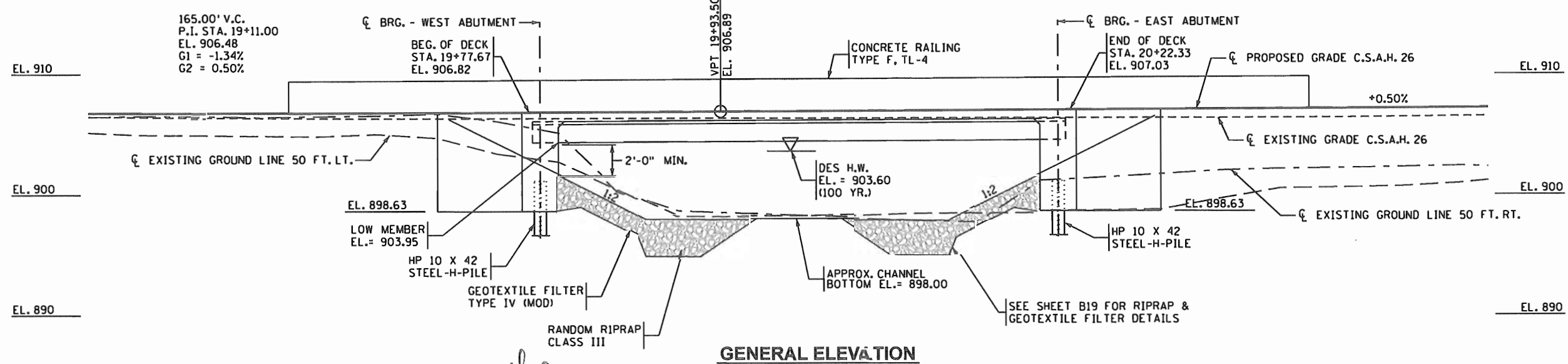


GENERAL PLAN



GENERAL ELEVATION

DESIGN DATA

2007 AND CURRENT INTERIM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
 DESIGN LOADING HL93 LIVE LOAD
 LOAD AND RESISTANCE FACTOR DESIGN METHOD
 DEAD LOAD INCLUDES 20 PSF ALLOWANCE FOR FUTURE WEARING COURSE MODIFICATIONS.

MATERIAL DESIGN PROPERTIES:
 REINFORCED CONCRETE:
 $f'_c = 4 \text{ ksi}$ $n = 8$
 $f'_y = 60 \text{ ksi}$ REINFORCEMENT
 PRESTRESSED CONCRETE:
 $f'_c = 9 \text{ ksi}$ $n = 1$
 $f_{pu} = 270 \text{ ksi}$ STRANDS LOW RELAX
 0.75 f_{pu} FOR INITIAL PULL
 STRUCTURAL STEEL:
 $f_y = 36 \text{ ksi}$
 STRUCTURAL STEEL
 MNDOT 3306

DESIGN SPEED 55 MPH
 APPROXIMATE DECK AREA: 1936 SF
 OPERATING RATING FACTOR 1.61 (LRFD)
 PROJECTED ADT FOR 2030 = 2,000

LIST OF SHEETS

NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION
2	TRANSVERSE SECTION & QUANTITIES
3	BRIDGE LAYOUT
4-5	WEST ABUTMENT DETAILS
6-8	WEST ABUTMENT REINFORCEMENT
9-10	EAST ABUTMENT DETAILS
11-13	EAST ABUTMENT REINFORCEMENT
14	FRAMING PLAN
15	PRESTRESSED BEAM DETAILS
16-18	SUPERSTRUCTURE DETAILS & REINF.
19	TYPE F CONCRETE RAILING DETAILS
20	RIPRAP SLOPE WITH GEOTEXTILE FILTER
21-22	BRIDGE DETAILS
23	AS-BUILT BRIDGE DATA
24	BRIDGE SURVEY
25	BRIDGE SURVEY - PLAN & PROFILE

BENCH MARK EL. 905.479
 LOCATION: SURVEY CONTROL POINT 13 FEET EAST OF SOUTHEAST WINGWALL AND 4.5 FEET SOUTH OF PAVEMENT, BRIDGE NO. 02195
 VERTICAL DATUM IS NAVD 88

APPROVED: *[Signature]*
 ANOKA COUNTY ENGINEER

DATE: 7/12/10

WSB & Associates, Inc.
 701 Xenia Avenue, Suite 300, Minneapolis, MN 55416
 763-541-4800, FAX 763-541-1700
 INFRASTRUCTURE - ENGINEERS - PLANNERS

MINNESOTA DEPARTMENT OF TRANSPORTATION

Bridge No. 02581

LOCATED ON C.S.A.H. 26 1/2 MILE SOUTH OF THE JCT. OF C.S.A.H. 24 AND C.S.A.H. 26 OVER CEDAR CREEK.

43'-0" PRESTR. BEAM SPAN
 40'-0" CLEAR ROADWAY

SPAN IDENTIFICATION NO. 501

SEC. 33 TWP. 34 N R. 23 W
 CITY OF EAST BETHEL ANOKA COUNTY

ACCEPTED: *[Signature]* 7/15/10
 STATE BRIDGE ENGINEER DATE

NO.	DATE	BY	CHK	REVISIONS

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.

[Signature]
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 7/12/2010 LIC. NO.: 45501

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

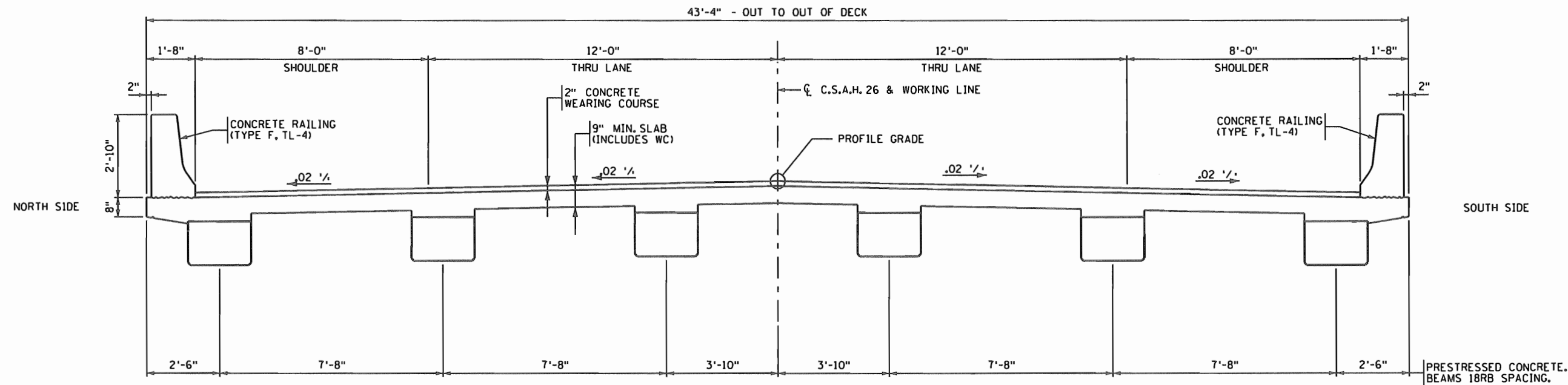
TITLE: **GENERAL PLAN AND ELEVATION**

DES: JUA DR: BUR
 CHK: BRL CHK: JUA

02/81

Sheet B1 of B25 Sheets

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TRANSVERSE SECTION THRU DECK

SCHEDULE OF QUANTITIES FOR BRIDGE NO. 02581			
ITEM NO.	ITEM	UNIT	QUANTITY
2021.501	MOBILIZATION	LUMP SUM	1
① 2104.601	REMOVE REGULATED WASTE MATERIAL (BRIDGE)	LUMP SUM	1
2401.501	STRUCTURAL CONCRETE (3Y43)	CU. YD.	75 (P)
2401.512	BRIDGE SLAB CONCRETE (3Y36)	SQ. FT.	1936 (P)
② 2401.513	(TYPE F, TL-4) RAILING CONCRETE (3Y46)	LIN. FT.	170 (P)
2401.541	REINFORCEMENT BARS (EPOXY COATED)	POUND	21185 (P)
2401.601	SLOPE PREPARATION	LUMP SUM	1
2401.601	STRUCTURE EXCAVATION	LUMP SUM	1
2402.590	ELASTOMERIC BEARING PAD, TYPE 1	EACH	12 (P)
2404.501	CONCRETE WEARING COURSE (3U17A)	SQ. FT.	3387 (P)
2405.502	PRESTRESSED CONCRETE BEAMS 18RB	LIN. FT.	266 (P)
① 2442.501	REMOVE EXISTING BRIDGE	LUMP SUM	1
2452.510	STEEL H-PILING DRIVEN 10"	LIN. FT.	900
2452.511	STEEL H-PILING DELIVERED 10"	LIN. FT.	900
2452.520	STEEL H-TEST PILES 85 FT. LONG 10"	EACH	2
2452.602	PILE TIP PROTECTION 10"	EACH	14
2511.501	RANDOM RIPRAP CLASS III	CU. YD.	138
2511.515	GEOTEXTILE FILTER TYPE IV (MOD)	SQ. YD.	250

- ① NON-PARTICIPATING FUNDS, STATION 20+00
- ② QUANTITY INCLUDES 80' OF TYPE F, TL-4 RAILING ON APPROACH PANELS APPROACH PANELS TO BE PAID BY SQ. YD. SEE ROADWAY TABULATIONS FOR QUANTITIES

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 SIZE, WHICH APPROXIMATES THE NOMINAL DIAMETER OF THE BAR IN MILLIMETERS.

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

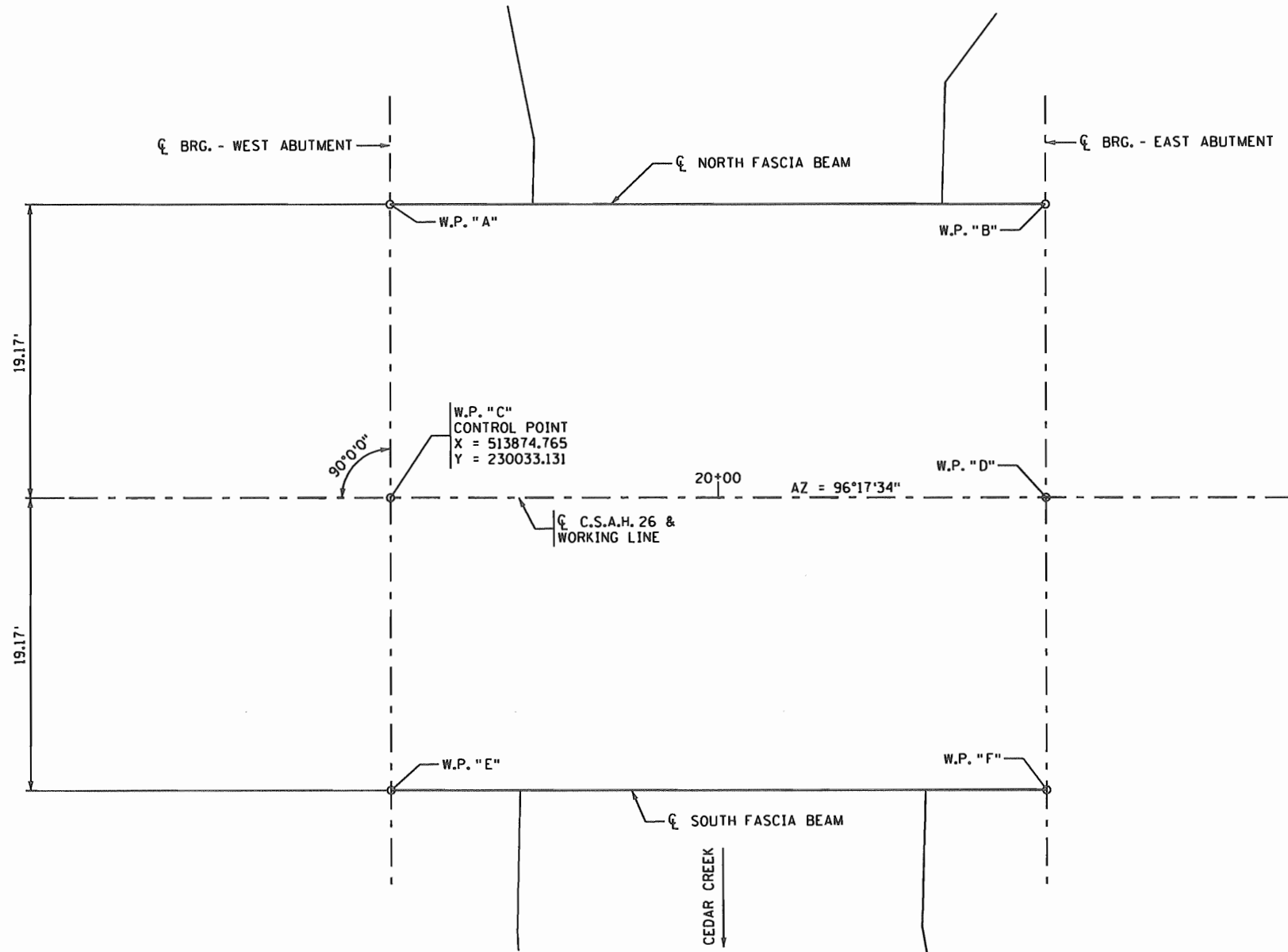
BRIDGE SEAT REINFORCEMENT SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR RODS. THE SUPERSTRUCTURE BEAMS SHALL BE ERRECTED IN FINAL POSITION PRIOR TO DRILLING HOLES FOR & PLACING ANCHOR RODS.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C1/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

THE PILE LOADS SHOWN IN THE PLAN 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.

CONTRACTOR SHALL VERIFY STABILITY OF FASCIA BEAMS FROM OVERTURNING (NO PERMANENT BEAM DIAPHRAGMS ARE PRESENT). CONTRACTOR SHALL PROVIDE TEMPORARY BRACING.

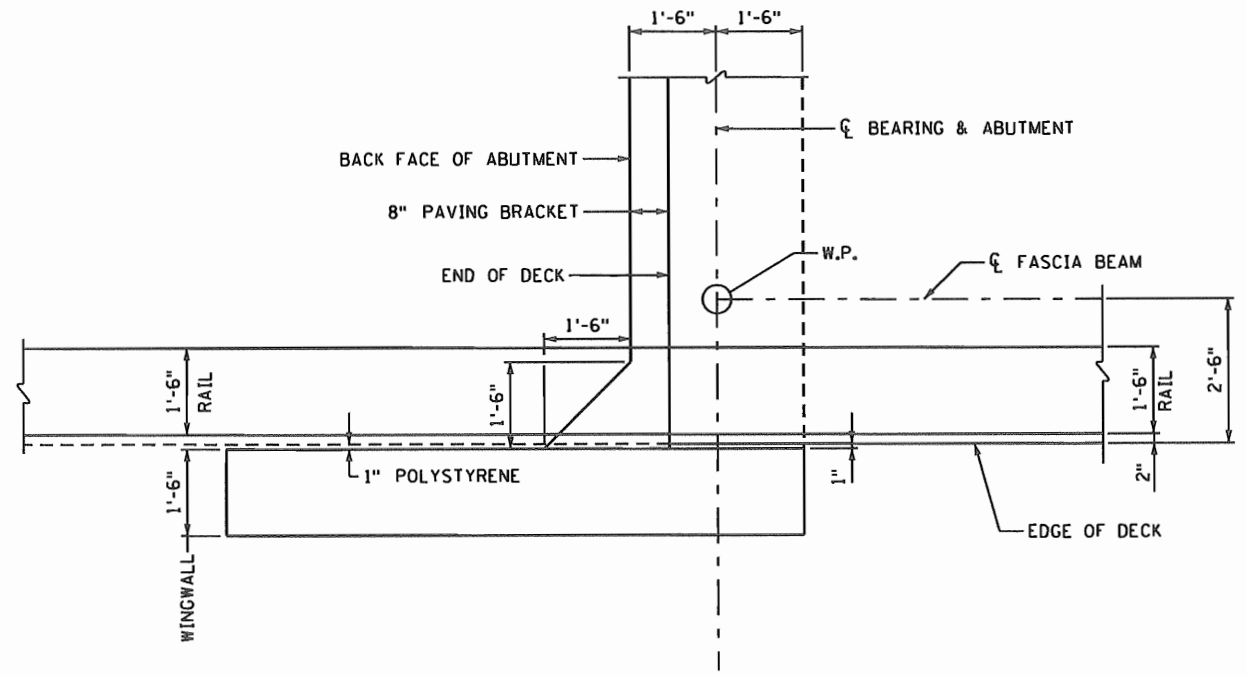
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WORKING POINT LAYOUT

TOP OF ROADWAY TO BRIDGE SEAT					
	SLAB THICKNESS	STOOL HEIGHT	BEAM HEIGHT	BEARING HEIGHT	TOTAL
WEST ABUT.	9"	3"	18"	1/2"	2.54'
EAST ABUT.	9"	3"	18"	1/2"	2.54'

DIMENSIONS BETWEEN WORKING POINTS										ELEVATIONS			
POINT	STATION	X-COORD	Y-COORD	A	B	C	D	E	F	TOP OF DECK	TOP OF DECK TO BRIDGE SEAT	BRIDGE SEAT	POINT
A	19+78.50	513876.866	230052.183		43.00	19.17	47.08		57.61	906.45	2.54	903.91	A
B	20+21.50	513919.606	230047.469			47.08	19.17	57.61		906.65	2.54	904.11	B
C	19+78.50	513874.765	230033.131				43.00	19.17	47.08	906.83	-	-	C
D	20+21.50	513917.506	230028.418					47.08	19.17	907.03	-	-	D
E	19+78.50	513872.664	230014.080						43.00	906.45	2.54	903.91	E
F	20+21.50	513915.405	230009.367							906.65	2.54	904.11	F



TYPICAL CORNER DETAIL

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James Archer
 LICENSED PROFESSIONAL ENGINEER, JAMES ARCHER
 DATE: 7/9/2010 LIC. NO.: 45501

WSB
 & Associates, Inc.
 INFRASTRUCTURE • ENGINEERS • PLANNERS

701 Xenia Ave. South
 Suite 300
 Minneapolis, MN 55416
 763-541-4800
 FAX 763-541-1700

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
BRIDGE LAYOUT

DES: JDA	DR: BJR
CHK: BRL	CHK: JDA

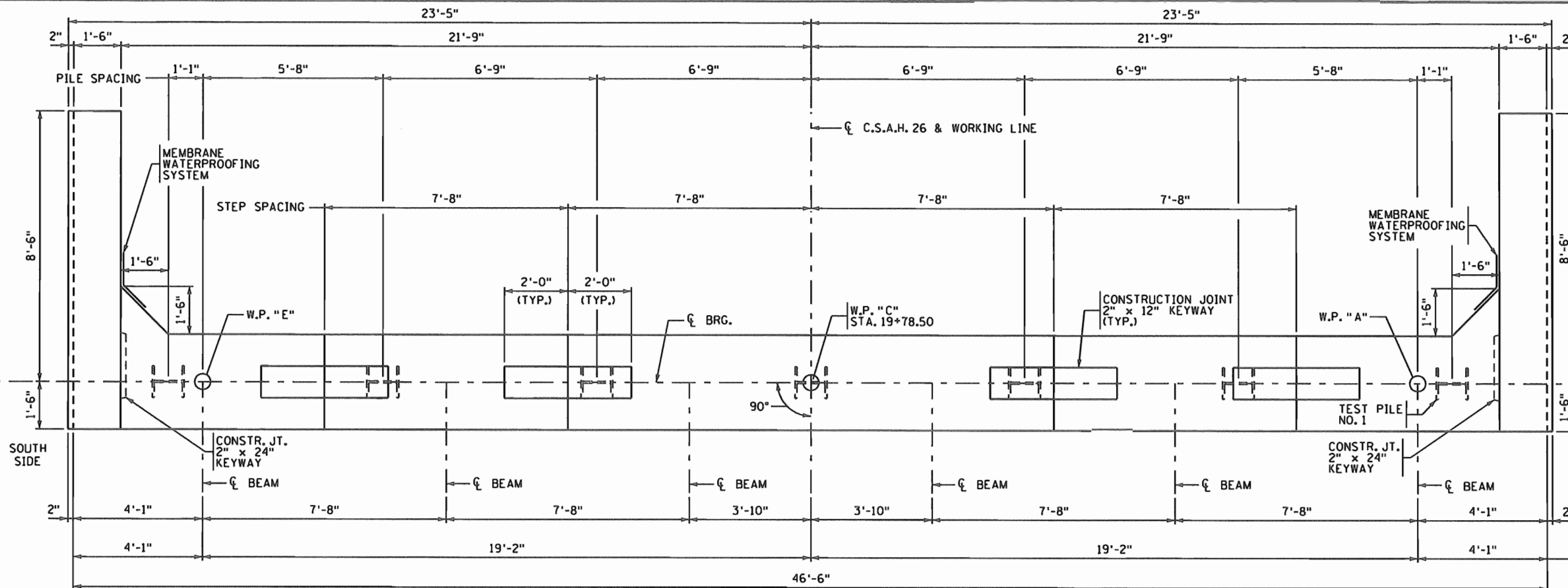
Sheet B3 of B25 Sheets

Bridge No.
02581

SUMMARY OF QUANTITIES - WEST ABUTMENT

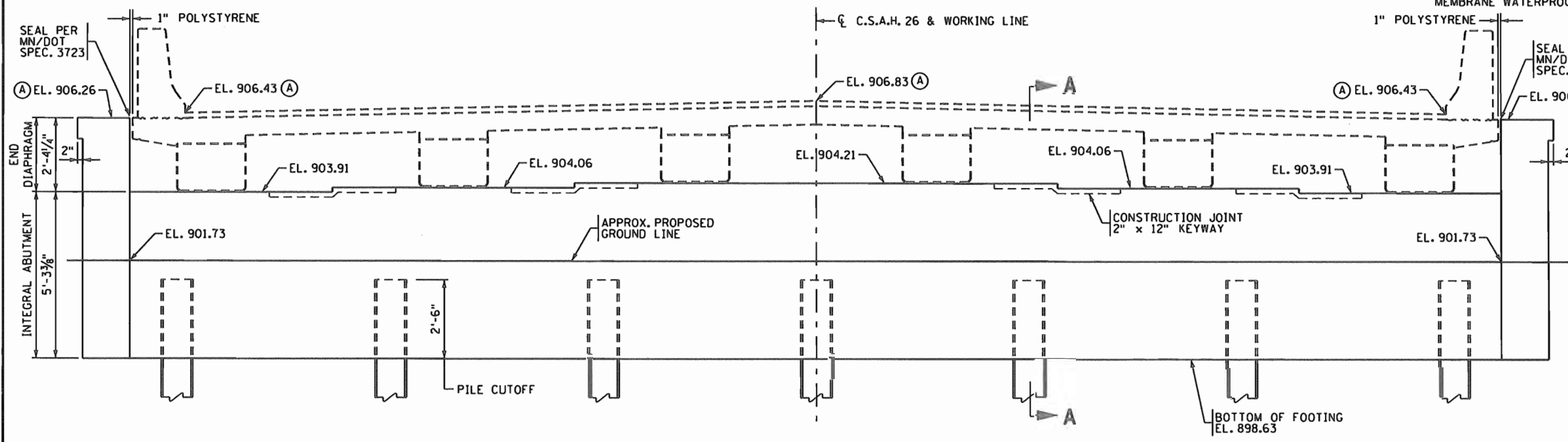
STRUCTURAL CONCRETE (3Y43)	37	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	2935	POUND
STEEL-H-PILING DELIVERED 10"	450	LIN. FT.
STEEL-H-PILING DRIVEN 10"	450	LIN. FT.
STEEL-H-TEST PILES 85 FT. LG. 10"	1	EACH
PILE TIP PROTECTION 10"	7	EACH
MEMBRANE WATERPROOFING SYSTEM	54	LIN. FT.
STRUCTURE EXCAVATION	1	LUMP SUM
RANDOM RIPRAP CLASS III	69	CU. YD.
GEOTEXTILE FILTER TYPE IV (MODIFIED)	125	SO. YD.
SLOPE PREPARATION	1	LUMP SUM

- ① DOES NOT INCLUDE TEST PILES.
- ② TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

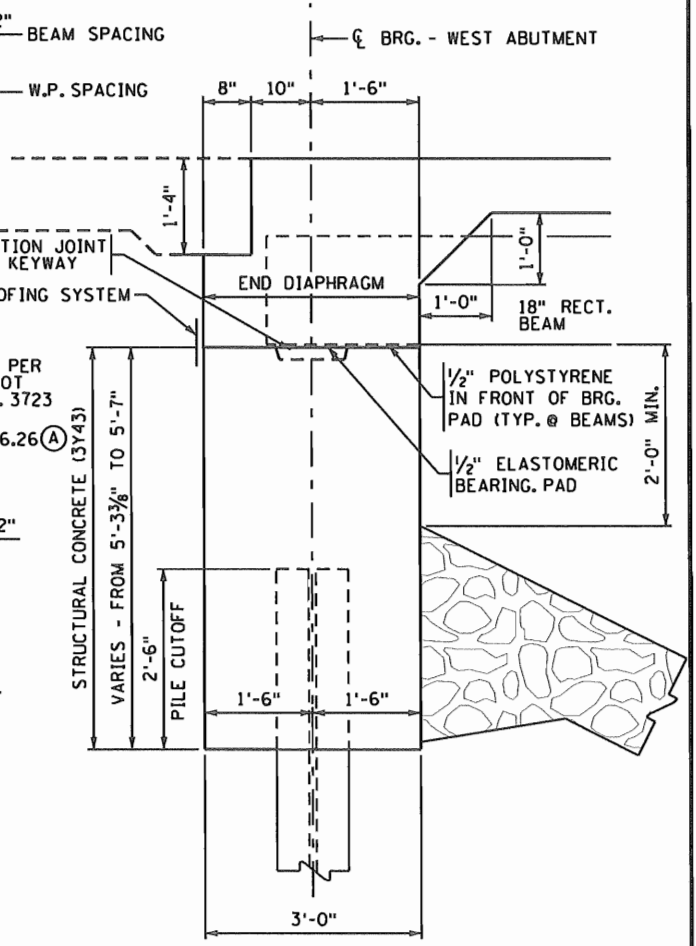


PLAN VIEW

Ⓐ ELEVATIONS ARE ALONG ϕ BEARING.



GENERAL ELEVATION



SECTION A-A

7/9/2010 10:45:59 AM K:\0898-00\cad\plan\br-02581\cbr02581\WABT1.dgn

NO.	DATE	BY	CHK	REVISIONS

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James Archer
 LICENSED PROFESSIONAL ENGINEER - JAMES ARCHER
 DATE: 7/9/2010 LIC. NO.: 45501

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 Minneapolis, MN 55416
 763-541-4800
 FAX 763-541-1700

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
WEST ABUTMENT
DETAILS

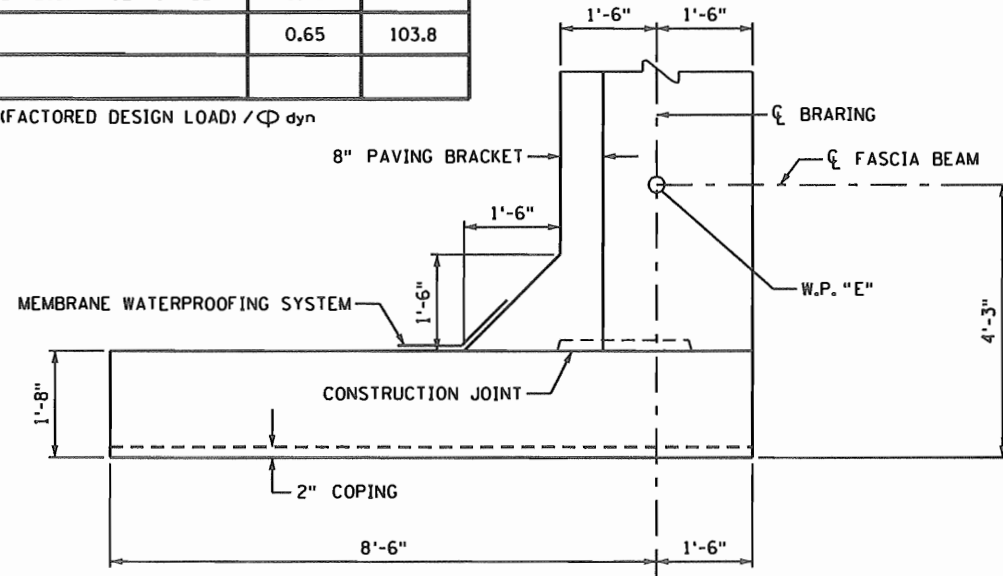
DES: JDA	DR: BJR
CHK: BRL	CHK: JDA

Sheet B4 of B25 Sheets

Bridge No.
02581

WEST ABUTMENT REQUIRED NOMINAL PILE BEARING RESISTANCE R_n - TONS/PILE		
FIELD CONTROL METHOD	ϕ_{dyn}	ϕR_n
MN/DOT NOMINAL RESISTANCE FORMULA	0.40	168.7
PDA	0.65	103.8

$$\phi R_n = (\text{FACTORED DESIGN LOAD}) / \phi_{dyn}$$



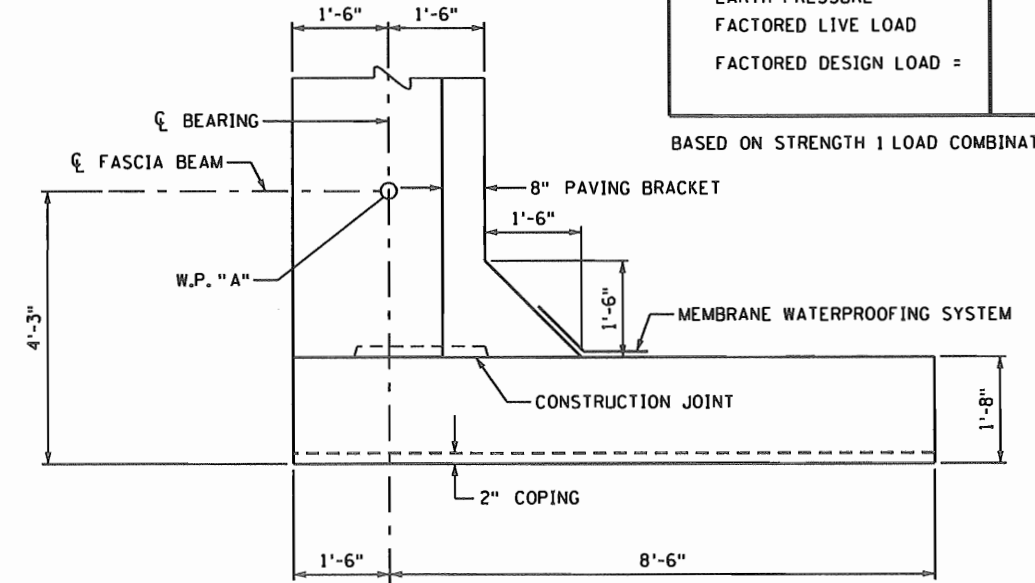
S.W. WINGWALL PLAN

PILE NOTES

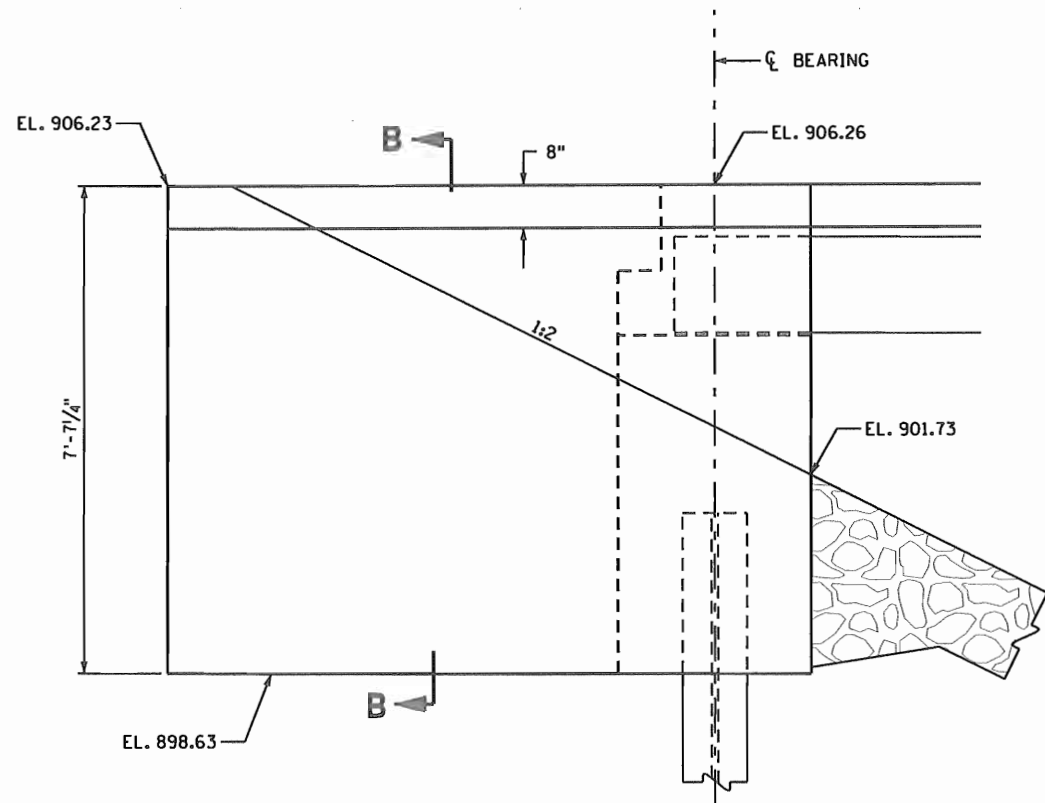
- 1 STEEL H-TEST PILES 85 FT. LONG
 - 6 STEEL H-PILES EST. LENGTH 75 FT.
 - 7 STEEL H-PILES REQ'D FOR WEST ABUTMENT
- PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
PILES TO BE HP 10 X 42
FOR PILE SPLICE DETAILS SEE DETAIL B202.
PILE CUTOFF IS EL. 901.13

WEST ABUTMENT COMPUTED PILE LOAD - TONS/PILE	
	WEST ABUT.
FACTORED DEAD LOAD + EARTH PRESSURE	42.7
FACTORED LIVE LOAD	24.8
FACTORED DESIGN LOAD =	67.5

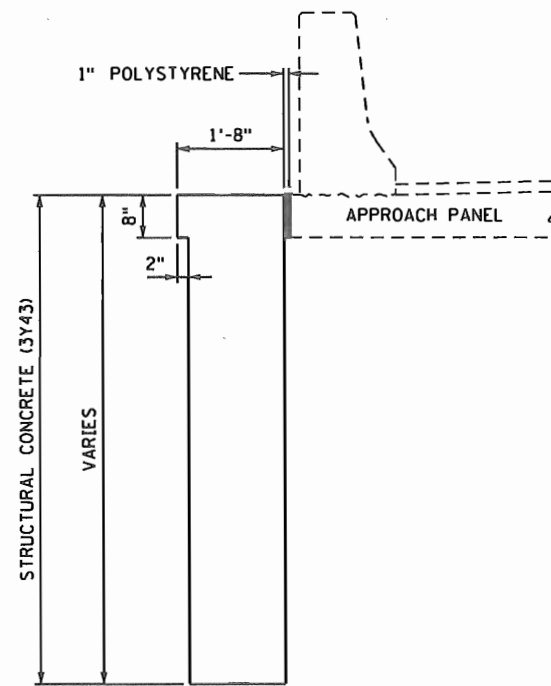
BASED ON STRENGTH I LOAD COMBINATION.



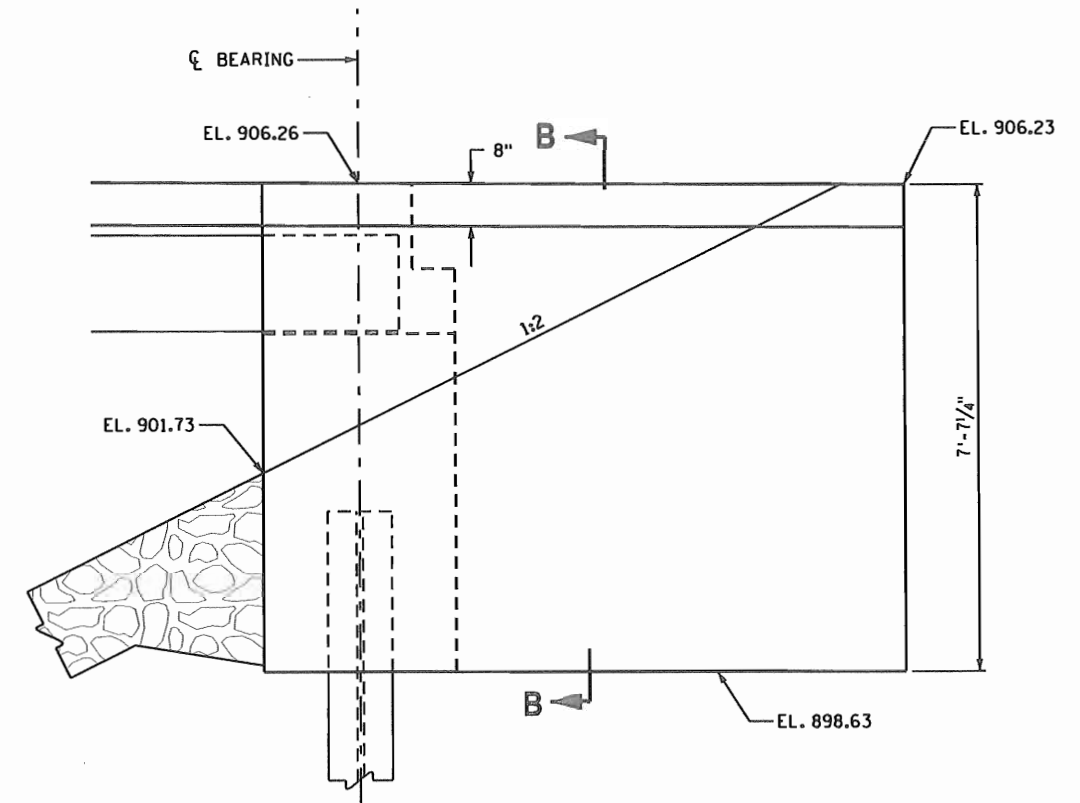
N.W. WINGWALL PLAN



S.W. WINGWALL ELEVATION



SECTION B-B



N.W. WINGWALL ELEVATION

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NO	DATE	BY	CHK	REVISIONS

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LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
DATE: 7/9/2010 LIC. NO.: 45501

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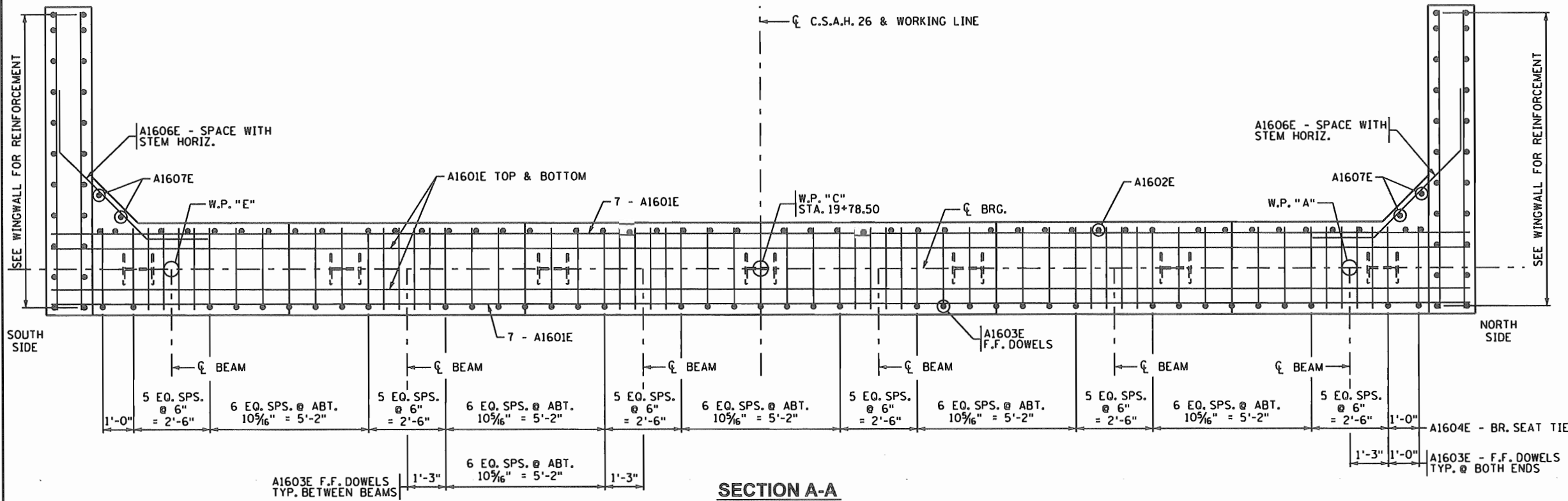
701 Xenia Ave. South
Suite 300
Minneapolis, MN 55416
763-541-4800
FAX 763-541-1700

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

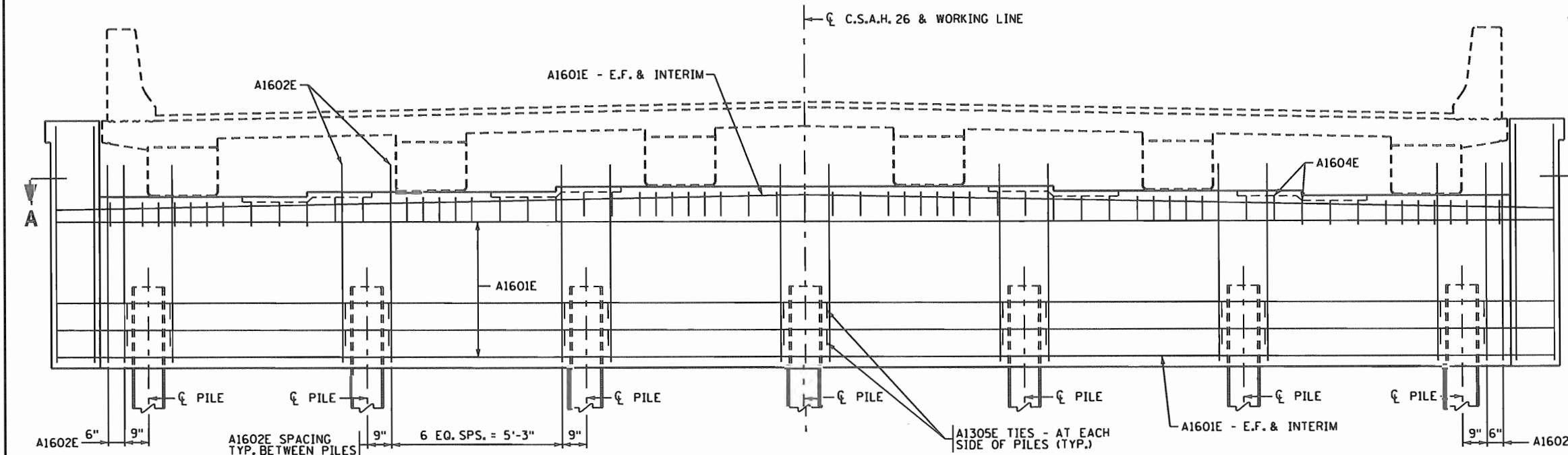
TITLE:
**WEST ABUTMENT
DETAILS**

DES: JDA	DR: BJR
CHK: BRL	CHK: JDA
Sheet B5 of B25 Sheets	

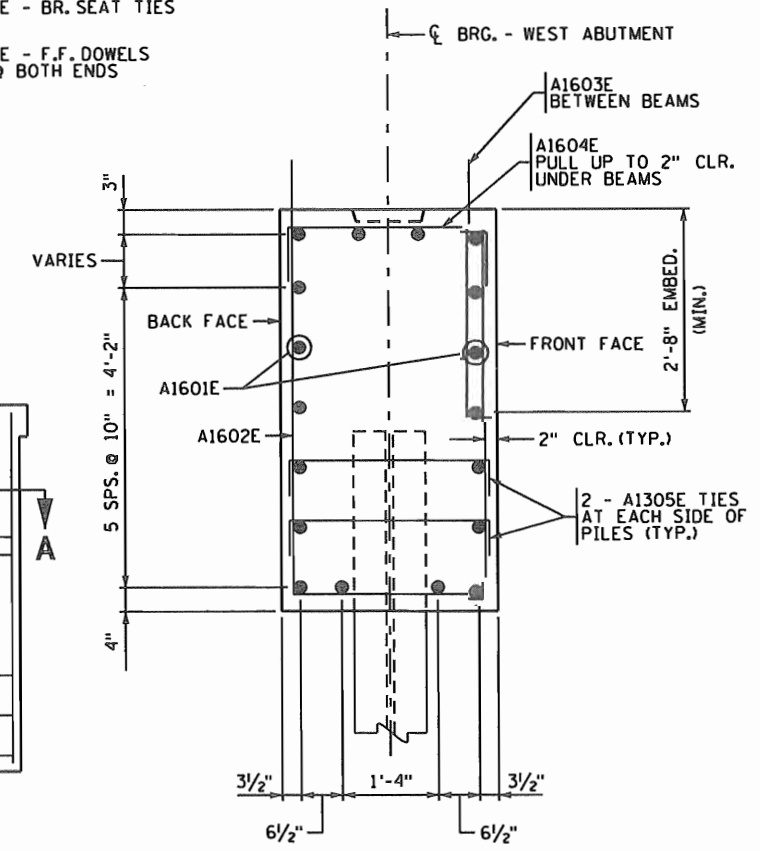
Bridge No.
02581



SECTION A-A



GENERAL ELEVATION



TYPICAL SECTION THRU ABUTMENT

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James Archer
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 7/9/2010 LIC. NO.: 45501

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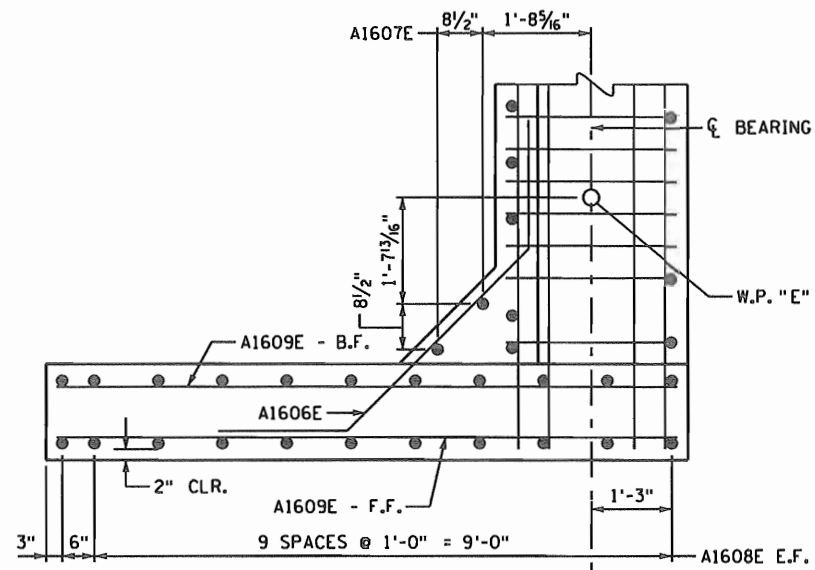
C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
WEST ABUTMENT REINFORCEMENT

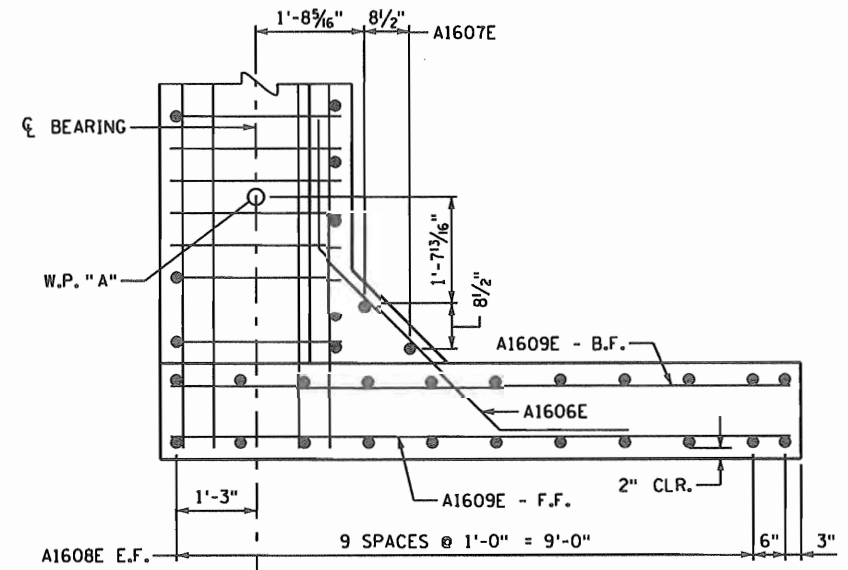
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CHK:	BRL	CHK:	JDA

Sheet B6 of B25 Sheets

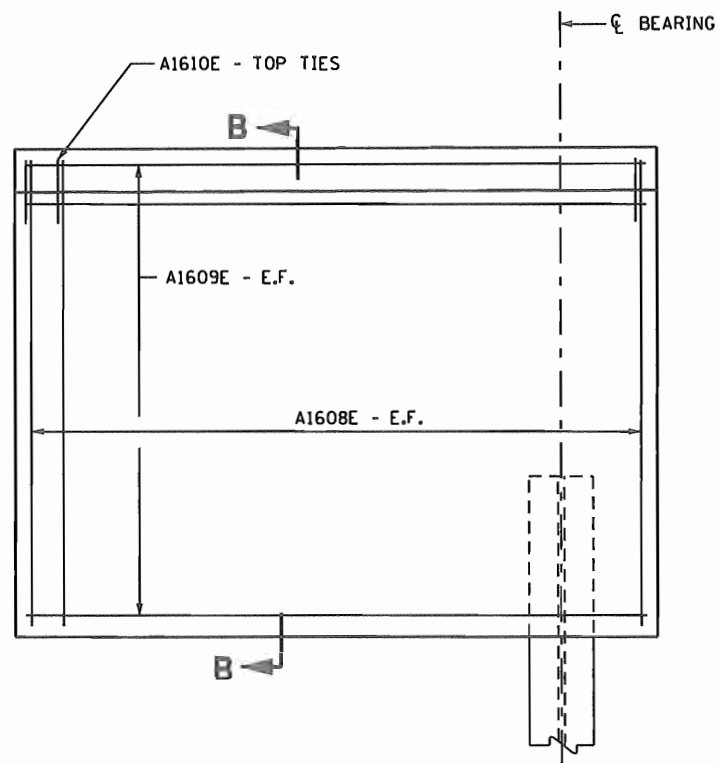
Bridge No.
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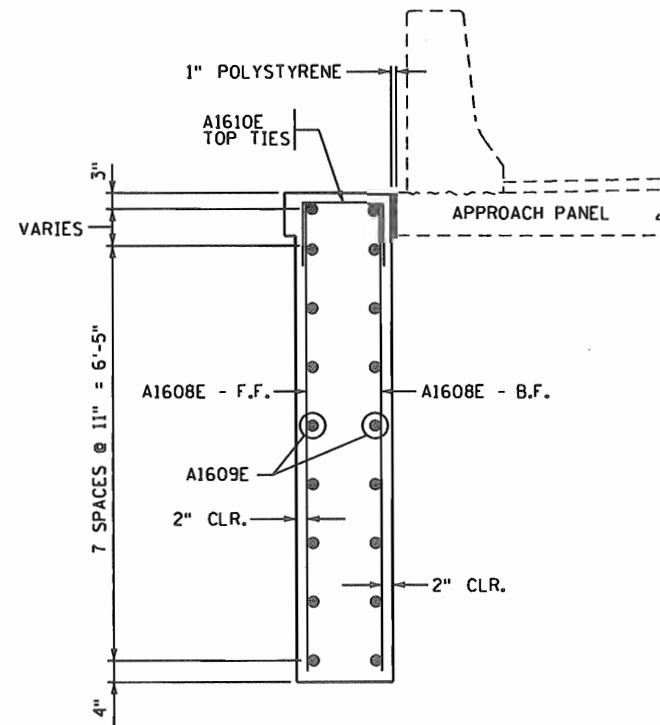
S.W. WINGWALL PLAN



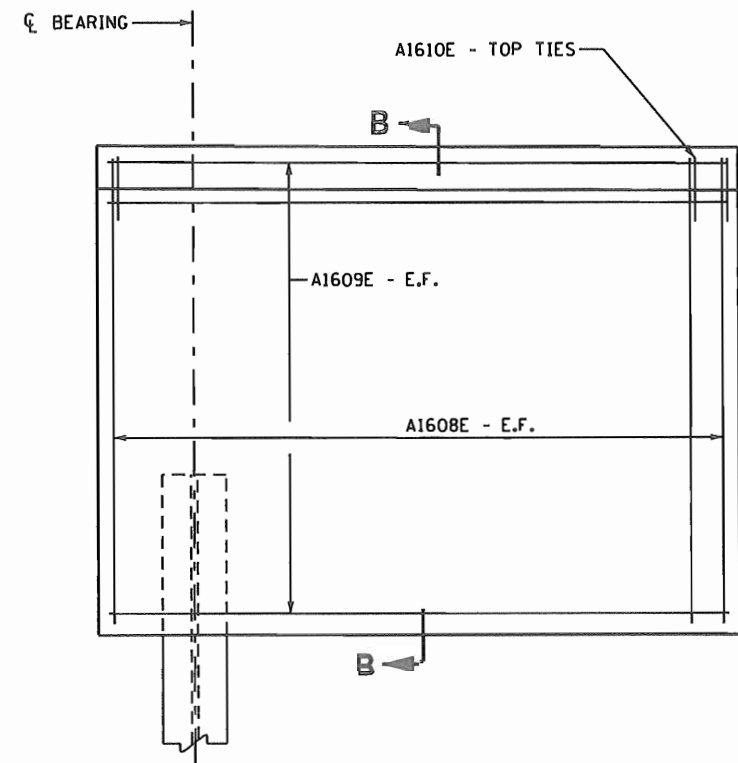
N.W. WINGWALL PLAN



S.W. WINGWALL ELEVATION



SECTION B-B



N.W. WINGWALL ELEVATION

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NO	DATE	BY	CHK	REVISIONS

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James Archer
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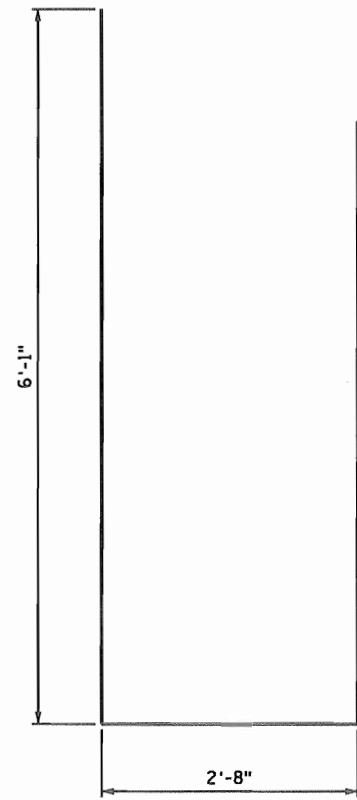
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WEST ABUTMENT REINFORCEMENT

DES: JDA	DR: BJR
CHK: BRL	CHK: JDA
Sheet B7 of B25 Sheets	

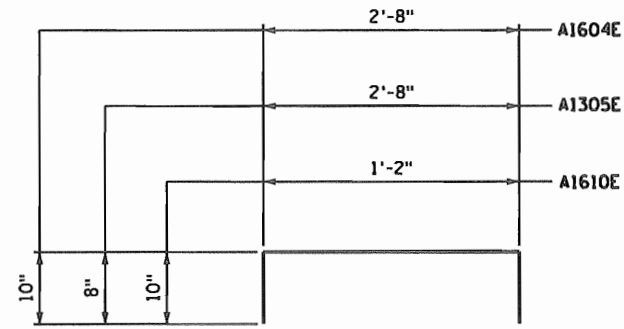
Bridge No.
02581

BILL OF REINFORCEMENT - WEST ABUTMENT

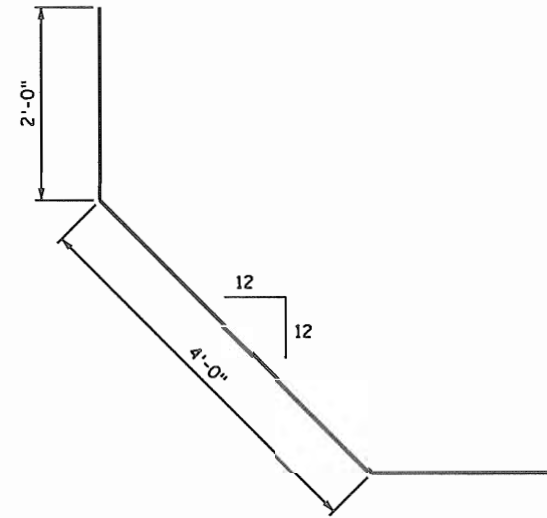
BAR	NO.	LENGTH	SHAPE	LOCATION
A1601E	18	46'-2"	STR.	STEM - LONGIT.
A1602E	46	13'-8"	BENT	STEM - B.F. TIES
A1603E	39	3'-8"	STR.	STEM - F.F. DOWELS
A1604E	63	4'-4"	BENT	STEM - BR. SEAT TIES
A1305E	28	4'-0"	BENT	STEM - TIES @ PILES
A1606E	14	8'-0"	BENT	STEM - FILLET TIES
A1607E	4	6'-1"	STR.	STEM - FILLET VERTS.
A1608E	44	7'-3"	STR.	WINGWALLS - VERTS.
A1609E	36	9'-8"	STR.	WINGWALLS - HORIZ.
A1610E	22	2'-10"	BENT	BOTH WINGS - TOP TIES



A1602E



A1604E, A1305E, & A1610E



A1606E

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James Archer
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 7/9/2010 LIC. NO.: 45501

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 701 Xenia Ave. South
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 Minneapolis, MN 55416
 763-541-4900
 FAX 763-541-1700
 INFRASTRUCTURE - ENGINEERS - PLANNERS

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
WEST ABUTMENT REINFORCEMENT

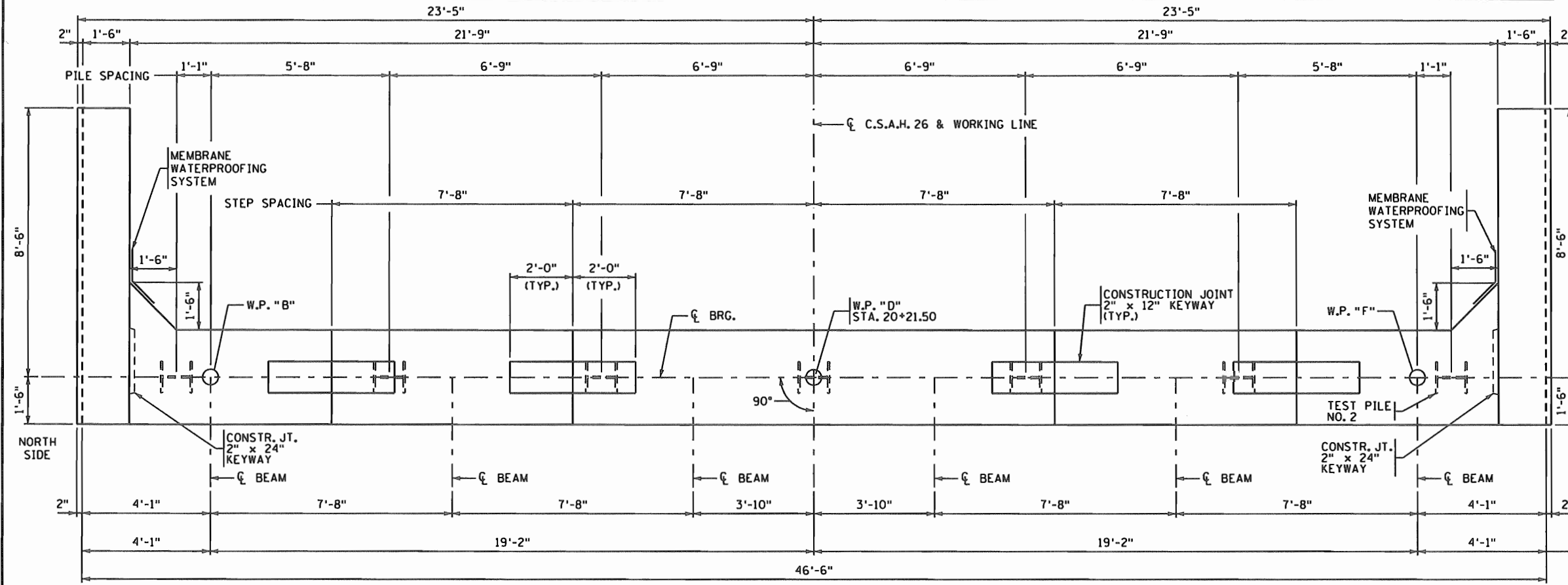
DES: JDA DR: BJR
 CHK: BRL CHK: JDA
Sheet B8 of B25 Sheets

Bridge No.
02581

SUMMARY OF QUANTITIES - EAST ABUTMENT

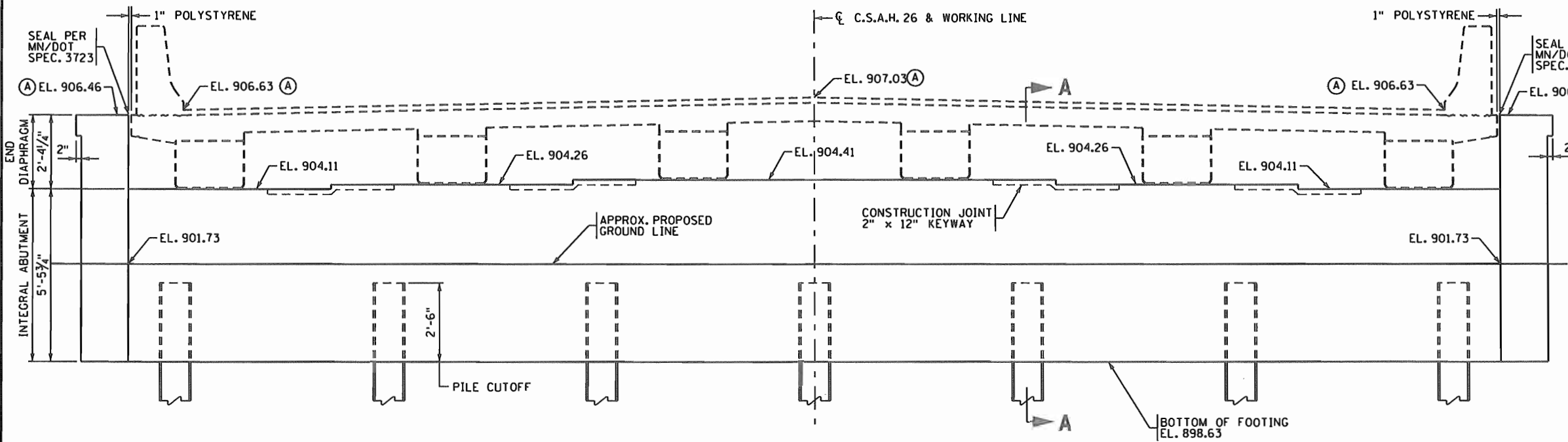
STRUCTURAL CONCRETE (3Y43)	38	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	2960	POUND
① STEEL-H-PILING DELIVERED 10"	450	LIN. FT.
① STEEL-H-PILING DRIVEN 10"	450	LIN. FT.
STEEL-H-TEST PILES 85 FT. LG. 10"	1	EACH
PILE TIP PROTECTION 10"	7	EACH
② MEMBRANE WATERPROOFING SYSTEM	55	LIN. FT.
STRUCTURE EXCAVATION	1	LUMP SUM
RANDOM RIPRAP CLASS III	69	CU. YD.
GEOTEXTILE FILTER TYPE IV (MODIFIED)	125	SQ. YD.
SLOPE PREPARATION	1	LUMP SUM

- ① DOES NOT INCLUDE TEST PILES.
- ② TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

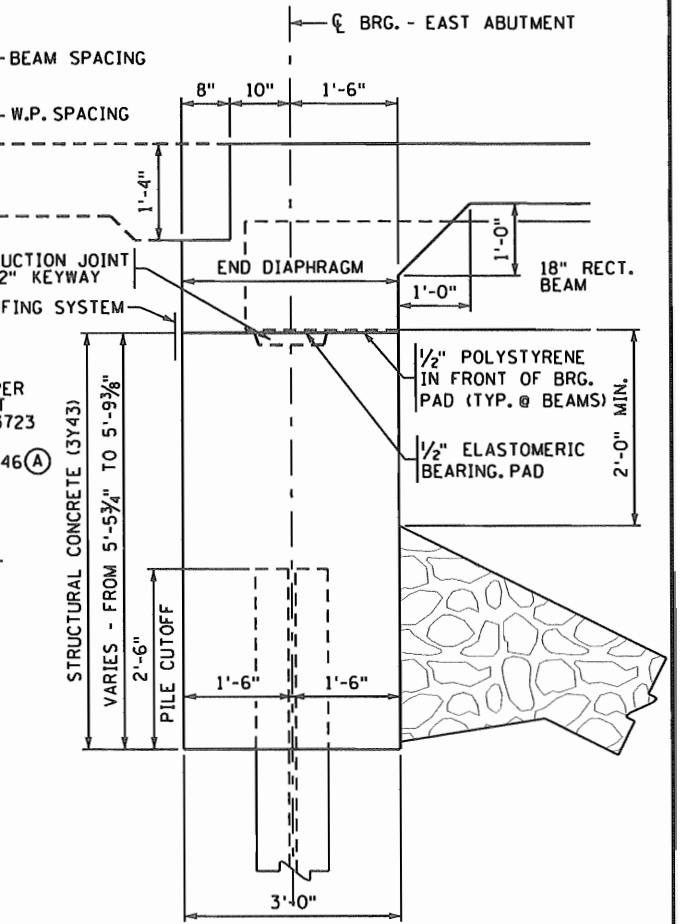


PLAN VIEW

(A) ELEVATIONS ARE ALONG ϕ BEARING.



GENERAL ELEVATION



SECTION A-A

7/9/2010 10:46:28 AM K:\0899-00\cad\plan\br02581\BR02581-EABT.dgn

NO	DATE	BY	CHK	REVISIONS

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

James Archer
 LICENSED PROFESSIONAL ENGINEER - JAMES ARCHER
 DATE: 7/9/2010 LIC. NO.: 45501

WSB
 & Associates, Inc.
 INFRASTRUCTURE - ENGINEERS - PLANNERS

701 Xenia Ave. South
 Suite 300
 Minneapolis, MN 55416
 763-541-4800
 FAX 763-541-1700

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
EAST ABUTMENT DETAILS

DES: JDA	DR: BJR
CHK: BRL	CHK: JDA

Sheet B9 of B25 Sheets

Bridge No.
02581

EAST ABUTMENT REQUIRED NOMINAL PILE BEARING RESISTANCE R_n - TONS/PILE		
FIELD CONTROL METHOD	ϕ_{dyn}	ϕR_n
MN/DOT NOMINAL RESISTANCE FORMULA	0.40	168.7
PDA	0.65	103.8

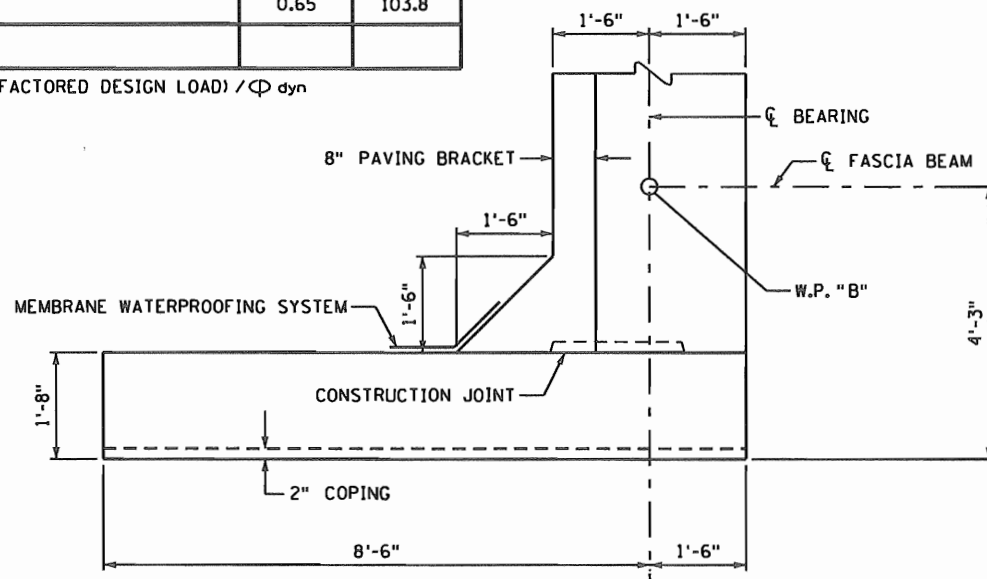
$\phi R_n = (\text{FACTORED DESIGN LOAD}) / \phi_{dyn}$

PILE NOTES

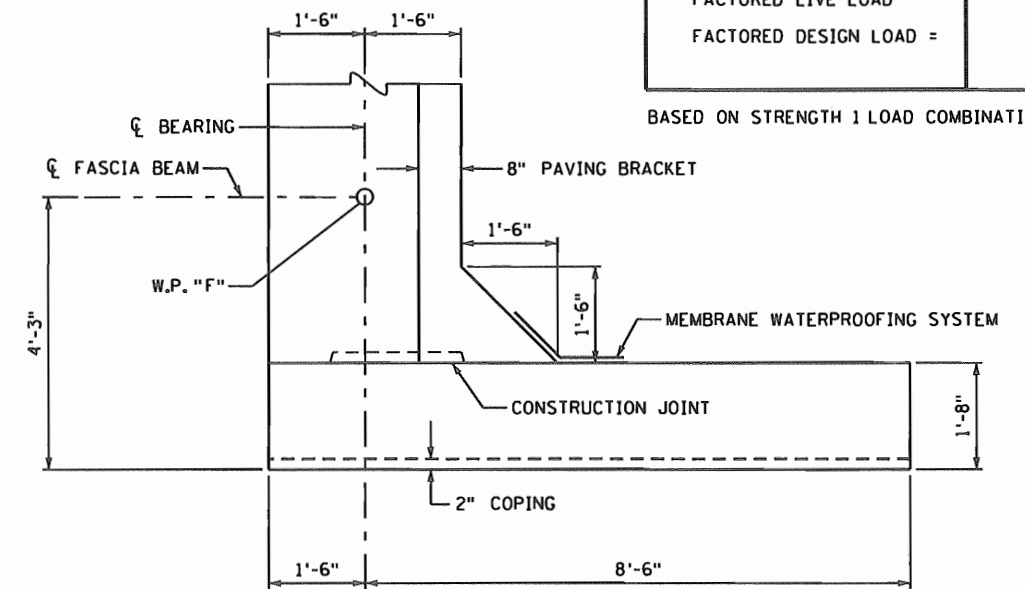
- 1 STEEL-H- TEST PILES 85 FT. LONG
 - 6 STEEL-H-PILES EST. LENGTH 75 FT.
 - 7 STEEL-H-PILES REQ'D FOR EAST ABUTMENT
- PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
PILES TO BE HP 10 X 42
FOR PILE SPLICE DETAILS SEE DETAIL B202.
PILE CUTOFF IS EL. 901.13

EAST ABUTMENT COMPUTED PILE LOAD - TONS/PILE	
	EAST ABUT.
FACTORED DEAD LOAD + EARTH PRESSURE	42.7
FACTORED LIVE LOAD	24.8
FACTORED DESIGN LOAD =	67.5

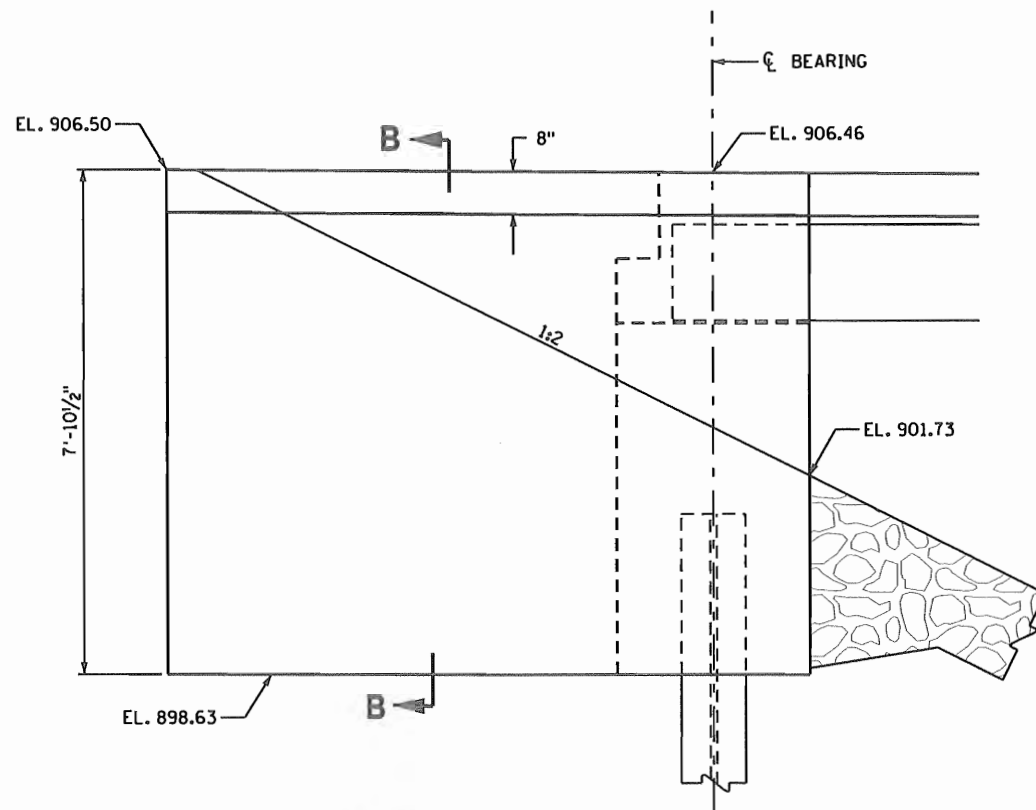
BASED ON STRENGTH I LOAD COMBINATION.



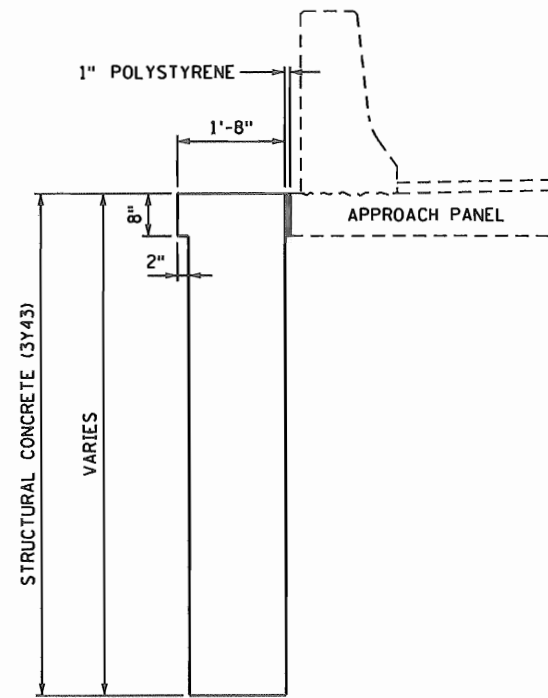
N.E. WINGWALL PLAN



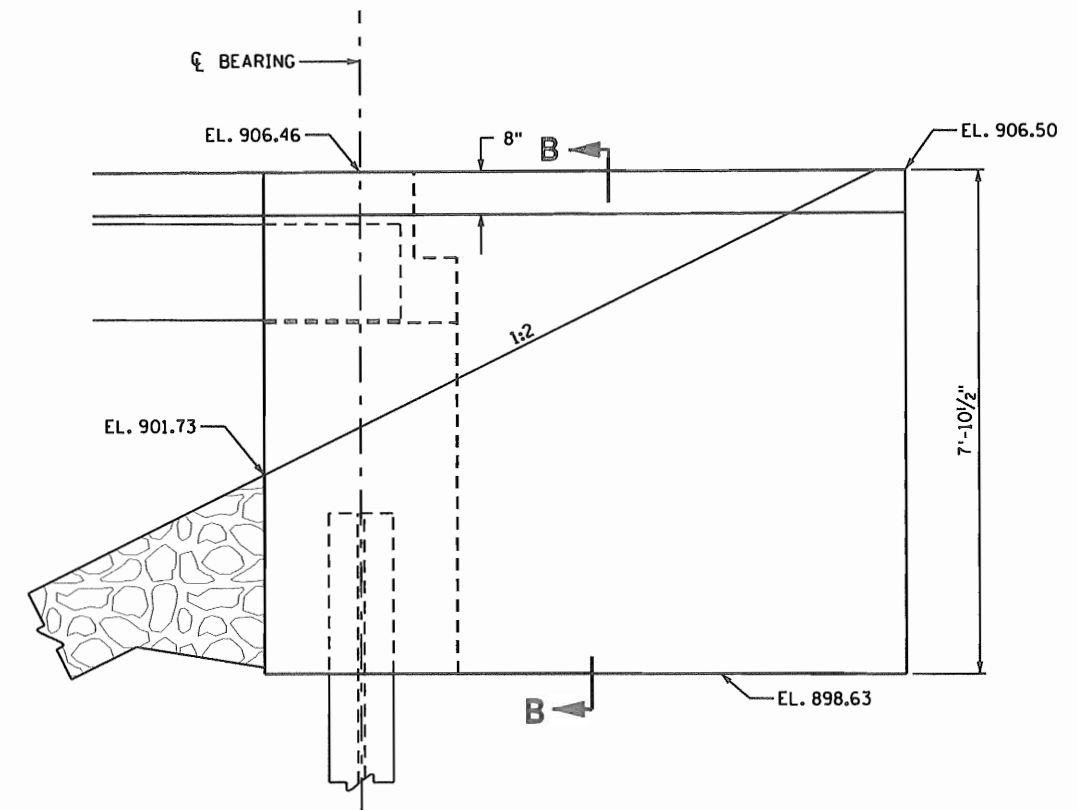
S.E. WINGWALL PLAN



N.E. WINGWALL ELEVATION



SECTION B-B



S.E. WINGWALL ELEVATION

7/9/2010 10:46:34 AM K:\0898-00\cad\plan\br02581\CB902581.EAB12.dgn

NO	DATE	BY	CHK	REVISIONS

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LICENSING PROFESSIONAL ENGINEER: JAMES ARCHER
DATE: 7/9/2010 LIC. NO.: 45501

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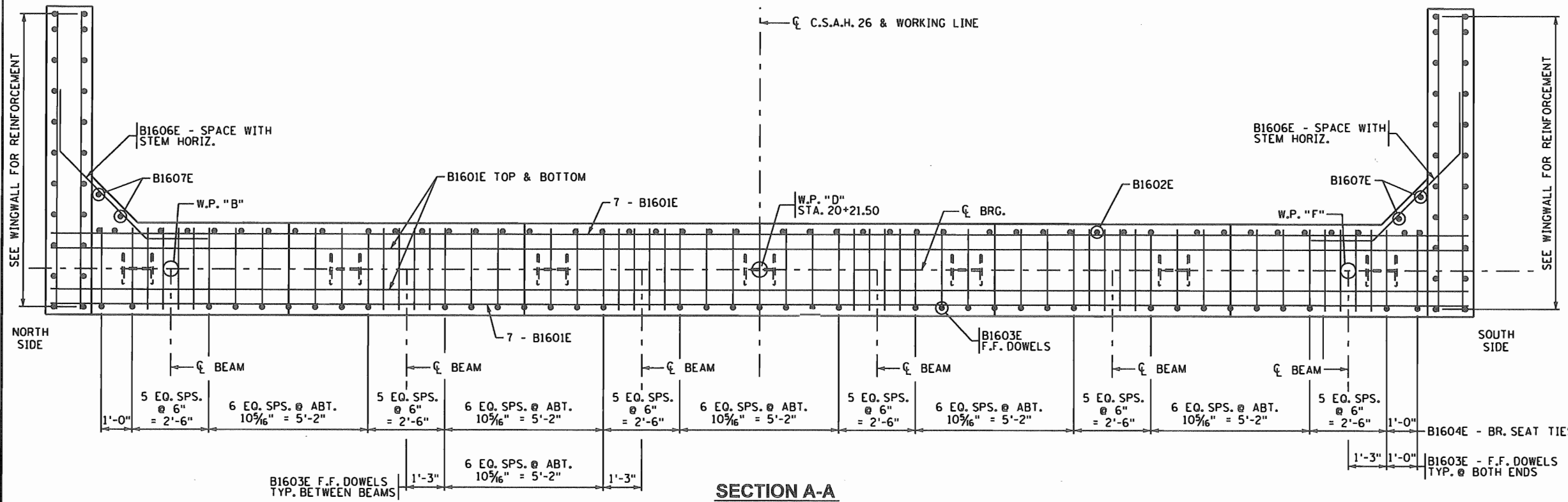
**C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05**

TITLE: **EAST ABUTMENT
DETAILS**

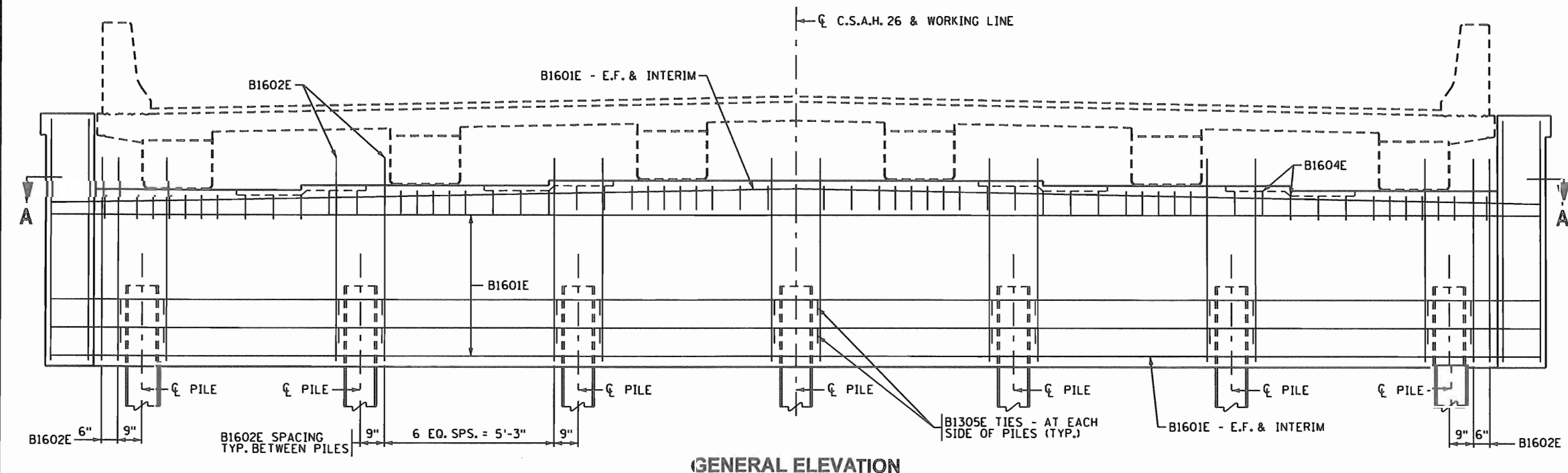
DES: JDA	DR: BJR
CHK: BRL	CHK: JDA

Sheet B10 of B25 Sheets

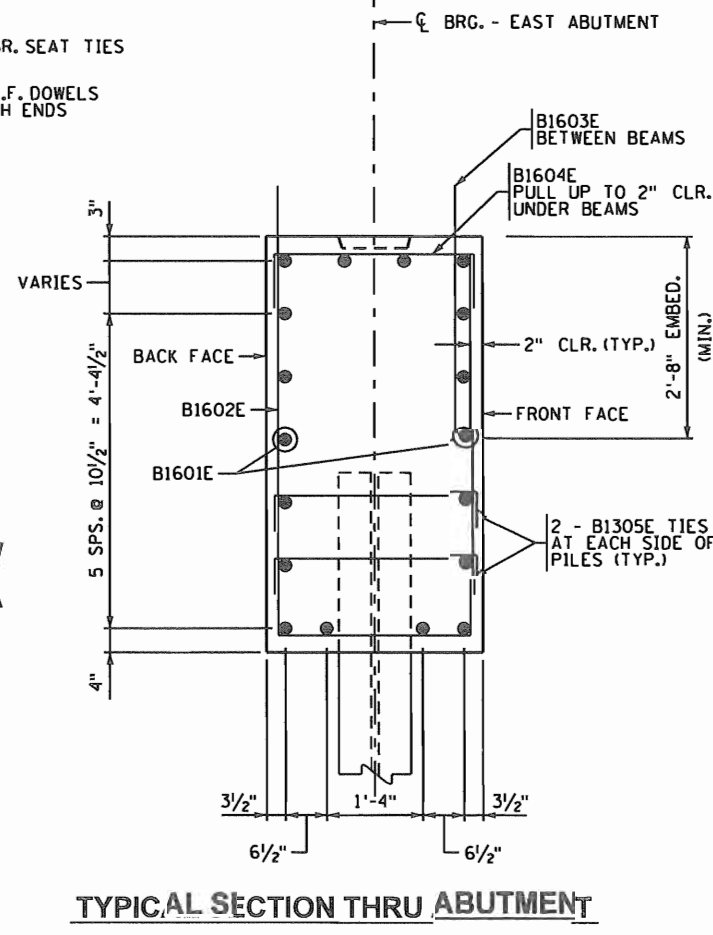
Bridge No. 02581



SECTION A-A



GENERAL ELEVATION



TYPICAL SECTION THRU ABUTMENT

7/9/2010 10:46:40 AM K:\0898-00\cadd\blm\br02581\CB02581\EB13.dgn

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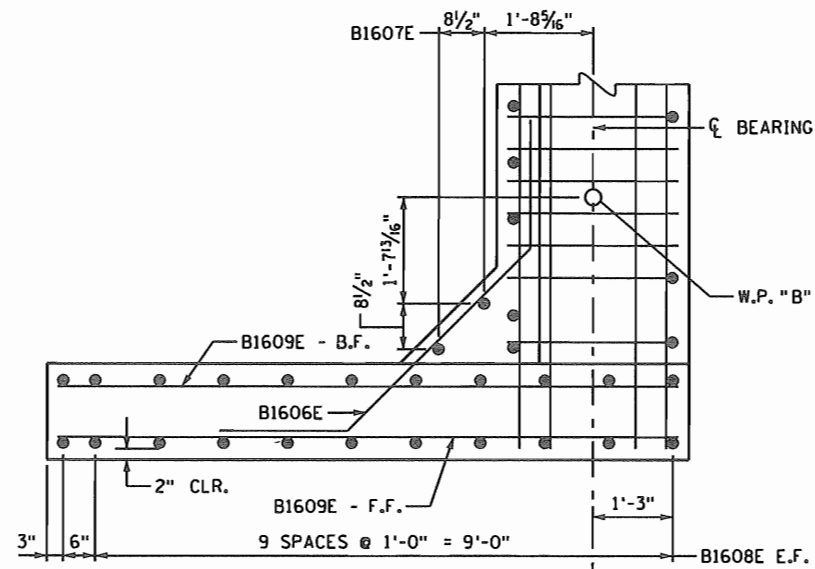
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ANOKA COUNTY
S.A.P. 02-626-05

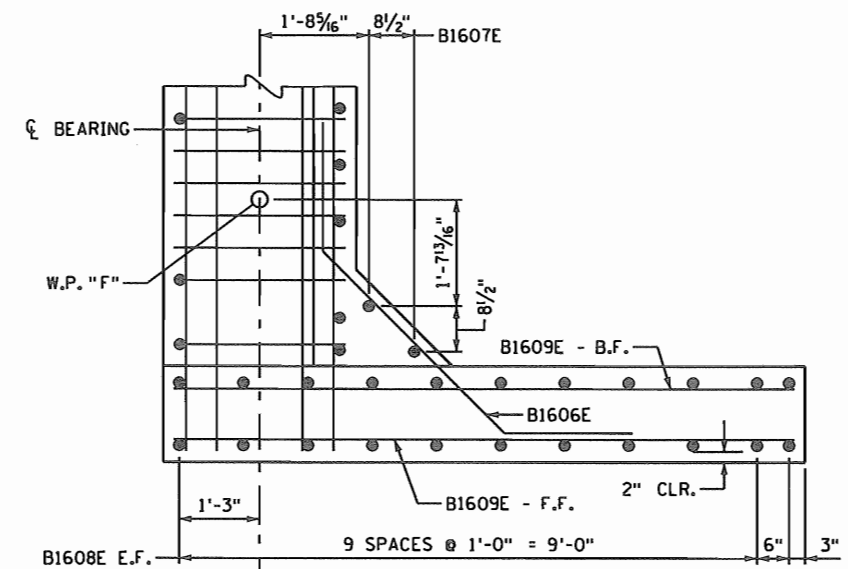
TITLE:
EAST ABUTMENT REINFORCEMENT

DES:	JDA	DR:	BJR
CHK:	BRL	CHK:	JDA
Sheet B11 of B25 Sheets			

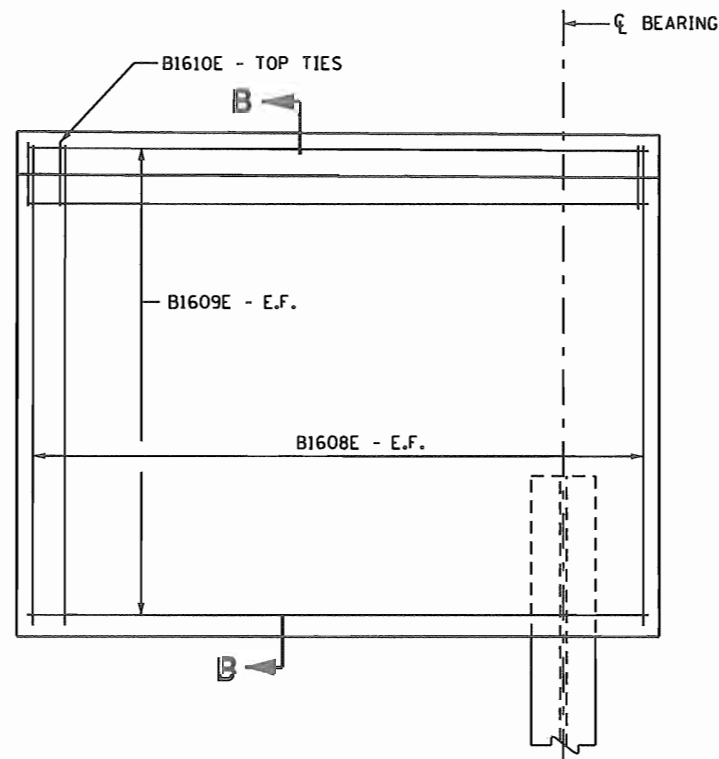
Bridge No.
02581



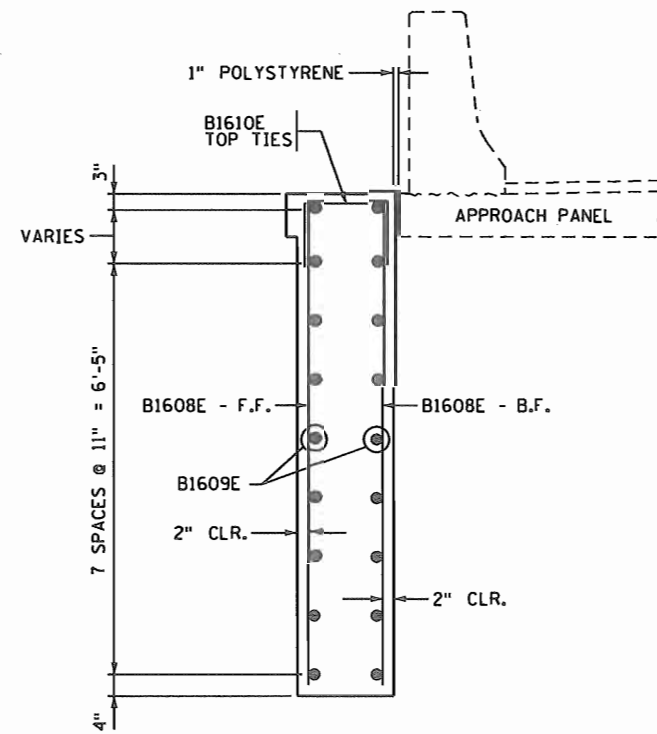
N.E. WINGWALL PLAN



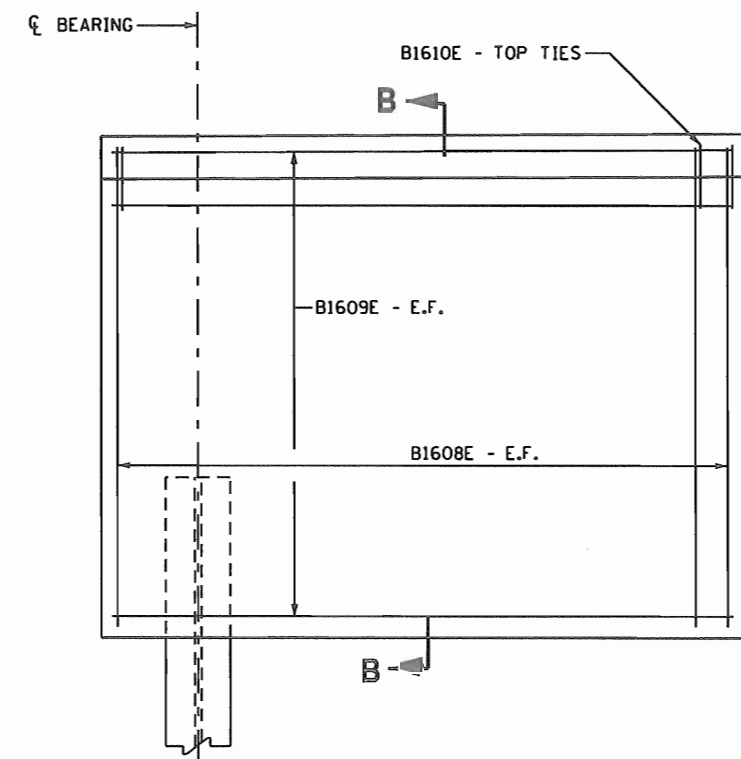
S.E. WINGWALL PLAN



N.E. WINGWALL ELEVATION



SECTION B-B



S.E. WINGWALL ELEVATION

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ANOKA COUNTY
S.A.P. 02-6:26-05

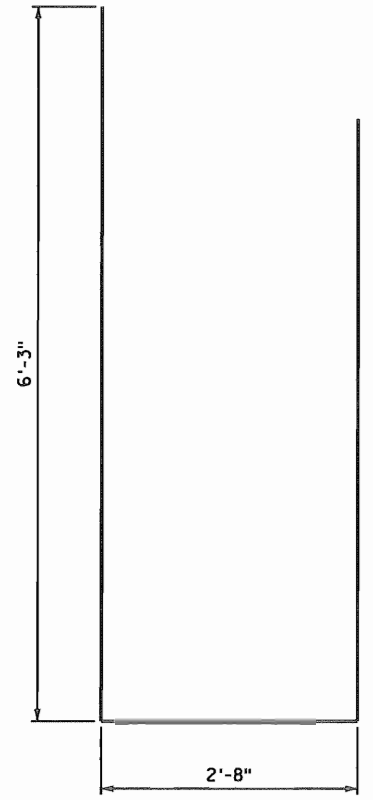
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EAST ABUTMENT REINFORCEMENT

DES: JDA	DR: BJR
CHK: BRL	CHK: JDA
Sheet B12 of B25 Sheets	

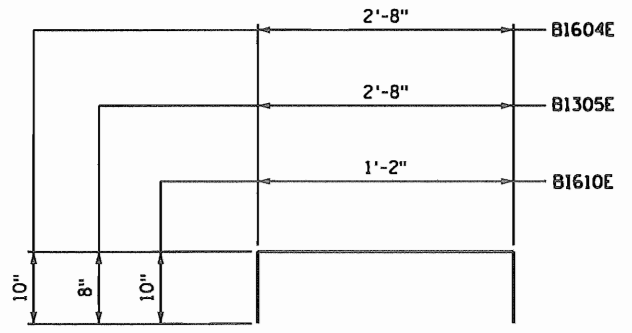
Bridge No.
02581

BILL OF REINFORCEMENT - EAST ABUTMENT

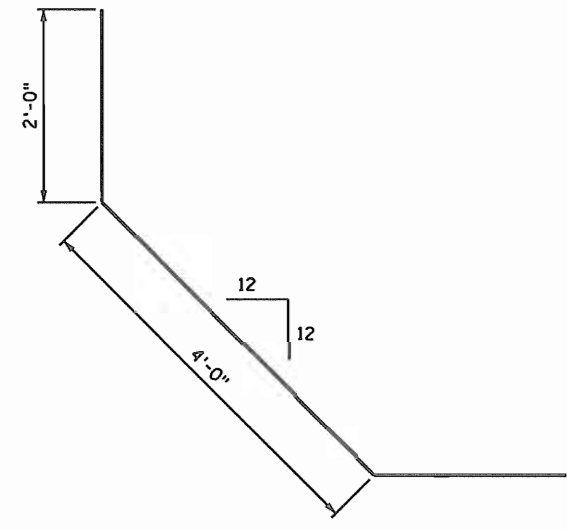
BAR	NO.	LENGTH	SHAPE	LOCATION
B1601E	18	46'-2"	STR.	STEM - LONGIT.
B1602E	46	14'-0"	BENT	STEM - B.F. TIES
B1603E	39	3'-8"	STR.	STEM - F.F. DOWELS
B1604E	63	4'-4"	BENT	STEM - BR. SEAT TIES
B1305E	28	4'-0"	BENT	STEM - TIES @ PILES
B1606E	14	8'-0"	BENT	STEM - FILLET TIES
B1607E	4	6'-3"	STR.	STEM - FILLET VERTS.
B1608E	44	7'-5"	STR.	WINGWALLS - VERTS.
B1609E	36	9'-8"	STR.	WINGWALLS - HORIZ.
B1610E	22	2'-10"	BENT	BOTH WINGS - TOP TIES



B1602E



B1604E, B1305E, & B1610E



B1606E

7/9/2010 10:46:52 AM K:\01838-00\Cad\plan\br-02581\CER02581_EABT5.dgn

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[Signature]
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 7/9/2010 LIC. NO.: 45501

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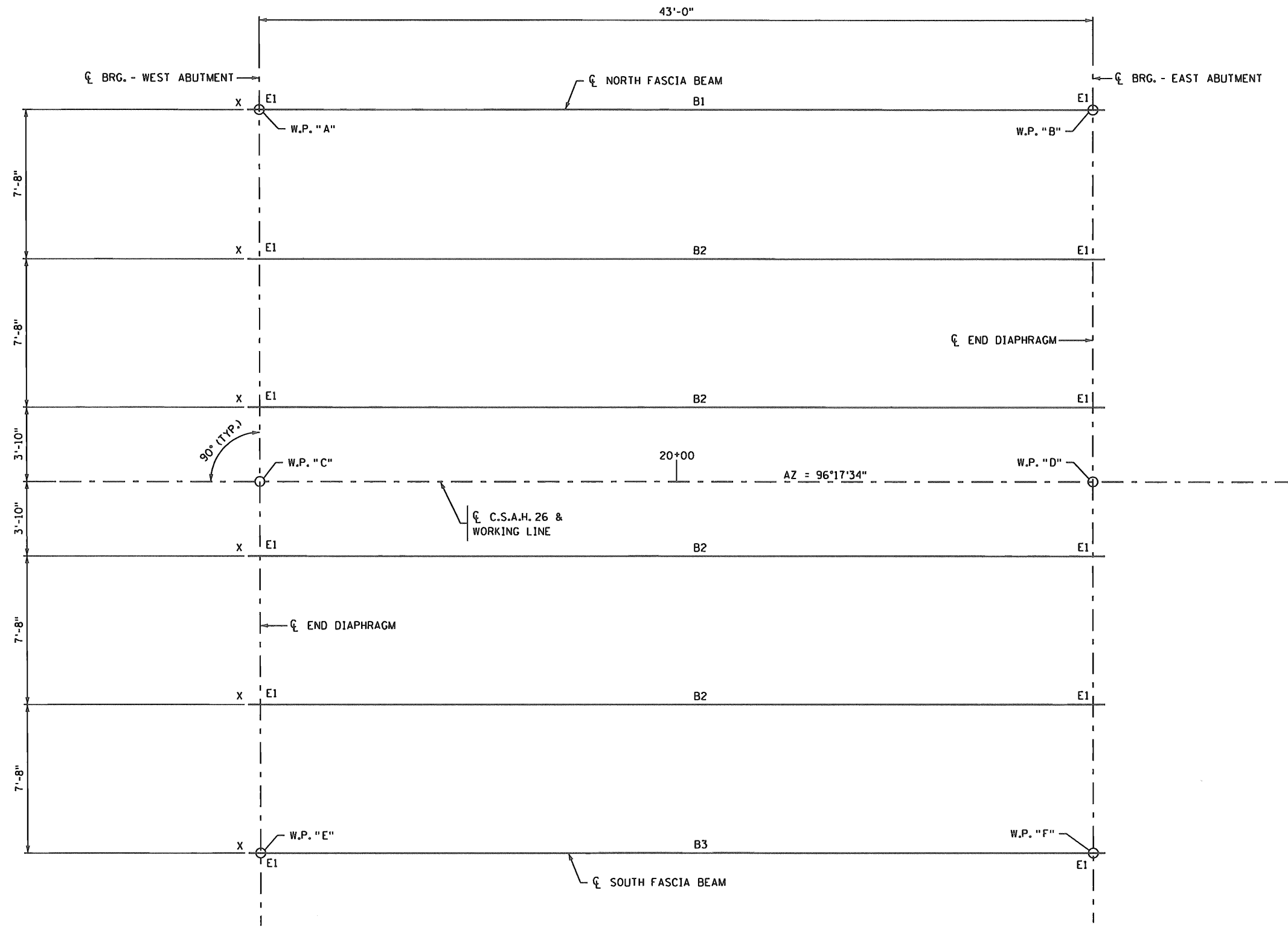
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ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
EAST ABUTMENT REINFORCEMENT

DES:	JDA	DR:	BJR
CHK:	BRL	CHK:	JDA
Sheet B13 of B25 Sheets			

Bridge No.
02581



FRAMING PLAN

E1 = ELASTOMERIC PAD, TYPE 1
 X = MARKS END OF BEAM

7/9/2010 10:46:58 AM K:\0889-00\Cad\Plan\br-02581\CBR02581_FRA.dgn

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James Archer

LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 7/9/2010 LIC. NO.: 45521

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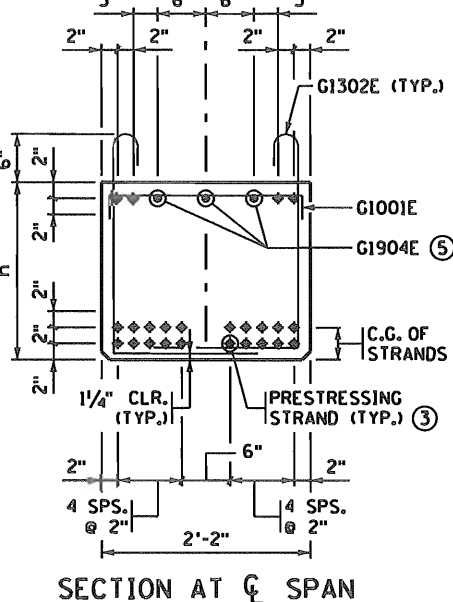
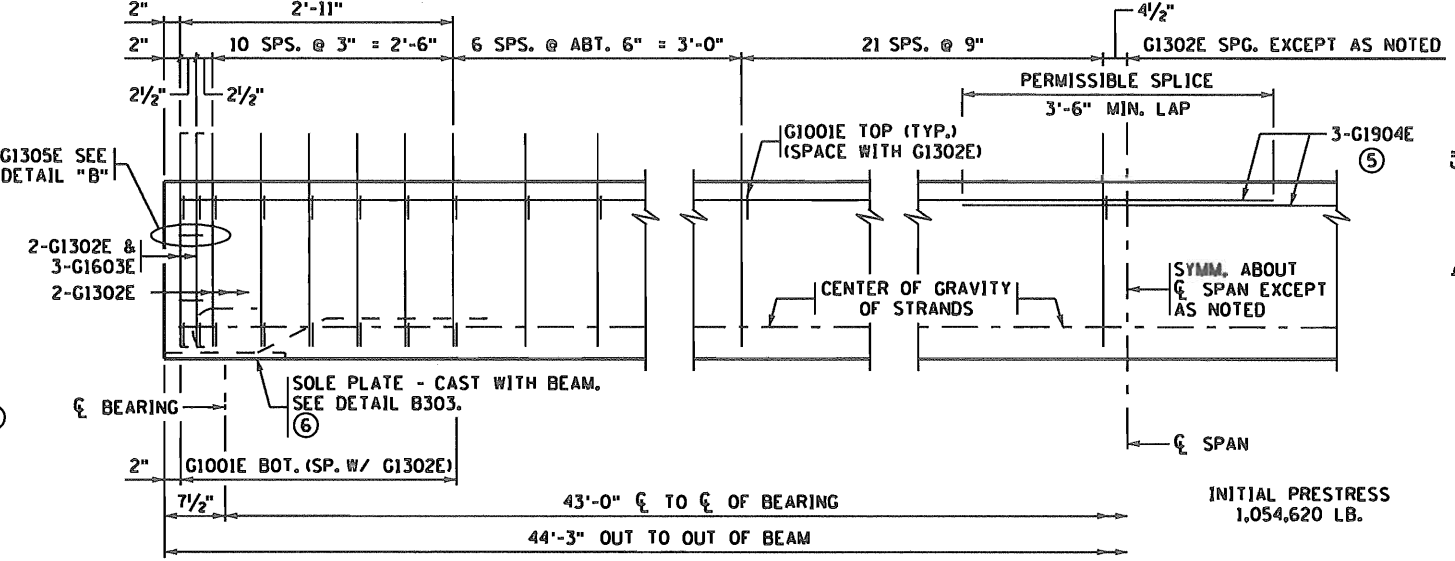
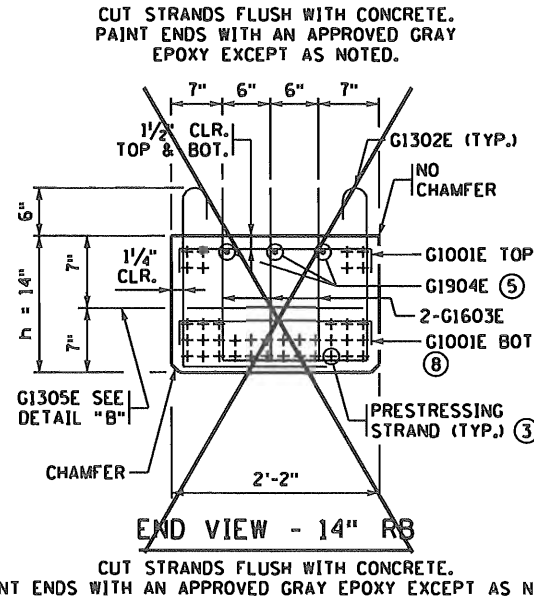
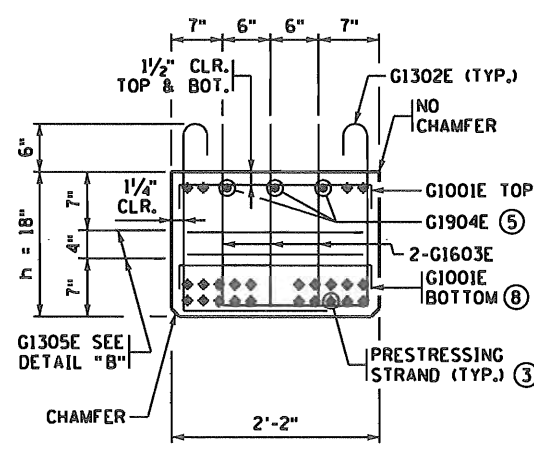
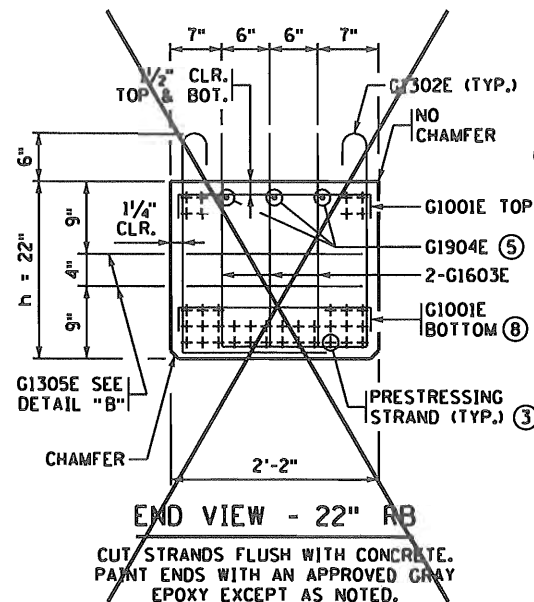
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C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
FRAMING PLAN

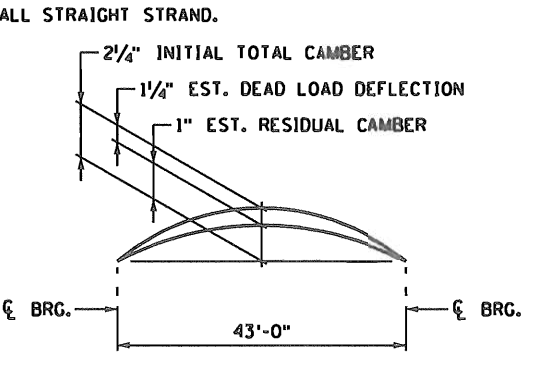
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CHK:	BRL	CHK:	JDA
Sheet B14 of B25 Sheets			

Bridge No.
02581



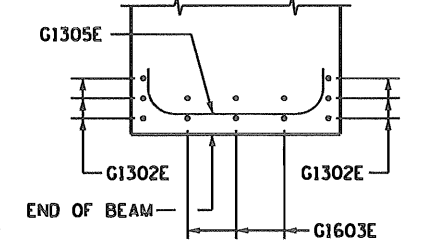
STRAND ARRANGEMENT	
LOCATION	NO. OF STRANDS
TOP ROW	4
2ND ROW FROM TOP	0
3RD ROW FROM BOTTOM	0
2ND ROW FROM BOTTOM	10
BOTTOM ROW	10
TOTAL	24
C.G. OF STRANDS = 5.17 INCHES	

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

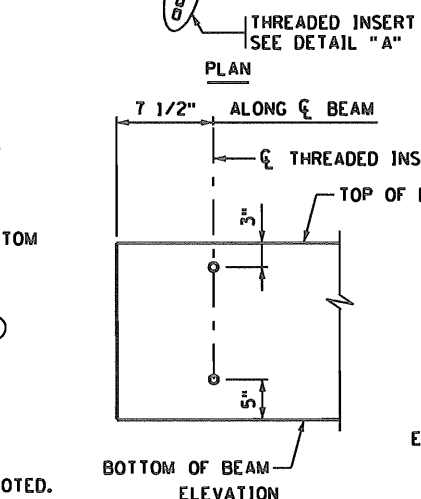
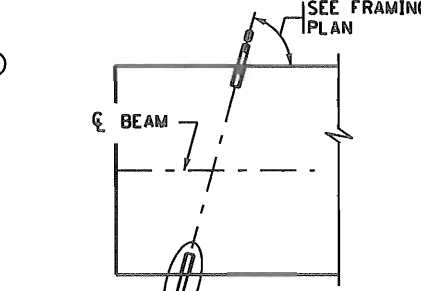


DEAD LOAD DEFLECTION SHOWN IS FOR WEIGHT OF SLAB, WEARING COURSE, RAILING, SIDEWALK AND MEDIAN WHERE APPLICABLE.

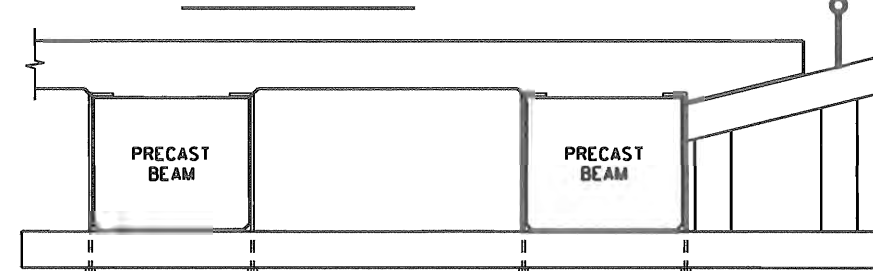
ENGINEER WILL TAKE ELEVATIONS AT TOP OF BEAMS AFTER ERECTION AND WILL ALLOW FOR DEFLECTION SHOWN TO ENABLE CONTRACTOR TO BUILD FORMS TO CORRECT GRADE AND SPECIFIED SLAB THICKNESS.



DETAIL "B"
PLAN VIEW SHOWING PLACEMENT OF G1305E BAR

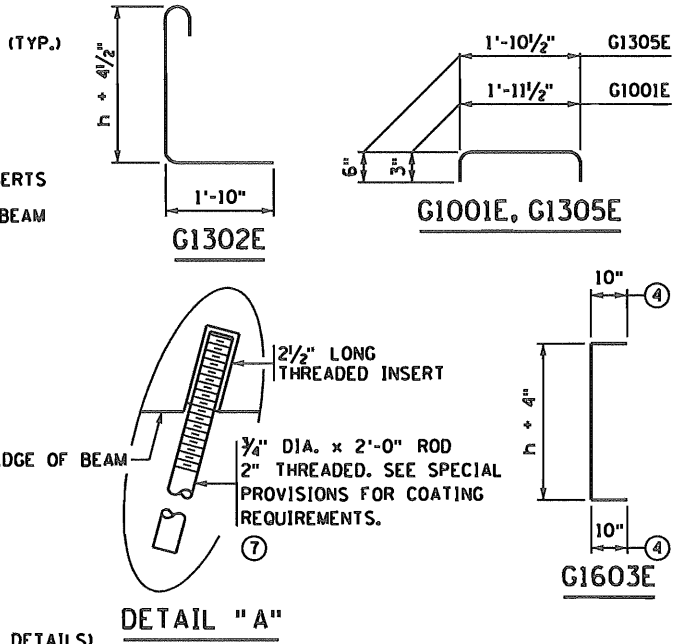


CONCRETE END DIAPHRAGM ANCHORAGES
INTEGRAL ABUTMENT
(SEE DETAIL B816 FOR CONCRETE END DIAPHRAGM DETAILS)



OVERHANG SUPPORT CONCEPT SKETCH
SEE THE "CONSTRUCTION NOTES" ON FRONT PORTION OF THE BRIDGE PLANS. THIS CONCEPT HAS BEEN USED SUCCESSFULLY ON PREVIOUS PROJECTS. CONTRACTORS MAY CONSIDER THIS OR ANOTHER SYSTEM AT THEIR DISCRETION.

CONTRACTOR SHALL VERIFY STABILITY OF FASCIA BEAMS FROM OVERTURNING (NO PERMANENT BEAM DIAPHRAGMS ARE PRESENT). CONTRACTOR SHALL PROVIDE TEMPORARY BRACING.



DETAIL "A"

SECTION HEIGHT "h"		
14" □	18" ☒	22" □

AN "X" IN THE BOX INDICATES THE SECTION HEIGHT.

CALCULATED PRESTRESS LOSSES	
ELASTIC SHORTENING LOSS	17.4 KSI
LONG TERM LOSSES	22.1 KSI
TOTAL LOSSES	39.4 KSI

MINIMUM CONCRETE STRENGTH - K.S.I.	
① f'c1	② f'c
7.5 KSI	9.0 KSI

PRESTRESSING STRAND DIAMETER	
③ 1/2" □	③ 0.60" ☒

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 STENCILLED AND BE CLEARLY LEGIBLE. FOR LOCATION OF BEAMS, SEE FRAMING PLAN.
- ALL MATERIAL AND WORK SHOWN OR NOTED ON THIS SHEET SHALL BE INCLUDED IN UNIT PRICE BID FOR PRESTRESSED CONCRETE BEAMS. SEE Mn/DOT SPEC. 2405.
- SEE FRAMING PLAN FOR BEAM END MARKED "X".
- APPROXIMATE WEIGHT OF BEAM IS 11 TONS.
- AS AN ALTERNATE TO THE END 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 PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND, CONFORMING TO ASTM A416, GRADE 270.
- ④ MAY STAGGER BARS TO AVOID INTERFERENCE.
- ⑤ PROVIDE 2" CLEARANCE AT ENDS OF BEAM.
- ⑥ FOR INTEGRAL ABUTMENT BRIDGES, SOLE PLATE CAN BE ELIMINATED OR BE REPLACED WITH APPROVED PROTECTION PLATE.
- ⑦ FOR INSERTS IN THE OUTSIDE OF FASCIA BEAM, THE ROD LENGTH SHALL BE ADJUSTED ACCORDING TO THE OVERHANG DIMENSION.
- ⑧ PLACE G1001E BAR ON TOP OF THE TOP ROW OF PRESTRESSING STRANDS IN THE BOTTOM OF THE BEAM.

REVISED: 10-22-2009
APPROVED: OCTOBER 22, 2008
STATE BRIDGE ENGINEER

NO	DATE	BY	CHK	REVISIONS

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DATE: 7/9/2010 LIC. NO.: 45501

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INFRASTRUCTURE - ENGINEERS - PLANNERS

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
14", 18" & 22" RECTANGULAR PRESTRESSED CONCRETE BEAM (PRETENSIONED) 18RB-45

DES: JDA DR: BJR
CHK: BRL CHK: JDA
BEAMS B1 - B3
Sheet B15 of B25 Sheets

FIG. 5-397.550
Bridge No. 02581

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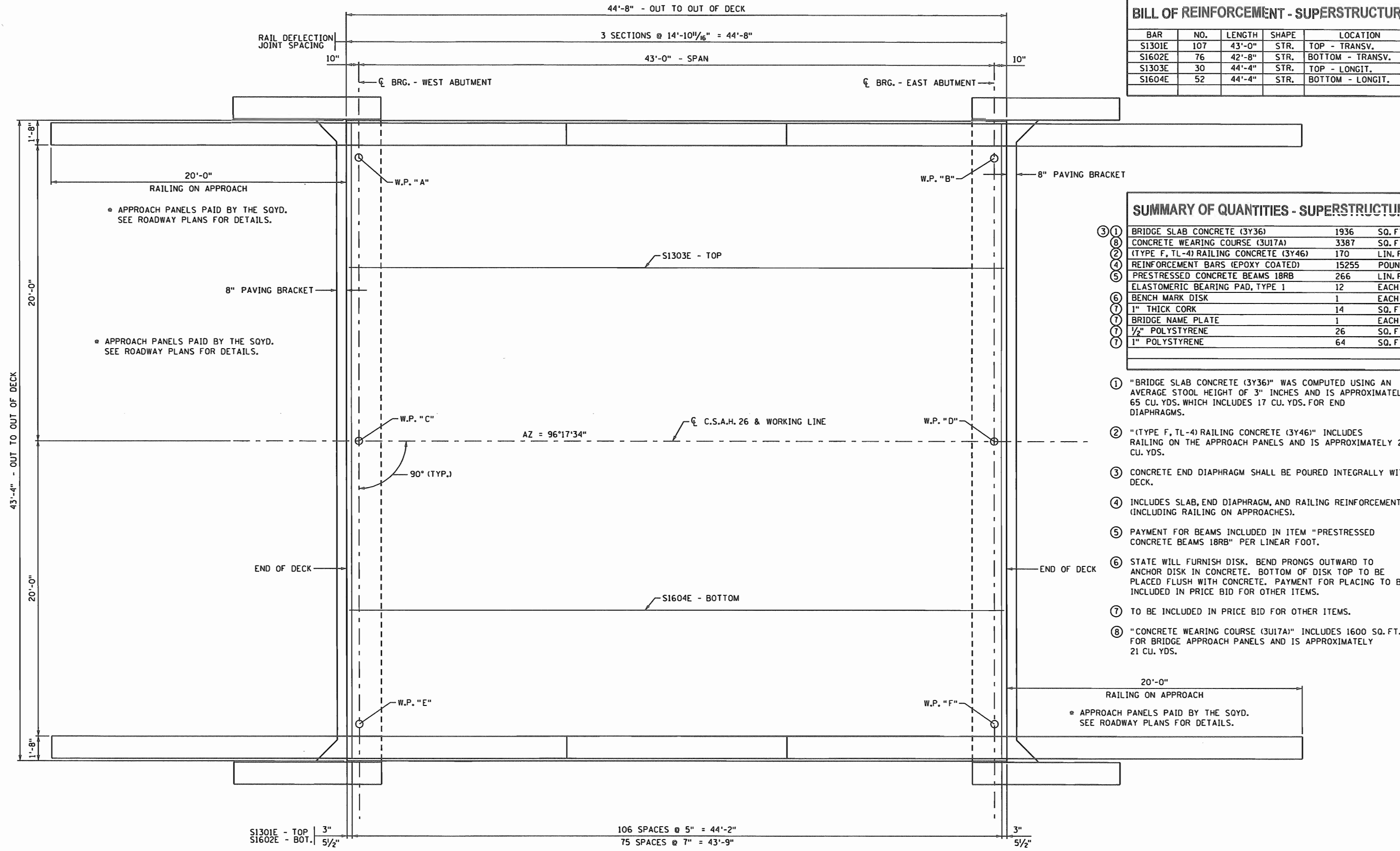
BILL OF REINFORCEMENT - SUPERSTRUCTURE

BAR	NO.	LENGTH	SHAPE	LOCATION
S1301E	107	43'-0"	STR.	TOP - TRANSV.
S1602E	76	42'-8"	STR.	BOTTOM - TRANSV.
S1303E	30	44'-4"	STR.	TOP - LONGIT.
S1604E	52	44'-4"	STR.	BOTTOM - LONGIT.

SUMMARY OF QUANTITIES - SUPERSTRUCTURE

①	BRIDGE SLAB CONCRETE (3Y36)	1936	SQ. FT.
②	CONCRETE WEARING COURSE (3U17A)	3387	SQ. FT.
③	(TYPE F, TL-4) RAILING CONCRETE (3Y46)	170	LIN. FT.
④	REINFORCEMENT BARS (EPOXY COATED)	15255	POUND
⑤	PRESTRESSED CONCRETE BEAMS 18RB	266	LIN. FT.
⑥	ELASTOMERIC BEARING PAD, TYPE 1	12	EACH
⑦	BENCH MARK DISK	1	EACH
⑧	1" THICK CORK	14	SQ. FT.
⑨	BRIDGE NAME PLATE	1	EACH
⑩	1/2" POLYSTYRENE	26	SQ. FT.
⑪	1" POLYSTYRENE	64	SQ. FT.

- ① "BRIDGE SLAB CONCRETE (3Y36)" WAS COMPUTED USING AN AVERAGE STUOL HEIGHT OF 3" INCHES AND IS APPROXIMATELY 65 CU. YDS. WHICH INCLUDES 17 CU. YDS. FOR END DIAPHRAGMS.
- ② "(TYPE F, TL-4) RAILING CONCRETE (3Y46)" INCLUDES RAILING ON THE APPROACH PANELS AND IS APPROXIMATELY 20 CU. YDS.
- ③ CONCRETE END DIAPHRAGM SHALL BE POURED INTEGRALLY WITH DECK.
- ④ INCLUDES SLAB, END DIAPHRAGM, AND RAILING REINFORCEMENT (INCLUDING RAILING ON APPROACHES).
- ⑤ PAYMENT FOR BEAMS INCLUDED IN ITEM "PRESTRESSED CONCRETE BEAMS 18RB" PER LINEAR FOOT.
- ⑥ STATE WILL FURNISH DISK. BEND PRONGS OUTWARD TO ANCHOR DISK IN CONCRETE. BOTTOM OF DISK TOP TO BE PLACED FLUSH WITH CONCRETE. PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- ⑦ TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- ⑧ "CONCRETE WEARING COURSE (3U17A)" INCLUDES 1600 SQ. FT. FOR BRIDGE APPROACH PANELS AND IS APPROXIMATELY 21 CU. YDS.



DECK PLAN VIEW

S1301E - TOP 3"
S1602E - BOT. 5/2"

106 SPACES @ 5" = 44'-2"
75 SPACES @ 7" = 43'-9"

3"
5/2"

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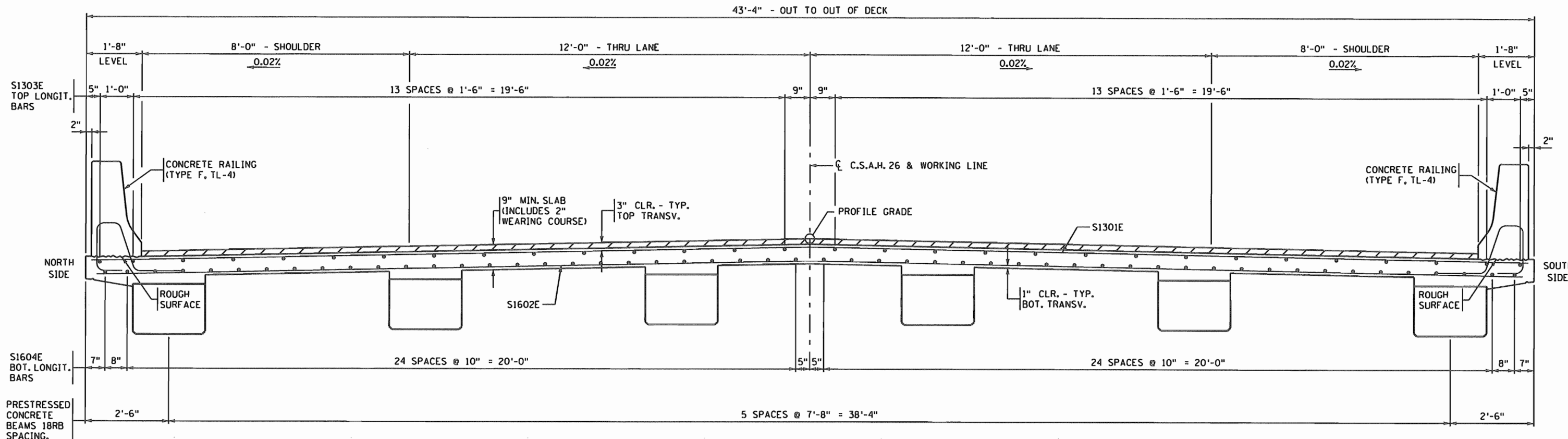
C.S.A.H. 26
ANOKA COUNTY
S.A.P. 0:2-626-05

TITLE:
**SUPERSTRUCTURE
DETAILS**

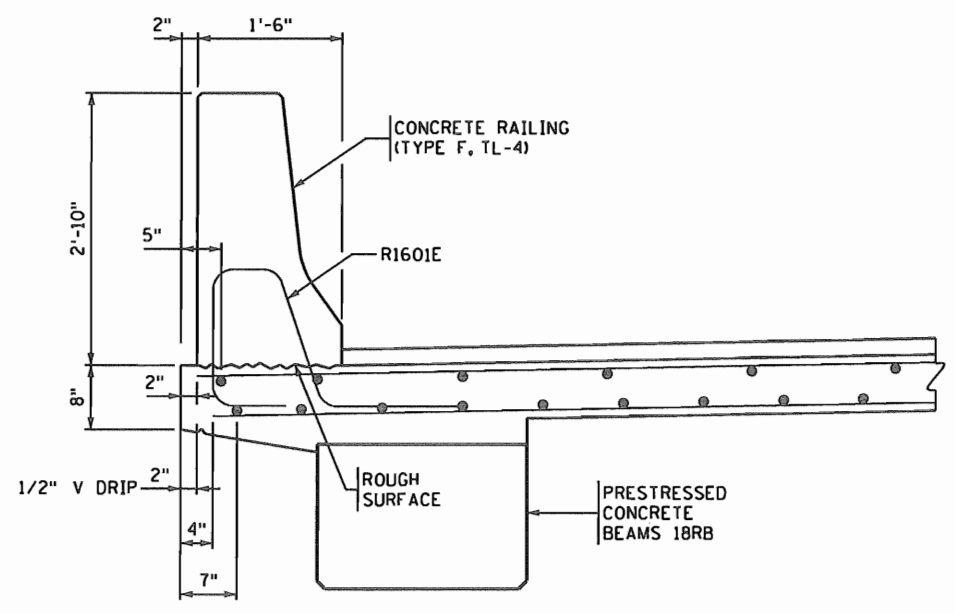
DES:	JDA	DR:	BJR
CHK:	BRL	CHK:	JDA

Sheet B16 of B25 Sheets

Bridge No.
02581



TRANSVERSE SECTION THRU DECK



EDGE OF DECK DETAIL

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LIC. ENSO. PROFESSIONAL ENGINEER: JAMIS ARCHER
 DATE: 7/9/2010 LIC. NO.: 45501

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 & Associates, Inc.
 INFRASTRUCTURE - ENGINEERS - PLANNERS

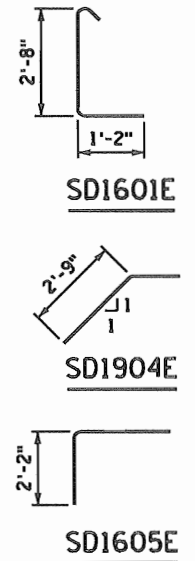
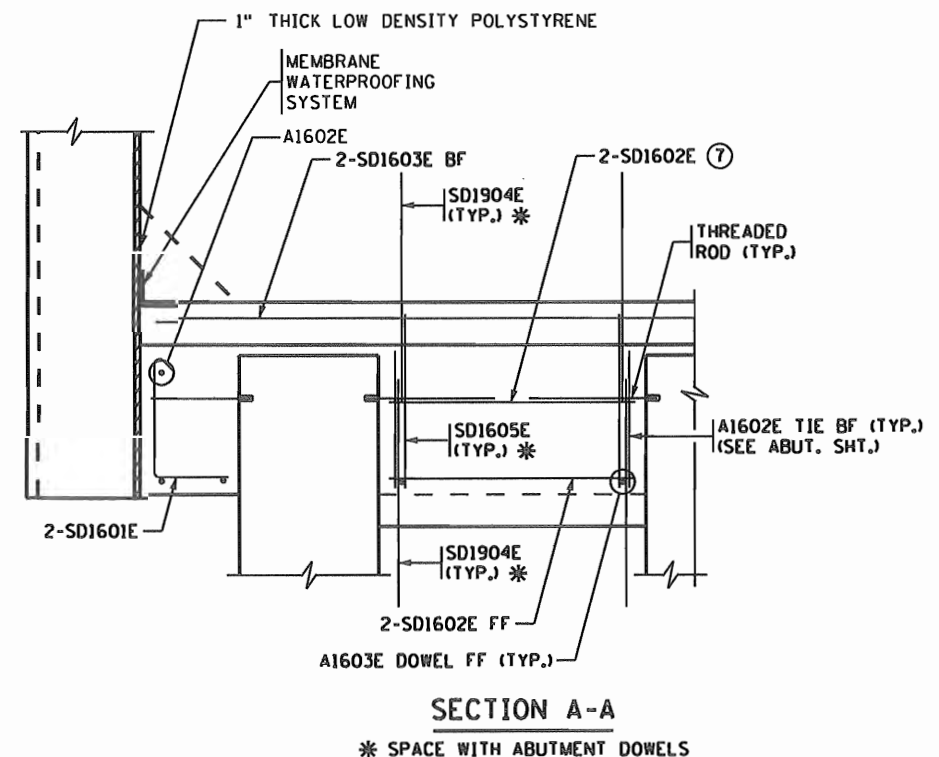
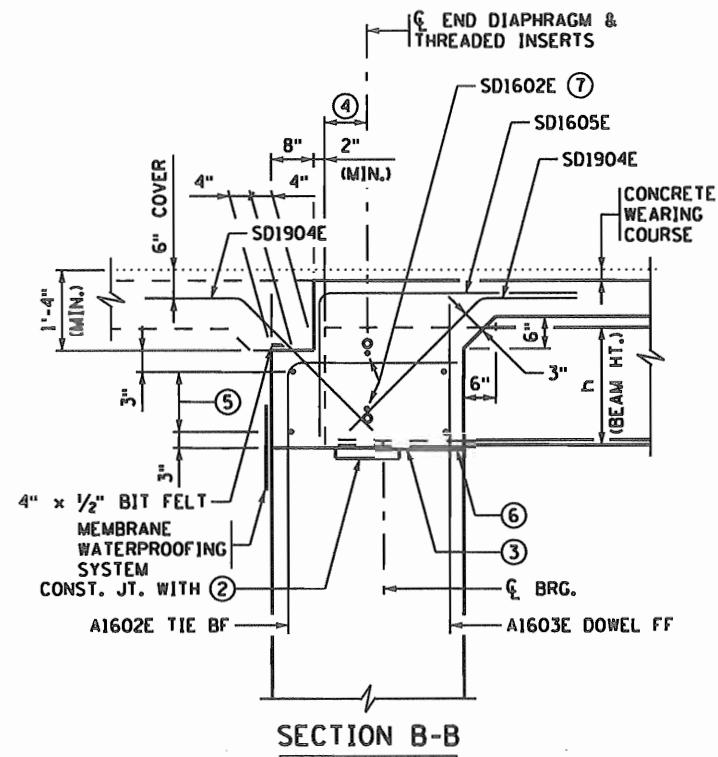
701 Xenia Ave. South
 Suite 300
 Minneapolis, MN 55416
 763-541-4800
 FAX 763-541-1700

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE: **SUPERSTRUCTURE DETAILS**

DES:	JDA	DR:	BJR
CHK:	BRL	CHK:	JDA
Sheet B17 of B25 Sheets			

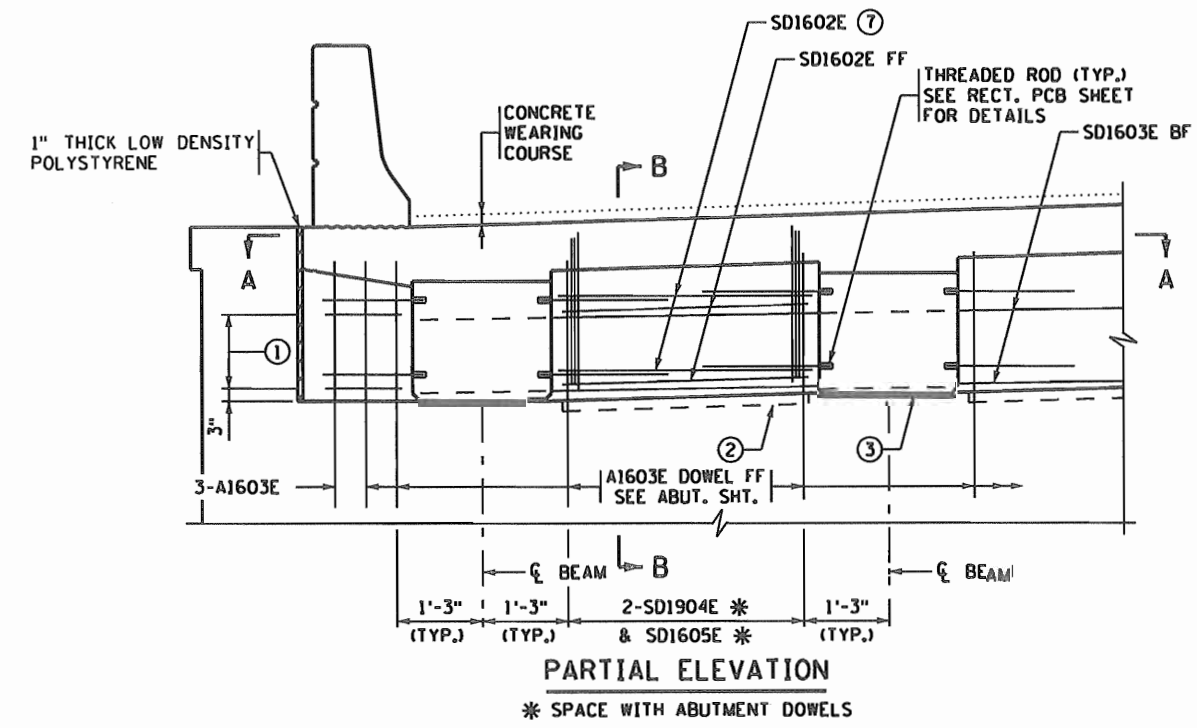
Bridge No. **02581**



- NOTES:**
- DIAPHRAGM CONCRETE AND REINFORCEMENT QUANTITIES ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES.
 - CONCRETE FOR END DIAPHRAGMS SHALL BE THE SAME MIX AS USED IN DECK.
 - POLYSTYRENE TO BE PLACED BETWEEN APPROACH PANEL AND WING WALLS, SUPPLIED IN BRIDGE PORTION OF CONTRACT, INSTALLED IN GRADING PORTION OF PLAN, SEAL PER MN/DOT SPEC. 3723.
 - BF DENOTES BACK FACE. FF DENOTES FRONT FACE.
 - ① SD1601E END TIE.
 - ② 2" x 12" KEYWAY (BETWEEN BEAMS ONLY)
 - ③ 12" x 24" x 1/2" ELASTOMERIC BEARING PAD
 - ④ SEE BEAM DETAIL SHEETS FOR DIMENSION.
 - ⑤ SD1603E BF & SD1602E FF HORIZONTAL.
 - ⑥ 1/2" MIN. TYPE B POLYSTYRENE IN FRONT OF BEARING PAD (UNDER BEAM).
 - ⑦ SPACE WITH THREADED RODS.

BILL OF REINFORCEMENT FOR END DIAPHRAGM

BAR	NO.	LENGTH	SHAPE	LOCATION
SD1601E	8	4'-4"	L	HORIZ. END TIE
SD1602E	40	5'-2"	—	HORIZ.
SD1603E	4	43'-0"	—	HORIZ. BF
SD1904E	156	4'-9"	∟	VERTICAL TIE
SD1605E	78	4'-2"	L	VERTICAL TIE



7/9/2000 10:41:21 AM K:\08888-00\1\c0d\p\gm\br\02581\CBR02581_SUP3.dgn

NO	DATE	BY	CHK	REVISIONS

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.

LICENSED PROFESSIONAL ENGINEER JAMES ARCHER
 DATE: 7/9/2000 LIC. NO.: 45501

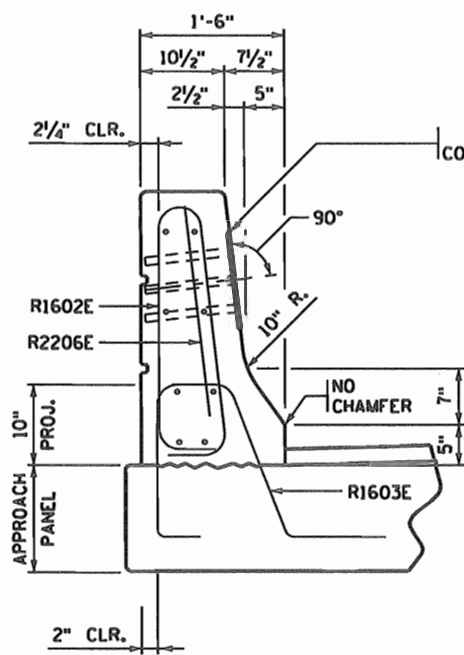
701 Xenia Ave. South Suite 300 Minneapolis, MN 55416
 763-541-4800 FAX 763-541-1700
 INFRASTRUCTURE ENGINEERS - PLANNERS

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

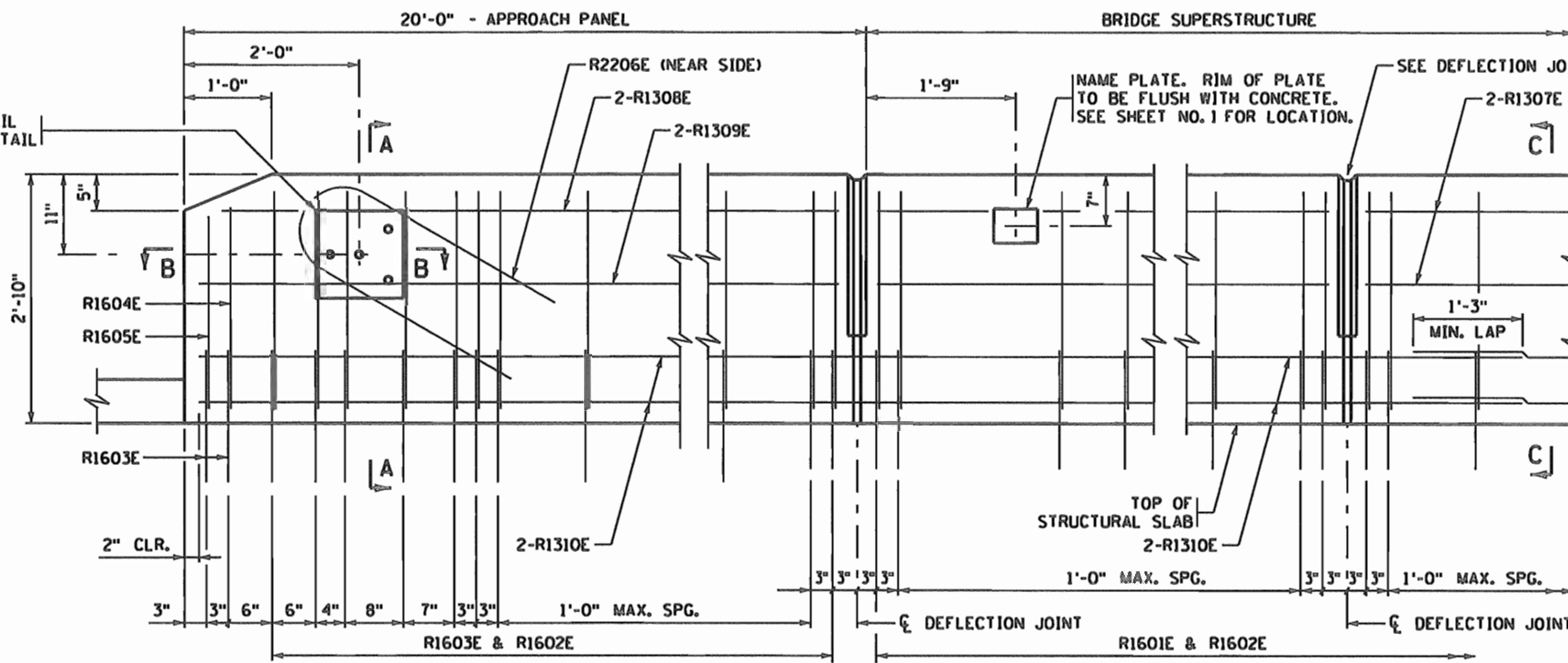
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SUPERSTRUCTURE DETAILS

DES: JDA DR: BJR
 CHK: BRL CHK: JDA
Sheet B18 of B25 Sheets

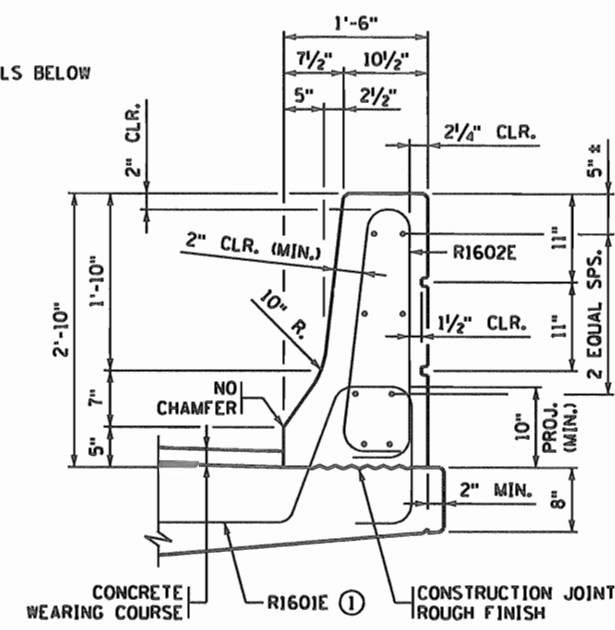
Bridge No.
02581



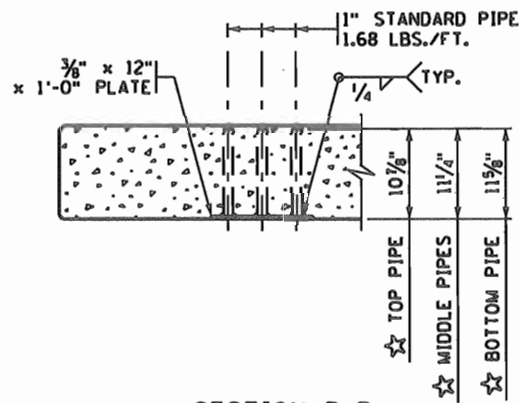
SECTION A-A



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



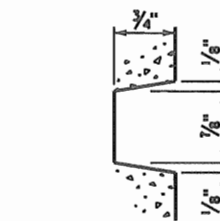
SECTION C-C



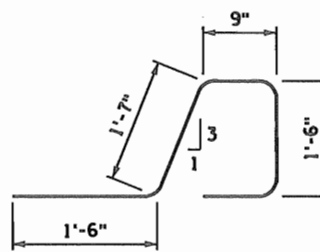
SECTION B-B

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

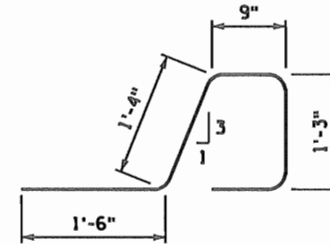
BARRIER MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350



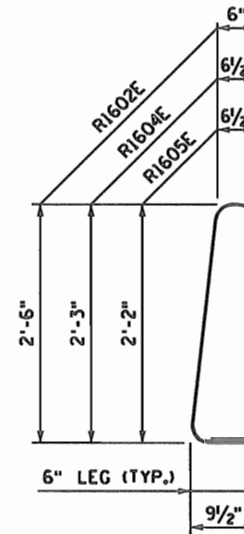
BARRIER RUSTICATION



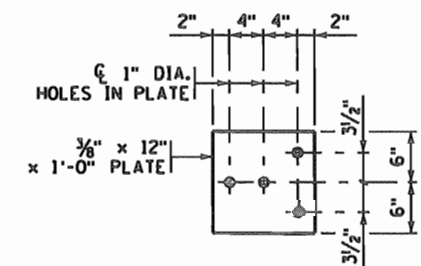
R1603E



R1601E

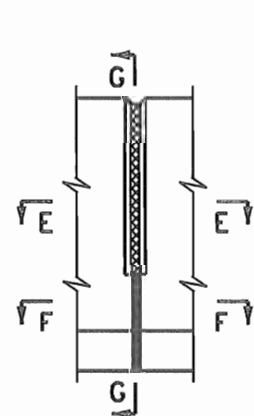


R1602E, R1604E & R1605E

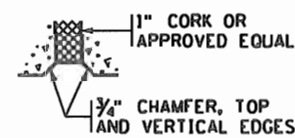


GUARDRAIL CONNECTION DETAIL

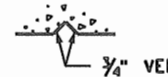
GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394
ESTIMATED WEIGHT = 22 LBS



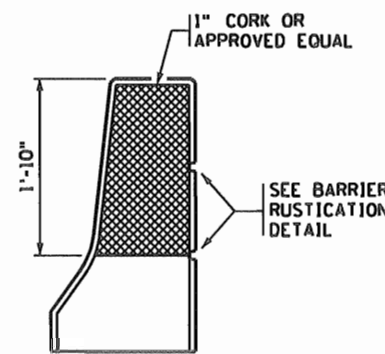
ELEVATION



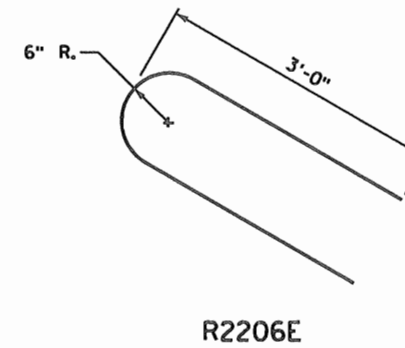
SECTION E-E



SECTION F-F



SECTION G-G



R2206E

BILL OF REINFORCEMENT FOR BARRIER				
BAR	NO.	LENGTH	SHAPE	LOCATION
R1601E	102	5'-7"		BARRIER DOWEL
R1602E	198	6'-7"		BARRIER VERTICAL
R1603E	104	6'-1"		BARRIER VERTICAL
R1604E	4	6'-1"		BARRIER VERTICAL
R1605E	4	5'-11"		BARRIER VERTICAL
R2206E	4	6'-6"		BARRIER VERTICAL
R1307E	24	14'-5"		BARRIER LONGIT.
R1308E	8	19'-4"		BARRIER LONGIT.
R1309E	8	19'-7"		BARRIER LONGIT.
R1310E	24	29'-0"		BARRIER LONGIT.

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

David J. Johnson
STATE BRIDGE ENGINEER

DEFLECTION JOINT DETAILS

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.
Barritt Lovelace
LICENSED PROFESSIONAL ENGINEER: BARRITT LOVELACE
DATE: 1/2/2005 REG. NO.: 40456

WSB
Associates, Inc.
INFRASTRUCTURE - ENGINEERS - PLANNERS

701 Xenia Ave. South
Suite 300
Minneapolis, MN 55416
763-541-4800
FAX 763-541-1700

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

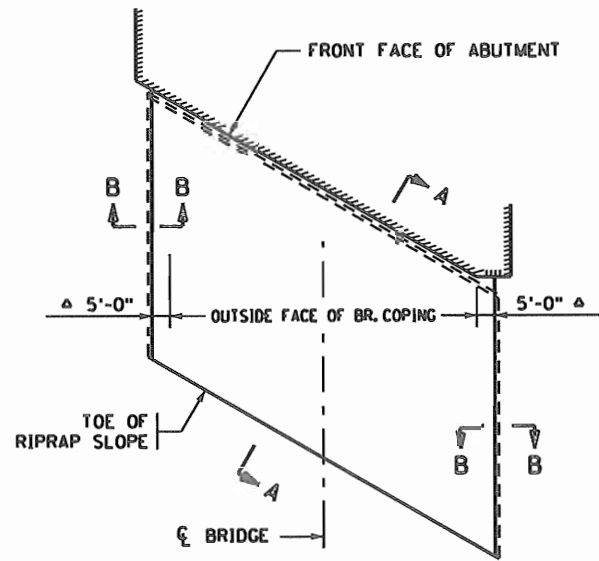
TITLE: CONCRETE BARRIER
(TYPE F, TL-4)
WITH INTEGRAL END POST
(WITH CONCRETE WEARING COURSE)

DES: JDA DR: BJR
CHK: BRL CHK: JDA

Sheet B19 of B25 Sheets

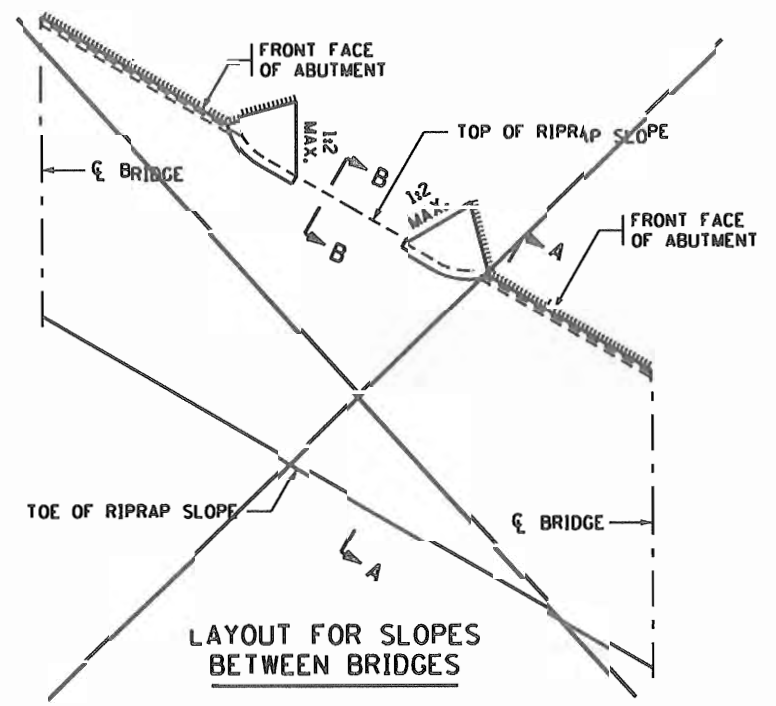
Bridge No.
02581

FIG. 5-397.117

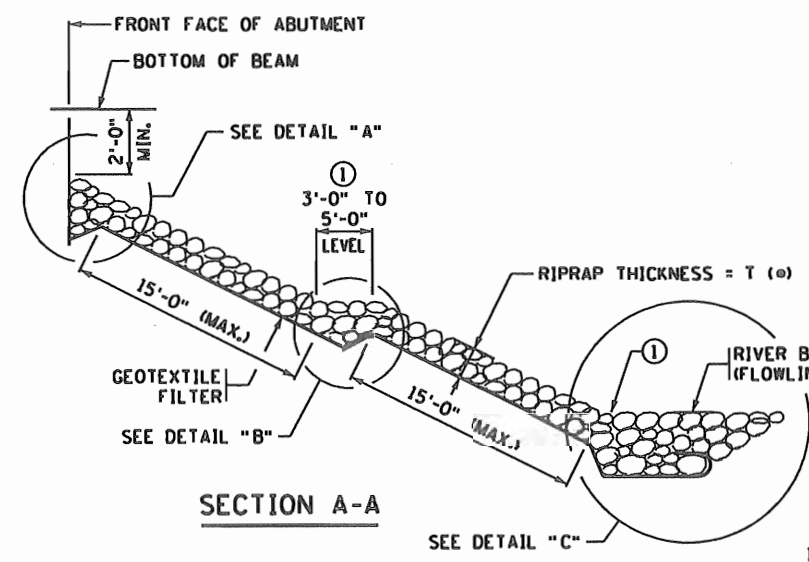


LAYOUT FOR 1:2 SLOPES

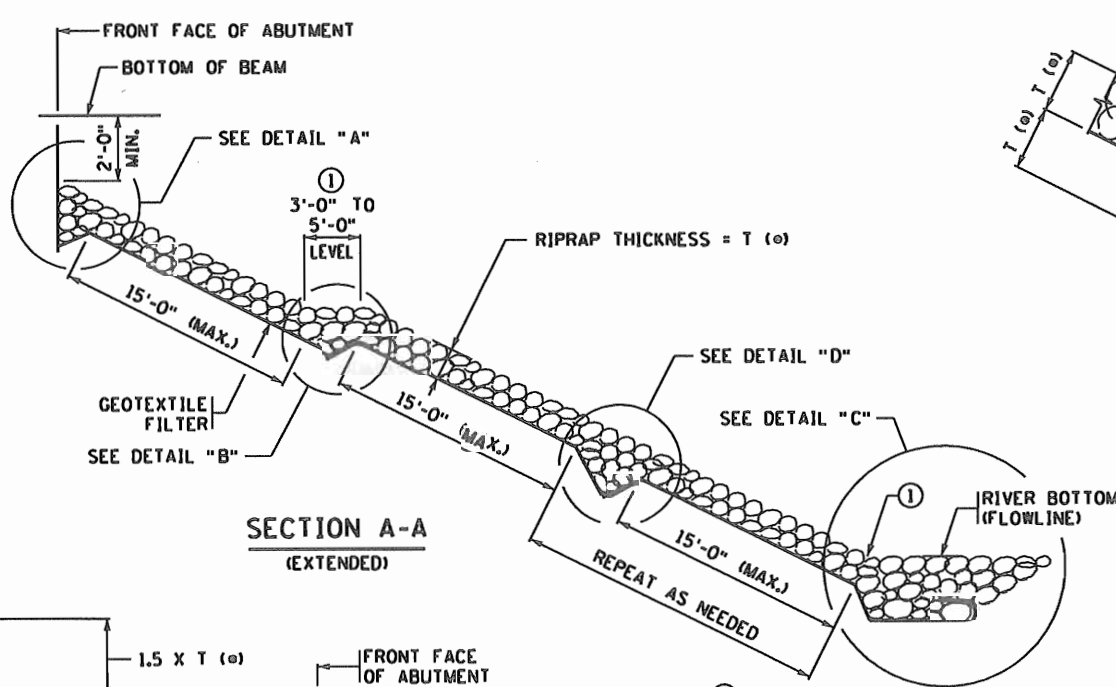
△ 5'-0" FOR TANGENT BRIDGE SUPERSTRUCTURES. VARIES 5'-0" MINIMUM FOR CURVED BRIDGE SUPERSTRUCTURES.



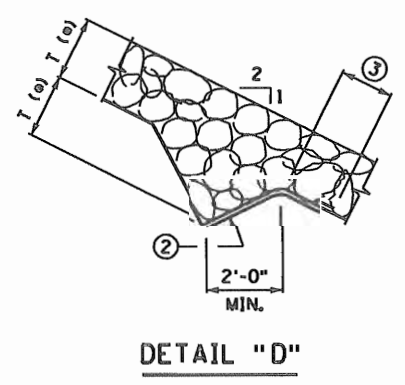
LAYOUT FOR SLOPES BETWEEN BRIDGES



SECTION A-A

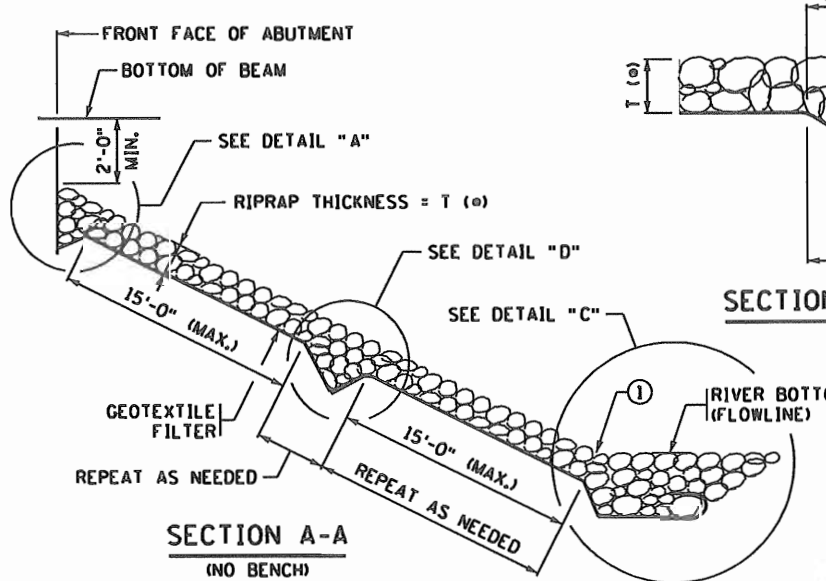


SECTION A-A (EXTENDED)

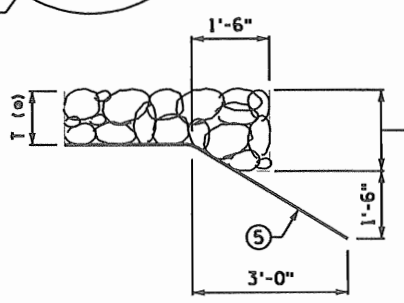


DETAIL "D"

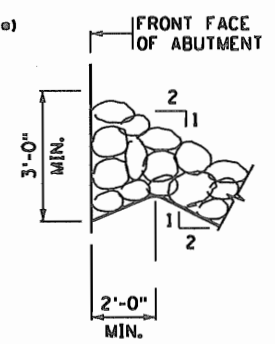
DIMENSION T	
CLASS III	= 1'-6"
CLASS IV	= 2'-0"



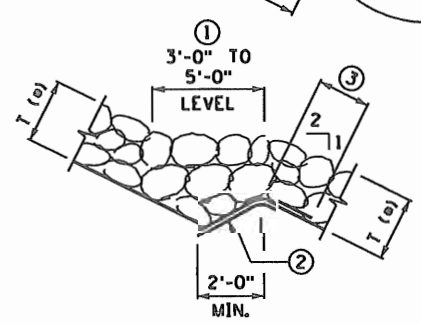
SECTION A-A (NO BENCH)



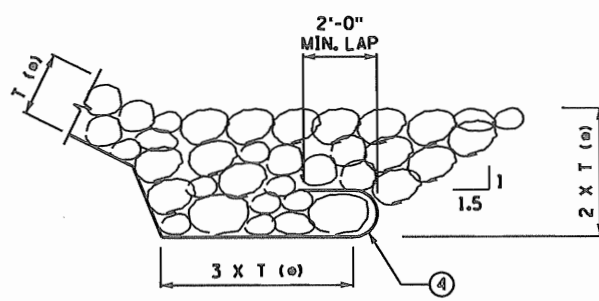
SECTION B-B



DETAIL "A"



DETAIL "B"



DETAIL "C"

GENERAL NOTES

- SEE SPECIAL PROVISIONS FOR MATERIALS, PREPARATION AND PLACEMENT.
- GEOTEXTILE FILTER MATERIAL AS PER Mn/DOT SPECIAL PROVISION 2511.515.
- PAYMENT WILL BE MADE UNDER ITEM 2511.515 GEOTEXTILE FILTER TYPE IV (MODIFIED) BY THE SQ. YD.
- PAYMENT WILL BE MADE UNDER ITEM 2511.501 RANDOM RIPRAP CLASS ... BY THE CU. YD.
- SLOPES ARE EXPRESSED AS A RATIO OF VERTICAL DISTANCE : HORIZONTAL DISTANCE.
- ① RIPRAP TOE AND BENCHES TO HAVE DIMENSIONS AND ELEVATIONS AS SPECIFIED ON PLAN SHEET NO....
- BENCHES TO BE SURFACED WITH AGGREGATE CLASS 5. BENCHES SHOULD TIE INTO NATURAL GROUND LINES OUTSIDE OF BRIDGE.
- ② PLACE RIPRAP IN TRENCH TO HOLD THE GEOTEXTILE FABRIC IN PLACE BEFORE PLACING THE REST OF THE RIPRAP. (FROM THE BOTTOM OF THE SLOPE).
- ③ OVERLAP GEOTEXTILE FILTER 1'-6" MINIMUM.
- ④ WRAP GEOTEXTILE FILTER AROUND TOE, OVERHANG BETWEEN 1ST AND 2ND LAYER OF RIPRAP.
- ⑤ BURY EDGES OF GEOTEXTILE FILTER SUFFICIENTLY TO DIRECT WATER FLOW OVER THE FABRIC WITHOUT UNDERMINING.

7/9/2010 10:47:23 AM K:\01898-00\cadd\plan\br02581\BR02581.SLP.dgn

NO.	DATE	BY	CHK	REVISIONS

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

[Signature]
 LICENSED PROFESSIONAL ENGINEER, UMRS ARCHER
 DATE: 7/9/2010 LIC. NO.: 45501

WSB
 OF ASSOCIATES, INC.
 INFRASTRUCTURE - ENGINEERS - PLANNERS

701 Maria Ave. South
 Suite 300
 Minneapolis, MN 55416
 763-541-4800
 FAX 763-541-1700

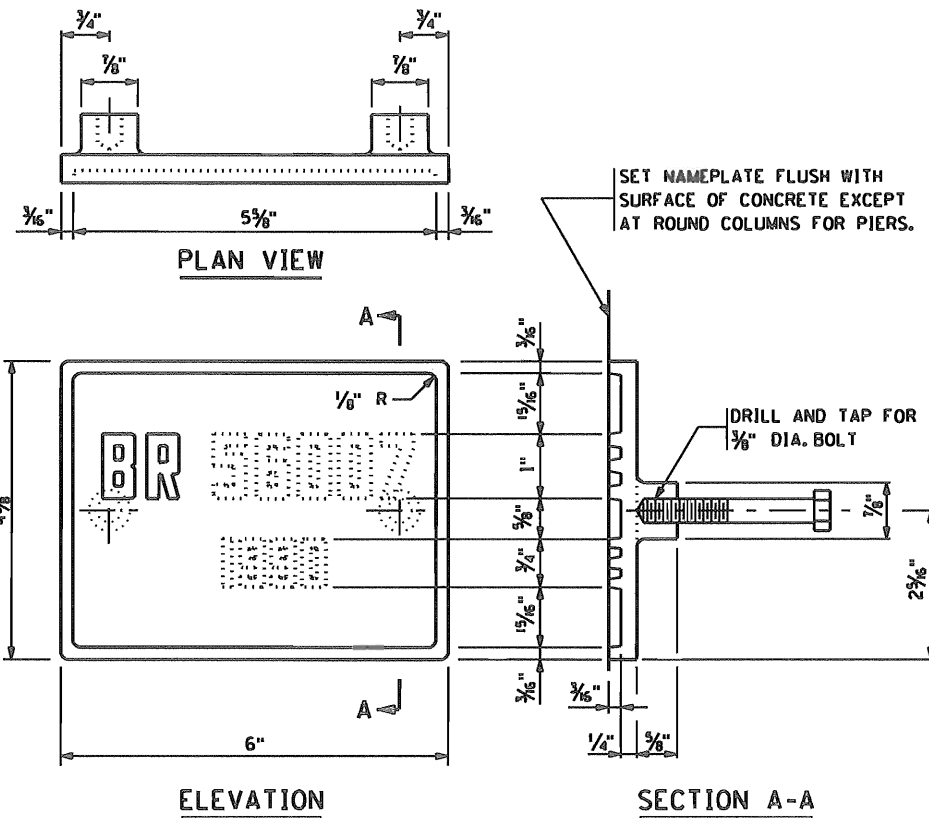
C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
**RIPRAP SLOPE WITH
 GEOTEXTILE FILTER
 TYPE IV (MODIFIED)**

DES:	JDA	DR:	BJR
CHK:	BRL	CHK:	JDA

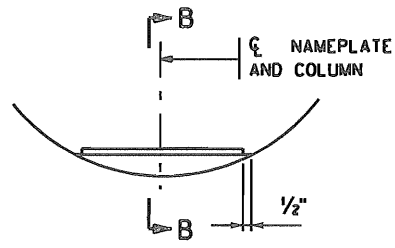
Sheet B20 of B25 Sheets

Bridge No.
02581



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

BRIDGE 02581
YEAR 2010



1234567890

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.

SECTION B-B

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

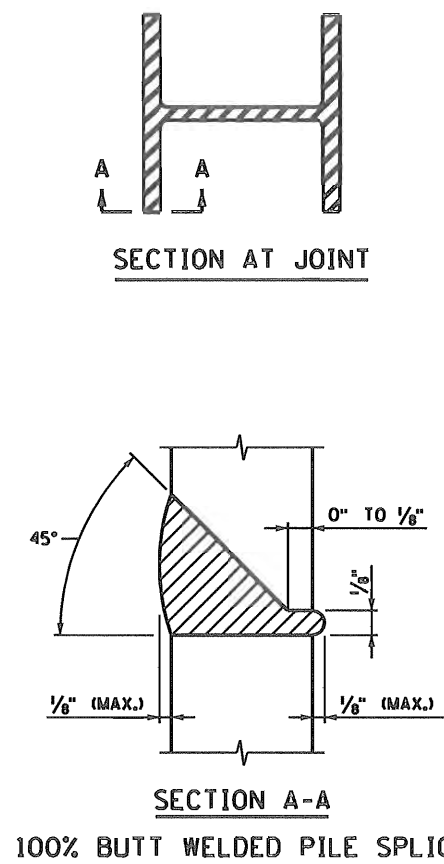
STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

PILE SPLICE
(STEEL H BEARING PILES 10" TO 14")

REVISION

DETAIL NO.

B202



NOTES:

- CELLULOSIC TYPE ELECTRODES E-6010 OR E-6011 SHALL BE USED FOR 100% BUTT WELDED SPLICES.
- 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.

7/9/2010 10:47:39 AM K:\01688-00\roadplan\br\02581\CBR02581_DET.dgn

NO	DATE	BY	CHK	REVISIONS

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.

James Archer
LICENSED PROFESSIONAL ENGINEER - JAMES ARCHER
DATE: 11/22/02 LIC. NO.: 45501

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Associates, Inc.
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Suite 300
Minneapolis, MN 55416
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FAX 763-541-1700
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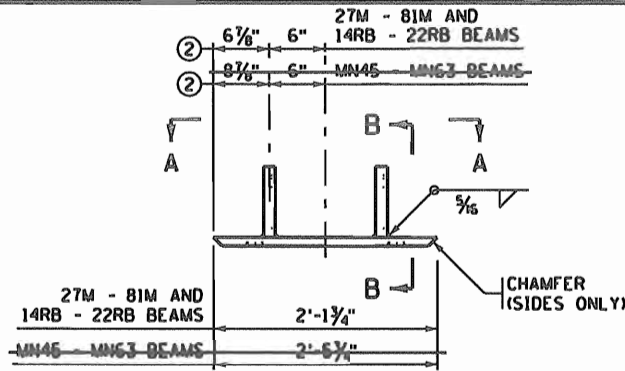
C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
BRIDGE DETAILS

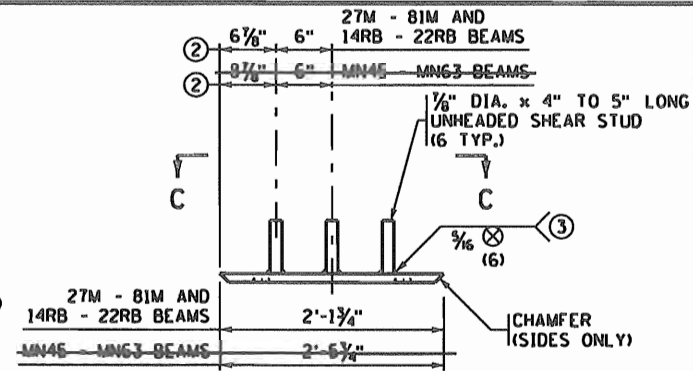
DES: JDA	DR: BJR
CHK: BRL	CHK: JDA

Sheet B21 of B25 Sheets

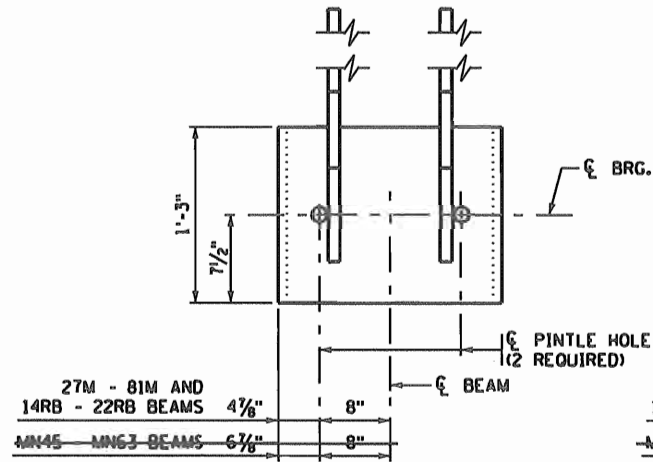
Bridge No.
02581



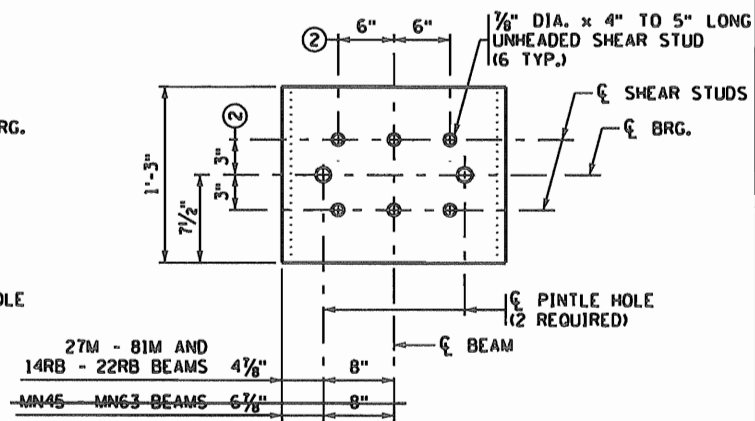
FRONT ELEVATION - OPTION 1



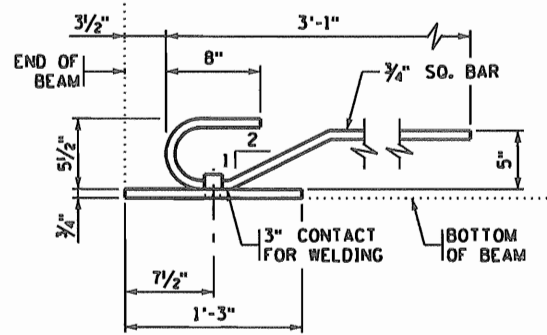
FRONT ELEVATION - OPTION 2



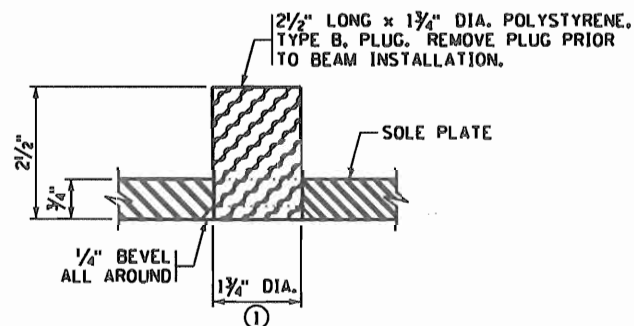
SECTION A-A



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 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.

APPROVED: OCTOBER 26, 2005

Daniel J. Morgan
STATE BRIDGE ENGINEER

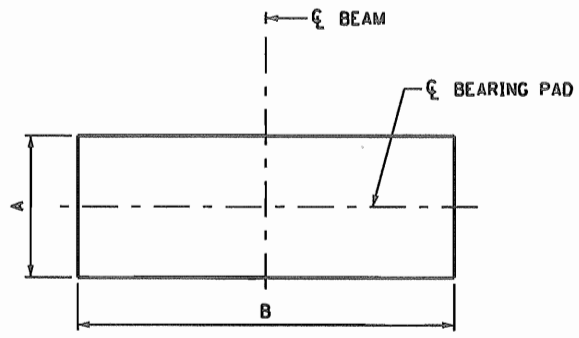
STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

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

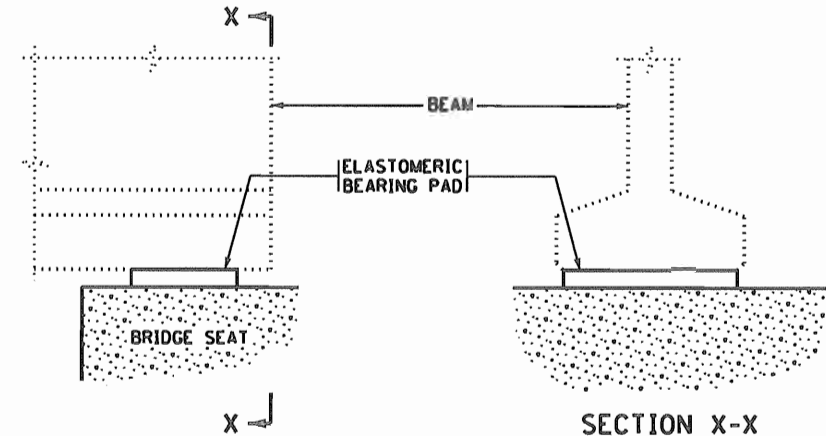
REVISED
06-14-2006
10-28-2008

DETAIL NO.

B303



PLAN
(BEAM NOT SHOWN)



SIDE ELEVATION

SECTION X-X

TABLE

PAD TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE			SHAPE FACTOR
			A	B	D ①	
1	ABT	18RB	12	24	1/2	8.0

NOTES:

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

PAYMENT FOR ELASTOMERIC BEARING PAD, TYPE 1, INCLUDED IN ITEM "ELASTOMERIC BEARING PAD" PER EACH.

- ① "D" INDICATES THE THICKNESS OF THE BEARING PAD.

APPROVED: NOVEMBER 22, 2002

Daniel J. Morgan
STATE BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

ELASTOMERIC BEARING PAD
(PRESTRESSED CONCRETE BEAMS)

REVISION
12-17-2008

DETAIL NO.

B305

7/9/2010 10:47:44 AM K:\01898-00\cad\plan\br0258\CBR0258L_DET2.dgn

NO	DATE	BY	CHK	REVISIONS

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.

James Archer
LICENSED PROFESSIONAL ENGINEER
DATE: 7/9/2010 LIC. NO. 45501

701 Xenia Ave. South
Suite 300
Minneapolis, MN 55416

WSB
Associates, Inc.

763-541-4800
FAX 763-541-1700

INFRASTRUCTURE - ENGINEERS - PLANNERS

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
BRIDGE DETAILS

DES: JDA DR: BJR
CHK: BRL CHK: JDA

Sheet B22 of B25 Sheets

Bridge No.
02581

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).

FIG. 5-397.900

REVISION: 10-28-2008

APPROVED: SEPTEMBER 26, 2003

David M. Hagen
STATE BRIDGE ENGINEER

AS-BUILT DETAILS
(AS NEEDED)

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.

James Archler
LICENSED PROFESSIONAL ENGINEER: JAMES ARCHLER
DATE: 7/9/2010 LIC. NO: 45501



701 Xenia Ave. South
Suite 300
Minneapolis, MN 55416
763-541-4800
FAX 763-541-1700
INFRASTRUCTURE - ENGINEERS - PLANNERS

C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
AS-BUILT BRIDGE DATA

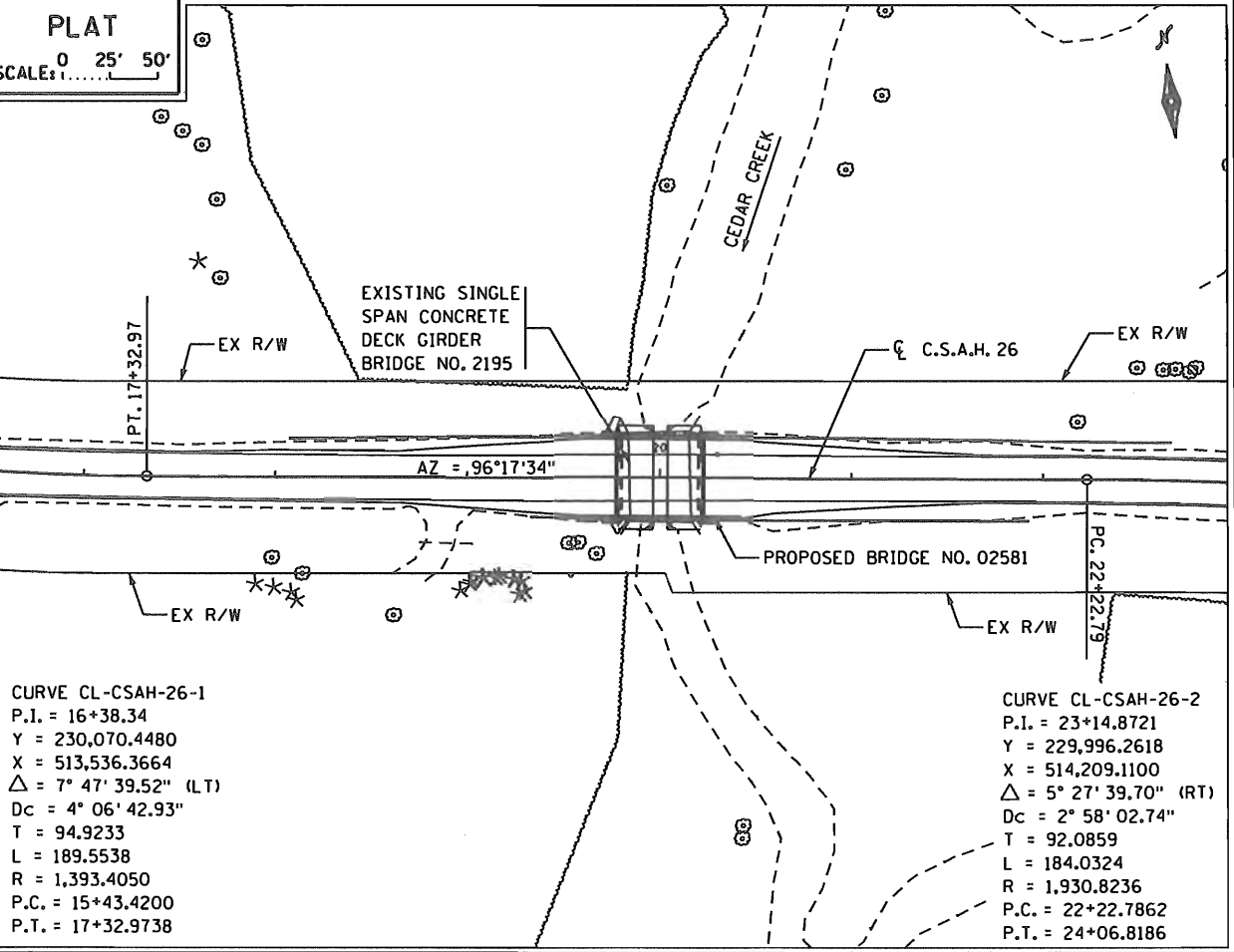
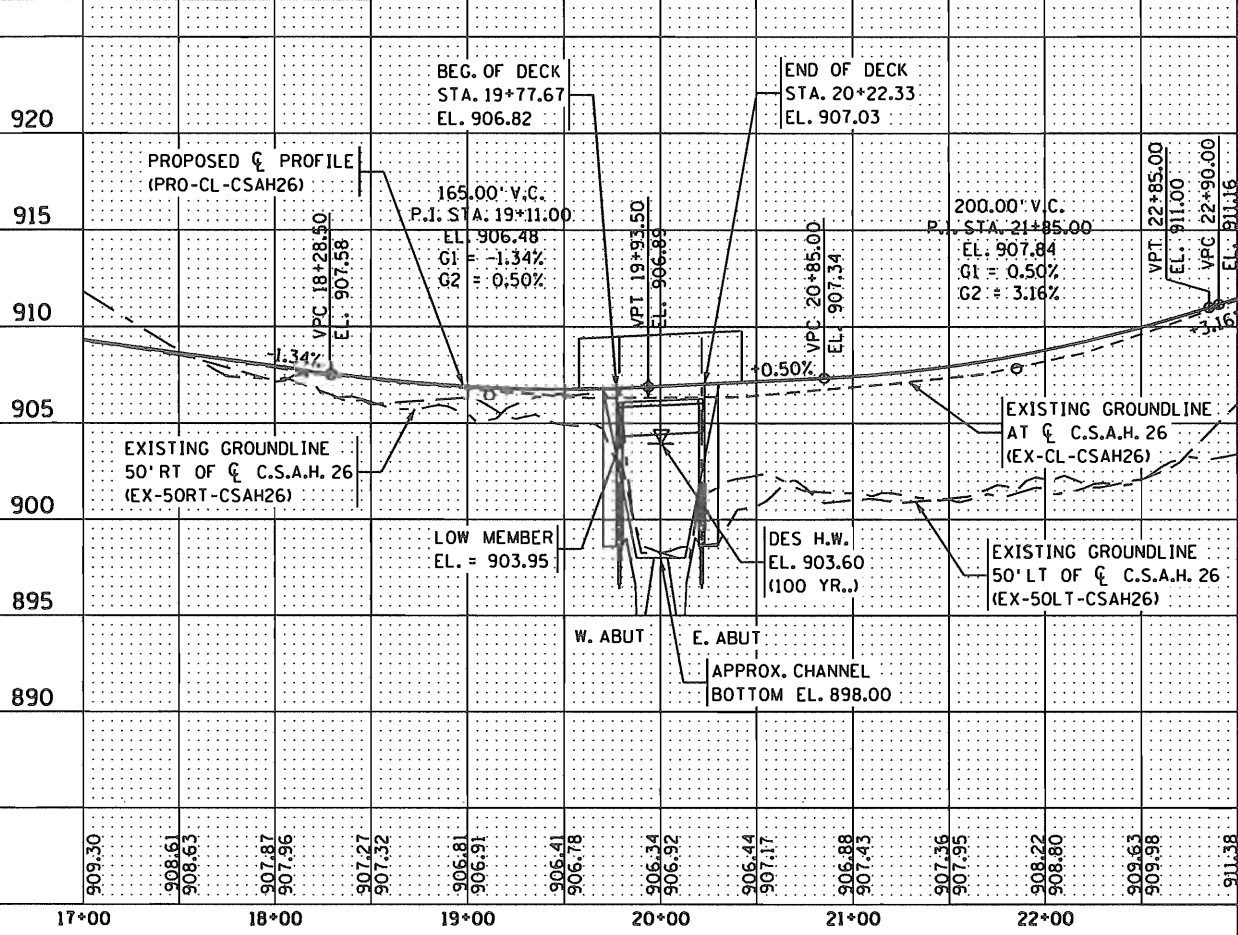
DES: JDA DR: BJR
CHK: BRL CHK: JDA

Sheet B23 of B25 Sheets

Bridge No.
02581

CONTRACTED PROFILE

SCALE : 0 25' 50' 0 2.5' 5'
HORIZONTAL VERTICAL

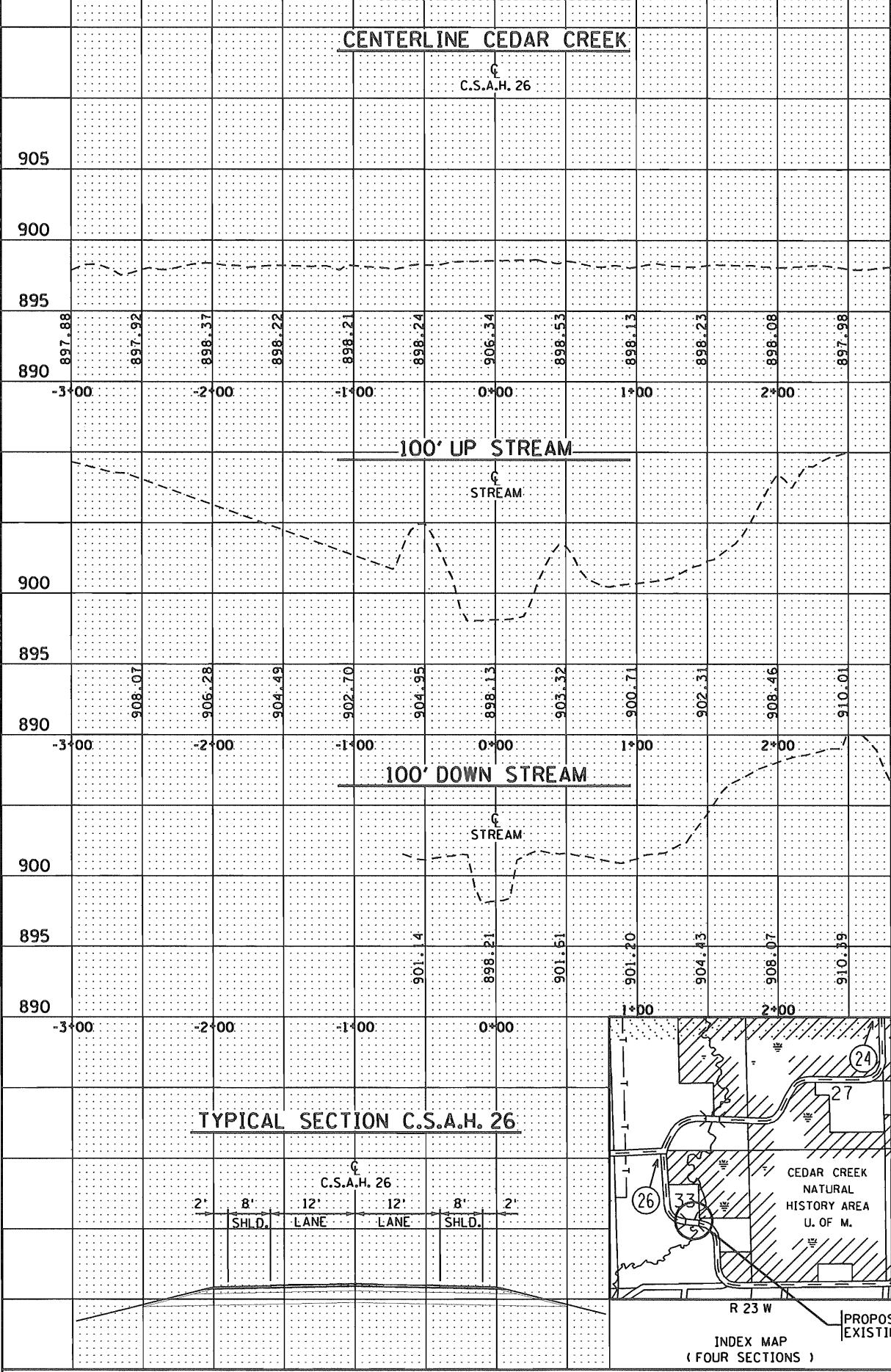


CURVE CL-CSAH-26-1
P.I. = 16+38.34
Y = 230,070.4480
X = 513,536.3664
Δ = 7° 47' 39.52" (LT)
Dc = 4° 06' 42.93"
T = 94.9233
L = 189.5538
R = 1,393.4050
P.C. = 15+43.4200
P.T. = 17+32.9738

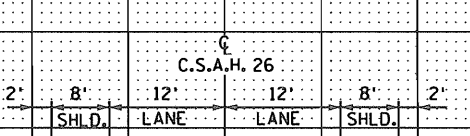
CURVE CL-CSAH-26-2
P.I. = 23+14.8721
Y = 229,996.2618
X = 514,209.1100
Δ = 5° 27' 39.70" (RT)
Dc = 2° 58' 02.74"
T = 92.0859
L = 184.0324
R = 1,930.8236
P.C. = 22+22.7862
P.T. = 24+06.8186

TYPICAL SECTIONS & PERTINENT DATA

SCALE : 0 25' 50' 0 5' 10'
HORIZONTAL VERTICAL



TYPICAL SECTION C.S.A.H. 26



- LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE**
- SPECIAL FEATURES: NONE
 - OTHER BRIDGES OR CULVERTS OVER THE SAME STREAM
UPSTREAM BRIDGE (C.S.A.H. 24)
(2) 9.5 FT TIMBER BOX CULVERTS
120 SQ. FT. WATERWAY OPENING
DOWNSTREAM BRIDGE (TH 65)
(2) 10 FT CONCRETE BOX CULVERTS
200 SQ. FT. WATERWAY OPENING
 - APPARENT HIGHWATER ELEVATION: UNKNOWN
OBTAINED FROM:
 - OTHER DATA: NONE

HYDRAULIC ENGINEERS RECOMMENDATION
DATE: 04/26/2010

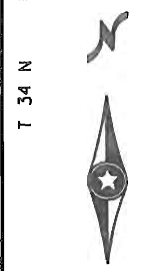
STREAM OR DITCH DESIGNATION: CEDAR CREEK
DRAINAGE AREA: 19.5 SQ. MI.
MAX. FLOOD ON RECORD: C.F.S. UNKNOWN
MAXIMUM OBSERVED HIGHWATER ELEVATION: UNKNOWN
DESIGN FLOOD (100 YR. FREQ.): 328 C.F.S.
HEADWATER ELEVATION: 903.6 FT.
DESIGN MEAN VELOCITY THROUGH STRUCTURE: 1.8 F.P.S.
TOTAL STAGE INCREASE: 0.1 FT.
LOW MEMBER AT OR ABOVE ELEVATION: 903.5 FT.
WATERWAY AREA REQUIRED BELOW ELEV. 903.6 FT. = 188 SQ. FT. AT RIGHT ANGLES TO CHANNEL
BASIC FLOOD (100 YR. FREQ.): 328 C.F.S.
HEADWATER ELEVATION: 903.6 FT.
TOTAL STAGE INCREASE: 0.1 FT.
MEAN VELOCITY THROUGH STRUCTURE: 1.8 F.P.S.
FLOWLINE ELEVATION: 898.0 FT. SKEW ANGLE: 0°
ESTIMATED PRELIMINARY TOTAL SCOUR AT PIER EL. NA FT. (500 YR. FREQ.)

SCOUR CONFIRMATION RECOMMENDATION
DATE: 04/26/10

TOTAL SCOUR AT PIER EL. NA (500 YR. FREQ.)
SCOUR CODE: L

BRIDGE SURVEY SHEETS MADE FROM :
ANOKA COUNTY SURVEY ON 11/10/2009
BENCH MARK ELEVATION 905.479 (N.A.V.D. 88 ADJ.)
LOCATION: SURVEY CONTROL POINT 13 FEET EAST OF
SOUTHEAST WINGWALL AND 4.5 FEET SOUTH
OF PAVEMENT. BRIDGE NO. 02195

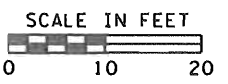
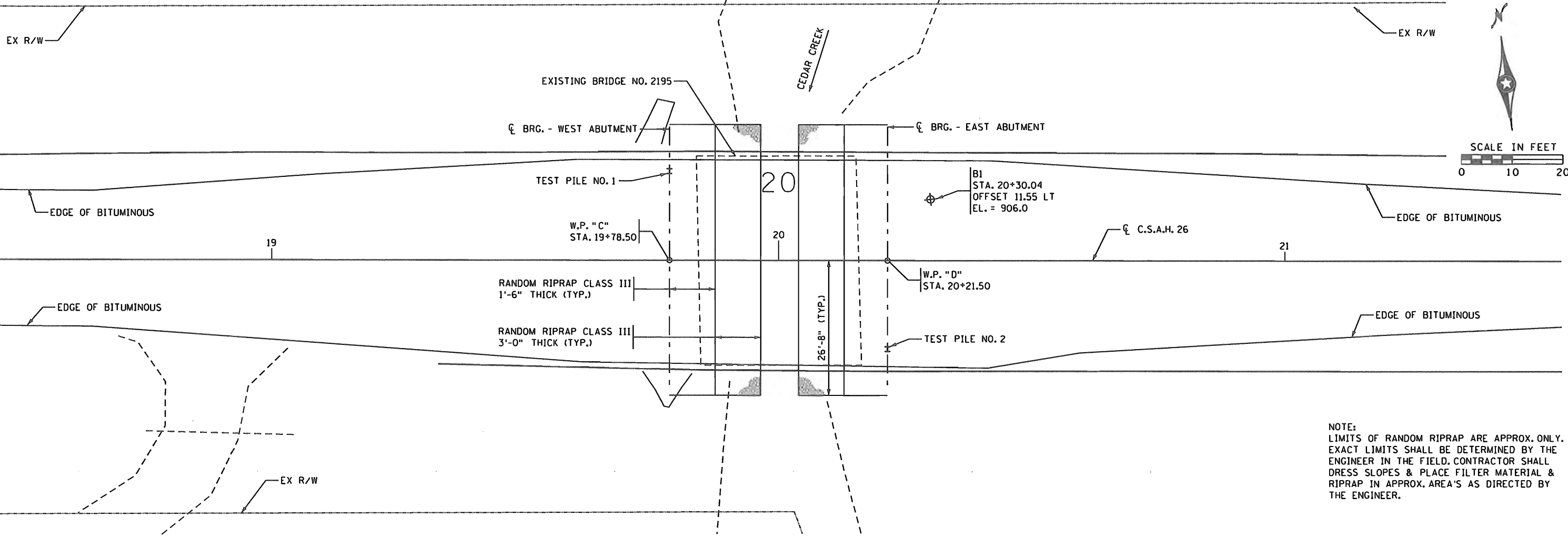
MNDOT MONUMENT:
HORIZONTAL DATUM NAD 83 (96 ADJ)
VERTICAL DATUM IS NAVD 88



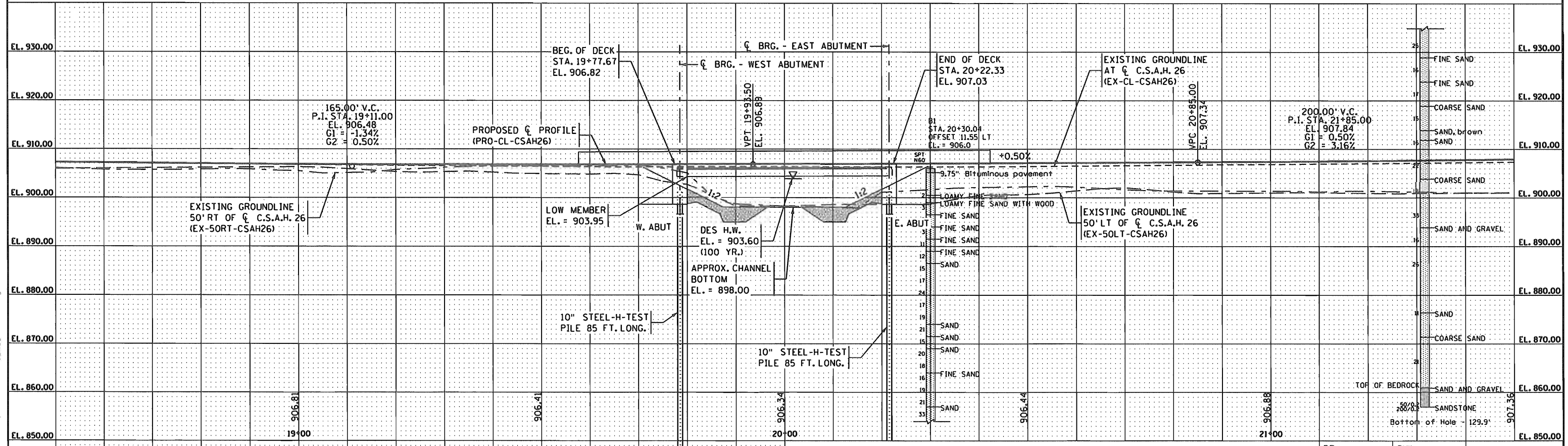
BRIDGE SURVEY
PROPOSED BRIDGE LOCATED C.S.A.H 26
1/2 MILE SOUTH OF JCT. C.S.A.H. 24
AND C.S.A.H. 26 OVER CEDAR CREEK.

SEC 33 T 34 N R 23 W
COUNTY: ANOKA
CITY: EAST BETHEL
BRIDGE NO. 02581

7/9/2010 10:46:00 AM K:\01888-00\cad\draw\br02581\CBR02581_SUR1.dgn



NOTE:
LIMITS OF RANDOM RIPRAP ARE APPROX. ONLY.
EXACT LIMITS SHALL BE DETERMINED BY THE
ENGINEER IN THE FIELD. CONTRACTOR SHALL
DRESS SLOPES & PLACE FILTER MATERIAL &
RIPRAP IN APPROX. AREA'S AS DIRECTED BY
THE ENGINEER.



BRIDGE SURVEY - PLAN AND PROFILE

DR: BJR CHK: JDA BRIDGE NO. 02581

STATE PROJECT NO. S.A.P. 02-626-05

SHEET NO. B25 OF B25 SHEETS

7/9/2009 10:48:06 AM K:\0895-00\cad\plan\br02581\CBRO2581_SUR2.dgn