

PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS

THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50.

CONNECTION ANGLE OR CONNECTION PLATE AND PLATE WASHERS IN

CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE

MAKE ALL BOLTED DIAPHRAGM CONNECTIONS WITH 1/8" OR 1" ASTM

BOLTS, HEAVY HEX NUTS, HARDENED WASHERS, AND DIRECT TENSION INDICATORS (DTI'S) IN ACCORDANCE WITH ASTM B 695 CLASS 50. FOR

AASHTO M 232 MAY BE SUBSTITUTED FOR MECHANICAL GALVANIZING

AFTER INSTALLATION OF STEEL DIAPHRAGMS, REPAIR ALL DAMAGED

AREAS OF THE GALVANIZED FINISH IN ACCORDANCE WITH ASTM A 780.

F3125, GRADE A325 (TYPE 1) BOLTS. MECHANICALLY GALVANIZE

SUBMIT SHOP PLANS FOR STEEL INTERMEDIATE DIAPHRAGMS IN

FORM BOLT HOLES IN PRESTRESSED CONCRETE BEAMS USING 2" INSIDE DIAMETER PIPE AND LEAVE PIPE IN PLACE AFTER FORMS ARE

TENSION BOLTS THROUGH THE BEAM WEB TO BE SNUG TIGHT AND THEN TURN THE BOLTS AN ADDITIONAL $\frac{1}{4}$ TURN. PEEN THREADS ON ALL BOLTS INSTALLED THROUGH THE BEAM WEB. INSTALL ALL OTHER

DO NOT PLACE DECK SLAB UNTIL ALL INTERMEDIATE DIAPHRAGMS ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE

INTERMEDIATE DIAPHRAGM ASSEMBLIES IN THE UNIT PRICE BID FOR

BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT

THE 1" BOLT ASSEMBLIES, GALVANIZING IN ACCORDANCE WITH

ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

DECK CONCRETE WILL BE PLACED DURING THE POUR.

PERMANENT PART OF THE COMPLETED STRUCTURE.

LEAVE STEEL INTERMEDIATE DIAPHRAGMS IN PLACE AS A

INCLUDE ALL COST OF FURNISHING AND INSTALLING STEEL

ASSEMBLY TO VERIFY PROPER TENSIONING.

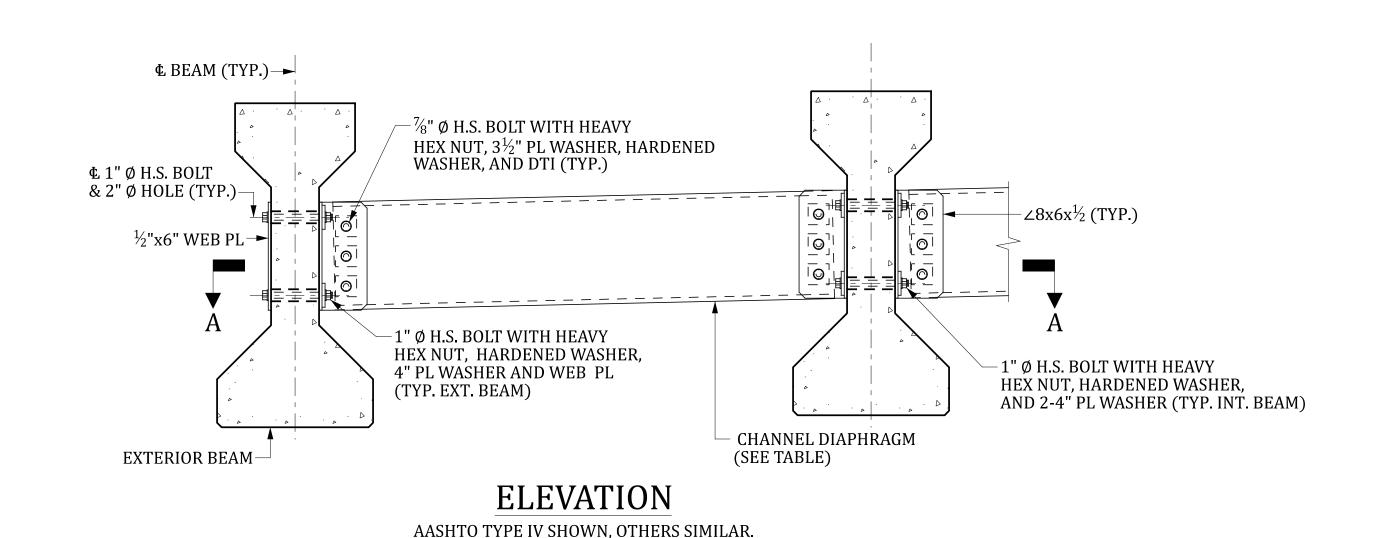
PRESTRESSED CONCRETE BEAMS.

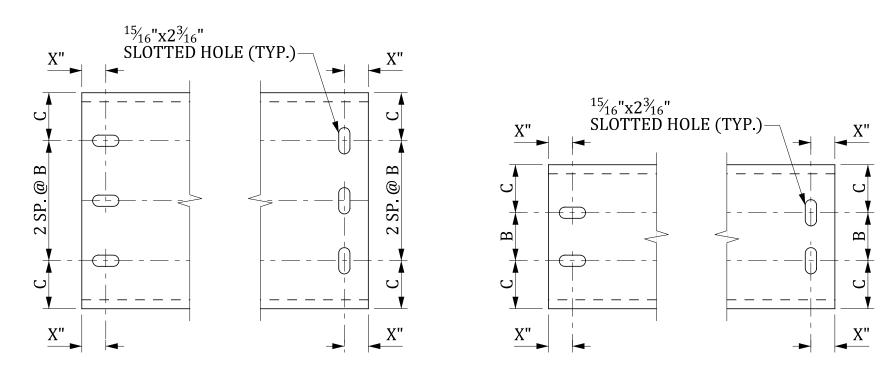
GALVANIZE ALL COMPONENTS OF DIAPHRAGMS INCLUDING

NOTES:

REMOVED.

BRUSHING IS NOT PERMITTED.

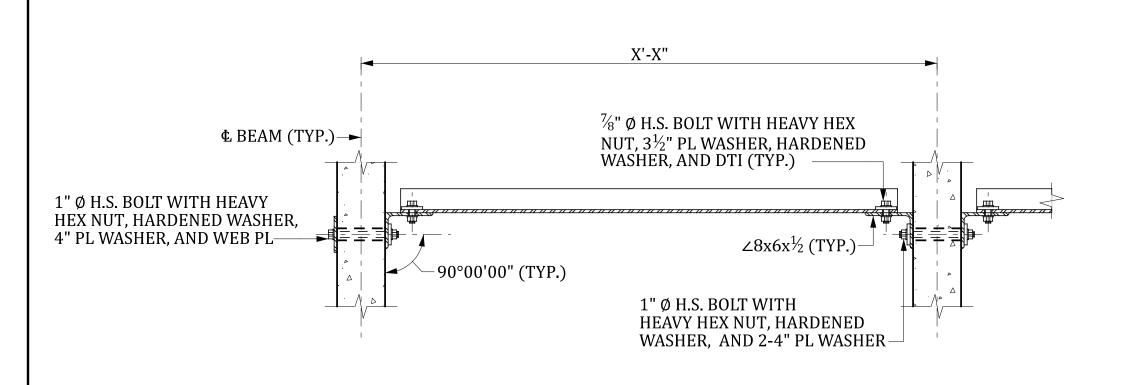




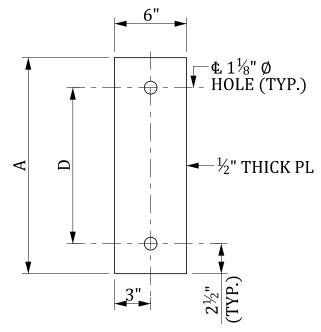
10" OR 12" CHANNEL

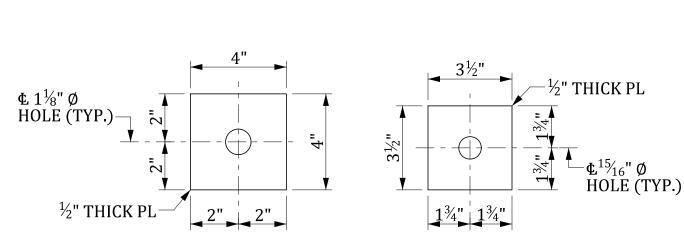
CHANNEL END DETAIL

18" CHANNEL



FOR 18" CHANNEL





SECTION A-A

WEB PLATE DETAIL

PLATE WASHER DETAIL

USE $3\frac{1}{2}$ " PLATE WASHER OVER ALL $^{15}\!\!/_{16}$ " x $^{23}\!\!/_{16}$ " HOLES USE 4" PLATE WASHER OVER ALL $1\frac{1}{8}$ "x $2\frac{1}{2}$ " HOLES

8" 15/16"x1 ¹ /8" SLOTTED HOLE (TYP.) 8 8 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1½"x2½" SLOTTED HOLE (TYP) 8" 15½"6"x1½" SLOTTED HOLE (TYP.)	3½" ½½" ½" ½" ½" ½" ½" ½% ½ ½ ½ ½ ½ ½ ½ ½
3 ⁷² ► <4 ⁷² ►	DIAPHRAGM FACE	WEB FACE

FOR 10" OR 12" CHANNEL

-½" CHANNEL CONNECTION ANGLE

CORNER CLIP

THIS DRAWING IS FURNISHED FOR INFORMATION ONLY. ALL DIMENSIONS SHOWN ARE SHEET SPECIFIC. ANY USE OF THIS DESIGN AND DRAWING, INCLUDING DIMENSIONS, MUST BE CHECKED BY THE USER'S ENGINEER TO ENSURE DESIGN IS ADEQUATE FOR THE INTENDED USE. ALL DRAWINGS MUST BE SIGNED AND SEALED BY A SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WHEN USED.

CONNECTION DIMENSIONS BEAM DIAPHRAGM 5" 3" TYPE I MOD. MC10X22 TYPE II MC12X31 4" TYPE III 4" 1'-1" MC18X42.7 5" MC18X42.7 1'-6" 5" 4" TYPE IV

CONSULTANT NAME/LOGO

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

AASHTO I-BEAM STEEL INTERMEDIATE DIAPHRAGM DETAILS - ALT 1

ROUTE: ####

COUNTY: ####

CHANNEL CONNECTION ANGLE DETAILS



PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS

THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50.

CONNECTION ANGLE OR CONNECTION PLATE AND PLATE WASHERS IN

CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE

MAKE ALL BOLTED DIAPHRAGM CONNECTIONS WITH 1/8" OR 1" ASTM

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F3125, GRADE A325 (TYPE 1) BOLTS. MECHANICALLY GALVANIZE

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TENSION BOLTS THROUGH THE BEAM WEB TO BE SNUG TIGHT AND THEN TURN THE BOLTS AN ADDITIONAL $\frac{1}{4}$ TURN. PEEN THREADS ON ALL BOLTS INSTALLED THROUGH THE BEAM WEB. INSTALL ALL OTHER

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ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE

INTERMEDIATE DIAPHRAGM ASSEMBLIES IN THE UNIT PRICE BID FOR

BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT

THE 1" BOLT ASSEMBLIES, GALVANIZING IN ACCORDANCE WITH

ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

DECK CONCRETE WILL BE PLACED DURING THE POUR.

PERMANENT PART OF THE COMPLETED STRUCTURE.

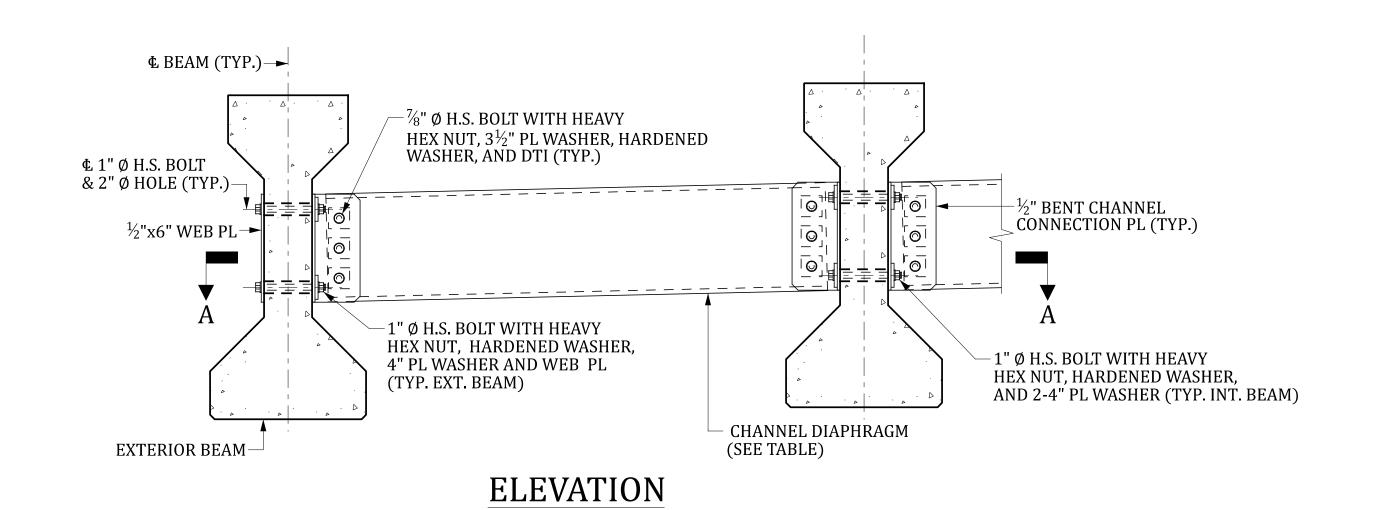
LEAVE STEEL INTERMEDIATE DIAPHRAGMS IN PLACE AS A

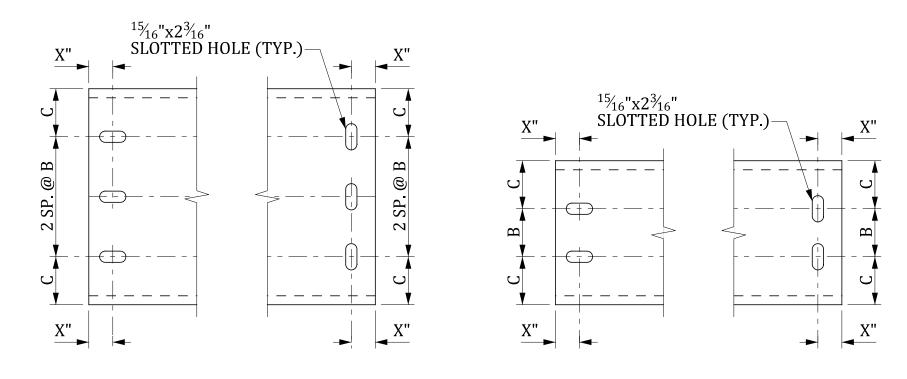
INCLUDE ALL COST OF FURNISHING AND INSTALLING STEEL

ASSEMBLY TO VERIFY PROPER TENSIONING.

PRESTRESSED CONCRETE BEAMS.

GALVANIZE ALL COMPONENTS OF DIAPHRAGMS INCLUDING

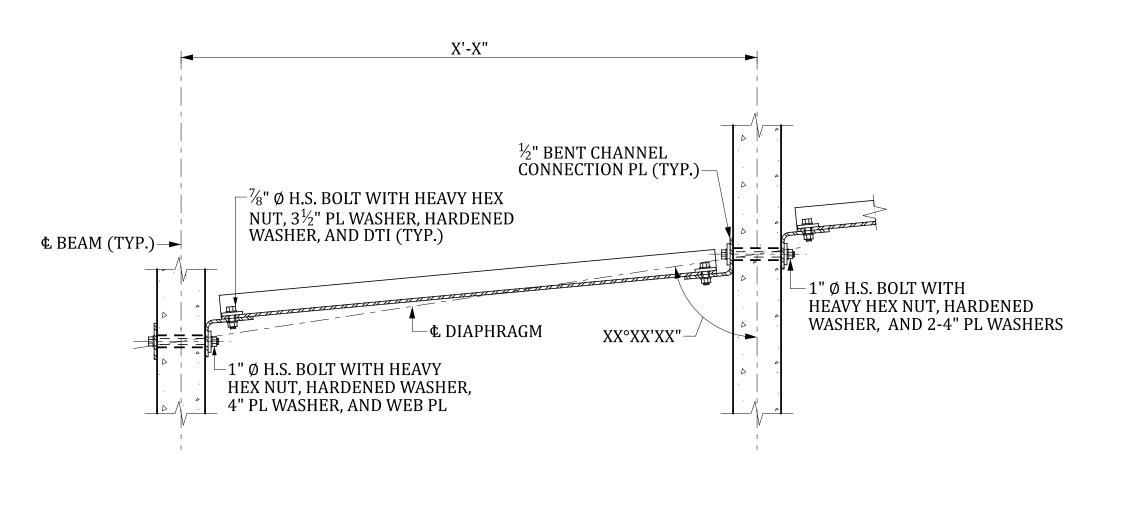




10" OR 12" CHANNEL

CHANNEL END DETAIL

18" CHANNEL



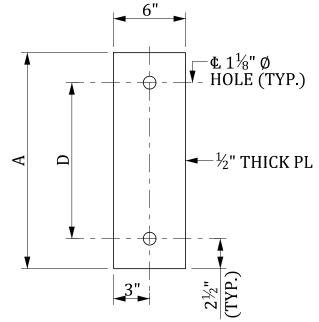
AASHTO TYPE IV SHOWN, OTHERS SIMILAR.

SECTION A-A

LEFT SKEW SHOWN. RIGHT SKEW SIMILAR BY MIRROR

FOR 18" CHANNEL

ABOUT A LINE PARALLEL TO H.S. BOLT CENTERLINES.



WEB PLATE DETAIL

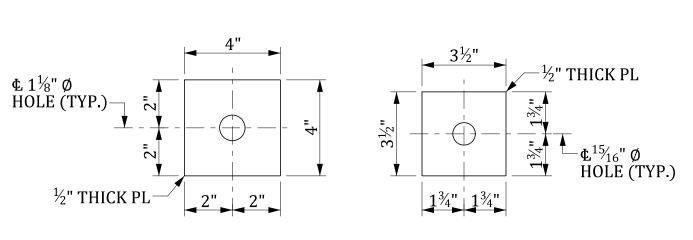
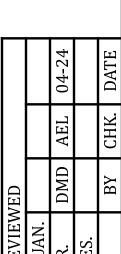


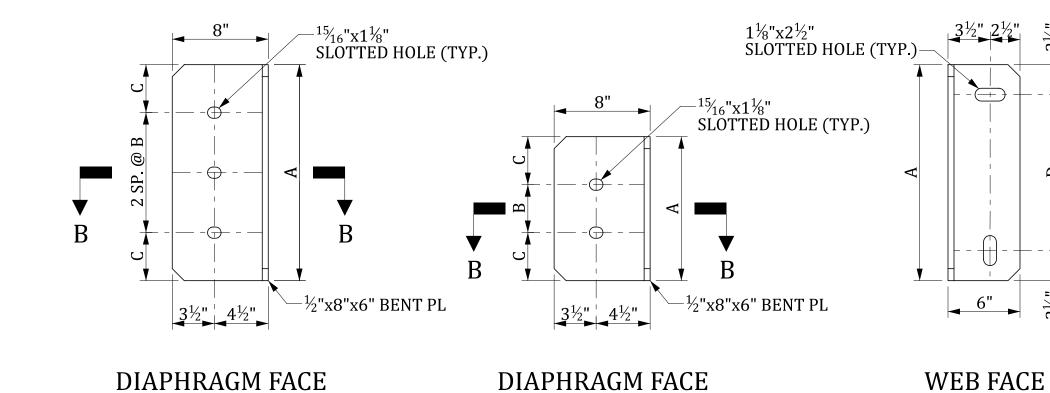
PLATE WASHER DETAIL

USE $3\frac{1}{2}$ " PLATE WASHER OVER ALL $^{15}\!\!/_{16}$ "x $2\frac{3}{16}$ " HOLES USE 4" PLATE WASHER OVER ALL 1\frac{1}{8}"x2\frac{1}{2}" HOLES

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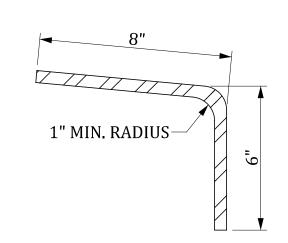


FOR 10" OR 12" CHANNEL

CHANNEL CONNECTION BENT PLATE DETAILS

CORNER CLIP

-½" CHANNEL CONNECTION PL



SECTION B-B

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		CONNECTION DIMENSIONS			ONS
BEAM	DIAPHRAGM	A	В	С	D
TYPE I MOD.	MC10X22	10"	4"	3"	5"
TYPE II	MC12X31	1'-0"	4"	4"	7"
TYPE III	MC18X42.7	1'-6"	5"	4"	1'-1"
TYPE IV	MC18X42.7	1'-6"	5"	4"	1'-1"

CONSULTANT NAME/LOGO

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

AASHTO I-BEAM STEEL INTERMEDIATE DIAPHRAGM DETAILS - ALT 2

COUNTY: ####

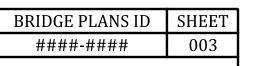
NOTES:

REMOVED.

BRUSHING IS NOT PERMITTED.

ROUTE: ####

DRAWING NUMBER: 704-AASHTO.STLINTDIA.CHAN.SKUNDER20



PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS

THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50.

CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE

MAKE ALL BOLTED DIAPHRAGM CONNECTIONS WITH 1/8" OR 1" ASTM

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AFTER INSTALLATION OF STEEL DIAPHRAGMS, REPAIR ALL DAMAGED AREAS OF THE GALVANIZED FINISH IN ACCORDANCE WITH ASTM A 780.

INSIDE DIAMETER PIPE AND LEAVE PIPE IN PLACE AFTER FORMS ARE

TENSION BOLTS THROUGH THE BEAM WEB TO BE SNUG TIGHT AND THEN TURN THE BOLTS AN ADDITIONAL $\frac{1}{4}$ TURN. PEEN THREADS ON ALL BOLTS INSTALLED THROUGH THE BEAM WEB. INSTALL ALL OTHER

DO NOT PLACE DECK SLAB UNTIL ALL INTERMEDIATE DIAPHRAGMS

INTERMEDIATE DIAPHRAGM ASSEMBLIES IN THE UNIT PRICE BID FOR

ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE

BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT

DECK CONCRETE WILL BE PLACED DURING THE POUR.

PERMANENT PART OF THE COMPLETED STRUCTURE.

LEAVE STEEL INTERMEDIATE DIAPHRAGMS IN PLACE AS A

INCLUDE ALL COST OF FURNISHING AND INSTALLING STEEL

ASSEMBLY TO VERIFY PROPER TENSIONING.

PRESTRESSED CONCRETE BEAMS.

F3125, GRADE A325 (TYPE 1) BOLTS. MECHANICALLY GALVANIZE

THE 1" BOLT ASSEMBLIES, GALVANIZING IN ACCORDANCE WITH

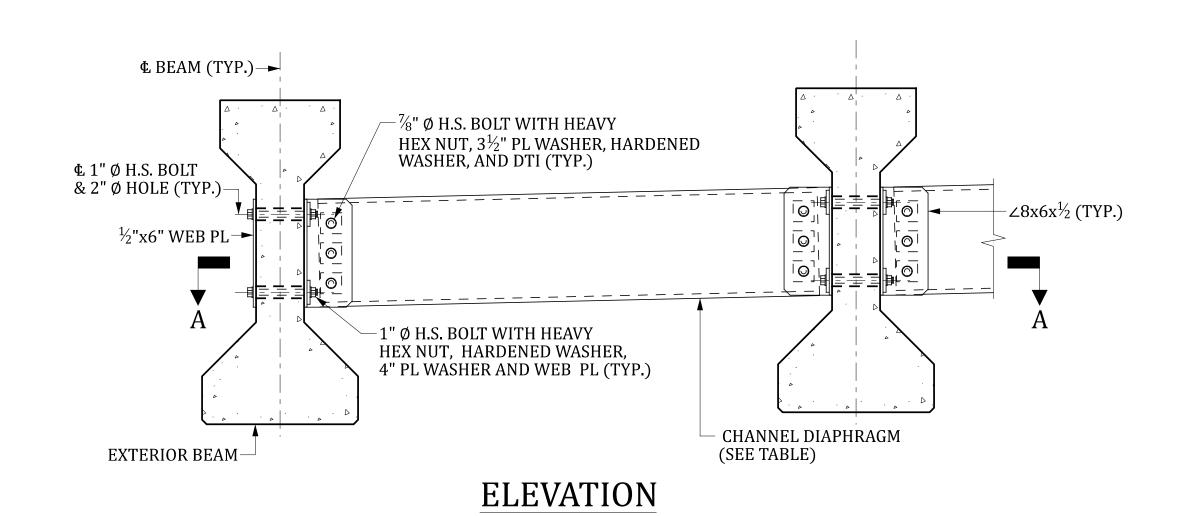
ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

SUBMIT SHOP PLANS FOR STEEL INTERMEDIATE DIAPHRAGMS IN

FORM BOLT HOLES IN PRESTRESSED CONCRETE BEAMS USING 2"

GALVANIZE ALL COMPONENTS OF DIAPHRAGMS INCLUDING



15/₁₆"x2³/₁₆"

X"

SLOTTED HOLE (TYP.)

X"

SLOTTED HOLE (TYP.)

X"

SLOTTED HOLE (TYP.)

X"

X"

X"

X"

X"

X"

X"

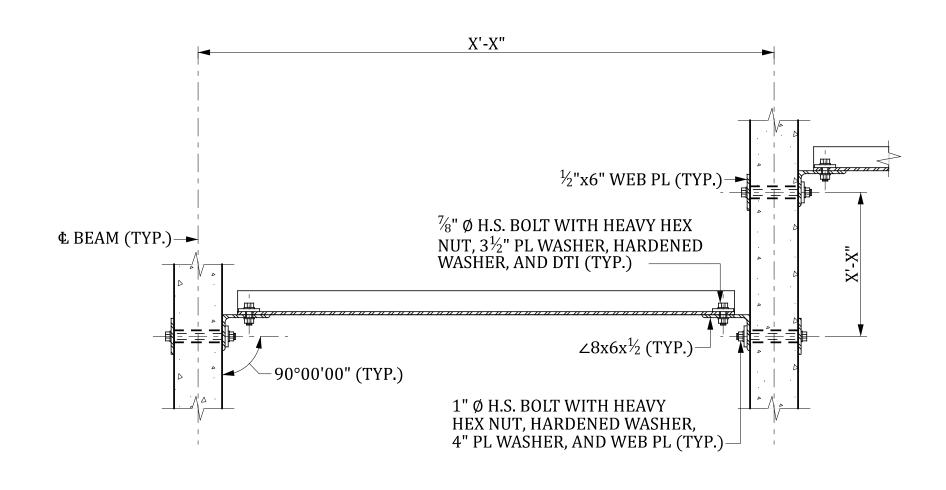
X"

X"

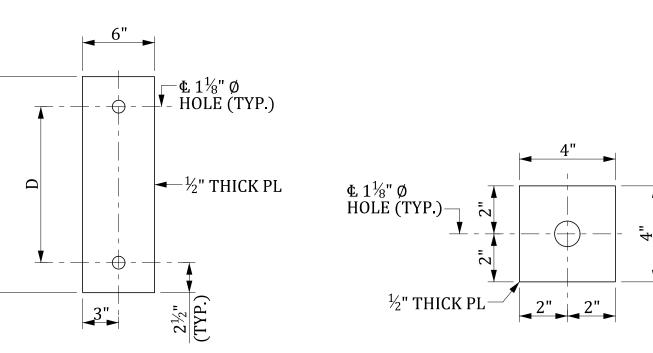
18" CHANNEL

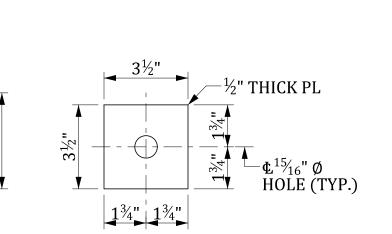
10" OR 12" CHANNEL

CHANNEL END DETAIL



AASHTO TYPE IV SHOWN, OTHERS SIMILAR.





ENGINEER WHEN USED.

SECTION A-A

LEFT SKEW SHOWN. RIGHT SKEW SIMILAR BY MIRROR ABOUT A LINE PARALLEL TO H.S. BOLT CENTERLINES.

PLATE WASHER DETAIL

USE $3\frac{1}{2}$ " PLATE WASHER OVER ALL $^{15}\!\!/_{16}$ " $\times 2^{3}\!\!/_{16}$ " HOLES USE 4" PLATE WASHER OVER ALL $1\frac{1}{8}$ " $\times 2\frac{1}{2}$ " HOLES

8" -15/16"x1½" SLOTTED HOLE (TYP.) 8" -15/16"x1½" SLOTTED HOLE (TYP.)	$1\frac{1}{8}$ "x $2\frac{1}{2}$ " SLOTTED HOLE (TYP.)	P.)
DIAPHRAGM FACE	DIAPHRAGM FACE	WEB FACE

FOR 18" CHANNEL

WEB PLATE DETAIL

CORNER CLIP

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DIAPHRAGM

MC10X22

MC12X31

MC18X42.7

MC18X42.7 1'-6"

CONSULTANT NAME/LOGO

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

AASHTO I-BEAM STEEL INTERMEDIATE DIAPHRAGM DETAILS - ALT 3

COUNTY: ####

BEAM

TYPE I MOD.

TYPE II

TYPE III

TYPE IV

NOTES:

REMOVED.

BRUSHING IS NOT PERMITTED.

ROUTE: ####

CONNECTION DIMENSIONS

5"

5"

3"

4"

4"

4"

5"

1'-1"

1'-1"

CHANNEL CONNECTION ANGLE DETAILS

FOR 10" OR 12" CHANNEL

DRAWING NUMBER: 704-AASHTO.STLINTDIA.CHAN.SKOVER20



PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50.

CONNECTION ANGLE OR CONNECTION PLATE AND PLATE WASHERS IN

ACCORDANCE WITH AASHTO M 111. PERFORM GALVANIZING AFTER FABRICATION IS COMPLETED. ROUGHEN FAYING SURFACES OF BOLTED

CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE

MAKE ALL BOLTED DIAPHRAGM CONNECTIONS WITH 7/8" OR 1" ASTM

BOLTS, HEAVY HEX NUTS, HARDENED WASHERS, AND DIRECT TENSION INDICATORS (DTI'S) IN ACCORDANCE WITH ASTM B 695 CLASS 50. FOR

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USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

DECK CONCRETE WILL BE PLACED DURING THE POUR.

PERMANENT PART OF THE COMPLETED STRUCTURE.

LEAVE STEEL INTERMEDIATE DIAPHRAGMS IN PLACE AS A

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PRESTRESSED CONCRETE BEAMS.

SUBMIT SHOP PLANS FOR STEEL INTERMEDIATE DIAPHRAGMS IN

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INTERMEDIATE DIAPHRAGM ASSEMBLIES IN THE UNIT PRICE BID FOR

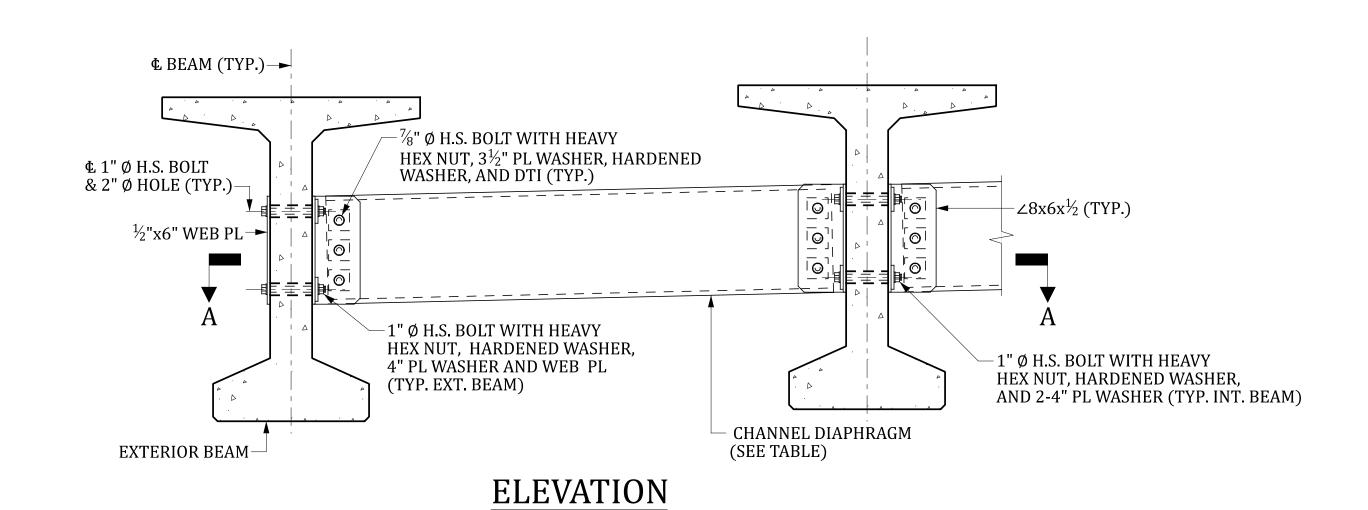
BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT

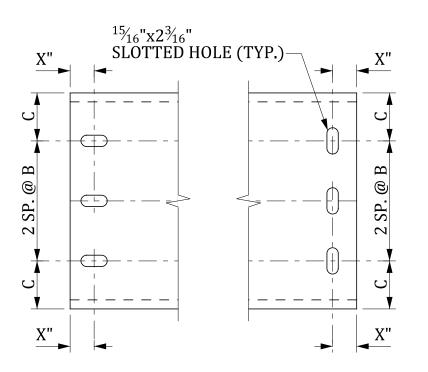
GALVANIZE ALL COMPONENTS OF DIAPHRAGMS INCLUDING

NOTES:

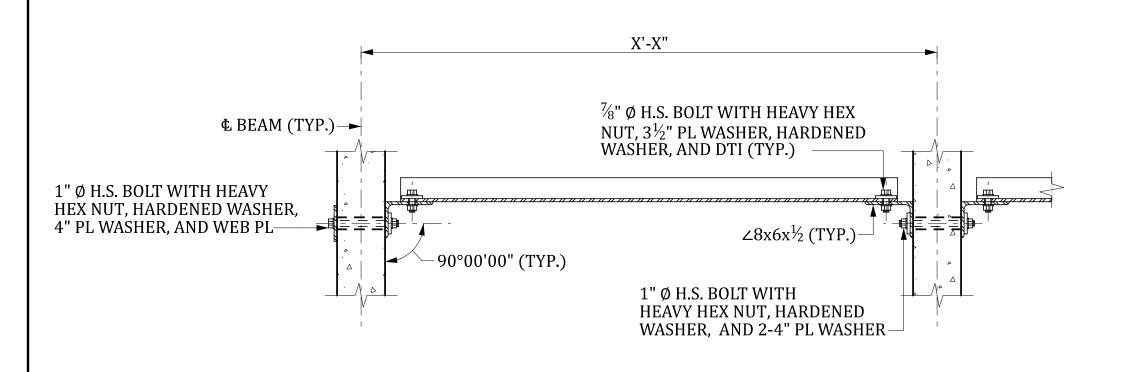
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BRUSHING IS NOT PERMITTED.

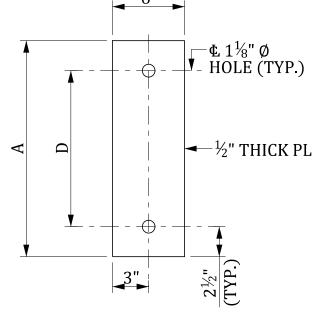


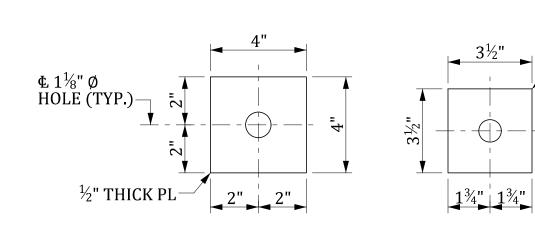


CHANNEL END DETAIL



 $^{15}\!\!\!/_{16}$ " $x1^{1}\!\!\!/_{8}$ " SLOTTED HOLE (TYP.)





SECTION A-A

DIAPHRAGM FACE

WEB PLATE DETAIL

-½" CHANNEL CONNECTION ANGLE

CORNER CLIP

PLATE WASHER DETAIL

USE $3\frac{1}{2}$ " PLATE WASHER OVER ALL $^{15}\!\!/_{16}$ "x $2\frac{3}{16}$ " HOLES USE 4" PLATE WASHER OVER ALL $1\frac{1}{8}$ "x $2\frac{1}{2}$ " HOLES

		CON	NECTION	DIMENSI	ONS
BEAM	DIAPHRAGM	A	В	С	D
54" MOD. B.T.	MC18X42.7	1'-6"	5"	4"	1'-1"

CONSULTANT NAME/LOGO

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

MODIFIED BULB TEE BEAM STEEL INTERMEDIATE

DIAPHRAGM DETAILS - ALT 1

CHANNEL CONNECTION ANGLE DETAILS

WEB FACE

 $1\frac{1}{8}$ "x $2\frac{1}{2}$ " SLOTTED HOLE (TYP.)

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HOLE (TYP.)

COUNTY: ####

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PRESTRESSED CONCRETE BEAMS.

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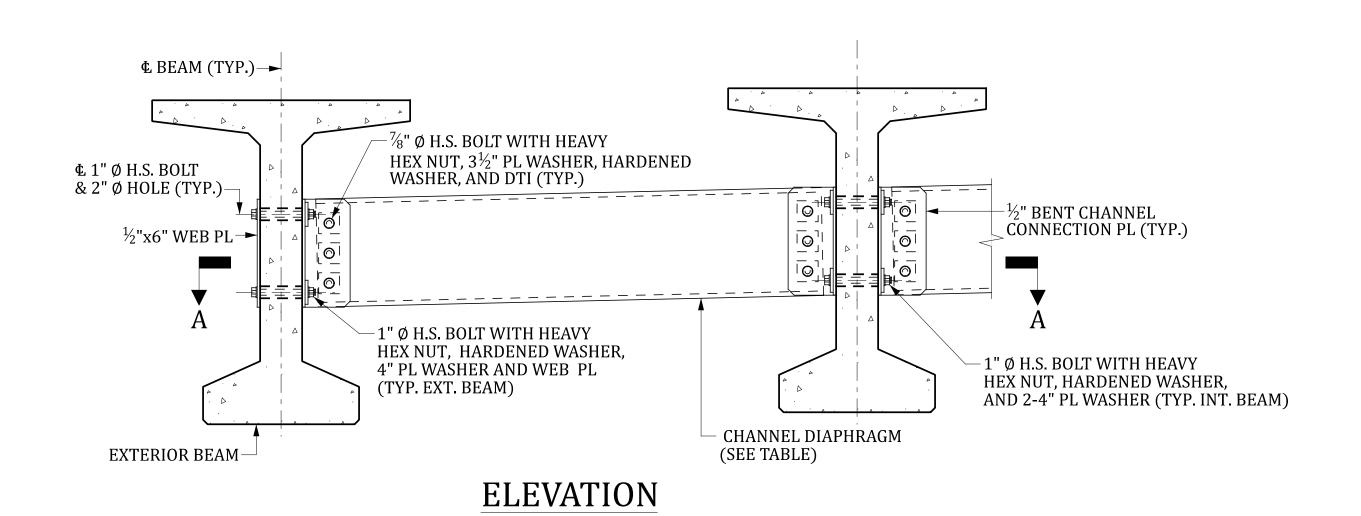
ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE

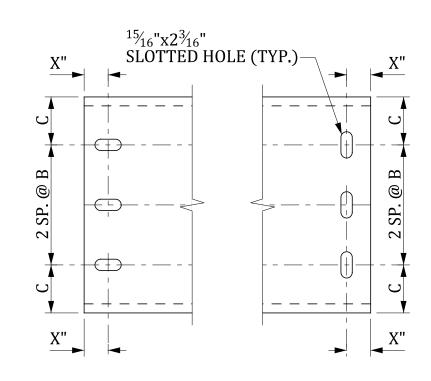
INTERMEDIATE DIAPHRAGM ASSEMBLIES IN THE UNIT PRICE BID FOR

BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT

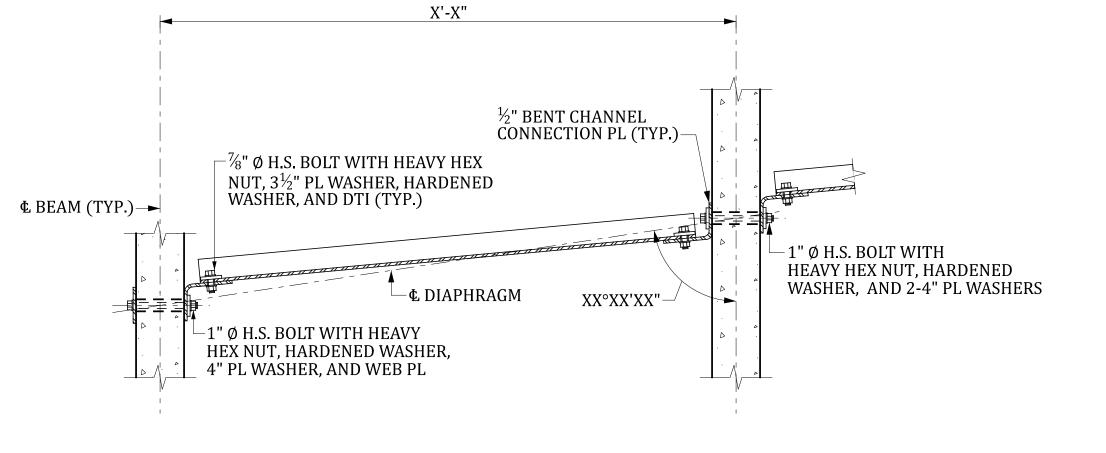
ACCORDANCE WITH AASHTO M 111. PERFORM GALVANIZING AFTER

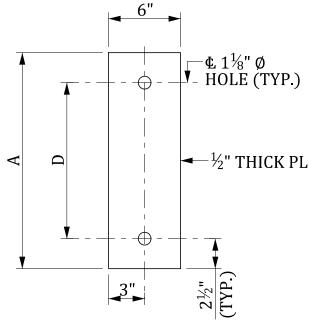
GALVANIZE ALL COMPONENTS OF DIAPHRAGMS INCLUDING

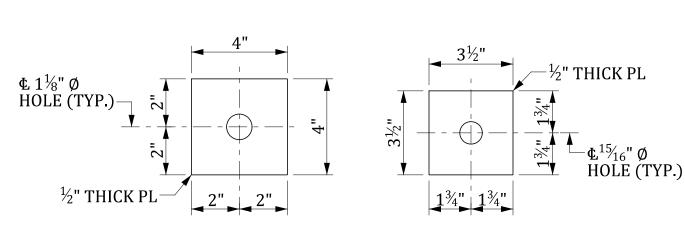




CHANNEL END DETAIL







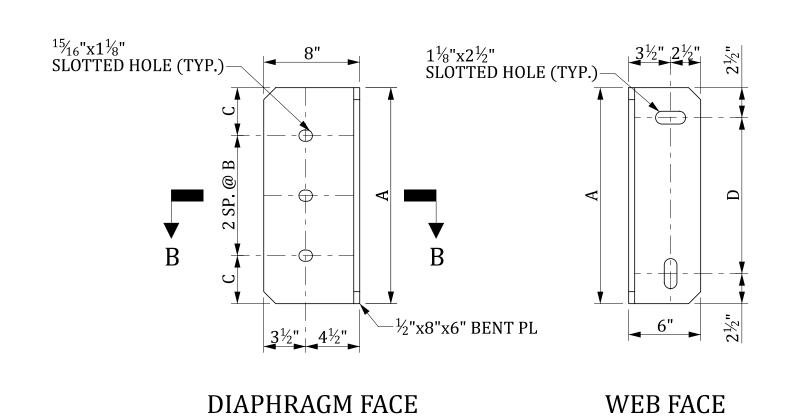
SECTION A-A

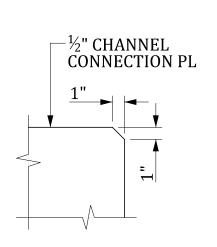
LEFT SKEW SHOWN. RIGHT SKEW SIMILAR BY MIRROR ABOUT A LINE PARALLEL TO H.S. BOLT CENTERLINES.

WEB PLATE DETAIL

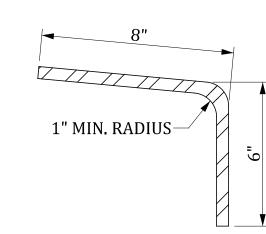
PLATE WASHER DETAIL

USE $3\frac{1}{2}$ " PLATE WASHER OVER ALL $^{15}\!\!/_{16}$ " $\times 2^{3}\!\!/_{16}$ " HOLES USE 4" PLATE WASHER OVER ALL $1\frac{1}{8}$ " $\times 2^{1}\!\!/_{2}$ " HOLES





CORNER CLIP



SECTION B-B

THIS DRAWING IS FURNISHED FOR INFORMATION ONLY. ALL DIMENSIONS SHOWN ARE SHEET SPECIFIC. ANY USE OF THIS DESIGN AND DRAWING, INCLUDING DIMENSIONS, MUST BE CHECKED BY THE USER'S ENGINEER TO ENSURE DESIGN IS ADEQUATE FOR THE INTENDED USE. ALL DRAWINGS MUST BE SIGNED AND SEALED BY A SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WHEN USED.

CONSULTANT NAME/LOGO

1'-6" 5"

DIAPHRAGM

54" MOD. B.T. | MC18X42.7

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

MODIFIED BULB TEE BEAM STEEL INTERMEDIATE DIAPHRAGM DETAILS - ALT 2

COUNTY: ####

NOTES:

REMOVED.

BRUSHING IS NOT PERMITTED.

| KUU1E: ####

CONNECTION DIMENSIONS

C

4" 1'-1"

HANNEL CONNECTION BENT PLATE DETAILS	S
--------------------------------------	---

VIEWED
AN.
DMD
S.

PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50.

CONNECTION ANGLE OR CONNECTION PLATE AND PLATE WASHERS IN

ACCORDANCE WITH AASHTO M 111. PERFORM GALVANIZING AFTER

CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE

MAKE ALL BOLTED DIAPHRAGM CONNECTIONS WITH 7/8" OR 1" ASTM

BOLTS, HEAVY HEX NUTS, HARDENED WASHERS, AND DIRECT TENSION INDICATORS (DTI'S) IN ACCORDANCE WITH ASTM B 695 CLASS 50. FOR

AASHTO M 232 MAY BE SUBSTITUTED FOR MECHANICAL GALVANIZING.

AFTER INSTALLATION OF STEEL DIAPHRAGMS, REPAIR ALL DAMAGED AREAS OF THE GALVANIZED FINISH IN ACCORDANCE WITH ASTM A 780.

F3125, GRADE A325 (TYPE 1) BOLTS. MECHANICALLY GALVANIZE

THE 1" BOLT ASSEMBLIES, GALVANIZING IN ACCORDANCE WITH

ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

DECK CONCRETE WILL BE PLACED DURING THE POUR.

PERMANENT PART OF THE COMPLETED STRUCTURE.

LEAVE STEEL INTERMEDIATE DIAPHRAGMS IN PLACE AS A

INCLUDE ALL COST OF FURNISHING AND INSTALLING STEEL

ASSEMBLY TO VERIFY PROPER TENSIONING

PRESTRESSED CONCRETE BEAMS.

SUBMIT SHOP PLANS FOR STEEL INTERMEDIATE DIAPHRAGMS IN

FORM BOLT HOLES IN PRESTRESSED CONCRETE BEAMS USING 2" INSIDE DIAMETER PIPE AND LEAVE PIPE IN PLACE AFTER FORMS ARE

TENSION BOLTS THROUGH THE BEAM WEB TO BE SNUG TIGHT AND THEN TURN THE BOLTS AN ADDITIONAL $\frac{1}{4}$ TURN. PEEN THREADS ON ALL BOLTS INSTALLED THROUGH THE BEAM WEB. INSTALL ALL OTHER

DO NOT PLACE DECK SLAB UNTIL ALL INTERMEDIATE DIAPHRAGMS

ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE

INTERMEDIATE DIAPHRAGM ASSEMBLIES IN THE UNIT PRICE BID FOR

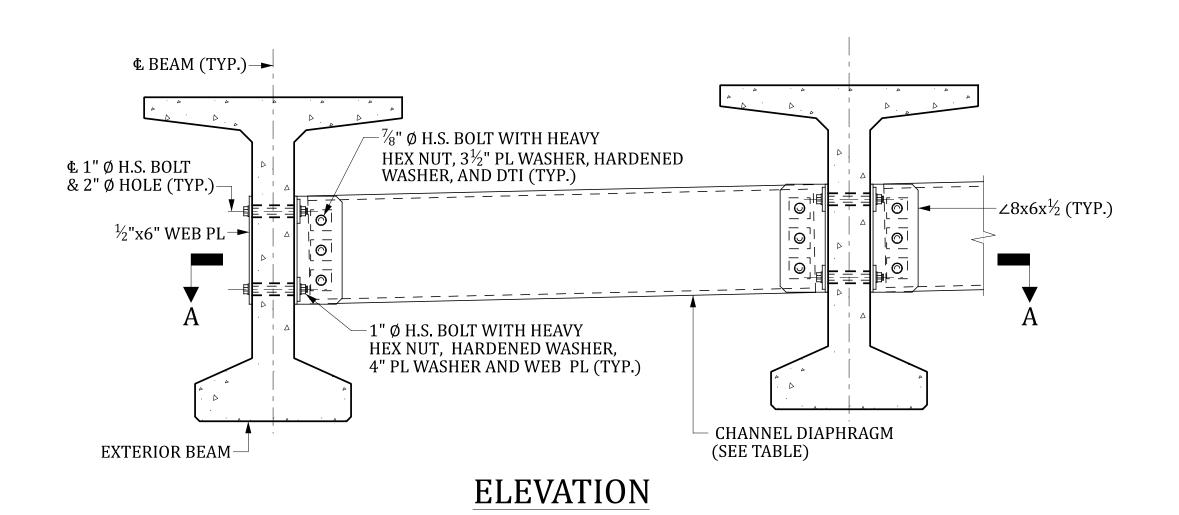
BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT

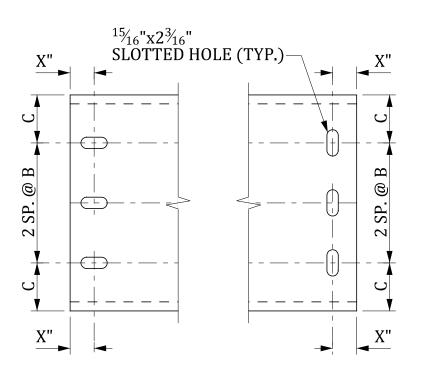
GALVANIZE ALL COMPONENTS OF DIAPHRAGMS INCLUDING

NOTES:

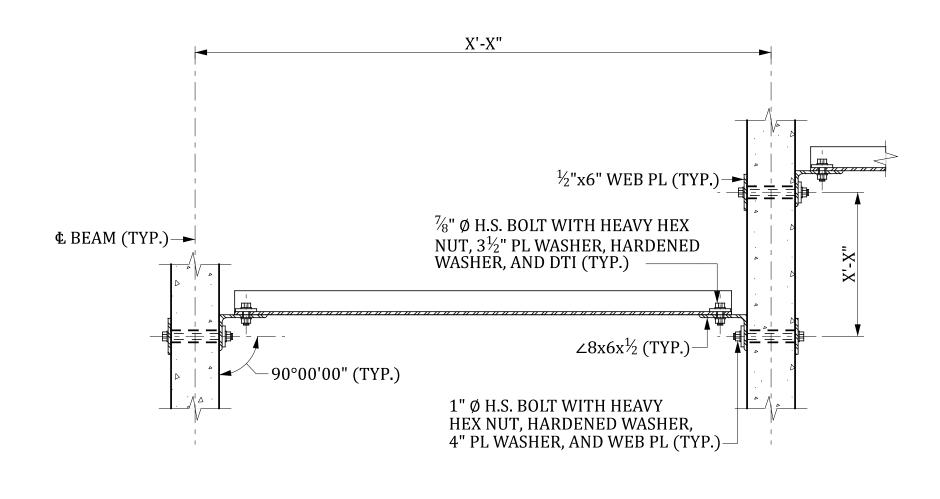
REMOVED.

BRUSHING IS NOT PERMITTED.



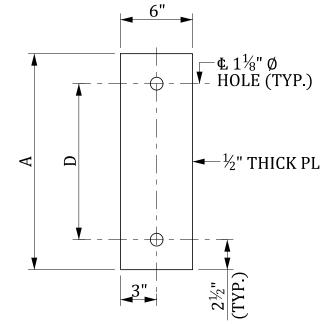


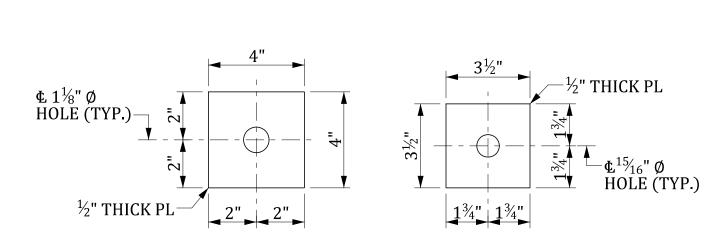
CHANNEL END DETAIL



LEFT SKEW SHOWN. RIGHT SKEW SIMILAR BY MIRROR

ABOUT A LINE PARALLEL TO H.S. BOLT CENTERLINES.

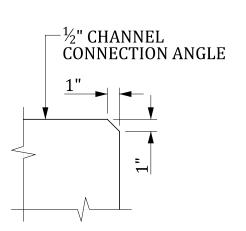




SECTION A-A

WEB PLATE DETAIL PLATE WASHER DETAIL USE $3\frac{1}{2}$ " PLATE WASHER OVER ALL $^{15}\!\!/_{16}$ "x $2\frac{3}{16}$ " HOLES USE 4" PLATE WASHER OVER ALL 11/8"x21/2" HOLES

$^{15}\!\!/_{16}$ "x $1^{1}\!\!/_{8}$ " SLOTTED HOLE (TYP.)—	8"	$1\frac{1}{8}$ "x $2\frac{1}{2}$ " SLOTTED HOLE (TY	P.)
2 SP. @ B	H		A
S -			
	3½" 4½" - ∠8	$3x6x\frac{1}{2}$	6" → ¹ 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 ×



DIAPHRAGM FACE

WEB FACE

CORNER CLIP

CHANNEL CONNECTION ANGLE DETAILS

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CONSULTANT NAME/LOGO

DIAPHRAGM

54" MOD. B.T. | MC18X42.7 | 1'-6" | 5"

CONNECTION DIMENSIONS

C

4" 1'-1"

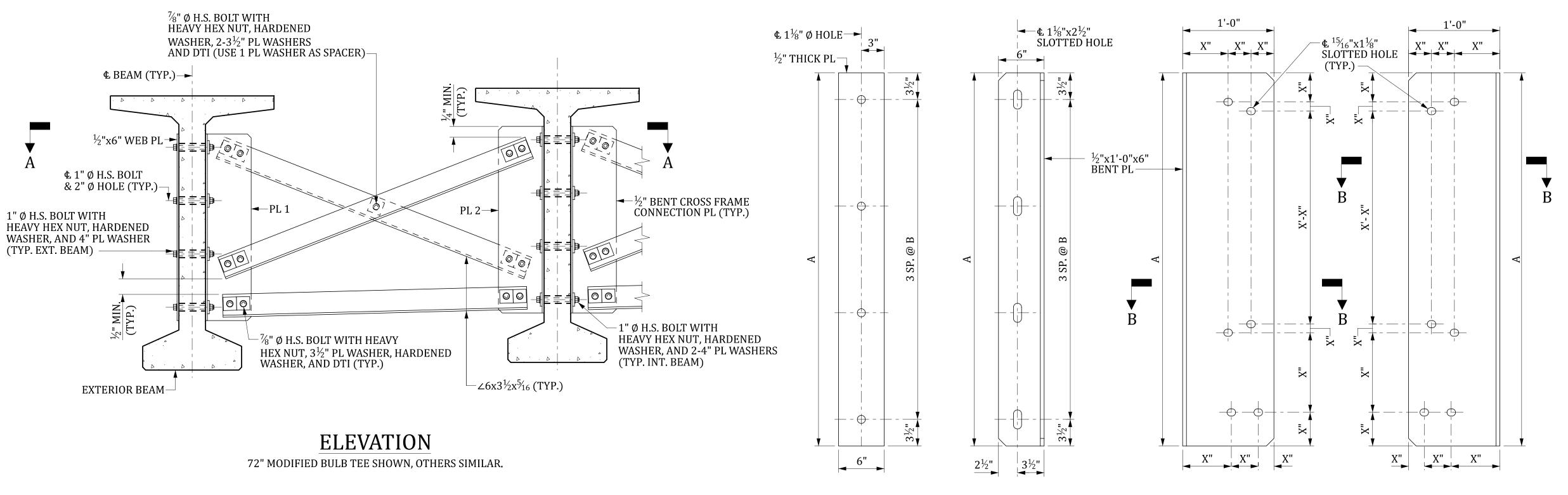
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

MODIFIED BULB TEE BEAM STEEL INTERMEDIATE DIAPHRAGM DETAILS - ALT 3

COUNTY: #### DRAWING NUMBER: 704-MBT.STLINTDIA.CHAN.SKOVER20

	_			
Dylan.Danks 6/21/2024 3:30:52 PM 704_StlIntDia.dgn				BY CHK. DATE DESCRIPTION OF REVISION
024 3:3				DATE
6/21/2				CHK.
Danks				BY
Dylan.	REV	REV.	REV.	
		4-24		ATE





WEB PLATE DETAIL

CROSS FRAME CONNECTION BENT PLATE DETAILS

DIAPHRAGM FACE - PL 1

NOTES:

PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50. GALVANIZE ALL COMPONENTS OF CROSS FRAMES INCLUDING CONNECTION PLATE AND PLATE WASHERS IN ACCORDANCE WITH AASHTO M 111. PERFORM GALVANIZING AFTER FABRICATION IS COMPLETED. ROUGHEN FAYING SURFACES OF BOLTED CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE BRUSHING IS NOT PERMITTED.

MAKE ALL BOLTED CROSS FRAME CONNECTIONS WITH 1/8" OR 1" ASTM F3125, GRADE A325 (TYPE 1) BOLTS. MECHANICALLY GALVANIZE BOLTS, HEAVY HEX NUTS, HARDENED WASHERS, AND DIRECT TENSION INDICATORS (DTI'S) IN ACCORDANCE WITH ASTM B 695 CLASS 50. FOR THE 1" BOLT ASSEMBLIES, GALVANIZING IN ACCORDANCE WITH AASHTO M 232 MAY BE SUBSTITUTED FOR MECHANICAL GALVANIZING.

SUBMIT SHOP PLANS FOR STEEL CROSS FRAMES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

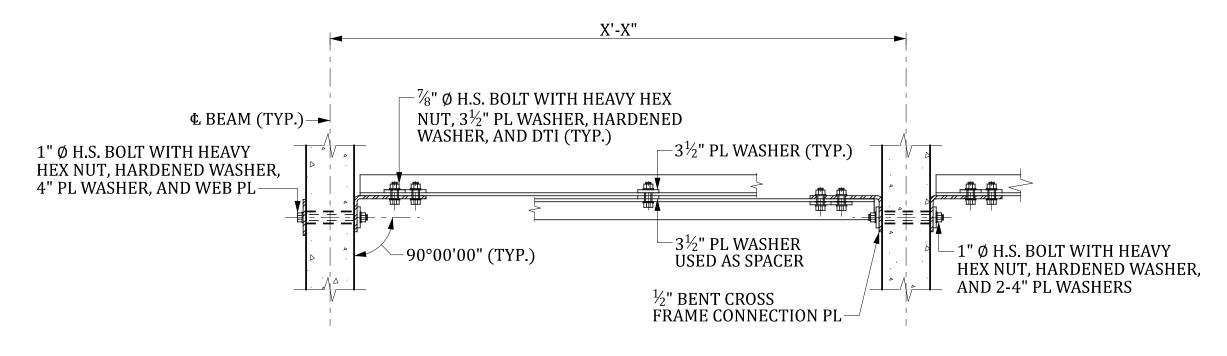
AFTER INSTALLATION OF STEEL CROSS FRAMES, REPAIR ALL DAMAGED AREAS OF THE GALVANIZED FINISH IN ACCORDANCE WITH ASTM A 780. USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

FORM BOLT HOLES IN PRESTRESSED CONCRETE BEAMS USING 2" INSIDE DIAMETER PIPE AND LEAVE PIPE IN PLACE AFTER FORMS ARE REMOVED.

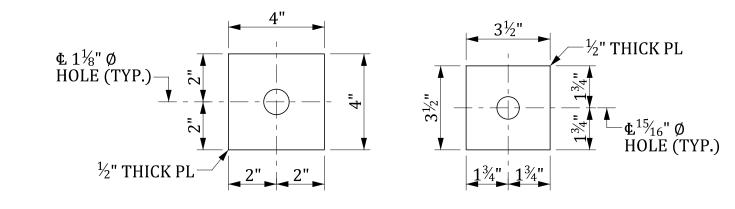
TENSION BOLTS THROUGH THE BEAM WEB TO BE SNUG TIGHT AND THEN TURN THE BOLTS AN ADDITIONAL ¼ TURN. PEEN THREADS ON ALL BOLTS INSTALLED THROUGH THE BEAM WEB. INSTALL ALL OTHER BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT ASSEMBLY TO VERIFY PROPER TENSIONING.

DO NOT PLACE DECK SLAB UNTIL ALL CROSS FRAMES ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE DECK CONCRETE WILL BE PLACED DURING THE POUR

LEAVE STEEL CROSS FRAMES IN PLACE AS A PERMANENT PART OF THE COMPLETED STRUCTURE.



SECTION A-A



WEB FACE

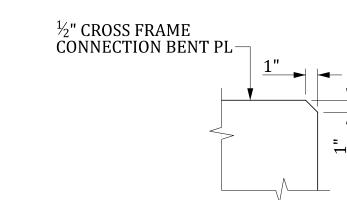
PLATE WASHER DETAIL

USE 3½" PLATE WASHER OVER ALL 15/16" x23/16" HOLES USE 4" PLATE WASHER OVER ALL 11/8" x2½" HOLES

15%6"x11%8" SLOTTED HOLE (TYP.) 15%16"x23%16" SLOTTED HOLE (TYP.)

CROSS FRAME DETAILS

NOTE: BOLTS, NUTS, AND WASHERS NOT SHOWN FOR CLARITY.



CORNER CLIP DETAIL

ENGINEER WHEN USED.

CHECKED BY THE USER'S ENGINEER TO ENSURE

ALL DRAWINGS MUST BE SIGNED AND SEALED BY

A SOUTH CAROLINA REGISTERED PROFESSIONAL

1'-0" —1" MIN. RADIUS

SECTION B-B

	CONNE DIMEN	
BEAM	Α	В
63" MOD. B.T.	3'-4"	11"
72" MOD. B.T.	4'-1"	1'-2"
74" MOD. B.T.	4'-1"	1'-2"
78" MOD. B.T.	4'-7"	1'-4"

DIAPHRAGM FACE - PL 2

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SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

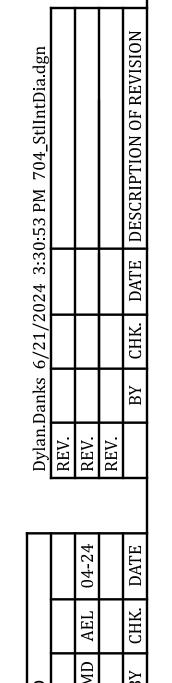
MODIFIED DIVIDING DIMENSIONS

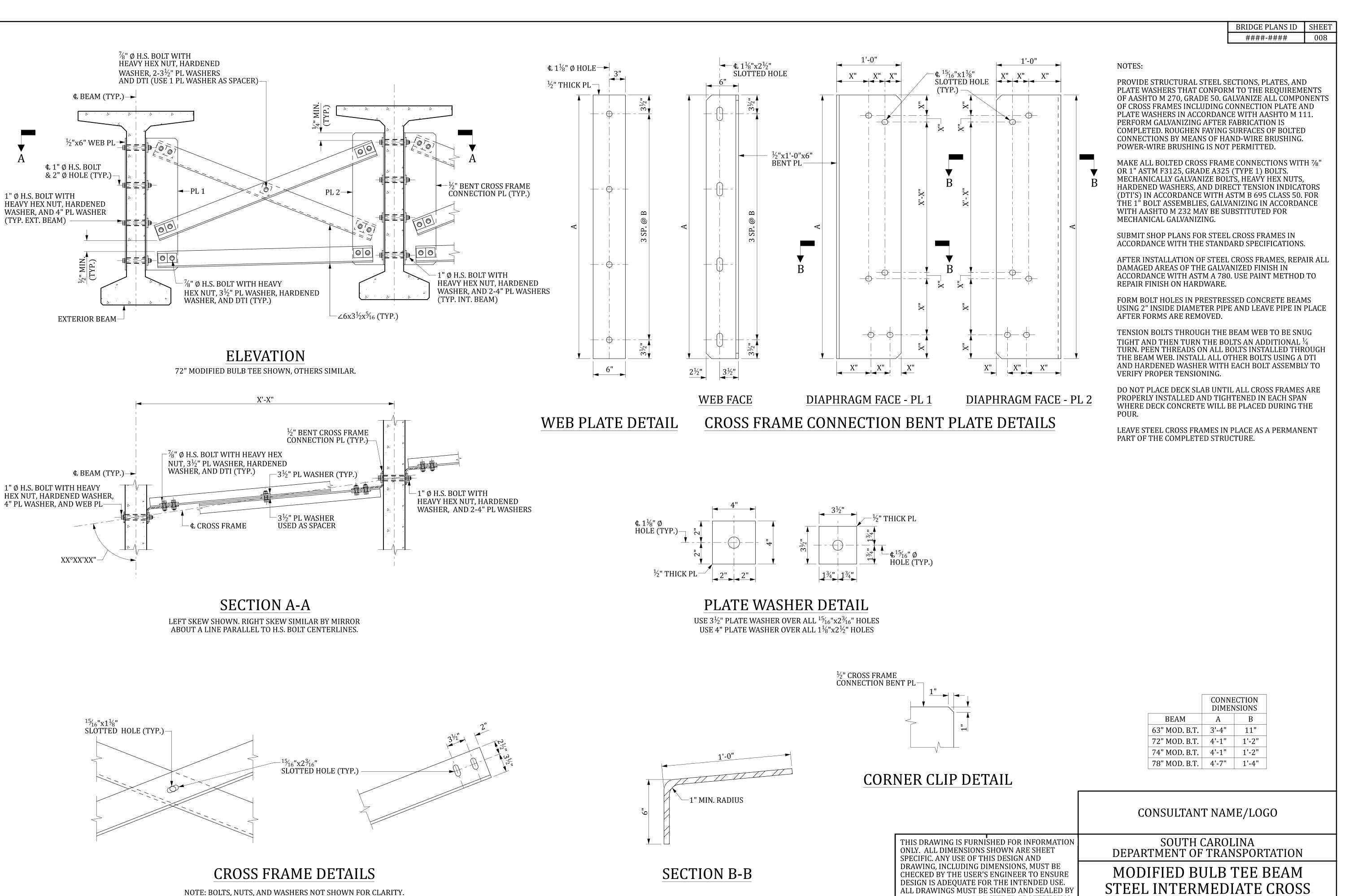
MODIFIED BULB TEE BEAM STEEL INTERMEDIATE CROSS FRAME DETAILS - ALT 1

CONSULTANT NAME/LOGO

COUNTY: ####

DRAWING NUMBER: 704-MBT.STLINTDIA.CROSS.SK000



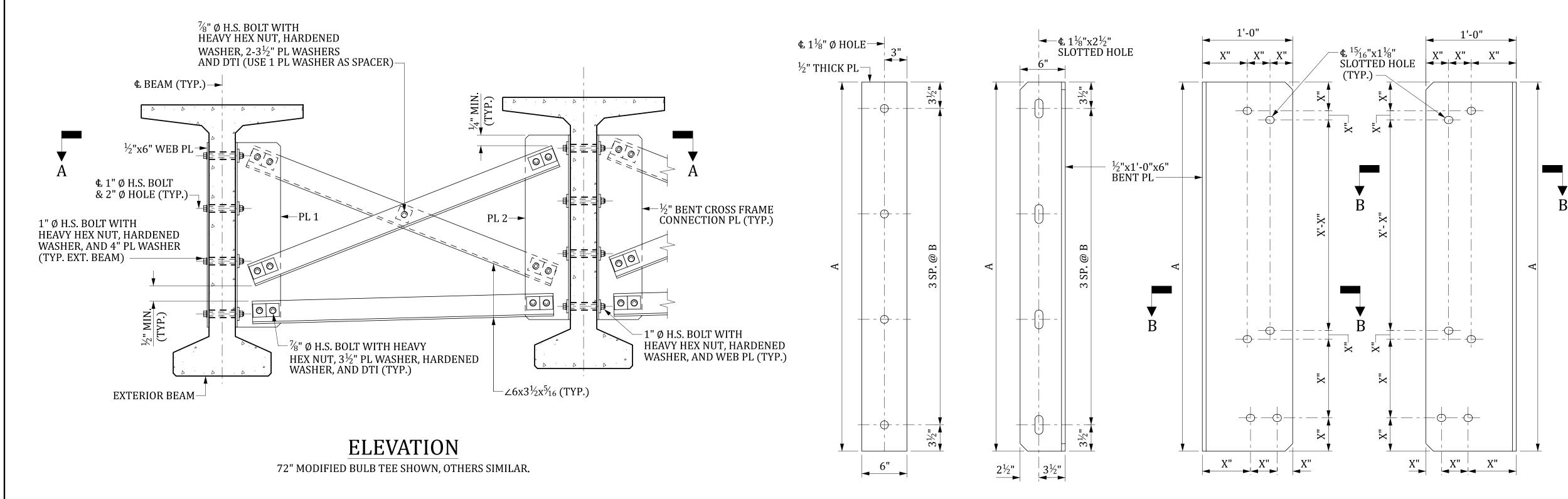


COUNTY: ####

FRAME DETAILS - ALT 2

A SOUTH CAROLINA REGISTERED PROFESSIONAL

ENGINEER WHEN USED.



1" Ø H.S. BOLT WITH HEAVY

AND WEB PL (TYP.)

HEX NUT, HARDENED WASHER,

WEB PLATE DETAIL

CROSS FRAME CONNECTION BENT PLATE DETAILS

DIAPHRAGM FACE - PL 1

NOTES:

PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50. GALVANIZE ALL COMPONENTS OF CROSS FRAMES INCLUDING CONNECTION PLATE AND PLATE WASHERS IN ACCORDANCE WITH AASHTO M 111. PERFORM GALVANIZING AFTER FABRICATION IS COMPLETED. ROUGHEN FAYING SURFACES OF BOLTED CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE BRUSHING IS NOT PERMITTED.

MAKE ALL BOLTED CROSS FRAME CONNECTIONS WITH 7/8" OR 1" ASTM F3125, GRADE A325 (TYPE 1) BOLTS.
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SUBMIT SHOP PLANS FOR STEEL CROSS FRAMES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

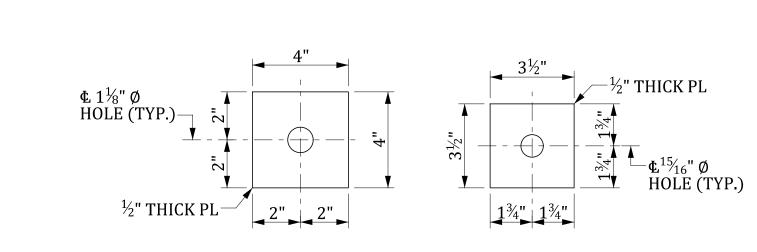
AFTER INSTALLATION OF STEEL CROSS FRAMES, REPAIR ALL DAMAGED AREAS OF THE GALVANIZED FINISH IN ACCORDANCE WITH ASTM A 780. USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

FORM BOLT HOLES IN PRESTRESSED CONCRETE BEAMS USING 2" INSIDE DIAMETER PIPE AND LEAVE PIPE IN PLACE AFTER FORMS ARE REMOVED.

TENSION BOLTS THROUGH THE BEAM WEB TO BE SNUG TIGHT AND THEN TURN THE BOLTS AN ADDITIONAL ¼ TURN. PEEN THREADS ON ALL BOLTS INSTALLED THROUGH THE BEAM WEB. INSTALL ALL OTHER BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT ASSEMBLY TO VERIFY PROPER TENSIONING.

DO NOT PLACE DECK SLAB UNTIL ALL CROSS FRAMES ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE DECK CONCRETE WILL BE PLACED DURING THE POUR

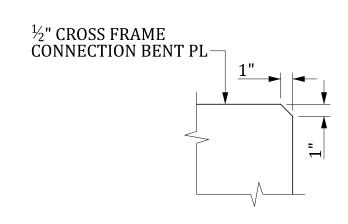
LEAVE STEEL CROSS FRAMES IN PLACE AS A PERMANENT PART OF THE COMPLETED STRUCTURE.



WEB FACE

PLATE WASHER DETAIL

USE $3\frac{1}{2}$ " PLATE WASHER OVER ALL $^{15}\!\!/_{16}$ " $\times 2^{3}\!\!/_{16}$ " HOLES USE 4" PLATE WASHER OVER ALL $1\frac{1}{8}$ " $\times 2^{1}\!\!/_{2}$ " HOLES



	CONNECTION DIMENSIONS		
BEAM	A	В	
63" MOD. B.T.	3'-4"	11"	
72" MOD. B.T.	4'-1"	1'-2"	
74" MOD. B.T.	4'-1"	1'-2"	
78" MOD. B.T.	4'-7"	1'-4"	

CORNER CLIP DETAIL

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DIAPHRAGM FACE - PL 2

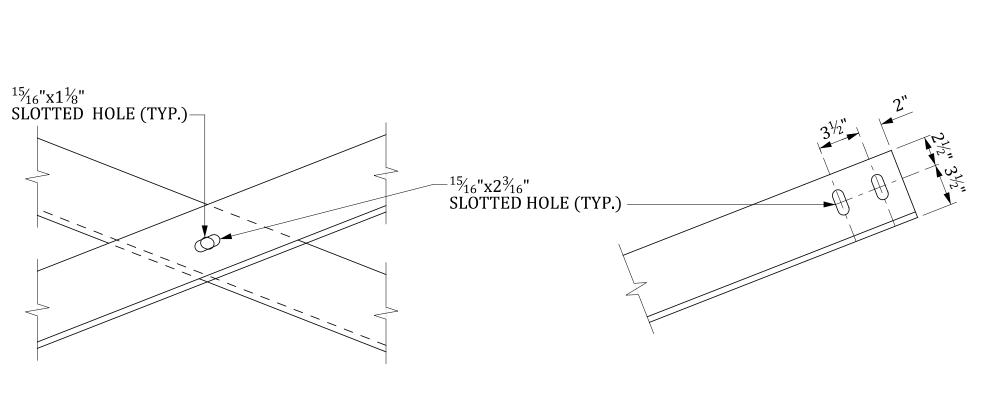
CONSULTANT NAME/LOGO

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

MODIFIED BULB TEE BEAM STEEL INTERMEDIATE CROSS FRAME DETAILS - ALT 3

COUNTY: ####

RUUTE: ####



X'-X"

SECTION A-A

LEFT SKEW SHOWN. RIGHT SKEW SIMILAR BY MIRROR ABOUT A LINE PARALLEL TO H.S. BOLT CENTERLINES.

 $-\frac{7}{8}$ " Ø H.S. BOLT WITH HEAVY HEX

WASHER, AND DTI (TYP.)

-90°00'00" (TYP.)

NUT, $3\frac{1}{2}$ " PL WASHER, HARDENED

& BEAM (TYP.)→

½"x6" WEB PL (TYP.)→

 $-3\frac{1}{2}$ " PL WASHER (TYP.)

 $-3\frac{1}{2}$ " PL WASHER

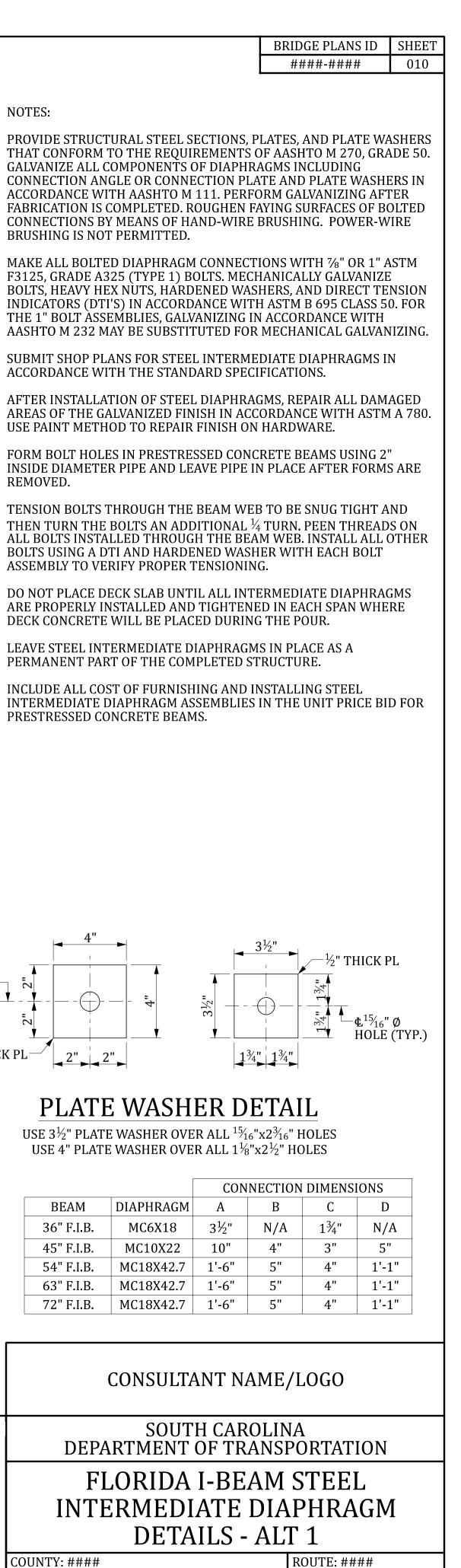
USED AS SPACER

FRAME CONNECTION PL-

½" BENT CROSS

CROSS FRAME DETAILS

NOTE: BOLTS, NUTS, AND WASHERS NOT SHOWN FOR CLARITY.



NOTES:

REMOVED.

 $\frac{1}{2}$ " THICK PL

BEAM

36" F.I.B.

45" F.I.B.

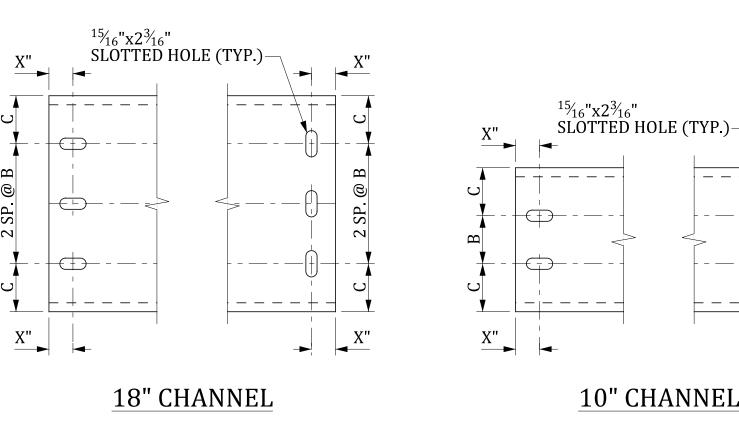
54" F.I.B.

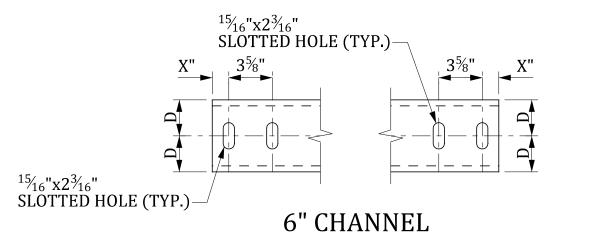
63" F.I.B.

COUNTY: ####

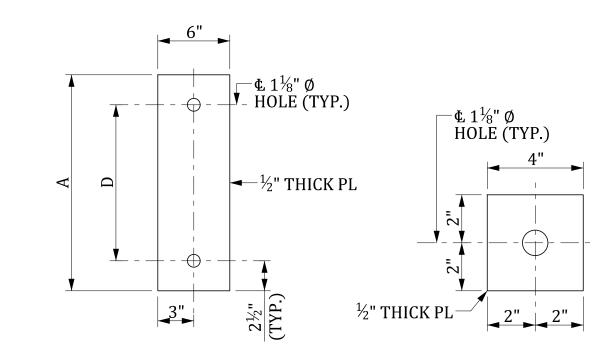
DIAPHRAGM

MC10X22

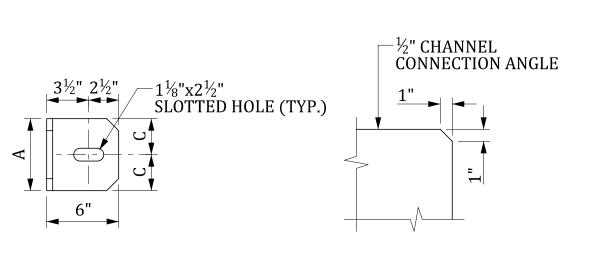




CHANNEL END DETAIL







WEB FACE FOR 6" CHANNEL

CORNER CLIP

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CONSULTANT NAME/LOGO

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

FLORIDA I-BEAM STEEL INTERMEDIATE DIAPHRAGM DETAILS - ALT 1

DRAWING NUMBER: 704-FIB.STLINTDIA.CHAN.SK000

FOR 6" CHANNEL FOR 10" OR 18" CHANNEL CHANNEL CONNECTION ANGLE DETAILS

 $\angle 8x6x\frac{1}{2}$ (TYP.)

- 1" Ø H.S. BOLT WITH HEAVY

- CHANNEL DIAPHRAGM

(SEE TABLE)

HEX NUT, HARDENED WASHER,

AND 2-4" PL WASHER (TYP. INT. BEAM)

-90°00'00" (TYP.) 1" Ø H.S. BOLT WITH HEAVY HEX NUT, HARDENED WASHER, AND 2-4" PL WASHER -**SECTION A-A**

 $-\frac{7}{8}$ " Ø H.S. BOLT WITH HEAVY

WASHER, AND DTI (TYP.)

1" Ø H.S. BOLT WITH HEAVY HEX NUT, HARDENED WASHER,

4" PL WASHER AND WEB PL

(TYP. EXT. BEAM)

HEX NUT, $3\frac{1}{2}$ " PL WASHER, HARDENED

ELEVATION

54" FLORIDA I-BEAM SHOWN, OTHERS SIMILAR.

X'-X"

 $\frac{7}{8}$ " Ø H.S. BOLT WITH HEAVY HEX

NUT, $3\frac{1}{2}$ " PL WASHER, HARDENED

 $\angle 8x6x^{1/2}$ (TYP.)

WASHER, AND DTI (TYP.)

& BEAM (TYP.)→

⊈ 1" Ø H.S. BOLT

& 2" Ø HOLE (TYP.)

½"x6" WEB PL

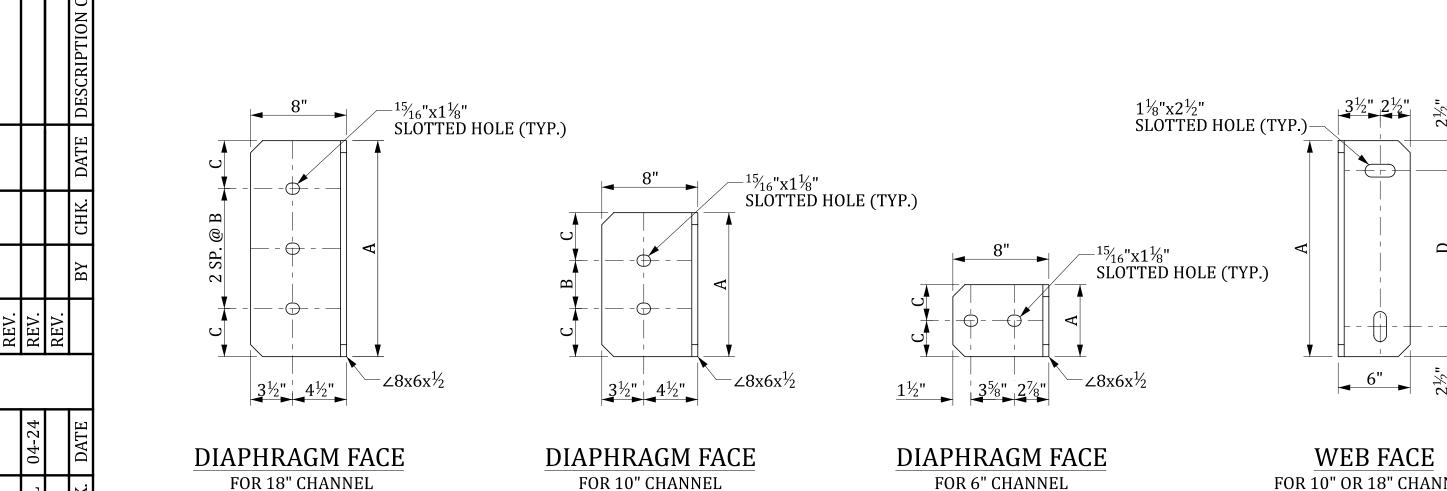
EXTERIOR BEAM-

& BEAM (TYP.)→

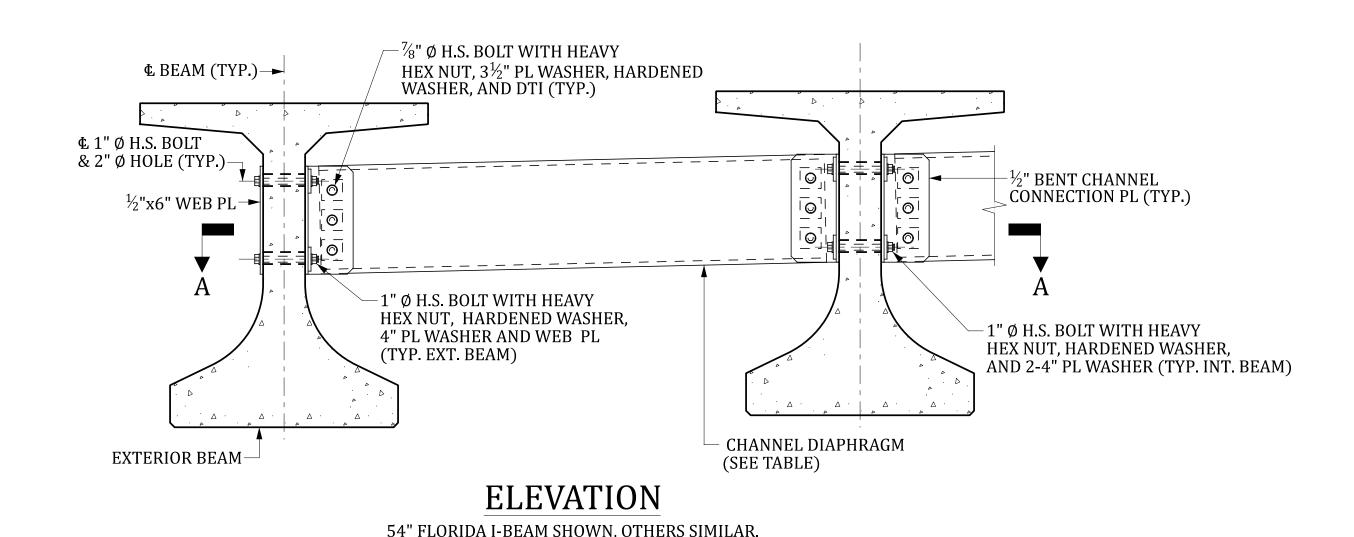
1" Ø H.S. BOLT WITH HEAVY

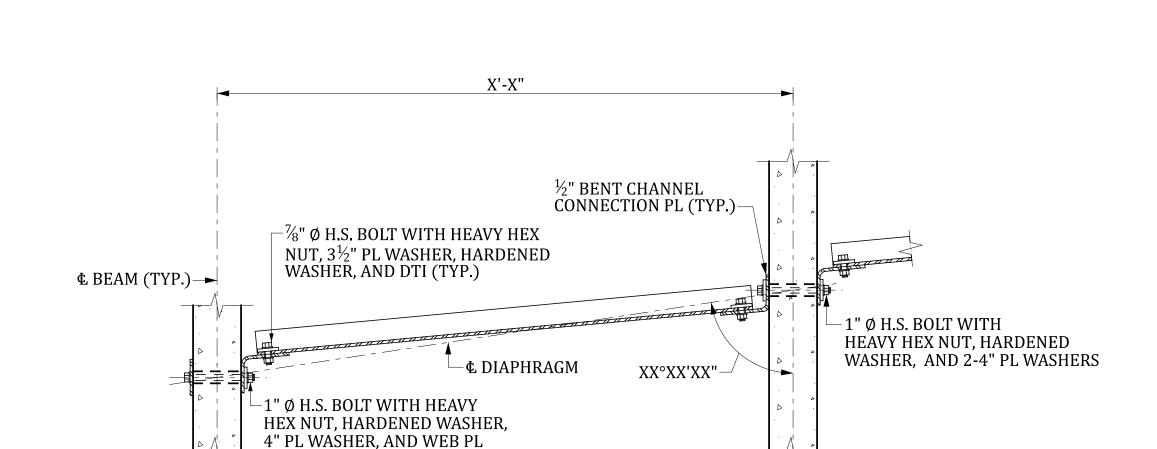
HEX NUT, HARDENED WASHER

4" PL WASHER, AND WEB PL—



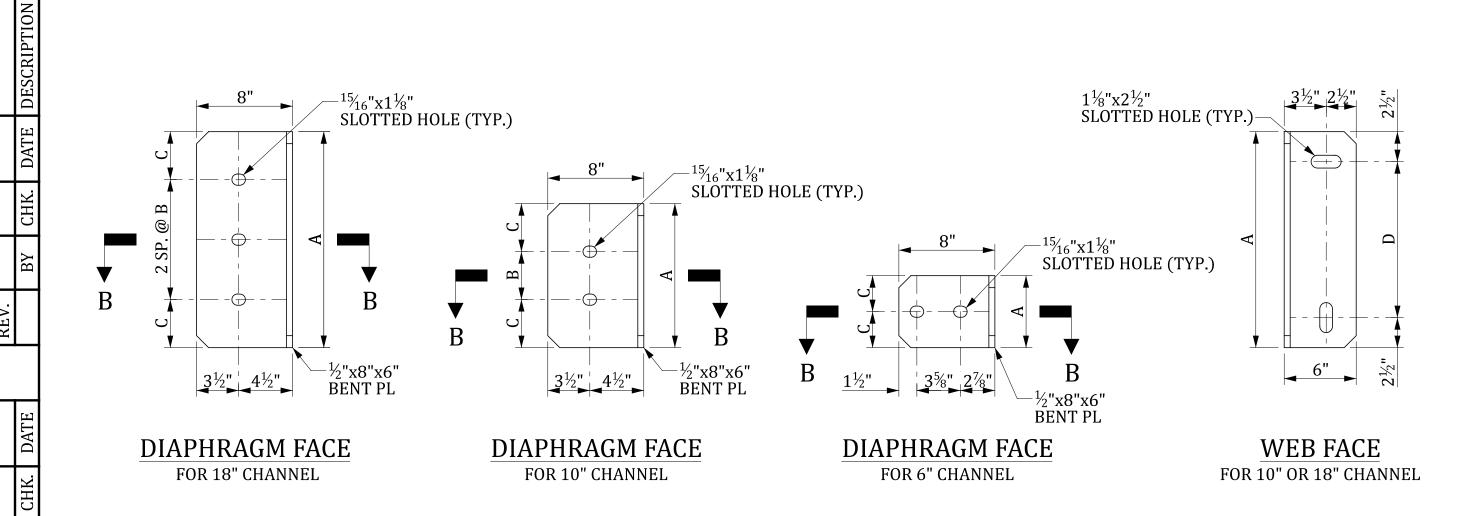




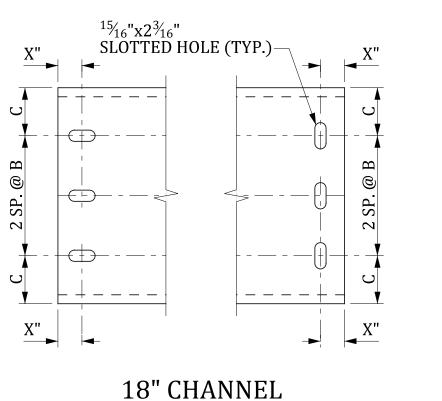


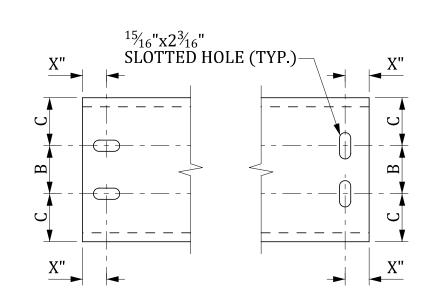
SECTION A-A

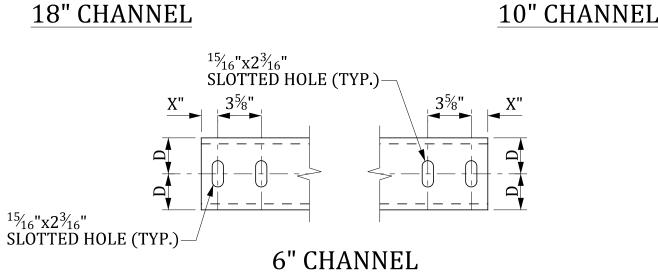
LEFT SKEW SHOWN. RIGHT SKEW SIMILAR BY MIRROR ABOUT A LINE PARALLEL TO H.S. BOLT CENTERLINES.



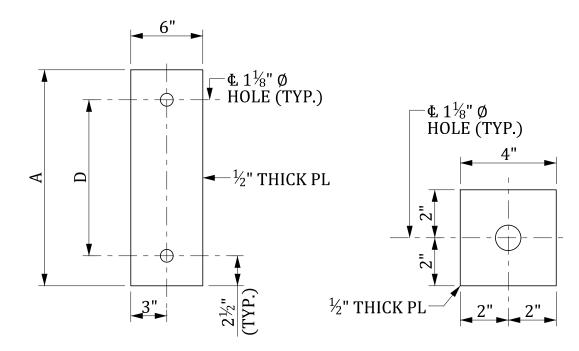
CHANNEL CONNECTION BENT PLATE DETAILS







CHANNEL END DETAIL



10" OR 18" CHANNEL 6" CHANNEL WEB PLATE DETAIL

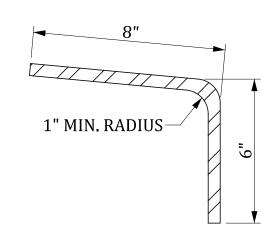
 $-1\frac{1}{8}$ "x2 $\frac{1}{2}$ "
SLOTTED HOLE (TYP.)

WEB FACE

FOR 6" CHANNEL

^{−½}" CHANNEL CONNECTION PL

CORNER CLIP



SECTION B-B

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ENGINEER WHEN USED.

PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50. GALVANIZE ALL COMPONENTS OF DIAPHRAGMS INCLUDING CONNECTION ANGLE OR CONNECTION PLATE AND PLATE WASHERS IN ACCORDANCE WITH AASHTO M 111. PERFORM GALVANIZING AFTER FABRICATION IS COMPLETED. ROUGHEN FAYING SURFACES OF BOLTED CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE BRUSHING IS NOT PERMITTED.

NOTES:

MAKE ALL BOLTED DIAPHRAGM CONNECTIONS WITH 7/8" OR 1" ASTM F3125, GRADE A325 (TYPE 1) BOLTS. MECHANICALLY GALVANIZE BOLTS, HEAVY HEX NUTS, HARDENED WASHERS, AND DIRECT TENSION INDICATORS (DTI'S) IN ACCORDANCE WITH ASTM B 695 CLASS 50. FOR THE 1" BOLT ASSEMBLIES, GALVANIZING IN ACCORDANCE WITH AASHTO M 232 MAY BE SUBSTITUTED FOR MECHANICAL GALVANIZING

SUBMIT SHOP PLANS FOR STEEL INTERMEDIATE DIAPHRAGMS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AFTER INSTALLATION OF STEEL DIAPHRAGMS, REPAIR ALL DAMAGED AREAS OF THE GALVANIZED FINISH IN ACCORDANCE WITH ASTM A 780. USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

FORM BOLT HOLES IN PRESTRESSED CONCRETE BEAMS USING 2" INSIDE DIAMETER PIPE AND LEAVE PIPE IN PLACE AFTER FORMS ARE REMOVED.

TENSION BOLTS THROUGH THE BEAM WEB TO BE SNUG TIGHT AND

THEN TURN THE BOLTS AN ADDITIONAL $\frac{1}{4}$ TURN. PEEN THREADS ON ALL BOLTS INSTALLED THROUGH THE BEAM WEB. INSTALL ALL OTHER BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT ASSEMBLY TO VERIFY PROPER TENSIONING.

DO NOT PLACE DECK SLAB UNTIL ALL INTERMEDIATE DIAPHRAGMS ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE DECK CONCRETE WILL BE PLACED DURING THE POUR.

LEAVE STEEL INTERMEDIATE DIAPHRAGMS IN PLACE AS A PERMANENT PART OF THE COMPLETED STRUCTURE.

INCLUDE ALL COST OF FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGM ASSEMBLIES IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BEAMS.

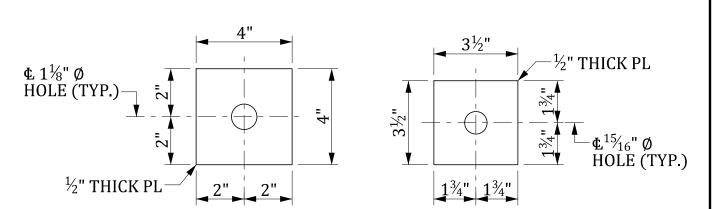


PLATE WASHER DETAIL

USE $3\frac{1}{2}$ " PLATE WASHER OVER ALL $^{15}\!\!/_{16}$ " $\times 2^{3}\!\!/_{16}$ " HOLES USE 4" PLATE WASHER OVER ALL 11/8" x21/2" HOLES

		CONNECTION DIMENSIONS			
BEAM	DIAPHRAGM	Α	В	С	D
36" F.I.B.	MC6X18	3½"	N/A	1¾"	N/A
45" F.I.B.	MC10X22	10"	4"	3"	5"
54" F.I.B.	MC18X42.7	1'-6"	5"	4"	1'-1"
63" F.I.B.	MC18X42.7	1'-6"	5"	4"	1'-1"
72" F.I.B.	MC18X42.7	1'-6"	5"	4"	1'-1"

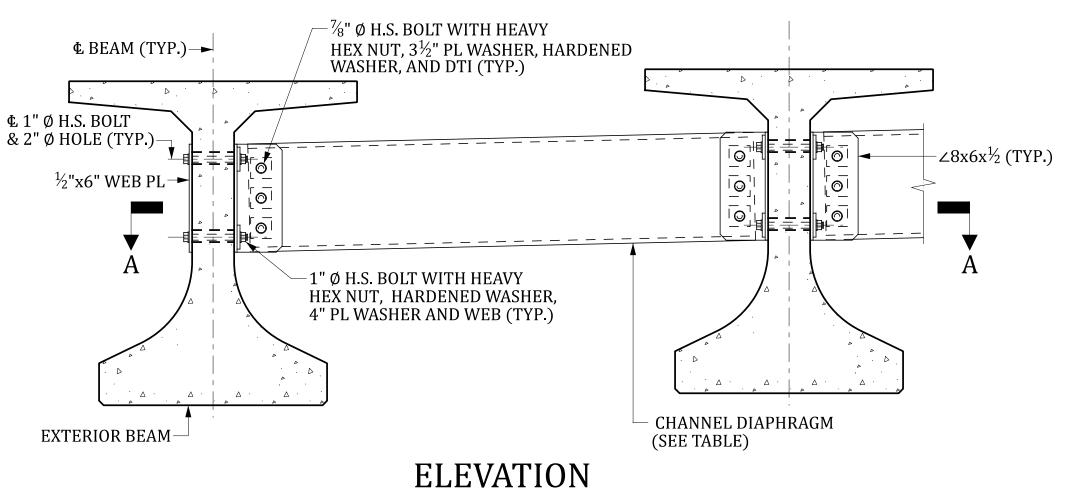
CONSULTANT NAME/LOGO

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

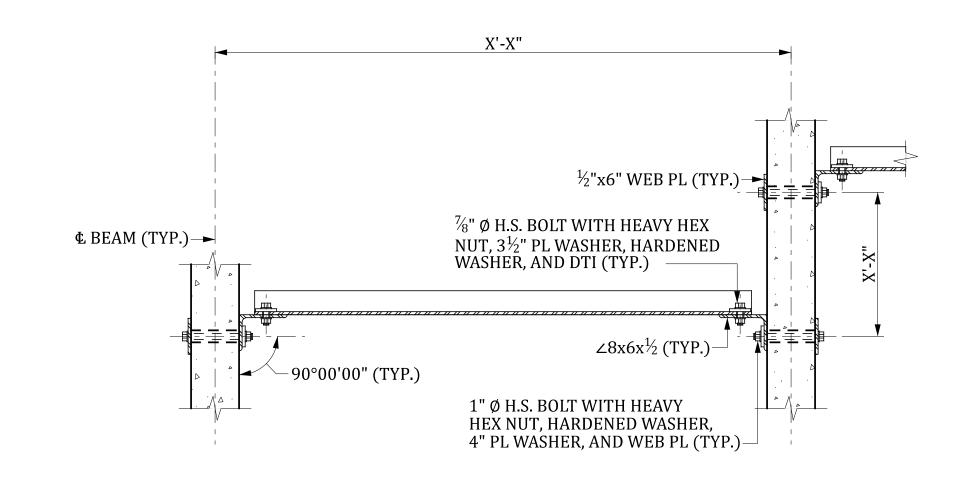
FLORIDA I-BEAM STEEL INTERMEDIATE DIAPHRAGM DETAILS - ALT 2

COUNTY: ####

ROUTE: #### DRAWING NUMBER: 704-FIB.STLINTDIA.CHAN.SKUNDER20

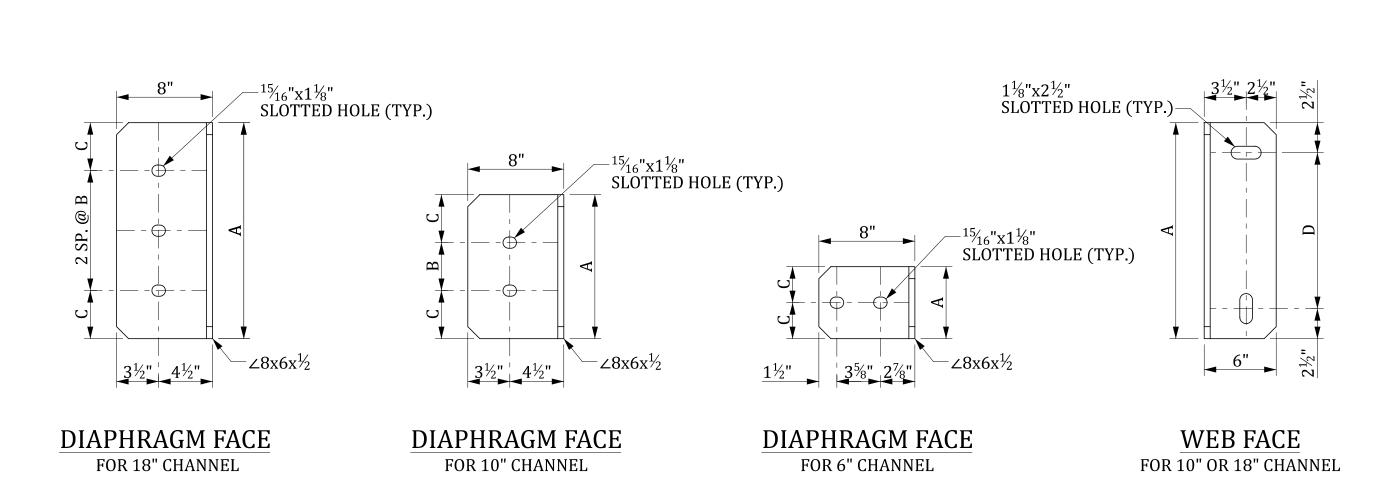


54" FLORIDA I-BEAM SHOWN, OTHERS SIMILAR.

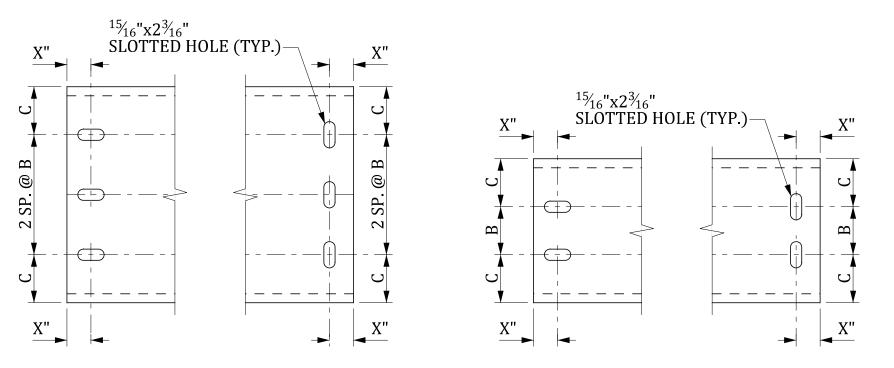


SECTION A-A

LEFT SKEW SHOWN. RIGHT SKEW SIMILAR BY MIRROR ABOUT A LINE PARALLEL TO H.S. BOLT CENTERLINES.



CHANNEL CONNECTION ANGLE DETAILS



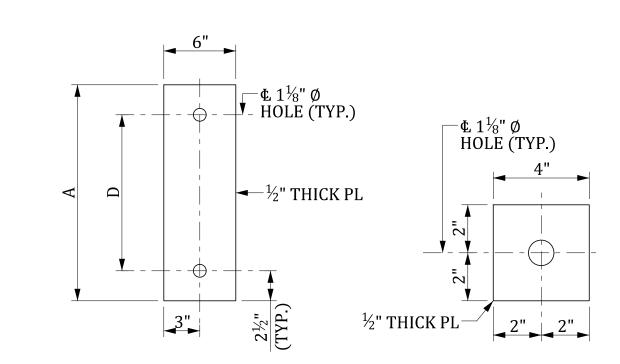
10" CHANNEL

15/₁₆"x2³/₁₆" SLOTTED HOLE (TYP.) 15/₁₆"x2³/₁₆" SLOTTED HOLE (TYP.)

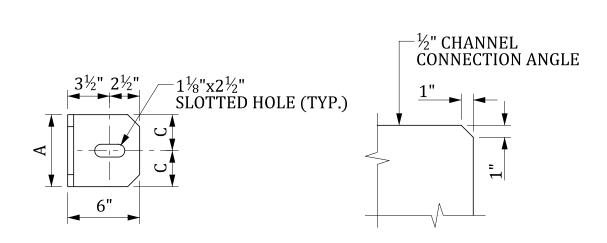
18" CHANNEL

CHANNEL END DETAIL

6" CHANNEL



10" OR 18" CHANNEL
WEB PLATE DETAIL



WEB FACE FOR 6" CHANNEL

CORNER CLIP

THIS DRAWING IS FURNISHED FOR INFORMATION ONLY. ALL DIMENSIONS SHOWN ARE SHEET SPECIFIC. ANY USE OF THIS DESIGN AND DRAWING, INCLUDING DIMENSIONS, MUST BE CHECKED BY THE USER'S ENGINEER TO ENSURE DESIGN IS ADEQUATE FOR THE INTENDED USE. ALL DRAWINGS MUST BE SIGNED AND SEALED BY A SOUTH CAROLINA REGISTERED PROFESSIONAL

ENGINEER WHEN USED.

NOTES:

PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50. GALVANIZE ALL COMPONENTS OF DIAPHRAGMS INCLUDING CONNECTION ANGLE OR CONNECTION PLATE AND PLATE WASHERS IN ACCORDANCE WITH AASHTO M 111. PERFORM GALVANIZING AFTER FABRICATION IS COMPLETED. ROUGHEN FAYING SURFACES OF BOLTED CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE BRUSHING IS NOT PERMITTED.

MAKE ALL BOLTED DIAPHRAGM CONNECTIONS WITH 1/8" OR 1" ASTM F3125, GRADE A325 (TYPE 1) BOLTS. MECHANICALLY GALVANIZE BOLTS, HEAVY HEX NUTS, HARDENED WASHERS, AND DIRECT TENSION INDICATORS (DTI'S) IN ACCORDANCE WITH ASTM B 695 CLASS 50. FOR THE 1" BOLT ASSEMBLIES, GALVANIZING IN ACCORDANCE WITH AASHTO M 232 MAY BE SUBSTITUTED FOR MECHANICAL GALVANIZING.

SUBMIT SHOP PLANS FOR STEEL INTERMEDIATE DIAPHRAGMS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AFTER INSTALLATION OF STEEL DIAPHRAGMS, REPAIR ALL DAMAGED AREAS OF THE GALVANIZED FINISH IN ACCORDANCE WITH ASTM A 780. USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

FORM BOLT HOLES IN PRESTRESSED CONCRETE BEAMS USING 2" INSIDE DIAMETER PIPE AND LEAVE PIPE IN PLACE AFTER FORMS ARE REMOVED.

TENSION BOLTS THROUGH THE BEAM WEB TO BE SNUG TIGHT AND THEN TURN THE BOLTS AN ADDITIONAL $\frac{1}{4}$ TURN. PEEN THREADS ON ALL BOLTS INSTALLED THROUGH THE BEAM WEB. INSTALL ALL OTHER BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT

DO NOT PLACE DECK SLAB UNTIL ALL INTERMEDIATE DIAPHRAGMS ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE DECK CONCRETE WILL BE PLACED DURING THE POUR.

LEAVE STEEL INTERMEDIATE DIAPHRAGMS IN PLACE AS A PERMANENT PART OF THE COMPLETED STRUCTURE.

ASSEMBLY TO VERIFY PROPER TENSIONING

INCLUDE ALL COST OF FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGM ASSEMBLIES IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BEAMS.

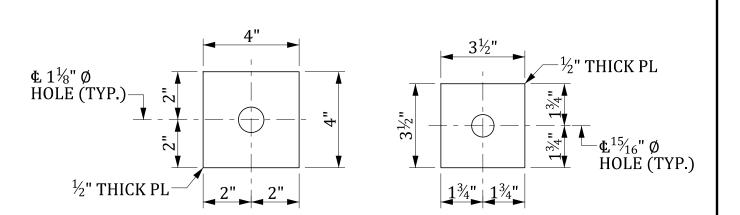


PLATE WASHER DETAIL

USE $3\frac{1}{2}$ " PLATE WASHER OVER ALL $^{15}\!\!/_{16}$ " $\times 2^{3}\!\!/_{16}$ " HOLES USE 4" PLATE WASHER OVER ALL $1\frac{1}{8}$ " $\times 2^{1}\!\!/_{2}$ " HOLES

		CONNECTION DIMENSIONS			
BEAM	DIAPHRAGM	A	В	С	D
36" F.I.B.	MC6X18	3½"	N/A	1¾"	N/A
45" F.I.B.	MC10X22	10"	4"	3"	5"
54" F.I.B.	MC18X42.7	1'-6"	5"	4"	1'-1"
63" F.I.B.	MC18X42.7	1'-6"	5"	4"	1'-1"
72" F.I.B.	MC18X42.7	1'-6"	5"	4"	1'-1"

CONSULTANT NAME/LOGO

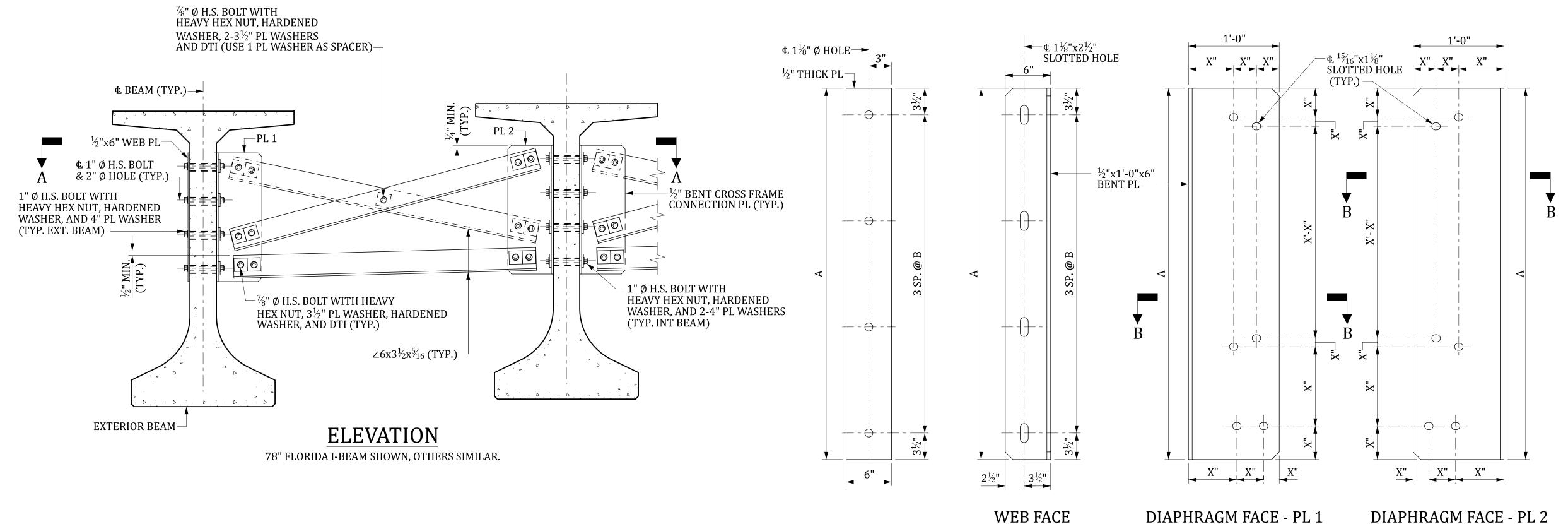
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

FLORIDA I-BEAM STEEL INTERMEDIATE DIAPHRAGM DETAILS - ALT 3

COUNTY: ####

DRAWING NUMBER: 704-FIB.STLINTDIA.CHAN.SKOVER20





WEB PLATE DETAIL

CROSS FRAME CONNECTION BENT PLATE DETAILS

NOTES:

PROVIDE STRUCTURAL STEEL SECTIONS, PLATES, AND PLATE WASHERS THAT CONFORM TO THE REQUIREMENTS OF AASHTO M 270, GRADE 50. GALVANIZE ALL COMPONENTS OF CROSS FRAMES INCLUDING CONNECTION PLATE AND PLATE WASHERS IN ACCORDANCE WITH AASHTO M 111. PERFORM GALVANIZING AFTER FABRICATION IS COMPLETED. ROUGHEN FAYING SURFACES OF BOLTED CONNECTIONS BY MEANS OF HAND-WIRE BRUSHING. POWER-WIRE BRUSHING IS NOT PERMITTED.

MAKE ALL BOLTED CROSS FRAME CONNECTIONS WITH 1/8" OR 1" ASTM F3125, GRADE A325 (TYPE 1) BOLTS.

MECHANICALLY GALVANIZE BOLTS, HEAVY HEX NUTS, HARDENED WASHERS, AND DIRECT TENSION INDICATORS (DTI'S) IN ACCORDANCE WITH ASTM B 695 CLASS 50. FOR THE 1" BOLT ASSEMBLIES, GALVANIZING IN ACCORDANCE WITH AASHTO M 232 MAY BE SUBSTITUTED FOR MECHANICAL GALVANIZING.

SUBMIT SHOP PLANS FOR STEEL CROSS FRAMES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

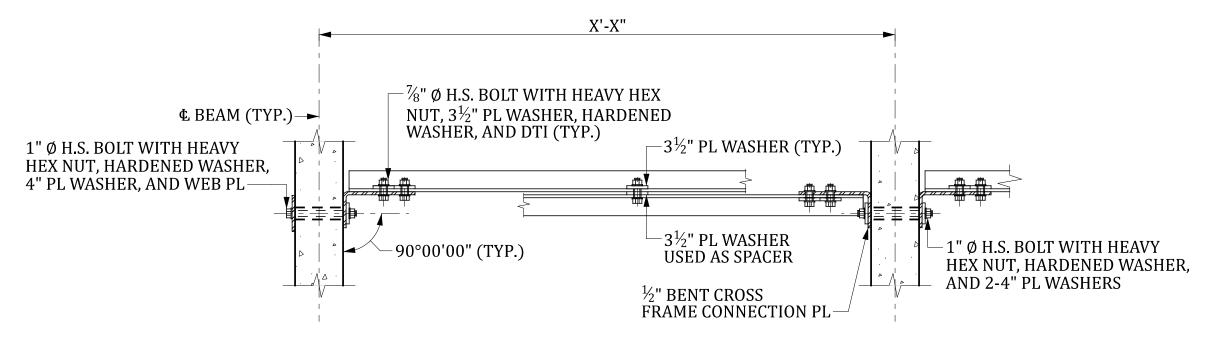
AFTER INSTALLATION OF STEEL CROSS FRAMES, REPAIR ALL DAMAGED AREAS OF THE GALVANIZED FINISH IN ACCORDANCE WITH ASTM A 780. USE PAINT METHOD TO REPAIR FINISH ON HARDWARE.

FORM BOLT HOLES IN PRESTRESSED CONCRETE BEAMS USING 2" INSIDE DIAMETER PIPE AND LEAVE PIPE IN PLACE AFTER FORMS ARE REMOVED.

TENSION BOLTS THROUGH THE BEAM WEB TO BE SNUG TIGHT AND THEN TURN THE BOLTS AN ADDITIONAL ¼ TURN. PEEN THREADS ON ALL BOLTS INSTALLED THROUGH THE BEAM WEB. INSTALL ALL OTHER BOLTS USING A DTI AND HARDENED WASHER WITH EACH BOLT ASSEMBLY TO VERIFY PROPER TENSIONING.

DO NOT PLACE DECK SLAB UNTIL ALL CROSS FRAMES ARE PROPERLY INSTALLED AND TIGHTENED IN EACH SPAN WHERE DECK CONCRETE WILL BE PLACED DURING THE POUR.

LEAVE STEEL CROSS FRAMES IN PLACE AS A PERMANENT PART OF THE COMPLETED STRUCTURE.



SECTION A-A

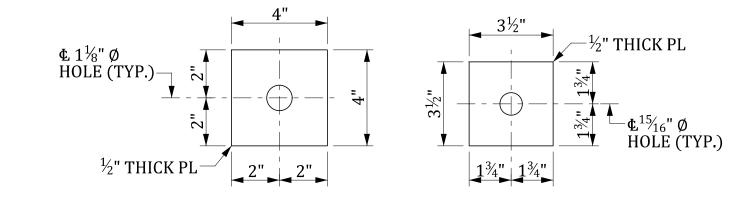
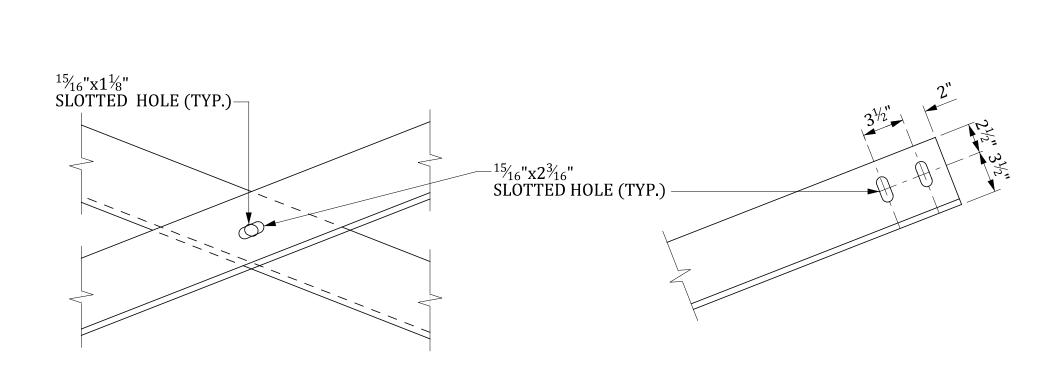


PLATE WASHER DETAIL

USE 3½" PLATE WASHER OVER ALL 15/16"x23/16" HOLES USE 4" PLATE WASHER OVER ALL 1½"x2½" HOLES

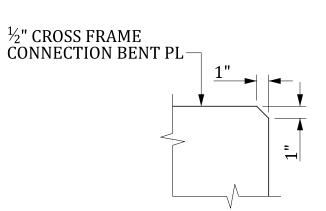


CROSS FRAME DETAILS

NOTE: BOLTS, NUTS, AND WASHERS NOT SHOWN FOR CLARITY.

1'-0"
—1" MIN. RADIUS

SECTION B-B



CORNER CLIP DETAIL

THIS DRAWING IS FURNISHED FOR INFORMATION ONLY. ALL DIMENSIONS SHOWN ARE SHEET SPECIFIC. ANY USE OF THIS DESIGN AND DRAWING, INCLUDING DIMENSIONS, MUST BE CHECKED BY THE USER'S ENGINEER TO ENSURE DESIGN IS ADEQUATE FOR THE INTENDED USE. ALL DRAWINGS MUST BE SIGNED AND SEALED BY A SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WHEN USED.

	DIMENSIONS	
BEAM	A	В
78" F.I.B.	3'-4"	11"
84" F.I.B.	3'-10"	1'-1"
96" F.I.B.	4'-10"	1'-5"

CONNECTION

CONSULTANT NAME/LOGO

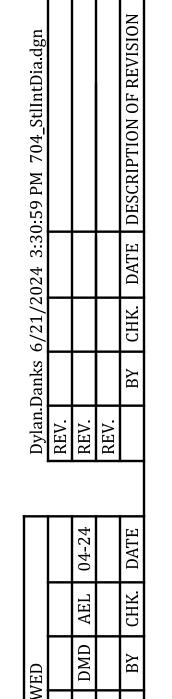
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

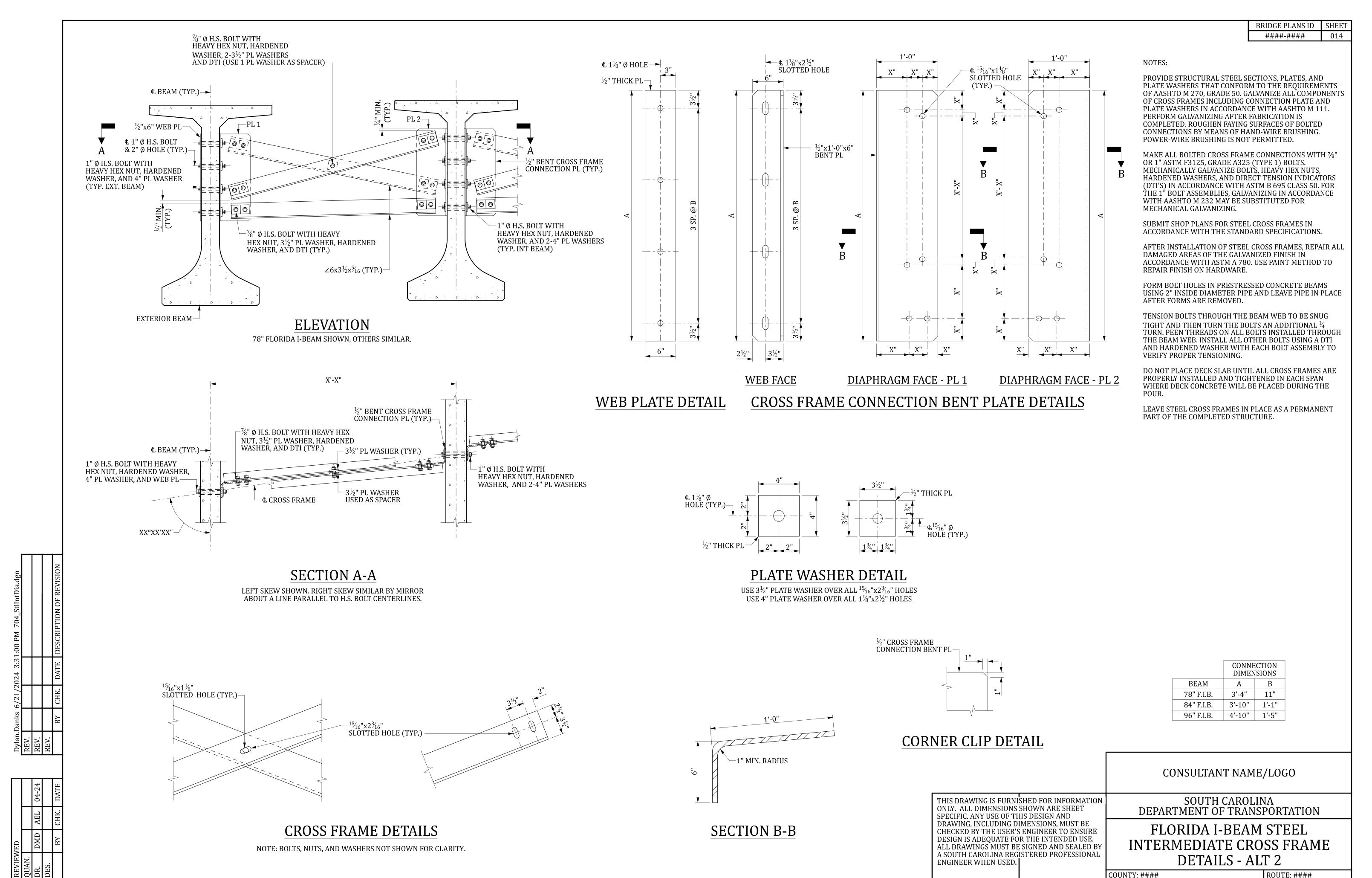
FLORIDA I-BEAM STEEL
INTERMEDIATE CROSS FRAME
DETAILS - ALT 1

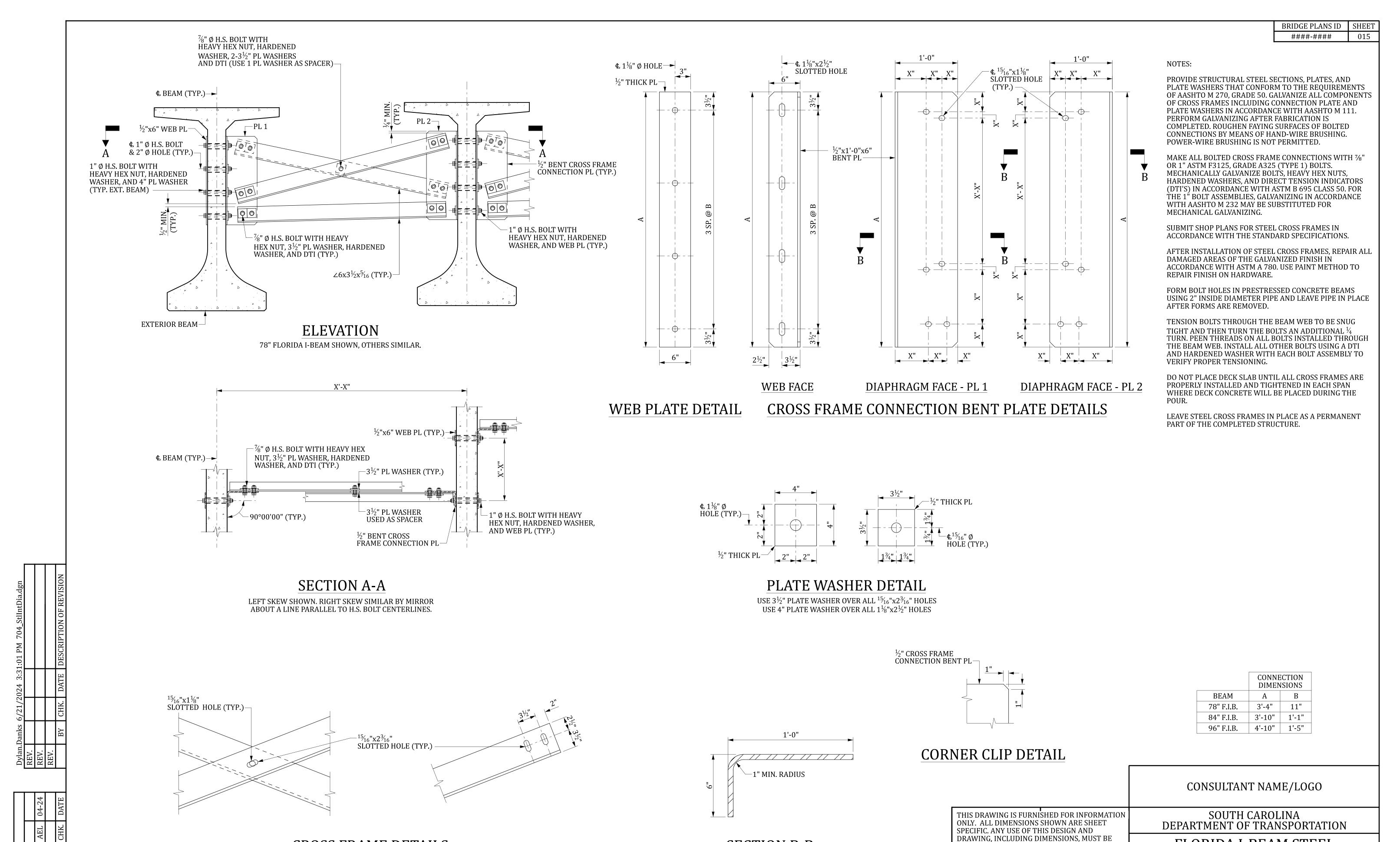
ROUTE: ####

COUNTY: ####

DRAWING NUMBER: 704-FIB.STLINTDIA.CROSS.SK000







SECTION B-B

CROSS FRAME DETAILS

NOTE: BOLTS, NUTS, AND WASHERS NOT SHOWN FOR CLARITY.

DRAWING NUMBER: 704-FIB.STLINTDIA.CROSS.SKOVER20

COUNTY: ####

CHECKED BY THE USER'S ENGINEER TO ENSURE DESIGN IS ADEQUATE FOR THE INTENDED USE.

ALL DRAWINGS MUST BE SIGNED AND SEALED BY

A SOUTH CAROLINA REGISTERED PROFESSIONAL

ENGINEER WHEN USED.

FLORIDA I-BEAM STEEL

INTERMEDIATE CROSS FRAME

DETAILS - ALT 3