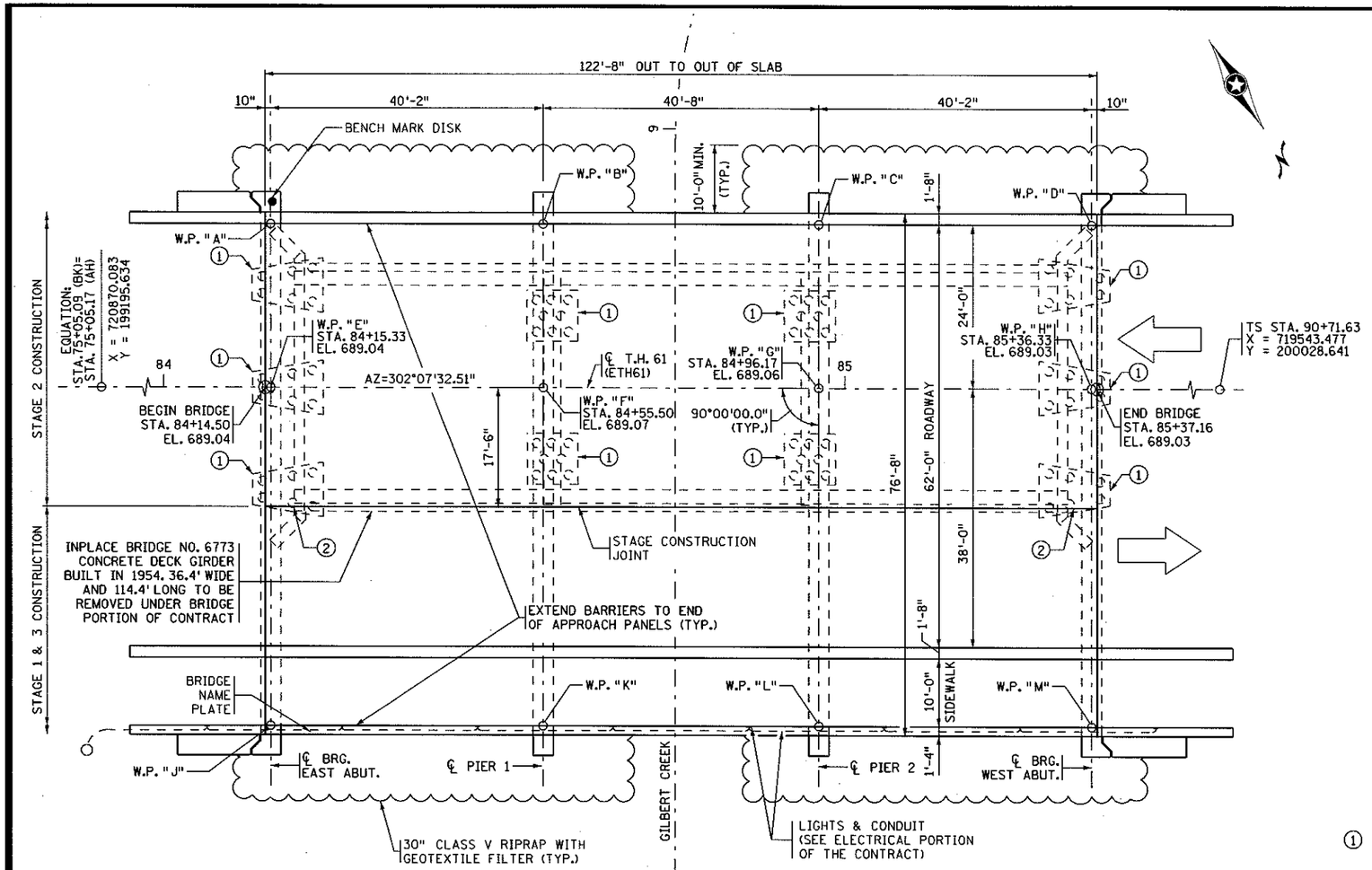
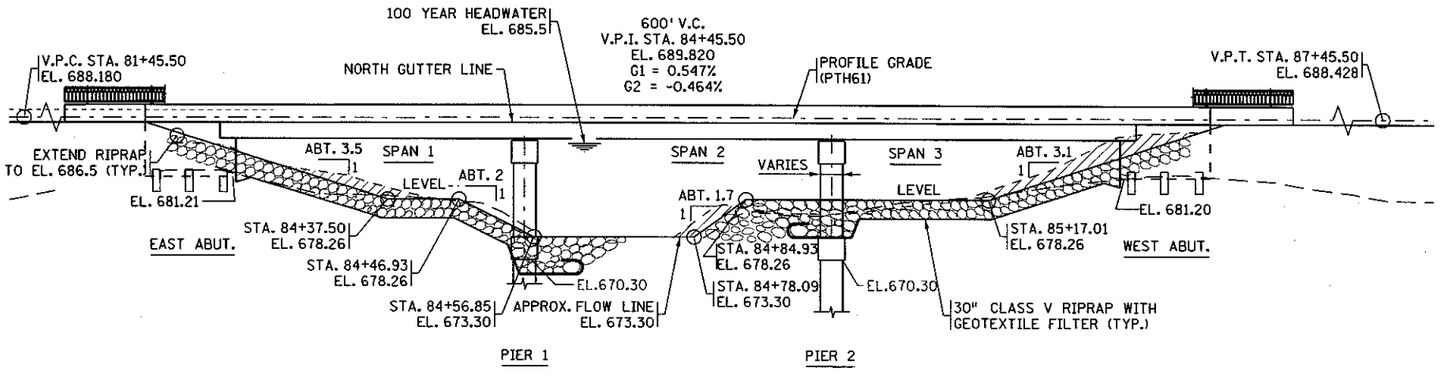


GENERAL PLAN



GENERAL ELEVATION

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12/1/2010

CONSTRUCTION NOTES

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

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

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

BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301.

BARS MARKED WITH THE SUFFIX "S" SHALL BE STAINLESS STEEL.

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

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

FOR STAGE 1 CONSTRUCTION, CONSTRUCTION OF EACH ABUTMENT SHALL NOT BE STARTED UNTIL THE APPROACH FILL AT THAT ABUTMENT HAS BEEN CONSTRUCTED TO THE FULL HEIGHT AND CROSS SECTION AND ALLOWED TO SETTLE FOR 1 MONTH. SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL DRESS SLOPES AND PLACE FILTER MATERIALS AND RIPRAP IN APPROXIMATE AREAS AS DIRECTED BY THE ENGINEER.

RIPRAP SHALL TIE TO EXISTING SPUR DIKES.

NO CUTTING WILL BE PERMITTED UNTIL THE CUTTING LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. REMOVAL SHALL CONFORM TO SPEC 2433.

CONTRACTOR SHALL CONSIDER THE GEOTECHNICAL LIMITS UNDER ALL POSSIBLE CONSTRUCTION LOADS DURRING ERECTION OF ALL PRECAST CONCRETE ELEMENTS.

① REMOVAL OF EXISTING PILES WILL BE REQUIRED TO CONSTRUCT STAGE 2 OF THIS PLAN. SEE SPECIAL PROVISIONS.

② SEE SHEET NO. 5 FOR TEMPORARY STEEL SHEET PILING DETAILS FOR STAGING CONSTRUCTION. SEE SPECIAL PROVISIONS.

NOTES

TRAFFIC TO BE STAGED DURING CONSTRUCTION.

HATCHED AREA TO BE REMOVED UNDER GRADING PORTION OF CONTRACT.

SEE SURVEY SHEET FOR INPLACE UTILITIES.

APPROXIMATELY 566 SQ. FT. OF WATERWAY IS AVAILABLE BELOW EL. 683.2.

SEE SHEET 46 RIPRAP DETAILS.

FED. PROJ. NO. NH0061 (303)

DESIGN DATA

2010 AND CURRENT INTERIM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

LOAD AND RESISTANCE FACTOR DESIGN METHOD

HL 93 LIVE LOAD

DEAD LOAD INCLUDES 20 p.s.f. ALLOWANCE FOR FUTURE WEARING COURSE MODIFICATIONS

MATERIAL DESIGN PROPERTIES:
REINFORCED CONCRETE:
f'c = 4 ksi n = 8
Fy = 60 ksi FOR REINFORCEMENT
PRESTRESSED CONCRETE:
f'c = 8 ksi n=1
fpu = 270 ksi FOR 0.6" DIAMETER LOW RELAXATION STRANDS

DECK AREA = 9405 SQ. FT.
20124 PROJECTED ADT FOR YEAR 2031
1694 PROJECTED ADTT FOR YEAR 2031
DESIGN SPEED = 60 MILES PER HOUR
BRIDGE OPERATING RATING HS 63.9

LIST OF SHEETS

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

SIGNED Jihshya J. Lin DATE 12/3/10
LICENSED PROFESSIONAL ENGINEER
NAME: JIHSHYA J. LIN LIC NO. 19115

TRUNK HIGHWAY NO. 61
MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 25024

T.H. 61 OVER GILBERT CREEK
1.6 MILES N.W. OF SOUTH JUNCTION OF T.H. 63

IDENTIFICATION NO. 526

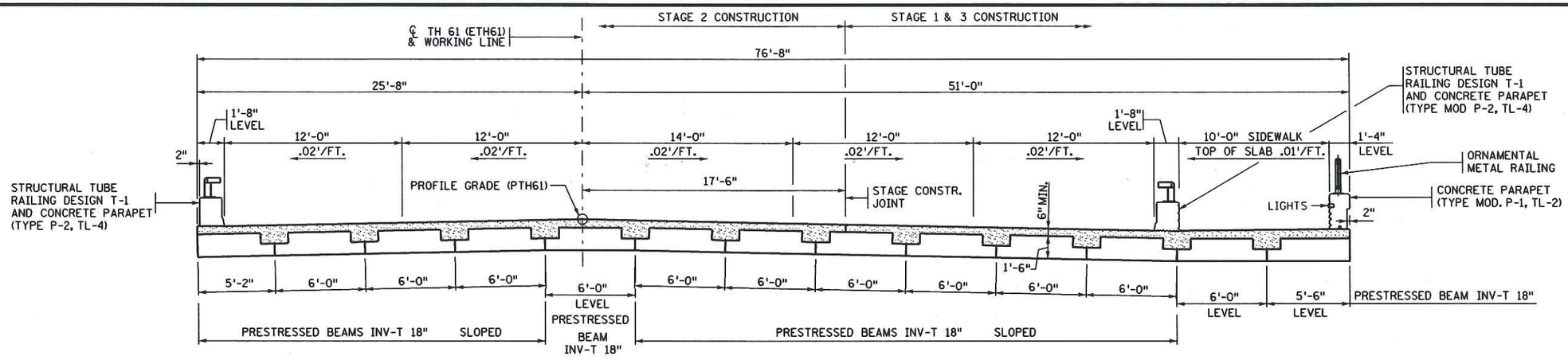
GENERAL PLAN AND ELEVATION

SEC. 31 T 112 N R 12 W
CITY OF LAKE CITY GOODHUE COUNTY

APPROVED Kevin Western
STATE BRIDGE ENGINEER FOR
DATE 12/3/10

DES.	P.J.K.	DR.	P.F./H.A.W.	25024
CHK.	J.J.L.	CHK.	J.A.J.	

JOB NO. T68968 DESIGN UNIT: JIHSHYA J. LIN STATE PROJ. NO. 2513-25024 (T.H. 61=003) SHEET NO. 1 OF 54 SHEETS



TRANSVERSE SECTION

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

	ITEM NO.	ITEM	UNIT	QUANTITY
	2401.512	BRIDGE SLAB CONCRETE (3Y33AHP)	SQ.FT.	9405 (P)
(5)	2401.513	TYPE P-2 (TL-4) RAILING CONCRETE (3Y46A)	LIN. FT.	163 (P)
(5)	2401.513	TYPE MOD P-2 (TL-4) RAILING CONCRETE (3Y46A)	LIN. FT.	163 (P)
(5)	2401.513	TYPE MOD P-1 (TL-2) RAILING CONCRETE (3Y46A)	LIN. FT.	163 (P)
(6)	2401.541	REINFORCEMENT BARS (EPOXY COATED)	POUND	104510 (P)
	2401.601	STRUCTURE EXCAVATION	LUMP SUM	1
	2401.601	FOUNDATION PREP PILE BENT PIERS	LUMP SUM	1
	2401.618	BRIDGE DECK PLANING	SQ. FT.	9542 (P)
(5)	2402.583	ORNAMENTAL METAL RAILING	LIN. FT.	163 (P)
(7)	2402.584	STRUCTURAL TUBE RAILING DESIGN T-1	LIN. FT.	314 (P)
	2402.590	ELASTOMERIC BEARING PAD TYPE 1	EACH	6 (P)
	2402.590	ELASTOMERIC BEARING PAD TYPE 2	EACH	66 (P)
	2402.590	ELASTOMERIC BEARING PAD TYPE 3	EACH	6 (P)
	2402.602	SHEAR STUDS	EACH	120 (P)
(9)	2405.601	PRECAST PIER WALL	LUMP SUM	1
(8)	2405.602	PRECAST PIER CAP ELEMENT	EACH	4 (P)
(8)	2405.602	PRECAST PIER BASE ELEMENT	EACH	4 (P)
(8)	2405.602	PRECAST WINGWALL ELEMENT	EACH	4 (P)
(8)	2405.602	PRECAST ABUTMENT ELEMENT	EACH	4 (P)
(2)	2405.603	PRESTRESSED BEAMS INV-T 18" TYPE 1	LIN. FT.	121 (P)
(3)	2405.603	PRESTRESSED BEAMS INV-T 18" TYPE 2	LIN. FT.	1331 (P)
(4)	2405.603	PRESTRESSED BEAMS INV-T 18" TYPE 3	LIN. FT.	121 (P)
	2411.618	ARCH CONC TEXTURE (ASHLAR STONE)	SQ. FT.	2383 (P)
	2411.618	ARCH SURFACE FINISH (MULTI COLOR)	SQ. FT.	2383 (P)
	2411.618	ANTI-GRAFFITI COATING	SQ. FT.	2383 (P)
	2433.516	ANCHORAGES TYPE REINF BARS	EACH	269 (P)
	2433.516	ANCHORAGES TYPE REINF BARS (STAINLESS STEEL)	EACH	248 (P)
	2433.516	ANCHORAGES TYPE 1	EACH	39 (P)

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

	ITEM NO.	ITEM	UNIT	QUANTITY
	2433.602	REMOVE ANCHORAGE	EACH	39 (P)
(1)	2442.501	REMOVE EXISTING BRIDGE	LUMP SUM	1
	2452.507	C-I-P CONCRETE PILING DELIVERED 12"	LIN. FT.	1500
	2452.507	C-I-P CONCRETE PILING DELIVERED 16"	LIN. FT.	1120
	2452.508	C-I-P CONCRETE PILING DRIVEN 12"	LIN. FT.	1500
	2452.508	C-I-P CONCRETE PILING DRIVEN 16"	LIN. FT.	1120
	2452.519	C-I-P CONCRETE TEST PILE 70 FT LONG 12"	EACH	2
	2452.519	C-I-P CONCRETE TEST PILE 75 FT LONG 12"	EACH	2
	2452.519	C-I-P CONCRETE TEST PILE 80 FT LONG 16"	EACH	4
	2452.527	PILE REDRIVING	EACH	8
	2452.601	STEEL SHEET PILING (TEMPORARY)	LUMP SUM	1
	2472.525	COUPLERS (REINFORCEMENT BARS) T-19	EACH	60 (P)
	2502.502	DRAINAGE SYSTEM TYPE (B910)	LUMP SUM	1
	2511.501	RANDOM RIPRAP CLASS V	CU. YD.	1350
	2511.515	GEOTEXTILE FILTER TYPE IV (MOD)	SQ.YD.	1480
	2545.509	CONDUIT SYSTEM (LIGHTING)	LUMP SUM	1

(1) REMOVE EXISTING BRIDGE NO. 6773

(2) "PRESTRESSED BEAM INV-T 18" TYPE 1 " INCLUDES BEAMS DESIGNATED AS B1.

(3) "PRESTRESSED BEAM INV-T 18" TYPE 2 " INCLUDES BEAMS DESIGNATED AS B2 AND B3.

(4) "PRESTRESSED BEAM INV-T 18" TYPE 3 " INCLUDES BEAMS DESIGNATED AS B4.

(5) INCLUDES 40 LIN. FT. FOR APPROACH PANELS.

(6) INCLUDES CAST IN PLACE DECK REINFORCEMENT AND RAILING REINFORCEMENT ONLY.

(7) INCLUDES 68 LIN. FT. FOR APPROACH PANELS.

(8) INCLUDING FRICTION COLLARS, LEVELING DEVICES, GROUT & CLOSURE POUR. SEE SPECIAL PROVISIONS.

(9) INCLUDING INSERTS, DOWEL, SCC, GROUT & CLOSURE POUR. SEE SPECIAL PROVISIONS.

12/22/2010 br25024_s12.dgn

CERTIFIED BY Jihshya J. Lin 12/22/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: TRANSVERSE SECTION & SCHEDULE OF QUANTITIES

DES: P.J.K. DR: P.F./H.A.W. APPROVED: 12/22/10
CHK: J.J.L. CHK: J.A.J.

SHEET NO. 2 OF 54 SHEETS

BRIDGE NO. 25024

PROPOSED PIER CONSTRUCTION SEQUENCE:

1. CONTRACTOR SHALL PREPARE SITE FOR CONSTRUCTION. CONTRACTOR IS TO CLEAR AND GRUB. CONTRATOR SHALL DESIGN & INSTALL CRANE PAD BASED ON THE RECOMMENED SOIL PROPERTIES IN THE GEOTECHNICAL REPORT. CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE GEOTECHNICAL STABILITY OF THE SITE DURING THE ENTIRE PERIOD OF BRIDGE CONSTRUCTION.
2. PROVIDE LEVELING PAD FOR ERECTION OF PIER BASE ELEMENTS TO THE ELEVATION PER THE PLAN.
3. INSTALL PIER BASE ELEMENT TO FINAL LOCATION AND APPROXIMATE ELEVATION AS PER THE PLAN.
4. INSTALL PILING USING PIER BASE ELEMENT AS A TEMPLATE. MAINTAIN PILES WITHIN SPECIFIED TOLERANCES (SEE TOLERANCE TABLE IN THIS SHEET.)
5. INSTALL NECESSARY TEMPORARY SUPPORTING COLLARS ON PILES OR OTHER TYPES OF SUPPORTS (SEE SHEET NO. 22.) CONNECT LEVELING DEVICES FOR PRECAST BASE ELEMENT (ELEMENT A) AND PRECAST CAP ELEMENTS (ELEMENT C OR E).
6. CONTRACTOR SHALL VERIFY LOCATION OF PILE TIP WITH RESPECT TO TOLERANCES. ENGINEER APPROVAL IS NEEDED TO PROCEED AFTER THIS STEP.
7. INSTALL PRECAST PIER CAP ELEMENT (ELEMENT C OR E). USING LEVELING DEVICES, ADJUST PRECAST PIER CAP ELEMENT INTO POSITION AS SHOWN IN THE PLAN.
8. CONTRACTOR SHALL VERIFY LOCATION OF PILES AND ELEVATIONS OF PRECAST ELEMENTS. ENGINEER APPROVAL IS NEEDED TO PROCEED AFTER THIS STEP.
9. PREPARE PRECAST PIER CAP ELEMENT FOR GROUTING OPERATIONS, INCLUDING ALL NECESSARY FORMWORK. PREPARE PRECAST BASE ELEMENT FOR GROUTING OPERATIONS, INCLUDING ALL NECESSARY FORMWORK. ALL FORMWORK SHALL BE WATERTIGHT TO AVOID ANY GROUT FROM LEAKING DURING GROUTING.
10. PERFORM GROUTING OPERATIONS. SEE SPECIAL PROVISIONS FOR MATERIAL & CONSTRUCTION REQUIRMENTS.
11. WAIT AT LEAST 24 HOURS OR UNTIL GROUT HAS ACHIEVE THE REQUIRED STRENGTH BEFORE PLACING SUPERSTRUCTURE ELEMENTS.
12. REMOVE TEMPORARY SUPPORTING COLLARS, LEVELING DEVICES AND ANY TEMPORARY SUPPORTS.
13. CONTRACTOR SHALL VERIFY ELEVATIONS AND LOCATIONS OF PRECAST ELEMENTS. ENGINEER APPROVAL IS NEEDED TO PROCEED AFTER THIS STEP.
14. PREPARE PRECAST PIER WALL ELEMENT (ELEMENT B OR D) FOR ERECTION. INSTALL SHEAR STUDS ON PILES AND THREADED RODS INTO INSERTS IN THE PRECAST WALL ELEMENTS PER THE PLAN.
15. INSTALL PRECAST PIER WALL ELEMENTS (ELEMENT B OR D). FORM AROUND THE PIER WALL ELEMENTS & VOIDS BETWEEN PIER WALL ELEMENTS.
16. INSTALL WATERPROOFING TO MAKE FORMS WATER TIGHT.
17. PLACE SCC CONCRETE IN VOID BETWEEN PRECAST PIER PANEL ELEMENTS.
18. GROUT TO FILL APPROX 5" VOID BETWEEN THE TOP OF PIER WALL ELEMENTS & THE BOTTOM OF PIER CAP.

PROPOSED ABUTMENT CONSTRUCTION SEQUENCE:

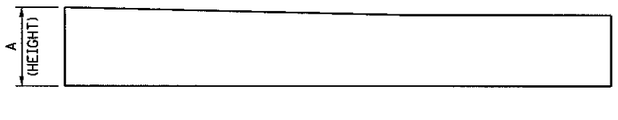
1. CONTRACTOR SHALL PREPARE SITE FOR CONSTRUCTION. CONTRACTOR IS TO CLEAR AND GRUB. CONTRATOR SHALL DESIGN & INSTALL CRANE PAD BASED ON THE RECOMMENED SOIL PROPERTIES IN THE GEOTECHNICAL REPORT. CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE GEOTECHNICAL STABILITY OF THE SITE DURING THE ENTIRE PERIOD OF BRIDGE CONSTRUCTION.
2. INSTALL PILING. MAINTAIN PILE WITHIN SPECIFIED TOLERANCES (SEE TOLERANCE TABLE IN THIS SHEET).
3. INSTALL TEMPORARY SUPPORTING COLLARS OR OTHER TYPES OF SUPPORTS (SEE SHEET NO. 22.) ON PILES. CONNECT LEVELING DEVICES FOR PRECAST ELEMENT.
4. CONTRACTOR SHALL VALIDATE LOCATION OF PILE TIP WITH RESPECT TO TOLERANCES. ENGINEER APPROVAL IS NEEDED TO PROCEED AFTER THIS STEP.
5. INSTALL PRECAST ELEMENT. USING LEVELING DEVICES, ADJUST PRECAST ELEMENT INTO POSITION AS SHOWN IN THE PLAN.
6. USING LEVELING DECVICES, ADJUST PRECAST ELEMENTS INTO FINAL POSITION.
7. CONTRACTOR SHALL VERIFY ELEVATIONS OF PRECAST ELEMENTS. ENGINEER APPROVAL IS NEEDED TO PROCEED AFTER THIS STEP.
8. PREPARE PRECAST ELEMENT FOR GROUTING OPERATIONS, INCLUDING ALL NECESSARY FORMWORK. ALL FORMWORK SHALL BE WATERTIGHT TO AVOID GROUT FROM LEAKING DURING GROUTING.
9. PERFORM GROUTING OPERATIONS. SEE SPECIAL PROVISIONS FOR MATERIAL & CONSTRUCTION REQUIREMENTS.
10. WAIT AT LEAST 24 HOURS OR UNTIL GROUT HAS ACHIEVE THE REQUIRED STRENGTH BEFORE PLACING SUPERSTRUCTURE ELEMENTS.
11. CONTRACTOR SHALL VERIFY ELEVATIONS & LOCATION OF PRECAST ELEMENTS. ENGINEER APPROVAL IS NEEDED TO PROCEED AFTER THIS STEP.
12. REMOVE TEMPORARY SUPPORTING COLLARS LEVELING DEVICES AND ANY TEMPORARY SUPPORTS.

PRECAST ELEMENT NOTES:

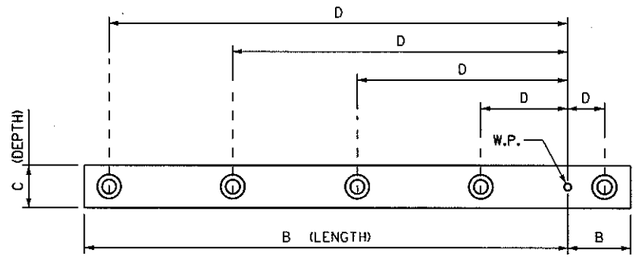
1. FABRICATOR SHALL BE RESPONSIBLE FOR EXERCISING CARE IN LIFTING, HANDLING, STORING, AND TRANSPORTING OF THE PRECAST ELEMENTS TO PREVENT CRACKING OR DAMAGING. ELEMENTS SHALL BE LIFTED BY DEVICES AS DESIGNED BY THE CONTRACTOR AND REVIEWED BY THE ENGINEER.
2. USE THE PCI DESIGN HANDBOOK, PRECAST AND PRESTRESSED CONCRETE, SEVENTH EDITION WITH ALL INTERIMS AND ERRATA FOR THE DESIGN AND DETAIL OF LIFTING SUPPORTS AND HANDLING CONSIDERATIONS (NO CRACKING CRITERIA). LIFTING HARDWARE LEFT IN PLACE SHALL BE GALVANIZED.
3. WEIGHTS ARE DEFINED IN ELEMENT WEIGHT TABLE.
4. ALL ELEMENTS SHALL BE CLEAN AND CONTAIN NO DIRT, OIL, GREASE, OR OTHER LOOSE MATERIAL BEFORE PLACING GROUT OR CONCRETE. WATER BLAST AFTER CLEANING.
5. FINAL PILE HEAD POSITION SHALL NOT DEVIATE FROM THE LOCATION DESIGNATED BY MORE THAN 1" IN ANY DIRECTION IN ORDER TO ALLOW THE PRECAST ELEMENTS TO BE INSTALLED.
6. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW A DETAILED CONSTRUCTION SEQUENCE OF THE WORK TASKS TO BE PERFORMED BEFORE STARTING OF CONSTRUCTION. DETAIL WORK TASKS AND METHOD FOR PILE REMOVAL IN EXISTING BRIDGE. DETAIL WORK TASK AND METHODS FOR QUALITY CONTROL FOR ELEMENT GEOMETRICS (SEE SPECIAL PROVISIONS). DETAIL WORK TASK AND METHODS FOR ADJUSTING ELEVATIONS FOR PRECAST SUBSTRUCTURE ELEMENTS (SEE SPECIAL PROVISIONS). DETAIL WORK TASK AND METHODS FOR PLACING SCC CONCRETE IN VOID AT PIERS (SEE SPECIAL PROVISIONS). THE PLANS HAVE BEEN DEVELOPED ASSUMING THE FOLLOWING CONSTRUCTION SEQUENCE(S).

PRECAST ELEMENT WEIGHT TABLE		
ELEMENT	STAGE	APPROX. WEIGHT (TONS)
WINGWALL	-	18
ABUT	1	43
ABUT	2	45
PIER A	1	34
PIER (PER PANEL) B	1	8
PIER (PER PANEL) B	1	8
PIER C	1	34
PIER A	2	34
PIER (PER PANEL) B	2	8
PIER (PER PANEL) D	2	9
PIER E	2	36

PRECAST ELEMENT TOLERANCES		
A	PRECAST ELEMENT HEIGHT	±3/16"
B	PRECAST ELEMENT LENGTH	±1/4"
C	PRECAST ELEMENT DEPTH	±1/4"
D	PILE THRU HOLE LOCATION	±3/16"
E	PIER WALL HEIGHT	±1/4"
F	PIER WALL LENGTH	±1/4"

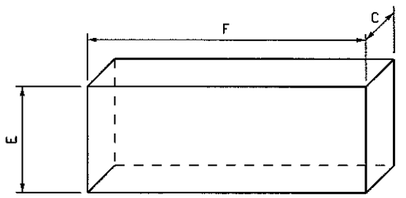


ELEVATION VIEW



PLAN VIEW

PRECAST ELEMENT



ELEVATION VIEW PRECAST PIER WALL ELEMENT

11/30/2010 br25024_s12.dgn

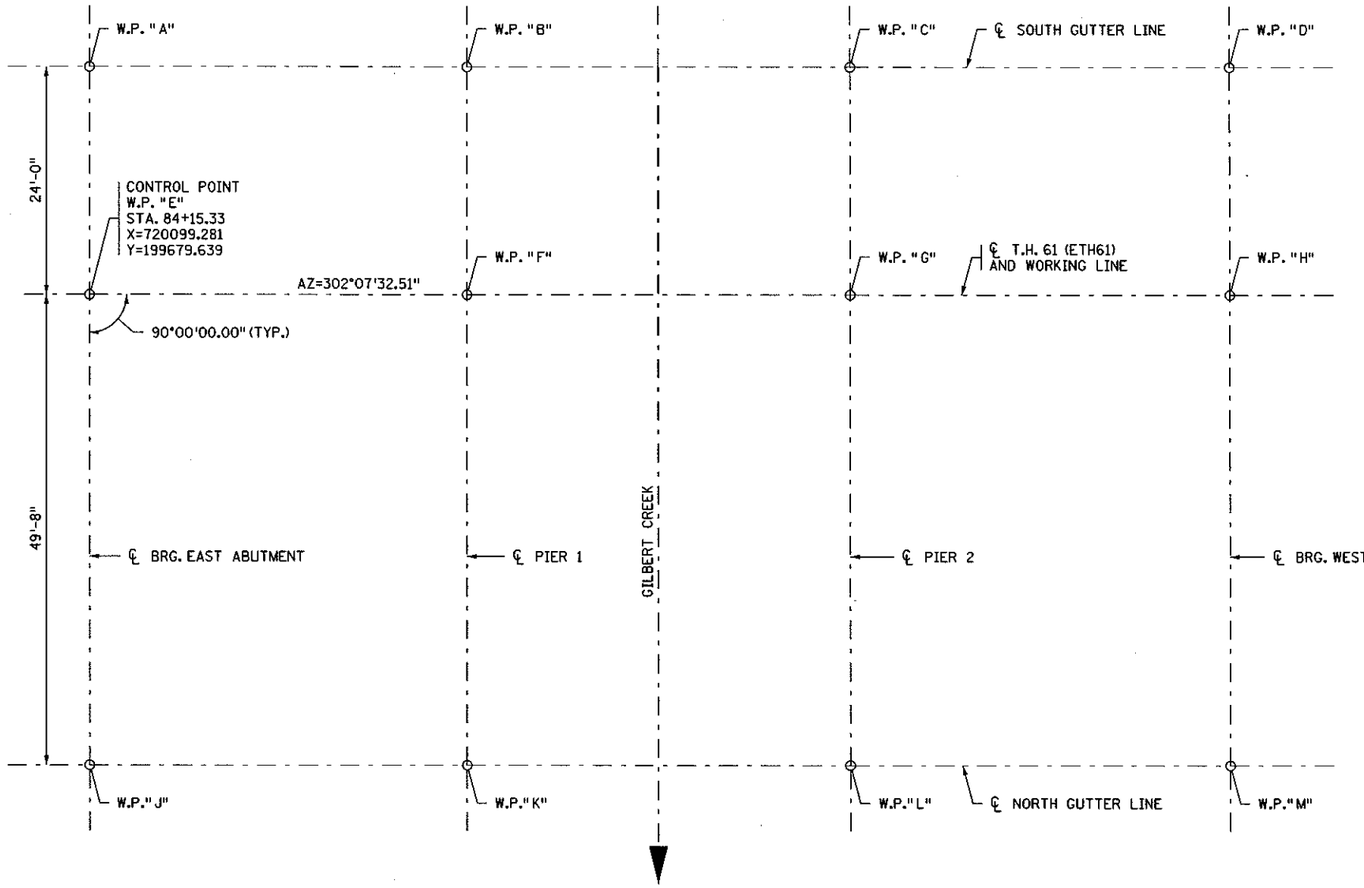
CERTIFIED BY: Jihshya J. Lin — LICENSED PROFESSIONAL ENGINEER — 12/3/10 DATE
NAME: JIHSHYA J. LIN — LIC. NO. 19115

TITLE: CONSTRUCTION NOTES

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/3/10
CHK: J.J.L.	CHK: J.A.J.	

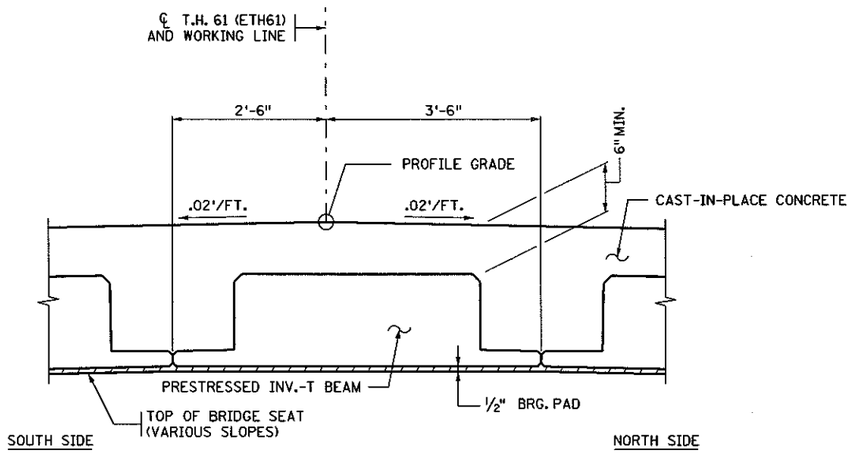
SHEET NO. 3 OF 54 SHEETS

BRIDGE NO. 25024



WORKING POINT LAYOUT

	DIMENSIONS BETWEEN WORKING POINTS															ELEVATIONS	
POINT	STATION	X-COORDIN	Y-COORDIN	A	B	C	D	E	F	G	H	J	K	L	M	TOP OF ROADWAY	POINT
A	84+15.33	720086.518	199659.314		40.17			24.00	46.79				83.91	109.37		688.56	A
B	84+55.50	720052.501	199680.674			40.67			24.00	47.22		83.91		84.15	109.37	688.59	B
C	84+96.17	720018.062	199702.299				40.17			24.00	46.79	109.37	84.15		83.91	688.58	C
D	85+36.33	719984.045	199723.659								24.00		109.37	83.91		688.55	D
E	84+15.33	720099.281	199679.639						40.17			49.67	63.88			689.04	E
F	84+55.50	720065.264	199700.999							40.67			49.67	64.19		689.07	F
G	84+96.17	720030.824	199722.624								40.17			49.67	63.88	689.06	G
H	85+36.33	719996.808	199743.984												49.67	689.03	H
J	84+15.33	720125.692	199721.701										40.17			688.38	J
K	84+55.50	720091.676	199743.061											40.67		688.41	K
L	84+96.17	720057.236	199764.686												40.17	688.40	L
M	85+36.33	720023.219	199786.046													688.37	M



BRIDGE SEAT ℄ CROWN DETAIL

dgnfilename

mmddyy

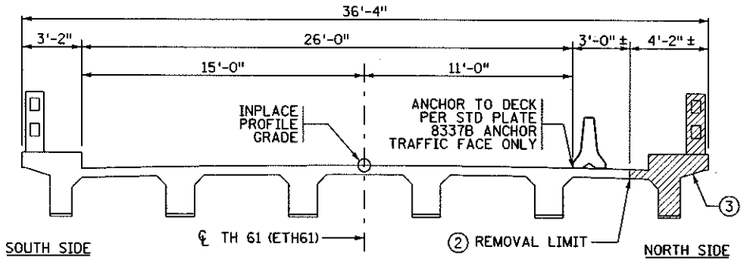
CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: BRIDGE LAYOUT

DES: P.J.K.	DR: P.F./H.A.W.	APPROVED:
CHK: J.J.L.	CHK: J.A.J.	12/3/10

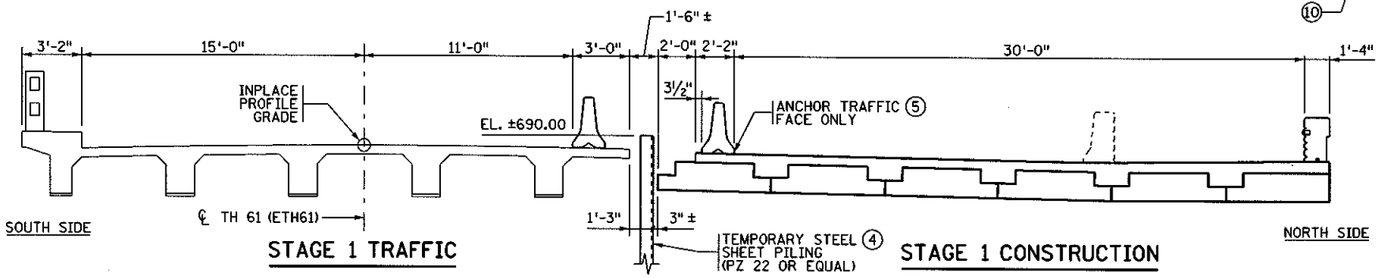
SHEET NO. 4 OF 54 SHEETS

BRIDGE NO. 25024



STAGE 1 DEMOLITION

(INPLACE BRIDGE NO 6773)

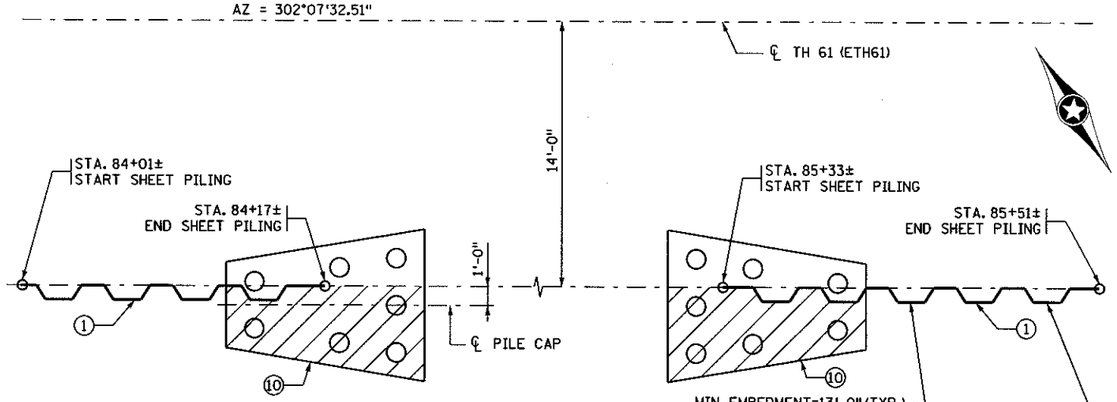


STAGE 1 TRAFFIC

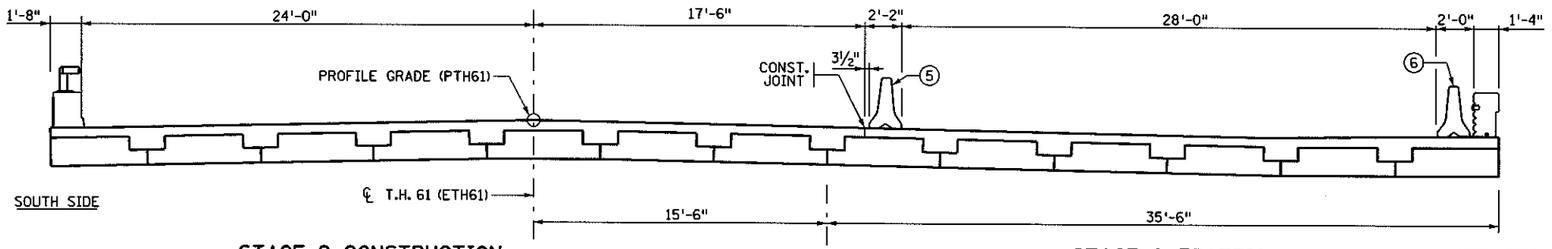
STAGE 1 CONSTRUCTION

STAGE 1 SECTION

STAGE 2 PER
SP2513-70 GRADING PLAN



SHEET PILE LAYOUT

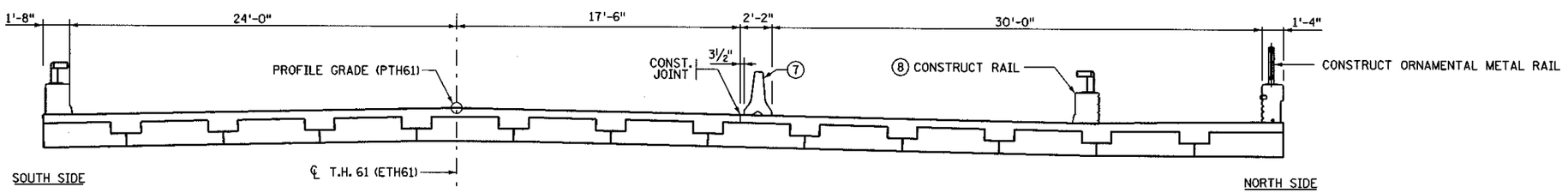


STAGE 2 CONSTRUCTION

STAGE 2 TRAFFIC

STAGE 2 SECTION

STAGE 3 PER
SP2513-70 GRADING PLAN



STAGE 3 TRAFFIC

STAGE 3 CONSTRUCTION

STAGE 3 SECTION ⑨

STAGE 4 PER
SP2513-70 GRADING PLAN

NOTES:

① TOP OF SHEET PILING EL. = 690 FT. MIN.

② NO CUTTING WILL BE PERMITTED UNTIL THE CUTTING LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. REMOVAL SHALL CONFORM TO SPEC 2433.

③ REMOVAL SHALL INCLUDE, IF NECESSARY, PART OF INPLACE RAILING, DECK, CURB, ABUTMENTS, WINGWALLS, PIER CAP, PILE CAPS & TIMBER PILES FOR THE INSTALLATION OF TEMPORARY STEEL SHEET PILING. THIS REMOVAL WORK SHALL BE INCLUDED IN PAY ITEM 2442.501 "REMOVE EXISTING BRIDGE". SEE SPECIAL PROVISIONS.

④ TEMPORARY STEEL SHEET PILING SHALL BE INCLUDED IN PAY ITEM 2452.601, "STEEL SHEET PILING (TEMPORARY)". SEE SPECIAL PROVISIONS.

⑤ ANCHORAGES SHALL BE PAID IN ITEM NO. 2433.516, "ANCHORAGES TYPE 1". THE TEMPORARY BARRIER SHALL BE INCLUDED IN GRADING PORTION OF THIS CONTRACT.

⑥ NO ANCHORAGES NEEDED.

⑦ REMOVAL OF THE ANCHORAGES & GROUTING OF HOLES SHALL BE PAID IN ITEM NO. 2433.602, "REMOVE ANCHORAGE". THE REMOVAL OF TEMPORARY BARRIERS SHALL BE INCLUDED IN THE GRADING PORTION OF THIS CONTRACT. SEE SPECIAL PROVISIONS.

⑧ TO BE INSTALLED WITH REINFORCEMENT BAR ANCHORAGES. SEE SPECIAL PROVISIONS.

⑨ SEE ABUTMENT & PIER SHEETS FOR STAGING CONSTRUCTION & CLOSURE POURS.

⑩ CONTRACTOR SHALL DETERMINE CONCRETE LIMIT FOR STAGE 1 CONSTRUCTION. THE REMOVAL LIMIT SHALL BE REVIEWED BY THE ENGINEER. SEE SPECIAL PROVISIONS.

▨ INDICATES REMOVAL

CERTIFIED BY Jihshya J. Lin LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

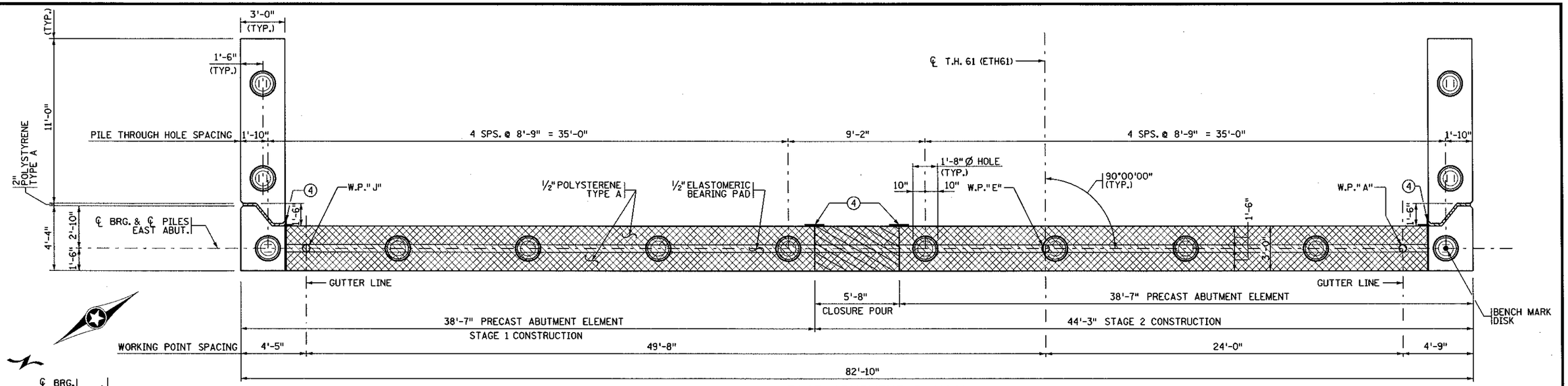
TITLE: CONSTRUCTION STAGING

DES: P.J.K.	DR: K.G.S.	APPROVED:
CHK: J.J.L.	CHK: J.A.J.	12/3/10

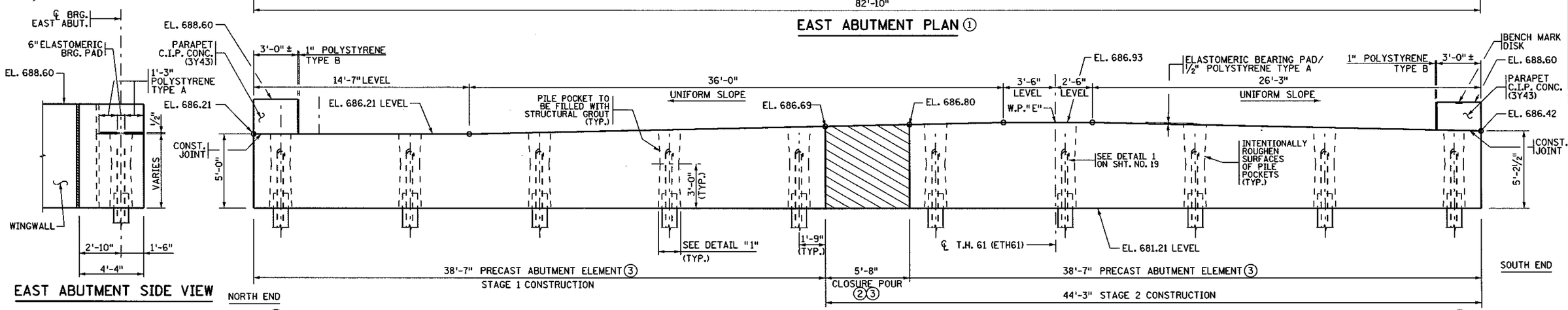
SHEET NO. 5 OF 54 SHEETS

BRIDGE NO. 25024

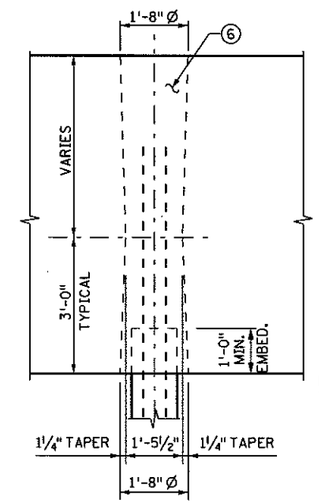
11/29/2010 br25024_s12.dgn



EAST ABUTMENT PLAN ①

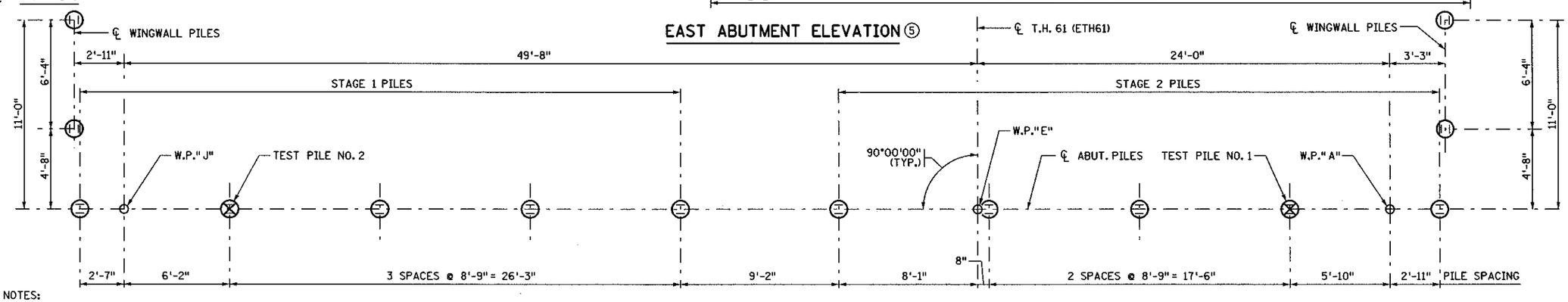


EAST ABUTMENT SIDE VIEW



DETAIL "1"

EAST ABUTMENT ELEVATION ⑤



NOTES:

① SEE SHEET NO. 20 FOR PILE NOTES AND PRECAST ABUTMENT ELEMENT NOTES.

② CLOSURE POUR TO OCCUR @ END OF STAGE 2 CONSTRUCTION BEFORE BEAM PLACEMENT.

③ STRUCTURAL CONCRETE (3Y43).

④ MEMBRANE WATERPROOFING SYSTEM PER MN/DOT SPEC. 2481.3B & 2'-0" WIDE GEOTEXTILE TYPE II PER MN/DOT SPEC. 3733.

⑤ ELEVATIONS SHOWN TO BE TO THE TOP OF CONCRETE.

⑥ FILL WITH GROUT. SEE SPECIAL PROVISIONS.

EAST ABUTMENT PILES PLAN

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN — LIC. NO. 10115

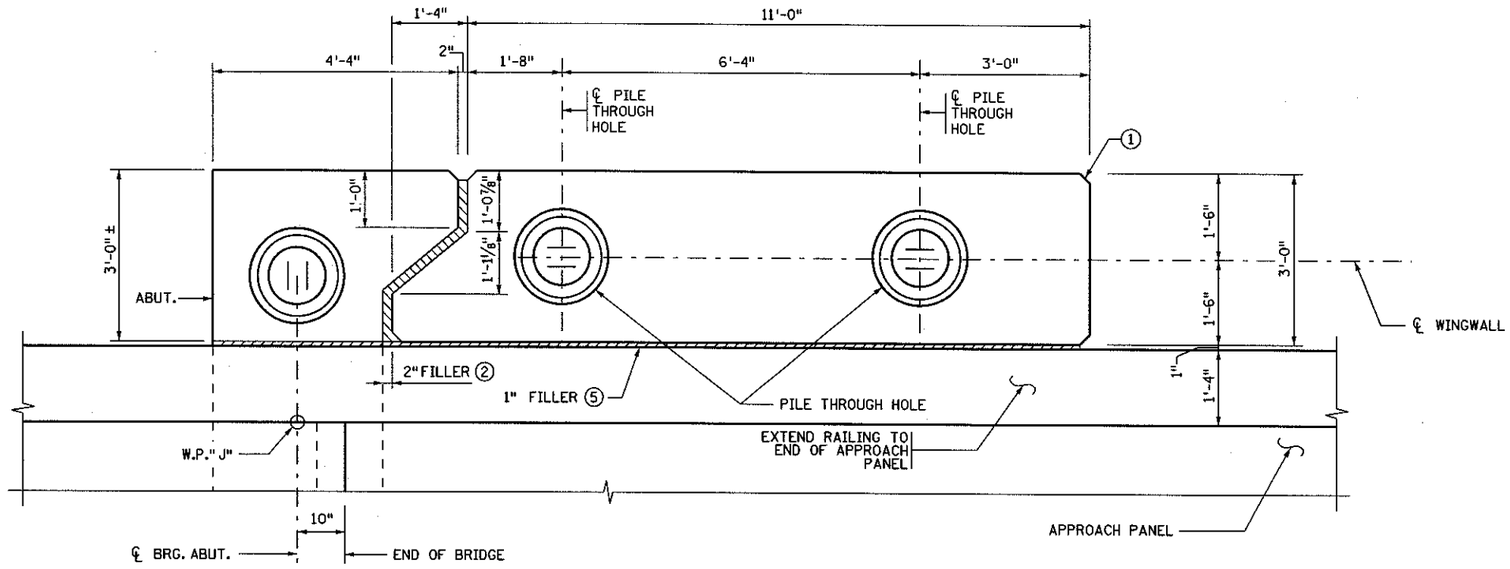
TITLE: EAST ABUTMENT GEOMETRICS

DES: P.J.K.	DR: P.F./TKB	APPROVED: 12/3/10
CHK: J.J.L.	CHK: P.J.K./MAK	

SHEET NO. 6 OF 54 SHEETS

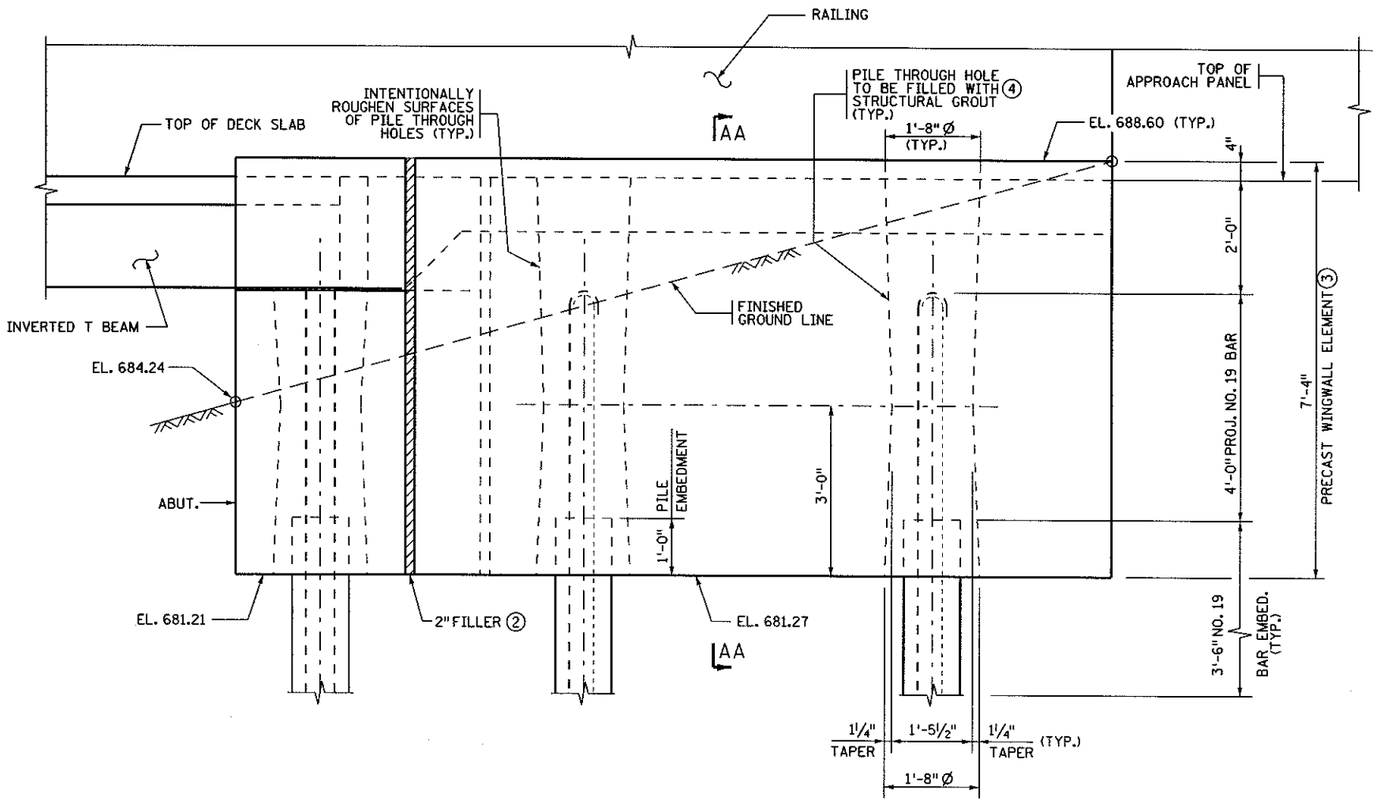
BRIDGE NO. 25024

12/17/2010 b:25024_abt.dgn



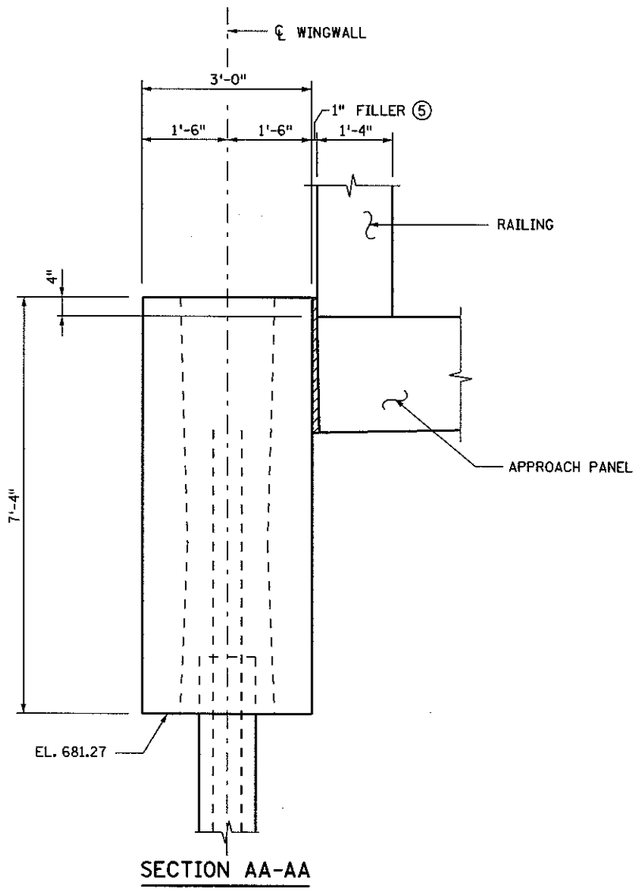
NORTH EAST WINGWALL PLAN VIEW

(STAGE 1)



NORTH EAST WINGWALL ELEVATION

(STAGE 1)



SECTION AA-AA

NOTES:

1. CHAMFER 2" UNLESS NOTED OTHERWISE.
2. POLYSTYRENE TYPE A.
3. STRUCTURAL CONCRETE (3Y43).
4. SEE SPECIAL PROVISIONS.
5. POLYSTYRENE TYPE B.

br25024_est.dgn

12/16/2010

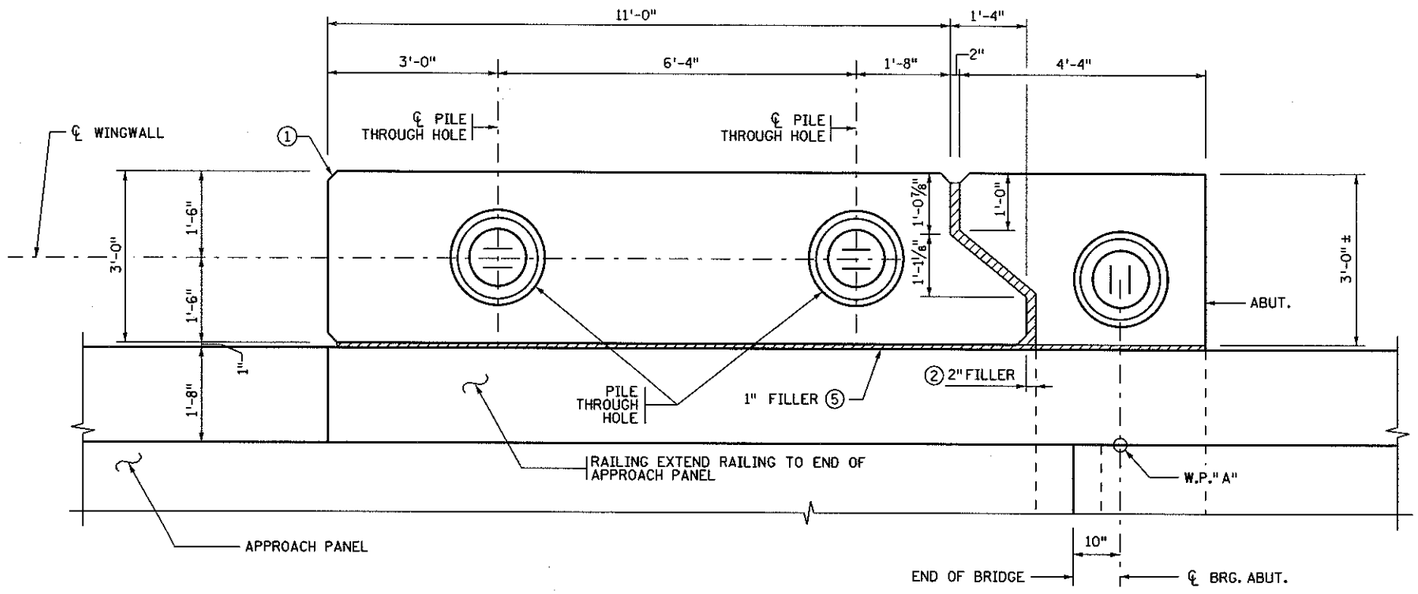
CERTIFIED BY Jihshya J. Lin 12/21/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: EAST ABUTMENT GEOMETRICS

DES: P.J.K.	DR: P.F./TKB	APPROVED:
CHK: J.J.L.	CHK: P.J.K./MAK	12/21/10

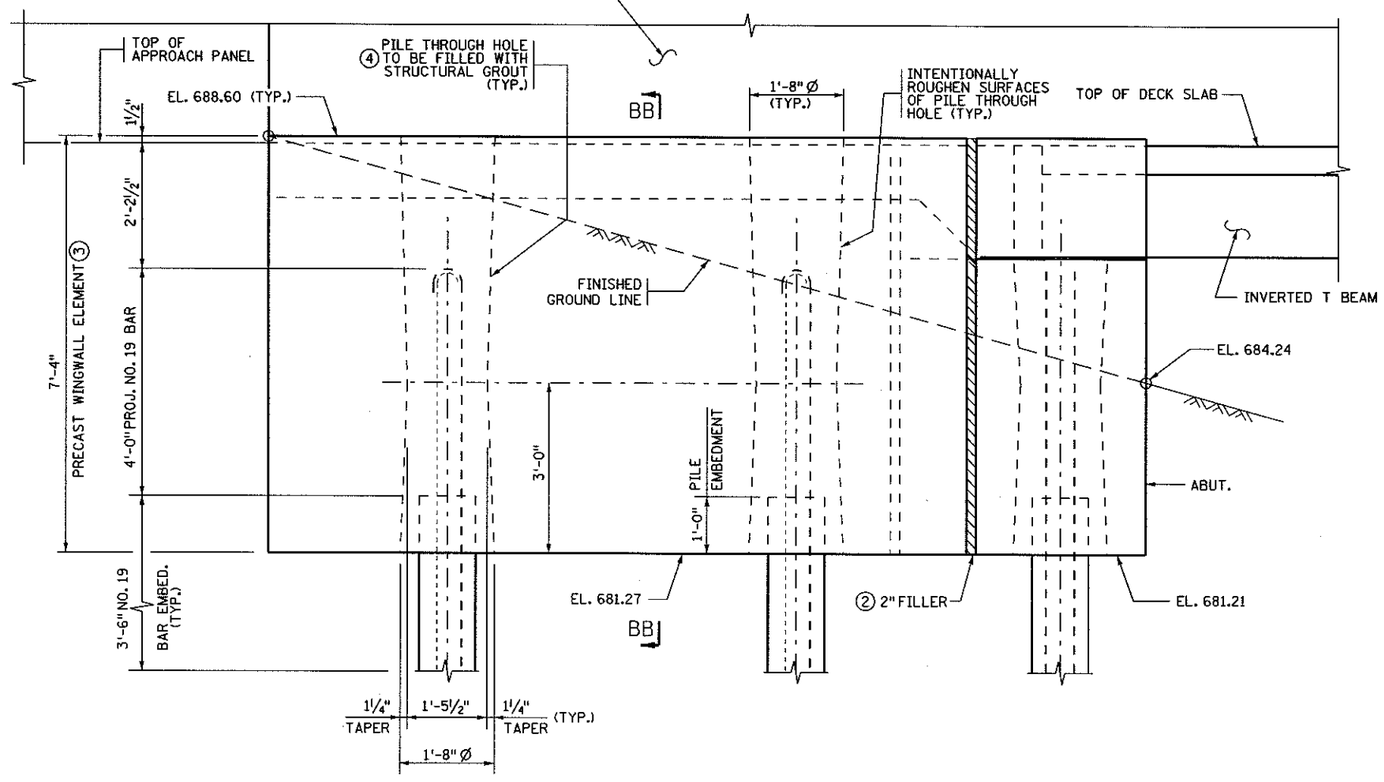
SHEET NO. 7 OF 54 SHEETS

BRIDGE NO. 25024



SOUTH EAST WINGWALL PLAN VIEW

(STAGE 2)



SOUTH EAST WINGWALL ELEVATION

(STAGE 2)

NOTES:

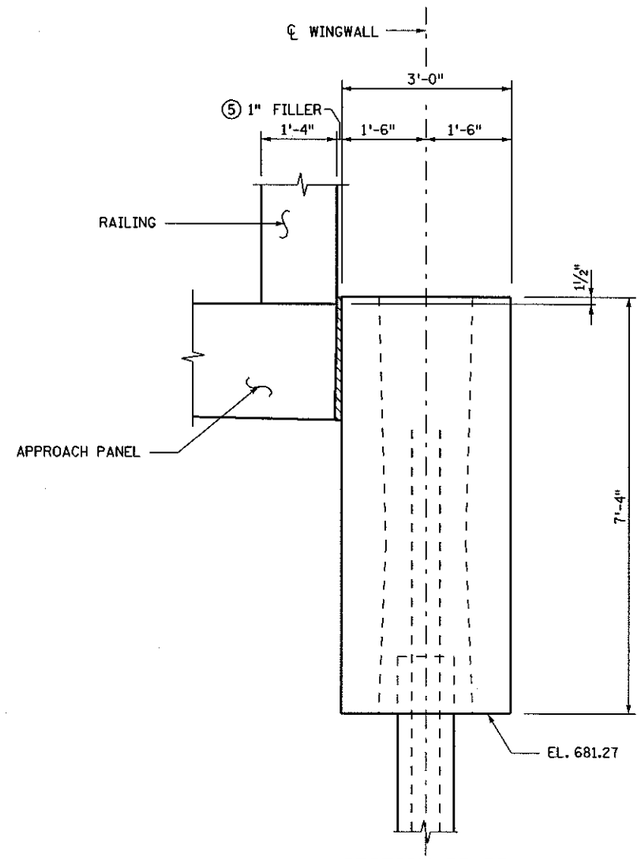
① CHAMFER 2" UNLESS NOTED OTHERWISE.

② POLYSTYRENE TYPE A.

③ STRUCTURAL CONCRETE (3Y43).

④ SEE SPEICAIL PROVISIONS.

⑤ POLYSTYRENE TYPE B.



SECTION BB-BB

CERTIFIED BY Jihshya J. Lin 12/21/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: EAST ABUTMENT GEOMETRICS

DES: P.J.K.	DR: P.F./TKB	APPROVED:
CHK: J.J.L.	CHK: P.J.K./MAK	12/21/10

SHEET NO. 8 OF 54 SHEETS

BRIDGE NO. 25024

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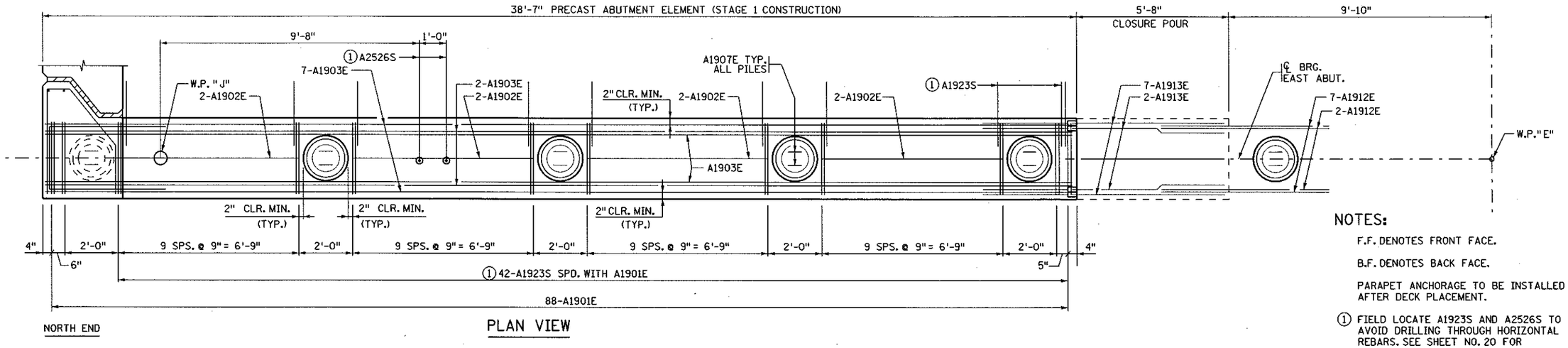
12/16/2010



PLAN VIEW

NOTES:

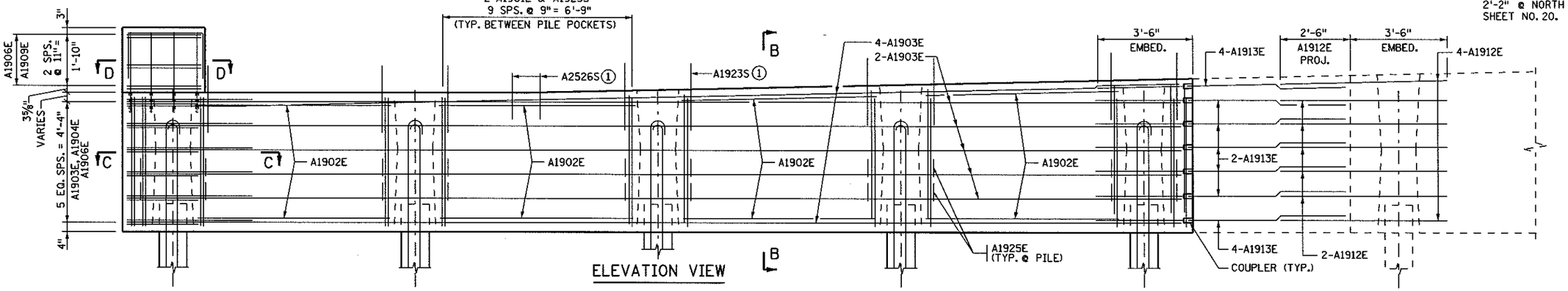
F.F. DENOTES FRONT FACE.

B.F. DENOTES BACK FACE.

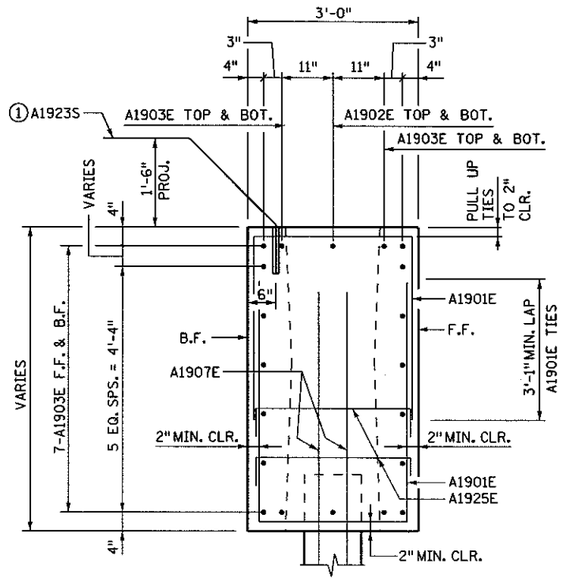
PARAPET ANCHORAGE TO BE INSTALLED AFTER DECK PLACEMENT.

① FIELD LOCATE A1923S AND A2526S TO AVOID DRILLING THROUGH HORIZONTAL REBARS. SEE SHEET NO. 20 FOR ANCHORAGE DETAILS.

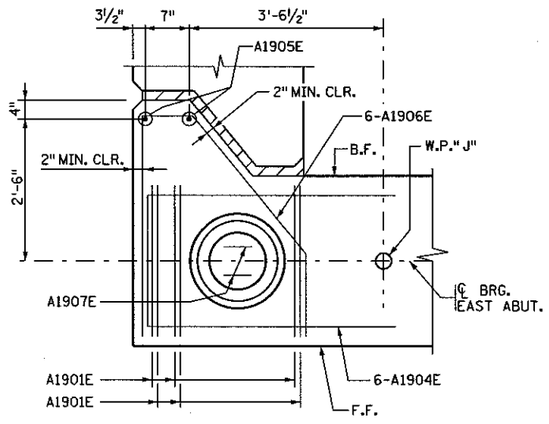
② A1908S TO BE PROJECTED FROM PRECAST ABUTMENT INTO CAST-IN-PLACE PARAPET 2'-2" @ NORTH END. SEE DETAIL 2 ON SHEET NO. 20.



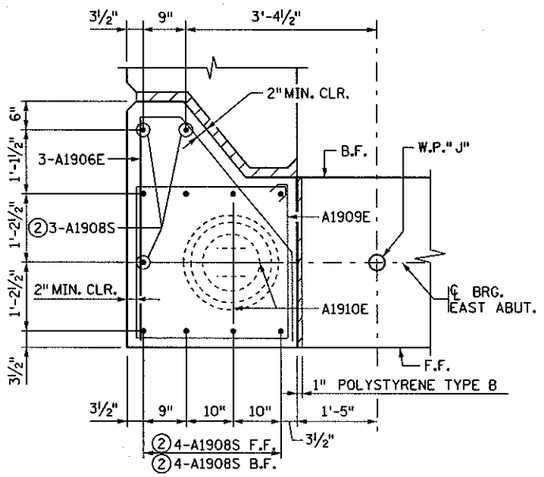
ELEVATION VIEW



SECTION B-B



SECTION C-C



SECTION D-D

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN — LIC. NO. 19115

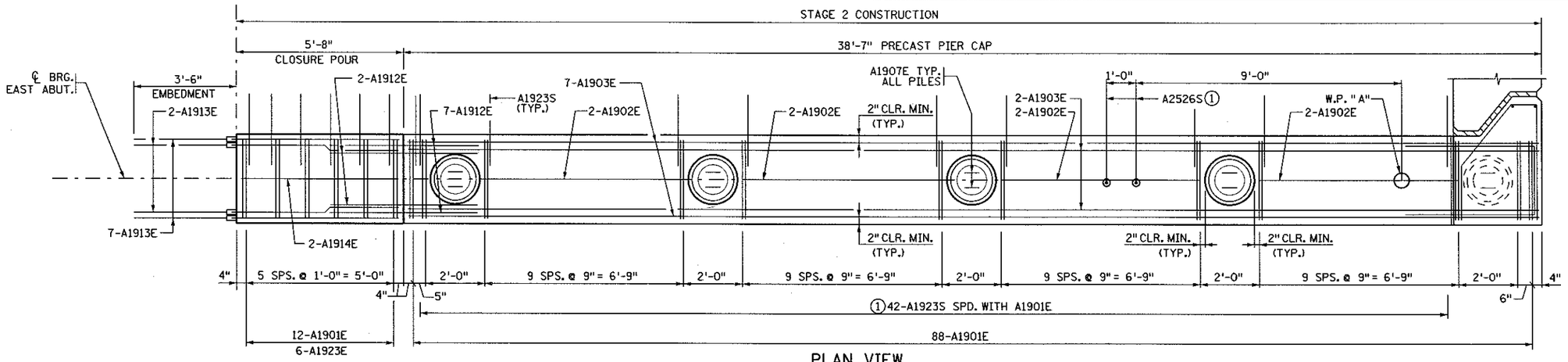
TITLE: EAST ABUTMENT REINFORCEMENT

DES: P.J.K.	DR: P.F./TKB	APPROVED: 12/3/10
CHK: J.J.L.	CHK: P.J.K./MAK	

SHEET NO. 9 OF 54 SHEETS

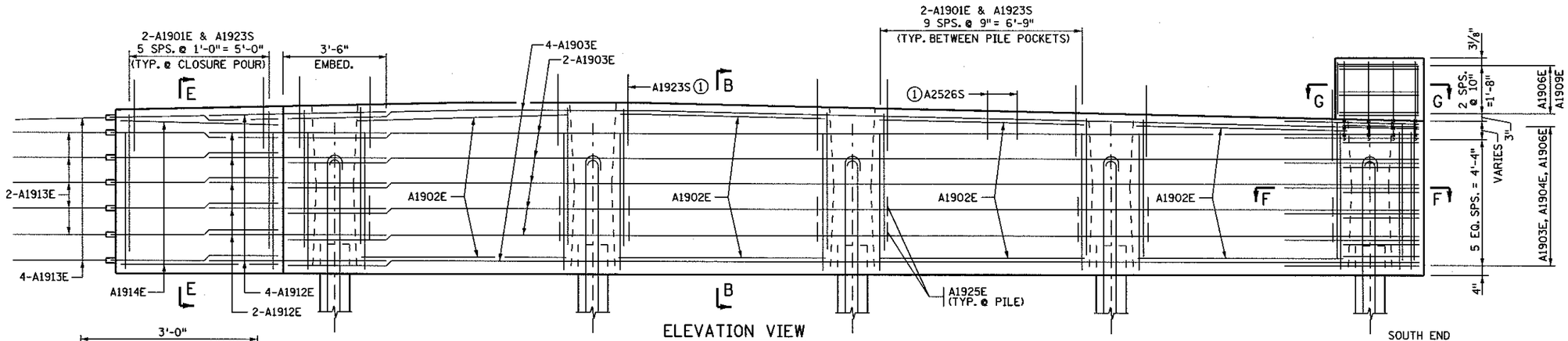
BRIDGE NO. 25024

12/27/2010 br25024_abt.dgn



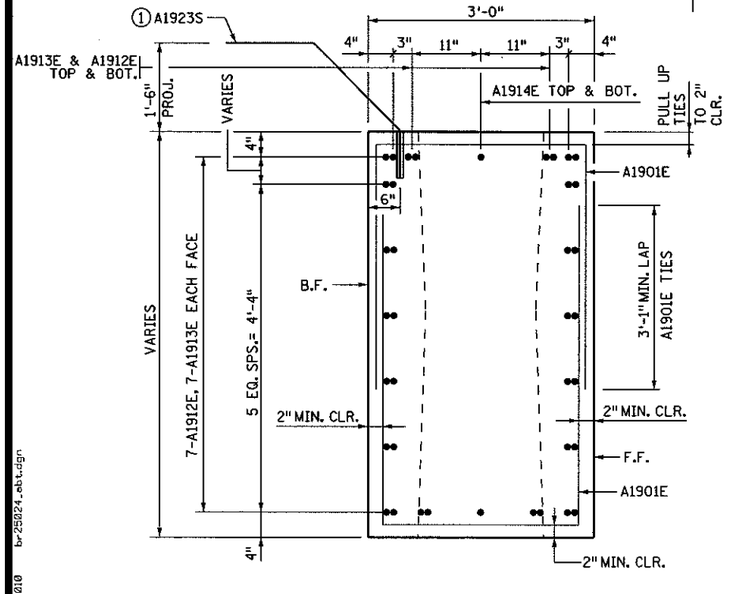
PLAN VIEW

SOURTH END

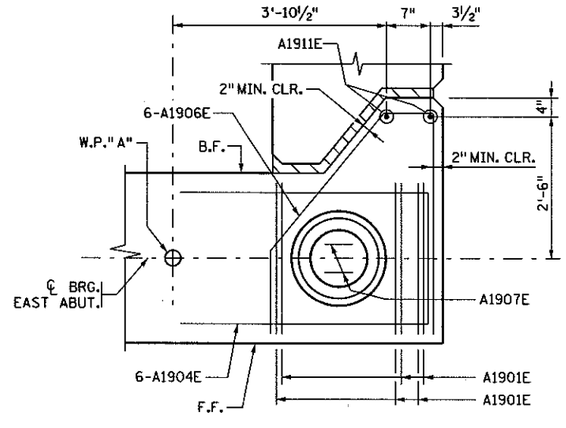


ELEVATION VIEW

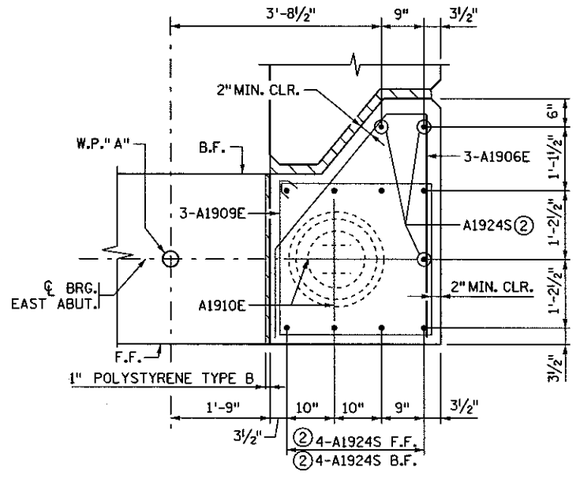
SOUTH END



SECTION E-E



SECTION F-F



SECTION G-G

NOTES:

F.F. DENOTES FRONT FACE.

B.F. DENOTES BACK FACE.

SEE SHEET NO. 9 FOR SECTION B.B.

PARAPET ANCHORAGE TO BE INSTALLED AFTER DECK PLACEMENT.

① FIELD LOCATE A1923S AND A2526S TO AVOID DRILLING THROUGH HORIZONTAL REBARS. SEE SHEET NO. 20 FOR ANCHORAGE DETAILS.

② A1924S TO BE PROJECTED FROM PRECAST ABUTMENT INTO CAST-IN-PLACE PARAPET 1'-10" @ SOUTH END. SEE DETAIL 2 ON SHEET NO. 20.

br25024_abt.dgn
12/2/2010

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN — LIC. NO. 19115

TITLE: EAST ABUTMENT REINFORCEMENT

DES: P.J.K.	DR: P.F./TKB	APPROVED: 12/3/10
CHK: J.J.L.	CHK: P.J.K./MAK	

SHEET NO. 10 OF 54 SHEETS

BRIDGE NO. 25024

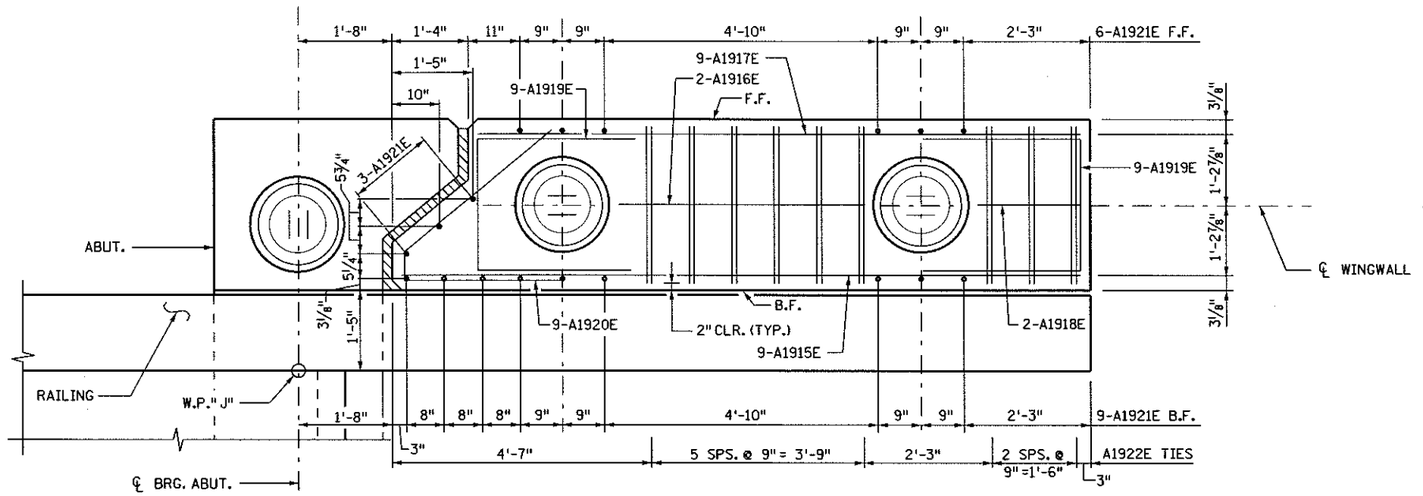
NOTES:

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

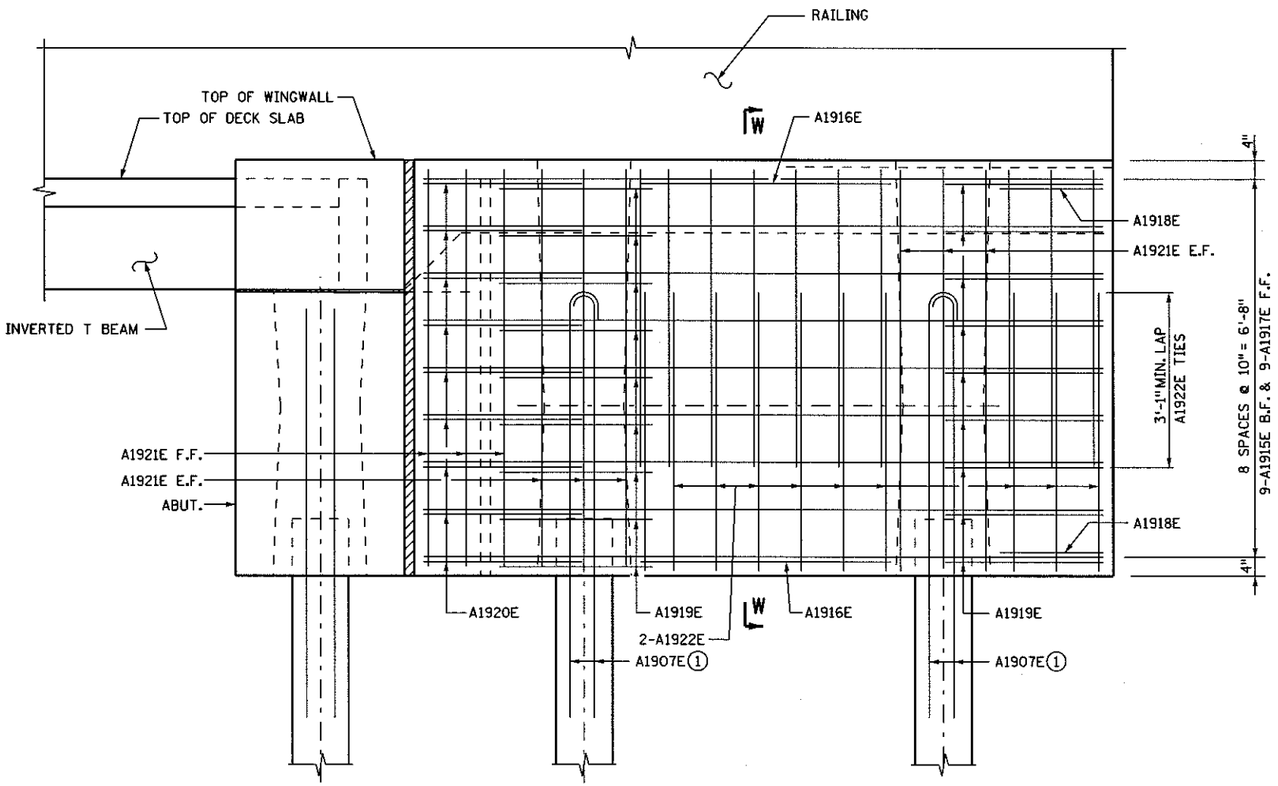
E.F. DENOTES EACH FACE.

(1) PLACED IN FIELD BEFORE PILE IS FILLED WITH CONCRETE.



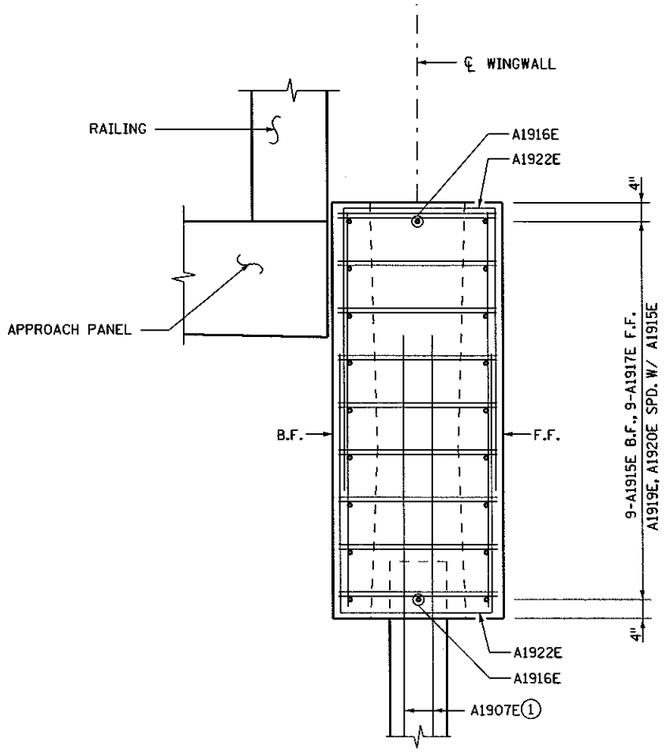
NORTH EAST WINGWALL PLAN VIEW

(STAGE 1)



NORTH EAST WINGWALL ELEVATION

(STAGE 1)



SECTION W-W

br25024_abt.dgn

12/2/2010

CERTIFIED BY _____ 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE

NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: EAST ABUTMENT REINFORCEMENT

DES: P.J.K.	DR: P.F./TKB	APPROVED: 12/3/10
CHK: J.J.L.	CHK: P.J.K./MAK	

SHEET NO. 11 OF 54 SHEETS

BRIDGE NO. 25024

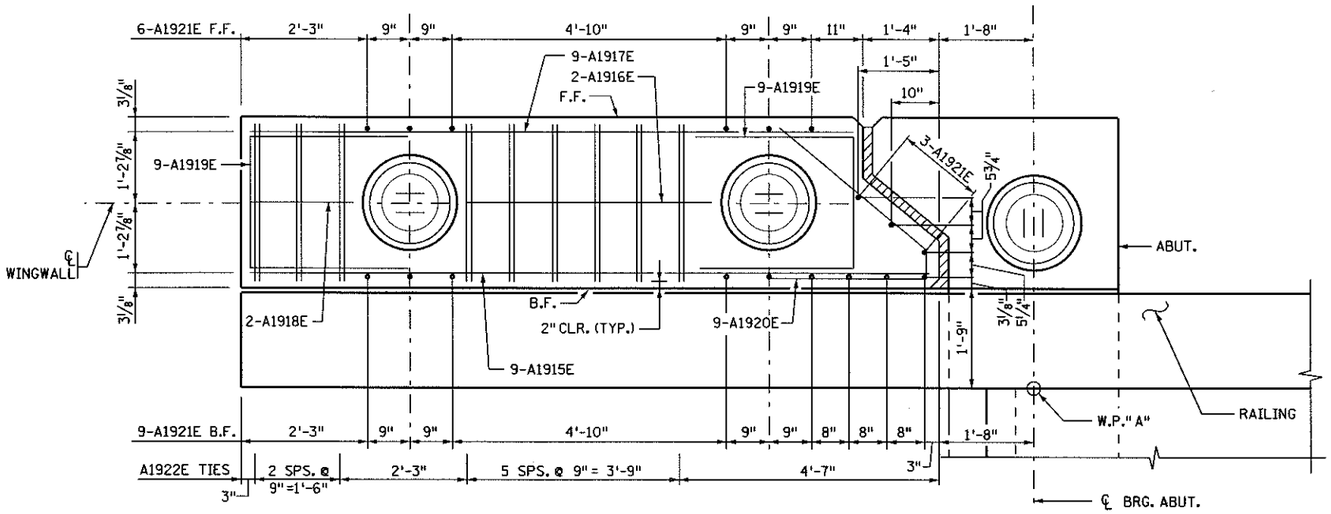
NOTES:

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

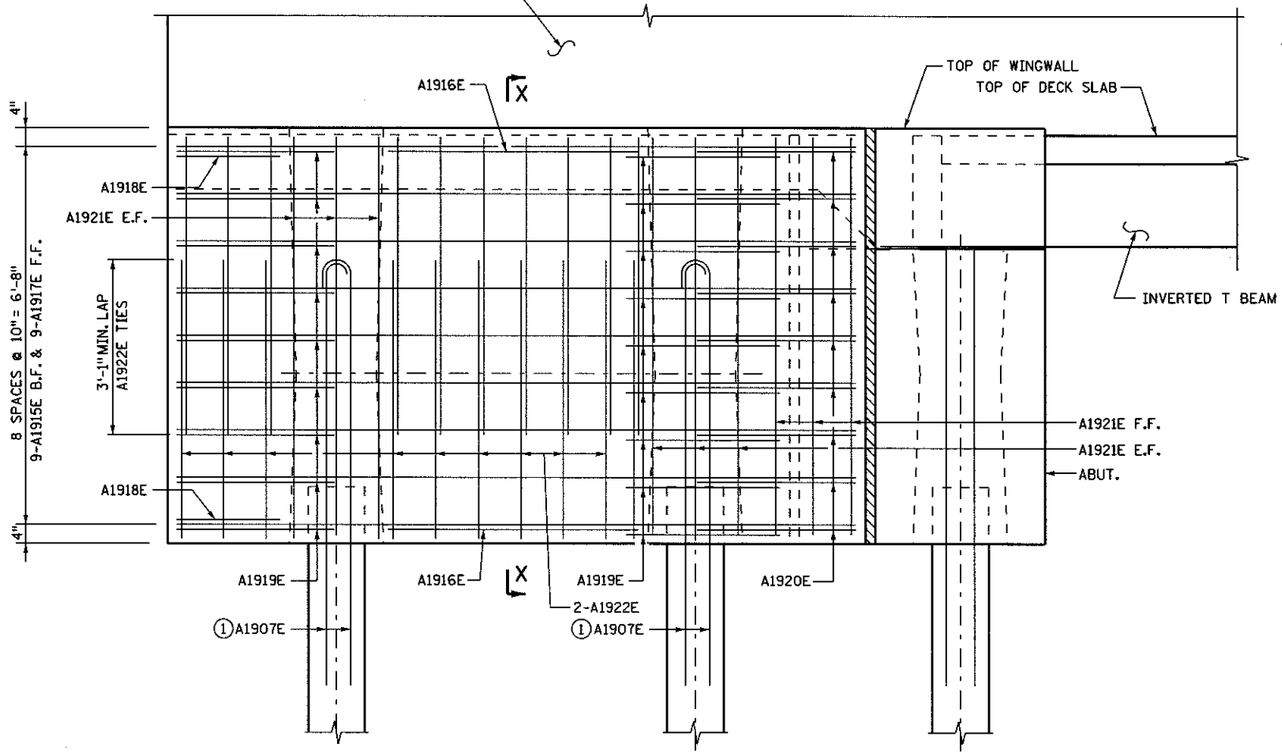
E.F. DENOTES EACH FACE.

(1) PLACED IN FIELD BEFORE PILE IS FILLED WITH CONCRETE.



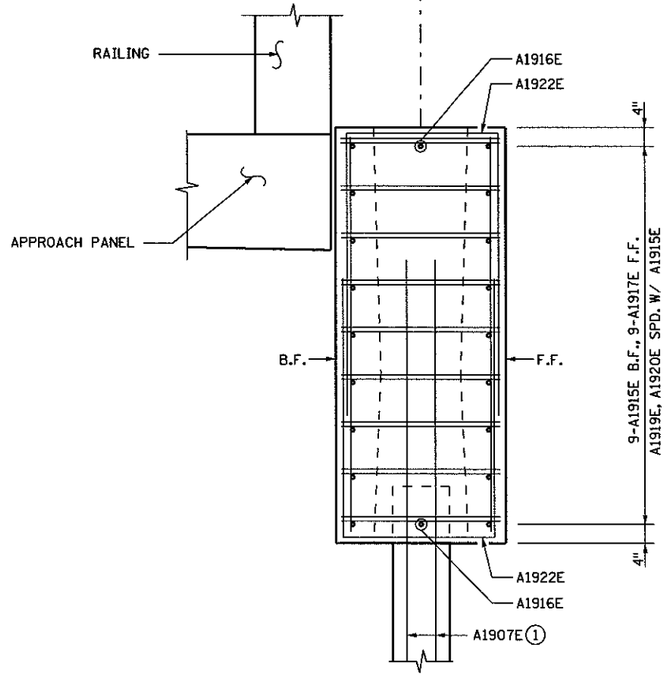
SOUTH EAST WINGWALL PLAN VIEW

(STAGE 2)



SOUTH EAST WINGWALL ELEVATION

(STAGE 2)

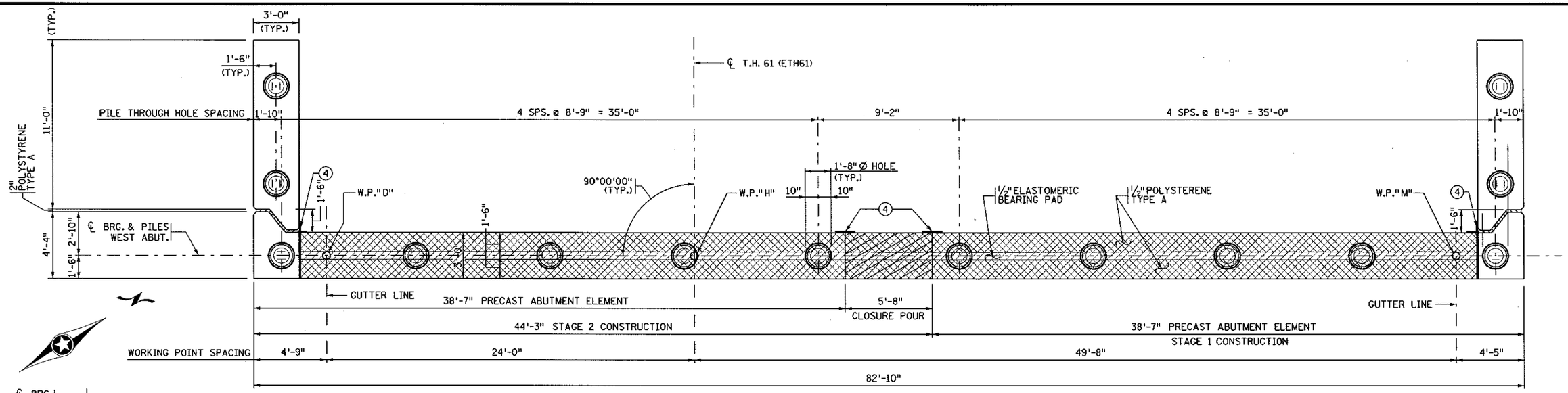


SECTION X-X

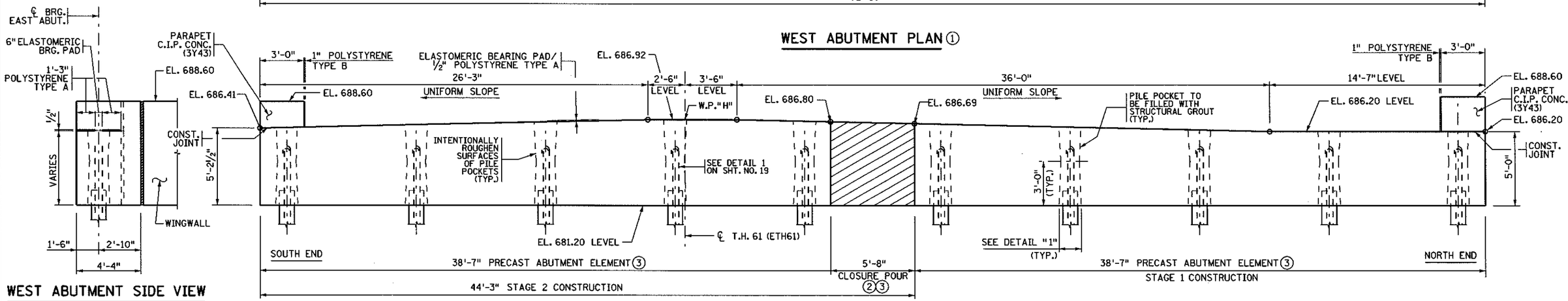
CERTIFIED BY [signature] LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE	TITLE: EAST ABUTMENT REINFORCEMENT	DES: P.J.K. DR: P.F./TKB APPROVED:	BRIDGE NO. 25024
NAME: JIHSHYA J. LIN LIC. NO. 19115		CHK: J.J.L. CHK: P.J.K./MAK 12/3/10	
		SHEET NO. 12 OF 54 SHEETS	

br-25024_abt.dgn

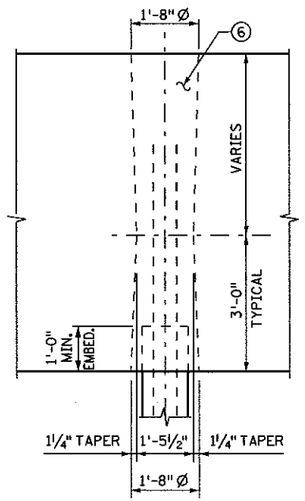
12/2/2010



WEST ABUTMENT PLAN ①

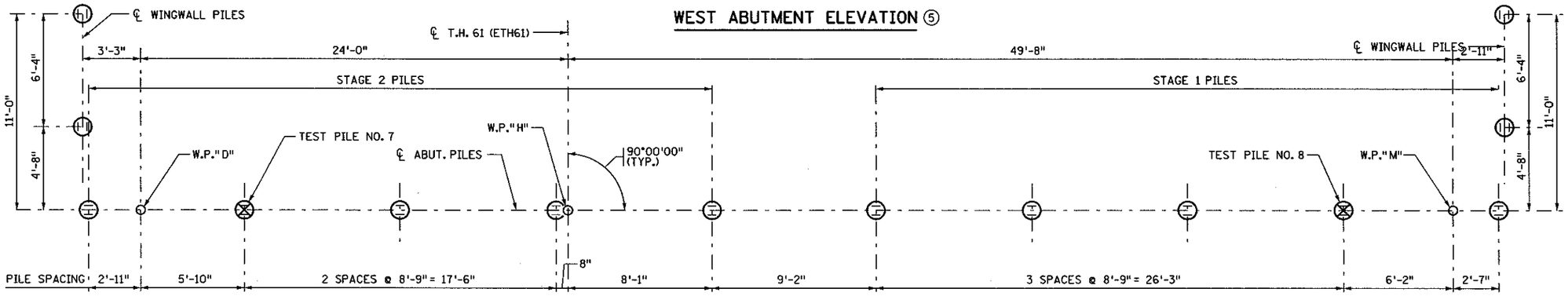


WEST ABUTMENT SIDE VIEW



DETAIL "1"

WEST ABUTMENT ELEVATION ⑤



WEST ABUTMENT PILES PLAN

NOTES:

① SEE SHEET NO. 20 FOR PILE NOTES AND PRECAST ABUTMENT ELEMENT NOTES.

② CLOSURE POUR TO OCCUR @ END OF STAGE 2 CONSTRUCTION BEFORE BEAM PLACEMENT.

③ STRUCTURAL CONCRETE (3Y43).

④ MEMBRANE WATERPROOFING SYSTEM PER MN/DOT SPEC. 2481.3B & 2'-0" WIDE GEOTEXTILE TYPE II PER MN/DOT SPEC. 3733.

⑤ ELEVATIONS SHOWN TO BE TO THE TOP OF CONCRETE.

⑥ FILL WITH GROUT. SEE SPECIAL PROVISIONS.

12/27/2010

CERTIFIED BY Jihshya J. Lin LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE

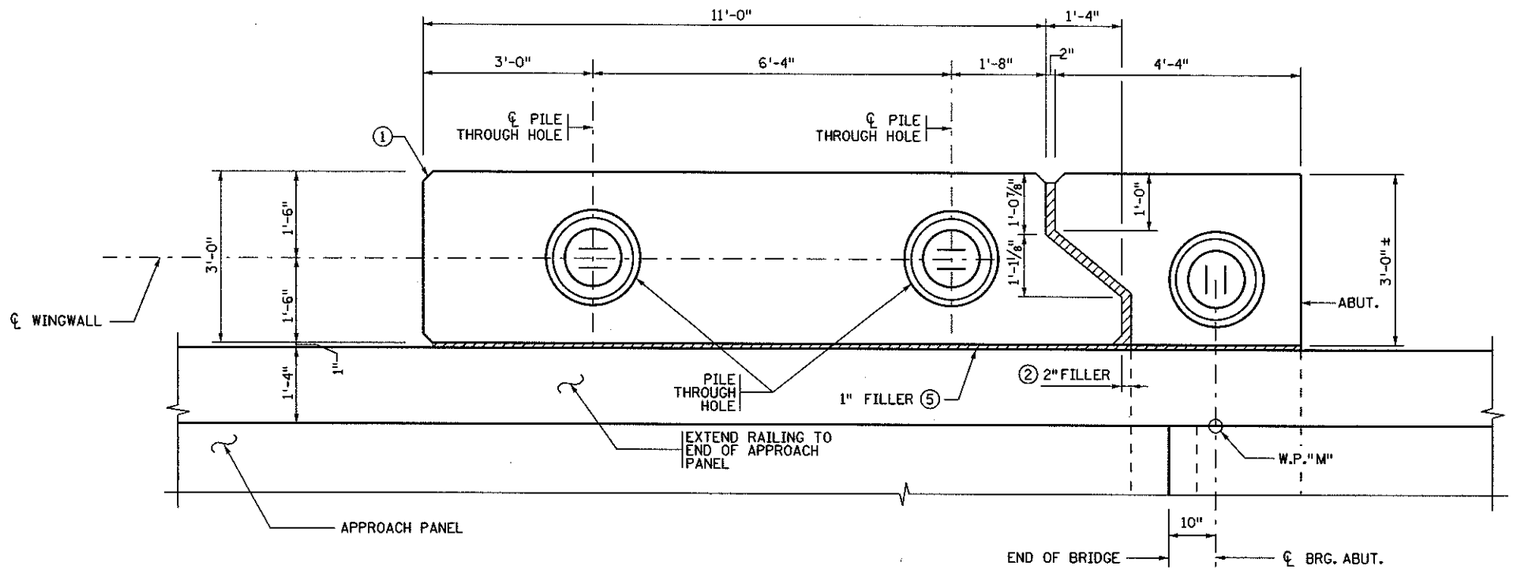
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: WEST ABUTMENT GEOMETRICS

DES: P.J.K.	DR: TKB	APPROVED:
CHK: J.J.L.	CHK: P.J.K./MAK	12/3/10

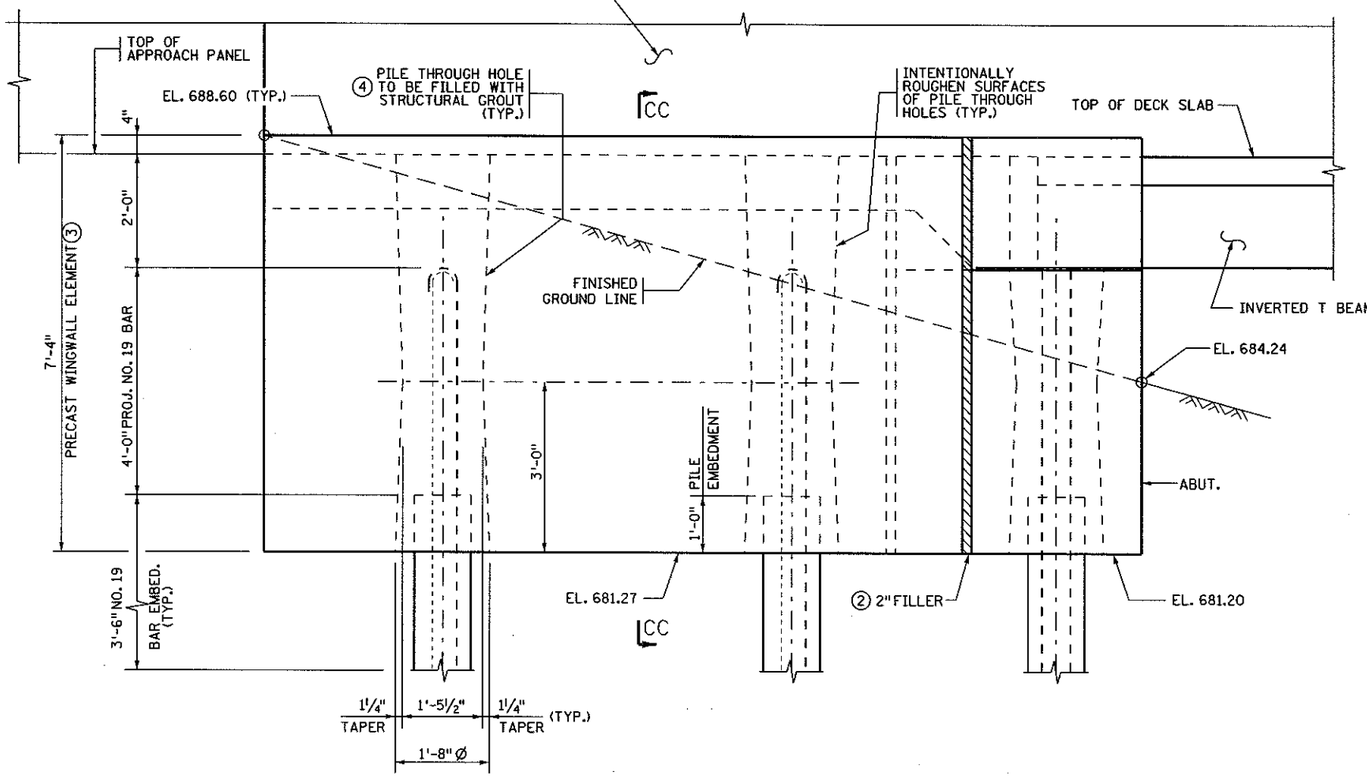
SHEET NO. 13 OF 54 SHEETS

BRIDGE NO. 25024



NORTH WEST WINGWALL PLAN VIEW

(STAGE 1)

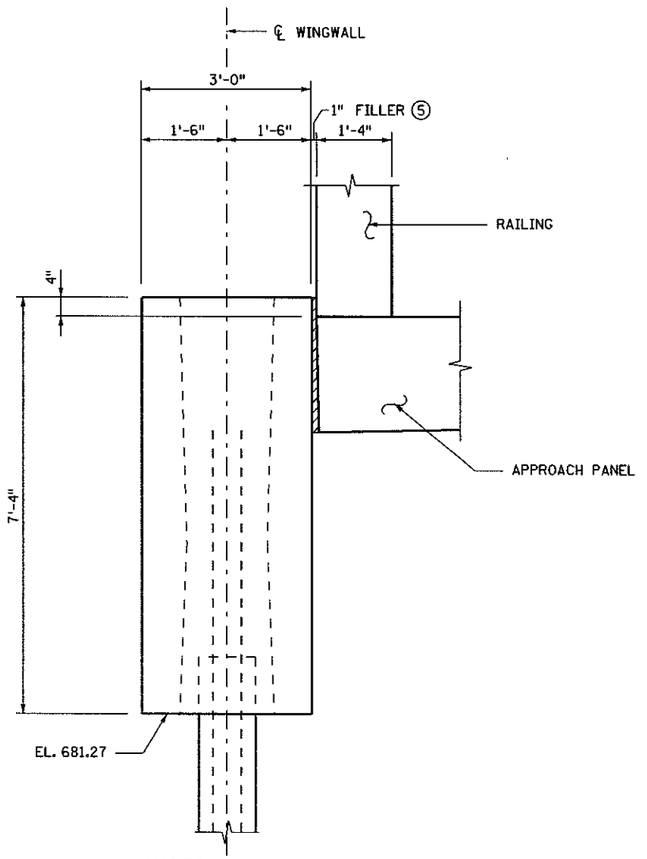


NORTH WEST WINGWALL ELEVATION

(STAGE 1)

NOTES:

1. CHAMFER 2" UNLESS NOTED OTHERWISE.
2. POLYSTYRENE TYPE A.
3. STRUCTURAL CONCRETE (3Y43).
4. SEE SPECIAL PROVISIONS.
5. POLYSTYRENE TYPE B.



SECTION CC-CC

CERTIFIED BY _____ 12/21/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN
LIC. NO. 19115

TITLE: WEST ABUTMENT GEOMETRICS

DES: P.J.K.	DR: TKB	APPROVED:
CHK: J.J.L.	CHK: P.J.K./MAK	12/21/10

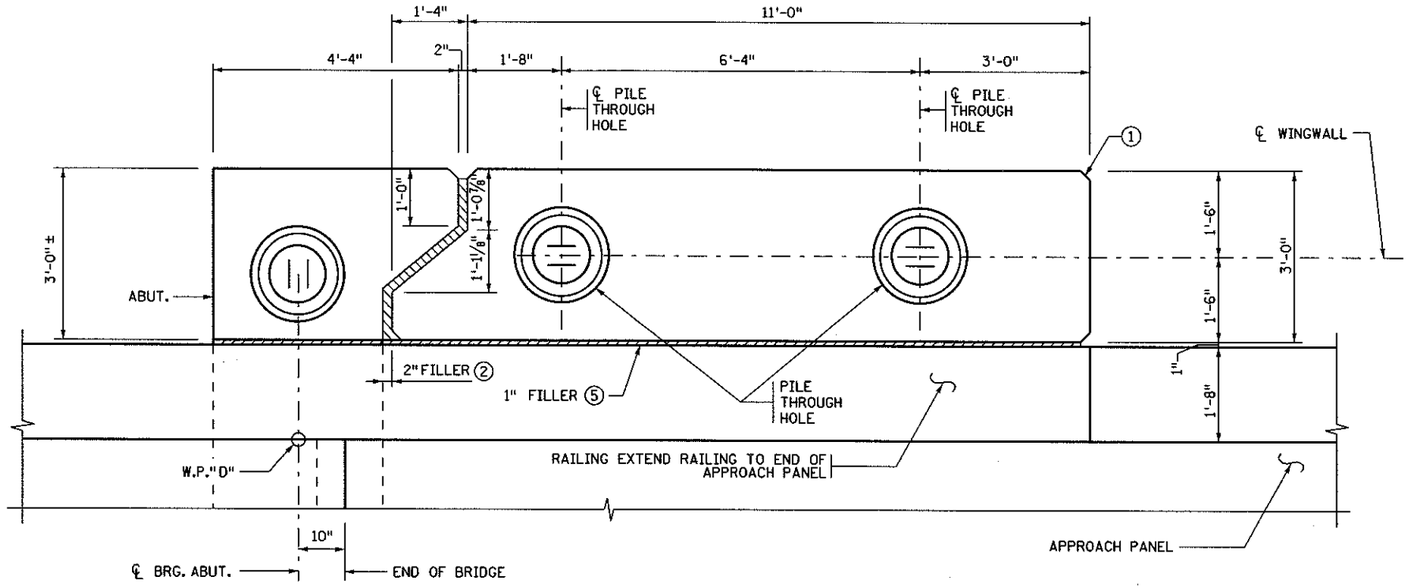
SHEET NO. 14 OF 54 SHEETS

BRIDGE NO. 25024

b-25024_abt.dgn
12/16/2010

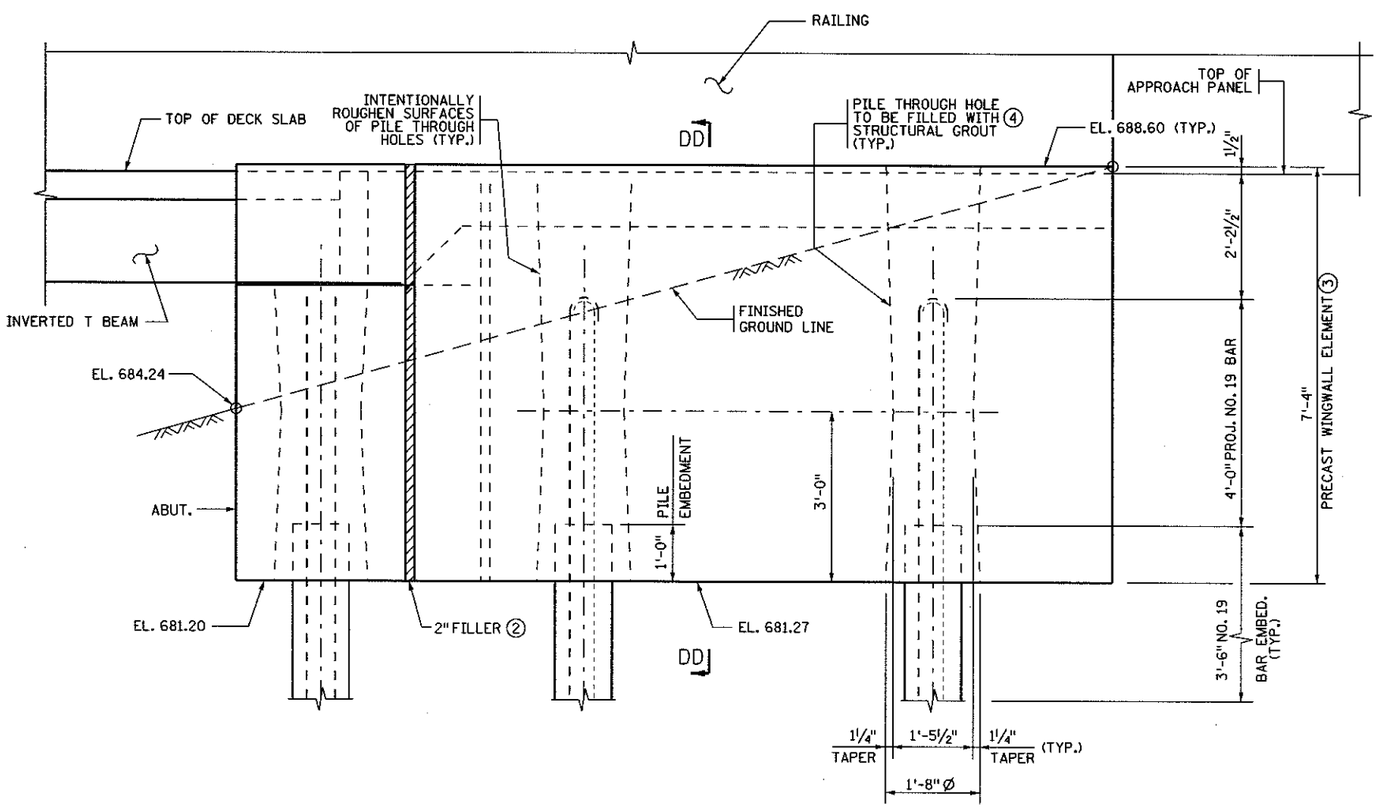
NOTES:

1. CHAMFER 2" UNLESS NOTED OTHERWISE.
2. POLYSTYRENE TYPE A.
3. STRUCTURAL CONCRETE (3Y43).
4. SEE SPECIAL PROVISIONS.
5. POLYSTYRENE TYPE B.



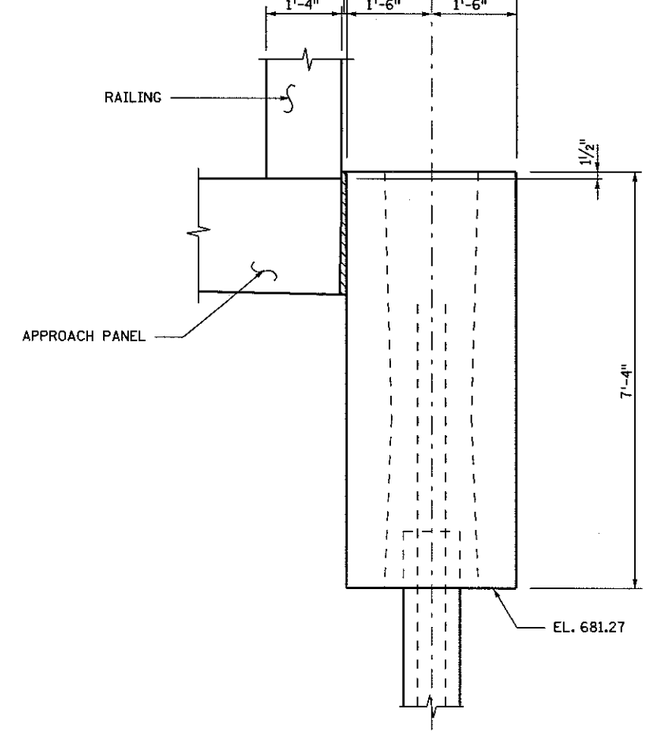
SOUTH WEST WINGWALL PLAN VIEW

(STAGE 2)



SOUTH WEST WINGWALL ELEVATION

(STAGE 2)



SECTION DD-DD

CERTIFIED BY: Jihshya J. Lin 12/21/10 (LICENSED PROFESSIONAL ENGINEER, DATE)	TITLE: WEST ABUTMENT GEOMETRICS	DES: P.J.K. / DR: TKB / APPROVED: 12/21/10	BRIDGE NO. 25024
NAME: JIHSHYA J. LIN LIC. NO. 19115		CHK: J.J.L. / CHK: P.J.K./MAK	SHEET NO. 15 OF 54 SHEETS

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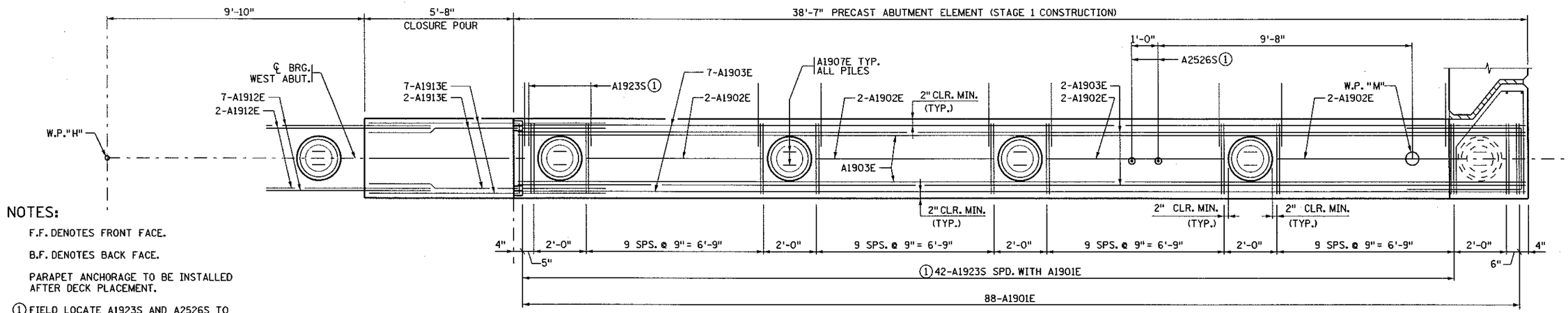
12/15/2010



PLAN VIEW

NORTH END

NOTES:

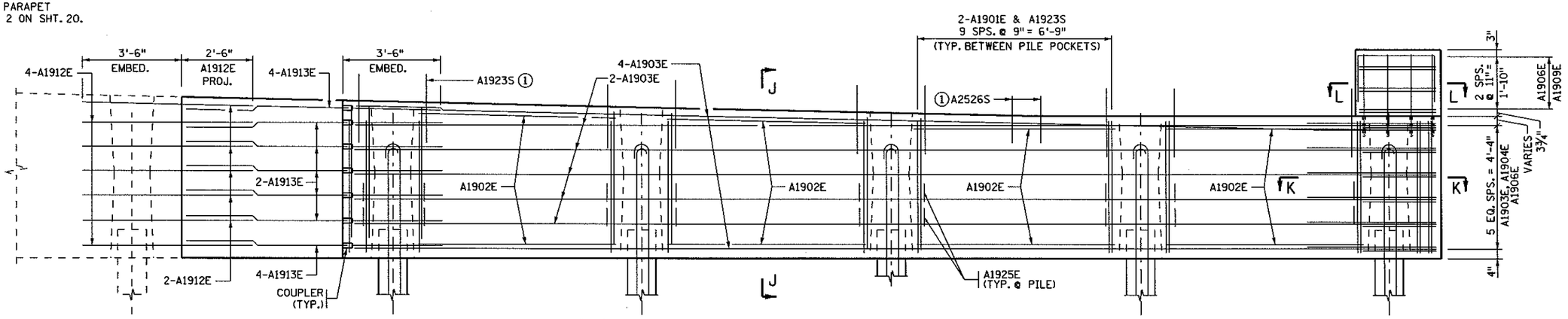
F.F. DENOTES FRONT FACE.

B.F. DENOTES BACK FACE.

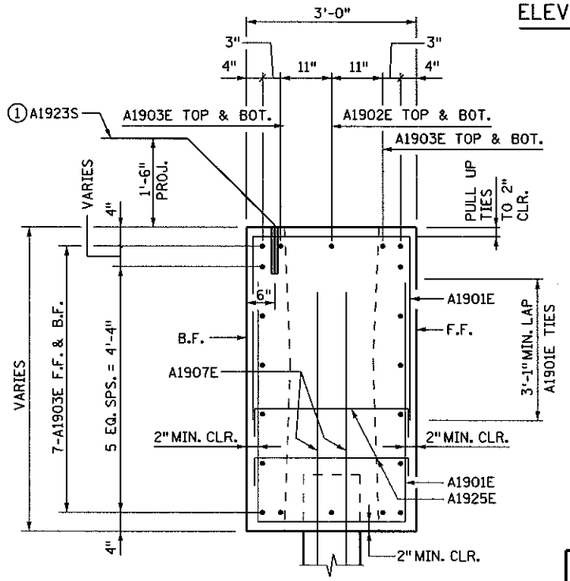
PARAPET ANCHORAGE TO BE INSTALLED AFTER DECK PLACEMENT.

① FIELD LOCATE A1923S AND A2526S TO AVOID DRILLING THROUGH HORIZONTAL REBARS. SEE SHEET NO. 20 FOR ANCHORAGE DETAILS.

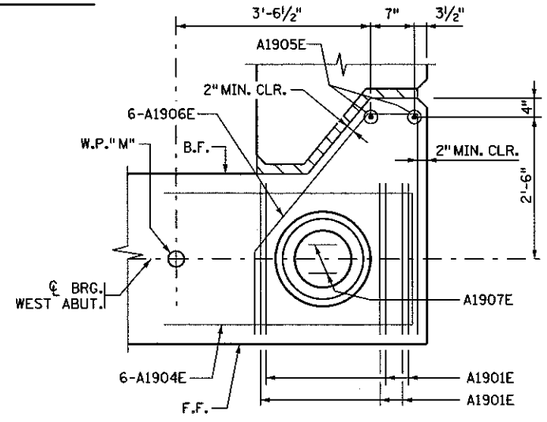
② A1908S TO BE PROJECTED FROM PRECAST ABUTMENT INTO CAST-IN-PLACE PARAPET 2'-2" @ NORTH END. SEE DETAIL 2 ON SHT. 20.



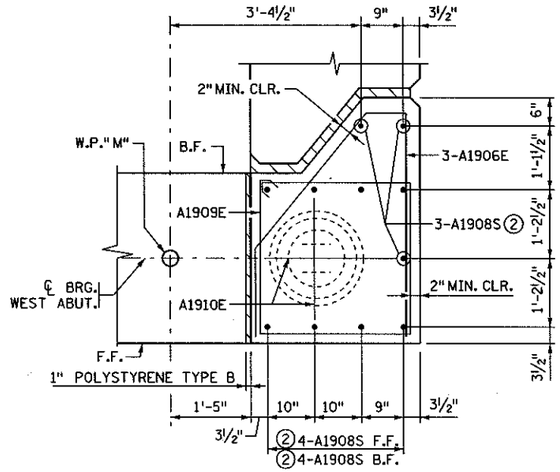
ELEVATION VIEW



SECTION J-J



SECTION K-K



SECTION L-L

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

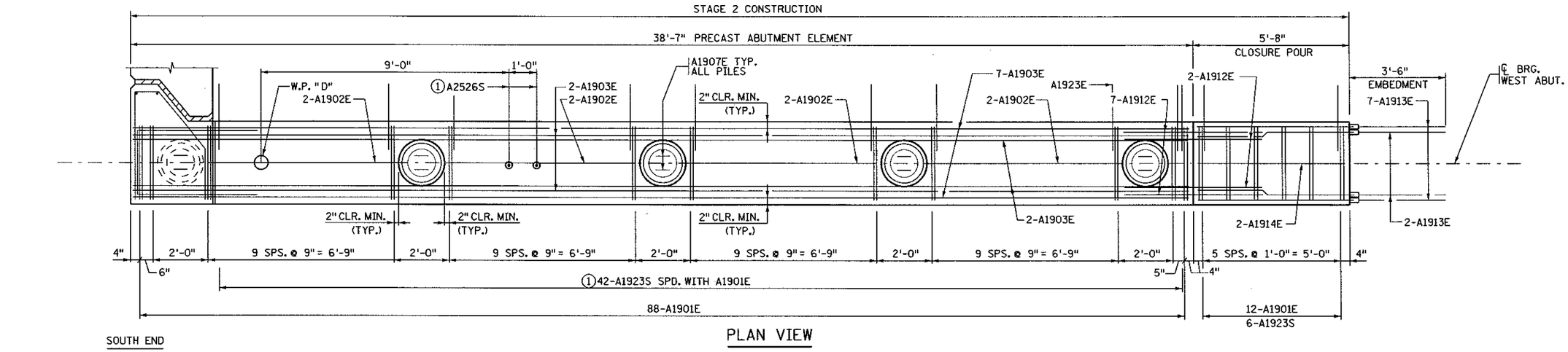
TITLE: WEST ABUTMENT REINFORCEMENT

DES: P.J.K.	DR: TKB	APPROVED:
CHK: J.J.L.	CHK: P.J.K.MAK	12/3/10

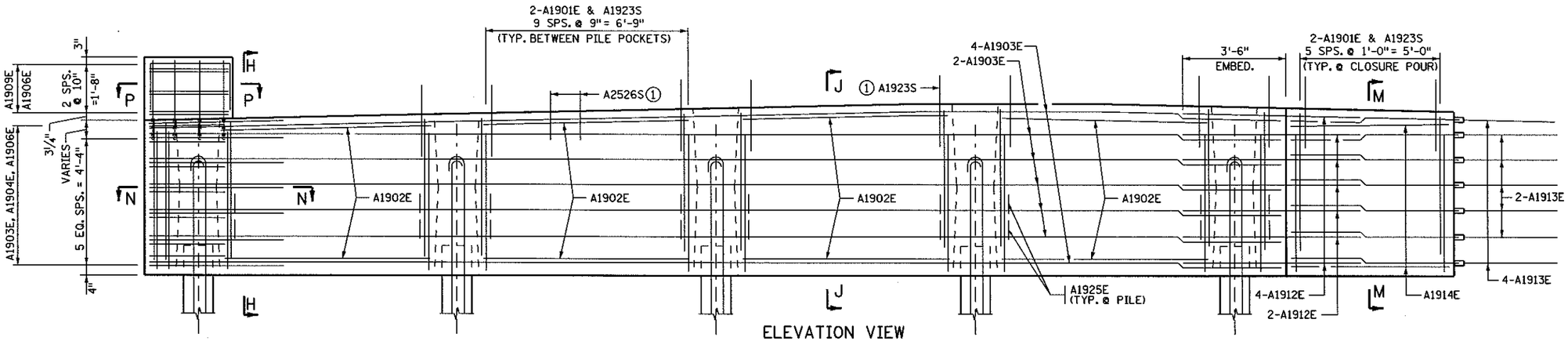
SHEET NO. 16 OF 54 SHEETS

BRIDGE NO. 25024

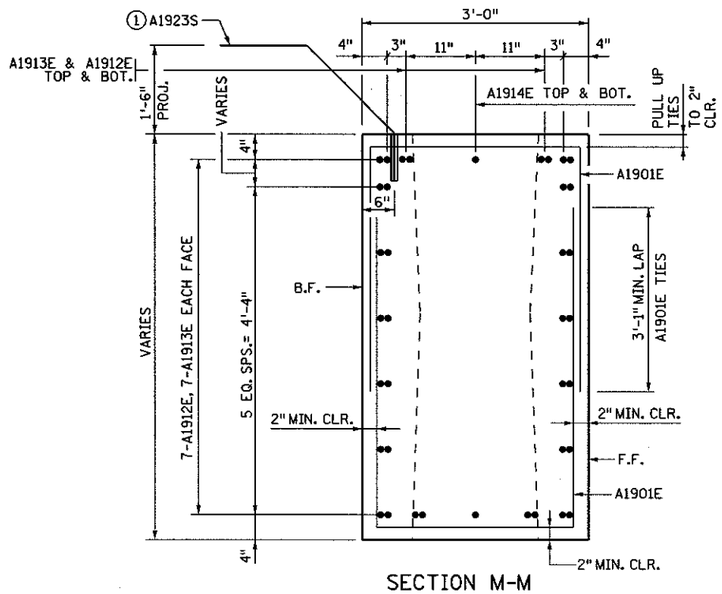
12/2/2010 b-25024_abt.dgn



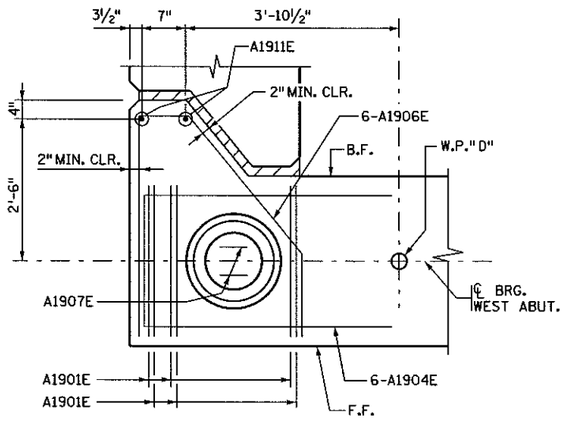
PLAN VIEW



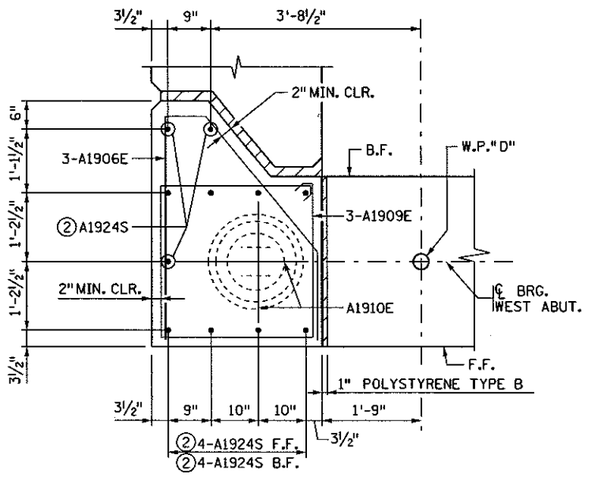
ELEVATION VIEW



SECTION M-M



SECTION N-N



SECTION P-P

NOTES:

F.F. DENOTES FRONT FACE.

B.F. DENOTES BACK FACE.

SEE SHEET NO. 16 FOR SECTION J.J.

PARAPET ANCHORAGE TO BE INSTALLED AFTER DECK PLACEMENT.

① FIELD LOCATE A1923S AND A2526S TO AVOID DRILLING THROUGH HORIZONTAL REBARS. SEE SHEET NO. 20 FOR ANCHORAGE DETAILS.

② A1924S TO BE PROJECTED FROM PRECAST ABUTMENT INTO CAST-IN-PLACE PARAPET 1'-10" @ SOUTH END. SEE DETAIL 2 ON SHEET NO. 20.

CERTIFIED BY _____ 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN — LIC. NO. 19115

TITLE: WEST ABUTMENT REINFORCEMENT

DES: P.J.K.	DR: P.F./TKB	APPROVED:
CHK: J.J.L.	CHK: P.J.K./MAK	12/3/10

SHEET NO. 17 OF 54 SHEETS

BRIDGE NO. 25024

12/2/2010 br25024_ab1.dgn

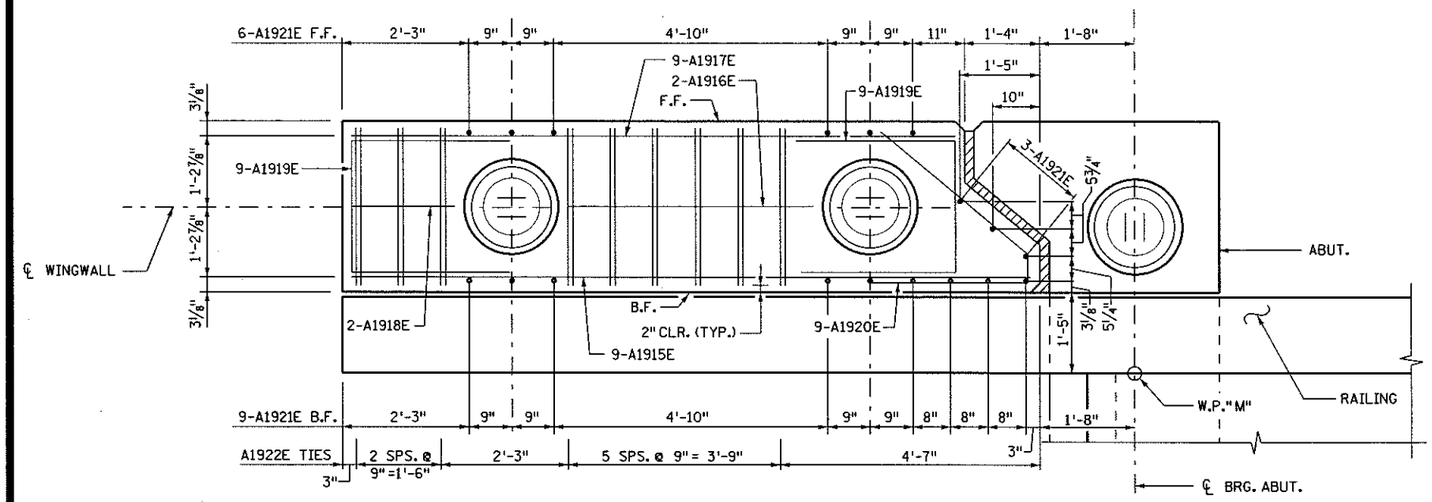
NOTES:

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

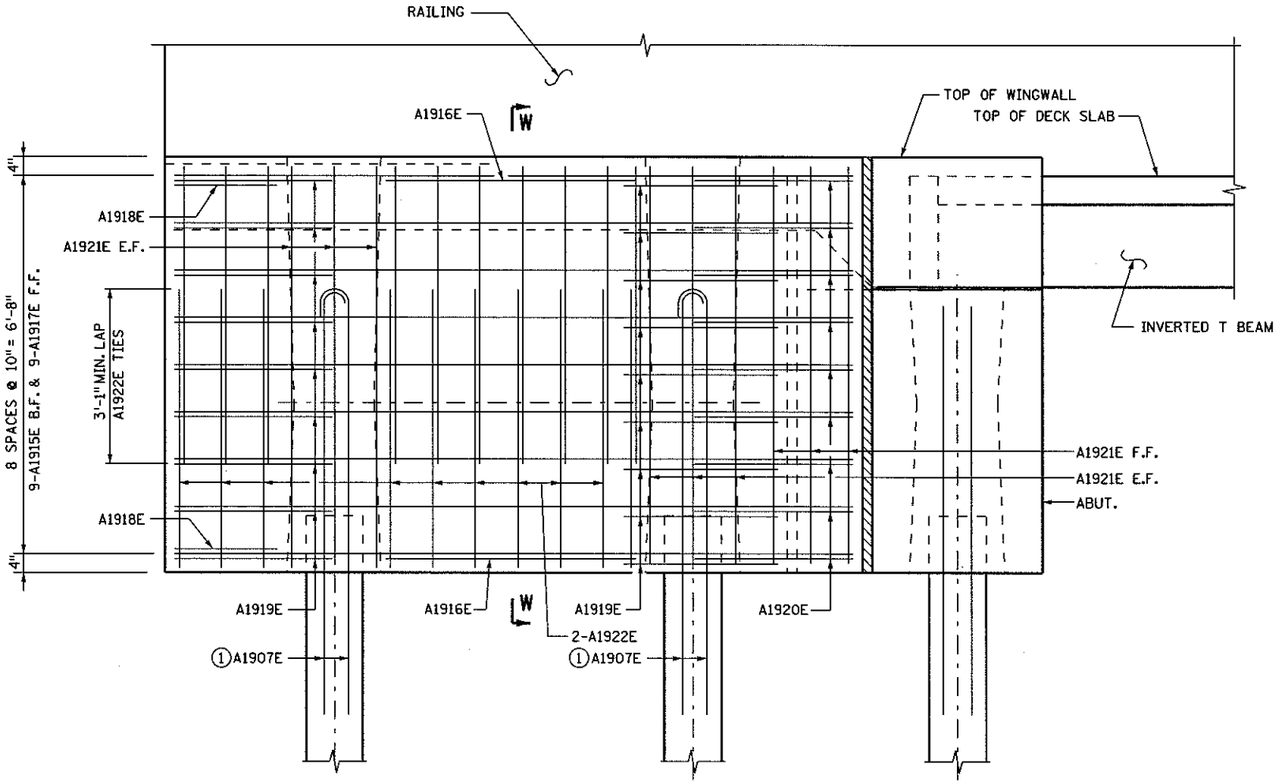
E.F. DENOTES EACH FACE.

(1) PLACED IN FIELD BEFORE PILE IS FILLED WITH CONCRETE.



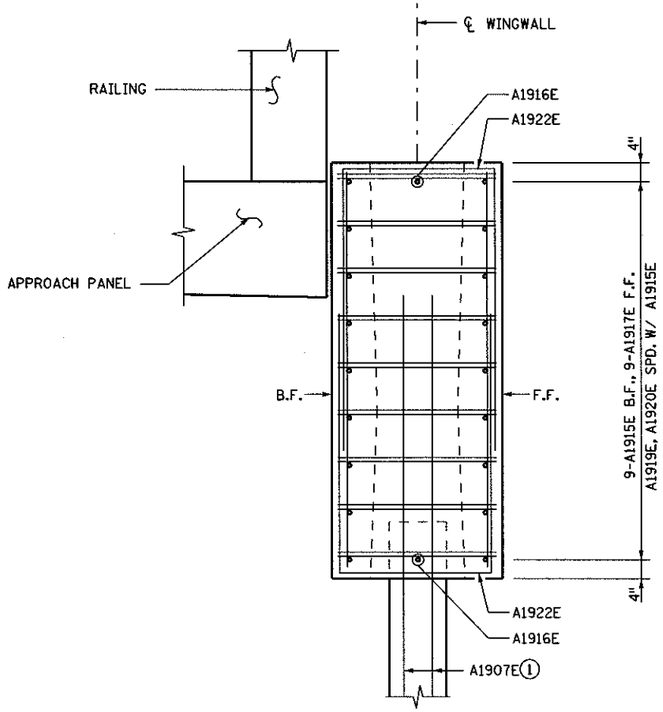
NORTH WEST WINGWALL PLAN VIEW

(STAGE 1)



NORTH WEST WINGWALL ELEVATION

(STAGE 1)



SECTION W-W

CERTIFIED BY [signature] LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE	TITLE: WEST ABUTMENT REINFORCEMENT	DES: P.J.K. / CHK: J.J.L.	DR: TKB / CHK: P.J.K./MAK / APPROVED: 12/3/10
NAME: JIHSHYA J. LIN LIC. NO. 19115		SHEET NO. 18 OF 54 SHEETS	BRIDGE NO. 25024

b-25024.ab1.dgn
12/2/2010

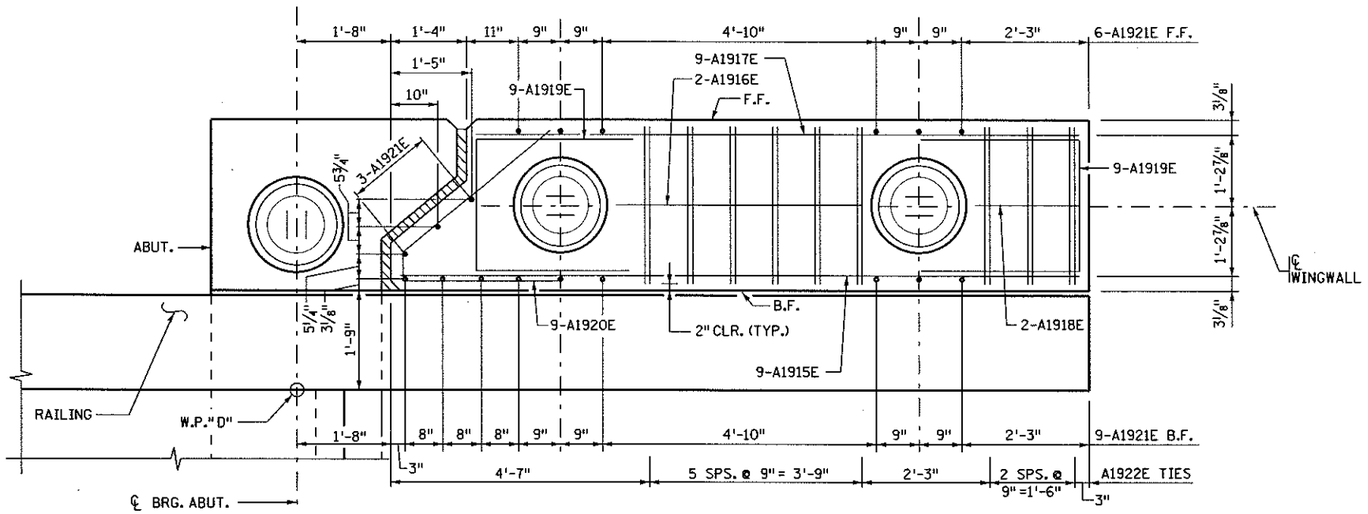
NOTES:

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

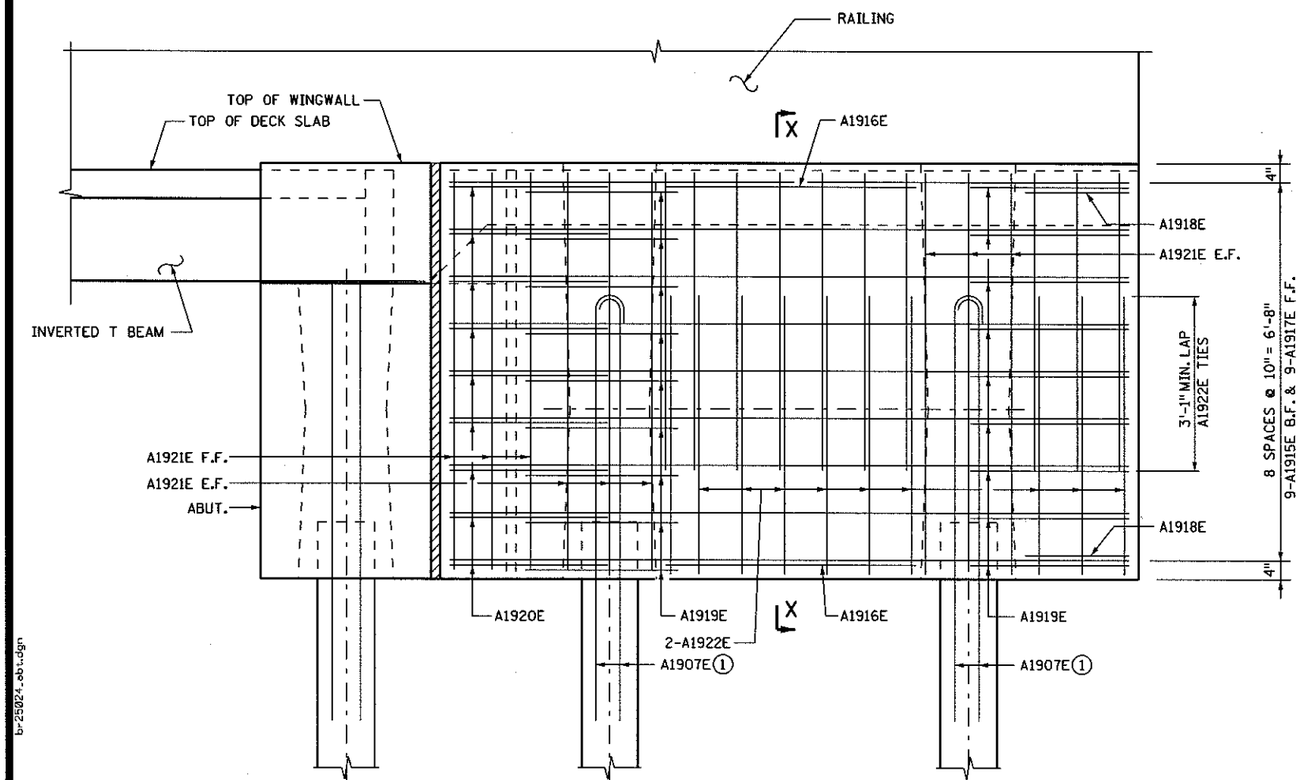
E.F. DENOTES EACH FACE.

(1) PLACED IN FIELD BEFORE PILE IS FILLED WITH CONCRETE.



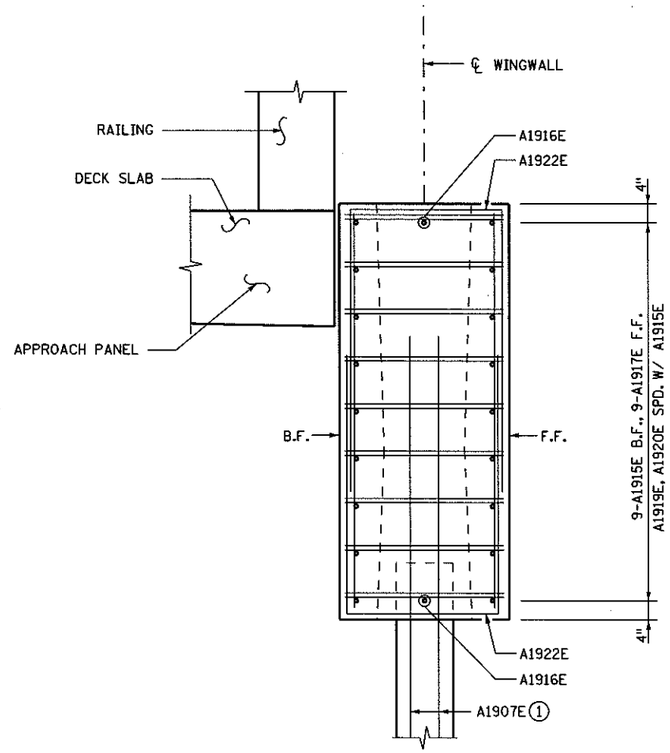
SOUTH WEST WINGWALL PLAN VIEW

(STAGE 2)



SOUTH WEST WINGWALL ELEVATION

(STAGE 2)



SECTION X-X

b-25024-ab1.dgn

12/27/2010

CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE

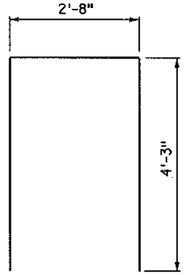
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: WEST ABUTMENT REINFORCEMENT

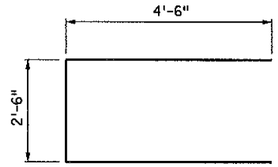
DES: P.J.K.	DR: TKB	APPROVED: 12/3/10
CHK: J.J.L.	CHK: P.J.K./MAK	

SHEET NO. 19 OF 54 SHEETS

BRIDGE NO. 25024



A1901E



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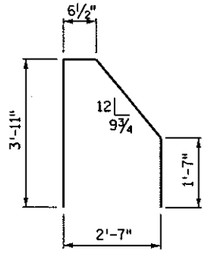

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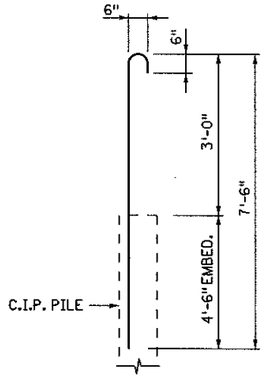
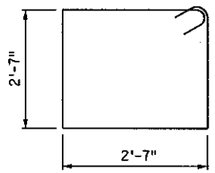


A1907E
DETAIL 1



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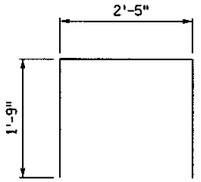

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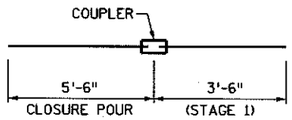

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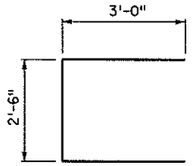

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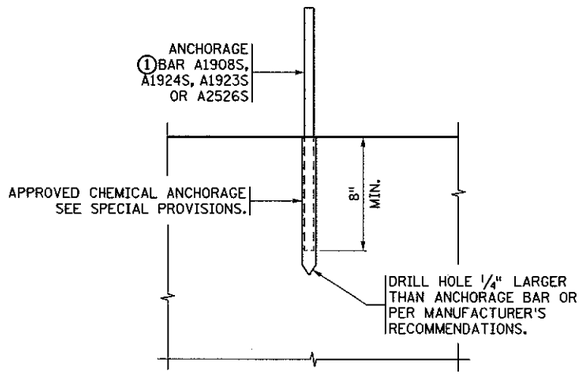
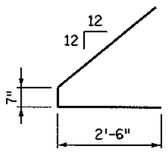
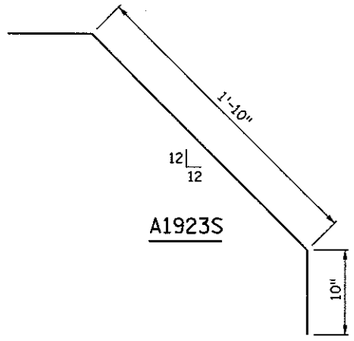


ANCHORAGE DETAIL
DETAIL 2



A1920E



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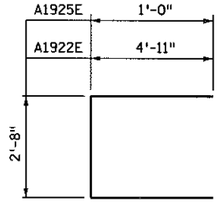


A1922E, A1925E

⑥ BILL OF REINFORCEMENT FOR TWO ABUTMENTS

	BAR	NO. STAGE 1	NO. STAGE 2	NO. CLOSURE STAGE	TOTAL	LENGTH	SHAPE	LOCATION
	A1901E	176	176	24	376	11'-2"		VERTICAL TIE
	A1902E	16	16		32	6'-9"		HORIZONTAL
	A1903E	36	36		72	38'-3"		HORIZONTAL
	A1904E	12	12		24	11'-6"		HORIZONTAL TIE
	A1905E	4	—		4	4'-8"		VERTICAL
	A1906E	18	18		36	8'-8"		HORIZONTAL TIE
	A1907E	28	28		56	9'-0"		PILE DOWEL
①	A1908S	22	—		22	2'-10"		VERTICAL ANCHORAGE
	A1909E	6	6		12	11'-8"		PARAPET HORIZONTAL TIE
	A1910E	4	4		8	5'-11"		PARAPET TOP TIE
	A1911E	—	4		4	4'-10"		VERTICAL
	A1912E	—	36		36	6'-0"		HORIZONTAL
②	A1913E	36	—		36	9'-0"		HORIZONTAL
	A1914E	—	—	2	2	5'-4"		HORIZONTAL
	A1915E	18	18		36	12'-0"		WINGWALL HORIZONTAL
	A1916E	4	4		8	4'-4"		WINGWALL HORIZONTAL
	A1917E	18	18		36	10'-8"		WINGWALL HORIZONTAL
	A1918E	4	4		8	1'-10"		WINGWALL HORIZONTAL
	A1919E	36	36		72	8'-6"		WINGWALL HORIZONTAL TIE
	A1920E	18	18		36	6'-3"		WINGWALL HORIZONTAL TIE
	A1921E	36	36		72	7'-0"		WINGWALL VERTICAL
	A1922E	36	36		72	12'-6"		VERTICAL
①	A1923S	84	84	12	180	4'-8"		APPROACH PANEL TIE
①	A1924S	—	22		22	2'-6"		VERTICAL ANCHORAGE
	A1925E	56	56		112	4'-8"		VERTICAL TIE
①	A2526S	4	4		8	2'-5"		ANCHORAGE

① NOT INCLUDED IN WEIGHT OF REINFORCEMENT. INCLUDED IN ITEM "ANCHORAGES TYPE REINFORCEMENT BARS (STAINLESS STEEL)".

② NOT INCLUDED IN WEIGHT OF REINFORCEMENT. INCLUDED IN ITEM "COUPLERS (REINFORCEMENT BARS) T-19".

PRECAST ABUTMENT ELEMENT NOTES:

THE PRECAST ABUTMENT ELEMENT PICK POINTS OR LIFTING LOOPS SHALL BE DESIGNED BY THE PRECAST MANUFACTURER. FLEXURAL EFFECTS AND TORSIONAL EFFECTS DUE TO THE ECCENTRICITY OF THE ABUTMENT ELEMENTS SHALL BE CONSIDERED IN THE DESIGN.

PICK POINTS OR LIFTING LOOP LOCATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO FABRICATION.

THE METHOD OF SUPPORTING THE PRECAST ABUTMENT ELEMENTS DURING ERECTION SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO THE ERECTION. SPECIAL EMPHASIS IS PLACED ON THE CONTRACTORS METHOD OF ELEVATION CONTROL.

DISTRICT MATERIALS WILL PROVIDE COMPRESSIVE STRENGTH TESTING OF THE CONCRETE USED TO FILL THE ABUTMENT PILING ENCASEMENTS. BLOCKING AND TEMPORARY SHORING SHALL NOT BE REMOVED UNTIL 3500 PSI HAS BEEN ACHIEVED. SEE SPECIAL PROVISIONS.

EAST & WEST ABUTMENT COMPUTED PILE LOAD - TONS/PILE

FACTORED DEAD LOAD	56.0
FACTORED LIVE LOAD	34.0
✳FACTORED DESIGN LOAD	90.0

✳BASED ON STRENGTH 1 LOAD COMBINATION

EAST & WEST ABUTMENT REQUIRED NOMINAL PILE BEARING RESISTANCE R_n - TONS/PILE

FIELD CONTROL METHOD	φ_{dyn}	✳R_n
MN/DOT NOMINAL RESISTANCE FORMULA	0.40	225.0
PDA	0.65	138.5

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

SUMMARY OF QUANTITIES FOR TWO ABUTMENTS

⑤	STRUCTURAL CONCRETE (3Y43)	142	CU. YD.
⑥	REINFORCEMENT BARS (EPOXY COATED)	18540	POUND
①	ANCHORAGES TYPE REINFORCEMENT BARS (STAINLESS STEEL)	232	EACH
②	COUPLERS (REINFORCEMENT BARS) T-19	36	EACH
	CAST-IN-PLACE TEST PILE 75 FT. LONG 12"	2	EACH
	CAST-IN-PLACE TEST PILE 70 FT. LONG 12"	2	EACH
③	CAST-IN-PLACE PILE 60 FT. LONG DELIVERED 12"	720	LIN. FT.
③	CAST-IN-PLACE PILE 60 FT. LONG DRIVEN 12"	720	LIN. FT.
③	PILE REDRIVING	4	EACH
④	MEMBRANE WATERPROOFING SYSTEM/GEOTEXTILE TYPE II	43	LIN. FT.
④	2" POLYSTYRENE TYPE A	109	SQ. FT.
④	½" POLYSTYRENE TYPE A	383	SQ. FT.
④	1" POLYSTYRENE TYPE B	76	SQ. FT.
③	CAST-IN-PLACE PILE 65 FT. LONG DELIVERED 12"	780	LIN. FT.
③	CAST-IN-PLACE PILE 65 FT. LONG DRIVEN 12"	780	LIN. FT.
⑦	BENCH MARK DISK	1	EACH

③ DOES NOT INCLUDE TEST PILE.

④ PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM "PRECAST ABUTMENT ELEMENT".

⑤ STRUCTURAL CONCRETE (3Y43) IS INCLUDED IN PRICE BID FOR "PRECAST ABUTMENT ELEMENT."

⑥ REINFORCEMENT IS INCLUDED IN PRICE BID FOR "PRECAST ABUTMENT ELEMENT."

⑦ 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 SHALL BE CONSIDERED INCIDENTAL TO CONCRETE PAY ITEMS.

PILE NOTES

1 C.I.P. TEST PILE 75 FT. LONG STAGE 1 CONSTRUCTION
1 C.I.P. TEST PILE 75 FT. LONG STAGE 2 CONSTRUCTION
6 C.I.P. PILE EST. LENGTH 65 FT. STAGE 1 CONSTRUCTION
6 C.I.P. PILE EST. LENGTH 65 FT. STAGE 2 CONSTRUCTION
14 C.I.P. PILES REQ'D. FOR EAST ABUTMENT.

1 C.I.P. TEST PILE 70 FT. LONG STAGE 1 CONSTRUCTION
1 C.I.P. TEST PILE 70 FT. LONG STAGE 2 CONSTRUCTION
6 C.I.P. PILE EST. LENGTH 60 FT. STAGE 1 CONSTRUCTION
6 C.I.P. PILE EST. LENGTH 60 FT. STAGE 2 CONSTRUCTION
14 C.I.P. PILES REQ'D. FOR WEST ABUTMENT.

PILE SPACING SHOWN IS AT BOTTOM OF ABUTMENT.
ALL PILES TO BE 12"Ø.
FOR PILE SPLICE DETAILS SEE DETAIL B201.

CERTIFIED BY Jihshya J. Lin 12/21/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

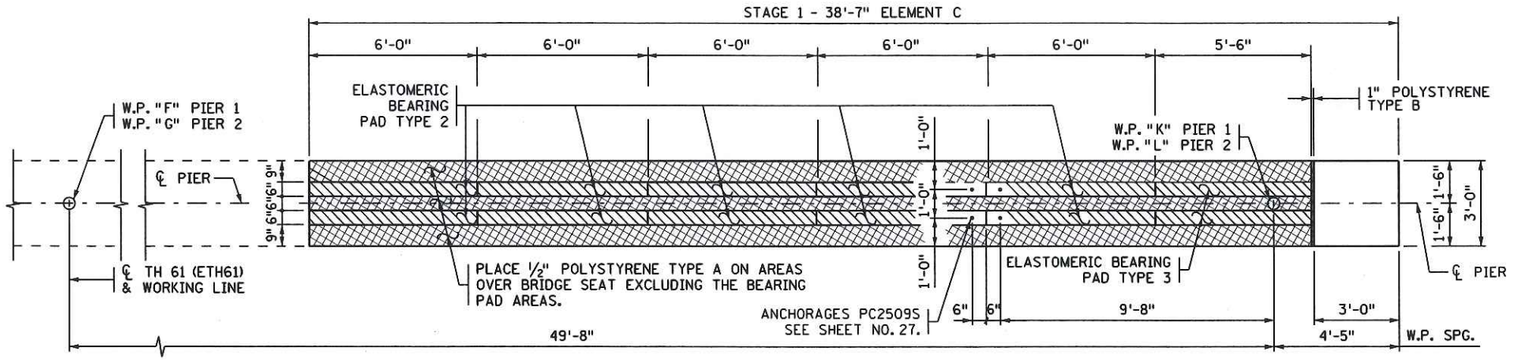
TITLE: ABUTMENT REINFORCEMENT

DES: P.J.K. | DR: TKB | APPROVED: 12/21/10
CHK: J.J.L. | CHK: P.J.K./MAK

SHEET NO. 20 OF 54 SHEETS

BRIDGE NO. 25024

12/16/2010 25024_abt.dgn



½" POLYSTYRENE TYPE A

½" ELASTOMERIC BEARING PAD

NOTES:

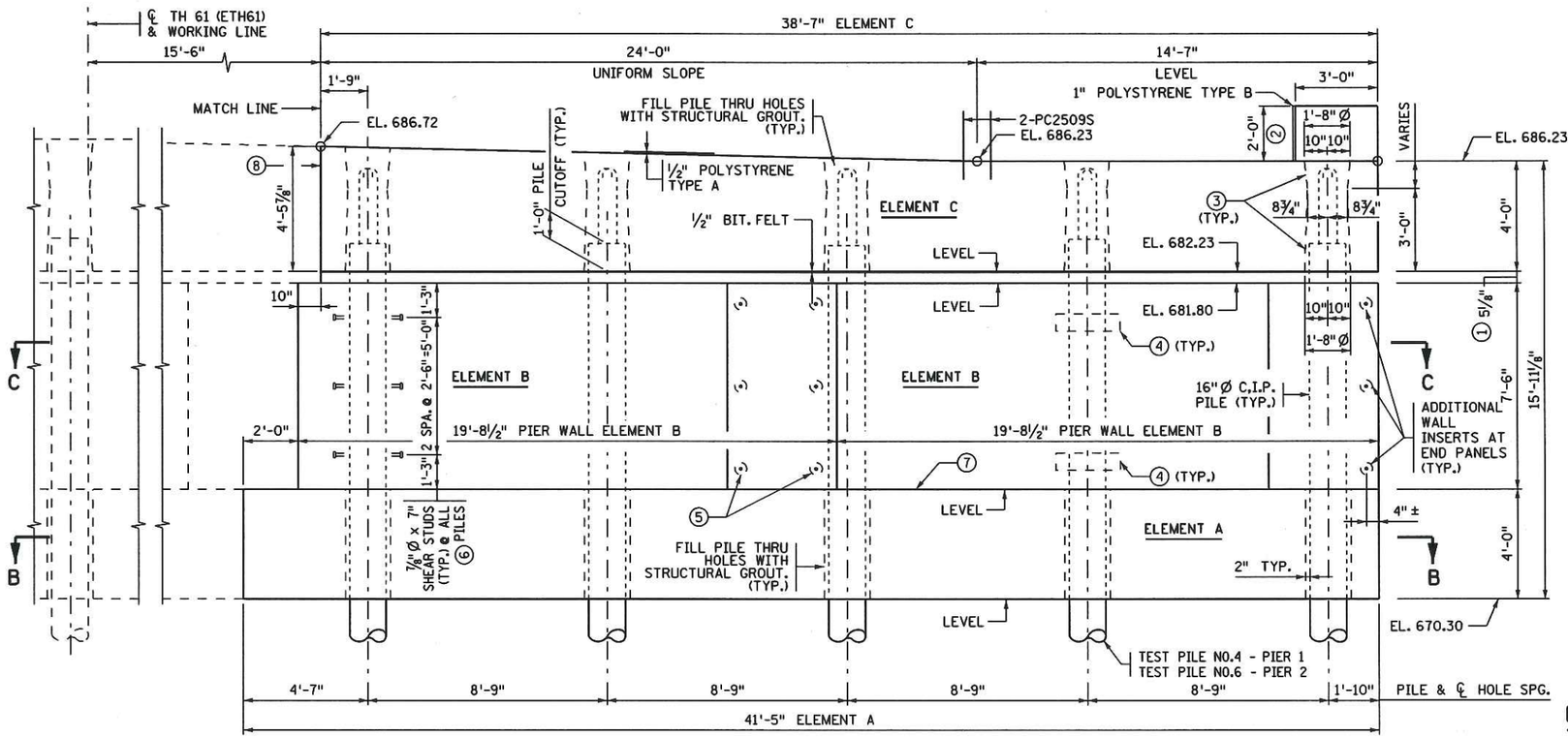
1. CAST-IN-PLACE STRUCTURAL CONC. 3Y43SCC AND ½" BIT. FELT ATTACHED TO BOTTOM OF CAP.
2. CAST IN PLACE STRUCTURAL CONCRETE (3Y43).
3. INTENTIONALLY ROUGHEN SURFACE OF PILE THRU HOLES.
4. PIER CAP & BASE MAY BE TEMPORARILY SUPPORTED BY TEMPORARY SUPPORT COLLARS OR OTHER APPROVED METHOD OF TEMPORARY SUPPORT. SEE SPECIAL PROVISIONS. SEE SHEET NO. 22 FOR PROPOSED METHOD.
5. CONCRETE INSERTS, TO BE 3'-0" MAX. SPACING AND AT LEAST 2" CLEAR OF PILES. SEE SECTION B-B IN SHEET NO. 26 FOR DETAILS. STAGGER PATTERN FOR OPPOSING WALL PANELS TO PREVENT INTERFERENCE IN CONSTRUCTION.
6. SHEAR STUD SPACING SHALL BE ADJUSTED TO ALLOW TEMPORARY SUPPORT COLLARS.
7. PRESSURE INJECT EPOXY TO SEAL THE VOID BETWEEEN ELEMENTS A & B TO WATERTIGHT BEFORE PLACING SCC. THIS WORK WILL BE INCIDENTAL TO PAY ITEM "PRECAST PIER WALL".
8. INTENTIONALLY ROUGHEN SURFACE FOR CLOSURE POUR.

CONTRACTOR TO SUBMIT SHOP DRAWINGS DETAILING, FORM WORK, CONSTRUCTION SEQUENCE, SUPPORT ELEMENTS METHOD OF INSTALLATION OF ELEMENTS.

SEE SPECIAL PROVISION FOR TOLERANCES ON PRECAST ELEMENTS.

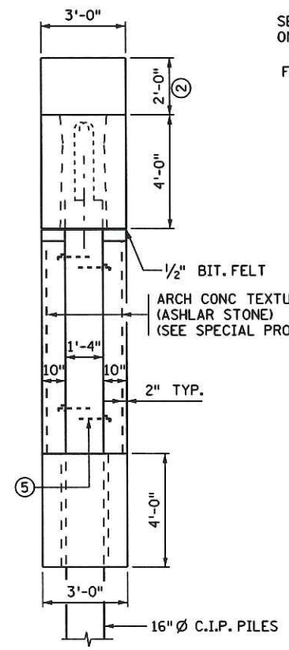
FOR SECTIONS B-B AND C-C DETAILS, SEE SHEET NO. 22.

STAGE 1 - PLAN: PIERS

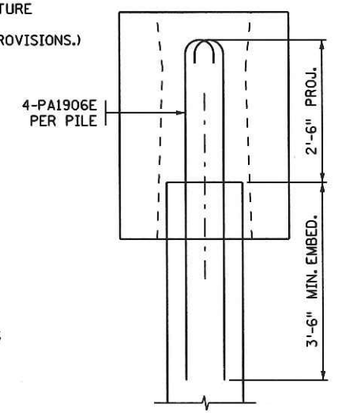


STAGE 1 - ELEVATION: PIERS

NORTH END



END ELEVATION: PIERS



PIER REINFORCEMENT DETAIL

CAST PA1906E WITH PILES

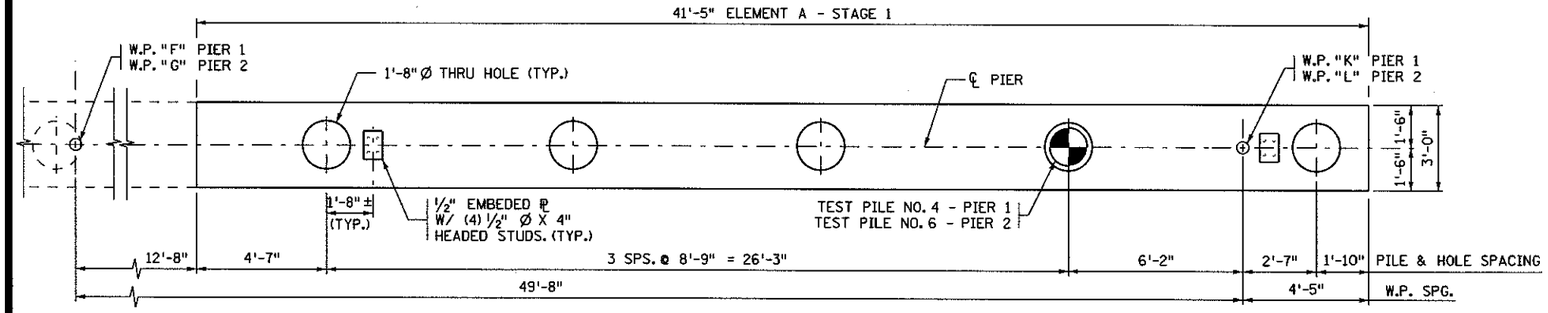
CERTIFIED BY Jinshya J. Lin 12/22/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JINSHYA J. LIN LIC. NO. 19115

TITLE: STAGE 1 PIERS 1 & 2 PLAN & ELEVATION

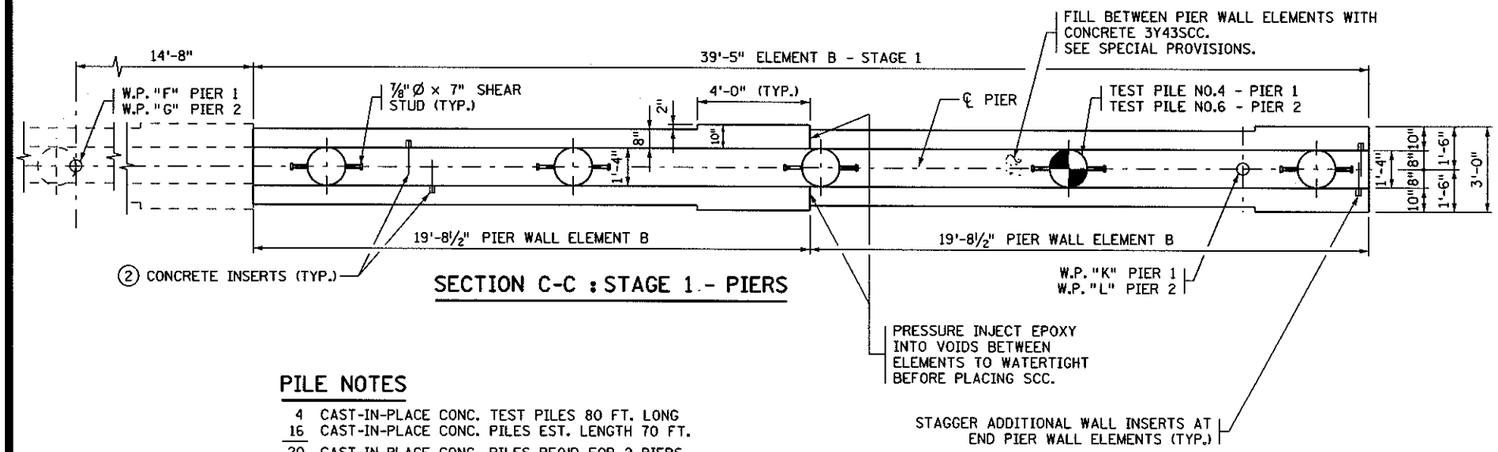
DES: PJK	DR: GRF	APPROVED: 12/22/10
CHK: JJL	CHK: JAJ	

SHEET NO. 21 OF 54 SHEETS

BRIDGE NO. 25024



SECTION B-B : STAGE 1 - PIERS



SECTION C-C : STAGE 1 - PIERS

PILE NOTES

4 CAST-IN-PLACE CONC. TEST PILES 80 FT. LONG
16 CAST-IN-PLACE CONC. PILES EST. LENGTH 70 FT.
20 CAST-IN-PLACE CONC. PILES REQ'D FOR 2 PIERS

PILE SPACING SHOWN IS AT BOTTOM OF PIER BASE ELEMENTS.

PILES TO HAVE A NOMINAL DIAMETER OF 16" AND MIN. WALL THICKNESS 5/16".

FOR PILE SPLICE DETAILS SEE DETAIL B201.

SEE DETAILS ON SHEET NOS. 21 & 23 FOR REINFORCEMENT CAST WITH PILES.

PIERS 1 AND 2 ① COMPUTED PILE LOAD - TONS/PILE	
FACTORED DEAD LOAD	106.0
FACTORED LIVE LOAD	38.0
✳FACTORED DESIGN LOAD	144.0

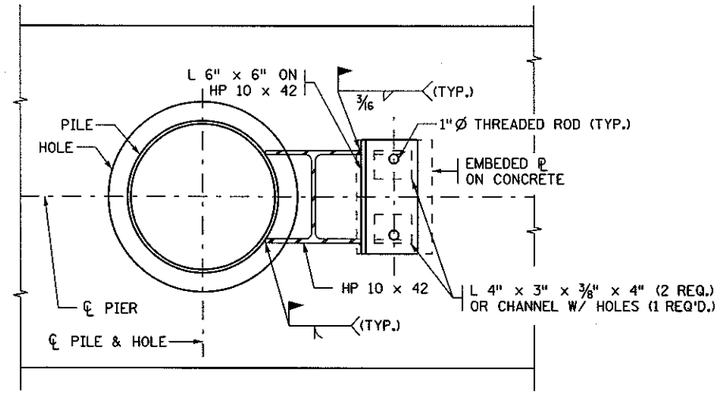
✳BASED ON STRENGTH 1 LOAD COMBINATION

PIERS 1 AND 2 ① REQUIRED NOMINAL PILE BEARING RESISTANCE R_n - TONS/PILE		
FIELD CONTROL METHOD	φ_{dyn}	✳R_n
Mn/DOT NOMINAL RESISTANCE FORMULA	0.40	360.0
PDA	0.65	222.0

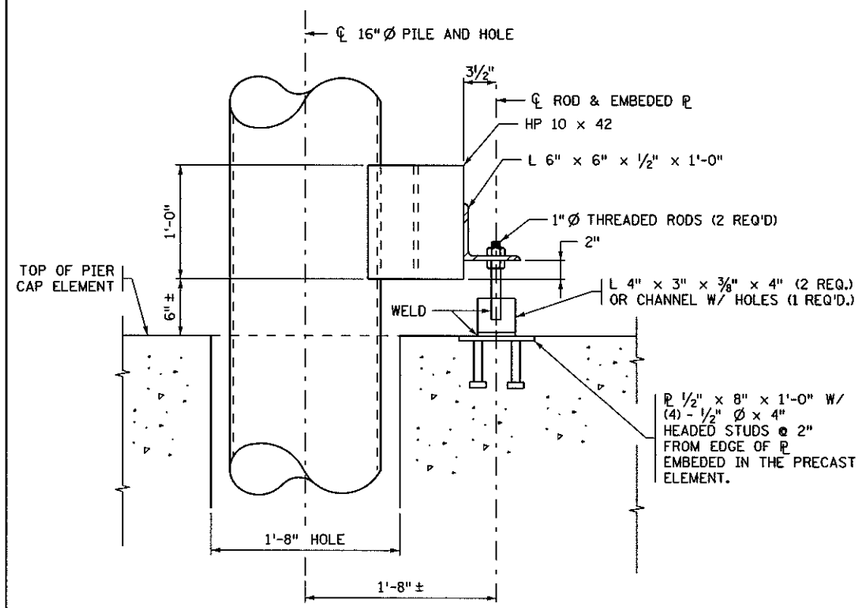
✳R_n = (FACTORED DESIGN LOAD) / φ_{dyn}

① FOR PILES IN BOTH STAGES 1 & 2.

② SEE SECTION B-B IN SHEET NO. 26 FOR DETAILS.



TOP VIEW



ELEVATION

BASE ELEMENT SUPPORT AND LEVELING DEVICE (PROPOSED) ①

(@ INSIDE FACE OF TWO EXTERIOR PILES OF EACH STAGE CONSTRUCTION)

① CONTRACTOR SHALL DESIGN THE LEVELING DEVICE PER PRECAST ELEMENT WEIGHT AS SHOWN IN SHEET NO. 3.

CERTIFIED BY Jinshya J. Lin 12/21/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JINSHYA J. LIN LIC. NO. 19115

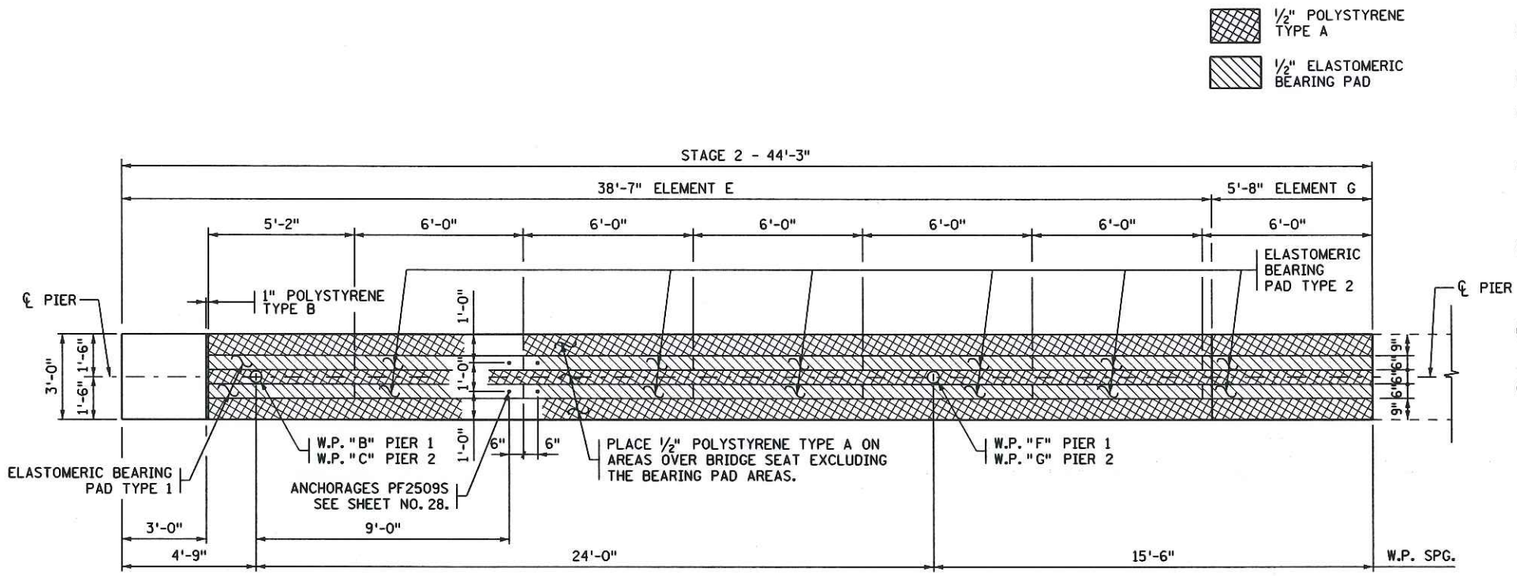
TITLE: STAGE 1 PIERS 1 & 2 SECTIONS & DETAILS

DES: PJK	DR: GRF	APPROVED: 12/21/10
CHK: JJL	CHK: JAJ	

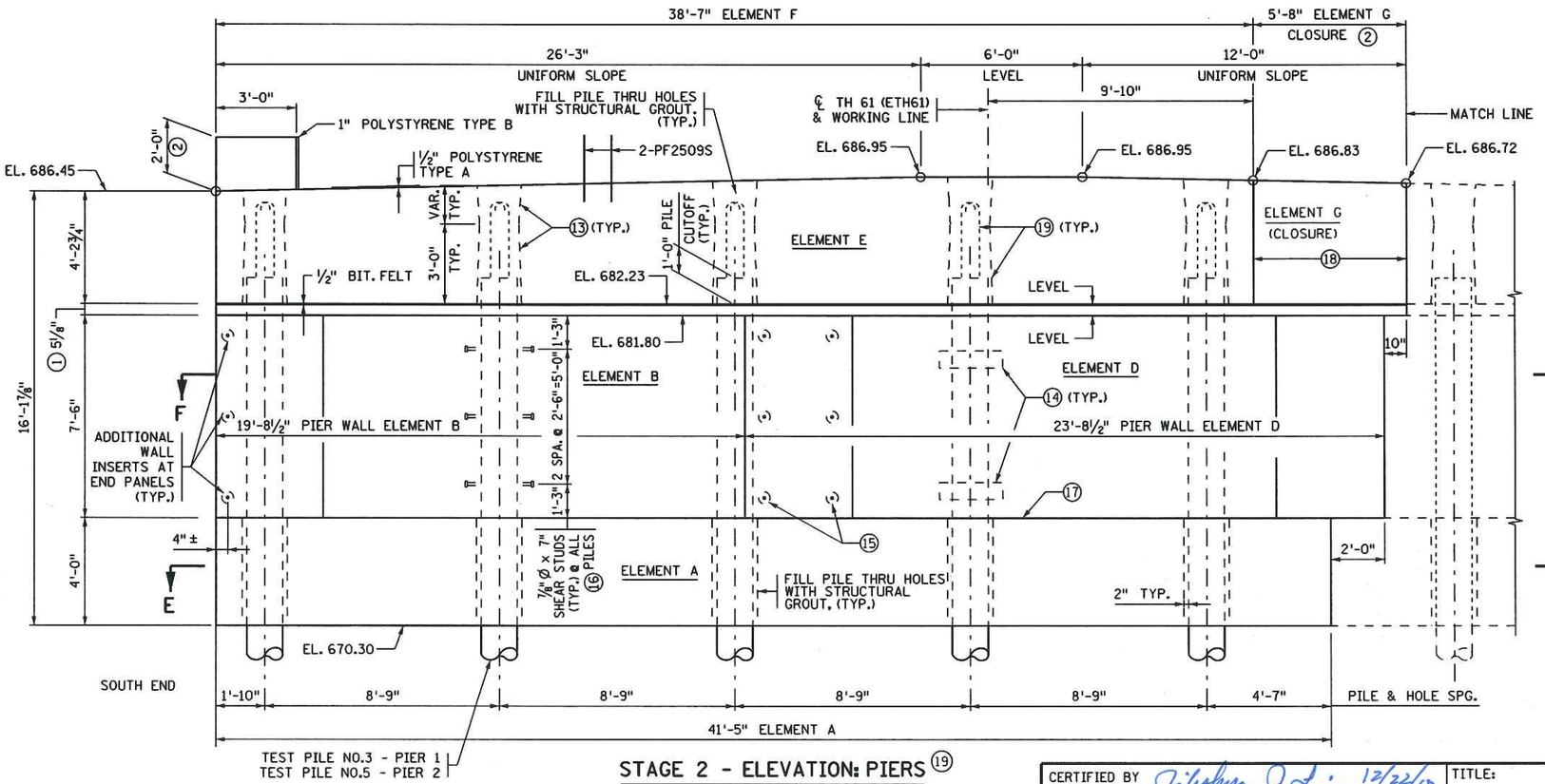
SHEET NO. 22 OF 54 SHEETS

BRIDGE NO. 25024

12/16/2010 10:35:20 AM b-25024sgs.dgn



STAGE 2 - PLAN: PIERS



STAGE 2 - ELEVATION: PIERS (19)

NOTES:

(1) CAST-IN-PLACE STRUCTURAL CONC. 3Y43SCC AND ½" BIT. FELT ATTACHED TO BOTTOM OF CAP.

(2) CAST IN PLACE STRUCTURAL CONCRETE (3Y43).

(13) INTENTIONALLY ROUGHEN SURFACE OF PILE THRU HOLES.

(14) PIER CAP & BASE MAY BE TEMPORARILY SUPPORTED BY TEMPORARY SUPPORT COLLARS OR OTHER APPROVED METHOD OF TEMPORARY SUPPORT. SEE SPECIAL PROVISIONS. SEE SHEET NO. 22 FOR PROPOSED METHOD.

(15) CONCRETE INSERTS TO BE 3'-0" MAX. SPACING & AT LEAST 2" CLEAR OF PILES. SEE SECTION B-B IN SHEET NO. 26 FOR DETAILS. STAGGER PATTERN FOR OPPOSING WALL PANELS TO PREVENT INTERFERENCE IN CONSTRUCTION.

(16) SHEAR STUD SPACING SHALL BE ADJUSTED TO ALLOW TEMPORARY SUPPORT COLLARS.

(17) PRESSURE INJECT EPOXY TO SEAL THE VOID BETWEEEN ELEMENT A & B AND ELEMENTS A & D TO WATERTIGHT BEFORE PLACING SCC. THIS WORK WILL BE INCIDENTAL TO PAY ITEM "PRECAST PIER WALL".

(18) INTENTIONALLY ROUGHEN SURFACE FOR CLOSURE POUR.

(19) SEE SHEET NO. 21 FOR DETAILS FOR THRU HOLES, DOWELS & END ELEVATION.

FOR SECTION E-E AND F-F DETAILS, SEE SHEET NO. 24.

SUMMARY OF QUANTITIES FOR TWO PIERS

(3)	C-I-P CONCRETE PILING DELIVERED 16"	1120 LIN. FT.
(3)	C-I-P CONCRETE PILING DRIVEN 16"	1120 LIN. FT.
	C-I-P CONCRETE TEST PILE 80 FT. LONG 16"	4 EACH
(4)	BASE ELEMENT A	4 EACH
(5)	WALL ELEMENT B	12 EACH
(5)	WALL ELEMENT D	4 EACH
(6)	CAP ELEMENT C	2 EACH
(6)	CAP ELEMENT E	2 EACH
(7)	STRUCTURAL CONCRETE (3Y43)	9 CU. YD.
(8)	STRUCTURAL CONCRETE (3Y43SCC)	60 CU. YD.
(9)	STRUCTURAL GROUT	8 CU. YD.
	SHEAR STUDS	120 EACH
(10)	REINFORCEMENT BARS (EPOXY COATED)	390 POUND
	ANCHORAGES TYPE REINF BARS (STAINLESS STEEL)	16 EACH
(11)	½" BITUMINOUS FELT	479 SQ. FT.
(11)	½" POLYSTYRENE TYPE A	307 SQ. FT.
(11)	1" POLYSTYRENE TYPE B	24 SQ. FT.
	COUPLERS (REINFORCEMENT BARS) T-19	24 EACH
(12)	CONCRETE INSERTS WITH ½" Ø THREADED ROD	396 EACH
	ARCH CONC TEXTURE (ASHLAR STONE)	1885 SQ. FT.
	ARCH SURFACE FINISH (MULTI COLOR)	1885 SQ. FT.
	ANTI-GRAFFITI COATING	1885 SQ. FT.
	PILE REDRIVING	4 EACH

(3) DOES NOT INCLUDE TEST PILES.

(4) TO BE INCLUDED IN PRICE BID FOR PAY ITEM "PRECAST PIER BASE ELEMENT".

(5) TO BE INCLUDED IN PRICE BID FOR PAY ITEM "PRECAST PIER WALL".

(6) TO BE INCLUDED IN PRICE BID FOR PAY ITEM "PRECAST PIER CAP ELEMENT".

(7) INCLUDES CAP CLOSURE POUR (ELEMENT G) AND 4 PIER CAP PILASTERS. TO BE INCLUDED IN PRICE BID FOR PAY ITEM "PRECAST PIER CAP ELEMENT".

(8) INCLUDES REQUIRED CONCRETE FILL BETWEEN THE OPPOSING PRECAST WALL ELEMENTS. TO BE INCLUDED IN PRICE BID FOR ITEM "PRECAST PIER WALL".

(9) INCLUDES REQUIRED GROUT FOR FILLING THE PILE POCKETS IN THE PRECAST BASE AND CAP ELEMENTS. TO BE INCLUDED IN THE PRICE BID FOR THE PRECAST ELEMENTS.

(10) INCLUDES REINFORCEMENT BARS FOR CAP CLOSURE POUR (ELEMENT G) ONLY. TO BE INCLUDED IN PRICE BID FOR PAY ITEM "PRECAST PIER CAP ELEMENT".

(11) PAYMENT SHALL BE CONSIDERED INCIDENTAL TO THE PRECAST CONCRETE PAY ITEMS.

(12) PAYMENT FOR CONCRETE INSERTS WITH ½"Ø THREADED RODS SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM "PRECAST PIER WALL".

CERTIFIED BY Jinshya J. Lin 12/22/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JINSHYA J. LIN LIC. NO. 19115

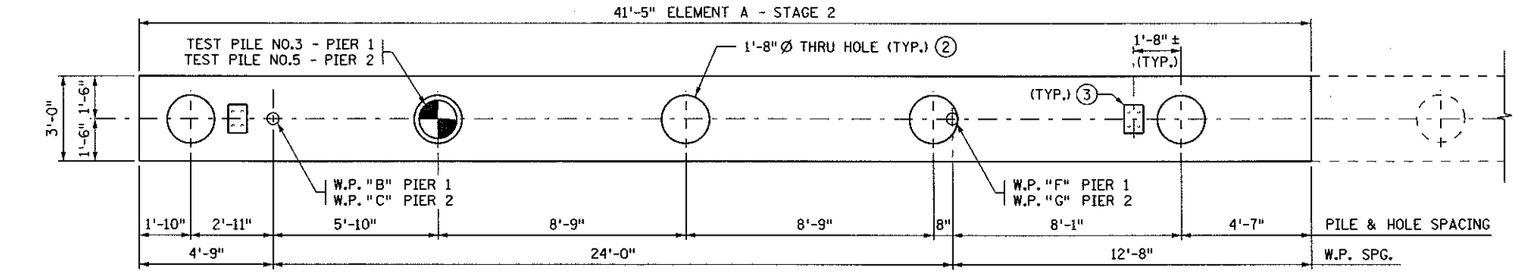
TITLE: STAGE 2 PIERS 1 & 2 PLAN & ELEVATION

DES: PJK	DR: GRF	APPROVED 12/22/10
CHK: JJL	CHK: JAJ	

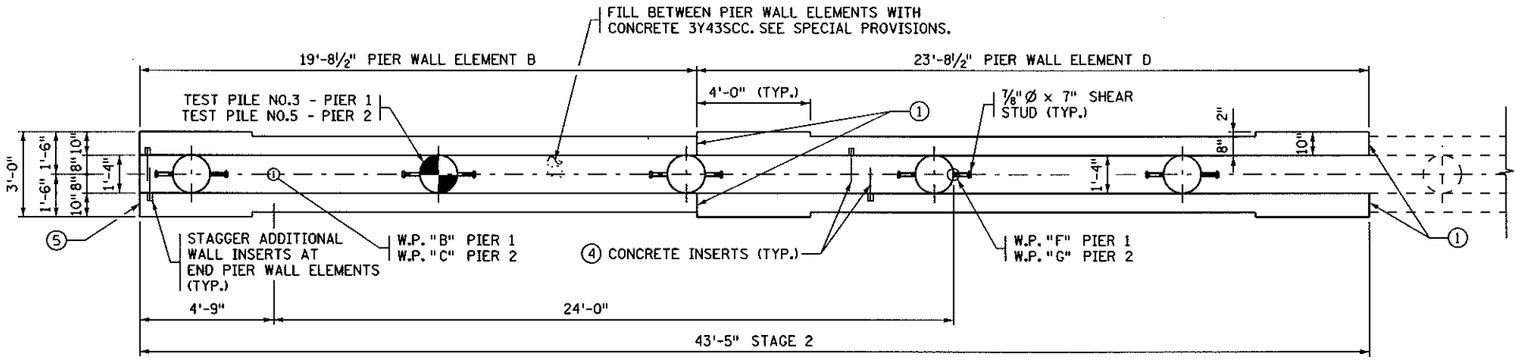
SHEET NO. 23 OF 54 SHEETS

BRIDGE NO. 25024

12/22/2010 10:41:52 AM br-25024ksg1.dgn



SECTION E-E : STAGE 2 - PIERS



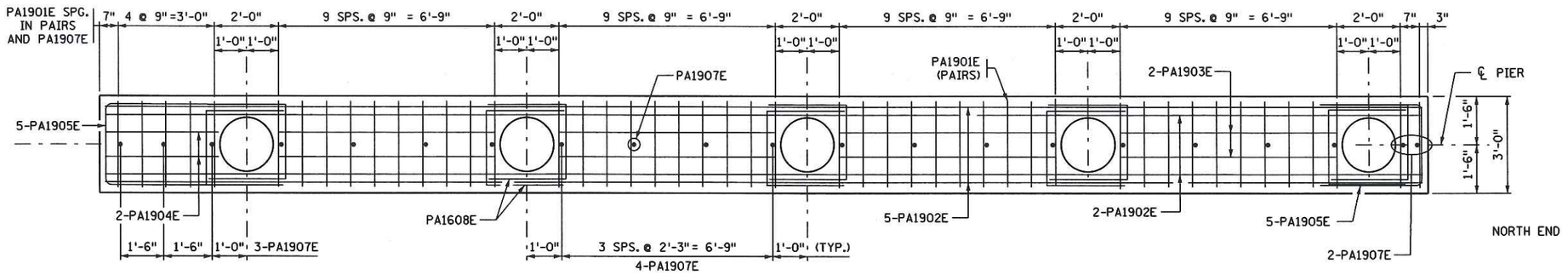
SECTION F-F : STAGE 2 - PIERS

NOTES:

1. PRESSURE INJECT EPOXY TO SEAL THE VOIDS BETWEEEN ELEMENTS A & B TO WATERTIGHT BEFORE PLACING SCC.
2. INTENTIONALLY ROUGHEN SURFACE FOR CLOSURE POUR.
3. ½" × 12" × 8" EMBEDED ℄ W/ (4) - ½" Ø × 4" HEADED STUDS.
4. SEE SECTION B-B IN SHEET NO. 26 FOR DETAILS.
5. CONTRACTOR TO FORM THE END OF PIERS TO WATERTIGHT.

12/27/2010 7:14:47 AM b=25024ksgs.dgn

CERTIFIED BY Jinshya J. Lin 12/3/10 (LICENSED PROFESSIONAL ENGINEER / DATE) NAME: JINSHYA J. LIN LIC. NO. 19115	TITLE: STAGE 2 PIERS 1 & 2 SECTIONS	DES: PJK DR: GRF CHK: JJL CHK: JAJ	APPROVED: 12/3/10	BRIDGE NO. 25024
		SHEET NO. 24 OF 54 SHEETS		



PLAN: PIER BASE ELEMENT A REINFORCEMENT

NORTH END ELEMENT A SHOWN SOUTH END ELEMENT A OPPOSITE

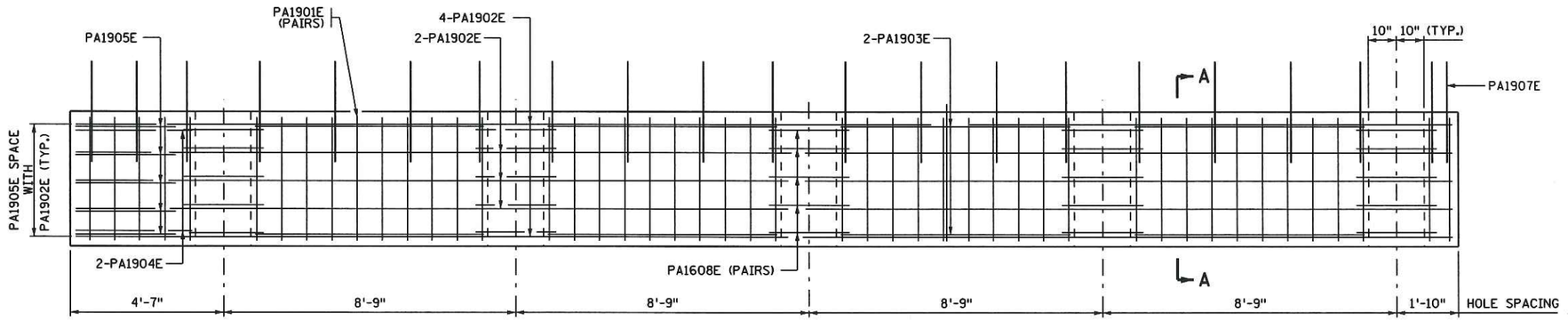
BILL OF REINFORCEMENT FOR 2 PIERS (4 BASE ELEMENTS A)				
BAR	NO.	LENGTH	SHAPE	LOCATION
PA1901E	376	9'-8"	⊓	STIRRUPS
PA1902E	56	41'-1"	—	HORIZONTAL
PA1903E	64	6'-9"	—	HORIZONTAL
PA1904E	16	3'-6"	—	HORIZONTAL
PA1905E	40	8'-8"	⊏	HORIZONTAL
① PA1906E	80	7'-2"	⊂	PILES VERTICAL
PA1907E	84	3'-0"	—	VERTICAL
PA1608E	200	8'-4"	⊏	HORIZONTAL

② SUMMARY OF QUANTITIES FOR 2 PIERS (4 BASE ELEMENTS A)	
STRUCTURAL CONCRETE (3Y43)	67 CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	13140 POUND

NOTES:

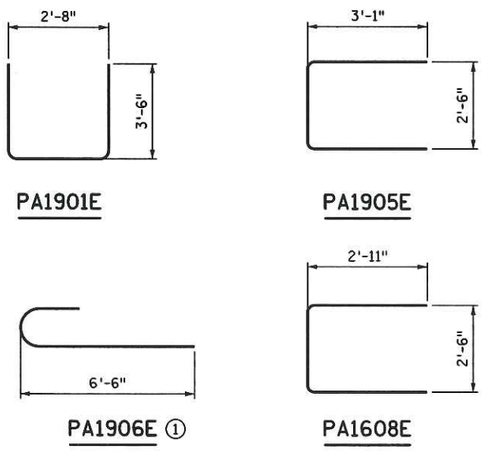
① REINFORCEMENT CAST WITH PILE.

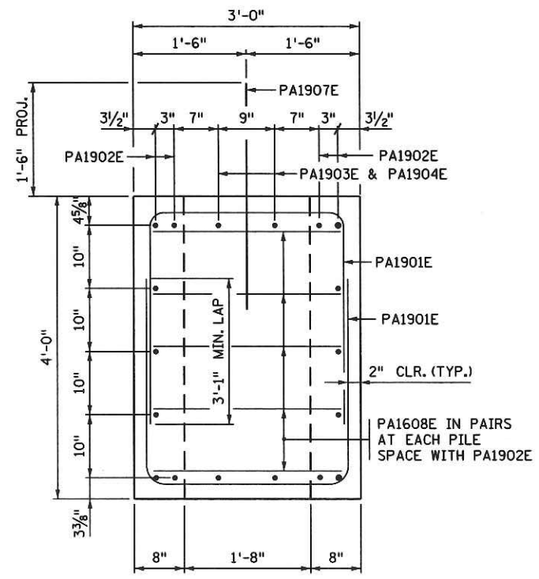
② TO BE INCLUDED IN PRICE BID FOR PAY ITEM "PRECAST PIER BASE ELEMENT".



ELEVATION: PIER BASE ELEMENT A REINFORCEMENT

(4 PIER BASE ELEMENTS REQUIRED THUS)





SECTION A-A

12/22/2010 11:20:15 AM br25024kgs.dgn

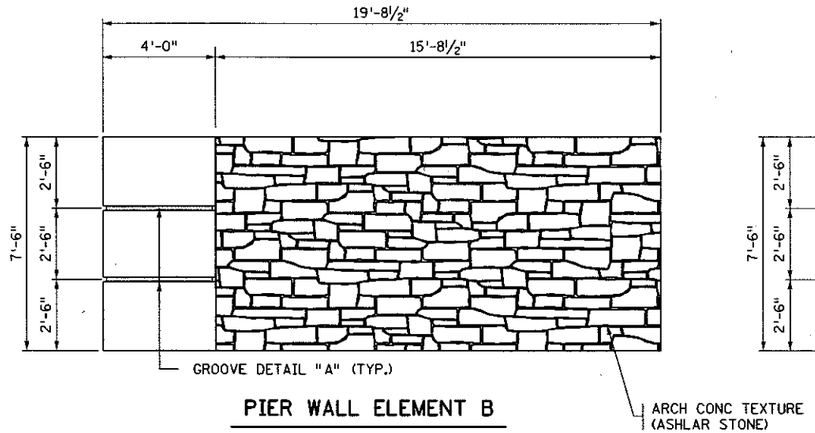
CERTIFIED BY Jihshya J. Lin 12/22/10 (LICENSED PROFESSIONAL ENGINEER / DATE)
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: PRECAST PIER BASE ELEMENT REINFORCEMENT

DES: PJK	DR: GRF	APPROVED: 12/22/10
CHK: JJL	CHK: JAJ	

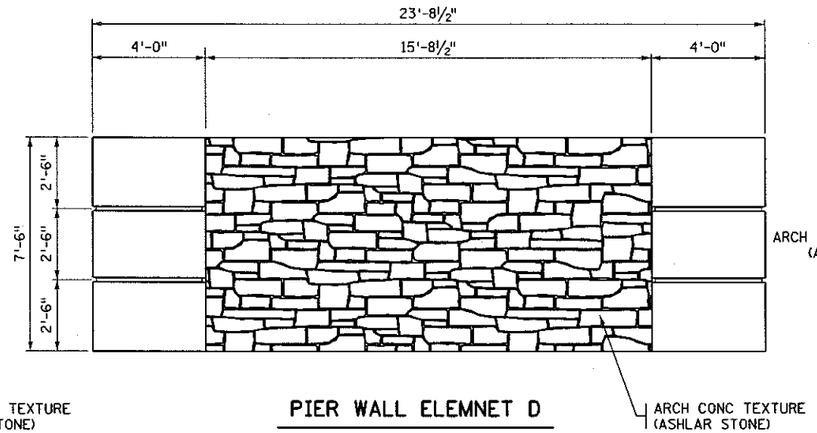
SHEET NO. 25 OF 54 SHEETS

BRIDGE NO. 25024



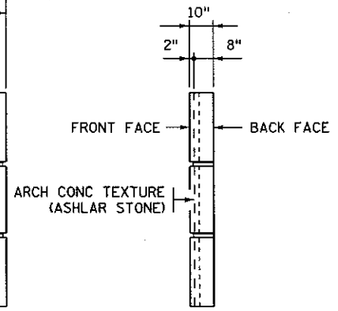
PIER WALL ELEMENT B

(12 PIER WALL ELEMENTS REQUIRED)



PIER WALL ELEMNET D

(4 PIER WALL ELEMENTS REQUIRED)



END ELEVATION

NOTES:

CONTRACTOR TO SUBMIT FORM WORK FOR HOLDING THE PIER WALL ELEMENTS TO THE COLUMNS FOR ENGINEERS APPROVAL. SEE SPECIAL PROVISIONS.

SEE SECTION C-C ON SHEET NO. 22 AND SECTION F-F ON SHEET NO. 24 FOR ADDITIONAL DETAILS.

BILL OF REINFORCEMENT
FOR 2 PIERS WALL ELEMENTS B & D

BAR	NO.	LENGTH	SHAPE	LOCATION
W1601E	352	7'-2"	——	VERTICAL
W1602E	132	19'-4"	——	HORIZONTAL
W1603E	44	23'-4"	——	HORIZONTAL

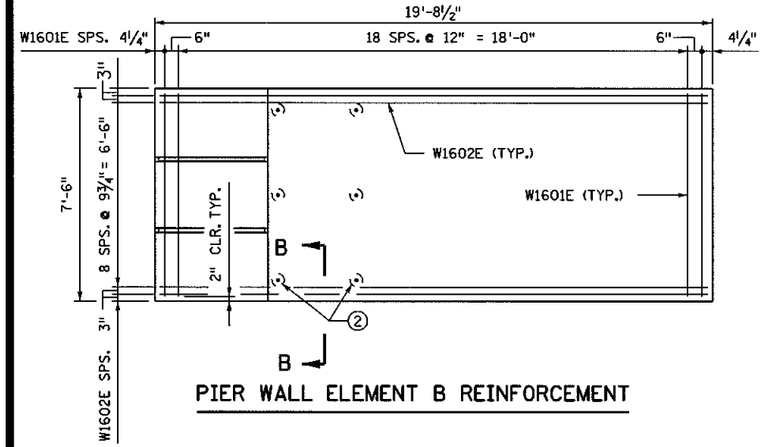
① SUMMARY OF QUANTITIES
FOR 2 PIERS WALL ELEMENTS B & D

STRUCTURAL CONCRETE (3Y43)	65 CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	6360 POUND
CONCRETE INSERTS WITH ½" Ø THREADED RODS	396 EACH

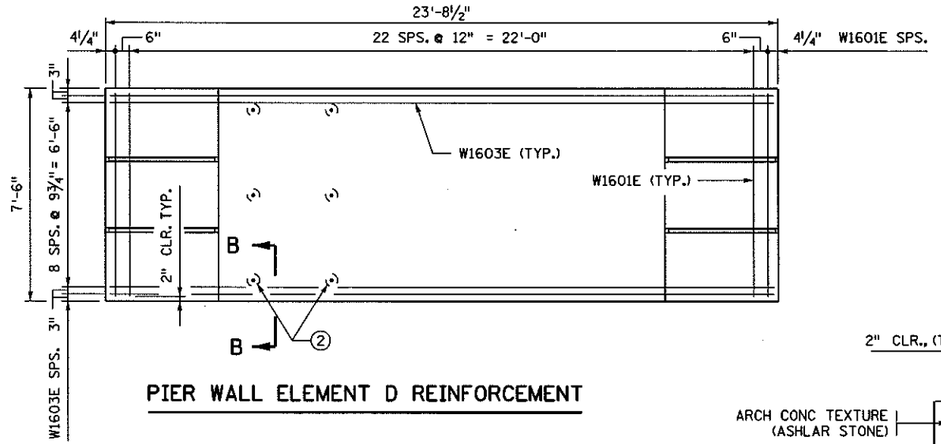
NOTES:

① PAYMENT FOR QUANTITIES TO BE INCLUDED IN PRICE BID FOR PAY ITEM "PRECAST PIER WALL". INCLUDES 12 WALL ELEMENT B AND 4 WALL ELEMENT D.

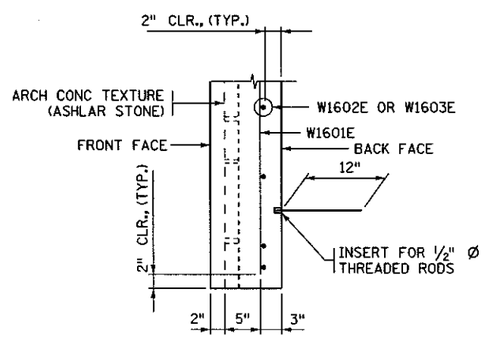
② CONCRETE INSERTS TO BE 3'-0" MAX. SPACING & AT LEAST 2" CLEAR OF PILES. STAGGER PATTERN FOR OPPOSING WALL PANELS TO PREVENT INTERFERENCE IN CONSTRUCTION.



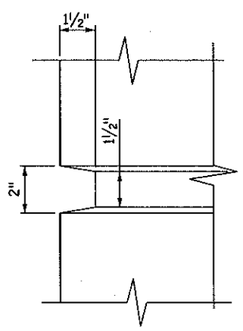
PIER WALL ELEMENT B REINFORCEMENT



PIER WALL ELEMENT D REINFORCEMENT



SECTION B-B



DETAIL "A"

12/27/2010 7:34:10 AM br250224gs.dgn

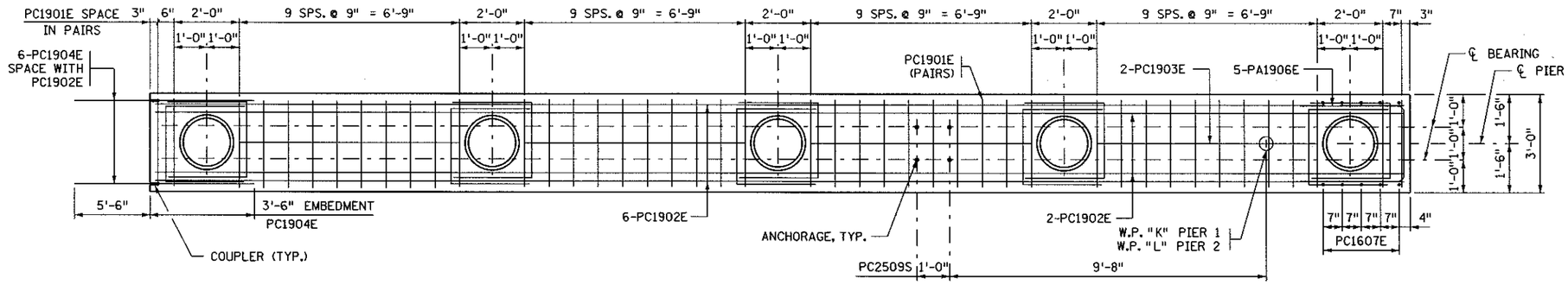
CERTIFIED BY Jinshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JINSHYA J. LIN LIC. NO. 19115

TITLE: PRECAST PIER WALL ELEMENT DETAILS & REINFORCEMENT

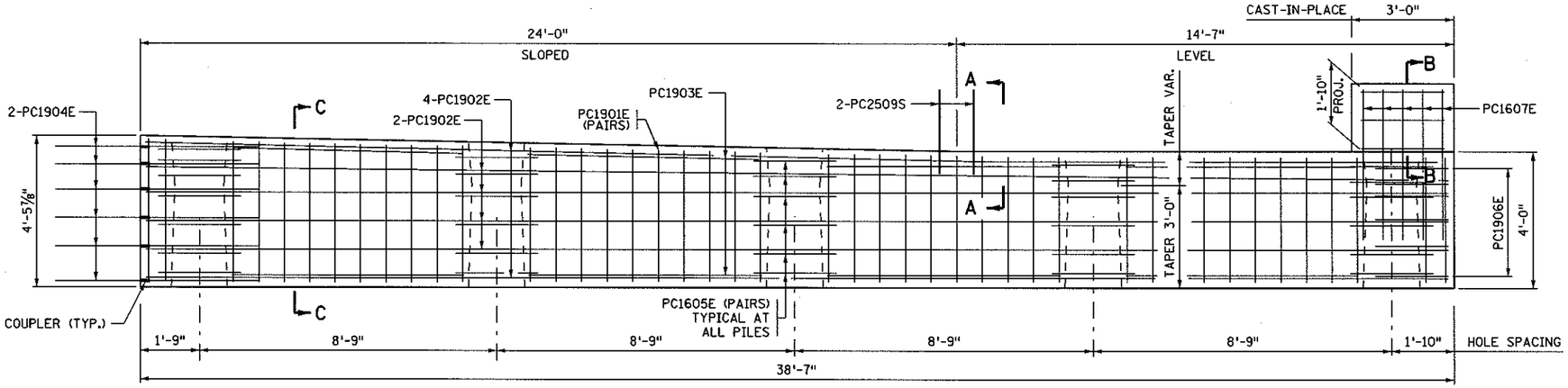
DES: PJK	DR: GRF	APPROVED: 12/3/10
CHK: JJL	CHK: JAJ	

SHEET NO. 26 OF 54 SHEETS

BRIDGE NO. 25024



PLAN: PIER CAP ELEMENT C REINFORCEMENT



ELEVATION: PIER CAP ELEMENT C REINFORCEMENT

(2 PIER CAP ELEMENTS REQUIRED)

BILL OF REINFORCEMENT FOR 2 PIERS (2 CAP ELEMENTS C)

	BAR	NO.	LENGTH	SHAPE	LOCATION
	PC1901E	176	10'-0"	⊓	STIRRUPS
	PC1902E	32	38'-3"	—	HORIZONTAL
	PC1903E	16	6'-9"	—	HORIZONTAL
(1)	PC1904E	24	SEE DETAIL	—	HORIZONTAL DOWEL
	PC1605E	120	8'-4"	▭	HORIZONTAL
	PC1906E	10	8'-8"	▭	HORIZONTAL
	PC1607E	10	11'-6"	▭	VERTICAL DOWEL
	PC1608E	14	2'-8"	—	HORIZONTAL
(3)	PC2509S	8	2'-6"	—	ANCHORAGE

SUMMARY OF QUANTITIES FOR 2 PIERS (2 CAP ELEMENTS C)

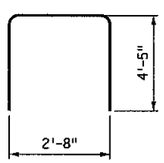
(2)	STRUCTURAL CONCRETE (3Y43)	33 CU. YD.
(2)	REINFORCEMENT BARS (EPOXY COATED)	5980 POUND
(1)	COUPLERS (REINFORCEMENT BARS) T-19	24 EACH
(3)	ANCHORAGES TYPE RINF BARS (STAINLESS STEEL)	8 EACH

NOTES:

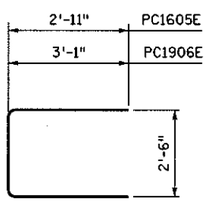
(1) TO BE INCLUDED IN PRICE BID FOR PAY ITEM "COUPLERS (REINFORCEMENT BARS) T-19".

(2) CONCRETE QUANTITY FOR PRECAST ELEMENT C ONLY. REINFORCEMENT QUANTITY INCLUDES PRECAST ELEMENT C AND THE CAST IN PLACE CAP PILASTER. TO BE INCLUDED IN PRICE BID FOR PAY ITEM "PRECAST PIER CAP ELEMENT".

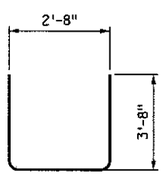
(3) STAINLESS STEEL BARS PLUS DRILLING AND INSTALLING TO BE INCLUDED IN PRICE BID FOR PAY ITEM "ANCHORAGES TYPE REINF BARS (STAINLESS STEEL)".



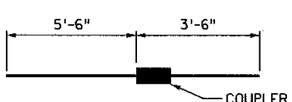
PC1607E



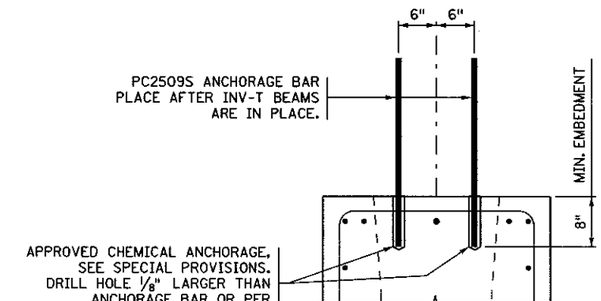
PC1605E, PC1906E



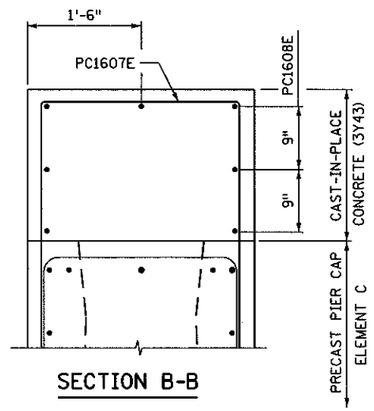
PC1901E



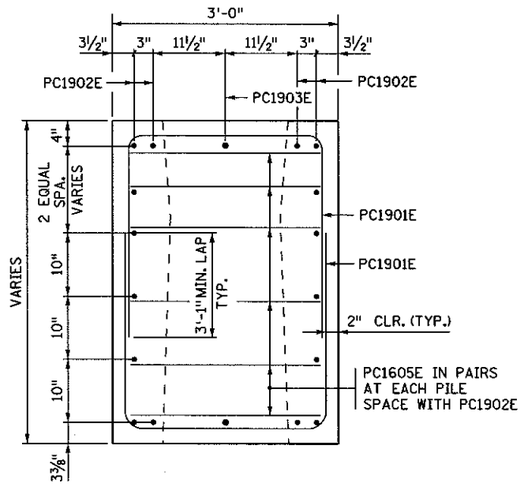
PC1904E



SECTION A-A



SECTION B-B



SECTION C-C

12/3/2010 12:19:49 PM b-25024ksgs.dgn

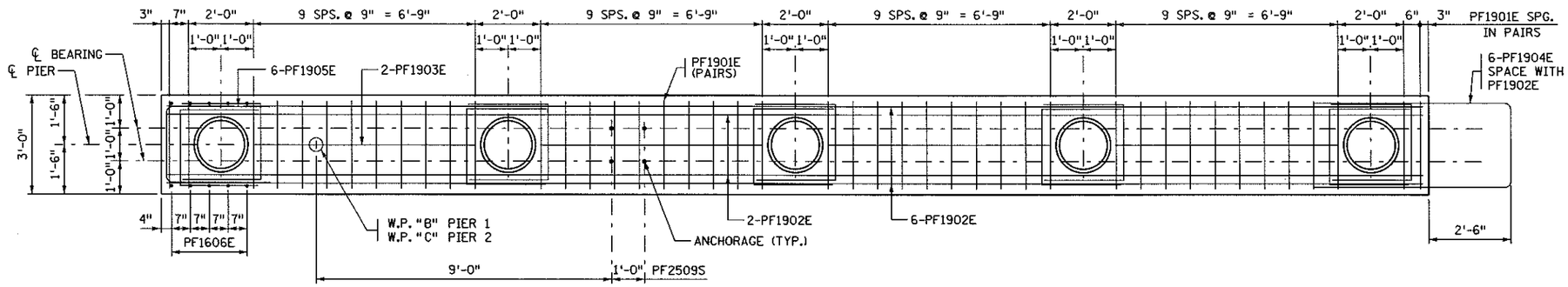
CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: PRECAST PIER CAP ELEMENT REINFORCEMENT

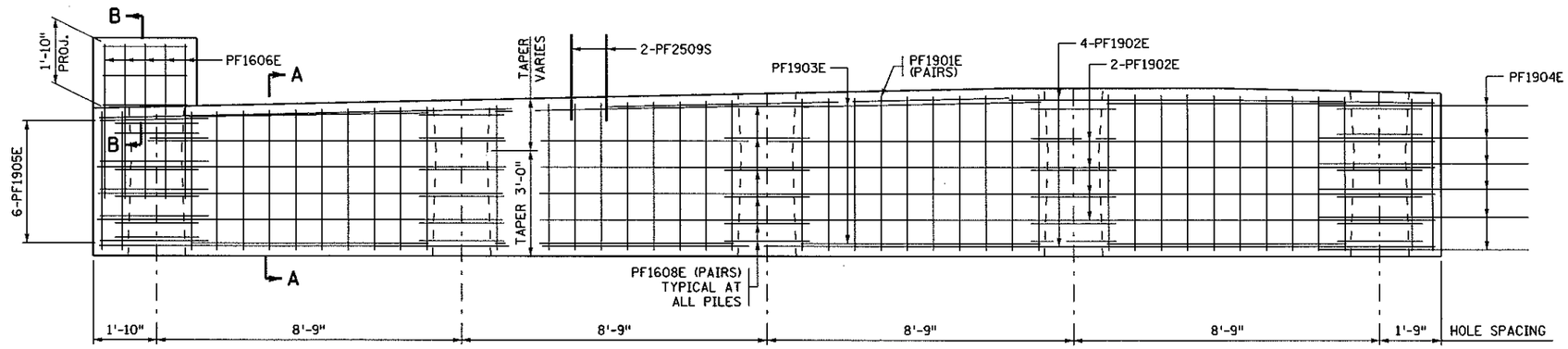
DES: PJK	DR: GRF	APPROVED: 12/3/10
CHK: JJL	CHK: JAJ	

SHEET NO. 27 OF 54 SHEETS

BRIDGE NO. 25024



PLAN: PIER CAP ELEMENT E REINFORCEMENT



ELEVATION: PIER CAP ELEMENT E REINFORCEMENT

(2 PIER CAP ELEMENTS REQUIRED)

BILL OF REINFORCEMENT FOR 2 PIERS (2 CAP ELEMENTS E)

	BAR	NO.	LENGTH	SHAPE	LOCATION
	PF1901E	176	10'-2"		STIRRUPS
	PF1902E	32	38'-3"		HORIZONTAL
	PF1903E	16	6'-9"		HORIZONTAL
	PF1904E	12	14'-6"		HORIZONTAL DOWEL
	PF1905E	12	8'-8"		HORIZONTAL
	PF1606E	10	11'-6"		VERTICAL DOWEL
	PF1607E	14	2'-8"		HORIZONTAL
	PF1608E	120	8'-4"		HORIZONTAL
②	PF2509S	8	2'-6"		ACHORAGES

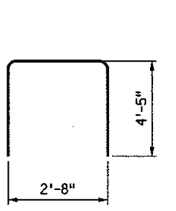
SUMMARY OF QUANTITIES FOR 2 PIERS (2 CAP ELEMENTS E)

①	STRUCTURAL CONCRETE (3Y43)	35 CU. YD.
①	REINFORCEMENT BARS (EPOXY COATED)	6310 POUND
②	ANCHORAGES TYPE RINF BARS (STAINLESS STEEL)	8 EACH

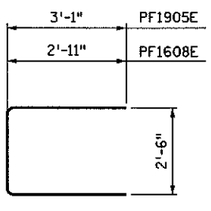
NOTES:

① CONCRETE QUANTITY FOR PRECAST ELEMENT E ONLY. REINFORCEMENT QUANTITY INCLUDES PRECAST ELEMENT E AND THE CAST IN PLACE CAP PILASTER. TO BE INCLUDED IN PRICE BID FOR PAY ITEM "PRECAST PIER CAP ELEMENT".

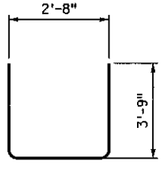
② STAINLESS STEEL BARS PLUS DRILLING AND INSTALLING TO BE INCLUDED IN PRICE BID FOR PAY ITEM "ANCHORAGES TYPE REINF BARS (STAINLESS STEEL)".



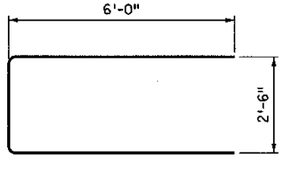
PF1606E



PF1905E & PF1608E



PF1901E



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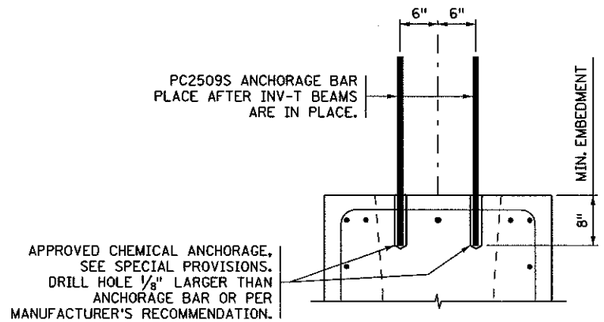
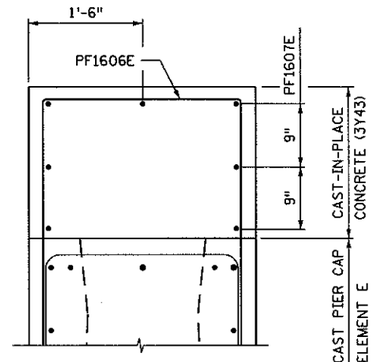
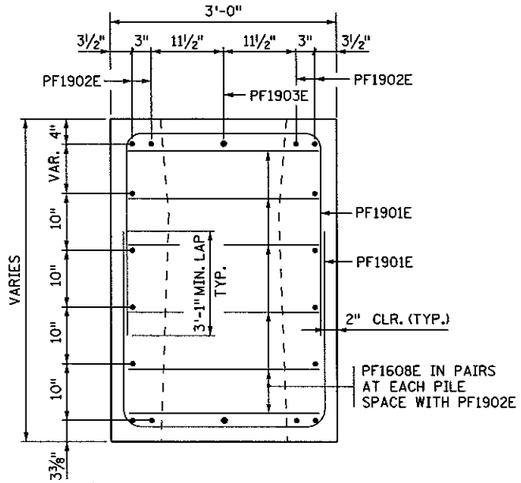


SECTION A-A



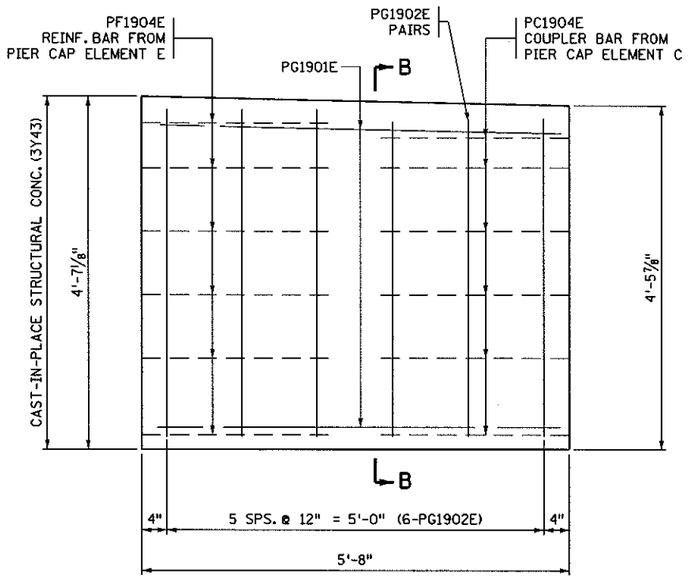
SECTION B-B



SECTION C-C

12/7/2010 7:55:36 AM br25024kgs.dgn

CERTIFIED BY [signature] LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE NAME: JIHSHYA J. LIN LIC. NO. 19115	TITLE: PRECAST PIER CAP ELEMENT REINFORCEMENT	DES: PJK	DR: GRF	APPROVED: 12/3/10	BRIDGE NO. 25024
		CHK: JJL	CHK: JAJ	SHEET NO. 28 OF 54 SHEETS	



CLOSURE (ELEMENT G)

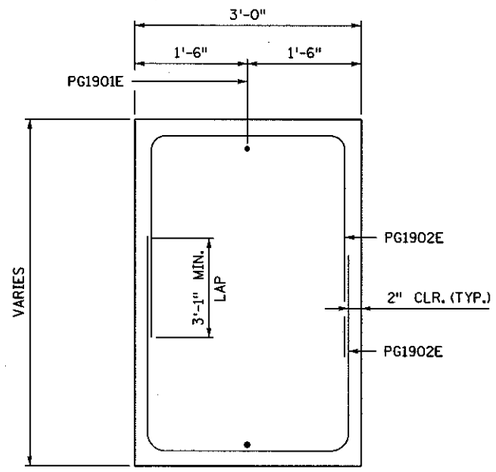
BILL OF REINFORCEMENT FOR 2 PIER CLOSURE POURS (ELEMENT G)

BAR	NO.	LENGTH	SHAPE	LOCATION
PG1901E	4	5'-4"	——	HORIZONTAL
PG1902E	24	10'-0"	▭	STIRRUP

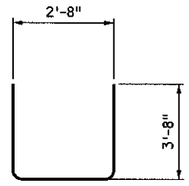
① SUMMARY OF QUANTITIES FOR 2 PIER CLOSURE POURS (ELEMENT G)

STRUCTURAL CONCRETE (3Y43)	6 CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	390 POUND

① PAYMENT FOR QUANTITIES TO BE INCLUDED IN PRICE BID FOR PAY ITEM "PRECAST PIER CAP ELEMENT". INCLUDES QUANTITY FOR 2 CLOSURE POURS (ELEMENT G).



SECTION B-B



PG1902E

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN — LIC. NO. 19115

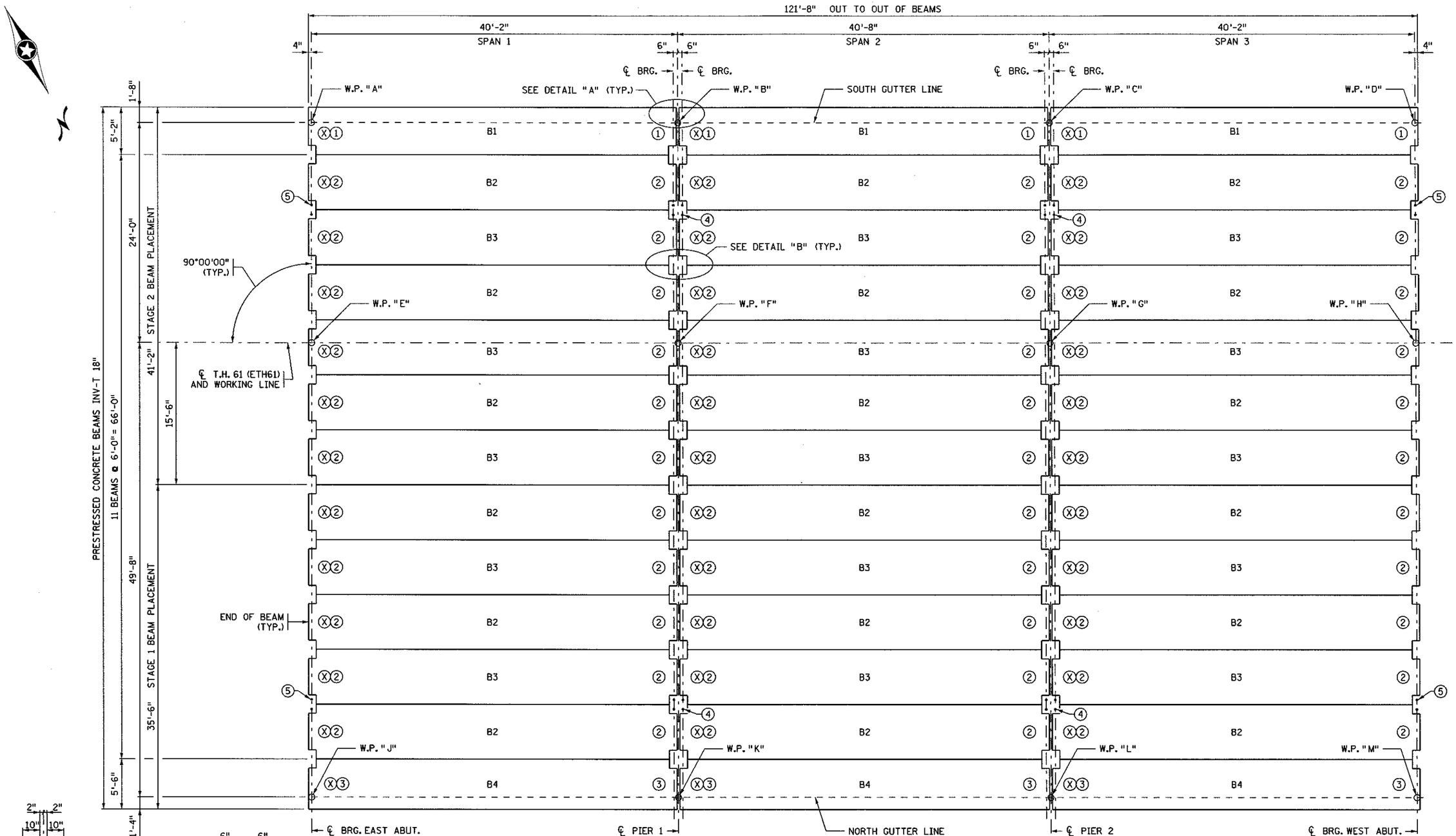
TITLE: CLOSURE POUR (ELEMENT G) REINFORCEMENT

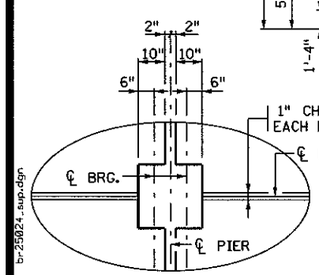
DES: PJK	DR: GRF	APPROVED: 12/3/10
CHK: JJL	CHK: JAJ	

SHEET NO. 29 OF 54 SHEETS

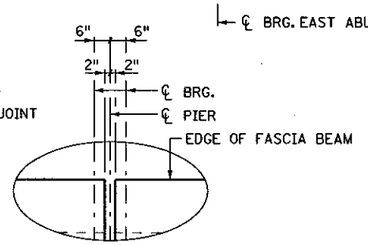
BRIDGE NO. 25024

12/1/2010 b-25024ksg.dgn





DETAIL "B"



DETAIL "A"

NOTES:

"PRESTRESSED BEAMS INV-T 18" TYPE 1" INCLUDES BEAMS DESIGNATED AS B1.

"PRESTRESSED BEAMS INV-T 18" TYPE 2" INCLUDES BEAMS DESIGNATED AS B2 AND B3.

"PRESTRESSED BEAMS INV-T 18" TYPE 3" INCLUDES BEAMS DESIGNATED AS B4.

(X) DENOTES "X" END OF BEAM.

(1) DENOTES ELASTOMERIC BEARING PAD TYPE 1. SEE SHEET NOS. 37 & 50.

(2) DENOTES ELASTOMERIC BEARING PAD TYPE 2. SEE SHEET NOS. 37 & 50.

(3) DENOTES ELASTOMERIC BEARING PAD TYPE 3. SEE SHEET NOS. 37 & 50.

(4) PF2509S OR PC2509S ANCHORAGE LOCATIONS. SEE PIER SHEETS OR PART LONGITUDINAL SECTION FOR DETAILS.

(5) A2525S ANCHORAGE LOCATIONS. SEE ABUTMENT SHEETS OR PART LONGITUDINAL SECTION FOR DETAILS.

FRAMING PLAN

CERTIFIED BY: Jihshya J. Lin — LICENSED PROFESSIONAL ENGINEER — 12/3/10 DATE

NAME: JIHSHYA J. LIN — LIC. NO. 19115

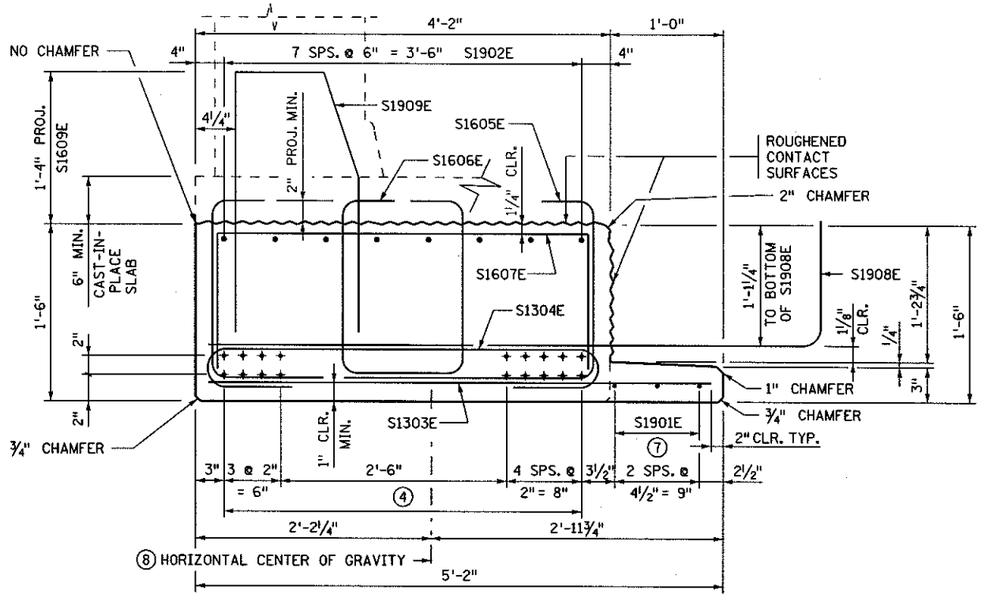
TITLE: FRAMING PLAN

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/3/10		BRIDGE NO. 25024
CHK: B.J.J.	CHK: D.C.H.			

SHEET NO. 30 OF 54 SHEETS

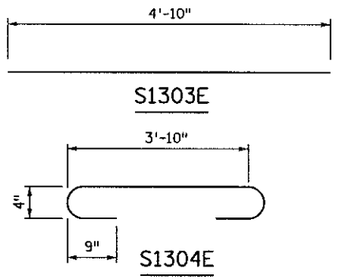
br-25024_sup.dgn

12/1/2010



END VIEW BEAMS B1

CUT STRANDS FLUSH WITH CONCRETE. PAINT ENDS WITH AN APPROVED GRAY EPOXY EXCEPT AS NOTED.
(BEAMS B1 = 3 REQUIRED THUS)



HANDLING NOTE:

BEAMS SHALL BE SUPPORTED ONLY WITHIN 2'-0" FROM THEIR ENDS, WHETHER BEING LIFTED, OR SUPPORTED DURING STORAGE. DURING STORAGE, SUPPORTS TO BE PLACED BENEATH WEB SECTION ONLY, NOT BENEATH FLANGES. SUPPORT AT ALL TIMES PRIOR TO FINAL PLACEMENT, SO THAT BEAM SELF WEIGHT CAN COUNTERACT PRESTRESS FORCE TO PREVENT CRACKING AT THE TOP OF THE BEAM.

CALCULATED PRESTRESS LOSSES	
ELASTIC SHORTENING LOSS	8.50 KSI
LONG TERM LOSSES	18.94 KSI
TOTAL LOSSES	27.44 KSI

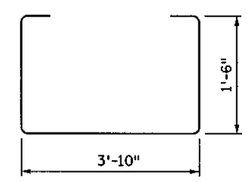
MINIMUM CONCRETE STRENGTH - P.S.I.	
① f'ci	② f'c
5000	6000

PRESTRESSING STRAND DIAMETER	
⑤	½" □
⑤	0.60" ☒

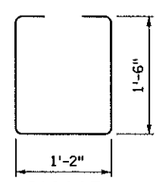
Y DISTANCES (IN INCHES)			
	NO.	℄ SPAN	END
STRAIGHT STRANDS	18	3.00	☒
DRAPED STRANDS	0	N/A	N/A ▫
TOTAL STRANDS	18	3.00	☒

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.

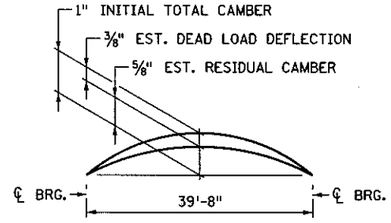
▫ A TOLERANCE OF ± 1" WILL BE PERMITTED IN THIS DIMENSION.



S1605E

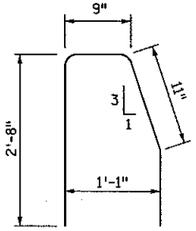


S1606E

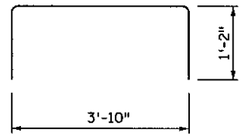


CAMBER DIAGRAM

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



S1909E



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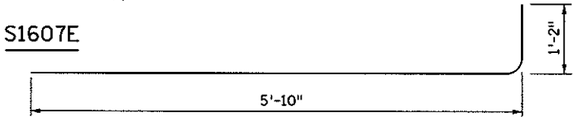

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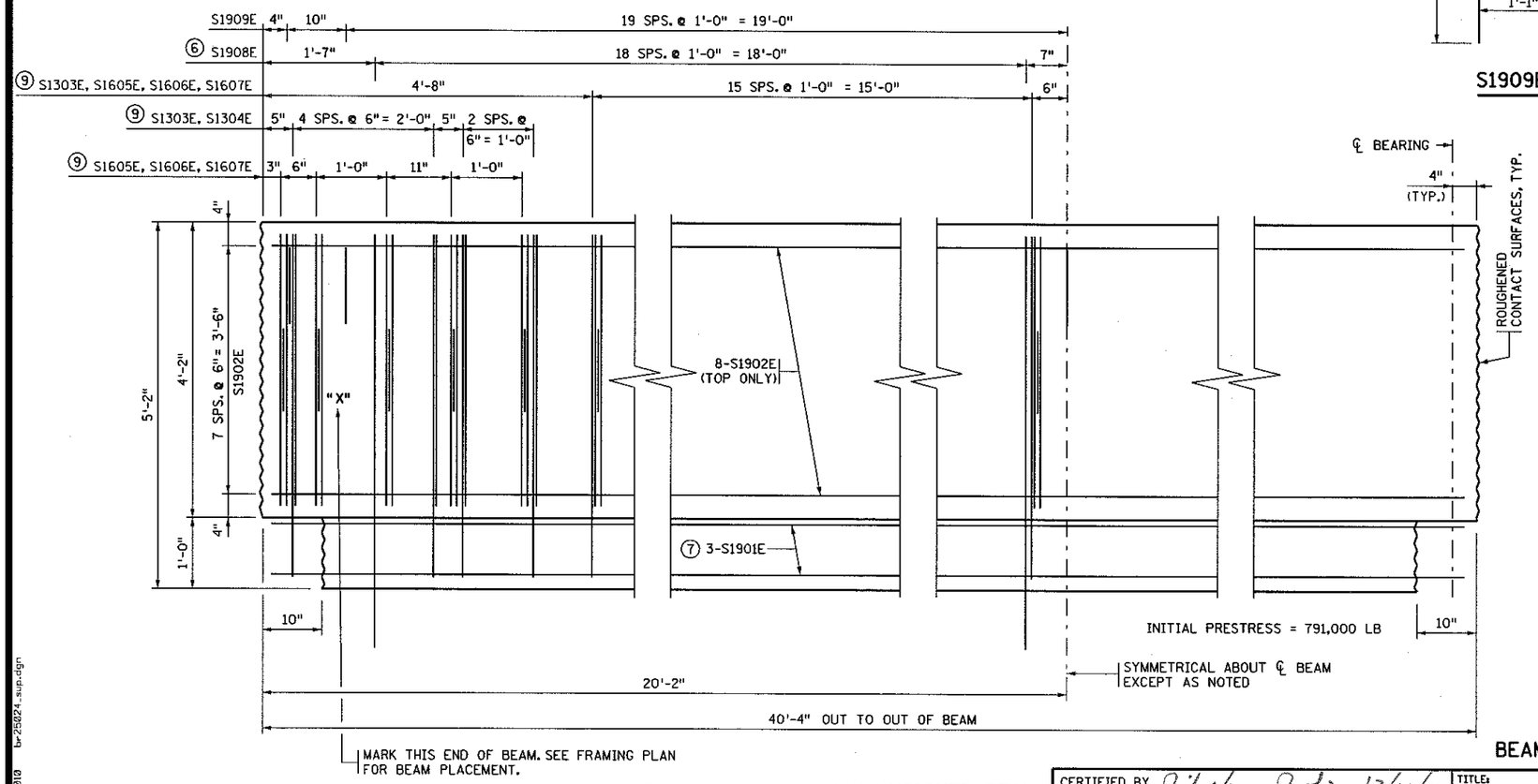


PARTIAL PLAN - PRETENSIONED BEAM

BEAM B1

GENERAL NOTES

ALL CONCRETE EDGES SHALL BE FORMED WITH A ¾" CHAMFER UNLESS OTHERWISE NOTED.

ALL CONTACT SURFACES, EXCEPT FLANGE EDGES, SHALL BE ROUGHENED FOR BOND AS SHOWN. SEE SPECIAL PROVISIONS.

PROVIDE HANDLING HOOKS OR DEVICES WITHIN 2'-0" FROM THE ENDS OF THE BEAM, 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. 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 BEAM INV-T 18" TYPE 1 SEE Mn/DOT SPEC. 2405.

SHOP DRAWINGS ARE REQUIRED. SEE SPECIAL PROVISIONS.

APPROXIMATE WEIGHT OF PRECAST SECTION IS 20.5 TONS.

① MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER.
② MINIMUM CONCRETE STRENGTH WHEN BEAM CAN BE TRANSPORTED AND INSTALLED.
④ STRAIGHT STRANDS.
⑤ PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND, CONFORMING TO ASTM A416, GRADE 270.
⑥ S1908E TRANSVERSE BARS SHOULD BE CAREFULLY SPACED AS SHOWN. ADJUST STIRRUP BAR SPACING AS NECESSARY TO ACCOMODATE SPACING OF S1908E BARS.
⑦ AT FABRICATORS OPTION, S1901E BARS MAY BE REPLACED WITH 0.60" PRESTRESSING STRANDS. THESE STRANDS SHALL BE TENSIONED TO A NOMINAL 5000 POUNDS EACH PRIOR TO POURING BEAM CONCRETE, AND SHALL BE CUT WHEN f'ci STRENGTH IS ACHIEVED ALONG WITH OTHER PRESTRESSING STRANDS. THESE STRANDS ARE NOT INCLUDED IN THE INITIAL PRESTRESS FORCE SHOWN HEREIN.
⑧ PLACE HANDLING HOOKS OR DEVICES WITH RESPECT TO HORIZONTAL CENTER OF GRAVITY SUCH THAT BEAMS WILL NOT TEND TO TIP WHEN LIFTED. HANDLING HOOKS OR DEVICES SHALL BE WITHIN 2'-0" FROM THE ENDS OF THE BEAM, AS REQUIRED BY CONTRACTOR.
⑨ BARS PLACED IN SEQUENCE SHOWN.

CERTIFIED BY Jihshya J. Lin 12/21/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

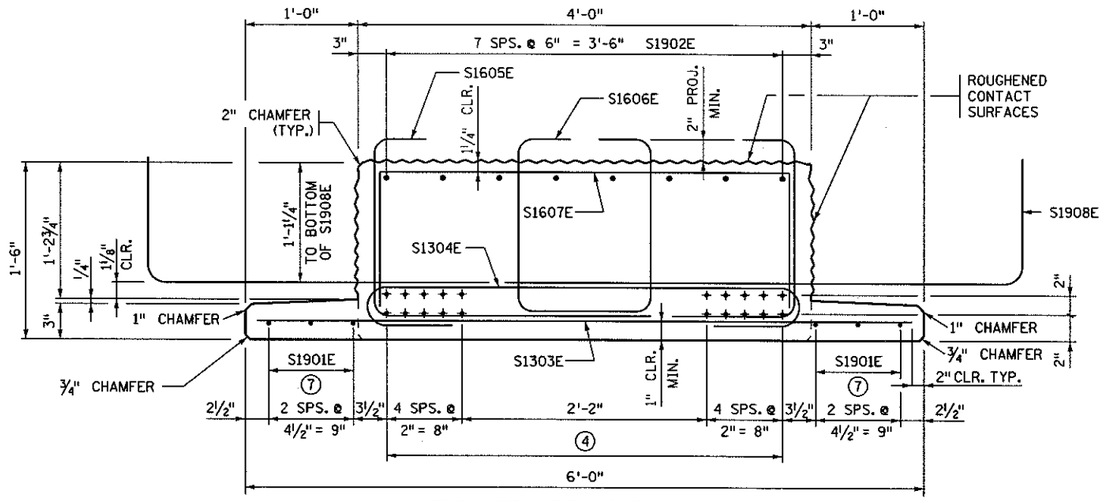
TITLE: PRESTRESSED BEAM INV-T 18" TYPE 1

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/21/10
CHK: B.J.J.	CHK: D.C.H.	

SHEET NO. 31 OF 54 SHEETS

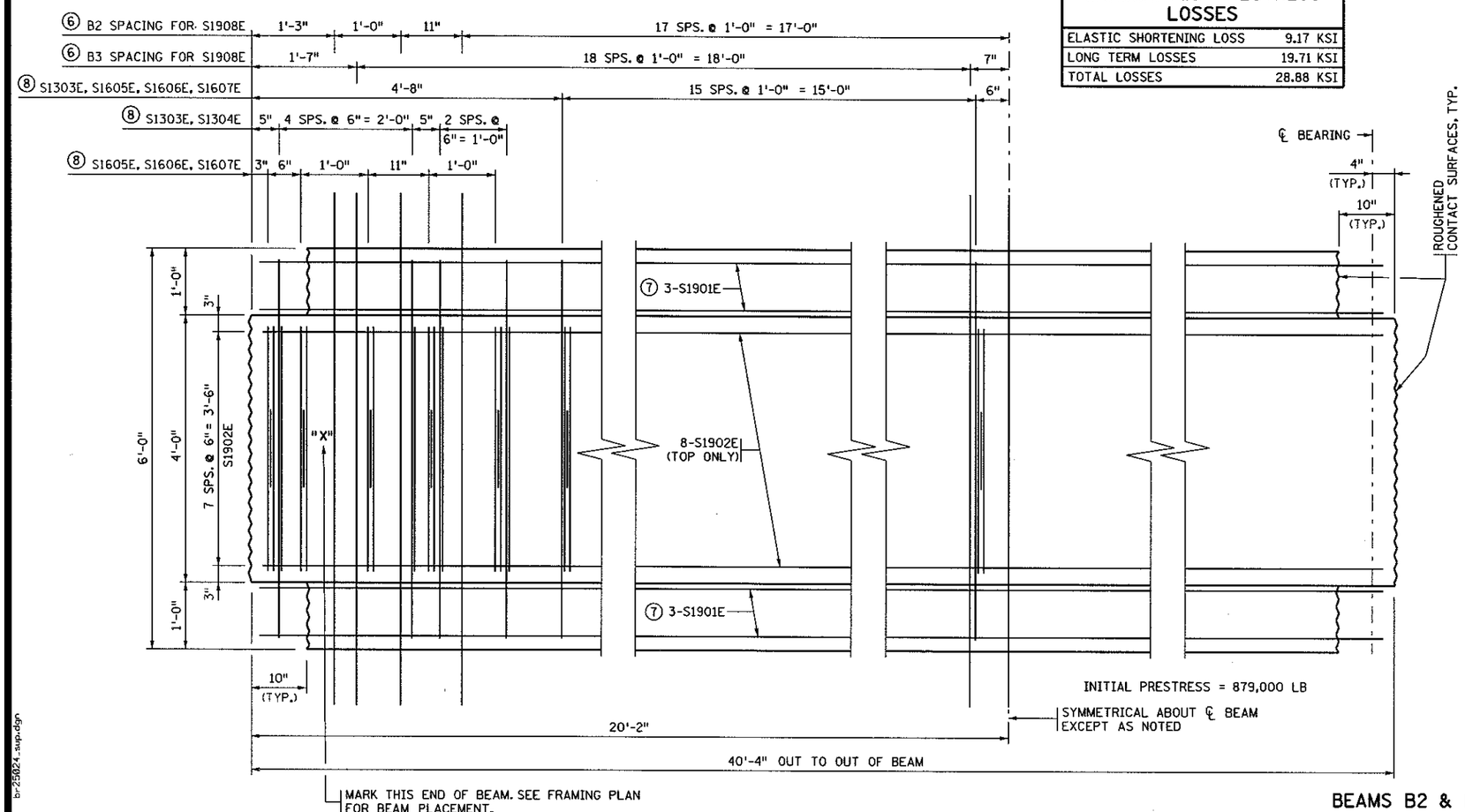
BRIDGE NO. 25024

12/16/2010 br25024_sup.dgn

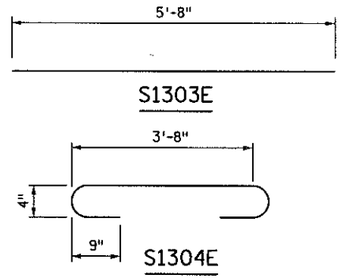


END VIEW BEAMS B2 OR B3

CUT STRANDS FLUSH WITH CONCRETE. PAINT ENDS WITH AN APPROVED GRAY EPOXY EXCEPT AS NOTED.
(BEAMS B2 = 18 REQUIRED THUS, BEAMS B3 = 15 REQUIRED THUS)



PARTIAL PLAN - PRETENSIONED BEAM



HANDLING NOTE:

BEAMS SHALL BE SUPPORTED ONLY WITHIN 2'-0" FROM THEIR ENDS, WHETHER BEING LIFTED, OR SUPPORTED DURING STORAGE. DURING STORAGE, SUPPORTS TO BE PLACED BENEATH WEB SECTION ONLY, NOT BENEATH FLANGES. SUPPORT AT ALL TIMES PRIOR TO FINAL PLACEMENT, SO THAT BEAM SELF WEIGHT CAN COUNTERACT PRESTRESS FORCE TO PREVENT CRACKING AT THE TOP OF THE BEAM.

CALCULATED PRESTRESS LOSSES	
ELASTIC SHORTENING LOSS	9.17 KSI
LONG TERM LOSSES	19.71 KSI
TOTAL LOSSES	28.88 KSI

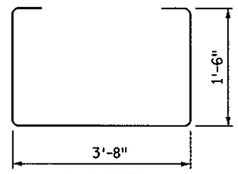
MINIMUM CONCRETE STRENGTH - P.S.I.	
① f'ci	② f'c
5000	6000

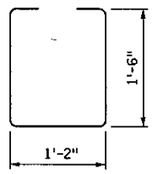
PRESTRESSING STRAND DIAMETER	
⑤	½" ☐
⑤	0.60" ☒

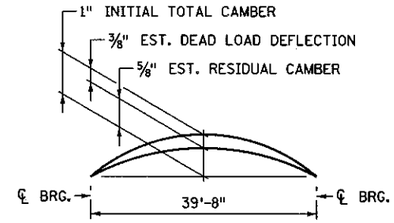
Y DISTANCES (IN INCHES)			
	NO.	℄ SPAN	END
STRAIGHT STRANDS	20	3.00	☒
DRAPED STRANDS	0	N/A	N/A ▫
TOTAL STRANDS	20	3.00	☒

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.

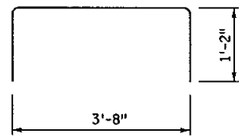


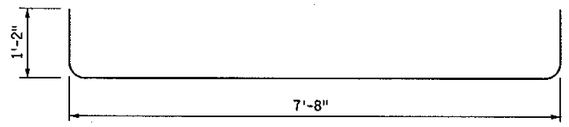




CAMBER DIAGRAM

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





GENERAL NOTES

ALL CONCRETE EDGES SHALL BE FORMED WITH A ¾" CHAMFER UNLESS OTHERWISE NOTED.

ALL CONTACT SURFACES, EXCEPT FLANGE EDGES, SHALL BE ROUGHENED FOR BOND AS SHOWN. SEE SPECIAL PROVISIONS.

PROVIDE HANDLING HOOKS OR DEVICES WITHIN 2'-0" FROM THE ENDS OF THE BEAM, 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. 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 BEAM INV-T 18" TYPE 2 SEE Mn/DOT SPEC. 2405.

SHOP DRAWINGS ARE REQUIRED. SEE SPECIAL PROVISIONS.

APPROXIMATE WEIGHT OF PRECAST SECTION IS 20.5 TONS.

① MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER.
② MINIMUM CONCRETE STRENGTH WHEN BEAM CAN BE TRANSPORTED AND INSTALLED.
④ STRAIGHT STRANDS.
⑤ PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND, CONFORMING TO ASTM A416, GRADE 270.
⑥ S1908E TRANSVERSE BARS SHOULD BE CAREFULLY SPACED AS SHOWN. ADJUST STIRRUP BAR SPACING AS NECESSARY TO ACCOMODATE SPACING OF S1908E BARS.
⑦ AT FABRICATORS OPTION, S1901E BARS MAY BE REPLACED WITH 0.60" PRESTRESSING STRANDS. THESE STRANDS SHALL BE TENSIONED TO A NOMINAL 5000 POUNDS EACH PRIOR TO POURING BEAM CONCRETE, AND SHALL BE CUT WHEN f'ci STRENGTH IS ACHIEVED ALONG WITH OTHER PRESTRESSING STRANDS. THESE STRANDS ARE NOT INCLUDED IN THE INITIAL PRESTRESS FORCE SHOWN HEREIN.
⑧ BARS PLACED IN SEQUENCE SHOWN.

BEAMS B2 & B3

CERTIFIED BY Jihshya J. Lin 12/21/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN — LIC. NO. 19115

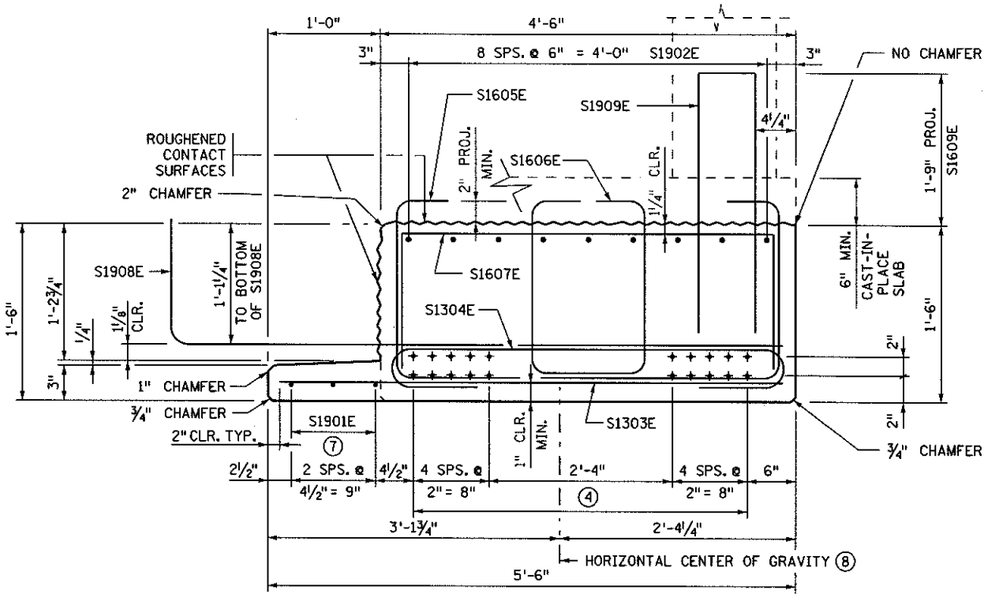
TITLE: PRESTRESSED BEAM INV-T 18" TYPE 2

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/21/10
CHK: B.J.J.	CHK: D.C.H.	

SHEET NO. 32 OF 54 SHEETS

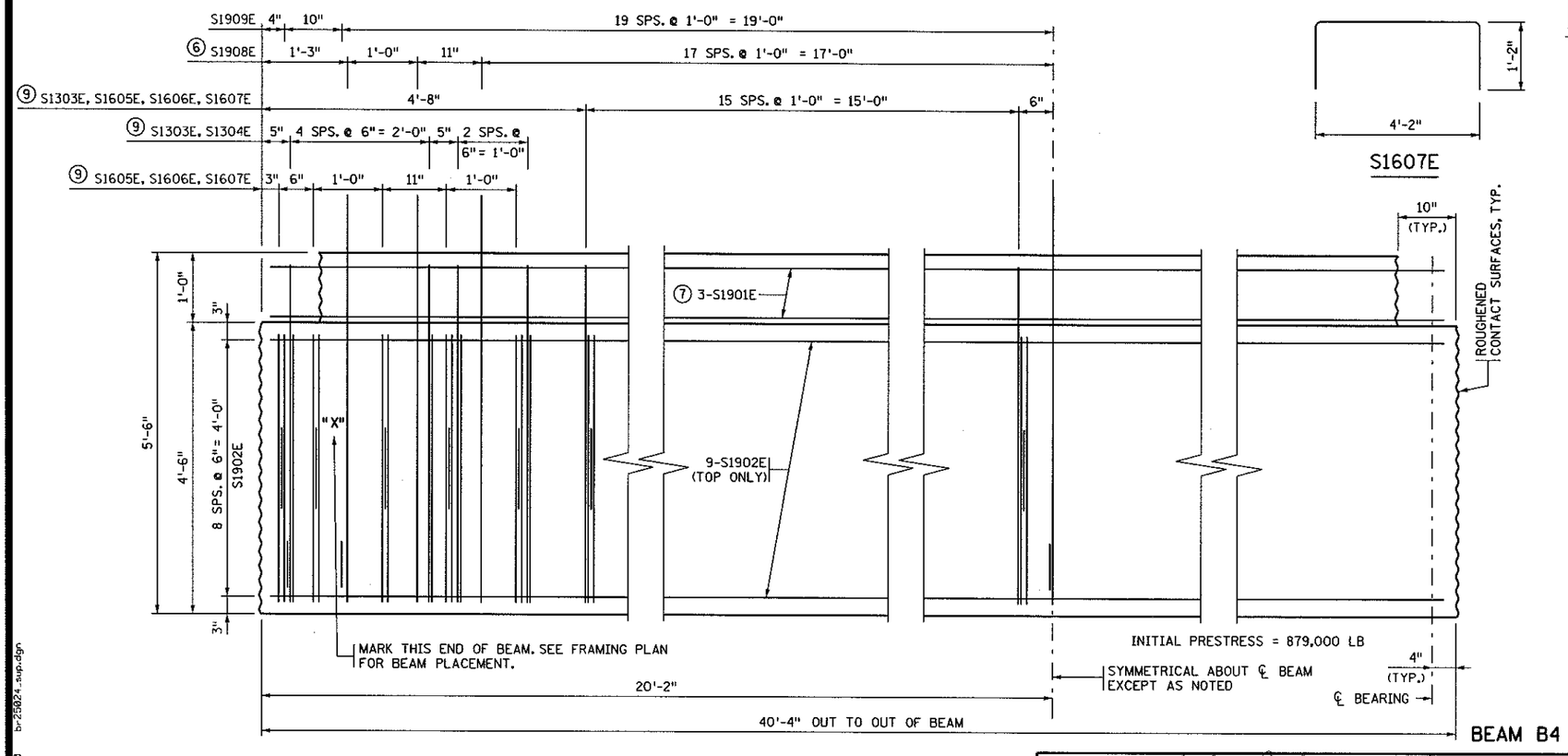
BRIDGE NO. 25024

12/16/2010 br25024_sup.dgn



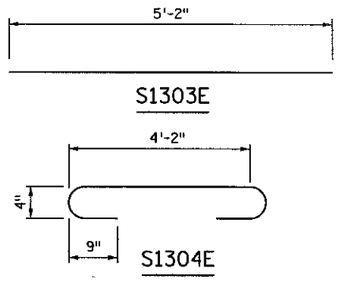
END VIEW BEAMS B4

CUT STRANDS FLUSH WITH CONCRETE. PAINT ENDS WITH AN APPROVED GRAY EPOXY EXCEPT AS NOTED.
(BEAMS B4 = 3 REQUIRED THUS)



PARTIAL PLAN - PRETENSIONED BEAM

BEAM B4



HANDLING NOTE:

BEAMS SHALL BE SUPPORTED ONLY WITHIN 2'-0" FROM THEIR ENDS, WHETHER BEING LIFTED, OR SUPPORTED DURING STORAGE. DURING STORAGE, SUPPORTS TO BE PLACED BENEATH WEB SECTION ONLY, NOT BENEATH FLANGES. SUPPORT AT ALL TIMES PRIOR TO FINAL PLACEMENT, SO THAT BEAM SELF WEIGHT CAN COUNTERACT PRESTRESS FORCE TO PREVENT CRACKING AT THE TOP OF THE BEAM.

CALCULATED PRESTRESS LOSSES	
ELASTIC SHORTENING LOSS	8.91 KSI
LONG TERM LOSSES	19.16 KSI
TOTAL LOSSES	28.07 KSI

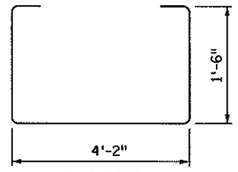
MINIMUM CONCRETE STRENGTH - P.S.I.	
① f'ci	② f'c
5000	6000

PRESTRESSING STRAND DIAMETER	
⑤	½" ☐
⑤	0.60" ☒

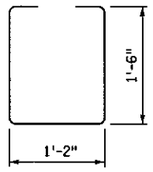
Y DISTANCES (IN INCHES)			
	NO.	℄ SPAN	END
STRAIGHT STRANDS	20	3.00	☒
DRAPED STRANDS	0	N/A	N/A ▫
TOTAL STRANDS	20	3.00	☒

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.

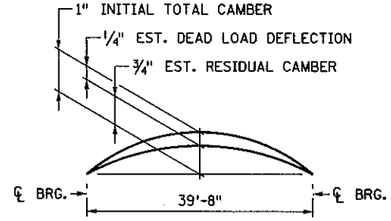
▫ A TOLERANCE OF ± 1" WILL BE PERMITTED IN THIS DIMENSION.



S1605E

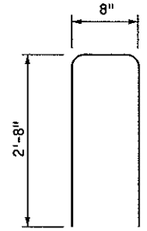


S1606E

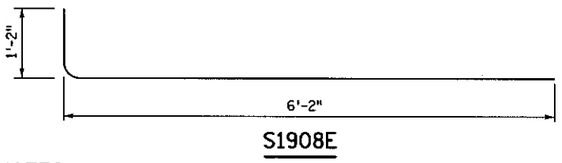


CAMBER DIAGRAM

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



S1909E



S1908E

S1607E

GENERAL NOTES

ALL CONCRETE EDGES SHALL BE FORMED WITH A ¾" CHAMFER UNLESS OTHERWISE NOTED.

ALL CONTACT SURFACES, EXCEPT FLANGE EDGES, SHALL BE ROUGHENED FOR BOND AS SHOWN. SEE SPECIAL PROVISIONS.

PROVIDE HANDLING HOOKS OR DEVICES WITHIN 2'-0" FROM THE ENDS OF THE BEAM, 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. 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 BEAM INV-T 18" TYPE 3 SEE Mn/DOT SPEC. 2405.

SHOP DRAWINGS ARE REQUIRED. SEE SPECIAL PROVISIONS.

APPROXIMATE WEIGHT OF PRECAST SECTION IS 21.9 TONS.

① MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER.
② MINIMUM CONCRETE STRENGTH WHEN BEAM CAN BE TRANSPORTED AND INSTALLED.
④ STRAIGHT STRANDS.
⑤ PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND, CONFORMING TO ASTM A416, GRADE 270.
⑥ S1908E TRANSVERSE BARS SHOULD BE CAREFULLY SPACED AS SHOWN. ADJUST STIRRUP BAR SPACING AS NECESSARY TO ACCOMODATE SPACING OF S1908E BARS.
⑦ AT FABRICATORS OPTION, S1901E BARS MAY BE REPLACED WITH 0.60" PRESTRESSING STRANDS. THESE STRANDS SHALL BE TENSIONED TO A NOMINAL 5000 POUNDS EACH PRIOR TO POURING BEAM CONCRETE, AND SHALL BE CUT WHEN f'ci STRENGTH IS ACHIEVED ALONG WITH OTHER PRESTRESSING STRANDS. THESE STRANDS ARE NOT INCLUDED IN THE INITIAL PRESTRESS FORCE SHOWN HEREIN.
⑧ PLACE HANDLING HOOKS OR DEVICES WITH RESPECT TO HORIZONTAL CENTER OF GRAVITY SUCH THAT BEAMS WILL NOT TEND TO TIP WHEN LIFTED. HANDLING HOOKS OR DEVICES SHALL BE WITHIN 2'-0" FROM THE ENDS OF THE BEAM, AS REQUIRED BY CONTRACTOR.
⑨ BARS PLACED IN SEQUENCE SHOWN.

CERTIFIED BY Jihshya J. Lin 12/21/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

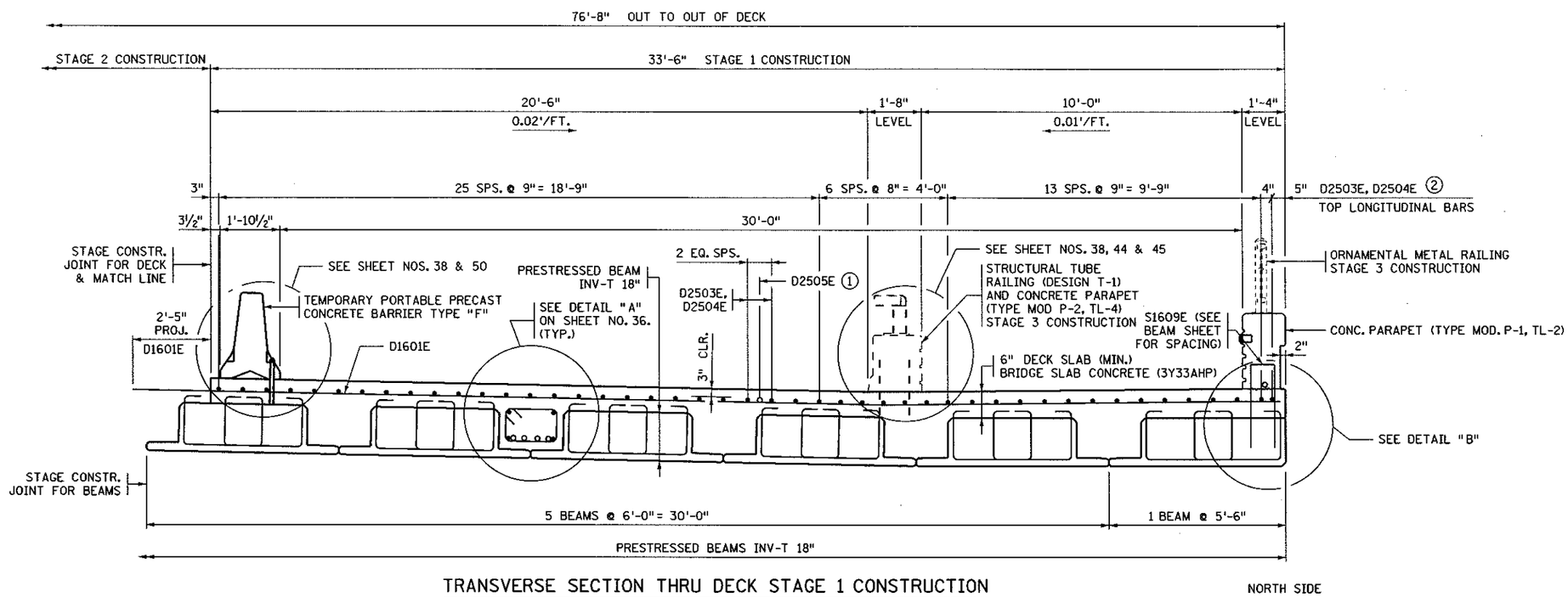
TITLE: PRESTRESSED BEAM INV-T 18" TYPE 3

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/21/10
CHK: B.J.J.	CHK: D.C.H.	

SHEET NO. 33 OF 54 SHEETS

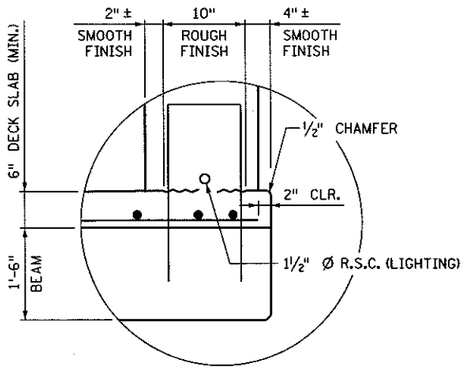
BRIDGE NO. 25024

12/15/2010 br25024_sup.dgn

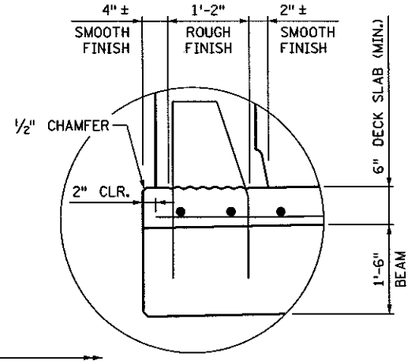


TRANSVERSE SECTION THRU DECK STAGE 1 CONSTRUCTION

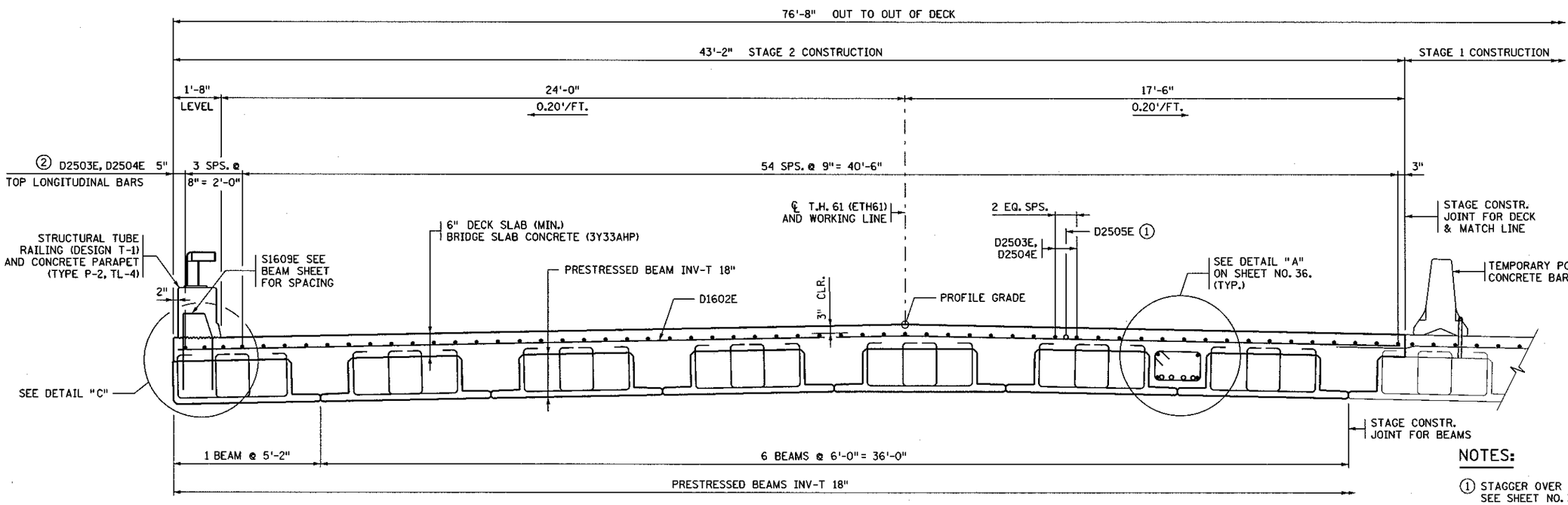
NORTH SIDE



DETAIL "B"



DETAIL "C"



SOUTH SIDE

TRANSVERSE SECTION THRU DECK STAGE 2 CONSTRUCTION

NOTES:

(1) STAGGER OVER PIERS BETWEEN LONGITUDINAL BARS. SEE SHEET NO. 36 FOR STAGGER DIAGRAM.

(2) EACH LINE CONSISTS OF 2-D2503E & 1-D2504E. 2-D2505E EACH LINE OVER PIERS NOT SHOWN. SEE DECK SLAB PLAN FOR REINFORCEMENT PLACEMENT.

CERTIFIED BY: Jihshya J. Lin — LICENSED PROFESSIONAL ENGINEER — DATE: 12/3/10
NAME: JIHSHYA J. LIN — LIC. NO. 19115

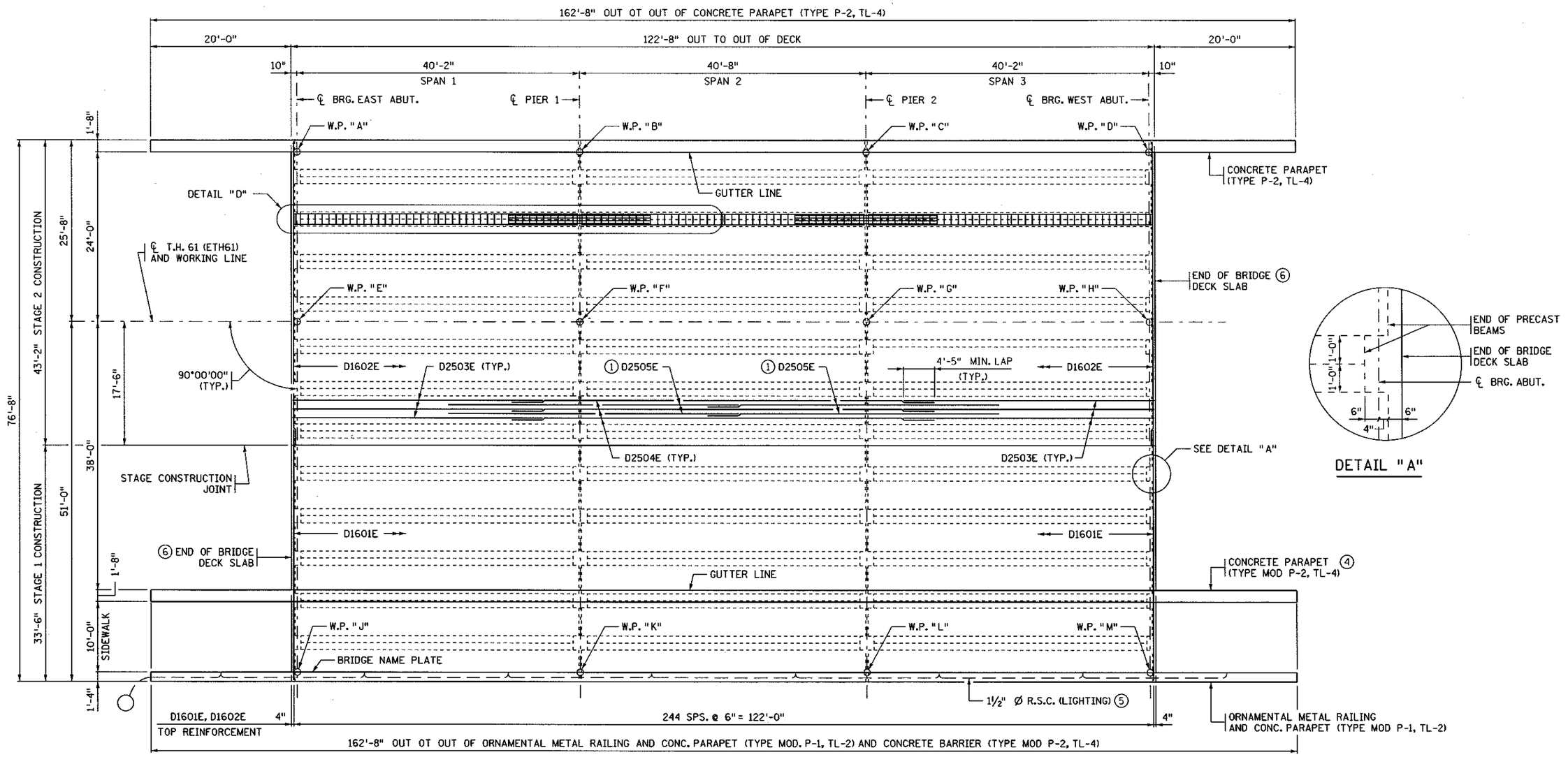
TITLE: SUPERSTRUCTURE DETAILS

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/3/10
CHK: B.J.J.	CHK: D.C.H.	

SHEET NO. 34 OF 54 SHEETS

BRIDGE NO. 25024

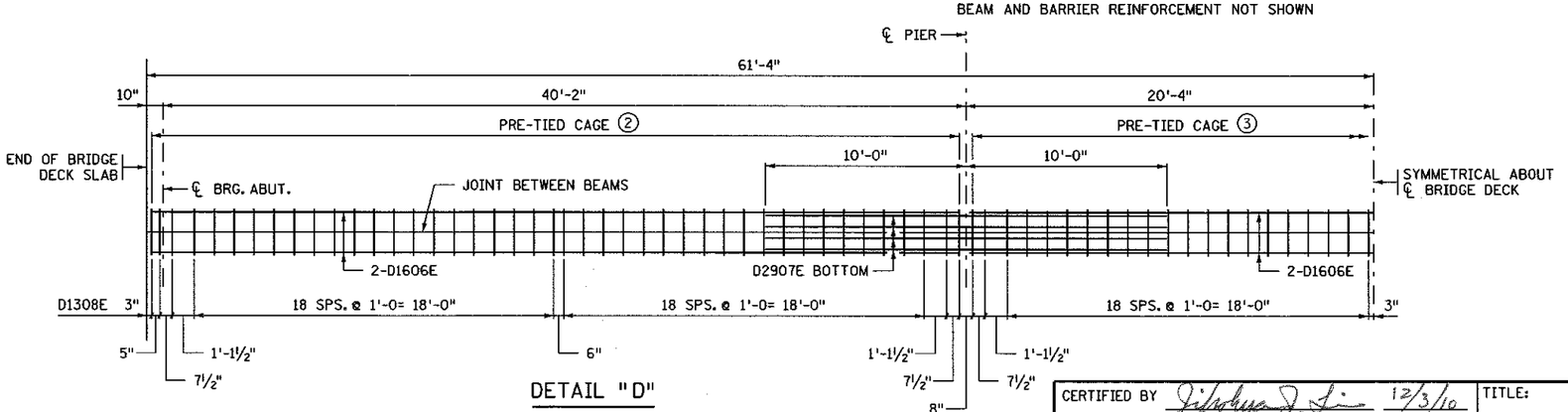
12/17/2010 br25024_sup.dgn



DECK SLAB PLAN

BEAM AND BARRIER REINFORCEMENT NOT SHOWN

DETAIL "A"



DETAIL "D"

HALF DECK REINFORCEMENT SHOWN. OTHER HALF SIMILAR BY 180° ROTATION.
SEE DETAIL "A" ON SHEET NO. 36 FOR ADDITIONAL DETAILS.

NOTES:

① STAGGER OVER PIERS BETWEEN LONGITUDINAL BARS. SEE SHEET NO. 36 FOR STAGGER DIAGRAM.

② TYPICAL PRE-TIED CAGE @ SPANS 1 & 3. ONE REQUIRED AT EACH JOINT BETWEEN BEAMS. 24 PRE-TIED CAGES REQUIRED FOR ENTIRE BRIDGE.

③ TYPICAL PRE-TIED CAGE @ SPAN 2. ONE REQUIRED AT EACH JOINT BETWEEN BEAMS. 12 PRE-TIED CAGES REQUIRED FOR ENTIRE BRIDGE.

④ STRUCTURAL TUBE RAILING (DESIGN T-1) & CONCRETE PARAPET (TYPE MOD P-2, TL-4) TO BE CONSTRUCTED DURING STAGE 3. SEE STAGING SHEETS.

⑤ SEE SHEET NOS. 47 & 48 FOR DETAILS.

⑥ SEE "TYP. LONGITUDINAL SECTION AT ABUTMENT" ON SHEET NO. 36 FOR ADDITIONAL END OF DECK REINFORCEMENT.

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN — LIC. NO. 19115

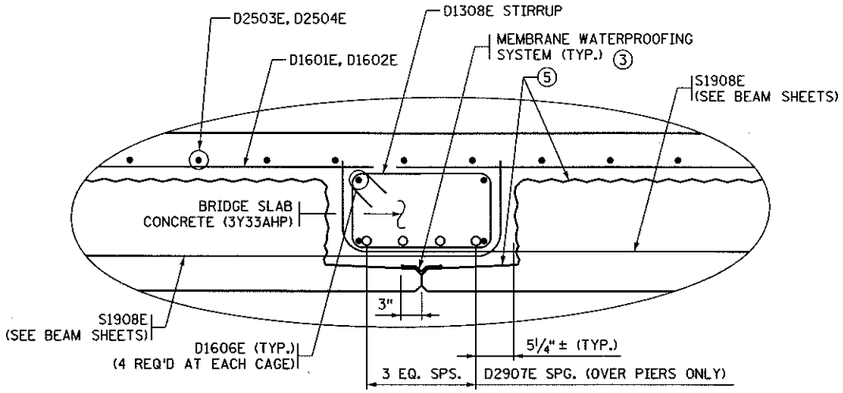
TITLE: SUPERSTRUCTURE DETAILS

DES:	P.J.K.	DR:	K.G.S.	APPROVED: 12/3/10
CHK:	B.J.J.	CHK:	D.C.H.	

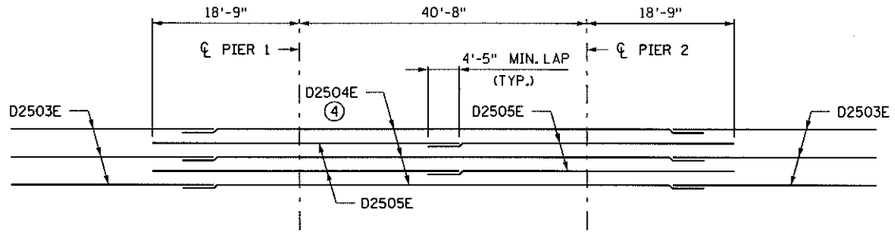
SHEET NO. 35 OF 54 SHEETS

BRIDGE NO. 25024

12/27/2010 br25024_sup.dgn

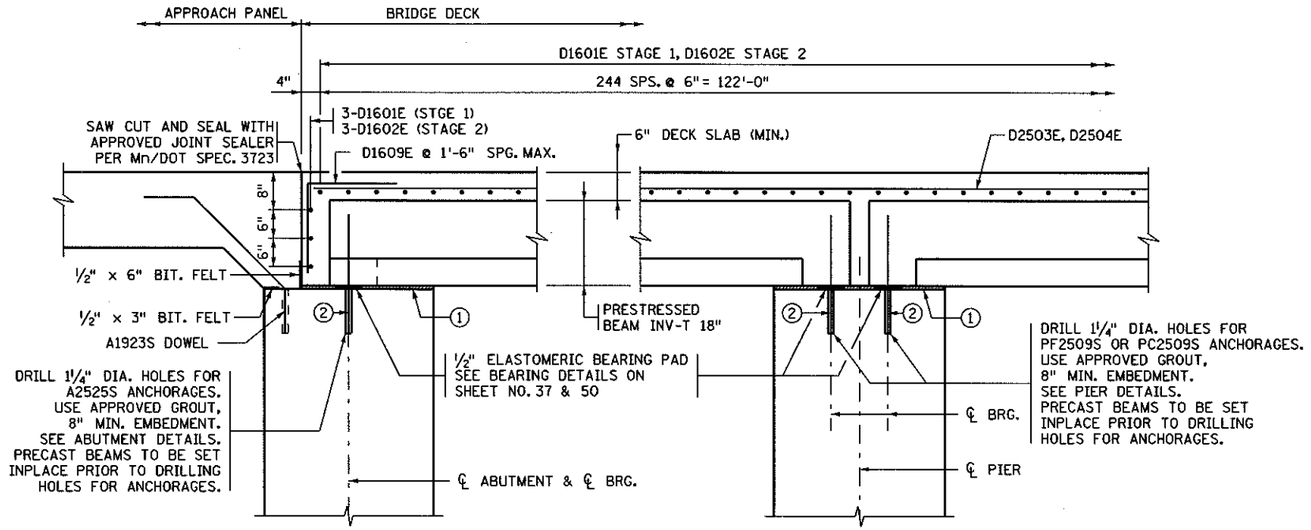


DETAIL "A"



TYPICAL STAGGER DIAGRAM OVER PIERS

D2505E AT ABOUT 4½" CENTERS BETWEEN D2503E AND D2504E TOP LONGITUDINAL REINFORCEMENT, PLACE FULL WIDTH OF DECK.



TYP. LONGITUDINAL SECTION AT ABUTMENTS

TYP. LONGITUDINAL SECTION AT PIERS

SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE

	ITEM	UNIT	STAGE 1	STAGE 2	STAGE 3	TOTAL
(6)	BRIDGE SLAB CONCRETE (3Y33AHP)	SQ. FT.	4109	5296	—	9405
(7)	TYPE MOD P-1, TL-2 RAILING CONCRETE (3Y46A)	LIN. FT.	163	—	—	163
(8)	TYPE P-2 (TL-4) CONCRETE (3Y46A)	LIN. FT.	—	163	—	163
(9)	TYPE MOD P-2 (TL-4) CONCRETE (3Y46A)	LIN. FT.	—	—	163	163
	ORNAMENTAL METAL RAILING	LIN. FT.	—	—	163	163
	STRUCTURAL TUBE RAILING DESIGN T-1	LIN. FT.	—	157	157	314
(10)	REINFORCEMENT BARS (EPOXY COATED)	POUND	44960	57410	2140	104510
(13)	ANCHORAGE TYPE REINF BARS	EACH	—	—	269	269
(11)	ANCHORAGES TYPE 1	EACH	39	—	—	39
	REMOVE ANCHORAGE	EACH	—	—	39	39
	ELASTOMERIC BEARING PAD TYPE 1	EACH	6	—	—	6
	ELASTOMERIC BEARING PAD TYPE 2	EACH	30	36	—	66
	ELASTOMERIC BEARING PAD TYPE 3	EACH	—	6	—	6
	PRESTRESSED BEAM INV-T 18" TYPE 1	LIN. FT.	—	121	—	121
	PRESTRESSED BEAM INV-T 18" TYPE 2	LIN. FT.	605	726	—	1331
	PRESTRESSED BEAM INV-T 18" TYPE 3	LIN. FT.	121	—	—	121
(11)	½" X 3" BIT FELT	LIN. FT.	71	82	—	153
(11)	½" X 6" BIT FELT	LIN. FT.	71	82	—	153
	ARCH CONC TEXTURE (ASHLAR STONE)	SQ. FT.	296	—	202	498
	ARCH SURFACE FINISH (MULTI COLOR)	SQ. FT.	296	—	202	498
	ANTI-GRAFFITI COATING	SQ. FT.	296	—	202	498
(12)	BRIDGE DECK PLANING	SQ. FT.	3063	6479	—	9542
(11)	MEMBRANE WATERPROOFING SYSTEM	LIN. FT.	608	852	—	1460
(11)	BRIDGE NAME PLATE	EACH	1	—	—	1

(6) "BRIDGE SLAB CONCRETE (3Y33AHP)" VOLUME IS APPROXIMATELY 137 CU. YDS. FOR STAGE 1 CONSTRUCTION & 182 CU. YDS. FOR STAGE 2 CONSTRUCTION.

(7) "TYPE P-1, TL-2 RAILING CONCRETE (3Y46A)" VOLUME IS APPROXIMATELY 17 CU. YDS.

(8) "TYPE P-2 (TL-4) RAILING CONCRETE (3Y46A)" VOLUME IS APPROXIMATELY 15 CU. YDS.

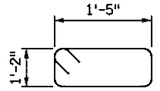
(9) "TYPE MOD P-2 (TL-4) RAILING CONCRETE (3Y46A)" VOLUME IS APPROXIMATELY 16 CU. YDS.

(10) INCLUDES SLAB AND RAILING REINFORCEMENT.

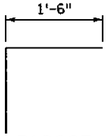
(11) PAYMENT SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM "BRIDGE SLAB CONCRETE (3Y33AHP)".

(12) INCLUDES 2346 SQ. FT. FOR BRIDGE APPROACH PANELS.

(13) SEE SPECIAL PROVISIONS.



D1308E



D1609E

BILL OF REINFORCEMENT FOR SUPERSTRUCTURE

BAR	NO. FOR STAGE 1 CONSTRUCTION	NO. FOR STAGE 2 CONSTRUCTION	LENGTH	SHAPE	LOCATION
D1601E	251	—	35'-9"	———	DECK TRANSVERSE
D1602E	—	251	42'-10"	———	DECK TRANSVERSE
D2503E	92	116	35'-7"	———	DECK LONGITUDINAL
D2504E	46	58	60'-0"	———	DECK LONGITUDINAL
D2505E	88	114	41'-4"	———	DECK LONGITUDINAL
D1606E	60	84	40'-4"	———	CAGE LONGITUDINAL
D2907E	40	56	20'-0"	———	CAGE LONGIT. OVER PIERS
D1308E	640	896	5'-11"	▭	CAGE STIRRUP
D1609E	46	60	3'-0"	⌐	DECK END

NOTES:

(1) PLACE ½" POLYSTYRENE TYPE A UNDER ALL BEAM AREAS OVER BRIDGE SEAT EXCLUDING THE BEARING PAD AREAS. SEE BEARING DETAILS ON SHEET NO. 37.

(2) SEE SHEET NOS. 10, 17, 21 & 23 FOR LOCATIONS.

(3) MEMBRANE WATERPROOFING SYSTEM IS INCIDENTAL. PERFORATE AS REQUIRED TO DRAIN ANY WATER. MEMBRANE AT THIS LOCATION USED AS LOCAL BOND BREAKER, NOT WATERPROOFING.

(4) CENTER D2504E OVER BRIDGE SPANS.

(5) CONTRACTOR SHALL PREWET PRECAST BEAMS BEFORE DECK CONCRETE IS PLACED. SEE SPECIAL PROVISIONS.

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN — LIC. NO. 19115

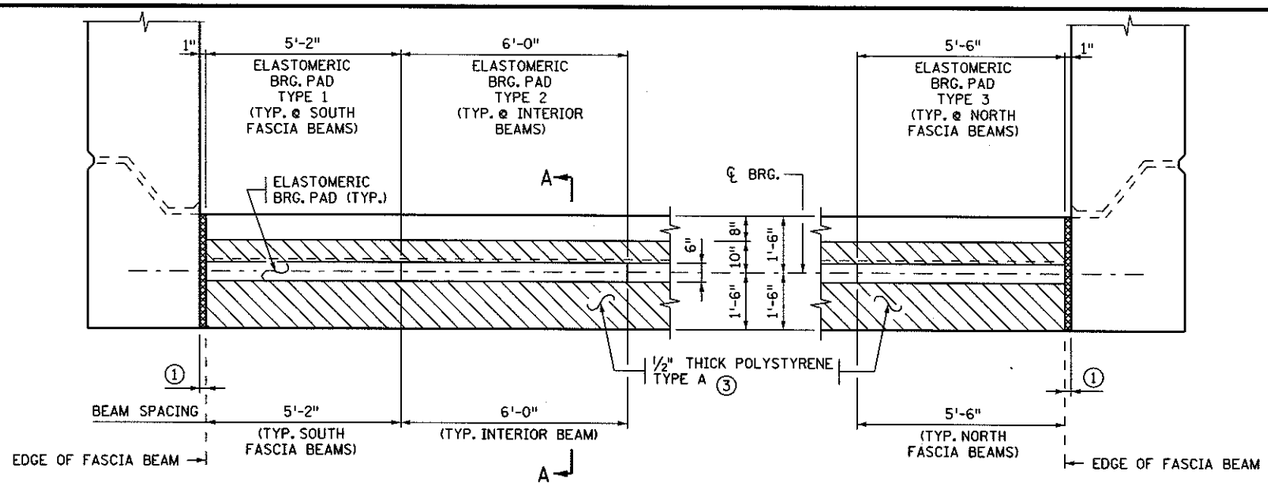
TITLE: SUPERSTRUCTURE DETAILS

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/3/10
CHK: B.J.J.	CHK: D.C.H.	

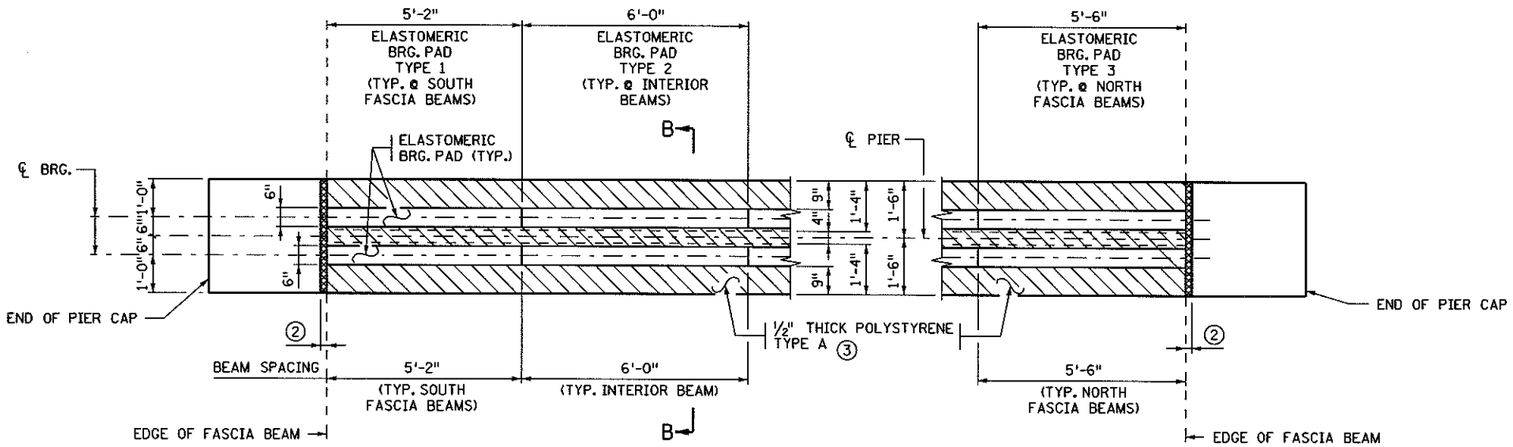
SHEET NO. 36 OF 54 SHEETS

BRIDGE NO. 25024

12/27/2010 br-25024_sup.dgn

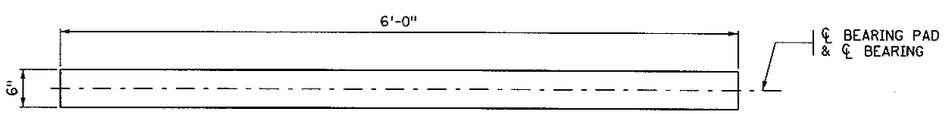


ELASTOMERIC BEARING PADS @ ABUTMENTS

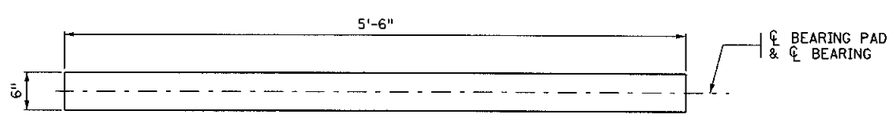


ELASTOMERIC BEARING PADS @ PIERS

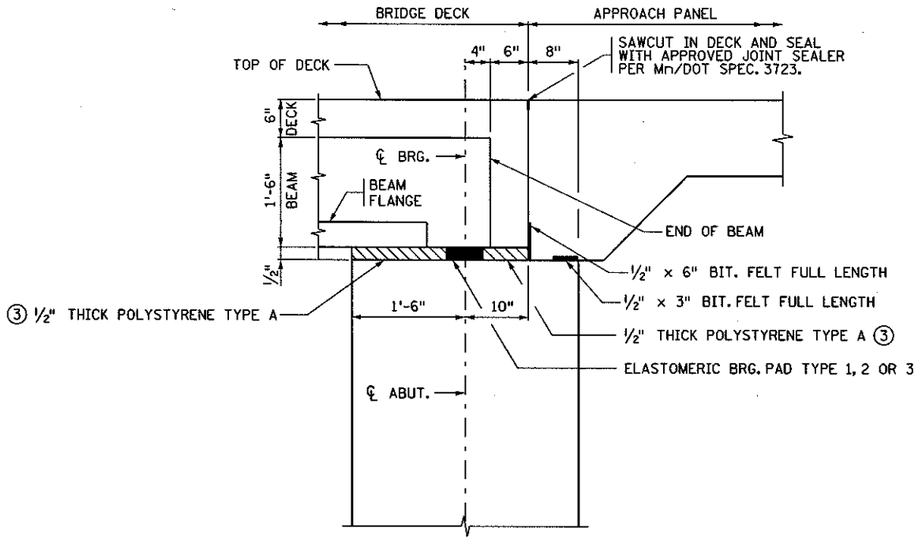
ELASTOMERIC BEARING PAD TYPE 1 PLAN VIEW



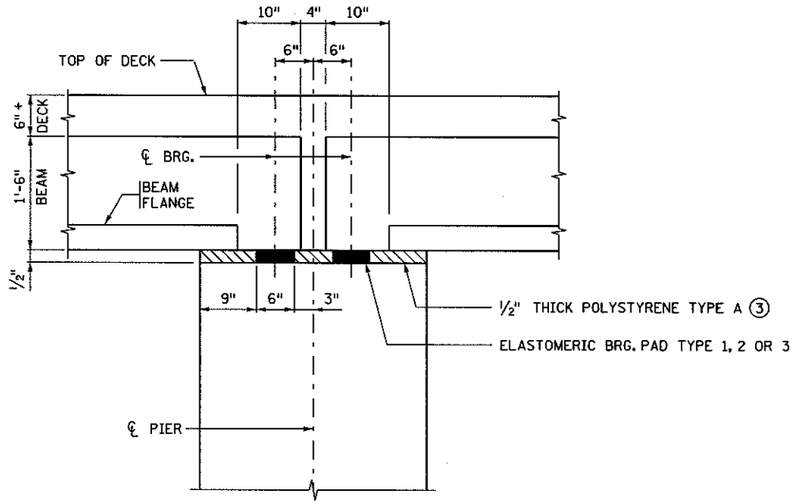
ELASTOMERIC BEARING PAD TYPE 2 PLAN VIEW



ELASTOMERIC BEARING PAD TYPE 3 PLAN VIEW



SECTION A-A



SECTION B-B

NOTES:

① 1" POLYSTYRENE TYPE B SEE ABUTMENT SHEETS FOR DETAILS.
② 1" POLYSTYRENE TYPE B SEE PIER SHEETS FOR DETAILS.
③ ½" POLYSTYRENE TYPE A SEE ABUTMENT & PIER SHEETS FOR DETAILS.

CERTIFIED BY Jihshya J. Lin 12/21/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN — LIC. NO. 19115

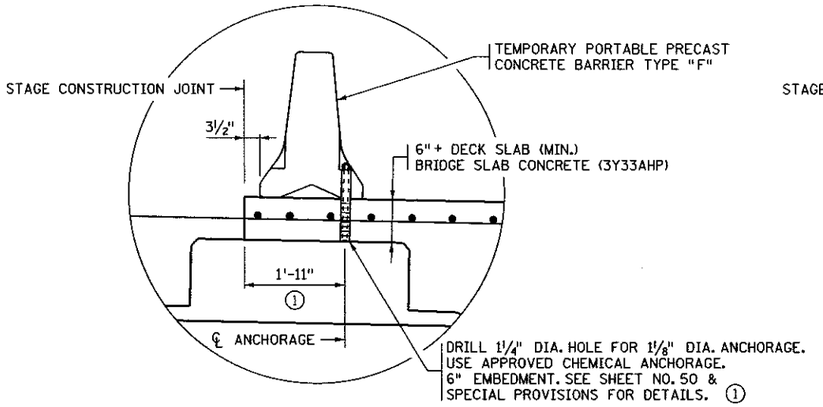
TITLE: SUPERSTRUCTURE DETAILS

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/21/10
CHK: B.J.J.	CHK: D.C.H.	

SHEET NO. 37 OF 54 SHEETS

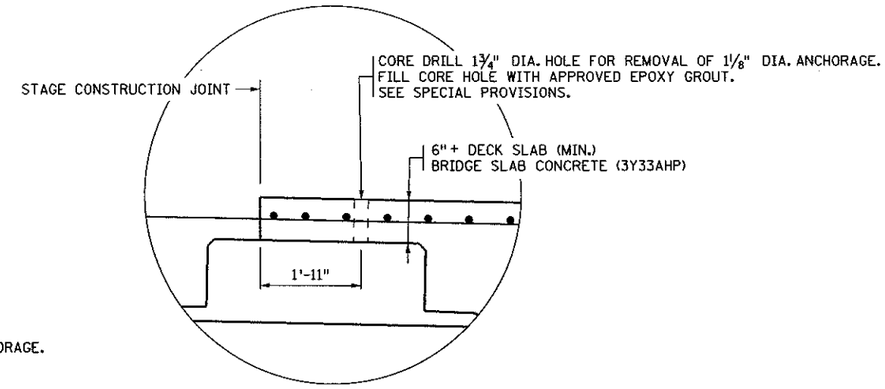
BRIDGE NO. 25024

12/16/2010 b-25024_sup.dgn



ANCHORAGE PLACEMENT DETAIL ②

(TEMPORARY BARRIER)



ANCHORAGE REMOVAL DETAIL ③

NOTES:

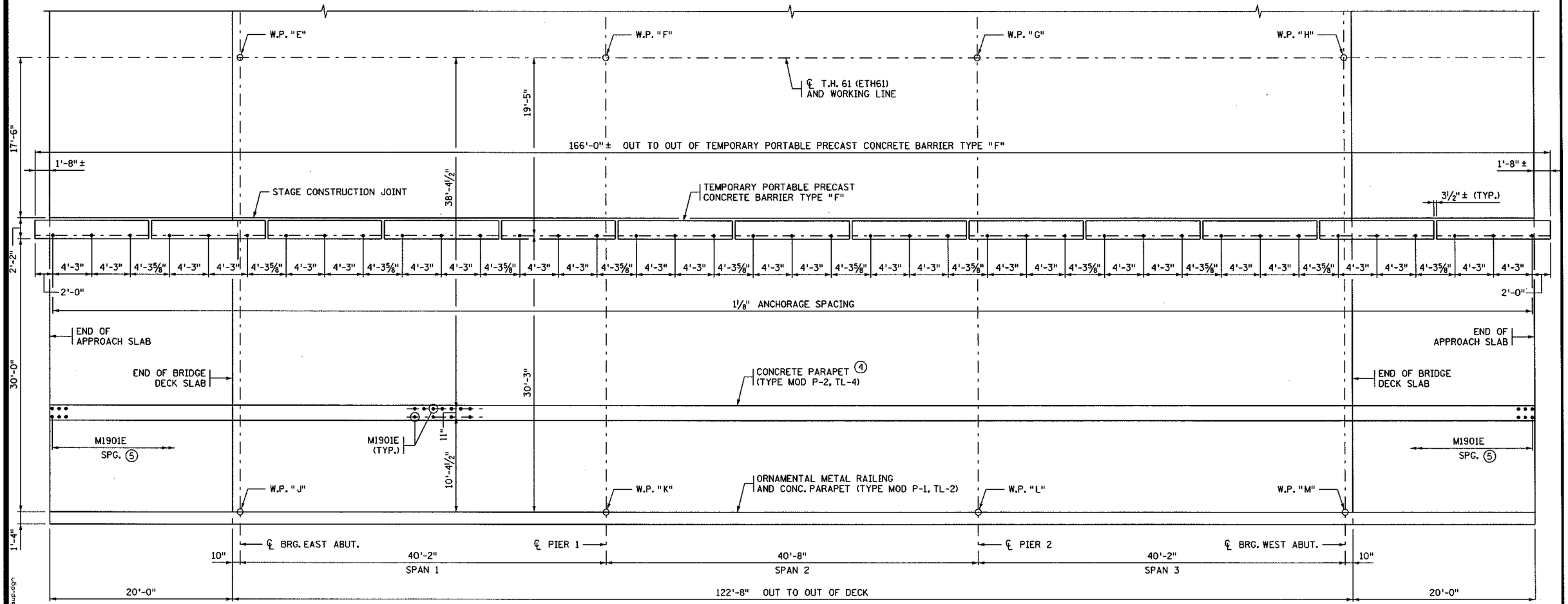
① CONTRACTOR SHALL PLACE ANCHOR BOLTS AS SHOWN AS TO AVOID HITTING DECK LONGITUDINAL BARS WHILE DRILLING.

② TEMPORARY BARRIER TO BE INCLUDED IN GRADING PORTION OF CONTRACT. THE ANCHORAGES OF THE BARRIER TO BE INCLUDED IN PRICE BID "ANCHORAGES TYPE 1" PER EACH.

③ ALL REMOVAL OF THE ANCHORAGES TO BE DONE DURING STAGE 3 CONSTRUCTION. ALL REMOVAL ITEMS TO BE INCLUDED IN PRICE BID "REMOVE ANCHORAGE" PER EACH.

④ TO BE CONSTRUCTED DURING STAGE 3.

⑤ SEE SHEET NOS. 44 & 45 FOR M1901E ANCHORAGE SPACING. ANCHORAGES FOR THE CONCRETE PARAPET (TYPE MOD P-1, TL-2) TO BE PAID FOR UNDER BID ITEM "ANCHORAGE TYPE REINF BARS" PER EACH.



PLAN VIEW ANCHORAGE SPACING

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

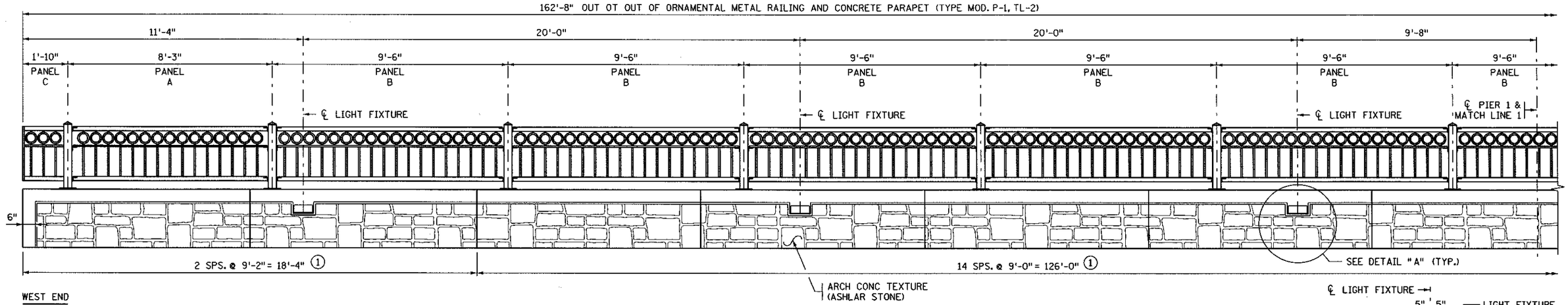
TITLE: SUPERSTRUCTURE DETAILS

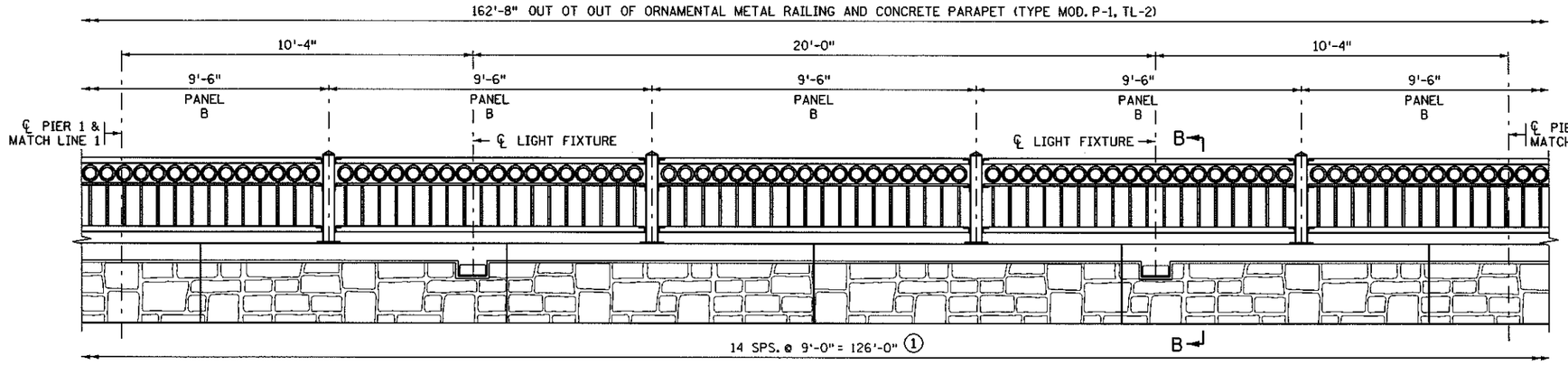
DES: P.J.K.	DR: K.G.S.	APPROVED: 12/3/10
CHK: B.J.J.	CHK: D.C.H.	

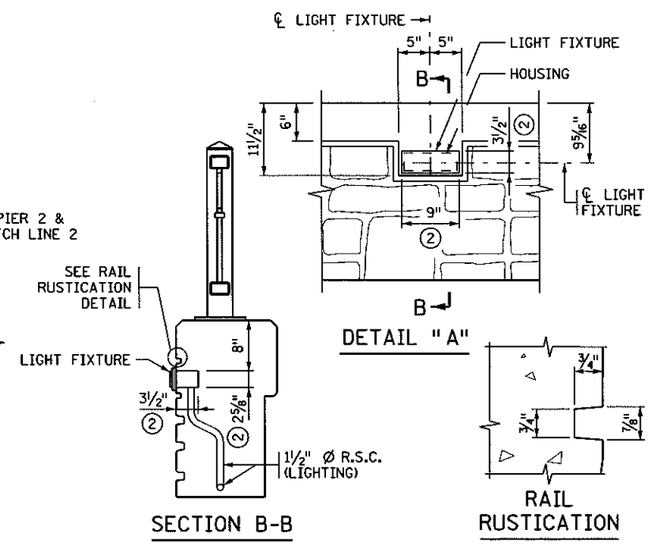
SHEET NO. 38 OF 54 SHEETS

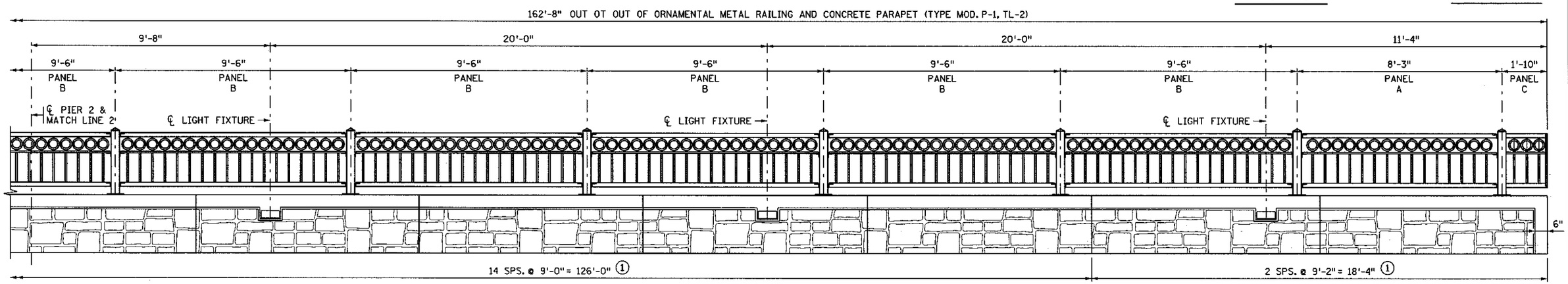
BRIDGE NO. 25024

b-25824.sup.dgn
12/2/2010









INSIDE ELEVATION OF BARRIER

NOTE:

(1) CONTROL JOINT SPACING.

(2) VERIFY SIZE OF LIGHT FIXTURE BLOCK OUT REQUIRED WITH LIGHTING PLAN. ADJUST LIGHT FIXTURE SPACING AND/OR REINFORCEMENT SPACING AS NECESSARY FOR FIT.

CERTIFIED BY Jihshya J. Lin LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE

NAME: JIHSHYA J. LIN LIC. NO. 19115

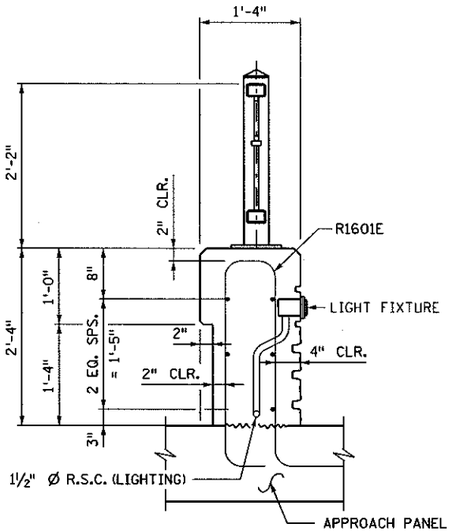
TITLE: ORNAMENTAL METAL RAILING AND CONCRETE PARAPET (TYPE MOD P-1, TL-2)

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/3/10
CHK: J.J.L.	CHK: J.A.J.	

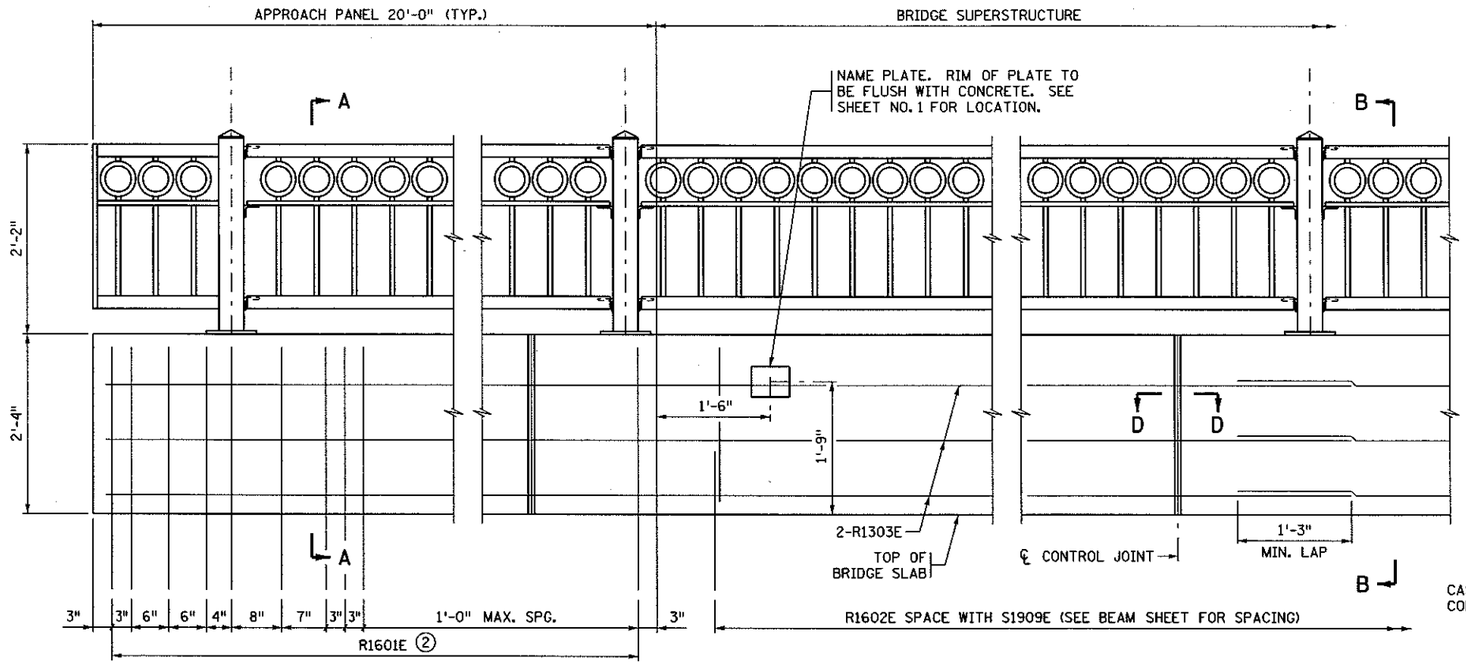
SHEET NO. 39 OF 54 SHEETS

BRIDGE NO. 25024

12/22/2010 br25024_sup.dgn

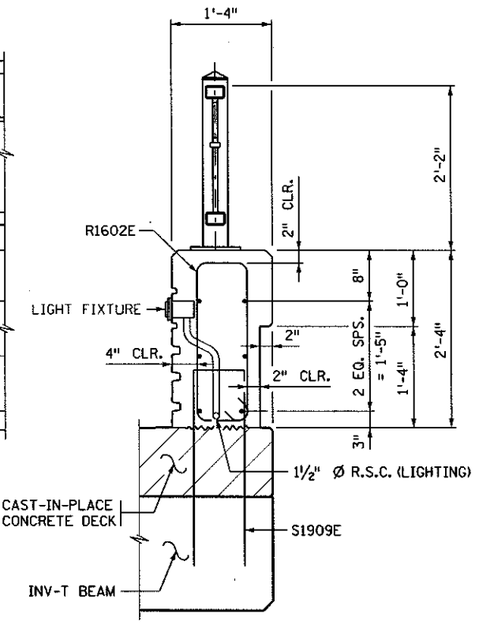


SECTION A-A

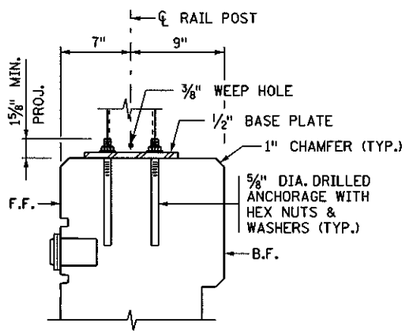


INSIDE ELEVATION OF RAILING

CONTROL JOINT

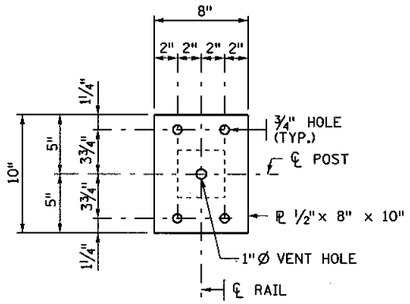


SECTION B-B

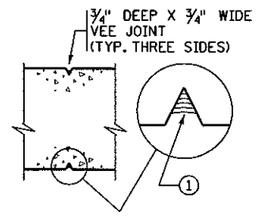


ANCHOR DETAIL

NOTE:
IF REINFORCEMENT IS HIT WHEN DRILLING HOLES FOR ANCHORAGES, MOVE POST SLIGHTLY LONGITUDINALLY AND REDRILL. ALTERNATE DIRECTION OF MOVEMENT SO THAT THE OVERALL RAIL LENGTH COMES OUT THE SAME.



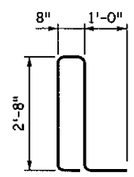
BASE PLATE
(TYP.)



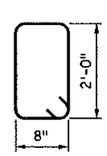
SECTION D-D

CONTROL JOINT DETAILS

BILL OF REINFORCEMENT FOR PARAPET				
BAR	NO.	LENGTH	SHAPE	LOCATION
R1601E	52	7'-6"		RAIL BASE VERTICAL
R1602E	123	6'-2"		RAIL BASE VERTICAL
R1303E	18	55'-0"		RAIL BASE LONGIT.



R1601E



R1605E

GENERAL NOTES

CONCRETE PARAPET BARRIER = 432 LBS./FT. (0.107 CU. YDS./FT.)

SEE SHEET NO. 41 FOR ORNAMENTAL METAL RAILING DETAILS.

SEE SPECIAL PROVISIONS FOR RAIL ANCHORAGE REQUIREMENTS.

FINISH ALL EDGES OF RAIL WITH ½" CHAMFER, EXCEPT WHERE OTHERWISE NOTED.

ALL MATERIAL IN THE CONCRETE BARRIER IS LISTED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

THE RAILING, BASE PLATES, AND PROTRUDING PORTIONS OF BOLTS, NUTS AND WASHERS SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

LENGTH OF "TYPE MOD P-1 (TL-2) RAILING CONCRETE (3Y46A)" FOR PAYMENT SHALL BE MEASURED BETWEEN END FACES OF CONCRETE BARRIER.

SEE SHEET NO. 39 FOR CONTROL JOINT SPACING & LIGHT FIXTURE SPACING.

SEE SHEET NO. 41 FOR ADDITIONAL NOTES.

F.F. DENOTES FRONT FACE.

B.F. DENOTES BACK FACE.

① SEE SPECIAL PROVISIONS FOR JOINT SEALING REQUIREMENTS.

② R1601E BARRIER REINFORCEMENT SUPPLIED IN BRIDGE PORTIION OF CONTRACT & INSTALLED IN GRADING PORTION OF CONTRACT FOR APPROACH PANELS.

REVISED:

APPROVED: DECEMBER 18, 2003
STATE BRIDGE ENGINEER

(MODIFIED)
FIG. 5-397.154

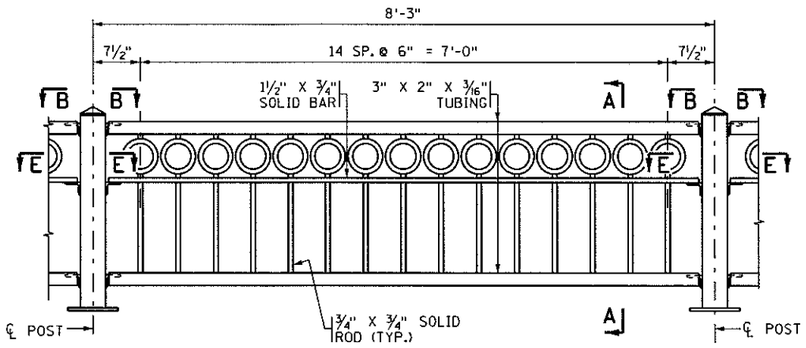
CERTIFIED BY LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: ORNAMENTAL METAL RAILING AND CONCRETE PARAPET (TYPE MOD P-1, TL-2)

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/3/10
CHK: J.J.L.	CHK: J.A.J.	

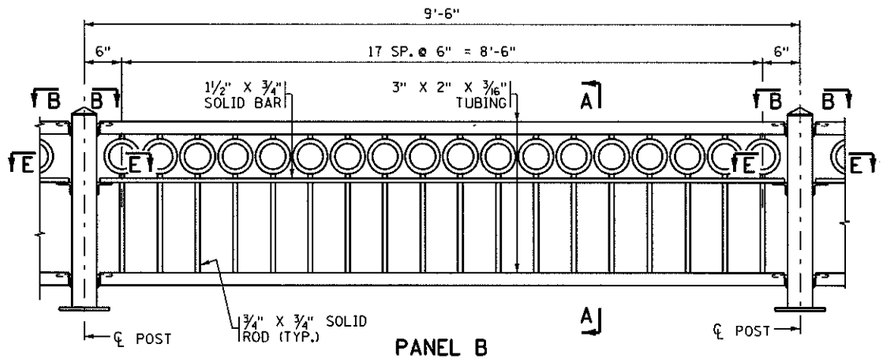
SHEET NO. 40 OF 54 SHEETS

BRIDGE NO. 25024



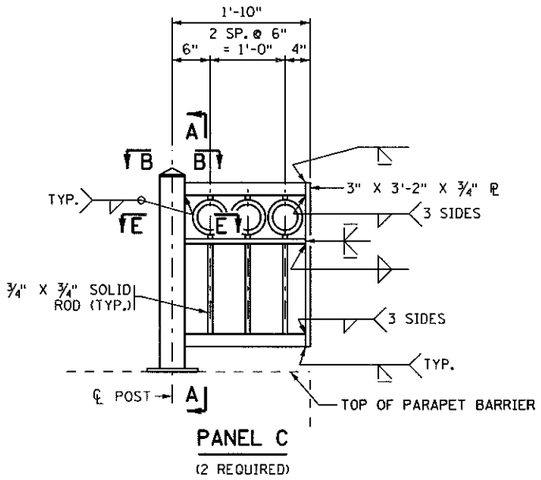
PANEL A

(2 REQUIRED)



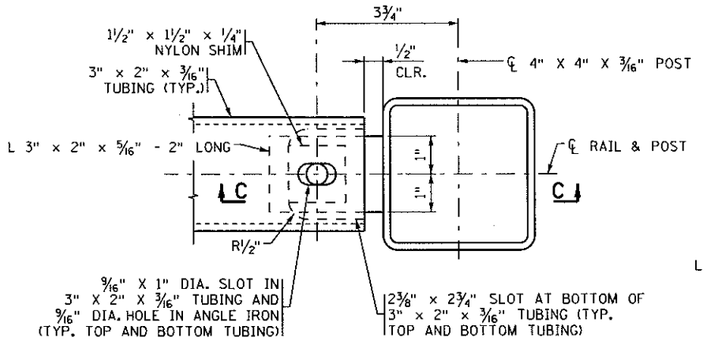
PANEL B

(15 REQUIRED)

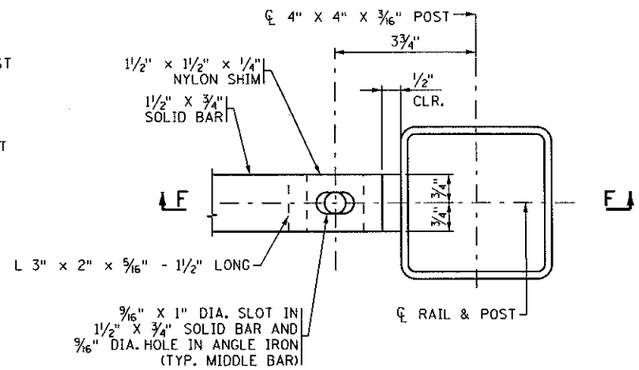


PANEL C

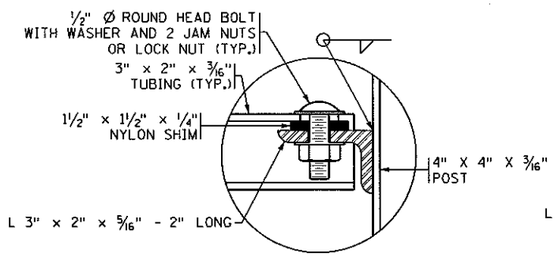
(2 REQUIRED)



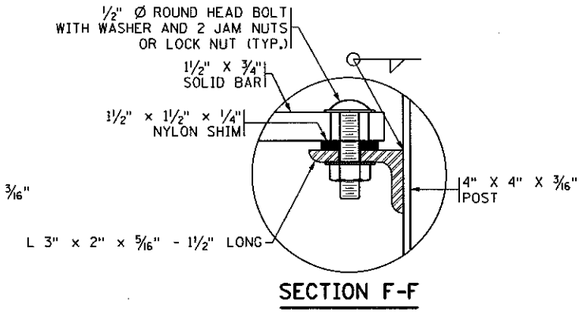
SECTION B-B



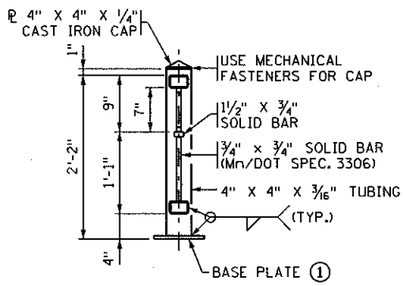
SECTION E-E



SECTION C-C

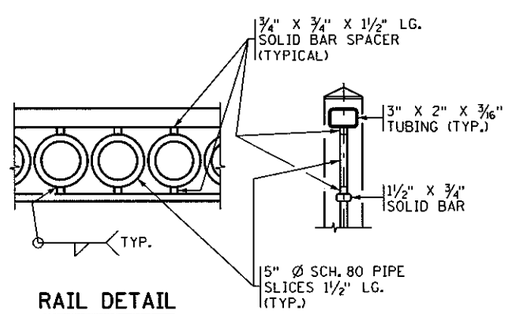


SECTION F-F



SECTION A-A

(18 POSTS REQUIRED)



RAIL DETAIL

GENERAL NOTES

LENGTH OF "ORNAMENTAL METAL RAILING" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE ENDS OF THE METAL RAILING.

ALL STRUCTURAL STEEL TUBING IN THE RAIL SHALL CONFORM TO MN/DOT SPEC. 3361 TYPE A.

MATERIAL FOR CLOSURE PLATES, BASE PLATES AND PICKETS SHALL CONFORM TO Mn/DOT SPEC. 3306.

FASTENERS SHALL BE PER SPEC 3391 AND SHALL BE MECHANICALLY GALVANIZED PER ASTM B695 CLASS 50.

FOR RAIL ANCHORAGE REQUIREMENTS SEE SPECIAL PROVISIONS.

VENT HOLES SHALL BE DRILLED IN THE RAIL POST BASE AND THE RAIL TUBES AS NECESSARY TO FACILITATE GALVANIZING.

RAIL POSTS AND PICKETS SHALL BE VERTICAL.

HORIZONTAL RAILS SHALL BE PARALLEL TO THE TOP OF THE PARAPET.

FOR RAIL COATING SEE SPECIAL PROVISIONS.

PRICE BID FOR "ORNAMENTAL METAL RAILING" INCLUDES ANCHORAGES AND ALL MATERIAL ABOVE TOP OF CONCRETE PARAPET.

RAILING SHALL BE GROUNDED WITH ⅝" DIA. COPPER ROD AS PER Mn/DOT SPEC. 2557.

① SEE SHEET NO. 40 FOR BASE PLATE DETAILS.

br25024_sup.dgn
12/1/2010

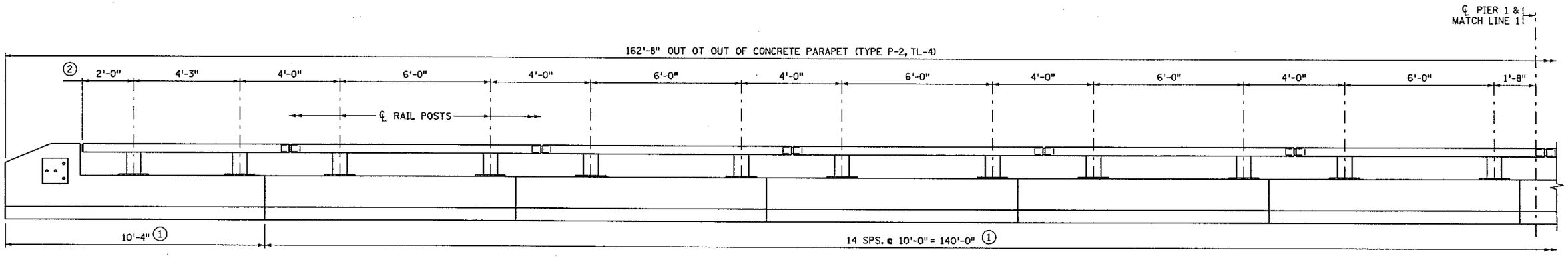
CERTIFIED BY [signature] LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: ORNAMENTAL METAL RAILING AND CONCRETE PARAPET (TYPE MOD P-1, TL-2)

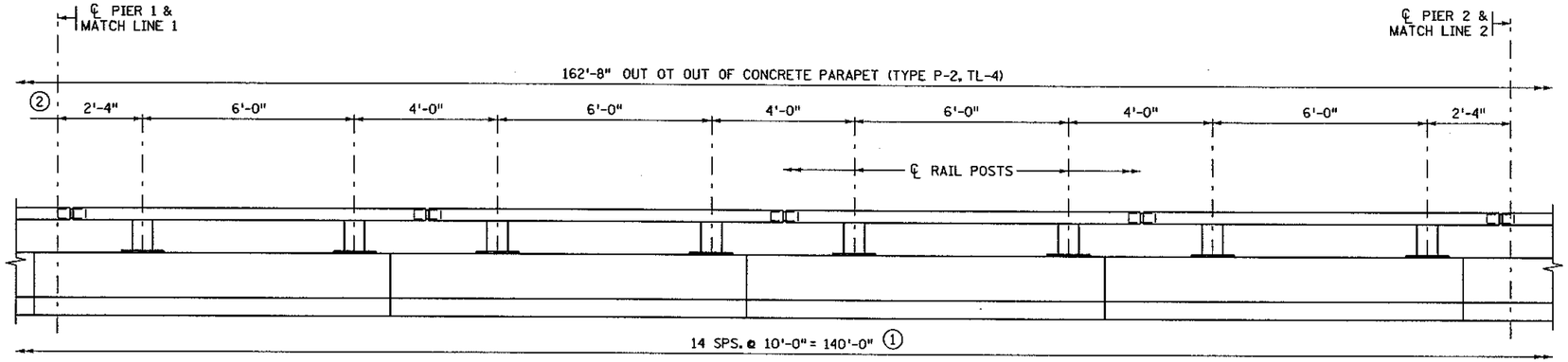
DES: P.J.K.	DR: K.C.S.	APPROVED: 12/3/10
CHK: J.J.L.	CHK: J.A.J.	

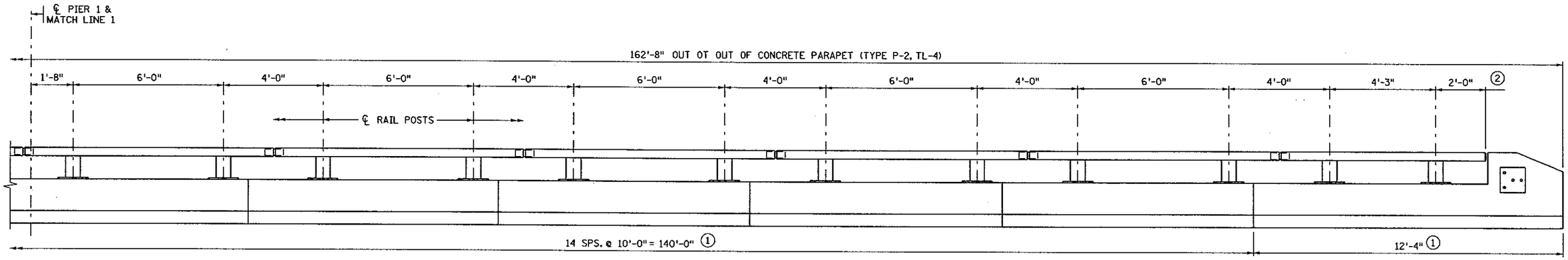
SHEET NO. 41 OF 54 SHEETS

BRIDGE NO. 25024



EAST END





WEST END

INSIDE ELEVATION OF BARRIER

NOTE:

① CONTROL JOINT SPACING.

② RAIL POST SPACING.

CERTIFIED BY J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

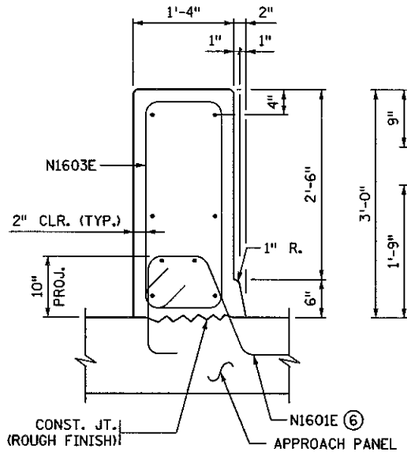
TITLE: STRUCTURAL TUBE RAILING (DESIGN T-1) AND CONCRETE PARAPET (TYPE P-2, TL-4) (SOUTH TRAFFIC RAILING)

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/3/10
CHK: J.J.L.	CHK: J.A.J.	

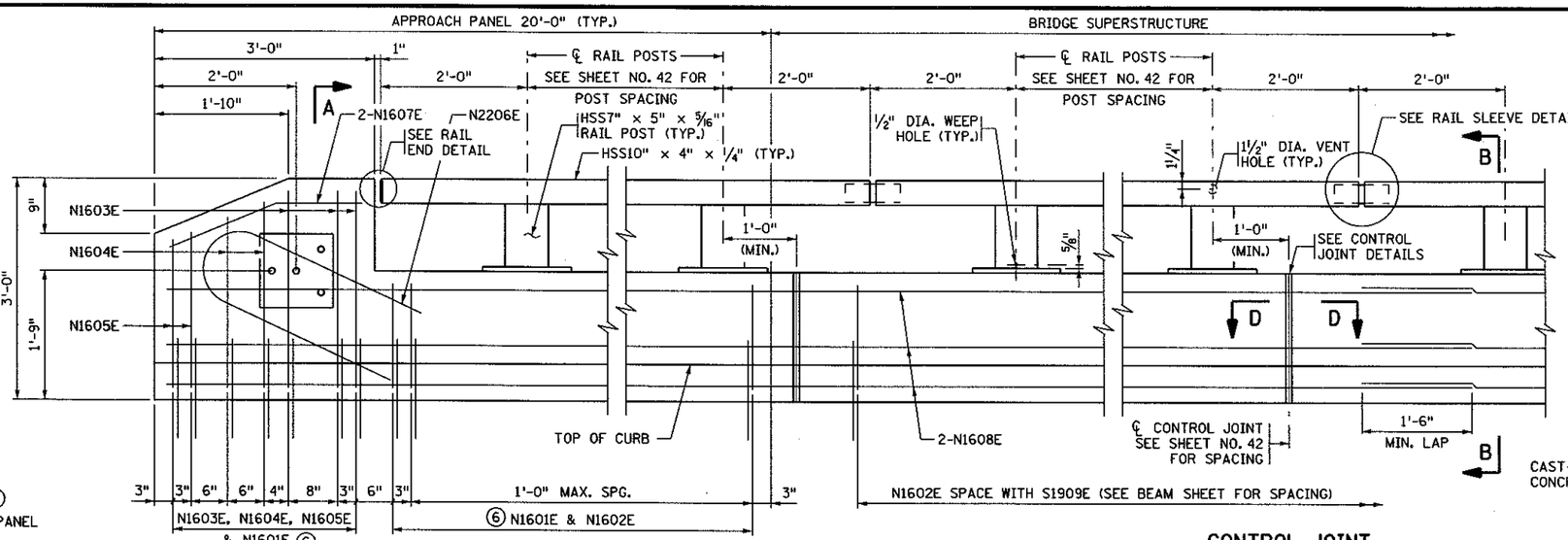
SHEET NO. 42 OF 54 SHEETS

BRIDGE NO. 25024

11/30/2010 br25024_sup.dgn

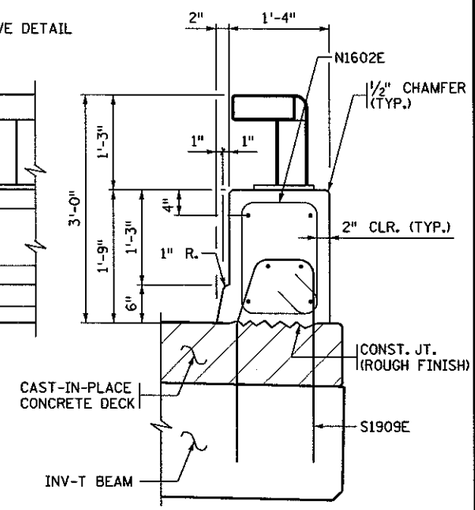


SECTION A-A

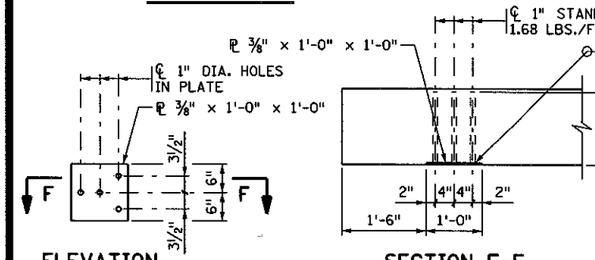


INSIDE ELEVATION OF SOUTH TRAFFIC RAILING

CONTROL JOINT



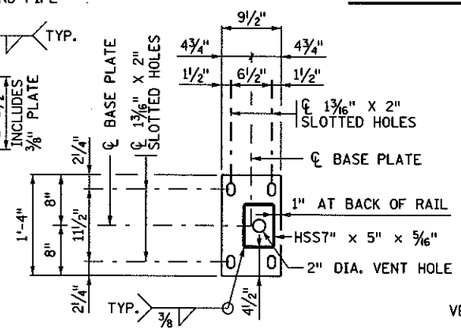
SECTION B-B



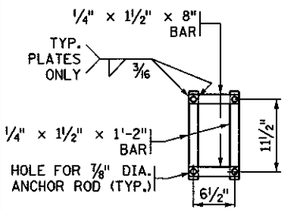
ELEVATION SECTION F-F

GUARDRAIL CONNECTION DETAIL

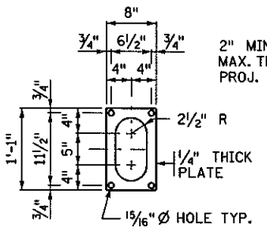
GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394
ESTIMATED WEIGHT = 22 LBS.



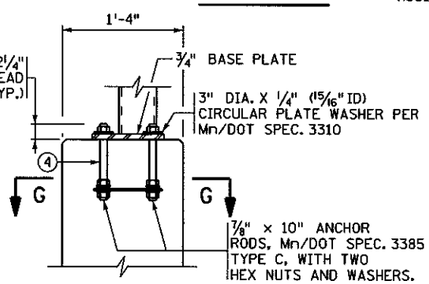
BASE PLATE



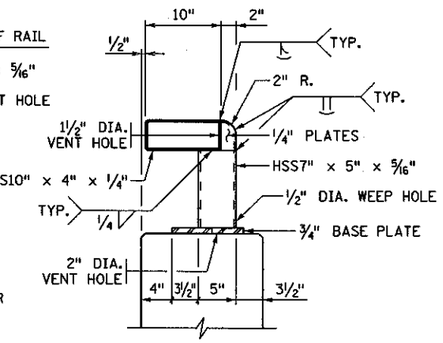
SECTION G-G
ANCHOR BAR ALTERNATE



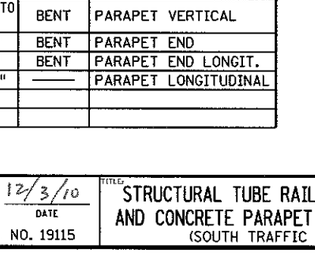
SECTION G-G
ANCHOR PLATE ALTERNATE



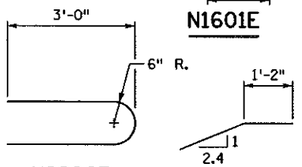
ANCHOR DETAIL



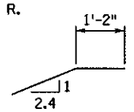
STRUCTURAL TUBE RAIL DETAIL



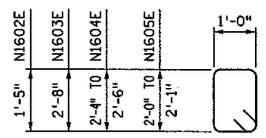
N1601E



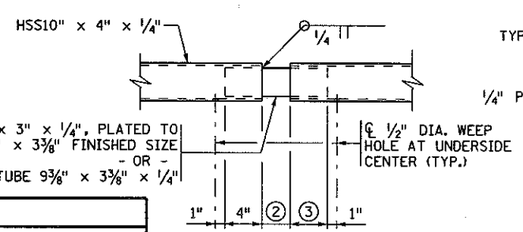
N2206E



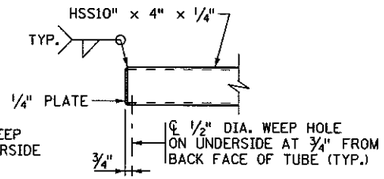
N1607E



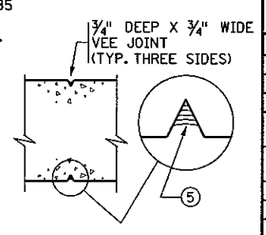
N1602E, N1603E, N1604E & N1605E



RAIL SLEEVE DETAIL



RAIL END DETAIL



SECTION D-D

CONTROL JOINT DETAILS

BILL OF REINFORCEMENT FOR PARAPET				
BAR	NO.	LENGTH	SHAPE	LOCATION
N1601E	52	5'-7"	BENT	PARAPET VERTICAL
N1602E	123	5'-9"	BENT	PARAPET VERTICAL
N1603E	6	8'-3"	BENT	PARAPET VERTICAL
N1604E	2 SER. OF 2	7'-7" TO 7'-11"	BENT	PARAPET VERTICAL
N1605E	2 SER. OF 2	6'-11"" TO 7'-1"	BENT	PARAPET VERTICAL
N2206E	2	6'-7"	BENT	PARAPET END
N1607E	4	2'-9"	BENT	PARAPET END LONGIT.
N1608E	18	55'-2"	——	PARAPET LONGITUDINAL

GENERAL NOTES

FOR PAYMENT OF "TYPE P-2 (TL-4) RAILING CONCRETE (3Y46A)" MEASURE LENGTH OF CONCRETE BARRIER BETWEEN END FACES. CONCRETE PARAPET = 360 LBS./FT. (0.089 CU. YDS./FT.)

FOR PAYMENT OF "STRUCTURAL TUBE RAILING DESIGN T-1" MEASURE LENGTH OF RAIL FROM END TO END OF TUBING. DO NOT DEDUCT FOR JOINTS.

FINISH ALL EDGES OF RAIL WITH 1/2" CHAMFER, EXCEPT WHERE OTHERWISE NOTED.

PROVIDE CORRECT ALIGNMENT FOR ANCHORAGES BY PLACING THEM ACCURATELY AND NORMAL TO GRADE. SEE SPECIAL PROVISIONS.

PROVIDE STRUCTURAL STEEL AND PLATE WASHERS PER Mn/DOT SPEC. 3310. PROVIDE STRUCTURAL TUBES PER A.S.T.M. A500, GRADE B AS SPECIFIED IN Mn/DOT SPEC. 3361.

GALVANIZE BOLTS, NUTS, AND WASHERS PER Mn/DOT SPEC. 3392.

GALVANIZE ALL OTHER STRUCTURAL STEEL PER Mn/DOT SPEC. 3394, AFTER FABRICATION.

PROVIDE GUARDRAIL CONNECTION STRUCTURAL STEEL PER Mn/DOT SPEC. 3306.

GUARDRAIL CONNECTION IS INCIDENTAL TO "TYPE P-2 (TL-4) RAILING CONCRETE (3Y46A)".

PRICE BID FOR "STRUCTURAL TUBE RAILING DESIGN T-1" INCLUDES ANCHORAGES AND ALL MATERIALS ABOVE TOP OF CONCRETE BARRIER.

ALL MATERIALS IN THE CONCRETE BARRIER ARE LISTED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

SEE SPECIAL PROVISIONS FOR PAINT REQUIREMENTS.

CONTINUOUSLY GROUND THE METAL RAILING AS DIRECTED IN THE SPECIAL PROVISIONS. REFER TO THE ELECTRICAL PLANS AND ELECTRICAL SPECIAL PROVISIONS FOR DETAILS REGARDING BONDING MULTIPLE ELECTRICAL GROUNDING SYSTEMS.

② 1" AT RAILING JOINTS.

③ 5" AT RAILING JOINTS.

④ SUBSTITUTION OF CHEMICAL ANCHOR RODS FOR CAST-IN-PLACE ANCHORAGE IS NOT PERMITTED.

⑤ SEE SPECIAL PROVISIONS FOR JOINT SEALING REQUIREMENTS.

⑥ N1601E SUPPLIED IN BRIDGE PORTION OF CONTRACT & INSTALLED IN GRADING PORTION OF CONTRACT.

REVISED:

APPROVED: MARCH 30, 2010
Daniel L. Hagen
STATE BRIDGE ENGINEER

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

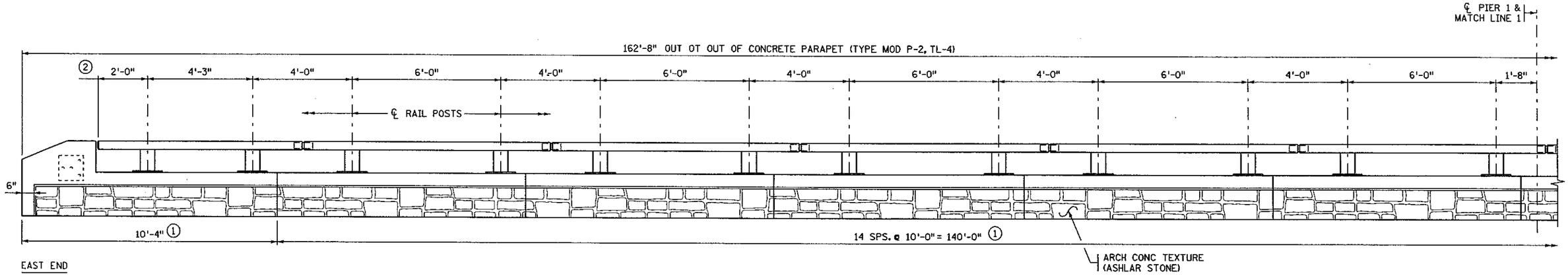
TITLED: STRUCTURAL TUBE RAILING (DESIGN T-1) AND CONCRETE PARAPET (TYPE P-2, TL-4) (SOUTH TRAFFIC RAILING)

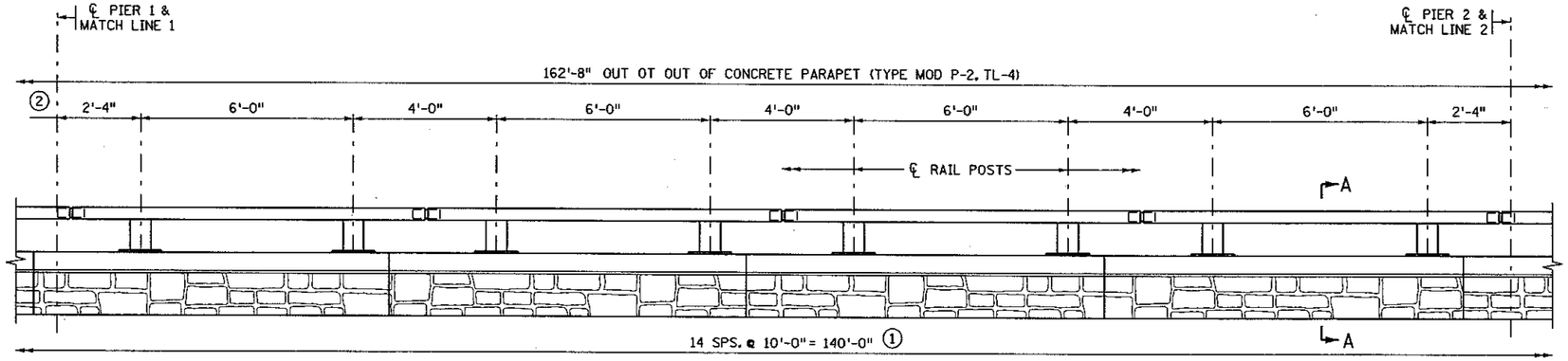
DES: P.J.K.	DR: K.G.S.	APPROVED:
CHK: J.J.L.	CHK: J.A.J.	12/6/11

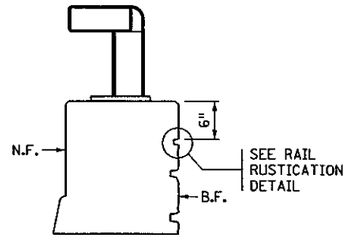
(MODIFIED) FIG. 5-397.157

SHEET NO. 43 OF 54 SHEETS

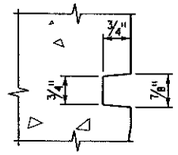
BRIDGE NO. 25024



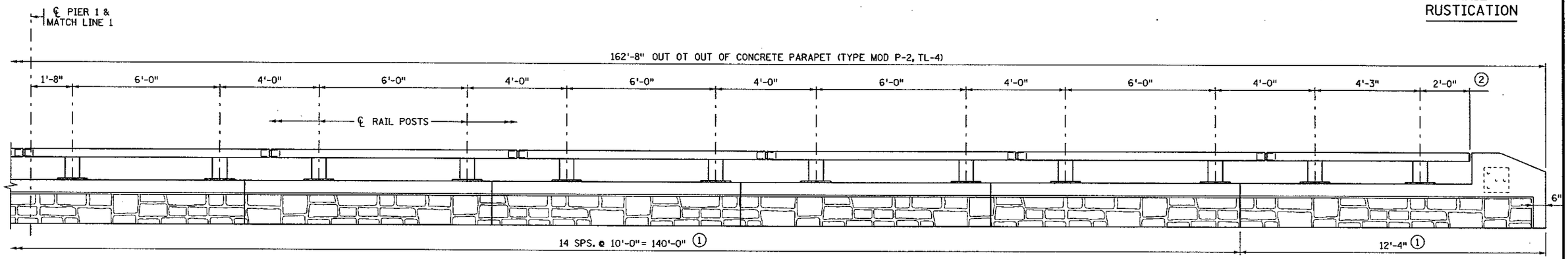




SECTION A-A



RAIL RUSTICATION



NOTES:

① CONTROL JOINT SPACING.

② RAIL POST SPACING.

N.F. DENOTES NEAR FACE.

B.F. DENOTES BACK FACE.

OUTSIDE ELEVATION OF BARRIER

(SIDEWALK FACE SHOWN)

CERTIFIED BY _____ 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE

NAME: JIHSHYA J. LIN — LIC. NO. 19115

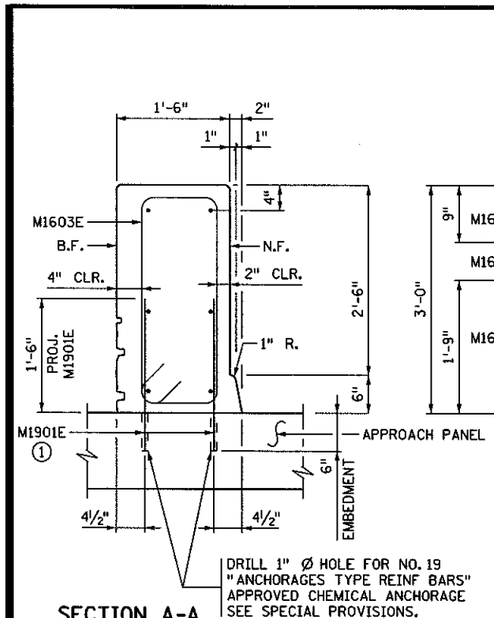
TITLE: STRUCTURAL TUBE RAILING (DESIGN T-1) AND CONCRETE PARAPET (TYPE MOD P-2, TL-4) (NORTH TRAFFIC RAILING)

DES: P.J.K.	DR: K.G.S.	APPROVED: 12/3/10
CHK: J.J.L.	CHK: J.A.J.	

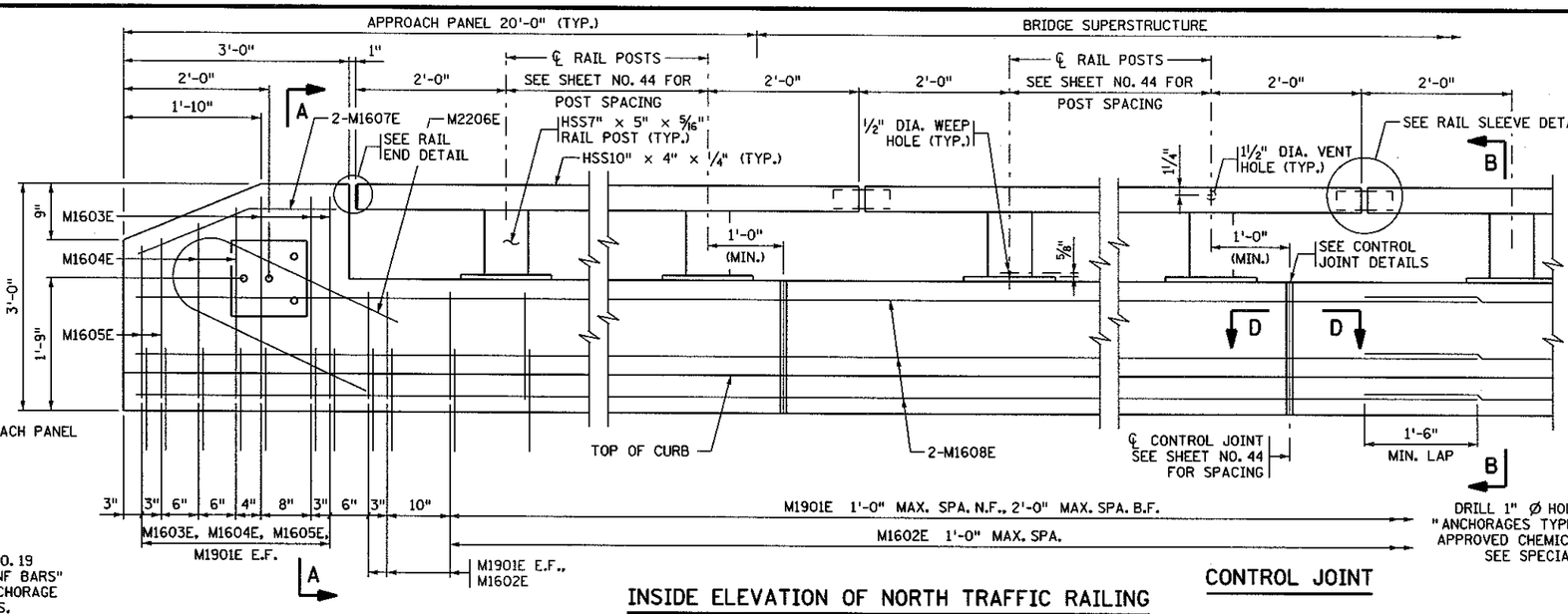
SHEET NO. 44 OF 54 SHEETS

BRIDGE NO. 25024

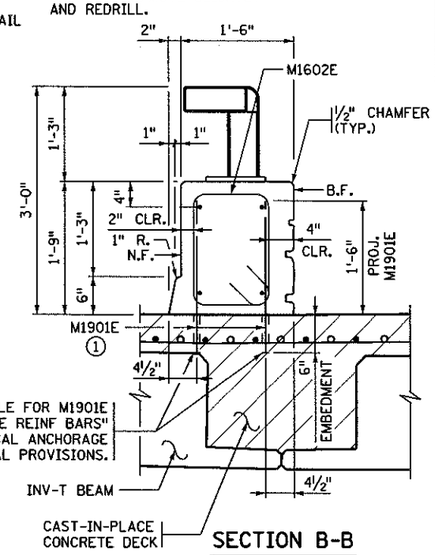
11/30/2010 b-25024_sup.dgn



SECTION A-A



INSIDE ELEVATION OF NORTH TRAFFIC RAILING



SECTION B-B

CONTROL JOINT

NOTE

IF REINFORCEMENT IS HIT WHEN DRILLING HOLES FOR ANCHORAGES. MOVE SLIGHTLY AND REDRILL.

DRILL 1" Ø HOLE FOR M1901E "ANCHORAGES TYPE REINF BARS" APPROVED CHEMICAL ANCHORAGE SEE SPECIAL PROVISIONS.

NOTES:

N.F. DENOTES NEAR FACE.

B.F. DENOTES BACK FACE.

E.F. DENOTES EACH FACE.

GENERAL NOTES

FOR PAYMENT OF "TYPE MOD P-2 (TL-4) RAILING CONCRETE (3Y46A)" MEASURE LENGTH OF CONCRETE BARRIER BETWEEN END FACES. CONCRETE PARAPET = 408 LBS./FT. (0.101 CU. YDS./FT.)

FOR PAYMENT OF "STRUCTURAL TUBE RAILING DESIGN T-1" MEASURE LENGTH OF RAIL FROM END TO END OF TUBING. DO NOT DEDUCT FOR JOINTS.

FINISH ALL EDGES OF RAIL WITH ½" CHAMFER, EXCEPT WHERE OTHERWISE NOTED.

PROVIDE CORRECT ALIGNMENT FOR ANCHORAGES BY PLACING THEM ACCURATELY AND NORMAL TO GRADE. SEE SPECIAL PROVISIONS.

PROVIDE STRUCTURAL STEEL AND PLATE WASHERS PER Mn/DOT SPEC. 3310. PROVIDE STRUCTURAL TUBES PER A.S.T.M. A500, GRADE B AS SPECIFIED IN Mn/DOT SPEC. 3361.

GALVANIZE BOLTS, NUTS, AND WASHERS PER Mn/DOT SPEC. 3392.

GALVANIZE ALL OTHER STRUCTURAL STEEL PER Mn/DOT SPEC. 3394, AFTER FABRICATION.

PROVIDE GUARDRAIL CONNECTION STRUCTURAL STEEL PER Mn/DOT SPEC. 3306.

GUARDRAIL CONNECTION IS INCIDENTAL TO "TYPE MOD P-2 (TL-4) RAILING CONCRETE (3Y46A)".

PRICE BID FOR "STRUCTURAL TUBE RAILING DESIGN T-1" INCLUDES ANCHORAGES AND ALL MATERIALS ABOVE TOP OF CONCRETE BARRIER.

ALL MATERIALS IN THE CONCRETE BARRIER ARE LISTED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

SEE SPECIAL PROVISIONS FOR PAINT REQUIREMENTS.

CONTINUOUSLY GROUND THE METAL RAILING AS DIRECTED IN THE SPECIAL PROVISIONS. REFER TO THE ELECTRICAL PLANS AND ELECTRICAL SPECIAL PROVISIONS FOR DETAILS REGARDING BONDING MULTIPLE ELECTRICAL GROUNDING SYSTEMS.

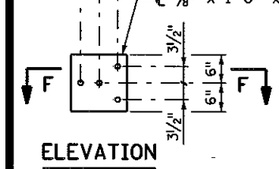
① REINFORCEMENT BARS PLUS DRILLING AND INSTALLING INCLUDED IN PAYMENT FOR "ANCHORAGES TYPE REINF BARS".

② 1" AT RAILING JOINTS.

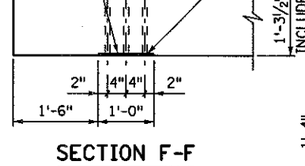
③ 5" AT RAILING JOINTS.

④ SUBSTITUTION OF CHEMICAL ANCHOR RODS FOR CAST-IN-PLACE ANCHORAGE IS NOT PERMITTED.

⑤ SEE SPECIAL PROVISIONS FOR JOINT SEALING REQUIREMENTS.



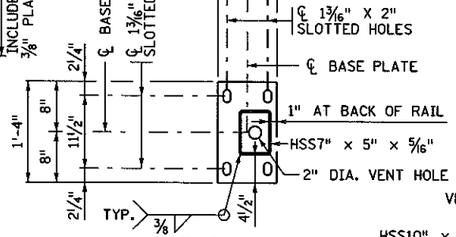
ELEVATION



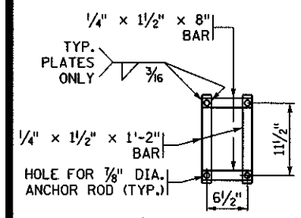
SECTION F-F

GUARDRAIL CONNECTION DETAIL

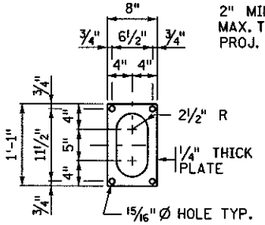
GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394
ESTIMATED WEIGHT = 22 LBS.



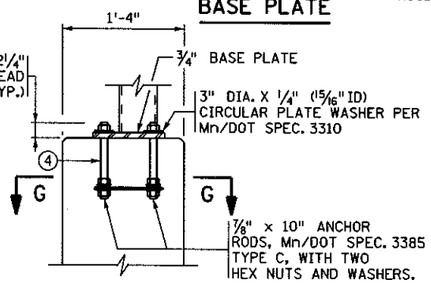
BASE PLATE



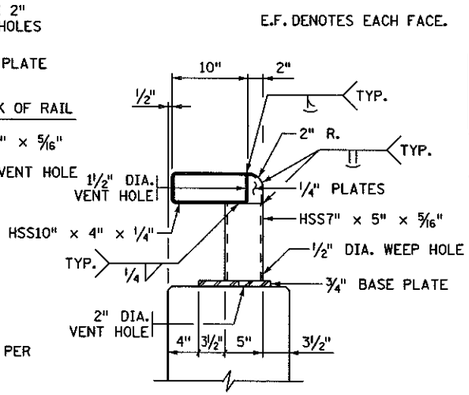
SECTION G-G
ANCHOR BAR ALTERNATE



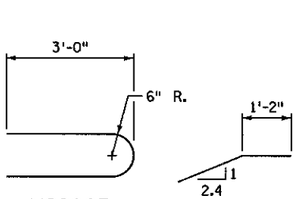
SECTION G-G
ANCHOR PLATE ALTERNATE



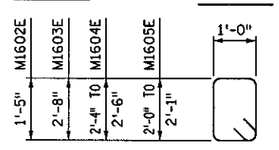
ANCHOR DETAIL



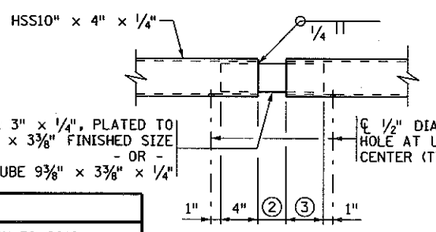
STRUCTURAL TUBE RAIL DETAIL



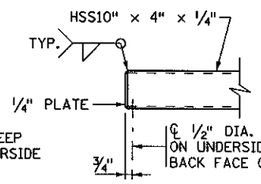
M2206E M1607E



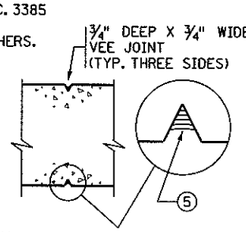
M1602E, M1603E, M1604E & M1605E



RAIL SLEEVE DETAIL



RAIL END DETAIL



SECTION D-D

CONTROL JOINT DETAILS

BILL OF REINFORCEMENT FOR PARAPET

	BAR	NO.	LENGTH	SHAPE	LOCATION
①	M1901E	269	2'-0"	——	PARAPET VERTICAL
	M1602E	159	5'-9"	BENT	PARAPET VERTICAL
	M1603E	6	8'-3"	BENT	PARAPET VERTICAL
	M1604E	2 SER. OF 2	7'-7" TO 7'-11"	BENT	PARAPET VERTICAL
	M1605E	2 SER. OF 2	6'-11" TO 7'-1"	BENT	PARAPET VERTICAL
	M2206E	2	6'-7"	BENT	PARAPET END
	M1607E	4	2'-9"	BENT	PARAPET END LONGIT.
	M1608E	18	55'-2"	——	PARAPET LONGITUDINAL

REVISED:

APPROVED: MARCH 30, 2010
Daniel D. Hagen
STATE BRIDGE ENGINEER

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: STRUCTURAL TUBE RAILING (DESIGN T-1) AND CONCRETE PARAPET (TYPE MOD P-2, TL-4) (NORTH TRAFFIC RAILING)

DES: P.J.K.	DR: K.G.S.	APPROVED:
CHK: J.J.L.	CHK: J.A.J.	1/6/11

(MODIFIED) FIG. 5-397.157

SHEET NO. 45 OF 54 SHEETS

BRIDGE NO. 25024

GENERAL NOTES

SEE SPECIAL PROVISIONS FOR MATERIALS, PREPARATION AND PLACEMENT.

GEOTEXTILE FILTER MATERIAL AS PER Mn/DOT SPECIAL PROVISION 2511.

PAYMENT WILL BE MADE UNDER ITEM 2511.515 GEOTEXTILE FILTER TYPE IV (MOD) BY THE SQ. YD.

PAYMENT WILL BE MADE UNDER ITEM 2511.501 RANDOM RIPRAP CLASS V BY THE CU. YD.

SLOPES ARE EXPRESSED AS A RATIO OF VERTICAL DISTANCE : HORIZONTAL DISTANCE.

BENCHES TO BE SURFACED WITH AGGREGATE CLASS 5 (INCIDENTAL TO RIPRAP). BENCHES SHOULD TIE INTO NATURAL GROUNDLINES OUTSIDE OF BRIDGE.

SLOPE BOTTOM OF TRENCHES 1:20 PARALLEL TO ABUTMENT FACE TO PROVIDE POSITIVE DRAINAGE.

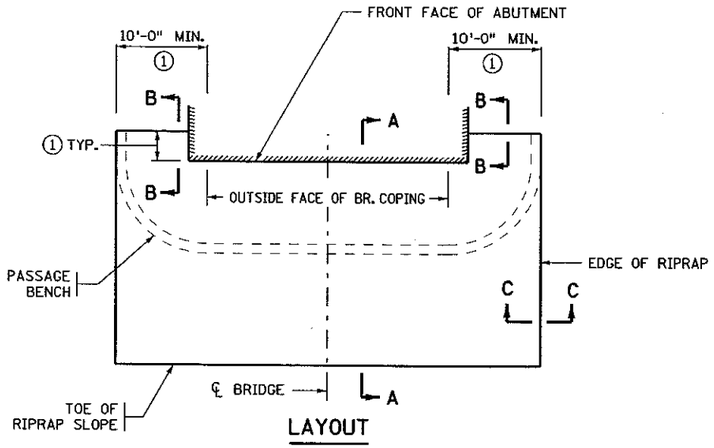
(1) SEE PLAN SHEET NO. 1 FOR DIMENSIONS, AND FOR ELEVATIONS OF RIPRAP TOE AND PASSAGE BENCHES.

(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).

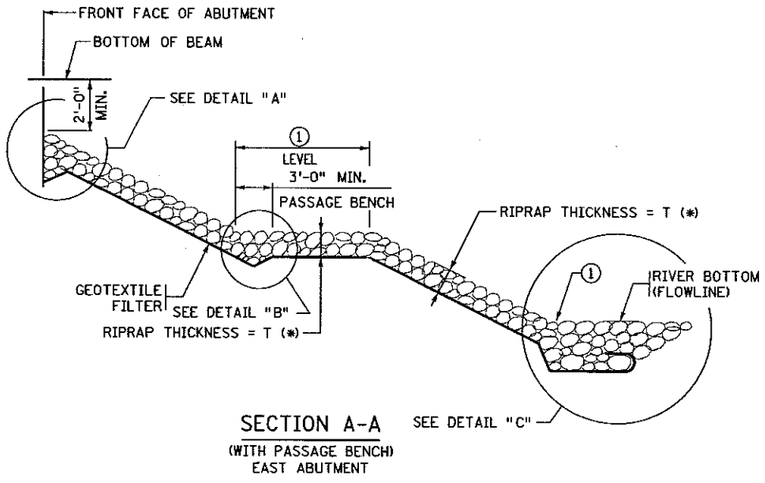
(3) OVERLAP GEOTEXTILE FILTER 1'-6" MINIMUM.

(4) WRAP GEOTEXTILE FILTER AROUND TOE, OVERHANG BETWEEN 1ST AND 2ND LAYER OF RIPRAP.

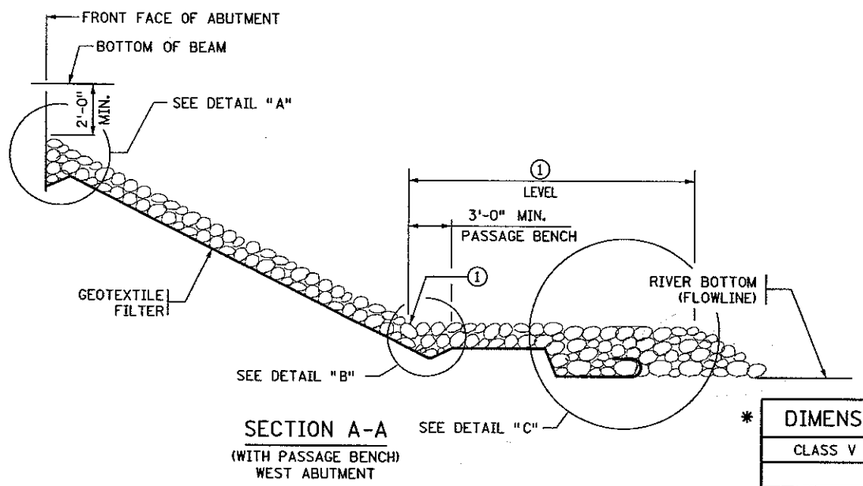
(5) BURY EDGES OF GEOTEXTILE FILTER SUFFICIENTLY TO DIRECT WATER FLOW OVER THE FABRIC WITHOUT UNDERMINING.



LAYOUT



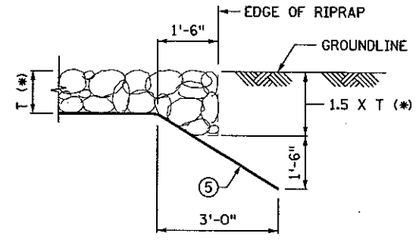
SECTION A-A
(WITH PASSAGE BENCH)
EAST ABUTMENT



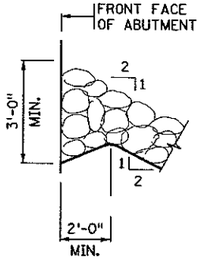
SECTION A-A
(WITH PASSAGE BENCH)
WEST ABUTMENT

* DIMENSION T

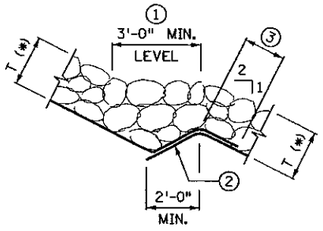
CLASS V = 2'-6"



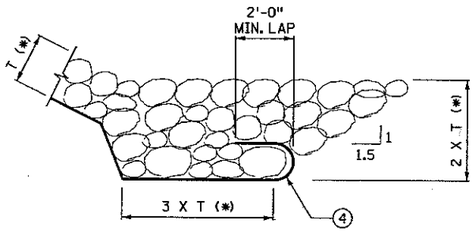
SECTION B-B



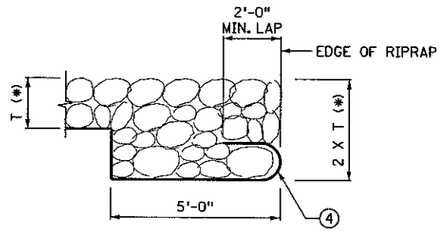
DETAIL "A"



DETAIL "B"



DETAIL "C"



SECTION C-C

REVISED:
APPROVED: XXXXXXX XX, XXXX
STATE BRIDGE ENGINEER

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER — DATE
NAME: JIHSHYA J. LIN — LIC. NO. 19115

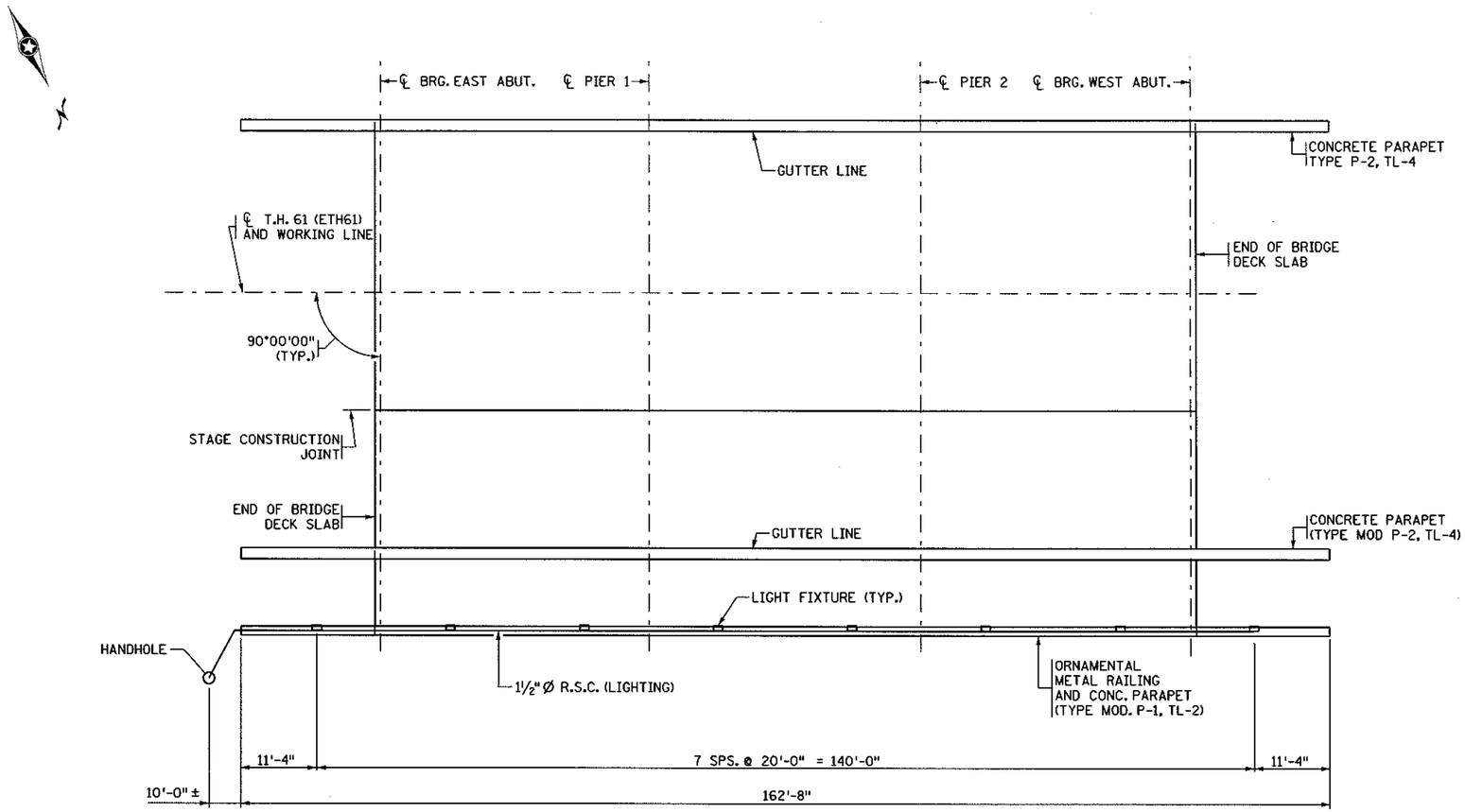
TITLE: RIPRAP SLOPE WITH GEOTEXTILE FILTER (SLOPES 1:2 AND FLATTER)

DES: PJK	DR: TKB/GRF	APPROVED: 12/3/10
CHK: JJL	CHK: JAJ	

SHEET NO. 46 OF 54 SHEETS

BRIDGE NO. 25024

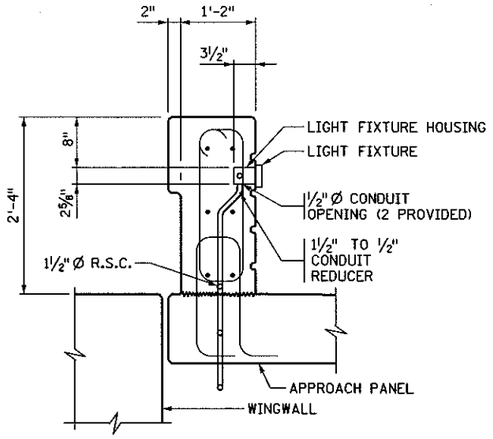
NOTE:
SEE SHEET NO. 48 FOR LIGHTING DETAILS.



PLAN VIEW

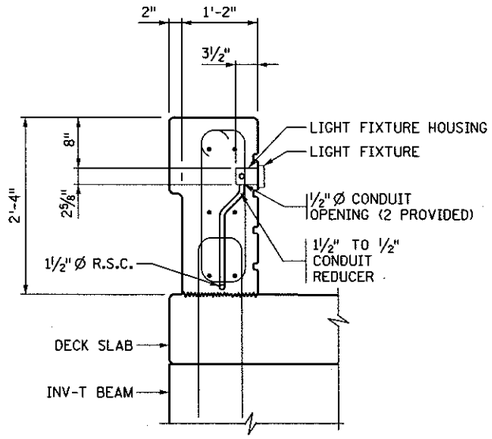
12/17/2010 br25024_sup.dgn

CERTIFIED BY Jihshya J. Lin LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE NAME: JIHSHYA J. LIN LIC. NO. 19115	TITLE: CONDUIT SYSTEM (LIGHTING)	DES: PJK	DR: TKB/GRF	APPROVED: 12/3/10	BRIDGE NO. 25024
		CHK: JJL	CHK: JAJ		
		SHEET NO. 47 OF 54 SHEETS			



SECTION A-A ①

② APPROACH PANEL



SECTION B-B ①

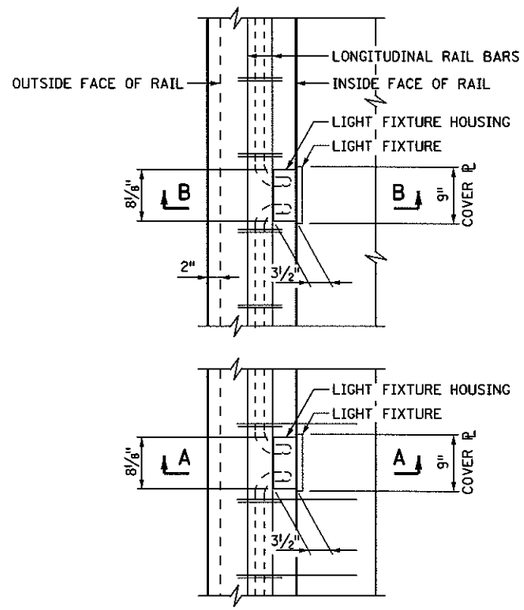
② BRIDGE DECK

SUMMARY OF QUANTITIES FOR CONDUIT SYSTEM (LIGHTING)		
	½" Ø END CAPS	16 EACH
②	1½" DIA. R.S.C.	190 LIN. FT.
	1½" DIA. END CAP	1 EACH
	1½" TO ½" CONDUIT REDUCER	8 EACH
	P.V.C. HANDHOLE / PULLBOX (STD. PLATE 8114)	1 EACH
	1½" DIA. EXPANSION FITTING	1 EACH

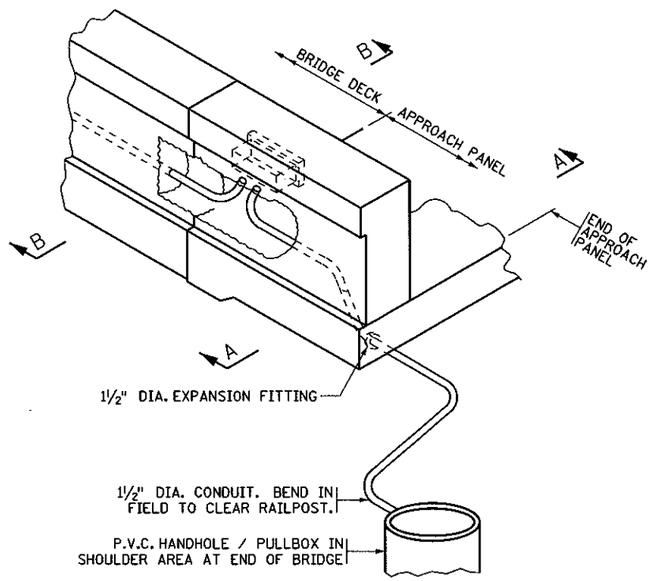
② SYSTEM TO BE GROUNDED.

ALL MATERIAL LISTED ABOVE TO BE INCLUDED IN PRICE BID FOR "CONDUIT SYSTEM (LIGHTING)"

QUANTITIES LISTED ABOVE ARE FOR INFORMATIONAL PURPOSES. ANY ADDITIONAL MINOR ITEMS AND SLIGHT CHANGES IN QUANTITIES REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.



PLAN
RECESSED LIGHTING
ON INSIDE FACE OF
CONCRETE PARAPET ①



VIEW AT END OF BRIDGE
WINGWALL NOT SHOWN

GENERAL NOTES

① SEE SHEET NOS. 39 & 40 FOR ADDITIONAL REINFORCEMENT PLACEMENT AND DETAIL DIMENSIONS.

REVISION: 10-22-2009

APPROVED: SEPTEMBER 26, 2003

STATE BRIDGE ENGINEER

FIG. 5-397.403 MODIFIED

CERTIFIED BY LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE

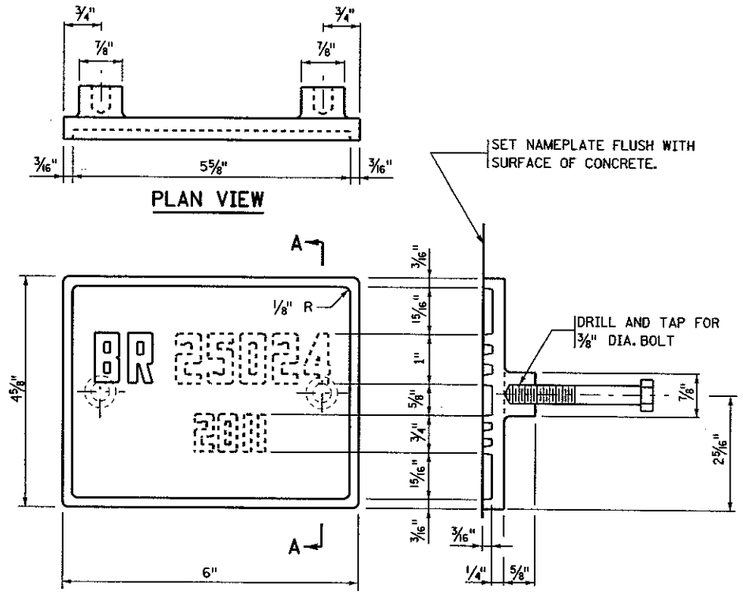
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: CONDUIT SYSTEM (LIGHTING)

DES: PJK	DR: TKB/GRF	APPROVED: 12/3/10
CHK: JJL	CHK: JAJ	

SHEET NO. 48 OF 54 SHEETS

BRIDGE NO. 25024



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

BRIDGE 25024

YEAR 2011

NUMBERS FOR NAMEPLATE

NOTES:

NO SHOP DRAWING REQUIRED.

MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3327.

LETTERS AND NUMBERS SHALL CONFORM TO THOSE SHOWN.

DRAFT ON LETTERS AND NUMBERS SHALL NOT BE MORE THAN 3" IN 12".

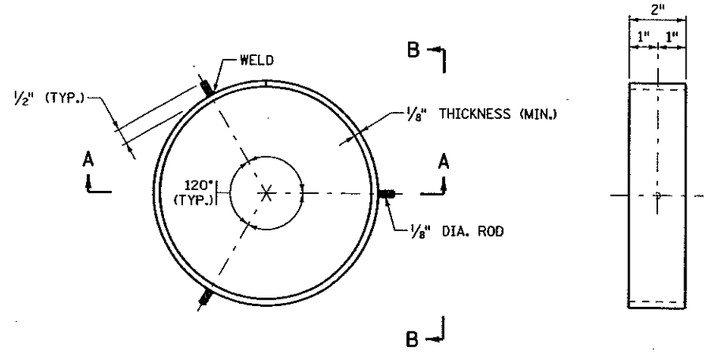
HORIZONTAL SPACING OF LETTERS AND NUMBERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.

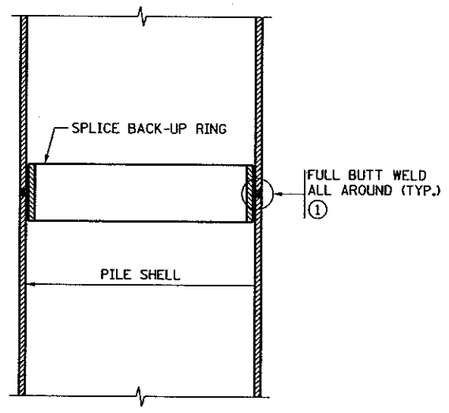
TOP SURFACE OF LETTERS, NUMBERS AND FRAMES SHALL BE BURNISHED.

FURNISH 2 STEEL BOLTS 3/8" DIA. x 3" LONG WITH EACH PLATE.

ALL DIMENSIONS FOR 3/4" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN FOR THE 1" HIGH LETTERS AND NUMBERS.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel T. Hovyan STATE BRIDGE ENGINEER	BRIDGE NAMEPLATE (FOR NEW BRIDGES)		B101





NOTES:

APPROVED COMMERCIAL PILE SPLICE BACK-UP RING MAY BE USED IN LIEU OF THE TYPE DETAILED. BACK-UP RING SHALL HAVE A TIGHT FIT.

WELDING ELECTRODES SHALL BE CELLULOSIC TYPE ELECTRODES E-6010 OR E-6011.

ELECTRODES WHICH HAVE BECOME WET, SOILED OR DAMAGED SHALL NOT BE USED.

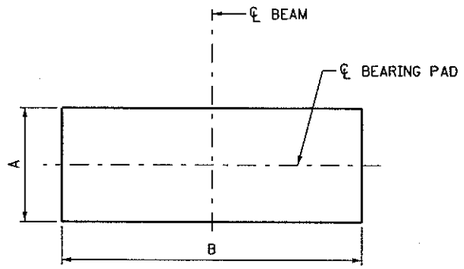
WELDING SHALL NOT BE DONE WHEN THE AMBIENT TEMPERATURE IS LOWER THAN 0° F. OR WHEN THE PILE IS WET OR EXPOSED TO FALLING RAIN OR SNOW. WHEN THE PILE METAL TEMPERATURE IS BELOW 32° F., THE PILE METAL IN THE AREA OF THE WELD SHALL BE HEATED TO A MINIMUM TEMPERATURE OF 70° F. AND MAINTAINED AT THIS TEMPERATURE DURING WELDING.

(1) FOR PILE SHELL THICKNESSES GREATER THAN 1/2", USE A B-U4a WELD CONFIGURATION.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel T. Hovyan STATE BRIDGE ENGINEER	PILE SPLICE (CAST-IN-PLACE CONCRETE PILES)		B201

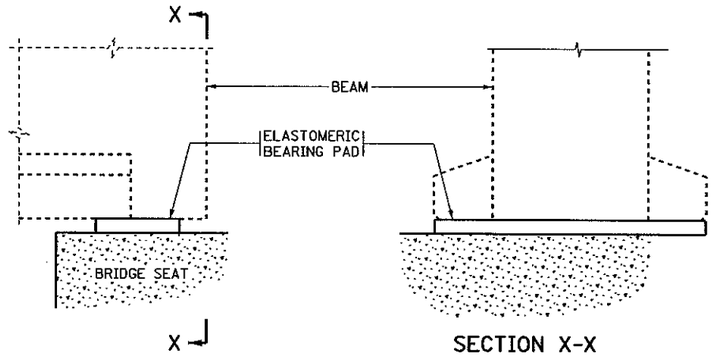
CERTIFIED BY	TITLE:	DES: PJK	DR: TKB/GRF	APPROVED: 12/3/10	BRIDGE NO. 25024
NAME: JIHSHYA J. LIN LIC. NO. 19115	DETAILS	CHK: JJL	CHK: JAJ	SHEET NO. 49 OF 54 SHEETS	

11/25/2010 25024.pr-dgn



PLAN

(BEAM NOT SHOWN)



SIDE ELEVATION

SECTION X-X

TABLE						
PAD TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE			SHAPE FACTOR
			A	B	D ①	
1		5'-2"	6"	62"	½"	5.5
2		6'-0"	6"	72"	½"	5.5
3		5'-6"	6"	66"	½"	5.5

NOTES:

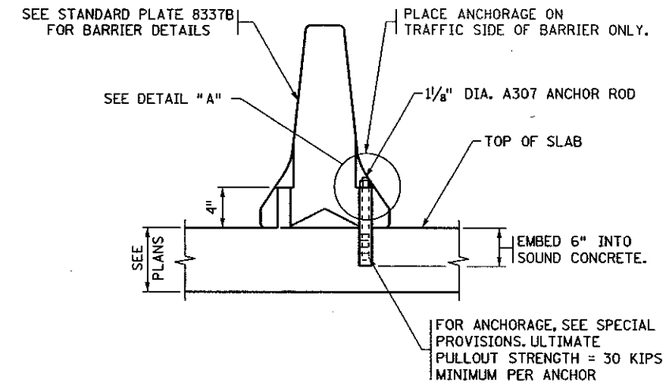
ELASTOMERIC MATERIALS AND PAD CONSTRUCTION SHALL COMPLY WITH Mn/DOT SPEC. 3741.

PAYMENT FOR ELASTOMERIC BEARING PAD, TYPE 1, 2 AND 3, INCLUDED IN ITEM "ELASTOMERIC BEARING PAD TYPE 1", "ELASTOMERIC BEARING PAD TYPE 2" AND "ELASTOMERIC BEARING PAD TYPE 3" PER EACH.

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

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION 12-17-2008	DETAIL NO.
Daniel J. Hogan STATE BRIDGE ENGINEER	ELASTOMERIC BEARING PAD (PRESTRESSED CONCRETE BEAMS)		B305

br25024_sup.dgn 11/29/2010



ANCHORAGE DETAILS

REINFORCEMENT NOT SHOWN

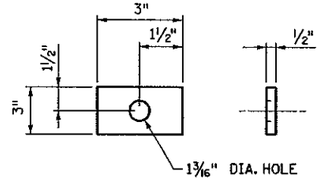
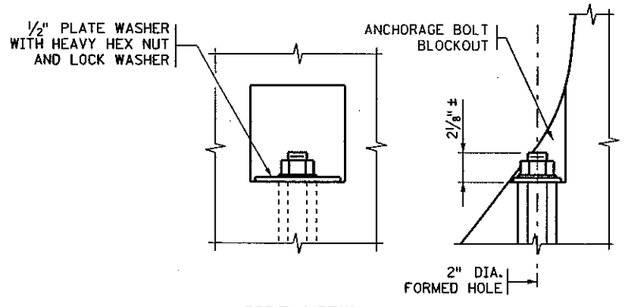


PLATE WASHER



SIDE VIEW

DETAIL "A"

NOTES:

ALL EXPOSED HARDWARE IS TO BE GALVANIZED AS PER Mn/DOT SPEC. 3392.

ALL STRUCTURAL STEEL IS TO BE Mn/DOT SPEC. 3306 UNLESS OTHERWISE NOTED.

COST OF ANCHORAGES IS INCLUDED IN PRICE BID FOR ITEM "ANCHORAGES TYPE 1".

REMOVE ANCHORAGES AND FILL ANCHORAGE HOLES WITH AN APPROVED EPOXY GROUT AFTER THE PORTABLE BARRIERS ARE REMOVED. TO BE INCLUDED IN PRICE BID FOR PAY ITEM "REMOVE ANCHORAGE".
SEE SPECIAL PROVISIONS.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISED 07-29-2003	DETAIL NO. MODIFIED
Daniel J. Hogan STATE BRIDGE ENGINEER	PORTABLE PRECAST BARRIER ANCHORAGE (TEMPORARY USAGE IN LIMITED BARRIER DISPLACEMENT AREAS)		B920

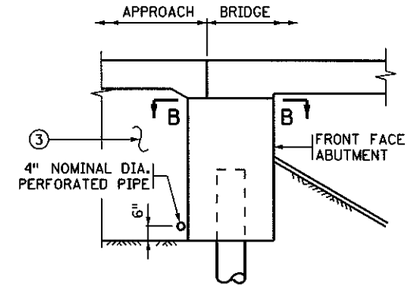
CERTIFIED BY Jihshya J. Lin LICENSED PROFESSIONAL ENGINEER 12/3/10 DATE	TITLE:	DES: PJK	DR: TKB/GRF	APPROVED: 12/3/10	BRIDGE NO. 25024
NAME: JIHSHYA J. LIN LIC. NO. 19115	DETAILS	CHK: JJL	CHK: JAJ	SHEET NO. 50 OF 54 SHEETS	

SUMMARY OF QUANTITIES FOR DRAINAGE SYSTEM

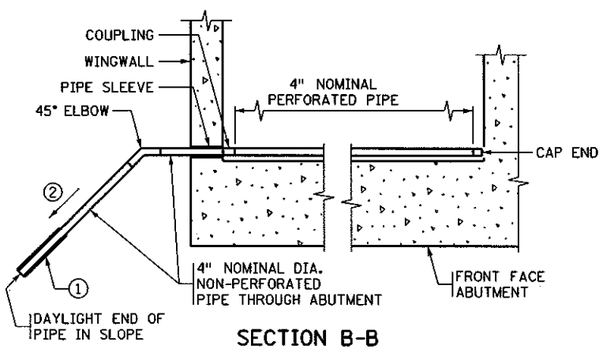
	4" DIA. PERFORATED PIPE	154 LIN. FT.
	4" DIA. NON-PERFORATED PIPE	60 LIN. FT.
	45° ELBOW	2 EACH
	4" DIA. END CAP	2 EACH
	4" DIA. COUPLING	2 EACH
	PIPE SLEEVE	2 EACH
①	PRECAST CONCRETE HEADWALL	2 EACH

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

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



SECTION THROUGH INTEGRAL ABUTMENT



SECTION B-B

NOTES:

ALL PIPE SHALL COMPLY WITH Mn/DOT SPEC. 3245.

WRAP PERFORATED PIPE WITH GEOTEXTILE AS PER Mn/DOT SPEC. 3733, TYPE I. ATTACH TO PIPE AS PER Mn/DOT SPEC. 2502.

① PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE STANDARD PLATE 3131 FOR DETAILS.

② 1/8" PER FT. MINIMUM SLOPE.

③ MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3149.2B SELECT GRANULAR BORROW, MODIFIED SO THAT NO MORE THAN 10% PASSES A NO. 200 SIEVE. (UNDER GRADING PORTION OF CONTRACT)

APPROVED: MARCH 26, 2009

Daniel T. Hovson
STATE BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

DRAINAGE SYSTEM

REVISED 10-22-2009

DETAIL NO. B910

CERTIFIED BY Jihshya J. Lin 12/3/10
LICENSED PROFESSIONAL ENGINEER DATE
NAME: JIHSHYA J. LIN LIC. NO. 19115

TITLE: DETAILS

DES: PJK	DR: TKB/GRF	APPROVED: 12/3/10	BRIDGE NO. 25024
CHK: JJL	CHK: JAJ		

SHEET NO. 51 OF 54 SHEETS

12/1/2010 br25024_sup.dgn

CONCRETE WEARING COURSE

☐ LOW SLUMP

☐ OTHER _____
TYPE OR MANUFACTURER

EXPANSION JOINTS

JOINT MANUFACTURER

MANUFACTURER'S IDENTIFICATION _____
MFR'S No. AND/OR LETTER DESIGNATION FOR JOINT USED

GLAND MANUFACTURER _____
NAME AND ADDRESS (CITY, STATE)

SIZE OF GLAND _____

MANUFACTURER'S IDENTIFICATION _____
MFR'S No. AND/OR LETTER DESIGNATION FOR GLAND USED

ELASTOMERIC BEARING PADS

PAD MANUFACTURER _____
NAME AND ADDRESS (CITY, STATE)

SPECIAL SURFACE FINISH

SYSTEM: _____ COLOR: _____

FINISHING ROADWAY FACES OF BARRIER RAILING

TYPE: _____ COLOR: _____

ANTI-GRAFFITI COATING

MANUFACTURER _____
NAME AND ADDRESS (CITY, STATE)

PRODUCT NAME: _____ LOCATION: _____

PAINT SYSTEM

Mn/DOT SPECIFICATION NUMBER _____
2478 OR 2479 OR OTHER

MANUFACTURER _____
NAME AND ADDRESS (CITY, STATE)

PRIME COAT _____
Mn/DOT MATERIAL SPECIFICATION NUMBER

INTERMEDIATE COAT _____
Mn/DOT MATERIAL SPECIFICATION NUMBER

FINISH COAT _____ _____
Mn/DOT MATERIAL SPECIFICATION NUMBER COLOR

PLAN QUALITY

RATE 1 (AGREE), 2 (NEUTRAL), OR 3 (DISAGREE, PLEASE COMMENT BELOW)

DIMENSIONING AND DETAILING ADEQUATELY DESCRIBED REQUIRED CONSTRUCTION. _____

BAR LISTS AND QUANTITIES WERE TYPICALLY COMPLETE AND FREE OF ERRORS. _____

SCALE OF DRAWINGS AND OVERALL LEGIBILITY OF LINES AND TEXT WAS GOOD. _____

(SB) SPECIAL PROVISIONS ADEQUATELY DESCRIBED SPECIAL WORK AND PAYMENT. _____

COMMENTS: _____

NUMBER OF BRIDGE SUPPLEMENTAL AGREEMENTS: _____ COST: $ _____

LIST SIGNIFICANT ERRORS OR OMISSIONS IN PLAN DETAILS OR PAY QUANTITIES IN THE SPACE PROVIDED AT RIGHT.

BRIDGE REMOVAL / BRIDGE OPENING

NUMBER OF AND DATE OLD BRIDGE WAS REMOVED (IF APPLICABLE):

BRIDGE NUMBER _____ DATE REMOVED _____

DATE NEW BRIDGE WAS OPENED TO TRAFFIC _____

NOTIFY THE BRIDGE OFFICE BRIDGE MANAGEMENT UNIT WITH THIS INFORMATION AS SOON AS POSSIBLE. (651) 366-4557

OTHER ITEMS ①

① UTILITIES ADDED DURING CONSTRUCTION AND SPECIALTY ITEMS.

FINAL QUANTITIES ENTERED ON SCHEDULE OF QUANTITIES: YES ☐ NO ☐

SUMMARY OF SIGNIFICANT AS-BUILT CHANGES

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

_____ _____
INSPECTOR(S) SIGNATURE DATE

CHECKED BY: _____ _____
PROJECT ENGINEER/SUPERVISOR SIGNATURE DATE

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

REVISION: 10-28-2008

APPROVED: SEPTEMBER 26, 2003
David A. Olson
STATE BRIDGE ENGINEER

AS-BUILT DETAILS
(AS NEEDED)

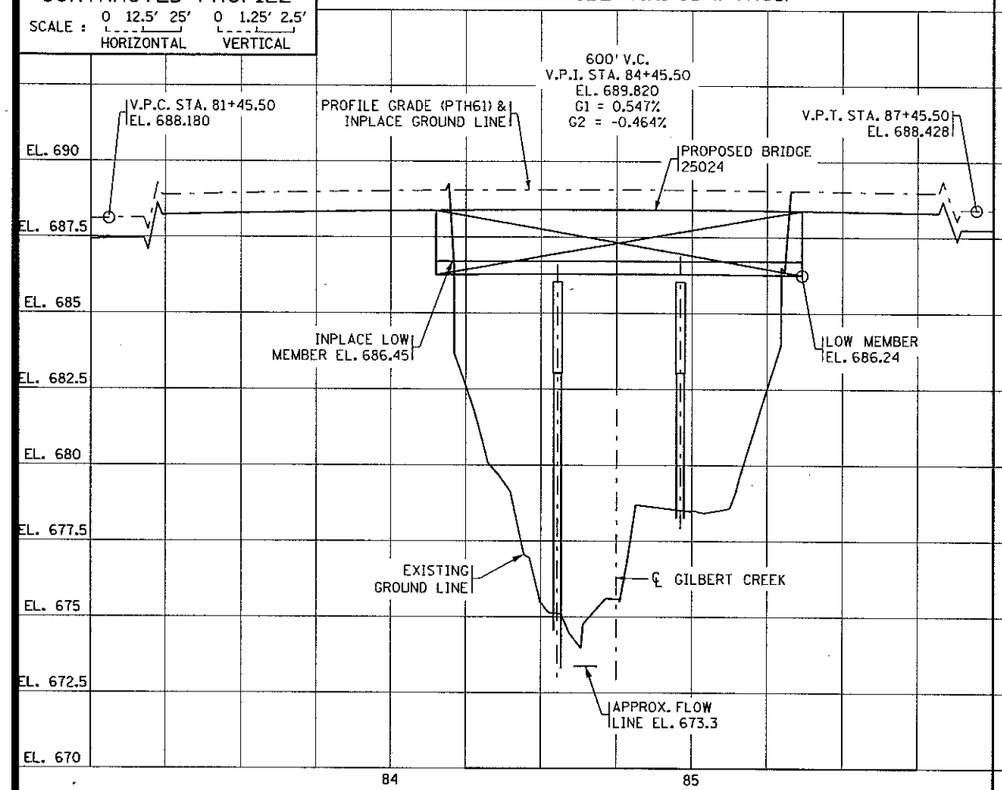
FIG. 5-397.900

TITLE:	DES:	DR:	APPROVED:	BRIDGE NO.
AS-BUILT BRIDGE DATA	CHK:	CHK:	12/3/10	25024
	SHEET NO. 52 OF 54 SHEETS			

CONTRACTED PROFILE

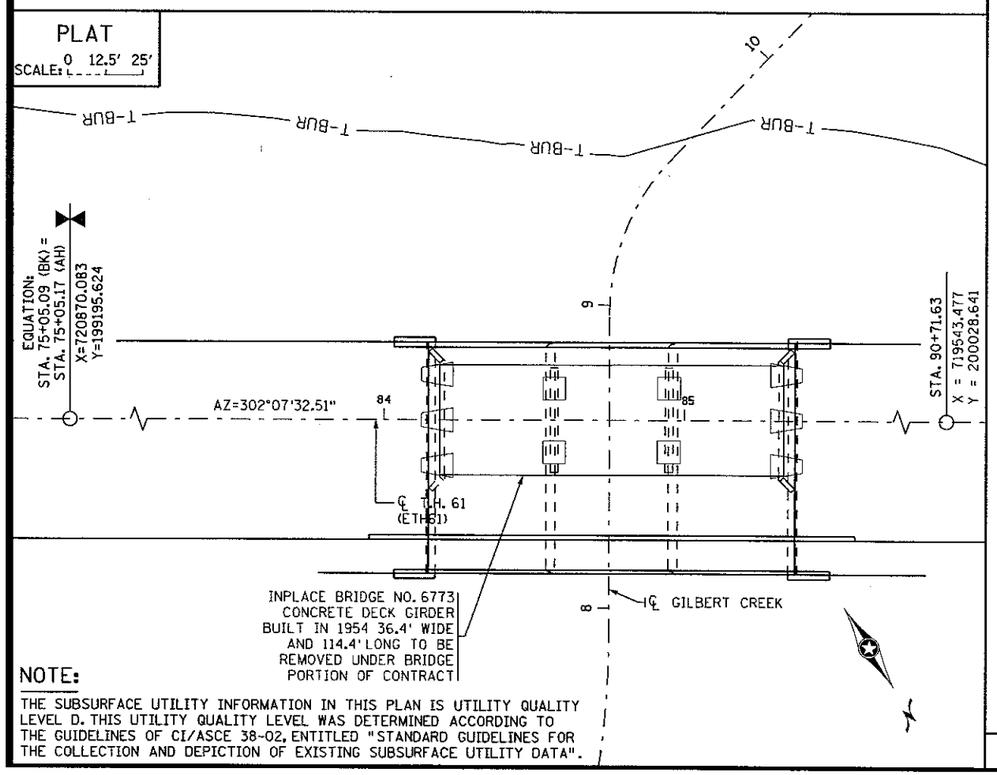
SCALE : 0 12.5' 25' HORIZONTAL — 0 1.25' 2.5' VERTICAL

PROFILE T.H. 61 (PTH61)



PLAT

SCALE: 0 12.5' 25'



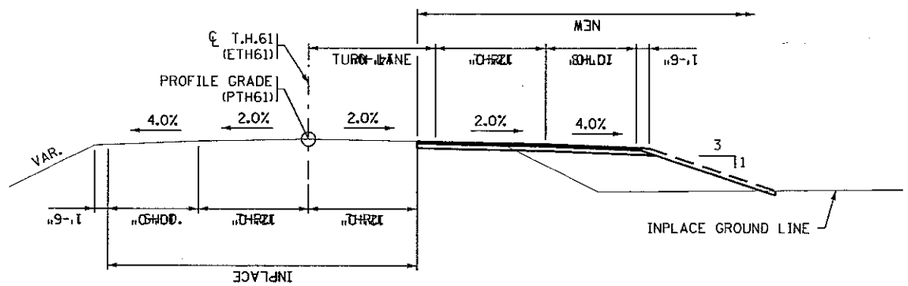
NOTE:

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

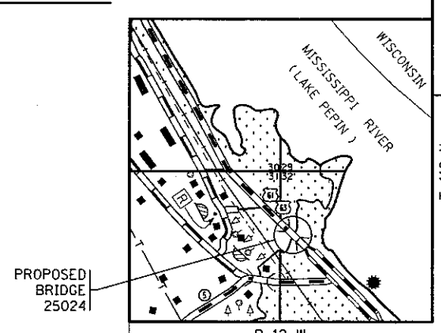
TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN

XXX



TYPICAL ROADWAY SECTION



INDEX MAP (FOUR SECTIONS)

Date: 1 APR 2010
Initials: CCS

LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

1. SPECIAL FEATURES:
   THE CHANNEL HAS DIKES UPSTREAM OF THE BRIDGE CONFINING THE WATER TO THE CHANNEL.
2. 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.
3. APPARENT HIGHWATER ELEVATION 677.49
   OBTAINED FROM:
   DIRT MARKS ON TREES
4. OTHER DATA: APPROX. VELOCITY OF WATER AT TIME OF SURVEY.
   EXTREME HIGH WATER: 683.03
   LOWEST FOUNDATION ELEV. = 683.29

HYDRAULIC ENGINEERS RECOMMENDATION

DATE: 06-15-2009

STREAM OR DITCH DESIGNATION: GILBERT CREEK

DRAINAGE AREA: 27.0 SQ. MI.

MAX. FLOOD ON RECORD: NA

MAXIMUM OBSERVED HIGHWATER ELEVATION: NA

DESIGN FLOOD (50 YR. FREQ.): 4300 C.F.S.

- HEADWATER ELEVATION: 684.6 FT.
- DESIGN MEAN VELOCITY THROUGH STRUCTURE: 8.3 F.P.S.
- TOTAL STAGE INCREASE: 0.1 FT.
- LOW MEMBER AT OR ABOVE ELEVATION: 686.4 FT.

WATERWAY AREA REQUIRED BELOW ELEV. 683.2 = 518.8 SQ. FT. AT RIGHT ANGLES TO CHANNEL

BASIC FLOOD (100 YR. FREQ.): 6300 C.F.S.

- HEADWATER ELEVATION: 685.5 FT.
- TOTAL STAGE INCREASE: 1.4 FT.
- MEAN VELOCITY THROUGH STRUCTURE: 8.9 F.P.S.

FLOWLINE ELEVATION: 673.3 FT. SKEW ANGLE: 0°

ESTIMATED PRELIMINARY TOTAL SCOUR AT PIER EL. 665.8 (500 OR OT YR. FREQ.)

HYDRAULIC ELEVATIONS REFERENCED TO NGVD29 DATUM

SCOUR CONFIRMATION RECOMMENDATION

DATE: XX-XX-XX

TOTAL SCOUR AT PIER EL. XXX.XX (500 OR OT YR. FREQ.)
SCOUR CODE: OBTAIN FROM HYDRAULIC ENGINEER

BRIDGE SURVEY SHEETS MADE FROM :
CALCULATED FIELD FILES COLLECTED ON 07/97

BENCH MARK ELEVATION 689.78 (NGVD 1929 ADJ.)
LOCATION 1.7 MILES NORTHWEST ON TRUNK HIGHWAY 61 FROM JUNCTION TRUNK HIGHWAY 61 AND TRUNK HIGHWAY 63 AT LAKE CITY, 19.0 FEET NORTHEAST OF TRUNK HIGHWAY 61, IN SOUTHEAST CONCRETE ABUTMENT OF TRUNK HIGHWAY 61 BRIDGE 6773 OVER GILBERT CREEK, 1.0 FOOT NORTHEAST OF CONCRETE PILLAR.

GSID STATION *9591

ALL ELEVATIONS IN PLAN REFERENCED TO NGVD29

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

PROPOSED BRIDGE LOCATED
1.6 MILES N.W. OF SOUTH
JUNCTION OF T.H. 63

SEC 31 T 112 N R 12 W

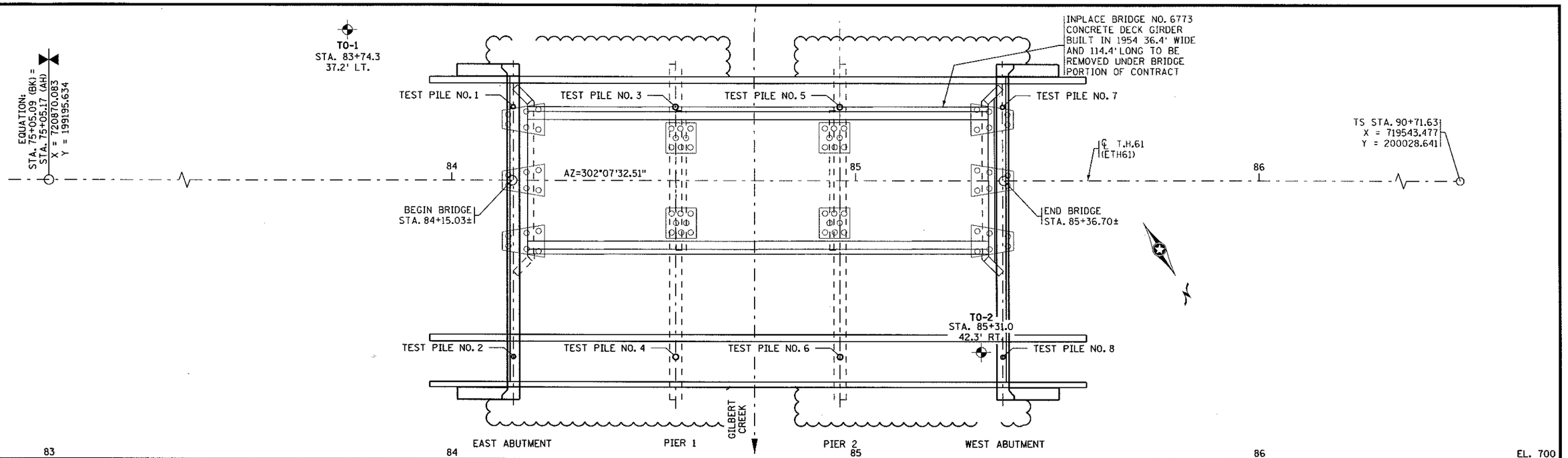
COUNTY: GOODHUE

CITY: LAKE CITY

BRIDGE NO. **25024**

STATE PROJECT NO. 2513-070

12/3/10



BORINGS

DR: CCS CHK: DTP

STATE PROJECT NO. 2513-25024 12/3/10

SHEET NO. 54 OF 54 SHEETS

BRIDGE NO. 25024