

DESIGN DATA

2014 AND CURRENT INTERIM AASHTO LRFD  
BRIDGE DESIGN SPECIFICATIONS

**CONSTRUCTION NOTES:**

THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION  
"STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

SEE SPECIAL PROVISIONS FOR ALL XXXX.6XX SERIES PAY ITEMS FOR  
ADDITIONAL REQUIREMENTS.

PLANS OF INPLACE BRIDGES 69101, 69102, AND 69839 ARE AVAILABLE AT THE  
MINNESOTA DEPARTMENT OF TRANSPORTATION.

MINNESOTA DEPARTMENT OF TRANSPORTATION	
<b>BRIDGE NO. 69101</b>	
RAMP A OVER THE SOO LINE RR & RAMP D JCT. 1-35 & T.H. 2 IN DULUTH	
SEC. 7 & 8	T 49 N R 14 W
CITY OF DULUTH	ST. LOUIS COUNTY
JOB NO. T1A570	STATE PROJ. NO. 6937-69101A
<b>BRIDGE NO. 69102</b>	
T.H. 35 S.B. TO T.H. 2 E.B. OVER RAMP T.H. 35 BRIDGE 69100 & 69109 AND TRACKS AT NO. JCT. T.H. 35 AND T.H. 2 IN DULUTH	
SEC. 7 & 8	T 49 N R 14 W
CITY OF DULUTH	ST. LOUIS COUNTY
JOB NO. T1A569	STATE PROJ. NO. 6937-69102B
<b>BRIDGE NO. 69839</b>	
MICHIGAN ST. TO MESABA AVE. & SUPERIOR ST. OVER MESABA AVE. & SUPERIOR ST. TO T.H. 35 S.B. 0.8 MILES NORTH OF JCT. 1-35 & T.H. 2 IN DULUTH	
SEC. 34	T 50 N R 14 W
CITY OF DULUTH	ST. LOUIS COUNTY
JOB NO. T18856	STATE PROJ. NO. 6933-69839B

LIST OF SHEETS

NO.	DESCRIPTION
1	BRIDGE DESCRIPTIONS & LIST OF SHEETS
2	SCHEDULE OF QUANTITIES FOR BRIDGES
3	BRIDGE 69839 GENERAL PLAN & ELEVATION
4	BRIDGE 69839 TRANSVERSE BRIDGE SECTION
5	BRIDGE 69839 BRIDGE DECK LAYOUT & FRAMING PLAN
6-7	BRIDGE 69839 REMOVAL DETAILS
8	BRIDGE 69839 CORNER DETAILS
9	BRIDGE 69839 ABUTMENT REPAIRS
10-15	BRIDGE 69839 STEEL REPAIR DETAILS
16-19	BRIDGE 69839 SUPERSTRUCTURE DETAILS
20-22	BRIDGE 69839 BARRIER DETAILS
23	BRIDGE 69839 CONDUIT SYSTEM (TYPE 1)
24	BRIDGE 69839 WATERPROOF EXPANSION DEVICE
25	BRIDGE 69839 STANDARD DETAILS
26	BRIDGE 69839 EXPANSION BEARING ASSEMBLY WITH GUIDE BARS
27	BRIDGE 69839 AS-BUILT BRIDGE DATA

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 AMK DATE 12/12/17  
LICENSED PROFESSIONAL ENGINEER

NAME: ANGELA M. KINGSLEY LIC NO. 47097

APPROVED Kevin Westerm  
DATE 12/13/17 STATE BRIDGE ENGINEER

TITLES:	DES: CTW	DR: CTW	APPROVED: <u>AMK</u>	BRIDGE NO. 69101 69102 69839
	CHK: AMK	CHK: AMK		
BRIDGE DESCRIPTIONS & LIST OF SHEETS			SHEET NO. 1 OF 27 SHEETS	

### SCHEDULE OF QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITIES FOR BRIDGES NUMBER			QUANTITY TOTAL
			69101②	69102②	69839	
2013.602	TCLP TEST	EACH	1	1	1	3
2104.601	REMOVE CONDUIT SYSTEM	LUMP SUM			1	1
2104.601	REMOVE REGULATED WASTE MATERIAL (BRIDGE)	LUMP SUM			1	1
2401.503	TYPE S (TL-4) 36" BARRIER CONCRETE (3S52)	LIN. FT.			714	714
2401.508	REINFORCEMENT BARS (EPOXY COATED)	POUND			91170	91170
2401.601	STRUCTURE EXCAVATION	LUMP SUM			1	1
2401.618	BRIDGE SLAB CONCRETE (3YHPC-M)	SQ. FT.			10483	10483
2401.618	SPECIAL SURFACE FINISH (INPLACE)	SQ. FT.			1360	1360
2402.503	EXPANSION JOINT DEVICES TYPE 5	LIN. FT.			67	67
2402.602	SHEAR STUDS	EACH			4566	4566
① 2402.602	SUPPLEMENTAL STEEL DIAPHRAGM	EACH			4	4
① 2402.602	SUPPLEMENTAL STIFFENER	EACH			24	24
① 2402.602	RECONSTRUCT LATERAL BRACING	EACH			4	4
① 2402.602	STEEL CORBEL BRACKET	EACH			4	4
③ 2433.502	ANCH TYPE REINF BARS (TYPE L)	EACH			30	30
2433.507	REMOVE CONCRETE	CU. YD.			6	6
2433.518	REMOVE CONC SLAB, CURBS, OVERLAY, AND BARRIER	SQ. FT.			10689	10689
2433.601	PRE-REMOVAL SURVEY	LUMP SUM			1	1
2433.602	GREASE EXP BEARING ASSEMBLIES	EACH			4	4
2433.602	RECONSTRUCT EXPANSION BEARING	EACH			4	4
2433.602	ARREST WELD CRACK	EACH			1	1
2433.618	RECONSTRUCT PAVING BRACKET AND WALL	SQ. FT.			100	100
2433.618	CONCRETE SURFACE REPAIR	SQ. FT.			400	400
2476.601	LEAD SUBSTANCES COLLECTION AND DISPOSAL	LUMP SUM			1	1
2476.601	WASTE COLLECTION AND DISPOSAL	LUMP SUM	0.3	0.7		1
2478.518	ORGANIC ZINC-RICH PAINT SYSTEM (OLD)	SQ. FT.	11600	38900	23100	73600
2478.618	CLEAN AND PAINT STEEL	SQ. FT.			1715	1715
2545.501	CONDUIT SYSTEM TYPE 1	LUMP SUM			1	1

- ① INCLUDES PAINTING. SEE SPECIAL PROVISIONS.
- ② SEE SPECIAL PROVISIONS FOR DESCRIPTION OF WORK AND ADDITIONAL INFORMATION.
- ③ QUANTITY BASED ON ESTIMATED LENGTH OF PAVING BRACKET TO REMAIN IN PLACE. SEE SPECIAL PROVISIONS.

CERTIFIED BY *AMK* 12/12/17  
 LICENSED PROFESSIONAL ENGINEER DATE  
 NAME: ANGELA M. KINGSLEY LIC. NO. 47097

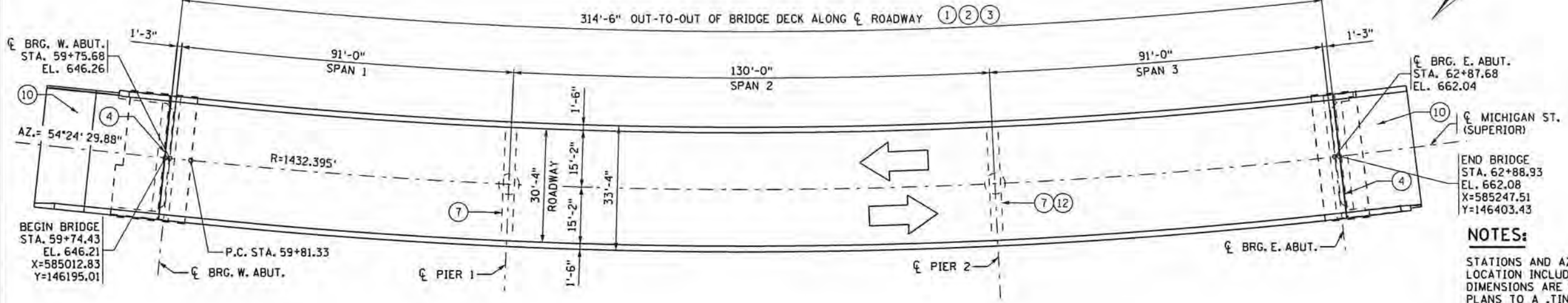
TITLE: SCHEDULE OF QUANTITIES FOR BRIDGES

DES: CTW DR: CTW APPROVED: *12-13-17*  
 CHK: AMK CHK: AMK  
 SHEET NO. 2 OF 27 SHEETS

BRIDGE NO.  
 69101  
 69102  
 69839

**DESIGN DATA**

2014 AND CURRENT INTERIM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS  
 LOAD AND RESISTANCE FACTOR DESIGN METHOD  
 HL-93 LIVE LOAD  
 MATERIAL DESIGN PROPERTIES:  
 REINFORCED CONCRETE:  
 $f'_c = 4$  KSI  $n = 8$   
 $f_y = 60$  KSI REINFORCEMENT  
 STRUCTURAL STEEL:  
 $f_y = 36$  KSI SPEC 3306  
 $f_y = 50$  KSI SPEC 3309  
 5,500 ADT (2007) OVER  
 9,250 ADT (2004) UNDER  
 DESIGN SPEED:  
 OVER = 30 MPH UNDER = 55 MPH  
 APPROXIMATE DECK AREA 10,483 SQ. FT.  
 HL-93 LRFR OPERATING RF = 1.29



**NOTES:**

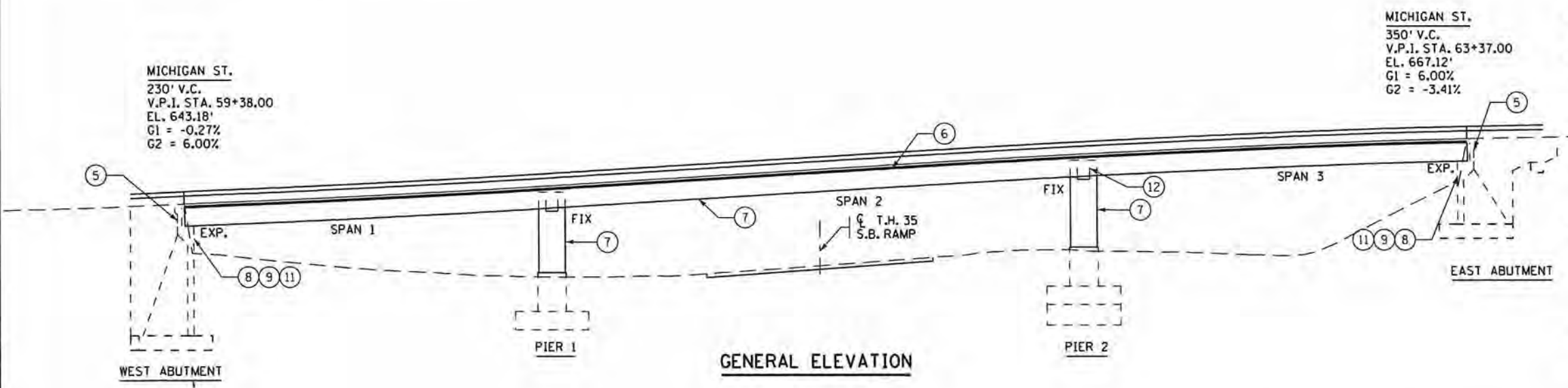
THE BAR SIZES SHOWN IN THIS PLAN ARE IN U.S. CUSTOMARY DESIGNATIONS.  
 THE FIRST OR FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE. BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301.  
 THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C1/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".  
 NO CUTTING WILL BE PERMITTED UNTIL THE CUTTING LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. REMOVAL AND RECONSTRUCTION SHALL CONFORM TO SPEC. 2433. ANY DAMAGE TO BEAMS AND SHEAR CONNECTORS DURING DECK REMOVAL SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.  
 APPROVED BONDING GROUT TO BE APPLIED TO ALL CONTACT SURFACES BETWEEN NEW AND INPLACE CONCRETE.

**GENERAL PLAN**

**NOTES:**

STATIONS AND AZIMUTHS ARE FROM THE GEOPAK ALIGNMENT. BRIDGE LOCATION INCLUDING X-Y COORDINATES, WORKING POINTS, AND DIMENSIONS ARE BASED ON A BEST FIT OF THE ORIGINAL 1968 PLANS TO A .TIN FILE. DECK ELEVATIONS ARE DERIVED FROM A PROFILE MADE FROM A .TIN FILE. SUBSTRUCTURE ELEVATIONS ARE BASED ON THE ORIGINAL PLANS ADJUSTED BY 0.076' TO CONFORM TO NAVD83. FIELD VERIFY ALL INFORMATION. SEE SPECIAL PROVISIONS FOR PRE-REMOVAL SURVEY REQUIREMENTS.  
 ADDITIONAL WORK IS DEFINED IN THE NOTES ON SHEET 4 .

- ① REMOVE INPLACE RAILINGS (INCLUDING EMBEDDED CONDUIT), CURBS, END BLOCKS, CONCRETE DECK AND WEARING COURSE. DECK SHALL BE REMOVED USING SAWCUTTING AND SLABBING TO PROTECT THE EXISTING SHEAR CONNECTORS AND STEEL SUPERSTRUCTURE. SEE REMOVAL SHEETS FOR DETAILS, INCLUDED IN ITEM "REMOVE CONC SLAB, CURBS, OVERLAY, AND BARRIER". REMOVE PORTIONS OF THE WINGWALLS, CURBS, AND BARRIERS ON APPROACHES, INCLUDED IN ITEM "REMOVE CONCRETE".
- ② PLACE NEW DECK USING "BRIDGE SLAB CONCRETE (3YHPC-M)".
- ③ PLACE NEW 36" BARRIERS TYPE S ON BOTH EDGES OF BRIDGE DECK AND APPROACH PANELS, INCLUDED IN ITEM "TYPE S (TL-4) 36" BARRIER CONCRETE (3S52)". SEE SPECIAL PROVISIONS.
- ④ INSTALL WATERPROOF EXPANSION JOINT DEVICES, INCLUDED IN ITEM "EXPANSION JOINT DEVICES TYPE 5".
- ⑤ RECONSTRUCT PORTIONS OF ABUTMENT PAVING BRACKET AND BACKWALLS, INCLUDED IN ITEM "RECONSTRUCT PAVING BRACKET AND WALL".
- ⑥ CLEAN AND PRIME PAINT TOP FLANGE, INCLUDED IN ITEM "CLEAN AND PAINT STEEL". SEE SPECIAL PROVISIONS.
- ⑦ PAINT EXISTING STEEL MEMBERS WITH ASTM-STD-595A COLOR 10075 (REDDISH BROWN). LIMITS OF PAINTING INCLUDE EXTERIOR FACES OF PIER CAPS AND STEEL COLUMNS, BEARINGS AT ABUTMENTS, ALL EXPOSED FACES OF GIRDERS, AND ALL CROSS FRAMES, DIAPHRAGMS & BRACING, INCLUDED IN ITEM "ORGANIC ZINC-RICH PAINT SYSTEM (OLD)". SEE SPECIAL PROVISIONS.
- ⑧ REMOVE UNSOUND CONCRETE ON SOUTHWEST WINGWALL, SOUTHEAST WINGWALL, AND NORTHEAST WINGWALL. REPAIR WITH SHOTCRETE AND APPLY SPECIAL SURFACE FINISH. INCLUDED IN ITEM "CONCRETE SURFACE REPAIR".
- ⑨ APPLY SPECIAL SURFACE FINISH ON EXPOSED FACES OF ABUTMENTS (INCLUDING ABUTMENT SEATS) AND WINGWALLS, INCLUDED IN ITEM "SPECIAL SURFACE FINISH (INPLACE)".
- ⑩ FOR APPROACH PANEL REMOVAL AND RECONSTRUCTION, SEE GRADING PLANS. FOR THE RECONSTRUCTION OF APPROACH PANEL CONCRETE BARRIERS, SEE "BARRIER LAYOUT" SHEETS.
- ⑪ CLEAN AND GREASE BEARING ASSEMBLIES OF INTERIOR GIRDERS. BLAST, CLEAN, AND PAINT PRIOR TO GREASING. INCLUDED IN ITEM "GREASE EXP BEARING ASSEMBLIES". RECONSTRUCT EXPANSION BEARING ASSEMBLIES OF EXTERIOR GIRDERS, INCLUDED IN ITEM "RECONSTRUCT EXPANSION BEARING". SEE SPECIAL PROVISIONS.
- ⑫ REPAIR FATIGUE CRACK AT INTERSECTION OF EAST FACE OF PIER 2 AND SOUTH FACE OF GIRDER C. INCLUDED IN ITEM "ARREST WELD CRACK"



**GENERAL ELEVATION**

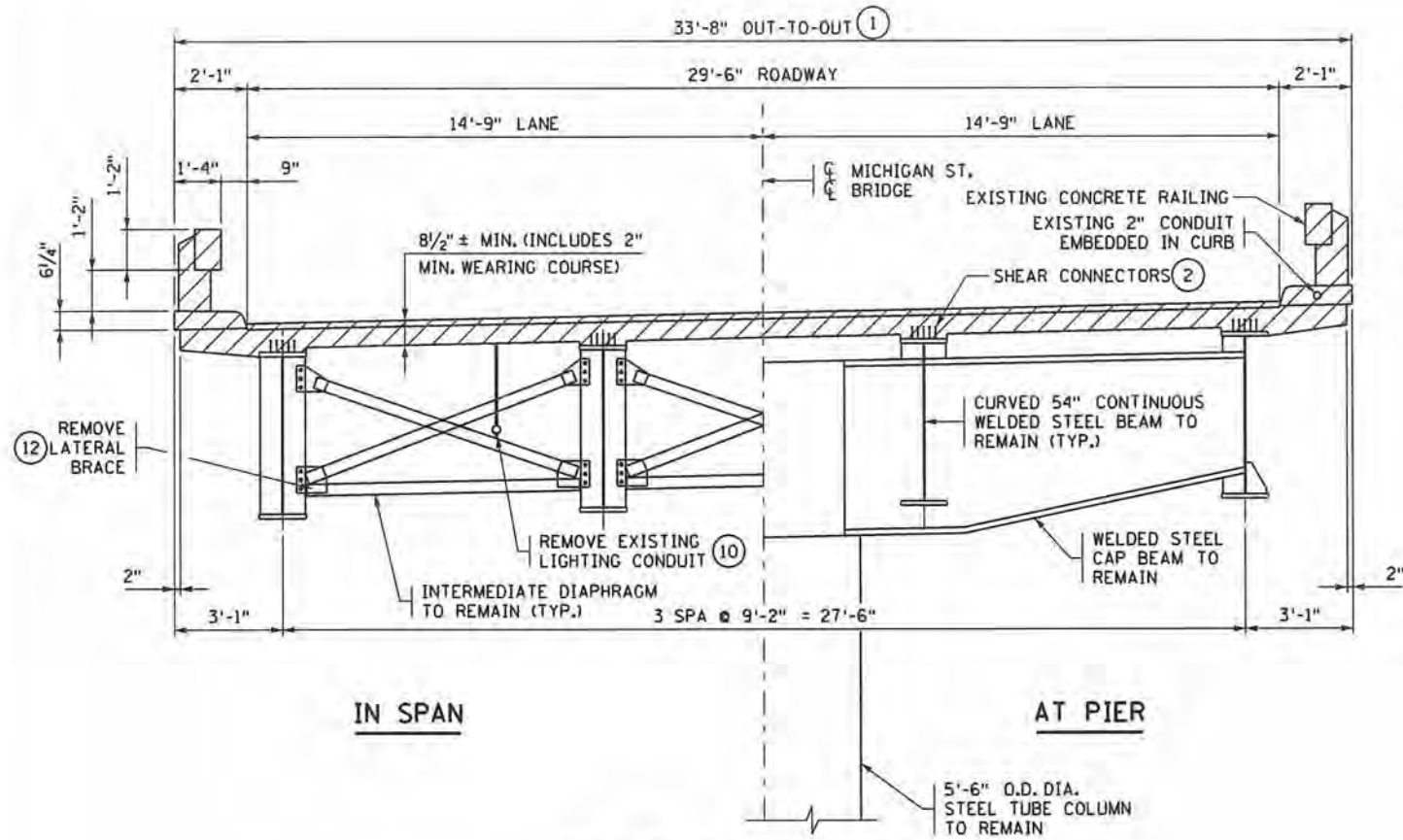
CERTIFIED BY *Angela M. Kingsley* 2/12/17  
 LICENSED PROFESSIONAL ENGINEER DATE  
 NAME: ANGELA M. KINGSLEY LIC. NO. 47097

TITLE: GENERAL PLAN & ELEVATION

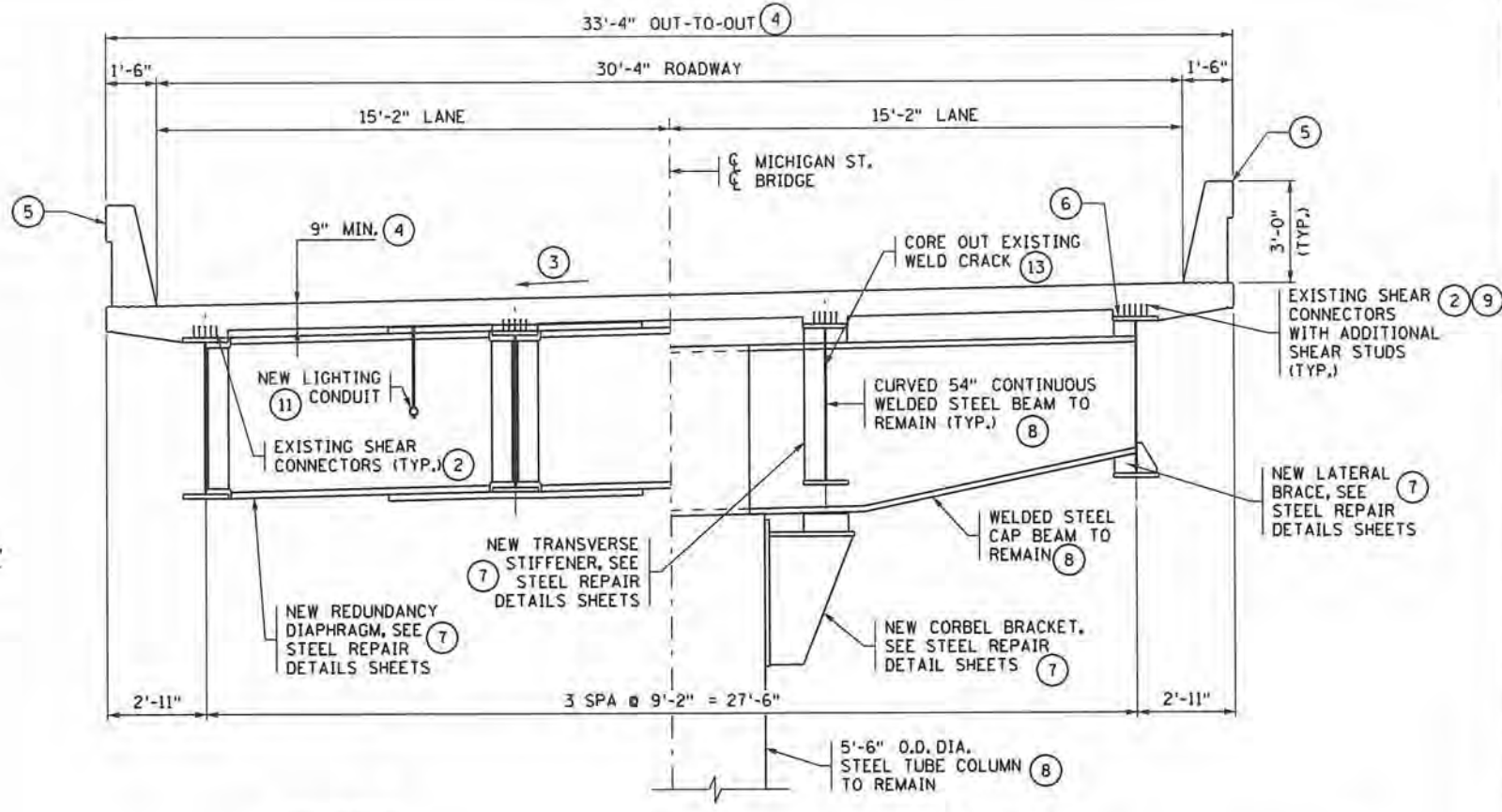
DES: CTW DR: CTW APPROVED: 12/13/17  
 CHK: AMK CHK: AMK  
 SHEET NO. 3 OF 27 SHEETS

BRIDGE NO. 69839

12/12/2017 C:\B69839\_S1203.dgn



**INPLACE TRANSVERSE SECTION**  
(SHOWING REMOVAL)



**IN SPAN NORTH SIDE**      **AT PIER SOUTH SIDE**  
**PROPOSED TRANSVERSE SECTION**  
(SHOWING RECONSTRUCTION)

SUPERELEVATION TABLE (3)	
59+10	-0.020'/FT
59+58	0.000'/FT
60+06	0.020'/FT

**NOTES**

- 1 REMOVE INPLACE RAILINGS (INCLUDING EMBEDDED CONDUIT), CURBS, END BLOCKS, CONCRETE DECK AND WEARING COURSE. DECK SHALL BE REMOVED USING SAWCUTTING AND SLABBING TO PROTECT THE EXISTING SHEAR CONNECTORS AND STEEL SUPERSTRUCTURE. SEE REMOVAL SHEETS FOR DETAILS, INCLUDED IN ITEM "REMOVE CONCRETE SLAB, CURBS, OVERLAY AND BARRIER". REMOVE PORTIONS OF THE WINGWALL APPROACH CURBS AND BARRIERS, INCLUDED IN ITEM "REMOVE CONCRETE".
- 2 SALVAGE ALL SHEAR CONNECTORS AT TOP OF BEAMS. ANY SHEAR CONNECTORS DAMAGED DURING DECK REMOVAL SHALL BE REPLACED AT CONTRACTOR'S EXPENSE. SEE SPECIAL PROVISIONS.
- 3 SEE SUPERELEVATION TABLE FOR VALUES. ALL SUPERELEVATION TRANSITIONS ARE LINEAR.
- 4 PLACE NEW DECK USING "BRIDGE SLAB CONCRETE (3YHPC-M)".
- 5 PLACE NEW 36" BARRIERS TYPE S ON BOTH EDGES OF BRIDGE DECK AND APPROACH PANELS, INCLUDED IN ITEM "TYPE S (TL-4) 36" BARRIER CONCRETE (3S52)". ORIENT VERTICAL AXIS OF NORTH AND SOUTH BARRIERS PLUMB ON THE BRIDGE AND THE APPROACH PANELS.
- 6 CLEAN AND PRIME PAINT ALL TOP FLANGES, INCLUDED IN ITEM "CLEAN AND PAINT STEEL". SEE SPECIAL PROVISIONS.
- 7 INSTALL NEW REDUNDANCY DIAPHRAGMS, INCLUDED IN ITEM "SUPPLEMENTAL STEEL DIAPHRAGM". INSTALL NEW TRANSVERSE STIFFENERS, INCLUDED IN ITEM "SUPPLEMENTAL STIFFENER". INSTALL NEW CORBEL BRACKETS, INCLUDED IN ITEM "STEEL CORBEL BRACKET". INSTALL NEW LATERAL BRACES THAT CORRESPOND WITH NEW REDUNDANCY DIAPHRAGMS, INCLUDED IN ITEM "RECONSTRUCT LATERAL BRACING". SEE SUPERSTRUCTURE DETAILS SHEETS.
- 8 PAINT EXISTING STEEL MEMBERS WITH ASTM-STD-595A COLOR 10075 (REDDISH BROWN). LIMITS OF PAINTING INCLUDE EXTERIOR FACES OF PIER CAPS AND STEEL COLUMNS, BEARINGS AT ABUTMENTS, ALL EXPOSED FACES OF GIRDERS, AND ALL DIAPHRAGMS, INCLUDED IN ITEM "ORGANIC ZINC-RICH PAINT SYSTEM (OLD)". SEE SPECIAL PROVISIONS.
- 9 INSTALL ADDITIONAL SHEAR STUDS AS INDICATED ON STEEL REPAIR DETAILS SHEETS AND SUPERSTRUCTURE DETAILS SHEETS, INCLUDED IN ITEM "SHEAR STUDS".
- 10 REMOVE EXISTING CONDUIT FOR UNDERDECK LIGHTING, INCLUDED IN ITEM "REMOVE CONDUIT SYSTEM".
- 11 INSTALL NEW CONDUIT SYSTEM FOR UNDERDECK LIGHTING, INCLUDED IN ITEM "CONDUIT SYSTEM TYPE I".
- 12 REMOVE INPLACE LATERAL BRACES THAT CONFLICT WITH NEW REDUNDANCY DIAPHRAGMS, INCLUDED IN "RECONSTRUCT LATERAL BRACING"
- 13 CORE OUT EXISTING 1/2" FILLET WELD CRACK IN THE WEB OF GIRDER C WHERE IT CONNECTS TO THE EAST SIDE OF THE PIER 2 CAP BEAM, INCLUDED IN THE ITEM "ARREST WELD CRACK".

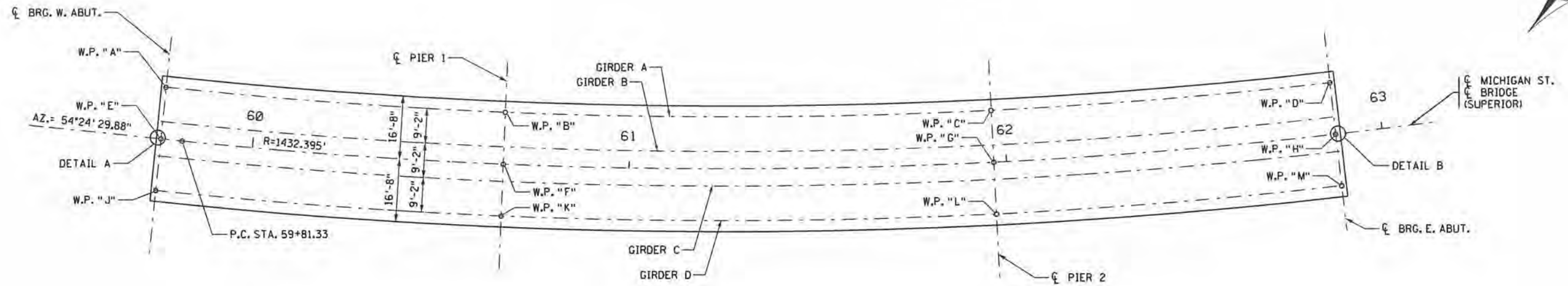
HATCHED AREA DENOTES PORTIONS OF EXISTING SUPERSTRUCTURE REMOVAL.

CERTIFIED BY *James W. Carter III* 12-12-2017  
LICENSED PROFESSIONAL ENGINEER DATE  
 NAME: JAMES W. CARTER III LIC. NO. 53305

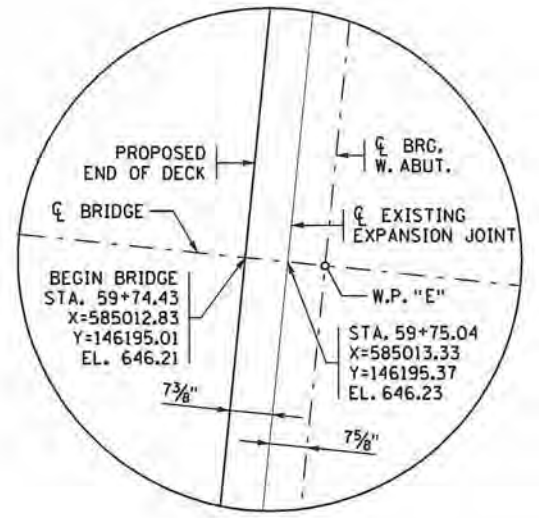
TITLE: TRANSVERSE BRIDGE SECTION

DES: JJO DR: JJO APPROVED: 12-13-17  
 CHK: JWC CHK: JWC  
 SHEET NO. 4 OF 27 SHEETS

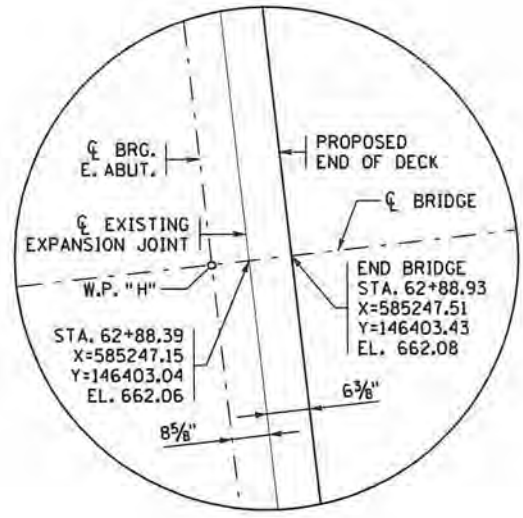
BRIDGE NO. 69839



WORKING POINT PAYOUT



DETAIL A



DETAIL B

WORKING POINTS DATA				ELEVATIONS
POINT	STATION	X-COORDIN	Y-COORDIN	TOP OF ROADWAY
A	59+75.68	585005.845	146206.919	646.15
B	60+66.68	585077.673	146261.423	650.63
C	61+96.68	585173.912	146346.885	658.26
D	62+87.68	585236.479	146411.734	661.76
E	59+75.68	585013.848	146195.738	646.26
F	60+66.68	585086.327	146250.738	650.90
G	61+96.68	585183.499	146337.029	658.54
H	62+87.68	585246.673	146402.506	662.04
J	59+75.68	585021.851	146184.557	646.36
K	60+66.68	585094.981	146240.053	651.18
L	61+96.68	585193.086	146327.172	658.81
M	62+87.68	585256.866	146393.278	662.31

	CL BRG. W. ABUT.	SPAN 1										CL BRG. PIER 1	SPAN 2										CL BRG. PIER 2	
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	FS1		FS2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9		FS3
GIRDER A	0.000	-0.021	-0.037	-0.048	-0.051	-0.048	-0.039	-0.027	-0.016	-0.009	-0.009	-0.008	-0.017	-0.030	-0.064	-0.100	-0.125	-0.135	-0.126	-0.101	-0.066	-0.031	-0.017	-0.009
GIRDER B	0.000	-0.021	-0.038	-0.048	-0.051	-0.046	-0.036	-0.022	-0.010	-0.003	-0.003	-0.003	-0.012	-0.025	-0.062	-0.100	-0.128	-0.139	-0.128	-0.100	-0.062	-0.025	-0.011	-0.003
GIRDER C	0.000	-0.022	-0.039	-0.049	-0.052	-0.047	-0.037	-0.023	-0.010	-0.004	-0.003	-0.003	-0.012	-0.027	-0.065	-0.105	-0.134	-0.145	-0.134	-0.105	-0.065	-0.027	-0.012	-0.003
GIRDER D	0.000	-0.023	-0.042	-0.053	-0.057	-0.052	-0.042	-0.029	-0.016	-0.009	-0.009	-0.009	-0.019	-0.034	-0.074	-0.115	-0.145	-0.156	-0.146	-0.117	-0.076	-0.035	-0.019	-0.010

	FS4	SPAN 3									CL BRG. E. ABUT.
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
	-0.009	-0.009	-0.016	-0.027	-0.039	-0.048	-0.051	-0.048	-0.038	-0.021	0.000
	-0.003	-0.004	-0.011	-0.022	-0.036	-0.046	-0.050	-0.048	-0.037	-0.021	0.000
	-0.003	-0.004	-0.010	-0.023	-0.037	-0.047	-0.052	-0.049	-0.039	-0.022	0.000
	-0.009	-0.009	-0.016	-0.029	-0.042	-0.052	-0.057	-0.053	-0.042	-0.023	0.000

GIRDER CONCRETE DEFLECTIONS  
(FT. - NEGATIVE VALUES ARE DOWNWARD) ①

NOTES

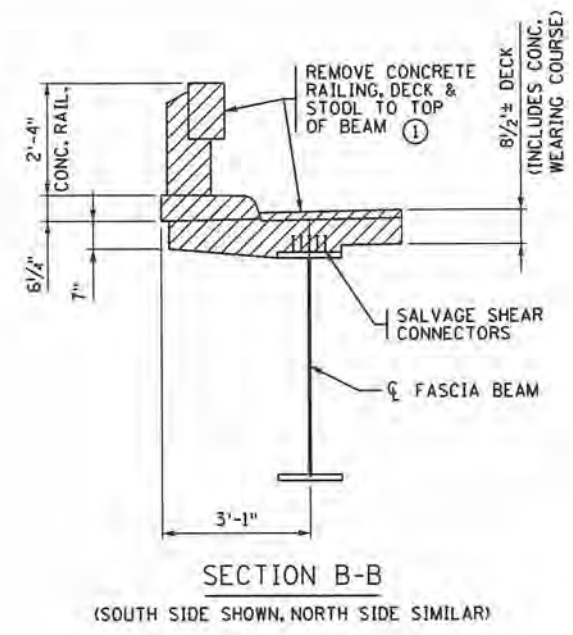
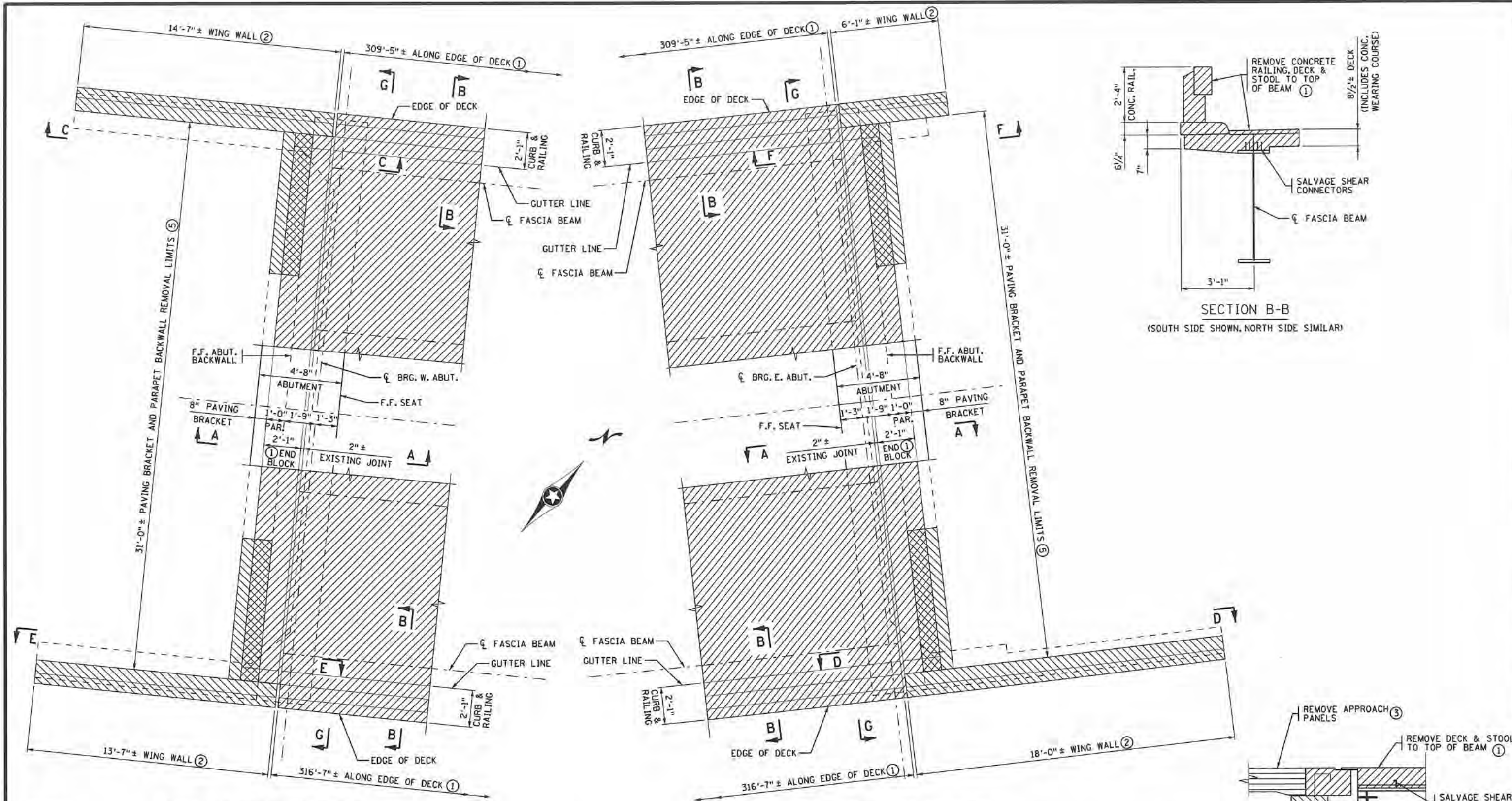
NO SURVEY HAS BEEN TAKEN TO ASSIST IN THE DEVELOPMENT OF THESE PLANS. STATIONS AND AZIMUTHS ARE FROM THE GEOPAK ALIGNMENT. BRIDGE LOCATION INCLUDING X-Y COORDINATES, WORKING POINTS, AND DIMENSIONS ARE BASED ON A BEST FIT OF THE ORIGINAL 1968 PLANS TO A .TIN FILE. DECK ELEVATIONS ARE DERIVED FROM A PROFILE MADE FROM A .TIN FILE. FIELD VERIFY ALL INFORMATION. SEE SPECIAL PROVISIONS FOR PRE-REMOVAL SURVEY REQUIREMENTS.

DETAILS A AND B ARE PROVIDED FOR FIELD VERIFICATION OF BRIDGE LOCATION AND LENGTH. COMPARE EXISTING EXPANSION JOINT STATION, COORDINATES AND ELEVATION TO VALUES DETERMINED IN PRE-REMOVAL SURVEY.

① GIRDER CONCRETE DEFLECTIONS ACCOUNT FOR THE WEIGHT OF THE NEW DECK AND BARRIERS.

12/11/2017 CBR69839\_51205.dgn

CERTIFIED BY <i>James W. Carter III</i> LICENSED PROFESSIONAL ENGINEER NAME: JAMES W. CARTER III	DATE 12-12-2017 LIC. NO. 53305	TITLE: BRIDGE DECK LAYOUT & FRAMING PLAN	DES: JJO	DR: JJO	APPROVED: 12/13/17	BRIDGE NO. 69839
			CHK: JWC	CHK: JWC	SHEET NO. 5 OF 27 SHEETS	



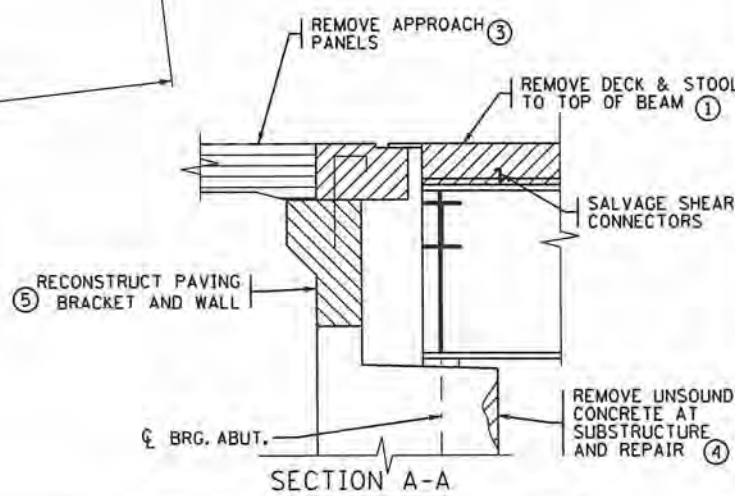
**NOTES** **PLAN VIEW WEST ABUTMENT**

- SEE SHEET NO. 7 FOR SECTIONS C-C THROUGH G-G.
- F.F. DENOTES FRONT FACE  
B.F. DENOTES BACK FACE
- HATCHED AREA DENOTES DECK AND END BLOCK REMOVAL.
- HATCHED AREA DENOTES PARAPET AND WINGWALL REMOVAL.
- HATCHED AREA DENOTES APPROACH PANEL REMOVAL. SEE ROADWAY PLANS

- ① INCLUDED IN ITEM "REMOVE CONCRETE SLAB, CURBS, OVERLAY, AND BARRIER".
- ② INCLUDED IN ITEM "REMOVE CONCRETE".
- ③ REMOVAL OF CONCRETE APPROACH PANELS AND RETAINING WALL TO CONSTRUCT NEW APPROACH PANELS IS INCLUDED IN THE GRADING PLANS.
- ④ REMOVE ALL AREAS OF UNSOUND CONCRETE AND REPAIR WITH SHOTCRETE PER THE SPECIAL PROVISIONS AND AS APPROVED BY ENGINEER IN FIELD. INCLUDED IN ITEM "CONCRETE SURFACE REPAIR".

**PLAN VIEW EAST ABUTMENT**

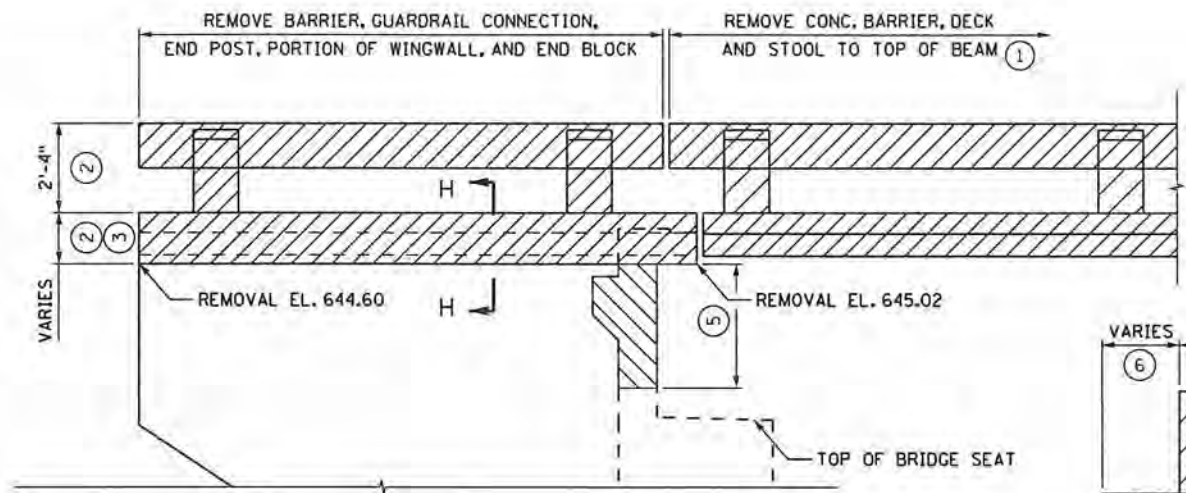
- ⑤ REMOVE AND RECONSTRUCT ONLY AREAS OF UNSOUND CONCRETE PER THE SPECIAL PROVISIONS AND AS APPROVED BY THE ENGINEER IN FIELD. SEE SECTION J-J ON SHEET NO. 7 FOR DETAILS OF REINFORCEMENT TO REMAIN, INCLUDED IN ITEM "RECONSTRUCT PAVING BRACKET AND WALL"



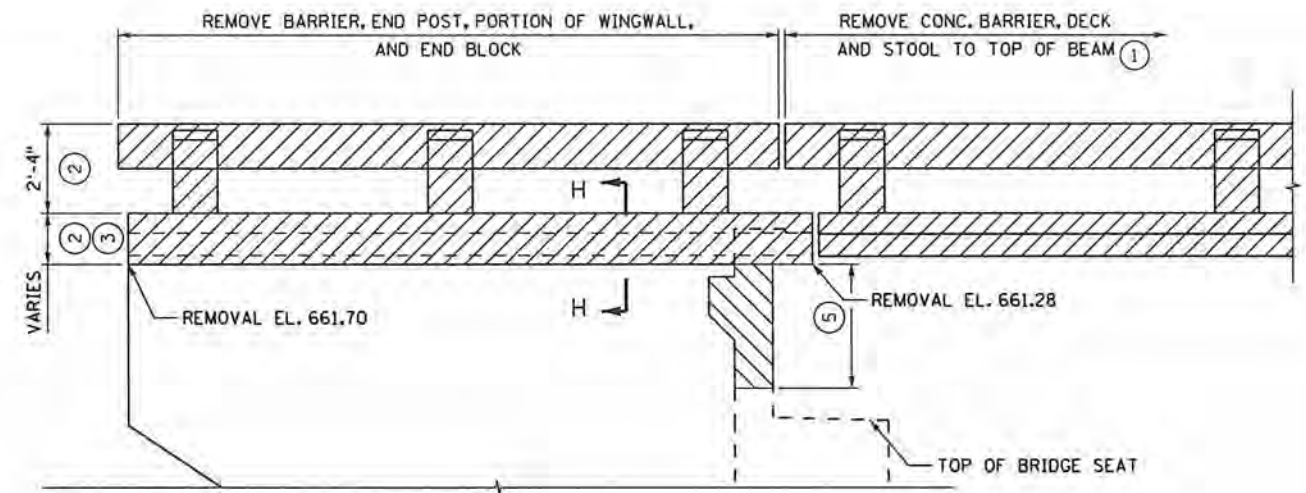
CERTIFIED BY: LICENSED PROFESSIONAL ENGINEER NAME: JAMES W. CARTER III	DATE: 12-12-2017 L.I.C. NO. 53305	TITLE: REMOVAL DETAILS (1 OF 2)	DES: JJO    DR: JJO    APPROVED: 12-13-17 CHK: JWC    CHK: JWC SHEET NO. 6 OF 27 SHEETS
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BRIDGE NO. 69839

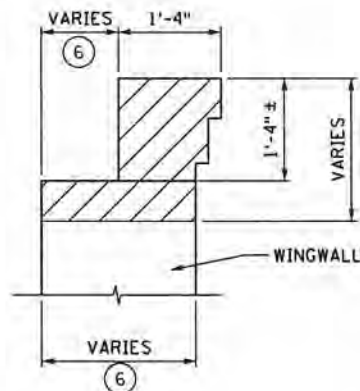
12/11/2017 CBR69839\_REM01.dgn



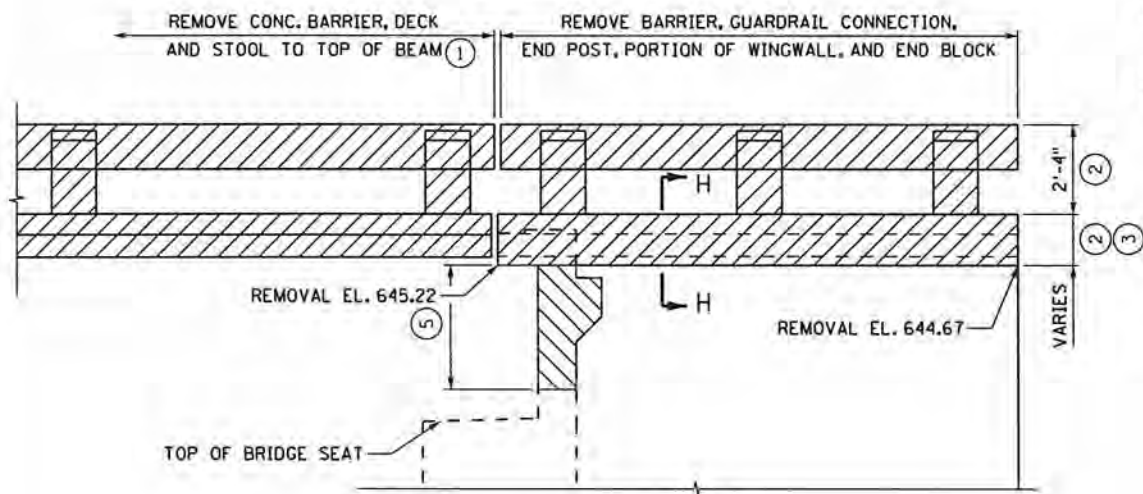
**SECTION C-C**  
(NW CORNER)



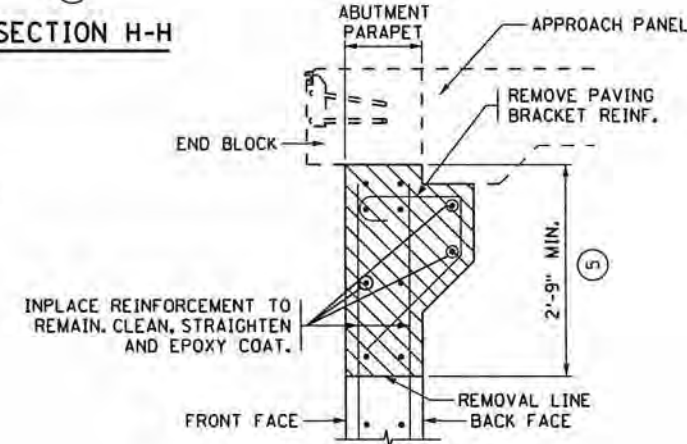
**SECTION D-D**  
(SE CORNER)



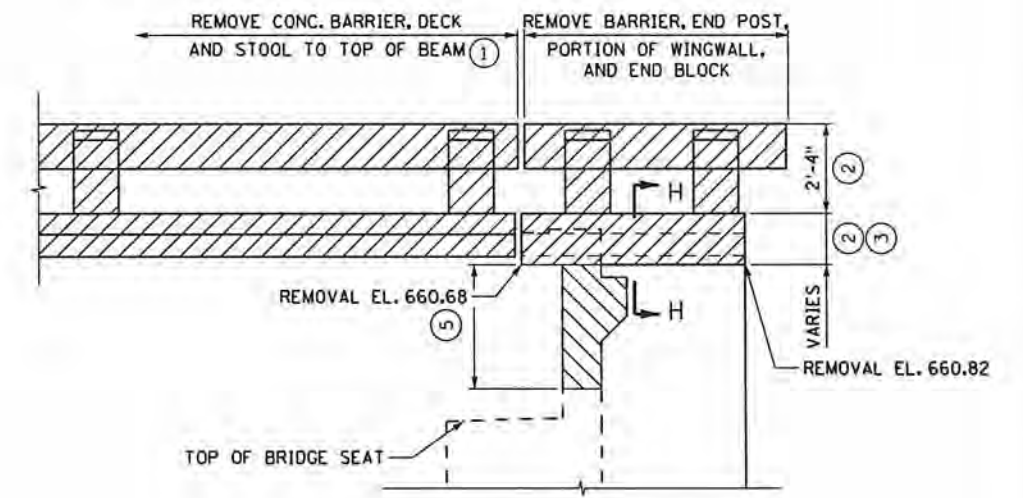
**SECTION H-H**



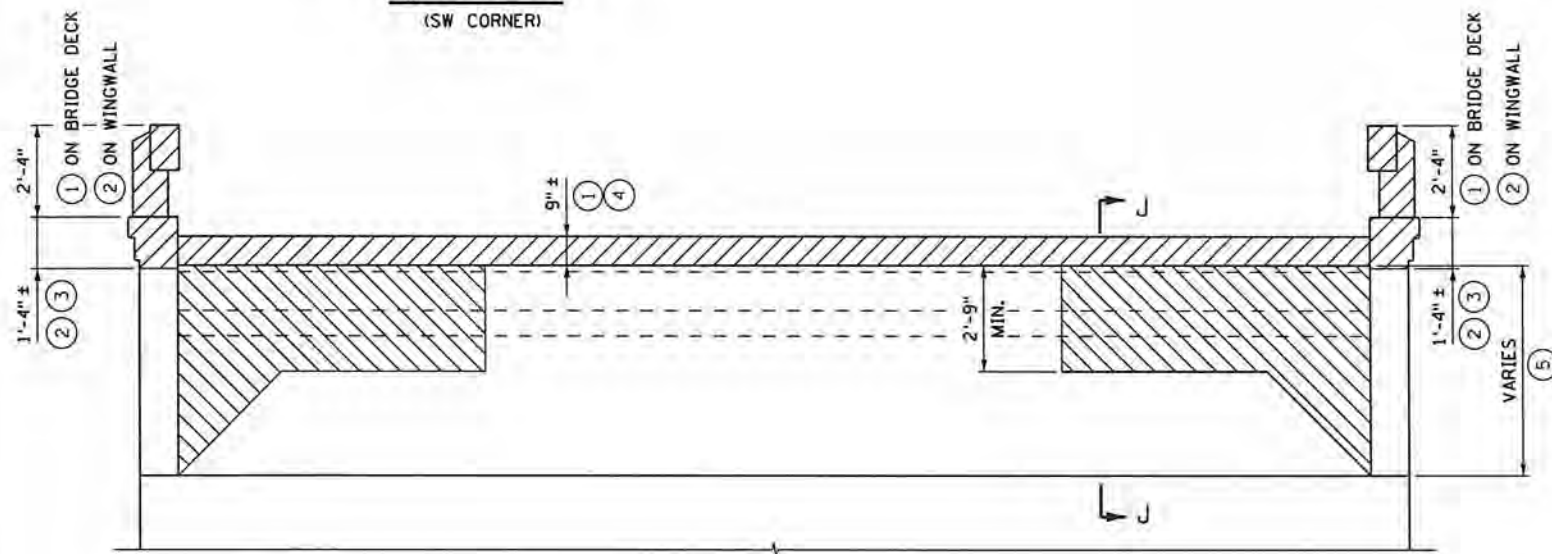
**SECTION E-E**  
(SW CORNER)



**SECTION J-J**



**SECTION F-F**  
(NE CORNER)



**SECTION G-G**

**NOTES:**

- REMOVE CONCRETE, REINFORCEMENT, GUARDRAIL CONNECTIONS, AND JOINT MATERIAL IN HATCHED AREAS
- RECONSTRUCT PAVING BRACKET AND WALL IN HATCHED AREAS
- FOR LOCATIONS OF SECTIONS C-C THROUGH G-G SEE SHEET NO. 6.
- ① INCLUDED IN "REMOVE CONCRETE BRIDGE SLAB, CURBS, OVERLAY, AND BARRIER"
- ② INCLUDED IN "REMOVE CONCRETE"
- ③ DEPICTS PORTION OF WINGWALL TO BE REMOVED, SEE SECTION H-H
- ④ END BLOCK
- ⑤ REMOVE PARAPET WALL AND PAVING BRACKET TO SOUND CONCRETE AS APPROVED BY ENGINEER IN FIELD AND IN ACCORDANCE WITH THE SPECIAL PROVISIONS. INCLUDED IN ITEM "RECONSTRUCT PAVING BRACKET AND WALL".
- ⑥ ABUTMENT WINGWALL THICKNESS VARIES. SEE EXISTING PLANS.

12/12/2017 CBR69839\_REMO2.dgn

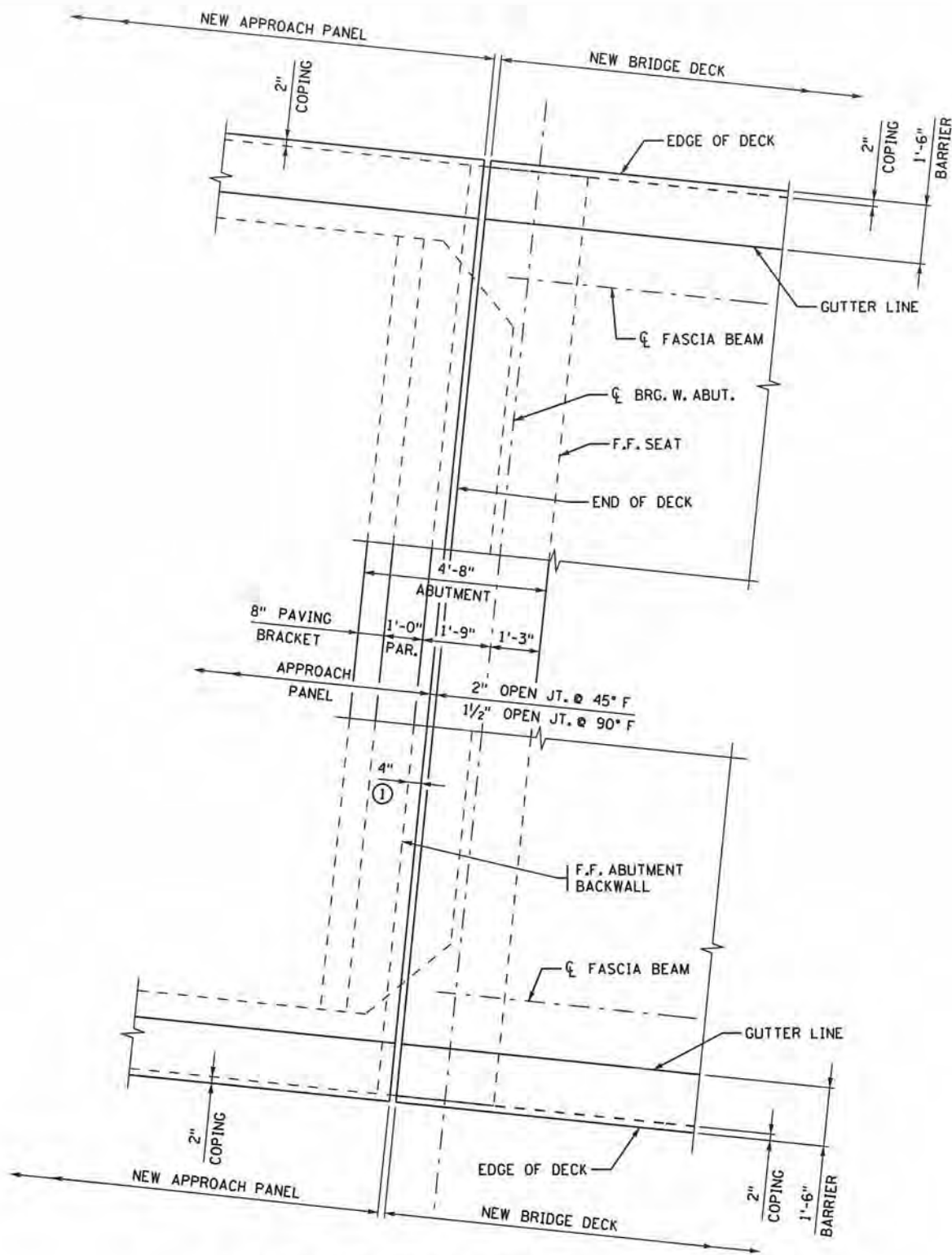
CERTIFIED BY: *AM Kingsley* 12/12/17  
LICENSED PROFESSIONAL ENGINEER DATE  
 NAME: ANGELA M. KINGSLEY LIC. NO. 47097

TITLE:  
 REMOVAL DETAILS (2 OF 2)

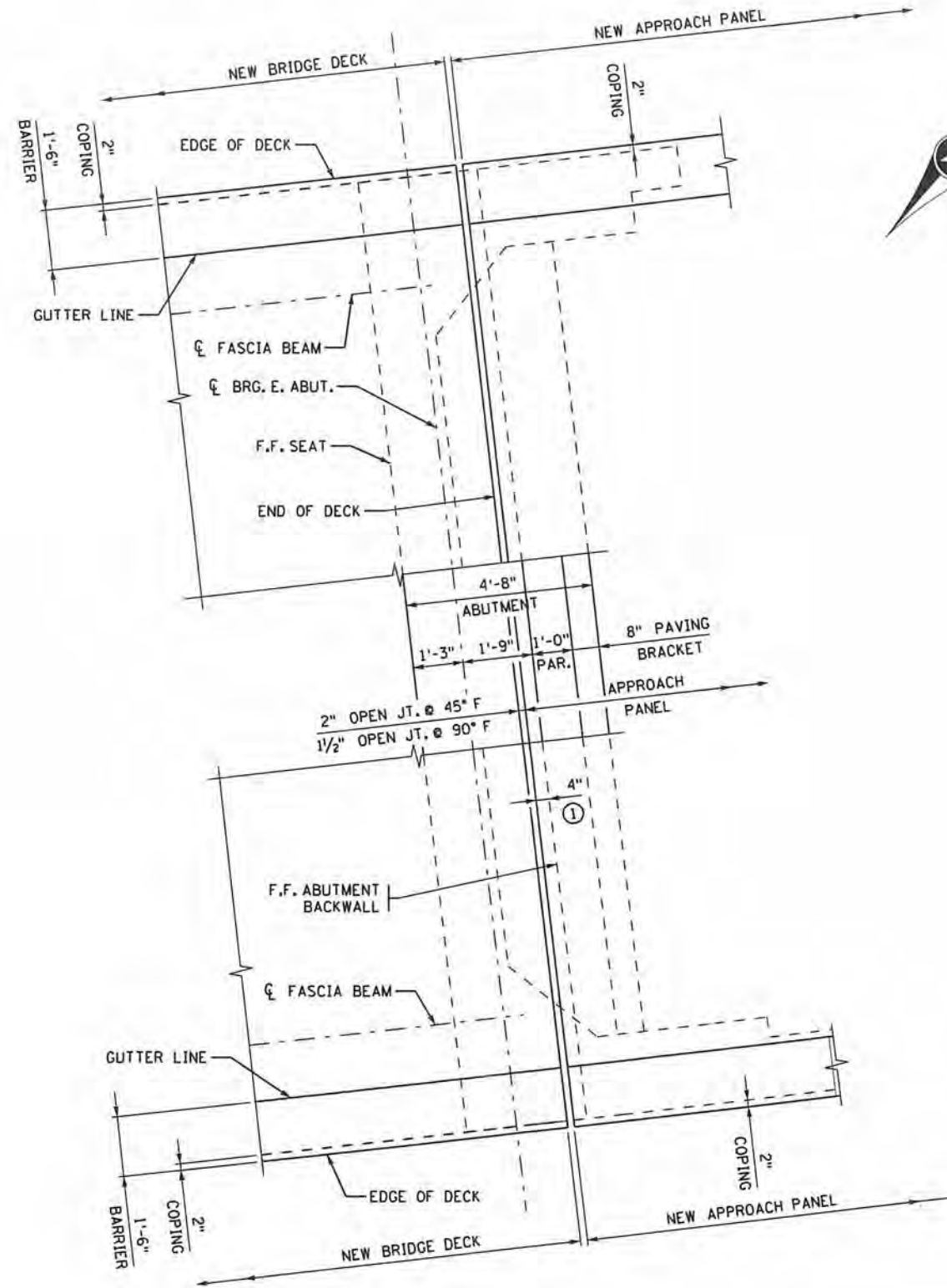
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CHK: AMK	CHK: AMK	

SHEET NO. 7 OF 27 SHEETS

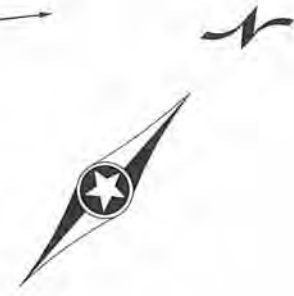
BRIDGE NO.  
 69839



PLAN VIEW WEST ABUTMENT



PLAN VIEW EAST ABUTMENT



NOTES

F.F. DENOTES FRONT FACE  
B.F. DENOTES BACK FACE

- ① HOLD CONSTANT THE DIMENSION INDICATED. MEASURE FROM NEW FACE OF ABUTMENT BACKWALL TO END OF NEW APPROACH PANEL.

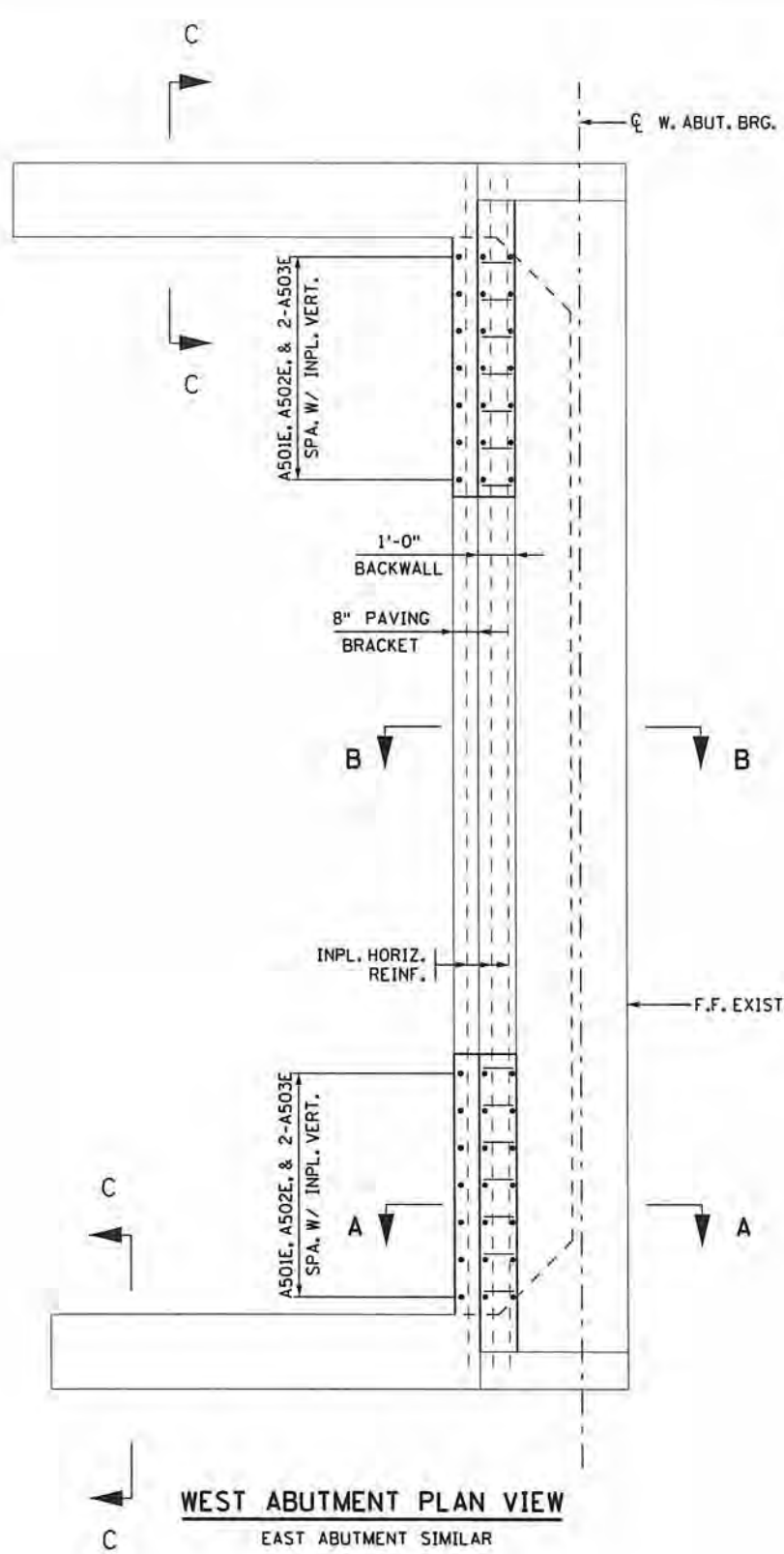
CERTIFIED BY *James W. Carter III* 12-12-2017 DATE  
 LICENSED PROFESSIONAL ENGINEER  
 NAME: JAMES W. CARTER III LIC. NO. 53305

TITLE: CORNER DETAILS

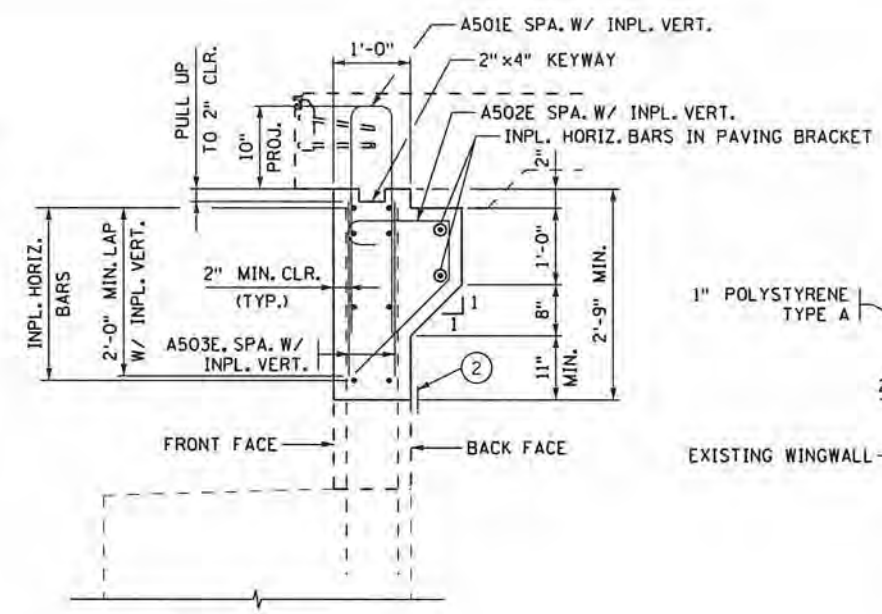
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 CHK: JWC CHK: JWC  
 SHEET NO. 8 OF 27 SHEETS

BRIDGE NO. 69839

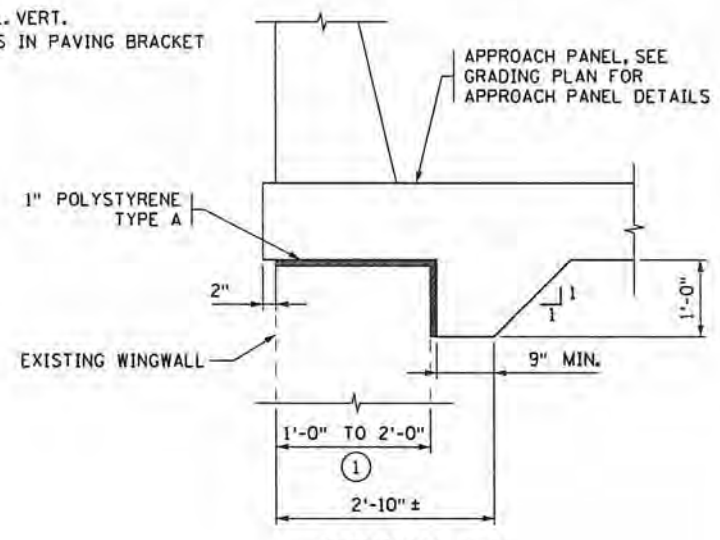




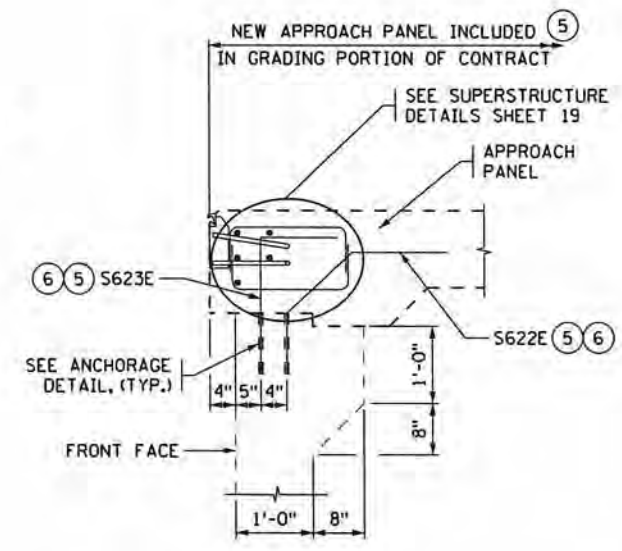
**WEST ABUTMENT PLAN VIEW**  
EAST ABUTMENT SIMILAR



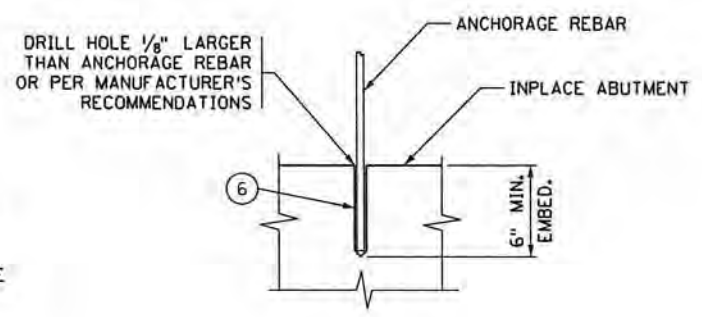
**SECTION A-A**  
LOCATION WHERE PAVING BRACKET AND WALL RECONSTRUCTED



**SECTION C-C**



**SECTION B-B**  
LOCATION WHERE PAVING BRACKET AND WALL REMAIN



**ANCHORAGE DETAIL**

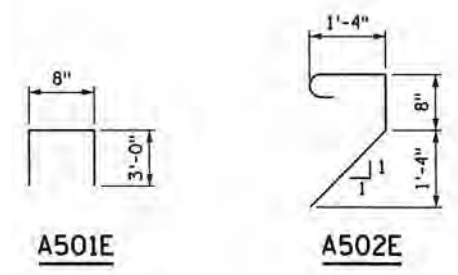
**SUMMARY OF QUANTITIES FOR TWO ABUTMENTS**

SPECIAL SURFACE FINISH (INPLACE)	1360 SQ. FT.
REMOVE CONCRETE	6 CU. YD.
RECONSTRUCT PAVING BRACKET AND WALL	100 SQ. FT.
CONCRETE SURFACE REPAIR	400 SQ. FT.

**BILL OF REINFORCEMENT FOR TWO ABUTMENTS**

BAR	NO.	LENGTH	SHAPE	LOCATION
A501E	32*	6'-8"	U	BACKWALL
A502E	32*	4'-6"	7	PAVING BRACKET
A503E	64*	2'-3"*	—	BACKWALL VERTICAL

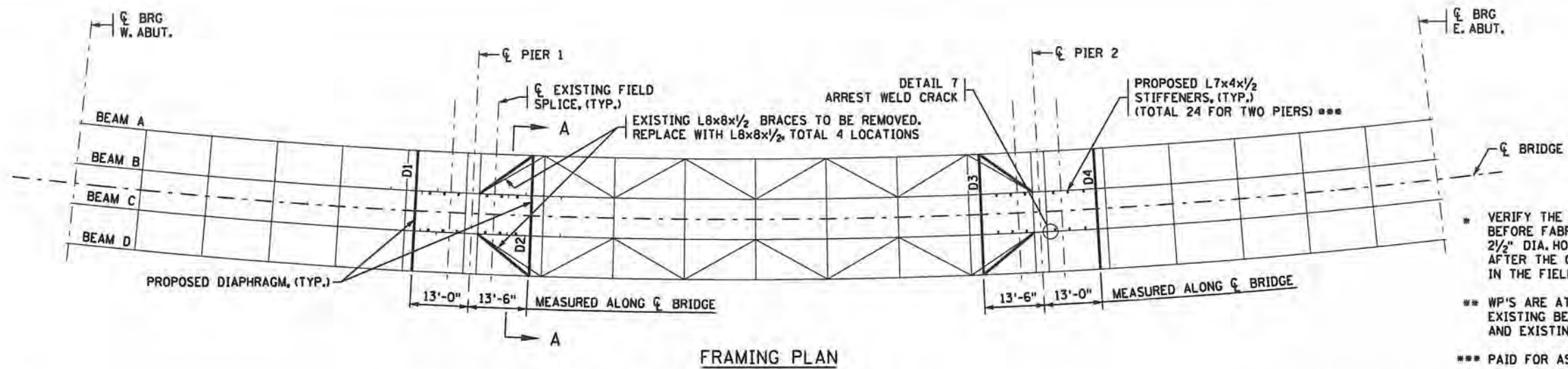
\* TO BE ADJUSTED BASED ON REMOVAL LIMITS DETERMINED IN FIELD. SEE SPECIAL PROVISIONS.



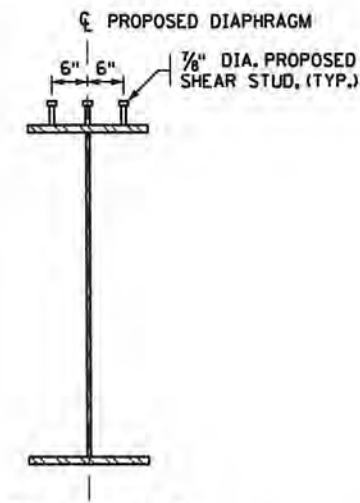
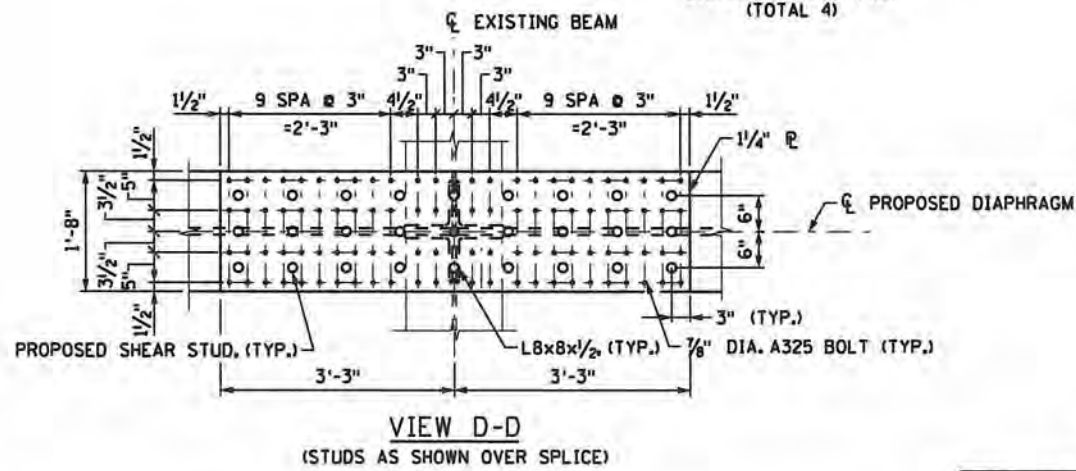
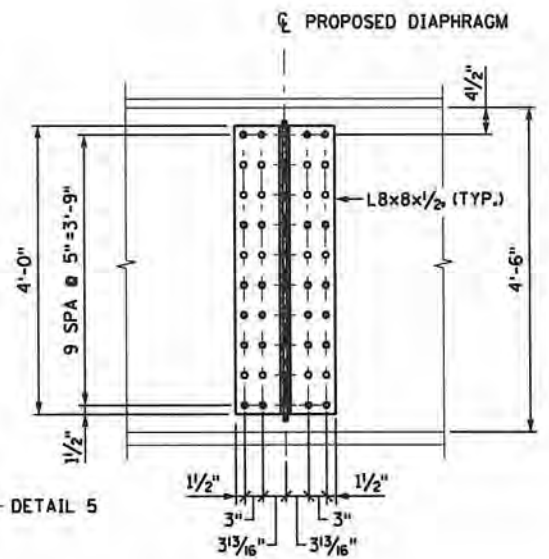
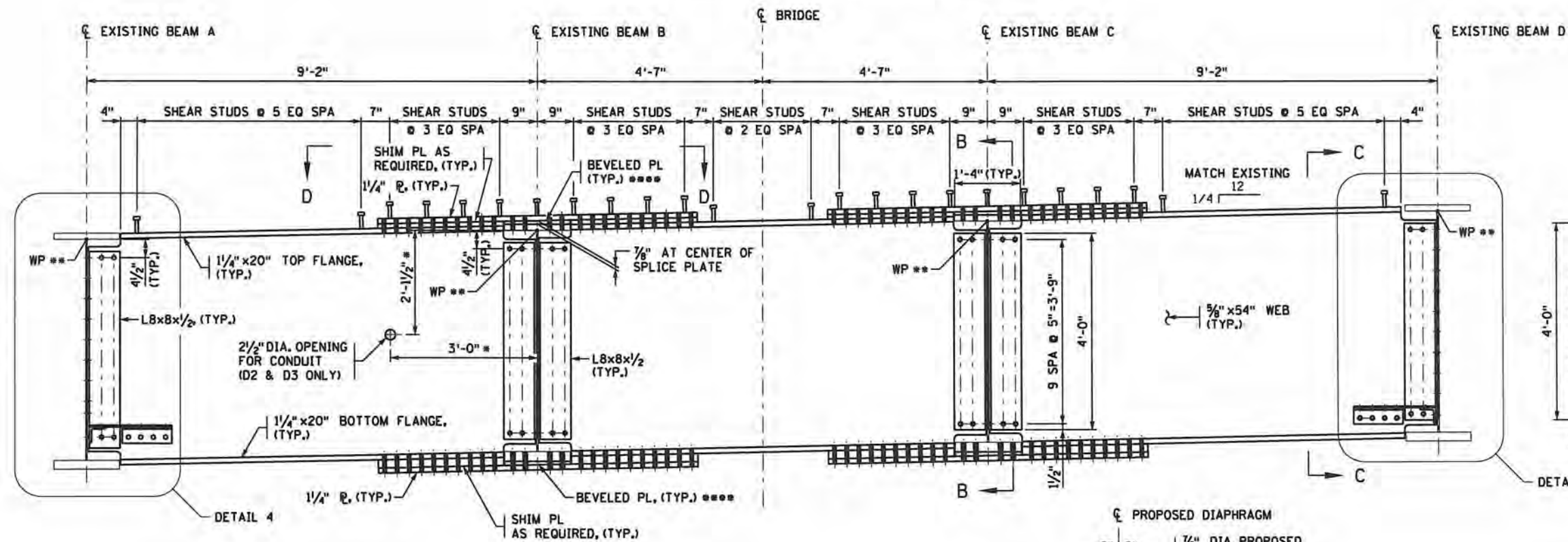
- NOTES:**
- ABUTMENT WINGWALL THICKNESS VARIES. SEE EXISTING PLANS.
  - MEMBRANE WATERPROOFING SYSTEM.
  - INCLUDED IN ITEM "RECONSTRUCT PAVING BRACKET AND WALL".
  - ANCHORAGES USED IN AREAS WHERE EXISTING PAVING BRACKET AND WALL ARE NOT RECONSTRUCTED.
  - NEW EXPANSION DEVICE, ANCHORAGES, AND REINFORCEMENT ADJACENT TO THE EXPANSION DEVICE SHOWN IN APPROACH PANELS INCLUDED IN BRIDGE PORTION OF THE CONTRACT, PLACED WITH APPROACH PANELS. SEE SUPERSTRUCTURE DETAILS SHEET 19.
  - PROVIDE AN ADHESIVE WITH A MINIMUM CHARACTERISTIC BOND STRENGTH IN UNCRACKED CONCRETE OF 1.0 KSI. EMBED THE ANCHORAGE NO LESS THAN 6" REGARDLESS OF CHARACTERISTIC BOND STRENGTH. DRILL THROUGH REINFORCEMENT (IF ENCOUNTERED) TO ACHIEVE MINIMUM EMBEDMENT. PROOF LOAD TO 2.2 KIPS. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

12/12/2017 CBR69839.ABT101.dgn

CERTIFIED BY: <i>Angela M. Kingsley</i> 12/12/17 LICENSED PROFESSIONAL ENGINEER DATE	TITLE: ABUTMENT REPAIRS	DES: CTW DR: CTW APPROVED: 12/13/17 CHK: AMK CHK: AMK	BRIDGE NO. 69839
NAME: ANGELA M. KINGSLEY LIC. NO. 47097		SHEET NO. 9 OF 27 SHEETS	



- \* VERIFY THE DIMENSIONS IN THE FIELD BEFORE FABRICATING STEEL DIAPHRAGMS. 2 1/2" DIA. HOLE WILL BE FIELD DRILLED AFTER THE CONDUIT LOCATION IS VERIFIED IN THE FIELD.
- \*\* WP'S ARE AT THE TOP WEB OF THE EXISTING BEAM. TOP OF WEBS OF DIAPHRAGM AND EXISTING BEAMS TO LINE UP.
- \*\*\* PAID FOR AS "SUPPLEMENTAL STIFFENER."
- \*\*\*\* THE SIZE OF THE BEVELED PLATE IS 1'-4" x 1'-8". THICKNESS OF THE BEVELED PLATE AT THE CENTER IS 3/8" AND THE THICKNESS VARIES AT THE CORNERS. CORNER DIMENSIONS SHALL BE DETERMINED IN THE FIELD AFTER THE DECK HAS BEEN REMOVED PRIOR TO FABRICATING BASED ON THE PROPOSED DIAPHRAGM AND SLOPE OF EXISTING BEAMS B & C.



**NOTES:**

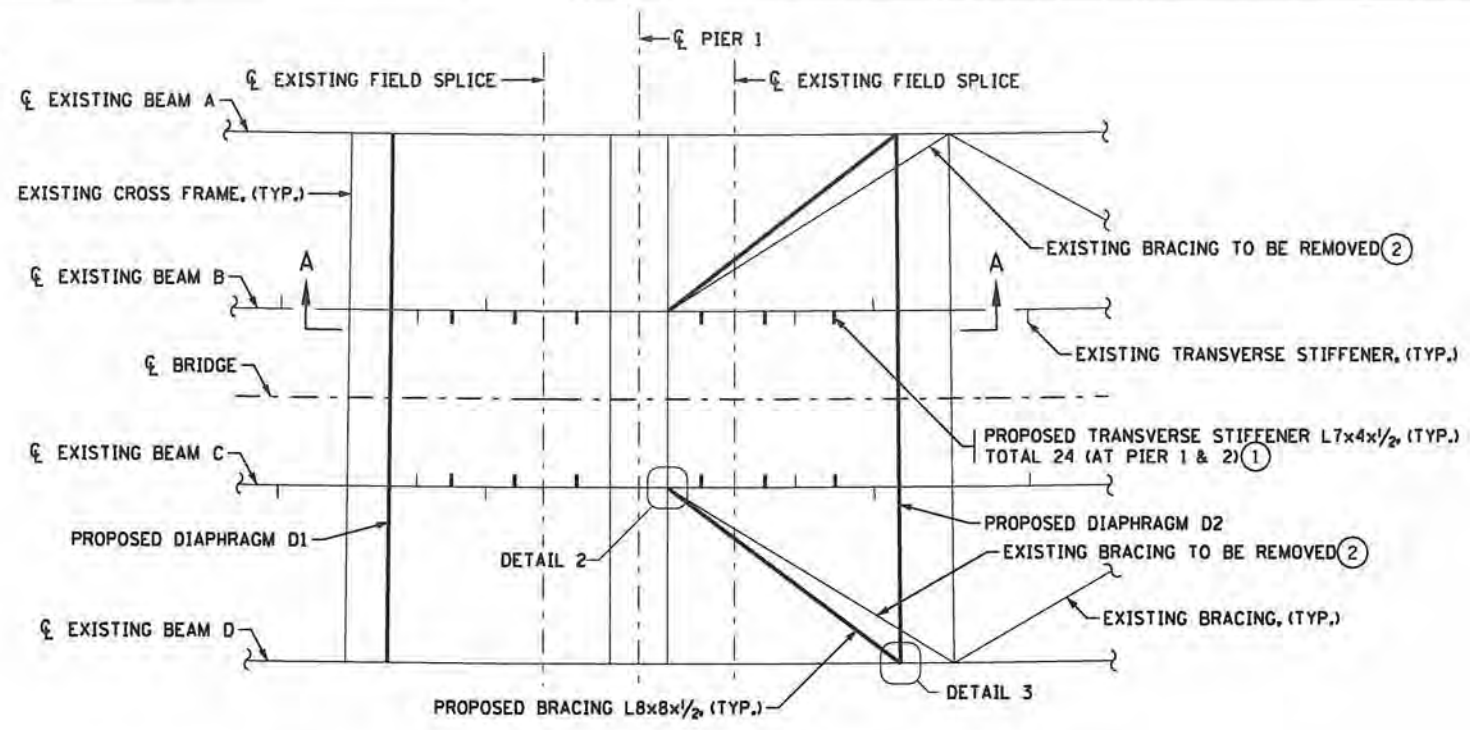
1. FIELD VERIFY ALL DIMENSIONS, LOCATIONS, AND ELEVATIONS SHOWN IN THE PLAN FOR EXISTING STRUCTURES. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
2. ALL STEEL SHALL CONFORM TO SPEC.3309, Fy = 50 KSI, UNLESS OTHERWISE NOTED.
3. ALL BOLTED CONNECTIONS SHALL BE MADE WITH 7/8" DIA. A325 BOLTS IN 15/16" DIA STANDARD HOLES, EXCEPT AS NOTED.
4. SHEAR STUDS ON THE TOP FLANGE OF GIRDER SHALL BE INSTALLED IN THE FIELD.
5. SHEAR CONNECTOR TO PROJECT A MINIMUM 2" INTO DECK STRUCTURAL SLAB. IN NO CASE SHALL SHEAR CONNECTORS PROJECT CLOSER THAN 1" TO TOP OF DECK STRUCTURAL SLAB. ENGINEER TO FIELD VERIFY BEAM ELEVATION AND AUTHORIZE STUD LENGTH.
6. SEE SHEET 11 FOR PROPOSED STIFFENER PLACEMENT ELEVATION.
7. SEE SHEET 14 FOR DETAILS 4, 5, AND 7.

CERTIFIED BY: 12/12/2017  
 LICENSED PROFESSIONAL ENGINEER DATE  
 NAME: TONY SHKURTI LIC. NO. 48479

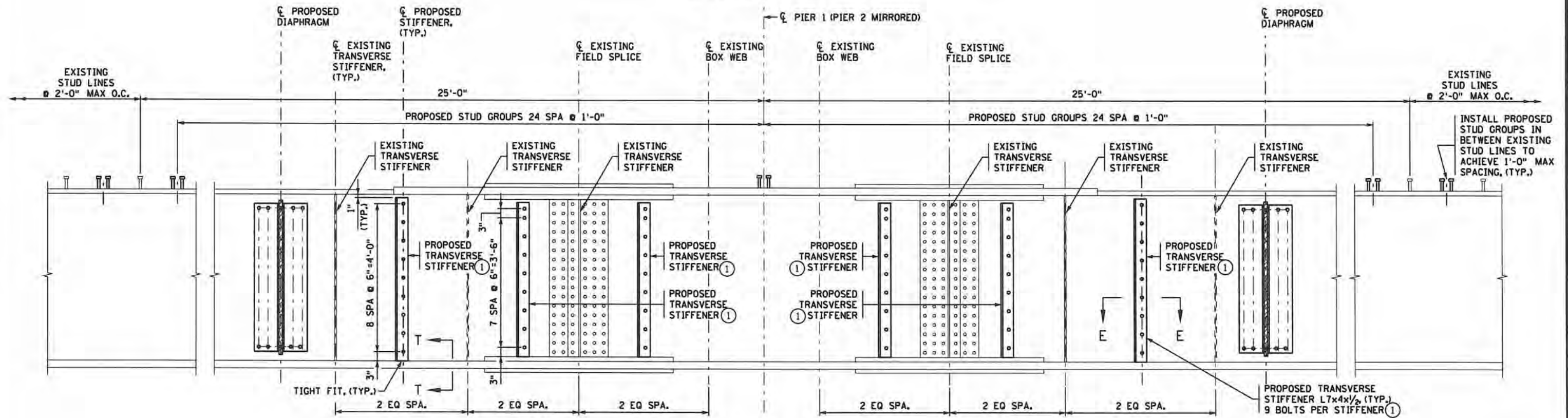
TITLE: STEEL REPAIR DETAILS - 1

DES: TFS DR: LK APPROVED: 12/17/17  
 CHK: MX CHK: EPP  
 SHEET NO. 10 OF 27 SHEETS

BRIDGE NO. 69839



**RETROFIT PARTIAL PLAN**  
(PIER 1 SHOWN, PIER 2 MIRRORED)



**VIEW A-A**  
**PROPOSED STIFFENER PLACEMENT ELEVATION**  
(TYPICAL FOR EXISTING BEAMS B & C)  
(EXISTING BOX BEAM NOT SHOWN FOR CLARITY)  
(PROPOSED STUD GROUPS APPLICABLE TO ALL EXISTING BEAMS)


**NOTES:**

- ① PAID FOR AS "SUPPLEMENTAL STIFFENER"
  - ② EXISTING LATERAL BRACING CONNECTED WITH HUCK BOLTS. SEE SPECIAL PROVISIONS FOR REMOVAL PROCESS.
1. SEE ADDITIONAL NOTES ON SHEET 10.

**NOTES (CONTINUED):**

- 2. EACH EXISTING STUD LINE AND PROPOSED STUD GROUP CONTAINS FIVE 5/8" DIA. STUDS. SEE SUPERSTRUCTURE DETAILS SHEETS FOR ADDITIONAL INFORMATION AND QUANTITY.
- 3. FOR DETAILS 2 & 3, SEE SHEET 13.
- 4. SHEAR STUDS ARE FOR ALL FOUR EXISTING BEAMS.

12/12/2017 CBR69839\_SUP02.dgn

CERTIFIED BY  12/12/2017 DATE  
LICENSED PROFESSIONAL ENGINEER  
NAME: TONY SHKURTI LIC. NO. 48479

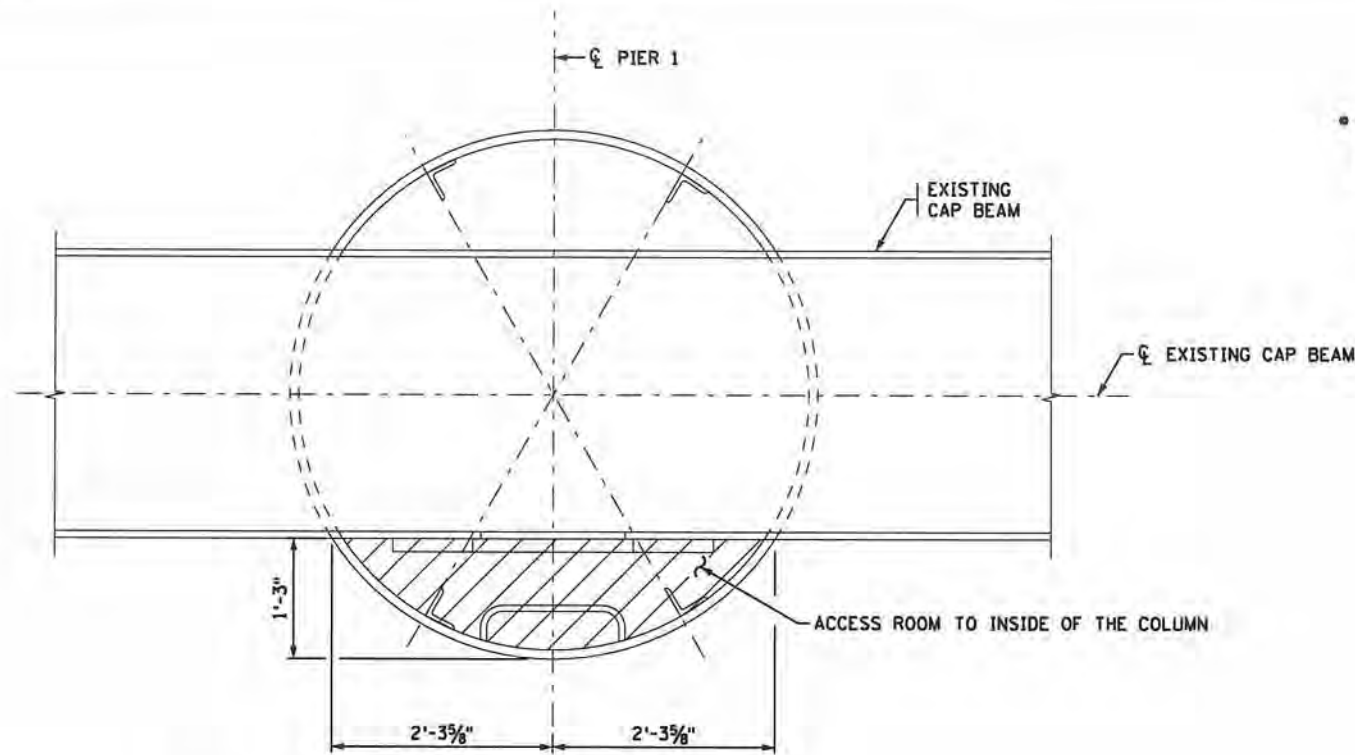
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DES: TFS	DR: LK	APPROVED: 12-13-17
CHK: MX	CHK: EPP	

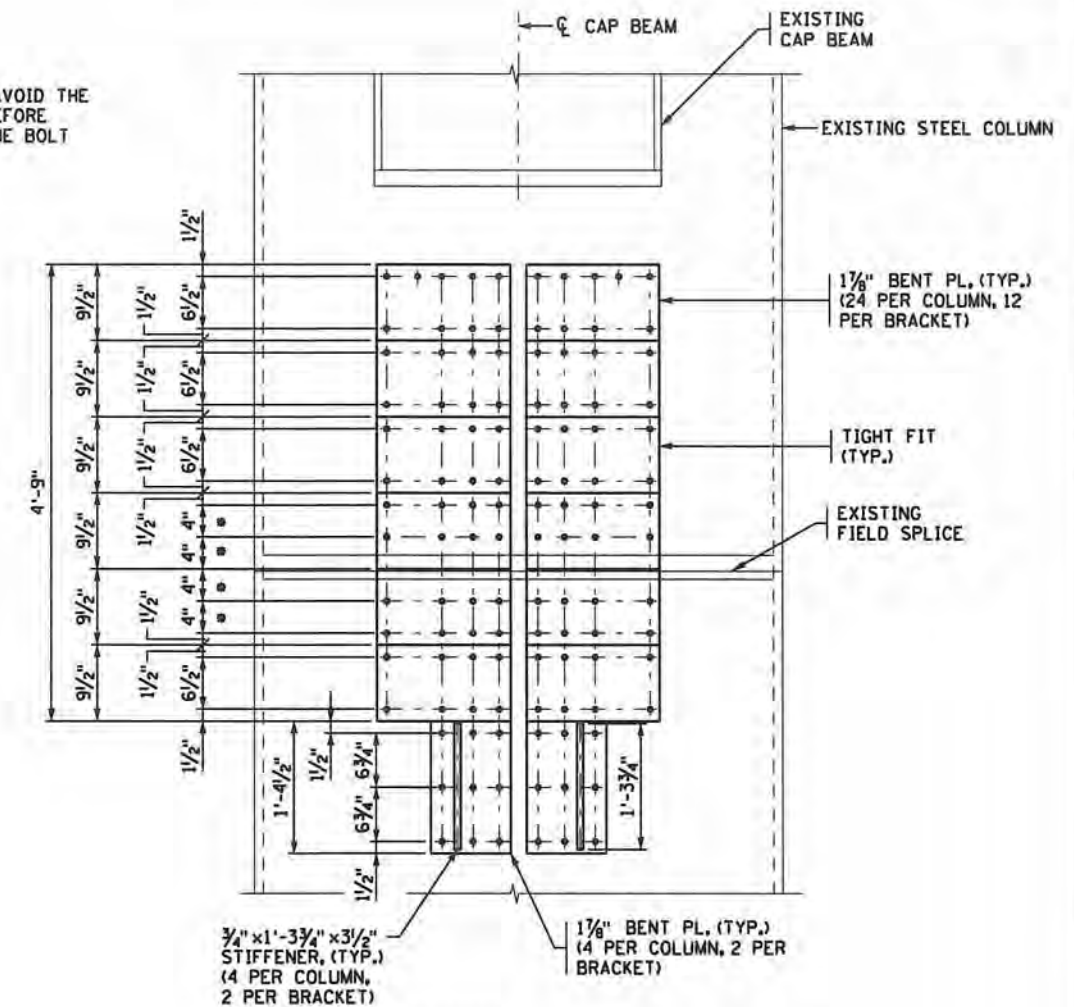
SHEET NO. 11 OF 27 SHEETS

BRIDGE NO. 69839

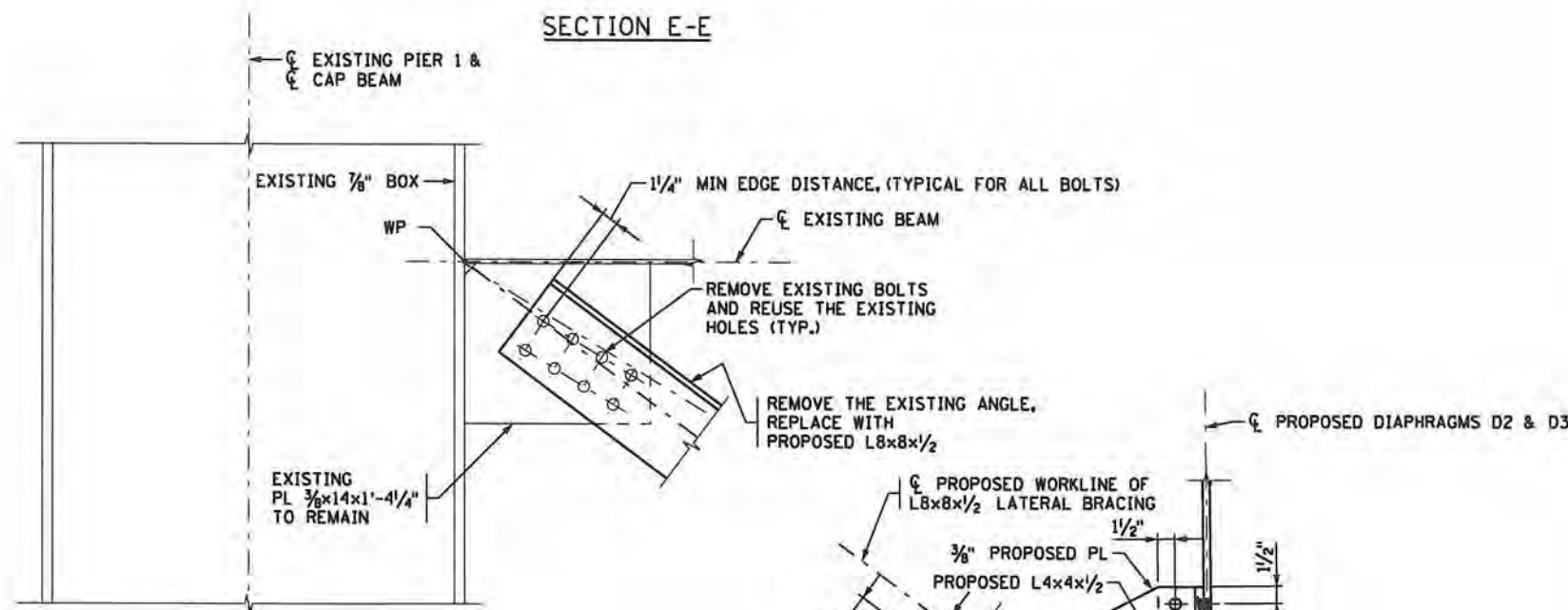




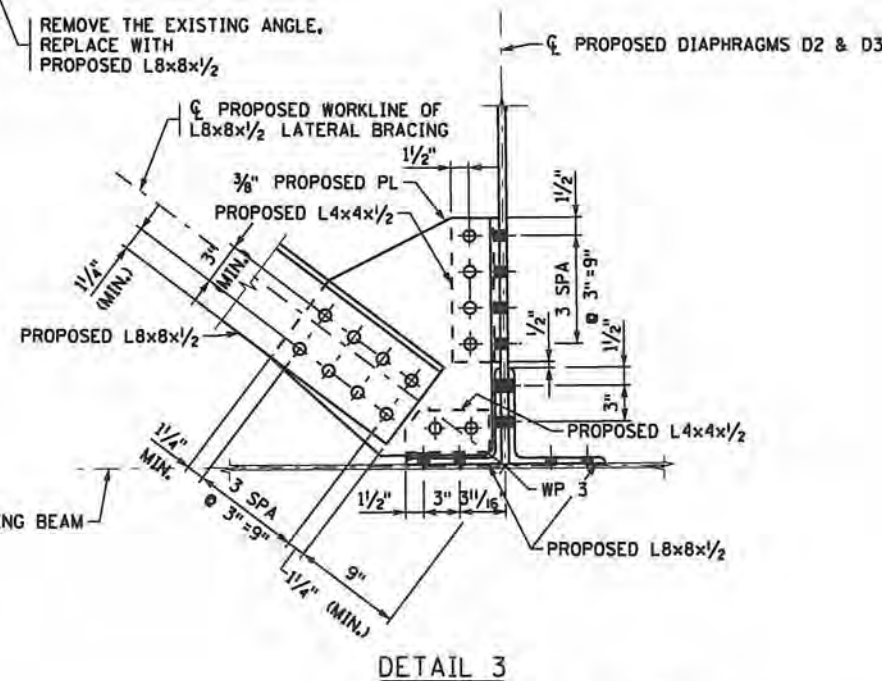
• VERIFY THE BOLT SPACING TO AVOID THE 3/8" X 3" EXISTING SPLICE BAR BEFORE DRILLING THE HOLES. ADJUST THE BOLT SPACING AS NECESSARY



(COLUMN INSIDE BRACKET DETAIL)  
(NUMBER OF BOLTS AS SHOWN)  
(EXISTING VERTICAL ANGLE NOT SHOWN FOR CLARITY)



DETAIL 2



DETAIL 3

**RECONSTRUCT LATERAL BRACING PROCEDURE:**

1. POSITION PROPOSED L8x8x1/2 AS SHOWN.
2. MARK UP HOLES ON L8x8x1/2 USING EXISTING HOLES FROM THE CONNECTION PLATE SEEN IN DETAIL 2. ENSURE ALL HOLES FIT AND MAINTAIN REQUIRED 1/4" MIN. EDGE DISTANCE ON L8x8x1/2 IF THEY DO, DRILL HOLES TO MATCH WITH EXISTING HOLES IN CONNECTION PLATE.
3. IF EXISTING HOLES IN CONNECTION PLATE DO NOT FIT IN L8x8x1/2 AND MEET EDGE DISTANCE REQUIRED, ADJUST BRACING ELEMENT L8x8x1/2 BY ROTATING IT ABOUT WP 3 UNTIL ALL EIGHT HOLES FIT AND MEET MIN. EDGE DISTANCE.
4. FIELD DRILL ALL EIGHT HOLES IN DETAIL 2 USING EXISTING CONNECTION PLATE HOLES AS TEMPLATE.
5. FIELD DRILL ALL HOLES IN L8x8x1/2 AND NEW CONNECTION PLATE IN DETAIL 3.

**NOTES:**

1. SEE ADDITIONAL NOTES ON SHEET 10.
2. FOR LOCATIONS OF DETAILS 2 & 3, SEE SHEET 11.
3. FOR LOCATIONS OF SECTIONS E-E & H-H, SEE SHEET 12.
4. ALL WORK IN DETAILS 2 AND 3 IS INCLUDED IN PAY ITEM "RECONSTRUCT LATERAL BRACING"

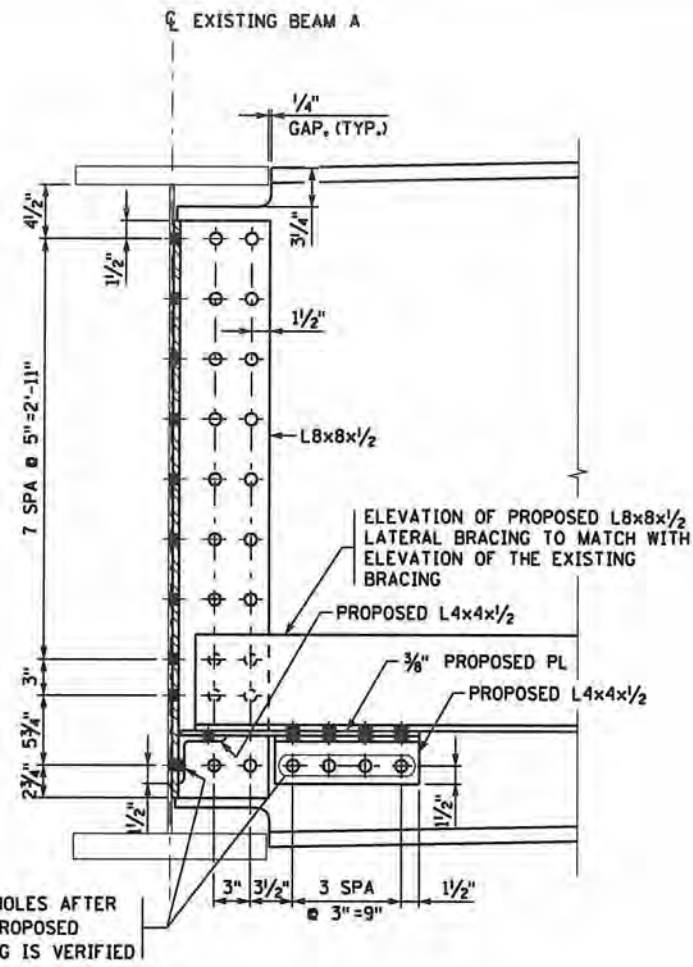
CERTIFIED BY: *[Signature]*  
 LICENSED PROFESSIONAL ENGINEER  
 NAME: TONY SHKURTI  
 DATE: 12/12/2017  
 LIC. NO. 48479

TITLE: STEEL REPAIR DETAILS - 4

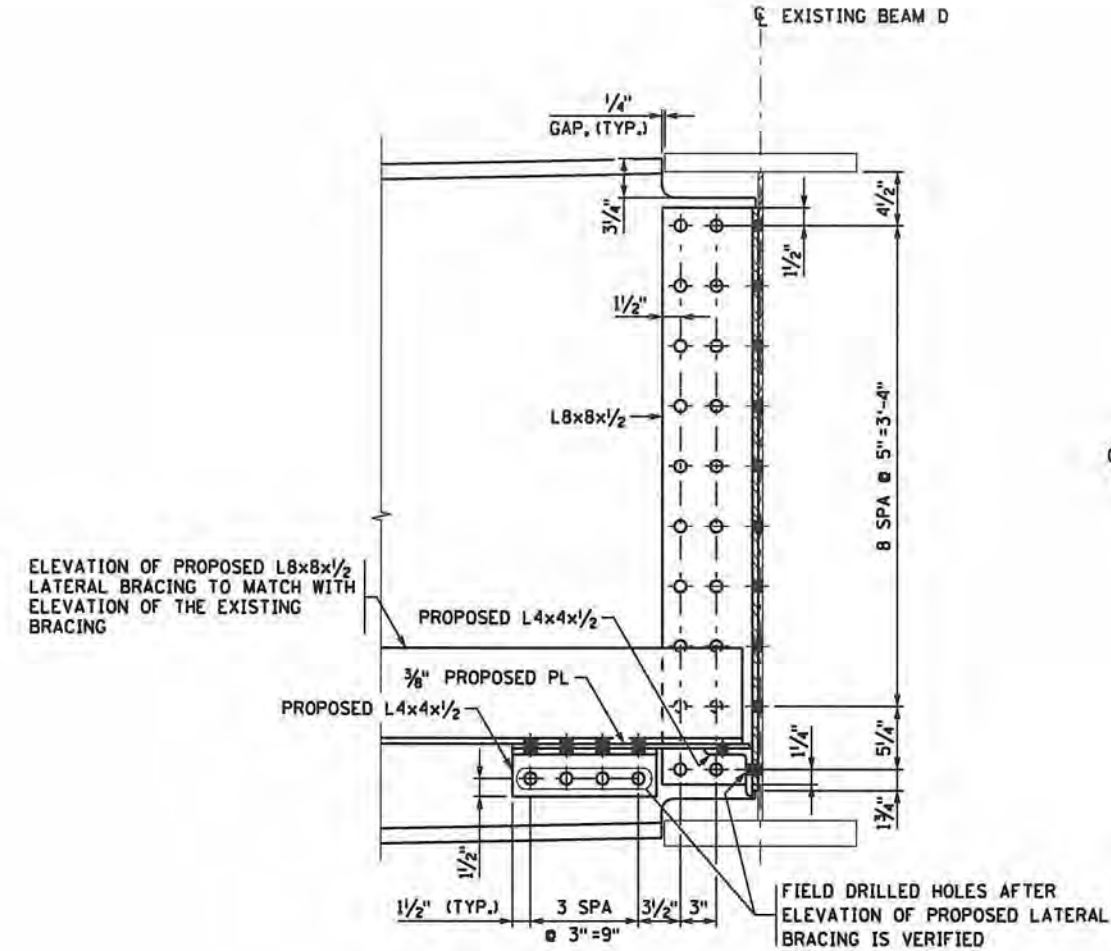
DESIGNED BY: MX  
 CHECKED BY: TFS  
 DRAWN BY: DRK  
 CHECKED BY: LK  
 APPROVED BY: *[Signature]*  
 SHEET NO. 13 OF 27 SHEETS

BRIDGE NO. 69839

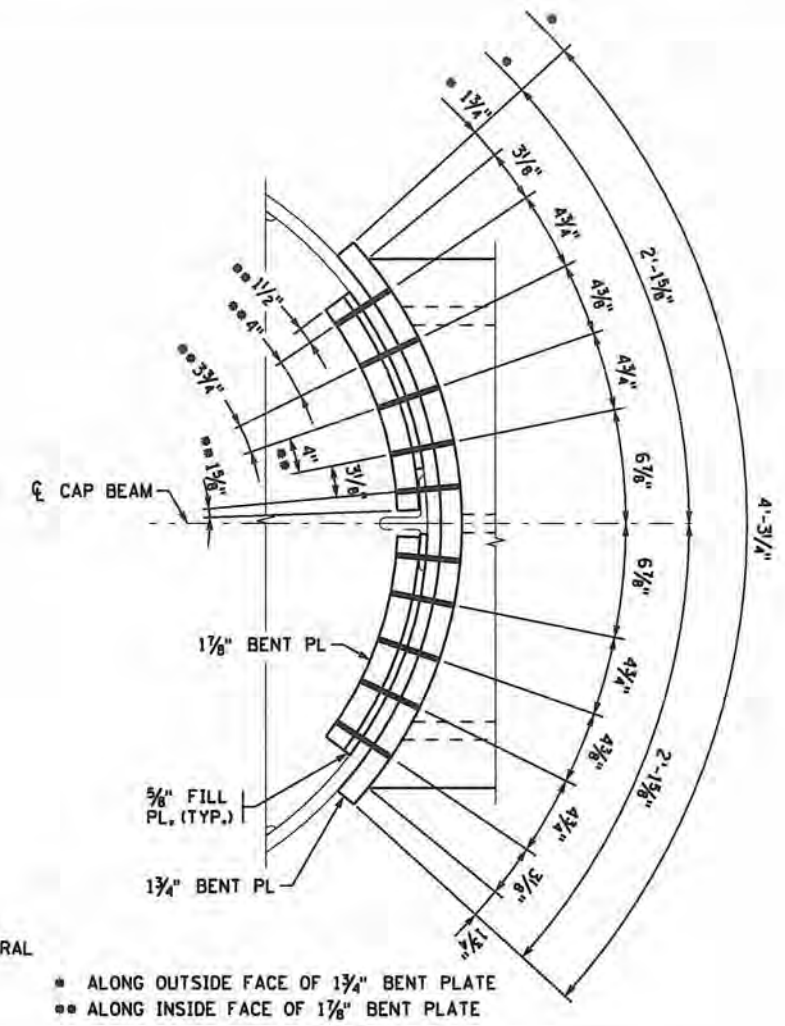
12/12/2017 CBR69839\_SUP04.dgn



DETAIL 4 (2)



DETAIL 5 (2)

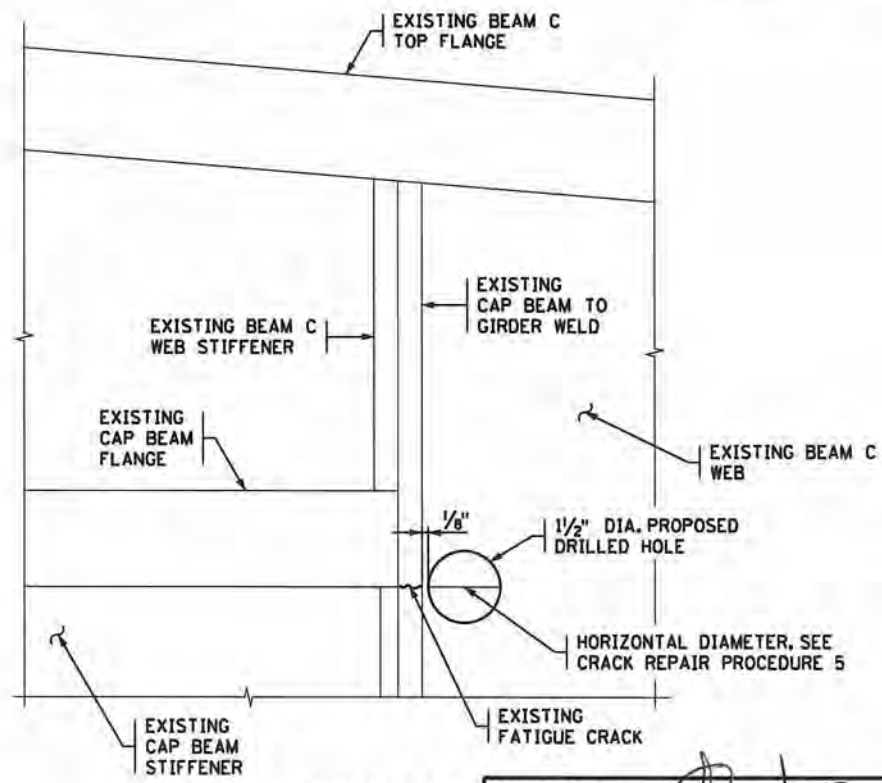


DETAIL 6

(DIMENSIONS SYMMETRICAL ABOUT C CAP BEAM)

CRACK REPAIR PROCEDURE (1)

1. CARBIDE-TIPPED OR HIGH-SPEED ANNULAR CUTTER TO BE USED TO DRILL PROPOSED HOLE.
2. FLAME-CUTTING HOLE IS NOT PERMITTED.
3. PERFORM MAGNETIC PARTICLE TESTING TO DETECT EXTENT OF CRACK PROPAGATION.
4. IF CRACK IS FOUND TO HAVE PROPAGATED INTO THE GIRDER WEB, DRILL A HOLE SUCH THAT THE TIP OF THE CRACK LIES AT THE EDGE OF THE CORED HOLE AND ON A HORIZONTAL DIAMETER OF THE CIRCULAR HOLE.
5. IF CRACK HAS NOT PROPAGATED INTO THE GIRDER WEB, IDENTIFY TIP OF THE CRACK ON THE WELD AND MARK THE CENTER OF THE HOLE TO BE LOCATED AT 7/8 INCH AWAY FROM TIP OF CRACK ALONG A HORIZONTAL DIAMETER OF HOLE THAT STARTS AT TIP OF CRACK AS SHOWN IN DETAIL 7. DISTANCE FROM EDGE OF HOLE TO END OF CRACK SHOULD BE 1/8 INCH.
6. COMPLETED HOLE EDGES SHOULD BE ANSI ROUGHNESS 500 OR LESS.
7. PRIME AND PAINT ALL BARE SURFACES.
8. FILL HOLE WITH A TENSIONED BOLT.



DETAIL 7 (1)

NOTES:

- (1) INCLUDED IN "ARREST WELD CRACK"
  - (2) INCLUDED IN "RECONSTRUCT LATERAL BRACING" AND "SUPPLEMENTAL STEEL DIAPHRAGMS"
1. SEE ADDITIONAL NOTES ON SHEET 10.
  2. FOR LOCATION OF DETAILS 4, 5, & 7, SEE SHEET 10.
  3. FOR LOCATION OF DETAIL 6, SEE SHEET 12.
  4. BRACING SHOWN IN DETAILS 4 AND 5 ARE ONLY FOR DIAPHRAGMS D2 AND D3.

12/12/2017 CBR69839\_SUP04\_1.dgn

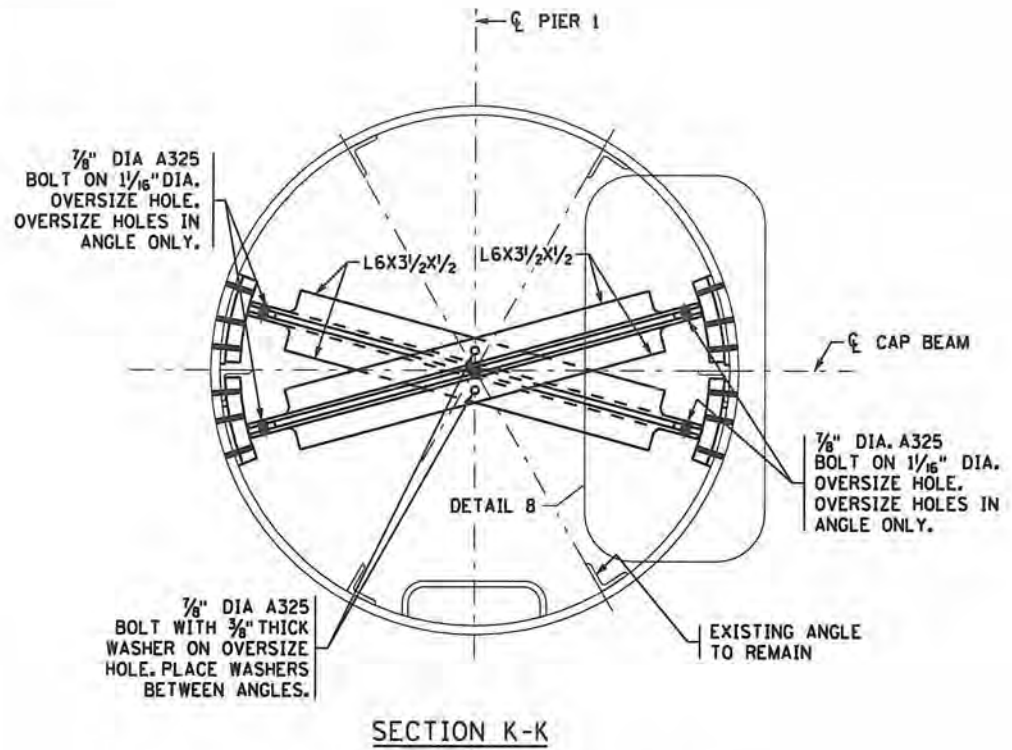
CERTIFIED BY *[Signature]* 12/12/2017  
 LICENSED PROFESSIONAL ENGINEER DATE  
 NAME: IONY SHKURII LIC. NO. 48479

TITLE: STEEL REPAIR DETAILS - 5

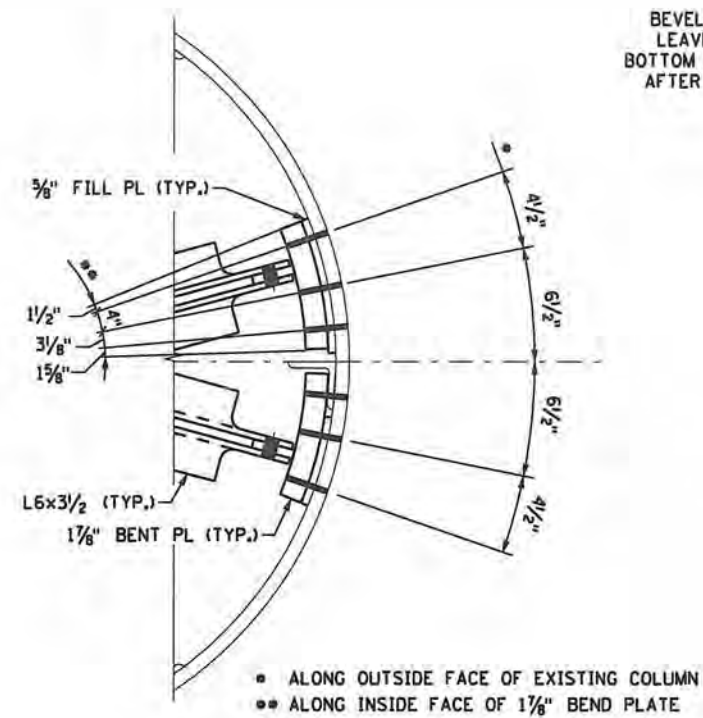
DES: TFS	DR: LK	APPROVED: <i>[Signature]</i>
CHK: MX	CHK: EPP	

SHEET NO. 14 OF 27 SHEETS

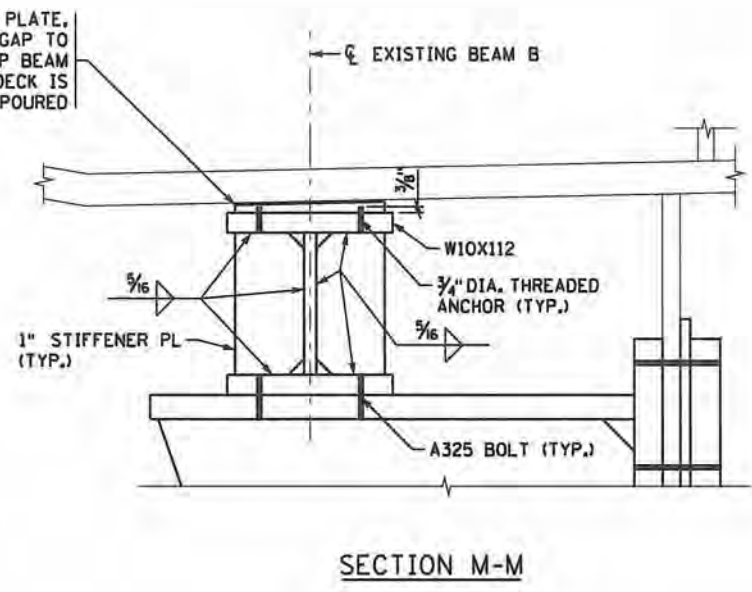
BRIDGE NO. 69839



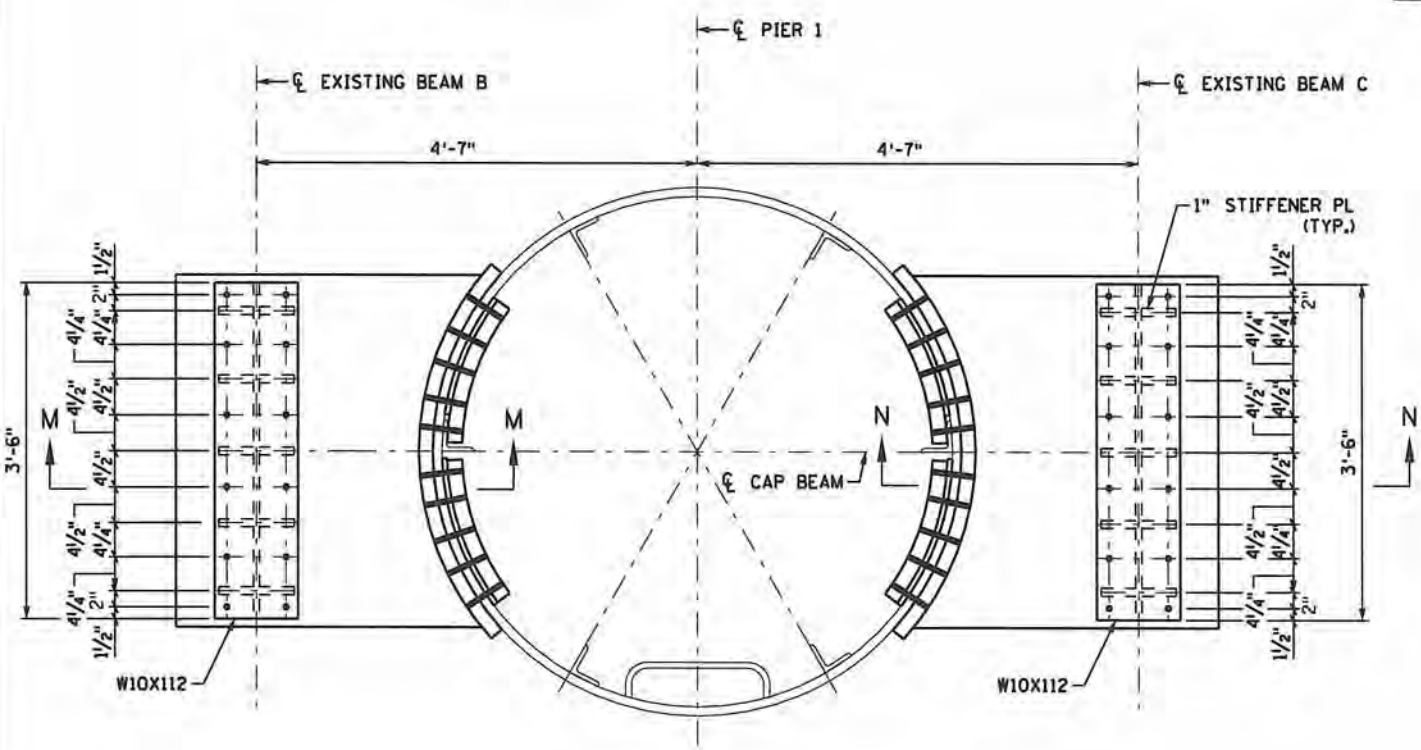
SECTION K-K



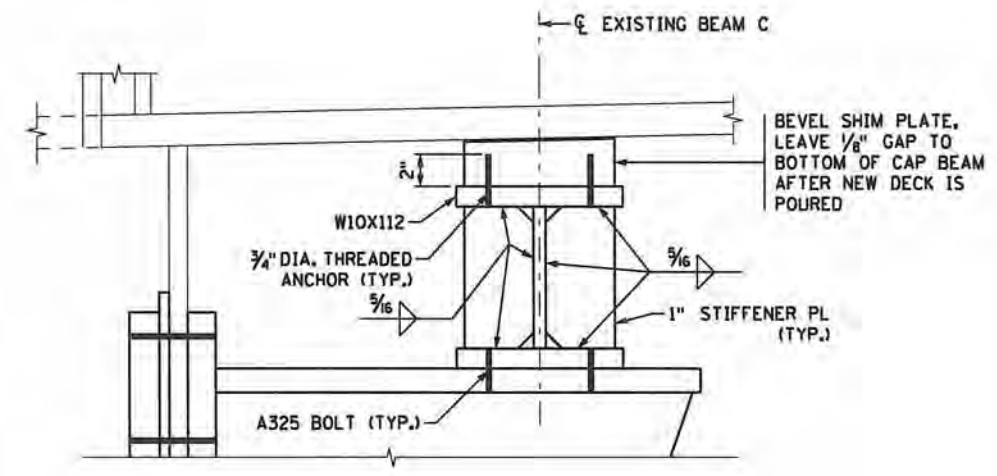
DETAIL 8



SECTION M-M



SHIM BLOCK DETAIL



SECTION N-N

NOTES:

1. SEE ADDITIONAL NOTES ON SHEET 10.
2. CONTRACTOR TO DETERMINE THE BEVEL SHIM PLATE THICKNESS BASED ON THE SURVEY DATA AFTER NEW DECK IS POURED. LEAVE 1/8" GAP TO THE BOTTOM OF EXISTING CAP BEAMS.
3. FOR LOCATION OF SECTION K-K, SEE SHEET 12.
4. ALL NEW STEEL SHOWN ON THIS SHEET IS INCLUDED IN "STEEL CORBEL BRACKET". STEEL SHOWN REPRESENTS 2 BRACKETS.

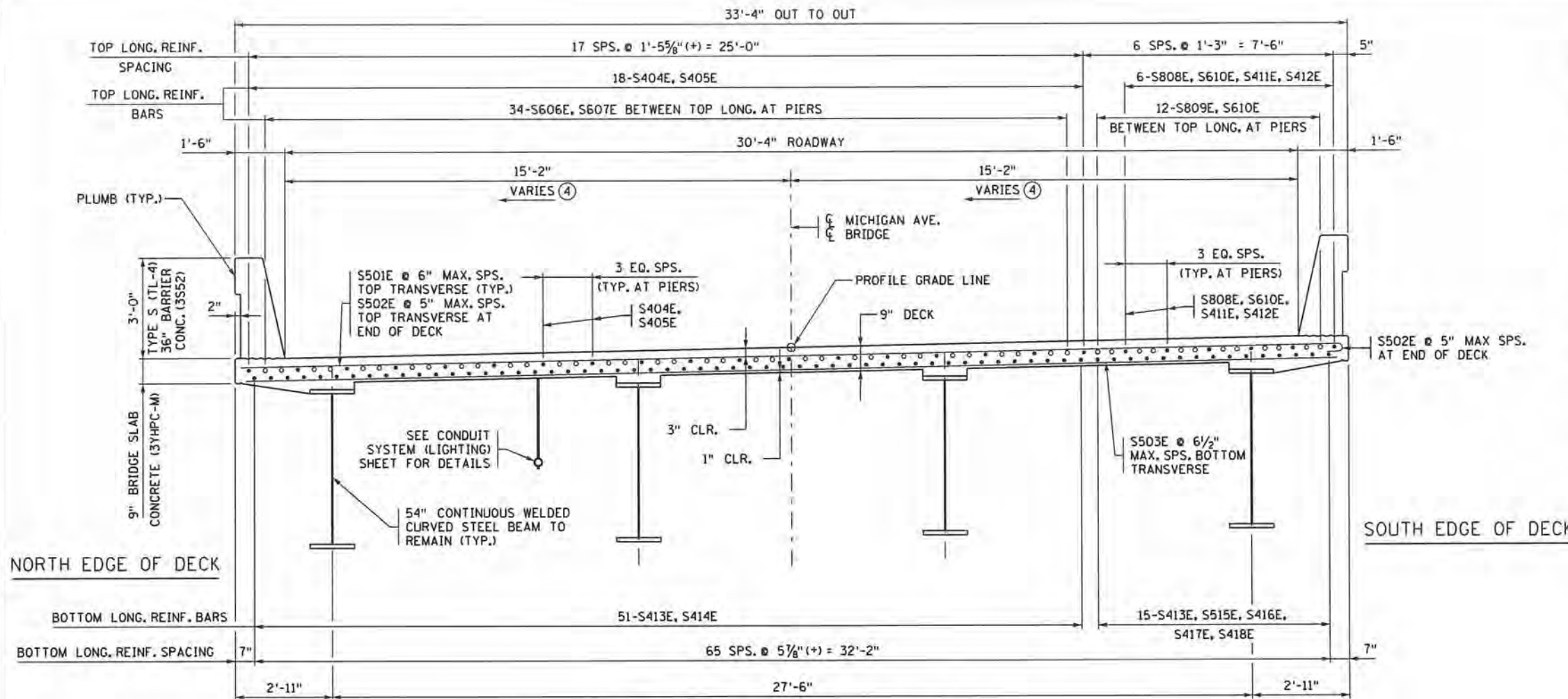
12/12/2017 CBR69839\_SUP04\_2.dgn

CERTIFIED BY  LICENSED PROFESSIONAL ENGINEER NAME: IONY SHKURII	DATE 12/12/2017 L.C. NO. 48479	TITLE: <b>STEEL REPAIR DETAILS - 6</b>		DES: TFS CHK: MX	DR: LK CHK: EPP	APPROVED:  12-13-17	BRIDGE NO. 69839
		SHEET NO. 15 OF 27 SHEETS					

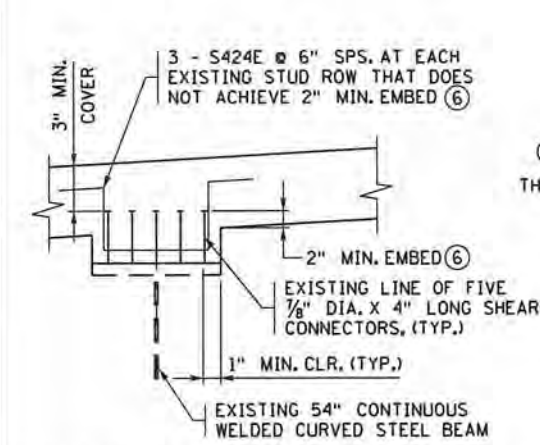
**SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE**

TYPE S (TL-4) 36" BARRIER CONCRETE (3S52)	714 LIN. FT.
REINFORCEMENT BARS (EPOXY COATED)	91170 POUND
BRIDGE SLAB CONCRETE (3YHPC-M)	10483 SQ. FT.
EXPANSION JOINT DEVICES TYPE 5	67 LIN. FT.
SHEAR STUDS	4566 EACH
SUPPLEMENTAL STEEL DIAPHRAGM	4 EACH
SUPPLEMENTAL STIFFENER	24 EACH
RECONSTRUCT LATERAL BRACING	4 EACH
STEEL CORBEL BRACKET	4 EACH
ANCH TYPE REINF BARS (TYPE L)	30 EACH
REMOVE CONC SLAB, CURBS, OVERLAY, AND BARRIER	10689 SQ. FT.
GREASE EXP BEARING ASSEMBLIES	4 EACH
RECONSTRUCT EXPANSION BEARING	4 EACH
ARREST WELD CRACK	1 EACH
CONDUIT SYSTEM TYPE 1	1 LUMP SUM
BRIDGE NAME PLATE	1 EACH

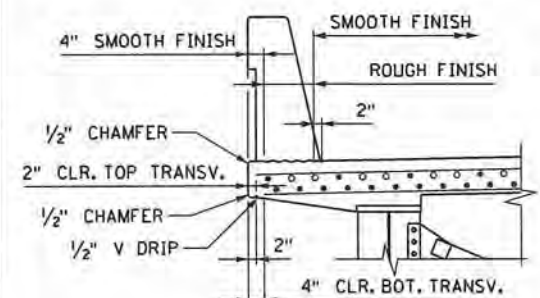
- ① ADD NEW STUDS OVER ENTIRE BEAM LENGTH SUCH THAT THE MAXIMUM SPACING BETWEEN STUD GROUPS IS 1'-0".
- ② INCLUDES SLAB, BOTH BARRIERS AND SUPPLEMENTARY STOOL REINFORCEMENT, (IF NEEDED).
- ③ PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM "TYPE S (TL-4) 36" BARRIER CONCRETE (3S52)".
- ④ SEE SUPERELEVATION TABLE ON TRANSVERSE BRIDGE SECTION SHEET FOR VALUES.
- ⑤ QUANTITY IS AN ESTIMATE BASED ON THE ESTIMATE OF SOUND CONCRETE IN EACH BACKWALL TO REMAIN THAT WILL SUPPORT THE NEW APPROACH PANEL AND COULD BE ADJUSTED BASED ON FIELD VERIFICATION.
- ⑥ IN CASES WHERE EXISTING SHEAR CONNECTORS DO NOT PROJECT A MINIMUM OF 2" INTO THE BOTTOM OF THE DECK SLAB, PROVIDE BAR REINFORCEMENT AS SHOWN. NEW SHEAR STUDS SHALL PROJECT A MINIMUM OF 2" INTO THE BOTTOM OF THE DECK SLAB AND PROVIDE 3" COVER TO THE TOP OF THE DECK SLAB. FIELD ENGINEER TO AUTHORIZE NEW STUD LENGTHS FOLLOWING SURVEY REVIEW OF EXISTING TOP OF GIRDER ELEVATIONS.



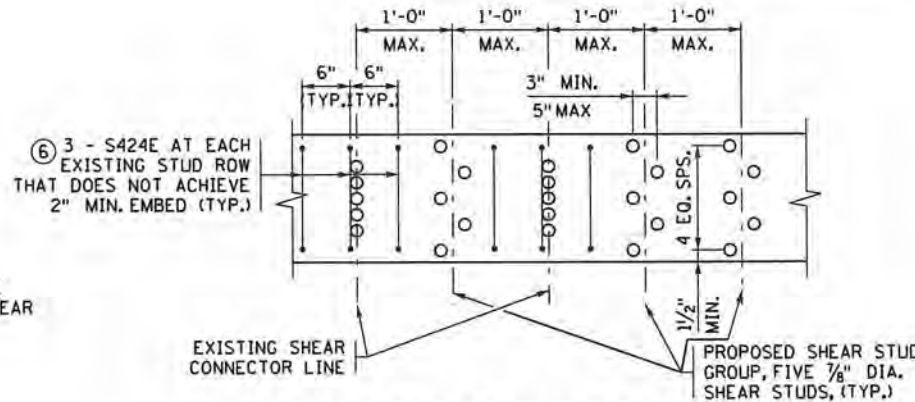
TRANSVERSE SECTION THROUGH DECK



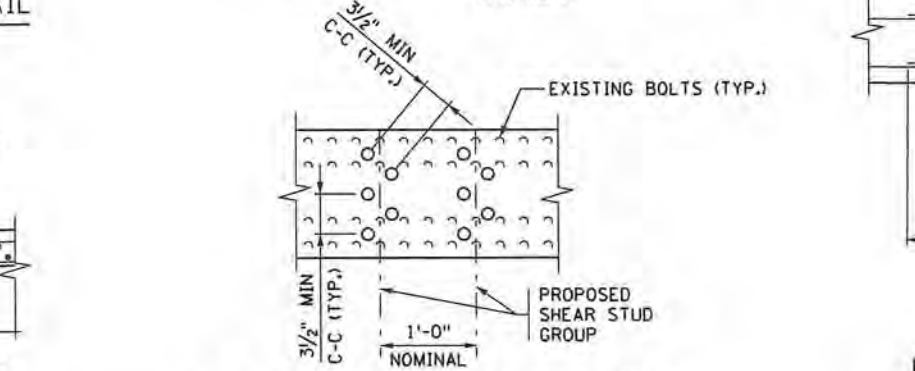
EXISTING SHEAR CONNECTOR DETAIL



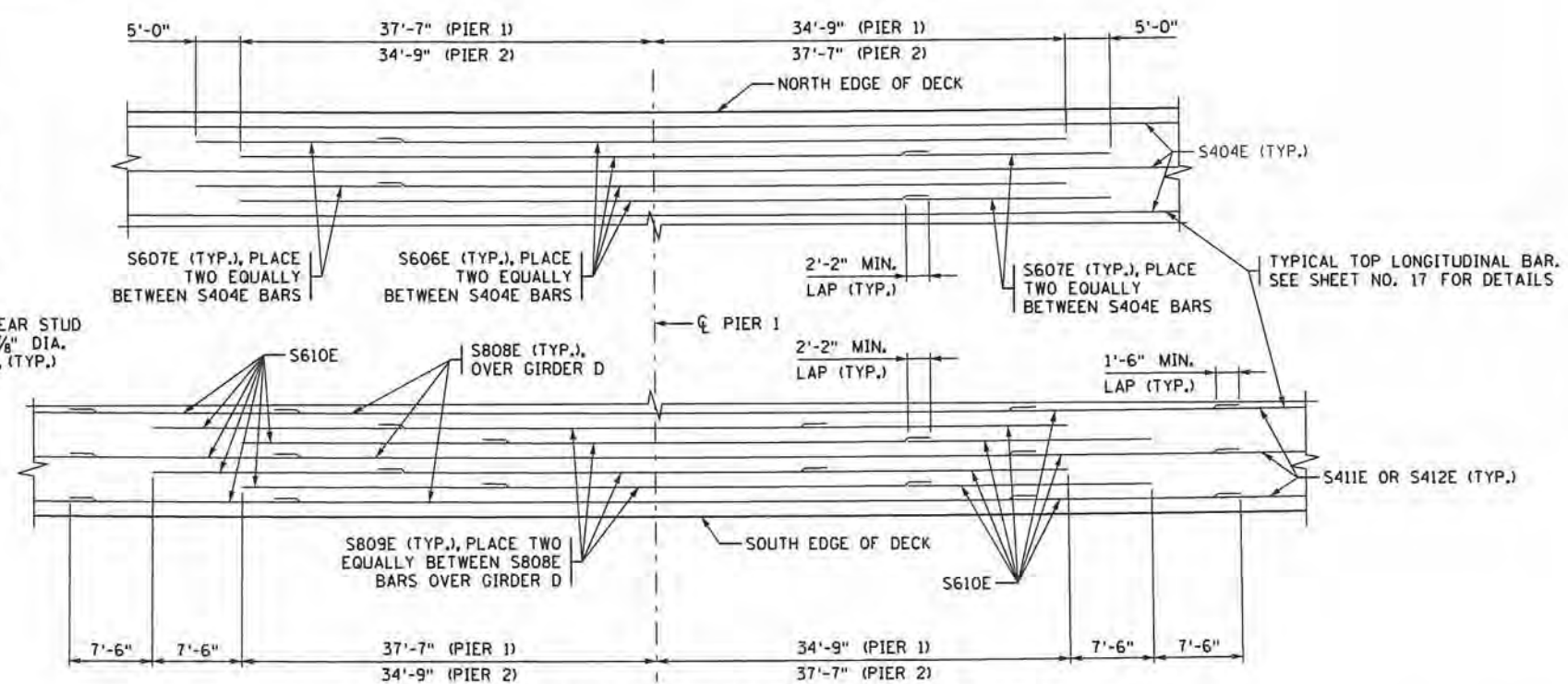
DECK EDGE DETAIL



NEW SHEAR STUD GROUP LAYOUT (TYPICAL)



NEW SHEAR STUD GROUP LAYOUT (ON SPLICE PLATES)



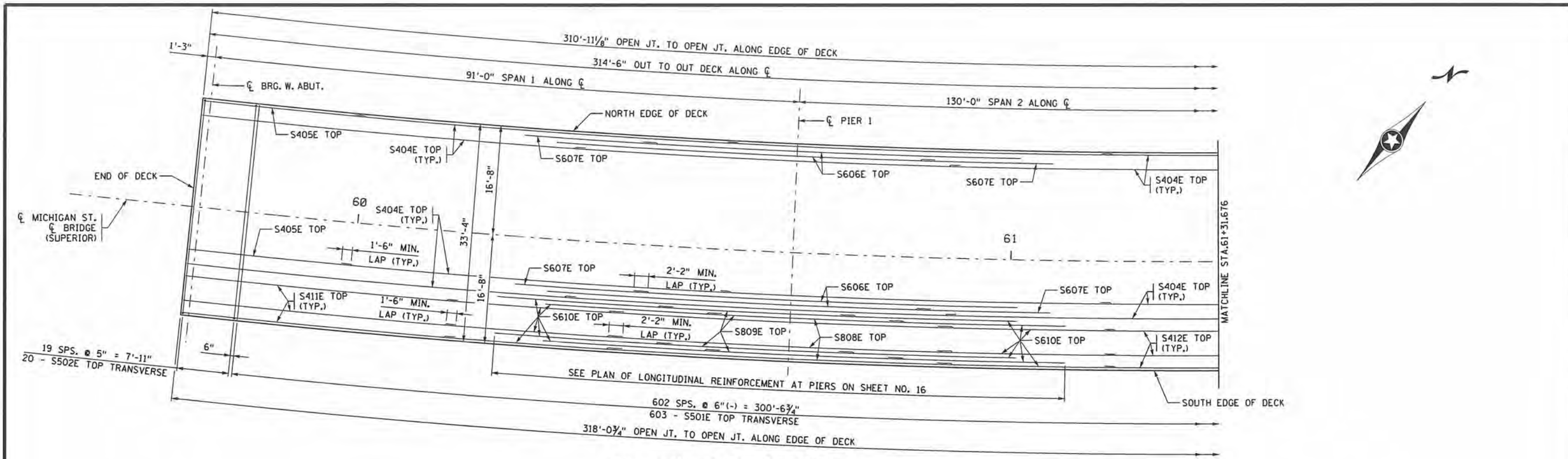
PLAN OF TOP LONGITUDINAL REINFORCEMENT AT PIERS

(PIER 1 SHOWN, PIER 2 SIMILAR)

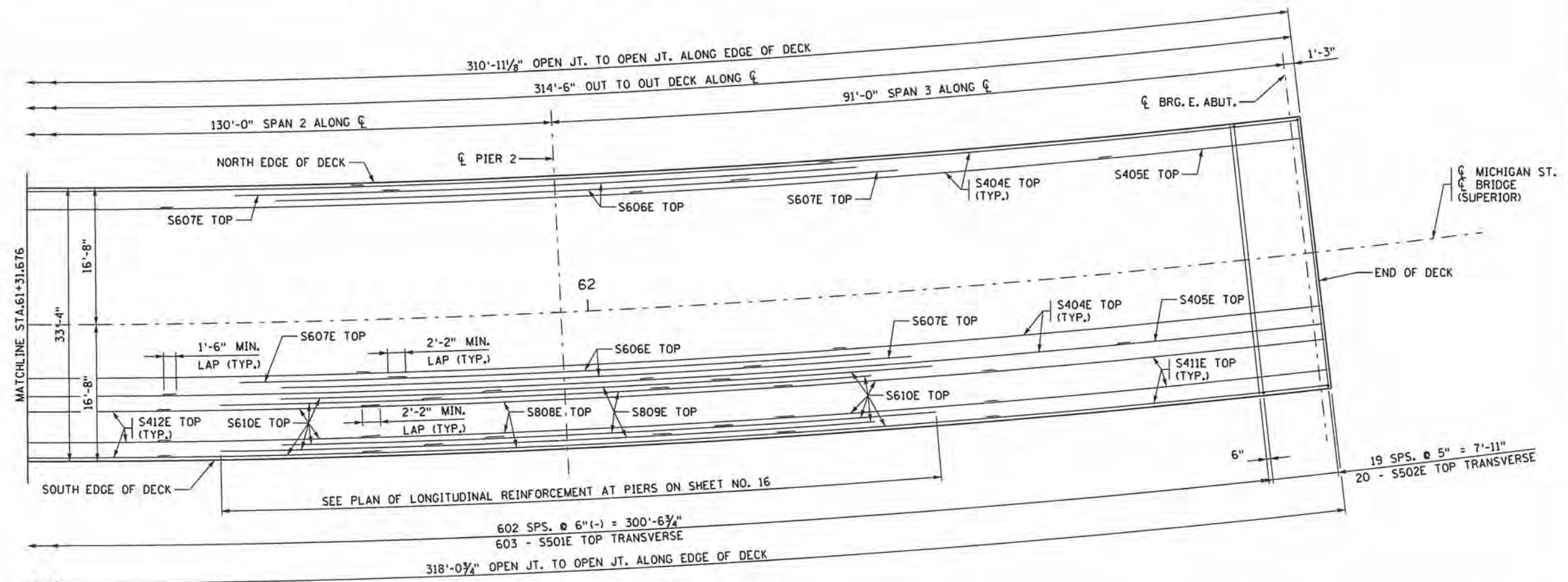
CERTIFIED BY: <i>James W. Carter III</i>	DATE: 12-12-2017	TITLE: SUPERSTRUCTURE DETAILS	DES: JJO	DR: JJO	APPROVED: <i>D. J. 12/17</i>	BRIDGE NO. 69839
NAME: JAMES W. CARTER III	LIC. NO. 53305		CHK: JWC	CHK: JWC	SHEET NO. 16 OF 27 SHEETS	

12/17/2017 CBR69839\_SUP05.dgn





DECK PLAN TOP REINFORCEMENT



DECK PLAN TOP REINFORCEMENT

**NOTES:**  
 SUPERSTRUCTURE DIMENSIONS ARE BASED ON THE EXPANSION JOINT DIMENSION AT 45° F.  
 FOR END BLOCK REINFORCEMENT, SEE "PARTIAL LONGITUDINAL SECTION SHOWING RECONSTRUCTION" DETAIL ON SHEET 19.

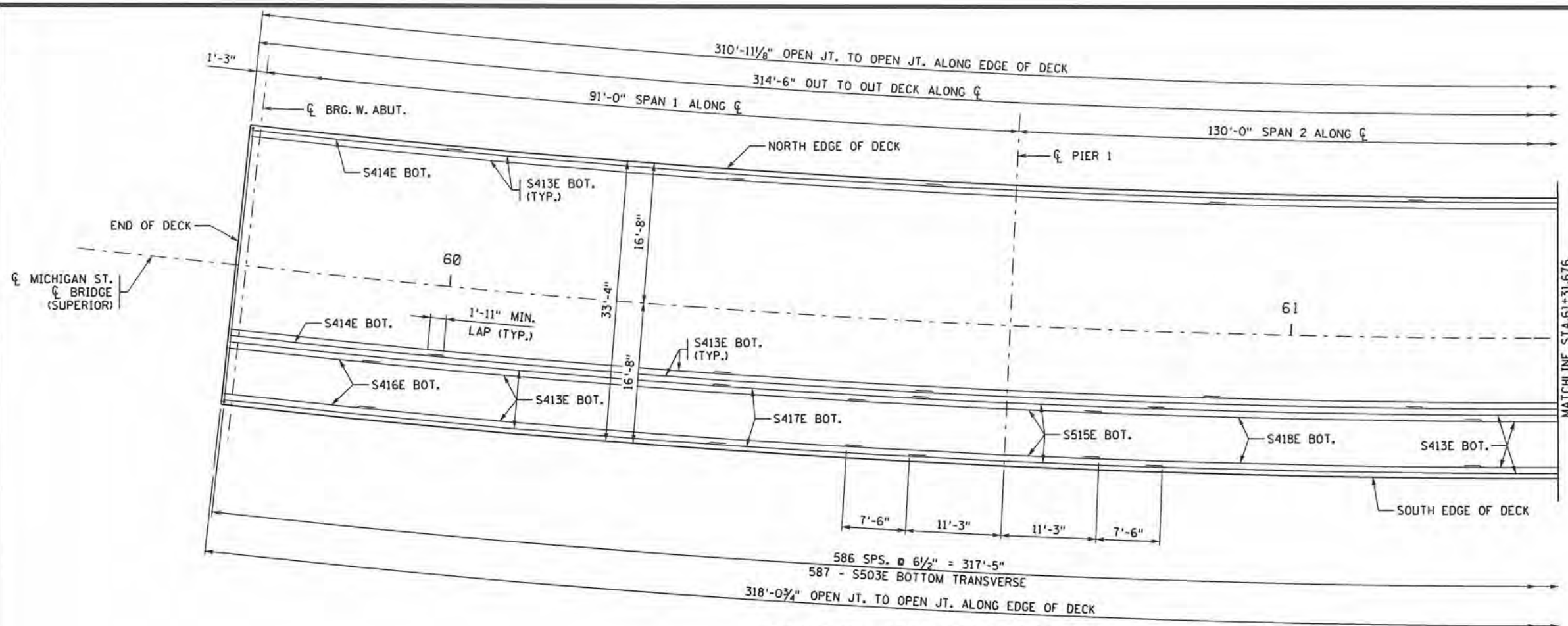
CERTIFIED BY *[Signature]* 12-17-2017  
 LICENSED PROFESSIONAL ENGINEER DATE  
 NAME: JAMES W. CARTER III LIC. NO. 53305

TITLE:  
 SUPERSTRUCTURE DETAILS

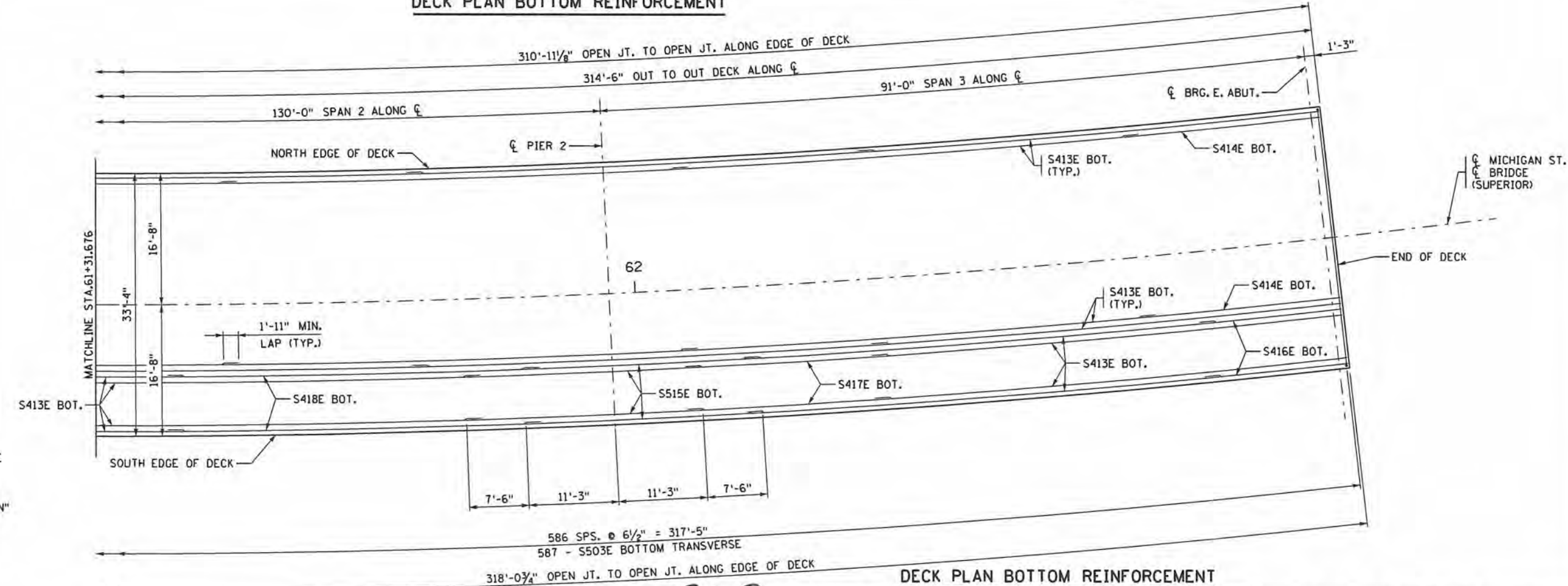
DES: JJO DR: JJO APPROVED: 12-13-17  
 CHK: JWC CHK: JWC  
 SHEET NO. 17 OF 27 SHEETS

BRIDGE NO. 69839

12/11/2017 CBR69839\_SUP06.dgn



DECK PLAN BOTTOM REINFORCEMENT



DECK PLAN BOTTOM REINFORCEMENT

**NOTES:**  
 SUPERSTRUCTURE DIMENSIONS ARE BASED ON THE EXPANSION JOINT DIMENSION AT 45° F.  
 FOR END BLOCK REINFORCEMENT, SEE "PARTIAL LONGITUDINAL SECTION SHOWING RECONSTRUCTION" DETAIL ON SHEET 19.

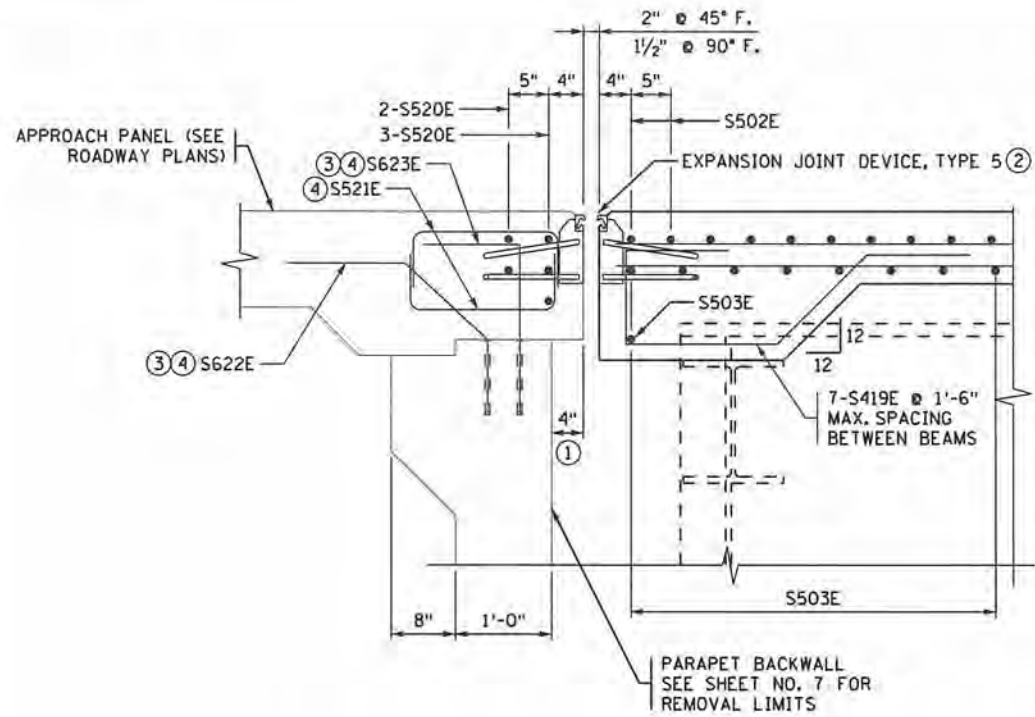
CERTIFIED BY *J. W. Carter III* 12-12-2017  
 LICENSED PROFESSIONAL ENGINEER DATE  
 NAME: JAMES W. CARTER III LIC. NO. 53305

TITLE:  
 SUPERSTRUCTURE DETAILS

DES: JJO DR: JJO APPROVED: 12-13-17  
 CHK: JWC CHK: JWC  
 SHEET NO. 18 OF 27 SHEETS

BRIDGE NO. 69839

12/11/2017 CBR69839\_SUP07.dgn

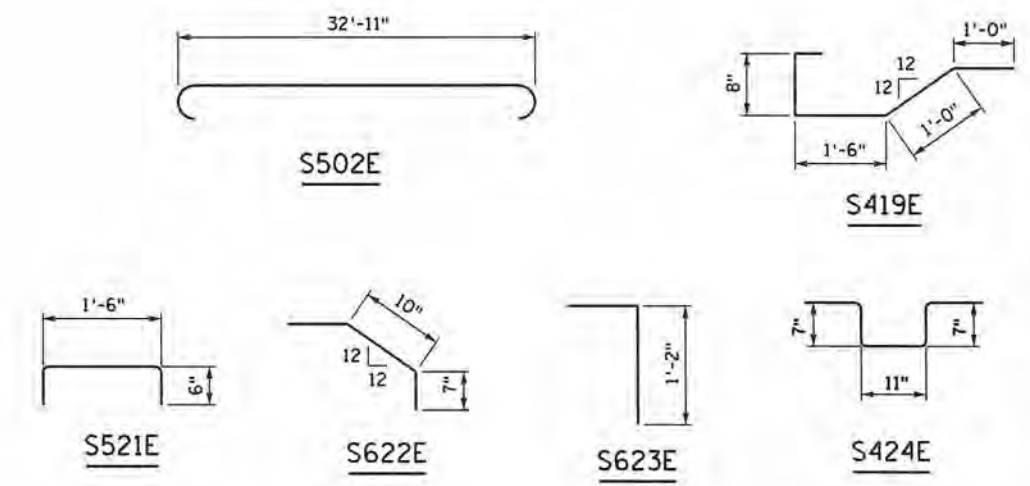


PARTIAL LONGITUDINAL SECTION SHOWING RECONSTRUCTION

BILL OF REINFORCEMENT FOR SUPERSTRUCTURE

BAR	NO.	LENGTH	SHAPE	LOCATION
S501E	603	32'-11"	—	TOP TRANS.
S502E	40	34'-1"	⌒	TOP TRANS. - END
S503E	589	32'-8"	—	BOTTOM TRANS.
S404E	90	60'-0"	—	LONG. TOP
S405E	18	25'-2"	—	LONG. TOP
S606E	34	60'-0"	—	LONG. TOP - OVER PIERS
S607E	34	19'-6"	—	LONG. TOP - OVER PIERS
S808E	12	52'-6"	—	LONG. TOP - OVER PIERS
S809E	24	30'-0"	—	LONG. TOP - OVER PIERS
S610E	72	27'-1"	—	LONG. TOP - OVER PIERS
S411E	12	42'-1"	—	LONG. TOP
S412E	6	35'-3"	—	LONG. TOP
S413E	300	60'-0"	—	LONG. BOTTOM
S414E	51	27'-3"	—	LONG. BOTTOM
S515E	30	30'-0"	—	LONG. BOTTOM
S416E	15	18'-3"	—	LONG. BOTTOM
S417E	15	25'-9"	—	LONG. BOTTOM
S418E	15	47'-3"	—	LONG. BOTTOM
S419E	42	4'-10"	⌒	BETWEEN GIRDER AT JOINT
S520E	10	32'-11"	—	ABUT. JOINT TRANSVERSE
S521E	136	2'-4"	⌒	EXP. JOINT TIE
S622E	15	3'-5"	⌒	ANCHORAGE
S623E	15	2'-2"	⌒	ANCHORAGE
S424E	1362	3'-5"	⌒	STOOL HT. BARS (WHERE NEEDED)

③⑤  
③⑤

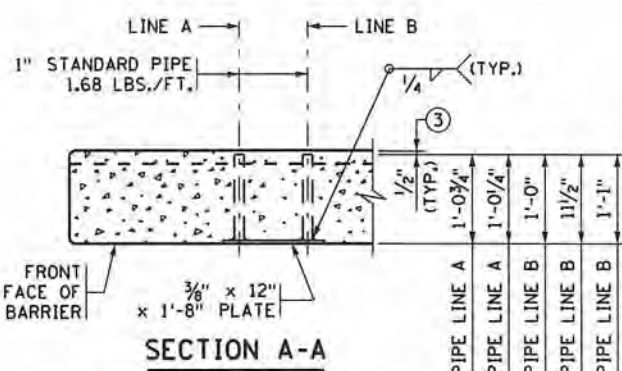
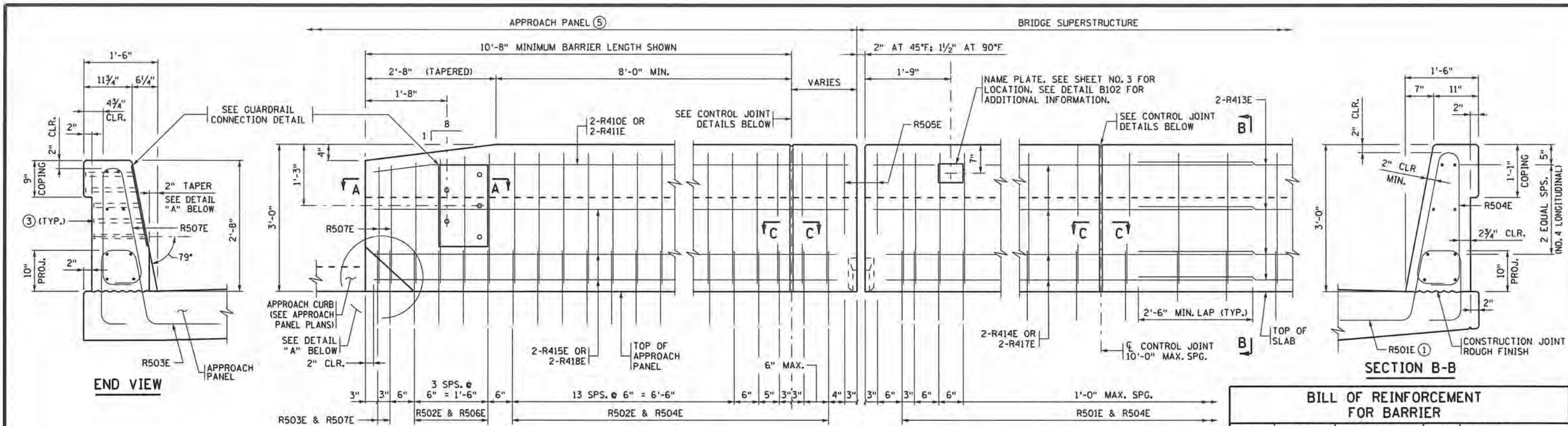


NOTES

- HOLD CONSTANT THE DIMENSION INDICATED, BETWEEN EXISTING FRONT FACE OF BACKWALL AND END OF NEW APPROACH PANEL.
- COORDINATE THE CONSTRUCTION OF EXPANSION JOINT BETWEEN THE DECK AND APPROACH PANEL.
- S622E AND S623E ANCHORAGE BARS PLUS DRILLING AND INSTALLING INCLUDED IN PAYMENT FOR "ANCH TYPE REINF BARS (TYPE L)".
- S521E, S622E AND S623E AT 1'-0" MAX. SPACING. STAGGER S622E AND S623E. SEE SHEET NO. 9 FOR ANCHORAGE DETAIL.
- NOT INCLUDED IN WEIGHT OF REINFORCEMENT, INCLUDED IN PAYMENT FOR "ANCH TYPE REINF BARS (TYPE L)".

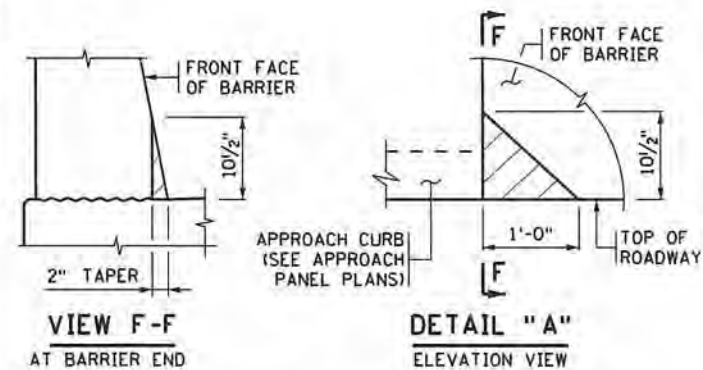
12/11/2017 CBR69839\_SUP08.dgn

CERTIFIED BY <i>J. W. Carter III</i> LICENSED PROFESSIONAL ENGINEER NAME: JAMES W. CARTER III	DATE 12-12-2017 DATE 53305	TITLE: SUPERSTRUCTURE DETAILS	DES: JJO CHK: JWC	DR: JJO CHK: JWC	APPROVED: 12-13-17	BRIDGE NO. 69839
SHEET NO. 19 OF 27 SHEETS						



**BARRIER MEETS NCHRP 350 TL-4 REQUIREMENTS ON BRIDGE DECK AND TL-3 ON APPROACH PANEL.**

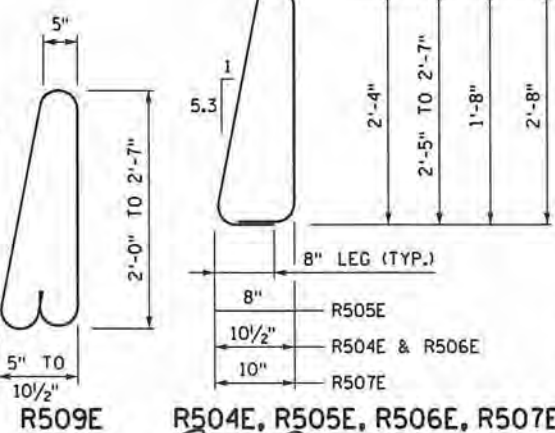
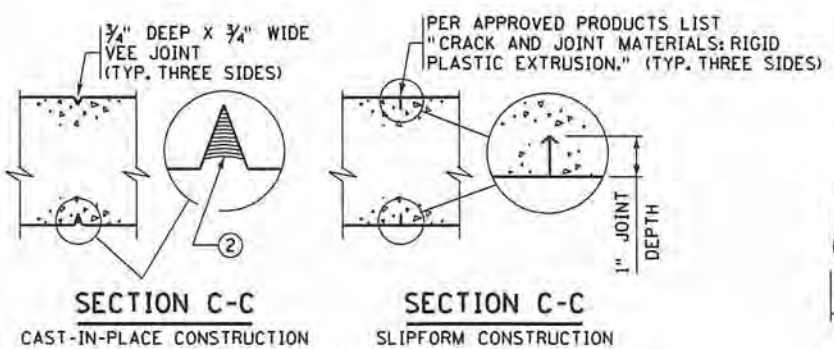
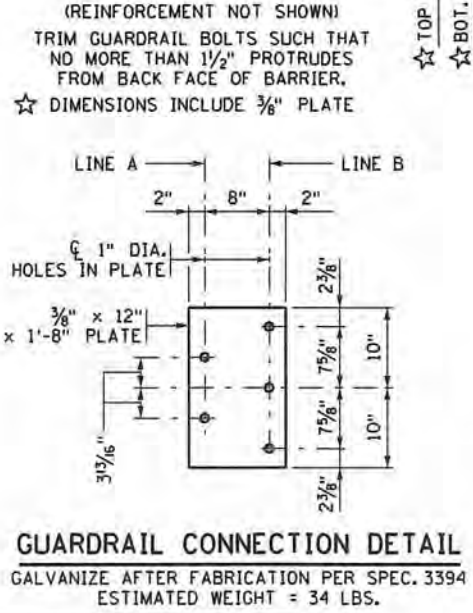
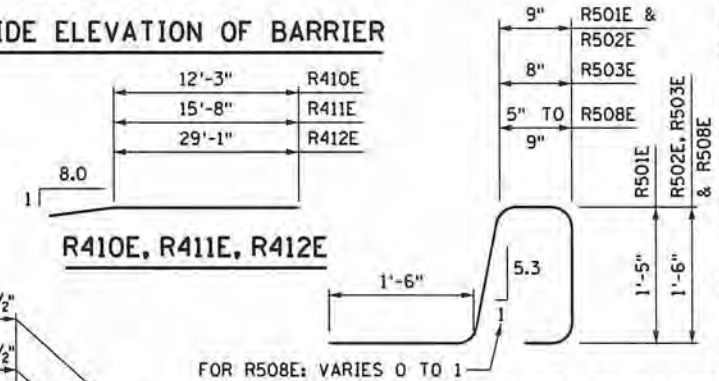
**MODIFIED BY ADDING KEYNOTE ⑤ AND BARS R508E-R412E FOR BARRIER TRANSITIONS**



**EXPANSION JOINT ④**  
EXPANSION DEVICE NOT SHOWN

**CONTROL JOINT**

**INSIDE ELEVATION OF BARRIER**



BILL OF REINFORCEMENT FOR BARRIER				
BAR	NO.	LENGTH	SHAPE	LOCATION
R501E	674	5'-7"		BARRIER DOWEL
R502E	158	5'-9"		BARRIER DOWEL
R503E	4	5'-8"		BARRIER DOWEL
R504E	824	7'-1"		BARRIER VERTICAL
R505E	8	5'-1"		BARRIER VERTICAL
R506E	2 SET OF 4	6'-7" TO 6'-11"		BARRIER VERTICAL
R507E	4	6'-5"		BARRIER VERTICAL
R508E	1 SET OF 11	5'-5" TO 5'-9"		BARRIER DOWEL
R509E	1 SET OF 11	6'-2" TO 6'-9"		BARRIER VERTICAL
R410E	2	13'-5"		BARRIER LONGIT.
R411E	2	16'-10"		BARRIER LONGIT.
R412E	2	32'-11"		BARRIER LONGIT.
R413E	128	40'-0"		BARRIER LONGIT.
R414E	8	11'-4"		BARRIER LONGIT.
R415E	6	13'-5"		BARRIER LONGIT.
R416E	8	19'-5"		BARRIER LONGIT.
R417E	8	18'-0"		BARRIER LONGIT.
R418E	6	16'-10"		BARRIER LONGIT.
R419E	6	32'-11"		BARRIER LONGIT.

**R501E, R502E, R503E, R508E**

**GENERAL NOTES**

- MEASURE PAYMENT LENGTH BETWEEN THE OUTSIDE ENDS OF THE BARRIER.
- CONCRETE BARRIER = 496 LBS./FT. (0.123 CU. YDS./FT.)
- FINISH ALL EDGES OF BARRIER WITH 1/2" CHAMFER, EXCEPT WHERE OTHERWISE NOTED.
- SPACE CONTROL JOINTS AT 10 FT. MAXIMUM. REFER TO BARRIER DETAILS SHEETS FOR SPECIFIC SPACING INFORMATION.
- GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, SPEC. 3306.
- GUARDRAIL CONNECTION AND NAME PLATE TO BE CONSIDERED INCIDENTAL TO BARRIER.
- BARRIER QUANTITIES ARE LISTED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.
- ① PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT IN DECK.
- ② JOINT SEALANT PER MNDOT APPROVED/QUALIFIED PRODUCTS LIST - CRACK AND JOINT MATERIALS - SILICONE JOINT SEALERS.
- ③ REMOVE CONCRETE FROM PIPE ENDS AFTER SLIPFORMING OR FORM REMOVAL.
- ④ REFER TO "WATERPROOF EXPANSION DEVICE" STANDARD PLANS FOR COVER PLATE DETAILS.
- ⑤ TYPICAL FOR NW & SE CORNERS. NE & SW CORNERS SIMILAR, SEE BARRIER DETAILS SHEETS FOR REINFORCEMENT.

REVISION: MAY 10, 2017

APPROVED: AUGUST 24, 2016

*Kevin Westcott*  
STATE BRIDGE ENGINEER

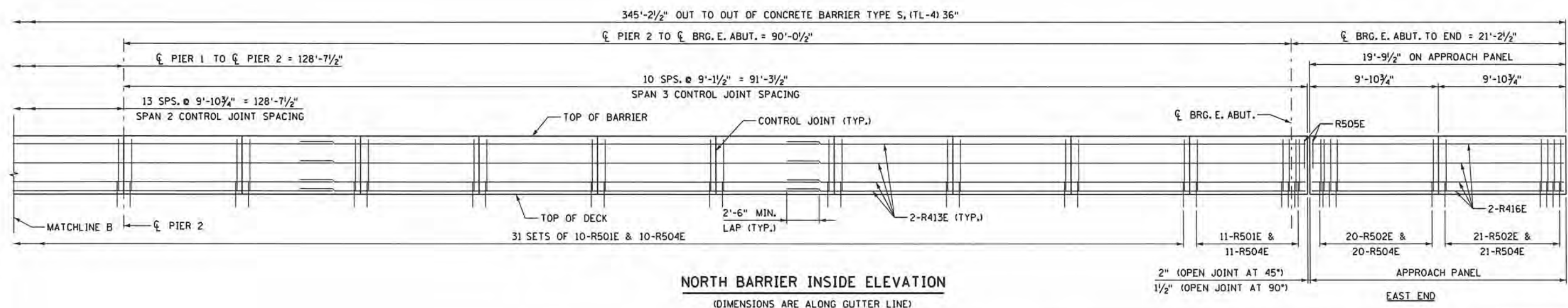
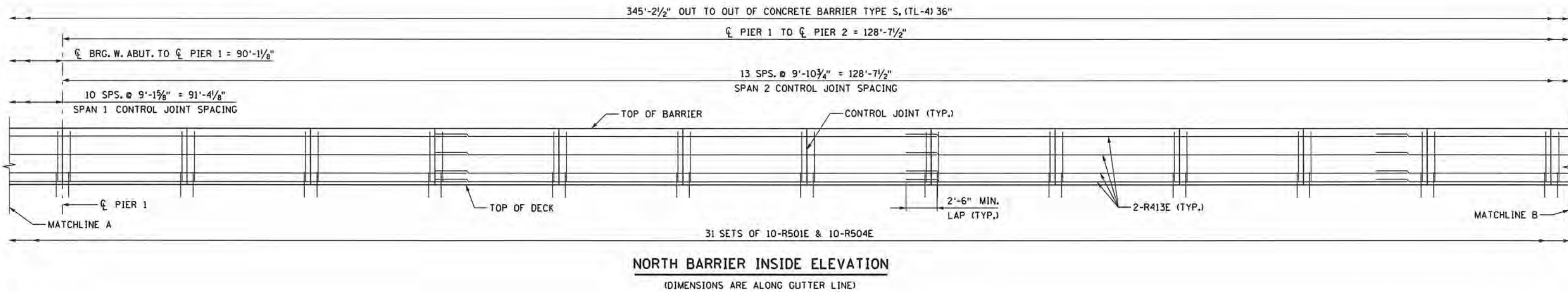
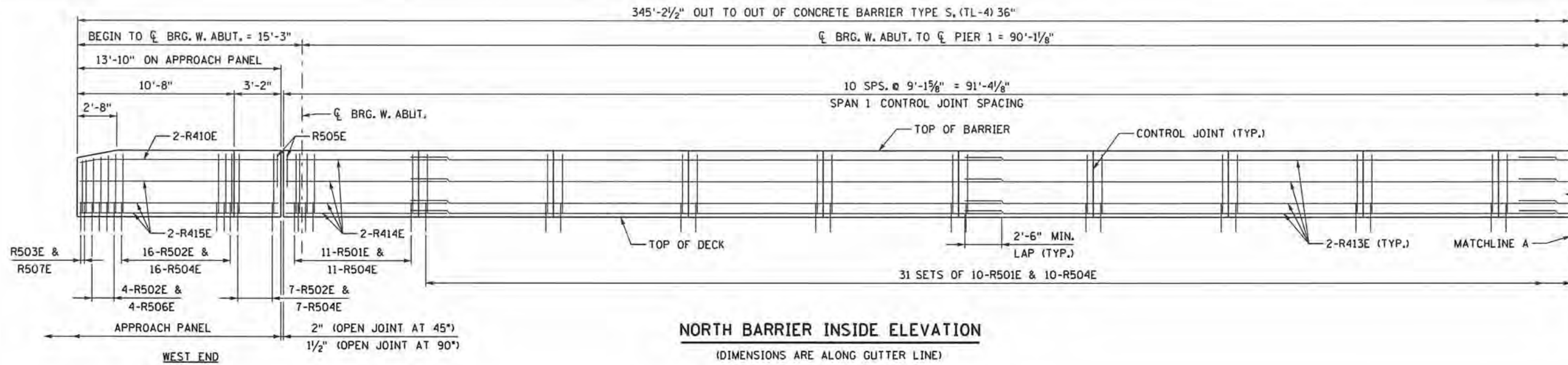
FOR SLIPFORM CONSTRUCTION: IMMEDIATELY AFTER CONCRETE IS PLACED AND WHILE IT IS STILL WET, CREATE A ONE INCH STRAIGHT GROOVE USING A TROWEL. INSERT RIGID PLASTIC EXTRUSION INTO GROOVE TO A DEPTH 1/8" BELOW THE SURFACE; FINISH OVER GROOVE COMPLETELY HIDING THE EXTRUSION.

CERTIFIED BY *James W. Carter III* 12-12-2017  
LICENSED PROFESSIONAL ENGINEER DATE  
NAME: JAMES W. CARTER III LIC. NO. 53305

TITLE: **CONCRETE BARRIER 36" (TYPE S MOD., TL-4)**  
PARAPET ABUTMENT WITH GUARDRAIL CONNECTION (WITHOUT CONCRETE WEARING COURSE)

DES: JJO DR: JJO APPROVED: 12-13-17  
CHK: JWC CHK: JWC  
SHEET NO. 20 OF 27 SHEETS  
BRIDGE NO. 69839

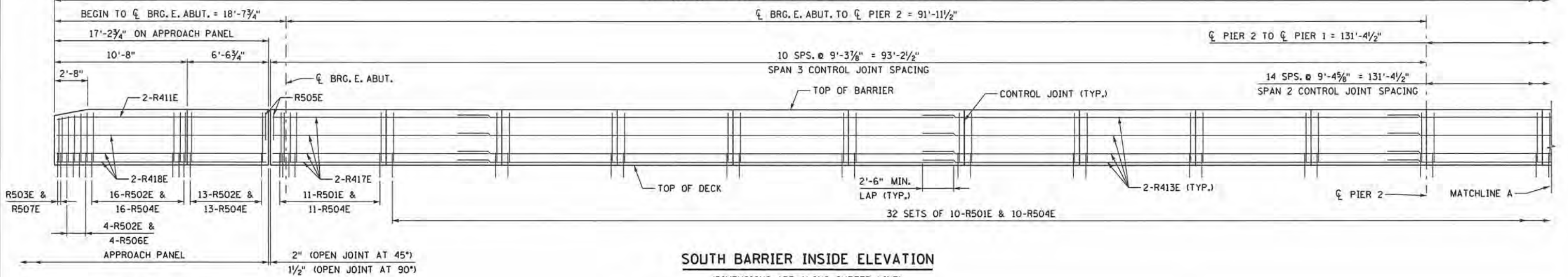
FIG. 5-397.139(A) MOD.



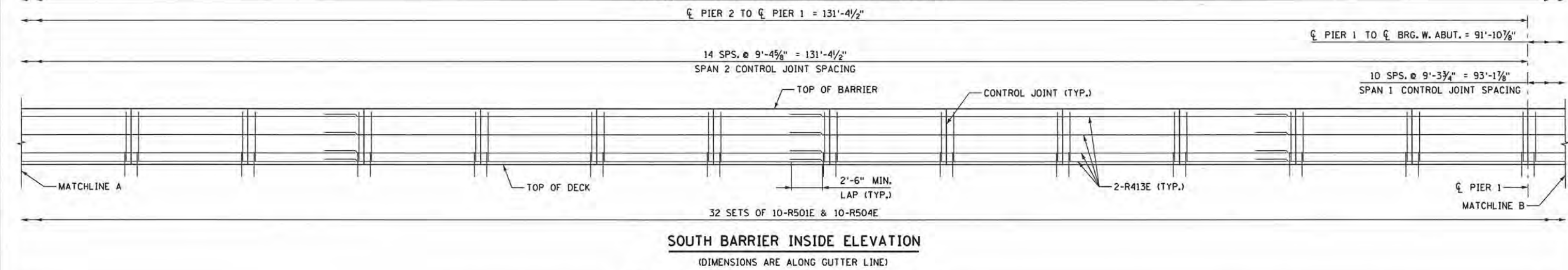
12/11/2017 CBR659839\_RAL02.dgn

CERTIFIED BY  LICENSED PROFESSIONAL ENGINEER NAME: JAMES W. CARTER III	DATE 12-12-2017 LIC. NO. 53305	TITLE: BARRIER DETAILS	DES: JJO	DR: JJO	APPROVED:	BRIDGE NO. 69839
			CHK: JWC	CHK: JWC	12-13-17	

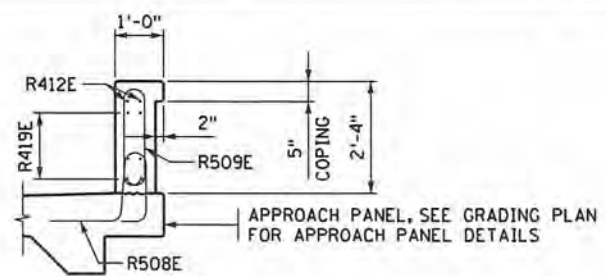
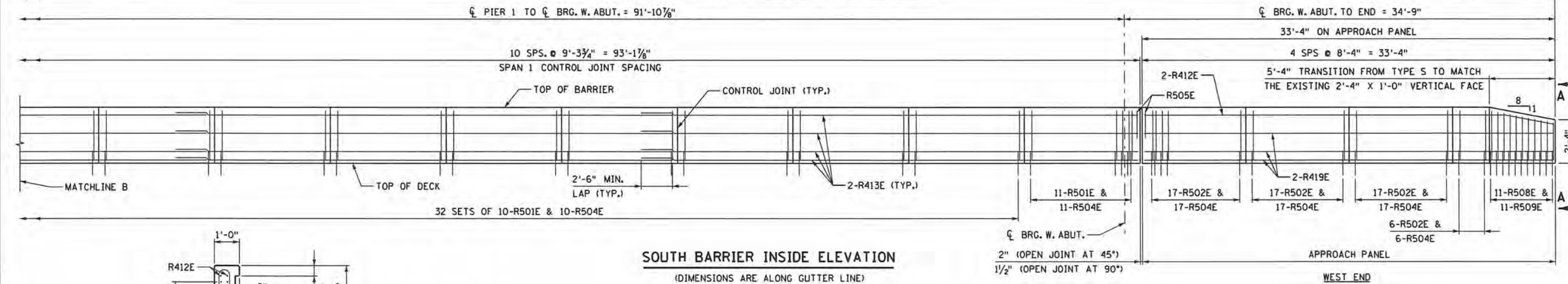
368'-7 $\frac{3}{4}$ " OUT TO OUT OF CONCRETE BARRIER TYPE S, (TL-4) 36"



368'-7 $\frac{3}{4}$ " OUT TO OUT OF CONCRETE BARRIER TYPE S, (TL-4) 36"

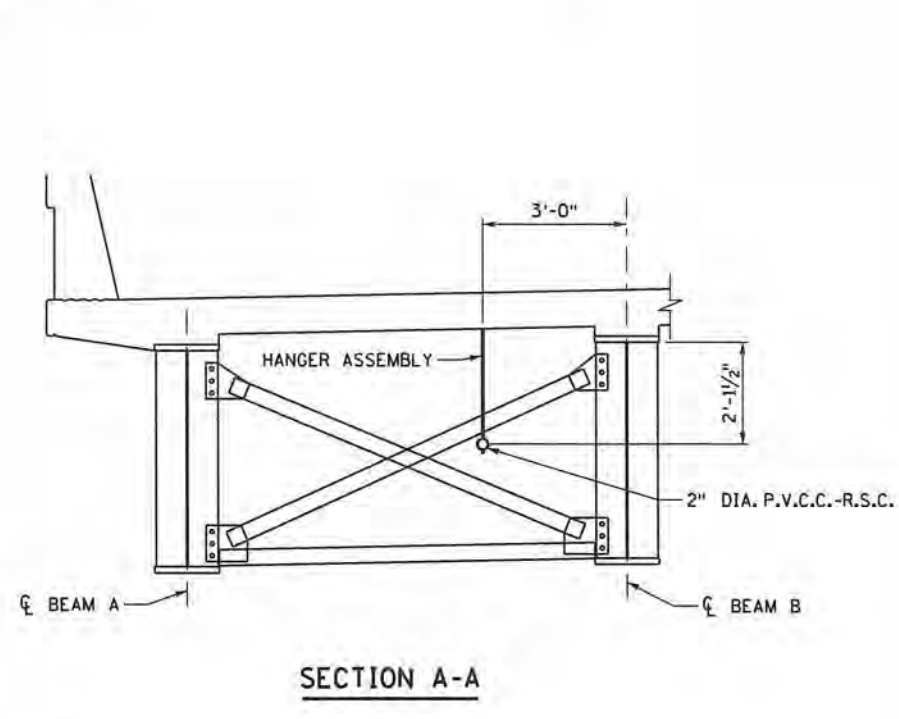
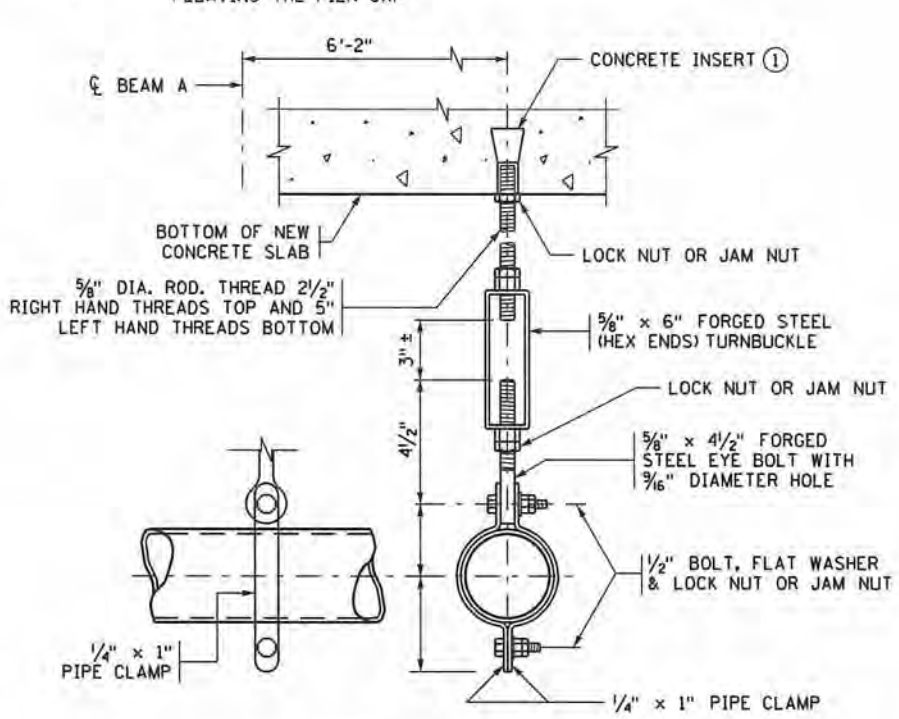
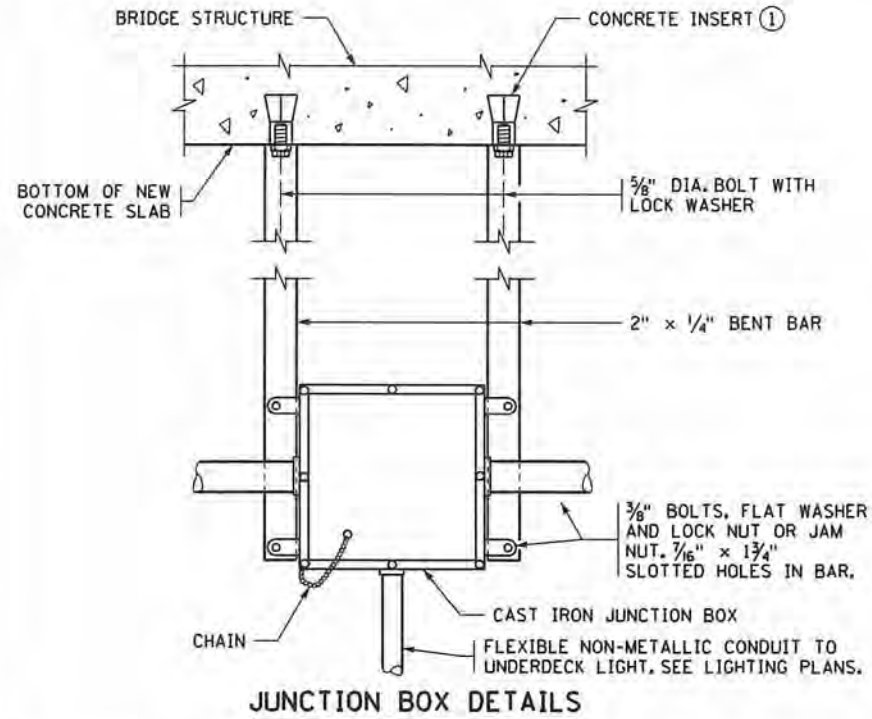
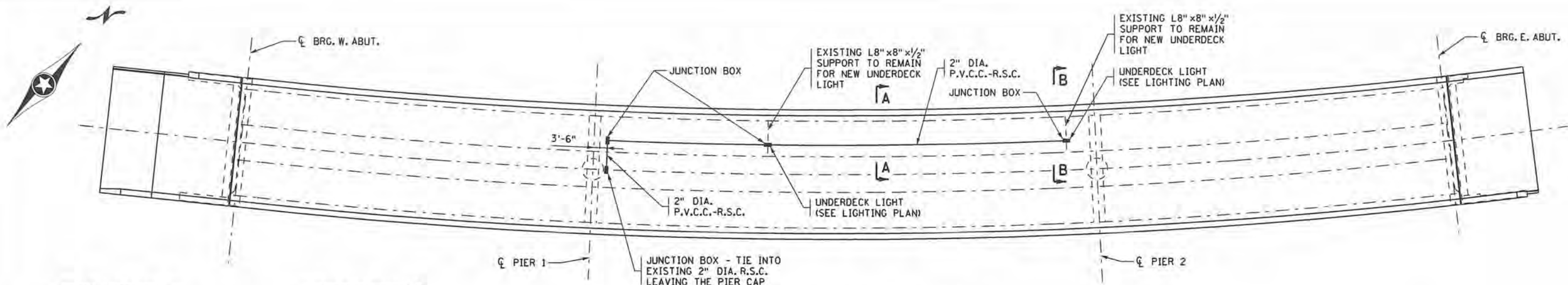


368'-7 $\frac{3}{4}$ " OUT TO OUT OF CONCRETE BARRIER TYPE S, (TL-4) 36"



CERTIFIED BY  LICENSED PROFESSIONAL ENGINEER NAME: JAMES W. CARTER III	DATE 12-12-2017 LIC. NO. 53305	TITLE: BARRIER DETAILS	DES: JJO	DR: JJO	APPROVED:	BRIDGE NO. 69839
			CHK: JWC	CHK: JWC	12-13-17	

12/11/2017 CBR69839\_RAL03.dgn



**GENERAL NOTES**

REMOVE ALL EXISTING LIGHTING CONDUIT AND WIRING, JUNCTION BOXES, UNDERDECK LIGHTS AND THEIR CORRESPONDING HANGER ASSEMBLIES, MOUNTINGS AND SUPPORTS FROM UNDER EXISTING CONCRETE SLAB, UP TO AND INCLUDING THE JUNCTION BOX IN FRONT OF PIER CAP 1, INCLUDED IN ITEM "REMOVE CONDUIT SYSTEM".

INSTALL NEW JUNCTION BOXES, LIGHTING CONDUIT AND THEIR CORRESPONDING HANGER ASSEMBLIES AND SUPPORTS, AS INDICATED ON THIS SHEET AND PER SPEC. 2565.3, INCLUDED IN ITEM "CONDUIT SYSTEM TYPE 1". FOR WIRING AND UNDERDECK LIGHTS, SEE LIGHTING PLAN.

LIGHTING CONDUIT SHALL BE PVC COATED, HOT DIPPED GALVANIZED RIGID STEEL CONDUIT (PVCC-RSC), COMPLYING WITH SPEC. 2565 AND SPEC. 3805.

RODS, EYE BOLTS AND PIPE CLAMPS SHALL COMPLY WITH SPEC. 3313, TYPE I.

TURNBUCKLES AND EYE BOLTS SHALL COMPLY WITH A.S.T.M. A235 CLASS A MINIMUM REQUIREMENTS.

FLAT BARS AND ANCHORAGES SHALL COMPLY WITH SPEC. 3306.

CONCRETE INSERTS SHALL BE APPROVED TYPE MALLEABLE IRON. MATERIAL AS PER SPEC. 3324, GRADE 35018. TAP AFTER GALVANIZING.

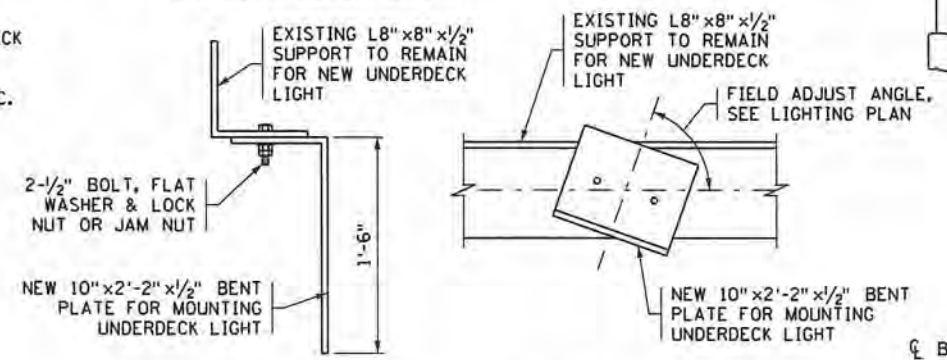
GALVANIZE BOLTS, NUTS, WASHERS, TURNBUCKLES, RODS, EYE BOLTS, AND INSERTS AS PER SPEC. 3392. GALVANIZE OTHER MATERIAL AS PER SPEC. 3394 AFTER FABRICATION.

JUNCTION BOXES SHALL COMPLY WITH SPEC. 3838.

CONTRACTOR IS RESPONSIBLE FOR PREPARING CONDUIT SYSTEM ERECTION DRAWINGS, INCLUDING ALL DECK INSERTS, HANGER ASSEMBLY DETAILS, FITTINGS, SLEEVES, ETC. SEE SPECIAL PROVISIONS.

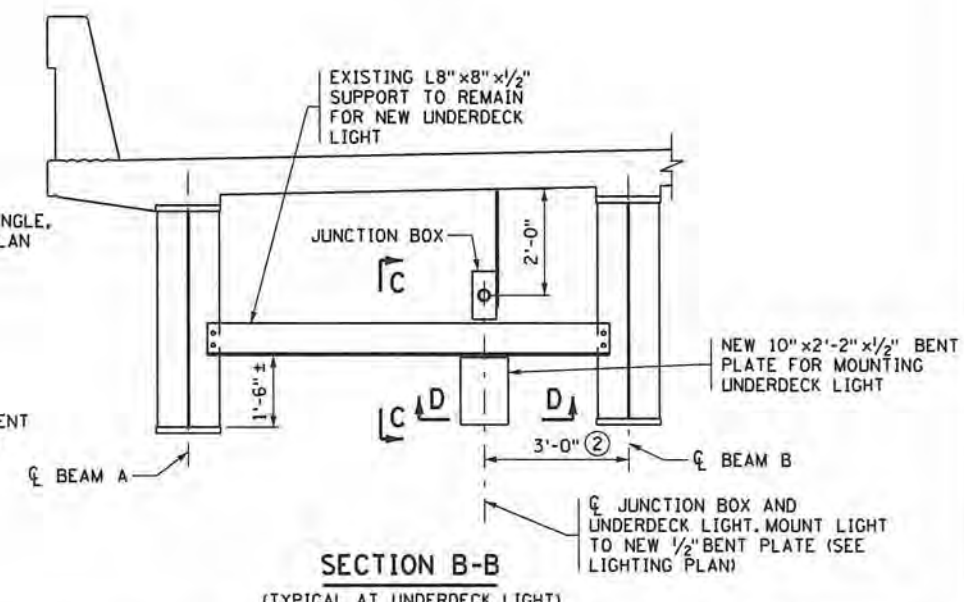
**HANGER ASSEMBLY**

EACH HANGER ASSEMBLY SHALL CONSIST OF CONCRETE INSERT, 5/8" DIA. ROD, PIPE CLAMPS, NUTS, BOLTS, WASHERS, TURNBUCKLE AND EYE BOLT



**SECTION C-C**

**SECTION D-D**



**SECTION B-B**

(TYPICAL AT UNDERDECK LIGHT)

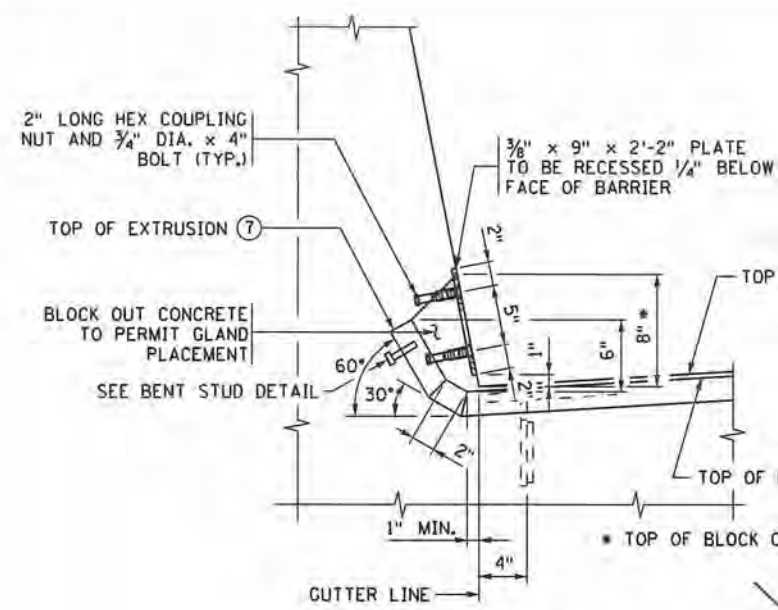
- ① SPACE INSERTS AT 10'-0" MAXIMUM CENTERS.
- ② MOUNTING PLATE MAY BE SHIFTED UP TO 1'-0" ± FROM JUNCTION BOX TO AVOID CONFLICT WITH INPLACE LATERAL BRACING.

CERTIFIED BY *[Signature]* 12-12-2017 DATE  
 LICENSED PROFESSIONAL ENGINEER  
 NAME: JAMES W. CARTER III LIC. NO. 53305

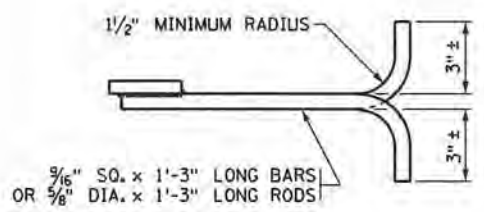
TITLE: CONDUIT SYSTEM (TYPE 1)

DES: JJO	DR: JJO	APPROVED: <i>[Signature]</i>	BRIDGE NO. 69839
CHK: JWC	CHK: JWC	12-13-17	
SHEET NO. 23 OF 27 SHEETS			

12/11/2017 C:\BRS\9839\_S\51501.dgn

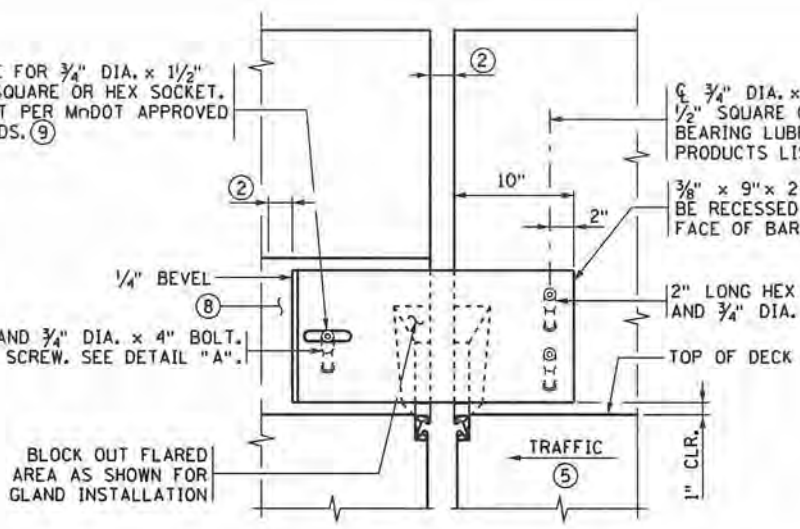


**SECTION THROUGH BARRIER**  
TYPE S BARRIER

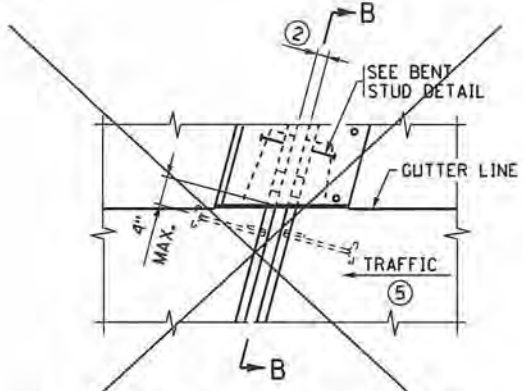


**BAR-ROD DETAIL**

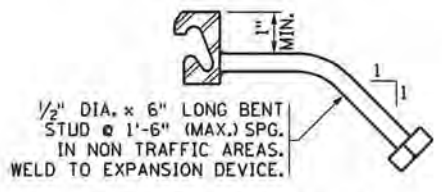
1" DIA. x 6" LONG SLOTTED HOLE FOR 3/4" DIA. x 1/2" FLATHEAD CAP SCREW WITH 1/2" SQUARE OR HEX SOCKET. APPLY BRIDGE BEARING LUBRICANT PER MDOT APPROVED PRODUCTS LIST TO SCREW THREADS. ⑨



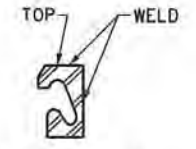
**BARRIER ELEVATION**



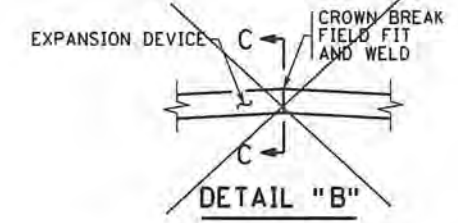
**PLAN VIEW @ EXPANSION DEVICE**  
MEDIAN OR SIDEWALK ALTERNATE



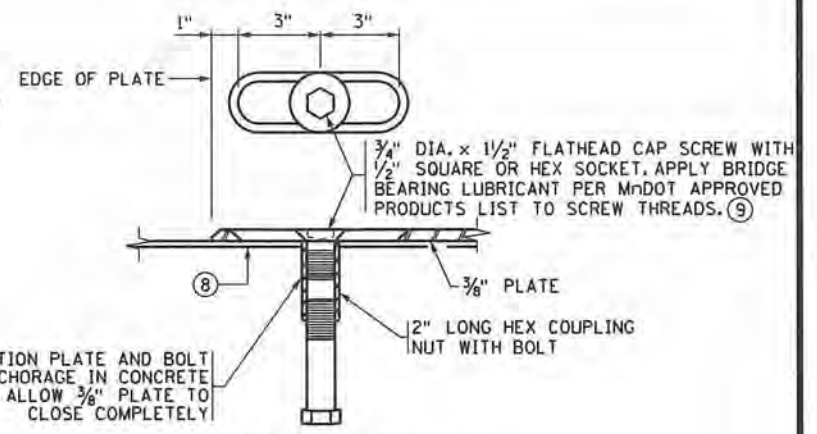
**BENT STUD DETAIL**



**SECTION C-C**



**DETAIL "B"**

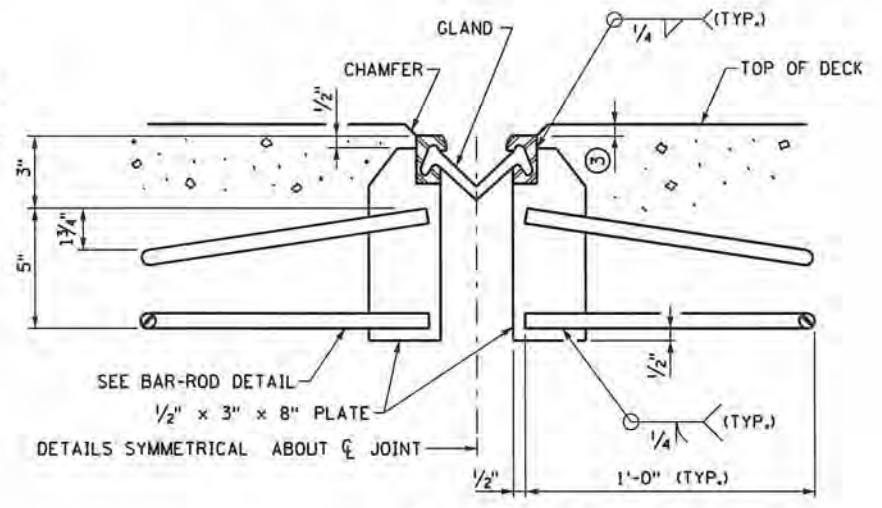


**DETAIL "A"**

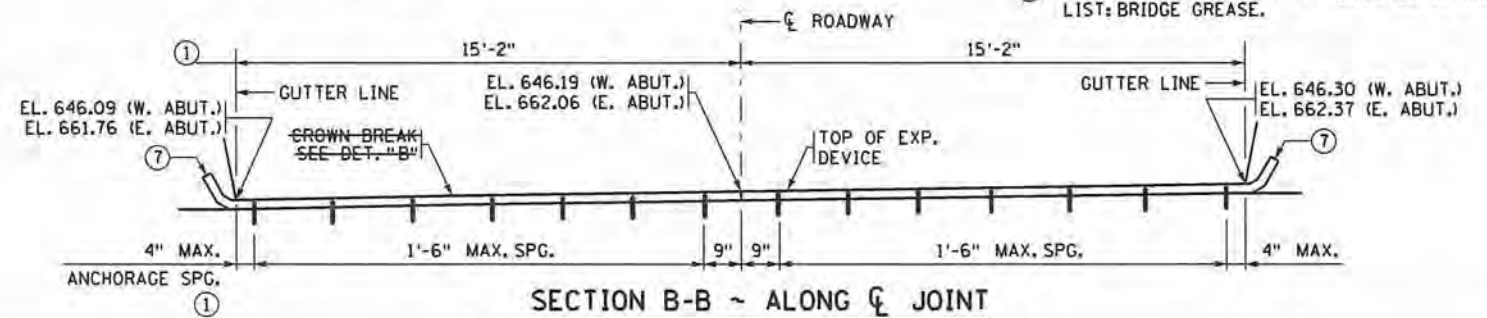
**GENERAL NOTES**

- GALVANIZE STRUCTURAL STEEL AFTER FABRICATION PER SPEC. 3394. GALVANIZE FASTENERS PER SPEC. 3392.
- LOCATE JOINTS IN EXTRUSION AT BREAKS IN TRANSVERSE PROFILE AND AS OTHERWISE REQUIRED, WITH CLOSE FIT, WELDED JOINTS. REPAIR AFTER WELDING PER SPEC. 2471.3.L.
- PROVIDE STRUCTURAL STEEL PER SPEC. 3306 OR SPEC. 3309.
- STRAIGHTEN EXPANSION DEVICE TO A TOLERANCE OF 1/8" IN 10 FT.
- 3/4" DIA. x 1/2" FLATHEAD CAP SCREW WITH 1/2" SQUARE OR HEX SOCKET PER SPEC 3391. COUNTERSINK CAP SCREWS 1/16" BELOW TOP OF PLATE. APPLY BRIDGE BEARING LUBRICANT PER MDOT APPROVED PRODUCTS LIST TO SCREW THREADS. ⑨
- PAYMENT LENGTH IS BASED ON THE HORIZONTAL DISTANCE BETWEEN THE OUTSIDE EDGES OF THE DECK MEASURED ALONG THE CENTERLINE OF JOINT.

- ① DIMENSIONS ARE ALONG CENTERLINE OF JOINT.
- ② 2" AT 45° F; 1/2" AT 90° F. 2" AT ALL TEMPS.
- ③ 1/8" (1/4" MAX.). 1/2" (5/8" MAX.) WHEN SNOWPLOW FINGERS ARE USED. SNOWPLOW FINGERS ARE REQUIRED FOR SKEWS OVER 15° AND LESS THAN 50°.
- ④ SEE SUPERSTRUCTURE DETAILS FOR RADIUS.
- ⑤ SEE SHEET NO. 3 FOR DIRECTION OF TRAFFIC.
- ⑥ PLACE BAR-ROD NORMAL TO JOINT ON NEW BRIDGES AND JOINT REPLACEMENTS. ON JOINT REPLACEMENTS WHEN SKEW IS OVER 15° AND LESS THAN 50° BEND RODS PARALLEL TO ROADWAY.
- ⑦ EXTEND GLAND 1" MIN. BEYOND THE TOP OF THE EXTRUSION.
- ⑧ PROVIDE SMOOTH CONCRETE FINISH BENEATH PLATE WITH 0" MIN. TO 1/8" MAX. GAP BETWEEN CONCRETE AND UNDERSIDE OF PLATE. PROVIDE BOND BREAKER (DUCT TAPE, ETC.) TO UNDERSIDE OF COVER PLATE.
- ⑨ LUBRICANT PER MDOT APPROVED/QUALIFIED PRODUCTS LIST: BRIDGE GREASE.

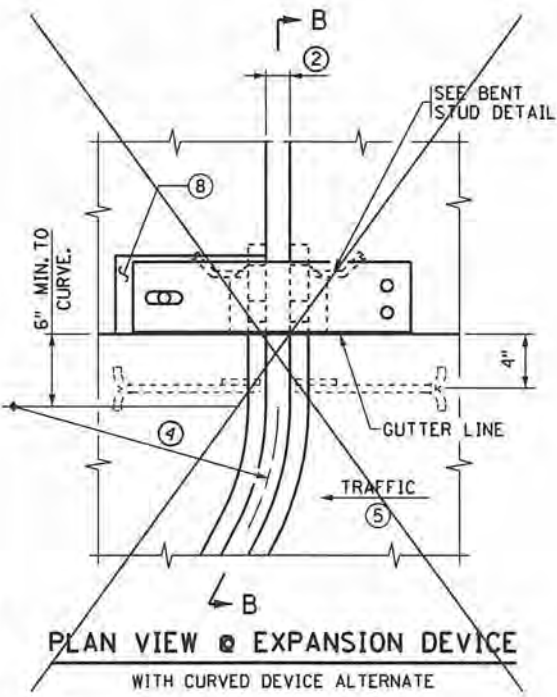


**SECTION A-A**

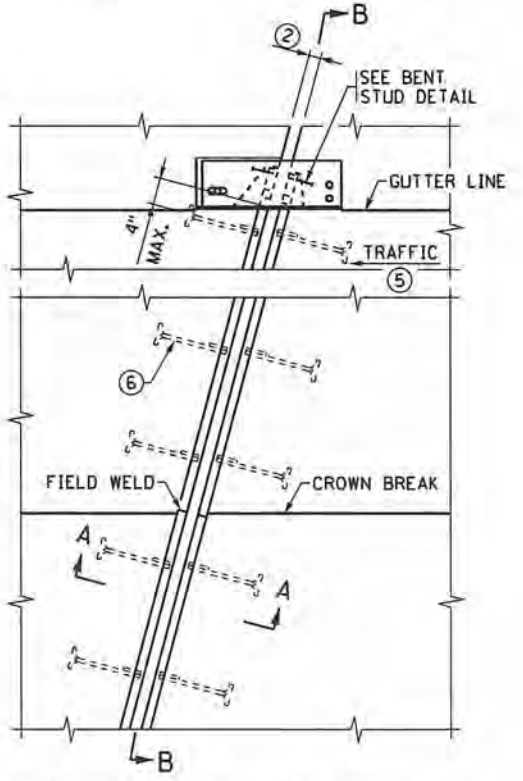


**SECTION B-B ~ ALONG Q JOINT**

ELEVATIONS SHOWN ARE 1/8" BELOW TOP OF SLAB @ Q JOINT  
ELEVATIONS SHOWN ARE 1/2" BELOW TOP OF SLAB @ Q JOINT



**PLAN VIEW @ EXPANSION DEVICE**  
WITH CURVED DEVICE ALTERNATE



**PLAN VIEW @ EXPANSION DEVICE**  
WITH STRAIGHT DEVICE

REVISION: 01-05-2017  
APPROVED: AUGUST 24, 2016  
*Levin Weston*  
STATE BRIDGE ENGINEER

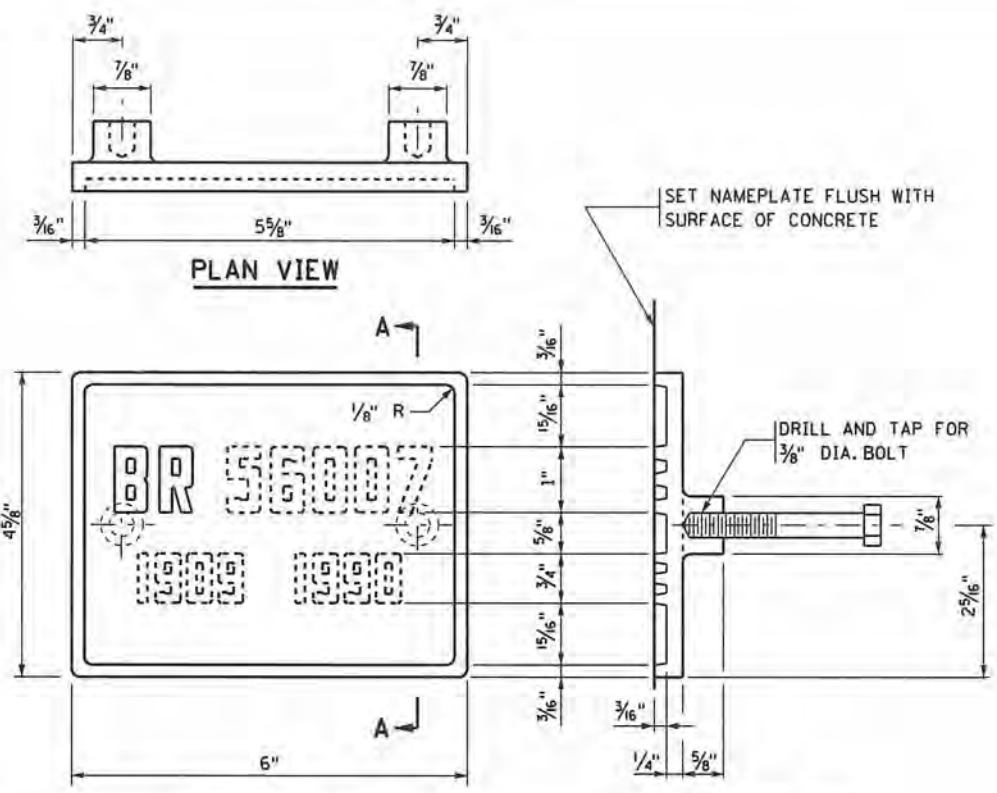
CERTIFIED BY *James W. Carter III* 12-12-2017  
LICENSED PROFESSIONAL ENGINEER DATE  
NAME: JAMES W. CARTER III LIC. NO. 53305

**WATERPROOF EXPANSION DEVICE**  
(WITH TYPE S BARRIER)

DES: JJO DR: JJO  
CHK: CTW CHK: JWC  
12/13-17  
BRIDGE NO. 69839  
SHEET NO. 24 OF 27 SHEETS

**FIG. 5-397.627(B)**





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

BRIDGE: 69839  
 YEAR: 1969 YEAR: 2018



**NOTES:**

NO SHOP DRAWING REQUIRED.

MATERIAL SHALL COMPLY WITH 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.

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

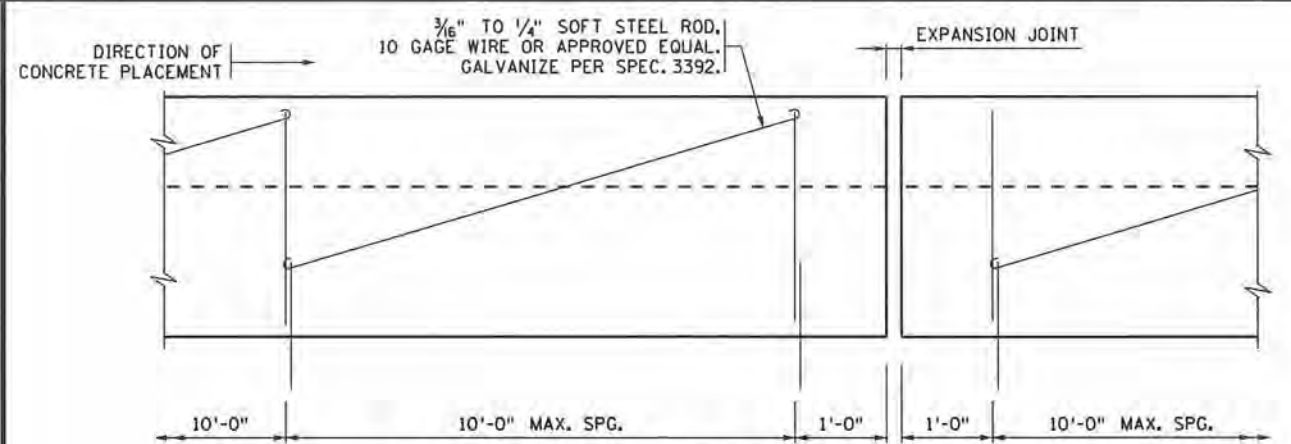
*Daniel J. Wenzon*  
 STATE BRIDGE ENGINEER

STATE OF MINNESOTA  
 DEPARTMENT OF TRANSPORTATION

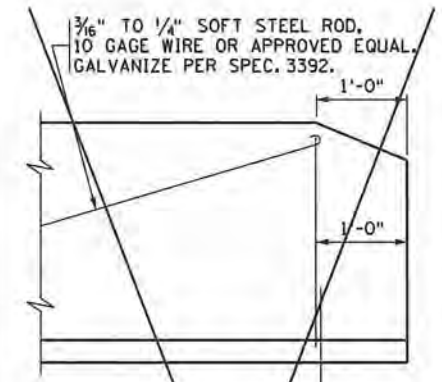
**BRIDGE NAMEPLATE**  
 (FOR BRIDGE RECONSTRUCTION)

REVISION  
 09-11-2014

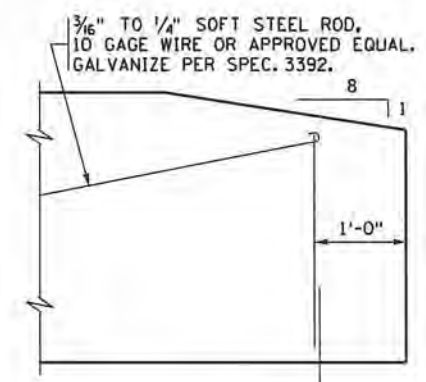
DETAIL NO.  
 B102



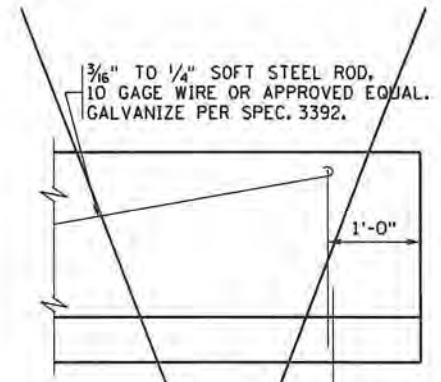
**INSIDE ELEVATION OF BARRIER OR PARAPET**



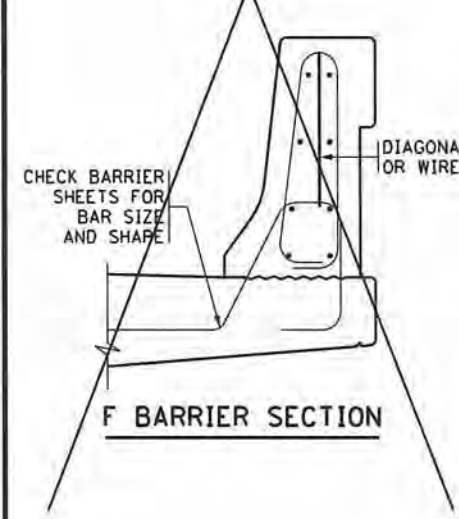
**INSIDE ELEVATION OF F BARRIER**  
 AT END OF BARRIER



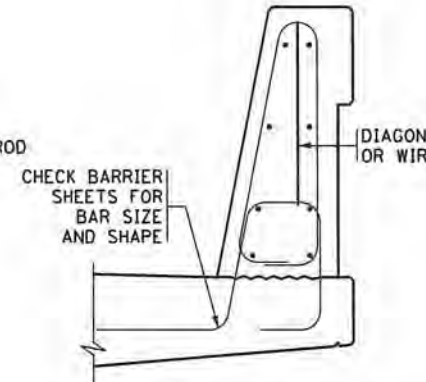
**INSIDE ELEVATION OF S BARRIER**  
 AT END OF BARRIER



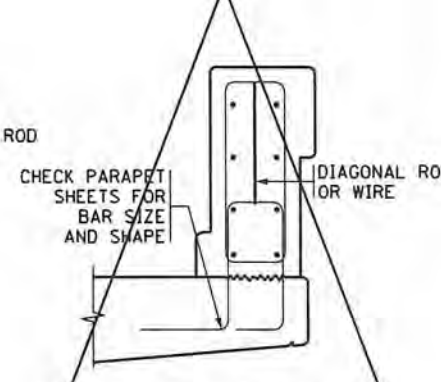
**INSIDE ELEVATION OF PARAPET**  
 AT END OF PARAPET



**F BARRIER SECTION**



**S BARRIER SECTION**



**PARAPET SECTION**

**NOTES:**

FOR ADDITIONAL DIMENSIONS, DETAILS, REINFORCEMENT, NOTES, AND CONTROL JOINT SPACING SEE BARRIER OR PARAPET SHEET.

PAY QUANTITIES WILL NOT BE ADJUSTED AS A RESULT OF SELECTING SLIPFORM ALTERNATE.

USE A SIMILAR METHOD FOR TALLER BARRIERS OR MODIFIED VERSIONS OF THIS BARRIER.

APPROVED: AUGUST 24, 2016

*Kevin Westra*  
 STATE BRIDGE ENGINEER

STATE OF MINNESOTA  
 DEPARTMENT OF TRANSPORTATION

**CONCRETE BARRIER OR PARAPET**  
 (SLIPFORM ALTERNATE)

REVISION

DETAIL NO.  
 B830

CERTIFIED BY *James W. Carter III* 12-12-2017 DATE  
 LICENSED PROFESSIONAL ENGINEER  
 NAME: JAMES W. CARTER III L.I.C. NO. 53305

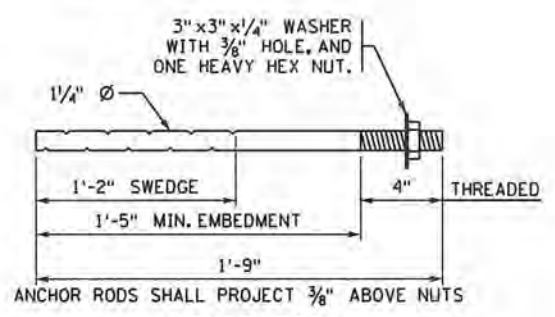
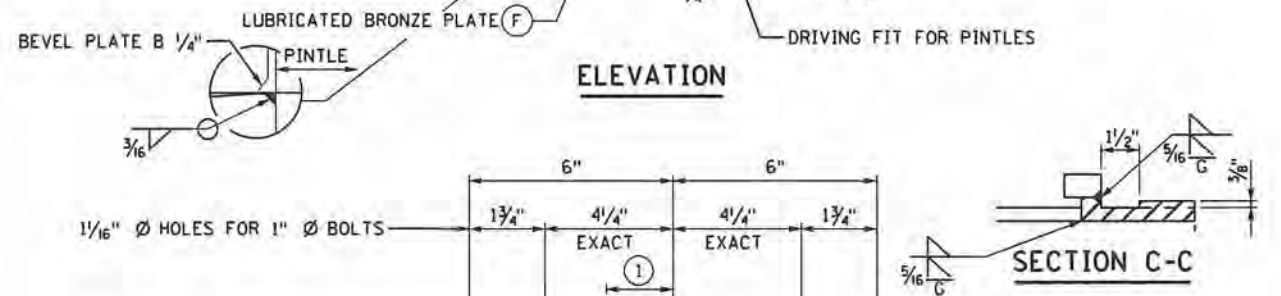
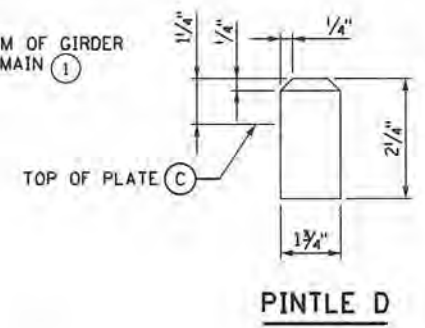
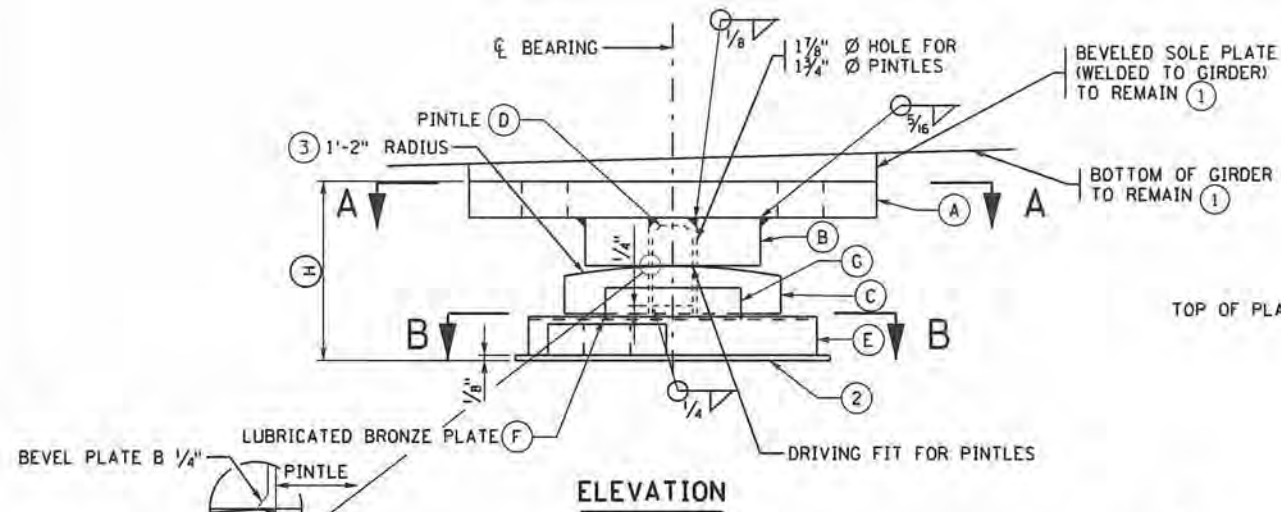
TITLE:  
 STANDARD DETAILS

DES: JJO DR: JJO APPROVED: 12-13-17  
 CHK: JWC CHK: JWC  
 SHEET NO. 25 OF 27 SHEETS

BRIDGE NO.  
 69839

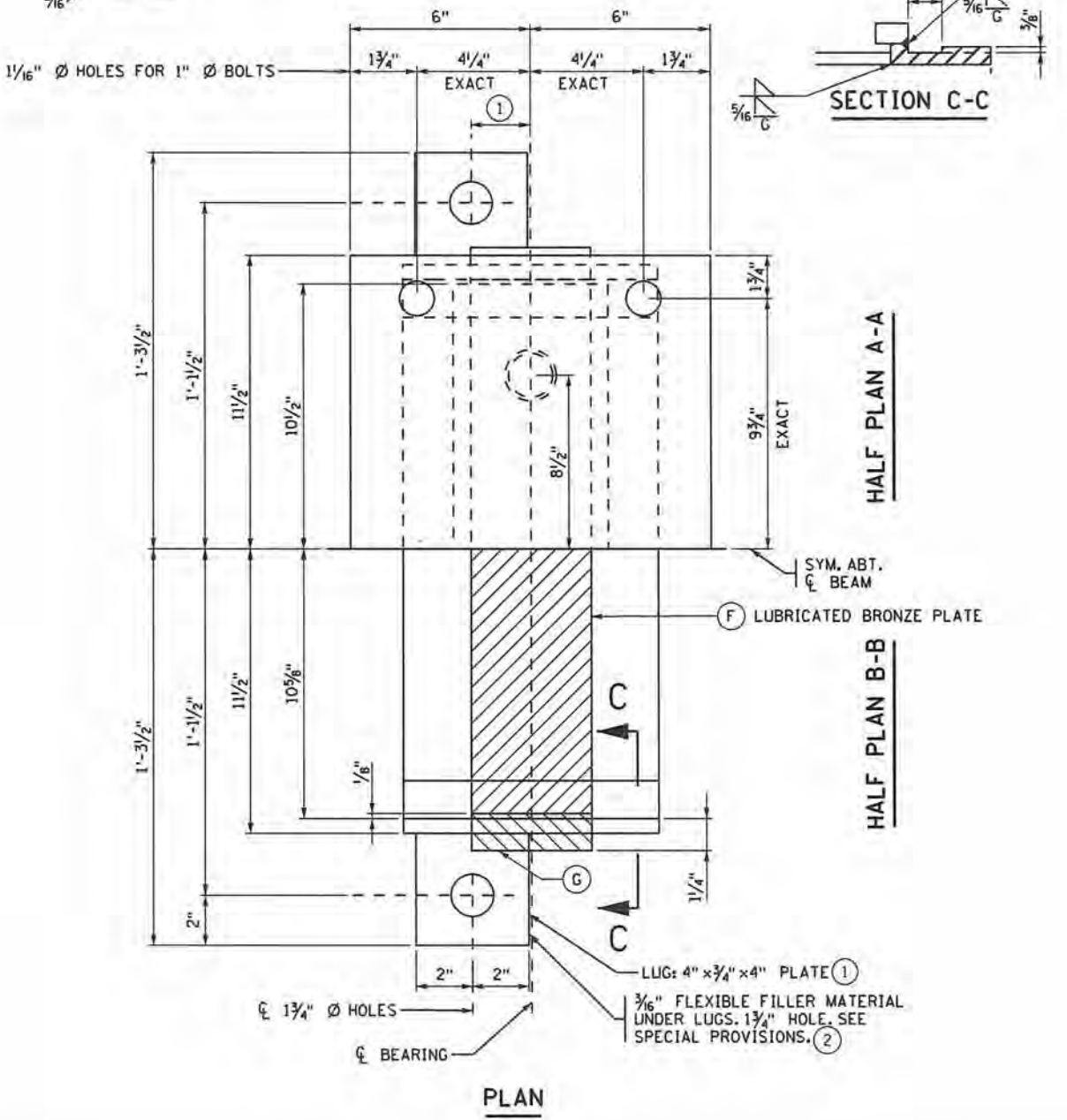
12/11/2017 CBR69839\_DET01.dgn

THIS SHEET WAS DEVELOPED FOLLOWING DETAIL NO. B144 IN THE 1968 ORIGINAL BRIDGE PLANS FOR BRIDGE NO. 69839.



**NOTES:**

- ① SUGGESTED ORDER OF OPERATIONS: REMOVE FOUR 1" BOLTS CONNECTING BEVELED SOLE PLATE TO BEARING PLATE A, CUT OFF ANCHOR RODS. TEMPORARILY SUPPORT EXISTING EXTERIOR GIRDER. REMOVE EXISTING EXTERIOR BEARING FROM BELOW BEVELED SOLE PLATE. CORE OUT EXISTING ANCHOR RODS. REPLACE BEARING, GROUT ANCHOR RODS, AND RECONNECT TO BEVELED SOLE PLATE WITH FOUR NEW 1" BOLTS. INCLUDED IN ITEM "RECONSTRUCT EXPANSION BEARING". SEE SPECIAL PROVISIONS.
  - ② PROVIDE 1/8" 60 DUROMETER PLAIN ELASTOMERIC PAD OR PREFORMED FABRIC PAD MEETING AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATION SECTION 18.10. WAIVE THE SAMPLING AND TESTING REQUIREMENTS UNDER 3741. "ELASTOMERIC BEARING PADS," AND AASHTO M 251.
  - ③ MACHINE TOP OF PLATE C TO RADIUS SHOWN AND TO 250 MICRO. MACHINE BOTTOM TO 125 MICRO.
  - ④ FIELD VERIFY DIMENSIONS OF BEARING PRIOR TO FABRICATION OF NEW BEARINGS.
- PINTLE D SHALL COMPLY WITH SPEC 3314, TYPE III.  
 ALL OTHER STRUCTURAL STEEL PER SPEC 3306.  
 ANCHOR RODS SHALL COMPLY WITH SPEC. 3385 TYPE A.  
 LUBRICATED BRONZE PLATES PER SPEC 3329.  
 FINISH RECESS IN PLATE E TO 250 MICRO.  
 PLATES SHALL BE FLAT AFTER WELDING AND FABRICATION.  
 GALVANIZE AFTER FABRICATION AND BEFORE BRONZE IS FITTED IN PLACE PER SPEC 3394. NO PAINT.  
 BRONZE BEARING PLATES SHALL BE BOXED FOR SHIPMENT PER SPEC 2471.3.0.  
 PAYMENT FOR "RECONSTRUCT EXPANSION BEARING" SHALL INCLUDE ALL MATERIALS SHOWN IN THIS DETAIL.



A	B	C*	D	E	F*	G	H
12" x 1" x 1'-11"	6" x 1 1/2" x 1'-9"	6" x 1 1/4" x 1'-9"	1 3/4" Ø x 2 1/4"	8" x 1" x 1'-11"	4" x 1/2" x 1'-9"	1 1/4" x 1" x 4"	5"

\* CAST BRONZE SHALL HAVE MACHINE-FINISHED EDGES TO WIDTH AND LENGTH SHOWN. BOTTOM SURFACE TO BE MACHINED TO 250 MICRO AND TOP SURFACE TO 125 MICRO. WIDTH AND LENGTH OF CAST OR WROUGHT BRONZE SHALL BE HELD TO +0.000 AND -0.050 INCH TOLERANCE.  
 \*FINISHED THICKNESS OF PLATE C MAY BE LESS 1/16" LESS THAN THICKNESS SHOWN.

12/11/2017 CBR69839\_DET03.dgn

CERTIFIED BY  LICENSED PROFESSIONAL ENGINEER NAME: JAMES W. CARTER III	DATE 12-12-2017 L.I.C. NO. 53305	TITLE: EXPANSION BEARING ASSEMBLY WITH GUIDE BARS		DES: CTW CHK: JWC	DR: CTW CHK: JWC	APPROVED:  12/13/17	BRIDGE NO. 69839
		SHEET NO. 26 OF 27 SHEETS					

