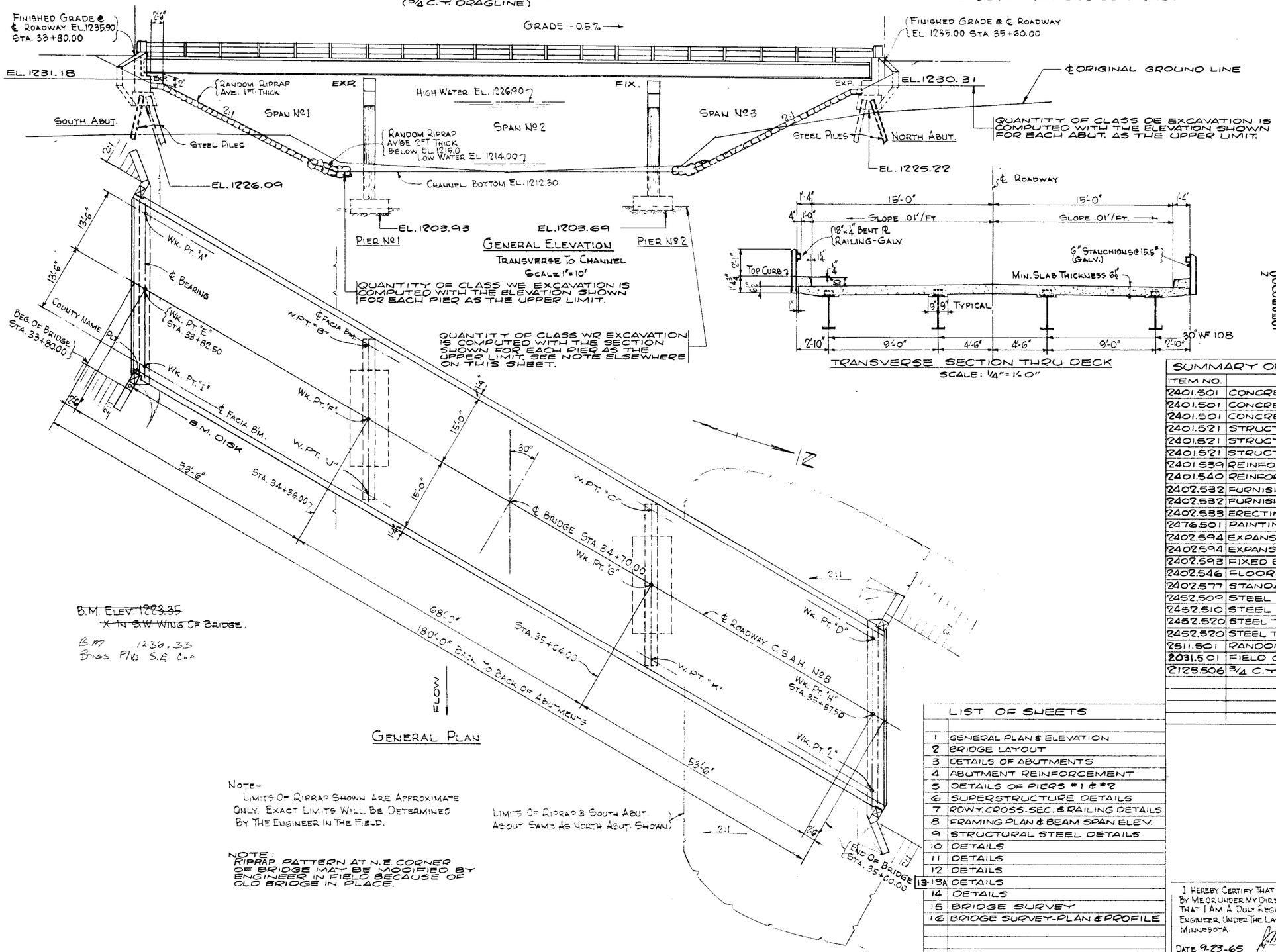
CHANNEL CLEANOUT AS DIRECTED BY THE ENGINEER-TO BE PAID FOR AS ITEM NO. 2123.506 (3/4 C.Y. DRAGLINE)

NOTE:
APPROACH FILLS HAVE BEEN CONSTRUCTED BY OTHERS UNDER A PREVIOUS CONTRACT.



GENERAL PLAN

B.M. Elev. ~~1223.35~~
~~X in S.W. Wing of Bridge.~~
B.M. 1230.33
Brass Plug S.E. Cor.

NOTE:-
LIMITS OF RIPRAP SHOWN ARE APPROXIMATE ONLY. EXACT LIMITS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

LIMITS OF RIPRAP @ SOUTH ABUT ABOUT SAME AS NORTH ABUT. SHOWN.

NOTE:
RIPRAP PATTERN AT N.E. CORNER OF BRIDGE MAT BE MODIFIED BY ENGINEER IN FIELD BECAUSE OF OLD BRIDGE IN PLACE.

NOTE:
QUANTITY OF STRUCTURE EXCAVATION (CLASS WR) WILL NOT BE BASED ON PLAN QUANTITY. QUANTITY FOR PAYMENT SHALL BE DETERMINED FROM CROSS SECTION DATA OBTAINED BEFORE ANY CLASS WR EXCAVATION IS STARTED. THE PROVISIONS OF M.H.D. 1404 SHALL NOT APPLY TO THIS ITEM.

DESIGN DATA
1961 A.A.S.H.O. SPECIFICATIONS
2 LANES H-20 LOADING WITH IMPACT
fs REINF. STEEL 20000 P.S.I
fc 1600 P.S.I. n=8
fs STRUCTURAL STEEL M.H.D. 3305 18000 P.S.I.
fs STRUCTURAL STEEL M.H.D. 3306 20000 P.S.I.

CONSTRUCTION NOTES

THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JAN. 1, 1964 AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" DATED FEBRUARY 1, 1966 SHALL GOVERN.

ALL KEYWAY SIZES ARE NOMINAL.

ALL BAR DETAILS SHALL CONFORM TO A.C.I. 315 LATEST EDITION.

ALL BAR DIMENSIONS ARE OUT TO OUT.

FOR CONCRETE JOINT SEALER SEE SPECIAL PROVISIONS.

CURBS SHALL NOT BE PLACED UNTIL ENTIRE ROADWAY SLAB HAS BEEN PLACED.

SUMMARY OF QUANTITIES FOR ENTIRE BRIDGE

ITEM NO.	ITEM	QUAN.	UNIT
2401.501	CONCRETE, MIX NO. 1A6	85	CU.YD.
2401.501	CONCRETE, MIX NO. 3T6	280	CU.YD.
2401.501	CONCRETE, MIX NO. 3T60	16	CU.YD.
2401.521	STRUCTURE EXCAVATION (CLASS DE)	140	CU.YD.
2401.521	STRUCTURE EXCAVATION (CLASS WE)	188	CU.YD.
2401.521	STRUCTURE EXCAVATION (CLASS WR)	7	CU.YD.
2401.539	REINFORCEMENT BARS DELIVERED	74850	POUND
2401.540	REINFORCEMENT BARS PLACED	74850	POUND
2402.532	FURNISHING STRUCTURAL STEEL (3305)	20900	POUND
2402.532	FURNISHING STRUCTURAL STEEL (3306)	85670	POUND
2402.533	ERECTING STRUCTURAL METALS	106570	POUND
2476.501	PAINTING METAL STRUCTURES	1	STRUCT.
2402.594	EXPANSION BEARING ASSEMBLIES (TYPE 1)	8	UNIT
2402.594	EXPANSION BEARING ASSEMBLIES (TYPE 2)	4	UNIT
2402.593	FIXED BEARING ASSEMBLIES (TYPE 3)	4	UNIT
2402.546	FLOOR DRAINS (TYPE 1)	12	UNIT
2402.577	STANDARD NAME PLATES	1	UNIT
2452.509	STEEL PILING DELIVERED	8400	POUND
2452.510	STEEL PILING DRIVEN	190	LIN. FT.
2452.520	STEEL TEST PILES IN PLACE, 30 FT. LONG	2	PILE
2452.520	STEEL TEST PILES IN PLACE, 20 FT. LONG	2	PILE
2511.501	RANDOM RIPRAP CLASS A	310	CU.YD.
2031.501	FIELD OFFICE, TYPE A	1	EACH
2123.506	3/4 C.Y. DRAGLINE	10	HOURS

LIST OF SHEETS

1	GENERAL PLAN & ELEVATION
2	BRIDGE LAYOUT
3	DETAILS OF ABUTMENTS
4	ABUTMENT REINFORCEMENT
5	DETAILS OF PIERS #1 & #2
6	SUPERSTRUCTURE DETAILS
7	RDWY. CROSS. SEC. & RAILING DETAILS
8	FRAMING PLAN & BEAM SPAN ELEV.
9	STRUCTURAL STEEL DETAILS
10	DETAILS
11	DETAILS
12	DETAILS
13-13A	DETAILS
14	DETAILS
15	BRIDGE SURVEY
16	BRIDGE SURVEY-PLAN & PROFILE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 9-23-65 Reg. No. 3452

PLANS PREPARED BY
ROBERT E. ERICKSON ENGINEERING CO.
3340 REPUBLIC AVE. ST. LOUIS PARK, MINN.

C.S.A.H. NO. 8 OLMSTED COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

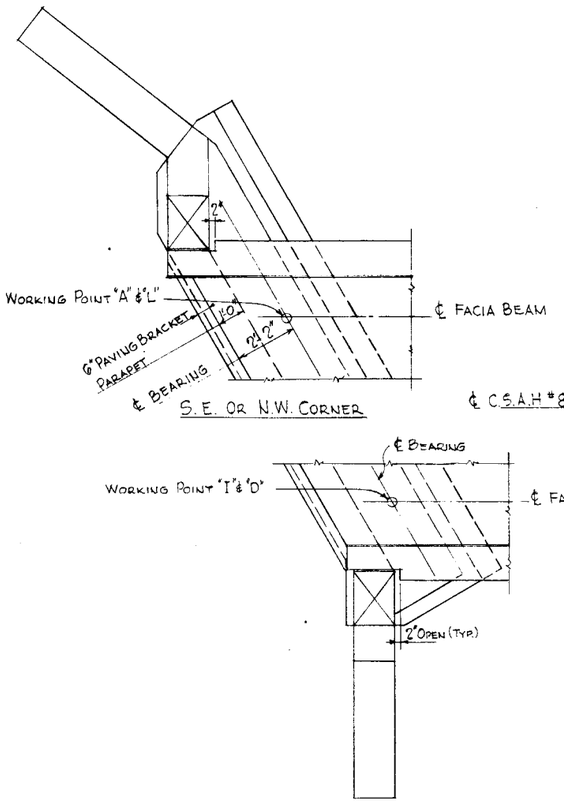
BRIDGE Nº 55512
GENERAL PLAN & ELEVATION

56'-08'-56' CONT. BEAM SPAN
30 FT. ROADWAY
OVER NORTH FORK ROOT R. 3 MI. W. OF STEWARTVILLE
SEC. 31 T. 105 N. R. 14 W.
HIGH FOREST TWP. OLMSTED COUNTY

APPROVED
1-31-66 DATE
ASS'T. BRIDGE ENG'R.

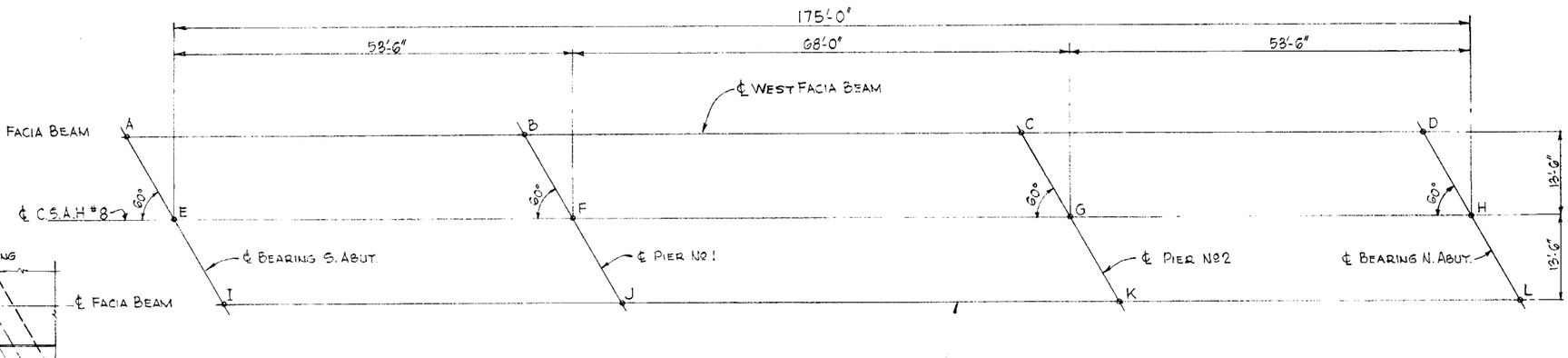
MINN. PROJ. F.A.S. 6226(5) S.P. NO. 55-608-06

SHEET 1 OF 16 SHEETS | 55512 | DR. J.M.G. | RA.



S.E. OR N.W. CORNER

S.W. OR N.E. CORNER



LAYOUT SHOWING WORKING POINTS

NO SCALE

DIMENSIONS BETWEEN WORKING POINTS														ELEVATIONS		
POINT	STATION	A	B	C	D	E	F	G	H	I	J	K	L	TOP OF SLAB EL.	SLAB TO BRG SEAT	BRIDGE SEAT EL.
A	33 + 74.71													1235.79	3.62	1232.17
B	34 + 28.21	53.50'												1235.52	3.77	1231.75
C	34 + 96.21		68.00'											1235.18	3.67	1231.51
D	35 + 49.71			53.50'										1234.92	3.62	1231.30
E	33 + 82.50	15.59'												1235.89		
F	34 + 36.00	62.76'	15.59'			53.50'								1235.62		
G	35 + 04.00		76.98'	15.59'			68.00'							1235.28		
H	35 + 57.50			62.76'	15.59'			53.50'						1235.02		
I	33 + 90.29		46.55'			15.59'								1235.71	3.62	1232.09
J	34 + 43.79	74.17'		58.96'		62.76'	15.59'			53.50'				1235.45	3.77	1231.68
K	35 + 11.79	139.71'			46.55'		76.98'	15.59'			68.00'			1235.11	3.67	1231.44
L	35 + 65.29		139.71'	74.17'				62.76'	15.59'			53.50'		1234.84	3.62	1231.22

PLANS PREPARED BY
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C. S. A. H. Nº 8 OLMSTED COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE Nº 55512
BRIDGE LAYOUT

APPROVED 1-31-66

NORTH ABUT. BRIDGE SEAT

EL. 1236.30 SO. ABUT.
EL. 1235.51 NO. ABUT.

¼" FILL ℄ EL. 1231.28 — ⅜" FILL ℄ EL. 1231.22

FINISH ALL EXPOSED VEGTICAL EDGES OF POSTS TO ½" V. FINISH TOP EDGES OF POSTS TO 1" V. FINISH TOP OF POSTS WITH ⅛" CROWN FOR DRAINAGE.

TOP OF COPING

EL. 1233.99 NO. ABUT.
EL. 1234.78 SO. ABUT.

EL. 1233.91 NO. ABUT.
EL. 1234.86 SO. ABUT.

EL. 1236.38 SO. ABUT.
EL. 1235.43 NO. ABUT.

UNIFORM SLOPE

½" BIT. FELT FULL WIDTH BETWEEN RAILPOSTS

CONST. J.T. 2" x 6" x 1'-0" KEYWAY

CONST. J.T. 2" x 12" x 1'-0" KEYWAY

EL. 1232.09 — ⅜" FILL ℄ — EL. 1232.18 — ¼" FILL ℄

CONTRACTION JOINT SEE DETAIL B260

CONSTRUCTION JOINT 2" x 12" x 39'-0" KEYWAY

EL. 1226.09 SO. ABUT.
EL. 1225.22 NO. ABUT.

2'-7" | 2'-6" | 4'-0" | 3'-8½" | 3'-9½"

10'-2½" SOUTH ABUT. — 10'-3½" NORTH ABUT.

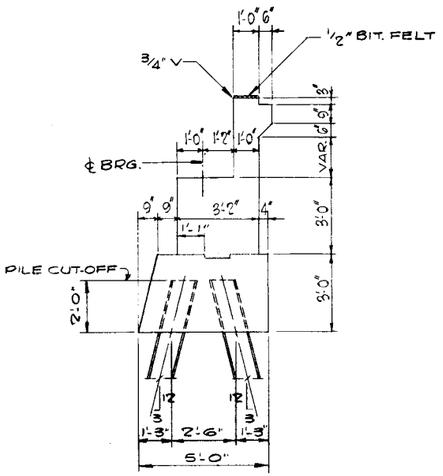
2'-1½" | 2'-1½" | 4'-0" | 4'-0" | 4'-2" | 4'-1"

10'-3½" SOUTH ABUT. — 10'-2½" NORTH ABUT.

43'-1 7/16"

SOUTH — NORTH

ELEVATION
SHOWING SOUTH BRIDGE SEAT
SCALE: ⅜" = 1'-0"



SECTION A-A

B.M. DISK AT S.E. CORNER ONLY

1'-6"

30°

5'-0"

1½"

6'-3"

2'-0"

11" 2'-3" 17'-2 7/16" 19'-6 15/16" 2'-5⅝" 8 7/16"

9⅛" 9⅛" (TYP.)

Wk. Pt. "H" N. Abut. Sta. 35+57.50
Wk. Pt. "E" S. Abut. Sta. 33+82.50

1" CORK

1" CORK

℄ BEARING

5¼" (TYP.)

10½" 5¼"

3½"

4"

2'-6" 1'-8⅛"

1'-6"

1'-7 5/16"

1'-8 5/16"

7'-0"

1'-7½"

1'-6"

2'-6"

9'-0"

10⅜"

1'-0" 3'-1¼" 10'-4¾" 5'-2⅜" 5'-2⅜" 10'-4¾" 7'-9 15/16"

19'-8⅜" 23'-5 1/16"

43'-1 7/16"

4'-6" 4'-6"

PLAN

NOTE:
FOOTING TO BE CONCRETE MIX NO. 1A6. END POSTS TO BE CONCRETE MIX NO. 3T60. REMAINDER OF ABUTMENT TO BE CONCRETE MIX NO. 3T6.

Summary of Quantities For Two Abutments	
Concrete, Mix No. 1A6	44 cu. yd.
Concrete, Mix No. 3Y6	50 cu. yd.
Concrete, Mix No. 3Y60	2 cu. yd.
Reinforcement Bars	5950 lb.
Class D.E. Excavation	140 cu. yd.
① Steel Piling Delivered	8400 lb.
Steel Test Piles in Place 30' Lg.	2
Steel Test Piles in Place 20' Lg.	2
② County Name Plate - Detail No. 2101 - One	
③ B.M. Disk - Std. Plate No. 9300 - One	
Exp. Bearing Assemblies (Type 1) - 8	

① Does not include test piles.
② Bridge No. 55512 FAS 6226-5 dated 1966 County will furnish disk. Payment for placing disk to be included in price bid for other items. See Std. Plate No. 9301 for placing.

PILE NOTE

2 Steel Test Piles 30 Ft. Long - South Abut.
2 " " " 20 " " North " "
Piles Est. Length 25 Ft. South " "
" " " 15 " North " "
4 Steel Piles Req'd. for both Abuts.

All piles to be 10 BP 42
Estimated penetration 1 Ft. less than length given.
All piles to be driven to a bearing of not less than 35 tons per pile. See M.H.D. 2452.3E1.
Piles marked thus H to be battered 3" per Ft. in direction shown.
Pile spacing shown is at bottom of footing.
For splices & tip reinforcement see detail B 221

TEST PILE #2 SOUTH ABUT.
" " #3 NORTH "

43'-1 7/16"

1'-1" 2'-2 1/8" 36'-8 1/4" 2'-4 1/8" 9 15/16"

6'-0½" 15'-6" 15'-2" 6'-0 15/16"

1'-11¼" 1'-9"

Wk. Pt. "D" North Abut.
Wk. Pt. "I" South Abut.

Wk. Pt. "H" North Abut.
Wk. Pt. "E" South Abut.

Wk. Pt. "A" South Abut.
Wk. Pt. "L" North Abut.

2'-0"

6'-3 1/16" 4'-4 9/16" 1'-10½" 1'-3" 2'-6" 1'-3"

2'-6"

℄ C.S.A.H. #8

30°

2" x 6" KEYWAY

1'-4½" 2'-0" 1'-7¾" 5'-0"

19'-8⅜" 23'-5 1/16"

2'-0" 3 SPS. @ 13'-0" = 39'-0" 2'-1 7/16"

TEST PILE #1 SOUTH ABUT.
" " #4 NORTH "

FOOTING PLAN

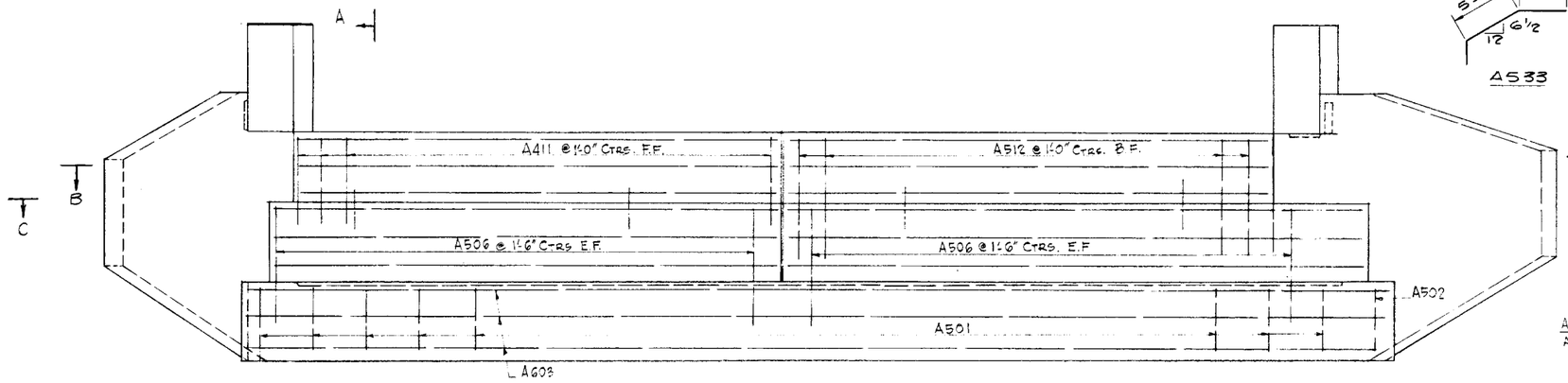
Computed Pile Loads - Tons/Pile	
Dead Load + Earth Pressure	22.40
Live Load	5.85
Total	27.25

State Of Minnesota
Department Of Highways

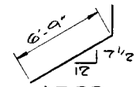
Olmsted County C.S.A.H. 8
Bridge No. 55512

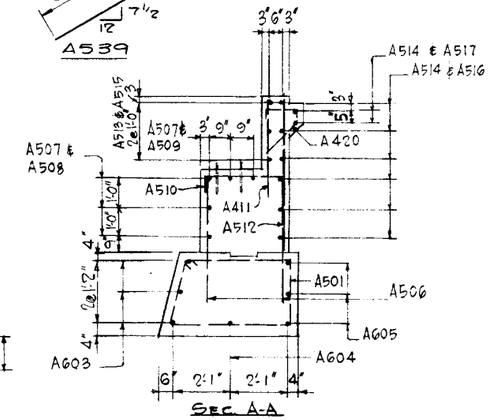
Details Of Abutments

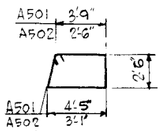
Approved:- 1-31-66

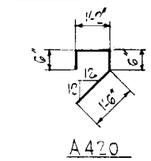


ELEVATION

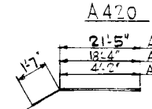


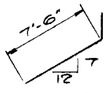










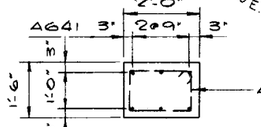


BILL OF REINFORCEMENT BARS FOR 2 ABUTMENTS					
BAR	No.	SIZE	LENGTH	SHAPE	LOCATION
A501	42	5	14'-3"		FOOTING - TIES
A502	2	5	11'-8"		" - TIES
A603	6	6	42'-9"		" - LONGIT. - FRONT
A604	2	6	42'-4"		" - " - BOTTOM
A605	6	6	39'-7"		" - " - BACK
A506	120	5	4'-6"		BRIDGE SEAT - VERT
A507	10	5	19'-2"		" " - HORIZ FRONT
A508	6	5	28'-0"		" " - " - FRONT
A509	4	5	20'-0"		" " - HORIZ. TOP
A510	66	5	3'-10"		" " - TRANSV - TOP
A411	78	4	4'-0"		PARAPET - VERT. - FRONT
A512	76	5	4'-6"		" - " - BACK
A513	6	5	19'-11"		" - HORIZ. - FRONT
A514	16	5	19'-0"		" - " - BACK
A515	6	5	20'-3"		" - " - FRONT
A516	12	5	19'-6"		" - " - BACK
A517	4	5	18'-6"		" - " - PAVING BOLT
A518	6	5	7'-2"		" - HORIZ. - FRONT
A519	12	5	5'-9"		" - " - BACK
A420	38	4	3'-8"	2	PAVING BRACKET
① A521	4	5	12'-9"		7 FT. WING - TOP
A522	2	5	5'-4"		" " - HORIZ.
A523	4	5	7'-4"		" " - "
A524	4	5	9'-9"		" " - "
A525	4	5	8'-0"		" " - "
A526	4	5	10'-0"		" " - "
A527	4	5	6'-0"		" " - "
A528	4	5	4'-6"		" " - "
A529	4	5	10'-3"		" " - BOTTOM
A530	4	5	3'-6"		" " - "
② A531	10	5	8'-10"		" " - VERT.
A532	14	5	7'-0"		" " - "
A533	4	5	11'-1"		5 FT. WING - TOP
A534	2	5	6'-3"		" " - HORIZ.
A535	10	5	8'-0"		" " - "
A536	10	5	9'-9"		" " - "
② A537	8	5	7'-0"		" " - "
A538	4	5	3'-6"		" " - BOTTOM
A539	4	5	9'-6"		" " - "
② A540	10	5	14'-3"		" " - VERT
A641	24	6	6'-0"		END POST
A342	24	3	6'-4"	□	" "
A543	4	5	9'-8"		5 FT. WING - VERT.
A544	2	5	7'-8"		7 " "
A545	2	5	7'-2"		" " "
A546	2	5	7'-9"		5 " "

② BEND IN FIELD
CUT 2 FROM 1

E.F. = EACH FACE
F.F. = FRONT FACE
B.F. = BACK FACE

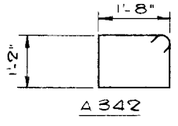
NOTE:
REINF. FOR NO. ABUT. NOT TO BE ORDERED UNTIL FOOTING ELEV. HAS BEEN DETERMINED IN FIELD.

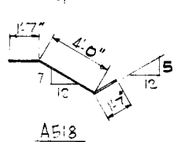


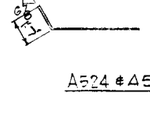
SECTION THRU END POST

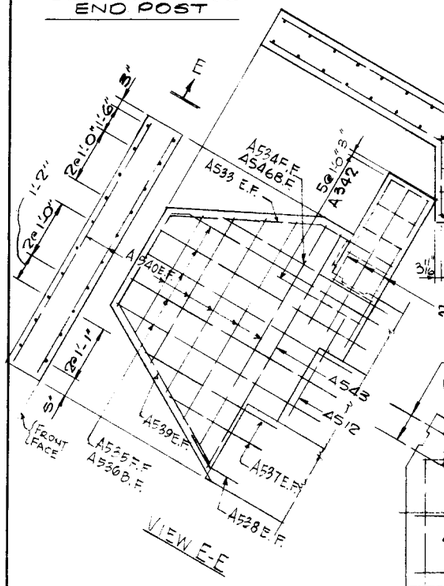
NOTE:
BRIDGE SEAT REINF. SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR BOLTS. THE SUPERSTRUCTURE BEAMS SHALL BE ERECTED IN FINAL POSITION PRIOR TO DRILLING FOR & PLACING ANCHOR BOLTS.

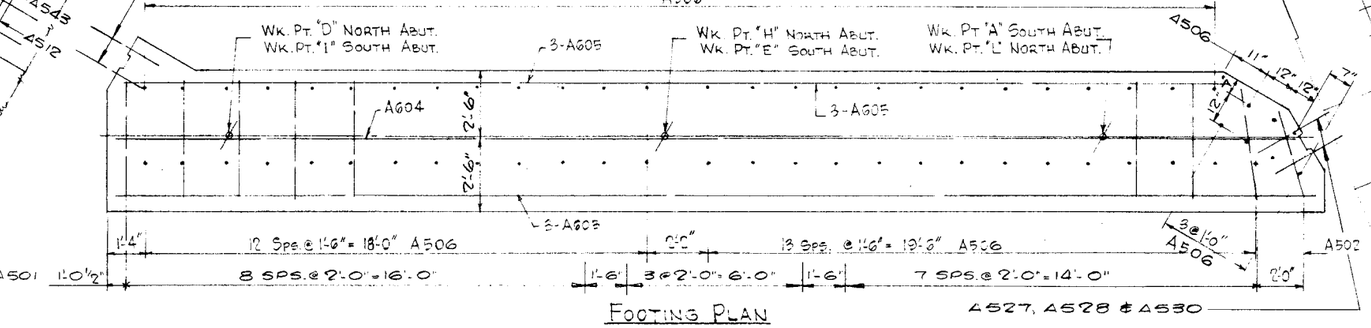
SECTION B-B

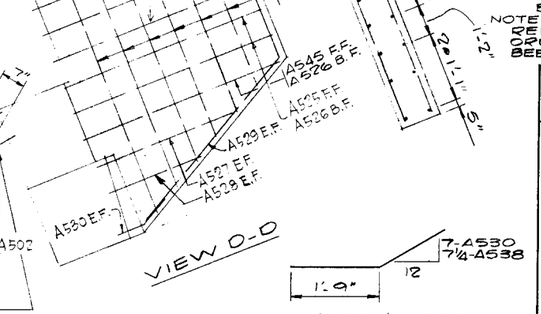












NOTE:
REINF. FOR NO. ABUT. NOT TO BE ORDERED UNTIL FOOTING ELEV. HAS BEEN DETERMINED IN FIELD.

A527, A528 & A530

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

OLMSTED COUNTY C.S.A.H. 8

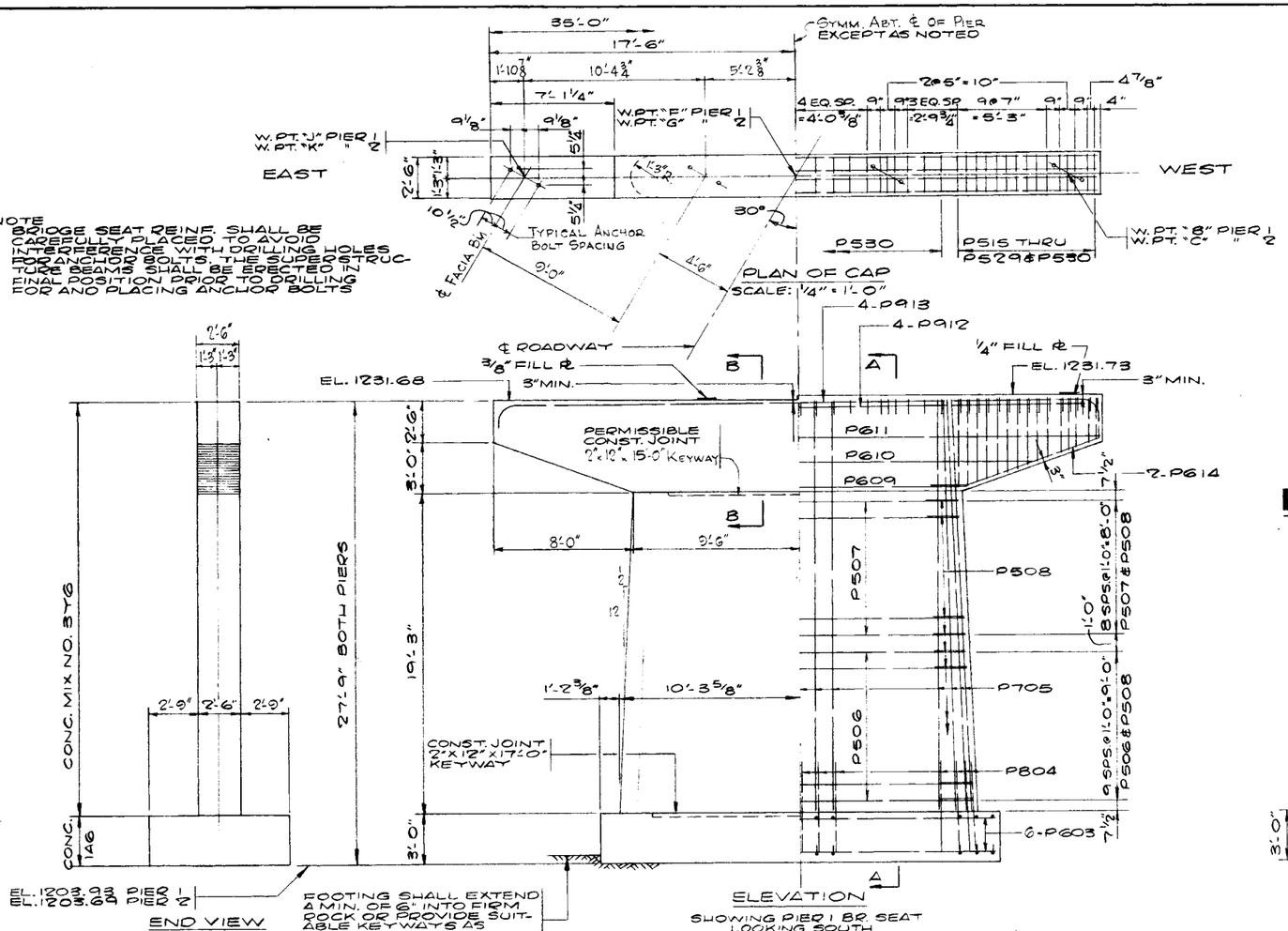
BRIDGE No. 55512

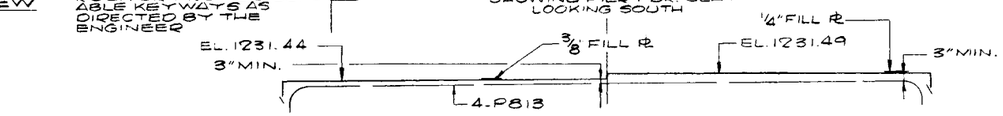
ABUTMENT REINFORCEMENT

APPROVED 1-31-66

DES. J.M.G.
R.A.

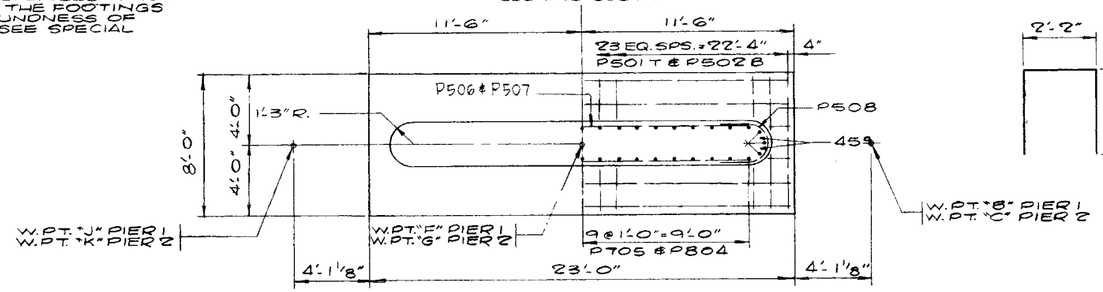
NOTE
BRIDGE SEAT REINF. SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR BOLTS. THE SUPERSTRUCTURE BEAMS SHALL BE ERECTED IN FINAL POSITION PRIOR TO DRILLING FOR AND PLACING ANCHOR BOLTS



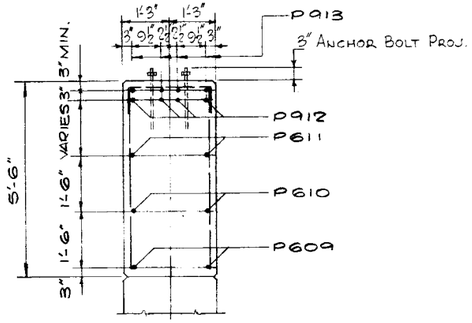


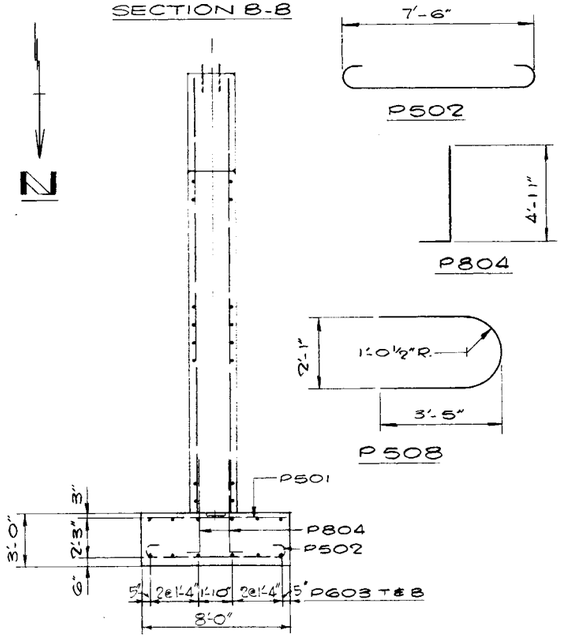
Pier 2 Bridge Seat
Looking South

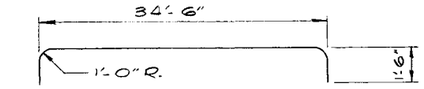
NOTE:
ENGINEER MAY ORDER CHANGES WHICH WILL RAISE OR LOWER THE FOOTINGS DEPENDING ON THE SOUNDNESS OF ROCK ENCOUNTERED. SEE SPECIAL PROVISIONS.

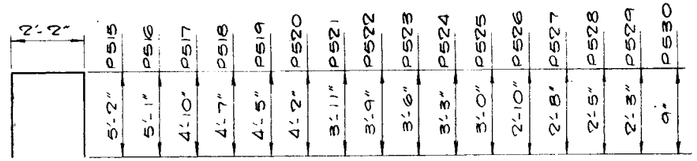


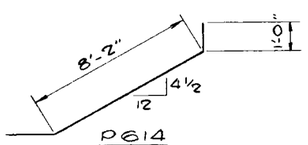
Footing Plan











Bill Of Reinforcement Bars For Two Piers					
Bar	No.	Size	Length	Shape	Location
① P501	48	5	7'-6"	STR.	FOOTING
① P502	48	5	8'-8"	BENT	"
① P603	24	6	22'-6"	STR.	"
① P804	88	8	6'-0"	BENT	DOWELS
① P705	88	7	24'-8"	STR.	SHAFT-VERT.
① P506	40	5	18'-6"	"	" HORZ.
P507	36	5	17'-6"	"	" "
P508	76	5	8'-0"	BENT	" ENDS
P609	4	6	19'-4"	STR.	CAP
P610	4	6	27'-4"	"	"
P611	4	6	34'-6"	"	"
P912	8	9	33'-2"	"	"
P913	8	9	36'-8"	BENT	"
P614	8	6	11'-0"	BENT	"
P515	4	5	12'-6"	"	"
P516	4	5	12'-4"	"	"
P517	4	5	11'-10"	"	"
P518	4	5	11'-4"	"	"
P519	4	5	11'-0"	"	"
P520	4	5	10'-6"	"	"
P521	4	5	10'-0"	"	"
P522	4	5	9'-8"	"	"
P523	4	5	9'-2"	"	"
P524	4	5	8'-8"	"	"
P525	4	5	8'-2"	"	"
P526	4	5	7'-10"	"	"
P527	4	5	7'-6"	"	"
P528	4	5	7'-0"	"	"
P529	4	5	6'-8"	"	"
P830	102	5	3'-8"	"	"

① DO NOT ORDER THESE BARS BEFORE FOOTING ELEVATIONS HAVE BEEN ESTABLISHED IN THE FIELD.

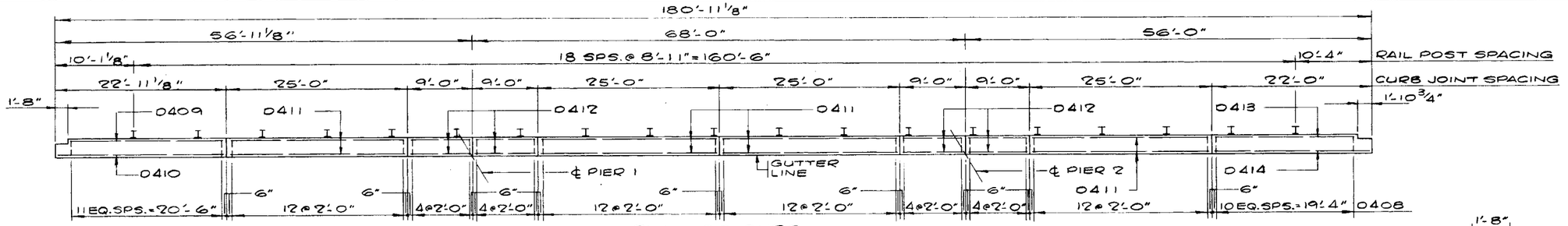
Summary Of Quantities For Two Piers		
Concrete Mix No. 1A6	41	CU.YD.
Concrete Mix No. 3Y6	105	CU.YD.
Reinforcement Bars	13870	LB.
Structure Excavation (Class We)	188	CU.YD.
Structure Excavation (Class Wr)	7	CU.YD.
Exp. Brg. Assemblies (Type 2) - Pier 1	4	
Fix. Brg. Assemblies (Type 3) - Pier 2	4	

Computed Rock Pressure - K/Sq. Ft.	
Dead Load	2.76
Live Load	0.79
Overturning	2.57
Total	6.12

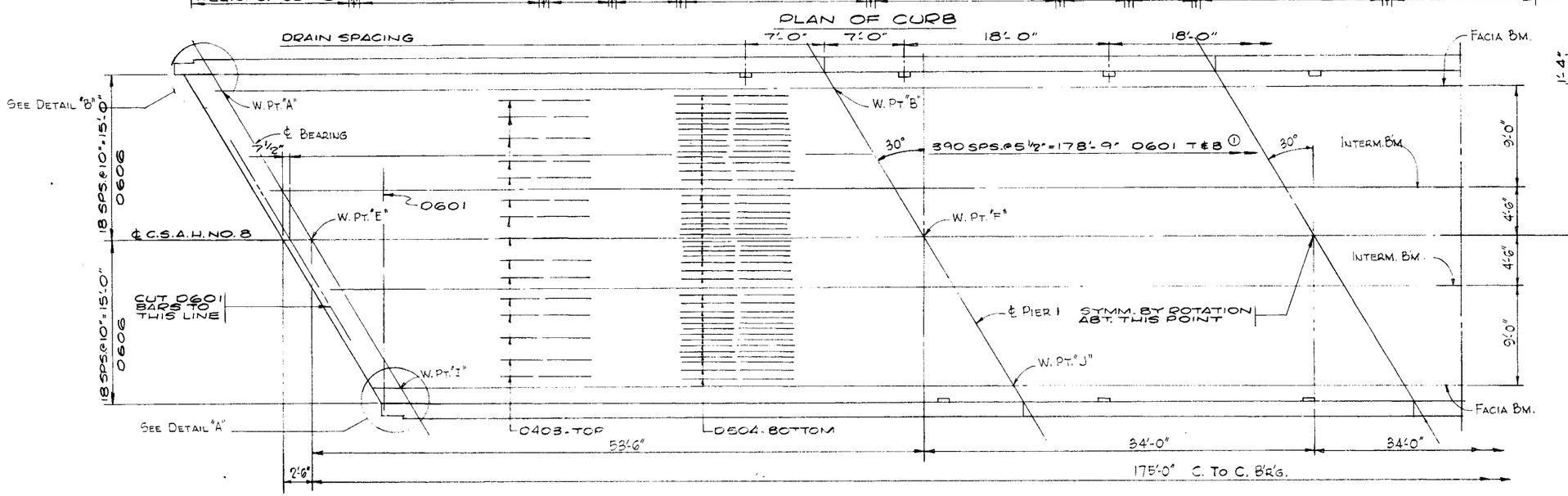
State Of Minnesota
Department Of Highways

Olmsted County C.S.A.H. 8
Bridge No. 55512
Details Of Piers #1 & #2

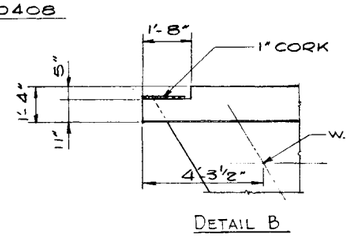
Approved: 1-31-66



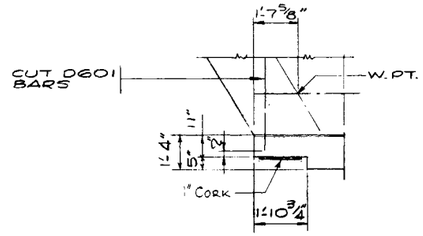
PLAN OF CURB



HALF PLAN



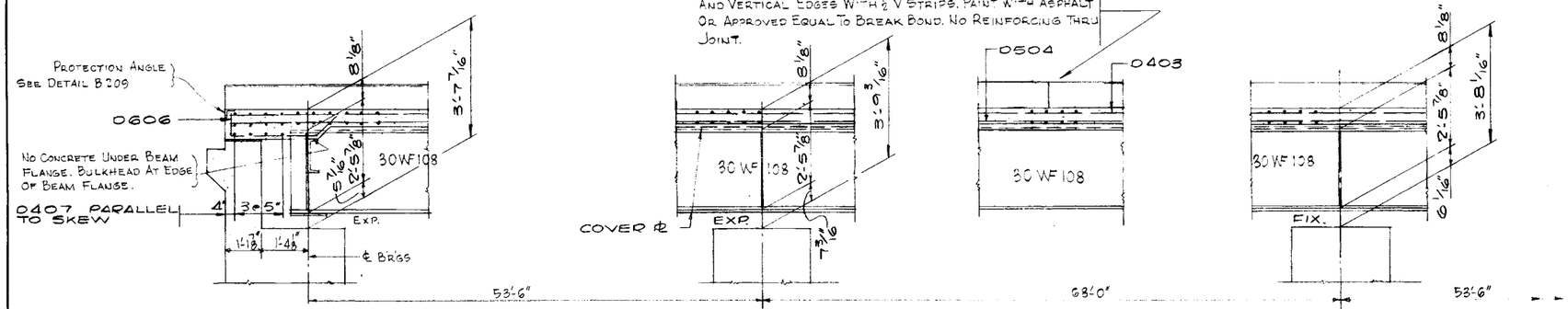
DETAIL B



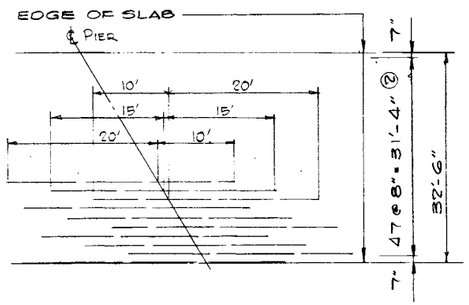
DETAIL A

SEAL TOP AND FRONT FACE OF JOINTS IN CURBS WITH CONCRETE JOINT SEALER. FINISH TOP OF ALL CURB JOINTS WITH SMALL RADIUS EDGER AND VERTICAL EDGES WITH ½" V STRIPS. PAINT WITH ASPHALT OR APPROVED EQUAL TO BREAK BOND. NO REINFORCING THRU JOINT.

① A CERTAIN NUMBER OF THESE BARS ARE TO BE CUT TWO FROM ONE TO FIT SKEWED ENDS OF BRIDGE.



SOUTH ABUT. | PIER NO 1 | SLAB CONST. JT. & CURB DEFL. JT | PIER NO 2



PLACING DIAGRAM FOR D605 REINF'G BARS OVER PIERS - 2½" BELOW TOP OF SLAB.

② SPACING MAY VARY TO MISS MAIN REINFORCEMENT

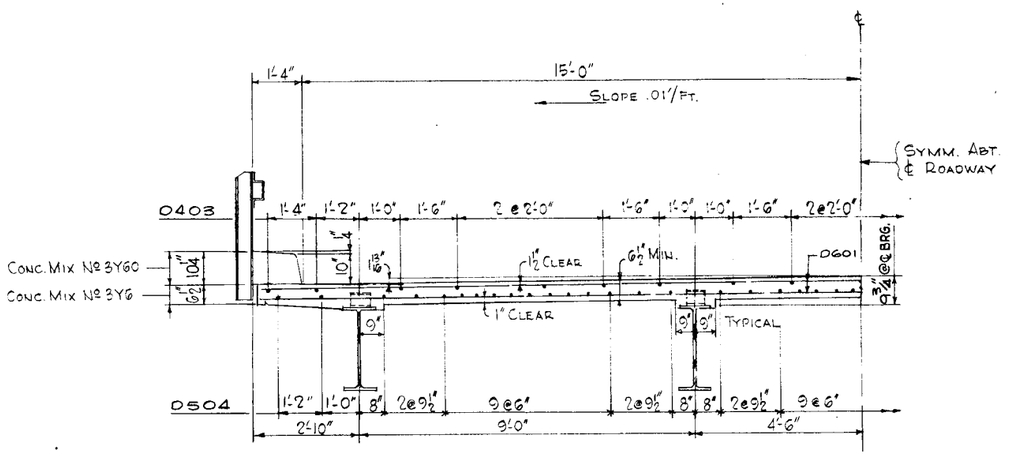
LONGITUDINAL SECTION AT FACIA BEAM

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

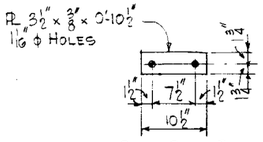
OLMSTED COUNTY C.S.A.H. 8
BRIDGE NO 55512

SUPERSTRUCTURE DETAILS

APPROVED: 1-31-66

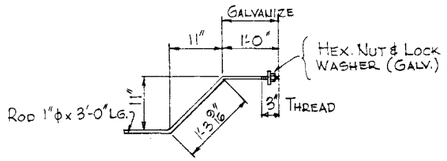


HALF TYPICAL CROSS-SECTION OF ROADWAY



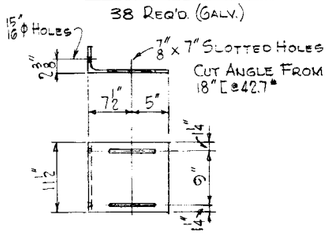
RAIL POST PLATES P1

38 REQ'D. (GALV.)



RAIL POST ANCHORS T-1

76 REQ'D. GALV. AS SHOWN PER M.H.D. 3392 - INCL. IN WT. OF STRUCT. STEEL - M.H.D. 3305



RAIL CONNECTOR ANGLE P2

4 REQ'D. (GALV.)

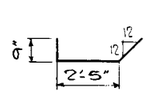
RAILING NOTE:-

RAILING TO BE 18" x ¼" U.M. PLATE BENT TO DIMENSIONS SHOW WITH ½" INSIDE RADIUS BENDS. RAILING TO BE CONTINUOUS FOR MINIMUM OF TWO PANELS AND A MAX. OF THREE PANELS. LEAVE ⅝" CLEAR OPENINGS AT JOINTS BETWEEN ENDS OF RAILS. FABRICATOR WILL BE PERMITTED TO SPLICE CONTINUOUS BENT PLATE RAILINGS AT THE ℄ OF RAIL POSTS USING A BUTT WELD GROUND SMOOTH. ALL RAILINGS, POSTS, BOLTS AND ALL FITTINGS TO BE MEASURED AND PAID FOR AS M.H.D. 3305 STRUCT. STEEL. GALVANIZE STRUCTURAL STEEL ITEMS AFTER FABRICATION PER M.H.D. 3394 UNLESS OTHERWISE NOTED. GALVANIZED ANCHORS T1, BOLTS, NUTS & WASHERS AS PER M.H.D. 3392.

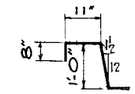
BILL OF REINFORCEMENT BARS FOR SUPERSTRUCTURE

	BAR	Nº	SIZE	LENGTH	SHAPE	LOCATION
	0601	782	6	32'-2"	STR.	SLAB - TRANS.
④	0403	114	4	31'-0"	STR.	SLAB LONG.
⑤	0504	230	5	37'-3"	"	" "
	0605	96	6	30'-0"	"	" OVER PIERS
	0606	74	6	4'-0"	BENT	" ENDS
	0407	8	4	36'-2"	STR.	" "
	0408	190	4	3'-5"	BENT	CURB - TIES
	0409	2	4	21'-0"	STR.	" LONG.
	0410	2	4	22'-8"	"	" "
	0411	16	4	24'-8"	"	" "
	0412	16	4	8'-8"	"	" "
	0413	2	4	19'-10"	"	" "
	0414	2	4	21'-8"	"	" "

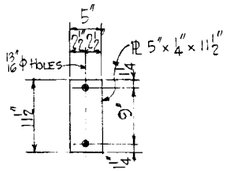
④ MIN. LAP 1'-3"
⑤ MIN. LAP 1'-7"



0606



0408



RAIL CONNECTOR PLATE P3

4 REQ'D. (GALV.)

SUMMARY OF QUANTITIES FOR SUPSTRUCTURE

CONCRETE, MIX Nº 3Y6	125	CU.YD.
CONCRETE, MIX Nº 3Y60	14	CU.YD.
REINFORCEMENT BARS	55030	LB.
STRUCTURAL STEEL (3306)	85670	LB.
STRUCTURAL STEEL (3305)	20900	LB.
FLOOR DRAINS (TYPE I)		12
① PREFORMED JOINT FILLER (SEE LIST)		
② PROTECTION ANGLE		

① TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
② INCLUDE IN STRUCTURAL STEEL 3305

LIST OF PREFORMED BITUMINOUS JOINT FILLER

2 PCS. 1'-0" x ½" x 37'-0" TOP OF PARAPET

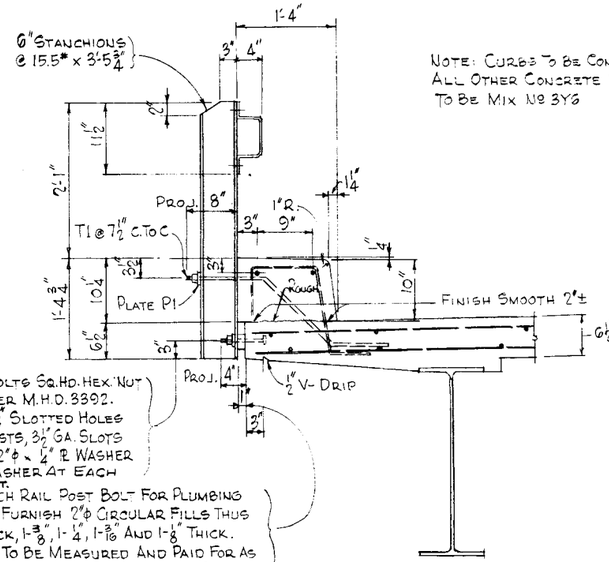
LIST OF PREFORMED CORK JOINT FILLER

4 PCS. 1'-6" x 1" x 1'-10" ABUT. RECESS FOR SLAB

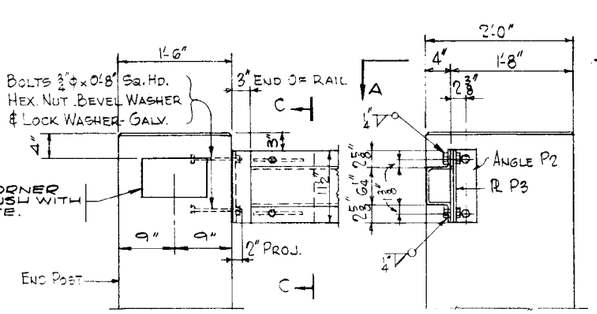
TRIM JOINT FILLER AS REQ'D. TO FACE OF CONCRETE OR TO DEPTH OF VEE WHERE CORNERS HAVE BEEN VEED IN THE FIELD.

CORK SHALL COMPLY WITH A.A.S.H.O. SPEC. M 153 TYPE I. BIT. FELT SHALL COMPLY WITH M.H.D. 3701. SECURE CORK JOINT FILLER WITH 2½" LG. 11 GA. COPPER NAILS ABT. 18" CTRS. NAILS TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

THE JOINT FILLER LISTS ARE FOR THE CONTRACTORS CONVENIENCE ONLY, ANY ADDITIONAL JOINT FILLER REQ'D AS SHOWN ON THE PLANS, SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.

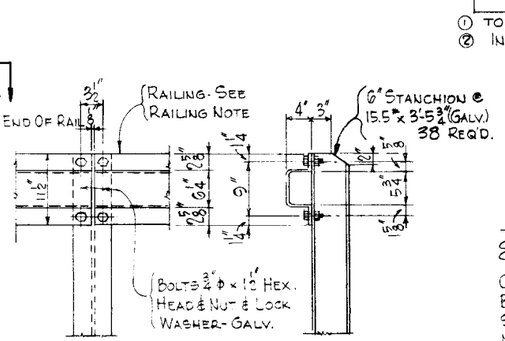


NOTE: CURBS TO BE CONCRETE MIX Nº 3Y60
ALL OTHER CONCRETE IN SUPERSTRUCTURE TO BE MIX Nº 3Y6

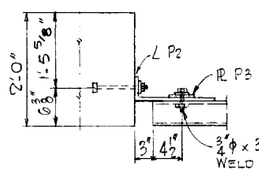


INSIDE ELEVATION

SEC. C-C



DETAIL OF RAILING CONNECTION TO STEEL INTERM. POSTS



¾" ϕ x 3" LG. HEX. HD. & 2 NUTS & LOCK WASHER
WELD NUT TO RAILING BEFORE GALV.
LOCK 2 NUTS AND ALLOW ⅛" CLEAR FOR EXPANSION.

SEC. A-A

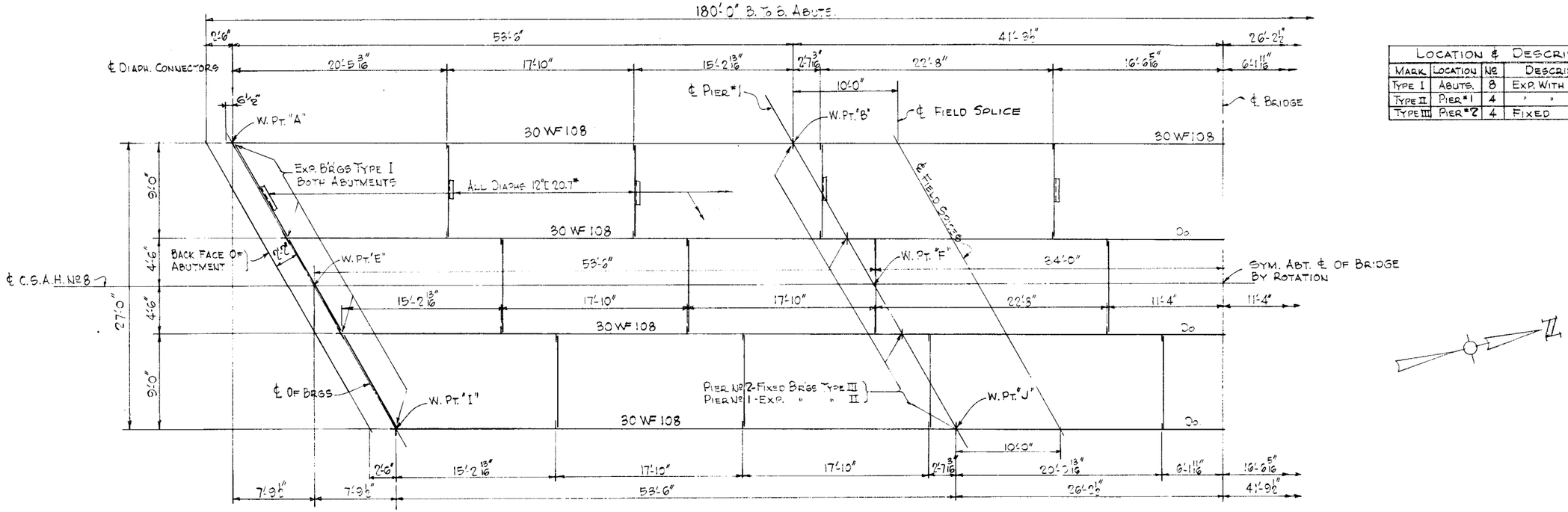
DETAIL OF RAILING CONNECTION TO CONCRETE END POSTS

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

OLMSTED COUNTY C.S.A.H. 8
BRIDGE Nº 55512

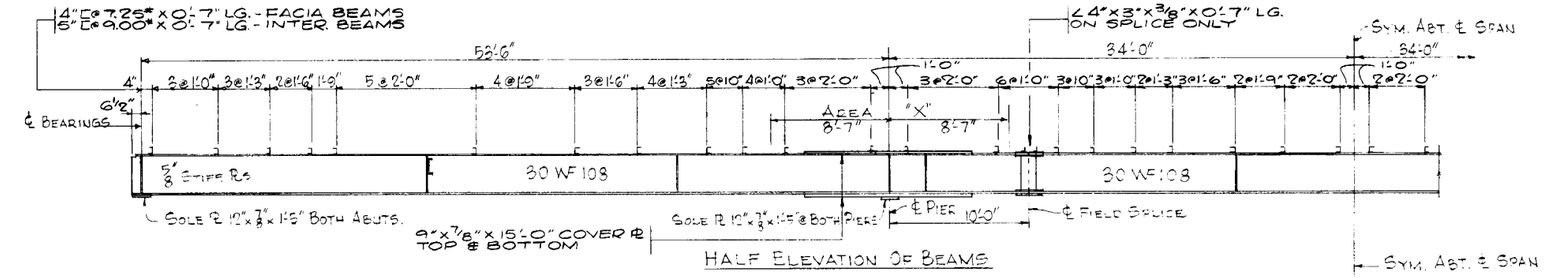
ROADWAY CROSS-SECTION & RAILING DETAILS

1-31-66

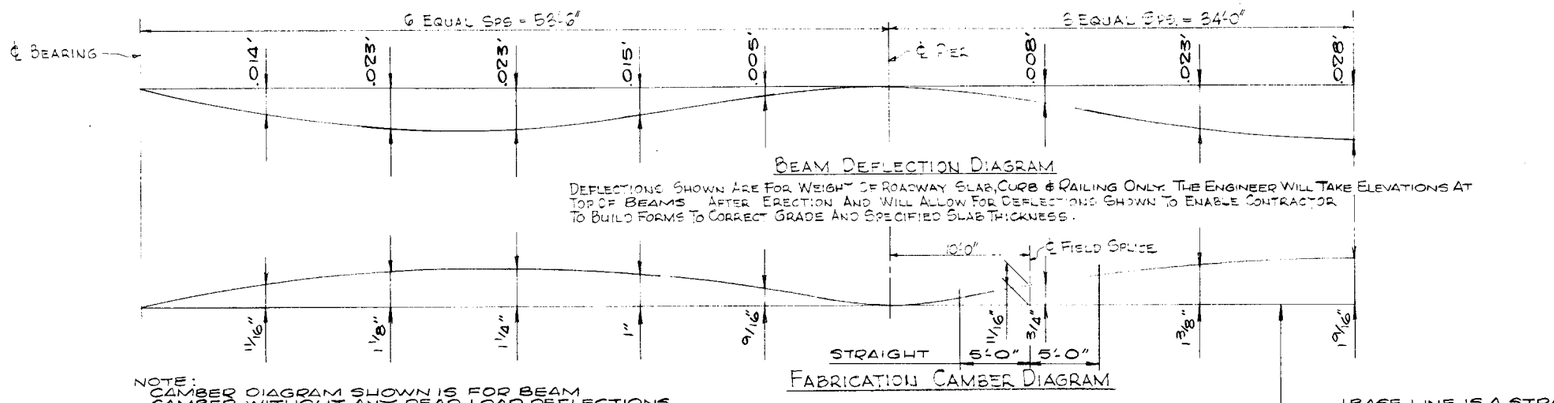


HALF STEEL FRAMING PLAN

LOCATION & DESCRIPTION OF BEARINGS						
MARK	LOCATION	Nº	DESCRIPTION	R Nº	LOAD	HEIGHT
TYPE I	ABUTS.	8	EXP. WITH GUIDE BARS	B138	120	4 7/16"
TYPE II	PIER #1	4	" " " "	B138	160	5 5/16"
TYPE III	PIER #2	4	FIXED	B137	160	4 3/16"



HALF ELEVATION OF BEAMS



BEAM DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE FOR WEIGHT OF ROADWAY SLAB, CURB & RAILING ONLY. THE ENGINEER WILL TAKE ELEVATIONS AT TOP OF BEAMS AFTER ERECTION AND WILL ALLOW FOR DEFLECTIONS SHOWN TO ENABLE CONTRACTOR TO BUILD FORMS TO CORRECT GRADE AND SPECIFIED SLAB THICKNESS.

FABRICATION CAMBER DIAGRAM

NOTE:
CAMBER DIAGRAM SHOWN IS FOR BEAM CAMBER WITHOUT ANY DEAD LOAD DEFLECTIONS. DEAD LOAD DEFLECTIONS DUE TO WEIGHT OF STEEL ONLY ARE 16 % OF DEFLECTIONS SHOWN ON DEFLECTION DIAGRAM FOR WEIGHT OF CONCRETE ONLY.

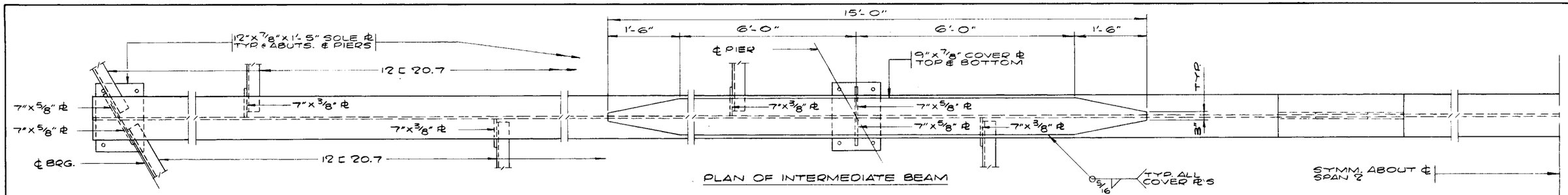
BASE LINE IS A STRAIGHT LINE BETWEEN BEARINGS

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

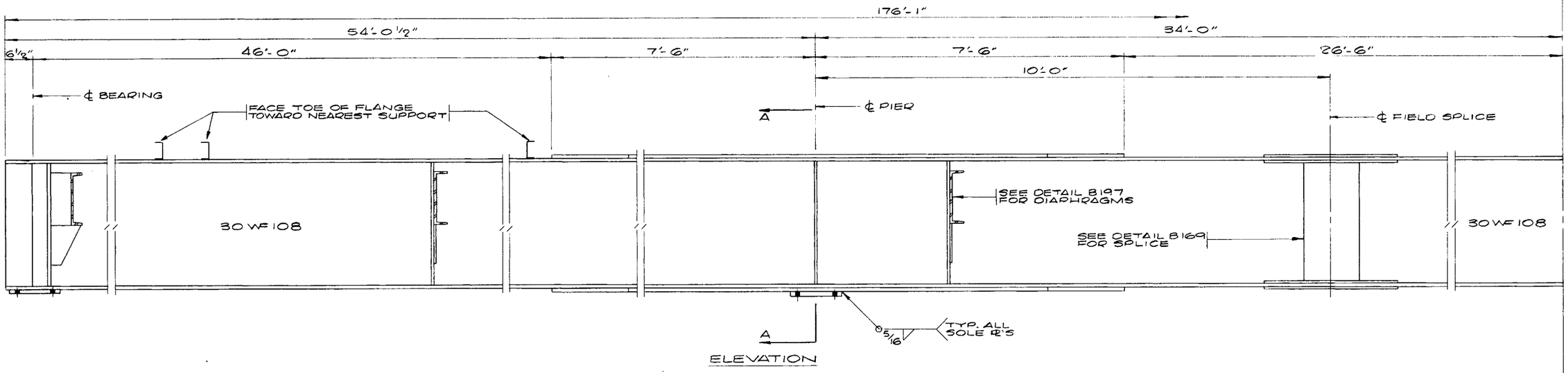
OLMSTED COUNTY C.S.A.H. 8
BRIDGE Nº 55512

FRAMING PLAN & BEAM SPAN ELEVATION

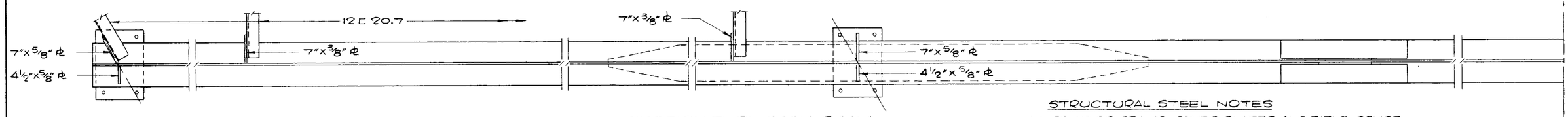
1-31-66



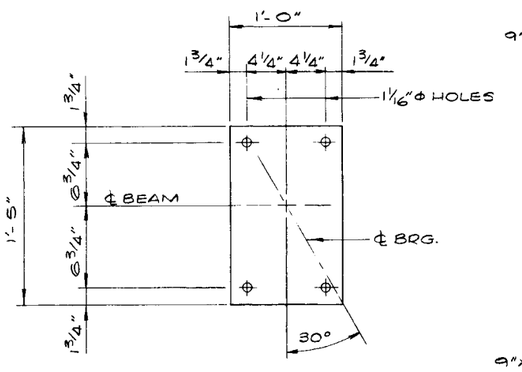
PLAN OF INTERMEDIATE BEAM



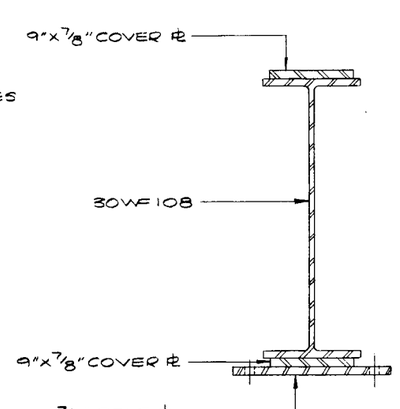
ELEVATION



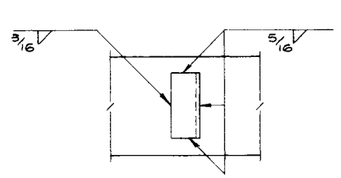
SECTION THRU FACIA BEAM



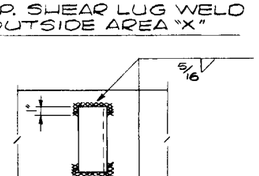
DETAIL OF 7/8" SOLE ℘



SECTION A-A



TYP. SHEAR LUG WELD OUTSIDE AREA "X"



TYP. SHEAR LUG WELD IN AREA "X"

STRUCTURAL STEEL NOTES

ALL 30 WF 108 BEAMS, COVER PLATES AND FIELD SPLICE MATERIAL TO BE STRUCTURAL STEEL PER M.H.D. 3306.
ALL OTHER STRUCTURAL STEEL ITEMS TO BE STRUCTURAL STEEL PER M.H.D. 3308 UNLESS OTHERWISE NOTED.
ALL FIELD CONNECTIONS SHALL BE MADE USING 7/8" RIVETS OR 7/8" HIGH STRENGTH BOLTS, EXCEPT AS NOTED. RIVETS SHALL CONFORM TO M.H.D. 3316 TYPE I. HIGH STRENGTH BOLTS SHALL CONFORM TO M.H.D 3391-8, STYLE II.
15/16"Φ HOLES EXCEPT AS NOTED.
SPECIAL REAMING PER M.H.D. 2471.3E1b WILL BE REQUIRED FOR THE RIVETED BEAM SPLICES. HOLES SHALL BE SUBPUNCHED OR DRILLED 1 1/16"Φ AND REAMED TO 15/16"Φ IN ASSEMBLED POSITION. THE SECTION TO BE ASSEMBLED FOR REAMING SHALL BE FROM ABUTMENT TO ABUTMENT. ALL OTHER HOLES MAY BE FULL PUNCHED PER M.H.D. 2471.3E1a.
START COVER PLATE WELDS AT CENTER OF PLATE AND PROCEED SIMULTANEOUSLY ON BOTH SIDES OF PLATE TOWARDS EITHER END. DO NOT TACK WELD. USE "C" CLAMPS AND RELEASE CLAMPS AS WELDING PROCEEDS, TO RELIEVE STRESS.

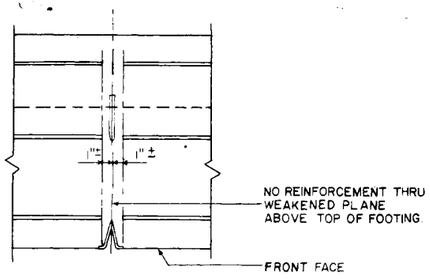
PAINT ALL STRUCTURAL STEEL EXCEPT GALVANIZED MATERIALS AS FOLLOWS:
SHOP COAT, RED LEAD . . . . . M.H.D. 3506
FIRST FIELD COAT, ALUMINUM . . . M.H.D. 3527
SECOND FIELD COAT, ALUMINUM . . . M.H.D. 3528

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

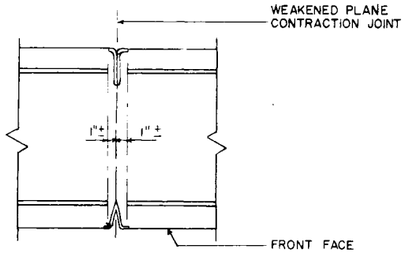
OLMSTED COUNTY C.S.A.H.8
BRIDGE NO 55512

STRUCTURAL STEEL
DETAILS

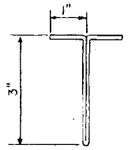
1-31-66



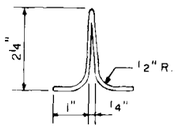
SECTION A-A



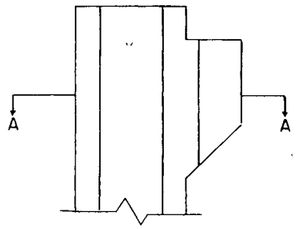
SECTION B-B



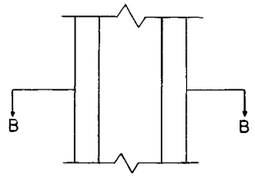
BACK STRIP
8" WIDE



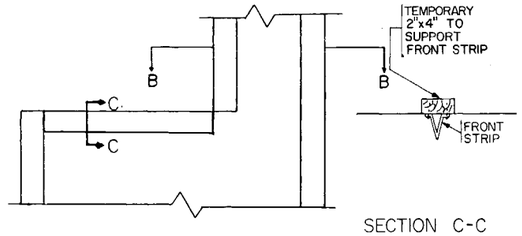
FRONT STRIP
6" WIDE



SECTION THRU PAVING BRACKET

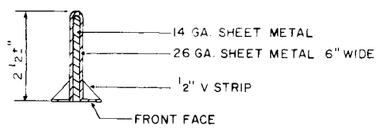


SECTION THRU WALL



SECTION C-C

SECTION THRU BRIDGE SEAT ON PARAPET ABUTMENT



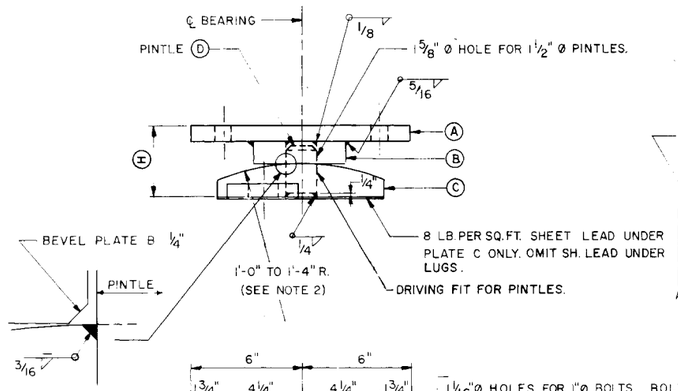
ALTERNATE FRONT STRIP

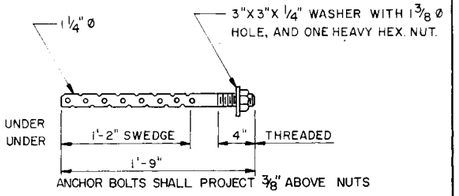
NOTES
METAL STRIP TO BE 26 GA. GALVANIZED SHEET METAL. M.H.D. 3338
FASTEN TO FORMS WITH $\frac{7}{8}$" ROOFING NAILS ABOUT 6" CENTERS.
FRONT STRIP TO BE REMOVED WITH FORMS. BACK STRIP REMAINS IN PLACE. ALL METAL IN FRONT FACE TO BE OILED FOR EASY REMOVAL.
COST OF FORMING JOINT TO BE INCLUDED IN PRICE 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 $\frac{5}{16}$". THE SEPARATION OF THE HORIZONTAL REINFORCEMENT BARS SHALL BE NOT LESS THAN 1½" 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.

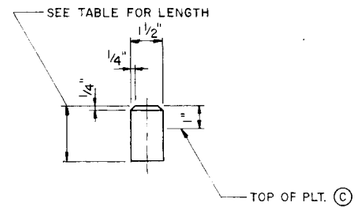
STRIPS TO BE REMOVED SHALL BE OILED OR GREASED AS NECESSARY TO PERMIT REMOVAL WITHOUT SPALLING THE CONCRETE.

APPROVED SEPT. 5 1963	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS 8-26-64 9-1-65	DETAIL NO.
BRIDGE ENGINEER	CONTRACTION JOINT		B260





ANCHOR BOLT
(GALV. PER M.H.D. 3392)



PINTLE D

LOAD KIPS	A	B	C ^	D	H (MIN.)	CODE
200	12"X1"X1'-5"	5"X1¼"X1'-3"	12"X2½"X1'-5"	1½"ØX3¼"	4 1/16"	B137-200
160	12"X1"X1'-5"	5"X1¼"X1'-3"	10"X2"X1'-5"	1½"ØX2¾"	4 3/16"	B137-160
120	12"X⅞"X1'-5"	5"X1¼"X1'-3"	8"X1½"X1'-5"	1½"ØX2¼"	3 9/16"	B137-120

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

NOTES:
1 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 DIAPHRAMS IN PLACE.
PINTLE D SHALL COMPLY WITH M.H.D. 3314, TYPE II.
ALL OTHER STRUCTURAL STEEL AS PER M.H.D. 3305.
2 MACHINE TOP OF PLATE C TO RADIUS SHOWN AND TO 250 MICRO.
PLATES SHALL BE FLAT AFTER WELDING AND FABRICATION.
GALVANIZE AFTER FABRICATION PER M.H.D. 3394, NO PAINT.
PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

APPROVED MAY 17 1960	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS 5/11/60-A 9/26/61-B 5/22/63 8/28/63 6/15/64 4/28/65	DETAIL NO.
A. E. LaBonte BRIDGE ENGINEER	FIXED BEARING ASSEMBLY FOR BEAMS WITH 9" TO 10½" FLANGE		B137

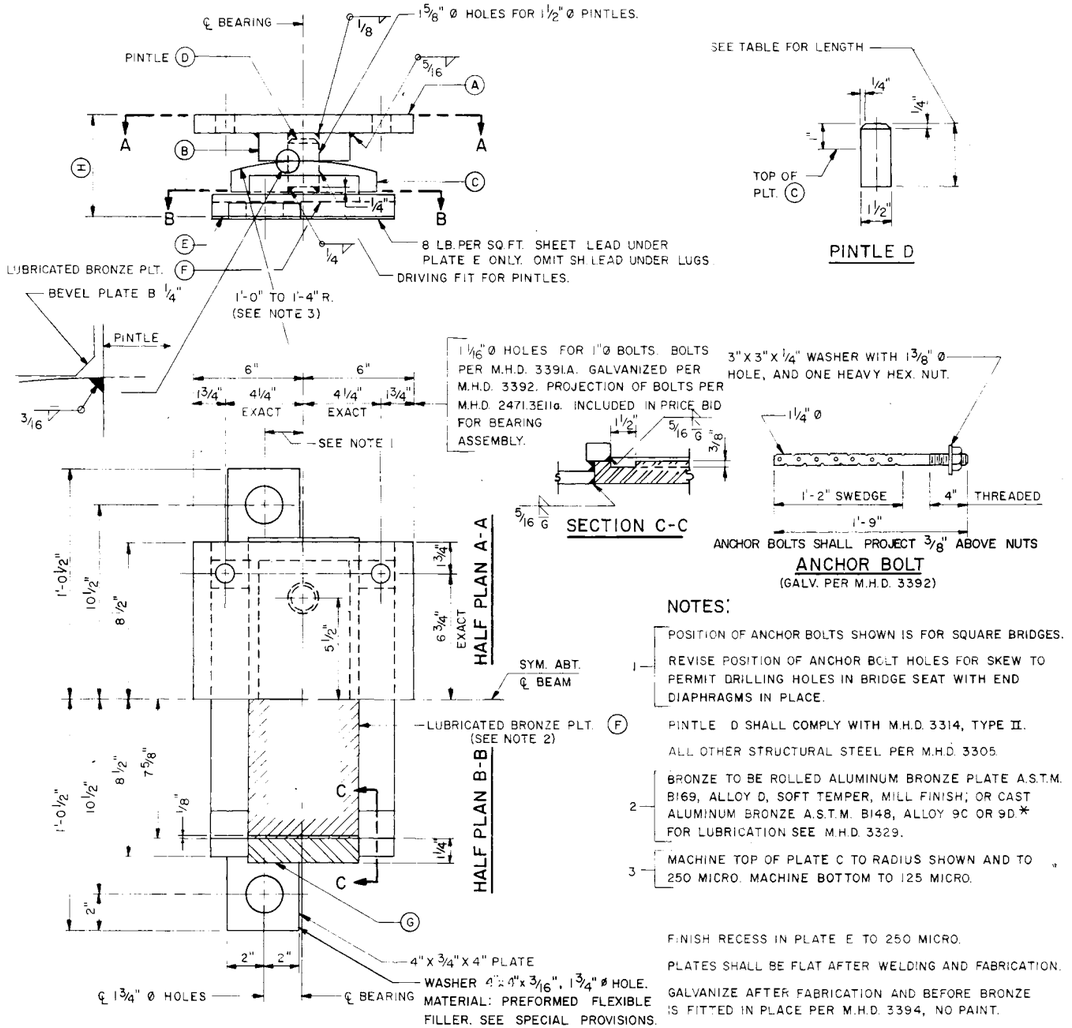
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No. .....

DETAILS

APPROVED .....

Sheet No. of Sheets



NOTES:

1. 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.
2. PINTLE D SHALL COMPLY WITH M.H.D. 3314, TYPE II. ALL OTHER STRUCTURAL STEEL PER M.H.D. 3305. 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.
3. 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.

LOAD KIPS	A	B	C△	D	E	F*	G	H (MIN.)	CODE
200	12" X 1" X 1'-5"	5" X 1 1/4" X 1'-3"	9" X 2" X 1'-3"	1 1/2" ø X 2 3/4"	12" x 1 1/2" x 1'-5"	7" x 1/2 x 1'-3"	1 1/4" x 1" x 7"	5 13/16"	B138-200
160	12" X 1" X 1'-5"	5" X 1 1/4" X 1'-3"	8" x 1 3/4" x 1'-3"	1 1/2" ø X 2 1/2"	10" x 1 1/4" x 1'-5"	6" x 1/2" x 1'-3"	1 1/4" x 1" x 6"	5 5/16"	B138-160
120	12" X 7/8" X 1'-5"	5" X 1 1/4" X 1'-3"	6" x 1 1/4" x 1'-3"	1 1/2" ø X 2"	8" x 1" x 1'-5"	4" x 1/2" x 1'-3"	1 1/4" x 1" x 4"	4 7/16"	B138-120

* 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.

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

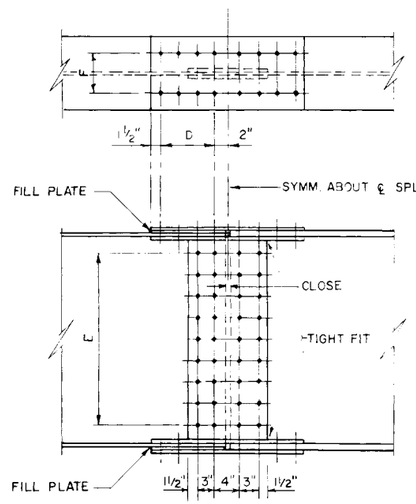
A. E. LaBonte
BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

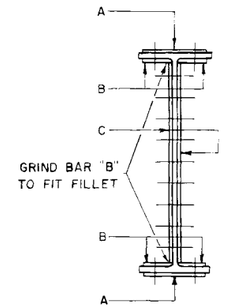
EXPANSION BEARING ASSEMBLY FOR BEAMS WITH 9" TO 10 1/2" FLANGE WITH GUIDE BARS

REVISIONS
5/11/60-A
9/26/61-B
5/22/63
8/28/63
3/11/64
6/15/64
4/28/65

DETAIL NO. B138



NOTES:
SPLICE DESIGN IS FOR STRUCTURAL STEEL M.H.D. 3306.
SPLICE DEVELOPS 100% OF NET SECTION.
USE 7/8" RIVETS PER M.H.D. 3316, TYPE I OR 7/8" HIGH STRENGTH BOLTS PER M.H.D. 2471.3 E11c, M.H.D. 3391B STYLE II, AND SPECIAL PROVISIONS.
IF RIVETS ARE USED, FILL PLATES THICKER THAN 1/4" SHALL BE DEVELOPED WITH ADDITIONAL RIVETS.
WHEN BEAMS ARE OF UNEQUAL WEIGHT, USE DESIGN FOR LIGHTER BEAM.



SIZE	A	B	C	D	E	F	FILL PL
21 WF 55	8 X 5/16	3 3/4 X 5/16	13 X 5/16	2 SPS. @ 3"	5 SPS. @ 3"	5"	
21 WF 62	8 X 3/8	3 3/4 X 7/16	13 X 5/16	2 SPS. @ 3"	5 SPS. @ 3"	5"	
21 WF 68	8 X 3/8	3 3/4 X 9/16	13 X 5/16	2 SPS. @ 3"	5 SPS. @ 3"	5"	
21 WF 73	8 X 7/16	3 3/4 X 9/16	13 X 5/16	2 SPS. @ 3"	5 SPS. @ 3"	5"	
21 WF 82	9 X 7/16	4 X 9/16	13 X 5/16	3 SPS. @ 3"	5 SPS. @ 3"	5"	
21 WF 96	9 X 9/16	4 X 5/8	13 X 5/16	3 SPS. @ 3"	5 SPS. @ 3"	5"	
24 WF 68	9 X 3/8	4 X 3/8	13 X 5/16	2 SPS. @ 3"	5 SPS. @ 3 5/8"	5"	
24 WF 76	9 X 3/8	4 X 1/2	13 X 5/16	2 SPS. @ 3"	5 SPS. @ 3 5/8"	5"	
24 WF 84	9 X 7/16	4 X 1/2	13 X 5/16	3 SPS. @ 3"	5 SPS. @ 3 5/8"	5"	
24 WF 94	9 X 1/2	4 X 9/16	13 X 5/16	3 SPS. @ 3"	5 SPS. @ 3 5/8"	5"	
24 WF 100	12 X 7/16	5 1/2 X 1/2	13 X 5/16	4 SPS. @ 3"	5 SPS. @ 3 5/8"	6 1/2"	
24 WF 110	12 X 1/2	5 1/2 X 9/16	13 X 5/16	5 SPS. @ 3"	5 SPS. @ 3 5/8"	6 1/2"	
24 WF 120	12 X 9/16	5 1/2 X 5/8	13 X 5/16	5 SPS. @ 3"	5 SPS. @ 3 5/8"	6 1/2"	
27 WF 84	10 X 3/8	4 1/2 X 7/16	13 X 5/16	3 SPS. @ 3"	6 SPS. @ 3 1/2"	5 1/2"	
27 WF 94	10 X 7/16	4 1/2 X 9/16	13 X 5/16	3 SPS. @ 3"	6 SPS. @ 3 1/2"	5 1/2"	
27 WF 102	10 X 1/2	4 1/2 X 5/8	13 X 5/16	4 SPS. @ 3"	6 SPS. @ 3 1/2"	5 1/2"	
27 WF 114	10 X 9/16	4 1/2 X 11/16	13 X 5/16	4 SPS. @ 3"	6 SPS. @ 3 1/2"	5 1/2"	
30 WF 99	10 X 7/16	4 1/2 X 1/2	13 X 5/16	3 SPS. @ 3"	6 SPS. @ 4"	5 1/2"	
30 WF 108	10 X 7/16	4 1/2 X 5/8	13 X 5/16	4 SPS. @ 3"	6 SPS. @ 4"	5 1/2"	
30 WF 116	10 X 1/2	4 1/2 X 11/16	13 X 5/16	4 SPS. @ 3"	6 SPS. @ 4"	5 1/2"	
30 WF 124	10 X 9/16	4 1/2 X 3/4	13 X 5/16	5 SPS. @ 3"	6 SPS. @ 4"	5 1/2"	
30 WF 132	10 X 5/8	4 1/2 X 13/16	13 X 5/16	5 SPS. @ 3"	6 SPS. @ 4"	5 1/2"	
33 WF 118	11 X 7/16	5 X 9/16	13 X 5/16	4 SPS. @ 3"	8 SPS. @ 3 3/8"	6 1/2"	
33 WF 130	11 X 9/16	5 X 5/8	13 X 5/16	5 SPS. @ 3"	8 SPS. @ 3 3/8"	6 1/2"	
33 WF 141	11 X 9/16	5 X 3/4	13 X 5/16	5 SPS. @ 3"	8 SPS. @ 3 3/8"	6 1/2"	
33 WF 152	11 X 5/8	5 X 7/8	13 X 3/8	6 SPS. @ 3"	8 SPS. @ 3 3/8"	6 1/2"	
36 WF 135	12 X 7/16	5 1/2 X 9/16	13 X 5/16	4 SPS. @ 3"	9 SPS. @ 3 1/4"	6 1/2"	
36 WF 150	12 X 9/16	5 1/2 X 5/8	13 X 3/8	5 SPS. @ 3"	9 SPS. @ 3 1/4"	6 1/2"	
36 WF 160	12 X 5/8	5 1/2 X 11/16	13 X 3/8	6 SPS. @ 3"	9 SPS. @ 3 1/4"	6 1/2"	
36 WF 170	12 X 5/8	5 1/2 X 3/4	13 X 3/8	6 SPS. @ 3"	9 SPS. @ 3 1/4"	6 1/2"	
36 WF 182	12 X 11/16	5 1/2 X 13/16	13 X 3/8	7 SPS. @ 3"	10 SPS. @ 2 15/16"	6 1/2"	
36 WF 194	12 X 3/4	5 1/2 X 15/16	13 X 3/8	8 SPS. @ 3"	10 SPS. @ 2 15/16"	6 1/2"	

LAM

APPROVED 4-2 1964

A. E. LaBonte
BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BEAM SPLICES

REVISIONS
4-2-64
10-2-64

DETAIL NO. B 169

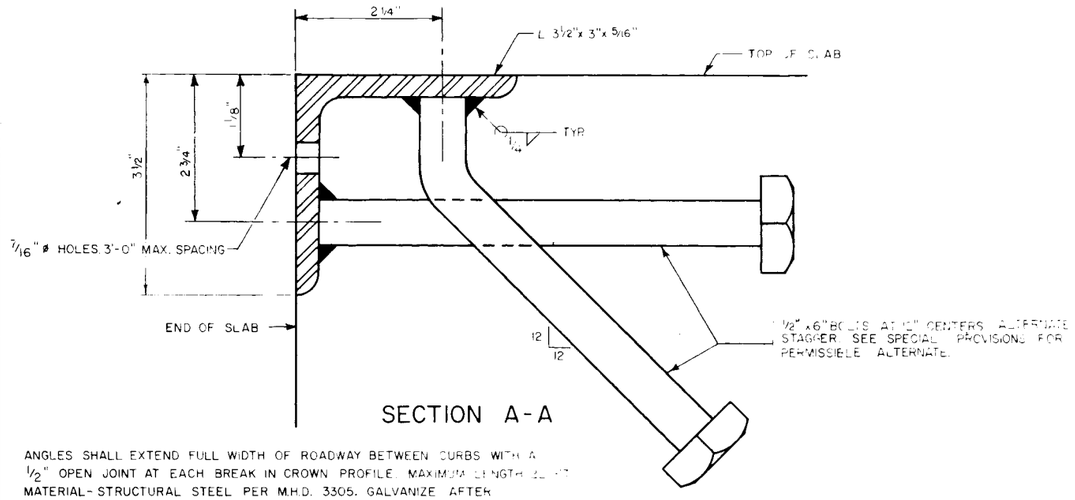
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No. .....

DETAILS

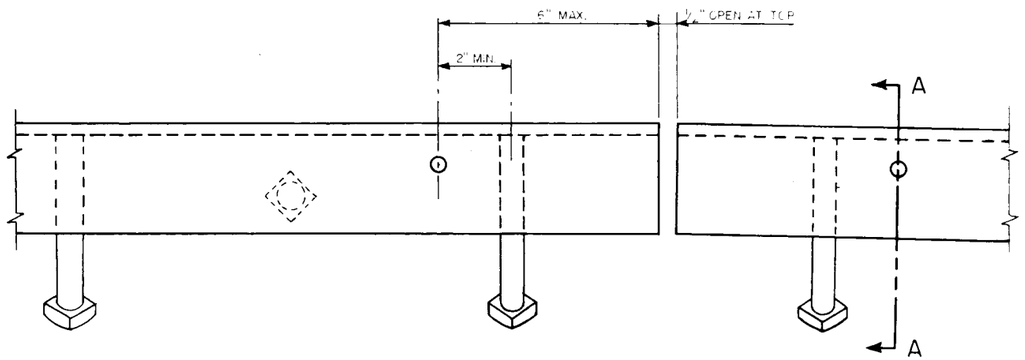
APPROVED .....

Sheet No. of Sheets

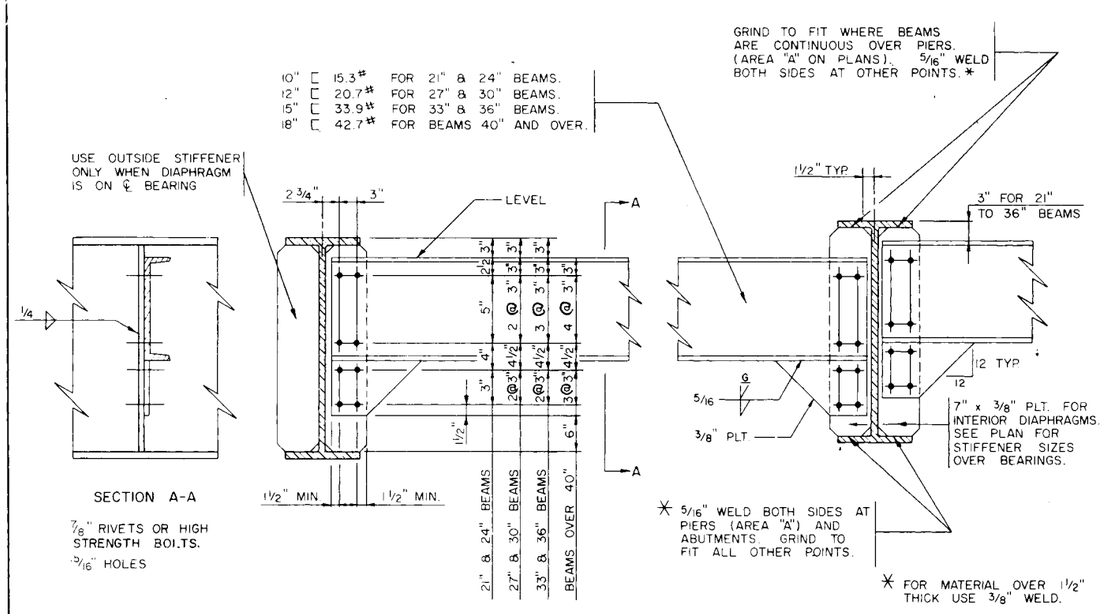


SECTION A-A

ANGLES SHALL EXTEND FULL WIDTH OF ROADWAY BETWEEN CURBS WITH A 1/2" OPEN JOINT AT EACH BREAK IN CROWN PROFILE. MAXIMUM LENGTH 25'-0"
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 AS _____



ELEVATION

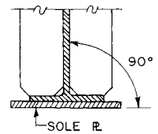


SECTION A-A

7/8" RIVETS OR HIGH STRENGTH BOLTS.
5/16" HOLES

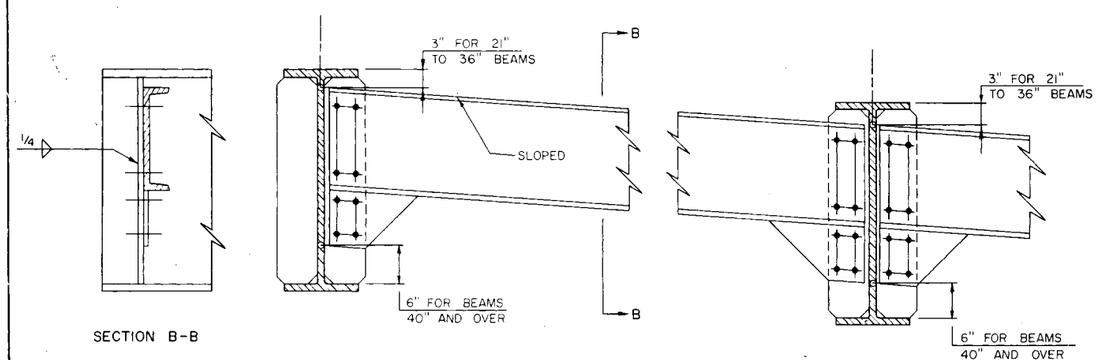
FACIA BEAM

INTERMEDIATE BEAM



PIER & INTERMEDIATE DIAPHRAGMS

TYPICAL DETAIL AT BEARINGS



SECTION B-B

NOTE:
FOR SKEWS OVER 17 1/2° USE 7/8" ø HIGH STRENGTH BOLTS FOR ACUTE ANGLE CONNECTIONS.

FACIA BEAM

INTERMEDIATE BEAM

DIAPHRAGMS AT ABUTMENTS

SEE INTERMEDIATE DIAPHRAGMS FOR DETAILS NOT GIVEN

APPROVED 9-24 1963 A E La Bonte BRIDGE ENGINEER	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS PROTECTION ANGLE FOR END OF SLAB	REVISIONS 3/8/65	DETAIL NO. B209
APPROVED _____ 196_ _____ BRIDGE ENGINEER	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS BEAM DIAPHRAGMS	REVISIONS 7-12-63 10-4-64 10-23-64	DETAIL NO. B 197

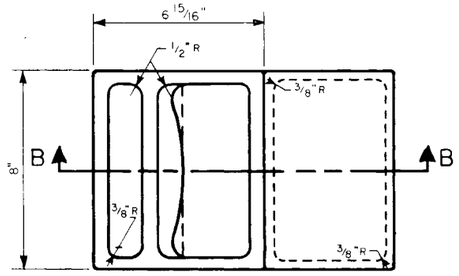
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No. .....

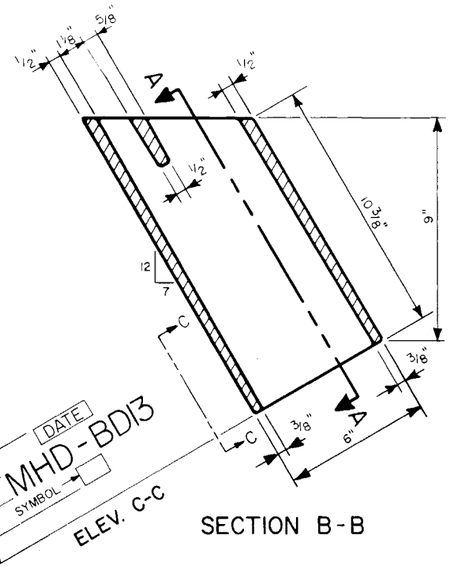
DETAILS

APPROVED _____

Sheet No. of Sheets

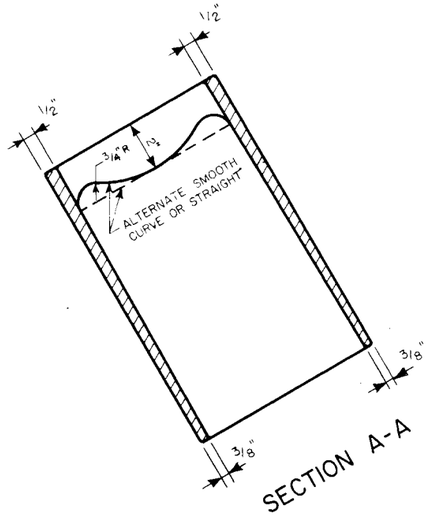


TOP VIEW



ELEV. C-C

SECTION B-B



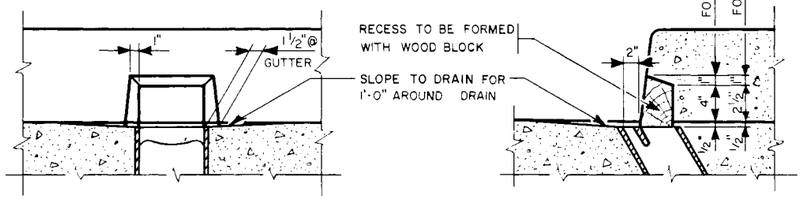
SECTION A-A

MATERIAL:
GRAY IRON CASTING PER M.H.D. 3320.

HOT-DIP GALVANIZED AS PER M.H.D. 3394. NO PAINT.
SHOP INSPECTION BY M.H.D. BEFORE AND AFTER GALVANIZING.

BOX CASTING BD-13

EACH CASTING TO BE IDENTIFIED BY FOUNDRY SYMBOL, CASTING DATE AND CASTING TYPE (MHD-BD13). SEE MHD 3320.2B

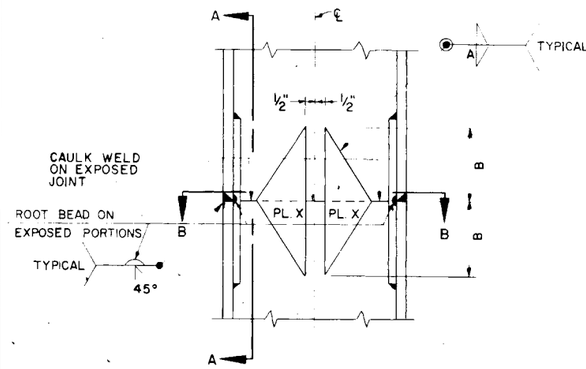


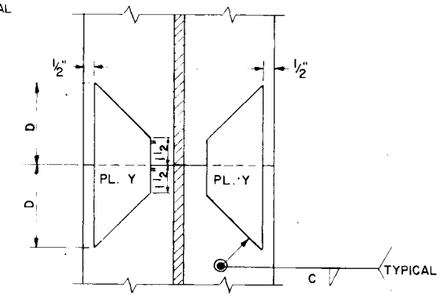
PLACING DIAGRAM

BOX CASTING BD-13

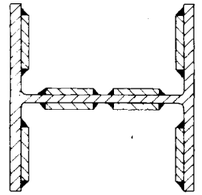
LEB

APPROVED 10-23 1958	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
C. E. Gabriel	CAST IRON FLOOR DRAIN FOR BRIDGES	4-10-59 9-7-62 9-23-63 9-14-64	B13
BRIDGE ENGINEER			



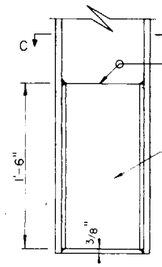


SECTION A-A



SECTION B-B

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



SECTION C-C

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.

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.

DETAIL OF PILE TIP REINFORCEMENT

APPROVED 12-19-1958	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
C. E. Gabriel	SPLICES FOR STEEL H BEARING PILES & PILE TIP REINFORCEMENT 10" TO 14"	6-2-59 7-31-62 12-2-63	B 221
BRIDGE ENGINEER			

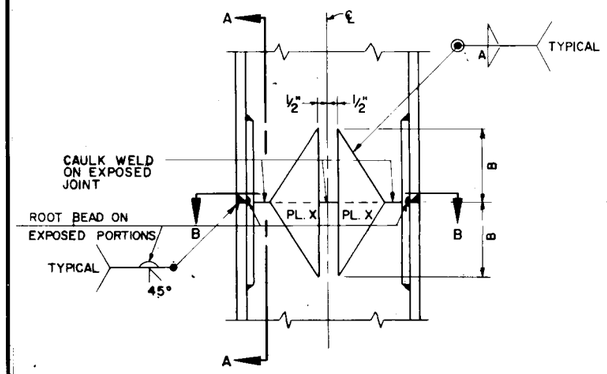
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

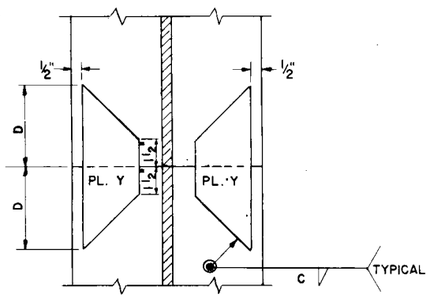
Bridge No.

DETAILS

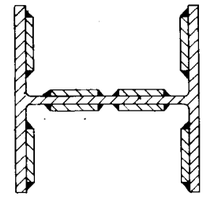
APPROVED

Sheet No. of Sheets

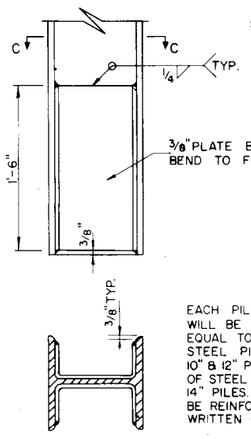




SECTION A-A



SECTION B-B



SECTION C-C

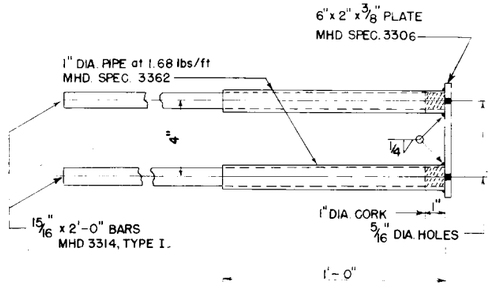
EACH PILE TIP REINFORCEMENT WILL BE PAID FOR IN AMOUNT EQUAL TO 250 POUNDS OF STEEL PILING DELIVERED FOR 10" & 12" PILES AND 300 POUNDS OF STEEL PILING DELIVERED FOR 14" PILES. NO PILE TIPS SHALL BE REINFORCED EXCEPT BY WRITTEN ORDER OF THE ENGINEER.

DETAIL OF PILE TIP REINFORCEMENT

PILE SECTION	PLATE X SIZE	A	B	PLATE Y SIZE	C	D
10BP42	2½ x 3/8	¼	4	3 x 3/8	5/16	4
10BP57	2½ x ½	5/16	4	3 x ½	5/16	5
12BP53	3½ x 3/8	¼	5	4 x 3/8	5/16	5
12BP74	3½ x ½	5/16	6	4 x ½	5/16	6
14BP73	4½ x 3/8	¼	7	5 x 3/8	5/16	6
14BP89	4½ x 7/16	5/16	7	5 x ½	5/16	7
14BP102	4½ x ½	5/16	7	5 x 9/16	3/8	7
14BP117	4½ x 9/16	3/8	7	5 x 5/8	3/8	8

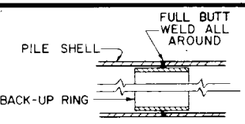
NOTES:
PILE ENDS AT SPLICE TO BE SQUARE.
WELDING SEQUENCE:
A. PILES SPLICED ON SKIDS BEFORE DRIVING.
1. BUTT WELD FLANGES.
2. WELD WEB SPLICE PLATES.
3. WELD FLANGE SPLICE PLATES.
4. MAKE CAULK WELDS & ROOT BEADS.
B PILES SPLICED IN LEADS.
1. WELD SPLICE PLATES TO EXTENSION BEFORE ASSEMBLY.
2. CLAMP SECTIONS TOGETHER AND HOLD RIGID. BUTT WELD FLANGES.
3. WELD SPLICE PLATES TO DRIVEN SECTION.
4. MAKE CAULK WELDS & ROOT BEADS.
WELDING ELECTRODES M.H.D. 3339.
WITH D.C. REVERSE POLARITY (ELECTRODE POSITIVE) ONLY, USE A.S.T.M. CLASSIFICATION E 6010.
WITH D.C. REVERSE POLARITY OR A.C. USE A.S.T.M. CLASSIFICATION E 6011.
WHERE MOISTURE CONTROL IS PROPERLY ENFORCED A.S.T.M. CLASSIFICATION E 6016 OR E 7016 MAY BE USED.
RECOMMENDED MOISTURE CONTENT, PER CENT OF COATING
E 6010 3.0 TO 5.0% D.C.R. ONLY
E 6011 2.0 TO 4.0% A.C. OR D.C.R.
E 6016 LESS THAN 0.4% A.C. OR D.C.R.
E 7016 LESS THAN 0.4% A.C. OR D.C.R.
ALL WELDING PER M.H.D. 247-3J
STEEL PLATES PER M.H.D. 3306

APPROVED 12-19-1958	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
C. E. LaBonte BRIDGE ENGINEER	SPLICES FOR STEEL H BEARING PILES & PILE TIP REINFORCEMENT 10" TO 14"	6-2-59 7-31-62 12-2-63 11-15-65	B 221

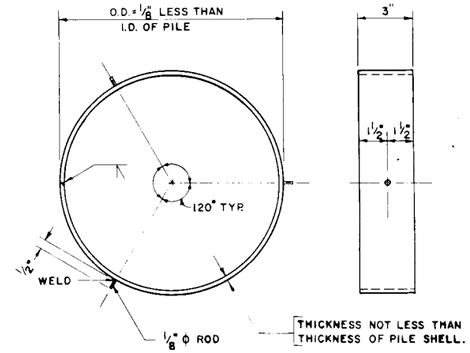


NOTE:
OPEN END OF PIPE MUST BE DE-BURRED AFTER CUTTING AND BEFORE GALVANIZING.
BARS TO BE SAWED TO LENGTH.
GALVANIZE AS PER M.H.D. 3394 AFTER FABRICATION.

APPROVED 8-15-1957	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
C. E. LaBonte BRIDGE ENGINEER	SHEAR DOWEL ASSEMBLY	4/10/59-A 10/27/64 11/15/65	B 100



DETAIL OF SPLICE RING



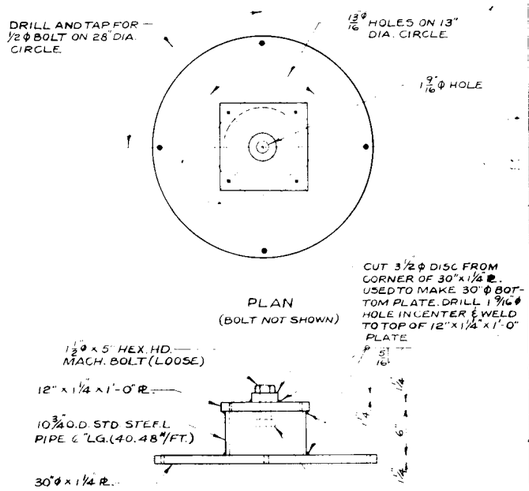
FOR 35000 PSI YIELD MATERIAL IN PILE SHELL USE WELDING ELECTRODE AWS-ASTM CLASS E 6010, 6011, 6016, OR 7016.

FOR 45000 PSI YIELD MATERIAL IN PILE SHELL USE WELDING ELECTRODE AWS-ASTM CLASS E 7016.

ELECTRODES CONTAINING IRON POWDER SHALL NOT BE USED.

STRUCTURAL STEEL FOR THE RING SHALL BE PER M.H.D. 3306 OR MATERIAL FROM A PILE SHELL.

APPROVED 5-23-58	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
C. E. LaBonte BRIDGE ENGINEER	SPLICES FOR CAST IN PLACE CONCRETE PILES	6/2/59 1/17/64 10/27/64 9/14/65 5/16/66	B220



NOTE:
PAINT ONE SHOP COAT RED LEAD AS PER M.H.D. 3506
MATERIAL: STRUCTURAL STEEL (DEVICE FURNISHED BY STATE)

APPROVED: 7-9-58	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
A. C. LaBonte BRIDGE ENGINEER	SOIL BEARING LOAD TESTING DEVICE		B226

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

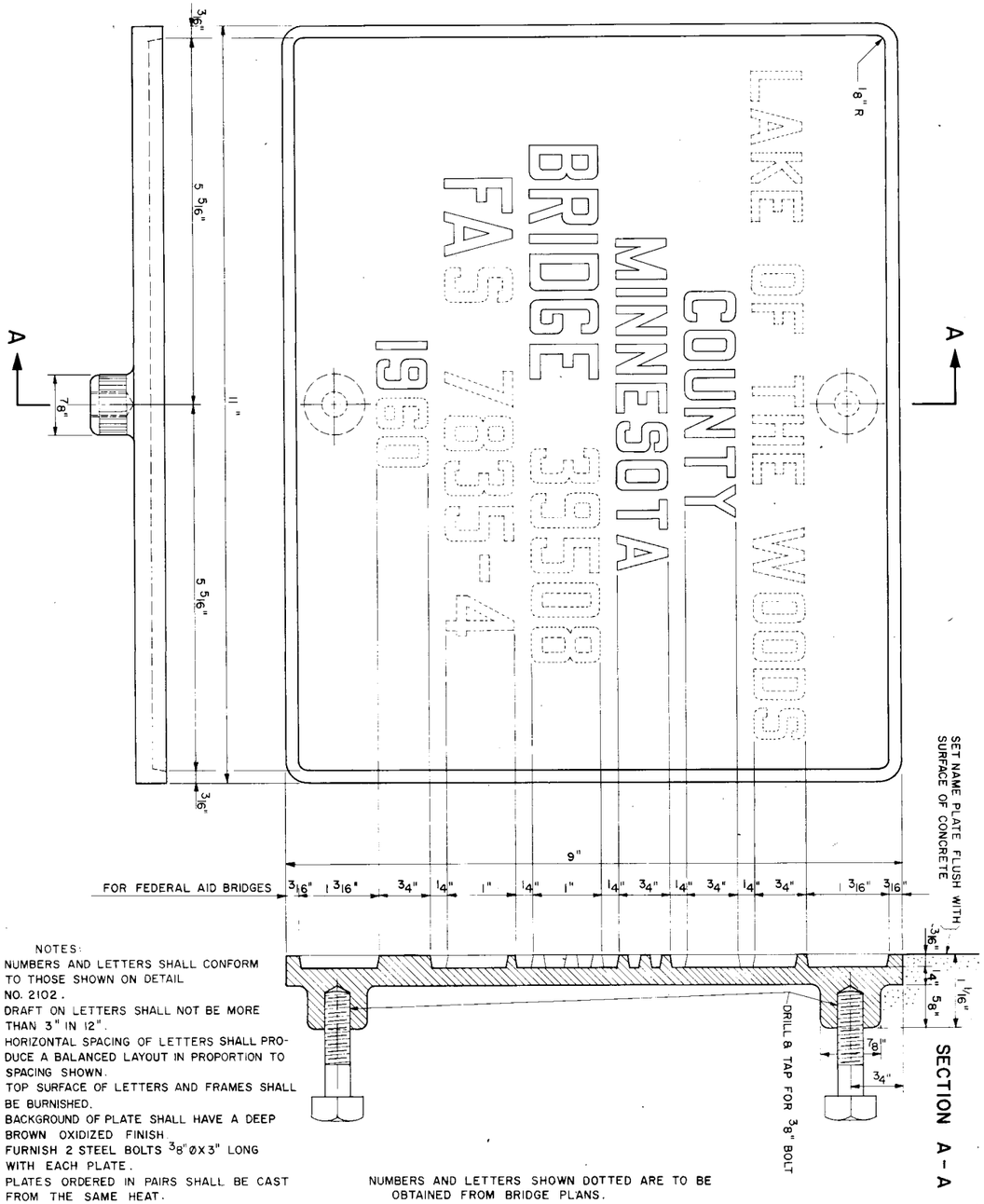
Bridge No. .....

DETAILS

APPROVED .....

Sheet No. of Sheets

B-96
8 #4 HAS
-6R22
Tens Rein



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"ØX3" 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 JULY 3 1959 A. E. LaBonte BRIDGE ENGINEER	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS BRIDGE NAME PLATE FOR COUNTY BRIDGES	REVISIONS	DETAIL NO. 2101

ABCDEFGHIJKLMN
OPQRSTUVWXYZ
1234567890

NOTE:
ALL DIMENSIONS FOR 3/4" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN ABOVE FOR THE 1" HIGH LETTERS AND NUMBERS. THE THICKNESS OF THE LETTERS AND NUMBERS SHALL BE 3/16".

APPROVED 7/3 1959 A. E. LaBonte BRIDGE ENGINEER	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS LETTERS FOR BRIDGE NAME PLATES	REVISIONS	DETAIL NO. 2102

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No. .....

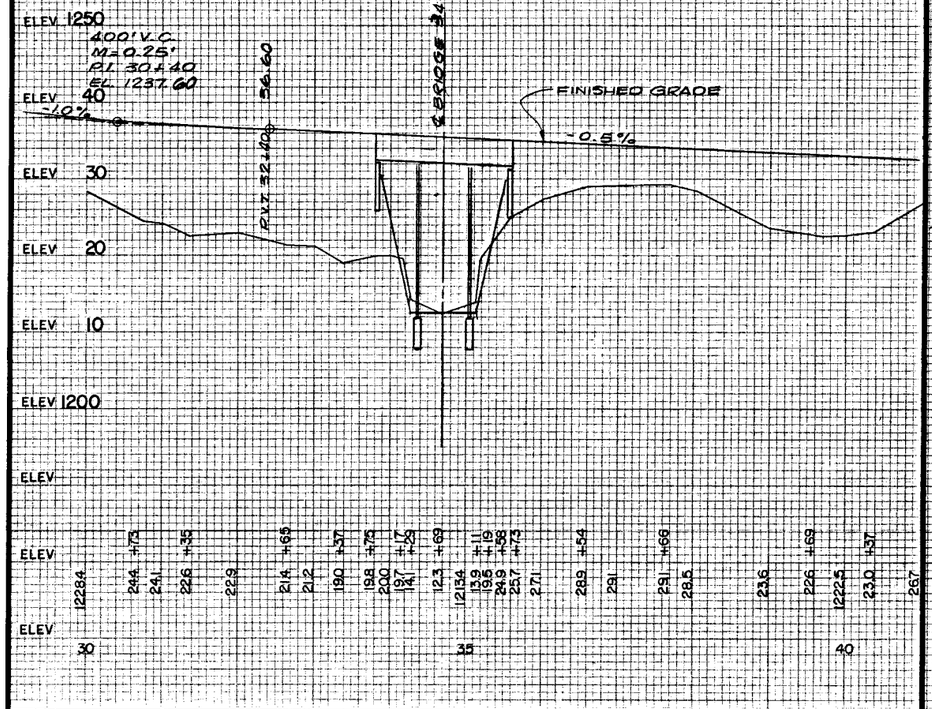
DETAILS

APPROVED _____

Sheet No. of Sheets

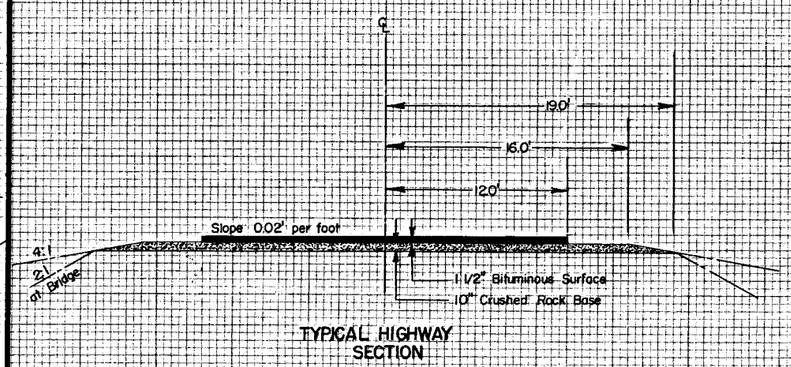
CONTRACTED PROFILE

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



TYPICAL SECTIONS & PERTINENT DATA

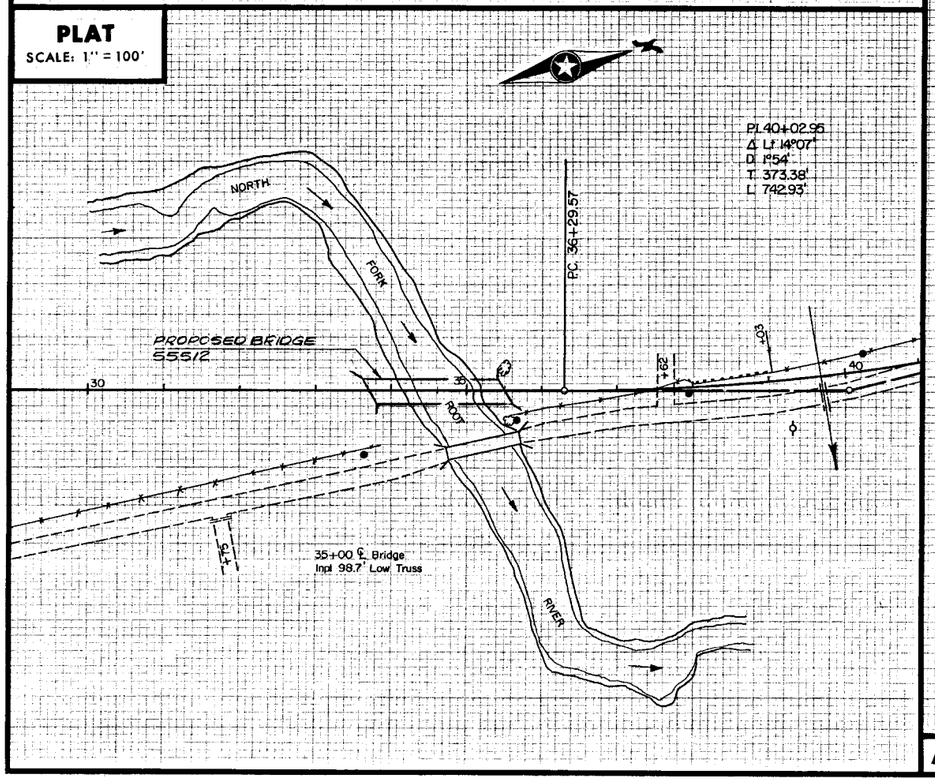
SCALES AS SHOWN



TYPICAL HIGHWAY SECTION

PLAT

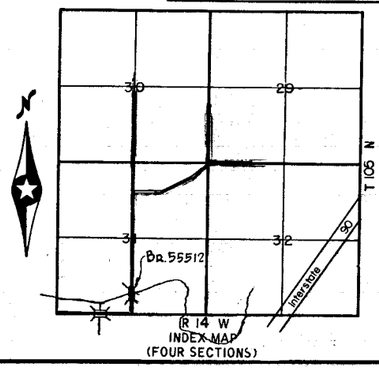
SCALE: 1" = 100'



B.M. ELEV 1223.35' (M.S.L. 19 ADJ.)
X in SW Wing Bridge

SEE SHEET 16 OF 16 SHEETS FOR PLAN AND PROFILE

Fed. Proj. No. S 6226(5)



INDEX MAP (FOUR SECTIONS)

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

DATA

1. Preliminary recommendations of Engineer in charge of Bridge Survey:
   a. Net span length and type of bridge: 180' Beam Span 56'-68'-56'
   b. Width of roadway on bridge: 30'
   c. Number and width of sidewalks, if any: none
   d. Locate center of bridge at station: 34+70
   e. If a skew bridge is recommended, the angle of skew should be: 30°
   f. Is piling required?
2. Special features: Waterfalls, dams, exceptional floods, ice, driftwood, sliding banks, logging, etc.: subject to ice jams and driftwood
3. Changes: In height or length from that of old bridge, and reasons why: High water March 29, 1962 was 1 1/2 foot above deck of present bridge.
4. Other bridges in vicinity:
   a. 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: Approximately 1/2 mile downstream on US 90 inplace 180' span with 15' waterway built 1963, adequate. Upstream 2 1/2 miles a 26' span and 22' span, road built lower than bridge to protect structure, inadequate.
   b. Over or under same highway or railroad; give location, length, horizontal and vertical clearances and estimated age:
   c. Reasons why these bridges are, or are not, fair indications of what length the proposed bridge should be: This bridge will drain approximately 85 sq miles of rolling terrain which is approximately 1/2 mile upstream from 180' span on US 90
5. If structure is over a drainage ditch, is ditch gradient liable to be altered? NA
6. Navigation clearances required, if any: NA
7. Information and evidence in regard to high water stages was obtained as follows: High water elevations taken March 29, 1962 are considered extreme.
8. Must contractor provide for traffic during construction of proposed bridge? Old bridge can be used as a by-pass.
   If so, by what means?

HYDRAULIC ENGINEERS RECOMMENDATION

HIGH AND LOW WATER ELEVATIONS

Data obtained from observation reflects highest water elevation in the area of this construction to be 1226.9 and the lowest water elevation to be 1214.0. 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 3 miles west of * Stewartville 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 3 MILES west OF Stewartville (TOWN OR CITY), ON 8 (T.H., C.S.A.H. OR C.A.R. NUMBER)

SEC. 31 TWP. 105N R. 14W

TOWNSHIP High Forest COUNTY Olmsted

SURVEY MADE DURING MONTH OF August 19 64

SURVEY MADE BY R.L. Gustine

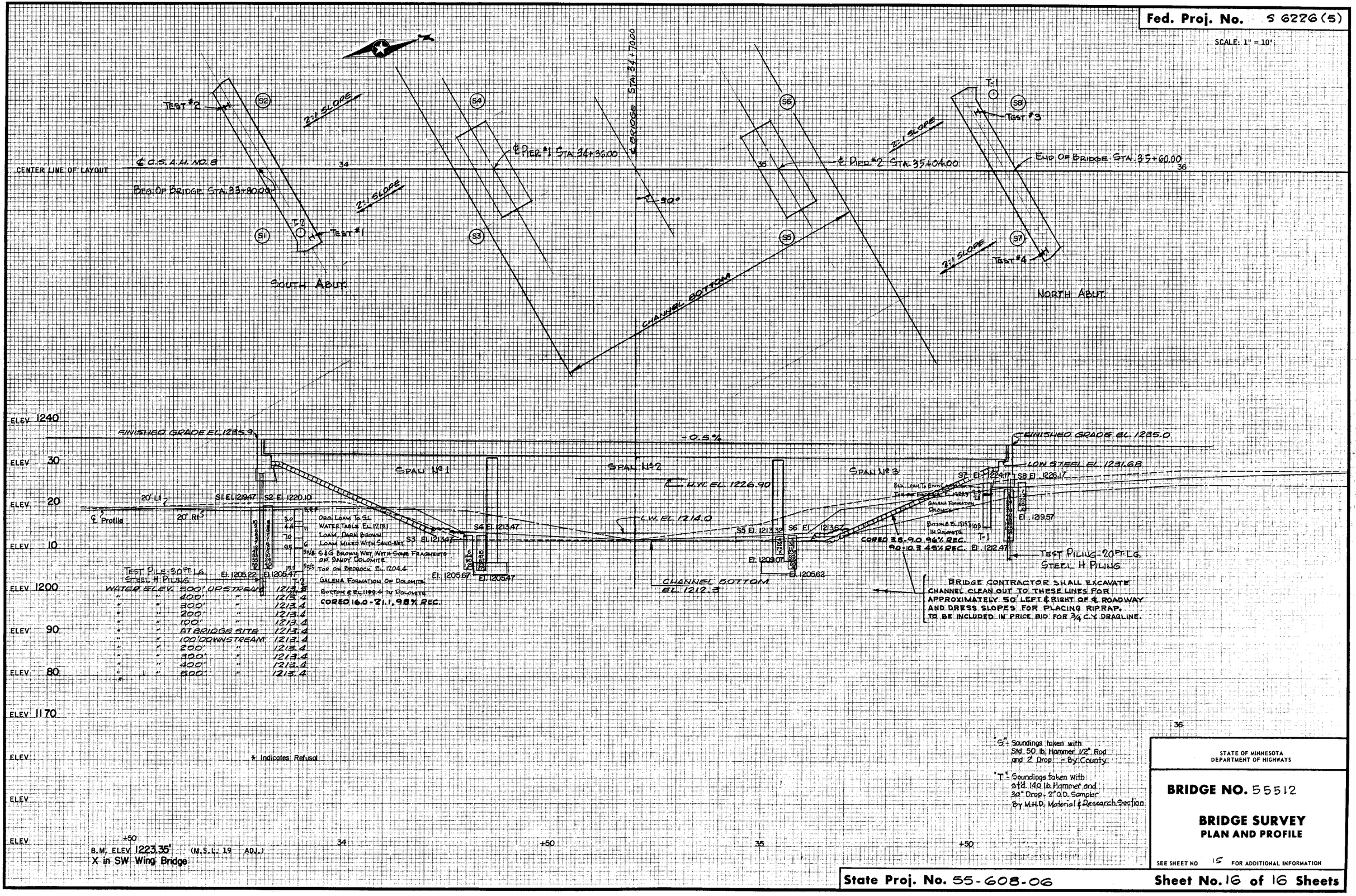
BRIDGE NO. 55512

Area No. **Job No.** **State Proj. No.** 55-608-06 **Sheet No.** 15 of 16 Sheets

Bridge Survey Sheet (Sheet 1 of 2)

Fed. Proj. No. S 6226(5)

SCALE: 1" = 10'



* Indicates Refusal

"S" - Soundings taken with Std. 50 lb. Hammer 1/2" Rod and 2' Drop - By County

"T" - Soundings taken with a 140 lb. Hammer and 30" Drop - 2" O.D. Sampler By M.H.D. Material & Research Section

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 55512

BRIDGE SURVEY
PLAN AND PROFILE

SEE SHEET NO 15 FOR ADDITIONAL INFORMATION

State Proj. No. 55-608-06

Sheet No. 16 **of** 16 **Sheets**

Bridge Survey Sheet (Sheet 2 of 2)

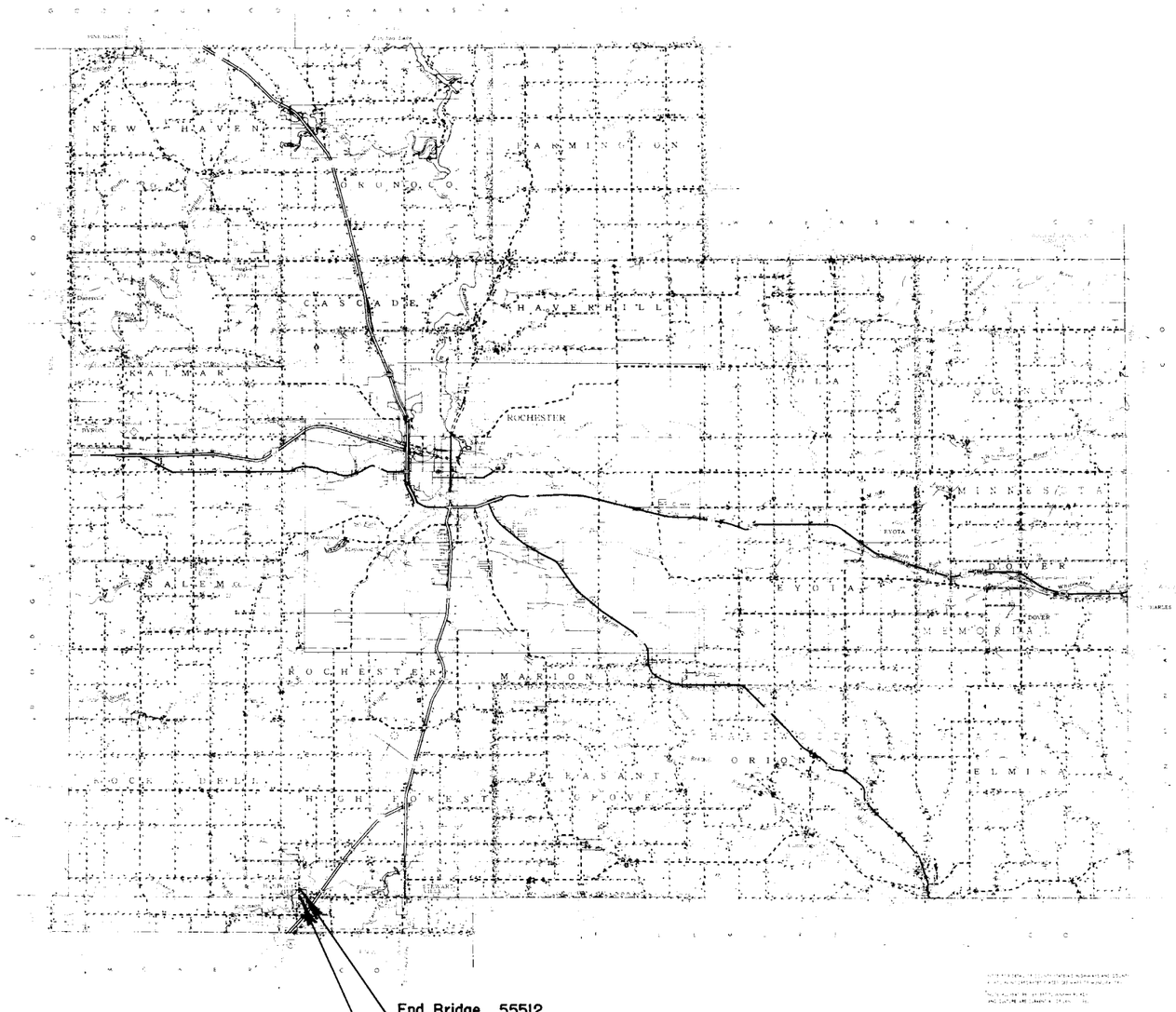
FORM 100-A '65

PLANS SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
PRESENT RIGHT OF WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY LINE
RIVER OR CREEK (NAME)
DRY RUN
DRAINAGE DITCH (SIZE)
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN C.B.
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame)
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT (G)
SAND PIT (S)
BORROW PIT (B)
ROCK QUARRY (Q)

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
AERIAL TELEPHONE CABLE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE



Fed. Proj. No.

STATE OF MINNESOTA

DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR BRIDGE 55512

COUNTY STATE AID HIGHWAY NO. 8

BETWEEN HIGH FOREST **AND** ROCHESTER

In the SE 1/4 of the SW 1/4 of Section 31 T105N-R14W
(Give proper reference to Sections, Township and Range)

Over the North Fork of the Root River 3.0 miles West of Stewartville

GROSS LENGTH	180.0	FEET 0.034	MILES
BRIDGES-LENGTH	180.0	FEET 0.034	MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH	180.0	FEET 0.034	MILES

INDEX OF SHEETS

Sheet No. 1 Title Sheet & Layout Map
" No. 2
" No. 3
" No.

DESIGN SPEED 55 M. P. H.

PROJECTED A. D. T. 351

TON DESIGN

SOIL FACTOR

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

G. P. Sullivan COUNTY ENGINEER DATE 11-26-65
Olmsted COUNTY REG. NO. 12077

RECOMMENDED FOR APPROVAL [illegible] DISTRICT STATE AID ENGINEER 11/29, 19--

RECOMMENDED FOR APPROVAL U. C. Blandy ASST. BRIDGE ENGINEER 1/31, 1966

APPROVED 1-31, 1966 J. M. Evans STATE AID ENGINEER

Minn. Project No. S 6226(5) S.A.P.
State Project No. 55-608-06

Olmsted County, Minnesota. County Proj. No. Plan No. Sheet of Sheets

ALBINSON, INC.