

LIST OF SHEETS	
NO.	DESCRIPTION
B1	GENERAL PLAN AND ELEVATION
B2	BRIDGE LAYOUT
B3	DECK PLAN
B4-B5	TYPICAL SECTIONS
B6	BRIDGE DRAINAGE AND OUTLET STRUCTURE
B7	BAR LIST AND SUMMARY OF QUANTITIES
B8	CONCRETE BARRIER (TYPE F, TL-4)
B9	CONCRETE BARRIER (TYPE F, TL-5)
B10-B11	WATERPROOF EXPANSION DEVICE
B12	WIRE FENCE (DESIGN W-1)
B13-B14	B-DETAILS
B15-B18	BRIDGE APPROACH PANEL/PAVEMENT JOINTS
B19	AS-BUILT BRIDGE DATA
B20	BRIDGE SURVEY
B21-B22	BRIDGE SURVEY PLAN AND PROFILE

2029 PROJECTED TRAFFIC VOLUMES	
18900	ADT (2009)
26500	ADT (2029)
780	HCA DT (2029)

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.

SIGNED: *Nathan C. Klopp* DATE 7-28-09
 LICENSED PROFESSIONAL ENGINEER
 NAME: NATHAN C. KLOPP LIC NO 43836

SUMMARY OF QUANTITIES			
ITEM NO	ITEM	UNIT	QUANTITY
2301.551	BRIDGE APPROACH PANELS	EACH	2
2401.512	BRIDGE SLAB CONCRETE (3Y36)	SQ. FT.	46821 (P)
2401.513	TYPE F (TL-4) RAILING CONCRETE (3Y46)	LIN. FT.	513 (P)
2401.513	TYPE F (TL-5) RAILING CONCRETE (3Y46)	LIN. FT.	513 (P)
2401.516	RAISED MEDIAN CONCRETE (3Y46)	SQ. FT.	7700 (P)
2401.541	REINFORCEMENT BARS (EPOXY COATED)	POUND	591440 (P)
2401.601	STRUCTURE EXCAVATION	LUMP SUM	1
2401.618	BRIDGE DECK PLANING	SQ. FT.	31478 (P)
2402.591	EXPANSION JOINT DEVICES, TYPE 4	LIN. FT.	196 (P)
2404.501	CONCRETE WEARING COURSE (3U17A)	SQ. FT.	34906 (P)
2452.507	C.I.P. CONCRETE PILING DELIVERED 16"	LIN. FT.	24380
2452.508	C.I.P. CONCRETE PILING DRIVEN 16"	LIN. FT.	24380
2452.519	C.I.P. CONC. TEST PILE, 120 FT LONG, 16"	EACH	6
2452.519	C.I.P. CONC. TEST PILE, 150 FT LONG, 16"	EACH	2
2452.527	PILE REDRIVING	EACH	65
2452.602	PILE ANALYSIS	EACH	8
2502.601	DRAINAGE SYSTEM TYPE SPECIAL	LUMP SUM	1
2557.501	WIRE FENCE DESIGN W-1 VINYL COATED	LIN. FT.	513 (P)

① INCLUDES APPROACH PANELS
 ② PERTAINS TO ABUTMENTS AND PIER CAPS. SUBCUT, REPLACEMENT BACKFILL AND SURCHARGE ARE PAID FOR IN OTHER ITEMS IN ROADWAY PLANS.

CONSTRUCTION NOTES

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

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 IN ACCORDANCE WITH SPEC. 3301.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY 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 PILE LOADS SHOWN IN THE PLANS AND THE CORRESPONDING NOMINAL PILE BEARING RESISTANCE (R_n) WERE COMPUTED USING LRFD METHODOLOGY. PILE BEARING RESISTANCE DETERMINED IN THE FIELD SHALL INCORPORATE THE METHODS AND/OR FORMULAS DESCRIBED IN THE SPECIAL PROVISIONS.

B.M. ELEV. EL 878.978 (NAVD 88 DATUM)

Mn/DOT GEODETIC DATABASE STA. #581; COPPER CLAD ROD (NO SLEEVE) (DEPTH 8") 1.15 MILES E. OF JCT. CSAH 14 & THIO, 67' N. OF CSAH 14, 26' E. OF ENTRANCE AT HOUSE #2061, ACROSS FROM HOUSE #2108 IN A BUSH, 1.0' S. OF WITNESS POST

NEW 60" RCP CULVERT ON PILING. SEE GRADING PLAN

FEDERAL PROJ NO. (STATE FUNDS)

DESIGN DATA
 2007 AND CURRENT INTERIM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
 LOAD AND RESISTANCE FACTOR DESIGN METHOD
 HL 93 LIVE LOAD
 DEAD LOAD INCLUDES 20 psf ALLOWANCE FOR FUTURE WEARING COURSE MODIFICATIONS
 MATERIAL DESIGN PROPERTIES:
 REINFORCED CONCRETE:
 f'_c = 4 ksi n = 8
 F_y = 60 ksi FOR REINFORCEMENT
 DECK AREA = 46821 SQ FT
 DESIGN SPEED OVER = 55 MPH
 BRIDGE OPERATING RATING RF 2.15

C.S.A.H. NO. 14 MINNESOTA
 DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 02577

C.S.A.H. 14 SUPPORTED SLAB OVER POOR SOILS AND DRAINAGE DITCH IN COON RAPIDS 0.3 MI. WEST OF THE JUNCTION OF C.S.A.H. 14 AND HANSON BLVD. 473.33' C.I.P. CONC. SLAB SPANS (2) 34'-0" ROADWAYS, 15'-0" MEDIAN IDENTIFICATION NO. 209

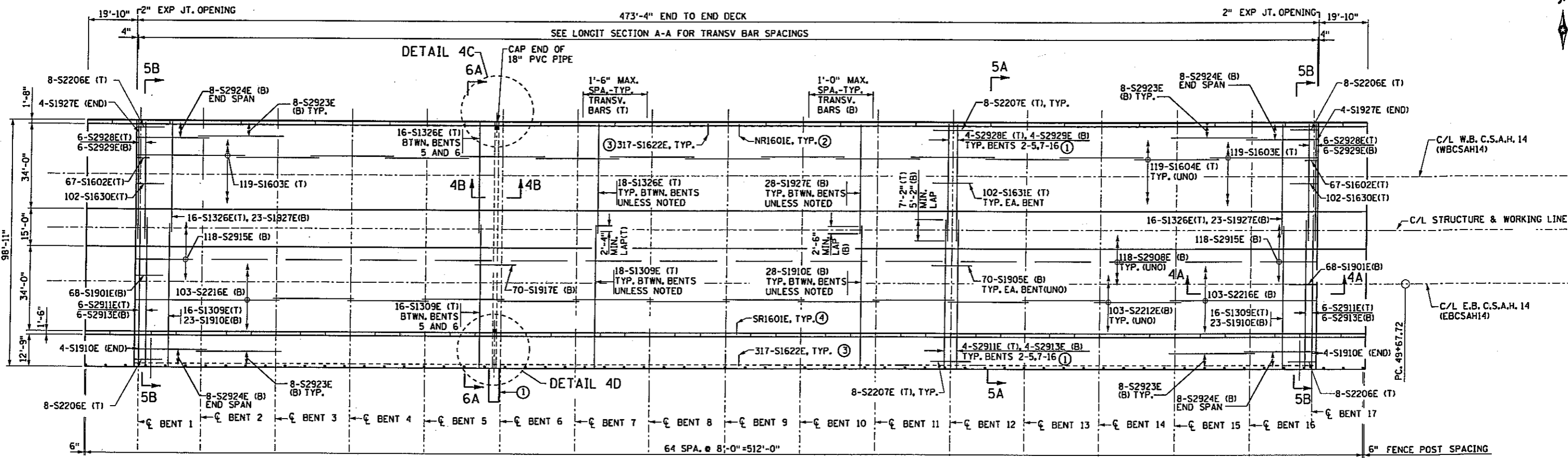
GENERAL PLAN AND ELEVATION

SEC. 3-10 T 31 N R 24 W
 CITY OF COON RAPIDS ANOKA COUNTY

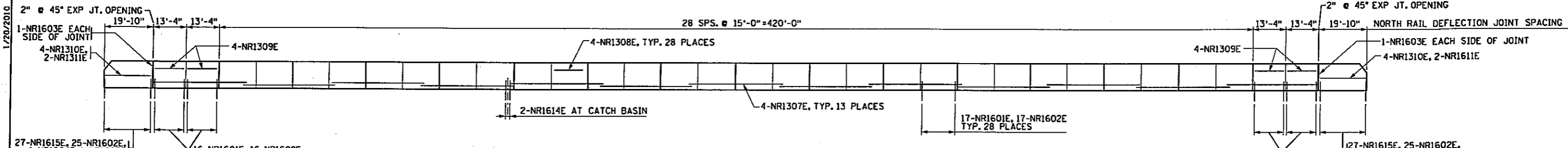
APPROVED: *Wanulda Wargem* STATE BRIDGE ENGINEER
 DATE 4/6/10

DES. JAJ	DR. MAW	02577
CHK. NCK	CHK. JAJ	

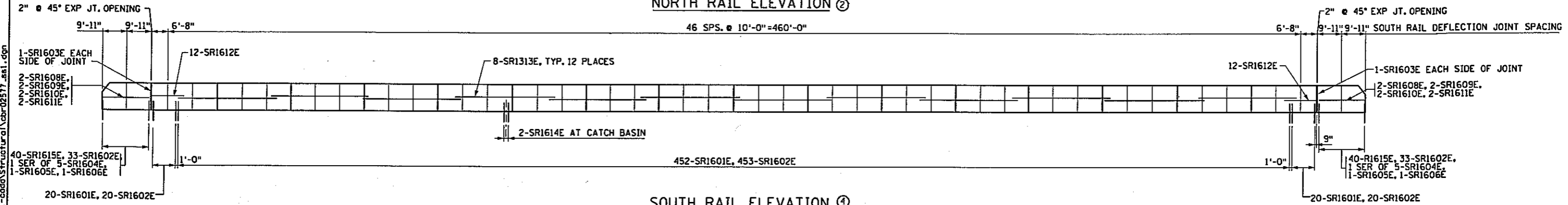
10142119 AM



DECK PLAN



NORTH RAIL ELEVATION ②

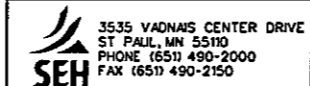


SOUTH RAIL ELEVATION ④

NOTES:

- SEE SHEET B7 FOR BAR LIST AND SUMMARY OF QUANTITIES.
- ① SEE SHEET B6 FOR DETAILS AT SUPPORTED STORM SEWER STRUCTURE, BENT 6.
- ② SEE CONCRETE BARRIER (TYPE F, TL-4) SHEET B8 FOR ADD'L INFO.
- ③ SPACE FROM END TO END OF DECK SLAB @ 1'-6" MAX. SPACINGS.
- ④ SEE CONCRETE BARRIER (TYPE F, TL-5) SHEET B9 FOR ADD'L INFO.

S:\A.E.V.A.\work\102287A5-dsgr\A51-cadd\Structure\01\cb02577_srl.dgn



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.

Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

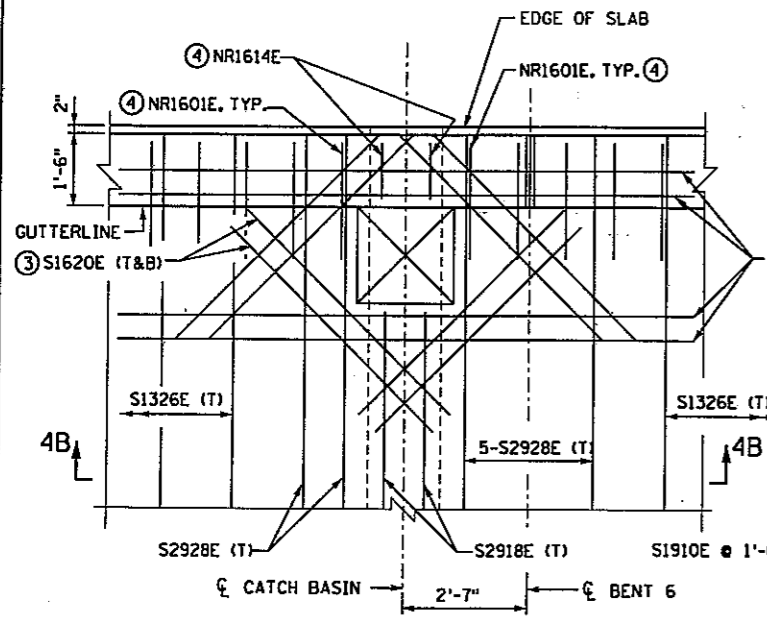
TITLE: DECK PLAN

SP 02-614-32		DES: NCK	DR: MAW	APPROVED:	BRIDGE NO 02577
CHK: JAJ	CHK: NCK				
SHEET NO B3 OF B22 SHEETS					

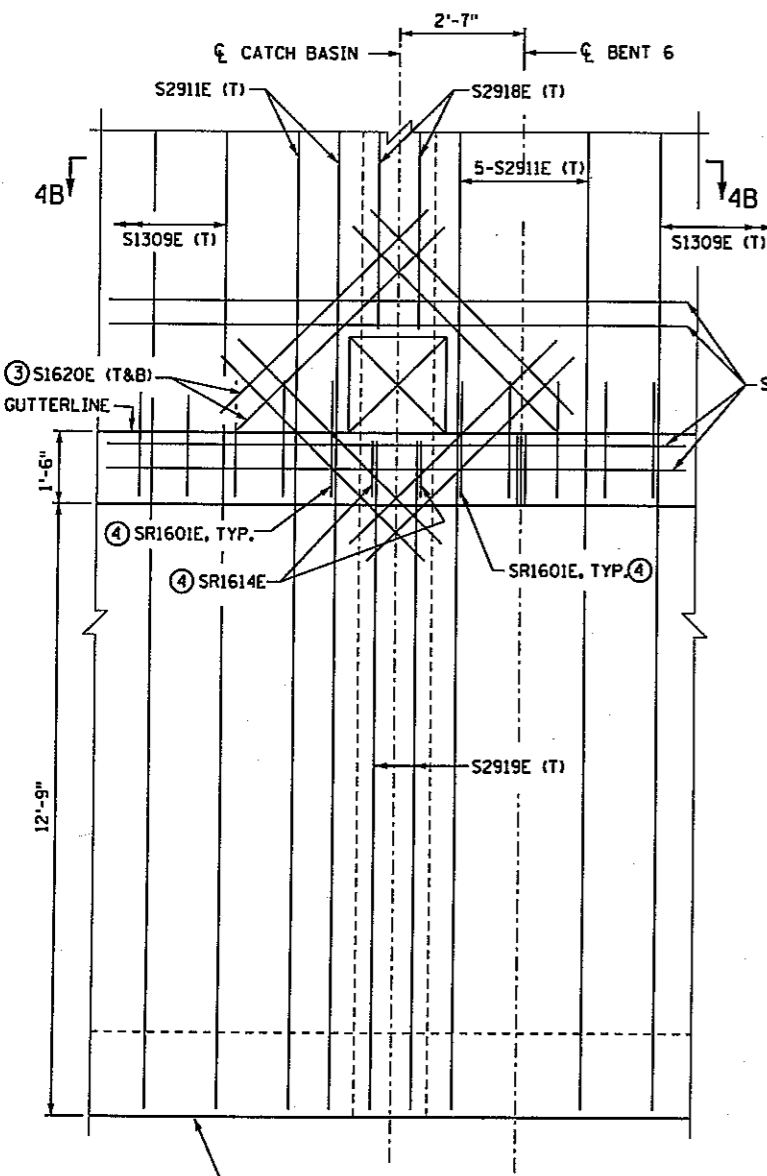
10/22/21 AM

1/20/2010

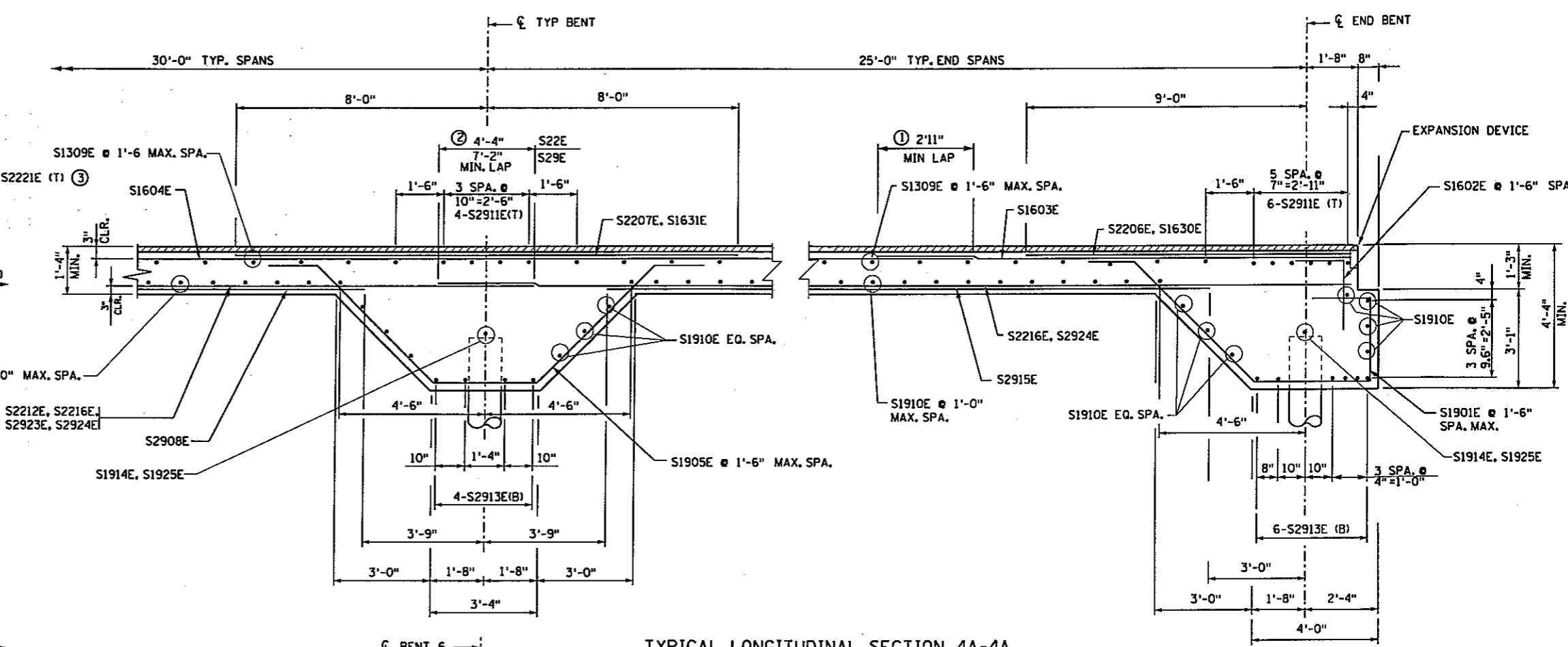
S:\AE\A\Anokc\102287\5-dgn\51-cadd\Structure\1\cbr02577_s82.dgn



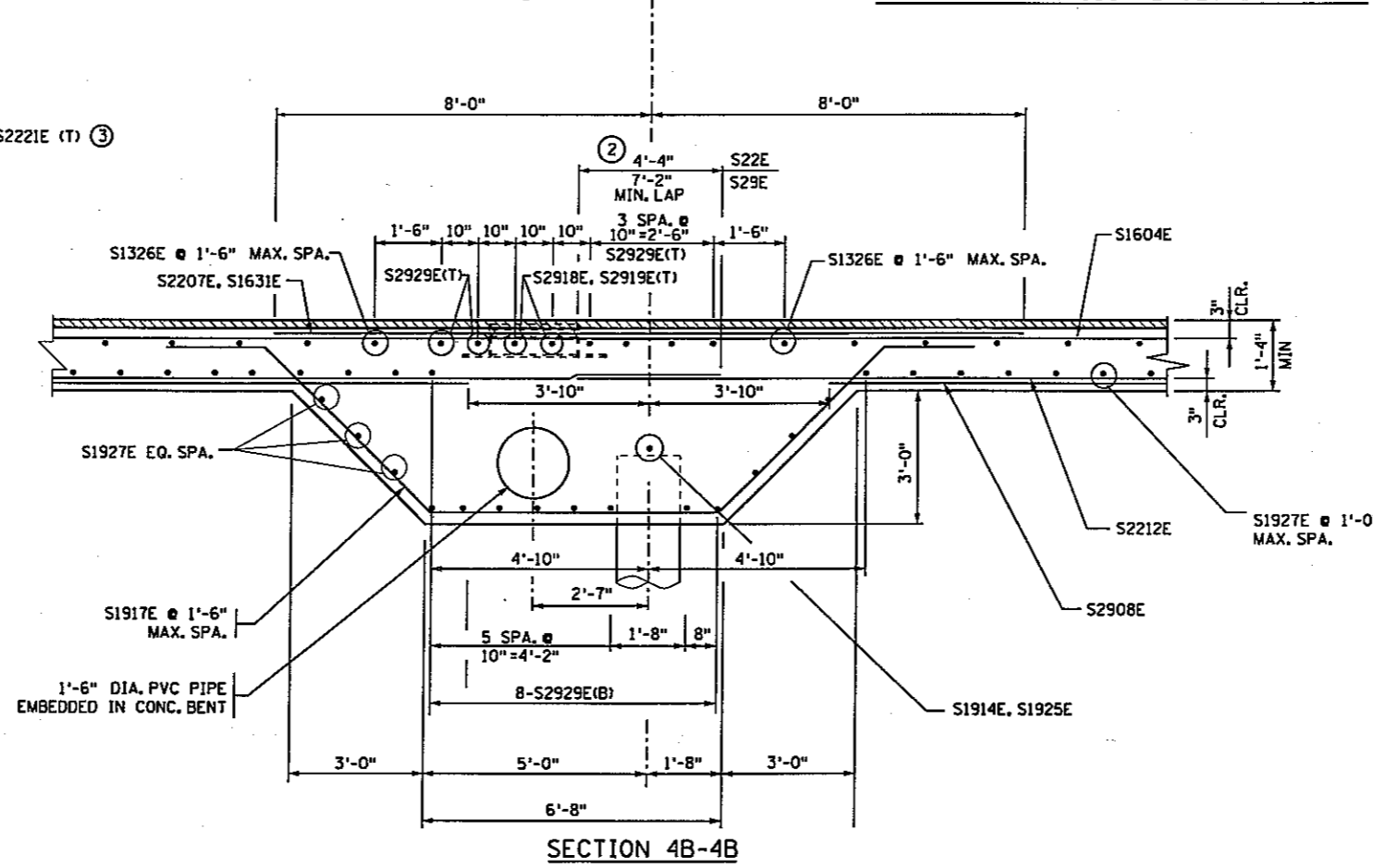
DETAIL 4C - PLAN AT NORTH CATCH BASIN
TYP AT (1) LOCATION



DETAIL 4D - PLAN AT SOUTH CATCH BASIN
TYP AT (1) LOCATION

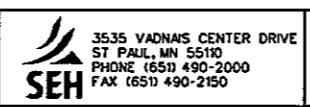


TYPICAL LONGITUDINAL SECTION 4A-4A



SECTION 4B-4B

- NOTES:**
 SEE SHEET B7 FOR BAR LIST AND SUMMARY OF QUANTITIES.
 (T) = TOP
 (B) = BOTTOM
- ① CENTER SPLICE AT MIDSPAN.
 - ② CENTER SPLICE OVER PILES.
 - ③ CENTER ON CATCH BASIN OPENING.
 - ④ SEE CONCRETE BARRIER (TYPE F, TL-5) SHEET B8.

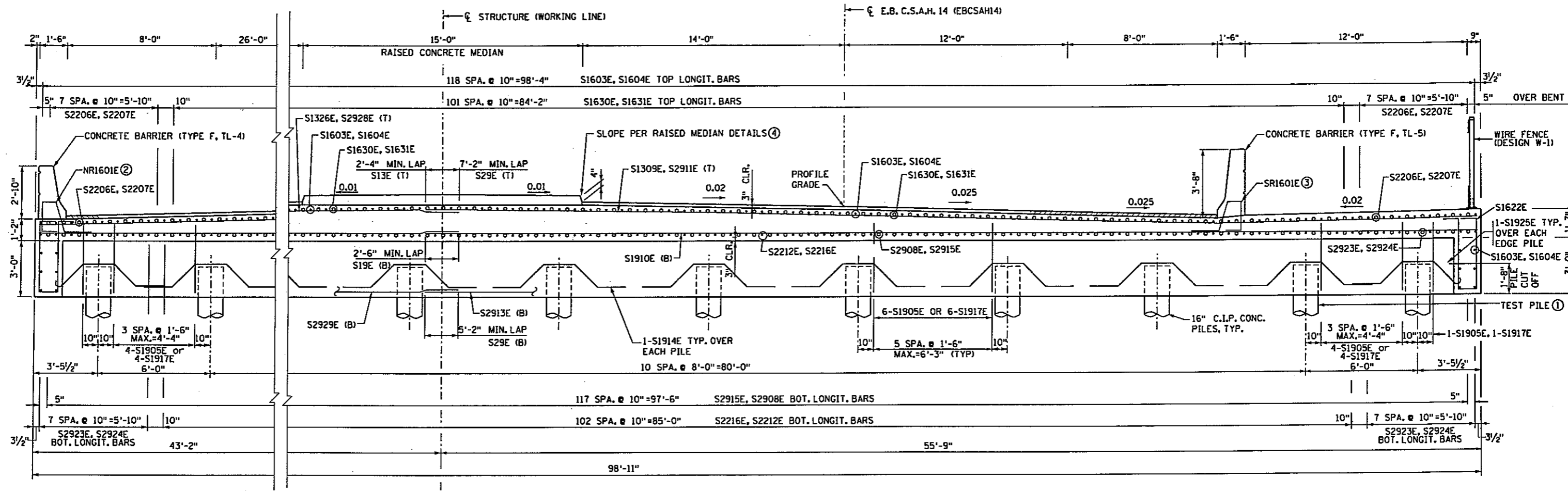


I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
 Signature: *Nathan C. Klopp* Date: 7-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

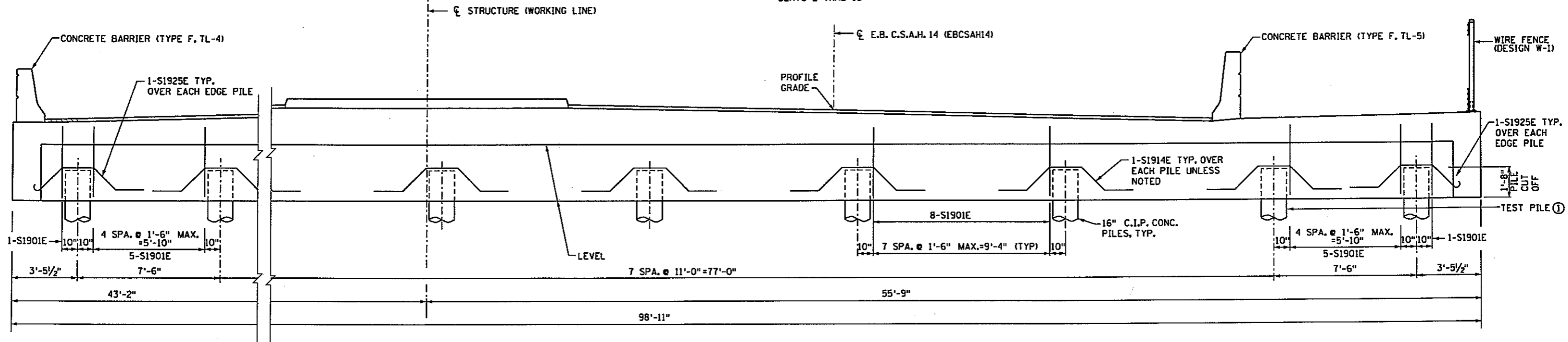
TITLE: TYPICAL SECTIONS

SP 02-614-32		
DES: NCK	DR: MAW	APPROVED:
CHK: JAJ	CHK: NCK	
SHEET NO B4 OF B22 SHEETS		BRIDGE NO 02577

10/14/2013 AM



NORTH SIDE TYPICAL TRANSVERSE SECTION 5A-5A SOUTH SIDE
 BENTS 2 THRU 16



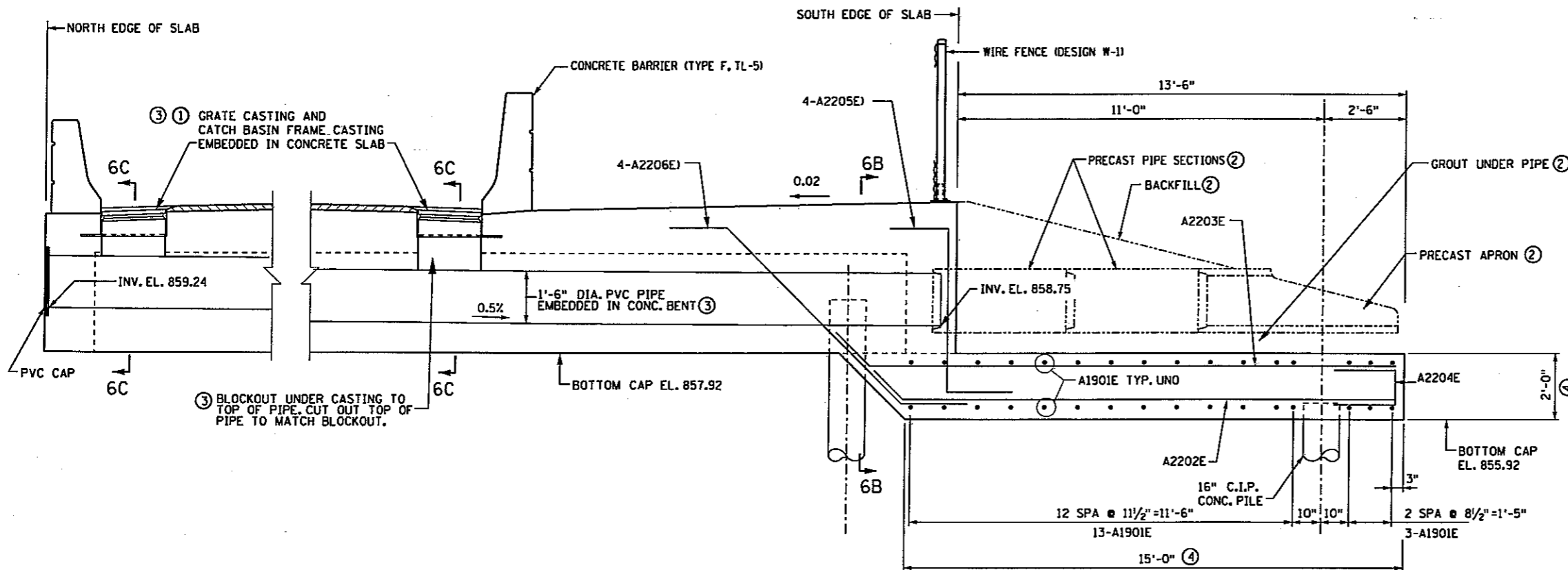
TRANSVERSE SECTION 5B-5B
 BENTS 1 AND 17

- NOTES:**
 SEE SHEET B7 FOR BAR LIST AND SUMMARY OF QUANTITIES.
- ① SEE SHEET B21 FOR TEST PILE LOCATIONS.
 - ② SEE SHEET B8 CONCRETE BARRIER (TYPE F, TL-4).
 - ③ SEE SHEET B9 CONCRETE BARRIER (TYPE F, TL-5).
 - ④ SEE SHEET B11 FOR EXP. JT. DEVICE AT RAISED MEDIAN.

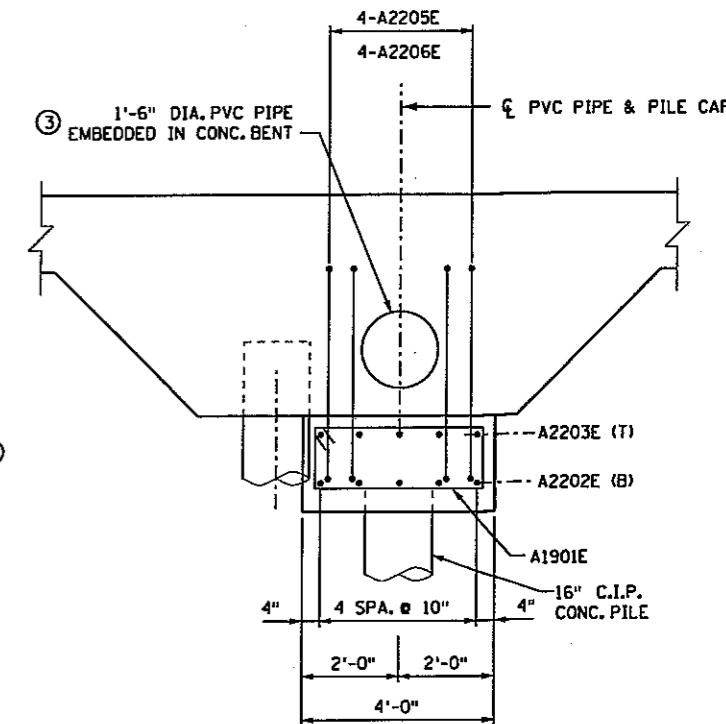
S:\AE\VA\proj\102287\5-dsgn\51-cadd\Structure\1\cbp02577_s83.dgn 1/20/2010

3535 VADNAIS CENTER DRIVE ST PAUL, MN 55110 PHONE (651) 490-2000 FAX (651) 490-2150	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. Signature: <i>Nathan C. Klopff</i> Date: 7-28-09 Printed Name: NATHAN C. KLOPP Reg. No. 43836	TITLE: TYPICAL SECTIONS		SP 02-614-32	DES: NCK	DR: MAW	APPROVED:	BRIDGE NO 02577
				CHK: JAJ	CHK: NCK	SHEET NO B5 OF B22 SHEETS		

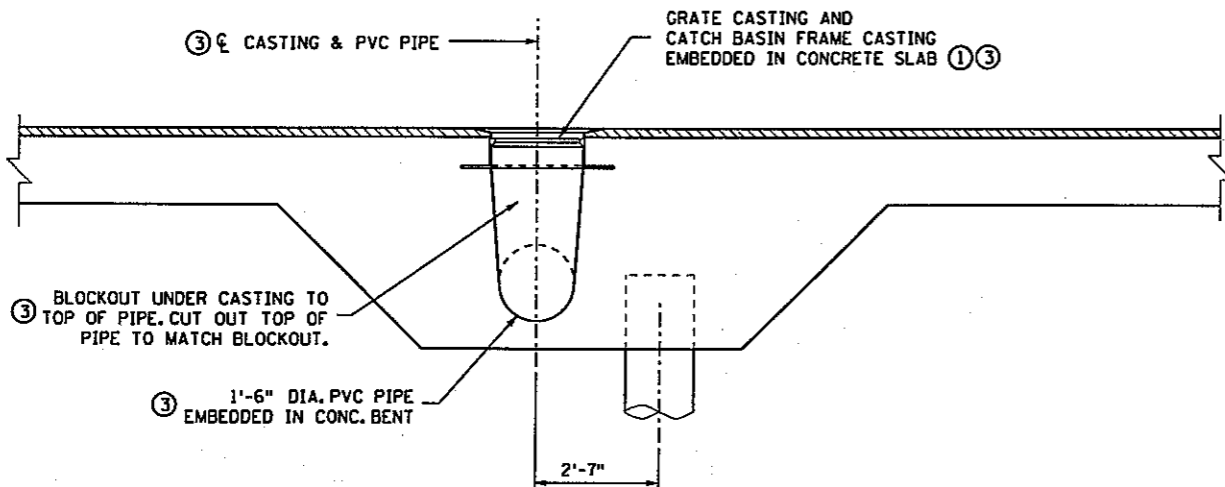
10/42/24 AM



SECTION 6A-6A



SECTION 6B-6B



SECTION 6C-6C

SUMMARY OF QUANTITIES DRAINAGE SYSTEM TYPE SPECIAL		
ITEM	UNIT	QUANTITY
① GRATE CASTING NO. 811	EACH	2
① GRATE FRAME CASTING NO. 802A	EACH	2
1'-6" DIA. PVC PIPE	LIN. FT.	99
1'-6" DIA. PVC END CAP	EACH	1

- NOTES:**
 SEE SHEET B7 FOR BAR LIST AND SUMMARY OF QUANTITIES.
 ① GRATE CASTING NO. 811 (STD. PLATE 4151B)
 GRATE FRAME CASTING NO. 802A (STD. PLATE NO. 4129G).
 ② SEE ROADWAY PLANS.
 ③ INCLUDED IN PRICE BID FOR "DRAINAGE SYSTEM TYPE SPECIAL".
 ④ INCLUDED UNDER ITEM "BRIDGE SLAB CONCRETE (3Y36)".

1/20/2010

S:\AE\A\Anokc\102287\5-dsop\51-cadd\Structure\1\cbr02577_ses4.dgn

3535 VADNAS CENTER DRIVE
 ST. PAUL, MN 55110
 PHONE (651) 490-2000
 FAX (651) 490-2150

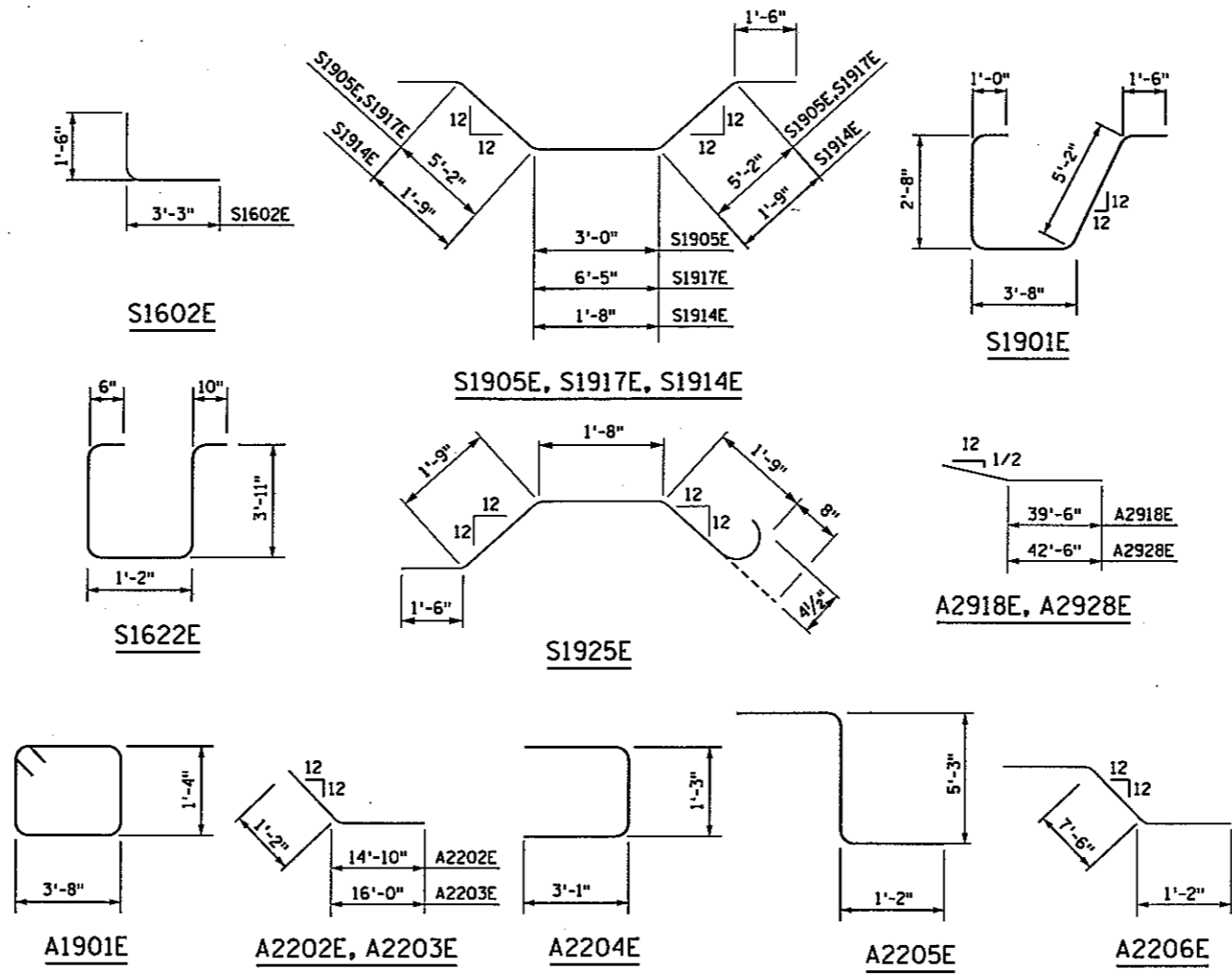
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
 Signature: *Nathan C. Klopp* Date: 7-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE: BRIDGE DRAINAGE AND OUTLET STRUCTURE

SP 02-614-32
 DES: NCK DR: MAW APPROVED:
 CHR: JAJ CHR: NCK
 SHEET NO B6 OF B22 SHEETS BRIDGE NO 02577

10/4/2016 AM 1/20/2010 S:\VA\A\Anokc\10228745-dsgn\51-cadd\Structure\al\cbr\02577.ssb.dgn

BAR MARK	NO. OF BARS	LENGTH	SHAPE	LOCATION
DECK BARS				
EPOXY COATED BARS				
S1901E	136	14'-0"	BENT	SLAB ENDS
S1602E	134	4'-9"	BENT	SLAB ENDS
S1603E	262	43'-0"	STR	SLAB TOP
S1604E	1703	32'-11"	STR	SLAB TOP
S1905E	980	16'-4"	BENT	SLAB AT BENTS (B)
S2206E	32	9'-0"	STR	SLAB AT END BENTS (T)
S2207E	240	16'-0"	STR	SLAB AT BENTS (T)
S2908E	1652	22'-6"	STR	SLAB BOT BTWN BENTS
S1309E	282	56'-9"	STR	TRANSV SLAB TOP
S1910E	446	56'-10"	STR	TRANSV SLAB BOT
S2911E	75	55'-1"	STR	TRANSV SLAB TOP
S2212E	1256	32'-6"	STR	SLAB LONGIT BOT
S2913E	76	58'-2"	STR	TRANSV SLAB BOT
S1914E	181	8'-2"	BENT	PILE TOPS
S2915E	236	18'-3"	STR	SLAB ENDS BOT
S2216E	206	58'-10"	STR	SLAB LONGIT BOT
S1917E	70	20'-0"	BENT	SLAB AT BENTS 6 (B)
S2918E	4	43'-1"	BENT	CATCH BASIN
S2919E	2	13'-11"	STR	CATCH BASIN
S1620E	32	8'-0"	STR	CATCH BASIN
S2221E	8	12'-0"	STR	CATCH BASIN
S1622E	634	10'-4"	BENT	SLAB EDGE WALL
S2923E	224	37'-2"	STR	SLAB LONGIT (B)
S2924E	32	30'-1"	STR	SLAB LONGIT (B)
S1925E	34	7'-4"	BENT	PILE TOPS
S1326E	282	44'-0"	STR	TRANSV SLAB TOP
S1927E	446	45'-3"	STR	TRANSV SLAB BOT
S2928E	75	49'-8"	BENT	TRANSV SLAB TOP
S2929E	76	46'-7"	STR	TRANSV SLAB BOT
S1630E	206	9'-0"	STR	SLAB AT END BENTS (T)
S1631E	1530	16'-0"	STR	SLAB AT BENTS (T)
OUTLET STRUCTURE				
EPOXY COATED BARS				
A1901E	16	10'-9"	BENT	STIRRUP
A2202E	5	16'-0"	BENT	LONGIT. BOTTOM
A2203E	5	17'-2"	BENT	LONGIT. TOP
A2204E	5	7'-5"	BENT	CAP END
A2205E	4	7'-7"	BENT	SLAB DOWEL
A2206E	4	9'-10"	BENT	SLAB DOWEL



SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE

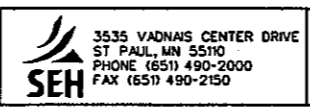
ITEM	UNIT	QUANTITY
③ BRIDGE SLAB CONCRETE (3Y36)	SQ. FT.	46821
④ TYPE F (TL-4) RAILING CONCRETE (3Y46)	LIN. FT.	513
④ TYPE F (TL-5) RAILING CONCRETE (3Y46)	LIN. FT.	513
⑤ RAISED MEDIAN CONCRETE (3Y46)	SQ. FT.	7700
⑥ REINFORCEMENT BARS (EPOXY COATED)	POUND	591440
⑧ BRIDGE DECK PLANING	SQ. FT.	31478
EXPANSION JOINT DEVICES, TYPE 4	LIN. FT.	196
⑦③ CONCRETE WEARING COURSE (3U17A)	SQ. FT.	34906
C.I.P. CONCRETE PILING DELIVERED 16"	LIN. FT.	24380
C.I.P. CONCRETE PILING DRIVEN 16"	LIN. FT.	24380
C.I.P. CONC. TEST PILE, 120 FT LONG, 16"	EACH	6
C.I.P. CONC. TEST PILE, 150 FT LONG, 16"	EACH	2
PILE REDRIVING	EACH	65
PILE ANALYSIS	EACH	8
⑩ DRAINAGE SYSTEM TYPE SPECIAL	LUMP SUM	1
WIRE FENCE (DESIGN W-1)	LIN. FT.	513
① BRIDGE NAME PLATE	EACH	1
②① BENCH MARK DISK	EACH	2

- ① INCLUDED IN PRICE BID FOR OTHER ITEMS
- ② STATE WILL FURNISH DISK. BEND PRONGS OUTWARD TO ANCHOR DISK IN CONCRETE. BOTTOM OF DISK TOP TO BE PLACED FLUSH WITH CONCRETE.
- ③ THE APPROXIMATE CONCRETE QUANTITIES ARE:
BRIDGE SLAB CONCRETE (3Y36) 4135 CU. YD.
CONCRETE OVERLAY (3U17A) 216 CU. YD.
- ④ TYPE F (TL-4) RAILING CONCRETE (3Y46) APPROX. VOLUME = 60 CU. YD.
TYPE F (TL-5) RAILING CONCRETE (3Y46) APPROX. VOLUME = 74 CU. YD.
- ⑤ RAISED MEDIAN CONCRETE (3Y46) APPROX. VOLUME = 143 CU. YD.
- ⑥ INCLUDES DECK, RAILING & OUTLET STRUCTURE REINFORCEMENT. SEE RAILING SHEET FOR RAILING BARLIST.
- ⑦ INCLUDES 2720 SF ON BRIDGE APPROACH PANELS.
- ⑧ INCLUDES 2453 SF ON BRIDGE APPROACH PANELS.
- ⑨ INCLUDES 600 SF ON BRIDGE APPROACH PANELS.
- ⑩ INCLUDES 99'-0" OF 18" DIA. PVC PIPE, (1) 18" PVC PIPE CAP, (2) GRATE CASTINGS, AND (2) CATCH BASIN FRAME CASTINGS. SEE SHEET B6 FOR CASTINGS. SEE SPECIAL PROVISIONS.

PILE QUANTITIES							COMPUTED PILE LOAD - TONS/PILE			REQUIRED NOMINAL PILE BEARING RESISTANCE Rn - TONS/PILE			
BENT NUMBER	CIP CONC. TEST PILE 120' LONG, 16"	CIP CONC. TEST PILE 150' LONG, 16"	PILES REQUIRED	ESTIMATED PILE LENGTH	TOTAL PILES REQUIRED	TOTAL PILE LENGTH	FACTORED DEAD LOAD + EARTH PRESSURE	FACTORED LIVE LOAD	FACTORED DESIGN LOAD= PILE BEARING RESISTANCE NOTE ①	MNDOT NOMINAL RESISTANCE FORMULA	PDA		
										φ dyn	Rn ②	φ dyn	Rn ②
1			10	110	10	1100	30.9	42.2	73.1	0.40	182.8	0.65	112.5
2	1		12	110	13	1320	69.8	50.8	120.6	0.40	301.5	0.65	185.5
3			13	110	13	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
4	1		12	110	13	1320	69.8	50.8	120.6	0.40	301.5	0.65	185.5
5			13	110	13	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
6	1		(A) 13	110	(A) 14	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
7			13	110	13	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
8	1		12	110	13	1320	69.8	50.8	120.6	0.40	301.5	0.65	185.5
9			13	110	13	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
10	1		12	110	13	1320	69.8	50.8	120.6	0.40	301.5	0.65	185.5
11			13	110	13	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
12	1		12	110	13	1320	69.8	50.8	120.6	0.40	301.5	0.65	185.5
13			13	140	13	1820	69.8	50.8	120.6	0.40	301.5	0.65	185.5
14		1	12	140	13	1680	69.8	50.8	120.6	0.40	301.5	0.65	185.5
15			13	140	13	1820	69.8	50.8	120.6	0.40	301.5	0.65	185.5
16		1	12	140	13	1680	69.8	50.8	120.6	0.40	301.5	0.65	185.5
17			10	110	10	1100	30.9	42.2	73.1	0.40	182.8	0.65	112.5
6	2				216	24380							

NOTES:
 PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
 PILES TO HAVE A NOMINAL DIAMETER OF 16".
 FOR PILE SPLICE DETAILS SEE DETAIL B201.
 (A) INCLUDES PILE AT OUTLET STRUCTURE.

NOTES:
 ① BASED ON STRENGTH I LOAD COMBINATION.
 ② Rn = FACTORED DESIGN LOAD / φ dyn.

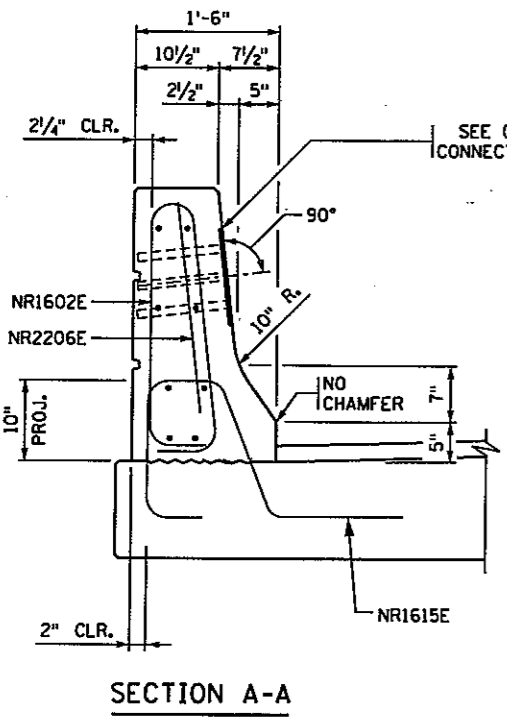


I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
 Signature: *Nathan C. Klopff* Date: 1-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

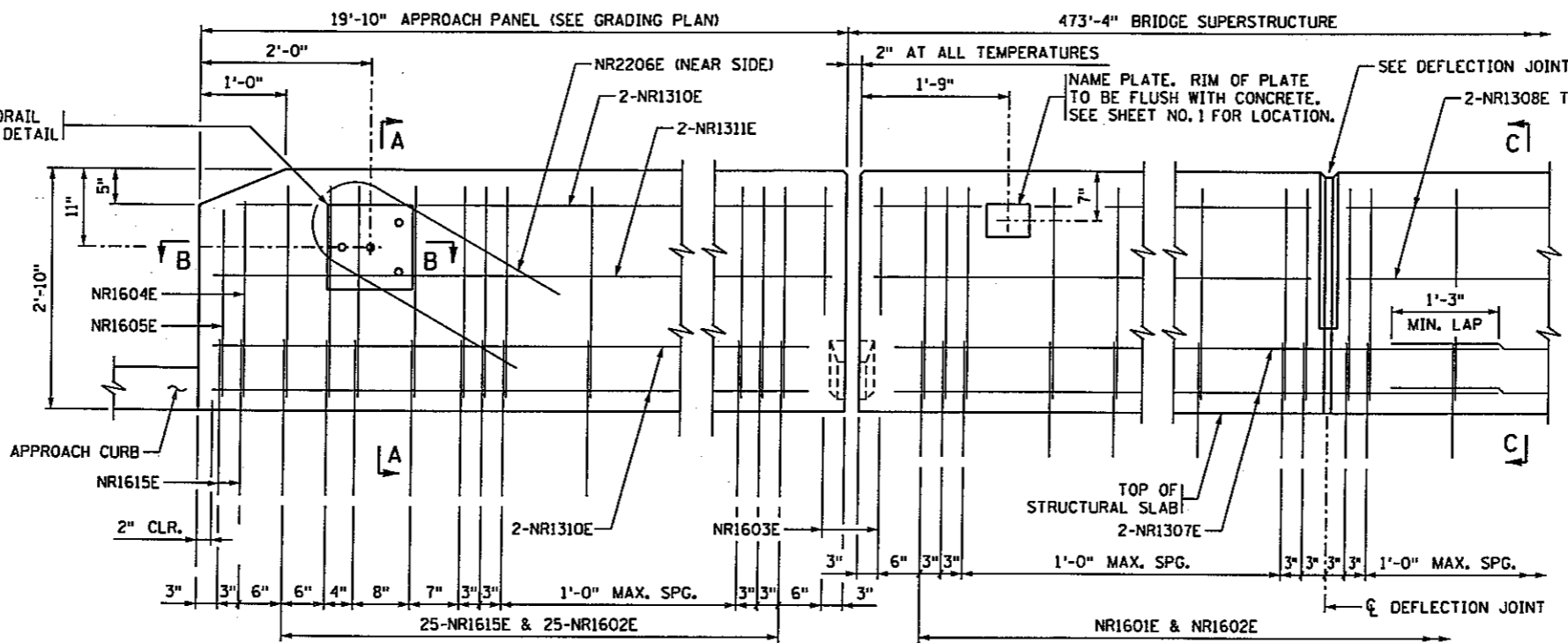
TITLE:
 SUPERSTRUCTURE BAR LIST AND SUMMARY OF QUANTITIES

DES: NCK	DR: MAW	APPROVED:	BRIDGE NO 02577
CHK: JAJ	CHK: NCK		
SHEET NO B7 OF B22 SHEETS			

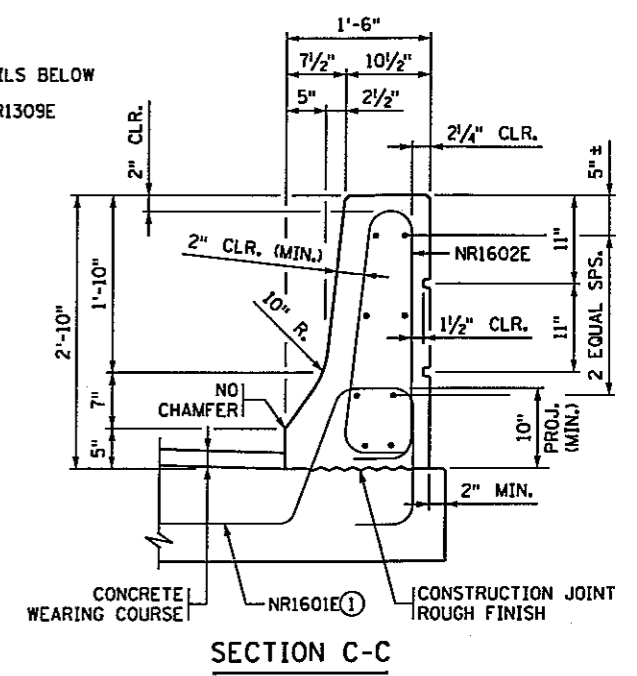
10/42/28 AM
1/20/2010
S:\E\A\Anoka\102287AS-dsgn\51-cadd\Structural\cbr02577-7117e.dgn



SECTION A-A

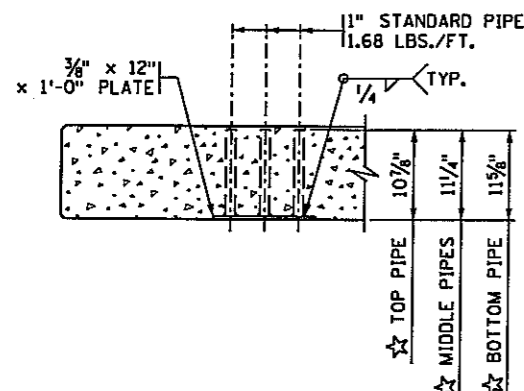


EXPANSION JOINT
(EXPANSION DEVICE NOT SHOWN)
INSIDE ELEVATION OF BARRIER
(CONCRETE WEARING COURSE NOT SHOWN)



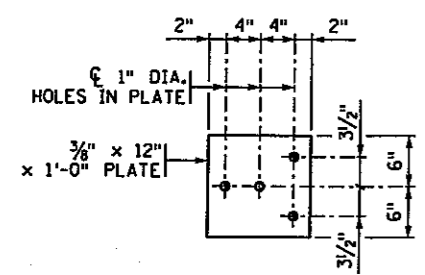
SECTION C-C

BARRIER MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350



SECTION B-B

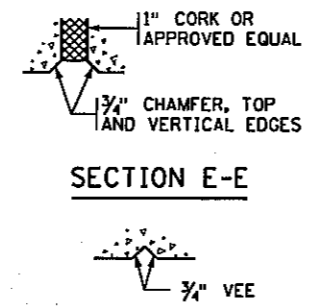
(REINFORCEMENT NOT SHOWN)
★ DIMENSIONS INCLUDE 3/8" PLATE



GUARDRAIL CONNECTION DETAIL

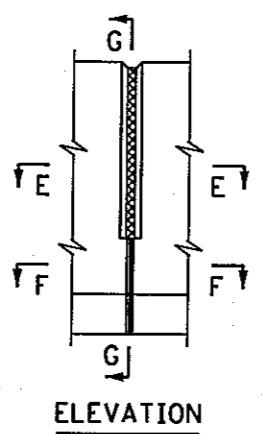
GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394
ESTIMATED WEIGHT = 22 LBS

BARRIER RUSTICATION

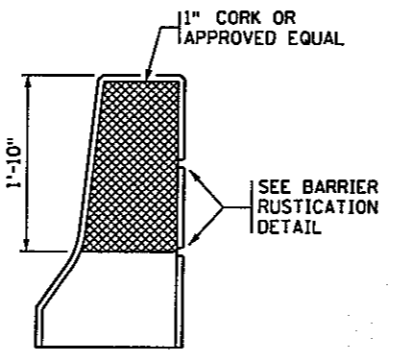


SECTION E-E

SECTION F-F

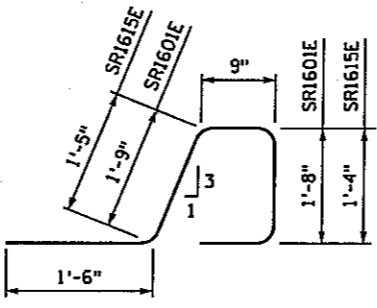


ELEVATION

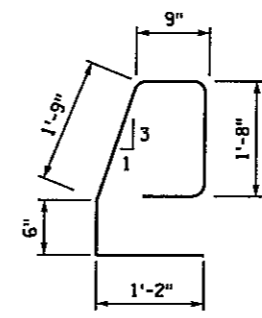


SECTION G-G

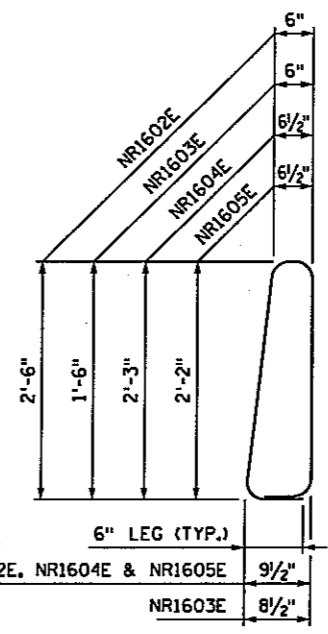
DEFLECTION JOINT DETAILS



NR1601E, NR1615E



NR1614E



NR1602E, NR1603E, NR1604E & NR1605E

NR2206E

BILL OF REINFORCEMENT FOR NORTH BARRIER				
BAR	NO.	LENGTH	SHAPE	LOCATION
NR1601E	521	6'-3"		BARRIER DOWEL
NR1602E	561	6'-7"		BARRIER VERTICAL
NR1603E	4	4'-7"		BARRIER VERTICAL
NR1604E	2	6'-1"		BARRIER VERTICAL
NR1605E	2	5'-11"		BARRIER VERTICAL
NR2206E	2	6'-6"		BARRIER VERTICAL
NR1307E	52	37'-7"		BARRIER LONGIT.
NR1308E	112	14'-8"		BARRIER LONGIT.
NR1309E	16	13'-0"		BARRIER LONGIT. TOP
NR1310E	8	19'-3"		BARRIER LONGIT.
NR1311E	4	19'-6"		BARRIER LONGIT.
NR1614E	2	6'-5"		DWL AT CATCH BASIN
NR1615E	54	5'-7"		BARRIER DOWEL

GENERAL NOTES

- LENGTH OF "TYPE F (TL-4) RAILING CONCRETE (3Y46 OR 3Y46A)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE BARRIER.
- CONCRETE BARRIER = 477 LBS./FT. (0.117 CU. YDS./FT.)
- FINISH ALL EDGES OF BARRIER WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.
- MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.
- SEE SUPERSTRUCTURE SHEET FOR JOINT SPACING.
- GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.
- GUARDRAIL CONNECTION, CORK, AND NAME PLATE TO BE CONSIDERED INCIDENTAL TO "TYPE F (TL-4) RAILING CONCRETE (3Y46 OR 3Y46A)".
- BARRIER QUANTITIES ARE LISTED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.
- ① PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT.

REVISED: 05-26-2006
APPROVED: DECEMBER 18, 2003
Daniel C. Klepp
STATE BRIDGE ENGINEER

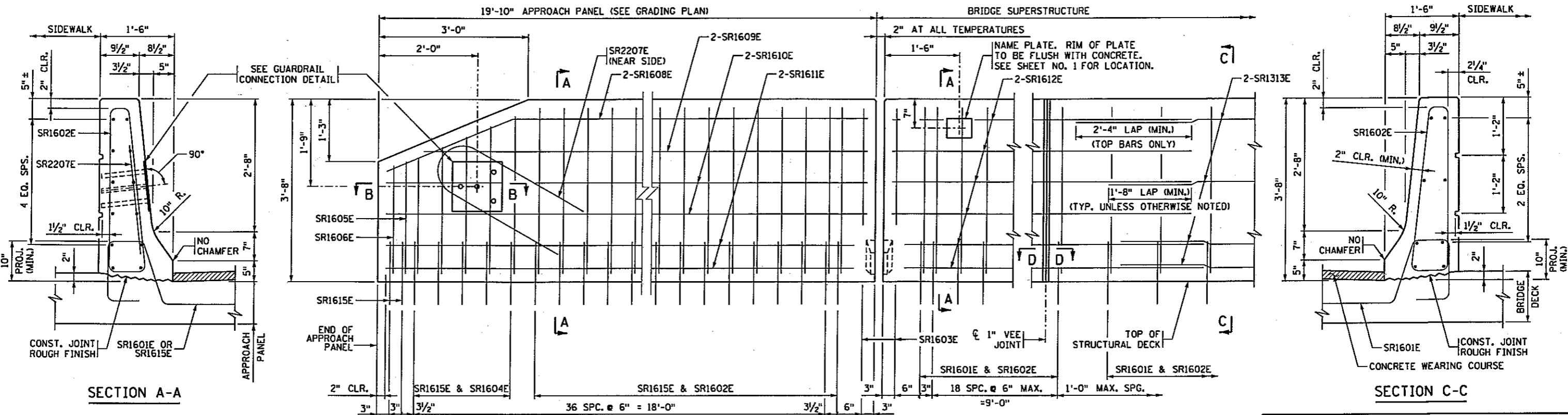
SEH
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150

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.
Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:
CONCRETE BARRIER (TYPE F, TL-4)
WITH INTEGRAL END POST
(WITH CONCRETE WEARING COURSE)

SP 02-614-32
DES: MAW DR: MAW APPROVED:
CHK: NCK CHK: NCK
SHEET NO B8 OF B22 SHEETS
BRIDGE NO 02577
FIG. 5-397.117

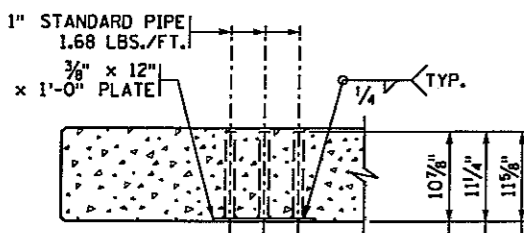
10:42:30 AM
1/20/2010
S:\MEVA\Arakoc\10228715-dgn\51-cadd\Structural\cbr02577_7125e.dgn



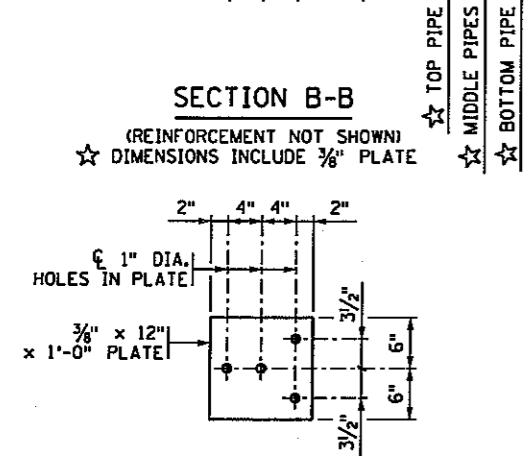
EXPANSION JOINT
EXPANSION DEVICE NOT SHOWN
INSIDE ELEVATION OF BARRIER
CONCRETE WEARING COURSE NOT SHOWN

BARRIER MEETS TEST LEVEL 5 REQUIREMENTS OF NCHRP REPORT 350

BILL OF REINFORCEMENT FOR SOUTH BARRIER				
BAR	NO.	LENGTH	SHAPE	LOCATION
SR1601E	492	6'-3"		BARRIER DOWEL
SR1602E	559	8'-2"		BARRIER VERTICAL
SR1603E	4	6'-2"		BARRIER VERTICAL
SR1604E	2 SERIES OF 5	6'-2" TO 7'-10"		BARRIER VERTICAL
SR1605E	2	6'-1"		BARRIER VERTICAL
SR1606E	2	5'-11"		BARRIER VERTICAL
SR2207E	2	6'-6"		BARRIER VERTICAL
SR1608E	4	19'-11"		BARRIER LONGIT.
SR1609E	4	18'-11"		BARRIER LONGIT.
SR1610E	8	19'-6"		BARRIER LONGIT.
SR1611E	8	19'-3"		BARRIER LONGIT.
SR1612E	24	13'-0"		BARRIER LONGIT.
SR1313E	96	40'-0"		BARRIER LONGIT.
SR1614E	2	6'-5"		DWL AT CATCH BASIN
SR1615E	80	5'-7"		BARRIER DOWEL

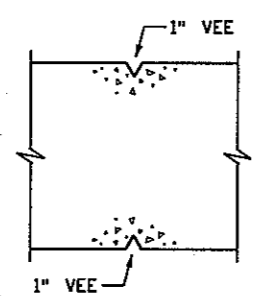


SECTION B-B
(REINFORCEMENT NOT SHOWN)
DIMENSIONS INCLUDE 3/8" PLATE

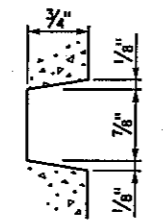


GUARDRAIL CONNECTION DETAIL

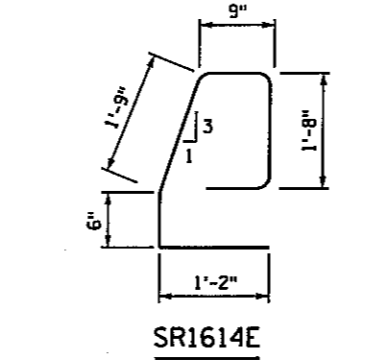
GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394
ESTIMATED WEIGHT = 22 LBS



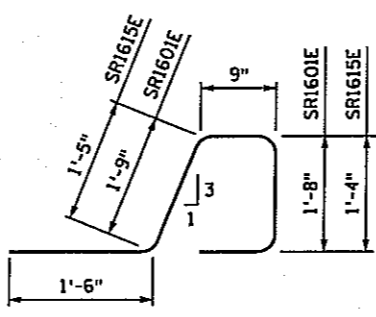
SECTION D-D



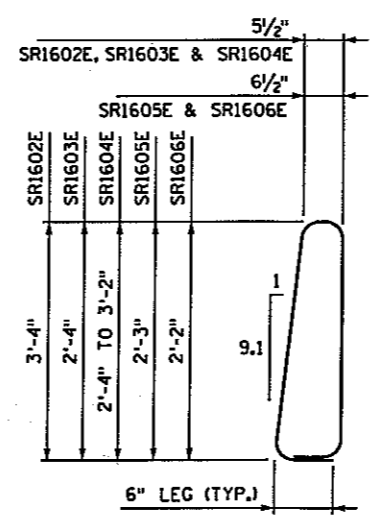
BARRIER RUSTICATION



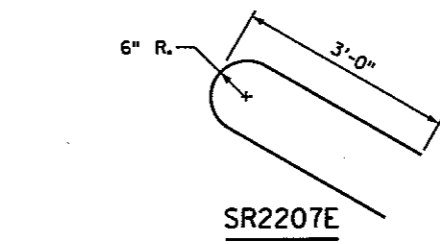
SR1614E



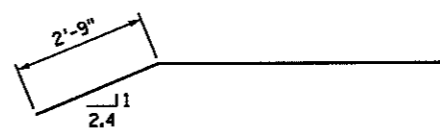
SR1601E, SR1615E



SR1602E, SR1603E, SR1604E, SR1605E & SR1606E



SR2207E



SR1608E

GENERAL NOTES

- LENGTH OF "TYPE F (TL-5) RAILING CONCRETE (3Y46 OR 3Y46A)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE BARRIER.
- CONCRETE BARRIER = 582 LBS./FT. (0.144 CU. YDS./FT.)
- FINISH ALL EDGES OF BARRIER WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.
- MAXIMUM SPACING OF 1" VEE JOINTS SHALL BE 10 FT.
- GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.
- GUARDRAIL CONNECTION AND NAME PLATE TO BE CONSIDERED INCIDENTAL TO "TYPE F (TL-5) RAILING CONCRETE (3Y46 OR 3Y46A)".
- BARRIER QUANTITIES ARE LISTED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

MODIFIED

REVISED: 05-26-2006
APPROVED: JULY 25, 2005
David A. Arakoc
STATE BRIDGE ENGINEER

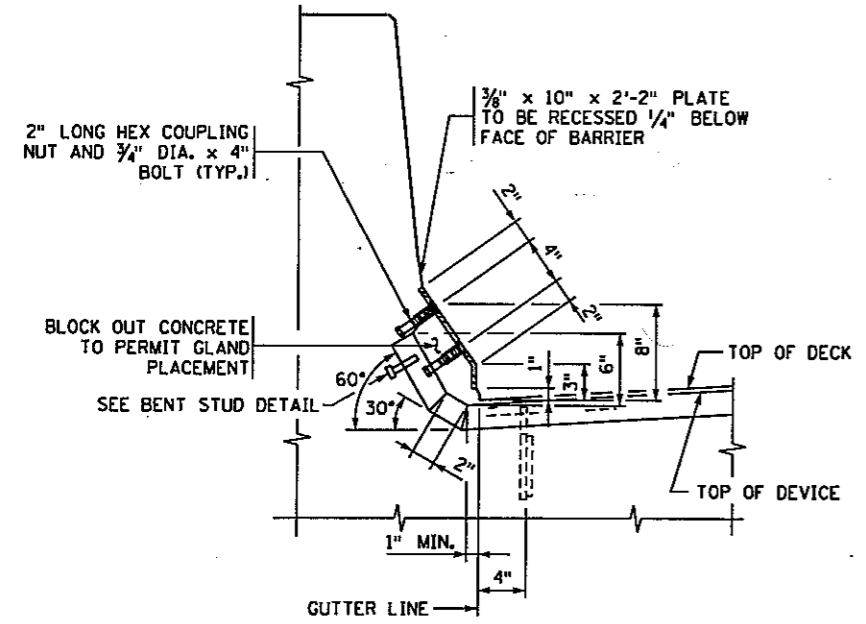
SEH
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150

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.
Signature: *Nathan C. Klopff* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

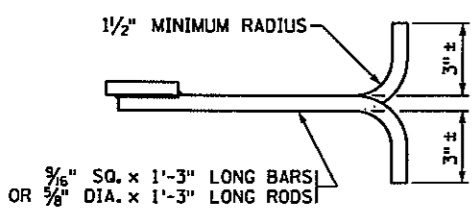
TITLE:
CONCRETE BARRIER (TYPE F, TL-5)
WITH BRIDGE SLAB SIDEWALK AND INTEGRAL
END POST (WITH CONC. WEARING COURSE)

SP 02-614-32	DES: MAW	DR: MAW	APPROVED:	FIG. 5-397.125
CHK: NCK	CHK: NCK			BRIDGE NO
SHEET NO B9 OF B22 SHEETS				02577

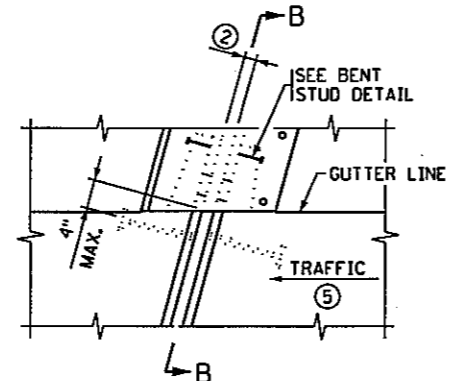
10142131 AM
1/20/2010
S:\AE\VA\Anokg\102287\5-dsgn\51-cadd\structure\1\abr-02577_7627e.dgn



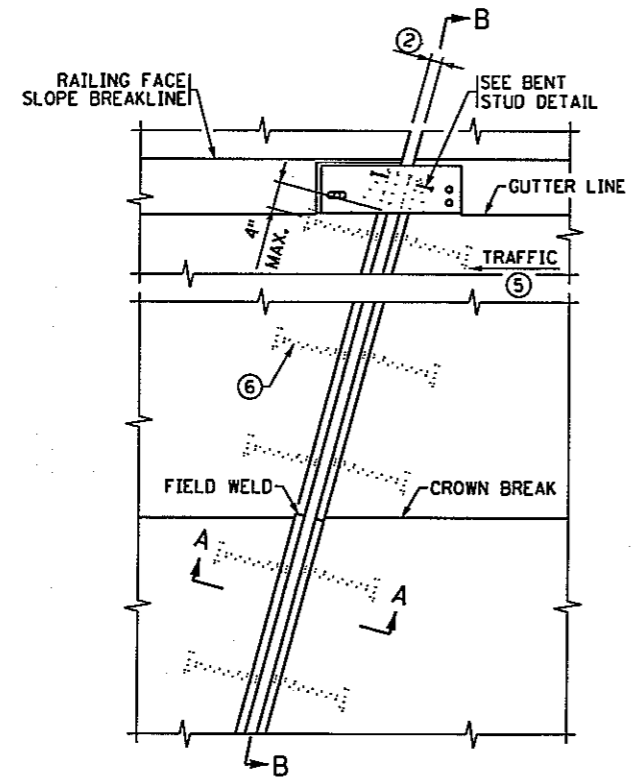
SECTION THROUGH RAILING
TYPE F RAILING



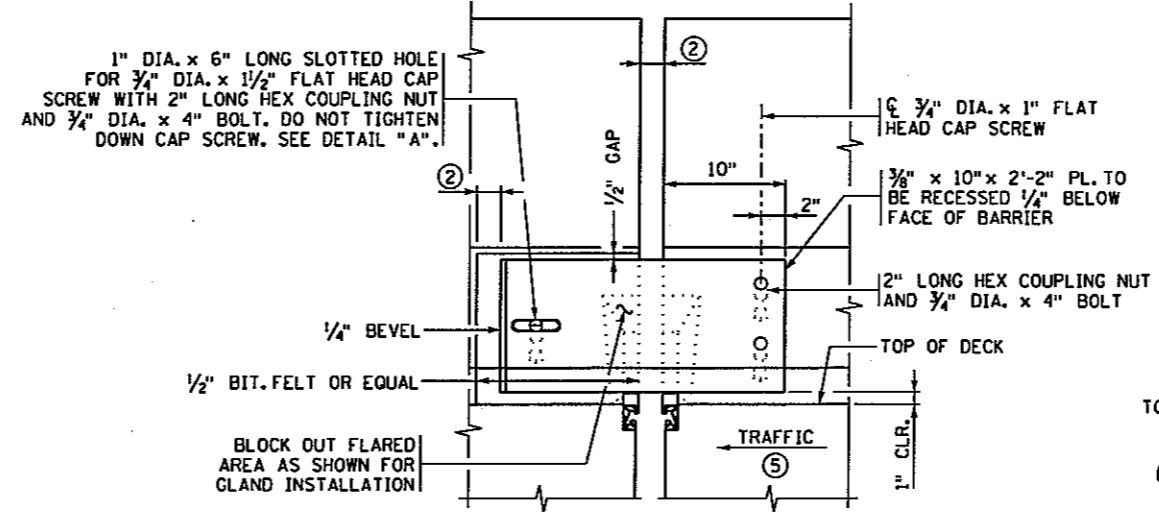
BAR-ROD DETAIL



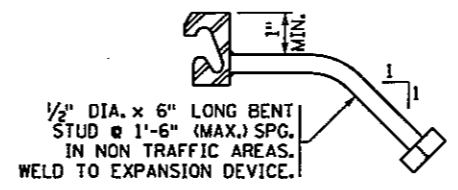
PLAN VIEW @ EXPANSION DEVICE
MEDIAN OR SIDEWALK ALTERNATE



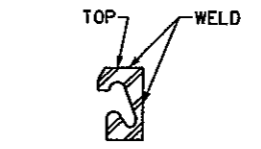
PLAN VIEW @ EXPANSION DEVICE
WITH STRAIGHT DEVICE



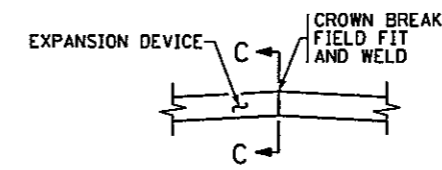
RAILING ELEVATION



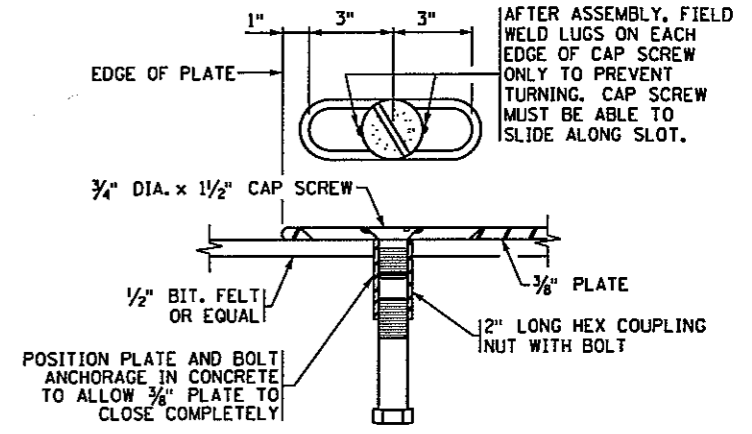
BENT STUD DETAIL



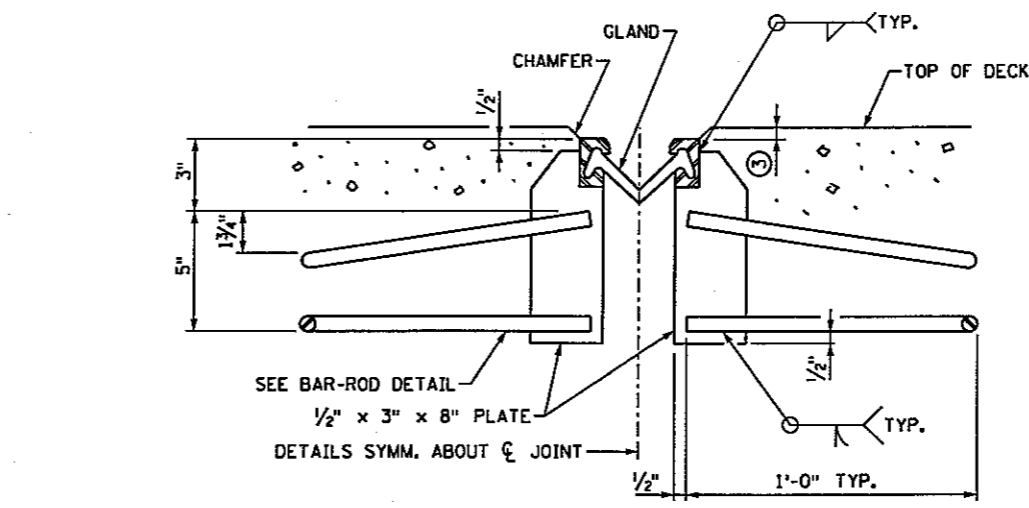
SECTION C-C



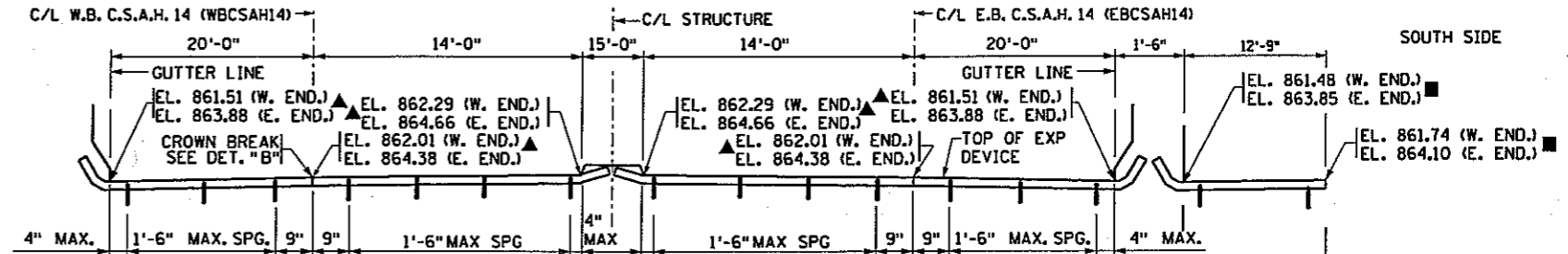
DETAIL "B"



DETAIL "A"



SECTION A-A



SECTION B-B ~ ALONG @ JOINT - S ABUT

▲ ELEVATIONS SHOWN ARE 1/8" BELOW TOP OF SLAB @ @ JOINT
■ ELEVATIONS SHOWN ARE 1/2" BELOW TOP OF SLAB @ @ 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.
- ① DIMENSIONS ARE ALONG CENTERLINE OF JOINT.
- ② 2" AT 45°; 1" AT 90°
- ③ 1/8" (1/4" MAX.), 1/2" (5/8" MAX.) WHEN SNOWPLOW FINGERS ARE USED. SNOWPLOW FINGERS ARE REQUIRED FOR SKEWS OVER 15° AND LESS THAN 50°.
- ④ SEE SUPERSTRUCTURE DETAILS FOR RADIUS.
- ⑤ SEE SHEET NO. 1 FOR DIRECTION OF TRAFFIC.
- ⑥ PLACE BAR-ROD NORMAL TO JOINT ON NEW BRIDGES AND JOINT REPLACEMENTS. ON JOINT REPLACEMENTS WHEN SKEW IS OVER 15° AND LESS THAN 50° BEND RODS PARALLEL TO @ ROADWAY.

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

3535 VADNAS CENTER DRIVE
ST. PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150
SEH

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.
Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:
WATERPROOF EXPANSION DEVICE (WITH TYPE F BARRIER)

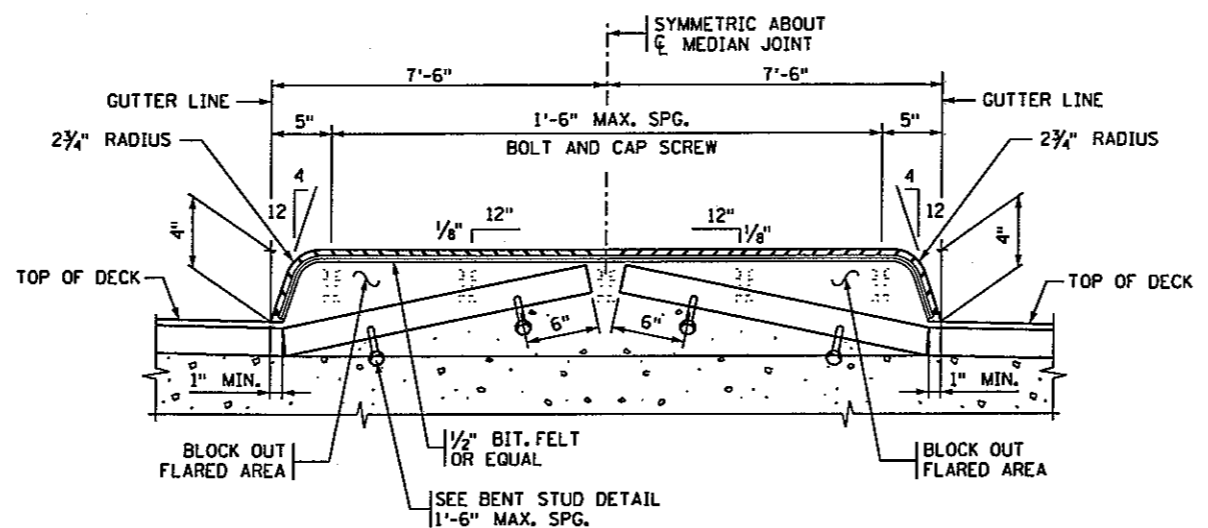
SP 02-614-32
DES: MAW DR: MAW APPROVED:
CHK: NCK CHK: NCK
SHEET NO B10 OF B22 SHEETS
FIG. 5-397.627
BRIDGE NO 02577

MODIFIED

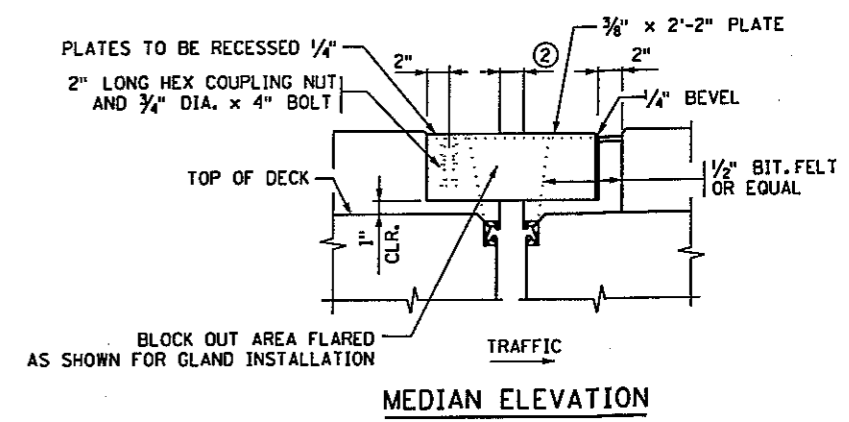
10:42:33 AM

1/20/2010

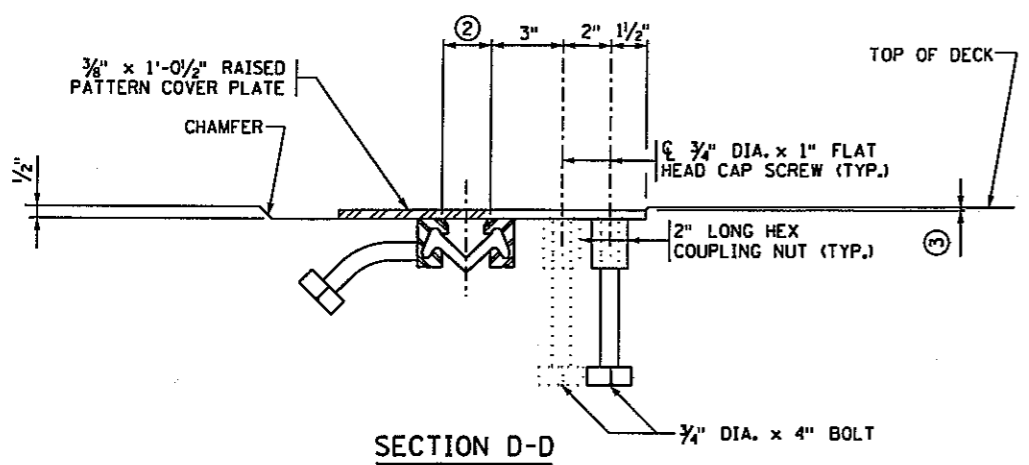
S:\ME\A\Anokc\102287\5-dsgn\51-cadd\51-struct\1\cbr-02577-76306.dgn



MEDIAN SECTION

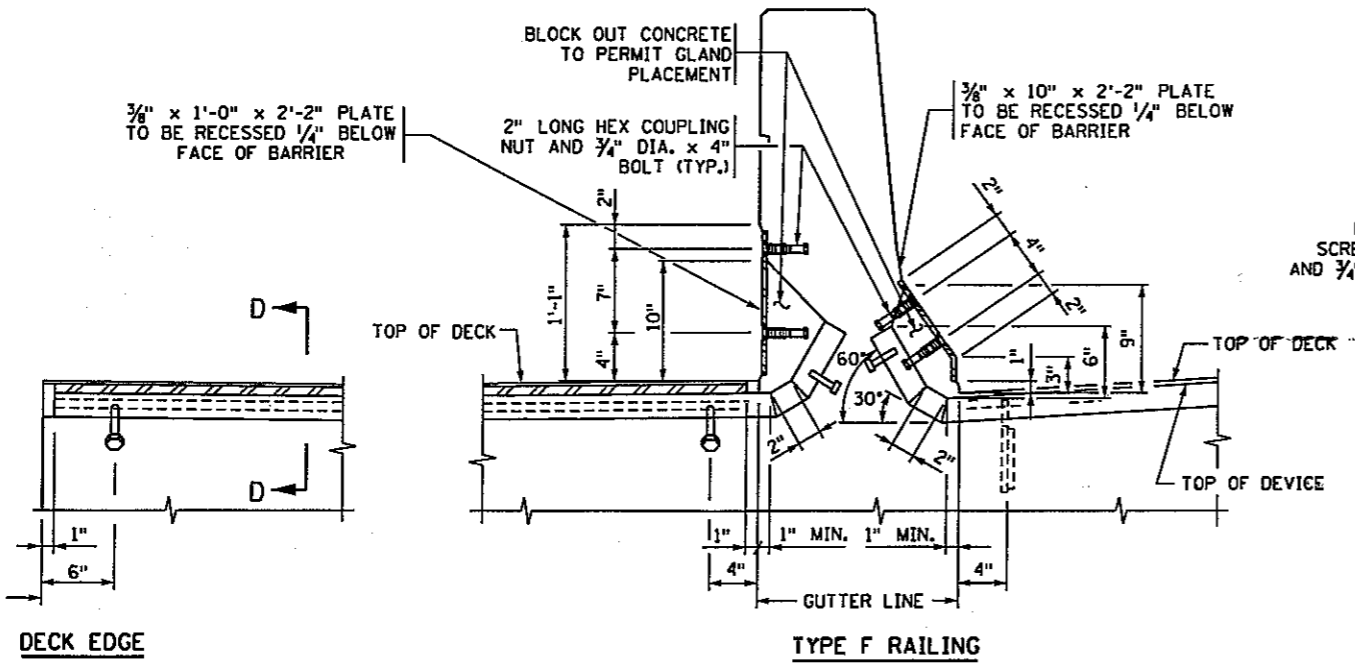


MEDIAN ELEVATION



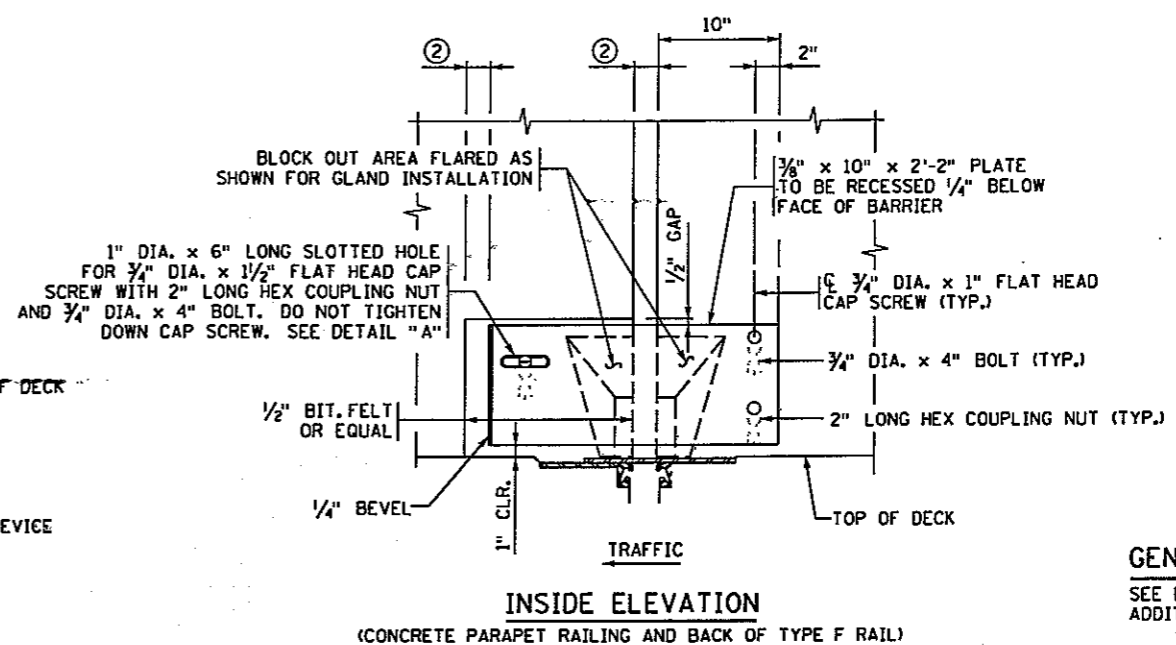
SECTION D-D

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



DECK EDGE

TYPE F RAILING



INSIDE ELEVATION

(CONCRETE PARAPET RAILING AND BACK OF TYPE F RAIL)

GENERAL NOTE
SEE DETAIL 5-397.627, SHEET B10 FOR
ADDITIONAL DETAILS AND NOTES.

REVISION: 10-28-2008
APPROVED: SEPTEMBER 26, 2003
Daniel C. Klepp
STATE BRIDGE ENGINEER

SECTION THROUGH RAILINGS - INTEGRAL SIDEWALK
AT SOUTH DECK EDGE

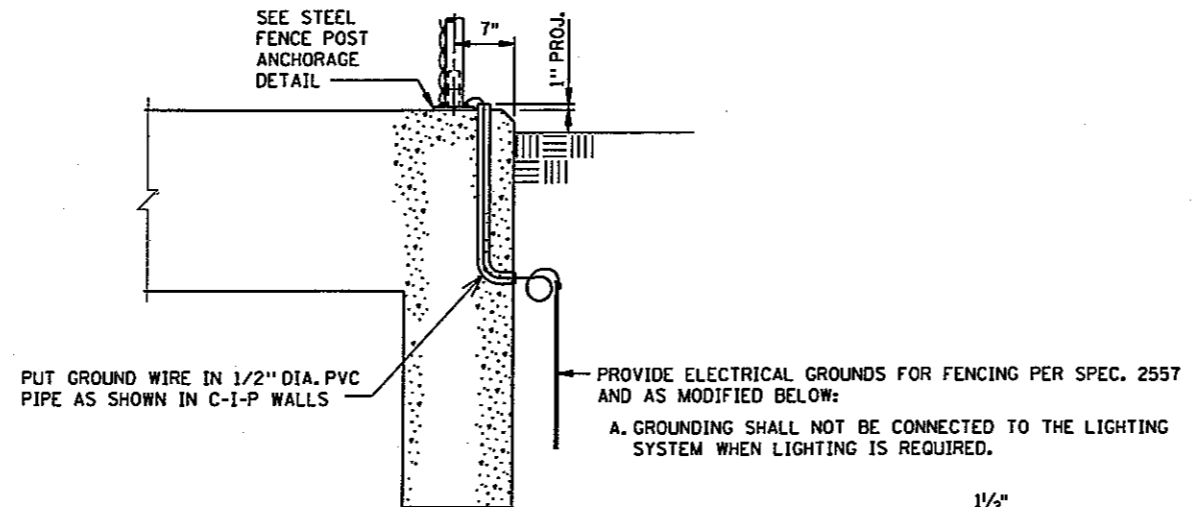
3535 VADNAS CENTER DRIVE
ST. PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150
SEH

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
Signature: *Nathan C. Klepp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

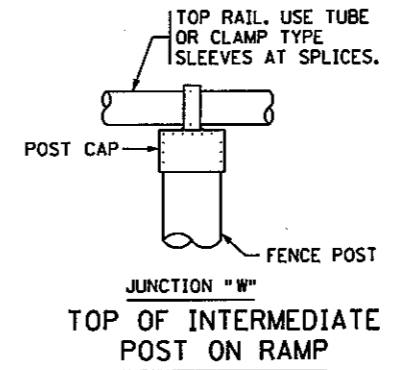
TITLE: WATERPROOF
EXPANSION DEVICE
(WITH RAISED MEDIAN OR SIDEWALK)

SP 02-614-32
DES: MAW DR: MAW
CHK: NCK CHK: NCK

MODIFIED
FIG. 5-397.630
APPROVED: _____
BRIDGE NO 02577
SHEET NO B11 OF B22 SHEETS

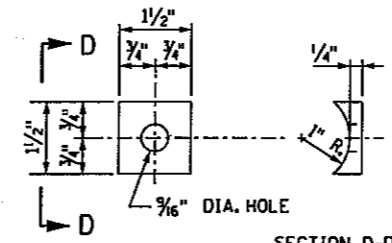


GROUNDING SECTION

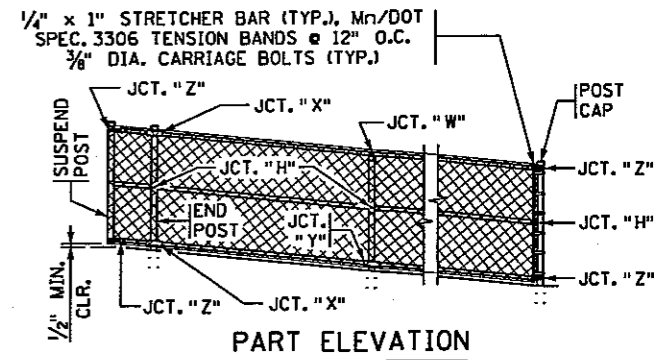
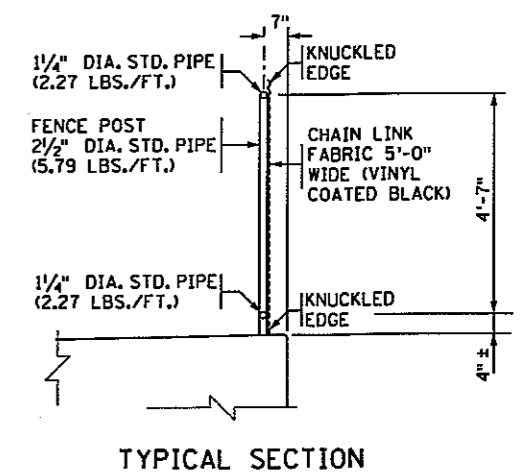
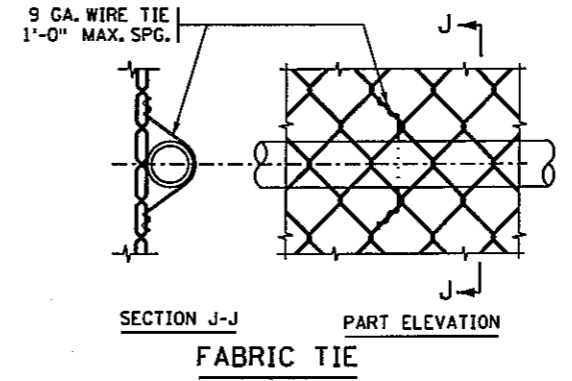
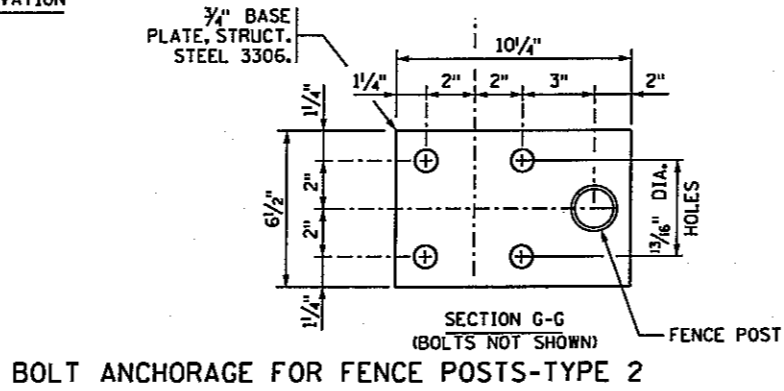
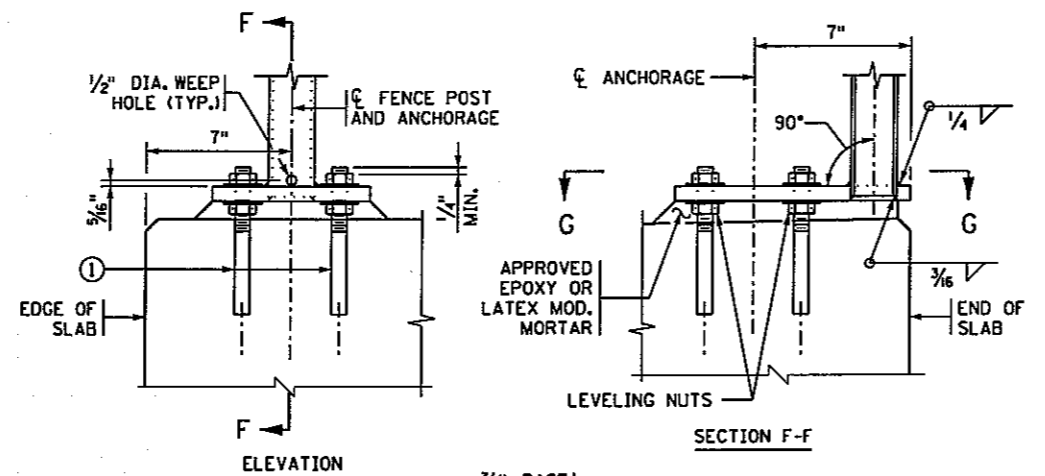
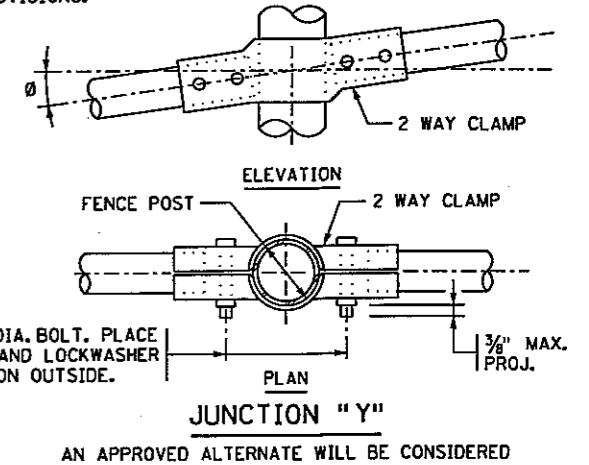
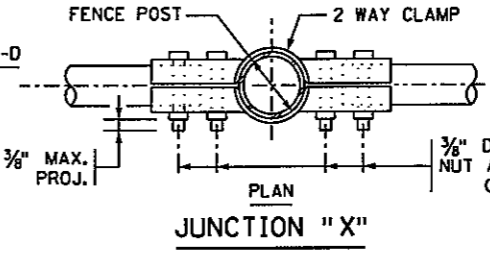


2 WAY CLAMP BENDING TABLE

GRADE OF FENCE	Ø
0° TO 2°	0°
2° TO 6°	4°
6° TO 10°	8°



GROOVED WASHER
AN APPROVED ALTERNATE WILL BE CONSIDERED



REVISION: 04-23-2003

APPROVED: NOVEMBER 26, 1985

Donald J. Fleming
STATE BRIDGE ENGINEER

3535 YADNAS CENTER DRIVE
ST. PAUL, MN 55113
PHONE (651) 490-2000
FAX (651) 490-2150

SEH

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.

Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:
5 FT. WIRE FENCE (DESIGN W-1)
FOR PEDESTRIAN BRIDGES

SP 02-614-32

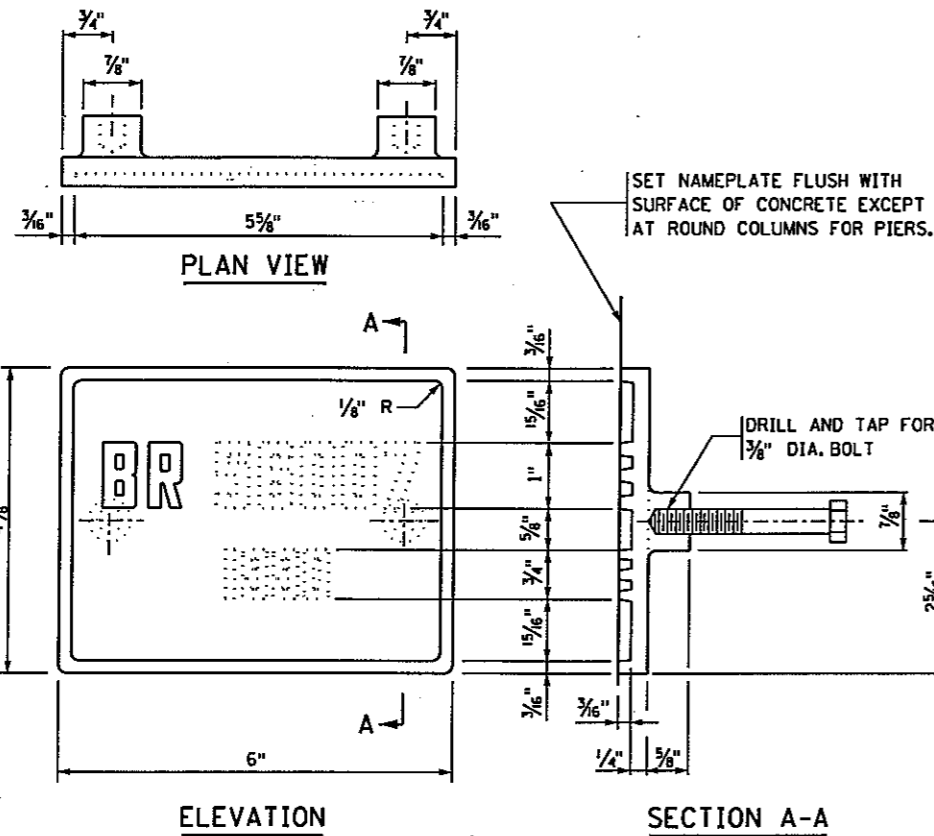
DES: MAW DR: MAW APPROVED:
CHK: NCK CHR: NCK

SHEET NO B12 OF B22 SHEETS

FIG. 5-397.202

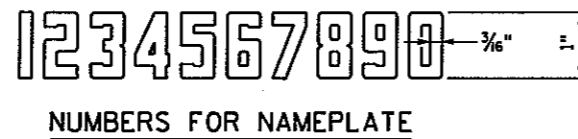
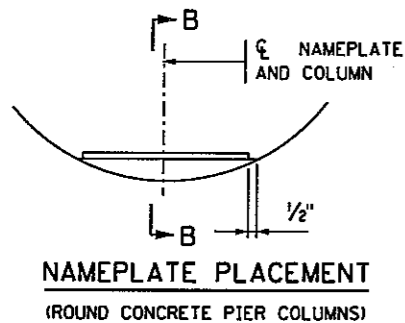
BRIDGE NO 02577

10.42137 AM
1/20/2010
S:\A\A\Anoke\102287\5-dsgn\51-cadd\Structure\01\cbr-02577_det.dgn



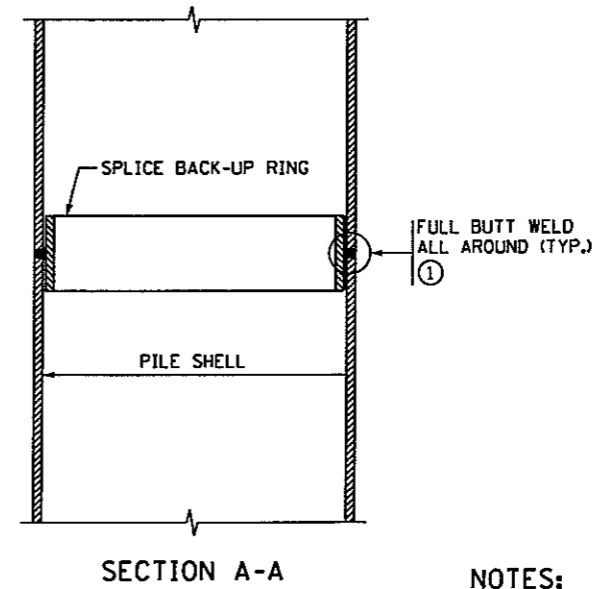
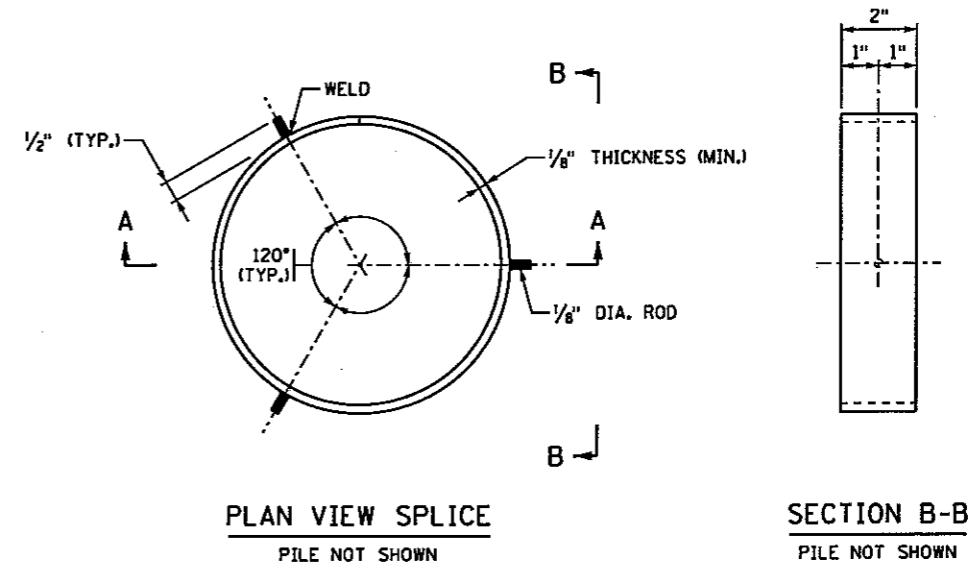
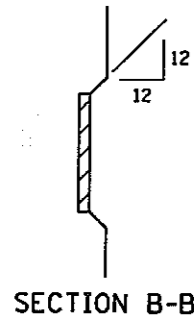
THE DASHED NUMBERS SHOWN ABOVE ARE FOR ILLUSTRATION. DATA TO BE SHOWN ON NAMEPLATE IS AS FOLLOWS:

BRIDGE 02577
YEAR 2009



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.



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-U4a WELD CONFIGURATION.

APPROVED: NOVEMBER 22, 2002

Daniel J. Morgan
STATE BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE NAMEPLATE
(FOR NEW BRIDGES)

REVISION

DETAIL NO.

B101

APPROVED: NOVEMBER 22, 2002

Daniel J. Morgan
STATE BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

PILE SPLICE
(CAST-IN-PLACE CONCRETE PILES)

REVISION

DETAIL NO.

B201

3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150

SEH

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.
Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:

B-DETAILS

SP 02-614-32

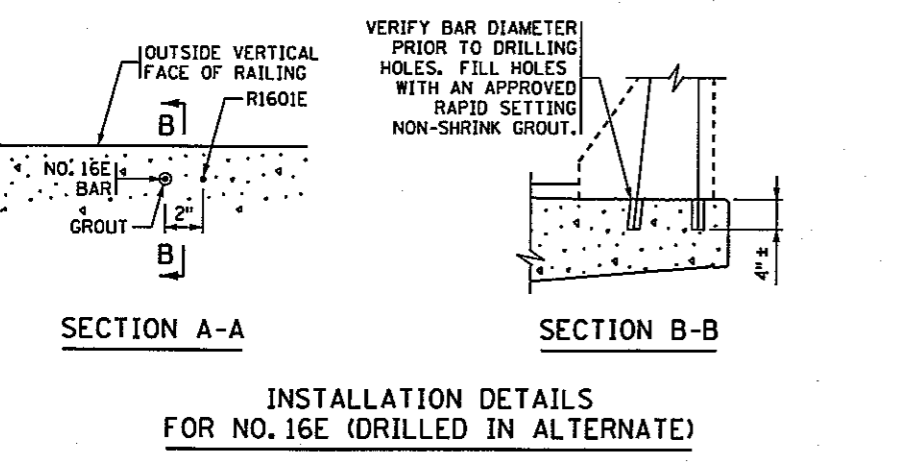
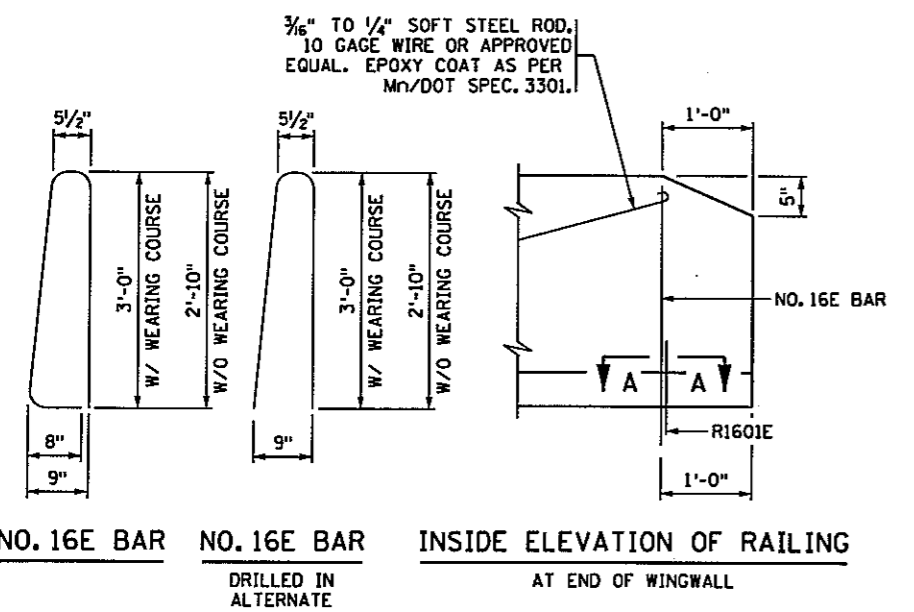
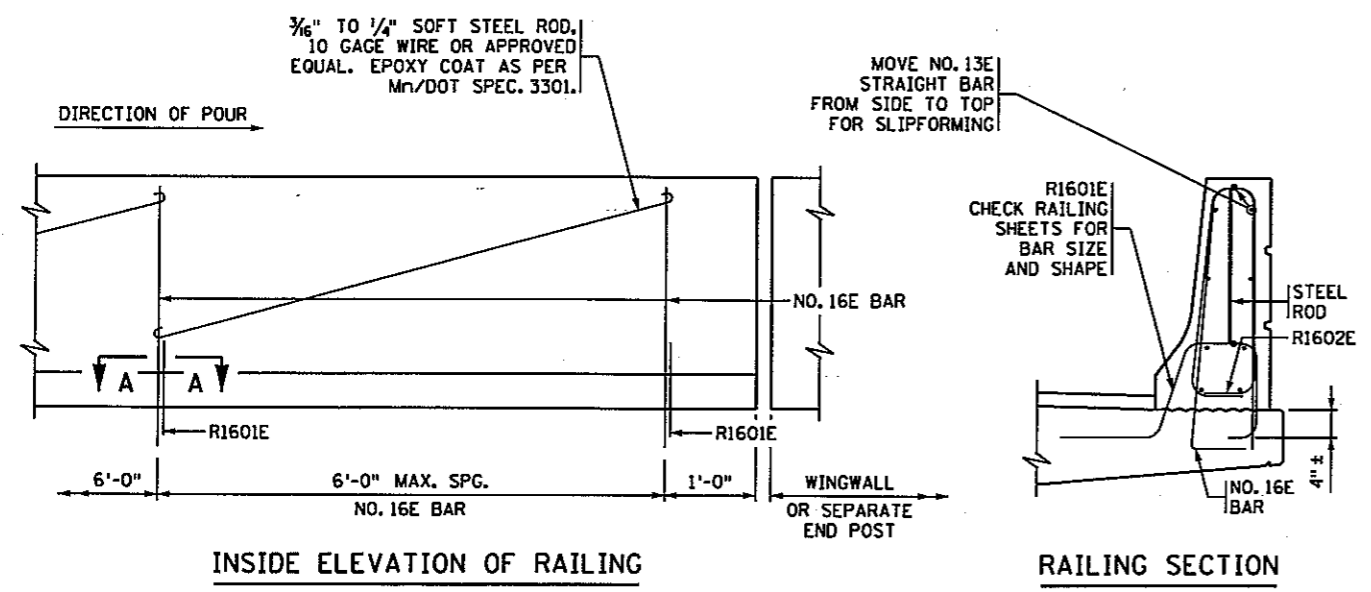
DES: MAW DR: MAW
CHK: JAJ CHK: JAJ

APPROVED:

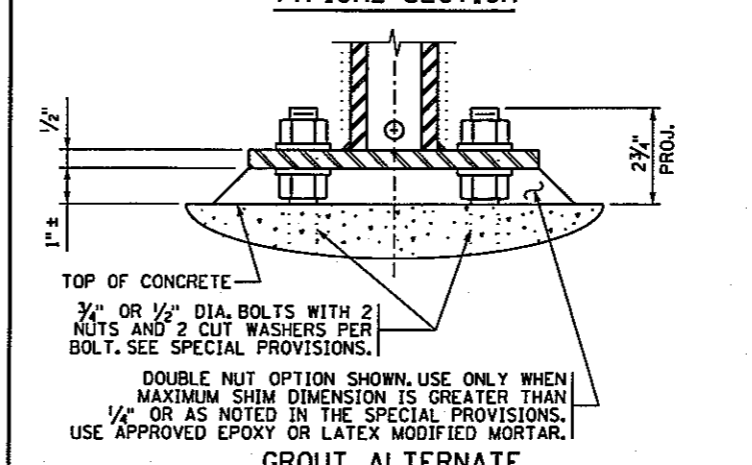
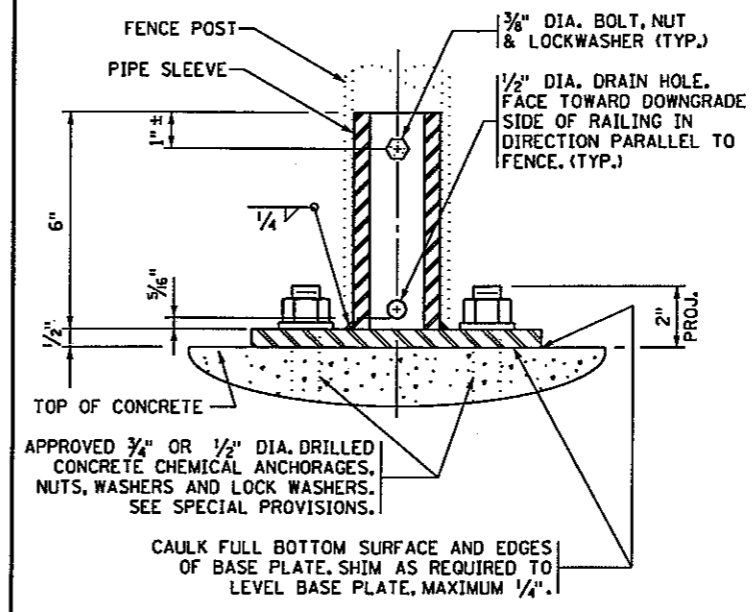
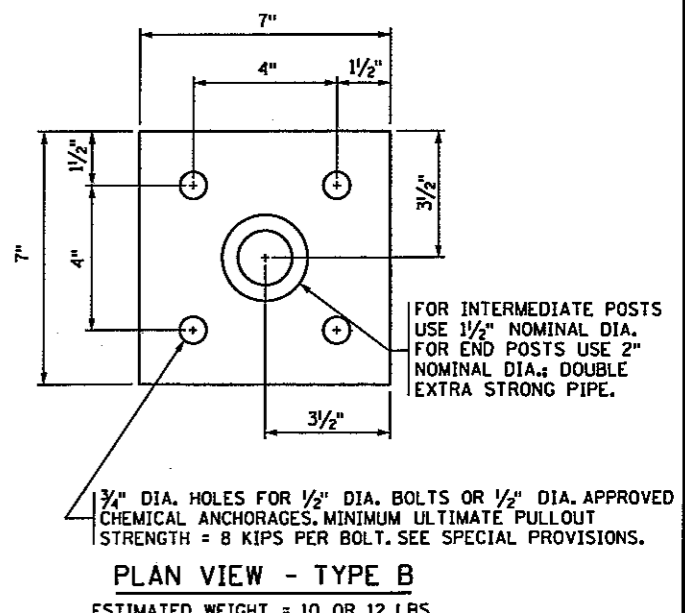
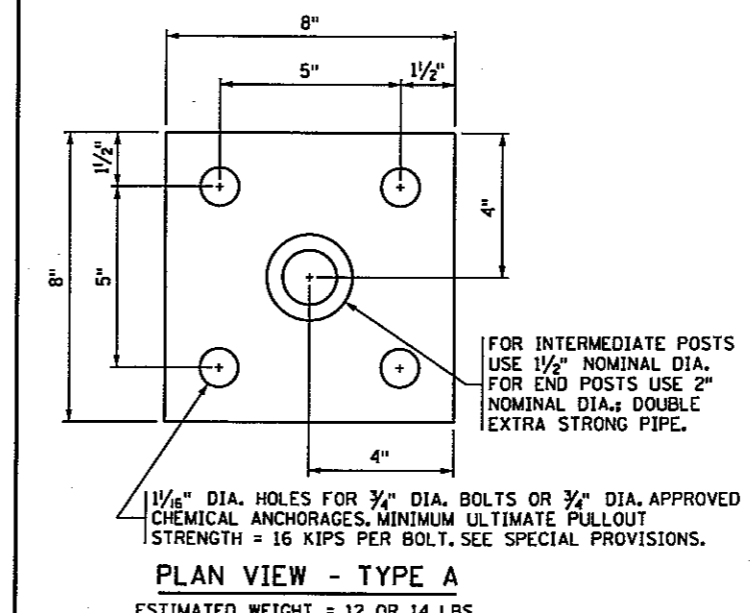
SHEET NO B13 OF B22 SHEETS

BRIDGE NO
02577

10/4/2010 10:42:37 AM
1/20/2010
S:\MEVA\A\moka\102287\5-dsgn\151-cadd\Structure\1\cbr-02577_det.dgn



NOTES:
 CONTRACTOR WILL TOOL V-GROOVE AT DEFLECTION JOINTS AT TIME RAIL IS CAST AND SHALL EXTEND V-GROOVE AROUND ENTIRE PERIMETER OF RAIL.
 FOR ADDITIONAL DIMENSIONS, DETAILS, REINFORCEMENT AND NOTES SEE RAILING SHEET.
 FORM RAIL FOR A MINIMUM OF 2' ON EACH SIDE OF EXPANSION DEVICES, LIGHT STANDARDS AND DECK DRAIN BOX OUTS.
 PAY QUANTITIES WILL NOT BE ADJUSTED AS A RESULT OF SELECTING THIS ALTERNATE.
 USE A SIMILAR METHOD FOR TALLER RAILINGS OR MODIFIED VERSIONS OF THIS RAILING.



NOTES:
 STRUCTURAL STEEL PER Mn/DOT SPEC. 3306
 STRUCTURAL PIPE PER Mn/DOT SPEC. 3362
 GALVANIZE THE FENCE POST ANCHORAGE AFTER FABRICATION PER Mn/DOT SPEC. 3394. GALVANIZE THE FASTENERS PER Mn/DOT SPEC. 3392.
 DOUBLE EXTRA STRONG PIPE WEIGHTS:
 1/2" NOMINAL DIA. = 6.41 LBS./FT.
 2" NOMINAL DIA. = 9.03 LBS./FT.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Morgan</i> STATE BRIDGE ENGINEER	CONCRETE RAILING (TYPE F) (SLIPFORM ALTERNATE)		B830

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Morgan</i> STATE BRIDGE ENGINEER	FENCE POST ANCHORAGE		B905

3535 VADNAIS CENTER DRIVE
ST PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150
SEH

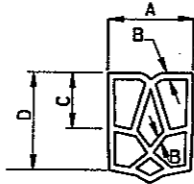
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
 Signature: *Nathan C. Klapp* Date: 7-28-09
 Printed Name: NATHAN C. KLAPP Reg. No. 43836

TITLE: B-DETAILS
 DES: MAW DR: MAW APPROVED:
 CHK: JAJ CHK: JAJ
 SHEET NO B14 OF B22 SHEETS
 BRIDGE NO 02577

10442139 AM
1/20/2010
S:\AE\AI\Anokic\102287.5-dsgn\51-cadd\Structure\of\Approach\panel\5-221-1.sprn.dgn

REQUIRED DIMENSIONS

JOINT TYPE	TRANSVERSE NOMINAL SEALER SIZE
A	1 1/16" USE IN ALL 3/8" JOINTS
B	0.69" + 0.13" - 0.05"
C	0.08" ± 0.02"
D	0.25" MIN.
E	0.63" MIN.



SPEC. REFERENCE 3721

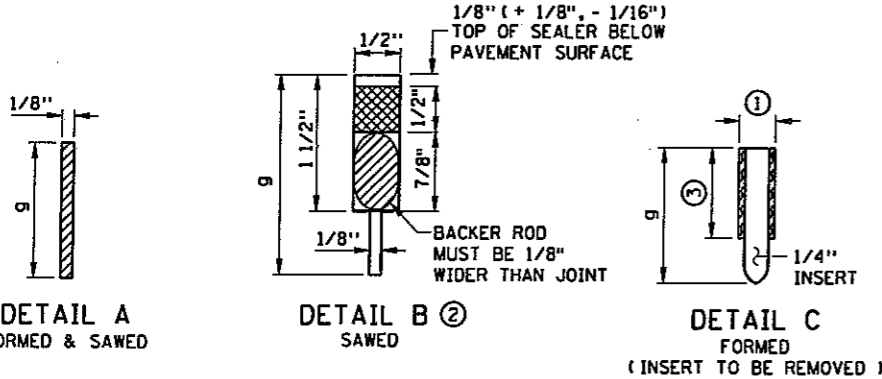
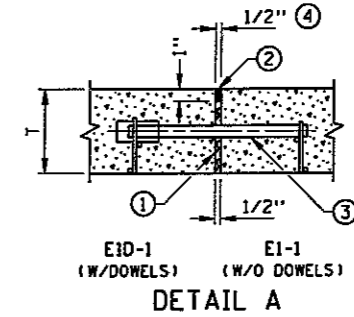
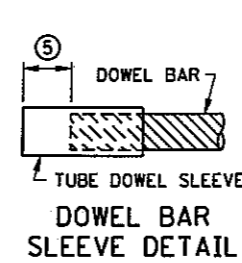
TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

CONTRACTION JOINT SEALER
PREFORMED ELASTIC TYPE

NOTES:

"A" DIMENSION SHALL APPLY AT ANY POINT THROUGHOUT "C" DEPTH. IN ITS FINAL POSITION, THE TOP CORNERS OF THE PREFORMED JOINT SEALER SHALL BE PLACED NOT LESS THAN 1/8 IN. NOR MORE THAN 5/16 IN. BELOW THE PAVEMENT SURFACE.

SHARP INTERNAL CORNERS WILL NOT BE PERMITTED. ALL CORNERS SHALL BE PROVIDED WITH SUITABLE FILLET. CURRENTLY APPROVED CONFIGURATIONS ARE ON FILE IN THE MATERIALS ENGINEERING SECTION, MINNESOTA DEPARTMENT OF TRANSPORTATION.

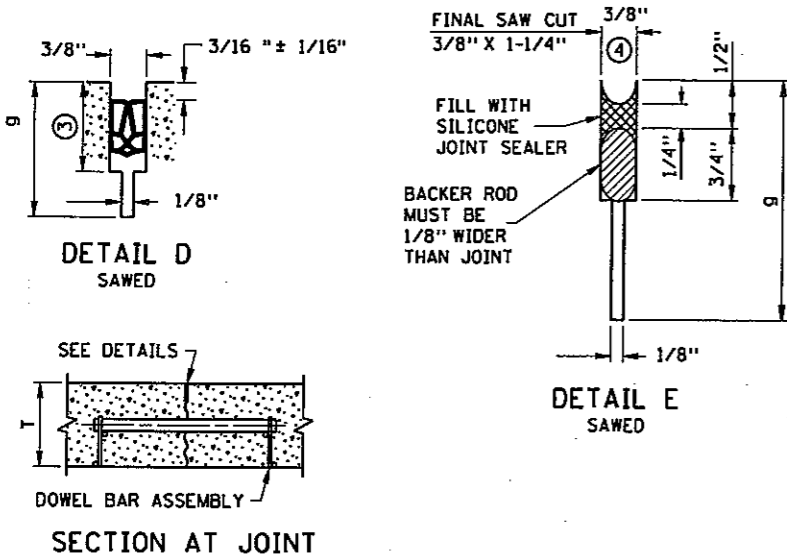
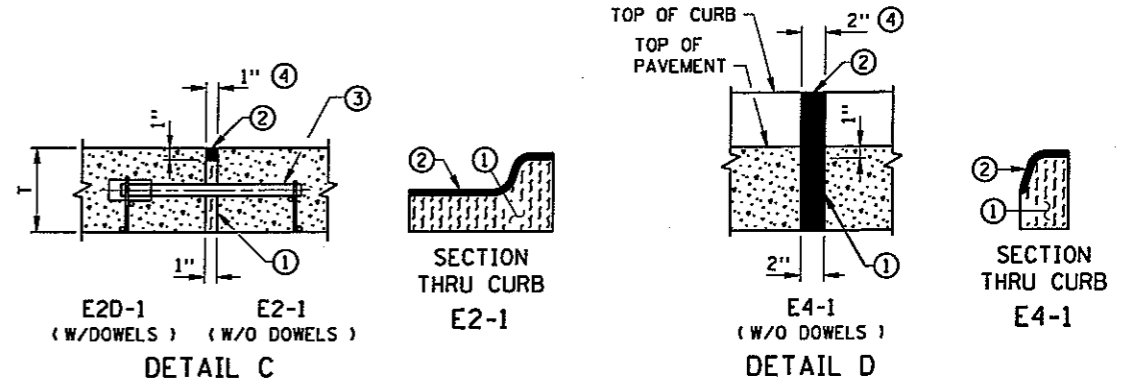


CONTRACTION JOINT CLASS DESIGNATION, DETAIL & SEALER SPEC. TABLE

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITHOUT DOWELS	WITH DOWELS		
C1A	C1A-D	A	UNSEALED
C2A	C2A-D	A	3725
C2B	C2B-D	B	3725
C2X	C2X-D	B OR C	3725
C3D	C3D-D	D	3721
C3X	C3X-D	C OR D	3721
C4E	C4E-D	E	3722

DOWEL BAR DIAMETER TABLE

PAVEMENT THICKNESS T	DOWEL BAR DIAMETER
6" - 6 1/2"	1"
7" - 10"	1 1/4"
10 1/2" - 14"	1 1/2"



LEGEND
C = CONTRACTION JOINT
NO. = SEALANT TYPE
1 = UNSEALED
2 = 3725
3 = 3721
4 = 3722

EXAMPLE
C2B-D

LETTER = DETAIL
X = MORE THAN 1 DETAIL
-D = DOWEL BARS

NOTES:

- DESIGN C3X OR C3X-D - PRIOR TO INSTALLING PREFORMED JOINT SEALER IN THE FORMED JOINT (DETAIL C), THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH OF 3/8" BY SAWING ALONG THE FULL LENGTH OF THE FORMED JOINT.
- DESIGN C2X OR C2X-D - PRIOR TO SEALING FORMED JOINT (DETAIL C) WITH HOT POUR SEALER THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH OF 1/2". SAW ALONG THE FULL LENGTH OF THE FORMED JOINT TO DEPTH OF 3/4" (+ 1/8", - 1/16"). THE SEALER SHALL BE FILLED TO THE SAME DEPTH AS SHOWN IN DETAIL B.
- DESIGN C2B OR C2B-D - PRIOR TO SEALING JOINT (DETAIL B) WITH HOT POUR JOINT SEALER, A 5/8" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 5/8" BELOW THE SURFACE OF THE PAVEMENT.
- WHEN USING PREFORMED JOINT SEALER, THE DEPTH SHALL BE 1/4" MORE THAN THE PREFORMED SEALER, WHEN COMPRESSED, TO FIT THE JOINT DESIGN WIDTH.
- THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2" BELOW THE SURFACE OF THE PAVEMENT. NON SELF-LEVELING SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4".

GENERAL NOTES:

SEE STANDARD PLATE 1103, DOWEL BAR ASSEMBLY. SEE STANDARD PLATE 1150, CONSTRUCTION OF HEADER JOINTS. SEE STANDARD PLANS 5-297.217 AND 5-297.219, CONCRETE MAINLINE/RAMP PAVEMENT. SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED. FOR UNBONDED OVERLAYS, THE JOINT DEPTH "g" SHALL BE T/3. FOR CONCRETE PAVEMENT, THE JOINT DEPTH "g" SHALL BE T/4.

CONTRACTION JOINTS
DESIGN C

EXPANSION JOINTS

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITH DOWELS	WITHOUT DOWELS		
E1D-1	E1-1	A	3723
E2D-1	E2-1	C	3723
	E4-1	D	3723
	E4D-1	E	3723
	E8S-1	(6)	3725

LEGEND
E = EXPANSION JOINT
NO. = JOINT REFERENCE
D = DOWEL BARS
S = CONCRETE SILL
-1 = HOT Poured SEAL

EXAMPLE
E1D-1
HOT Poured SEAL
DOWEL BARS
JOINT REFERENCE
EXPANSION JOINT

NOTES:

- PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.
- JOINT SEALER SPEC. 3723. TOP OF SEALER, FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION E JOINTS FLUSH WITH SURFACE ± 1/8".
- DOWEL BAR ASSEMBLY, SEE STANDARD PLATE 1103.
- THE FIRST NUMBER IN THE JOINT DESIGNATION IS EQUAL TO HALF OF THE JOINT NUMBER IN 1/2" INTERVALS (I.E. E1 = 1/2", E2 = 1", E4 = 2", AND E8 = 4").
- SPACE FROM END OF DOWEL BAR TO END OF SLEEVE TO BE EQUAL TO EXPANSION JOINT WIDTH.
- SEE STANDARD PLAN 5-297.223 FOR E8S JOINT DETAIL.

EXPANSION JOINTS
DESIGN E

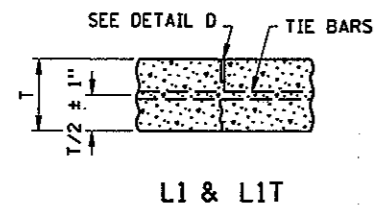
STANDARD SHEET NO.
5-297.221 (1 OF 2)
STANDARD APPROVED:
JUNE 6, 2005

TITLE:
PAVEMENT JOINTS
CONTRACTION (DESIGN C) AND EXPANSION (DESIGN E)

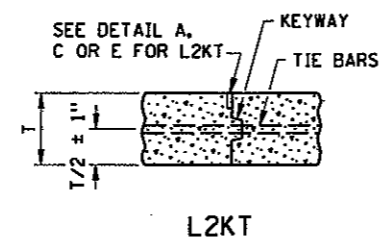
STATE PROJ. NO. SP 02-614-32

SHEET NO. B15 OF B22 SHEETS

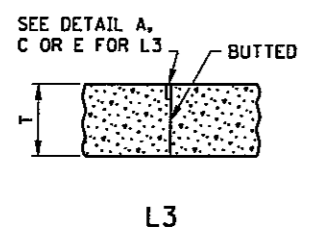
10142141 AM
1/20/2010
S:\V\AE\Anoke\10228715-dsgn\51-ccdd\Structural\app\acchbone\1014221_2_spn.dgn



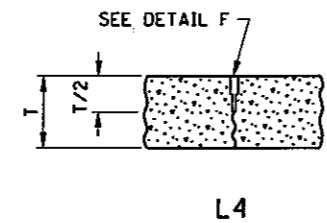
L1 & L1T



L2KT



L3

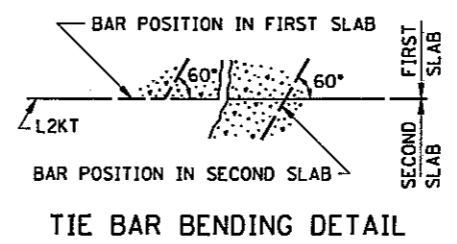
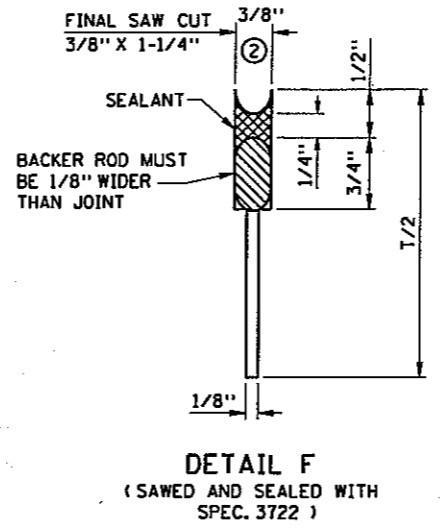
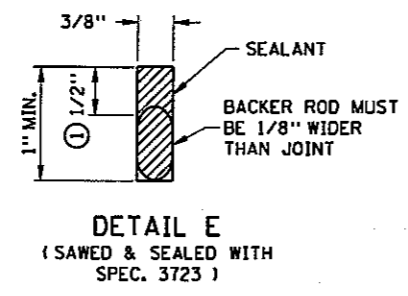
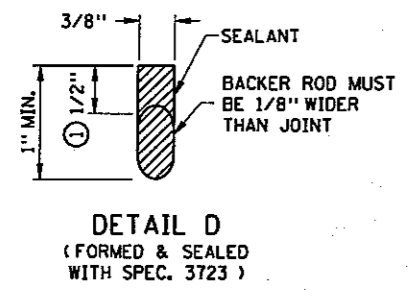
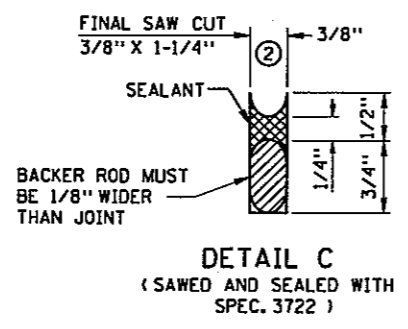
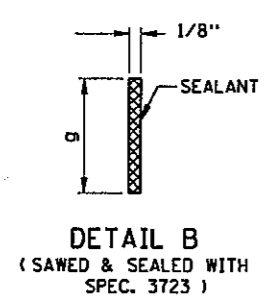


L4

LONGITUDINAL JOINT CLASS DESIGNATION, DETAIL & SEALER SPECIFICATION TABLE

CLASS DESIGNATION				JOINT DETAIL	JOINT SEALER SPECIFICATION
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS	BUTTED		
L1H	L1TH			B	3723
		L2KTH		D OR E	3723
		L2KTS		C	3722
			L3H	D OR E	3723
			L3S	C	3722
L4S				F	3722

- LEGEND**
- L = LONGITUDINAL JOINT
 - NO. = JOINT REFERENCE
 - K = KEYWAY
 - T = TIE BARS
 - U = UNSEALED
 - H = HOT POUR (SEALANT)
 - S = SILICONE (SEALANT)
- JOINT REFERENCE NUMBERS**
- 1 = SAWED TO A DEPTH OF T/3
 - 2 = KEYED CONSTRUCTION JOINT
 - 3 = BUTTED CONSTRUCTION JOINT
 - 4 = SAWED TO A DEPTH OF T/2



LONGITUDINAL JOINT NOTES:

ALL REBARS ARE IN METRIC DESIGNATIONS

THE TIE BAR SPACING FOR ALL L2KT JOINTS SHALL BE 2' - 6" CENTER TO CENTER AND BENT 60° AS SHOWN, EXCEPT WHEN NOTED OTHERWISE IN THE PLANS.

TIE BARS IN THE L2KT JOINTS SHALL BE THE SAME SIZE AND LENGTH AS USED FOR THE L1T JOINTS, WHEN TYING PAVEMENT TO PAVEMENT. TIE BARS IN THE L2KT JOINTS SHALL BE NO. 13 X 2' - 6", WHEN TYING CURB & GUTTER TO PAVEMENT.

ALL TIE BARS SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53.

NORMALLY, TIED PAVEMENT WIDTHS SHALL NOT EXCEED FOUR LANES, EXCEPT BRIDGE APPROACH PANELS AND PAVEMENT TAPERS.

JOINT WIDTH TOLERANCE IS + 1/16 IN. TO - 1/32 IN. FOR CONCRETE PAVEMENT THE JOINT DEPTH "g" SHALL BE T/3 INCHES.

SPEC. 3723 SEALER - TOP OF SEALER FLUSH TO - 3/16 IN. BELOW TOP OF PAVEMENT SURFACE.

- ① THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F, WITH A DIAMETER 1/8 IN. LARGER THAN THE JOINT OPENING, MAY BE PLACED 1/2 IN. BELOW THE TOP OF THE PAVEMENT.
- ② THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2 IN. DIAMETER CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2 IN. BELOW THE SURFACE OF THE PAVEMENT. NON-SELF-LEVELING SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4 IN.

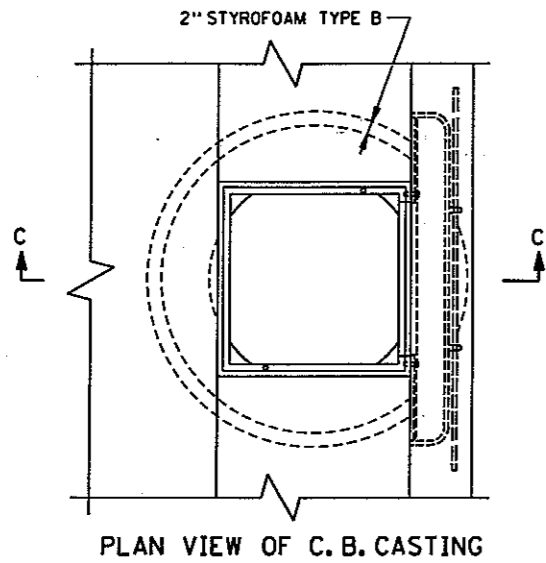
GENERAL NOTES:

SEE STANDARD PLATE 1103, DOWEL BAR ASSEMBLY. SEE STANDARD PLATE 1141, PAVEMENT KEYWAY. SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE AND RAMP PAVEMENT.

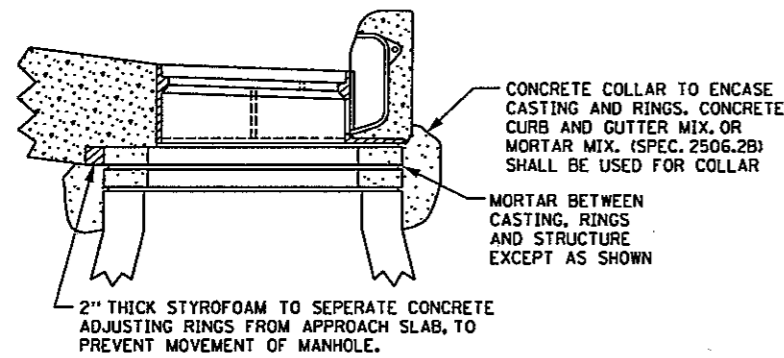
SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATIONS TO BE USED & SPECIAL REINFORCEMENT REQUIRED.

STANDARD SHEET NO. 5-297.221 (2 OF 2)	TITLE: PAVEMENT JOINTS LONGITUDINAL (DESIGN L)
STANDARD APPROVED: JUNE 6, 2005	
STATE PROJ. NO. SP 62-614-32	SHEET NO. B16 OF B22 SHEETS

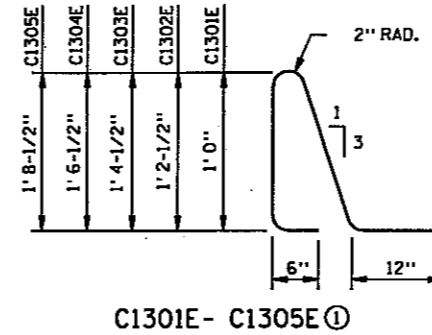
SUMMARY OF QUANTITIES FOR (2) BRIDGE APPROACH PANELS		
CONCRETE MIX NO. 3X42	128	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	22460	LBS.
CURB DESIGN B4 INTEGRANT		LIN. FT.
CURB DESIGN B424		LIN. FT.



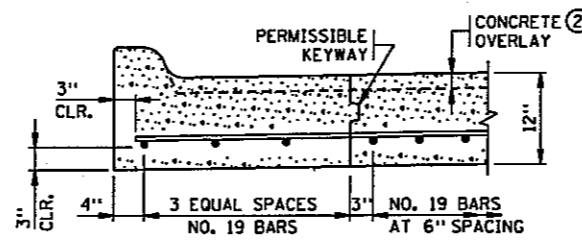
PLAN VIEW OF C. B. CASTING



SECTION C-C
(GRATE NOT SHOWN)



C1301E - C1305E ①



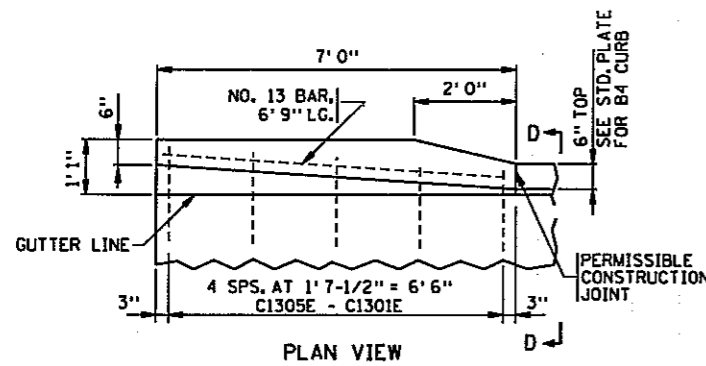
CURB DETAIL ①

(B4 INTEGRANT CURB OR B424 MODIFIED CURB AND GUTTER)

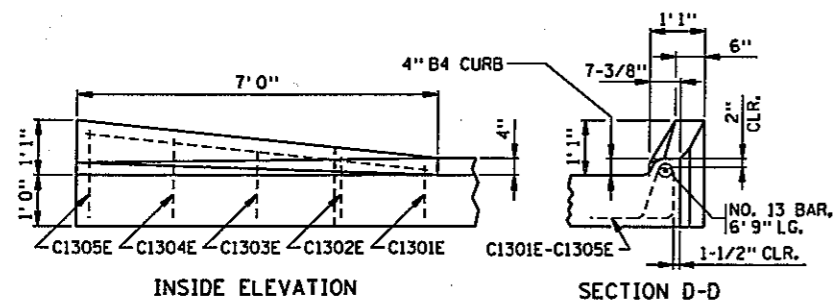
NOTES:

ALL REBARS ARE IN METRIC DESIGNATIONS

- ALL REINFORCEMENT IN APPROACH PANEL AND CURB SHALL BE GRADE 60 AND EPOXY COATED AS PER SPEC. 3301.
- APPROACH SLAB THICKNESS SHOWN INCLUDES ANY CONCRETE OVERLAY THAT MAY BE REQUIRED. SEE BRIDGE PLANS FOR REQUIREMENTS. CONCRETE OVERLAYS TO BE INCLUDED IN BRIDGE QUANTITIES AND DONE AT THE SAME TIME BY BRIDGE CONTRACTOR.
- 2" NOMINAL DIA. THERMOPLASTIC PIPE, AS PER ASTM D1785M, SCHEDULE 40. SLOPE PIPE TO DITCH. FURNISHING AND INSTALLING DRAIN SYSTEM SHALL BE INCIDENTAL, WITH NO DIRECT PAYMENT. WRAP PERFORATED PIPE WITH GEOTEXTILE AS PER SPEC. 3733. 1/8" PER 12" MINIMUM SLOPE.
- BACKFILL WITH FINE AGGREGATE, SPEC. 3149, MODIFIED TO 0-3% PASSING A NO. 200 SIEVE.



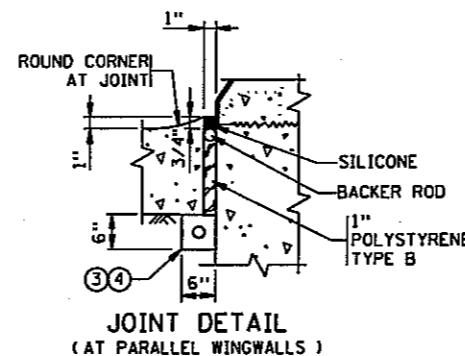
PLAN VIEW



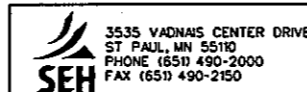
INSIDE ELEVATION

SECTION D-D

CURB TRANSITION DETAILS ①



JOINT DETAIL
(AT PARALLEL WINGWALLS)



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.
 Signature: *Nathan C. Klopff* Date: 7-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE: BRIDGE APPROACH PANEL
 BITUMINOUS MAINLINE ROADWAY
 (MISCELLANEOUS DETAILS)

SP 02-614-32

REVISION DATE
 2-7-2000

MODIFIED

STANDARD SHEET NO.
 5-297.224

STANDARD APPROVED:
 NOVEMBER 9, 1999

DES: MAW DR: MAW APPROVED:
 CHK: NCK CHK: NCK
 SHEET NO B17 OF B22 SHEETS

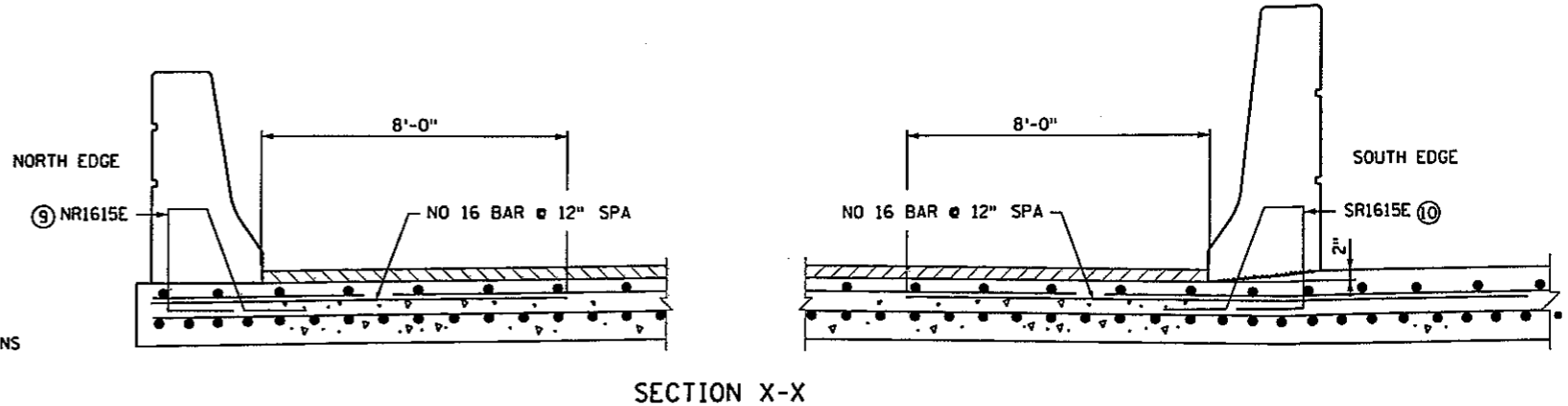
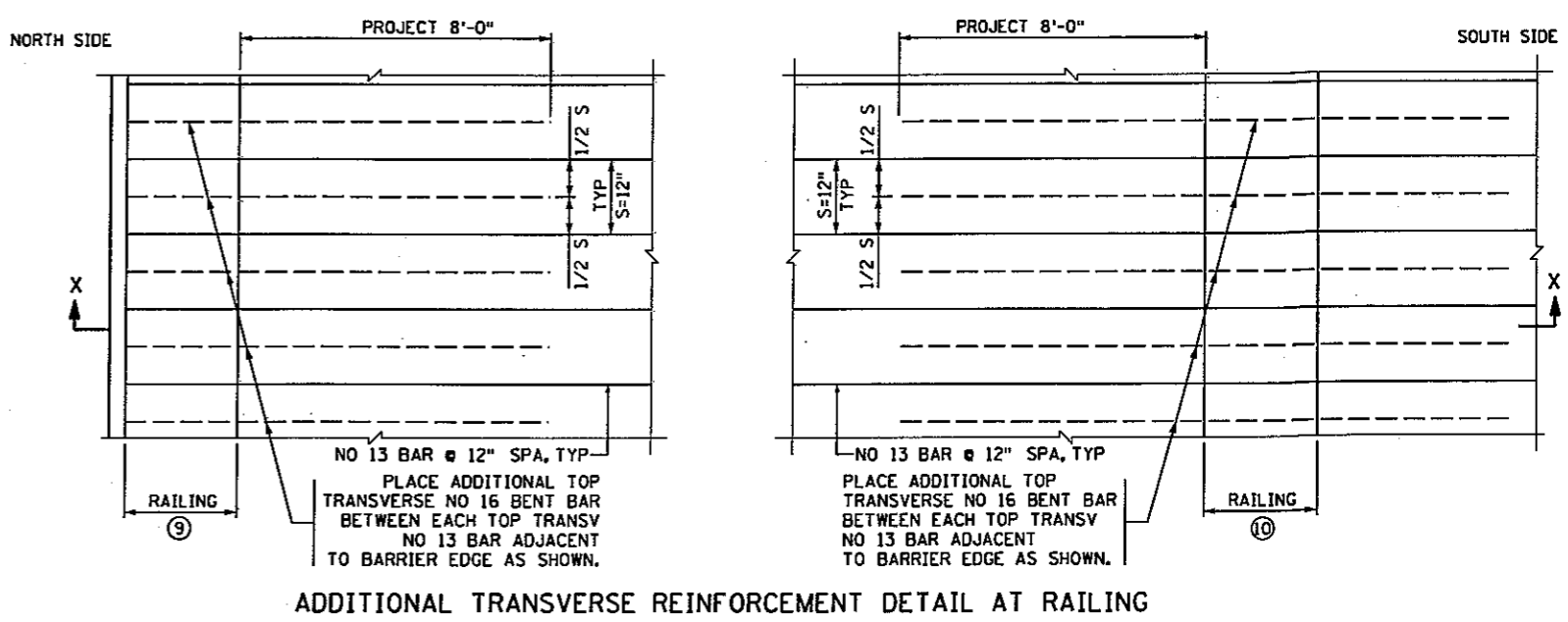
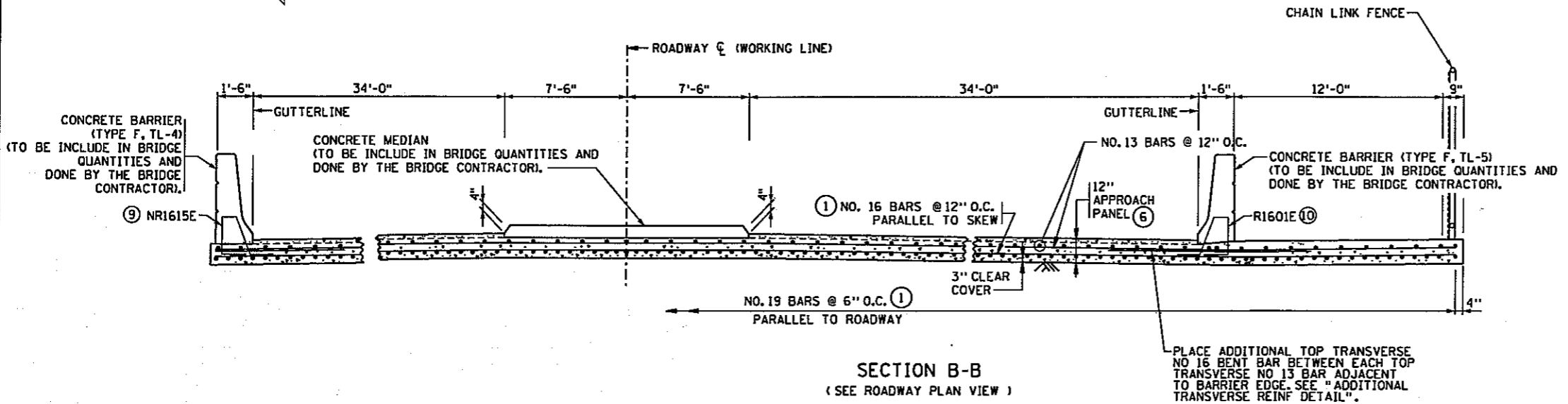
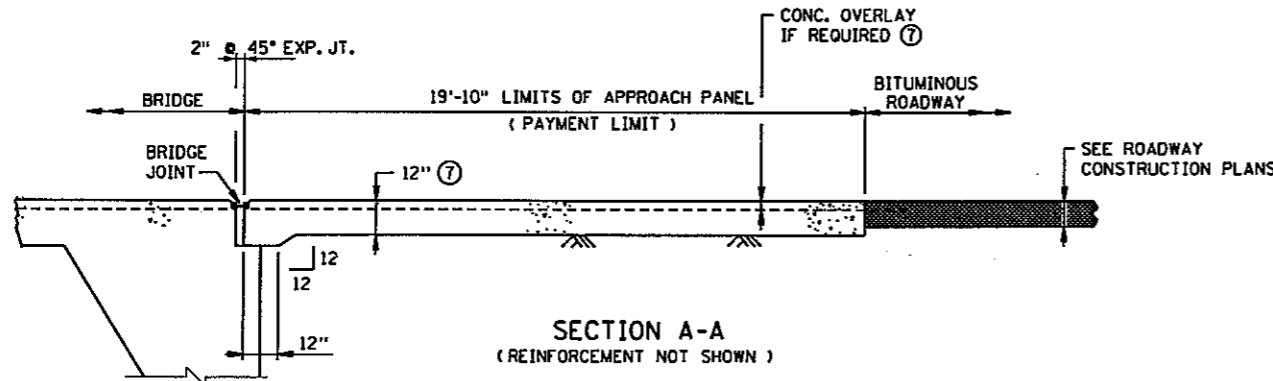
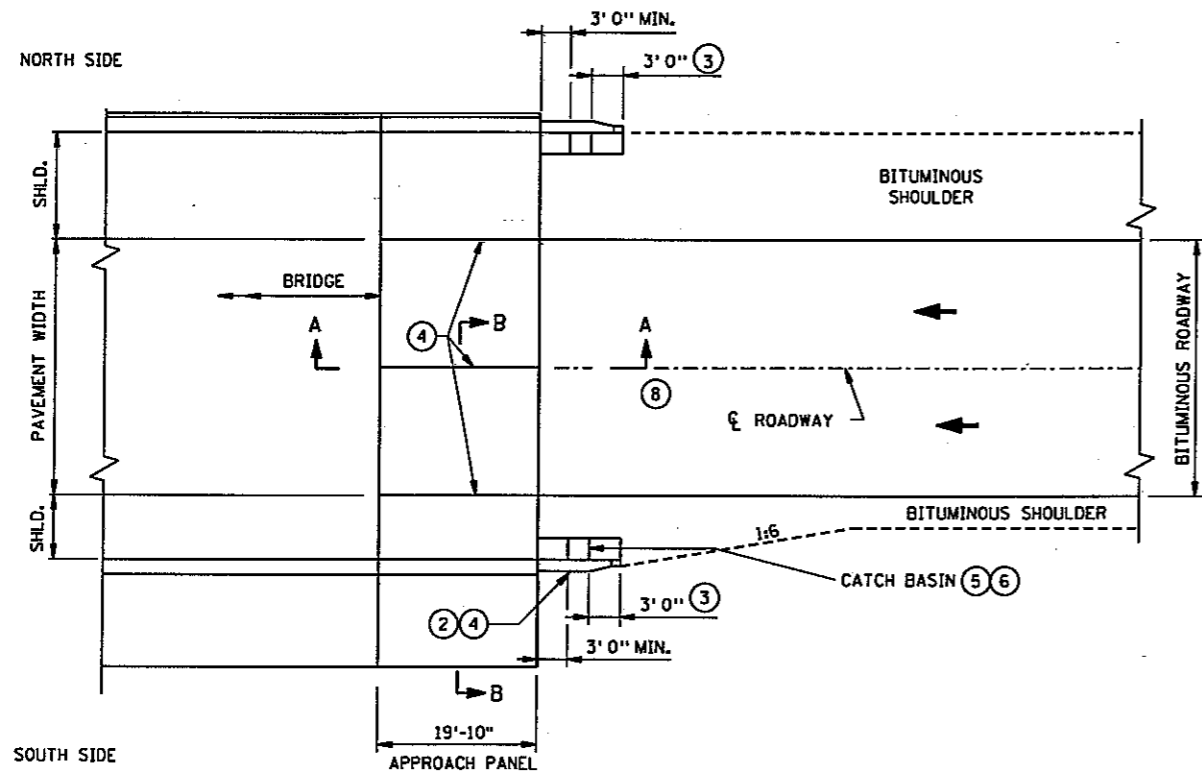
BRIDGE NO
 02577

10:42:43 AM 1/20/2010 S:\AE\Anko\102287.15-dsgn\51-cadd\Structural\Approachpanels\cbcr02577_s224.dgn

10:42:45 AM

1/20/2010

S:\AAE\A\Anoka\102287\5-dsgn\51-cadd\Structure\Approach\Approach.dgn



- NOTES:**
- ① ALL REINFORCEMENT IN APPROACH PANEL, SILL AND CURB SHALL BE GRADE 60 AND EPOXY COATED AS PER SPEC. 3301.
 - ② TRANSITION FACE OF 4" CURB INTO PROFILE OF BRIDGE RAILING. SEE CURB TRANSITION DETAILS.
 - ③ TRANSITION APPROACH PANEL CURB HEIGHT 4" TO 0" WHERE THERE IS NO ROADWAY CURB.
 - ④ L2KT OR L1T LONGITUDINAL JOINT IS REQUIRED. SEE STANDARD PAVEMENT JOINT SHEET FOR DETAILS.
 - ⑤ SEE PLAN SHEET B17 FOR REQUIRED MISCELLANEOUS DETAILS.
 - ⑥ LOCATE BETWEEN GUARD RAIL POSTS OR AS DETERMINED BY THE DESIGNER. SEE ROAD DESIGN MANUAL CHAPTER 7 FOR CATCH BASIN INFORMATION.
 - ⑦ APPROACH SLAB THICKNESS SHOWN INCLUDES ANY CONCRETE OVERLAY THAT MAY BE REQUIRED. SEE BRIDGE PLANS FOR REQUIREMENTS. CONCRETE OVERLAYS TO BE INCLUDED IN BRIDGE QUANTITIES AND DONE AT THE SAME TIME BY BRIDGE CONTRACTOR.
 - ⑧ SEE PLAN SHEET IN ROADWAY PLANS FOR BRIDGE APPROACH ROADWAY INFORMATION.
 - ⑨ INCLUDED IN CONCRETE BARRIER (TYPE F, TL-4) QUANTITIES. INCLUDED IN THE BRIDGE QUANTITIES.
 - ⑩ INCLUDED IN CONCRETE BARRIER (TYPE F, TL-5) QUANTITIES. INCLUDED IN THE BRIDGE QUANTITIES.

MODIFIED	
STANDARD SHEET NO. 5-297.229	
STANDARD APPROVED: MAY 7, 2002	
DES: MAW CHK: NCK	DR: MAW CHK: NCK
APPROVED:	
BRIDGE NO 02577	

3535 VADNAS CENTER DRIVE
ST PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150

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.

Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:
**BRIDGE APPROACH PANEL
BITUMINOUS MAINLINE-JOINT AT ABUTMENT
SQUARE TO 10° SKEWS**

SP 02-614-32

10142146 AU
1/20/2010
S:\VAE\A\Anoke\102287\5-dsgm\51-cadd\Structural\cbr-02577_7900a.dgn

CONCRETE WEARING COURSE

LOW SLUMP
 OTHER _____
TYPE OR MANUFACTURER _____

EXPANSION JOINTS

JOINT MANUFACTURER _____
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.

BRIDGE REMOVAL / BRIDGE OPENING

NUMBER OF AND DATE OLD BRIDGE WAS REMOVED (IF APPLICABLE): _____
BRIDGE NUMBER _____ DATE REMOVED _____
DATE NEW BRIDGE WAS OPENED TO TRAFFIC _____
NOTIFY THE BRIDGE OFFICE BRIDGE MANAGEMENT UNIT WITH THIS INFORMATION AS SOON AS POSSIBLE. (651) 366-4557

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: 10-28-2008

APPROVED: SEPTEMBER 26, 2003

David A. Johnson
STATE BRIDGE ENGINEER

AS-BUILT DETAILS
(AS NEEDED)

TITLE:

AS-BUILT BRIDGE DATA

SP 02-614-32

DES: _____
CHK: _____

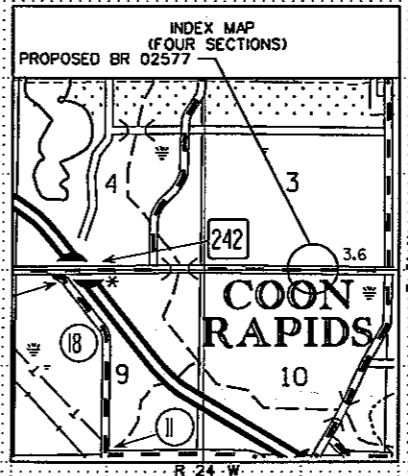
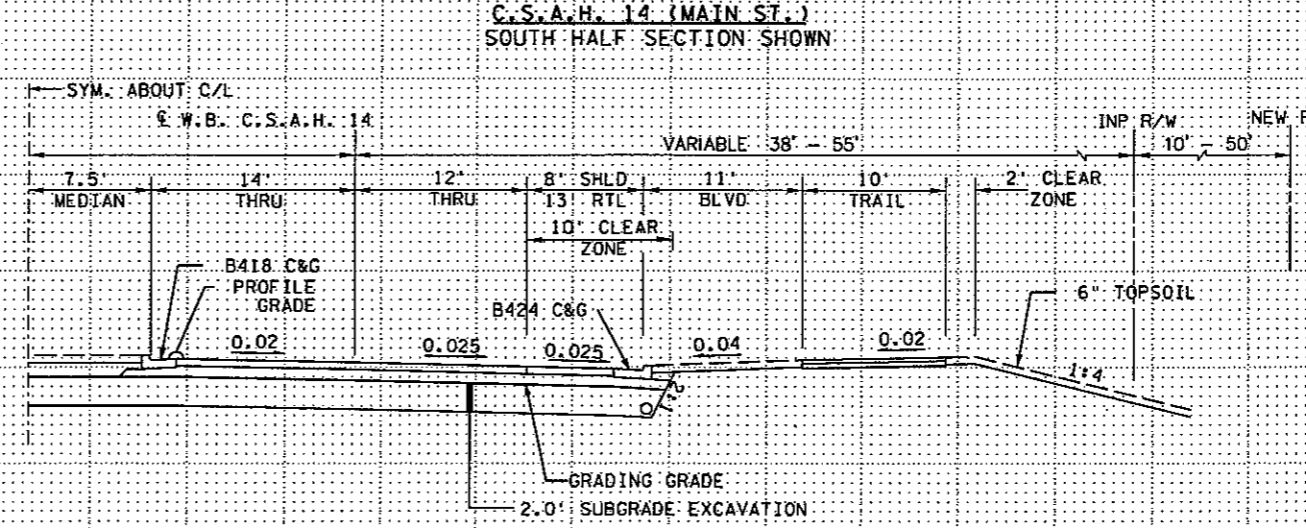
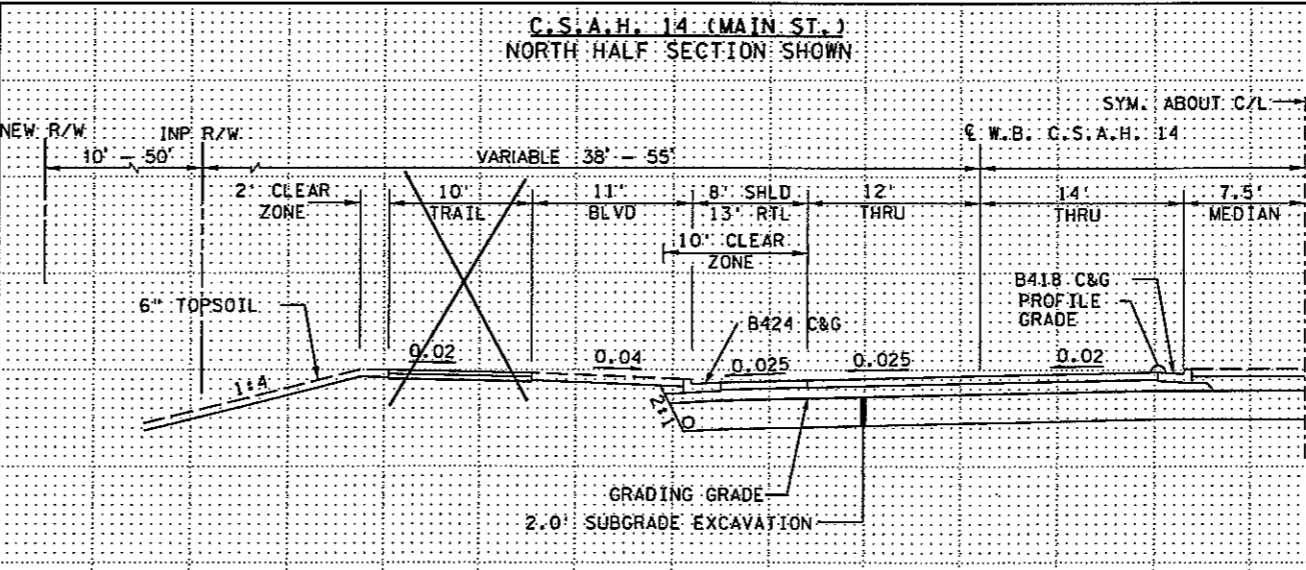
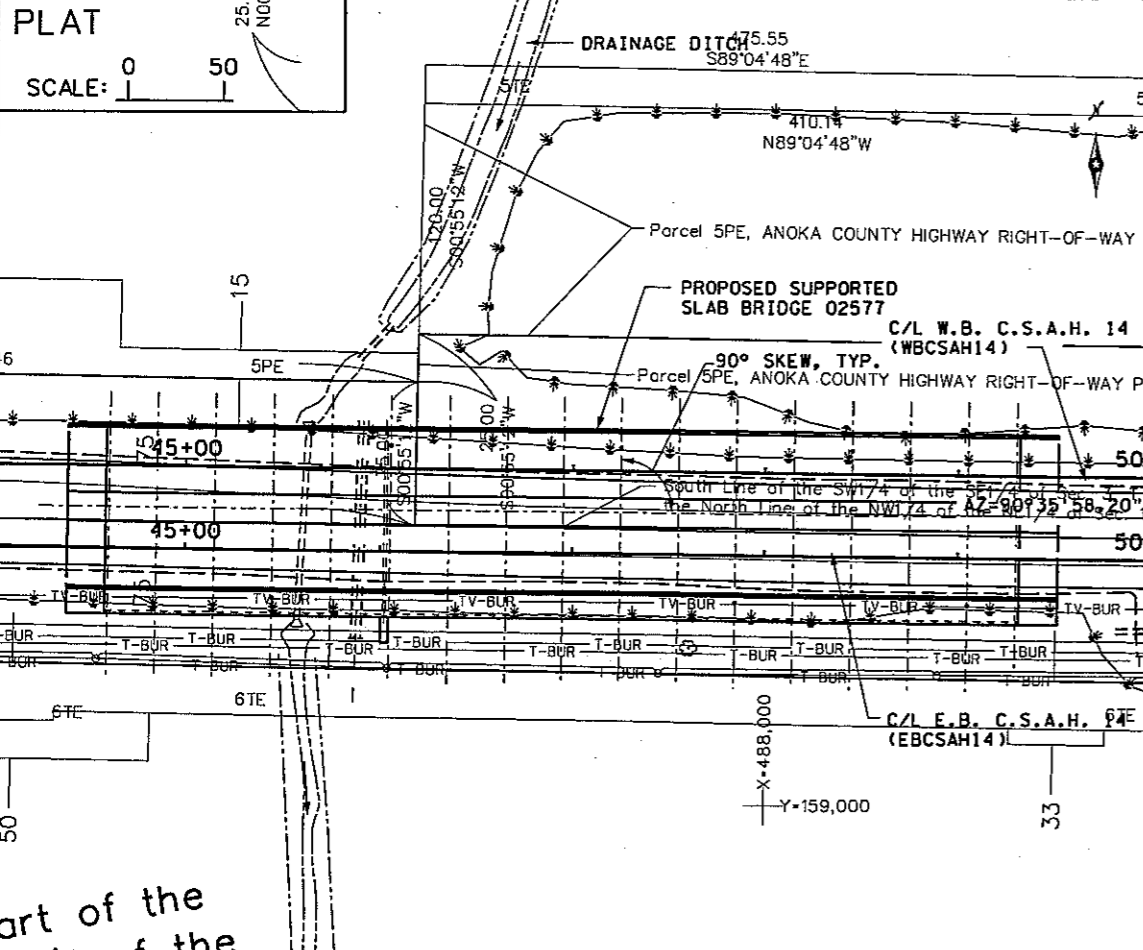
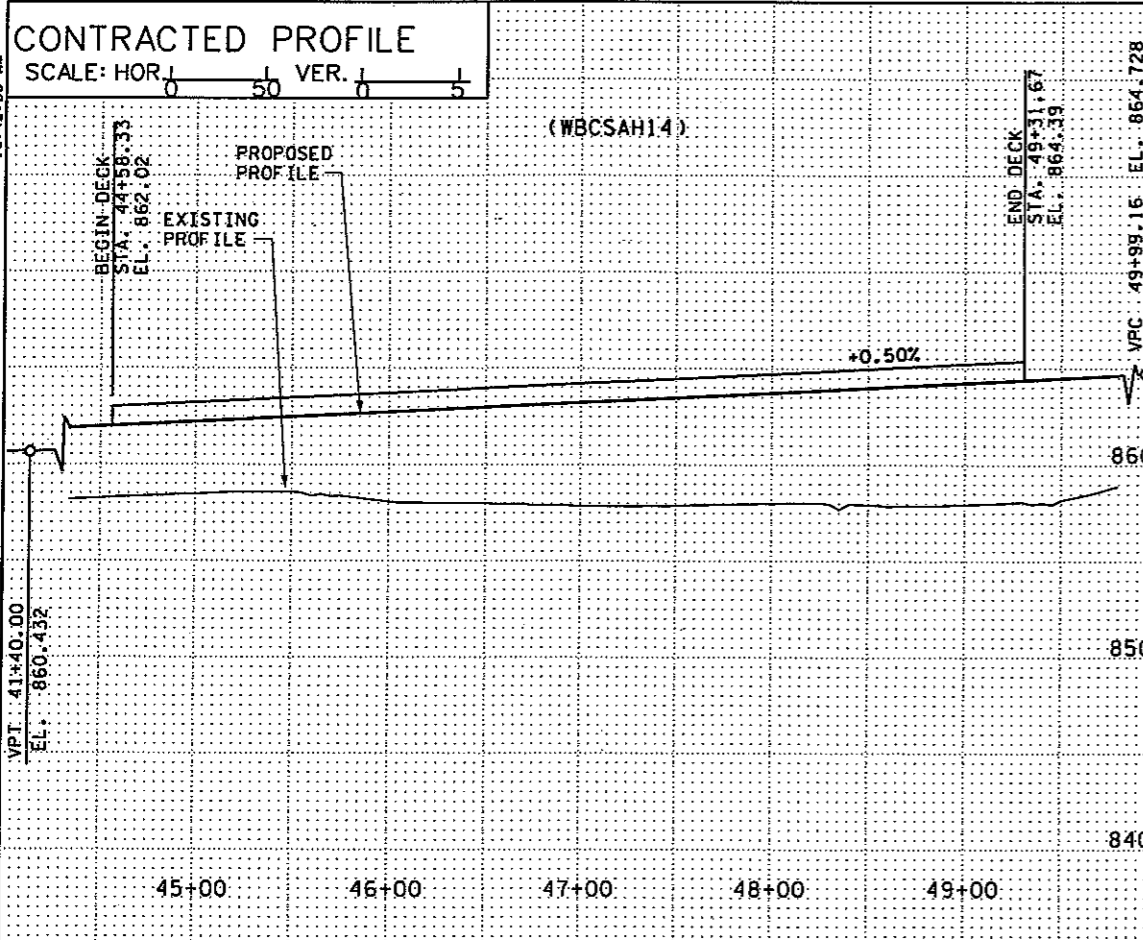
DR: _____
CHK: _____

APPROVED:

SHEET NO B19 OF B22 SHEETS

FIG. 5-397.900

BRIDGE NO
02577



- 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 RECOMMENDATIONS DATED

STREAM		
FLOOD OF RECORD ()	UNKNOWN	CFS
MAXIMUM OBSERVED HIGHWATER ELEV. ()		CFS
DESIGN FLOOD ()	YEAR FREQUENCY	
DESIGN STAGE		
TOTAL STAGE INCREASE		FT
DESIGN MEAN VELOCITY THROUGH STRUCTURE		FPS
LOW MEMBER AT OR ABOVE ELEVATION		
MIN. WATERWAY AREA REQUIRED BELOW ELEV. AT RIGHT ANGLE TO CHANNEL		SF
BASIC FLOOD (100 YEAR FREQUENCY)		
STAGE		
TOTAL STAGE INCREASE		FT
MEAN VELOCITY THROUGH STRUCTURE		FPS
APPROX. FLOWLINE ELEV. SKEW ANGLE		DEG.
ESTIMATED PIER SCOUR ELEV. ()	YR FREQUENCY	

(DESIGN STAGE AND STAGE ARE TAILWATER ELEVATIONS AT BRIDGE.)

BRIDGE SURVEY SHEETS MADE FROM :
 ANOKA COUNTY SURVEY

BENCH MARK ELEVATION 878.978 (NAVD 88 DATUM)

NAME & LOCATION:
 Mn/DOT GEODETIC DATABASE STA. #581:
 COPPER CLAD ROD (NO SLEEVE) (DEPTH 8")
 1.15 MILES E. OF JCT. CSAH 14 & TH10,
 67' N. OF CSAH14, 26' E. OF ENTRANCE
 AT HOUSE #2061, ACROSS FROM HOUSE
 #2108 IN A BUSH, 1.0' S. OF WITNESS POST

BRIDGE SURVEY

PROPOSED BRIDGE LOCATED
 CSAH 14 OVER POOR SOILS
 IN COON RAPIDS

SEC 3-10 TWP 31 N R 24 W
 CITY OF COON RAPIDS ANOKA CO

BRIDGE NO 02577

S:\A\EA\Anoka\102287\5-dsgn\51-cadd\Structure\1\cbr02577_bsl.dgn

art of the
 of the

SEH
 3535 VADNAIS CENTER DRIVE
 ST PAUL, MN 55110
 PHONE (651) 490-2000
 FAX (651) 490-2150

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

Signature: *Nathan C. Klopff* Date: 7-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

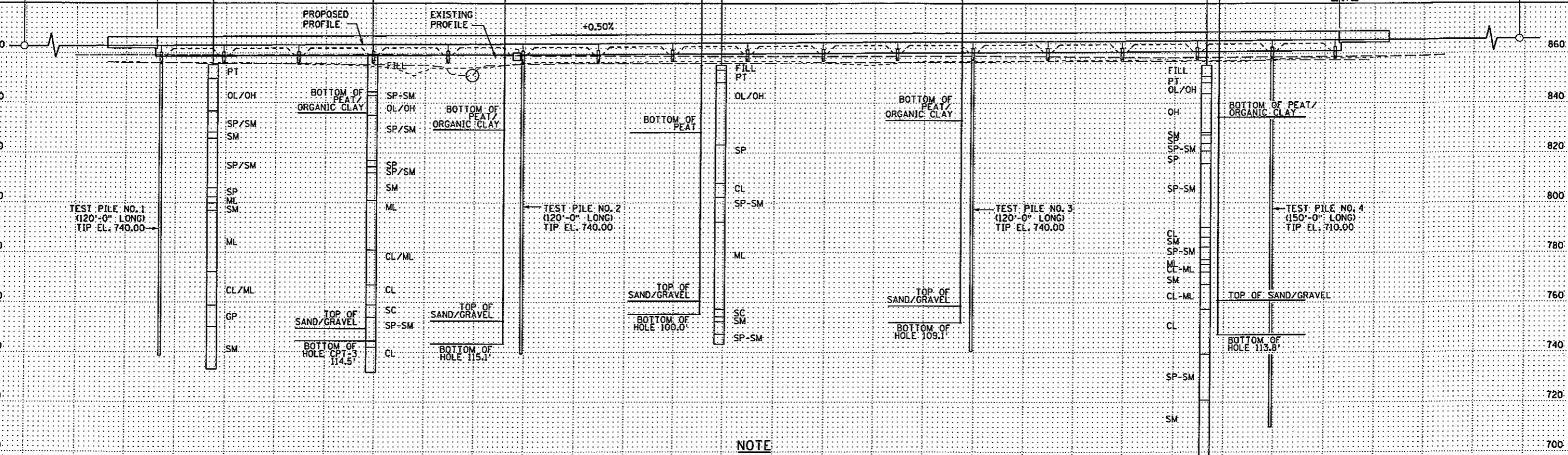
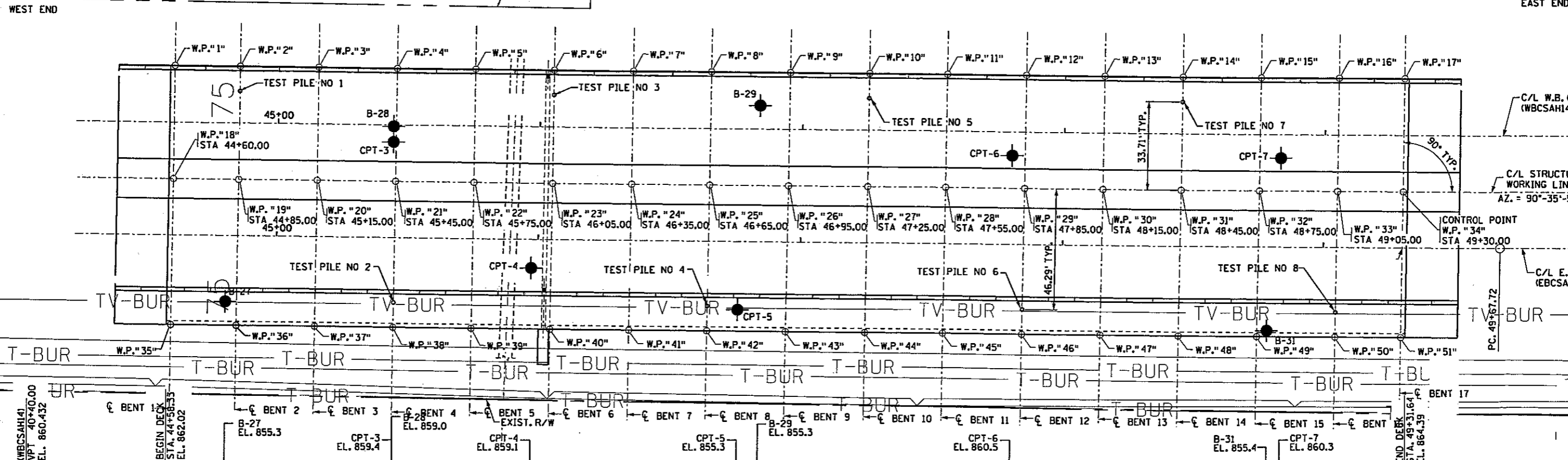
TITLE:
BRIDGE SURVEY

SP 02-614-32

DES: MAW	DR: MAW	APPROVED:
CHK: JAJ	CHK: JAJ	

BRIDGE NO 02577
 SHEET NO B20 OF B22 SHEETS

10142152 AU
1/20/2010
S:\A\A\Anok\10287\5-dsgn\51-cadd\Struct\01\abr-025177_ba2.dgn



NOTE
SEE NEXT SHEET FOR ADDITIONAL BORING INFORMATION.

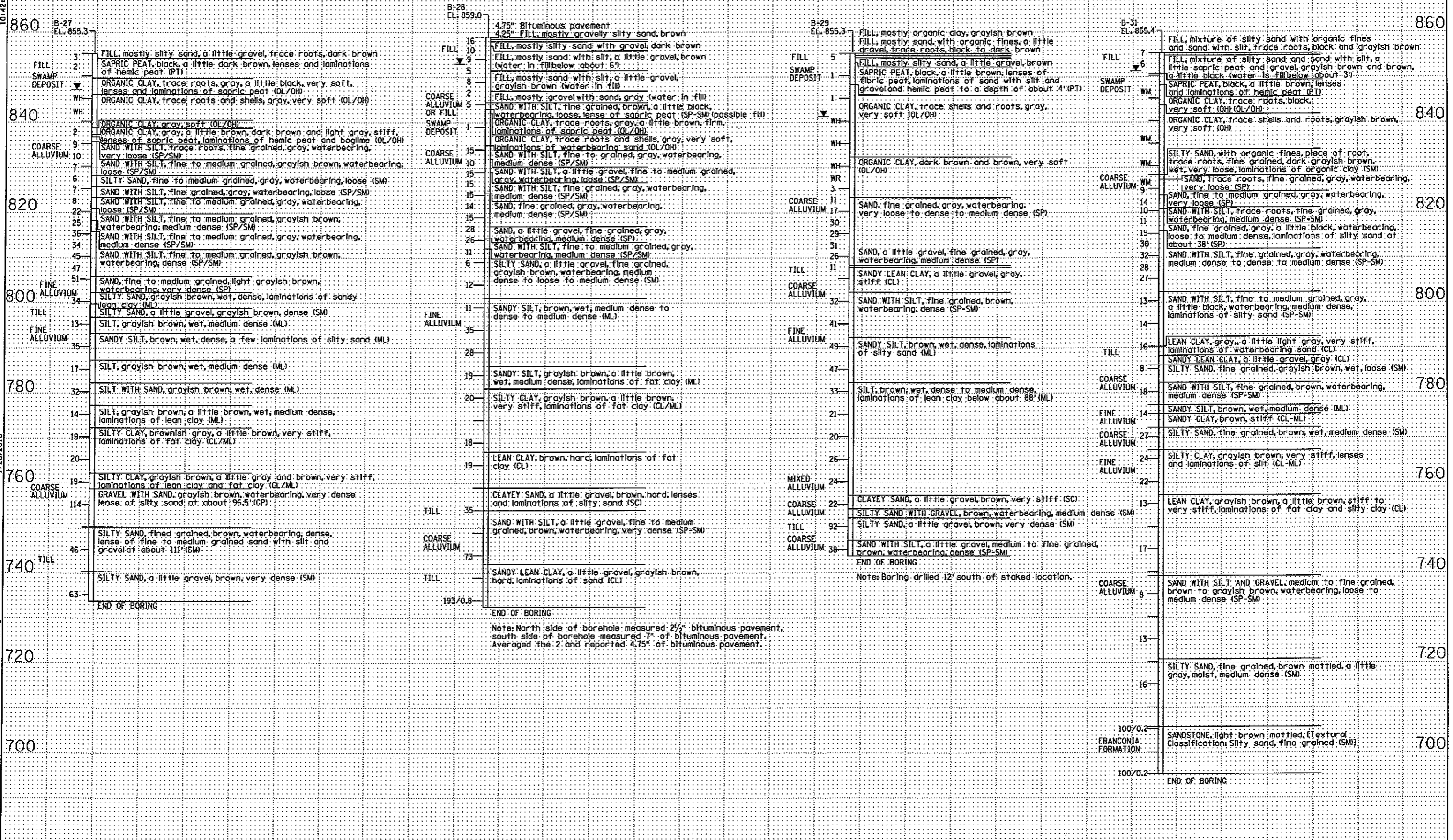
SEH
3535 VADNAIS CENTER DRIVE
ST PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150

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.
Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:
BRIDGE SURVEY
PLAN AND PROFILE

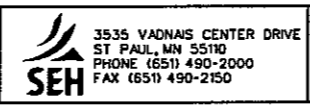
SP 02-614-32
DES: MAW DR: MAW APPROVED:
CHK: JAJ CHK: JAJ
SHEET NO B21 OF B22 SHEETS
BRIDGE NO 02577

10/12/13 AM
1/20/2010
S:\MEVA\mko\102281\5-dsgn\51-cadd\Structural\cbr02577_ba2.dgn



Note: North side of borehole measured 2 1/4" bituminous pavement, south side of borehole measured 7" of bituminous pavement. Averaged the 2 and reported 4.75" of bituminous pavement.

Note: Boring drilled 12' south of staked location.



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.
 Signature: *Nathan C. Klopp* Date: 7-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE: BRIDGE SURVEY PLAN AND PROFILE

SP 02-614-32		DES: MAW	DR: MAW	APPROVED:	BRIDGE NO 02577
CHK: JAJ	CHK: JAJ				
SHEET NO B22 OF B22 SHEETS					