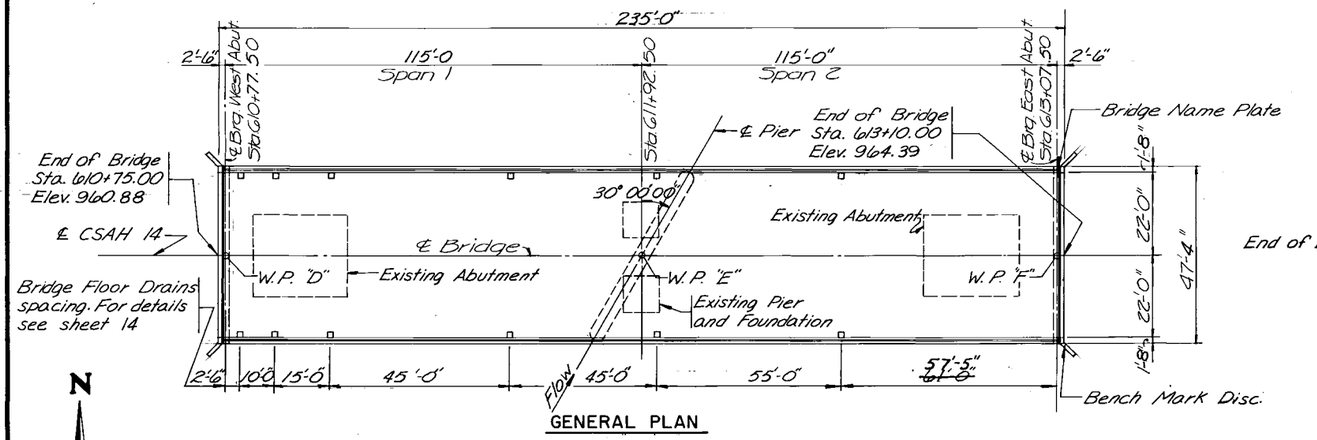
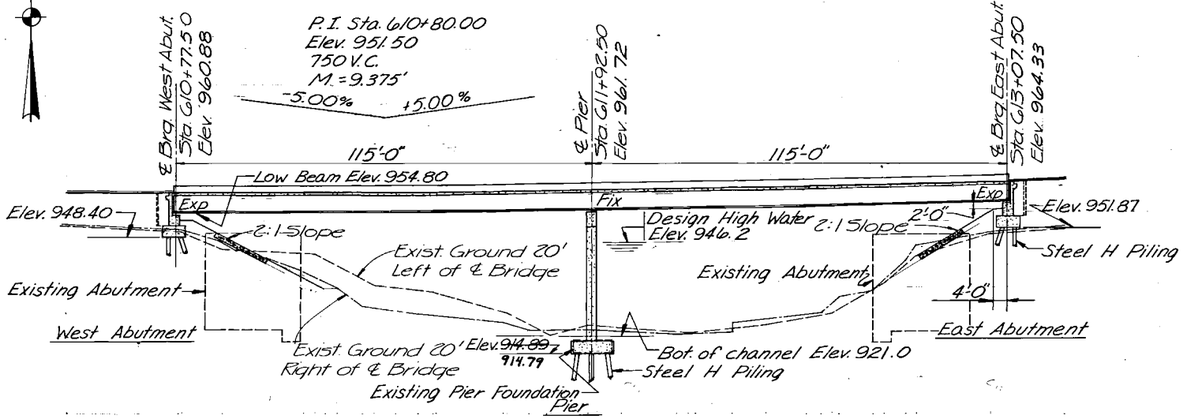
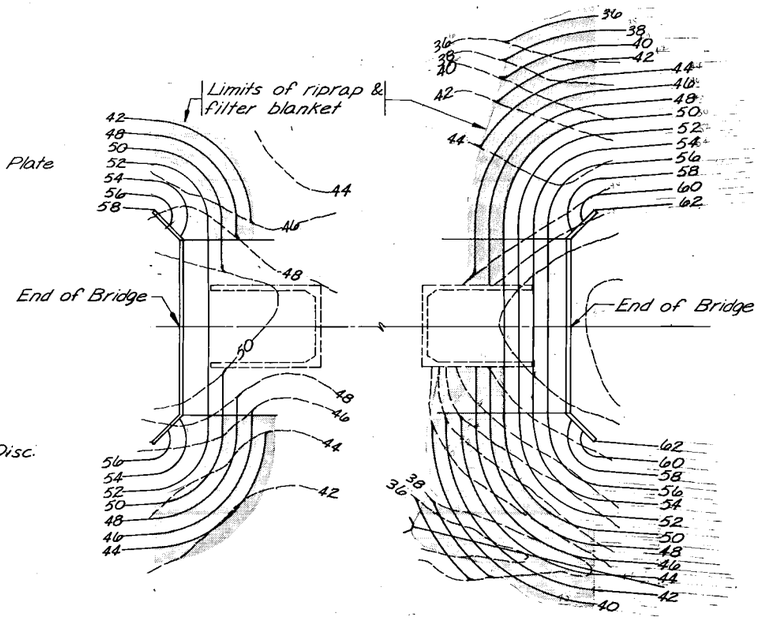


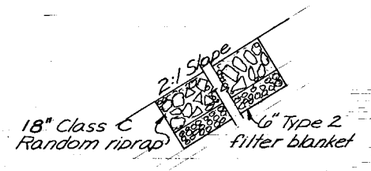
GENERAL PLAN



GENERAL ELEVATION AT ℄ BRIDGE



RIPRAP DETAIL



Minn. Proj. No. BR-RS 6219(5)

DESIGN DATA

1977 AASHTO Design Specifications
Load Factor Design Method
HS 20 Loading
f'c = 4,000 psi. n = 8
fy = 60,000 psi. Reinf. (For Grade 60)
fy = 50,000 psi. Struct. Steel Mn.D.O.T. 3309

DECK AREA: 11,125 SQ. FT.

Proj. ADT For 1999 = 1164 VPD

LIST OF SHEETS

NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION
2	BRIDGE LAYOUT
3	WEST ABUTMENT
4	EAST ABUTMENT
5	ABUTMENT DETAILS AND REINFORCEMENT
6	PIER DETAILS AND REINFORCEMENT
7&8	STRUCTURAL STEEL DETAILS
9	SUPERSTRUCTURE DETAILS
10	CONCRETE RAILING (TYPE J)
11	WATERPROOF EXPANSION DEVICE
12	BEARING DETAILS
13-15	DETAILS
16&17	SURVEY SHEETS

CONSTRUCTION NOTES:

The 1978 Edition of the Minnesota Department of Transportation "Standard Specifications for Highway Construction" shall govern.

Bridge seat Reinforcement shall be carefully placed to avoid interference with drilling holes for Anchor Rods. The beams shall be erected in final position prior to drilling holes for and placing Anchor Rods.

Bench mark: Sta. 611+10, 10.5' Rt. top bolt on bridge seat, Elev. 948.73.

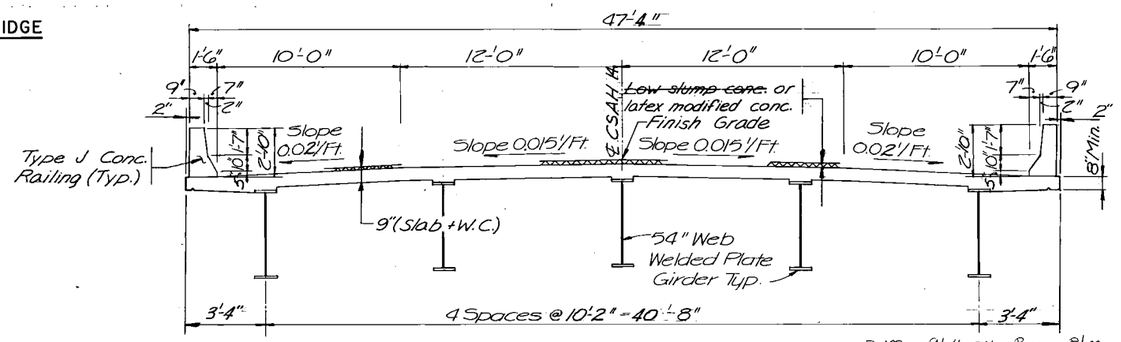
GENERAL NOTES

Design includes an allowance of 17 psf for future wearing course modifications.

Construction of each abutment shall not be started until the approach fill at the abutment has been constructed to the top of subgrade.

Existing pier, steel trusses **and a portion of** the abutments shall be removed. See special provisions.

The first digit or the first two digits of each bar mark indicate the bar size.



TRANSVERSE SECTION

B.M. 964.04 Brass Plug S.E.

(P) Denotes plan quantities pay items per Mn. D.O.T. 1901.

401.601
FOUNDATION PREPARATION (PIER)
L. S.
1

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

ITEM NO.	2401.501	2401.501	401.605	401.606	401.605	401.601	2401.541	2401.541	2402.521	2402.590	2402.591	2402.592	2452.510	2452.511	2452.520	2452.510	2452.511	2452.520	2511.501	2511.504	2402.546
ITEM	CONCRETE, MIX NO. 1A 43	CONCRETE, MIX NO. 3Y 43	BRIDGE SLAB CONCRETE, MIX NO. 3X 33	TYPE J RAIL CONCRETE, MIX NO. 3X 46A	WEARING COURSE CONC. MIX NO. SPECIAL	STRUCTURE EXCAVATION	REINFORCEMENT BARS	REINFORCEMENT BARS (EPOXY COATED)	STRUCTURAL STEEL (3309)	ELASTOMERIC BEARINGS PADS TYPE 1	EXPANSION JOINT DEVICES TYPE 2	ELASTOMERIC BEARING ASSEMBLY TYPE 1	STEEL H-PILING, DRIVEN HP10 X 42	STEEL H-PILING, DELIVERED HP10 X 42	STEEL H-TEST PILES, 60 FT. LONG HP10 X 42	STEEL H-PILING, DRIVEN HP10 X 57	STEEL H-PILING, DELIVERED HP10 X 57	STEEL H-TEST PILES, 80 FT. LONG HP10 X 57	RANDOM RIPRAP CLASS C	FILTER BLANKET TYPE 2	FLOOR DRAINS TYPE 1
UNIT	CU. YD.	CU. YD.	SQ. FT.	LIN. FT.	SQ. FT.	LUMP SUM	POUND	POUND	POUND	EACH	LIN. FT.	EACH	LIN. FT.	LIN. FT.	EACH	LIN. FT.	LIN. FT.	EACH	CU. YD.	CU. YD.	EACH
QUANTITY	119 (P)	207 (P)	11,125 (P)	470 (P)	10186 (P)	1	90,310 (P)	45,620 (P)	307,060 (P)	10	91 (P)	5	1,300	1,300	4	1,540	1,540	2	290	95	12

KIRKHAM, MICHAEL & ASSOC.
ARCHITECTS ENGINEERS
OMAHA MINNEAPOLIS

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
SIGNED James L. Chandler
DATE 8-2-78 REG NO 10588

APPROVED BY THE COUNTY OF OLMSTED
J. K. Dolan
J. K. DOLAN, P.E.
PUBLIC WORKS DIRECTOR

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

Bridge No. 55530

C.S.A.H. 14 OVER ZUMBRO RIVER. LOCATED 0.81 MILES WEST OF T.H. NO. 63. WELDED STEEL BEAMS, CONCRETE SLAB CONTINUOUS OVER PIER VARIABLE SPAN LENGTHS I.D. NO. 401 44' RDWY. 30° SKEW (PIER)

GENERAL PLAN AND ELEVATION

SEC. 1 T 107 N R 14 W
CASCADE TOWNSHIP OLMSTED COUNTY

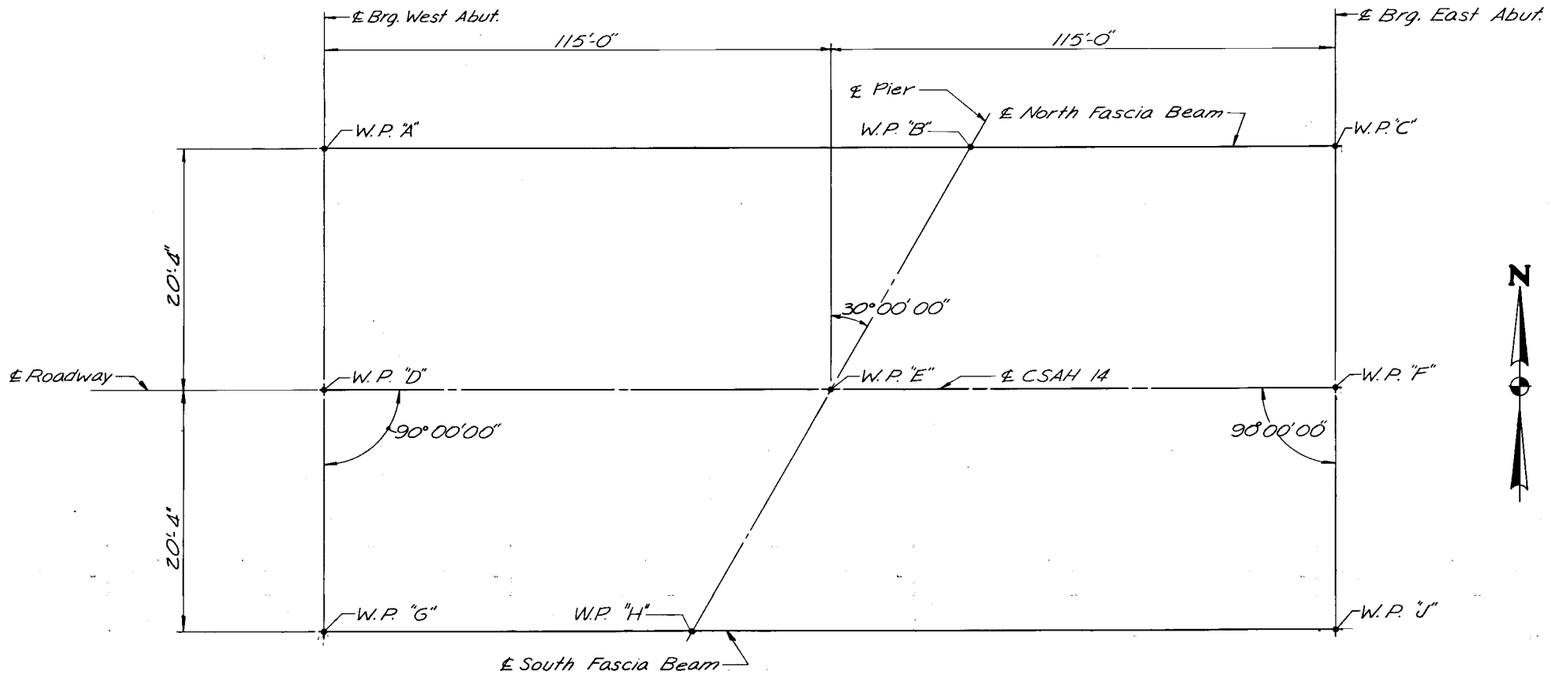
APPROVED
BRIDGE ENGINEER 3-30-79

DES. J. L. C.	DR. F. S.	55530
CHK. S. L. B.	CHK. J. L. C.	

Area No. Job No. Design Squad State Proj. No. 55-614-07 Sheet No. 1 of 17 Sheets

NORTHSTAR # 116

AS BUILT PLANS



WORKING POINT LAYOUT

POINT	STATION	DIMENSIONS BETWEEN WORKING POINTS A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W
A	610+77.50		126.74		2033	116.78			110.98													
B	612+04.24	126.74		103.26	128.36	23.48	105.24	133.10		110.98												
C	613+07.50		103.26			116.78	2033		133.10													
D	610+77.50	2033	128.36			115.00		2033	105.24													
E	611+92.50	116.78	23.48	116.78	115.00		115.00	116.78	23.48	116.78												
F	613+07.50		105.24	2033		115.00			128.36	2033												
G	610+77.50		133.10		2033	116.78			103.26													
H	611+80.76	110.98		133.10	105.24	23.48	128.36	103.26		126.74												
J	613+07.50		110.98			116.78	2033		126.74													
K																						
L																						
M																						
N																						
P																						
Q																						
R																						
S																						
T																						
U																						
V																						
W																						

ELEVATIONS TOP OF SLAB	TOP OF SLAB TO BR. SEAT	BRIDGE SEAT	POINT
960.53	6.13	954.40	A
961.56	5.97	955.59	B
963.98	6.11	957.87	C
960.88	6.08	954.80	D
961.72	5.93	955.79	E
964.33	6.10	958.23	F
960.53	6.13	954.40	G
961.21	5.99	955.22	H
963.98	6.07	957.91	J
			K
			L
			M
			N
			P
			Q
			R
			S
			T
			U
			V
			W

Fig. 5-397.001

TITLE: BRIDGE LAYOUT

DES: T. T. S. | DR: D. Y. B. | APPROVED: 3-30-79

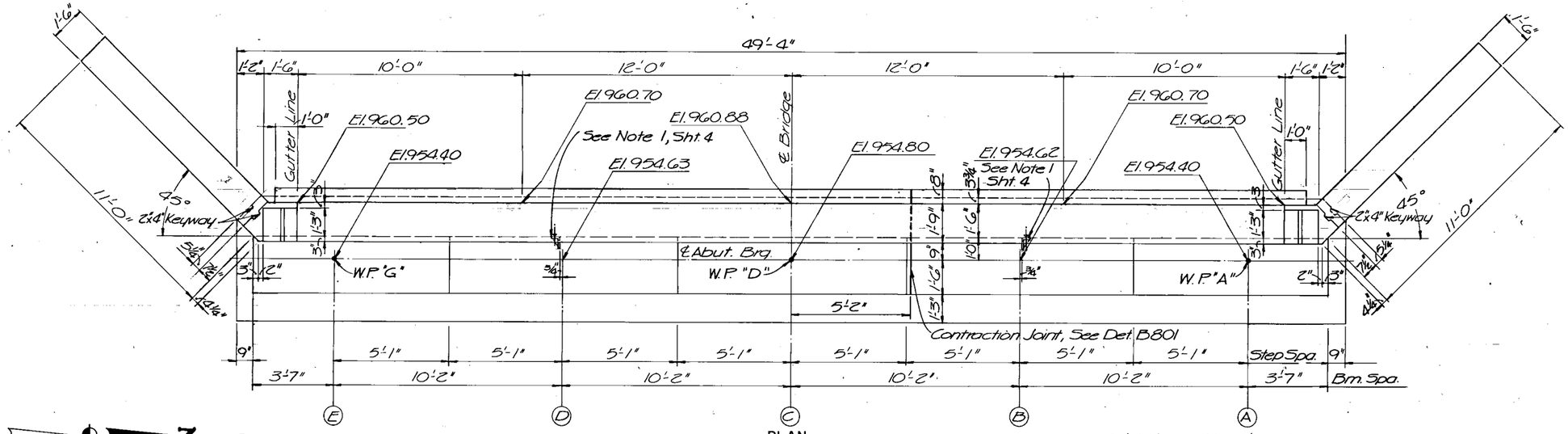
CHK: S. L. B. | CHK: J. L. C.

Sheet No. 2 of 17 Sheets

Bridge No. 55530

AS BUILT PLANS

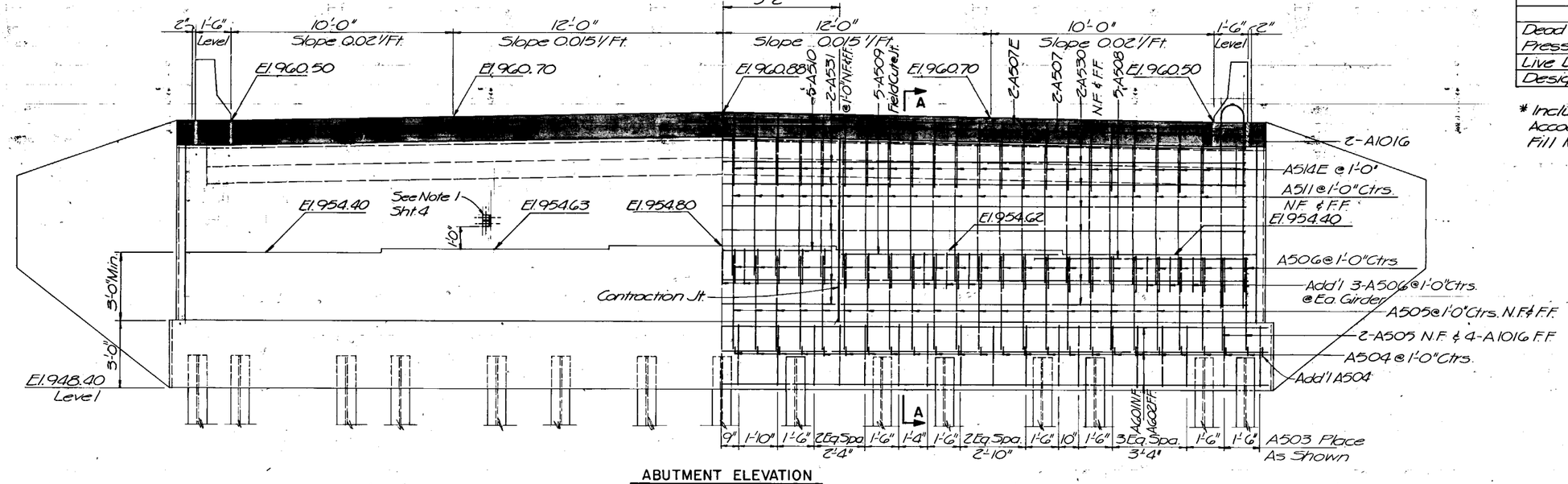
Minn. Proj. No.



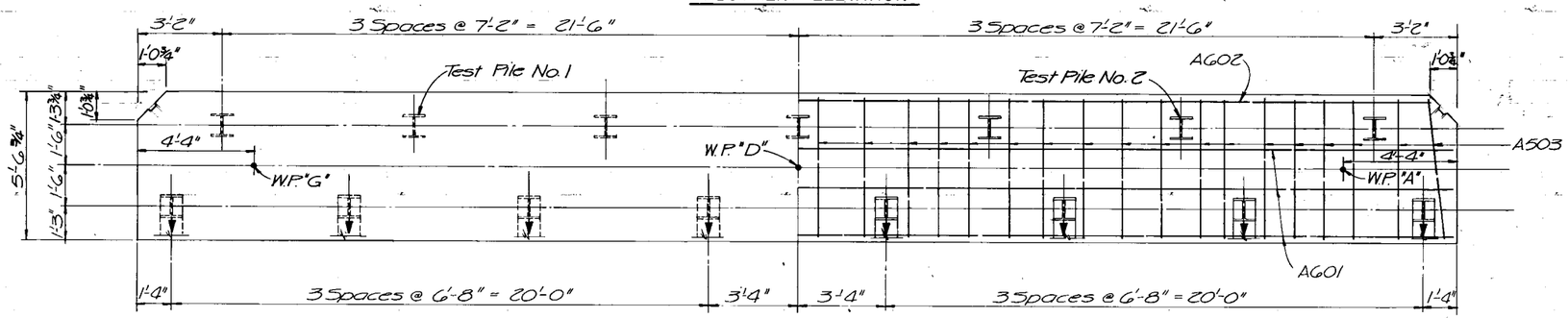
N

PLAN

See Sht. 5 for Section A-A.



ABUTMENT ELEVATION



FOOTING PLAN

ABUTMENTS PILING NOTES

26 Steel Pile Est Length 50 Ft Req'd For The East & West Abutments.
4 Steel Test Pile : Length 60 Ft. Req'd For The East & West Abuts.
30 Steel Piles Total for Abutments. (15 Steel Piles Each Abutment)

Pile Spacing Shown is at Bottom of Footing.

All Pile For Abuts. to be HP10x42.

Piles Marked thus ↧ to be Battered 3" Per Foot in Direction Shown.

COMPUTED PILE LOADS - TONS/PILE		
	W. Abut.	E. Abut.
Dead Load + Earth Pressure	31.6	31.6
Live Load	12.5	12.5
Design Load *	49.1	49.1

* Includes 5 Ton Increase To Account For Penetration Through Fill Material At Abutments.

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

Bridge No. 55530

WEST ABUTMENT

APPROVED: 3-20-79

DES. T. T. S.	DR. F. L. S.	55530
CHK. S. L. B.	CHK. J. L. C.	

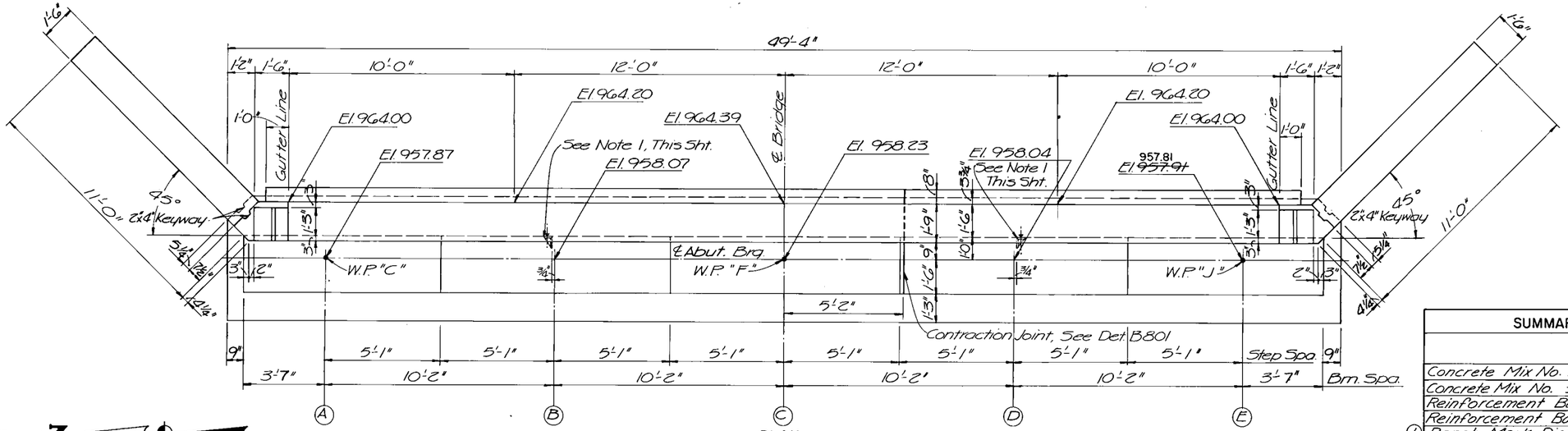
State Proj. No.

Sheet No. 3 of 17 Sheets

AS BUILT PLANS

TELEDYNE POST-117-378

Minn. Proj. No.



N

PLAN

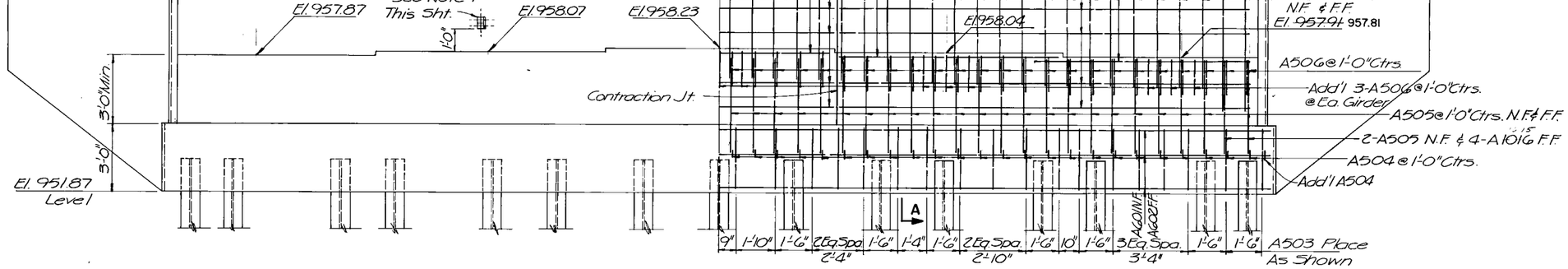
See Sht. 5 for Section A-A.

SUMMARY OF QUANTITIES			
	West Abut.	East Abut.	Unit
Concrete Mix No. 1A43	30	30	Cu. Yd.
Concrete Mix No. 3Y43	47	47	Cu. Yd.
Reinforcement Bars	6,360	6,360	Pound
Reinforcement Bars (Epoxy Coated)	370	370	Pound
(1) Bench Mark Disc	—	1	Units
Steel H Test Piles	2	2	Each
(2) Steel H Piling Delivered (HP10x42)	650	650	Lin. Ft.
(2) Steel H Piling Driven (HP10x42)	650	650	Lin. Ft.

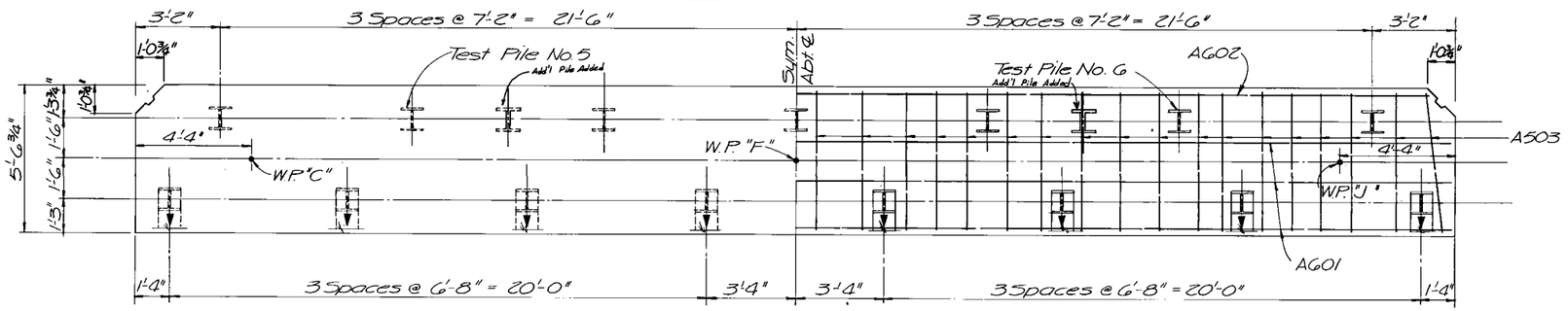
(1) County will furnish Disc payment for placing to be included in price bid for other items, see standard plate No. 9301 for placing.

(2) Does not include Test Piles.

Note:
1. ℄ 4"x 6"x 3/8"x 0'-6" Lg. & Welded 3/8" Fillet Rt. W/ 2-7/8"ϕ Exp. Anchors. Weight is included for payment in weight of Structural Steel (3309).



ABUTMENT ELEVATION



FOOTING PLAN

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

Bridge No. 55530

EAST ABUTMENT

APPROVED: 5-30-79

DES. T. T. S.	DR. F. L. S.	55530
CHK. S. L. B.	CHK. J. L. C.	

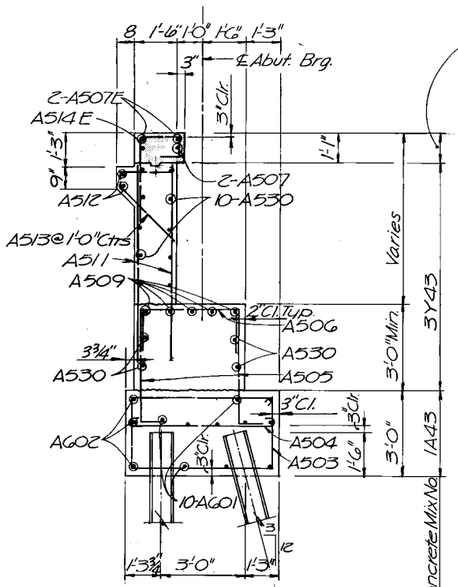
State Proj. No.

Sheet No. 4 **of** 17 **Sheets**

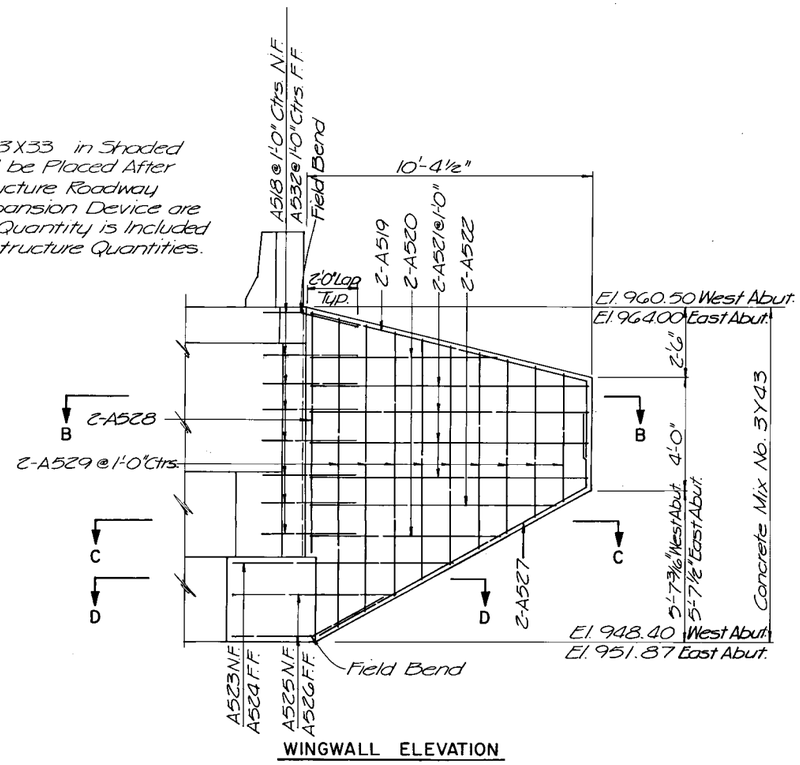
AS BUILT PLANS

TELEDYNE POST-117-378

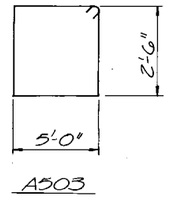
Minn. Proj. No.



SECTION A-A



WINGWALL ELEVATION

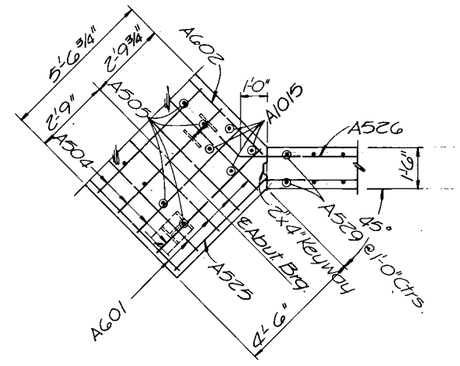


A503

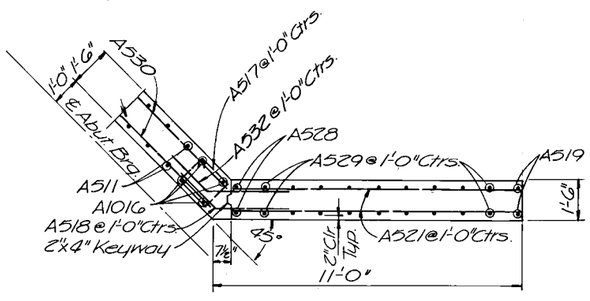
WEST & EAST ABUTMENTS
BILL OF REINFORCEMENT

	BAR	NO.	LENGTH	SHAPE	LOCATION
	A601	20	48'-10"	——	Footing
	A602	6	47'-4"	——	Footing
	A503	72	15'-11"	⌐¬	Footing
	A504	100	6'-2"	⊐	Footing
	A505	184	4'-11"	⌐	Ftg. Dowel
	A506	126	6'-8"	⌐¬	Brg. Seat
	A507E	4	47'0"	——	Horiz. Backwall
	A507	4	47'-0"	——	Horiz. Backwall
	A508	20	9'-6"	——	Long. Brg. Seat
	A509	20	11'-2"	——	Long. Brg. Seat
	A510	10	9'-10"	——	Long. Brg. Seat
	A511	176	7'-0"	——	Vert. Backwall
	A512	4	45'8"	——	Horiz. Haunch
	A513	94	5'-0"	⌐	Vert. Haunch
	A514E	88	5'-11"	⌐¬	Vert. Backwall
	A1015	16	5'-11"	⌐	Ftg. Dowel
	A1016	8	19'-1"	⊔	Vert. Backwall
	A517	32	5'-1"	⌐¬	Horiz. Ties
	A518	32	4'-3"	⌐	Wingwall Dowels
	A519	8	12'-8"	⌐	Horiz. Wingwall
	A520	16	6'-9"	——	Horiz. Wingwall
	A521	32	10'-0"	——	Horiz. Wingwall
	A522	8	8'-10"	——	Horiz. Wingwall
	A523	4	6'-10"	⌐	Horiz. Wingwall
	A524	4	9'-6"	⌐	Horiz. Wingwall
	A525	8	7'-6"	⌐	Horiz. Wingwall
	A526	8	5'-0"	⌐	Horiz. Wingwall
	A527	8	13'-5"	⌐	Horiz. Wingwall
	A528	8	8'-7"	——	Vert. Wingwall
①	A529	36	15'-6"	——	Vert Wingwall
	A530	28	18'-3"	——	Horiz. Backwall
	A531	28	28'-7"	——	Horiz. Backwall
	A532	32	4'-9"	⌐	Wingwall Dowels

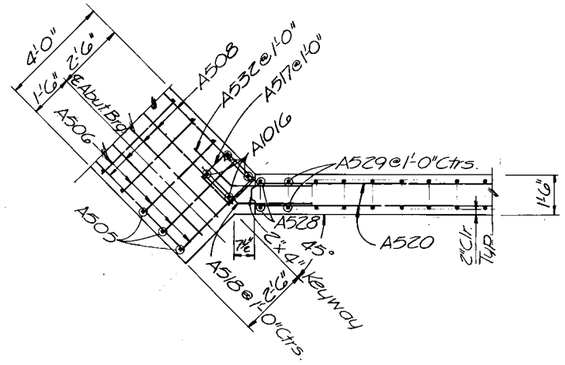
① Cut 2 From 1



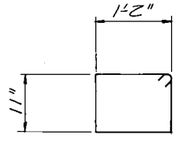
SECTION D-D



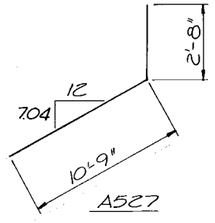
SECTION B-B



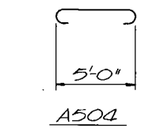
SECTION C-C



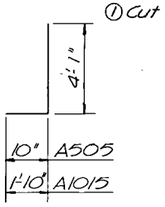
A517



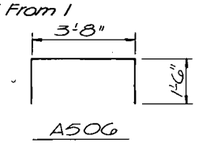
A527



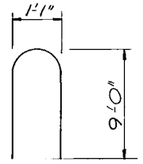
A504



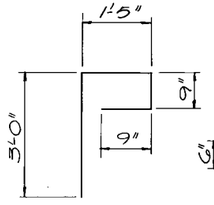
A505, A1015



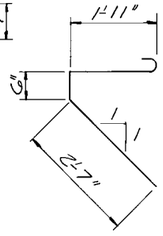
A506



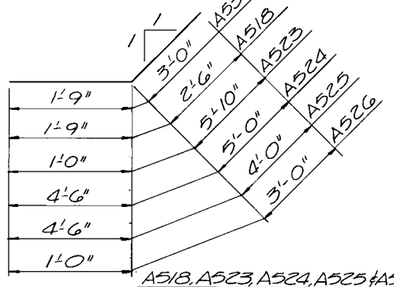
A1016



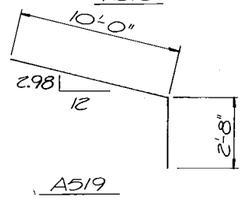
A514E



A513



A518, A523, A524, A525 & A526
A532



A519

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

Bridge No. 55530

ABUTMENT DETAILS
AND REINFORCEMENT

APPROVED: 3-30-79

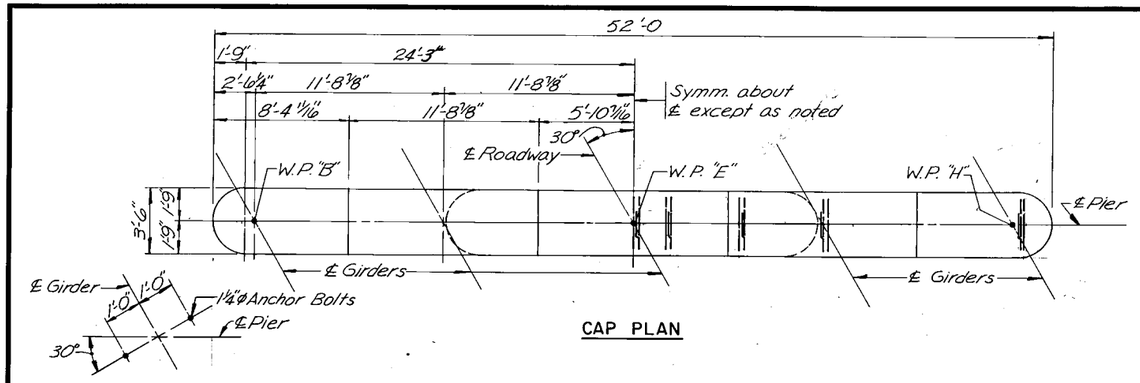
DES. T. T. S.	DR. F. L. S.	55530
CHK. S. L. B.	CHK. T. T. S.	

State Proj. No.

Sheet No. 5 **of** 17 **Sheets**

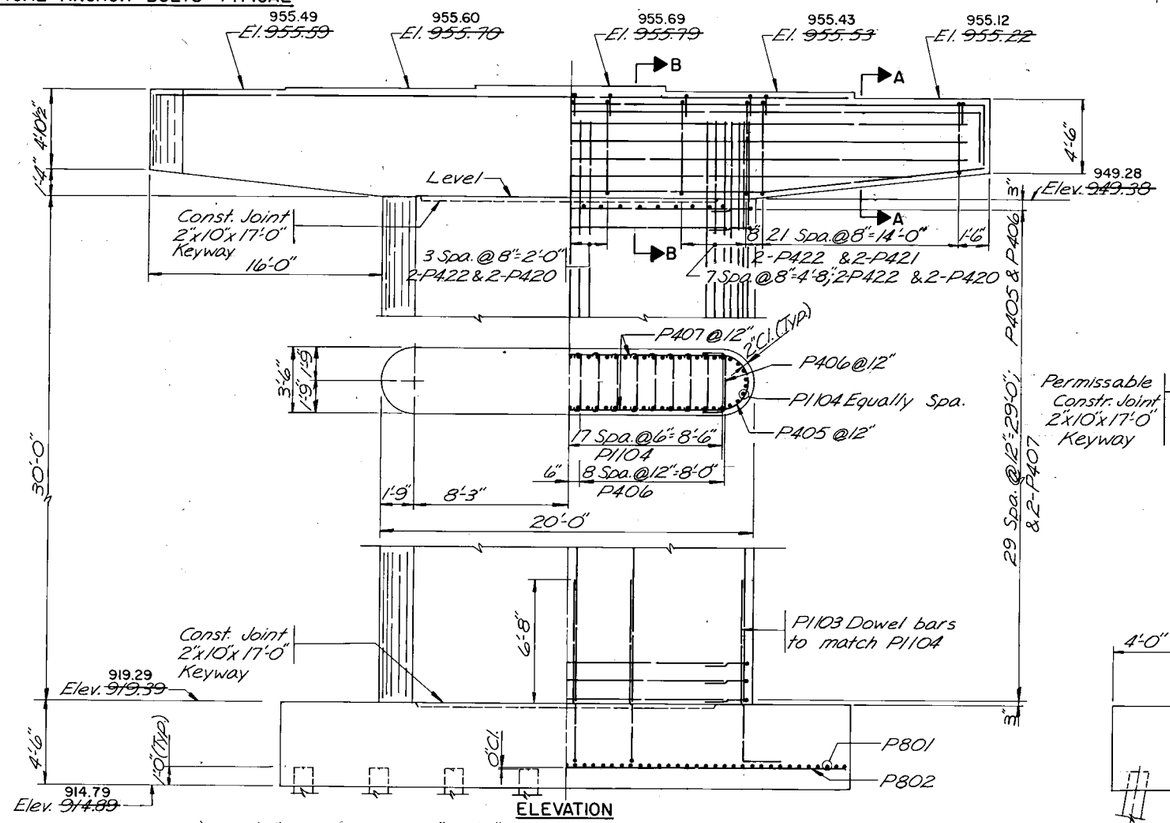
TELEDYNE POST 117-3/78

Minn. Proj. No.

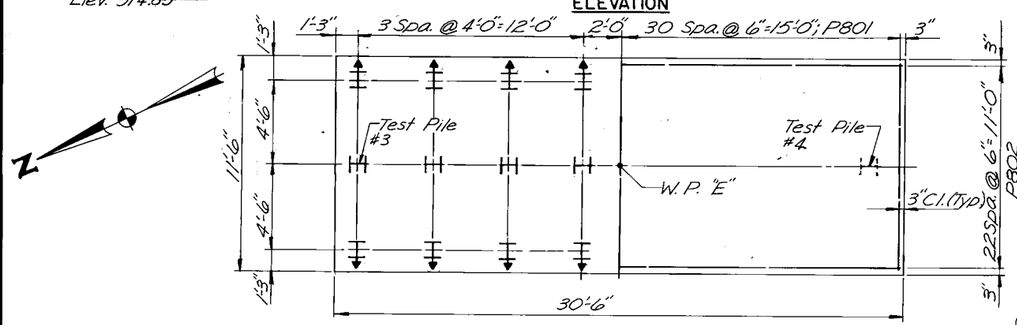


CAP PLAN

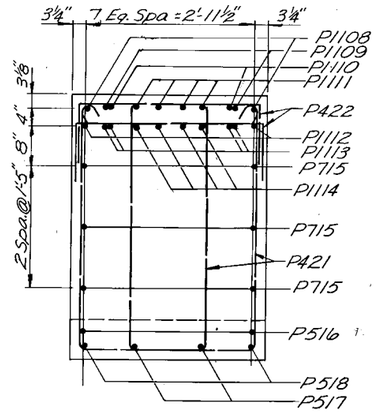
TYPICAL ANCHOR BOLTS TYPICAL



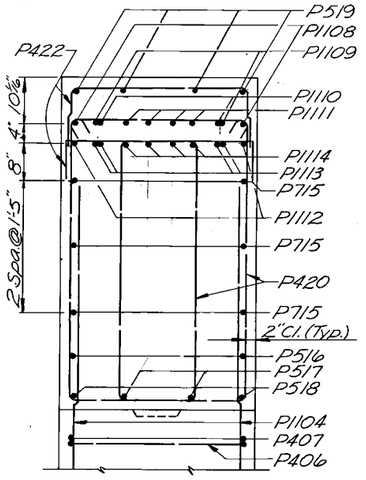
ELEVATION



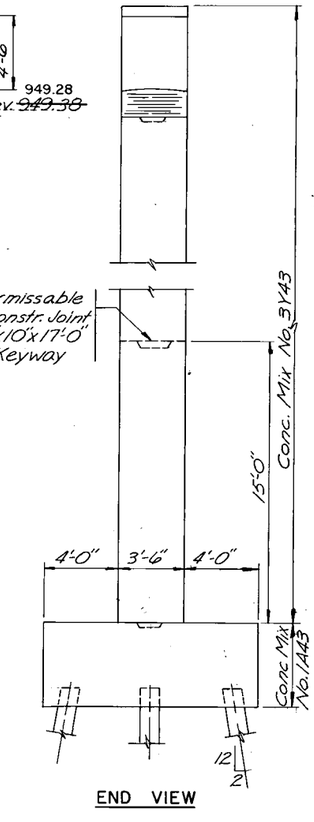
FOOTING PLAN



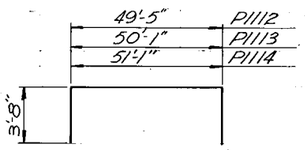
SECTION A-A



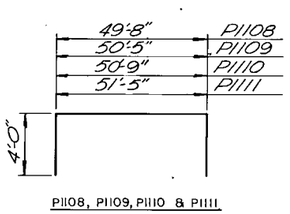
SECTION B-B



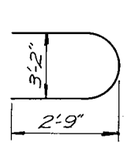
END VIEW



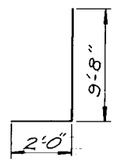
P1112, P1113 & P1114



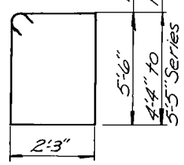
P1108, P1109, P1110 & P1111



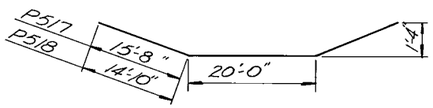
P405



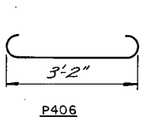
P1103



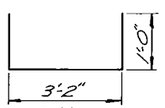
P420 & P421



P517 & P518



P406



P422

BILL OF REINFORCEMENT PIER				
Mark	No.	Length	Shape	Location
P801	61	11'-0"		Footings
P802	23	30'-0"		"
P1103	86	11'-8"		" Dowels
P1104	86	34'-0"		Column Vert.
P405	60	7'-4"		" Horiz.
P406	540	4'-2"		" "
P407	60	16'-8"		" "
P1108	2	57'-8"		Cap
P1109	2	58'-5"		"
P1110	2	58'-9"		"
P1111	4	59'-5"		"
P1112	2	56'-9"		"
P1113	4	57'-5"		"
P1114	4	58'-5"		"
P715	6	49'-6"		"
P516	2	41'-0"		"
P517	2	51'-4"		"
P518	2	49'-8"		"
P519	4	41'-6"		"
P420	46	16'-3"		Stirrups
P421	4 Series 14-9 to or 22 13-11			"
P422	134	5'-2"		Cap Ties

Pile Notes For Pier

22 Steel piles est. length 70' req'd.
2 Steel test piles length 80' req'd.
24 Steel piles req'd. for pier.
Pile spacing shown is at bottom of footing.
Piles marked thus ↓ to be battered 2" Ft. in direction shown.
All piles for pier to be HP10x57.

SUMMARY OF QUANTITIES FOR PIER		
Concrete Mix No. 1A43	59	Cu.Yd.
Concrete Mix No. 3Y43	113	Cu.Yd.
Reinforcement bars	35,290	Pound
② Steel H Piling Delivered	1,540	Lin.Ft.
② Steel H Piling Driven	1,540	Lin.Ft.
Steel H Test Piles	2	Each

② Does not include test piles

COMPUTED PILE LOADS – TONS/PILE	
Dead Load	37.4
Live Load	5.5
Over Turning	39.1
Total	82.0
① Design Load	65.6T

① Design Load = Total / 1.25 Reduction Per AASHTO 1.2.22

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

Bridge No. 55530

PIER DETAILS & REINFORCEMENT

APPROVED: _____ 3-30-77

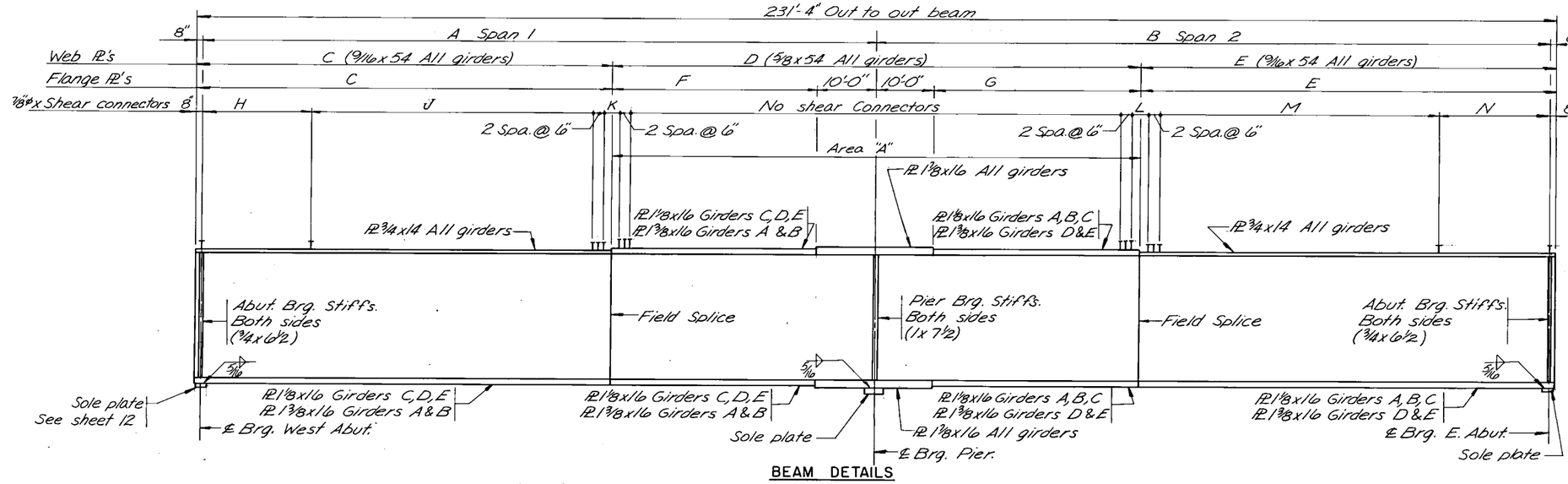
DES. T. T. S.	DR. D. Y. B.	55530
CHK. J. L. C.	CHK. S. L. B	

State Proj. No.

Sheet No. 6 **of** 17 **Sheets**

TELEDYNE POST-117-3/78

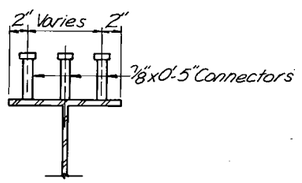
Minn. Proj. No.



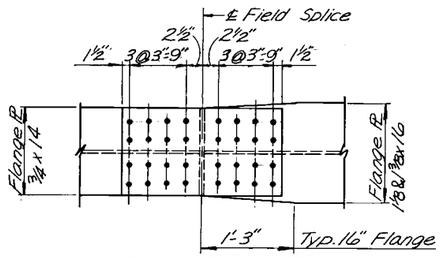
BEAM DETAILS

Girder	Girder Dimensions												
	A	B	C	D	E	F	G	H	J	K	L	M	N
A	126'-8 3/8"	103'-3 1/8"	97'-4 1/8"	63'-0"	70'-11 1/8"	20'-0"	23'-0"	19 @ 10" = 15'-10"	78 @ 1'-0" = 78'-0"	2'-11 3/4"	2'-6 1/4"	53 @ 1'-0" = 53'-0"	18 @ 10" = 15'-0"
B	120'-10 7/16"	109'-1 9/16"	91'-6 11/16"	63'-0"	76'-9 9/16"	20'-0"	23'-0"	18 @ 10" = 15'-0"	73 @ 1'-0" = 73'-0"	2'-10 5/8"	2'-3 1/8"	59 @ 1'-0" = 59'-0"	18 @ 10" = 15'-0"
C	115'-0"	115'-0"	82'-8"	66'-0"	82'-8"	23'-0"	23'-0"	17 @ 10" = 14'-2"	65 @ 1'-0" = 65'-0"	2'-1 0"	2'-10"	65 @ 1'-0" = 65'-0"	17 @ 10" = 14'-2"
D	109'-1 9/16"	120'-10 7/16"	76'-9 9/16"	63'-0"	91'-6 11/16"	23'-0"	20'-0"	18 @ 10 = 15'-0"	59 @ 1'-0" = 59'-0"	2'-3 1/8"	2'-10 5/8"	73 @ 1'-0" = 73'-0"	18 @ 10 = 15'-0"
E	103'-3 1/8"	126'-8 3/8"	70'-11 1/8"	63'-0"	97'-4 1/8"	23'-0"	20'-0"	18 @ 10" = 15'-0"	53 @ 1'-0" = 53'-0"	2'-6 1/4"	2'-11 3/4"	78 @ 1'-0" = 78'-0"	19 @ 10" = 15'-10"

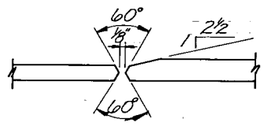
Notes:
All structural steel shall conform to Spec. 3309 unless otherwise noted.
Special reaming as per Spec. 2471. 3E1d will be required for the beam splices. The section to be assembled for reaming shall be from Abut. to. Abut.
Web plates shall be furnished in available mill lengths with a minimum number of web splices. Location of splices shall be a minimum of 1'-0" from stiffeners or flange splices.
Bearing stiffeners shall be vertical.
End of beams shall be vertical.
Shear connectors to be included in weight of structural steel Spec. 3309.
All butt splices shall be full butt welds using low hydrogen process and shall be ground flush.
Field connections shall be made with 7/8" high strength bolts or 7/8" pin bolts, except as noted.



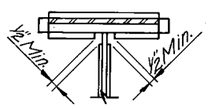
SHEAR CONNECTOR SPACING



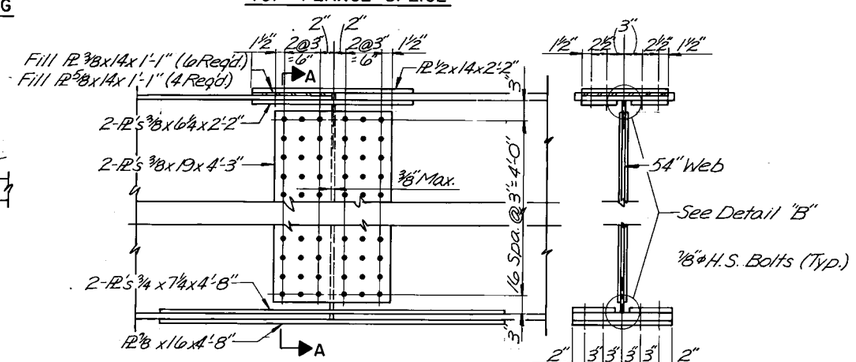
TOP FLANGE SPLICE



TYPICAL WELDED FLANGE TRANSITION

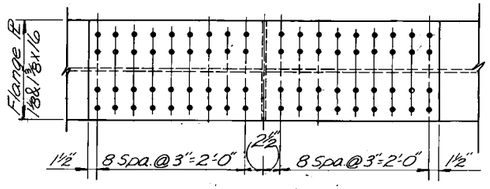


DETAIL "B"



WEB SPLICE

SECTION A-A



BOTTOM FLANGE SPLICE

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

Bridge No. 55530

BEAM DETAILS

APPROVED: 3-30-79

DES. T. T. S.	DR. D. Y. B.	55530
CHK. S. L. B.	CHK. J. L. C.	

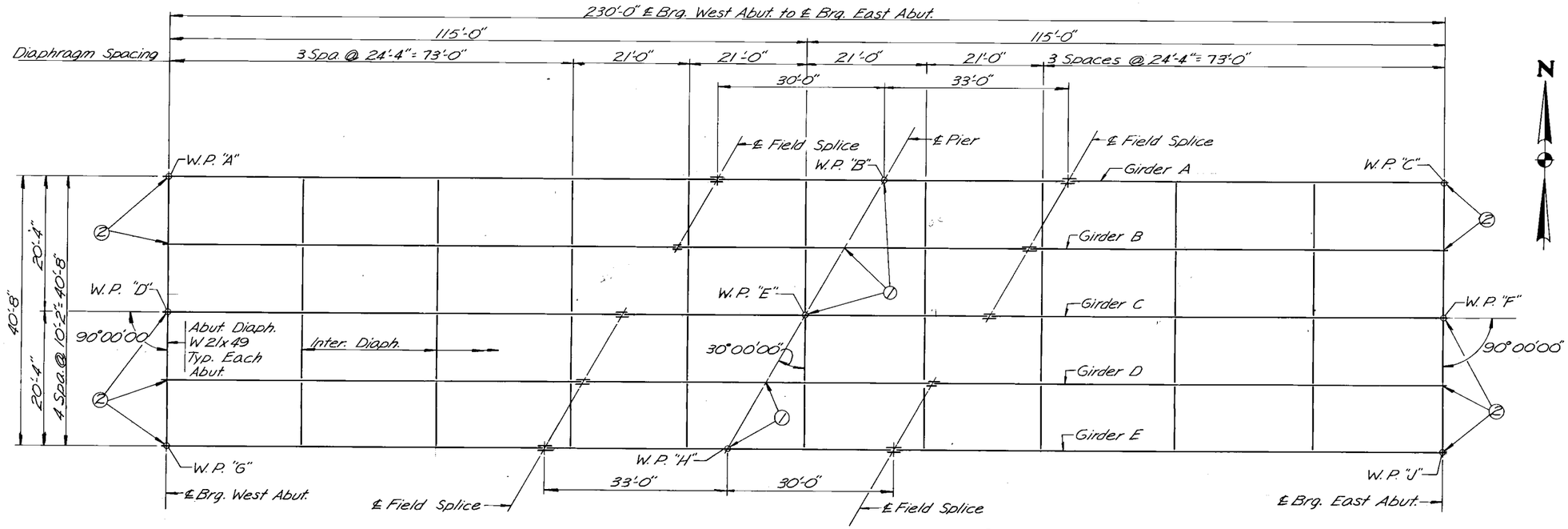
State Proj. No.

Sheet No. 7 **of** 17 **Sheets**

AS BUILT PLANS

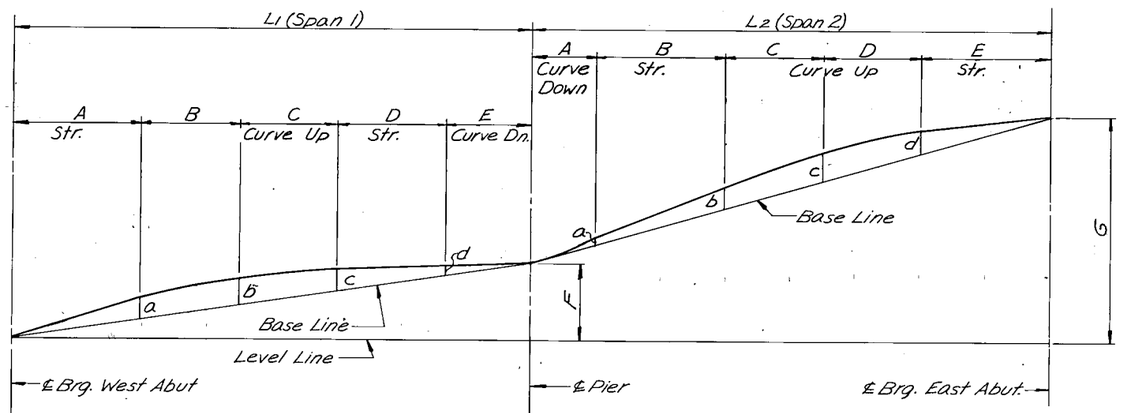
TELEDYNE POST-117-378

Minn. Proj. No.

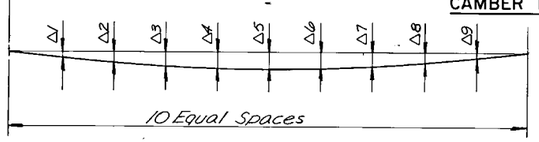


① Elastomeric Bearing Assembly, Type I.
② Elastomeric Bearing Pad, Type I.

FRAMING PLAN



CAMBER DIAGRAM



DEAD LOAD DEFLECTION DIAGRAM

Dead load deflections shown are for weight of slab, wearing course and railing.

Camber diagram shown is for beam camber without any dead load deflection. Dead load deflections due to weight of beams are 19% of values shown on deflection diagram.

Base line in camber diagram is a straight line from ℄ Brg. to ℄ Brg. at top of web.

Splices shall be on a straight portion of the beam. Straight portion of beam shall extend a minimum of 5 feet each side of centerline of splice.

CAMBER & DEFLECTION DIAGRAM DIMENSIONS

	Girder No.	L1 or L2	A	B	C	D	E	F	G	a	b	c	d	Δ1	Δ2	Δ3	Δ4	Δ5	Δ6	Δ7	Δ8	Δ9
Span No. 1	A	126'-8 1/8"	38'-0"	21'-4 9/16"	21'-4 9/16"	38'-0"	8'-0"	1'-0 1/8"		2 11/16"	3"	2 1/8"	1 1/8"	.0942	.1748	.2316	.2587	.2543	.2214	.1672	.1030	.0435
	B	120'-10 7/16"	90'-0"	21'-1 1/2"	21'-1 1/2"	36'-0"	11'-0"	0'-11 1/8"		2 1/8"	2 3/8"	2 1/8"	3/8"	.0799	.1477	.1946	.2155	.2093	.1791	.1318	.0782	.0312
	C	115'-0"	24'-0"	20'-6"	20'-6"	42'-0"	8'-0"	0'-10 1/8"		1 5/8"	2 1/16"	1 7/16"	1/8"	.0706	.1340	.1729	.1830	.1727	.1413	.0970	.0513	.0165
	D	109'-1 9/16"	19'-0"	18'-0"	18'-0"	39'-1 9/16"	15'-0"	0'-9 1/8"		1/8"	1 3/16"	1/4"	9/16"	.0439	.0800	.1027	.1093	.0998	.0772	.0474	.0188	.0012
	E	103'-3 1/8"	23'-0"	21'-1 7/8"	21'-1 7/8"	26'-0"	12'-0"	0'-8 1/8"		9/16"	1/16"	3/16"	0"	.0246	.0442	.0552	.0559	.0469	.0307	.0125	-.0032	-.0082
Span No. 2	A	103'-3 1/8"	23'-0"	15'-0"	19'-7 3/8"	19'-7 3/8"	26'-0"	1'-0 1/8"	3'-5 3/8"	0"	5/16"	1 1/16"	5/16"	-.0082	-.0032	.0125	.0307	.0469	.0559	.0552	.0442	.0246
	B	109'-1 9/16"	22'-0"	33'-0"	21'-0 3/8"	21'-0 3/8"	12'-0"	0'-11 1/8"	3'-5 3/8"	5/16"	1 3/16"	1 1/8"	5/16"	.0012	.0185	.0474	.0772	.0998	.1043	.1027	.0800	.0439
	C	115'-0"	13'-0"	25'-0"	26'-6"	26'-6"	24'-0"	0'-10 1/8"	3'-5 3/8"	9/16"	1 7/16"	2 1/16"	1 11/16"	.0165	.0513	.0970	.1413	.1727	.1830	.1729	.1340	.0706
	D	120'-10 7/16"	16'-0"	21'-0"	26'-5 3/8"	26'-5 3/8"	31'-0"	0'-9 1/8"	3'-5 3/8"	9/16"	1 9/16"	2 3/16"	2 5/16"	.0312	.0782	.1318	.1791	.2093	.2155	.1946	.1477	.0799
	E	126'-8 1/8"	17'-0"	28'-0"	26'-4 9/16"	21'-4 9/16"	29'-0"	0'-8 1/8"	3'-5 3/8"	3/4"	1 5/8"	3"	2 5/16"	.0435	.1030	.1672	.2214	.2543	.2587	.2316	.1748	.0942

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

Bridge No. 55530

FRAMING PLAN
& BEAM DETAILS

APPROVED: 3-30-79

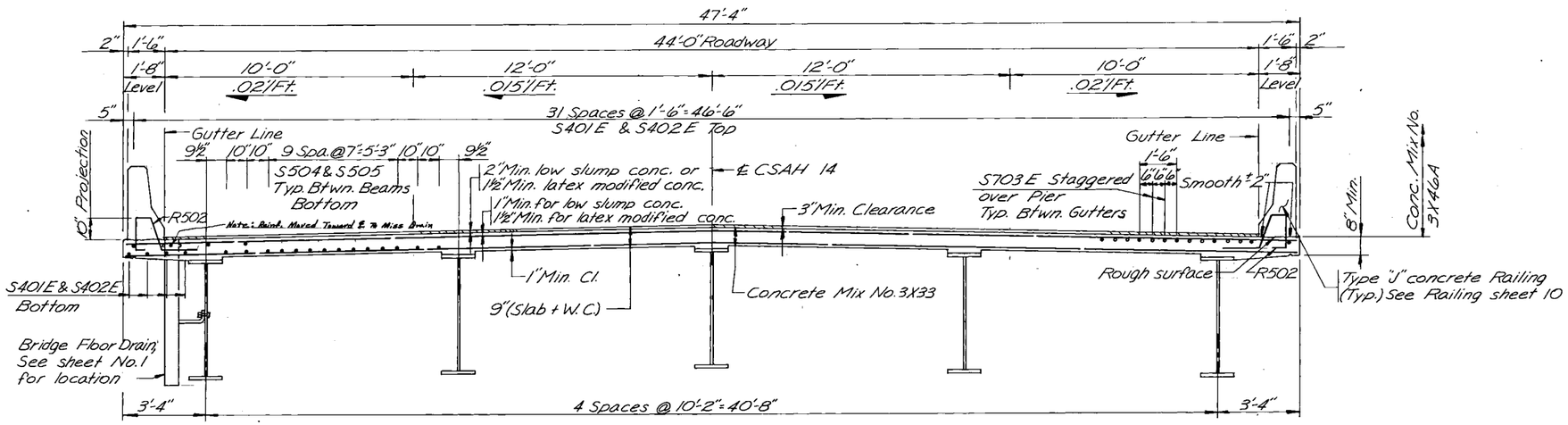
DES. T. T. S.	DR. D. Y. B.	55530
CHK. J. L. C.	CHK. T. T. S.	

State Proj. No.

Sheet No. 8 **of** 17 **Sheets**

TELEDYNE POST-117-378

Minn. Proj. No.

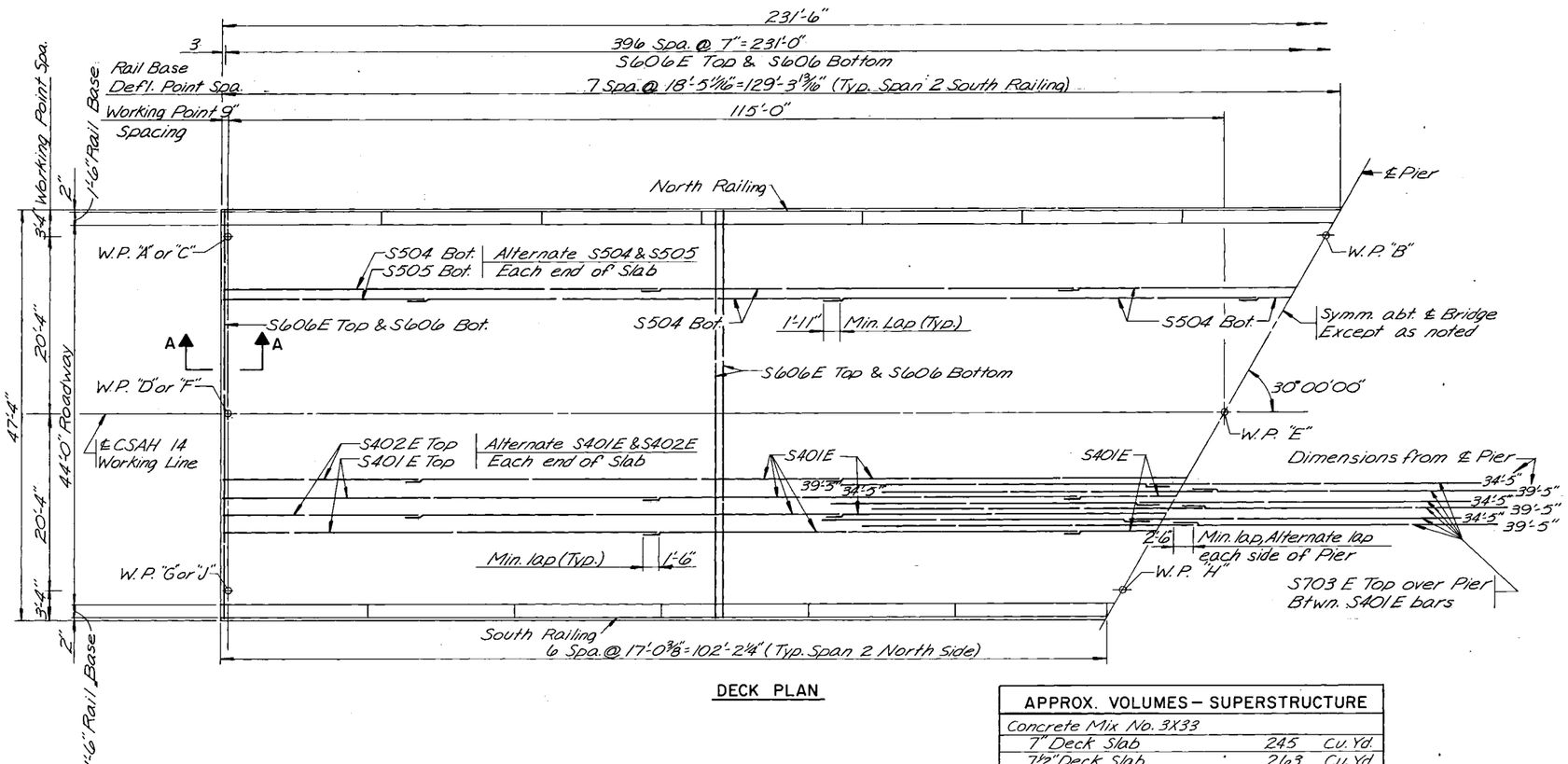


TRANSVERSE SECTION

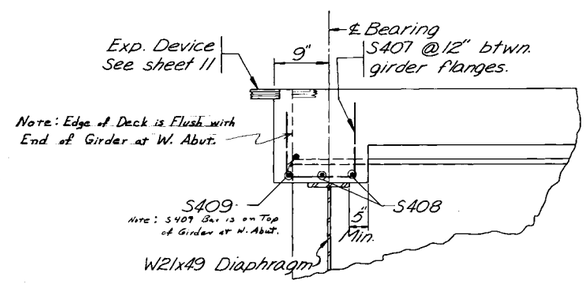
BILL OF REINFORCEMENT FOR SUPERSTR.				
Bar	No.	Length	Shape	Location
S401E	160	50'-0"	——	Slab Longit. Top
S402E	40	37'-2"	——	" " "
S703E	~~58~~ 116	38'-2"	——	over Pier
S504	224	50'-0"	——	Slab Longit. Bot.
S505	56	38'-10"	——	" " "
S606	397	47'-0"	——	Slab Trans. Bot.
S606E	397	47'-0"	——	" " Top
S407	80	2'-11"	L	End of Slab, Stirrup
S408	16	9'-10"	——	" " " Trans.
S409	2	47'-0"	——	" " " "

SUMMARY OF QUANTITIES FOR SUPERSTR.			
(5)(4) Concrete, Mix No. 3X33 *	17,125	Sq. Ft.	
(5)(1) Concrete, Mix No. 3X46A *	470	Lin. Ft.	
(5) Concrete, Mix No. Special *	10,186	Sq. Ft.	
(2) Reinforcement Bars	42,300	Pound	
(5)(2) Reinforcement Bars (Epoxy Coated)	44,880	Pound	
Structural Steel (3309)	306,720	Pound	
(3) Bridge Name Plate	1	Unit	
(5) Expansion Joint Device, Type 2	91	Lin. Ft.	
Elastomeric Bearing Pad, Type I	10	Each	
Elastomeric Bearing Assy. Type I	5	Each	
Bridge Floor Drains Type I	12	Each	

* See table below for approx. volume of quantity.
(1) Bridge Railing out to out of End Post.
(2) Includes Railing and End Post Reinf.
(3) Bridge 55530, 1979.
(4) Includes Slab section on top of Abut. wall.
(5) See Special Provisions.



DECK PLAN



SECTION A-A

APPROX. VOLUMES — SUPERSTRUCTURE		
Concrete Mix No. 3X33		
7" Deck Slab	245	Cu. Yd.
7½" Deck Slab	263	Cu. Yd.
Concrete Mix 3X46A	51	Cu. Yd.
Concrete Mix Special		
2" Low Slump W.C.	63	Cu. Yd.
1½" Latex W.C.	47	Cu. Yd.

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

Bridge No. 55530

SUPERSTRUCTURE DETAILS

APPROVED: 3-30-79

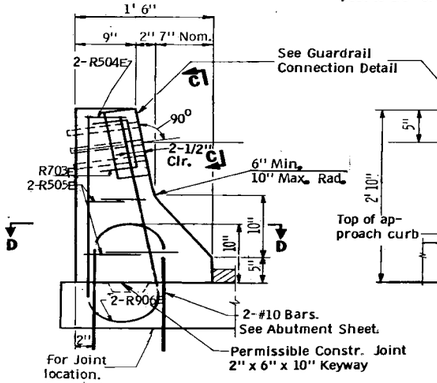
DES. T. T. S.	DR. D. Y. B.	55530
CHK. S. L. B.	CHK. T. T. S.	

State Proj. No.

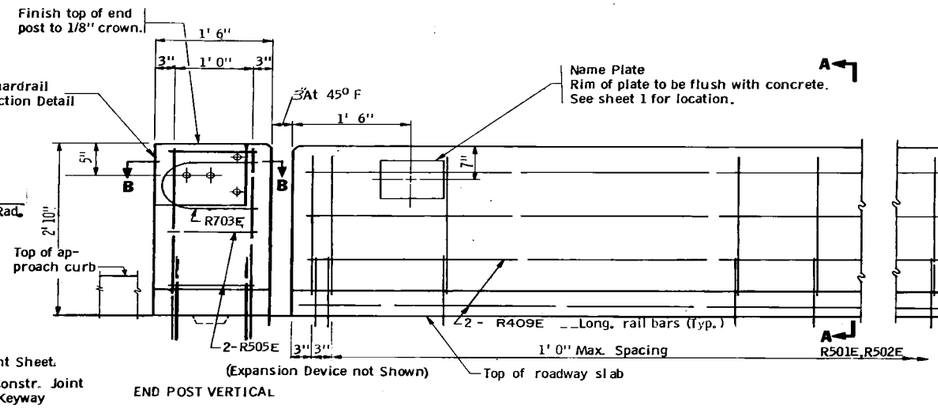
Sheet No. 9 **of** 17 **Sheets**

AS BUILT PLANS

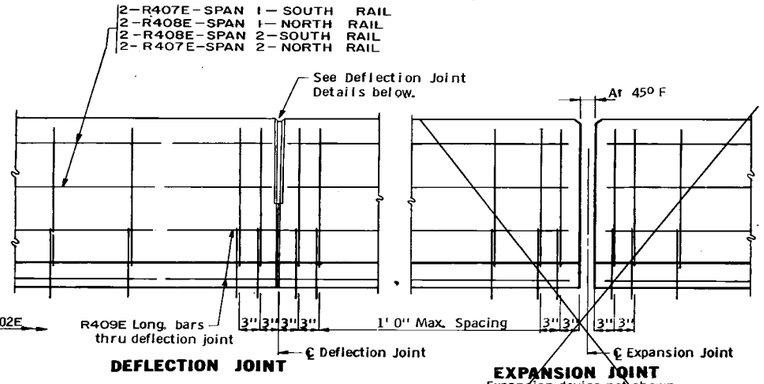
TELEDYNE POST-117-378



END VIEW



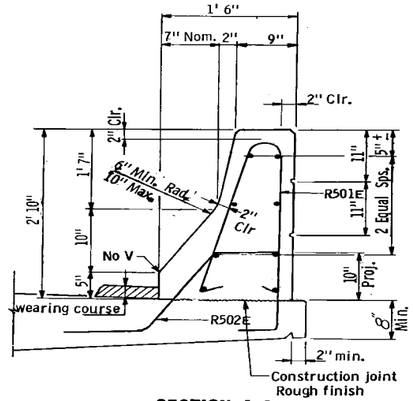
END POST VERTICAL



INSIDE ELEVATION OF RAILING
(WEARING COURSE NOT SHOWN)

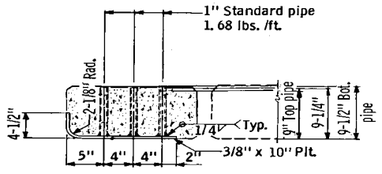
DEFLECTION JOINT

EXPANSION JOINT
Expansion device not shown.
Expansion joint required only if expansion device is used.
See superstructure sheets.

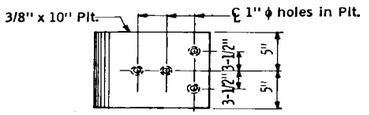


SECTION A-A

BILL OF REINFORCEMENT FOR RAILING				
BAR	NO.	LENGTH	SHAPE	LOCATION
R501E	264	6' 2"	Bent	Rail Vertical
R502E	264	5' 5"	Bent	Rail Vertical
R703E	4	4' 4"	Bent	End Post
R504E	8	2' 3"	Bent	End Post
R505E	16	2' 7"	Bent	End Post
R906E	8	7' 9"	Bent	End Post
R407E	56	18'-1"	Str't.	Rail Long.
R408E	48	16'-8"	Str't.	Rail Long.
R409E	56	34'-3	Str't.	Rail Long.

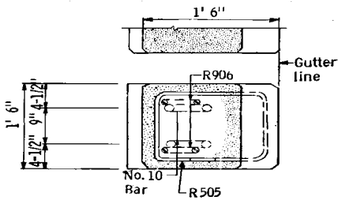


SECTION B-B
(Reinf. not shown)

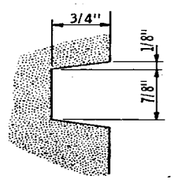


VIEW C-C

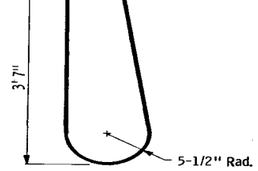
GUARDRAIL CONNECTION DETAIL
GALVANIZE AFTER FABRICATION PER SPEC. 3394
Est. Wt. 24 Lbs.



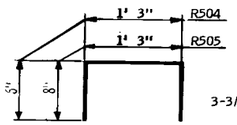
SECTION D-D



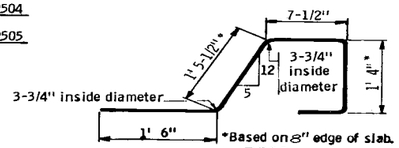
RAIL RUSTICATION



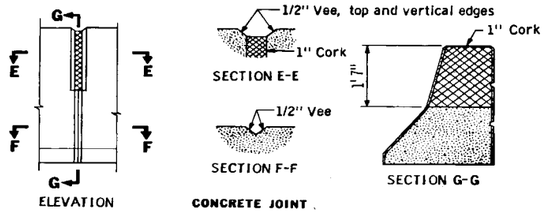
R906



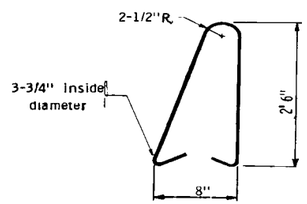
R504 & R505



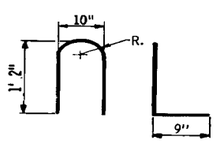
R502



DEFLECTION JOINT DETAILS



R501



R703

GENERAL NOTES

Conc. Railing - 440 lbs./ft.

Conc. Railing - .109 cu. yds./ft.

Rail and end post to be Concrete Mix No. 3X46A

Guardrail connection to be Structural Steel, Spec. 3306

Finish all edges of rail and end post with 1/2" vee except where otherwise noted.

See superstructure sheet for joint spacing.

Maximum spacing of concrete deflection joints shall be 20' 0".

Guardrail connection to be included in price bid for other items.

Rail quantities are included in summary of quantities for superstructure.

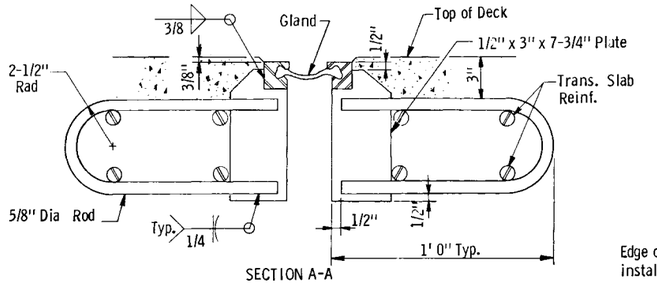
Length of railing concrete to be measured for payment between outside faces of end posts.

Fig. 5-397.116

Revised: May 5, 1978 | Approved: July 11, 1977

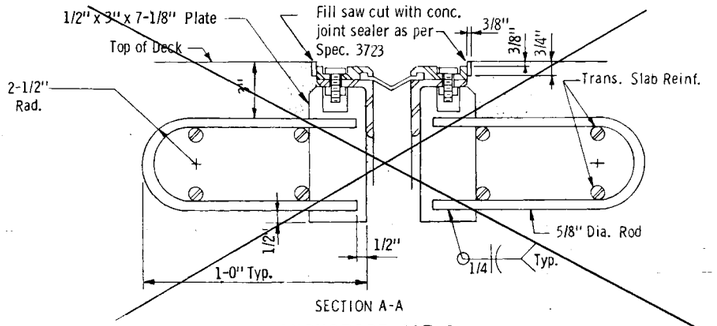
TITLE:				
CONCRETE RAILING (TYPE J) WITH SEPARATE END POST	DES: T. T. S.	DR: D. Y. B.	APPROVED: 3-30-79	**Bridge No.** 55530
	CHK:	CHK:	**Sheet No. 10 of 17 Sheets**	

AS BUILT PLANS



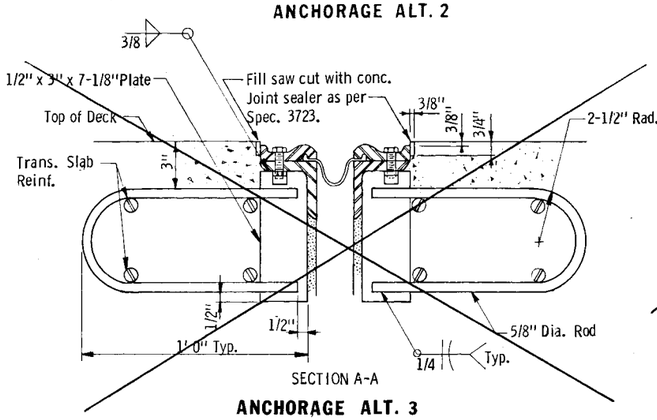
SECTION A-A

ANCHORAGE ALT. 1



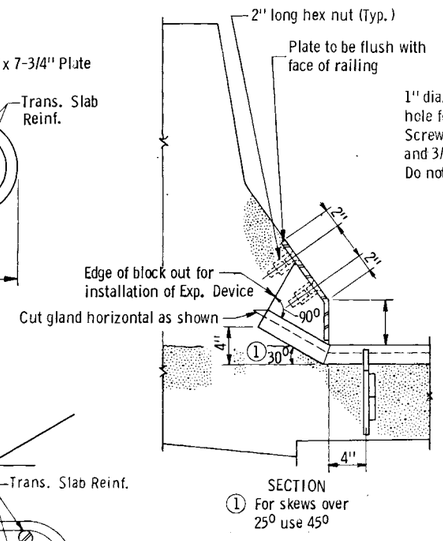
SECTION A-A

ANCHORAGE ALT. 2



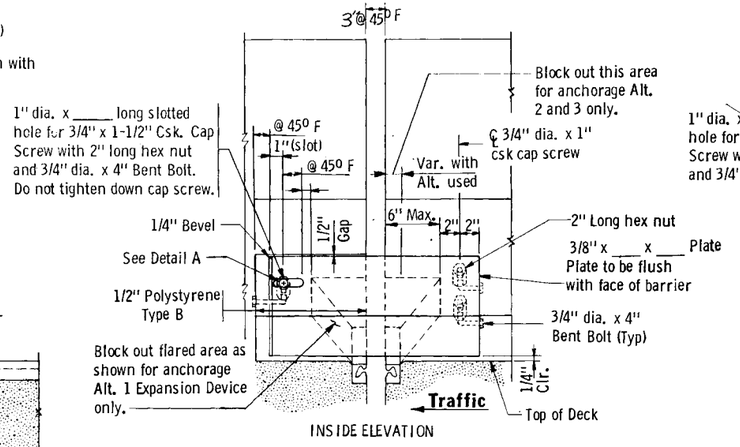
SECTION A-A

ANCHORAGE ALT. 3



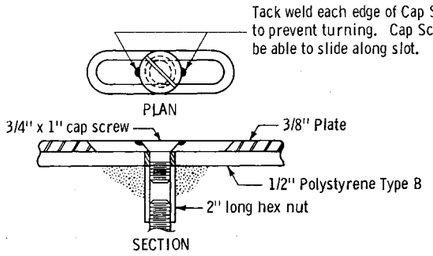
SECTION

1 For skews over 25° use 45°



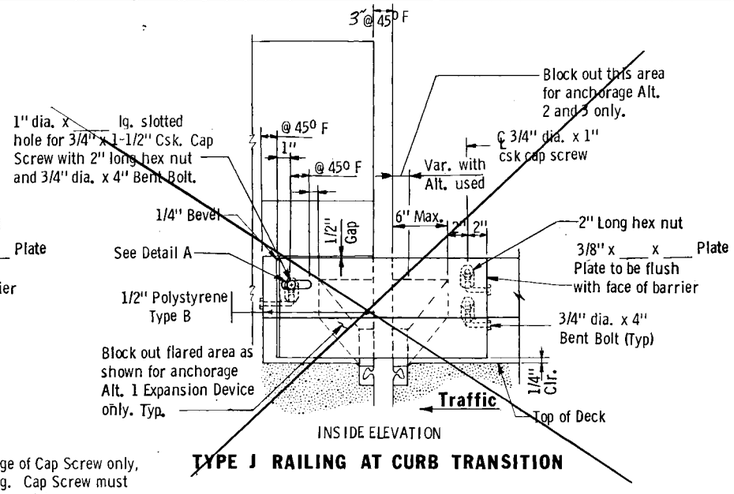
INSIDE ELEVATION

TYPE J RAILING ~~OR MEDIAN~~



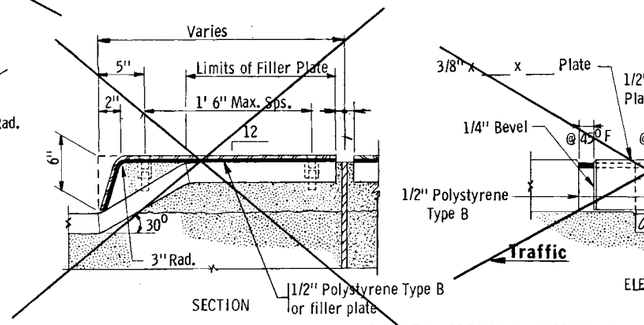
SECTION

DETAIL A



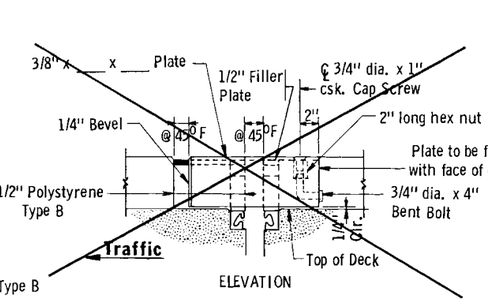
INSIDE ELEVATION

TYPE J RAILING AT CURB TRANSITION

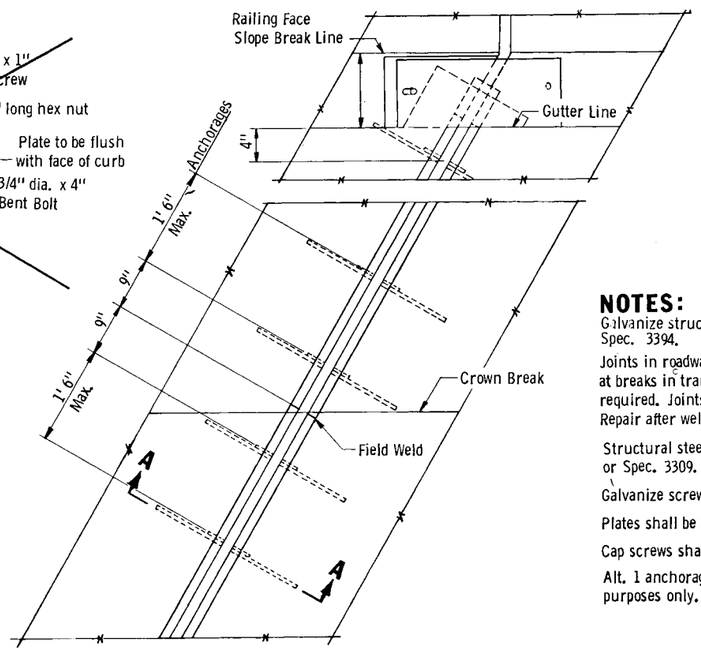


SECTION

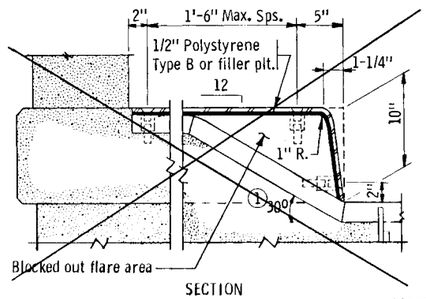
~~RAISED MEDIAN DETAILS~~



ELEVATION

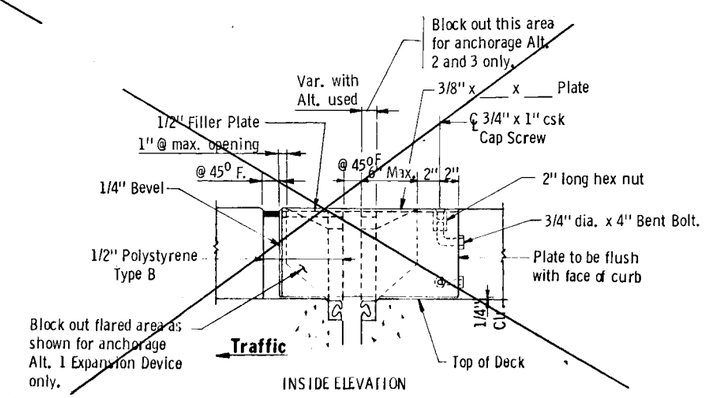


PLAN VIEW AT EXPANSION DEVICE



SECTION

1 For skews over 25° use 45°



INSIDE ELEVATION

~~SIDEWALK DETAILS~~

NOTES:

Galvanize structural steel after fabrication as per Spec. 3394.

Joints in roadway plate or extrusion shall be located at breaks in transverse profile and as otherwise required. Joints shall be close fit and welded. Repair after welding as per Spec. 2471.3L.

Structural steel shall comply with Spec. 3306. or Spec. 3309.

Galvanize screws and nuts as per Spec. 3392

Plates shall be flat after galvanizing.

Cap screws shall be csk. 1/16" below top of plate

Alt. 1 anchorage is shown for illustration purposes only.

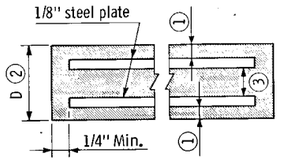
CMT WABO A2 EXPANSION S-400 GLAND

Fig. 5-397.627

Revised: March 16, 1978 Approved: December 5, 1977

TITLE:	DES: T. T. S.	DR: D. Y. B.	APPROVED: 3-30-79	Bridge No.
WATERPROOF EXPANSION DEVICE	CHK:	CHK:	**Sheet No. 11 of 17 Sheets**	55530

AS BUILT PLANS



SECTION THRU PAD

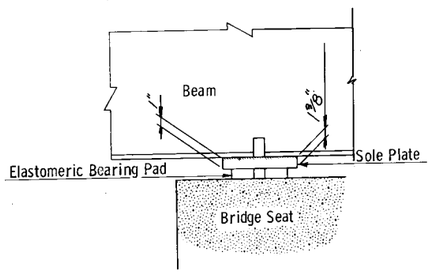
① 1/8" for 1/2" and 3/4" laminate.
3/16" for 3/8" laminate.

② Total thickness including the steel plates.

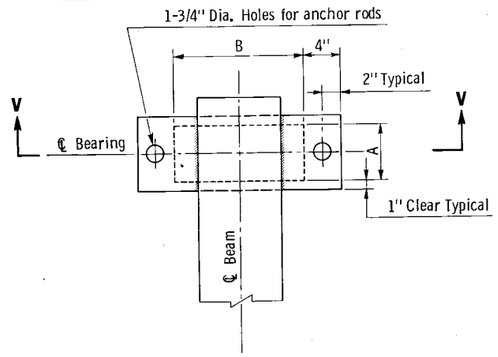
③ For maximum laminate thickness, see Elastomeric Pad Table

STEEL LAMINATE PAD DETAIL

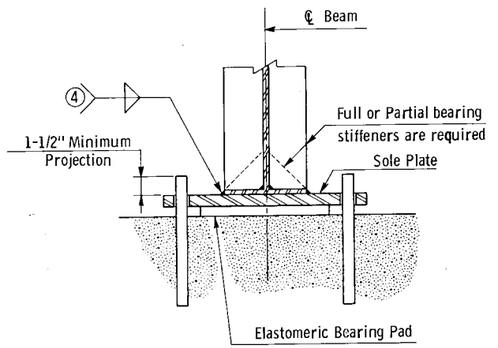
(1" pad with 3/8" laminate shown)



SIDE ELEVATION AT PIER
(Looking North)

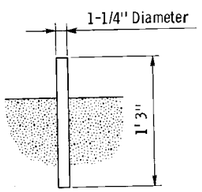


PLAN



SECTION V-V

④ 5/16" minimum fillet weld for 3/4" up to and including 1-1/2" thick sole plates.
3/8" minimum fillet weld for over 1-1/2" to 2-1/4" thick sole plates.



ANCHOR ROD DETAIL

ELASTOMERIC PAD TABLE

Pad Size A	Pad Size B	D	DL + LL Min. (Kips)	DL Max. (Kips)	DL + LL Max. (Kips)	Shape Factor	Sole Plate Size: For Beam Flanges 9" to 10-1/2"	Sole Plate Size: For Beam Flanges 11-1/2" to 12"	Sole Plate Size: For Beam Flanges 15" to 16"	Max. Lam. Thk.	Assy. Type
~~6"~~	~~14"~~	~~1"~~	~~17~~	~~42~~	~~67~~	~~6~~	~~8" x 22" x 1 1/4"~~	~~8" x 22" x 1"~~	~~8" x 22" x 1"~~	~~3/8"~~	
~~6"~~	~~16"~~	~~1"~~	~~19~~	~~48~~	~~77~~	~~6~~	~~8" x 24" x 1 1/2"~~	~~8" x 24" x 1 1/4"~~	~~8" x 24" x 1"~~	~~3/8"~~	
~~8"~~	~~14"~~	~~1"~~	~~22~~	~~56~~	~~90~~	~~7~~	~~10" x 22" x 1 1/4"~~	~~10" x 22" x 1"~~	~~10" x 22" x 1"~~	~~3/8"~~	
~~8"~~	~~16"~~	~~1"~~	~~26~~	~~64~~	~~102~~	~~7~~	~~10" x 24" x 1 1/2"~~	~~10" x 24" x 1 1/4"~~	~~10" x 24" x 1"~~	~~3/8"~~	
~~10"~~	~~14"~~	~~1"~~	~~28~~	~~70~~	~~112~~	~~8~~	~~12" x 22" x 1 1/4"~~	~~12" x 22" x 1"~~	~~12" x 22" x 1"~~	~~3/8"~~	
~~10"~~	~~16"~~	~~1"~~	~~32~~	~~80~~	~~128~~	~~6~~	~~12" x 24" x 1 1/2"~~	~~12" x 24" x 1 1/4"~~	~~12" x 24" x 1"~~	~~1/2"~~	
~~12"~~	~~14"~~	~~1"~~	~~34~~	~~84~~	~~134~~	~~9~~	~~14" x 22" x 1 1/4"~~	~~14" x 22" x 1"~~	~~14" x 22" x 1"~~	~~3/8"~~	
~~12"~~	~~16"~~	~~1"~~	~~38~~	~~96~~	~~154~~	~~7~~	~~14" x 24" x 1 1/2"~~	~~14" x 24" x 1 1/4"~~	~~14" x 24" x 1"~~	~~1/2"~~	
~~14"~~	~~16"~~	~~1"~~	~~45~~	~~112~~	~~179~~	~~7~~	~~16" x 24" x 1 1/2"~~	~~16" x 24" x 1 1/4"~~	~~16" x 24" x 1"~~	~~1/2"~~	
~~16"~~	~~20"~~	~~1"~~	~~64~~	~~160~~	~~256~~	~~9~~	~~18" x 28" x 2"~~	~~18" x 28" x 1 1/2"~~	~~18" x 28" x 1 1/4"~~	~~1/2"~~	
~~18"~~	~~20"~~	~~1"~~	~~72~~	~~180~~	~~288~~	~~9~~	~~20" x 28" x 2"~~	~~20" x 28" x 1 1/2"~~	~~20" x 28" x 1 1/4"~~	~~1/2"~~	
~~20"~~	~~20"~~	~~2"~~	~~80~~	~~200~~	~~320~~	~~7~~	~~22" x 28" x 2"~~	~~22" x 28" x 1 1/2"~~	~~22" x 28" x 1 1/4"~~	~~3/4"~~	
~~22"~~	~~20"~~	~~2"~~	~~88~~	~~220~~	~~352~~	~~7~~	~~24" x 28" x 2"~~	~~24" x 28" x 1 1/2"~~	~~24" x 28" x 1 1/4"~~	~~3/4"~~	
24"	20"	2"	96	240	384	7	~~26" x 28" x 2"~~	~~26" x 28" x 1 1/2"~~	26" x 28" x 1-1/4" *	3/4"	1

SEE SIDE ELEVATION THIS SHEET FOR SOLE PLATE TAPER

NOTES:

For elastomeric materials and pad construction, see Spec. 3741.

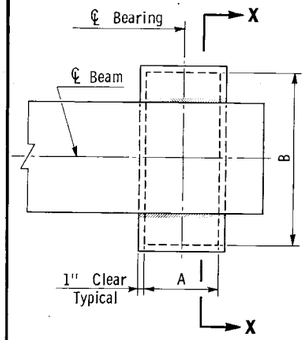
Anchor rods shall comply with Spec 3306.
Galvanize anchor rods as per Spec 3394.

Payment for bearing assembly shall include elastomeric bearing pad and anchor rods.

Sole Plate is to be of the same material Spec as the steel beam and is to be included in the weight of structural steel. Shop weld sole plate to the steel beam.

All bearing pads are to bear evenly on the bearing seats.

APPROVED: April 26, 1978	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION		DETAIL NO.
Developed by: ENGINEERING STANDARDS, BRIDGES AND STRUCTURES	**ELASTOMERIC BEARING ASSEMBLY** STEEL BEAMS (FIXED)		**B354**
Issued by: ENGINEERING STANDARDS			

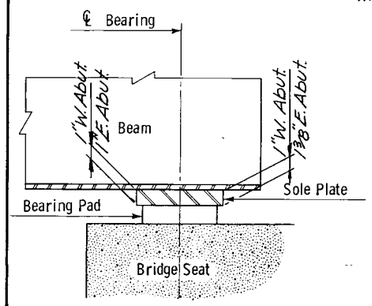


PLAN

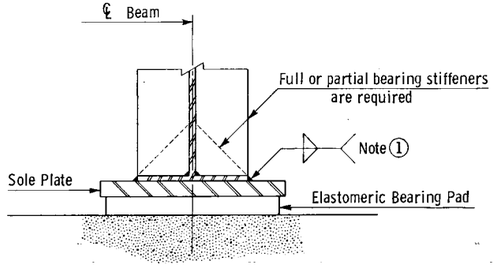
ELASTOMERIC PAD TABLE

Bearing Pad Size A	Bearing Pad Size B	D	DL + LL Min. (Kips)	DL Max. (Kips)	DL + LL Max. (Kips)	Shape Factor	Sole Plate Size: For Beam Flanges 9" to 10-1/2"	Sole Plate Size: For Beam Flanges 11-1/2" to 12"	Sole Plate Size: For Beam Flanges 15" to 16"	Lam. Thk.	Pad Type
~~6"~~	~~14"~~		~~17~~	~~42~~	~~67~~	~~6~~	~~8" x 16" x 1 1/4"~~	~~8" x 16" x 1"~~	~~8" x 16" x 1"~~	~~3/8"~~	
~~6"~~	~~16"~~		~~19~~	~~48~~	~~77~~	~~6~~	~~8" x 18" x 1 1/2"~~	~~8" x 18" x 1 1/4"~~	~~8" x 18" x 1"~~	~~"~~	~~"~~
~~8"~~	~~14"~~		~~22~~	~~56~~	~~90~~	~~7~~	~~10" x 16" x 1 1/4"~~	~~10" x 16" x 1"~~	~~10" x 16" x 1"~~	~~"~~	~~"~~
~~8"~~	~~16"~~		~~26~~	~~64~~	~~102~~	~~7~~	~~10" x 18" x 1 1/2"~~	~~10" x 18" x 1 1/4"~~	~~10" x 18" x 1"~~	~~"~~	~~"~~
~~10"~~	~~14"~~		~~28~~	~~70~~	~~112~~	~~8~~	~~12" x 16" x 1 1/4"~~	~~12" x 16" x 1"~~	~~12" x 16" x 1"~~	~~"~~	~~"~~
~~12"~~	~~14"~~		~~34~~	~~84~~	~~134~~	~~9~~	~~14" x 16" x 1 1/4"~~	~~14" x 16" x 1"~~	~~14" x 16" x 1"~~	~~"~~	~~"~~
~~10"~~	~~16"~~		~~32~~	~~80~~	~~128~~	~~6~~	~~12" x 18" x 1 1/2"~~	~~12" x 18" x 1 1/4"~~	~~12" x 18" x 1"~~	~~1/2"~~	
12"	16"	3 1/2"	38	96	154	7	~~14" x 18" x 1 1/2"~~	~~14" x 18" x 1 1/4"~~	14" x 18" x 1" *		1
~~14"~~	~~16"~~		~~45~~	~~112~~	~~179~~	~~7~~	~~16" x 18" x 1 1/2"~~	~~16" x 18" x 1 1/4"~~	~~16" x 18" x 1"~~	~~"~~	~~"~~
~~16"~~	~~20"~~		~~64~~	~~160~~	~~256~~	~~9~~	~~18" x 22" x 2"~~	~~18" x 22" x 1 1/2"~~	~~18" x 22" x 1 1/4"~~	~~"~~	~~"~~
~~18"~~	~~20"~~		~~72~~	~~180~~	~~288~~	~~9~~	~~20" x 22" x 2"~~	~~20" x 22" x 1 1/2"~~	~~20" x 22" x 1 1/4"~~	~~"~~	~~"~~
~~20"~~	~~20"~~		~~80~~	~~200~~	~~320~~	~~7~~	~~22" x 22" x 2"~~	~~22" x 22" x 1 1/2"~~	~~22" x 22" x 1 1/4"~~	3/4"	
~~22"~~	~~20"~~		~~88~~	~~220~~	~~352~~	~~7~~	~~24" x 22" x 2"~~	~~24" x 22" x 1 1/2"~~	~~24" x 22" x 1 1/4"~~	~~"~~	~~"~~
~~24"~~	~~20"~~		~~90~~	~~240~~	~~384~~	~~7~~	~~26" x 22" x 2"~~	~~26" x 22" x 1 1/2"~~	~~26" x 22" x 1 1/4"~~	~~"~~	~~"~~

* SEE SIDE ELEVATION THIS SHEET FOR SOLE PLATE TAPER



SIDE ELEVATION
(At beam end shown)



SECTION X-X

① 5/16" minimum fillet weld for 3/4" up to and including 1-1/2" thick sole plates.
3/8" minimum fillet weld for over 1-1/2" to 2-1/4" thick sole plates.

NOTES: All bearing pads are to bear evenly on the bearing seats.

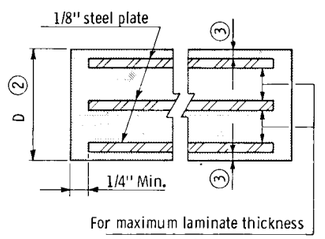
For elastomeric material and pad construction, see Spec. 3741.

The Sole Plate will be the same material spec. as the steel beam and will be included in the weight of structural steel. Shop weld the sole plate to the steel beam.

Minimum A dimension shall be 3[D - 1/8 (No. of steel plates)]
Minimum B dimension shall be 2[D - 1/8 (No. of steel plates)]

MOVEMENT AND LAMINATE TABLE

MAXIMUM MOVEMENT 3/8" Lam.	MAXIMUM MOVEMENT 1/2" Lam.	MAXIMUM MOVEMENT 3/4" Lam.	PAD THICKNESS D	MAXIMUM NO. OF LAMINATES 3/8" Lam.	MAXIMUM NO. OF LAMINATES 1/2" Lam.	MAXIMUM NO. OF LAMINATES 3/4" Lam.
3/16"	1/4"	—	1"	1	1	—
3/8"	7/16"	—	1-1/2"	2	2	—
9/16"	5/8"	11/16"	2"	3	3	2
3/4"	13/16"	7/8"	2-1/2"	4	4	3
15/16"	1"	1-1/8"	3"	5	5	3
1-1/8"	1-1/4"	1-5/16"	3-1/2"	6	5	4
1-5/16"	1-7/16"	1-1/2"	4"	7	6	5
1-1/2"	1-5/8"	1-3/4"	4-1/2"	8	7	5
1-11/16"	1-13/16"	1-15/16"	5"	9	8	6
1-7/8"	2"	2-3/16"	5-1/2"	10	9	6
2-1/16"	2-1/4"	2-3/8"	6"	11	9	7
2-1/4"	2-7/16"	2-5/8"	6-1/2"	12	10	7
2-7/16"	2-5/8"	2-13/16"	7"	13	11	8
2-5/8"	2-13/16"	3"	7-1/2"	14	12	9
2-13/16"	3"	3-1/4"	8"	15	13	9



SECTION THRU PAD

② Total thickness including the steel plates

③ 1/8" for 1/2" and 3/4" laminates
3/16" for 3/8" laminates

STEEL LAMINATE PAD DETAIL

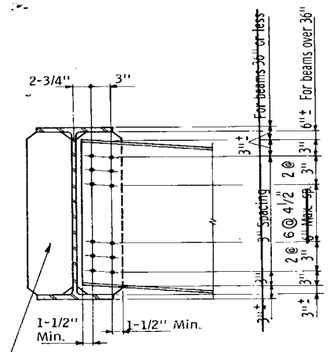
(1-1/2" Pad With 1/2" Laminates Shown)

APPROVED: April 26, 1978	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION		DETAIL NO.
Developed by: ENGINEERING STANDARDS, BRIDGES AND STRUCTURES	**ELASTOMERIC BEARING PAD** STEEL BEAMS (EXPANSION)		**B355**
Issued by: ENGINEERING STANDARDS			

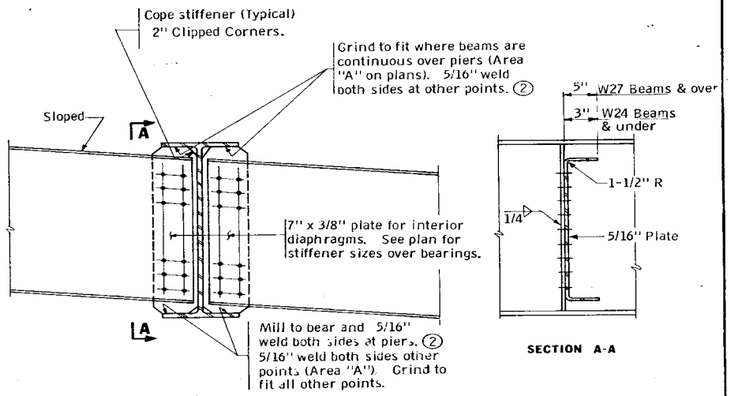
TITLE: BEARING DETAILS	DES: T. T. S.	DR: D. Y. B.	APPROVED: 3-30-79	Bridge No. 55530
	CHK:	CHK:	Sheet No. 12 of 17 Sheets	

NORTHSTAR # 117

AS BUILT PLANS



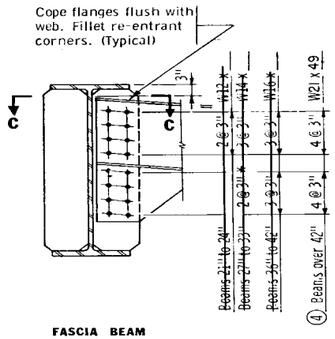
FASCIA BEAM



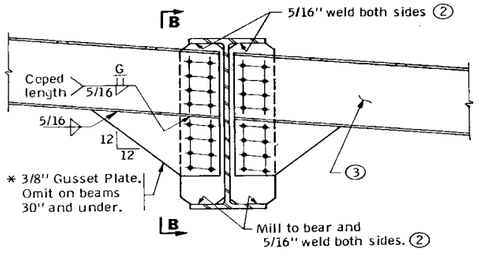
INTERMEDIATE BEAMS

INTERMEDIATE AND PIER DIAPHRAGMS

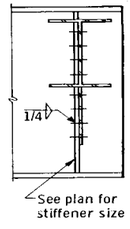
SECTION A-A



FASCIA BEAM

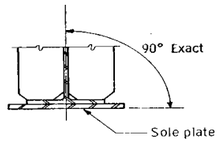


INTERMEDIATE BEAMS

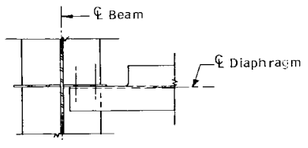


SECTION B-B

ABUTMENT DIAPHRAGMS



TYPICAL DETAIL AT BEARINGS

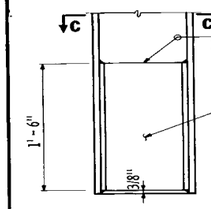


SECTION C-C

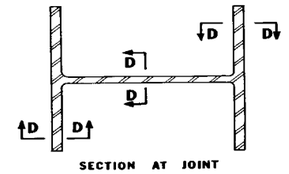
NOTES

1. Use 7/8" high strength bolts or 7/8" pin bolts
2. For flange material over 1-1/2" thick, use 3/8" weld.
3. Where expansion device is bolted to end diaphragm, use W12 x 53 (for 21" to 24" beams), W14 x 61 (for 27" to 33" beams) and W16 x 71 (for 36" to 42" beams). For beam heights over 42", see framing plan for size of diaphragm.
4. For beam heights over 42", diaphragm to be at least 1/3 the beam height.
5. Material to be structural steel per Mn. D. O. T. 3309.

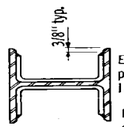
APPROVED:	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Developed by: ENGINEERING STANDARDS, AND BRIDGES AND STRUCTURES Issued by: ENGINEERING STANDARDS	**BOLTED DIAPHRAGMS FOR STEEL BEAMS**	Nov. 2, 1977	**B402**



ELEVATION



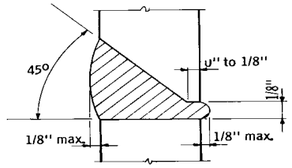
SECTION AT JOINT



SECTION C - C

Each pile tip reinforced, will be paid for in amount equal to 5 linear feet of piling delivered.

Pile tips shall be reinforced only when directed by the Engineer.



SECTION D - D

DETAIL OF PILE TIP REINFORCEMENT

NOTES:

A. W. S. Type E7010 or E7018 (low-hydrogen) electrodes shall be used for 100% butt welded splices.

A. W. S. Type E6010, E6011 electrodes, or E7016 or E7018 (low-hydrogen) electrodes, shall be used for the alternate plate type pile splice.

Low-hydrogen electrodes shall be supplied in hermetically (air-tight) sealed containers.

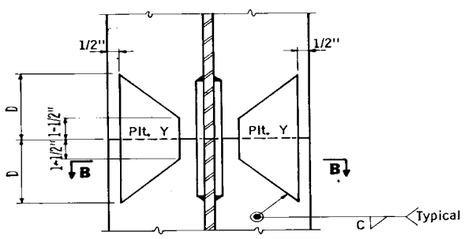
Low-hydrogen electrodes shall be stored in holding ovens at a temperature of not less than 250° F.

Low-hydrogen electrodes shall be placed in a holding oven for at least 8 hours, after having been exposed to the atmosphere for more than 2 hours.

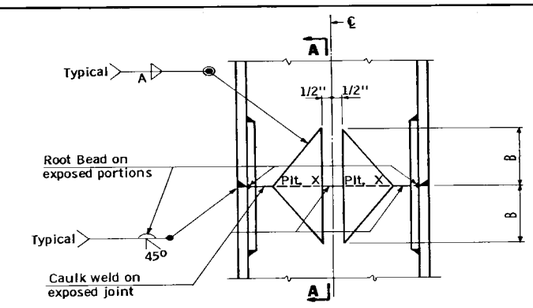
Any type electrode which has become wet, soiled, or damaged shall not be used.

Welding shall not be done when the ambient temperature is lower than 0° F. or when the pile is wet or exposed to falling rain or snow. When the pile metal temperature is below 32° F., the pile metal in the area of the weld shall be heated to a minimum temperature of 70° F. and maintained at this temperature during welding.

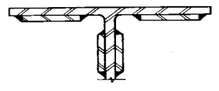
100% BUTT WELDED PILE SPLICE



SECTION A-A



ELEVATION



SECTION B - B

PILE SECTION	PLATE X Size	A	B	PLATE Y Size	C	D
HP10 x 42	2-1/2 x 3/8	1/4	4	3 x 3/8	5/16	4
HP10 x 57	2-1/2 x 1/2	5/16	4	3 x 1/2	5/16	5
~~HP12 x 53~~	~~3-1/2 x 3/8~~	~~1/4~~	~~5~~	~~4 x 3/8~~	~~5/16~~	~~5~~
~~HP12 x 74~~	~~3-1/2 x 1/2~~	~~5/16~~	~~6~~	~~4 x 1/2~~	~~5/16~~	~~6~~
~~HP14 x 73~~	~~4-1/2 x 3/8~~	~~1/4~~	~~7~~	~~5 x 3/8~~	~~5/16~~	~~6~~
~~HP14 x 89~~	~~4-1/2 x 7/16~~	~~5/16~~	~~7~~	~~5 x 1/2~~	~~5/16~~	~~7~~
~~HP14 x 102~~	~~4-1/2 x 1/2~~	~~5/16~~	~~7~~	~~5 x 9/16~~	~~3/8~~	~~7~~
~~HP14 x 117~~	~~4-1/2 x 9/16~~	~~3/8~~	~~7~~	~~5 x 5/8~~	~~3/8~~	~~8~~

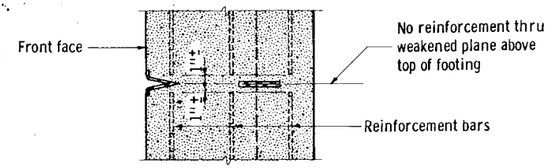
ALTERNATE PILE SPLICE

APPROVED July 21, 1972 Douglas Duffert Engineering Standards Engineer RESEARCH AND STANDARDS DIVISION	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION		DETAIL NO.
	PILE SPLICE and TIP REINFORCEMENT STEEL H BEARING PILES 10" TO 14"		**B202**

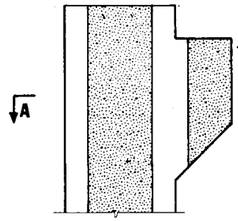
TITLE:	DES: T. T. S.	DR: D. Y. B.	APPROVED: 3-30-79	Bridge No.
DETAILS	CHK:	CHK:	Sheet No. 13 of 17 Sheets	55530

NORTHSTAR # 117

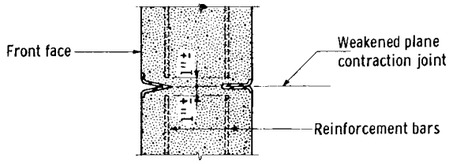
AS BUILT PLANS



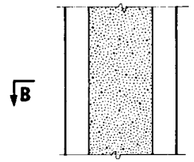
SECTION A - A



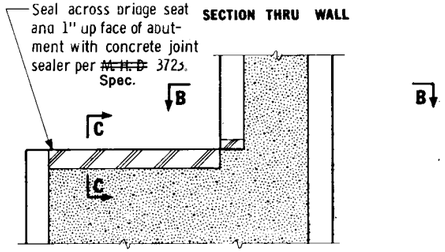
SECTION THRU PAVING BRACKET



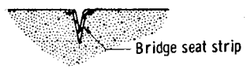
SECTION B - B



SECTION THRU WALL

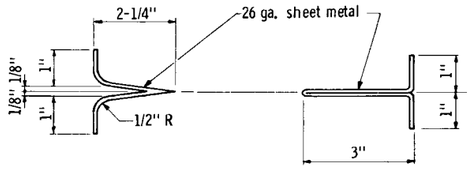


SECTION THRU BRIDGE SEAT



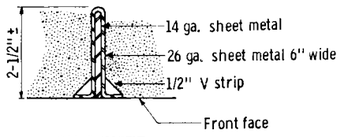
SECTION C - C

PART SECTION THRU ABUTMENT AT JOINT



BRIDGE SEAT and FRONT STRIP
6" wide

BACK STRIP
8" wide



ALTERNATE BRIDGE SEAT and FRONT STRIP

NOTES:

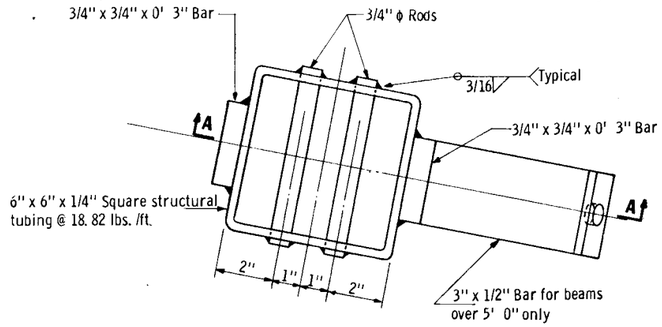
The methods and materials indicated hereon shall be considered as suggested only. Variations will be permitted, subject to approval by the Engineer, but must provide dummy joints of a depth not less than the depth shown, and a width at the front face of the abutment of not greater than 5/16". The separation of the horizontal reinforcement bars shall be not less than 1-1/2" nor more than 3", centered as shown, regardless of the procedure used for forming the dummy joint.

Front and bridge seat strips shall be removed with forms, except if a suitable plastic or other durable material satisfactory to the Engineer, is used the material may be left in place. Back strip to remain in place.

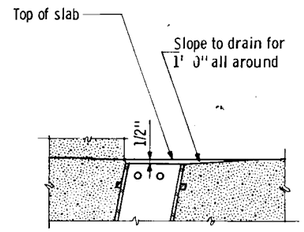
Back metal strips to be galvanized sheet metal. Fasten to forms with 7/8" roofing nails about 6" centers.

Cost of forming joint to be included in price bid for other items.

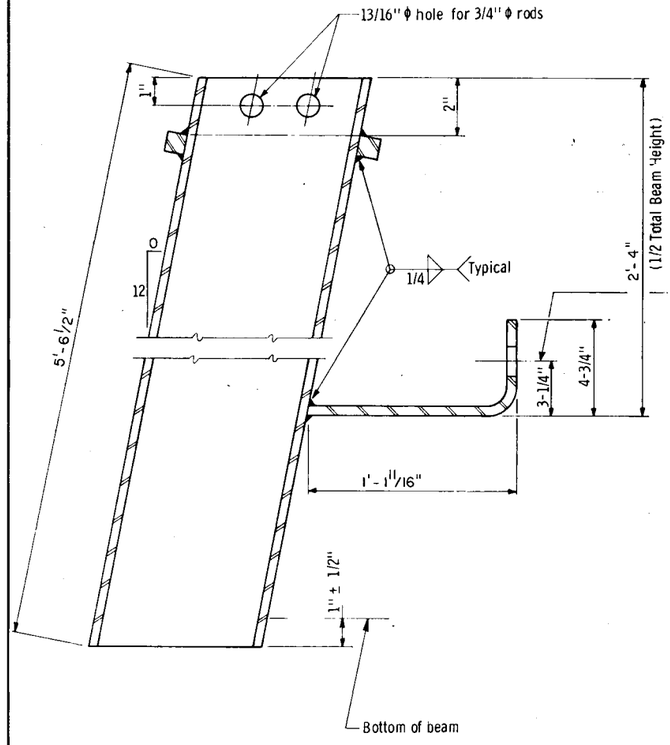
APPROVED Feb. 15, 1972 Douglas Dight Engineering Standards Engineer RESEARCH AND STANDARDS DIVISION	MINNESOTA DEPARTMENT OF TRANSPORTATION **CONTRACTION JOINT**		DETAIL NO. **B801**



PLAN VIEW



PLACEMENT DIAGRAM



SECTION A - A

NOTES:

Material to be structural steel per ~~M.H.D.~~ Spec. 3306.

Galvanize bolts and washer per ~~M.H.D.~~ Spec. 3392.

Galvanize other materials per ~~M.H.D.~~ Spec. 3394 after fabrication.

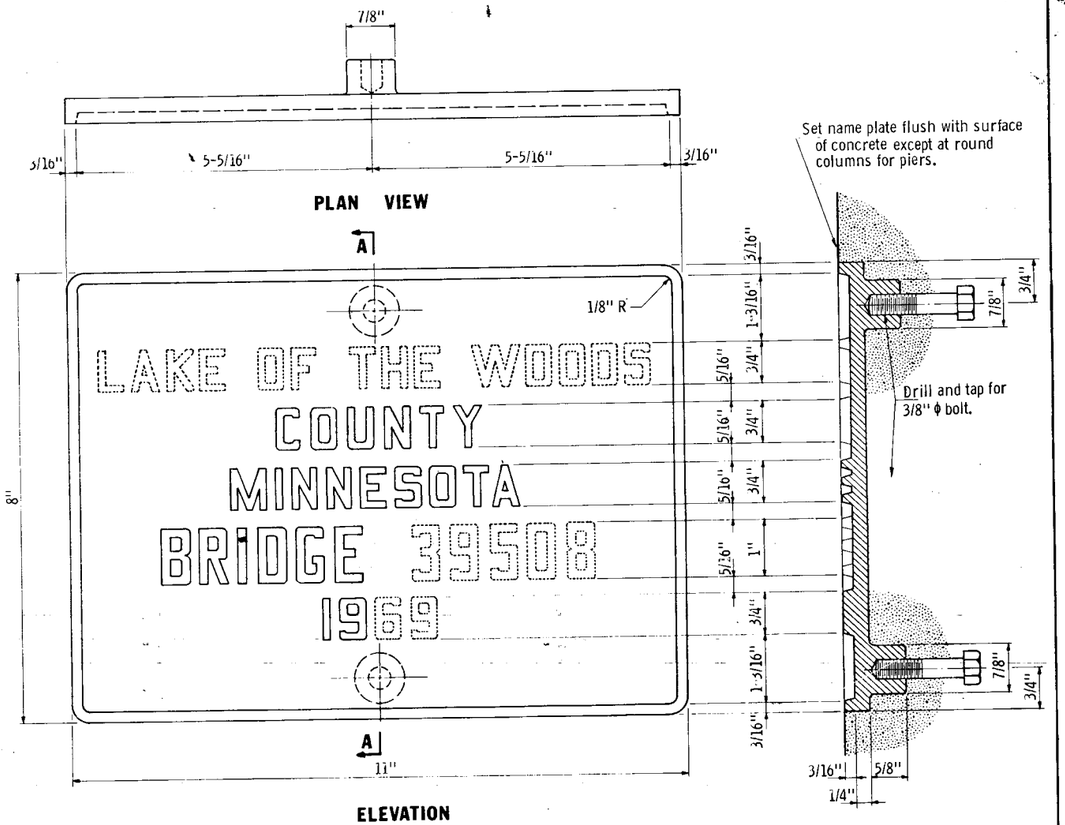
Payment for Floor Drain Type 1 shall include all material shown on this detail.

APPROVED: Aug. 12, 1975 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	MINNESOTA DEPARTMENT OF TRANSPORTATION **BRIDGE FLOOR DRAIN** **STRUCTURAL TUBING**		DETAIL NO. **B702**

TITLE: DETAILS	DES: T. T. S.	DR: D. Y. B.	APPROVED: 3-30-79	**Bridge No.** 55530
	CHK:	CHK:	**Sheet No. 14 of 17 Sheets**	

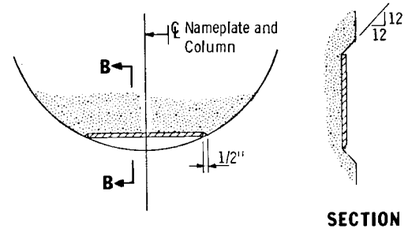
AS BUILT PLANS

NORTHSTAR # 117



The numbers shown above are for illustration.
Data to be shown on name plate is as follows:

BRIDGE 55530
YEAR 1979



SECTION B-B

NOTES:

No shop drawing required. Spec.
Material shall comply with ~~M.H.D.~~ 3327.
Numbers and letters shall conform to those shown.
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.
Furnish 2 steel bolts 3/8" ϕ x 3" long with each plate.
All dimensions for 3/4" high letters and numbers shall be in direct proportion to those shown for the 1" high letters and numbers.

NAMEPLATE PLACEMENT

(Round Concrete Pier Columns)

LETTERS & NUMBERS FOR NAMEPLATES



Specification reference:
2471 3H, A.S.T.M. Designation: B145 - Alloy 836.

APPROVED: March 15, 1976

Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN

Issued by: OFFICE OF ENGINEERING STANDARDS

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
BRIDGE NAMEPLATE
COUNTY BRIDGES

DETAIL NO. **B103**

TITLE:	DES: T. T. S.	DR: D. Y. B.	APPROVED: 3-30-79	Bridge No.
DETAILS	CHK:	CHK:	Sheet No. 15 of 17 Sheets	55530

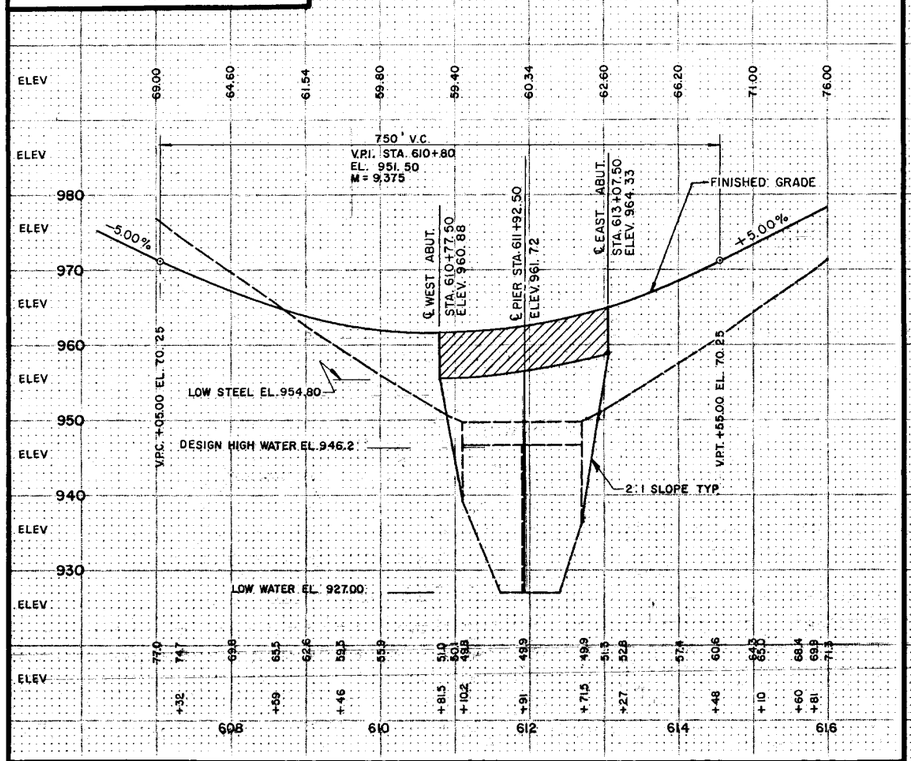
NORTHSTAR # 117

AS BUILT PLANS

Minn. Proj. No. BR-RS 6219(5)

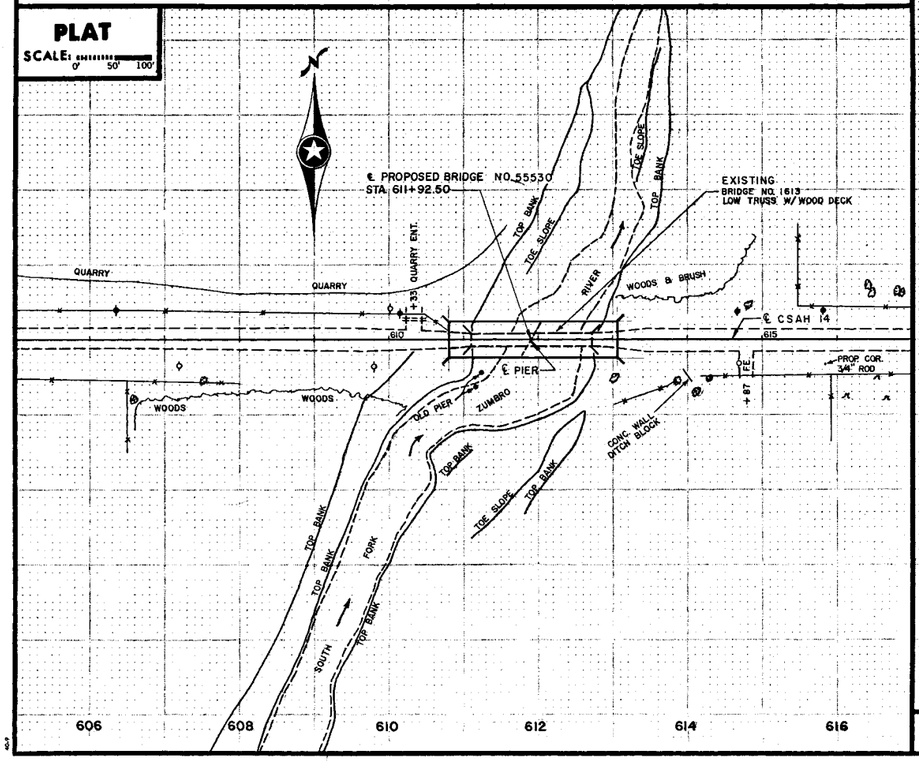
CONTRACTED PROFILE

SCALE: HOR. 0' 50' 100' VER. 0' 5' 10'



PLAT

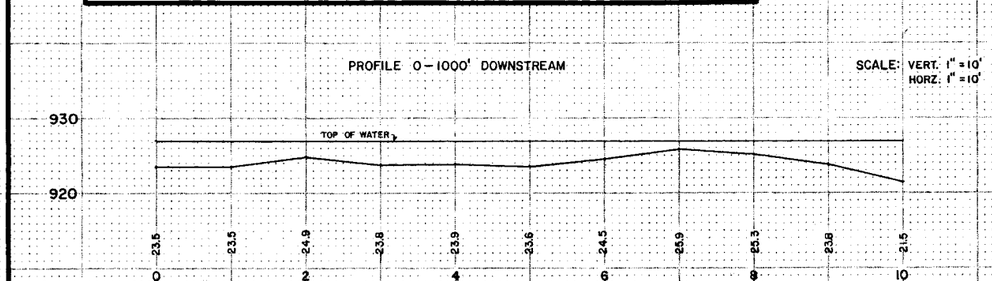
SCALE: 0' 50' 100'



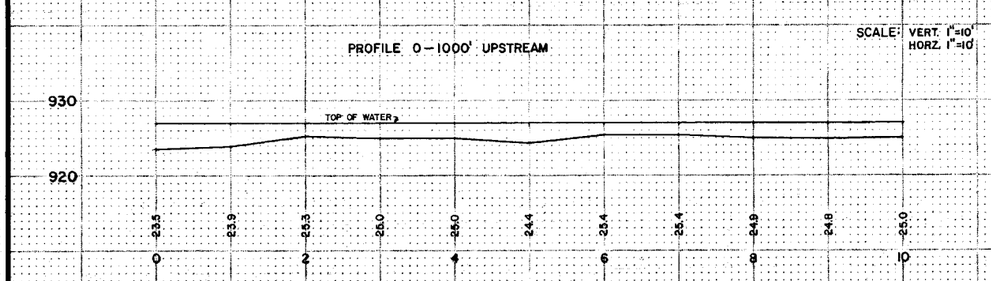
TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN

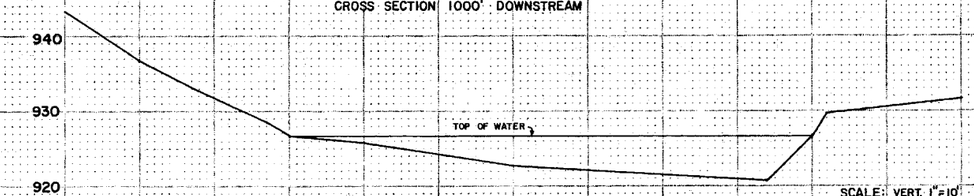
PROFILE 0-1000' DOWNSTREAM — SCALE: VERT. 1" = 10' HORZ. 1" = 10'



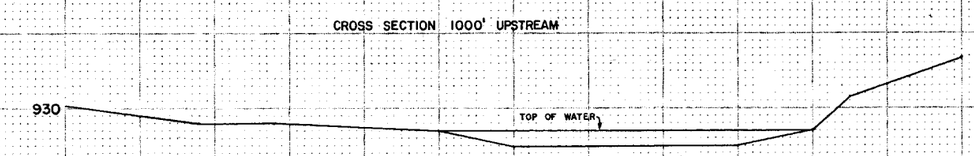
PROFILE 0-1000' UPSTREAM — SCALE: VERT. 1"=10' HORZ. 1"=10'



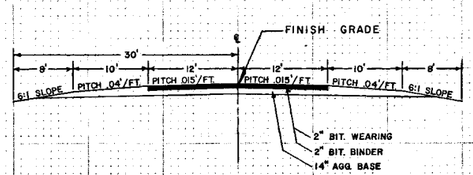
CROSS SECTION 1000' DOWNSTREAM — SCALE: VERT. 1"=10' HORZ. 1"=10'

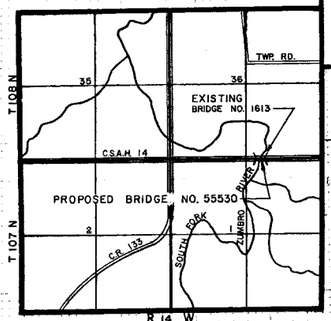


CROSS SECTION 1000' UPSTREAM



TYPICAL GRADING SECTION





LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

1. Special Features: Waterfalls, dams, floods, ice, debris, sliding banks, recreational boating.
   SUBJECT TO DRIFT WOOD FROM WOOD AREAS UPSTEAM
2. Other bridges or culverts over the same stream (particularly structures which carry high water without overflow of roadway) :Given location, type, length, height above high water, cross-sectional area etc.
   UPSTREAM 3 1/4 MILES BRIDGE NO. 55519, 3 — SPANS, TOTAL LENGTH 264.7'
   PRESTRESSED CONCRETE GIRDERS, LOW CONCRETE 3.0' ABOVE DESIGN HIGHWATER.
   DESIGN HIGHWATER EL. 970.8 AND CROSS SECTIONAL AREA OF 2350 SQ. FT.
3. Apparent highwater elevation 942.11 Obtained from FLOOD ON MARCH 29, 1952
4. Other data: Approx. velocity of water at time of survey.

HYDRAULIC ENGINEERS RECOMMENDATION

DATE 5-21-77

Stream or ditch designation SOUTH FORK ZUMBRO RIVER
Drainage area 337 SQ. MILES
Max. discharge on record 19,600 Design discharge (50 yr. freq.) 23,000 C.F.S.
Max. observed highwater elevation 942.11 Design highwater elevation 946.2
Design mean velocity through structure 7.6 F.P.S.
Low superstructure at or above elevation 949.2
Flowline elevation 921.0 Skew angle 30° PIER ONLY
Waterway area req'd. below elevation 946.1 = 3030 Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr. freq.) is 29,400 C.F.S. at stage 948.6 and mean velocity of 8.6 F.P.S. with 0.1 Ft. swellhead. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of Natural Resources.

FOUNDATION ENGINEERS RECOMMENDATION

DATE 1-23-78

WEST ABUTMENT TO BE SUPPORTED BY PILING
PIER TO BE SUPPORTED BY PILING
EAST ABUTMENT TO BE SUPPORTED BY PILING

Bridge survey sheets made from:

Bench mark elevation 948.73 (M.S.L. 1929 Adj.)
Location: TOP BOLT ON BRIDGE SEAT, STA. 611+10, 10.5 RT. BRIDGE NO. 1613

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT ON CSAH 14 (T.H., C.S.A.H., C.R. etc.)
PROPOSED BRIDGE LOCATED 0.81 MILES WEST OF TH. NO. 63
SEC. 1 TWP. 107N R. 14W
TOWNSHIP CASCADE COUNTY OLMSTED
BRIDGE NO. 55530

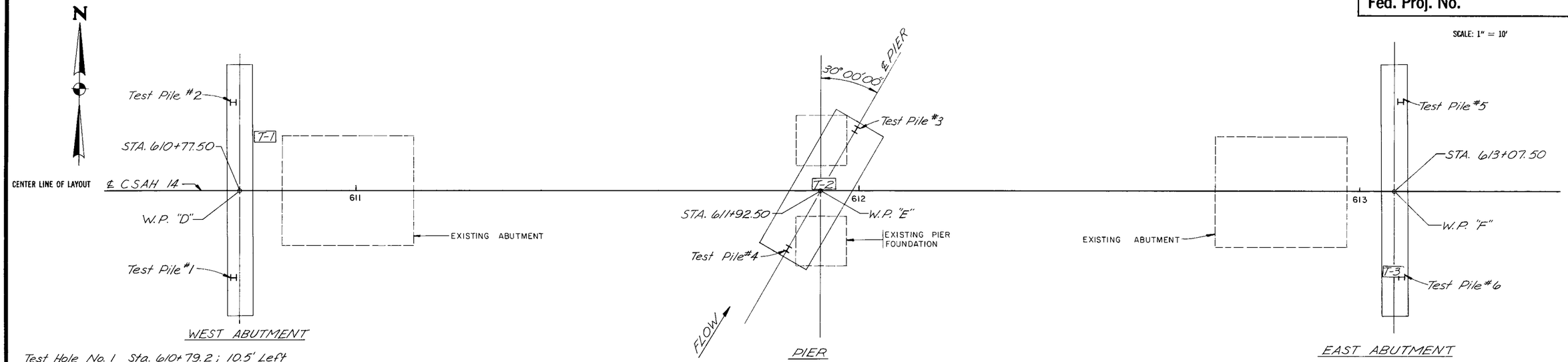
3-30-79

Area No. **Job No.** **State Proj. No.** 55-614-07 **Sheet No.** 16 **of** 17 **Sheets**

AS BUILT PLANS

Fed. Proj. No.

SCALE: 1" = 10'

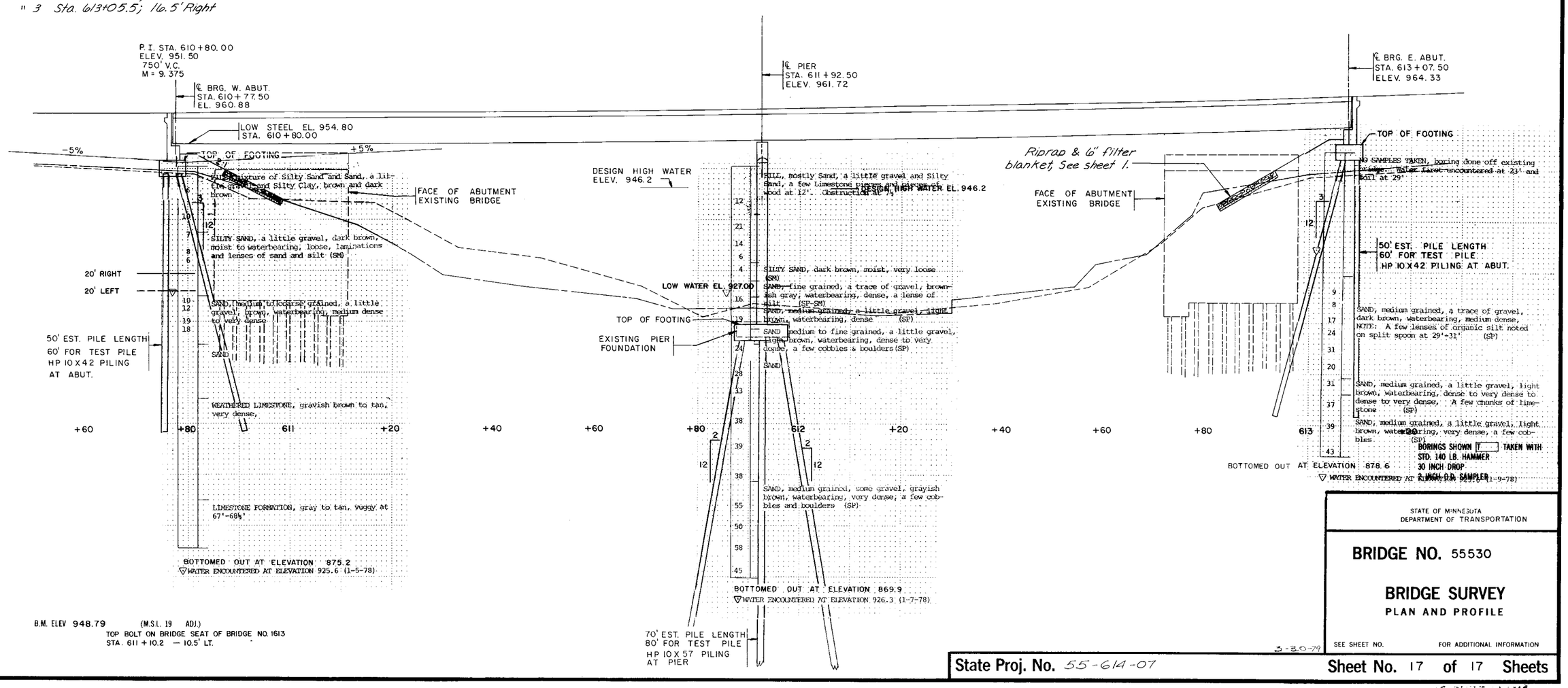


WEST ABUTMENT

PIER

EAST ABUTMENT

Test Hole No. 1 Sta. 610+79.2; 10.5' Left
" " " 2 Sta. 611+95.2; ℄
" " " 3 Sta. 613+05.5; 16.5' Right



B.M. ELEV 948.79 (M.S.L. 19 ADJ.)
TOP BOLT ON BRIDGE SEAT OF BRIDGE NO. 1613
STA. 611+10.2 — 10.5' LT.

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55530

BRIDGE SURVEY
PLAN AND PROFILE

SEE SHEET NO. FOR ADDITIONAL INFORMATION

3-30-79

State Proj. No. 55-614-07

Sheet No. 17 **of** 17 **Sheets**

Bridge Survey Sheet (Sheet 2 of 2)

FORM 100-A '65

Minn **Proj. No.** RS 6219 (4)
BR RS 6219 (5)

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 NO.)
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 (TIMBER)
CATCH BASIN C.B
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) I-S-F 75
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)

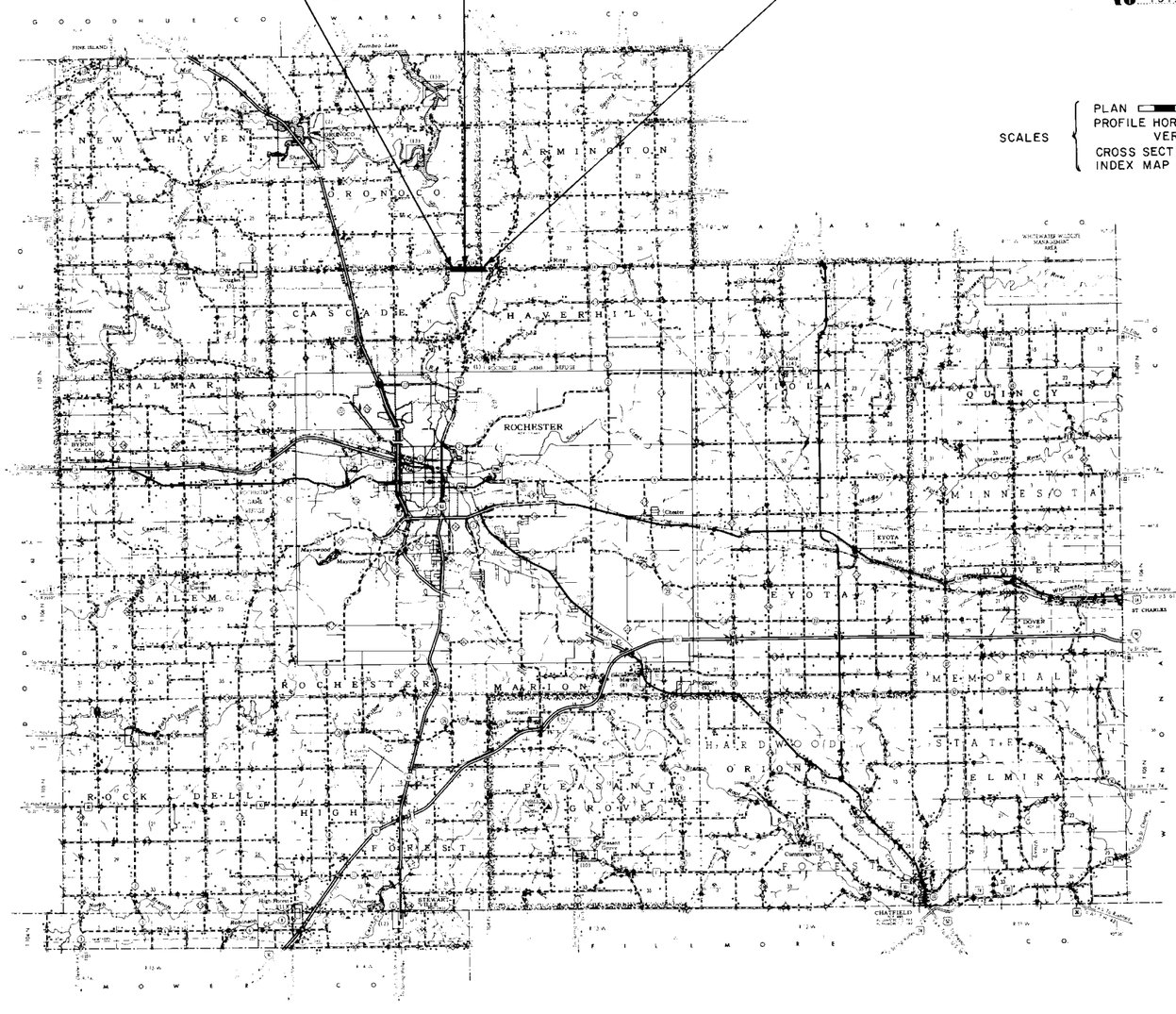
UTILITIES SYMBOLS

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 G—G
WATER MAIN W—W
CONDUIT
TELEPHONE CABLE IN CONDUIT T
ELECTRIC CABLE IN CONDUIT P
TELEPHONE MANHOLE T
ELECTRIC MANHOLE P
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
AERIAL TELEPHONE CABLE T-AE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE

SP 55-614-07
MINN PROJ BR RS 6219 (5)
BRIDGE NO.55530
STA.610+75.00 TO
STA.613+10.00

BEGIN: STA. 583+00.0
MINN PROJ RS 6219(4)

END: S P 55-614-08
STA. 637+00
MINN PROJ RS 6219 (4)



SCALES
PLAN 100 FEET
PROFILE HORZ. 100 FEET
VERT. 10 FEET
CROSS SECTION 10 FEET
INDEX MAP 10,560 FEET

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR GRADING, AGG. BASE AND BRIDGE NO. 55530

COUNTY STATE AID HIGHWAY NO. 14

BETWEEN C.R. 133 **AND** T.H. 63

From 586.26' EAST OF S.W. CORNER SEC. 36 T.108 N., R.14 W.
(Give proper reference to Sections, Township and Range)

To 191.57' EAST OF S.W. CORNER SEC. 31 T.108 N., R.13 W.

SP 55-614-08

GROSS LENGTH	5400.0	**FEET**	1.023 **MILES**
BRIDGES-LENGTH	235.00	**FEET**	0.045 **MILES**
EXCEPTIONS-LENGTH	235.00	**FEET**	0.045 **MILES**
NET LENGTH	5165.0	**FEET**	0.978 **MILES**

INDEX OF SHEETS

Sheet No. 1 Title Sheet & Layout Map
" No. 2 Est Quantities & Typical Sec
" No. 3 To 4 Plan & Profile
" No. 5 To 19 Cross Sections
No. 1 To 17 BRIDGE NO 55530 SP 55-614-07

DESIGN SPEED 50 M. P. H.

PROJECTED A. D. T. 1164
HCADT <150

9 TON DESIGN

SOIL FACTOR 130

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.

JK Dolan COUNTY ENGINEER DATE 11/1/78

Olmsted COUNTY REG. NO. 10219

RECOMMENDED FOR APPROVAL [signature] DISTRICT STATE AID ENGINEER 11-2 19 78

RECOMMENDED FOR APPROVAL Delbert D. Ofstedal 4-11 19 79

APPROVED 4/11 19 79 [signature] STATE AID ENGINEER

SPECIFICATION REFRERENCE
THE 1978 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" SHALL GOVERN.

S. P. 55-614-07
State Project No. 55-614-08

OLMSTED County, Minnesota. County Proj. No. _____ Plan No. _____ Sheet 1 of 19 Sheets

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	MUNICIPAL	RURAL	TOTAL ESTIMATED QUANTITIES
	2101.501	CLEARING	ACRE		0.29	0.29
	2101.502	CLEARING	TREE		104	104
	2101.506	GRUBBING	ACRE		0.29	0.29
	2101.507	GRUBBING	TREE		107	107
	2104.501	REMOVE PIPE CULVERTS	LIN. FT.		878	878
①	2104.509	REMOVE CONCRETE BOX CULVERT	EACH		1	1
	2105.501	COMMON EXCAVATION	CU. YD.		55023	55023
	2105.503	ROCK EXCAVATION	CU. YD.		33968	33968
	2105.507	SUBGRADE EXCAVATION	CU. YD.		3460	3460
	2130.501	WATER	M-GAL.		18	18
②	2211.501	AGGREGATE BASE, CLASS 2	TON		7383	7383
	2442.501	REMOVE OLD BRIDGE	LUMP SUM		1	1
	2501.511	18" C.S. PIPE CULVERTS	LIN. FT..		216	216
	2501.511	24"C.S. PIPE CULVERTS	LIN. FT.		64	64
	2501.511	30"C.S. PIPE CULVERTS	LIN. FT.		74	74
	2501.511	24" R.C. PIPE CULVERT CL. II	LIN. FT.		190	190
	2501.511	36" R.C. PIPE CULVERT CL. III	LIN. FT.		64	64
	2501.511	36" R.C. PIPE CULVERT CL. V	LIN. FT.		104	104
	2501.511	48" R.C. PIPE CULVERT CL. III	LIN. FT.		52	52
	2501.511	48" R.C. PIPE CULVERT CL. V	LIN. FT.		228	228
	2501.515	18" G.S. PIPE APRONS	EACH		14	14
	2501.515	24" G.S. PIPE APRONS	EACH		4	4
	2501.515	30" G.S. PIPE APRONS	EACH		4	4
	2501.515	24" R.C. PIPE APRONS	EACH		4	4
	2501.515	36" R.C. PIPE APRONS	EACH		2	2
	2501.515	48" R.C. PIPE APRONS	EACH		2	2
	2501.521	29" SPAN R.C. PIPE-ARCH CULV. CL. II A	LIN. FT.		78	78
	2501.525	29" SPAN R.C. PIPE-ARCH APRONS	EACH		2	2
	2511.501	RANDOM RIP RAP CLASS "A"	CU. YD.		32	32
	2021.501	MOBILIZATION	LUMP SUM		1	1

① CONCRETE BOX CULVET STA. 586+16 INPL. 4'X6'X42.5'.

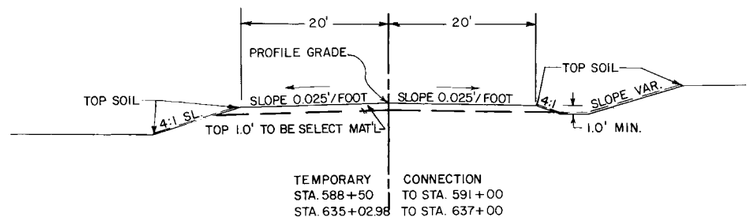
② INCLUDED 50 TONS FOR 1-PUBLIC ROAD, 661 TONS FOR 8 DRIVES AND 150 TONS FOR 5-F. ENT.

STANDARD PLATES

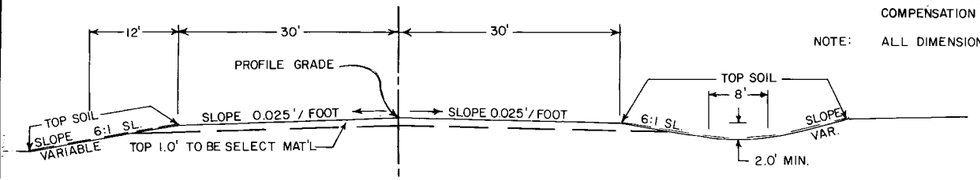
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

PLATE NO		DESCRIPTION
0003	A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000	G	REINFORCED CONCRETE PIPE
3004	B	REINFORCED CONCRETE PIPE CLASS V SPECIAL DESIGN
3014	G	REINFORCED CONCRETE PIPE ARCH DETAIL
3040	D	CORRUGATED METAL PIPE
3100	F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110	D	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3123	G	METAL APRON FOR C.M. PIPE
3124	A	METAL APRON CONNECTION
3133	A	RIPRAP AT RCP OUTLETS
3145	A	CONCRETE PIPE JOINT TIES EYE BOLT TIE
8000	F	STANDARD BARRICADES
9000	B	APPROACHES AND ENTRANCES

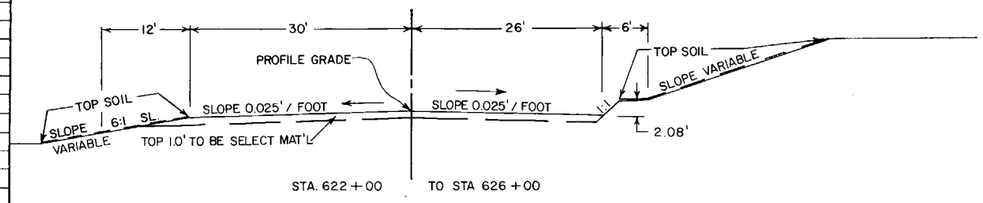
TYPICAL GRADING SECTIONS



TEMPORARY CONNECTION
STA. 588+50 TO STA. 591+00
STA. 635+02.98 TO STA. 637+00



STA. 591+00 TO STA. 622+00
STA. 626+00 TO STA. 635+02.98



STA. 622+00 TO STA 626+00

NOTE: MATERIAL FROM THE UPPER 1.0' OF THE NATURAL TOPSOIL SHALL NOT BE USED IN THE UPPER 1.0' OF THE ROADBED. PART OF THIS MATERIAL SHALL BE UNIFORMLY SPREAD ON SLOPES AND DITCH BOTTOMS TO A DEPTH OF 3". NO PAYMENT IN ADDITION TO THE CONTRACT PRICE FOR COMMON EXCAVATION WILL BE MADE FOR SPREADING THE TOPSOIL AS ABOVE PROVIDED, NOR WILL ANY UNDER CUTTING MADE IN EXCAVATING PRIOR TO PLACING THE TOPSOIL BE MEASURED FOR PAYMENT.

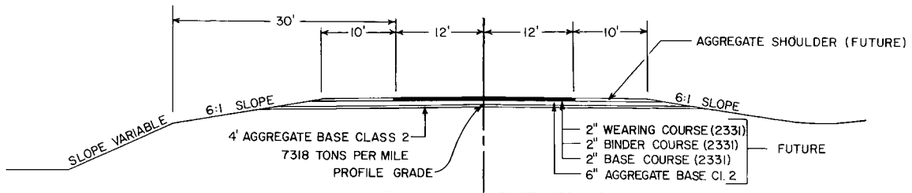
NOTE: CORRUGATED STEEL AND REINFORCED CONCRETE PIPE CULVERT EXCAVATION WILL BE CONSIDERED INCIDENTAL, AND WILL BE INCLUDED FOR PAYMENT UNDER UNIT PRICE FOR "PIPE CULVERT".

NOTE: SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE FOR COMPACTION, AS SHOWN ON THE PLAN AND PROFILE SHEETS. EXCAVATION HAS BEEN COMPUTED AND IS LISTED AS SUBGRADE EXCAVATION. BACKFILL WITH SELECT MATERIAL FROM R.O.W. TAPERS SHALL BE SOIL IN ALL CASES.

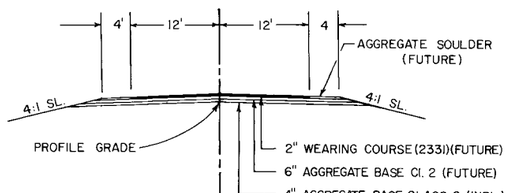
NOTE: PLACE SECTIONAL CONCRETE PIPE ON CLASS "B" BEDDING AS DIRECTED BY THE ENGINEER. ALL BEDDING TO BE CONSIDERED AS INCIDENTAL AND NO DIRECT COMPENSATION SHALL BE MADE THERE FOR.

NOTE: ALL DIMENSIONS AND SLOPES SHOWN ON TYPICAL SECTIONS ARE APPROXIMATE.

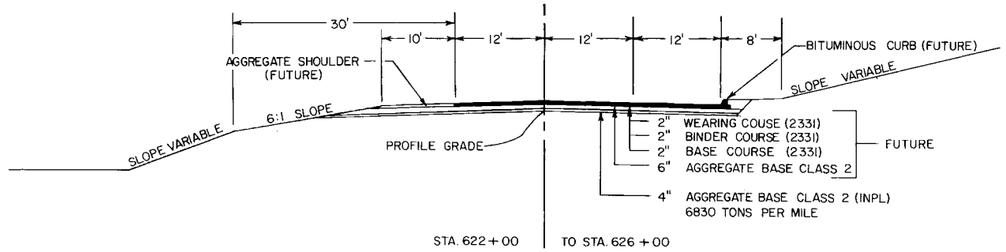
TYPICAL BASE AND SURFACE SECTIONS (FUTURE)



STA. 591+00 TO STA. 622+00
STA. 626+00 TO STA. 635+02.98



TEMPORARY CONNECTION
STA. 588+50 TO STA. 591+00
STA. 635+02.98 TO STA. 637+00



STA. 622+00 TO STA. 626+00

S. P. 55-614-08

State Proj. No.

OLMSTED COUNTY C.S.A.H. 14 **Sheet No.** 2 **of** 19 **Sheets**

ARMSTRONG INC. MINNEAPOLIS 55425

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

405
585+69 ℄ Culv
Inpl 48"X170' SCP
REMOVE 4°
SKEW CULV. 11°
48"x 228' R.C.P. CULV. CL.V
48"x 52' R.C.P. CULV. CL. III
2-48" R.C.P. APRONS
PLACE CULV. ON "B" BEDDING
F.&I. APPROVED JOINT TIES.
RANDOM RIPRAP CLASS "A" 13 CU. YDS.
12" DEPTH.

LIMITS OF SLOPE EASEMENT

EMBANKMENT AREA FOR EXCESS COMMON AND ROCK EXCAVATION FROM STA. 538+50 TO STA. 604+70.

LIMITS OF SLOPE EASEMENT

BEGIN: S P 55-614-07
STA. 583+00.0

586+76 ℄ Culv
Inpl W46 X 42.5'
REMOVE STRUCTURE
NO CULV REQ'D.

591+49 ℄ Culv
Inpl 15"X46' CMP
REMOVE
NO CULV. REQ'D.

~~OMITTED~~
~~592+98 Driveway Lt~~
Inpl 15"X30' CMP
REMOVE
~~NO CULV. REQ'D.~~

~~OMITTED~~
~~594+13 Driveway Lt~~
Inpl 15"X24' CMP
REMOVE
18"x 32' C.S. P. CULV.
2-18" G.S.P. APRONS.

595+27 Driveway Lt
No Culv Inpl
NO CULV. REQ'D
~~18"x 32' C.S.P. CULV.~~
~~2-18" G.S.P. APRONS.~~

599+25
~~598+79~~ ℄ Culv
Inpl 15"X74' CMP
REMOVE
36"x104' R.C.P. CULV. CL.V
36"x64' R.C.P. CULV. CL. III
2-36" R.C.P. APRONS
PLACE CULV. ON "B" BEDDING
F.&I. APPROVED JOINT TIES
SKEW CULV. 11°
RANDOM RIPRAP CL. "A" 9 CU. YDS
12" DEPTH.

600+05 ℄ Culv
Inpl 18"X94' CMP
REMOVE
NO CULV. REQ'D.

602+98 FE Lt
Inpl 15"X24' CMP
REMOVE
NO F.ENT.
REQ'D.

610+34 Quarry Ent Lt
Inpl 15"X30' CMP
REMOVE
MOVE DRIVE TO STA. 607+35
24"x36' C.SP. CULV.
2-24' G.S.P. APRONS
SEE PLAN SHEET 19
FOR GRADING DETAIL

CONSTRUCTION 650' FROM ℄ EASEMENT

POT 592+00 = SURVEY ℄ CONSTRUCTION ℄ IS 1.09' NO.

POT 602+10.60 = SURVEY ℄ CONSTRUCTION ℄ IS 2.23' NORTH

GALBERG QUARRY No. 55-37

Fuel Tank Vent

HO.

HO.

591+31 Res. Dr. Rt.
No Culv. Inpl.
18"x 32' C.S.P. CULV.
2-18" G.S.P. APRONS

597+54 FE Rt
Inpl 18"X 26' CMP
REMOVE
18"x 28' C.S.P. CULV.
2-18" G.S.P. APRONS

~~OMITTED~~
~~600+79 FE Rt~~
Inpl 15"X 24' CMP
REMOVE
~~NO CULV. REQ'D.~~

611+10 – 612+70 Bridge No. 1613
Inpl 2-80' Truss Spans Built 1914
REMOVE OLD BRIDGE

POT 606+93.35 = SURVEY ℄ Corner is 3.78' Rt of ℄

POT 606+51.09 = SURVEY ℄ ΔRT FOOT

CONSTRUCTION ℄ IS 0.90' SOUTH

CONSTRUCTION ℄ IS 2.23' SOUTH

CONSTRUCTION ℄ IS 1.11' SOUTH OF SURVEY ℄

614+87 FE Rt
Inpl. 24" X 34' CMP
REMOVE
30"x 42' C.S.P. CULV.
2-30" G.S.P. APRONS.

WOODS & BRUSH

BR. NO. 55530

P-BUR

Prop. Cor.

River

Zumbro

VERTICAL CONTROL
ELEVATIONS SHOWN IN THIS PLAN ARE BASED ON MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT, AND TIED TO THE DEPARTMENT OF TRANSPORTATION B.M. NO. 5508 U ELEV. 1089.54 .

CL. 30 — GR. 31 | CL. 21 | GR. 23 | CL. 0.16 ACRE — GR. 0.16 ACRE | CL. 8 GR. 7 CL. 0.13 ACRE GR. 0.13 ACRE

BM Elev. 1000.18'
Spk in PP 14' Rt
Sta. 597+86

BM Elev. 948.73'
Top Bolt on Bridge
Seat Sta. 611+10.2

FUTURE GRADE LINE

+3.0%

TEMPORARY CONNECTION

P.I. +55.17241
ELEV. 27.05516
500' V.C.
M = 3.625

P.V.C. +05.17241
ELEV. 19.55516

P.V.T. +105.17241
ELEV. 20.04006

-2.8%

P.V.C. +54.54545
ELEV. 01.87274

P.V.T. +54.54545
ELEV. 86.27275

+0.3%

INLET ELEV. 94.5
65.0
OUTLET ELEV. 81.8

SPECIAL DITCH GRADE RT.

P.I. +54.54545
ELEV. 96.27274
400' V.C.
M = 1.1

P.I. +80.0
ELEV. 50.0
750' V.C.
M = 9.375

P.V.C. +04.04.0
ELEV. 68.75

P.V.T. +55.0
ELEV. 68.75

+5.0%

STA. 610+80.0

STA. 613+05.0

+5.0%

INLET ELEV. 81.2

OUTLET ELEV. 56.0

Profile 75' Lt

Profile 75' Rt

℄ SUBGRADE ELEVATION

19.4 | 21.88 | 23.19 | 23.36 | 22.36 | 20.2 | 17.4 | 14.6 | 11.8 | 09.0 | 06.2 | 03.4 | 00.54 | 97.23 | 93.33 | 88.92 | 84.0 | 79.0 | 74.0 | 69.0 | 64.6 | 61.53 | 59.80 | 59.40 | 60.33 | 62.60 | 66.30 | 66.26 | 71.2 | 71.3

℄ SUBGRADE ELEV.

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 588+50 TO STA. 595+90,
FROM STA. 599+55 TO STA. 601+16 AND
FROM STA. 608+50 TO STA. 609+25.

NOTE: 5000 CU. YDS. OF ROCK EXCAVATION AND 9829 CU. YDS. OF COMMON EXCAVATION TO BE HAULED AND PLACED ON EMBANKMENT FROM STA. 583+50 TO STA. 587+62 QUANTITIES ARE INCLUDED IN BALANCE STA. 588+50 TO STA. 604+70

COMMON EXC.	16022	1238 CU. YDS. TOP SOIL	
ROCK EXC.	13077	14784 CU. YDS. COMMON EXC.	
SUBGRADE EXC.	1398		
EMB.	21590		

COMMON EXC.	10946	1019	CU. YDS. TOP SOIL
ROCK EXC.	15247	9927	CU. YDS. COMMON EXC.
SUBGRADE	116		
EMB.	19964		

BRIDGE NO. 55530

585 | 590 | 595 | 600 | 605 | 610 | 615

SINGLE PLAN & PROFILE - DOTTED
CHARLES BRUNING COMPANY INC.
MADE IN U.S.A.

BRUNING NO. 589T

OLMSTED COUNTY, MINN. CSAH 14 State Proj. No. S P 55-614-08 Sheet No. 3 of 19 Sheets

AS BUILT PLANS

CONSTRUCTION ℄
P.I. 618+00
(6.04' SO. OF SURVEY ℄ STA. 618+00)
LT. 2°38'
D = 0° 24'
T = 329.22'
L = 698.33'
E = 3.78'

CONSTRUCT ℄ CULV. STA. 626+36
29" SPAN x 78' R.C.P.-ARCH CULV. CL. IIA
2-29" SPAN R.C.P.-ARCH APRONS
PLACE CULV. ON "B" BEDDING
F&I. APPROVED JOINT TIES.

616+09 QUARRY ENT. LT.
NO CULV. REQ'D.

625+39 FE Lt.
Inpl. 18" X 26' CMP
REMOVE
24"x28' C.S.P. CULV.
2-24" G.S.P. APRONS

638+22 Dr. Rt.
No Culv. Inpl.
NO CHANGE

641+22 Dr. Rt.
Inpl. 15"x 30' CMP.
NO CHANGE

635+03 Twp. Lt.
No Culv. Inpl.
NO CULV. REQ'D.

635+35 ℄ Culv. Skewed 15°
Inpl. 18" X 62' CMP
REMOVE
24"x92' R.C.P. CULV. CL. 2
2-24" R.C.P. APRONS
PLACE ON "B" BEDDING
F&I. APPOVED JOINT TIES
RANDOM RIPRAP CL. "A"
5 CU. YDS. 12" DEPTH
SKEWED 15°

641+47 FE Ent. Lt.
Inpl. 15"X28' CMP
NO CHANGE

645+14 Drive Rt.
Inpl. 15" X 30' CMP
NO CHANGE

P.I. 614+25.49=(SURVEY ℄)
Δ Lt. 0°53' 30"

P.C. 620+17.79
(SURVEY ℄)

P.T. 621+29.11
CONSTRUCTION ℄

P.C. 622+73.38
CONST. ℄

(SURVEY ℄)
P.I. 623+53.59
Δ Rt. 1°34'
D 0°14'
T 335.80'
L 671.54'

CONSTRUCTION ℄
P.I. 626+30.99
(38.18' NO. SURVEY ℄ STA. 626+30)
RT. 5° 07'
D = 00° 43'
T = 357.21'
L = 713.96'
E = 7.98'

P.T. 626+89.33
SURVEY ℄

P.T. 629+87.74
CONST. ℄

P.C. 631+63.02 (SURVEY ℄)

P.C. 631+65.77
CONST. ℄

3.0' NORTH & 5.45' EAST OF SURVEY ℄ P.I. 635+02.98

(SURVEY ℄)
P.I. 635+02.98
Δ Lt. 1°08'
D 0° 10'
T 339.69'
L 679.78'

P.T. 638+42.80 (SURVEY ℄)

P.T. 638+51.19=
P.O.T. 638+47.50
EQUATION

END: S.P 55-614-07
STA. 637+00

CONSTRUCTION ℄
P.I. 635+08.55
(3.0' NO. SURVEY ℄ STA. 635+08.43)
LT. 2° 44' 30"
D = 00° 24'
T = 342.38'
L = 685.42'
E = 4.10'

616+09 Dr. Rt.
Inpl. 24"x30" CMP.
REMOVE
30"x 32' C.S. PIPE CULV.
2-30" G.S. PIPE APRONS.

623+50 Farm Drive Rt.
Inpl. 18" X 30' CMP
REMOVE
MOVE DR. TO STA. 626+00
NO CULV. REQ'D.

625+42 Dr. Rt.
No Culv. Inpl.
NO CULV. REQ'D.

630+28 FE Rt.
Inpl. 18" X 30' CMP
REMOVE
18"x28' C.S.P. CULV.
2-18" G.S.P. APRONS.

633+17 Dr. Rt.
Inpl. 18"x 32' CMP
REMOVE
18"x32' C.S.P. CULV.
2-18" G.S.P. APRONS.

634+55 ℄ Culv.
Inpl. 24"X62" CMP
REMOVE
24"x98' R.C.P. CULV CL. II
2-24" R.C.P. APRONS
PLACE CULV. ON "B" BEDDING
F&I. APPROVED JOINT TIES.
RANDOM RIP RAP CL. "A"
5 CU. YDS. 12" DEPTH.

632+15 Drive Rt.
Inpl. 18" X 30' CMP
REMOVE
18"x32' C.S.P. CULV.
2-18" G.S.P. APRONS.

636+54 Drive Rt.
Inpl. 15"x 26' CMP
NO CHANGE

638+46 Drive Rt.
No Culv. Inpl.
NO CHANGE

639+39 Drive Rt.
Inpl. 15" X 26' CMP
NO CHANGE

642+40 Drive Rt.
Inpl. 18"X26' CMP
NO CHANGE

643+44 Drive Rt.
Inpl. 18" X30' CMP
NO CHANGE

CL. 26 TREES — GR. 27 TREES — CL. 19 TREES GR. 19 TREES

B.M. Elev. 1025.91
Spk. in PP 35' Rt.
Sta. 626+43

B.M. Elev. 1020.13
Spk. in PP 37' Rt.
Sta. 637+52

Profile 75' Lt.
Profile 75' Rt.

P.V.T. +55.0
ELEV. 69.75

+5.0%

P.V.C. +00
ELEV. 06.0

P.V.T. +00
ELEV. 24.4

P.V.C. +50
ELEV. 22.6

P.I. +50
ELEV. 21.8
400' V.C.
M = 0.35

P.V.T. +50
ELEV. 22.4

-0.4%

+0.3%

TEMPORARY CONNECTION
STA. 633+02.98 TO STA. 637+00

END GRADING STA. 637+00

INLET ELEV. ~~17.9~~ 18.5
OUTLET ELEV. ~~17.5~~ 18.2

INLET ELEV. 18.2
OUTLET ELEV. 09.9

INLET ELEV. 18.0
OUTLET ELEV. 08.0

P.I. +00
ELEV. 26.0
800' V.C.
M = 5.4

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 618+25 TO STA. 621+25
FROM STA. 624+50 TO STA. 633+00

COMMON EXC. 23650 { 1309 CU. YDS. TOP SOIL / 22341 CU. YDS. COMMON EXC.
ROCK EXC. 5644
SUBGRADE EXC. 886
EMB. 20894

COMMON EXC. 4405 { 456 CU. YDS. TOP SOIL / 3949 CU. YDS. COMMON EXC.
SUBGRADE EXC. 1060
EMB. 3338

DLMSTED COUNTY, MINN. CSAH 14 S.P 55-614-08 SHEET NO. 4 OF 19 SHEETS
AS BUILT PLANS