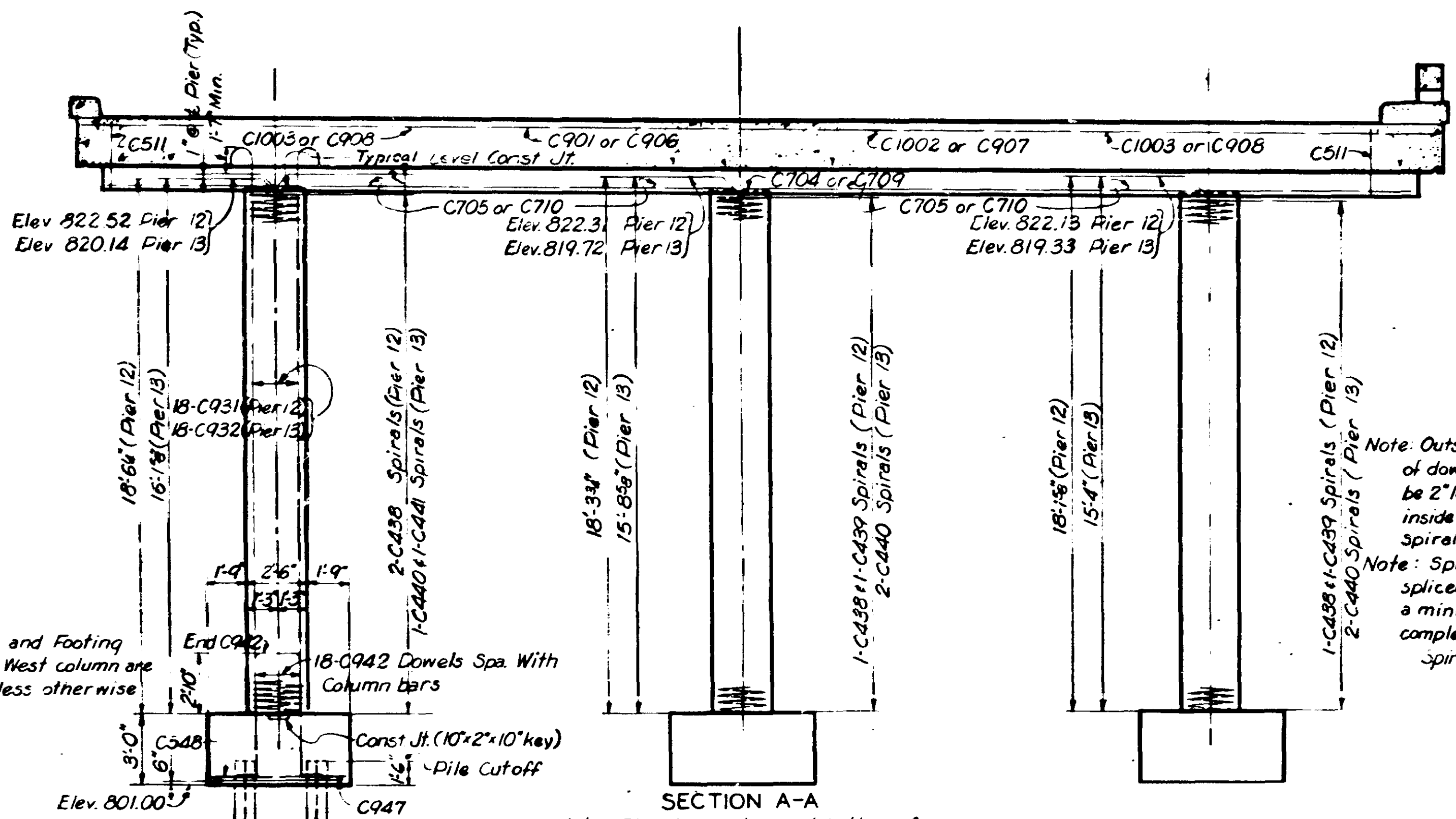
APPROVED - 6-18-65

Drawn by: A. Myers, Mar. 1964
 Checked by: R. F. Beck, May 1964
 2083
 64S134

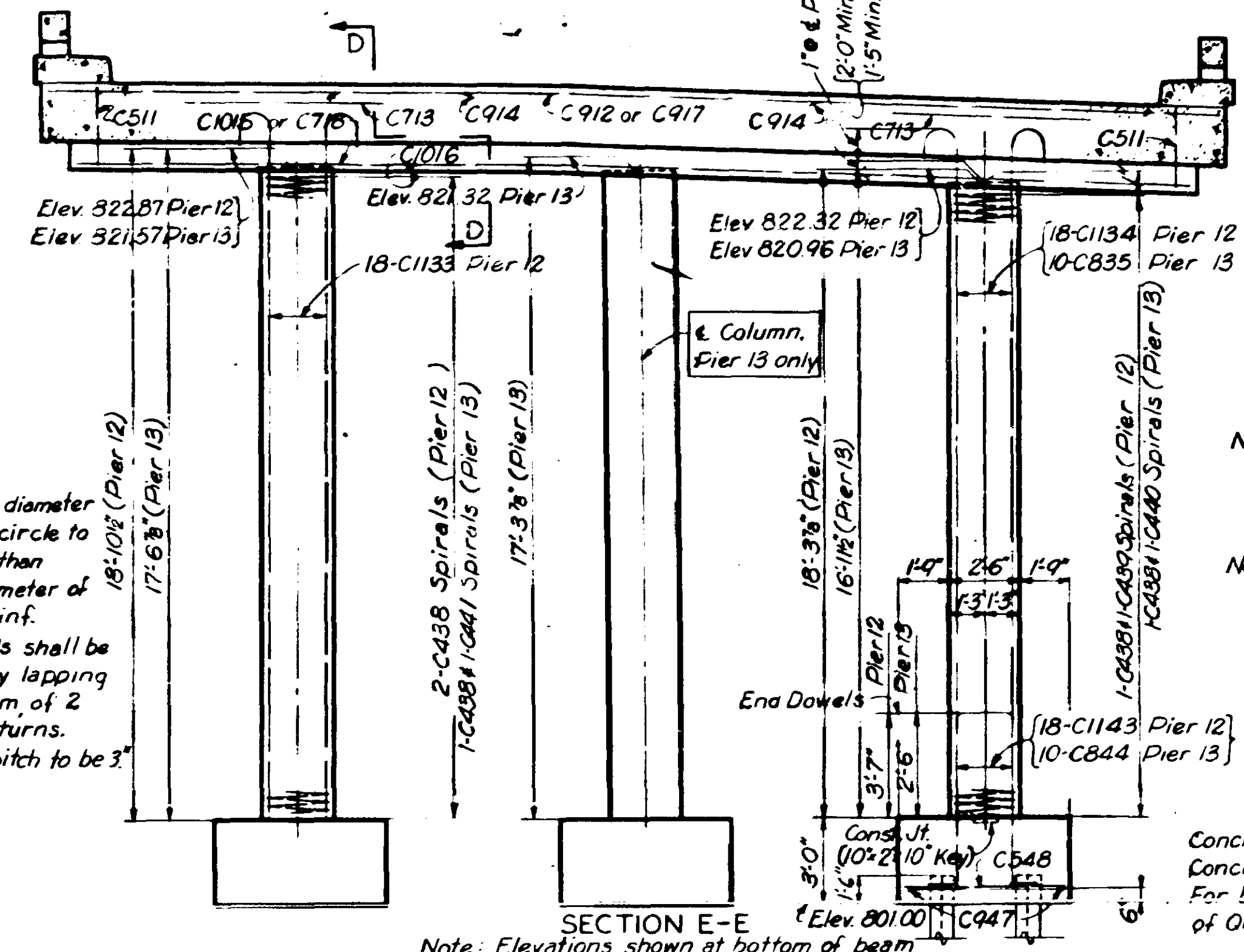


PLAN
NORTHBOUND ROADWAY PIERS 12 AND 13

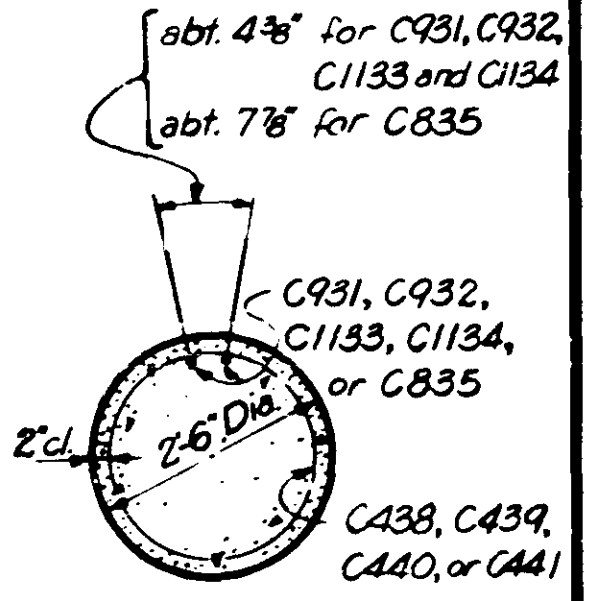
PLAN
RAMP 2 PIERS 12 AND 13



SECTION A-A



SECTION E-E

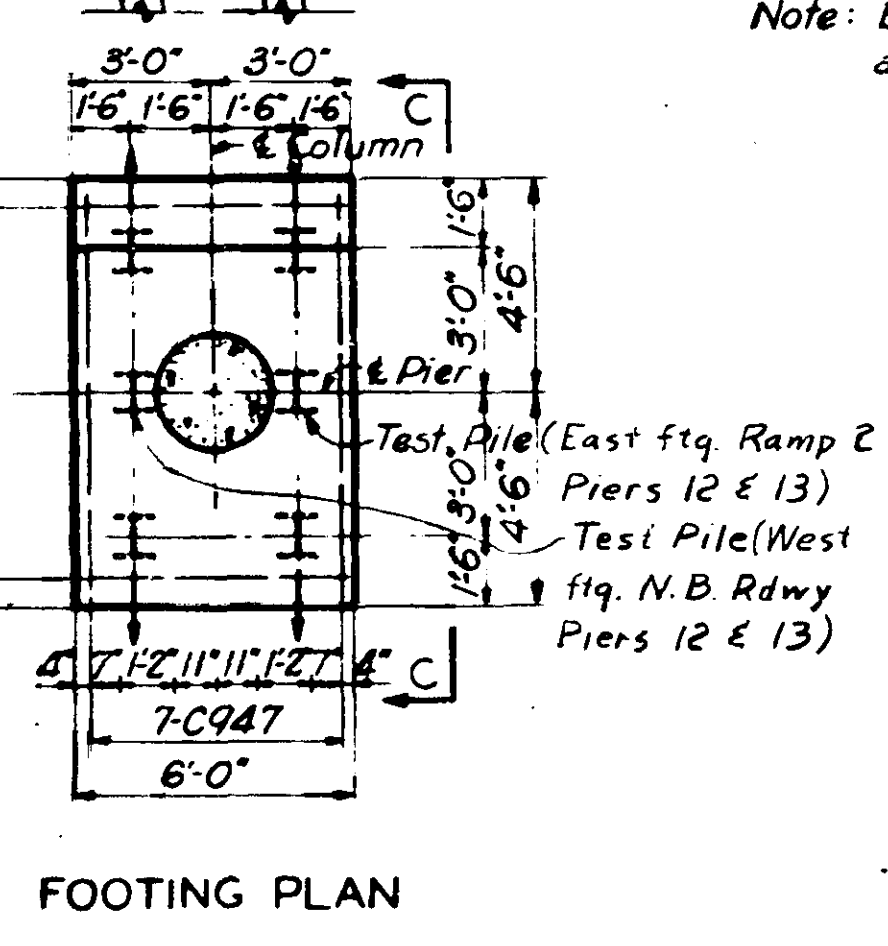


SECTION THRU COLUMN
Note: Spacing of vertical reinf. is measured along inside of spiral.
Note: Column and Footing details of East column are typical unless otherwise shown.

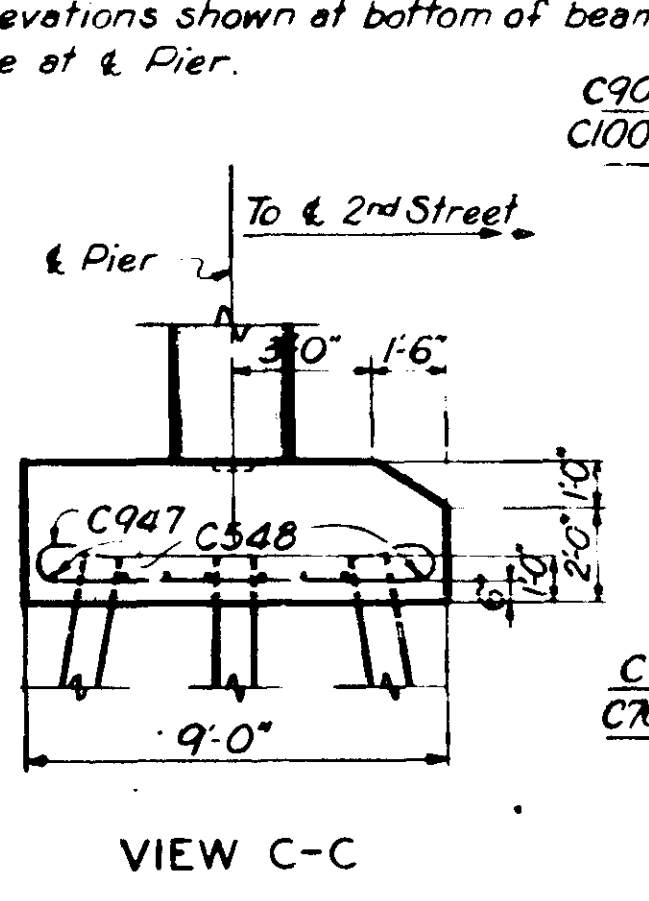
NOTES

Concrete in columns to be Mix 3Y6.
Concrete in footings to be Mix 1A6.
For Bill of Reinforcement and Summary of Quantities see Sheet 48.

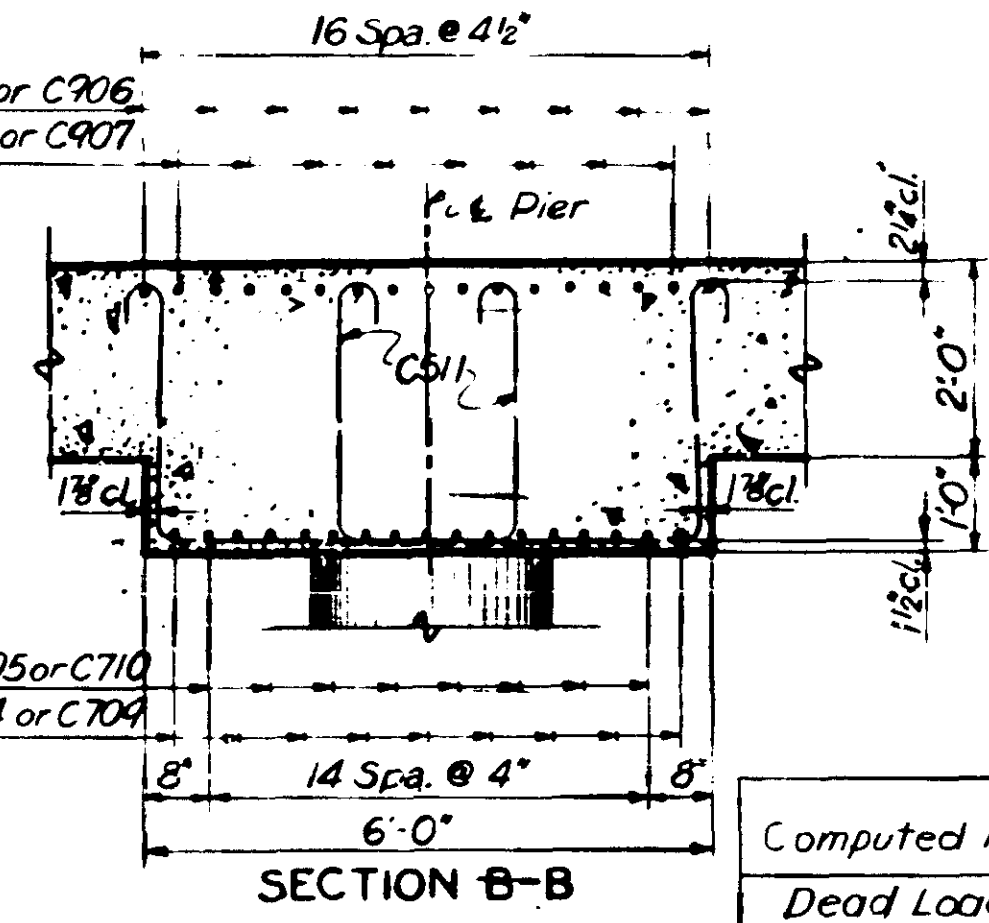
Pile Notes
4 Steel Test Piles, 20 feet long
62 Steel Piles, Est. Length 15 feet
66 Steel Piles req'd for Piers 12 & 13 of the Northbound & Ramp 2 Roadways.
All piles to be 10BP42.
Estimated penetration 1ft. less than length given.
All Piles to be driven to a minimum bearing of 43 tons per pile.
Piles marked thus → to be battered 2 in 12 in direction shown.
For pile splice see M.H.D. Detail B221.
Pile spacing shown is measured at bottom of footing.



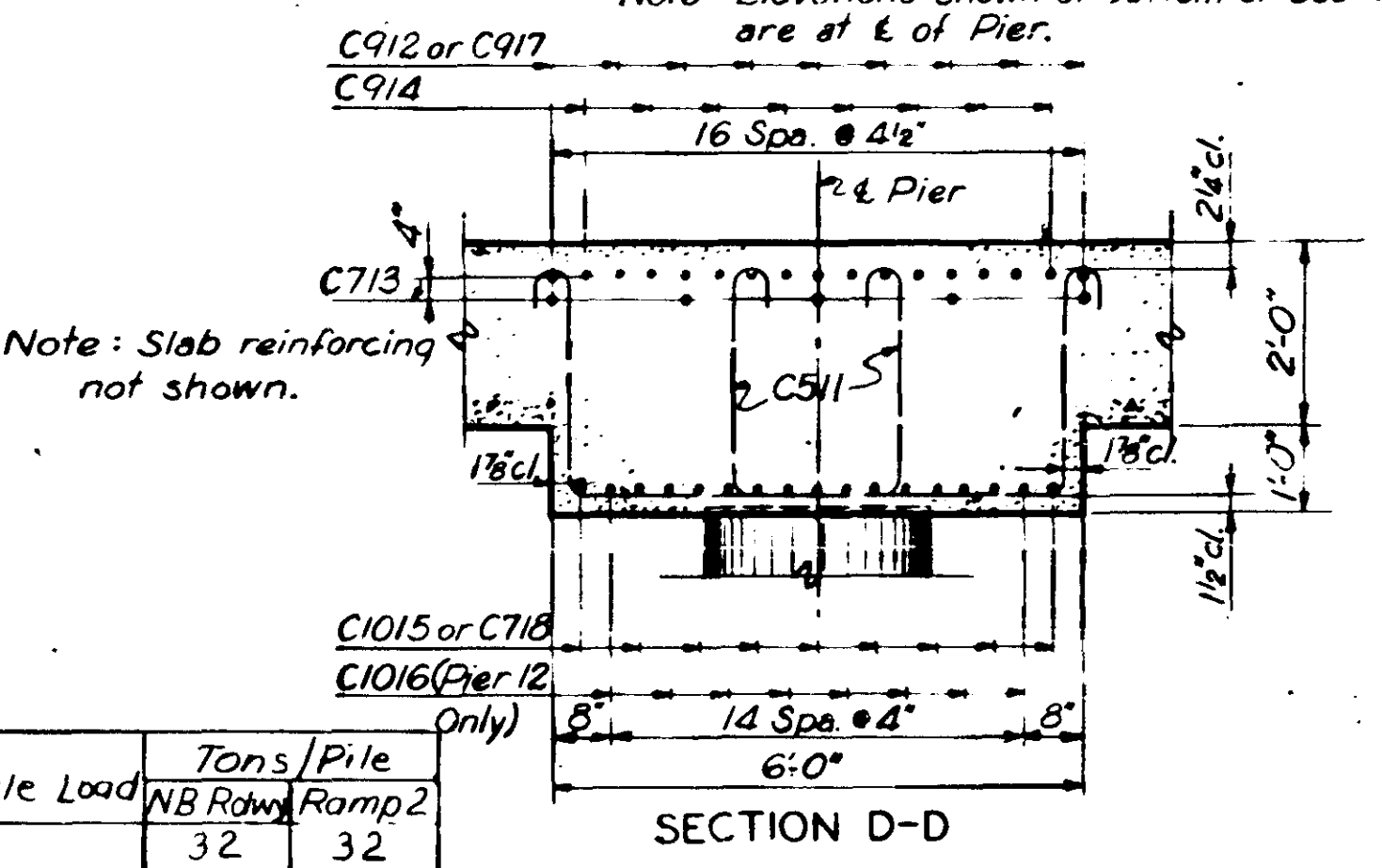
FOOTING PLAN



VIEW C-C



SECTION B-B



SECTION D-D

Computed Pile Load	Tons/Pile	
	NB Row	Ramp 2
Dead Load	32	32
Live Load	9	11
Total	41	43

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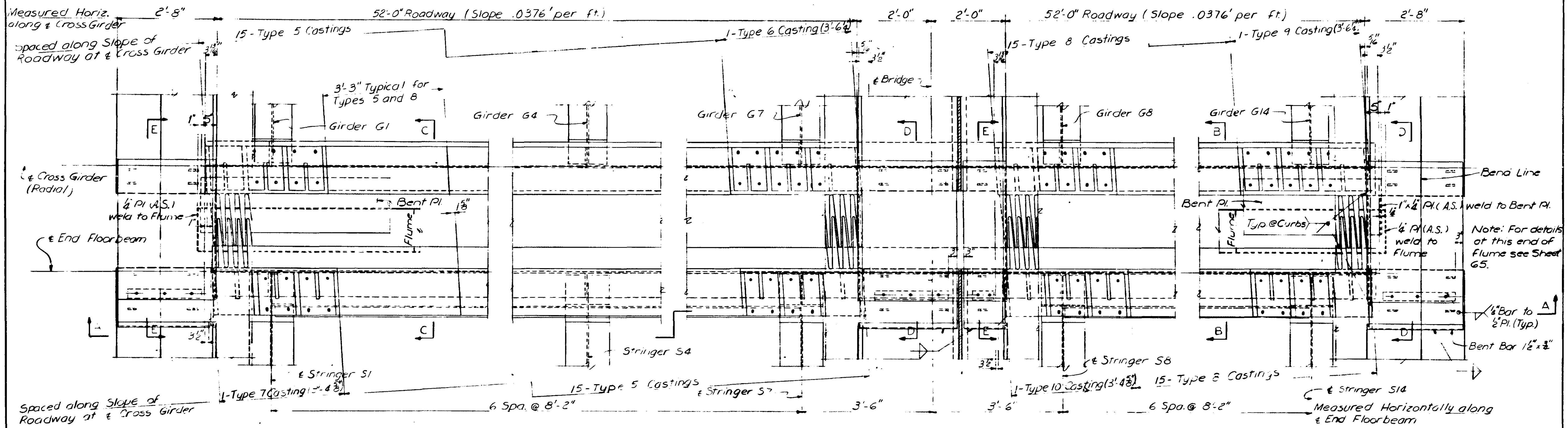
T. H. 35W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

NORTH APPROACH VOIDED
SLAB SPANS
PIERS 12 & 13

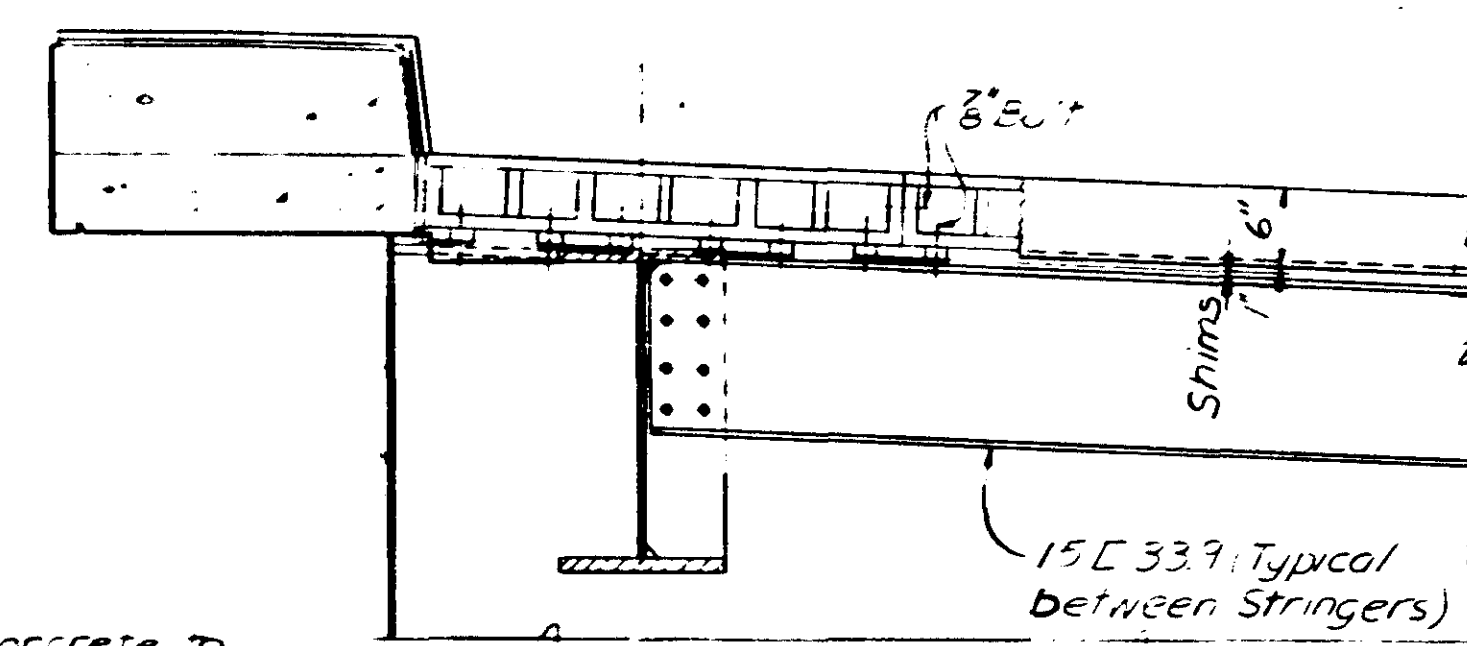
APPROVED - 6-18-65

Drawn by: A. Myers, Feb. 1964
Checked by: R. F. Beck, May 1964
2083
64S114

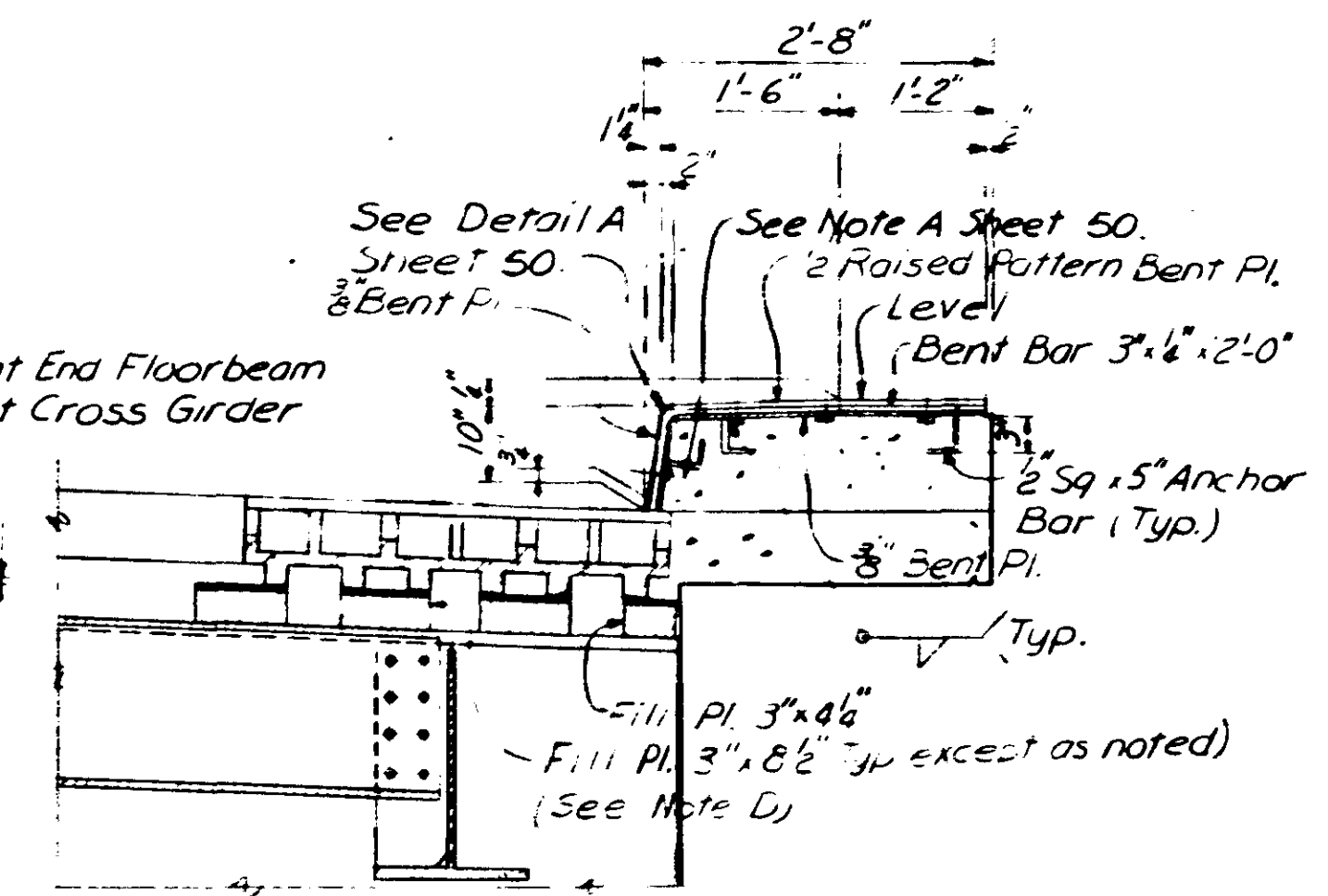


PART PLAN

Note: Safety Curb details same as other side.

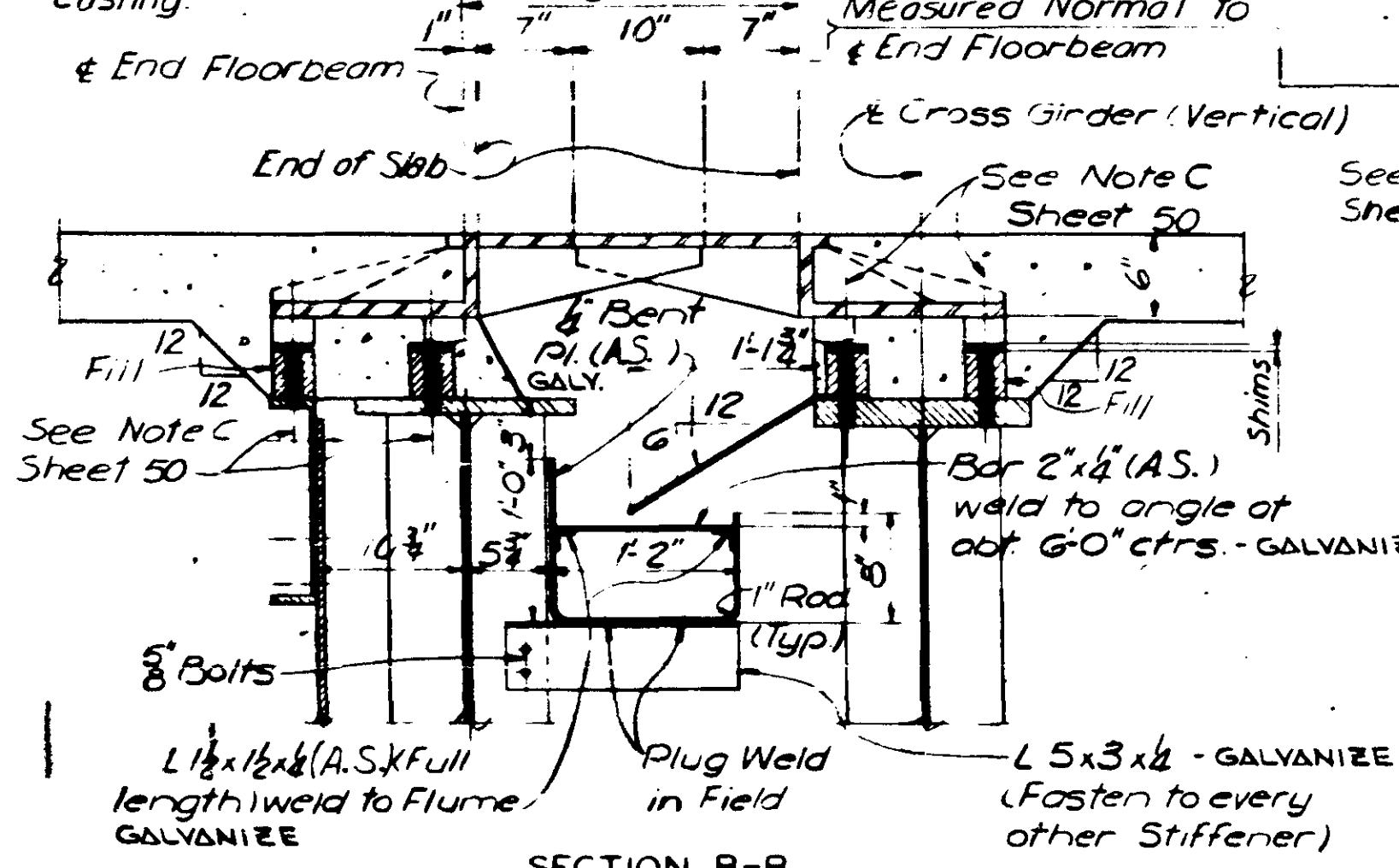


SECTION A-A
Note: Flume not shown.



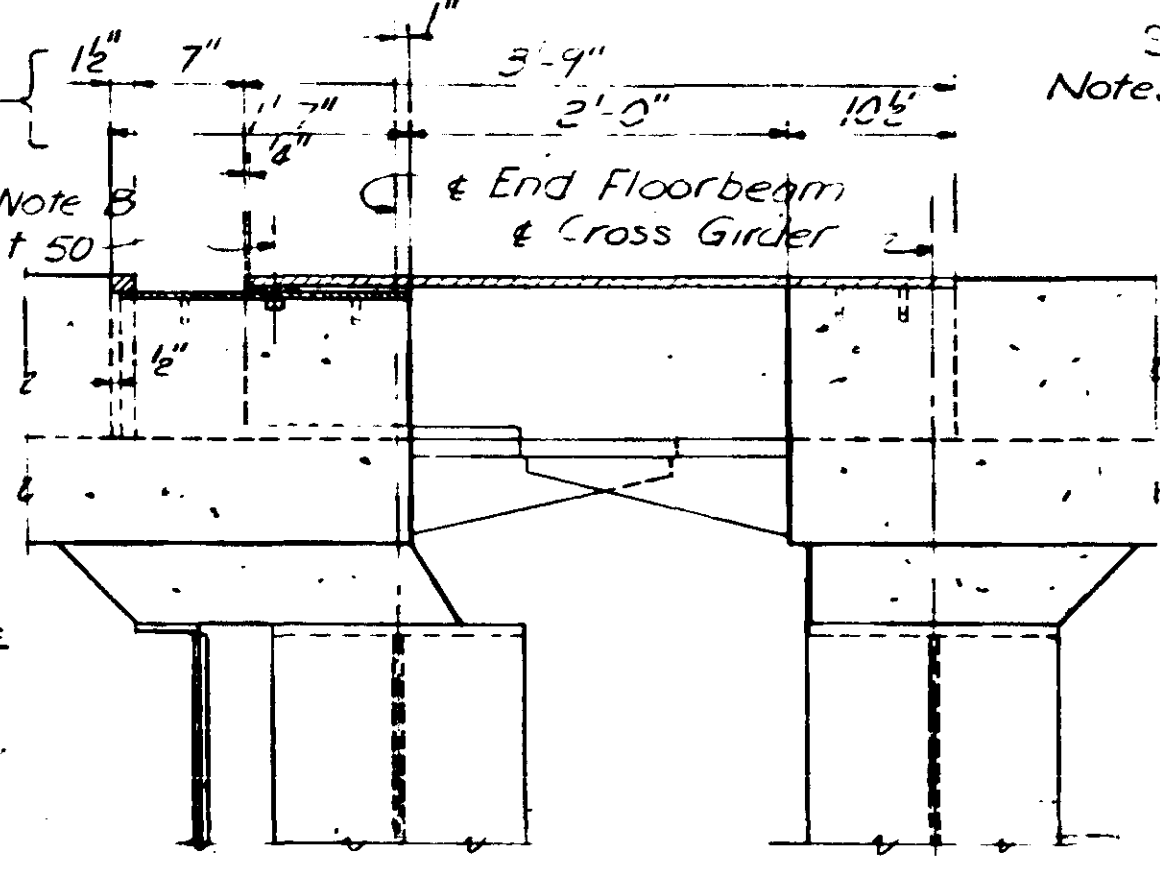
Note D: Fill plates to be at the same location as the shim holes may be pre-drilled to match holes in Expansion Device.

Note: Vibrate concrete to completely fill below casting.
Note: Use 3/8" Pivets at 15E connection.



SECTION B-B

Note: Section C-C similar except no fills required. Girders and Stringers not shown.



SECTION D-D

Note: Section E-E opposite hand. Girders, Stringers and Flume not shown.

NOTES

See Sheet 40 for Structural Steel Notes.
See Sheet 50 for Expansion Device Notes.
See Sheet 19 for Cross Girder Details.
See Sheet 26 for End Floorbeam Details.

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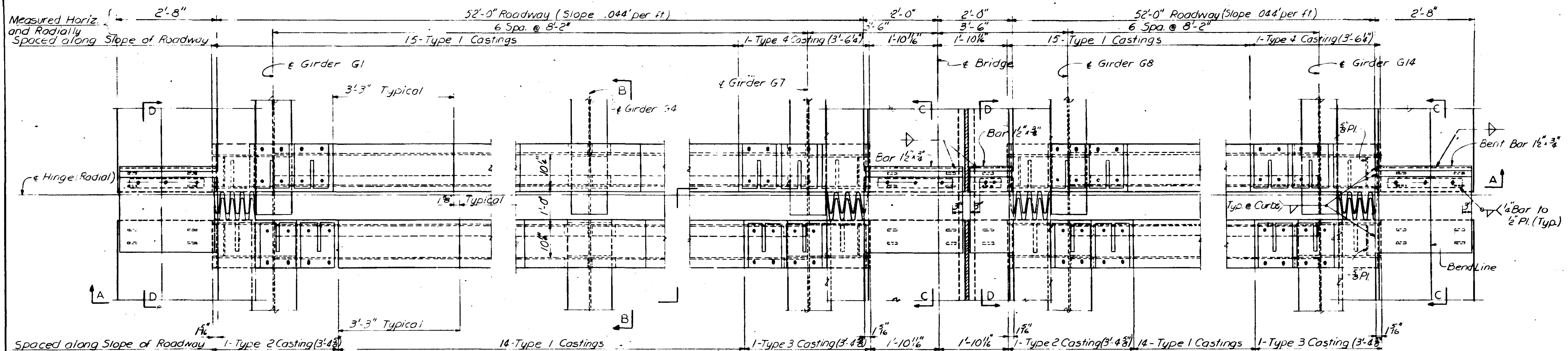
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DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

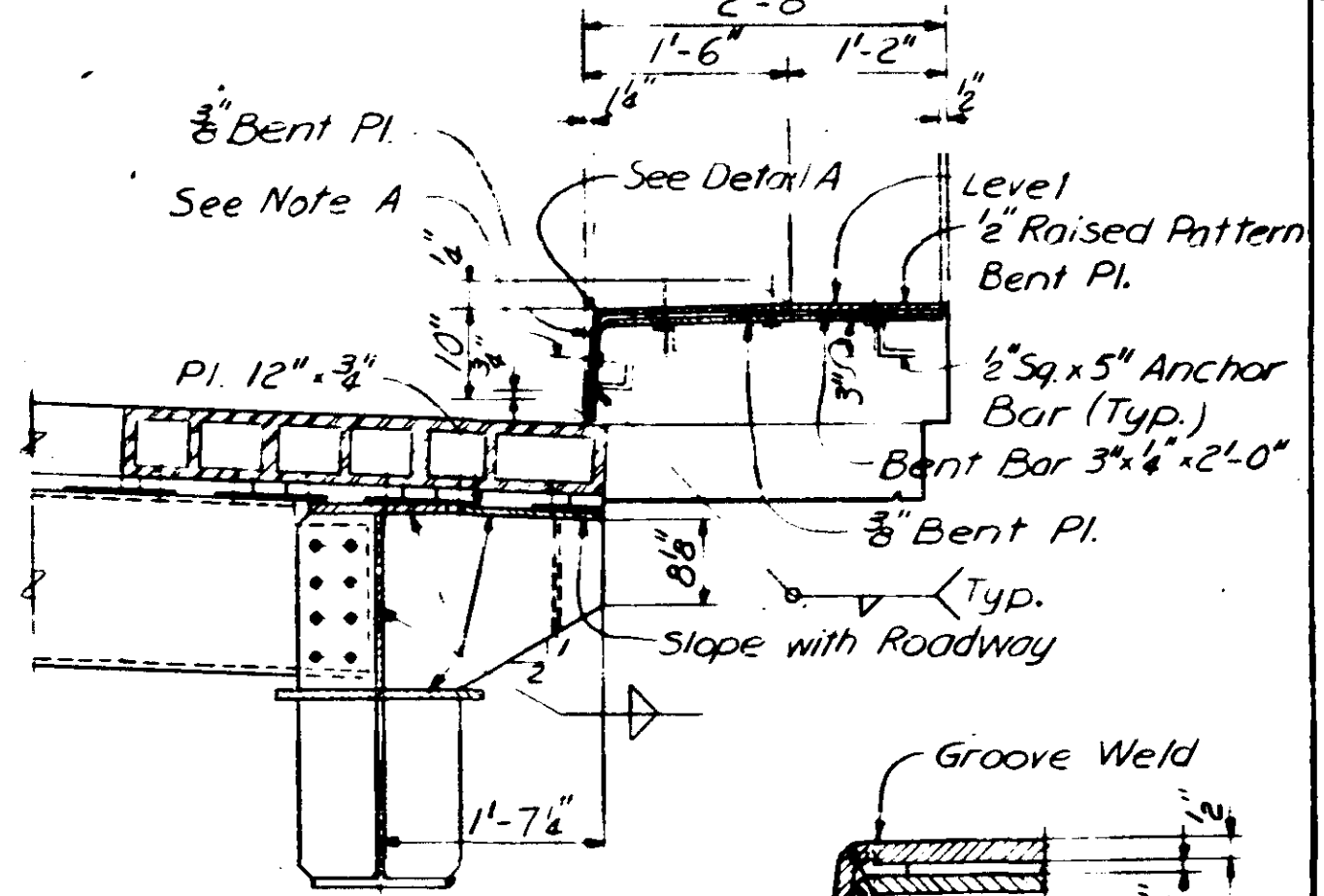
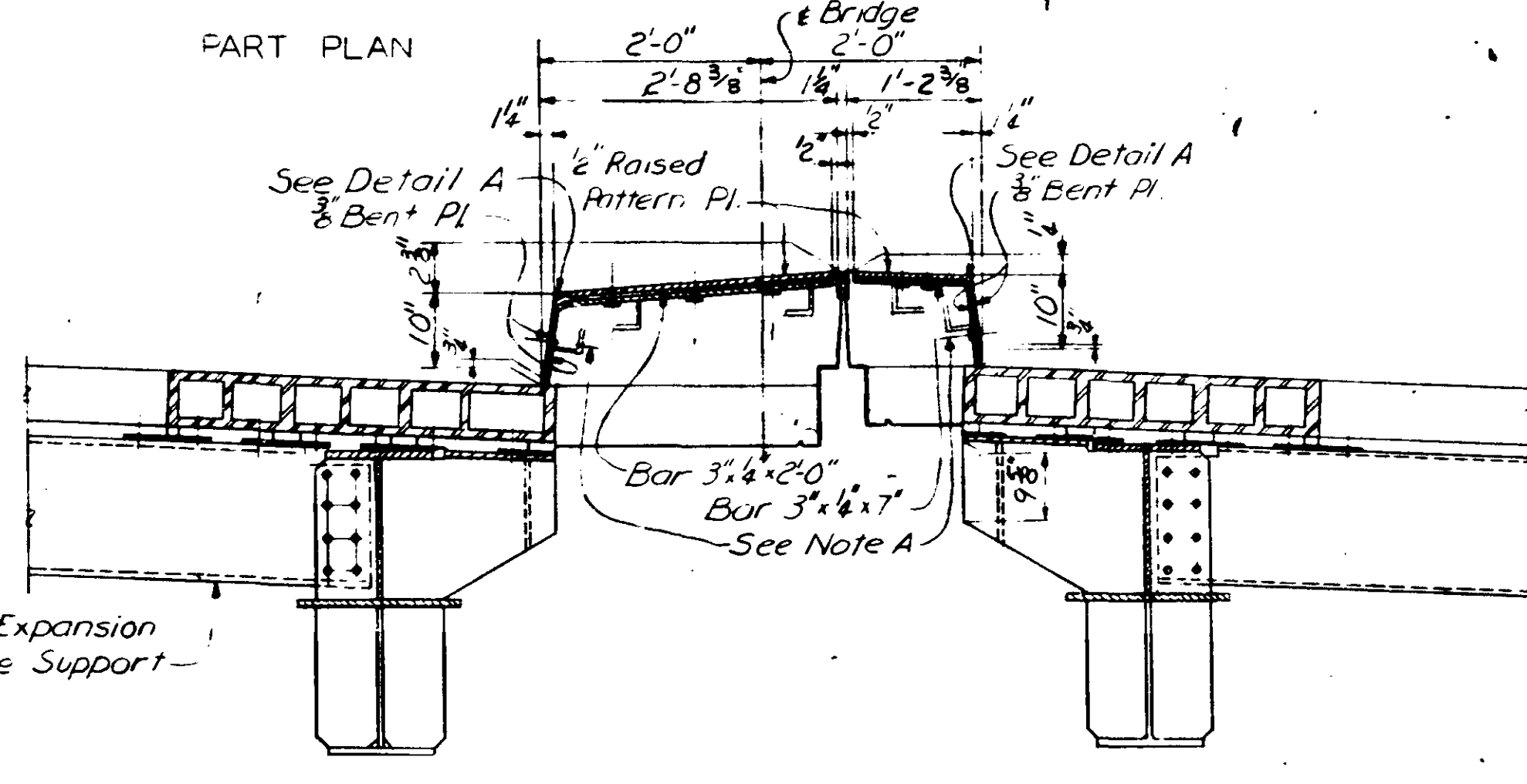
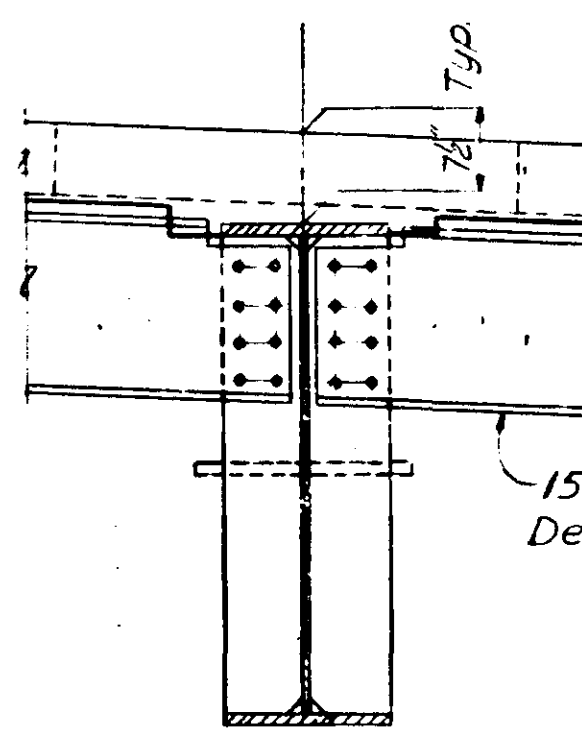
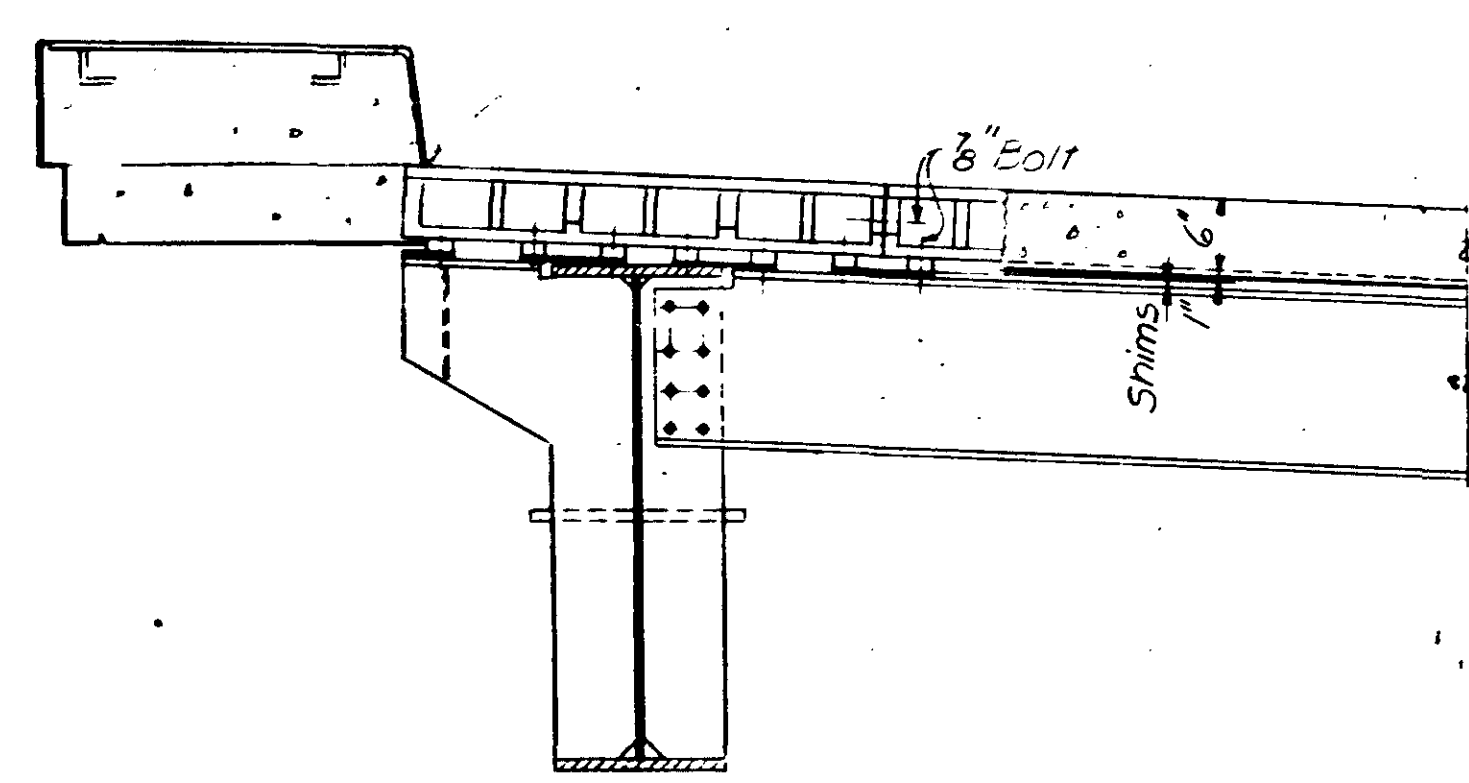
ROADWAY EXPANSION DEVICE
NEAR PIER 5
AT UC

APPROVED - 6-18-65

Drawn by: D. E. DiEranno, Apr. 1964
 Checked by: W. J. Gabels, May 1964
 2083
 645201



Note: Safety Curb details same as other side



NOTES

- Note A: 7/16" x 1 1/2" slot in outside pl. and 7/16" hole in inside pl. for 3/8" bolt. Weld 3/8" Sq Nut to inside pl. and remove bolt after concrete has set.
- Note B: 7/16" x 1 1/2" slots in 1/4" bar and 1/2" pl and 1/16" holes in 3/8" pl. for 3/8" bolts. Weld 3/8" Sq Nuts to 3/8" pl. and remove bolts after concrete has set.
- Note C: Drill holes for Expansion Device in field after adjustment of device.

Note: Details at Girder G14 are typical for Girders G1, G7 and G8 unless otherwise shown or noted. Details at Girder G4 are typical for all girders except as shown or noted.

EXPANSION DEVICE NOTES

Castings shall be carbon steel castings conforming to M.H.D. 3322 Grade 70-36. All other material in Exp. Device shall conform to M.H.D. 3306. The Expansion Devices are shown in normal position at a temperature of 45°F. Complete Expansion Assemblies (except fills) to be galvanized after fabrication in accordance with M.H.D. 3394. All connections of castings to be made with 3/8" bolts conforming to M.H.D. 3391B, Style II.

Expansion Device at Hinge, near Pier 2, shall be paid for as Expansion Assembly, Type I. Expansion Device at UO shall be paid for as Expansion Assembly, Type II. Expansion Device at UO' shall be paid for as Expansion Assembly, Type III. Expansion Device at Pier 11 shall be paid for as Structural Steel M.H.D. 3306. Expansion Assemblies shall consist of all steel castings, curb plates, shims, fills and connecting bolts. Raised pattern plates to be similar to Inland Steel Company's large pattern, U.S. Steel Section S-300 or Alan Wood Company's super diamond. Repair galvanizing after field welding per M.H.D. 2471.3L.

See Sheet 40 for Structural Steel Notes. See Sheet 18 for Hinge Details. No paint shall be applied to Exp. Device except as noted. After concrete has set, the joint opening shall be thoroughly cleaned. VERTICAL PORTION OF CURB PLATE SHALL BE FURNISHED 1" LONG AND CUT TO FIT IN FIELD.

Drawn by: D.E.D. Ernm., Apr. 1964
Checked by: W.J. Gaddis, May 1964
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645198

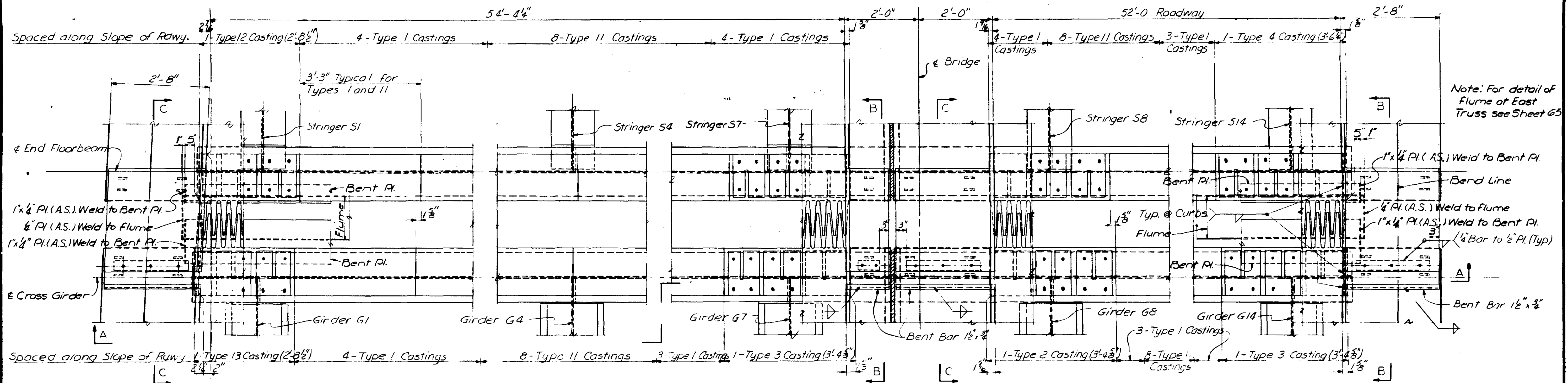
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BRIDGE NO. 9340

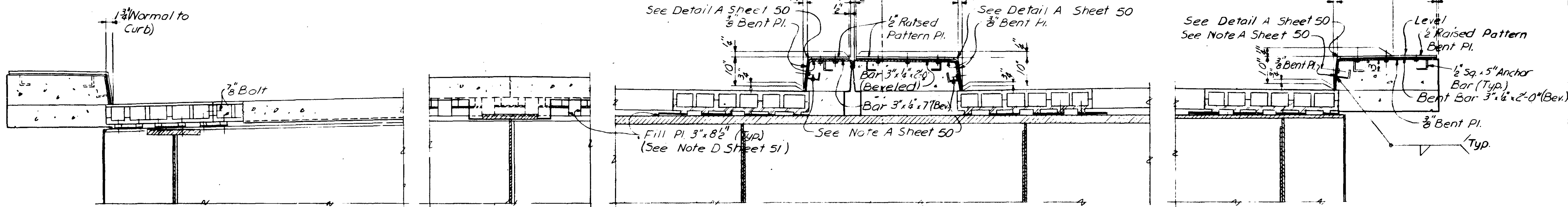
ROADWAY EXPANSION DEVICE
NEAR PIER 2

APPROVED - 6-18-65

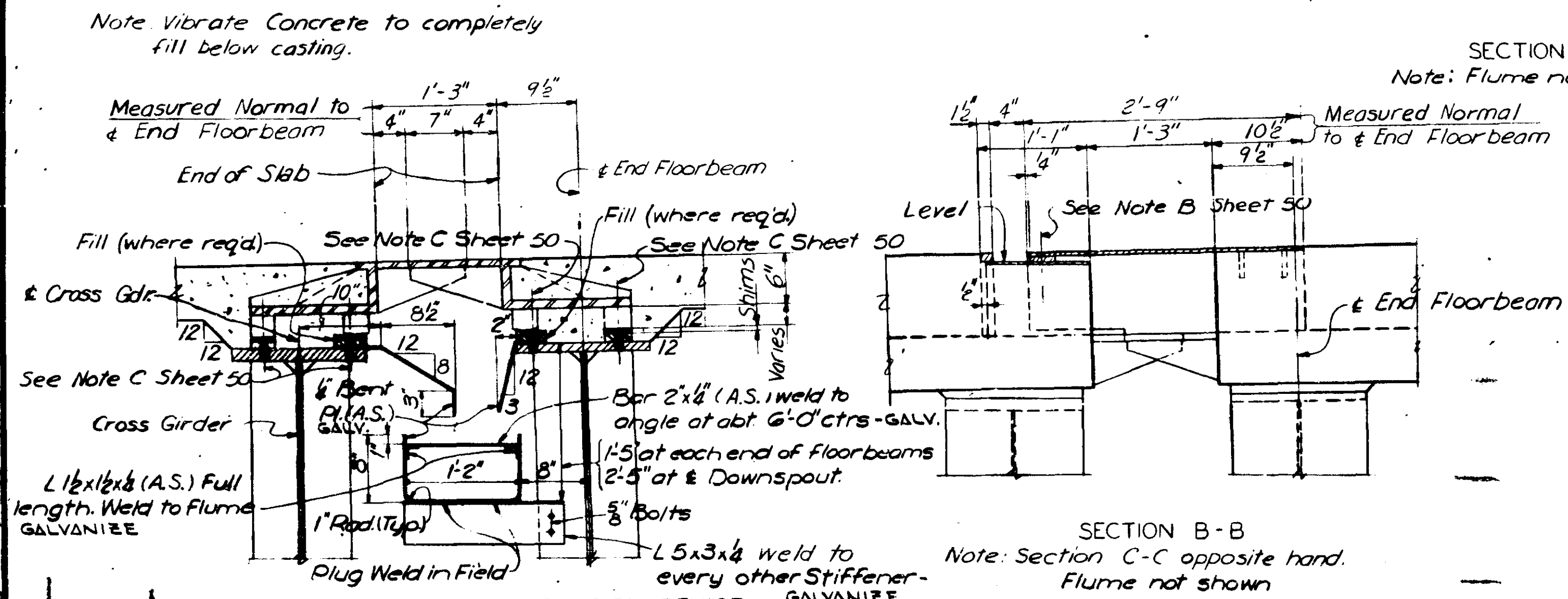


Note: For detail of Flume at East Truss see Sheet 65

Note: Safety Curb details same as other side except as shown or noted.



SECTION A-A
Note: Flume not shown



TYPICAL SECTION THRU EXPANSION DEVICE
Note: Girders and Stringers not shown.
To insure full bearing on Cross Girder any required fills are to be beveled accordingly; where no fills are required grind rear lug to fit.

NOTES
See Sheet 40 for Structural Steel Notes.
See Sheet 50 for Expansion Device Notes.
See Sheet 43 for Cross Girder Details.
See Sheet 27 for End Floorbeam Details.

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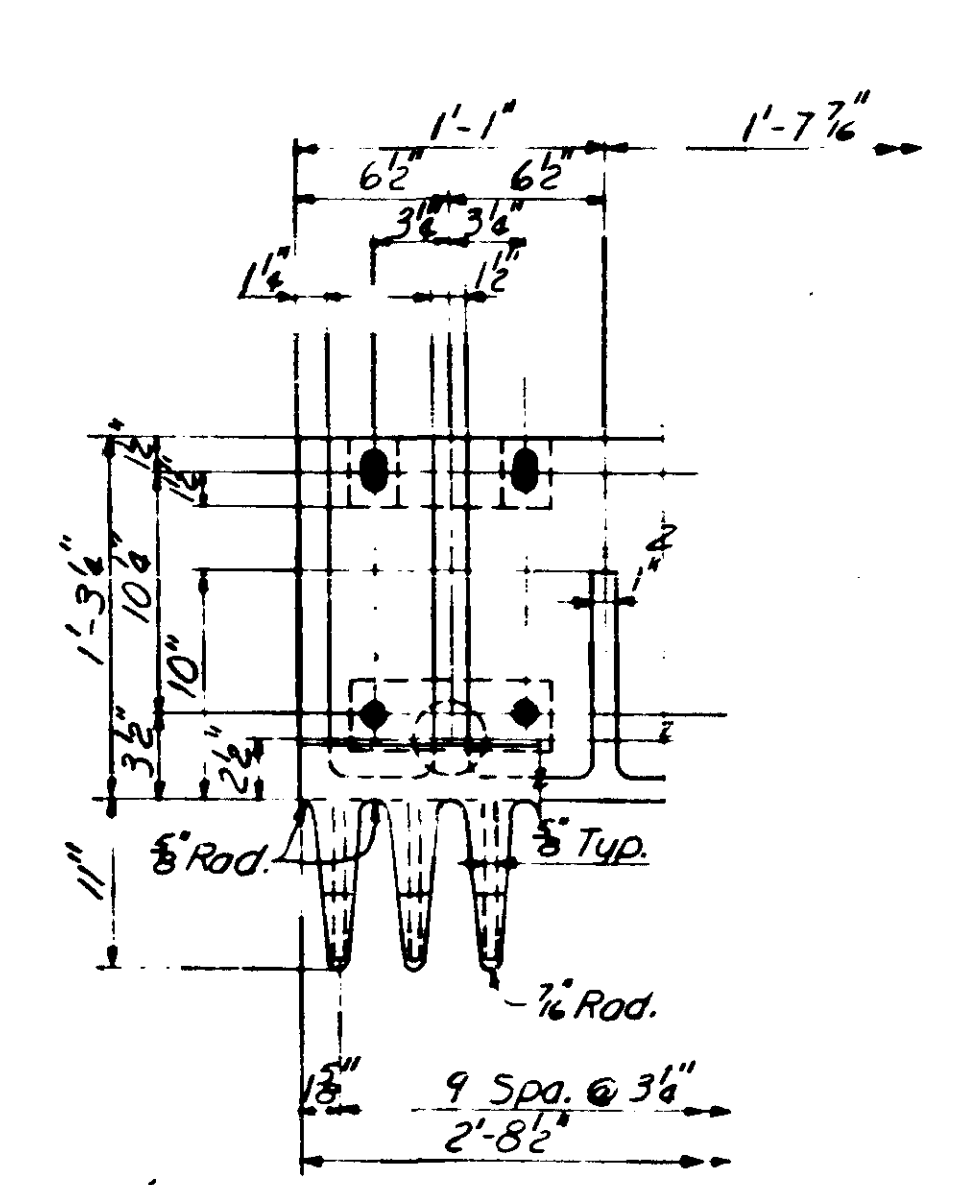
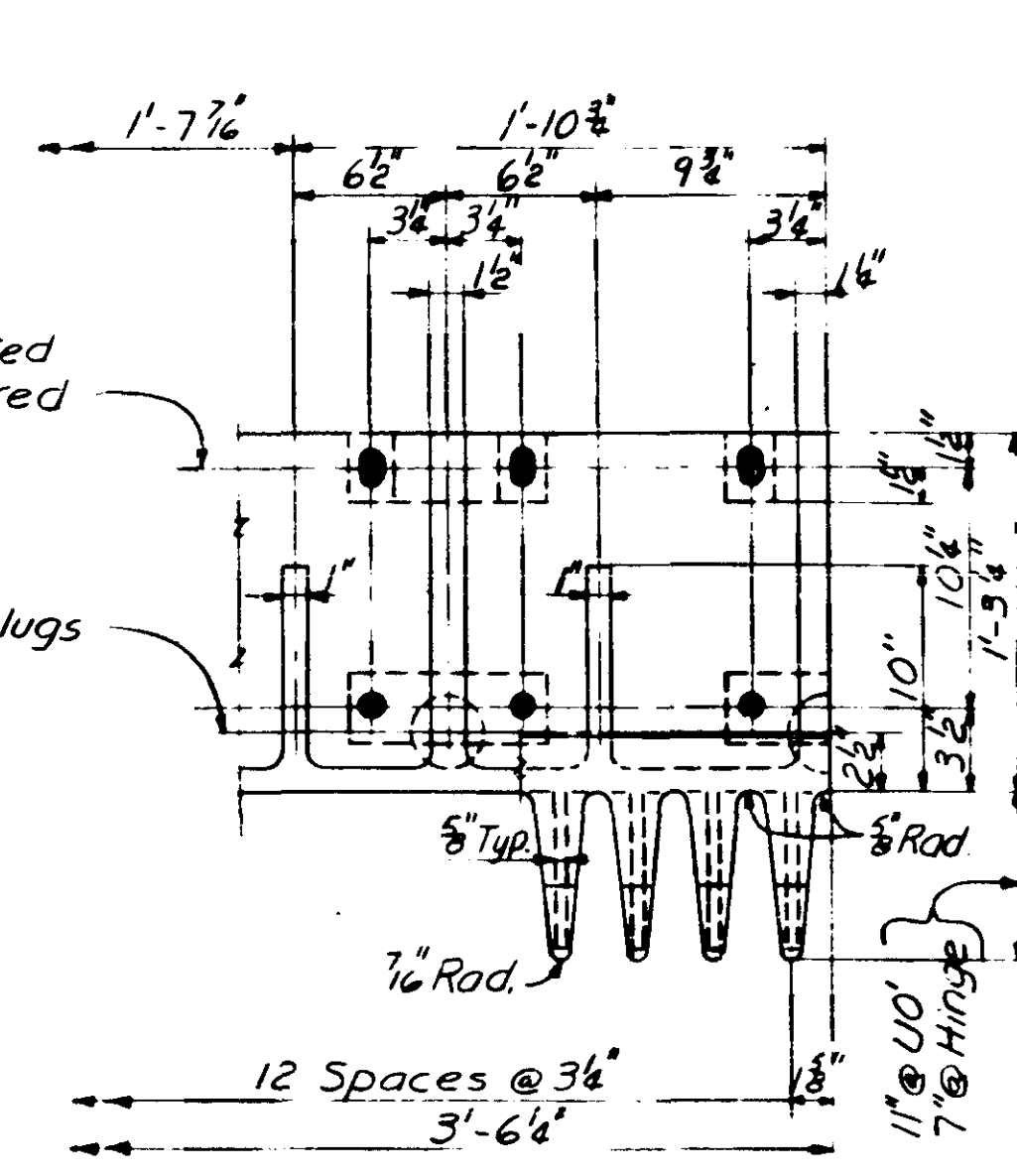
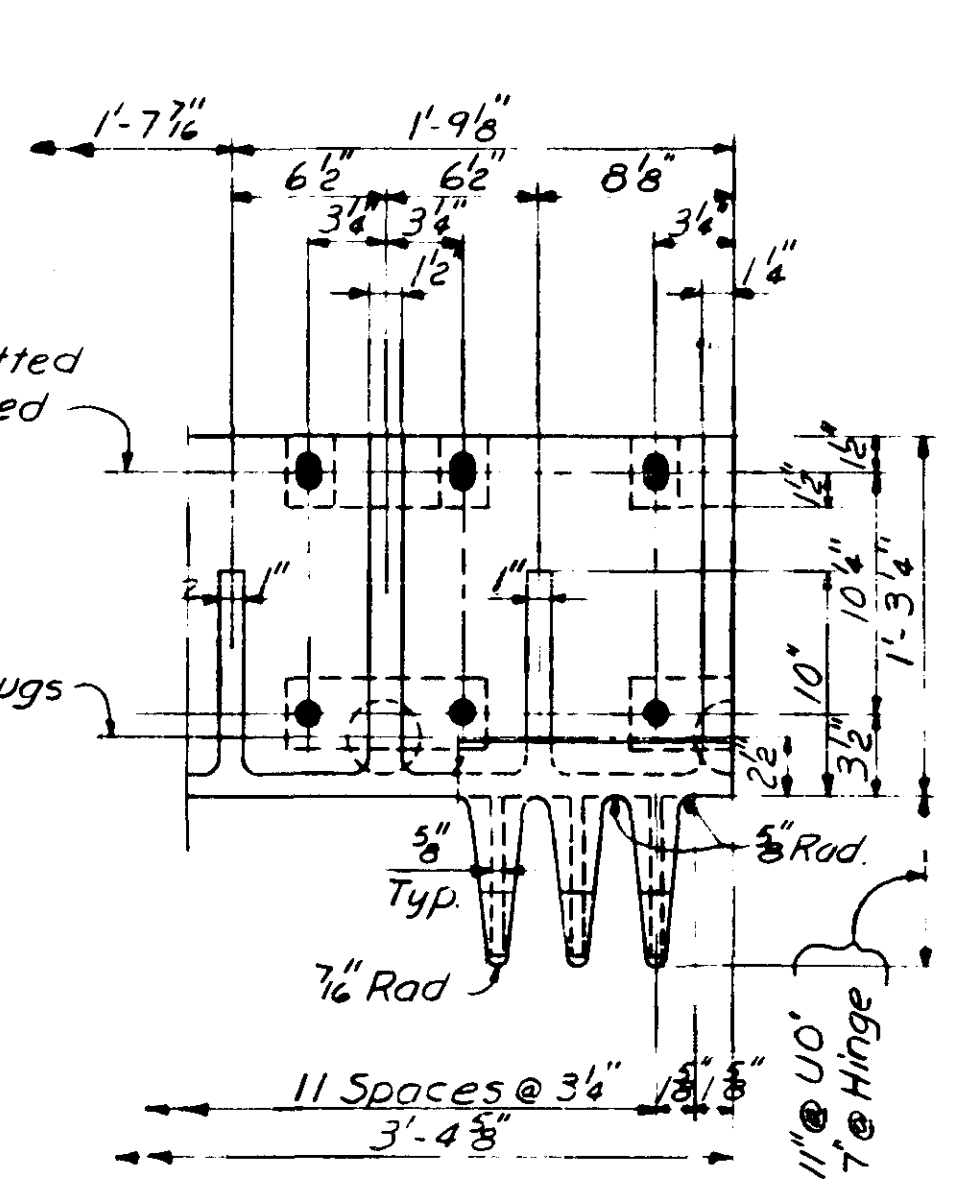
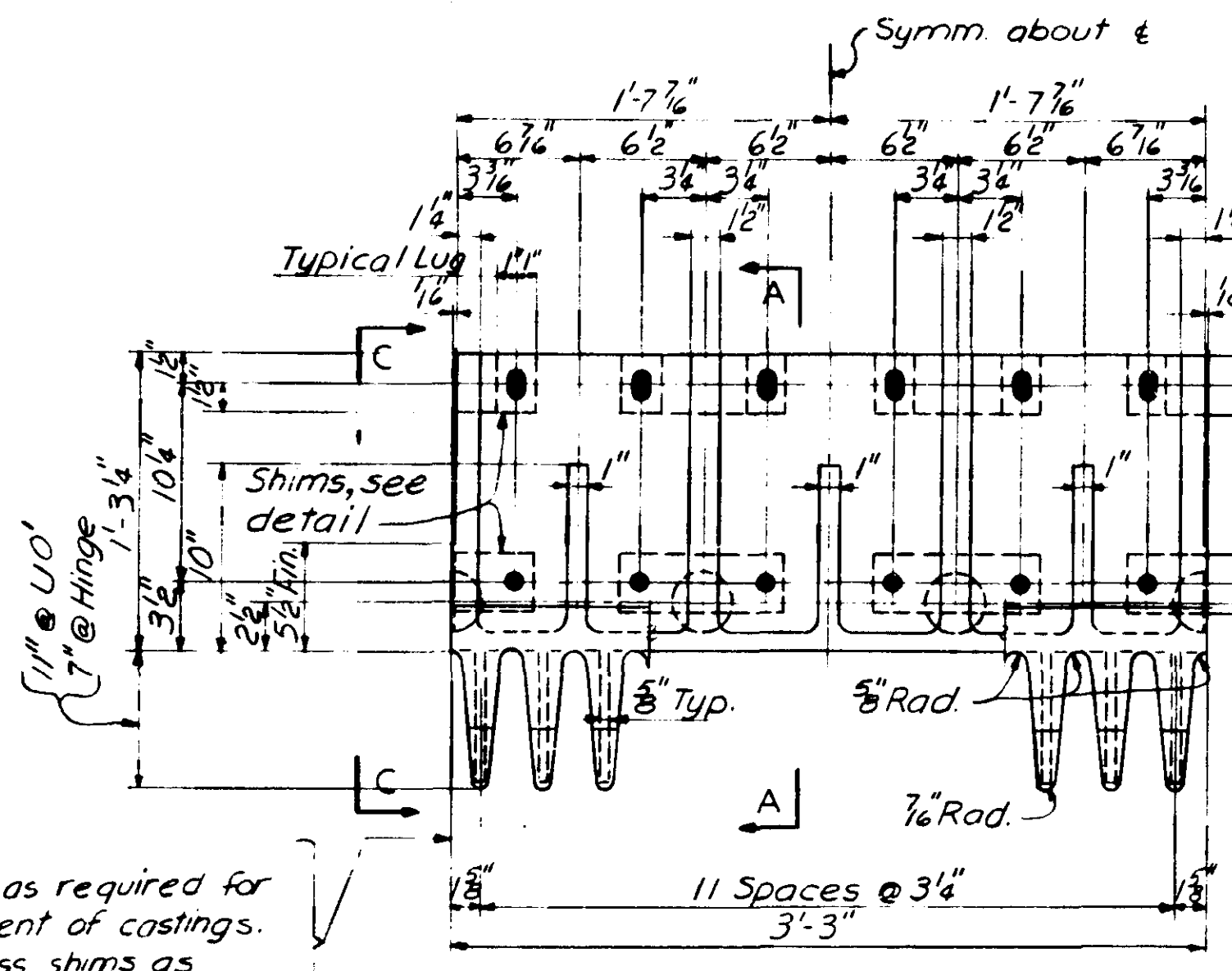
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DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

ROADWAY EXPANSION DEVICE
NEAR PIER 8
AT UO'

APPROVED - 6-18-65

Drawn by: D.E. DiFranco, Apr. 1964
 Checked by: W.J. Goodis, Sept. 1964
 2083
 645279



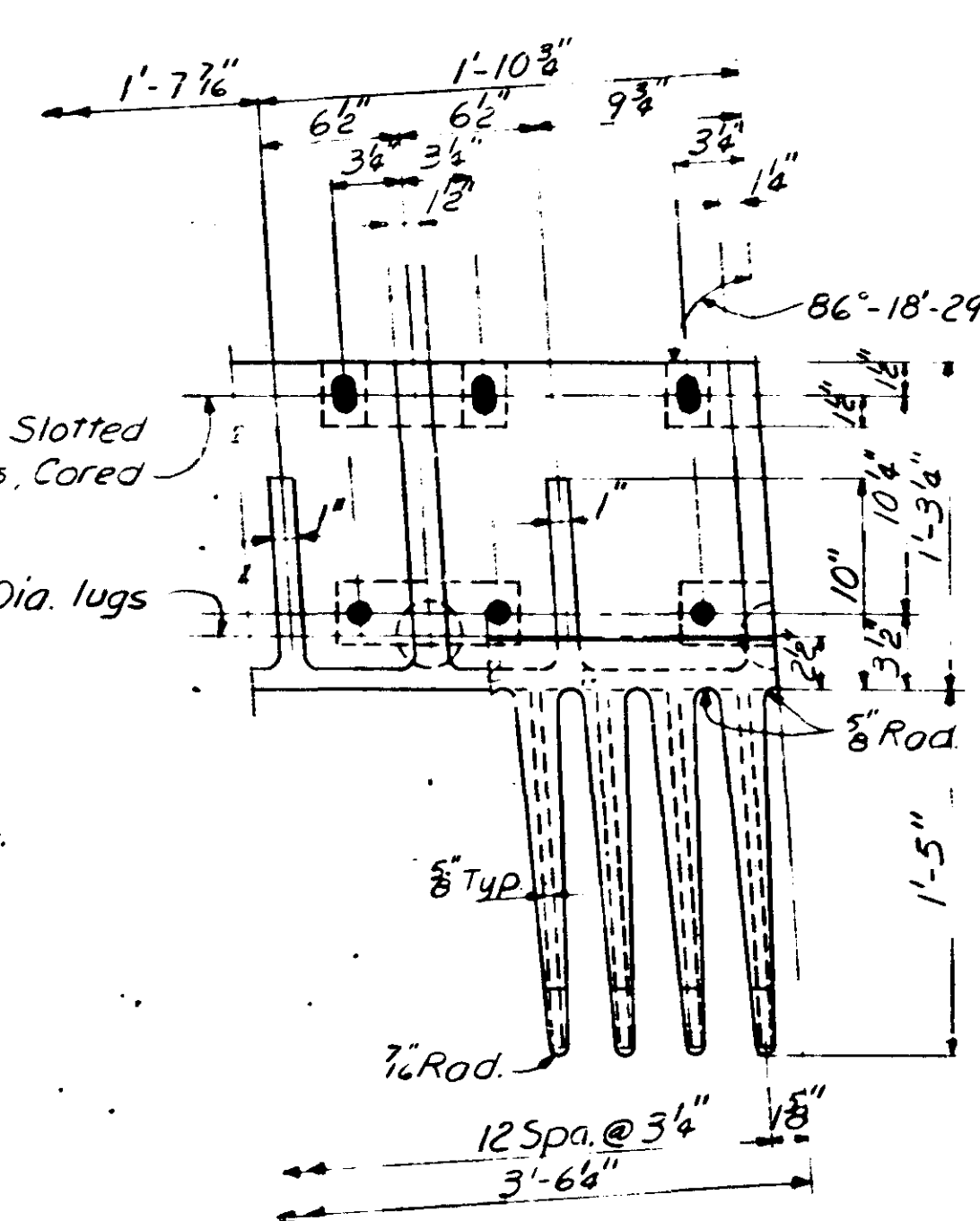
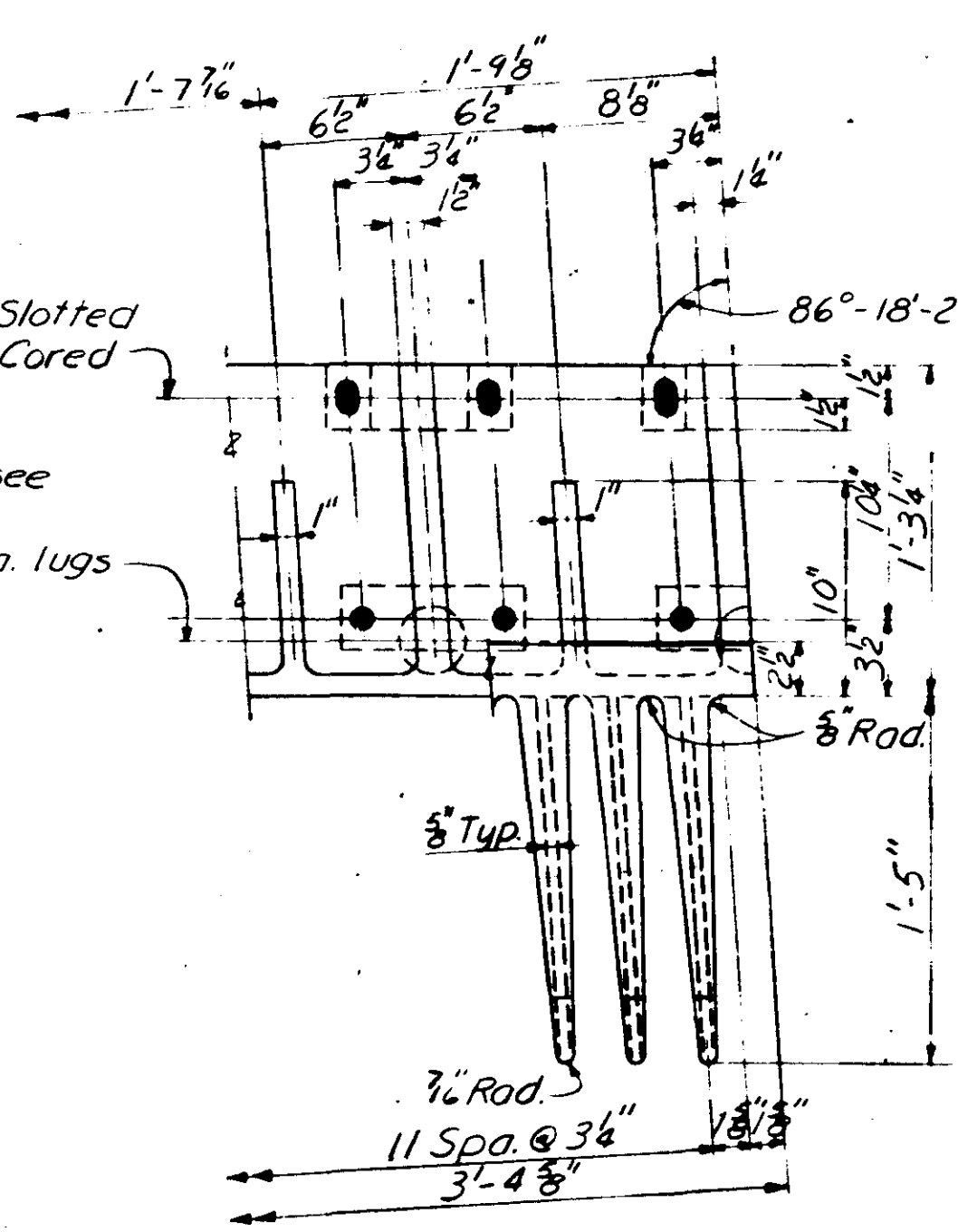
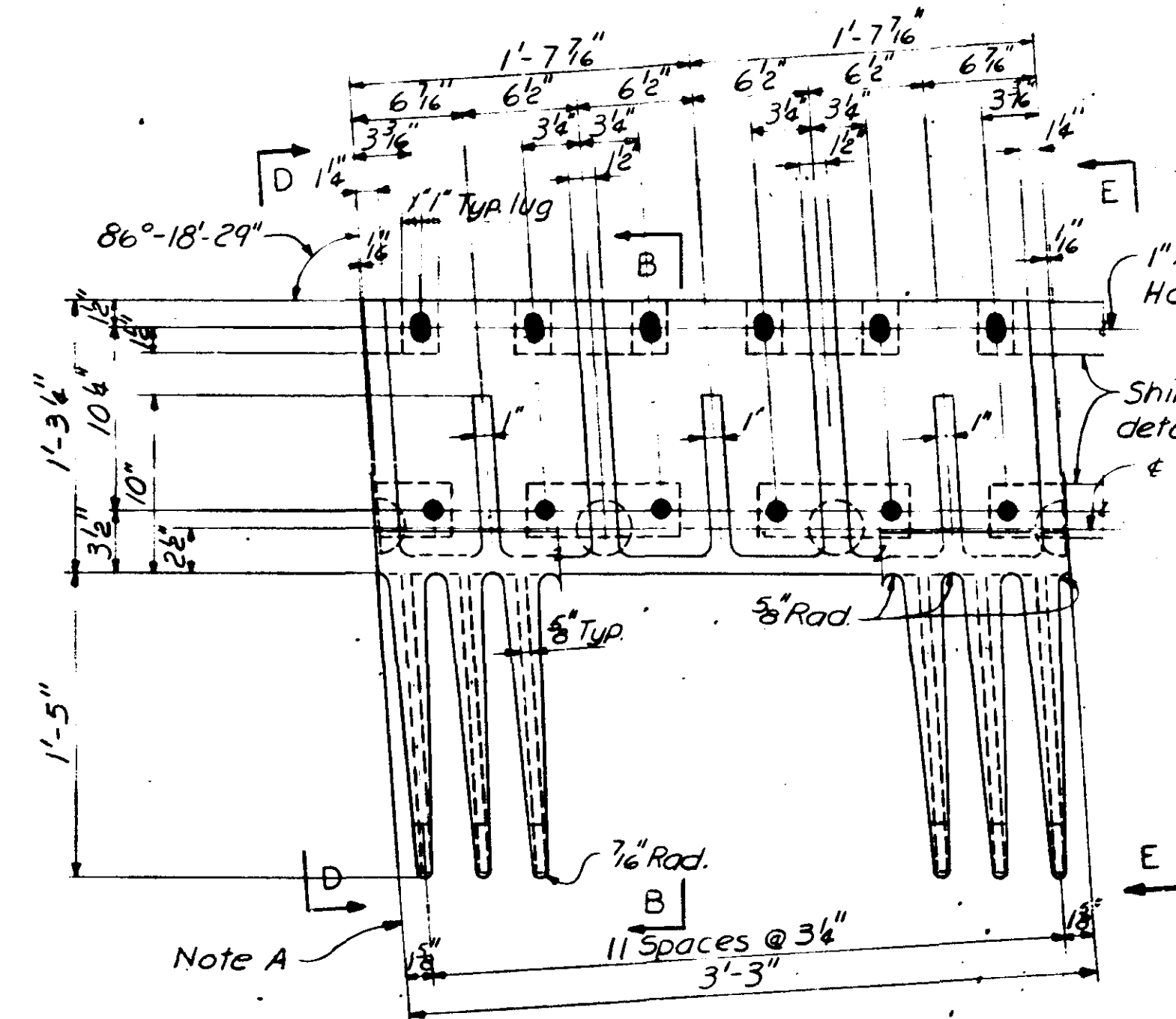
Note A:
Finish as required for adjustment of castings. Use brass shims as required between finished surfaces.

TYPES 1 AND 11
Type 1 { 58 required at Hinge
 28 required at UO'
Type 11 - 32 required at UO'

TYPE 2
Note: Same as Types 1 and 11 except as shown.
Type 3 opposite hand.
At Hinge: 2-Type 2 and 2-Type 3 required.
At UO': 1-Type 2 and 2-Type 3 required.

TYPE 4
Same as Types 1 and 11 except as shown.
2 Required at Hinge.
1 Required at UO'.

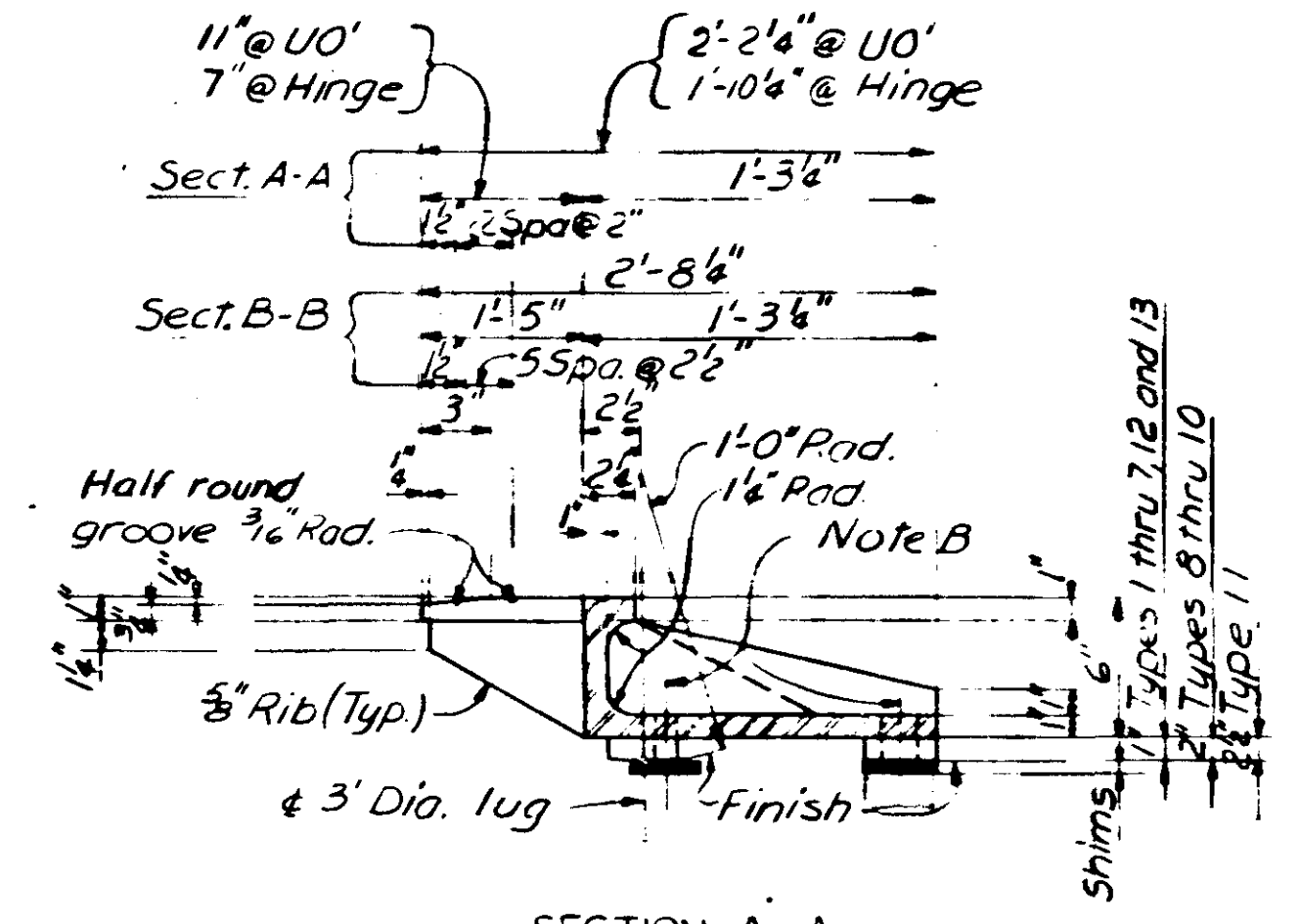
TYPE 12
Same as Types 1 and 11 except as shown.
Type 13 opposite hand
1-Type 12 and 1-Type 13 required at UO'.



TYPES 5 AND 8
30-Type 5 required at UO.
30-Type 8 required at UO.

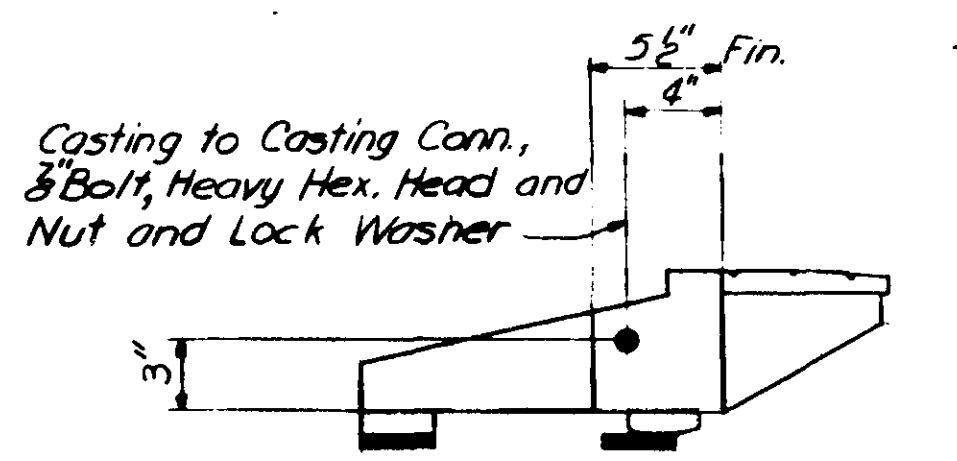
TYPES 7 AND 10
Same as Types 5 and 8 except as shown.
1-Type 7 required at UO.
1-Type 10 required at UO.

TYPES 6 AND 9
Same as Types 5 and 8 except as shown.
1-Type 6 required at UO.
1-Type 9 required at UO.

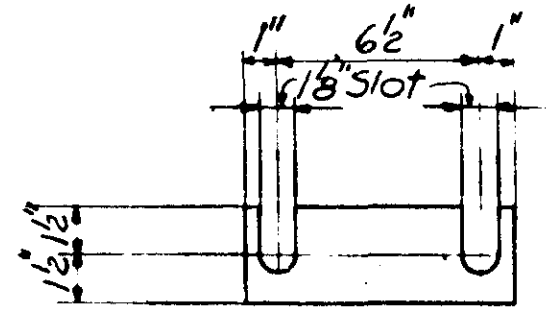


Note B: Casting to Channel or Girder Connection, 3/8" Bolt, Heavy Hex. Head and Nut and one McLean-Fogg Lock Nut No. 1 or approved equal.

SECTION A-A
SECTION B-B



VIEW C-C
Note: View D-D similar.
View E-E opposite hand.



SHIM DETAIL
1140 Sets required.
Use half shims at curbs, 44 sets half shims required.
Interchange shims as required for adjusting castings.
Shop paint: One coat of Red Lead.

For each set of shims provide:
1 shim - 3" x 4"
1 shim - 3" x 3 1/2"
1 shim - 3" x 1 1/2"

NOTES

All fillets 3/8" radius except as shown.
Holes to be 1/2" drilled holes for 3/8" bolts except as shown.
See Sheet 50 for Expansion Device Notes.

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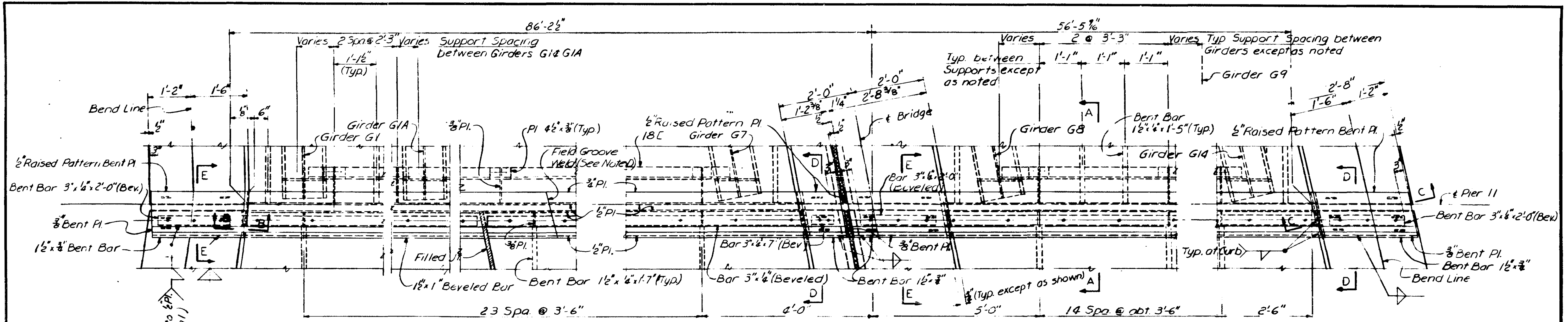
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DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

ROADWAY EXPANSION
DEVICE CASTINGS

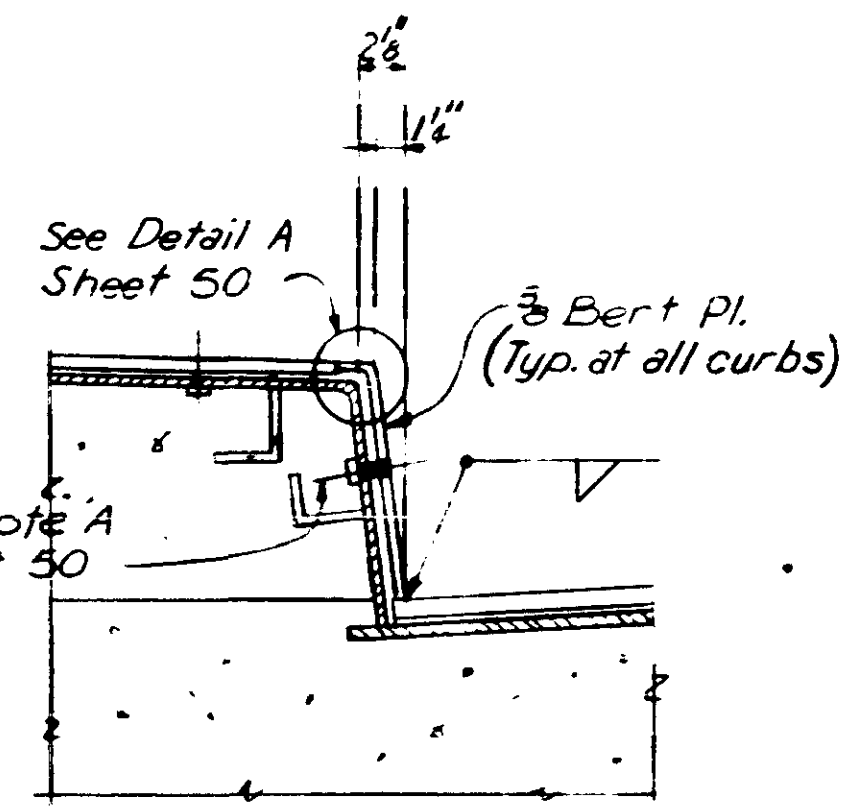
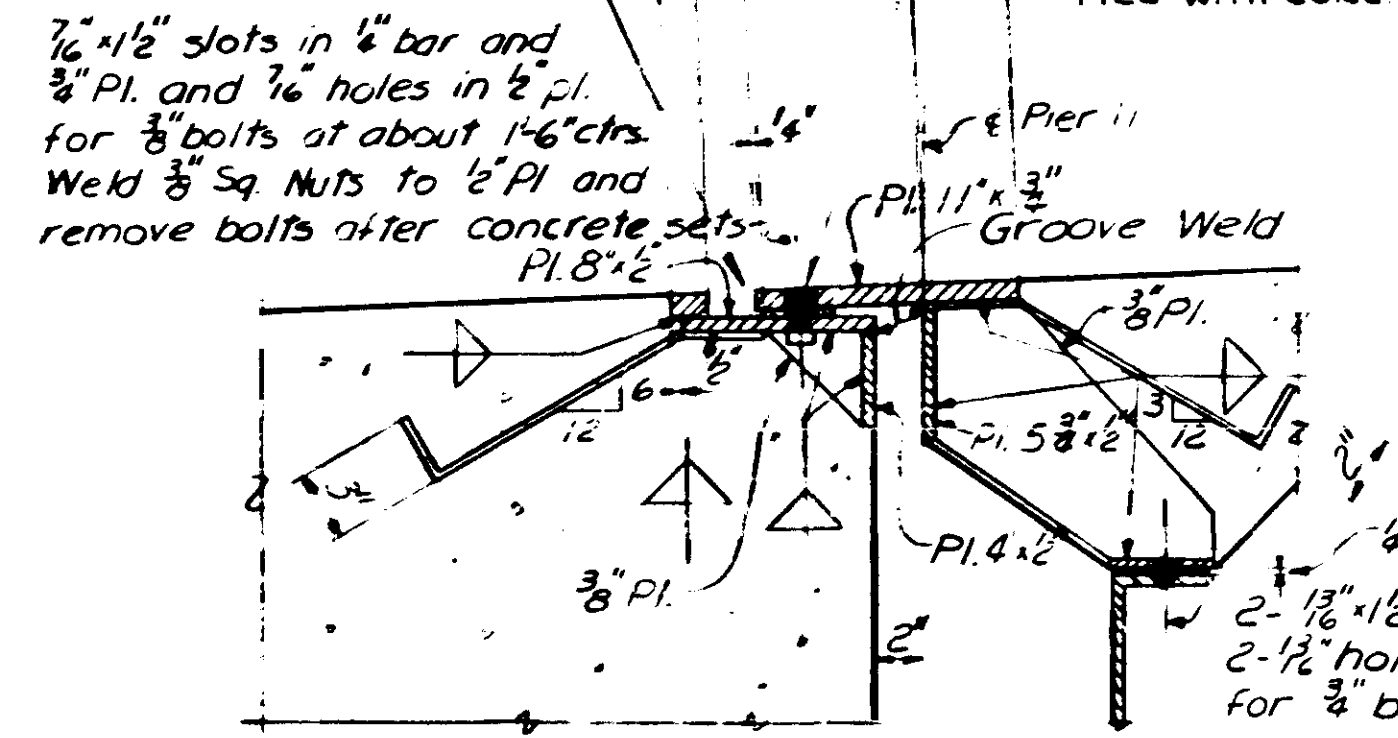
APPROVED - 6-18-65

Drawn By: D. DeRamo, Apr. 1964
Checked by: W. J. Gaddis, May 1964
2083
645236

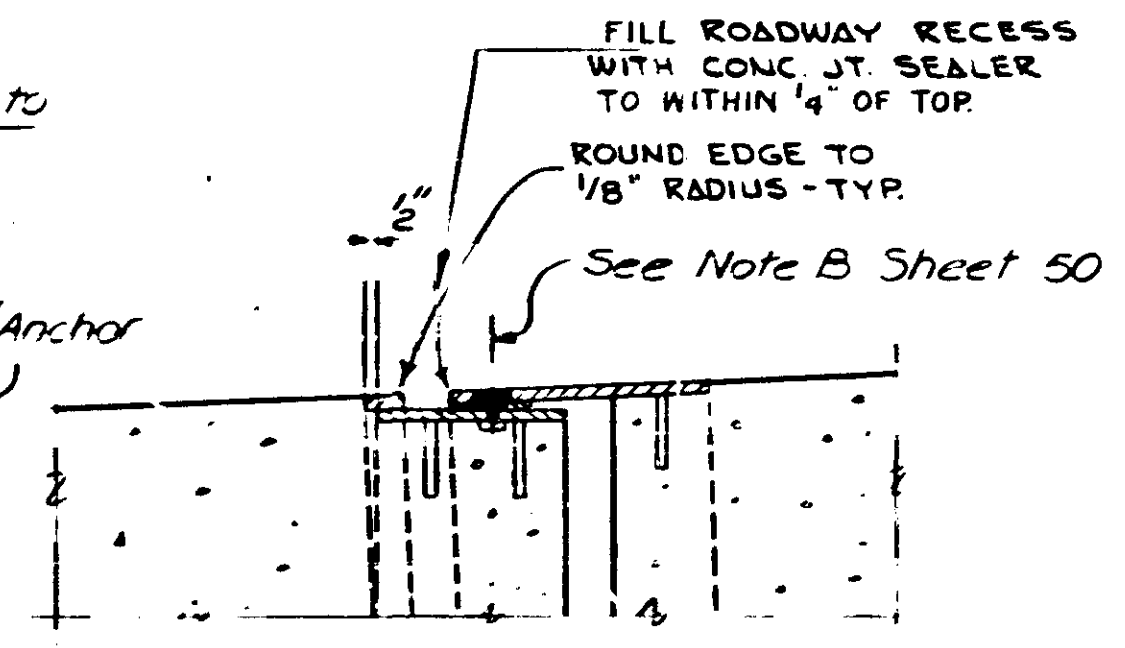
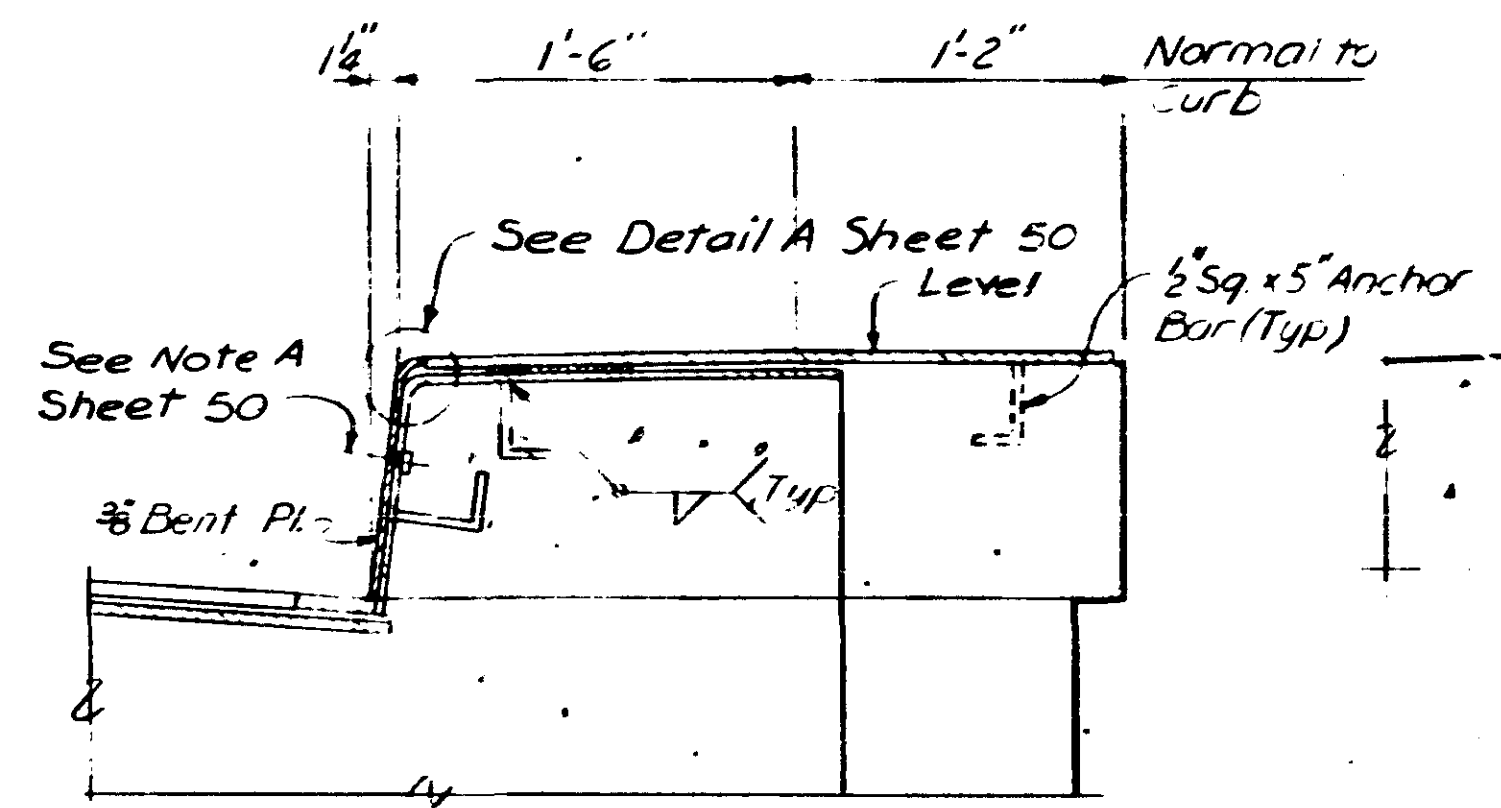


Note D: Expansion device plates shall be field spliced at changes in roadway cross slope. Groove welds to be ground flush.

Fill roadway recess to within 1/4" of top with concrete joint sealer



Note: Details not shown same as Section C-C.



Section E-E opposite hand.

NOTES

For Structural Steel Notes see Sheet 40.
 For details of voided Slab see Sheet 44.
 Expansion Device to follow shape of Roadway, see Sheets 66 & 67.
 For Expansion Device Notes see Sheet 50.

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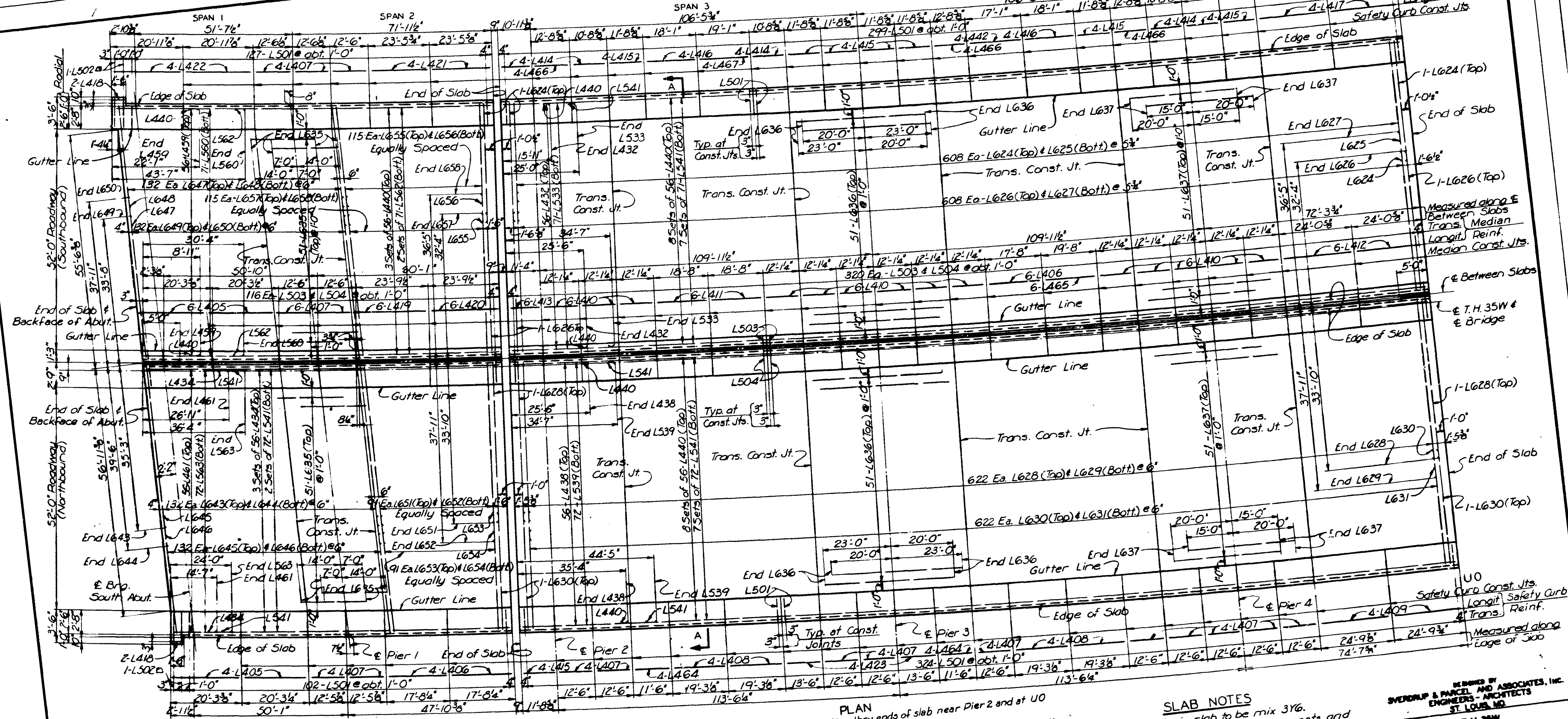
BRIDGE NO. 9340

ROADWAY EXPANSION DEVICE
 AT PIER 11

APPROVED - 6-18-65

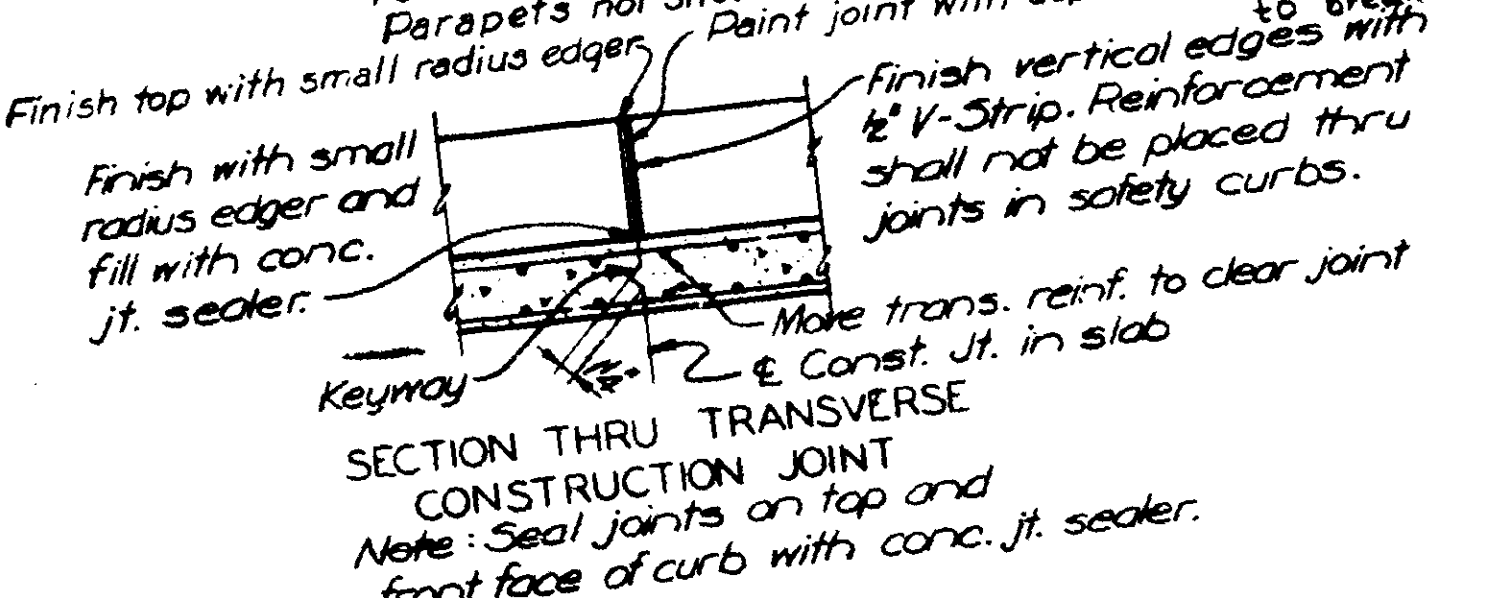
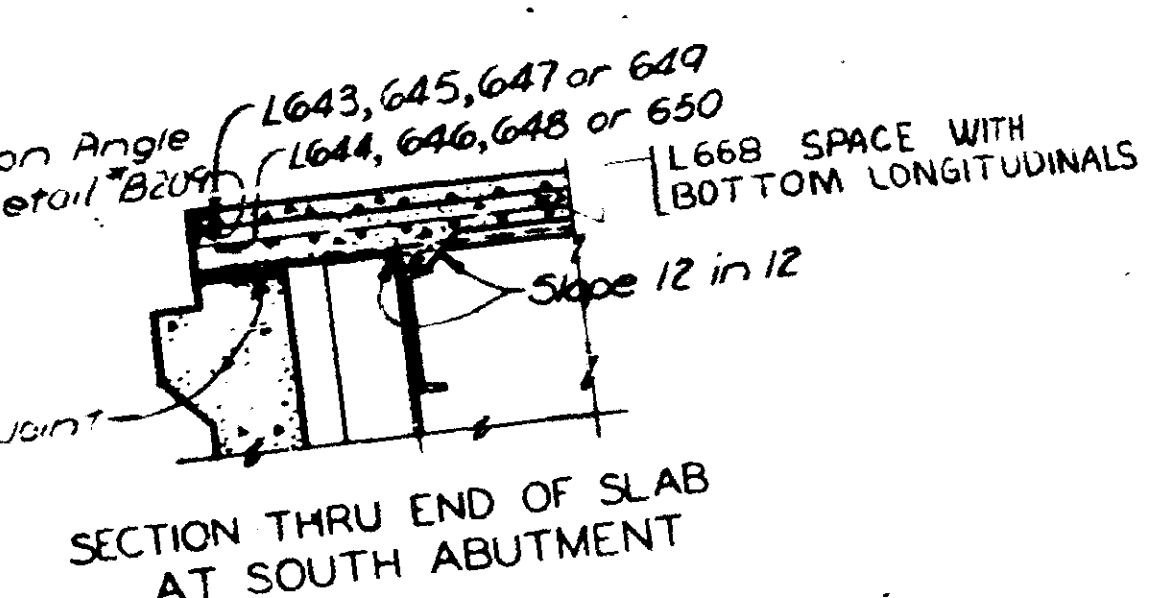
Drawn By: D.E. DiFranco, April 64
 Checked By: W.J. Gaddis, Sept. 64
 2083
 645241

Note: Transverse reinforcing is placed radial except as otherwise shown and may be bent in field to clear transverse construction joints at gutter lines in Spans 1 and 2.
 Spacing of transverse slab reinforcing is measured along adjacent exterior edge of slab.
 Stagger every other longitudinal bar over piers (bars L635, L636, & L637) as shown.



PLAN
 Note: For section thru ends of slab near Pier 2 and at UO see Sheets 50 and 51.
 Dimensions shown are measured horizontally.
 For Section A-A see Sheet 59.
 Parapets not shown.
 Parapets to be equal to approved equal.

SLAB NOTES
 Concrete in slab to be mix 3Y6.
 Concrete in safety curb, parapets and median to be mix 3Y60.
 For Summary of Quantities see Sheet 63.
 For Bill of Reinforcement, see Sheet 63.
 For location of roadway drains, see Sheet 64.
 Cut or bend reinf. to clear roadway drains.
 Transverse reinforcing shall be bent in the field to conform to roadway cross slope.
 Marking at & between slabs indicates limits of compression joint seal see Special Provisions.
 For concrete placing sequence, edge of slab ordinates and deflection ordinates due to weight of concrete, see Sheet 60.



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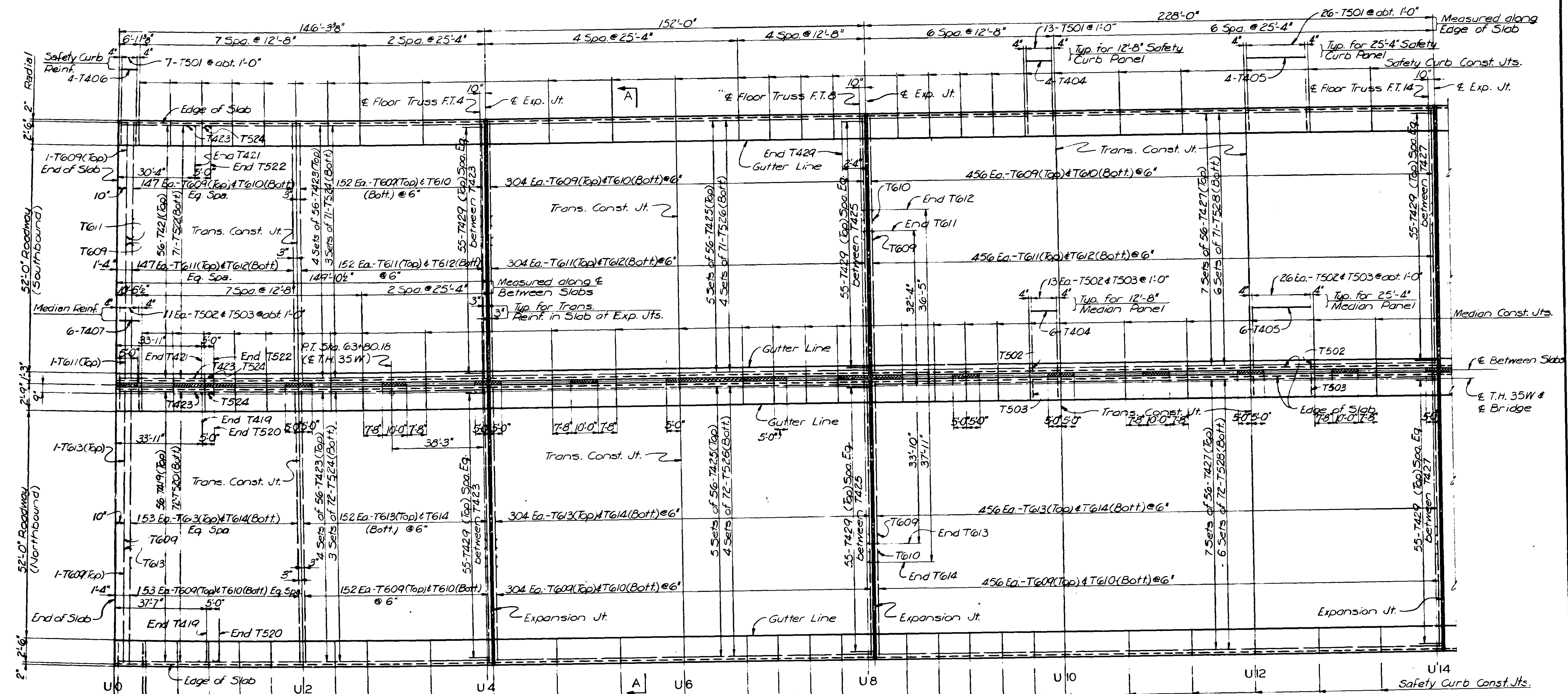
T. H. 35W
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 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

SOUTH APPROACH SPANS
 SLAB DETAILS.

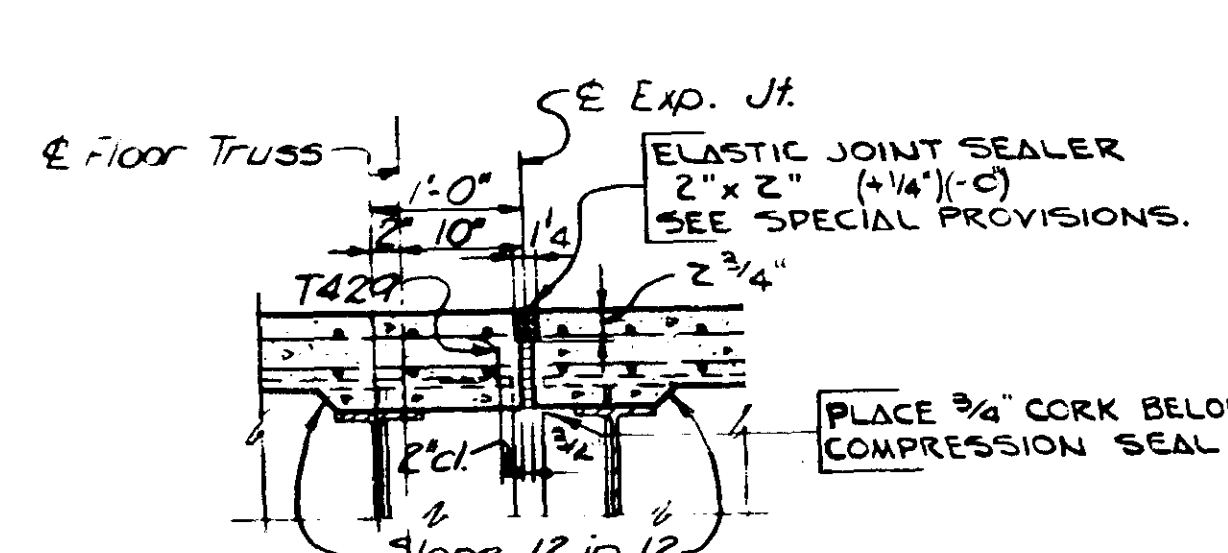
APPROVED - 6-18-65

Drawn by G. J. Des. May 1964
 Checked by R. F. Beck July 1964

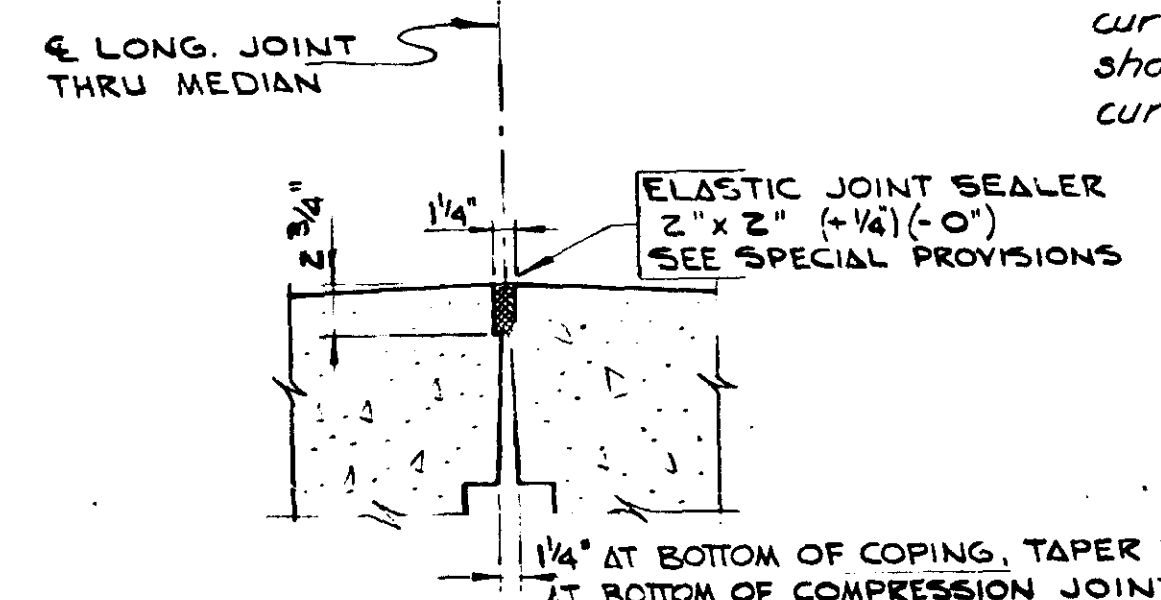


PLAN
 Note: Parapets not shown.
 Longitudinal dimensions shown are measured along ϵ of upper chord.
 Location of construction joints in safety curb of Northbound Roadway and median not shown are the same as shown for the safety curb of the Southbound Roadway.
 For section thru end of slab at U0 see Sheet 51.
 For Section A-A see Sheet 59.

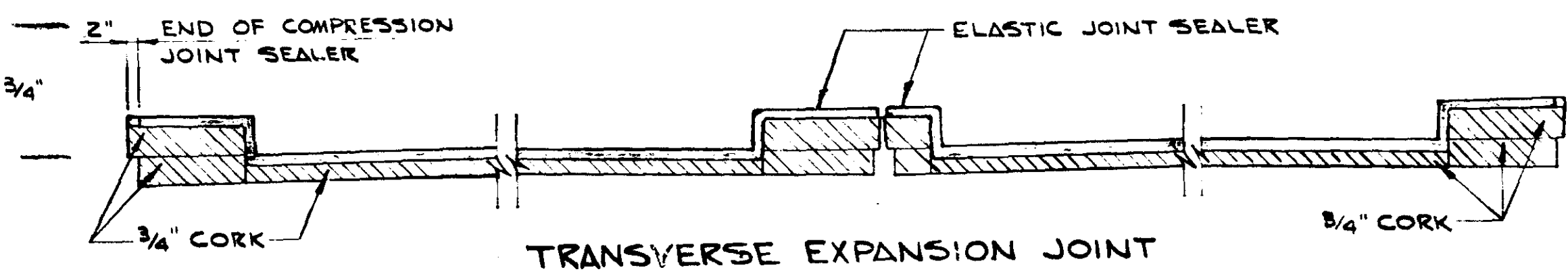
NOTES
 For slab notes and misc. details see Sheet 55.



SECTION THRU SLAB AT TRANSVERSE EXPANSION JOINT



SECTION THRU LONG. JOINT IN MEDIAN



TRANSVERSE EXPANSION JOINT

NOTE: SEE SHEET 63 FOR SUMMARY OF COMPRESSION JT. SEALER.

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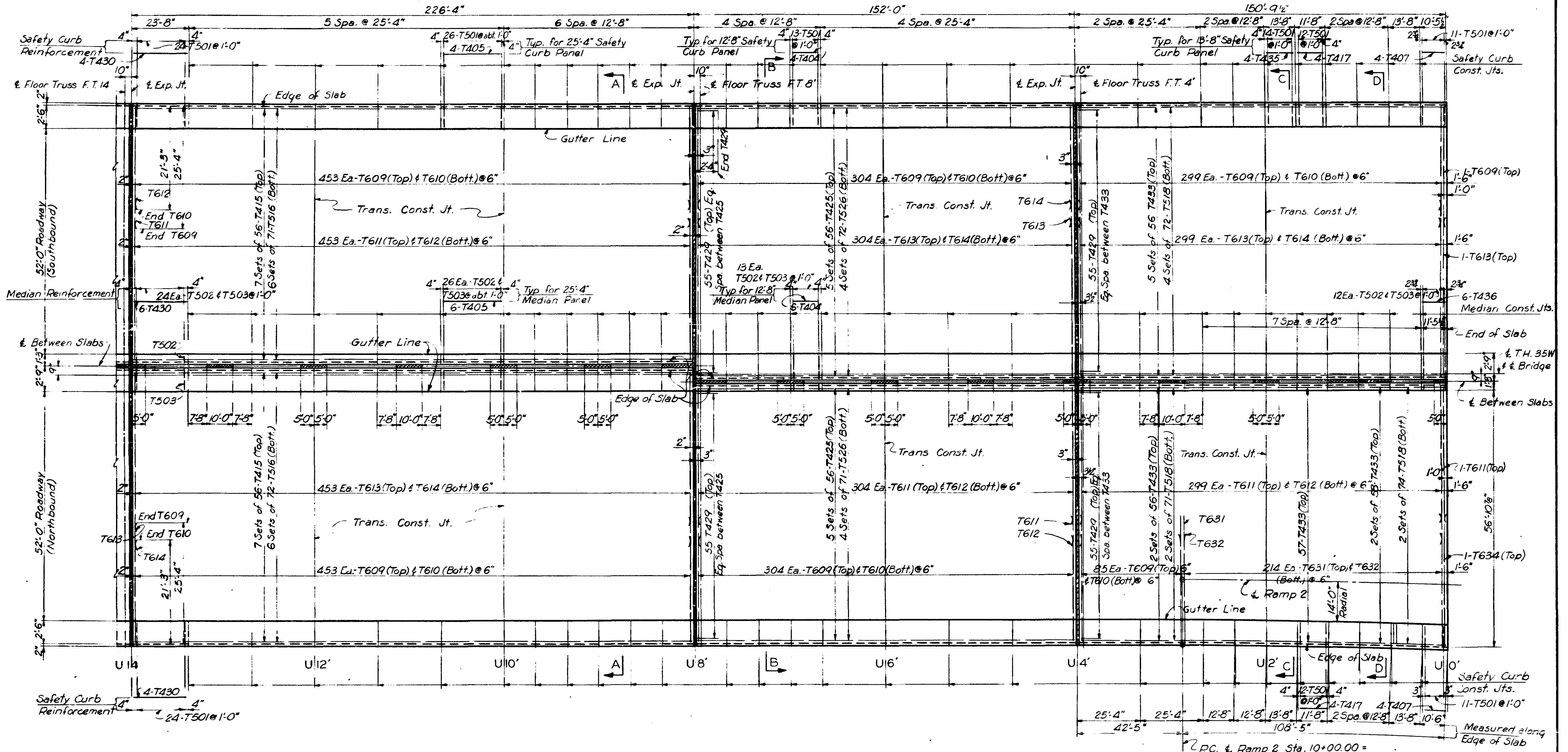
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 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DECK TRUSS SPANS
 SLAB DETAILS

APPROVED - 6-18-65

Drawn by: G. J. Dee, May 1964
 Checked by: R. F. Beck, July 1964
 2043
 645248



PLAN

Note: Parapets not shown.
 Longitudinal dimensions are measured along & Upper Chord.
 Location of construction joints in safety curb of Northbound Roadway and median not shown are the same as shown for the safety curb of the Southbound Roadway.
 For section thru end of slab at U0' see Sheet 52.
 For section thru expansion joint see Sheet 56.
 For Sections A-A & B-B see Sheet 59.

NOTES

For Slab Notes and misc. details see Sheet 55.

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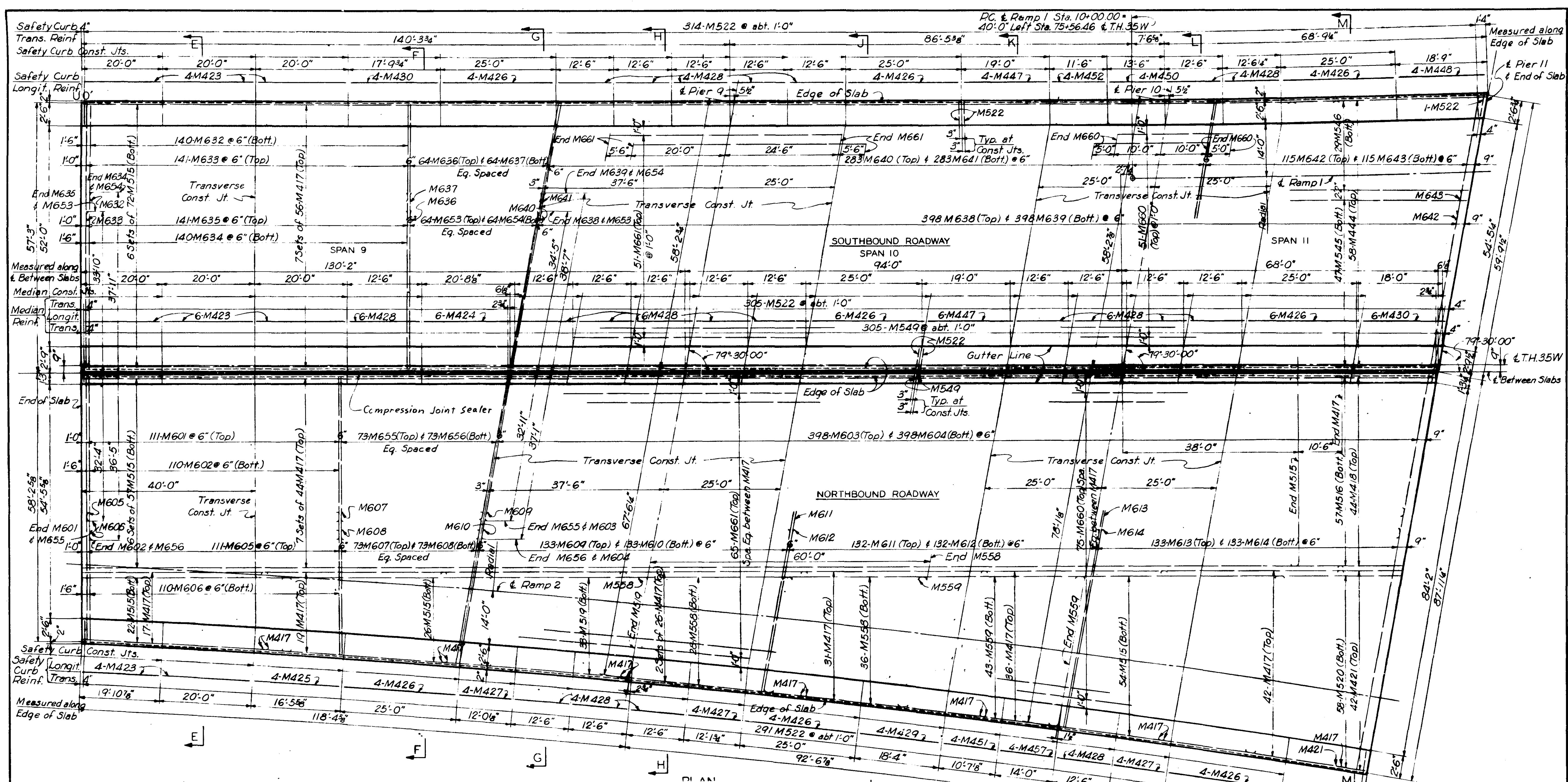
BRIDGE NO. 9340

DECK TRUSS SPANS
 SLAB DETAILS

APPROVED - 6-18-65

Drawn by: G. J. Dee, May 1964
 Checked by: R. F. Beck, Aug. 1964

2083
 645308



PLAN

Note: Parapets not shown.
 Dimensions shown are measured horizontally.
 Stagger every other longitudinal bar over piers (bars M660 & M661) as shown.
 Transverse reinforcing may be bent in the field to clear transverse construction joints at gutter lines.
 For sections thru ends of slab see Sheets 52 and 54.
 For cross sections thru slab see Sheet 57.

NOTES
 For slab notes and misc. details see Sheet 55.

Drawn by: A. Myers, May, 1964
 Traced by: P.F. Beck, Aug. 1964
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BRIDGE NO. 9340

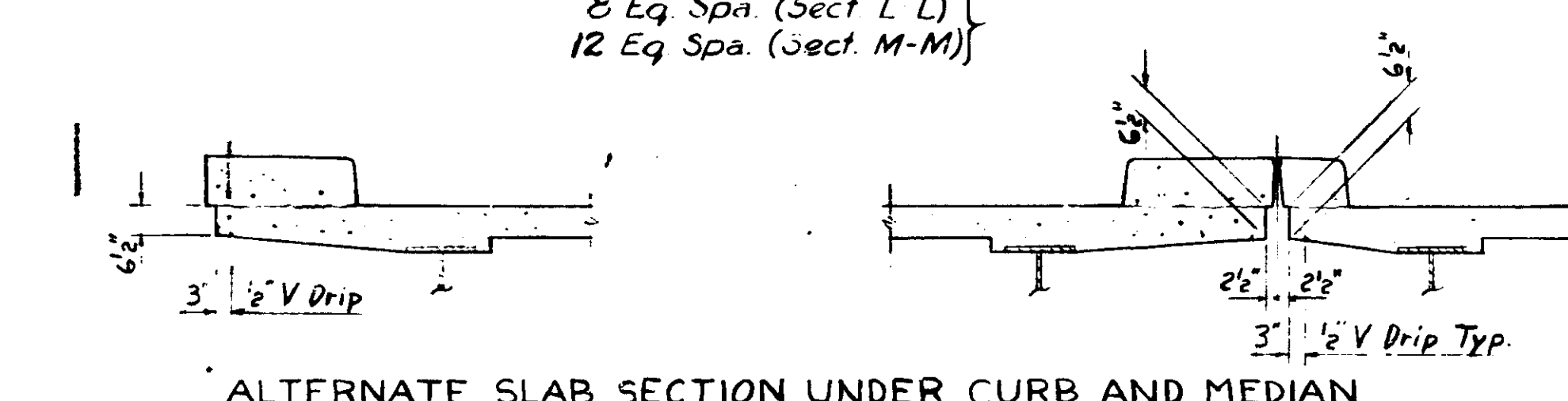
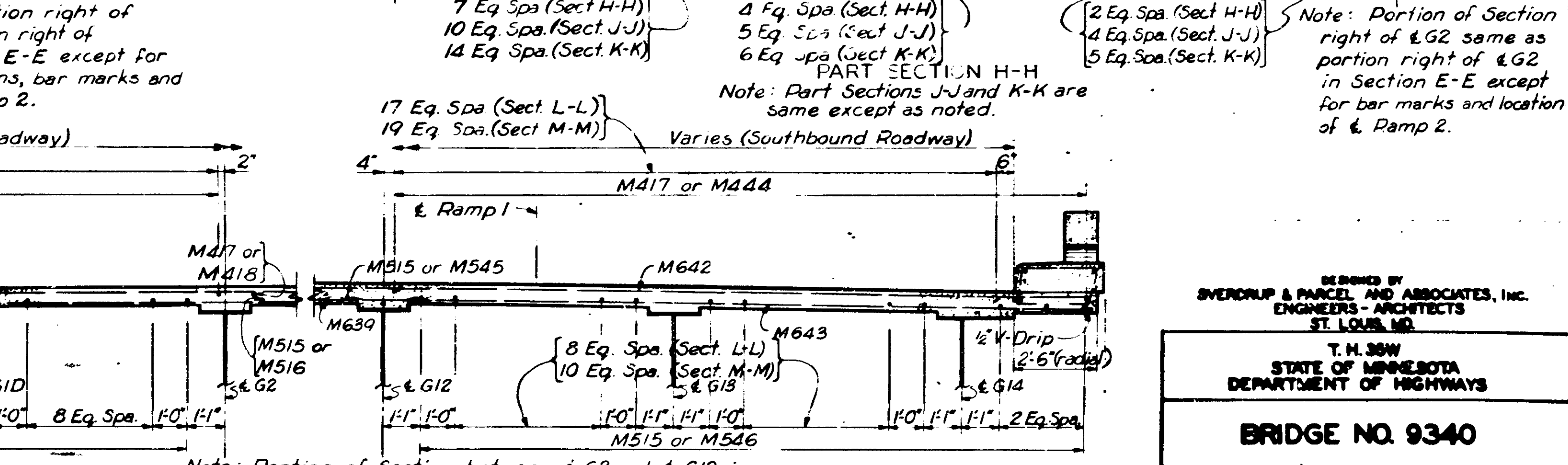
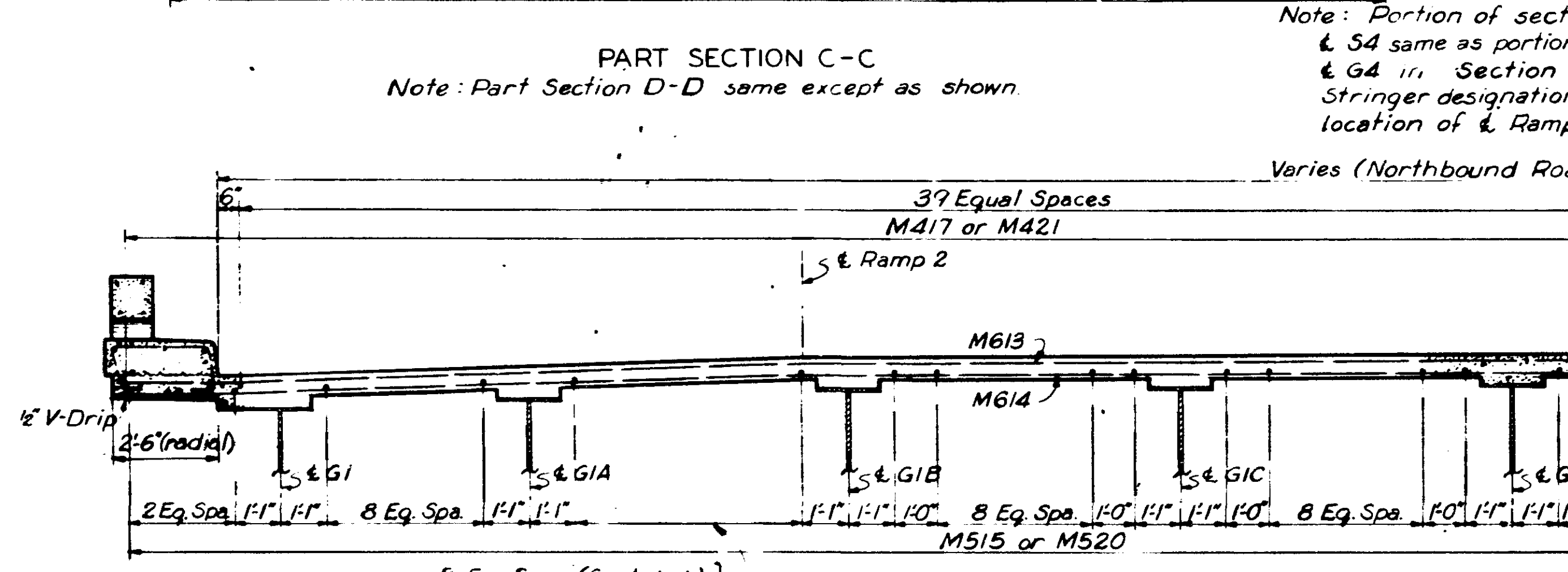
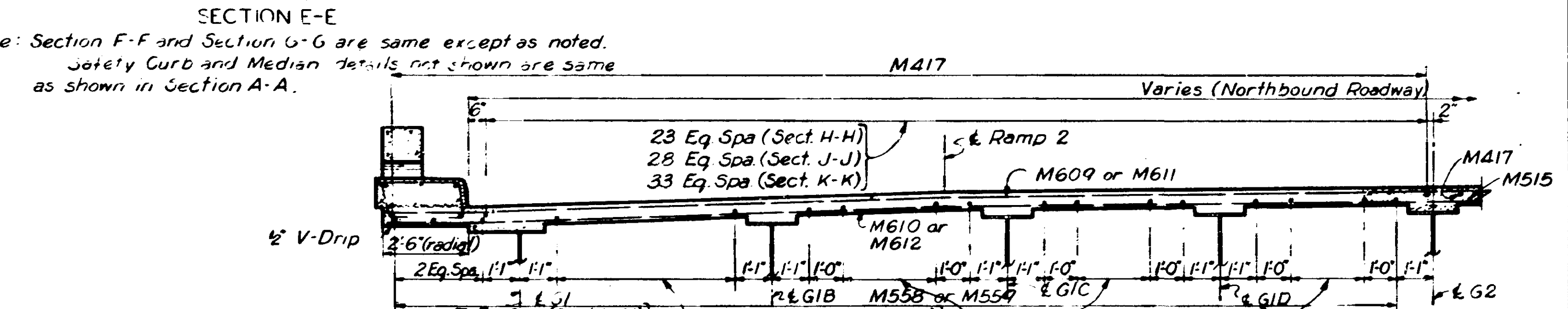
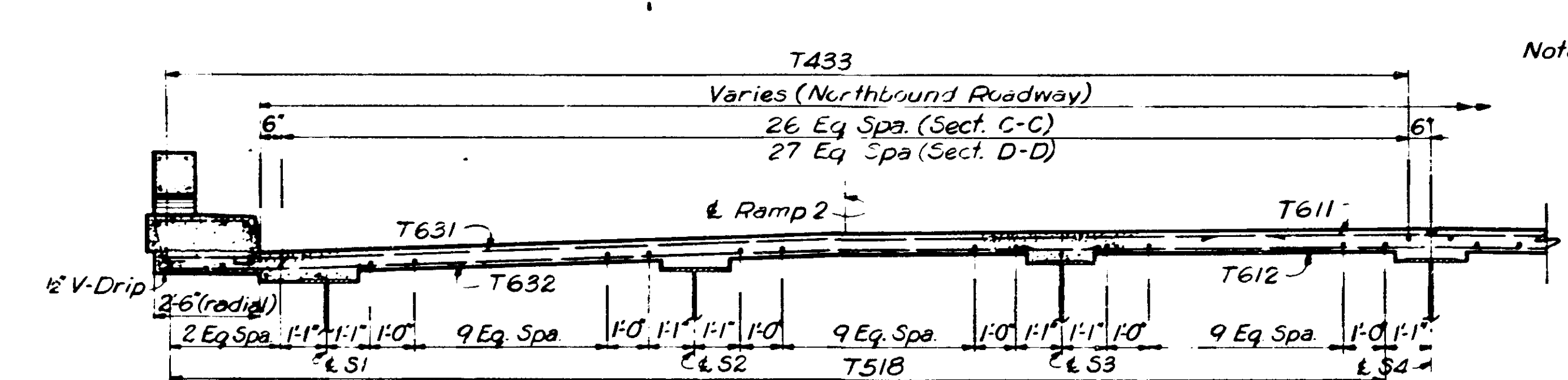
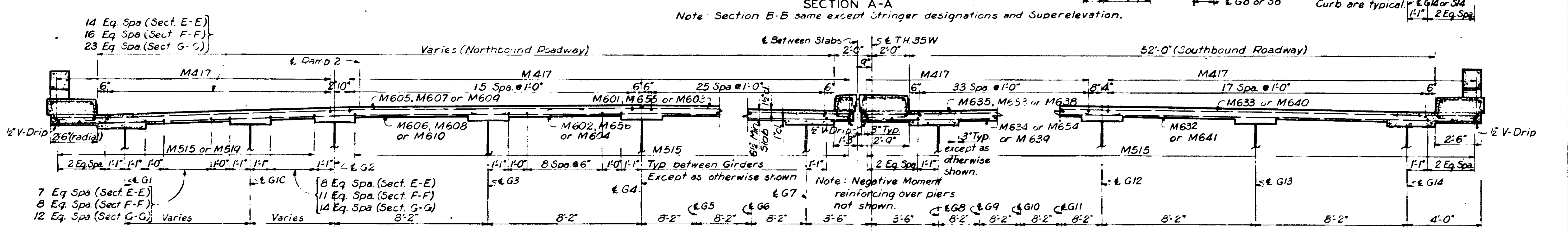
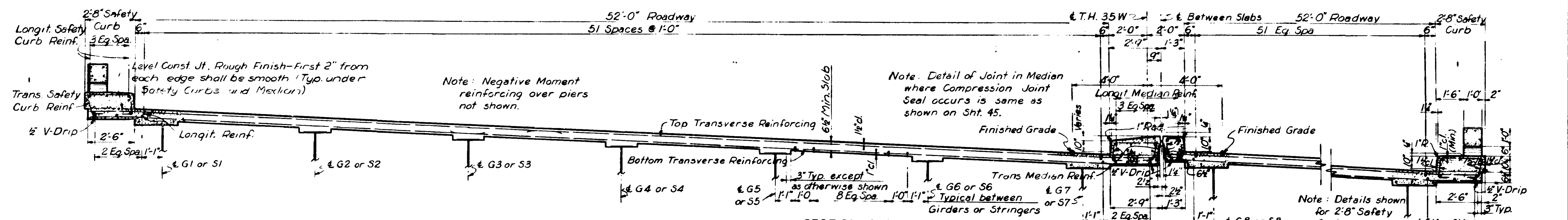
MICRO-FIELD

NORTH APPROACH GIRDER SPANS
 SLAB DETAILS

APPROVED - 6-18-65

SHEET 58 OF 94

9340



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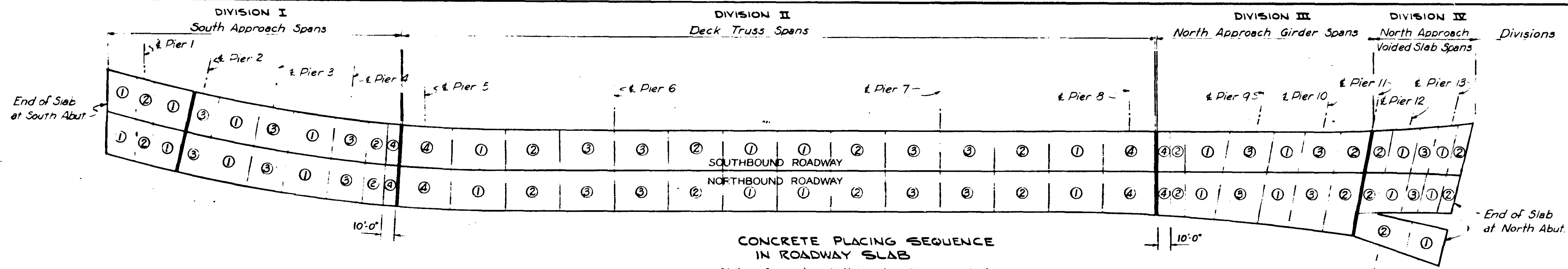
T. H. SOW
 STATE OF MINNESOTA
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BRIDGE NO. 9340

SLAB DETAILS

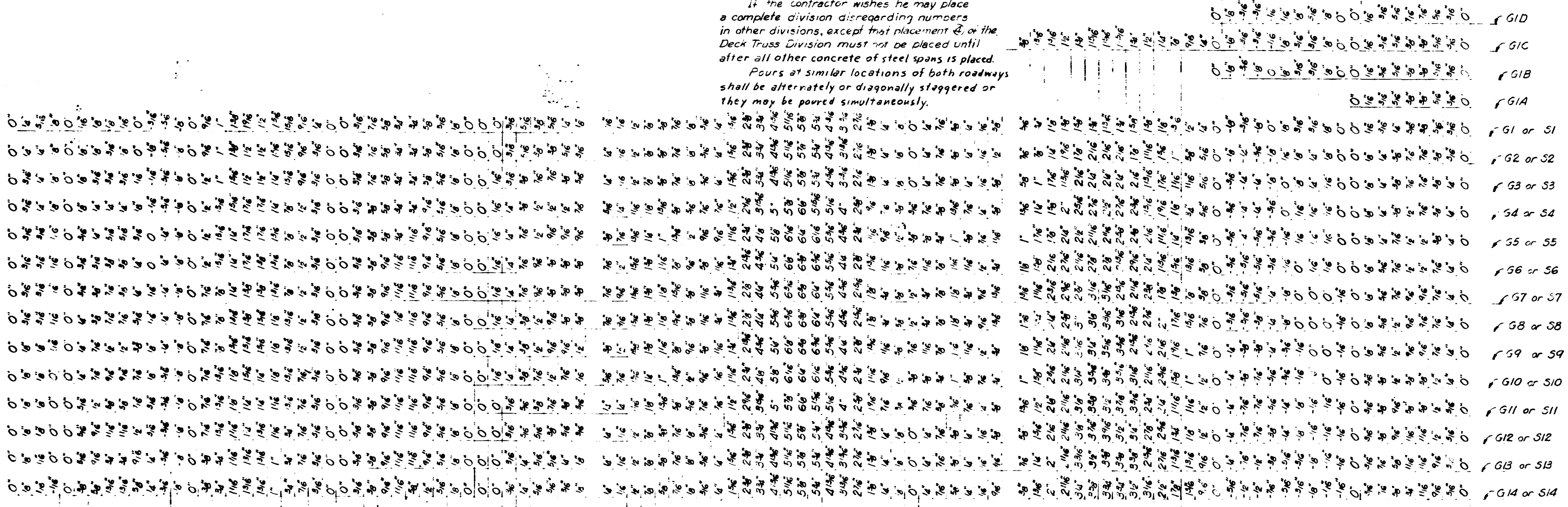
APPROVED - 6-18-65

Drawn by: A. Myers, May, 1964
 Checked by: R. F. Beck, July, 1964
 2083
 643289



CONCRETE PLACING SEQUENCE IN ROADWAY SLAB

Note: Concrete shall be placed in numerical order as indicated by numbers in circles.
 Order of placement for panels with the same number is optional.
 If the contractor wishes he may place a complete division disregarding numbers in other divisions, except that placement in the Deck Truss Division must not be placed until after all other concrete of steel spans is placed.
 Pours at similar locations of both roadways shall be alternately or diagonally staggered or they may be poured simultaneously.



DEFLECTION ORDINATES

NOTE: THE ENGINEER WILL CHECK THE ELEVATIONS AT FIELD BEAM SPLICES IN THE NORTH AND SOUTH APPROACH SPANS AFTER ERECTION. IF VERTICAL ADJUSTMENT IS REQUIRED AT THESE POINTS, AS DETERMINED BY THE ENGINEER, IT SHALL BE DONE BEFORE THE SPLICES ARE RIVETED OR BOLTED INTO FINAL POSITION.

Note: The deflection ordinates shown include deflection due to dead load of the concrete slab, safety curb, median, parapet, handrail and guardrail.
 (-) indicates an upward deflection.
 The Engineer will measure elevations at the top of girders and stringers after erection and allow for the deflections shown to enable the Contractor to build forms to correct grade and specified slab thickness.

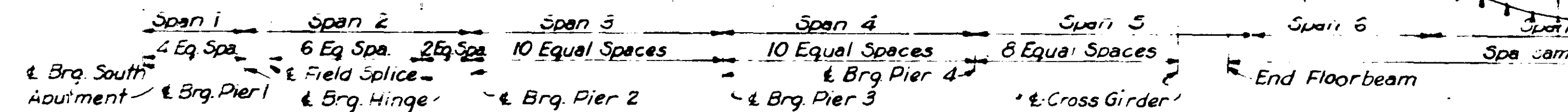
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BRIDGE NO. 9340

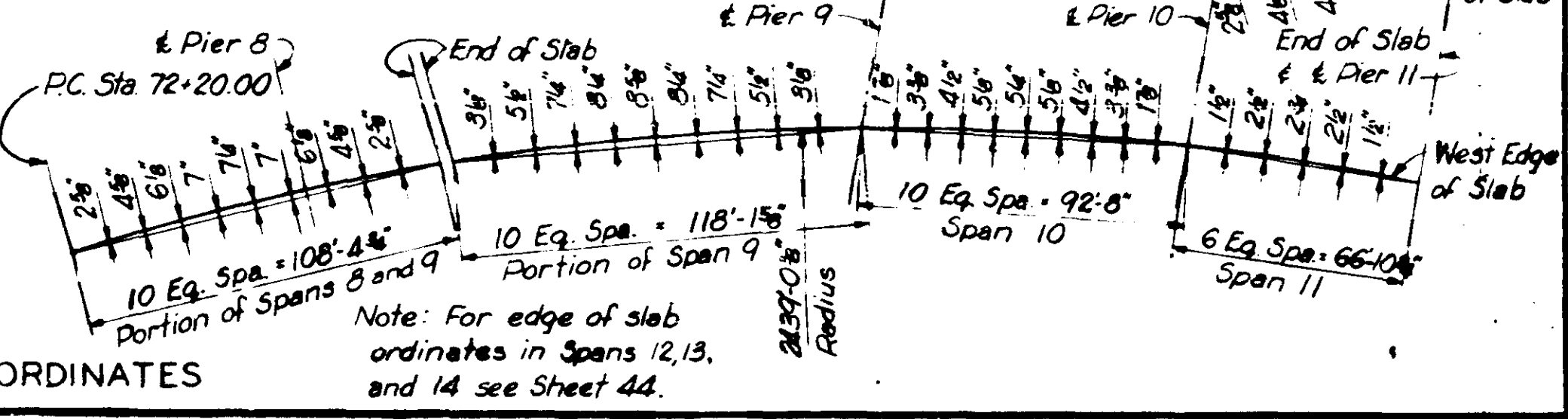
CONCRETE PLACING SEQUENCE, DEFLECTION ORDINATES AND EDGE OF SLAB ORDINATES

APPROVED - 6-18-65

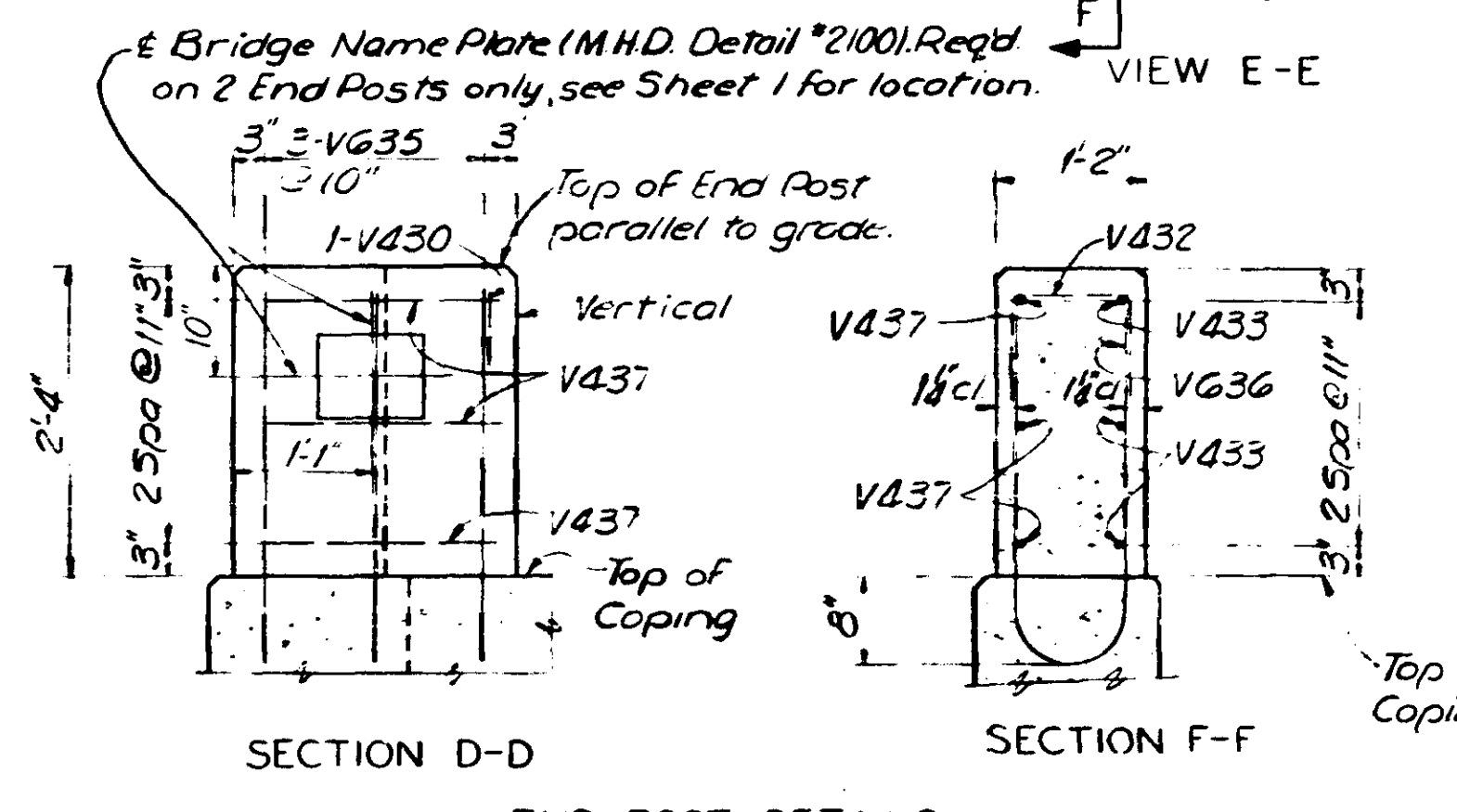
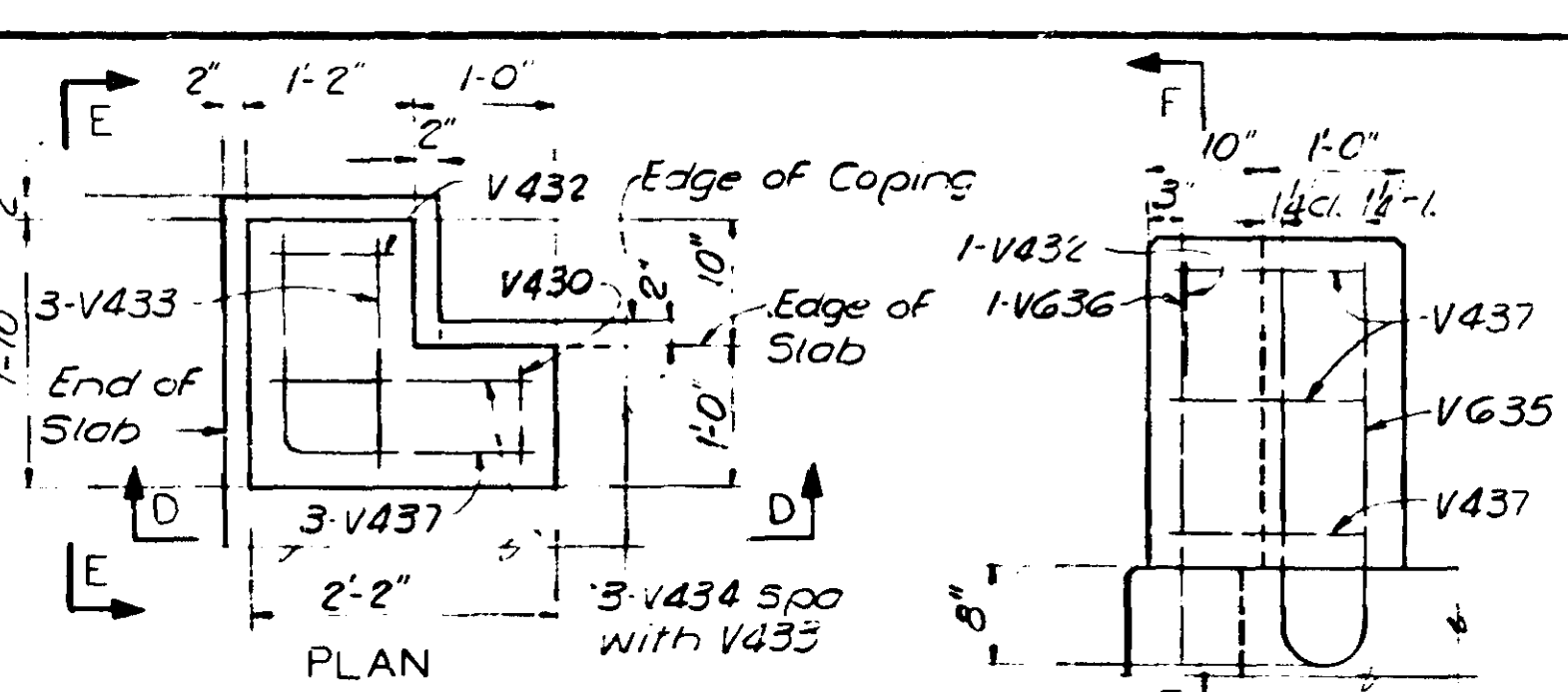


	Span 1		Span 2			Span 3					Span 4					Portion of Span 5		Portion of Spans 5 and 6											
	A	B	A	B	C	A	B	C	D	E	A	B	C	D	E	A	B												
West Edge of Slab	1706'-5 1/2"	14'	24'	50'-11 1/2"	25'	46'	72'-7 1/2"	45'	74'	108'	114'	106'	117'-4 1/2"	33'	68'	83'	98'	10'	106'-5 1/2"	23'	33'	48'	70'-0 1/2"	34'	68'	84'	94'	108'	107'-2 1/2"
& Between Slabs	1762'-2 1/2"	15'	24'	50'-10"	14'	36'	60'-1"	45'	8'	106'	110'	110'	121'-3 1/2"	33'	68'	83'	98'	10'	106'	109'-11 1/2"	26'	48'	72'-5 1/2"	34'	68'	83'	94'	108'	110'-9 1/2"
East Edge of Slab	1819'-5 1/2"	15'	24'	50'-8 1/2"	1'	14'	47'-2 1/2"	45'	84'	108'	114'	108'	125'-2 1/2"	33'	68'	83'	98'	10'	106'	115'-6"	24'	48'	74'-7 1/2"	34'	68'	83'	94'	108'	114'-5 1/2"

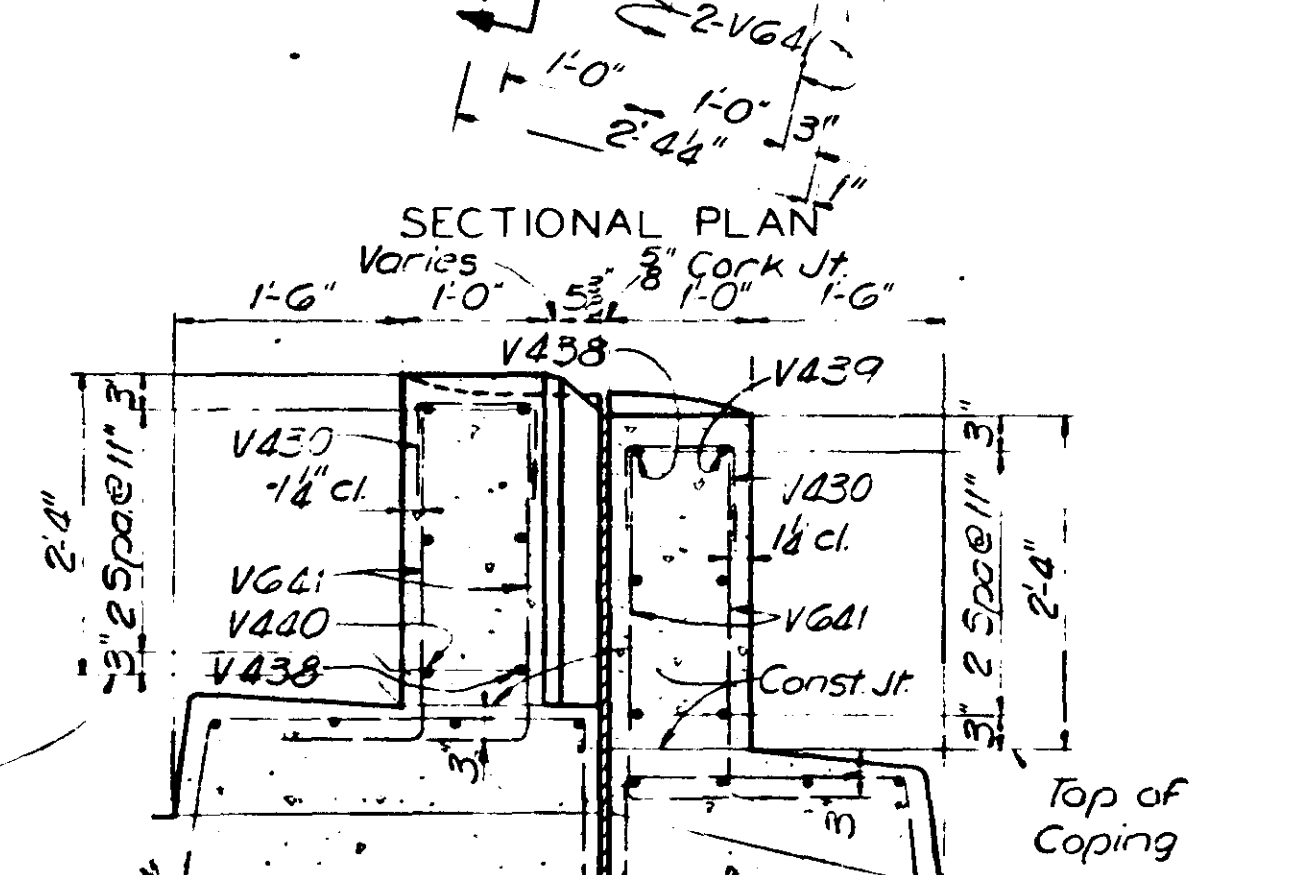
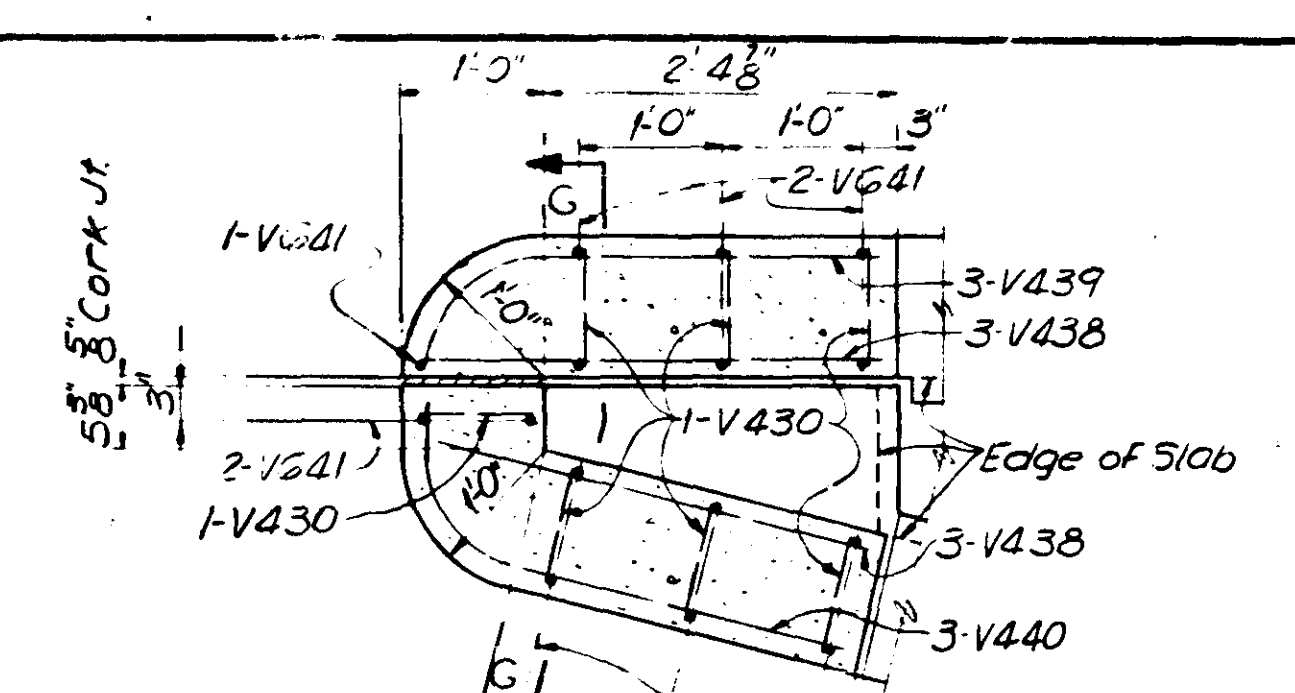
EDGE OF SLAB ORDINATES



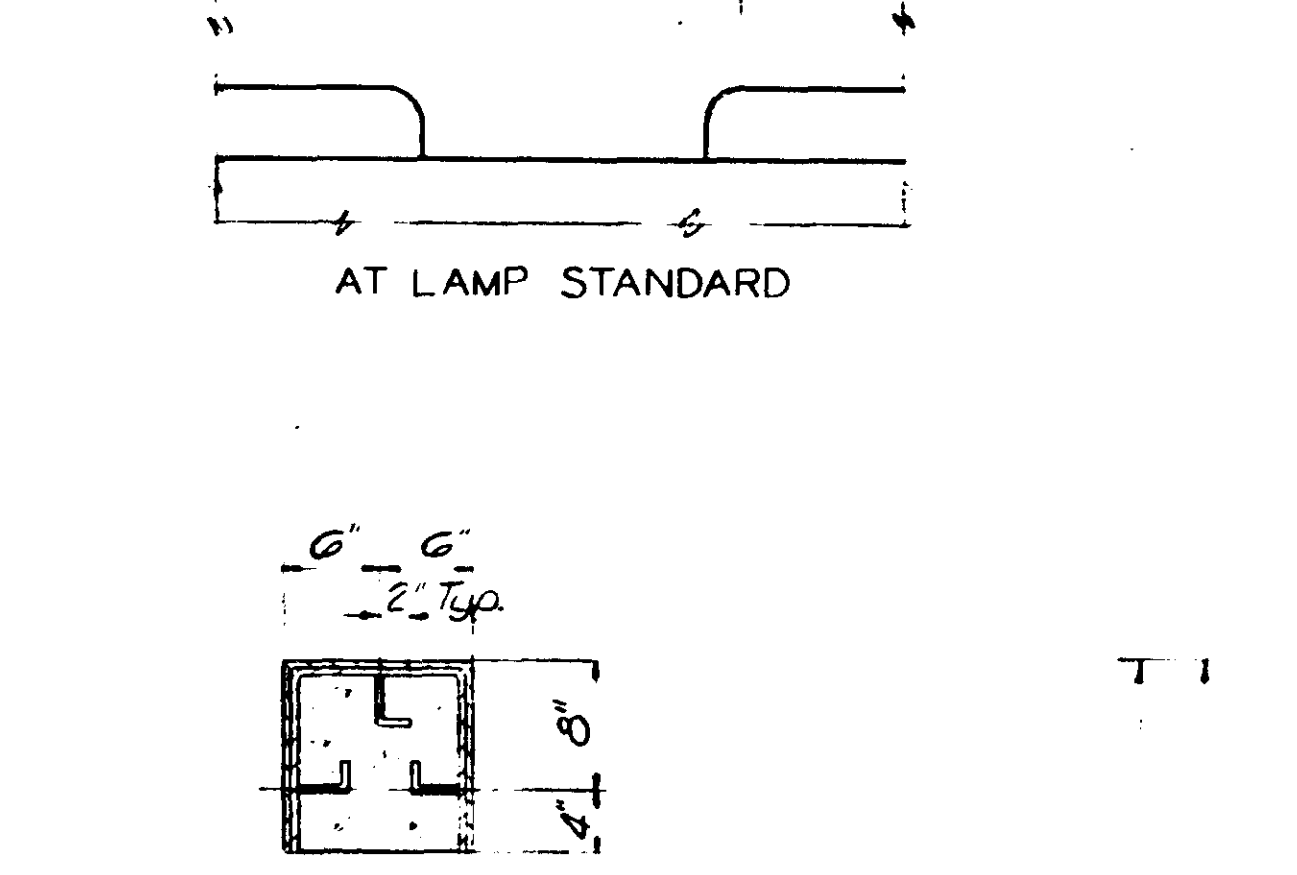
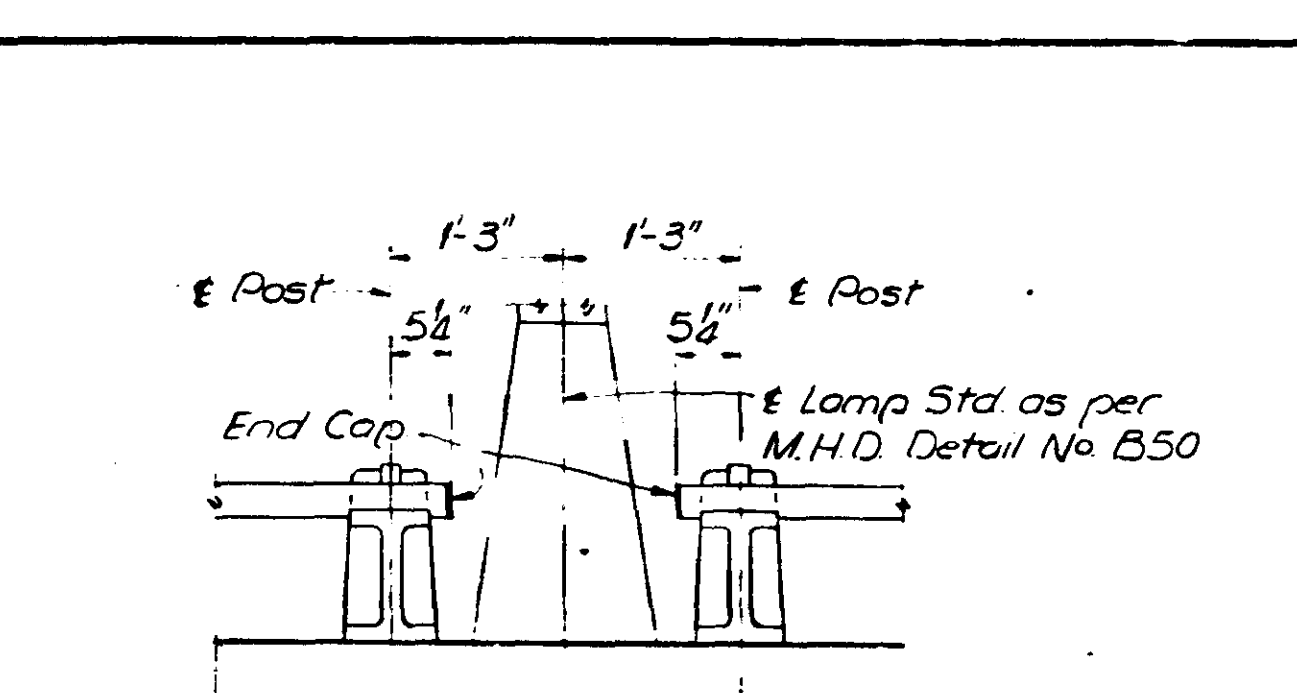
Drawn by: A.T. Myers, Oct. 1964
 Checked by: R.R. Berke & Robert's, Oct. 1964
 2083
 645632



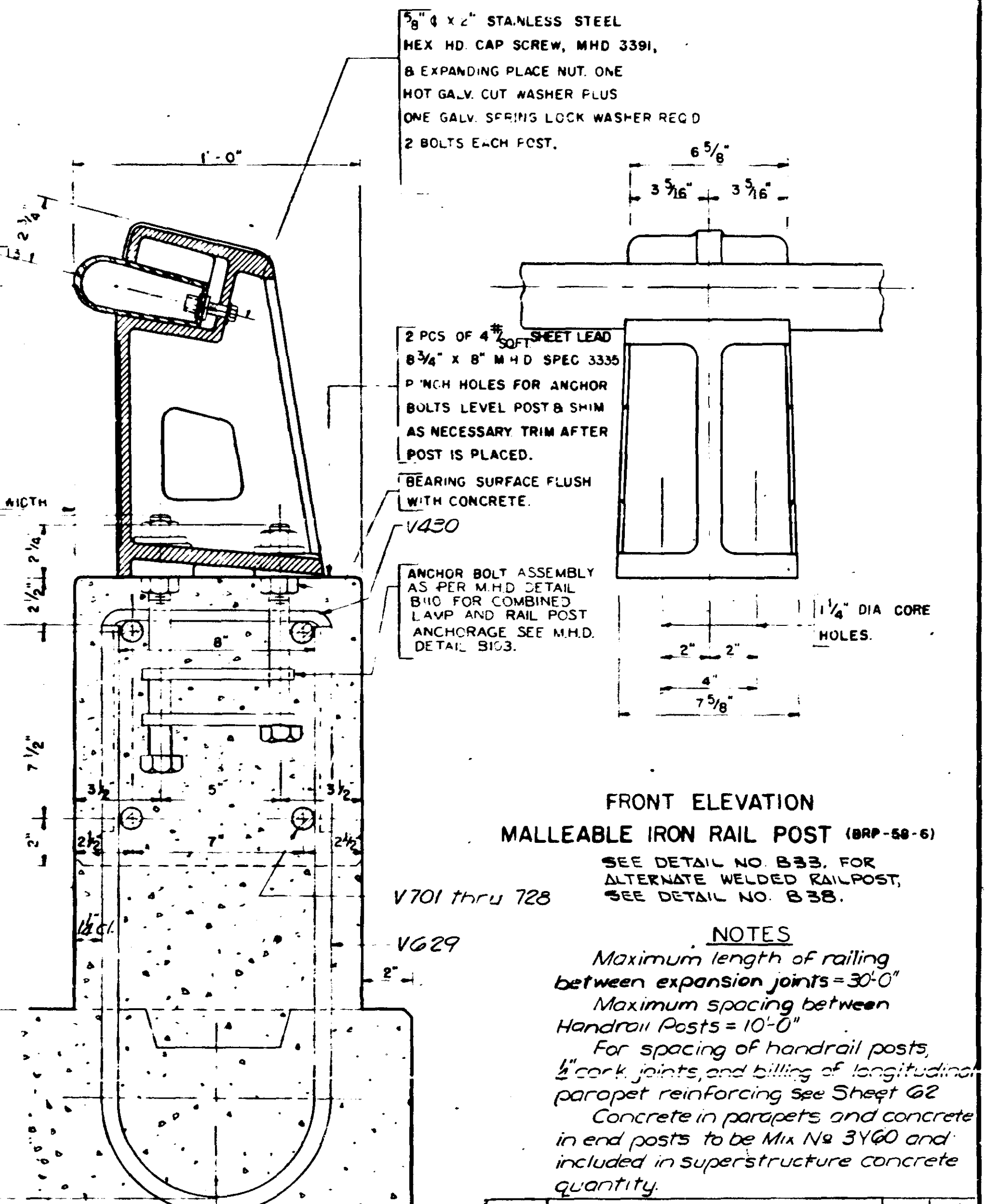
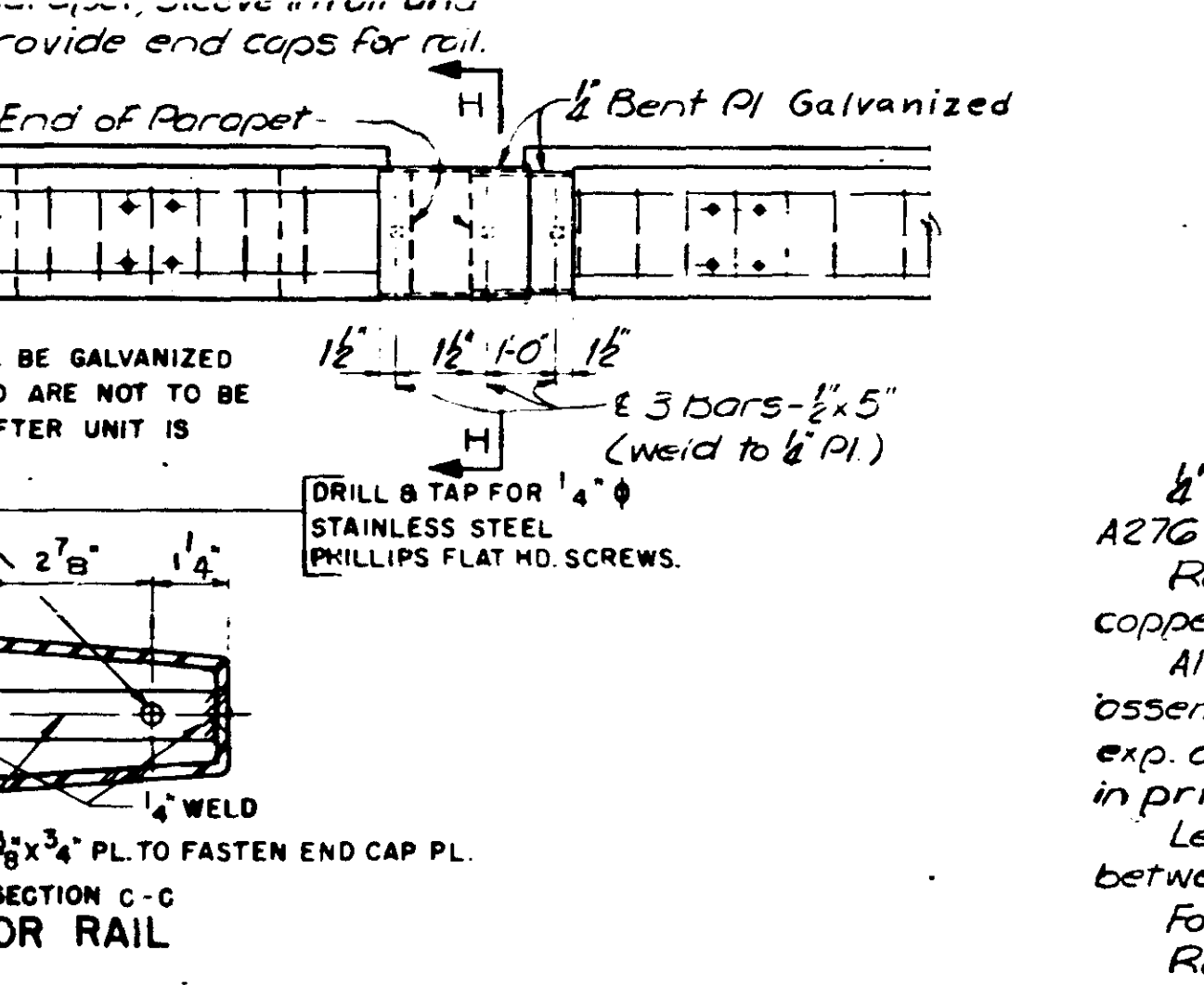
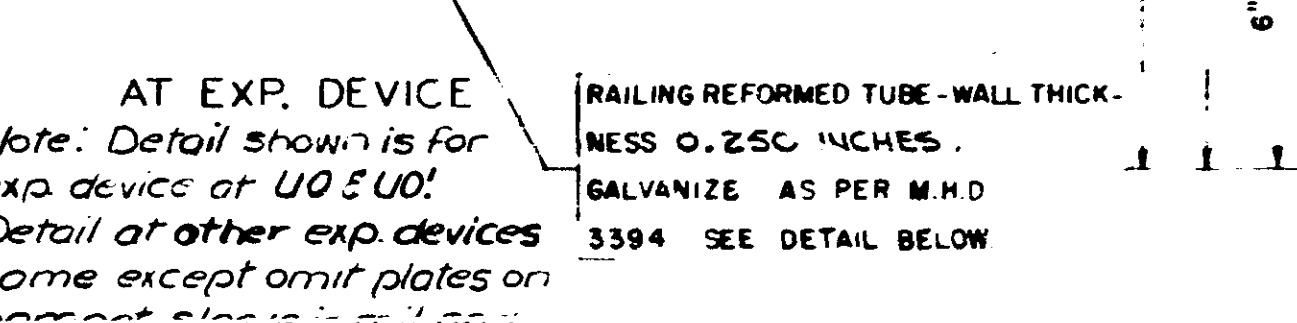
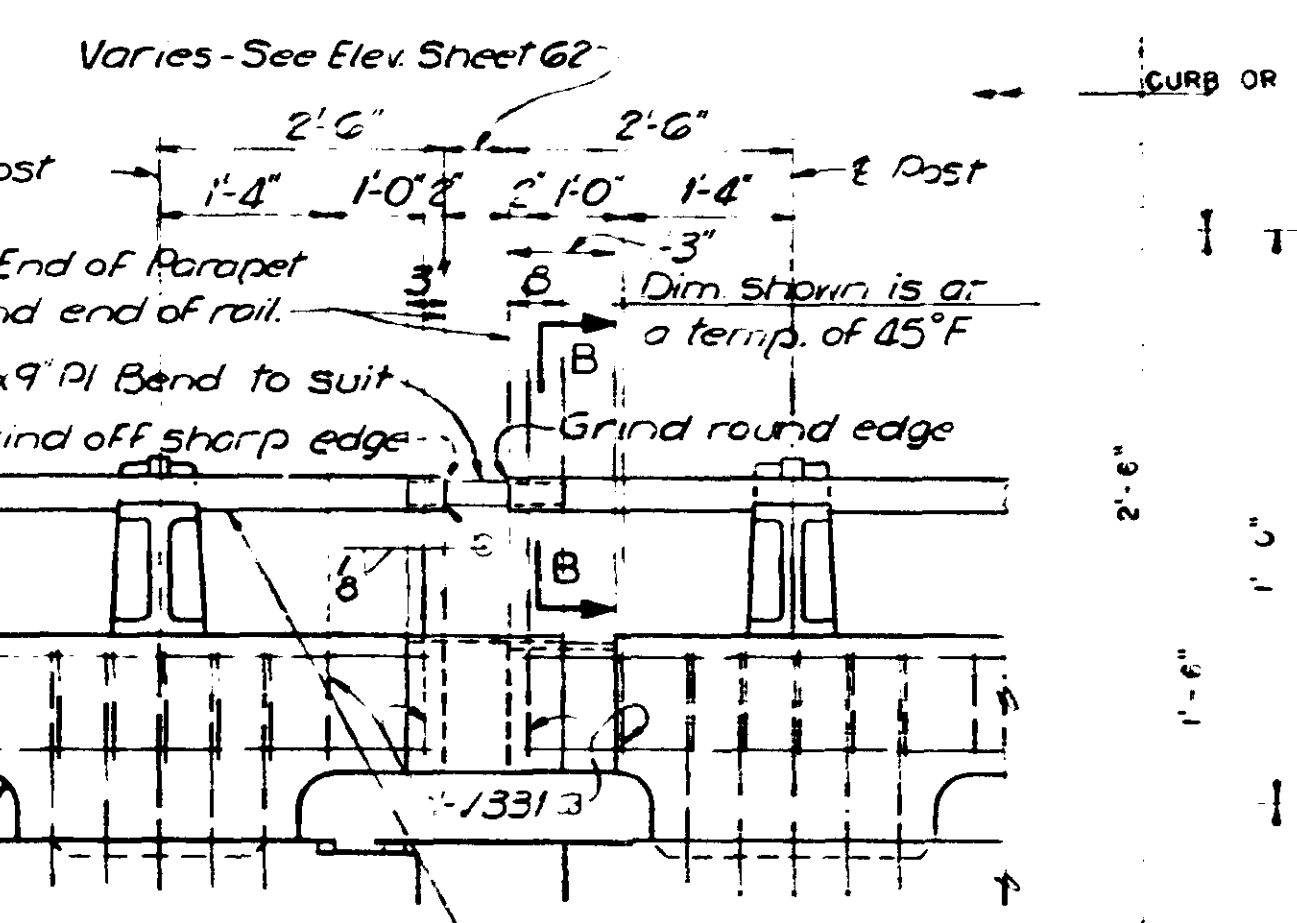
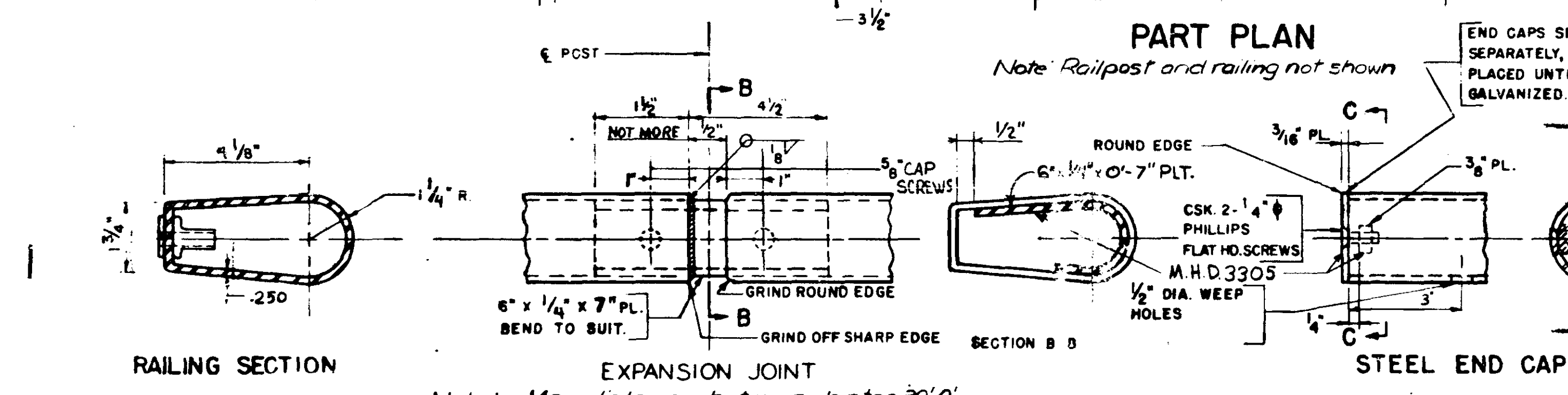
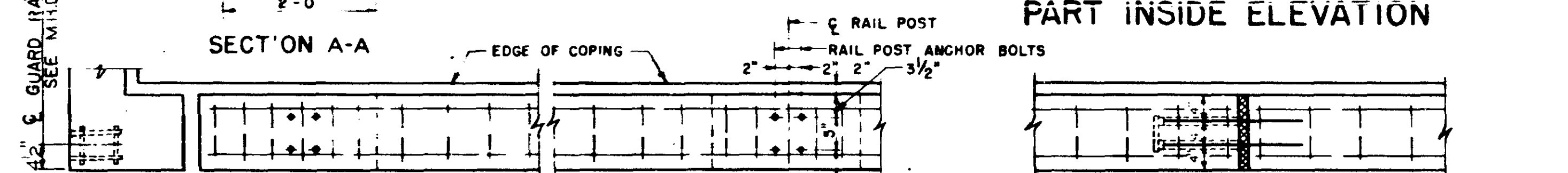
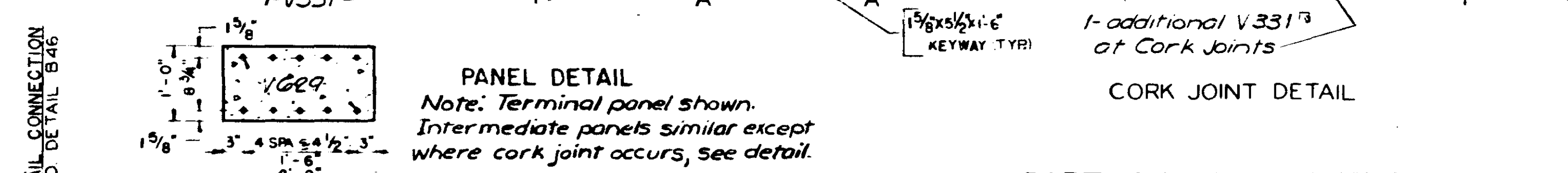
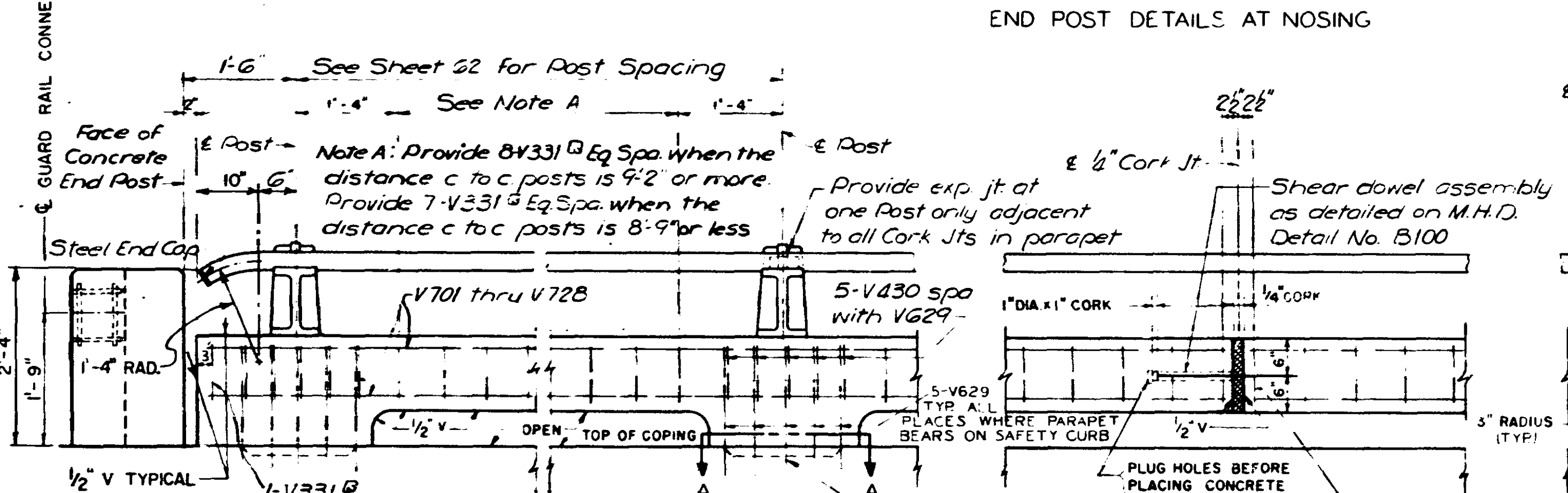
END POST DETAILS
Note: For location see Sheet G2.



END POST DETAILS AT NOSING



SECTION H-H



FRONT ELEVATION
MALLEABLE IRON RAIL POST (BRP-58-6)
V701 thru 728
V629

NOTES
Maximum length of railing between expansion joints = 30'-0"
Maximum spacing between Handrail Posts = 10'-0"
For spacing of handrail posts, 1/2" cork joints, and billing of longitudinal parapet reinforcing see Sheet G2
Concrete in parapets and concrete in end posts to be Mix No 3Y60 and included in superstructure concrete quantity.

DATE	REVISION	BY	CK'D
8-4-65	RAILING WALL THICKNESS @ EXP DEV	TJH	R2T

HANDRAIL NOTES
1/2" stainless steel phillips flat hd screws - A.S.T.M. A276 Type 302, 303, 304 or 305.
Railing to be intermediate strength manganese copper-bearing steel M.H.D. 3317 EXCEPT AS NOTED.
All railing, sleeves, railposts, fastenings, anchor bolt assemblies, shear dowel assemblies, end caps, plates at exp. devices on parapets, and sheet lead to be included in price bid for ornamental metal railing.
Length of railing for payment to be measured between faces of concrete end posts.
For construction requirements see special provisions.
Railing to be galvanized in one dip.
MALLEABLE IRON POSTS TO BE NORMAL TO GRADE.

- 2 PCS OF 4" x 4" STAINLESS STEEL HEX HD CAP SCREW, MHD 3391.
- 8 EXPANDING PLATE NUT, ONE HOT GALV. CUT WASHER PLUS ONE GALV. SPRING LOCK WASHER REQD 2 BOLTS EACH POST.
- 2 PCS OF 4" x 4" SHEET LEAD AS PER M.H.D. DETAIL B10 FOR COMBINED LAMP AND RAIL POST ANCHORAGE SEE M.H.D. DETAIL B10.
- ANCHOR BOLT ASSEMBLY AS PER M.H.D. DETAIL B10 FOR COMBINED LAMP AND RAIL POST ANCHORAGE SEE M.H.D. DETAIL B10.
- BEARING SURFACE FLUSH WITH CONCRETE.
- 1 1/4" DIA CORE HOLES.

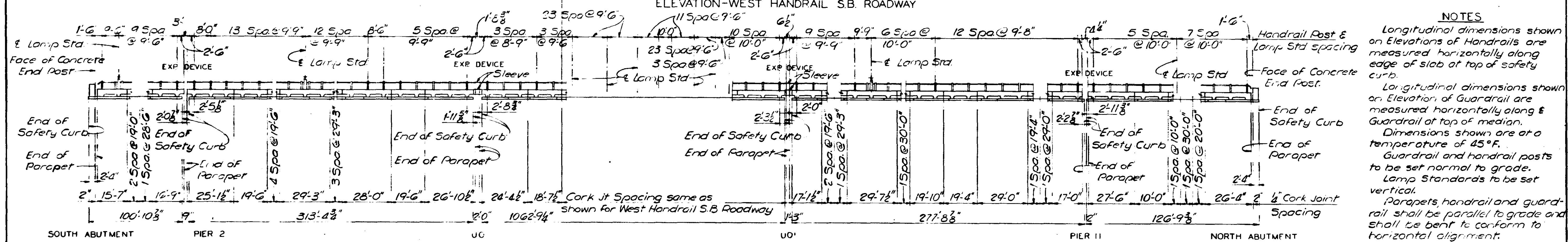
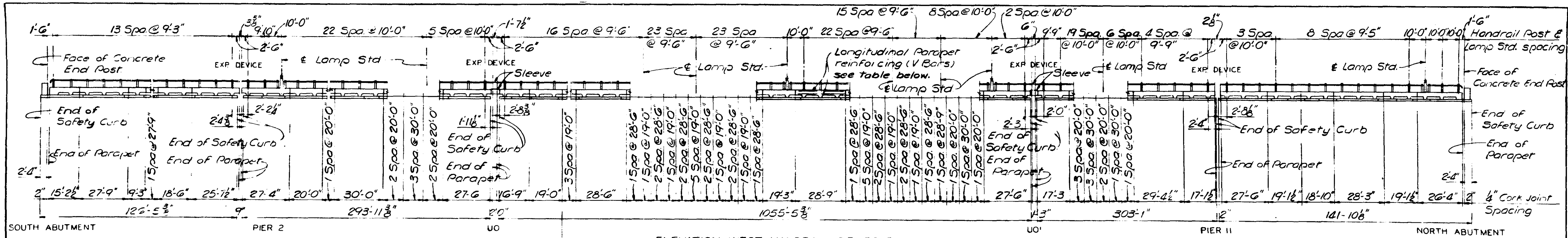
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

I-LINE FLAT TUBE STEEL RAIL AND PARAPET

APPROVED 6-18-65

Design by: L.A. Gainer, Sept. 1964
 Checked by: R.F. Beck, Oct. 1964
 2033
 25518



NOTES

Longitudinal dimensions shown on Elevations of Handrails are measured horizontally along edge of slab at top of safety curb.

Longitudinal dimensions shown on Elevation of Guardrail are measured horizontally along & Safety Curb at top of median.

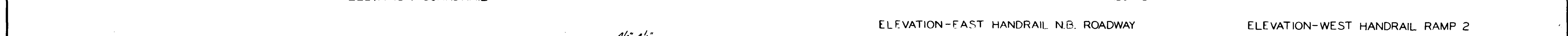
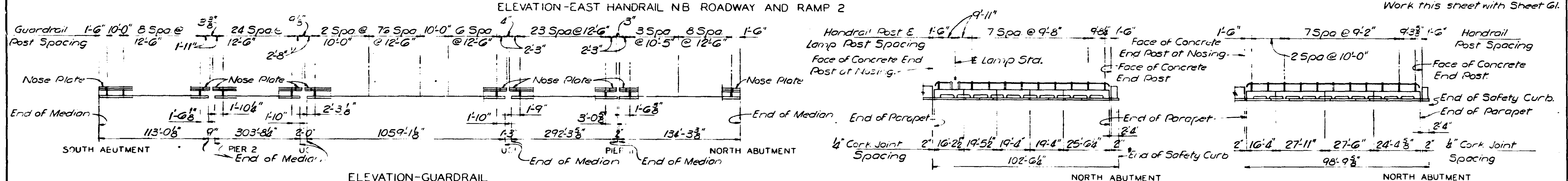
Dimensions shown are at a temperature of 45°F.

Guardrail and handrail posts to be set normal to grade.

Lamp Standards to be set vertical.

Parapets, handrail and guardrail shall be parallel to grade and shall be bent to conform to horizontal alignment.

Work this sheet with Sheet G1.



GUARDRAIL NOTES

Material for guardrail posts and base pl. shall be in accordance with M.H.D. 330G.

Structural plate beam guardrail and nose plates shall be in accordance with M.H.D. Std. Pl. No. 8307C except for gage of plate.

Material for beam guardrail and nose plates shall be in accordance with M.H.D. 3382. Material not covered in M.H.D. 3382 shall be galvanized in accordance with M.H.D. 2471.3L2.

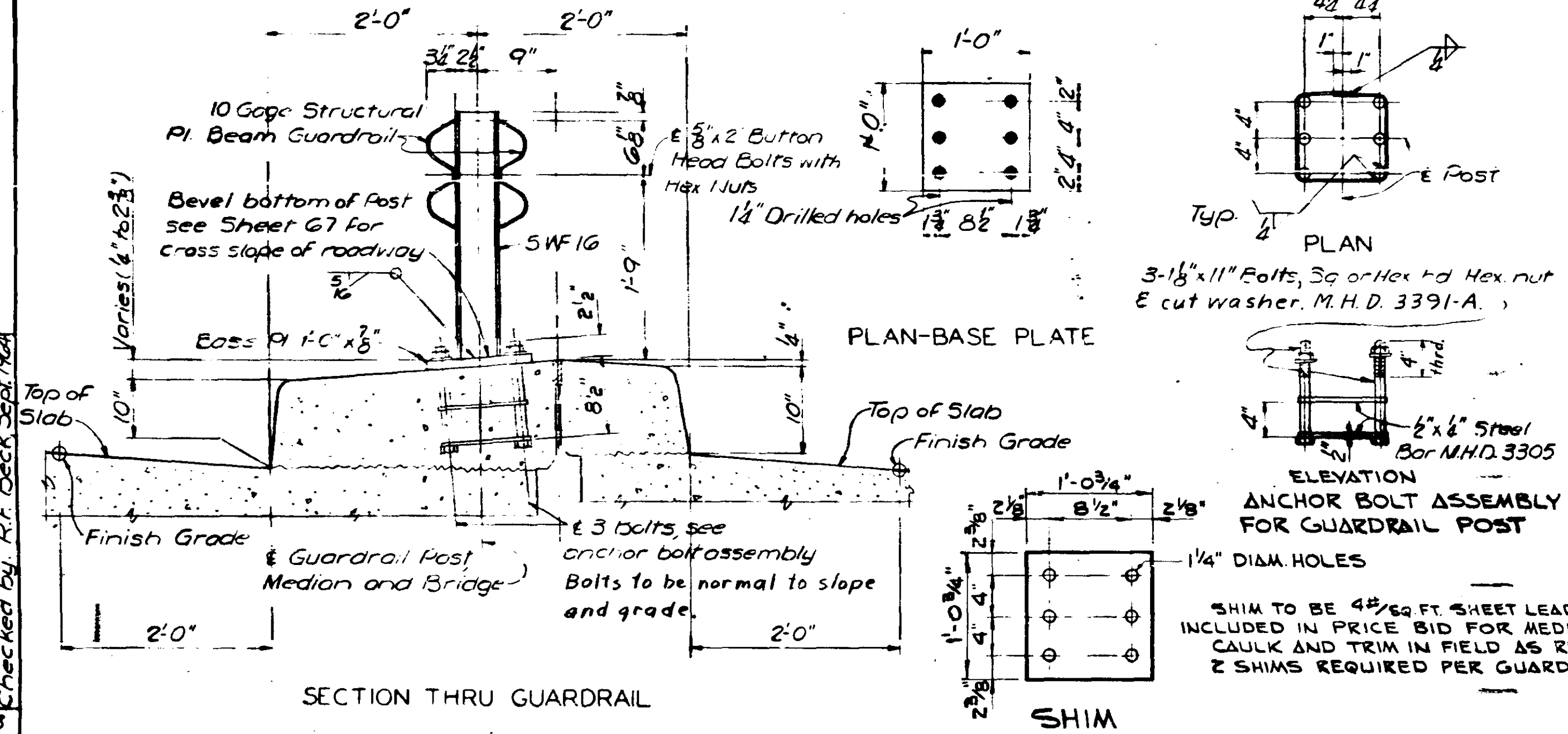
Length of guardrail for payment will be measured by length between end posts of each continuous section.

Installation and cost of all structural plate beams, nose plates, posts, base plates, fastenings, and anchor bolt assemblies, shall be included in the price bid for Median Barrier (Type, Metal).

For construction requirements see Special provisions.

LONGITUDINAL PARAPET REINFORCING

LENGTH OF UNIT	NR OF UNITS	V BARS PER UNIT	LENGTH OF UNIT	NR OF UNITS	V BARS PER UNIT
7'-3"	1	4-V101	24'-4 1/2"	1	4-V714
10'-0"	2	4-V702	25'-1 1/2"	1	4-V715
15'-2 1/2"	1	4-V703	25'-6 1/2"	1	4-V716
15'-7"	1	4-V704	25'-7 1/2"	1	4-V716
16'-2 1/2"	1	4-V705	26'-4"	2	4-V717
16'-4"	1	4-V705	26'-10 1/2"	1	4-V718
16'-9"	2	4-V706	27'-4"	1	4-V719
17'-0"	1	4-V707	27'-6"	6	4-V719
17'-1 1/2"	2	4-V707	27'-9"	2	4-V720
17'-3"	1	4-V708	27'-11"	1	4-V721
18'-6"	1	4-V709	28'-0"	1	4-V721
18'-7 1/2"	1	4-V709	28'-3"	1	4-V722
18'-10"	1	4-V710	28'-6"	35	4-V723
19'-0"	41	4-V710	28'-9"	4	4-V724
19'-1 1/2"	2	4-V711	29'-0"	2	4-V725
19'-3"	2	4-V711	29'-3"	5	4-V726
19'-4"	4	4-V712	29'-4 1/2"	1	4-V726
19'-5 1/2"	1	4-V712	29'-7 1/2"	1	4-V727
19'-6"	8	4-V712	30'-0"	12	4-V728
19'-10"	1	4-V713			
20'-0"	17	4-V713			
24'-4 1/2"	1	4-V714			



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 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

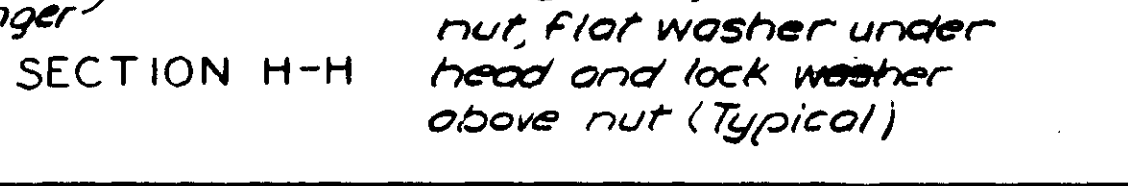
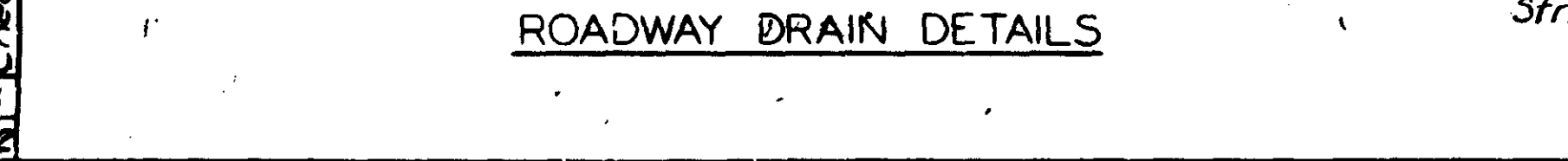
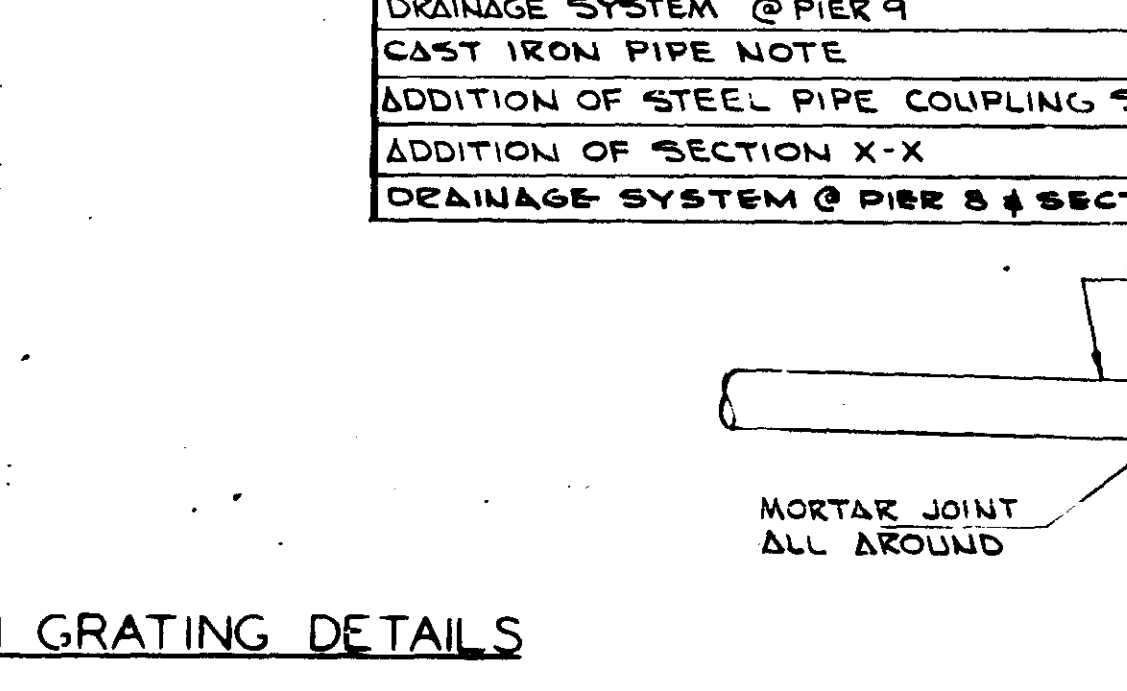
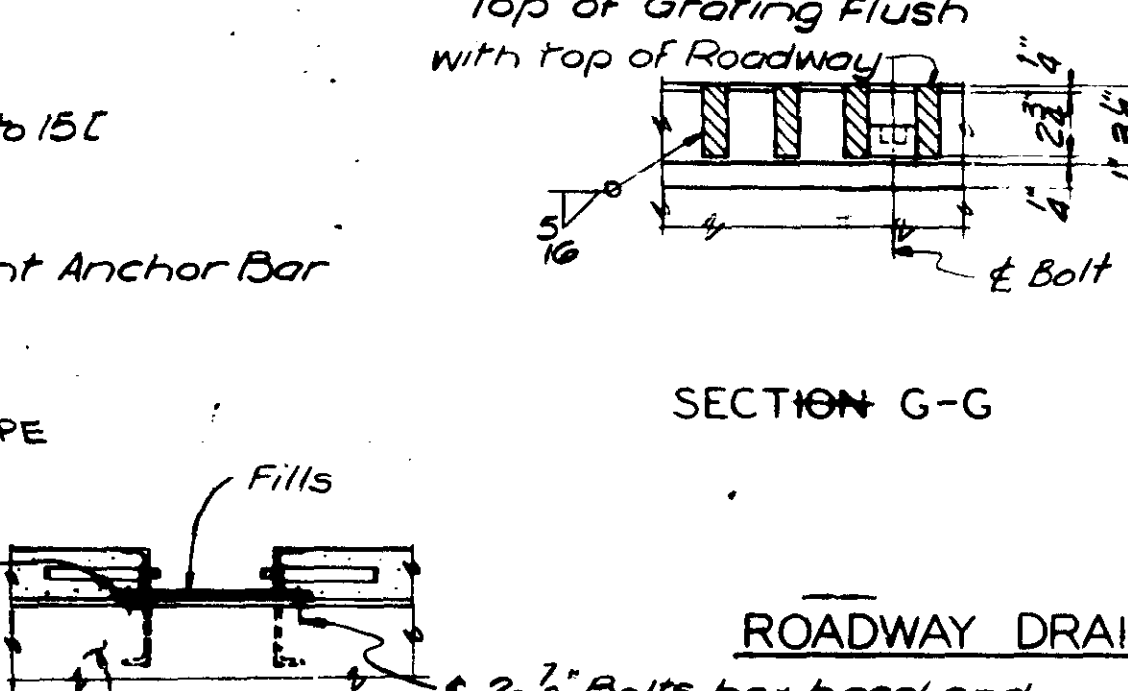
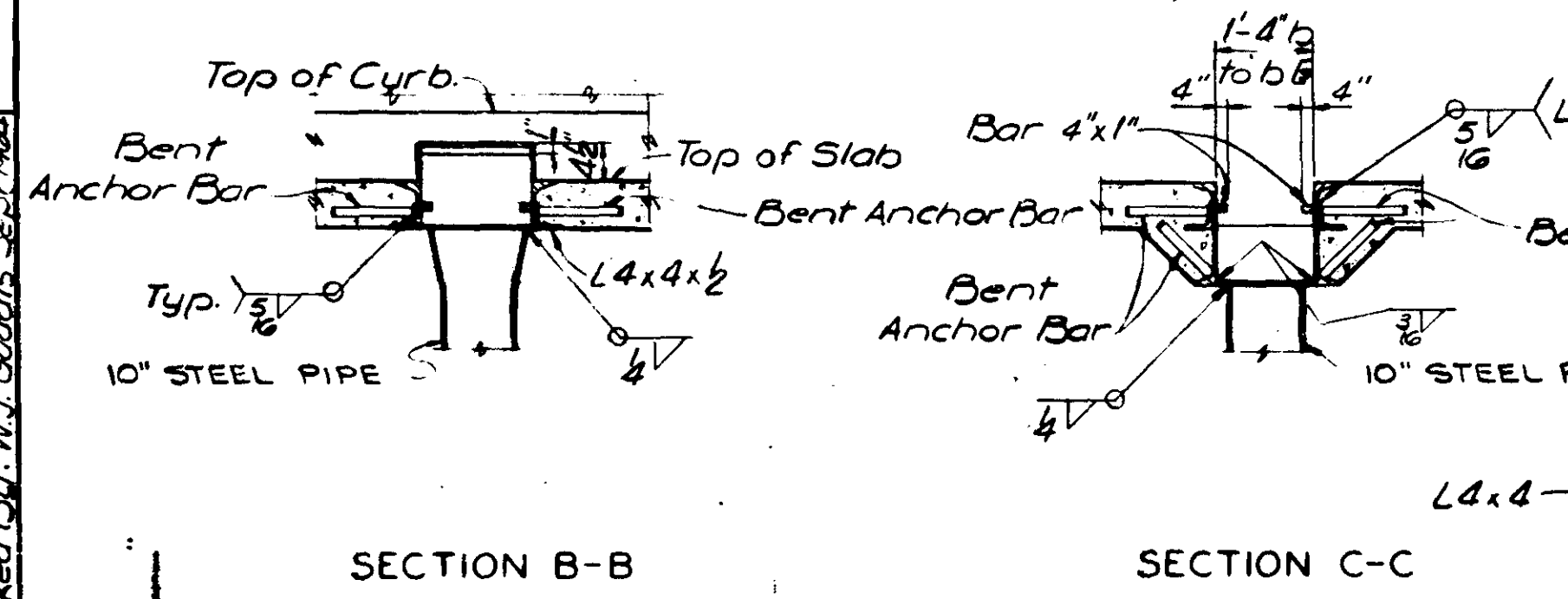
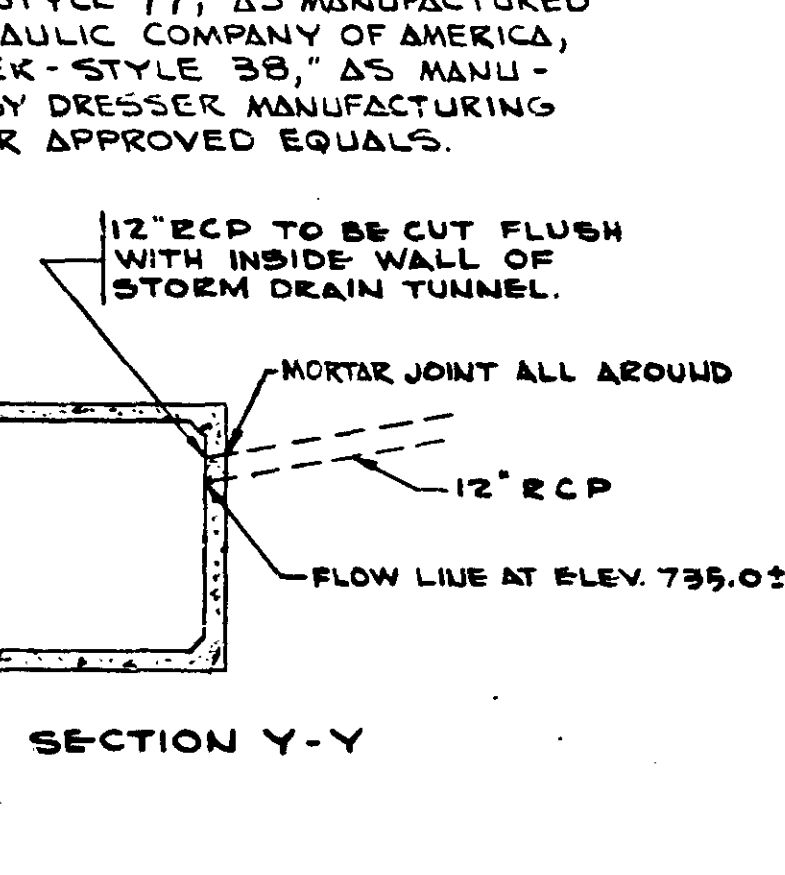
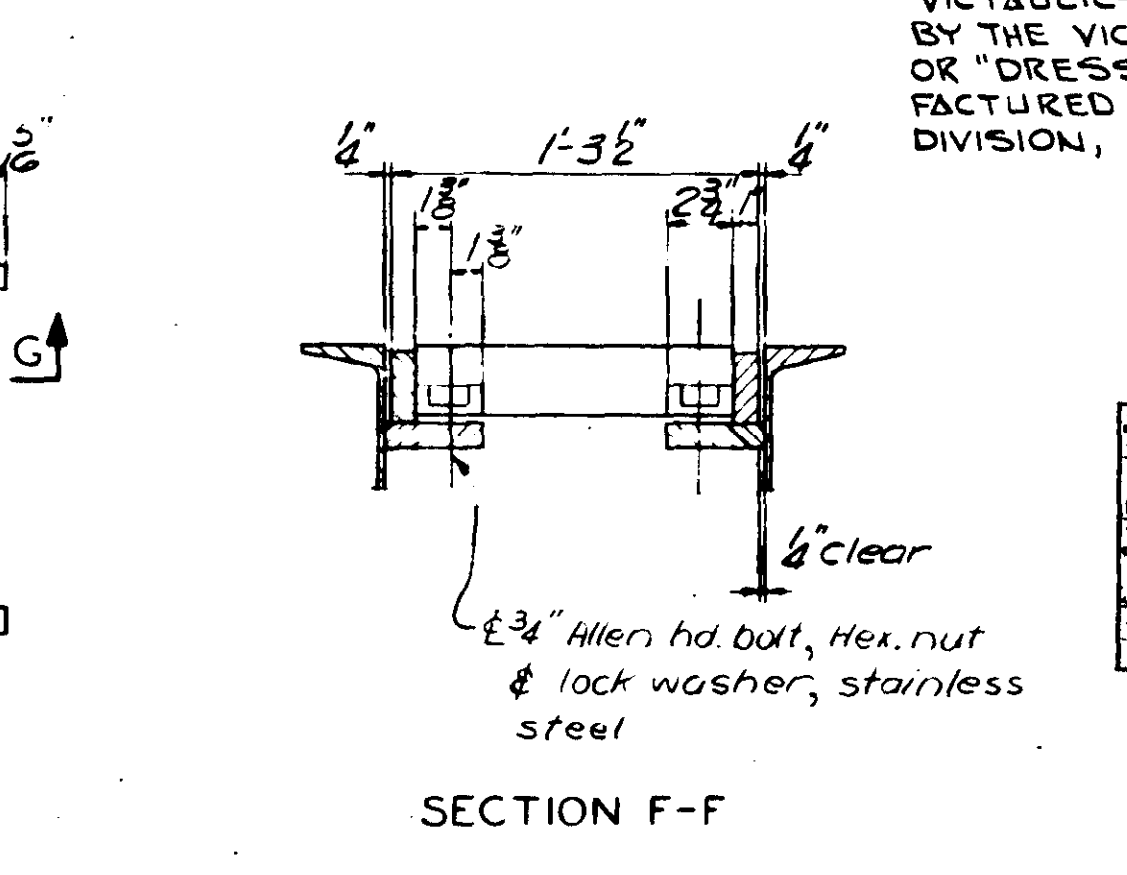
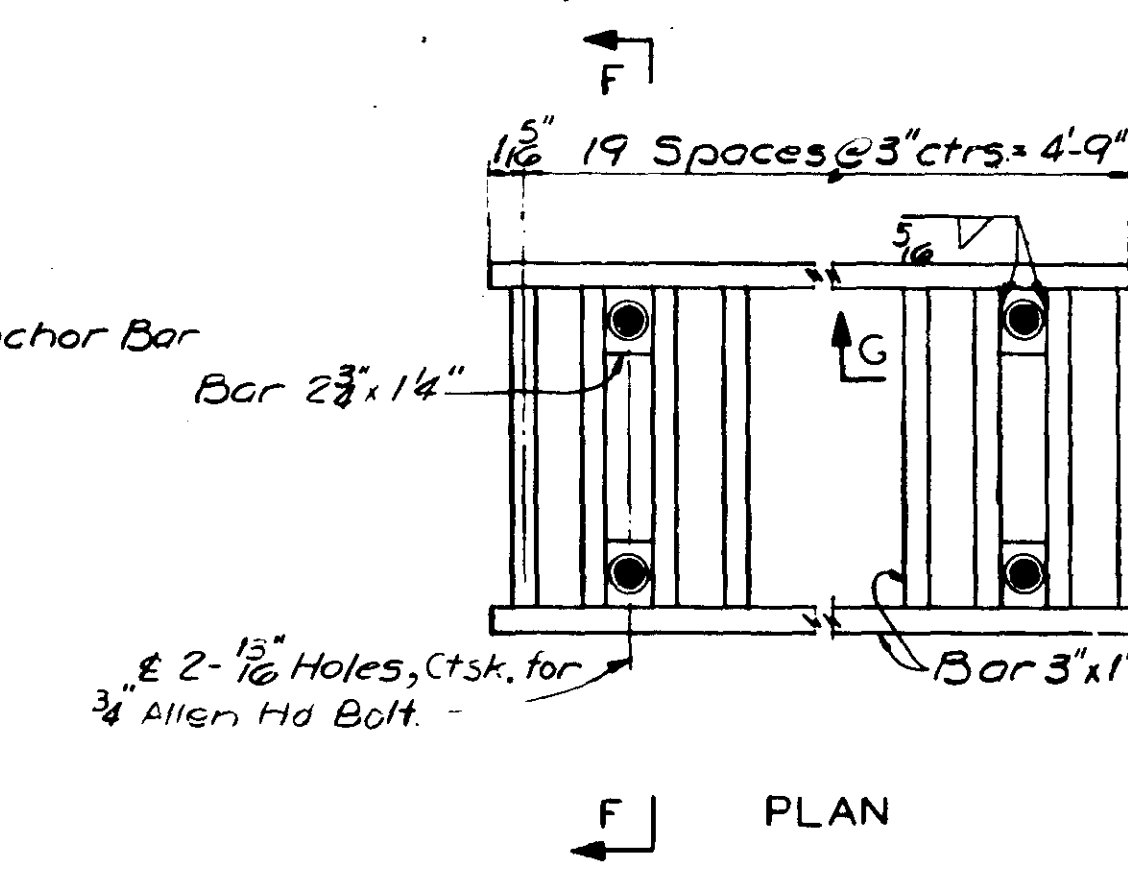
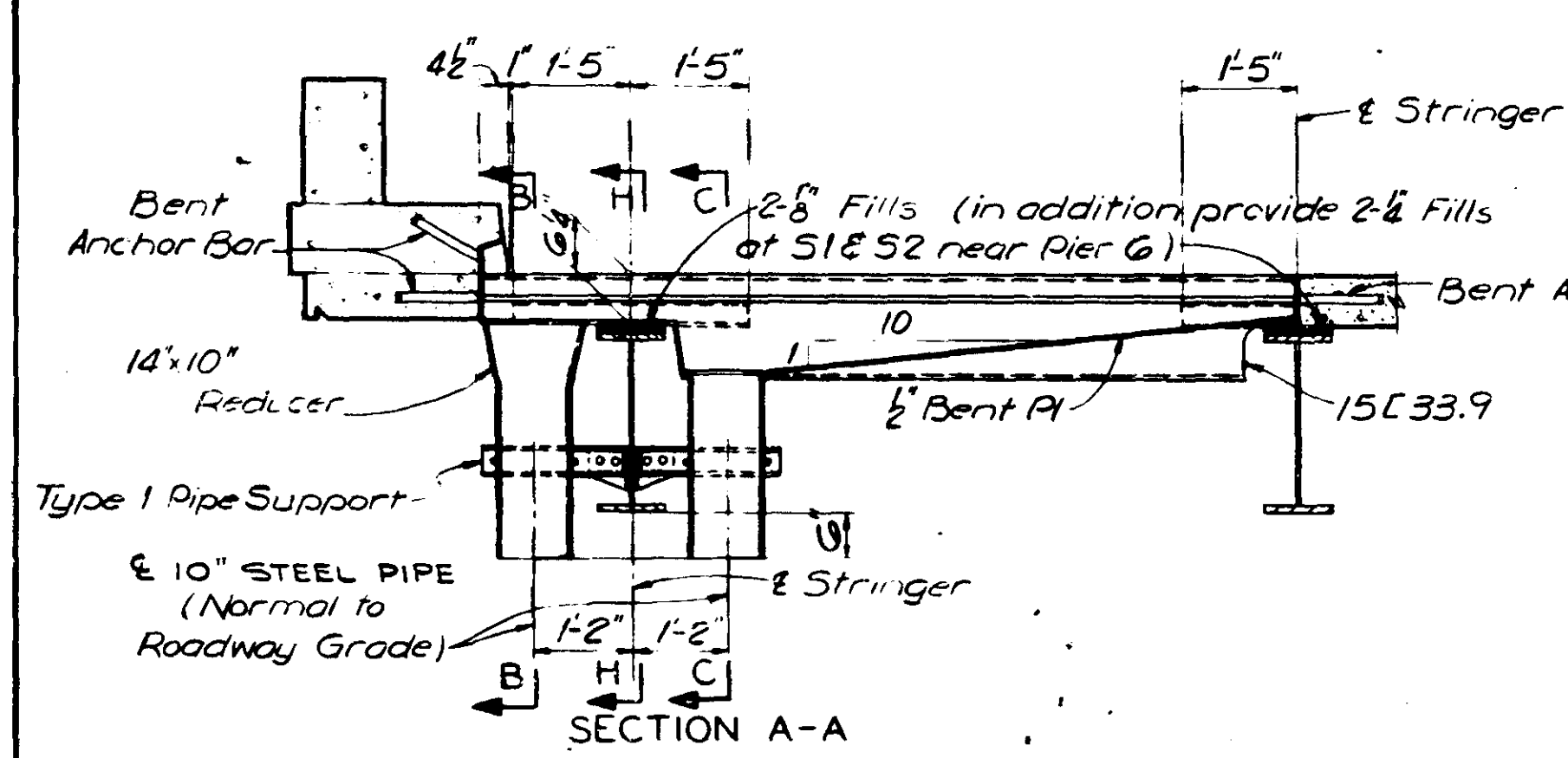
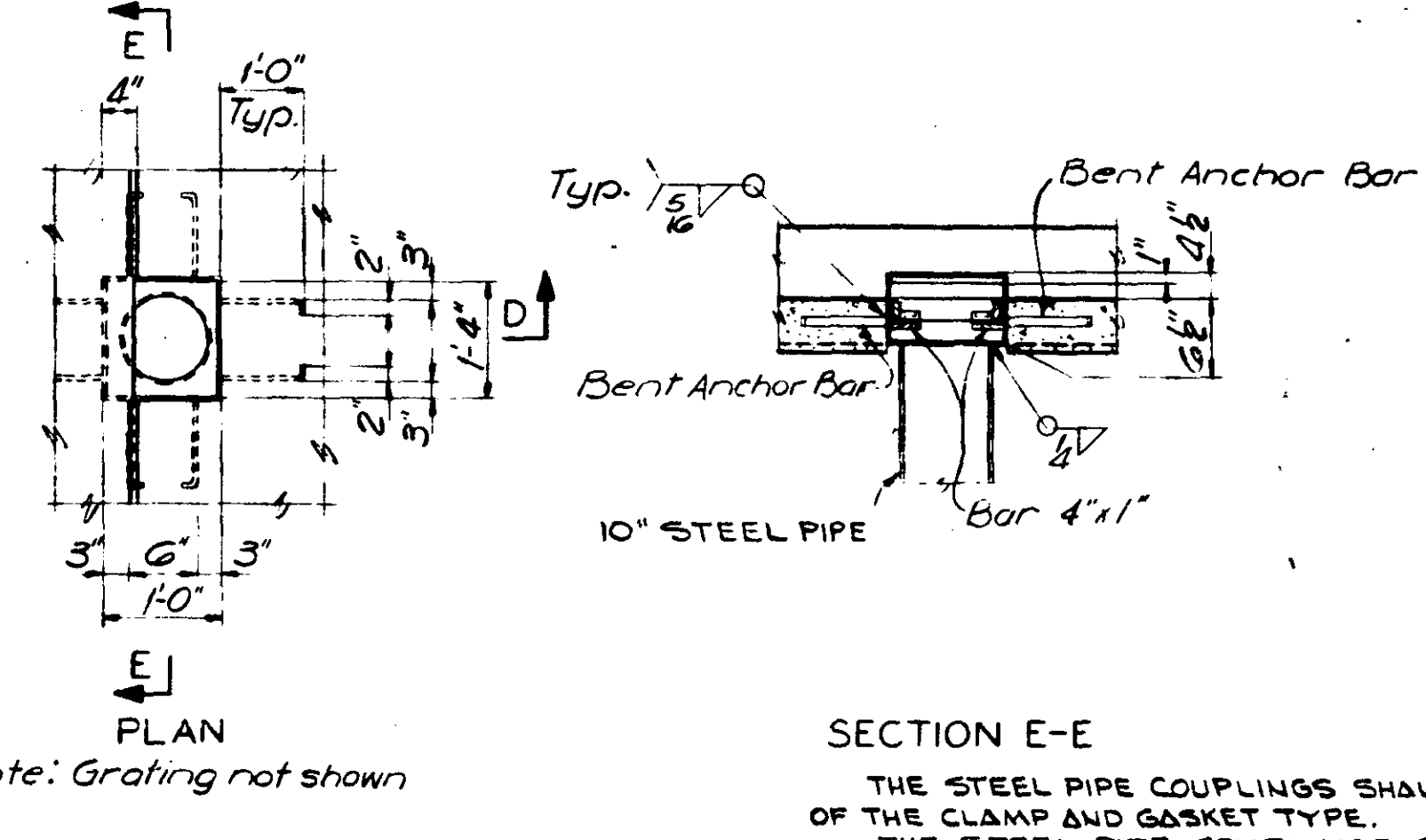
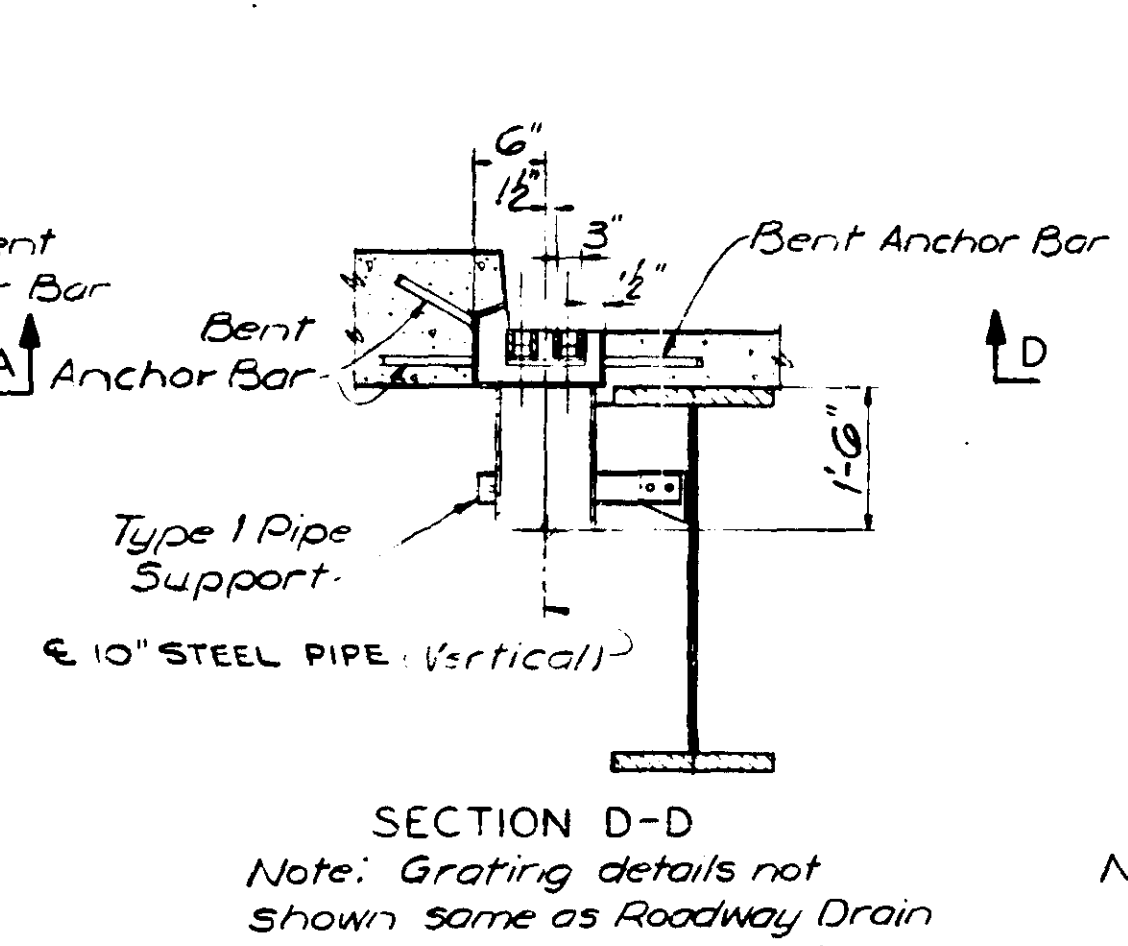
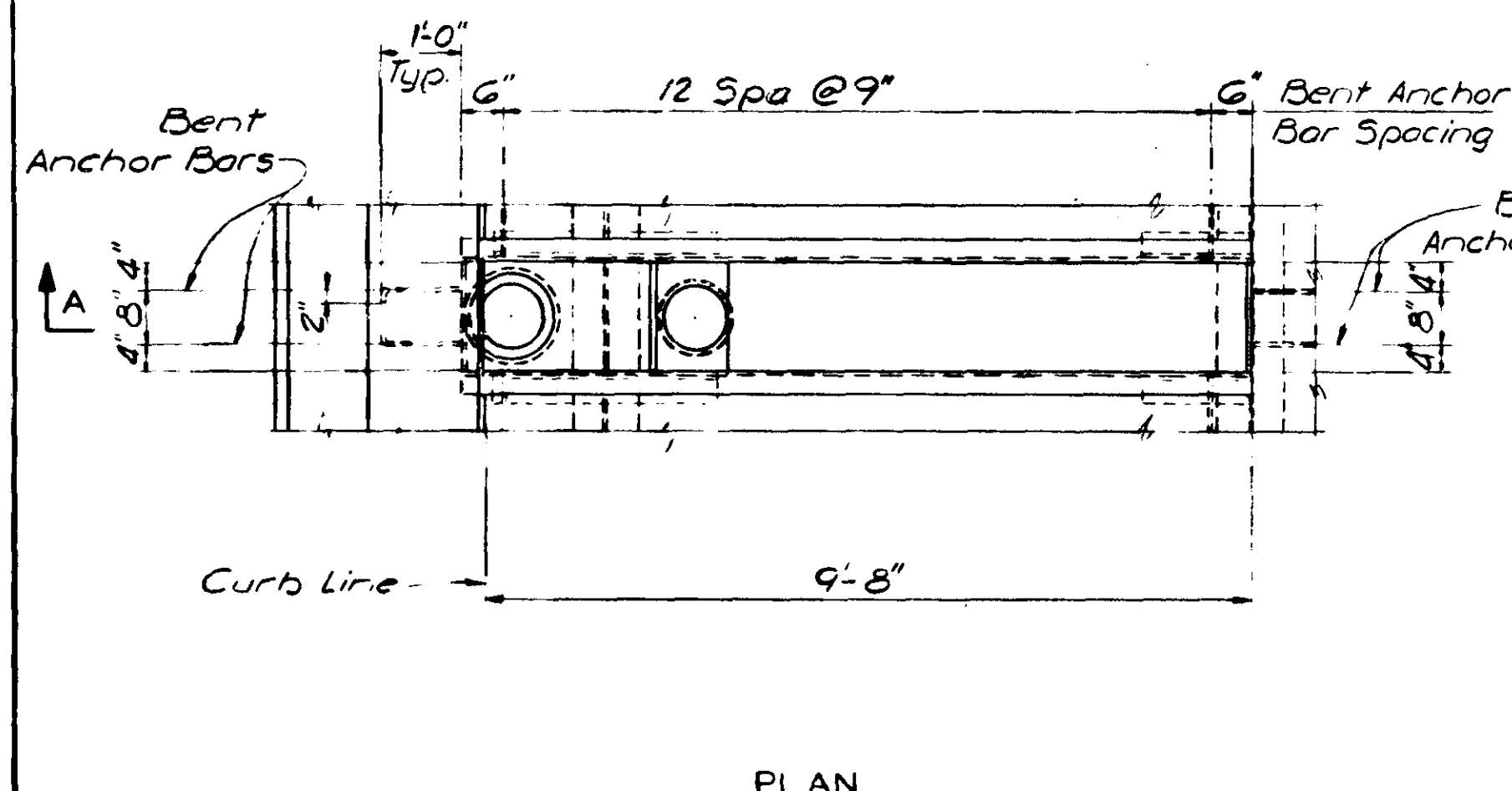
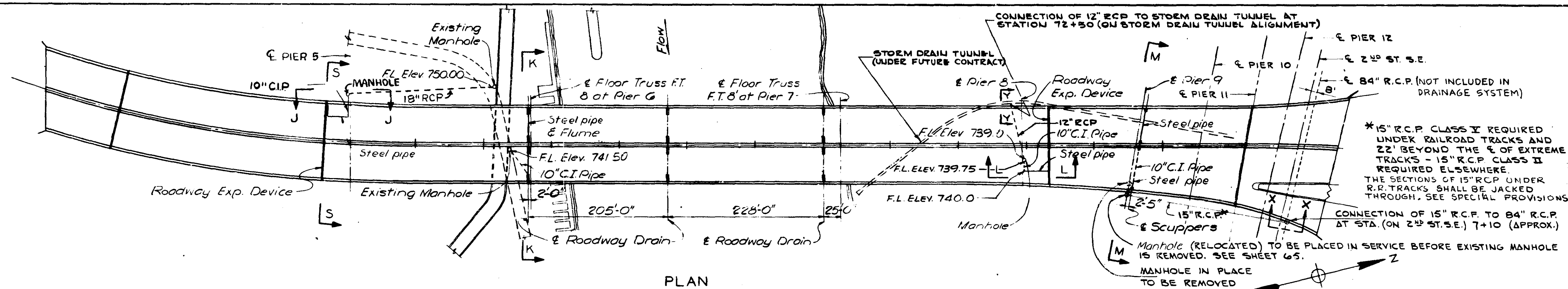
T. H. SSW
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

HANDRAIL AND GUARDRAIL DETAILS

APPROVED - 6-18-65

Drawn by: L. A. Gellier, Aug. 1964
 Checked by: R. F. Beck, Sept. 1964
 2083
 645517



NOTES

Work this sheet with Sheet 65.

All steel pipe and pipe fittings shall comply with M.H.D. 3362 except that material shall comply with M.H.D. 3309.

Drains, scuppers, flumes, and grates shall be corrosion resistant high strength steel per M.H.D. 3309, except as noted.

Anchor bars and pipe supports shall be structural carbon steel per M.H.D. 3305.

Cast iron pipe shall be standard weight bell and spigot type per M.H.D. 3345, OR A MECHANICAL TYPE CONNECTION SUBJECT TO THE APPROVAL OF THE ENGINEER.

Reducers may be fabricated from 3/8" plate per M.H.D. 3309.

Bent anchor bars to be 1/2" x 3/8" x 1-2".

All plates to be 1/2" except as shown.

10" pipe shall be 10.75" O.D., 0.365" wall thickness, weight 40.48 lbs per foot.

Drains and scuppers shall be assembled with 1/4" continuous welds except as shown.

SHOP SPLICES SHALL BE FULL PENETRATION BUTT WELDS.

Galvanize bolts, nuts, and threaded rods per M.H.D. 3392.

Flow line elevations shall be adjusted as necessary to provide 4'-0" cover over top of C.I. and R.C. pipe.

The pay item "Drainage System" shall be compensatory for all materials and labor for all drainage items, including connections to manholes, removal of existing manhole, and construction of new manholes except as noted.

GALVANIZE ALL STRUCTURAL STEEL AND STEEL PIPE PER M.H.D. 3394 AFTER FABRICATION EXCEPT AS NOTED.

REVISION	BY	CK'D
DRAINAGE SYSTEM @ PIER 9	TJH	RST
CAST IRON PIPE NOTE	TJH	RST
ADDITION OF STEEL PIPE COUPLING SPEC. NOTE	TJH	RST
ADDITION OF SECTION X-X	TJH	RST
DRAINAGE SYSTEM @ PIER 8 & SECTION Y-Y	ZCD	RST

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SVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

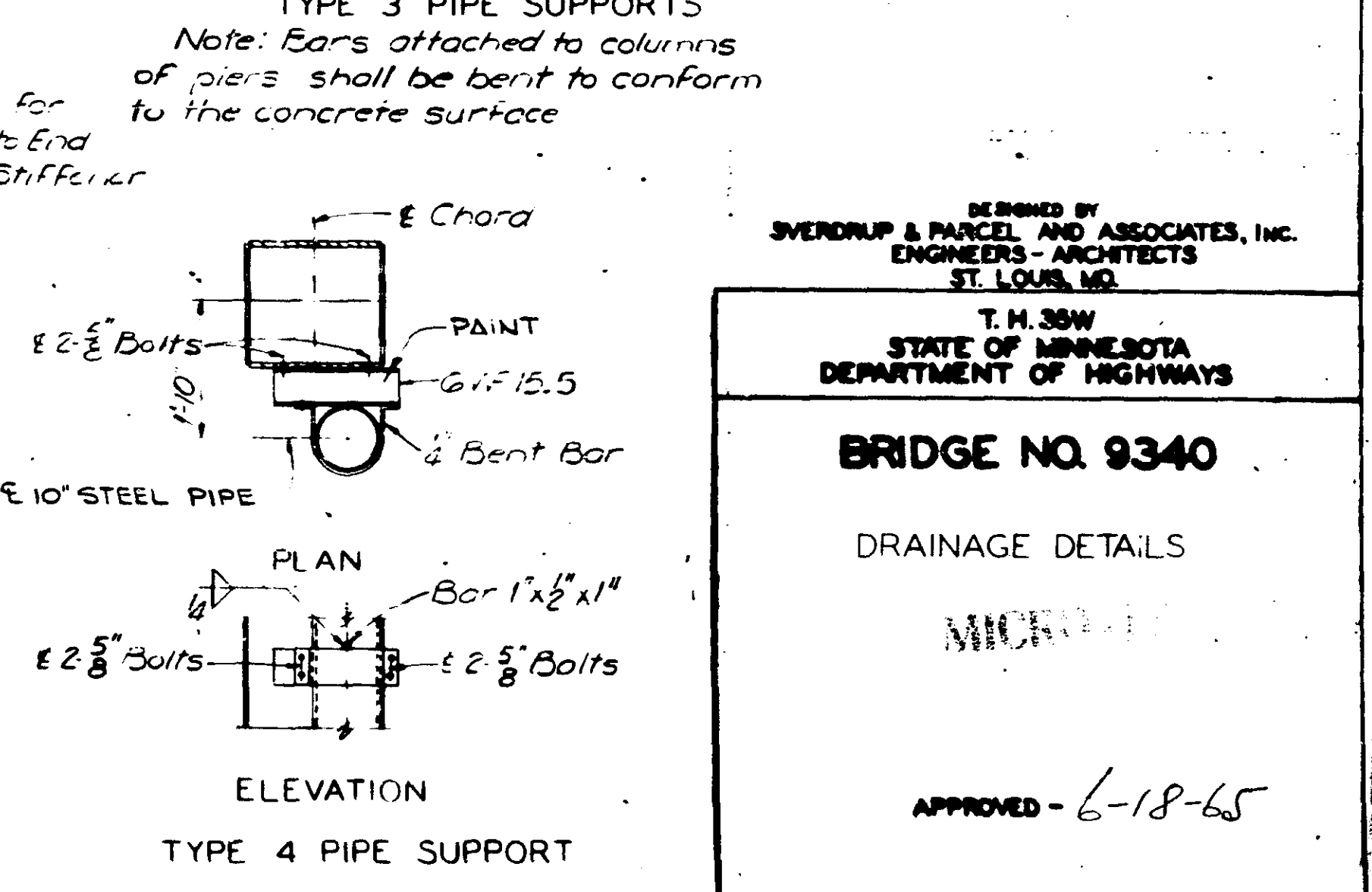
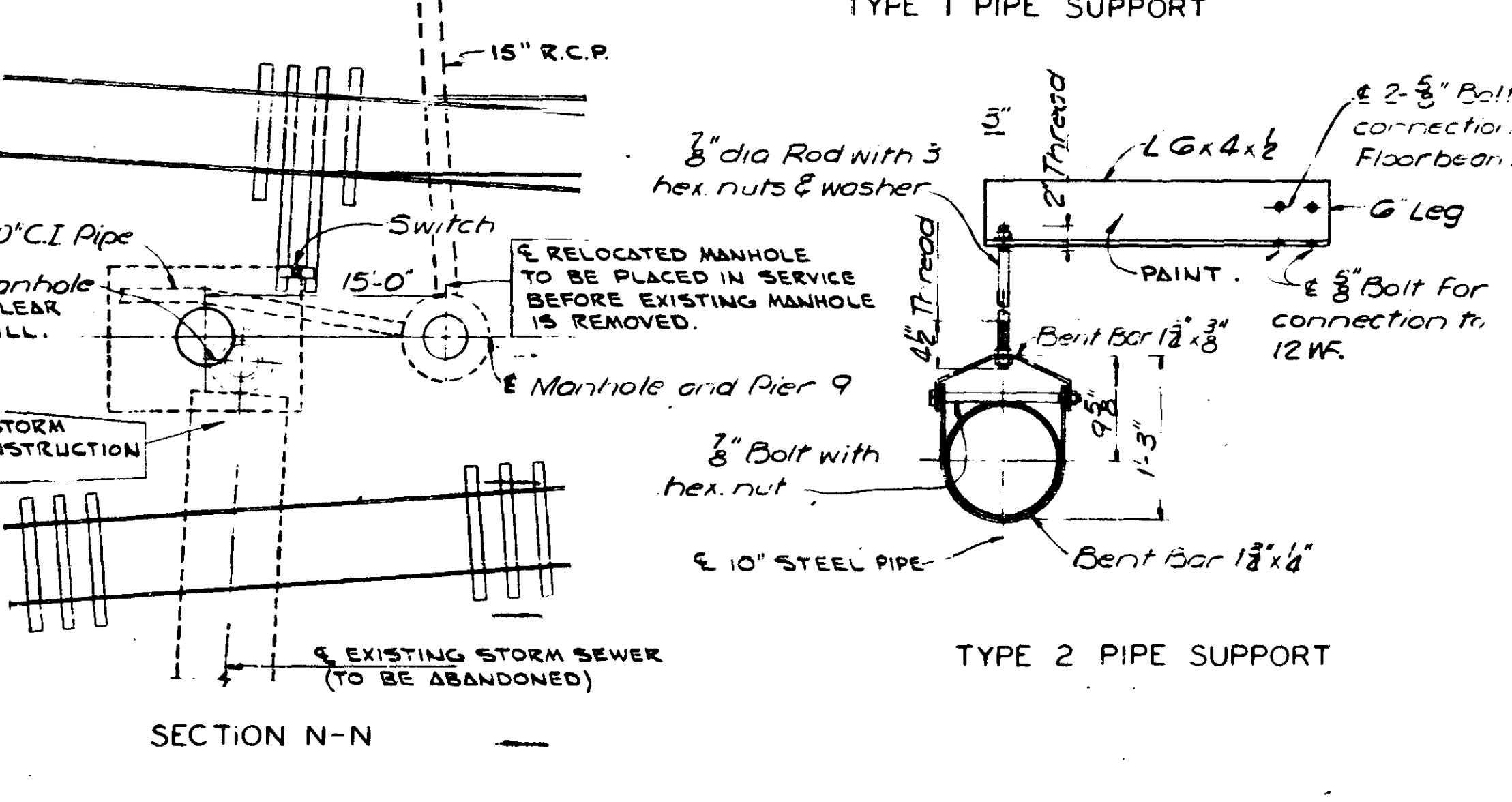
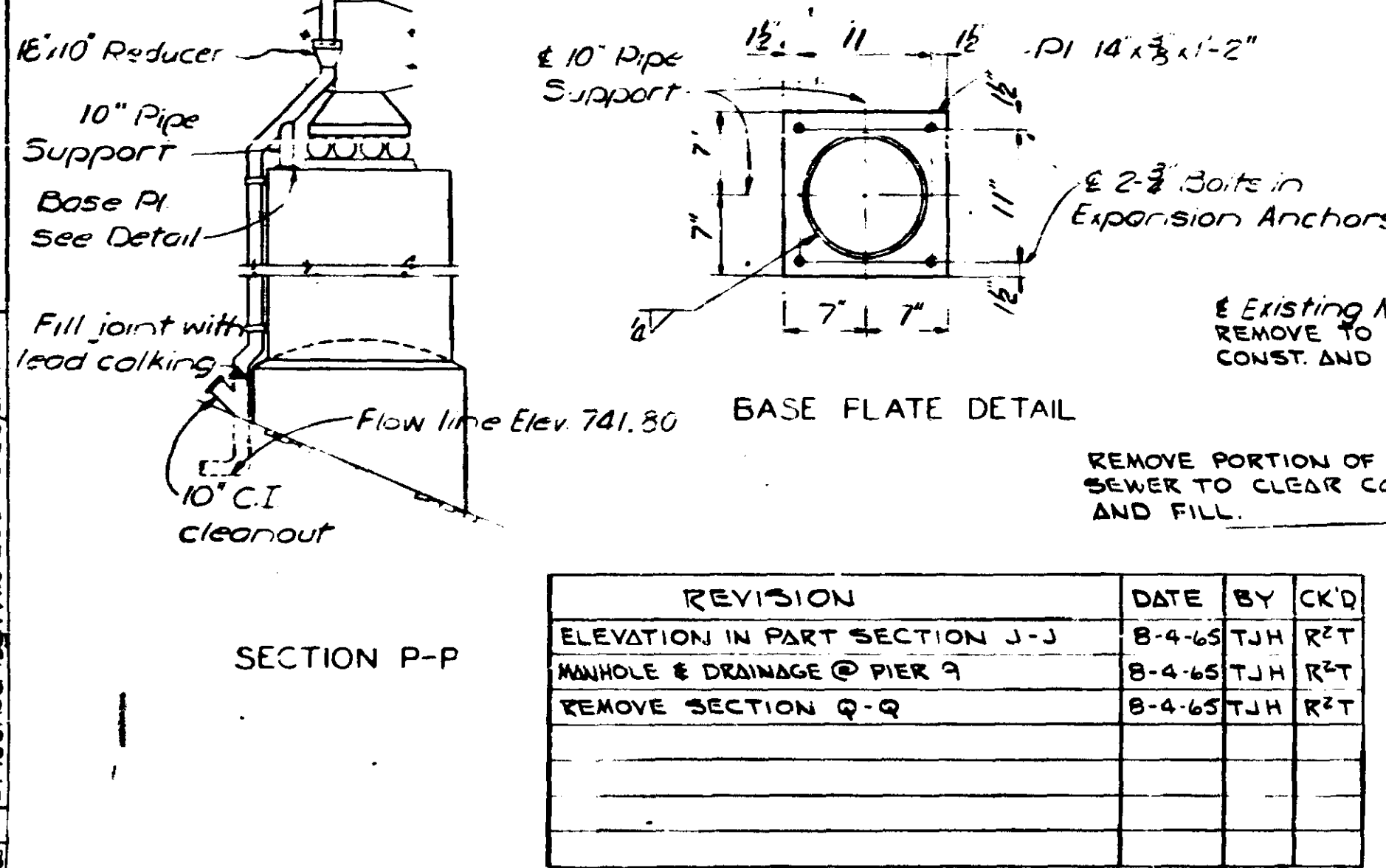
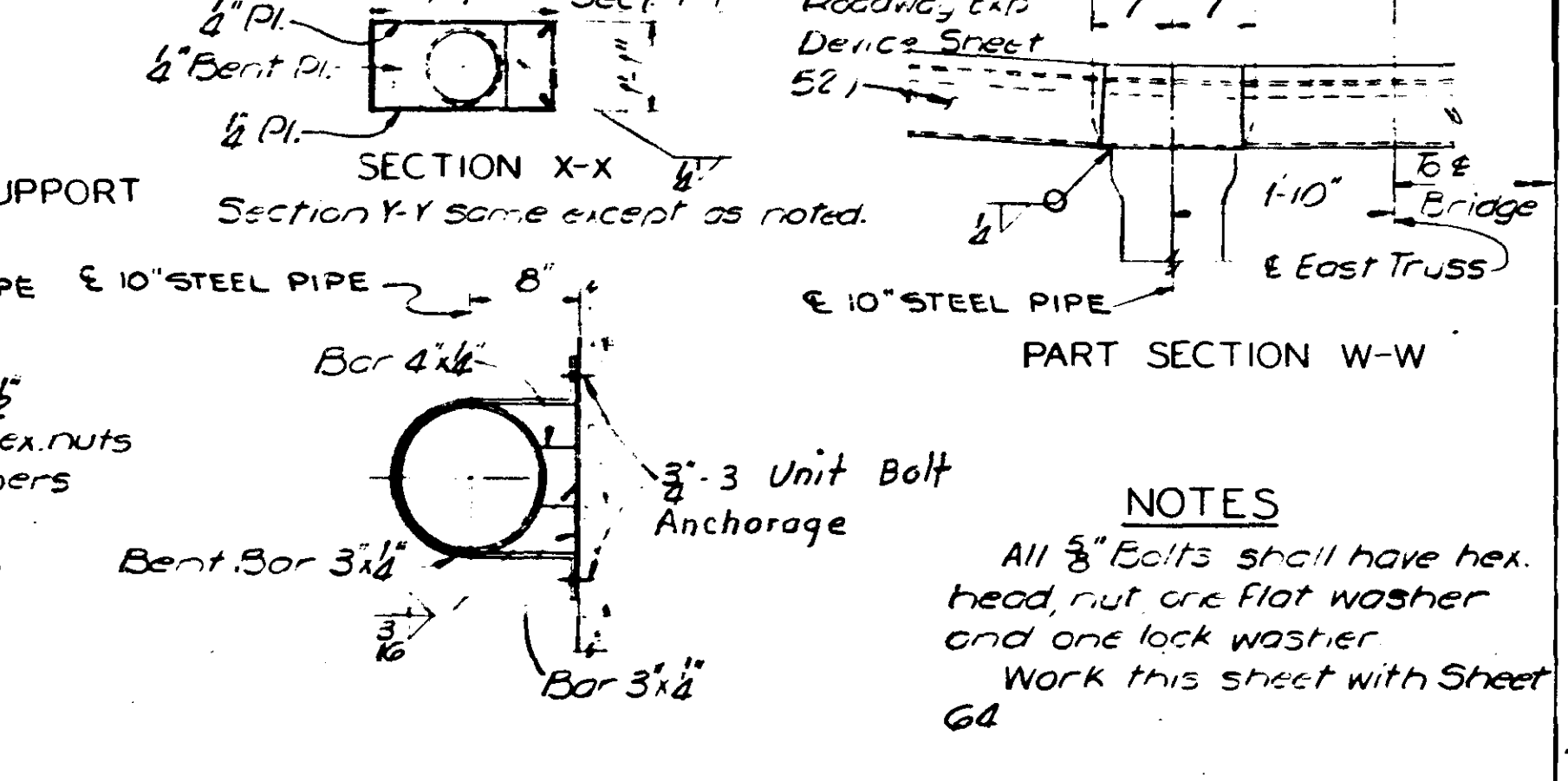
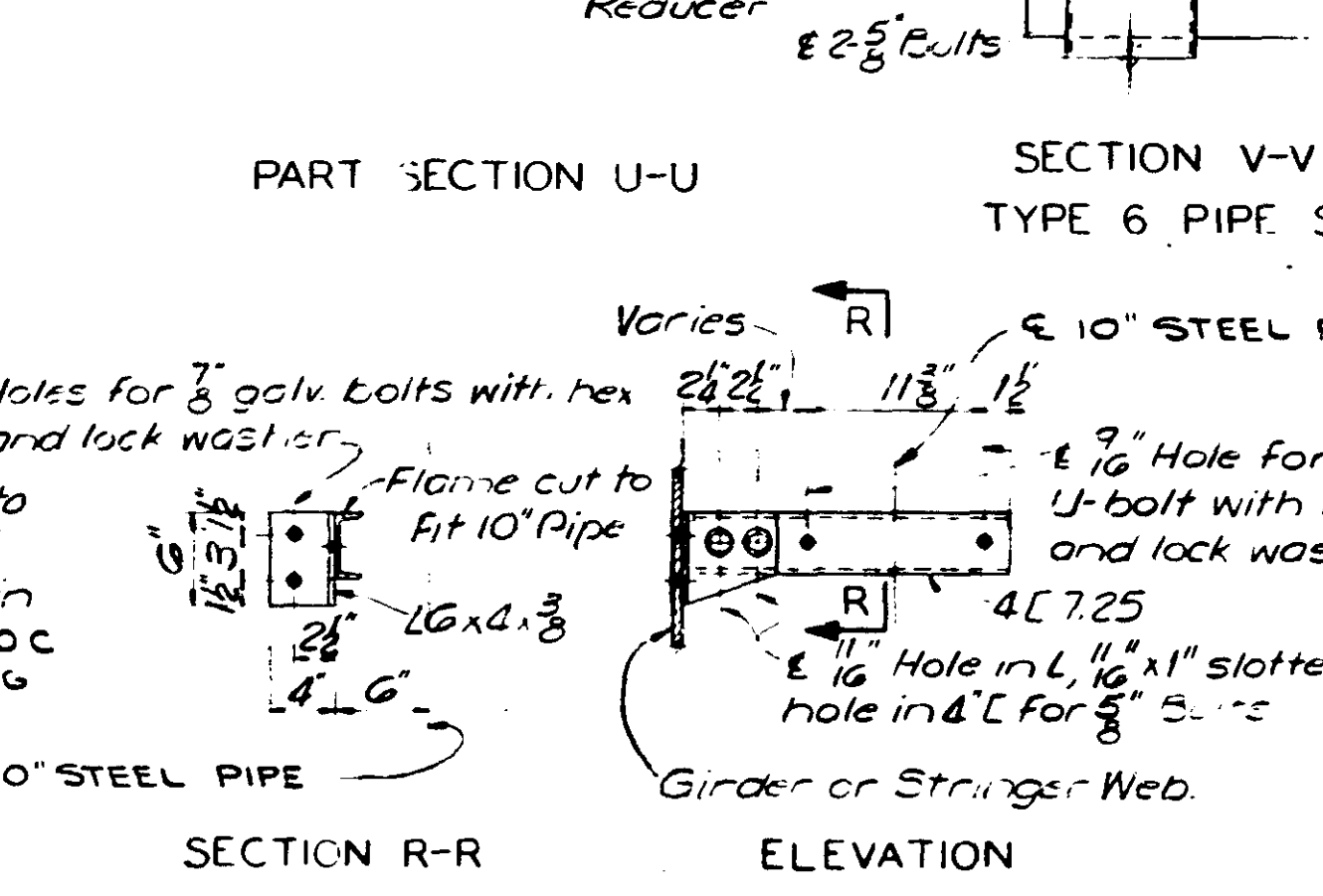
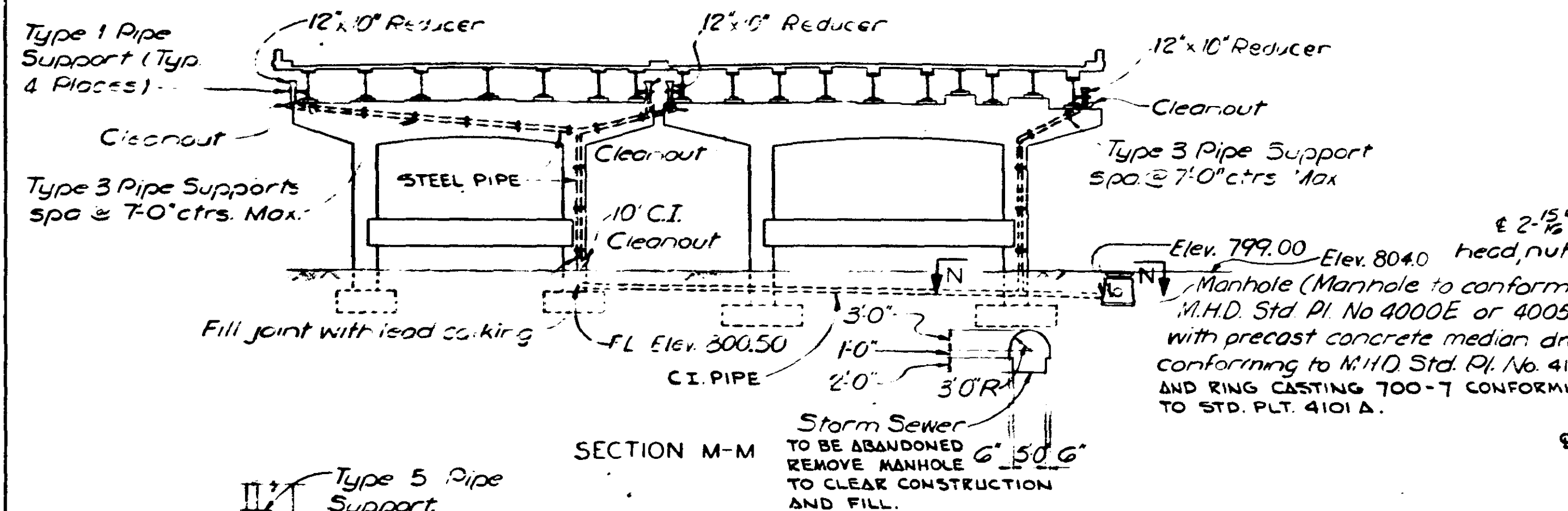
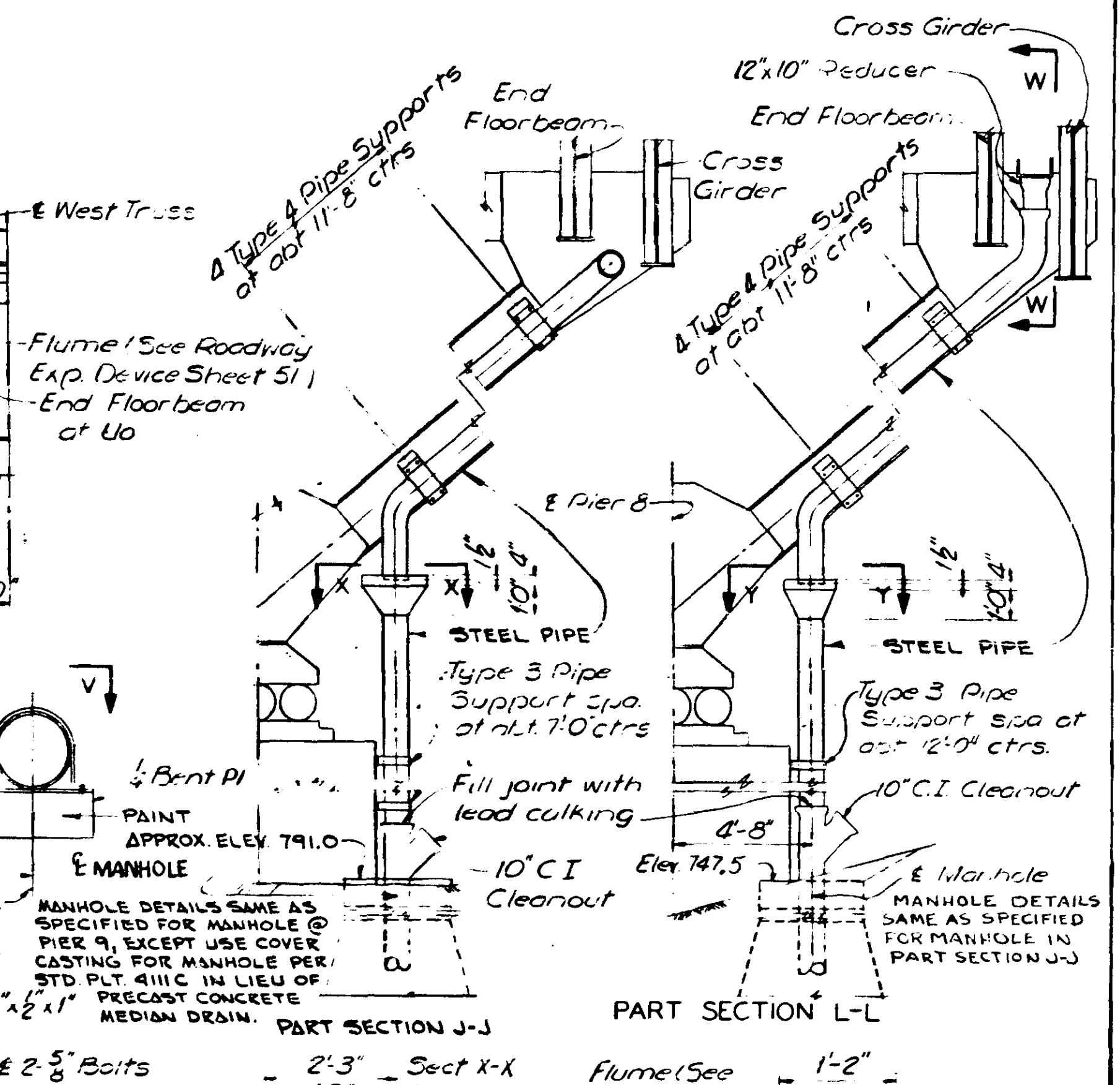
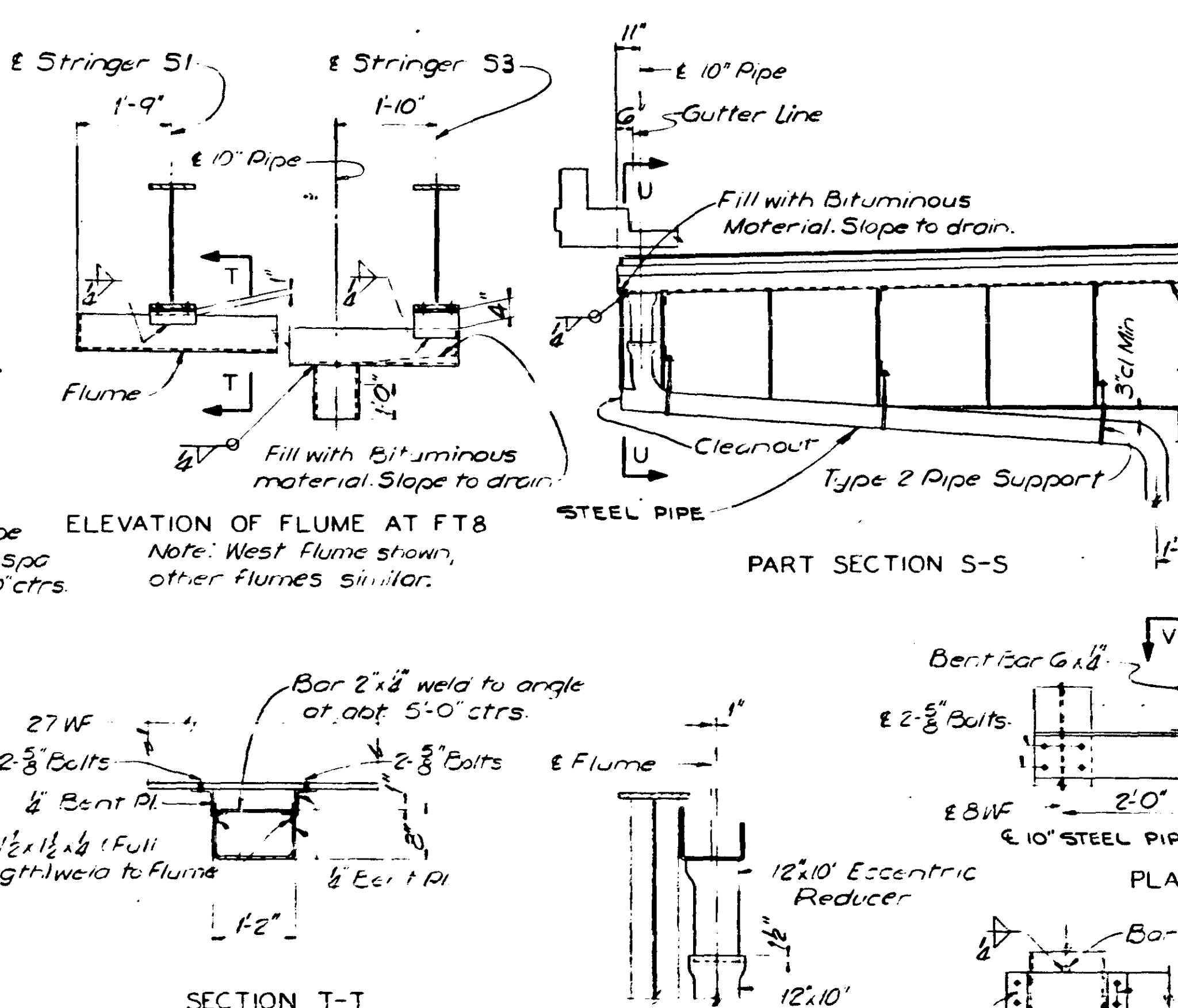
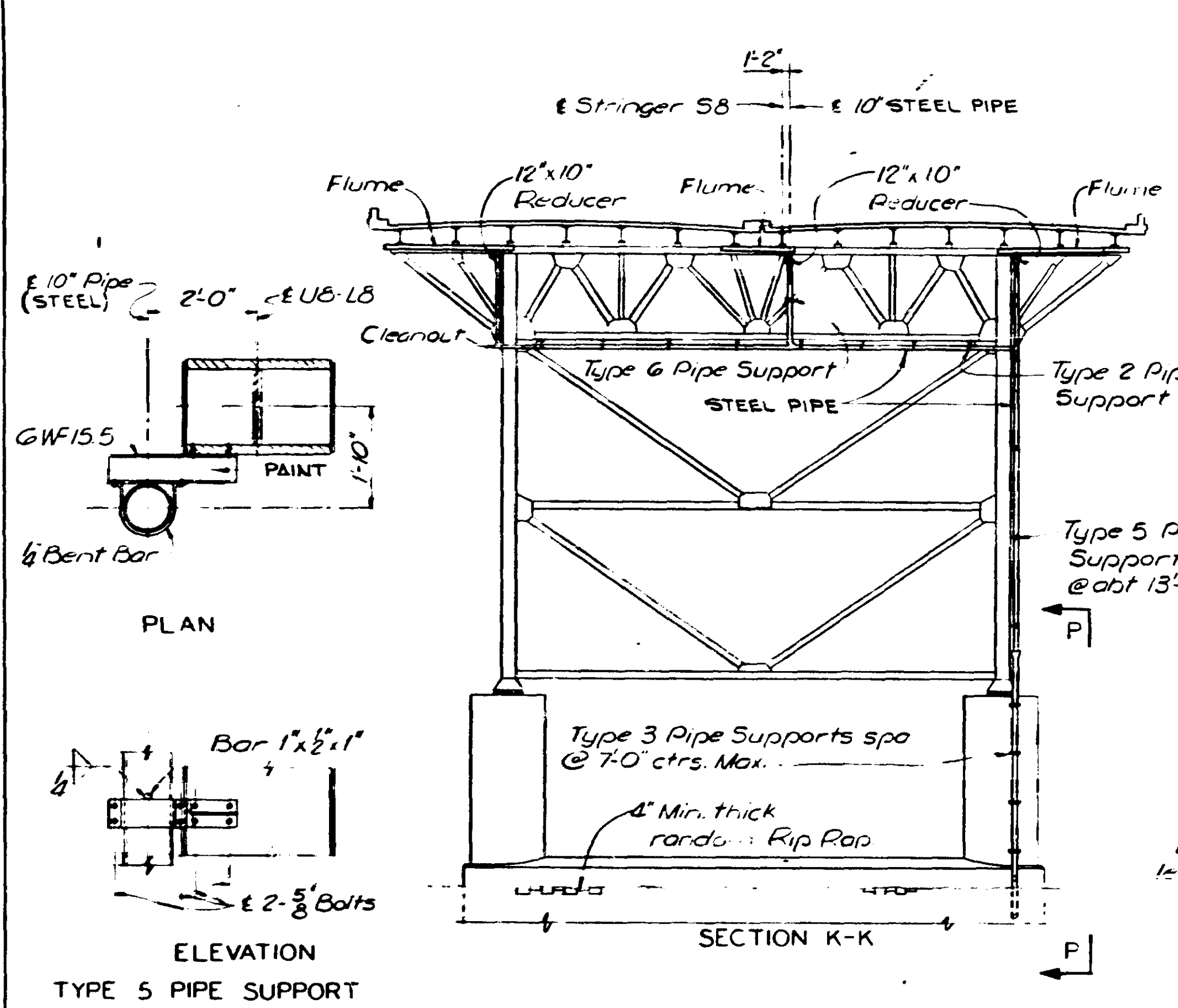
T. H. 33W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DRAINAGE DETAILS

APPROVED - 6-18-65

Drawn By: L.A. Gerner, July 1964
Checked By: W.J. Gaddis, Sept. 1964



NOTES
All 5/8" Bolts shall have hex head nut and flat washer and one lock washer.
Work this sheet with Sheet 6d.

REVISION	DATE	BY	CK'D
ELEVATION IN PART SECTION J-J	8-4-65	TJH	R2T
MANHOLE & DRAINAGE @ PIER 9	8-4-65	TJH	R2T
REMOVE SECTION Q-Q	8-4-65	TJH	R2T

Drawn By: L.A. Gainer, July 1964
Checked By: W.J. Goddard, Sept 1964
2083
645483

DESIGNED BY
SVERDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

T.H. 35W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

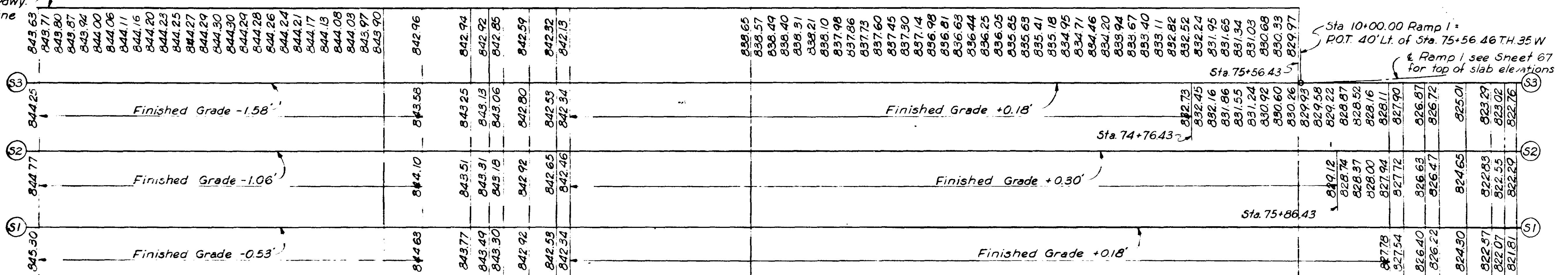
DRAINAGE DETAILS

APPROVED - 6-18-65

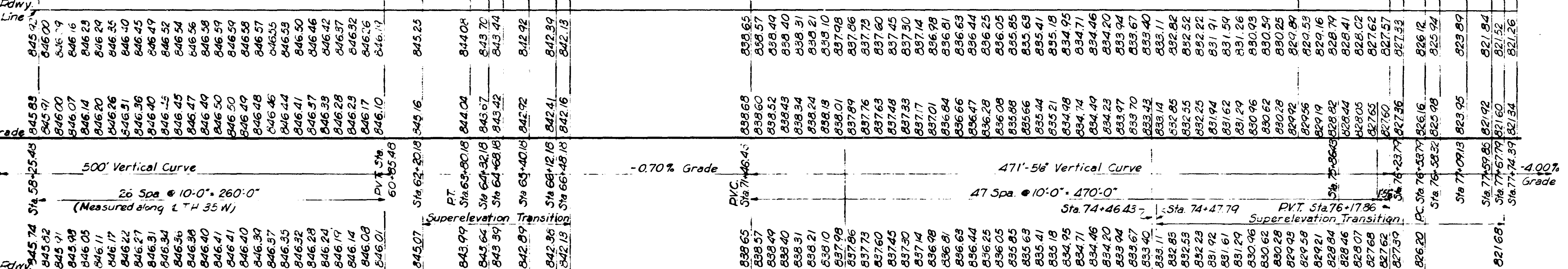
SHEET 65 OF 94

9340

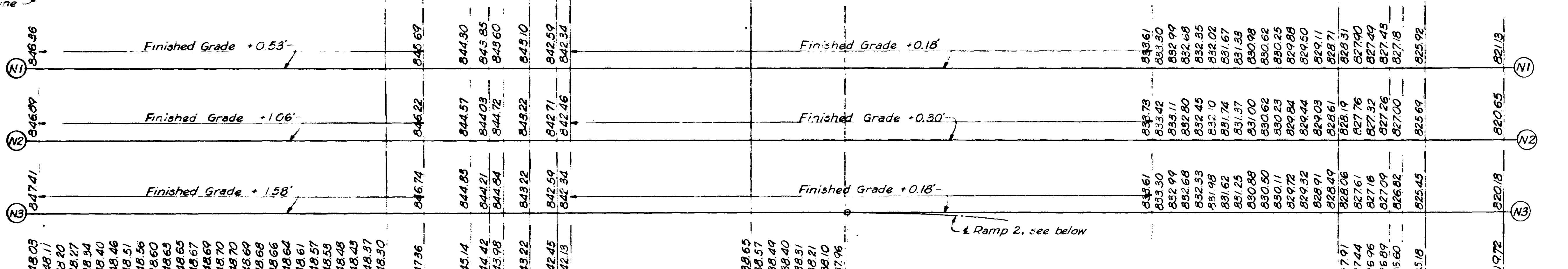
Southbound Rdwy.
West Gutter Line



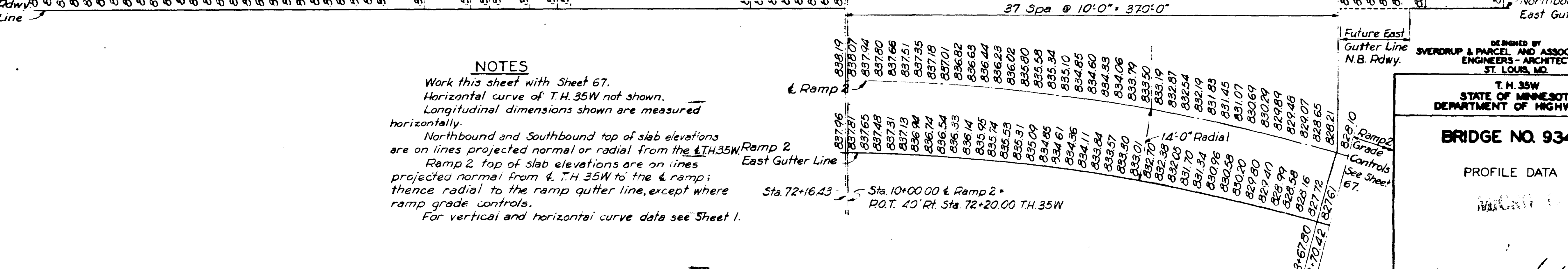
Southbound Rdwy.
East Gutter Line



Northbound Rdwy.
West Gutter Line



Northbound Rdwy.
East Gutter Line



NOTES
 Work this sheet with Sheet 67.
 Horizontal curve of T.H.35W not shown.
 Longitudinal dimensions shown are measured horizontally.
 Northbound and Southbound top of slab elevations are on lines projected normal or radial from the T.H.35W.
 Ramp 2 top of slab elevations are on lines projected normal from T.H.35W to the ramp; thence radial to the ramp gutter line, except where ramp grade controls.
 For vertical and horizontal curve data see Sheet 1.

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 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

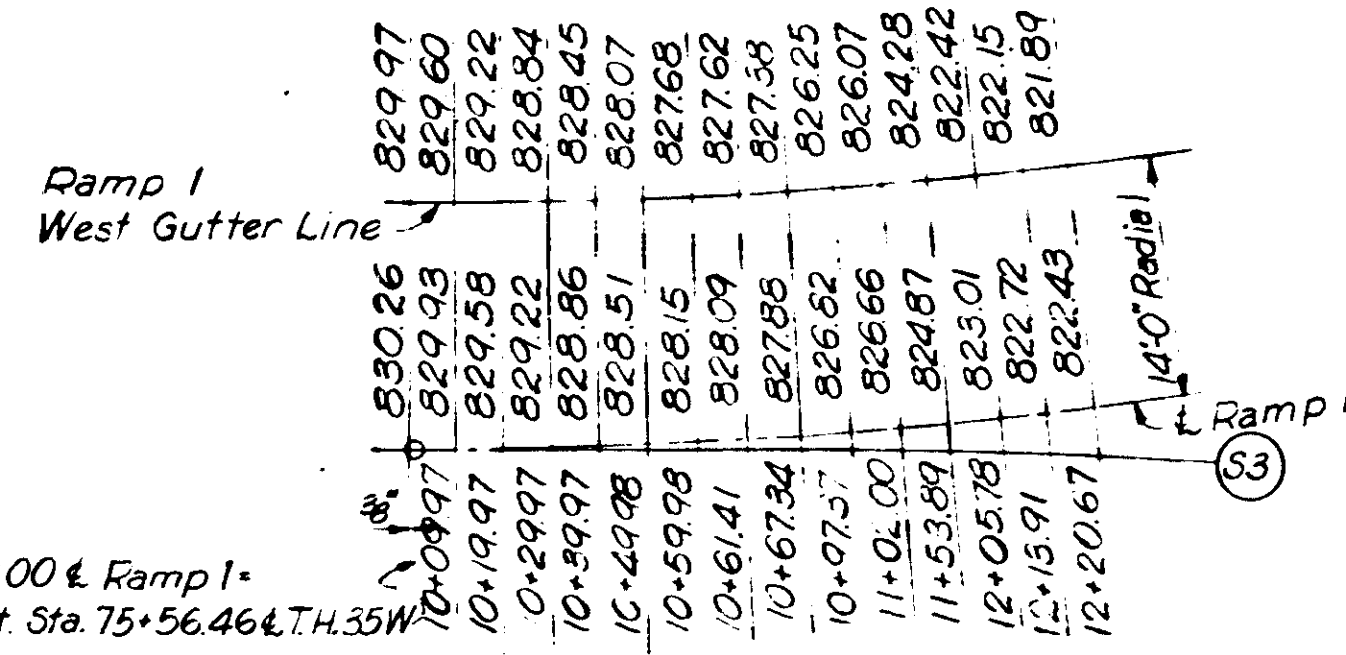
T. H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

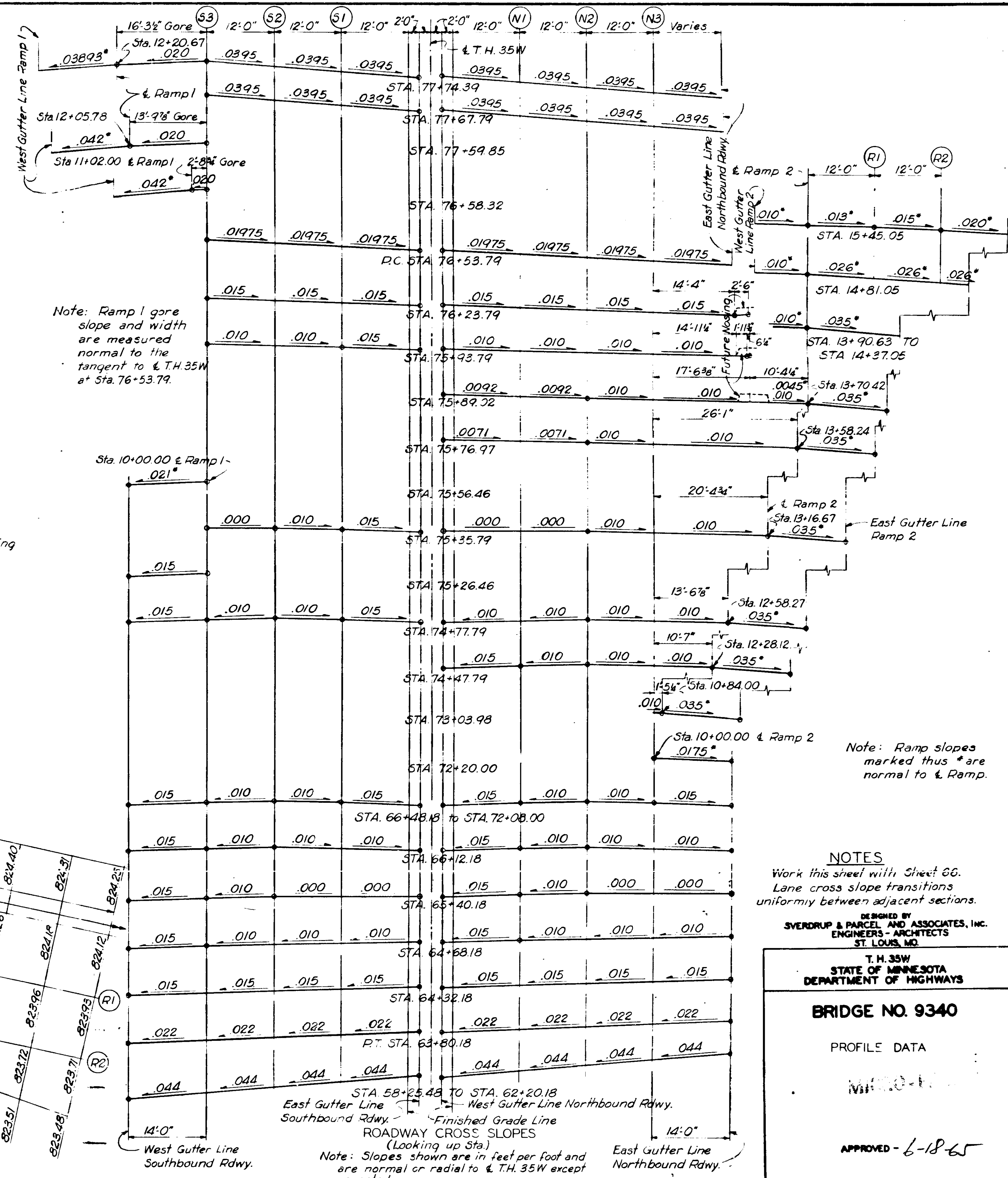
PROFILE DATA

APPROVED - 6-18-65

Drawn by: A. Myers, Aug. 1964
 Checked by: R. F. Beck, Sept. 1964
 2083
 64550



RAMP 1 TOP OF SLAB ELEVATIONS
 Note: Top of slab elevations are on lines projected radial from the Ramp 1.
 Stations shown for Ramp 1 were obtained by projecting lines normal or radial from a corresponding station on & T.H. 35W to line S3; thence from line S3 to Ramp 1 on a line normal to the tangent to & T.H. 35W at Sta. 76+53.79.



Note: Ramp 1 gore slope and width are measured normal to the tangent to & T.H. 35W at Sta. 76+53.79.

Note: Ramp slopes marked thus * are normal to Ramp.

NOTES
 Work this sheet with Sheet 66.
 Lane cross slope transitions uniformly between adjacent sections.
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 SVENDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

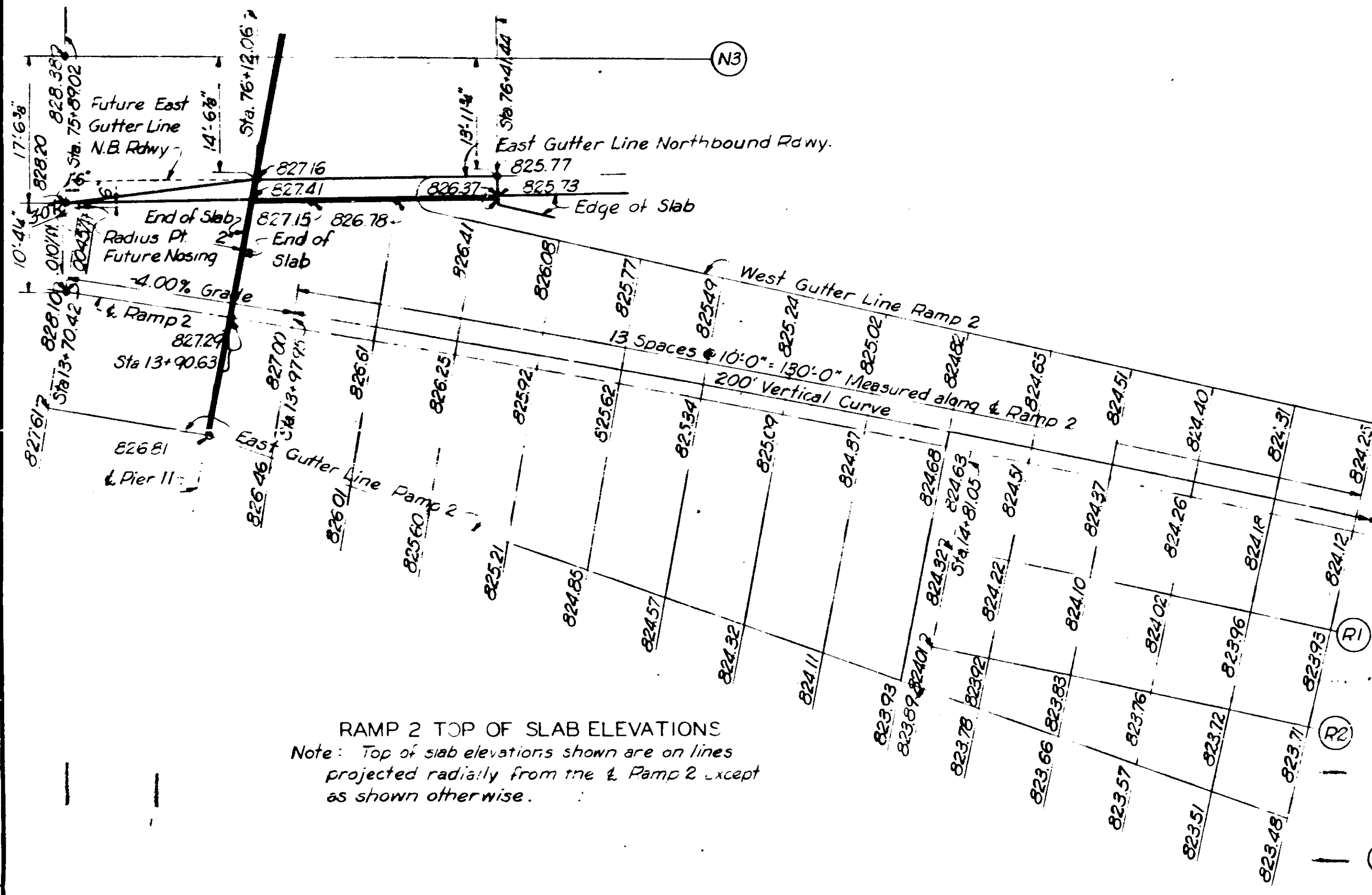
T. H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

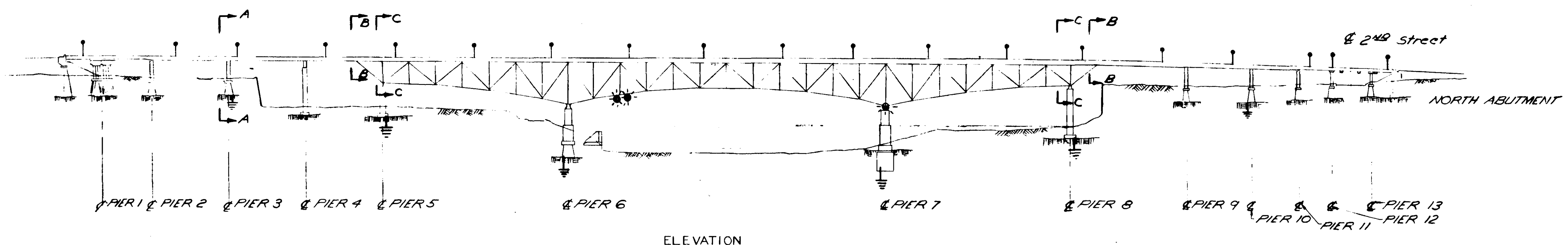
PROFILE DATA

APPROVED - 6-18-65

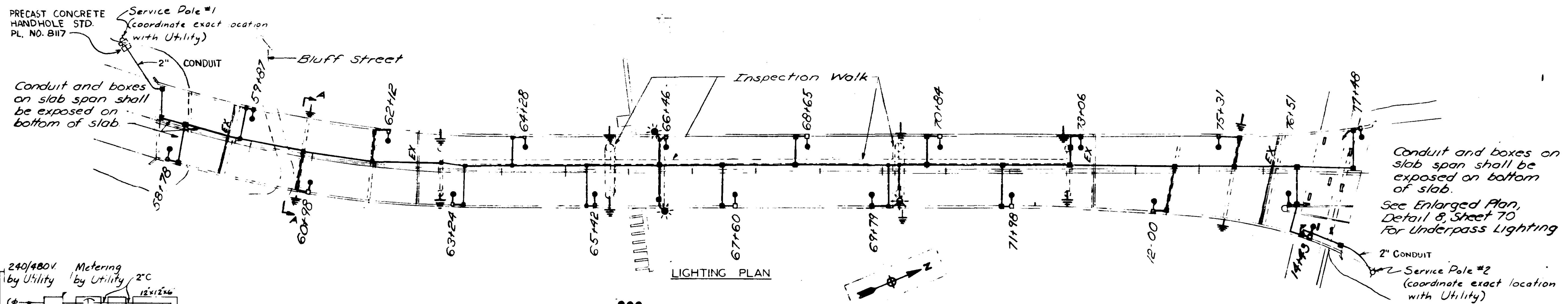
RAMP 2 TOP OF SLAB ELEVATIONS
 Note: Top of slab elevations shown are on lines projected radially from the Ramp 2 except as shown otherwise.



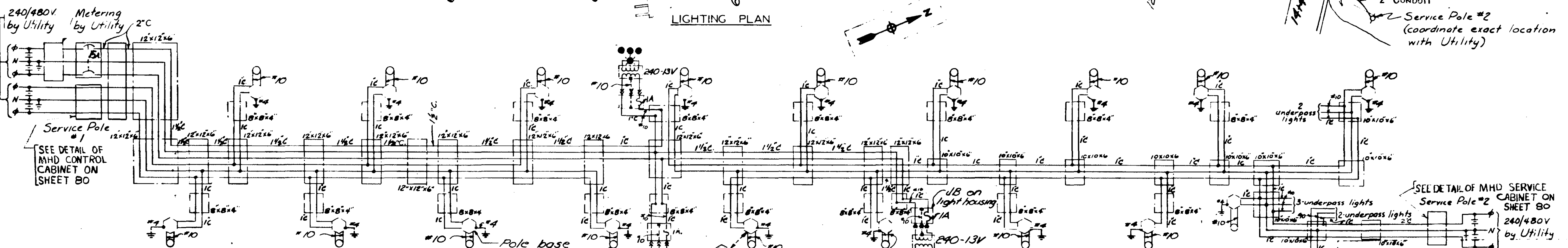
Drawn by: A. Myers, Aug. 1964
 Checked by: R.F. Beck, Sept. 1964
 2083
 645511



ELEVATION



LIGHTING PLAN



ELEMENTARY DIAGRAM
(Conductors shall be #8 except as noted)

- SYMBOLS FOR LIGHTING PLAN**
- 400W Mercury vapor luminaire, Detail 2
 - 6'-0" Bracket arm } See M.D.H. Detail No. B50
 - Steel pole

- ☼ 360° Green navigation light *
- ☼ 180° Red navigation light *
- ☼ *With internal transformer and 4 lamp automatic lamp changer.
- Junction box
- ⊕ Ground conductor in pier 3, 5, 6, 7, 8 & 10, connect to bridge steel. See Typical Section
- EX Expansion device, Detail 1
- Rigid steel conduit

- NOTES**
1. Routing of conduit and location of junction boxes shown is approximate and may be revised by the Contractor as field conditions dictate and as approved by the Engineer.
 2. Horizontal conduit runs shall be supported a min. of every 8'-0". Vertical conduit runs shall be supported a min. of every 5'-0".
 3. Station Nos for light standards are approximate. For exact location see Structural Dwg's.
 4. Roadway lighting, underpass lighting, grounding and navigation lighting (including installation and maintenance of a temporary navigation lighting system during construction) as detailed on Sheets 68, 69 and 70 and described in the specifications shall be included in the pay item for Electric Lighting System.
 5. Conduit shall be supported WITH ONE HOLE PIPE CLAMPS ANCHORED WITH EXPANSION SHIELDS AND BOLTS.

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ST. LOUIS, MO.

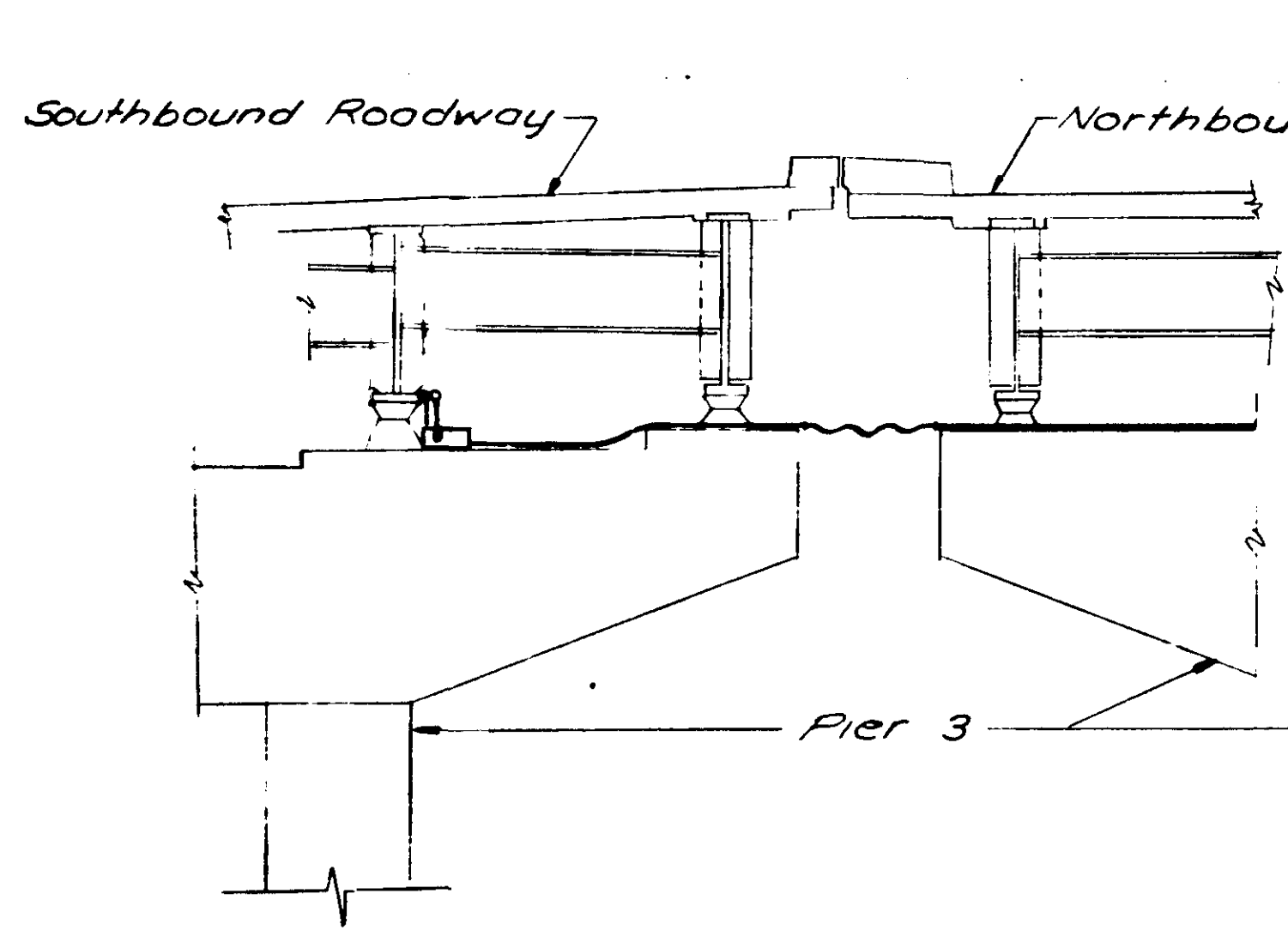
T. H. SOW
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

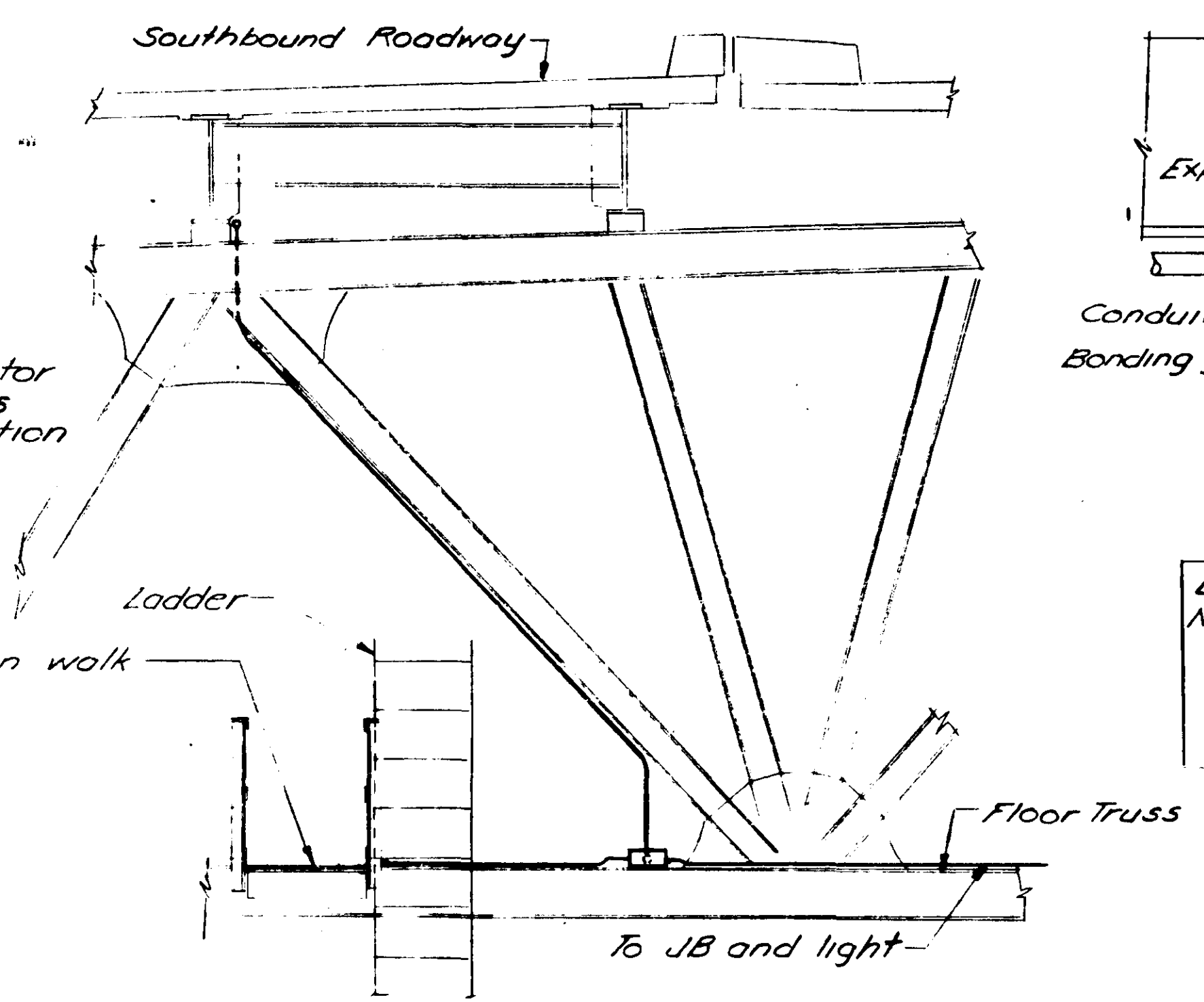
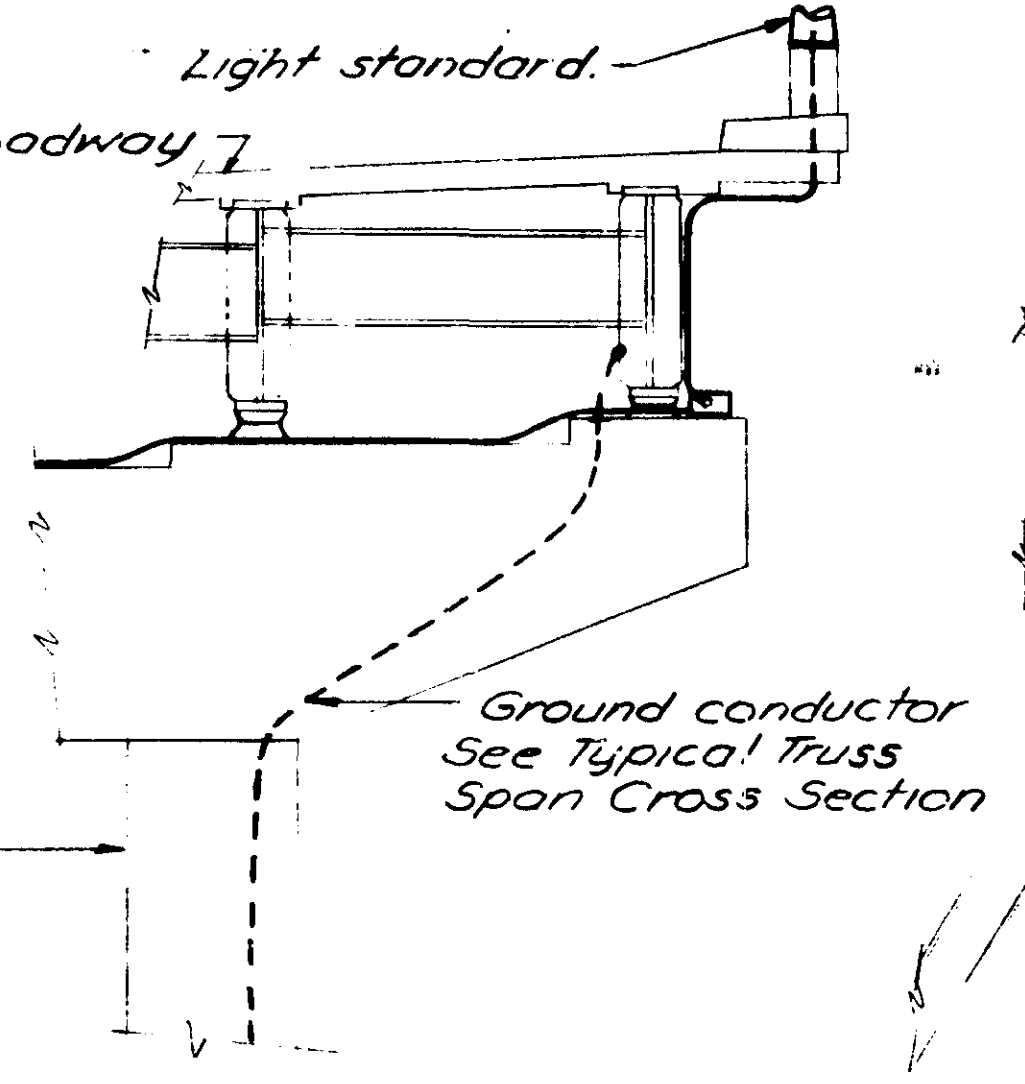
ELECTRICAL PLAN &
ELEMENTARY DIAGRAM

APPROVED - 6-18-65

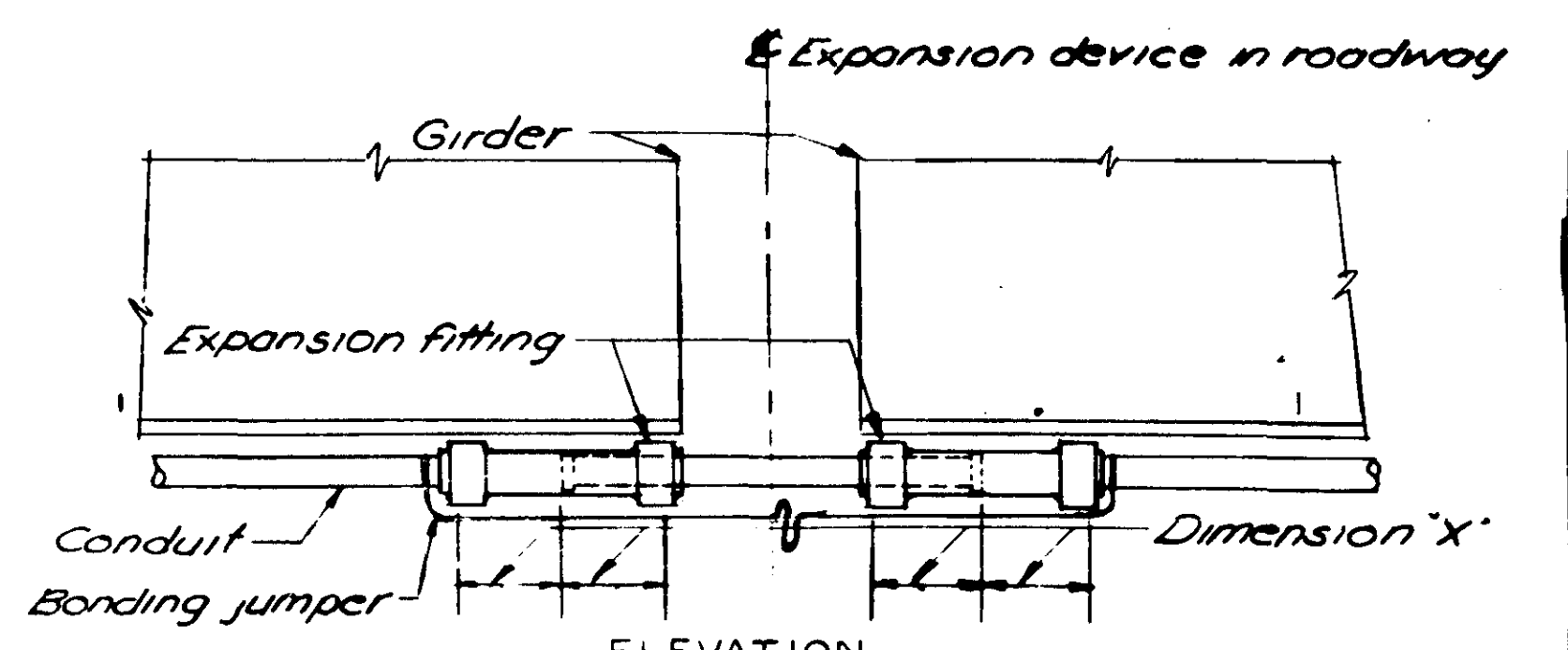
Drawn By D.S. Musker
Checked By R.W. Press



SECTION A-A
N.T.S.



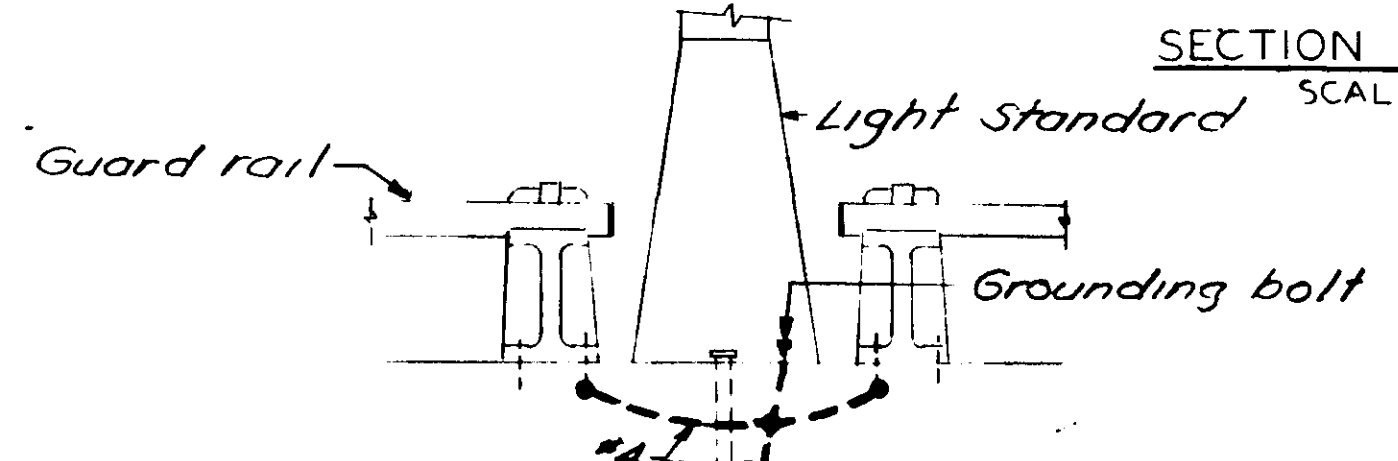
SECTION C.C. (TYPICAL)
SCALE: 3/8" = 1'-0"



ELEVATION
(Install 1 fitting at expansion device near piers 2, 8 and 11. Install 2 fittings at expansion device near pier 5.)

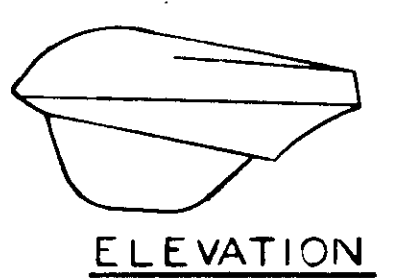
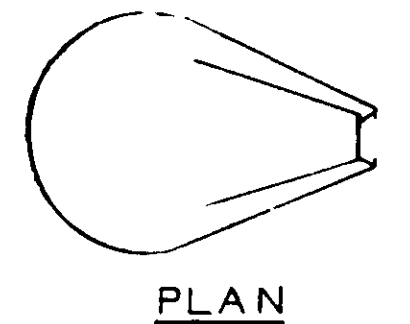
Exp. Device Near Pier	Dimension "X"	Maximum Expansion
2	2"	± 2"
5	4"	± 7"
8	4"	± 4"
11	2"	± 2"

CONDUIT EXPANSION FITTINGS
DETAIL 1 (TYPICAL)
N.T.S.

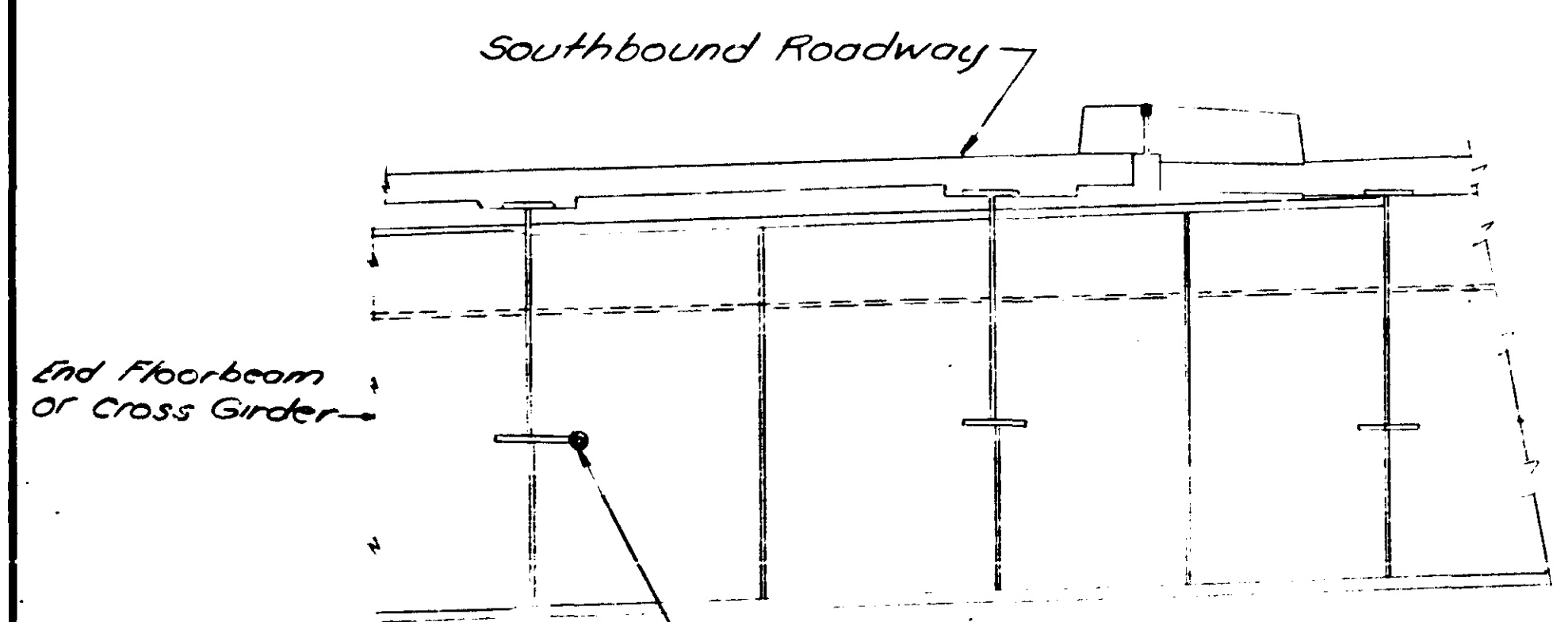


ELEVATION E-E
N.T.S.
(Typical of each light standard)

For details of pole and bracket arm, see Minn. Hwy Dept. standard Detail B50

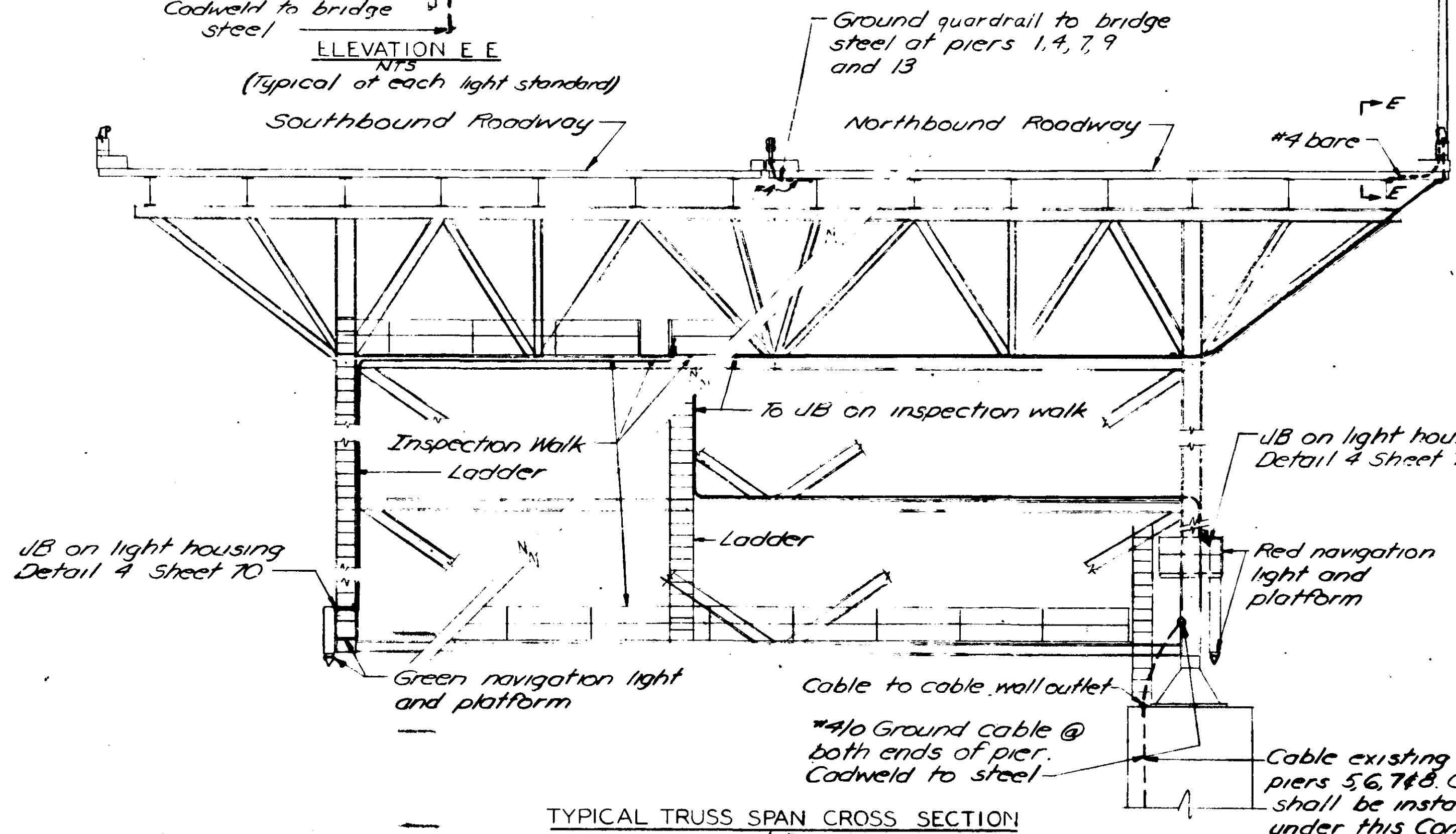


REMOTE BALLAST MERCURY VAPOR LUMINAIRE
DETAIL 2
N.T.S.



SECTION B-B (TYPICAL)
SCALE: 3/8" = 1'-0"

Field drill hole thru web plate install bakelite bushing and locknut between web plate and conduit



TYPICAL TRUSS SPAN CROSS SECTION
SCALE: 1/8" = 1'-0"

(Electrical work on Approach Span similar)

Drawn By D.S. Mustop
Checked By R.W. Pres
2089
GHE:561

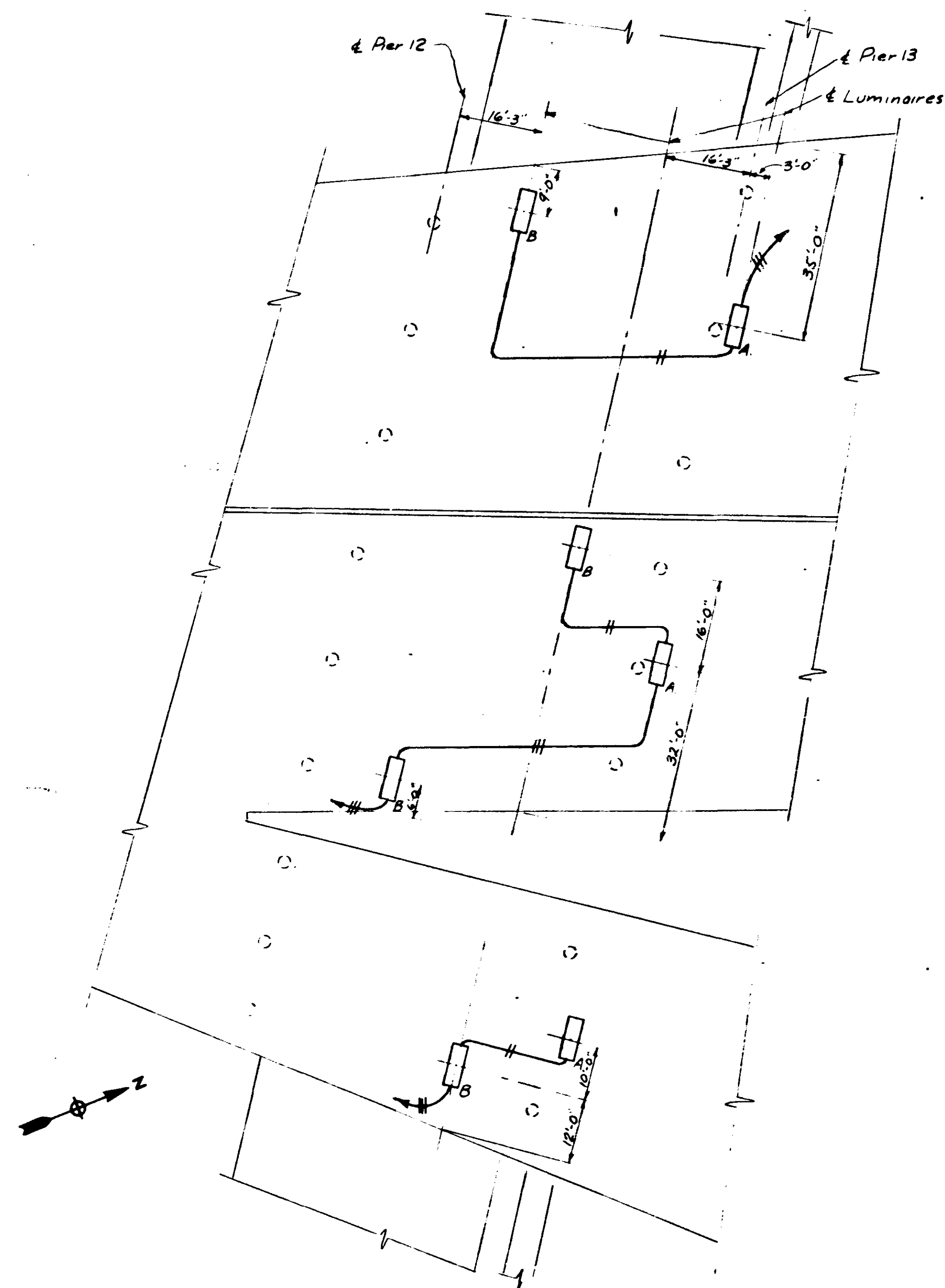
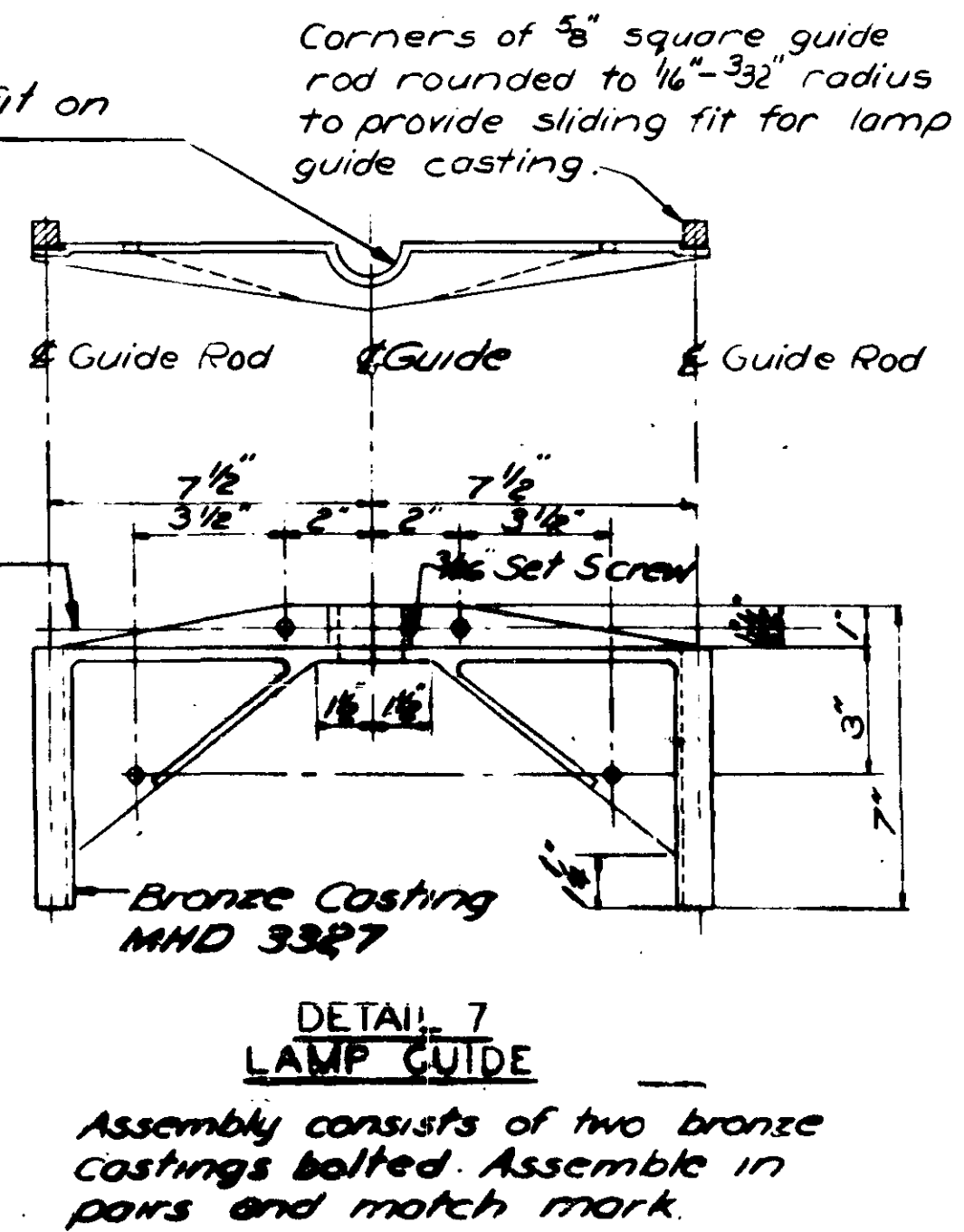
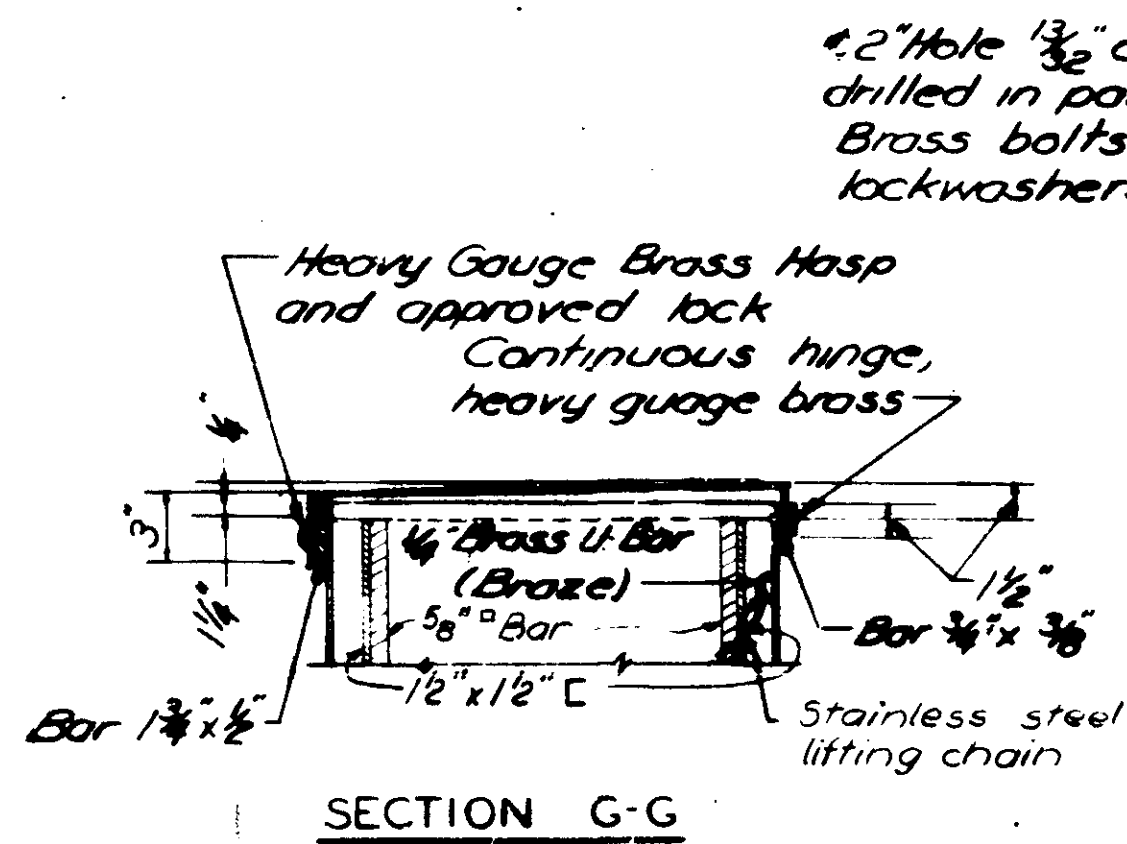
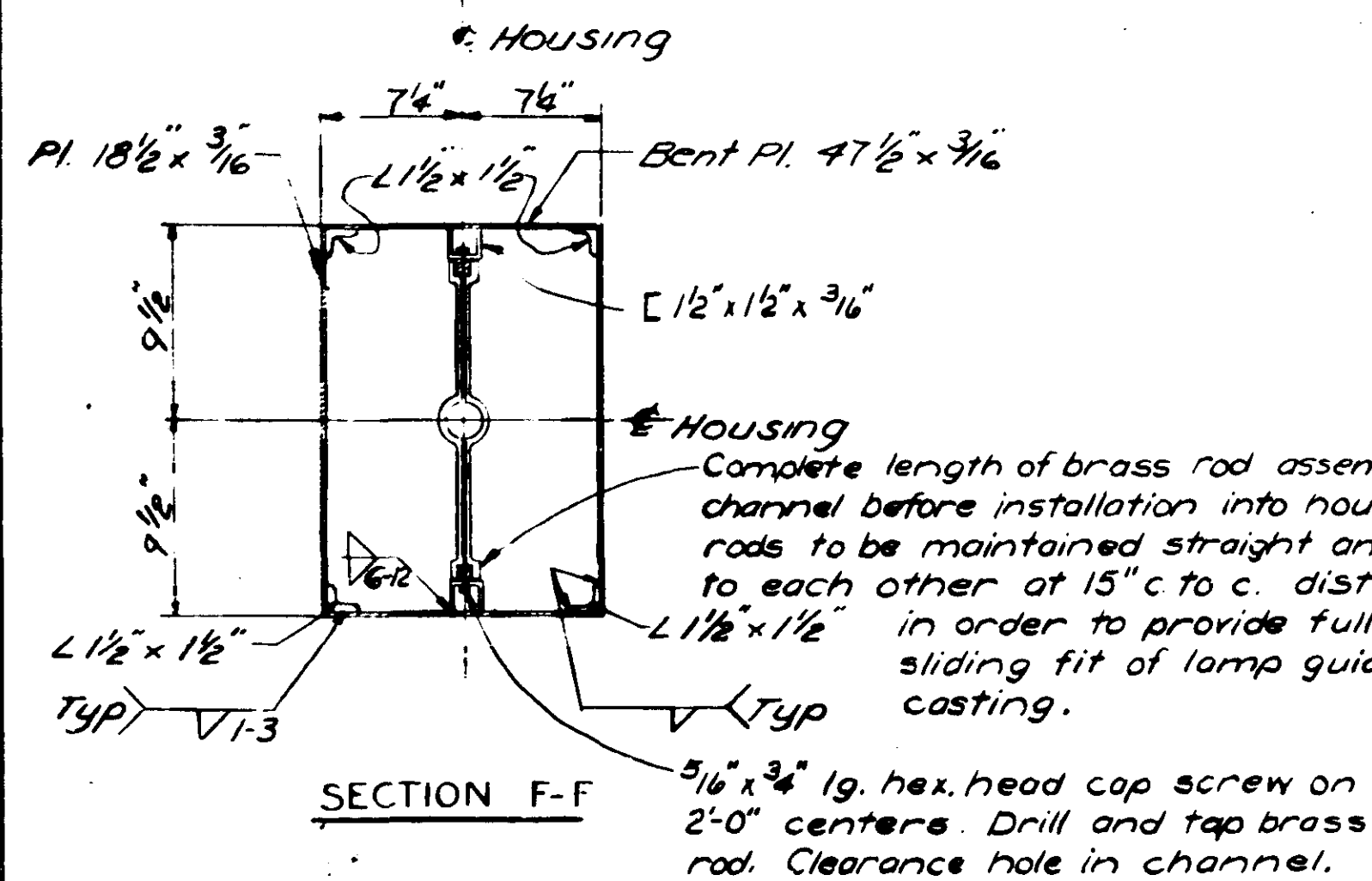
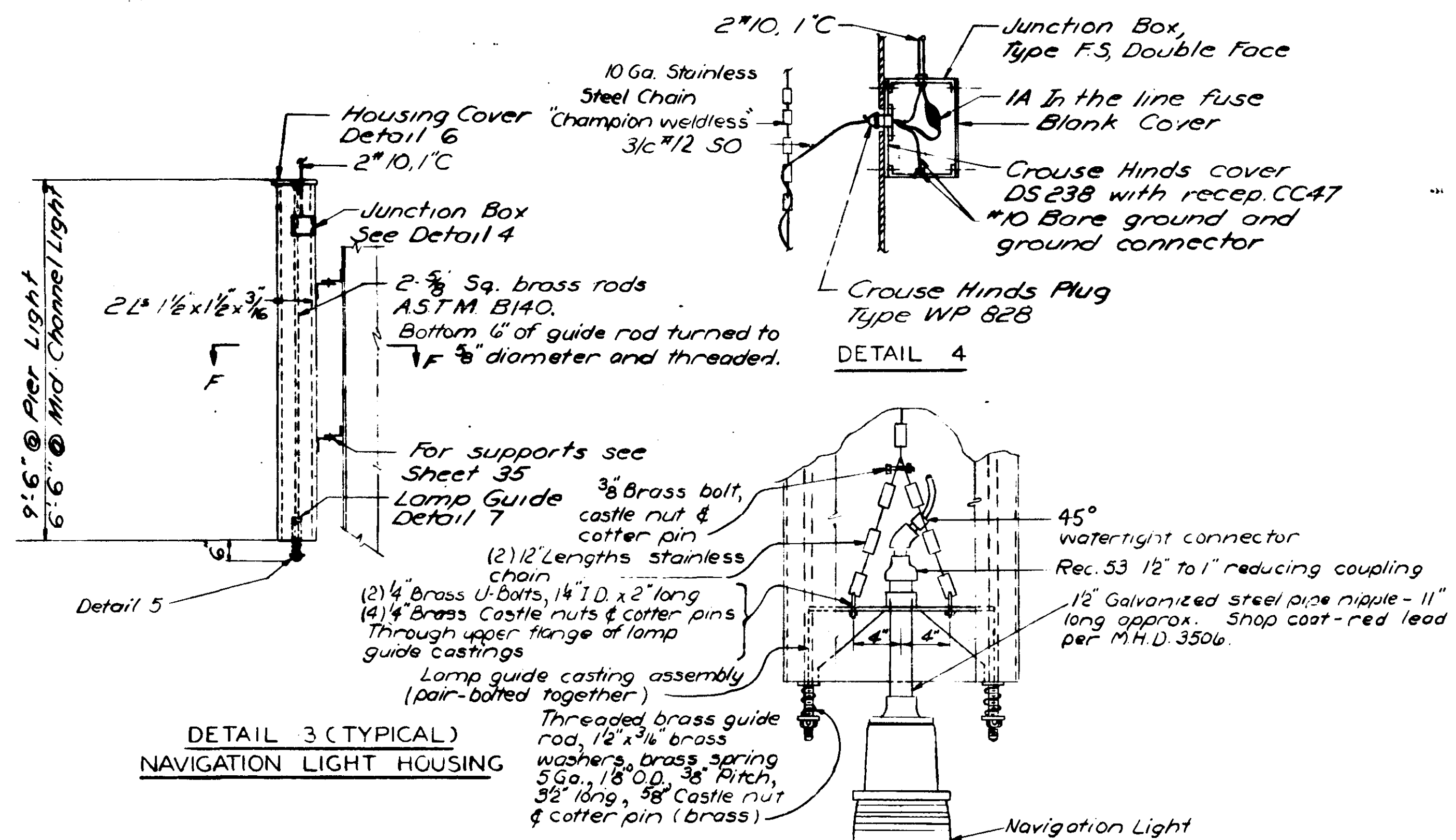
DESIGNED BY
SVENDRUP & PARCEL AND ASSOCIATES, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

T. H. 38W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

ELECTRICAL
SECTIONS AND DETAILS

APPROVED - 6-18-65



CONDUCTORS shall be #10 AWG
Conduit shall be 3/4" rigid galvanized steel
Type "A" luminaire - 1-lamp with ballast
Type "B" luminaire - 2-lamp with ballast

NOTES
1. See Sheet 10 For Structural Steel Notes
for Approach Spans.

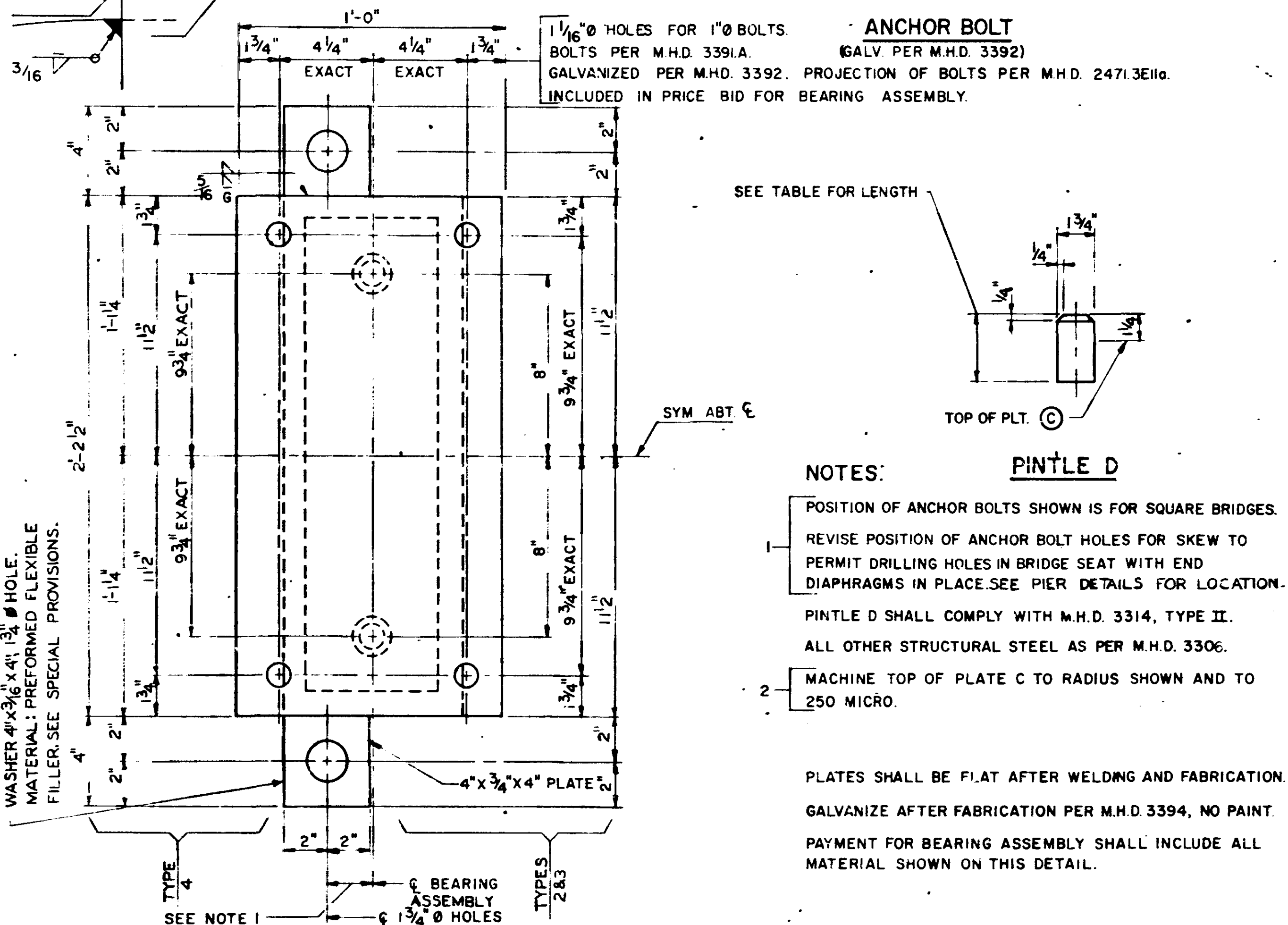
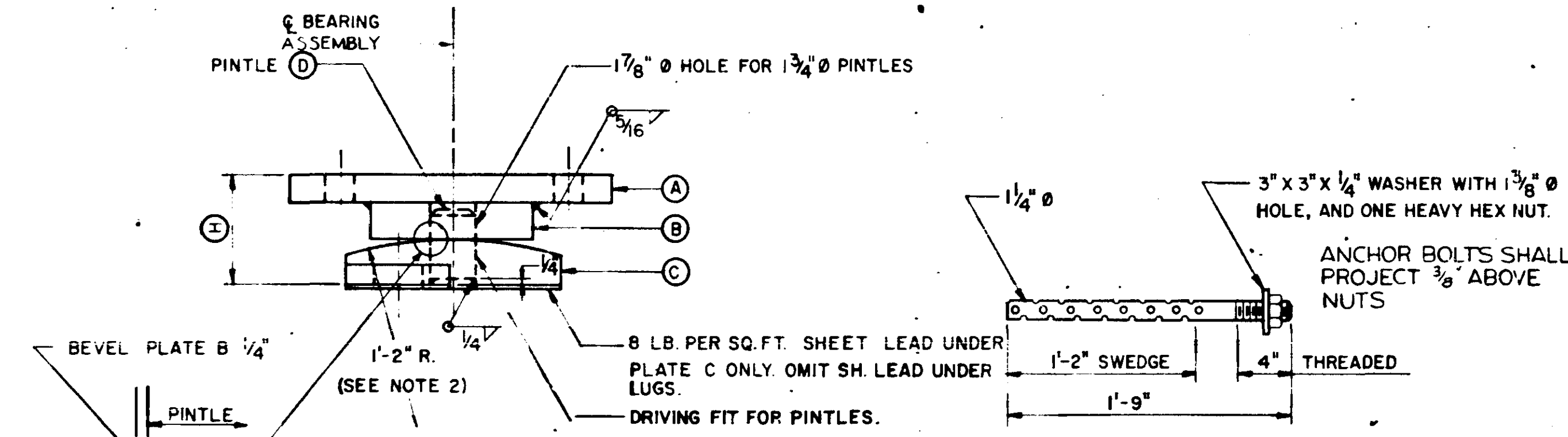
DESIGNED BY
SVERDRUP & PACIFIC AND ASSOCIATES, INC.
ENGINEERS - ARCHITECTS
ST. LOUIS, MO.

T.H. BOW
STATE OF MISSOURI
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

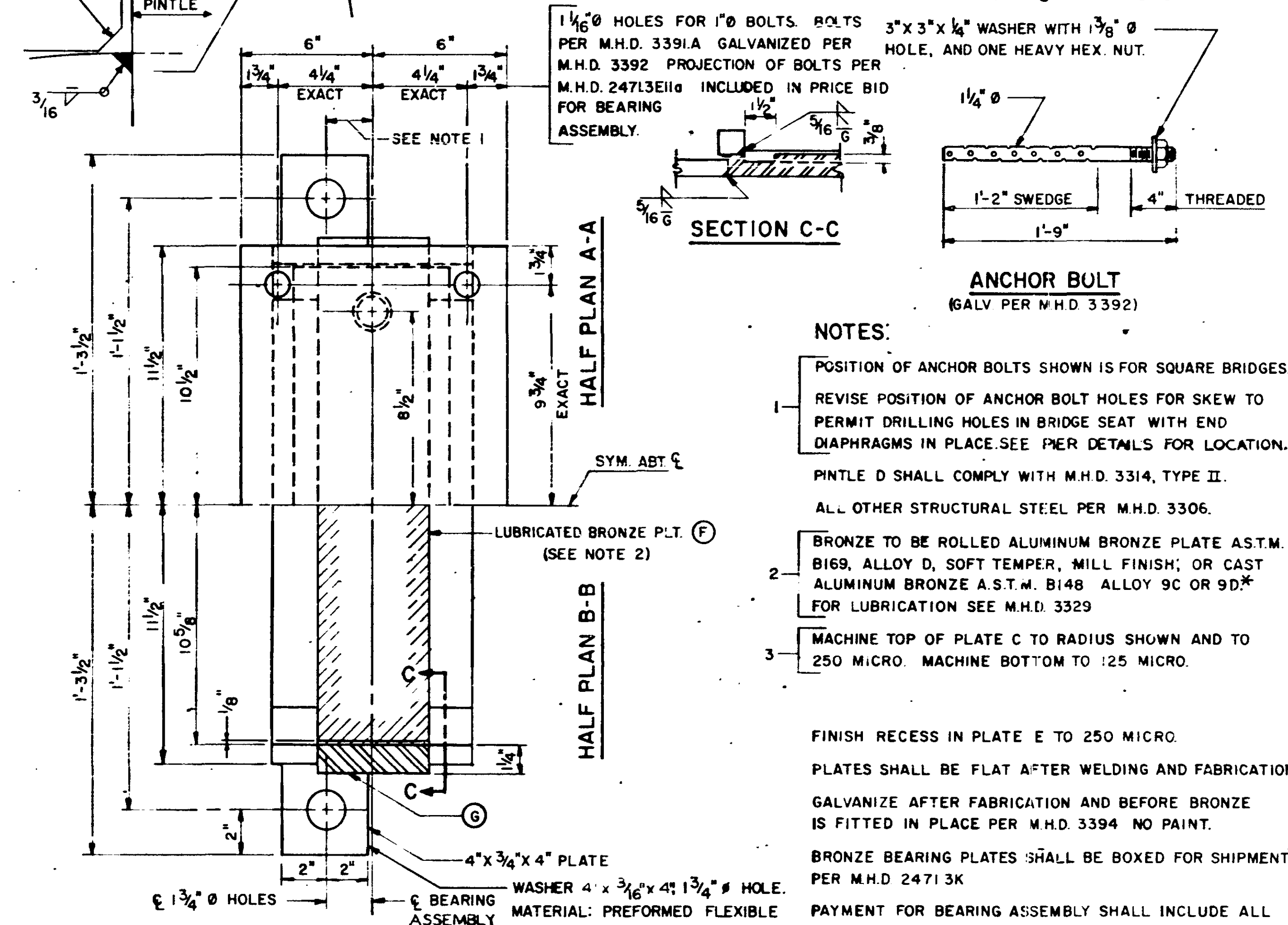
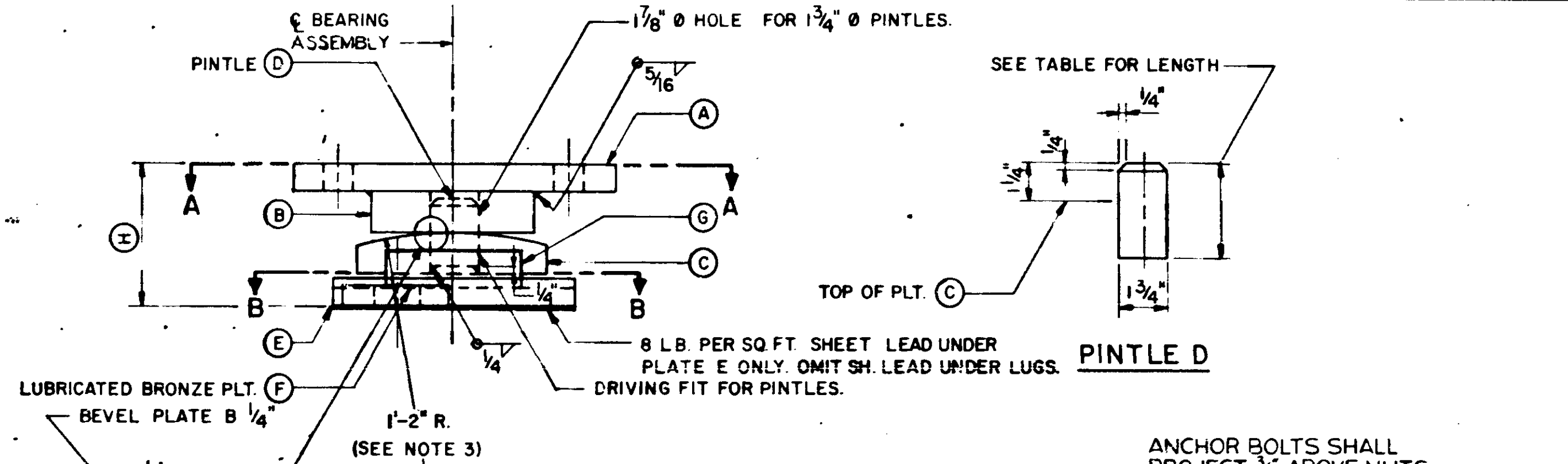
MICRO-FILMED
NAVIGATION LIGHTING AND
UNDERPASS LIGHTING DETAILS

APPROVED - 6-18-65



LOAD KIPS	A	B	C Δ	D	H (MIN.)	CODE	ASSEMBLY TYPE	LOCATION	NO. REQ'D.
260	12" x 1 1/2" x 1'-11"	6" x 1 1/2" x 1'-9"	12" x 2 1/2" x 1'-11"	1 3/4" x 3 1/2"	5 3/16"	B143-260	2	PIER 3	10
220	12" x 1 1/4" x 1'-11"	6" x 1 1/2" x 1'-9"	10" x 2" x 1'-11"	1 3/4" x 3"	4 1/16"	B143-220			
180	12" x 1" x 1'-11"	6" x 1 1/2" x 1'-9"	8" x 1 1/2" x 1'-11"	1 3/4" x 2 3/4"	4 3/16"	B143-180			
150	12" x 1" x 1'-11"	6" x 1 1/2" x 1'-9"	8" x 1 1/2" x 1'-11"	1 3/4" x 2 1/2"	3 3/16"	B143-150	3	PIER 9	2
300	12" x 1 1/4" x 2'-2 1/2"	6" x 1 1/2" x 2'-0 1/2"	12" x 2 1/2" x 2'-2 1/2"	1 3/4" x 3 1/2"	5 3/16"	B143-300	4	PIER 9	11

Δ FINISHED THICKNESS OF PLATE C MAY BE 1/16" LESS THAN THICKNESS SHOWN



LOAD KIPS	A	B	C Δ	D	E	F*	G	H (MIN.)	CODE	ASSEMBLY TYPE	LOCATION	NO. REQ'D.
260	12" x 1 1/4" x 1'-11"	6" x 1 1/2" x 1'-9"	9" x 2" x 1'-9"	1 3/4" x 3"	11" x 1 1/4" x 1'-11"	7" x 1/2" x 1'-9"	1 1/4" x 7"	6 1/16"	B144-260			
240	12" x 1 1/4" x 1'-11"	6" x 1 1/2" x 1'-9"	8" x 1 3/4" x 1'-9"	1 3/4" x 2 3/4"	10" x 1 1/4" x 1'-11"	6" x 1/2" x 1'-9"	1 1/4" x 6"	5 3/16"	B144-240			
200	12" x 1" x 1'-11"	6" x 1 1/2" x 1'-9"	7" x 1 1/2" x 1'-9"	1 3/4" x 2 1/2"	9" x 1" x 1'-11"	5" x 1/2" x 1'-9"	1 1/4" x 5"	5 1/16"	B144-200	10	PIERS 2, 4, 8, 10	34
160	12" x 1" x 1'-11"	6" x 1 1/2" x 1'-9"	6" x 1 1/4" x 1'-9"	1 3/4" x 2 1/4"	8" x 1" x 1'-11"	4" x 1/2" x 1'-9"	1 1/4" x 4"	4 3/16"	B144-160	9	PIER 11	14

* CAST BRONZE SHALL HAVE MACHINE-FINISHED EDGES TO WIDTH AND LENGTH SHOWN
 BOTTOM SURFACE TO BE MACHINED TO 250 MICRO AND TOP SURFACE TO 125 MICRO.
 WIDTH AND LENGTH OF CAST OR WROUGHT BRONZE SHALL BE HELD TO +0.000 AND -0.050 INCH TOLERANCE

Δ FINISHED THICKNESS OF PLATE C MAY BE 1/16" LESS THAN THICKNESS SHOWN

APPROVED MAY 17, 1960
 BRIDGE ENGINEER

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
 FIXED BEARING ASSEMBLY FOR
 BEAMS WITH 15" TO 20" FLANGE

REVISIONS
 5/11/60 A
 9/26/61 B
 5/22/63
 8/28/63
 6/15/64
 4/28/65
 DETAIL NO
 B143
 MODIFIED

APPROVED MAY 17, 1960
 BRIDGE ENGINEER

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
 EXPANSION BEARING ASSEMBLY FOR BEAMS
 WITH 15" TO 16 1/2" FLANGE WITH GUIDE BARS

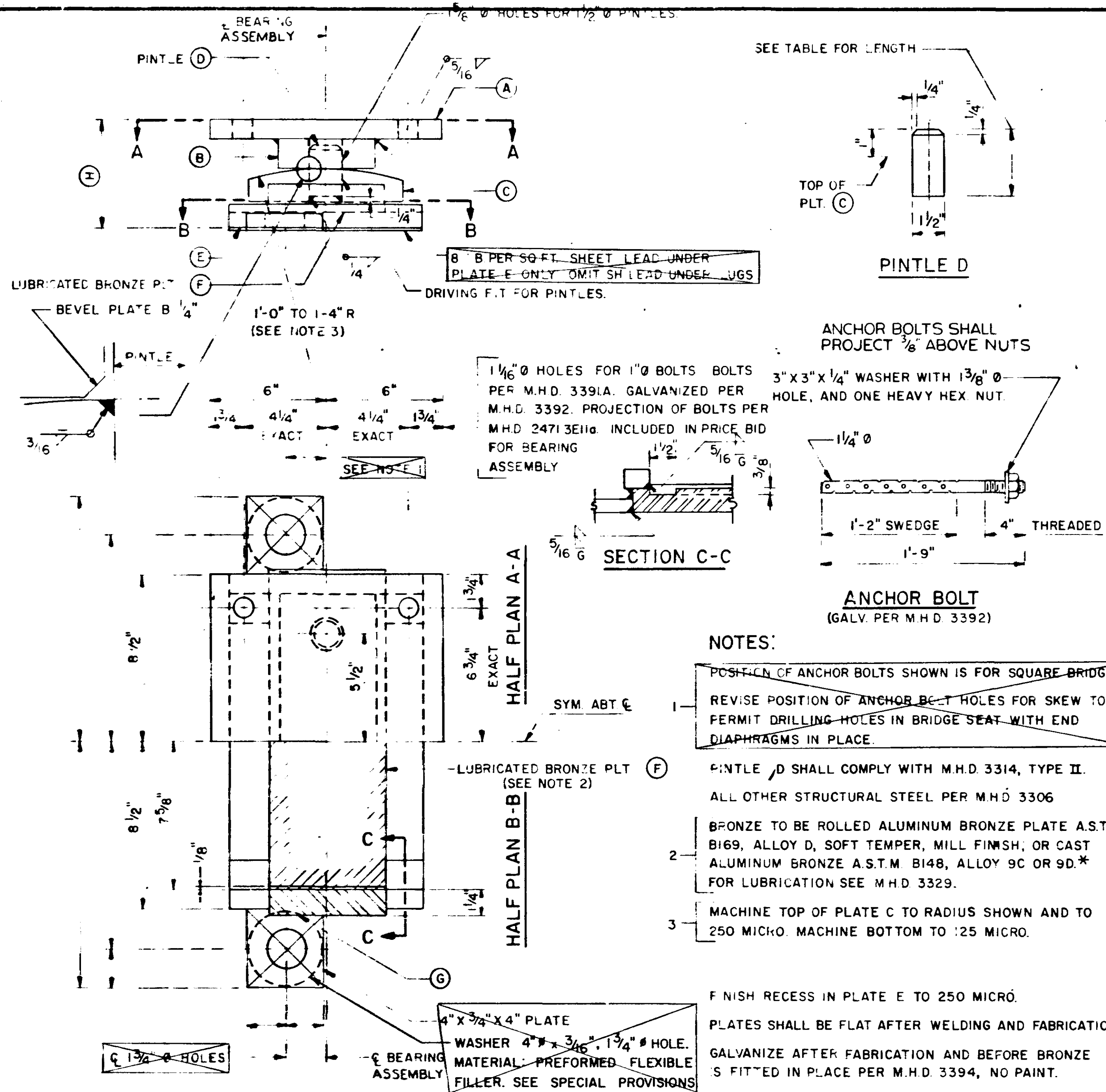
REVISIONS
 5/11/60-A
 9/26/61-B
 5/22/63
 8/28/63
 6/15/64
 4/28/65
 DETAIL NO.
 B144
 MODIFIED

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

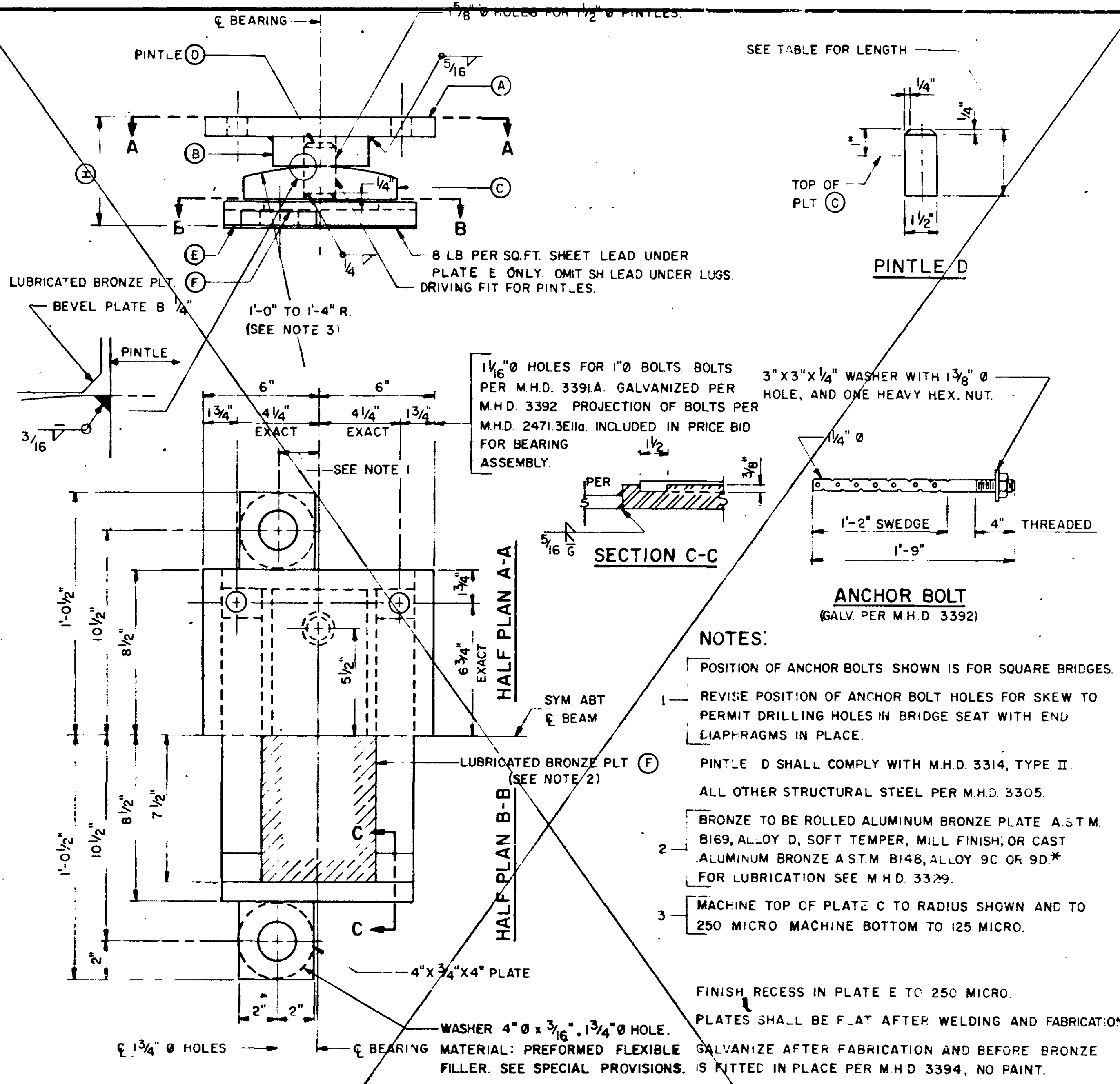
DETAILS

APPROVED 6-18-65



* CAST BRONZE SHALL HAVE MACHINE-FINISHED EDGES TO WIDTH AND LENGTH SHOWN. BOTTOM SURFACE TO BE MACHINED TO 250 MICRO AND TOP SURFACE TO 125 MICRO. WIDTH AND LENGTH OF CAST OR WROUGHT BRONZE SHALL BE HELD TO +0.000 AND -0.050 INCH TOLERANCE. Δ FINISHED THICKNESS OF PLATE C MAY BE 1/16" LESS THAN THICKNESS SHOWN.

BRONZE BEARING PLATES SHALL BE BOXED FOR SHIPMENT PER M.H.D. 2471.3K. PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.



* CAST BRONZE SHALL HAVE MACHINE-FINISHED EDGES TO WIDTH AND LENGTH SHOWN. BOTTOM SURFACE TO BE MACHINED TO 250 MICRO AND TOP SURFACE TO 125 MICRO. WIDTH AND LENGTH OF CAST OR WROUGHT BRONZE SHALL BE HELD TO +0.000 AND -0.050 INCH TOLERANCE. Δ FINISHED THICKNESS OF PLATE C MAY BE 1/16" LESS THAN THICKNESS SHOWN.

BRONZE BEARING PLATES SHALL BE BOXED FOR SHIPMENT PER M.H.D. 2471.3K. PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

2083
 15488
 Checked by: J.E. DiFranco July 1964
 Checked by: W.J. Gaudin, Sept. 1964

APPROVED: MAY 17, 1960

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
EXPANSION BEARING ASSEMBLY FOR BEAMS
WITH 9" TO 10 1/2" FLANGE WITH GUIDE BARS

REVISIONS
5/11/60-A
9/26/61-B
5/22/63
8/28/63
3/11/64
4/28/65
DETAIL NO.
B138
MODIFIED

APPROVED: MAY 17, 1960

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
EXPANSION BEARING ASSEMBLY FOR BEAMS
WITH 9" TO 10 1/2" FLANGE WITHOUT GUIDE BARS

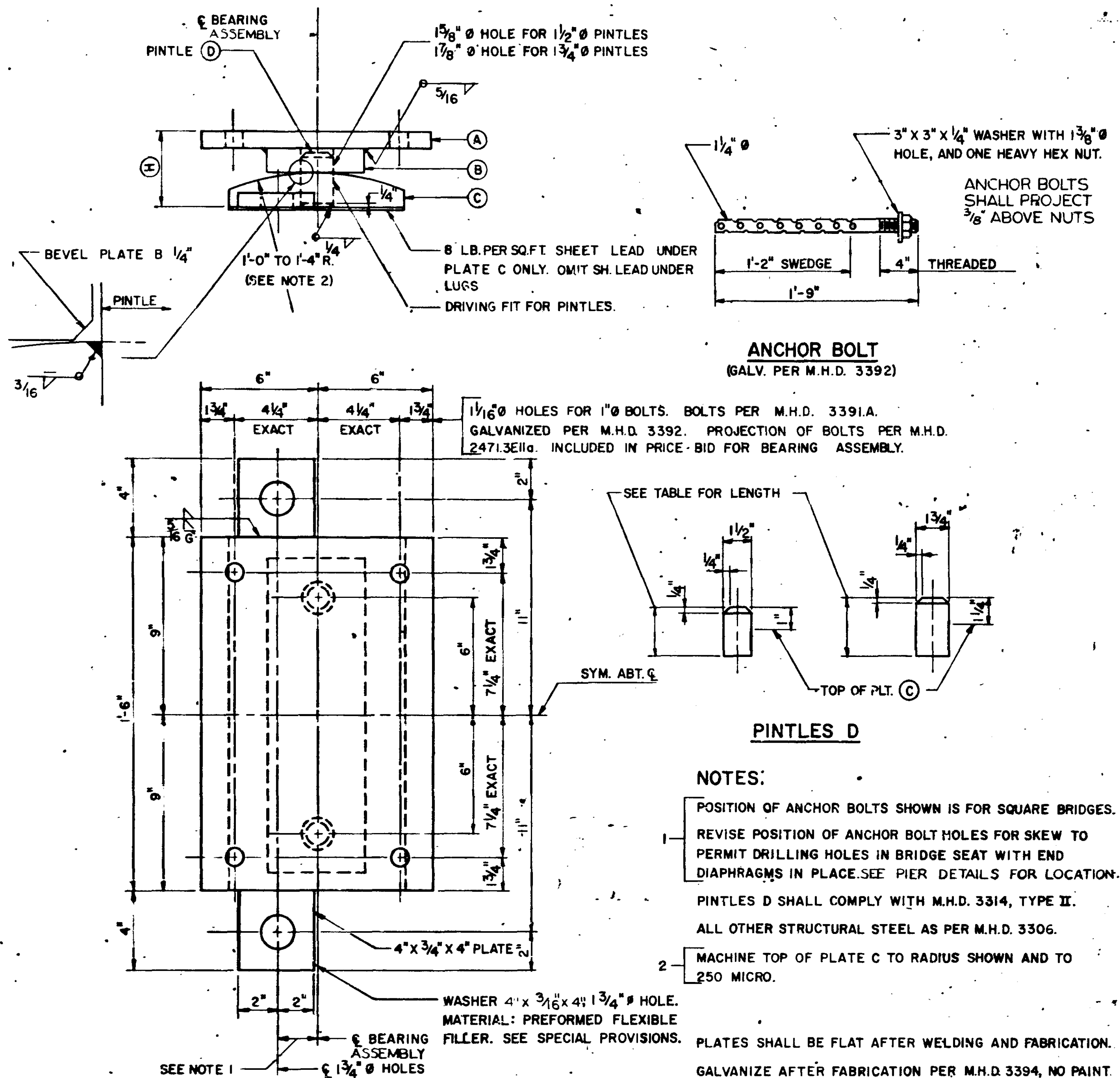
REVISIONS
5/11/60-A
9/26/61-B
5/22/63
8/28/63
DETAIL NO.
B139

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DETAILS

APPROVED: 6-18-65



LOAD KIPS	A	B	C Δ	D	H (MIN.)	CODE	ASSEMBLY TYPE	LOCATION	NO. REQ'D.
220	12" X 1" X 1'-6"	6" X 1 1/2" X 1'-4"	12" X 1 1/2" X 1'-6"	1 3/4" X 3 1/2"	4 5/16"	B140-220			
180	12" X 1" X 1'-6"	6" X 1 1/2" X 1'-4"	10" X 2" X 1'-6"	1 3/4" X 3"	4 7/16"	B140-180	1	PIER 1	10
140	12" X 1 1/8" X 1'-6"	5" X 1 1/4" X 1'-4"	8" X 1 3/4" X 1'-6"	1 1/2" X 2 1/2"	3 7/16"	B140-140			

Δ FINISHED THICKNESS OF PLATE C MAY BE 1/16" LESS THAN THICKNESS SHOWN

PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

APPROVED MAY 17 1960
A. L. LaBonte
 BRIDGE ENGINEER

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
 FIXED BEARING ASSEMBLY FOR
 BEAMS WITH 1 1/2" OR 12" FLANGE

REVISIONS
 5/11/60-A
 9/26/61-B
 5/22/63
 8/28/63
 6/15/64
 4/28/65

DETAIL NO.
B140
 MODIFIED

APPROVED MAY 17 1960
A. L. LaBonte
 BRIDGE ENGINEER

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
 EXPANSION BEARING ASSEMBLY FOR BEAMS
 WITH 1 1/2" OR 12" FLANGE WITH GUIDE BARS

REVISIONS
 5/11/60-A
 9/26/61-B
 5/22/63
 8/28/63
 6/15/64
 4/28/65

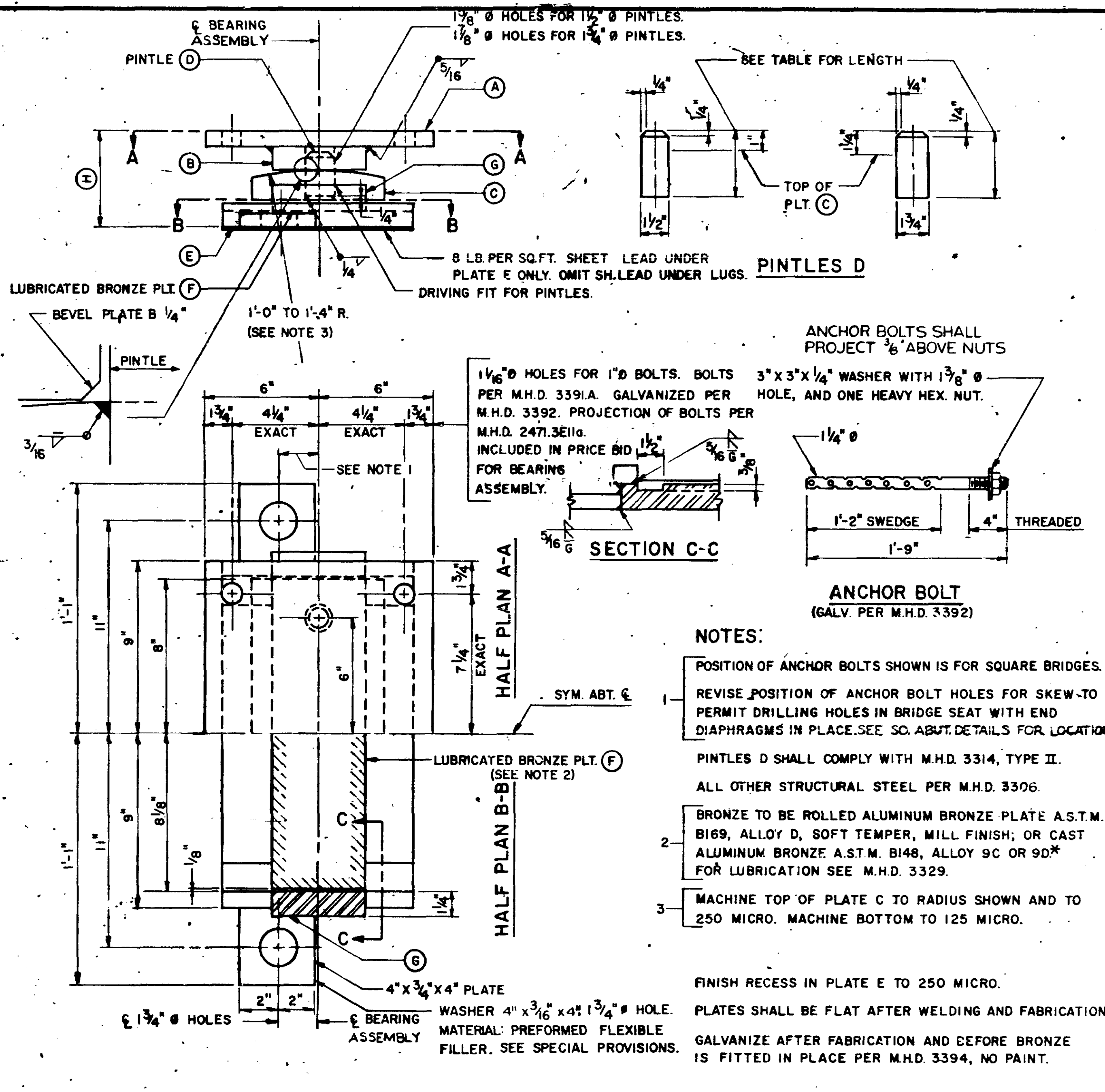
DETAIL NO.
B141
 MODIFIED

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DETAILS

APPROVED 6-18-65



LOAD KIPS	A	B	C Δ	D	E	F*	G	H (MIN.)	CODE	ASSEMBLY TYPE	LOCATION	NO. REQ'D.
220	12" X 1" X 1'-6"	6" X 1 1/2" X 1'-4"	9" X 2" X 1'-4"	1 3/4" X 3"	12" X 1 1/2" X 1'-6"	7" X 1/2" X 1'-4"	1 1/2" X 1" X 7"	6 1/16"	B141-220			
180	12" X 1" X 1'-6"	6" X 1 1/2" X 1'-4"	8" X 1 3/4" X 1'-4"	1 3/4" X 3"	10" X 1 1/2" X 1'-6"	6" X 1/2" X 1'-4"	1 1/2" X 1" X 5"	5 9/16"	B141-180			
140	12" X 1 1/8" X 1'-6"	5" X 1 1/4" X 1'-4"	7" X 1 1/4" X 1'-4"	1 1/2" X 2"	8" X 1" X 1'-6"	5" X 1/2" X 1'-4"	1 1/4" X 1" X 5"	4 7/16"	B141-140	6	SO. ABUT.	10

* CAST BRONZE SHALL HAVE MACHINE-FINISHED EDGES TO WIDTH AND LENGTH SHOWN. BOTTOM SURFACE TO BE MACHINED TO 250 MICRO AND TOP SURFACE TO 125 MICRO. WIDTH AND LENGTH OF CAST OR WROUGHT BRONZE SHALL BE HELD TO +0.000 AND -0.050 INCH TOLERANCE. Δ FINISHED THICKNESS OF PLATE C MAY BE 1/16" LESS THAN THICKNESS SHOWN.

BRONZE BEARING PLATES SHALL BE BOXED FOR SHIPMENT PER M.H.D. 2471.3K. PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

APPROVED MAY 17 1960
A. L. LaBonte
 BRIDGE ENGINEER

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
 EXPANSION BEARING ASSEMBLY FOR BEAMS
 WITH 1 1/2" OR 12" FLANGE WITH GUIDE BARS

REVISIONS
 5/11/60-A
 9/26/61-B
 5/22/63
 8/28/63
 6/15/64
 4/28/65

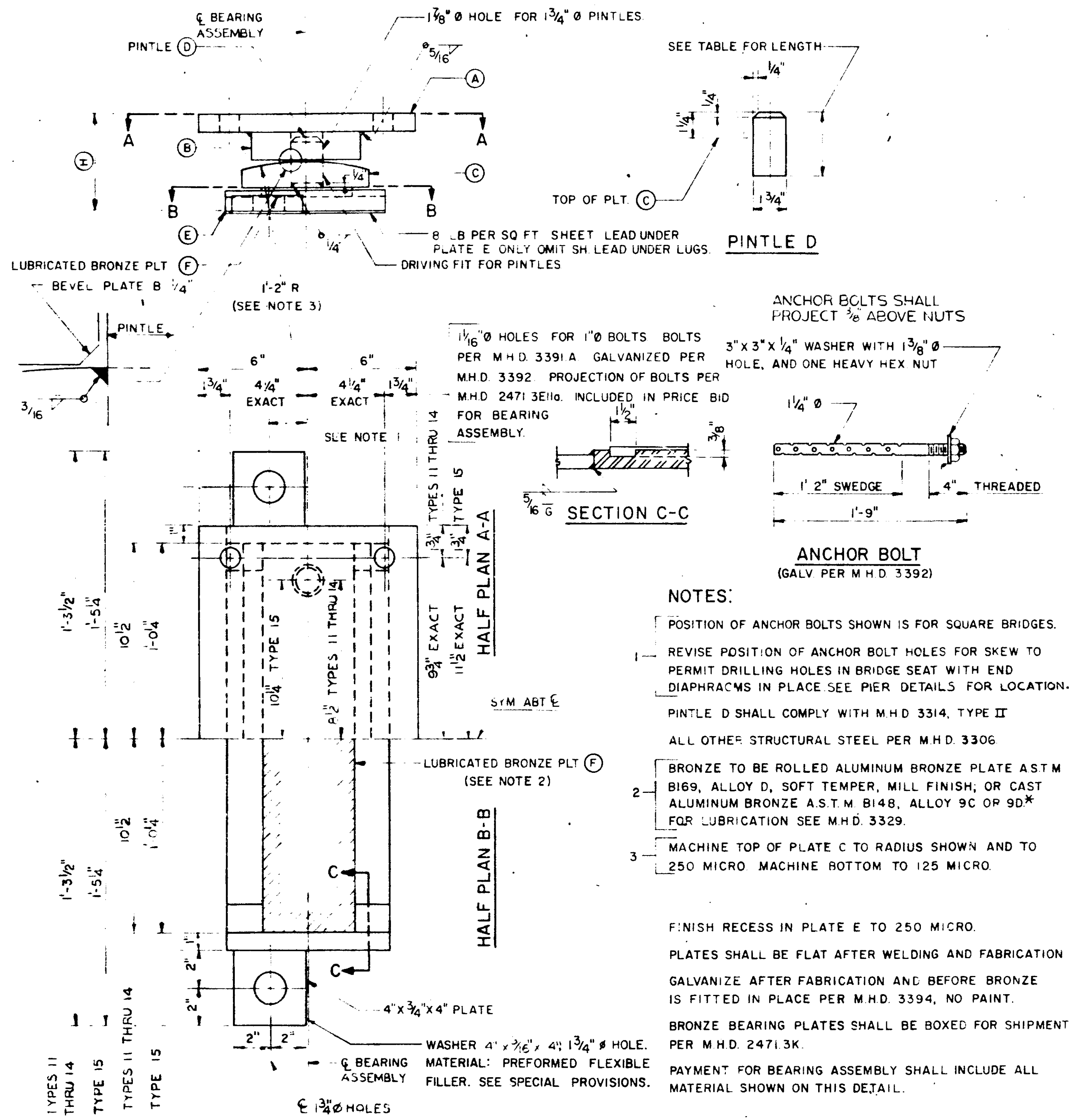
DETAIL NO.
B141
 MODIFIED

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

DETAILS

APPROVED 6-18-65



NOTES:

- POSITION OF ANCHOR BOLTS SHOWN IS FOR SQUARE BRIDGES.
- REVISE POSITION OF ANCHOR BOLT HOLES FOR SKEW TO PERMIT DRILLING HOLES IN BRIDGE SEAT WITH END DIAPHRAGMS IN PLACE. SEE PIER DETAILS FOR LOCATION.
- PINTLE D SHALL COMPLY WITH M.H.D. 3314, TYPE II.

ALL OTHER STRUCTURAL STEEL PER M.H.D. 3306.

BRONZE TO BE ROLLED ALUMINUM BRONZE PLATE A.S.T.M. B169, ALLOY D, SOFT TEMPER, MILL FINISH; OR CAST ALUMINUM BRONZE A.S.T.M. B148, ALLOY 9C OR 9D* FOR LUBRICATION SEE M.H.D. 3329.

MACHINE TOP OF PLATE C TO RADIUS SHOWN AND TO 250 MICRO. MACHINE BOTTOM TO 125 MICRO.

FINISH RECESS IN PLATE E TO 250 MICRO.

PLATES SHALL BE FLAT AFTER WELDING AND FABRICATION GALVANIZE AFTER FABRICATION AND BEFORE BRONZE IS FITTED IN PLACE PER M.H.D. 3394, NO PAINT.

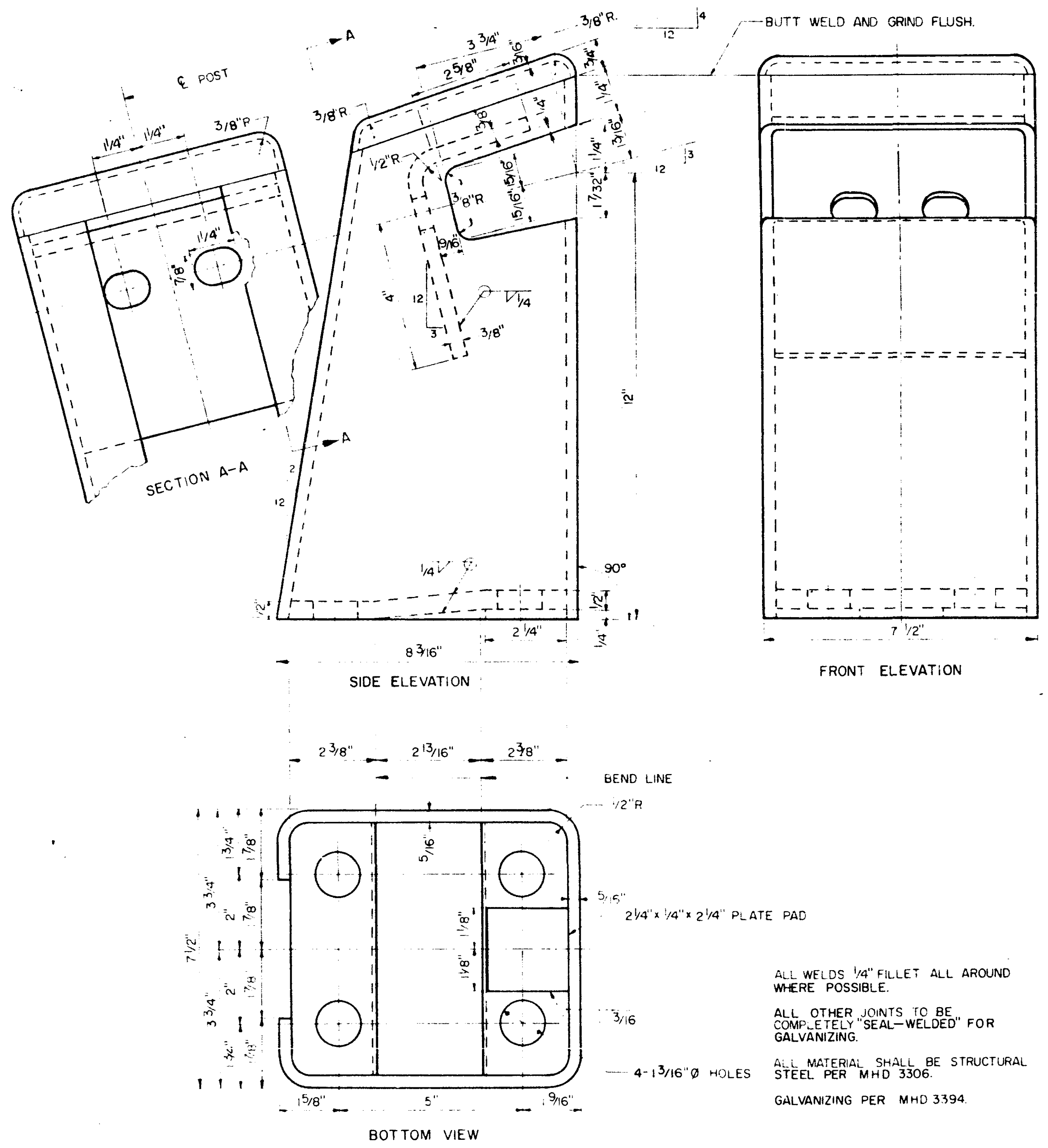
BRONZE BEARING PLATES SHALL BE BOXED FOR SHIPMENT PER M.H.D. 2471.3K.

PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

LOAD KIPS	A	B	C	D	E	F*	H (MIN)	CODE	ASSEMBLY TYPE	LOCATION	NO. REQ'D.
260	12"x 1/4" x 1'-11"	6"x 1/2" x 1'-9"	9"x 2" x 1'-9"	1 3/4" x 3"	11"x 1/4" x 1'-11"	7"x 1/2" x 1'-9"	6 1/16"	B145-260	14	PIER 3	4
240	12"x 1/4" x 1'-11"	6"x 1/2" x 1'-9"	8"x 3/4" x 1'-9"	1 3/4" x 2 3/4"	10"x 1/4" x 1'-11"	6"x 1/2" x 1'-9"	5 3/16"	B145-240	13	PIER 4	4
200	12"x 1" x 1'-11"	6"x 1/2" x 1'-9"	7"x 1/2" x 1'-9"	1 3/4" x 2 1/2"	9"x 1" x 1'-11"	5"x 1/2" x 1'-9"	5 1/16"	B145-200	12	PIERS 2&10	8
160	12"x 1" x 1'-11"	6"x 1/2" x 1'-9"	6"x 1/4" x 1'-9"	1 3/4" x 2 1/4"	8"x 1" x 1'-11"	4"x 1/2" x 1'-9"	4 3/16"	B145-160	11	PIER 11	4
300	12"x 1 1/4" x 2'-2 1/2"	6"x 1 1/2" x 2'-0 1/2"	9"x 2" x 2'-0 1/2"	1 3/4" x 3"	11"x 1/4" x 2'-2 1/2"	7"x 1 1/2" x 2'-0 1/2"	6 1/16"	B145-300	15	PIER 9	4

* CAST BRONZE SHALL HAVE MACHINE-FINISHED EDGES TO WIDTH AND LENGTH SHOWN.
 BOTTOM SURFACE TO BE MACHINED TO 250 MICRO AND TOP SURFACE TO 125 MICRO.
 WIDTH AND LENGTH OF CAST OR WROUGHT BRONZE SHALL BE HELD TO +0.000 AND -0.050 INCH TOLERANCE.

FINISHED THICKNESS OF PLATE C MAY BE 1/16" LESS THAN THICKNESS SHOWN.



ALL WELDS 1/4" FILLET ALL AROUND WHERE POSSIBLE.

ALL OTHER JOINTS TO BE COMPLETELY "SEAL-WELDED" FOR GALVANIZING.

ALL MATERIAL SHALL BE STRUCTURAL STEEL PER M.H.D. 3306.

GALVANIZING PER M.H.D. 3394.

APPROVED MAY 17 1960
C. J. S. Bont
 BRIDGE ENGINEER

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
**EXPANSION BEARING ASSEMBLY FOR BEAMS
 WITH 15" TO 20" FLANGE WITHOUT GUIDE BARS**

REVISIONS
 5/11/60-A
 9/26/61-B
 5/22/63
 8/28/63
 4/28/65

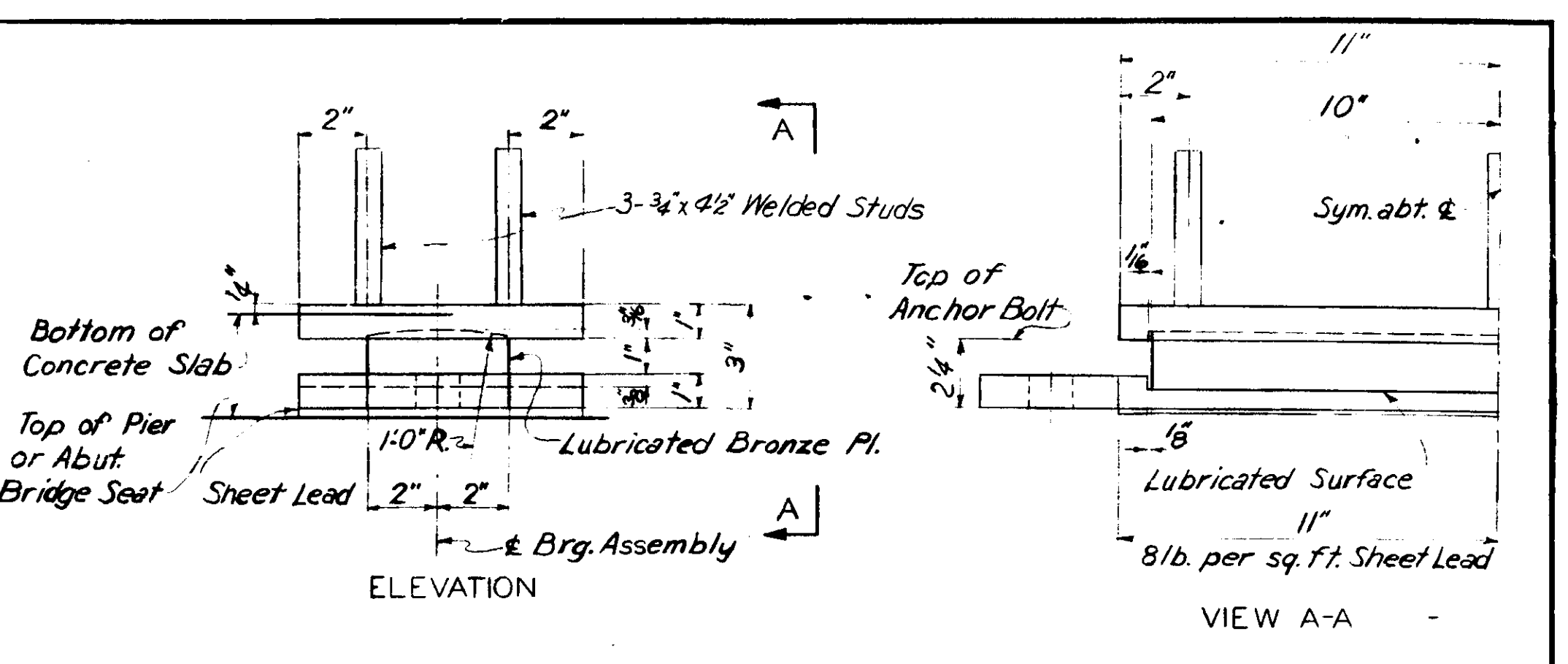
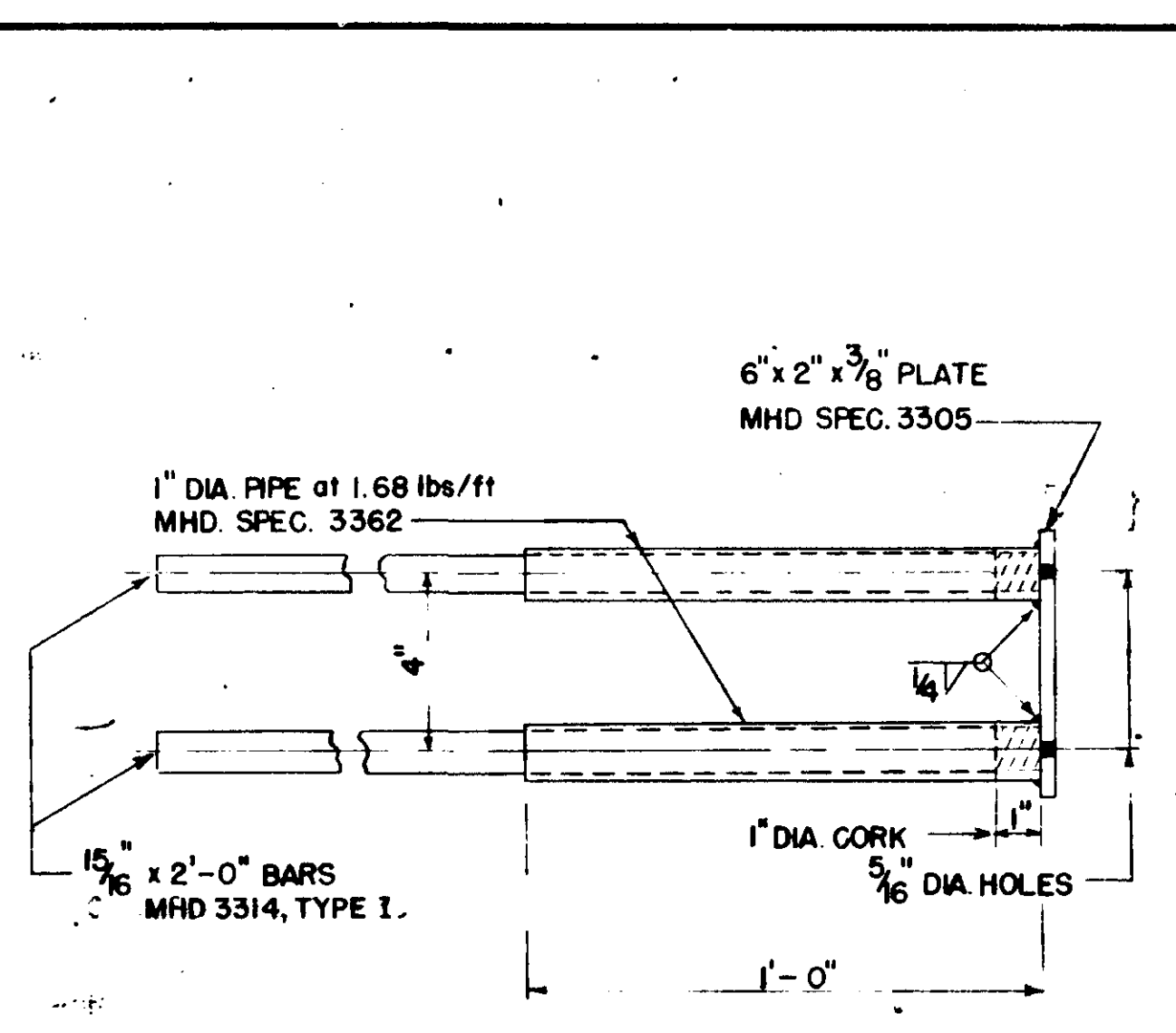
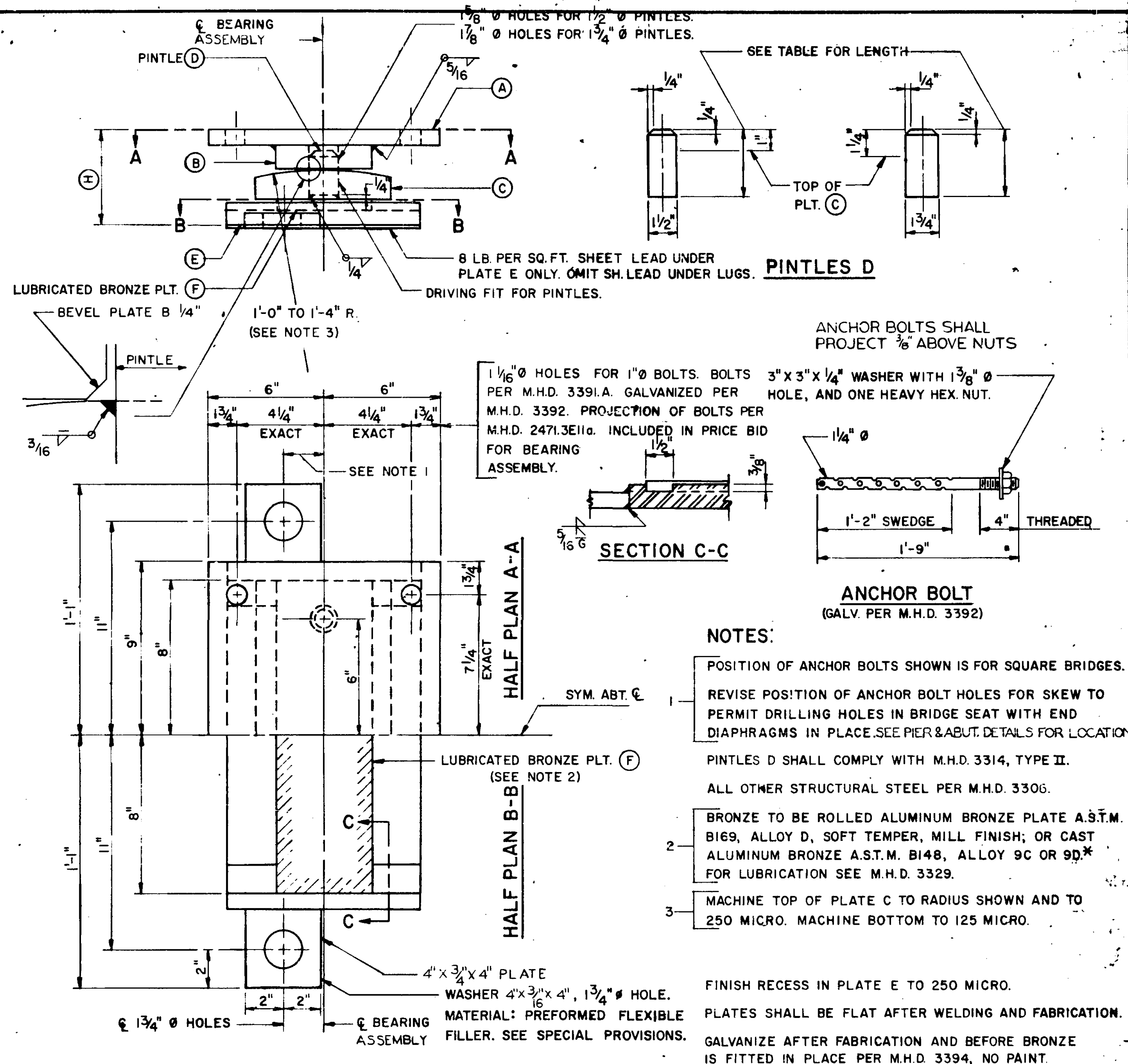
DETAIL NO.
B145
 MODIFIED

APPROVED 6-7 1965
C. J. S. Bont
 BRIDGE ENGINEER

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
**WELDED RAIL POST
 FOR I-LINE FLAT TUBE RAIL**

REVISIONS
 DETAIL NO.
B38

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
**Bridge No.
 9340**
DETAILS
 APPROVED 6/18/65
9340
 Sheet No. 74 of
 94 Sheets

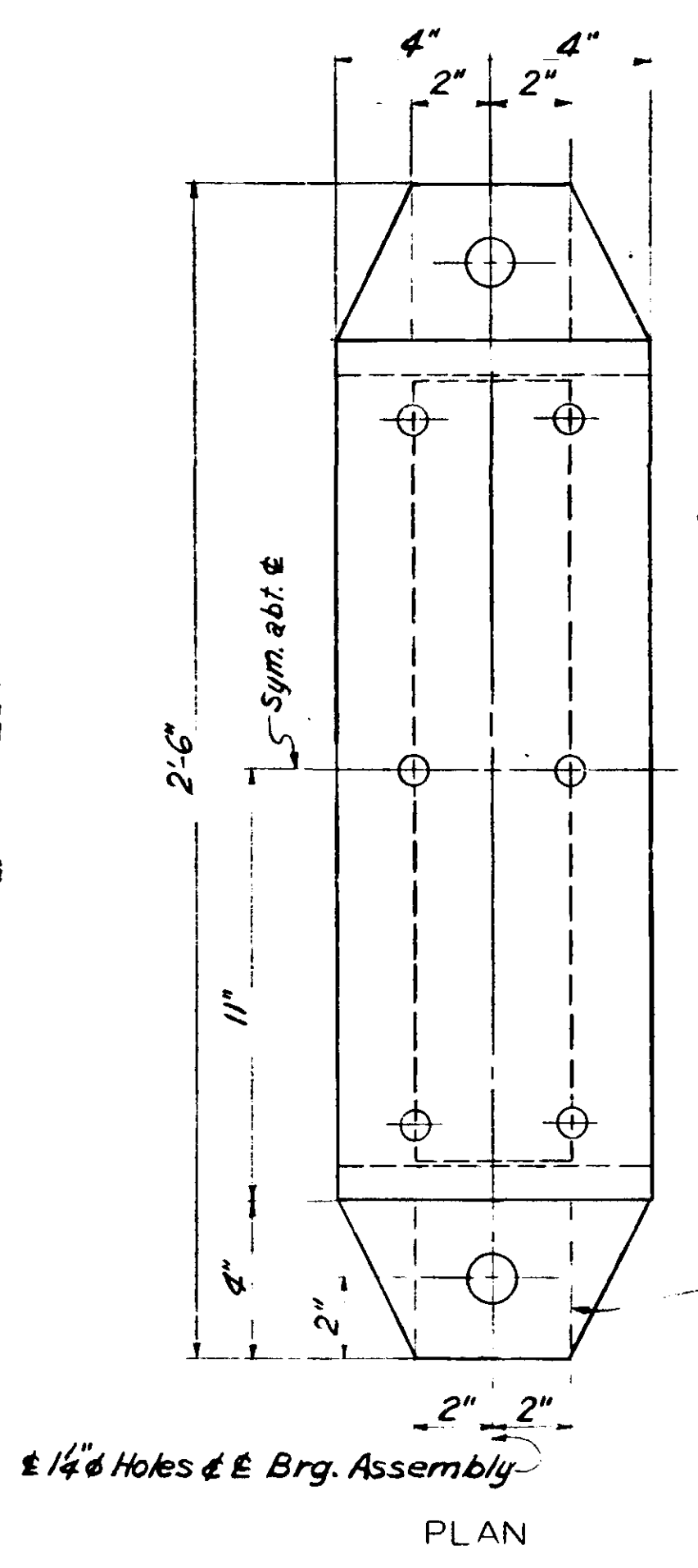
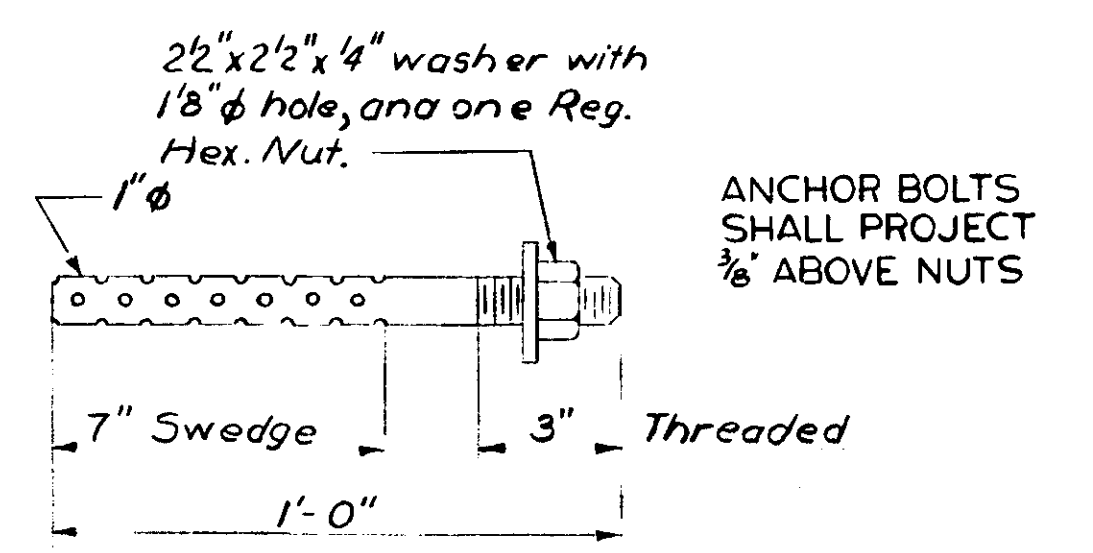


NOTES

All Structural Steel per M.H.D. 3306. Bronze to be rolled aluminum bronze plate A.S.T.M. B169, Alloy D, soft temper, mill finish; or cast aluminum bronze A.S.T.M. B148, Alloy 9C or 9D.* For lubricating see M.H.D. 3329. Plates shall be flat after fabrication. Galvanize after fabrication and before bronze is fitted in place per M.H.D. 3394, no paint. Bronze bearing plates shall be boxed for shipment per M.H.D. 2471.3K. Payment for bearing assemblies shall include all material shown on this detail. Finish recess in top and bottom plates to 125 Micro.

* Cast bronze shall have machine-finished edges to width and length shown. Top and bottom surfaces to be machined to 125 Micro. Width and length of cast or wrought bronze shall be held to +0.000 and -0.050 inch tolerance.

APPROVED 8-18-1967	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS REVISED - A 10/27/64	DETAIL NO. B 100
<i>A. C. LaBonte</i> BRIDGE ENGINEER	SHEAR DOWEL ASSEMBLY		



LOAD KIPS	A	B	C ^Δ	D	E	F*	H (MIN)	CODE	ASSEMBLY TYPE	LOCATION	NO. REQ'D.
220	12" x 11" x 1'-6"	6" x 1 1/2" x 1'-4"	9" x 2" x 1'-4"	1 3/4" x 3"	12" x 1 1/2" x 1'-6"	7" x 1/2" x 1'-4"	6 1/16"	B142-220			
180	12" x 11" x 1'-6"	6" x 1 1/2" x 1'-4"	6" x 1 3/4" x 1'-4"	1 3/4" x 2 3/4"	10" x 1 1/4" x 1'-6"	6" x 1/2" x 1'-4"	5 9/16"	B142-180	8	PIER 1	4
140	12" x 7/8" x 1'-6"	5" x 1 1/4" x 1'-4"	7" x 1 1/4" x 1'-4"	1 1/2" x 2"	8" x 1" x 1'-6"	5" x 1/2" x 1'-4"	4 7/16"	B142-140	7	SQ. ABUT.	4

* CAST BRONZE SHALL HAVE MACHINE-FINISHED EDGES TO WIDTH AND LENGTH SHOWN. BOTTOM SURFACE TO BE MACHINED TO 250 MICRO AND TOP SURFACE TO 125 MICRO. WIDTH AND LENGTH OF CAST OR WROUGHT BRONZE SHALL BE HELD TO +0.000 AND -0.050 INCH TOLERANCE. Δ FINISHED THICKNESS OF PLATE C MAY BE 1/16" LESS THAN THICKNESS SHOWN.

BRONZE BEARING PLATES SHALL BE BOXED FOR SHIPMENT PER M.H.D. 2471.3K. PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

Drawn by: D.E.D. Eramo July 1964
 Checked by: W.J. Gaudin Sept 1964
 2083
 645490

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

APPROVED MAY 17 1960

A. C. LaBonte
BRIDGE ENGINEER

EXPANSION BEARING ASSEMBLY FOR BEAMS WITH 11 1/2" OR 12" FLANGE WITHOUT GUIDE BARS

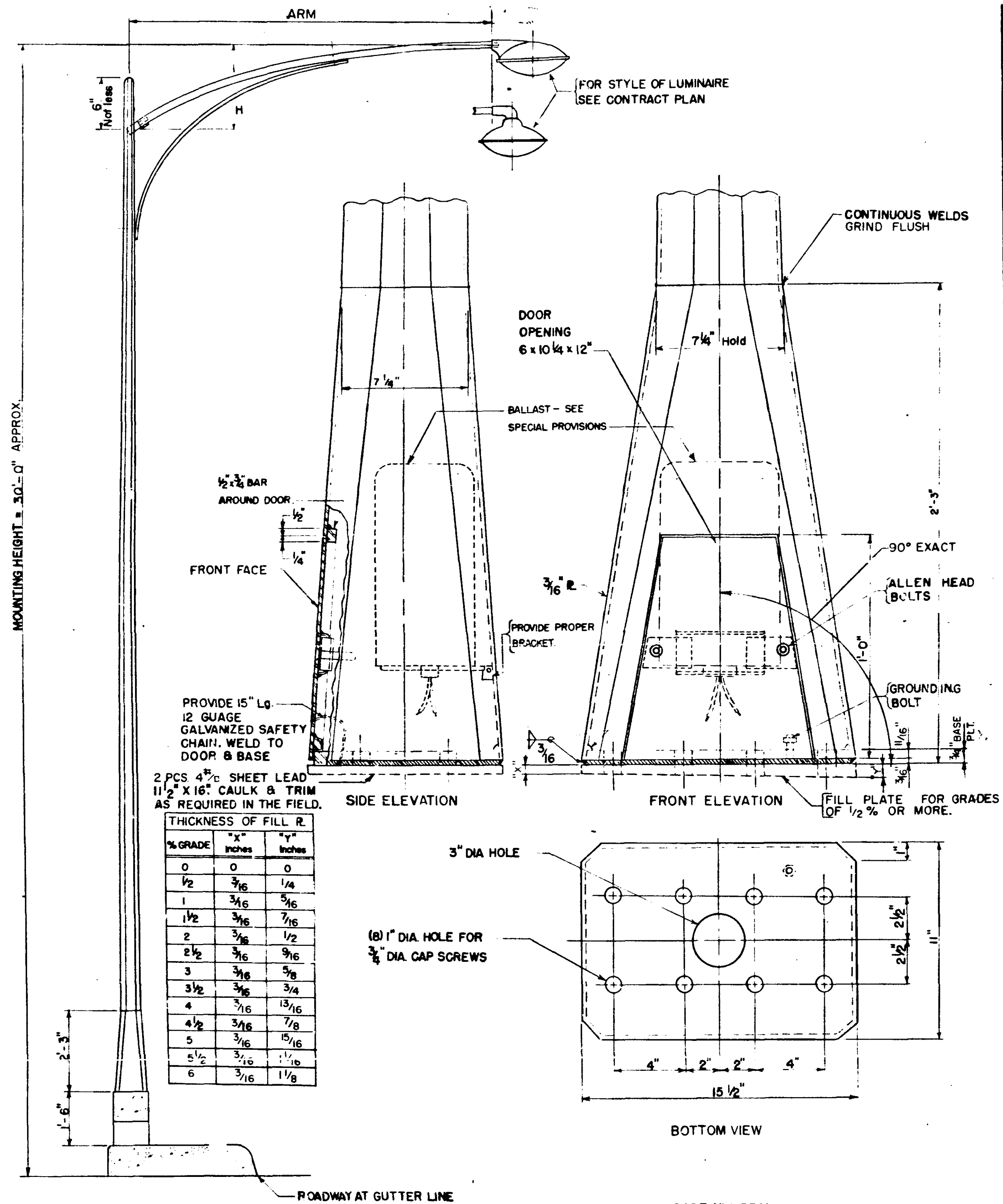
REVISIONS	DETAIL NO.
5/11/60-A	B142
9/26/61-B	MODIFIED
5/22/63	
8/28/63	
6/15/64	
4/28/65	

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

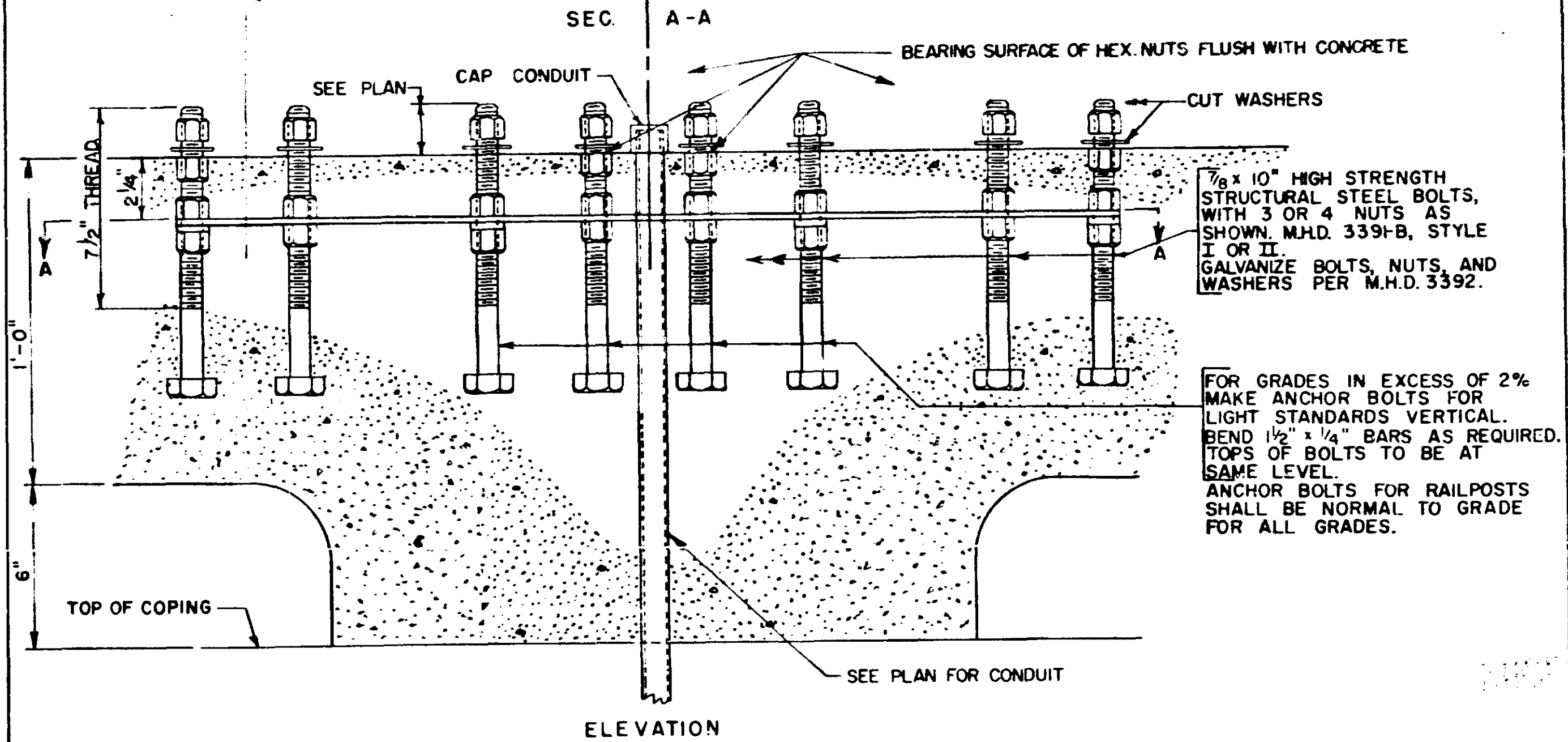
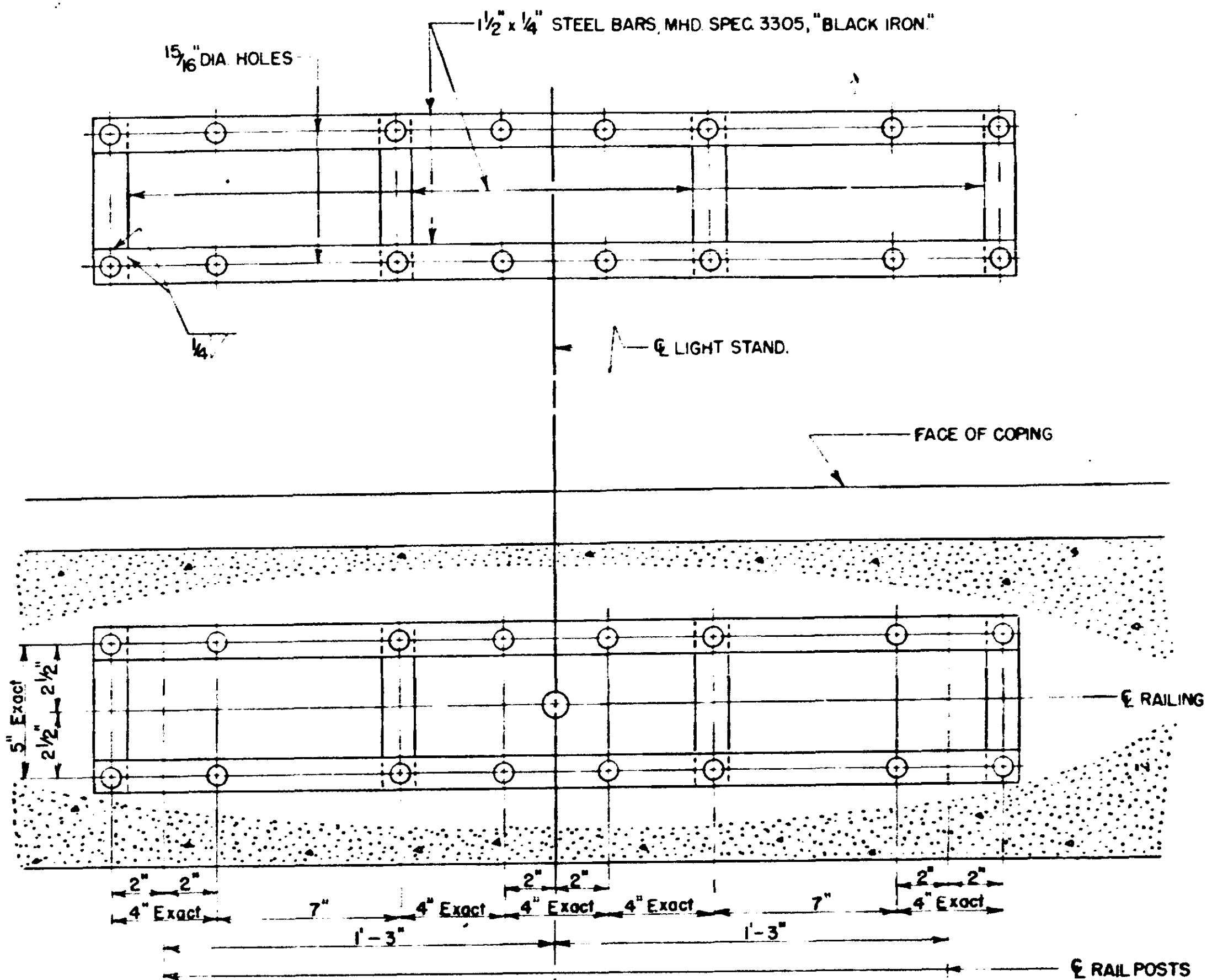
DETAILS

APPROVED: 6-18-65



SPECIFICATIONS:
REFERENCE MHD 2545
HOT DIP GALVANIZE AFTER FABRICATION.

CODE NUMBER:
MHLS-57-01-273-04(4' Arm)(H=1'-6")
MHLS-57-01-273-06(6' Arm)(H=2'-0")
MHLS-57-01-273-08(8' Arm)(H=2'-6")
MHLS-57-01-273-10(10' Arm)(H=2'-10")



THIS ASSEMBLY TO BE USED WHERE LIGHT STANDARDS WILL BE PLACED WHEN BRIDGE IS CONSTRUCTED

APPROVED 1-10-1958

A. C. LaBonte
BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

LAMP STANDARD, STYLE - 01,
WITH INTEGRAL BALLAST BASE
FOR CONCRETE PARAPETS

REVISIONS
2/18/60-A
5/6/64
11/9/64

DETAIL NO.
B 50

APPROVED 11-29-1957

A. C. LaBonte
BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

ANCHOR BOLT ASSEMBLY

FOR LIGHT STD. WITH ANCHOR BOLT SPACING 4-4-4 AND FLANKING STEEL RAILPOSTS

REVISIONS
4/1/59-A
3/28/63
7/30/64
8/6/64
10/8/64
11/6/64

DETAIL NO.
B 103

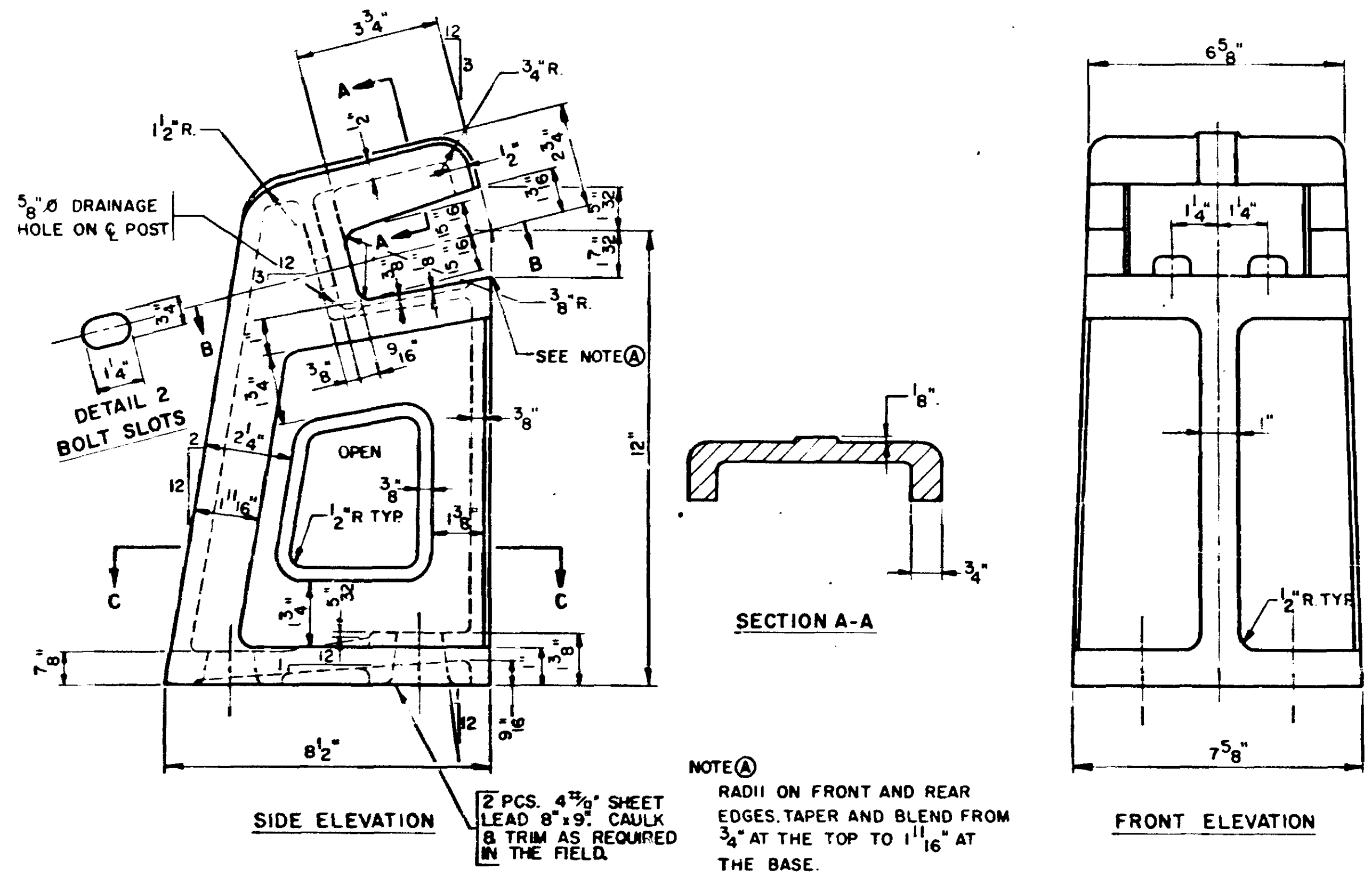
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No.
9340

DETAILS

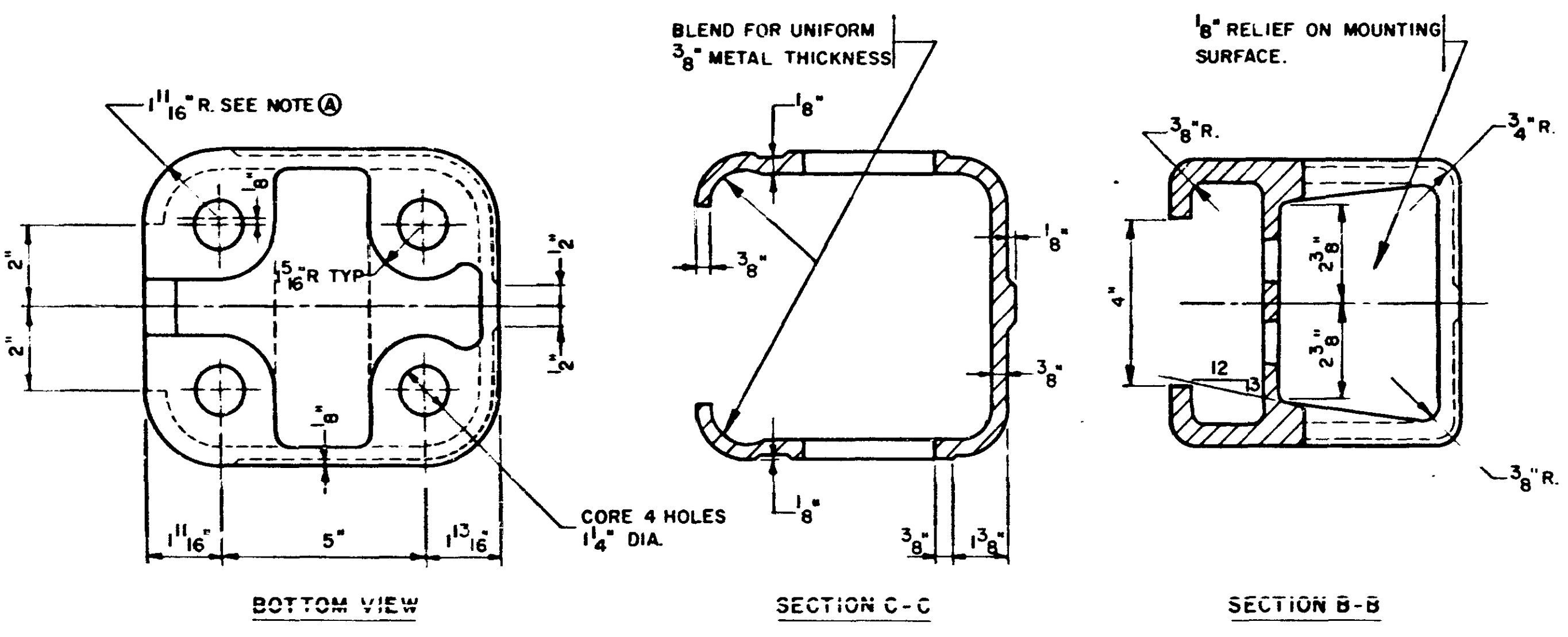
APPROVED 6/18/65

Sheet No. 76 of
94 Sheets

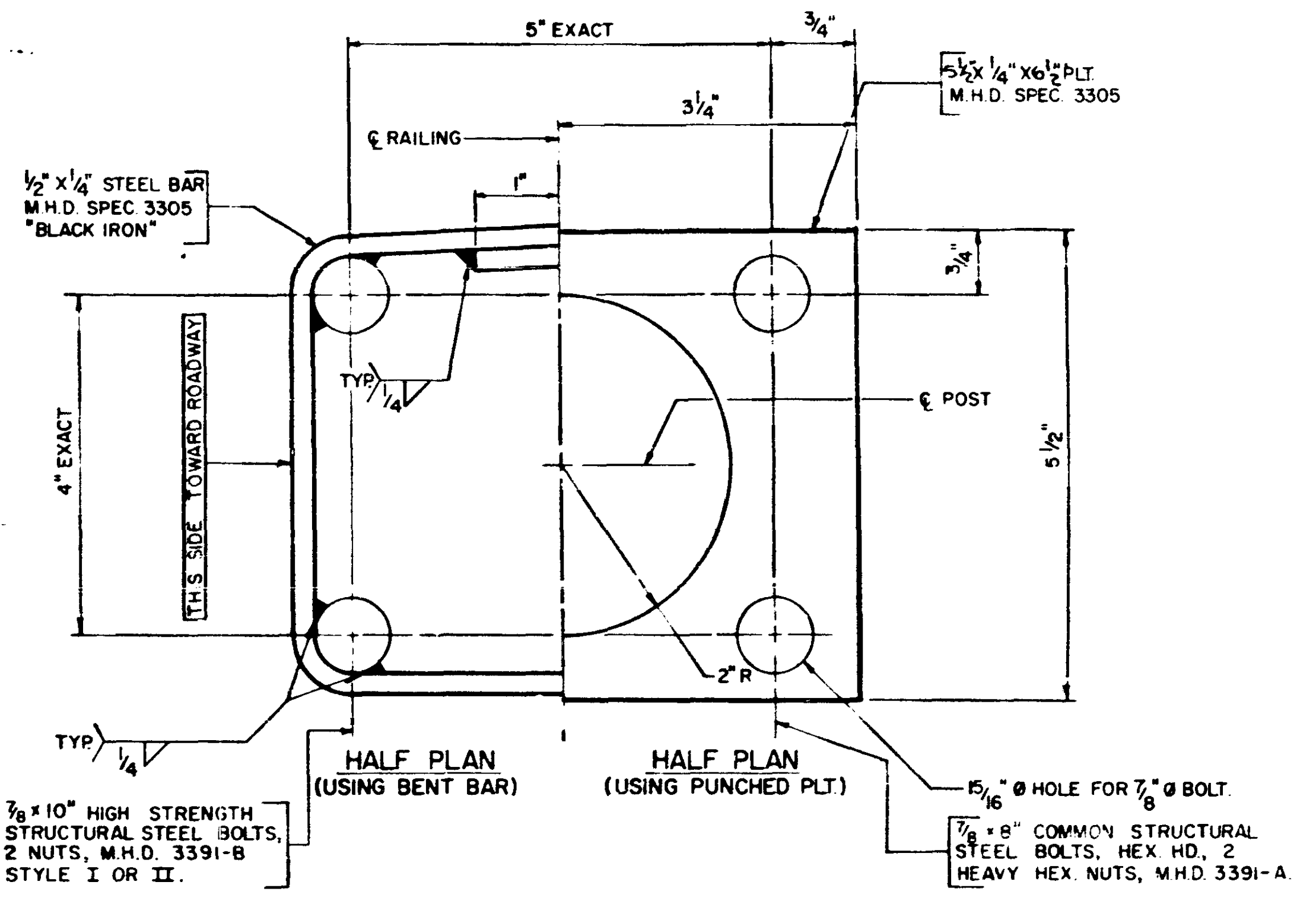


NOTE (A)
RADI ON FRONT AND REAR EDGES. TAPER AND BLEND FROM 3/4" AT THE TOP TO 1 1/16" AT THE BASE.

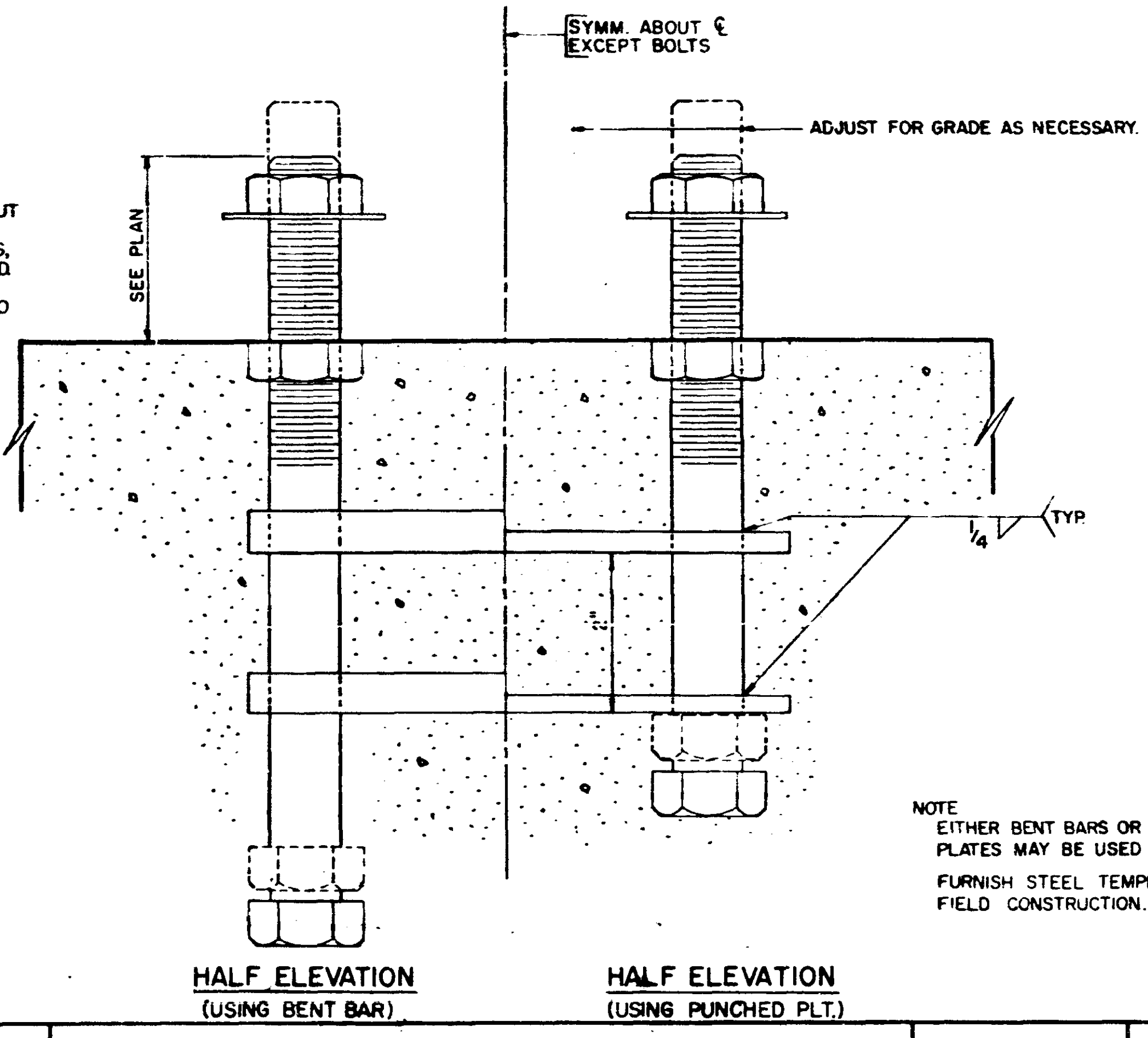
2 PCS. 4"x6" SHEET LEAD 8"x9" CAULK & TRIM AS REQUIRED IN THE FIELD.



MATERIAL FOR CASTING:
MALLEABLE IRON M.H.D. 3324 GRADE NO. 35018, AS MODIFIED.
GALVANIZE PER M.H.D. 3394.
WORKMANSHIP:
M.H.D. 2471.
ALL FILLETS TO BE 1/4" UNLESS OTHERWISE NOTED.



NOTE:
ALL BOLTS TO HAVE CUT WASHERS.
GALVANIZE BOLTS, NUTS, AND WASHERS PER M.H.D. 3392.
SET BOLTS NORMAL TO GRADE



NOTE:
EITHER BENT BARS OR PUNCHED PLATES MAY BE USED AS SPACERS.
FURNISH STEEL TEMPLATE FOR FIELD CONSTRUCTION.

APPROVED 222 1961
A.P. Rente
BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
MALLEABLE IRON RAIL POST
TYPE BRP-58-6
FOR I-LINE FLAT TUBE RAIL

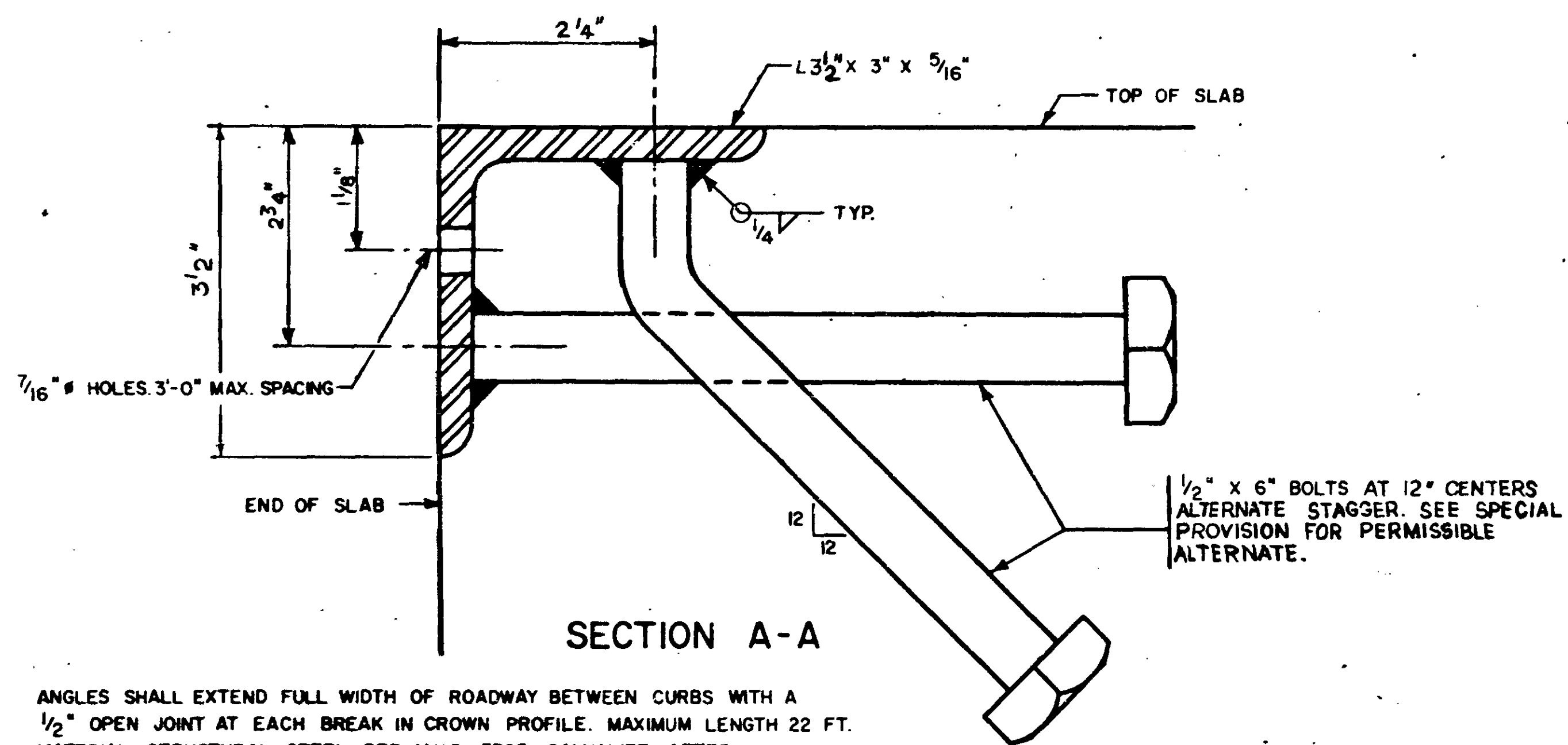
REVISIONS
4/30/59 - A
10/1/59 - B
7/14/61
11/16/64
DETAIL NO.
B 33

APPROVED SEPT 5 1963
A. J. ...
BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
ANCHOR BOLT ASSEMBLY
(FOR STEEL AND FLAT TUBE RAILING)

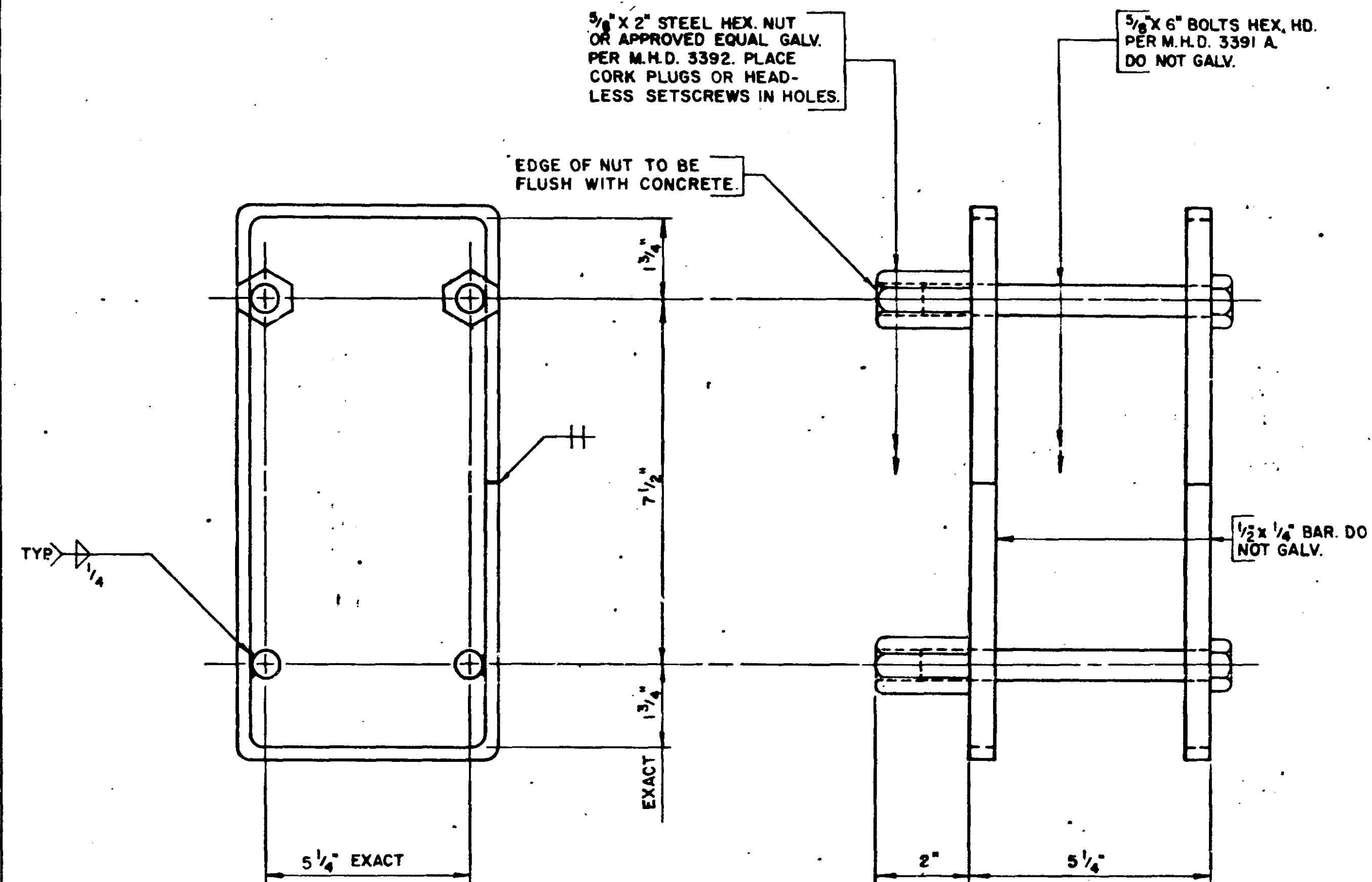
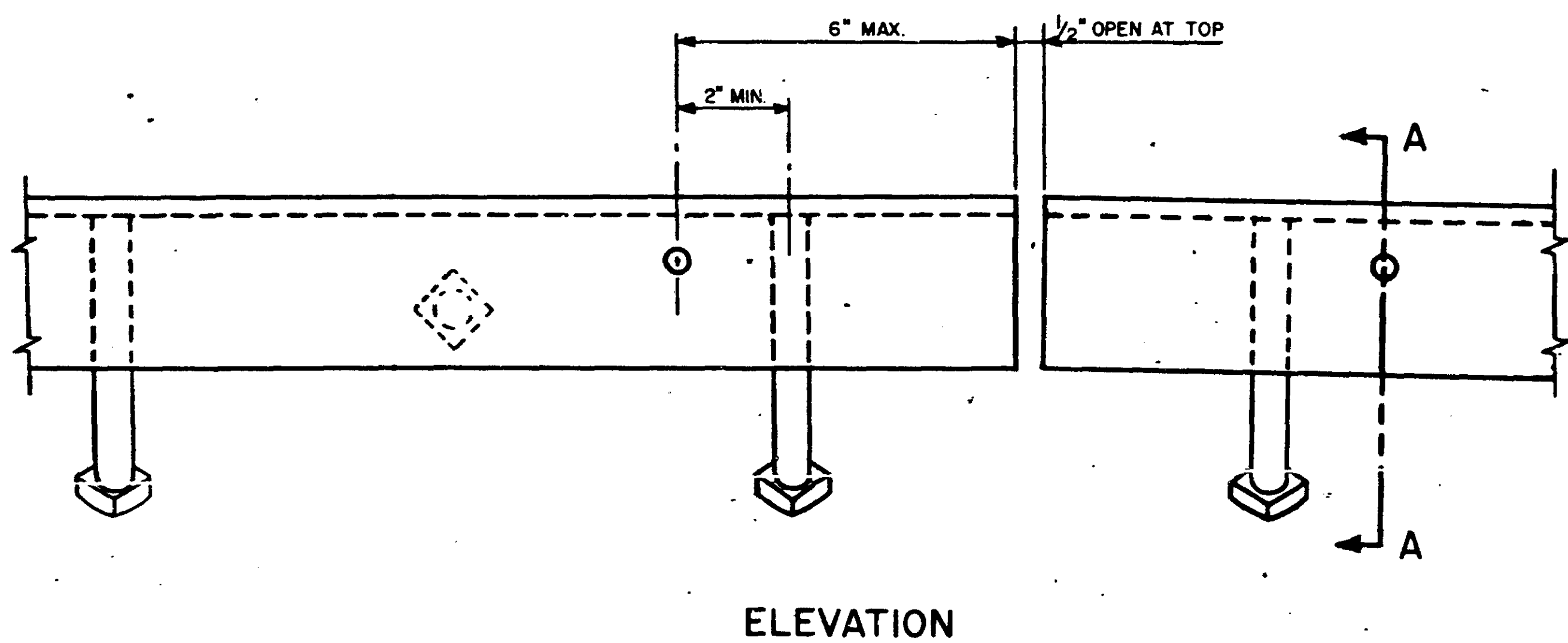
REVISIONS
5/26/61 - A
12/1/61 - B
11/9/62 - C
1/11/63
7/30/64
10/8/64
12/18/64
DETAIL NO.
B110

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
Bridge No. 9340
DETAILS
APPROVED 6/10/64
Sheet No. 77 of 94 Sheets



SECTION A-A

ANGLES SHALL EXTEND FULL WIDTH OF ROADWAY BETWEEN CURBS WITH A 1/2" OPEN JOINT AT EACH BREAK IN CROWN PROFILE. MAXIMUM LENGTH 22 FT. MATERIAL - STRUCTURAL STEEL PER M.H.D. 3305. GALVANIZE AFTER FABRICATION PER M.H.D. 3394. FURNISHING AND INSTALLING PROTECTION ANGLE SHALL BE PAID FOR *Structural Steel M.H.D. 3306*



NOTE:
1/2 x 1/4" BAR TO BE M.H.D. SPEC. 3305 "BLACK IRON"

ESTIMATED WT. 7 LBS.

FURNISHING AND PLACING INSERT SHALL BE PAID FOR AS *Structural Steel M.H.D. 3306*

APPROVED 9-24-1963
A. E. LaBonté
BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
PROTECTION ANGLE FOR END OF SLAB

REVISIONS
3/8/65

DETAIL NO.
B209

APPROVED SEPT. 5 1963
A. E. LaBonté
BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
INSERT FOR PLATE BEAM GUARD RAIL CONNECTION

REVISIONS
12-2-63
7-30-64
8-5-64
8-14-64
10-7-64

DETAIL NO.
B 46

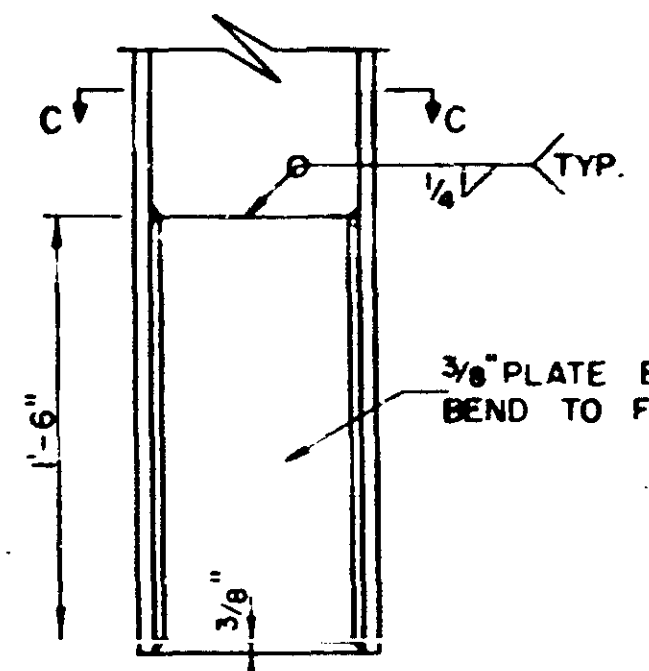
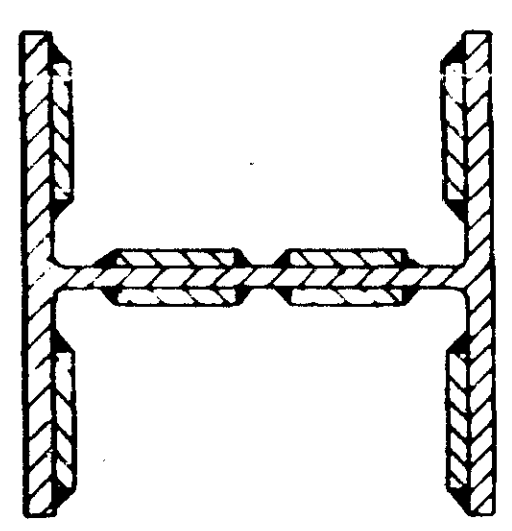
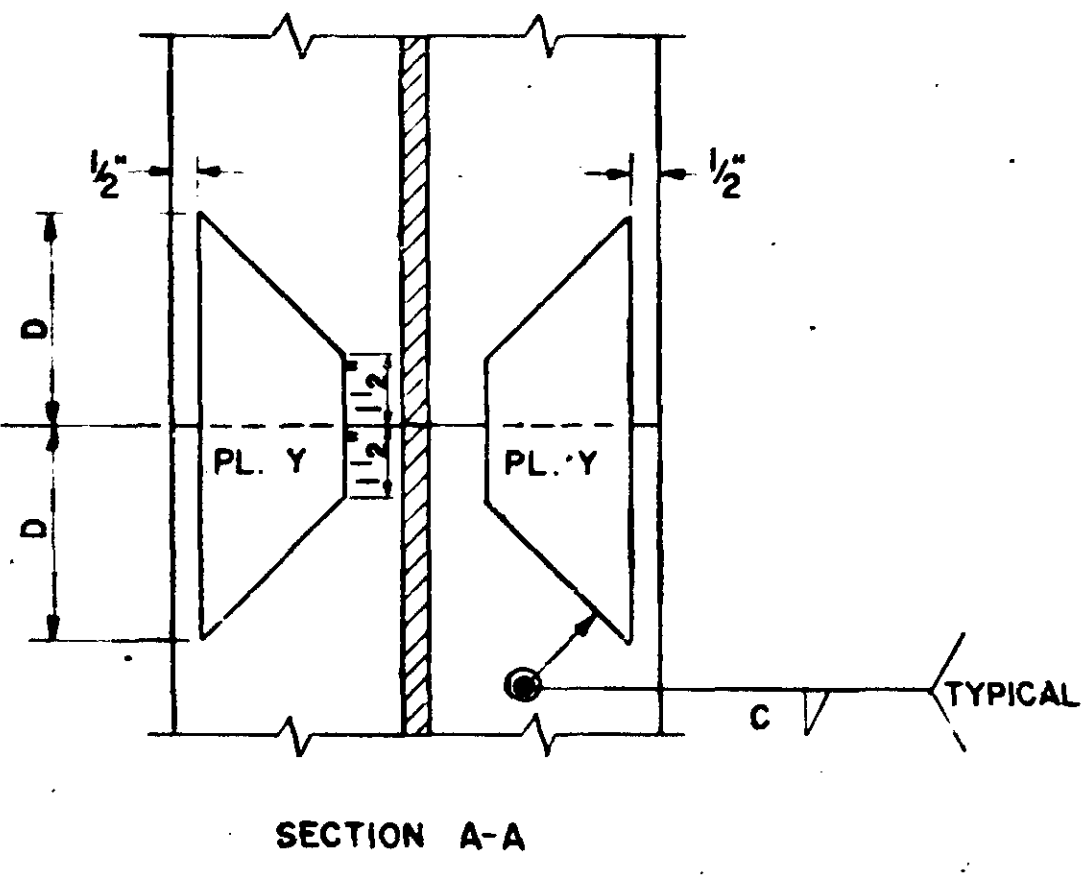
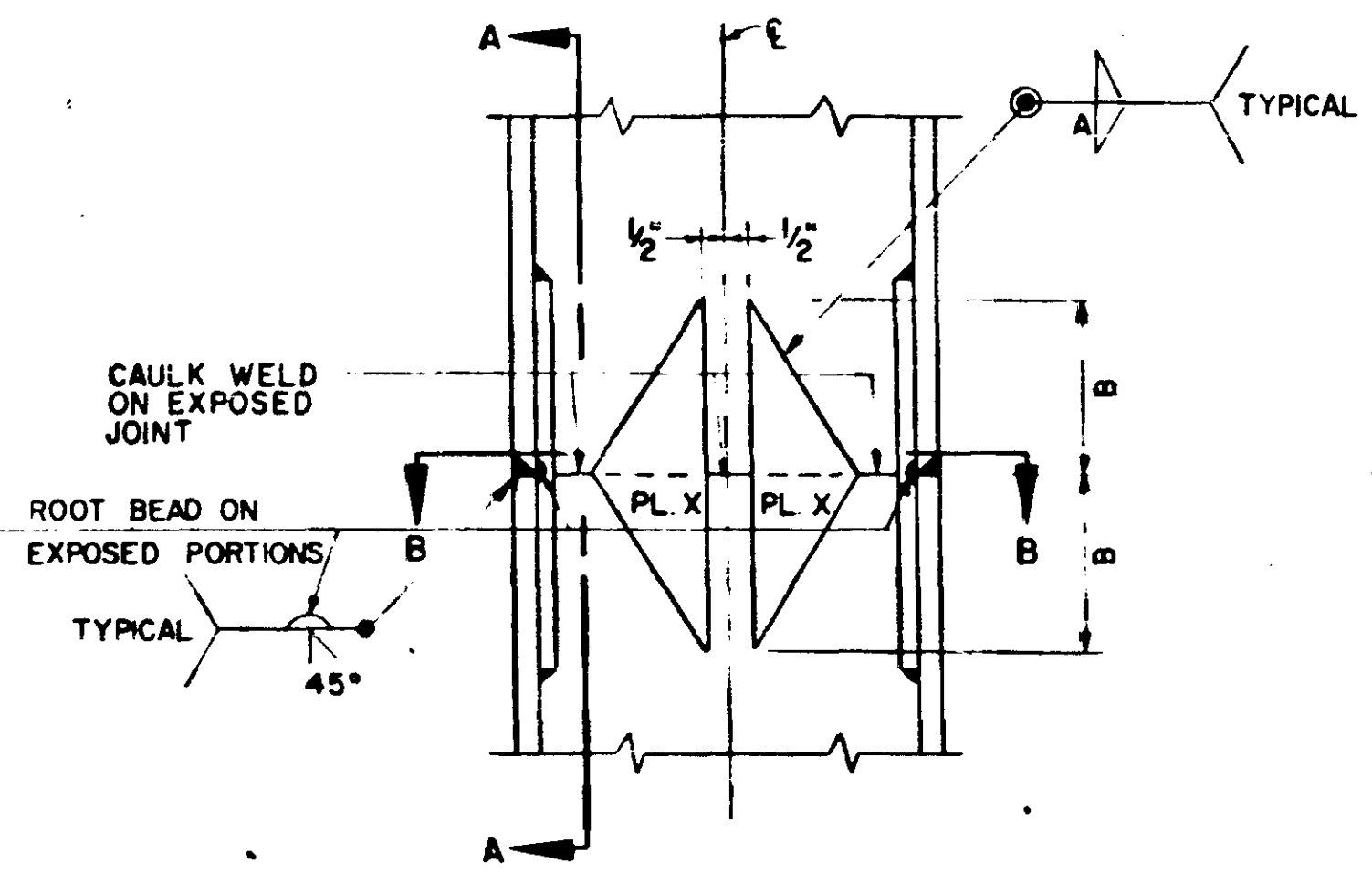
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No.
9340

DETAILS

APPROVED 6/18/65

Sheet No. 78 of
94 Sheets



PILE SECTION	SIZE	PLATE X		PLATE Y	
		A	B	C	D
10BP42	2 1/2 x 3/8	1 1/2	4	3 x 3/8	5/16
10BP57	2 1/2 x 1/2	5/16	4	3 x 1/2	5/16
12BP53	3 1/2 x 3/8	1 1/2	5	4 x 3/8	5/16
12BP74	3 1/2 x 1/2	5/16	6	4 x 1/2	5/16
14BP73	4 1/2 x 3/8	1 1/2	7	5 x 3/8	5/16
14BP89	4 1/2 x 7/16	5/16	7	5 x 1/2	5/16
14BP102	4 1/2 x 1/2	5/16	7	5 x 9/16	3/8
14BP117	4 1/2 x 5/16	3/8	7	5 x 5/8	3/8

NOTES:
 PILE ENDS AT SPLICE TO BE SQUARE.
WELDING SEQUENCE:
 A. PILES SPLICED ON SKIDS BEFORE DRIVING.
 1. BUTT WELD FLANGES.
 2. WELD WEB SPLICE PLATES.
 3. WELD FLANGE SPLICE PLATES.
 4. MAKE CAULK WELDS & ROOT BEADS.
 B. PILES SPLICED IN LEADS.
 1. WELD SPLICE PLATES TO EXTENSION BEFORE ASSEMBLY.
 2. CLAMP SECTIONS TOGETHER AND HOLD RIGID.
 BUTT WELD FLANGES.
 3. WELD SPLICE PLATES TO DRIVEN SECTION.
 4. MAKE CAULK WELDS & ROOT BEADS.
WELDING ELECTRODE M.H.D. 3339.
CLASSIFICATION A.S.T.M. E 6010.
 FOR USE WITH DC, REVERSE POLARITY (ELECTRODE POSITIVE) ONLY.
CLASSIFICATION A.S.T.M. E 6012.
 FOR USE WITH DC STRAIGHT POLARITY (ELECTRODE NEGATIVE), OR AC.
ALL WELDING AS PER M.H.D. 2471.3J
ALL MATERIAL SHALL CONFORM TO M.H.D. 3305.

EACH PILE TIP REINFORCEMENT WILL BE PAID FOR IN AMOUNT EQUAL TO 250 POUNDS OF STEEL PILING DELIVERED FOR 10" & 12" PILES AND 300 POUNDS OF STEEL PILING DELIVERED FOR 14" PILES. NO PILE TIPS SHALL BE REINFORCED EXCEPT BY WRITTEN ORDER OF THE ENGINEER.

DETAIL OF PILE TIP REINFORCEMENT

APPROVED 12-19-1956

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

REVISIONS
 6-2-59
 7-31-62
 12-2-63

DETAIL NO.
 B 221

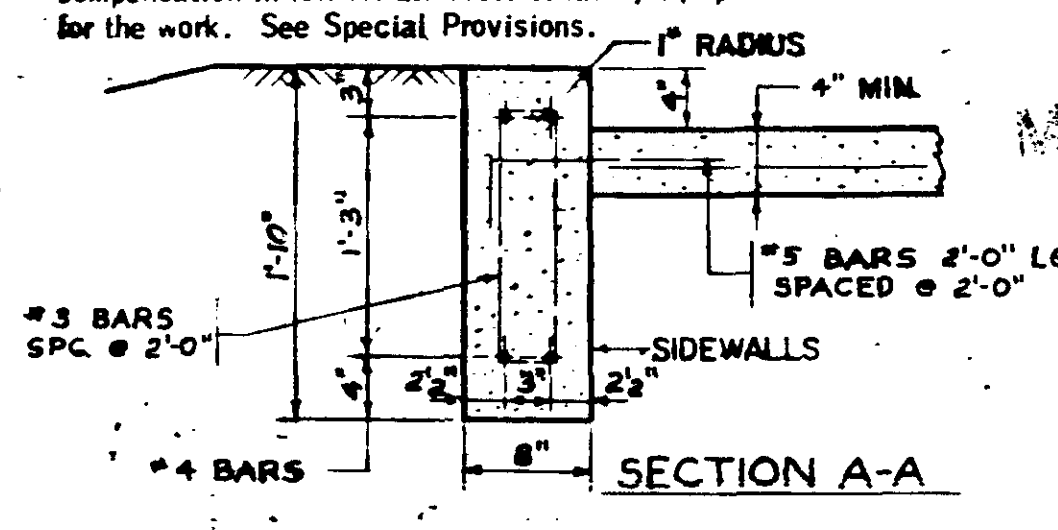
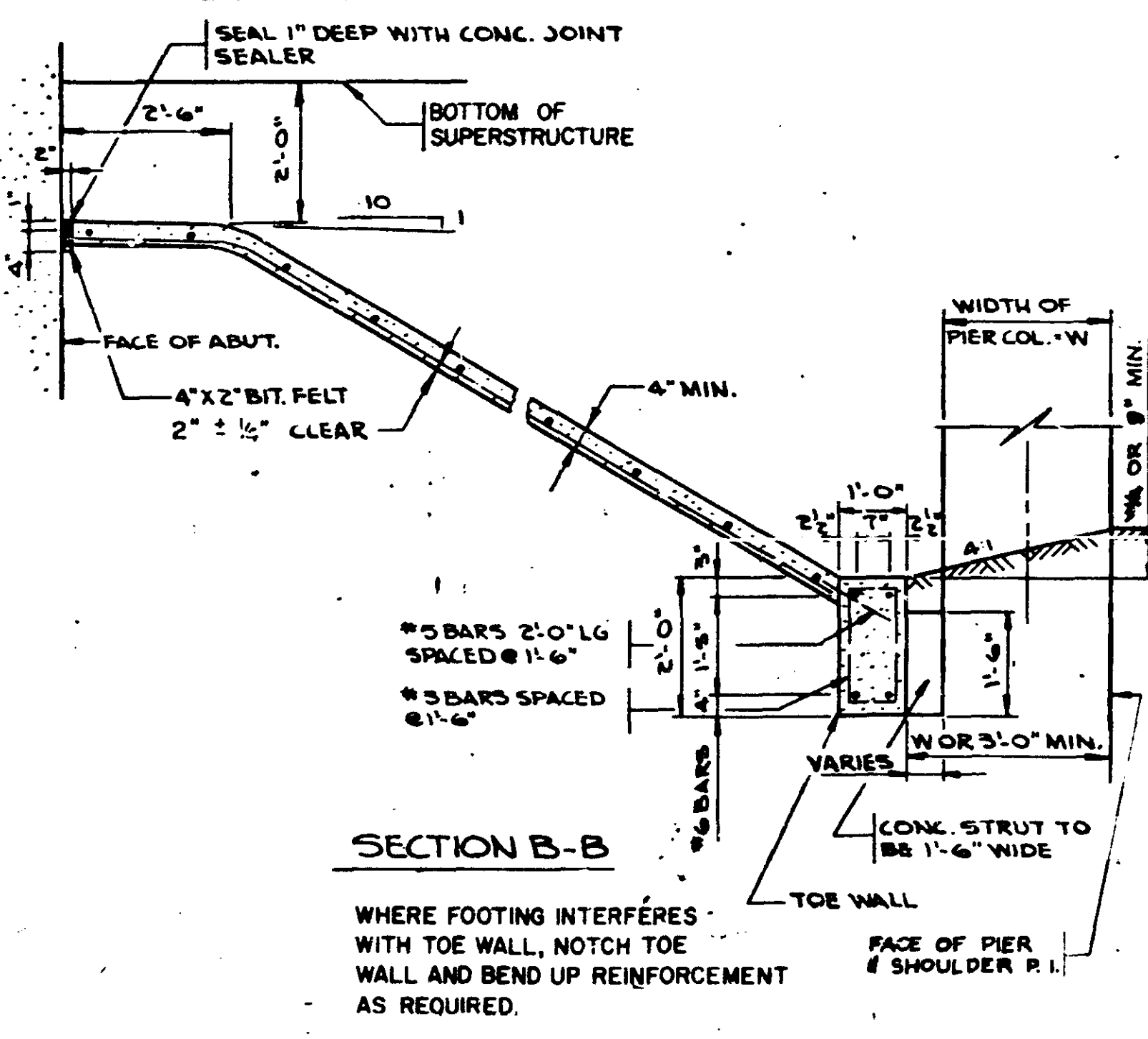
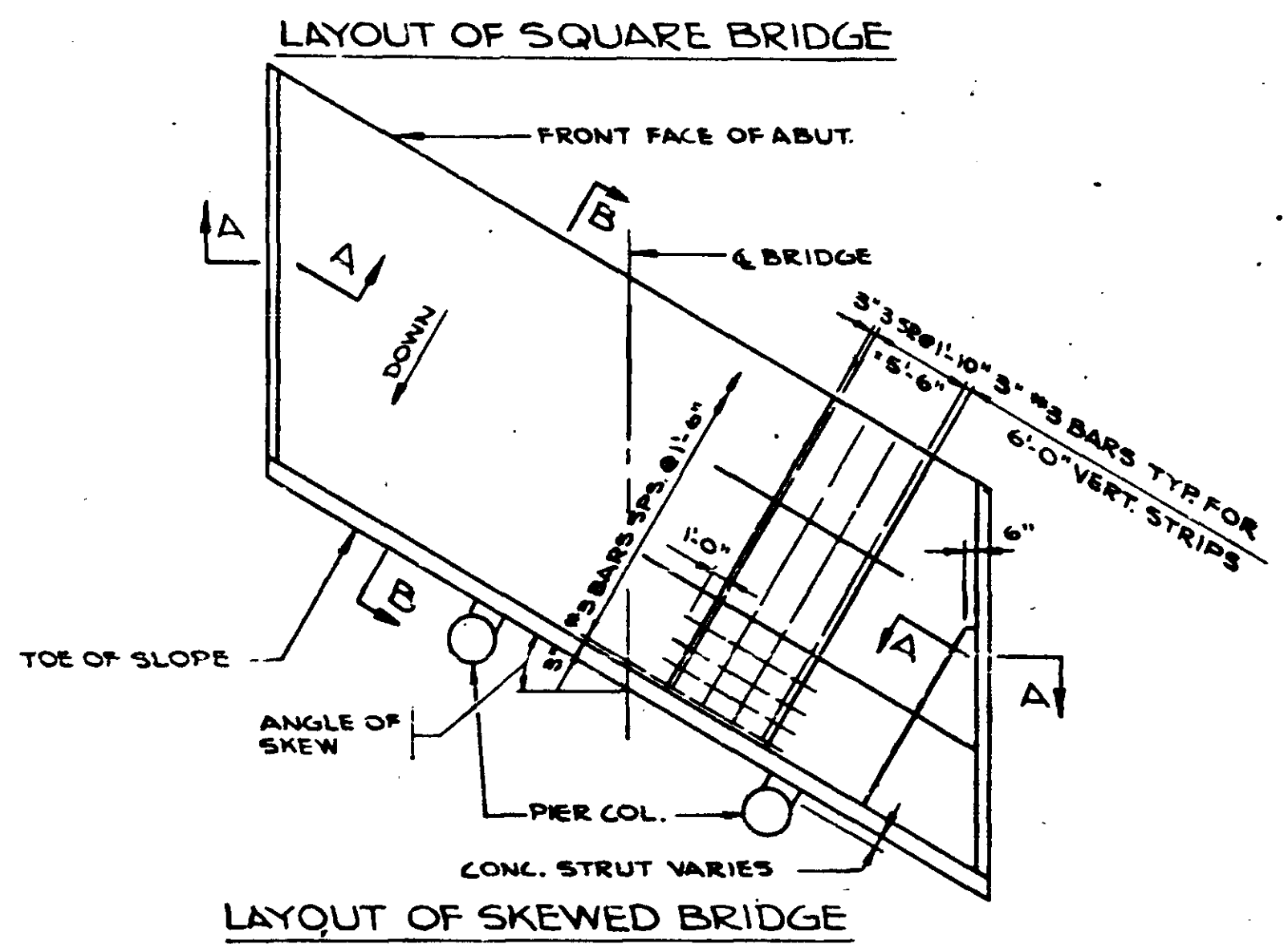
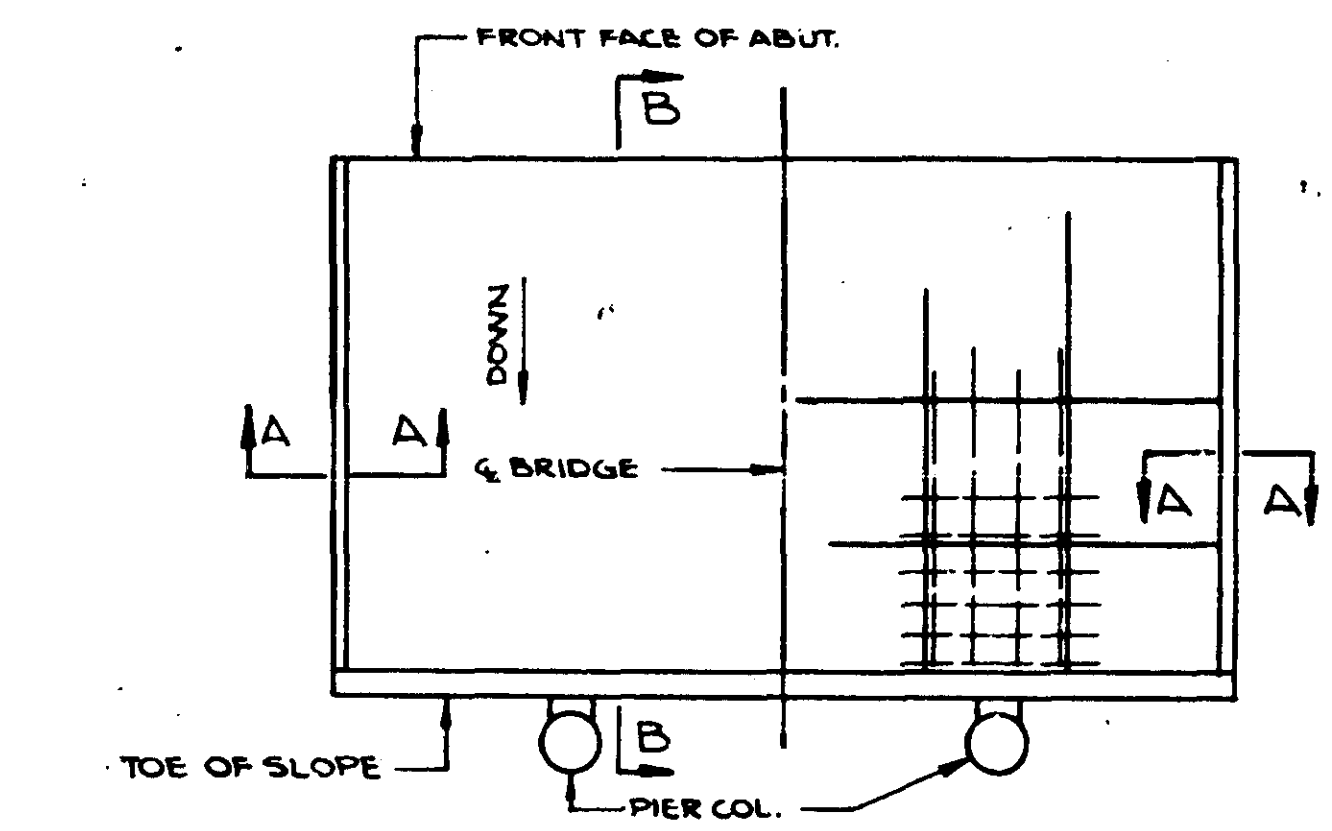
SPLICES FOR STEEL H BEARING PILES
& PILE TIP REINFORCEMENT 10" TO 14"

R. C. Co. Co.
BRIDGE ENGINEER

SLOPE PAVING - CLASS B

Construction Notes

- The slope paving shall be constructed of cast-in-place concrete, in accordance with the applicable sections of M.H.D. 2401, and the following.
- The concrete shall be any mix of Type 3, Grade A or stronger as provided in M.H.D. 2461. The concrete slump may be adjusted, subject to approval of the Engineer, as may be necessary to obtain the desired results.
- Metal reinforcement shall conform to M.H.D. 3301. Lap 30 diameters at splices.
- The slopes shall conform to the section shown on the General Plan and Elevation sheet in these Plans, except as otherwise provided for below: In the event the Engineer determines that a deficiency in material exists on the approach embankments constructed by others, he may order that the dimensions shown for the berm (see upper left of Section B-B) be revised to the extent necessary to construct the slope without hauling additional material. Such revision should, however, be limited to a decrease of not more than three inches, as applied to the height and/or width of the berm. In the event additional fill is required in order to conform to the slope lines staked by the Engineer, on approach embankments completed by others, the cost of furnishing, hauling, placing and compacting additional material ordered by the Engineer will be paid for as Extra Work. In the event the Engineer determines that an excess of material is present on approach embankments completed by others, he may order that the width of the berm be increased to the extent necessary to utilize such material, but not by more than 1' - 6". Excess material, beyond that which is required to dress the slope to true lines and to the grades staked by the Engineer, shall be used as directed by the Engineer for purposes such as widening the shoulders adjacent to the sidewalls, flaring out these shoulders, and shaping up adjacent side slopes. The disposal of excess material, except material deposited by the Contractor during excavation for substructure units or related work, which can not be incorporated into the slopes as hereinbefore defined, and which the Engineer directs to be hauled from the site, will be paid for as Extra Work. Any revision in berm grades and dimensions should be applied uniformly for the full length of the berm. Compaction will be required.
- Toe and side walls shall be in place before casting remainder of slope paving.
- Slope paving shall, in general, be poured in equal alternate vertical strips with a maximum width of 6 ft. The strips shall be cut into sections by grooves spaced at equal distances not exceeding 6 ft. and shall be at right angles to the strips. Other patterns for strips and grooves will be considered if requested by the Contractor.
- The forms shall be set to accurate grade and alignment, and shall be rigidly supported. Deviations of greater than 1/4" from a ten-foot straight edge shall be corrected.
- Care shall be taken in placement of concrete so as not to disturb the grade on which it is placed, or to contaminate the concrete.
- Sufficient hand spading and/or tamping shall be done to secure a dense paving, relatively free of voids and honeycomb.
- The top surface shall be struck off immediately after placing the concrete. When the concrete has set sufficiently to hold its shape, it shall be struck off again, after which it shall be given a final finish by hand floating with a cork or wooden float. The finished appearance shall be reasonably smooth and uniform. The finished concrete shall not vary more than 3/8" from a ten-foot straight edge.
- All edges shall be finished with an edger unless otherwise noted. Grooves shall be cut using a sidewalk grooving tool. The trails left by the flanges of these tools shall be removed by floating.
- The concrete shall be cured for at least 72 hours after casting by any of the methods outlined in M.H.D. 2401.3G2, except Earth Cover.
- Method of Measurement
Slope paving will be measured by area of the top surface bounded by the outside edges of the toe and sidewalls and the front face of the abutment, unless otherwise shown and noted in the plans.
- Basis of Payment
Payment for furnishing and placing the slope paving will be made as Item No. 514.601 at the Contract price per square yard, which price shall be compensation in full for all costs of labor, equipment and materials required for the work. See Special Provisions.



APPROVED 2-22-1961

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

REVISIONS
 27 FEB 1962
 12-20-62
 7-18-63
 11/7/63
 12/4/63

DETAIL NO.
 B 252

SLOPE PAVING UNDER BRIDGE
CLASS B

(CAST-IN-PLACE CONCRETE SLAB - SIDES PARALLEL)

R. C. Co. Co.
BRIDGE ENGINEER

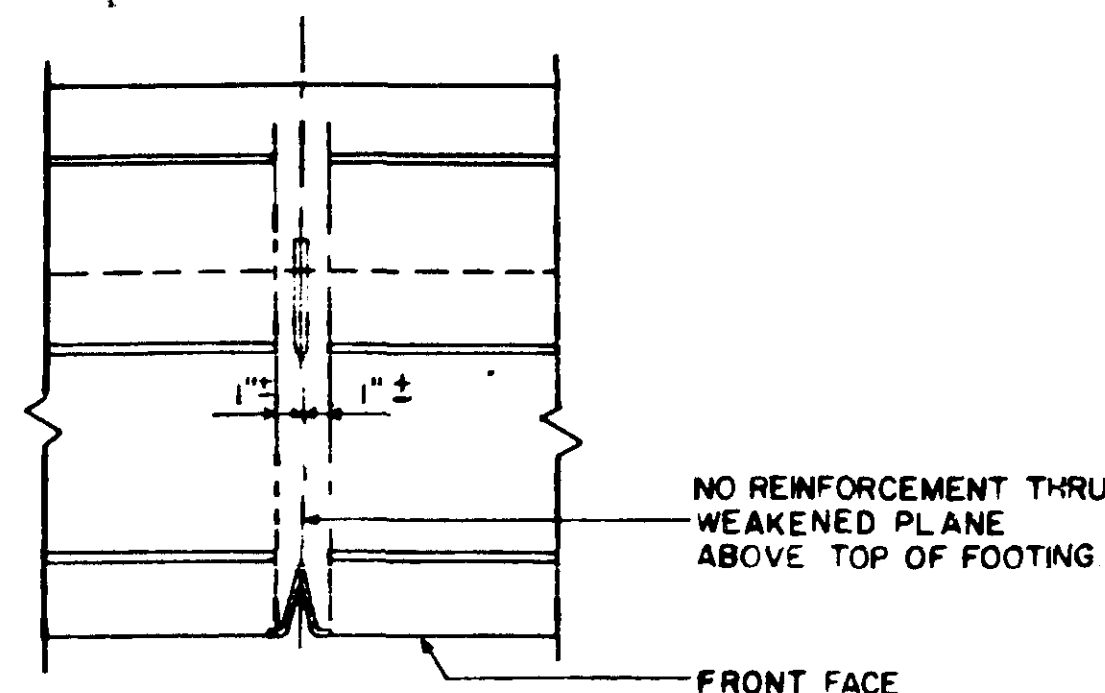
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No.
9340

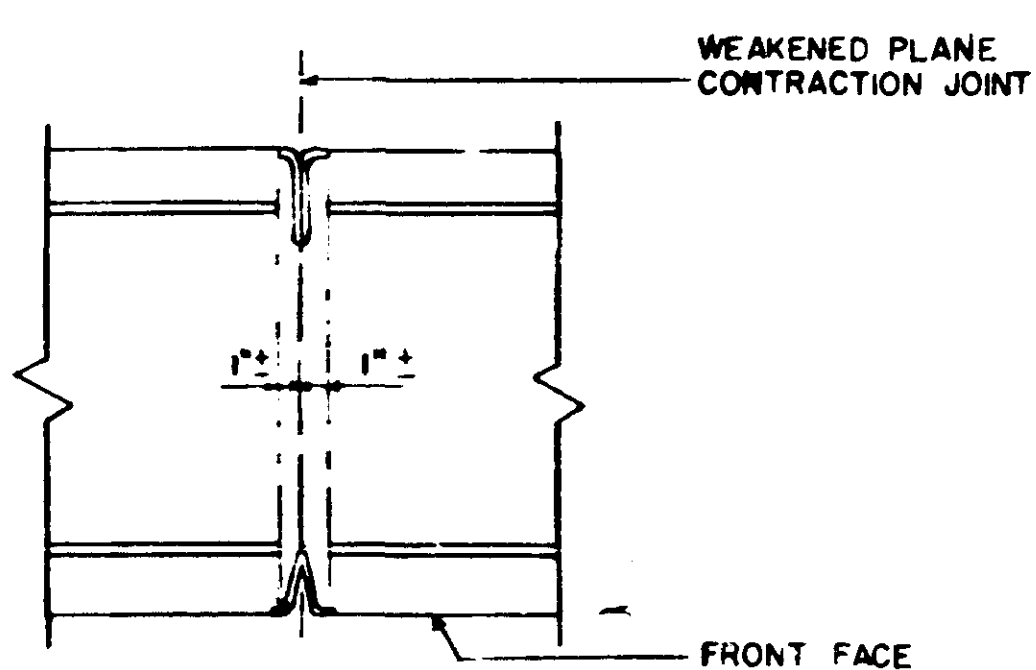
DETAILS

APPROVED *G. J. Co.*

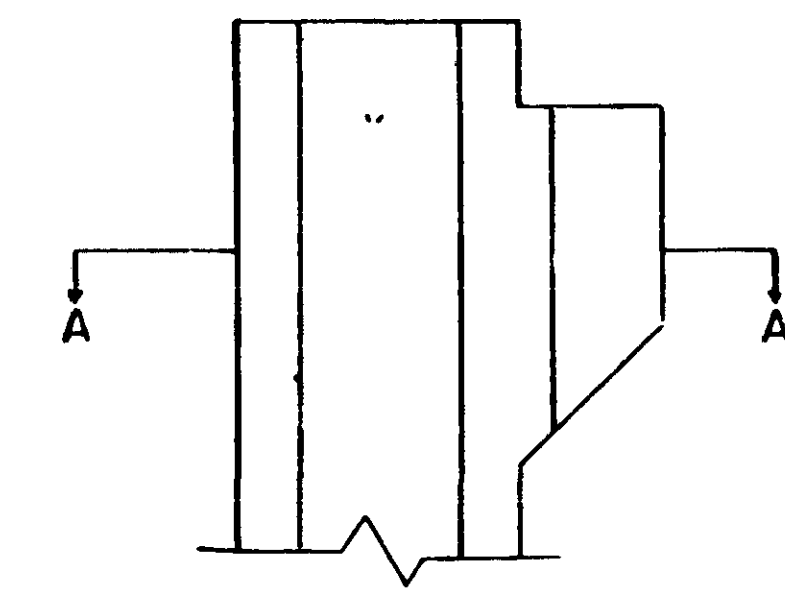
Sheet No. 79 of
94 Sheets



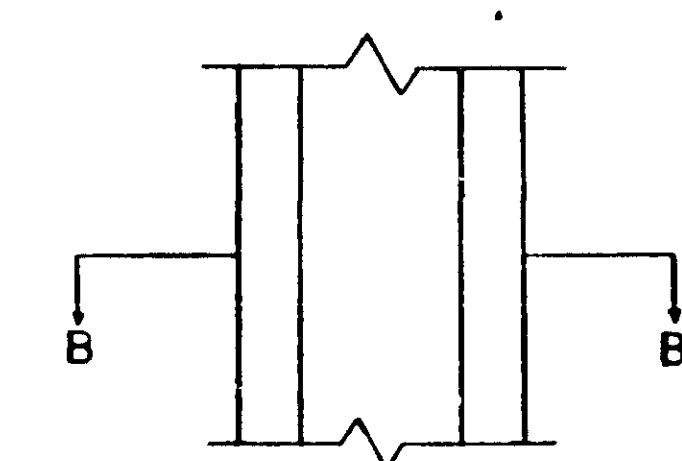
SECTION A-A



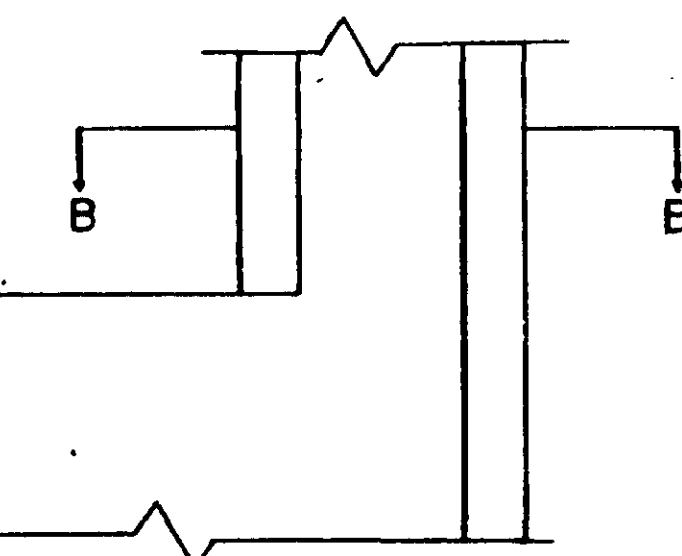
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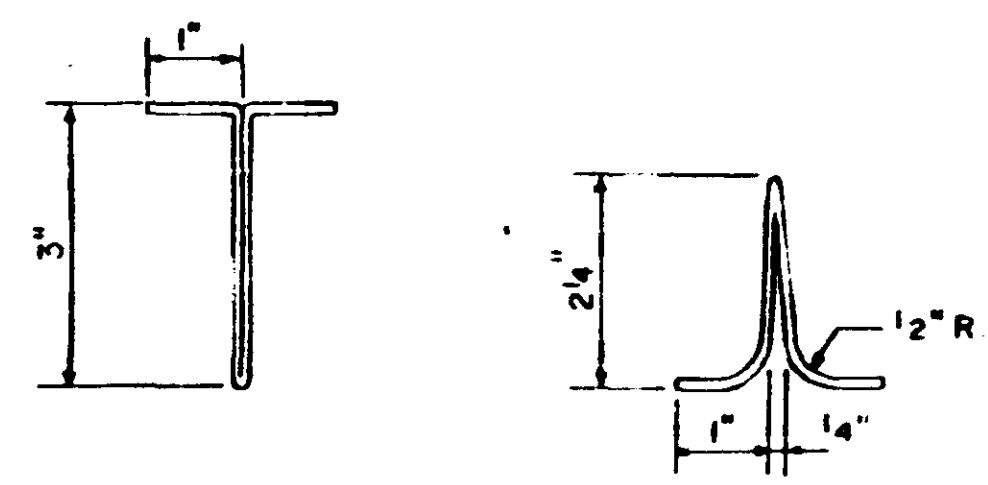
SECTION THRU PAVING BRACKET



SECTION THRU WALL

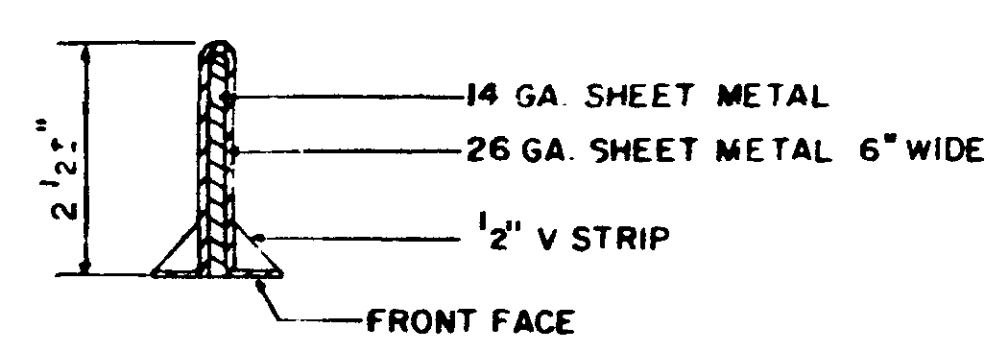


SECTION THRU BRIDGE SEAT ON PARAPET ABUTMENT



BACK STRIP 8" WIDE

FRONT STRIP 6" WIDE

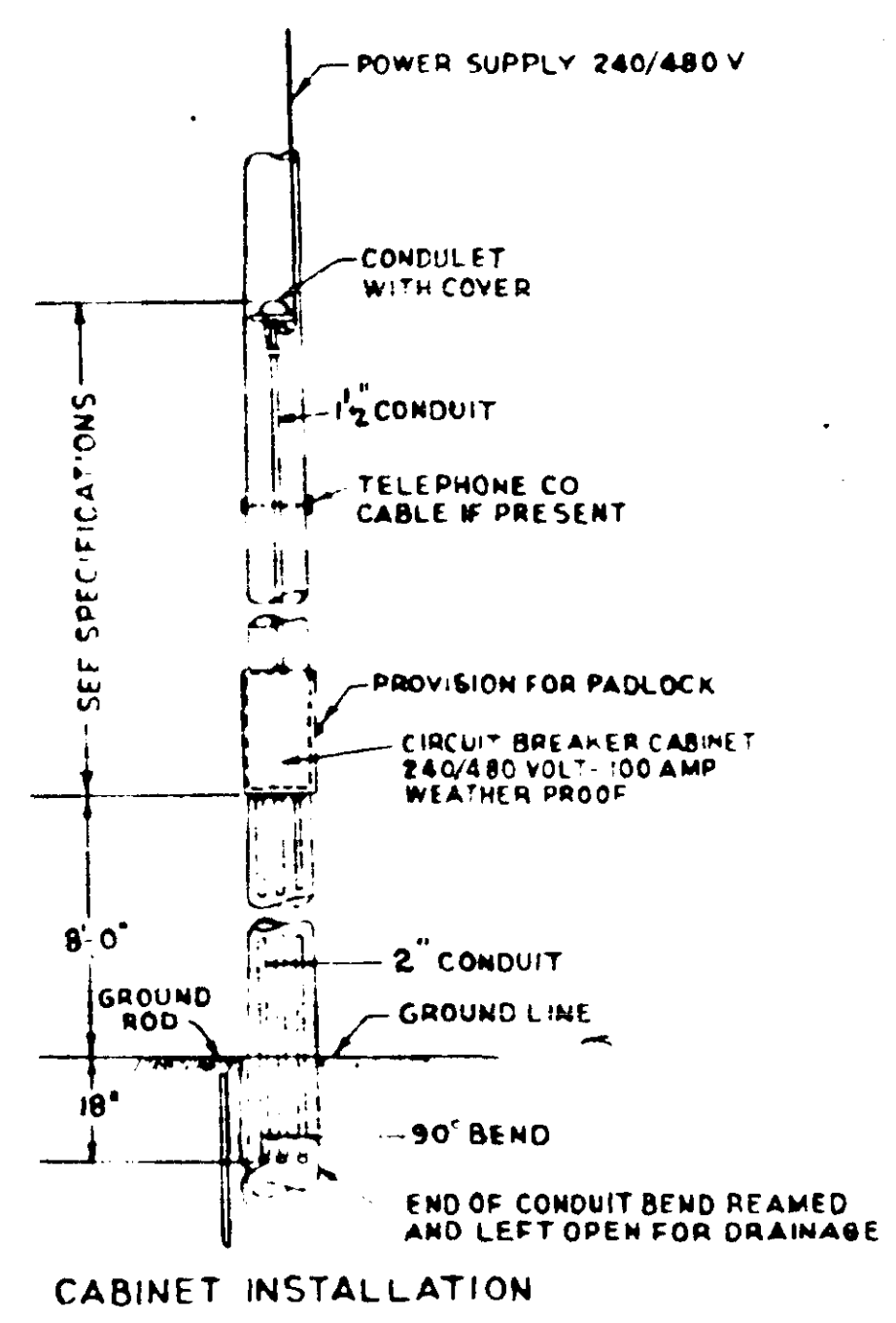


ALTERNATE FRONT STRIP

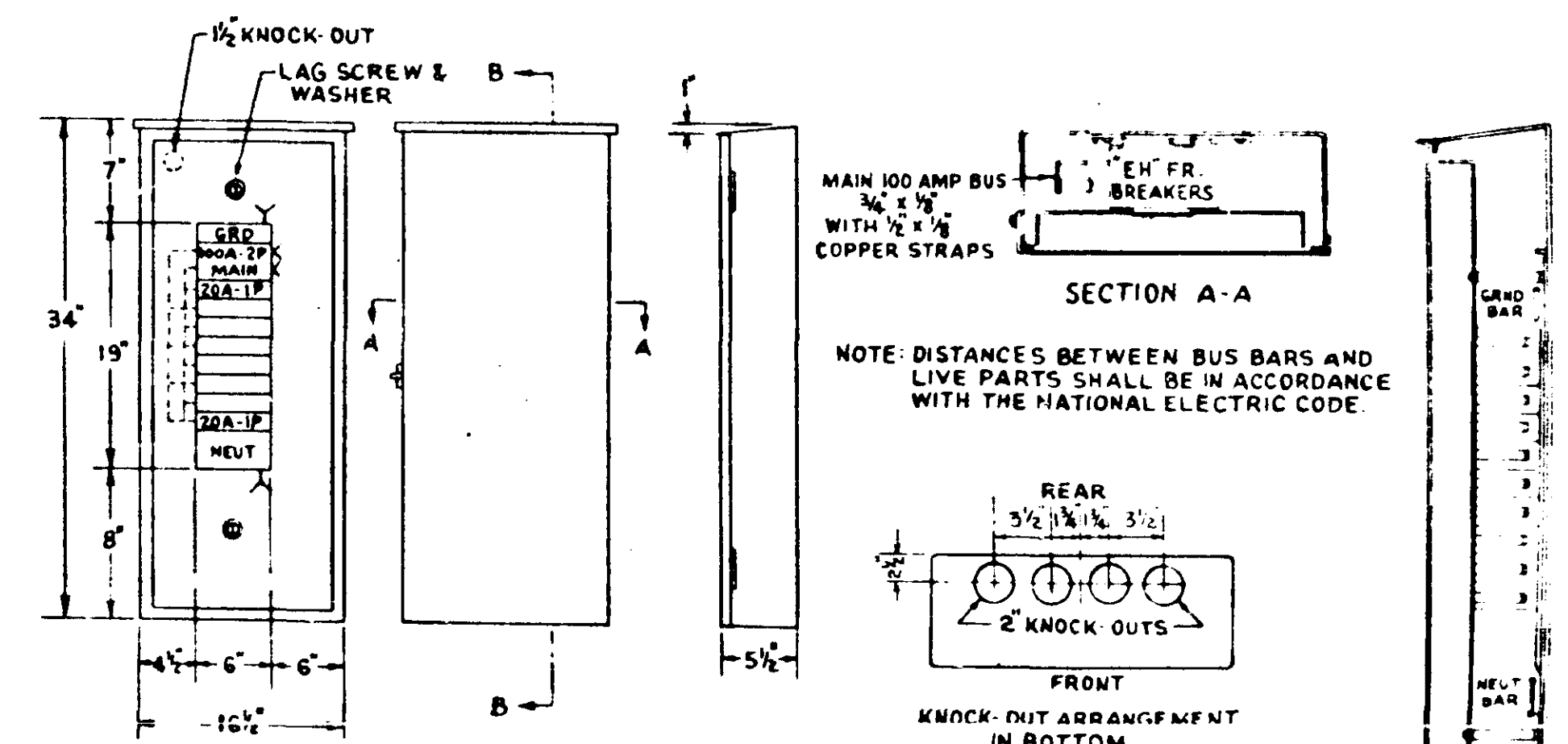
NOTES
 METAL STRIP TO BE 26 GA. GALVANIZED SHEET METAL M.H.D. 3338 FASTEN TO FORMS WITH 7/8" ROOFING NAILS ABOUT 6" CENTERS. FRONT STRIP TO BE REMOVED WITH FORM. BACK STRIP REMAINS IN PLACE. ALL METAL IN FRONT FACE TO BE OILED FOR EASY REMOVAL. COST OF FORMING JOINT TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

NOTE:
 THE METHODS AND MATERIALS INDICATED HEREON SHALL BE CONSIDERED AS SUGGESTED ONLY. VARIATIONS WILL BE PERMITTED, SUBJECT TO APPROVAL BY THE ENGINEER, BUT MUST PROVIDE DUMMY JOINTS OF A DEPTH NOT LESS THAN THE DEPTH SHOWN, AND A WIDTH AT THE FRONT FACE OF THE ABUTMENT OF NOT GREATER THAN 5/16". THE SEPARATION OF THE HORIZONTAL REINFORCEMENT BARS SHALL BE NOT LESS THAN 1/2" NOR MORE THAN 3", CENTERED AS SHOWN, REGARDLESS OF THE PROCEDURE USED FOR FORMING THE DUMMY JOINT. IF A SUITABLE PLASTIC OR OTHER DURABLE MATERIAL, SATISFACTORY TO THE ENGINEER, IS USED FOR THE FRONT STRIP, THE MATERIAL MAY BE LEFT IN PLACE. STRIPS TO BE REMOVED SHALL BE OILED OR GREASED AS NECESSARY TO PERMIT REMOVAL WITHOUT SPALLING THE CONCRETE.

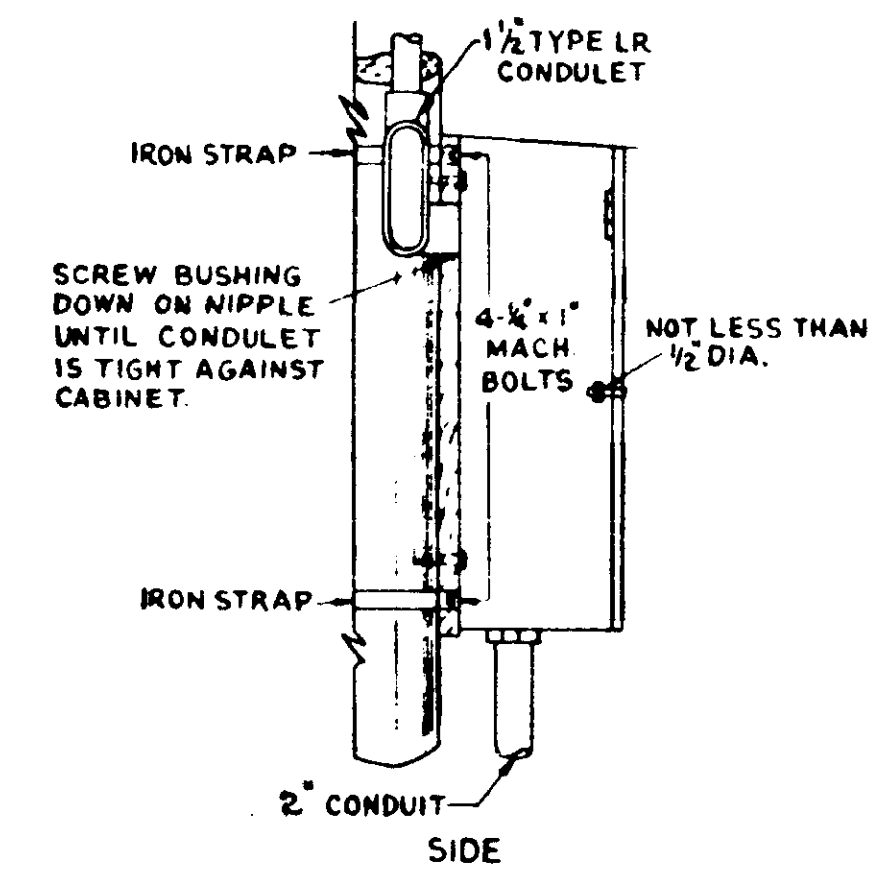
FEED POINT INSTALLATION DETAILS FOR 240/480 VOLT HIGHWAY LIGHTING



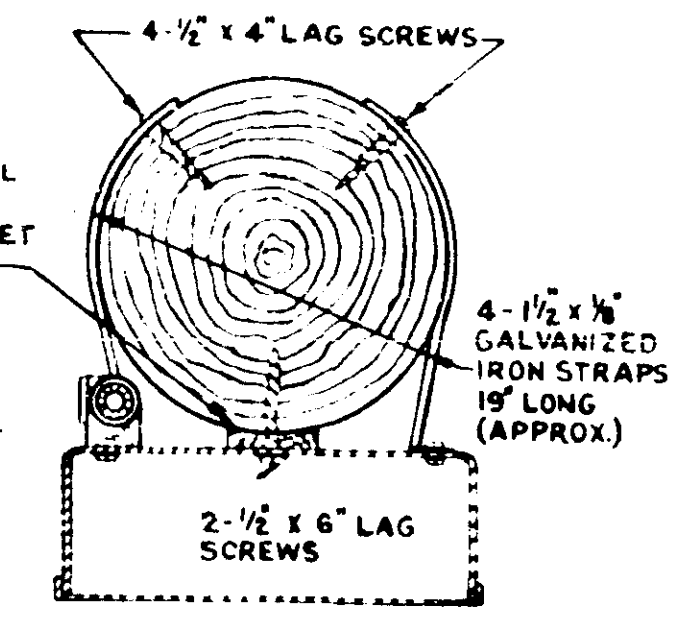
CABINET INSTALLATION



CABINET AND COVER-12 GAUGE GALVANIZED STEEL FOR CIRCUIT BREAKERS



WOOD BLOCK 34" LONG MAY BE OMITTED WHEN POLE DIAMETER IS SMALL ENOUGH TO PROVIDE CLEARANCE FOR CONDULET ON BACK OF CABINET. IF WOOD BLOCK IS OMITTED, USE 4" LAG SCREWS FOR MOUNTING.



SECTION

APPROVED... SEPT. 5 1963

STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS

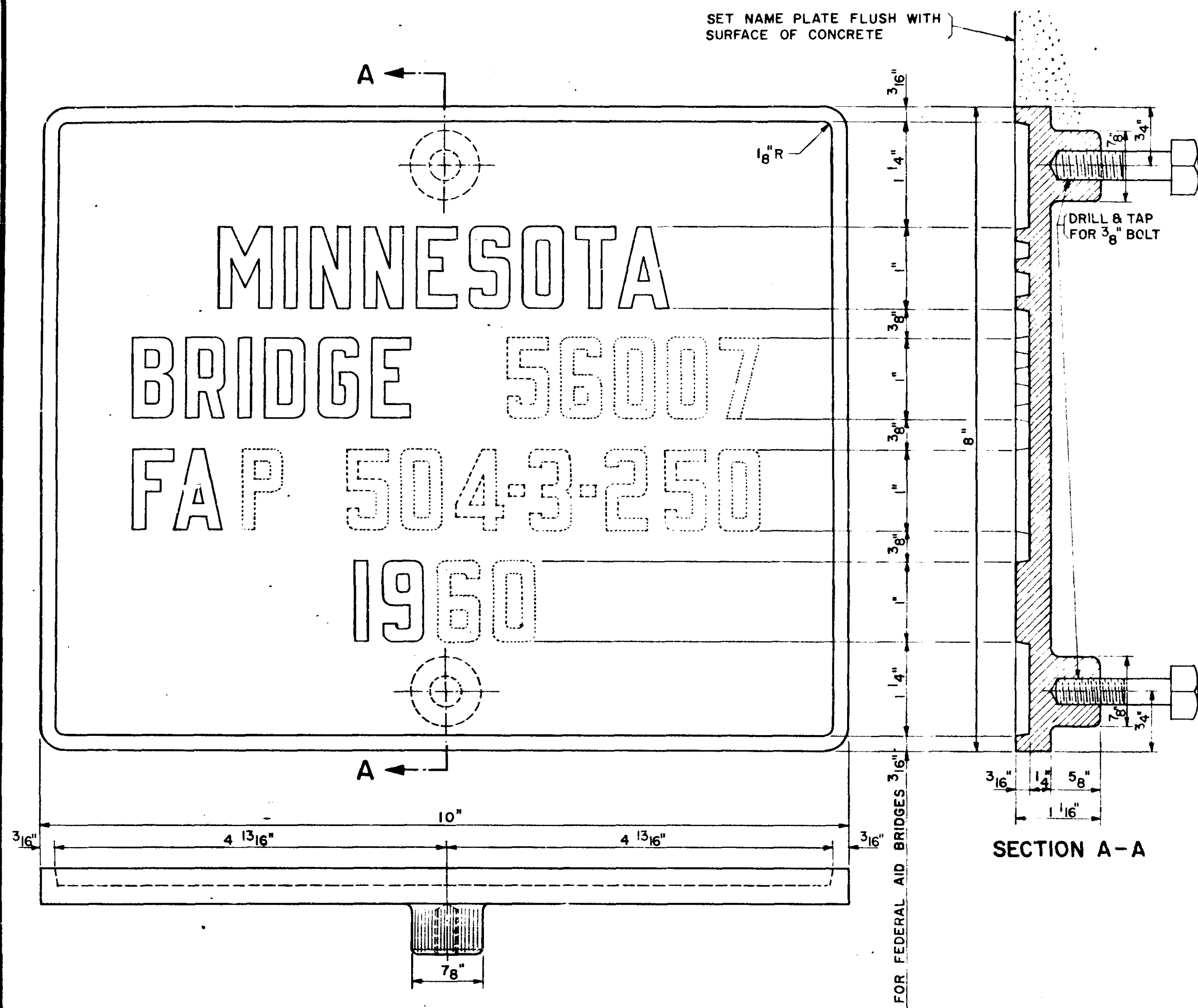
REVISIONS 8-26-64

DETAIL NO.

CONTRACTION JOINT

B260

STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS
 Bridge No. 9340
 DETAILS
 APPROVED 6/18/65
 Sheet No. 80 of 94 Sheets



SECTION A-A

DRILL & TAP FOR 3/8\"/>

NOTE:
ALL DIMENSIONS FOR 3/4\"/>

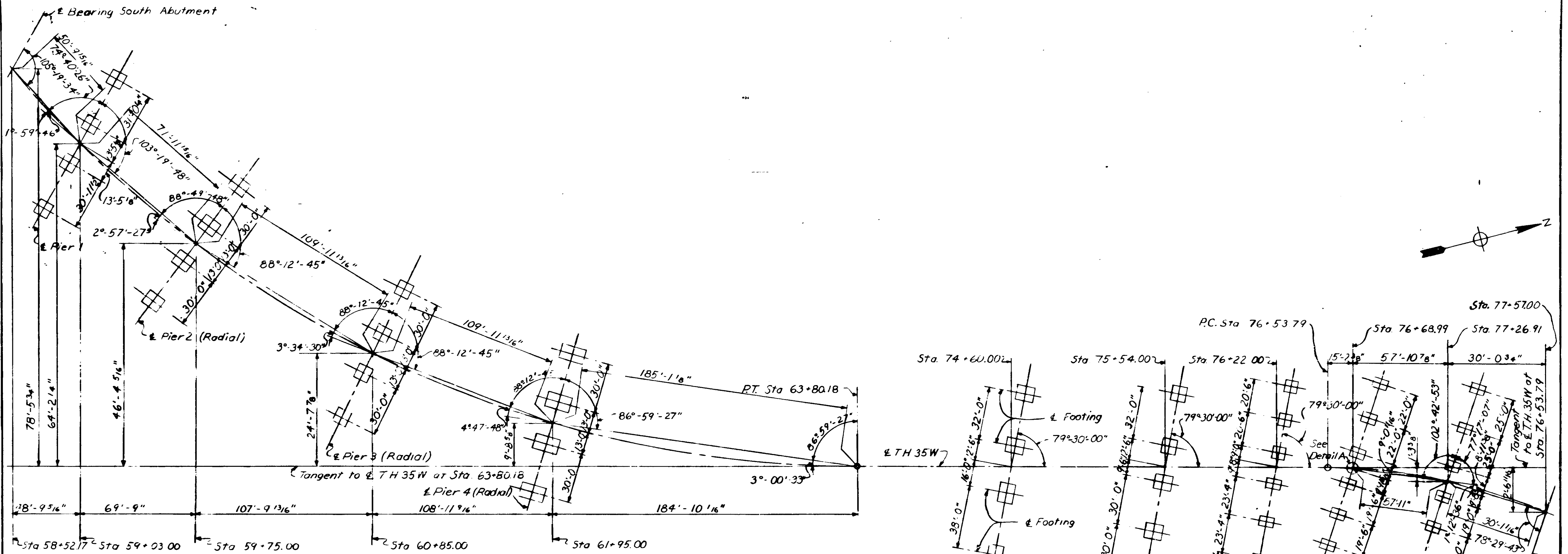
APPROVED <u>7/3</u> 1959	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
<i>A. E. LaRonde</i> BRIDGE ENGINEER	LETTERS FOR BRIDGE NAME PLATES		2102

NOTES:
 NUMBERS AND LETTERS SHALL CONFORM TO THOSE SHOWN ON DETAIL NO. 2102. DRAFT ON LETTERS SHALL NOT BE MORE THAN 3" IN 12". HORIZONTAL SPACING OF LETTERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN. TOP SURFACE OF LETTERS AND FRAMES SHALL BE BURNISHED. BACKGROUND OF PLATE SHALL HAVE A DEEP BROWN OXIDIZED FINISH. FURNISH 2 STEEL BOLTS 3/8" x 3" LONG WITH EACH PLATE. PLATES ORDERED IN PAIRS SHALL BE CAST FROM THE SAME HEAT. NUMBERS AND LETTERS SHOWN DOTTED ARE TO BE OBTAINED FROM BRIDGE PLANS.

SPECIFICATION REFERENCE 2471.3 H, 3327 (BRONZE CASTINGS TYPE 2)

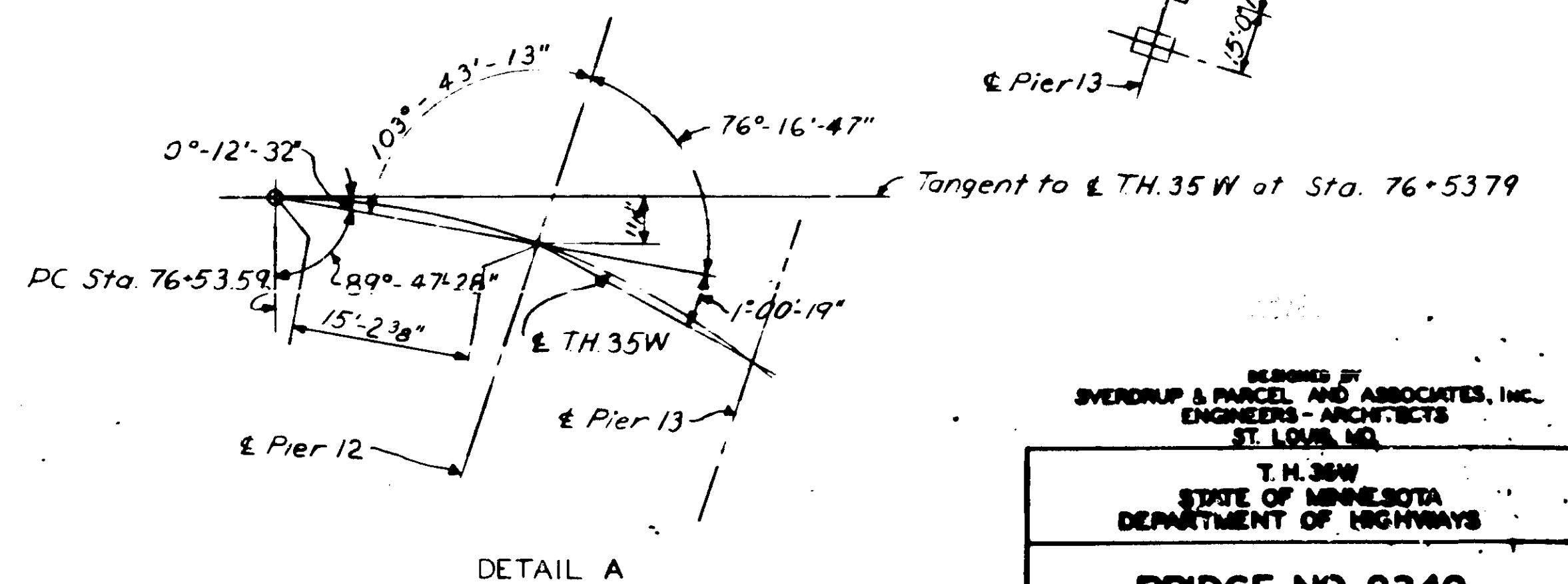
APPROVED <u>7/3</u> 1959	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
<i>A. E. LaRonde</i> BRIDGE ENGINEER	BRIDGE NAME PLATE FOR TRUNK HIGHWAY BRIDGES		2100

STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS
Bridge No. 9340
DETAILS
APPROVED <u>4/2/55</u>
Sheet No. 81 of 94 Sheets



PLAN

Note: For horizontal curve data see Sheet i.
 Dimensions from tangent line to E.T.H. 35W are exaggerated. Location of footings shown are in proper relation to E.T.H. 35W, not the tangent extended.
 Piers 5, 6, 7, and 8 are not included in this Contract.



DESIGNED BY
 SVERDRUP & PARCEL AND ASSOCIATES, INC.
 ENGINEERS - ARCHITECTS
 ST. LOUIS, MO.

T. H. 35W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

SUBSTRUCTURE LAYOUT

APPROVED - 6-18-65

Drawn by: M. Kordonow, Feb. 1965
 Checked by: R.F. Beck, Feb. 1965
 2083
 655171

CONTRACTED PROFILE

SCALE HOR 1" = 100' VER 1" = 10'

ELEV
ELEV
ELEV
ELEV
ELEV
ELEV
ELEV
ELEV
ELEV
ELEV
ELEV

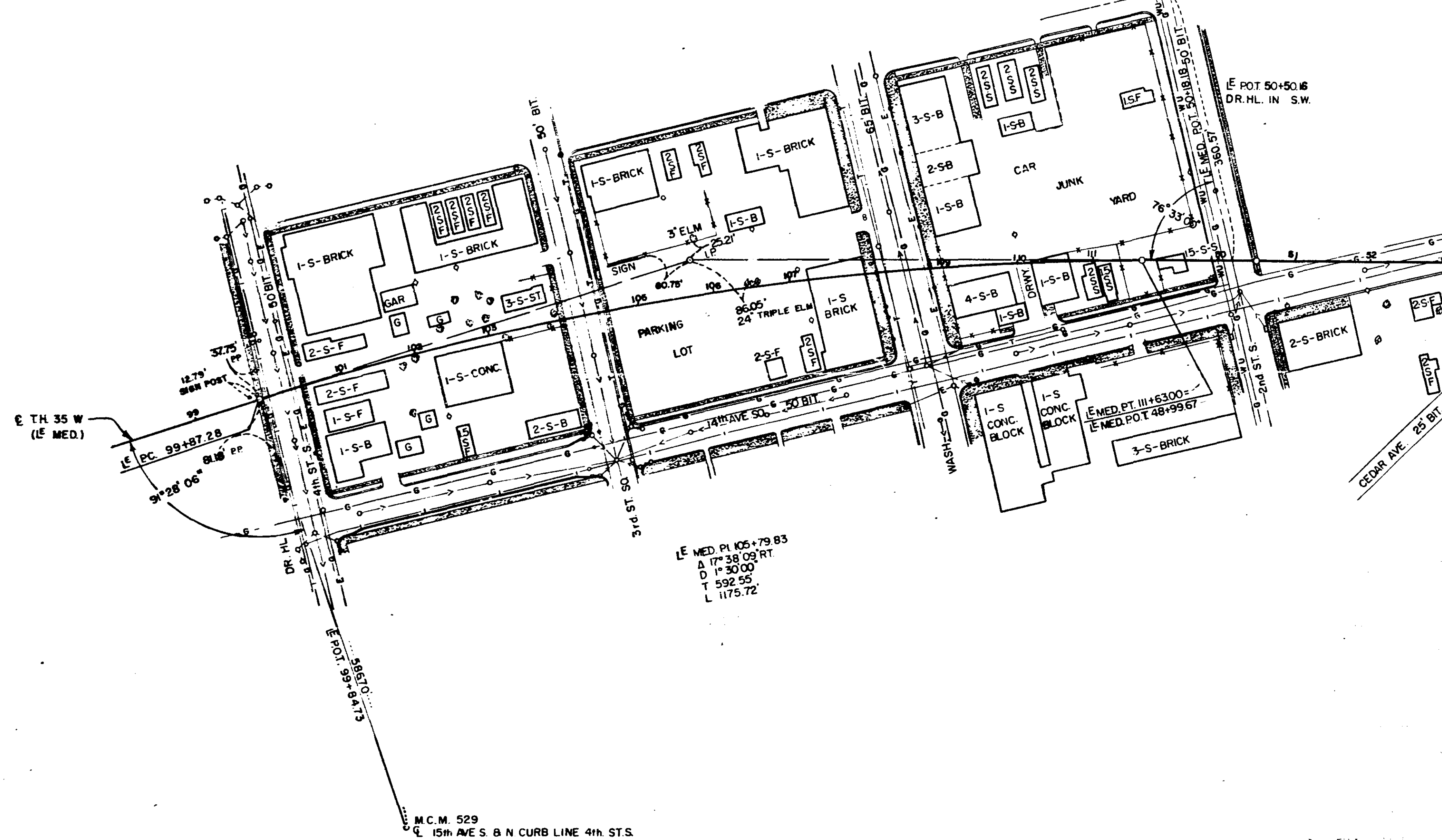
PLAT

SCALE 1" = 100'

PLAT

SCALE 1" = 100'

ENTER LINE OF LAYOUT



FOLLOW SEPARATE "INSTRUCTIONS FOR PREPARATION OF BRIDGE SURVEYS" WHEN MAKING BRIDGE SURVEYS.

DATA

1. Preliminary recommendations of Engineer in charge of Bridge Survey:

- Net span length and type of bridge.
- Width of roadway on bridge.
- Number and width of sidewalks, if any.
- Locate center of bridge at station.
- If a skew bridge is recommended, the angle of skew should be _____.
- Is piling required? _____

2. Special features: Waterfalls, dams, exceptional floods, ice, driftwood, sliding banks, logging, etc.

3. Changes: In height or length from that of old bridge, and reasons why.

DATA (Contd.)

4. Other bridges in vicinity:

- Over same stream (particularly structures which carry high water without overflow of roadway); give location, length, height above water, net cross-sectional area at high water stage and estimated age.
- Over or under same highway or railroad; give location, length, horizontal and vertical clearances and estimated age.
- Reasons why these bridges are, or are not, fair indications of what length the proposed bridge should be.

5. If structure is over a drainage ditch, is ditch gradient liable to be altered?

6. Navigation clearances required, if any.

7. Information and evidence in regard to high water stages was obtained as follows:

8. Must contractor provide for traffic during construction of proposed bridge? _____
If so, by what means? _____

HIGH AND LOW WATER ELEVATIONS

Data obtained from _____
 re: is highest water elevation in the area of this construction to be _____ and the lowest water elevation to be _____.
 The above figures are for informational purposes only. The state neither warrants nor represents that these figures for high water and low water are in any way indicative of the high water or low water to be expected or encountered during this construction.

SHIPPING POINT

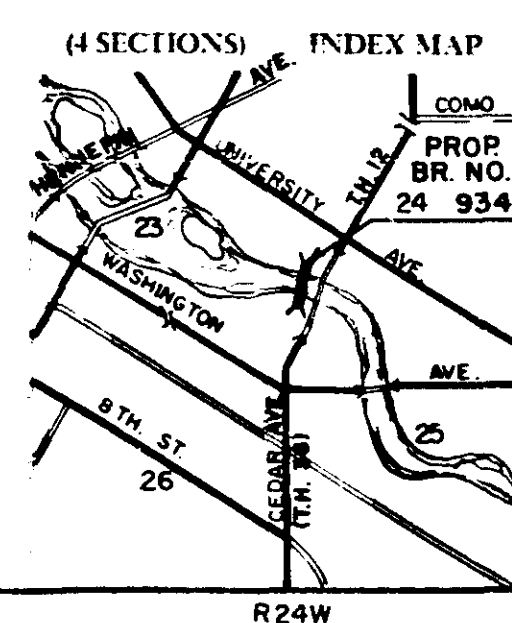
Proposed Bridge is _____ miles _____ of _____
 which is the nearest _____
 Railroad shipping point.
 *(Give name of town, station or siding)

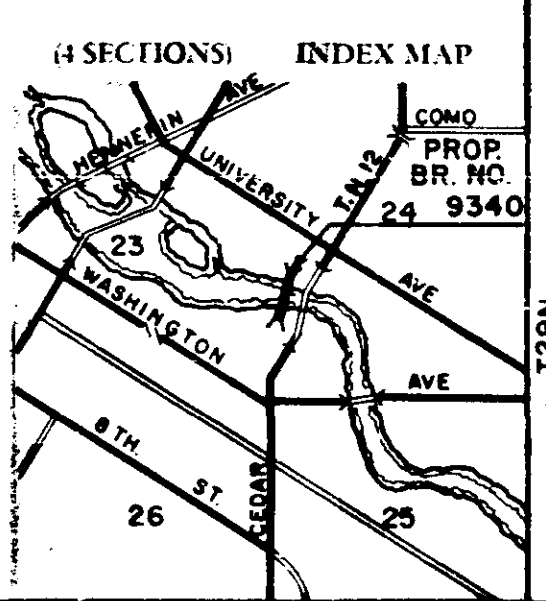
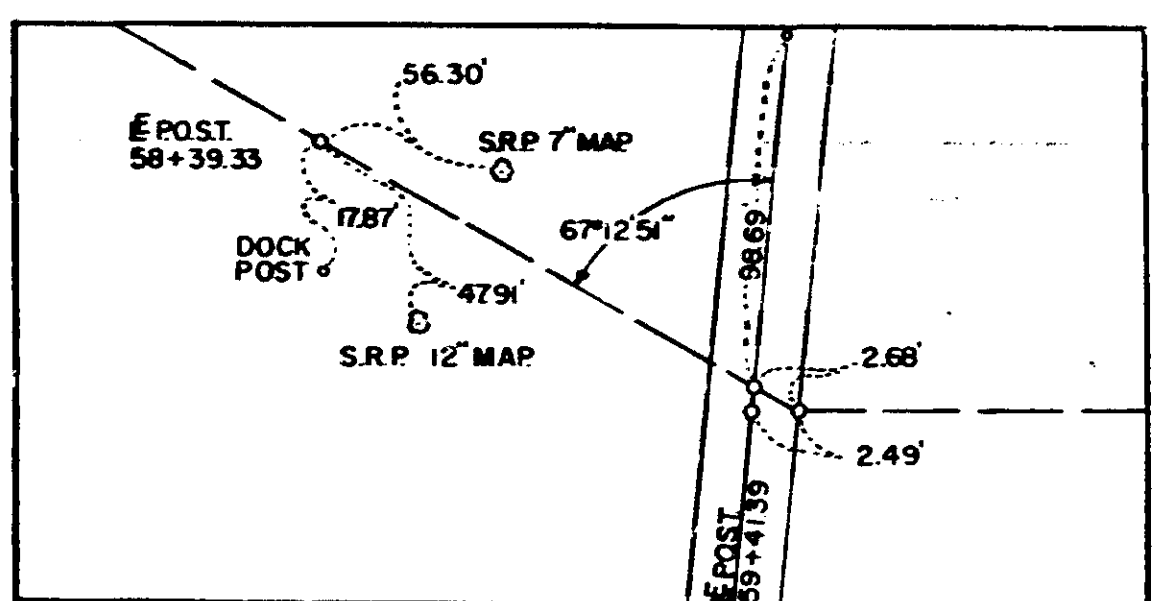
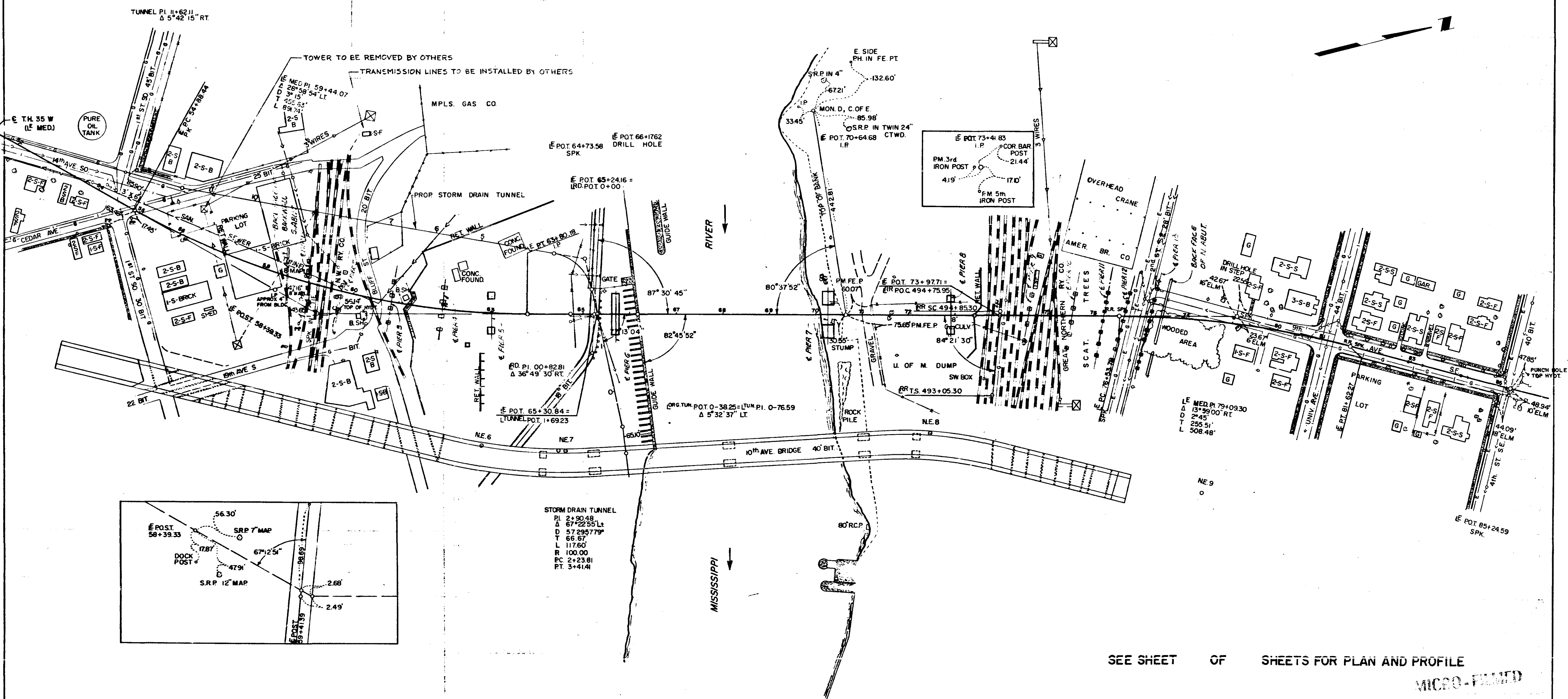
Date _____ Project or County Engineer _____
 Date _____ District Engineer _____

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
BRIDGE SURVEY
 FOR _____ MILES _____ OF _____
 PROPOSED BRIDGE LOCATED _____ ON TH. 35 W
 (TOWN OR CITY) (T.H. S.A.R. OR C.A.R. NUMBER)

SEC. 24 TWP. 29N R. 24W
 TOWNSHIP _____ COUNTY HENNEPIN
 SURVEY MADE DURING MONTH OF FEB. 19 62
 SURVEY MADE BY A.W. EDWARDS

BRIDGE No. 9340





SEE SHEET OF SHEETS FOR PLAN AND PROFILE

MICRO-FILMED

FOLLOW SEPARATE "INSTRUCTIONS FOR PREPARATION OF BRIDGE SURVEYS" WHEN MAKING BRIDGE SURVEYS.

DATA

- Preliminary recommendations of Engineer in charge of Bridge Survey:
 - Net span length and type of bridge.
 - Width of roadway on bridge.
 - Number and width of sidewalks, if any.
 - Locate center of bridge at station.
 - If a skew bridge is recommended, the angle of skew should be.
 - Is piling required?
- Special features: Waterfalls, dams, exceptional floods, ice, driftwood, sliding banks, logging, etc.
- Changes: In height or length from that of old bridge, and reasons why.

DATA (Contd.)

- Other bridges in vicinity:
 - Over same stream (particularly structures which carry high water without overflow of roadway); give location, length, height above water, net cross-sectional area at high water stage and estimated age.
 - Over or under same highway or railroad; give location, length, horizontal and vertical clearances and estimated age.
 - Reasons why these bridges are, or are not, fair indications of what length the proposed bridge should be.
- If structure is over a drainage ditch, is ditch gradient liable to be altered?
- Navigation clearances required, if any.
- Information and evidence in regard to high water stages was obtained as follows.
- Must contractor provide for traffic during construction of proposed bridge? If so, by what means?

HIGH AND LOW WATER ELEVATIONS

Data obtained from _____ reflects highest water elevation in the area of this construction to be _____ and the lowest water elevation to be _____. The above figures are for informational purposes only. The state neither warrants nor represents that these figures for high water and low water are in any way indicative of the high water or low water to be expected or encountered during this construction.

SHIPPING POINT

Proposed Bridge is _____ miles _____ of _____ which is the nearest Railroad shipping point.

*(Give name of town, station or siding)

Date _____ Project or County Engineer _____
Date _____ District Engineer _____

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
BRIDGE SURVEY
FOR
PROPOSED BRIDGE LOCATED _____ MILES _____ OF _____ (TOWN OR CITY) ON T.H. 35 W (T.H. S.A.R. OR C.A.R. NUMBER)

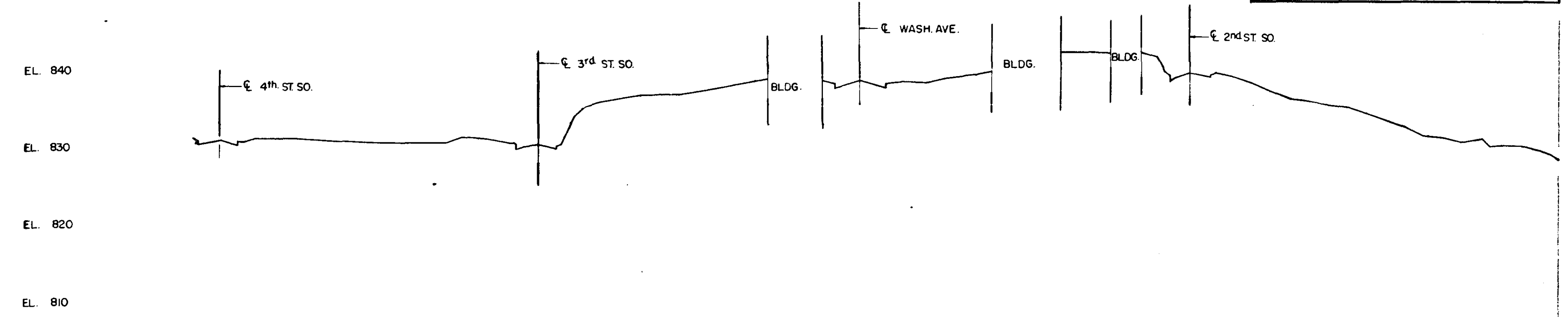
SEC. 24 TWP. 29N R. 24W
TOWNSHIP _____ COUNTY HENNEPIN
SURVEY MADE DURING MONTH OF FEB. 1962
SURVEY MADE BY A.W. EDWARDS

BRIDGE No. **9340**

FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
---------------------	-------	-------------------	-------------	-----------	--------------

CONTRACTED PROFILE
 SCALE: HOR. 1" = 100'
 VER. 1" = 10'

☉ PROFILE ☉ MEDIAN
 (T.H. 35 W)



SURVEY NOTE BOOK NO. 2026
 SURVEYED BY: [blank]
 DATE: [blank]
 AREA: [blank]

SURVEY NOTE BOOK NO. 2026
 SURVEYED BY: [blank]
 DATE: [blank]
 AREA: [blank]

☒ E.P.T. 99+84.73 =
 P.C. 37+21.61 ORG. STA.

☒ E.P.T. 48+79.55 ORG. STA.
 P.T. III+63.00 =
 E.P.T. 48+99.67

37	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148
30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80

51	52	53	54
40.29	40.61	40.61	40.61
39.6	39.6	39.6	39.6
38.5	38.5	38.5	38.5
37.16	37.16	37.16	37.16
36.91	36.91	36.91	36.91
36.47	36.47	36.47	36.47
35.80	35.80	35.80	35.80
34.95	34.95	34.95	34.95
34.04	34.04	34.04	34.04
32.7	32.7	32.7	32.7
32.1	32.1	32.1	32.1
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31.07	31.07	31.07	31.07

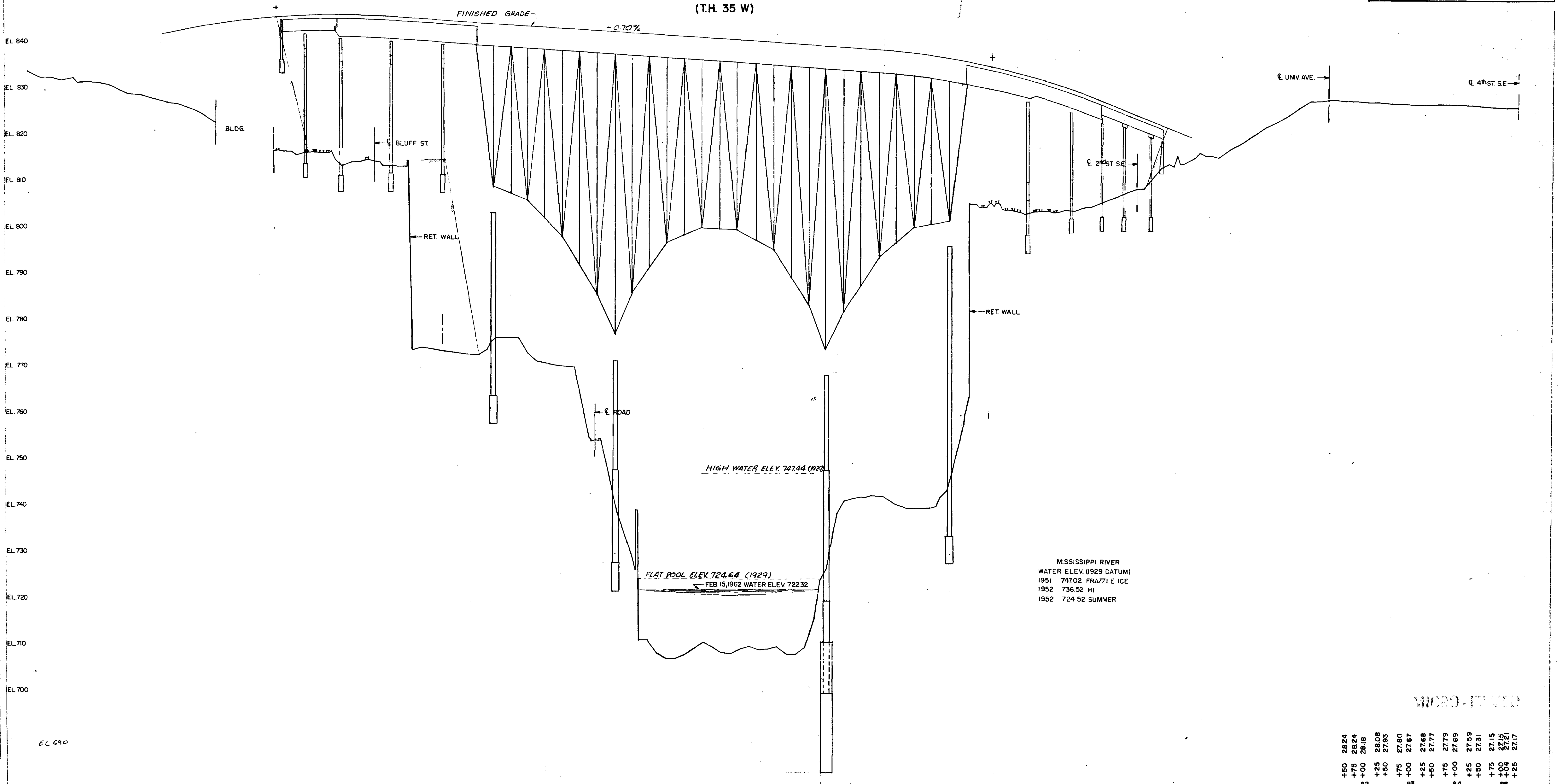
TRUNK HIGHWAY NO. 35 W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

BRIDGE SURVEY
 CONTRACTED PROFILE

SEE SHEET NO. FOR ADDITIONAL INFORMATION

CONTRACTED PROFILE
 SCALE: HOR. 1" = 100'
 VER. 1" = 10'



PROFILE MEDIAN
(T.H. 35 W)

NOTE BOOK TEMPLATE AREA CHECKED NO.

NOTE BOOK TEMPLATE AREA CHECKED NO.

MISSISSIPPI RIVER
 WATER ELEV. (1929 DATUM)
 1951 747.02 FRAZZLE ICE
 1952 736.52 HI
 1952 724.52 SUMMER

WATER FLOW

+50	2824	+50	2808	+50	2780	+50	2769	+50	2759	+50	2751	+50	2721
+75	2824	+75	2808	+75	2780	+75	2769	+75	2759	+75	2751	+75	2721
+100	2818	+100	2793	+100	2767	+100	2757	+100	2747	+100	2737	+100	2707
82		83		84		85							

TRUNK HIGHWAY NO. 35 W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

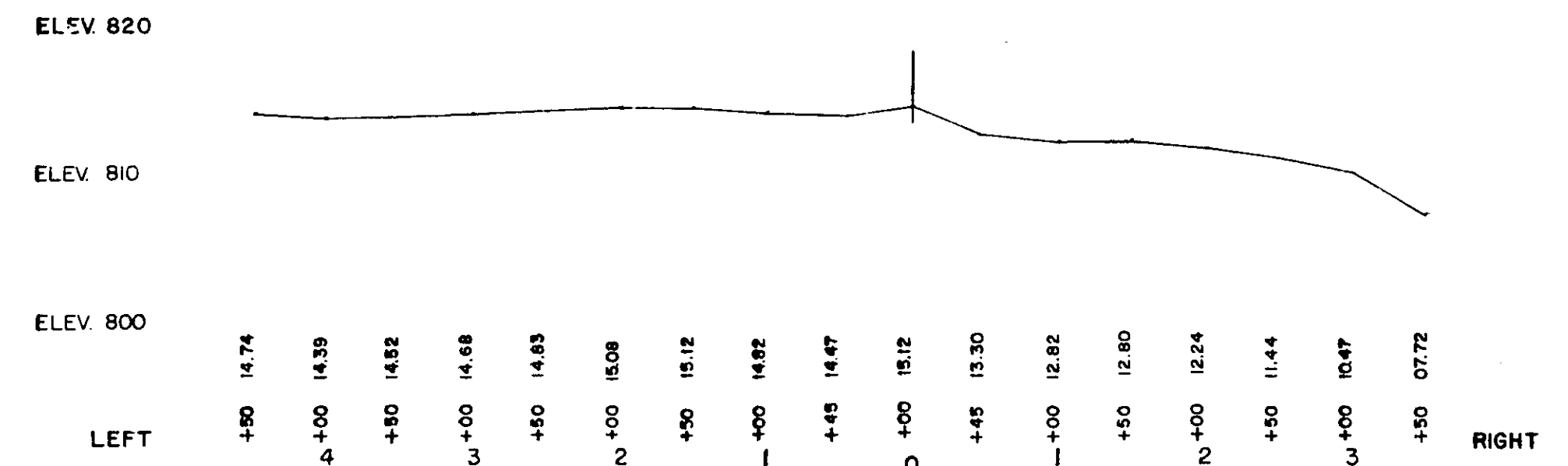
BRIDGE SURVEY
 CONTRACTED PROFILE

SEE SHEET NO. FOR ADDITIONAL INFORMATION

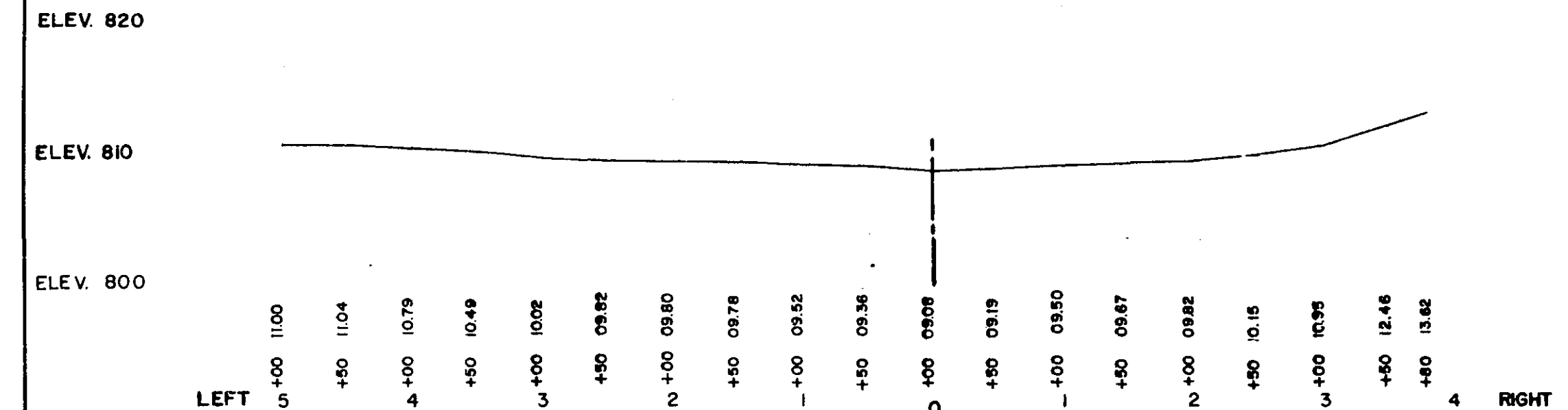
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CONTRACTED PROFILE
SCALE: HOR. 1" = 100'
VER. 1" = 10'

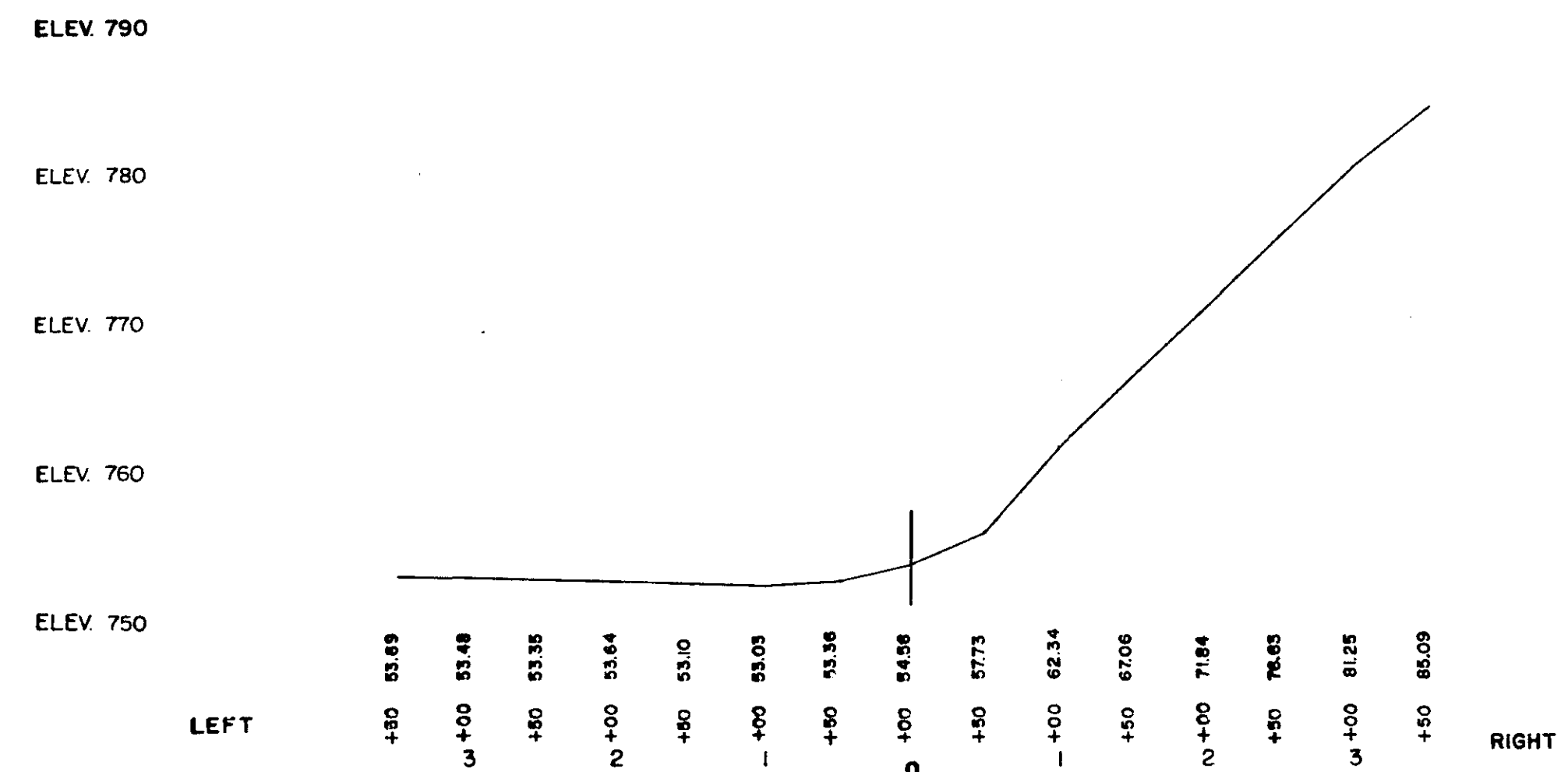
PROFILE BLUFF ST.
MED. P.O.T. 126+40



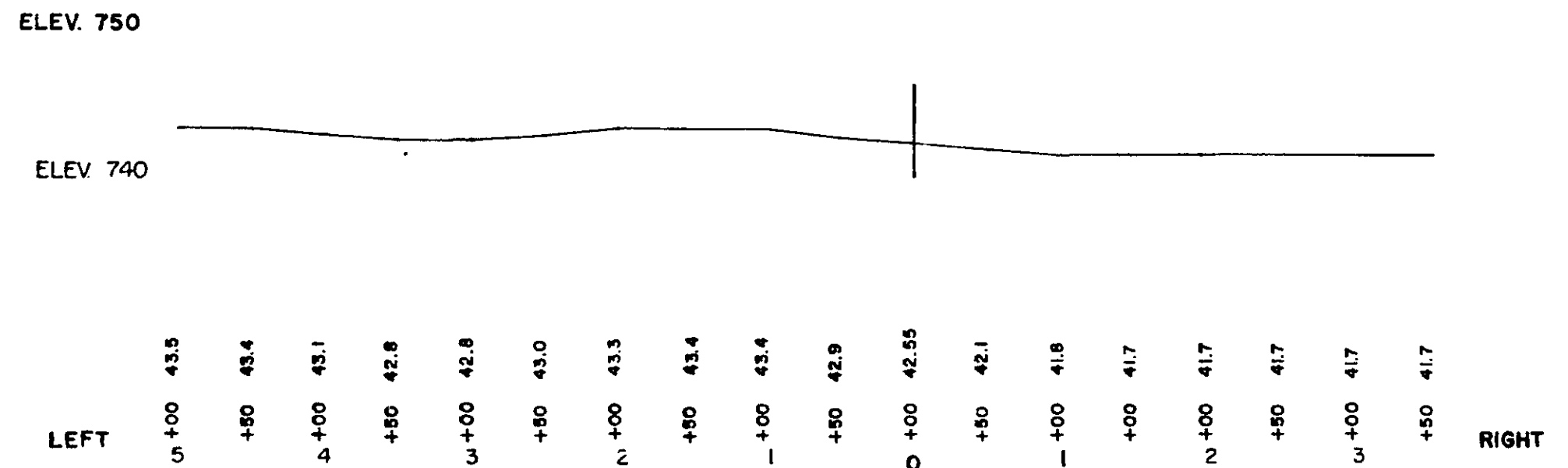
PROFILE 2nd. ST. SE.
MED. P.O.T. 76+98



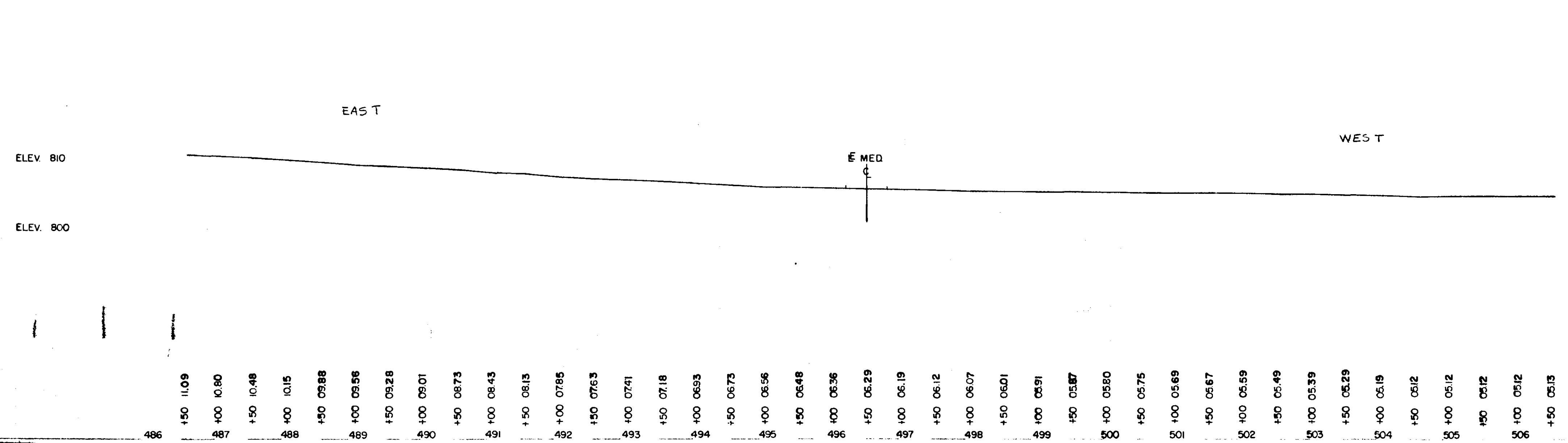
PROFILE LOCK & DAM RD.
MED. P.O.T. 65+25



PROFILE UNIV. OF MINN. RD.
MED. P.O.T. 71+07



PROFILE MAIN LINE G.N. RY.
MED. P.O.T. 73+97.71 = L.R. 496+43.96



TRUNK HIGHWAY NO 35 W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

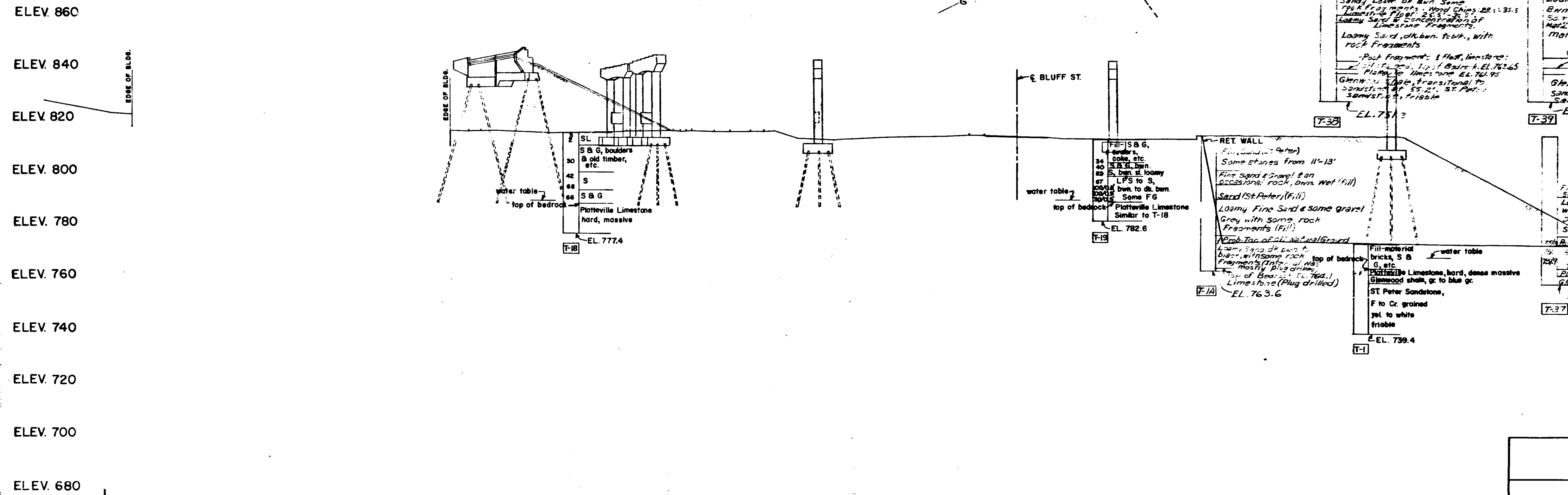
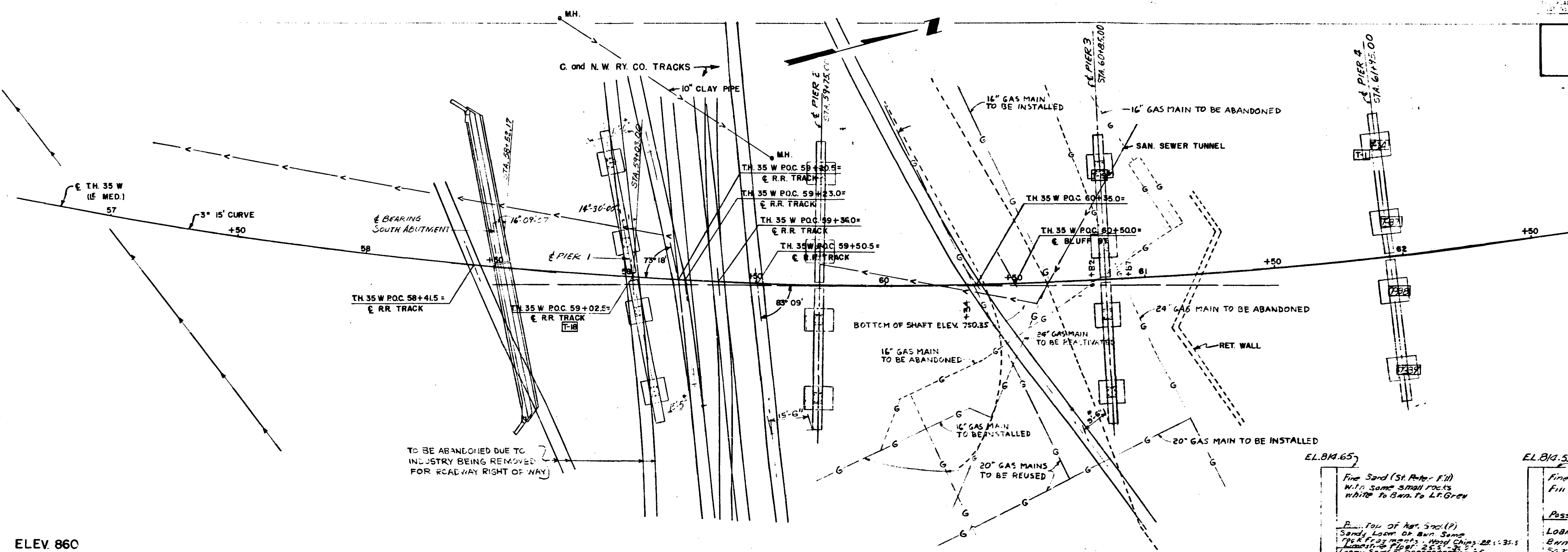
BRIDGE SURVEY
CONTRACTED PROFILE

SEE SHEET NO. FOR ADDITIONAL INFORMATION

SURVEY BOOK NO. 151
 NOTE BOOK NO. 151
 SURVEY BOOK NO. 151
 NOTE BOOK NO. 151

SURVEY BOOK NO. 151
 NOTE BOOK NO. 151
 SURVEY BOOK NO. 151
 NOTE BOOK NO. 151

PLAN AND PROFILE
SCALE: 1" = 20'



EL. 814.65
 Fine Sand (St. Peter Fill) with some small rocks white to tan. to Lt. Grey
 Poss. Top of Nat. Grnd. (?)
 Sandy Loam, dk. brn. Smp. 70% R. Fragments, Wood Chips, 22.1-35.5
 Loamy Sand, Top of 28.5-30.5
 Loamy Sand & Concentration of Limestone Fragments
 Loamy Sand, dk. brn. Soil, with rock fragments
 Rock fragments of Hard limestone with asphalt or oil Top of Bedrock
 Platteville Limestone EL. 763.65
 Glenwood shale transitional to sandstone at 55.2'. St. Peter Sandstone, friable

EL. 814.55
 Fine Sand white (St. Peter Sandstone) Fill, some rock fragments
 Poss. Top of Nat. Grnd. (?)
 Loamy Sand & Sandy Loam, dk. Grey, dk. brn. & some blk. material. Rock fragments 50% or more of wood chips & bituminous mat. All samples appear to be old fill mat'l.
 Primarily rock fragments stained with asphalt or oil Top of Bedrock
 Platteville limestone EL. 761.5
 Glenwood shale transitional to sandstone at 54.7 to 55'. St. Peter Sandstone, friable.
 EL. 751.25

EL. 773.5
 Fill material (St. Peter)
 Some stones from 11-13'
 Fine sand & gravel on occasions, rock, dk. wet fill
 Sand (St. Peter) (Fill)
 Loamy fine sand & some gravel Grey with some rock fragments (Fill)
 Top of Bedrock EL. 773.5
 Platteville Limestone, hard, dense massive
 Glenwood shale, gr. to blue gr.
 ST. Peter Sandstone, F to Cr. grained yet to white friable
 EL. 739.4

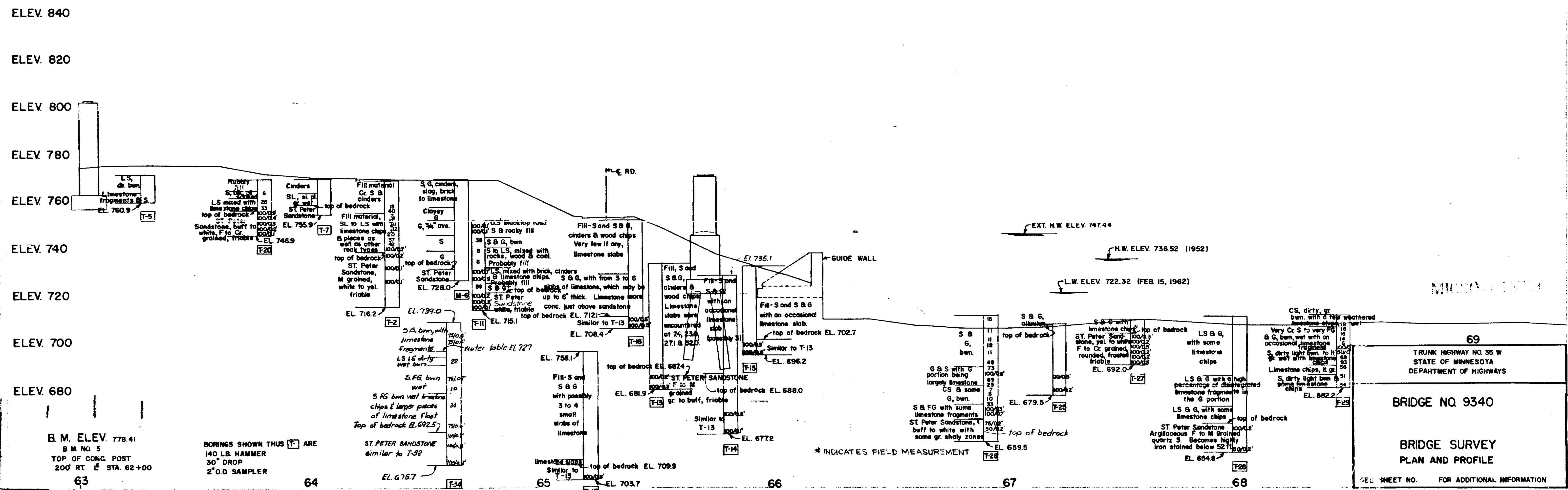
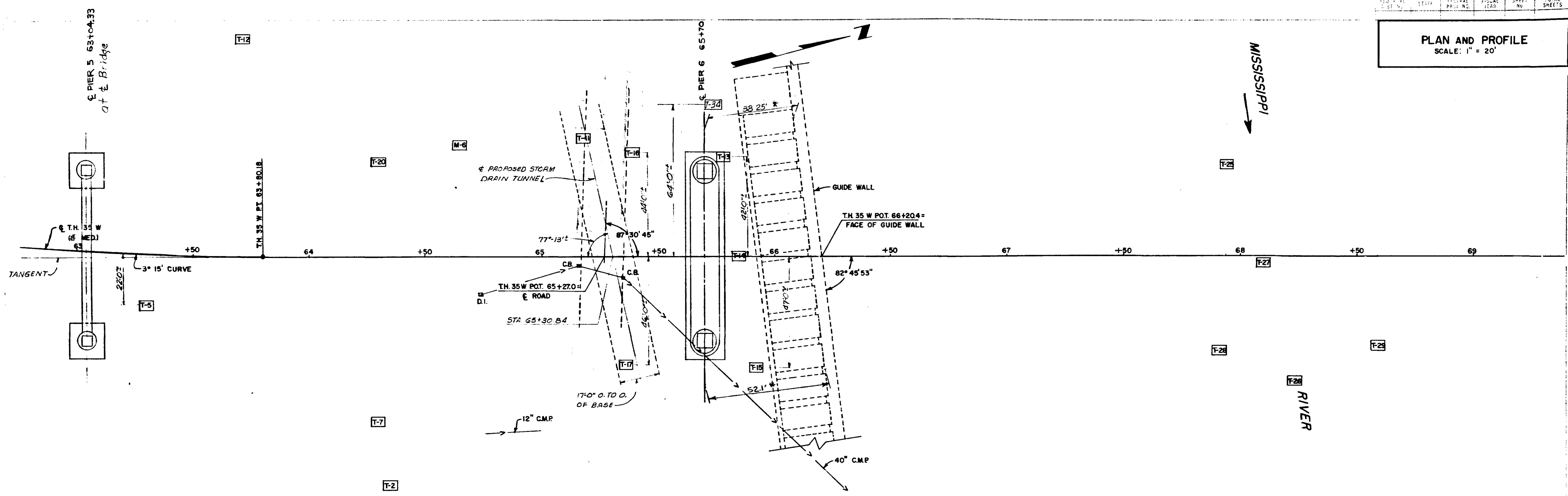
EL. 737
 Fill material (St. Peter) (stained with oil or asphalt)
 Top of Bedrock EL. 761.1
 Platteville limestone, grey, hard
 Glenwood shale, transitional into sandstone at 55 ft.
 EL. 102.5 in St. Peter Sandstone

* INDICATES FIELD MEASUREMENT

B.M. ELEV. 820.82
 B.M. NO. 4
 TOP HYD. 150' RT.
 1" STA. 59+00

BORINGS SHOWN ARE
 140 LB. HAMMER
 30" DROP
 2" O.D. SAMPLER

PLAN AND PROFILE
SCALE: 1" = 20'



B.M. ELEV. 778.41
B.M. NO. 5
TOP OF CONG. POST
200' RT. 1/4" STA. 62+00

BORINGS SHOWN THUS ARE
140 LB. HAMMER
30" DROP
2" O.D. SAMPLER

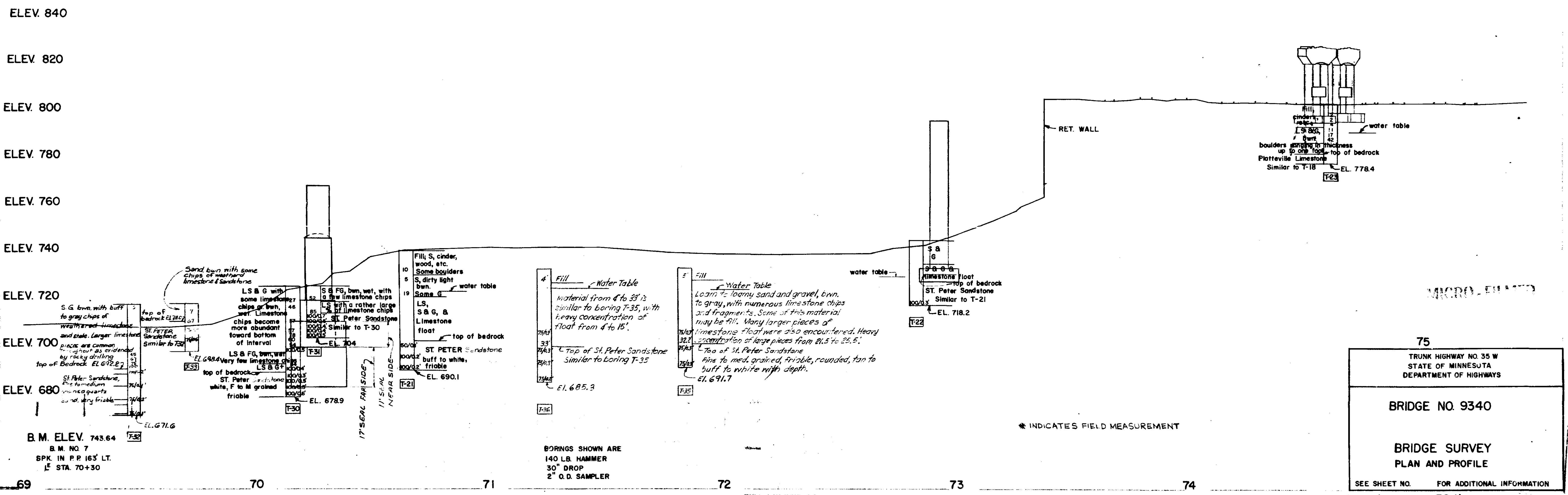
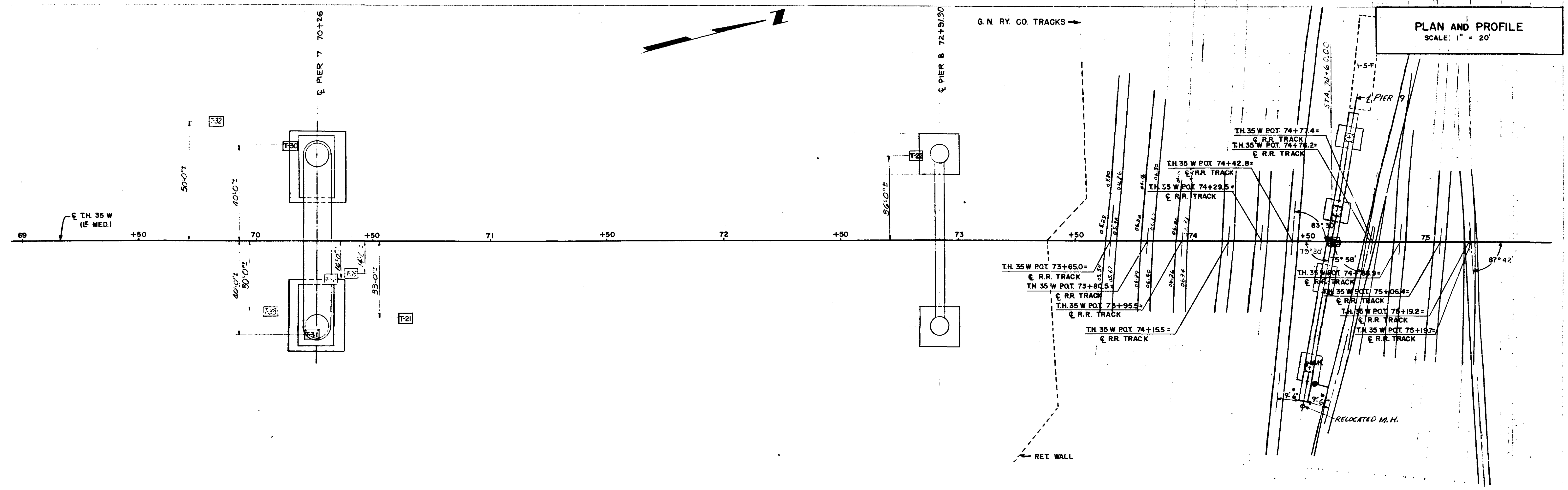
69
TRUNK HIGHWAY NO. 35 W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

BRIDGE SURVEY
PLAN AND PROFILE

SEE SHEET NO. FOR ADDITIONAL INFORMATION

PLAN AND PROFILE
 SCALE: 1" = 20'



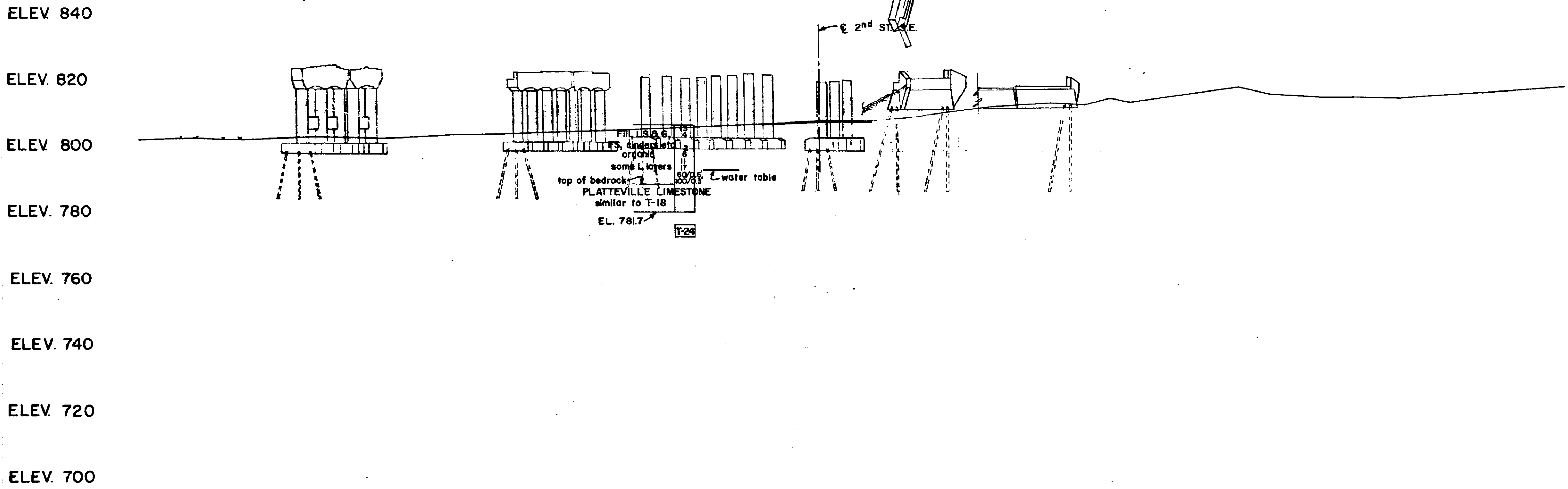
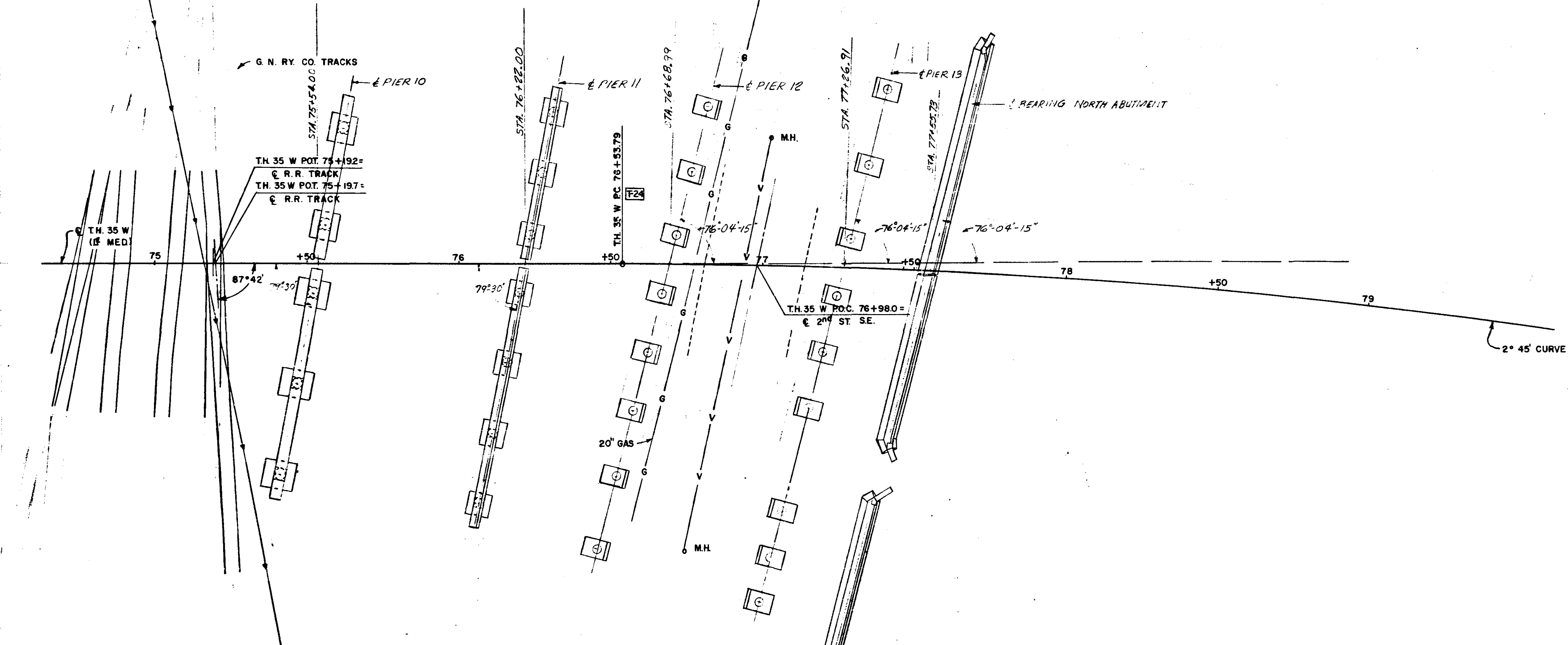
75
 TRUNK HIGHWAY NO. 35 W
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

**BRIDGE SURVEY
 PLAN AND PROFILE**

SEE SHEET NO. FOR ADDITIONAL INFORMATION

PLAN AND PROFILE
SCALE: 1" = 20'



B.M. ELEV. 807.97
B.M. NO. 8
SPK IN CTWD. 15' LT
LE STA. 76+10

* INDICATES FIELD MEASUREMENT

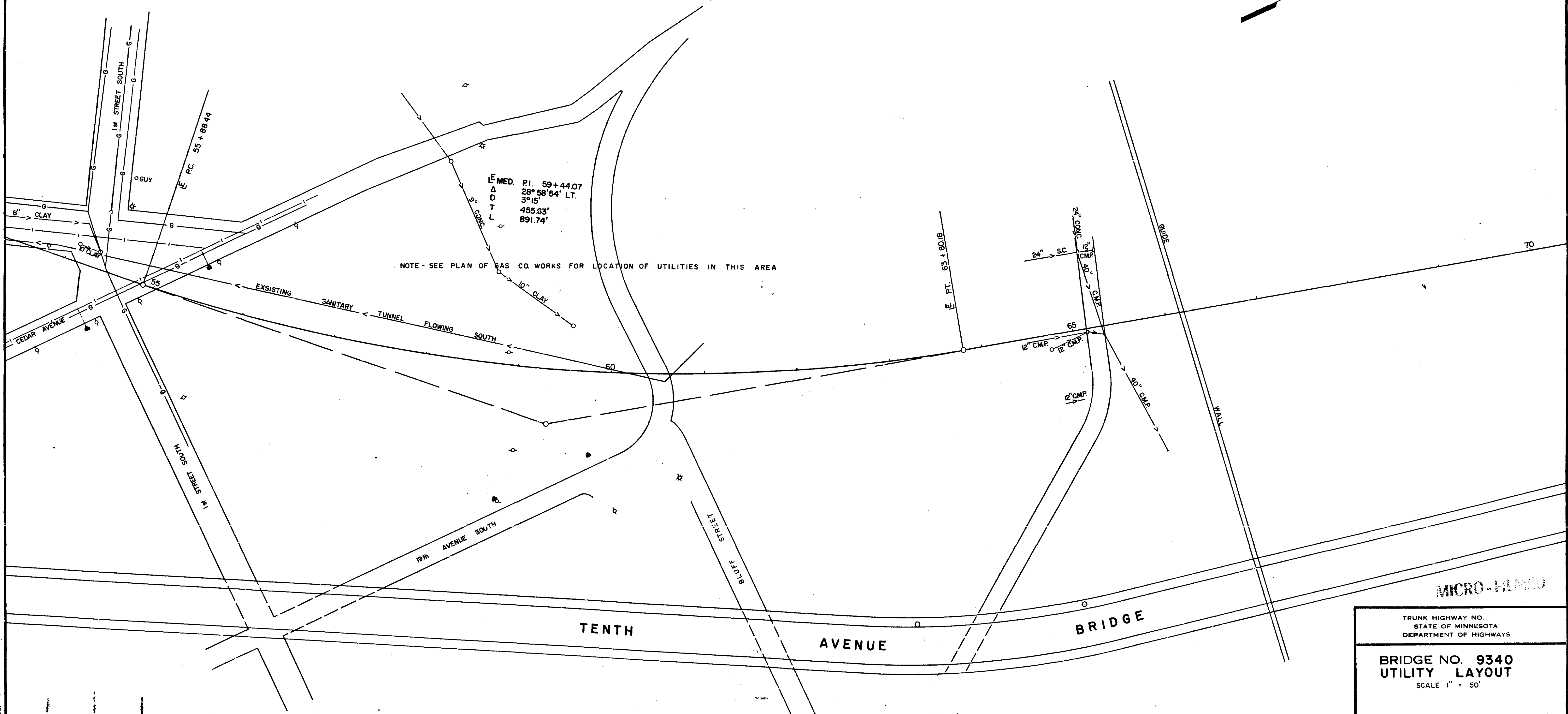
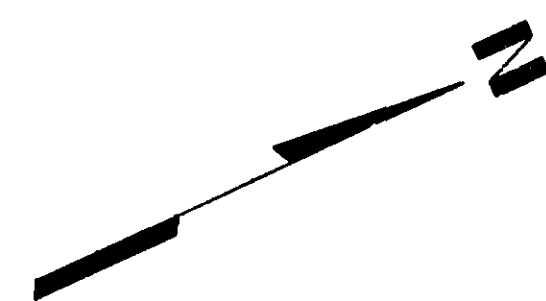
BORINGS SHOWN ARE
140 LB. HAMMER
30" DROP
2" O.D. SAMPLER

TRUNK HIGHWAY NO. 35 W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340

**BRIDGE SURVEY
PLAN AND PROFILE**

SEE SHEET NO. FOR ADDITIONAL INFORMATION



E	MED.	P.I.	59+44.07
Δ			28° 58' 54" LT.
D			3° 15'
T			455.63'
L			891.74'

NOTE - SEE PLAN OF GAS CO WORKS FOR LOCATION OF UTILITIES IN THIS AREA

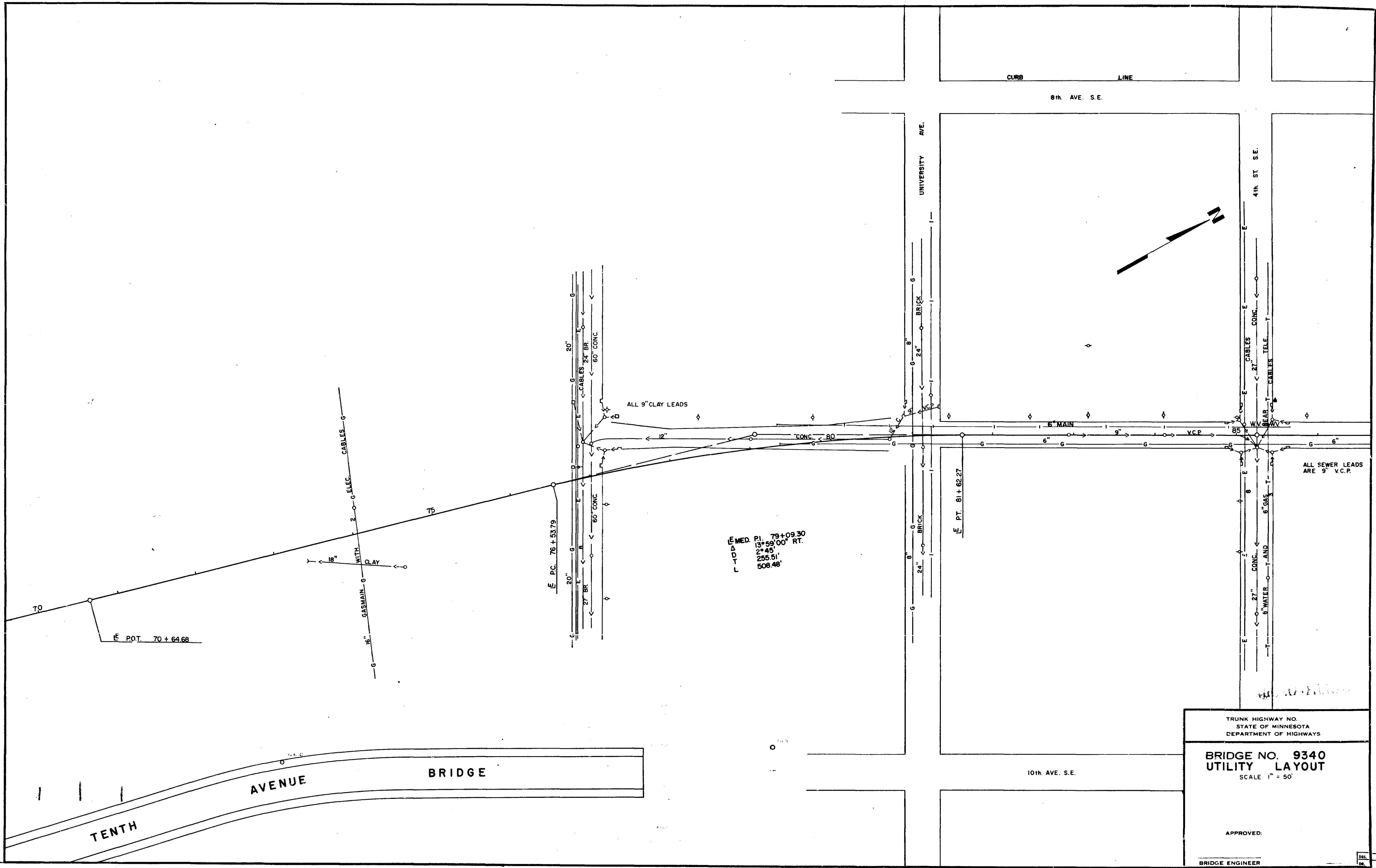
TRUNK HIGHWAY NO.
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

**BRIDGE NO. 9340
UTILITY LAYOUT**
SCALE 1" = 50'

APPROVED:

BRIDGE ENGINEER

DES.	
DR.	
IN-CH.	
SCALE	



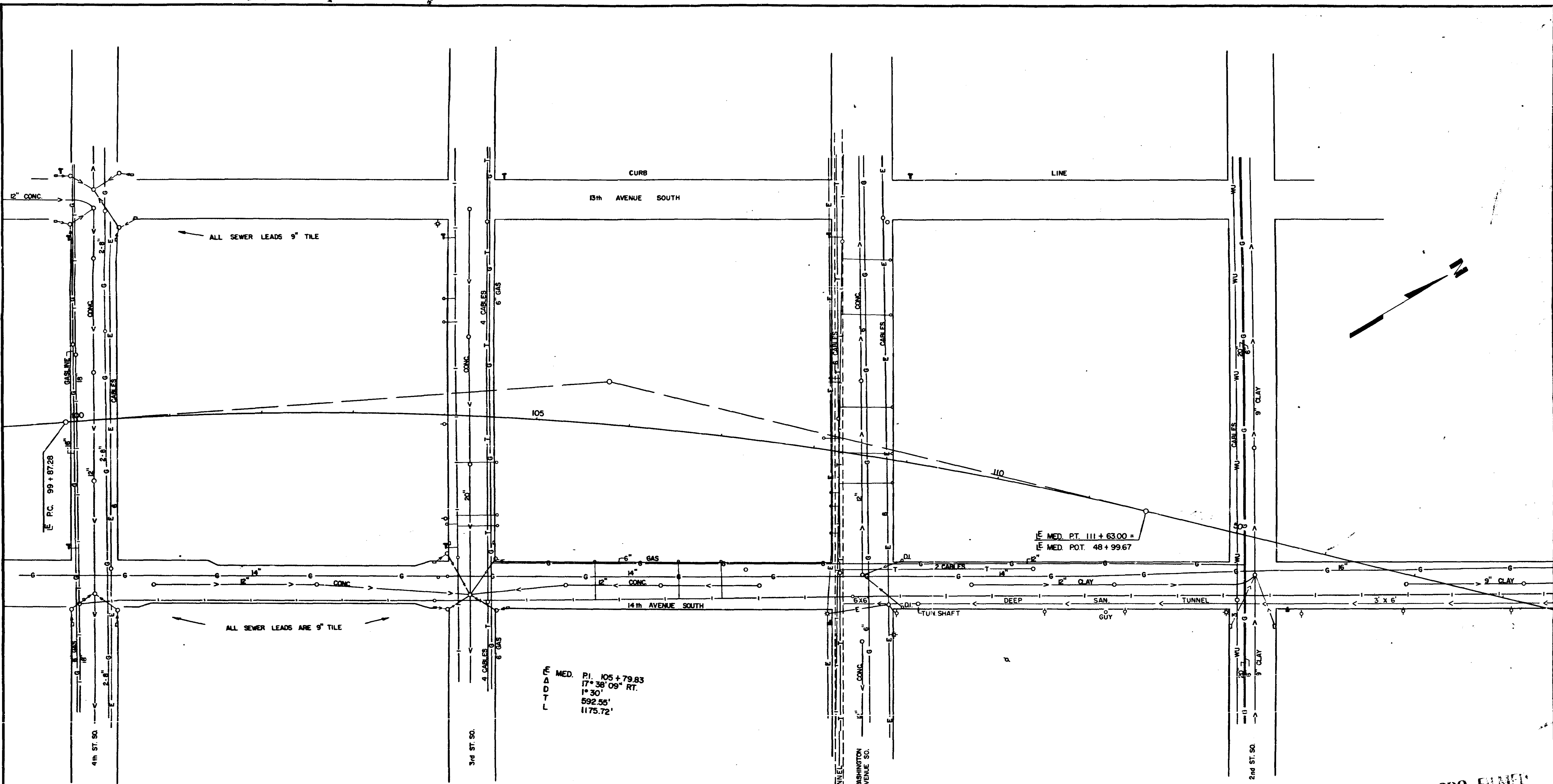
L-10
 E MED. PI. 79+09.30
 13°59'00" RT.
 255.51'
 508.48'

TRUNK HIGHWAY NO.
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340
UTILITY LAYOUT
 SCALE 1" = 50'

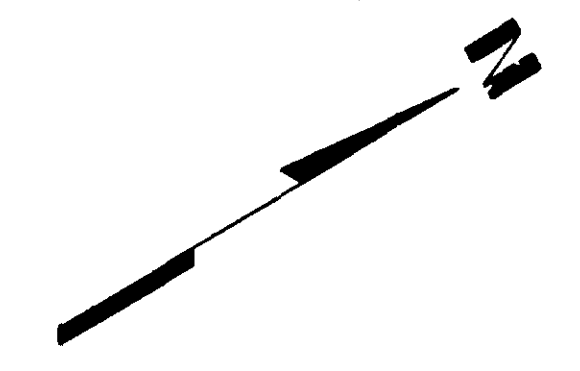
APPROVED: _____
 BRIDGE ENGINEER

DES.	
TR.	
LEC.	
ACC.	



E
 A
 D
 T
 L
 MED. PT. 105 + 79.83
 17° 38' 09" RT.
 592.55'
 1175.72'

E MED. PT. 111 + 63.00 =
 E MED. POT. 48 + 99.67



MICRO-FILM

TRUNK HIGHWAY NO.
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9340
UTILITY LAYOUT
 SCALE 1" = 50'

APPROVED: _____
 BRIDGE ENGINEER

DES.	
CHK.	
SCALE	