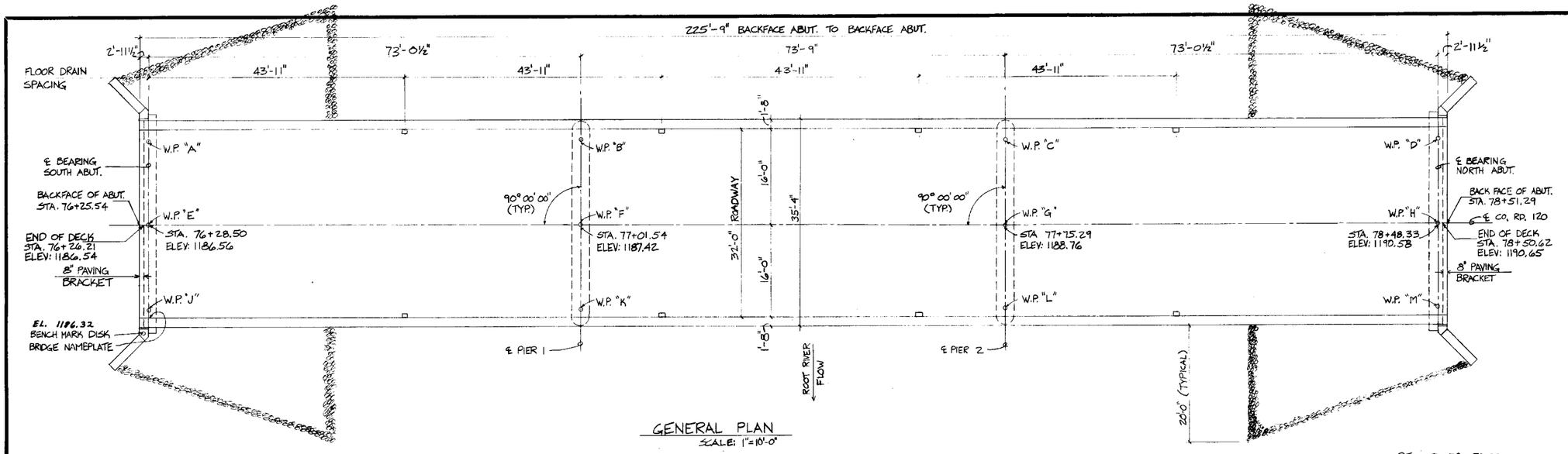
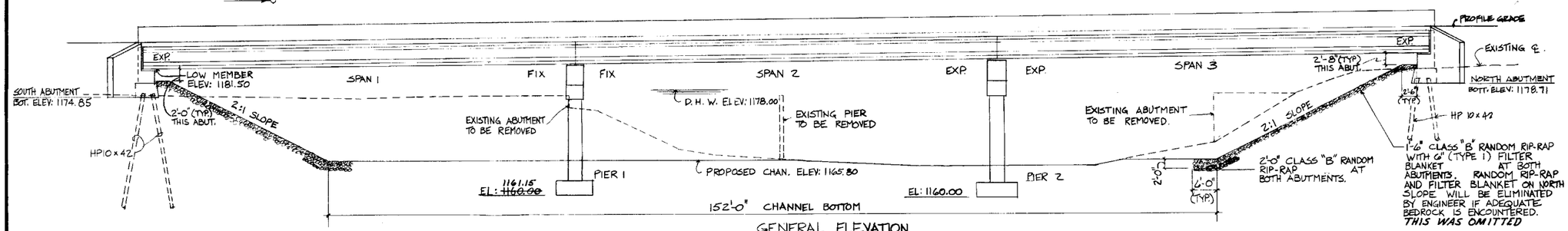


GENERAL PLAN
SCALE: 1"=10'-0"

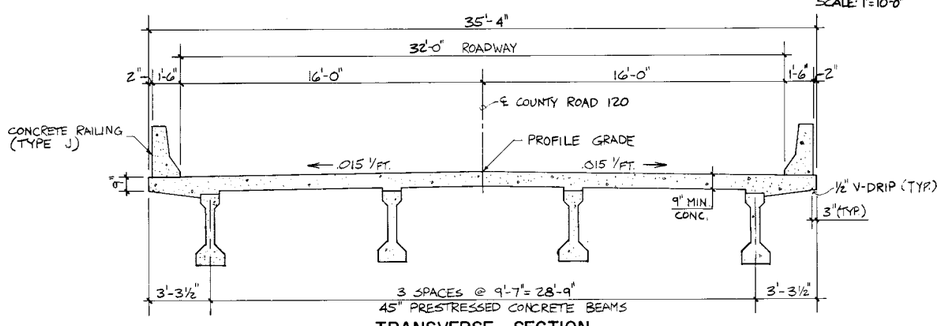
P.C. STA. 76+50.00
ELEV: 1186.78

P.I. STA. 78+50.00
ELEV: 1188.78
V.C. = 400'
M = 1.85%

+1.00 %
+1.00 %
+4.70%



GENERAL ELEVATION
SCALE: 1"=10'-0"



TRANSVERSE SECTION
SCALE: ½"=1'-0"

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

ITEM NO.	2021.501	2105.511	2401.501	2401.501	2401.501	2401.501	2401.521	2401.541	2402.546	2402.590	2402.590		2402.591
ITEM	MOBILIZATION	COMMON CHANNEL EXCAVATION	CONCRETE MIX. NO. 1A43	CONCRETE MIX NO. 3Y43	CONCRETE MIX NO. 3X46A	CONCRETE MIX NO. 3X33	STRUCTURE EXCAVATION CLASS WR	REINFORCEMENT BARS	FLOOR DRAINS TYPE 1	ELASTOMERIC BEARING PADS, TYPE 1	ELASTOMERIC BEARING PADS TYPE 2		EXPANSION JOINT DEVICES TYPE 2
UNIT	LUMP SUM	CU. YD.	CU. YD	CU. YD.	CU. YD.	CU. YD	CU. YD	POUND	EACH	EACH	EACH		LIN. FT.
QUANTITY	1	800	71 (P)	171 (P)	45 (P)	235 (P)	50	84250 (P)	8	12	4		68 (P)
ITEM NO.	2402.592	2405.501	2405.511		2452.510	2452.511	2452.520	2452.520	2511.501	2511.504	401.601	401.601	401.601	452.602
ITEM	ELASTOMERIC BEARING ASSEMBLY TYPE 1	PRESTRESSED CONC. BEAMS TYPE 45-74	DIAPHRAGMS FOR TYPE 45 PRESTRESSED BEAMS		STEEL H-PILING DRIVEN	STEEL H-PILING DELIVERED	STEEL H-TEST PILES, 30 FEET LONG	STEEL H-TEST PILES, 20 FT. LONG.	RANDOM RIP-RAP CLASS B	FILTER BLANKET TYPE 1	STRUCTURE EXCAVATION	FOUNDATION PREPARATION PIER 1	FOUNDATION PREPARATION PIER 2	PILE POINT
UNIT	EACH	EACH	LIN. FT.	LUMP SUM	LIN. FT.	LIN. FT.	EACH	EACH	CU. YD.	CU. YD.	LUMP SUM	LUMP SUM	LUMP SUM	EACH
QUANTITY	8	12	288 (P)		248	248	1	1	340	85	1	1	1	18

(P) DENOTES PLAN QUANTITY PAY ITEM PER SPEC. 1901

	2402.521	
	STRUCTURAL STEEL (330G)	
	POUND	
	420 (P)	

DESIGN DATA

1977 (AND INTERIM) AASHTO DESIGN SPECIFICATIONS
LOAD FACTOR DESIGN METHOD H520 LOADING
INCLUDES 18 PSF DEAD LOAD ALLOWANCE FOR FUTURE WEARING COURSE.
MAXIMUM ALLOWABLE DESIGN STRESSES:
REINFORCED CONCRETE;
$f'c$ = 4000 PSI, n = 8, f_y = 60,000 PSI
REINFORCEMENT (GRADE 60)
PRESTRESSED CONCRETE;
$f'c$ = 6000 PSI, n = 6, f_s = 270000 PSI
(FOR 270K STRANDS)
STRUCTURAL STEEL SPEC. 3306
f_y = 36000 PSI

PROJECTED ADT = 101 YEAR - 2001
CURRENT ADT = 63 YEAR - 1981

DECK AREA = 7929 SQ. FT.

LIST OF SHEETS

NO.	TITLE
—	TITLE SHEET NO 1 OF 21
2	GENERAL PLAN & ELEVATION
3	BRIDGE LAYOUT
4	SOUTH ABUTMENT DETAILS
5	SOUTH ABUTMENT REINFORCEMENT
6	NORTH ABUTMENT DETAILS
7	NORTH ABUTMENT REINFORCEMENT
8	PIER DETAILS
9	PIER REINFORCEMENT
10	SUPERSTRUCTURE DETAILS
11	SUPERSTRUCTURE DETAILS
12	45" PRESTRESSED CONC. BEAM DETAILS
13	ELASTOMERIC BEARING PAD DETAILS
14	CONCRETE RAILING DETAILS
15	END DIAPHRAM
16	PILE SPLICE DETAILS
17	BRIDGE FLOOR DRAIN DETAILS
18	SOLE PLATE & PROTECTION ANGLE DETAILS
19	WATERPROOF EXPANSION DEVICE
20	BRIDGE SURVEY
21	BRIDGE SURVEY - PLAN & PROFILE

BENCH MARK ELEVATION = 1189.67
SPK. IN POWER POLE 27' RT. STA. 79+20

CONTRACTOR SHALL DRESS SLOPES AND PLACE RIP-RAP IN APPROXIMATE AREAS SHOWN AS DIRECTED BY THE ENGINEER. RANDOM RIP-RAP CLASS "B" AVERAGE THICKNESS 1'-6".

FOOTINGS AT PIER 1 AND PIER 2 SHALL BE KEYED INTO SOUND BEDROCK AS DIRECTED BY THE ENGINEER. (SEE SPECIAL PROVISIONS.)

CONSTRUCTION NOTES

THE 1978 EDITION OF THE MINNESOTA DEPT. 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 SUPERSTRUCTURE GIRDERS SHALL BE ERECTED IN FINAL POSITION PRIOR TO DRILLING HOLES FOR AND PLACING ANCHOR RODS.
THE FIRST DIGIT OR FIRST TWO DIGITS OF EACH BAR MARK INDICATES THE BAR SIZE.
CONSTRUCTION OF EACH ABUTMENT SHALL NOT BE STARTED UNTIL THE APPROACH FILL AT THAT ABUTMENT HAS BEEN CONSTRUCTED TO THE BOTTOM OF THE SUBGRADE, UNDER GRADING PORTION OF CONTRACT.

APPROVED:
J. K. Dolan 1-23-81
OLMSTED COUNTY ENGINEER DATE

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 Gerber
DATE: Dec. 31, 1981 REG. NO. 13734

COUNTY ROAD 120 OLMSTED COUNTY
STATE OF MINNESOTA

BRIDGE NO. 55539

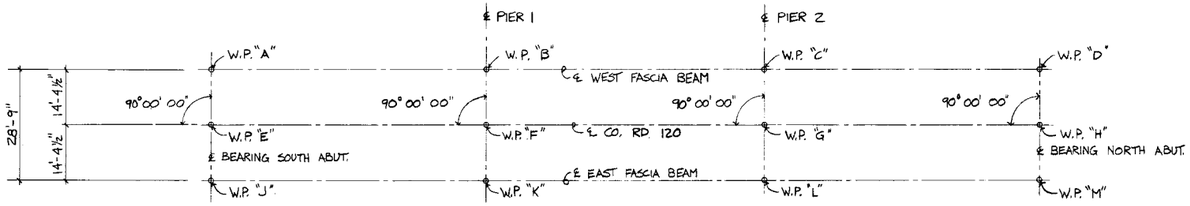
COUNTY ROAD 120 OVER THE NORTH BRANCH OF THE ROOT RIVER.
HIGH FOREST TOWNSHIP. 2 MILES N.E. OF STEWARTVILLE IN OLMSTED COUNTY, MINN.
73'-74'-73' PRESTRESSED BEAM BRIDGE
32'-0" ROADWAY 0° SKEW TYPE J RAILING
IDENTIFICATION NO. 501
GENERAL PLAN & ELEVTION
SEC. 26 TWP. 105N R14W
APPROVED: M. Y. Boutin
BRIDGE ENGINEER
DATE: 4-29-82

TITLE: GENERAL PLAN & ELEVATION

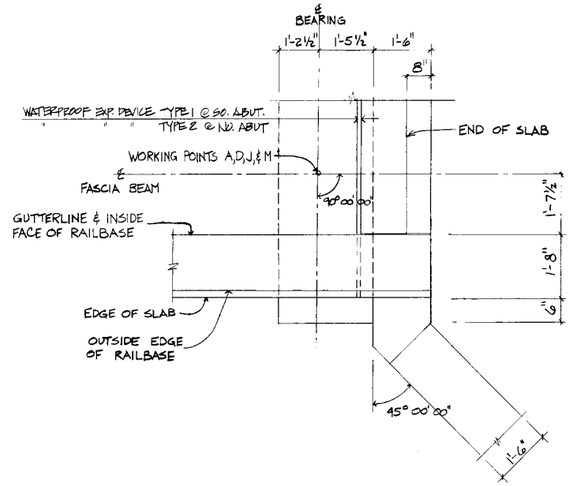
DES: J. GERBER	DR: S. OSLUND	APPROVED: 4-29-82	Bridge No. 55539
CHK: J. GERBER	CHK: H.K.		
Sheet No. 2 of 21 Sheets			

SP 55-598-07

AS BUILT PLANS



WORKING POINT LAYOUT



TYPICAL CORNER

DIMENSIONS BETWEEN WORKING POINTS

POINT	STATION	A	B	C	D	E	F	G	H	J	K	L	M	ELEVATIONS TOP OF SLAB	TOP OF SLAB TO BRG SEAT	BRIDGE SEAT	POINT
A	76+28.50		73.04			14.38	74.44				78.50	149.58		1186.35	5.00	1181.35	A
B	77+01.54			73.75			14.38	75.14		78.50		79.16	149.58	1187.20	4.98	1182.22	B
C	77+75.29				73.04			14.38	74.44	149.58	79.16		78.50	1188.54	5.00	1183.54	C
D	78+48.33								14.38		149.58	78.50		1190.36	5.16	1185.20	D
E	76+28.50						73.04			14.38	74.44			1186.56			E
F	77+01.54							73.75			14.38	75.14		1187.42			F
G	77+75.29								73.04			14.38	74.44	1188.76			G
H	78+48.33												14.38	1190.58			H
J	76+28.50										73.04			1186.35	5.00	1181.35	J
K	77+01.54											73.75		1187.20	4.98	1182.22	K
L	77+75.29												73.04	1188.54	5.00	1183.54	L
M	78+48.33													1190.36	5.16	1185.20	M

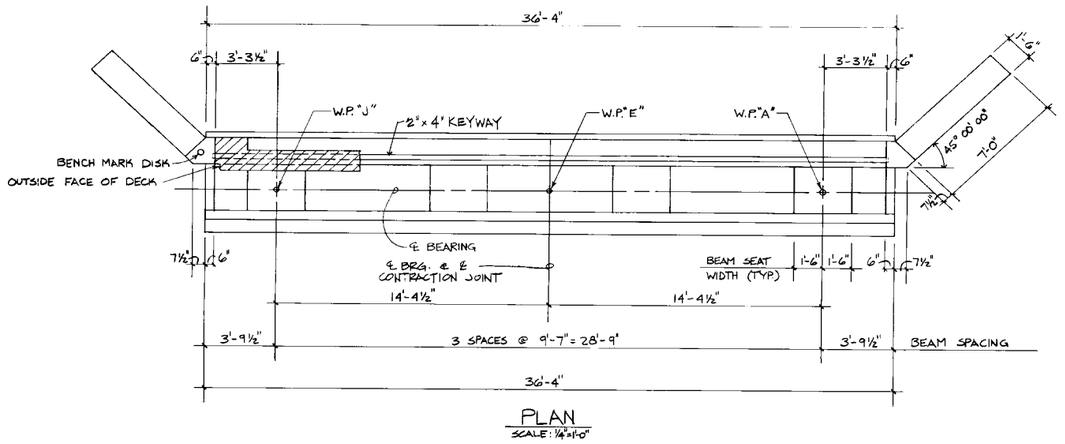
TOP OF ROADWAY TO BRIDGE SENT				
	S. ABUT.	N. ABUT.	PIER 1	PIER 2
SLAB THICKNESS	9"	9"	9"	9"
STOOL HEIGHT	3½"	3½"	3½"	3½"
BEAM HEIGHT	45"	45"	45"	45"
BEARING HEIGHT	2½"	4½"	2¼"	2½"
TOTAL	5'-0"	5'-2"	4'-11¾"	5'-0"

40-17C

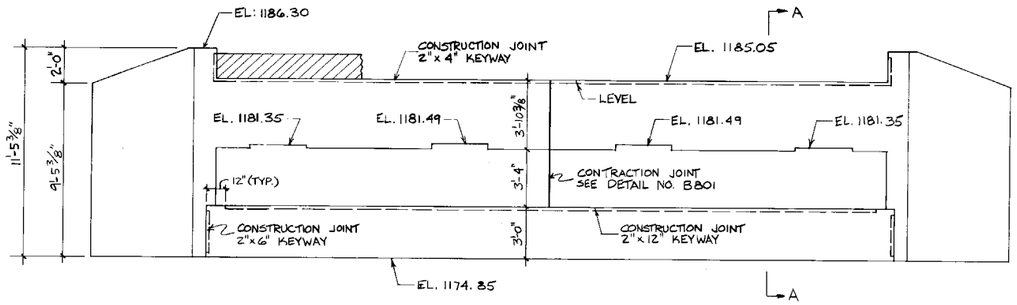
TITLE: BRIDGE LAYOUT	DES: J.G.	DR: D.M.	APPROVED: 4-29-92
	CHK: H.K.	CHK: J.G.	Bridge No. 55539
	Sheet No. 3 of 21 Sheets		

SP 55-598-07

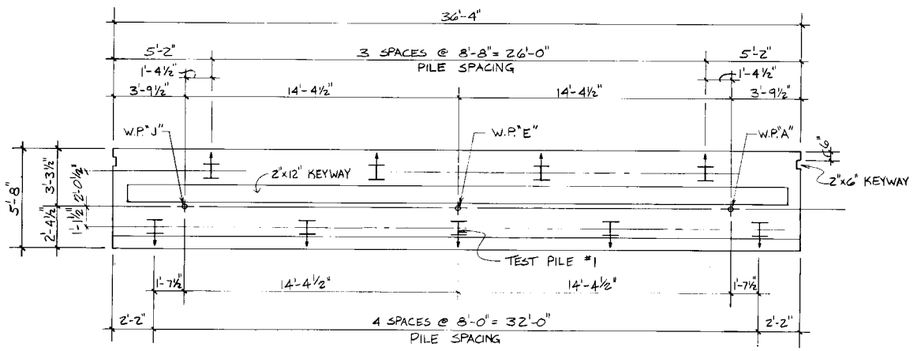
AS BUILT



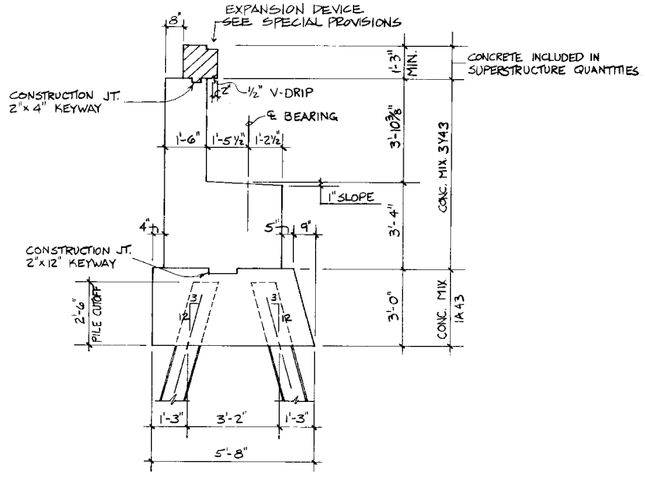
PLAN
SCALE: ¼"=1'-0"



ELEVATION
SCALE: ¼"=1'-0"



FOOTING PLAN
SCALE: ¼"=1'-0"



SECTION A-A
SCALE: ⅜"=1'-0"

SUMMARY OF QUANTITIES FOR SOUTH ABUTMENT		
CONCRETE MIX NO. 1A43	21	CU. YD.
CONCRETE MIX NO. 3Y43	35	CU. YD.
REINFORCEMENT STEEL	4180	LBS.
(1) BENCH MARK DISK	1	EACH
STEEL H TEST PILE 30 PT. LONG	1	EACH
(2) STEEL H PILING DELIVERED	160	LIN. PT.
(2) STEEL H PILING DRIVEN	160	LIN. PT.
(3) PILE POINTS	9	EACH

(1) COUNTY WILL FURNISH DISK. PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS. SEE STD. PLATE NO. 9301 FOR PLACING.

(2) DOES NOT INCLUDE TEST PILES.

(3) SEE SPECIAL PROVISIONS

COMPUTED PILE LOADS	TONS/PILE
DEAD LOAD + EARTH PRESSURE	35.3
LIVE LOAD	8.1
DESIGN LOAD TOTAL	43.4

PILE NOTES

ALL PILES TO BE HP10x42.
1 - STEEL H TEST PILE - 30 FEET LONG.
8 - STEEL H PILES - EST. LENGTH - 20 FEET LONG.
9 - STEEL H PILES REQUIRED FOR SOUTH ABUTMENT.

PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.

ALL PILES MARKED THUS (H→) TO BE BATTERED 3" PER FOOT IN DIRECTION SHOWN.

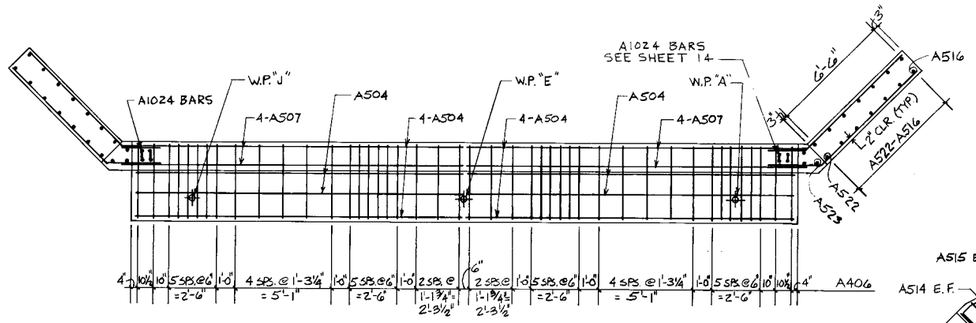
40-17C

TITLE: SOUTH ABUTMENT DETAILS

DES: J. GERBER	DR: S. OSLUND	APPROVED: 4-29-82	Bridge No. 55539
CHK:	CHK: J. GERBER		
Sheet No. 4 of 21 Sheets			

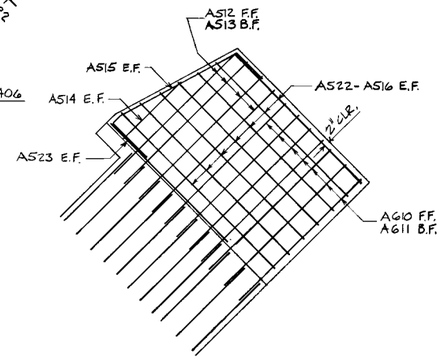
SP 55-598-07

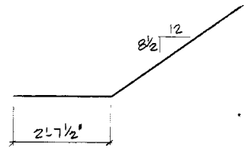
AS BUILT PLANS



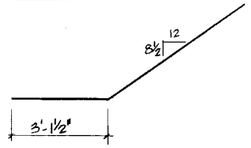
PLAN
SCALE: 1/4"=1'-0"

Note: F.F. = Front Face
B.F. = Back Face
E.F. = Each Face

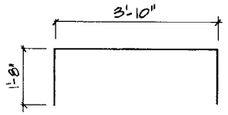




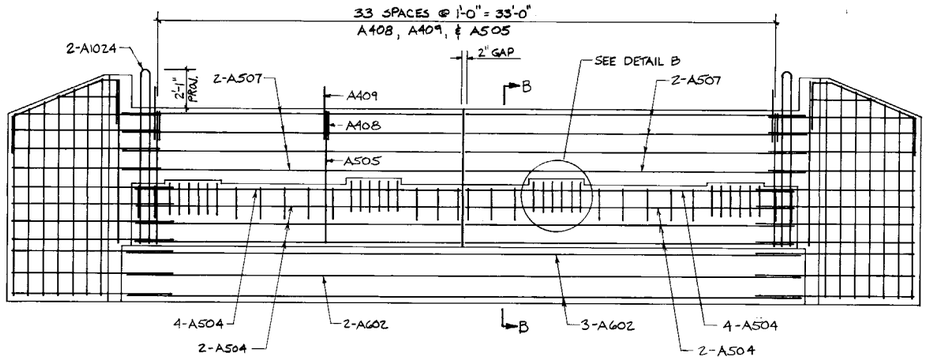
A512



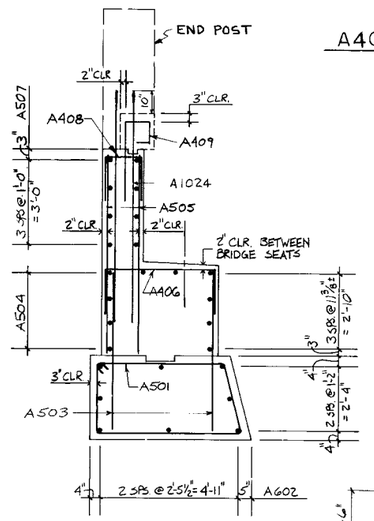
A610



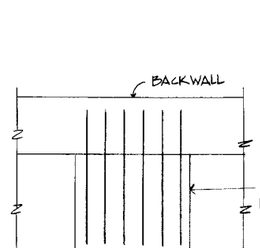
A406



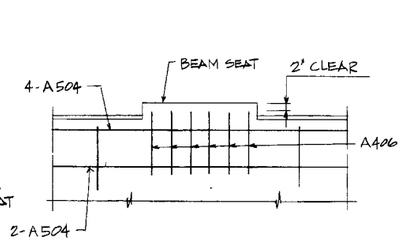
ELEVATION
SCALE: 1/4"=1'-0"



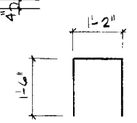
SECTION B-B
SCALE: 3/8"=1'-0"



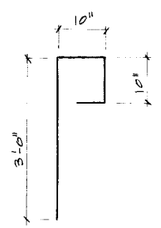
PEDESTAL DETAIL



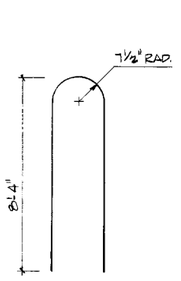
DETAIL B



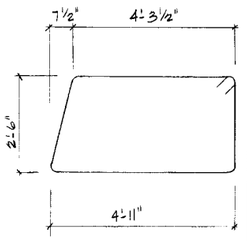
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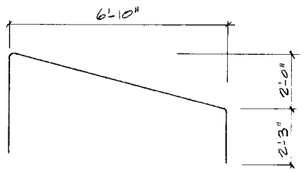
A409



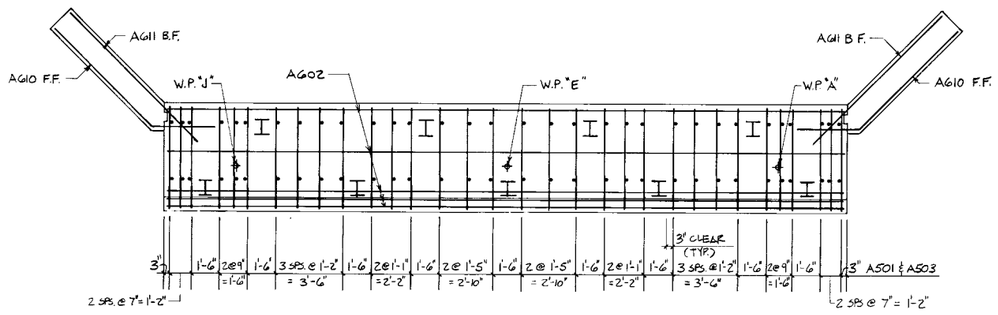
A1024



A501



A515



FOOTING PLAN
SCALE: 1/4"=1'-0"

BILL OF REINFORCEMENT FOR SOUTH ABUT.

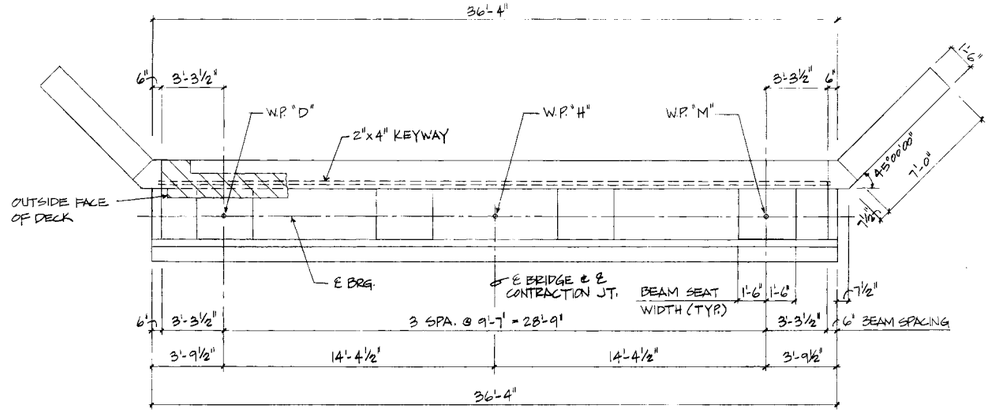
BAR	NO.		LENGTH	SHAPE	LOCATION
A501	32		15'-6"	BENT	FOOTING TIE
A602	8		36'-0"	STRT.	" HORIZ.
A503	64		5'-3"	"	" DOWELS
A504	20		17'-4"	"	BRIDGE SEAT-HORIZ.
A505	68		7'-1"	"	PARAPET WALL-VERT.
A406	44		7'-2"	BENT	BRIDGE SEAT TIE
A507	16		17'-10"	STRT	PARAPET WALL-HORIZ.
A408	34		4'-2"	BENT	" " TIE
A409	34		5'-3"	"	EXP. BLOCK DOWEL
A610	14		10'-7"	"	WINGWALL-HORIZ.
A611	14		9'-8"	STRT.	" "
A512	8		10'-1"	BENT	" "
A513	8		9'-2"	STRT	" "
A514	4		4'-5"	STRT.	" "
A515	4		11'-10"	BENT	" TOP
A516	4		8'-11"	STRT.	" VERT.
A517	4		9'-3"	"	" "
A518	4		9'-7"	"	" "
A519	4		9'-11	"	" "
A520	4		10'-3"	"	" "
A521	4		10'-7"	"	" "
A522	4		10'-10"	"	" "
A523	6		8'-4"	"	" "
A1024	4		17'-5"	BENT.	RAILPOST-DOWEL

TITLE: SOUTH ABUTMENT REINFORCEMT.	DES: J. GERBER	DR: S. OSLUND	APPROVED: 4-29-82	Bridge No. 55539
	CHK:	CHK: J. GERBER		
	Sheet No. 5 of 21 Sheets			

SP 55-598-07

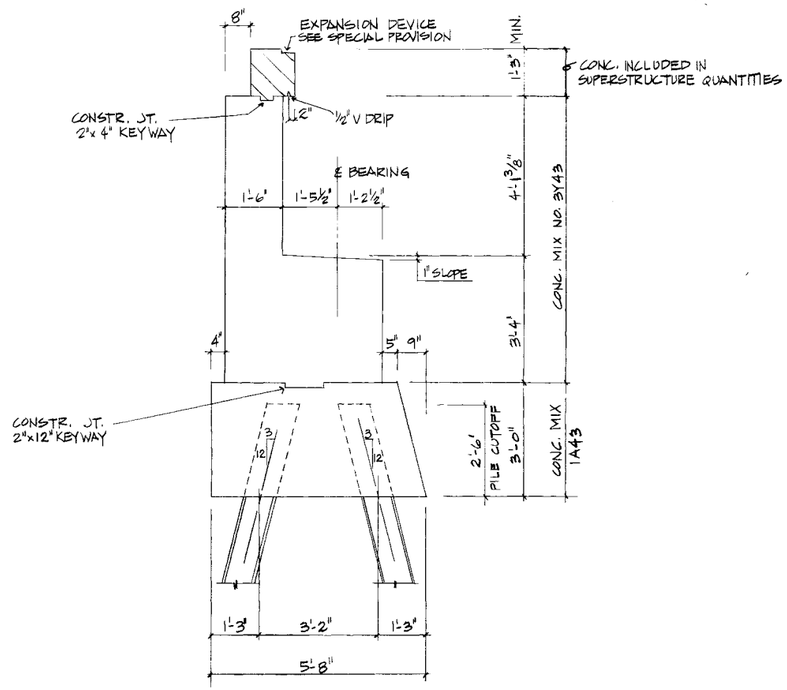
AS BUILT PLANS

40-17C



PLAN

SCALE: 1/4"=1'-0"



SECTION A-A

SCALE: ½"=1'-0"

SUMMARY OF QUANTITIES FOR NORTH ABUTMENT		
	CONCRETE MIX NO. 1A43	21 CU.YD.
	CONCRETE MIX NO. 3Y43	36 CU.YD.
	REINFORCEMENT BARS	4340 LBS.
	STEEL H TEST PILE 20 FT. LONG	1 EACH
(1)	STEEL H PILING DELIVERED	88 LIN. FT.
(1)	STEEL H PILING DRIVEN	88 LIN. FT.
(2)	PILE POINTS	9 EACH

(1) DOES NOT INCLUDE TEST PILES
(2) SEE SPECIAL PROVISIONS

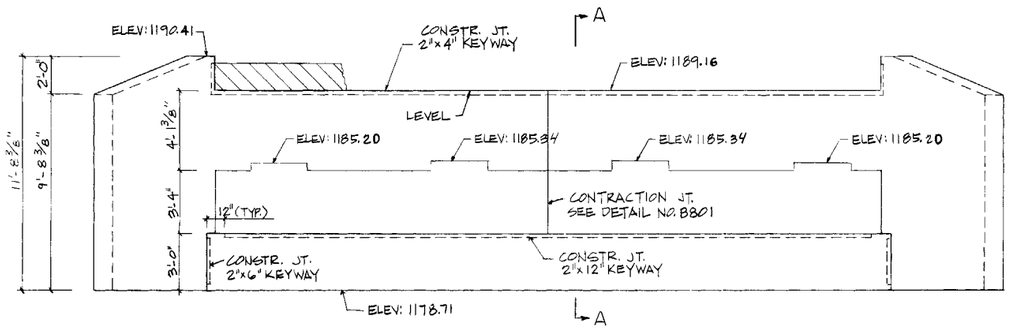
PILE NOTES

ALL PILES TO BE HP 10x42
1- STEEL H TEST PILE - 20 FEET LONG
8- STEEL H PILES - EST. LENGTH - 11 FEET LONG
9- STEEL H PILES REQUIRED FOR NORTH ABUTMENT

PILE SPACING SHOWN IS AT BOTTOM OF FOOTING

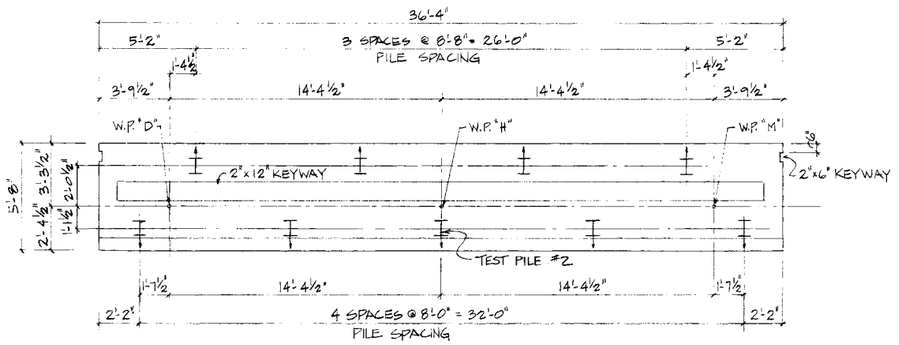
ALL PILES MARKED THUS (H→) TO BE BATTERED 3" PER FOOT IN DIRECTION SHOWN

COMPUTED PILE LOADS	TONS/PILE
DEAD LOAD + EARTH PRESSURE	35.3
LIVE LOAD	8.1
DESIGN LOAD TOTAL	43.4



ELEVATION

SCALE: 1/4"=1'-0"



FOOTING PLAN

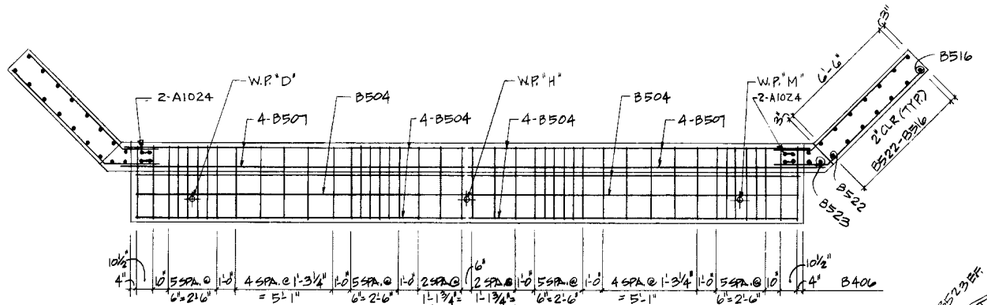
SCALE 1/4"=1'-0"

TITLE: NORTH ABUTMENT DETAILS	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK:	CHK: J.G.		
	Sheet No. 6 of 21 Sheets			

SP 55-598-07

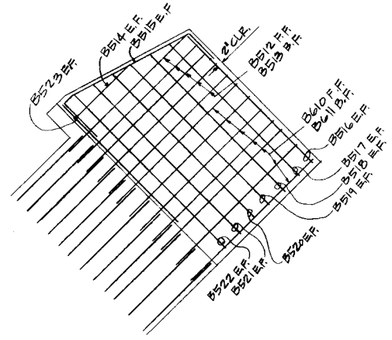
AS BUILT PLANS

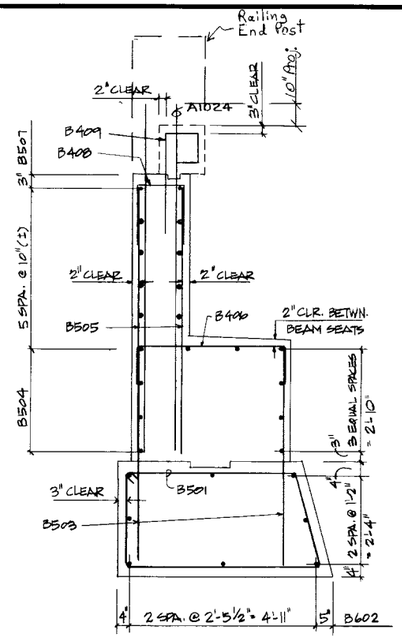
40-17C



PLAN
SCALE: 1/4"=1'-0"

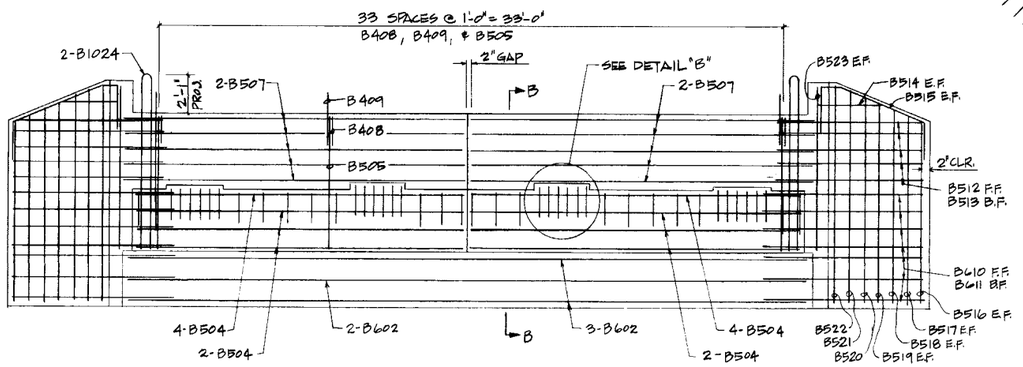
Note: F.F. = Front Face
B.F. = Back Face
E.F. = Each Face



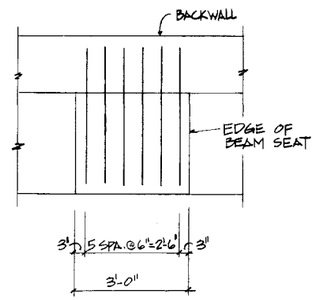


SECTION B-B
SCALE: 1/2"=1'-0"

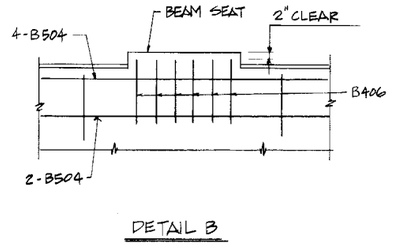
BILL OF REINFORCEMENT FOR NORTH ABUTMENT				
BAR	NO.	LENGTH	SHAPE	LOCATION
B501	32	15'-6"	BENT	FOOTING TIE
B602	8	36'-0"	STRT.	FOOTING HORIZ.
B503	64	5'-3"	"	FOOTING DOWELS
B504	20	17'-4"	"	BRIDGE SEAT - HORIZ.
B505	68	7'-4"	"	PARAPET WALL - VERT.
B406	44	7'-2"	BENT	BRIDGE SEAT TIE
B507	20	17'-10"	STRT.	PARAPET WALL - HORIZ.
B408	34	4'-2"	BENT	PARAPET WALL TIE
B409	34	5'-3"	"	EXP. BLK. DOWEL
B610	14	10'-7"	"	WING WALL - HORIZ.
B611	14	9'-8"	STRT.	" "
B512	10	10'-1"	BENT	" "
B513	10	9'-2"	STRT.	" "
B514	4	4'-5"	STRT.	" "
B515	4	11'-10"	BENT	WING WALL - TOP
B516	4	9'-3"	STRT.	WING WALL - VERT
B517	4	9'-7"	"	" "
B518	4	9'-11"	"	" "
B519	4	10'-3"	"	" "
B520	4	10'-7"	"	" "
B521	4	10'-11"	"	" "
B522	4	11'-3"	"	" "
B523	6	8'-8"	"	" "
B1024	4	18'-1"	BENT	RAILPOST - DOWEL



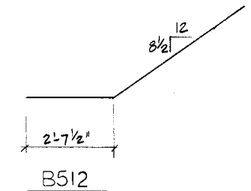
ELEVATION
SCALE: 1/4"=1'-0"



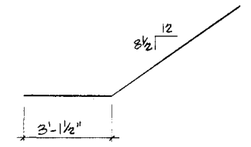
PEDESTAL DETAIL



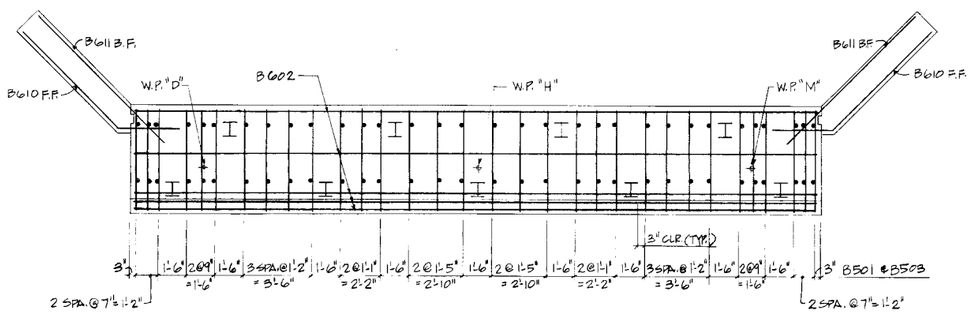
DETAIL B



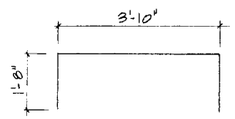
B512



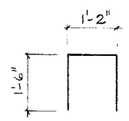
B610



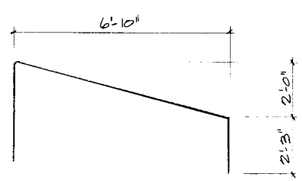
FOOTING PLAN
SCALE: 1/4"=1'-0"



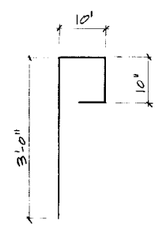
B406



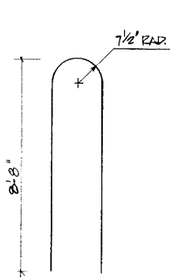
B408



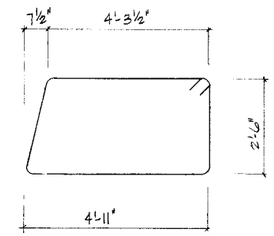
B515



B409



B1024



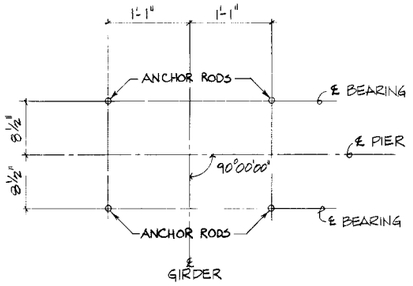
B501

TITLE: NORTH ABUTMENT REINFORCEMENT	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK:	CHK: J.G.	Sheet No. 7 of 21 Sheets	

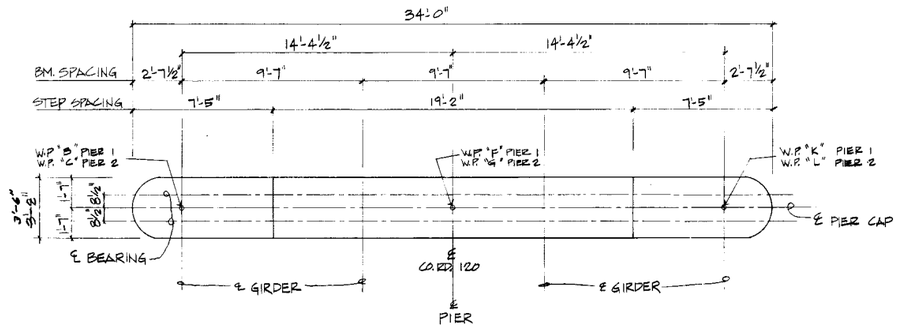
SP 55-598-07

AS BUILT PLANS

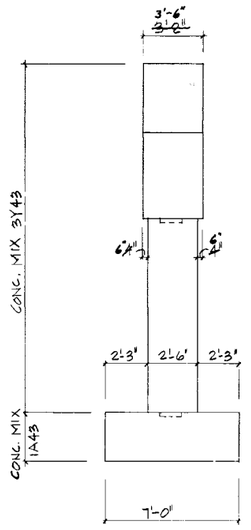
40-17C



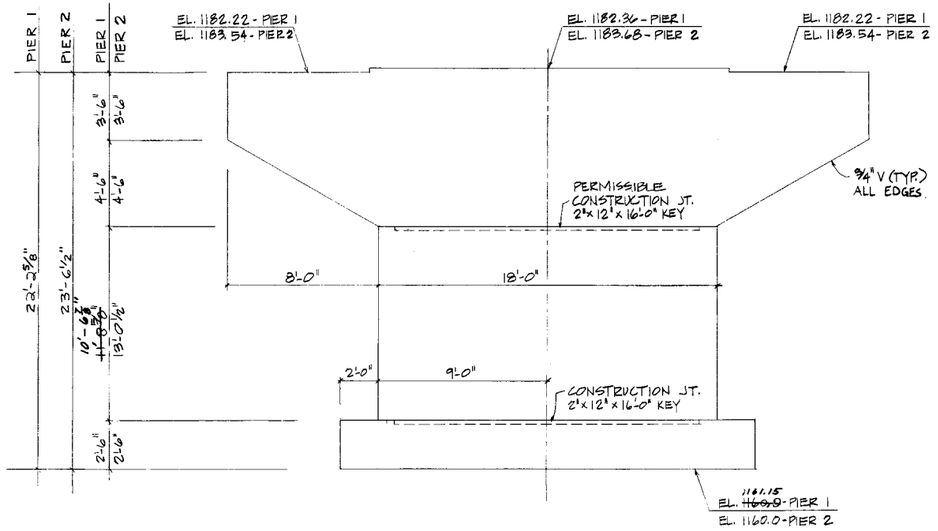
ANCHOR ROD LAYOUT
(PIER 1 ONLY)



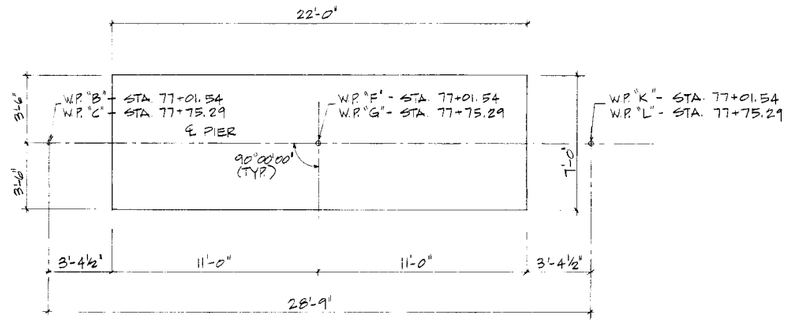
PLAN OF CAP



END ELEVATION



ELEVATION



FOUNDATION PLAN

SUMMARY OF QUANTITIES - 2 PIERS	
CONC. MIX NO. 1A43	29 CU.YD.
CONC. MIX. NO. 3Y43	95 CU.YD.
REINFORCEMENT BARS 14,510 ~~14,770~~	LBS.
(1) FOUNDATION PREP. PIER 1	1 LUMP SUM
(1) FOUNDATION PREP. PIER 2	1 LUMP SUM
STRUCTURE EXCAVATION CLASS WR	50 CU.YD.

(1) SEE SPECIAL PROVISIONS

PIERS	
COMPUTED SOIL PRESSURE	KIPS/SQ.FT.
DEAD LOAD	5.3
LIVE LOAD	1.2
OVERTURNING	2.3
TOTAL	8.8
* DESIGN LOAD	7.1

$\frac{8.8}{1.25} = 7.1$ REDUCTION

PER AASHTO GROUP III LOADING

NOTE: FOOTINGS SHALL BE KEYED INTO SOUND BEDROCK AS DIRECTED BY THE ENGINEER (SEE SPECIAL PROVISIONS)

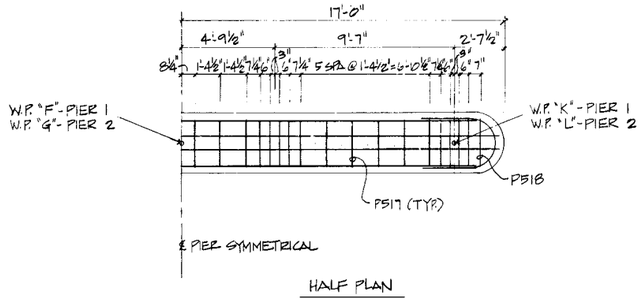
CONTRACTOR SHALL NOT ORDER COL. STEEL UNTIL SUITABLE ROCK HAS BEEN ENCOUNTERED AND APPROVED BY THE ENGINEER FOR BOTTOM OF FOOTINGS.

TITLE: PIER GEOMETRICS	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK: H.K.	CHK: J.G.		
	Sheet No. 8 of 21 Sheets			

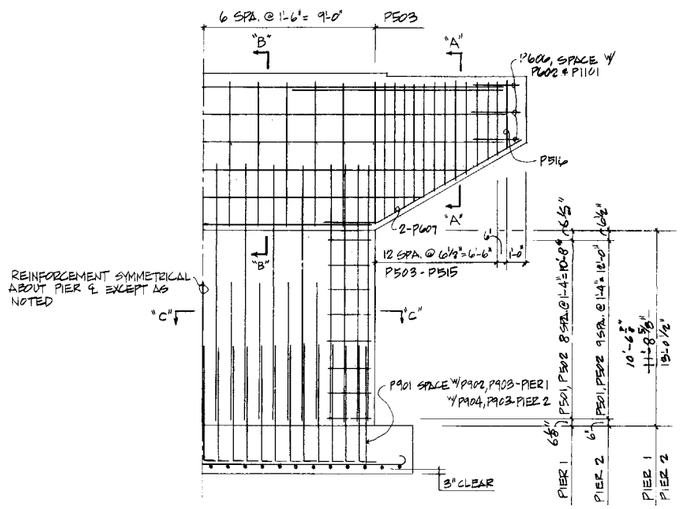
SP 55-598-07

AS BUILT PLANS

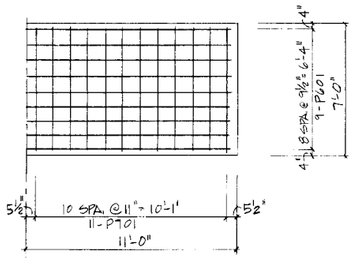
40-17C



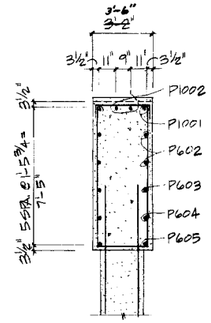
HALF PLAN



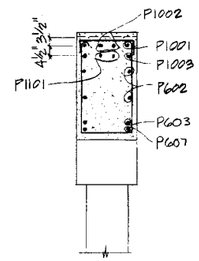
HALF ELEVATION



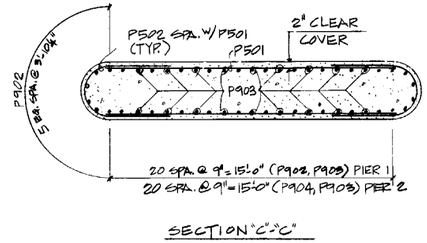
HALF-FOOTING PLAN



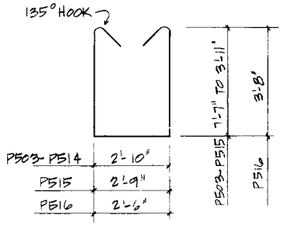
SECTION "B"-"B"

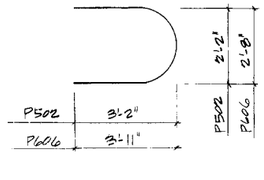


SECTION "A"-"A"

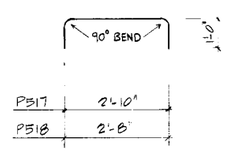


SECTION "C"-"C"



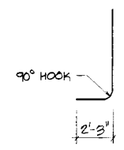


P503 - P516

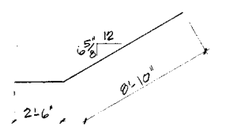


P517, P518

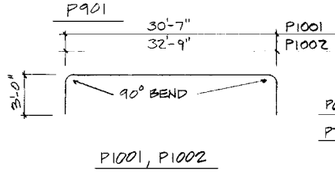
P502, P606



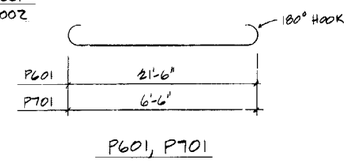
P901



P607



P1001, P1002



P601, P701

BILL OF REINFORCEMENT FOR 2 PIERS

BAR	SIZE	NO.	LENGTH	SHAPE	LOCATION
P501	5	~~28~~ 34	15'-10"	STRT.	SHAFT HORIZ.
P502	5	~~28~~ 34	7'-7"	BENT	"
P503	5	26	18'-0"	"	CAP STIRRUP
P504	5	4	18'-5"	"	"
P505	5	4	17'-9"	"	"
P506	5	4	17'-2"	"	"
P507	5	4	16'-7"	"	"
P508	5	4	16'-0"	"	"
P509	5	4	15'-4"	"	"
P510	5	4	14'-9"	"	"
P511	5	4	14'-2"	"	"
P512	5	4	13'-6"	"	"
P513	5	4	12'-11"	"	"
P514	5	4	12'-4"	"	"
P515	5	4	11'-7"	"	"
P516	5	4	10'-9"	"	"
P517	5	68	4'-10"	BENT	CAP TIE
P518	5	4	4'-8"	BENT	"
P601	6	18	23'-6"	BENT	FOOTING
P602	6	8	31'-4"	STRT.	CAP LONGIT.
P603	6	4	28'-4"	"	"
P604	6	4	23'-4"	"	"
P605	6	4	18'-0"	"	"
P606	6	12	9'-4"	BENT	"
P607	6	8	11'-4"	BENT	"
P701	7	48	8'-10"	BENT	FOOTING
P901	9	100	~~8'-9"~~ 8'-6"	BENT	FOOTING DOWEL
P902	9	32	~~15'-3"~~ 15'-0"	STRT.	SHAFT VERT. - PIER 1
P903	9	36	7'-6"	"	SHAFT VERT. - BOTH PIERS
P904	9	32	16'-7"	"	SHAFT VERT. - PIER 2
P1001	10	4	32'-7"	BENT	CAP LONGIT.
P1002	10	4	38'-9"	BENT	"
P1003	10	8	11'-2"	STRT.	"
P1101	11	8	12'-5"	STRT.	CAP LONGIT.

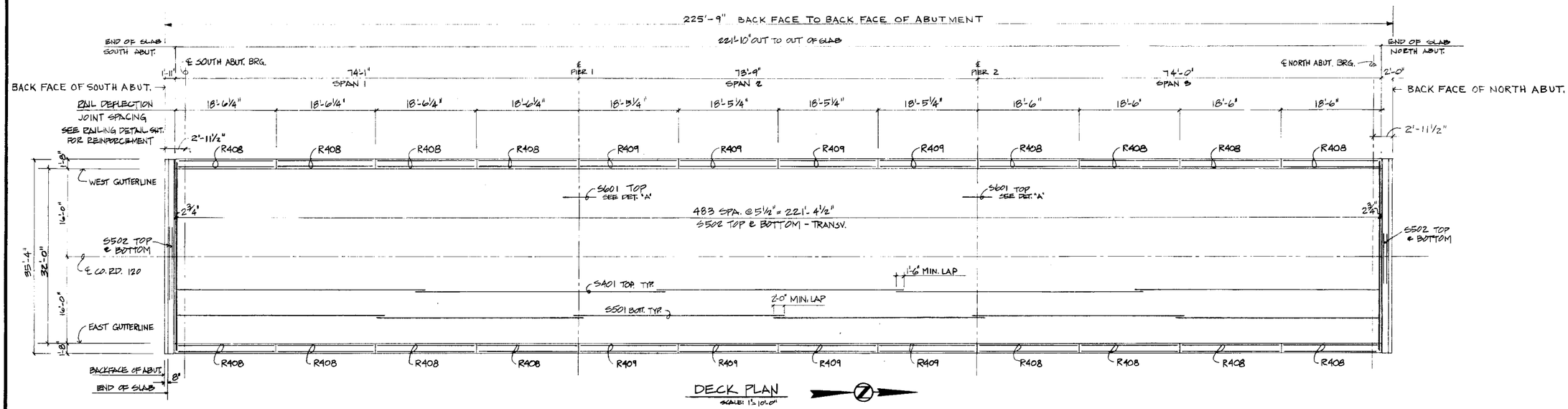
NOTE: CONTRACTOR SHALL NOT ORDER COLUMN STEEL UNTIL THE ROCK ELEVATION HAS BEEN ESTABLISHED BY THE ENGINEER.

TITLE: PIER REINFORCEMENT	DES: J.G. / CHK: H.K.	DR: D.M. / CHK: J.G.	APPROVED: 9-25-82
Sheet No. 9 of 21 Sheets			Bridge No. 55539

SP 55-598-07

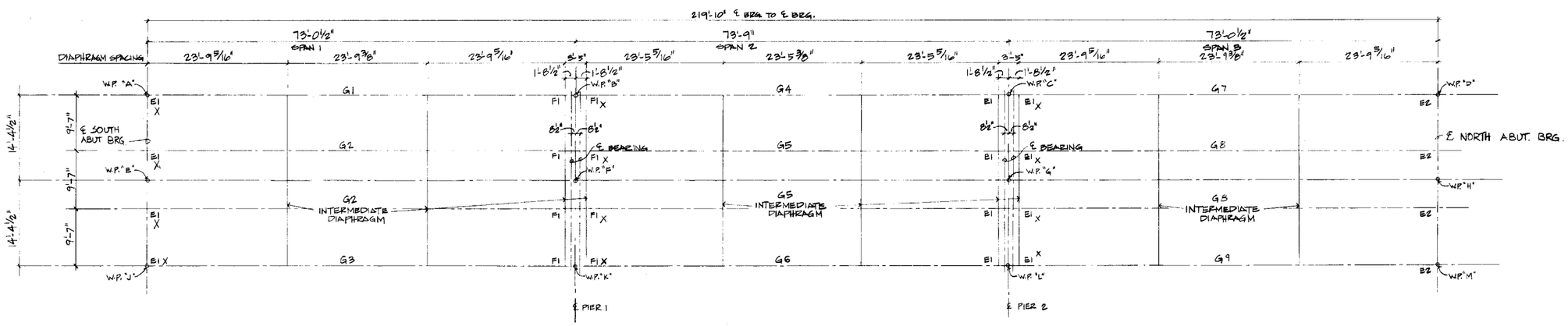
AS BUILT PLANS

40-17C



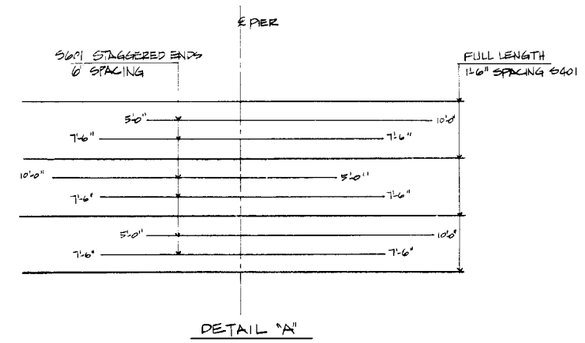
DECK PLAN

SCALE: 1" = 10'-0"



FRAMING PLAN

E1 DENOTES ELASTOMERIC BEARING PAD TYPE 1
E2 " " " " TYPE 2
F1 " " " ASSEMBLY TYPE 1



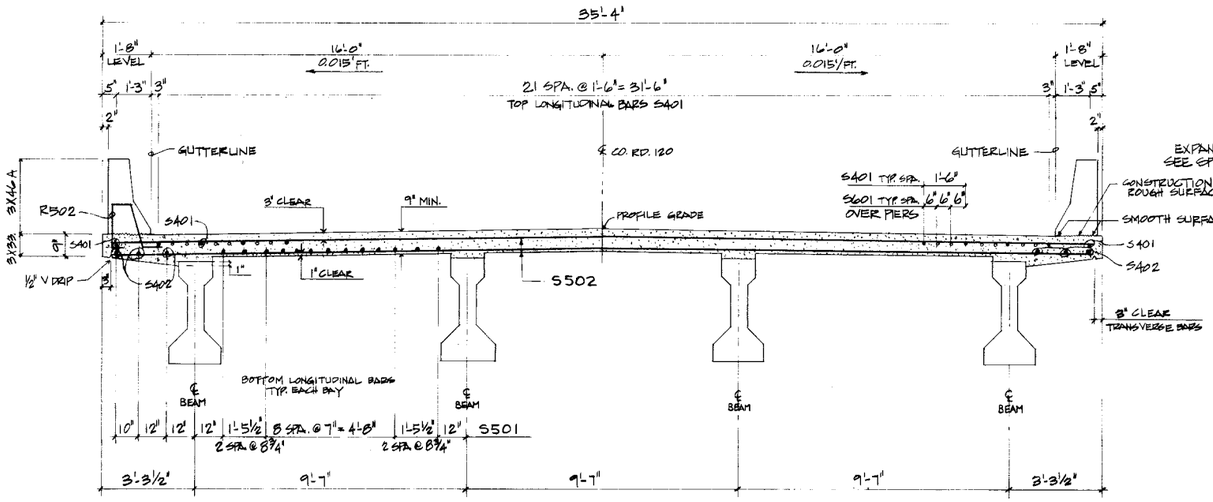
DETAIL "A"

TITLE: SUPERSTRUCTURE DETAILS	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK: H.K.	CHK: J.G.		
	Sheet No. 10 of 21 Sheets			

SP 55-598-07

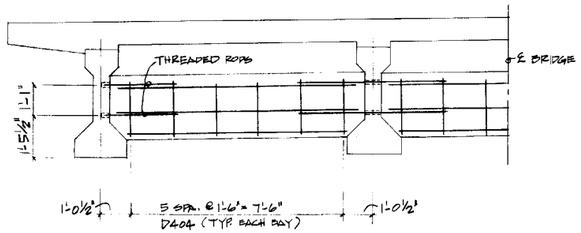
AS BUILT PLANS

40-17C

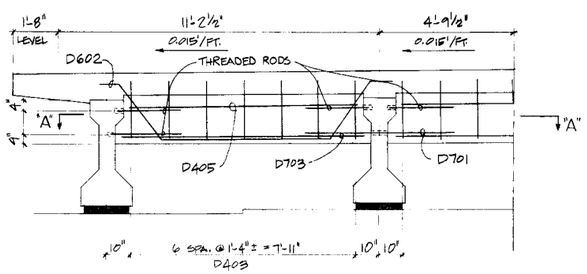


TRANSVERSE SECTION

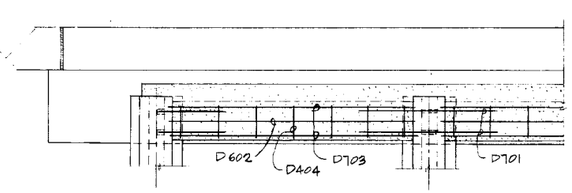
SCALE: 3/8" = 1'-0"



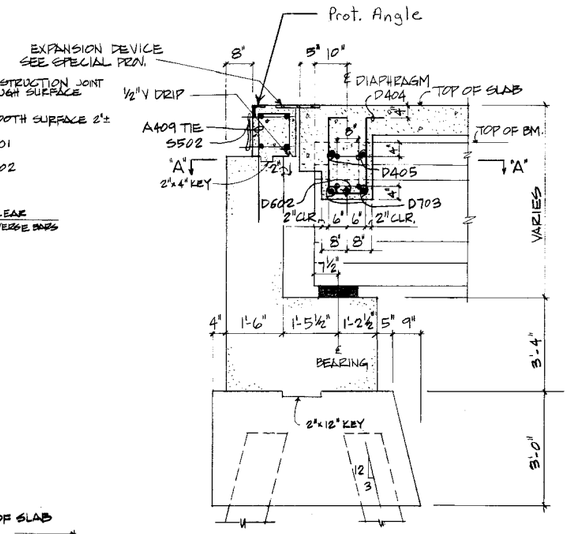
ELEVATION @ INTERMEDIATE DIAPHRAGM



ELEVATION @ END DIAPHRAGM

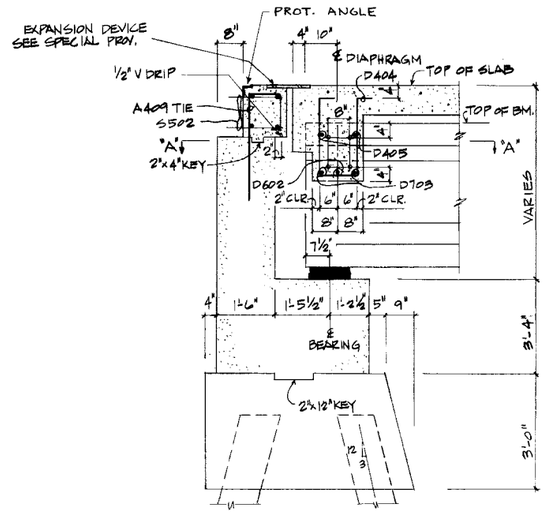


SECTION "A"-"A"



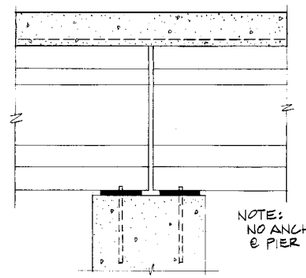
SECTION @ SOUTH ABUTMENT

SCALE: ½" = 1'-0"



SECTION @ NORTH ABUTMENT

SCALE: ½" = 1'-0"



NOTE:
NO ANCHOR RODS @ PIER 2

PIER 1 & 2

BILL OF REINFORCEMENT — SUPERSTRUCTURE

BAR	NO.	LENGTH	SHAPE	LOCATION
S401	120	45'-7"	STRT.	DECK LONGIT. - TOP
S402	36	38'-5"	"	" " - BOTT.
S501	234	38'-8"	STRT.	DECK LONGIT.
S502	976	35'-0"	"	DECK TRANS.
S601	84	15'-0"	STRT.	ADD. DECK REINF. OVER PIERS
D404	42	6'-2"	"	END DIAPHRAGM
D405	12	8'-0"	STRT.	" "
D701	8	5'-0"	STRT.	END DIAPHRAGM
D602	6	16'-3"	BENT	" "
D703	12	8'-3"	STRT	" "

SUMMARY OF QUANTITIES - SUPERSTRUCTURE

	CONCRETE, MIX NO. 3X35	235 CU. YDS.
	" MIX NO. 3X43	5 CU. YDS.
	" MIX NO. 3X46A	45 CU. YDS.
1	REINFORCEMENT BARS	60,980 LBS.
4	INTERMEDIATE DIAPH. (TYPE 45 PRESTRESSED BM.)	288 LIN. FT.
6	ELASTOMERIC BEA. PAD TYPE 1	12 EACH
6	" " TYPE 2	4 EACH
6	" ASSEMBLY TYPE 1	8 EACH
6	PRESTRESSED CONC. BEAMS TYPE 45-74	12 EACH
	FLOOR DRAINS	8 EACH
3	BRIDGE NAMEPLATE	1 UNIT
6	STRUCTURAL STEEL (3306)	420 LBS.
4	EXP. JT. DEVICE TYPE 2	68 LIN. FT.
3 4	PREFORMED CORK JT. FILLER	22 PIECES

1. INCLUDES RAILING, SUPERSTRUCTURE, & END DIAPHRAGM QUANTITIES.
2. VOLUME OF DECK CONC. FOR PAYMENT COMPUTED USING AN AVERAGE STOOL HEIGHT OF 2.0"
3. TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
4. SEE SPECIAL PROVISIONS.
5. END DIAPHRAGMS.
6. INCL'S. PROTECTION ANGLES

PREFORMED CORK JOINT FILLER

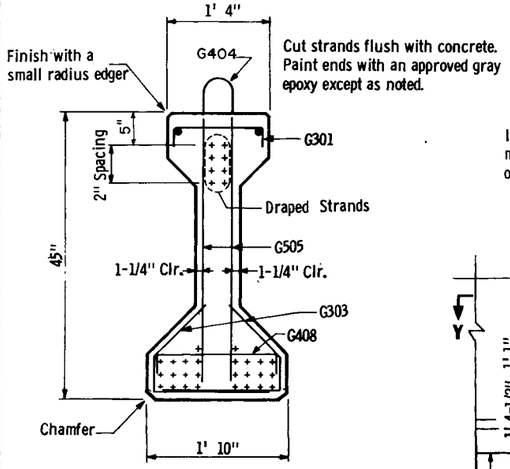
22 PIECES	1" CORK	- RAILING DEFLECTION JOINTS

NOTES:
PLACE ¾" V TRANSVERSELY IN BOTTOM OF DECK SLAB OVER ℄ OF PIERS. MAKE SAW CUT ¾" WIDE BY 1" DEEP IN SURFACE OF DECK SLAB OVER ℄ OF PIERS AS SOON AS THE CUTTING CAN BE DONE WITHOUT RAVELING THE CONCRETE. FILL SAW CUT WITH APPROVED JOINT SEALER - PER MN/DOT 3723.

TITLE: SUPERSTRUCTURE DETAILS	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK: H.K.	CHK: J.G.	Sheet No. 11 of 21 Sheets	

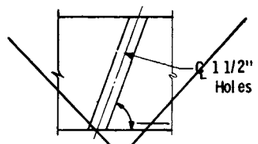
SP 55-598-07 AS BUILT PLANS

40-170



Details not shown are the same as the SECTION AT ℄ BEAM

END VIEW



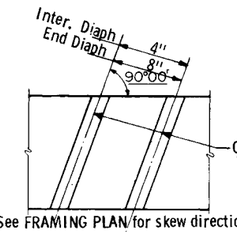
See FRAMING PLAN for skew direction. Intermediate stirrups may be shifted the minimum distance required to clear holes or inserts for intermediate diaphragms.

SECTION Y-Y

FOR USE WITH CONCRETE END DIAPHRAGMS WITH PILE BENT ABUTMENTS

SECTION X-X

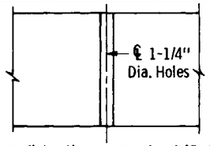
USE AT FASCIA BEAM AND INTERIOR BEAM WITH STAGGERED DIAPHRAGMS



See FRAMING PLAN for skew direction. Intermediate stirrups may be shifted the minimum distance required to clear holes or inserts for intermediate diaphragms.

SECTION X-X

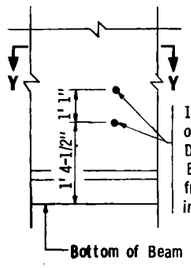
USE AT INTERIOR BEAM WITH CONTINUOUS CONCRETE DIAPHRAGM



Intermediate stirrups may be shifted the minimum distance required to clear holes or inserts for intermediate diaphragms.

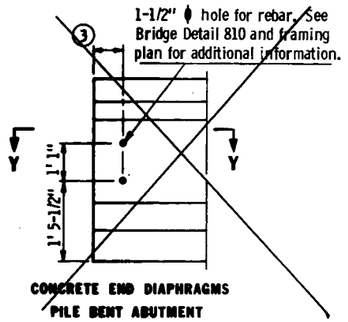
SECTION Y-Y

USE AT INTERIOR BEAM WITH STEEL DIAPHRAGM

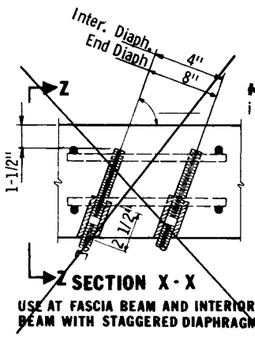


1 1/4" ϕ hole for 7/8" bolts or Anchorage for 7/8" Diameter Bolts. See Bridge Detail B403 and framing plan for additional information.

FOR USE WITH STEEL INTERMEDIATE DIAPHRAGM

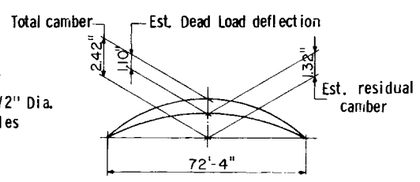


CONCRETE END DIAPHRAGMS PILE BENT ABUTMENT



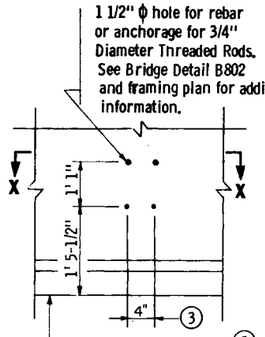
Nuts and rods per Spec. 3306. No paint

SECTION Z-Z

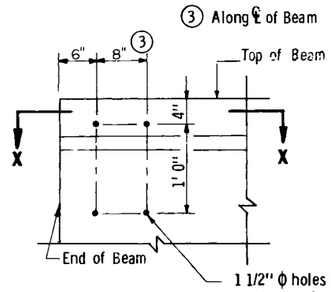


Deflections shown are for weight of slab, railing, and diaphragms only. Engineer will take elevations at top of beams after erection and will allow for deflections shown to enable contractor to build forms to correct grade and specified slab thickness.

CAMBER DIAGRAM

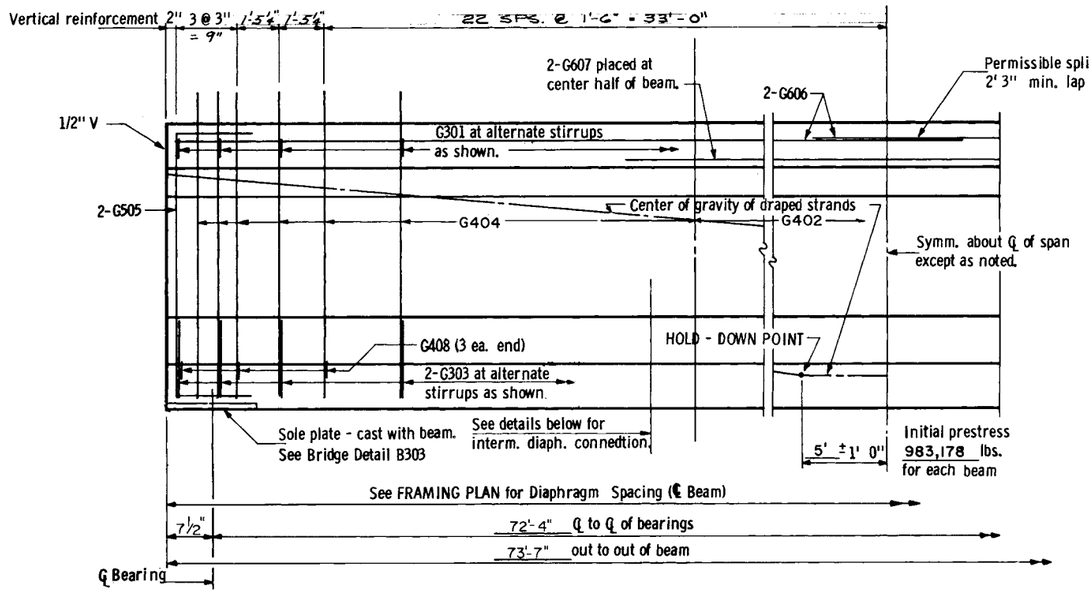


FOR USE WITH CONCRETE INTERMEDIATE DIAPHRAGM

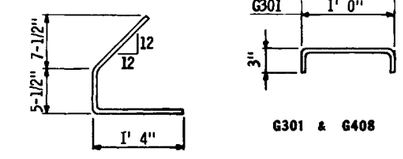


1 1/2" ϕ holes for rebars or Anchorage for 3/4" Diameter Threaded Rods. See Bridge Detail B803 for additional information.

CONCRETE END DIAPHRAGMS PARAPET ABUTMENT

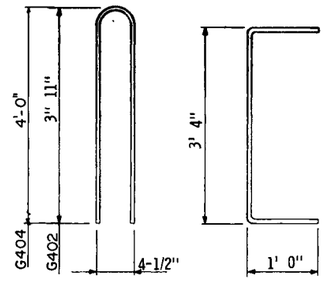


HALF ELEVATION



G303

G301 & G408



G402, G404 **G505**

First digit of bar mark indicates bar size. All bar dimensions are out-to-out.

Bar	Wt.
G 301	.56 lb.
G 402	5.37 lb.
G 303	1.00 lb.
G 505	5.56 lb.
G 606	
G 607	
G 408	1.42 lb.
G 404	5.48 lb.

Girder Section Data
Wt./Ft. = 583 lbs.
Cross sec. area at ℄ of span = 560 in.^{2}
C. G. (from bottom) = 20.27 in.
I = 125,390 in.^{4}
S_B = 6,186 in.^{3}
1/2" ϕ 270k strand wt./ft. = .525 lb.
1/2" ϕ 270k strand area = .1531 sq. in.

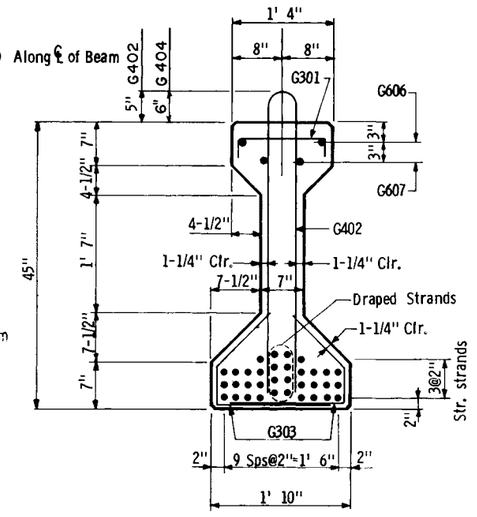
Y DISTANCES (IN INCHES)

	NO.	℄ SPAN	END
Straight strands	26	4.31	
Draped strands	8	6.00	37.00 [a]
Total strands	34	4.71	

Y = distance of Center of Gravity of strands from bottom of beam. All strands spaced 2" c-c, horizontally and vertically except as noted.

All strands 1/2" ϕ 270 kip, ultimate strength

[a] A tolerance of ± 2" will be permitted in this dimension



SECTION AT ℄ BEAM

BEAMS G1-G9

GENERAL NOTES:

Tops of beams shall be rough floated and broomed transversely for bond.

Provide handling hooks or devices as required by Contractor. Hooks or devices provided will be subject to approval of Engineer and shall be installed within 4' 0" of the end of beam.

A modified strand pattern or a bundled strand pattern which does not change center of gravity of strands may be submitted to the Engineer for approval.

A post-tensioned beam may be used as an alternate for the pretensioned design shown. Designer will provide plans for the post-tensioned alternate on request.

Each beam shall be marked, showing bridge number, casting date, and individual identification letters and numbers. Markings shall be made on the face of the beam, near the end, so located that they will be exposed after the end diaphragms have been cast. Fascia beams shall be marked on an inside face. All markings shall be stencilled and be clearly legible. For location of beams, see framing plan.

All material and work shown or noted on this sheet shall be included in unit price bid for prestressed concrete beams. See Spec. 2405.

See framing plan for beam ends marked "X".

Approximate weight of beam 21.5 tons.

As an alternate to the diaphragm anchorages shown, the contractor may submit details of a cast-in-place anchorage to the engineer for approval. Anchorage must provide an ultimate pull out strength of 15 kips per anchorage.

MINIMUM CONCRETE STRENGTH - P.S.I.

	① f'ci	② f'c
Required min. Concrete Strength	5300	6000

① Minimum concrete strength at time of prestress transfer.

② Minimum concrete strength when curing can be discontinued and beam transported and installed.

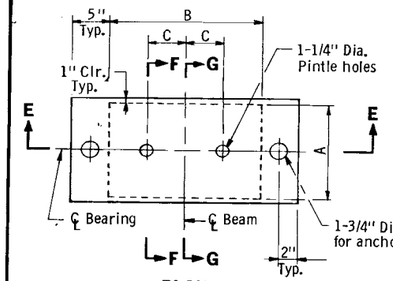
Fig. 5-397.504

Revised: January 22, 1980 Approved: May 18, 1977

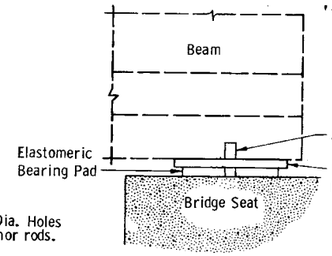
MODIFIED

TITLE:			
45" PRESTRESSED CONCRETE BEAM (PRETENSIONED) TYPE 45 - 74	DES: J.G. / CHK:	DR: D.M. / CHK: J.G.	APPROVED: 4-29-82
Sheet No. 12 of 21 Sheets			Bridge No. 55539

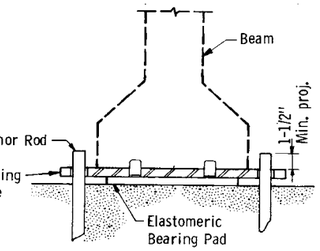
SP 55-502-07 AS BUILT PLANS



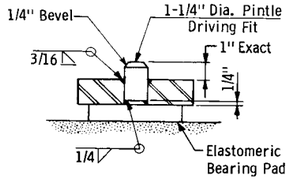
PLAN



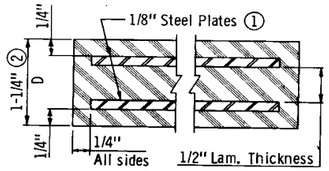
END ELEVATION



SECTION E-E



SECTION F-F
(ENLARGED)



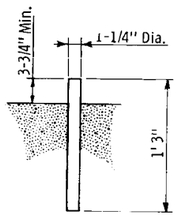
SECTION G-G
(Section Thru Level Pad)

① Do not galvanize these plates.
② The total thickness shown includes the steel plates.

ELASTOMERIC BEARING PAD TABLE ⑤

Beam Size	A	B	C	E	Bearing Plate Size	Assembly Type	DL + LL Min. (Kips)	DL Max. (Kips)	DL + LL Max. (Kips)	Shape Factor
28"	10"	14"	4"		12" x 24" x 1"		28	69	110	5.7
↓	12"	↓	↓		14" x 24" x 1"		33	83	132	6.4
↓	14"	↓	↓		16" x 24" x 1"		39	97	155	6.9
36"	10"	16"	6"		12" x 26" x 1"		32	79	126	6.1
↓	12"	↓	↓		14" x 26" x 1"		38	95	152	6.8
↓	14"	↓	↓		16" x 26" x 1"		44	111	177	7.4
→ 40" & 45"	10"	20"	8"		12" x 30" x 1"	F-1	40	99	158	6.6
↓	12"	↓	↓		14" x 30" x 1"		48	119	190	7.4
↓	14"	↓	↓		16" x 30" x 1"		56	139	222	8.2
54"	10"	24"	9"		12" x 34" x 1"		48	118	190	7.0
↓	12"	↓	↓		14" x 34" x 1"		57	143	228	7.9
↓	14"	↓	↓		16" x 34" x 1"		67	167	267	8.8
63" - 81"	10"	↓	8"		12" x 34" x 1"		48	118	190	7.0
↓	12"	↓	↓		14" x 34" x 1"		57	143	228	7.9
↓	14"	↓	↓		16" x 34" x 1"		67	167	267	8.8
30" Bulb	10"	22"	9"		12" x 32" x 1"		44	109	174	6.8
↓	12"	↓	↓		14" x 32" x 1"		52	131	209	5.7
↓	14"	↓	↓		16" x 32" x 1"		61	153	244	8.5
↓	16"	↓	↓		18" x 32" x 1"		70	175	280	9.2

⑤ See Bridge Design Manual for additional information.



ANCHOR ROD DETAIL

NOTES:

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

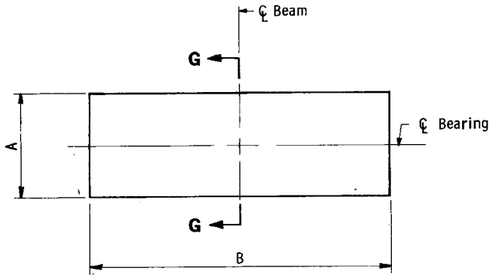
All steel plates and anchor rods shall comply with Spec. 3306.

Pintles shall comply with Spec. 3314, Type II.

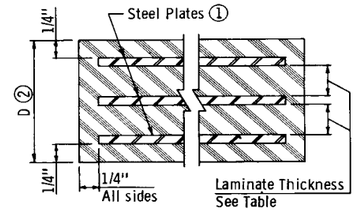
Galvanize structural steel bearing plate and pintle after assembly as per Spec. 3394.

Payment for bearing assembly shall include all material on this detail.

APPROVED: May 8, 1979	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Developed by: BRIDGE STANDARDS & BRIDGE AND STRUCTURES SECTION	**ELASTOMERIC BEARING ASSEMBLY** PRESTRESSED CONCRETE BEAMS (FIXED)		**B304**
Issued by: ENGINEERING STANDARDS SECTION			



PLAN



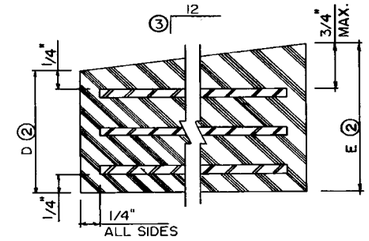
SECTION G-G
(Section Thru Level Pad)

① Do not galvanize these plates.
② The total thickness shown includes the steel plates.

ELASTOMERIC BEARING PAD TABLE ⑤

Beam Size	A	B	Pad Thickness D	Pad Thickness E	Steel Plates No.	Steel Plates Thickness	Laminates No.	Laminates Thickness	Shape Factor	Pad Type
28"										
↓										
36"										
↓										
40"										
↓										
45"	12"	20"	4⅜"	4⅝"	7	⅛"	6	½" MAX.	7.5	E2
↓	10"	20"	2½"	2½"	4	⅛"	3	½" MAX.	6.7	E1
54"	16									
↓										
63"										
↓										
72"										
↓										
81"										
↓										
30" Bulb										
↓										

⑤ See Bridge Design Manual for design requirememts.



SECTION G-G
(SECTION THRU SLOPED PAD)

③ SLOPES TO BE MADE IN ⅛" INCREMENTS PER FT.
④ MARK HIGH SIDE OF SLOPED PADS WITH AN "E" FOR FIELD PLACEMENT

NOTES:

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

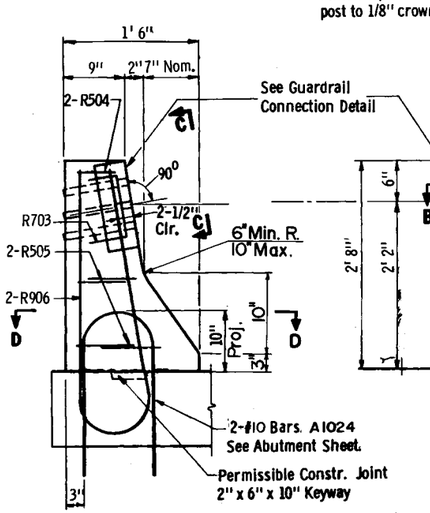
All steel plates shall comply with Spec. 3306.

APPROVED: May 8, 1979	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Developed by: BRIDGE STANDARDS & BRIDGE AND STRUCTURES SECTION	**ELASTOMERIC BEARING PAD** PRESTRESSED CONCRETE BEAMS (EXPANSION)		**B305**
Issued by: ENGINEERING STANDARDS SECTION			

TITLE: DETAILS	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK:	CHK: J.G.	Sheet No. 13 of 21 Sheets	

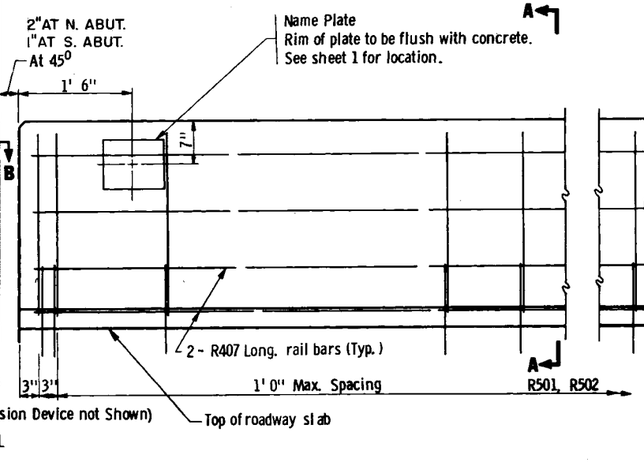
SP 55-598-07 **AS BUILT PLANS**

NORTHSTAR # 117

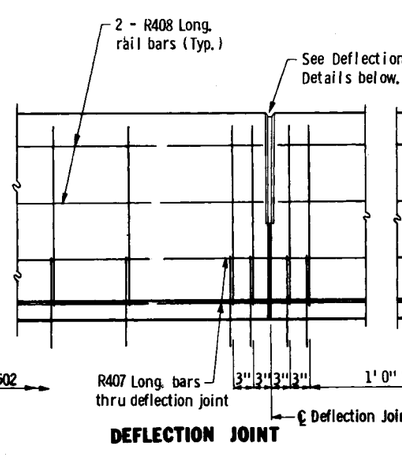


END VIEW

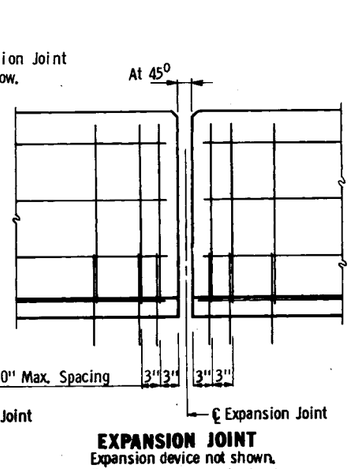
END POST VERTICAL



INSIDE ELEVATION OF RAILING

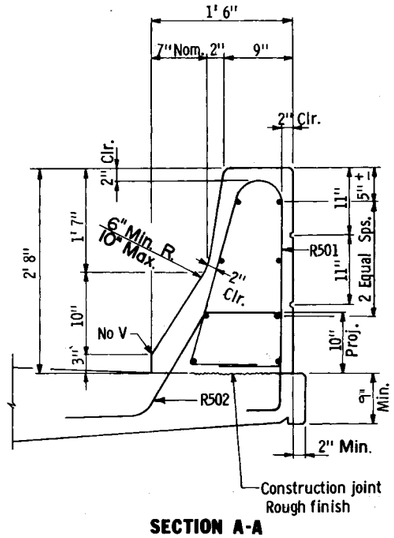


DEFLECTION JOINT



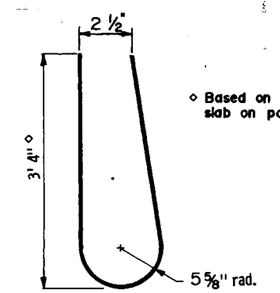
EXPANSION JOINT

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



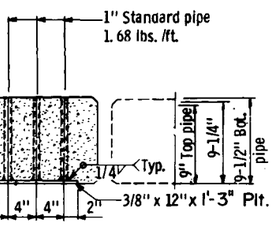
SECTION A-A

BILL OF REINFORCEMENT FOR RAILING				
BAR	NO.	LENGTH	SHAPE	LOCATION
R501	504	6'-1"	Bent	Rail Vertical
R502	504	5'-6"	Bent	Rail Vertical
R703	4	3'-10"	Bent	End Post
R504	8	2'-1"	Bent	End Post
R505	16	2'-7"	Bent	End Post
R906	8	7'-2"	Bent	End Post
R407	40	45'-7"	Str't.	Rail Long.
R408	64	18'-2"	Str't.	Rail Long.
R409	32	18'-1"	Str't.	" "

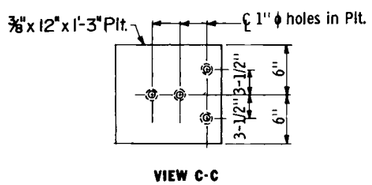


◇ Based on 1'-0" thick slab on parapet wall.

R906

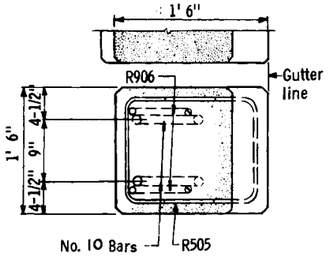


SECTION B-B
(Reinf. not shown)

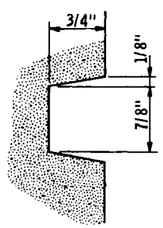


VIEW C-C

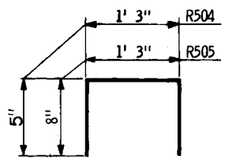
GUARDRAIL CONNECTION DETAIL
GALVANIZE AFTER FABRICATION PER SPEC. 3394
Est. Wt. 23Lbs.



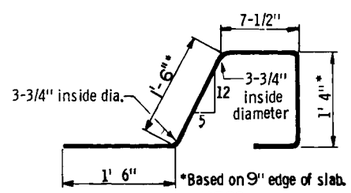
SECTION D-D



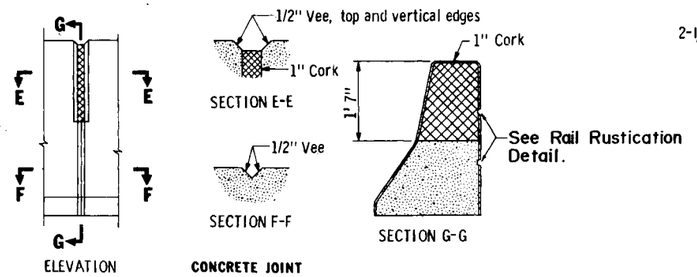
RAIL RUSTICATION



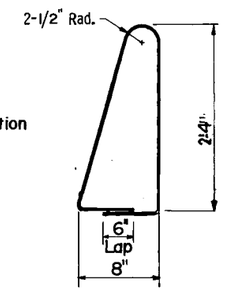
R504 & R505



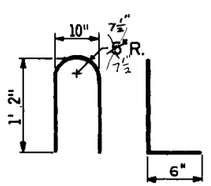
R502



DEFLECTION JOINT DETAILS



R501



R703

GENERAL NOTES

Conc. Railing = 405lbs. /ft.
Conc. Railing = .100 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.

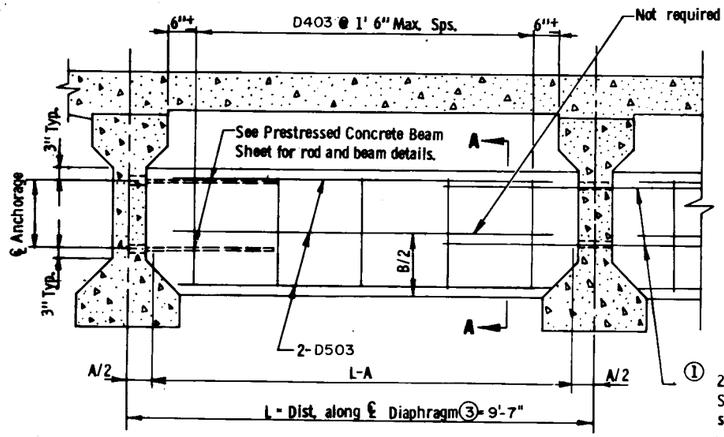
Rail quantities are included in summary of quantities for superstructure.

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

Fig. 5·397.114
Approved: April 23, 1980

TITLE: CONCRETE RAILING (TYPE J) WITH SEPARATE END POST (Without Wearing Course)	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK:	CHK: J.G.	Sheet No. 14 of 21 Sheets	

SP 55-598-07 AS BUILT PLANS

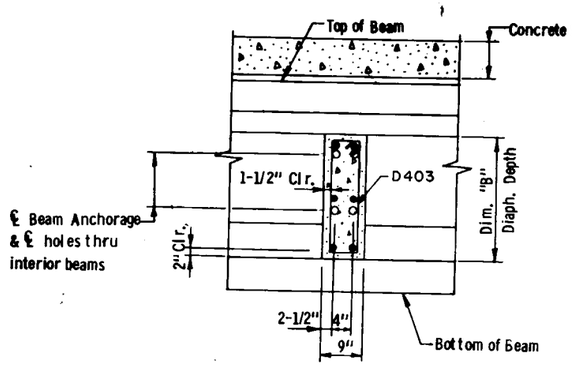


PART TRANSVERSE SECTION

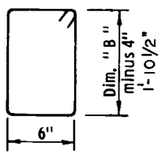
Bm. Ht.	Dim. "A" For comp. volume	Diaph. Dim. "B"	D403 Length
28"	7-1/2"	1'-4"	3'-9"
36"	7-3/4"	1'-9"	4'-7"
40"	8-3/4"	1'-11"	4'-11"
45"	9"	2'-2 1/2"	5'-6"
54"	10-1/2"	2'-8"	6'-5"

Concrete volume per diaphragm

$$\frac{(L-A)\times B\times .75}{27} = \text{(Cu. yd.)}$$



SECTION A-A



D403

INT. DIAPH. BILL OF REINF.

BAR	NO.	SHAPE	LENGTH	LOCATION
D403	180	BENT	5'-6"	INT. DIAPH. TIE
D503	180	STRT.	7'-11"	INT. DIAPH. LONG
D504	80	STRT.	5'-0"	INT. DIAPH LONG

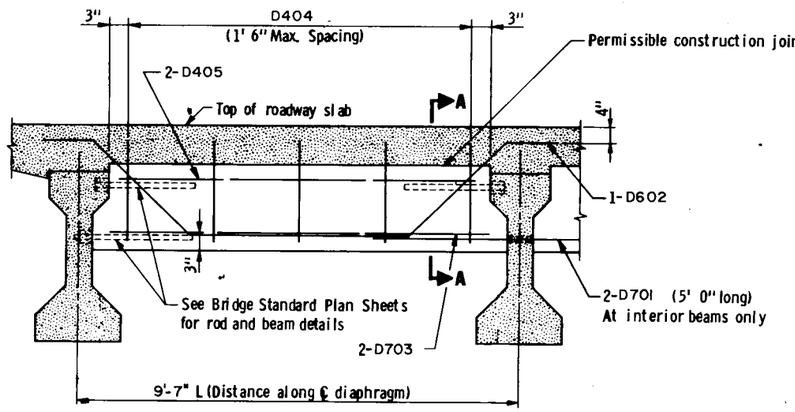
GENERAL NOTES

① For Diaphragms 20° and over, use threaded rods as shown on standard prestressed concrete beam sheet.

② All diaphragm concrete and reinforcement bars shown on this detail to be included in payment for diaphragms for prestressed beams. Threaded rods are included in payment for prestressed concrete beams.

③ PAYMENT LENGTH FOR DIAPHRAMS

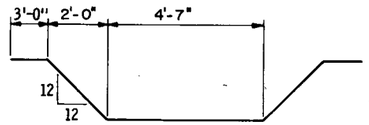
APPROVED: MARCH 27, 1979 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	MINNESOTA DEPARTMENT OF TRANSPORTATION **CONCRETE INTERMEDIATE DIAPHRAGM** **(FOR 28"-54" PRESTRESSED CONCRETE BEAM SPANS)**		DETAIL NO. **B802**



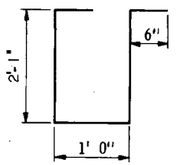
PART TRANSVERSE SECTION AT END DIAPHRAGM

LONGITUDINAL REINFORCEMENT IN BOTTOM OF DIAPHRAGM

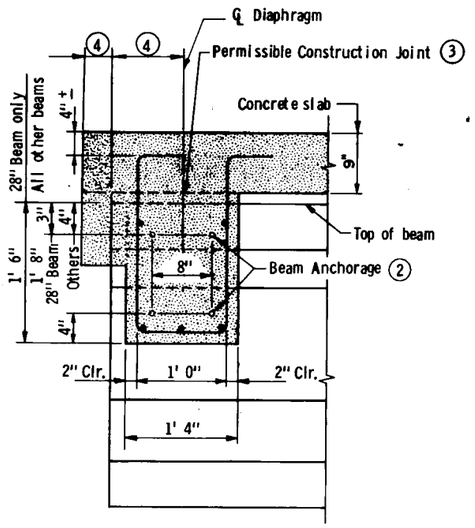
BEAM SPACING ℄ TO ℄ ①	BARS REQUIRED STRAIGHT NO.	STRAIGHT SIZE	BENT NO.	BENT SIZE
Up to 8'	2	6	1	5
Over 8' to 11'	2	7	1	6
Over 11' to 13'	2	8	1	8
Over 13' to 15'	2	9	1	10
Over 15' to 18'	2	#1	1	11



D602



D404



SECTION A-A

NOTE:

① Distance measured along ℄ of diaphragm.

② BEAM ANCHORAGES
Fascia beams only: four 3/4" dia. threaded rods.
Interior beams: Two 3/4" dia. threaded rods on top two No. 7 bars on bottom.

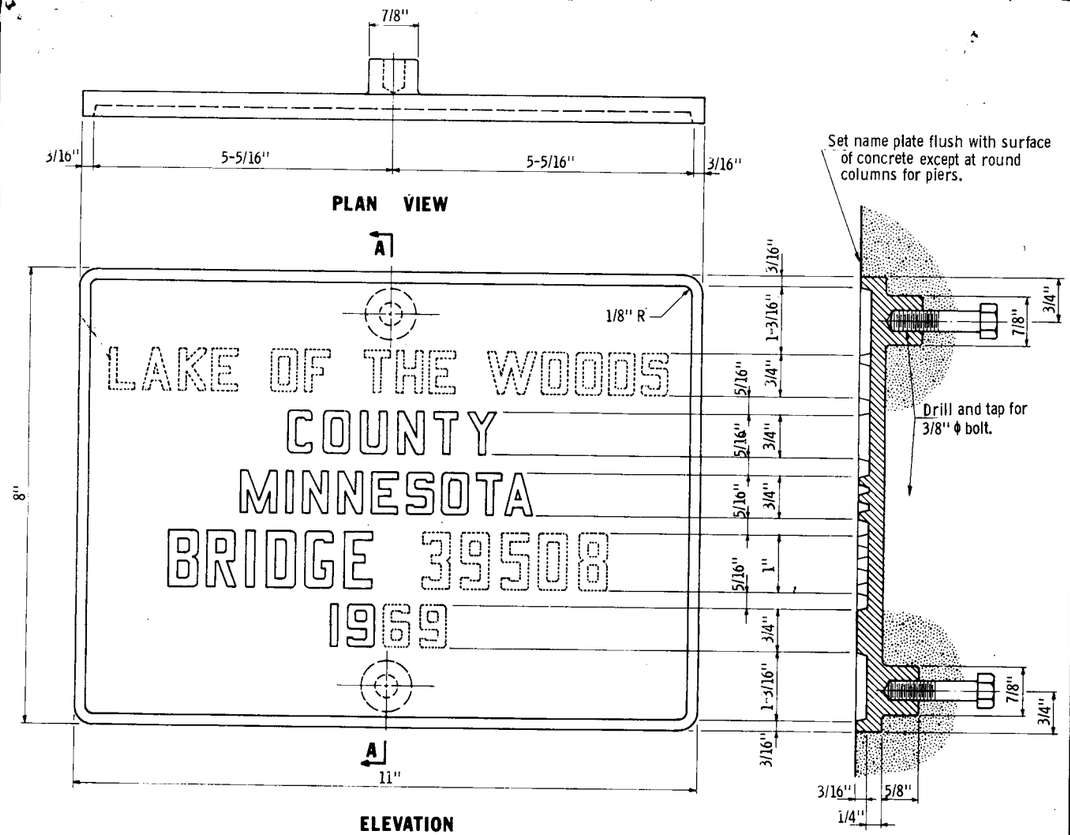
③ When construction joint is used at this location, diaphragm falsework shall remain in place until completion of slab curing period.

④ See plans for dimensions.

⑤ All diaphragm bars shown are listed with the superstructure reinforcement. Diaphragm concrete and reinforcement quantities are included in superstructure quantites (except threaded rods are included in payment for prestressed beams).

APPROVED: March 3, 1977 Developed by: ENGINEERING STANDARDS AND BRIDGES AND STRUCTURES Issued by: ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **END DIAPHRAGM** **(28"-54" PRESTRESSED CONCRETE BEAM SPAN WITH PARAPET ABUTS.)**	REVISED Aug. 23, 1978	DETAIL NO. **B803**

TITLE: DETAILS	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK:	CHK: J.G.	Sheet No. 15 of 21 Sheets	

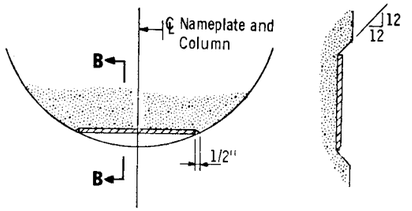


ELEVATION

SECTION A - A

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

BRIDGE 55539
YEAR 1982
COUNTY OLMSTED



SECTION B-B

NAMEPLATE PLACEMENT
(Round Concrete Pier Columns)

NOTES:

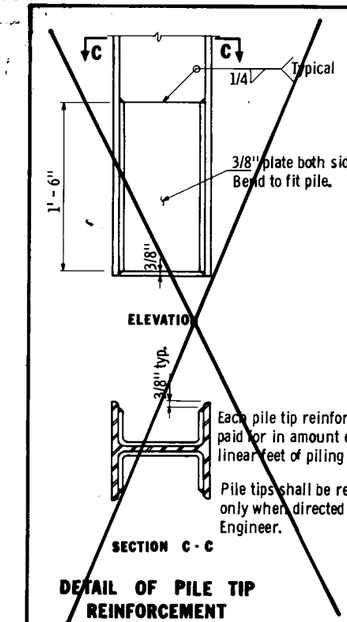
No shop drawing required.
Material shall comply with SPEC. 3327.
Numbers and letters shall conform to those shown.
Draft on letters shall not be more than 3" in 12"
Horizontal spacing of letters shall produce a balanced layout in proportion to spacing shown.
Top surface of letters and frames shall be 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.



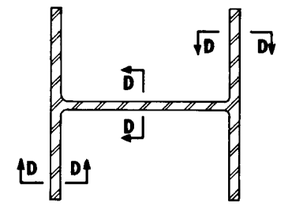
Specification reference: 2471.3H, A.S.T.M. Designation: B145 - Alloy 836.

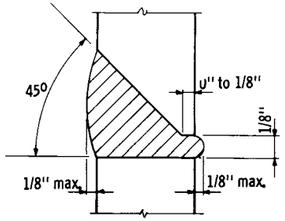
LETTERS & NUMBERS FOR NAMEPLATES

APPROVED: March 15, 1976 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **BRIDGE NAMEPLATE** **COUNTY BRIDGES**		DETAIL NO. **B103**



DETAIL OF PILE TIP REINFORCEMENT





100% BUTT WELDED PILE SPLICE

NOTES:

A. W. S. Type E7016 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.

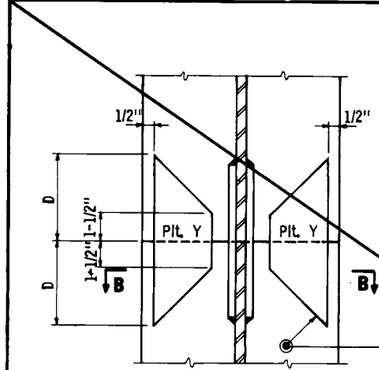
Low-hydrogen electrodes shall be supplied in hermetically (air-tight) sealed containers.

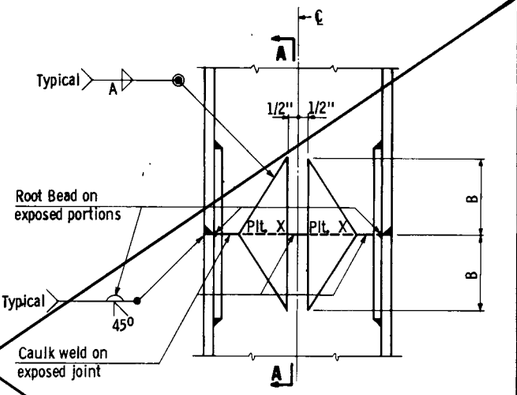
Low-hydrogen electrodes shall be stored in holding ovens at a temperature of not less than 250° F.

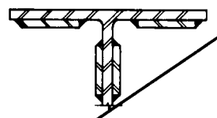
Low-hydrogen electrodes shall be placed in a holding oven for at least 8 hours, after having been exposed to the atmosphere for more than 2 hours.

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.







PILE SECTION	PLATE X			PLATE Y		
	Size	A	B	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

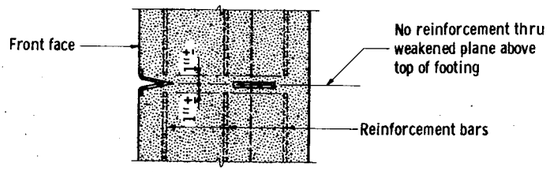
ALTERNATE PILE SPLICE

APPROVED NOVEMBER 5,1979 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **PILE SPLICE and TIP REINFORCEMENT** **STEEL H BEARING PILES 10" TO 14"**		DETAIL NO. **B202**

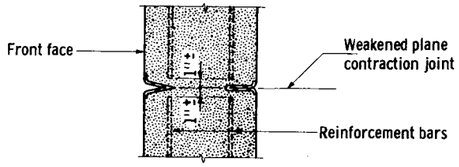
TITLE: DETAILS	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK:	CHK: J.G.	Sheet No. 16 of 21 Sheets	

SP 55-598-07 AS BUILT PLANS

NORTHSTAR # 117



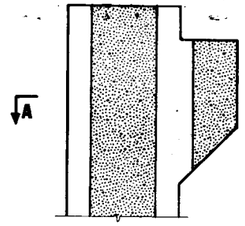
SECTION A - A



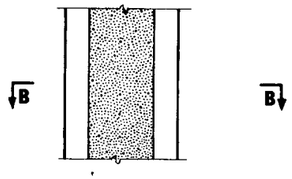
SECTION B - B



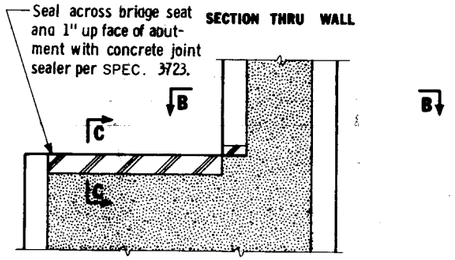
SECTION C - C



SECTION THRU PAVING BRACKET

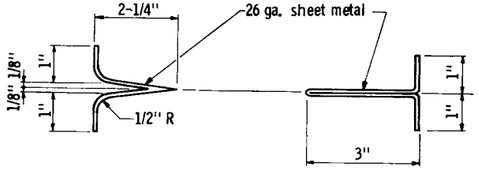


SECTION THRU WALL



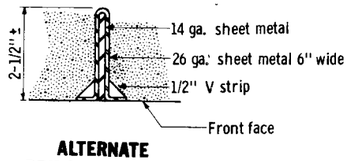
SECTION THRU BRIDGE SEAT

PART SECTION THRU ABUTMENT AT JOINT



BRIDGE SEAT and FRONT STRIP
6" wide

BACK STRIP
8" wide



ALTERNATE BRIDGE SEAT and FRONT STRIP

NOTES:

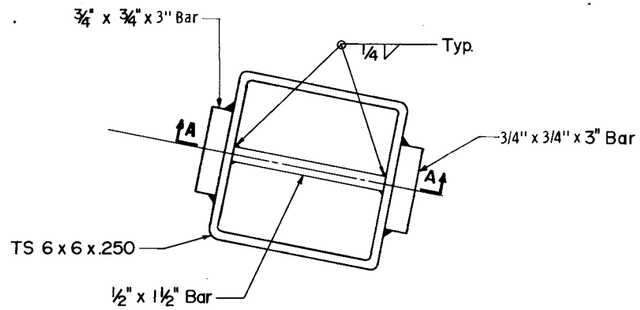
The methods and materials indicated hereon shall be considered as suggested only. Variations will be permitted, subject to approval by the Engineer, but must provide dummy joints of a depth not less than the depth shown, and a width at the front face of the abutment of not greater than 5/16". The separation 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.

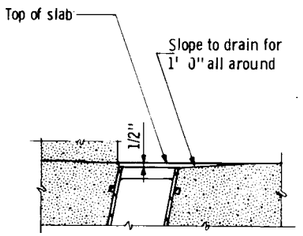
Back metal strips to be galvanized sheet metal. Fasten to forms with 7/8" roofing nails about 6" centers.

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

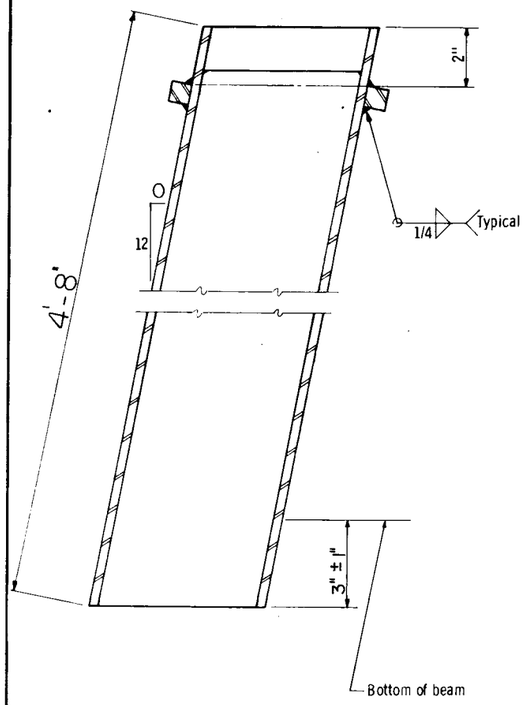
APPROVED Feb. 15, 1972	MINNESOTA DEPARTMENT OF TRANSPORTATION		DETAIL NO.
Douglas Differt Engineering Standards Engineer RESEARCH AND STANDARDS DIVISION	**CONTRACTION JOINT**		**B801**



PLAN VIEW



PLACEMENT DIAGRAM



SECTION A - A

NOTES:

Material to be structural steel per SPEC. 3306.

Galvanize bolts and washer per SPEC. 3392.

Galvanize other materials per SPEC. 3394 after fabrication.

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

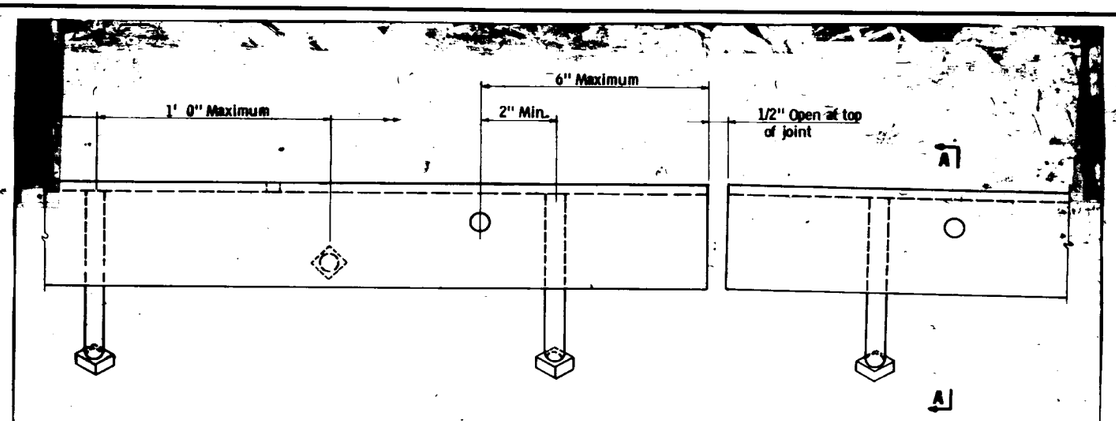
APPROVED: DECEMBER 28, 1979 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	MINNESOTA DEPARTMENT OF TRANSPORTATION		DETAIL NO.
	BRIDGE FLOOR DRAIN STRUCTURAL TUBING		**B702**

TITLE: DETAILS	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK:	CHK: J.G.	Sheet No. 17 of 21 Sheets	

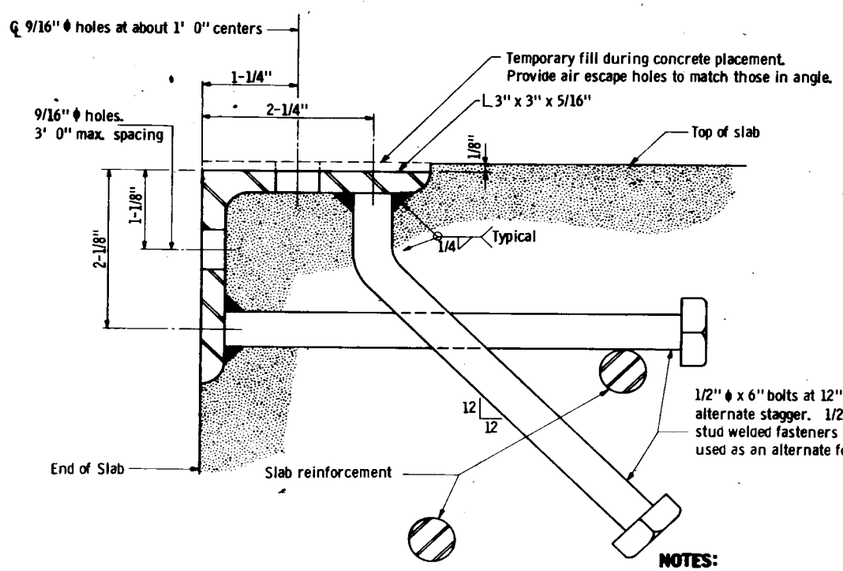
SP 55-598-07

NORTHSTAR # 117

AS BUILT PLANS



ELEVATION
(Concrete not shown)



SECTION A - A

NOTES:

Angles shall extend full width of roadway between curbs with a 1/2" open joint at each break in crown profile. Maximum length 22 feet.

Angles shall be straightened to a tolerance of 1/16" in 10 feet after galvanizing.

Material: Structural steel per SPEC 3306. Galvanize after fabrication per SPEC 3394.

Set angle to proper grade and crown.

All material will be paid for as structural steel SPEC 3306.

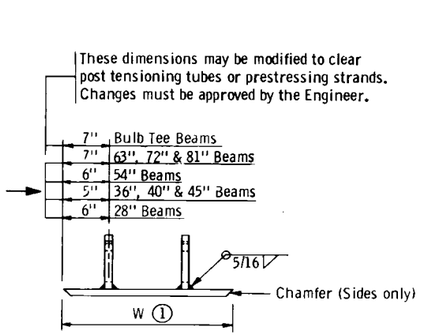
APPROVED May 26, 1972

Douglas Differt
Engineering Standards Engineer
RESEARCH AND STANDARDS DIVISION

TRANSPORTATION

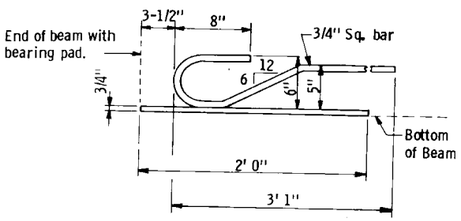
PROTECTION ANGLE FOR END OF SLAB

DETAIL NO. **B551**



FRONT VIEW

(1) Dimension "W" to be the width at the bottom flange of the beam - 1/4".



SIDE VIEW

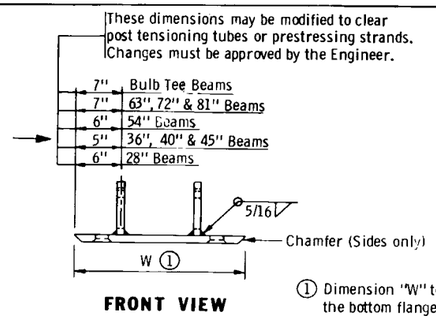
SOLE PLATE FOR B305 BEARING

NOTES

Material to be Structural Steel per Spec. 3306

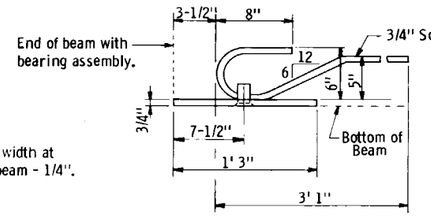
Sole plate for Bearing Assembly to be hot dipped galvanized as per Spec. 3394 after fabrication.

Payment for sole plates to be included in price bid for Prestressed Concrete Beams.



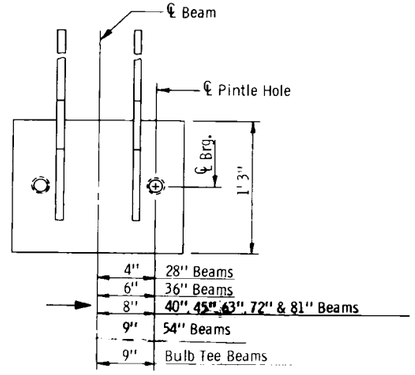
FRONT VIEW

(1) Dimension "W" to be the width at the bottom flange of the beam - 1/4".

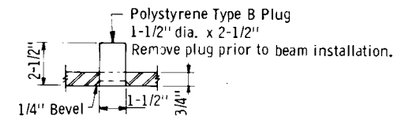


SIDE VIEW

Showing placement in beam



PLAN VIEW



PINTLE HOLE DETAIL
(2 Required)

SOLE PLATE FOR B302, & B304 BEARING ASSEMBLY

NOTES

Material to be Structural Steel per Spec. 3306

Sole plate for Bearing Assembly to be hot dipped galvanized as per Spec. 3394 after fabrication. Pintle holes shall be free of zinc build up from galvanizing.

Payment for sole plates to be included in price bid for Prestressed Concrete Beams

APPROVED: April 26, 1978

Developed by: ENGINEERING STANDARDS AND BRIDGES AND STRUCTURES

Issued by: ENGINEERING STANDARDS

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

SOLE PLATES
PRESTRESSED CONCRETE BEAMS

REVISION Sept. 7, 1978

DETAIL NO. **B303**

TITLE: DETAILS

DES: J.G.	DR: S.O.	APPROVED: 4-29-82
CHK:	CHK: J.G.	

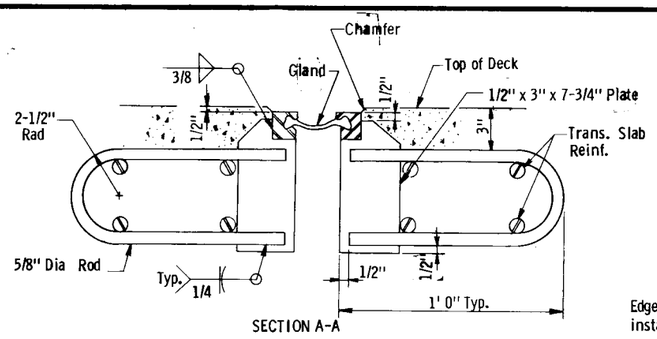
Sheet No. 18 of 21 Sheets

Bridge No. 55539

SP 55-598-07

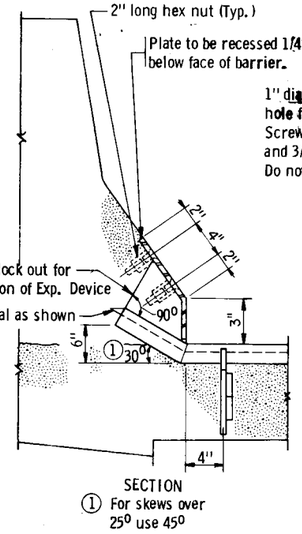
AS BUILT PLANS

17M



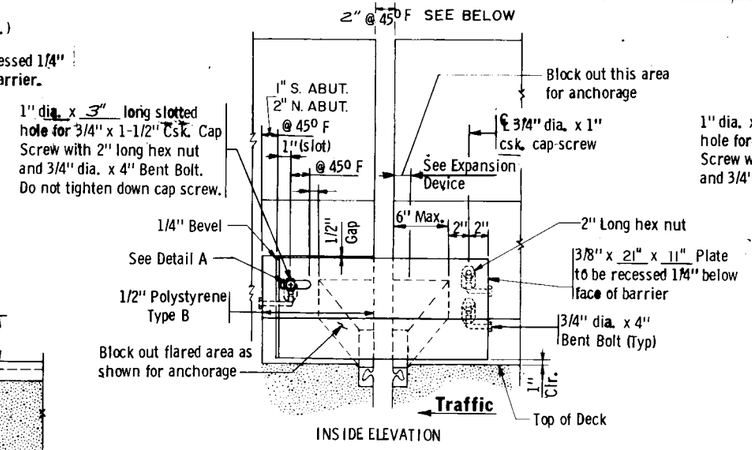
SECTION A-A

ANCHORAGE

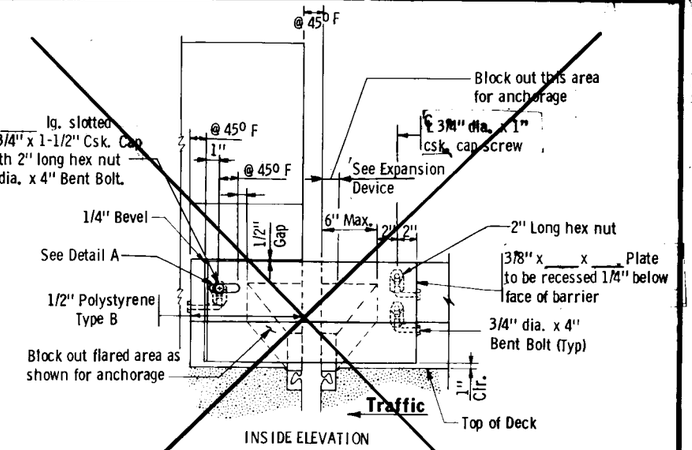


SECTION

1 For skews over 25° use 45°



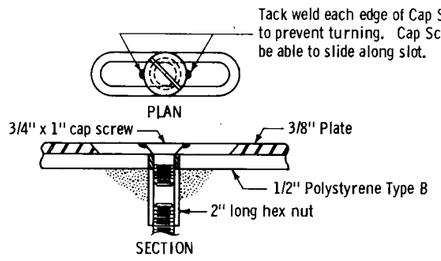
INSIDE ELEVATION



INSIDE ELEVATION

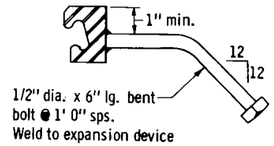
TYPE J RAILING AT CURB TRANSITION

TYPE J RAILING OR MEDIAN

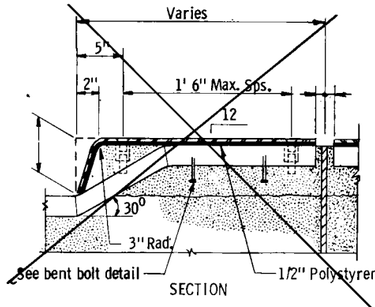


SECTION

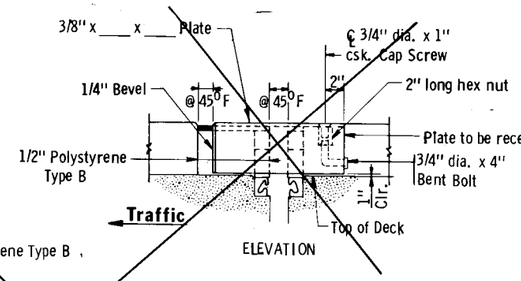
DETAIL A



BENT BOLT DETAIL

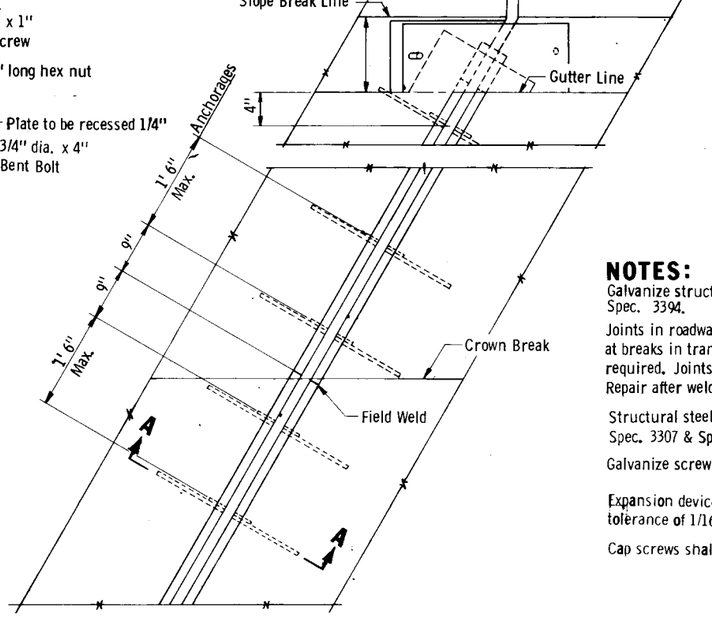


SECTION

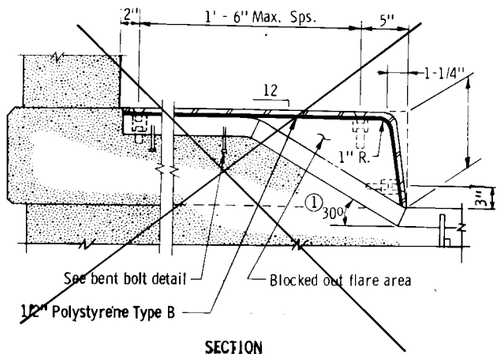


ELEVATION

RAISED MEDIAN DETAILS

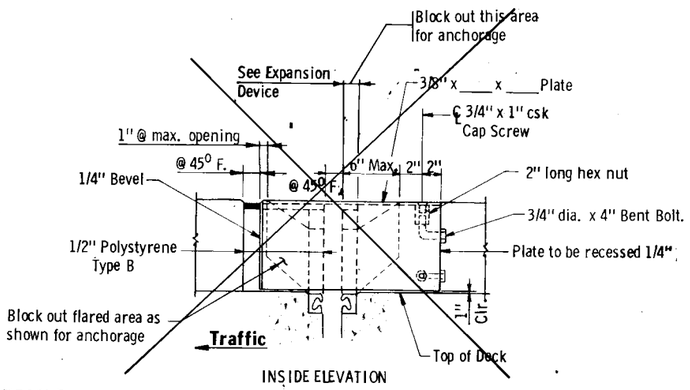


PLAN VIEW AT EXPANSION DEVICE



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, Spec. 3307 & Spec. 3309.

Galvanize screws and nuts as per Spec. 3392

Expansion device shall be straightened to a tolerance of 1/16" in 10 ft.

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

CMI SA2 EXTRUSION

Fig. 5-397.627

Revised: May 15, 1979 Approved: December 5, 1977

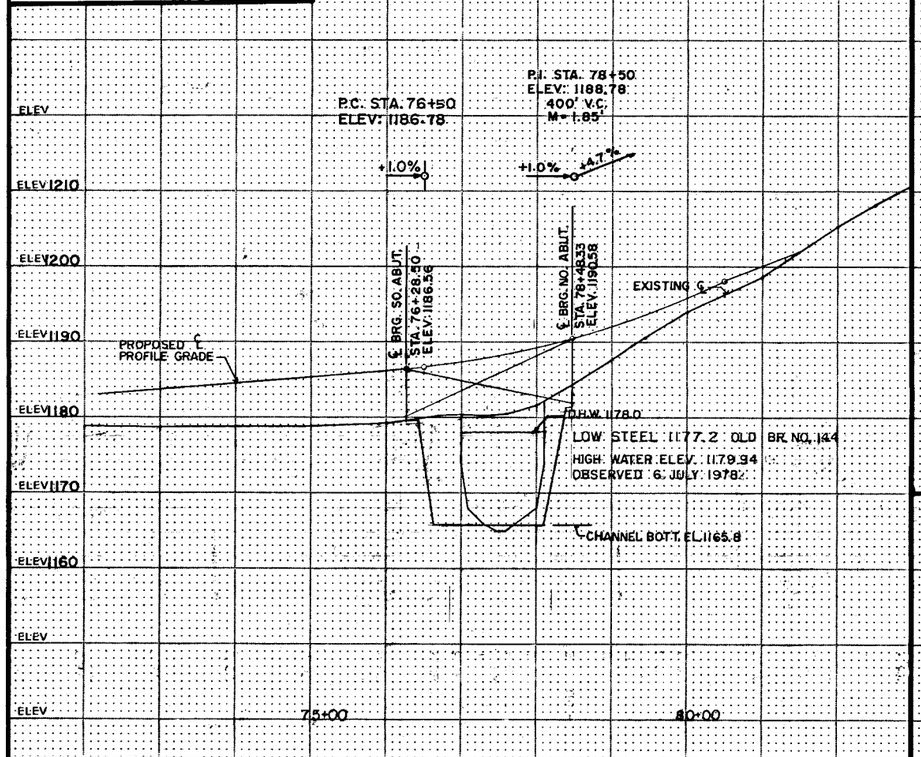
TITLE: WATERPROOF EXPANSION DEVICE	DES: J.G.	DR: D.M.	APPROVED: 4-29-82	Bridge No. 55539
	CHK:	CHK: J.G.	Sheet No. 19 of 21 Sheets	

SP 55-598-07

AS BUILT PLANS

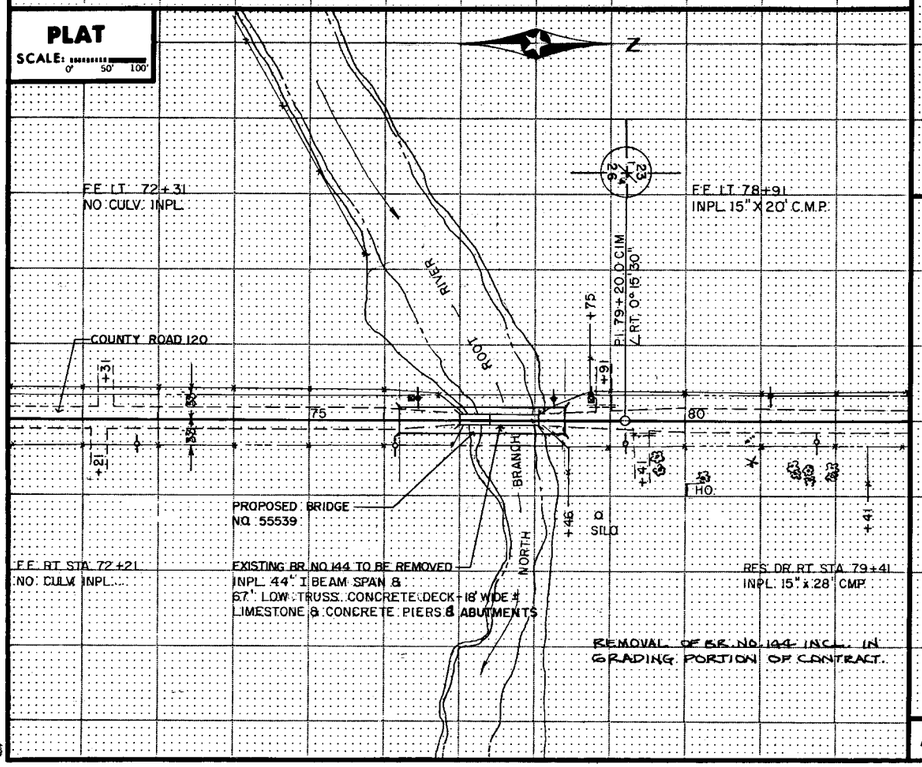
CONTRACTED PROFILE

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



PLAT

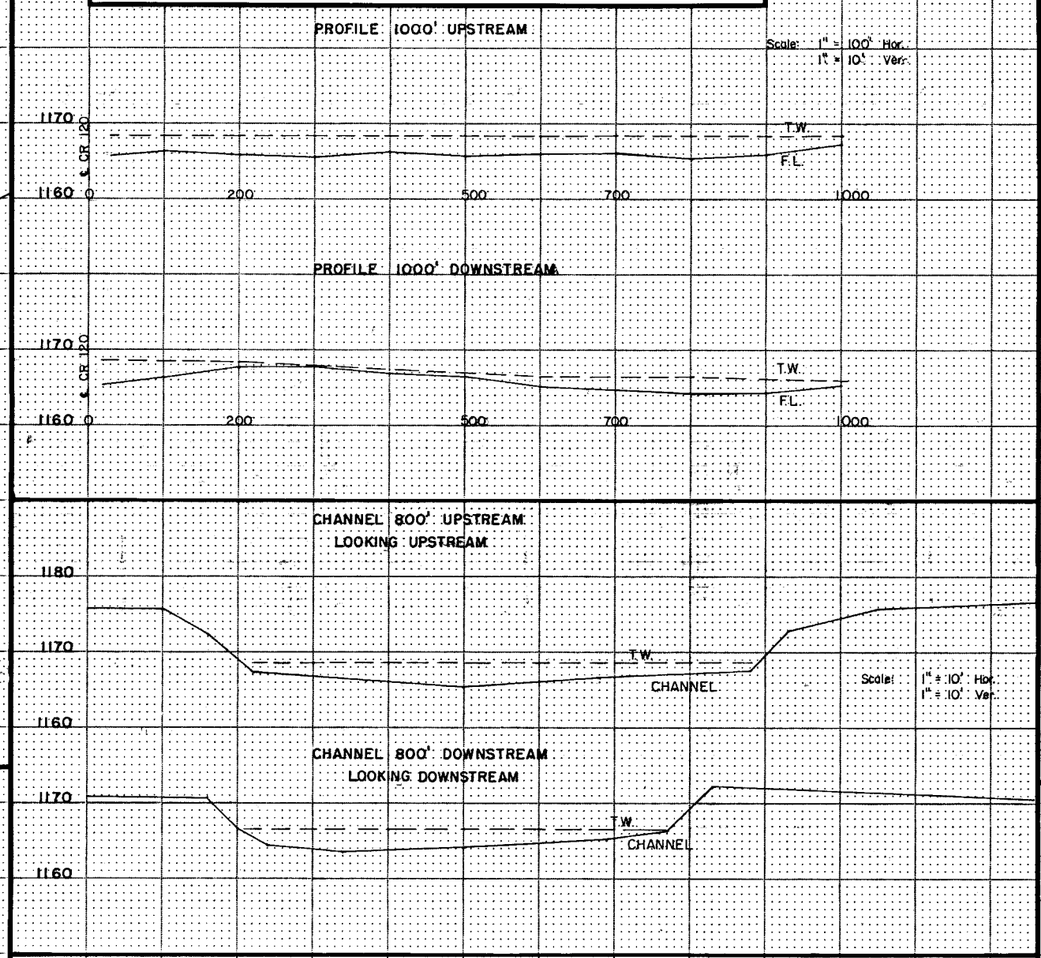
SCALE: 0' 50' 100'

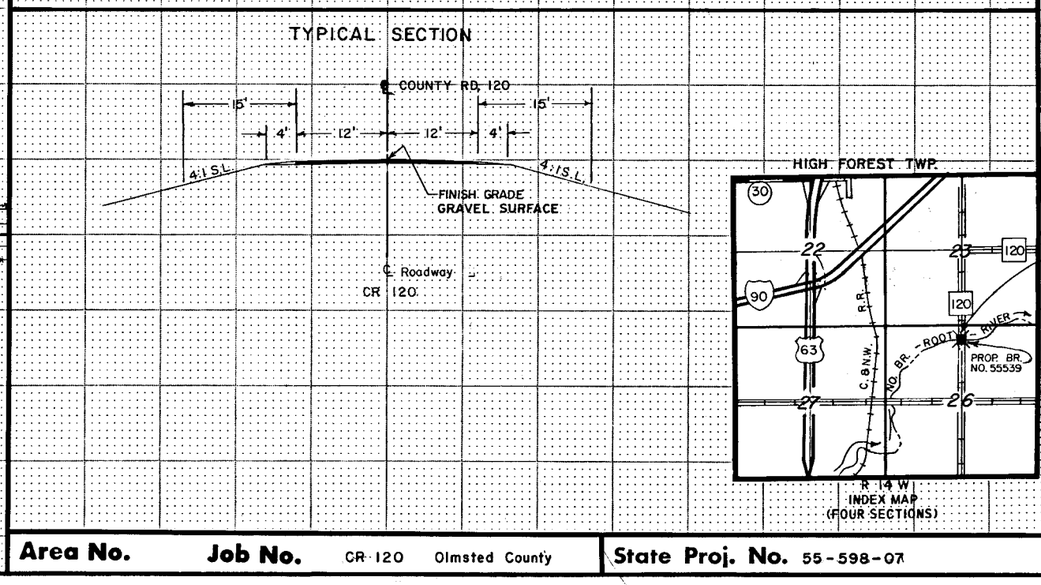


TELEDYNE POST BRIDGE SURVEY 18C-2 6/78

TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN





Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

1. Special Features: Waterfalls, dams, floods, ice, debris, sliding banks, recreational boating.
NONE

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.

3. Apparent highwater elevation UNKNOWN Obtained from

4. Other data: Approx. velocity of water at time of survey

HYDRAULIC ENGINEERS RECOMMENDATION

DATE MAY 31, 1979

Stream or ditch designation NORTH BRANCH OF ROOT RIVER
Drainage area 123.5 SQ. MI.
Max. flood on record UNK. Design flood (50 yr. freq.) 13750 C.F.S.
Max. observed highwater elevation UNK. Design highwater elevation 1178.0
Design mean velocity through structure 6.6 F.P.S.
Low superstructure at or above elevation 1181.5
Flowline elevation 1165.8 Skew angle 0°
Waterway area req'd. below elevation 1178.0 = 2080 Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr. freq.) is 17550 C.F.S. at stage 1180.4 and mean velocity of 7.7 F.P.S. with 1.3 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

Bridge survey sheets made from: Bridge Survey conducted by Olmsted County

Bench mark elevation 1189.67 (M.S.L. 1929 Adj.)
Location: Spk. in Power Pole 27' Rt. Sta. 79+20.

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

REPLACEMENT FOR BRIDGE NO. 144
AT MILE POINT 14 ON C.R. 120 (T.H., C.S.A.H., C.R. etc.)
PROPOSED BRIDGE LOCATED 2 MILES N.E. OF
Stewartville
SEC. 26 TWP 105N R 14 W
TOWNSHIP HIGH FOREST COUNTY OLMSTED
BRIDGE NO. 55539

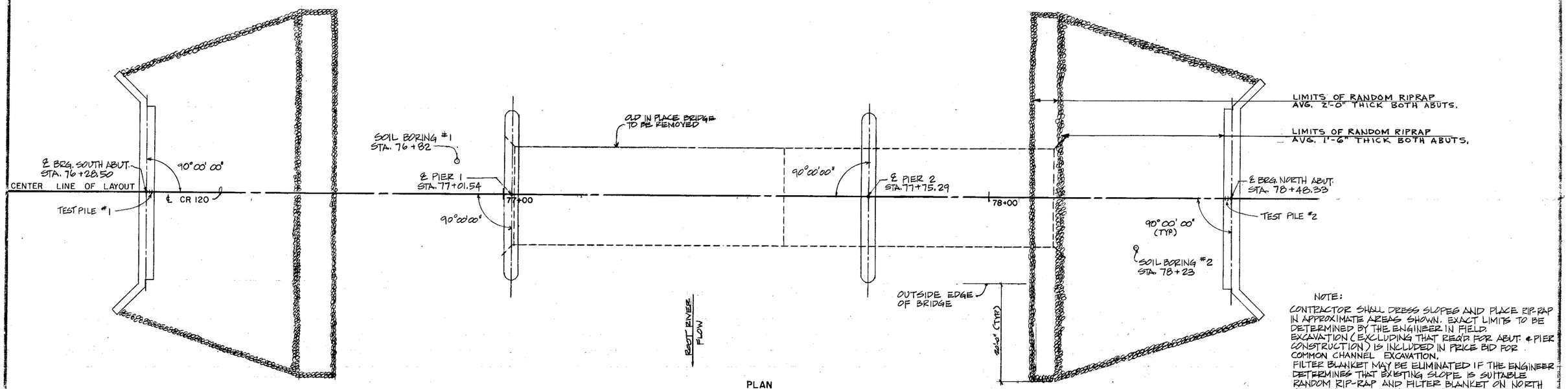
4-29-82

Area No. | Job No. CR-120 Olmsted County | State Proj. No. 55-598-07 | Sheet No. 20 of 21 Sheets

AS BUILT PLANS

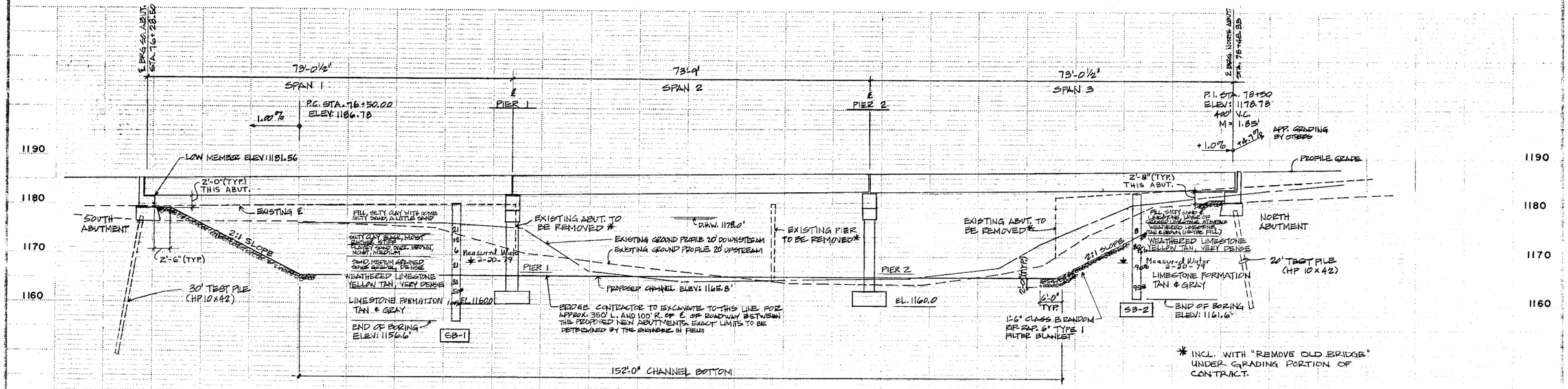
Fed. Proj. No.

Scale 1" = 10' Hor. & Ver.



PLAN

NOTE:
CONTRACTOR SHALL DRESS SLOPES AND PLACE RIP-RAP IN APPROXIMATE AREAS SHOWN. EXACT LIMITS TO BE DETERMINED BY THE ENGINEER IN FIELD. EXCAVATION (EXCLUDING THAT REQ'D FOR ABUT. & PIER CONSTRUCTION) IS INCLUDED IN PRICE BID FOR COMMON CHANNEL EXCAVATION.
FILTER BLANKET MAY BE ELIMINATED IF THE ENGINEER DETERMINES THAT EXISTING SLOPE IS SUITABLE RANDOM RIP-RAP AND FILTER BLANKET ON NORTH SLOPE WILL BE ELIMINATED BY ENGINEER IF BEDROCK IS ENCOUNTERED



ELEVATION

CR 120 Olmsted County

BRIDGE SURVEY PLAN AND PROFILE

State Proj. No. 55-598-07

DES. J.G. | DR. DM. J.G. | APPROVED. 4-29-82

Sheet No. 21 of 21 Sheets

BRIDGE NO. 55539

AS BUILT PLANS