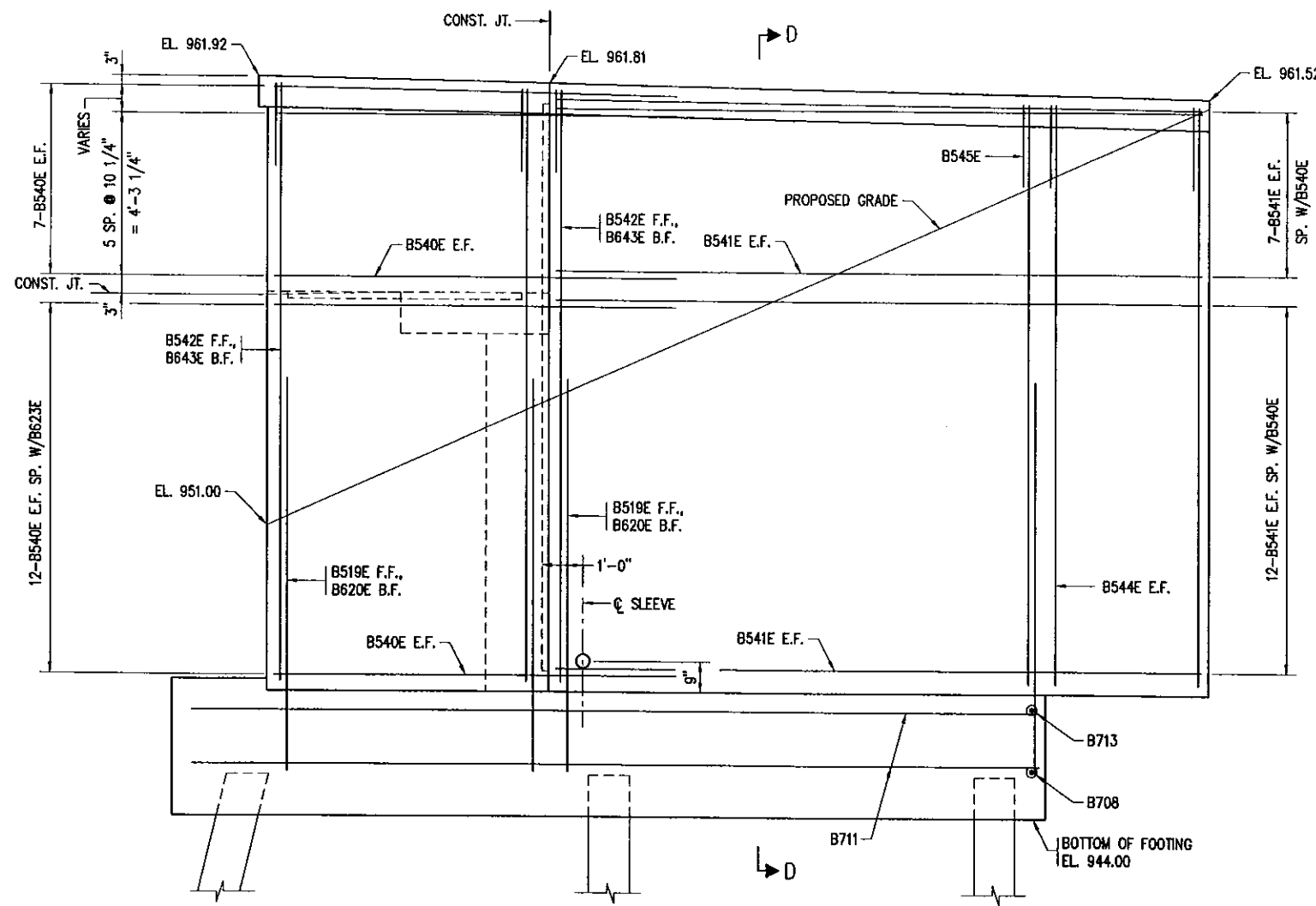
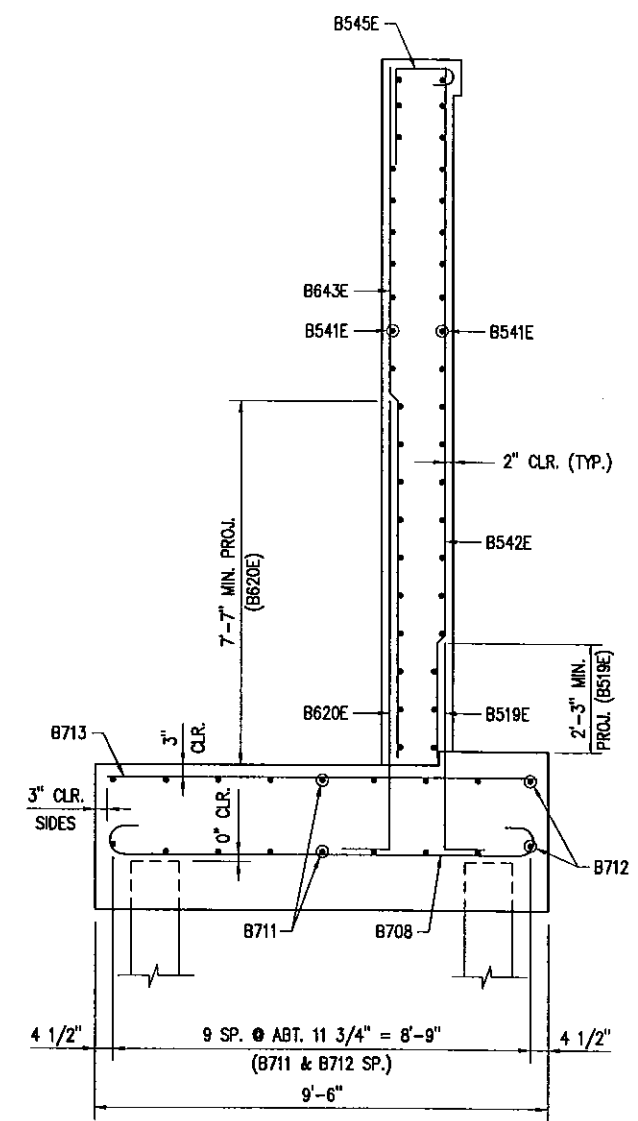


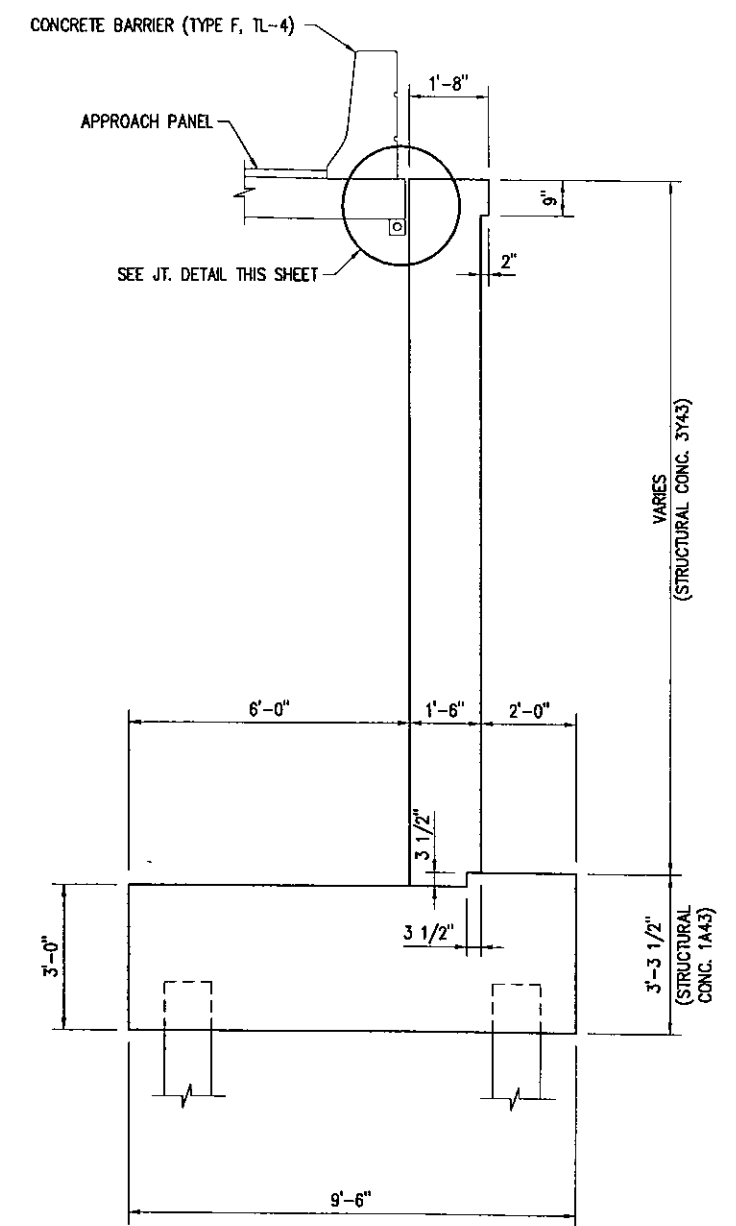
- KEY NOTES:**
- ① PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.
 - ② THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING PRIOR TO SEALING THE JOINT.
 - ③ HOT POUR JOINT SEALER SPEC. 3725. TOP OF SEALER FLUSH TO 1/8 INCH BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION E8H JOINTS FLUSH WITH SURFACE (+ 1/8 INCH OR - 1/8 INCH).
 - ④ BACKFILL WITH FINE FILTER AGGREGATE (MNDOT 3149) MODIFIED TO 3% PASSING THE NO. 200 SIEVE (INCIDENTAL).
 - ⑤ 2" NOM. DIA. THERMOPLASTIC PIPE AS PER ASTM D1785M, SCH. 40. SLOPE PIPE TO DITCH OR DRAINAGE SYSTEM AS DIRECTED BY THE ENGINEER IN THE FIELD. WRAP PERFORATED PIPE WITH GEOTEXTILE TYPE I AS PER SPEC. 3733. 1/8 INCH 12" MINIMUM SLOPE. FURNISHING AND INSTALLING THE DRAIN SYSTEM IS INCIDENTAL.
 - ⑥ DETAIL AND NOTES PROVIDED FOR REFERENCE ONLY. PAYMENT IS INCLUDED IN APPROACH PANEL WORK.



NORTHEAST WINGWALL ELEVATION
SCALE: 0 2'-0"



SECTION D-D
SCALE: 0 2'-0"



SECTION B-B
SCALE: 0 2'-0"

State Aid Proj. No. 098-594-002

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
NAME: *Jon W. Siter* LIC. NO. 25128 DATE: 06/28/2013

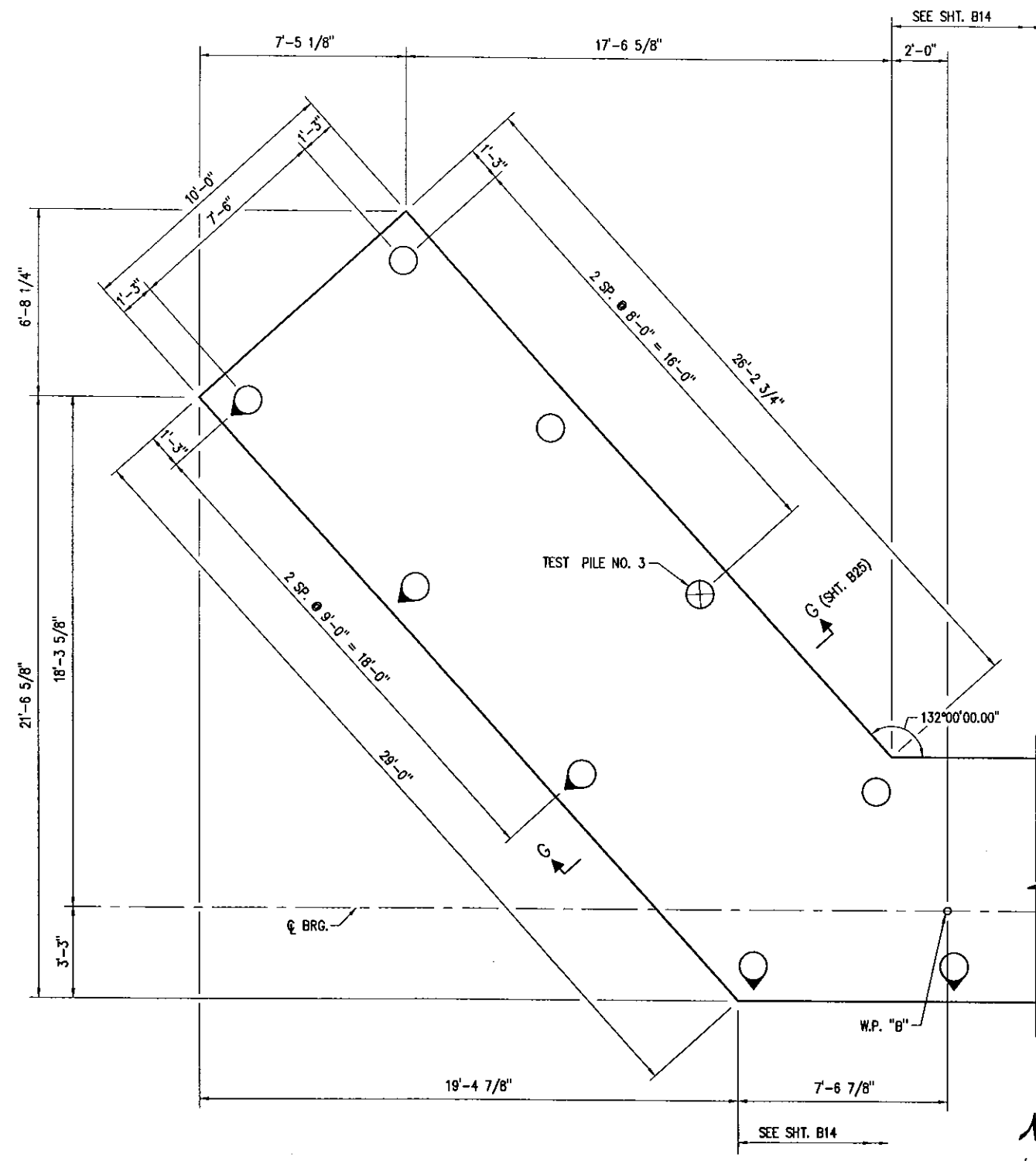
TITLE: **NORTHEAST WINGWALL DETAILS**

DES: CJM	DR: GAV	APPROVED:
CHK: RAM	CHK: JWS	
Sheet No. B21 of 54 Sheets		

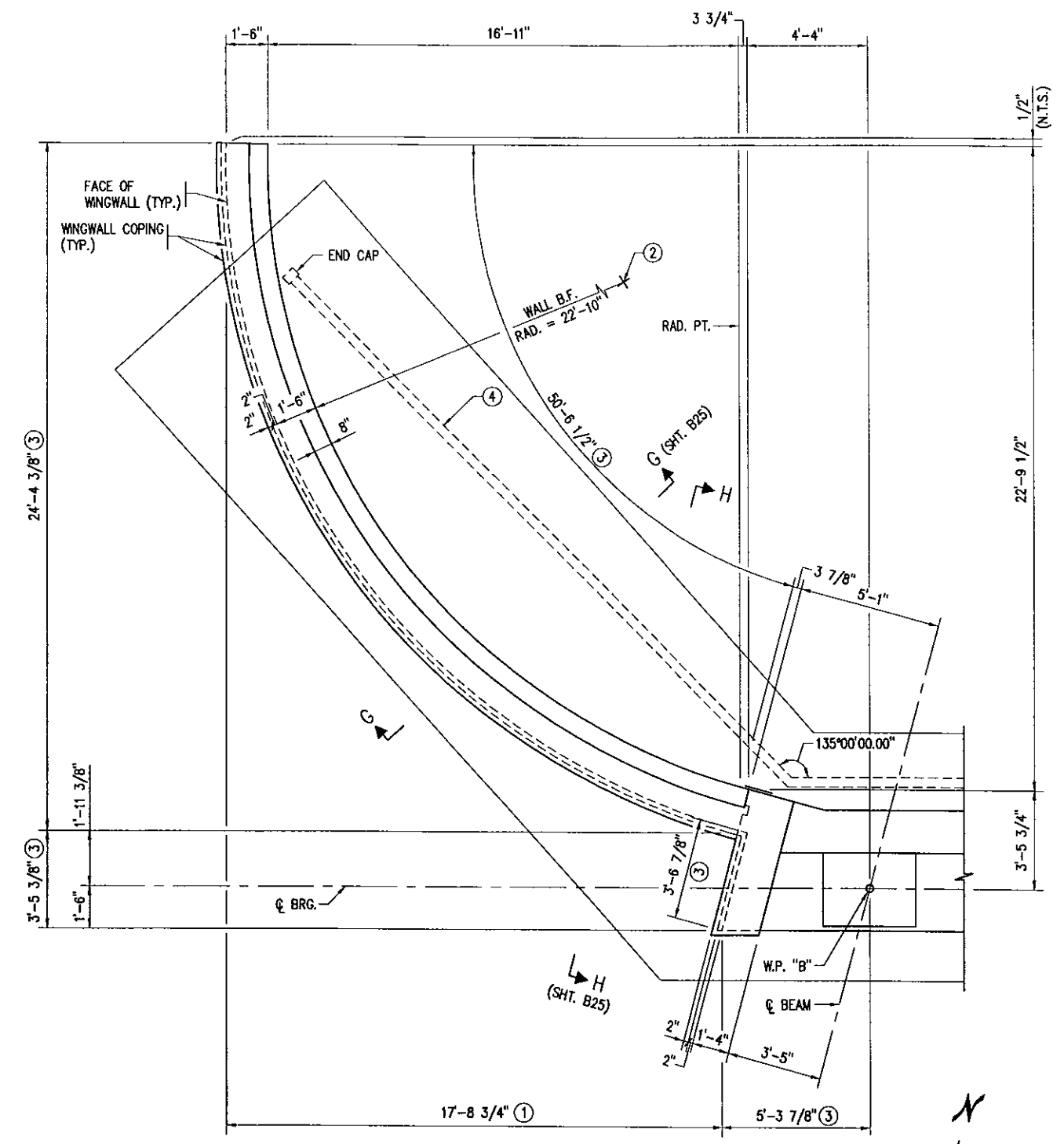
Bridge No. 27B90

KEY NOTES:

- ① DIMENSION MEASURED AT FACE OF WINGWALL AT TOP OF FOOTING.
- ② CENTER OF RADIUS X=463752.449, Y=148711.794.
- ③ MEASURED ALONG BACKFACE OF WALL.
- ④ FOR DRAINAGE SYSTEM DETAILS SEE DETAIL B910 SHT. B50



PARTIAL FOOTING PLAN-NORTH ABUTMENT
SCALE: 0 2'-8"



PLAN NORTHWEST RETAINING WALL
SCALE: 0 2'-8"

State Aid Proj. No. 098-594-002

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
NAME: *Jon W. Sitter* LIC. NO. 25128 DATE 06/28/2013
JON W. SITTER

TITLE:
**NORTH ABUT. RETAINING WALL
FOOTING & WALL GEOMETRICS**

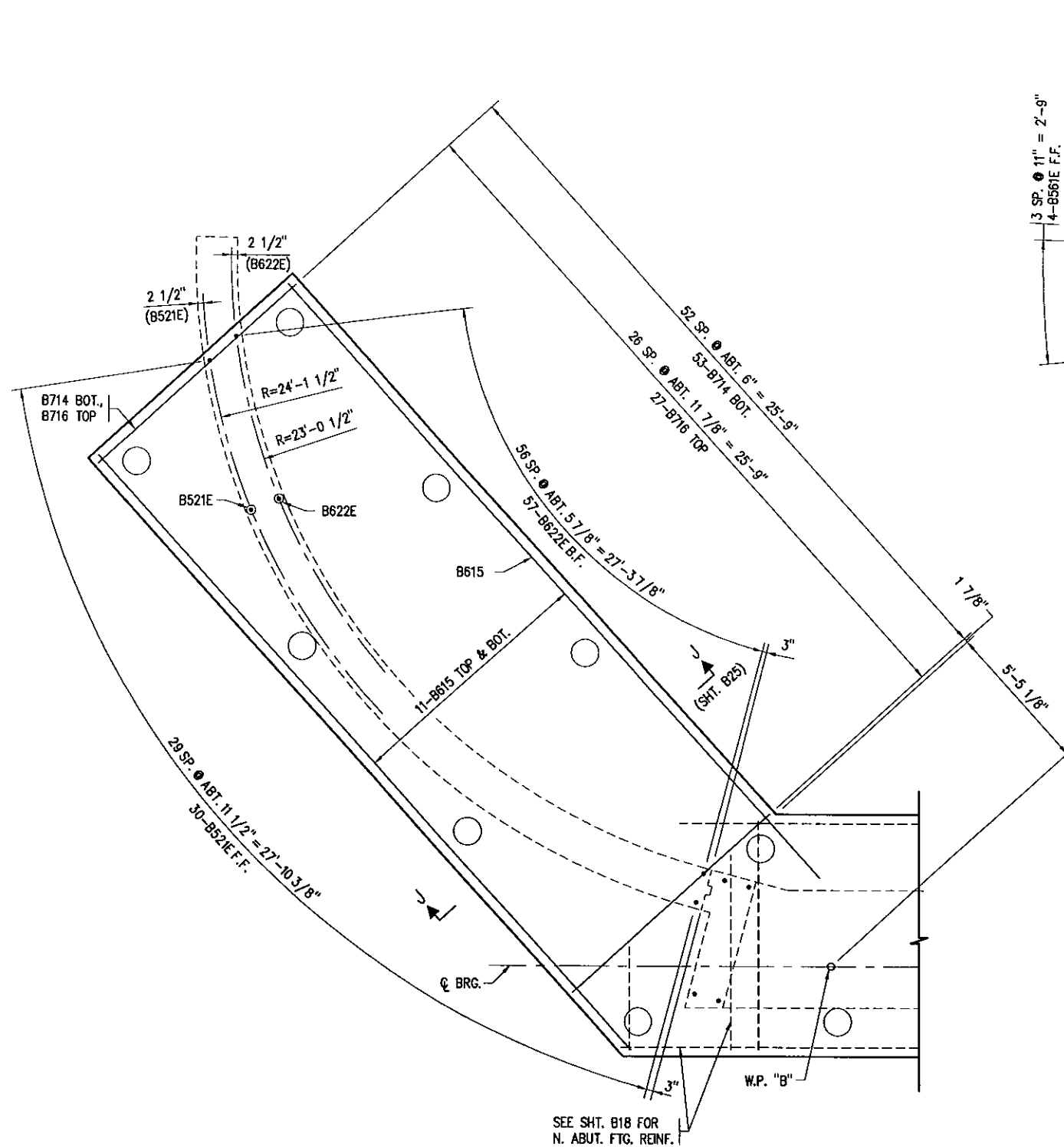
DES: CM	DR: MAM	APPROVED:
CHK: RAM	CHK: JNS	

Sheet No. B22 of 54 Sheets

Bridge No.
27B90

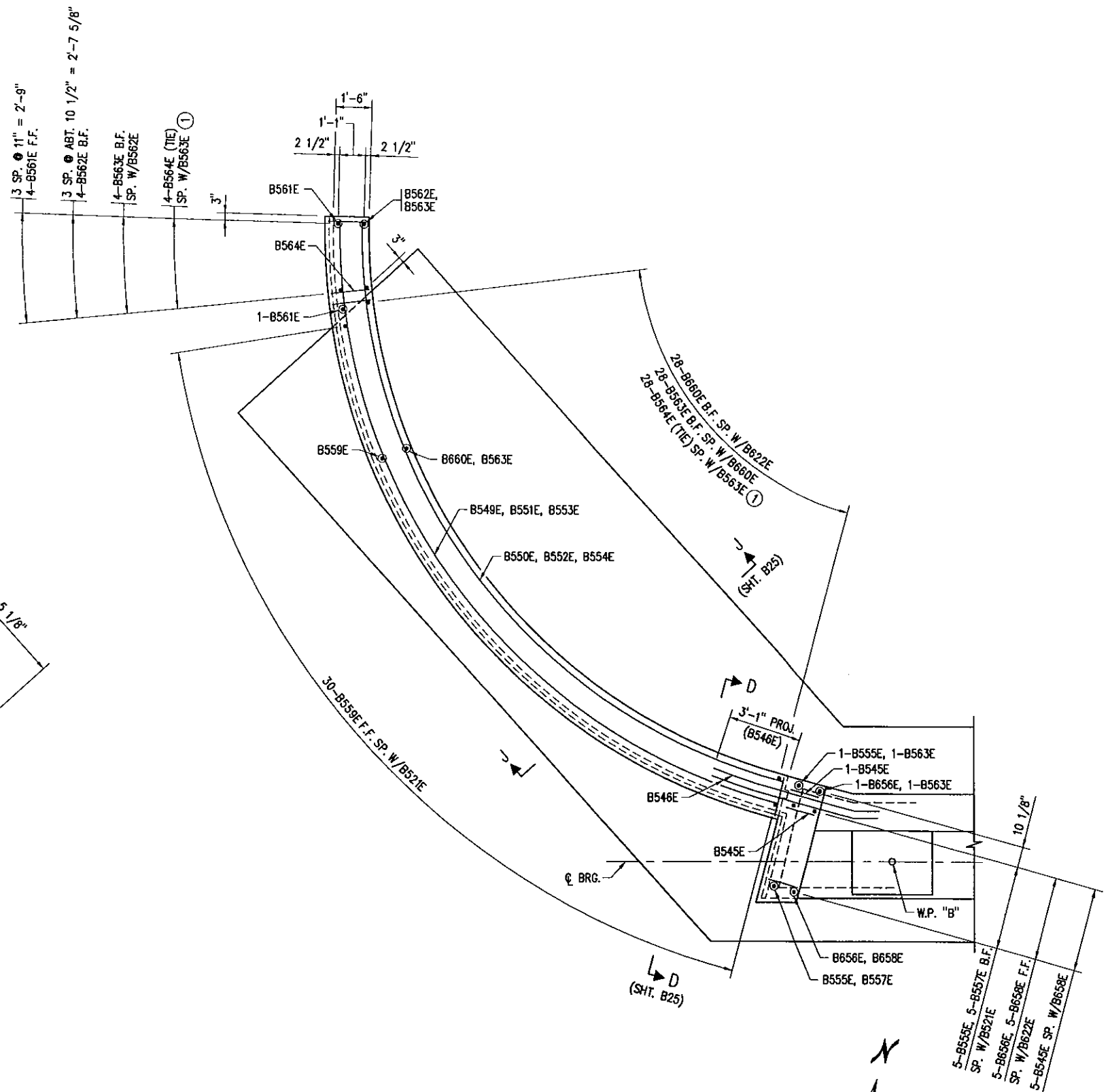
KEY NOTES:

① TIE BARS SHALL BE ALIGNED PERPENDICULAR TO BACKFACE OF RETAINING WALL



PARTIAL FOOTING PLAN-NORTH ABUTMENT

SCALE: 0 2'-8"



PLAN NORTHWEST RETAINING WALL

SCALE: 0 2'-8"



NOTES:
1. B.F. = BACK FACE
F.F. = FRONT FACE
E.F. = EACH FACE

State Aid Proj. No. 098-594-002

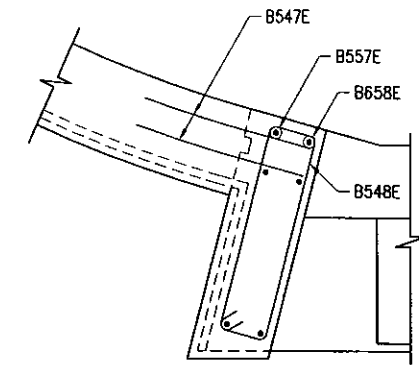
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
NAME: *Jon W. Siver* LIC. NO. 25128 DATE 06/28/2013
JON W. SIVER

TITLE:
NORTH ABUTMENT RETAINING WALL FOOTING & WALL REINF.

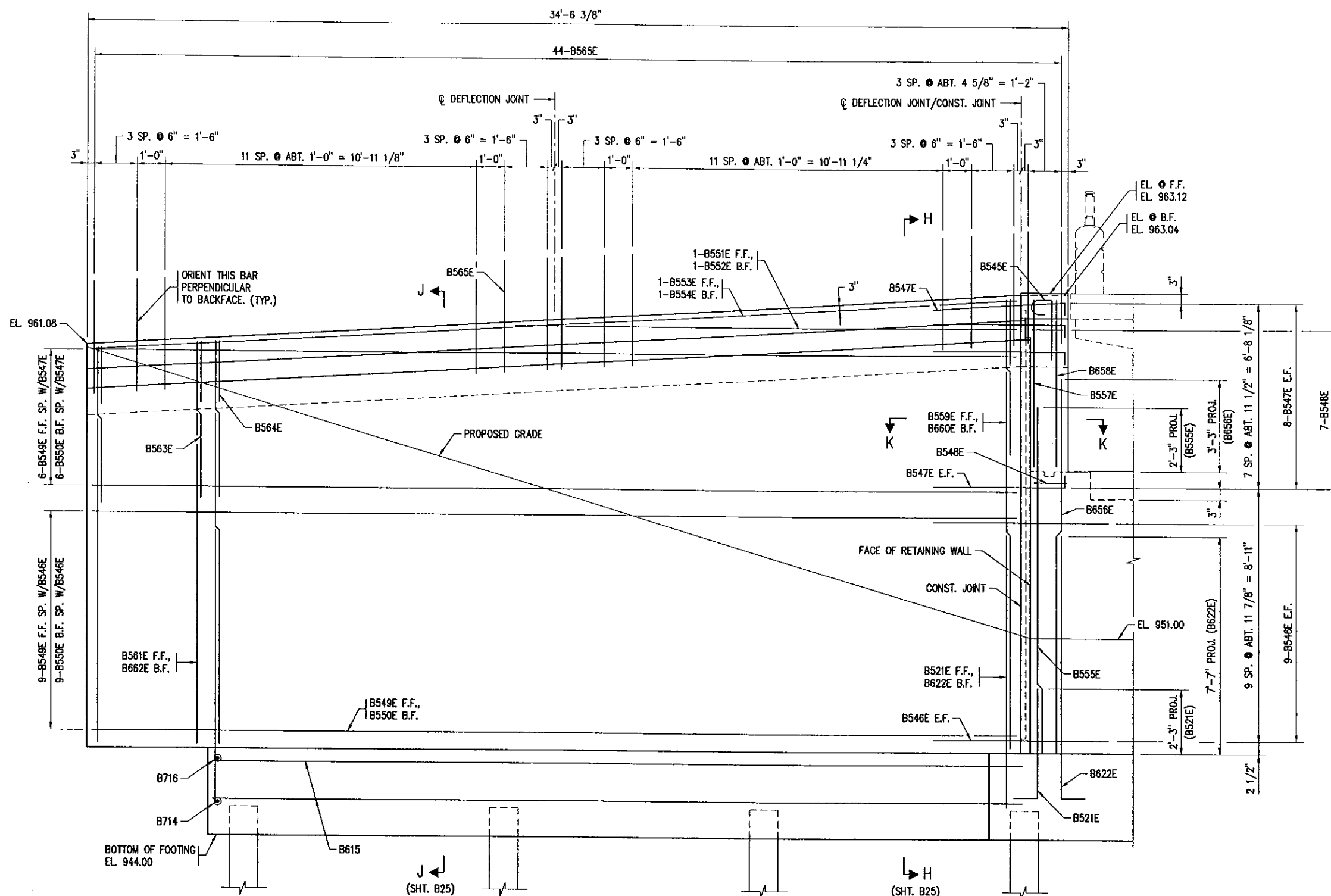
DES: CJM	DR: MAM	APPROVED:
CHK: RAM	CHK: JWS	

Sheet No. B23 of 54 Sheets

Bridge No. 27B90



SECTION K-K
(RETAINING WALL TO ABUTMENT TIE REINFORCEMENT)
SCALE: 0 2'-0"



DEVELOPED NORTHWEST WINGWALL ELEVATION

SCALE: 0 2'-0"

(OUTSIDE FACE OF WINGWALL)

NOTES:
1. B.F. = BACK FACE
F.F. = FRONT FACE
E.F. = EACH FACE

State Aid Proj. No. 098-594-002

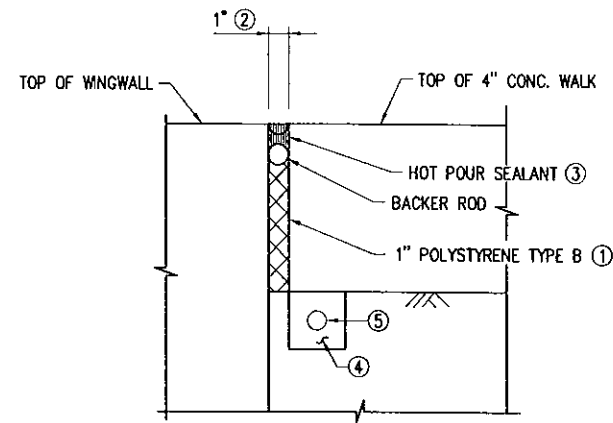
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
NAME: *Jon W. Siter* LIC. NO. 25128 DATE 06/28/2013
JOHN W. SITER

TITLE:
NORTHWEST RETAINING WALL ELEVATION

DES: CJM	DR: KDM	APPROVED:
CHK: RAM	CHK: JWS	

Sheet No. B24 of 54 Sheets

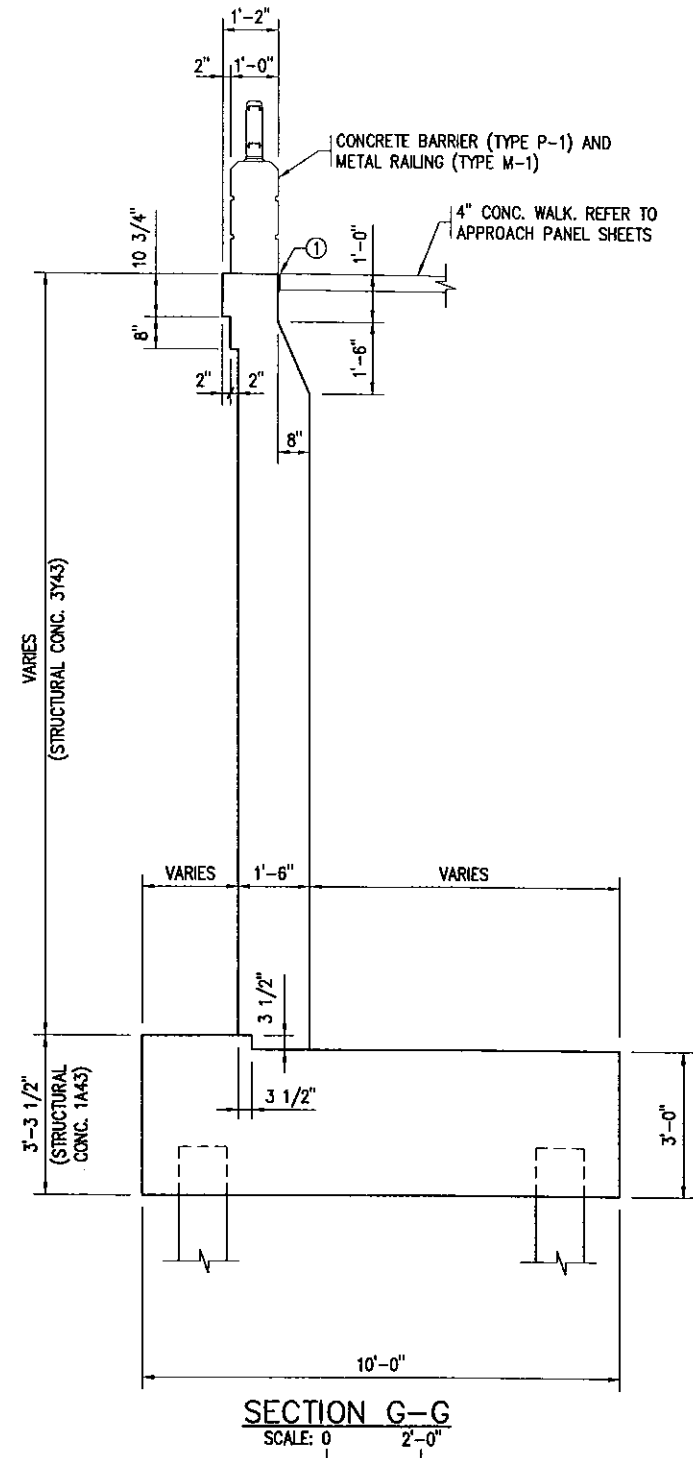
Bridge No.
27B90



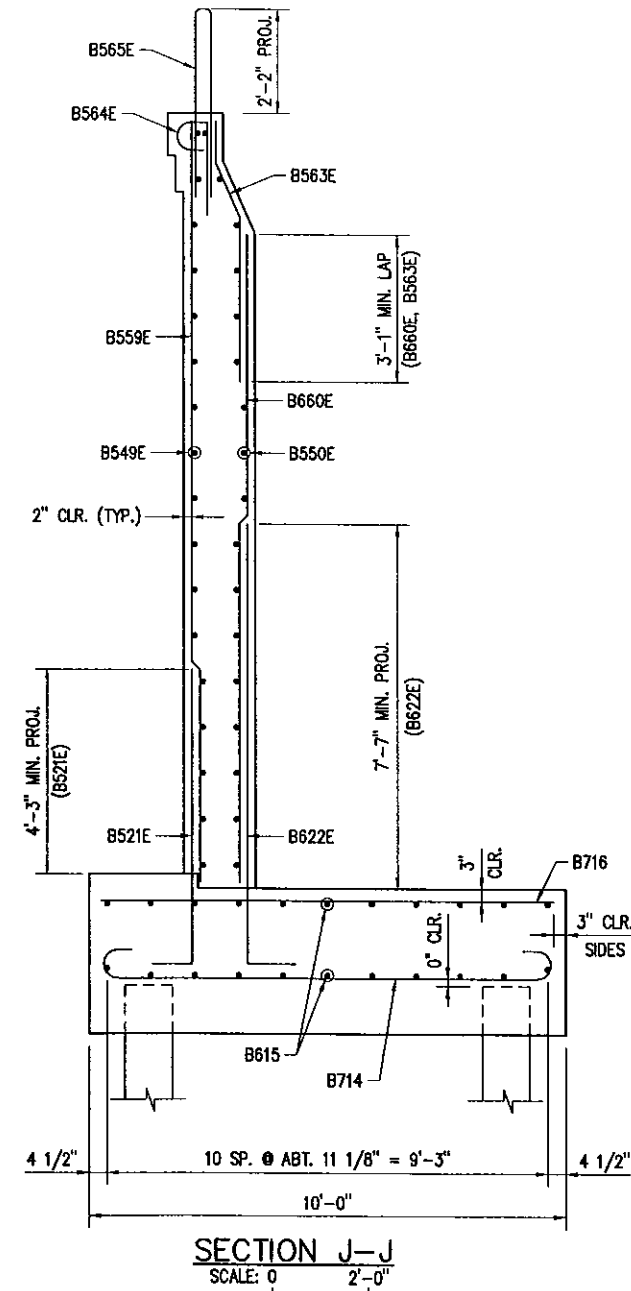
JOINT DETAIL ②⑥

KEY NOTES:

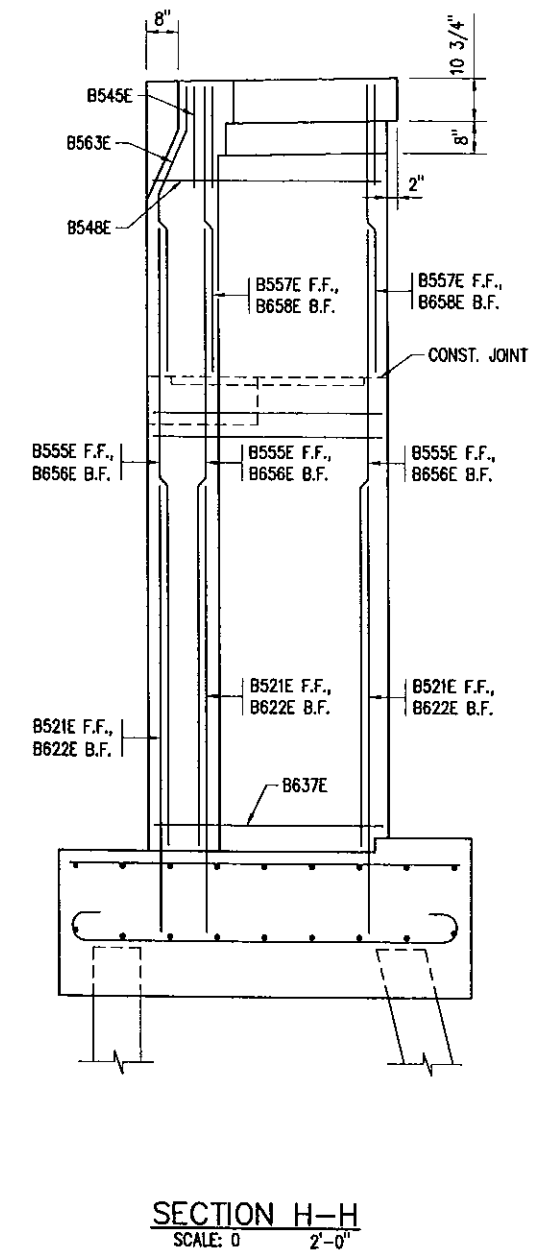
- ① PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.
- ② THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING PRIOR TO SEALING THE JOINT.
- ③ HOT POUR JOINT SEALER SPEC. 3725. TOP OF SEALER FLUSH TO 1/8 INCH BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION EBH JOINTS FLUSH WITH SURFACE (+ 1/8 INCH OR - 1/8 INCH).
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- ⑤ 2" NOM. DIA. THERMOPLASTIC PIPE AS PER ASTM D1785M, SCH. 40. SLOPE PIPE TO DITCH OR DRAINAGE SYSTEM AS DIRECTED BY THE ENGINEER IN THE FIELD. WRAP PERFORATED PIPE WITH GEOTEXTILE TYPE 1 AS PER SPEC. 3733. 1/8 INCH 12" MINIMUM SLOPE. FURNISHING AND INSTALLING THE DRAIN SYSTEM IS INCIDENTAL.
- ⑥ DETAIL AND NOTES PROVIDED FOR REFERENCE ONLY. PAYMENT IS INCLUDED IN APPROACH PANEL WORK.



SECTION G-G
SCALE: 0 2'-0"



SECTION J-J
SCALE: 0 2'-0"



SECTION H-H
SCALE: 0 2'-0"

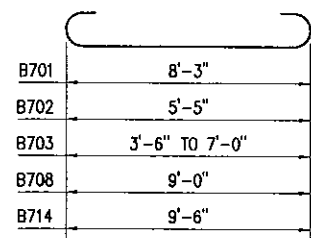
State Aid Proj. No. 098-594-002

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NAME: *Jon W. Siter* LIC. NO. 25128 DATE 06/28/2013

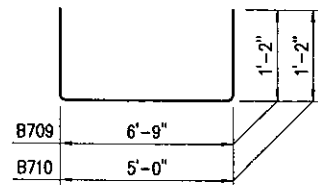
TITLE: NORTHWEST RETAINING WALL DETAILS

DES: CM	DR: GAV	APPROVED:	Bridge No. 27B90
CHK: RAM	CHK: JWS		

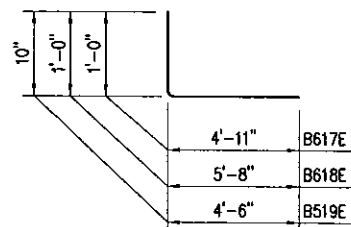
Sheet No. B25 of 54 Sheets



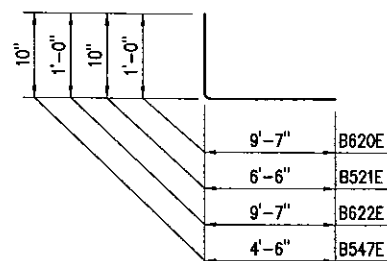
B701, B702, B703,
B708, B714 *



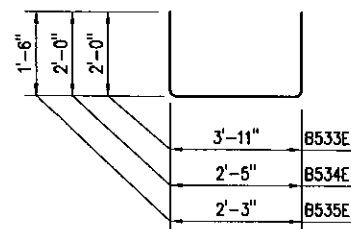
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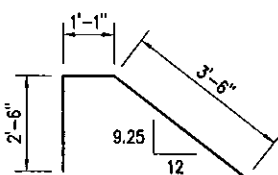
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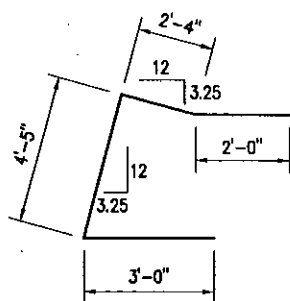
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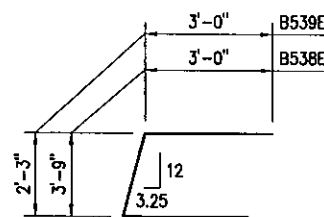
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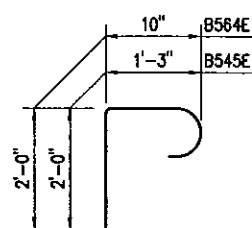
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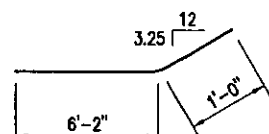
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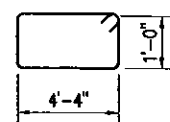
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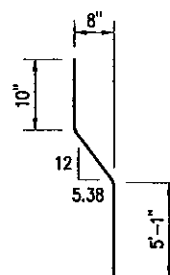
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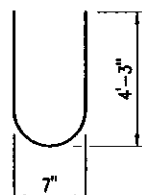
B546E



B548E *



B563E



B565E

BILL OF REINFORCEMENT FOR NORTH ABUTMENT

BAR MARK	NO. OF BARS	NO. OF SERIES	LENGTH (FT.-IN.)	SHAPE	LOCATION
B701	56		9'-11"	BENT	FOOTING BOTTOM TRANSVERSE
B702	1		7'-1"	BENT	FOOTING BOTTOM TRANSVERSE
B703	5	1 SER. OF 5	5'-2" TO 8'-8"	BENT	FOOTING BOTTOM TRANSVERSE
B604	36		31'-7"	STR.	FOOTING LONGITUDINAL
B605	56		8'-3"	STR.	FOOTING TOP TRANSVERSE
B606	1		5'-5"	STR.	FOOTING TOP TRANSVERSE
B607	5	1 SER. OF 5	3'-6" TO 7'-0"	STR.	FOOTING TOP TRANSVERSE
B708	23		10'-8"	BENT	WINGWALL FOOTING BOTTOM TRANSVERSE
B709	2		9'-1"	BENT	WINGWALL FOOTING TOP AND BOTTOM TRANSVERSE
B710	2		7'-4"	BENT	WINGWALL FOOTING TOP AND BOTTOM TRANSVERSE
B711	18		16'-6"	STR.	WINGWALL FOOTING LONGITUDINAL
B712	2		19'-10"	STR.	WINGWALL FOOTING LONGITUDINAL
B713	12		9'-0"	STR.	WINGWALL FOOTING TOP TRANSVERSE
B714	53		11'-2"	BENT	WINGWALL FOOTING BOTTOM TRANSVERSE
B615	22		28'-9"	STR.	WINGWALL FOOTING LONGITUDINAL
B616	27		9'-6"	STR.	WINGWALL FOOTING TOP TRANSVERSE
B617E	54		5'-11"	BENT	ABUTMENT FRONT FACE DOWEL
B618E	57		6'-8"	BENT	ABUTMENT BACK FACE DOWEL
B519E	21		5'-4"	BENT	WINGWALL FRONT FACE DOWEL
B620E	39		10'-7"	BENT	WINGWALL BACK FACE DOWEL
B521E	36		7'-4"	BENT	RETAINING WALL FRONT FACE DOWEL
B622E	63		10'-7"	BENT	RETAINING WALL BACK FACE DOWEL
B623E	12		27'-8"	STR.	ABUTMENT STEM HORIZONTAL
B624E	12		27'-2"	STR.	ABUTMENT STEM HORIZONTAL
B625E	11		28'-8"	STR.	ABUTMENT STEM HORIZONTAL
B626E	11		26'-3"	STR.	ABUTMENT STEM HORIZONTAL
B627E	2		28'-3"	STR.	ABUTMENT STEM HORIZONTAL
B628E	2		26'-7"	STR.	ABUTMENT STEM HORIZONTAL
B629E	25		7'-0"	STR.	ABUTMENT DOWEL
B630E	53		8'-5"	STR.	ABUTMENT FRONT FACE VERTICAL
B631E	54		8'-5"	STR.	ABUTMENT BACK FACE VERTICAL
B632E	3		8'-5"	STR.	ABUTMENT CORNER VERTICAL
B533E	53		7'-11"	BENT	ABUTMENT TIE
B534E	53		6'-5"	BENT	ABUTMENT SEAT TIE
B535E	42		5'-3"	BENT	ABUTMENT PAD TIE
B536E	11		7'-1"	BENT	ABUTMENT TIE
B537E	11		11'-9"	BENT	ABUTMENT TIE
B538E	11		9'-9"	BENT	ABUTMENT TIE
B539E	2		8'-3"	BENT	ABUTMENT TIE
B540E	38		9'-4"	STR.	WINGWALL DOWEL
B541E	38		16'-6"	STR.	WINGWALL HORIZONTAL
B542E	21		14'-2"	STR.	WINGWALL FRONT FACE VERTICAL
B643E	21		14'-2"	STR.	WINGWALL BACK FACE VERTICAL
B544E	10		14'-1"	STR.	WINGWALL VERTICAL
B545E	32		3'-10"	BENT	WINGWALL TIE
B546E	18		7'-2"	BENT	RETAINING WALL DOWEL
B547E	16		5'-4"	BENT	RETAINING WALL DOWEL
B548E	7		11'-7"	BENT	RETAINING WALL TIE
B549E	15		32'-1"	STR.	RETAINING WALL FRONT FACE HORIZONTAL
B550E	15		30'-9"	STR.	RETAINING WALL BACK FACE HORIZONTAL

BILL OF REINFORCEMENT FOR NORTH ABUTMENT (CONT'D)

BAR MARK	NO. OF BARS	NO. OF SERIES	LENGTH (FT.-IN.)	SHAPE	LOCATION
B551E	1		17'-5"	STR.	RETAINING WALL FRONT FACE HORIZONTAL
B552E	1		16'-8"	STR.	RETAINING WALL BACK FACE HORIZONTAL
B553E	1		32'-3"	STR.	RETAINING WALL FRONT FACE HORIZONTAL
B554E	1		30'-11"	STR.	RETAINING WALL BACK FACE HORIZONTAL
B555E	6		12'-2"	STR.	RETAINING WALL FRONT FACE VERTICAL
B556E	6		13'-2"	STR.	RETAINING WALL BACK FACE VERTICAL
B557E	5		5'-10"	STR.	RETAINING WALL FRONT FACE VERTICAL
B558E	5		5'-10"	STR.	RETAINING WALL BACK FACE VERTICAL
B559E	30		13'-5"	STR.	RETAINING WALL FRONT FACE VERTICAL
B660E	28		11'-6"	STR.	RETAINING WALL BACK FACE VERTICAL
B561E	5		13'-7"	STR.	RETAINING WALL FRONT FACE VERTICAL
B562E	4		11'-0"	STR.	RETAINING WALL BACK FACE VERTICAL
B563E	34		7'-6"	BENT	RETAINING WALL BACK FACE VERTICAL
B564E	32		3'-5"	BENT	RETAINING WALL TIE
B565E	44		8'-10"	BENT	RAIL DOWEL

NOTE:

* PROVIDE STANDARD HOOKS FOR DIMENSIONS NOT SHOWN.

BENT BAR DIMENSIONS ARE OUT-TO-OUT. ACTUAL BAR LENGTHS SHALL BE DETERMINED BASED ON DETAIL DIMENSIONS SHOWN IN THE BAR BENDING DIAGRAMS. TOTAL BAR LENGTHS SHOWN ARE FOR USE IN COMPUTING REINFORCEMENT BAR WEIGHTS FOR PAYMENT ONLY.

ALL REINFORCEMENT SHALL BE DELIVERED TO SITE IN BUNDLES IDENTIFIED BY SUBSTRUCTURE & BAR MARK.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
NAME: *Jon W. Sitter* LIC. NO. 25128 DATE 06/28/2013
JON W. SITTER

TITLE: NORTH ABUTMENT BILL OF REINFORCEMENT

DES: CM DR: RAM APPROVED:
CHK: RAM CHK: JWS

Bridge No. 27B90

State Aid Proj. No. 098-594-002

Sheet No. B26 of 54 Sheets

SUMMARY OF QUANTITIES FOR BOTH ABUTMENTS				
ITEM	UNIT	S. ABUT.	N. ABUT.	TOTAL
STRUCTURAL CONCRETE (1A43)	CU YD	85	103	188
STRUCTURAL CONCRETE (3Y43)	CU YD	121	129	250
REINFORCEMENT BARS	POUND	6400	8860	15 260
REINFORCEMENT BARS (EPOXY COATED)	POUND	12 060	12 500	24 560
① ② C-I-P CONCRETE PILING DELIVERED 12"	LIN FT	1430	1800	3230
① ② C-I-P CONCRETE PILING DRIVEN 12"	LIN FT	1430	1800	3230
② C-I-P CONCRETE TEST PILE 75 FT. LONG 12"	EACH	2	0	2
② C-I-P CONCRETE TEST PILE 85 FT. LONG 12"	EACH	0	2	2
PILE POINT 12"	EACH	24	26	50
DRAINAGE SYSTEM TYPE B910	LUMP SUM	0.5	0.5	1
③ BENCHMARK DISK	EACH	1	0	1

- ① DOES NOT INCLUDE TEST PILE
 ② ALL STEEL PILE SHELLS SHALL HAVE A MINIMUM WALL THICKNESS OF 5/16".
 ③ CITY WILL FURNISH DISK. PAYMENT FOR PLACEMENT SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS. MEMBRANE WATERPROOFING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

SOUTH & NORTH ABUTMENT COMPUTED PILE LOAD - TONS/PILE	
FACTORED DEAD LOAD + EARTH PRESSURE	86.5
FACTORED LIVE LOAD	19.3
* FACTORED DESIGN LOAD	105.8

* BASED ON STRENGTH I LOAD COMBINATION

SOUTH & NORTH ABUTMENT REQUIRED NOMINAL PILE BEARING RESISTANCE FOR CIP PILES R _n - TONS/PILE		
FIELD CONTROL METHOD	φ _{dyn}	* R _n
Mn/DOT PILE FORMULA 2012 (MPF12) $R_n = 20 \sqrt{\frac{W \times H}{1000}} \times \log\left(\frac{10}{S}\right)$	0.50	211.6
PDA	0.65	162.8

* R_n = (FACTORED DESIGN LOAD) / φ_{dyn}

PILE NOTES ②

- SOUTH ABUTMENT
 - 2 CAST-IN-PLACE CONC. TEST PILE 75 FT. LONG
 - 22 CAST-IN-PLACE CONC. PILES EST. 65 FT. LONG
 - 24 CAST-IN-PLACE CONC. PILES REQUIRED FOR SOUTH ABUTMENT
- NORTH ABUTMENT
 - 2 CAST-IN-PLACE CONC. TEST PILE 85 FT. LONG
 - 24 CAST-IN-PLACE CONC. PILES EST. 75 FT. LONG
 - 26 CAST-IN-PLACE CONC. PILES REQUIRED FOR NORTH ABUTMENT
- ALL PILES SHALL BE 12" CAST-IN-PLACE CONCRETE WITH A NOMINAL DIAMETER OF 12".
 PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.

 PILES MARKED THIS \odot TO BE BATTERED
 3" PER FT. IN DIRECTION SHOWN.
 FOR PILE SPLICES, SEE DETAIL B201, SHT. B46.
 ALL PILES SHALL HAVE PILE TIP PROTECTION.

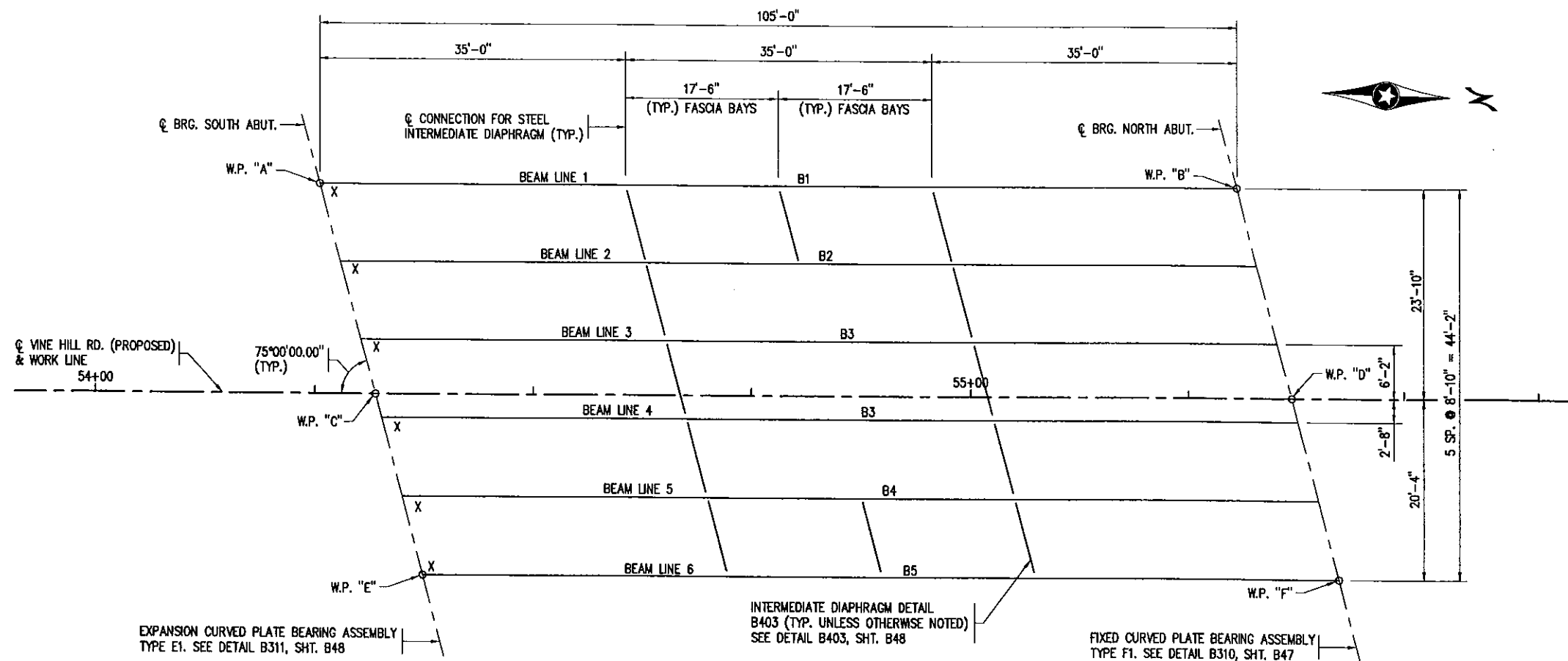
State Aid Proj. No. 098-594-002

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 NAME: *Jon W. Siter* LIC. NO. 25128 DATE 06/28/2013
 JON W. SITER

TITLE:
 ABUTMENT SUMMARY OF
 QUANTITIES

DES: CJM DR: RAM APPROVED:
 CHK: RAM CHK: JWS
 Sheet No. B27 of 54 Sheets

Bridge No.
 27B90



WORK POINT LAYOUT

NOTE: "X" DENOTES "X" END OF BEAM

State Aid Proj. No. 098-594-002

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

NAME: *Jon W. Sinter* LIC. NO. 25128 DATE 06/28/2013

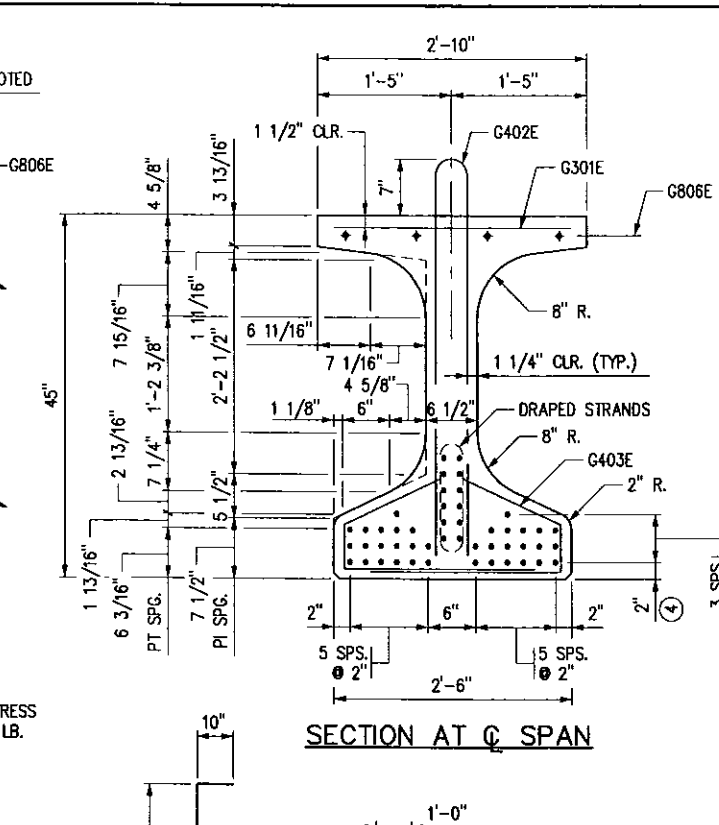
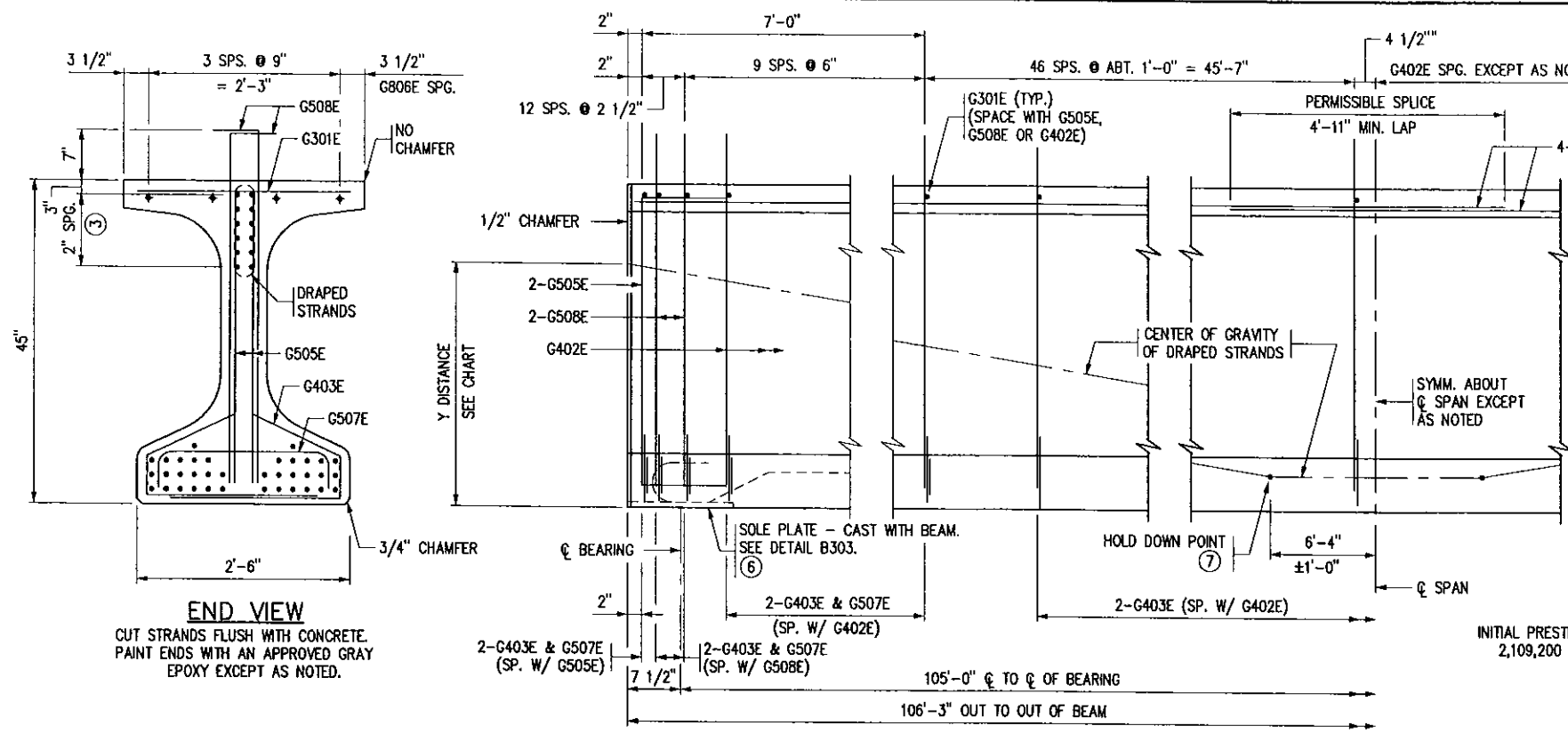
JON W. SINTER

TITLE: **FRAMING PLAN**

DES: JWS	DR: GAV	APPROVED:
CHK: JDL	CHK: JWS	

Bridge No. **27B90**

Sheet No. B28 of 54 Sheets



Y DISTANCES (IN INCHES)			
	NO.	Q SPAN	END
STRAIGHT STRANDS	36	4.11	
DRAPED STRANDS	12	10.00	37.00
TOTAL STRANDS	48	5.58	

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

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

BEAM ELEVATION
 105'-0" Q TO Q OF BEARING
 106'-3" OUT TO OUT OF BEAM
 INITIAL PRESTRESS 2,109,200 LB.

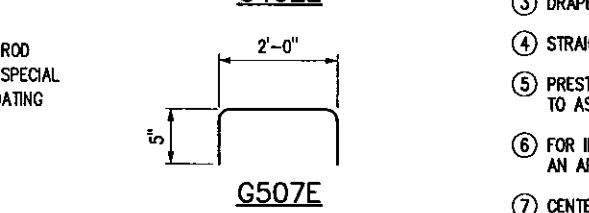
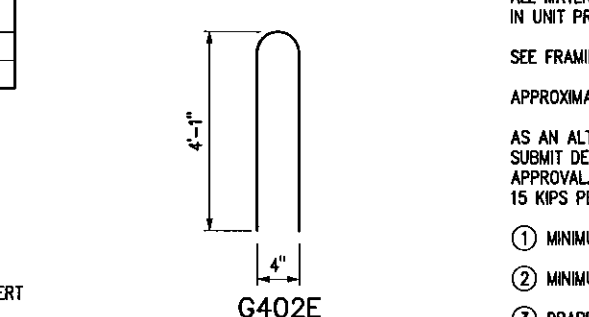
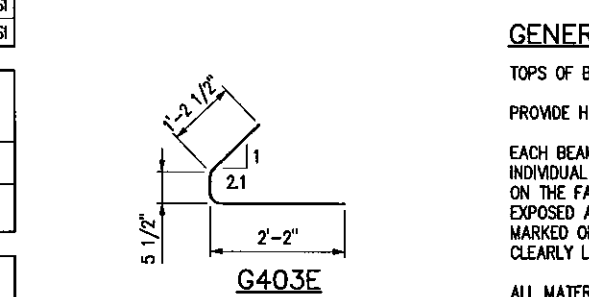
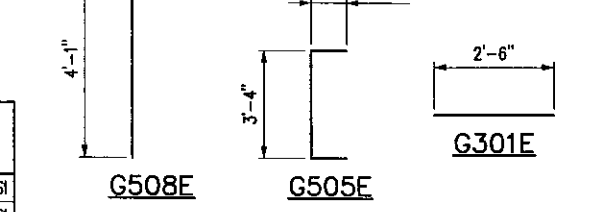
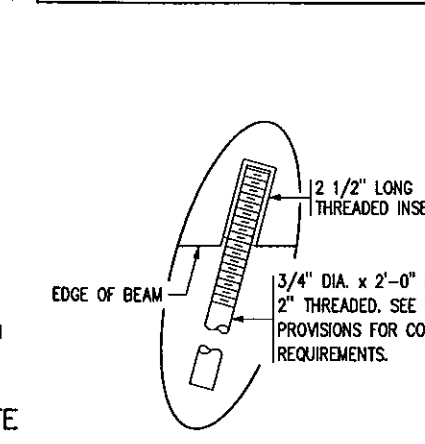
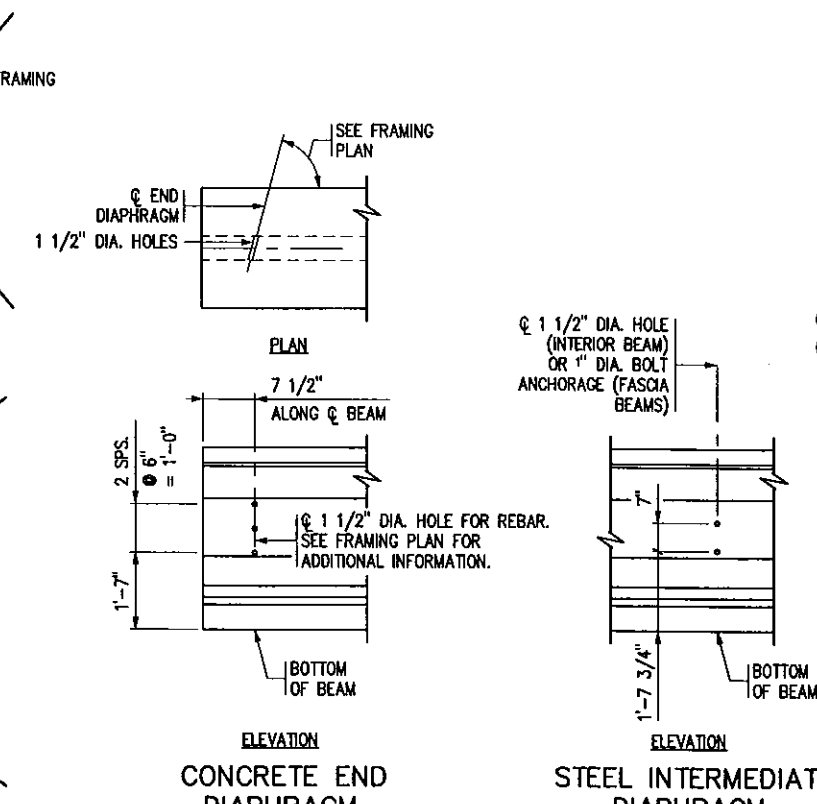
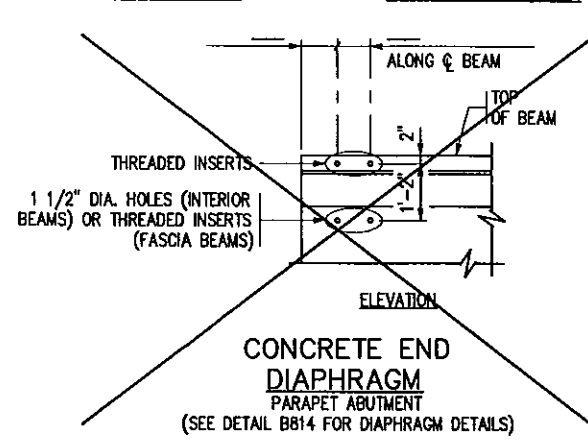
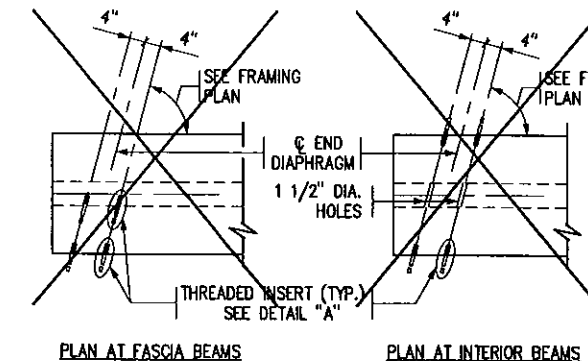


END VIEW
 CUT STRANDS FLUSH WITH CONCRETE. PAINT ENDS WITH AN APPROVED GRAY EPOXY EXCEPT AS NOTED.

CALCULATED PRESTRESS LOSSES	
ELASTIC SHORTENING LOSS	25.37 KSI
LONG TERM LOSSES	26.19 KSI
TOTAL LOSSES	51.56 KSI

MINIMUM CONCRETE STRENGTH - K.S.I.	
① f _{ci}	② f _c
7.5 KSI	9.0 KSI

PRESTRESSING STRAND DIAMETER	
⑤	1/2" □
⑥	0.60" ☒



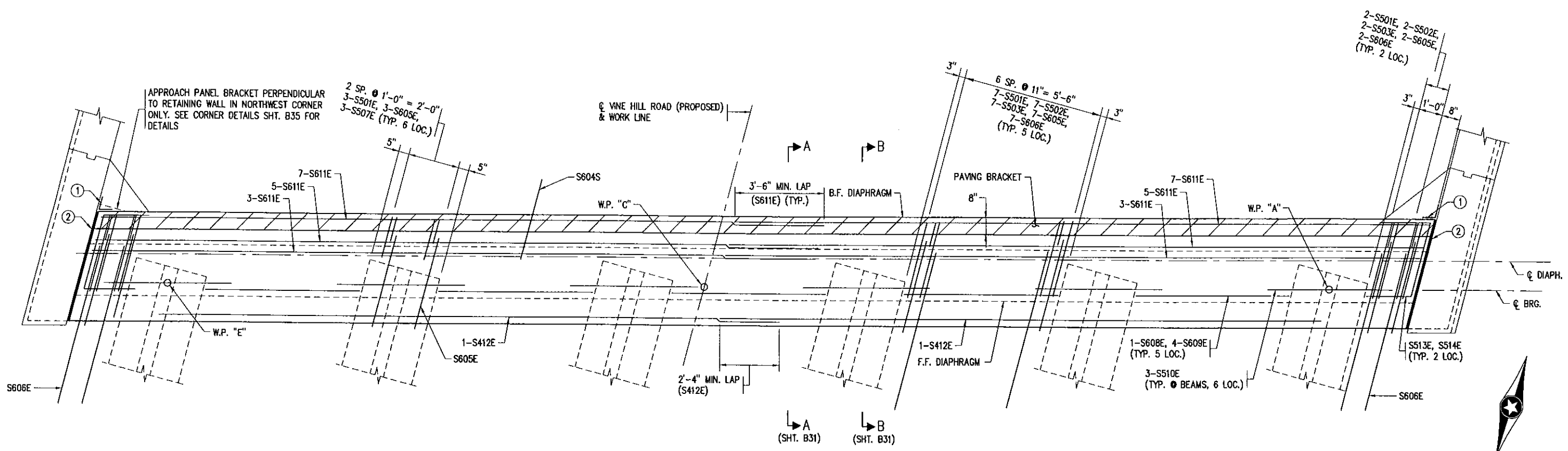
- GENERAL NOTES**
- TOPS OF BEAMS SHALL BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BOND.
 - PROVIDE HANDLING HOOKS OR DEVICES AS REQUIRED BY CONTRACTOR.
 - EACH BEAM SHALL BE MARKED, SHOWING BRIDGE NUMBER, CASTING DATE, AND INDIVIDUAL IDENTIFICATION LETTERS AND NUMBERS. MARKINGS SHALL BE MADE ON THE 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 STENCILED AND BE CLEARLY LEGIBLE. FOR LOCATION OF BEAMS, SEE FRAMING PLAN.
 - ALL MATERIAL AND WORK SHOWN OR NOTED ON THIS SHEET SHALL BE INCLUDED IN UNIT PRICE BID FOR PRESTRESSED CONCRETE BEAMS. SEE Mn/DOT SPEC. 2405.
 - SEE FRAMING PLAN FOR BEAM END MARKED "X" AND DIAPHRAGM SPACING.
 - APPROXIMATE WEIGHT OF BEAM IS 39.5 TONS.
 - AS AN ALTERNATE TO THE DIAPHRAGM ANCHORAGES SHOWN, THE CONTRACTOR MAY SUBMIT DETAILS OF A CAST-IN-PLACE ANCHORAGE TO THE ENGINEER FOR APPROVAL. ANCHORAGE MUST PROVIDE AN ULTIMATE PULL OUT STRENGTH OF 15 KIPS PER ANCHORAGE.
 - ① MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER.
 - ② MINIMUM CONCRETE STRENGTH WHEN BEAM CAN BE TRANSPORTED AND INSTALLED.
 - ③ DRAPED STRANDS.
 - ④ STRAIGHT STRANDS.
 - ⑤ PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND, CONFORMING TO ASTM A416, GRADE 270.
 - ⑥ FOR INTEGRAL ABUTMENT, SOLE PLATE CAN BE ELIMINATED OR REPLACED WITH AN APPROVED PROTECTION PLATE.
 - ⑦ CENTER OF GRAVITY OF HOLD DOWNS WHEN MULTIPLE HOLD DOWNS ARE USED.

REVISION: 04-17-2013
 APPROVED: OCTOBER 26, 2005
 STATE BRIDGE ENGINEER

State Aid Proj. No. 098-594-002

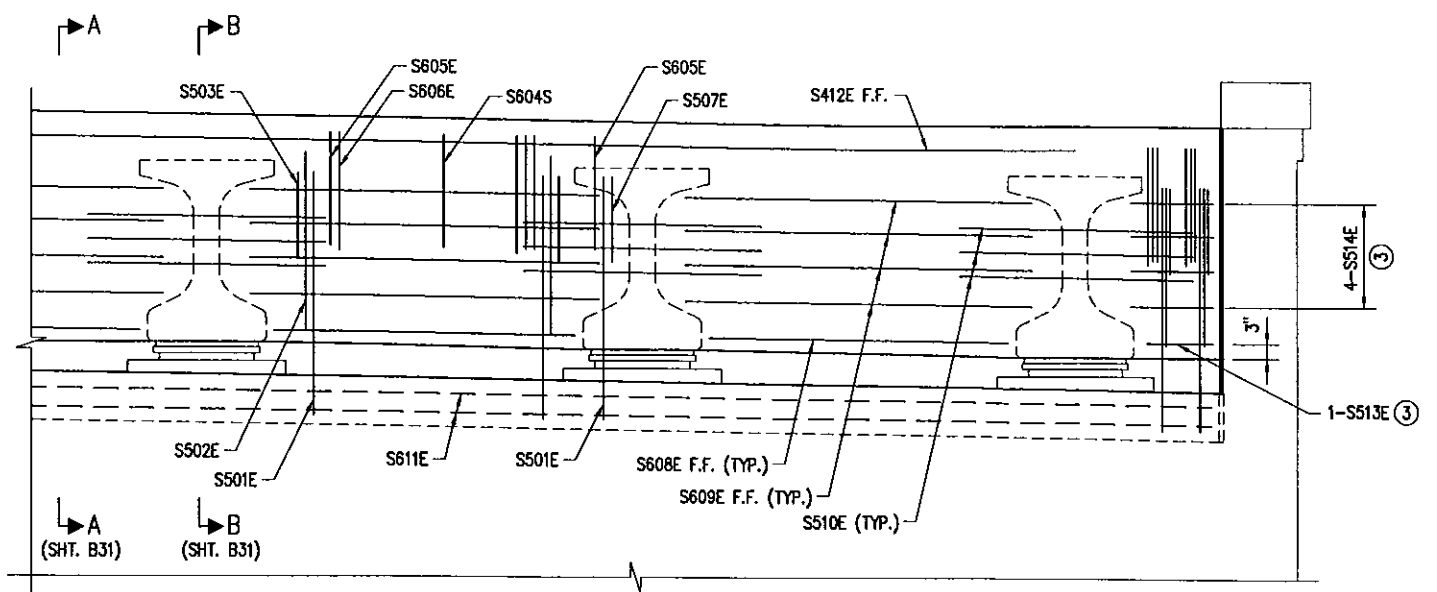
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 NAME: *Jon W. Siter* LIC. NO. 25128 DATE: 06/28/2013

TITLE: MN45" PRESTRESSED CONCRETE BEAM (PRETENSIONED) MN45-106
 BEAMS B1-B5
 FIG. 5-397.507
 DES: JMS DR: GAV APPROVED: *David W. Siter*
 CHK: RAM CHK: JMS
 Sheet No. B29 of 54 Sheets
 Bridge No. 27B90



SOUTH ABUTMENT DIAPHRAGM PLAN
SCALE: 0' = 2'

SOUTH ABUTMENT DIAPHRAGM SHOWN, NORTH ABUTMENT DIAPHRAGM SIMILAR EXCEPT AS NOTED



SOUTH ABUTMENT PARTIAL DIAPHRAGM ELEVATION
SCALE: 0' = 2'

SOUTH ABUTMENT DIAPHRAGM SHOWN, NORTH ABUTMENT DIAPHRAGM SIMILAR

- KEY NOTES:**
- ① MEMBRANE WATERPROOFING SYSTEM PER MnDOT SPEC. 2481.3B.
 - ② 1" LOW DENSITY POLYSTYRENE
 - ③ SPACE S513E AND S514E AS PER S608E AND S609E SHOWN ON "SECTION A-A (REINFORCEMENT)" ON SHT. B31.

State Aid Proj. No. 098-594-002

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NAME: *Jon W. Siter* LIC. NO. 25128 DATE 06/28/2013

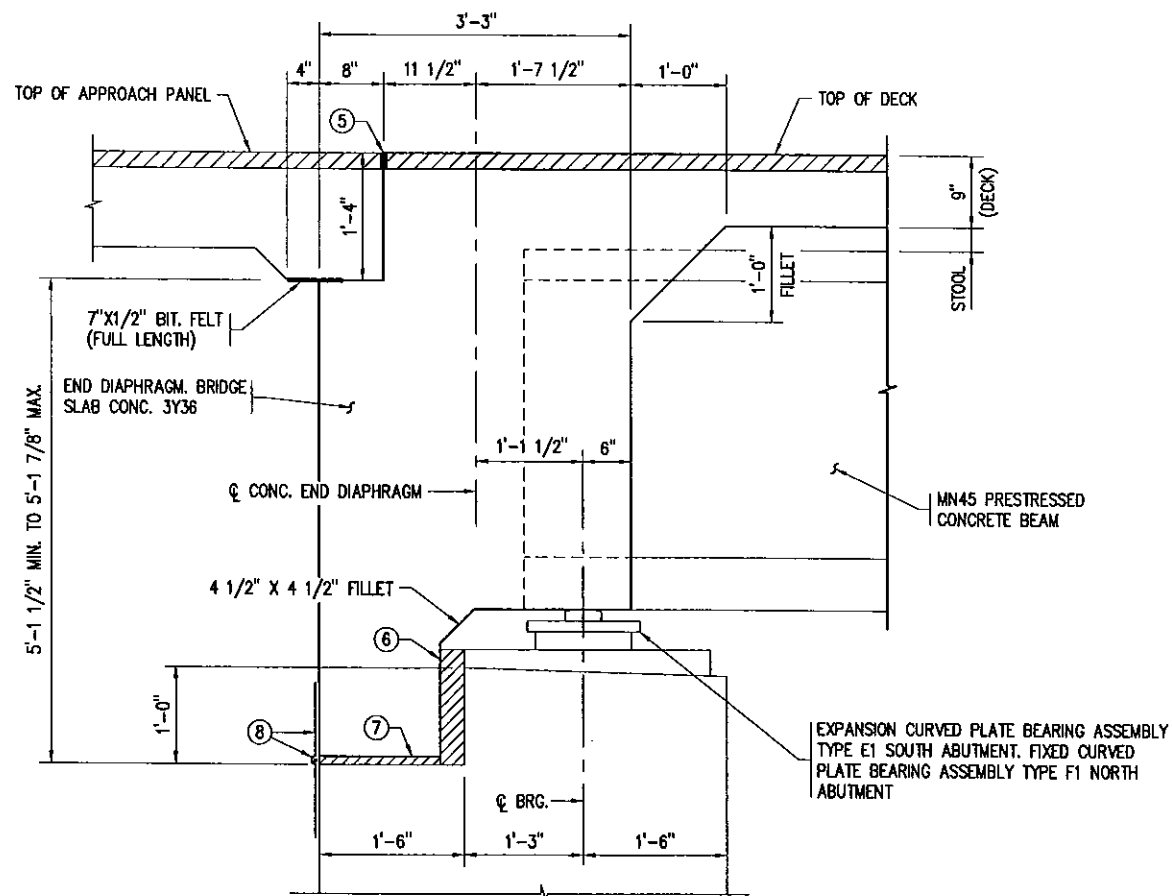
TITLE: SUPERSTRUCTURE DETAILS

DES: C.M.	DR: GAV	APPROVED:
CHK: JWS	CHK: JWS	

Bridge No. 27B90
Sheet No. B30 of 54 Sheets

KEY NOTES:

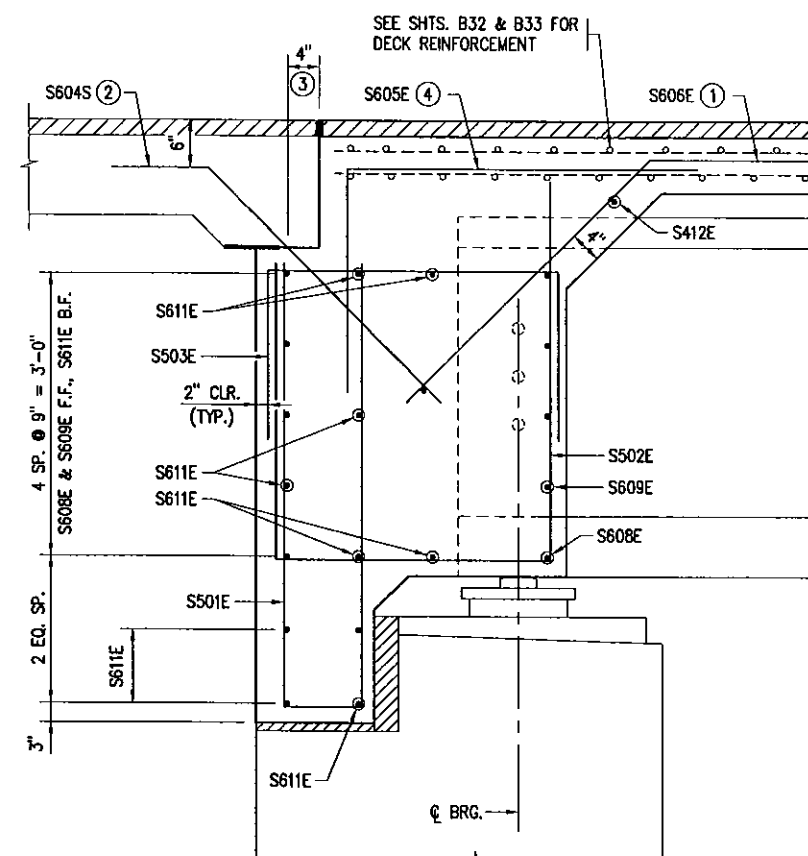
- ① TIE TO TOP OF DECK REINFORCEMENT
- ② APPROACH PANEL DOWELS SHALL BE STAINLESS STEEL. SEE SPECIAL PROVISIONS.
- ③ 4" DIMENSION IS FOR PLACEMENT OF S604S DOWELS.
- ④ PLACE LONGER LEG IN DECK.
- ⑤ SAW CUT DECK AS SOON AS THE CUTTING CAN BE DONE WITHOUT RAVELING THE CONCRETE AND SEAL WITH AN APPROVED JOINT SEALER PER MNDOT SPEC. 3723.
- ⑥ 3" LOW DENSITY POLYSTYRENE.
- ⑦ 1" HIGH DENSITY POLYSTYRENE.
- ⑧ SEE WATERPROOFING AND BACKER ROD DETAIL ON SHT. B07.



SECTION A-A (GEOMETRICS)

SCALE: 0 1'-0"

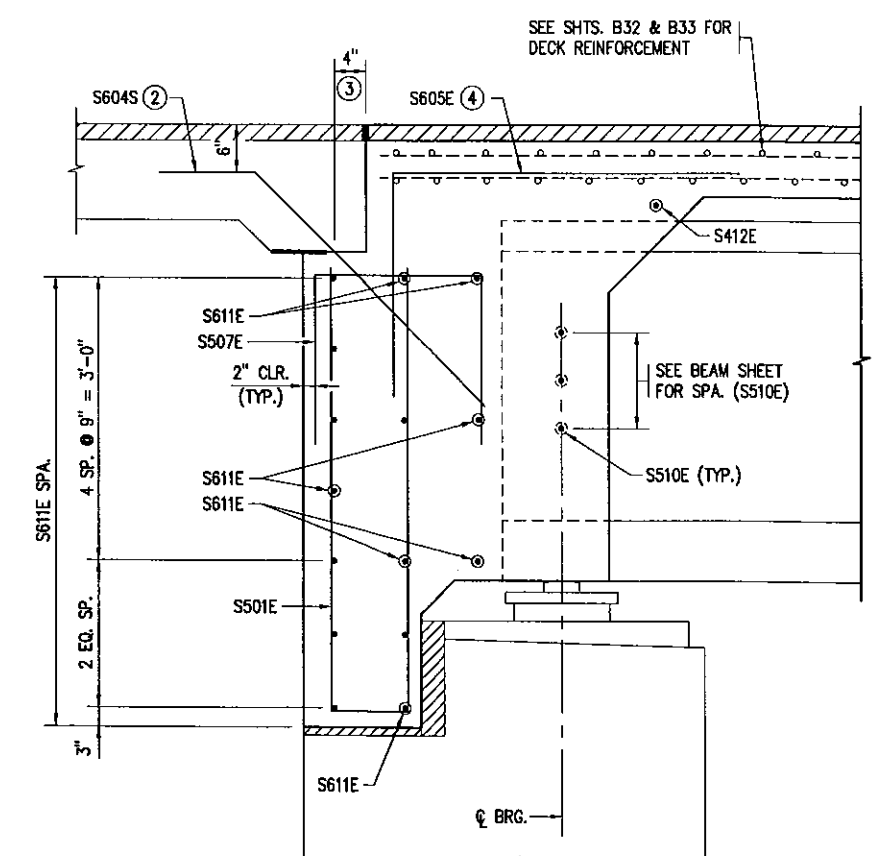
ALL DIMENSIONS MEASURED PERPENDICULAR TO ϕ BEARING



SECTION A-A (REINFORCEMENT)

SCALE: 0 1'-0"

ALL DIMENSIONS MEASURED PERPENDICULAR TO ϕ BEARING



SECTION B-B (AT BEAMS)

SCALE: 0 1'-0"

ALL DIMENSIONS MEASURED PERPENDICULAR TO ϕ BEARING

NOTES:
1. B.F. = BACK FACE
F.F. = FRONT FACE
E.F. = EACH FACE

State Aid Proj. No. 098-594-002

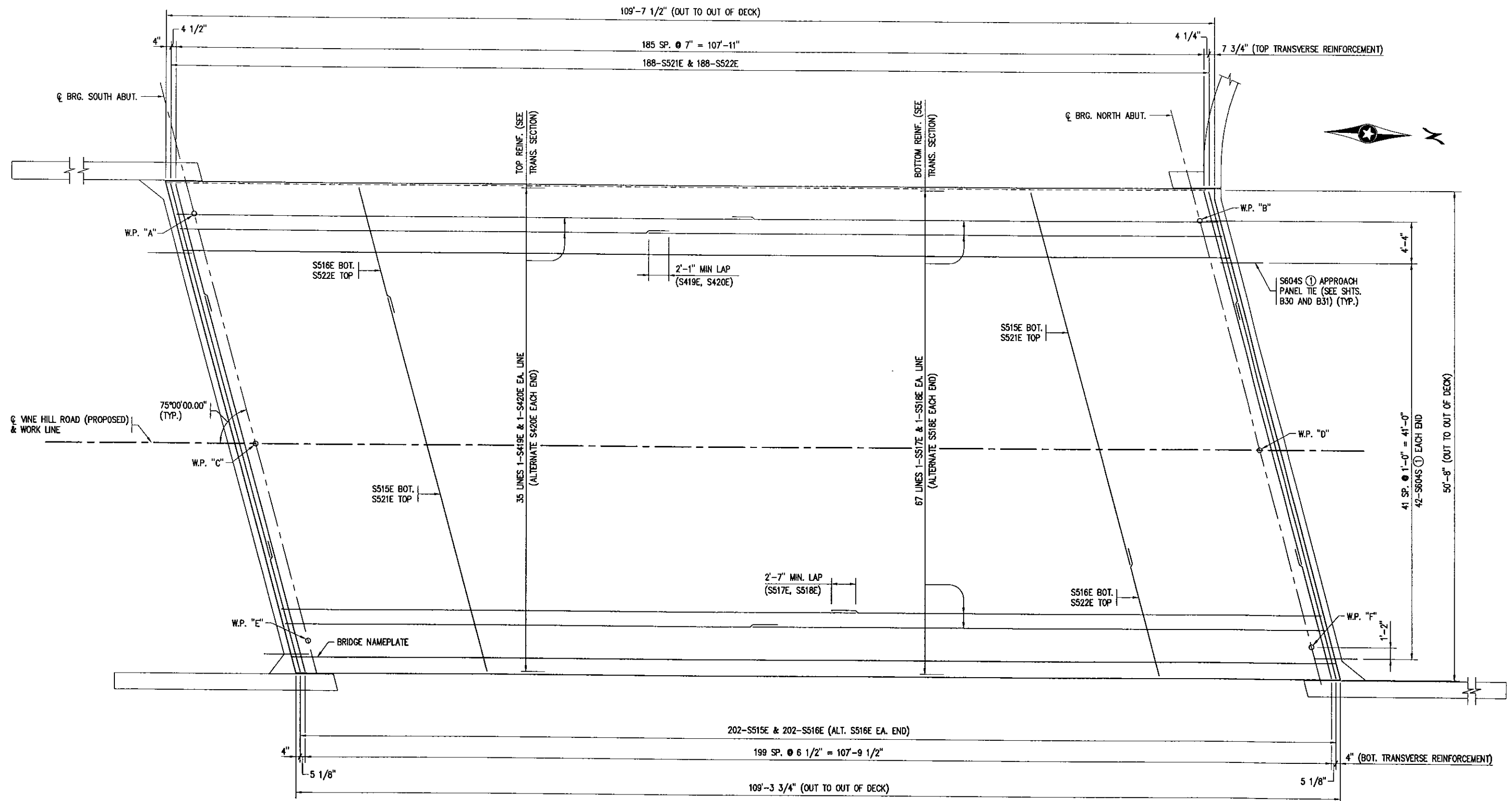
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NAME: *Jon W. Siter* LIC. NO. 25128 DATE 06/28/2013
JON W. SITER

TITLE: SUPERSTRUCTURE DETAILS

DES: CJM	DR: GAV	APPROVED:	Bridge No. 27B90
CHK: JWS	CHK: JWS		

Sheet No. B31 of 54 Sheets

KEY NOTES:
 ① APPROACH PANEL TIES (S604S) TO BE STAINLESS STEEL.



DECK PLAN
 SCALE: 0 5'

State Aid Proj. No. 098-594-002

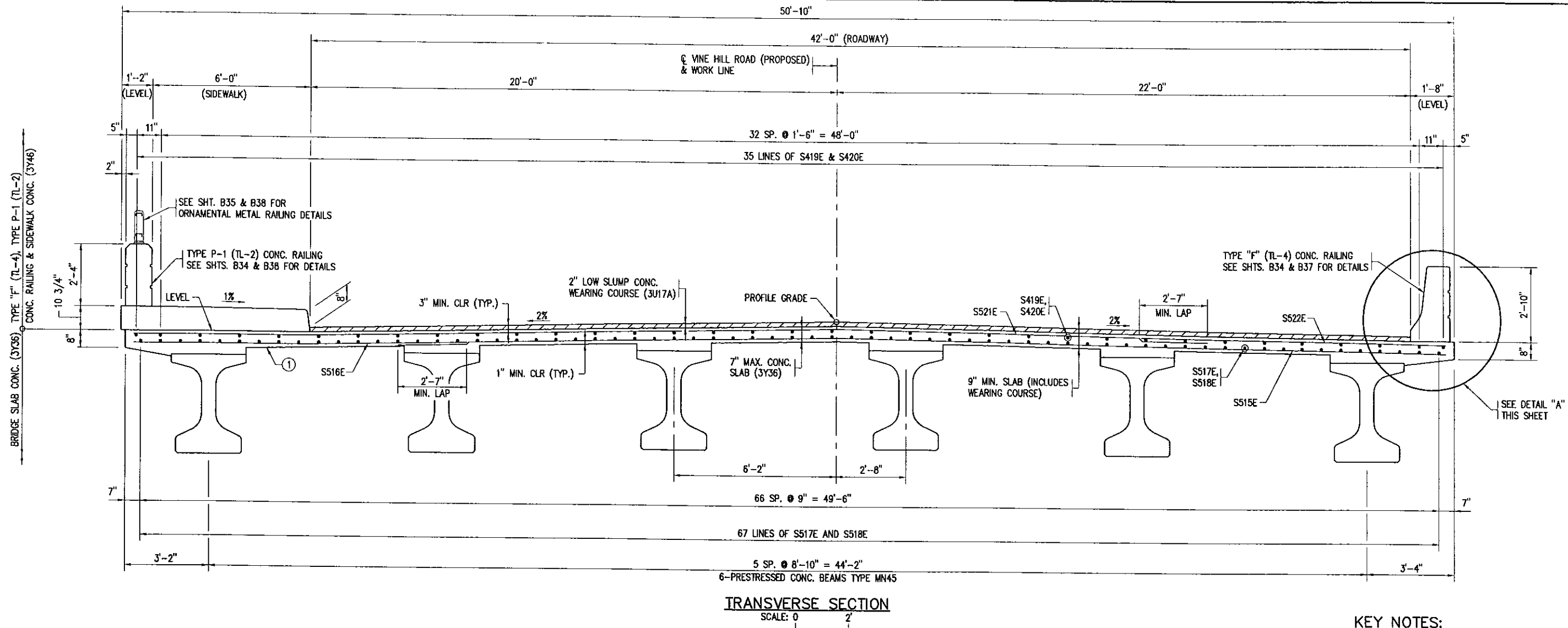
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 NAME: *Jon W. Sitter* LIC. NO. 25128 DATE 06/28/2013
 JON W. SITTER

TITLE: SUPERSTRUCTURE DETAILS

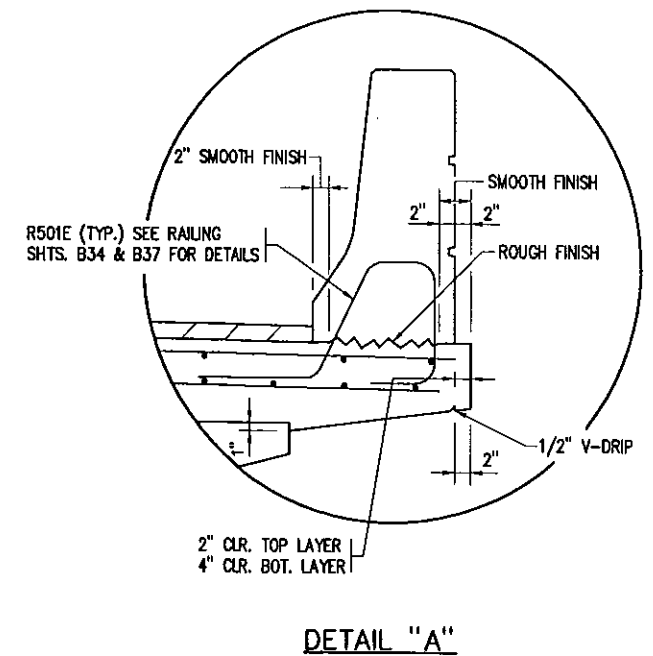
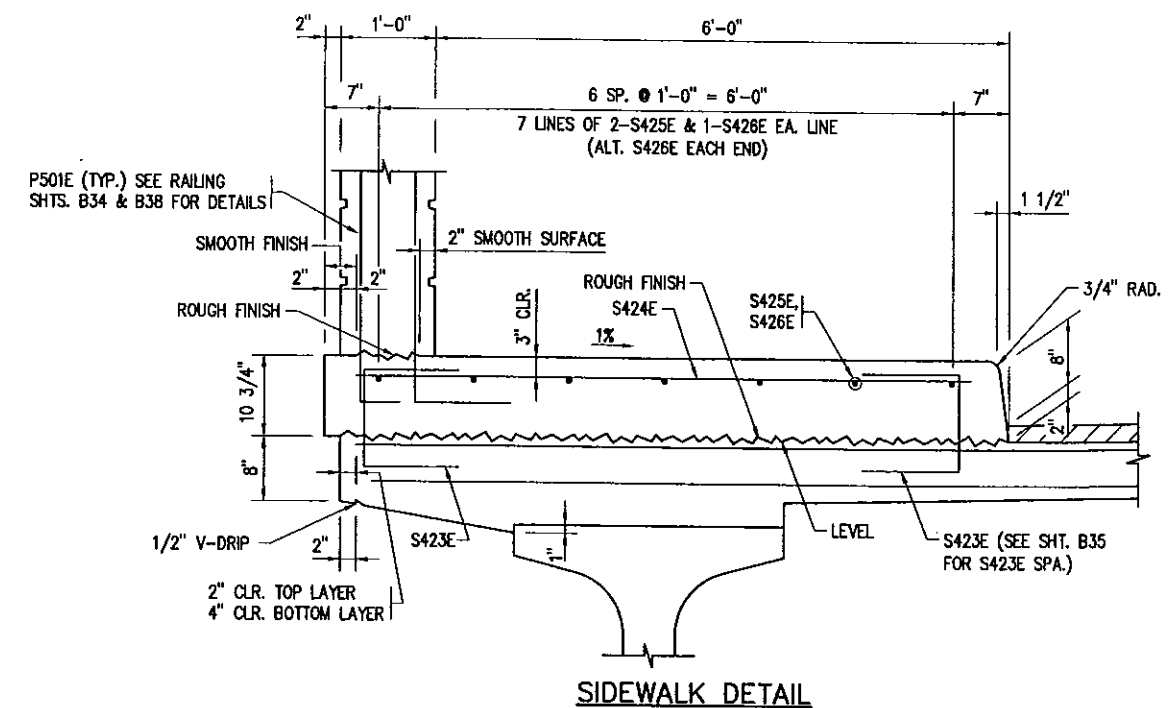
DES: CJM	DR: GAV	APPROVED:
CHK: JDL	CHK: JMS	

Sheet No. B32 of 54 Sheets

Bridge No. 27B90



KEY NOTES:
① BOTTOM OF DECK SLOPE AT 2%



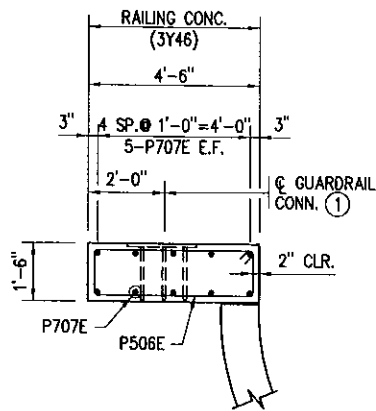
State Aid Proj. No. 098-594-002

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NAME: *Jon W. Sitter* LIC. NO. 25128 DATE 06/28/2013
JOHN W. SITTER

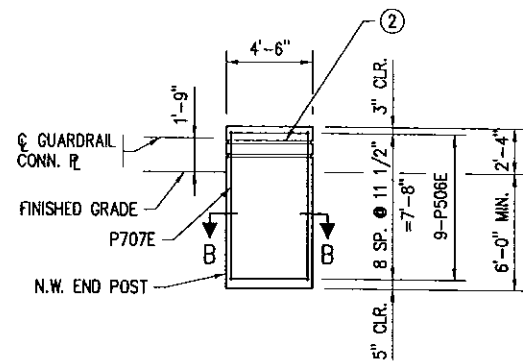
TITLE: SUPERSTRUCTURE DETAILS

DES: CMM	DR: GAV	APPROVED:	Bridge No. 27B90
CHK: JDL	CHK: JWS		

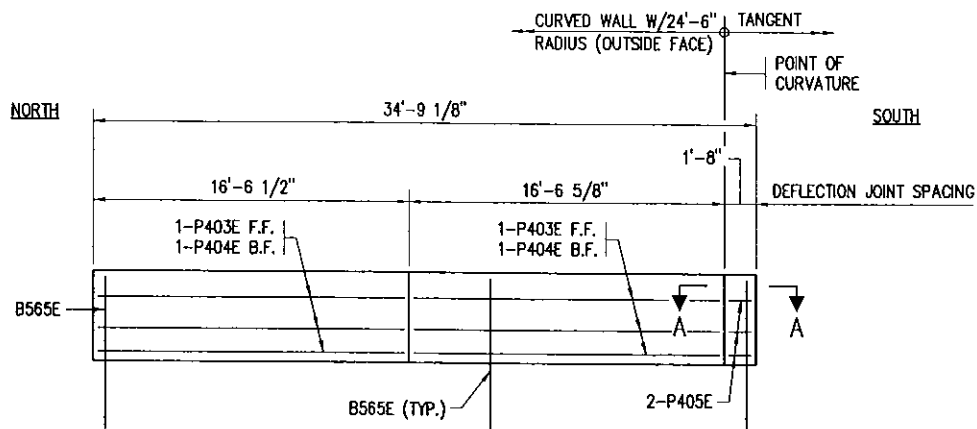
Sheet No. B33 of 54 Sheets



SECTION B-B



NORTHWEST END POST DETAILS

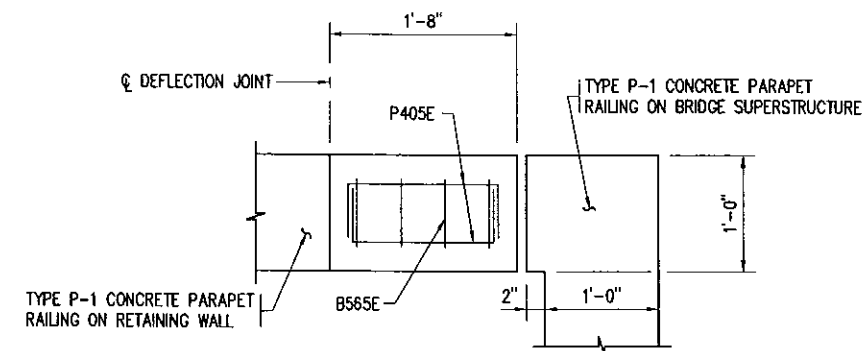


DEVELOPED NORTHWEST RETAINING WALL RAILING ELEVATION (TYPE P-1)

SCALE: 0 5' (HORIZ.)

SCALE: 0 2'-6" (VERT.)

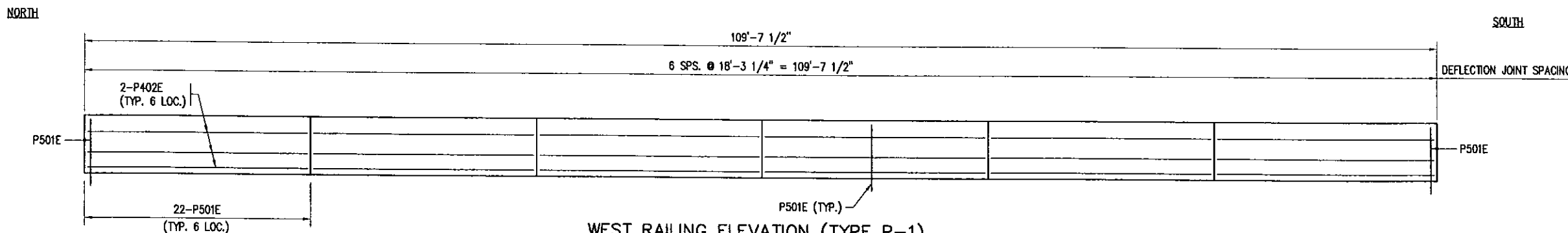
(OUTSIDE FACE OF RAILING)



SECTION A-A

KEY NOTES:

- ① SEE SHEET B43 FOR GUARDRAIL CONNECTION PLATE DETAIL. MODIFY PIPE SLEEVE LENGTH TO 1'-5 1/2" FOR THIS LOCATION.
- ② PROVIDE REVEALS AROUND THE PERIMETER OF THE END POST TO MATCH THAT OF THE TYPE P-1 RAIL REVEALS.

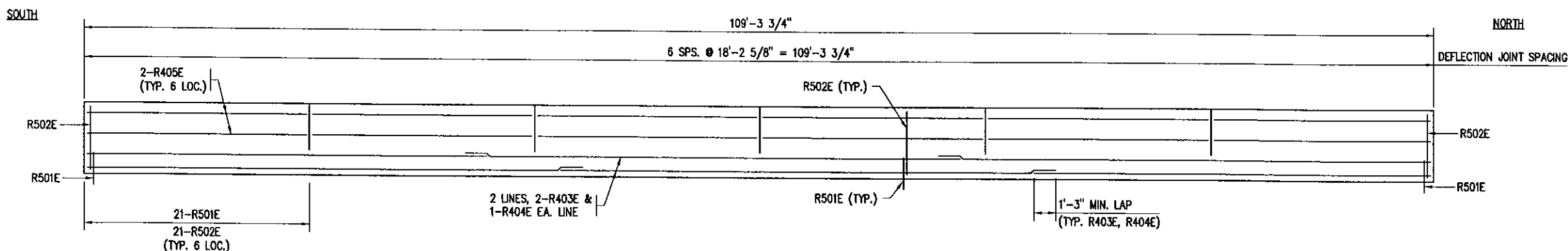


WEST RAILING ELEVATION (TYPE P-1)

SCALE: 0 5' (HORIZ.)

SCALE: 0 2'-6" (VERT.)

(OUTSIDE FACE OF RAILING)



EAST RAILING ELEVATION (TYPE F)

SCALE: 0 5' (HORIZ.)

SCALE: 0 2'-6" (VERT.)

(OUTSIDE FACE OF RAILING)

State Aid Proj. No. 098-594-002

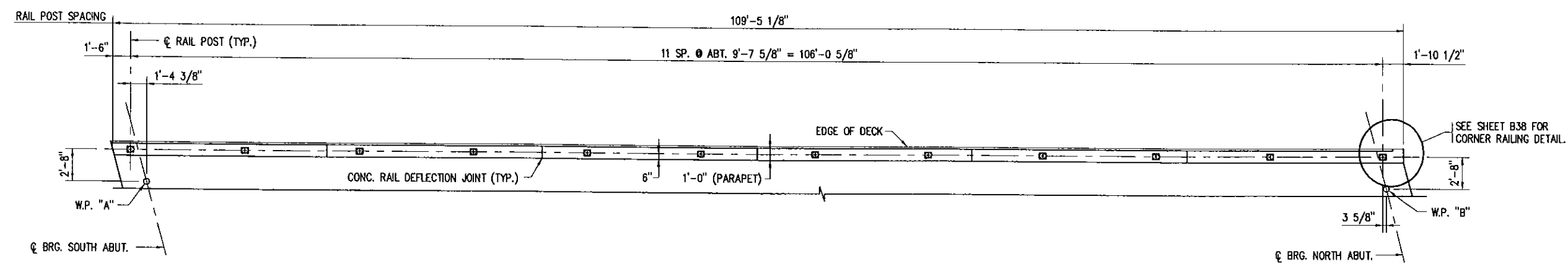
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 NAME: *Jon W. Suter* LIC. NO. 25128 DATE: 06/28/2013
 JON W. SUTER

TITLE: SUPERSTRUCTURE DETAILS

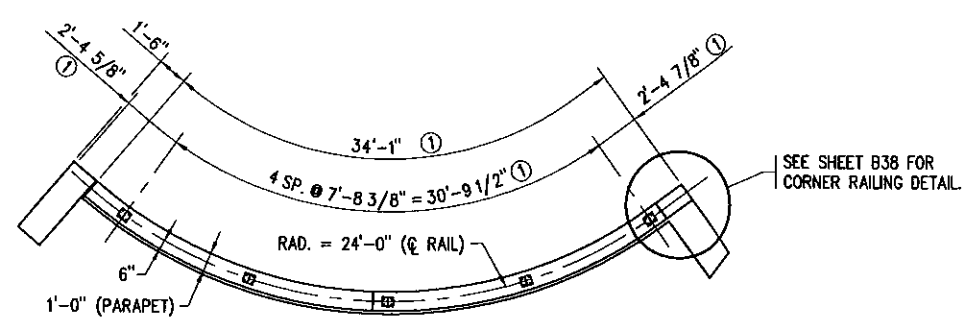
DES: JWS	DR: GAV	APPROVED:	Bridge No. 27B90
CHK: JDL	CHK: JWS		

Sheet No. B34 of 54 Sheets

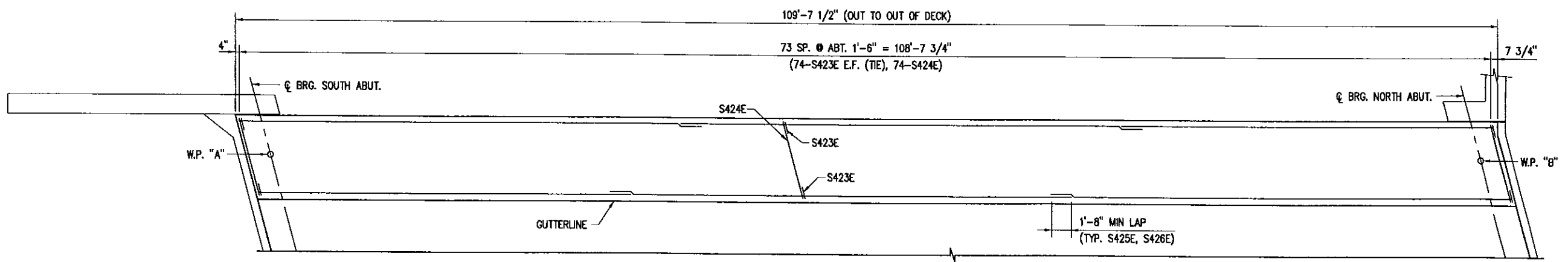
KEY NOTES:
 ① MEASURED ALONG ϕ METAL RAILING



RAIL POST LAYOUT
 SCALE: 0 5'



NORTHWEST RETAINING WALL RAIL POST LAYOUT
 SCALE: 0 5'



SIDEWALK REINFORCEMENT PLAN
 SCALE: 0 5'

NOTES:
 1. B.F. = BACK FACE
 F.F. = FRONT FACE
 E.F. = EACH FACE

State Aid Proj. No. 098-594-002

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 NAME: *Jon W. Sitter* LIC. NO. 25128 DATE 06/28/2013
 JON W. SITTER

TITLE: SUPERSTRUCTURE DETAILS

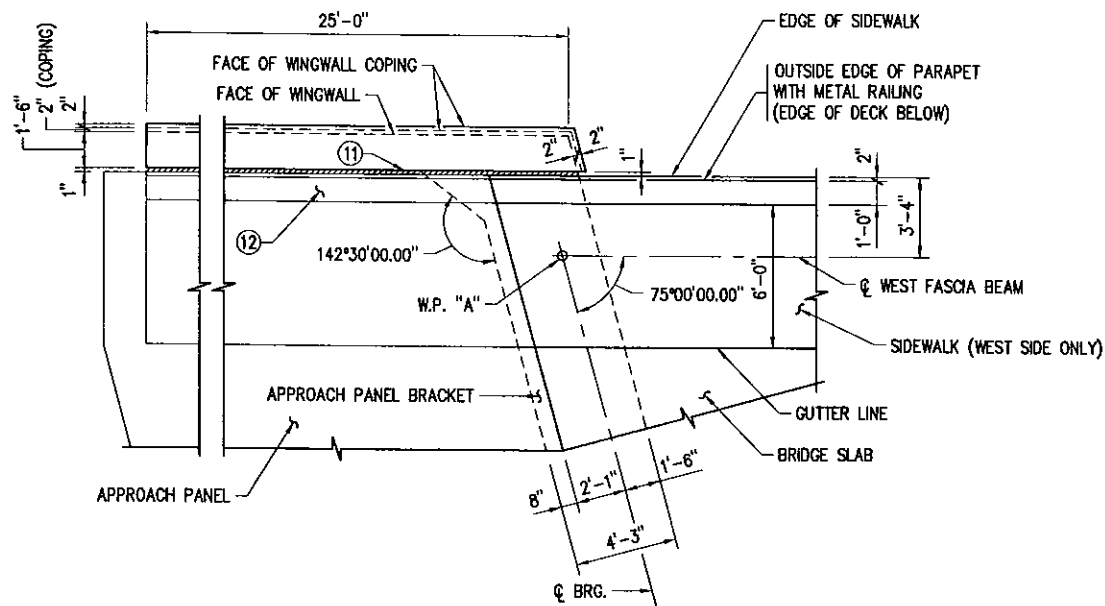
DES: CM DR: GAV APPROVED:
 CHK: JWS CHK: JWS

Bridge No. 27B90
 Sheet No. B35 of 54 Sheets

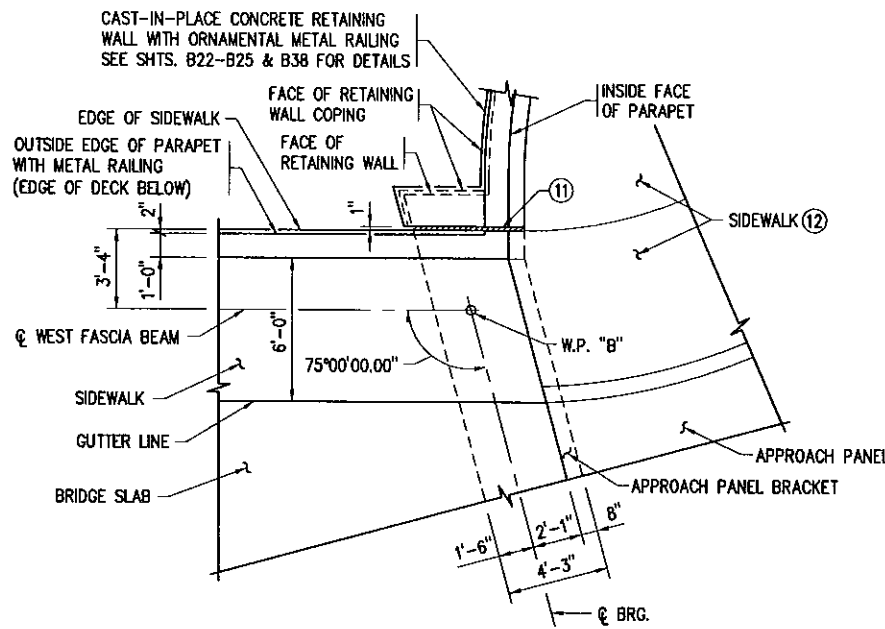
KEY NOTES:

- ① "BRIDGE SLAB CONCRETE (3Y36)" VOLUME WAS COMPUTED USING AN AVERAGE STOOD HEIGHT OF 3". ITEM INCLUDES APPROXIMATELY 141 CU. YDS. FOR SLAB AND APPROXIMATELY 58 CU. YDS. FOR END DIAPHRAGMS.
- ② TYPE F (TL-4) RAILING CONCRETE (3Y46) VOLUME IS APPROXIMATELY 13 CU. YDS.
- ③ TYPE P-1 (TL-2) RAILING CONCRETE (3Y46) VOLUME IS APPROXIMATELY 15 CU. YDS. THIS INCLUDES APPROXIMATELY 3 CU. YDS. FOR RETAINING WALL RAILING CONCRETE AND 2 CU. YDS. FOR N.W. ENDPST CONCRETE.
- ④ SIDEWALK CONCRETE (3Y46) VOLUME IS APPROXIMATELY 25 CU. YDS.
- ⑤ INCLUDES SLAB, SIDEWALK, END DIAPHRAGMS AND BARRIER REINFORCEMENT (ON SUPERSTRUCTURE AND RETAINING WALL).
- ⑥ APPROACH PANEL TIES (S604S) TO BE STAINLESS STEEL. SEE SPECIAL PROVISIONS.
- ⑦ INCLUDES 6-TYPE E1 EXPANSION CURVED PLATE BEARING ASSEMBLIES AND 6-TYPE F1 FIXED CURVED PLATE BEARING ASSEMBLIES. PAYMENT FOR BEARING INCLUDED IN ITEM "BEARING ASSEMBLY" PER EACH.
- ⑧ INCLUDES 1068 SQ. FT. FOR SOUTH APPROACH PANEL AND 1286 FOR NORTH APPROACH PANEL. VOLUME OF CONCRETE WEARING COURSE IS APPROXIMATELY 43 CU. YDS.
- ⑨ PAYMENT FOR BEAMS INCLUDED IN ITEM "PRESTRESSED CONCRETE BEAMS MN45" PER LINEAR FOOT.
- ⑩ PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM "TYPE F (TL-4) RAILING CONCRETE (3Y46)".
- ⑪ JOINT FILLER - POLYSTYRENE TYPE A
- ⑫ REFER TO SHTS. B42 & B43 FOR PORTION OF CONCRETE RAILING AND SIDEWALK ON APPROACH PANEL.
- ⑬ THIS INCLUDES 34 LIN. FT. FOR RETAINING WALL AND 5 LIN. FT. "TYPE P-1 (TL-2) RAILING CONCRETE (3Y46)" FOR N.W. ENDPST.

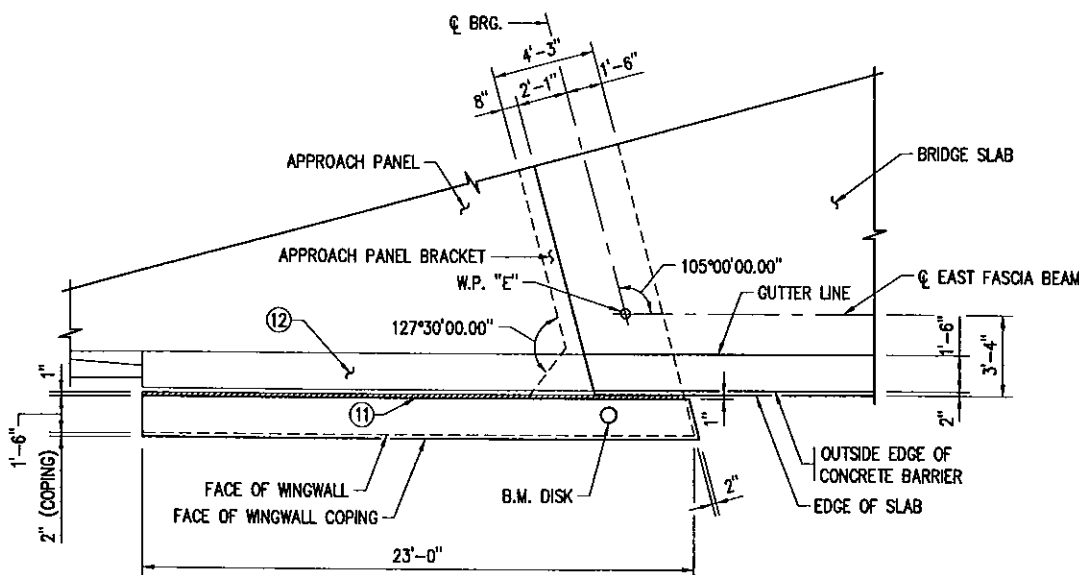
SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE		
ITEM	UNIT	TOTAL
① BRIDGE SLAB CONCRETE (3Y36)	SQ FT	5539
② ⑫ TYPE F (TL-4) RAILING CONCRETE (3Y46)	LIN FT	109
③ ⑫ ⑬ TYPE P-1 (TL-2) RAILING CONCRETE (3Y46)	LIN FT	149
④ ⑫ SIDEWALK CONCRETE (3Y46)	SQ FT	783
⑤ REINFORCEMENT BARS (EPOXY COATED)	POUND	45 660
⑥ REINFORCEMENT BARS (STAINLESS STEEL)	POUND	580
⑦ BEARING ASSEMBLY	EACH	12
⑬ METAL RAILING FOR BIKEWAYS (DESIGN M-1) (MOD.)	LIN FT	145
⑧ CONCRETE WEARING COURSE (3U17A)	SQ FT	6944
⑨ PRESTRESSED CONCRETE BEAMS MN45	LIN FT	638
⑨ PRESTRESSED CONCRETE BEAM TYPE MN45-106	EACH	6
DIAPHRAGMS FOR TYPE MN45 PRESTRESSED BEAMS	LIN FT	110
⑩ BRIDGE NAMEPLATE	EACH	1



SOUTHWEST CORNER DETAIL

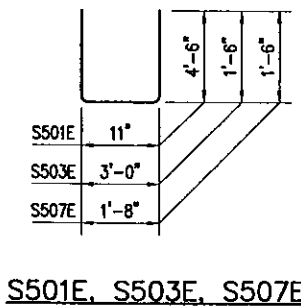


NORTHWEST CORNER DETAIL

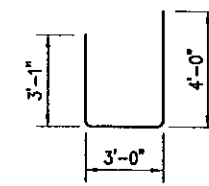


SOUTHEAST CORNER DETAIL

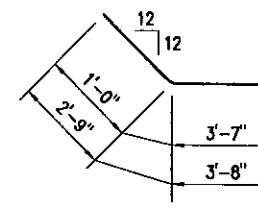
(NORTHEAST CORNER SIM.)



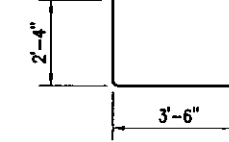
S501E, S503E, S507E



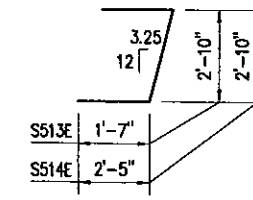
S502E



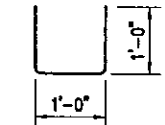
S604S, S606E



S605E



S513E, S514E



S423E

BILL OF REINFORCEMENT FOR SUPERSTRUCTURE					
BAR MARK	NO. OF BARS	NO. OF SERIES	LENGTH (FT.-IN.)	SHAPE	LOCATION
S501E	114		9'-11"	BENT	END DIAPHRAGM STIRRUP
S502E	78		10'-1"	BENT	END DIAPHRAGM STIRRUP
S503E	78		6'-0"	BENT	END DIAPHRAGM TIE
⑥ S604S	84		4'-7"	BENT	END DIAPHRAGM APPROACH DOWEL
S605E	114		5'-10"	BENT	END DIAPHRAGM VERTICAL DOWEL
S606E	78		6'-5"	BENT	END DIAPHRAGM VERTICAL DOWEL
S507E	36		4'-8"	BENT	END DIAPHRAGM TIE
S608E	10		5'-9"	STR.	END DIAPHRAGM F.F. LONGITUDINAL BETWEEN BEAMS
S609E	40		7'-3"	STR.	END DIAPHRAGM F.F. LONGITUDINAL BETWEEN BEAMS
S510E	36		5'-0"	STR.	END DIAPHRAGM THRU BEAMS
S611E	60		28'-0"	STR.	END DIAPHRAGM B.F. LONGITUDINAL
S412E	4		24'-1"	STR.	END DIAPHRAGM F.F. OVER BEAMS
S513E	4		6'-0"	BENT	END DIAPHRAGM HORIZONTAL TIE @ END
S514E	16		7'-8"	BENT	END DIAPHRAGM HORIZONTAL TIE @ END
S515E	202		40'-0"	STR.	SLAB BOTTOM TRANSVERSE
S516E	202		14'-7"	STR.	SLAB BOTTOM TRANSVERSE
S517E	67		60'-0"	STR.	SLAB BOTTOM LONGITUDINAL
S518E	67		51'-11"	STR.	SLAB BOTTOM LONGITUDINAL
S419E	35		60'-0"	STR.	SLAB TOP LONGITUDINAL
S420E	35		51'-5"	STR.	SLAB TOP LONGITUDINAL
S521E	188		40'-0"	STR.	SLAB TOP TRANSVERSE
S522E	188		14'-9"	STR.	SLAB TOP TRANSVERSE
S423E	148		3'-0"	BENT	SIDEWALK TIE
S424E	74		7'-0"	STR.	SIDEWALK TRANSVERSE
S425E	14		40'-0"	STR.	SIDEWALK LONGITUDINAL
S426E	7		32'-8"	STR.	SIDEWALK LONGITUDINAL

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 NAME: *Jon W. Sitter* LIC. NO. 25128 DATE 06/28/2013
 JOHN W. SITTER

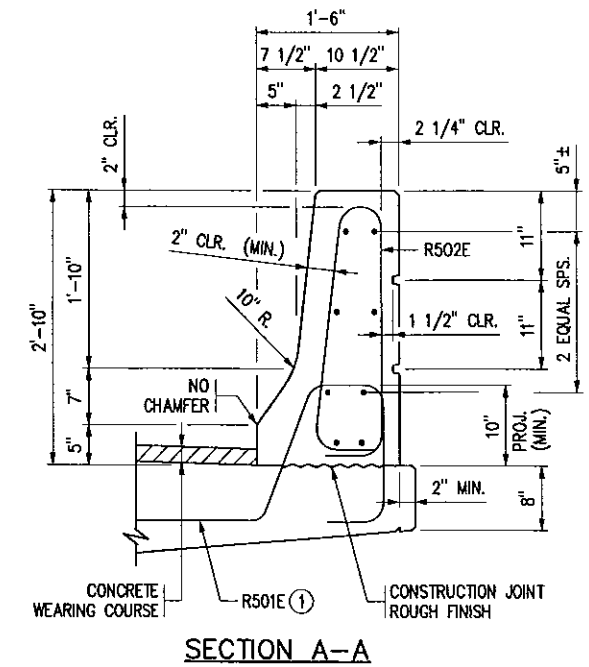
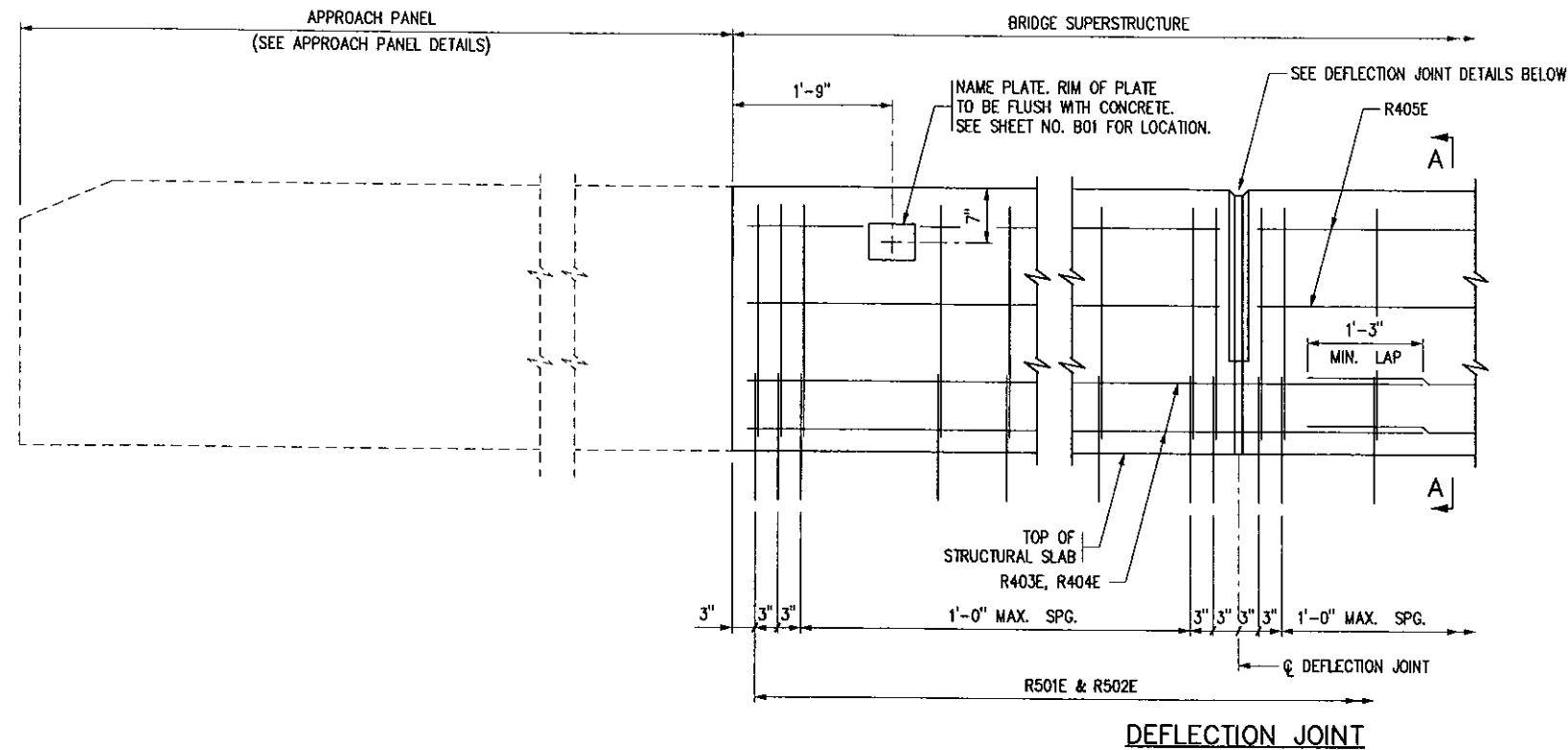
TITLE: **SUPERSTRUCTURE DETAILS**

DES: CM DR: GAV APPROVED:
 CHK: JWS CHK: JWS

Bridge No. 27B90

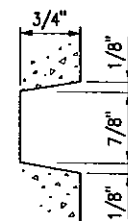
State Aid Proj. No. 098-594-002

Sheet No. B36 of 54 Sheets

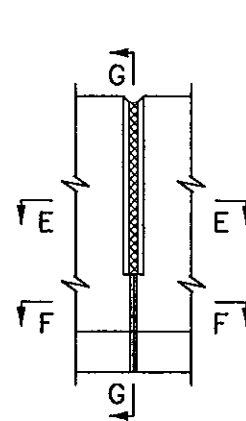


INSIDE ELEVATION OF BARRIER
(CONCRETE WEARING COURSE NOT SHOWN)

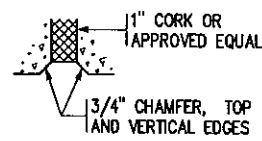
BARRIER MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350



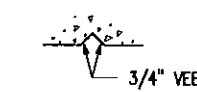
BARRIER RUSTICATION



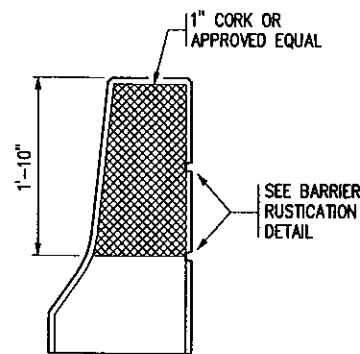
ELEVATION



SECTION E-E

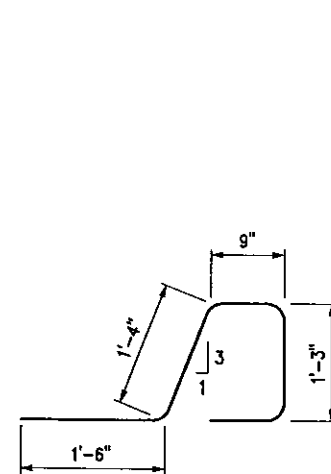


SECTION F-F

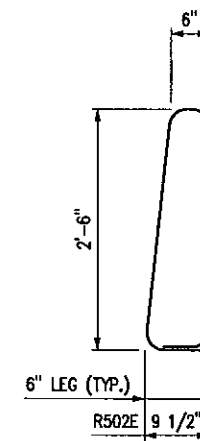


SECTION G-G

DEFLECTION JOINT DETAILS



R501E



R502E

GENERAL NOTES

LENGTH OF "TYPE F (TL-4) RAILING CONCRETE (3Y46 OR 3Y48A)" 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 3Y48A)".

BARRIER QUANTITIES ARE LISTED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

① PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT.

REVISION: 04-17-2013
APPROVED: DECEMBER, 18, 2003
Samuel A. Haggren
STATE BRIDGE ENGINEER

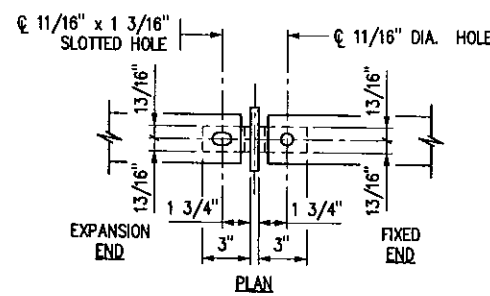
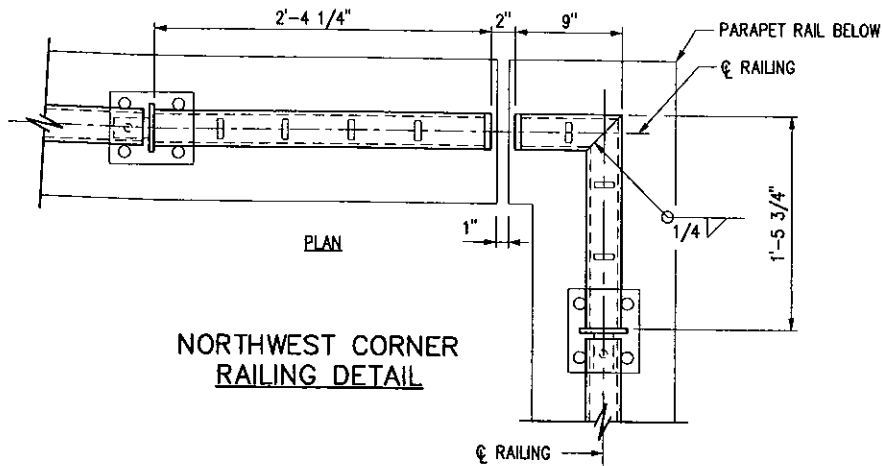
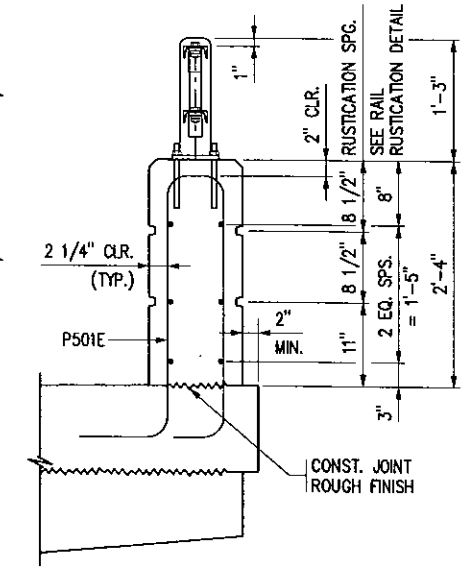
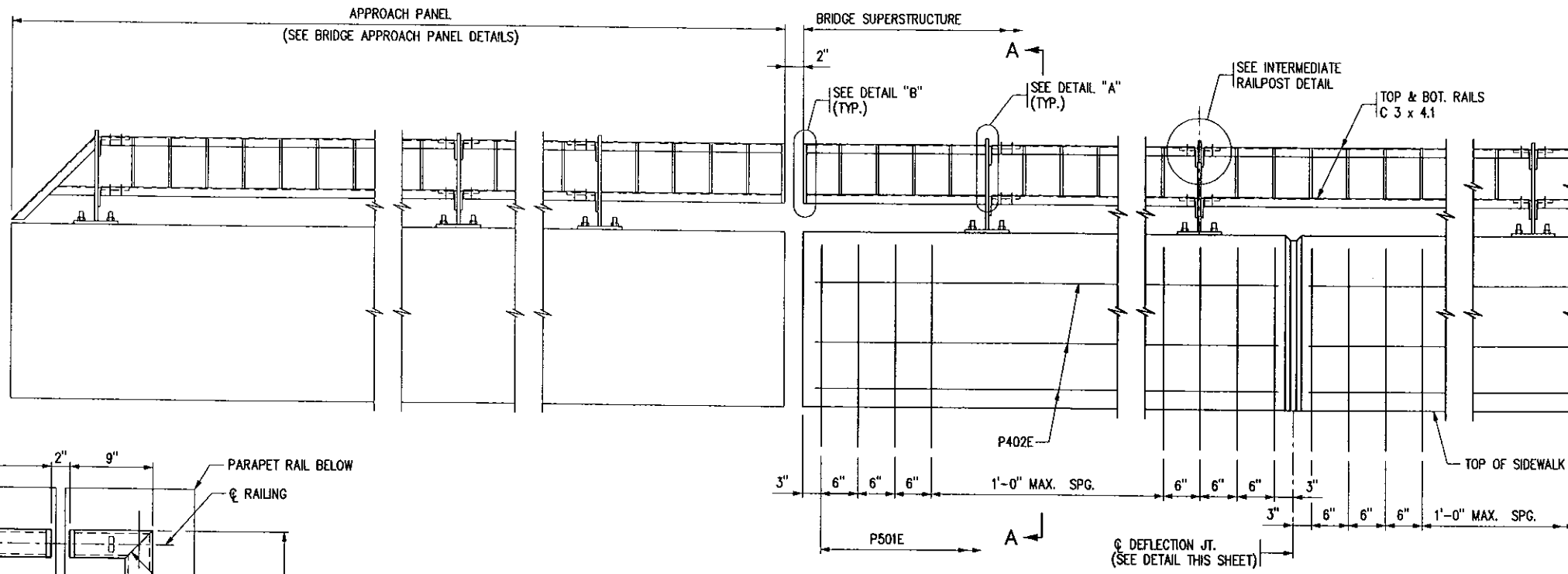
State Aid Proj. No. 098-594-002

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NAME: *Jon W. Siter* LIC. NO. 25128 DATE 06/28/2013
JON W. SITER

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

DES: C.M. DR: GAV. APPROVED: *[Signature]*
CHK: JDL. CHK: JWS. **Bridge No. 27B90**
Sheet No. B37 of 54 Sheets

FIG. 5-397.117

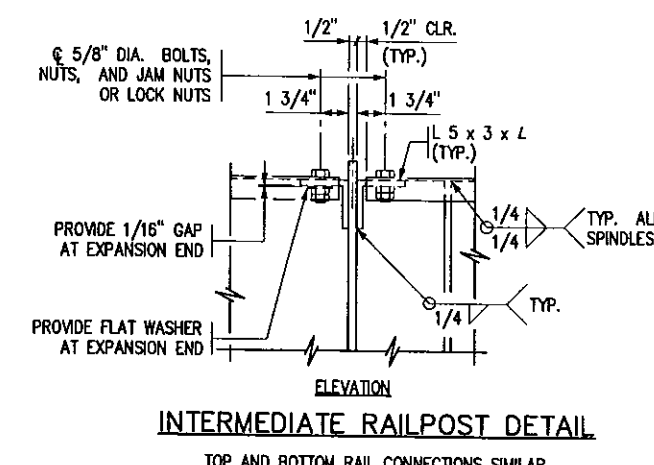
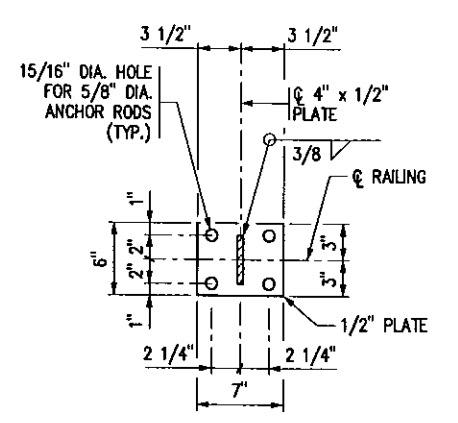


INSIDE ELEVATION OF RAILING

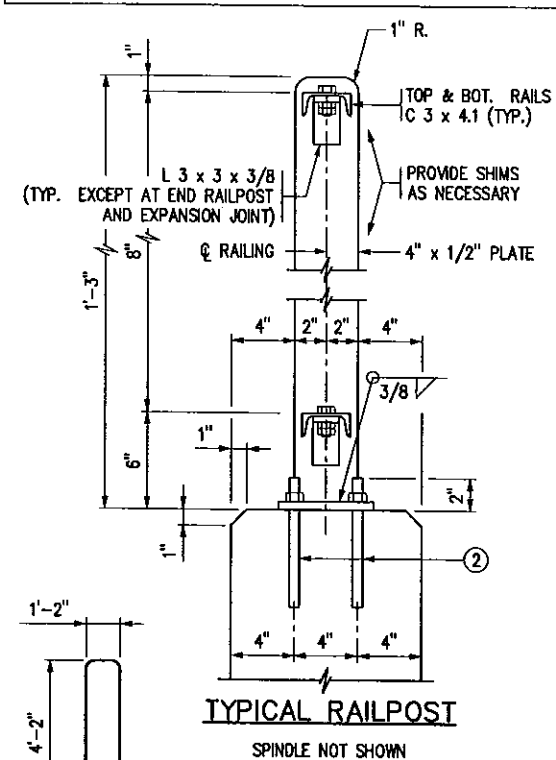
RAIL MEETS TEST LEVEL 2 REQUIREMENTS OF NCHRP REPORT 350.
 THE RAIL MUST BE USED NEXT TO WALKWAY.
 AN F-BARRIER MUST BE USED TO SEPARATE TRAFFIC FROM THIS RAIL IN THE 45 MPH (OR OVER) SPEED ZONE.

GENERAL NOTES

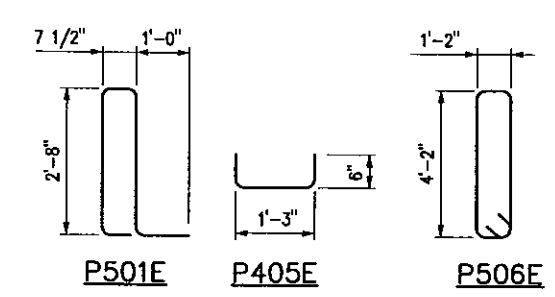
- LENGTH OF "TYPE P-1 RAILING CONCRETE (3Y46 OR 3Y46A)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAILING.
- LENGTH OF "METAL RAILING FOR BIKEWAYS, TYPE M-1" (MOD.) FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAILING.
- CONCRETE PARAPET = 350 LBS./FT. (0.086 CU. YDS./FT.)
- FINISH ALL EDGES OF CONCRETE PARAPET WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.
- MAX. SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT. SEE SUPERSTRUCTURE SHEET FOR JOINT SPACING.
- ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF METAL RAILING. SET NORMAL TO GRADE.
- DRILLED IN ANCHORAGES WILL BE PERMITTED IN LIEU OF ANCHORAGE SHOWN.
- RAILPOSTS AND SPINDLES SHALL BE NORMAL TO GRADE.
- ALL STRUCTURAL STEEL MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3306.
- GALVANIZE BOLTS, NUTS AND WASHERS PER Mn/DOT SPEC. 3392.
- GALVANIZE ALL OTHER STRUCTURAL STEEL PER Mn/DOT SPEC. 3394 AFTER FABRICATION.
- ALL RAILING MEMBERS SHALL BE FLAT AFTER FABRICATION AND GALVANIZING TO WITHIN 1/8" IN 10 FT. VERTICALLY AND HORIZONTALLY BY MECHANICAL MEANS WITHOUT DAMAGE TO THE ZINC COATING.
- SEE SPECIAL PROVISIONS FOR PAINT TO BE APPLIED TO METAL RAILING.
- GUARDRAIL CONNECTION TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- PRICE BID FOR METAL RAILING INCLUDES ANCHORAGES AND ALL MATERIAL ABOVE TOP OF CONCRETE PARAPET.
- RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.



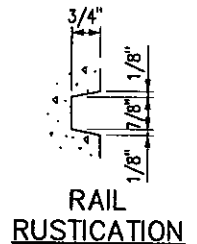
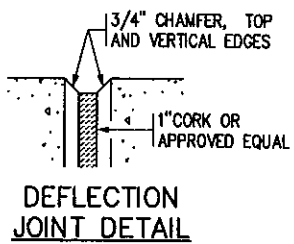
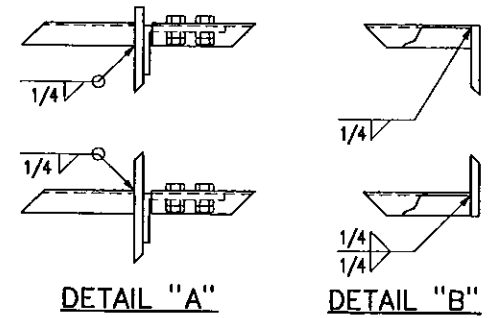
INTERMEDIATE RAILPOST DETAIL
 TOP AND BOTTOM RAIL CONNECTIONS SIMILAR



TYPICAL RAILPOST
 SPINDLE NOT SHOWN



BILL OF REINFORCEMENT FOR PARAPET				
BAR	NO.	LENGTH	SHAPE	LOCATION
P501E	132	7'-5"	U	RAIL BASE VERTICAL
P402E	36	17'-10"	—	RAIL BASE LONGIT.
P403E	6	15'-11"	—	RAIL BASE LONGIT.
P404E	6	15'-7"	—	RAIL BASE LONGIT.
P405E	6	2'-3"	—	RAIL BASE LONGIT.
P506E	9	11'-8"	U	NW END POST
P707E	10	7'-7"	U	NW END POST



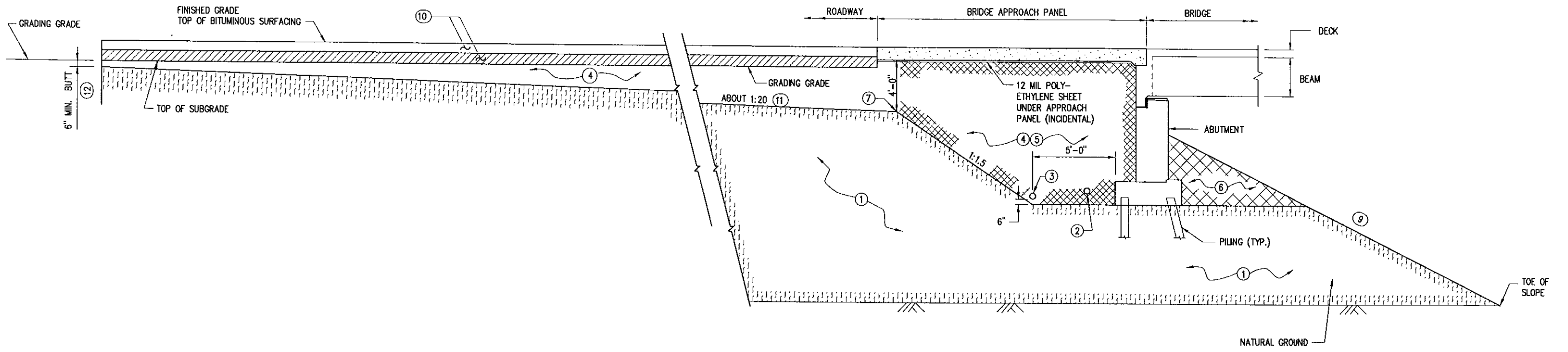
REVISION: 04-17-3013
 APPROVED: DECEMBER 18, 2003
 David J. Johnson
 STATE BRIDGE ENGINEER

State Aid Proj. No. 098-594-002

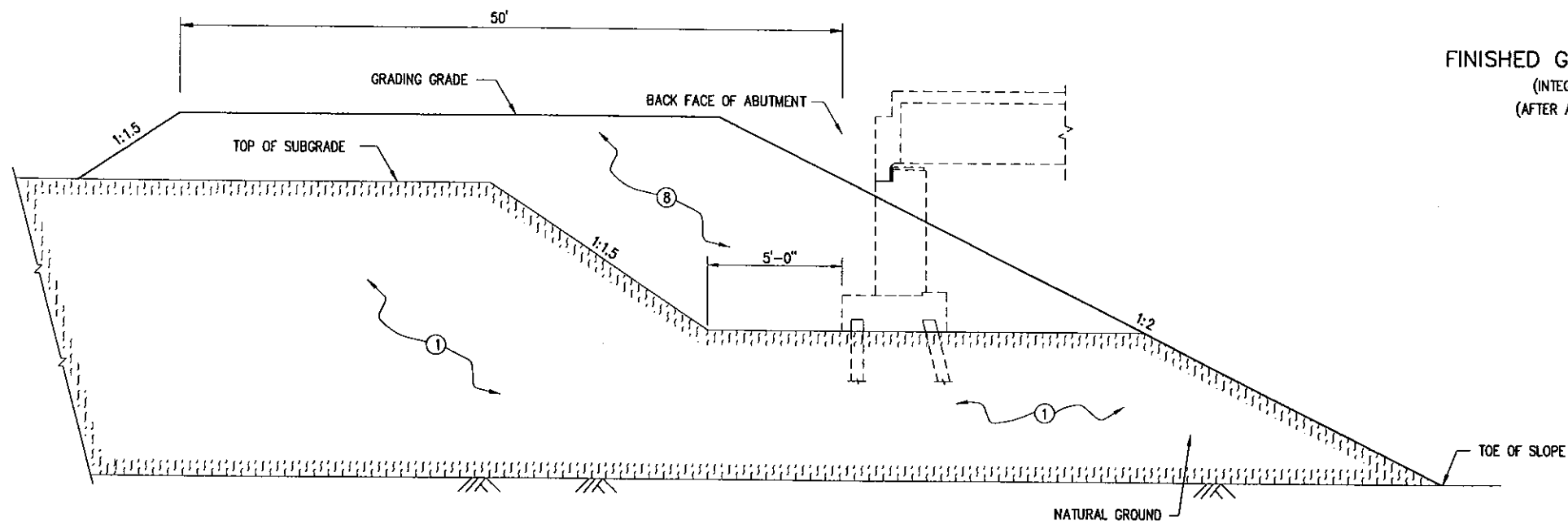
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 NAME: Jon W. Smiter LIC. NO. 25128 DATE: 06/28/2013

TITLE: METAL RAILING FOR BIKEWAYS (TYPE M-1) (MOD.) & CONCRETE PARAPET (TYPE P-1) (WITH INTEGRAL END POST)

DES: CJM DR: GAV APPROVED: [Signature]
 CHK: JDL CHK: JWS
 FIG. 5-397.154
 Bridge No. 27B90
 Sheet No. B38 of 54 Sheets



ELEVATION
FINISHED GRADING SECTION AT ABUTMENT
 (INTEGRAL ABUTMENT ON PILING SHOWN)
 (AFTER ABUTMENT HAS BEEN CONSTRUCTED)



ROUGH GRADING SECTION AT ABUTMENT
 (PRIOR TO ABUTMENT CONSTRUCTION)

NOTES:

- ① NATURAL GROUND.
- ② SUBSURFACE PIPE DRAIN. SEE BRIDGE PLANS FOR DETAILS.
- ③ SUBSURFACE PIPE DRAIN. SEE GRADING PLAN FOR DETAILS. FURNISH AND INSTALL IF SHOWN IN GRADING PLAN. (NOT REQUIRED THIS PROJECT)
- ④ SELECT GRANULAR MATERIAL MODIFIED 7% SHALL COMPLY WITH SPEC. 3149.2B2, MODIFIED SUCH THAT OF THE PORTION WHICH PASSES A 1" SIEVE, NOT MORE THAN 7% BY WEIGHT PASSES THE NUMBER 200 SIEVE.
- ⑤ SELECT GRANULAR MOD 7% QUANTITY FOR BRIDGE APPROACH TREATMENT IS INCLUDED FOR PAYMENT IN GRADING PLAN. QUANTITY OF SELECT GRANULAR MATERIAL MODIFIED 7% IS BASED ON DIMENSIONS SHOWN. Mn/DOT SPEC. 1903 SHALL NOT APPLY IF THE CONTRACTOR CHOOSES TO INCREASE DIMENSIONS IN ORDER TO FACILITATE CONSTRUCTION OPERATIONS AND ANY QUANTITY INCREASES SHALL BE CONSIDERED INCIDENTAL.
- ⑥ SUITABLE GRADING MATERIAL. (NO MEASUREMENT OR PAYMENT)
- ⑦ TOP OF 1:1.5 SLOPE (FORMS A LINE PARALLEL TO END OF BRIDGE).
- ⑧ SURCHARGE MATERIAL SHALL BE PLACED DURING ROADWAY EMBANKMENT CONSTRUCTION. THIS SAME MATERIAL TO BE REMOVED AS STRUCTURE EXCAVATION JUST PRIOR TO THE ABUTMENT CONSTRUCTION. (NOTE: NO SURCHARGE IS REQUIRED FOR BRIDGE 27B90).
- ⑨ SEE BRIDGE PLANS FOR SLOPE AND SLOPE PROTECTION.
- ⑩ SEE GRADING PLANS FOR TYPE OF MATERIAL.
- ⑪ START 1:20 TAPER AT END OF APPROACH PANEL. 1:20 VARIES WHEN APPROACH PANEL IS SKEWED.
- ⑫ GRADING TO BE SQUARED OFF ON SKEWED APPROACHES.

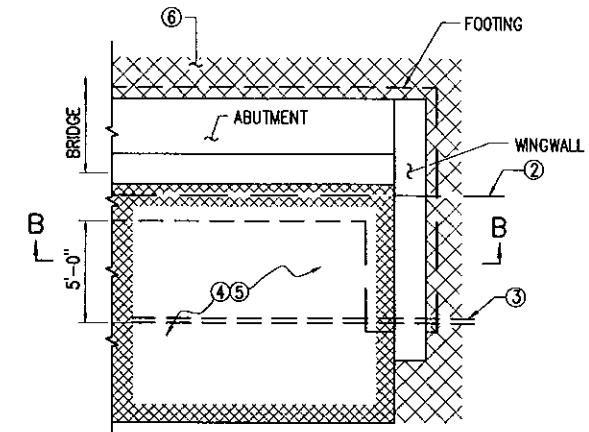
State Aid Proj. No. 098-594-002

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 NAME: *Jon W. Sitter* LIC. NO. 25128 DATE 06/28/2013
 JON W. SITTER

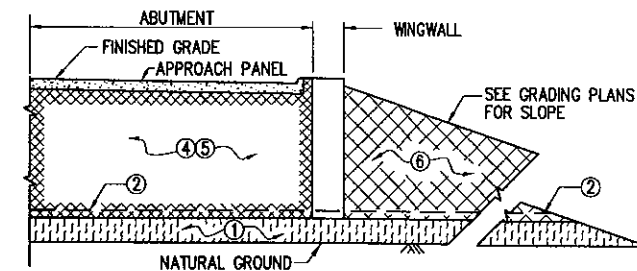
TITLE: **BRIDGE APPROACH TREATMENT SHEET 1 OF 2**

DES: GAV	DR: GAV	APPROVED:
CHK: JDL	CHK: JDL	

Bridge No. 27B90
 Sheet No. B39 of 54 Sheets



PARTIAL PLAN VIEW AT ABUTMENT
(WINGWALL AT 90°) (FINISHED GRADING)



FINISHED GRADING SECTION B-B
(FILL SECTION)

NOTES:

- ① NATURAL GROUND OR SUITABLE GRADING MATERIAL
- ② SUBSURFACE PIPE DRAIN. SEE BRIDGE PLAN FOR DETAILS.
- ③ SUBSURFACE PIPE DRAIN. SEE GRADING PLAN FOR DETAILS. FURNISH AND INSTALL IF SHOWN IN GRADING PLAN. (NOT REQUIRED)
- ④ SELECT GRANULAR MATERIAL MODIFIED 7% SHALL COMPLY WITH SPEC. 3149.2B2, MODIFIED SUCH THAT OF THE PORTION WHICH PASSES A 1" SIEVE, NOT MORE THAN 7% BY WEIGHT PASSES THE NUMBER 200 SIEVE.
- ⑤ QUANTITY OF SELECT GRANULAR MATERIAL MODIFIED 7% IS BASED ON DIMENSIONS SHOWN AND PAYMENT IS BASED ON THIS QUANTITY. SEE GRADING PLAN FOR QUANTITY. Mn/DOT SPEC. 1903 SHALL NOT APPLY IF THE CONTRACTOR CHOOSES TO INCREASE DIMENSIONS IN ORDER TO FACILITATE CONSTRUCTION OPERATIONS AND ANY QUANTITY INCREASES SHALL BE CONSIDERED INCIDENTAL.
- ⑥ SUITABLE GRADING MATERIAL

State Aid Proj. No. 098-594-002

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NAME: *Jon W. Sitter* LIC. NO. 25128 DATE 06/28/2013
JON W. SITTER

TITLE: BRIDGE APPROACH TREATMENT SHEET 2 OF 2

DES: GAV	DR: GAV	APPROVED:	Bridge No. 27B90
CHK: JDL	CHK: JDL		

Sheet No. B40 of 54 Sheets