



04/07/2010
(Date)

Donald E. Yetter
(Signature)

NO.	DATE	REVISION	BY
Plans Prepared By			
URS		6737 West Washington Street Suite 2265 Milwaukee, WI 53214 (414) 831-4100	
Plans Prepared For		WISDOT	
APPROVED		4/7/10	
CHIEF STRUCTURES DESIGN ENGINEER		DATE	
STRUCTURE B-5-661			
SB USH 41 TO WB STH 29			
COUNTY	BROWN	TOWN/CITY/VILLAGE	HOWARD
DESIGN SPEC.	2007 AASHTO LRFD DESIGN SPEC. 4th EDITION	LOAD	HL-93
DESIGNED BY	JRS	DESIGN CK'D.	NPP
DRAWN BY	JRS	PLANS CK'D.	MAD
SITE PLAN B-5-661			SHEET 1 OF 26

NE REGION CONTACT - PAUL VRANEY (920) 492-5999
BUREAU OF STRUCTURES CONTACT - WILLIAM DREHER (608) 266-8489
CONSULTANT CONTACT - ROBERT FIELDBINDER (414) 831-4129

90% PLANS STEEL FABRICATION CONTRACT ONLY

LIST OF DRAWINGS

- 1. SITE PLAN B-5-661
- 2. DRAWING LIST AND GENERAL NOTES
- 3. GENERAL PLAN AND ELEVATION
- 4. TYPICAL CROSS SECTION
- 5. ALIGNMENT LAYOUT
- 6. BEARING LAYOUT
- 7. BEARING DETAILS
- 8. JACKING PROVISIONS
- 9. FRAMING PLAN
- 10. GIRDER PLAN AND ELEVATION - SPAN 1
- 11. GIRDER PLAN AND ELEVATION - SPAN 2
- 12. INTERMEDIATE PIER DIAPHRAGMS XD1AND D1
- 13. ABUTMENT DIAPHRAGMS XD2 AND D2
- 14. INTERMEDIATE DIAPHRAGMS XD3 AND D3
- 15. MISCELLANEOUS DIAPHRAGM DETAILS
- 16. INTERIOR CROSS FRAME K1 DETAILS
- 17. FIELD SPLICE DETAILS
- 18. BRACING CONNECTION DETAILS
- 19. BRACING CONNECTION DETAILS SHEET 2
- 20. MISCELLANEOUS GIRDER DETAILS
- 21. MISCELLANEOUS GIRDER DETAILS SHEET 2
- 22. ACCESS HATCH DETAILS
- 23. SUPERSTRUCTURE DETAILS
- 24. CAMBER DIAGRAM
- 25. CAMBER DATA FIELD SECTIONS *1AND *2
- 26. CAMBER DATA FIELD SECTION *3

GENERAL NOTES

A DETAILED STUDY OF THE REDUNDANCY FOR THIS STRUCTURE VERIFIED THAT THERE ARE NO ELEMENTS TO BE OFFICIALLY CLASSIFIED AS FRACTURE CRITICAL MEMBERS. HOWEVER, SOME MEMBERS AND/OR ELEMENTS OF THEM SHALL BE FURNISHED, FABRICATED, AND TESTED IN ACCORDANCE WITH REQUIREMENTS FOR FRACTURE CRITICAL MEMBERS (SEE FOLLOWING NOTES). AFTER COMPLETION OF CONSTRUCTION, FUTURE INSPECTIONS OF THE IN-SERVICE BRIDGE WILL BE PERFORMED ON THE BASIS OF IT BEING CLASSIFIED AS A REDUNDANT STRUCTURE.

ALL STRUCTURAL STEEL PLATE FOR BOX GIRDER FLANGES AND WEBS, BOX GIRDER FLANGE AND WEB SPLICE PLATES, EXTERNAL AND INTERNAL DIAPHRAGMS FOR BOX GIRDERS, AND ALL OTHER STEEL PLATE COMPONENTS WELDED TO ANY OF THESE ELEMENTS SHALL BE HIGH STRENGTH ASTM A709 (AASHTO M270) GRADE HPS 50W (FY=50 KSI). ALL OTHER STEEL SHALL BE IN ACCORDANCE WITH ASTM A709 GRADE 50 (FY=50 KSI).

ALL STRUCTURAL STEEL PLATE FOR BOX GIRDER FLANGES AND WEBS IN TENSION ZONES AS SHOWN ON THE PLANS AND ALL ASSOCIATED SPLICE PLATES, ALL ATTACHING TRANSVERSE WEB STIFFENERS AND CONNECTION PLATES, AND ALL STEEL PLATE ELEMENTS OF EXTERNAL AND INTERNAL DIAPHRAGMS FOR BOX GIRDERS SHALL MEET THE FRACTURE CRITICAL TENSION COMPONENT IMPACT TEST REQUIREMENTS OF HPS 50WF/HPS 345WF OF TABLE 10 OF ASTM A709/A709M-05 FOR ZONE 2.

ALL WELDING PERFORMED IN TENSION ZONES SHOWN ON THE PLANS FOR BOX GIRDER WEB AND FLANGE ELEMENTS, INCLUDING ATTACHING TRANSVERSE WEB STIFFENER AND CONNECTION PLATES, AND ALL WELDING PERFORMED FOR ALL ELEMENTS OF EXTERNAL AND INTERNAL STEEL PLATE DIAPHRAGMS FOR BOX GIRDERS SHALL BE PERFORMED, TESTED, AND INSPECTED IN ACCORDANCE WITH REQUIREMENTS FOR FABRICATION OF FRACTURE CRITICAL MEMBERS.

CHARPY V-NOTCH TOUGHNESS REQUIREMENTS FOR ALL STEEL SHALL CONFIRM TO THE REQUIREMENTS FOR ZONE 2.

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES. ALL STATIONS AND ELEVATIONS ARE IN FEET.

ELEVATIONS ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.

GIRDERS AND OTHER ELEMENTS OF THE STRUCTURE ARE REFERRED TO AS 'LEFT' AND 'RIGHT'. THESE ORIENTATIONS ARE WITH RESPECT TO THE REFERENCE LINE WHEN LOOKING IN THE DIRECTION OF INCREASING STATION.

TRANSVERSE DIMENSIONS ARE RADIAL TO THE REFERENCE LINE UNLESS NOTED OTHERWISE.

ALL WELDING SHALL BE IN ACCORDANCE WITH THE CURRENT AASHTO/AWS D1.5 BRIDGE WELDING CODE.

USE WELD MATERIAL WITH A TENSILE STRENGTH AT LEAST 20 KSI GREATER THAN THE YIELD STRENGTH OF THE STEEL BEING WELDED. NON-WEATHERING CONSUMABLES MAY BE USED FOR SINGLE-PASS FILLET WELDS.

FABRICATE BEARING ASSEMBLIES FROM ASTM A709 GRADE 50 MATERIAL (FY=50 KSI).

PROVIDE ANCHOR RODS, NUTS AND WASHERS CONFORMING TO ASTM F1554 (GRADE 105) AND HOT-DIP GALVANIZE IN ACCORDANCE WITH AASHTO M232.

ALL BOLTS SHALL BE ASTM A325 TYPE 1. BOLTS SHALL BE 7/8" DIAMETER UNLESS NOTED OTHERWISE. ALL HOLES SHALL BE STANDARD DIAMETER. NO OVERSIZE HOLES WILL BE PERMITTED WITHOUT PRIOR APPROVAL. ALL CONNECTIONS SHALL BE FABRICATED AND ASSEMBLED AS SLIP-CRITICAL CONNECTIONS. DESIGN ASSUMED SURFACE CLASS A.

PAINT ALL STRUCTURAL STEEL, INCLUDING SURFACES AND BRACING MEMBERS ON THE INSIDE OF THE BOX GIRDERS, IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

THIS CONTRACT INCLUDES FABRICATING, FURNISHING, STORING AND DELIVERING STRUCTURAL STEEL AND BEARINGS AS SHOWN IN THESE PLANS AND DESCRIBED IN THE SPECIAL PROVISIONS.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	QUANTITY
SPV.0060.01	BEARINGS HIGH-LOAD MULTI-ROTATIONAL FIXED	EACH	2
SPV.0060.02	BEARINGS HIGH-LOAD MULTI-ROTATIONAL UNI-DIRECTIONAL	EACH	4
SPV.0085.01	FABRICATED STRUCTURAL STEEL HPS 50W	LB	759,249
SPV.0085.02	FABRICATED STRUCTURAL STEEL HS	LB	56,729
SPV.0105.01	PAINTING POLYSILOXANE SYSTEM STRUCTURE B-05-661	LS	1

STATE PROJECT NUMBER

1133-03-83

DESIGN CRITERIA

DESIGN IS IN ACCORDANCE WITH AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH 2008 AND 2009 INTERIM REVISIONS, AND THE WISDOT BRIDGE MANUAL.

ALL DETAILS, MATERIALS, AND FABRICATION SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION OF THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION EDITION OF 2010, EXCEPT AS OTHERWISE NOTED.

LIVE LOAD PLUS DYNAMIC LOAD DEFLECTION LIMIT = SPAN / 800 (HL93).

DESIGN LIVE LOAD

DESIGN LOADING: HL-93

INVENTORY RATING FACTOR: RF = 1.29

OPERATING RATING FACTOR: RF = 1.67

WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 KIPS

OTHER DESIGN LOADS

THE STRUCTURE IS DESIGNED FOR THE DECK THICKNESS SHOWN, WHICH INCLUDES A 1/2" INTEGRAL WEARING SURFACE. NO ADDITIONAL LOAD FOR A FUTURE WEARING SURFACE IS CONSIDERED IN THE DESIGN.

TEMPERATURE CHANGE FOR DETERMINING THERMAL FORCES ON SUBSTRUCTURES = 90°F.

BEARING MOVEMENT RANGE IS BASED ON BEARING CENTERED AT 60°F AND ACCOMODATING 90°F OF MOVEMENT IN EITHER DIRECTION.

DESIGN ASSUMED A WEIGHT PER GIRDER OF 10 PSF FOR STAY-IN-PLACE METAL FORMS INSIDE EACH GIRDER ONLY AND 13.5 PSF FOR CONCRETE WITHIN THE RIBS OF THESE FORMS.

DESIGN ASSUMED 7.5 PSF FOR TEMPORARY FORMWORK IN ADDITION TO STAY-IN-PLACE FORMS.

PARAPETS WERE ASSUMED TO WEIGH 525 PLF AND 420 PLF FOR 42" AND 32" SECTIONS RESPECTIVELY.

ALL OTHER LOADS IN ACCORDANCE WITH AASHTO.

MINIMUM FILLET WELD SIZE:

THICKNESS OF THICKER PART JOINED	MINIMUM WELD SIZE
T <= 1/2"	3/16"
1/2" < T <= 3/4"	1/4"
3/4" < T <= 1 1/2"	5/16"
1 1/2" < T <= 2 1/4"	3/8"
T > 2 1/4"	1/2"

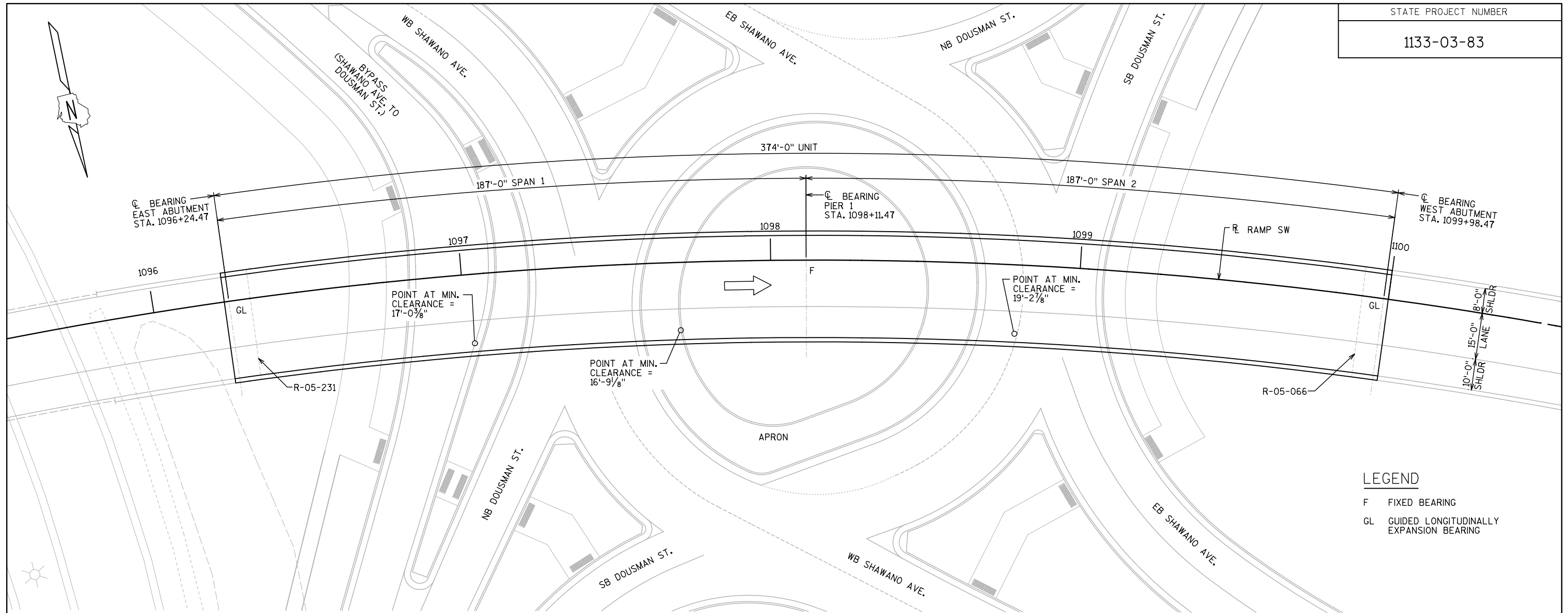
MINIMUM WELD SIZES SHOWN SHALL BE USED WHEN A SIZE IS NOT OTHERWISE SPECIFIED OR SHOWN.

WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART BEING JOINED.

FOR ALL WELDS 5/16" OR LARGER, THE MINIMUM PASS SIZE SHALL BE 5/16".

90% PLANS STEEL FABRICATION CONTRACT ONLY

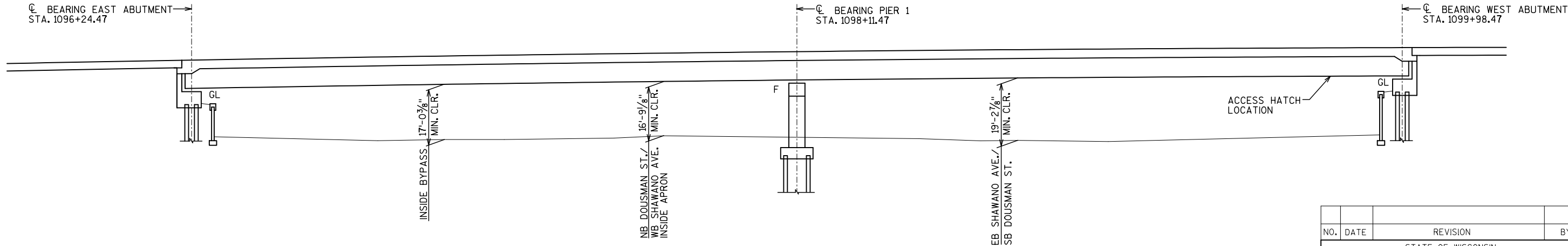
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
		DRAWN BY MJA	PLANS CK'D. MDR
DRAWING LIST AND GENERAL NOTES			SHEET 2 OF 26



PLAN

LEGEND

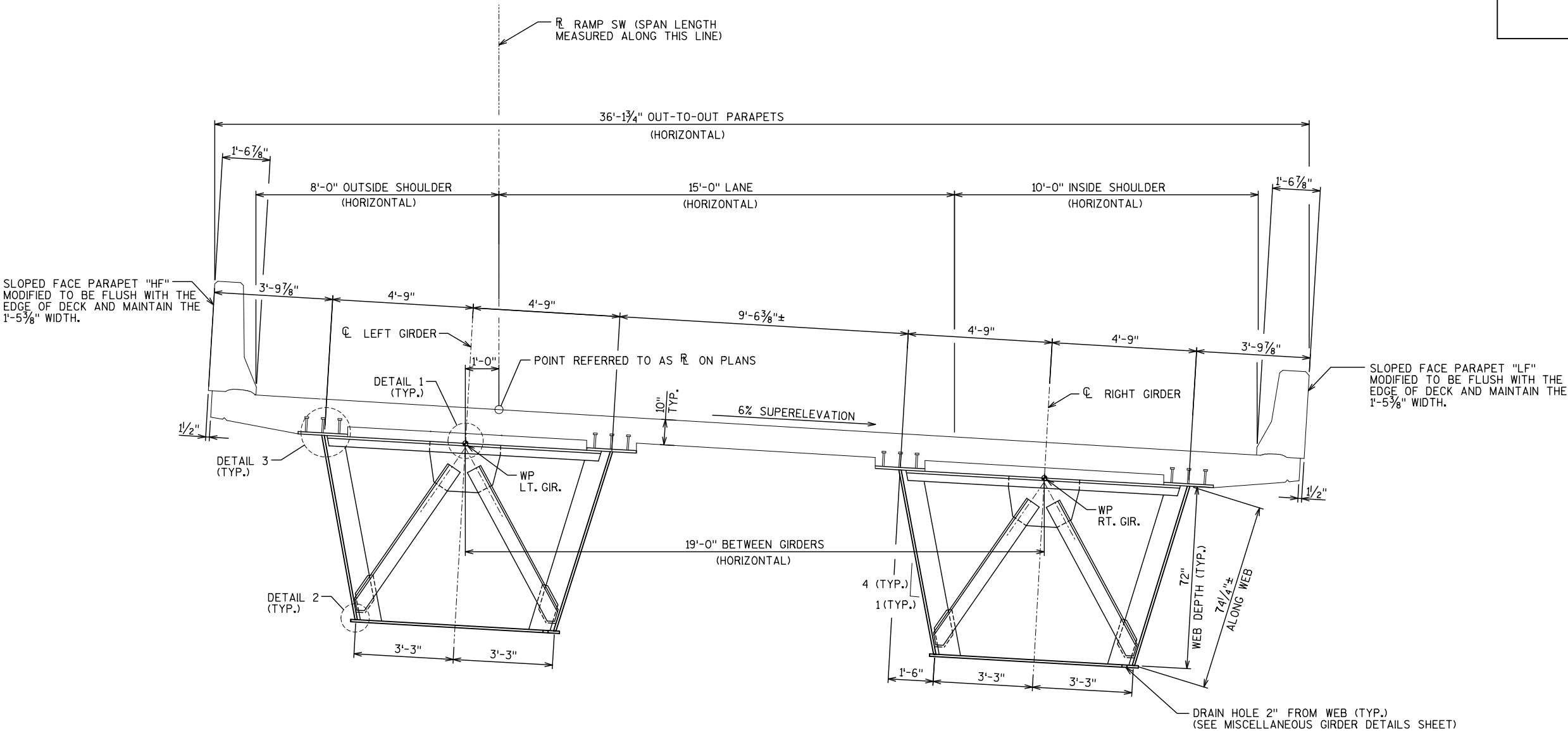
- F FIXED BEARING
- GL GUIDED LONGITUDINALLY EXPANSION BEARING



ELEVATION

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY JRS		PLANS CK'D.	MAD
GENERAL PLAN & ELEVATION			SHEET 3 OF 26

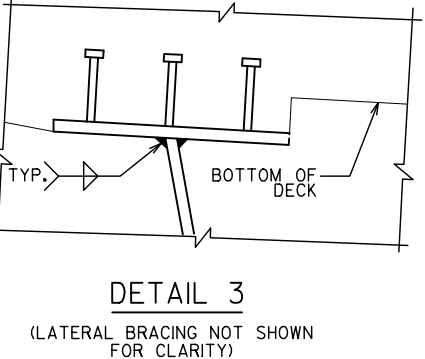
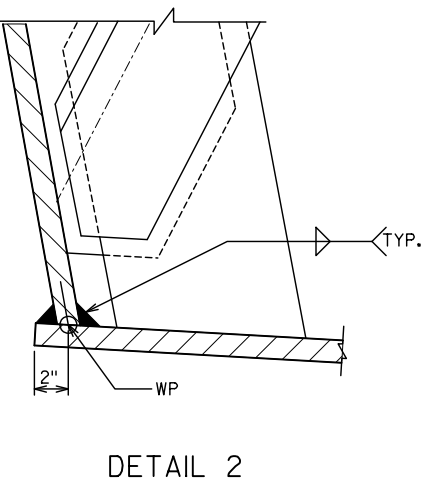
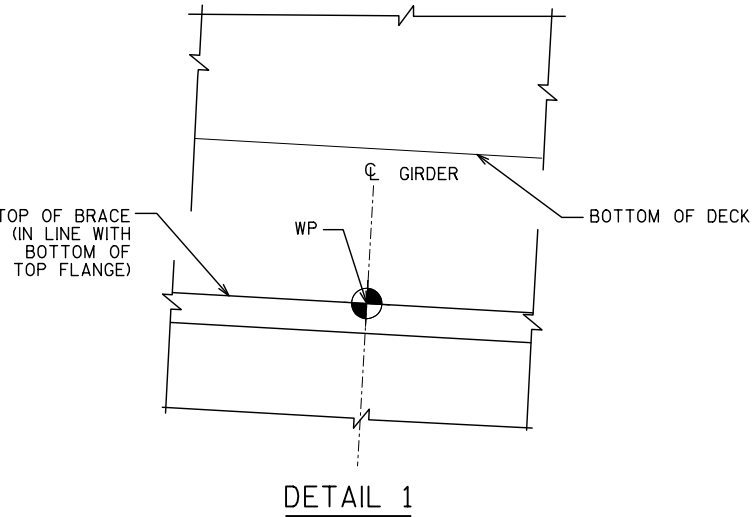
90% PLANS STEEL FABRICATION CONTRACT ONLY



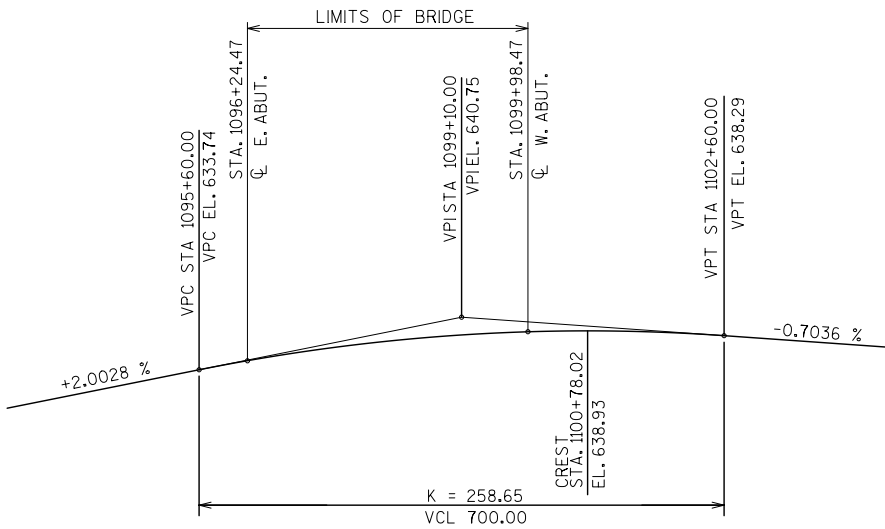
TYPICAL CROSS SECTION
(LOOKING UPSTATION)

NOTES:

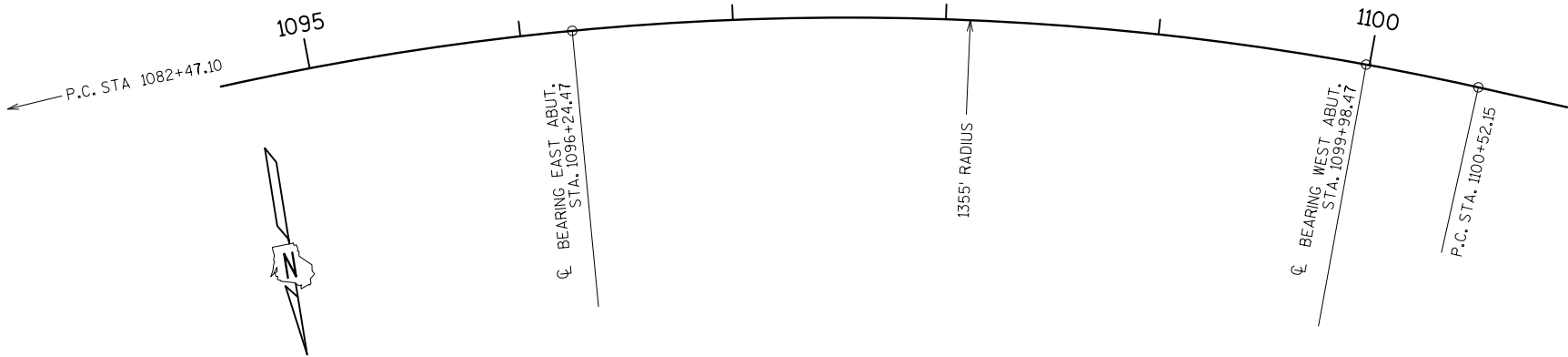
- STAY-IN-PLACE METAL FORMS PERMITTED INSIDE BOX GIRDERS ONLY.
- WP= WORK POINT TO WHICH DIMENSIONS ARE MEASURED.
- SEE SUPERSTRUCTURE DETAILS FOR HAUNCH.
- CONCRETE DECK, PARAPETS, SHEAR CONNECTORS AND STAY-IN-PLACE FORMS SHOWN HERE FOR REFERENCE ONLY, TO BE PROVIDED BY OTHERS DURING FUTURE CONTRACT.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MDR/MAD	
TYPICAL CROSS SECTION			SHEET 4 OF 26



PROFILE GRADE LINE SB USH 41 TO WB STH 29



HORIZONTAL ALIGNMENT SB USH 41 TO WB STH 29

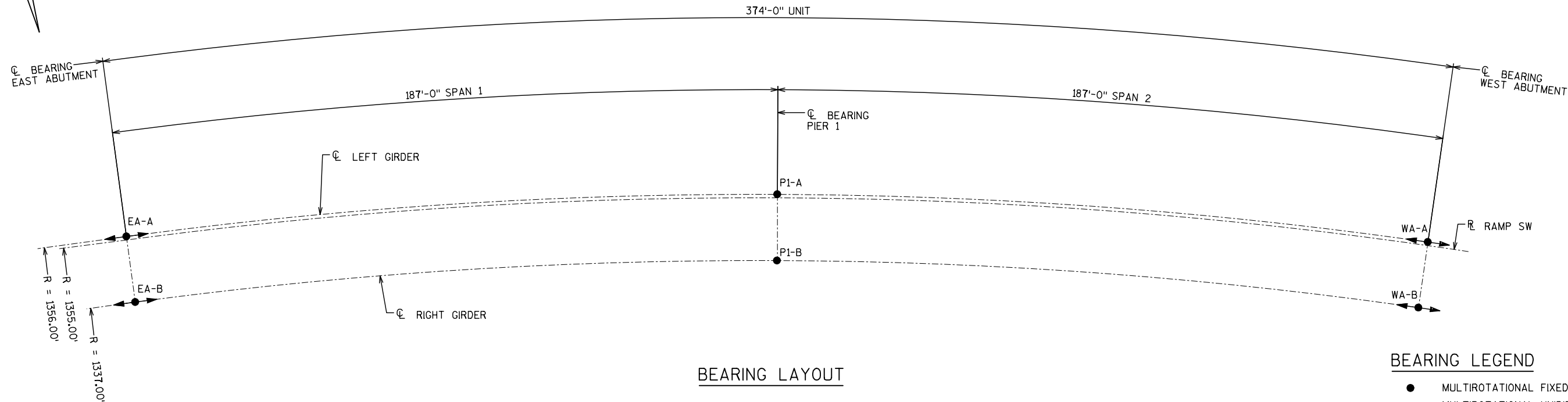
SB USH 41 TO WB STH 29
HORIZONTAL CURVE DATA

P.I. STA.= 1093+11.97
N= 576333.17
E= 83559.79
P.C. STA.= 1082+47.10
P.T. STA.= 1100+52.15
Δ= 76°19'33.09"
D= 4°13'42.49"
T= 1064.86'
L= 1805.05'
R= 1355.00'

S.E. = 6.0% ACROSS STRUCTURE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MDR	
ALIGNMENT LAYOUT			SHEET 5 OF 26

90% PLANS STEEL FABRICATION CONTRACT ONLY



BEARING LAYOUT

BEARING LEGEND

- MULTIROTATIONAL FIXED
- ◄◄ MULTIROTATIONAL UNIDIRECTIONAL (GUIDED) ARROWHEADS DENOTE MOVEMENT DIRECTIONS

BEARING MARK	BEARING TYPE	SERVICE LIMIT STATE VERTICAL LOADS		SERVICE LIMIT STATE HORIZ. LOADS		ROTATIONS		MOVEMENT RANGE (FOR 180 DEG.) LONGIT. (IN)	TAPERED SOLE PLATE THICKNESS					NOMINAL BEARING DIMENSIONS						MIN. ANCHOR BOLTS	MIN. TOP BOLTS
		DEAD LOAD (KIPS)	TOTAL LOAD (KIPS)	TRAN. LOAD (KIPS)	LONGIT. LOAD (KIPS)	X-AXIS TORSION (RAD)	Y-AXIS FLEXURE (RAD)		LL (IN)	RL (IN)	LH (IN)	RH (IN)	CC (IN)	A (IN)	B (IN)	C (IN)	D (IN)	E (IN)	H (IN)		
EA-A	GUIDED	358	645	43	69	0.0005	0.0080	2.63	2.98	1.00	3.37	1.39	2.19	33	22.5	29.5	21.50	1.75	7.50	4-1" DIA.	4-1" DIA.
EA-B	GUIDED	358	645	43	69	0.0005	0.0080	2.63	2.98	1.00	3.37	1.39	2.19	33	22.5	29.5	21.50	1.75	7.50	4-1" DIA.	4-1" DIA.
P1-A	FIXED	1012	1467	86	75	0.0002	0.0019	N/A	3.13	1.00	3.41	1.28	2.21	35.5	27.5	39.5	31.50	1.75	9.125	6-1" DIA.	4-1" DIA.
P1-B	FIXED	1012	1467	86	75	0.0002	0.0019	N/A	3.13	1.00	3.41	1.28	2.21	35.5	27.5	39.5	31.50	1.75	9.125	6-1" DIA.	4-1" DIA.
WA-A	GUIDED	358	645	43	69	0.0005	0.0080	2.63	2.98	1.00	3.05	1.07	2.02	33	22.5	29.5	21.50	1.75	7.50	4-1" DIA.	4-1" DIA.
WA-B	GUIDED	358	645	43	69	0.0005	0.0080	2.63	2.98	1.00	3.05	1.07	2.02	33	22.5	29.5	21.50	1.75	7.50	4-1" DIA.	4-1" DIA.

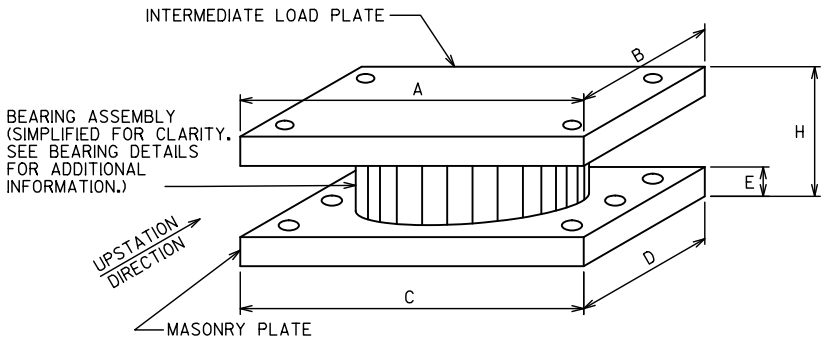
NOTES:

SEE BEARING DETAILS SHEET FOR TYPICAL BEARING DETAILS

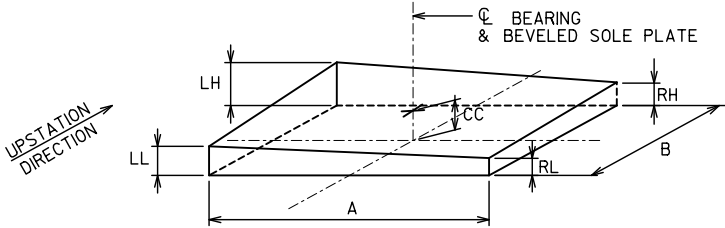
BEARING DIMENSIONS SHOWN ARE NOMINAL VALUES ONLY AND MAY VARY WITH THE SELECTED MANUFACTURER. IF BEARING DIMENSIONS VARY FROM THOSE SHOWN HERE, THE BEARING MANUFACTURER SHALL COORDINATE WITH THE STEEL GIRDER FABRICATOR TO ASSURE THERE ARE NO CONFLICTS WITH JACKING PADS OR ANY OTHER STEEL ELEMENTS. THE STEEL GIRDER FABRICATOR IS RESPONSIBLE TO DETERMINE WHAT ELEMENTS REQUIRE RE-DESIGN AND TO RE-DESIGN THEM, SUBJECT TO APPROVAL BY THE ENGINEER.

HORIZONTAL FORCES SPECIFIED IN THE TABLE ARE THE EXPECTED APPLIED FORCES. DESIGN BEARINGS AND CONNECTIONS FOR THESE VALUES OR 10 PERCENT OF THE VERTICAL DEAD LOAD, WHICHEVER IS LARGER.

ROTATIONS SPECIFIED IN THE TABLE ARE THE EXPECTED APPLIED ROTATIONS FROM APPLICABLE STRENGTH LOAD COMBINATIONS. DESIGN BEARINGS FOR AN ADDITIONAL 0.005 RADIAN FOR FABRICATION AND INSTALLATION TOLERANCES, AND 0.005 RADIAN FOR UNCERTAINTIES. DESIGN ALL BEARINGS FOR A MINIMUM 0.020 RADIAN OF TOTAL ROTATION.



BEARING DIMENSION KEY

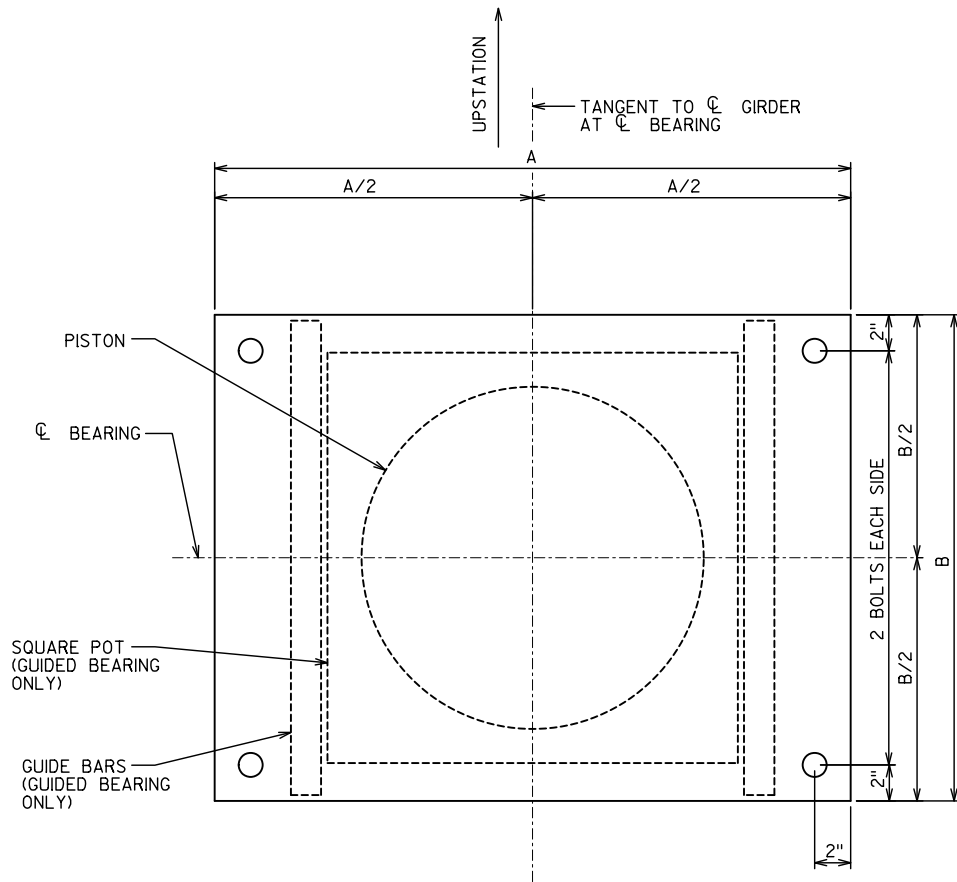
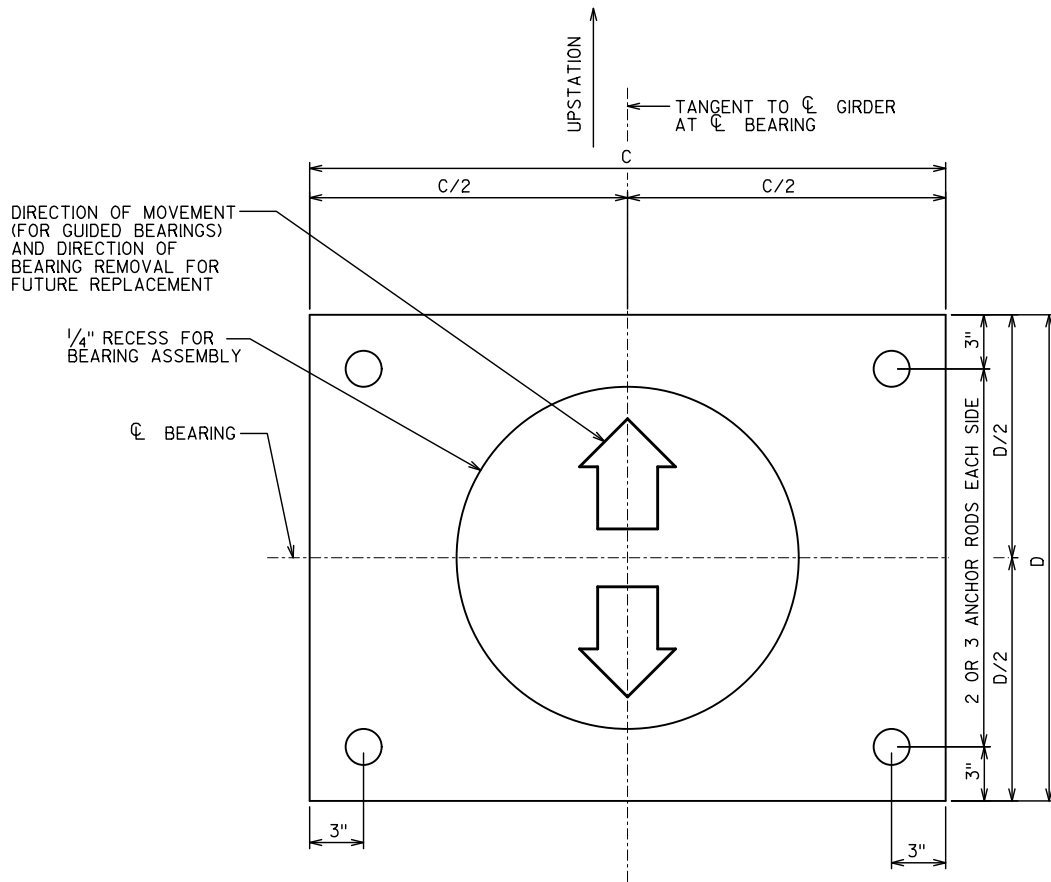
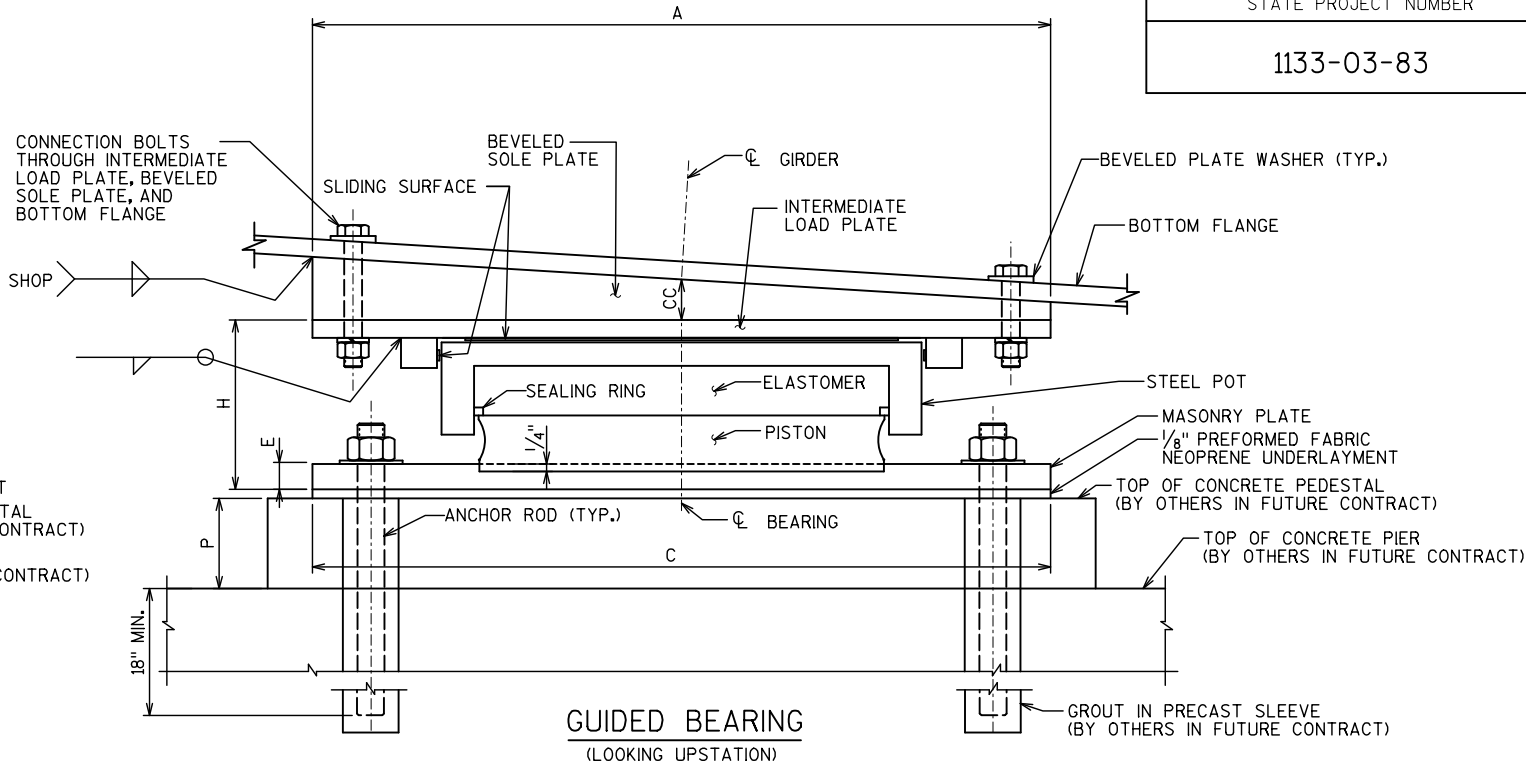
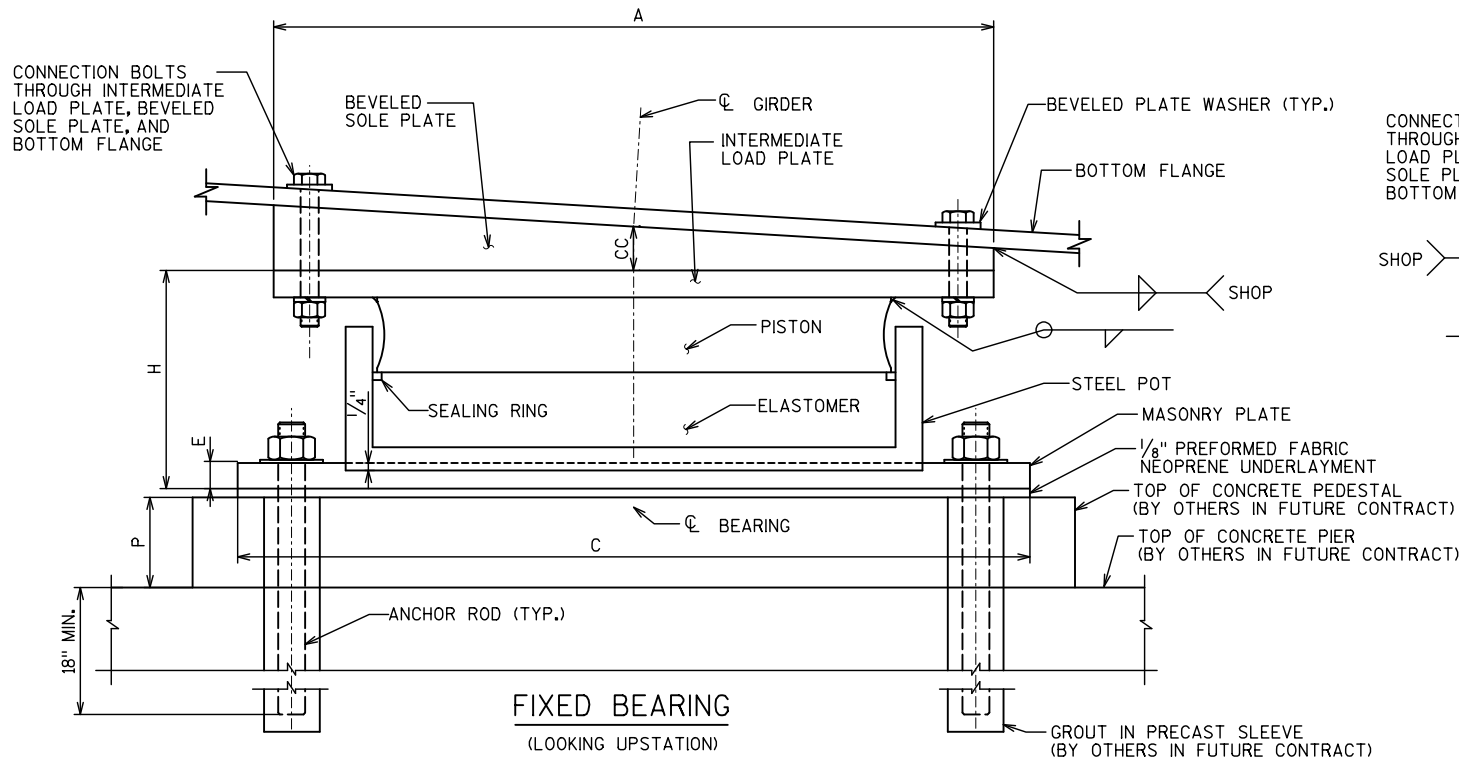


BEVELED SOLE PLATE DIMENSION KEY

(HOLES MATCHING INTERMEDIATE LOAD PLATE NOT SHOWN FOR CLARITY)

90% PLANS STEEL FABRICATION CONTRACT ONLY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY JRS		PLANS CK'D. MAD	
BEARING LAYOUT			SHEET 6 OF 26



NOTES:

- SEE BEARING LAYOUT SHEET FOR LOCATION-SPECIFIC DIMENSIONS.
- SEE JACKING PROVISIONS SHEET FOR LOCATION AND SIZE OF BEARING REPLACEMENT JACKING PADS ATTACHED TO BOTTOM OF GIRDER FLANGE.
- DESIGN BOLTED CONNECTION BETWEEN BEVELED SOLE PLATE AND INTERMEDIATE LOAD PLATE FOR THE COMBINED SPECIFIED HORIZONTAL LOADS SHOWN ON THE BEARING LAYOUT SHEETS PER AASHTO LRFD AND THE WISDOT BRIDGE MANUAL. FOR FUTURE BEARING REPLACEMENT, ARRANGE THE CONNECTION TO ENSURE ALL BOLTS CAN BE REMOVED WITHOUT INTERFERENCE FROM ANCHOR BOLTS OR OTHER OBSTRUCTIONS AFTER BEARING IS INSTALLED.
- HOLES IN TOP PLATE MAY BE SLOTTED OR OVERSIZED AS REQUIRED TO FACILITATE STEEL ERECTION. IF OVERSIZED OR SLOTTED HOLES ARE USED, DESIGN CONNECTION AS SLIP-RESISTANT PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- HOLES IN MASONRY PLATE SHALL BE A MAXIMUM OF 1/8" LARGER THAN THE SPECIFIED ANCHOR BOLT DIAMETER.
- BEVELED SOLE PLATE, INTERMEDIATE LOAD PLATE AND MASONRY PLATES ARE ALIGNED WITH THE GIRDER AND THE SUBSTRUCTURE BELOW.
- BEVELED SOLE PLATE AND INTERMEDIATE LOAD PLATE THICKNESSES TO BE SELECTED BY THE BEARING DESIGNER. MINIMUM 1".
- MASONRY PLATE THICKNESS TO BE CONFIRMED BY THE BEARING DESIGNER AND INCREASED IF REQUIRED, BUT NOT DECREASED FROM DIMENSION SHOWN.
- PROVIDE ANCHOR RODS IN ACCORDANCE WITH ASTM F1554 (GRADE 105) AND HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M232.
- DESIGN BEARINGS TO PERMIT REPLACEMENT BY JACKING THE BRIDGE A MAXIMUM OF 1/2".
- FINAL DISTANCE BETWEEN BOTTOM OF STEEL GIRDER AND TOP OF PIER IS THE SUMMATION OF "CC", THE ACTUAL "H" OF THE BEARING, 1/8" UNDERLAYMENT AND THE ACTUAL PEDESTAL HEIGHT "P". HEIGHT "P" IS ASSUMED TO BE 10" FOR ALL LOCATIONS.
- ALL ELEMENTS SHOWN ARE PROVIDED BY THE BEARING MANUFACTURER (UNLESS OTHERWISE NOTED) AND COORDINATED WITH THE STEEL FABRICATOR.
- THE CONTRACTOR IS RESPONSIBLE DURING STORAGE OF THE BEARING TO PREVENT OVER-ROTATION OR SLIDING OF THE BEARING. CONSTRUCTION ROTATIONS MUST NOT EXCEED THE ALLOWABLE ROTATIONS SHOWN.
- DO NOT DISASSEMBLE ANY BEARING WITHOUT THE PRESENCE OF THE TECHNICAL REPRESENTATIVE OF THE BEARING MANUFACTURER.
- A TECHNICAL REPRESENTATIVE FROM THE BEARING MANUFACTURER MUST BE PRESENT DURING INSTALLATION OF THE BEARINGS IN A FUTURE ERECTION AND CONSTRUCTION CONTRACT BY OTHERS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
		DRAWN BY JRS	PLANS CK'D. MAD
BEARING DETAILS			SHEET 7 OF 26

LEGEND:

▲ SUGGESTED JACKING LOCATIONS FOR FUTURE BEARING REPLACEMENT.

NOTES:

THIS DRAWING SHOWS DETAILS AND LOCATION OF JACKING PADS AND ADDITIONAL JACKING STIFFENERS REQUIRED FOR FUTURE BEARING REPLACEMENT.

JACKING PAD DIMENSIONS AND LOCATIONS ARE BASED ON THE MINIMUM CLEARANCES SHOWN AND THE NOMINAL BEARING DIMENSIONS GIVEN ON BEARING LAYOUT SHEETS. MAKE ADJUSTMENTS AS REQUIRED TO ACCOMMODATE ACTUAL BEARINGS SUPPLIED.

JACKING PADS ARE PROVIDED TO GIVE A JACKING SURFACE THAT IS APPROXIMATELY LEVEL AND TO ENSURE THAT JACKING LOADS ARE APPLIED TO THE CORRECT LOCATION.

ADDITIONAL MEASURES SHALL BE TAKEN TO CORRECT FOR ANY UNINTENDED SLOPE AND TO ENSURE THAT JACKS ARE POSITIVELY HELD IN POSITION ON THE JACKING PADS.

ESTIMATED JACKING FORCES ARE GIVEN AT EACH PAD AND ARE BASED ON DEAD LOAD AND LIVE LOAD REACTIONS ONLY AND NO ADDITIONAL ALLOWANCES HAVE BEEN MADE. THESE FORCES MUST BE INCREASED TO ALLOW FOR JACK FRICTION AND OTHER FACTORS. RECOMMENDED MINIMUM JACK CAPACITY IS 2 TIMES THE TABULATED VALUES.

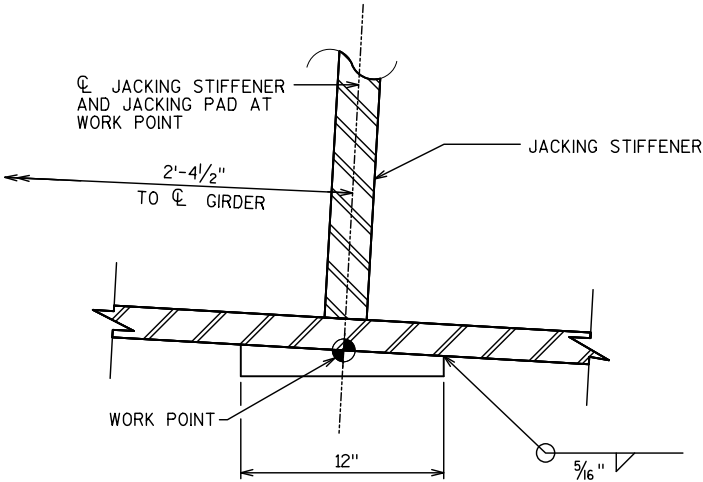
FORCES AND RECOMMENDATIONS ARE PROVIDED FOR INFORMATION ONLY AND MUST BE VERIFIED BY THE ENGINEER RESPONSIBLE FOR JACKING OPERATIONS.

CONTROL JACKS TO ENSURE THAT FORCES APPLIED TO ALL JACKING PADS AT A SINGLE BEARING LOCATION ARE APPROXIMATELY EQUAL. IF THIS REQUIREMENT IS NOT MET, A COMPLETE ANALYSIS OF THE PIER DIAPHRAGM SYSTEM WILL BE REQUIRED IN ORDER TO ACCOUNT FOR THE REDISTRIBUTION OF FORCES WITHIN THE SYSTEM.

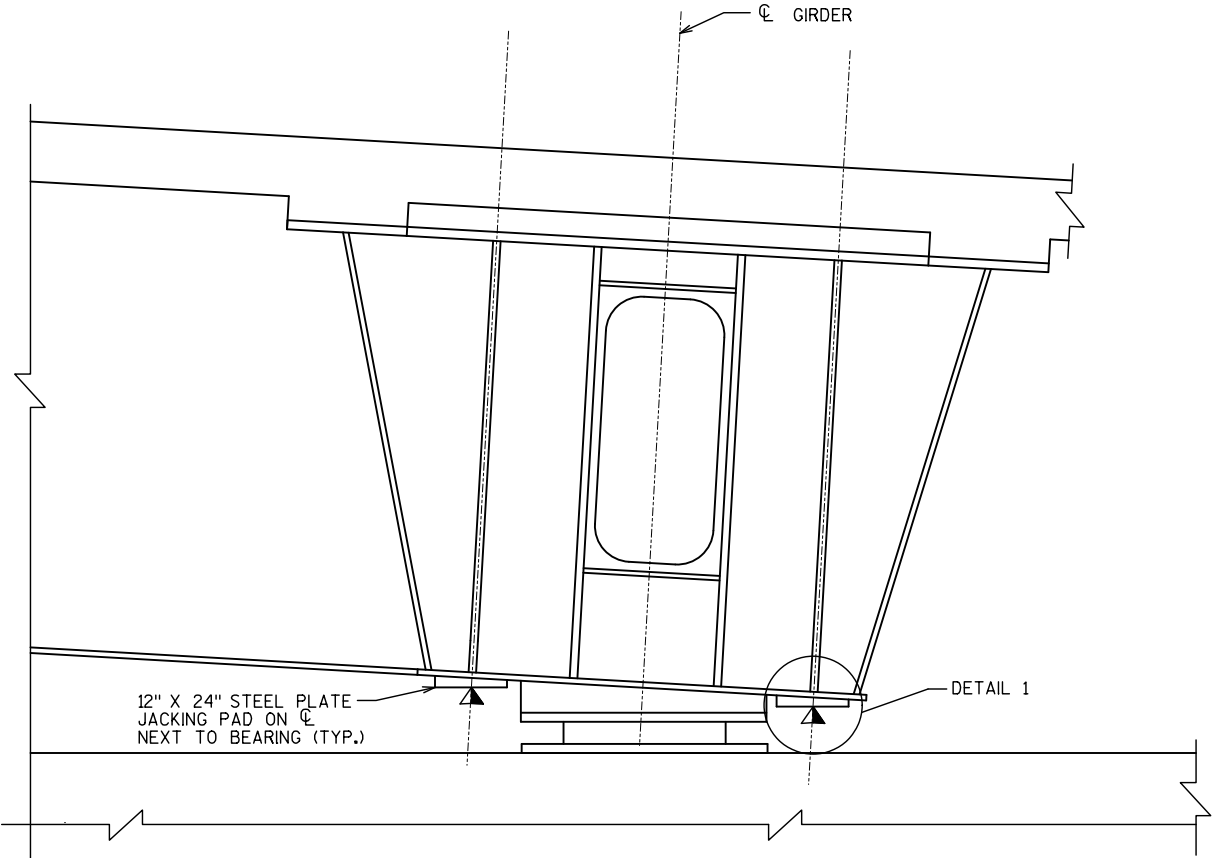
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY JRS		PLANS CK'D. MAD	
JACKING PROVISIONS		SHEET 8 OF 26	

JACKING PROVISIONS

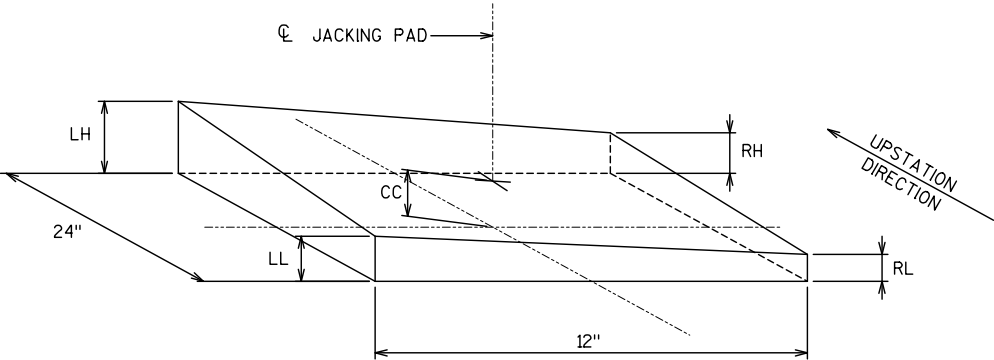
SHEET 8 OF 26



DETAIL 1
NOT TO SCALE



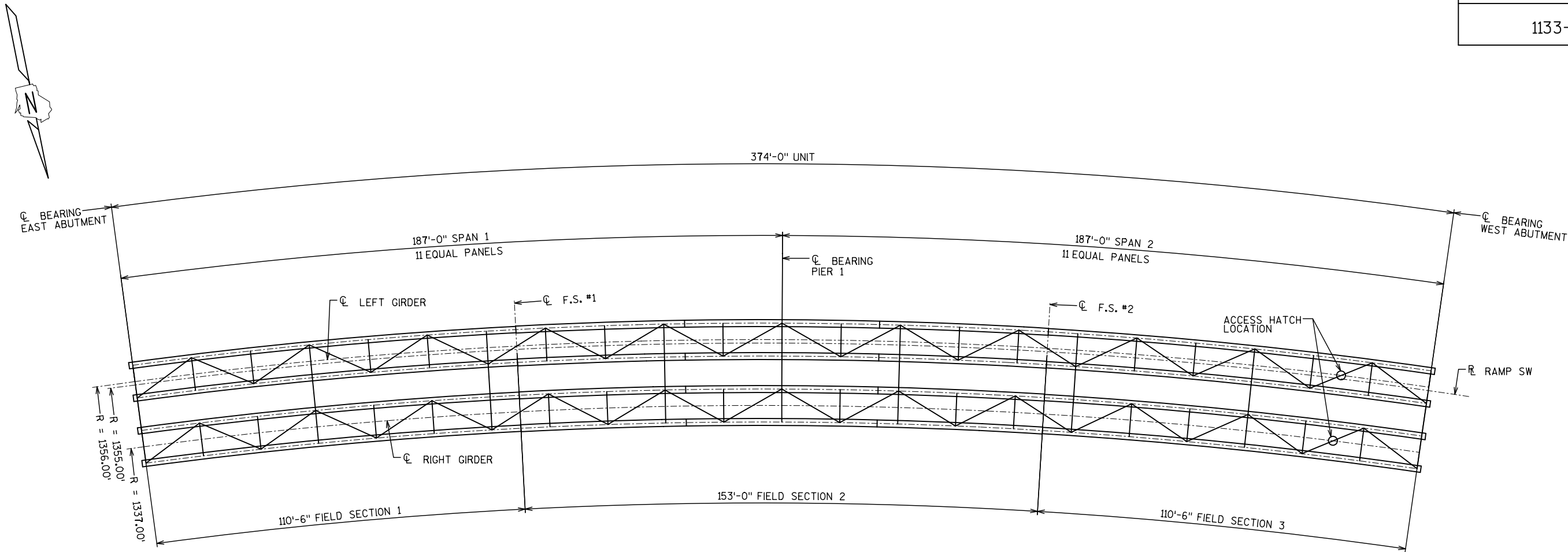
TYPICAL ELEVATION
(LOOKING UPSTATION)



JACKING PAD DIMENSION KEY

LOCATION	NUMBER OF PADS PER BOX	LEFT BOX JACKING PAD DIMENSIONS					RIGHT BOX JACKING PAD DIMENSIONS					MIN. JACK FORCE (KIP)
		LL (IN)	RL (IN)	LH (IN)	RH (IN)	CC (IN)	LL (IN)	RL (IN)	LH (IN)	RH (IN)	CC (IN)	
E. ABUT	2	1.72	1.00	2.14	1.42	1.57	1.72	1.00	2.14	1.42	1.57	330
PIER 1	2	1.72	1.00	1.97	1.25	1.48	1.72	1.00	1.97	1.25	1.48	740
W. ABUT	2	1.72	1.00	1.79	1.07	1.40	1.72	1.00	1.79	1.07	1.40	330

MINIMUM JACK FORCE IS PER JACKING PAD.



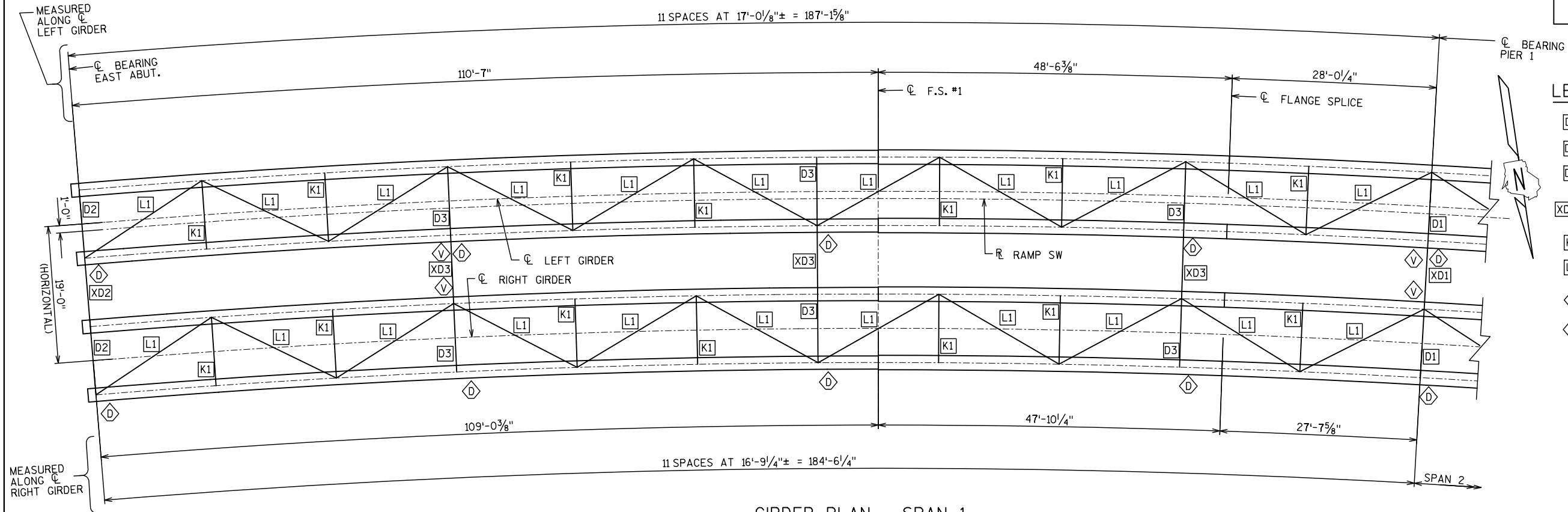
FRAMING PLAN

LEGEND

F.S. = BOLTED FIELD SPLICE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY JRS		PLANS CK'D. MAD	
FRAMING PLAN		SHEET 9 OF 26	

90% PLANS STEEL FABRICATION CONTRACT ONLY



LEGEND

- D1 INTERIOR DIAPHRAGM OVER PIER FOR CONTINUOUS SPAN
- D2 INTERIOR DIAPHRAGM AT ABUTMENT
- D3 INTERIOR INTERMEDIATE DIAPHRAGM
- XDA EXTERIOR DIAPHRAGM (WHERE 'A' INDICATES CORRESPONDING INTERIOR DIAPHRAGM NUMBER)
- K1 INTERIOR K FRAME
- L1 TOP FLANGE LATERAL BRACING
- V VENT HOLE LOCATION
- D DRAIN HOLE LOCATION

NOTES:

SHEAR STUDS FURNISHED AND INSTALLED BY OTHERS DURING FUTURE ERECTION CONTRACT.

ALL LONGITUDINAL DIMENSIONS SHOWN ARE MEASURED HORIZONTALLY ALONG CENTERLINE OF EACH GIRDER. CONTRACTOR SHALL MAKE ADJUSTMENTS FOR CAMBER AND GRADE.

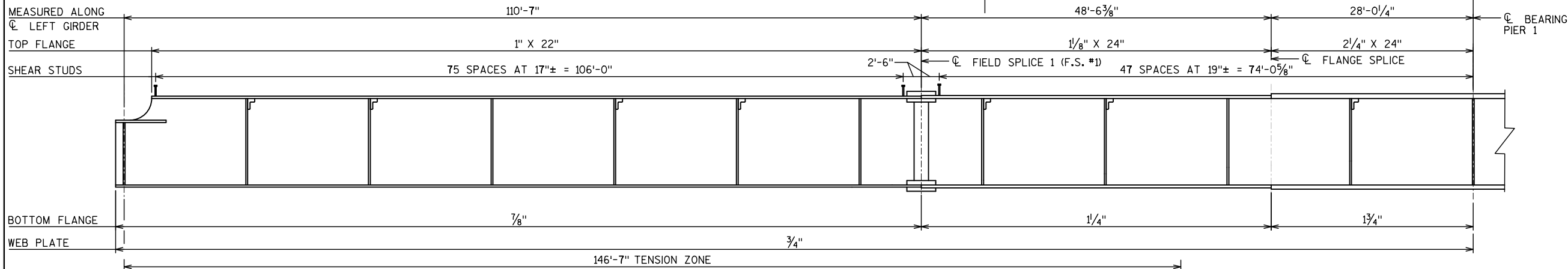
FOR SHOP WELDED BUTT SPLICES OF FLANGES, FABRICATOR MAY CHOOSE TO ELIMINATE SPLICE AND CONTINUE THICKER PLATE TO END OF SECTION AT FIELD SPLICE AT NO ADDITIONAL COST TO THE OWNER. ADJUST CAMBER IF PLATE SIZES ARE CHANGED.

TENSION ZONES SHOWN ABOVE THE GIRDER ELEVATION INDICATE TENSION ZONES FOR TOP FLANGE AND UPPER PORTION OF WEB.

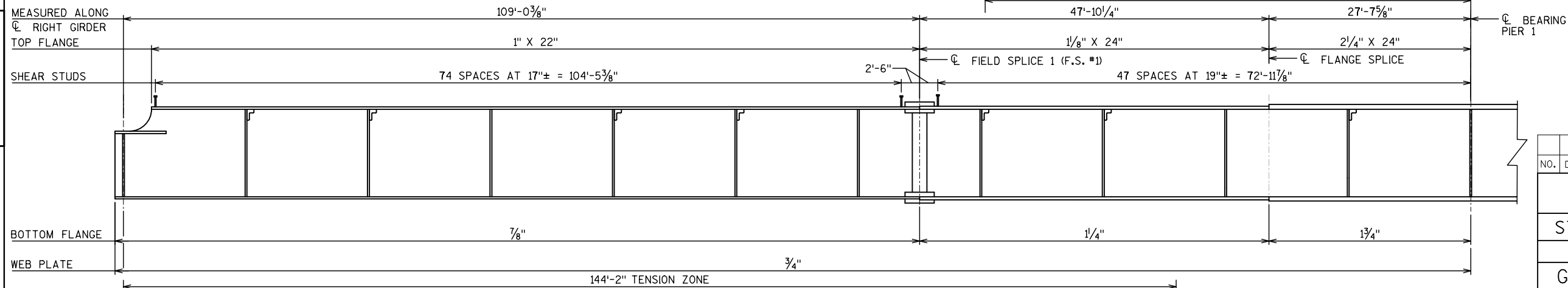
TENSION ZONES SHOWN BELOW THE GIRDER ELEVATION INDICATE TENSION ZONES FOR BOTTOM FLANGE AND LOWER PORTION OF WEB.

FOR OPTIONAL SHOP SPLICE DETAIL AS REQUIRED DUE TO MAXIMUM PLATE LENGTHS AVAILABLE FROM MILL, SEE MISCELLANEOUS GIRDER DETAILS SHEET.

GIRDER PLAN - SPAN 1



LEFT GIRDER ELEVATION - SPAN 1



RIGHT GIRDER ELEVATION - SPAN 1

90% PLANS STEEL FABRICATION CONTRACT ONLY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY JRS		PLANS CK'D. MAD	
GIRDER PLAN & ELEVATION SPAN 1			SHEET 10 OF 26



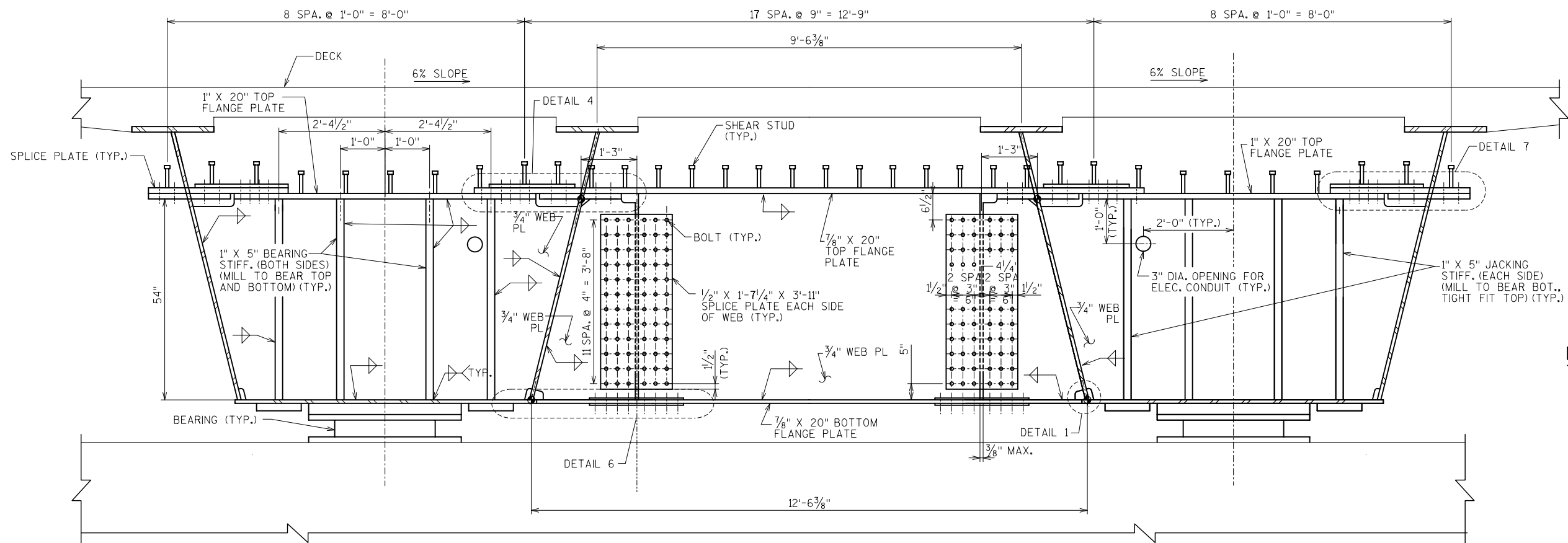
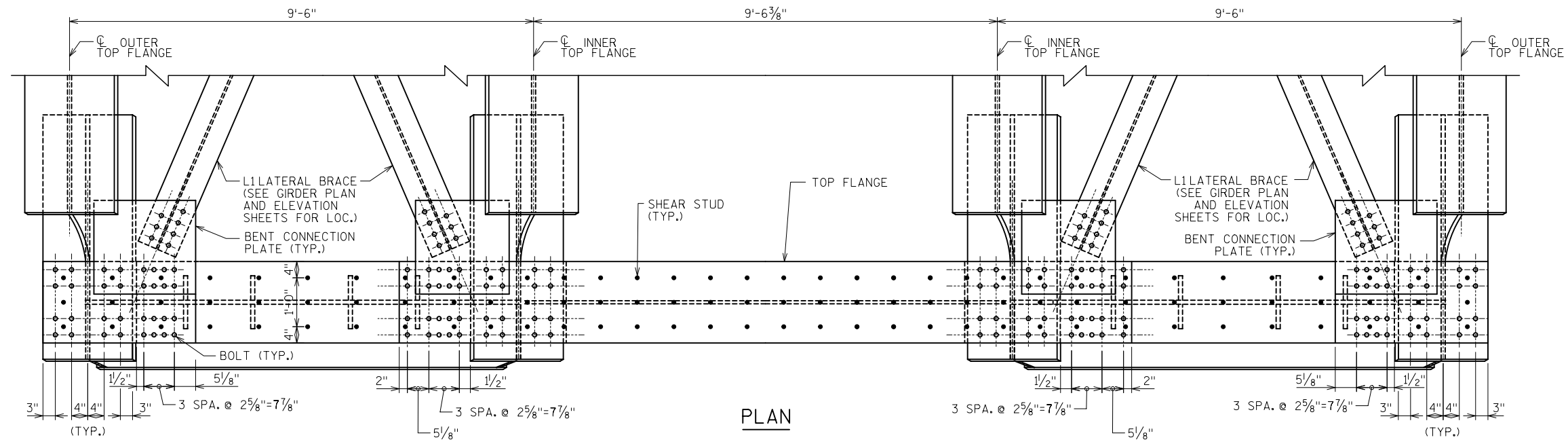
FOR NOTES AND LEGEND SEE
GIRDER PLAN AND ELEVATION
SPAN 1

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY		JRS	PLANS CK'D. MAD
GIRDER PLAN & ELEVATION SPAN 2		SHEET 11 OF 26	

90% PLANS STEEL FABRICATION CONTRACT ONLY

90% PLANS STEEL FABRICATION CONTRACT ONLY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
	DRAWN BY	MJA	PLANS CK'D. MDR
INTERMEDIATE PIER DIAPHRAGMS XD1 AND D1			SHEET 12 OF 20



NOTES:

SHEAR STUDS FURNISHED AND INSTALLED BY OTHERS DURING ERECTION.

ALL BOLTS SHOWN SHALL BE $\frac{7}{8}$ " DIAMETER, EXCEPT BOLTS FOR LATERAL BRACE CONNECTIONS WHICH ARE 1" DIAMETER.

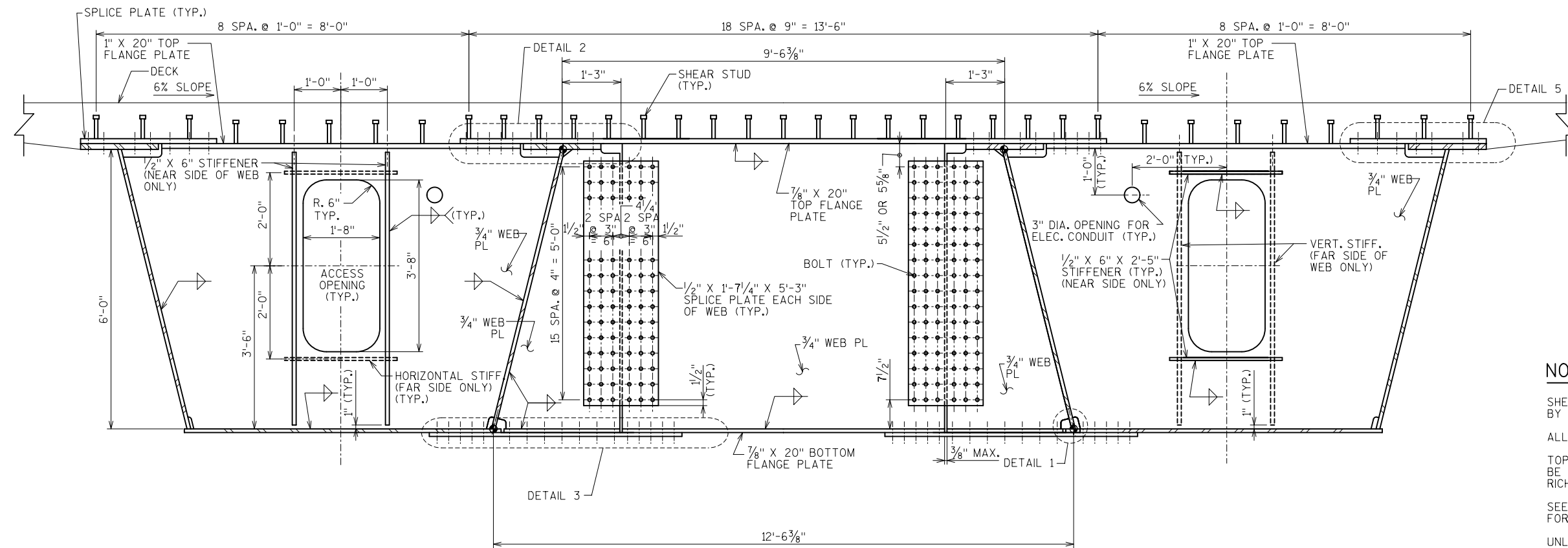
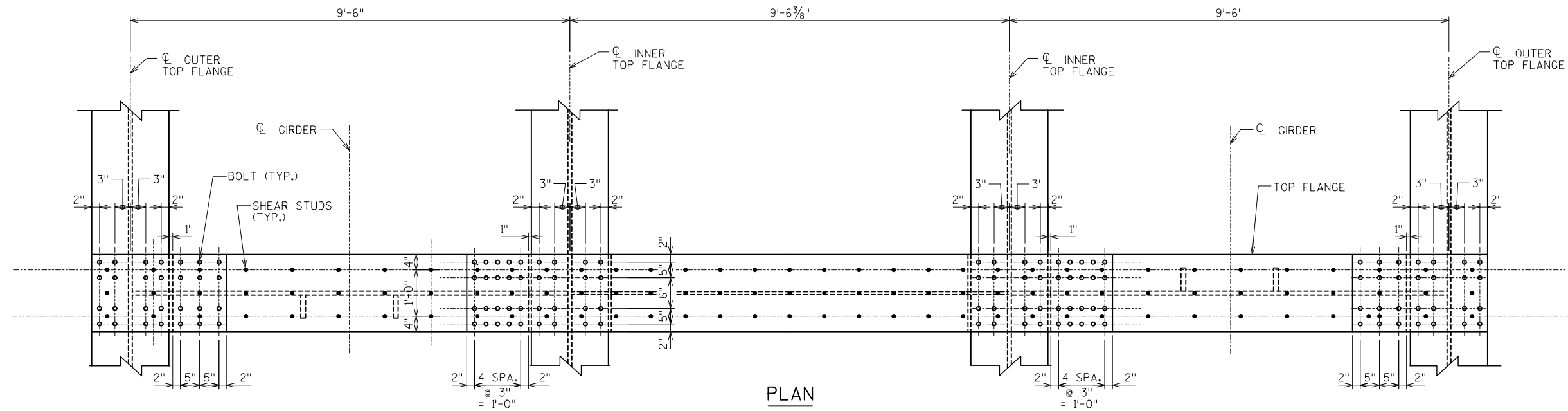
TOP OF DIAPHRAGM TOP FLANGE PLATE TO BE PROVIDED WITH 3 MIL OF AN ORGANIC ZINC RICH PRIMER.

SEE MISCELLANEOUS DIAPHRAGM DETAILS SHEET FOR DETAILS 1, 4, 6 AND 7 AND SECTIONS.

UNLESS OTHERWISE NOTED, ALL DIMENSIONS GIVEN ARE PARALLEL OR PERPENDICULAR TO SUPERELEVATION.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MDR	
ABUTMENT DIAPHRAGMS XD2 & D2			SHEET 13 OF 26

90% PLANS STEEL FABRICATION CONTRACT ONLY



INTERNAL DIAPHRAGM D3

(SHOWING FACE WITH
VERTICAL STIFFENERS)

EXTERNAL DIAPHRAGM XD3

INTERNAL DIAPHRAGM D3

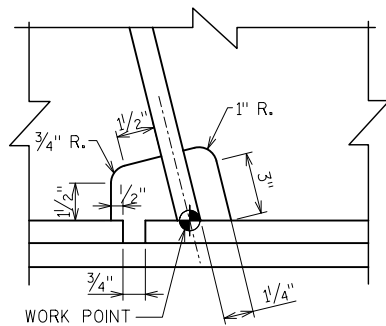
(SHOWING FACE WITH
HORIZONTAL STIFFENERS)**NOTES:**SHEAR STUDS FURNISHED AND INSTALLED
BY OTHERS DURING ERECTION.

ALL BOLTS SHOWN SHALL BE 7/8" DIAMETER.

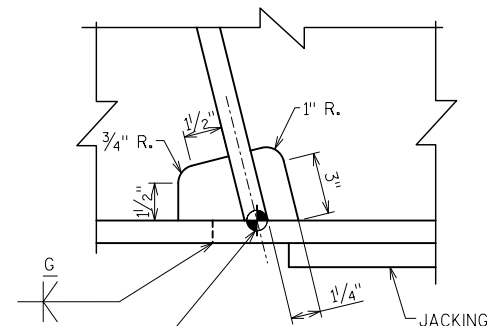
TOP OF DIAPHRAGM TOP FLANGE PLATE TO
BE PROVIDED WITH 3 MIL OF ORGANIC ZINC
RICH PRIMER.SEE MISCELLANEOUS DIAPHRAGM DETAILS SHEET
FOR DETAILS 1, 2, 3 AND 5 AND SECTIONS.UNLESS OTHERWISE NOTED, ALL DIMENSIONS GIVEN
ARE PARALLEL OR PERPENDICULAR TO
SUPERELEVATION.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MDR	
INTERMEDIATE DIAPHRAGMS XD3 AND D3			SHEET 14 OF 26

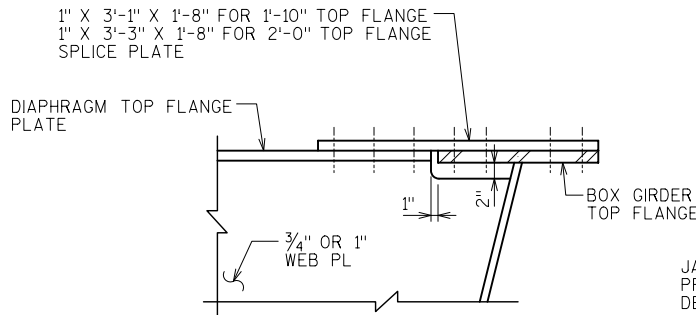
90% PLANS STEEL FABRICATION CONTRACT ONLY



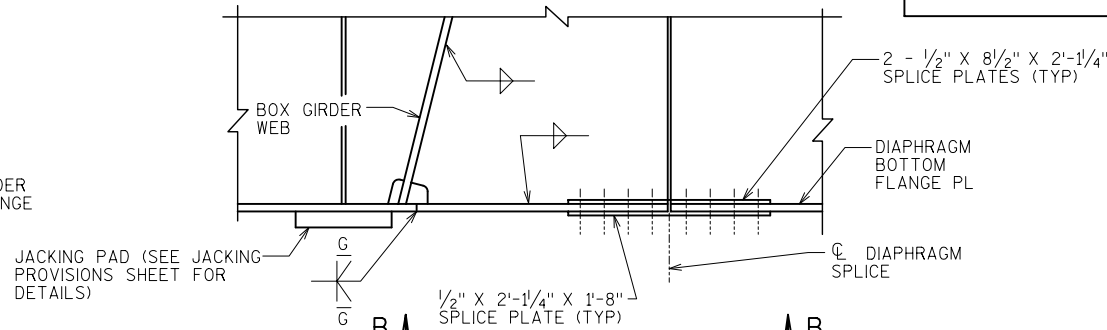
DETAIL 1
DIAPHRAGM XD3/D3



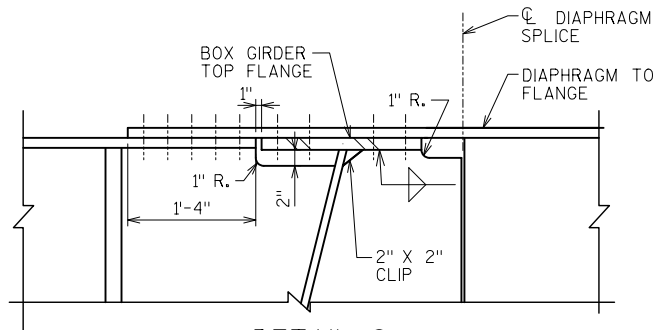
DETAIL 1
DIAPHRAGMS XD1/D1 AND XD2/D2



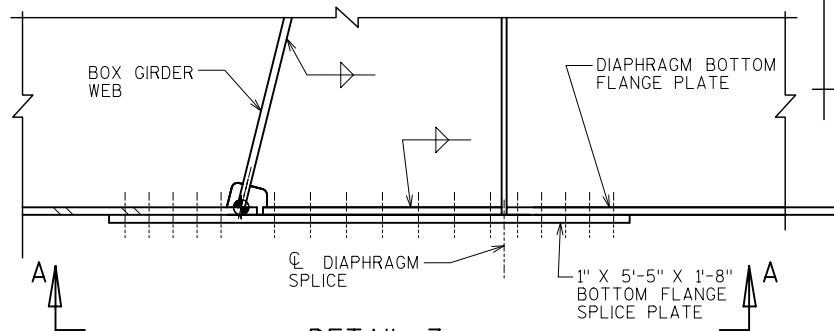
DETAIL 5
DIAPHRAGMS XD1/D1 AND XD3/D3



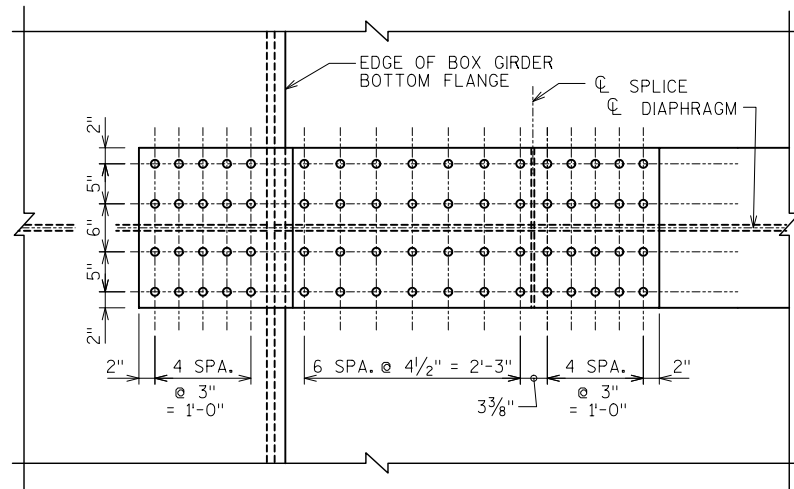
DETAIL 6
DIAPHRAGMS XD1/D1 AND XD2/D2



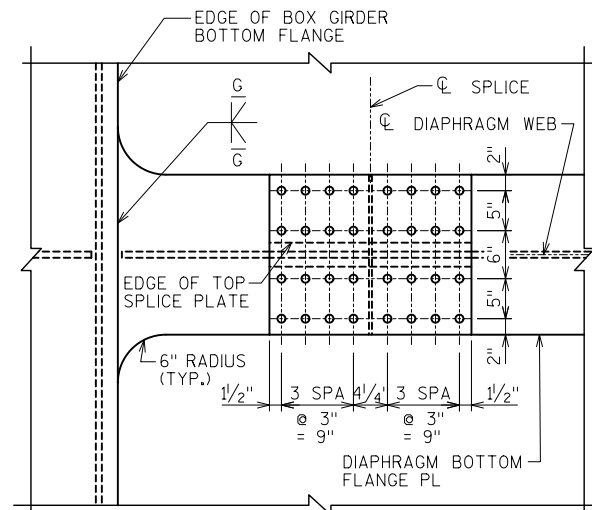
DETAIL 2
XD1/D1 AND XD3/D3



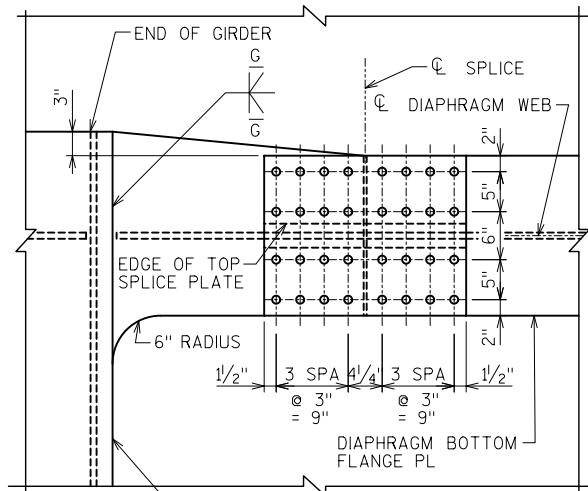
DETAIL 3
DIAPHRAGM XD3/D3



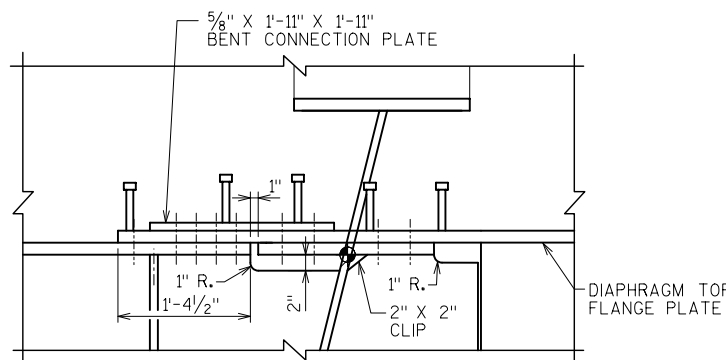
SECTION A-A
THIS SHEET



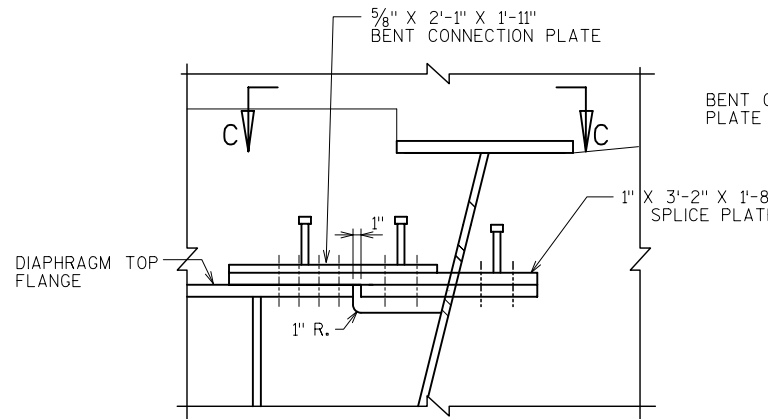
SECTION B-B
THIS SHEET
(DIAPHRAGM XD1/D1)



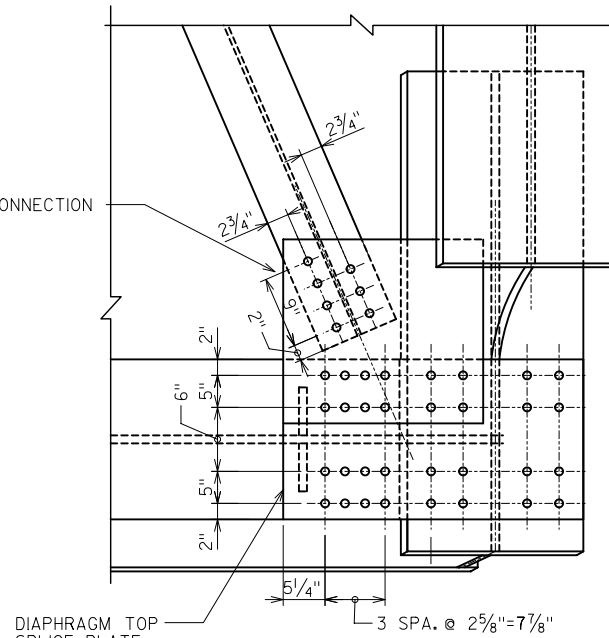
SECTION B-B
THIS SHEET
(DIAPHRAGM XD2/D2)



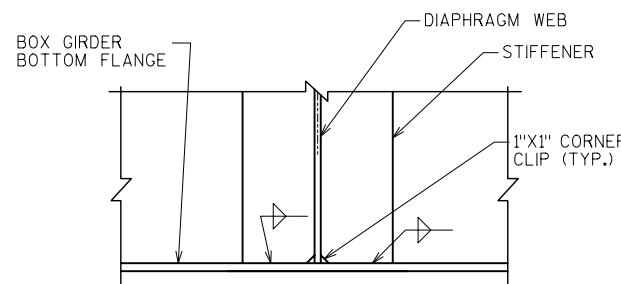
DETAIL 4
DIAPHRAGMS XD2/D2



DETAIL 7
DIAPHRAGMS XD2/D2



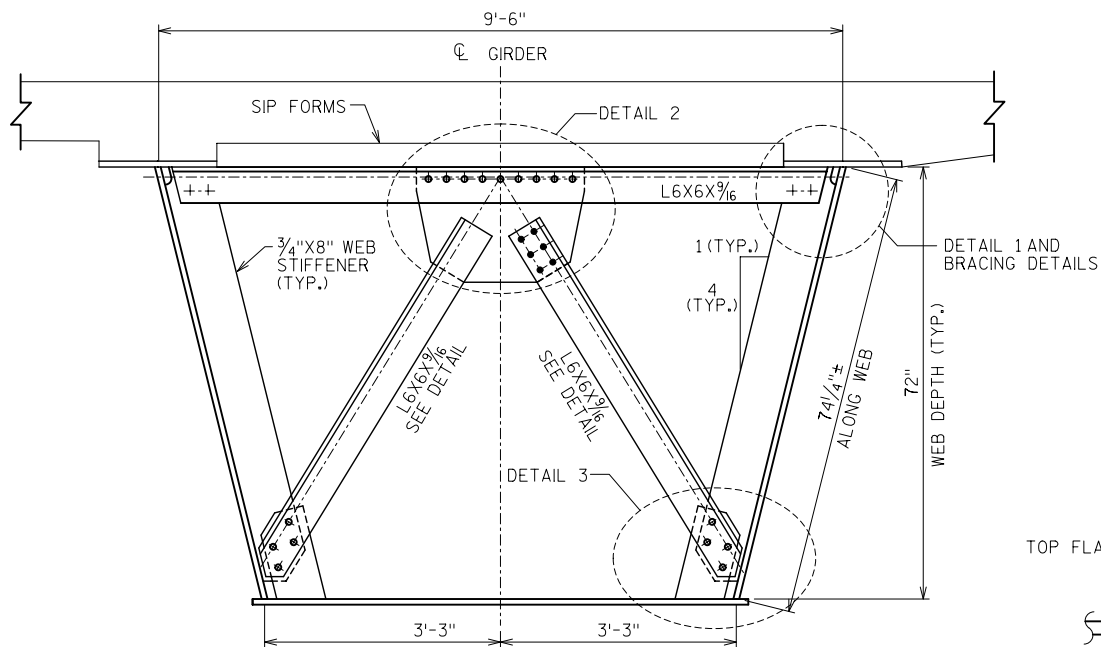
SECTION C-C
THIS SHEET
(SHEAR STUDS NOT SHOWN FOR CLARITY)



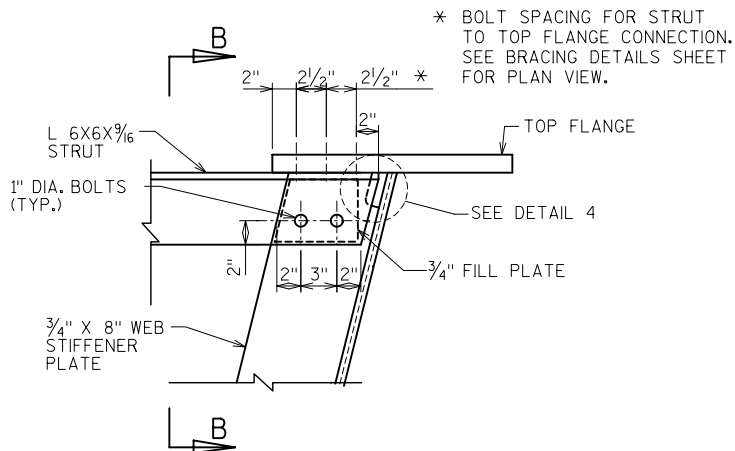
STIFFENER TO FLANGE DETAIL

ALL DIAPHRAGMS AND ALL STIFFENERS
NO WELD AT TOP OF STIFFENERS

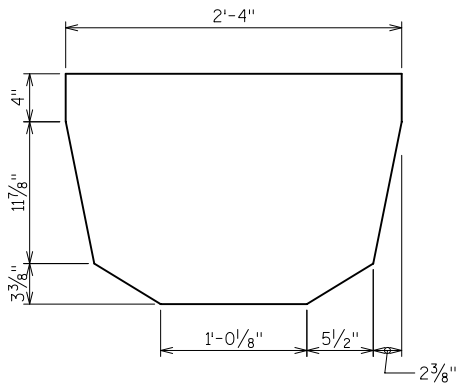
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MDR	
MISCELLANEOUS DIAPHRAGM DETAILS			SHEET 15 OF 26



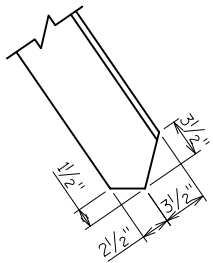
TYPICAL SECTION AT K-FRAME



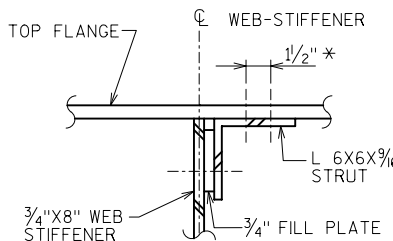
DETAIL 1



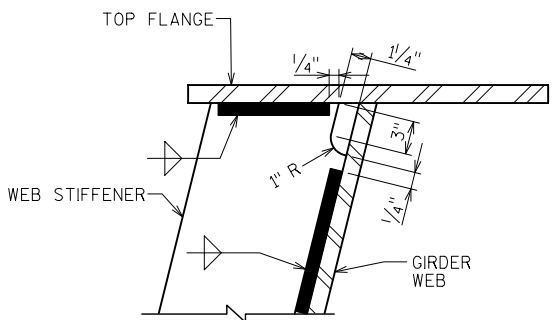
3/4" CONN. PLATE DETAIL



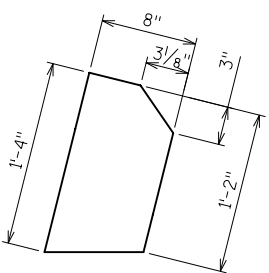
L 6"X6"X $\frac{9}{16}$ " DETAIL



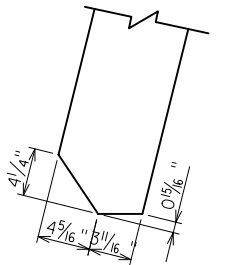
SECTION B-B



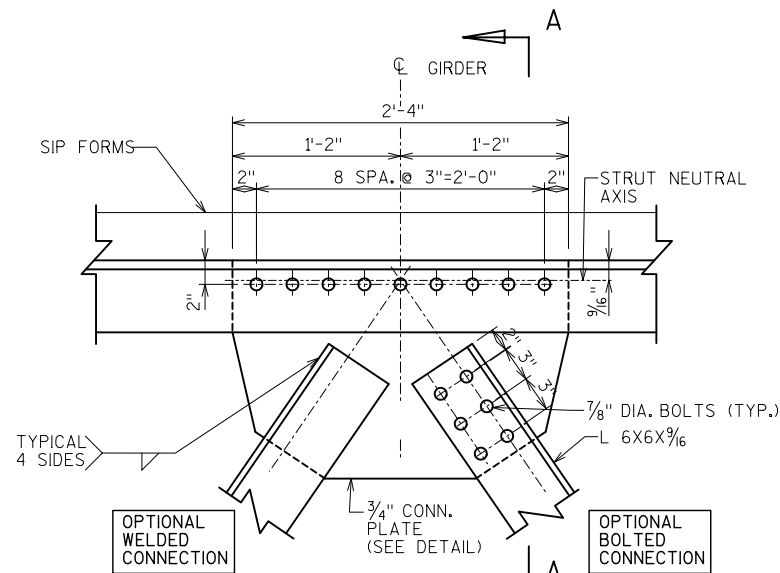
DETAIL 4



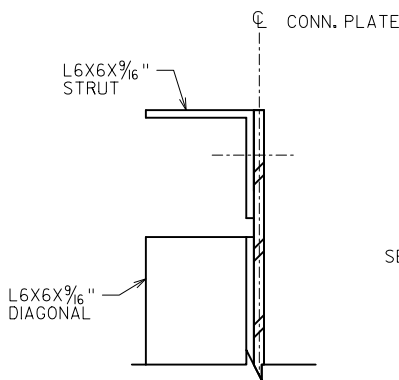
PL 3/4"X8" DETAIL



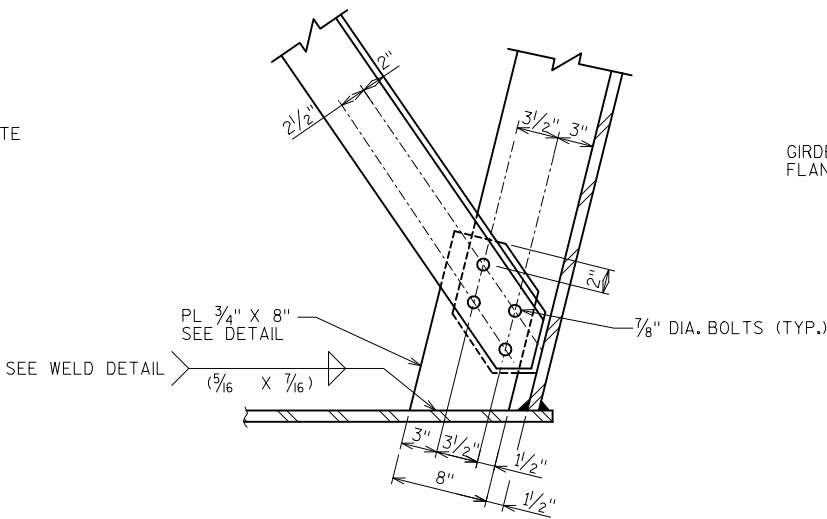
WEB STIFFENER DETAIL



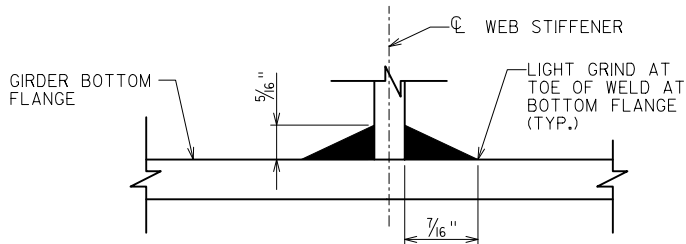
DETAIL 2



SECTION A-A



DETAIL 3



WEB STIFFENER WELD DETAIL

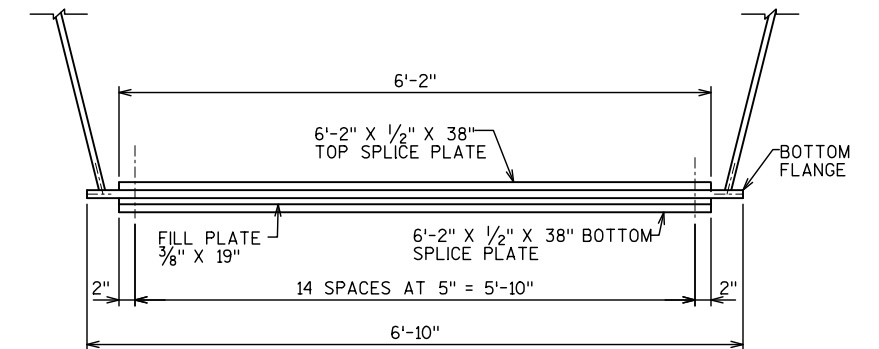
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MDR	
INTERIOR CROSS FRAME K1 DETAILS			SHEET 16 OF 26



TYPICAL TOP FLANGE CONNECTION



TYPICAL WEB CONNECTION

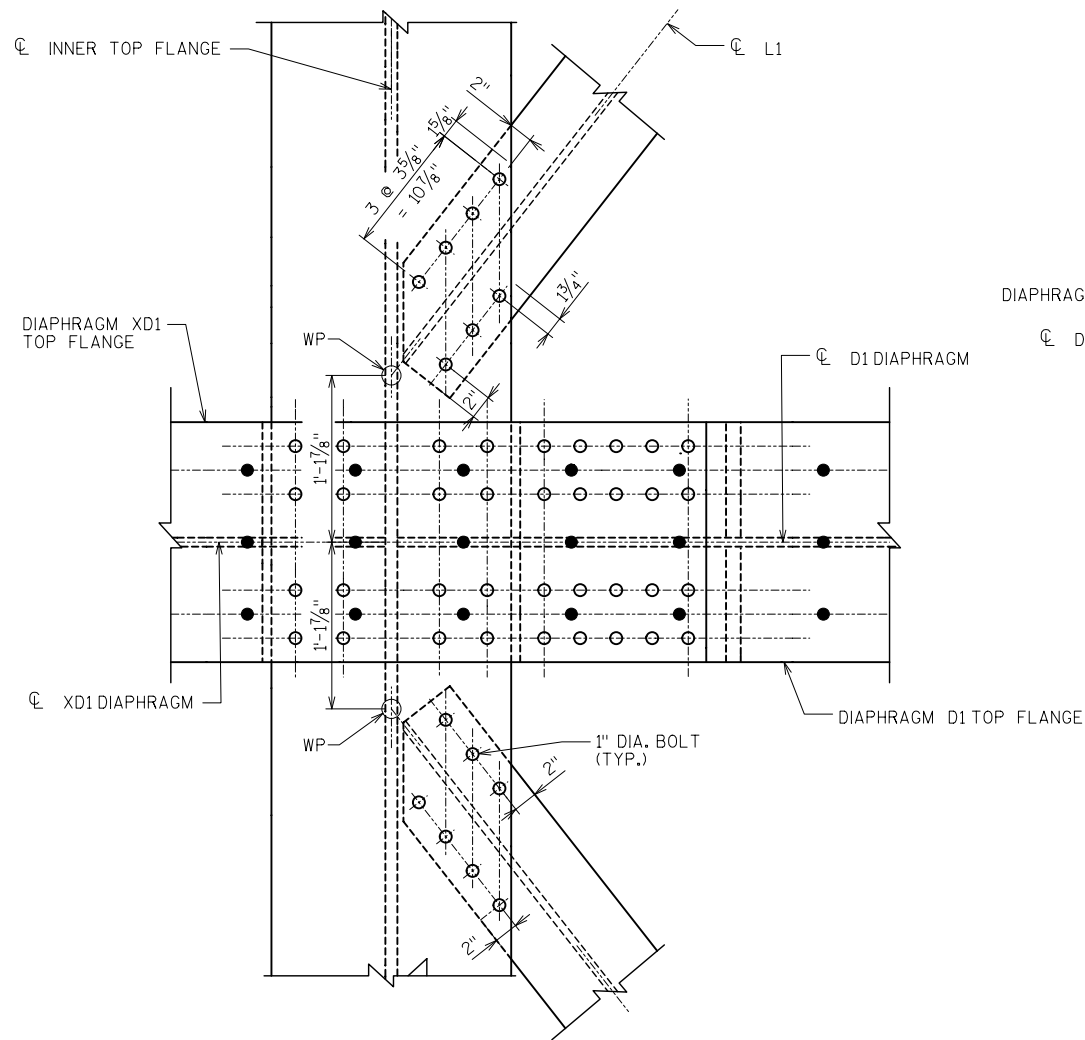


SECTION

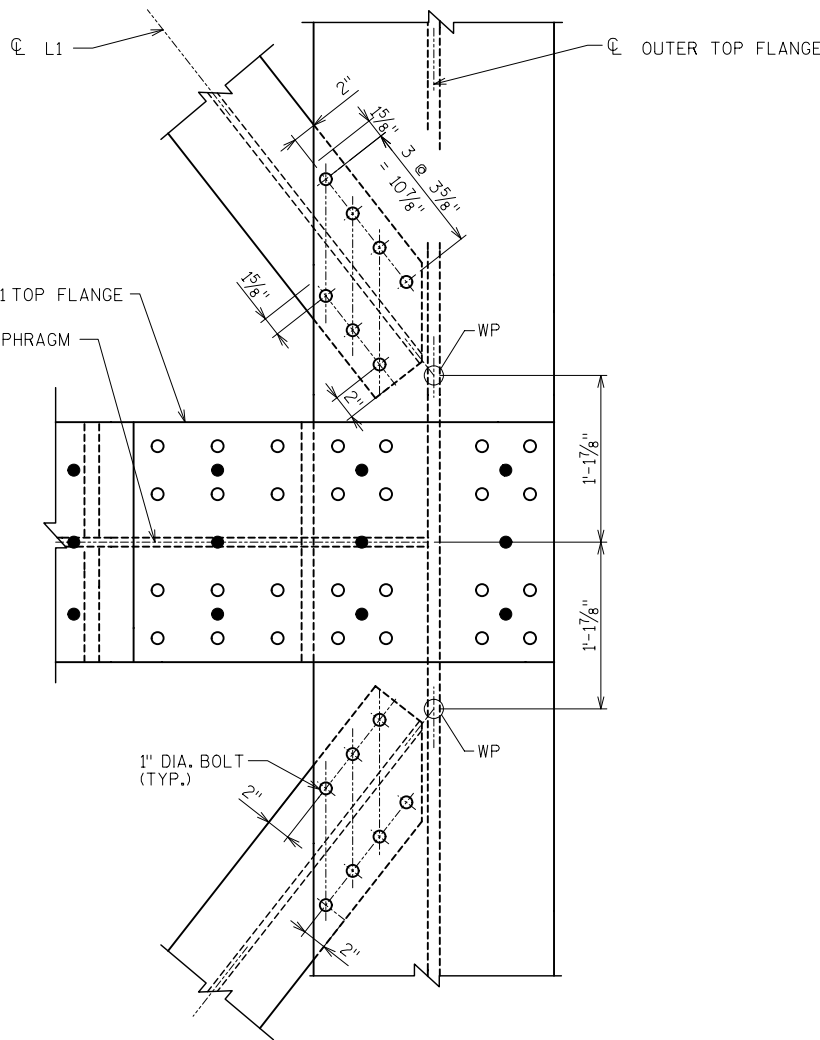
TYPICAL BOTTOM FLANGE CONNECTION

DETAILS

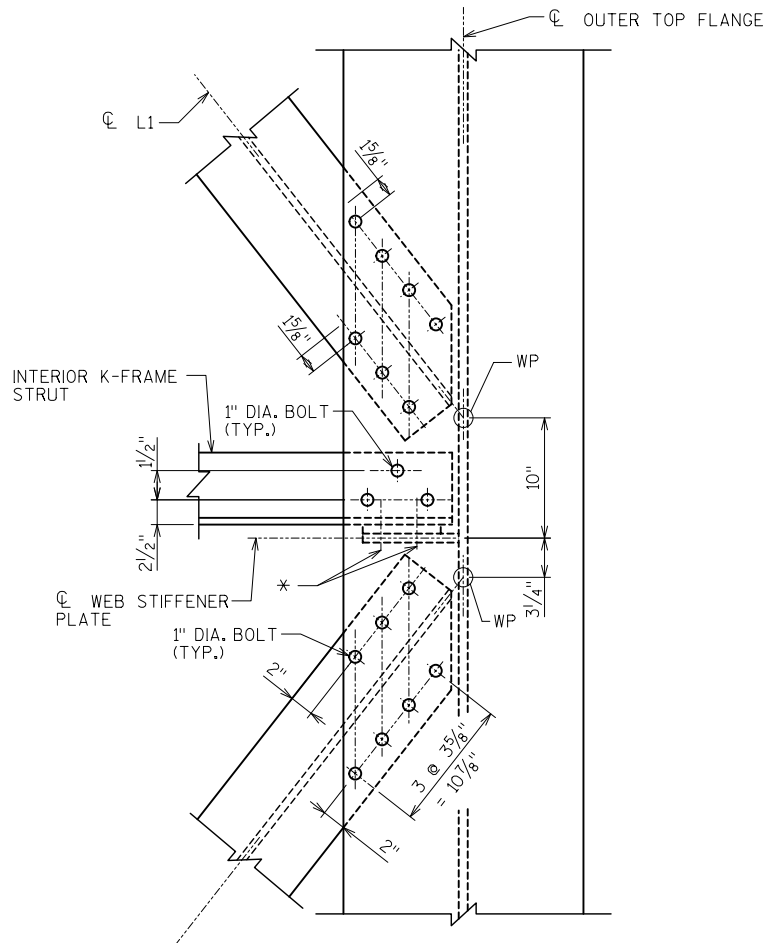
90% PLANS STEEL FABRICATION CONTRACT ONLY



PLAN VIEW AT DIAPHRAGM XD1/D1
(SHOWING INNER TOP FLANGE)
(XD3/D3 SIMILAR)



PLAN VIEW AT DIAPHRAGM XD1/D1
(SHOWING OUTER TOP FLANGE)
(XD3/D3 SIMILAR)



PLAN VIEW AT K-FRAME
(SHOWING OUTER TOP FLANGE)
(INNER TOP FLANGE SIMILAR)

NOTES:

SEE GIRDER PLAN AND ELEVATION SHEETS
FOR LOCATIONS OF DETAILS.

LATERAL BRACE MEMBERS:
L1: WT7X41

* SEE INTERIOR CROSS FRAME K-1 DETAILS
SHEET FOR ADDITIONAL DETAILS FOR
BOLTED CONNECTION OF STRUT ANGLE
LEG TO WEB STIFFENER.

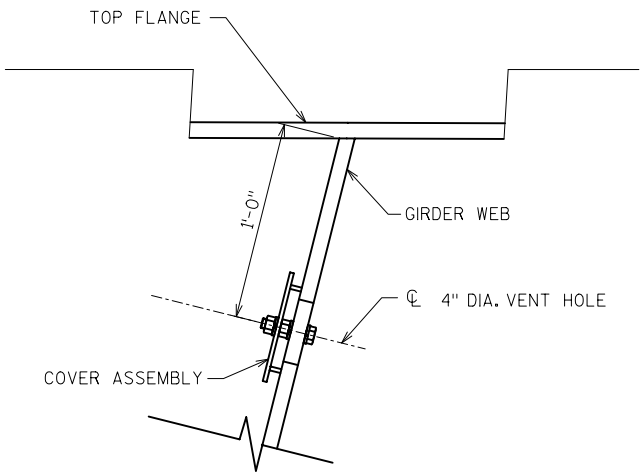
90% PLANS STEEL FABRICATION CONTRACT ONLY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MDR	
BRACING CONNECTION DETAILS		SHEET 18 OF 26	

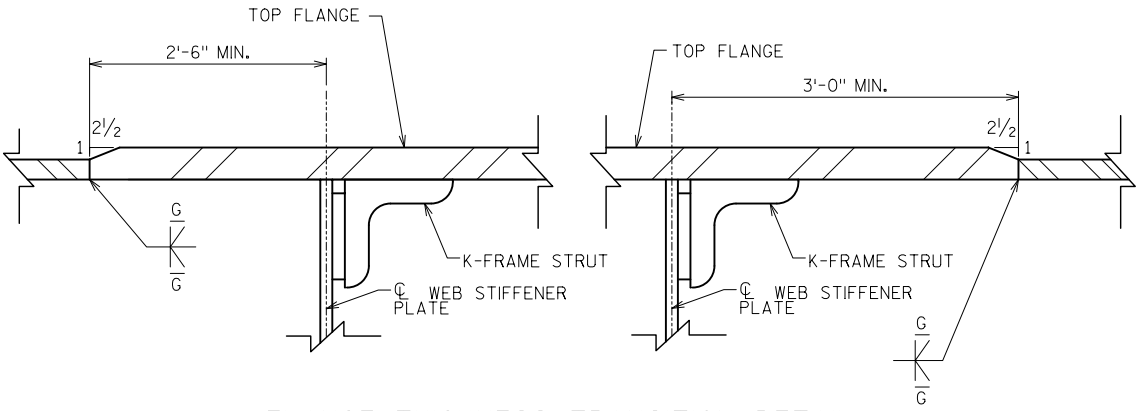


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
		DRAWN BY MJA	PLANS CK'D. MDR
BRACING CONNECTION		SHEET 19 OF 26	
DETAILS SHEET 2			

90% PLANS STEEL FABRICATION CONTRACT ONLY

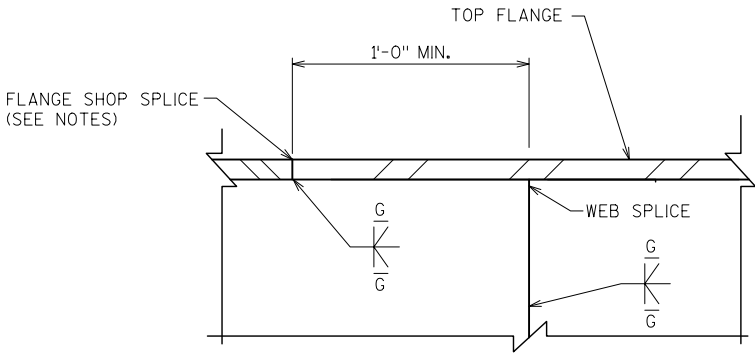


VENT HOLE LOCATION



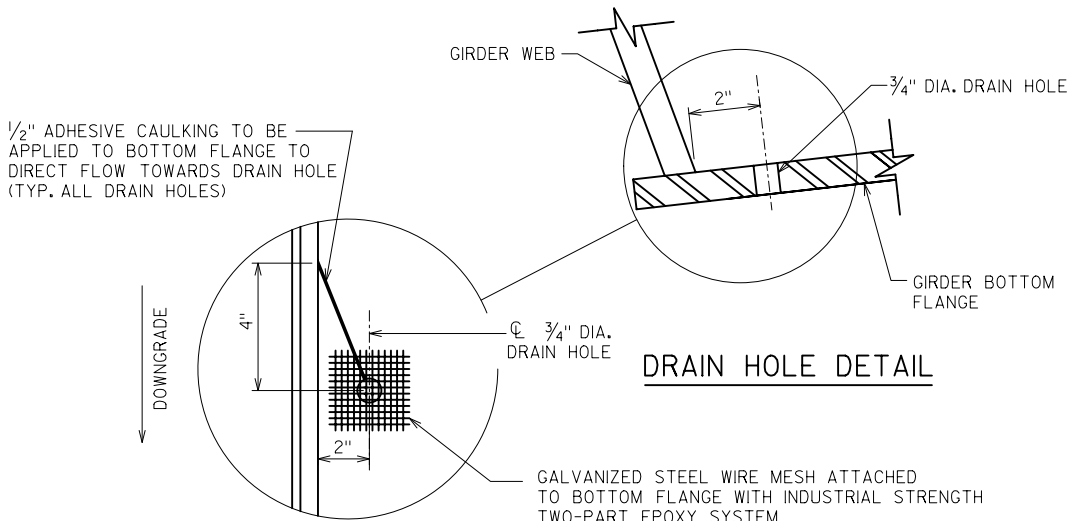
FLANGE THICKNESS TRANSITION DETAIL

NOT TO SCALE



OPTIONAL SHOP SPLICE DETAIL

NOT TO SCALE
(SEE FLANGE THICKNESS TRANSITION DETAIL FOR
MINIMUM SPACING OF SHOP SPLICES TO STIFFENERS AND
K-FRAMES)

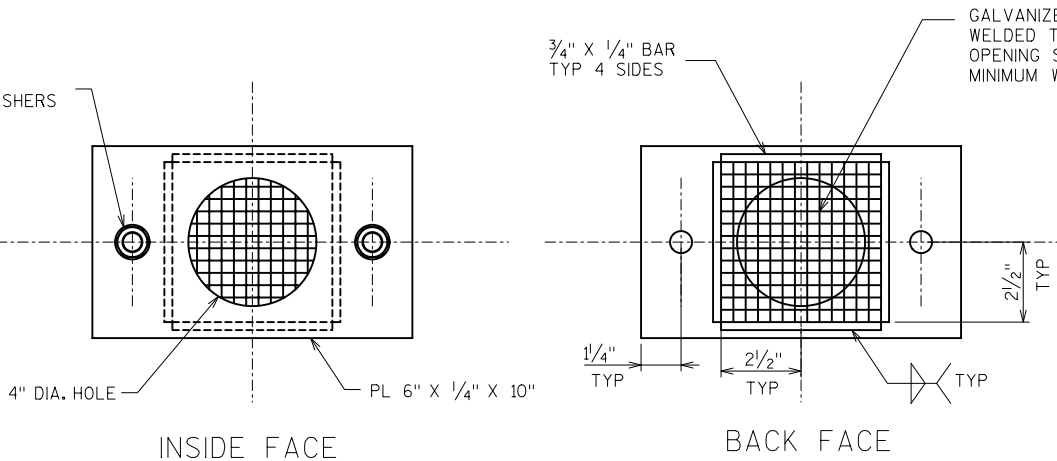


DRAIN HOLE DETAIL

PLAN OF DRAIN HOLES

GALVANIZED STEEL WIRE MESH ATTACHED
TO BOTTOM FLANGE WITH INDUSTRIAL STRENGTH
TWO-PART EPOXY SYSTEM
MAXIMUM MESH OPENING SIZE: 3/8" X 3/8"
MINIMUM WIRE GAUGE: 18 AWG (0.04")

5/8" BOLTS WITH
2 NUTS & 3 WASHERS



VENT HOLE COVER ASSEMBLY

NOT TO SCALE

NOTES:

SEE GIRDER PLAN AND ELEVATION SHEETS
FOR DRAIN AND VENT HOLE LOCATIONS.

LOCATE ALL VENT HOLES ON THE
INTERIOR WEBS - I.E. THE RIGHT WEB OF
THE LEFT GIRDER AND THE LEFT WEB OF
THE RIGHT GIRDER.

VENT HOLE COVER ASSEMBLIES SHALL BE
HOT- DIP GALVANIZED AFTER FABRICATION
AND INSTALLED AFTER GIRDERS ARE
PAINTED.

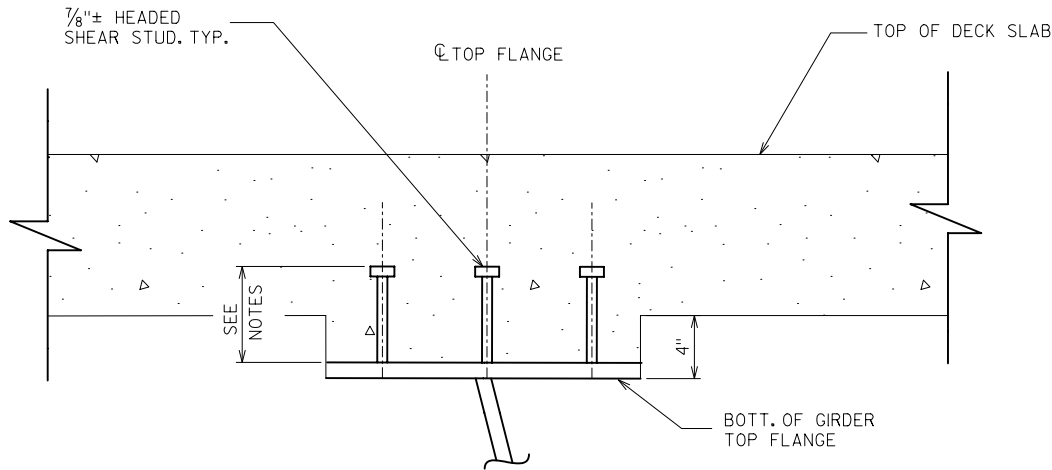
LOCATE ALL DRAIN HOLES ON THE LOW
SIDE OF THE GIRDER AS SHOWN.

COST OF ADHESIVE CAULKING, WIRE MESH
AND ATTACHMENT IS INCLUDED IN THE COST
OF "FABRICATED STRUCTURAL STEEL HPS 50W".

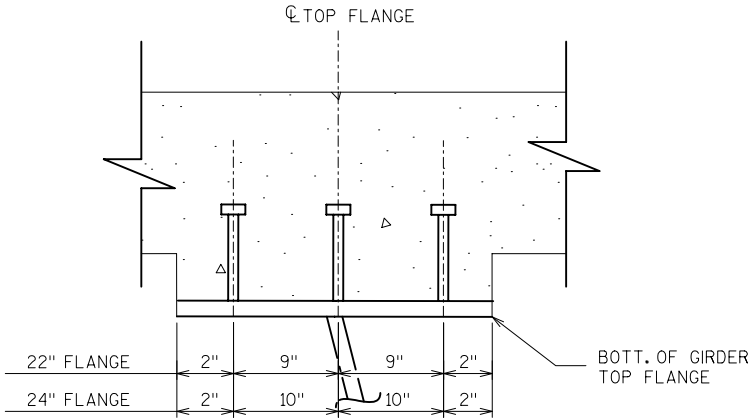
SHEAR STUD CONNECTORS ARE SHOWN FOR
REFERENCE ONLY AND ARE NOT FURNISHED
OR INSTALLED AS PART OF THIS CONTRACT.

SHEAR CONNECTORS PROVIDED IN FUTURE
CONTRACT WILL PENETRATE INTO DECK 2"
ABOVE BOTTOM MAT OF REINFORCING STEEL.

FOR FLANGE AND WEB PLATES 2" THICK AND
UNDER WITH LENGTHS MORE THAN 90'-0", AND
FOR PLATES THICKER THAN 2" WITH LENGTHS
MORE THAN 60'-0", ONE OPTIONAL WELDED
SHOP SPLICE IS ALLOWED. NO ADDITIONAL
PAYMENT WILL BE MADE FOR THESE SPLICES
AS REQUIRED DUE TO MAXIMUM PLATE LENGTHS
AVAILABLE FROM MILL.



SHEAR STUD DETAIL



SHEAR STUD SPACING

90% PLANS STEEL FABRICATION CONTRACT ONLY

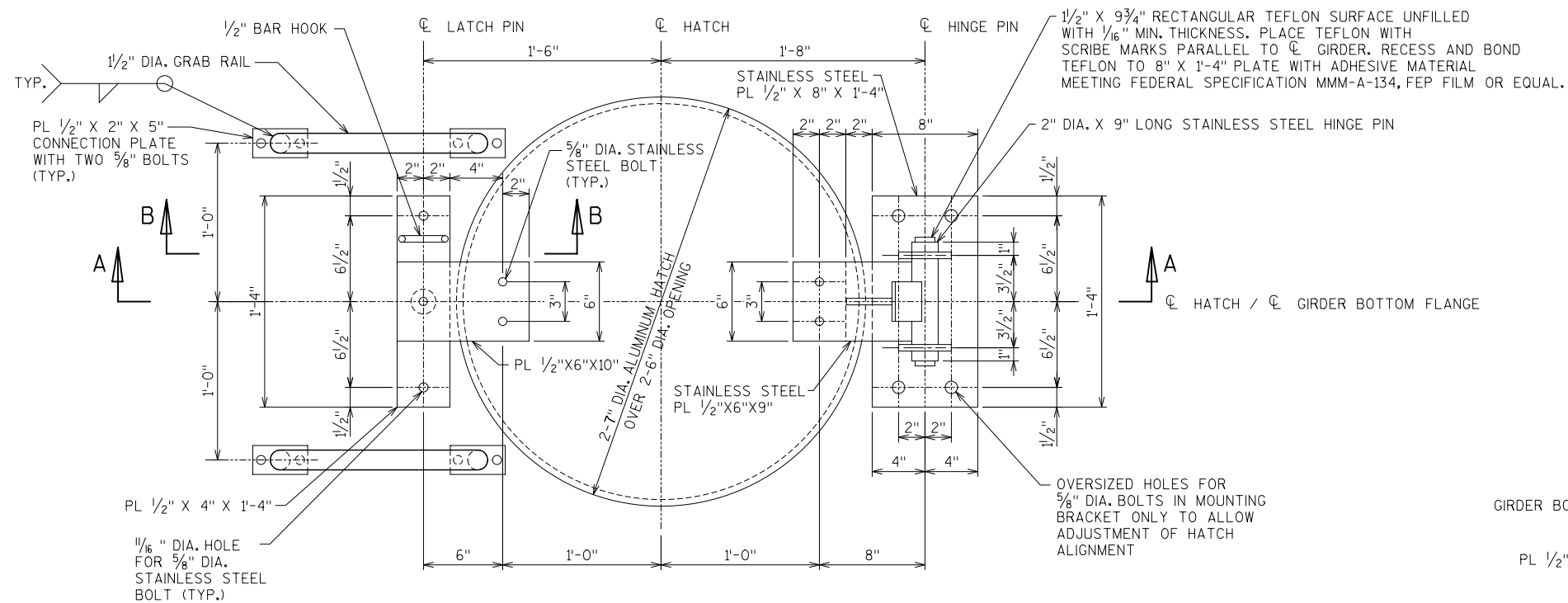
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MDR	
MISCELLANEOUS GIRDER DETAILS			SHEET 20 OF 26



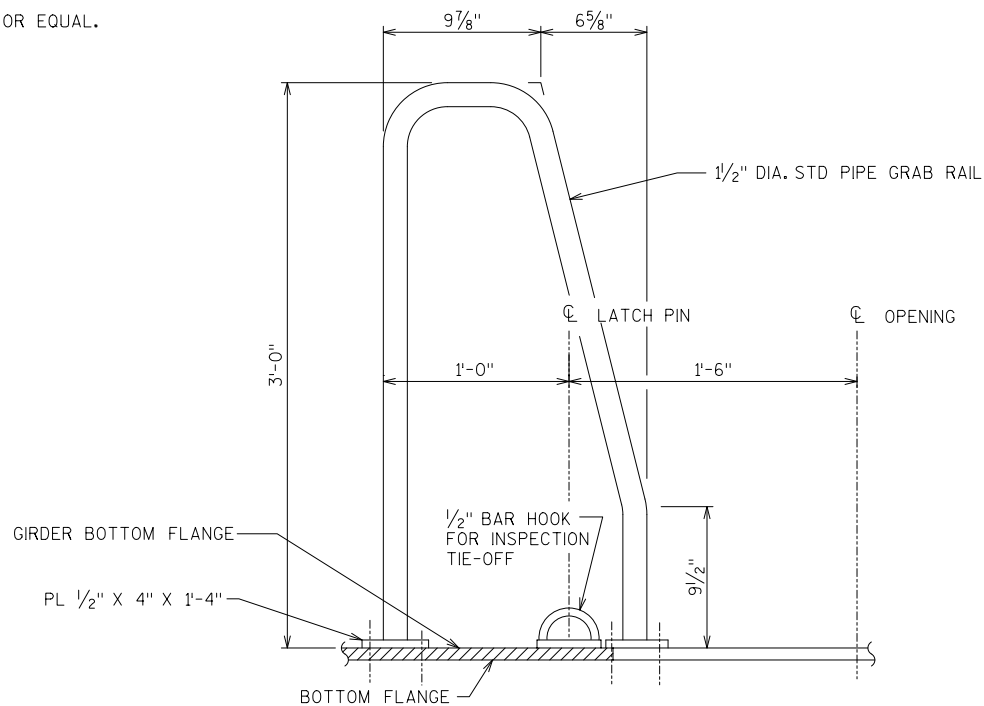
GIRDER FLANGES ARE NOT HORIZONTAL, BUT PARALLEL TO VERTICAL CURVE. DIAPHRAGMS ARE PERPENDICULAR TO GIRDERS FLANGES. ONLY ENDS OF GIRDER WEBS ARE VERTICAL.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY JRS		PLANS CK'D. MAD	
MISCELLANEOUS GIRDER DETAILS SHEET 2		SHEET 21 OF 26	

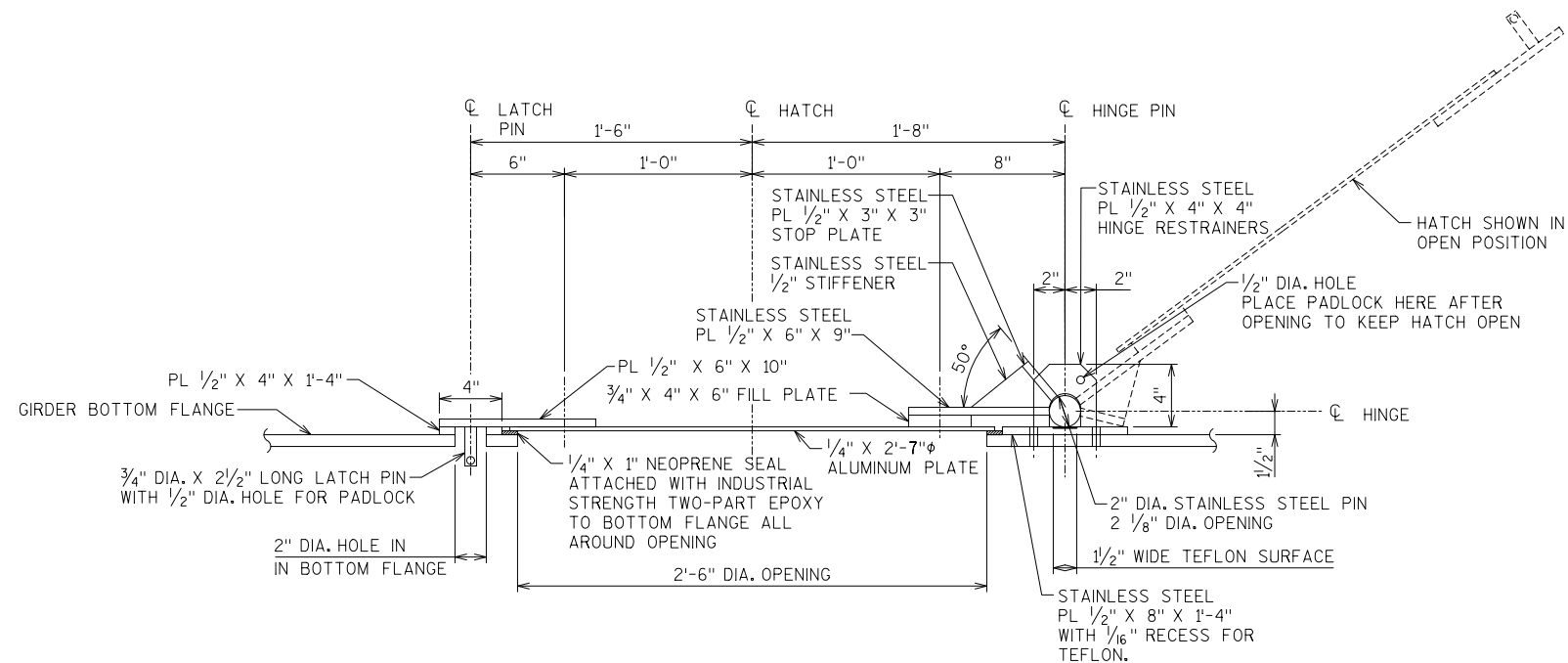
90% PLANS STEEL FABRICATION CONTRACT ONLY



PLAN



SECTION B-B



SECTION A-A

NOTES:

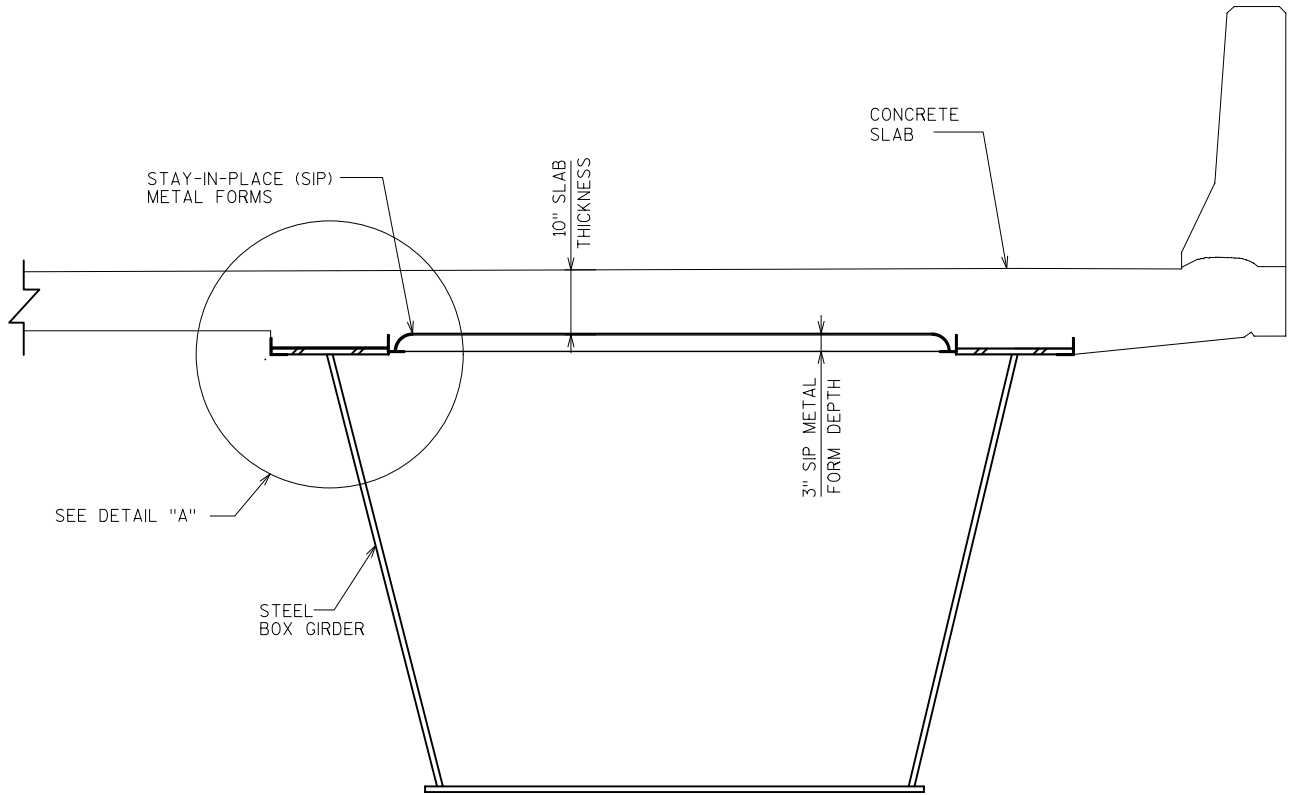
ALL BOLTS SHOWN ARE 5/8" DIAMETER STAINLESS STEEL.

TWO ACCESS HATCHES REQUIRED. SEE GIRDER PLAN AND ELEVATION SHEETS FOR HATCH LOCATIONS.

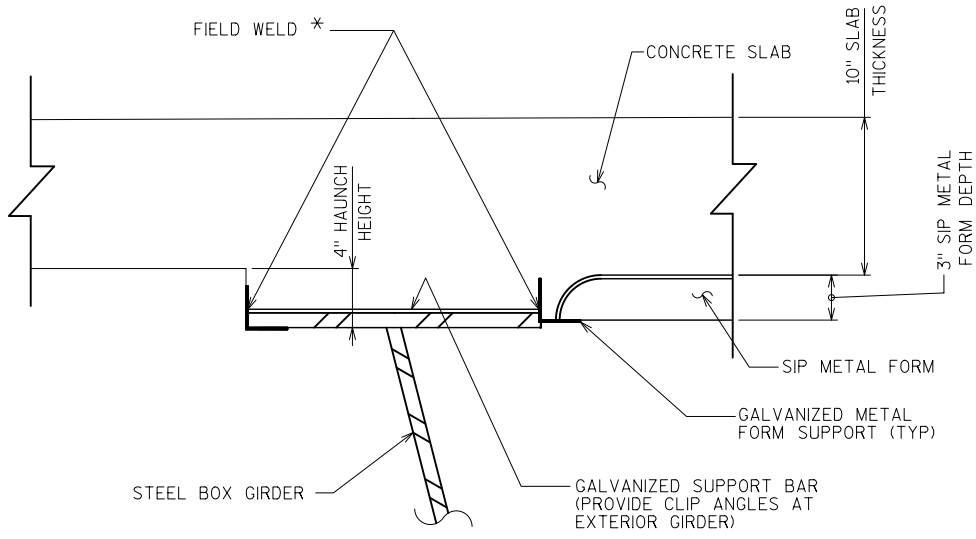
STEEL FOR HATCH IS A709 GRADE 50 UNLESS OTHERWISE NOTED.

ALL MATERIALS SHOWN WILL BE PAID FOR AT THE UNIT PRICE BID FOR "FABRICATED STRUCTURAL STEEL HS".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MDR	
ACCESS HATCH DETAILS			SHEET 22 OF 26

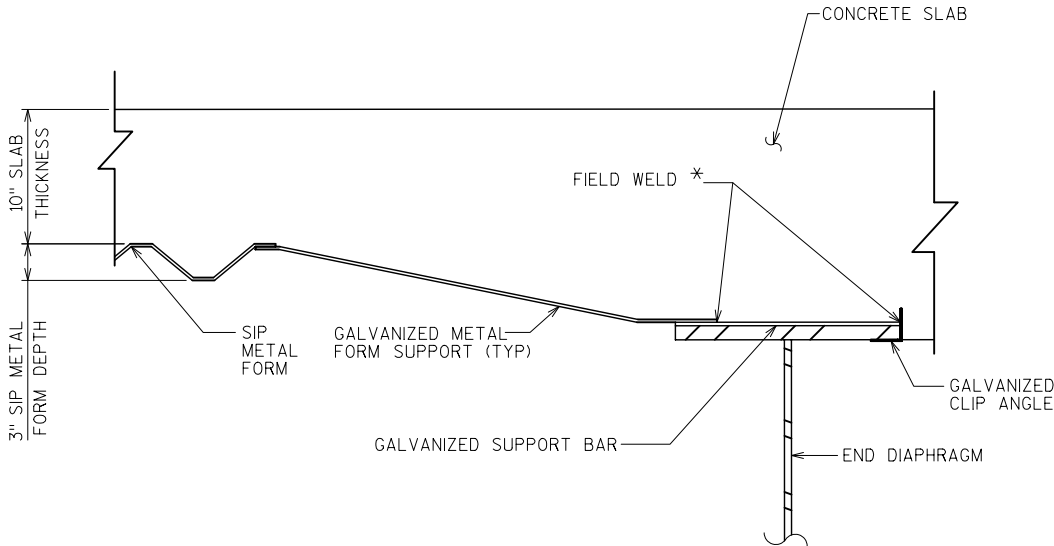


PARTIAL SECTION THROUGH SUPERSTRUCTURE
(SHOWING TYPICAL DETAILS AND NOTES FOR SIP METAL FORMS)



DETAIL "A"

* DO NOT WELD TO NOR PERMIT WELD SPATTER ON SUPPORTING STEEL GIRDER, DIAPHRAGMS, BRACING ETC. ELECTRICAL GROUNDING TO STRUCTURAL STEEL IS PROHIBITED. SEE SPECIFICATIONS FOR FIELD WELDING OF SIP FORMS IN PLACE AND PAINTING OF THE TOP FLANGE.



PARTIAL SECTION THROUGH END OF SPAN
(INTERIOR OF BOXES SHOWN ONLY)

NOTES:

STAY-IN-PLACE (SIP) FORM DETAILS ARE SHOWN FOR REFERENCE ONLY. SIP FORMS, GALVANIZED SUPPORT BARS, FORM SUPPORTS, AND CLIP ANGLES ARE NOT FURNISHED AS PART OF THIS CONTRACT.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MDR	
SUPERSTRUCTURE DETAILS			SHEET 23 OF 26

LEGEND:

P1-2 INTERMEDIATE ELEVATION POINT AT PANEL POINTS.

IN THIS EXAMPLE, '1' IS THE FIELD SECTION NUMBER AND '2' IS THE PANEL NUMBER WITHIN THIS FIELD SECTION.

TABULATED ELEVATIONS

- FTW FINISHED ELEVATION AT TOP OF WEB.
- FG FINISHED ELEVATION AT TOP OF DECK SLAB.
- TES TOP OF ERECTED STEEL ELEVATION.
= ZW + PL - SW
- ZW TOP OF ERECTED WEB ELEVATION NEGLECTING ALL DEFLECTIONS
= FG + SW + DL1 + DL2 - DK
- CW ELEVATION OF CHORD LINES JOINING TOP OF WEB ELEVATION 'ZW' AT FIELD SPLICES AND END SUPPORTS.
- BLK BLOCKING HEIGHT CORRESPONDING TO THE ERECTED STEEL CONDITION NEGLECTING ALL DEFLECTIONS.

TABULATED DEFLECTIONS

- SW SELF -WEIGHT OF STEEL GIRDERS, INCLUDING ALL DIAPHRAGMS, STIFFENERS, BRACING, AND PERMANENT METAL FORMS.
- DL1 CONCRETE DECK SLAB AND HAUNCHES APPLIED TO BARE STEEL SECTION.
- DL2 PARAPETS AND WEARING SURFACE APPLIED TO COMPOSITE SECTION.

CALCULATED VALUES

- PL =THICKNESS OF TOP FLANGE PLUS ANY FILLER AND SPLICE PLATES
- DK =DECK ASSEMBLY THICKNESS FROM TOP OF WEB TO FINISHED GRADE
- C =CAMBER= ZW - CW

HAUNCH NOTE:

† =HAUNCH HEIGHT AT CENTERLINE OF GIRDER.

TO DETERMINE "†" AFTER ALL STRUCURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES, TOP OF SPLICE PLATES, OR TOP OF COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN.

- TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF STEEL ELEV. AFTER PLACEMENT
- + CONC. ONLY DEFLECTIONS (DOWNWARD DEFLECTION IS POSITIVE, UPWARD DEFLECTION IS NEGATIVE.)
- SLAB THICKNESS (10")
- = "†" VALUE FOR SETTING HAUNCH

NOTES:

POSITIVE DEFLECTIONS ARE DOWNWARD.

POSITIVE CAMBER IS UPWARD RELATIVE TO A CHORD LINE JOINING THE FIELD SECTION ENDPOINTS.

TES ELEVATIONS ARE TO TOP OF STEEL (SPLICE AND COVER PLATE THICKNESS, IF APPLICABLE, ARE ACCOUNTED FOR) AND THEY ARE FOR THE MATERIAL AS ERECTED. THE ELEVATION OF THE TOP STEEL AT THE FIELD SPLICE POINTS SHALL BE CHECKED, AND CORRECTED, IF POSSIBLE, AFTER ERECTION AND BEFORE PERMANENTLY BOLTING THE DIAPHRAGMS IN PLACE.

BECAUSE VERTICAL PROFILE AND DEFLECTIONS ARE EXAGGERATED TO DIFFERENT DEGREES, THE CAMBERS SHOWN ON THIS DIAGRAM ARE SCHEMATIC ONLY.

SPECIFICALLY COMPARING RELATIVE CAMBER MAGNITUDES BETWEEN FIELD SECTIONS MAY BE MISLEADING.

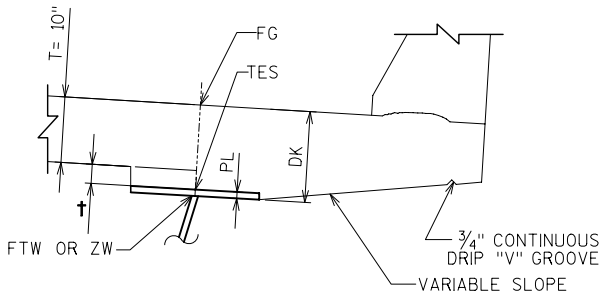
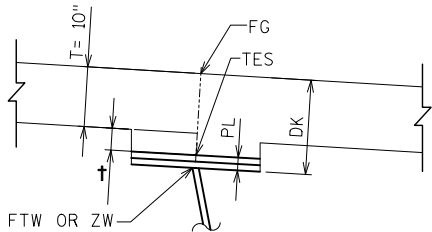
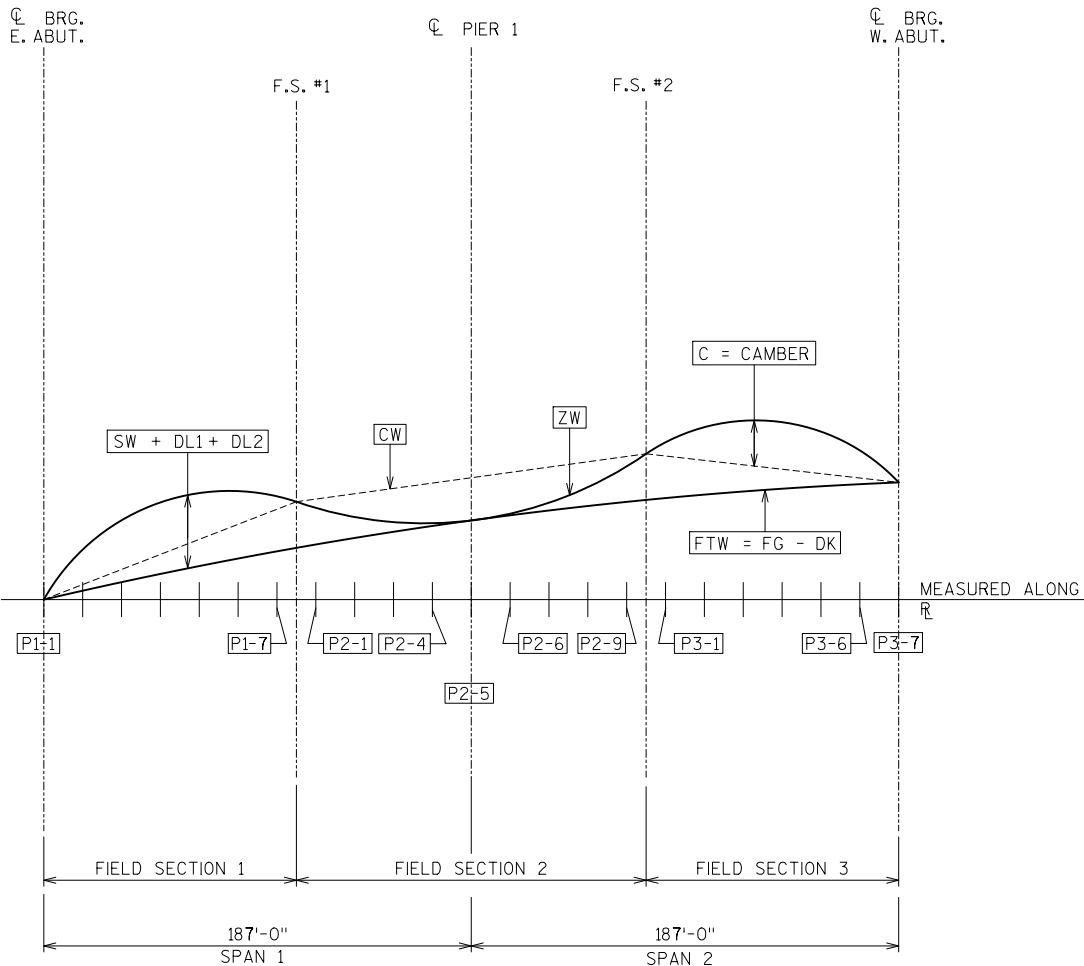
CAMBERS ACCOUNT FOR PERMANENT FORMWORK WEIGHT OF 10.0 PSF INSIDE EACH GIRDER PLUS 13.5 PSF FOR ADDITIONAL CONCRETE IN RIBS OF PERMANENT FORMWORK. THE CONTRACTOR MAY NEED TO REVISE THE CAMBERS IF THE PERMANENT FORMWORK IS USED DIFFERS FROM THAT SHOWN ON THE PLANS.

ALL TABULATED VALUES ARE IN DECIMALS OF A FOOT.

TOP OF ERECTED STEEL ELEVATIONS AT SUPPORTS AND FIELD SPLICES SHALL BE AFTER ERECTION IS COMPLETE AND BEFORE BOLTED CONNECTIONS ARE FINALLY TORQUED.

IF SURVEYED ELEVATIONS DIFFER FROM THOSE EXPECTED BY MORE THAN 0.02 FT (1/4") AT SUPPORTS OR 0.083 FT (1") AT FIELD SPLICES, CORRECTIVE MEASURES SHALL BE TAKEN BEFORE FURTHER CONSTRUCTION OPERATIONS MAY PROCEED.

CAMBER DIAGRAMS HAVE BEEN DEVELOPED ASSUMING A CONSTANT 4" HAUNCH HEIGHT. MEASURED FROM THE UNDERSIDE OF THE TOP FLANGE (TOP OF WEB) TO THE UNDERSIDE OF THE DECK (TOP OF STAY-IN-PLACE METAL FORMS).



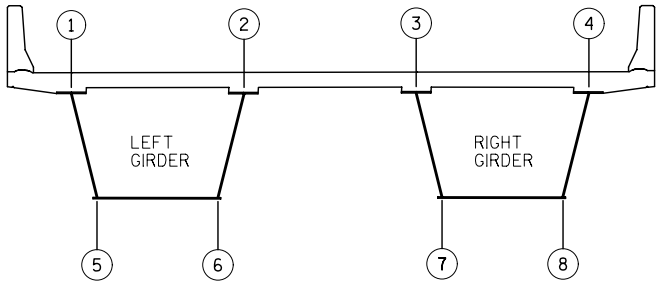
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY MJA		PLANS CK'D. MAD	
CAMBER DIAGRAM		SHEET 24 OF 26	

FIELD SECTION 1

HORIZ. LOC.	VALUE	POSITION AND STATION							
		E. ABUT.	P1- 2	P1- 3	P1- 4	P1- 5	P1- 6	P1- 7	FS #1
		1096+24.47	1096+41.47	1096+58.47	1096+75.47	1096+92.47	1097+09.47	1097+26.47	1097+34.97
CAMBER DATA									
1	FG	635.30	635.59	635.87	636.14	636.40	636.65	636.88	637.00
	TES	634.21	634.64	635.04	635.39	635.69	635.94	636.13	636.27
	ZW	634.13	634.60	635.04	635.42	635.73	635.98	636.16	636.23
	CW	634.13	634.45	634.78	635.10	635.42	635.75	636.07	636.23
	SW	0.00	0.04	0.08	0.11	0.12	0.12	0.11	0.10
LEFT WEB	DL1	0.00	0.12	0.23	0.31	0.34	0.34	0.30	0.27
	DL2	0.00	0.01	0.02	0.03	0.04	0.04	0.03	0.03
	C	0.00	0.15	0.26	0.32	0.31	0.23	0.09	0.00
2	FG	634.73	635.02	635.30	635.57	635.83	636.08	636.31	636.43
	TES	633.64	634.07	634.46	634.82	635.11	635.36	635.55	635.69
	ZW	633.56	634.03	634.46	634.84	635.15	635.40	635.58	635.65
	CW	633.56	633.88	634.20	634.53	634.85	635.17	635.49	635.65
	SW	0.00	0.04	0.08	0.11	0.12	0.12	0.11	0.10
RIGHT WEB	DL1	0.00	0.12	0.22	0.30	0.33	0.33	0.29	0.27
	DL2	0.00	0.01	0.02	0.03	0.04	0.04	0.03	0.03
	C	0.00	0.15	0.26	0.31	0.30	0.22	0.08	0.00
3	FG	634.16	634.45	634.73	635.00	635.26	635.51	635.74	635.86
	TES	633.07	633.49	633.89	634.24	634.54	634.78	634.98	635.11
	ZW	632.99	633.45	633.88	634.26	634.57	634.81	635.00	635.07
	CW	632.99	633.31	633.63	633.95	634.27	634.59	634.91	635.07
	SW	0.00	0.04	0.08	0.11	0.12	0.12	0.10	0.09
LEFT WEB	DL1	0.00	0.12	0.22	0.29	0.33	0.32	0.28	0.25
	DL2	0.00	0.01	0.02	0.03	0.03	0.03	0.03	0.03
	C	0.00	0.14	0.25	0.31	0.30	0.23	0.09	0.00
4	FG	633.59	633.88	634.16	634.43	634.69	634.94	635.17	635.29
	TES	632.50	632.92	633.31	633.66	633.96	634.20	634.40	634.53
	ZW	632.42	632.88	633.31	633.68	633.99	634.23	634.42	634.49
	CW	632.42	632.74	633.06	633.37	633.69	634.01	634.33	634.49
	SW	0.00	0.04	0.08	0.10	0.12	0.11	0.10	0.09
RIGHT WEB	DL1	0.00	0.11	0.21	0.28	0.32	0.31	0.28	0.25
	DL2	0.00	0.01	0.02	0.03	0.03	0.03	0.03	0.03
	C	0.00	0.14	0.25	0.31	0.30	0.22	0.09	0.00
BLOCKING HEIGHTS									
5	BLK	1.53							3.64
6		1.14							3.24
7		0.39							2.47
8		0.00							2.07

FIELD SECTION 2

HORIZ. LOC.	VALUE	POSITION AND STATION										
		FS #1	P2-1	P2-2	P2-3	P2-4	Pier 1	P2-6	P2-7	P2-8	P2-9	FS #2
		1097+34.97	1097+43.47	1097+60.47	1097+77.47	1097+94.47	1098+11.47	1098+28.47	1098+45.47	1098+62.47	1098+79.47	1098+87.97
CAMBER DATA												
1	FG	637.00	637.11	637.32	637.53	637.72	637.90	638.07	638.23	638.37	638.51	638.57
	TES	636.27	636.29	636.42	636.54	636.77	636.92	637.12	637.24	637.47	637.69	637.84
	ZW	636.23	636.28	636.38	636.47	636.59	636.74	636.94	637.17	637.43	637.69	637.80
	CW	636.23	636.32	636.50	636.67	636.84	637.02	637.19	637.37	637.54	637.71	637.80
	SW	0.10	0.09	0.06	0.03	0.01	0.00	0.01	0.03	0.06	0.08	0.10
LEFT WEB	DL1	0.27	0.23	0.15	0.08	0.02	0.00	0.00	0.02	0.08	0.15	0.23
	DL2	0.03	0.03	0.02	0.01	0.00	0.00	0.00	0.01	0.02	0.03	0.03
	C	0.00	-0.04	-0.11	-0.20	-0.26	-0.28	-0.25	-0.19	-0.11	-0.03	0.00
2	FG	636.43	636.54	636.75	636.96	637.15	637.33	637.50	637.66	637.80	637.94	638.00
	TES	635.69	635.72	635.85	635.97	636.19	636.35	636.55	636.67	636.90	637.12	637.26
	ZW	635.65	635.71	635.81	635.90	636.02	636.17	636.37	636.60	636.86	637.11	637.22
	CW	635.65	635.74	635.92	636.09	636.26	636.44	636.61	636.79	636.96	637.13	637.22
	SW	0.10	0.08	0.06	0.03	0.01	0.00	0.01	0.03	0.05	0.08	0.09
RIGHT WEB	DL1	0.27	0.23	0.15	0.07	0.02	0.00	0.02	0.08	0.15	0.23	0.26
	DL2	0.03	0.03	0.02	0.01	0.00	0.00	0.00	0.01	0.02	0.03	0.03
	C	0.00	-0.04	-0.11	-0.19	-0.25	-0.27	-0.25	-0.18	-0.10	-0.03	0.00
3	FG	635.86	635.97	636.18	636.39	636.58	636.76	636.93	637.09	637.23	637.37	637.43
	TES	635.11	635.14	635.27	635.40	635.62	635.78	635.97	636.10	636.32	636.54	636.69
	ZW	635.07	635.13	635.23	635.33	635.45	635.59	635.80	636.03	636.28	636.53	636.65
	CW	635.07	635.16	635.33	635.51	635.68	635.86	636.03	636.21	636.38	636.56	636.65
	SW	0.09	0.08	0.05	0.03	0.01	0.00	0.01	0.03	0.05	0.08	0.09
LEFT WEB	DL1	0.25	0.22	0.15	0.07	0.02	0.00	0.02	0.07	0.15	0.22	0.26
	DL2	0.03	0.02	0.02	0.01	0.00	0.00	0.00	0.01	0.02	0.02	0.03
	C	0.00	-0.03	-0.10	-0.18	-0.24	-0.27	-0.24	-0.18	-0.10	-0.03	0.00
4	FG	635.29	635.40	635.61	635.82	636.01	636.19	636.36	636.52	636.66	636.80	636.86
	TES	634.53	634.56	634.70	634.82	635.05	635.21	635.40	635.52	635.75	635.97	636.11
	ZW	634.49	634.55	634.66	634.76	634.87	635.02	635.23	635.46	635.71	635.95	636.07
	CW	634.49	634.58	634.75	634.93	635.10	635.28	635.45	635.63	635.80	635.98	636.07
	SW	0.09	0.08	0.05	0.03	0.01	0.00	0.01	0.03	0.05	0.08	0.09
RIGHT WEB	DL1	0.25	0.21	0.14	0.07	0.02	0.00	0.02	0.07	0.14	0.22	0.25
	DL2	0.03	0.02	0.02	0.01	0.00	0.00	0.00	0.01	0.02	0.02	0.03
	C	0.00	-0.03	-0.09	-0.17	-0.23	-0.26	-0.23	-0.17	-0.10	-0.03	0.00
BLOCKING HEIGHTS												
5	BLK	3.64						4.14				5.20
6		3.24						3.75				4.80
7		2.47						2.99				4.05
8		2.07						2.60				3.65



HORIZONTAL LOCATION KEY

LOOKING UPSTATION

LEGEND:

FOR LEGEND SEE CAMBER DIAGRAM

NOTES:

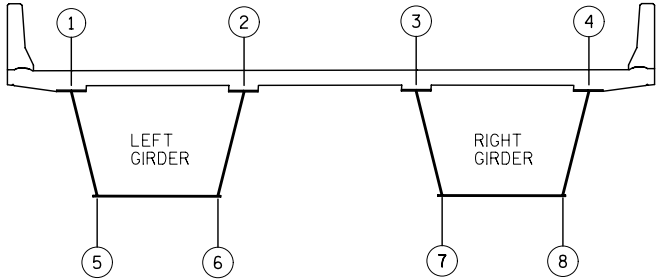
FOR NOTES SEE CAMBER DIAGRAM

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY		MJA	PLANS CK'D. MAD
CAMBER DATA: FIELD SECTION #1 & #2			SHEET 25 OF 26

90% PLANS STEEL FABRICATION CONTRACT ONLY

FIELD SECTION 3

HORIZ. LOC.	VALUE	POSITION AND STATION							
		FS #2 1098+87.97	P3-1 1098+96.47	P3-2 1099+13.47	P3-3 1099+30.47	P3-4 1099+47.47	P3-5 1099+64.47	P3-6 1099+81.47	W. ABUT 1099+98.47
CAMBER DATA									
1 LEFT GIRDER	FG	638.57	638.64	638.75	638.85	638.94	639.02	639.09	639.15
	TES	637.84	637.87	638.04	638.15	638.21	638.22	638.18	638.07
	ZW	637.80	637.90	638.07	638.19	638.24	638.23	638.16	637.98
	CW	637.80	637.81	637.84	637.87	637.90	637.93	637.96	637.98
LEFT WEB	SW	0.10	0.11	0.12	0.12	0.11	0.09	0.06	0.00
	DL1	0.27	0.29	0.33	0.34	0.32	0.25	0.16	0.00
	DL2	0.03	0.03	0.04	0.04	0.03	0.03	0.02	0.00
	C	0.00	0.08	0.23	0.32	0.34	0.30	0.20	0.00
2 LEFT GIRDER	FG	638.00	638.07	638.18	638.28	638.37	638.45	638.52	638.58
	TES	637.26	637.30	637.46	637.57	637.63	637.64	637.61	637.41
	ZW	637.22	637.31	637.49	637.61	637.66	637.65	637.58	637.41
	CW	637.22	637.24	637.27	637.29	637.32	637.35	637.38	637.41
RIGHT WEB	SW	0.09	0.10	0.12	0.12	0.11	0.09	0.06	0.00
	DL1	0.26	0.28	0.33	0.34	0.31	0.25	0.15	0.00
	DL2	0.03	0.03	0.04	0.04	0.03	0.03	0.02	0.00
	C	0.00	0.08	0.23	0.31	0.34	0.30	0.20	0.00
3 RIGHT GIRDER	FG	637.43	637.50	637.61	637.71	637.80	637.88	637.95	638.01
	TES	636.69	636.73	636.88	636.99	637.04	637.04	637.00	636.84
	ZW	636.65	636.75	636.92	637.02	637.06	637.04	636.96	636.84
	CW	636.65	636.66	636.69	636.72	636.75	636.78	636.81	636.84
LEFT WEB	SW	0.09	0.10	0.12	0.12	0.10	0.08	0.04	0.00
	DL1	0.26	0.29	0.32	0.33	0.29	0.22	0.12	0.00
	DL2	0.03	0.03	0.03	0.03	0.03	0.02	0.01	0.00
	C	0.00	0.09	0.22	0.30	0.31	0.25	0.14	0.00
4 RIGHT GIRDER	FG	636.86	636.93	637.04	637.14	637.23	637.31	637.38	637.44
	TES	636.12	636.15	636.30	636.41	636.46	636.47	636.43	636.27
	ZW	636.08	636.17	636.33	636.44	636.48	636.46	636.38	636.27
	CW	636.08	636.09	636.12	636.15	636.18	636.21	636.24	636.27
RIGHT WEB	SW	0.09	0.10	0.11	0.11	0.10	0.08	0.04	0.00
	DL1	0.26	0.28	0.31	0.32	0.28	0.21	0.11	0.00
	DL2	0.03	0.03	0.03	0.03	0.03	0.02	0.01	0.00
	C	0.00	0.08	0.21	0.29	0.30	0.25	0.14	0.00
BLOCKING HEIGHTS									
5	BLK	5.20							5.38
6		4.80							4.99
7		4.05							4.24
8		3.65							3.84



HORIZONTAL LOCATION KEY
LOOKING UPSTATION

LEGEND:
FOR LEGEND SEE CAMBER DIAGRAM
NOTES:
FOR NOTES SEE CAMBER DIAGRAM

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-5-661			
DRAWN BY		MJA	PLANS CK'D. MAD
CAMBER DATA: FIELD SECTION #3			SHEET 26 OF 26