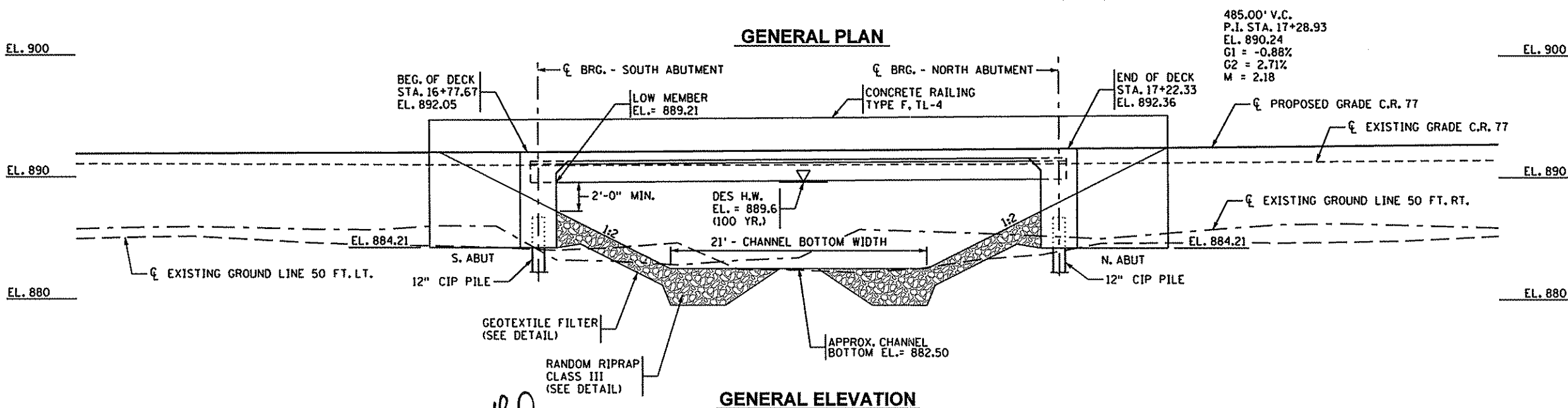


GENERAL PLAN



GENERAL ELEVATION

DESIGN DATA	
2010 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 ksi n = 8	
f'y = 60 ksi REINFORCEMENT	
PRESTRESSED CONCRETE:	
f'c = 9 ksi n = 1	
fpu = 270 ksi STRANDS LOW RELAX	
0.75fpu FOR INITIAL PULL	
STRUCTURAL STEEL:	
fy = 36 ksi	
STRUCTURAL STEEL	
MNDOT 3306	
DESIGN SPEED 55 MPH	
APPROXIMATE DECK AREA: 1757 SF	
OPERATING RATING HS 2.17 (LRFD)	
CURRENT ADT FOR 2010 = 400	

LIST OF SHEETS	
NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION
2	TRANSVERSE SECTION & QUANTITIES
3	BRIDGE LAYOUT
4-5	SOUTH ABUTMENT DETAILS
6-8	SOUTH ABUTMENT REINFORCEMENT
9-10	NORTH ABUTMENT DETAILS
11-13	NORTH 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. 893.258
 LOCATION: EAST 1/4 CORNER SECTION 36
 TOWNSHIP 34 N RANGE 22W 332 FEET ±
 SOUTH OF BRIDGE NO. 90733
 VERTICAL DATUM IS NAVD 88

APPROVED: *[Signature]*
 ANOKA COUNTY ENGINEER

DATE: 4/26/11

WSB
 & Associates, Inc.
 INFRASTRUCTURE - ENGINEERS - PLANNERS

701 Xenia Avenue
 Suite 300
 Minneapolis, MN 55416

763-541-4800
 FAX 763-541-1700

MINNESOTA DEPARTMENT OF TRANSPORTATION

Bridge No. 02582

PROPOSED BRIDGE LOCATED ON C.R. 77
 1/4 MILE SOUTH OF JCT. C.S.A.H. 36
 AND C.R. 77 OVER THE SUNRISE RIVER

43'-0" PRESTR. BEAM SPANS
 36'-0" CLEAR ROADWAY

SPAN IDENTIFICATION NO. 501

SEC. 36 TWP. 34 N R. 22 W
 LINWOOD TOWNSHIP ANOKA COUNTY

ACCEPTED: *[Signature]* 5/16/11
 FOR STATE BRIDGE ENGINEER DATE

DES: JDA	DR: BJR	02582
CHK: BRL	CHK: JDA	

Sheet B1 of B25 Sheets

NO	DATE	BY	CHK	REVISIONS

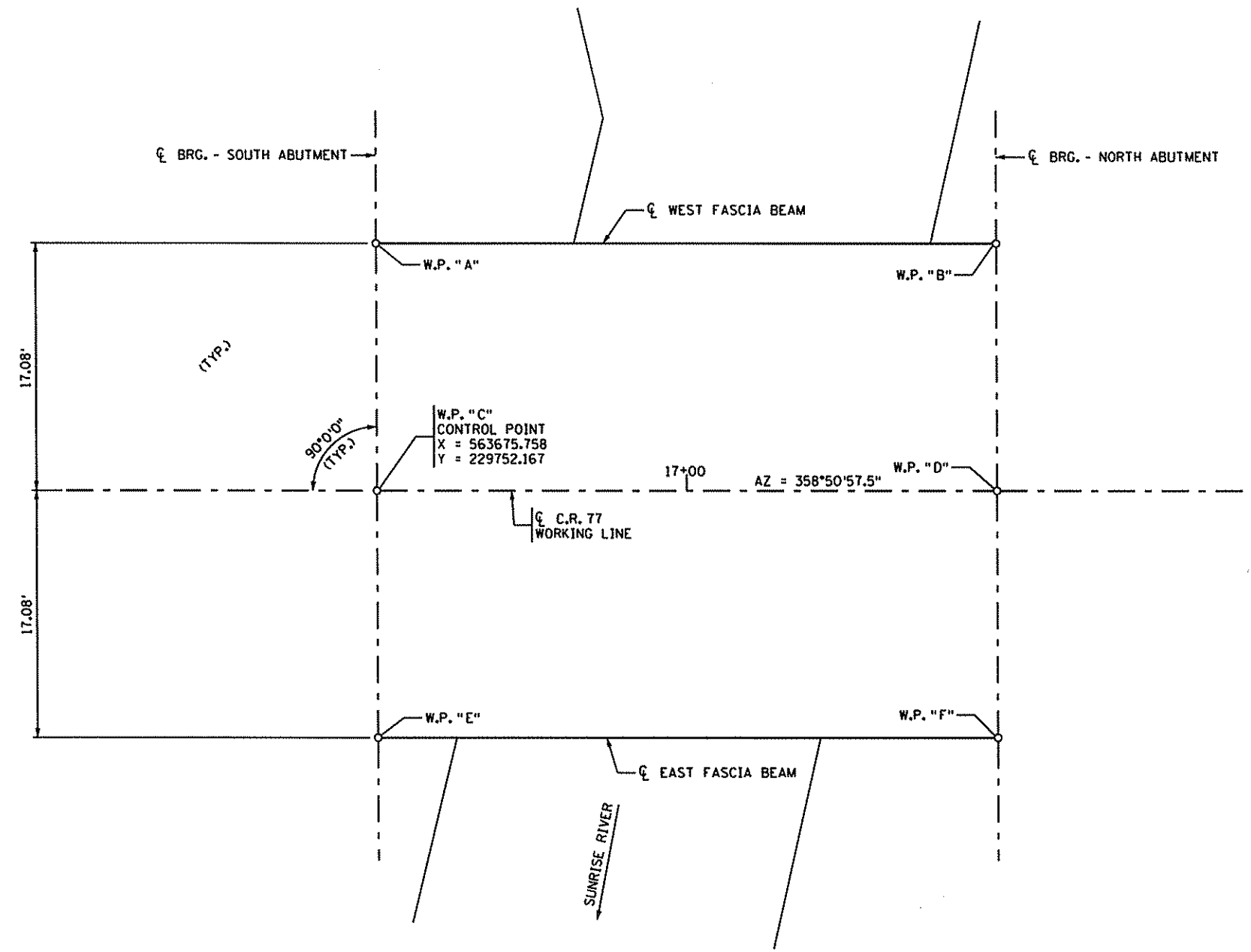
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

[Signature]
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 1/3/2011 REG NO: 45501

**C.R. 77
 ANOKA COUNTY
 S.A.P. 02-598-06**

TITLE: **GENERAL PLAN AND ELEVATION**

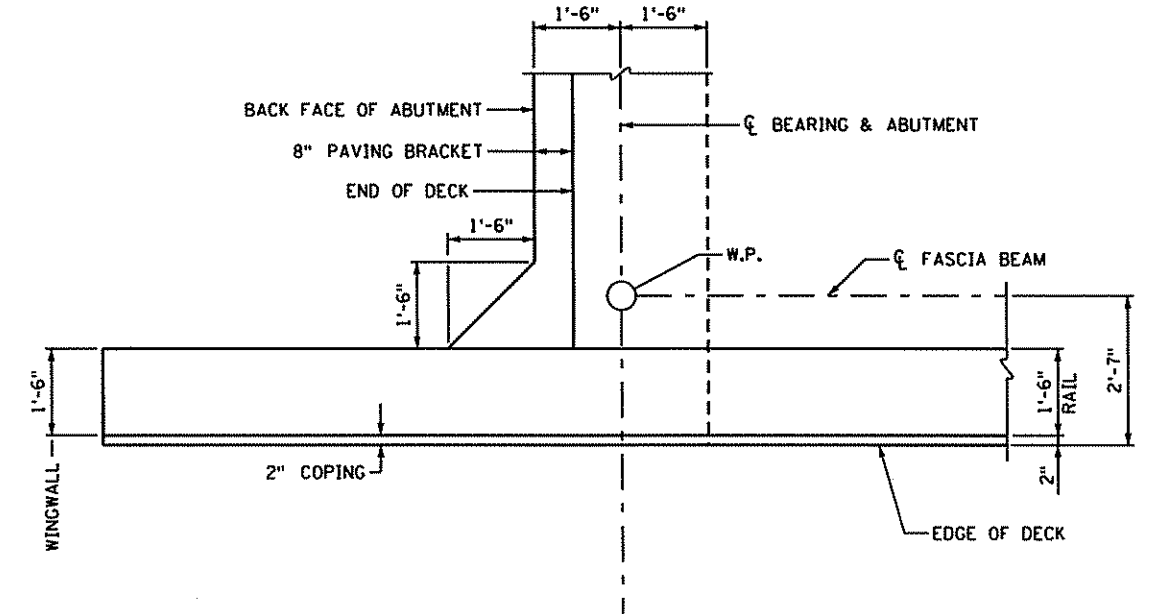
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WORKING POINT LAYOUT

TOP OF ROADWAY TO BRIDGE SEAT					
	SLAB THICKNESS	STOOL HEIGHT	BEAM HEIGHT	BEARING HEIGHT	TOTAL
SOUTH ABUT.	9"	3"	18"	1/2"	2.54'
NORTH 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	16+78.50	563658.678	229751.823		43.00	17.08	46.27		54.92	891.71	2.54	889.17	A
B	17+21.50	563657.814	229794.815			46.27	17.08	54.92		892.02	2.54	889.48	B
C	16+78.50	563675.758	229752.167				43.00	17.08	46.27	892.05	-	-	C
D	17+21.50	563674.894	229795.158					46.27	17.08	892.36	-	-	D
E	16+78.50	563692.838	229752.510						43.00	891.71	2.54	889.17	E
F	17+21.50	563691.974	229795.501							892.02	2.54	889.48	F



TYPICAL CORNER DETAIL

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NO	DATE	BY	CHK	REVISIONS

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James Archer
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 1/3/2011 REG 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.R. 77 ANOKA COUNTY S.A.P. 02-598-06

TITLE: **BRIDGE LAYOUT**

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

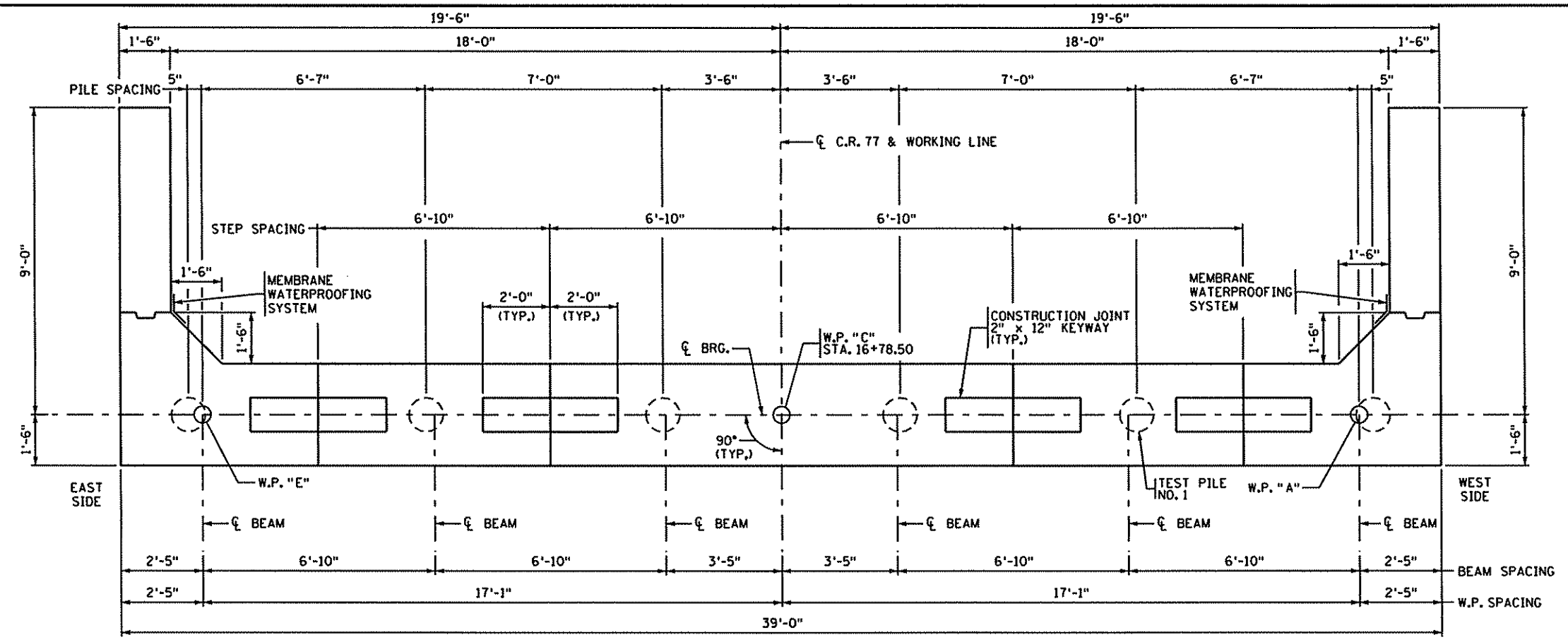
Sheet B3 of B25 Sheets

Bridge No. **02582**

SUMMARY OF QUANTITIES - SOUTH ABUTMENT

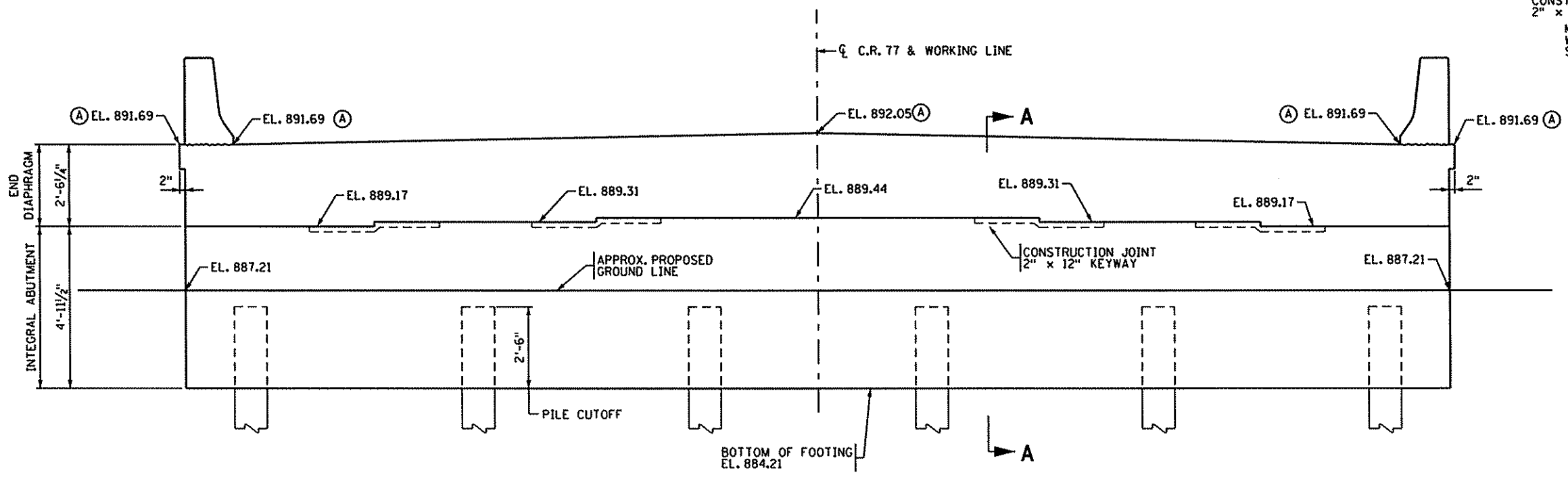
STRUCTURAL CONCRETE (3Y43)	29	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	2680	POUND
① 12" CIP PILING DELIVERED	275	LIN. FT.
① 12" CIP PILING DRIVEN	275	LIN. FT.
① 12" CIP TEST PILES 60 FT. LONG	1	EACH
② MEMBRANE WATERPROOFING SYSTEM	50	LIN. FT.
STRUCTURE EXCAVATION	1	LUMP SUM
RANDOM RIPRAP CLASS III	70	CU. YD.
GEOTEXTILE FILTER TYPE IV (MODIFIED)	117	SQ. YD.
SLOPE PREPARATION	1	LUMP SUM

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

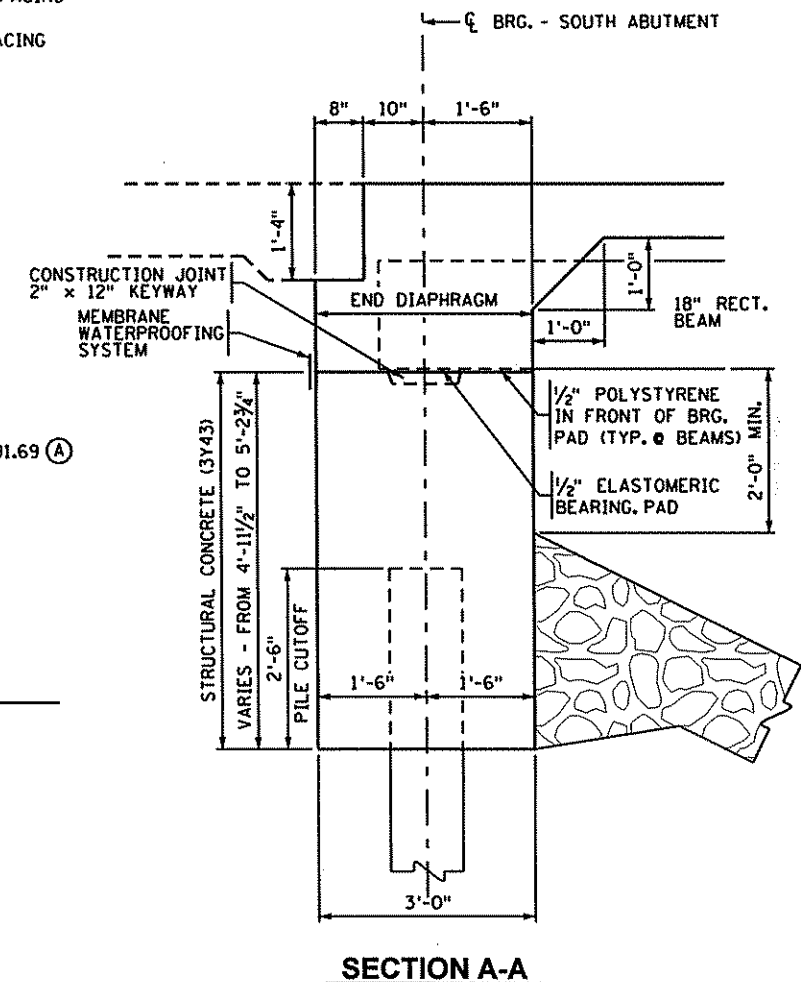


PLAN VIEW

Ⓐ ELEVATIONS ARE ALONG ϕ BEARING.



GENERAL ELEVATION



SECTION A-A

1/4/2011 10:24:40 AM I:\0898-00\Cad\plan\br-02582\CBR02582_SABTL.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 FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
DATE: 1/3/2011 REG NO: 45501

WSB
Associates, Inc.
701 Xenia Ave. South
Suite 300
Minneapolis, MN 55416
763-541-4800
FAX 763-541-4700
INFRASTRUCTURE - ENGINEERS - PLANNERS

**C.R. 77
ANOKA COUNTY
S.A.P. 02-598-06**

TITLE: **SOUTH ABUTMENT
DETAILS**

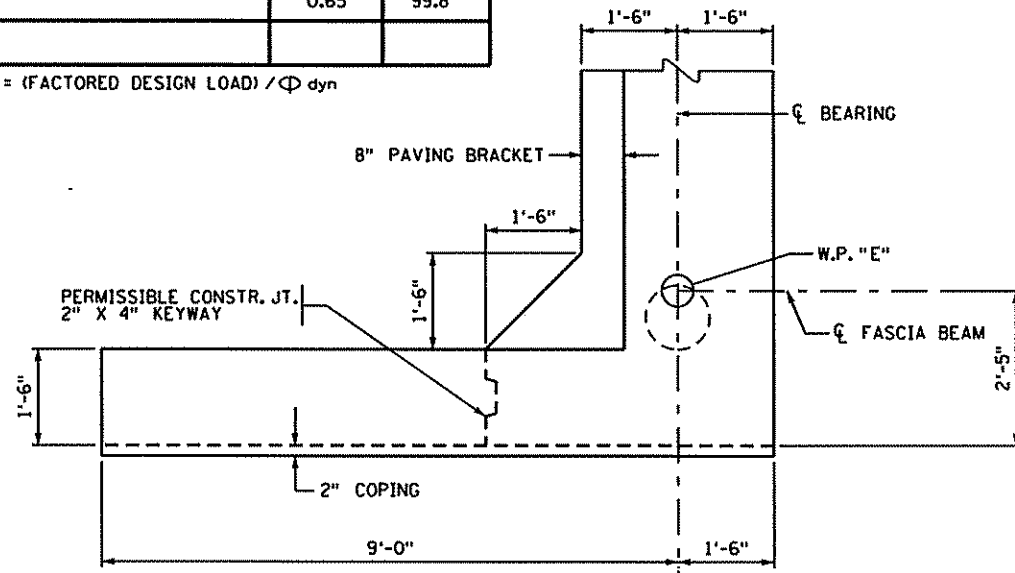
DES: JDA	DR: BJR
CHK: BRL	CHK: JDA

Sheet B4 of B25 Sheets

Bridge No. **02582**

SOUTH ABUTMENT REQUIRED NOMINAL PILE BEARING RESISTANCE R _n - TONS/PILE		
FIELD CONTROL METHOD	Φ_{dyn}	$\bullet R_n$
MN/DOT NOMINAL RESISTANCE FORMULA	0.40	162.1
PDA	0.65	99.8

$\bullet R_n = (\text{FACTORED DESIGN LOAD}) / \Phi_{dyn}$



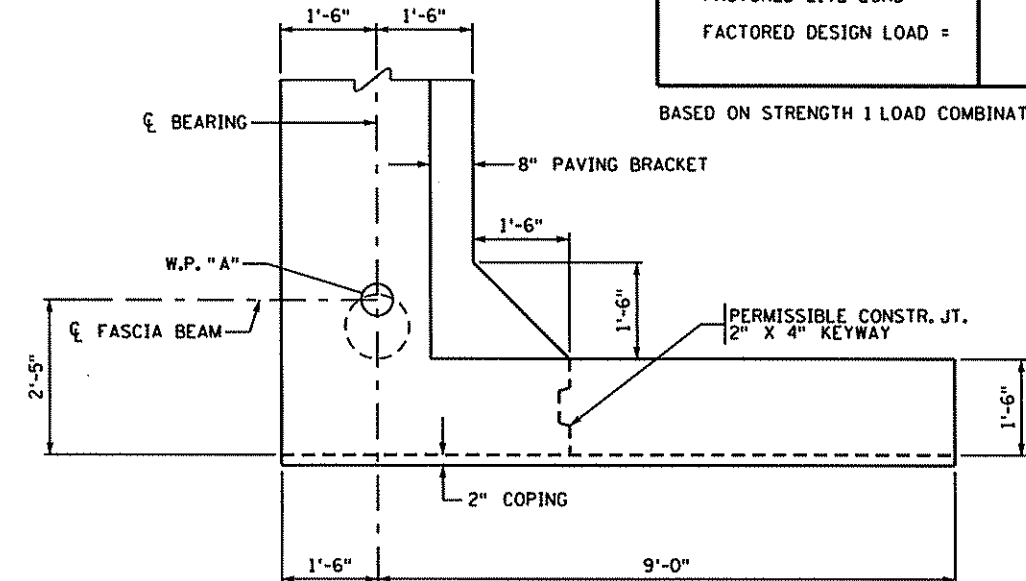
S.E. WINGWALL PLAN

PILE NOTES

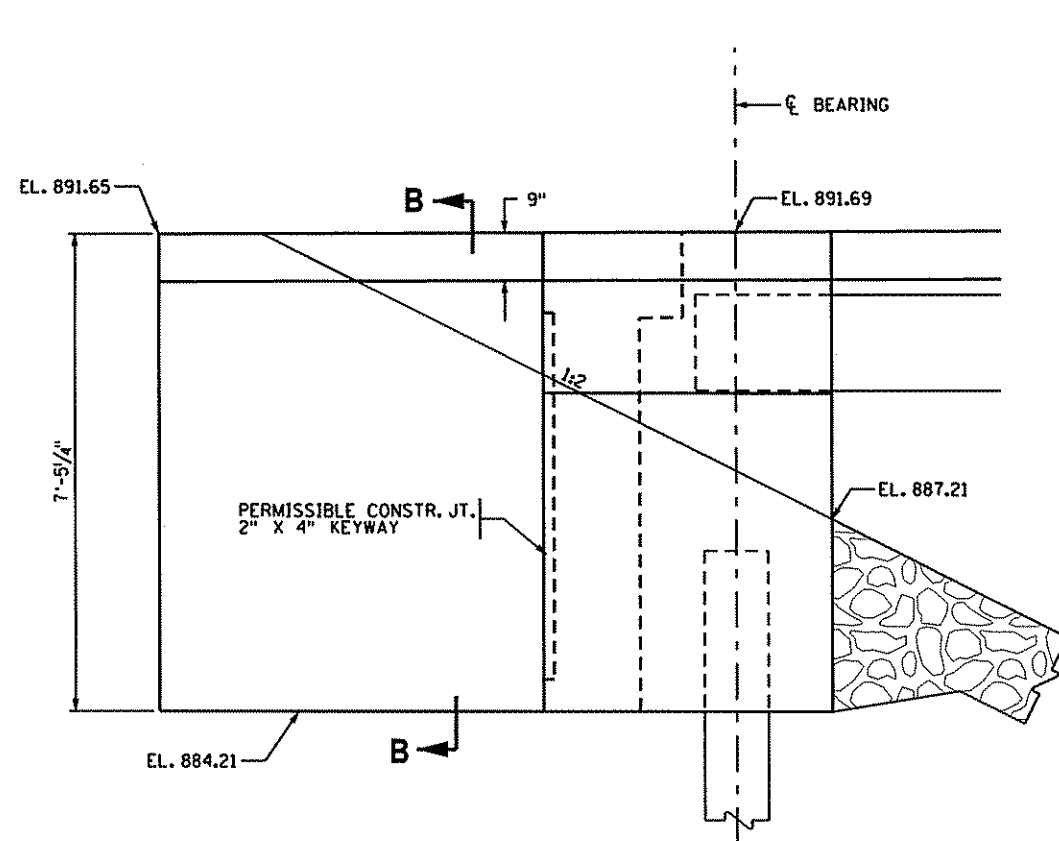
- 1 12" CIP TEST PILES 60 FT. LONG
 - 5 12" CIP PILES EST. LENGTH 55 FT.
 - 6 12" CIP PILES REQ'D FOR SOUTH ABUTMENT
- PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
PILES TO BE 12" CIP
FOR PILE SPLICE DETAILS SEE DETAIL B202.
PILE CUTOFF IS EL. 886.71

SOUTH ABUTMENT COMPUTED PILE LOAD - TONS/PILE	
	SOUTH ABUT.
FACTORED DEAD LOAD + EARTH PRESSURE	38.3
FACTORED LIVE LOAD	26.5
FACTORED DESIGN LOAD =	64.8

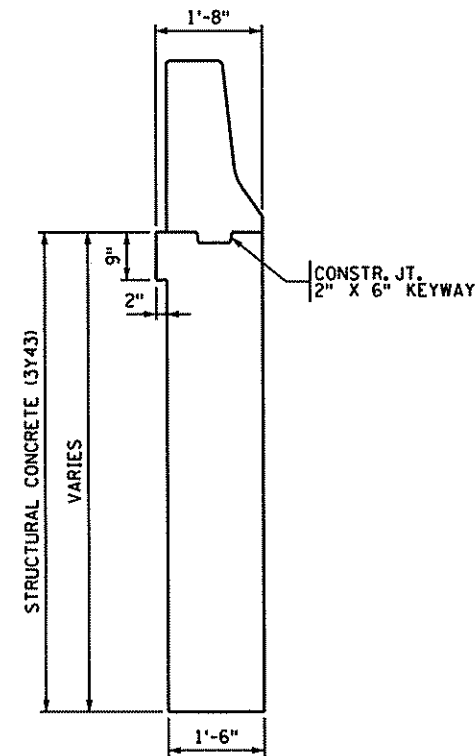
BASED ON STRENGTH I LOAD COMBINATION.



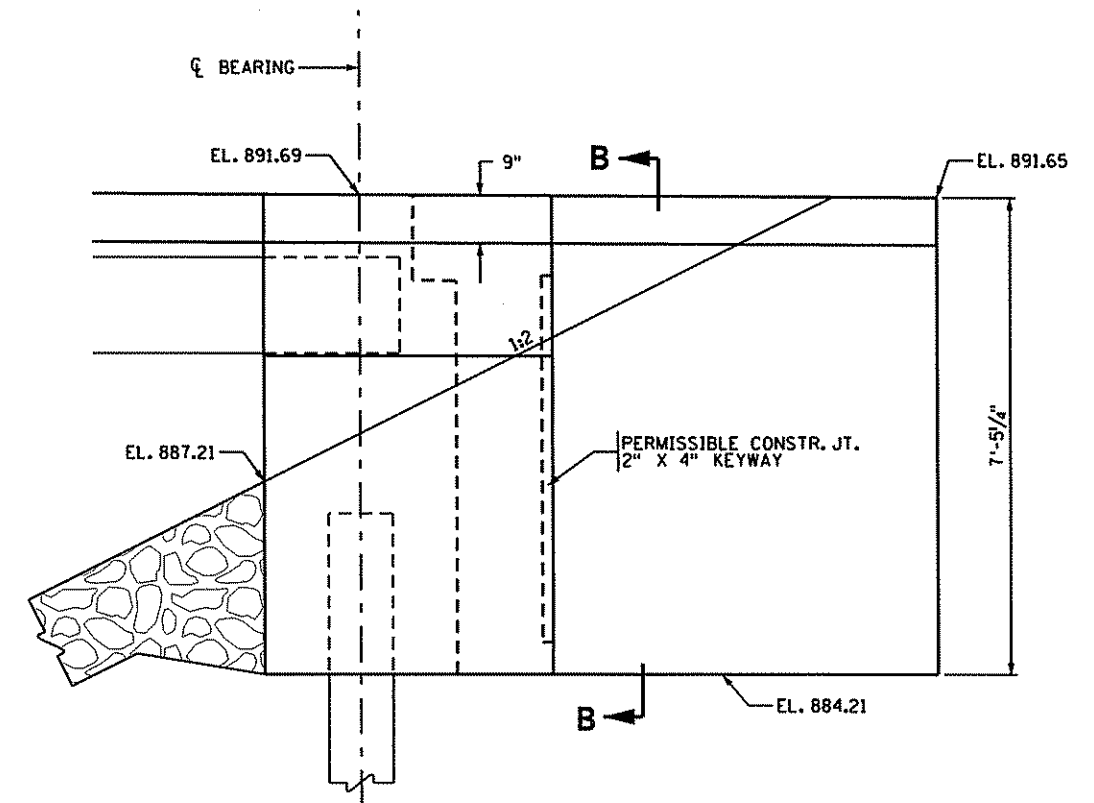
S.W. WINGWALL PLAN



S.E. WINGWALL ELEVATION



SECTION B-B



S.W. WINGWALL ELEVATION

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LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
DATE: 1/3/2011 REG NO: 45501

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

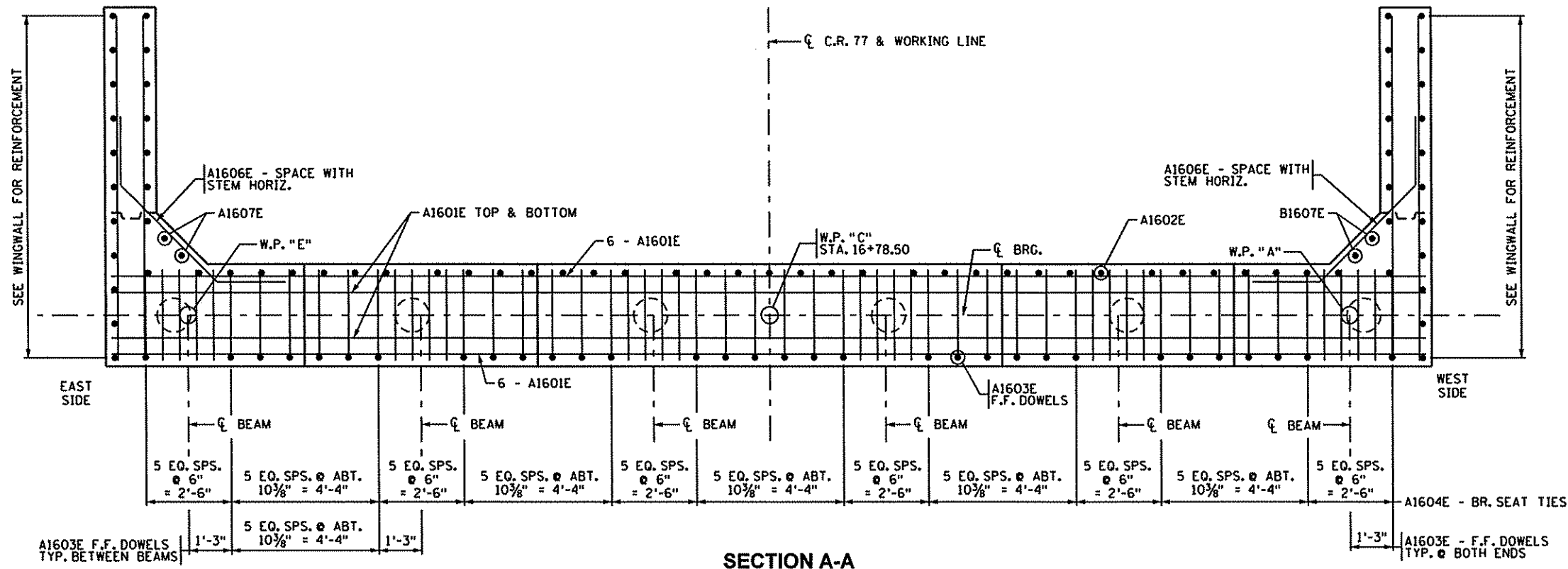
**C.R. 77
ANOKA COUNTY
S.A.P. 02-598-06**

TITLE:
**SOUTH ABUTMENT
DETAILS**

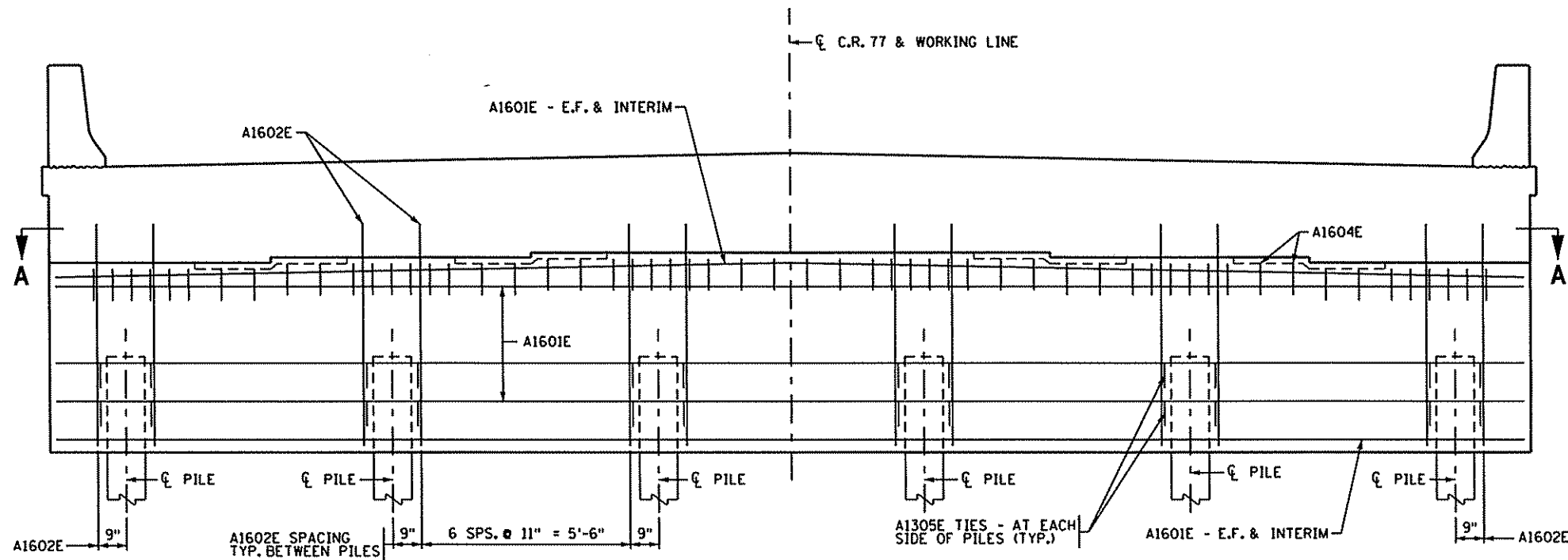
DES: JDA	DR: BJR
CHK: BRL	CHK: JDA

Sheet B5 of B25 Sheets

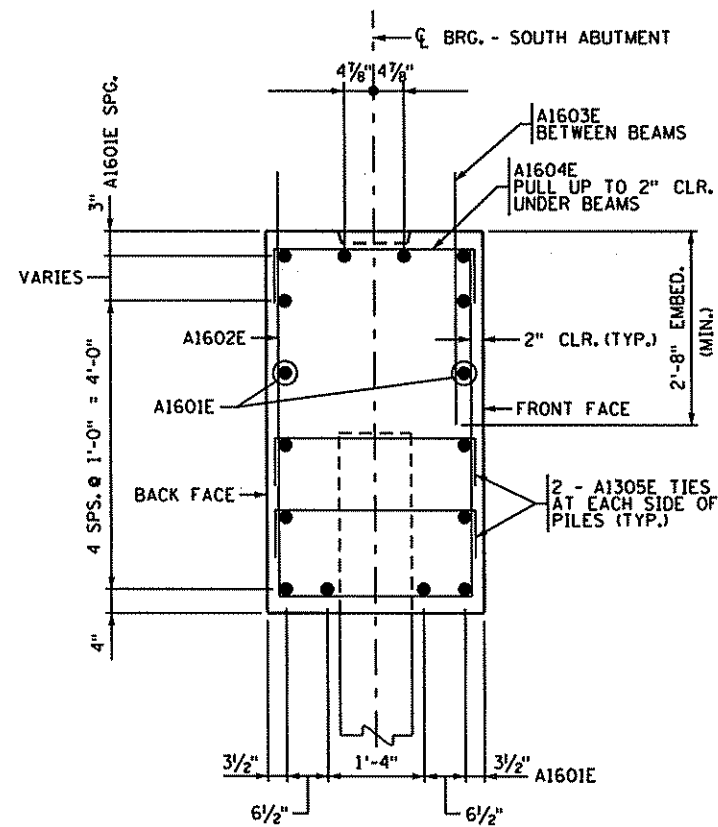
Bridge No.
02582



SECTION A-A



GENERAL ELEVATION



TYPICAL SECTION THRU ABUTMENT

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LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 1/3/2011 REG NO: 45501

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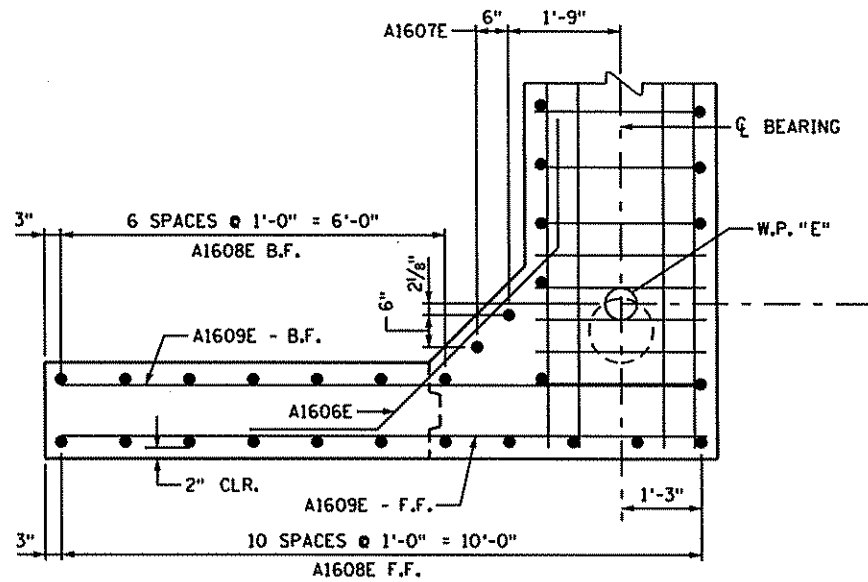
701 Xenia Ave. South
 Suite 500
 Minneapolis, MN 55416
 763-641-4800
 FAX 763-641-1700

**C.R. 77
 ANOKA COUNTY
 S.A.P. 02-598-06**

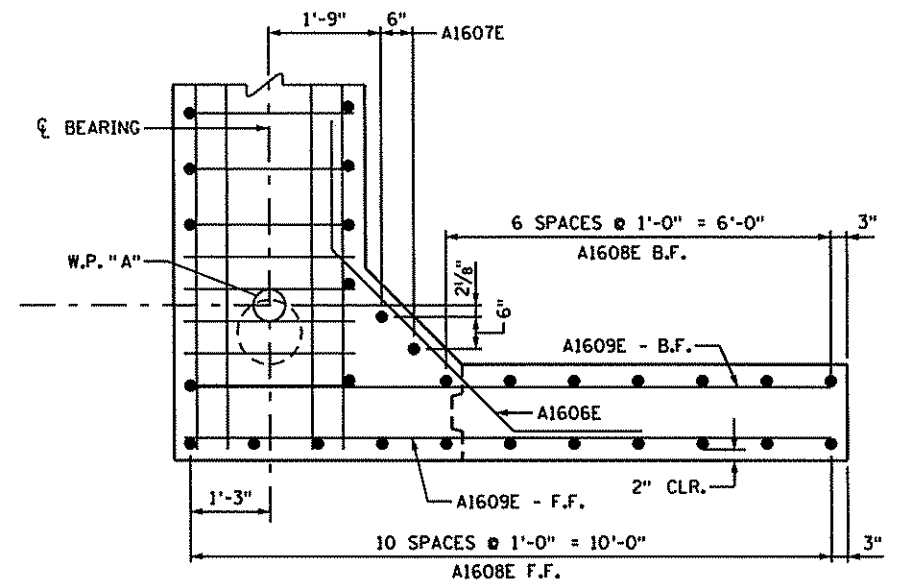
TITLE:
**SOUTH ABUTMENT
 REINFORCEMENT**

DES: JDA	DR: BJR
CHK: BRL	CHK: JDA
Sheet B6 of B25 Sheets	

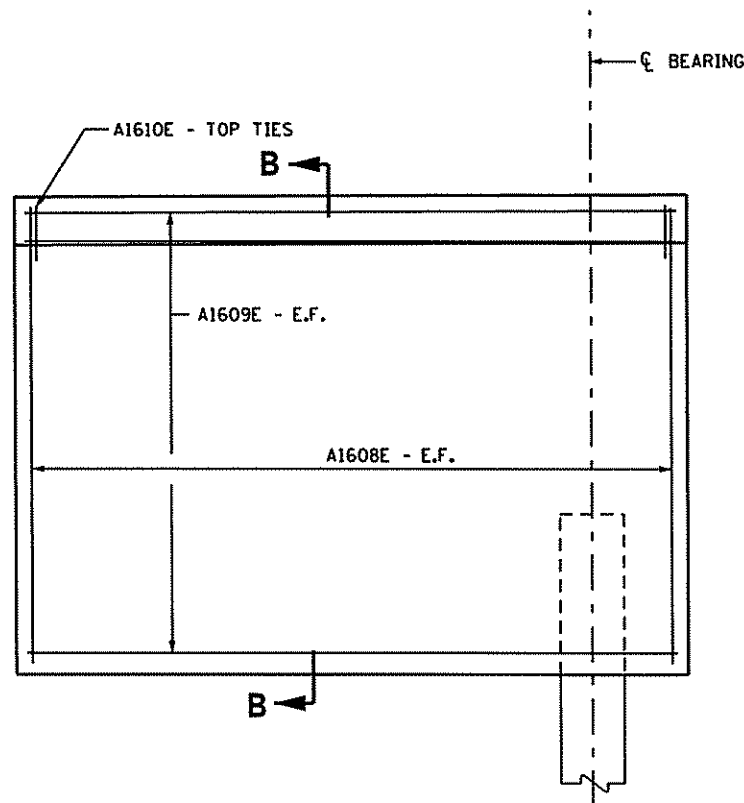
Bridge No.
02582



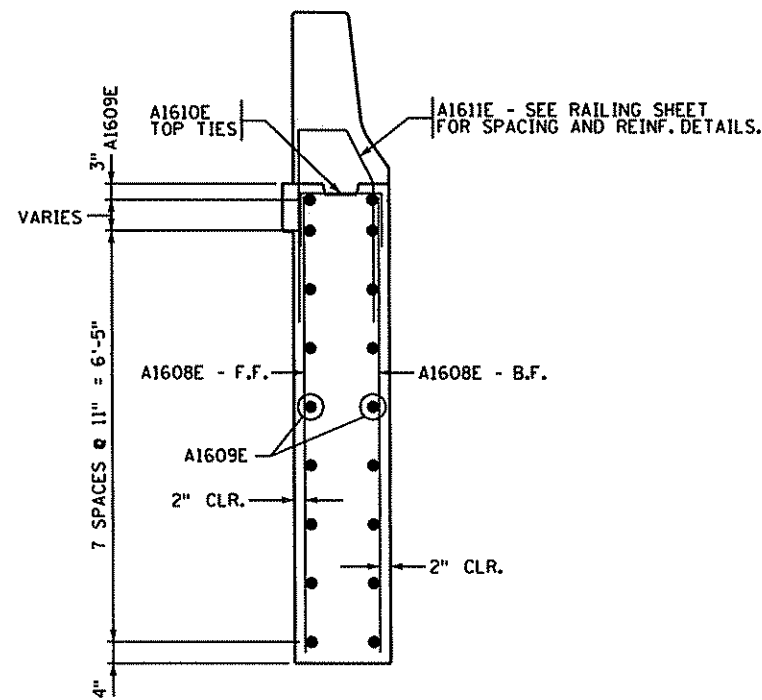
S.E. WINGWALL PLAN



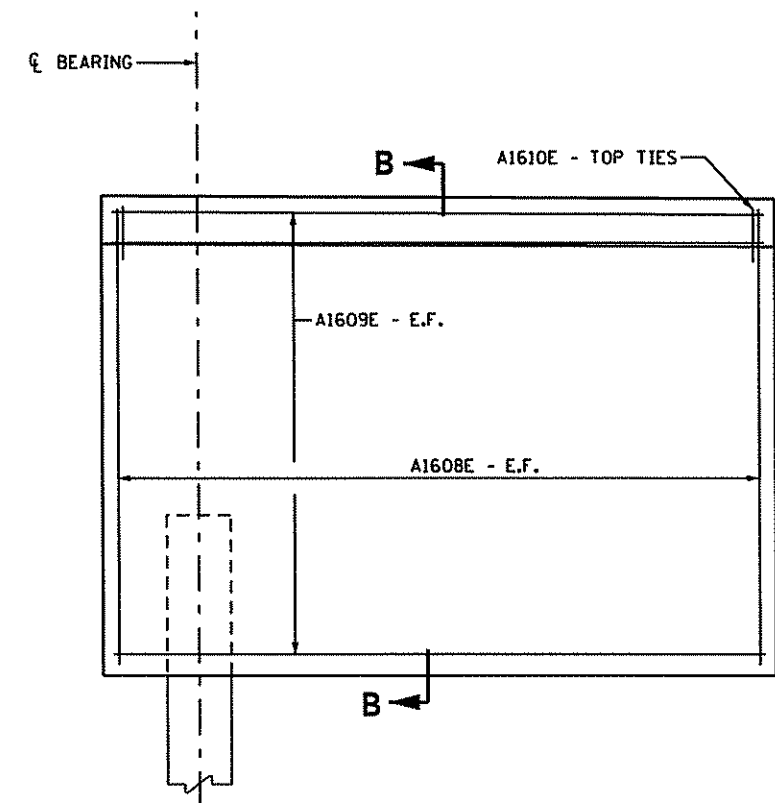
S.W. WINGWALL PLAN



S.E. WINGWALL ELEVATION



SECTION B-B



S.W. WINGWALL ELEVATION

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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: 1/3/2011 REG NO: 45501

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 INFRASTRUCTURE - ENGINEERS - PLANNERS

701 Xenia Ave. South
 Suite 500
 Minneapolis, MN 55416
 763-541-4800
 FAX 763-541-1700

**C.R. 77
 ANOKA COUNTY
 S.A.P. 02-598-06**

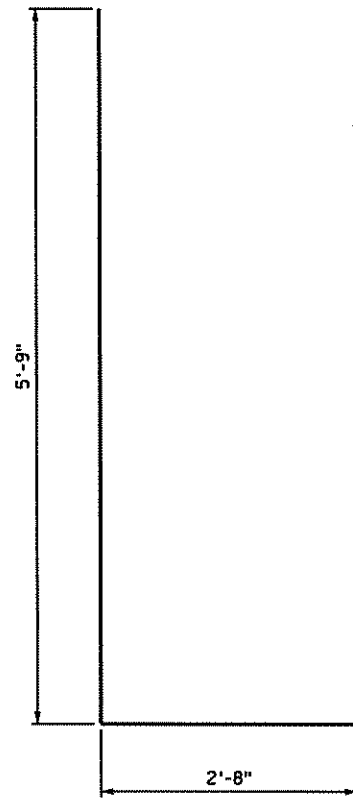
TITLE:
**SOUTH ABUTMENT
 REINFORCEMENT**

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

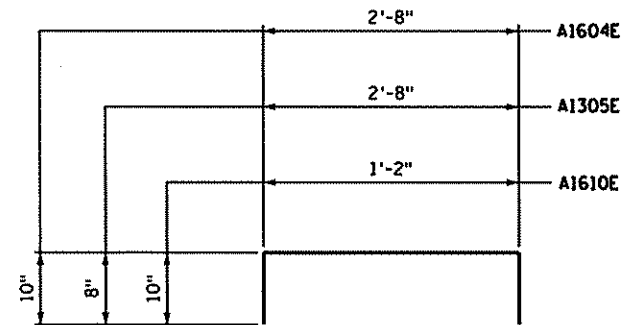
Bridge No.
02582

BILL OF REINFORCEMENT - SOUTH ABUTMENT

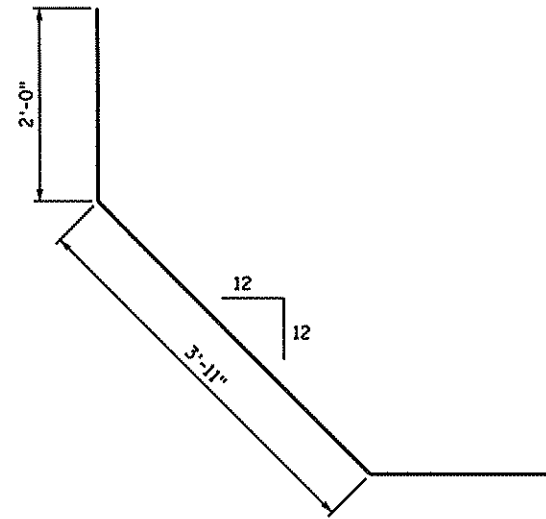
BAR	NO.	LENGTH	SHAPE	LOCATION
A1601E	16	38'-8"	STR.	STEM - LONGIT.
A1602E	37	13'-0"	BENT	STEM - B.F. TIES
A1603E	32	4'-11"	STR.	STEM - F.F. DOWELS
A1604E	56	4'-4"	BENT	STEM - BR. SEAT TIES
A1305E	24	4'-0"	BENT	STEM - TIES @ PILES
A1606E	12	7'-11"	BENT	STEM - FILLET TIES
A1607E	4	5'-9"	STR.	STEM - FILLET VERTS.
A1608E	36	7'-1"	STR.	WINGWALLS - VERTS.
A1609E	36	10'-2"	STR.	WINGWALLS - HORIZ.
A1610E	22	2'-10"	BENT	WINGWALLS - TOP TIES
A1611E	30	6'-10"	BENT	WINGWALLS - RAIL TIES



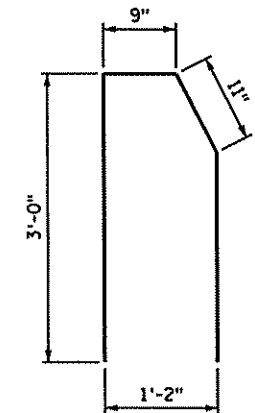
A1602E



A1604E, A1305E, & A1610E



A1606E



A1611E

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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: 11/3/11 LIC. NO.: 45501



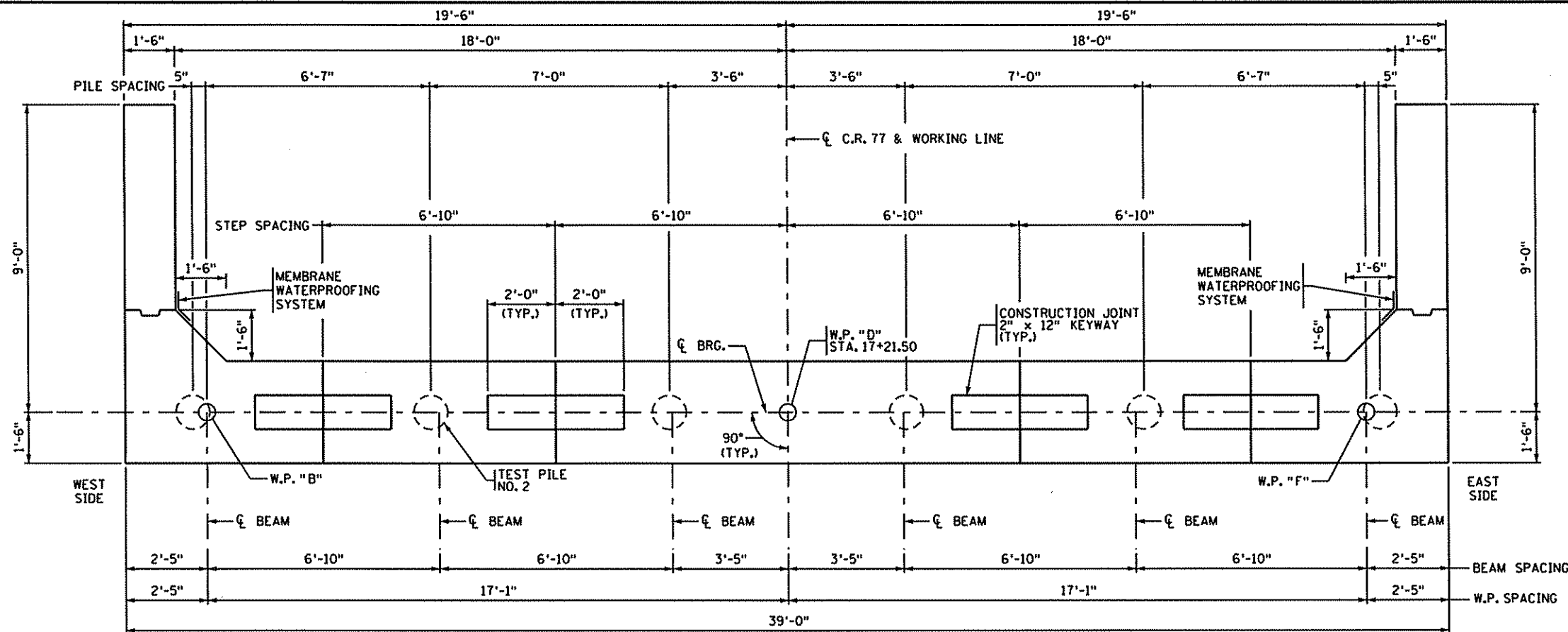
701 Xenia Ave. South
 Suite 300
 Minneapolis, MN 55416
 763-541-4800
 FAX 763-541-1700

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

TITLE: **SOUTH ABUTMENT REINFORCEMENT**

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

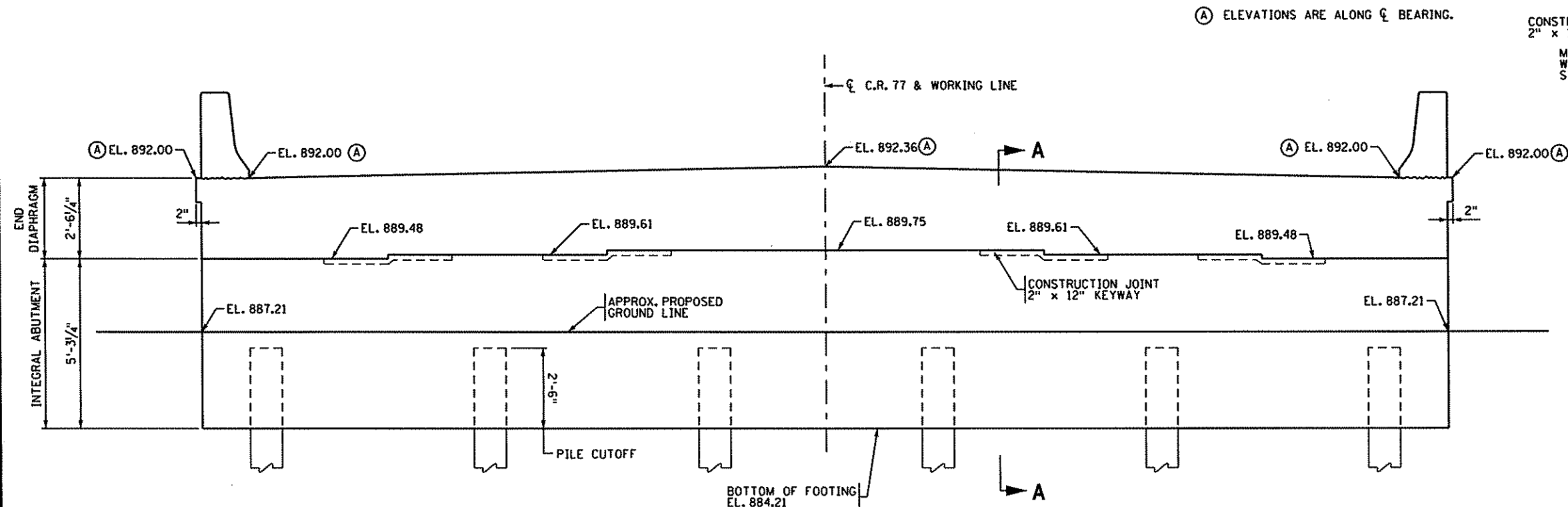
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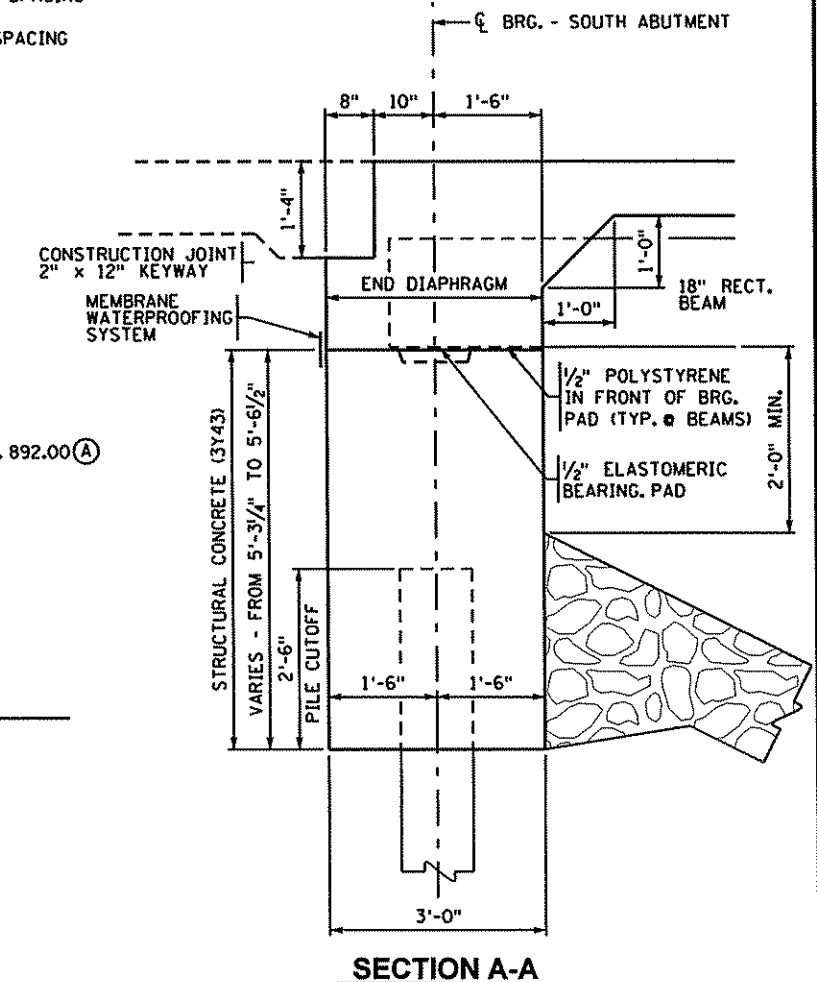
PLAN VIEW

SUMMARY OF QUANTITIES - NORTH ABUTMENT		
STRUCTURAL CONCRETE (3Y43)	31	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	2715	POUND
① 12" CIP PILING DELIVERED	275	LIN. FT.
① 12" CIP PILING DRIVEN	275	LIN. FT.
12" CIP TEST PILES 60 FT. LONG	1	EACH
② MEMBRANE WATERPROOFING SYSTEM	50	LIN. FT.
STRUCTURE EXCAVATION	1	LUMP SUM
RANDOM RIPRAP CLASS III	70	CU. YD.
GEOTEXTILE FILTER TYPE IV (MODIFIED)	117	SQ. YD.
SLOPE PREPARATION	1	LUMP SUM

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



GENERAL ELEVATION



SECTION A-A

Ⓐ ELEVATIONS ARE ALONG CL BEARING.

1/4/2011 10:24:47 AM K:\0898-00\cod\plan\br02582\CBR02582_NABTL.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: 1/3/2011 REG NO: 45501

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701 Xenia Ave. South
 Suite 300
 Minneapolis, MN 55416
 783-541-4800
 FAX 783-541-1700

C.R. 77
ANOKA COUNTY
S.A.P. 02-598-06

TITLE:
NORTH ABUTMENT
DETAILS

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

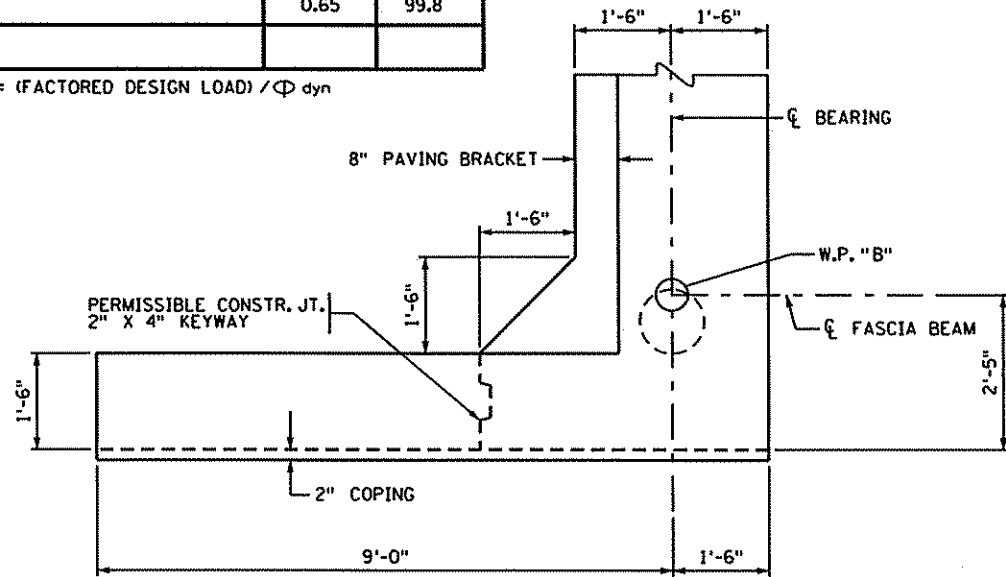
Sheet B9 of B25 Sheets

Bridge No.
02582

**NORTH ABUTMENT
REQUIRED NOMINAL PILE BEARING
RESISTANCE R_n - TONS/PILE**

FIELD CONTROL METHOD	Φ _{dyn}	• R _n
MN/DOT NOMINAL RESISTANCE FORMULA	0.40	162.1
PDA	0.65	99.8

• R_n = (FACTORED DESIGN LOAD) / Φ_{dyn}



N.W. WINGWALL PLAN

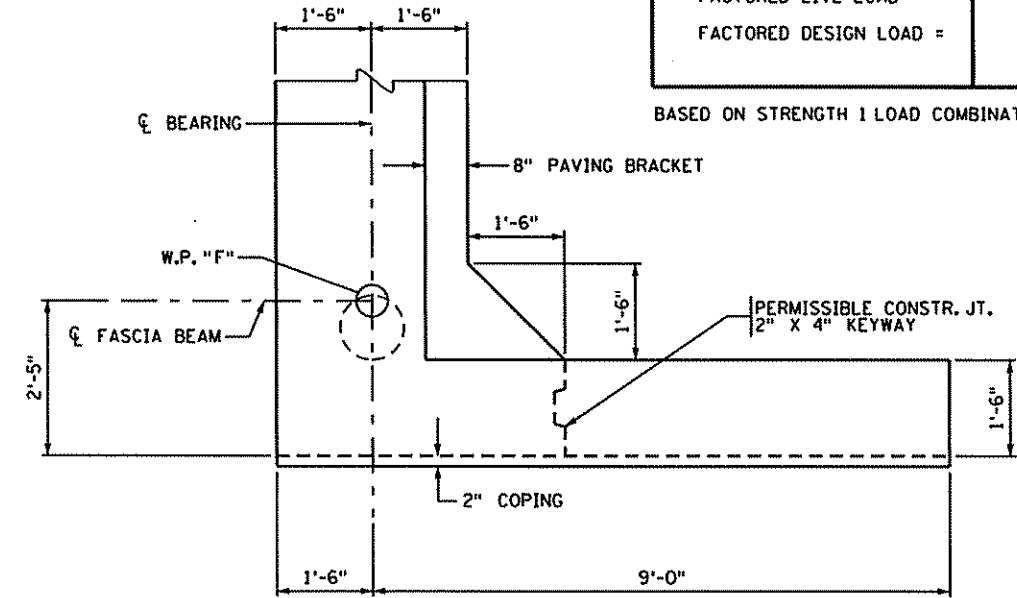
PILE NOTES

- 1 12" CIP TEST PILES 60 FT. LONG
 - 5 12" CIP PILES EST. LENGTH 55 FT.
 - 6 12" CIP PILES REQ'D FOR NORTH ABUTMENT
- PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
PILES TO BE 12" CIP
FOR PILE SPLICE DETAILS SEE DETAIL B202.
PILE CUTOFF IS EL. 886.71

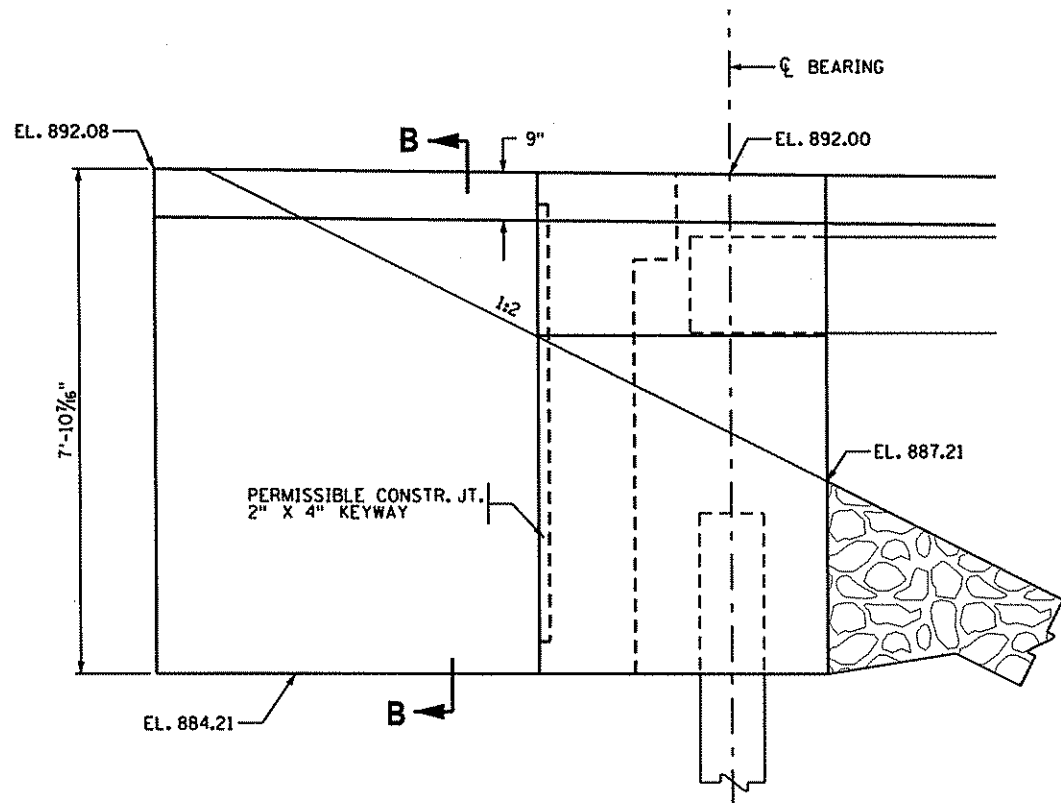
**NORTH ABUTMENT
COMPUTED PILE LOAD - TONS/PILE**

	NORTH ABUT.
FACTORED DEAD LOAD + EARTH PRESSURE	38.3
FACTORED LIVE LOAD	26.5
FACTORED DESIGN LOAD =	64.8

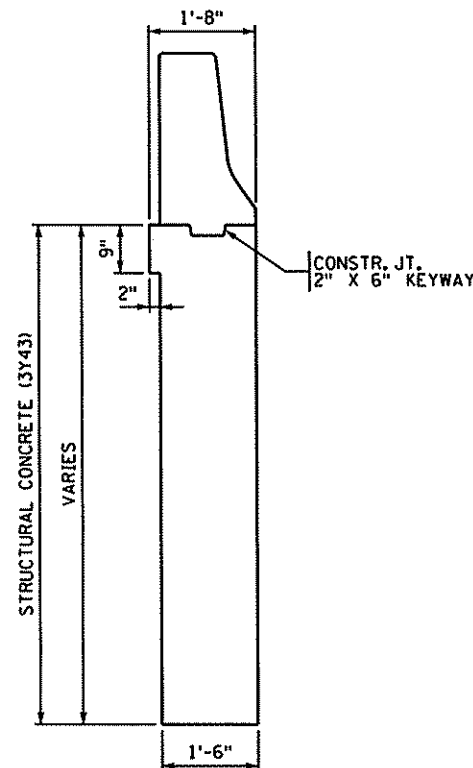
BASED ON STRENGTH I LOAD COMBINATION.



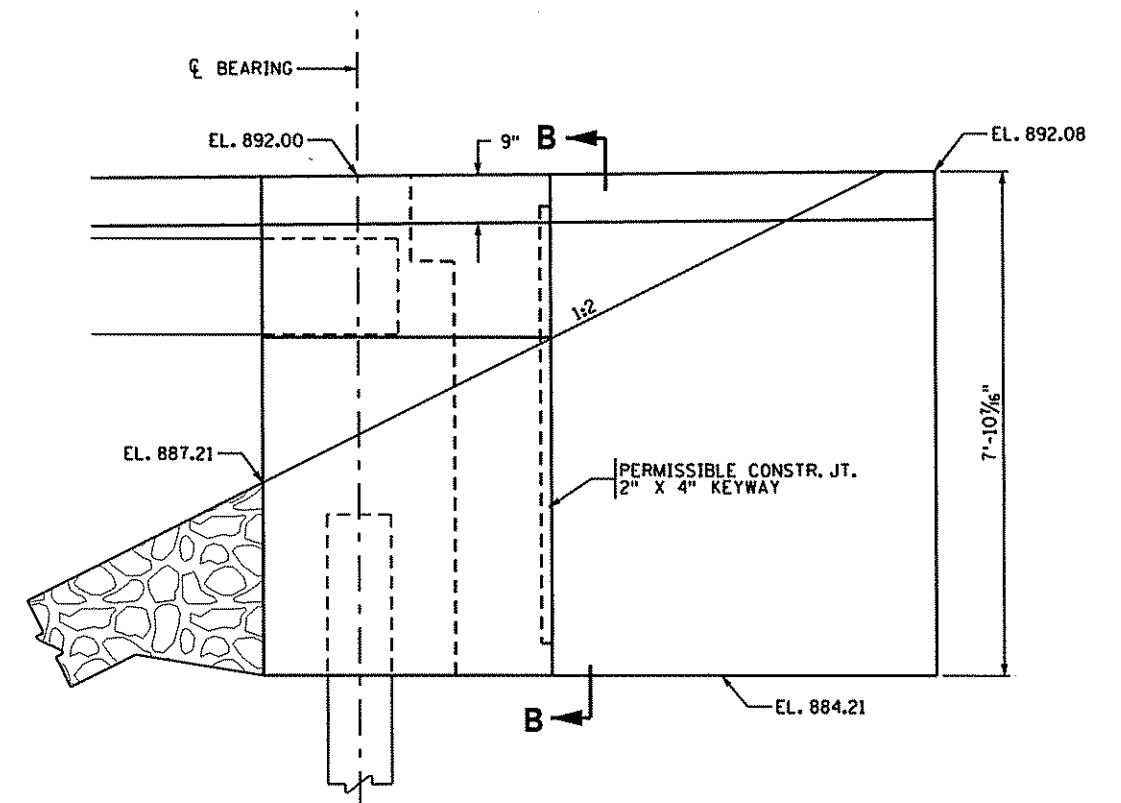
N.E. WINGWALL PLAN



N.W. WINGWALL ELEVATION



SECTION B-B



N.E. WINGWALL ELEVATION

1/3/2011 2:31:03 PM K:\0898-00\cod\plan\br-02582\CBR02582_NABT2.dgn

NO	DATE	BY	CHK	REVISIONS

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: 1/3/2011 REG NO: 45501

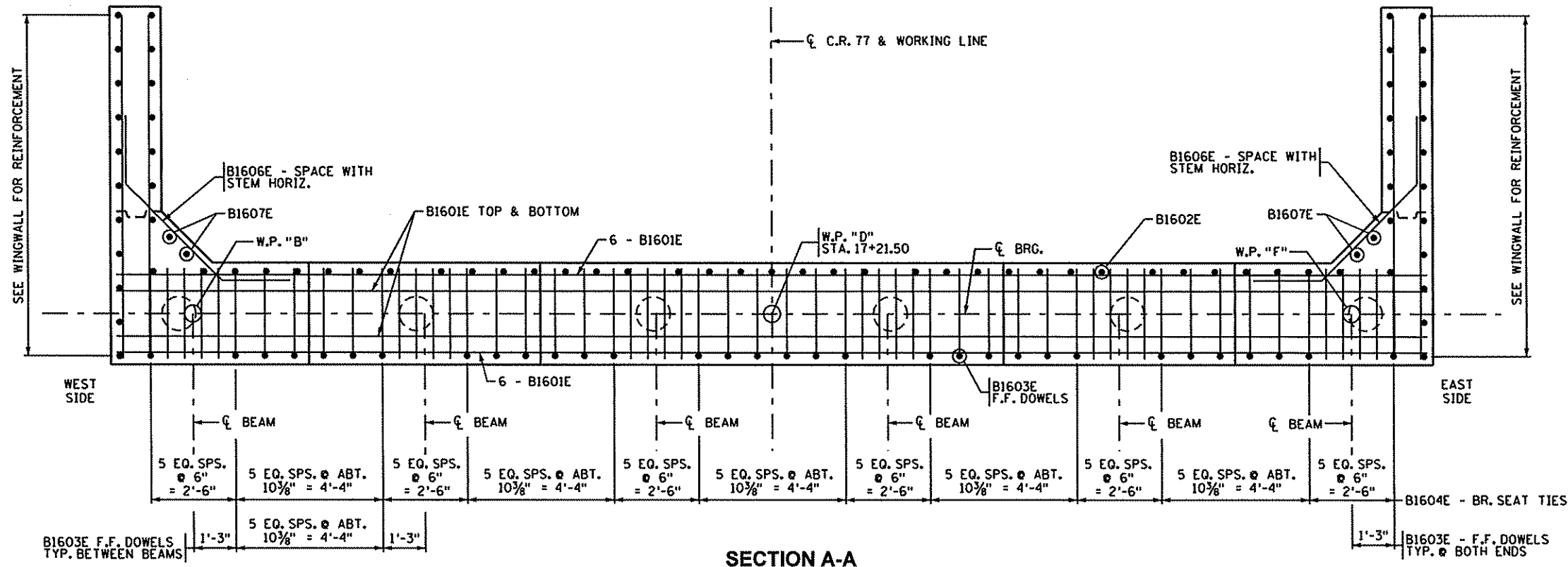
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701 Xenia Ave. South, Suite 300
Minneapolis, MN 55416
763-541-4800
FAX 763-541-1700
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ANOKA COUNTY
S.A.P. 02-598-06**

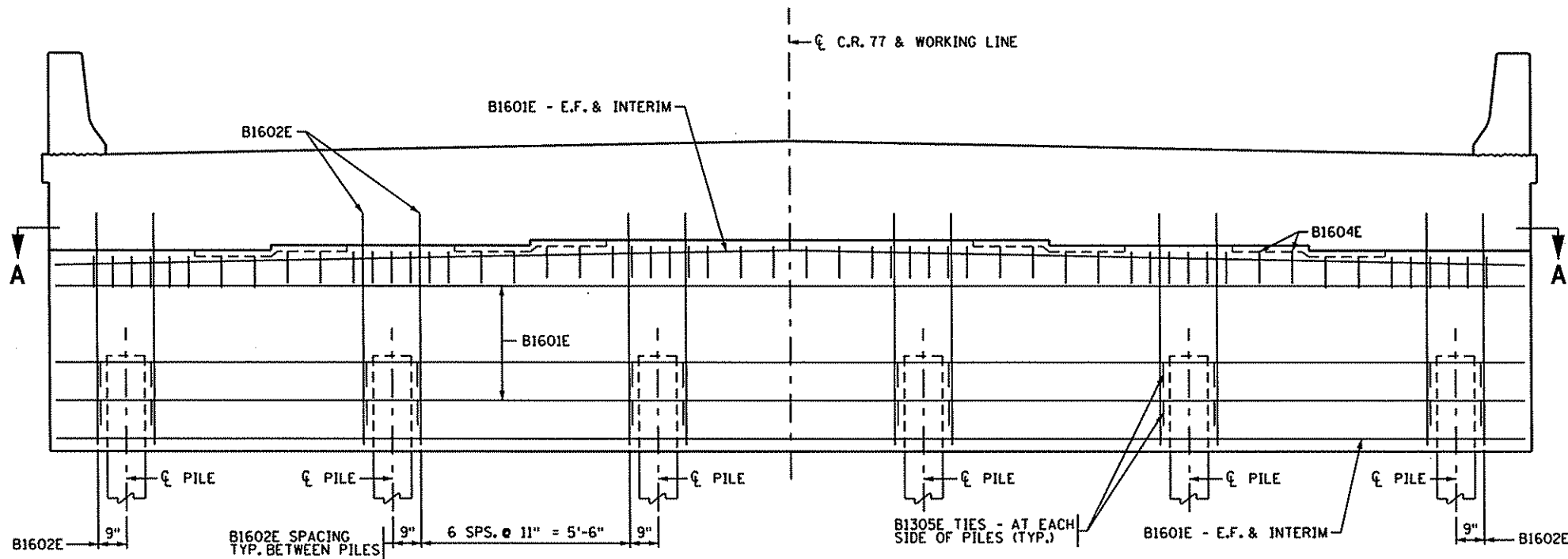
TITLE:
**NORTH ABUTMENT
DETAILS**

DES: JDA DR: BJR
CHK: BRL CHK: JDA
Sheet B10 of B25 Sheets

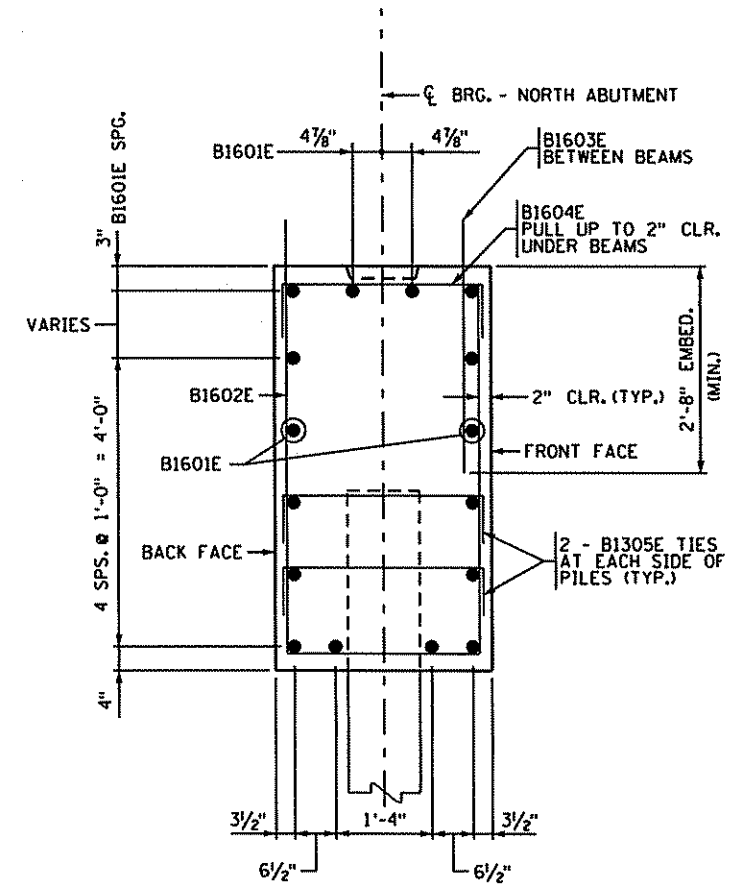
Bridge No.
02582



SECTION A-A



GENERAL ELEVATION



TYPICAL SECTION THRU ABUTMENT

1/3/2011 2:31:00 PM K:\01898-00\cod\plan\br-02582\CBR02582.NAB13.dgn

NO	DATE	BY	CHK	REVISIONS

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James Archer
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 1/3/2011 REG NO: 45501

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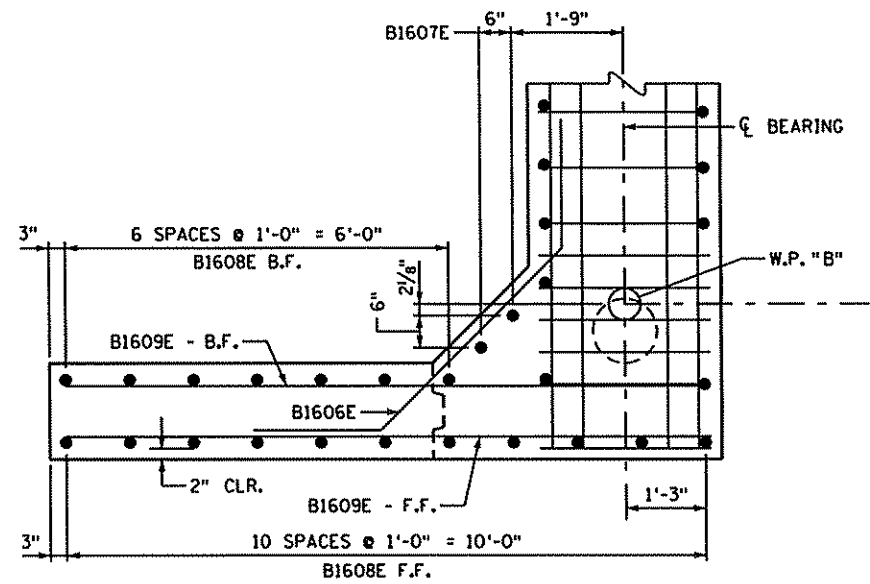
**C.R. 77
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TITLE:
**NORTH ABUTMENT
 REINFORCEMENT**

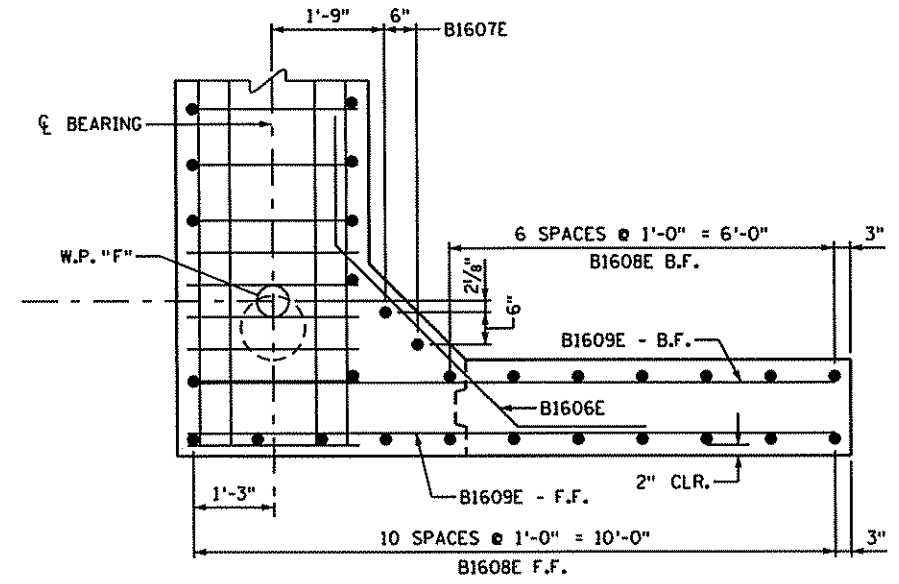
DES: JDA	DR: BJR
CHK: BRL	CHK: JDA

Sheet B11 of B25 Sheets

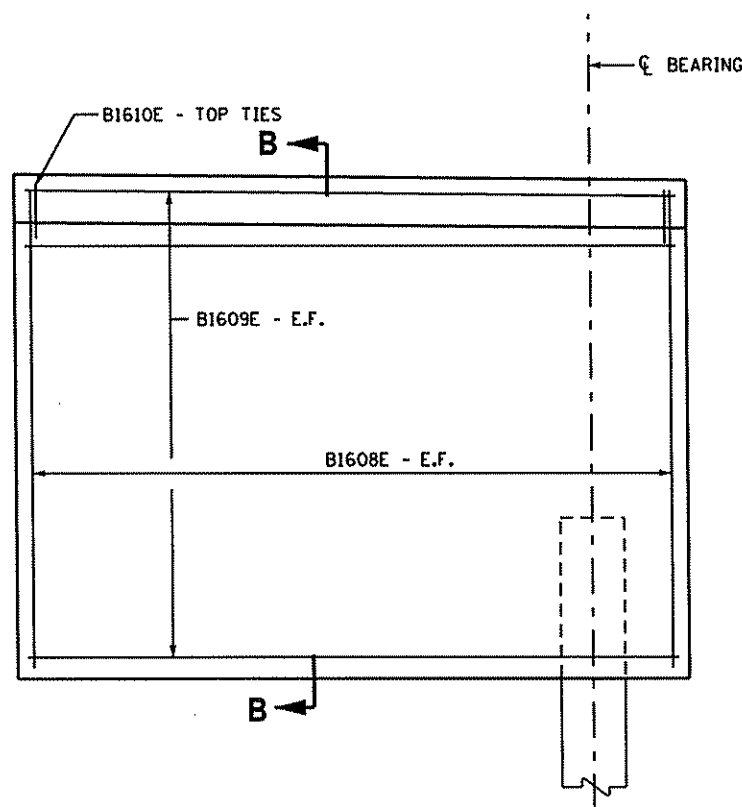
Bridge No.
02582



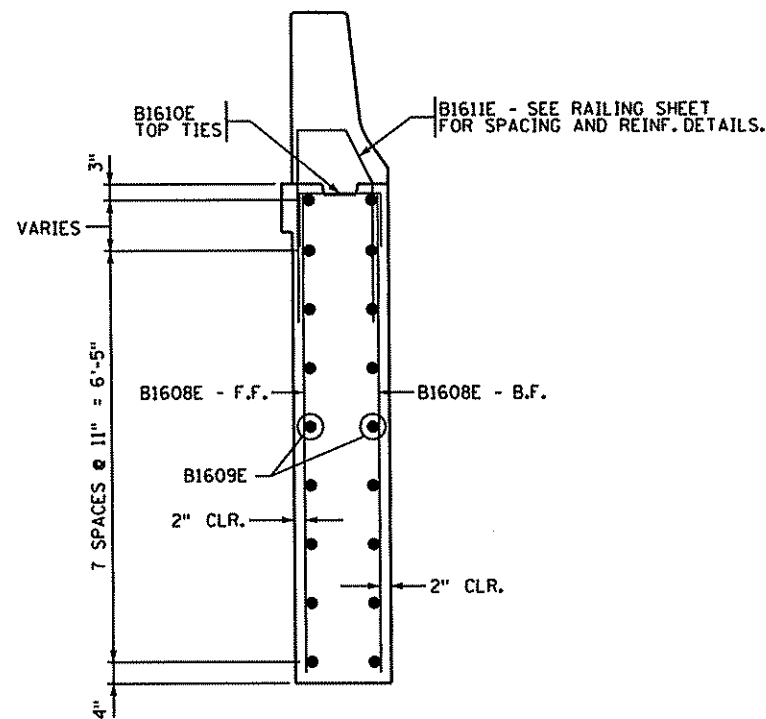
N.W. WINGWALL PLAN



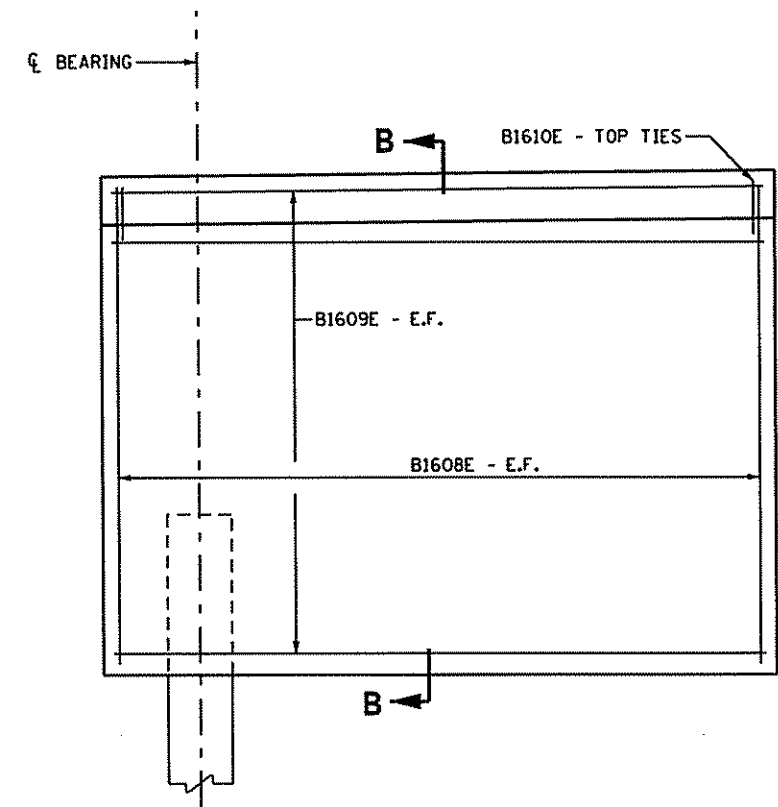
N.E. WINGWALL PLAN



N.W. WINGWALL ELEVATION



SECTION B-B



N.E. WINGWALL ELEVATION

1/3/2011 2:31:46 PM K:\01898-00\cadd\plan\br-02582\C8R02582.NABT4.dgn

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 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 1/3/2011 REG NO: 45501

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701 Xenia Ave. South
 Suite 300
 Minneapolis, MN 55416

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TITLE:
NORTH ABUTMENT REINFORCEMENT

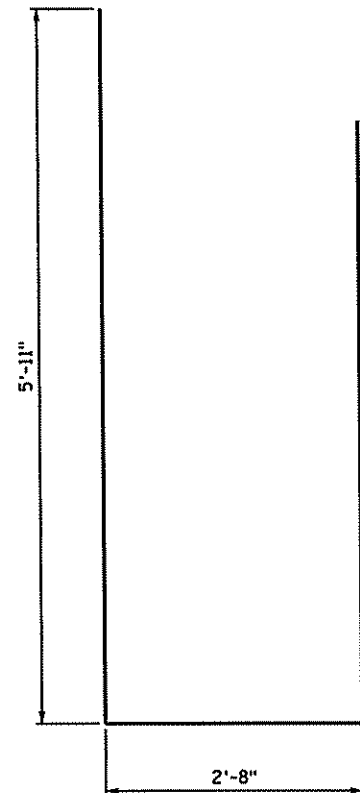
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CHK: BRL	CHK: JDA

Sheet B12 of B25 Sheets

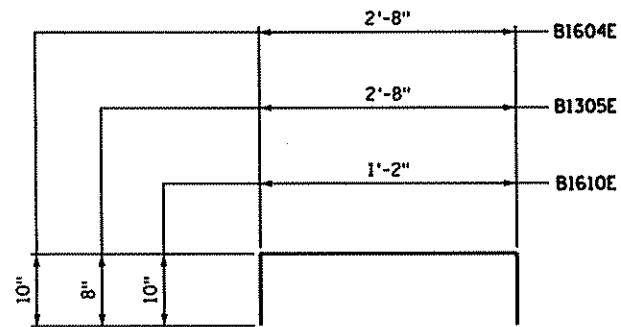
Bridge No.
02582

BILL OF REINFORCEMENT - NORTH ABUTMENT

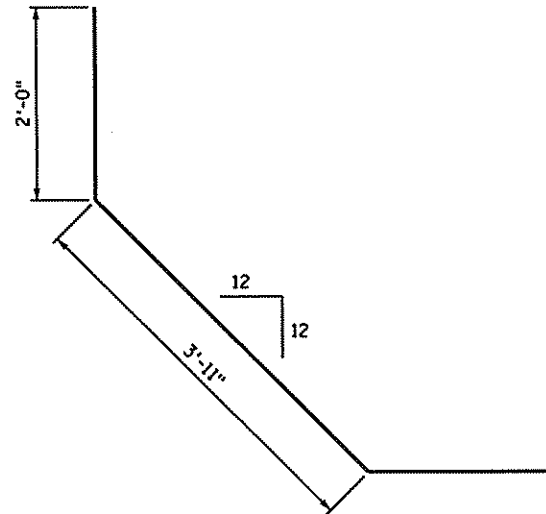
BAR	NO.	LENGTH	SHAPE	LOCATION
B1601E	16	38'-8"	STR.	STEM - LONGIT.
B1602E	37	13'-6"	BENT	STEM - B.F. TIES
B1603E	32	4'-11"	STR.	STEM - F.F. DOWELS
B1604E	56	4'-4"	BENT	STEM - BR. SEAT TIES
B1305E	24	4'-0"	BENT	STEM - TIES @ PILES
B1606E	12	7'-11"	BENT	STEM - FILLET TIES
B1607E	4	5'-11"	STR.	STEM - FILLET VERTS.
B1608E	36	7'-5"	STR.	WINGWALLS - VERTS.
B1609E	36	10'-2"	STR.	WINGWALLS - HORIZ.
B1610E	22	2'-10"	BENT	WINGWALLS - TOP TIES
B1611E	30	6'-10"	BENT	WINGWALLS - RAIL TIES



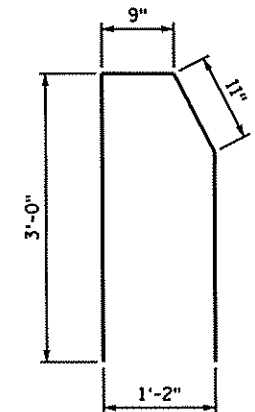
B1602E



B1604E, B1305E, & B1610E



B1606E



B1611E

1/13/2011 2:31:23 PM K:\01898-00\cod\plan\br-02582\CBR02582_NAB15.dgn

NO	DATE	BY	CHK	REVISIONS

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James Archer
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 11/21/11 LIC. NO.: 45501

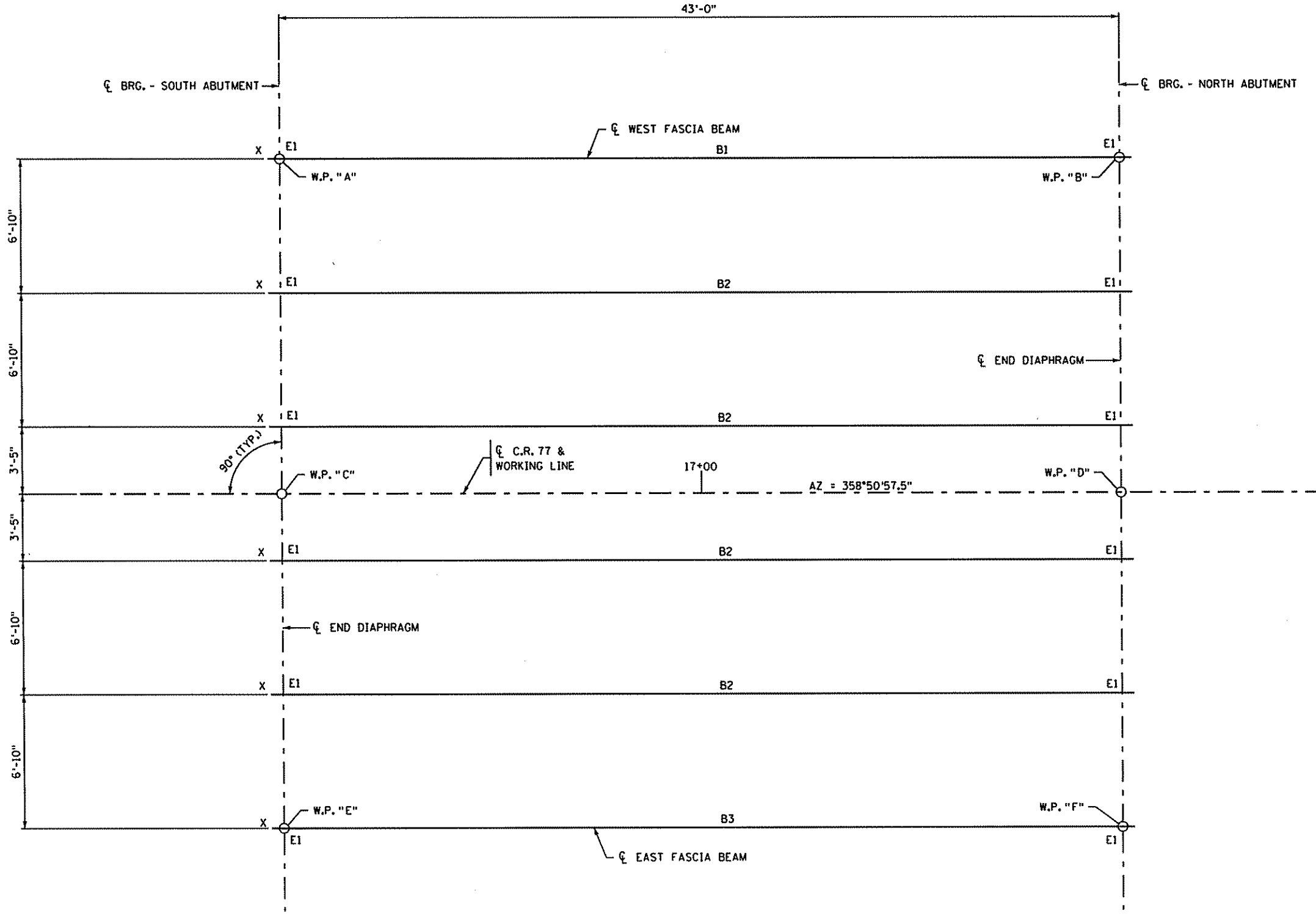
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 Suite 300
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 FAX 763-541-1700
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C.S.A.H. 26
ANOKA COUNTY
S.A.P. 02-626-05

TITLE:
NORTH 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

1/3/2011 2:31:30 PM K:\0898-00\cod\plan\br-02582\CBR02582_FRA.dgn

NO	DATE	BY	CHK	REVISIONS

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James Archer
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 1/3/2011 REG NO: 45501

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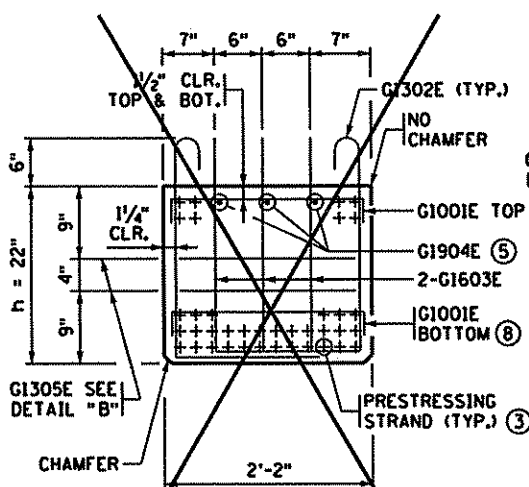
C.R. 77
ANOKA COUNTY
S.A.P. 02-598-06

TITLE: **FRAMING PLAN**

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

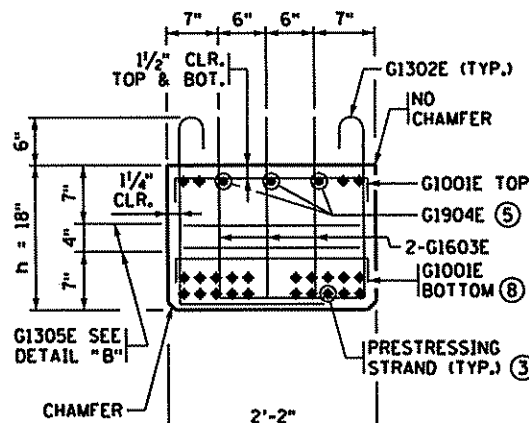
Sheet B14 of B25 Sheets

Bridge No. **02582**



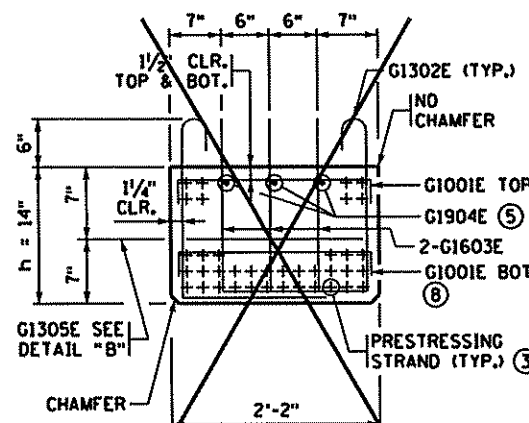
END VIEW - 22" RB

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



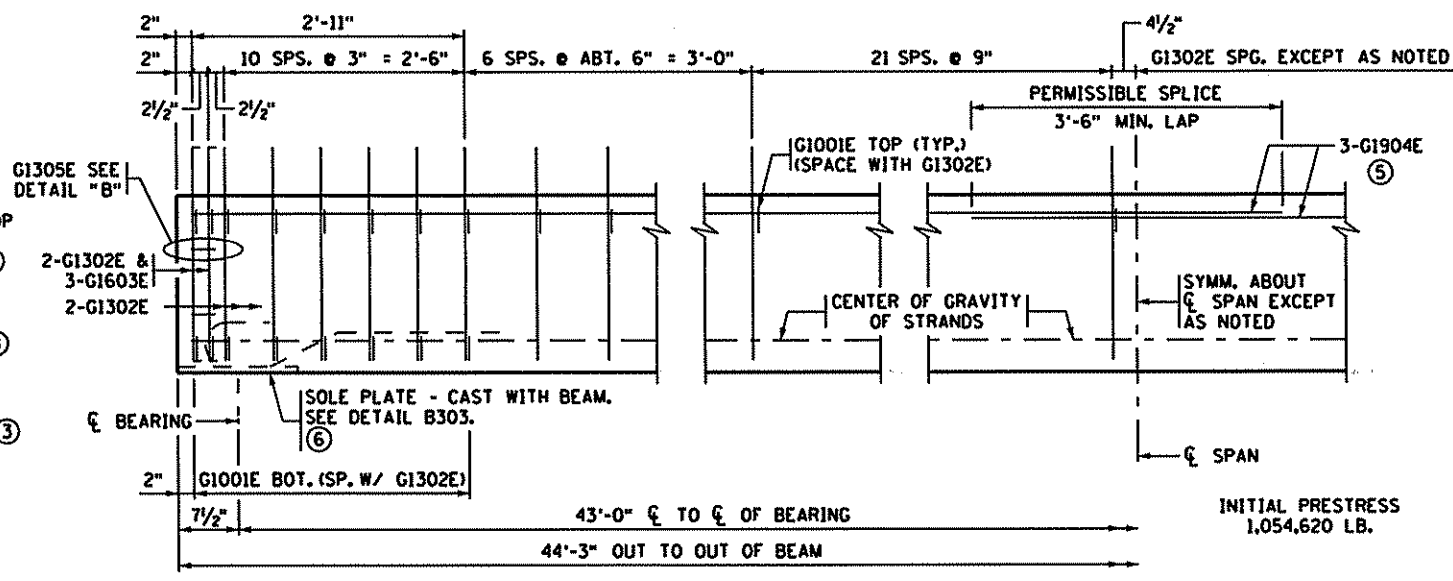
END VIEW - 18" RB

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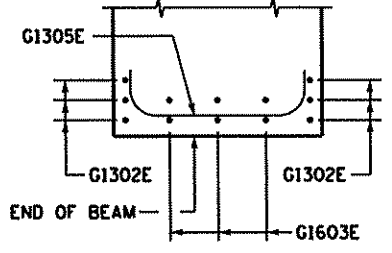


END VIEW - 14" RB

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

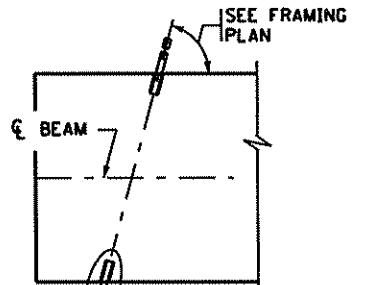


BEAM ELEVATION

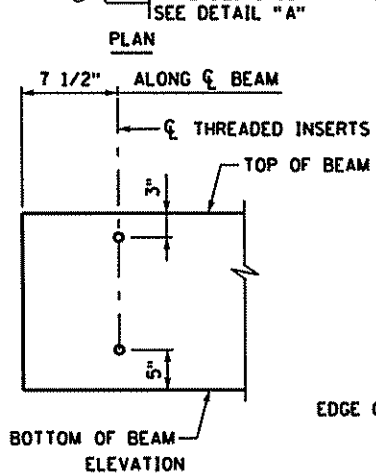


DETAIL "B"

PLAN VIEW SHOWING PLACEMENT OF G1305E BAR

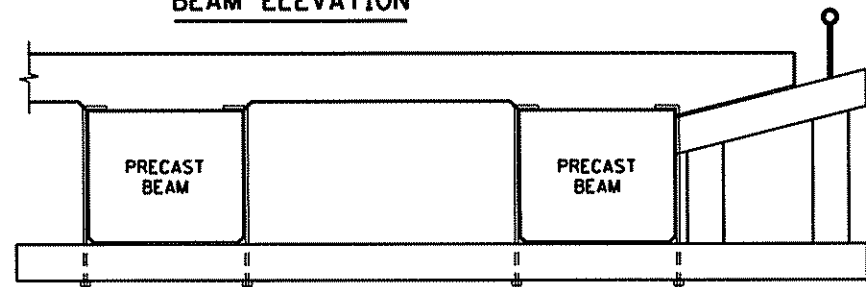


DETAIL "A"



CONCRETE END DIAPHRAGM ANCHORAGES

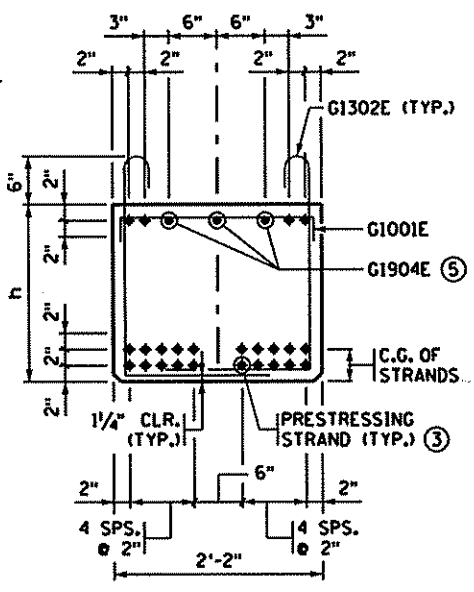
INTEGRAL ABUTMENT (SEE DETAIL B816 FOR CONCRETE END DIAPHRAGM DETAILS)



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.

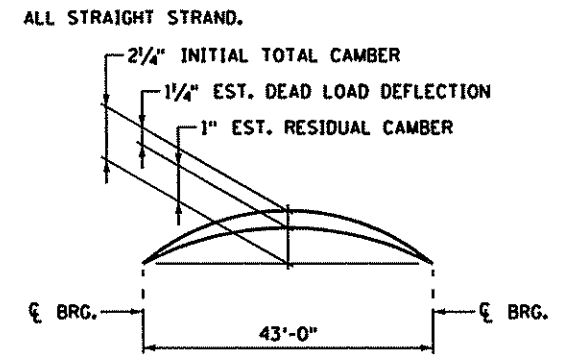


SECTION AT C_g SPAN

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.



CAMBER DIAGRAM

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.

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.

SECTION HEIGHT "h"	
14" <input type="checkbox"/>	18" <input checked="" type="checkbox"/>
22" <input type="checkbox"/>	

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' _{ci}	② f' _c
7.5 KSI	9.0 KSI

PRESTRESSING STRAND DIAMETER	
③ 1/2" <input type="checkbox"/>	③ 0.60" <input checked="" type="checkbox"/>

REVISED: 10-22-2009
 APPROVED: OCTOBER 22, 2008
 Daniel S. Halverson
 STATE BRIDGE ENGINEER

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 DATE: 1/22/2011 REG NO: 45501

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 Suite 300
 Minneapolis, MN 55416
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 FAX 763-541-1700
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C.R. 77
ANOKA COUNTY
S.A.P. 02-598-06

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. 02582

1/3/2011 2:34:37 PM K:\08938-00\cadd\plan\br-02582-CBR02582_PCB.dgn

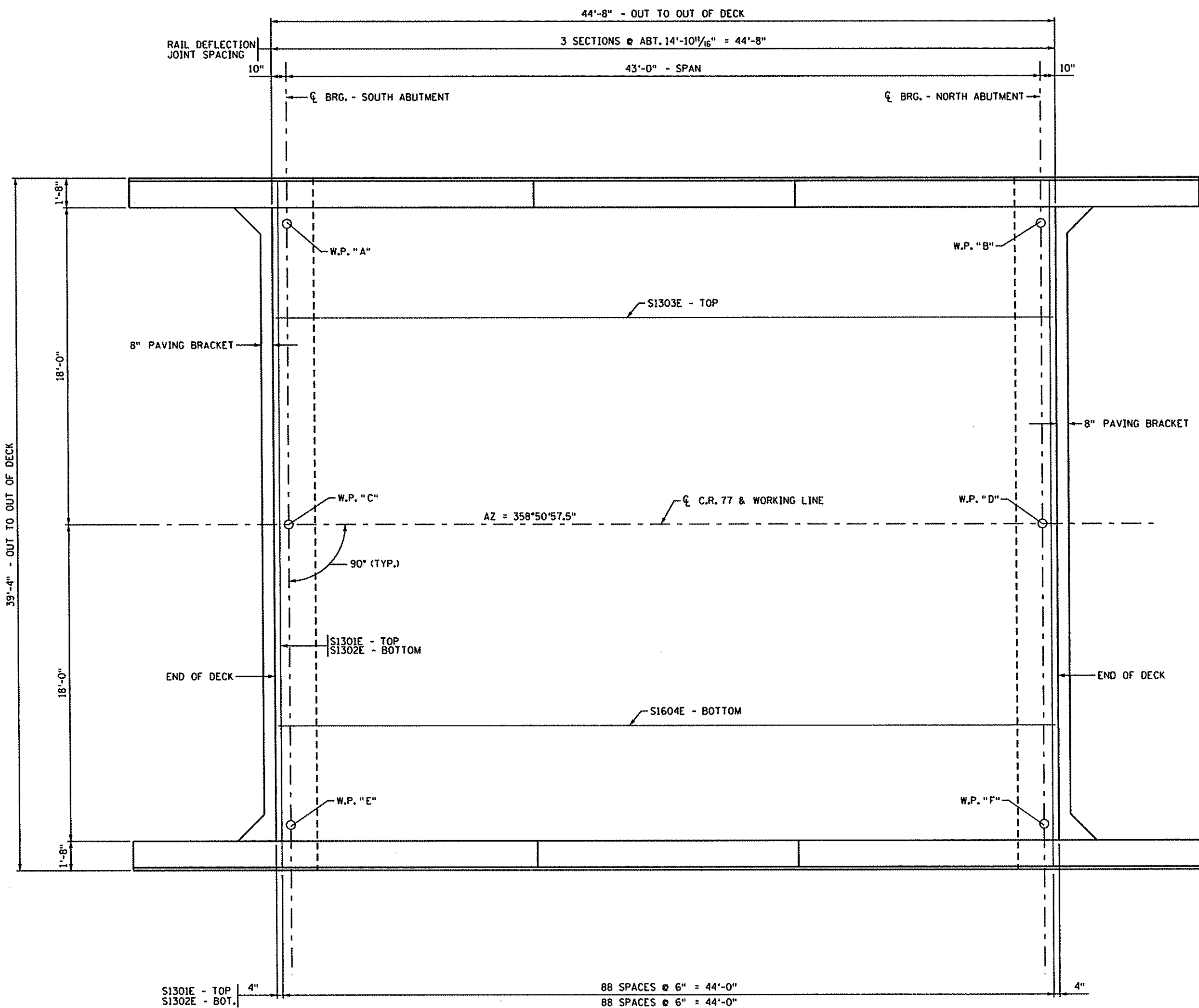
BILL OF REINFORCEMENT - SUPERSTRUCTURE

BAR	NO.	LENGTH	SHAPE	LOCATION
S1301E	89	39'-0"	STR.	TOP - TRANSV.
S1302E	89	38'-8"	STR.	BOTTOM - TRANSV.
S1303E	27	44'-4"	STR.	TOP - LONGIT.
S1604E	47	44'-4"	STR.	BOTTOM - LONGIT.

SUMMARY OF QUANTITIES - SUPERSTRUCTURE

①	BRIDGE SLAB CONCRETE (3Y33)	1757	SQ. FT.
②	TYPE F, (TL-4) RAILING CONCRETE (3Y46)	122	LIN. FT.
④	REINFORCEMENT BARS (EPOXY COATED)	11530	POUND
⑤	PRESTRESSED CONCRETE BEAMS 18RB	266	LIN. FT.
	ELASTOMERIC BEARING PAD, TYPE 1	12	EACH
⑥	BENCH MARK DISK	1	EACH
⑦	1" THICK CORK	13	SQ. FT.
⑦	BRIDGE NAME PLATE	1	EACH
⑦	1/2" POLYSTYRENE	26	SQ. FT.

- ① "BRIDGE SLAB CONCRETE (3Y33)" WAS COMPUTED USING AN AVERAGE STUOL HEIGHT OF 3" INCHES AND IS APPROXIMATELY 70 CU. YDS. WHICH INCLUDES 15 CU. YDS. FOR END DIAPHRAGMS.
- ② "TYPE F, (TL-4) RAILING CONCRETE (3Y46)" APPROXIMATELY 14 CU. YDS.
- ③ CONCRETE END DIAPHRAGM SHALL BE POURED INTEGRALLY WITH DECK.
- ④ INCLUDES SLAB, END DIAPHRAGM, AND RAILING REINFORCEMENT.
- 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.



DECK PLAN VIEW

NO	DATE	BY	CHK	REVISIONS

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LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 1/3/2011 REG NO: 45501

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 Minneapolis, MN 55416
 763-541-4800
 FAX 763-541-1700
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C.R. 77 ANOKA COUNTY S.A.P. 02-598-06

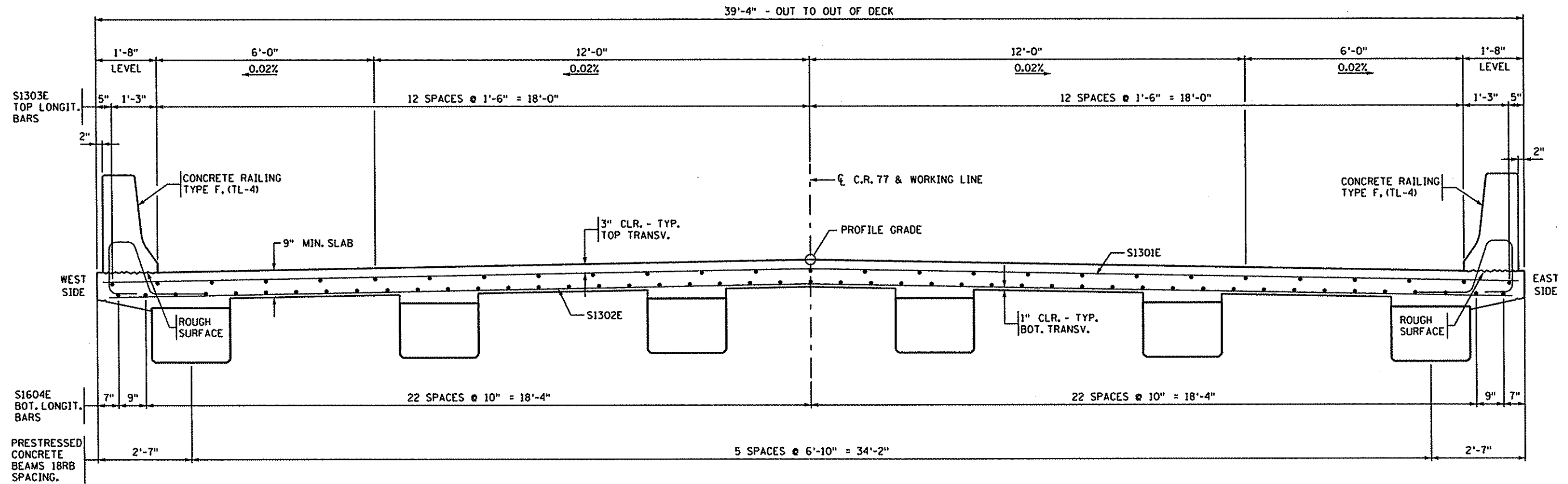
TITLE: **SUPERSTRUCTURE DETAILS**

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

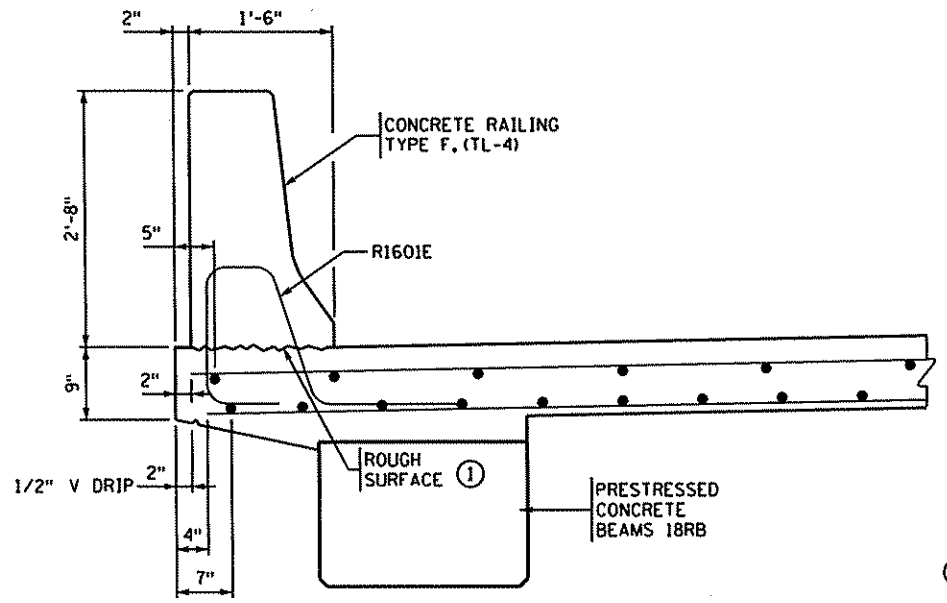
Sheet B16 of B25 Sheets

Bridge No. **02582**

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TRANSVERSE SECTION THRU DECK



EDGE OF DECK DETAIL

① SURFACE BETWEEN DECK AND BARRIER RAIL SHALL BE MADE ROUGH. THE LIMITS OF THE ROUGH SURFACE SHALL BE 2" INSIDE EITHER EDGE OF THE BARRIER RAIL FOR A TOTAL ROUGHNESS WIDTH OF 1'-2".

1/3/2011 2:31:56 PM K:\01898-00\cod\plan\br02582\CBR02582_SUP2.dgn

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James Archer
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 1/3/2011 REG NO: 45501

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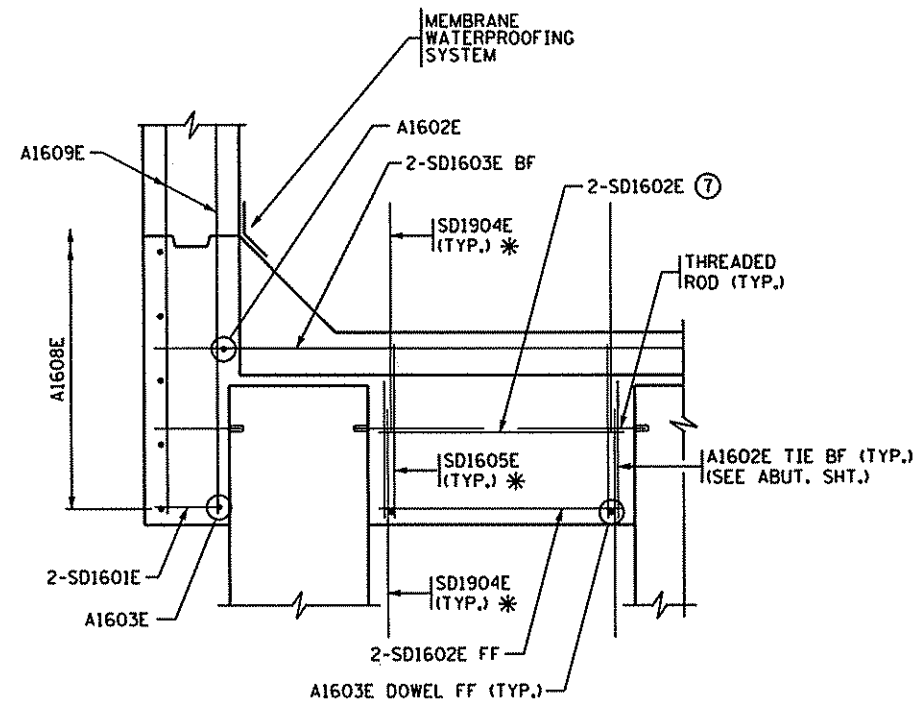
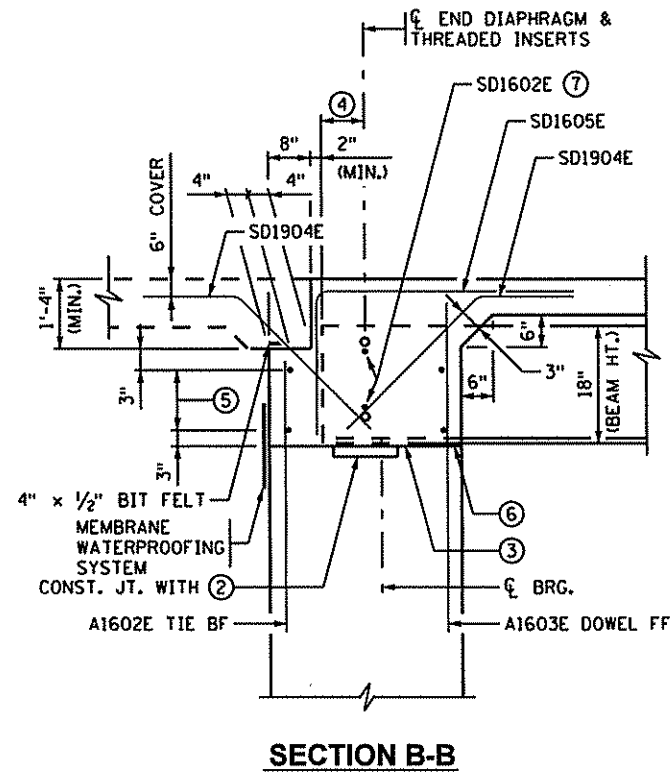
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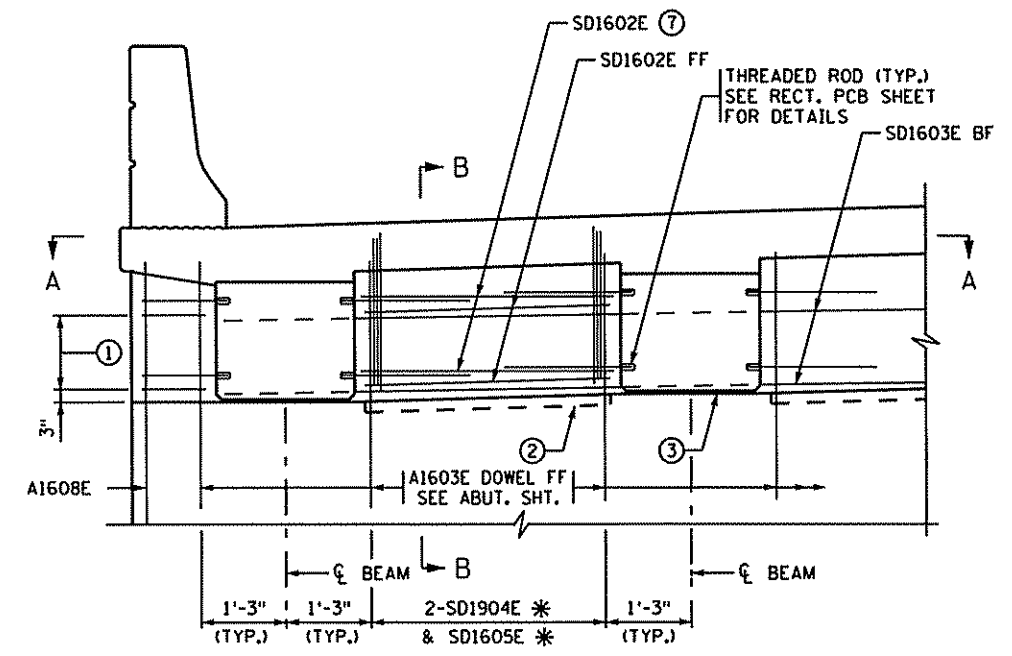
TITLE: **SUPERSTRUCTURE DETAILS**

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

Bridge No. **02582**



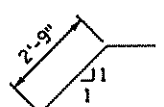
SECTION A-A
* SPACE WITH ABUTMENT DOWELS



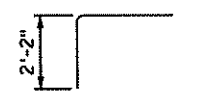
PARTIAL ELEVATION
* SPACE WITH ABUTMENT DOWELS

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.



SD1604E

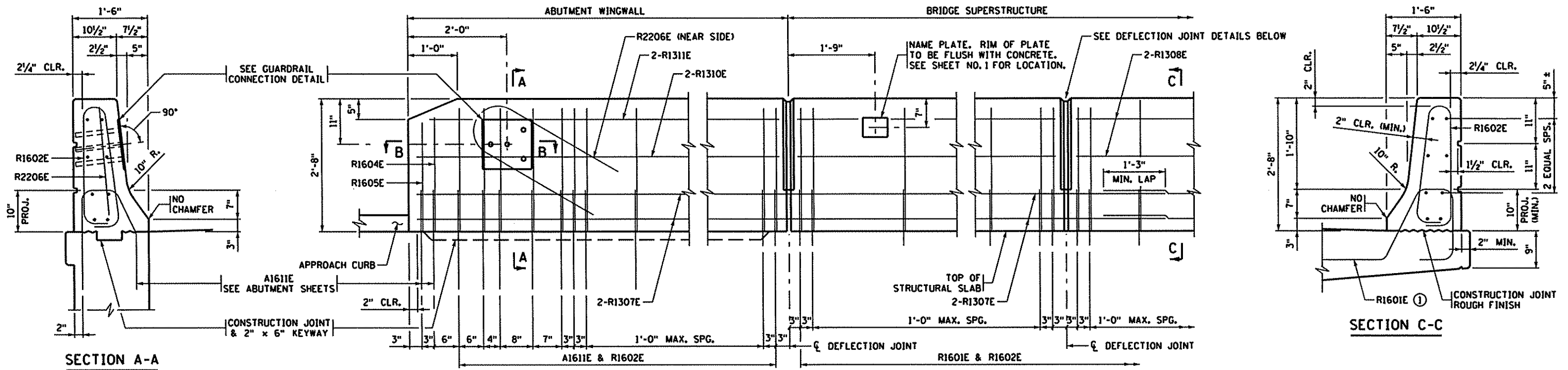


SD1605E

BILL OF REINFORCEMENT FOR END DIAPHRAGM				
BAR	NO.	LENGTH	SHAPE	LOCATION
SD1601E	8	1'-0"	—	HORIZ. END TIE
SD1602E	40	4'-4"	—	HORIZ.
SD1603E	4	38'-8"	—	HORIZ. BF
SD1904E	128	4'-9"	—	VERTICAL TIE
SD1605E	64	4'-2"	—	VERTICAL TIE

1/3/2011 2:32:07 PM K:\08598-00\cod\plan\br\02582\CBR02582_SUP3.dgn

<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CHK</th> <th>REVISIONS</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO	DATE	BY	CHK	REVISIONS						<p>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.</p> <p style="text-align: center;"><i>James Archer</i></p> <p>LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER DATE: 1/3/2011 REG NO: 45501</p>	 WSB <small>& Associates, Inc.</small> INFRASTRUCTURE • ENGINEERS • PLANNERS	701 Xenia Ave. South Suite 300 Minneapolis, MN 55416 763-541-4800 FAX 763-541-1700	C.R. 77 ANOKA COUNTY S.A.P. 02-598-06	TITLE: SUPERSTRUCTURE DETAILS	DES: JDA DR: BJR CHK: BRL CHK: JDA	Bridge No. 02582
NO	DATE	BY	CHK	REVISIONS													
Sheet B18 of B25 Sheets																	



SECTION A-A

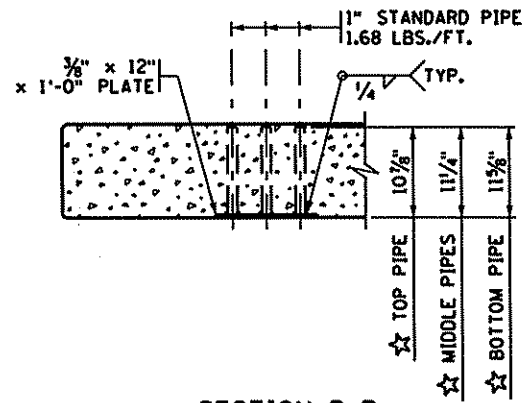
SECTION C-C

DEFLECTION JOINT DEFLECTION JOINT

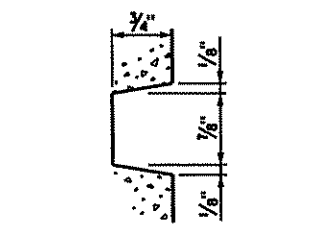
INSIDE ELEVATION OF BARRIER

BARRIER MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350

BILL OF REINFORCEMENT FOR BARRIER				
BAR	NO.	LENGTH	SHAPE	LOCATION
R1601E	106	5'-7"		BARRIER DOWEL
R1602E	158	6'-3"		BARRIER VERTICAL
R1604E	4	5'-9"		BARRIER VERTICAL
R1605E	4	5'-7"		BARRIER VERTICAL
R2206E	4	6'-6"		BARRIER VERTICAL
R1307E	16	31'-0"		BARRIER LONGIT.
R1308E	24	14'-6"		BARRIER LONGIT.
R1310E	8	7'-10"		BARRIER LONGIT.
R1311E	8	7'-7"		BARRIER LONGIT.

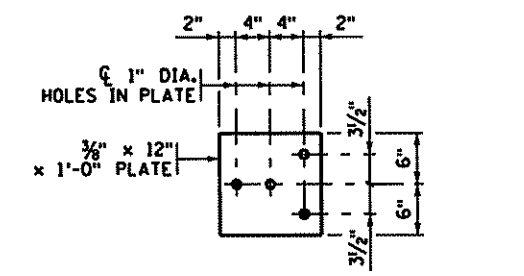


SECTION B-B



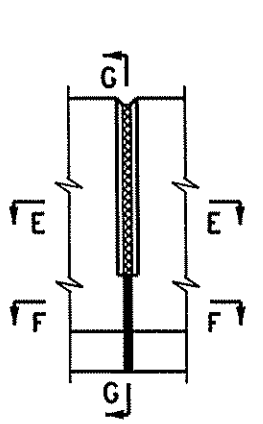
BARRIER RUSTICATION

☆ DIMENSIONS INCLUDE 3/8" PLATE

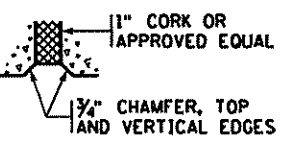


GUARDRAIL CONNECTION DETAIL

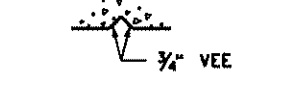
GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394 ESTIMATED WEIGHT = 22 LBS



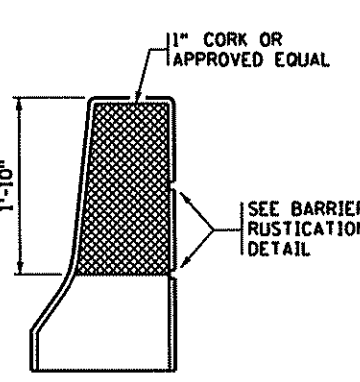
ELEVATION



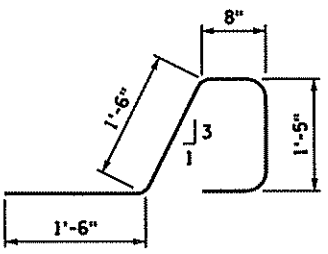
SECTION E-E



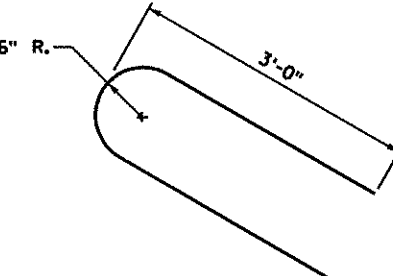
SECTION F-F



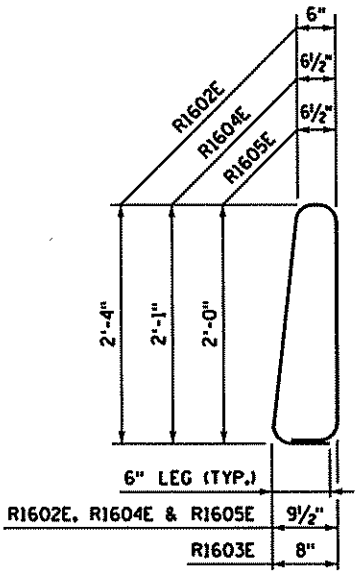
SECTION G-G



R1601E



R2206E



R1602E, R1604E & R1605E

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 = 439 LBS./FT. (0.108 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
 [Signature]
 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.
 LICENSED PROFESSIONAL ENGINEER: BARRITT LOVELL
 DATE: 12/10 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.R. 77
 ANOKA COUNTY
 S.A.P. 02-598-06

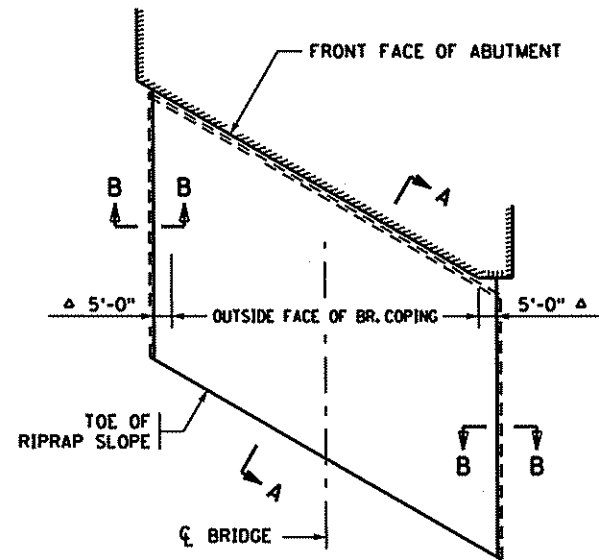
TITLE: **CONCRETE BARRIER (TYPE F, TL-4)**
 WITH INTEGRAL END POST (WITHOUT CONCRETE WEARING COURSE)

DES: JDA DR: BJR
 CHK: BRL CHK: JDA
 Sheet B19 of B25 Sheets

Bridge No. 02582

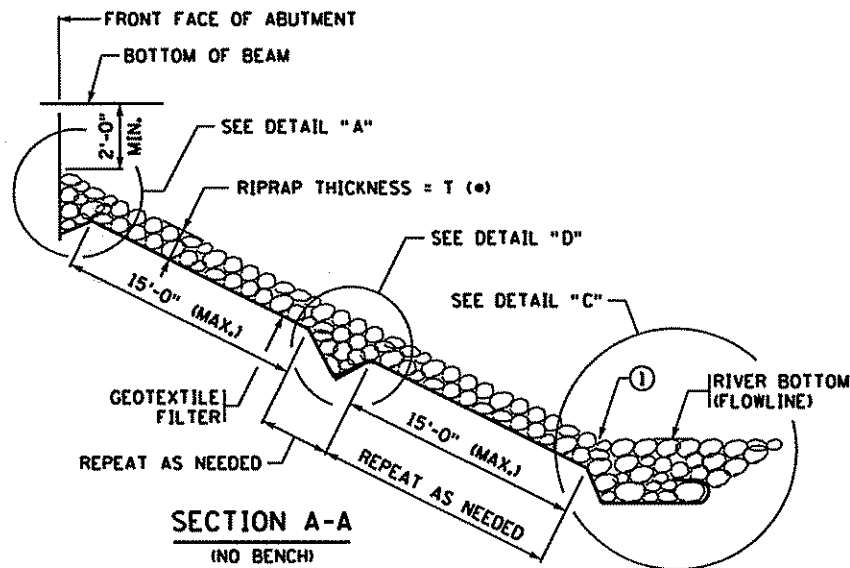
FIG. 5-397.115

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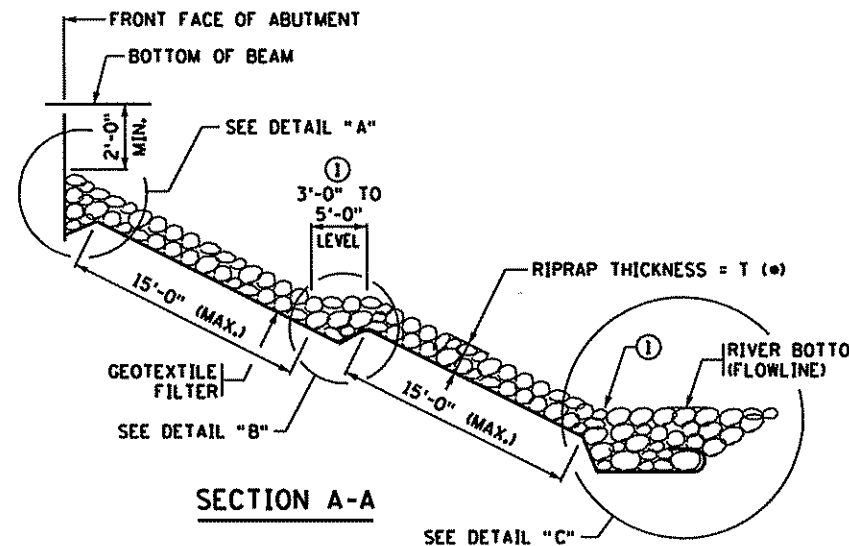


LAYOUT FOR 1:2 SLOPES

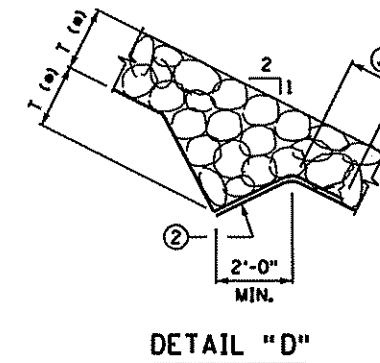
5'-0" FOR TANGENT BRIDGE SUPERSTRUCTURES. VARIES 5'-0" MINIMUM FOR CURVED BRIDGE SUPERSTRUCTURES.



SECTION A-A
(NO BENCH)

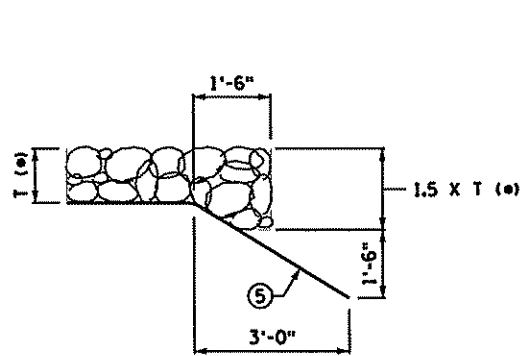


SECTION A-A

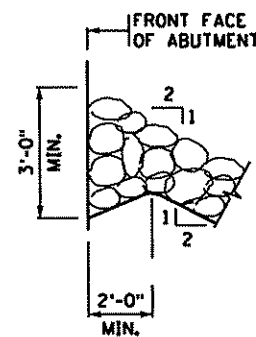


DETAIL "D"

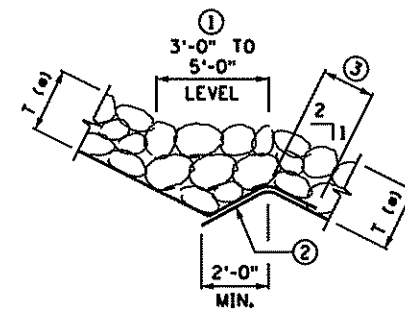
DIMENSION T	
CLASS III	= 1'-6"
CLASS IV	= 2'-0"



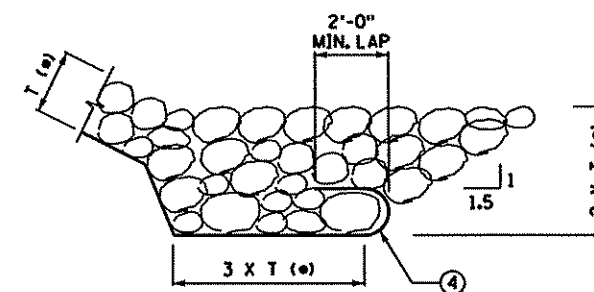
SECTION B-B



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 III 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.

1/3/2011 2:32:29 PM K:\01898-00\Cad\plan\br-02582\C8502582_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 DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

James Archer
 LICENSED PROFESSIONAL ENGINEER: JAMES ARCHER
 DATE: 1/3/2011 REG NO: 45501

WSB
 & Associates, Inc.
 INFRASTRUCTURE - ENGINEERS - PLANNERS

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

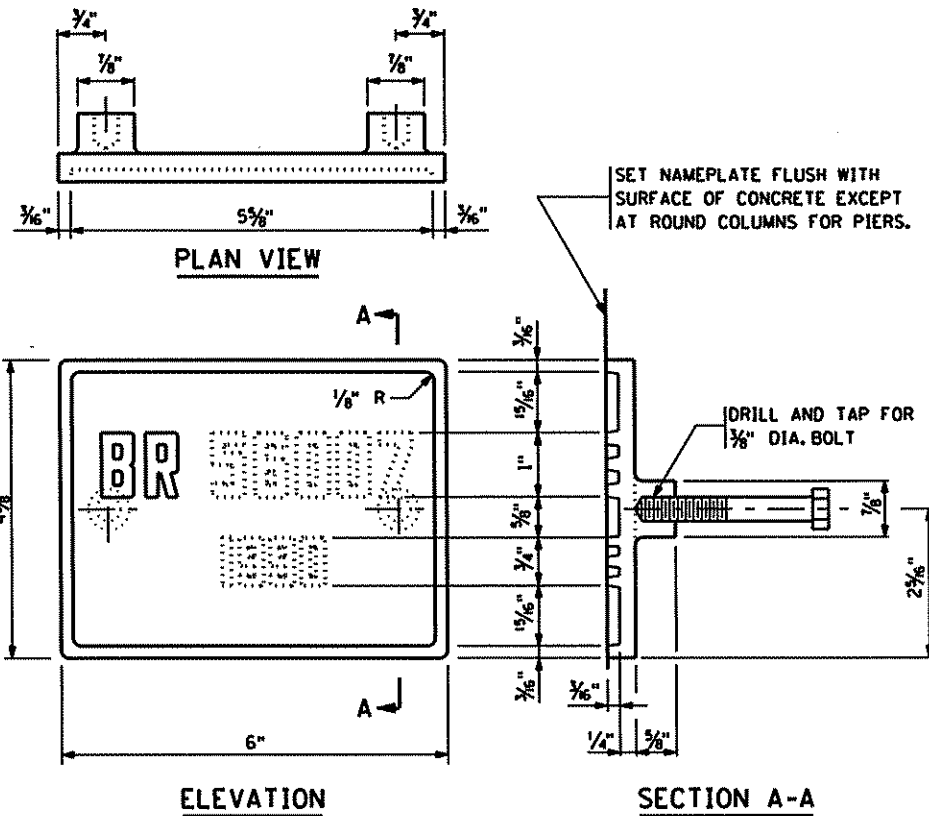
C.R. 77
ANOKA COUNTY
S.A.P. 02-598-06

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

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

Sheet B20 of B25 Sheets

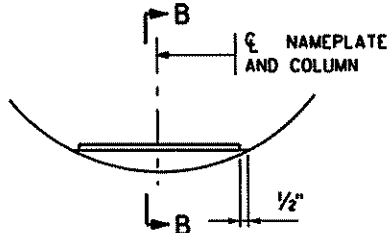
Bridge No.
02582



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

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

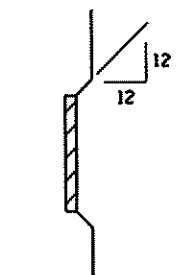
BRIDGE 02582
YEAR 2011



NAMEPLATE PLACEMENT
(ROUND CONCRETE PIER COLUMNS)

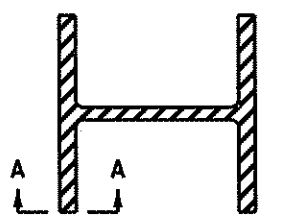


NUMBERS FOR NAMEPLATE

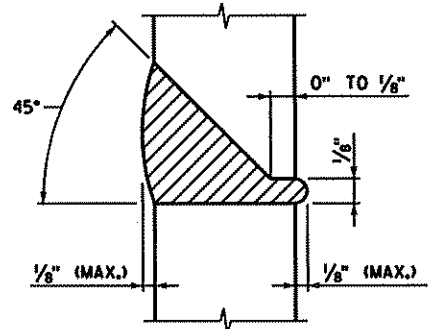


SECTION B-B

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 AT JOINT



SECTION A-A
100% BUTT WELDED PILE SPLICE

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.

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

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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: 1/3/2011 REG NO: 45501

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

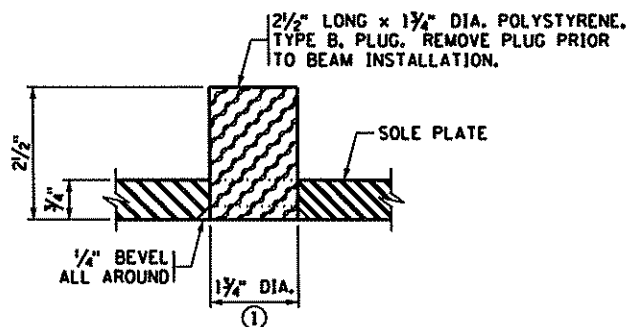
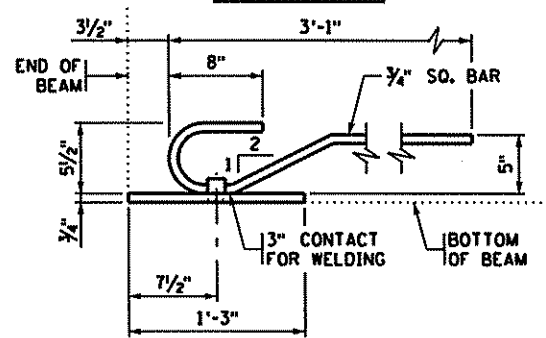
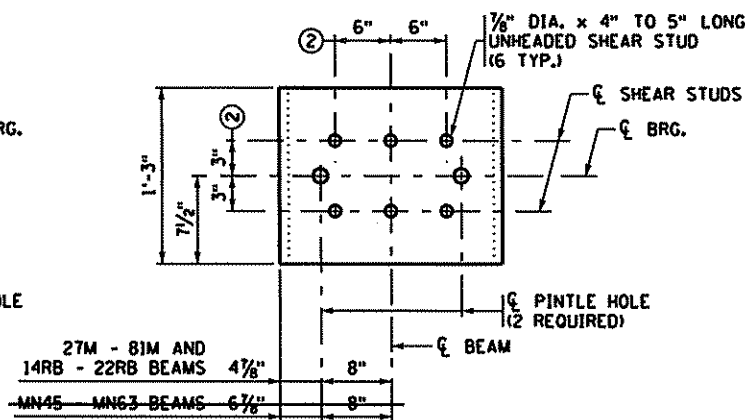
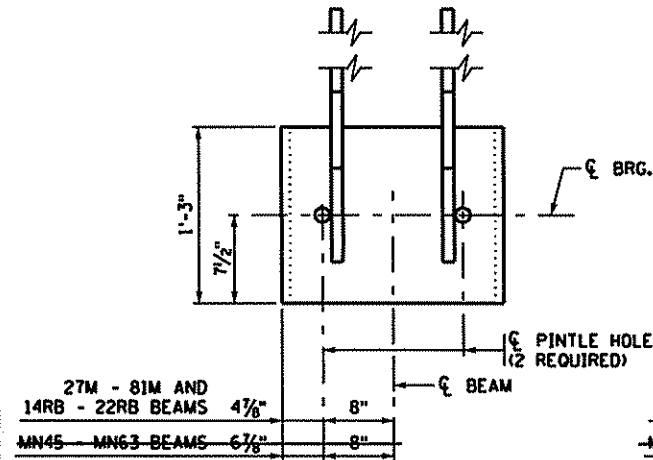
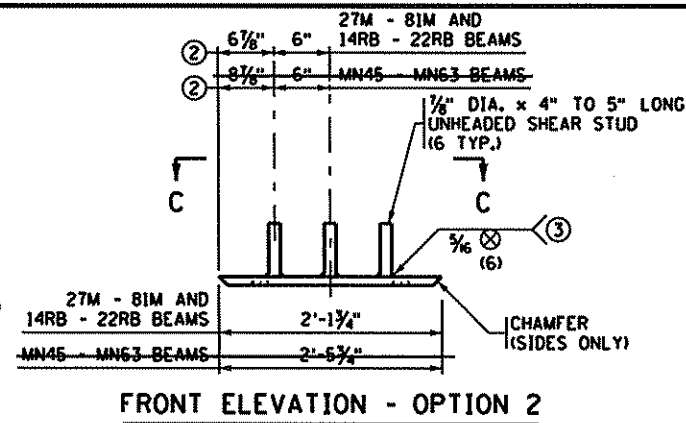
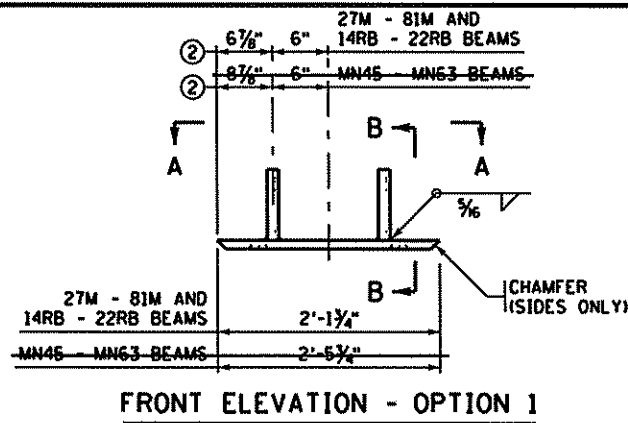
C.R. 77
ANOKA COUNTY
S.A.P. 02-598-06

TITLE:
BRIDGE DETAILS

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

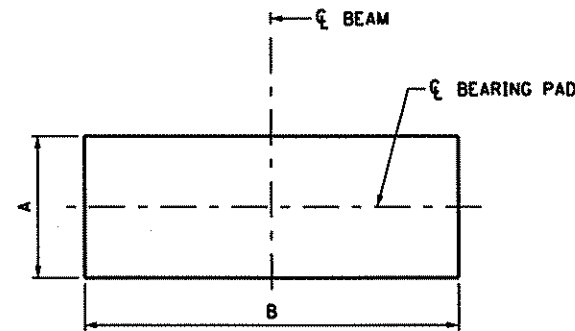
Sheet B21 of B25 Sheets

Bridge No.
02582

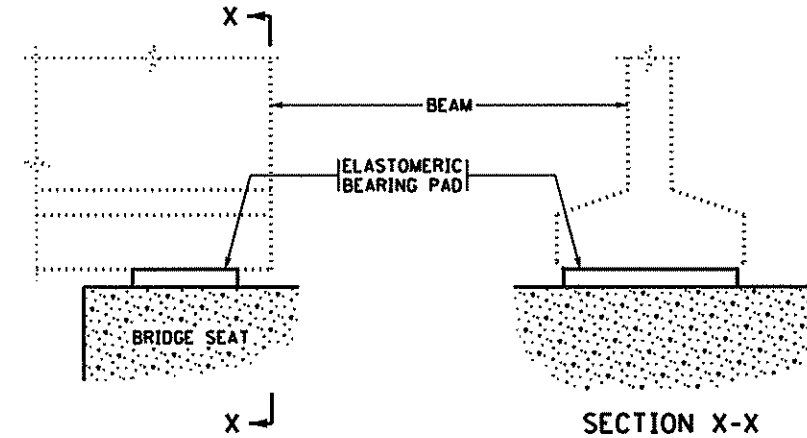


NOTES:

- 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.



PLAN
(BEAM NOT SHOWN)



SIDE ELEVATION

PAD TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE			SHAPE FACTOR
			A	B	D ①	
I	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 I, INCLUDED IN ITEM "ELASTOMERIC BEARING PAD" PER EACH.
- ① "D" INDICATES THE THICKNESS OF THE BEARING PAD.

APPROVED: OCTOBER 26, 2005

Garrett 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

APPROVED: NOVEMBER 22, 2002

Garrett J. Morgan
STATE BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

ELASTOMERIC BEARING PAD
(PRESTRESSED CONCRETE BEAMS)

REVISION
12-17-2008

DETAIL NO.

B305

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: 1/3/2011 REG NO: 45501

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INFRASTRUCTURE - ENGINEERS - PLANNERS

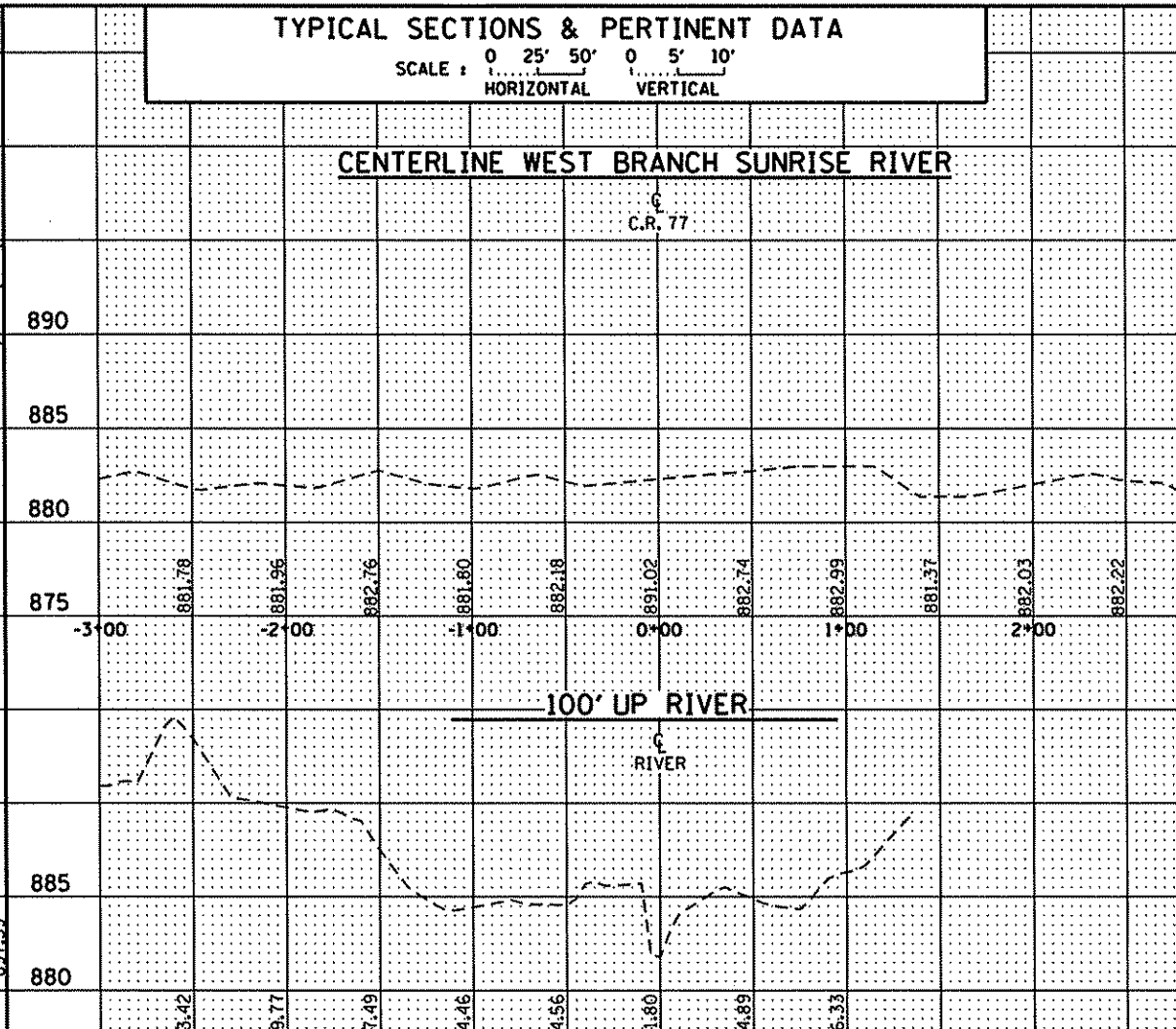
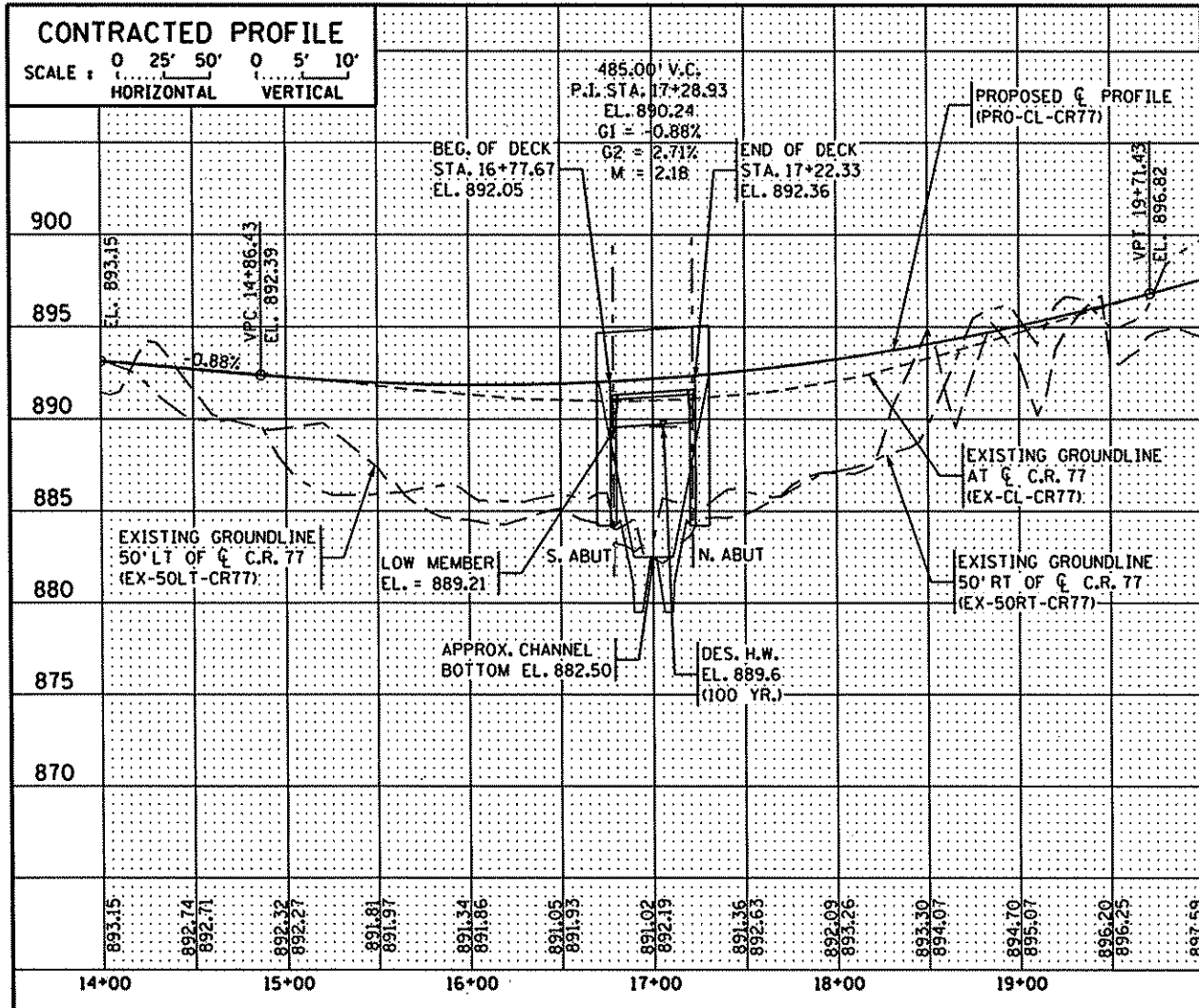
C.R. 77
ANOKA COUNTY
S.A.P. 02-598-06

TITLE:
BRIDGE DETAILS

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

Sheet B22 of B25 Sheets

Bridge No.
02582



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: UNKNOWN OBTAINED FROM:
- OTHER DATA:

HYDRAULIC ENGINEERS RECOMMENDATION
DATE: 05/04/10

STREAM OR DITCH DESIGNATION: WEST BRANCH SUNRISE RIVER
DRAINAGE AREA: 45.5 SQ. MI.
MAX. FLOOD ON RECORD: UNKNOWN
MAXIMUM OBSERVED HIGHWATER ELEVATION: UNKNOWN
DESIGN FLOOD (100 YR. FREQ.): 628 C.F.S.
HEADWATER ELEVATION: 889.6 FT.
DESIGN MEAN VELOCITY THROUGH STRUCTURE: 3.5 F.P.S.
TOTAL STAGE INCREASE: 0.4 FT.
LOW MEMBER AT OR ABOVE ELEVATION: 889.0 FT.
WATERWAY AREA REQUIRED BELOW ELEV. 889.0 FT. = 181 SQ. FT. AT RIGHT ANGLES TO CHANNEL
BASIC FLOOD (100 YR. FREQ.): 628 C.F.S.
HEADWATER ELEVATION: 889.6 FT.
TOTAL STAGE INCREASE: 0.4 FT.
MEAN VELOCITY THROUGH STRUCTURE: 3.5 F.P.S.
FLOWLINE ELEVATION: 882.5 FT. SKEW ANGLE: 0°
ESTIMATED PRELIMINARY TOTAL SCOUR AT PIER EL. N/A FT. (500 YR. FREQ.)

SCOUR CONFIRMATION RECOMMENDATION
DATE: 05/04/10

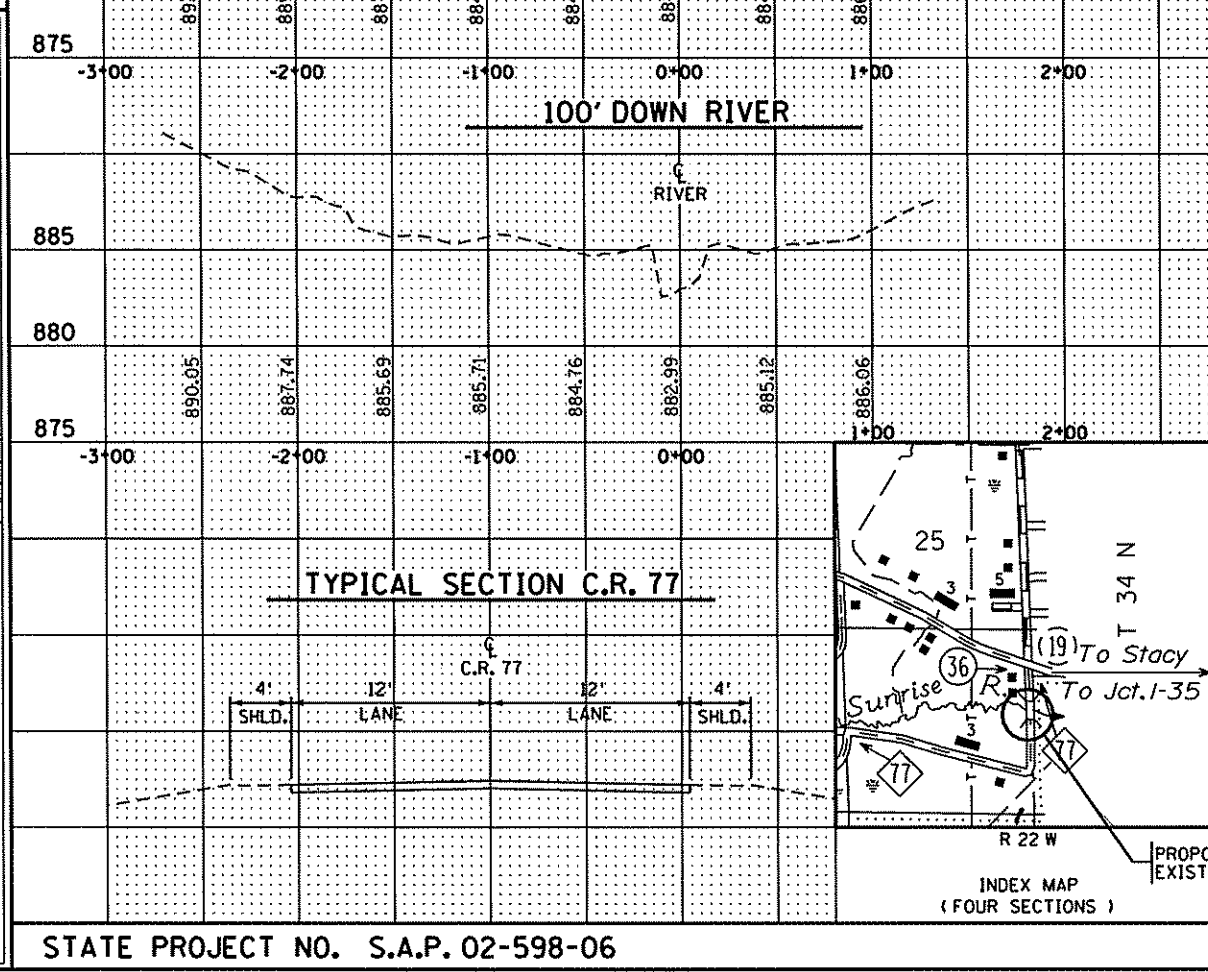
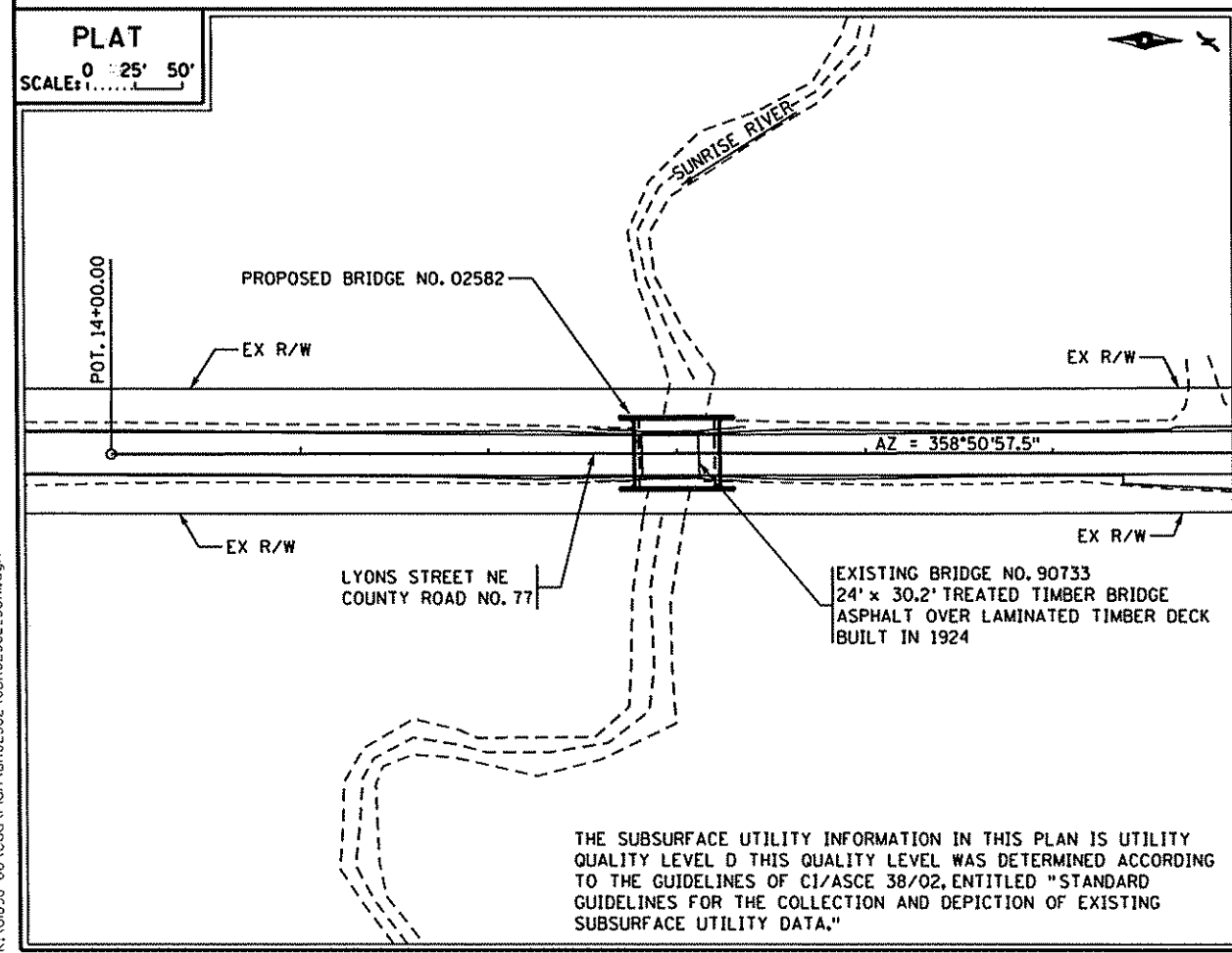
TOTAL SCOUR AT PIER EL. N/A (500 YR. FREQ.)
SCOUR CODE: L

BRIDGE SURVEY SHEETS MADE FROM :
ANOKA COUNTY SURVEY ON 08/05/2009

BENCH MARK ELEVATION 893.258 (N.A.V.D. 88 ADJ.)

LOCATION: EAST 1/4 CORNER SECTION 36
TOWNSHIP 34 N RANGE 22W
332 FEET ± SOUTH OF BRIDGE
NO. 90733

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



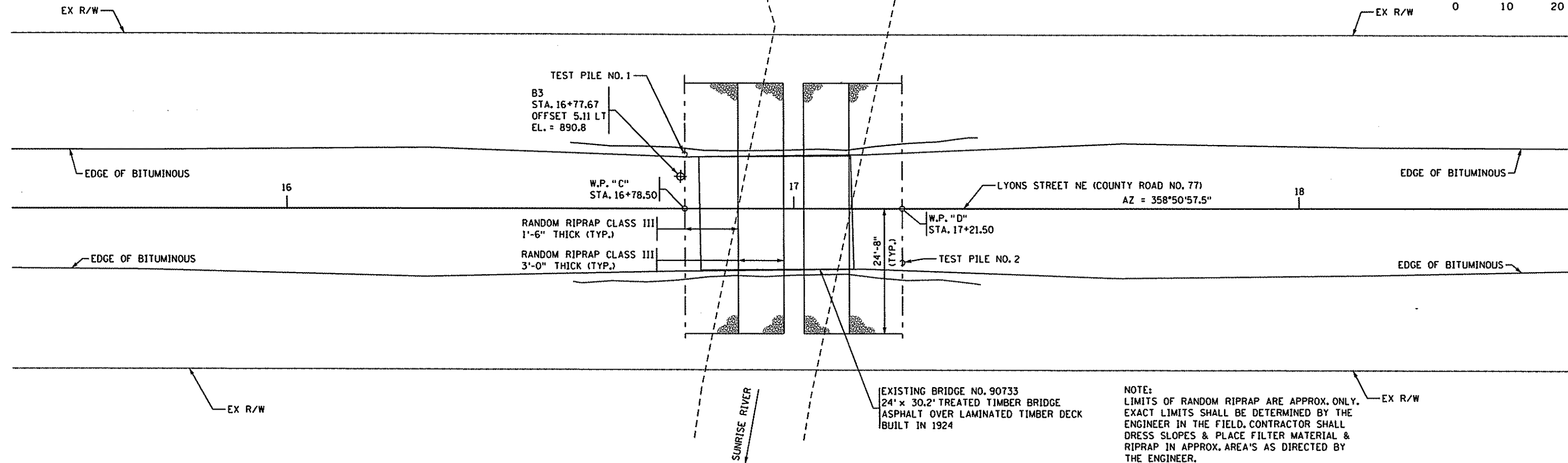
BRIDGE SURVEY

PROPOSED BRIDGE LOCATED ON C.R. 77
1/4 MILE SOUTH OF JCT. C.S.A.H. 36
AND C.R. 77 OVER THE SUNRISE RIVER

SEC 36 T 34 N R 22 W
COUNTY: ANOKA
TOWNSHIP: LINWOOD

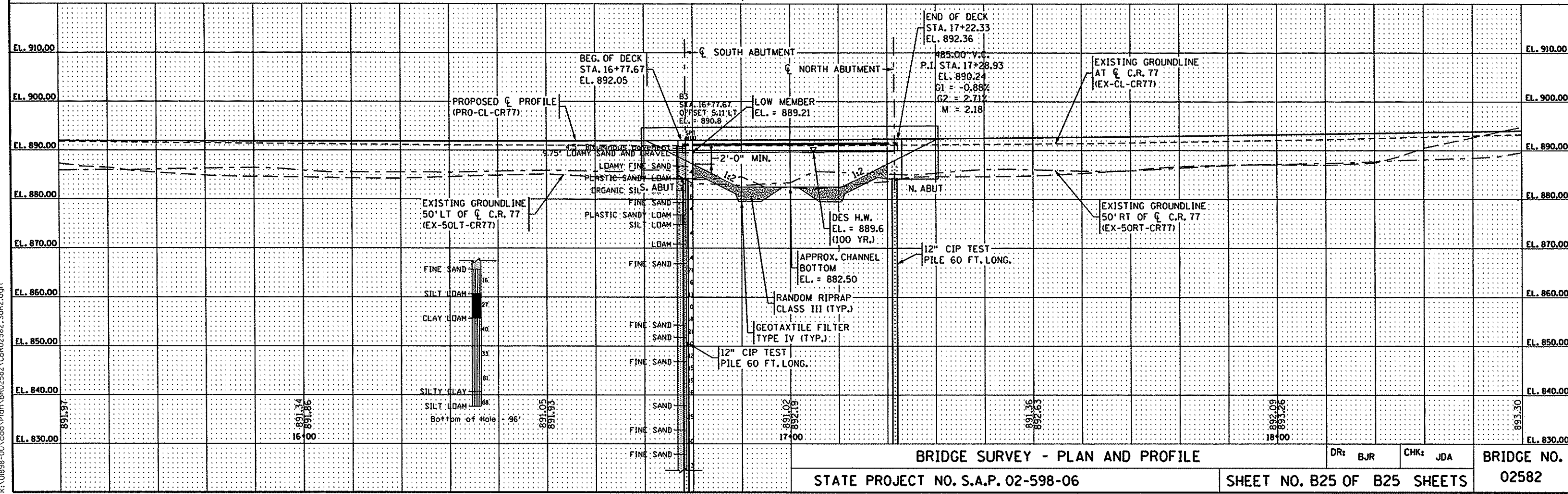
BRIDGE NO. 02582

1/3/2010 2:33:28 PM K:\01898-00\cod\Plan\BR02582\CBR02582_SURR.dgn



EXISTING BRIDGE NO. 90733
24' x 30.2' TREATED TIMBER BRIDGE
ASPHALT OVER LAMINATED TIMBER DECK
BUILT IN 1924

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

STATE PROJECT NO. S.A.P. 02-598-06

SHEET NO. B25 OF B25 SHEETS

BRIDGE NO.
02582

DR: BJR
CHK: JDA

1/3/2011 2:33:37 PM k:\01898-00\cadd\plan\B25 of B25\CBR02582_SUR2.dgn