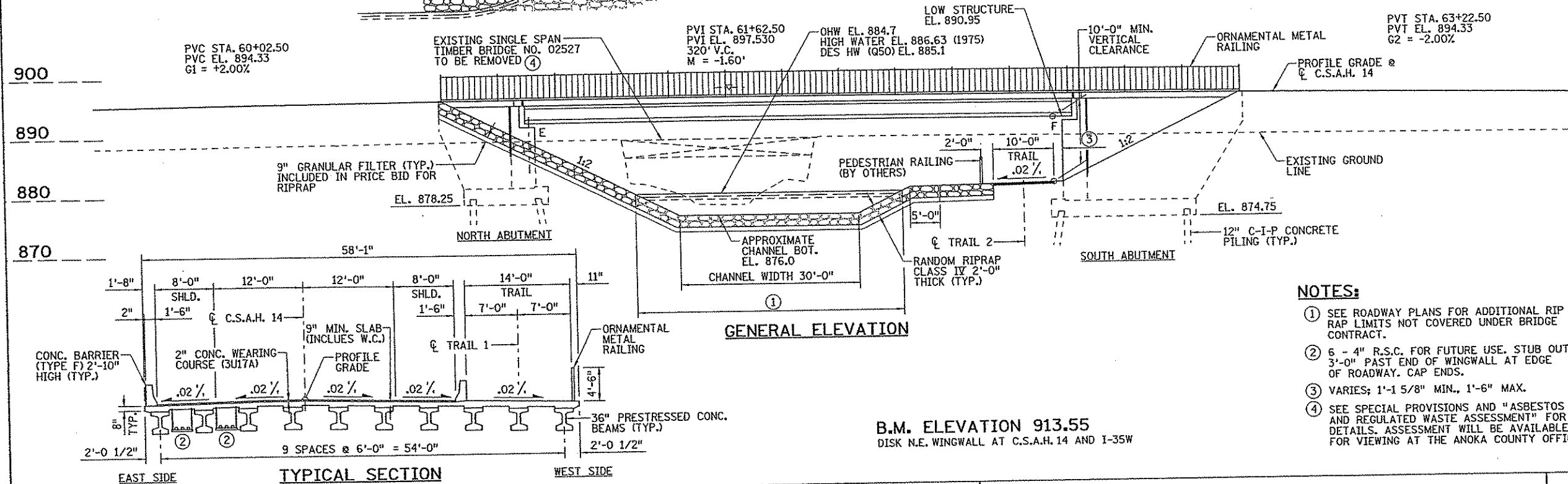


GENERAL PLAN



GENERAL ELEVATION

TYPICAL SECTION

B.M. ELEVATION 913.55
DISK N.E. WINGWALL AT C.S.A.H. 14 AND I-35W

DESIGN DATA	
2004 (AND CURRENT INTERIM) A.A.S.H.T.O. LRFD BRIDGE DESIGN SPECIFICATIONS	
LOAD & RESISTANCE FACTOR DESIGN METHOD	
DESIGN LOADING HL-93 LIVE LOAD	
DEAD LOAD INCLUDES 20 psf ALLOWANCE FOR FUTURE WEARING COURSE MODIFICATIONS.	
MAXIMUM ALLOWABLE DESIGN STRESSES:	
REINFORCED CONCRETE:	$f'_c = 4000 \text{ psi}$ $n = 8$
	$f_y = 60000 \text{ psi}$ REINFORCEMENT
PRESTRESSED CONCRETE:	$f'_c = 8000 \text{ psi}$ $n = 1$
	$f'_s = 270000 \text{ psi}$ LOW RELAXATION STRANDS
DESIGN SPEED:	OVER = 50 mph
APPROXIMATE DECK AREA 5499 ft ² .	
OPERATING RATING HS58	

2027 PROJECTED TRAFFIC VOLUMES	
ROADWAY OVER	11,834 A.D.T.

LIST OF SHEETS	
B1	GENERAL PLAN AND ELEVATION
B2	BRIDGE LAYOUT
B3 - B7	NORTH ABUTMENT DETAILS
B8 - B15	SOUTH ABUTMENT DETAILS
B16	FRAMING PLAN
B17	36" PRESTRESSED BEAMS
B18 & B19	BRIDGE DECK DETAILS
B20 & B21	CONCRETE RAILING (TYPE F)
B22	RAILING DETAILS
B23	CONDUIT SYSTEM
B24 & B25	WATERPROOF EXPANSION DEVICE
B26 - B29	B-DETAILS
B30	BRIDGE SURVEY
B31	BRIDGE SURVEY PLAN AND PROFILE
B32	SOIL BORINGS
B33	AS-BUILT BRIDGE DATA

CONSTRUCTION NOTES

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

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

THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR NUMBER WHICH APPROXIMATES THE NOMINAL DIAMETER OF THE BAR IN MILLIMETERS (mm).

BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED.

ALL REINFORCEMENT SHALL BE 2 IN. CLEAR, UNLESS SHOWN OR NOTED OTHERWISE.

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

Print Name: LARRY A. PRICKSON
Signature: *Larry A. Prickson*
Date: 3/15/07 License: 14546

SRE CONSULTING GROUP, INC.

ANOKA COUNTY

MINNESOTA DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 02572

C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY
90' PRESTRESSED CONCRETE BEAM SPAN
40'-0" ROADWAY INCLUDING 14'-0" TRAIL,
0° SKEW, 2-TYPE F RAILS

BRIDGE I.D. NO. 501

SEC. 15, T31N, R22W,
ANOKA COUNTY

- NOTES:**
- SEE ROADWAY PLANS FOR ADDITIONAL RIP RAP LIMITS NOT COVERED UNDER BRIDGE CONTRACT.
 - 6 - 4" R.S.C. FOR FUTURE USE. STUB OUT 3'-0" PAST END OF WINGWALL AT EDGE OF ROADWAY. CAP ENDS.
 - VARIES; 1'-1 5/8" MIN., 1'-6" MAX.
 - SEE SPECIAL PROVISIONS AND "ASBESTOS AND REGULATED WASTE ASSESSMENT" FOR DETAILS. ASSESSMENT WILL BE AVAILABLE FOR VIEWING AT THE ANOKA COUNTY OFFICES.

APPROVED: _____ DATE _____
STATE BRIDGE ENGINEER

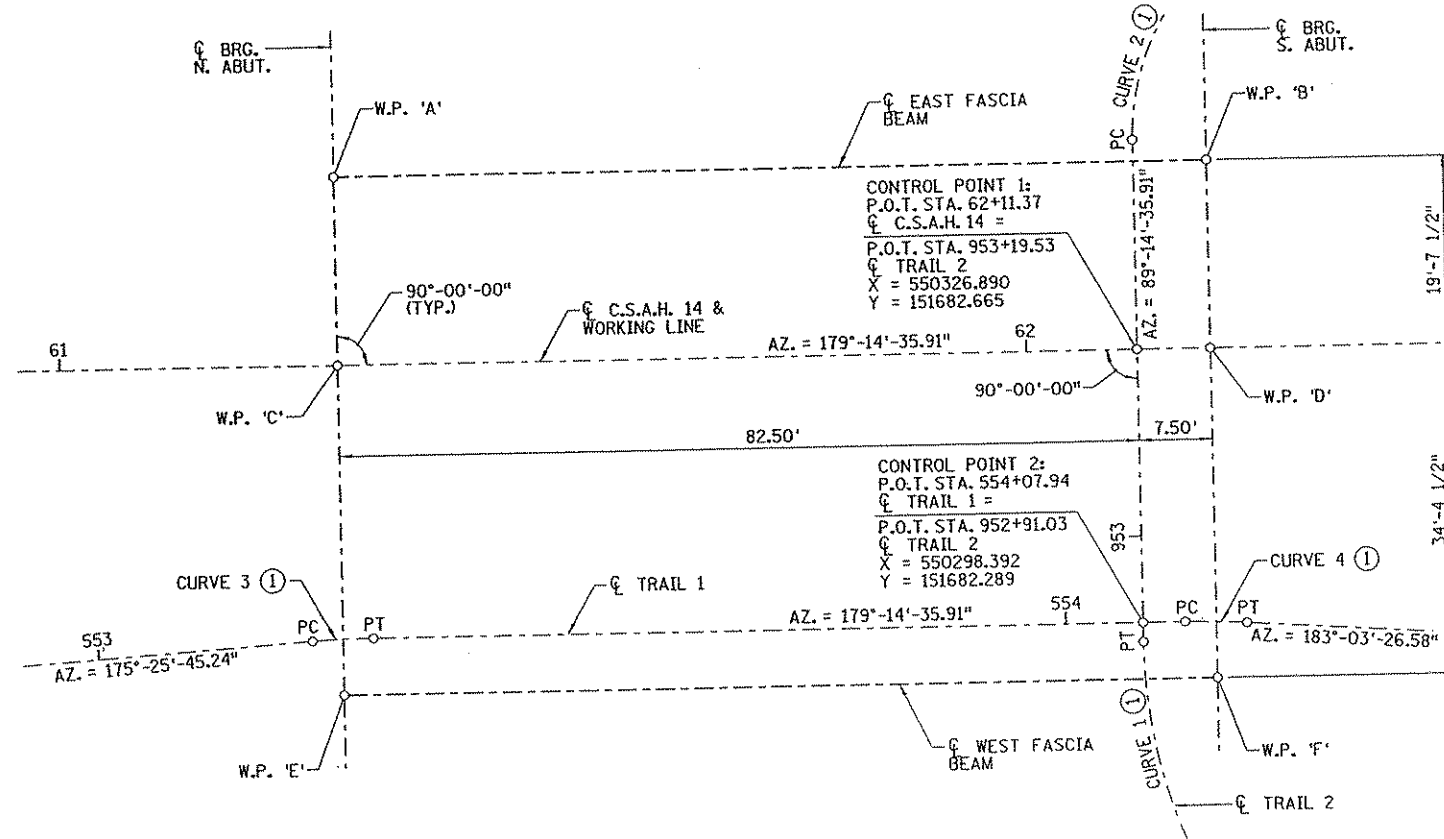
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3/12/2007 8:46:35 AM

CURVE 1 DATA: ①
P.I. STA. 952+57.63
 $\Delta = 89^{\circ}-20'-39.11''$
 $D = 104^{\circ}-10'-26.92''$
 $R = 55.00'$
 $T = 54.374'$
 $L = 85.764'$
P.C. STA. 952+03.25
P.T. STA. 952+89.02

CURVE 2 DATA: ①
P.I. STA. 953+63.76
 $\Delta = 83^{\circ}-40'-20.92''$
 $D = 229^{\circ}-10'-59.22''$
 $R = 25.00'$
 $T = 22.381'$
 $L = 36.509'$
P.C. STA. 953+41.38
P.T. STA. 953+77.89

CURVE 3 DATA: ①
P.I. STA. 553+25.44
 $\Delta = 3^{\circ}-48'-50.67''$
 $D = 60^{\circ}-18'-40.85''$
 $R = 95.00'$
 $T = 3.163'$
 $L = 6.324'$
P.C. STA. 553+22.28
P.T. STA. 553+28.60

CURVE 4 DATA: ①
P.I. STA. 554+15.44
 $\Delta = 3^{\circ}-48'-50.67''$
 $D = 60^{\circ}-18'-40.85''$
 $R = 95.00'$
 $T = 3.163'$
 $L = 6.324'$
P.C. STA. 554+12.28
P.T. STA. 554+18.60



WORKING POINT LAYOUT

TOP OF ROADWAY TO BRIDGE SEAT		
	N. ABUT.	S. ABUT.
SLAB THICKNESS	9"	9"
STOOL HEIGHT	4"	4"
BEAM HEIGHT	36"	36"
BEARING HEIGHT	4 5/8"	3 1/4"
TOTAL	4'-5 5/8"	4'-4 1/4"

DIMENSIONS BETWEEN WORKING POINTS								COORDINATES		ELEVATION			POINT
POINT	STATION	A	B	C	D	E	F	X	Y	TOP OF FIN. DECK	FIN. DECK TO BR. SEAT	BRIDGE SEAT	
A	61+28.87							550345.423	151765.417	895.47	4.47	891.00	A
B	62+18.87	90.00						550346.612	151675.425	895.34	4.35	890.99	B
C	61+28.87	19.62						550325.800	151765.158	895.86	-	-	C
D	62+18.87	92.11	19.62	90.00				550326.989	151675.166	895.73	-	-	D
E	61+28.87			34.38				550291.428	151764.704	895.17	4.47	890.70	E
F	62+18.87	104.96		96.34	34.36	90.00		550292.617	151674.712	895.04	4.35	890.69	F

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE			
ITEM NO.	ITEM	UNIT	QUANTITY
2401.501	STRUCTURAL CONCRETE (1A43)	CU. YD.	205 (P)
2401.501	STRUCTURAL CONCRETE (3Y43)	CU. YD.	331 (P)
2401.512	BRIDGE SLAB CONCRETE (3Y36)	SQ. FT.	5490 (P)
2401.513	TYPE F (TL-4) RAILING CONCRETE (3Y46)	LIN. FT.	266 (P)
2401.541	REINFORCEMENT BARS	POUND	20270 (P)
2401.541	REINFORCEMENT BARS (EPOXY COATED)	POUND	60050 (P)
2401.601	STRUCTURE EXCAVATION	LUMP SUM	1
2401.601	FOUNDATION PREPARATION NORTH ABUTMENT	LUMP SUM	1
2401.601	FOUNDATION PREPARATION SOUTH ABUTMENT	LUMP SUM	1
2402.583	ORNAMENTAL METAL RAILING	LIN. FT.	132 (P)
2402.591	EXPANSION JOINT DEVICES TYPE 4	LIN. FT.	116 (P)
2402.595	BEARING ASSEMBLY	EACH	20
2404.501	CONCRETE WEARING COURSE (3U17A)	SQ. FT.	5380 (P)
2405.502	PRESTRESSED CONCRETE BEAMS 36M	LIN. FT.	913 (P)
2405.511	DIAPHRAGMS FOR TYPE 36M PREST BEAMS	LIN. FT.	108 (P)
2442.501	REMOVE OLD BRIDGE	LUMP SUM	1
2452.507	C-I-P CONCRETE PILING DELIVERED 12"	LIN. FT.	6840
2452.508	C-I-P CONCRETE PILING DRIVEN 12"	LIN. FT.	6840
2452.519	C-I-P CONC TEST PILE 100' LONG 12"	EACH	5
2502.502	DRAINAGE SYSTEM TYPE (B910)	LUMP SUM	1
2511.501	RANDOM RIPRAP CLASS IV	CU. YD.	311
2545.509	CONDUIT SYSTEM	LUMP SUM	1

NOTES:

- CURVE NUMBERS ON THIS SHEET DO NOT CORRESPOND WITH CURVE NUMBERS IN ROADWAY PLANS.
- INCLUDES APPROACH PANELS.
- DOES NOT INCLUDE TEST PILES.
- SPECIFIC AREAS MAY REQUIRE SHEETING OR SHORING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATIONS OF SHEET PILING AND/OR SHORING BASED ON THE CONTRACTOR'S CONSTRUCTION OPERATION. THIS SHALL BE INCIDENTAL TO ITEM 2401.601 "STRUCTURE EXCAVATION".
- 9" GRANULAR FILTER UNDER RIPRAP INCLUDED IN PRICE BID FOR "RANDOM RIPRAP CLASS IV".
- NON-PARTICIPATING

⑦ THE ASSESSMENT SUMMARY IDENTIFIED THE EXISTING BRIDGE AS HAVING BEEN CONSTRUCTED OF TREATED TIMBER. ALL SUCH MATERIALS SHALL BE REMOVED AND PROPERLY DISPOSED. SEE SPECIAL PROVISIONS AND "ASBESTOS AND REGULATED WASTE ASSESSMENT" FOR FURTHER DETAILS. ASSESSMENT WILL BE AVAILABLE FOR VIEWING AT THE ANOKA COUNTY OFFICES.

NO	DATE	BY	CHK	APPR	REVISION
1	5/1/07	JEH	JAW	LAE	REVISED NOTE

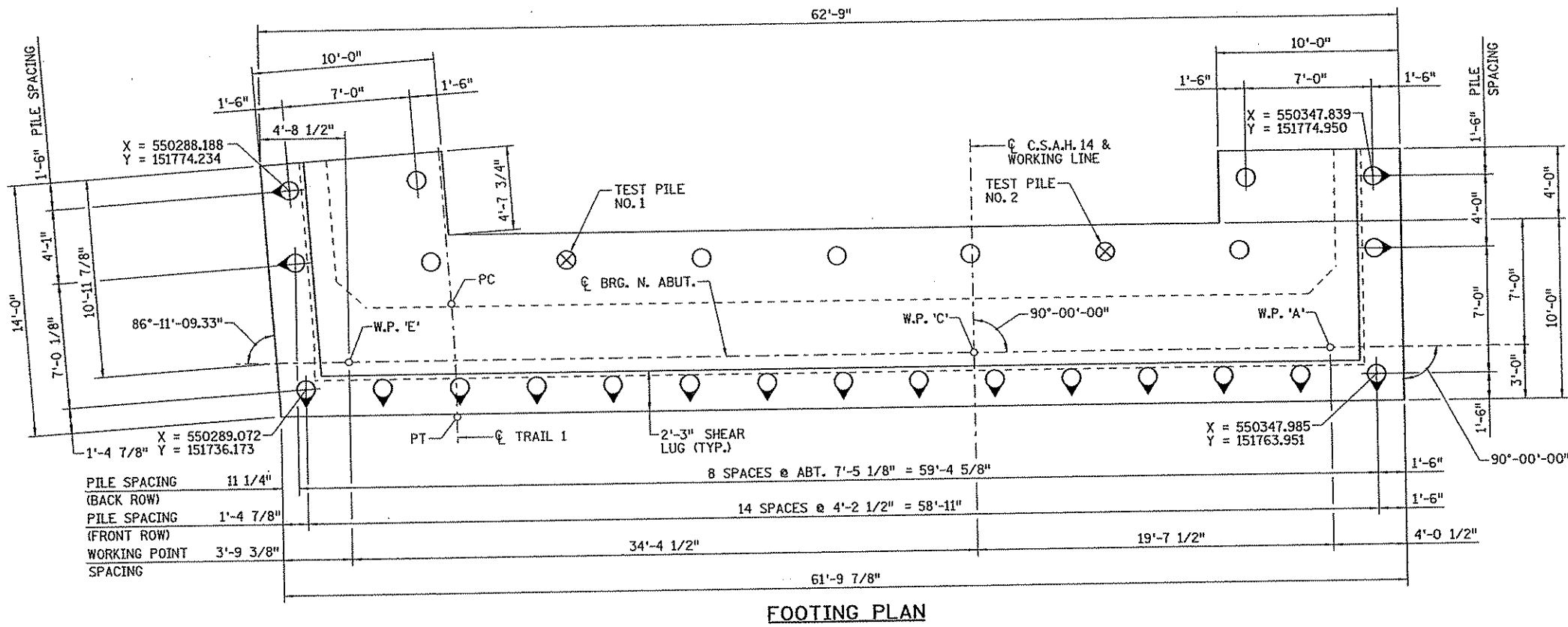
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STATE PROJ. NO. 02-614-24	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota. Print Name: JEREMY A. WEST Date: 5/1/07 License: 42039	DRAWN BY J. HOFFMAN DATE 6/06
BRIDGE NO. 02572		DESIGNED BY C. BLACK DATE 6/06
		COMM. NO. 0054994

SRF CONSULTING GROUP, INC.

ANOKA COUNTY
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY
BRIDGE LAYOUT

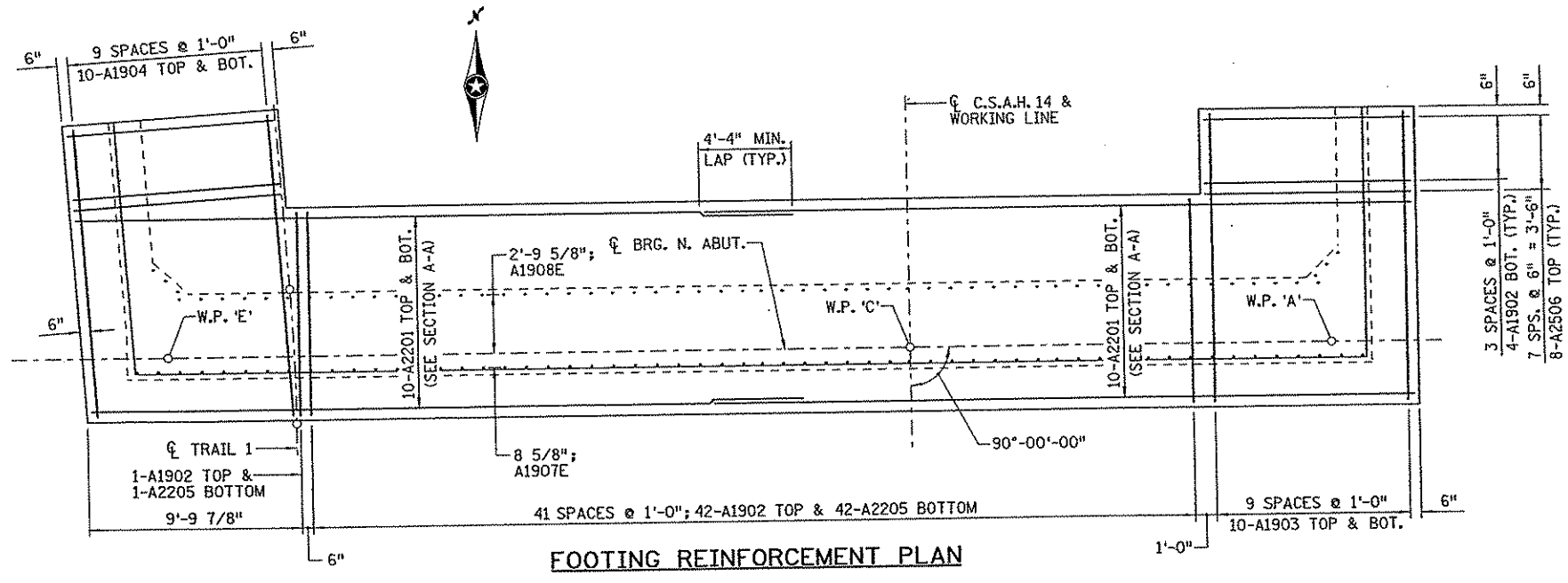
SHEET
B2
OF
B33



NORTH ABUTMENT	
COMPUTED PILE LOADS	TONS/PILE
FACTORED DEAD LOAD + EARTH PRESSURE	64.9
FACTORED LIVE LOAD	7.7
FACTORED TOTAL LOAD	72.6
* DESIGN LOAD	49.6

* $\frac{72.6}{1.463} = 49.6$ TONS/PILE
 1.463 IS AVERAGE LOAD FACTOR FOR STRENGTH I LOAD COMBINATION

- PILE NOTES:**
- 2 - 12" C-I-P TEST PILES, 100 FEET LONG.
 - 26 - 12" C-I-P, ESTIMATED LENGTH 90 FEET LONG.
 - 28 - 12" C-I-P REQUIRED FOR NORTH ABUTMENT.
- PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
 PILES MARKED THUS SHALL BE BATTERED 3" PER FOOT IN THE DIRECTION SHOWN.
 FOR PILE SPLICE, SEE DETAIL B201.
 PILES TO HAVE A NOMINAL DIAMETER OF 12".



NO	DATE	BY	CKD	APPR	REVISION

8:46:50 AM 3/12/2007

STATE PROJ. NO.
02-614-24

BRIDGE NO.
02572

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: JEREMY A. WEST
 Date: 3/15/07 License # 42039

DRAWN BY
J. HOFFMAN

DESIGNED BY
C. BLACK

CHECKED BY
J. WEST

DATE
6/06

DATE
6/06

COMM. NO.
0054994



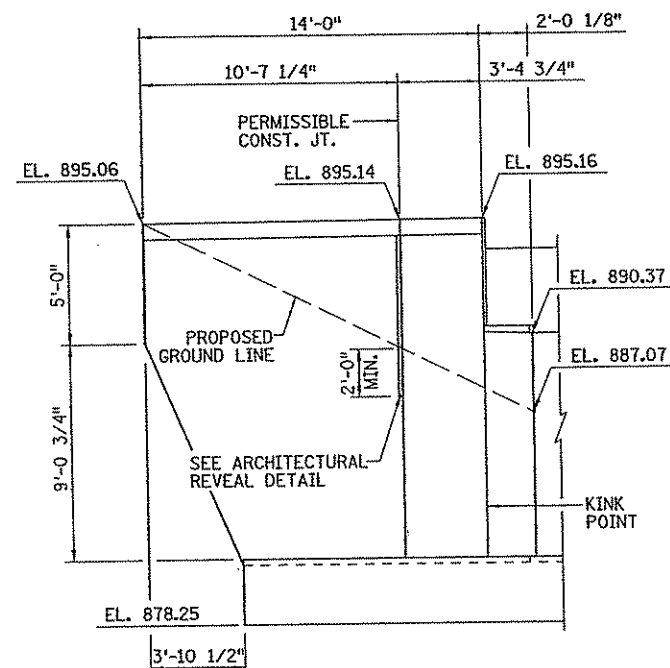
ANOKA COUNTY

C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY

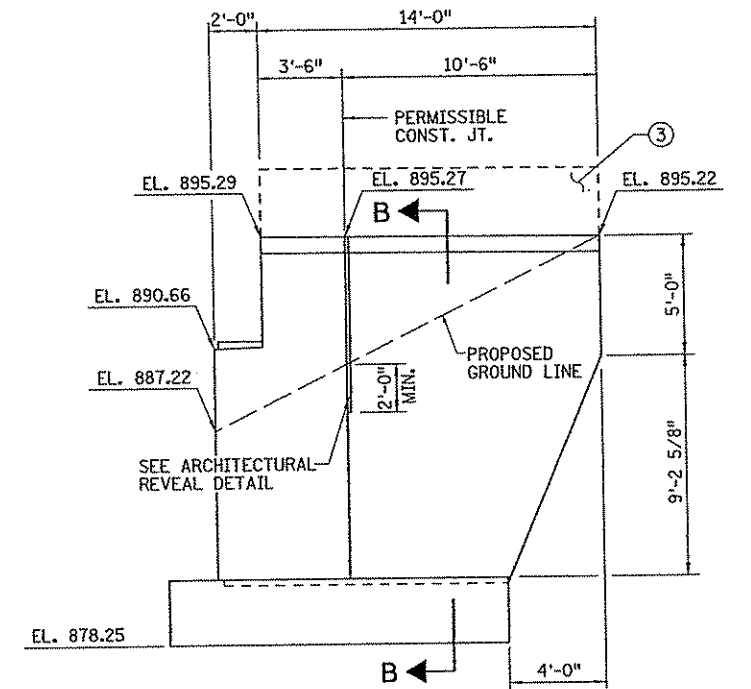
NORTH ABUTMENT DETAILS

(SHEET 1 OF 5)

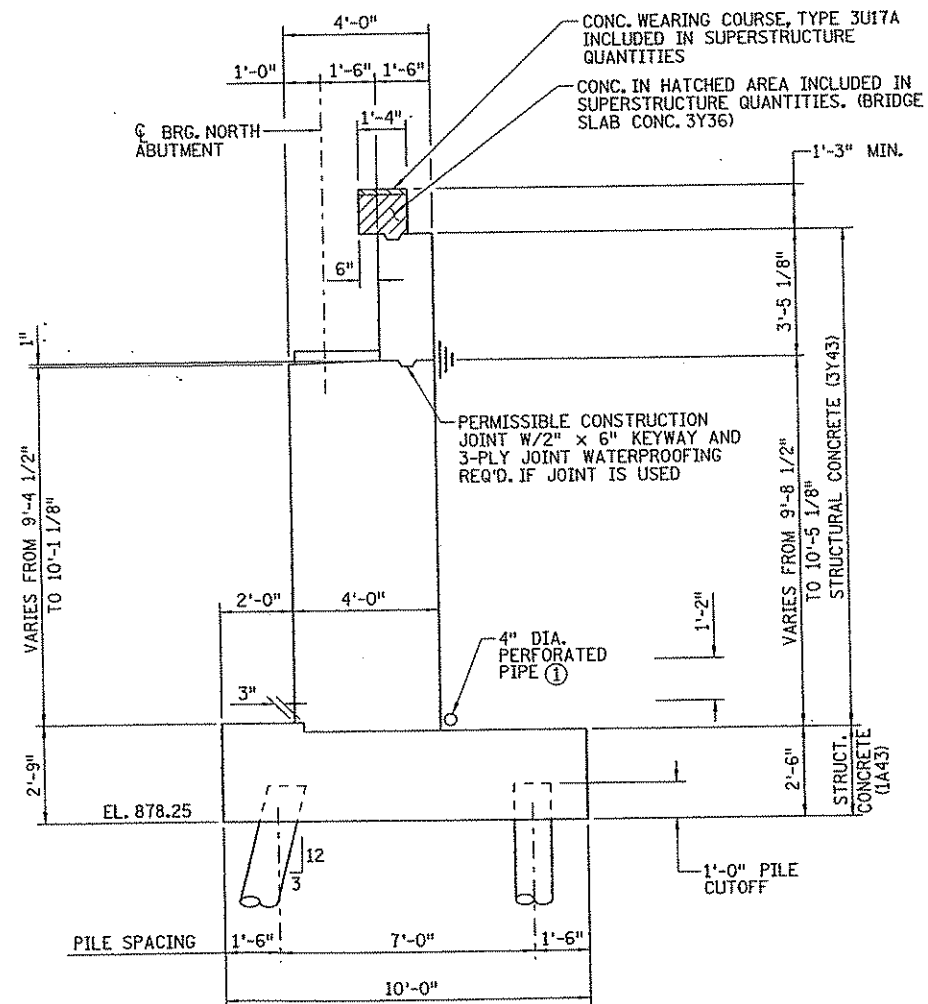
SHEET
B3
OF
B33



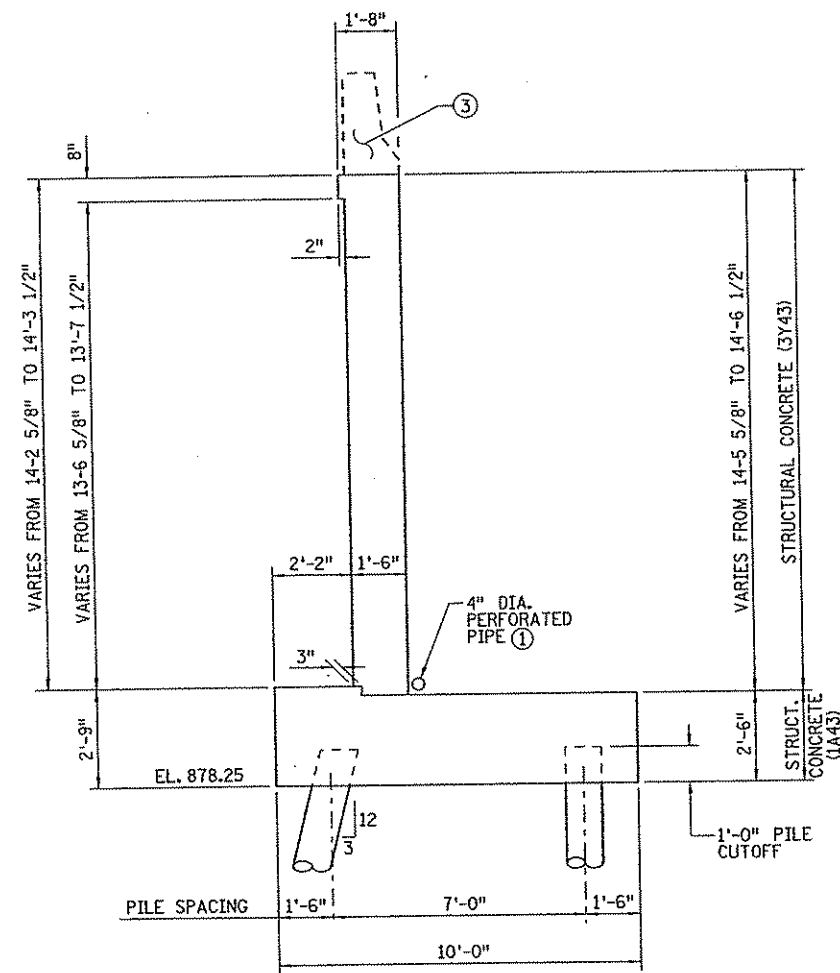
N.W. WINGWALL ELEVATION



N.E. WINGWALL ELEVATION



SECTION A-A



SECTION B-B

NOTE:

- ① SEE DETAIL B910 (DRAINAGE SYSTEM).
- 2. N.W. DENOTES NORTHWEST
N.E. DENOTES NORTHEAST.
- ③ SEE RAILING SHEETS FOR TYPE F RAILING AND REINFORCEMENT.

NO	DATE	BY	CKD	APPR	REVISION
STATE PROJ. NO. 02-614-24 BRIDGE NO. 02572 DATE 3/12/2007 8:46:52 AM					

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: JEREMY A. WEST
 Date: 3/15/07 License # 42039

DRAWN BY J. HOFFMAN DATE 6/06
 DESIGNED BY C. BLACK 6/06
 CHECKED BY J. WEST 6/06
 COMM. NO. 0054994

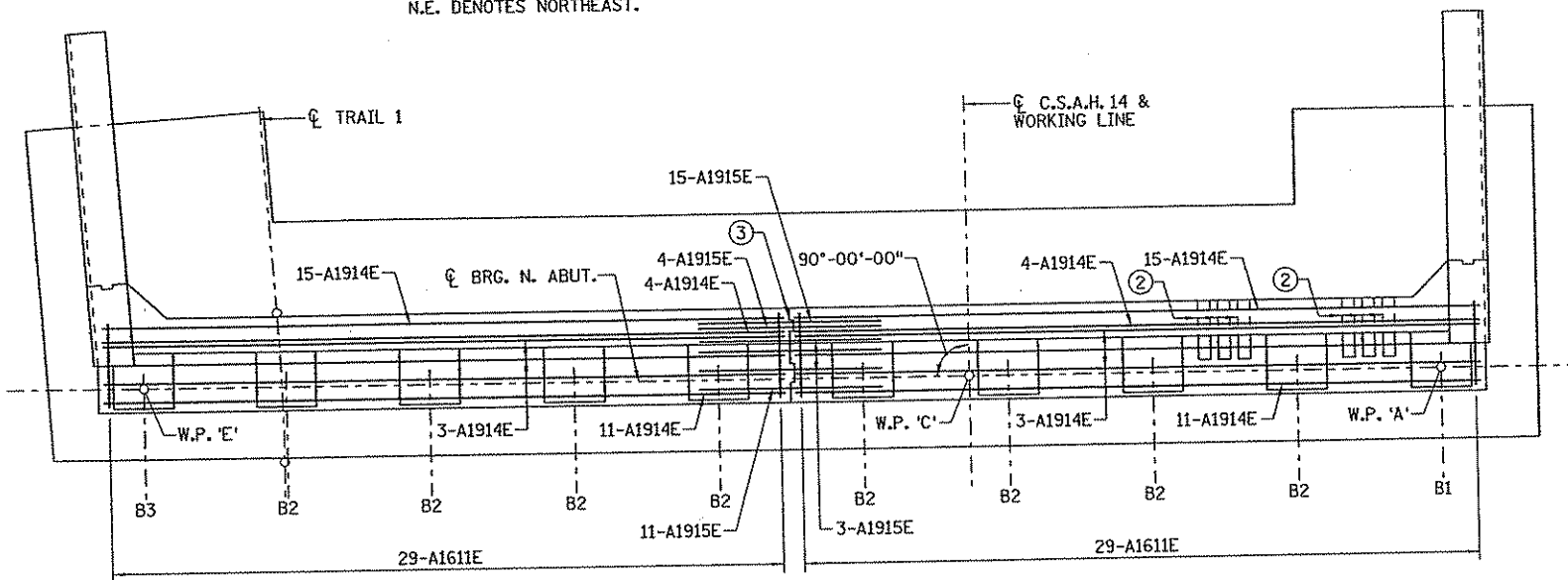


ANOKA COUNTY
 C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY
 NORTH ABUTMENT DETAILS
 (SHEET 3 OF 5)

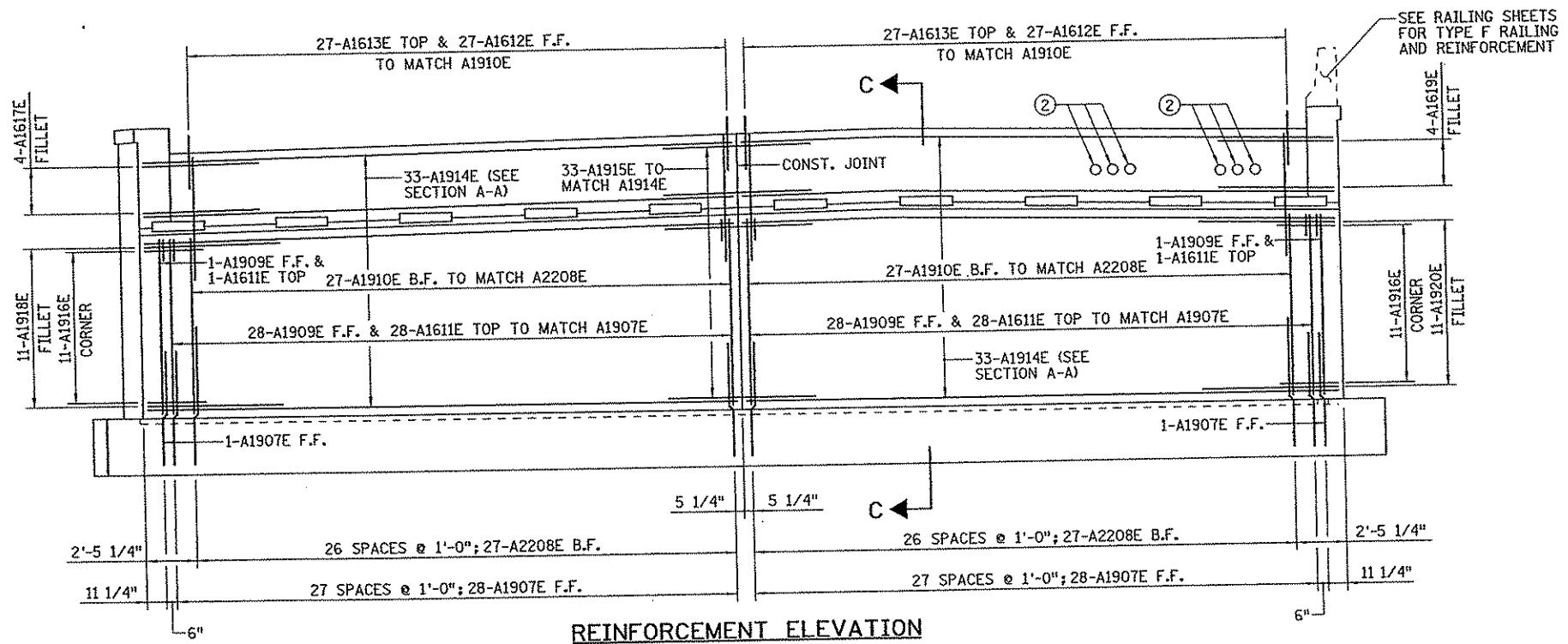
SHEET B5 OF B33

NOTE:

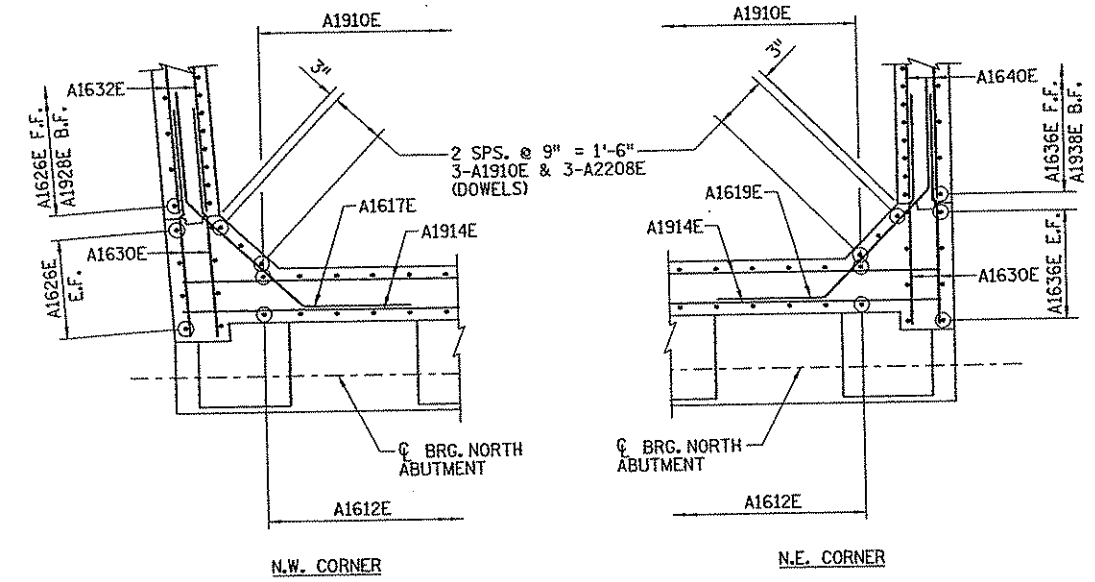
1. F.F. DENOTES FRONT FACE
B.F. DENOTES BACK FACE
E.F. DENOTES EACH FACE.
- ② 4" SLEEVE FOR FUTURE 4" R.S.C. CONDUIT.
3. N.W. DENOTES NORTHWEST
N.E. DENOTES NORTHEAST.



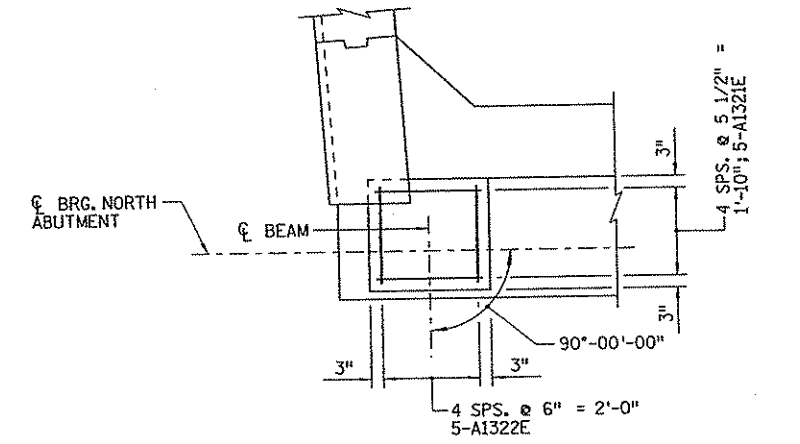
REINFORCEMENT PLAN



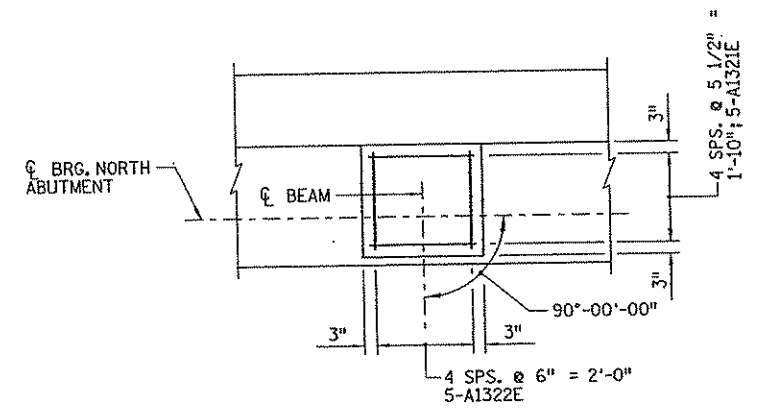
REINFORCEMENT ELEVATION



CORNER REINFORCEMENT DETAIL



BRIDGE SEAT TYPE 1 REINFORCEMENT DETAIL



BRIDGE SEAT TYPE 2 REINFORCEMENT DETAIL

NO	DATE	BY	CHKD	APPR	REVISION

8:46:53 AM 3/12/2007

STATE PROJ. NO. 02-614-24
 BRIDGE NO. 02572
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: JEREMY A. WEST
 Date: 3/15/07 License # 42039

DRAWN BY J. HOFFMAN DATE 6/06
 DESIGNED BY C. BLACK DATE 6/06
 CHECKED BY J. WEST DATE 6/06
 COMM. NO. 0054994



ANOKA COUNTY
 C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY
 NORTH ABUTMENT DETAILS
 (SHEET 4 OF 5)

SHEET B6 OF B33

BILL OF REINFORCEMENT: NORTH ABUTMENT

MARK	NO	SIZE	LENGTH [FT-IN]	SHAPE	DIMENSION [FT-IN]			LOCATION
					A	B	C	
A2201	40	22	33 - 2	STR	-	-	-	FTG. LONG.
A1902	51	19	10 - 10	15	9 - 6	0 - 8	-	FTG. TRANS.
A1903	20	19	14 - 2	16	13 - 6	0 - 8	-	FTG. LONG.
A1904	2 SERIES		14 - 2		13 - 6	0 - 8	-	FTG. LONG.
	OF 10	19	14 - 9	16	14 - 1	0 - 8	-	
A2205	43	22	11 - 2	16	9 - 6	0 - 10	-	FTG. TRANS.
A2506	16	25	11 - 4	15	9 - 6	0 - 11	-	FTG. TRANS.
A1907E	58	19	6 - 7	7	5 - 7	-	-	STEM DOWEL
A2208E	60	22	6 - 6	7	5 - 4	-	-	STEM DOWEL
A1909E	58	19	9 - 2	STR	-	-	-	STEM VERT
A1910E	60	19	12 - 11	STR	-	-	-	STEM VERT
A1611E	58	16	6 - 7	6	3 - 7	1 - 6	-	STEM TIE
A1612E	54	16	7 - 0	5	5 - 0	1 - 2	-	BACKWALL VERT
A1613E	54	16	9 - 0	21	0 - 11	1 - 0	3 - 6	PAVING BLOCK
A1914E	66	19	28 - 5	STR	-	-	-	STEM HORIZ
A1915E	33	19	7 - 6	STR	-	-	-	HORIZ DOWEL
A1916E	22	19	7 - 0	7	3 - 6	-	-	STEM CORNER
A1617E	4	16	12 - 1	12	5 - 1	3 - 6	1 - 0	TOP FILLET
A1918E	11	19	15 - 8	12	8 - 8	3 - 6	1 - 0	STEM FILLET
A1619E	4	16	11 - 11	12	4 - 4	3 - 6	1 - 0	TOP FILLET
A1920E	11	19	15 - 4	12	8 - 4	3 - 6	1 - 0	STEM FILLET
A1321E	50	13	5 - 2	6	2 - 2	1 - 6	-	SEAT
A1322E	50	13	5 - 0	6	2 - 0	1 - 6	-	SEAT
A1623E	36	16	5 - 2	7	4 - 4	-	-	W & E WING DOWEL
A224E	26	22	10 - 8	7	9 - 6	-	-	W. WING DOWEL
A1625E	3	16	9 - 2	STR	-	-	-	W. WING VERT
A1626E	15	16	13 - 11	STR	-	-	-	W. WING VERT
A1627E	2 SERIES		5 - 3		-	-	-	W. WING VERT
	OF 4	16	12 - 5	STR	-	-	-	W. WING VERT
A1928E	13	19	9 - 4	STR	-	-	-	W. WING VERT
A1629E	40	16	8 - 3	STR	-	-	-	W & E WING HORIZ
A1630E	20	16	6 - 3	STR	-	-	-	W & E WING HORIZ
A1631E	2 SERIES		6 - 7		-	-	-	W. WING HORIZ
	OF 9	16	9 - 11	STR	-	-	-	W. WING HORIZ
A1632E	12	16	10 - 3	STR	-	-	-	W. WING HORIZ
A1633E	2	16	9 - 10	STR	-	-	-	W. WING DIAG.
A1334E	30	13	3 - 1	6	1 - 1	1 - 0	-	WING TOP
A1635E	3	16	9 - 6	STR	-	-	-	E. WING VERT
A1636E	15	16	14 - 1	STR	-	-	-	E. WING VERT
A1637E	2 SERIES		5 - 0		-	-	-	E. WING VERT
	OF 4	16	12 - 1	STR	-	-	-	E. WING VERT
A1938E	13	19	9 - 6	STR	-	-	-	E. WING VERT
A1639E	2 SERIES		6 - 4		-	-	-	E. WING HORIZ
	OF 9	16	9 - 9	STR	-	-	-	E. WING HORIZ
A1640E	12	16	10 - 2	STR	-	-	-	E. WING HORIZ
A1641E	2	16	10 - 1	STR	-	-	-	E. WING DIAG.
A1642E	20	16	5 - 7	20	2 - 4	0 - 10	0 - 10	E. RAILING

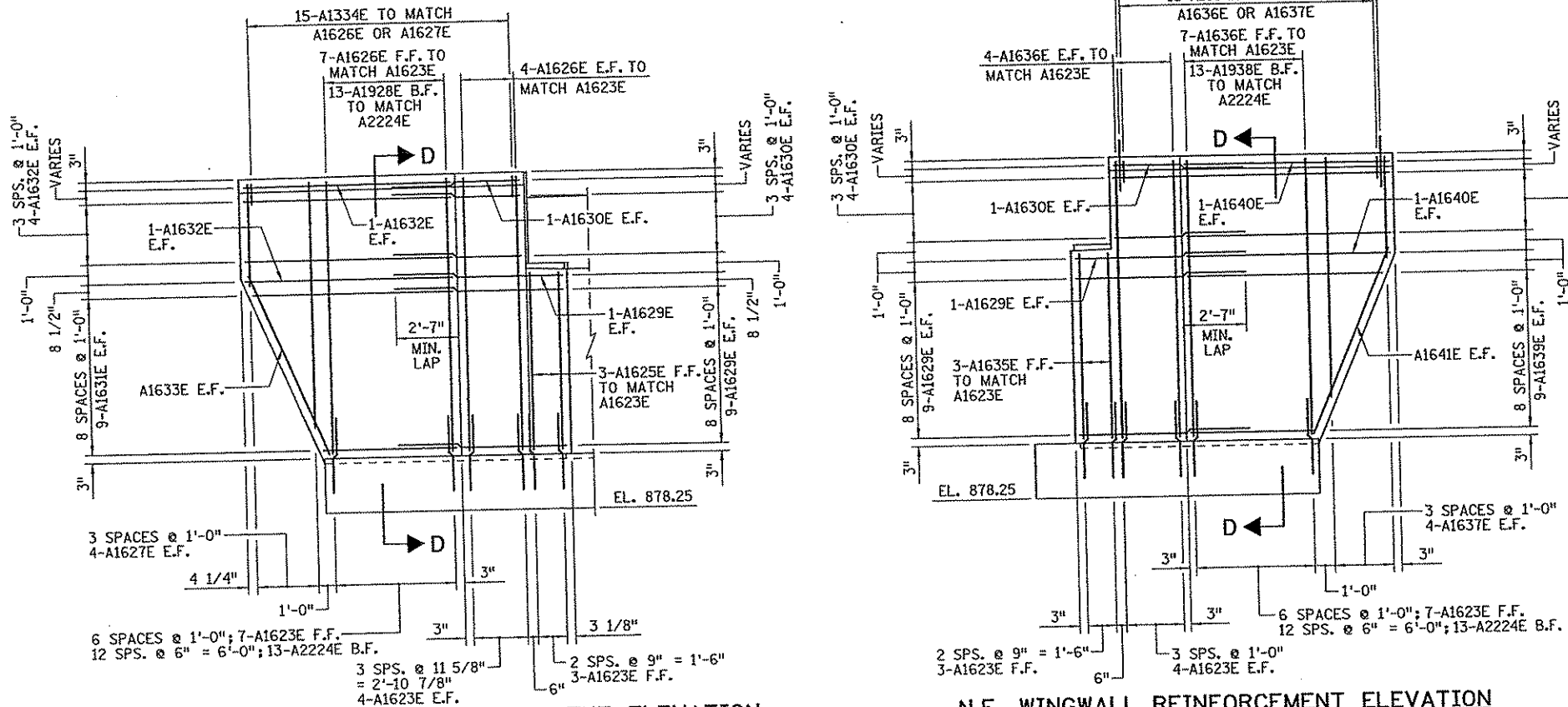
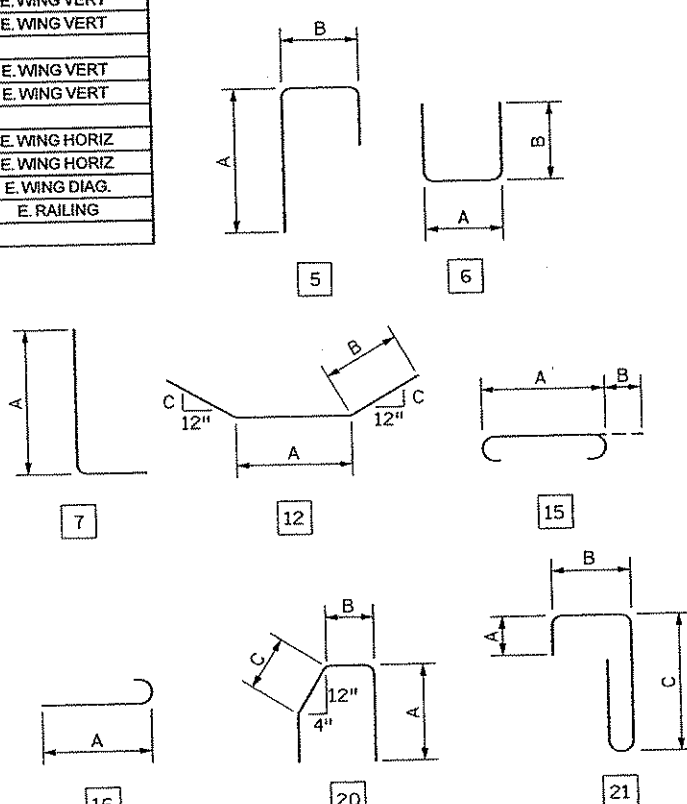
SUMMARY OF QUANTITIES : N. ABUTMENT

ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (1A43)	CU. YD.	68
STRUCTURAL CONCRETE (3Y43)	CU. YD.	119
REINFORCEMENT BARS	POUND	5830
REINFORCEMENT BARS (EPOXY COATED)	POUND	12140
C-I-P CONCRETE PILING DELIVERED 12"	LIN. FT.	2340
C-I-P CONCRETE PILING DRIVEN 12"	LIN. FT.	2340
C-I-P CONC TEST PILE 100' LONG 12"	EACH	2
3-PLY JOINT WATERPROOFING	LIN. FT.	100

NOTES:

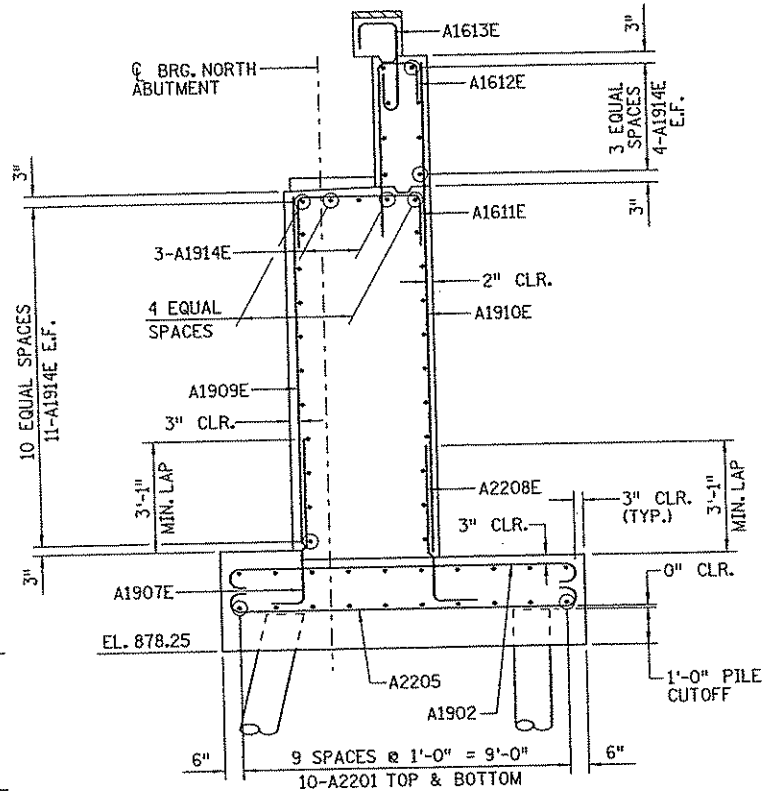
- F.F. DENOTES FRONT FACE
B.F. DENOTES BACK FACE
E.F. DENOTES EACH FACE.
- N.W. DENOTES NORTHWEST
N.E. DENOTES NORTHEAST.
- DOES NOT INCLUDE TEST PILES.
- TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- SEE RAILING SHEETS FOR TYPE F RAILING AND REINFORCEMENT.

BAR SHAPES:

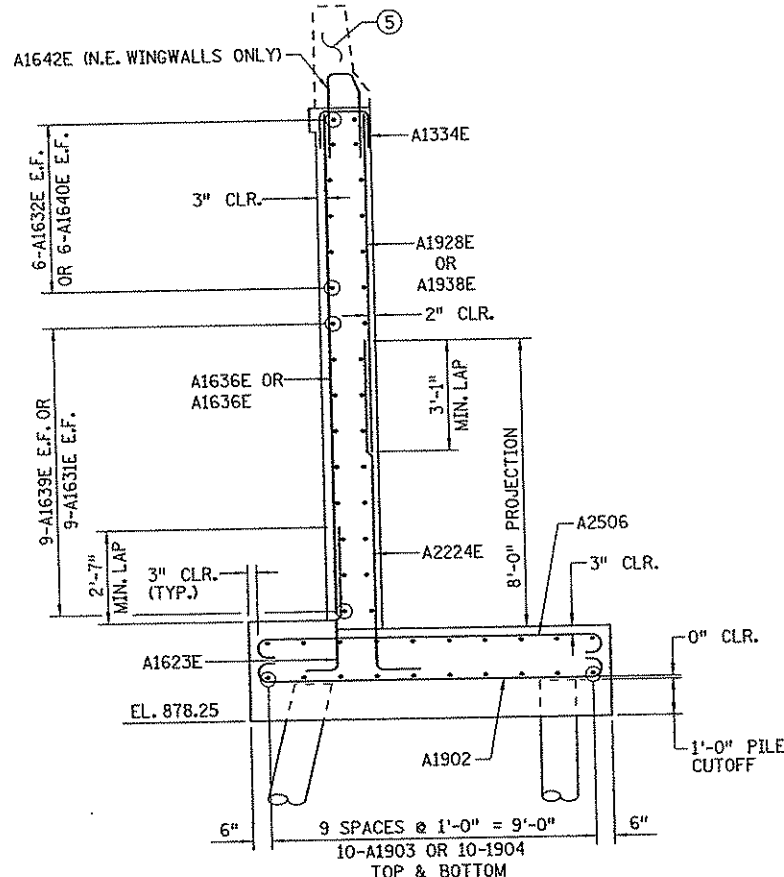


N.W. WINGWALL REINFORCEMENT ELEVATION

N.E. WINGWALL REINFORCEMENT ELEVATION



SECTION C-C REINFORCEMENT

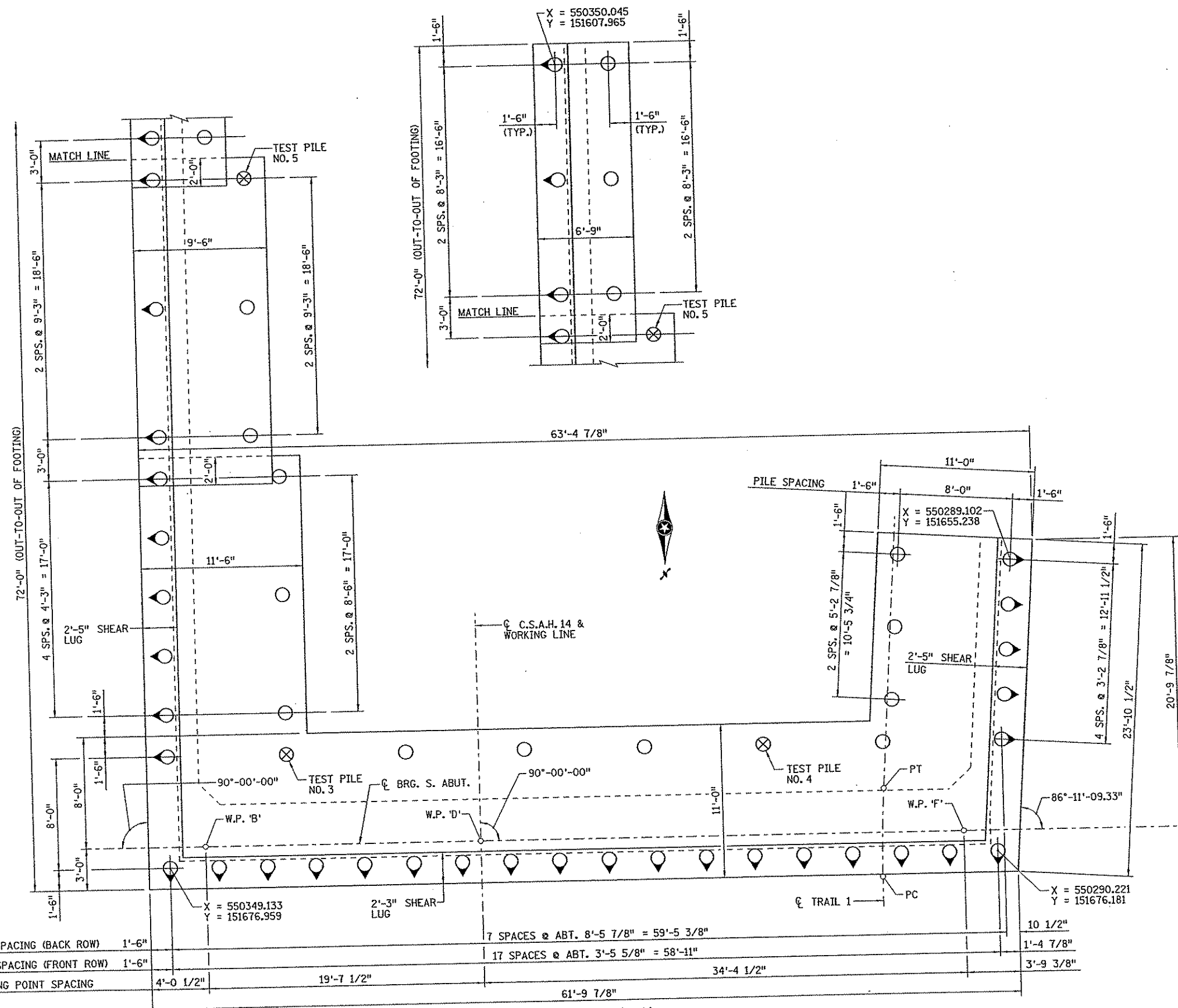


SECTION D-D REINFORCEMENT

NO	DATE	BY	CHKD	APPR	REVISION

STATE PROJ. NO. 02-614-24
BRIDGE NO. 02512
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Print Name: JEREMY A. WEST
Date: 3/15/07 License: 42039

DRAWN BY J. HOFFMAN DATE 6/06
DESIGNED BY C. BLACK 6/06
CHECKED BY J. WEST 6/06
COMM. NO. 0054994
SRF CONSULTING GROUP, INC.



SOUTH ABUTMENT	
COMPUTED PILE LOADS	TONS/PILE
FACTORED DEAD LOAD + EARTH PRESSURE	74.2
FACTORED LIVE LOAD	6.7
FACTORED TOTAL LOAD	80.9
* DESIGN LOAD	53.1

* 80.9 / 1.524 = 53.1 TONS/PILE
 1.524 IS AVERAGE LOAD FACTOR FOR STRENGTH I LOAD COMBINATION

PILE NOTES:
 3 - 12" C-I-P TEST PILES, 100 FEET LONG.
 50 - 12" C-I-P PILES, ESTIMATED LENGTH 90 FEET LONG.
 53 - 12" C-I-P PILES REQUIRED FOR SOUTH ABUTMENT.
 PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
 PILES MARKED THIS SHALL BE BATTERED 3" PER FOOT IN THE DIRECTION SHOWN.
 FOR PILE SPLICE, SEE DETAIL B201.
 PILES TO HAVE A NOMINAL DIAMETER OF 12".

FOOTING PLAN

NO	DATE	BY	CHKD	APPR	REVISION

8:46:54 AM 3/12/2007

STATE PROJ. NO. 02-614-24
 BRIDGE NO. 02572
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: JEREMY A. WEST
 Date: 3/15/07 License #: 42039

DRAWN BY J. HOFFMAN DATE 6/06
 DESIGNED BY C. BLACK 6/06
 CHECKED BY J. WEST 6/06
 COMM. NO. 0054994



ANOKA COUNTY
 C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY
 SOUTH ABUTMENT DETAILS
 (SHEET 1 OF 8)

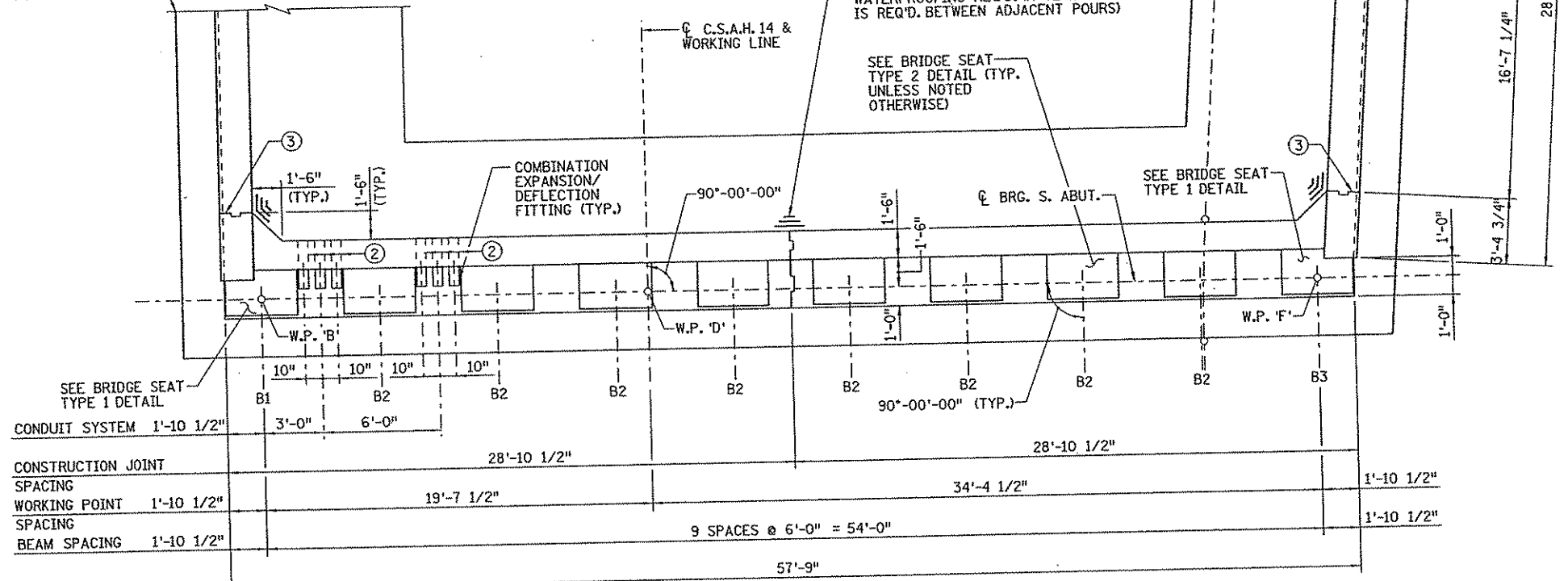
SHEET B8 OF B33

NOTES:

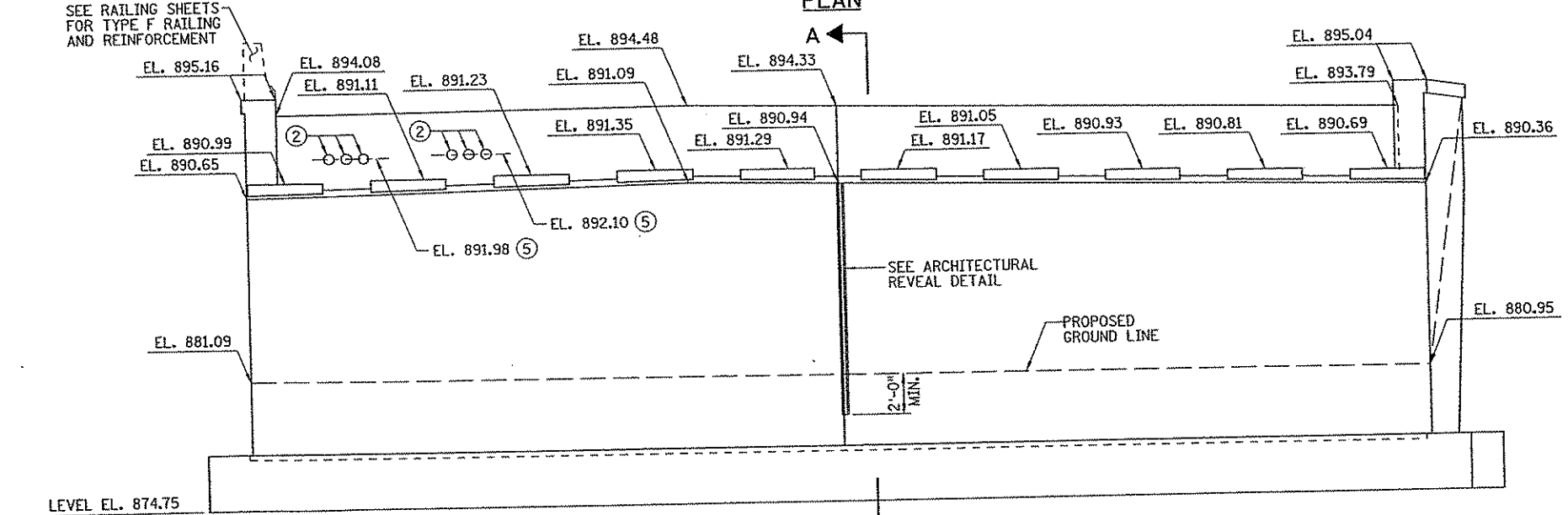
1. S.W. DENOTES SOUTHWEST
S.E. DENOTES SOUTHEAST
2. 6" SLEEVE FOR 4" R.S.C. CONDUIT.
3. PERMISSIBLE CONSTRUCTION JT. W/2" x 6" KEYWAY. 3-PLY JT. WATERPROOFING REQ'D. IF JOINT IS USED..
4. ELEVATIONS SHOWN ARE AT FRONT FACE.
5. ELEVATION AT C CONDUIT GROUP.
3 - 4" PIPE SLEEVES.
6. CONST. JT. W/2" x 6" KEYWAY W/3-PLY JT. WATERPROOFING REQ'D. (A 72 HOUR DELAY IS REQ'D. BETWEEN ADJACENT POURS)



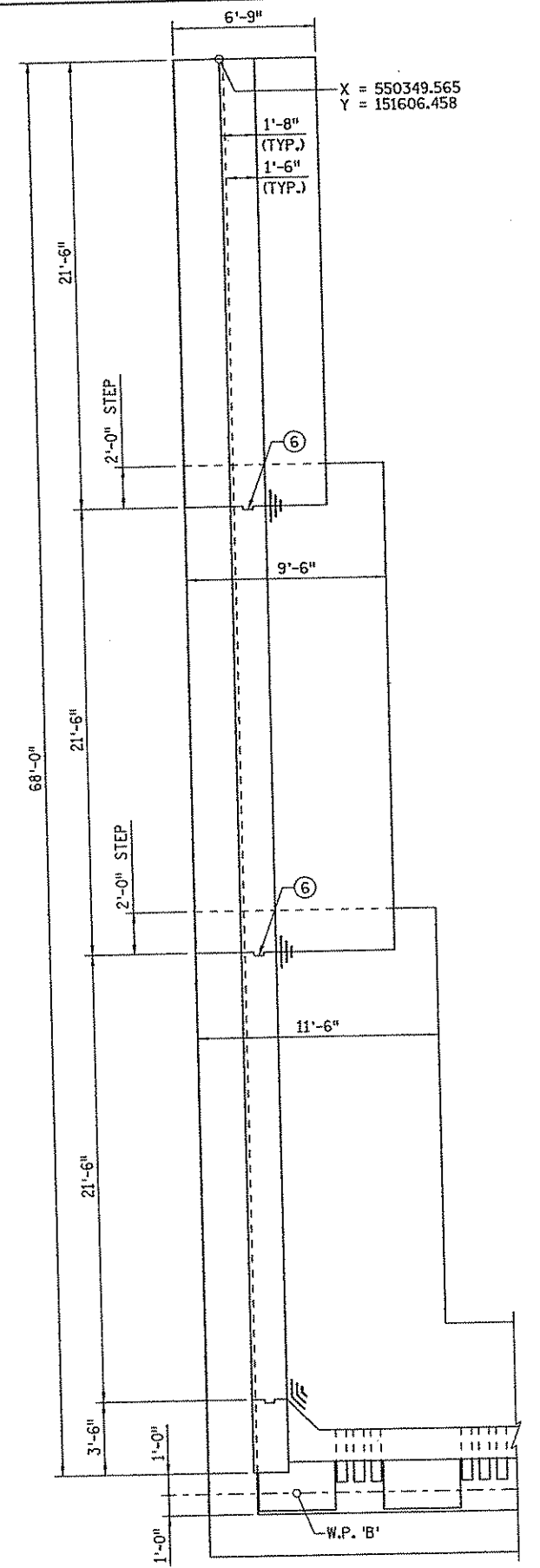
SEE S.E. WINGWALL PLAN



PLAN



ELEVATION



S.E. WINGWALL PLAN

NO	DATE	BY	CKD	APPR	REVISION

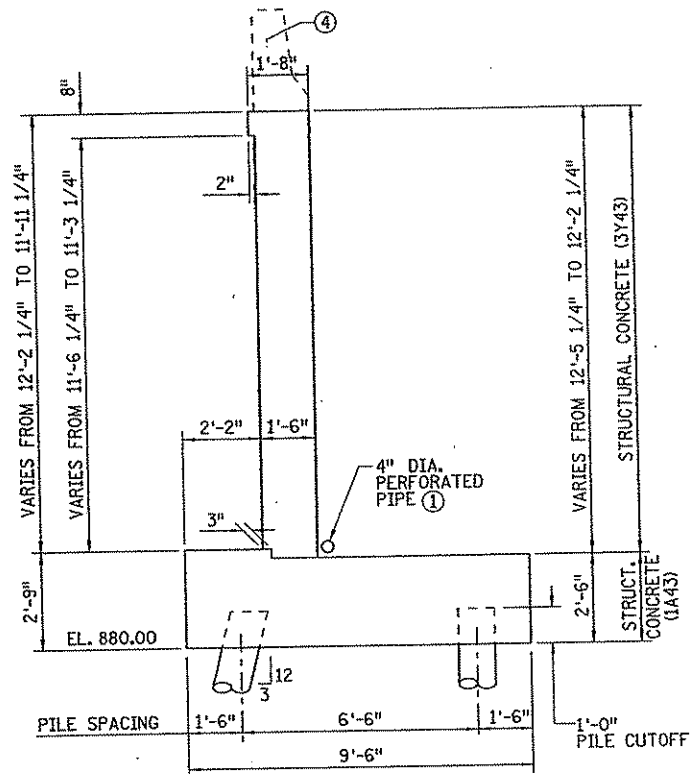
STATE PROJ. NO. 02-614-24	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: JEREMY A. WEST Date: 3/15/07 License # 42039
BRIDGE NO. 02572	

DRAWN BY J. HOFFMAN	DATE 6/06
DESIGNED BY C. BLACK	6/06
CHECKED BY J. WEST	6/06
COMM. NO. 0054994	



ANOKA COUNTY
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY
SOUTH ABUTMENT DETAILS
(SHEET 2 OF 8)

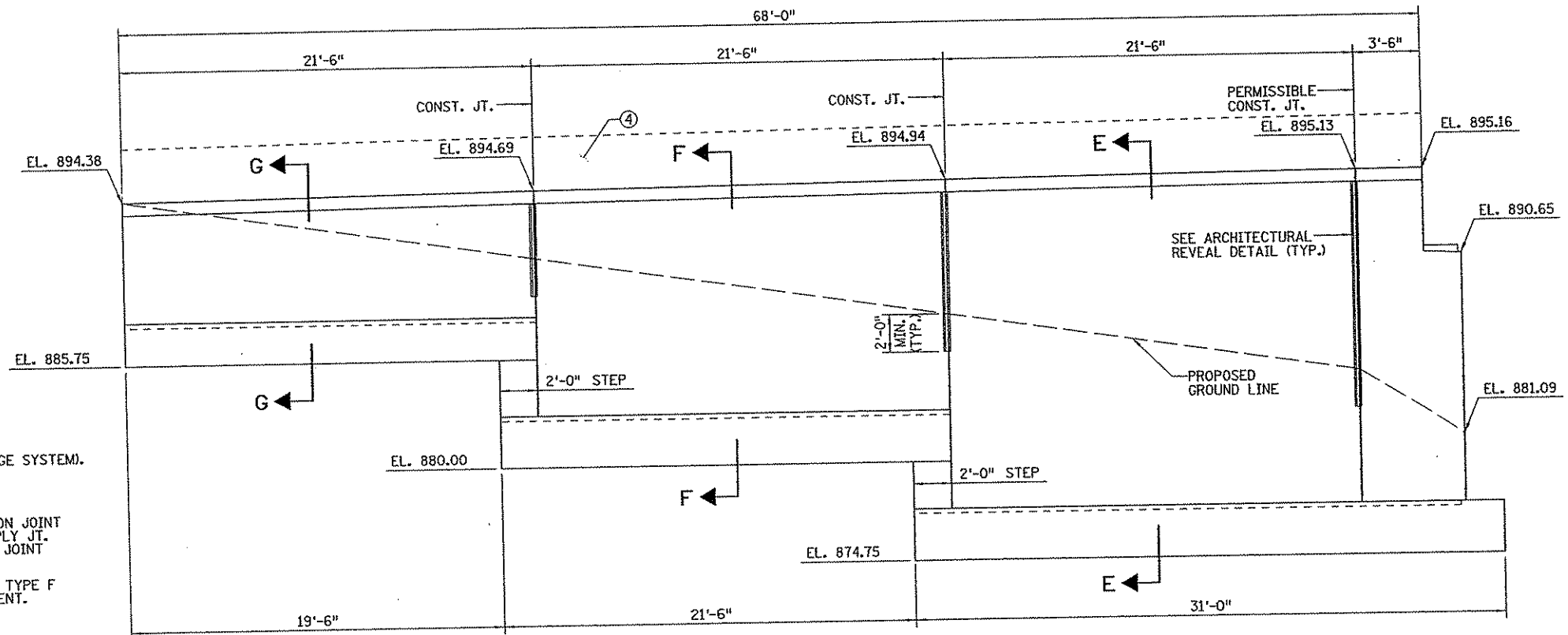
SHEET
B9
OF
B33



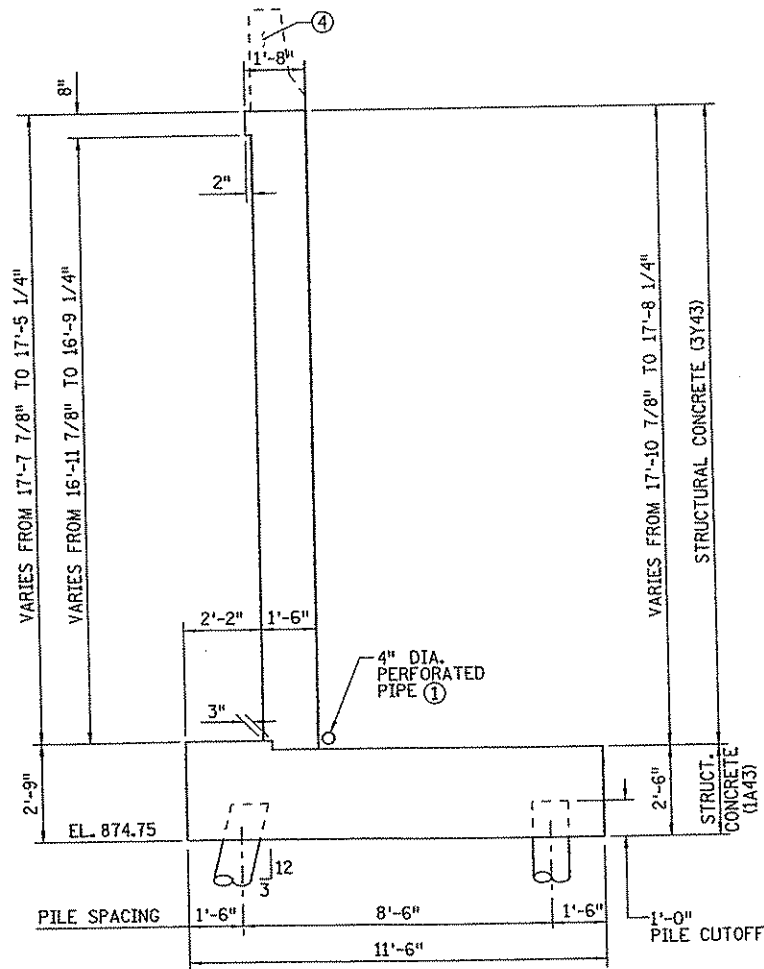
SECTION F-F

NOTES:

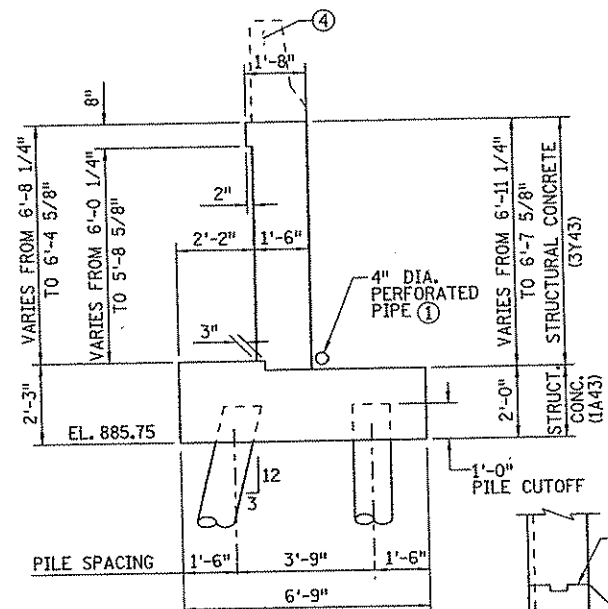
- ① SEE DETAIL B910 (DRAINAGE SYSTEM).
- 2. S.W. DENOTES SOUTHWEST
S.E. DENOTES SOUTHEAST.
- ③ PERMISSIBLE CONSTRUCTION JOINT
W/ 2" x 6" KEYWAY, 3-PLY JT.
WATERPROOFING REQ'D. IF JOINT
IS USED.
- ④ SEE RAILING SHEETS FOR TYPE F
RAILING AND REINFORCEMENT.



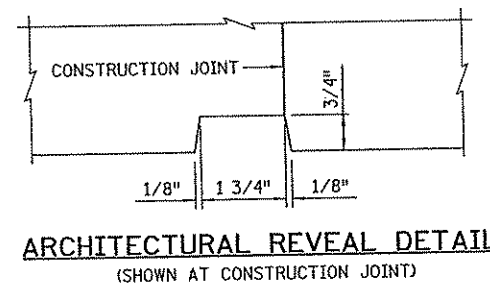
S.E. WINGWALL ELEVATION



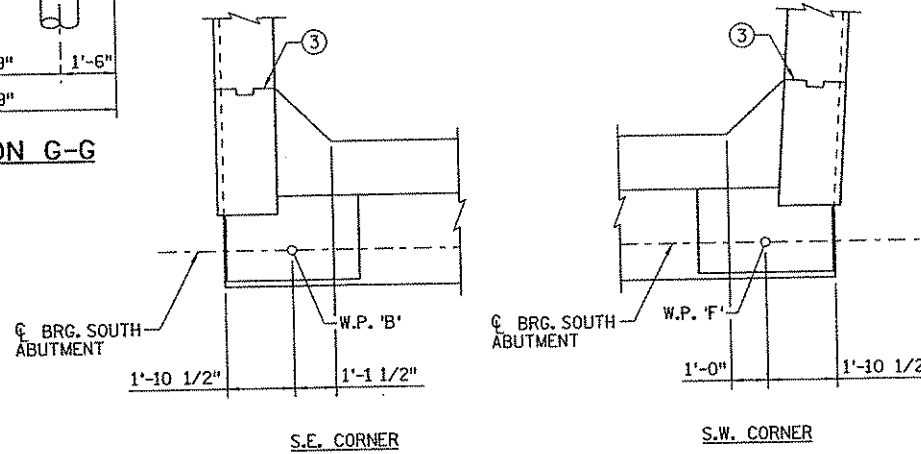
SECTION E-E



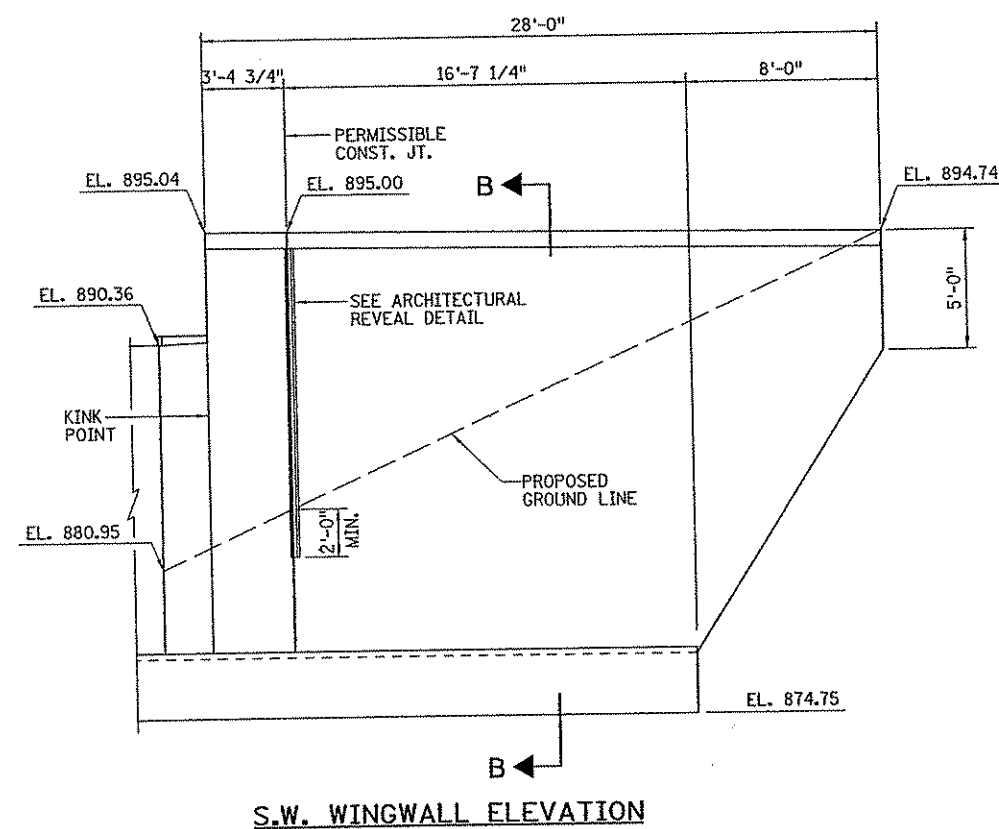
SECTION G-G



ARCHITECTURAL REVEAL DETAIL
(SHOWN AT CONSTRUCTION JOINT)



CORNER DETAIL



S.W. WINGWALL ELEVATION

NO	DATE	BY	CHKD	APPR	REVISION

h:\projects\4994-f\br\final\plan\4994 SA03.dgn 8:46:56 AM 3/12/2007

STATE PROJ. NO.	02-614-24
BRIDGE NO.	02572

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: JEREMY A. WEST

Date: 3/15/07 License: 42039

DRAWN BY: J. HOFFMAN DATE: 6/06
 DESIGNED BY: C. BLACK DATE: 6/06
 CHECKED BY: J. WEST DATE: 6/06
 COMM. NO.: 0054994

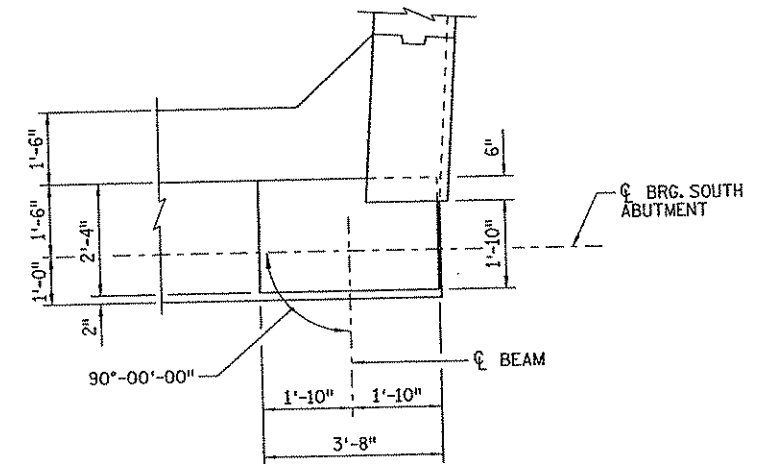


ANOKA COUNTY
 C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY
 SOUTH ABUTMENT DETAILS
 (SHEET 3 OF 8)

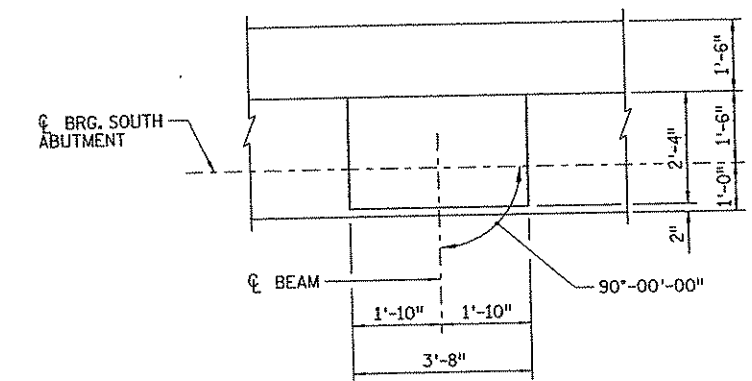
SHEET
 B10
 OF
 B33

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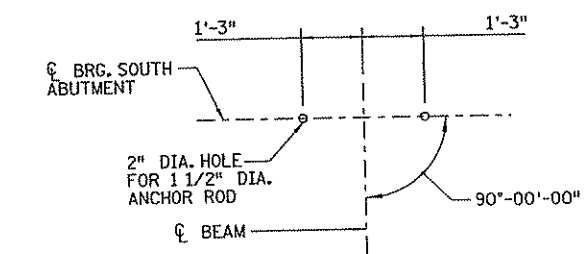
- ① SEE DETAIL B910 (DRAINAGE SYSTEM).
- 2. S.W. DENOTES SOUTHWEST
S.E. DENOTES SOUTHEAST.



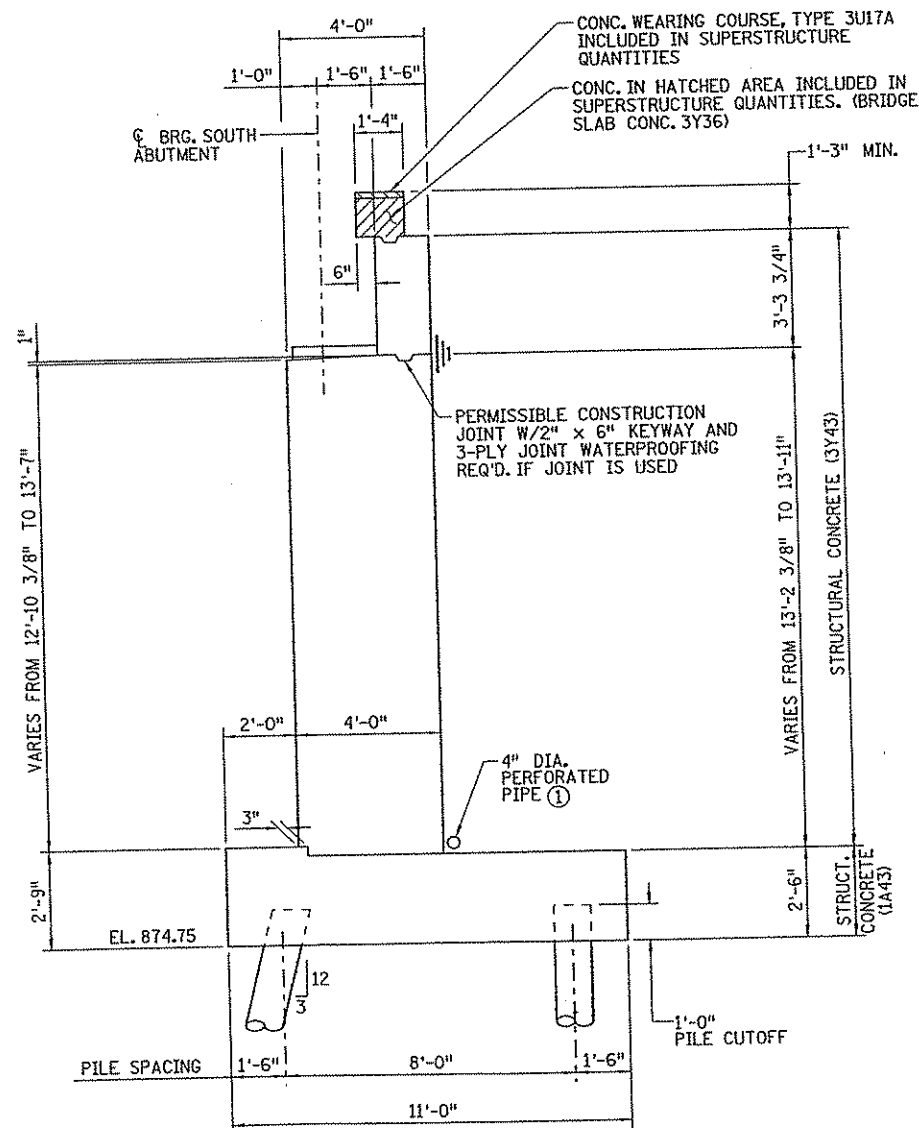
BRIDGE SEAT TYPE 1 DETAIL



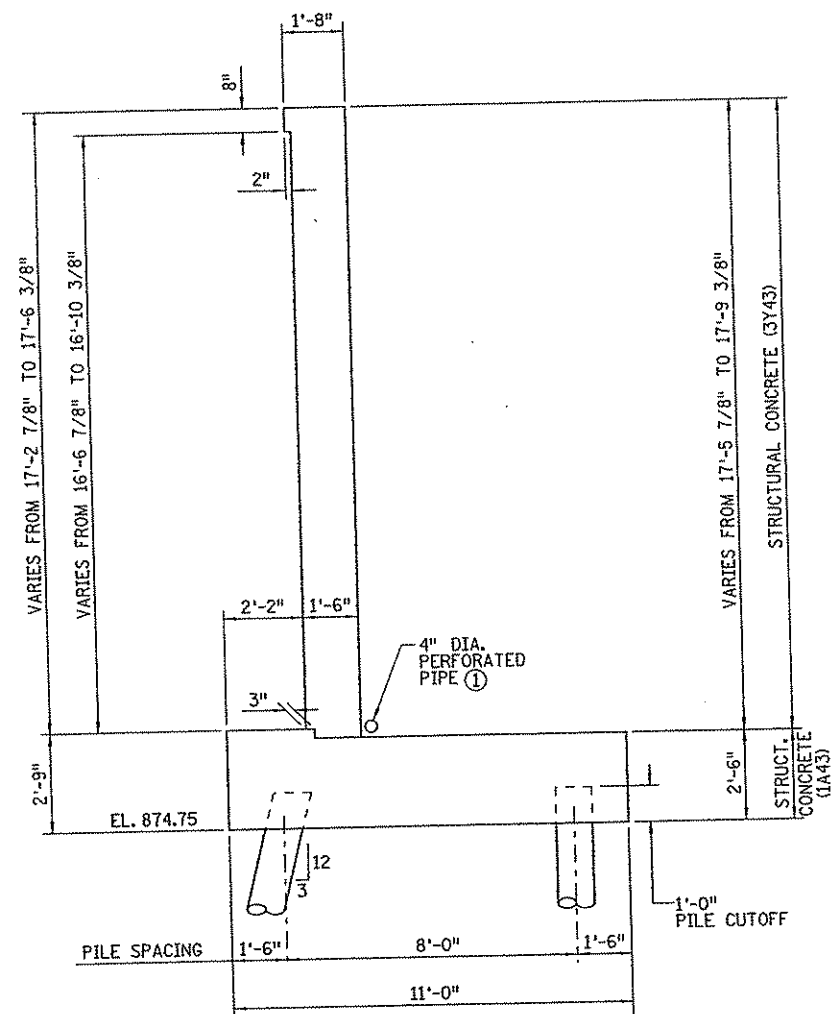
BRIDGE SEAT TYPE 2 DETAIL



ANCHOR ROD LAYOUT



SECTION A-A



SECTION B-B

NO	DATE	BY	CKD	APPR	REVISION

8:46:56 AM 3/12/2007

STATE PROJ. NO.
02-614-24

BRIDGE NO.
02572

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Print Name: JEREMY A. WEST

Date: 3/15/07 License: 42039

DRAWN BY
J. HOFFMAN

DESIGNED BY
C. BLACK

CHECKED BY
J. WEST

DATE
6/06

COMM. NO.
0054994



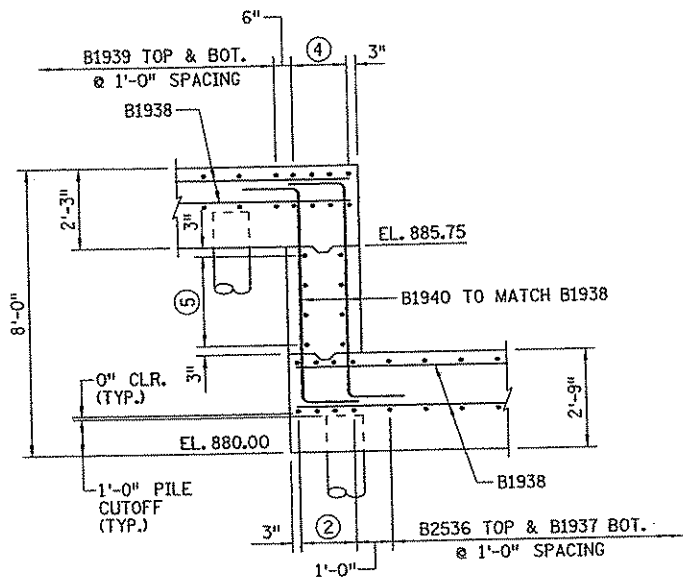
ANOKA COUNTY

C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY

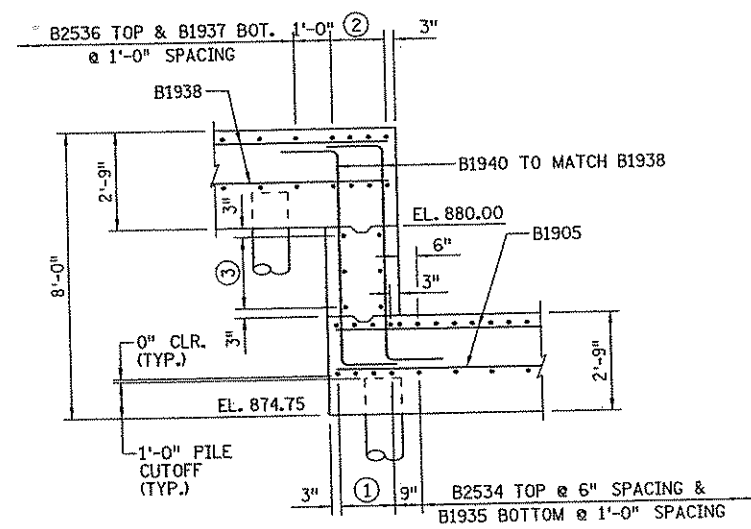
SOUTH ABUTMENT DETAILS

(SHEET 4 OF 8)

SHEET
B11
OF
B33



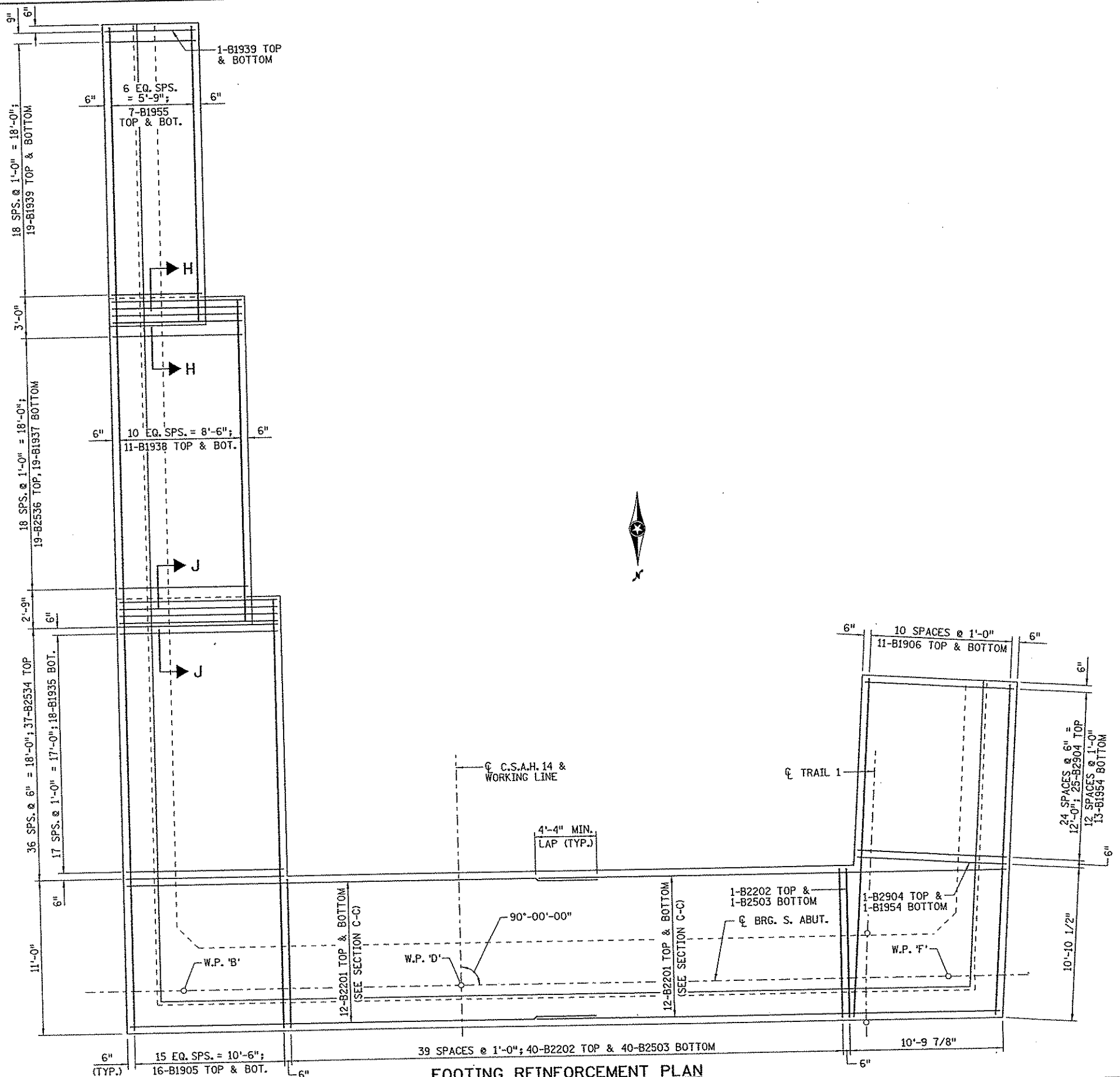
SECTION H-H



SECTION J-J

NOTES:

- ① 3 SPACES @ 6" = 1'-6"; 4-B2534 TOP, 4-B1935 BOTTOM.
- ② 3 SPACES @ 6" = 1'-6"; 4-B2536 TOP, 4-B1937 BOTTOM.
- ③ 2 SPACES @ 1'-0" = 2'-0"; 3-B1937 E.F.
- ④ 3 SPACES @ 6" = 1'-6"; 4-B1939 TOP & BOTTOM.
- ⑤ 3 SPACES @ 10" = 2'-6"; 4-B1939 E.F.
- 6. E.F. DENOTES EACH FACE



FOOTING REINFORCEMENT PLAN

NO	DATE	BY	CHKD	APPR	REVISION

8:46:57 AM 3/12/2007

STATE PROJ. NO.	02-614-24
BRIDGE NO.	02572

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Print Name: JEREMY A. WEST

Date: 3/15/07 License: 42039

DRAWN BY: J. HOFFMAN DATE: 6/06
 DESIGNED BY: C. BLACK DATE: 6/06
 CHECKED BY: J. WEST DATE: 6/06
 COMM. NO.: 0054994

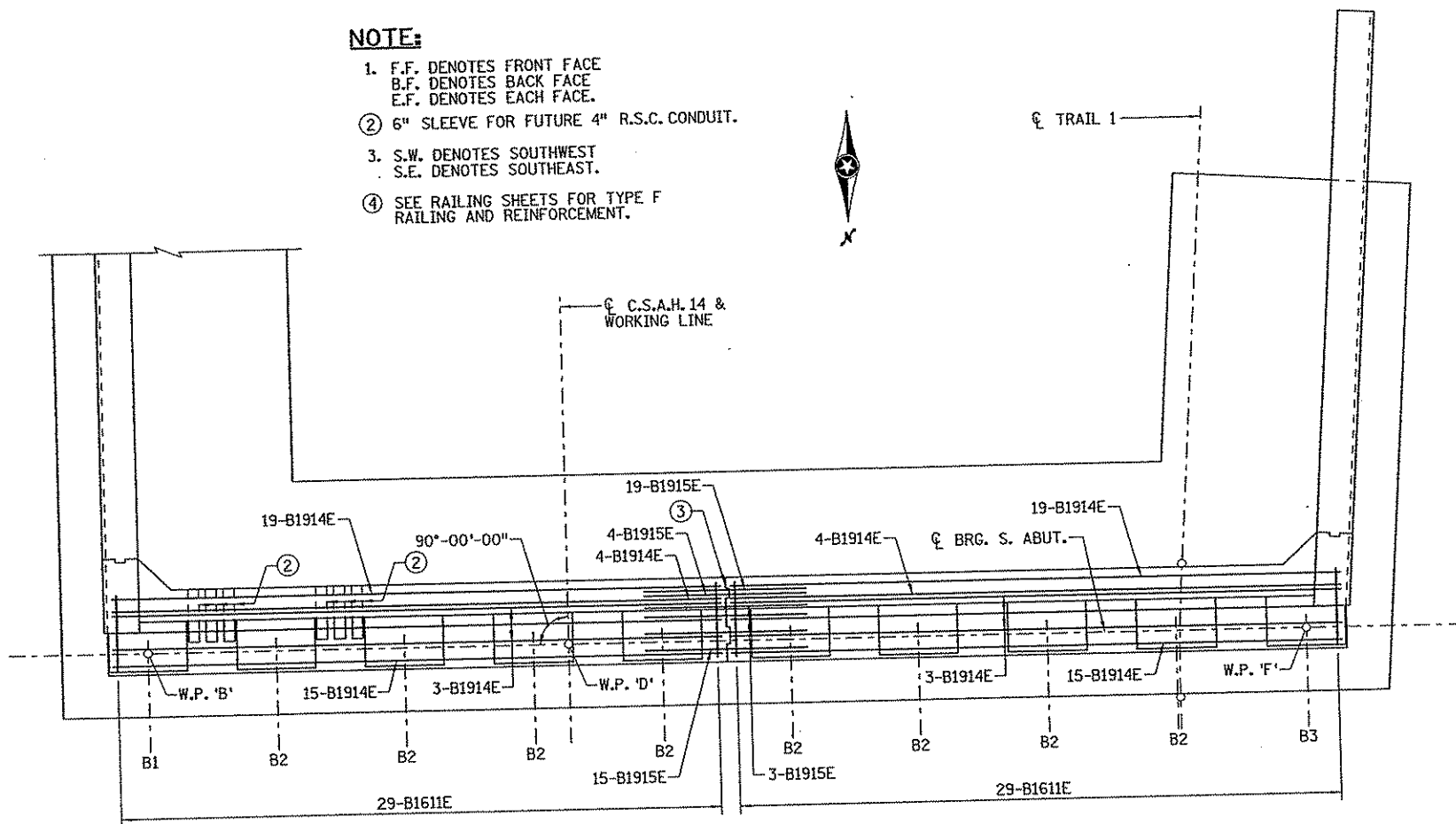
SRF CONSULTING GROUP, INC.

ANOKA COUNTY
 C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY
 SOUTH ABUTMENT DETAILS
 (SHEET 5 OF 8)

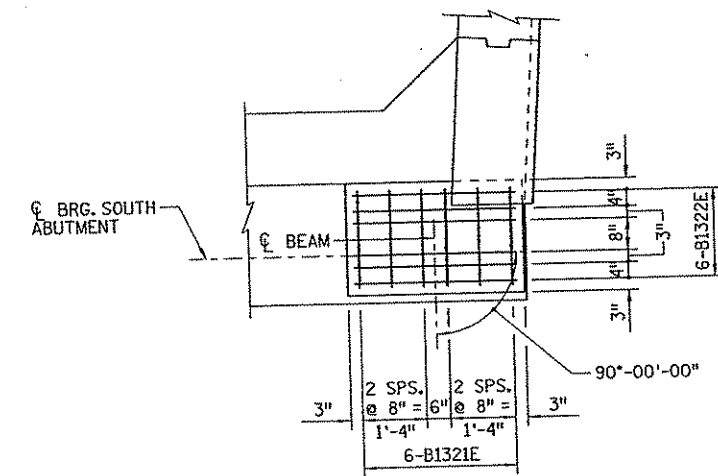
SHEET
 B12
 OF
 B33

NOTE:

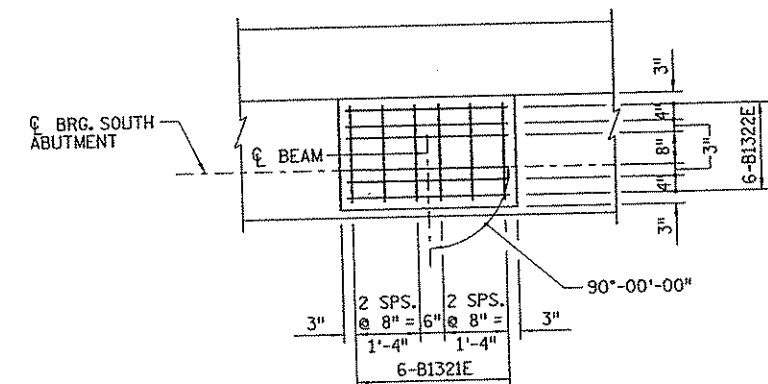
1. F.F. DENOTES FRONT FACE
B.F. DENOTES BACK FACE
E.F. DENOTES EACH FACE.
- ② 6" SLEEVE FOR FUTURE 4" R.S.C. CONDUIT.
3. S.W. DENOTES SOUTHWEST
S.E. DENOTES SOUTHEAST.
- ④ SEE RAILING SHEETS FOR TYPE F
RAILING AND REINFORCEMENT.



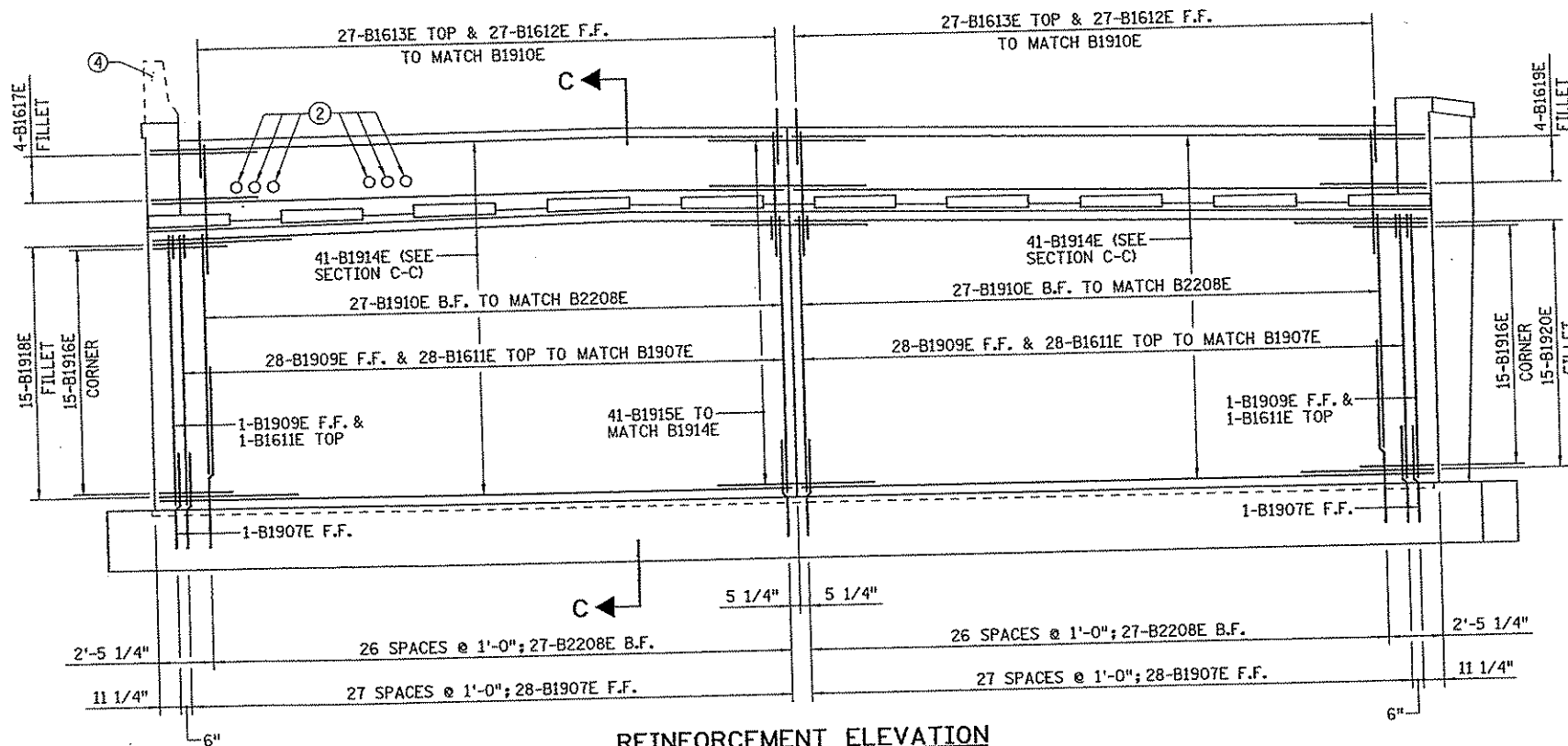
REINFORCEMENT PLAN



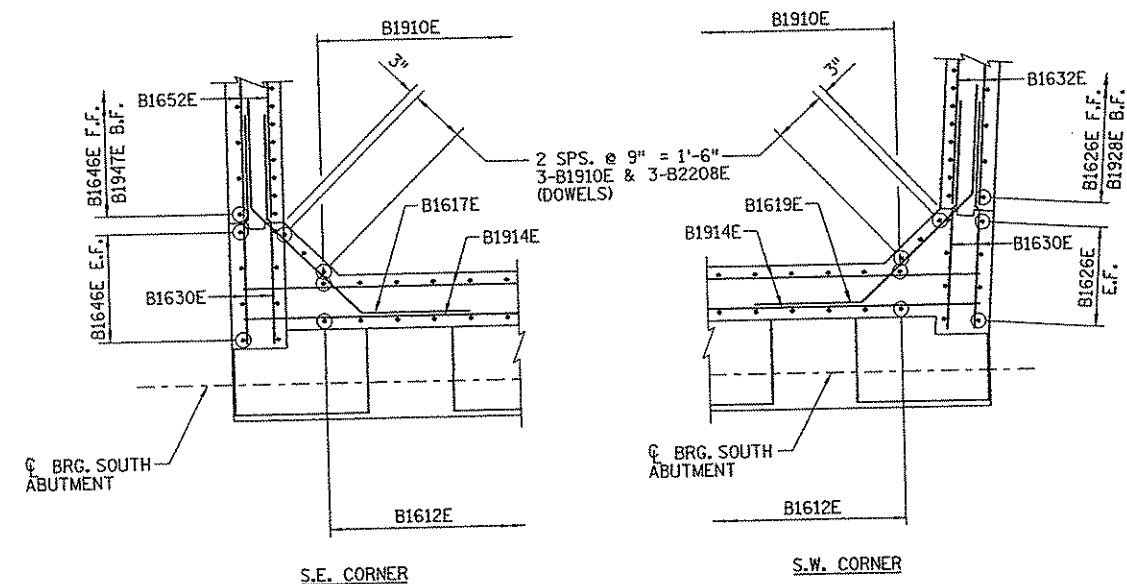
BRIDGE SEAT TYPE 1 REINFORCEMENT DETAIL



BRIDGE SEAT TYPE 2 REINFORCEMENT DETAIL



REINFORCEMENT ELEVATION



CORNER REINFORCEMENT DETAIL

NO	DATE	BY	CKD	APPR	REVISION

h:\projects\4994-f\br\final\plan\4994 5A06.dgn 8:46:58 AM 3/12/2007

STATE PROJ. NO. 02-614-24	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <u>JEREMY A. WEST</u> <i>Jeremy A. West</i> Date: <u>3/15/07</u> License # <u>42039</u>
BRIDGE NO. 02572	

DRAWN BY J. HOFFMAN	DATE 6/06
DESIGNED BY C. BLACK	DATE 6/06
CHECKED BY J. WEST	DATE 6/06
COMM. NO. 0054994	

SRF CONSULTING GROUP, INC.

ANOKA COUNTY
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY
SOUTH ABUTMENT DETAILS
(SHEET 6 OF 8)

SHEET
B13
OF
B33

BILL OF REINFORCEMENT: SOUTH ABUTMENT

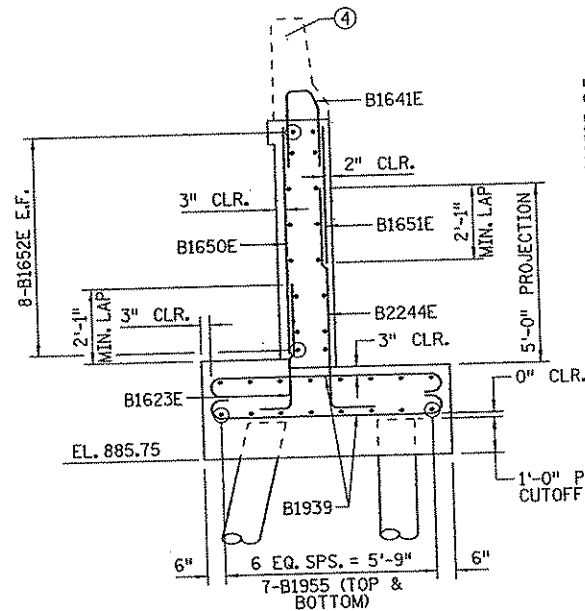
MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION
					A	B	C	
B2201	48	22	33 - 2	STR	-	-	-	FTG. LONG.
B2202	41	22	12 - 2	15	10 - 6	0 - 10	-	FTG. TRANS.
B2503	41	25	12 - 4	15	10 - 6	0 - 11	-	FTG. TRANS.
B2904	26	29	13 - 0	15	10 - 6	1 - 3	-	FTG. TRANS.
B1905	32	19	31 - 2	16	30 - 6	-	-	FTG. LONG.
B1906	2 SERIES		24 - 0		23 - 4	-	-	
	OF 11	19	24 - 8	16	24 - 0	-	-	FTG. LONG.
B1907E	58	19	6 - 7	7	5 - 7	-	-	STEM DOWEL
B2208E	60	22	7 - 3	7	6 - 1	-	-	STEM DOWEL
B1909E	58	19	12 - 8	STR	-	-	-	STEM VERT
B1910E	60	19	16 - 4	STR	-	-	-	STEM VERT
B1611E	58	16	6 - 7	6	3 - 7	1 - 6	-	STEM TIE
B1612E	54	16	7 - 0	5	5 - 0	1 - 2	-	BACKWALL VERT
B1613E	54	16	9 - 0	21	0 - 11	1 - 0	3 - 6	PAVING BLOCK
B1914E	82	19	28 - 5	STR	-	-	-	STEM HORIZ
B1915E	41	19	7 - 6	STR	-	-	-	HORIZ DOWEL
B1916E	30	19	7 - 0	7	3 - 6	-	-	STEM CORNER
B1617E	4	16	11 - 11	12	4 - 11	3 - 6	1 - 0	TOP FILLET
B1918E	15	19	15 - 4	12	8 - 4	3 - 6	1 - 0	STEM FILLET
B1619E	4	16	12 - 1	12	5 - 1	3 - 6	1 - 0	TOP FILLET
B1920E	15	19	15 - 8	12	8 - 8	3 - 6	1 - 0	STEM FILLET
B1321E	60	13	5 - 0	6	2 - 0	1 - 6	-	SEAT
B1322E	60	13	6 - 4	6	3 - 4	1 - 6	-	SEAT
B1623E	105	16	5 - 6	7	4 - 8	-	-	WING DOWEL
B2524E	33	25	8 - 10	7	7 - 6	-	-	W. WING VERT
B1625E	3	16	12 - 8	STR	-	-	-	W. WING VERT
B1626E	25	16	17 - 0	STR	-	-	-	W. WING VERT
B1627E	2 SERIES		5 - 1		-	-	-	
	OF 8	16	16 - 1	STR	-	-	-	W. WING VERT
B1928E	33	19	14 - 9	STR	-	-	-	W. WING VERT
B1629E	56	16	8 - 2	STR	-	-	-	W. WING HORIZ
B1630E	22	16	6 - 3	STR	-	-	-	W. WING HORIZ
B1631E	2 SERIES		16 - 6		-	-	-	
	OF 12	16	23 - 7	STR	-	-	-	W. WING HORIZ
B1632E	14	16	24 - 3	STR	-	-	-	W. WING HORIZ
B1633E	2	16	14 - 7	STR	-	-	-	W. WING DIAG.
B2534	41	25	12 - 10	15	11 - 0	0 - 11	-	FTG TRANS
B1935	22	19	12 - 4	15	11 - 0	0 - 8	-	FTG TRANS
B2536	27	25	10 - 10	15	9 - 0	0 - 11	-	FTG TRANS
B1937	33	19	10 - 4	15	9 - 0	0 - 8	-	FTG TRANS
B1938	22	19	23 - 0	STR	-	-	-	FTG LONG.
B1939	56	19	7 - 7	15	6 - 3	0 - 8	-	FTG TRANS
B1940	36	19	8 - 4	32	6 - 4	1 - 0	-	FTG TIE
B1641E	77	16	5 - 7	20	2 - 4	0 - 10	0 - 10	RAILING
B1342E	99	13	3 - 1	6	1 - 1	1 - 0	-	WING TOP
B2543E	22	25	13 - 10	7	12 - 6	1 - 4	-	DOWEL
B2244E	22	22	7 - 2	7	6 - 0	1 - 2	-	DOWEL
B1645E	3	16	12 - 11	STR	-	-	-	WING VERT
B1646E	30	16	17 - 3	STR	-	-	-	WING VERT
B1947E	43	19	12 - 10	STR	-	-	-	WING VERT
B1648E	22	16	11 - 9	STR	-	-	-	WING VERT
B1949E	22	19	4 - 5	STR	-	-	-	WING VERT
B1650E	22	16	5 - 10	STR	-	-	-	WING VERT
B1651E	22	16	3 - 11	STR	-	-	-	WING VERT
B1652E	82	16	21 - 2	STR	-	-	-	WING HORIZ
B1653E	38	16	6 - 2	STR	-	-	-	HORIZ DOWEL
B1954	14	19	11 - 10	15	10 - 6	0 - 8	-	FTG TRANS
B1955	14	19	21 - 0	STR	-	-	-	FTG LONG
B2556E	43	25	10 - 10	7	9 - 6	1 - 4	-	DOWEL

SUMMARY OF QUANTITIES : S. ABUTMENT

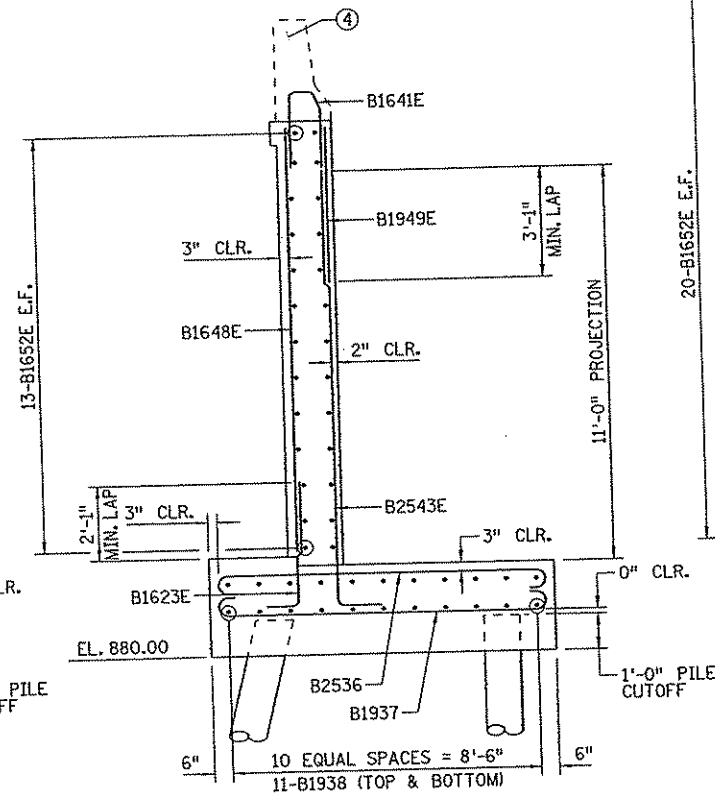
ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (1A43)	CU. YD.	137
STRUCTURAL CONCRETE (3Y43)	CU. YD.	201
REINFORCEMENT BARS	POUND	14440
REINFORCEMENT BARS (EPOXY COATED)	POUND	22460
C-I-P CONCRETE PILING DELIVERED 12"	LIN. FT.	4500
C-I-P CONCRETE PILING DRIVEN 12"	LIN. FT.	4500
C-I-P CONC TEST PILE 100' LONG 12"	EACH	3
3-PLY JOINT WATERPROOFING	LIN. FT.	140

NOTES:

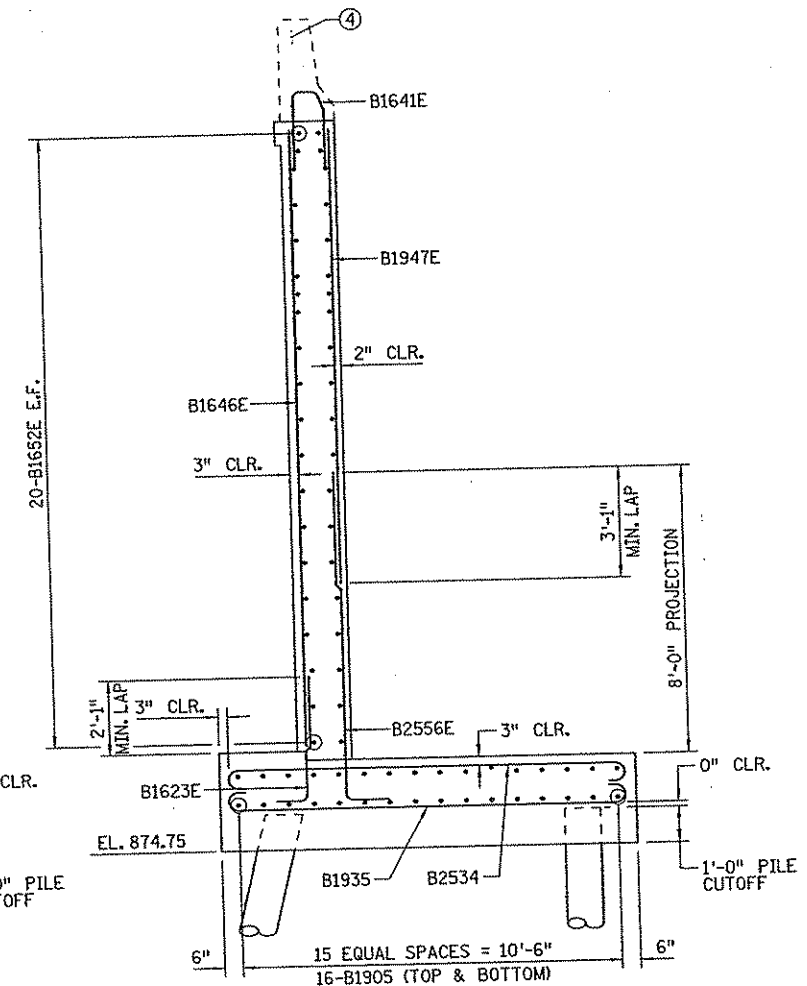
- ① DOES NOT INCLUDE TEST PILES.
- ② TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
3. E.F. DENOTES EACH FACE
F.F. DENOTES FRONT FACE
B.F. DENOTES BACK FACE
- ④ SEE RAILING SHEETS FOR TYPE F RAILING AND REINFORCEMENT.



SECTION J-J REINFORCEMENT

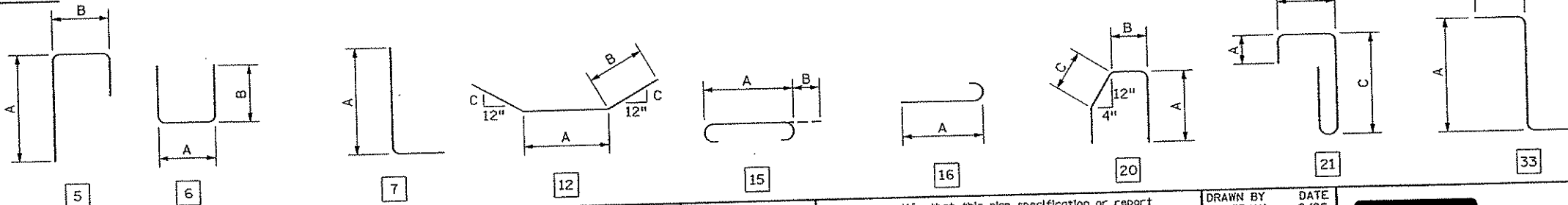


SECTION I-I REINFORCEMENT



SECTION K-K REINFORCEMENT

BAR SHAPES:



NO	DATE	BY	CHK	APPR	REVISION

8:46:59 AM 3/12/2007

STATE PROJ. NO.
02-614-24

BRIDGE NO.
02572

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Print Name: JEREMY A. WEST

Date: 3/15/07

License: 42039

DRAWN BY
J. HOFFMAN

DESIGNED BY
C. BLACK

CHECKED BY
J. WEST

DATE
6/06

DATE
6/06

DATE
6/06

COMM. NO.
0054994



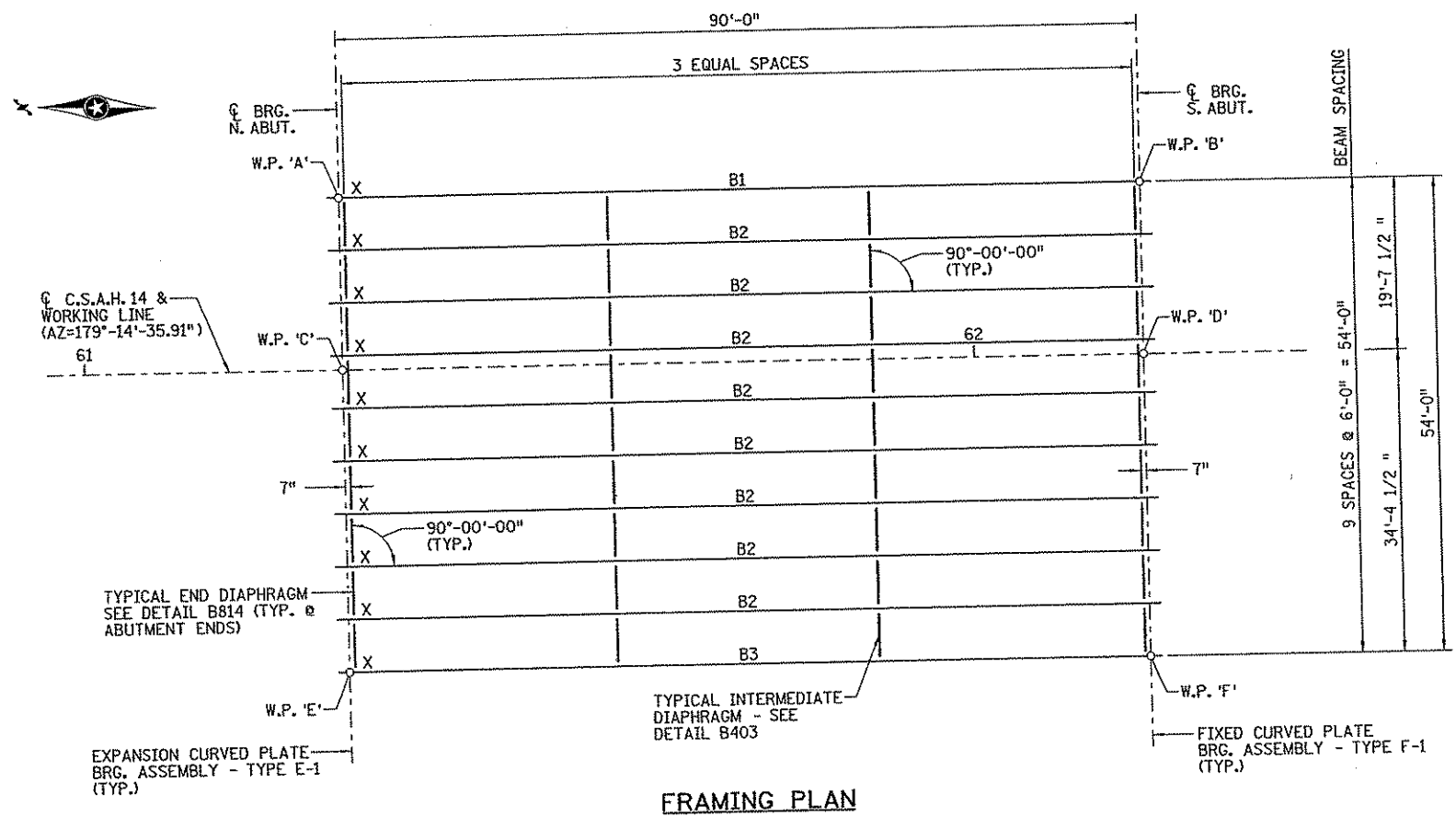
ANOKA COUNTY

C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY

SOUTH ABUTMENT DETAILS

(SHEET 8 OF 8)

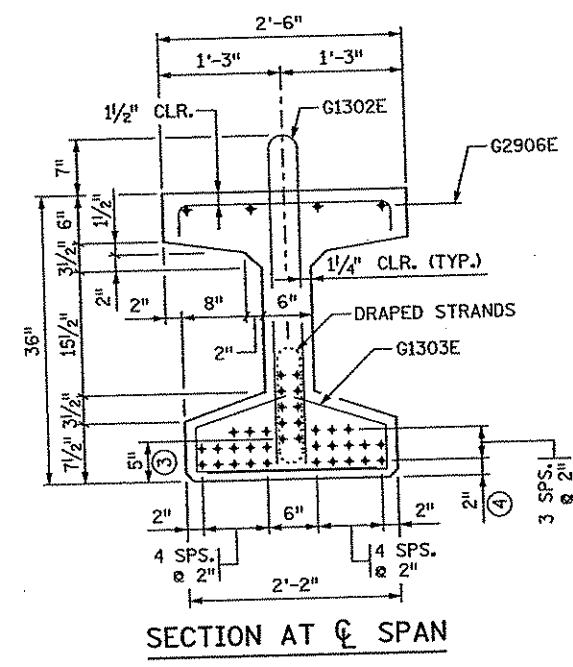
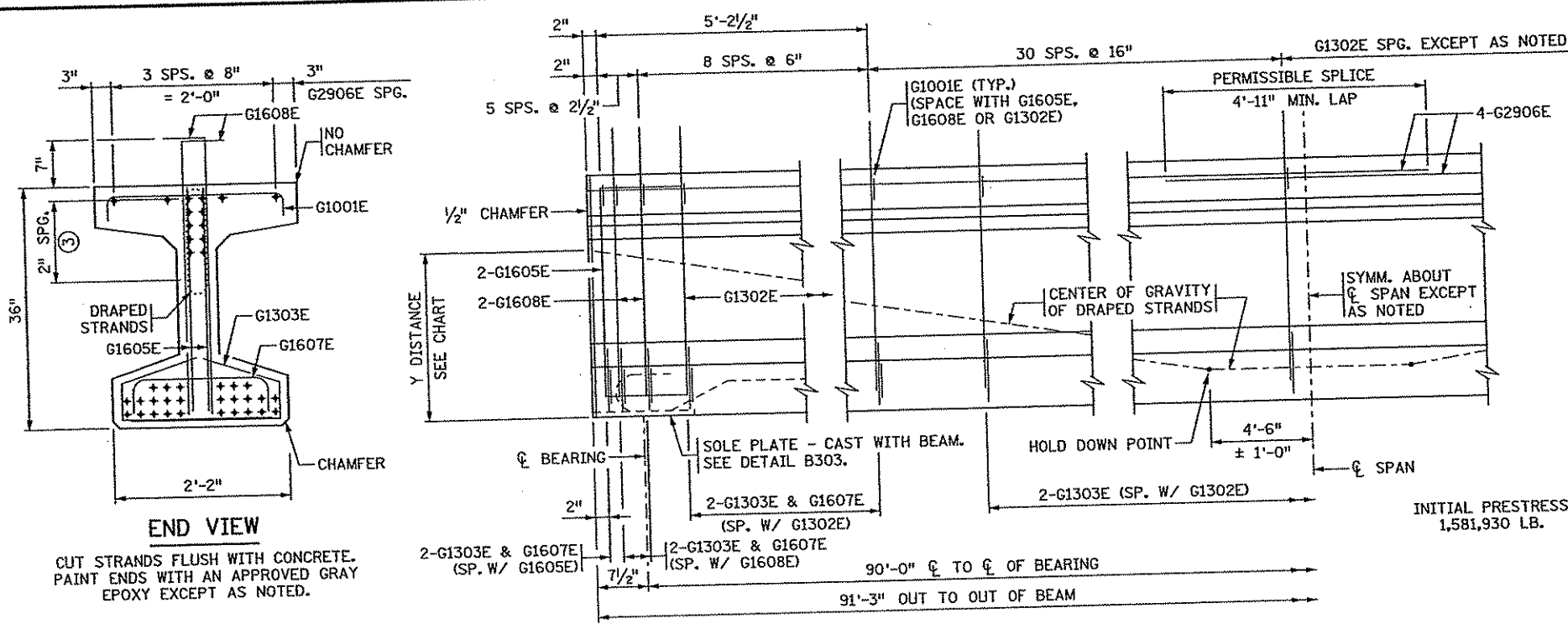
SHEET
B15
OF
B33



NOTES:
 1. X DENOTES WHICH END OF BEAM TO BE MARKED WITH AN "X".

STATE PROJ. NO. 02-614-24					I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <u>JEREMY A. WEST</u> <i>Jeremy A. West</i> Date: <u>3/15/07</u> License: <u>42039</u>	DRAWN BY J. HOFFMAN DATE 6/06	SRF CONSULTING GROUP, INC.	ANOKA COUNTY	SHEET B16 OF B33
BRIDGE NO. 02572						DESIGNED BY C. BLACK DATE 6/06		CHECKED BY J. WEST DATE 6/06	
NO	DATE	BY	CKD	APPR	REVISION	8:47:00 AM 3/12/2007			

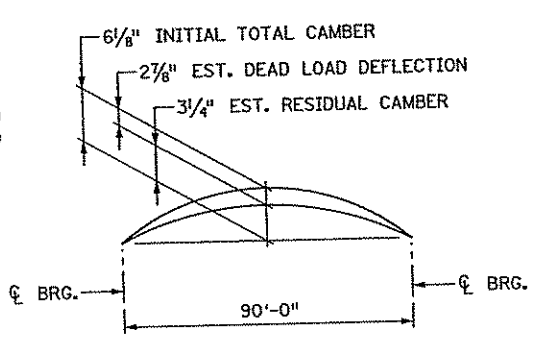
h:\projects\4994-f\br\final\Plan\4994 FP01.dgn



Y DISTANCES (IN INCHES)			
	NO.	Q SPAN	END
STRAIGHT STRANDS	26	3.69	
DRAPED STRANDS	10	9.00	28.00
TOTAL STRANDS	36	5.17	

Y = DISTANCE TO CENTER OF GRAVITY OF STRANDS FROM BOTTOM OF BEAM. ALL STRANDS SPACED 2" CENTER TO CENTER, HORIZONTALLY AND VERTICALLY, EXCEPT AS NOTED.

A TOLERANCE OF ± 1" WILL BE PERMITTED IN THIS DIMENSION.



INITIAL CAMBER IS GIVEN AFTER DIAPHRAGMS ARE IN PLACE.

DEAD LOAD DEFLECTION SHOWN IS FOR WEIGHT OF SLAB, WEARING COURSE, RAILING, SIDEWALK AND MEDIAN WHERE APPLICABLE.

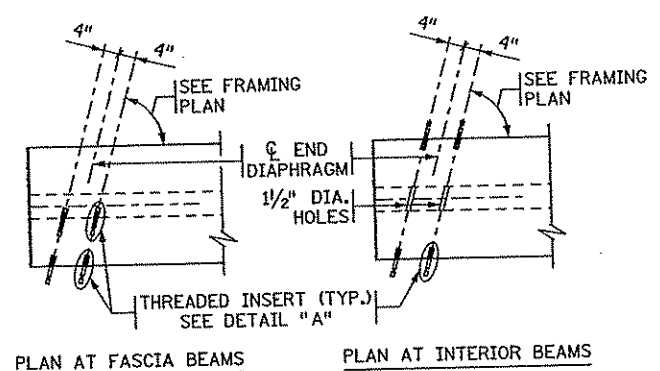
ENGINEER WILL TAKE ELEVATIONS AT TOP OF BEAMS AFTER ERECTION AND WILL ALLOW FOR DEFLECTION SHOWN TO ENABLE CONTRACTOR TO BUILD FORMS TO CORRECT GRADE AND SPECIFIED SLAB THICKNESS.

END VIEW
CUT STRANDS FLUSH WITH CONCRETE. PAINT ENDS WITH AN APPROVED GRAY EPOXY EXCEPT AS NOTED.

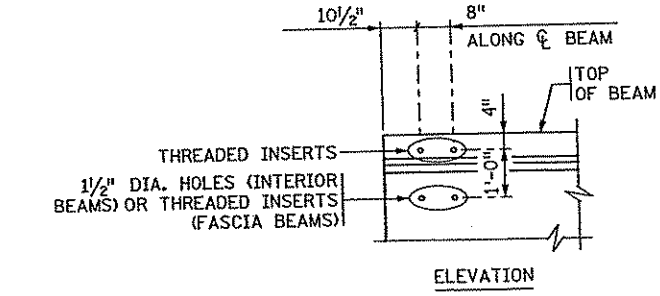
BEAM ELEVATION

SECTION AT Q SPAN

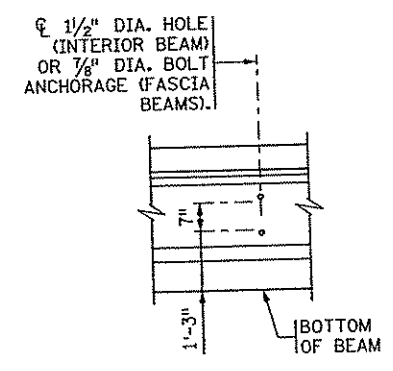
CAMBER DIAGRAM



PLAN AT FASCIA BEAMS **PLAN AT INTERIOR BEAMS**



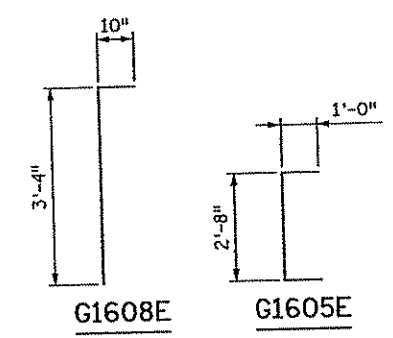
CONCRETE END DIAPHRAGM
PARAPET ABUTMENT
(SEE DETAIL B814 FOR DIAPHRAGM DETAILS)



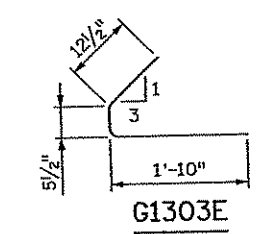
STEEL INTERMEDIATE DIAPHRAGM
(SEE DETAIL B403 FOR DIAPHRAGM DETAILS)

MINIMUM CONCRETE STRENGTH - P.S.I.	
① f'ci	② f'c
7500	8000

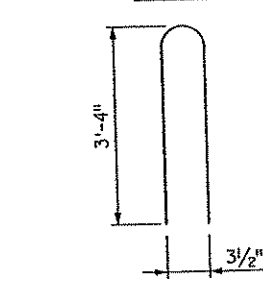
PRESTRESSING STRAND DIAMETER	
⑤ 1/2" □	
⑤ 0.60" ☒	



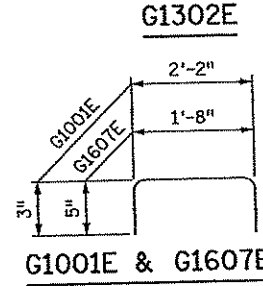
G1608E **G1605E**



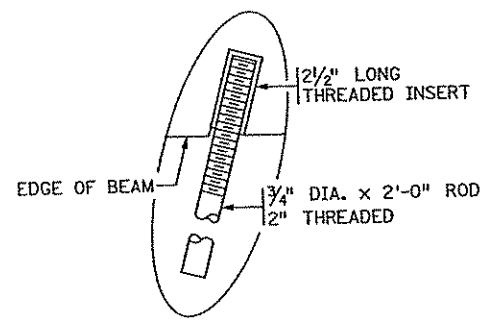
G1303E



G1302E



G1001E & G1607E



DETAIL "A"

GENERAL NOTES

- TOPS OF BEAMS SHALL BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BOND. PROVIDE HANDLING HOOKS OR DEVICES AS REQUIRED BY CONTRACTOR.
- 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 THE INSIDE FACE. ALL MARKINGS SHALL BE STENCILED 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 Mn/DOT SPEC. 2405.
- SEE FRAMING PLAN FOR BEAM END MARKED "X" AND DIAPHRAGM SPACING.
- APPROXIMATE WEIGHT OF BEAM IS 28 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.
- ① MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER.
- ② MINIMUM CONCRETE STRENGTH WHEN BEAM CAN BE TRANSPORTED AND INSTALLED.
- ③ DRAPED STRANDS.
- ④ STRAIGHT STRANDS.
- ⑤ PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND, CONFORMING TO ASTM A416, GRADE 270.

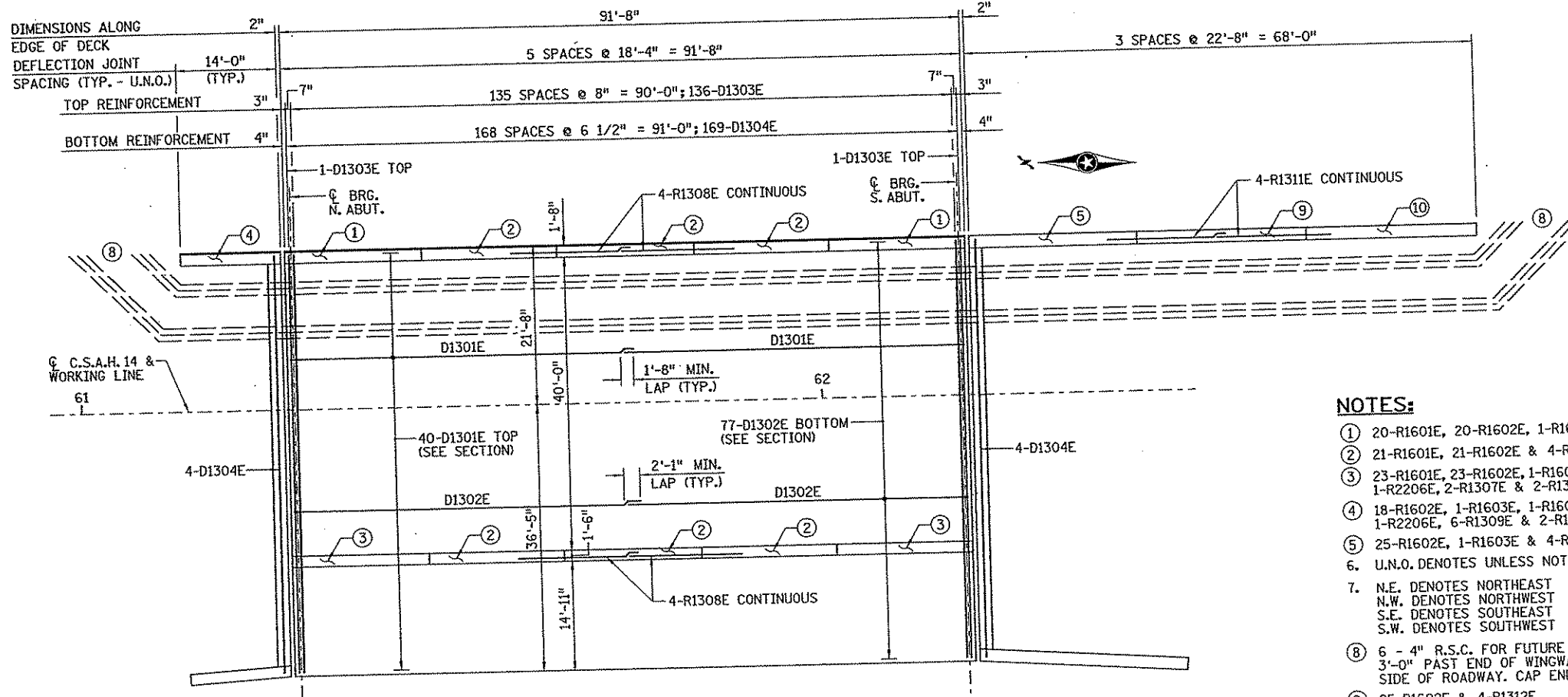
REVISED:
APPROVED: OCTOBER 26, 2005
David A. West
STATE BRIDGE ENGINEER

CERTIFIED BY *Jeremy West* 3/15/07
LICENSED PROFESSIONAL ENGINEER
NAME: JEREMY A. WEST LIC. NO. 42039

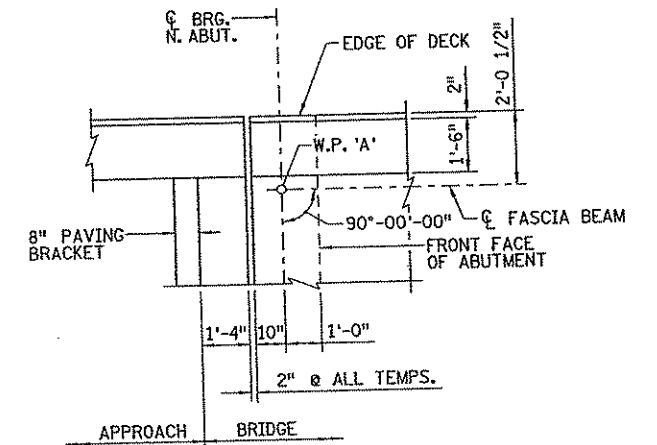
TITLE: 36" PRESTRESSED CONCRETE BEAM (PRETENSIONED) 36M-91

DES: CLB	DR: MM	APPROVED:	BRIDGE NO. 02572
CHK: JAW	CHK: JAW		

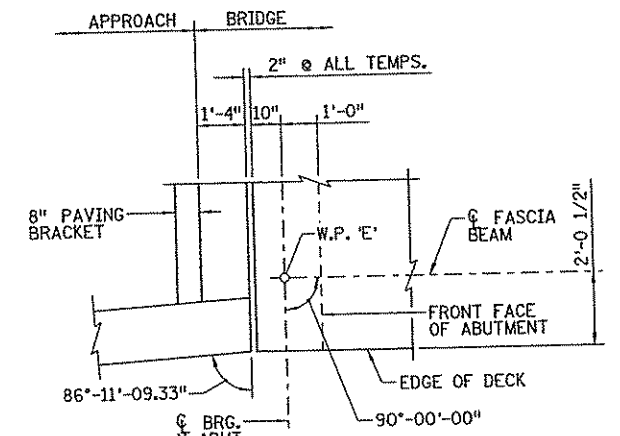
BEAMS B1-B3 MODIFIED FIG. 5-397.505
SHEET NO. B17 OF B33 SHEETS



DECK PLAN



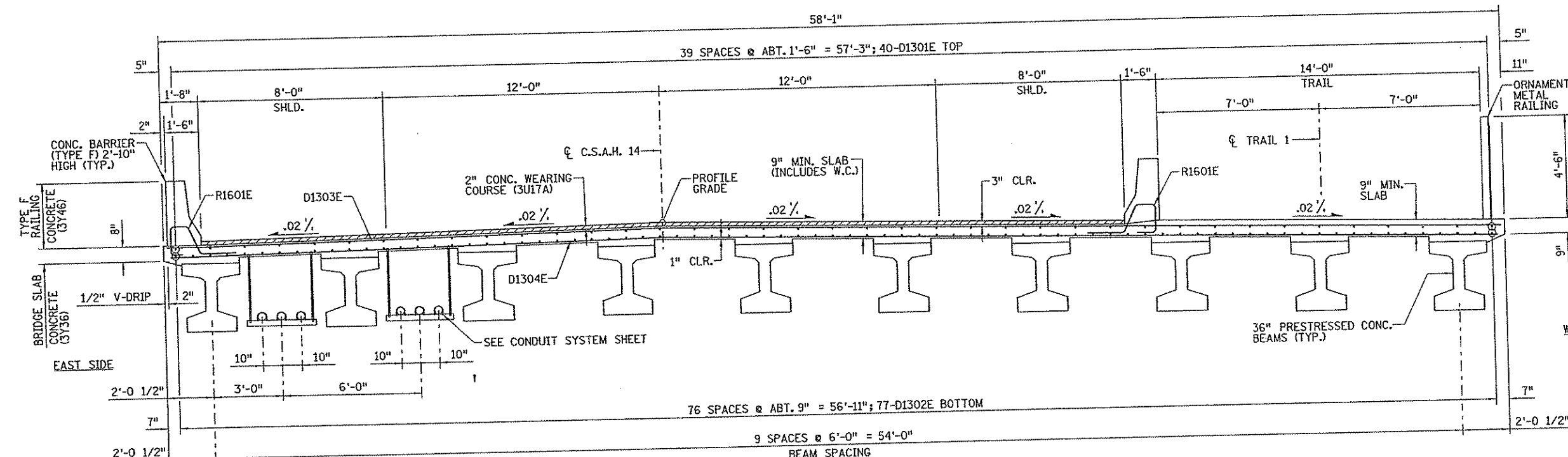
N.E. CORNER DETAIL
S.E. CORNER SIMILAR



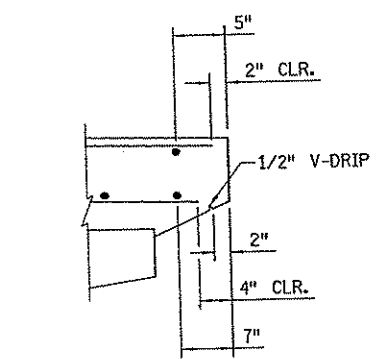
N.W. CORNER DETAIL
S.W. CORNER SIMILAR

NOTES:

- ① 20-R1601E, 20-R1602E, 1-R1603E & 4-R1307E
- ② 21-R1601E, 21-R1602E & 4-R1307E
- ③ 23-R1601E, 23-R1602E, 1-R1604E, 1-R1605E, 1-R2206E, 2-R1307E & 2-R1313E
- ④ 18-R1602E, 1-R1603E, 1-R1604E, 1-R1605E, 1-R2206E, 6-R1309E & 2-R1310E
- ⑤ 25-R1602E, 1-R1603E & 4-R1312E
6. U.N.O. DENOTES UNLESS NOTED OTHERWISE.
7. N.E. DENOTES NORTHEAST
N.W. DENOTES NORTHWEST
S.E. DENOTES SOUTHEAST
S.W. DENOTES SOUTHWEST
- ⑧ 6 - 4" R.S.C. FOR FUTURE USE. STUB OUT 3'-0" PAST END OF WINGWALL AND TO SIDE OF ROADWAY. CAP ENDS.
- ⑨ 25-R1602E & 4-R1312E
- ⑩ 27-R1602E, 1-R1604E, 1-R1605E, 1-R2206E, 2-R1312E & 2-R1314E



TYPICAL SECTION



EDGE OF SLAB DETAIL

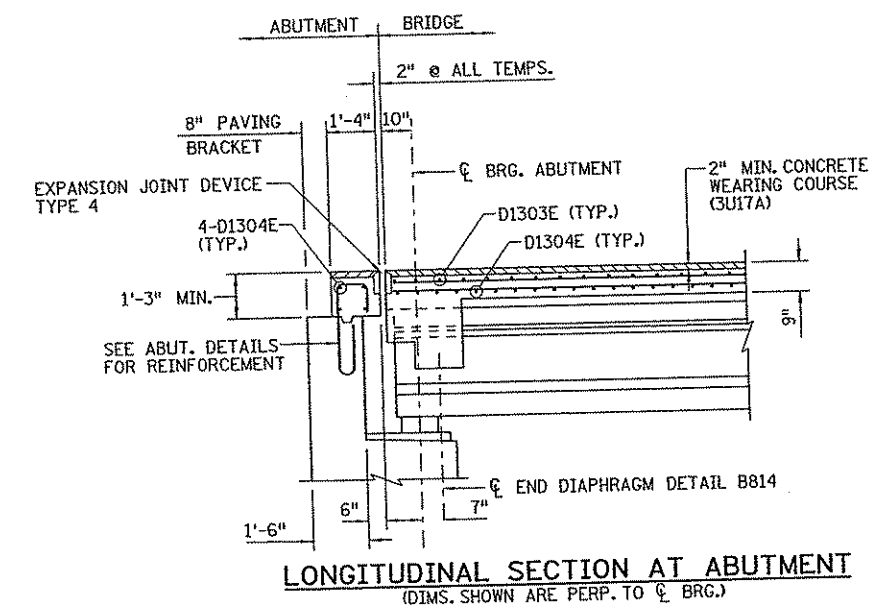
NO DATE BY CKD APPR REVISION 8:47:01 AM 3/12/2007			STATE PROJ. NO. 02-614-24 BRIDGE NO. 02572	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: JEREMY A. WEST Date: 3/13/07 License: 42039	DRAWN BY J. HOFFMAN DESIGNED BY C. BLACK CHECKED BY J. WEST COMM. NO. 0054994	DATE 6/06 6/06 6/06	SRF CONSULTING GROUP, INC.	ANOKA COUNTY C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY BRIDGE DECK DETAILS (SHEET 1 OF 2)	SHEET B18 OF B33
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BILL OF REINFORCEMENT: SUPERSTRUCTURE								
MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION
					A	B	C	
D1301E	80	13	46 - 6	STR	-	-	-	TOP LONG.
D1302E	154	13	46 - 9	STR	-	-	-	BOTTOM LONG.
D1303E	138	13	57 - 9	STR	-	-	-	TOP TRANS.
D1304E	177	13	57 - 5	STR	-	-	-	BOTTOM TRANS.

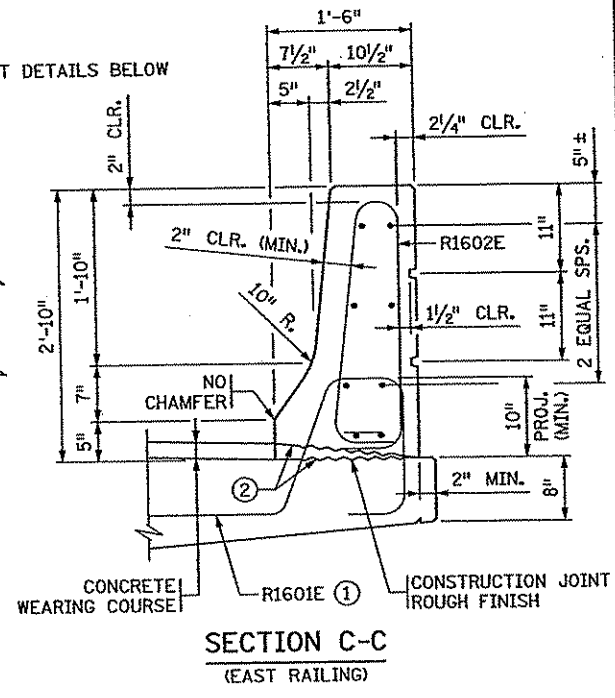
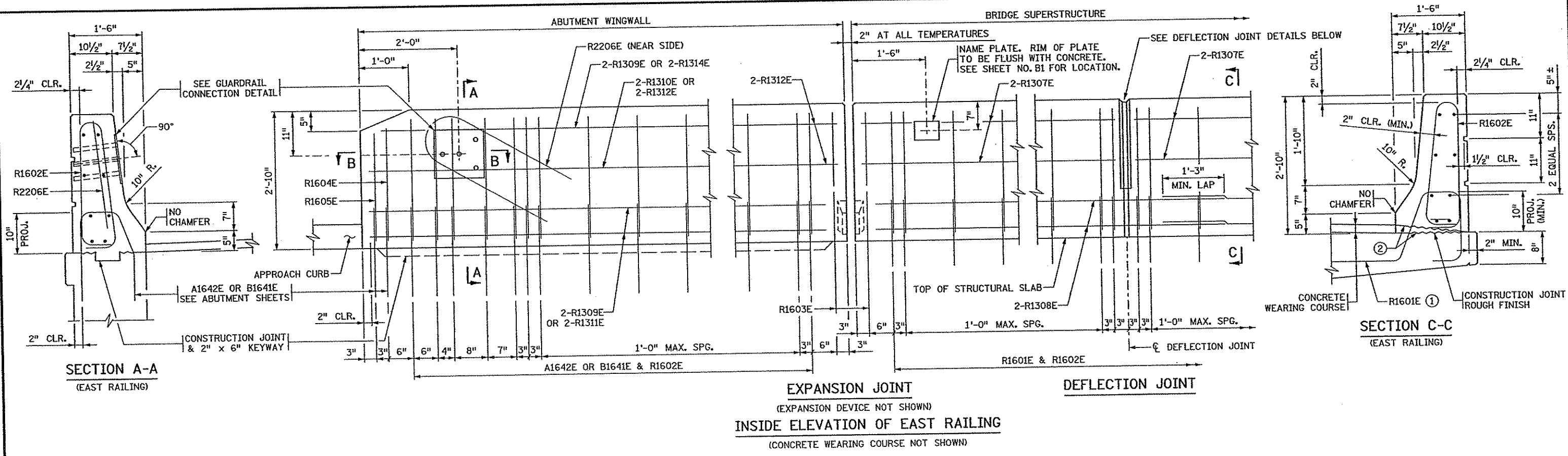
SUMMARY OF QUANTITIES : SUPERSTRUCTURE			
	ITEM	UNIT	QUANTITY
6	STRUCTURAL CONCRETE (3Y43)	CU. YD.	11
5	BRIDGE SLAB CONCRETE (3Y36)	SQ. FT.	5490
4	TYPE F (TL-4) RAILING CONCRETE (3Y46)	LIN. FT.	266
3	REINFORCEMENT BARS (EPOXY COATED)	POUND	25450
	EXPANSION JOINT DEVICES TYPE 4	LIN. FT.	116
	BEARING ASSEMBLY	EACH	20
	ORNAMENTAL METAL RAILING	LIN. FT.	132
10	CONCRETE WEARING COURSE (3U17A)	SQ. FT.	3780
7	PRESTRESSED CONCRETE BEAMS 36M	LIN. FT.	913
	DIAPHRAGMS FOR TYPE 36M PREST. CONCRETE BEAMS	LIN. FT.	108
8	FIXED CURVED PLATE BEARING ASSY., TYPE F-1	EACH	10
8	EXP. CURVED PLATE BEARING ASSY., TYPE E-1	EACH	10
1	B.M. DISK	EACH	1
2	BRIDGE NAMEPLATE	EACH	1
9	JOINT FILLER 1" x 1'-0" x 1'-10" F RAIL DEFL. JT.	EACH	10
7	PRESTRESSED CONCRETE BEAMS, TYPE 36M-91	EACH	10
11	CONDUIT SYSTEM	LUMP SUM	1

SUMMARY OF QUANTITIES NOTES:

- ① COUNTY WILL FURNISH DISK. BEND PRONGS OUTWARD TO ANCHOR DISK IN CONCRETE. BOTTOM OF DISK TOP TO BE PLACED FLUSH WITH CONCRETE. PAYMENT FOR PLACING DISK TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- ② TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- ③ INCLUDES DECK, RAILING AND END DIAPHRAGM REINFORCEMENT.
- ④ TYPE F RAILING CONCRETE MIX NO. (3Y46) VOLUME IS APPROXIMATELY 27 CU. YDS.
- ⑤ BRIDGE SLAB CONCRETE (3Y36) VOLUME IS APPROXIMATELY 150 CU. YDS. USING AN AVERAGE STUOL HEIGHT OF 3 INCHES.
- ⑥ END DIAPHRAGM CONCRETE.
- ⑦ PAYMENT FOR BEAMS INCLUDED IN ITEM "PRESTRESSED CONCRETE BEAMS TYPE 36M" PER LIN. FT.
- ⑧ PAYMENT FOR BEARINGS INCLUDED IN ITEM "BEARING ASSEMBLY" PER EACH.
- ⑨ QUANTITIES LISTED ARE FOR INFORMATIONAL PURPOSES. ANY ADDITIONAL MINOR ITEMS OR SLIGHT CHANGES IN QUANTITIES REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.
- ⑩ CONCRETE WEARING COURSE TYPE (3U17A) VOLUME IS APPROXIMATELY 24 CU. YDS. INCLUDES APPROXIMATELY 1600 SQ. FT. WITH A VOLUME OF 10 CU. YDS. FOR APPROACH PANELS.
- ⑪ SEE SUMMARY ON CONDUIT SHEET.

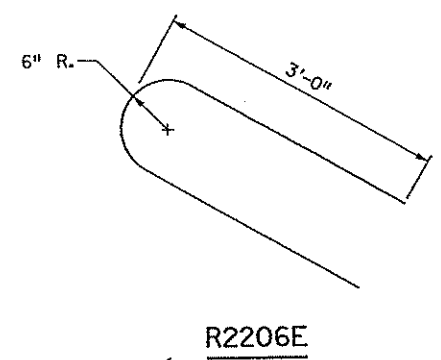
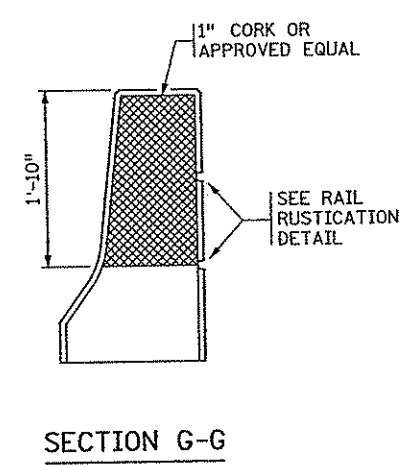
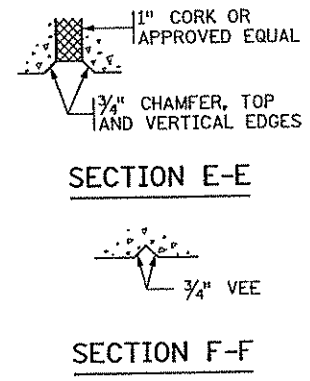
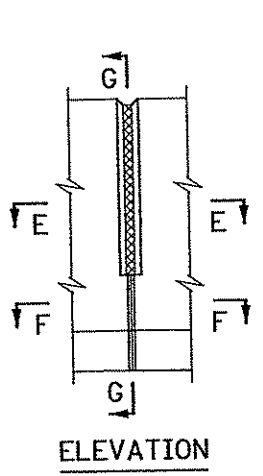
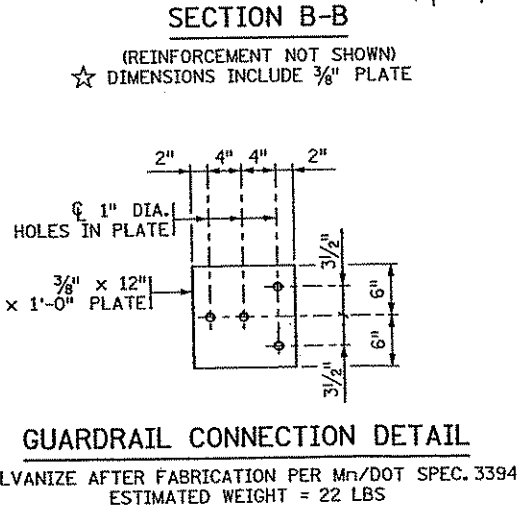
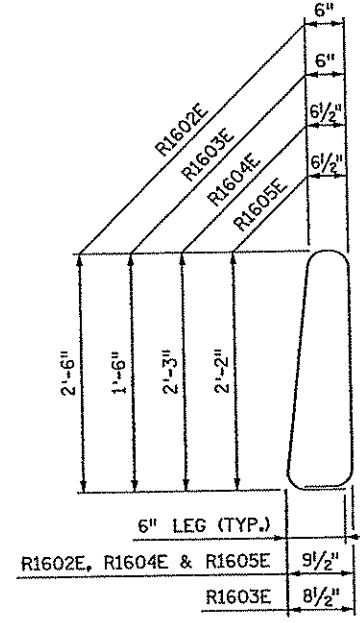
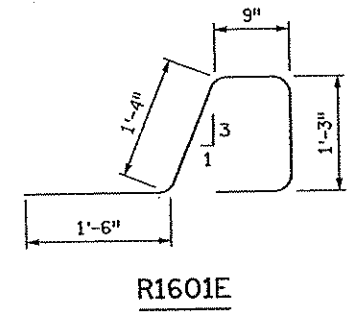
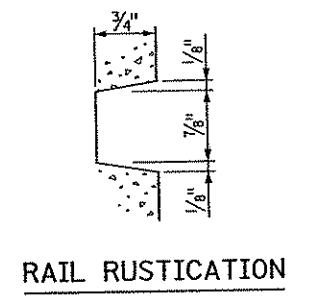
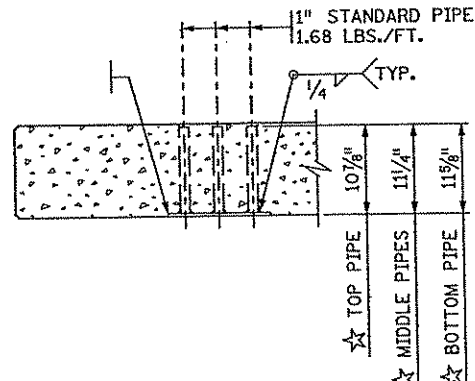


NO DATE BY CKD APPR REVISION 8:47:02 AM 3/12/2007				STATE PROJ. NO. 02-614-24 BRIDGE NO. 02572	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: JEREMY A. WEST Date: 3/15/07 License: 42039	DRAWN BY: J. HOFFMAN DATE: 6/06 DESIGNED BY: C. BLACK DATE: 6/06 CHECKED BY: J. WEST DATE: 6/06 COMM. NO. 0054994	SRF CONSULTING GROUP, INC.	ANOKA COUNTY C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY BRIDGE DECK DETAILS (SHEET 2 OF 2)	SHEET B19 OF B33
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EXPANSION JOINT
(EXPANSION DEVICE NOT SHOWN)
INSIDE ELEVATION OF EAST RAILING
(CONCRETE WEARING COURSE NOT SHOWN)

FOR PARAPET BILL OF REINFORCEMENT SEE SHEET B21



- GENERAL NOTES**
- LENGTH OF "TYPE F RAILING CONCRETE (3Y46)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAIL.
 - CONCRETE RAILING = 477 LBS./FT. (0.117 CU. YDS./FT.)
 - FINISH ALL EDGES OF RAIL WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.
 - MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.
 - SEE DECK DETAILS SHEET FOR JOINT SPACING.
 - GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.
 - GUARDRAIL CONNECTION TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
 - RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.
 - ① PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT.
 - ② SLOPE DECK AT 10% GRADE BELOW CONCRETE RAILING IF DECK IS POURED TO FULL DEPTH. DECK SHALL BE LEVEL BELOW CONCRETE RAILING WHEN WEARING COURSE IS USED.

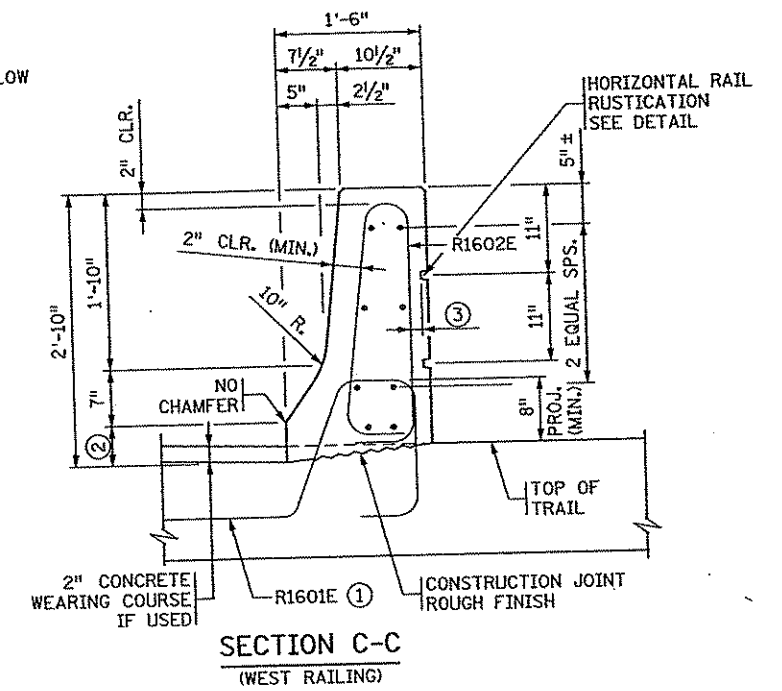
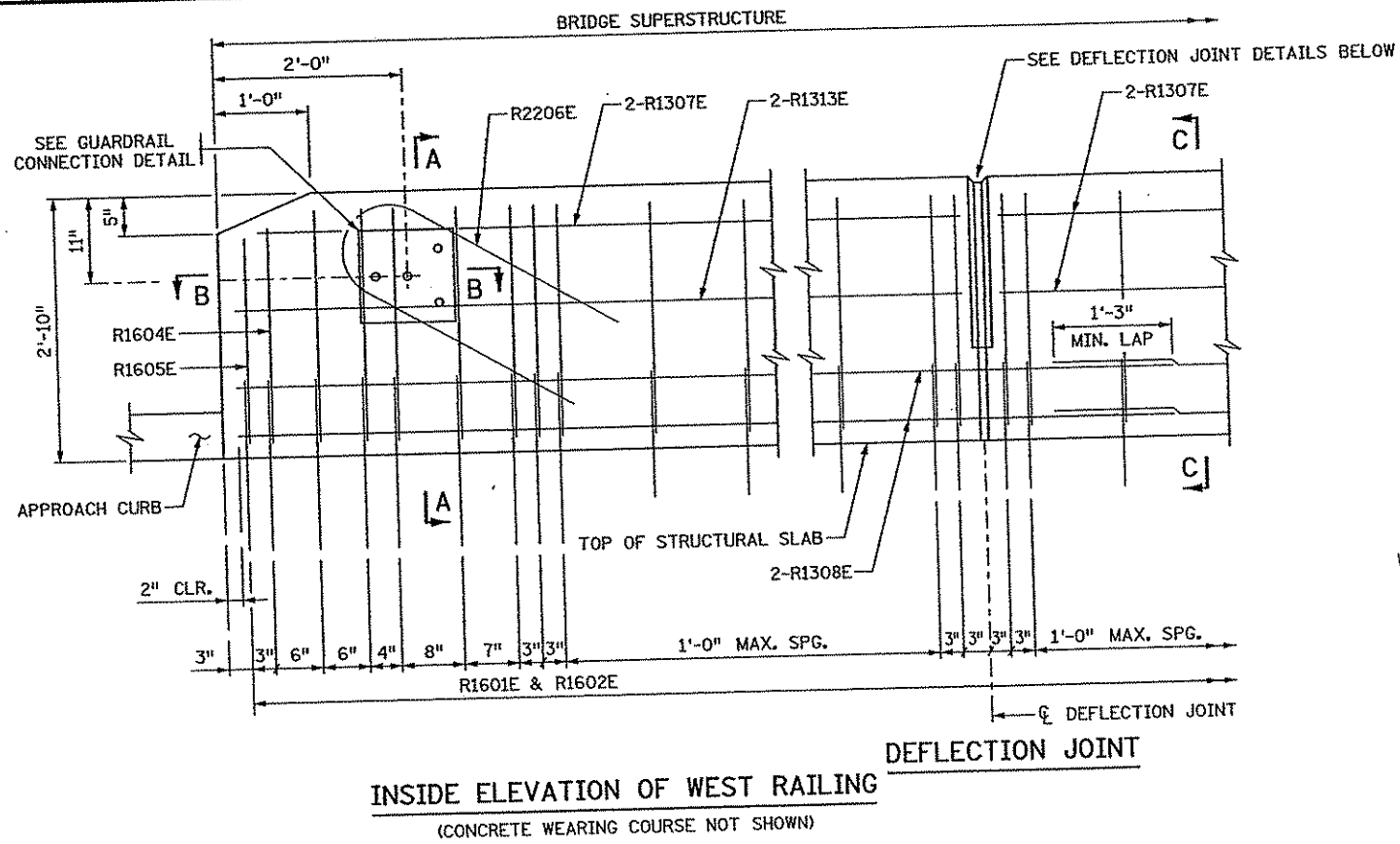
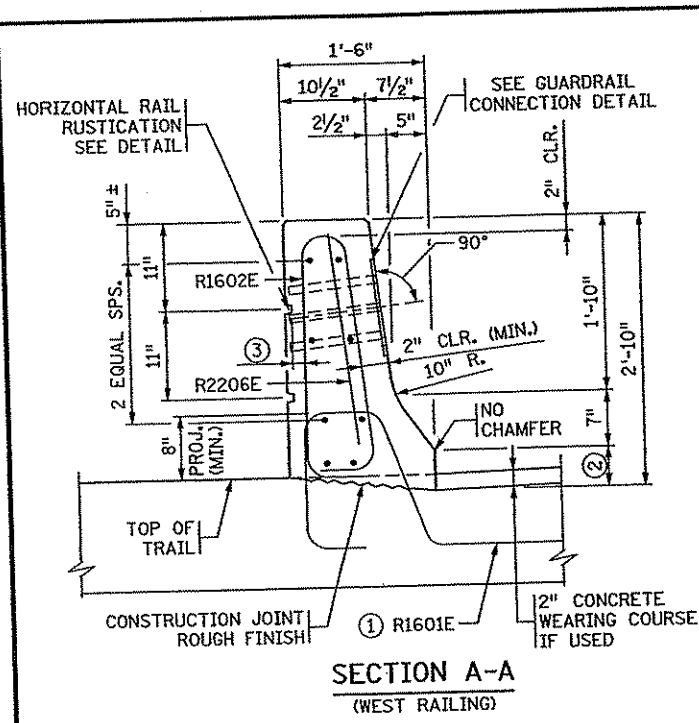
REVISED:
APPROVED: DECEMBER 18, 2003
Daniel A. Bergeson
STATE BRIDGE ENGINEER

DEFLECTION JOINT DETAILS

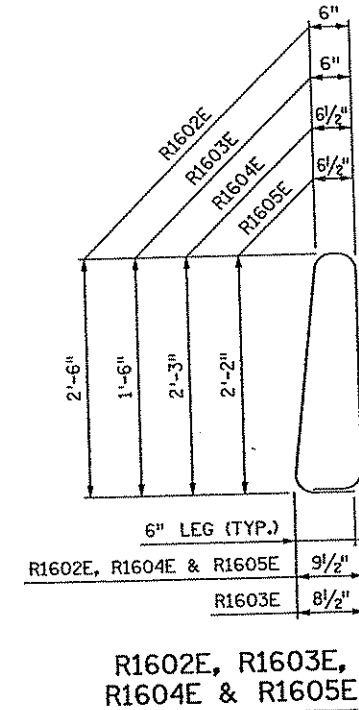
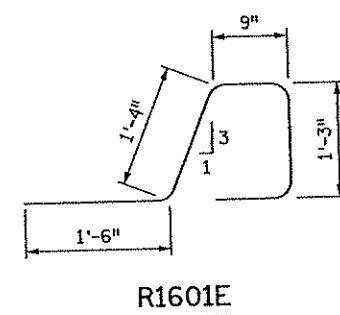
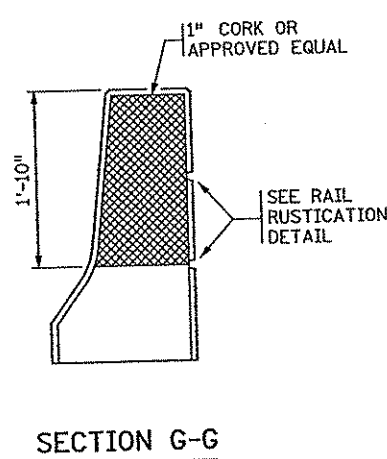
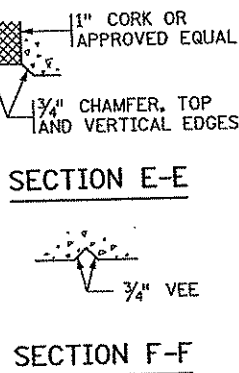
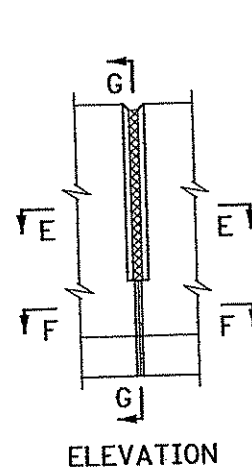
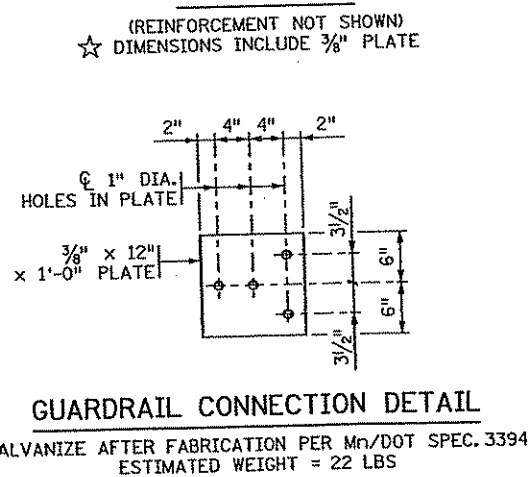
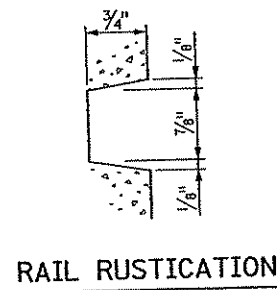
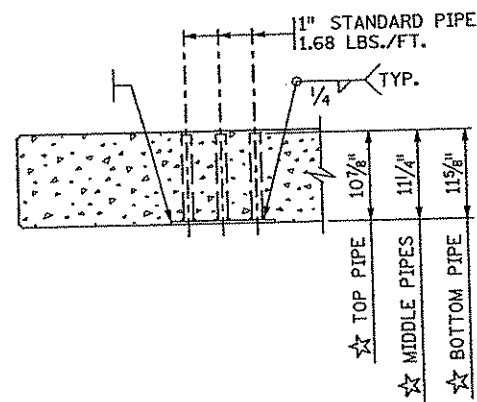
CERTIFIED BY *Jeremy A. West* 3/15/07
LICENSED PROFESSIONAL ENGINEER
NAME: JEREMY A. WEST DATE: 3/15/07
LIC. NO. 42039

CONCRETE RAILING (TYPE F)
WITH INTEGRAL END POST
(WITH CONCRETE WEARING COURSE)

MODIFIED		FIG. 5-397.117	
DES: CB	DR: JEH	APPROVED:	BRIDGE NO. 02572
CHK: JAW	CHK: CB	SHEET NO. B20 OF B33 SHEETS	



BILL OF REINFORCEMENT FOR RAILING				
BAR	NO.	LENGTH	SHAPE	LOCATION
R1601E	212	5'-5"		RAIL DOWEL
R1602E	307	6'-7"		RAIL VERTICAL
R1603E	4	4'-7"		RAIL VERTICAL
R1604E	4	6'-1"		RAIL VERTICAL
R1605E	4	5'-11"		RAIL VERTICAL
R2206E	4	6'-6"		RAIL VERTICAL
R1307E	36	17'-10"		RAIL LONGITUDINAL
R1308E	16	46'-3"		RAIL LONGITUDINAL
R1309E	6	13'-6"		RAIL LONGITUDINAL
R1310E	2	13'-8"		RAIL LONGITUDINAL
R1311E	8	34'-6"		RAIL LONGITUDINAL
R1312E	10	22'-4"		RAIL LONGITUDINAL
R1313E	4	18'-0"		RAIL LONGITUDINAL
R1314E	2	22'-0"		RAIL LONGITUDINAL



GENERAL NOTES

- LENGTH OF "TYPE F RAILING CONCRETE (3Y46)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAIL.
- CONCRETE RAILING = 477 LBS./FT. (0.117 CU. YDS./FT.)
- FINISH ALL EDGES OF RAIL WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.
- MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.
- SEE DECK DETAILS FOR JOINT SPACING.
- GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.
- GUARDRAIL CONNECTION TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.
- ① PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT.
- ② 3" MEASURED FROM TOP OF FINISHED ROADWAY SURFACE.
- ③ 2 1/4" CLEAR

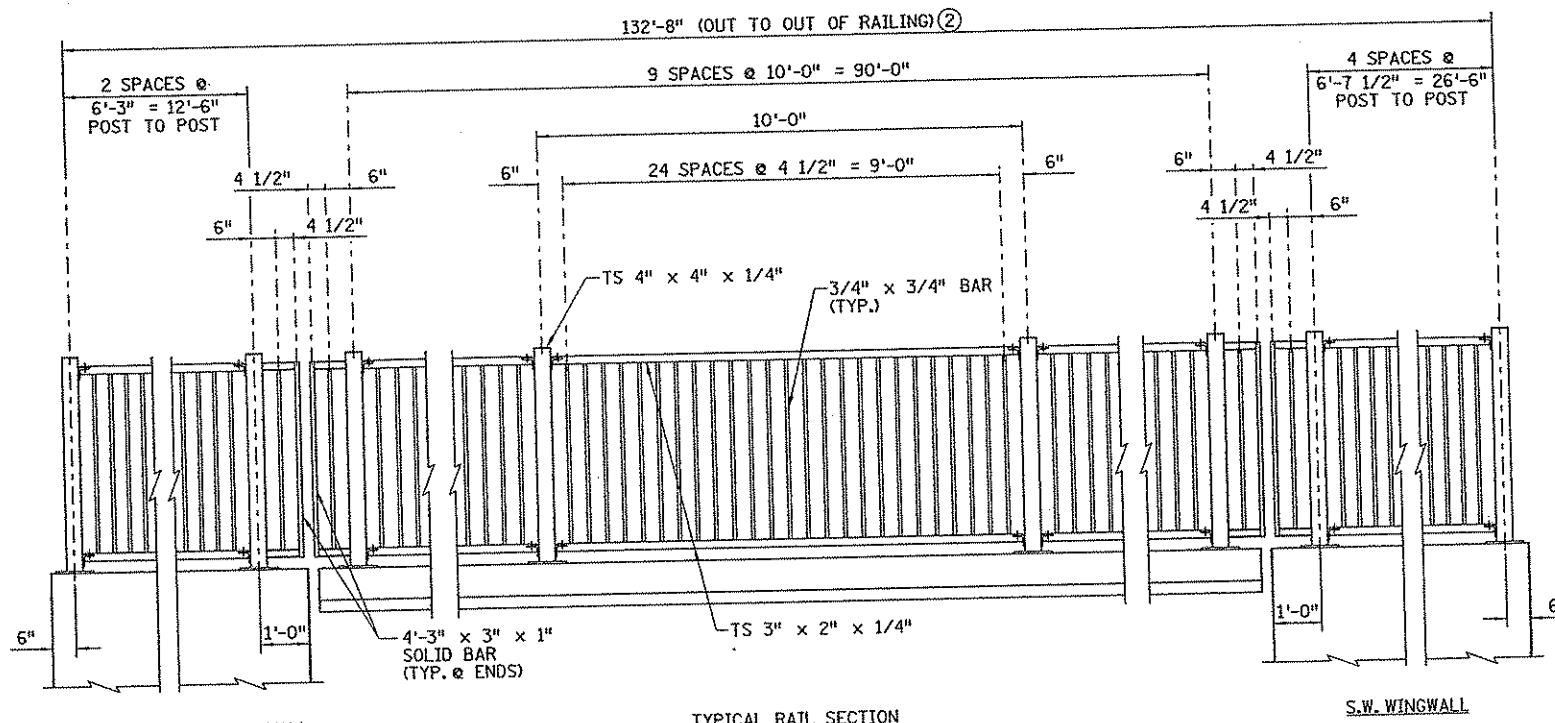
REVISED:
APPROVED: DECEMBER 18, 2003
STATE BRIDGE ENGINEER

DEFLECTION JOINT DETAILS

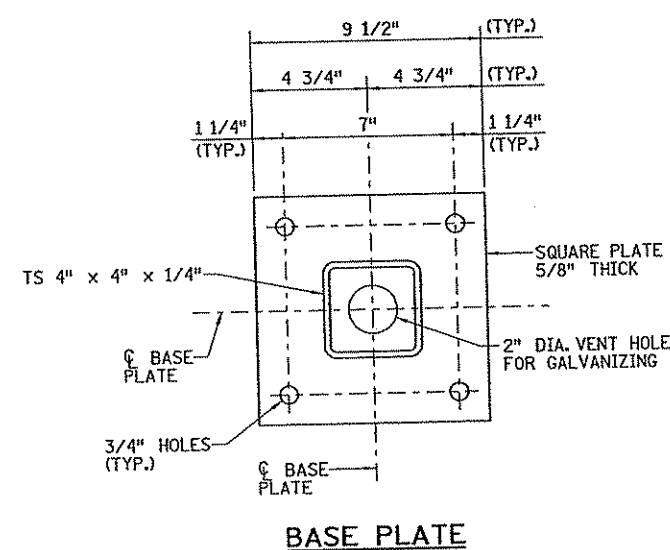
CERTIFIED BY *Jeremy A. West* 3/15/07
LICENSED PROFESSIONAL ENGINEER
NAME: JEREMY A. WEST LIC. NO. 42039

CONCRETE RAILING (TYPE F)
WITH INTEGRAL END POST
(WITH CONCRETE WEARING COURSE)

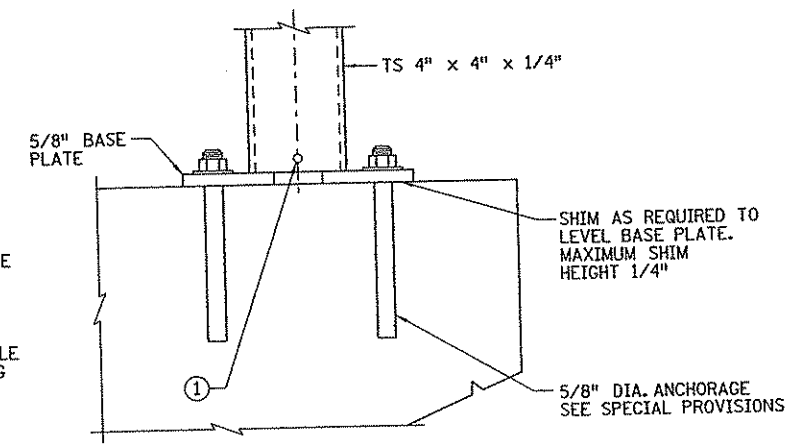
MODIFIED		FIG. 5-397.117	
DES: CB	DR: JEH	APPROVED:	BRIDGE NO. 02572
CHK: JAW	CHK: CB	SHEET NO. B21 OF B33 SHEETS	



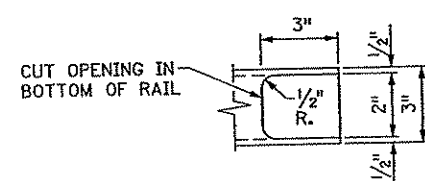
TYPICAL RAIL SECTION
RAILING ELEVATION



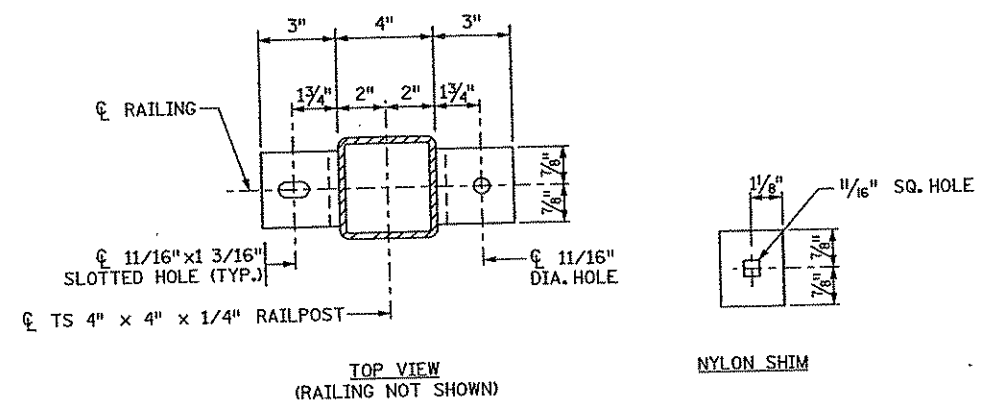
BASE PLATE



ANCHOR DETAIL



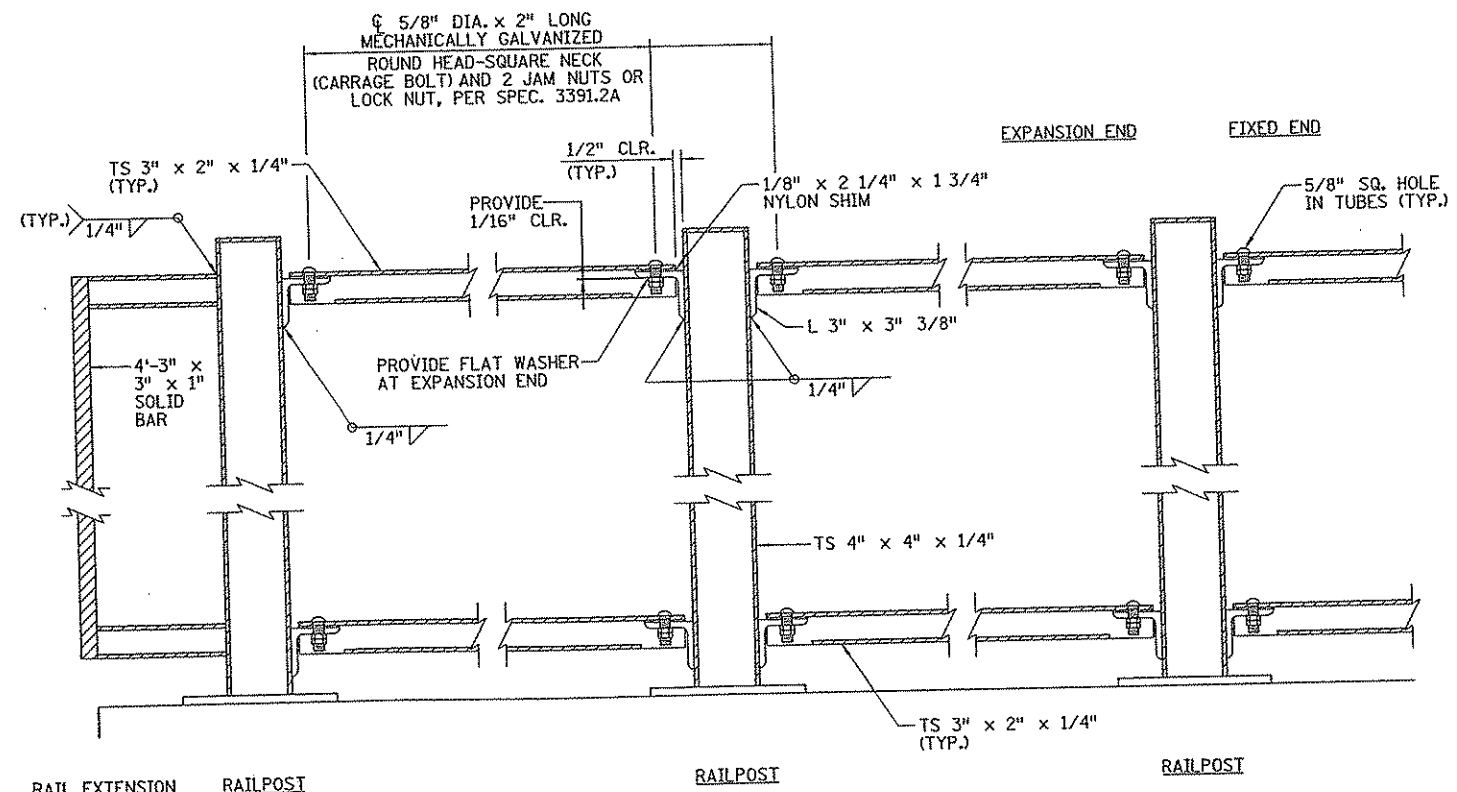
BOTTOM VIEW RAIL NOTCH



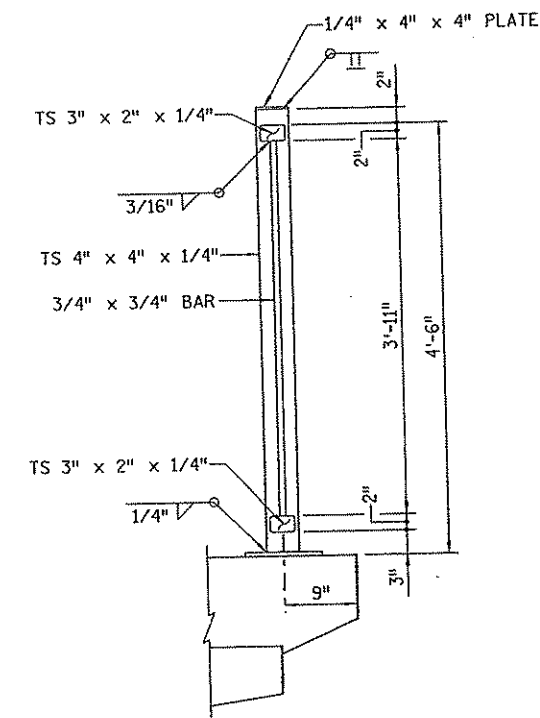
TOP VIEW
(RAILING NOT SHOWN)

NYLON SHIM

RAILPOST CONNECTION



SECTION ON CENTERLINE OF RAIL



RAILING SECTION

GENERAL NOTES

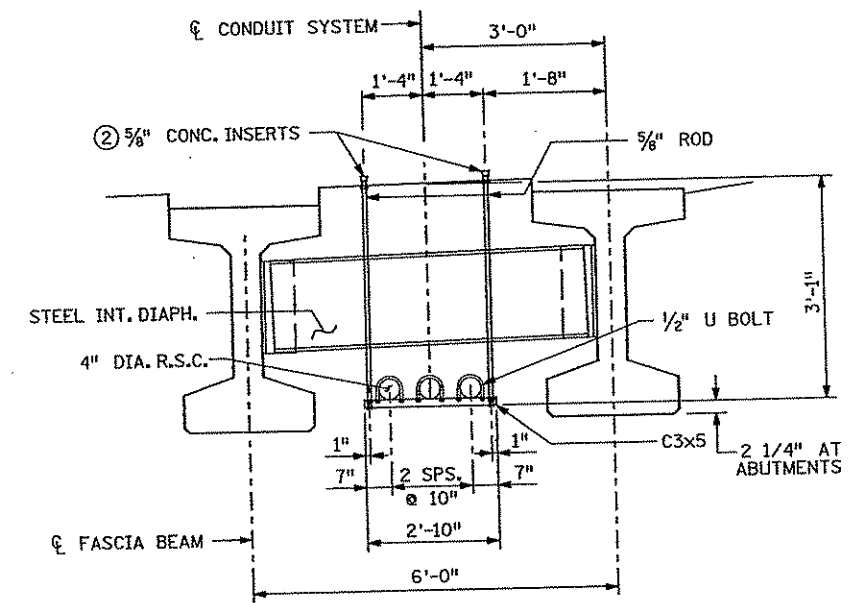
- LENGTH OF "ORNAMENTAL METAL RAILING" FOR PAYMENT SHALL BE MEASURED BETWEEN THE CENTERS OF THE END RAILPOSTS.
- ALL STRUCTURAL STEEL TUBING IN THE RAIL SHALL BE A500, GRADE B PER Mn/DOT SPEC. 3362.
- MATERIAL FOR CLOSURE PLATES AND BASE PLATES SHALL CONFORM TO Mn/DOT SPEC. 3306.
- FOR RAIL ANCHORAGE REQUIREMENTS SEE SPECIAL PROVISIONS.
- RAIL POSTS AND PICKETS SHALL BE NORMAL TO GRADE. HORIZONTAL RAILS SHALL BE CAMBERED/CURVED WHERE APPLICABLE AND PARALLEL TO THE EDGE OF SIDEWALK PROFILE.
- GALVANIZE BOLTS, NUTS, AND WASHERS PER Mn/DOT SPEC. 3392.
- GALVANIZE ALL OTHER STRUCTURAL STEEL PER Mn/DOT SPEC. 3394 AFTER FABRICATION.
- RAILING EXPANSION JOINTS SHALL BE PLACED IN BOTH RAILS AND IN EACH PANEL.
- THE RAILING, BASE PLATES, AND PROTRUDING PORTIONS OF BOLTS, NUTS AND WASHERS SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
- RAILING SHALL BE GROUNDED WITH 5/8" DIA. COPPER ROD AS PER Mn/DOT SPEC. 2557.
- ① VENT HOLES SHALL BE DRILLED IN THE RAIL POST BASE AND THE RAIL TUBES AS NECESSARY TO FACILITATE GALVANIZING.
- ② MEASURED TO CENTER OF END POST.

NO. DATE BY CKD APPR				REVISION	8:47:05 AM 3/12/2007	STATE PROJ. NO. 02-614-24	BRIDGE NO. 02572	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: JEREMY A. WEST Date: 3/5/07 License: 42039	DRAWN BY J. HOFFMAN DESIGNED BY C. BLACK CHECKED BY J. WEST COMM. NO. 0054994	DATE 6/06 6/06 6/06		ANOKA COUNTY	SHEET
												C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY	B22
												RAILING DETAILS	OF
													B33

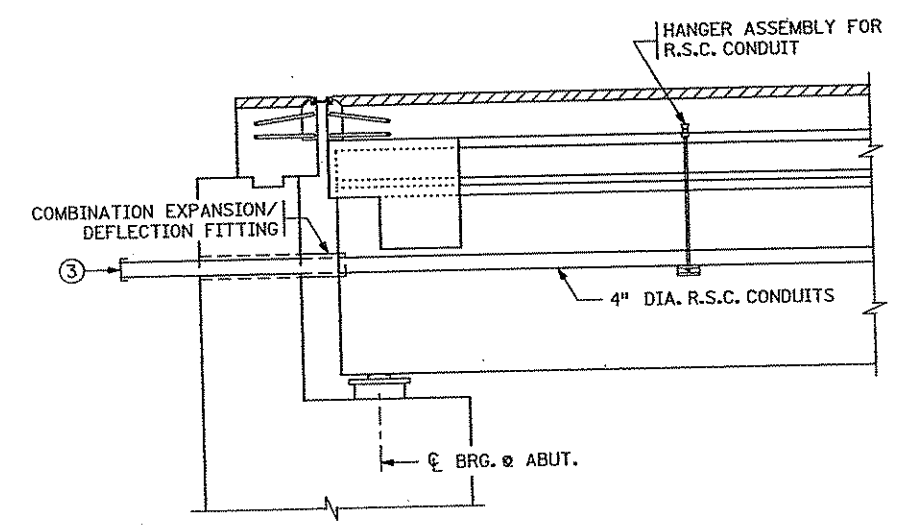
SUMMARY OF QUANTITIES FOR CONDUIT SYSTEM

HANGER ASSEMBLY	18 UNITS
CONDUIT CAP	12 UNITS
COMBINATION EXPANSION/DEFLECTION FITTING	12 UNITS
4" RIGID STEEL CONDUIT	1200 LIN. FT.
① 6" PIPE SLEEVE	12 UNITS

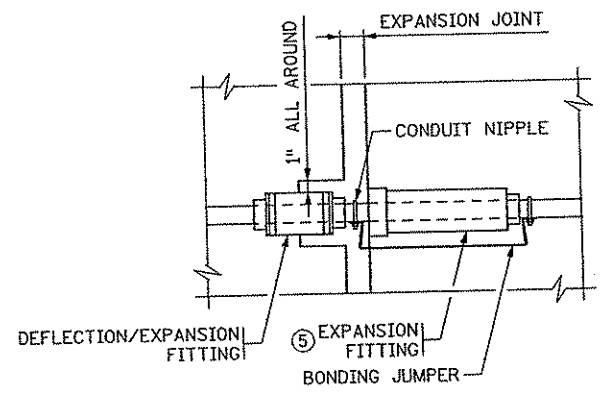
ALL MATERIAL LISTED ABOVE IS INCLUDED IN PRICE BID FOR "CONDUIT SYSTEM".



TRANSVERSE SECTION
SEE TYPICAL DECK SECTION FOR LOCATIONS



LONGITUDINAL SECTION



COMBINATION DEFLECTION/EXPANSION FITTING

GENERAL NOTES

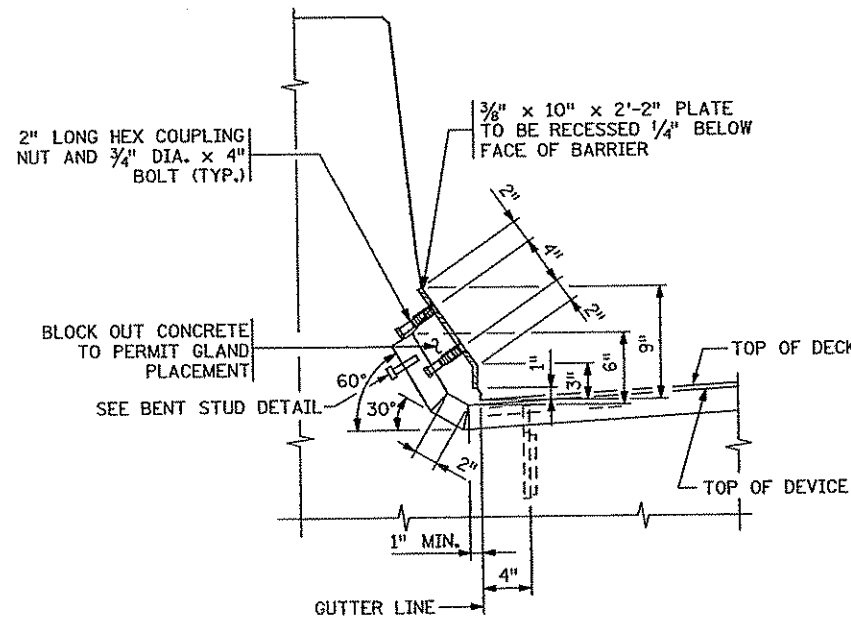
- RODS, EYE BOLTS AND PIPE CLAMPS SHALL COMPLY WITH Mn/DOT SPEC. 3313, TYPE I.
- TURNBUCKLES AND EYE BOLTS SHALL COMPLY WITH A.S.T.M. A235 CLASS A MINIMUM REQUIREMENTS.
- FLAT BARS AND ANCHORAGES SHALL COMPLY WITH Mn/DOT SPEC. 3306.
- CONCRETE INSERTS SHALL BE APPROVED TYPE MALLEABLE IRON MATERIAL AS PER Mn/DOT SPEC. 3324, GRADE 35018. TAP AFTER GALVANIZING.
- GALVANIZE BOLTS, NUTS, WASHERS, TURNBUCKLES, RODS, EYE BOLTS, AND INSERTS AS PER Mn/DOT SPEC. 3392. GALVANIZE OTHER MATERIAL AS PER Mn/DOT SPEC. 3394 AFTER FABRICATION.
- PIPE SLEEVES SHALL COMPLY WITH Mn/DOT SPEC. 3362.
- ① SEE ABUTMENT SHEETS FOR LOCATION AND DETAILS.
- ② SPACE INSERTS AT 10'-0" MAXIMUM CENTERS.
- ③ CAP ENDS.

REVISION: 03-02-2005
APPROVED: SEPTEMBER 26, 2003
David A. West
STATE BRIDGE ENGINEER

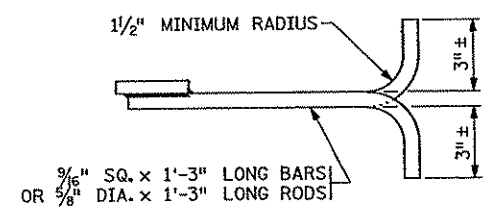
CERTIFIED BY *Jeremy A. West* 3/15/07
LICENSED PROFESSIONAL ENGINEER
NAME: JEREMY A. WEST LIC. NO. 42039

CONDUIT SYSTEM

DES: CEB	DR: MM	APPROVED:	BRIDGE NO. 02572
CHK: JAW	CHK: JAW		
MODIFIED			FIG. 5-397.402
SHEET NO. B23 OF B33 SHEETS			

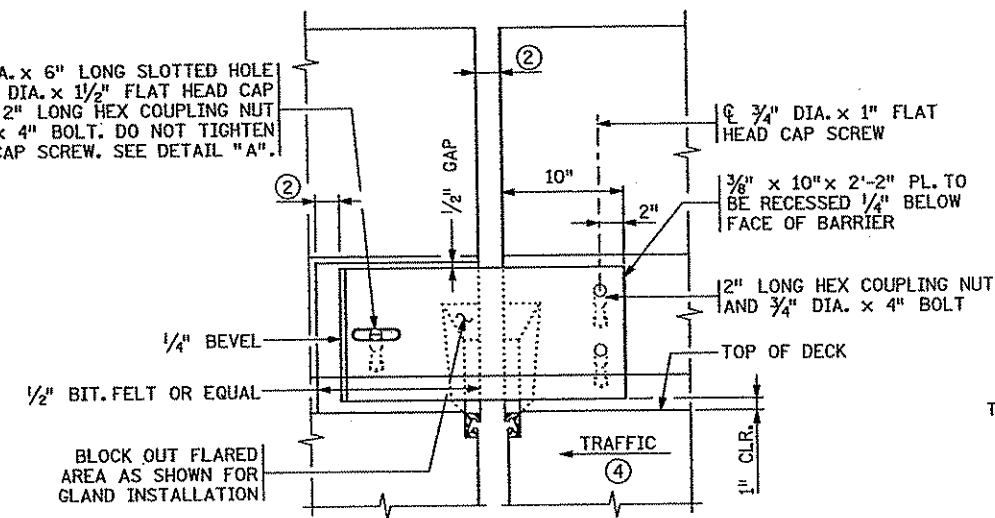


SECTION THROUGH RAILING
TYPE F RAILING

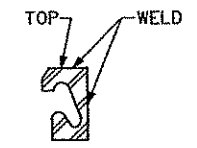


BAR-ROD DETAIL

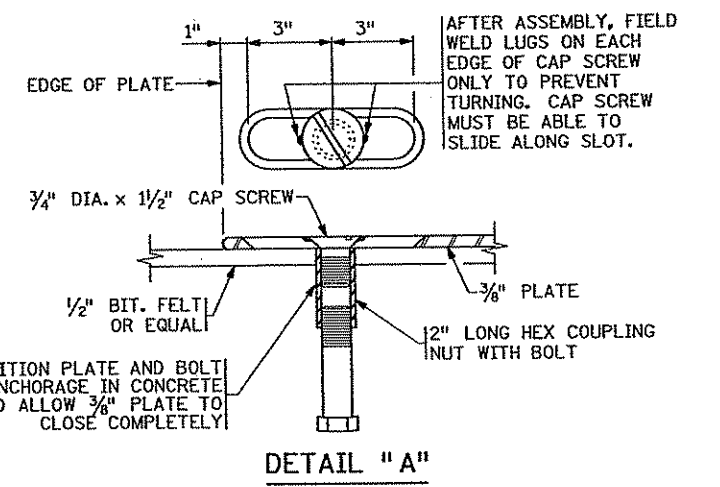
1" DIA. x 6" LONG SLOTTED HOLE FOR 3/4" DIA. x 1/2" FLAT HEAD CAP SCREW WITH 2" LONG HEX COUPLING NUT AND 3/4" DIA. x 4" BOLT. DO NOT TIGHTEN DOWN CAP SCREW. SEE DETAIL "A".



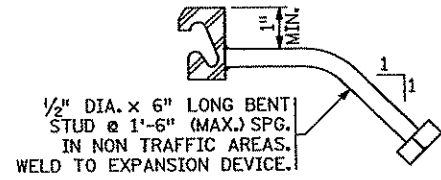
RAILING ELEVATION



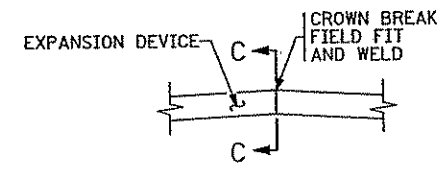
SECTION C-C



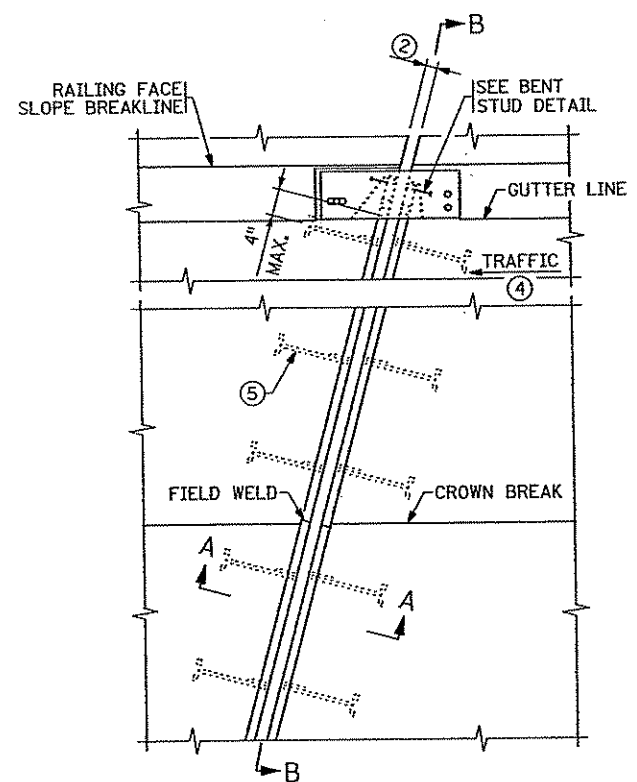
DETAIL "A"



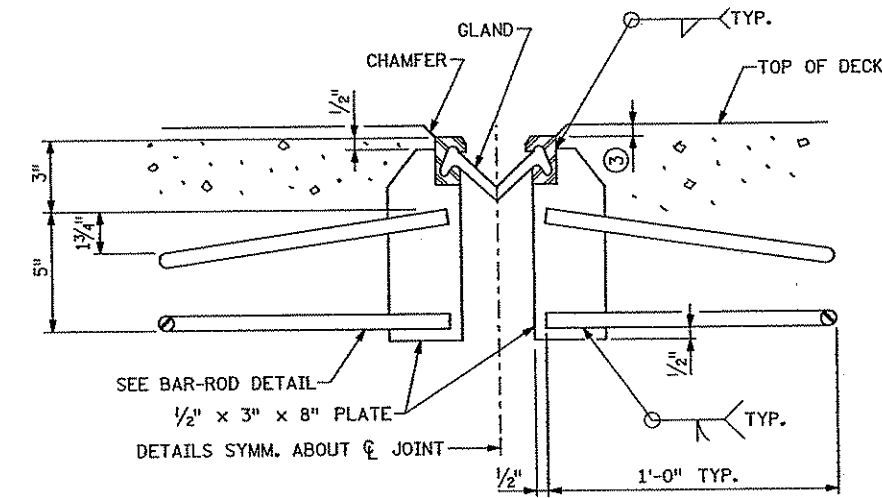
BENT STUD DETAIL



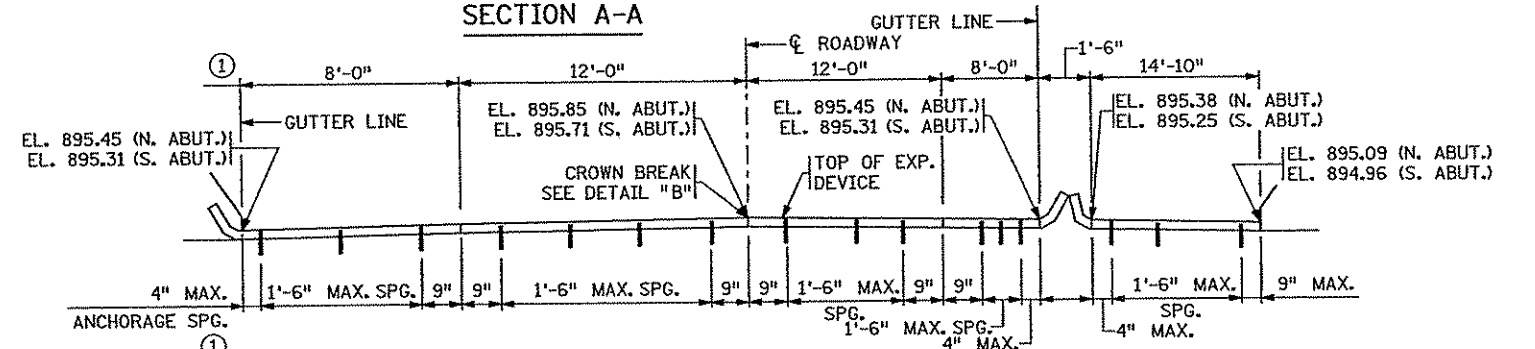
DETAIL "B"



PLAN VIEW @ EXPANSION DEVICE
WITH STRAIGHT DEVICE



SECTION A-A



SECTION B-B ~ ALONG Q JOINT

- GENERAL NOTES**
- GALVANIZE STRUCTURAL STEEL AFTER FABRICATION AS PER Mn/DOT SPEC. 3394. GALVANIZE FASTENERS AS PER Mn/DOT SPEC. 3392.
 - JOINTS IN 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 Mn/DOT SPEC. 2471.3L.
 - STRUCTURAL STEEL SHALL COMPLY WITH Mn/DOT SPEC. 3306 OR Mn/DOT SPEC. 3309.
 - EXPANSION DEVICE SHALL BE STRAIGHTENED TO A TOLERANCE OF 1/8" IN 10 FT.
 - CAP SCREWS SHALL BE COUNTERSUNK 1/16" BELOW TOP OF PLATE.
 - LENGTH OF PAYMENT FOR DEVICE IS FROM OUT TO OUT OF EXTRUSION ALONG CENTERLINE OF JOINT.
- DIMENSIONS ARE ALONG CENTERLINE OF JOINT.
 - 2" AT ALL TEMPS
 - 1/8" (1/4" MAX.)
 - SEE SHEET NO. B1 FOR DIRECTION OF TRAFFIC.
 - PLACE BAR-ROD NORMAL TO JOINT.

REVISION:
APPROVED: SEPTEMBER 26, 2003
Daniel A. Morrison
STATE BRIDGE ENGINEER

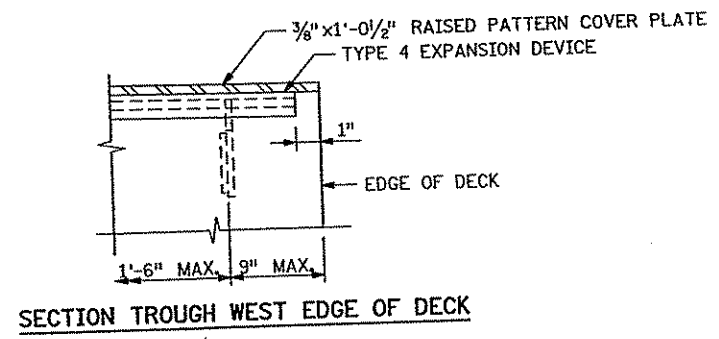
CERTIFIED BY: *Jeremy A. West* 3/15/07
LICENSED PROFESSIONAL ENGINEER
NAME: JEREMY A. WEST
DATE: 3/15/07
LIC. NO. 42039

WATERPROOF
EXPANSION DEVICE
(WITH TYPE F BARRIER)

DES: CEB DR: MM APPROVED:
CHK: PLR CHK: JAW
SHEET NO. B24 OF B33 SHEETS

MODIFIED FIG. 5-397.627
BRIDGE NO. 02572

ELEVATIONS SHOWN ARE 1/8" BELOW TOP OF SLAB @ Q JOINT ALONG ROADWAY
ELEVATIONS SHOWN ARE 1/2" BELOW TOP OF SLAB @ Q JOINT ALONG TRAIL



GENERAL NOTES
 GALVANIZE STRUCTURAL STEEL AFTER FABRICATION AS PER Mn/DOT SPEC. 3394. GALVANIZE FASTENERS AS PER Mn/DOT SPEC. 3392.

JOINTS IN 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 Mn/DOT SPEC. 2471.3L.

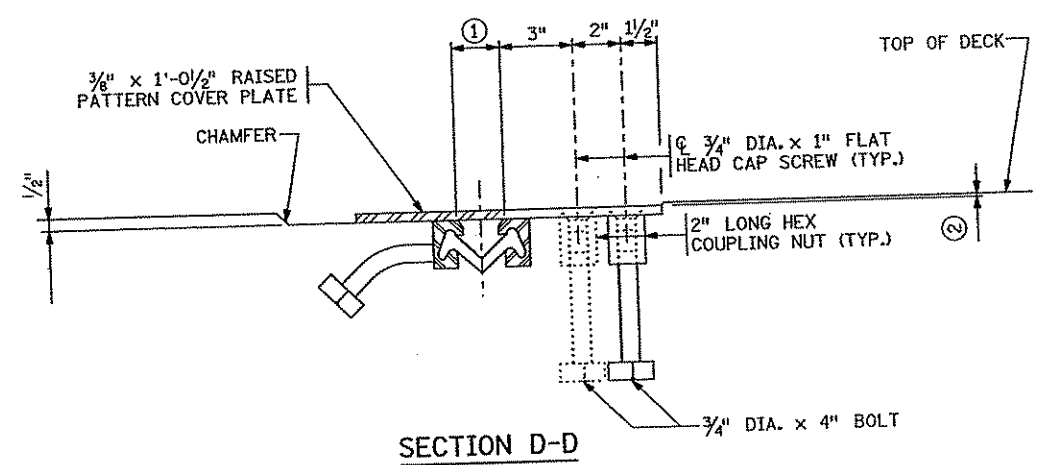
STRUCTURAL STEEL SHALL COMPLY WITH Mn/DOT SPEC. 3306 OR Mn/DOT SPEC. 3309.

EXPANSION DEVICE SHALL BE STRAIGHTENED TO A TOLERANCE OF 1/8 inch IN 10 FT.

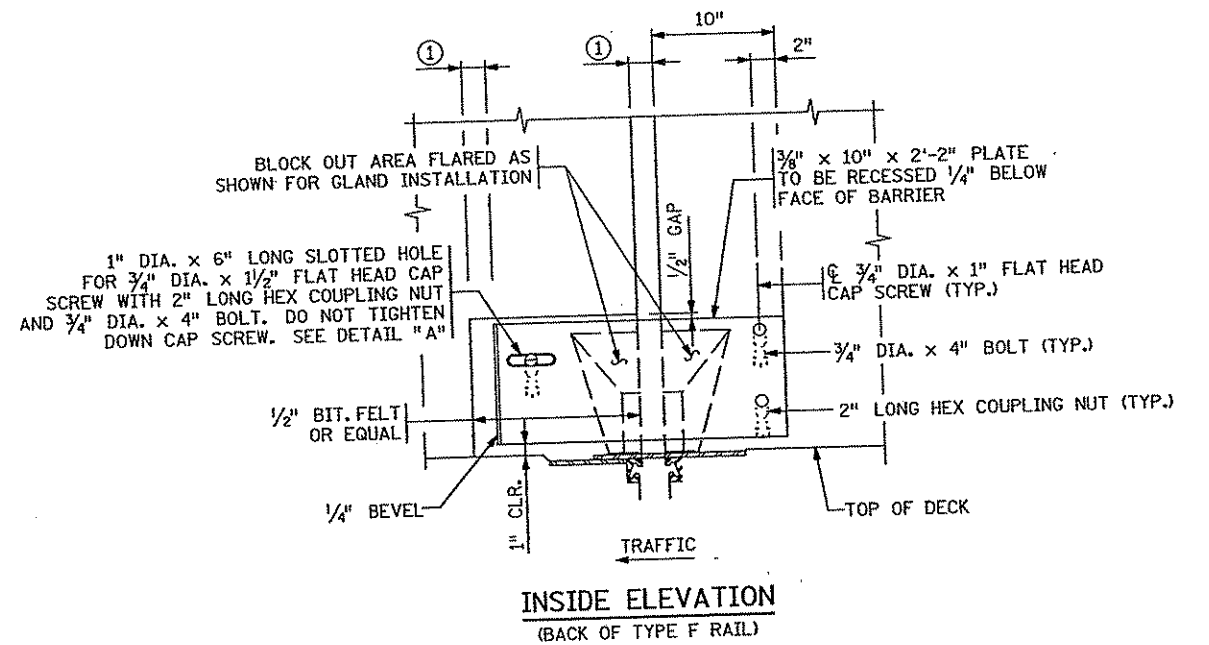
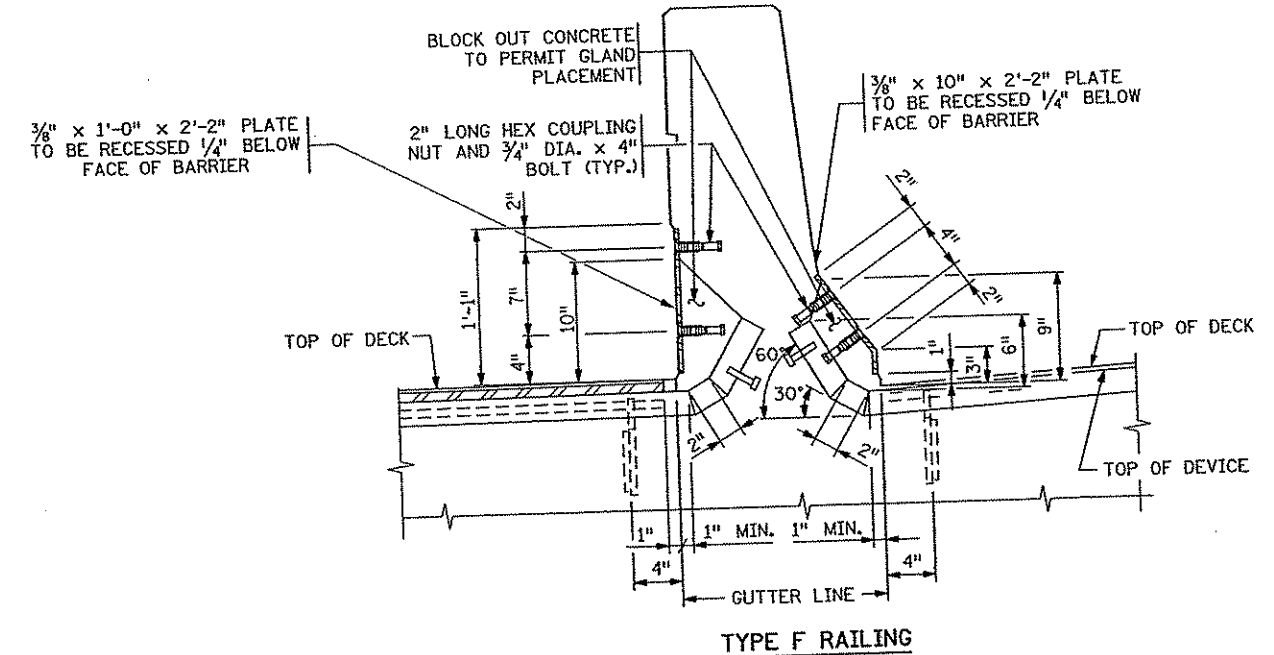
CAP SCREWS SHALL BE COUNTERSUNK 1/16 inch BELOW TOP OF PLATE.

LENGTH OF PAYMENT FOR DEVICE IS FROM OUT TO OUT OF EXTRUSION ALONG CENTERLINE OF JOINT.

- ① 2" AT ALL TEMPS
- ② 1/8" (1/4" MAX.)



NOTE:
 TRANSVERSE DECK REINFORCEMENT MAY BE SHIFTED THE MINIMUM DISTANCE REQUIRED FOR EXPANSION DEVICE PLACEMENT

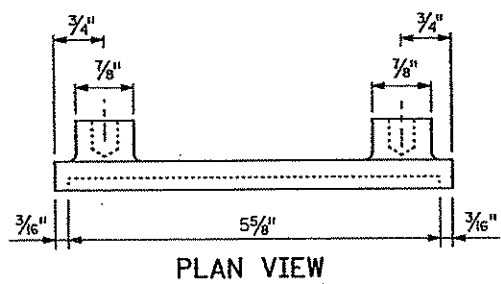


REVISIONS:
 APPROVED: SEPTEMBER 26, 2003
 State Bridge Engineer

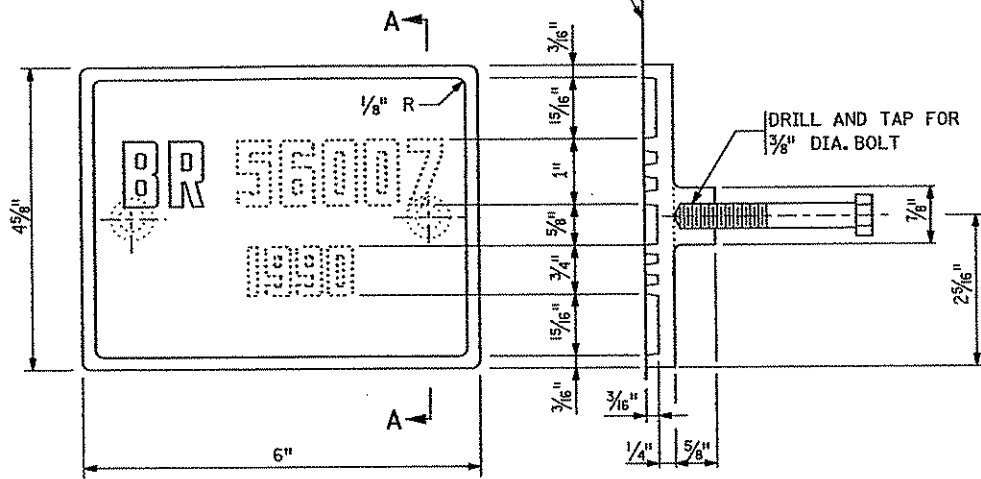
CERTIFIED BY *Jeremy A. West* 3/15/07
 LICENSED PROFESSIONAL ENGINEER DATE
 NAME: JEREMY A. WEST LIC. NO. 42039

WATERPROOF EXPANSION DEVICE
 (WITH RAISED MEDIAN OR SIDEWALK)

MODIFIED		FIG. 5-397.630	
DES: CEB	DR: MM	APPROVED:	BRIDGE NO. 02572
CHK: JAW	CHK: JAW	SHEET NO. B25 OF B33 SHEETS	



PLAN VIEW



ELEVATION

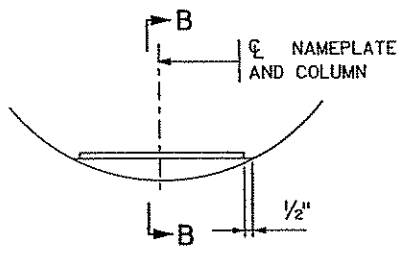
SECTION A-A

SET NAMEPLATE FLUSH WITH SURFACE OF CONCRETE EXCEPT AT ROUND COLUMNS FOR PIERS.

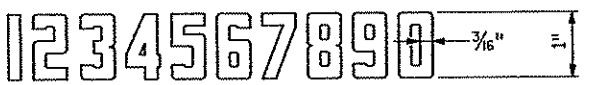
DRILL AND TAP FOR 3/8" DIA. BOLT

THE DASHED NUMBERS SHOWN ABOVE ARE FOR ILLUSTRATION. DATA TO BE SHOWN ON NAMEPLATE IS AS FOLLOWS:

BRIDGE 02572
YEAR 2007



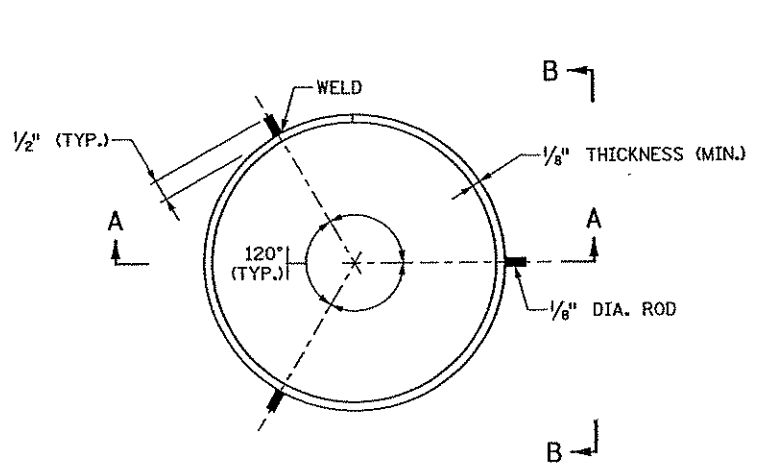
NAMEPLATE PLACEMENT
(ROUND CONCRETE PIER COLUMNS)



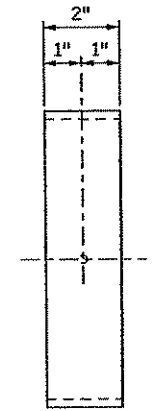
NUMBERS FOR NAMEPLATE

NOTES:

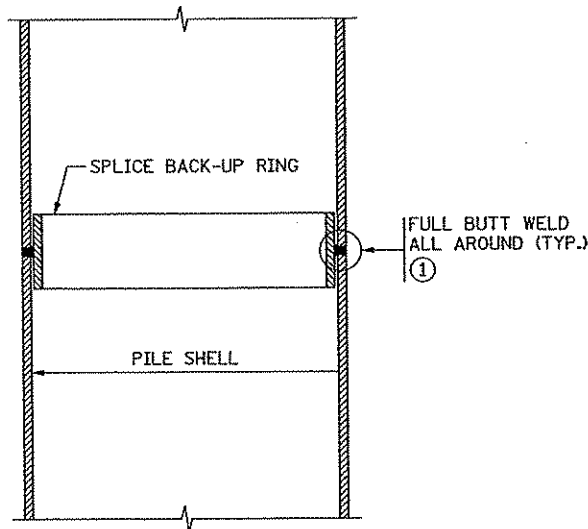
- NO SHOP DRAWING REQUIRED.
- MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3327.
- LETTERS AND NUMBERS SHALL CONFORM TO THOSE SHOWN.
- DRAFT ON LETTERS AND NUMBERS SHALL NOT BE MORE THAN 3" IN 12".
- HORIZONTAL SPACING OF LETTERS AND NUMBERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.
- TOP SURFACE OF LETTERS, NUMBERS AND FRAMES SHALL BE BURNISHED.
- FURNISH 2 STEEL BOLTS 3/8" DIA. 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.



PLAN VIEW SPLICE
PILE NOT SHOWN



SECTION B-B
PILE NOT SHOWN



SECTION A-A

NOTES:

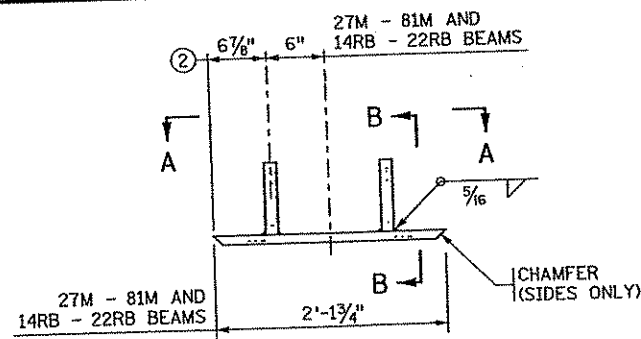
- APPROVED COMMERCIAL PILE SPLICE BACK-UP RING MAY BE USED IN LIEU OF THE TYPE DETAILED. BACK-UP RING SHALL HAVE A TIGHT FIT.
- WELDING ELECTRODES SHALL BE CELLULOSIC TYPE ELECTRODES E-6010 OR E-6011.
- ELECTRODES WHICH HAVE BECOME WET, SOILED OR DAMAGED SHALL NOT BE USED.
- WELDING SHALL NOT BE DONE 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.
- ① FOR PILE SHELL THICKNESSES GREATER THAN 1/2", USE A B-U4d WELD CONFIGURATION.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Morgan</i> STATE BRIDGE ENGINEER	BRIDGE NAMEPLATE (FOR NEW BRIDGES)		B101

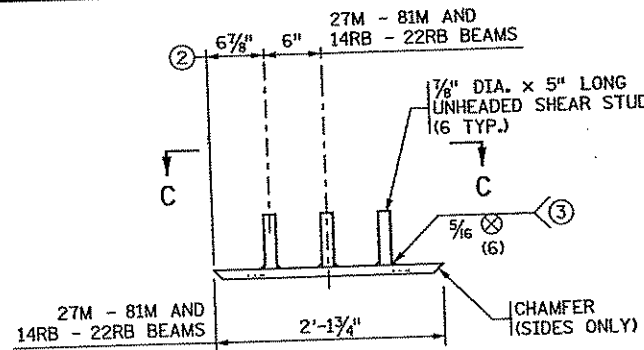
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Morgan</i> STATE BRIDGE ENGINEER	PILE SPLICE (CAST-IN-PLACE CONCRETE PILES)		B201

CERTIFIED BY <i>Jeremy A. West</i> 3/15/07 LICENSED PROFESSIONAL ENGINEER DATE	TITLE: DETAILS	DES: JAW DR: JEH CHK: PLR CHK: JAW	APPROVED:	Bridge No. 02572
NAME: JEREMY A. WEST LIC. NO. 42039		Sheet No. B26 of B33 Sheets		

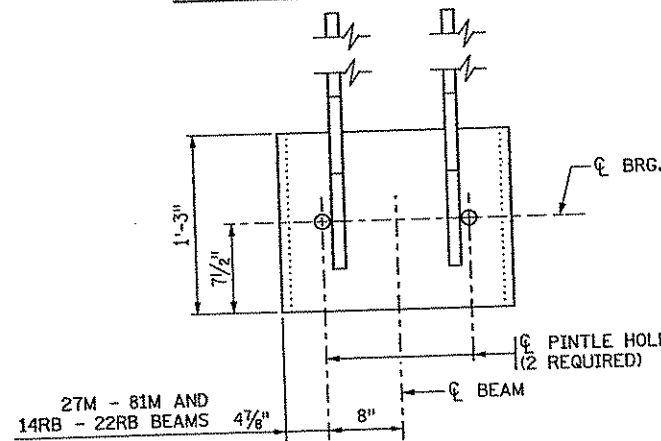
S.P. 02-614-24



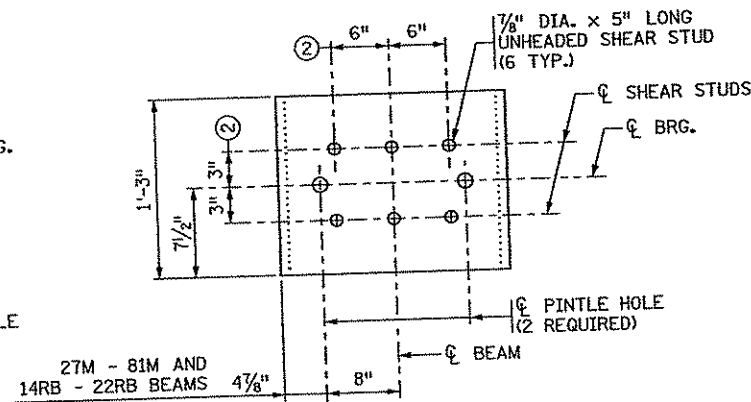
FRONT ELEVATION - OPTION 1



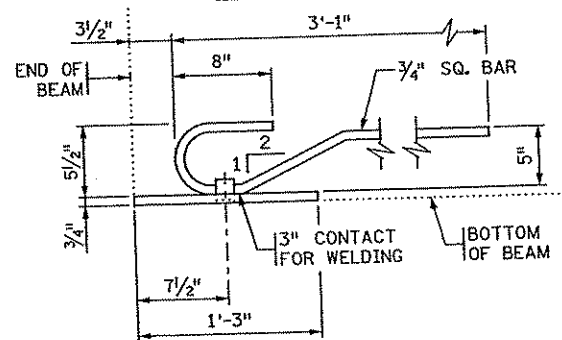
FRONT ELEVATION - OPTION 2



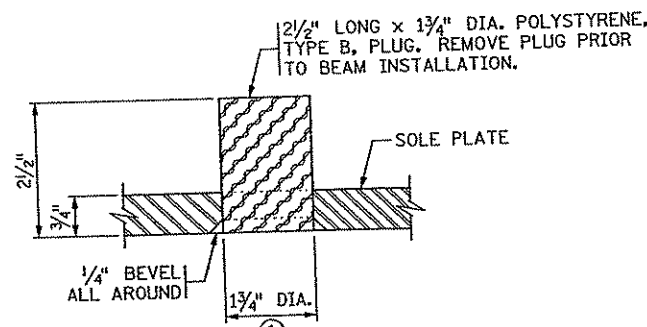
SECTION A-A



SECTION C-C



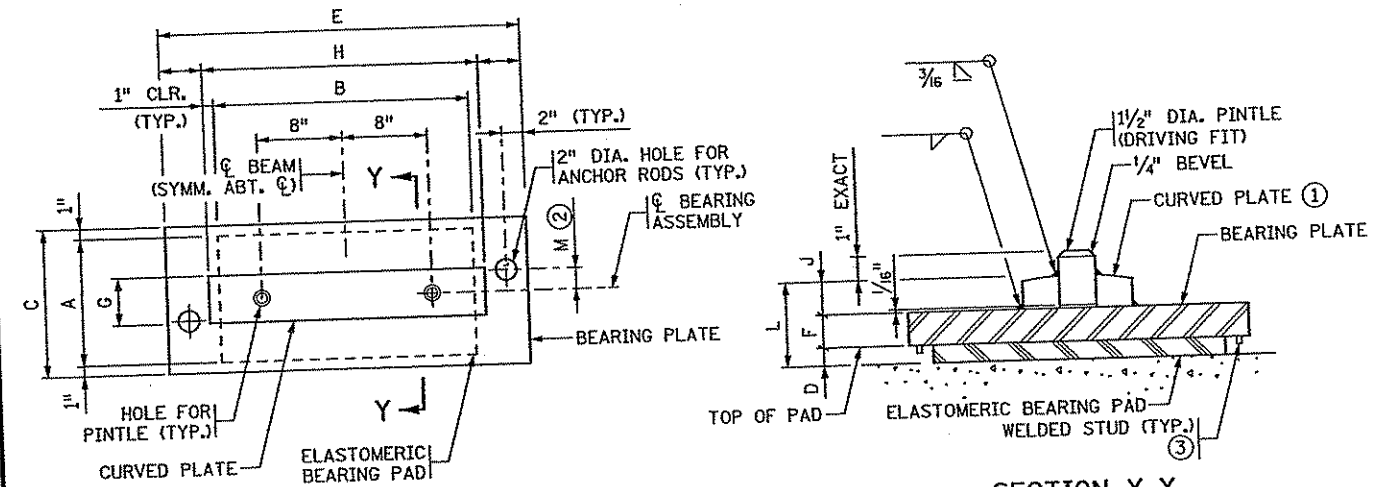
SECTION B-B



PINTLE HOLE DETAIL

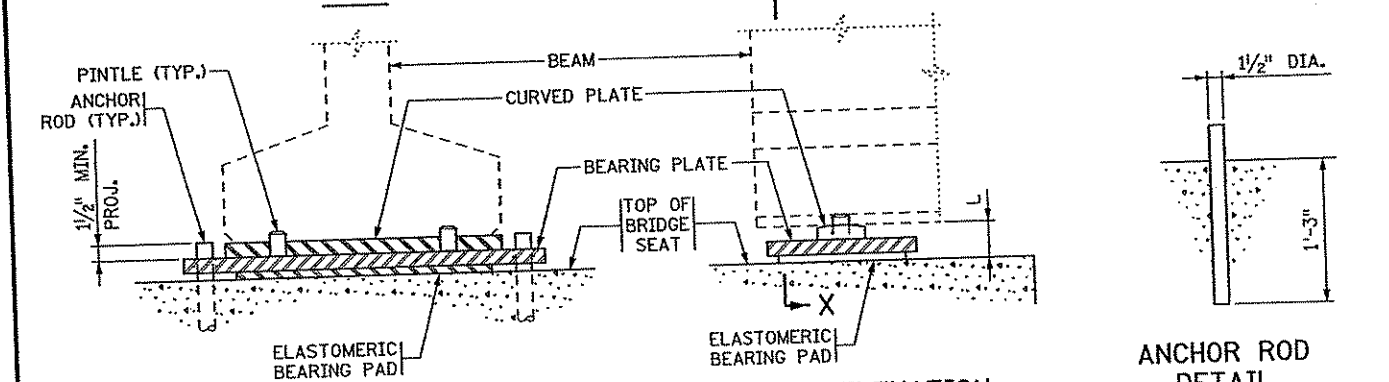
NOTES:

- MATERIAL TO BE STRUCTURAL STEEL PER Mn/DOT SPEC. 3306.
- WELDED STUDS TO BE WELDABLE CARBON STEEL PER Mn/DOT SPEC. 3391.2D.
- SOLE PLATE FOR BEARING ASSEMBLY TO BE GALVANIZED PER Mn/DOT SPEC. 3394 AFTER FABRICATION.
- PINTLE HOLES SHALL BE FREE OF ZINC BUILD UP FROM GALVANIZING.
- SOLE PLATES ARE INCIDENTAL TO PRESTRESSED CONCRETE BEAMS.
- ① FOR 1/2" DIA. PINTLES.
- ② THESE DIMENSIONS MAY BE MODIFIED TO CLEAR PRESTRESSED STRANDS. HOWEVER, CHANGES MUST BE APPROVED BY THE ENGINEER.
- ③ THE REQUIREMENTS FOR WELDING STUDS SHALL COMPLY WITH AASHTO/AWS D1.5.



PLAN

SECTION Y-Y



SECTION X-X

SIDE ELEVATION

ANCHOR ROD DETAIL

ASSEMBLY TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE			SHAPE FACTOR	BEARING PLATE SIZE			CURVED PLATE SIZE			ANCHOR ROD OFFSET	ASSY. HEIGHT	CURVED PLATE	
			A	B	D		C	E	F	G	H	J				
			+ ② - ② M L R ①													
F1	S. ABUT.	36M	12"	24"	1/2"	8.0	14"	34"	1 1/2"	4 1/2"	26"	1 1/4"	+	0"	3 3/4"	18"

NOTES:

- ELASTOMERIC MATERIALS AND PAD CONSTRUCTION SHALL COMPLY WITH Mn/DOT SPEC. 3741.
- ALL STEEL PLATES SHALL COMPLY WITH Mn/DOT SPEC. 3306.
- ANCHOR RODS SHALL COMPLY WITH Mn/DOT SPEC. 3306. GALVANIZE PER Mn/DOT SPEC. 3394.
- PINTLES SHALL COMPLY WITH Mn/DOT SPEC. 3309.
- GALVANIZE STRUCTURAL STEEL BEARING ASSEMBLY AFTER FABRICATION PER Mn/DOT SPEC. 3394, EXCEPT AS NOTED.
- PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL ON THIS DETAIL.

- ① THE MIN. RADIUS OF THE CURVED PLATE IS SHOWN. THE MAX. RADIUS IS 30". FINISH TO 250 MICRO. THE FINISHED THICKNESS OF THE PLATE MAY BE 1/16" LESS THAN SHOWN.
- ② "+" DENOTES OFFSET AS SHOWN. "-" DENOTES OFFSET OPPOSITE OF SHOWN.
- ③ 5/16" DIA. x 3/8" KNOCK-OFF WELD STUDS INSTALLED ON BEARING PLATE AROUND PERIMETER OF BEARING PAD. CENTERLINE STUD TO EDGE OF PAD DIMENSION = 1/2". MAX. STUD SPACING = 4", AND MAX. SPACING TO PAD CORNER = 2".

DESIGN DATA:
MAXIMUM HORIZONTAL LOAD IS TO KIPS FOR 1/2" PINTLES.

APPROVED: OCTOBER 26, 2005

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

SOLE PLATE
(PRESTRESSED CONCRETE BEAMS)
(FOR BEARINGS WITH PINTLES)

REVISOR: 06-14-2006

DETAIL NO. B303

APPROVED: OCTOBER 26, 2005

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

CURVED PLATE BEARING ASSEMBLY
(PRESTRESSED CONCRETE BEAMS)
(FIXED)

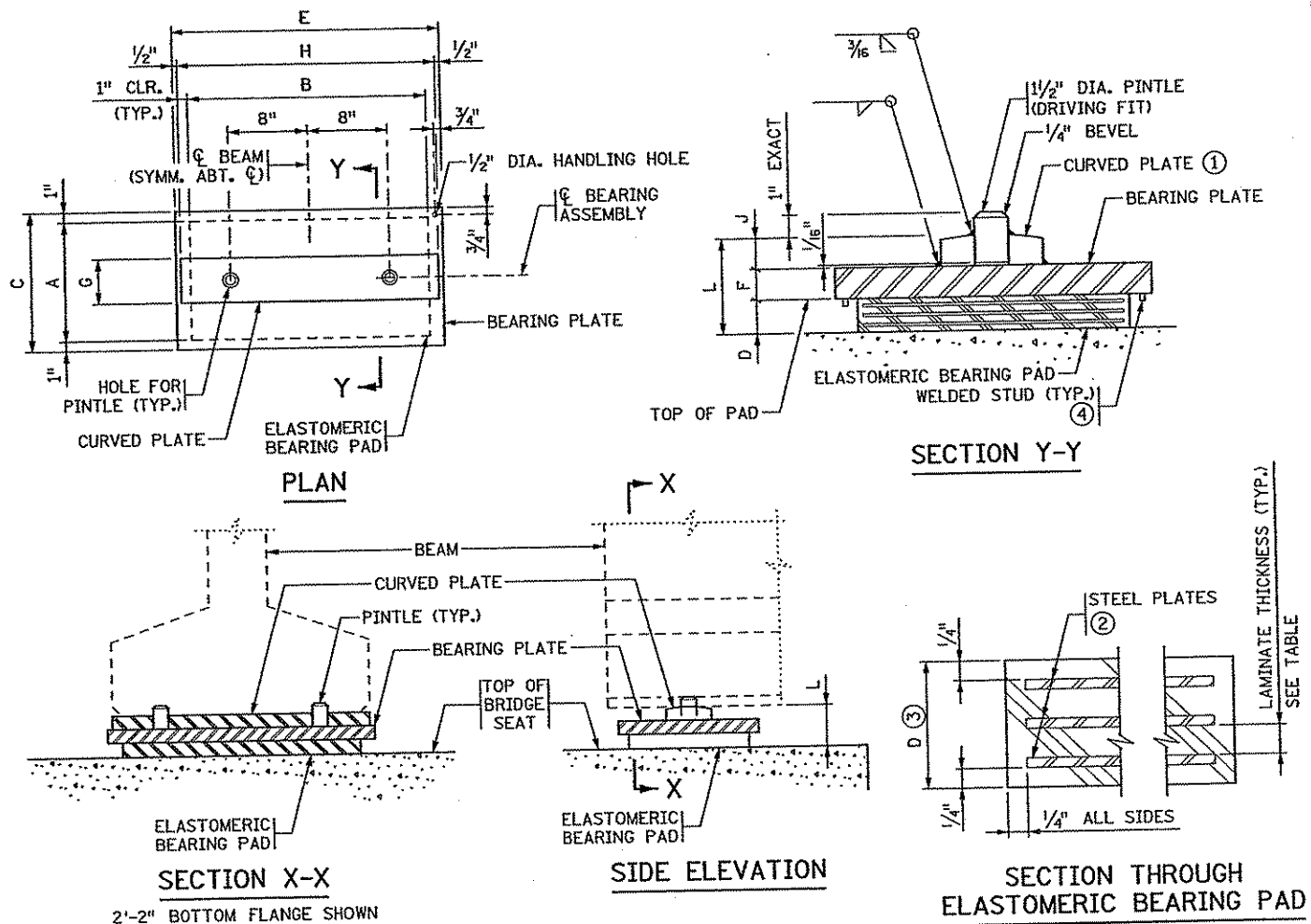
REVISOR: DETAIL NO. B310

CERTIFIED BY: *Jeremy A. West* 3/15/07
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JEREMY A. WEST LIC. NO. 42039

TITLE: DETAILS

DESIGNED BY: JAW DRAWN BY: JEH APPROVED BY:
CHECKED BY: PLR CHECKED BY: JAW

Sheet No. B27 of B33 Sheets Bridge No. 02572



ASSEMBLY TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE			STEEL PLATES		LAMINATES NO. THICK.	SHAPE FACTOR	BEARING PLATE SIZE			CURVED PLATE SIZE			ASSY. HEIGHT	CURVED PLATE R (1)	
			A	B	D	NO.	THICK.			C	E	F	G	H	J			L
			IN	IN	IN		IN			IN	IN	IN	IN	IN	IN			IN
E1	N. ABUT.	36M	12"	24"	1 7/8"	3	1/8"	2	1/2"	8.0	14"	27"	1 1/2"	4 1/2"	26"	1 1/4"	4 5/8"	19"

NOTES:

ELASTOMERIC MATERIALS AND PAD CONSTRUCTION SHALL COMPLY WITH Mn/DOT SPEC. 3741.

ALL STEEL PLATES SHALL COMPLY WITH Mn/DOT SPEC. 3306.

PINTLES SHALL COMPLY WITH Mn/DOT SPEC. 3309.

GALVANIZE STRUCTURAL STEEL BEARING ASSEMBLY AFTER FABRICATION PER Mn/DOT SPEC. 3394, EXCEPT AS NOTED.

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

- ① THE MIN. RADIUS OF THE CURVED PLATE IS SHOWN. THE MAX. RADIUS IS 30". FINISH TO 250 MICRO. THE FINISHED THICKNESS OF THE PLATE MAY BE 1/16" LESS THAN SHOWN.
- ② DO NOT GALVANIZE THESE PLATES.
- ③ THE TOTAL THICKNESS SHOWN INCLUDES THE STEEL PLATES.
- ④ 5/16" DIA. x 3/8" KNOCK-OFF WELD STUDS INSTALLED ON BEARING PLATE AROUND PERIMETER OF BEARING PAD. CENTERLINE STUD TO EDGE OF PAD DIMENSION = 1/2". MAX. STUD SPACING = 4". AND MAX. SPACING TO PAD CORNER = 2".

DESIGN DATA:

MAXIMUM HORIZONTAL LOAD IS 70 KIPS FOR 1/2" PINTLES.

REVISED DETAIL NO.

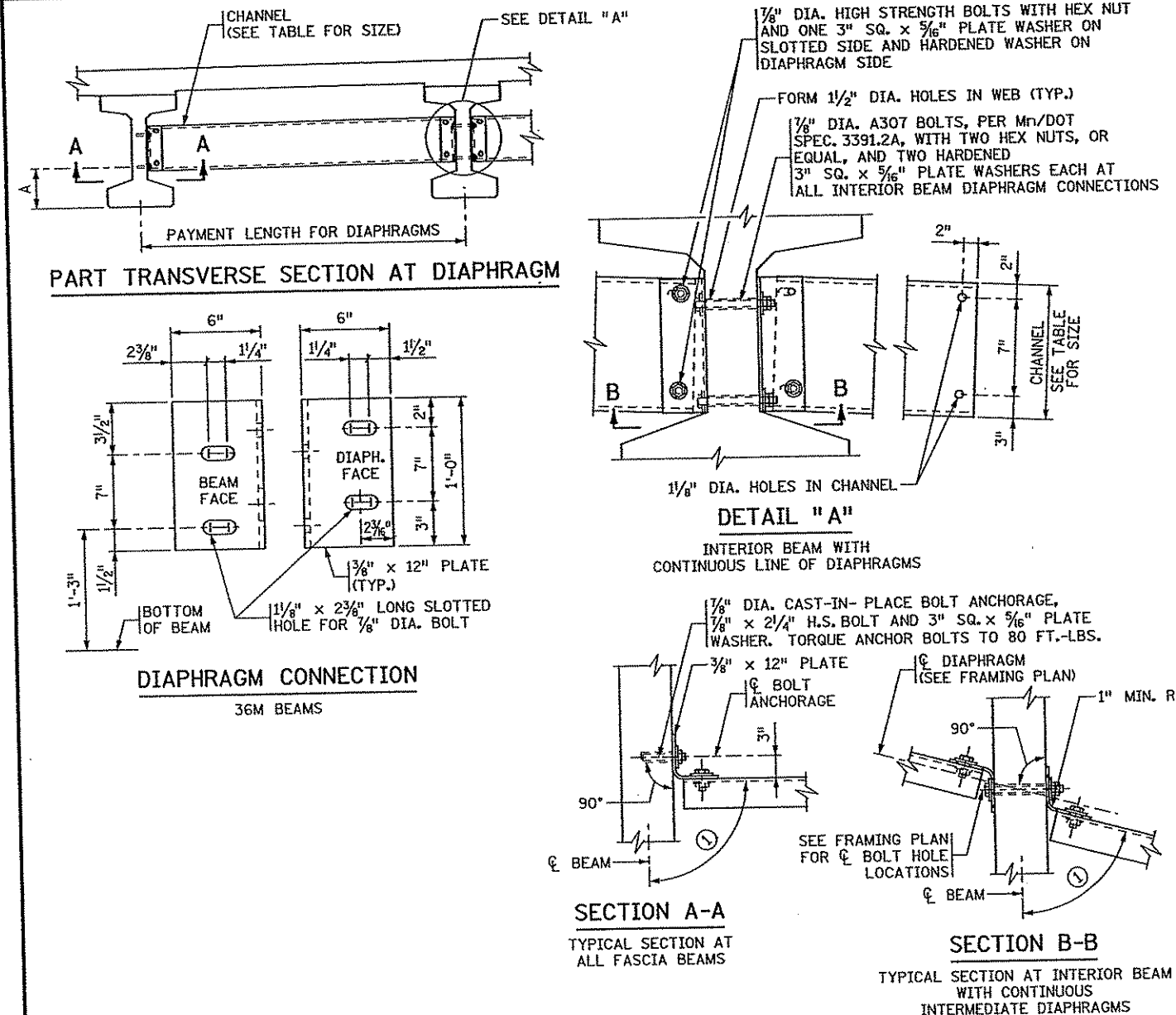
STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

CURVED PLATE BEARING ASSEMBLY
(PRESTRESSED CONCRETE BEAMS)
(EXPANSION)

B311

APPROVED: OCTOBER 26, 2005

David J. Morgan
STATE BRIDGE ENGINEER



BEAM HEIGHT	DISTANCE			CHANNEL SIZE
	A	B	C	
36M	1'-3"	7"	1'-0"	C12x20.7

NOTES:

ALL STEEL SHALL CONFORM TO Mn/DOT SPEC. 3306.

SEE Mn/DOT SPEC. 2405.3M FOR INSTALLATION.

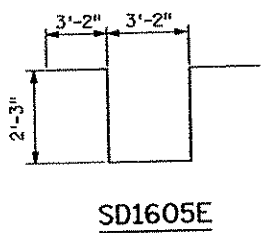
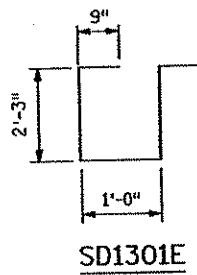
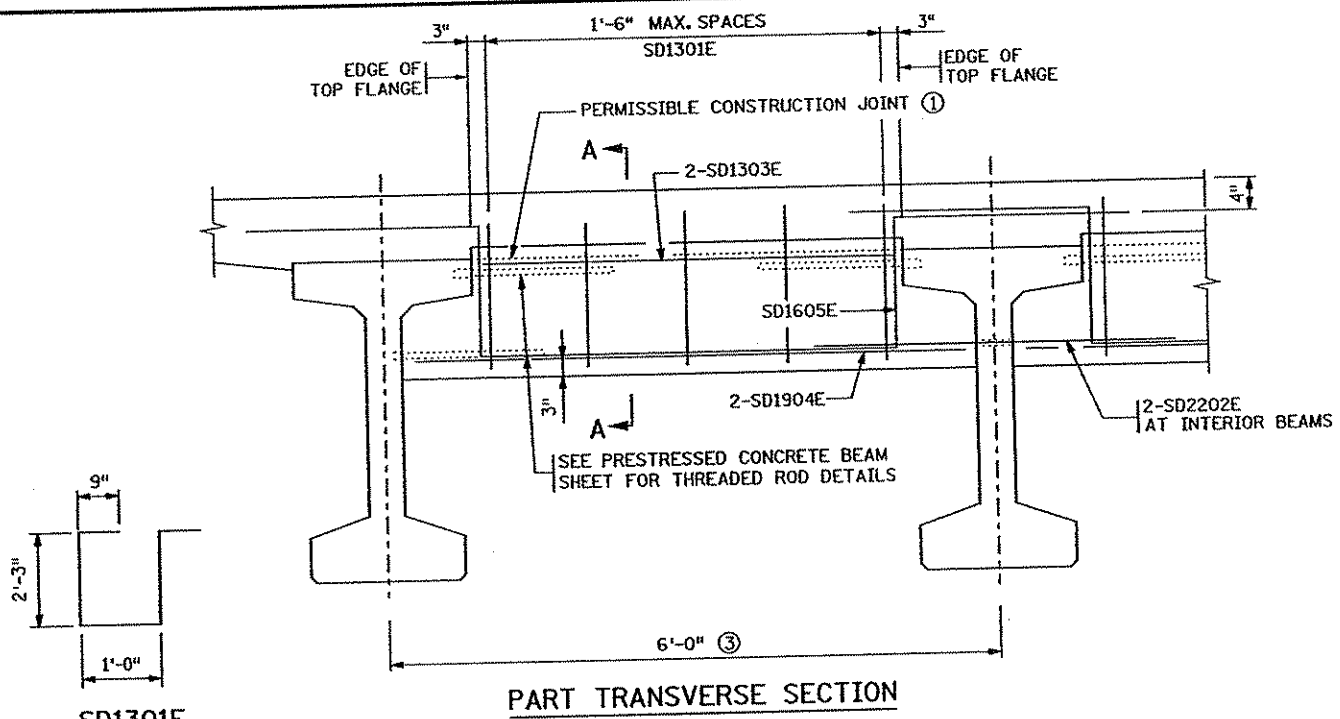
THE LEG OF THE 12" PLATE SHALL BE SHOP BENT TO CONFORM TO THE DIAPHRAGM. A 3/8" x 6" x 6" ANGLE MAY BE USED FOR DIAPHRAGMS PERPENDICULAR TO BEAMS.

ALL STRUCTURAL STEEL SHOWN ON THIS DETAIL, INCLUDING BOLTS AND WASHERS, SHALL BE INCLUDED IN THE PAYMENT FOR DIAPHRAGMS FOR PRESTRESSED BEAMS.

BENT PLATES MAY BE USED IN PLACE OF CHANNELS. THE BENT PLATES MUST BE THE SAME HEIGHT AS THE CHANNELS THEY REPLACE, BE 5/16" IN THICKNESS, AND HAVE LEGS 5" LONG.

① 90°-00°-00"

APPROVED: OCTOBER 26, 2005	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISED	DETAIL NO.
<i>David J. Morgan</i> STATE BRIDGE ENGINEER	STEEL INTERMEDIATE DIAPHRAGM (FOR 36M - 54M, MN45 AND MN54 PRESTRESSED CONCRETE BEAMS)		B403
CERTIFIED BY <i>Jerome A. West</i> LICENSED PROFESSIONAL ENGINEER NAME: JEROME A. WEST LIC. NO. 42039	TITLE: DETAILS	DES: JAW DR: JEH CHK: PLR CHK: JAW	APPROVED: _____
S.P. 02-614-24		Sheet No. B28 of B33 Sheets	
		Bridge No. 02572	



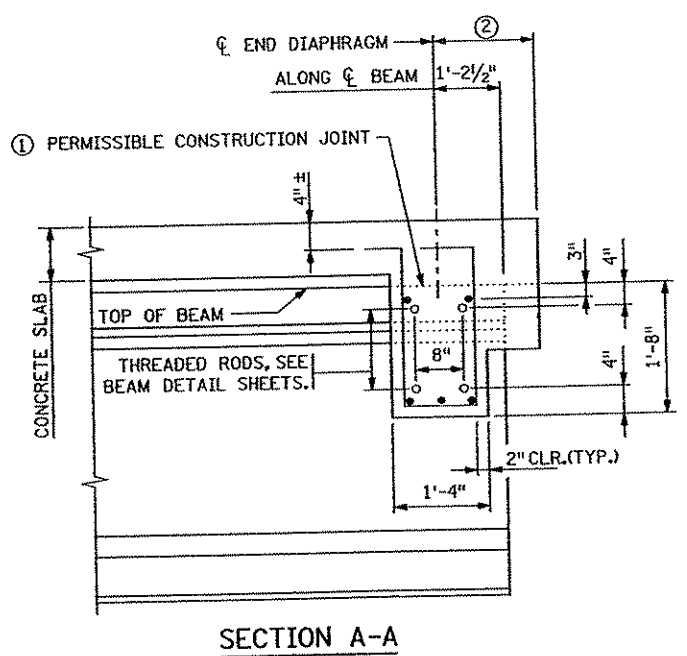
LONGITUDINAL REINFORCEMENT IN BOTTOM OF DIAPHRAGM

DISTANCE "L" ALONG ϕ OF DIAPHRAGM	BARS REQUIRED	
	STRAIGHT	BENT
UP TO 8'	2 19E	1 16E

BILL OF REINFORCEMENT FOR END DIAPHRAGM

BAR	NO.	LENGTH	SHAPE	LOCATION
SD1301E	54	7'-0"	┘	VERTICAL TIE
SD2202E	32	5'-0"	—	LONG. THRU BEAM
SD1303E	36	3'-2"	—	LONG. TOP
SD1904E	36	5'-2"	—	LONG. BOTTOM
SD1605E	18	14'-0"	┘	LONGITUDINAL

- NOTES:**
- DIAPHRAGM CONCRETE TO BE MIX NO. 3Y43.
 - ALL DIAPHRAGM CONCRETE AND REINFORCEMENT BARS SHOWN ON THIS DETAIL TO BE INCLUDED IN PAYMENT FOR SUPERSTRUCTURE QUANTITIES.
 - THREADED RODS ARE INCLUDED IN PAYMENT FOR PRESTRESSED CONCRETE BEAMS.
 - ① USE OF CONSTRUCTION JOINT REQUIRES CLEARANCE FOR EXPANSION DEVICE. WHEN CONSTRUCTION JOINT IS USED AT THIS LOCATION, DIAPHRAGM FALSEWORK SHALL REMAIN INPLACE UNTIL COMPLETION OF SLAB CURING PERIOD.
 - ② PERPENDICULAR TO CENTERLINE OF DIAPHRAGM. SEE PLANS FOR DIMENSION.
 - ③ DISTANCE ALONG ϕ OF DIAPHRAGM

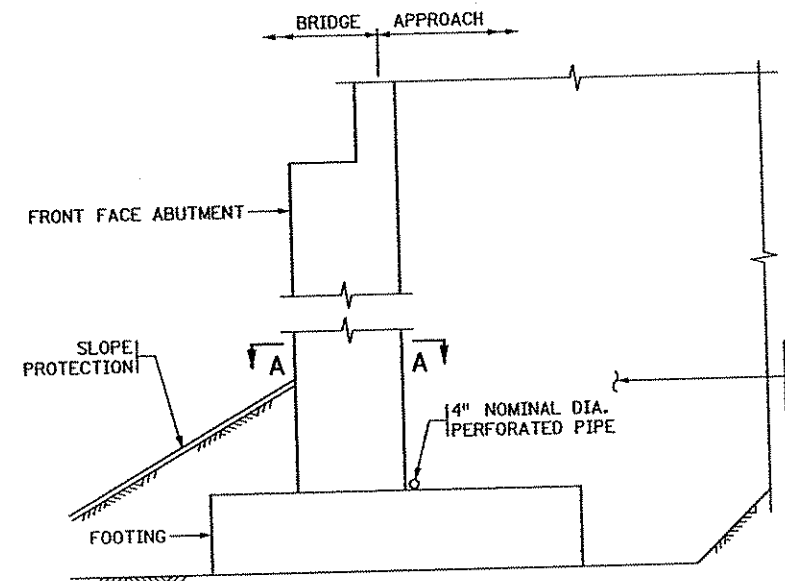


APPROVED: OCTOBER 26, 2005
Daniel J. Morgan
 STATE BRIDGE ENGINEER

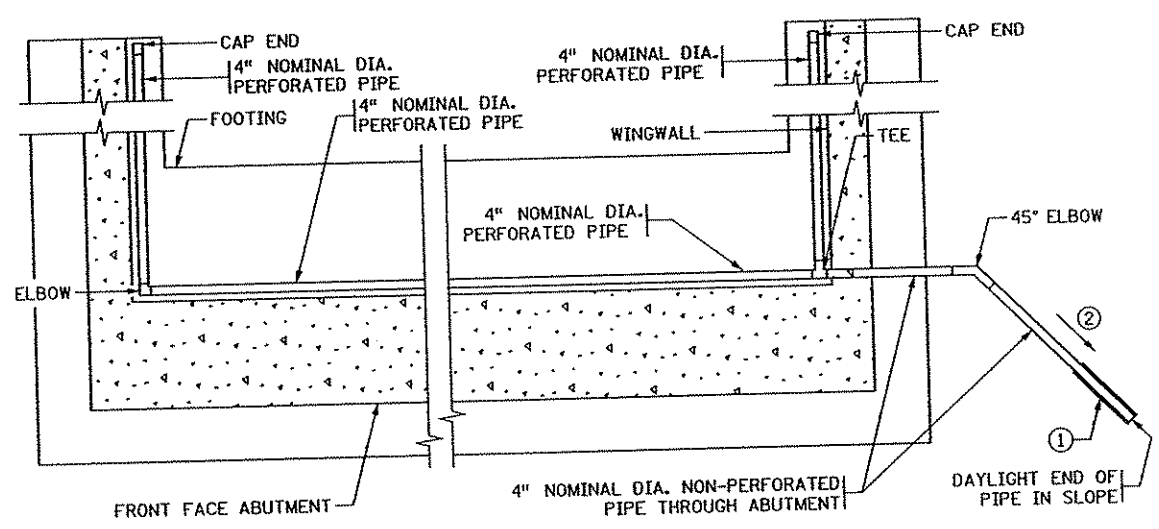
STATE OF MINNESOTA
 DEPARTMENT OF TRANSPORTATION
CONCRETE END DIAPHRAGM
 (27M - 54M, MN45 AND MN54 PRESTRESSED CONCRETE BEAMS)
 (PARAPET ABUTMENT)

REVISION	DETAIL NO.
	B814

S.P. 02-614-24



SECTION THROUGH ABUTMENT



SECTION A-A

SUMMARY OF QUANTITIES FOR DRAINAGE SYSTEM

4" DIA. PERFORATED PIPE	212 LIN. FT.
4" DIA. NON-PERFORATED PIPE	24 LIN. FT.
45° ELBOW	2 EACH
4" DIA. END CAP	4 EACH
4" DIA. TEE	2 EACH
PIPE SLEEVE	2 EACH
① PRECAST CONCRETE HEADWALL	2 EACH

THE SUMMARY OF QUANTITIES FOR DRAINAGE SYSTEM IS AS SHOWN ABOVE. ANY ADDITIONAL MINOR ITEMS OR SLIGHT CHANGES OF QUANTITIES REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.

PAYMENT WILL BE INCLUDED IN THE SINGLE LUMP SUM PRICE FOR ITEM 2502.502 "DRAINAGE SYSTEM TYPE (B910)".

MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3149.2B SELECT GRANULAR BORROW, MODIFIED SO THAT NO MORE THAN 10% PASSES A NO. 200 SIEVE. (UNDER GRADING PORTION OF CONTRACT)

- NOTES:**
- ALL PIPE SHALL BE AS PER Mn/DOT SPEC. 3245.
 - WRAP PERFORATED PIPE WITH GEOTEXTILE AS PER Mn/DOT SPEC. 3733, TYPE 1. ATTACH TO PIPE AS PER Mn/DOT SPEC. 2502.
 - ① PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE STANDARD PLATE 3131 FOR DETAILS.
 - ② 1/8" PER FT. MINIMUM SLOPE.

APPROVED: NOVEMBER 22, 2002
Daniel J. Morgan
 STATE BRIDGE ENGINEER

STATE OF MINNESOTA
 DEPARTMENT OF TRANSPORTATION
DRAINAGE SYSTEM
 (FOR HIGH ABUTMENTS)

REVISED	DETAIL NO.
04-20-2004	B910

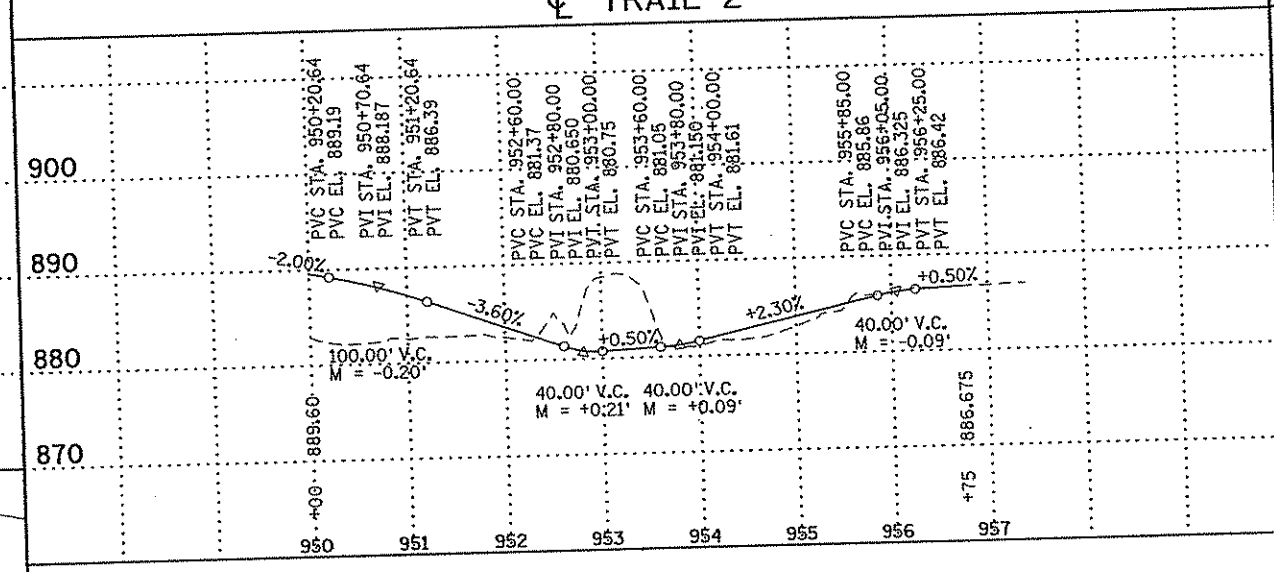
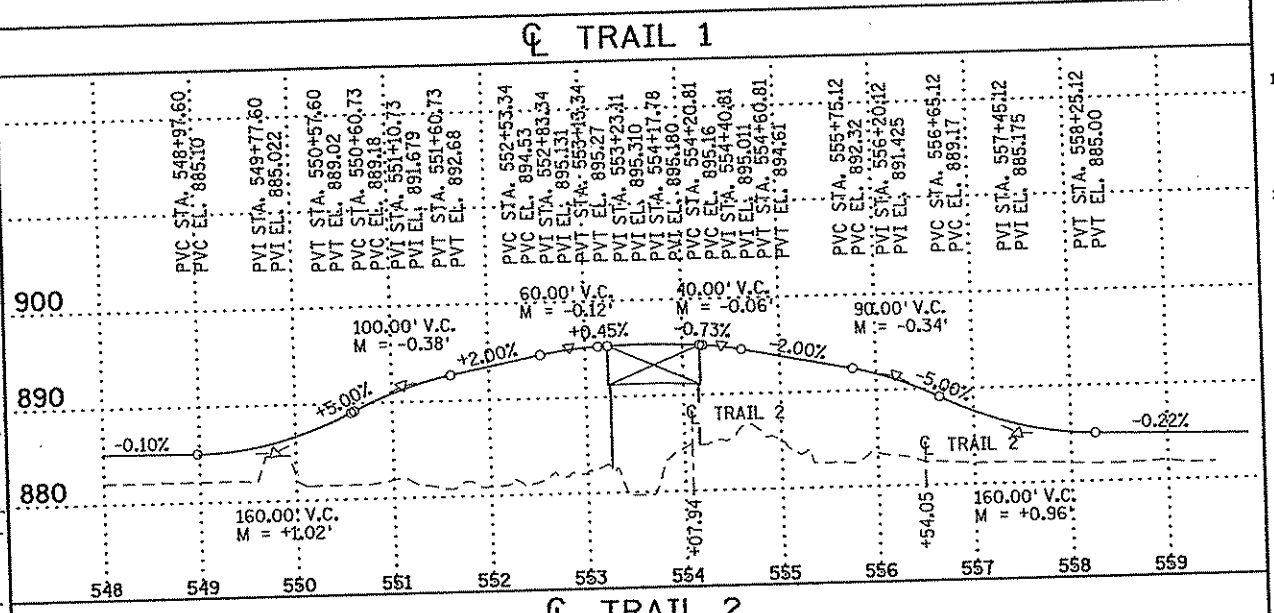
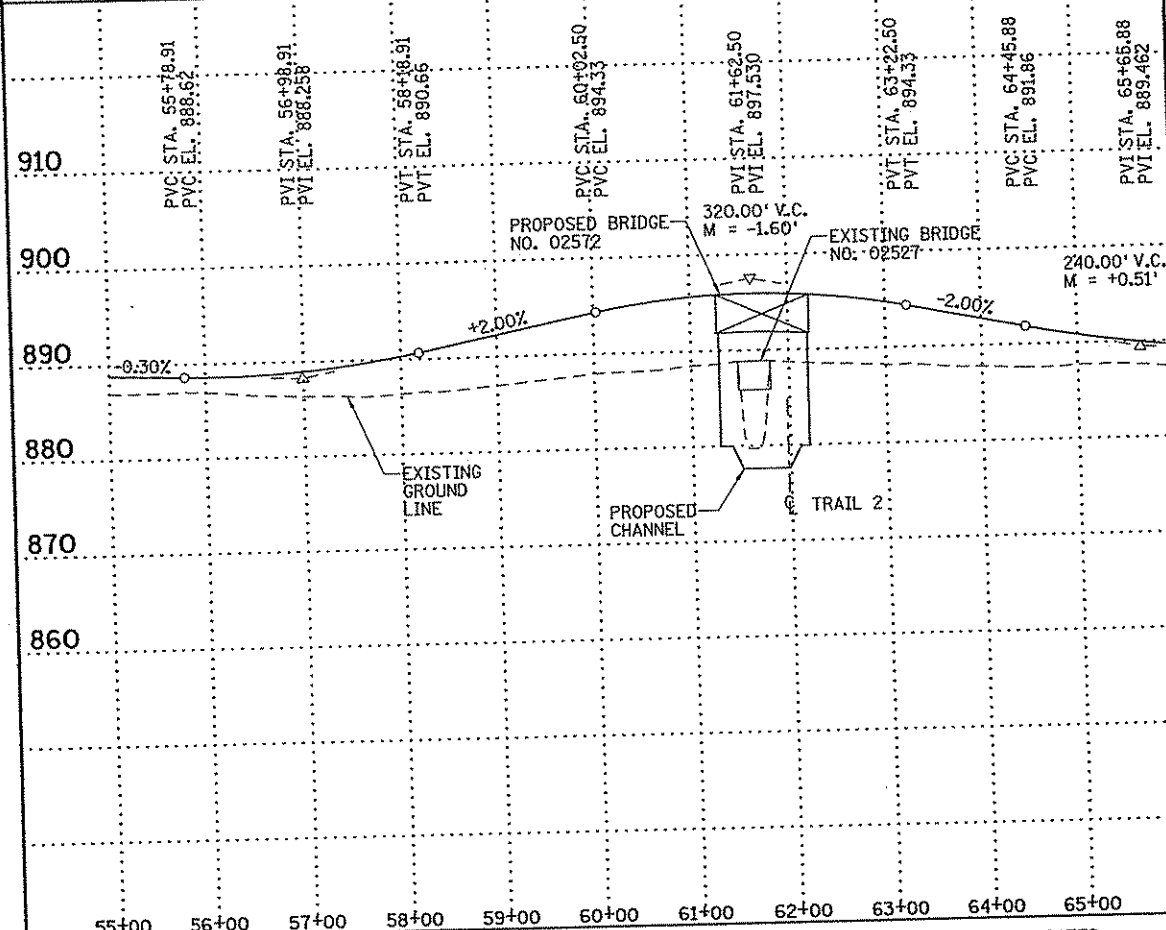
CERTIFIED BY *Jeremy A. West* 5/20/07
 LICENSED PROFESSIONAL ENGINEER DATE
 NAME: JEREMY A. WEST LIC. NO. 42039

DETAILS

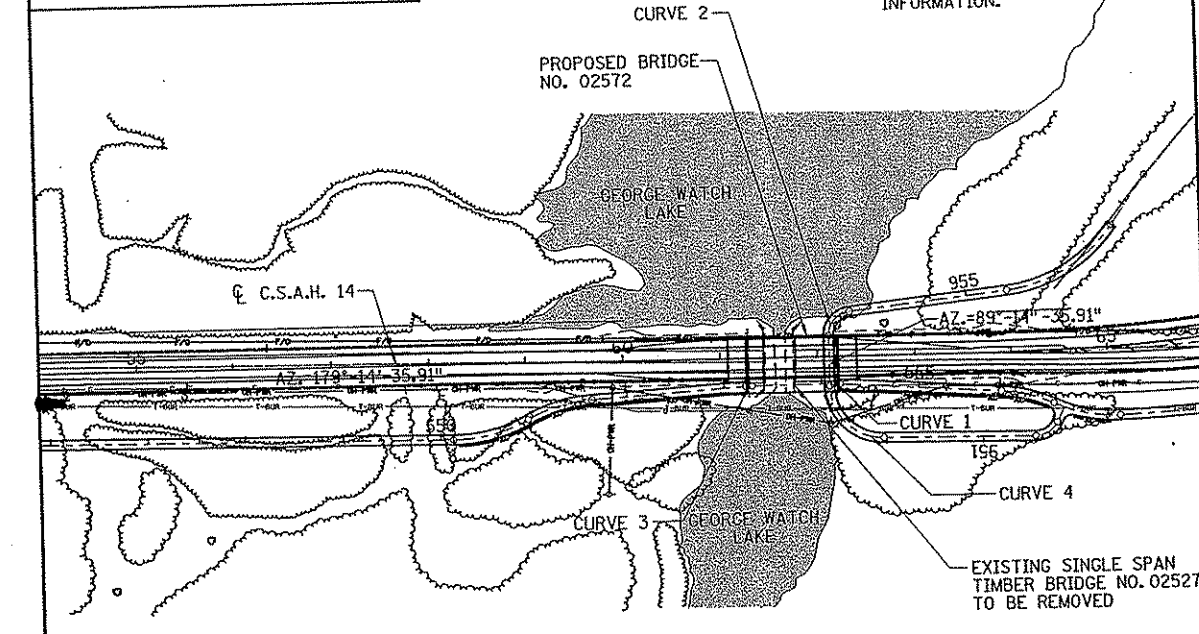
DES: CEB DR: JEH APPROVED:
 CHK: PLR CHK: JAW
 Sheet No. B29 of B33 Sheets

Bridge No. 02572

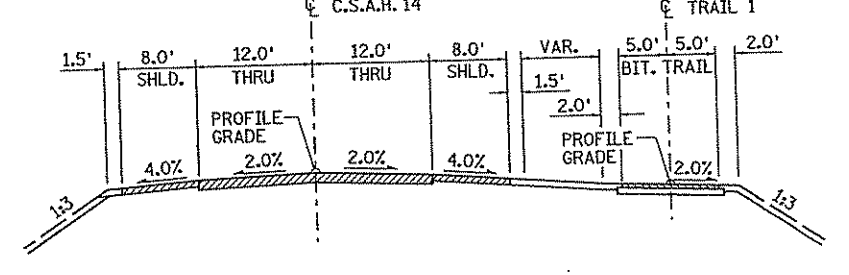
CONTRACTED PROFILE
 SCALE : 0 50' 100' 0 5' 10'
 HORIZONTAL VERTICAL



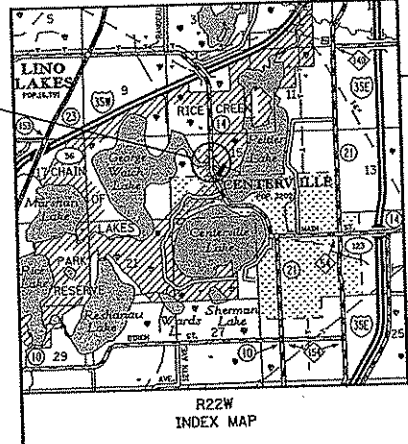
PLAT
 SCALE : 0 50' 100'



CURVE 1 DATA: P.I. STA. 952+57.63 $\Delta = 89^\circ-20'-39.11''$ $D = 104^\circ-10'-26.92''$ $R = 55.00'$ $T = 54.375'$ $L = 85.765'$ P.C. STA. 952+03.25 P.T. STA. 952+89.02	CURVE 2 DATA: P.I. STA. 953+63.76 $\Delta = 83^\circ-40'-20.92''$ $D = 229^\circ-10'-59.23''$ $R = 25.00'$ $T = 22.381'$ $L = 36.509'$ P.C. STA. 953+41.38 P.T. STA. 953+77.89	CURVE 3 DATA: P.I. STA. 553+25.44 $\Delta = 3^\circ-48'-50.67''$ $D = 60^\circ-18'-40.85''$ $R = 95.00'$ $T = 3.163'$ $L = 6.324'$ P.C. STA. 553+22.28 P.T. STA. 553+28.60	CURVE 4 DATA: P.I. STA. 554+15.44 $\Delta = 3^\circ-48'-50.67''$ $D = 60^\circ-18'-40.85''$ $R = 95.00'$ $T = 3.163'$ $L = 6.324'$ P.C. STA. 554+12.28 P.T. STA. 554+18.60
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TYPICAL APPROACH SECTION



LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

- SPECIAL FEATURES: WATERFALLS, DAMS, FLOODS, ICE, DEBRIS, SLIDING BANKS, RECREATIONAL BOATING.
- 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.
- APPARENT HIGHWATER ELEVATION OBTAINED FROM:
- OTHER DATA: APPROX. VELOCITY OF WATER AT TIME OF SURVEY.

HYDRAULIC ENGINEERS RECOMMENDATION
 DATE 4/14/06

STREAM OR DITCH DESIGNATION RICE CREEK
 DRAINAGE AREA 110 SQ. MI.
 MAX. FLOOD ON RECORD NOT PROVIDED
 MAXIMUM OBSERVED HIGHWATER ELEVATION 886.6
 DESIGN FLOOD (50 YR. FREQ.) 1235 C.F.S.
 DESIGN STAGE ELEVATION 885.1
 DESIGN MEAN VELOCITY THROUGH STRUCTURE 8.7 F.P.S.
 TOTAL STAGE INCREASE -3.5 FT.
 LOW MEMBER AT OR ABOVE ELEVATION 891.0
 FLOWLINE ELEVATION 876.0 SKEW ANGLE 0
 WATERWAY AREA REQUIRED BELOW ELEVATION 881.1 = 145 SQ.FT. AT RIGHT ANGLES TO CHANNEL
 BASIC FLOOD (100 YR. FREQ.) 1300 C.F.S.
 STAGE ELEVATION 885.3 FT.
 TOTAL STAGE INCREASE -3.5 FT.
 MEAN VELOCITY THROUGH STRUCTURE 9.0 F.P.S.
 ESTIMATED DEPTH OF PIER SCOUR = 8.6 FT.
 SCOUR CODE = L

BRIDGE SURVEY SHEETS MADE FROM :

BENCH MARK ELEVATION 913.55 (M.S.L. 1929 ADJ.)
 LOCATION DISK N.E. WINGWALL C.S.A.H. 14 AND I-35W

2nd BENCH MARK ELEVATION (M.S.L. 1929 ADJ.)
 LOCATION

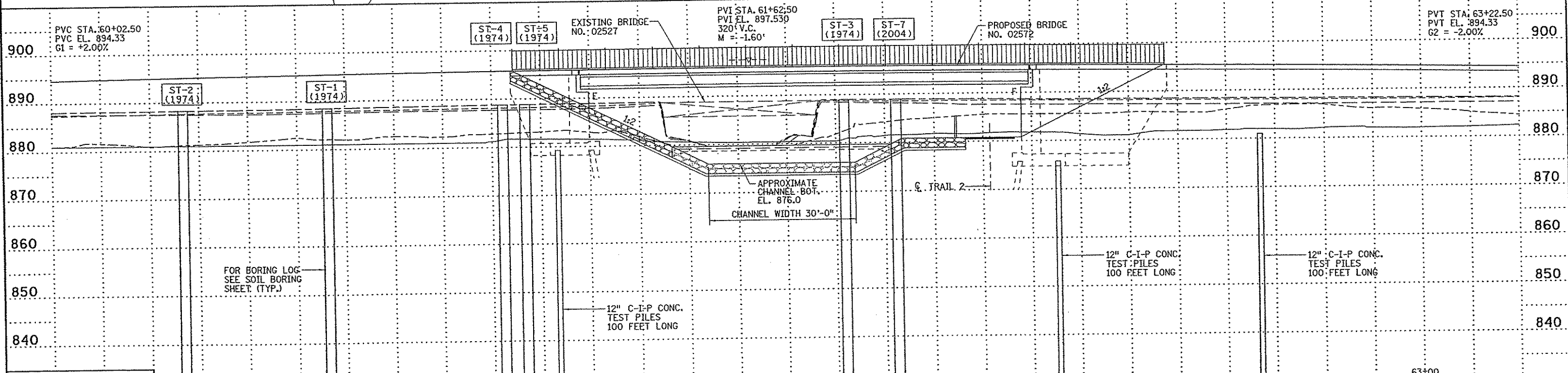
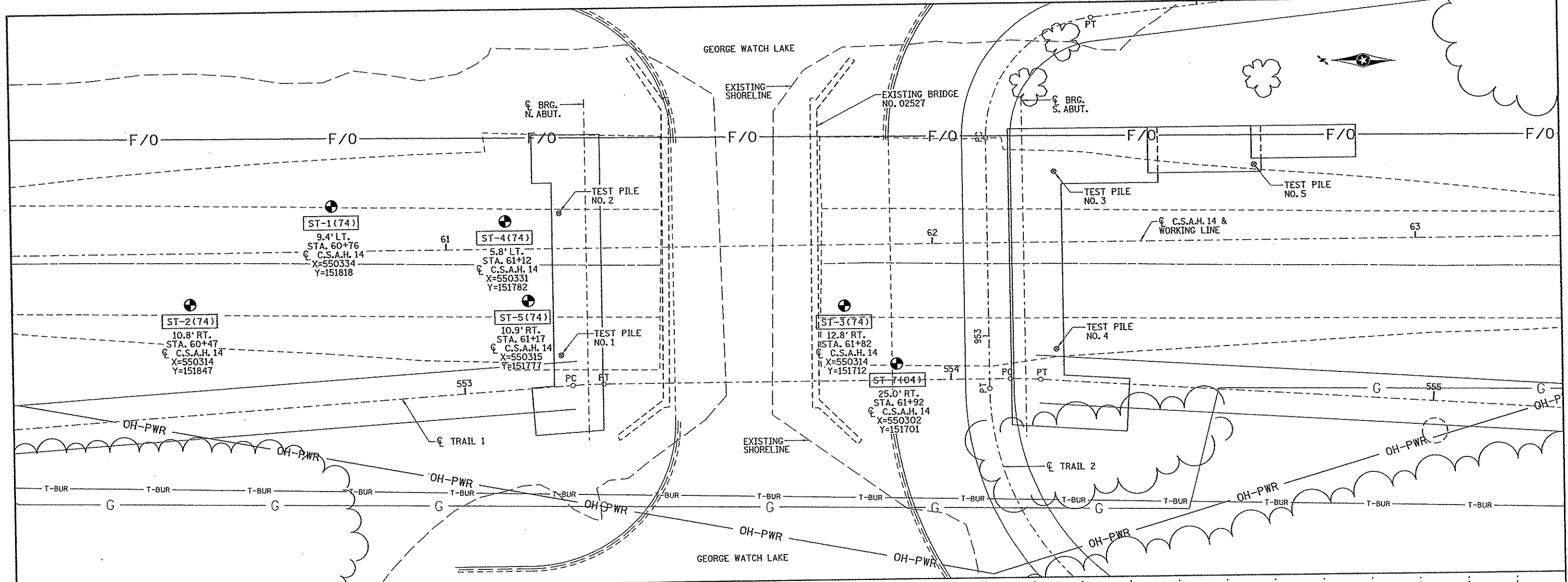
MINNESOTA
 DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT ON
 PROPOSED BRIDGE LOCATED (T.H. C.S.A.H. OR P.C.)
 JCT. OF I-35W AND C.S.A.H. 14

SEC. 15 TWP. T31N R. 22W
 TOWNSHIP CENTERVILLE COUNTY ANOKA

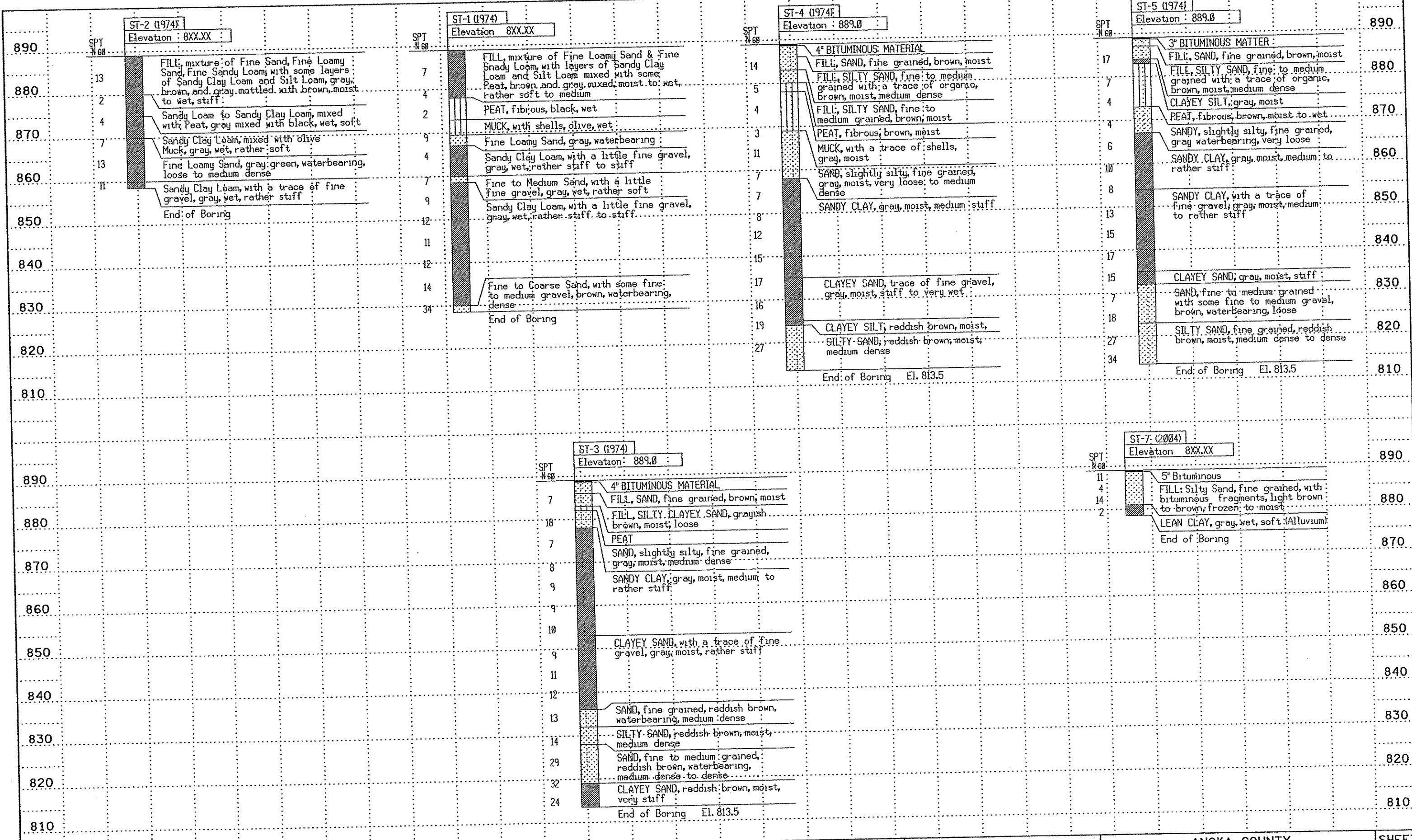
BRIDGE NO. **02572**



H:\projects\4894\Final\plan\4894_B502.dgn
 7/17/2007
 8:47:13 AM

40' LT.
20' LT.
C/L
20' RT.
40' RT.

BRIDGE SURVEY PLAN & PROFILE		DR: JEH	CHK: JAW	Bridge No. 02572
State Proj. No. S.P. 02-614-24		Sheet No. B31 of B33 Sheets		



NO	DATE	BY	CHKD	APPR	REVISION

8:47:14 AM 3/12/2007

STATE PROJ. NO. 02-614-24
BRIDGE NO. 02572

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Print Name: JEREMY A. WEST
Date: 3/15/07 License: 42039

DRAWN BY J. HOFFMAN DATE 6/06
DESIGNED BY C. BLACK 6/06
CHECKED BY J. WEST 6/06
COMM. NO. 0054994



ANOKA COUNTY
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY
SOIL BORINGS

SHEET B32 OF B33

CONCRETE WEARING COURSE

LOW SLUMP
 OTHER _____
TYPE OR MANUFACTURER _____

EXPANSION JOINTS

JOINT MANUFACTURER _____
NAME AND ADDRESS (CITY, STATE) _____
MANUFACTURER'S IDENTIFICATION _____
MFR'S No. AND/OR LETTER DESIGNATION FOR JOINT USED _____
GLAND MANUFACTURER _____
NAME AND ADDRESS (CITY, STATE) _____
SIZE OF GLAND _____
MANUFACTURER'S IDENTIFICATION _____
MFR'S No. AND/OR LETTER DESIGNATION FOR GLAND USED _____

ELASTOMERIC BEARING PADS

PAD MANUFACTURER _____
NAME AND ADDRESS (CITY, STATE) _____

SPECIAL SURFACE FINISH

SYSTEM: _____ COLOR: _____

FINISHING ROADWAY FACES OF BARRIER RAILING

TYPE: _____ COLOR: _____

ANTI-GRAFFITI COATING

MANUFACTURER _____
NAME AND ADDRESS (CITY, STATE) _____
PRODUCT NAME: _____ LOCATION: _____

PAINT SYSTEM

Mn/DOT SPECIFICATION NUMBER _____
2478 OR 2479 OR OTHER _____
MANUFACTURER _____
NAME AND ADDRESS (CITY, STATE) _____
PRIME COAT _____
Mn/DOT MATERIAL SPECIFICATION NUMBER _____
INTERMEDIATE COAT _____
Mn/DOT MATERIAL SPECIFICATION NUMBER _____
FINISH COAT _____
Mn/DOT MATERIAL SPECIFICATION NUMBER _____ COLOR _____

PLAN QUALITY

RATE 1 (AGREE), 2 (NEUTRAL), OR 3 (DISAGREE, PLEASE COMMENT BELOW)
DIMENSIONING AND DETAILING ADEQUATELY DESCRIBED REQUIRED CONSTRUCTION. _____
BAR LISTS AND QUANTITIES WERE TYPICALLY COMPLETE AND FREE OF ERRORS. _____
SCALE OF DRAWINGS AND OVERALL LEGIBILITY OF LINES AND TEXT WAS GOOD. _____
(SB) SPECIAL PROVISIONS ADEQUATELY DESCRIBED SPECIAL WORK AND PAYMENT. _____
COMMENTS: _____

NUMBER OF BRIDGE SUPPLEMENTAL AGREEMENTS: _____ COST: \$ _____
LIST SIGNIFICANT ERRORS OR OMISSIONS IN PLAN DETAILS OR PAY QUANTITIES IN THE SPACE PROVIDED AT RIGHT.

OTHER ITEMS ①

① UTILITIES ADDED DURING CONSTRUCTION AND SPECIALTY ITEMS.
FINAL QUANTITIES ENTERED ON SCHEDULE OF QUANTITIES: YES NO

SUMMARY OF SIGNIFICANT AS-BUILT CHANGES

THE AS-BUILT INFORMATION WAS ADDED TO THE PLAN BY:

INSPECTOR(S) SIGNATURE _____ DATE _____
CHECKED BY: _____
PROJECT ENGINEER/SUPERVISOR SIGNATURE _____ DATE _____

AT THE TIME OF THE FINAL, THIS COMPLETED AS-BUILT BRIDGE DATA SHEET MUST BE SUBMITTED TO THE BRIDGE OFFICE - ATTN: REGIONAL CONSTRUCTION ENGINEER (MS610).

REVISION: 05-27-2005
APPROVED: SEPTEMBER 26, 2003
David S. Johnson
STATE BRIDGE ENGINEER

AS-BUILT DETAILS
(AS NEEDED)

TITLE: AS-BUILT BRIDGE DATA

DES: CAB DR: JEH
CHK: JAW CHK: CAB

APPROVED: _____

FIG. 5-397.900

BRIDGE NO. 02572

SHEET NO. B33 OF B33 SHEETS