

GENERAL NOTES:

1. DESIGN LOADS AND SPECIFICATIONS

- 1.1. STEEL

— AISC SPECIFICATIONS FOR STEEL BUILDINGS AISC 360–16–ASD.
ASME DESIGN OF BELOW THE HOOK LIFTING DEVICES ASME BTH–1–2017, DESIGN CATEGORY A (Nd=2.0) AND CLASS 0 (LESS THAN 20,000 CYCLES) LIFTING DEVICE.
- 1.2. DESIGN LOADS

— DELTA FRAME SEGMENT = 128T MAX. (PER FDLLC).
DELTA FRAME LIFTER = 15T

2. MATERIALS

2.1. STRUCTURAL STEEL:

- STRUCTURAL STEEL U.N.O.

— ASTM A992 GR. 50
- ANGLES

— ASTM A36
- CHANNELS AND PLATE

— ASTM A572 GR. 50
- HSS/TUBES

— ASTM A500 GR. C
- PIPE (≤ 12"ø)

— ASTM A53 GR. B
- PIPE (> 12"ø)

— ANSI/API 5L GR. X46 OR APPROVED EQUIVALENT
- P.T. BARS

— ASTM A722 GR. 150
WILLIAMS ALL THREAD BAR OR SIMILAR
- NUTS, COUPLERS,
AND WASHERS

— ASTM A29, GR. C1045
— ASTM A536 (SPHERICAL HEX NUTS)
— ASTM F436
- PINS

— AISI 4140 Fy = 90 ksi
- MISCELLANEOUS ROUND BAR

— ASTM A36

3. FABRICATION/CONSTRUCTION

- 3.1. SHOP AND ERECTION DRAWINGS, MATERIALS, FABRICATION, DELIVERY AND ERECTION TO BE IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL, ASD SPECIFICATION, 15th EDITION AND CODE OF STANDARD PRACTICE.
- 3.2. WELDS:

3.2.1. WELD FILLER METAL SHALL HAVE A MINIMUM CLASSIFICATION STRENGTH (F_{EXX}) OF 70 ksi AND WELDING ELECTRODES SHALL BE IN ACCORDANCE WITH AWS D1.1 CHAPTER 3, BASE METAL/FILLER METAL COMBINATIONS FOR MATCHING ELECTRODES (AWS D1.1 TABLE 3.1 & TABLE 3.2).

3.2.2. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1, LATEST EDITION.

3.2.3. ALL WELDS SHALL BE PRE–QUALIFIED AND ALL WELDERS SHALL BE AWS CERTIFIED.

3.2.4. NON–DESTRUCTIVE TESTING OF WELDS TO BE PERFORMED AS FOLLOWS TO AWS D1.1 FOR STATIC STRUCTURES:

FILLET WELDS

— 10% MAGNETIC PARTICLE

FULL PENETRATION WELDS

— 100% ULTRASONIC OR X–RAY

PARTIAL PENETRATION WELDS

— 100% MAGNETIC PARTICLE
- 3.3. STRUCTURAL BOLTS:

3.3.1. BOLTS SHALL BE IN ACCORDANCE WITH ASTM F3125, GRADE A325 UNLESS NOTED OTHERWISE (U.N.O).

3.3.2. ALL BOLTS SHALL BE 7⁄8"ø UNLESS NOTED OTHERWISE.

3.3.3. ALL BOLTS SHALL BE SUPPLIED COMPLETE WITH WASHERS IN ACCORDANCE WITH ASTM STANDARD F436.

3.3.4. BOLTS TO BE BEARING TYPE WITH THREADS EXCLUDED FROM THE SHEAR PLANE. ALL BOLTS TO BE PRE–TENSIONED IN ACCORDANCE WITH RCSC SPECIFICATION FOR STRUCTURAL JOINTS.

3.3.5. ALL BOLT HOLES SHALL BE IN ACCORDANCE TO AISC 360–16 TABLE J3.3, UNLESS NOTED OTHERWISE.
- 3.4. ALL STRUCTURAL STEEL TO BE PAINTED IN ACCORDANCE WITH THE CONTRACTOR’S SITE STANDARD.
- 3.5. SHOP TRIAL ASSEMBLY OF AT LEAST ONE S50 DERRICK SLED IS MANDATORY AND OF ALL SLEDS IS RECOMMENDED. SHOP TRIAL ASSEMBLY OF AT LEAST ONE 183T DERRICK SUPPORT FRAME IS MANDATORY AND OF BOTH SLEDS IS RECOMMENDED.
- 3.6. CONNECTIONS:

3.6.1. 7⁄8"ø BOLTS TO BE SPACED AT 3" CENTERS U.N.O.
END AND EDGE DISTANCES TO BE MINIMUM 1½" U.N.O.

3.6.2. MINIMUM FILLET WELD SIZE IS ¼".
- 3.7. LIFTING DEVICE CONSTRUCTION, INSPECTION, MAINTENANCE, SAFETY, TESTING AND MARKING PER ASME B30.20 BELOW–THE–HOOK LIFTING DEVICES.
- 3.8. LIFTING DEVICE WWL = 128T
- 3.9. LIFTING DEVICE SHALL BE PROOF TESTED TO 125% OF RATED WORKING LOAD LIMIT PRIOR TO USE.

DELTA FRAME ERECTION – DRAWING INDEX		
DRAWING No.	DRAWING TITLE	REV. No.
160578–400	DELTA FRAME GENERAL NOTES AND DRAWING INDEX	0
160578–410	DELTA FRAME N.B. ACCESS PLATFORM GENERAL ARRANGEMENT	0
160578–411	DELTA FRAME S.B. ACCESS PLATFORM GENERAL ARRANGEMENT	0
160578–412	DELTA FRAME LOWER ACCESS PLATFORM DETAILS SHEET 1 OF 2	0
160578–413	DELTA FRAME LOWER ACCESS PLATFORM DETAILS SHEET 2 OF 2	0
160578–420	DELTA FRAME LIFTER GENERAL ARRANGEMENT	0
160578–421	DELTA FRAME LIFTER SECTIONS AND DETAILS SHEET 1	0
160578–422	DELTA FRAME LIFTER SECTIONS AND DETAILS SHEET 2	0
160578–431	DELTA FRAME TURNING FRAME GENERAL ARRANGEMENT	0
160578–432	DELTA FRAME TURNING FRAME DETAILS SHEET 1	0
160578–433	DELTA FRAME TURNING FRAME DETAILS SHEET 2	0
160578–434	DELTA FRAME TURNING ARM DETAILS	0
160578–435	DELTA FRAME TYPE 2 TURNING FRAME GENERAL ARRANGEMENT	0



CLIENT:



FLATIRON/Dragados LLC

PROJECT TITLE:

HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN

SHEET TITLE:

DELTA FRAME ERECTION
GENERAL NOTES
AND DRAWING INDEX

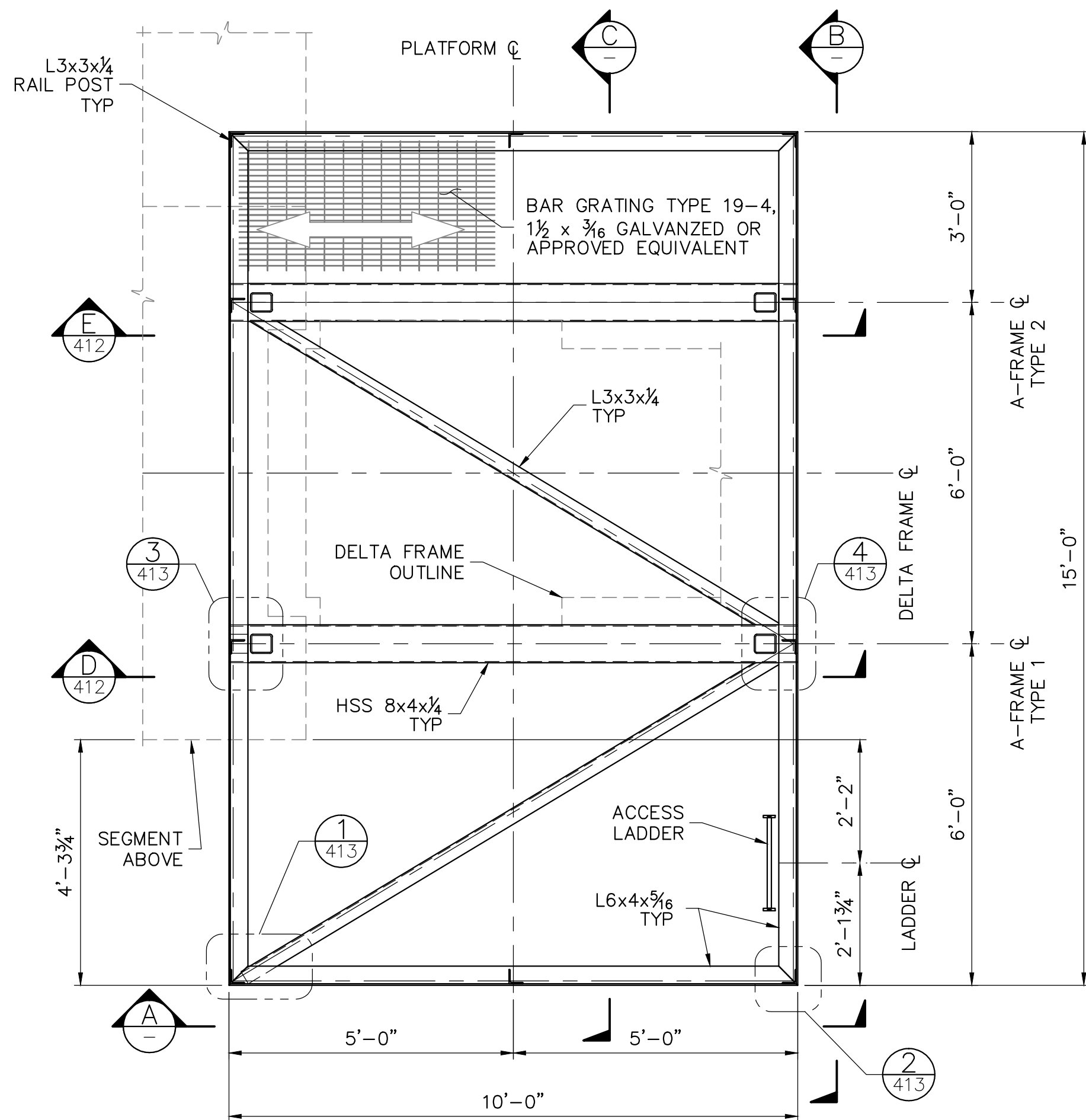
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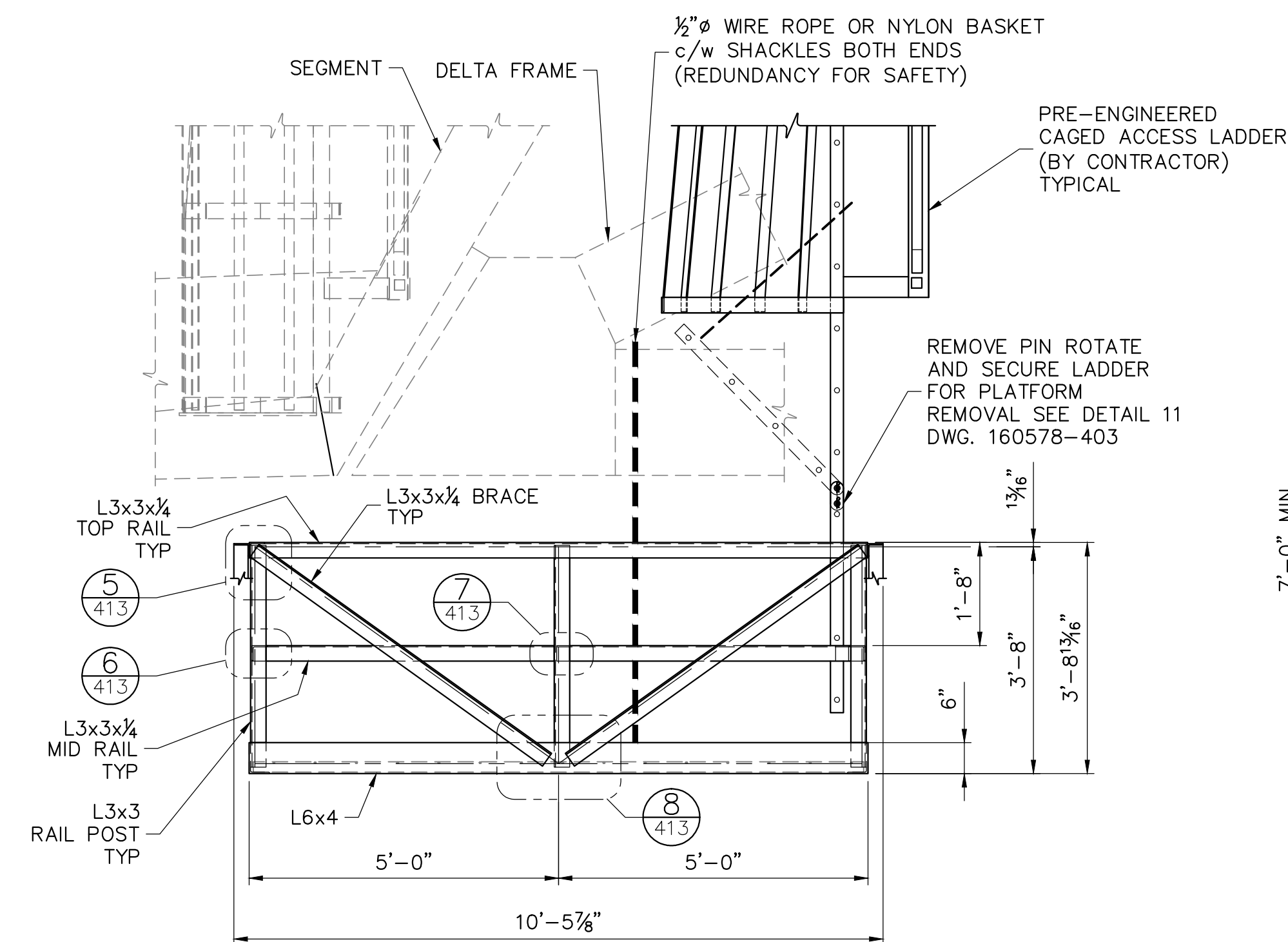
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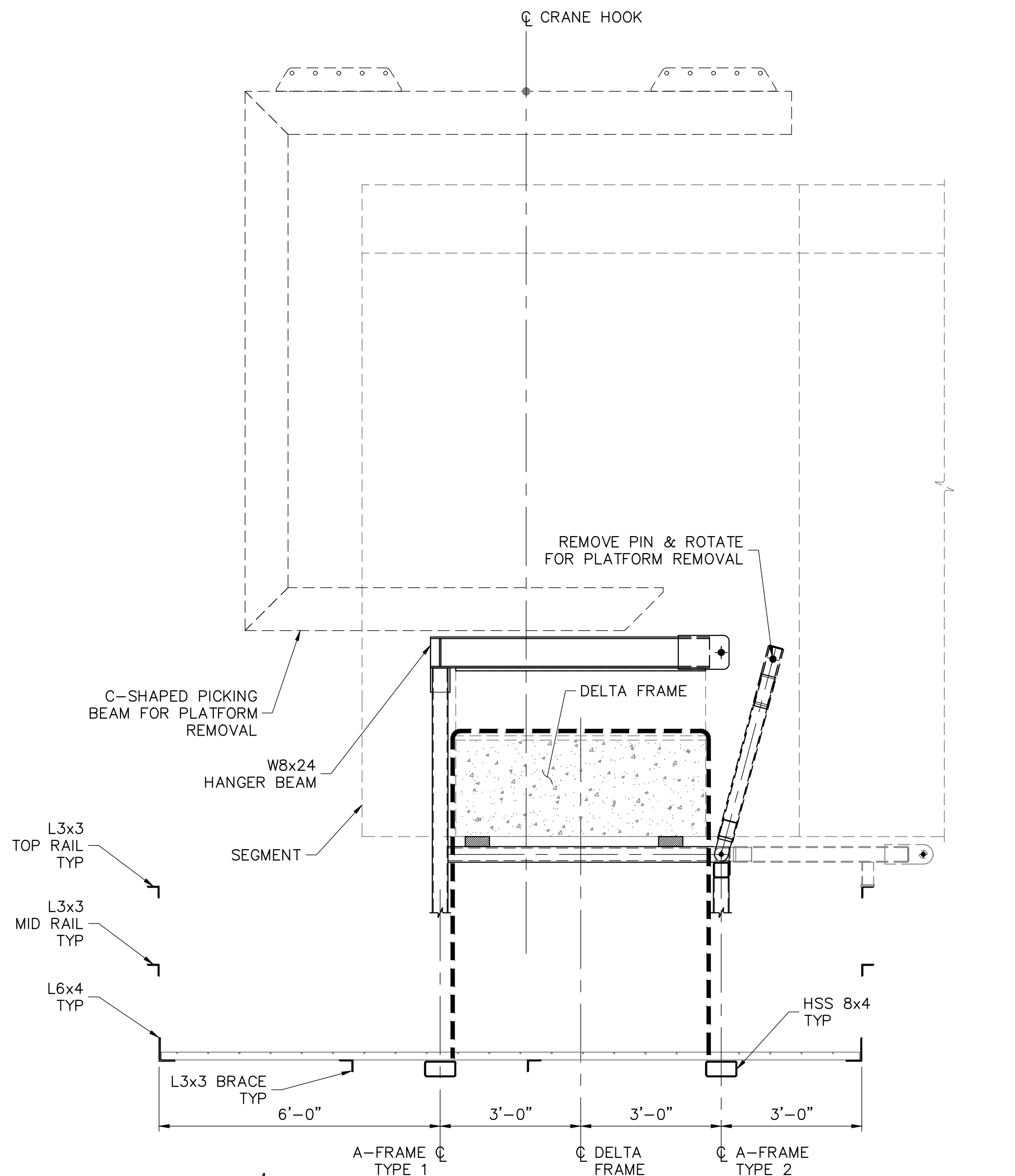
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DRAWING No.	160578-400		REV. 0



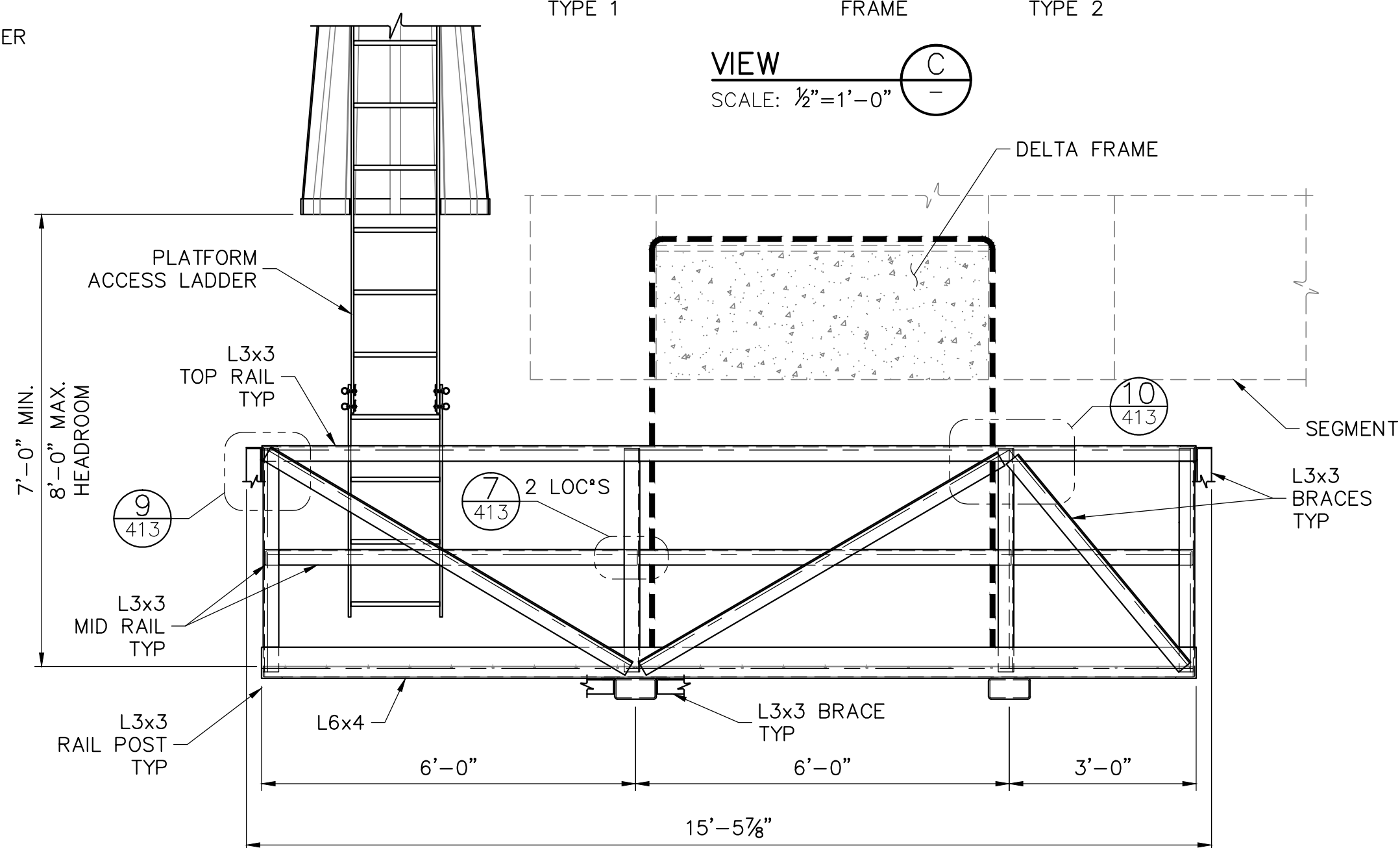
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VIEW A
SCALE: 1/2"=1'-0"



VIEW C
SCALE: 1/2"=1'-0"



VIEW B
SCALE: 1/2"=1'-0"



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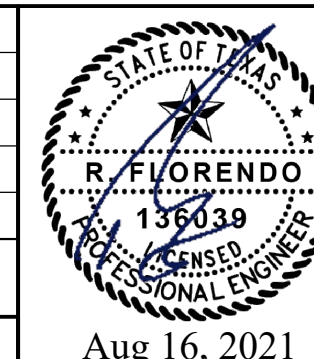
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HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN

SHEET TITLE:

DELTA FRAME
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GENERAL ARRANGENT

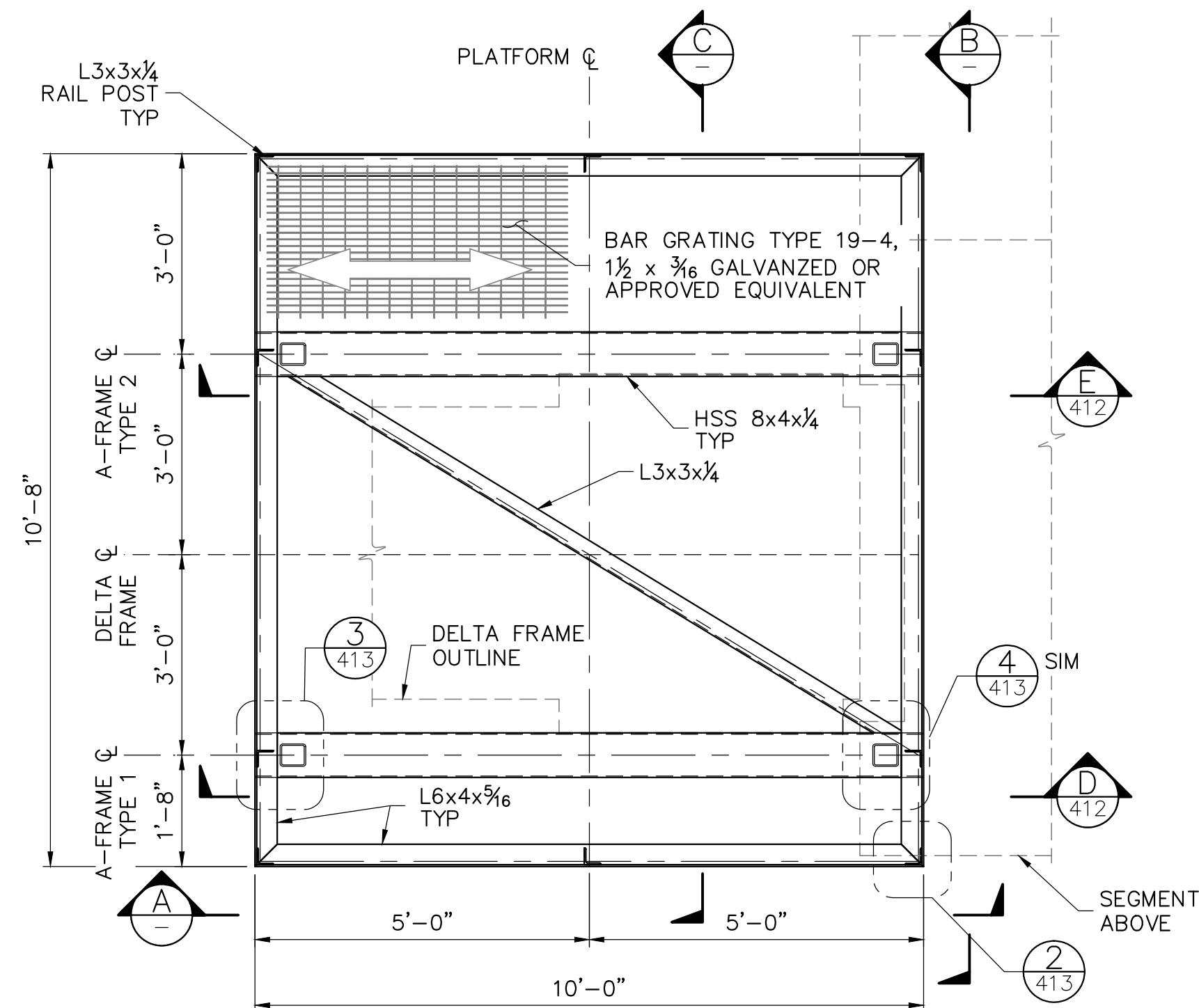
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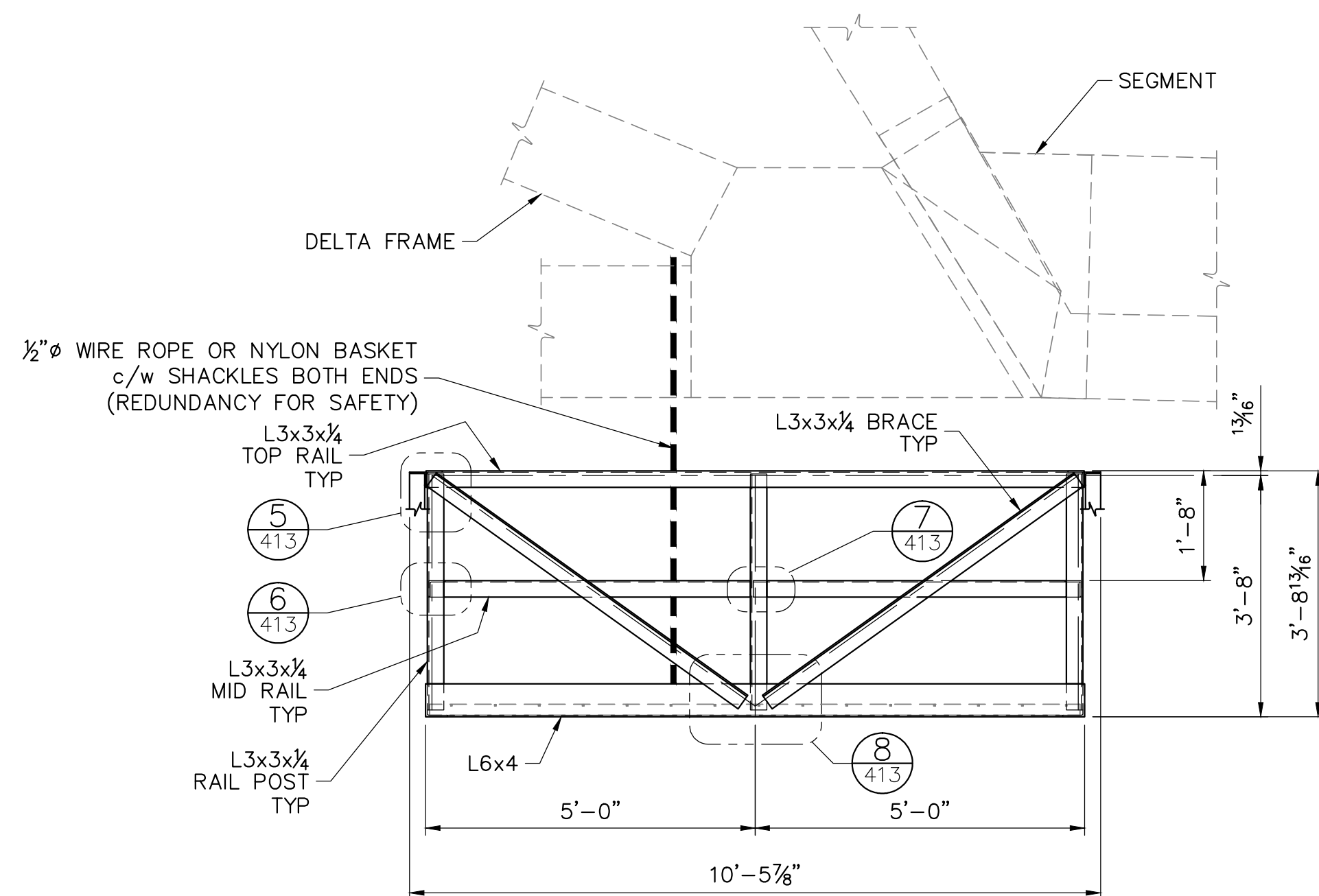
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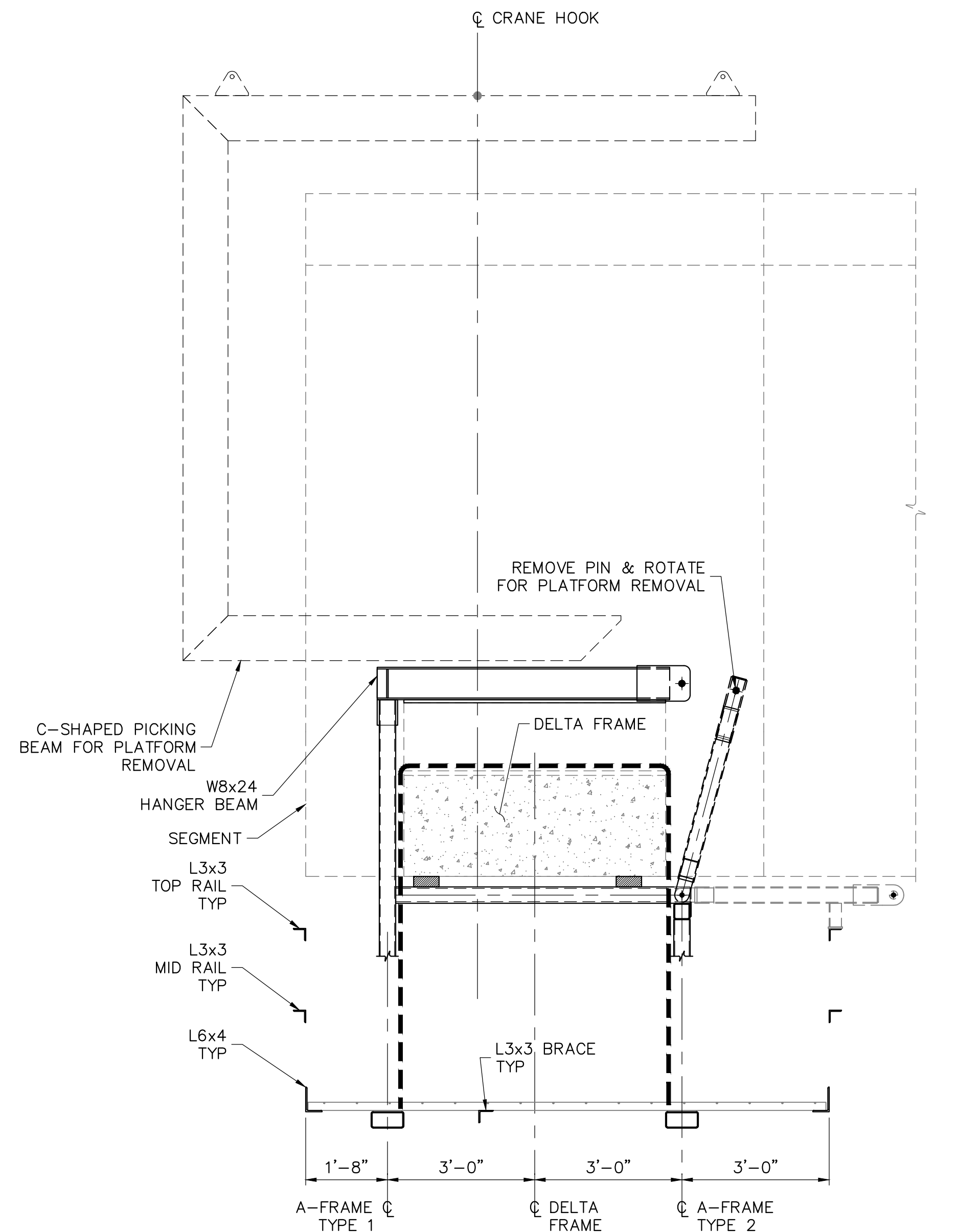
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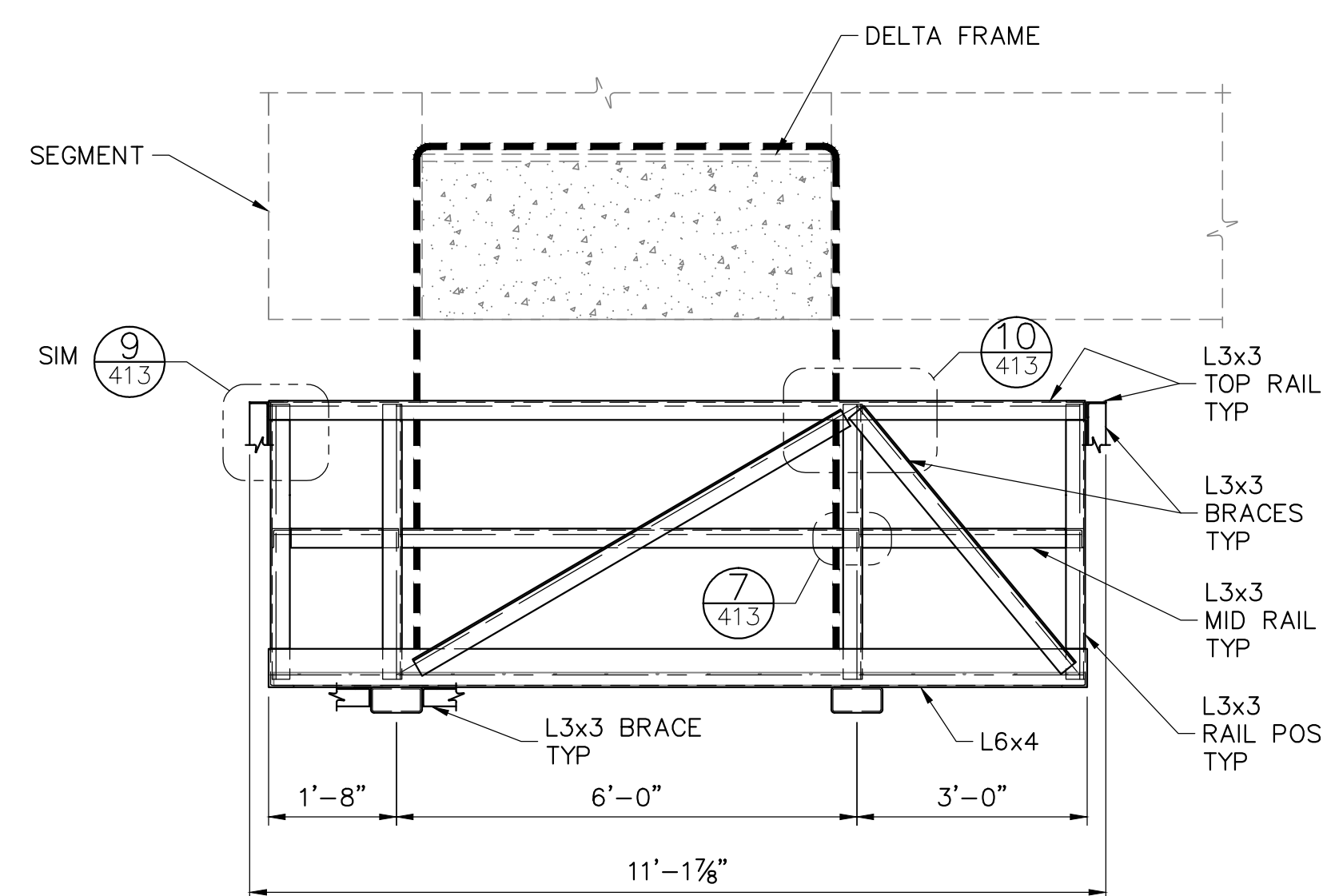
SOUTHBOUND DELTA FRAME PLATFORM – PLAN
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VIEW A
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VIEW C
SCALE: 1/2"=1'-0"



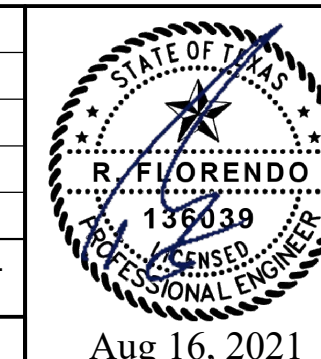
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PROJECT TITLE:
**HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN**

SHEET TITLE:
**DELTA FRAME
SOUTHBOUND LOWER ACCESS PLATFORM
GENERAL ARRANGENT**

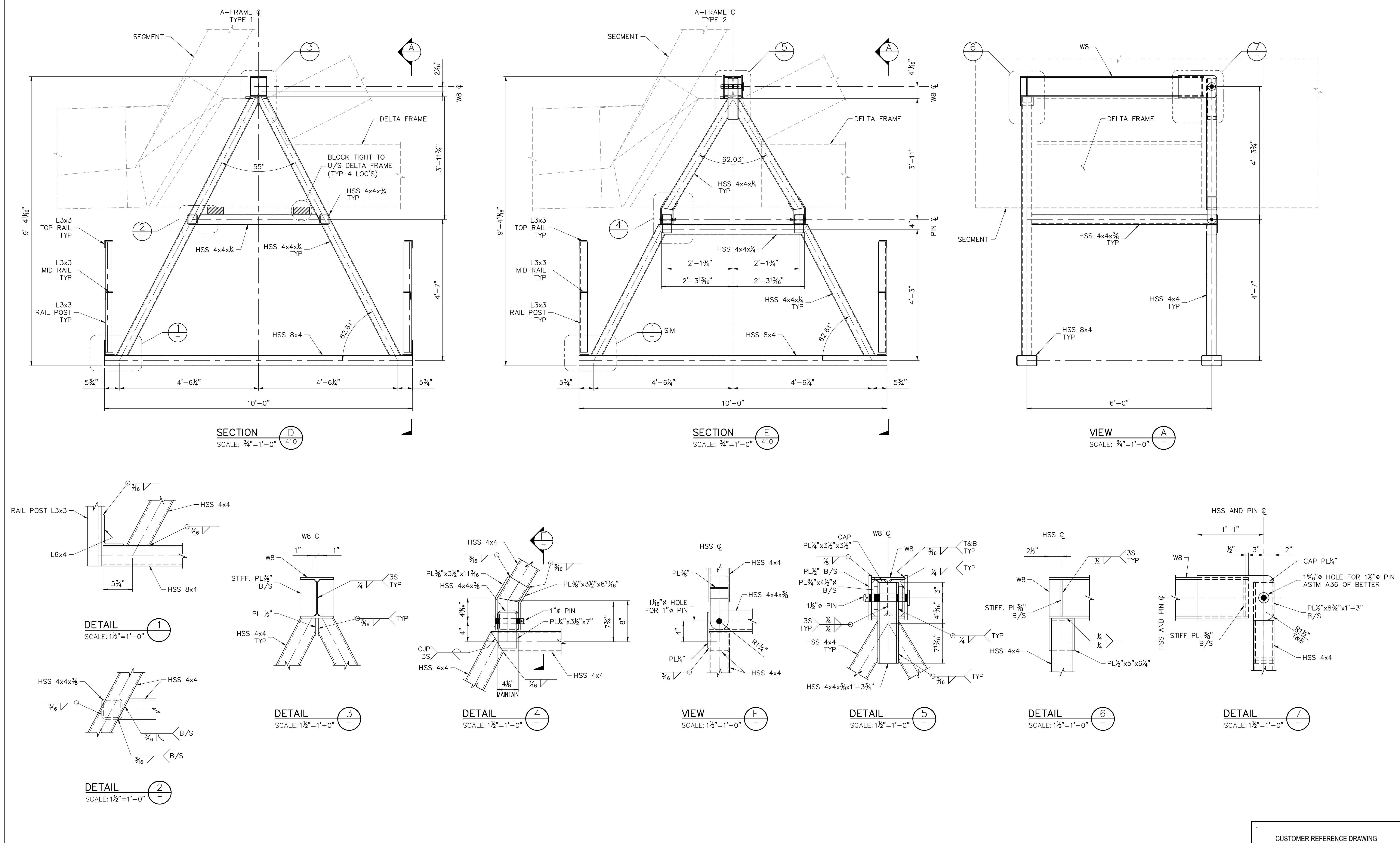
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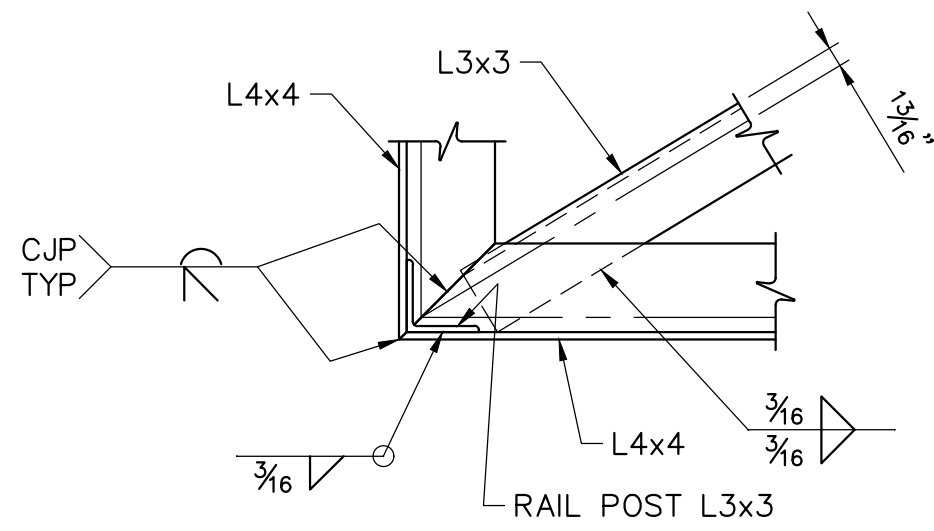
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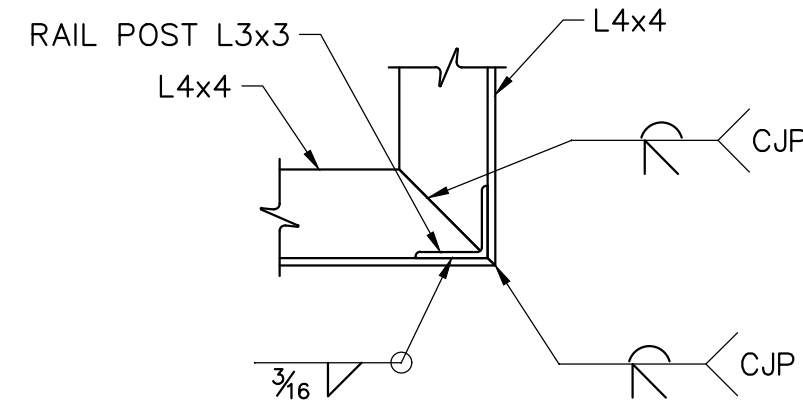
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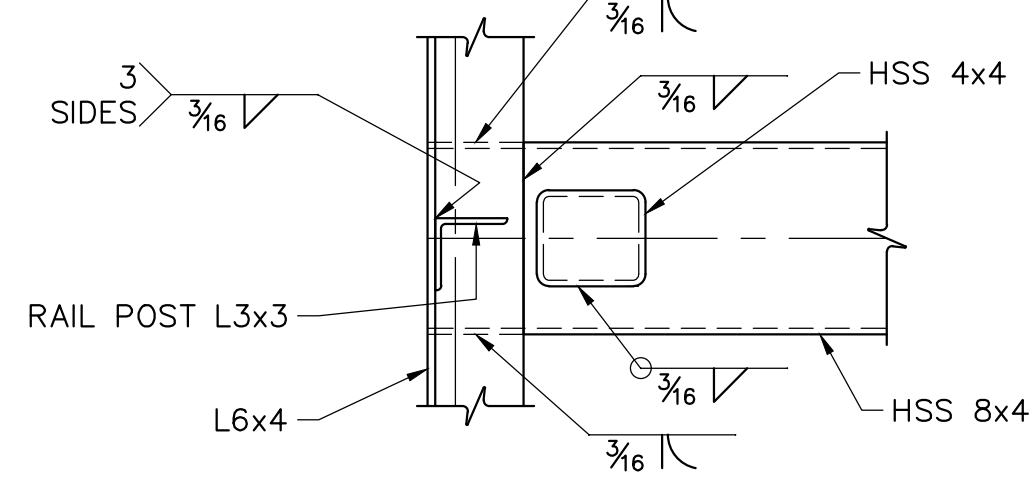
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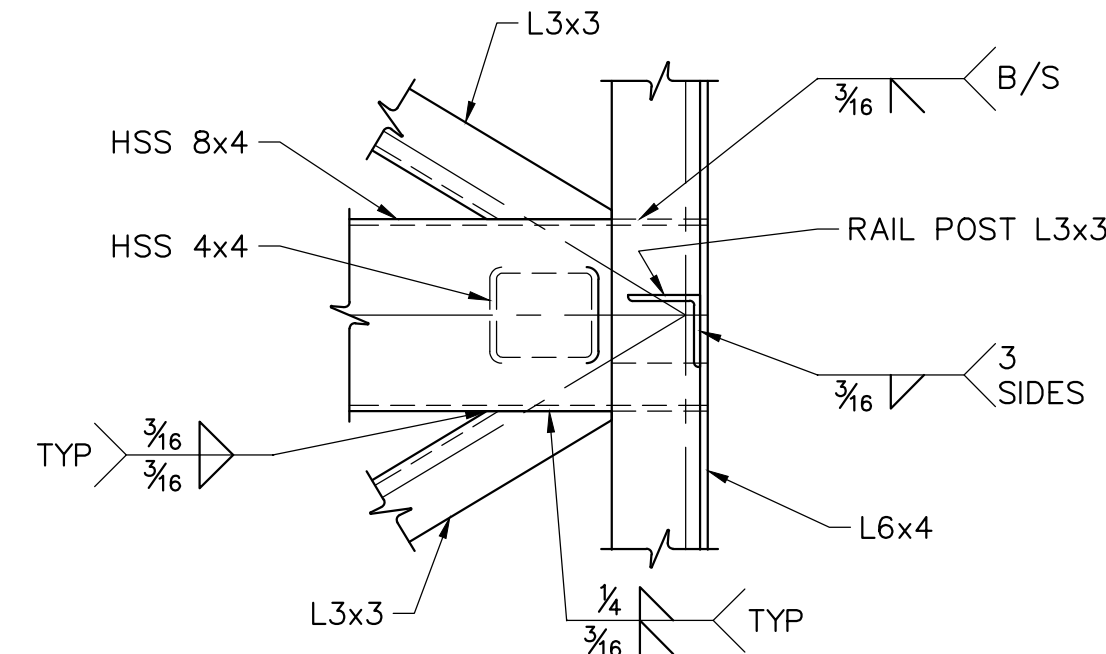
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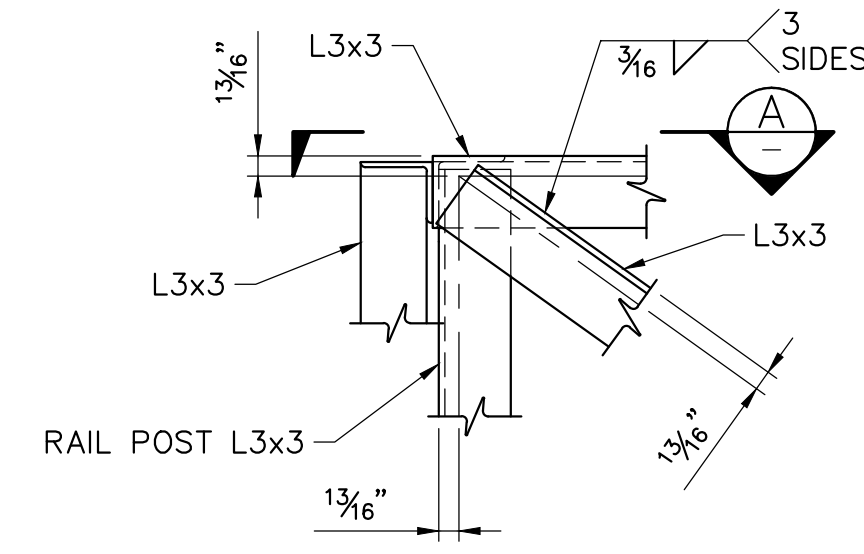
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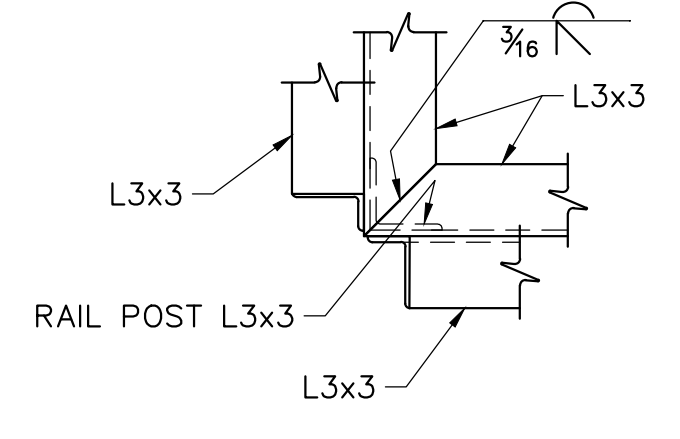
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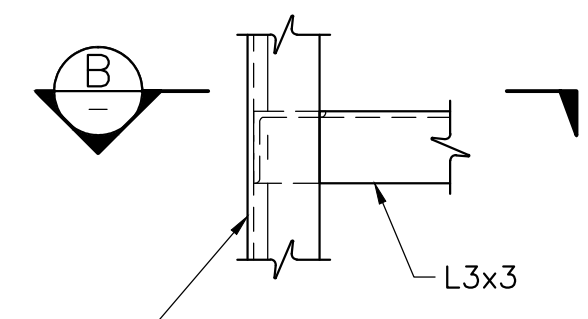
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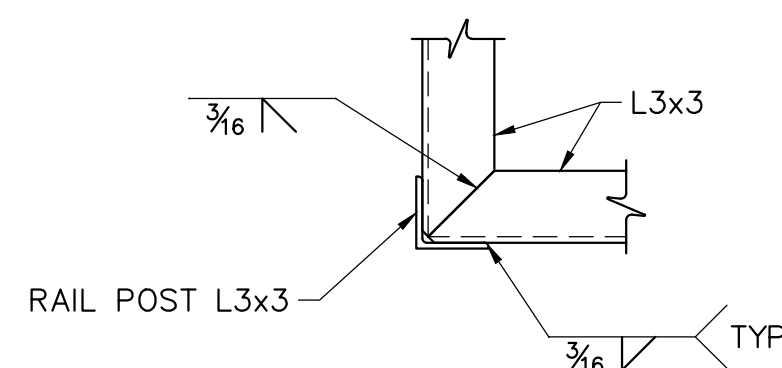
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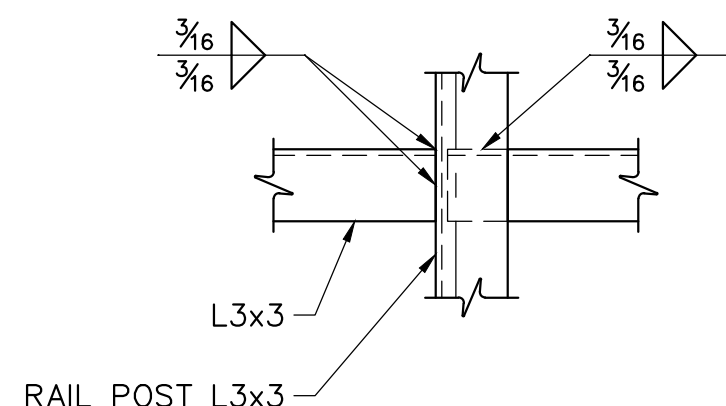
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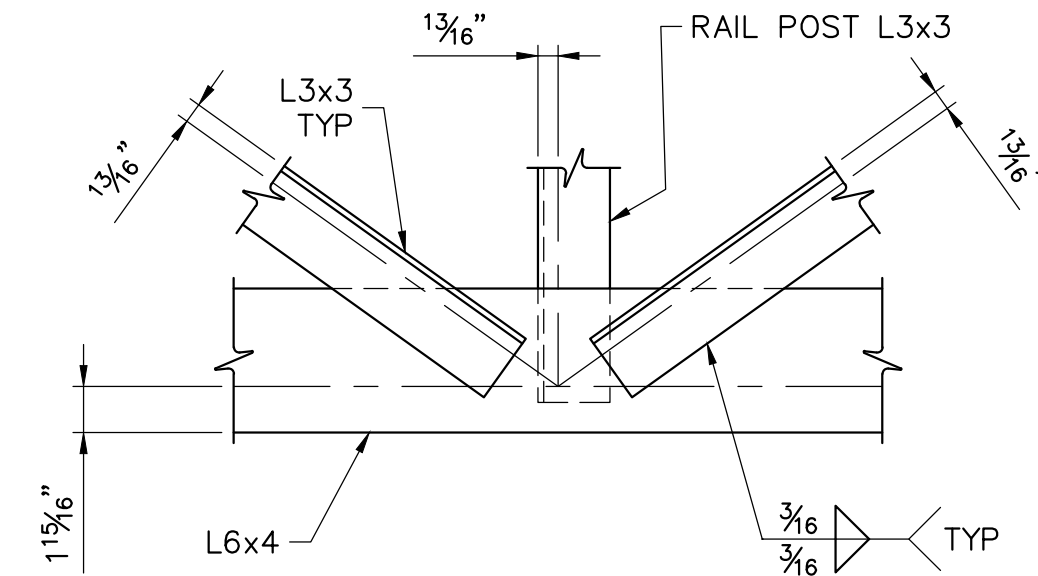
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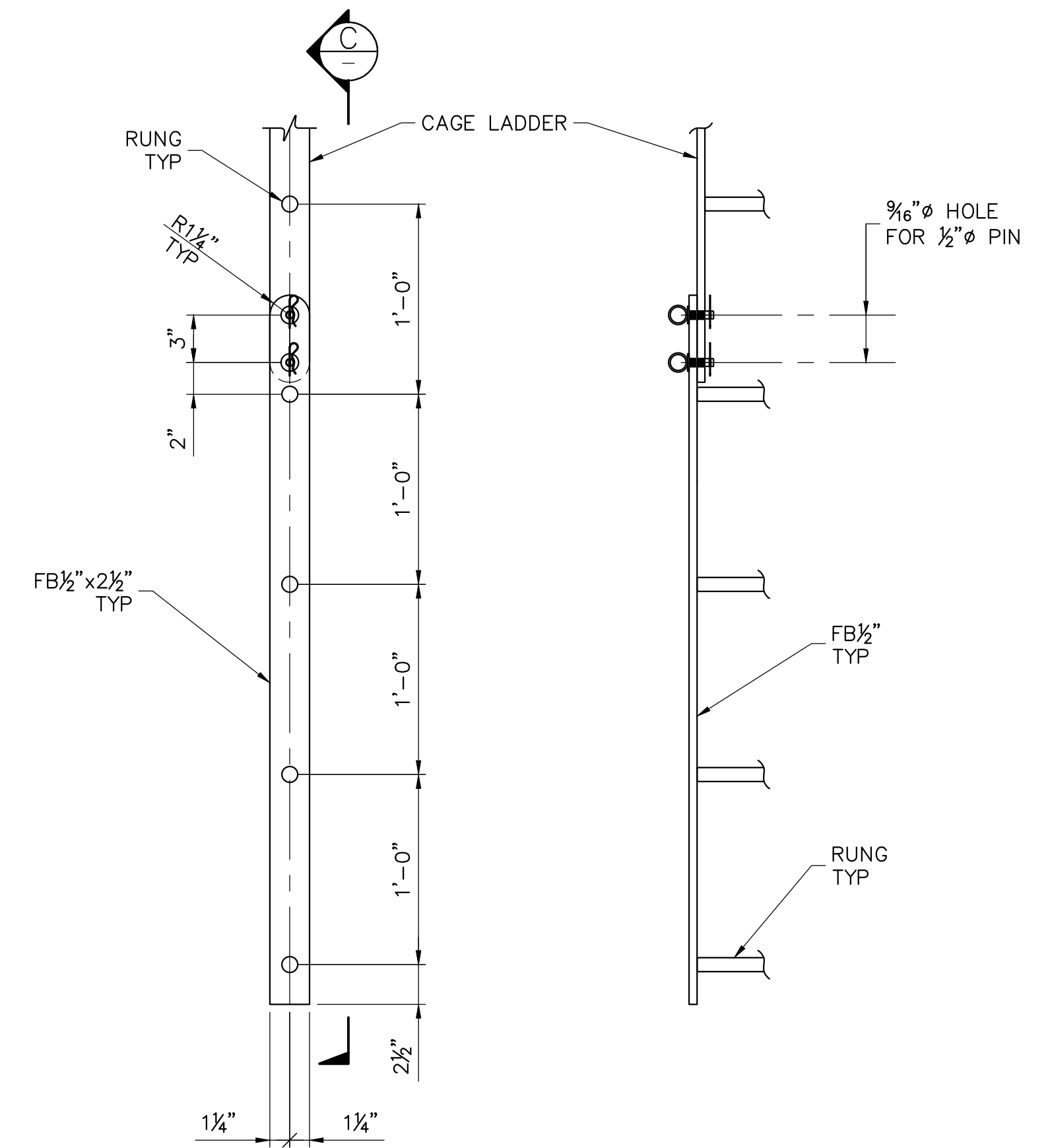
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DETAIL 7
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DETAIL 8
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DETAIL 11
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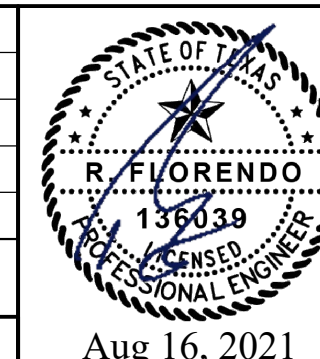
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PROJECT TITLE:
HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN

SHEET TITLE:
DELTA FRAME
LOWER ACCESS PLATFORM
DETAILS
SHEET 2 OF 2

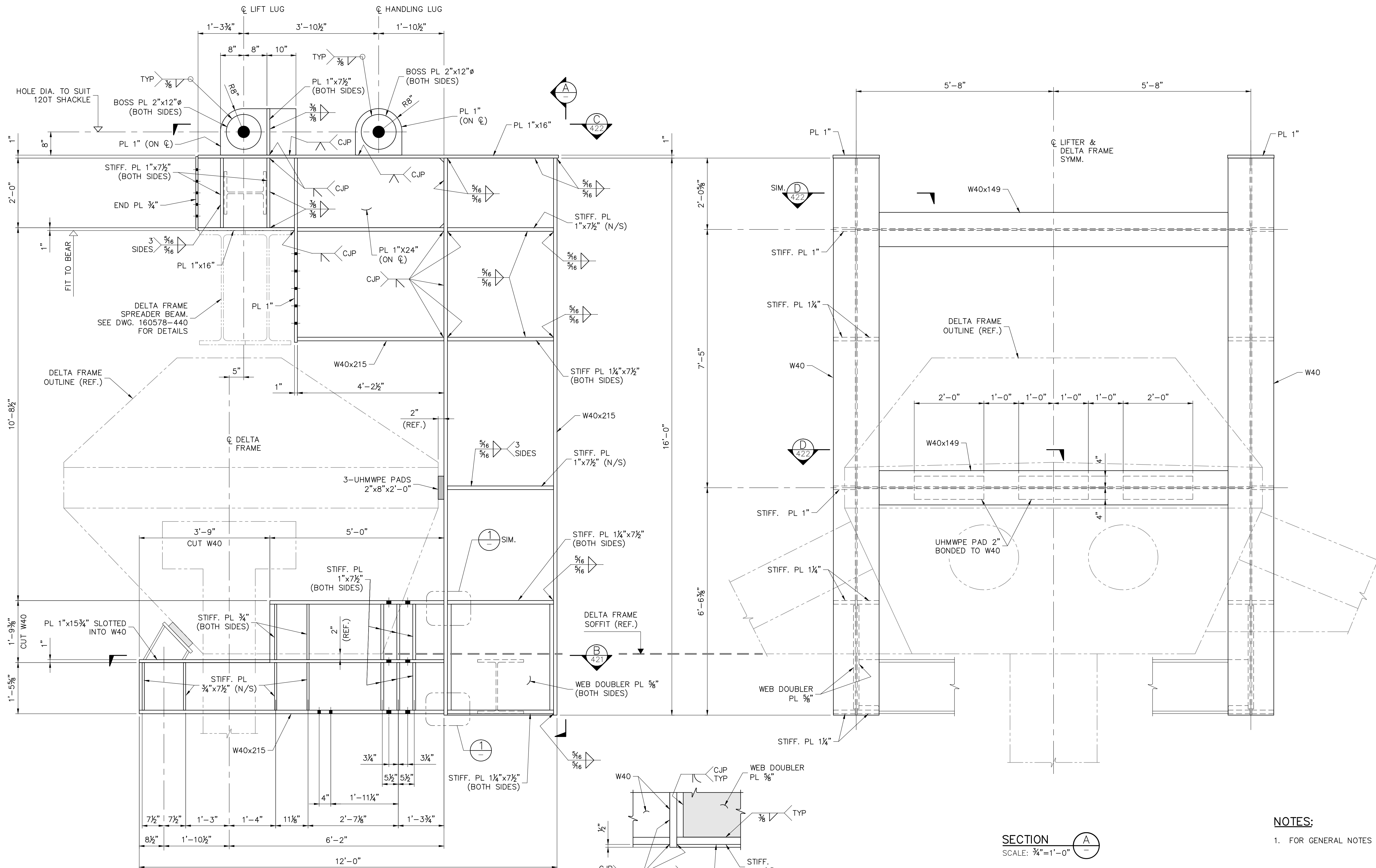
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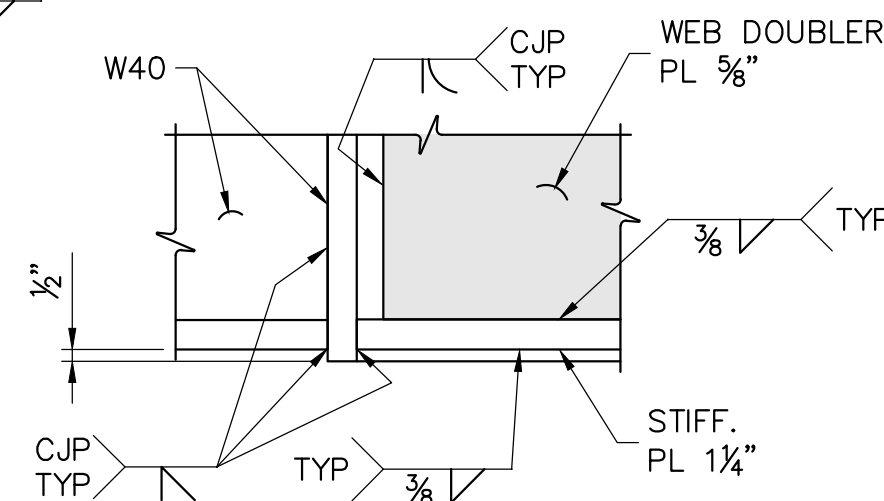
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160578-413		0	



DELTA FRAME LIFTER – GENERAL ARRANGEMENT
SCALE: 3/4"=1'-0"



DETAIL 1
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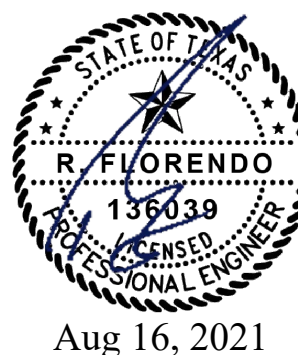
- NOTES:**
- FOR GENERAL NOTES SEE DRAWING 160578-400.



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**HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN**

SHEET TITLE:
**DELTA FRAME LIFTER
GENERAL ARRANGEMENT**

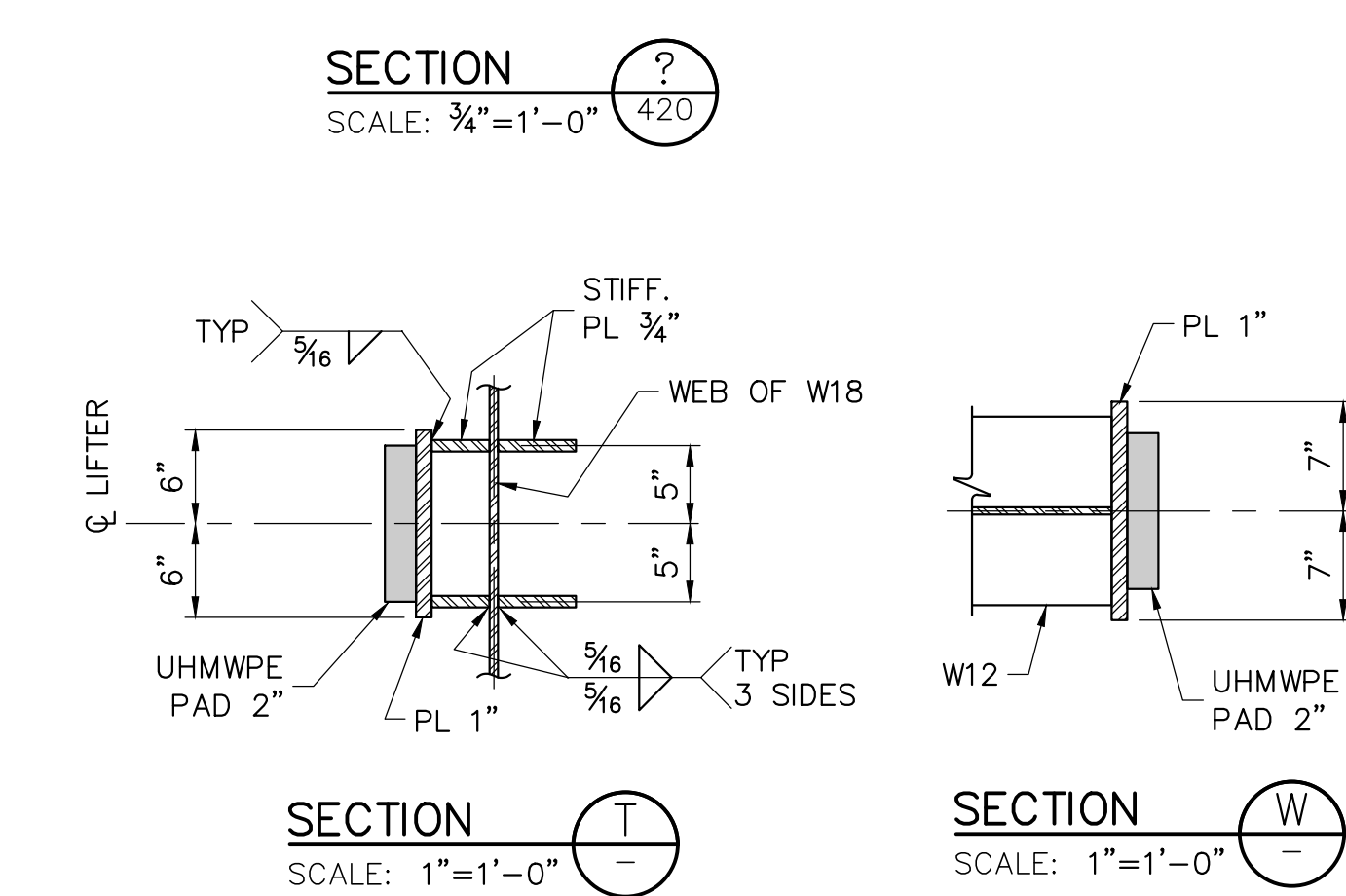
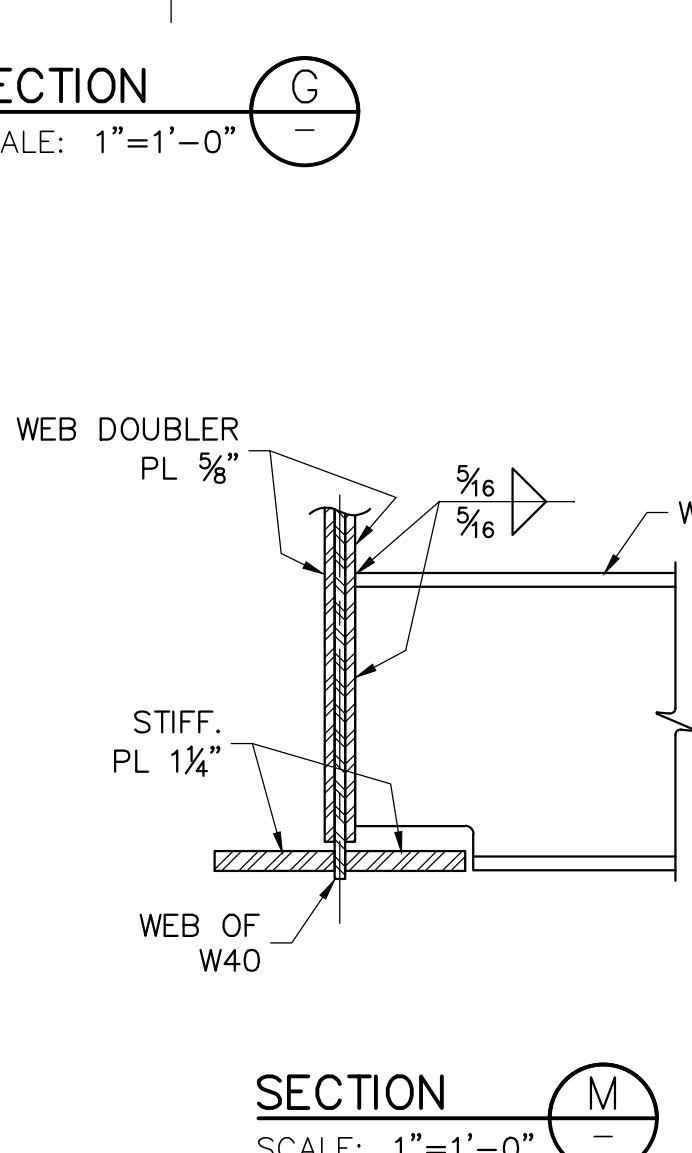
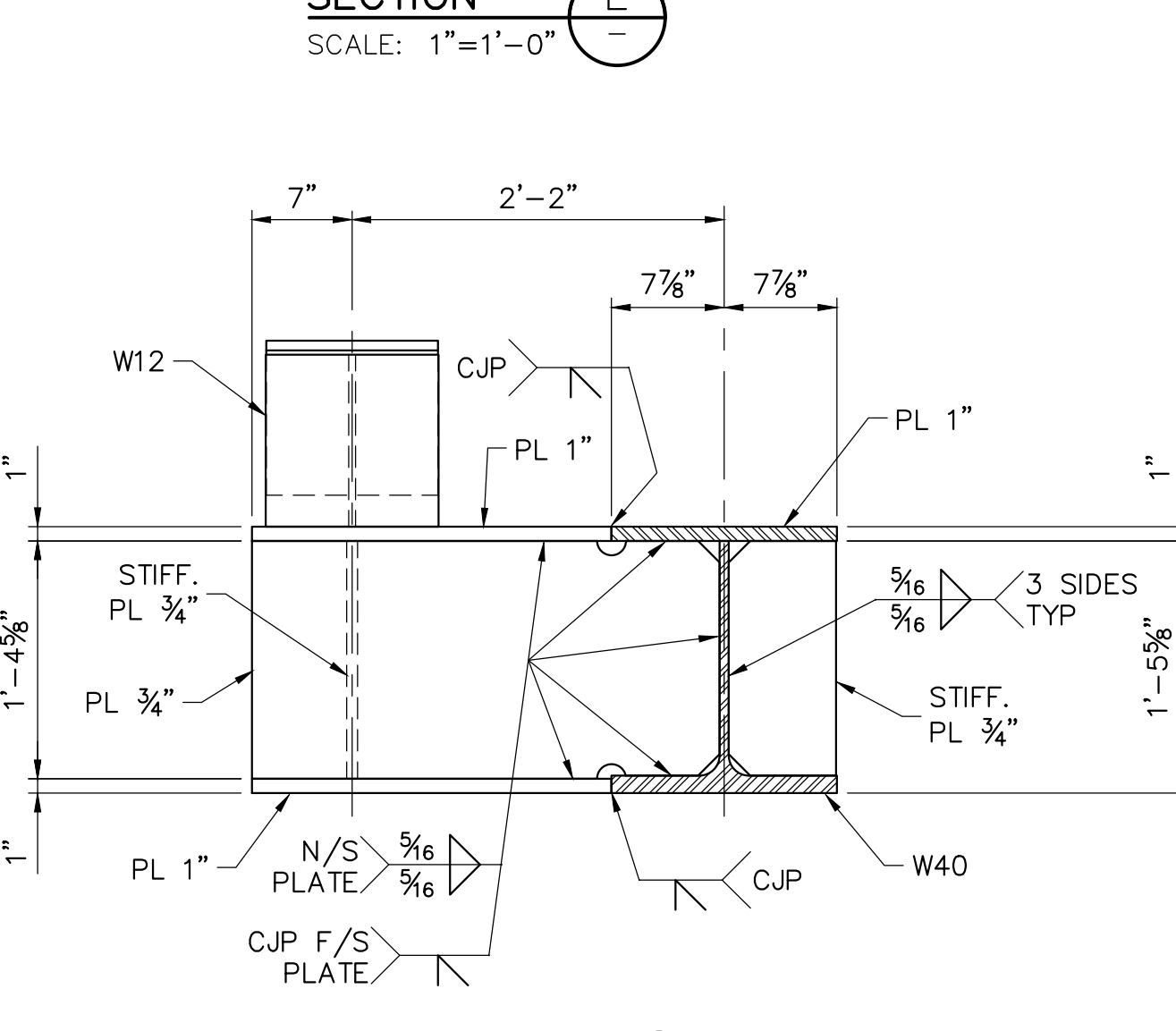
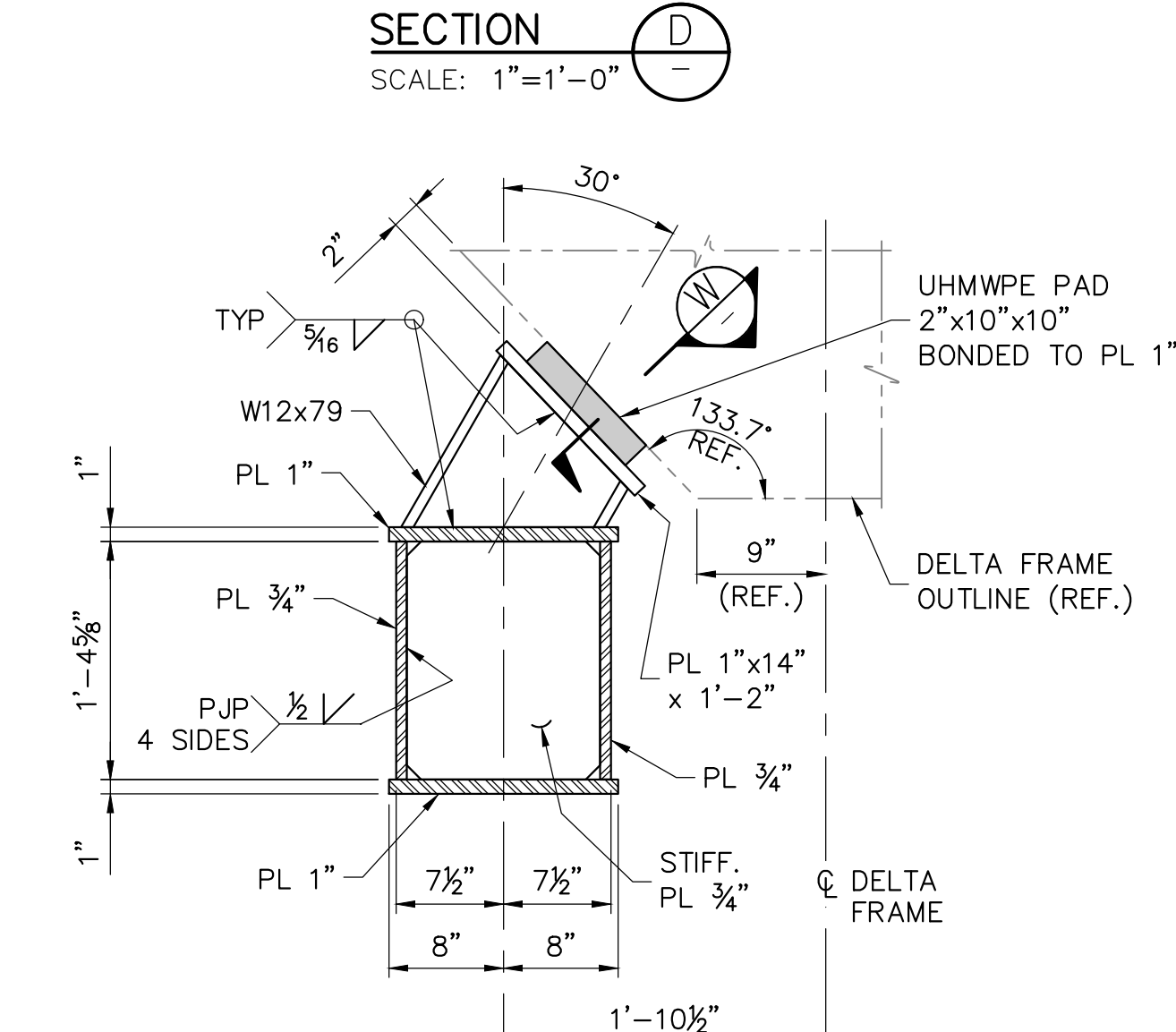
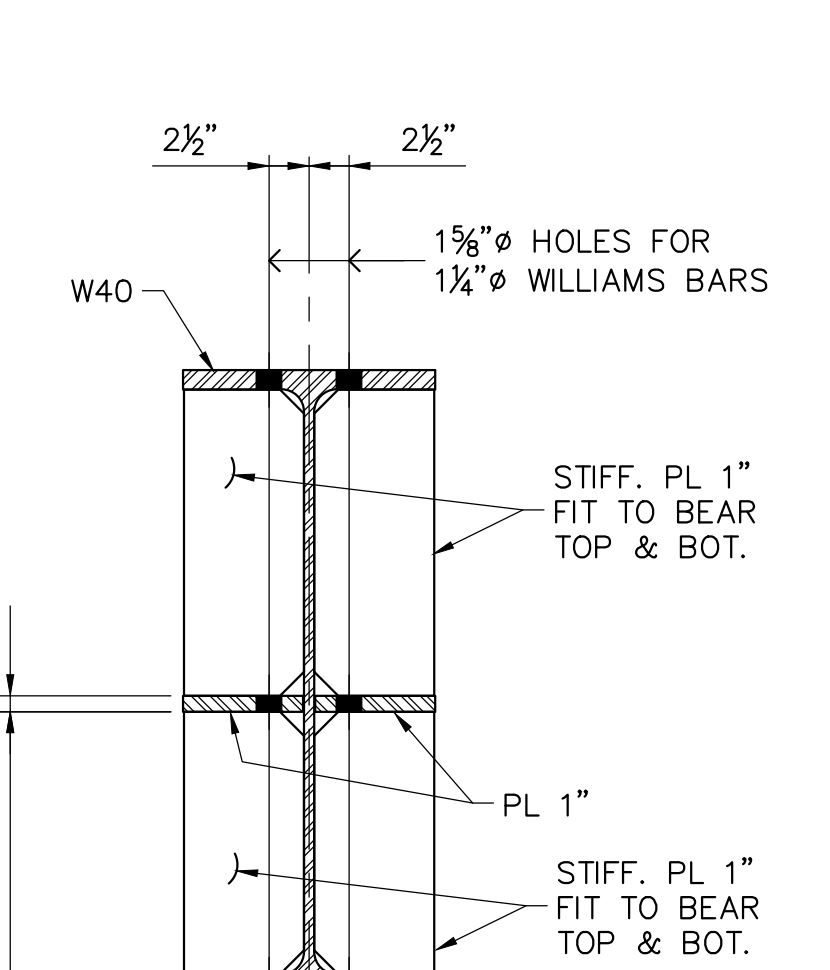
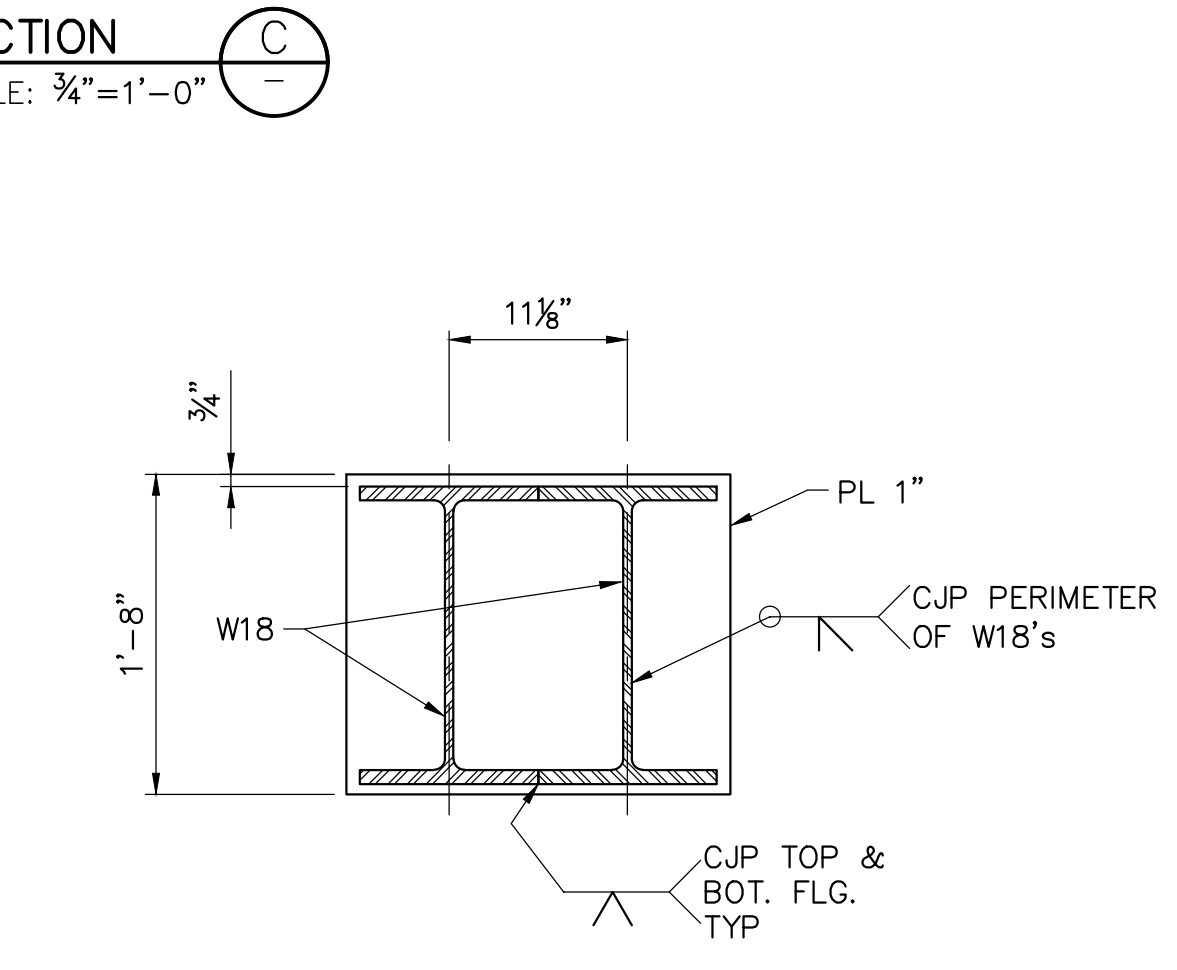
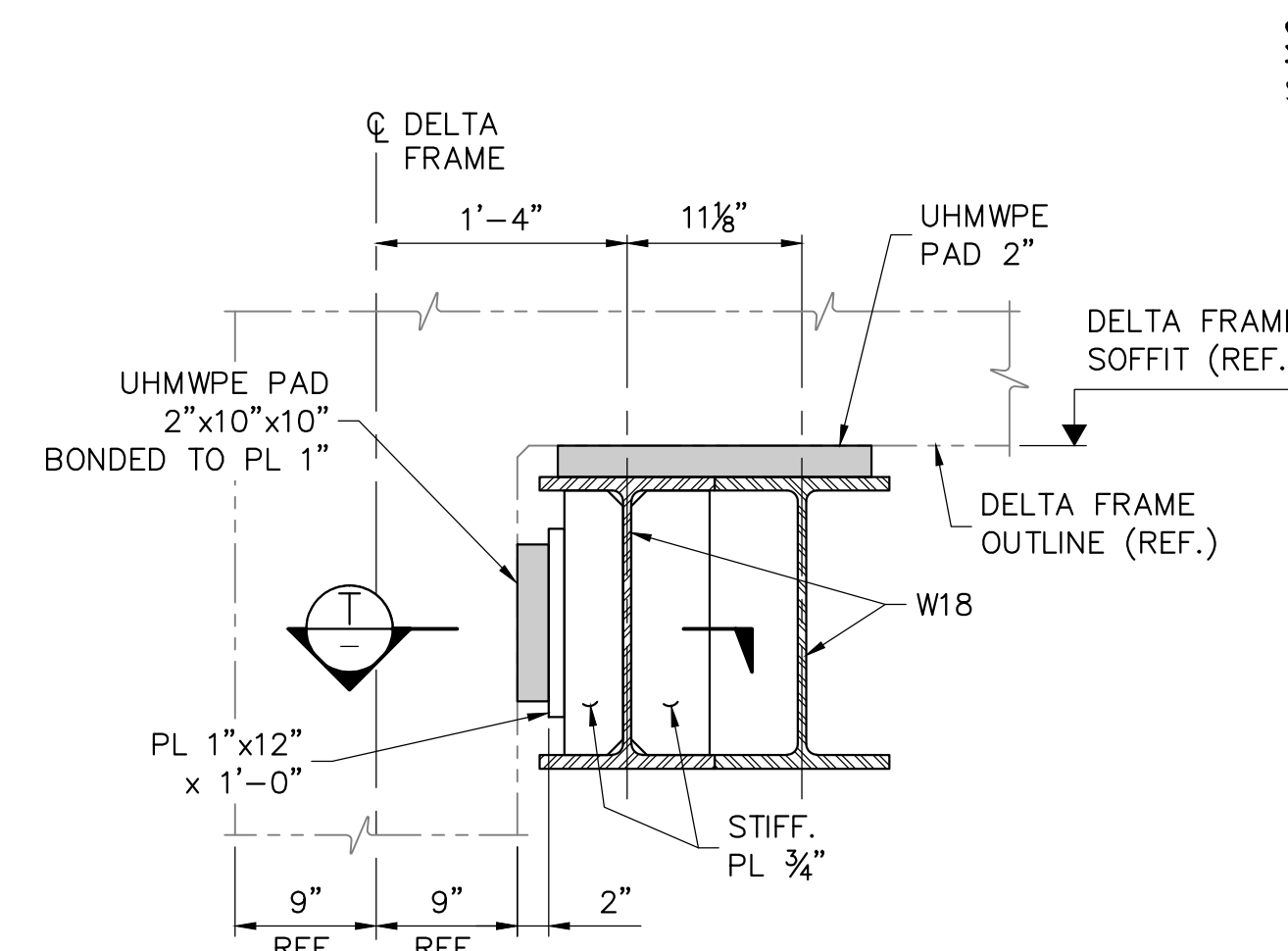
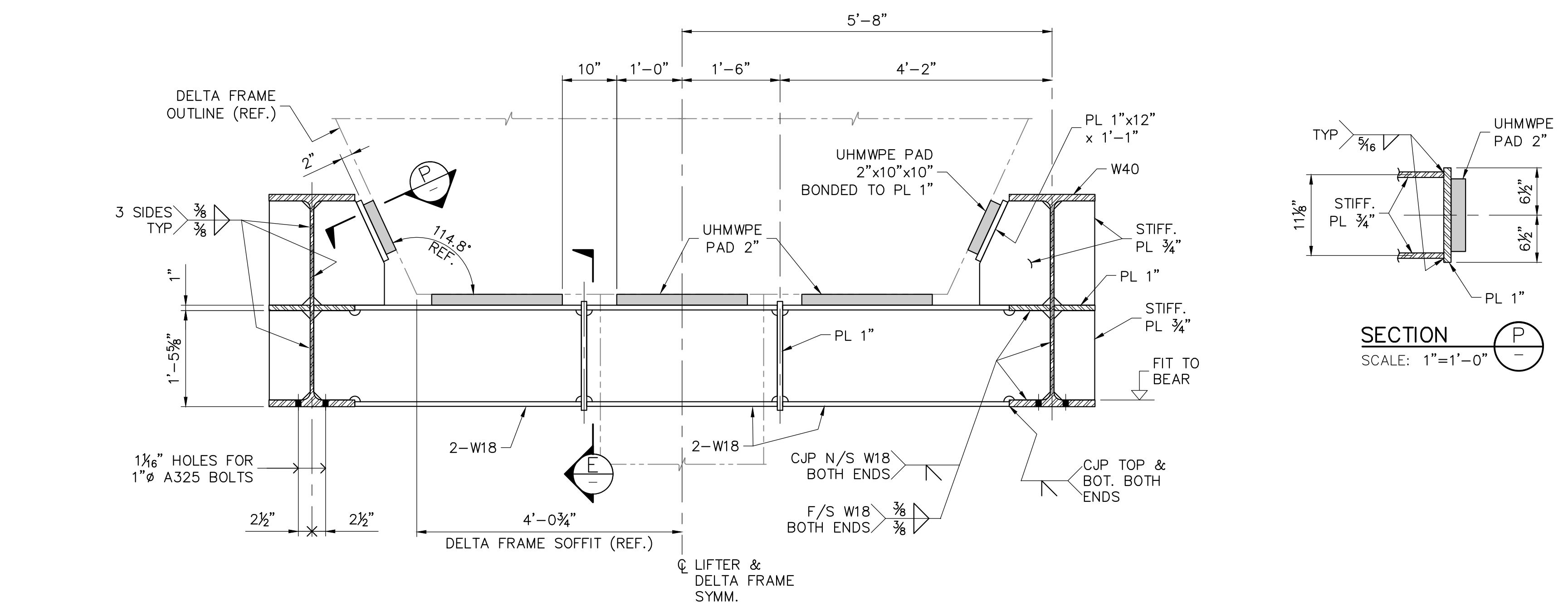
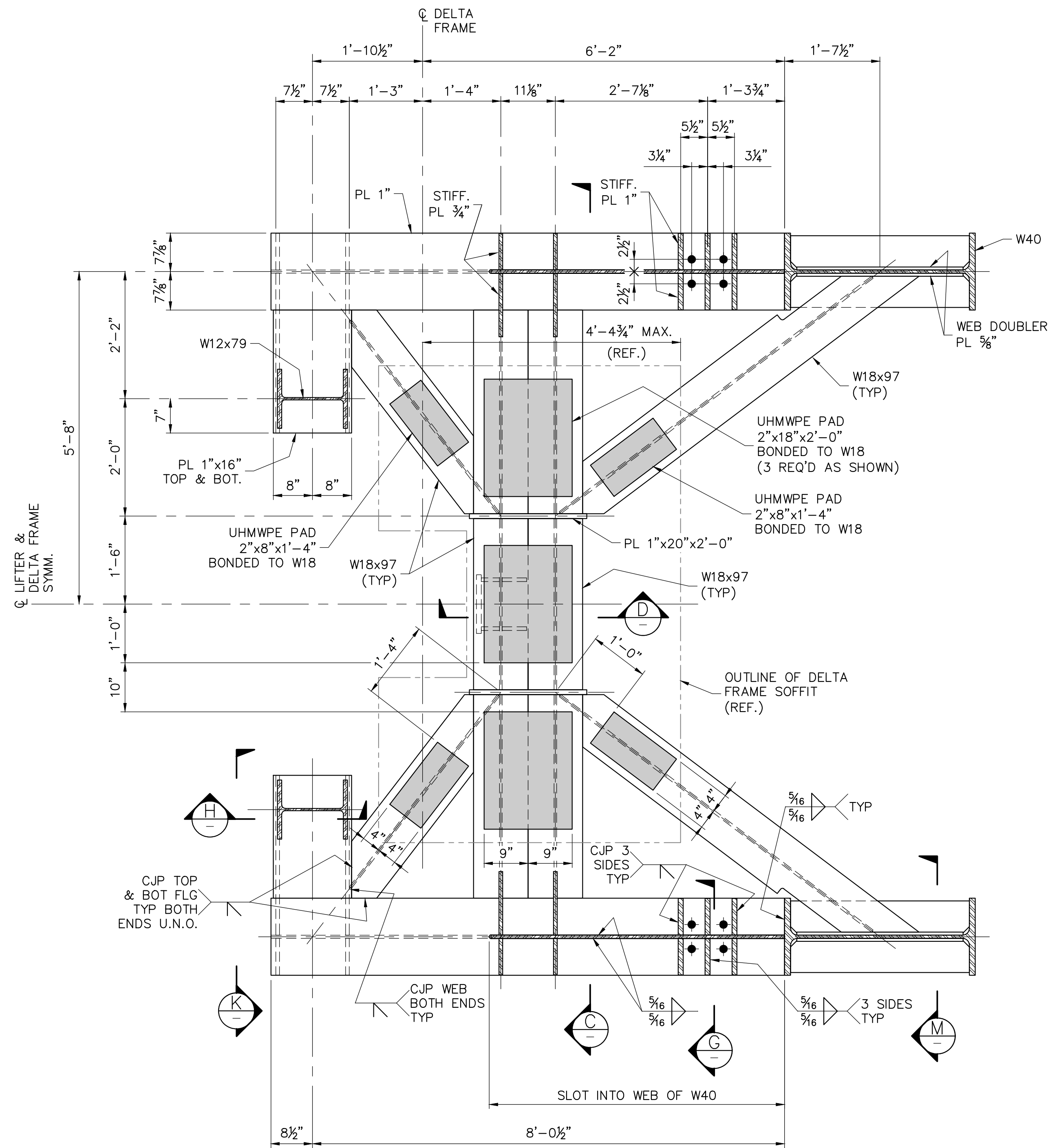
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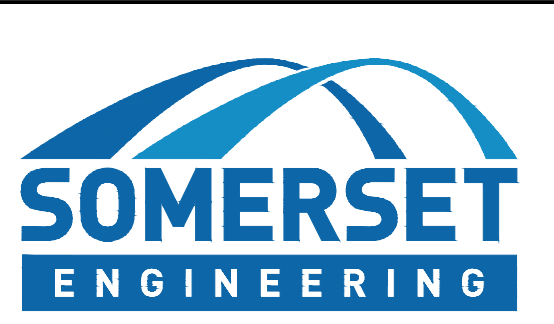
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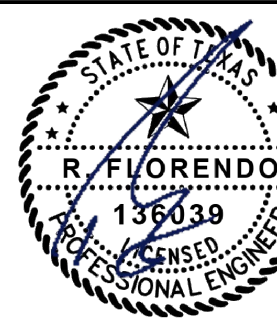
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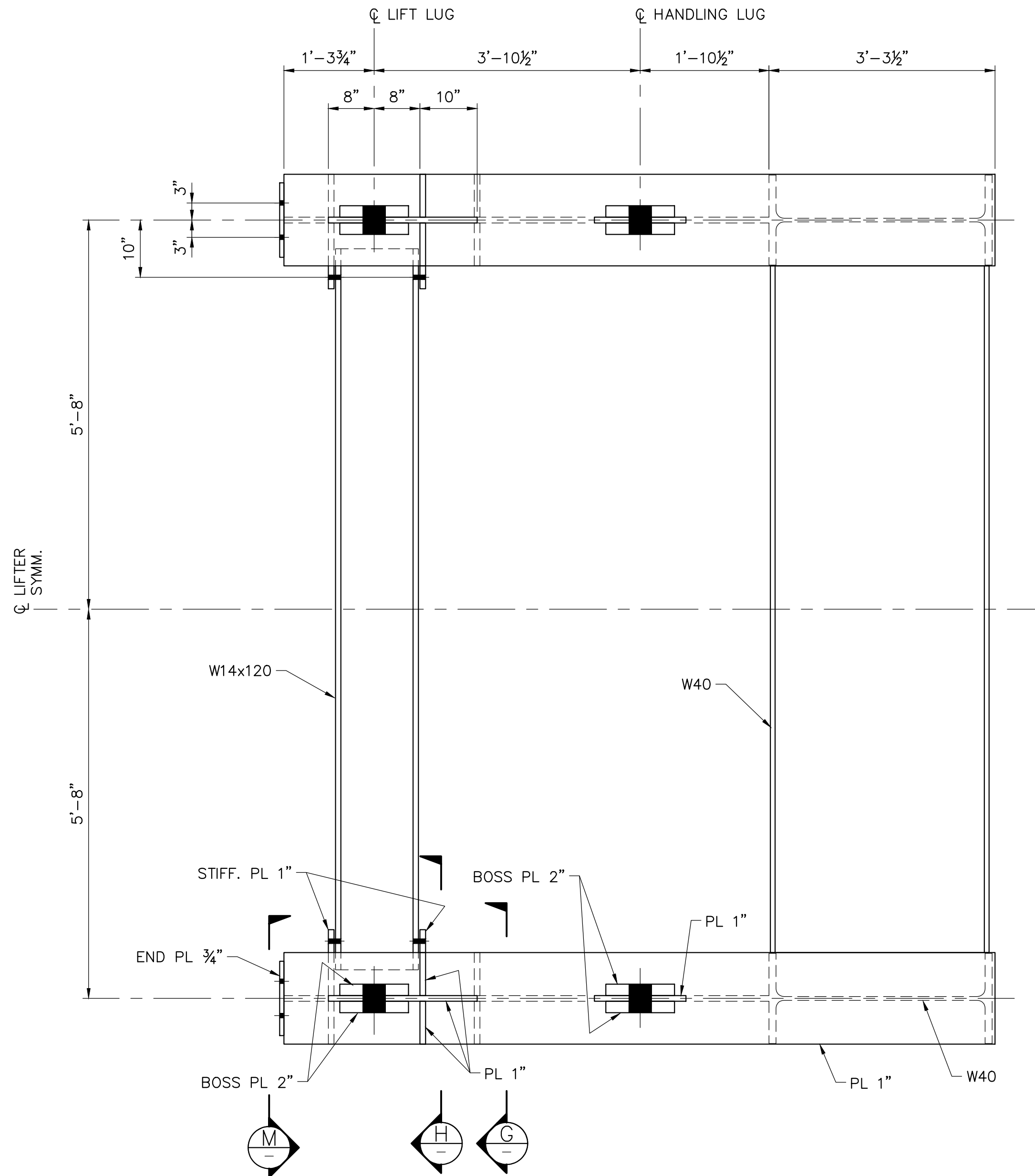
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**HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN**

SHEET TITLE:
**DELTA FRAME LIFTER
SECTIONS AND DETAILS
SHEET 1**

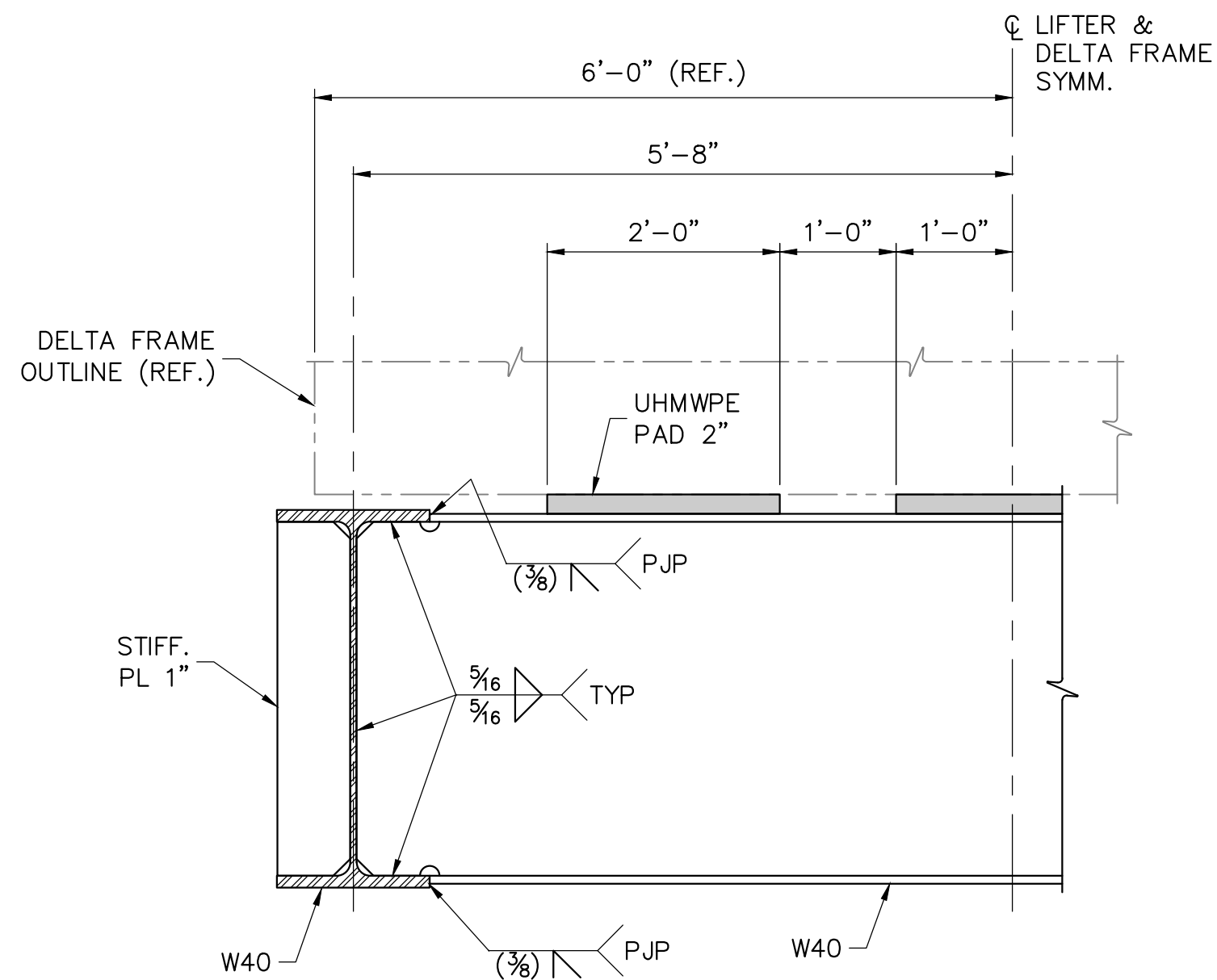
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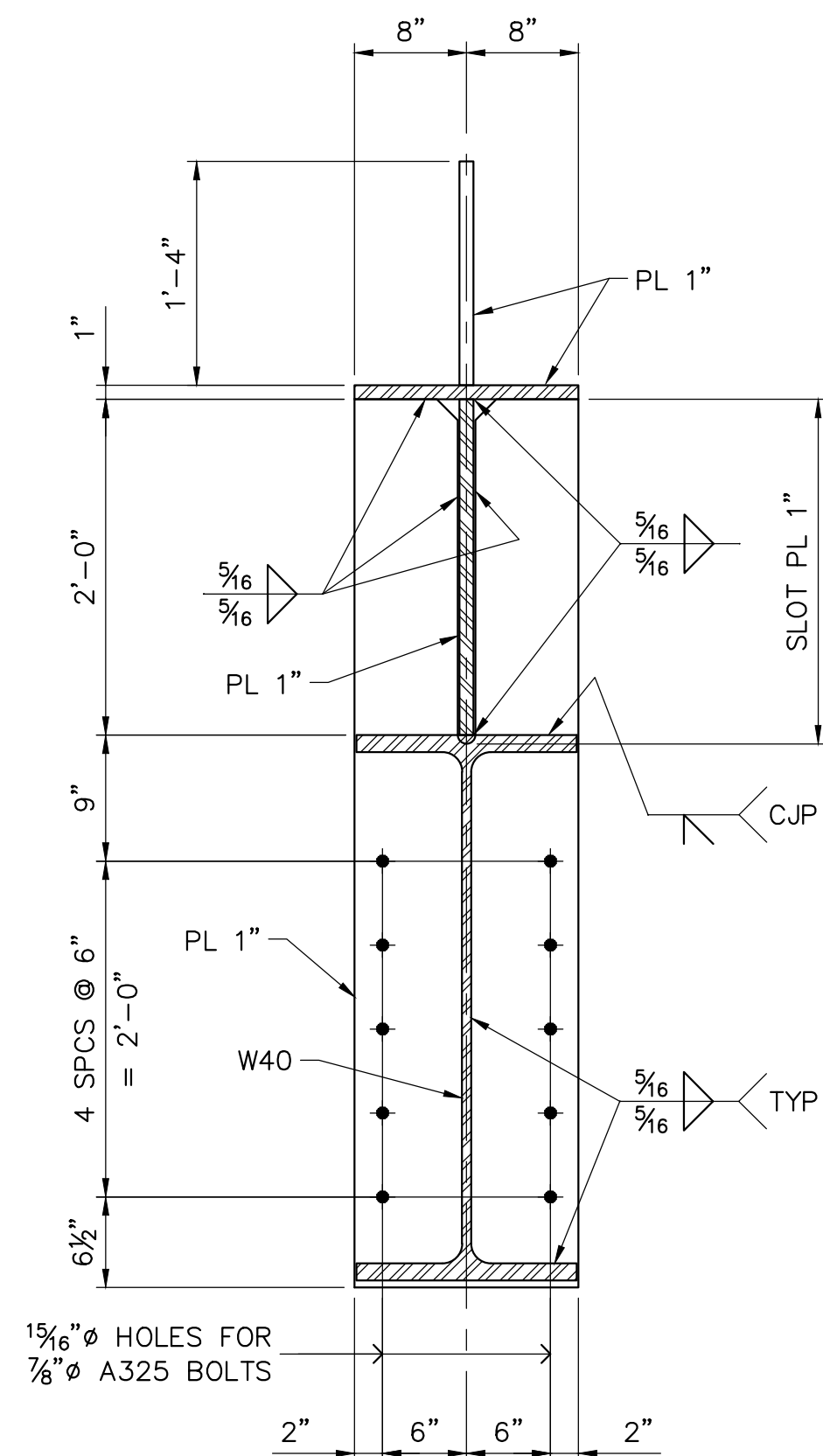
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DATE: MAR 5 2021	REV.
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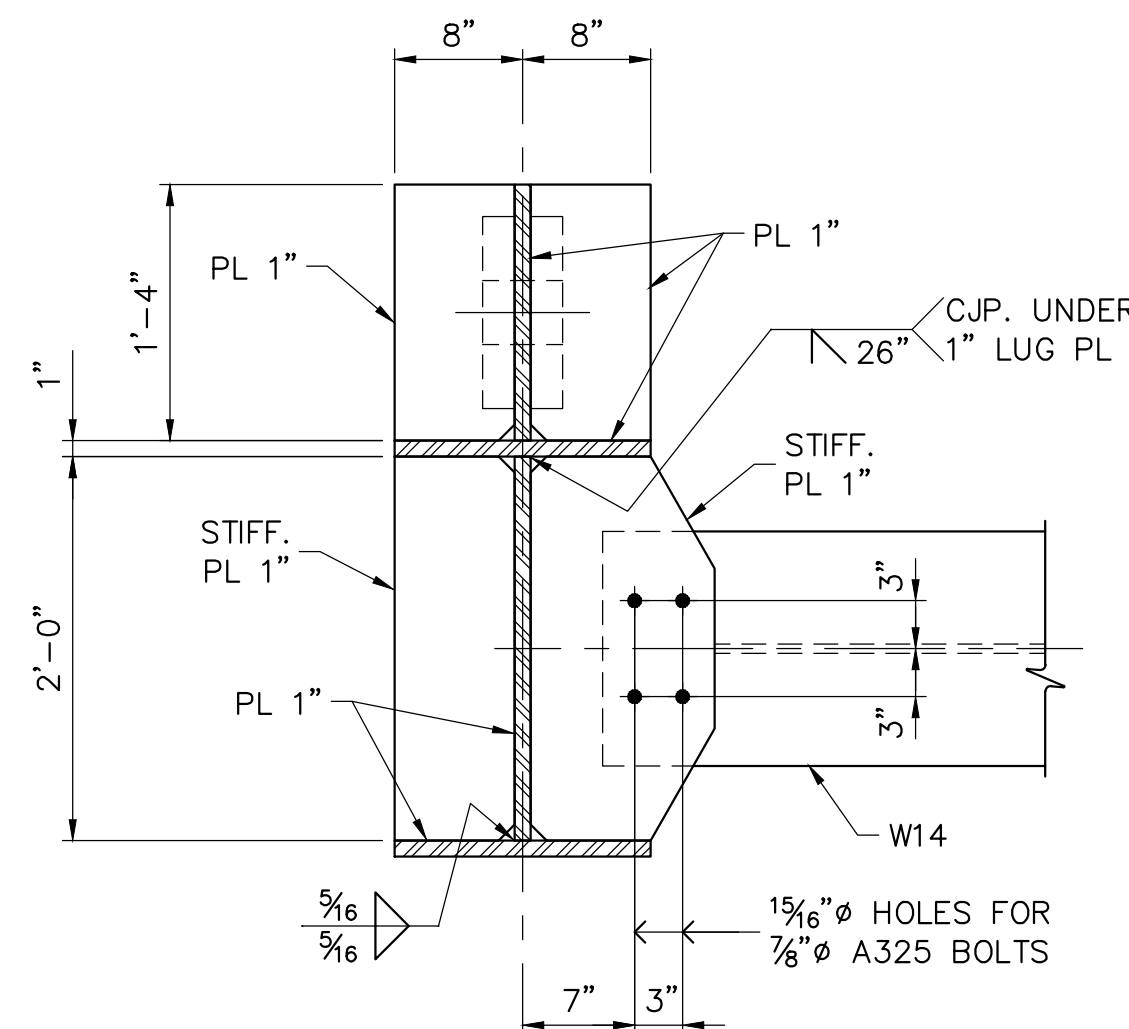
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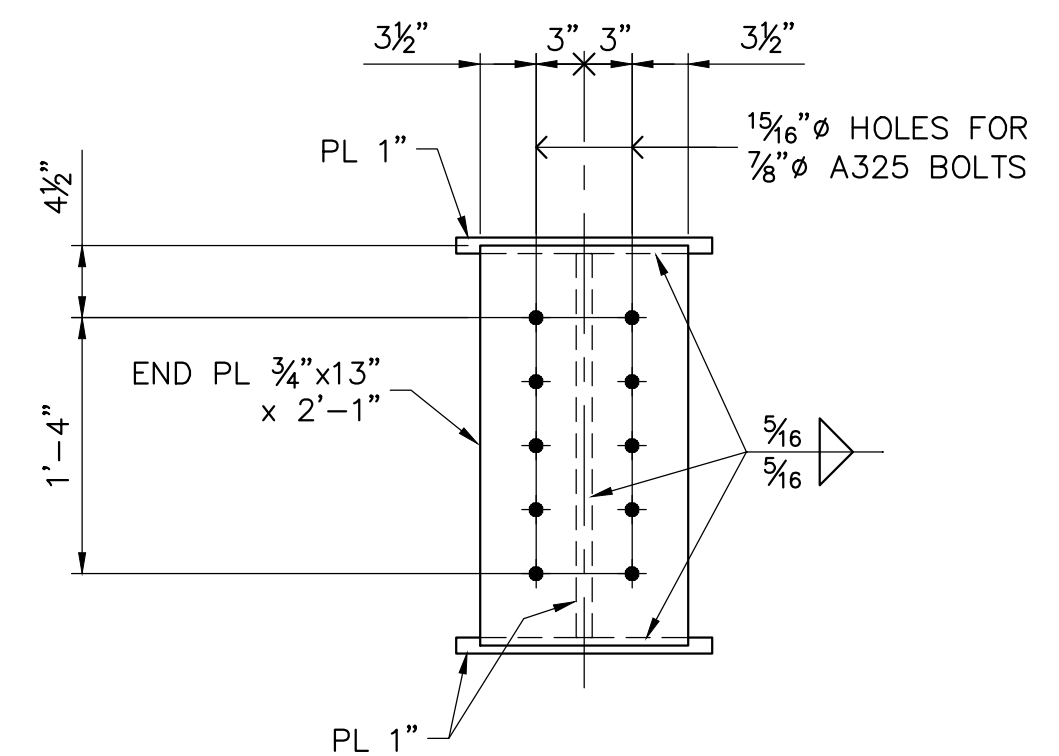
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SECTION G
SCALE: 1"=1'-0"



SECTION H
SCALE: 1"=1'-0"



SECTION M
SCALE: 1"=1'-0"

NOTES:

- FOR GENERAL NOTES SEE DRAWING 160578-400.



CLIENT:



FLATIRON/Dragados LLC

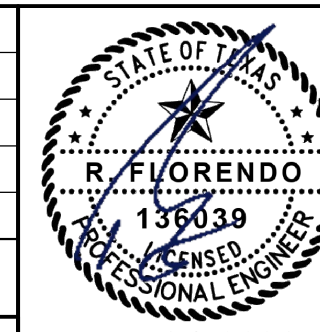
PROJECT TITLE:

HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN

SHEET TITLE:

DELTA FRAME LIFTER
SECTIONS AND DETAILS
SHEET 2

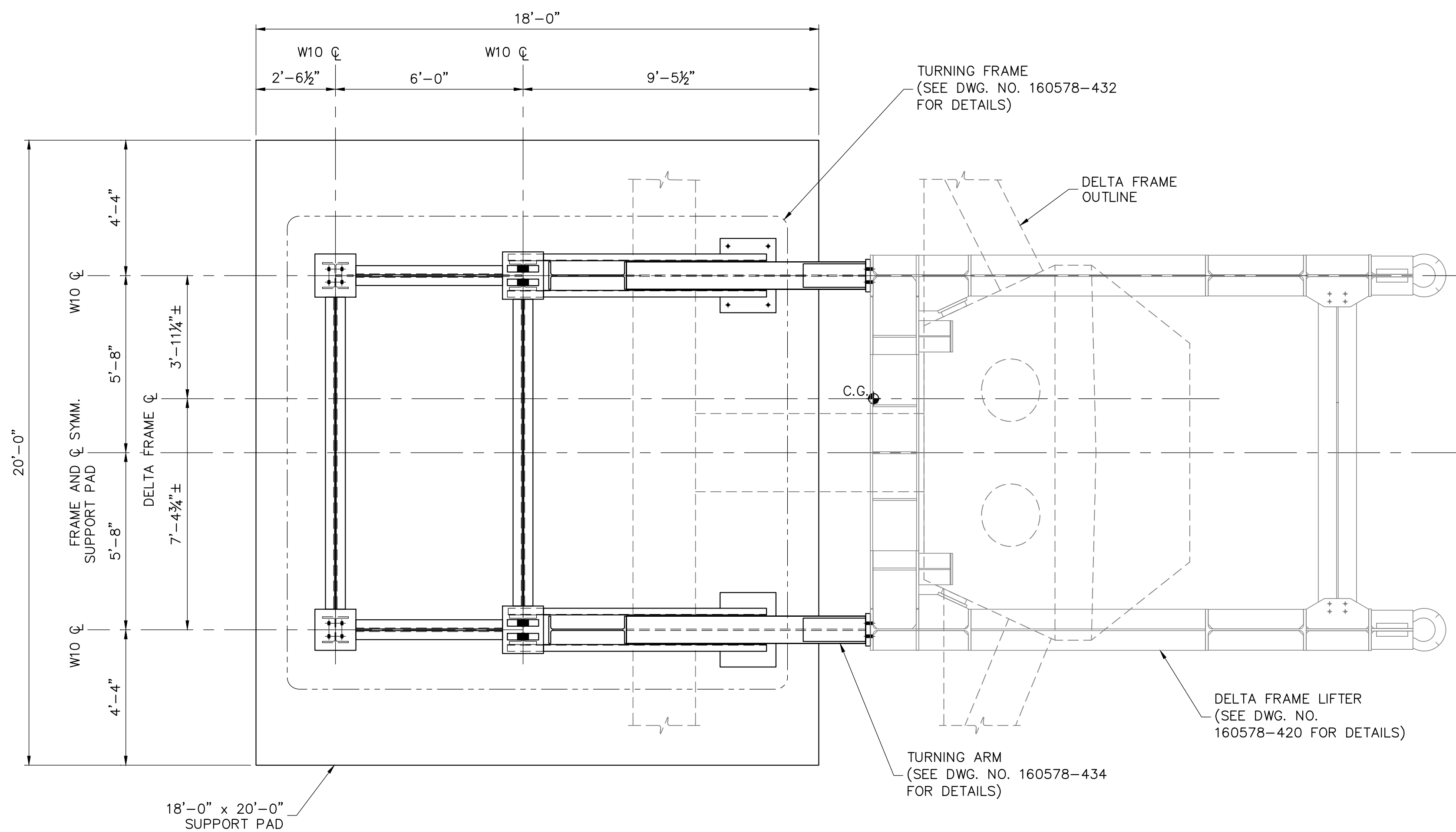
NO.	DATE	DESCRIPTION	DES.	DES. CHK.	DFTG.	DFTG. CHK.
0	AUG 16 2021	ISSUED FOR CONSTRUCTION	RF	RF	GDS	GDS
REVISIONS						



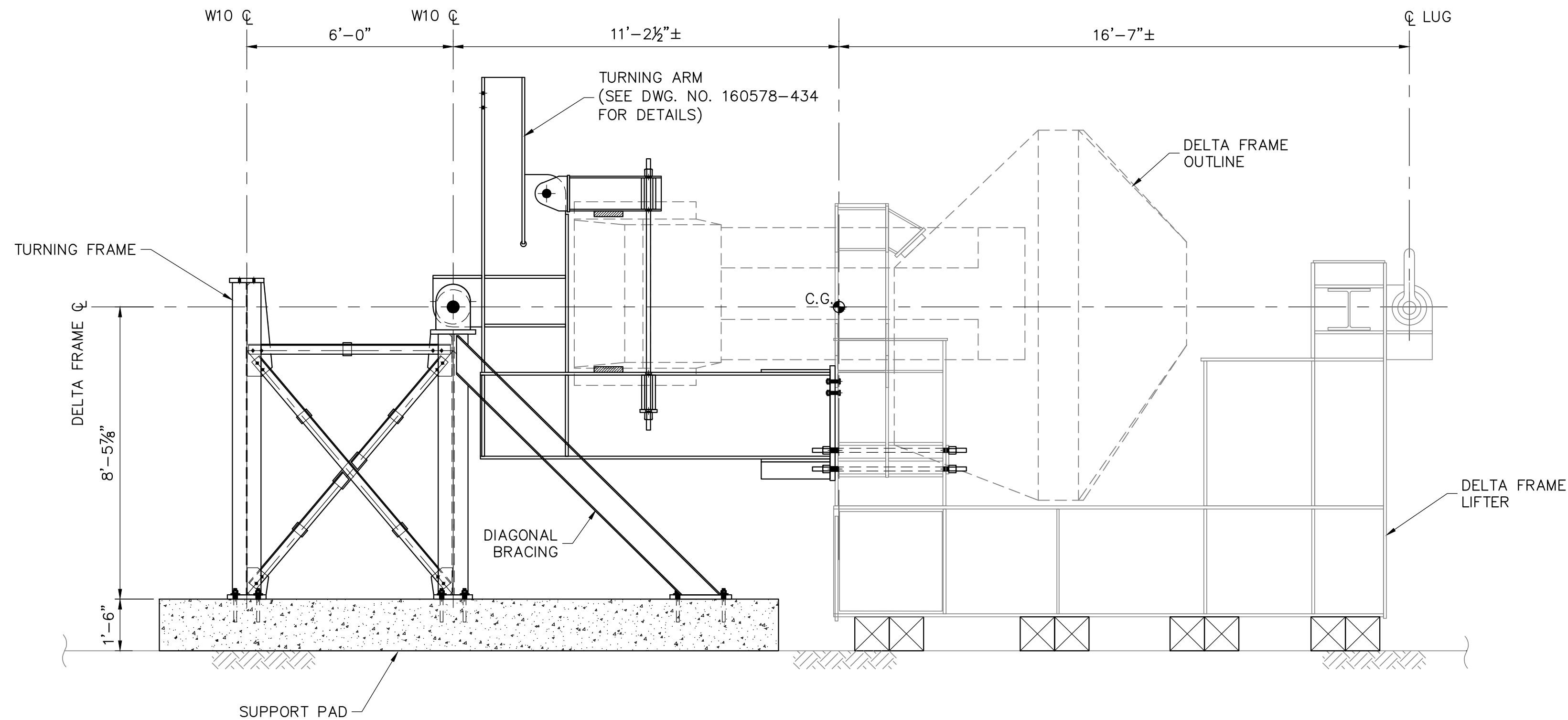
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DSGN: JL
DSGN CHK: RF
DFTG: GDS
DFTG CHK: GDS
DATE: MAR 8 2021

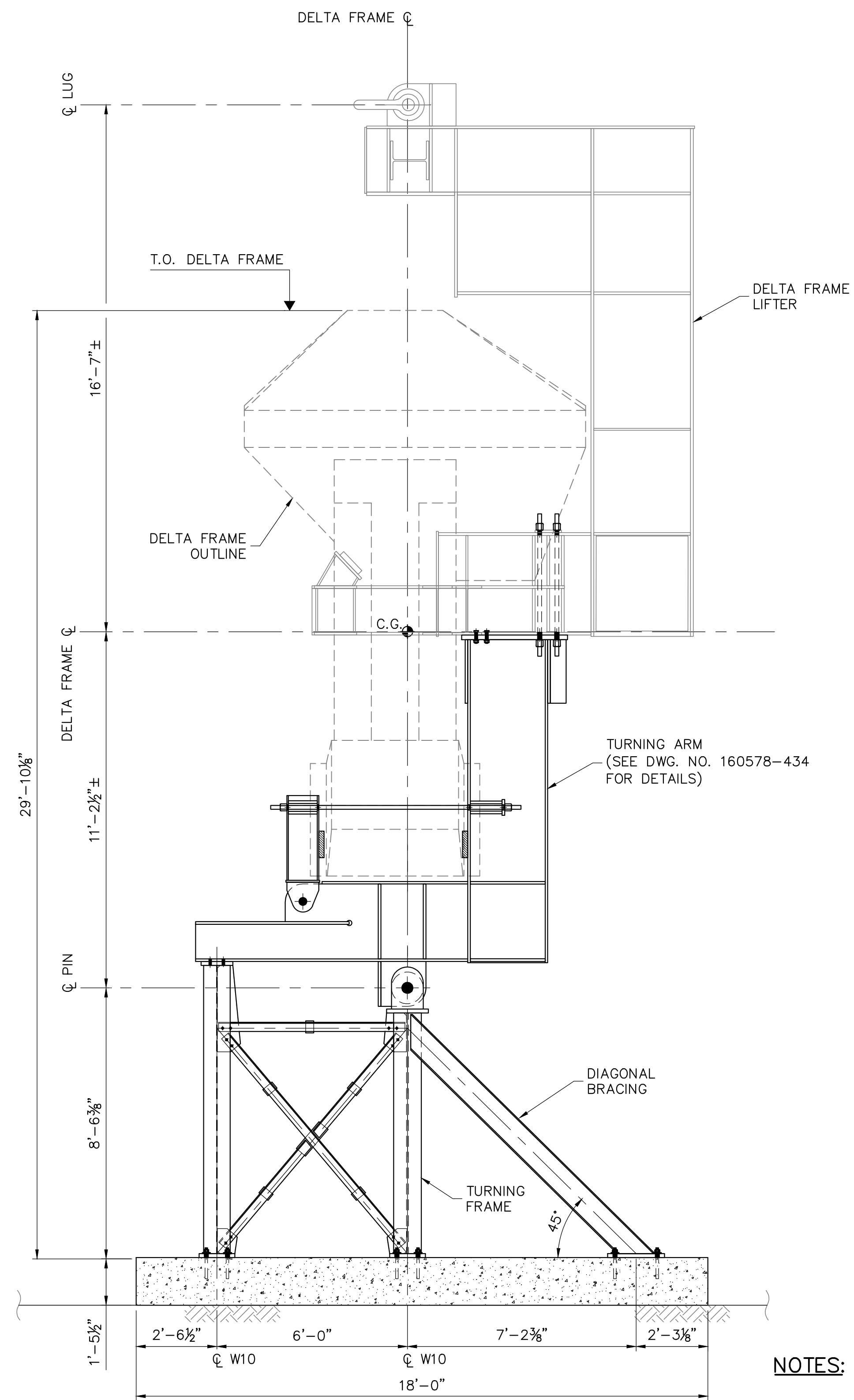
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SCALE: AS NOTED	JOB No.: 16-0578		
DRAWING No. 160578-422	REV. 0		



PLAN
SCALE: $\frac{3}{8}$ "=1'-0"



ELEVATION
SCALE: $\frac{3}{8}$ "=1'-0"
DELTA FRAME HORIZONTAL



ELEVATION
SCALE: $\frac{3}{8}$ "=1'-0"
DELTA FRAME VERTICAL

NOTES:

- FOR GENERAL NOTES SEE DWG. 160578-400.



CLIENT:



FLATIRON/Dragados LLC

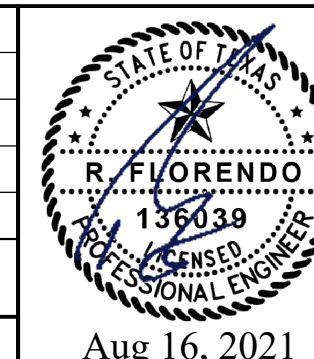
PROJECT TITLE:

HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN

SHEET TITLE:

DELTA FRAME
TURNING FRAME
GENERAL ARRANGEMENT

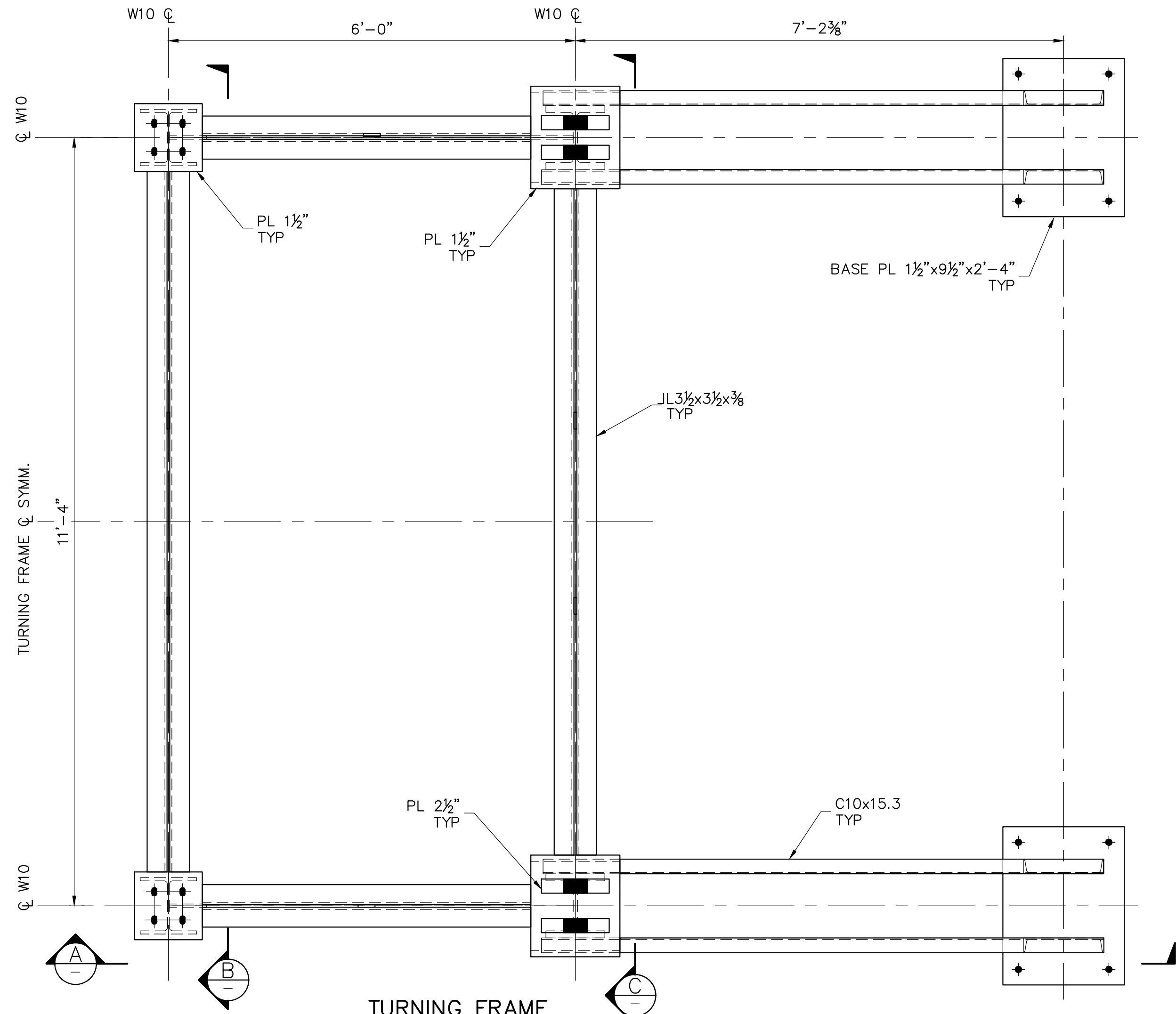
NO.	DATE	DESCRIPTION	DES.	DES. CHK.	DFTG.	DFTG. CHK.
0	AUG 16 2021	ISSUED FOR CONSTRUCTION	RF	RF	GDS	GDS
REVISIONS						



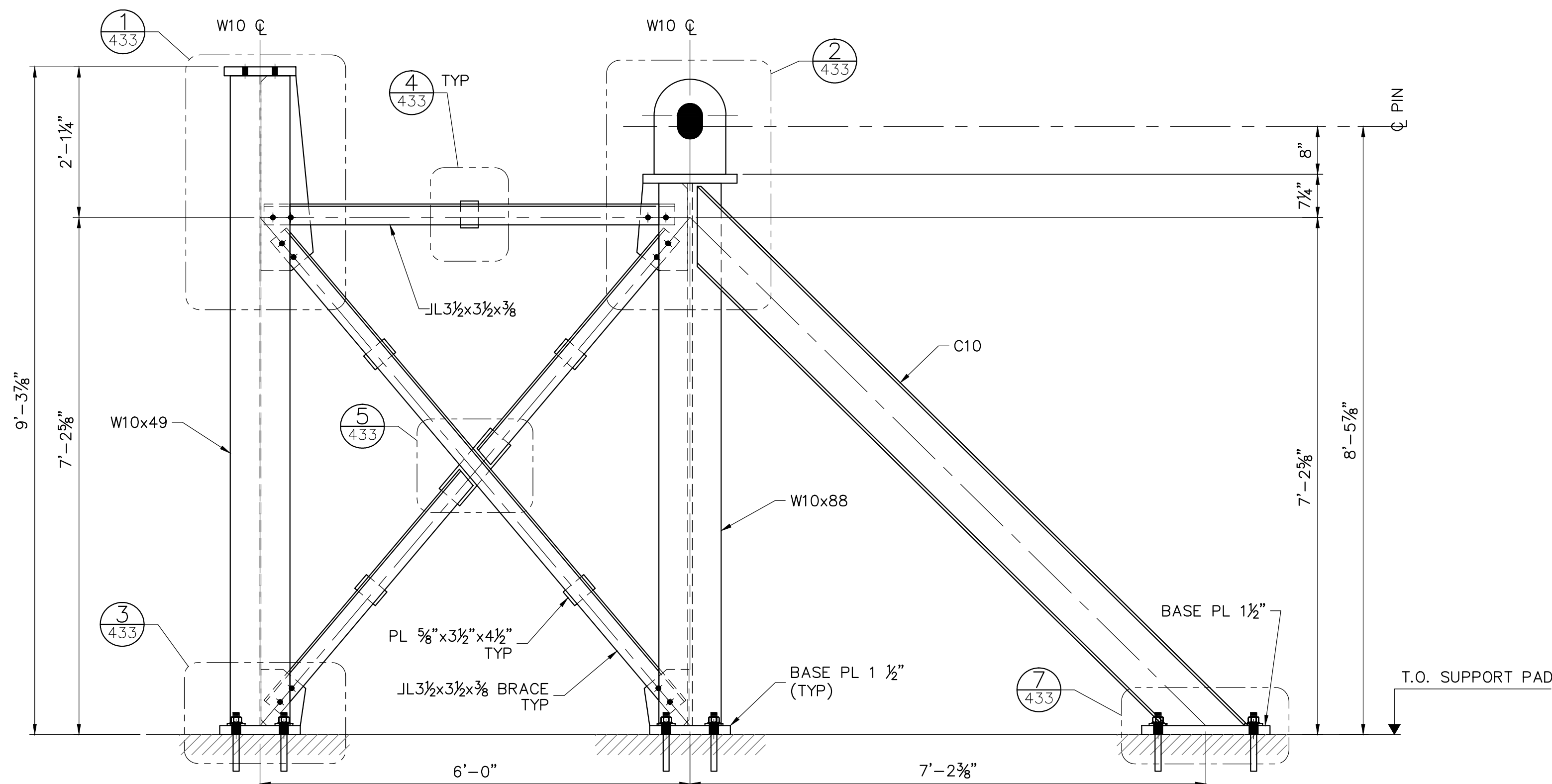
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DSGN: JL
DSGN CHK: RF
DFTG: JS/SO
DFTG CHK: JL
DATE: FEB 25 2021

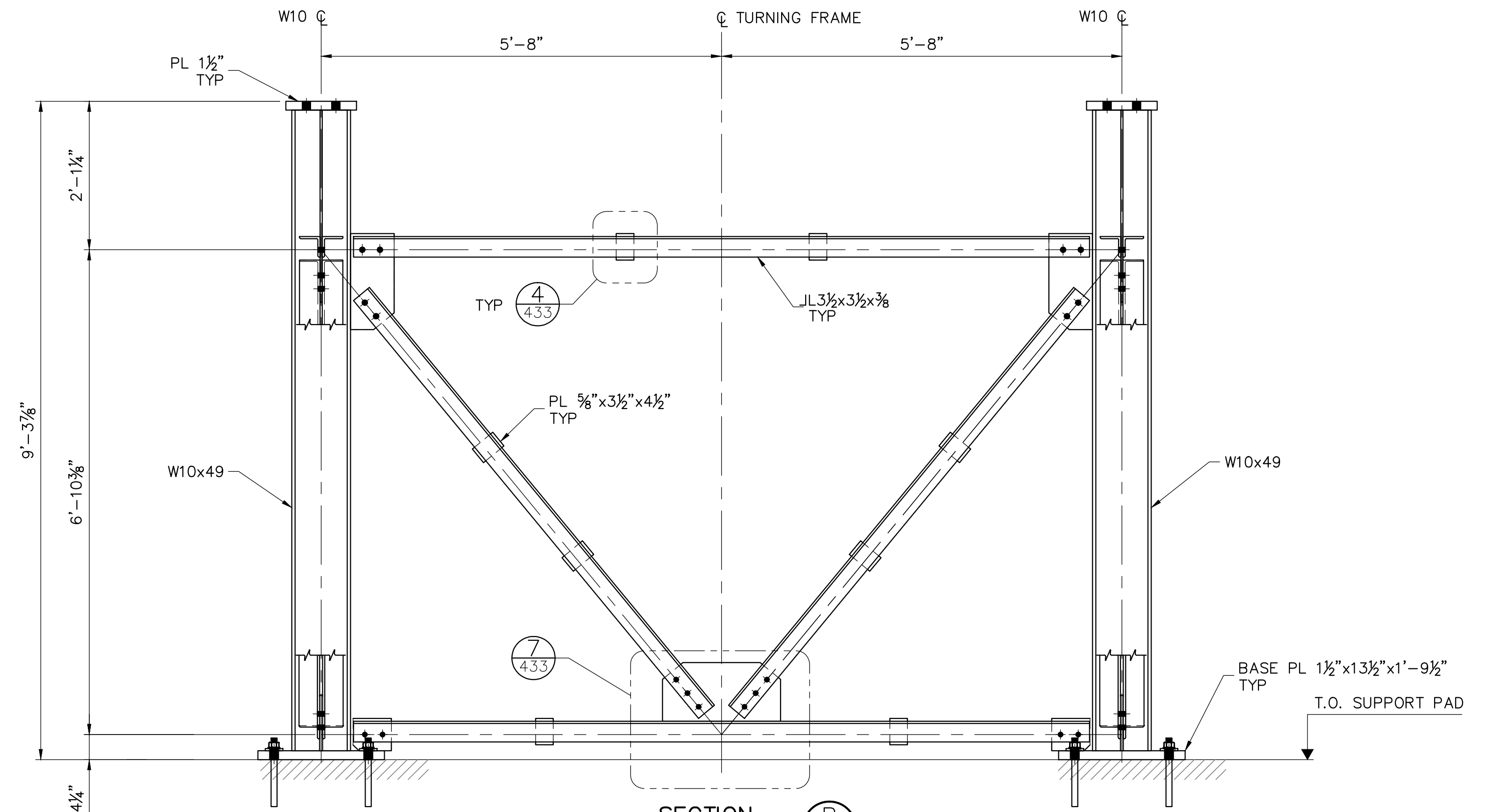
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SCALE: AS NOTED	JOB No.: 16-0578	REV.	
DRAWING No.	160578-431	0	



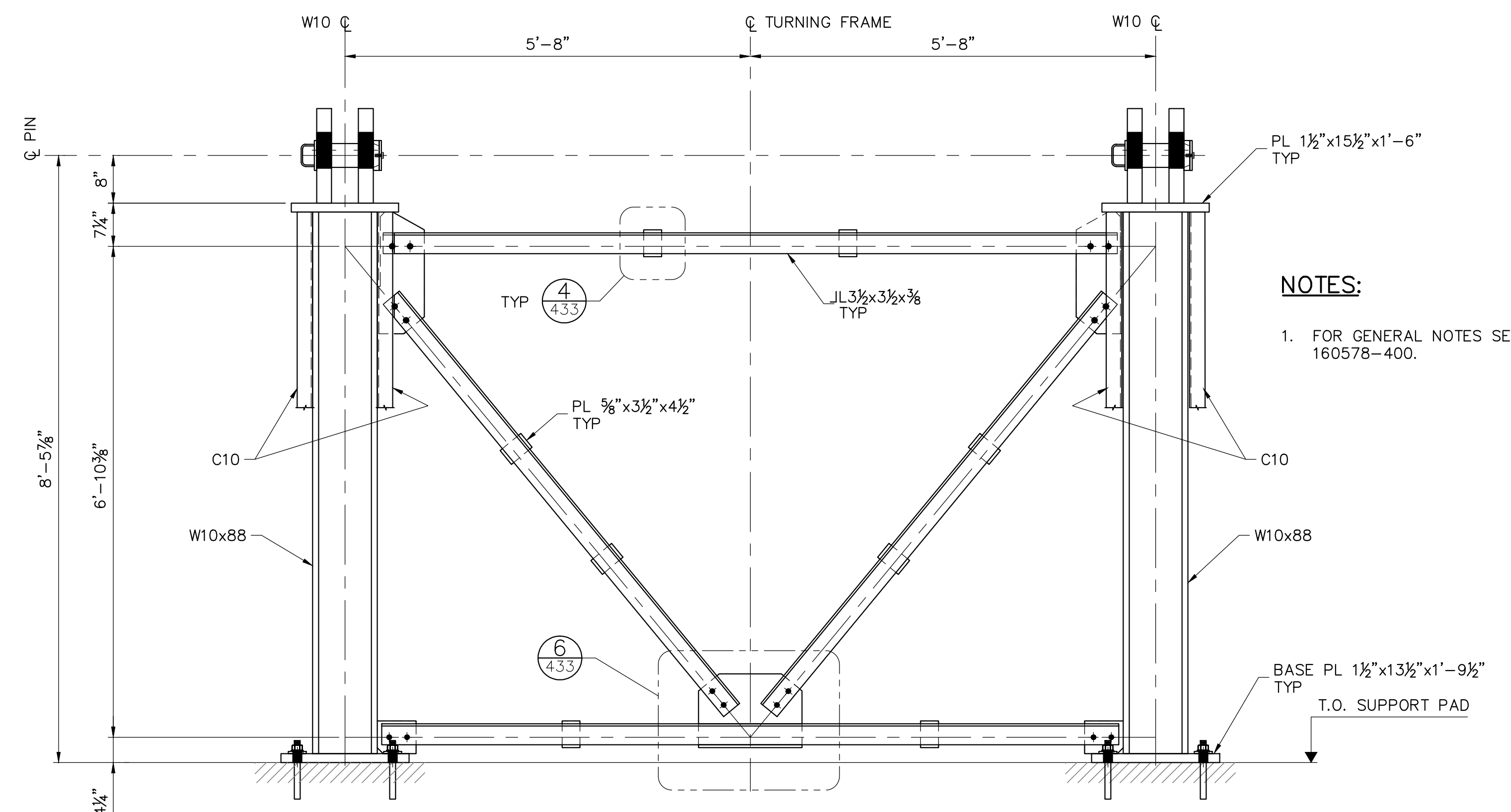
TURNING FRAME
SCALE: 3/4"=1'-0"



SECTION A
SCALE: 3/4"=1'-0"



SECTION B
SCALE: 3/4"=1'-0"



SECTION C
SCALE: 3/4"=1'-0"

NOTES:

1. FOR GENERAL NOTES SEE DWG. 160578-400.



CLIENT:



FLATIRON/Dragados LLC

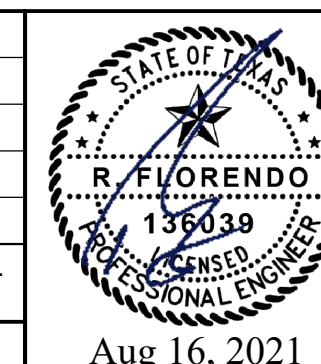
PROJECT TITLE:

HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN

SHEET TITLE:

DELTA FRAME
TURNING FRAME
DETAILS SHEET 1

NO.	DATE	DESCRIPTION	DES.	DES. CHK.	DFTG.	DFTG. CHK.
0	AUG 16 2021	ISSUED FOR CONSTRUCTION	RF	RF	GDS	GDS
REVISIONS						



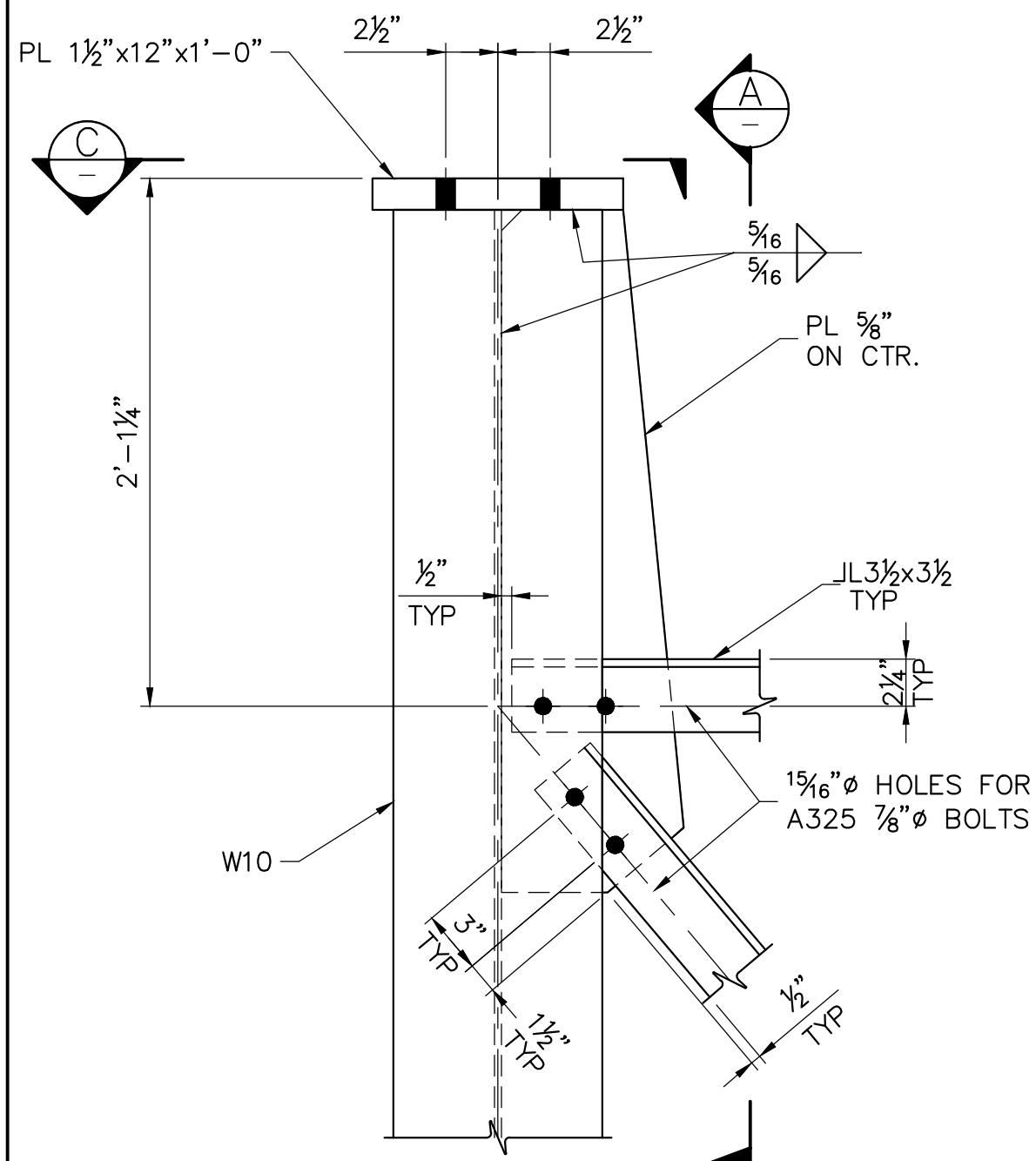
THE SIGNED SEAL APPEARING ON THIS DOCUMENT WAS ELECTRONICALLY APPLIED BY RAYMOND FLORENDO, P. ENG. ON 8/16/2021 TO CONFIRM HIS STRUCTURAL ENGINEERING CERTIFICATION OF THE WORK DESCRIBED HEREON. ALTERATIONS TO THIS DOCUMENT ARE PROHIBITED.

DSGN: JL
DSGN CHK: RF
DFTG: SOJS
DFTG CHK: JL
DATE: FEB 25 2021

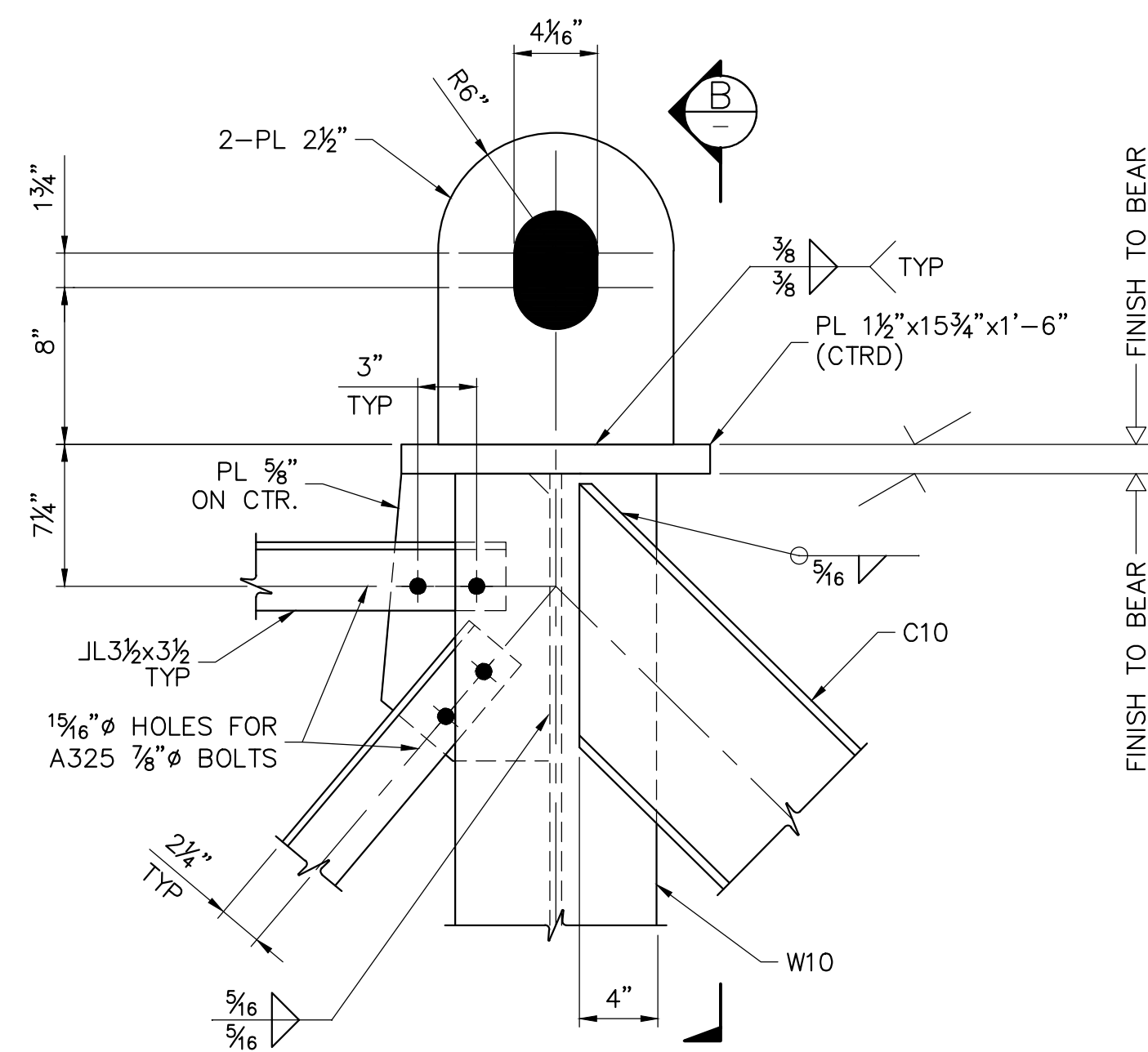
CUSTOMER REFERENCE DRAWING

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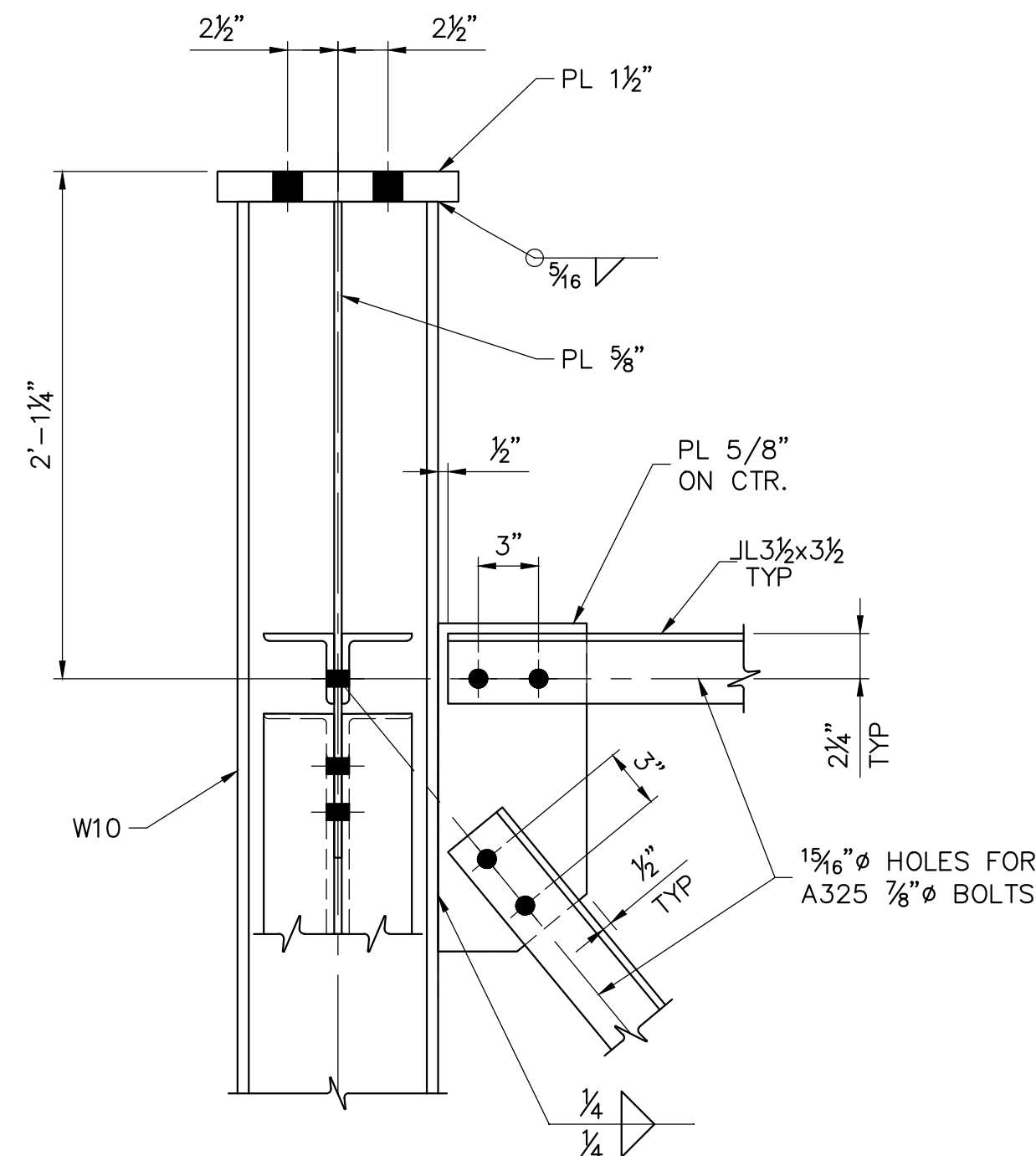
SCALE: AS NOTED
DRAWING No. 160578-432
JOB No.: 16-0578
REV. 0



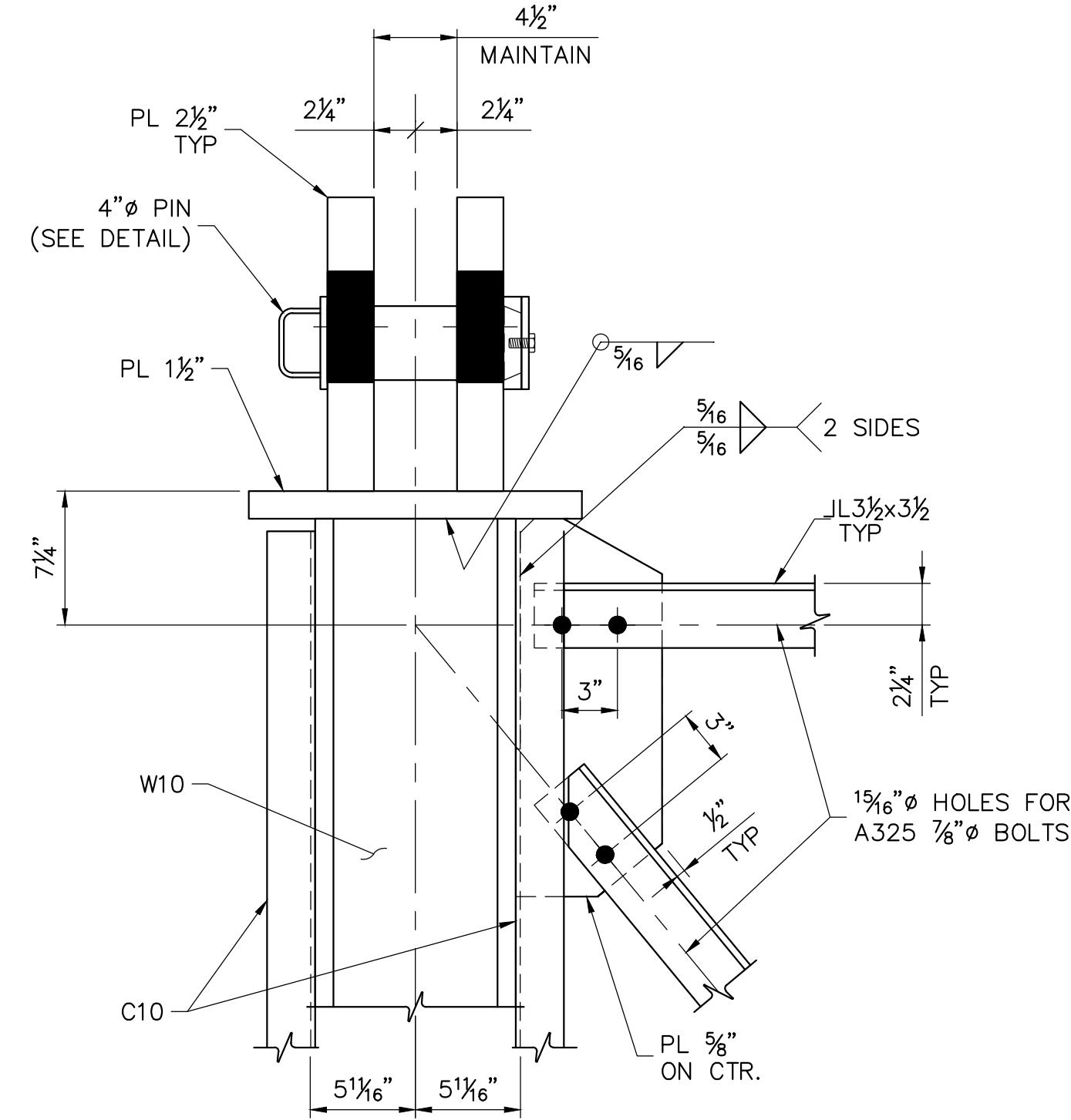
DETAIL 1
SCALE: 1 1/2"=1'-0" 4.32



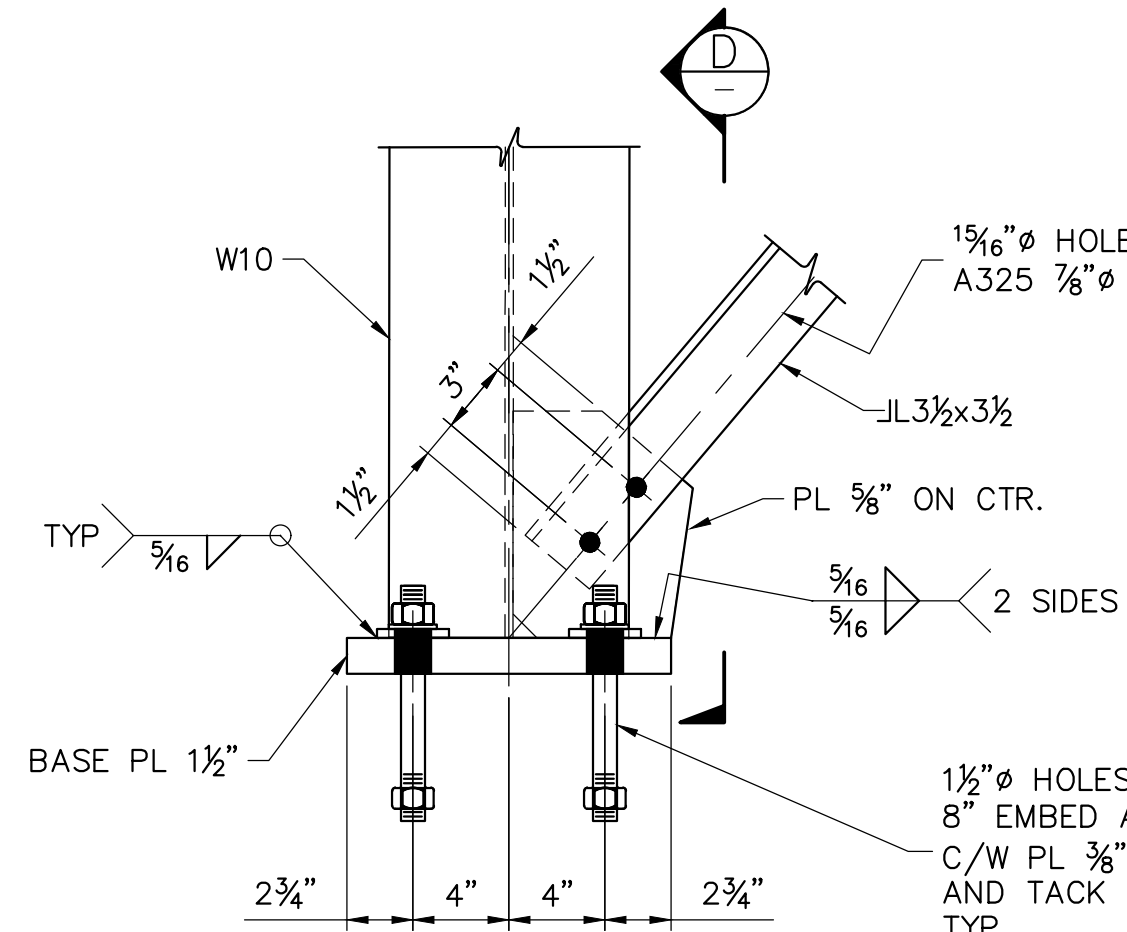
DETAIL 2
SCALE: 1 1/2"=1'-0" 4.32



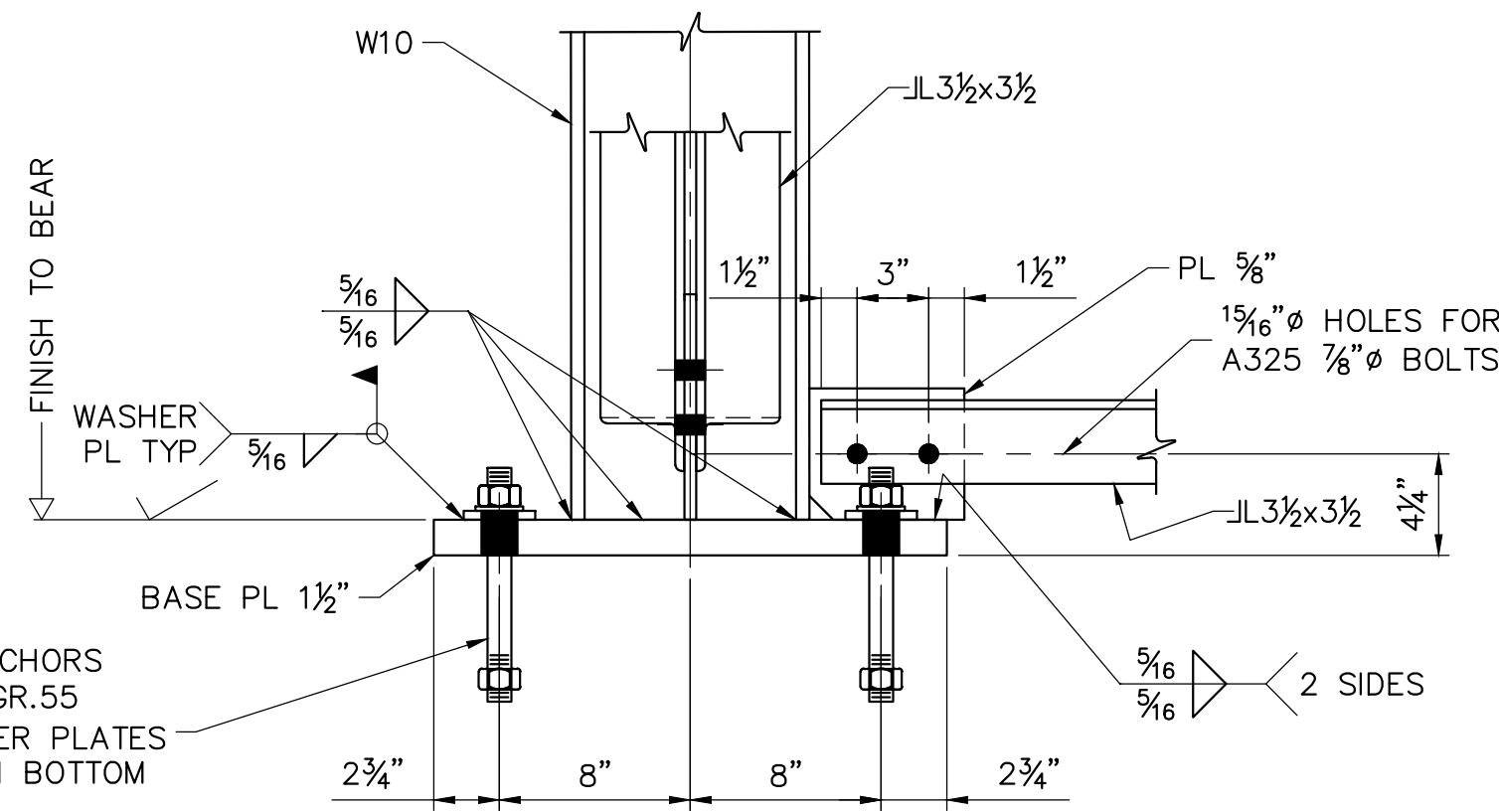
SECTION A
SCALE: 1 1/2"=1'-0" 4.32



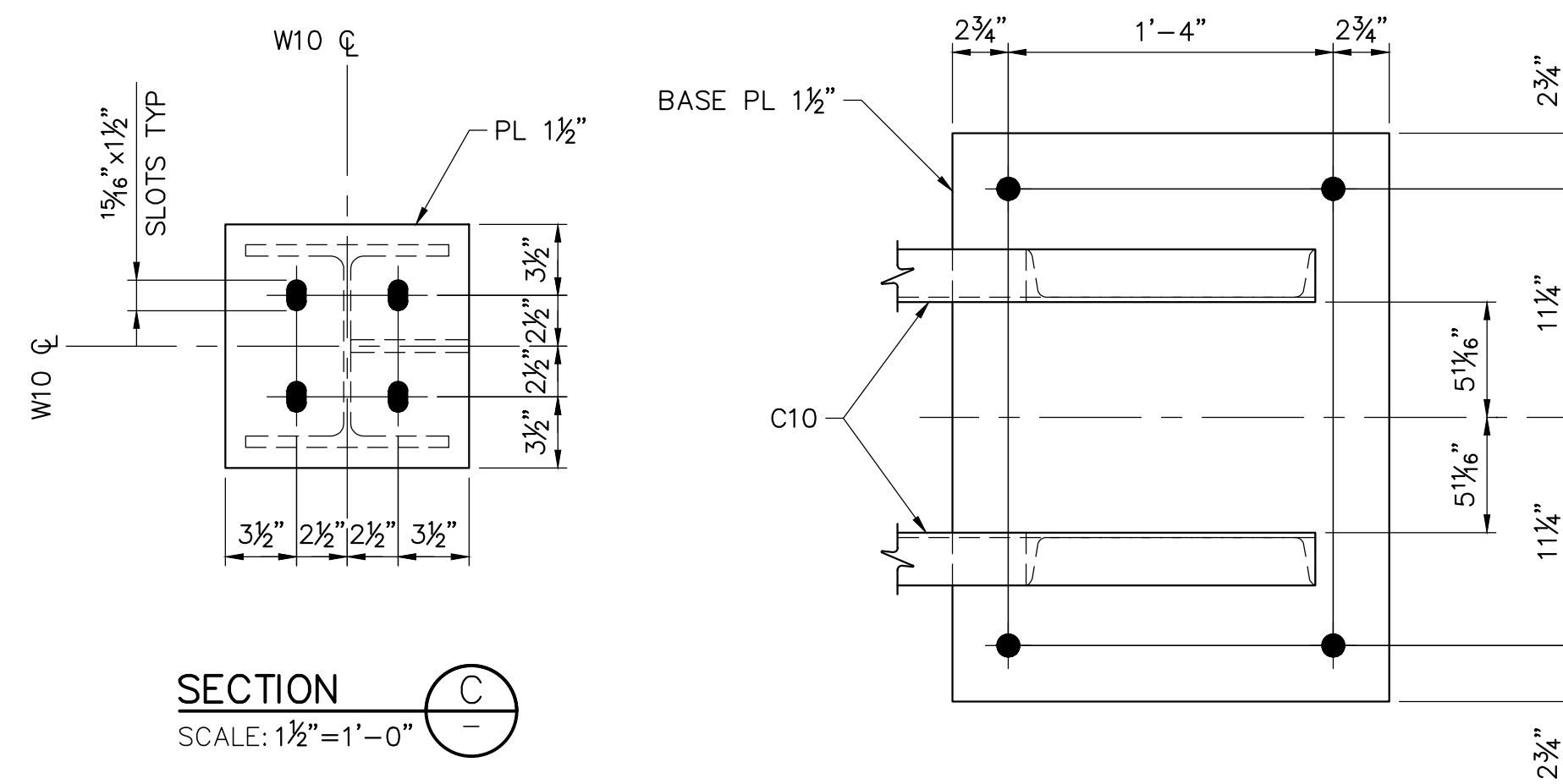
SECTION B
SCALE: 1 1/2"=1'-0" 4.32



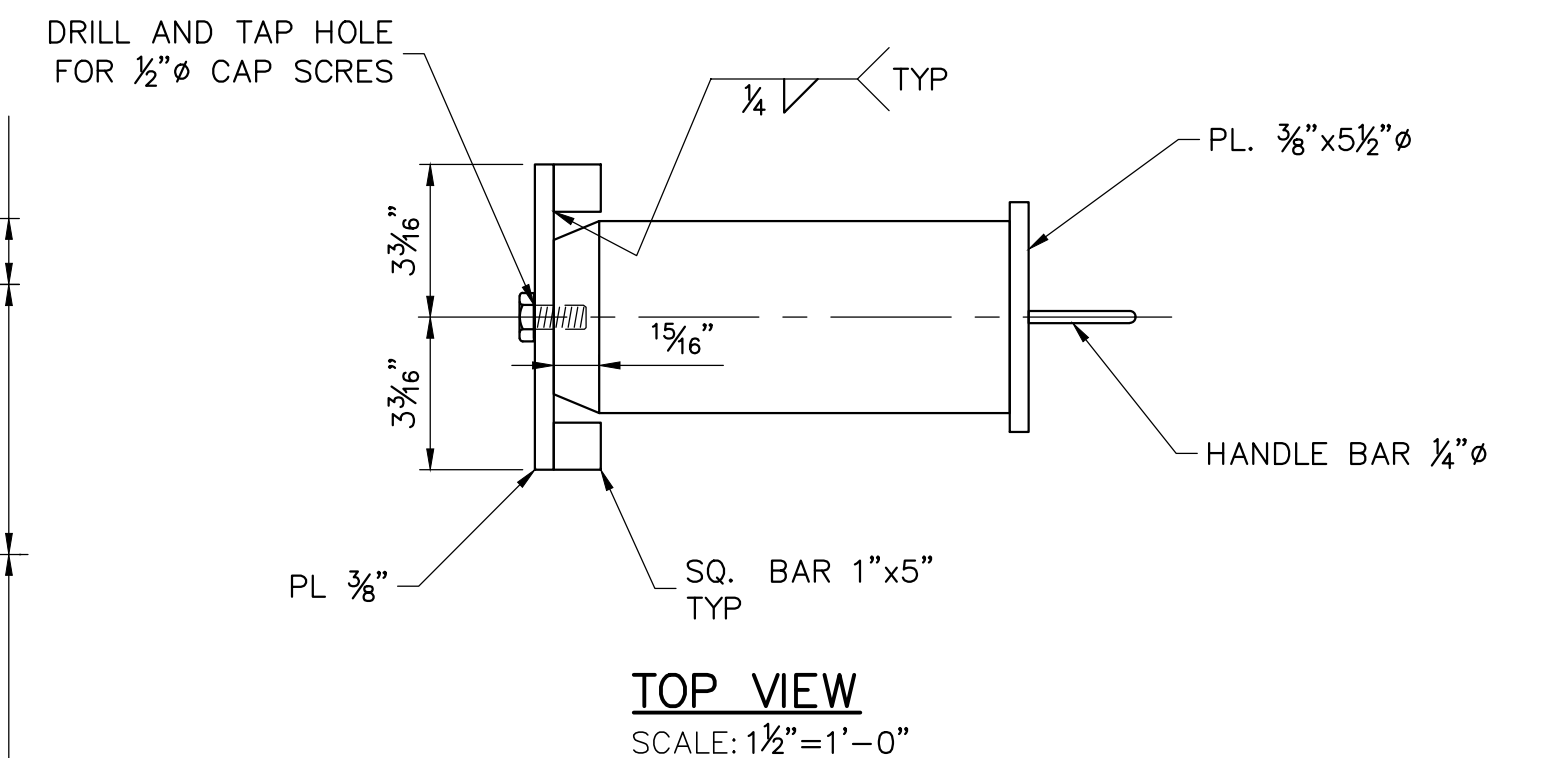
DETAIL 3
SCALE: 1 1/2"=1'-0" 4.32



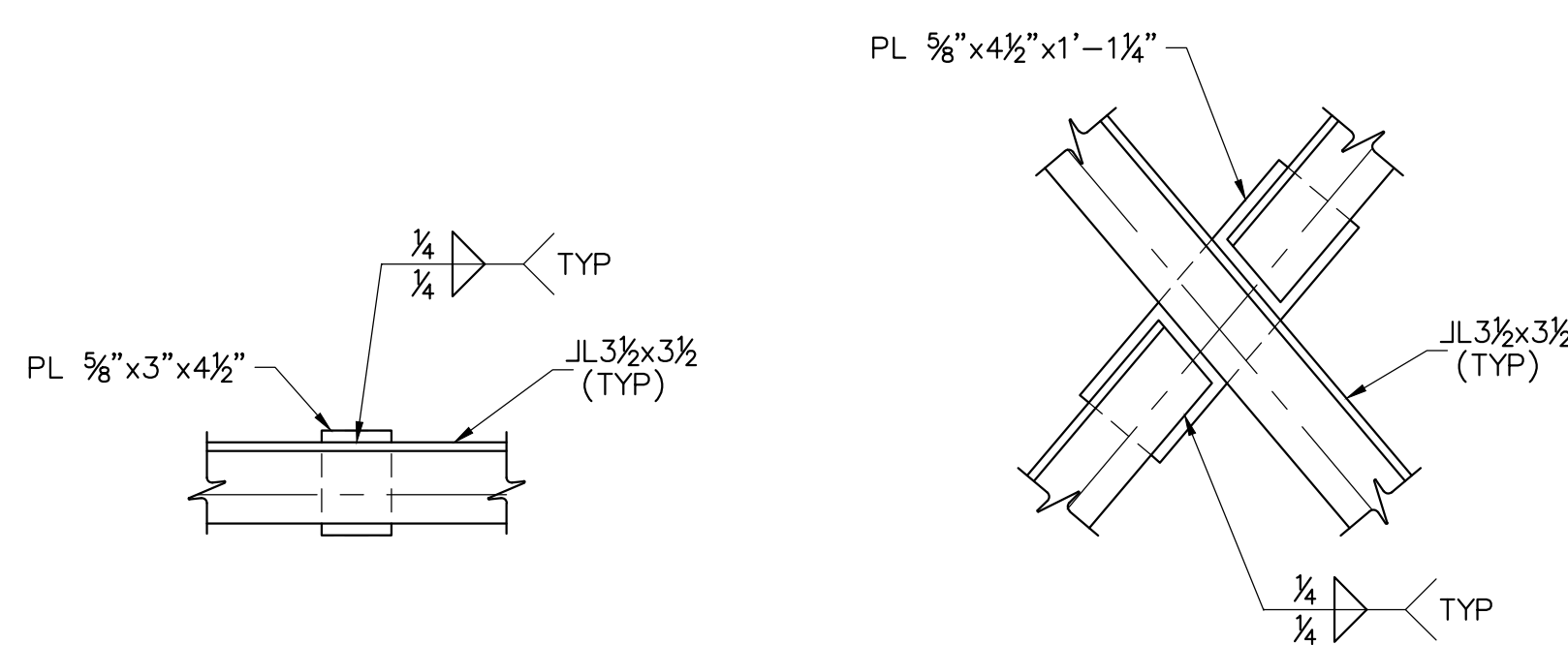
SECTION D
SCALE: 1 1/2"=1'-0" 4.32



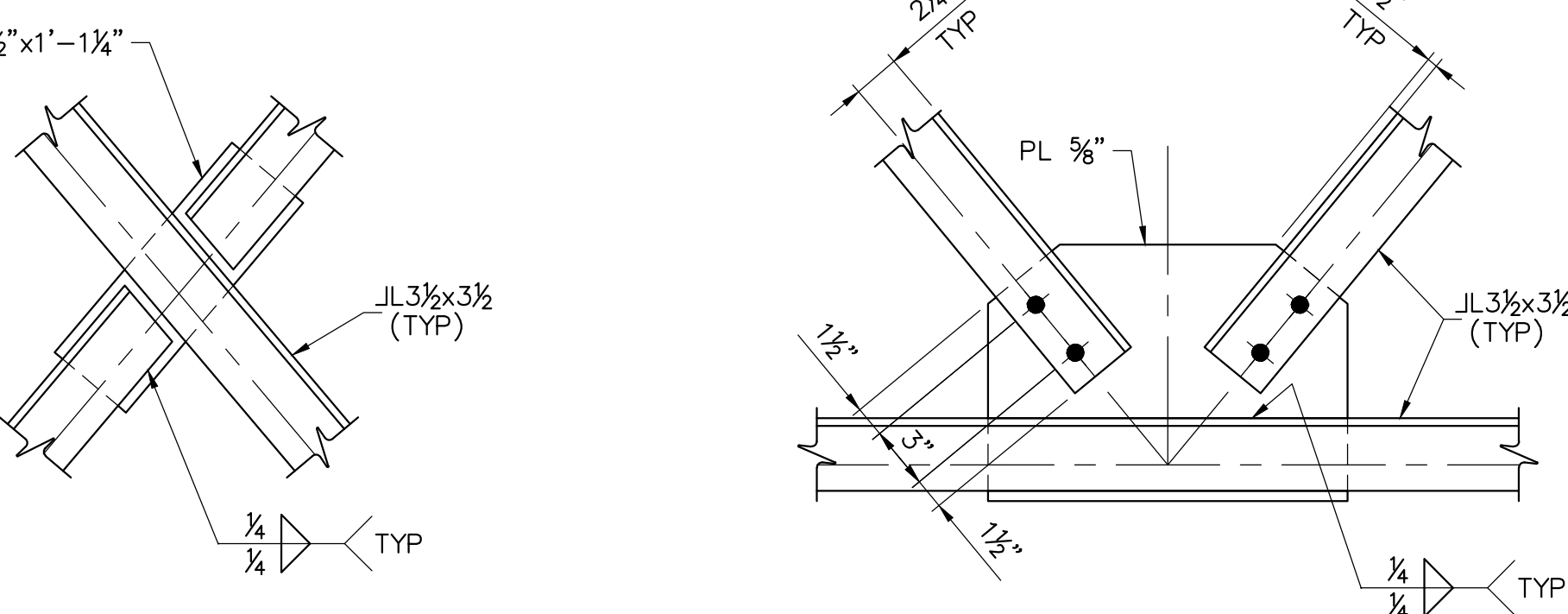
SECTION C
SCALE: 1 1/2"=1'-0" 4.32



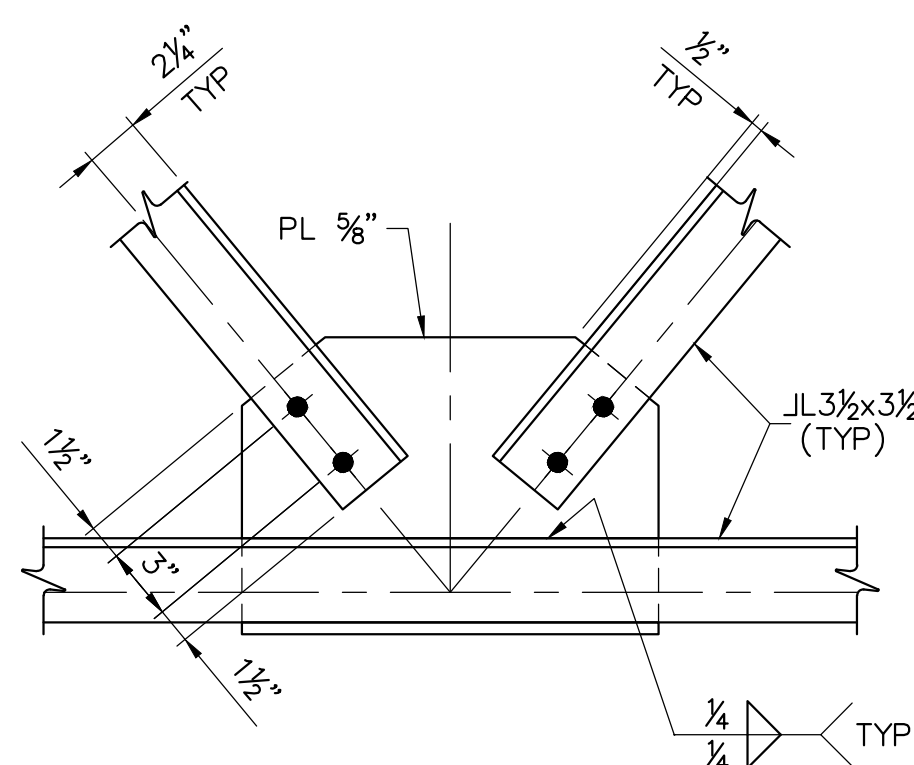
TOP VIEW
SCALE: 1 1/2"=1'-0" 4.32



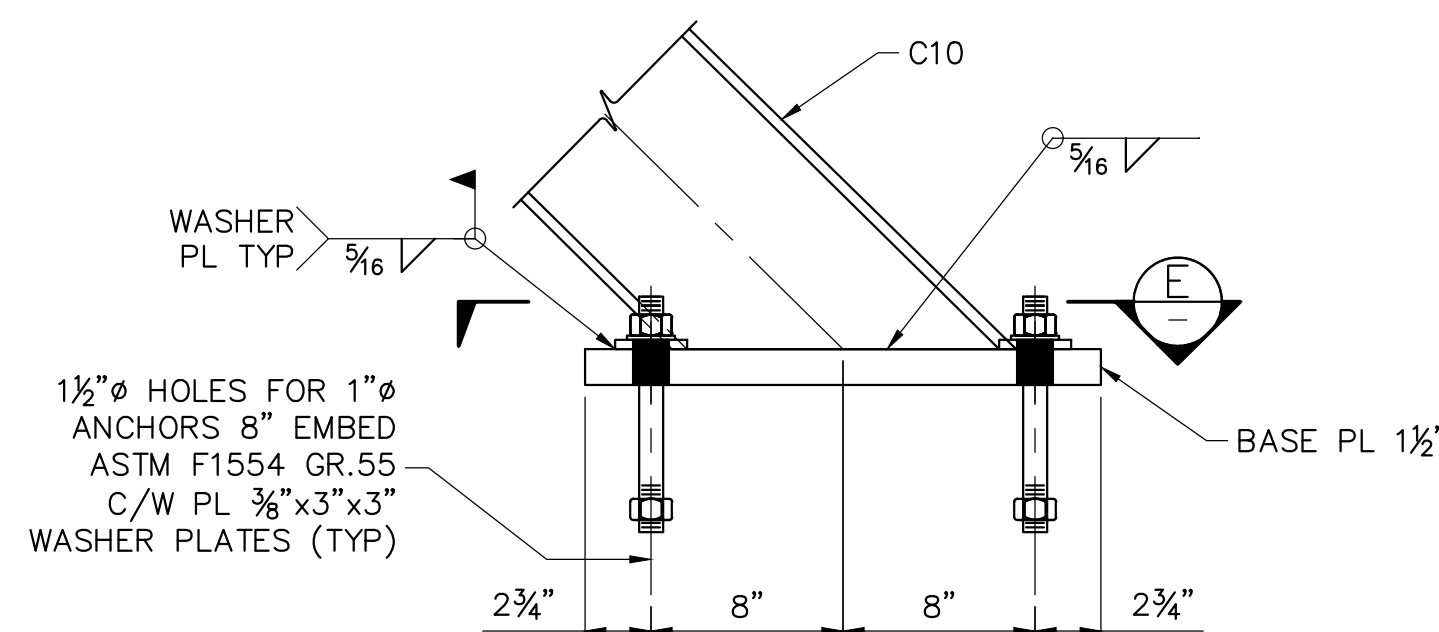
DETAIL 4
SCALE: 1 1/2"=1'-0" 4.32



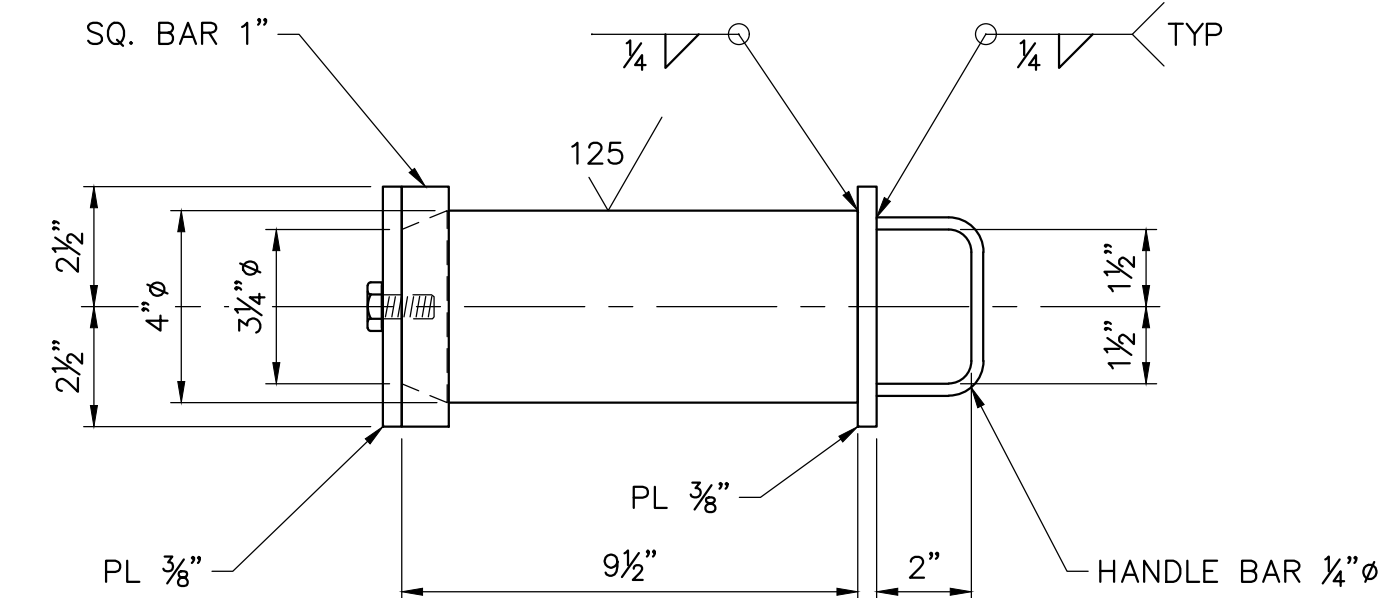
DETAIL 5
SCALE: 1 1/2"=1'-0" 4.32



DETAIL 6
SCALE: 1 1/2"=1'-0" 4.32



DETAIL 7
SCALE: 1 1/2"=1'-0" 4.32



4" PIN - DETAIL
(2 REQ'D)
SCALE: 3"=1'-0" 4.32

NOTES:

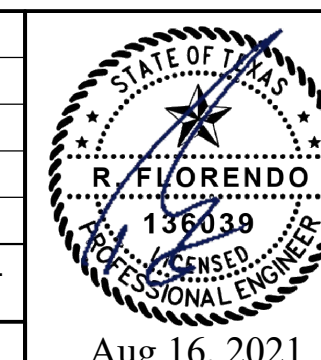
- FOR GENERAL NOTES SEE DWG. 160578-400.



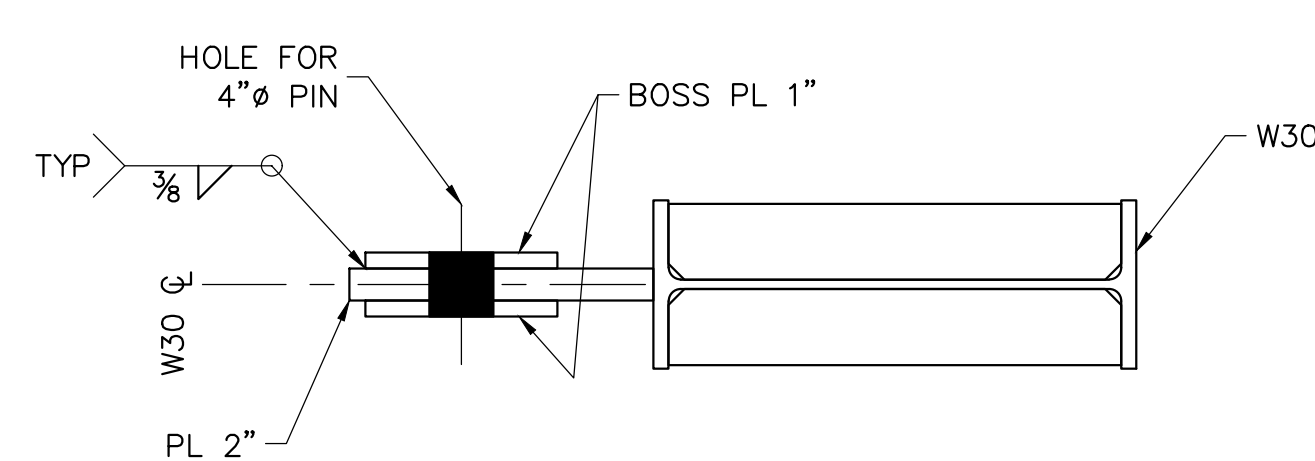
PROJECT TITLE:
HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN

SHEET TITLE:
DELTA FRAME
TURNING FRAME
DETAILS SHEET 2

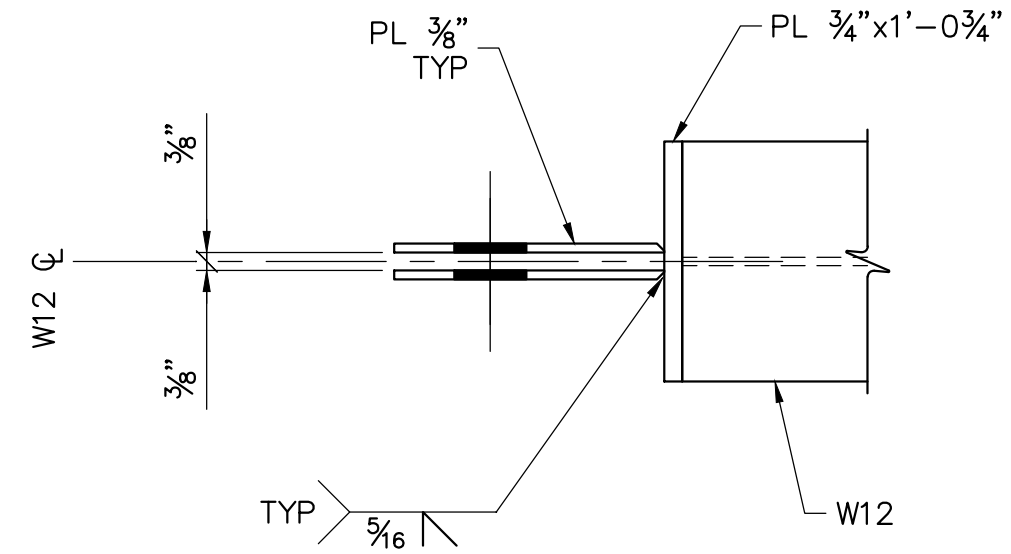
NO.	DATE	DESCRIPTION	DES.	DES. CHK.	DFTG.	DFTG. CHK.
0	AUG 16 2021	ISSUED FOR CONSTRUCTION	RF	RF	GDS	GDS
REVISIONS						



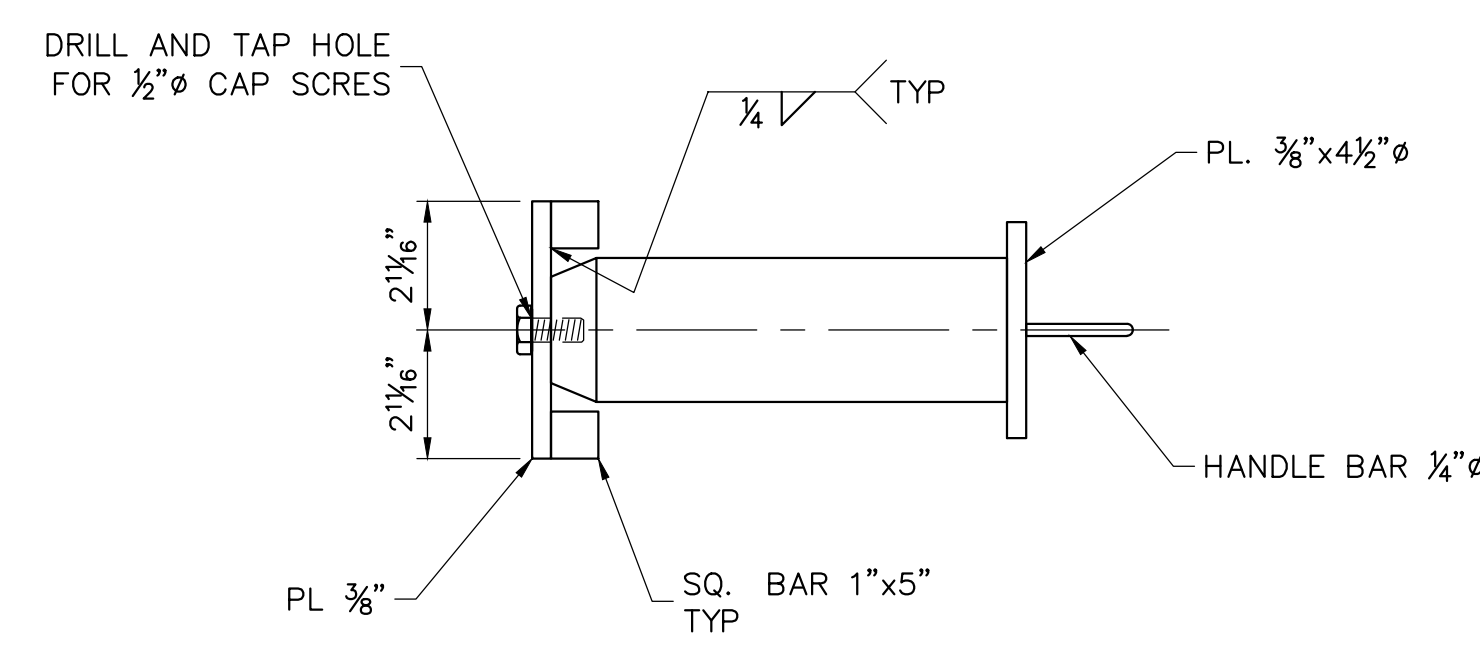
DSGN: JL DSGN CHK: RF DFTG: SOJS DFTG CHK: JL DATE: FEB 25 2021		SCALE: AS NOTED DRAWING No. 160578-433	JOB No.: 16-0578 REV. 0
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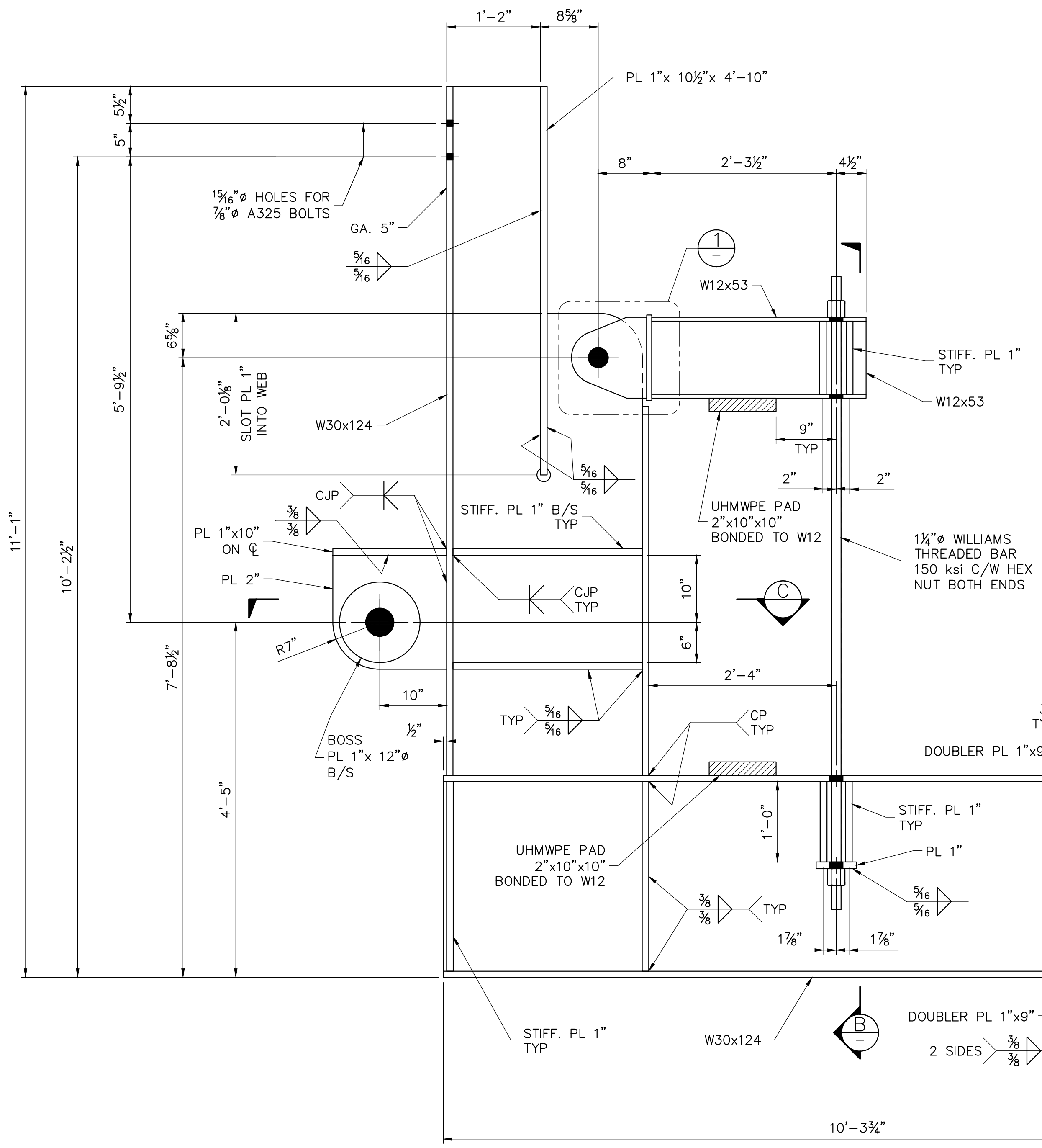
SECTION C
SCALE: 1"=1'-0"



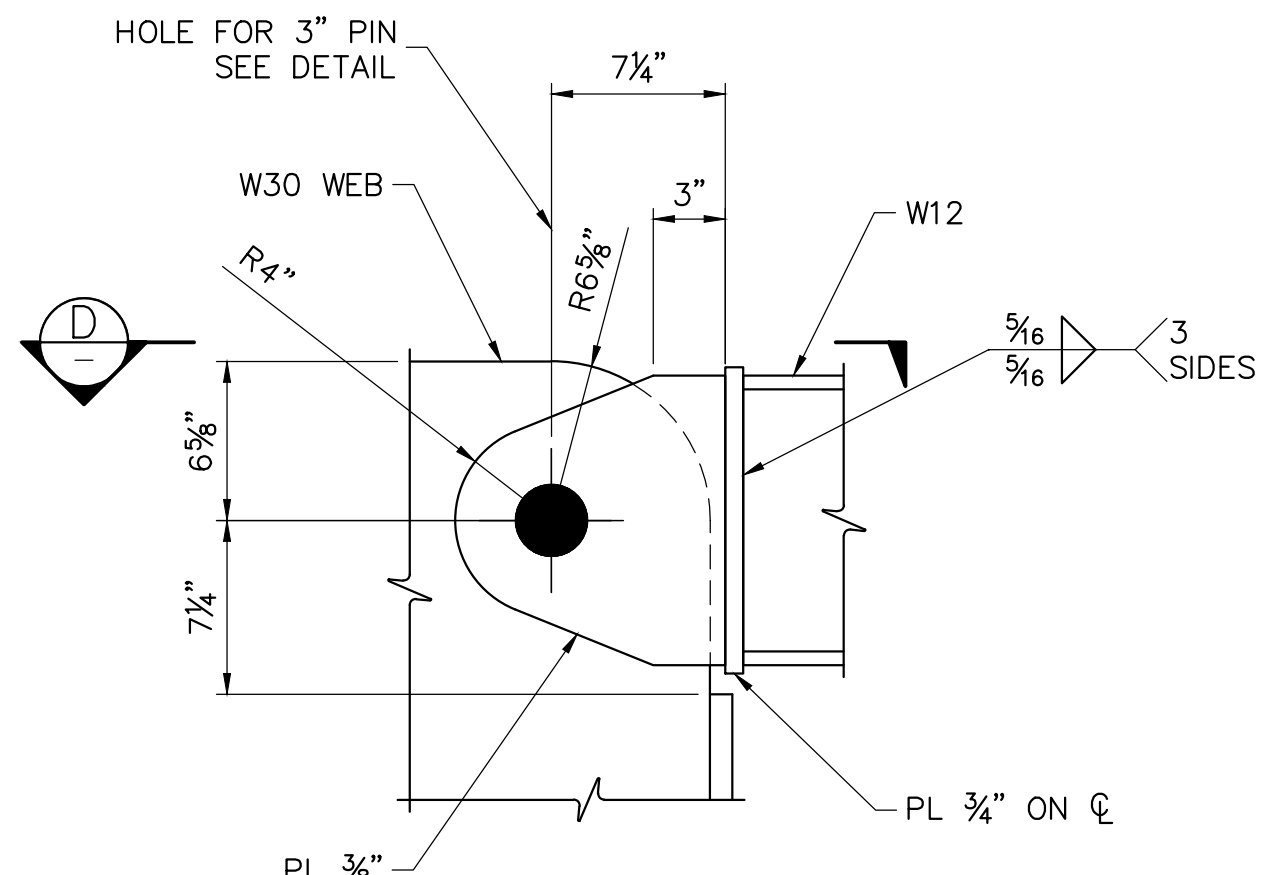
SECTION D
SCALE: 1 1/2"=1'-0"
(W30 WEB NOT SHOWN FOR CLARITY)



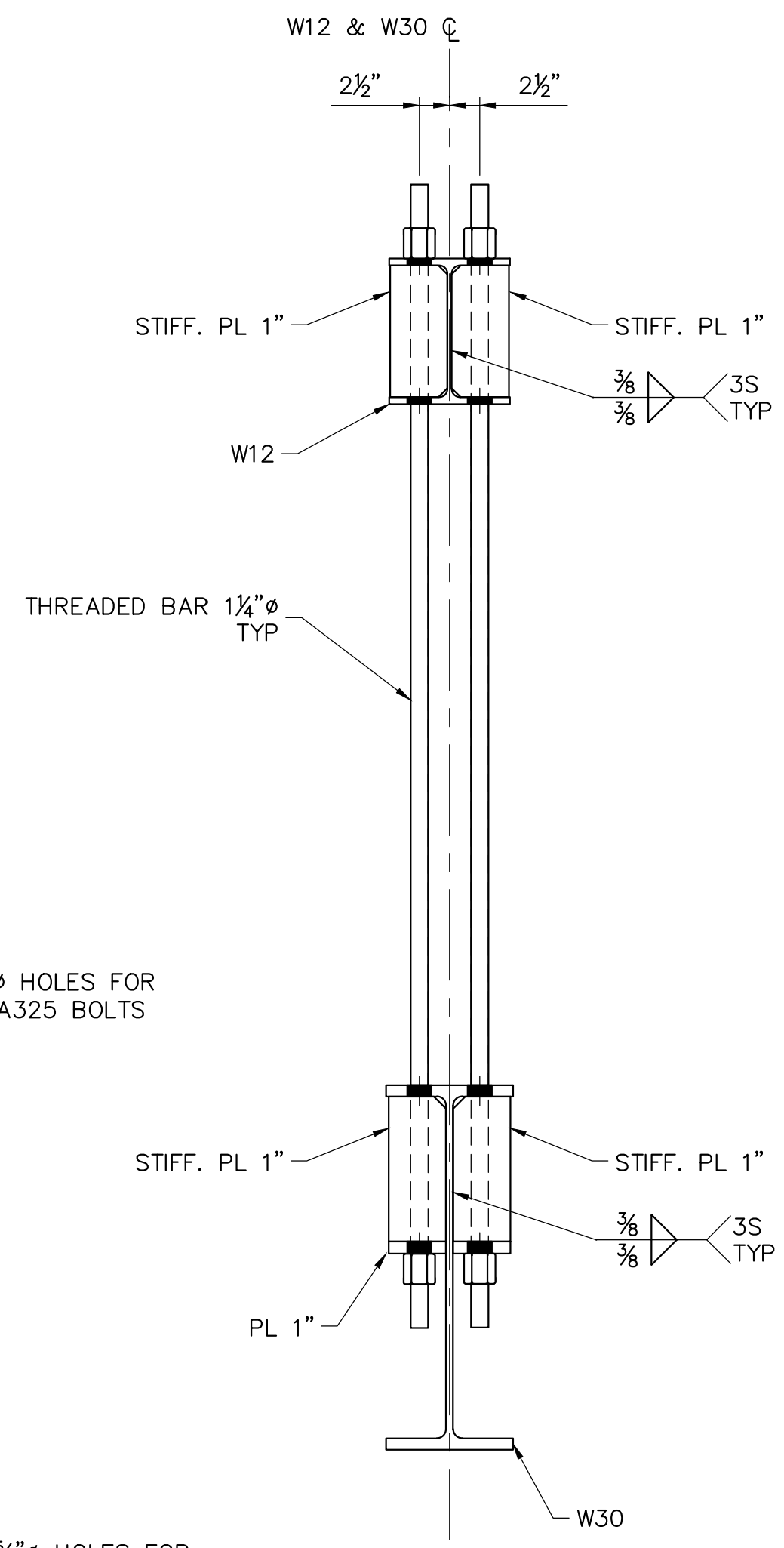
TOP VIEW
SCALE: 1 1/2"=1'-0"



TURNING ARM - ELEVATION
(2 REQ'D)
SCALE: 1"=1'-0"
(2 REQUIRED)

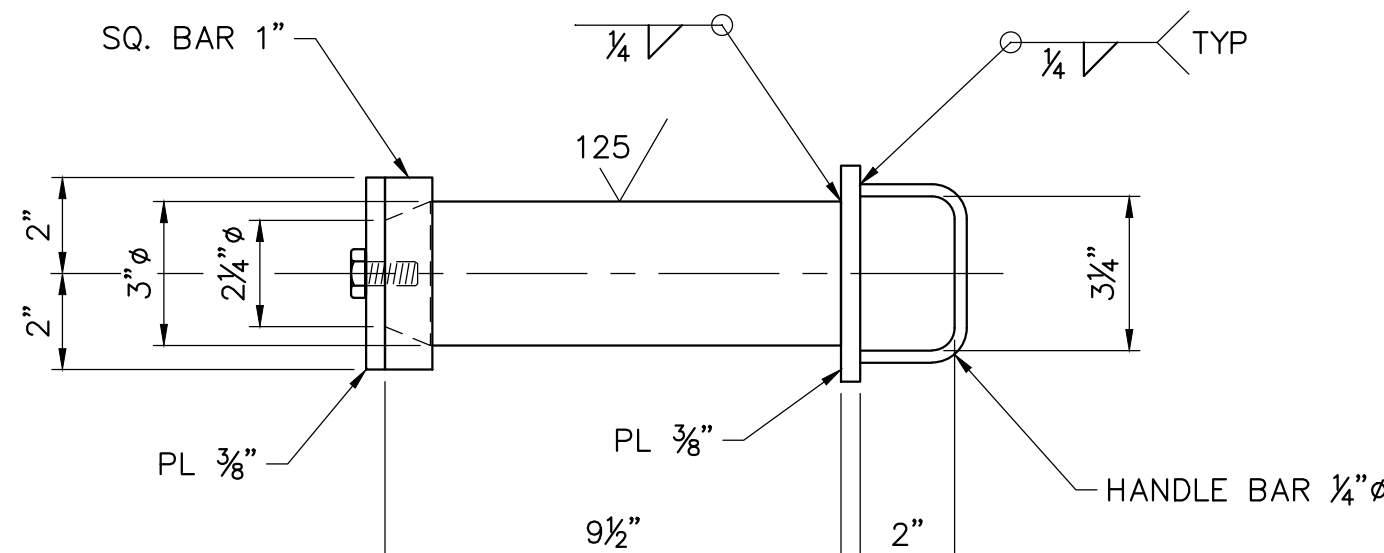


DETAIL 1
SCALE: 1 1/2"=1'-0"



SECTION A
SCALE: 1"=1'-0"

SECTION B
SCALE: 1"=1'-0"



3"Ø PIN - DETAIL
(2 REQ'D)
SCALE: 3"=1'-0"

NOTES:

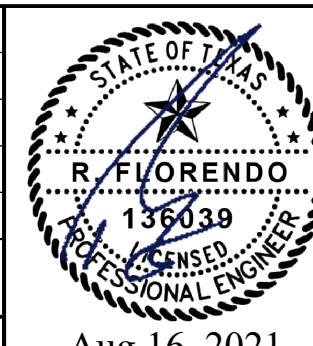
1. FOR GENERAL NOTES SEE DWG. 160578-400.



PROJECT TITLE:
HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN

SHEET TITLE:
DELTA FRAME
TURNING ARM DETAILS

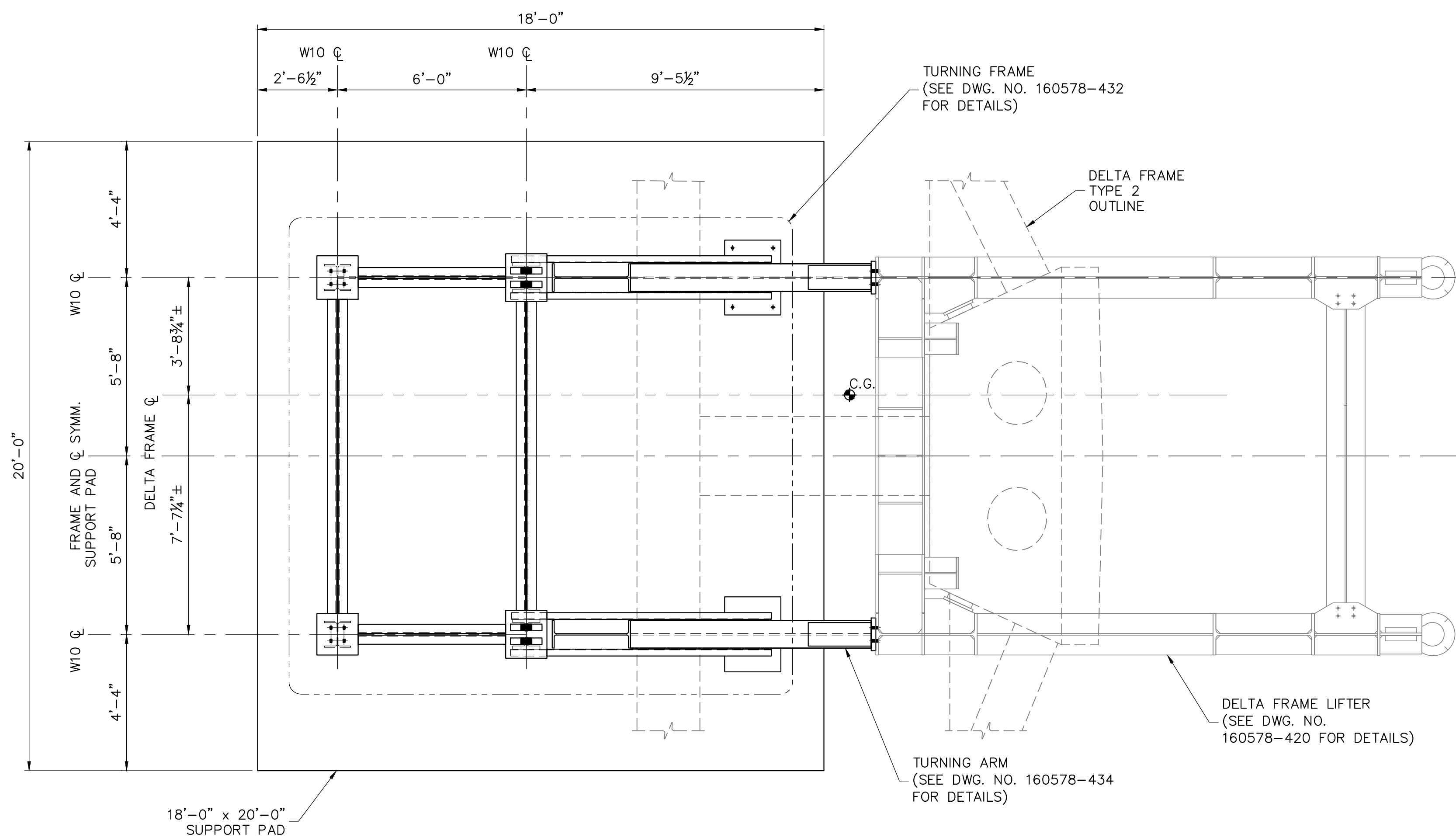
NO.	DATE	DESCRIPTION	DES.	DES. CHK.	DFTG.	DFTG. CHK.
0	AUG 16 2021	ISSUED FOR CONSTRUCTION	RF	RF	GDS	GDS
REVISIONS						



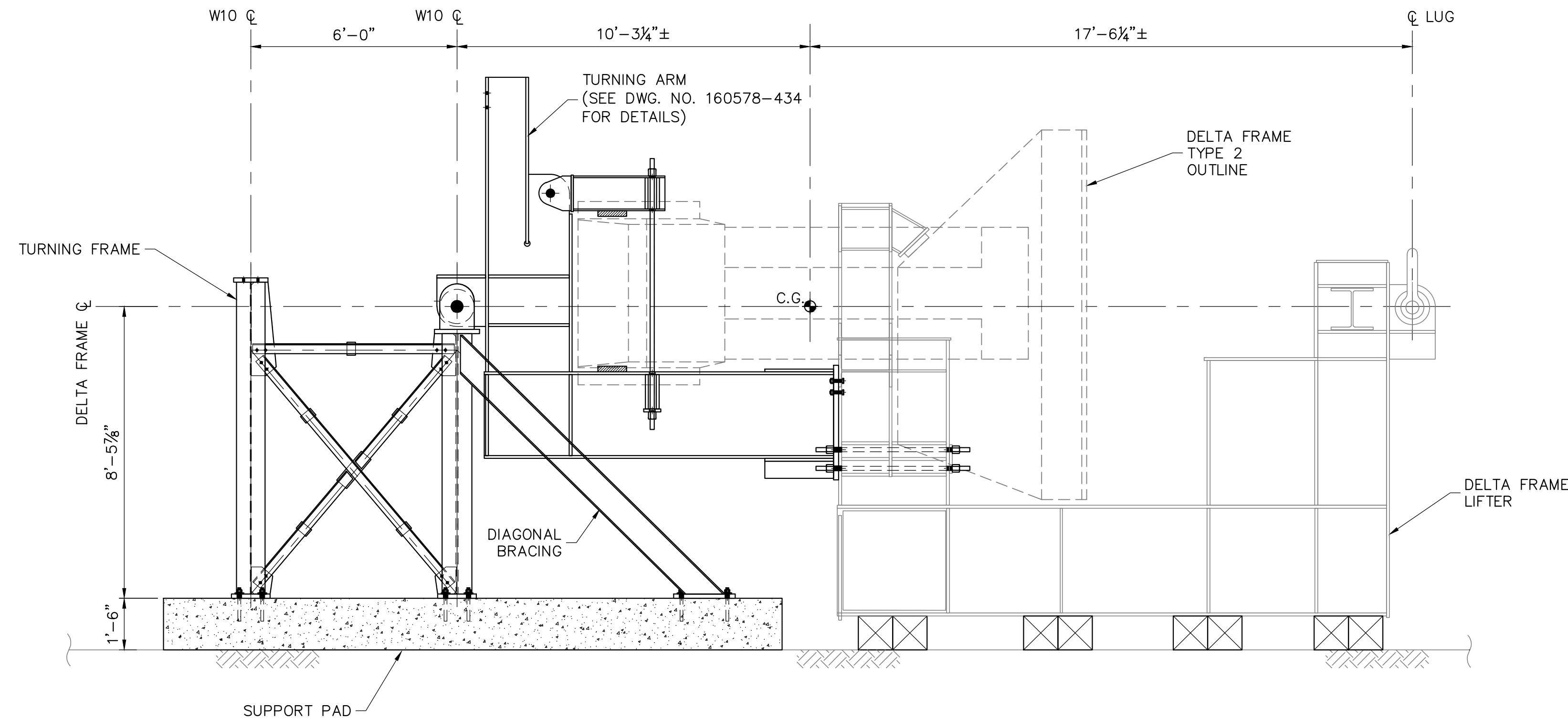
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DSGN CHK: RF
DFTG: JS
DFTG CHK: GDS
DATE: JUNE 29 2021

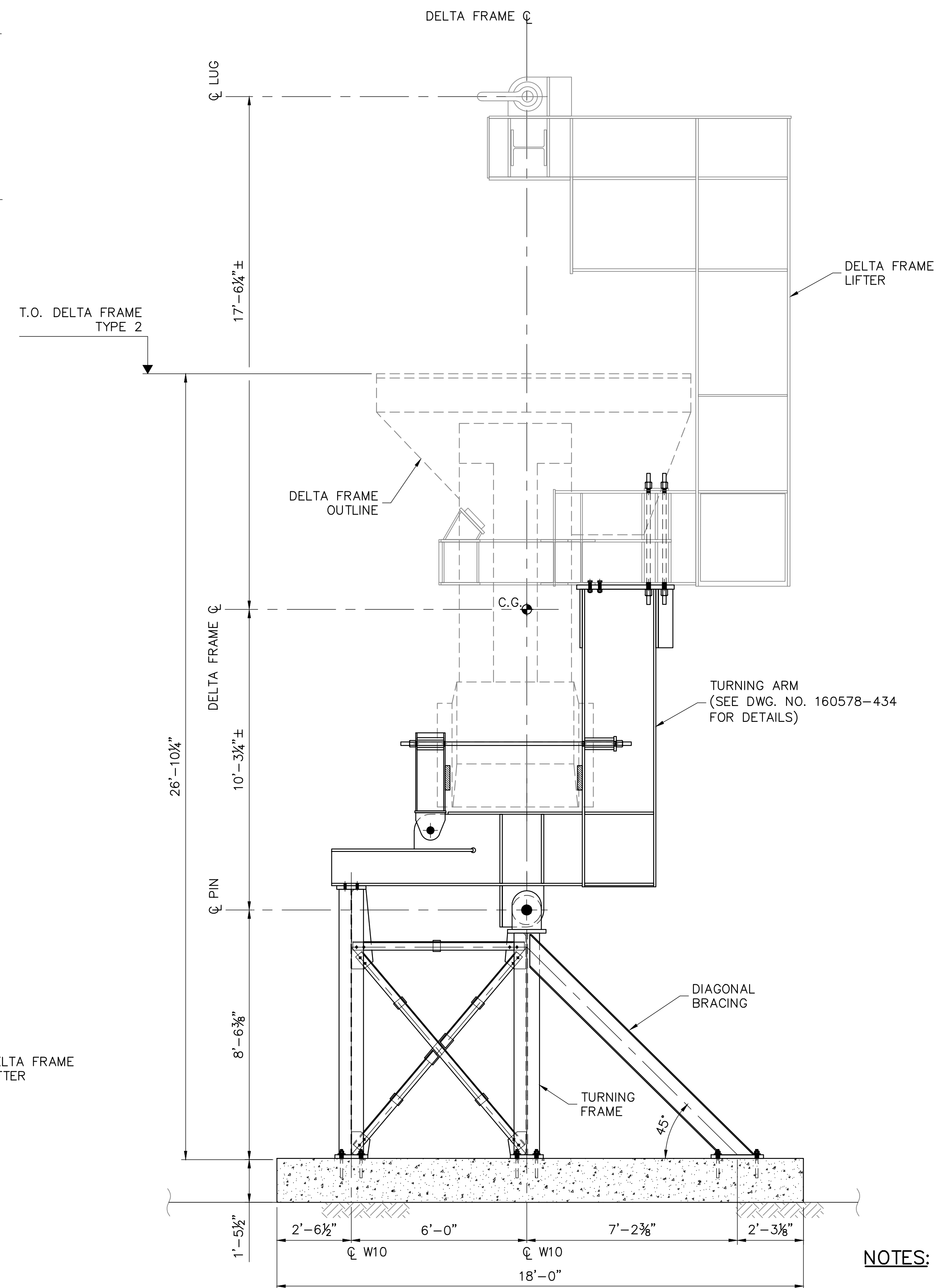
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SCALE: AS NOTED		JOB No.: 16-0578	
DRAWING No.		REV.	
160578-434		0	



PLAN
SCALE: $\frac{3}{8}$ "=1'-0"



ELEVATION
SCALE: $\frac{3}{8}$ "=1'-0"
DELTA FRAME HORIZONTAL



ELEVATION
SCALE: $\frac{3}{8}$ "=1'-0"
DELTA FRAME VERTICAL

NOTES:

- FOR GENERAL NOTES SEE DWG. 160578-400.



CLIENT:



FLATIRON/Dragados LLC

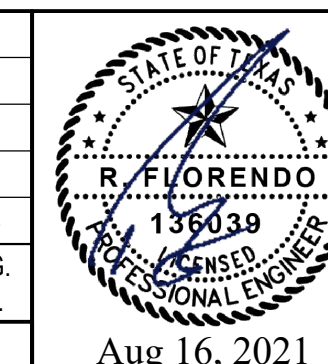
PROJECT TITLE:

HARBOR BRIDGE
CORPUS CHRISTI, TX
MAIN SPAN

SHEET TITLE:

DELTA FRAME TYPE 2
TURNING FRAME
GENERAL ARRANGEMENT

NO.	DATE	DESCRIPTION	DES.	DES. CHK.	DFTG.	DFTG. CHK.
0	AUG 16 2021	ISSUED FOR CONSTRUCTION	RF	RF	GDS	GDS
REVISIONS						



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DSGN CHK: RF
DFTG: JS
DFTG CHK: JL
DATE: JUL 27 2021

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SCALE: AS NOTED	JOB No.: 16-0578	REV.
DRAWING No.	160578-435	0