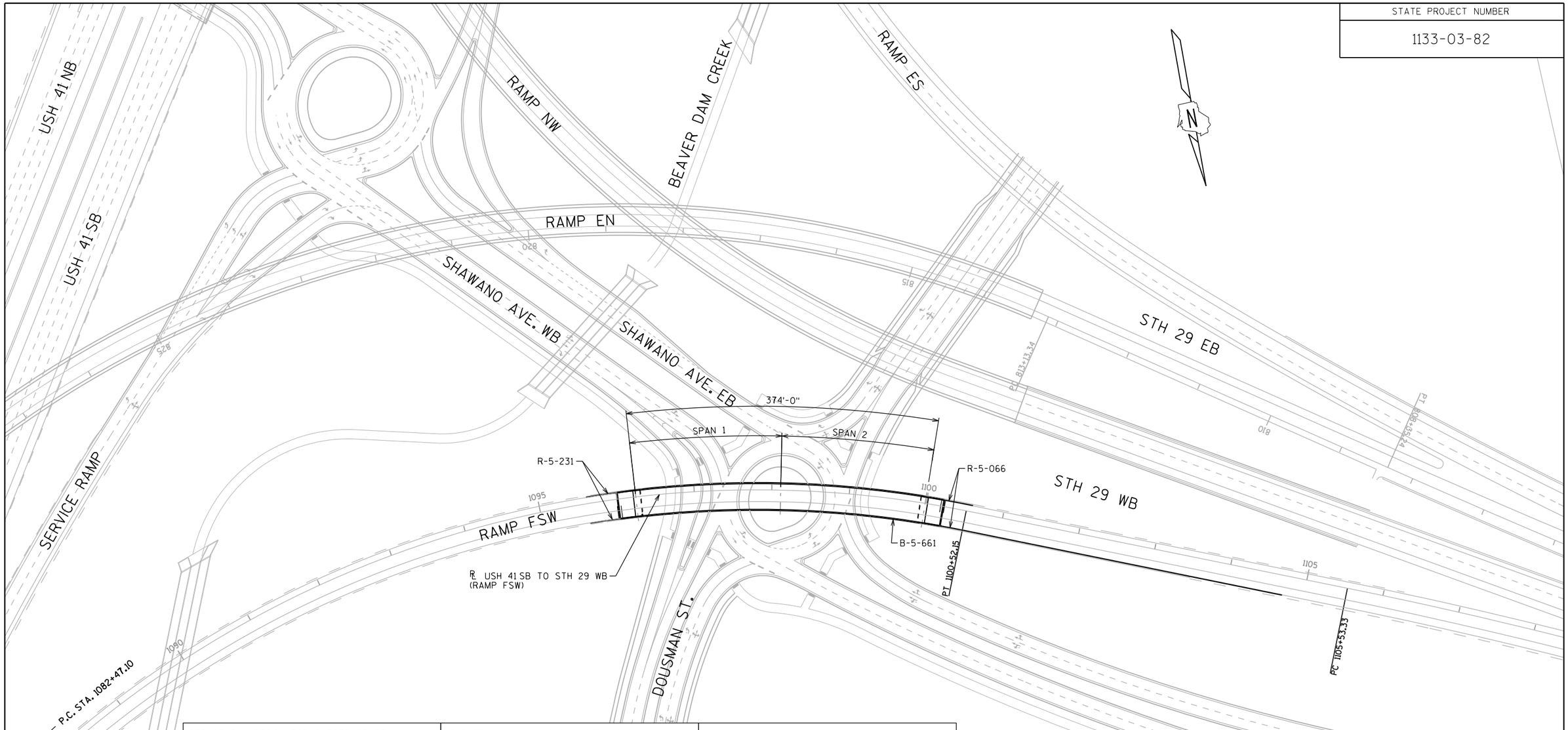
STATE PROJECT NUMBER

1133-03-82



STRUCTURAL DESIGN FOR SUBSTRUCTURE
PREPARED BY:

ROMENESKO ENGINEERING, INC.

WISCONSIN
THOMAS J. ROMENESKO
E-26318
MADISON
WI
PROFESSIONAL ENGINEER

2/24/11

ELECTRICAL DESIGN FOR GIRDER LIGHTING
PREPARED BY:

URS

WISCONSIN
DANIELLA DUZAN
36846-006
CHICAGO, IL
PROFESSIONAL ENGINEER

2/23/11

STRUCTURAL DESIGN FOR SUPERSTRUCTURE
PREPARED BY:

URS

WISCONSIN
MICHAEL D. RADTKE
40967
Elm Grove
WI
PROFESSIONAL ENGINEER

FEB 22 2011

NE REGION CONTACT - PAUL VRANEY (920) 492-2232
BUREAU OF STRUCTURES CONTACT - WILLIAM DREHER (608) 266-8489
CONSULTANT CONTACT - ROBERT FIELDBINDER (414) 831-4129

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

Plans Prepared By

URS

6737 West Washington Street
Suite 2265
Milwaukee, WI 53214
(414) 831-4100

ACCEPTED William C. Dreher KAR 03/12/11
CHIEF STRUCTURES DESIGN ENGINEER DATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-661

USH 41 SB TO STH 29 WB

COUNTY	~~TOWN/CITY~~/VILLAGE
BROWN	HOWARD

DESIGN SPEC.
AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	MJA	DESIGN CK'D.	MDR	DRAWN BY	MJA	PLANS CK'D.	MDR

SITE PLAN
B-5-661

SHEET 1 OF 36
471

DATE: 3/11/2011
I.D.

FILE= P:\Transportation\Brown County Bridges USH 41\CADD\Sheets\B-5-661 (RemainingStructure)\001 B-05-661-SITE PLAN.dgn

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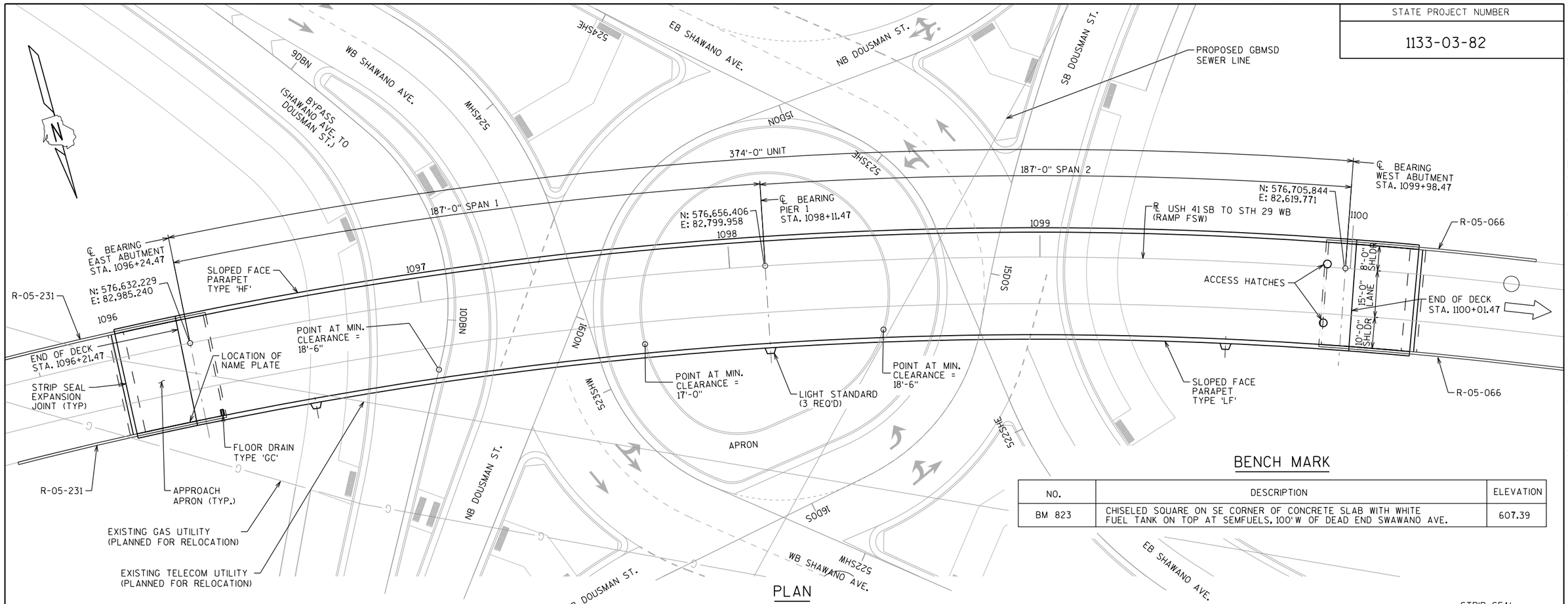
STATE PROJECT NUMBER
1133-03-82

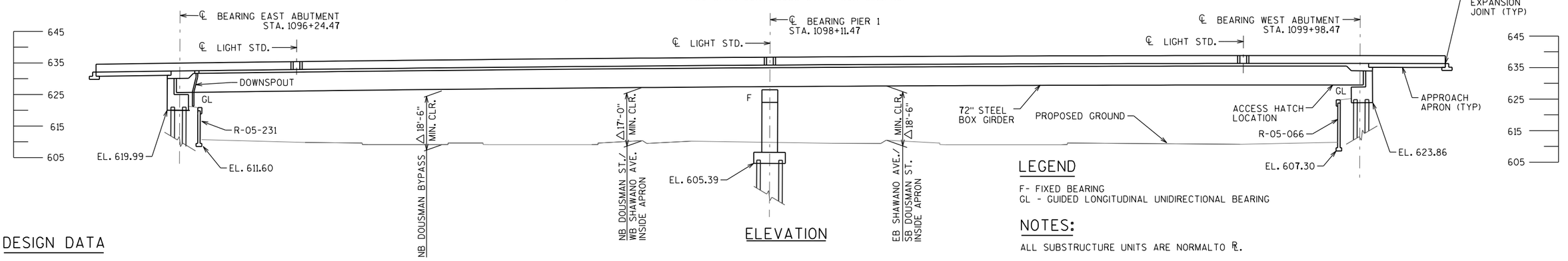


PLAN

(TWO SPAN CONTINUOUS STEEL BOX GIRDERS)

BENCH MARK

NO.	DESCRIPTION	ELEVATION
BM 823	CHISELED SQUARE ON SE CORNER OF CONCRETE SLAB WITH WHITE FUEL TANK ON TOP AT SEMFUELS, 100'W OF DEAD END SWAWANO AVE.	607.39



ELEVATION

LEGEND

F- FIXED BEARING
GL - GUIDED LONGITUDINAL UNIDIRECTIONAL BEARING

NOTES:

ALL SUBSTRUCTURE UNITS ARE NORMALTO ℞.

DIMENSIONS SHOWN ARE ALONG ℞.

SPAN LENGTHS SHOWN ARE MEASURED ALONG ℞.

FOR CURVE DATA SEE ALIGNMENT LAYOUT AND SUPERELEVATION SHEET.

△ VERTICAL CLEARANCE ESTIMATED BASED ON PRELIMINARY ROADWAY GEOMETRY.

EXISTING AND FUTURE UTILITIES ARE SHOWN FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL UTILITIES PRIOR TO EXCAVATION OR PILE DRIVING.

DESIGN DATA

LIVE LOAD

DESIGN RATING: HL-93
INVENTORY RATING: 1.29
OPERATIONAL RATING: 1.67
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 250 KIPS.

ULTIMATE DESIGN STRESSES

HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES
SLAB----------f'c = 4,000 P.S.I.
ALL OTHER----------f'c = 4,000 P.S.I.
HIGH STRENGTH
BAR STEEL REINFORCEMENT, GRADE 60----------fy = 60,000 P.S.I.
HIGH STRENGTH STRUCTURAL STEEL, (ASTM A709, GRADE 50, HPS50W)---fy = 50,000 P.S.I.

FOUNDATION DATA

EAST AND WEST ABUTMENT TO BE SUPPORTED ON HP 14X73 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 250 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 90 FEET LONG.

PIER 1 TO BE SUPPORTED ON HP 14X73 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 250 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 75 FEET LONG.

TRAFFIC VOLUME:

RAMP SW	SHAWANO	DOUSMAN
ADT (2035) = 4,200	ADT (2035) = 37,200	ADT (2035) = 14,500
R.D.S. = 60 M.P.H.	R.D.S. = 40 M.P.H.	R.D.S. = 40 M.P.H.

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MDR | PLANS CK'D. MJA

GENERAL PLAN & ELEVATION

SHEET 2 OF 36
472

DATE: 1/26/2011
I.D.

FILE= P:\Transportation\Brown County Bridges LSH 41\CADD\Sheets\B-5-661 (RemainingStructure)\002 B-05-661-GENERAL PLAN AND ELEVATION.dgn

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STATE PROJECT NUMBER

1133-03-82

LIST OF DRAWINGS

1. SITE PLAN B-5-661
2. GENERAL PLAN & ELEVATION
3. DRAWING LIST AND GENERAL NOTES
4. CROSS SECTION AND QUANTITIES
5. ALIGNMENT LAYOUT
6. SUBSURFACE EXPLORATION
7. EAST ABUTMENT
8. EAST ABUTMENT
9. EAST ABUTMENT DETAILS
10. WEST ABUTMENT
11. WEST ABUTMENT
12. WEST ABUTMENT DETAILS
13. PIER
14. PIER CAP DETAILS
15. PIER SHAFT DETAILS
16. PIER DETAILS
17. BEARING PEDESTAL DETAILS
18. DECK REINFORCEMENT
19. TYPICAL DECK SECTION
20. BILL OF BARS & TOP OF DECK ELEVATIONS
21. APPROACH APRON DETAILS
22. EXPANSION DEVICE
23. STRIP SEAL EXPANSION JOINT DETAILS
24. SLOPED FACE PARAPET 'LF'
25. SLOPED FACE PARAPET 'HF'
26. LIGHT STANDARD
27. ELECTRICAL SITE PLAN
28. GIRDER LIGHTING PLAN & ELEVATION SPAN 1
29. GIRDER LIGHTING PLAN & ELEVATION SPAN 2
30. ELECTRICAL INSTALLATION DETAILS 1
31. ELECTRICAL INSTALLATION DETAILS 2
32. ELECTRICAL INSTALLATION DETAILS 3
33. ELECTRICAL INSTALLATION DETAILS 4
34. FLOOR DRAIN TYPE 'GC'
35. FLOOR DRAIN DETAILS
36. AESTHETIC DETAILS

GENERAL NOTES

THIS CONTRACT INCLUDES ERECTING STRUCTURAL STEEL AND BEARINGS AND FURNISHING AND CONSTRUCTING/INSTALLING EXPANSION DEVICES SHEAR STUD CONNECTORS, LIGHTING SYSTEMS, CONCRETE SUPERSTRUCTURE AND SUBSTRUCTURES, INCLUDING FOUNDATIONS AS SHOWN IN THESE PLANS AND DESCRIBED IN THE SPECIAL PROVISIONS.

"STEEL FABRICATION CONTRACT" PLANS ARE ATTACHED TO THESE "STEEL ERECTION AND SITE CONSTRUCTION CONTRACT" PLANS FOR REFERENCE. USE FOR ERECTION AND INSTALLATION OF STEEL BOX GIRDERS AND BEARINGS UNDER THIS CONTRACT.

SHOP DRAWINGS ARE AVAILABLE UPON REQUEST FOR BIDDERS TO REVIEW.

AFTER STRUCTURE SHOP ASSEMBLY AND DISASSEMBLY, ANY ELEMENTS NOT INSTALLED BY THE CONTRACTOR OF THE FABRICATION CONTRACT ARE TO BE INSTALLED BY THE CONTRACTOR OF THIS ERECTION AND CONSTRUCTION CONTRACT.

DRAWINGS SHALL NOT BE SCALED.

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

ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (1991).

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.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR CONSIDERED ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES.

FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153, TYPE I, II, OR III OR M213

STAY-IN-PLACE GALVANIZED METAL FORMS PERMITTED INSIDE BOX GIRDERS ONLY.

STAY-IN-PLACE FORMS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF "HPC MASONRY STRUCTURES".

REINFORCING STEEL

ALL REINFORCING BARS ARE ENGLISH AND THE FIRST OR THE FIRST TWO DIGITS OF THE BAR MARK SIGNIFY THE BAR SIZE.

REINFORCING STEEL SHALL BE HIGH STRENGTH, GRADE 60 WITH FY=60 KSI.

REINFORCING STEEL SHALL BE UNCOATED IN FOUNDATIONS (EXCEPT PIER SHAFT DOWELS) AND EPOXY COATED IN ALL OTHER LOCATIONS (INCLUDING PIER SHAFT DOWELS).

PLACE ALL REINFORCEMENT WITH A MINIMUM CLEAR COVER OF 2" UNLESS NOTED OTHERWISE.

PLACE REINFORCEMENT IN FOOTINGS AND PILECAPS WITH A MINIMUM CLEAR COVER OF 3" BOTTOM AND 2" TOP AND SIDES UNLESS NOTED OTHERWISE.

PLACE TOP LAYER OF REINFORCING STEEL IN THE DECK SURFACE WITH 3½" CLEAR COVER TO TOP OF SLAB.

PLACE BOTTOM LAYER OF REINFORCING STEEL IN THE DECK WITH 1½" CLEAR COVER TO BOTTOM OF SLAB.

ONLY REINFORCEMENT REQUIRED BY DESIGN IS SHOWN EXPLICITLY ON THE DRAWINGS. ADDITIONAL REINFORCEMENT MAY BE USED TO SIMPLIFY ASSEMBLY AND ERECTION OF THE REINFORCING STEEL AND MAY BE REQUIRED TO ENSURE STABILITY AND POSITIONING OF THE COMPLETED REINFORCEMENT CAGE. REINFORCEMENT IN ADDITION TO THAT SHOWN WILL NOT BE INCLUDED FOR PAYMENT.

LAP SPLICE LENGTHS SHALL BE CLASS C UNLESS NOTED OTHERWISE.

CONCRETE

CONCRETE QUANTITY IN THE HAUNCHES IS CALCULATED BASED ON AN ASSUMED CONSTANT DEPTH OF 4" MEASURED FROM TOP OF WEB TO UNDERSIDE OF SLAB (EXCLUDING THE VOLUME TAKEN UP BY THE TOP FLANGE). THIS IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH PAYMENT WILL BE MADE.

CONCRETE QUANTITY IN THE STAY-IN-PLACE DECK FORM RIBS IS BASED ON AN ASSUMED RIB HEIGHT OF 3" AND RIB ANGLE OF 45°.

CHAMFER ALL EXPOSED OUTSIDE CORNERS ¾" UNLESS NOTED OTHERWISE.

PROVIDE AN EPOXY DECK OVERLAY ON THE BRIDGE DECK AND APPROACH APRONS. PAYMENT INCLUDED UNDER BID ITEM "DECK OVERLAY EPOXY." TOTAL THICKNESS OF EPOXY OVERLAY TO BE ⅜". FINISH CONCRETE PAVING BLOCK AT EXPANSION JOINT ⅜" HIGHER THAN APPROACH APRON ACROSS THE JOINT TO PROVIDE SMOOTH FINAL RIDING SURFACE. DO NOT PROVIDE LONGITUDINAL GROOVING AS A DECK SURFACE TREATMENT.

CRACK SEALING AND PROTECTIVE SURFACE TREATMENT ON DECK AND APPROACH APRON SLABS IS NOT REQUIRED. PROVIDE PROTECTIVE SURFACE TREATMENT ON THE INSIDE FACES AND TOPS OF ALL PARAPETS. PAYMENT INCLUDE UNDER BID ITEM "PROTECTIVE SURFACE TREATMENT."

STRUCTURAL STEEL

FABRICATED STRUCTURAL STEEL AND BEARINGS ARE FURNISHED BY OTHERS UNDER A SEPARATE CONTRACT. PROVIDE THE ENGINEER A MINIMUM OF THREE WEEKS WRITTEN NOTICE PRIOR TO WHEN THESE MATERIALS ARE REQUIRED ON SITE.

THE COST OF INSTALLING BEARINGS, ACCESS HATCHES, AND ERECTING STRUCTURAL STEEL ARE INCLUDED IN THE BID ITEM "ERECTING STRUCTURAL STEEL B-5-661."

A TECHNICAL REPRESENTATIVE FROM THE BEARING MANUFACTURER MUST BE PRESENT DURING INSTALLATION OF THE FIRST BEARING. PROVIDE THE ENGINEER A MINIMUM OF THREE WEEKS WRITTEN NOTICE OF THE SPECIFIC DAY THE BEARING MANUFACTURER REPRESENTATIVE NEEDS TO BE ON SITE. PAYMENT FOR THIS WORK IS MADE UNDER THE STEEL FABRICATION CONTRACT (1133-02-83).

THE CONTRACTOR IS RESPONSIBLE NOT TO OVER-ROTATE BEARING ASSEMBLIES. DO NOT DISASSEMBLE ANY BEARING WITHOUT THE PRESENCE OF THE TECHNICAL REPRESENTATIVE OF THE BEARING MANUFACTURER.

THE CONTRACTOR MUST COORDINATE WITH THE BEARING MANUFACTURER REGARDING FINAL DIMENSIONS AND DETAILS OF MASONRY PLATES AND ANCHOR BOLTS. NO ADDITIONAL PAYMENT WILL BE MADE DUE TO ANY CHANGES IN THE SUPPLIED BEARINGS AND AS SHOWN ON CONTRACT 1133-03-83.

SHEAR STUDS ARE FURNISHED AND INSTALLED UNDER THIS CONTRACT. SEE STEEL FABRICATION PLANS FOR LOCATIONS AND SPACING OF SHEAR STUDS. REMOVE 3MM COAT OF PRIMER FROM THE TOP FLANGE AT LOCATIONS OF SHEAR STUDS BEFORE INSTALLING STUDS.

SHEAR STUDS MUST BE A MINIMUM OF 2" PROUD OF THE BOTTOM MAT OF STEEL REINFORCEMENT.

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

TEMPORARY SUPPORTS AND FALSEWORK (INCLUDING DECK OVERHANG BRACKETS) SHALL NOT BE ATTACHED TO OR BEAR ON GIRDER WEBS EXCEPT AT WEB STIFFENER LOCATIONS.

DESIGN THE CONNECTION BETWEEN STAY-IN-PLACE METAL FORMS (OPTIONAL FORMS) AND GIRDER FLANGES TO PROVIDE ADJUSTMENT OF VERTICAL POSITION BASED ON THE ACTUAL HAUNCH HEIGHT REQUIRED.

TOP OF STAY-IN-PLACE METAL FORMS SHALL BE ALIGNED WITH THE UNDERSIDE OF THE DECK SLAB AS SHOWN ON THE SUPERSTRUCTURE DETAILS SHEET.

FIELD SECTION WEIGHTS

FIELD SECTION WEIGHTS DO NOT INCLUDE SPLICE PLATES, BOLTS, BEARING ASSEMBLIES OR PORTIONS OF EXTERNAL DIAPHRAGMS NOT SHOP-CONNECTED TO THE BOX GIRDER.

FIELD SECTION WEIGHTS ARE SHOWN FOR INFORMATION ONLY. THE CONTRACTOR MUST CALCULATE ACTUAL FIELD SECTION WEIGHTS BASED ON THE MATERIAL AS DELIVERED TO THE SITE.

	LEFT GIRDER	RIGHT GIRDER
FIELD SECTION 1	103,000 LBS	101,700 LBS
FIELD SECTION 2	181,700 LBS	180,000 LBS
FIELD SECTION 3	103,000 LBS	101,700 LBS

DESIGN CRITERIA

DESIGN IS IN ACCORDANCE WITH AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION/2007 WITH 2008 AND 2009 INTERIM REVISIONS, AND THE WISDOT BRIDGE MANUAL.

ALL DETAILS, MATERIALS, AND FABRICATION SHALL CONFORM TO THE THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION. USE THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS AT THE TIME OF CONSTRUCTION.

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

OTHER DESIGN LOADS

THE STRUCTURE IS DESIGNED FOR THE DECK THICKNESS SHOWN, WHICH INCLUDES A 1½" 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 474 PLF AND 387 PLF FOR 42" AND 32" SECTIONS RESPECTIVELY.

ALL OTHER LOADS IN ACCORDANCE WITH AASHTO.

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

EXCAVATION AND BACKFILL

THE FINISHED GRADE LINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MDR | PLANS CK'D. MJA

DRAWING LIST AND GENERAL NOTES

SHEET 3 OF 36
473

FILE= P:\Transportation\Brown County Bridges LSH 41\CADD\Sheets\B-5-661 (RemainingStructure)\003 B-05-661-DRAWING LIST AND GENERAL NOTES.dgn

DATE: 3/11/2011
I.D.

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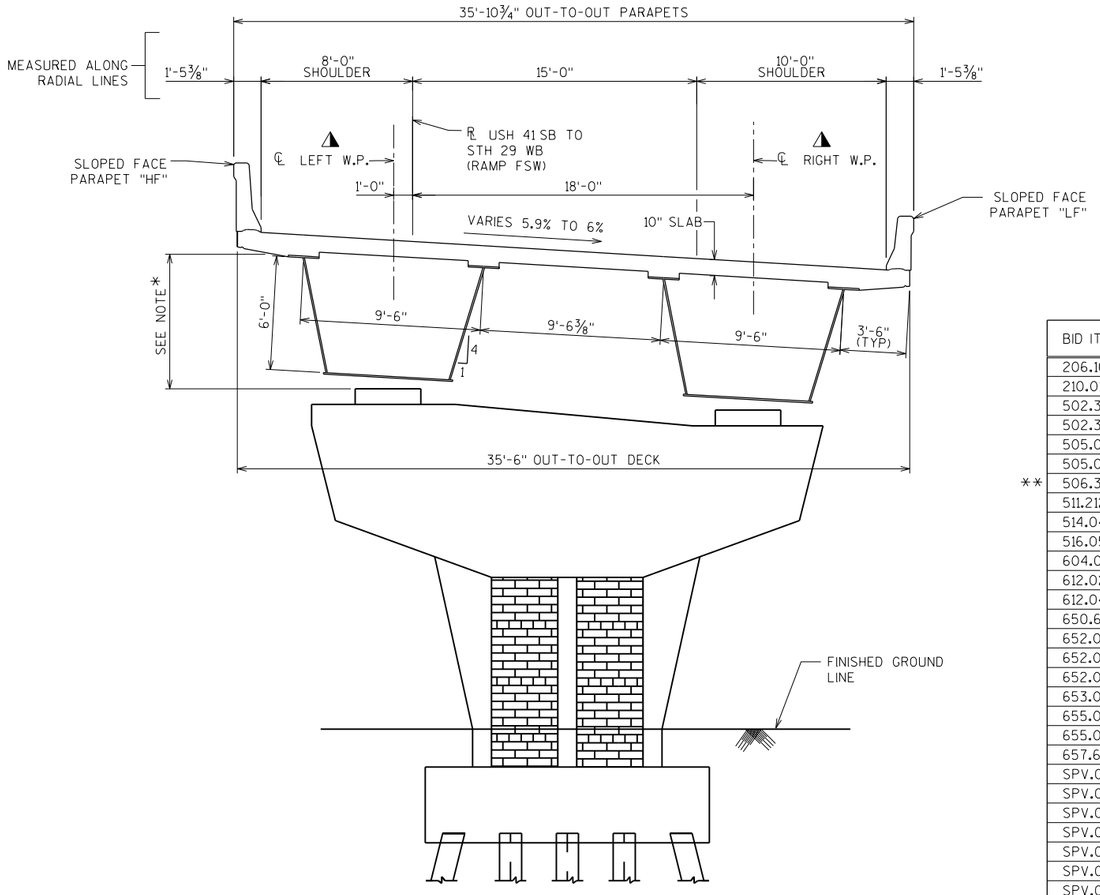
STATE PROJECT NUMBER
1133-03-82



TOTAL ESTIMATED QUANTITIES

	BID ITEM #	BID ITEM	UNIT	E. APPR. APRON	E. ABUT.	SUPER. SPANS 1- 2	PIER 1	W. ABUT	W. APPR. APRON	TOTAL
	206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-5-661	LS	-	-	-	1	-	-	1
	210.0100	BACKFILL STRUCTURE	CY	-	-	-	192	-	-	192
	502.3100	EXPANSION DEVICE STRUCTURE B-5-661	LS	-	-	1	-	-	-	1
	502.3200	PROTECTIVE SURFACE TREATMENT	SY	18	-	342	-	-	18	378
	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	-	4,110	-	3,000	4,110	-	11,220
	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	5,971	1,340	113,322	16,060	1,340	5,971	144,005
**	506.3025	WELDED STUD SHEAR CONNECTORS 7/8 X 8-INCH	EACH	-	-	3,873	-	-	-	3,873
	511.2120	PILING STEEL DELIVERED AND DRIVEN HP 14-INCH x 73 LB	LF	-	1,260	-	1,875	1,260	-	4,395
	514.0445	FLOOR DRAINS TYPE GC	EACH	-	-	1	-	-	-	1
	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-	12	-	-	12	-	24
	604.0400	SLOPE PAVING CONCRETE	SY	-	13	-	-	13	-	26
	612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	60	-	-	-	-	60	120
	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	60	62	-	-	62	60	244
	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT B-5-661	LS	-	-	1	-	-	-	1
	652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	20	-	1,610	-	-	20	1,650
	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	-	-	363	-	-	-	363
	652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	LF	-	-	-	20	-	-	20
	653.0222	JUNCTION BOXES 18x12x6-INCH	EACH	-	-	3	-	-	-	3
	655.0110	CABLE IN DUCT 2-10 AWG	LF	-	-	1,038	-	-	-	1,038
	655.0150	CABLE IN DUCT 4-10 AWG	LF	-	-	918	-	-	-	918
	657.6005.S	ANCHOR ASSEMBLIES LIGHT POLES ON STRUCTURES	EACH	-	-	3	-	-	-	3
	SPV.0035.700	HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES	CY	55	66	567	103	66	55	912
	SPV.0060.702	GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLES	EACH	-	-	10	-	-	-	10
	SPV.0060.703	JUNCTION BOXES STAINLESS STEEL 12x12x4-INCH	EACH	-	-	34	-	-	-	34
	SPV.0060.704	JUNCTION BOXES STAINLESS STEEL 18x12x6-INCH	EACH	-	-	-	1	-	-	1
	SPV.0060.705	FLUORESCENT OUTDOOR FIXTURE 4-FOOT	EACH	-	-	28	-	-	-	28
	SPV.0085.700	BAR STEEL REINFORCEMENT HS STAINLESS BRIDGES	LB	-	-	1,225	-	-	-	1,225
	SPV.0090.700	DOWNSPOUT RTRP 6-INCH	LF	-	-	10	-	-	-	10
	SPV.0090.701	CONDUIT RIGID METALLIC PVC COATED 3-INCH	LF	-	-	-	15	-	-	15
	SPV.0105.700	ELECTRICAL SERVICE INSTALLATION	LS	-	-	1	-	-	-	1
	SPV.0105.701	ERECTING STRUCTURAL STEEL B-5-661	LS	-	-	1	-	-	-	1
	SPV.0105.702	FIELD PAINTING STRUCTURAL STEEL B-5-661	LS	-	-	1	-	-	-	1
	SPV.0165.700	ARCHITECTURAL SURFACE TREATMENT	SF	-	-	-	196	-	-	196
	SPV.0165.701	STAINING CONCRETE	SF	123	183	5607	869	183	123	7,087
	SPV.0165.702	STAINING CONCRETE BRICK	SF	-	-	-	196	-	-	196
	SPV.0180.700	DECK OVERLAY EPOXY	SY	73	-	1386	-	-	73	1,533

NOTES:

* STRUCTURAL STEEL AND BEARINGS ARE PROVIDED UNDER A SEPARATE STRUCTURAL STEEL FABRICATION CONTRACT AND WILL BE INSTALLED UNDER THIS CONSTRUCTION CONTRACT.

GIRDER FLANGES ALWAYS PARALLEL TO DECK ABOVE.

SEE CONTRACT 1133-03-83 "SUPERSTRUCTURE DETAILS" SHEET FOR HAUNCH DETAILS.

** SHEAR STUDS ARE FURNISHED AND INSTALLED UNDER THIS CONTRACT. SEE STEEL FABRICATION PLANS FOR LOCATIONS AND SPACING OF SHEAR STUDS. REMOVE 3MM COAT OF PRIMER FROM THE TOP FLANGE AT SHEAR STUD LOCATIONS BEFORE INSTALLING STUDS.

STAY-IN PLACE METAL FORMS PERMITTED INSIDE BOX GIRDERS ONLY.

◭ W.P. = WORK POINT. SEE CONTRACT 1133-03-83 SHT. 4 OF 26 FOR DETAILS.

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MDR | PLANS CK'D. MJA

CROSS SECTION AND QUANTITIES

SHEET 4 OF 36
474

FILE= P:\Transportation\Brown County Bridges USH 41\CADD\Sheets\B-5-661 (RemainingStructure)\004 B-05-661-CROSS-SECTION AND QUANTITIES.dgn

DATE: 2/24/2011
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STATE PROJECT NUMBER

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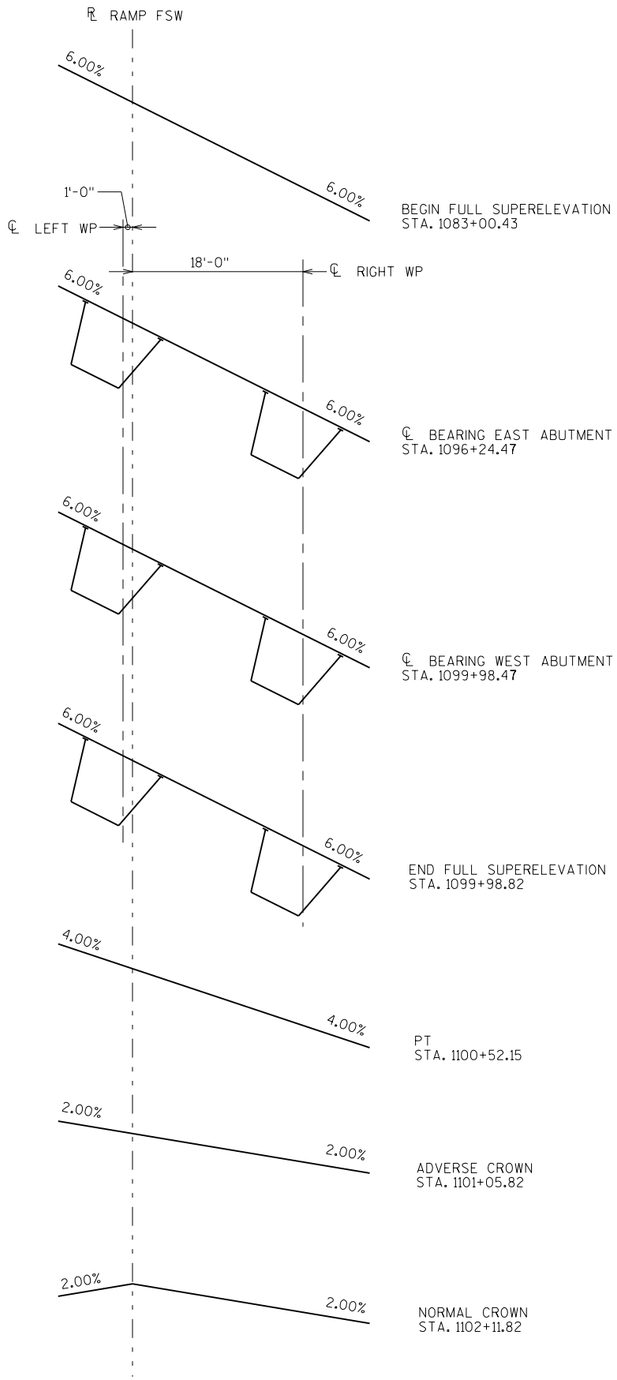
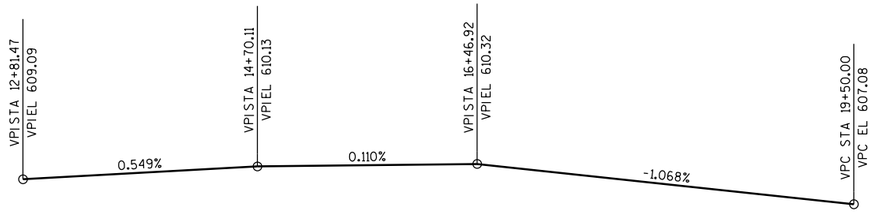
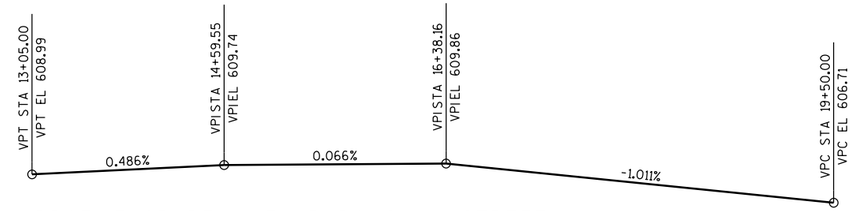


DECK SLOPE TRANSITION

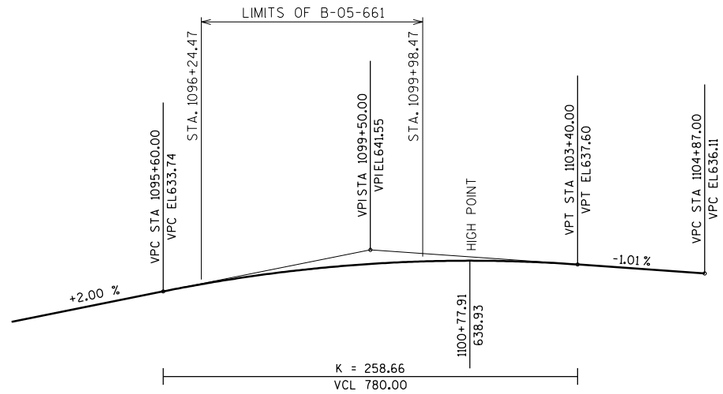
(LOOKING UPSTATION)



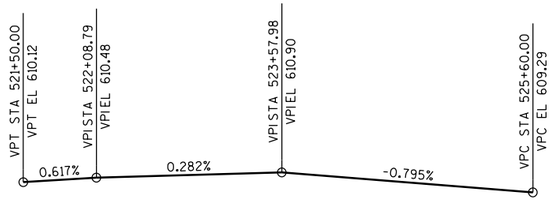
* PROFILE GRADE LINE SB DOUSMAN STREET



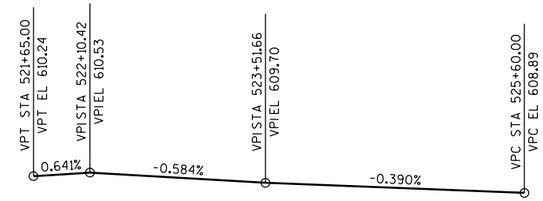
* PROFILE GRADE LINE NB DOUSMAN STREET



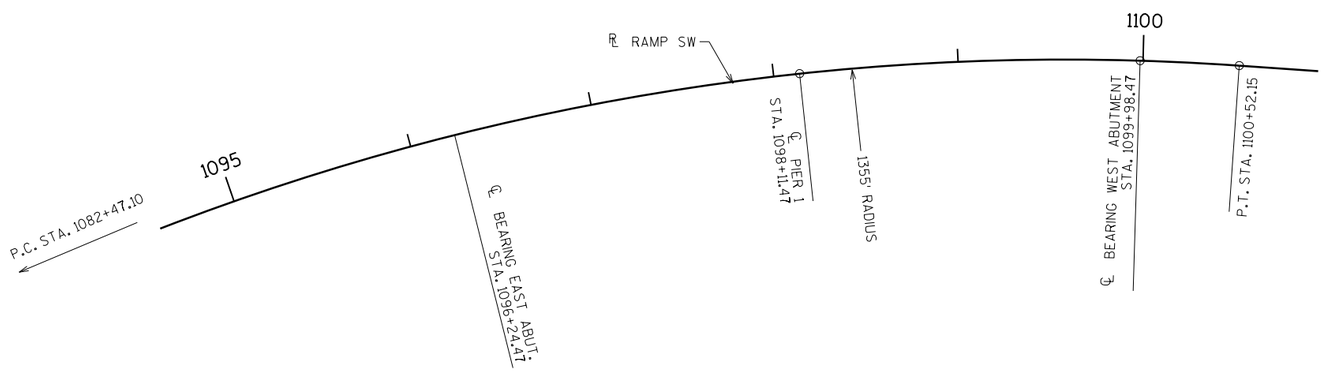
PROFILE GRADE LINE SB USH 41 TO WB STH 29 (RAMP FSW)



* PROFILE GRADE LINE WB SHAWANO AVENUE



* PROFILE GRADE LINE EB SHAWANO AVENUE



HORIZONTAL ALIGNMENT SB USH 41 TO WB STH 29 (RAMP FSW)

SB USH 41 TO WB STH 29 RAMP FSW 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
△= 76°19'33.09"
D= 4°13'42.49"
T= 1064.86'
L= 1805.05'
R= 1355.00'

SE= VARIES 5.90% TO 6%

NOTES:

* ROADWAY GEOMETRY NOT FINALIZED AT DATE OF THESE PLANS. SEE 1133-03-71 CONTRACT PLANS FOR DETAILS.

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 36
475

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

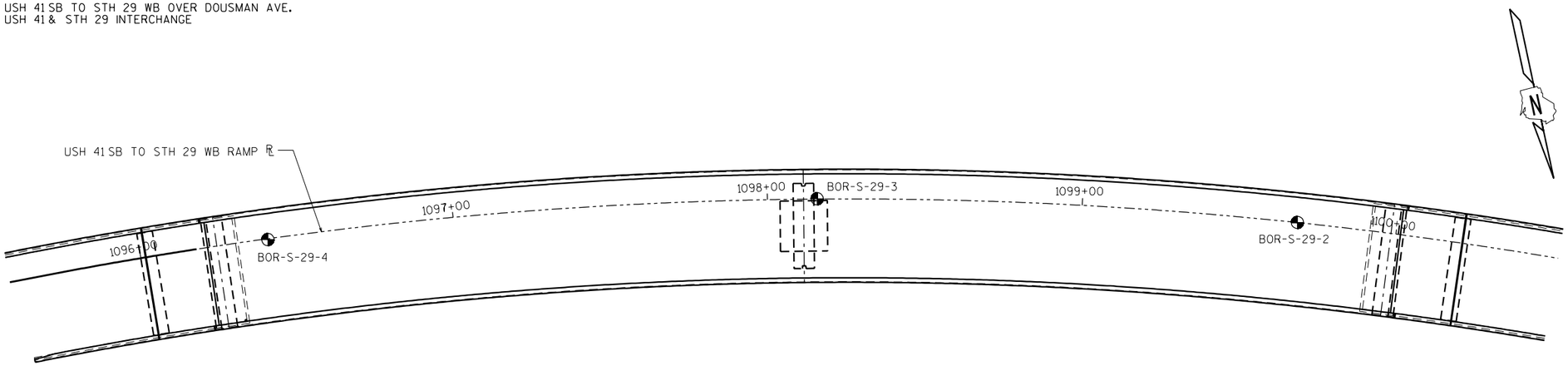
8

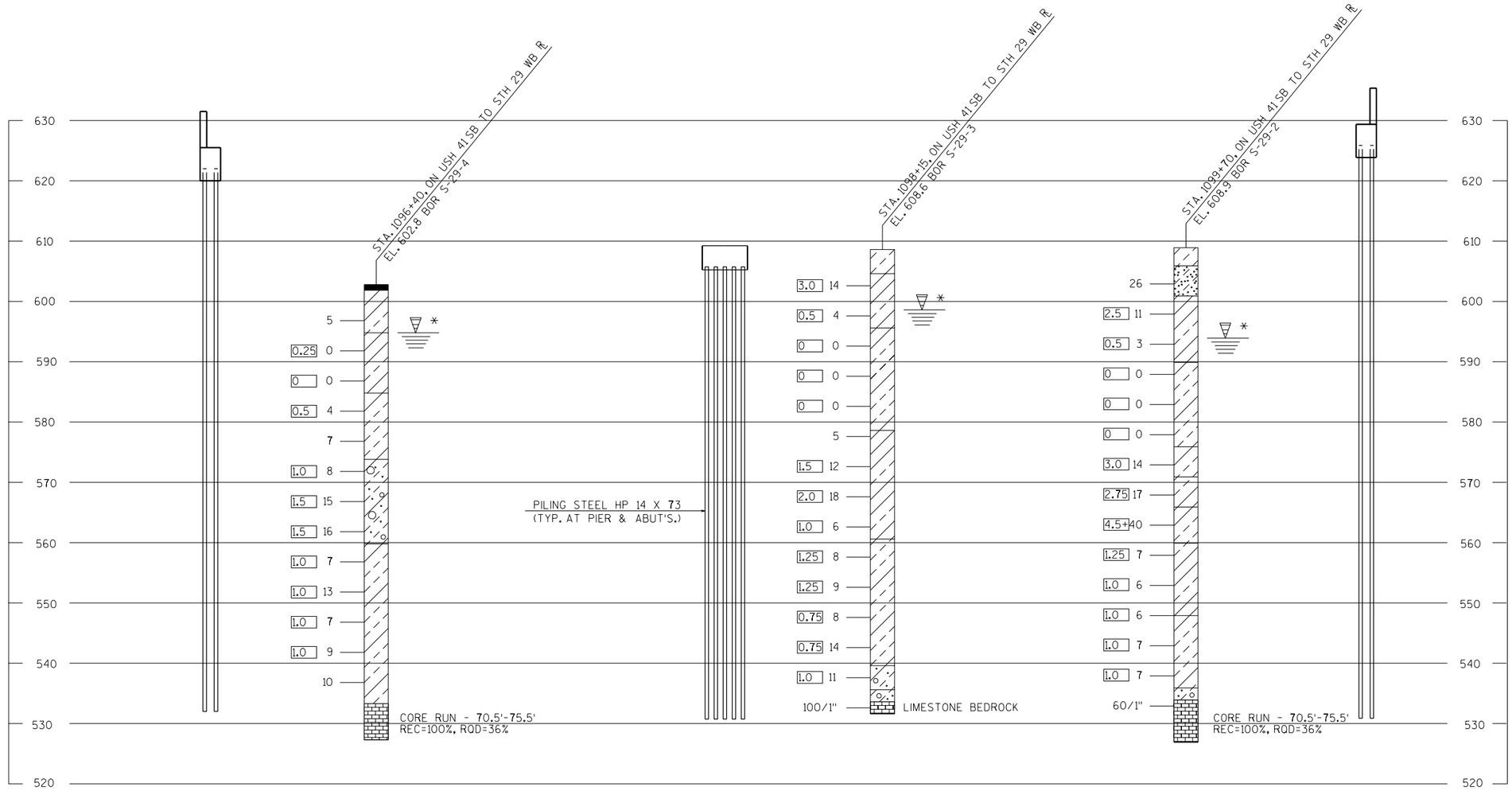
8

FILE= P:\Transportation\Brown County Bridges USH 41\CADD\Sheets\B-5-661 (RemainingStructure)\005 B-05-661-ALIGNMENT LAYOUT.dgn

DATE: 1/26/2011
I.D.

USH 41 SB TO STH 29 WB OVER DOUSMAN AVE.
USH 41 & STH 29 INTERCHANGE





* THE GROUND WATER ELEVATION WAS DETERMINED FROM WHERE THE SOIL SAMPLE WAS DESCRIBED AS WET.

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

STATE PROJECT NUMBER

1133-03-82

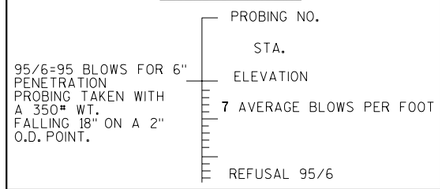
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

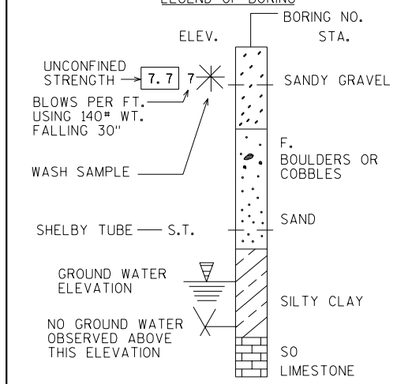
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY PR | PLANS CK'D.

SUBSURFACE EXPLORATION

SHEET 6 OF 36
476

8

8

FILE NAME : P:\152 USH 41 1133-03-02 URS\structures\B-5-661 substructure\06.soils.v8.b-5-661.DGN
PLOT DATE : 11/17/2010

STATE PROJECT NUMBER

1133-03-82

LEGEND

* ELEVATIONS ARE GIVEN AT THE TOP OF CONCRETE PEDESTAL AT THE ℄ OF BEARING.

** DIMENSIONS AND ELEVATIONS ARE GIVEN AT THE F.F. OF ABUTMENT BACKWALL AT TOP OFCONCRETE.

◭ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE ABOVE FOOTING.

◪ KEYED CONST. JOINT FORMED BY BEVELED 2" x 6".

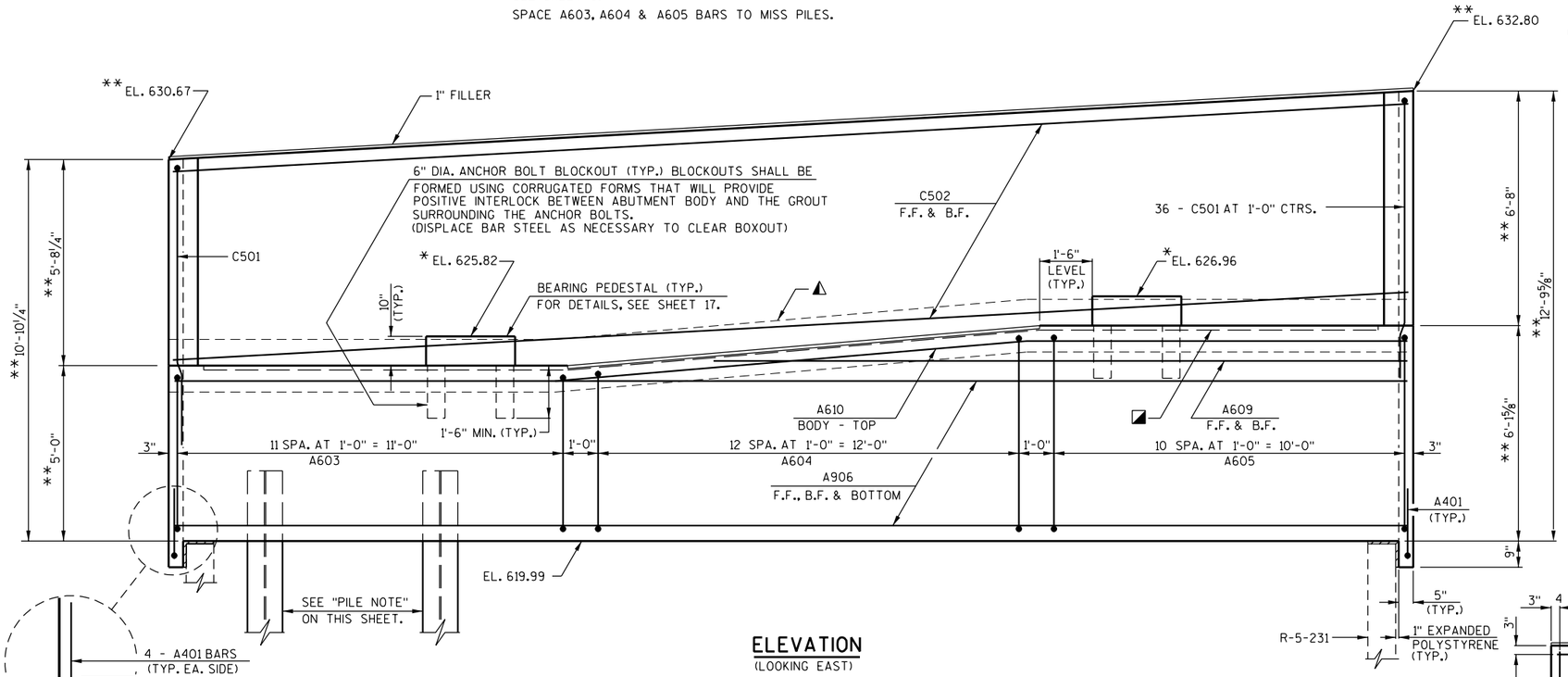
PILE NOTE

EAST ABUTMENT TO BE SUPPORTED ON PILING STEEL HP 14 x 73 WITH A REQUIRED DRIVING RESISTANCE OF 250 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 90' LONG. FOR PILE LAYOUT DETAILS, SEE SHEET 8. FOR PILE SPLICE DETAILS, SEE SHEET 9.

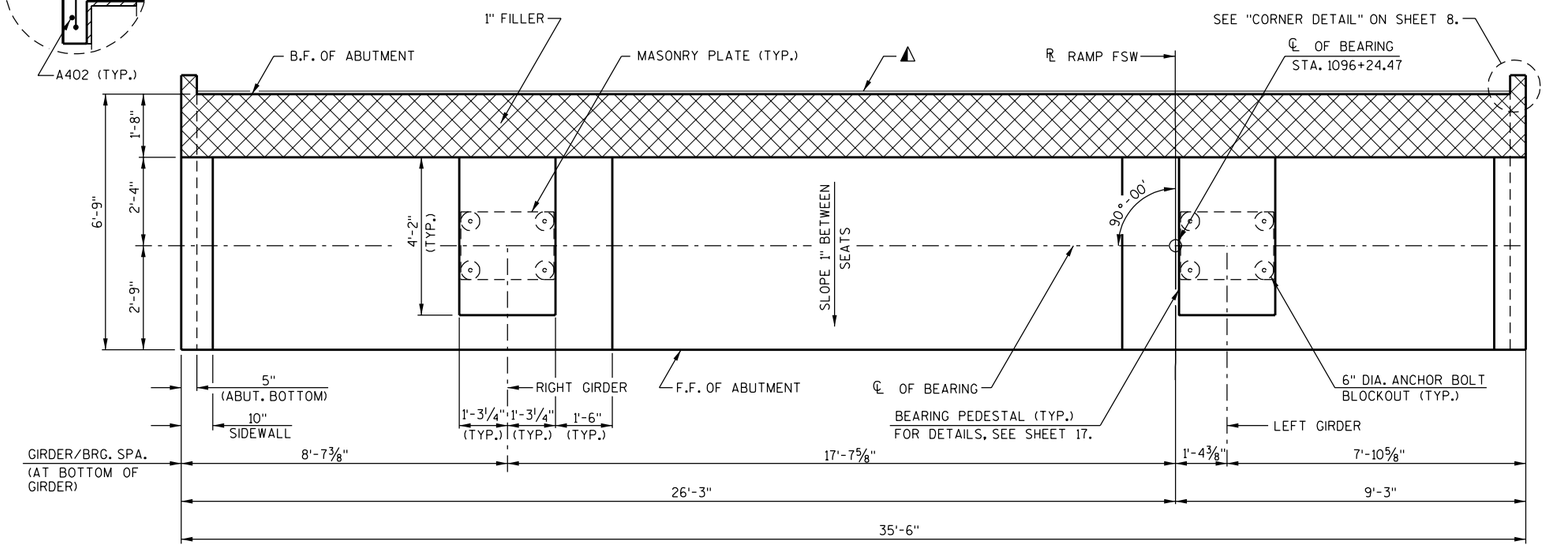
NOTE: FOR "TYPICAL SECTION THRU BODY", SEE SHEET 8.

SPACE A603, A604 & A605 BARS TO MISS PILES.

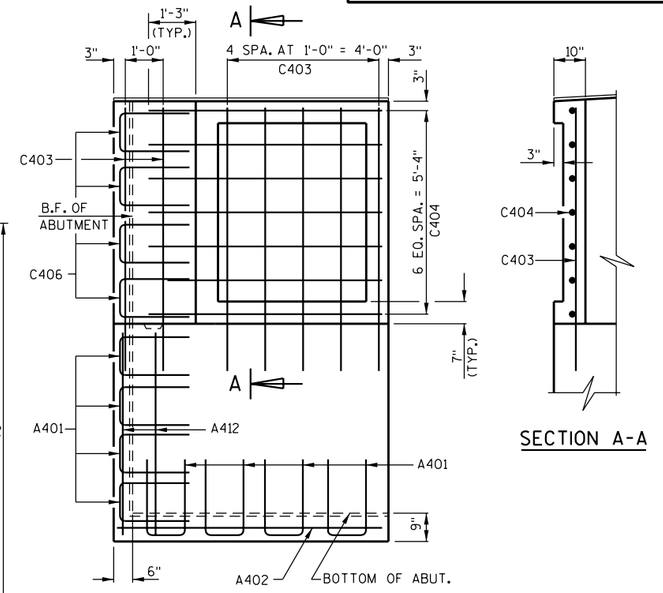
NOTE: APPLY "BRIDGE SEAT PROTECTION" PER SECTION 502.2.12 TO THE TOP OF ABUTMENT (SEATS AND BETWEEN SEATS).



ELEVATION
(LOOKING EAST)

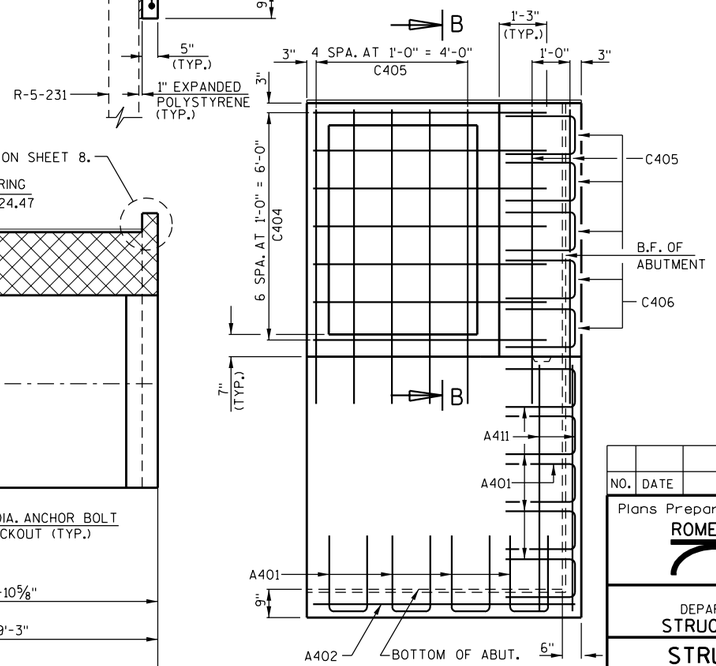


PLAN



SECTION A-A

END VIEW - NORTH END
(SHOWING CURTAIN WALL & B.F. NOTCH REINFORCEMENT)



SECTION B-B

END VIEW - SOUTH END
(SHOWING CURTAIN WALL & B.F. NOTCH REINFORCEMENT)

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

Plans Prepared By
ROMENESKO ENGINEERING, INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY TAW | PLANS CK'D. TR

EAST ABUTMENT

SHEET 7 OF 36
477

8

8

FILE NAME : P:\152 USH 41 1133-03-02 DRS\structures\B-5-661 substructure\07.eabut1.v7.b-5-661.dgn

PLOT DATE : 1/26/2011

STATE PROJECT NUMBER

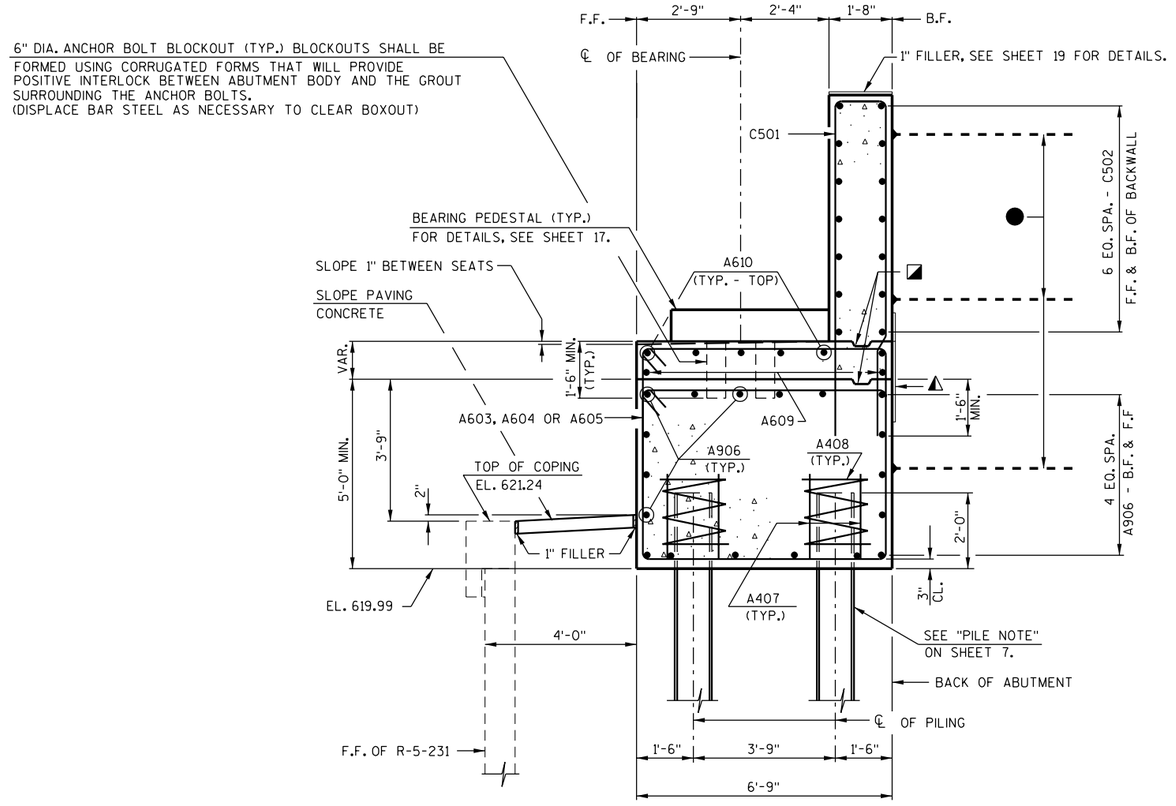
1133-03-82

LEGEND

◪ ◭ FOR SYMBOL DESCRIPTIONS, SEE SHEET 7.

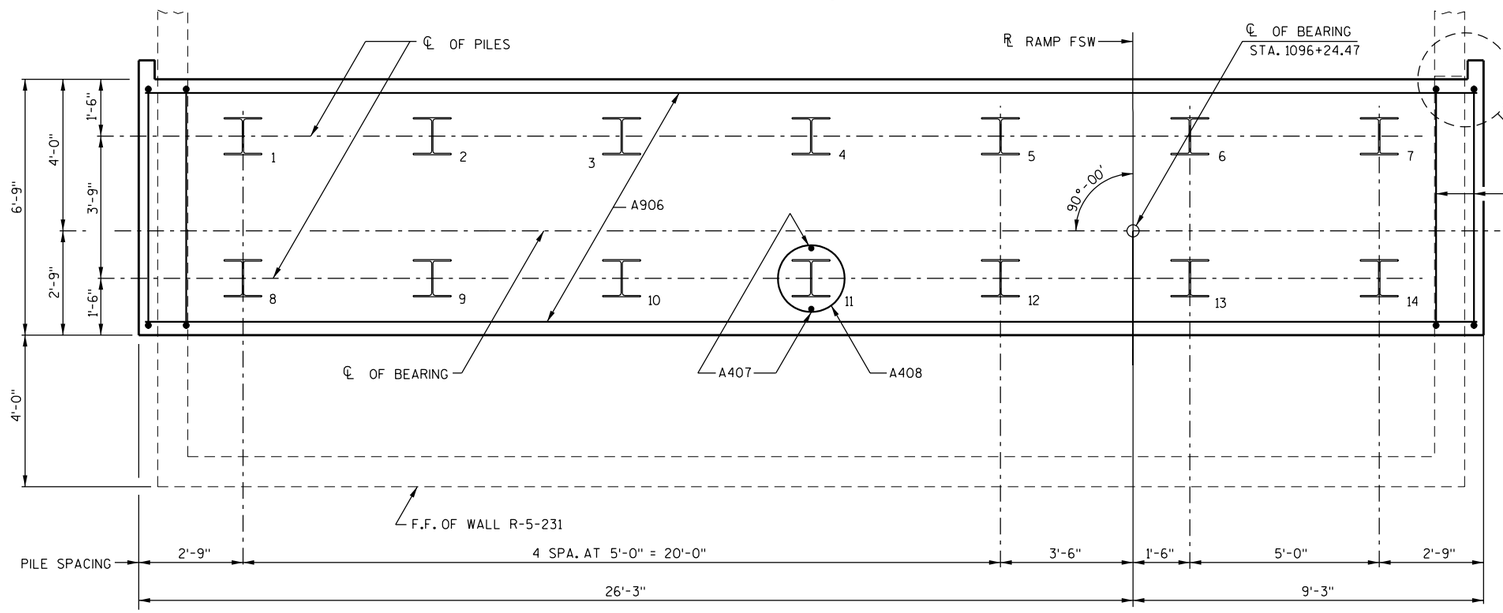
● M.S.E. WALL REINFORCEMENT STRIPS, TO BE DESIGNED BY MANUFACTURER. THE REINFORCEMENT STRIPS, BACKFILL STRUCTURE AND CONNECTION TO THE ABUTMENT ARE TO BE PAID FOR UNDER STRUCTURE R-5-231.

NOTE: BACKWALL MAY BE PLACED AFTER THE END DIAPHRAGM IS BOLTED.

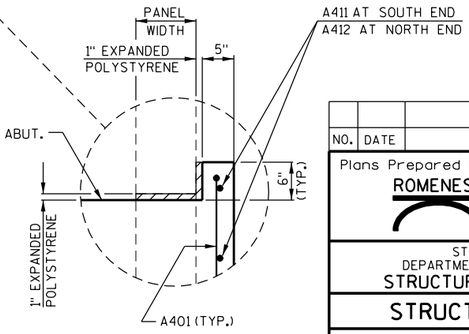


TYPICAL SECTION THRU BODY

(LOOKING NORTH)



PILE PLAN



CORNER DETAIL

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

Plans Prepared By
ROMENESKO ENGINEERING, INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY TAW | PLANS CK'D. TR

EAST ABUTMENT

SHEET 8 OF 36
478

8

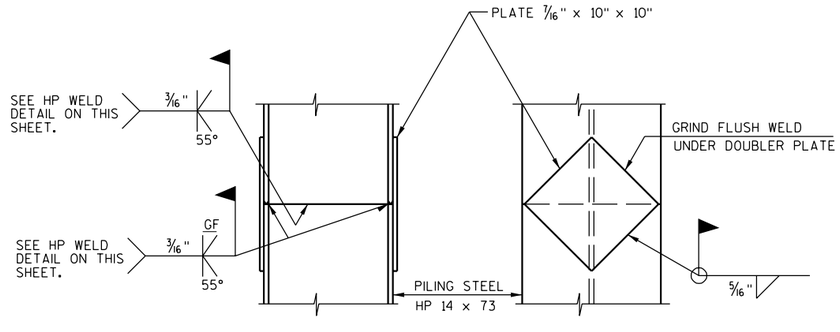
8

FILE NAME : P:\152 LSH 41 1133-03-02 UR\Structures\B-5-661 substructure\08_eabut2_v7_b-5-661.dgn

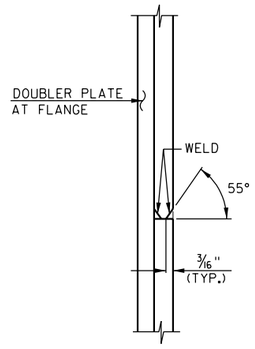
PLOT DATE : 12/1/2010

STATE PROJECT NUMBER

1133-03-82

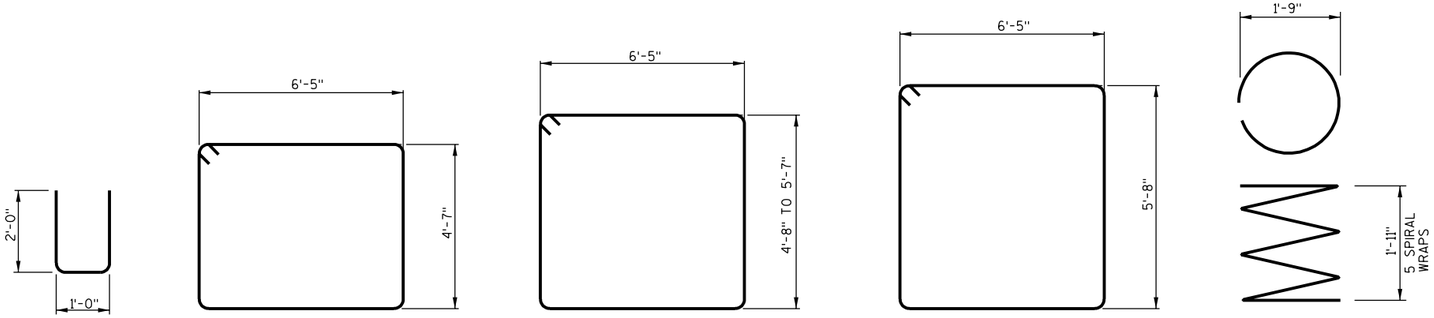


PILE SPLICE DETAIL

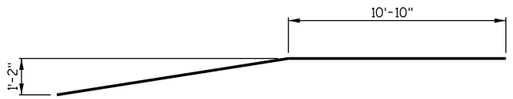


HP WELD DETAIL

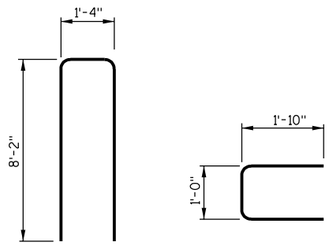
(FLANGE SHOWN, WEB SIMILAR)



A401 A603 A604 A605 A408



A610



C501 C406

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS					TOTAL WEIGHT = 4,110 LBS.
A401	17	4-10	X		BODY - B.F. & BOTTOM - EACH END VERT. & HORIZ.
A402	2	6-5			BODY - BOTTOM - EACH END HORIZ.
A603	12	22-10	X		BODY -STIRRUPS VERT.
A604	13	23-11	X	✳	BODY -STIRRUPS VERT.
A605	11	25-0	X		BODY -STIRRUPS VERT.
A906	18	35-2			BODY - F.F., B.F., TOP, & BOTTOM HORIZ.
A407	28	2-3			BODY - TWO PER PILE VERT.
A408	14	28-0	X		BODY - SPIRAL WRAP - ONE PER PILE VERT.
A609	2	19-9			BODY - F.F. & B.F. HORIZ.
A610	6	24-4	X		BODY - TOP HORIZ.
A411	2	5-8			BODY - SOUTH END VERT.
A412	2	4-7			BODY - NORTH END VERT.
EPOXY COATED BARS					TOTAL WEIGHT = 1,340 LBS.
C501	36	17-5	X		ABUTMENT BACKWALL VERT.
C502	14	35-3			ABUTMENT BACKWALL HORIZ.
C403	7	7-0			CURTAIN WALL - NORTH END VERT.
C404	14	5-8			CURTAIN WALL - EACH END HORIZ.
C405	7	7-10			CURTAIN WALL - SOUTH END VERT.
C406	9	4-6	X		ABUTMENT BACKWALL - EACH END HORIZ.

✳ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATION. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
A604	1 SERIES OF 13	23'-0" TO 24'-10"

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

Plans Prepared By
ROMENESKO ENGINEERING, INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY TAW | PLANS CK'D. TR

EAST ABUTMENT DETAILS

SHEET 9 OF 36
479

8

8

FILE NAME : P:\152 USH 41 1133-03-02 LRPS\structures\B-5-661 substructure\09_eabut&t_v7_b-5-661.dgn

PLOT DATE : 11/17/2010

STATE PROJECT NUMBER

1133-03-82

LEGEND

* ELEVATIONS ARE GIVEN AT THE TOP OF CONCRETE PEDESTAL AT THE ℄ OF BEARING.

** DIMENSIONS AND ELEVATIONS ARE GIVEN AT THE F.F. OF ABUTMENT BACKWALL AT TOP OFCONCRETE.

⚠ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE ABOVE FOOTING.

◪ KEYED CONST. JOINT FORMED BY BEVELED 2" x 6".

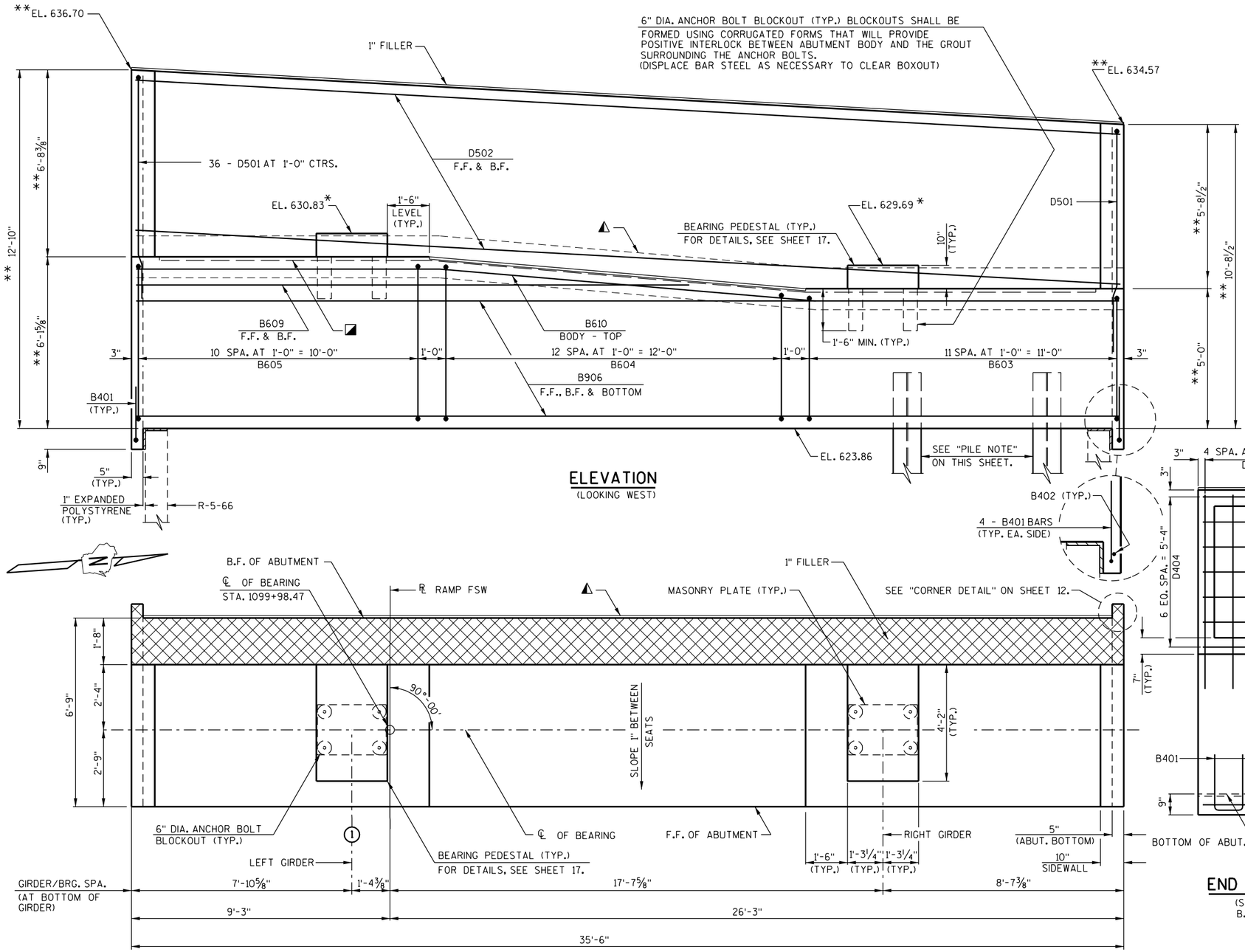
PILE NOTE

WEST ABUTMENT TO BE SUPPORTED ON PILING STEEL HP 14 x 73 WITH A REQUIRED DRIVING RESISTANCE OF 250 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 90' LONG. FOR PILE LAYOUT DETAILS, SEE SHEET 11. FOR PILE SPLICE DETAILS, SEE SHEET 9.

NOTE: FOR "TYPICAL SECTION THRU BODY", SEE SHEET 11.

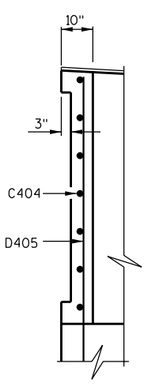
SPACE B603, B604 & B605 BARS TO MISS PILES.

NOTE: APPLY "BRIDGE SEAT PROTECTION" PER SECTION 502.2.12 TO THE TOP OF ABUTMENT (SEATS AND BETWEEN SEATS).

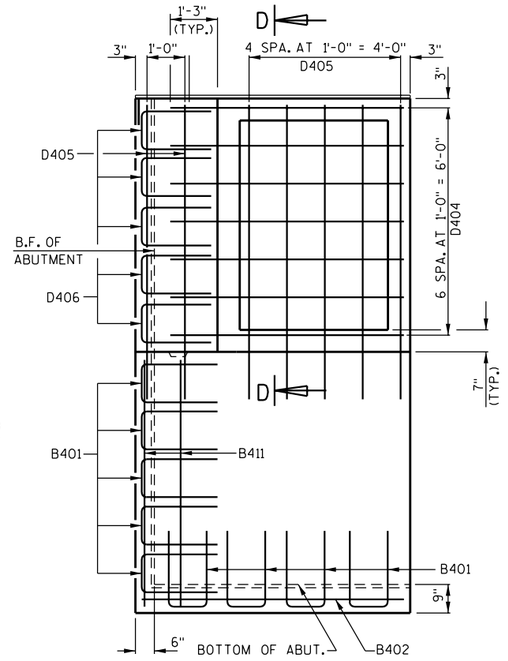


ELEVATION
(LOOKING WEST)

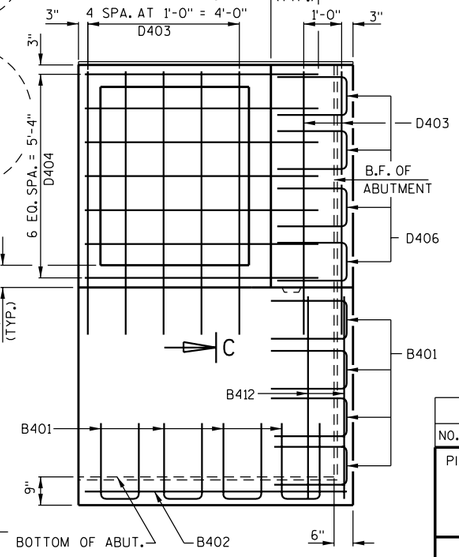
PLAN



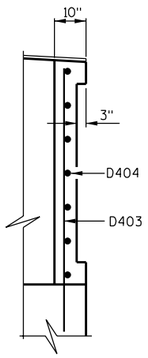
SECTION D-D



END VIEW - SOUTH END
(SHOWING CURTAIN WALL & B.F. NOTCH REINFORCEMENT)



END VIEW - NORTH END
(SHOWING CURTAIN WALL & B.F. NOTCH REINFORCEMENT)



SECTION C-C

NO.	DATE	REVISION	BY

Plans Prepared By
ROMENESKO ENGINEERING, INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY TAW | PLANS CK'D. TR

WEST ABUTMENT

SHEET 10 OF 36
480

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

8

8

FILE NAME : P:\152 USH 41 1133-03-02 UPG\structures\B-5-661 substructure\10_wabut1_v7_b-5-661.dgn

PLOT DATE : 1/26/2011

STATE PROJECT NUMBER

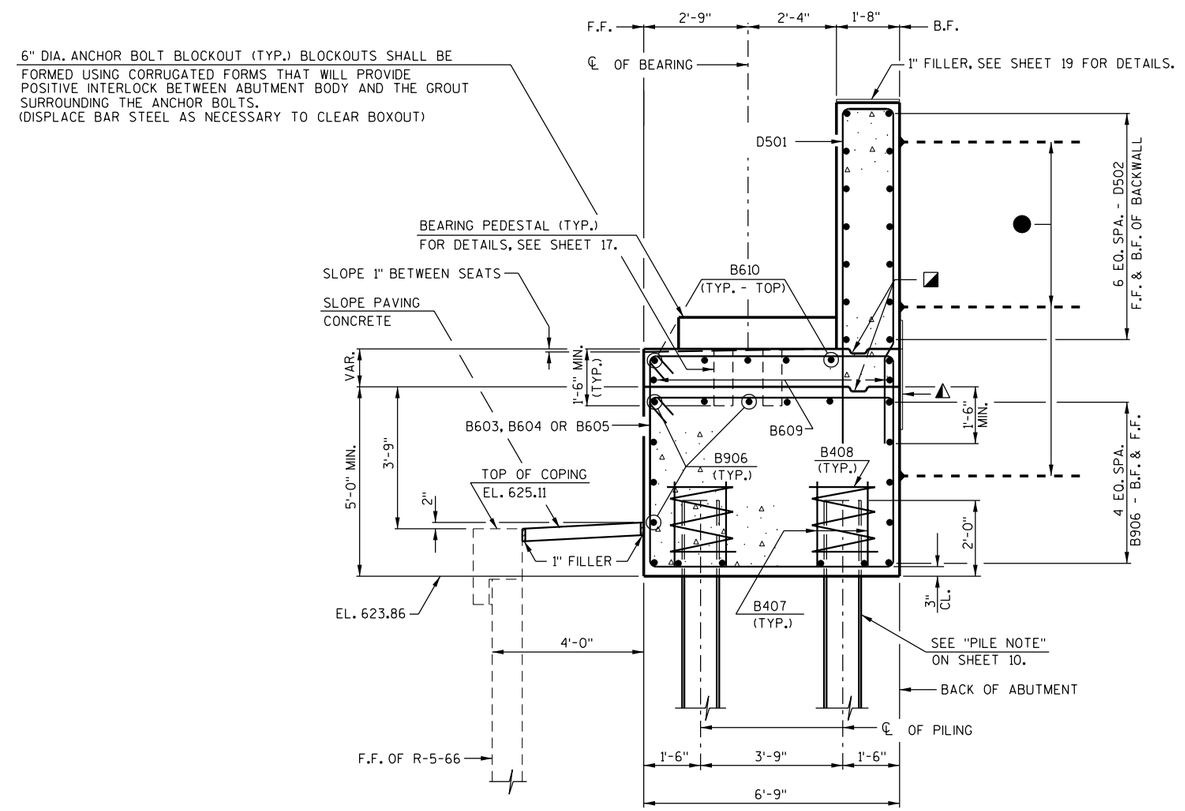
1133-03-82

LEGEND

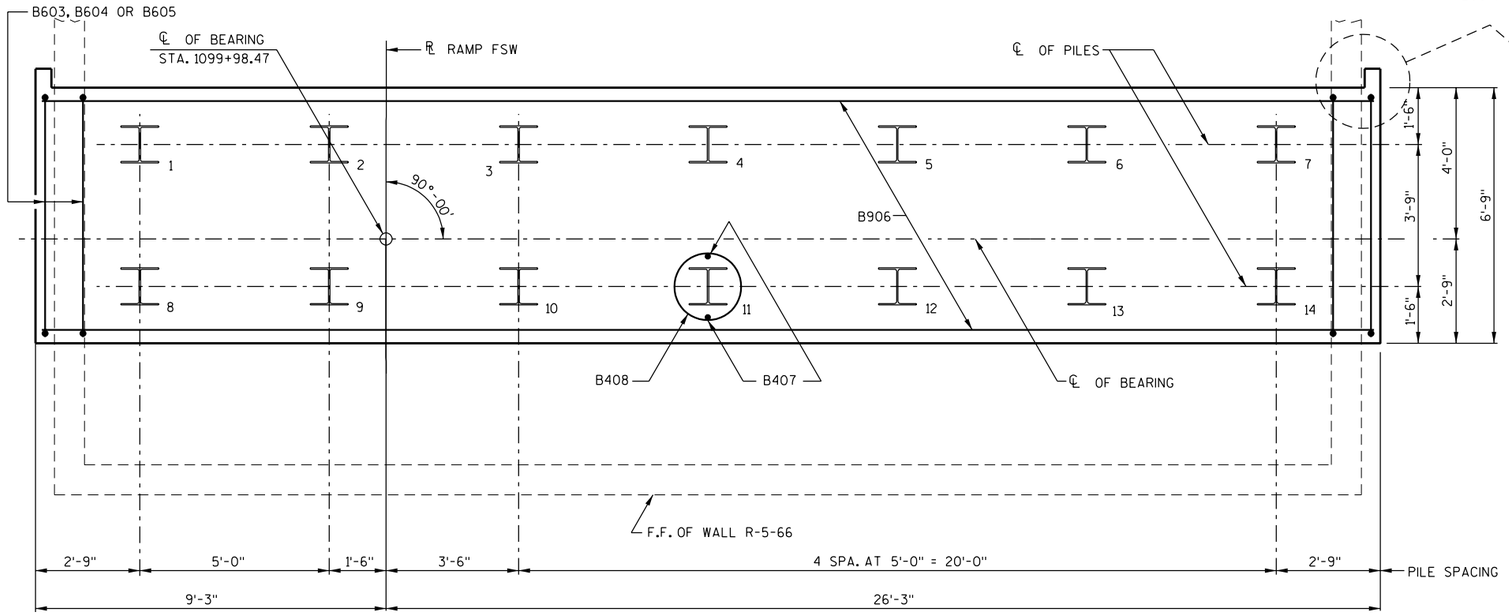
◪ ◭ FOR SYMBOL DESCRIPTIONS, SEE SHEET 10.

● M.S.E. WALL REINFORCEMENT STRIPS, TO BE DESIGNED BY MANUFACTURER. THE REINFORCEMENT STRIPS, BACKFILL STRUCTURE AND CONNECTION TO THE ABUTMENT ARE TO BE PAID FOR UNDER STRUCTURE R-5-66.

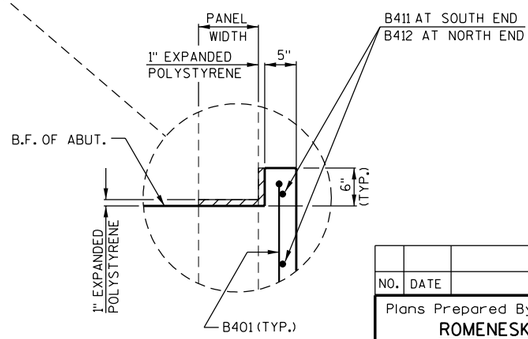
NOTE: BACKWALL MAY BE PLACED AFTER THE END DIAPHRAGM IS BOLTED.



TYPICAL SECTION THRU BODY
(LOOKING SOUTH)



PILE PLAN



CORNER DETAIL

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

Plans Prepared By
ROMENESKO ENGINEERING, INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY TAW | PLANS CK'D. TR

WEST ABUTMENT

SHEET 11 OF 36
481

8

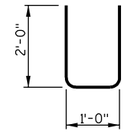
8

FILE NAME : P:\152 USH 41 1133-03-02 DFS\structures\B-5-661 substructure\11.wabut2.v7.b-5-661.dgn

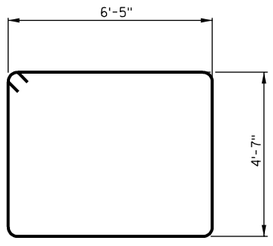
PLOT DATE : 12/1/2010

STATE PROJECT NUMBER

1133-03-82



B401



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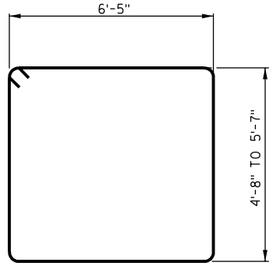
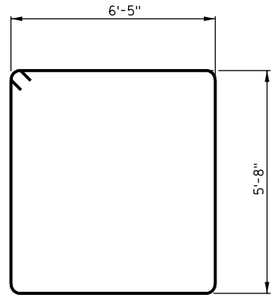
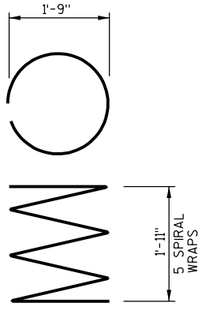


B604



B605



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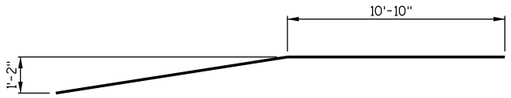

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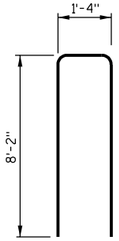
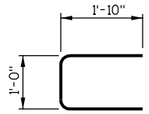


D501



D406

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS					TOTAL WEIGHT = 4,110 LBS.
B401	17	4-10	X		BODY - BOTTOM - EACH END VERT. & HORIZ.
B402	2	6-5			BODY - BOTTOM - EACH END HORIZ.
B603	12	22-10	X		BODY -STIRRUPS VERT.
B604	13	23-11	X	✳	BODY -STIRRUPS VERT.
B605	11	25-0	X		BODY -STIRRUPS VERT.
B906	18	35-2			BODY - F.F., B.F., TOP, & BOTTOM HORIZ.
B407	28	2-3			BODY - TWO PER PILE VERT.
B408	14	28-0	X		BODY - SPIRAL WRAP - ONE PER PILE VERT.
B609	2	19-9			BODY - F.F. & B.F. HORIZ.
B610	6	24-4	X		BODY - TOP HORIZ.
B411	2	5-8			BODY - SOUTH END VERT.
B412	2	4-7			BODY - NORTH END VERT.
EPOXY COATED BARS					TOTAL WEIGHT = 1,340 LBS.
D501	36	17-5	X		ABUTMENT BACKWALL VERT.
D502	14	35-3			ABUTMENT BACKWALL HORIZ.
D403	7	7-0			CURTAIN WALL - NORTH END VERT.
D404	14	5-8			CURTAIN WALL - EACH END HORIZ.
D405	7	7-10			CURTAIN WALL - SOUTH END VERT.
D406	9	4-6	X		ABUTMENT BACKWALL - EACH END HORIZ.

✳ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATION. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
B604	1 SERIES OF 13	23'-0" TO 24'-10"

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

Plans Prepared By
ROMENESKO ENGINEERING, INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY TAW | PLANS CK'D. TR

WEST ABUTMENT DETAILS

SHEET 12 OF 36
482

FILE NAME : P:\152 USH 41 1133-03-02 DFS\structures\B-5-661 substructure\12.wabutdet.v7.b-5-661.dgn

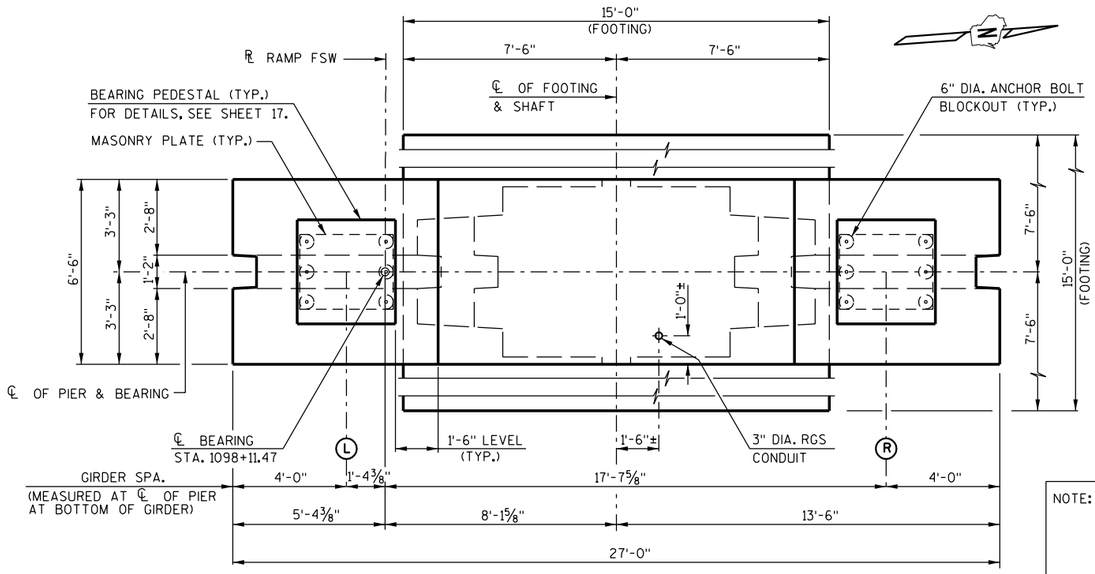
PLOT DATE : 11/17/2010

8

8

STATE PROJECT NUMBER

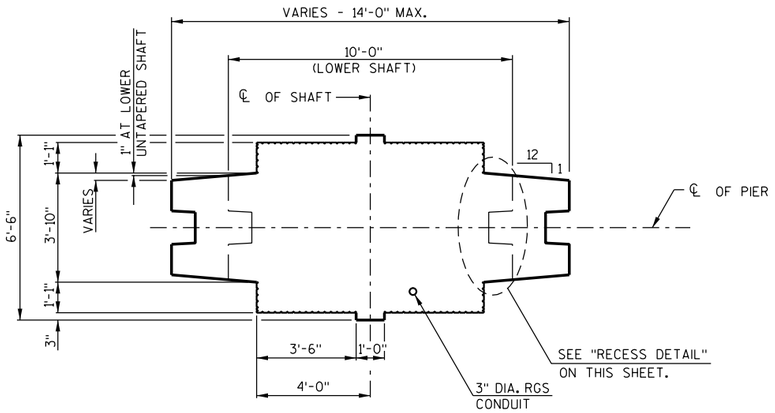
1133-03-82



PLAN

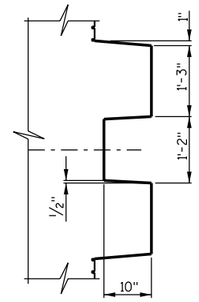
NOTE: THE 3" DIA. RIGID GALVANIZED STEEL (RGS) CONDUIT LOCATION IS SHOWN ON THIS PIER DETAIL SHEET ONLY. FOR ADDITIONAL CONDUIT DETAILS, SEE SHEET 32.

FOR AESTHETIC DETAILS, SEE SHEET 36.

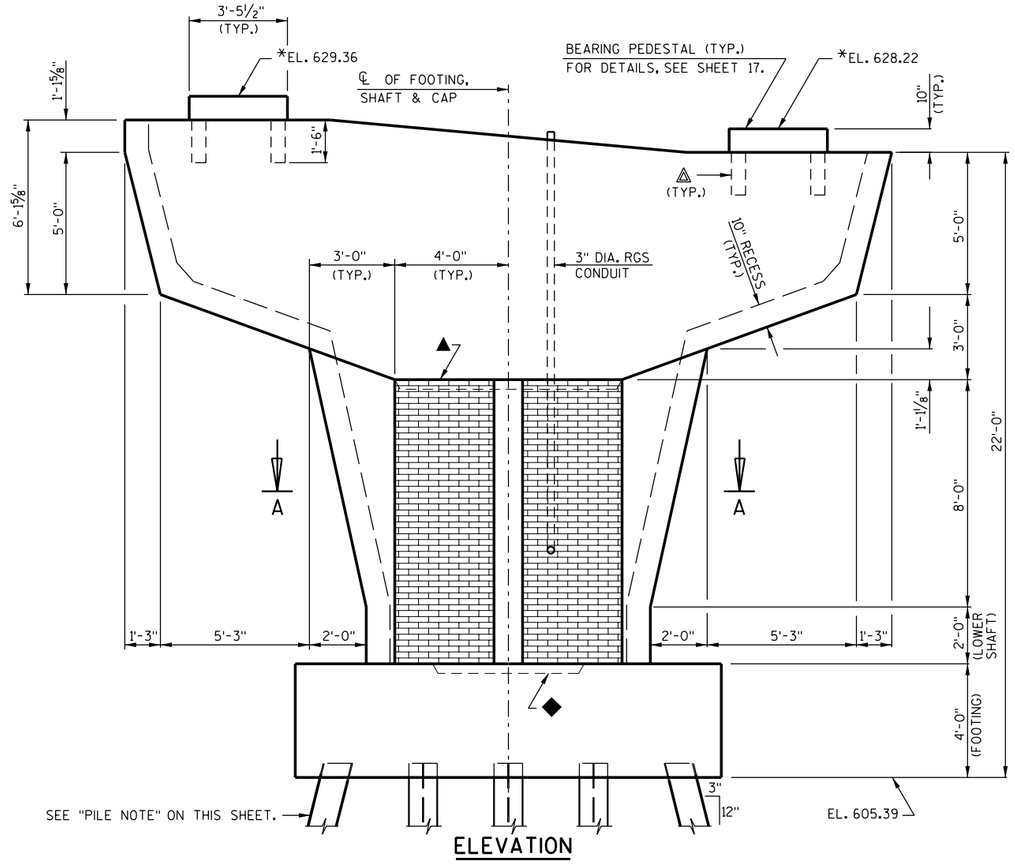


SECTION A-A

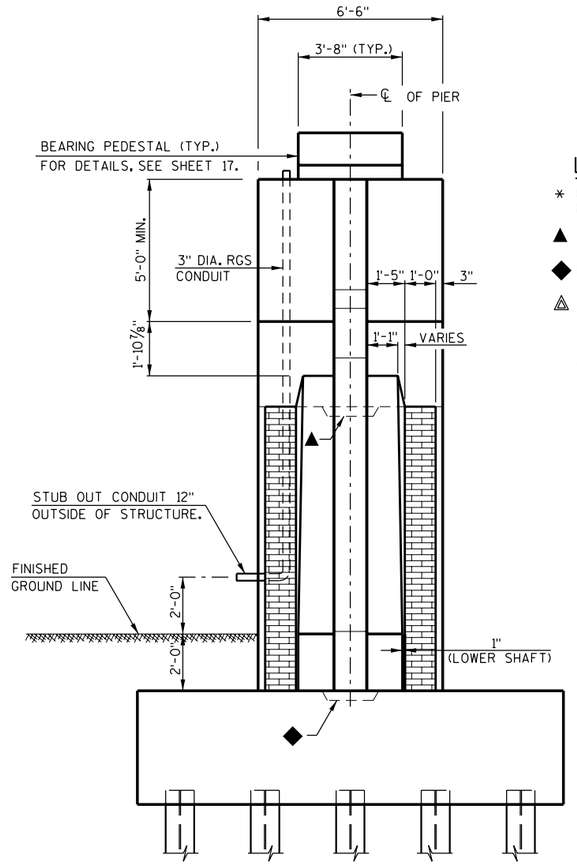
NOTE: ALL DIMENSIONS ARE SYMMETRICAL.



RECESS DETAIL
(LOWER SHAFT)



ELEVATION



END VIEW

(NORTH END SHOWN, SOUTH END SIMILAR)

LEGEND

* ELEVATIONS ARE GIVEN AT THE TOP OF CONCRETE PEDESTAL AT THE ℄ OF BEARING.

▲ KEYED CONST. JOINT FORMED BY BEVELED 4" x 2'-0" X 8'-0".

◆ KEYED CONST. JOINT FORMED BY BEVELED 4" x 2'-0" X 5'-4".

△ 6" DIA. ANCHOR BOLT BLOCKOUT (TYP.) BLOCKOUTS SHALL BE FORMED USING CORRUGATED FORMS THAT WILL PROVIDE POSITIVE INTERLOCK BETWEEN PIER CAP AND THE GROUT SURROUNDING THE ANCHOR BOLTS. (DISPLACE BAR STEEL AS NECESSARY TO CLEAR BOXOUT).

NOTE: FOR PIER BAR STEEL REINFORCEMENT DETAILS, SEE SHEETS 14 - 16.

PILE NOTE

PIER TO BE SUPPORTED ON PILING STEEL HP 14 x 73 WITH A REQUIRED DRIVING RESISTANCE OF 250 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 75' LONG. BATTER EXTERIOR PILES 3" PER FOOT. FOR FOOTING PILE LAYOUT DETAILS, SEE SHEET 15. FOR PILE SPLICE DETAILS, SEE SHEET 9.

NO.	DATE	REVISION	BY

Plans Prepared By
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

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PIER

SHEET 13 OF 36
483

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

8

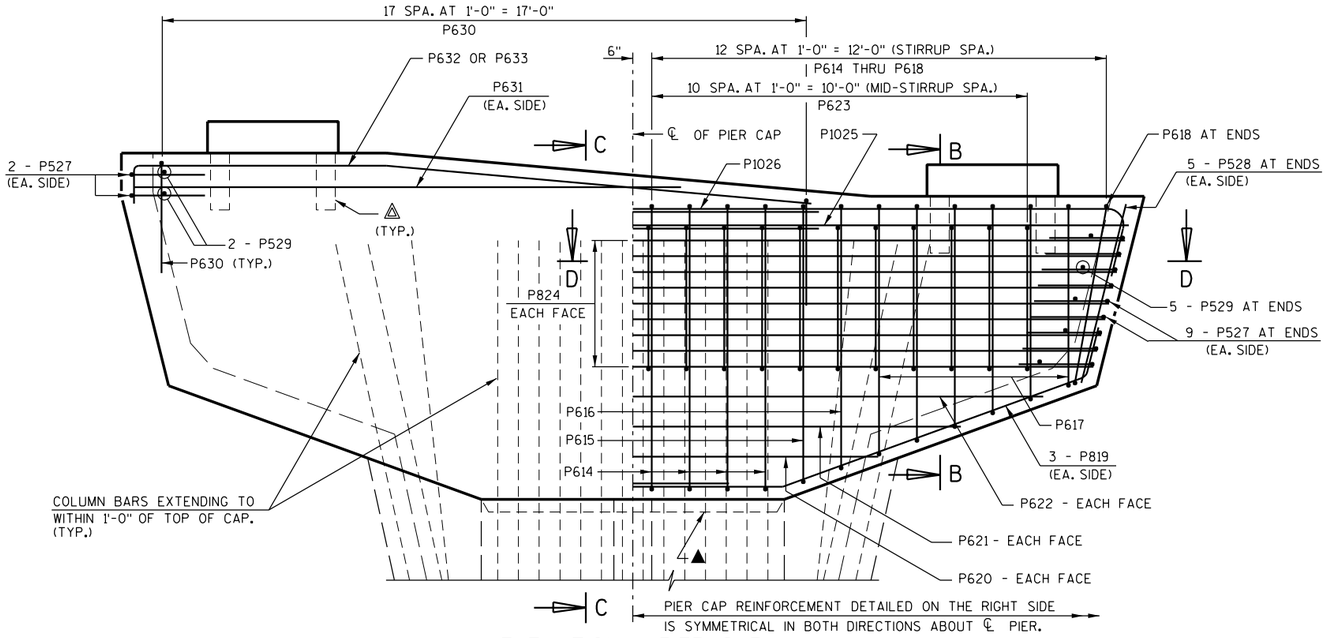
8

FILE NAME : P:\152 USH 41 1133-03-02 UPG\structures\B-5-661 substructure\13.pier.v7.b-5-661.dgn

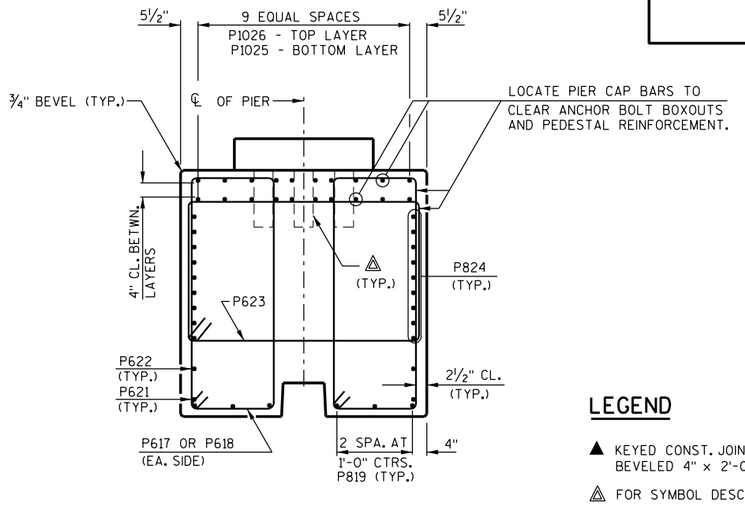
PLOT DATE : 12/1/2010

STATE PROJECT NUMBER

1133-03-82



ELEVATION - PIER CAP



SECTION B-B

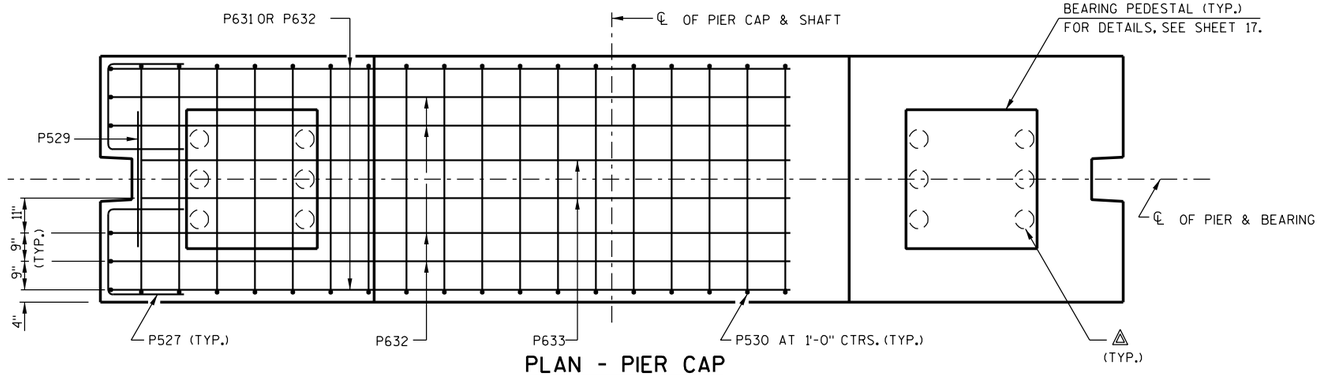
LEGEND

▲ KEYED CONST. JOINT FORMED BY BEVELED 4" x 2'-0" X 8'-0".

△ FOR SYMBOL DESCRIPTION, SEE SHEET 13.

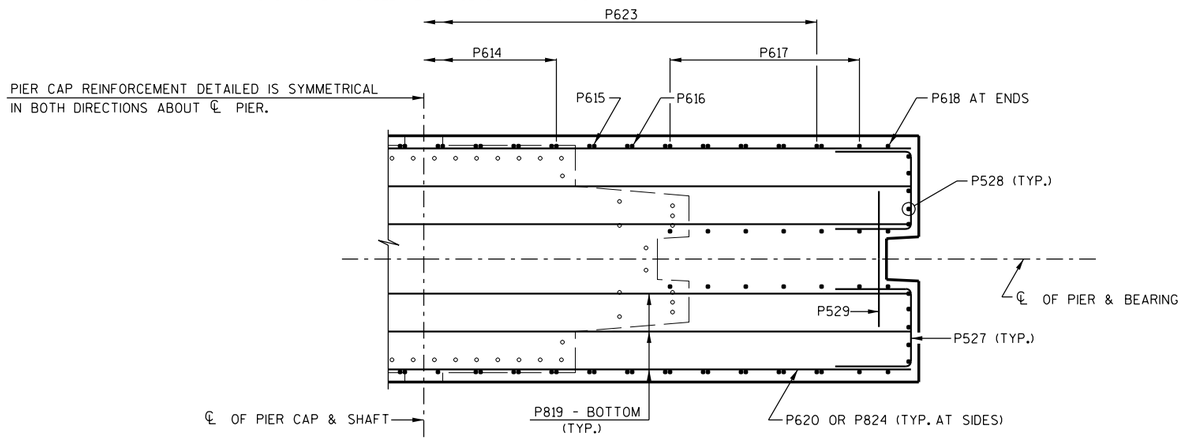
NOTES

1. LAP P819 BARS 5'-1" MIN.
2. LAP P1025 & P1026 BARS 9'-3" MIN.
3. SEE SHEET 13 FOR TYPICAL PIER GEOMETRY AND ELEVATIONS.
4. SEE SHEET 15 FOR PIER SHAFT BAR STEEL REINFORCEMENT DETAILS.
5. SEE SHEET 17 FOR TYPICAL PEDESTAL BAR STEEL REINFORCEMENT DETAILS.

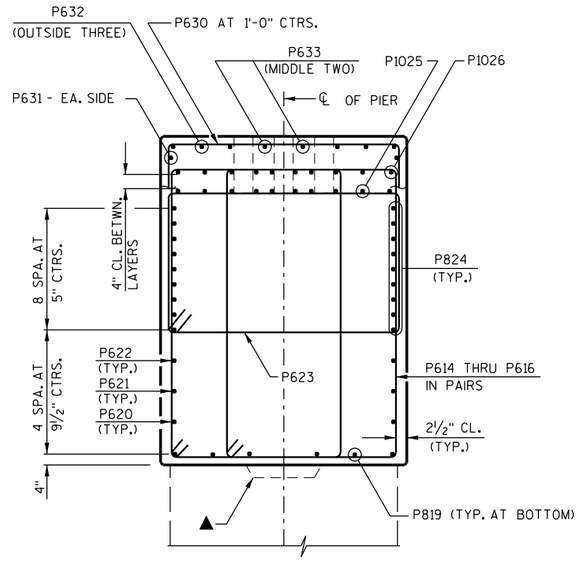


PLAN - PIER CAP

(SHOWING BAR STEEL REINFORCEMENT AT TOP OF CAP)



SECTION D-D



SECTION C-C

NO.	DATE	REVISION	BY

Plans Prepared By
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY TAW | PLANS CK'D. TR

PIER CAP DETAILS

SHEET 14 OF 36
484

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

8

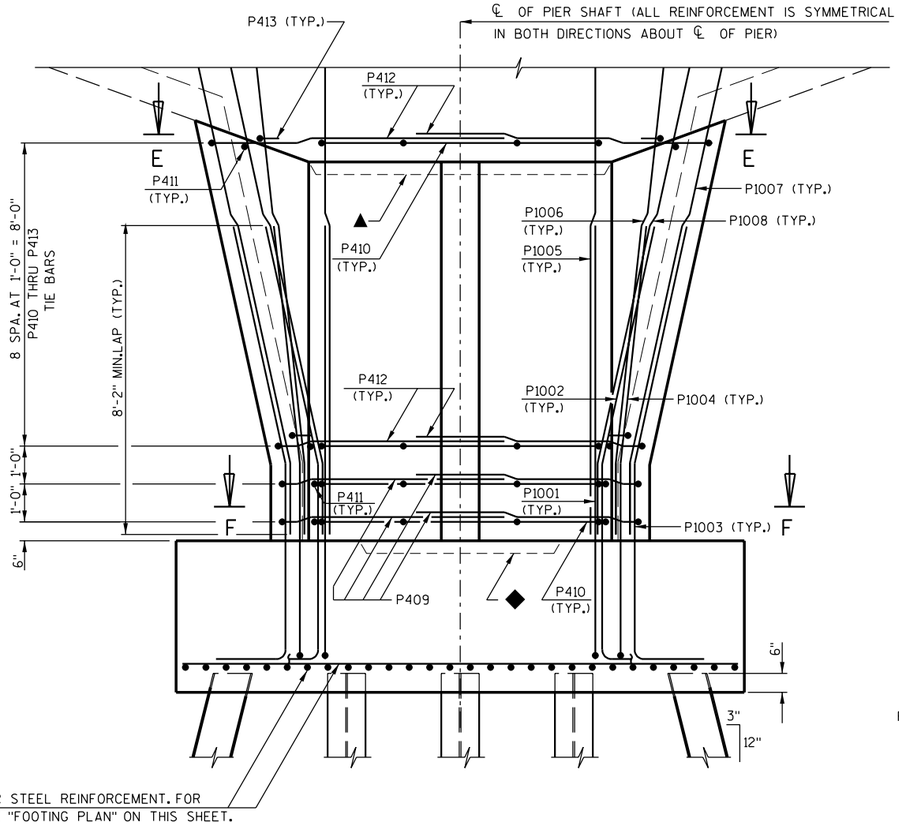
8

FILE NAME : P:\152 USH 41 1133-03-02 LRG\structures\B-5-661 substructure\14_pierb_v7_b-5-661.dgn

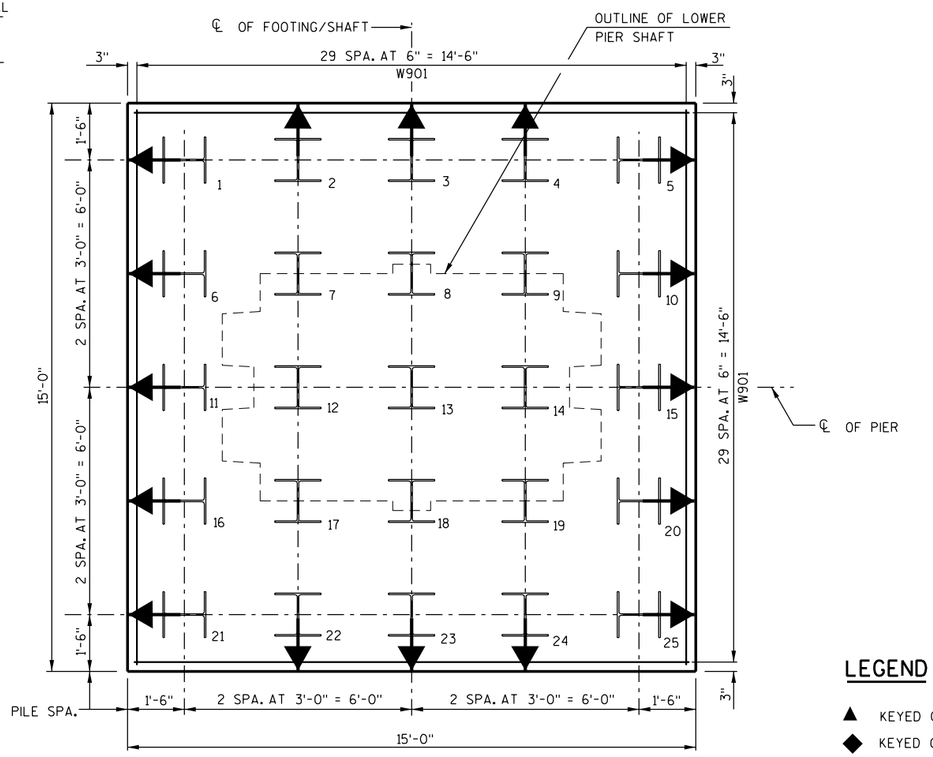
PLOT DATE : 11/17/2010

STATE PROJECT NUMBER

1133-03-82



FOOTING BAR STEEL REINFORCEMENT. FOR DETAILS, SEE "FOOTING PLAN" ON THIS SHEET.



FOOTING PLAN

LEGEND

▲ KEYED CONST. JOINT FORMED BY BEVELED 4" x 2'-0" X 8'-0".

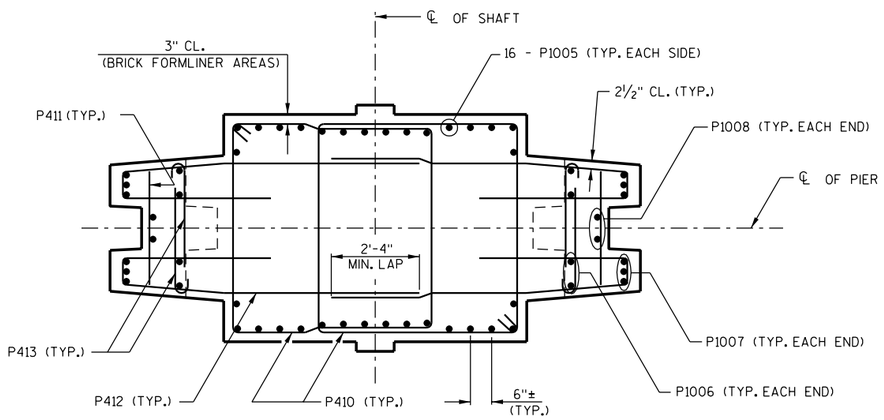
◆ KEYED CONST. JOINT FORMED BY BEVELED 4" x 2'-0" X 5'-4".

INDICATES PILES BATTERED 3" PER FOOT IN DIRECTION OF ARROW.

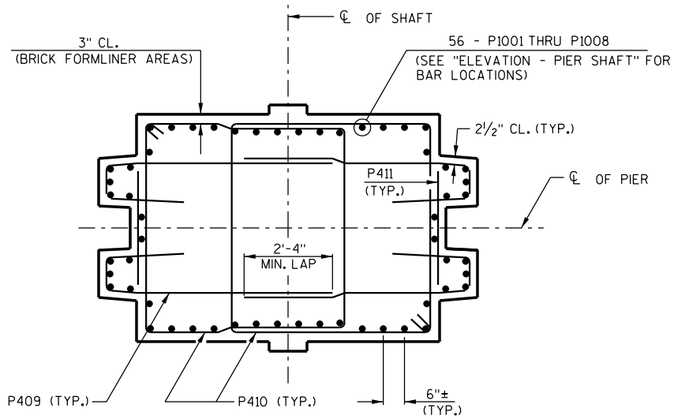
NOTES

1. SEE SHEET 13 FOR TYPICAL PIER GEOMETRY AND ELEVATIONS.
2. SEE SHEET 14 FOR PIER CAP BAR STEEL REINFORCEMENT DETAILS.
3. SEE SHEET 13 FOR PILE NOTE.

ELEVATION - PIER SHAFT



SECTION E-E



SECTION F-F

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

Plans Prepared By
ROMENESKO ENGINEERING, INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY TAW | PLANS CK'D. TR

PIER SHAFT DETAILS

SHEET 15 OF 36
485

8

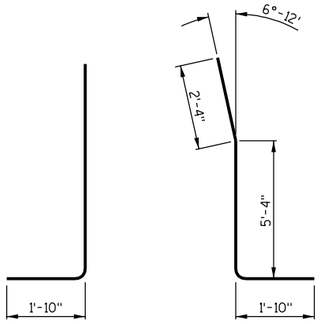
8

FILE NAME : P:\152 USH 41 1133-03-02 UPS\structures\B-5-661 substructure\15_piers_v7_b-5-661.dgn

PLOT DATE : 1/26/2011

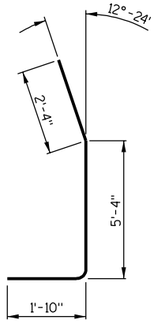
STATE PROJECT NUMBER

1133-03-82

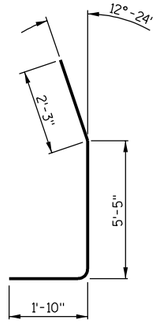


P1001

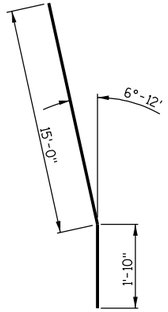
P1002



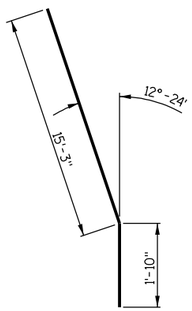
P1003



P1004



P1006



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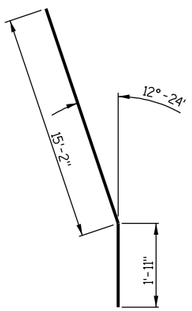

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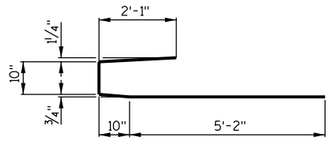
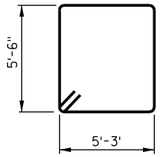


P409



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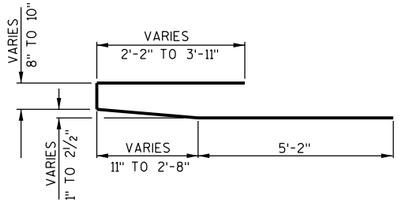

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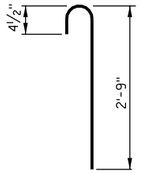

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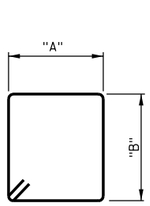
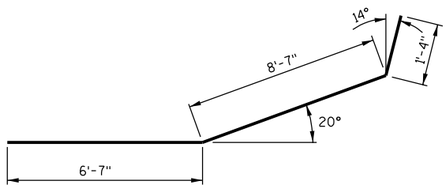
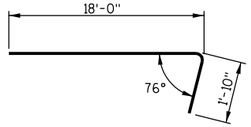


MARK	DIMENSION "A"	DIMENSION "B"
P614	4'-7"	7'-7"
P615	4'-7"	7'-4"
P616	4'-7"	7'-0"
P617	2'-3"	4'-10" TO 6'-8"
P618	2'-3"	4'-10"
P623	6'-1"	3'-10"

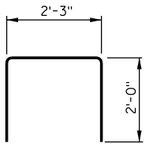
P614 THRU P618, P623



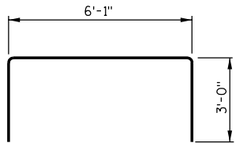
P819



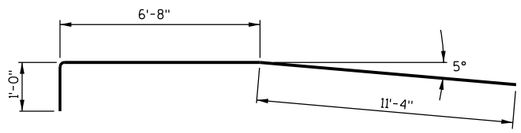
P1026



P527



P630



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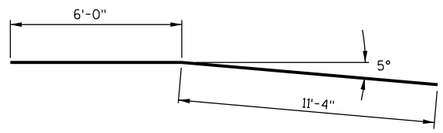


P633

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
UNCOATED BARS					TOTAL WEIGHT = 3,000 LBS.
W901	60	14-8			FOOTING HORIZ.
EPOXY COATED BARS					TOTAL WEIGHT = 15,430 LBS.
P1001	32	9-3	X		SHAFT & FOOTING - SIDES VERT.
P1002	8	9-3	X		SHAFT & FOOTING - ENDS VERT.
P1003	12	9-3	X		SHAFT & FOOTING - ENDS VERT.
P1004	4	9-3	X		SHAFT & FOOTING - ENDS VERT.
P1005	32	16-9			SHAFT & CAP - SIDES VERT.
P1006	8	16-10	X		SHAFT & CAP - ENDS VERT.
P1007	12	17-1	X		SHAFT & CAP - ENDS VERT.
P1008	4	17-1	X		SHAFT & CAP - ENDS VERT.
P409	8	8-9	X		SHAFT - TIES HORIZ.
P410	22	22-0	X		SHAFT - STIRRUPS HORIZ.
P411	22	3-0			SHAFT - TIES AT ENDS HORIZ.
P412	36	10-8	X	✳	SHAFT - TIES HORIZ.
P413	36	3-3	X		SHAFT - TIES HORIZ.
P614	16	25-2	X		CAP - STIRRUPS VERT.
P615	4	24-8	X		CAP - STIRRUPS VERT.
P616	4	24-0	X		CAP - STIRRUPS VERT.
P617	24	16-10	X	✳	CAP - STIRRUPS VERT.
P618	4	15-0	X		CAP - STIRRUPS VERT.
P819	12	16-6	X		CAP - BOTTOM HORIZ.
P620	2	13-0			CAP - SIDES HORIZ.
P621	2	17-4			CAP - SIDES HORIZ.
P622	2	12-11			CAP - SIDES HORIZ.
P623	22	21-8	X		CAP - MIDDLE STIRRUP VERT.
P824	18	25-2		✳	CAP - SIDES HORIZ.
P1025	20	18-0			CAP - TOP HORIZ.
P1026	20	19-7	X		CAP - TOP HORIZ.
P527	40	6-0	X		CAP - ENDS HORIZ.
P528	20	4-11			CAP - ENDS VERT.
P529	10	3-7			CAP - ENDS HORIZ.
P630	18	11-10	X		CAP - TOP VERT.
P631	2	14-5			CAP - TOP HORIZ.
P632	6	18-10	X		CAP - TOP HORIZ.
P633	2	17-4	X		CAP - TOP HORIZ.

✳ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATION. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
P412	4 SERIES OF 9	8'-11" TO 12'-5"
P617	4 SERIES OF 6	15'-0" TO 18'-8"
P824	2 SERIES OF 9	24'-4" TO 26'-0"

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

Plans Prepared By
ROMENESKO ENGINEERING, INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY TAW | PLANS CK'D. TR

PIER DETAILS

SHEET 16 OF 36
486

FILE NAME : P:\152 USH 41 1133-03-02 BPG\structures\B-5-661 substructure\16.pierd_v7_b-5-661.dgn

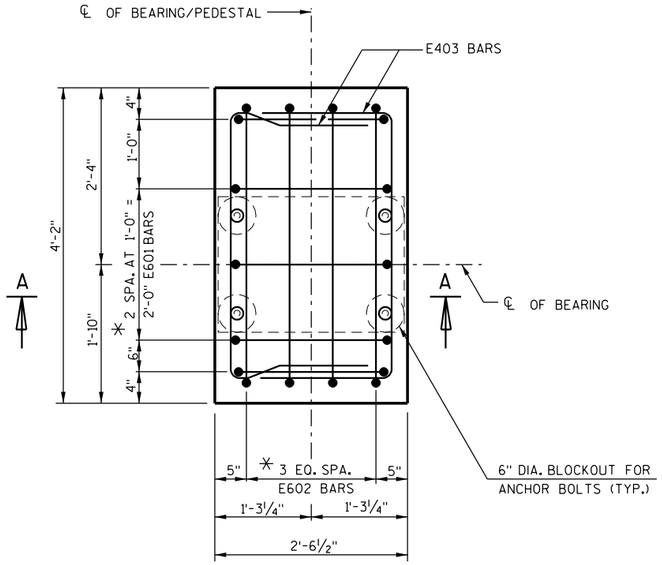
PLOT DATE : 1/26/2011

8

8

STATE PROJECT NUMBER

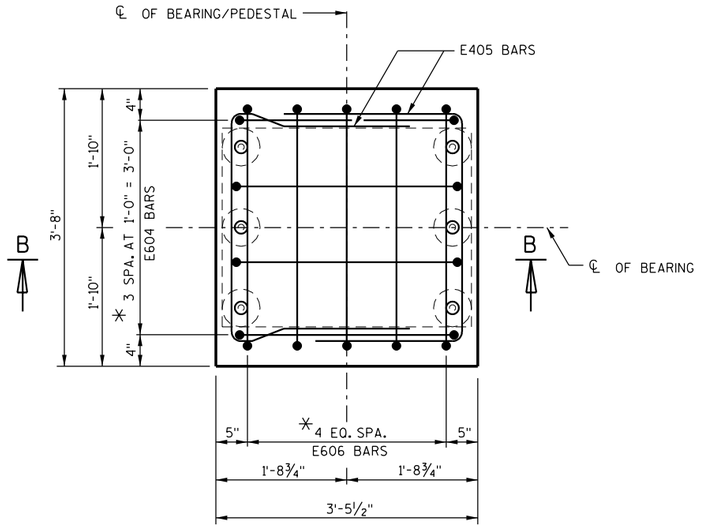
1133-03-82



PLAN

(ABUTMENT PEDESTAL)

✳ ADJUST SPA. TO MISS ANCHOR BOLT BLOCKOUTS



PLAN

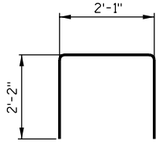
(PIER PEDESTAL)

✳ ADJUST SPA. TO MISS ANCHOR BOLT BLOCKOUTS

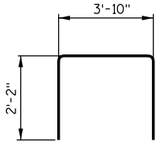
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
ALL BARS IN THIS BILL OF BARS SHALL BE EPOXY COATED.

MARK	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION	TOTAL WEIGHT = 630 LBS.
E601	20	6-1	X		PEDESTAL - AT ABUTMENTS	VERT.
E602	16	7-10	X		PEDESTAL - AT ABUTMENTS	VERT.
E403	8	7-2	X		PEDESTAL - AT ABUTMENTS	HORIZ.
E604	8	7-0	X		PEDESTAL - AT PIER	VERT.
E405	4	7-8	X		PEDESTAL - AT PIER	HORIZ.
E606	10	7-4	X		PEDESTAL - AT PIER	VERT.



E601



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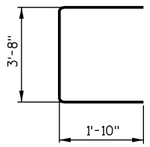

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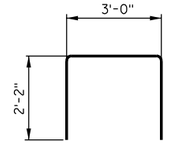

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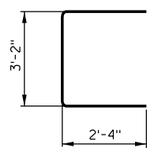

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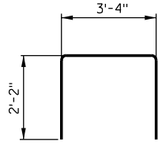
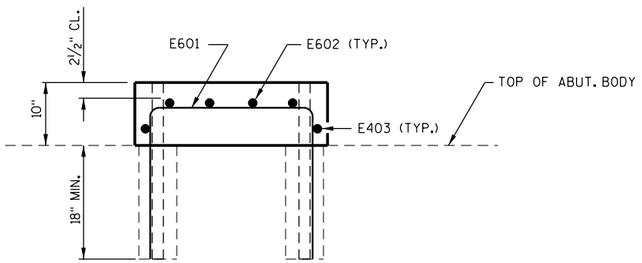


E606

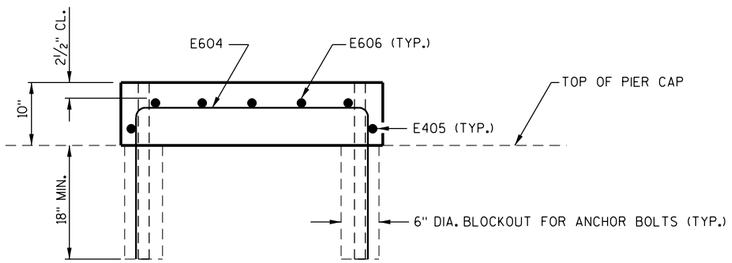
NOTE: FOR ANCHOR GROUT SLEEVE AND BASEPLATE SEATING USE HIGH MODULUS FLOWABLE EPOXY RESIN GROUT, SIKADUR 42 GROUT-PAK OR APPROVED EQUAL. GROUT SLEEVE AND GROUT WILL BE CONSIDERED INCINDENTAL TO THE COST OF "HPC MASONRY STRUCTURES".

ADJUST TOP OF PEDESTAL ELEVATIONS IF ACTUAL BEARING THICKNESSES ARE DIFFERENT THAN THOSE SHOWN ON SHEET 6 OF 26 OF THE STEEL FABRICATION PLANS.



SECTION A-A

(SHOWING DETAILS FOR ABUTMENT PEDESTAL)



SECTION B-B

(SHOWING DETAILS FOR PIER PEDESTAL)

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

Plans Prepared By
ROMENESKO ENGINEERING, INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY TAW | PLANS CK'D. TR

BEARING PEDESTAL DETAILS

SHEET 17 OF 36
487

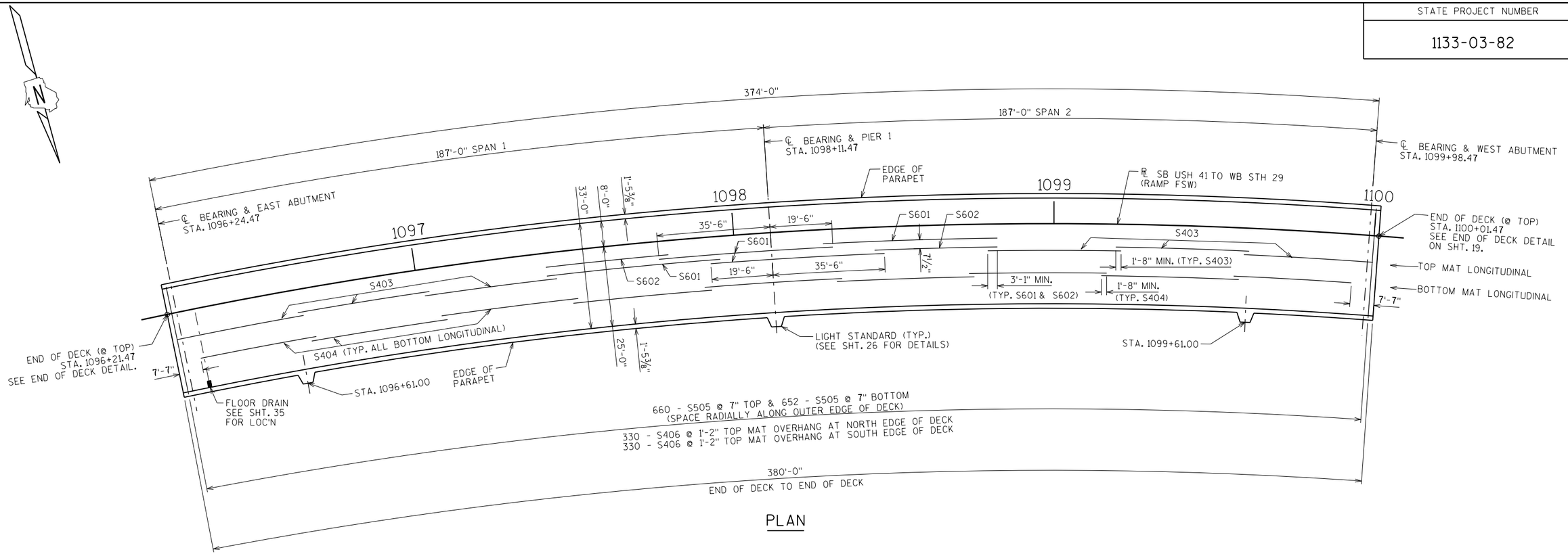
8

8

FILE NAME : p:\152 USH 41 1133-03-02 UFS\structures\B-5-661 substructure\17.brg.ped.v7.b-5-661.dgn

PLOT DATE : 11/28/2010

STATE PROJECT NUMBER
1133-03-82



PLAN

NOTES:

1. STAGGER LAP SPLICES FOR TOP LONGITUDINAL STEEL OVER THE PIER AS SHOWN.
2. THE BOTTOM TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS WITH A CENTER TO CENTER SPACING NOT TO EXCEED 4'-0". ONE LINE OF CONTINUOUS BAR CHAIRS SHALL BE PLACED NEAR EACH EDGE OF SLAB TO SUPPORT THE ENDS OF THE BOTTOM TRANSVERSE BAR STEEL.
3. THE TOP LONGITUDINAL BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS IN TRANSVERSE DIRECTION ON 4'-0" CENTERS.
4. ALL TRANSVERSE BAR STEEL SHALL BE PLACED RADIALLY TO THE RAMP SW REFERENCE LINE.
5. LONGITUDINAL BAR STEEL SHALL BE PLACED CONCENTRIC TO THE RAMP SW REFERENCE LINE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MJA | PLANS CK'D. MDR

DECK REINFORCEMENT

SHEET 18 OF 36
488

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

FILE= P:\Transportation\Brown County Bridges LSH 41\CADD\Sheets\B-5-661 (RemainingStructure)\018 B-05-661-DECK REINFORCEMENT.dgn

DATE: 1/26/2011
I.D.

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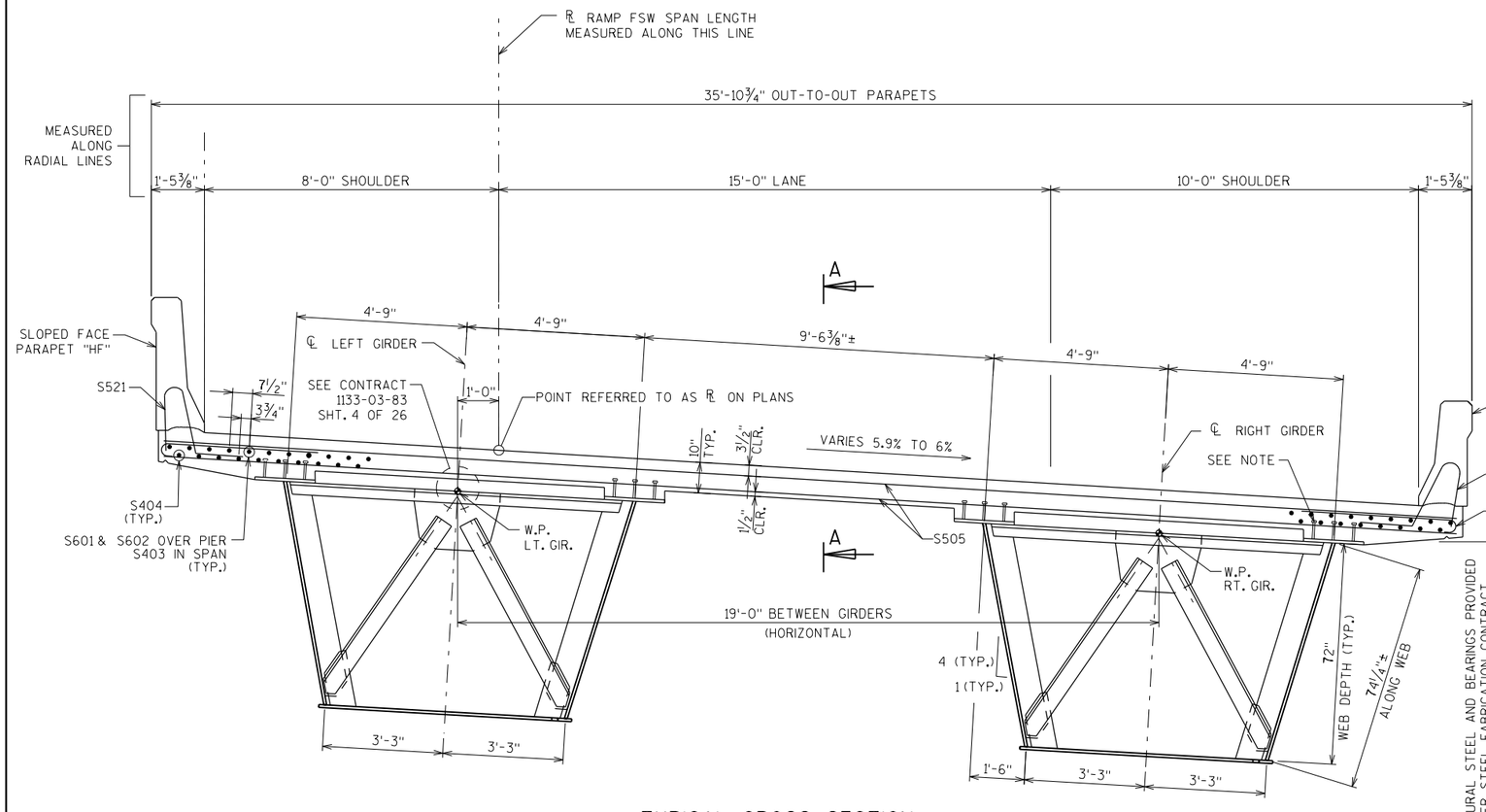
8

STATE PROJECT NUMBER

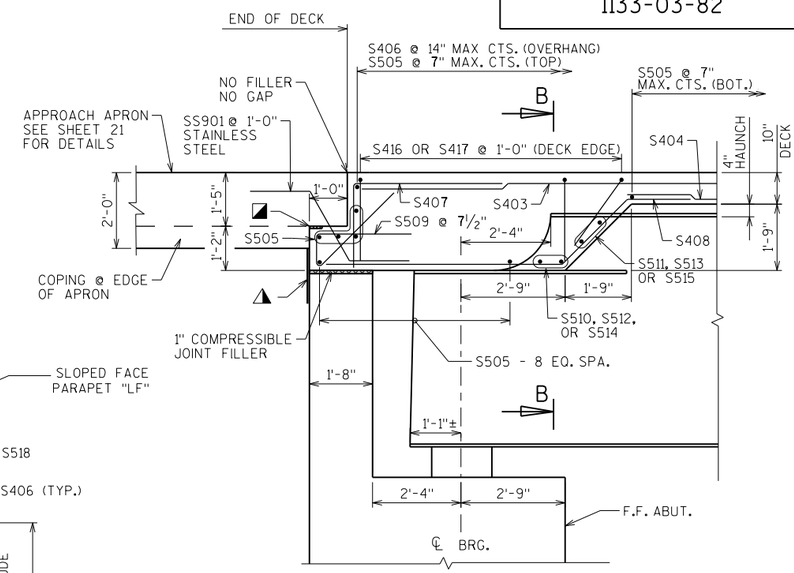
1133-03-82



TYPICAL CROSS SECTION

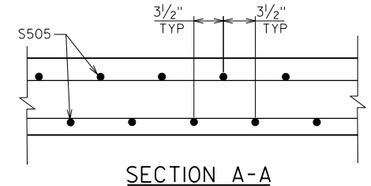
(LOOKING UPSTATION)

STRUCTURAL STEEL AND BEARINGS PROVIDED UNDER STEEL FABRICATION CONTRACT 1133-03-83. THIS CONTRACT WILL INCLUDE FIELD ASSEMBLY AND ERECTION.



END OF DECK DETAIL

EAST ABUT. SHOWN, WEST ABUT. SIMILAR.
CURTAIN WALL, MSE WALL AND STUDS NOT SHOWN FOR CLARITY.



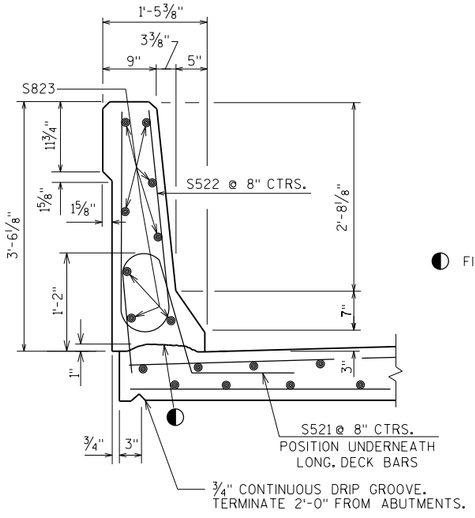
SECTION A-A

TRANSVERSE BAR STAGGER DETAIL

LEGEND

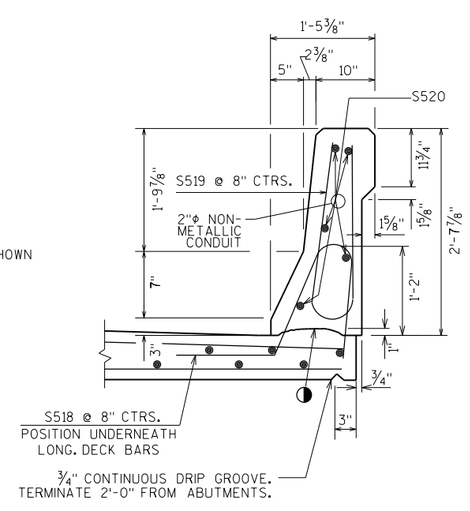
◪ ¾" X 4" COMPRESSIBLE JOINT FILLER ALONG LENGTH OF SLAB

◭ 18" RUBBERIZED MEMBRANE WATERPROOFING

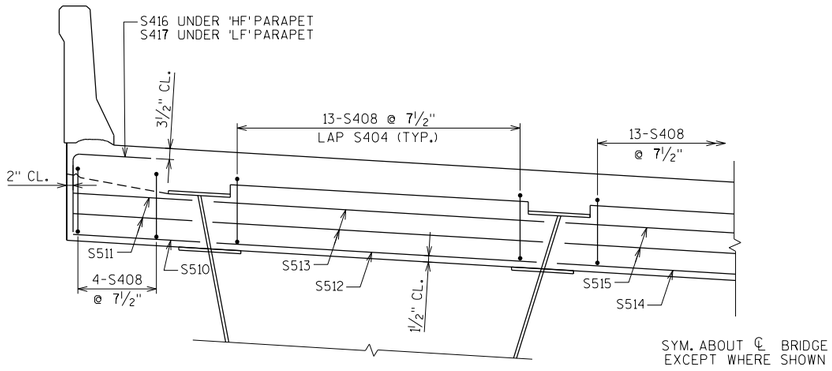


◐ FINISH AS SHOWN

SECTION THRU PARAPET ON BRIDGE SLOPED FACE PARAPET 'HF'



SECTION THRU PARAPET ON BRIDGE SLOPED FACE PARAPET 'LF'



SECTION B-B

HALF-SECTION THRU END OF DECK.
REINF. FOR PARAPET & SLAB NOT SHOWN FOR CLARITY.

NOTES:

STAY-IN-PLACE METAL FORMS PERMITTED INSIDE BOX GIRDERS ONLY.

W.P.= WORK POINT TO WHICH DIMENSIONS ARE MEASURED.

SEE CONTRACT 1133-03-83 "SUPERSTRUCTURE DETAILS" SHT. FOR HAUNCH DETAILS.

LAP S520 BARS IN PARAPET 1'-9" MIN.

LAP S823 BARS IN PARAPET 3'-5" MIN.

DO NOT PLACE SHEAR STUDS AT FLOOR DRAIN LOCATION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MJA | PLANS CK'D. MDR

TYPICAL DECK SECTION

SHEET 19 OF 36
489

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

FILE= P:\Transportation\Brown County Bridges USH 41\CADD\Sheets\B-5-661 (RemainingStructure)\019 B-05-661-DECK SECTION.dgn

DATE: 1/26/2011
I.D.

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8

STATE PROJECT NUMBER

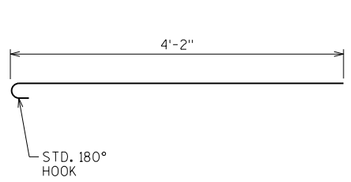
1133-03-82

BILL OF BARS - SUPERSTRUCTURE

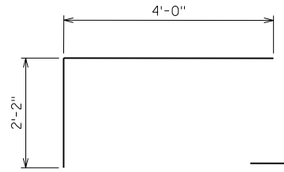
SLAB AND PARAPET BARS. LIGHT STANDARD BAR BILL ON SHT. 26

BAR MARK	NO. REQ'D	LENGTH	WEIGHT (LB)	BENT	LOCATION
S601	114	55'-0"	9,418		TOP LONGITUDINAL OVER PIER
S602	57	38'-10"	3,325		TOP LONGITUDINAL OVER PIER
S403	342	42'-1"	9,614		TOP LONGITUDINAL
S404	513	42'-4"	14,506		BOTT. LONGITUDINAL
S505	1312	35'-2"	48,123		TRANSVERSE T & B
S406	660	4'-10"	2,131	X	TRANSVERSE AT OVERHANG
S407	114	6'-1"	463	X	CANTILEVER END
S408	94	10'-5"	654	X	CANTILEVER BOTTOM TO SLAB
S509	114	6'-1"	723	X	CANTILEVER UNDER PAVING NOTCH
S510	8	3'-4"	28		CANTILEVER AT DECK OVERHANG
S511	8	3'-2"	26		CANTILEVER AT DECK OVERHANG
S512	8	8'-5"	70		CANTILEVER BETW. GIRDER WEBS
S513	8	8'-9"	73		CANTILEVER BETW. GIRDER WEBS
S514	4	9'-8"	40		CANTILEVER BETW. GIRDERS
S515	4	9'-2"	38		CANTILEVER BETW. GIRDERS
S416	16	4'-1"	44	X	CANTILEVER SIDES UNDER LF
S417	16	4'-1"	44	X	CANTILEVER SIDES UNDER HF
S518	558	4'-4"	2,520	X	LF PARAPET DOWELS
S519	558	4'-10"	2,811	X	LF PARAPET STIRRUPS
S520	50	38'-10"	2,025		LF PARAPET LONGITUDINAL
S521	572	4'-9"	2,834	X	HF PARAPET DOWELS
S522	572	6'-6"	3,878	X	HF PARAPET STIRRUPS
S823	80	41'-4"	8,828		HF PARAPET LONGITUDINAL
S631	4	7'-10"	47	X	DECK DRAIN
		TOTAL	112,263		

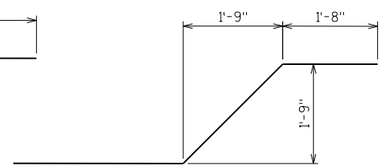
ALL BARS ARE EPOXY COATED.



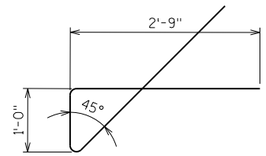
S406



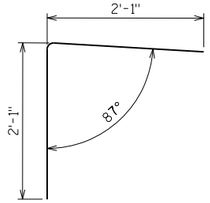
S407



S408



S509



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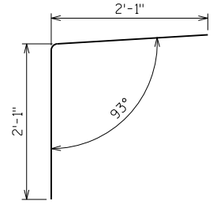

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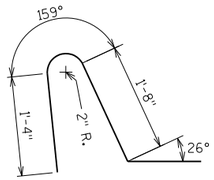

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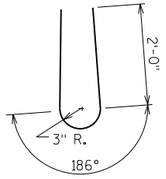

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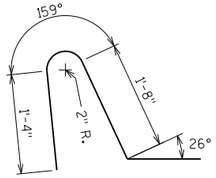

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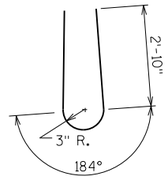

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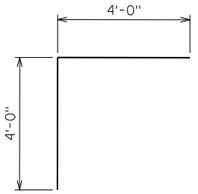


S631

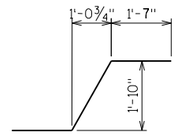
STAINLESS STEEL BILL OF BARS

BAR MARK	NO. REQUIRED		LENGTH	WEIGHT (LB)		BENT	LOCATION
	E. ABUT	W. ABUT		E. ABUT	W. ABUT		
SS901	36	36	5'-0"	613	613	X	DECK CANTILEVER TO APPROACH APRON

TOP OF DECK ELEVATIONS

LOCATION	APPR. APRON AT EXP. JOINT	APPR. APRON MIDPOINT	END OF SLAB	C/L BRG. E. ABUT.	P1-2	P1-3	P1-4	P1-5	P1-6	P1-7	FS #1	P2-1	P2-2	P2-3	P2-4	C/L PIER 1
SOUTH EDGE OF SLAB	635.09	635.27	635.45	635.51	635.80	636.08	636.35	636.61	636.86	637.09	637.21	637.32	637.53	637.74	637.93	638.11
LEFT GIRDER; LEFT WEB	634.88	635.06	635.24	635.30	635.59	635.87	636.14	636.40	636.65	636.88	637.00	637.11	637.32	637.53	637.72	637.90
PGL	634.54	634.72	634.90	634.95	635.24	635.52	635.79	636.05	636.30	636.54	636.65	636.76	636.98	637.18	637.37	637.55
LEFT GIRDER; RIGHT WEB	634.31	634.49	634.67	634.73	635.02	635.30	635.57	635.83	636.08	636.31	636.43	636.54	636.75	636.96	637.15	637.33
RIGHT GIRDER; LEFT WEB	633.74	633.92	634.10	634.15	634.45	634.73	635.00	635.26	635.50	635.74	635.85	635.97	636.18	636.38	636.58	636.76
RIGHT GIRDER; RIGHT WEB	633.17	633.35	633.53	633.58	633.88	634.16	634.43	634.69	634.93	635.17	635.28	635.40	635.61	635.81	636.01	636.19
NORTH EDGE OF SLAB	632.96	633.14	633.32	633.37	633.67	633.95	634.22	634.48	634.72	634.96	635.07	635.19	635.40	635.60	635.80	635.98

LOCATION	C/L PIER 1	P2-6	P2-7	P2-8	P2-9	FS #2	P3-1	P3-2	P3-3	P3-4	P3-5	P3-6	C/L BRG. W. ABUT.	END OF SLAB	APPR. APRON MIDPOINT	APPR. APRON AT EXP. JOINT
SOUTH EDGE OF SLAB	638.11	638.28	638.44	638.58	638.72	638.78	638.84	638.96	639.06	639.15	639.23	639.30	639.36	639.36	639.35	639.34
LEFT GIRDER; LEFT WEB	637.90	638.07	638.23	638.37	638.51	638.57	638.63	638.75	638.85	638.94	639.02	639.09	639.15	639.15	639.16	639.16
PGL	637.55	637.72	637.88	638.03	638.16	638.23	638.29	638.40	638.50	638.60	638.68	638.75	638.80	638.81	638.84	638.86
LEFT GIRDER; RIGHT WEB	637.33	637.50	637.66	637.80	637.94	638.00	638.06	638.18	638.28	638.37	638.45	638.52	638.58	638.59	638.63	638.67
RIGHT GIRDER; LEFT WEB	636.76	636.93	637.08	637.23	637.37	637.43	637.49	637.61	637.71	637.80	637.88	637.95	638.01	638.03	638.11	638.18
RIGHT GIRDER; RIGHT WEB	636.19	636.36	636.51	636.66	636.80	636.86	636.92	637.04	637.14	637.23	637.31	637.38	637.44	637.47	637.58	637.69
NORTH EDGE OF SLAB	635.98	636.15	636.30	636.45	636.59	636.65	636.71	636.83	636.93	637.02	637.10	637.17	637.23	637.26	637.39	637.51



SS901

NOTES:

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES BAR SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

TOP OF DECK ELEVATIONS GIVEN AT PANEL POINT LOCATIONS AS INDICATED BY P1-2 (EXAMPLE). PANEL POINTS ARE AT K-FRAME AND INTERMEDIATE DIAPHRAGM LOCATIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MDR | PLANS CK'D. MJA

BILL OF BARS & TOP OF DECK ELEVATIONS

SHEET 20 OF 36
490

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

FILE= P:\Transportation\Brown County Bridges LSH 41\CADD\Sheets\B-5-661 (RemainingStructure)\020 B-05-661-SUPERSTRUCTURE BILL OF BARS.dgn

DATE: 1/26/2011
I.D.

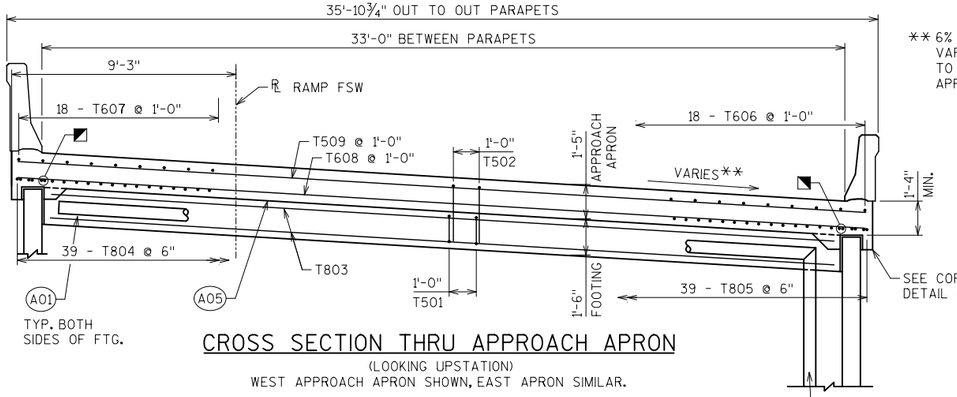
8

8

STATE PROJECT NUMBER

1133-03-82

NOTE: FOR SUPERELEVATION DETAILS SEE SHEET 5.
FOR TOP OF APPR. APRON ELEVATIONS SEE SHEET 20.

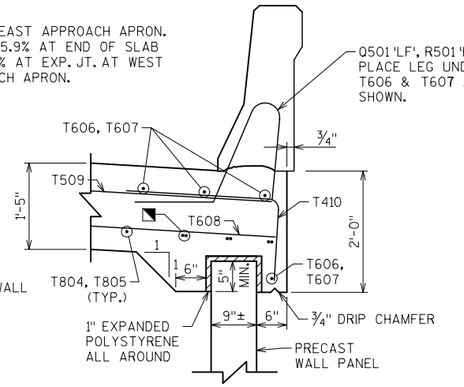


CROSS SECTION THRU APPROACH APRON

(LOOKING UPSTATION)
WEST APPROACH APRON SHOWN, EAST APRON SIMILAR.

** 6% AT EAST APPROACH APRON. VARIES 5.9% AT END OF SLAB TO 5.15% AT EXP. JT. AT WEST APPROACH APRON.

UNPERFORATED PIPE UNDERDRAIN 6-INCH. CONNECT INTO MSE WALL UNDERDRAIN WITH "TEE" FITTING. TYP. BOTH SIDES OF FTG.



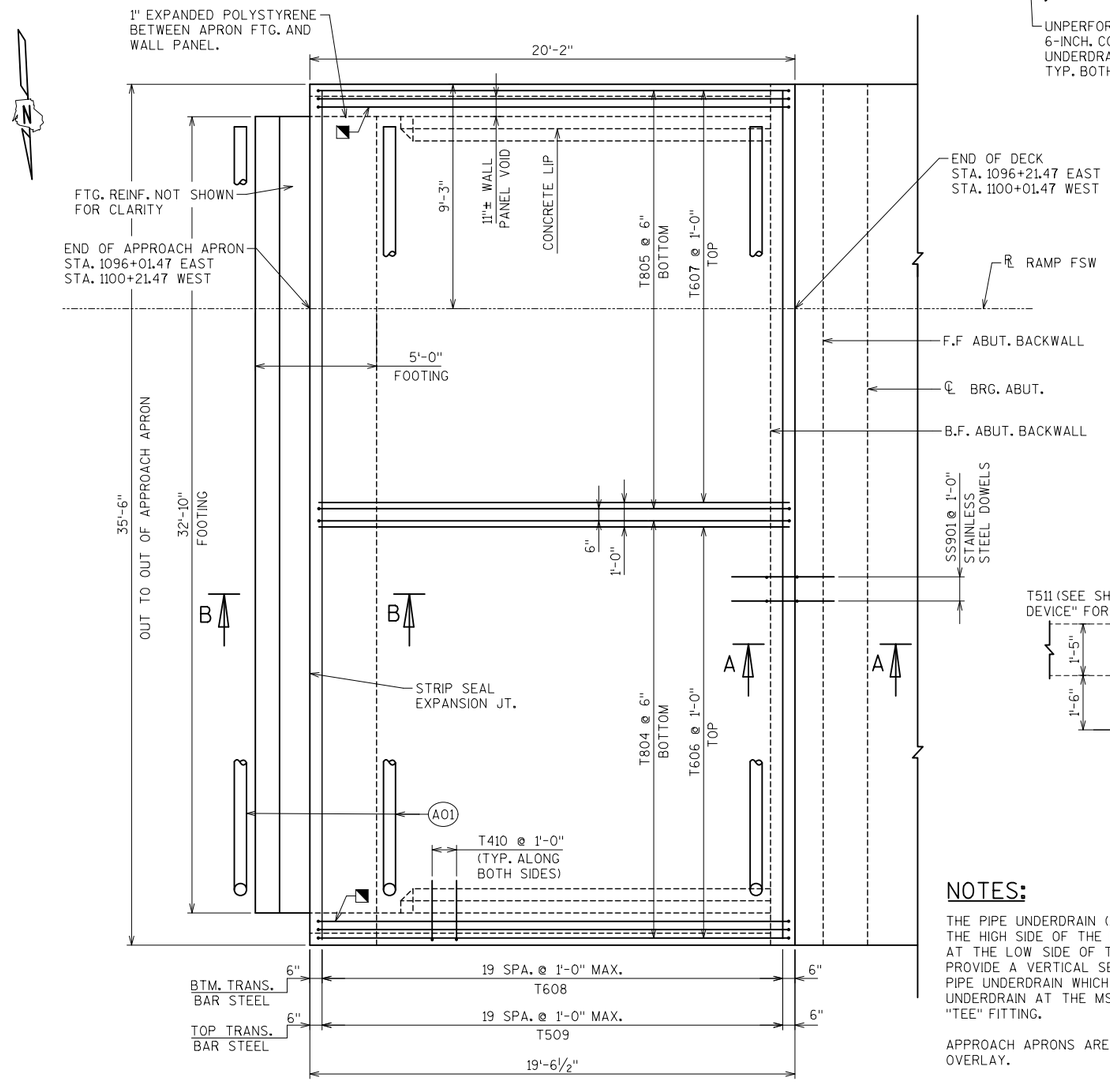
COPING DETAIL AT WALL

'LF' PARAPET SHOWN, 'HF' PARAPET SIMILAR.
WIRE FACE MSE WALL NOT SHOWN FOR CLARITY.

BILL OF BARS

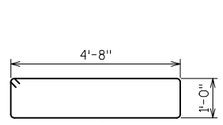
BAR MARK	NO. REQ'D E. APPR.	NO. REQ'D W. APPR.	LENGTH	WEIGHT (LB)	BENT	LOCATION
T501	33	33	11'-8"	402	X	FOOTING - STIRRUPS
T502	33	33	5'-6"	190	X	FOOTING - VERTICAL
T803	15	15	32'-6"	1,302		FOOTING - HORIZONTAL
T804	39	39	21'-0"	2,187	X	APPROACH APRON - LONG. BTM.
T805	39	39	21'-4"	2,221	X	APPROACH APRON - LONG. BTM.
T606	19	19	19'-2"	547		APPROACH APRON - LONG. TOP
T607	19	19	19'-6"	556		APPROACH APRON - LONG. TOP
T608	21	21	35'-0"	1,104		APPROACH APRON - TRANS. BTM.
T509	21	21	35'-0"	767		APPROACH APRON - TRANS. TOP
T410	42	42	4'-10"	136	X	APPROACH APRON - TRANS. EDGE
T511	20	20	8'-11"	186		APPROACH APRON - EXP. JT.
		TOTAL		9,597		

ALL BARS ARE EPOXY COATED.

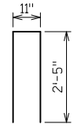


PLAN

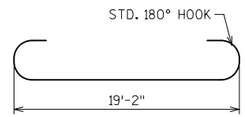
EAST APPROACH APRON SHOWN, WEST APRON SIMILAR.
CURVATURE OF ROADWAY NOT SHOWN.



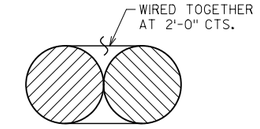
T501



T502

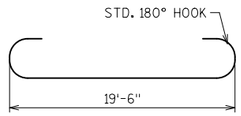


T804

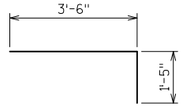


BUNDLING DETAIL

(BUNDLE 3 SETS OF T804 AND 3 SETS OF T805 AS SHOWN)



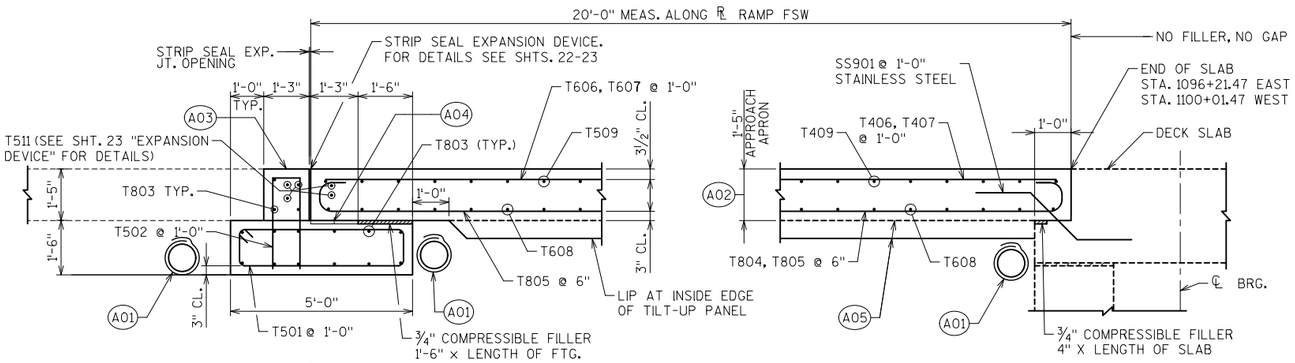
T805



T410

DESIGN DATA:

ALLOWABLE SOIL BEARING PRESSURE:	2,000 PSF
HPC MASONRY STRUCTURES, f'c:	4,000 PSI
BAR STEEL REINFORCEMENT, GRADE 60, fy:	60,000 PSI



SECTION B-B

SECTION A-A

NOTES:

THE PIPE UNDERDRAIN (A01) SHOULD BE CAPPED AT THE HIGH SIDE OF THE ROADWAY CROSS SLOPE. AT THE LOW SIDE OF THE CROSS SLOPE, PROVIDE A VERTICAL SECTION OF UNPERFORATED PIPE UNDERDRAIN WHICH CONNECTS TO THE PIPE UNDERDRAIN AT THE MSE WALL FOOTING WITH A "TEE" FITTING.

APPROACH APRONS ARE TO RECIEVE EPOXY OVERLAY.

SEE SHEET 36: "AESTHETIC DETAILS" FOR APPROACH APRON PARAPET AND COPING STAIN COLOR.

◥ PROVIDE (3) ADDITIONAL T804 OR T805 BARS AT OUTSIDE EDGES OF APRON. SEE "BUNDLING DETAIL."

TRANSVERSE SECTION THRU APPROACH APRON

(A01) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO VERTICAL SECTION OF PIPE UNDERDRAIN.

(A02) APPROACH APRON AND APPROACH APRON PAPAPETS SHALL BE "HPC MASONRY STRUCTURES".

(A03) FINISH TOP OF APPROACH FOOTING ⅜" HIGHER THAN APPROACH SLAB PROFILE TO ACCOUNT FOR EPOXY OVERLAY.

(A04) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHELENE SHEETS OVER THE ENTIRE LENGTH OF THE FOOTING.

(A05) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHELENE SHEETS OVER THE ENTIRE LENGTH AND WIDTH OF THE SUBGRADE.

STEEL ERECTION AND SITE CONSTRUCTION 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

APPROACH APRON DETAILS

SHEET 21 OF 36
491

FILE= P:\Transportation\Brown County Bridges USH 41\CADD\Sheets\B-5-661 (RemainingStructure)\021 B-05-661-APPROACH APRON.dgn

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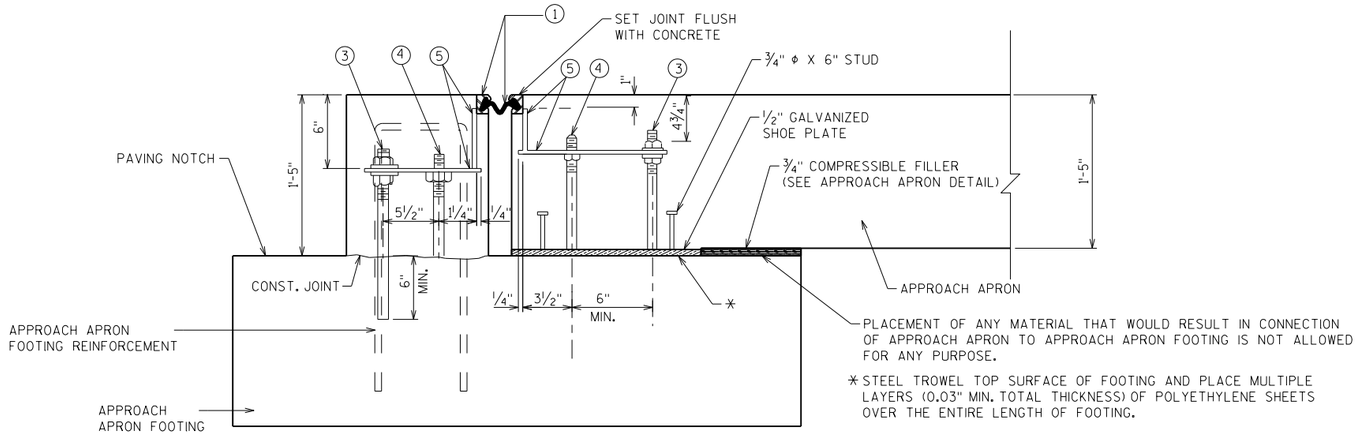
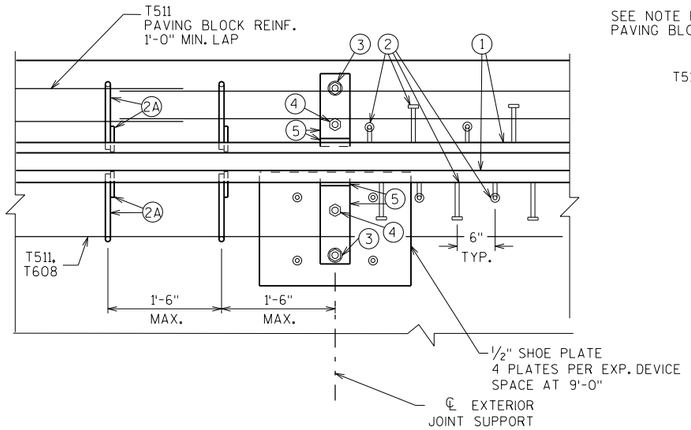
STATE PROJECT NUMBER

1133-03-82

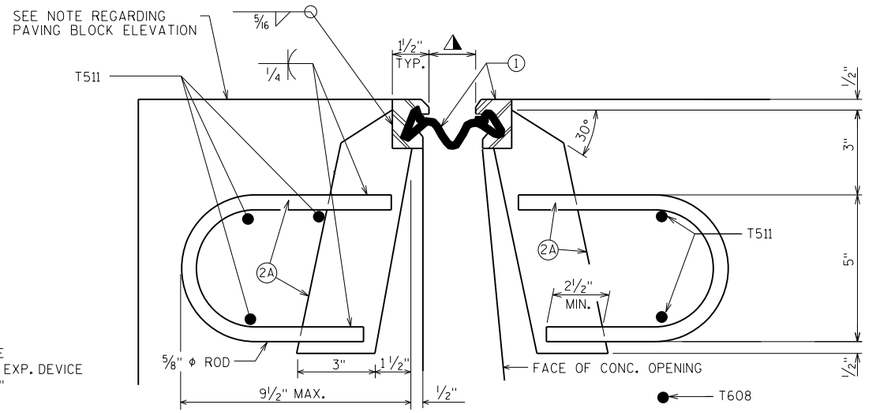


SECTION THRU JOINT AT APPROACH APRON

NORMAL TO ℄ APPROACH APRON
SEE SHEET TITLED "APPROACH APRON DETAILS" FOR MORE REINFORCEMENT INFORMATION



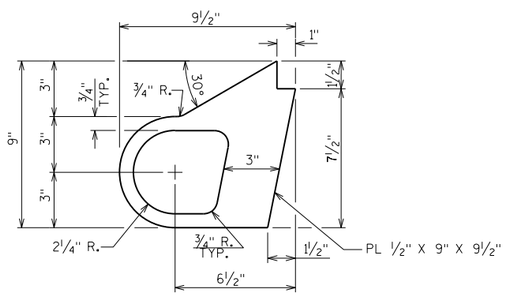
PART PLAN



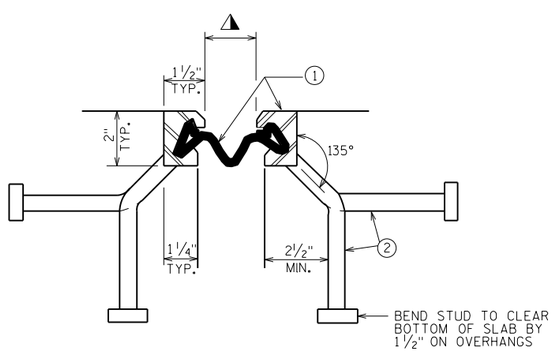
AT APPROACH FOOTING AT APPROACH APRON

SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR SUPPORTS
SYM. ABOUT ℄ JOINT UNLESS OTHERWISE SHOWN OR NOTED

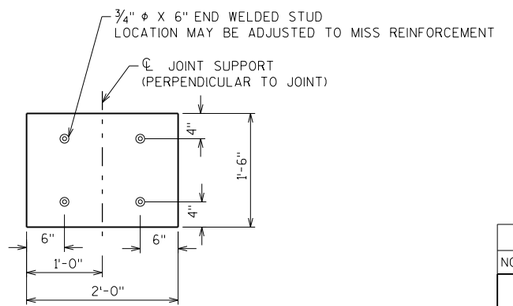


ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

EXTERIOR SUPPORT TO EDGE OF APPROACH APRON



SHOE PLATE

GALVANIZE AFTER FABRICATION

LEGEND

1. NEOPRENE STRIP SEAL (4-INCH) & STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾".
2. STUDS ⅝" ϕ X 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.
2A. ½" THICK ANCHOR PLATE WITH ⅝" ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PL. TO NO. 1 AT 1'-6" CTRS. BETWEEN PARAPETS.
3. ¾" ϕ THREADED ROD WITH 2 NUTS AND WASHERS. WELD THREADED ROD TO TOP OF STEEL SHOE PLATE. ON APPROACH APRON FOOTING SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES AS SHOWN.
4. ¾" ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" X ½" BAR AS SHOWN OR EQUIVALENT. ONE PER SHOE PLATE PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY COATING MATERIAL. PROVIDE 1½" ϕ HOLE FOR NO. 3 & 1" ϕ HOLE FOR NO. 4.
6. GALVANIZED PLATE ⅜" X 10½" X 2'-0" LONG FOR SKEWS TO 45° WITH HOLES FOR NO. 7. BEND AS SHOWN.
7. ¾" ϕ X 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. RECESS 1/16" BELOW PLATE SURFACE IN COUNTERSUNK HOLE.
8. ¾" ϕ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾" ϕ X 2¼" GALVANIZED THREADED COUPLING.
10. 1" X 5" SLOTTED CSK. HOLE FOR NO. 7. SLOT PARALLEL TO DIRECTION OF MOVEMENT.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM NO. 8 & NO. 9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING SHOE PLATES, ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-05-661".

THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE SUPPORT SYSTEM DESIGN FOR REVIEW AND APPROVAL BY THE ENGINEER.

PROVIDE AN EPOXY DECK OVERLAY ON THE BRIDGE DECK AND APPROACH APRONS. PAYMENT INCLUDED UNDER BID ITEM "DECK OVERLAY EPOXY." TOTAL THICKNESS OF EPOXY OVERLAY TO BE ⅜". FINISH CONCRETE PAVING BLOCK AT EXPANSION JOINT ⅜" HIGHER THAN APPROACH APRON ACROSS THE JOINT TO PROVIDE SMOOTH FINAL RIDING SURFACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MDR | PLANS CK'D. MJA

EXPANSION DEVICE

SHEET 22 OF 36
492

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

FILE= P:\Transportation\Brown County Bridges LSH 41\CADD\Sheets\B-5-661 (RemainingStructure)\022-B-05-661-EXPANSION DEVICE.dgn

DATE: 1/26/2011
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STATE PROJECT NUMBER

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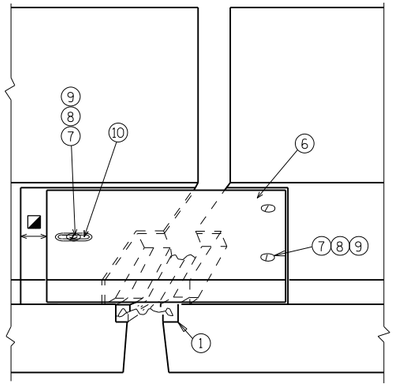
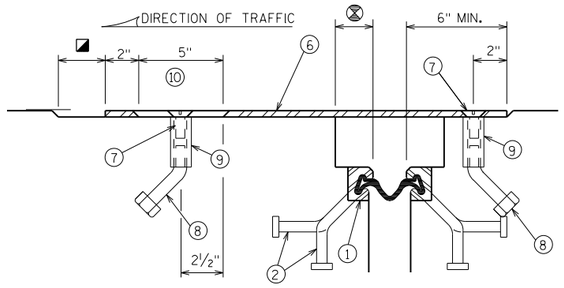
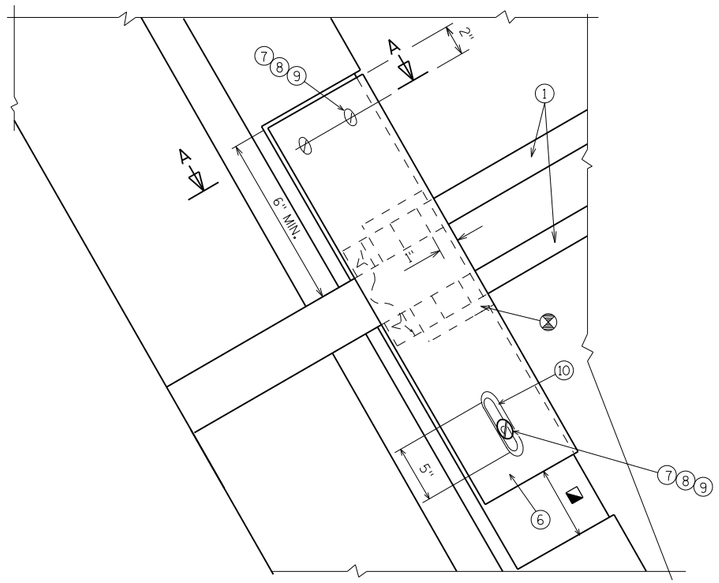


VIEW OF PARAPET PLATES
FROM ROADWAY



SECTION C-C



PLAN

SECTION A-A

LEGEND

- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING
- ◪ JOINT OPENING DIM. ALONG SKEW PLUS ½"

NOTES:

1. SEE EXPANSION DEVICE SHEET FOR LEGEND.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

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STRIP SEAL EXPANSION JOINT DETAILS

SHEET 23 OF 36
493

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

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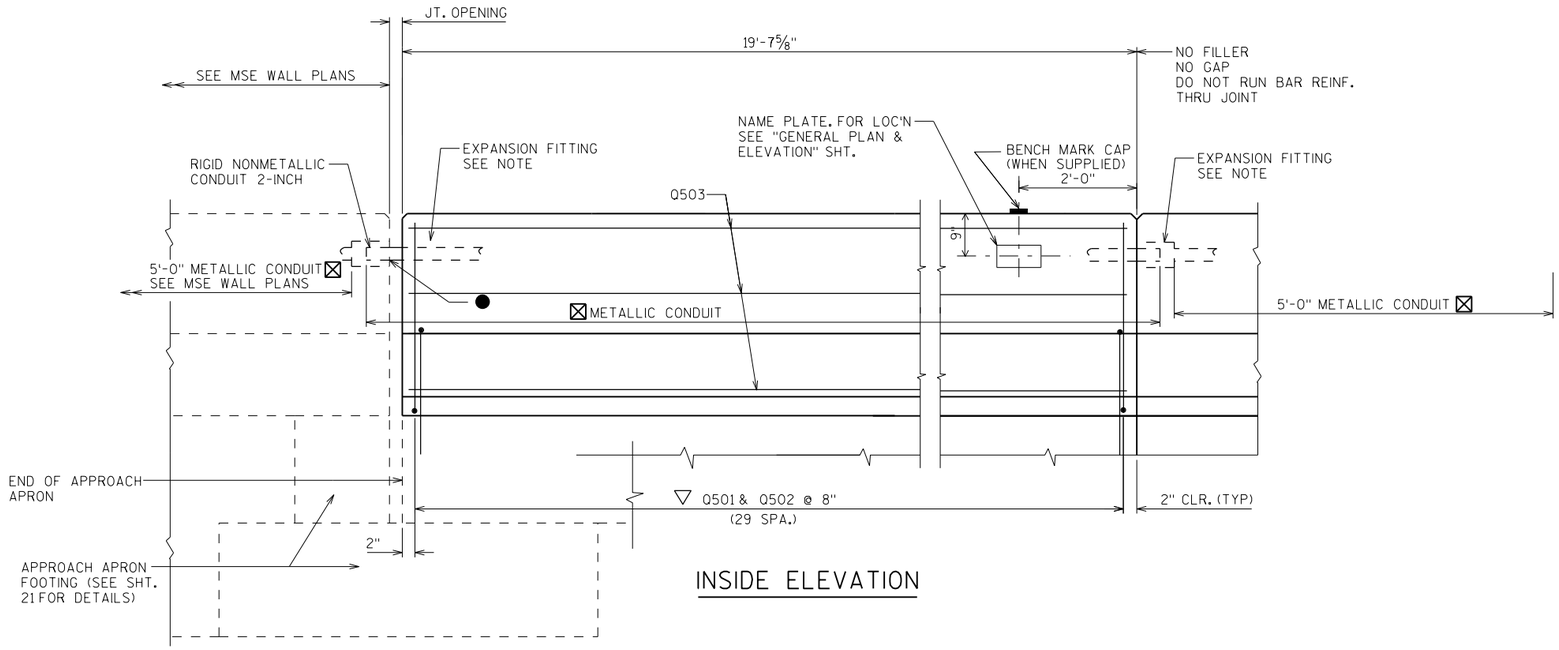
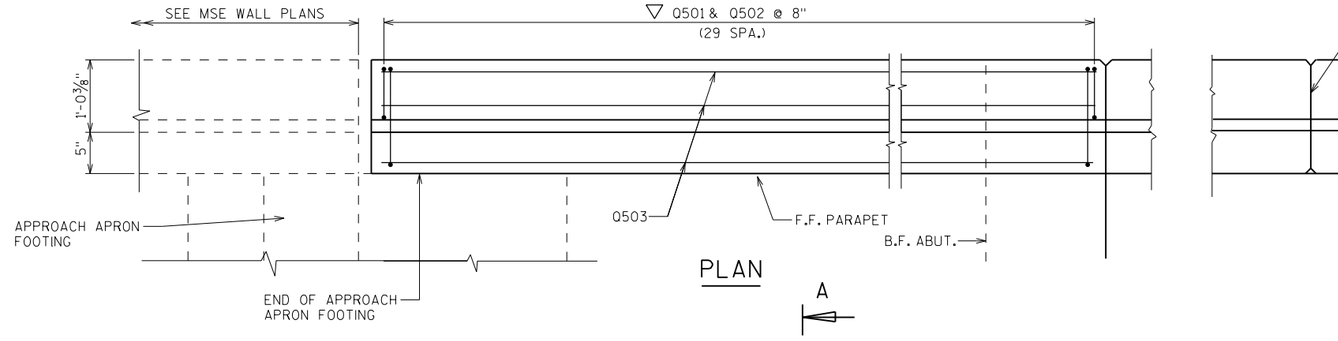
STATE PROJECT NUMBER

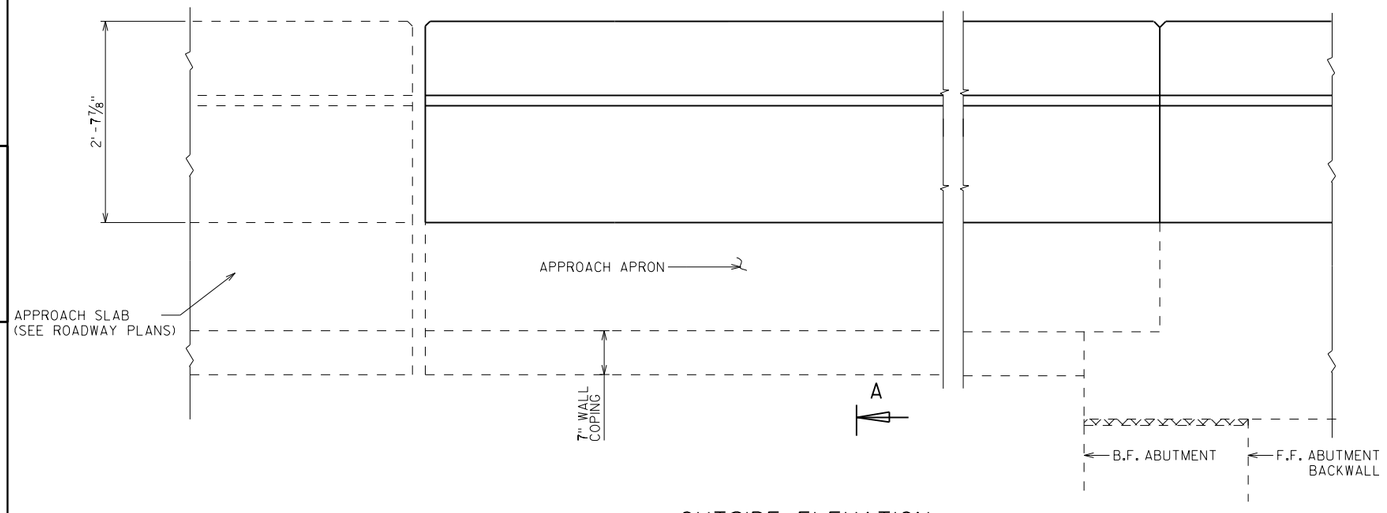
1133-03-82



INSIDE ELEVATION



PLAN



OUTSIDE ELEVATION

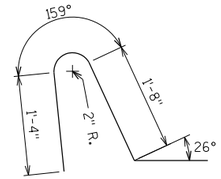
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINFORCEMENT THRU THE JOINT. LAP LONGITUDINAL BARS A MINIMUM OF 1'-9". USE A MINIMUM JOINT SPACING OF 80'-0". DEFINE CONSTRUCTION JOINT WITH A ¾" 'V' GROOVE.

BILL OF BARS

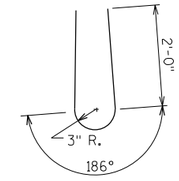
FOR "LF" PARAPETS AT APPROACH APRON

BAR MARK	NO. REQUIRED		LENGTH	WEIGHT (LB)		BENT	LOCATION
	W. APRON	E. APRON		W. APRON	E. APRON		
Q501	30	30	4'-4"	135	135	X	VERT.
Q502	30	30	4'-10"	151	151	X	VERT.
Q503	5	5	19'-3"	100	100		HORIZ.
			TOTAL	387	387		

ALL BARS ARE EPOXY COATED.



Q501



Q502

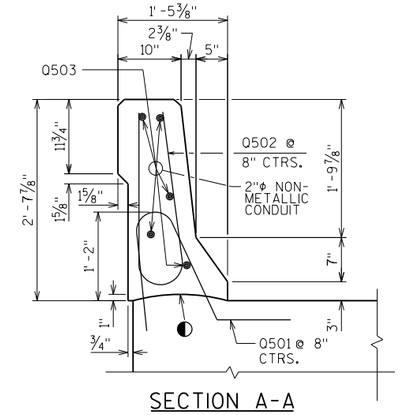
LEGEND

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

▽ Q501 BARS TO BE TIED TO APPROACH APRON STEEL BEFORE APPROACH APRON IS POURED.

● POSITION MOVABLE END OF CONDUIT INSIDE EXPANSION FITTING, SUCH THAT IT WILL HAVE THE SAME ALLOWANCE FOR MOVEMENT (EXPANSION/CONTRACTION) AS THE EXPANSION DEVICE SET IN PLACE BELOW IT. TAKE CARE TO INSTALL EXPANSION FITTING AND CONDUIT EXACTLY PARALLEL TO BRIDGE MOVEMENT.

⊠ USE 2" DIA. RIGID NON-METALLIC CONDUIT EXCEPT AT EXPANSION FITTING. AT EXPANSION FITTING USE RIGID METALLIC CONDUIT 5'-0" INTO WALL SEGMENT OR PARAPET. PROVIDE #10 AWG BONDING JUMPER BETWEEN METALLIC CONDUIT AND JUNCTION BOX. BONDING JUMPERS SHALL EITHER ENTER THE JUNCTION BOX AND BE TERMINATED TO THE GROUNDING LUG USING TERMINAL BLOCKS; OR CAN BE EXOTHERMICALLY WELDED TO A FIELD INSTALLED GROUNDING LUG ON THE BACK SIDE OF THE JUNCTION BOX. BONDING JUMPERS WILL BE PAID FOR UNDER BID ITEM 652.0125 "CONDUIT RIGID METALLIC 2-INCH"



SECTION A-A

PARAPET ON APPROACH APRON

NOTES

THE PARAPET TRANSITION FROM SLOPED FACE TO VERTICAL FOR CONNECTION OF THE STEEL PLATE BEAM GUARD TAKES PLACE AT THE END OF THE MSE WALLS. SEE MSE WALL PLANS R-05-66 AND R-05-231 FOR DETAILS.

APPROVED MANUFACTURER OR EQUIVALENT - EXPANSION FITTING: AT EXP. JT (HORIZ. AND VERT. MOVEMENT): O-Z/GEDNEY TYPE AXDX-200 AND BONDING JUMPER (4" TOTAL CONDUIT MOVEMENT). AT END OF DECK (HORIZ. MOVEMENT): O-Z/GEDNEY TYPE AX-200 AND BONDING JUMPER (4" TOTAL CONDUIT MOVEMENT).

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

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SLOPED FACE PARAPET "LF"

SHEET 24 OF 36
494

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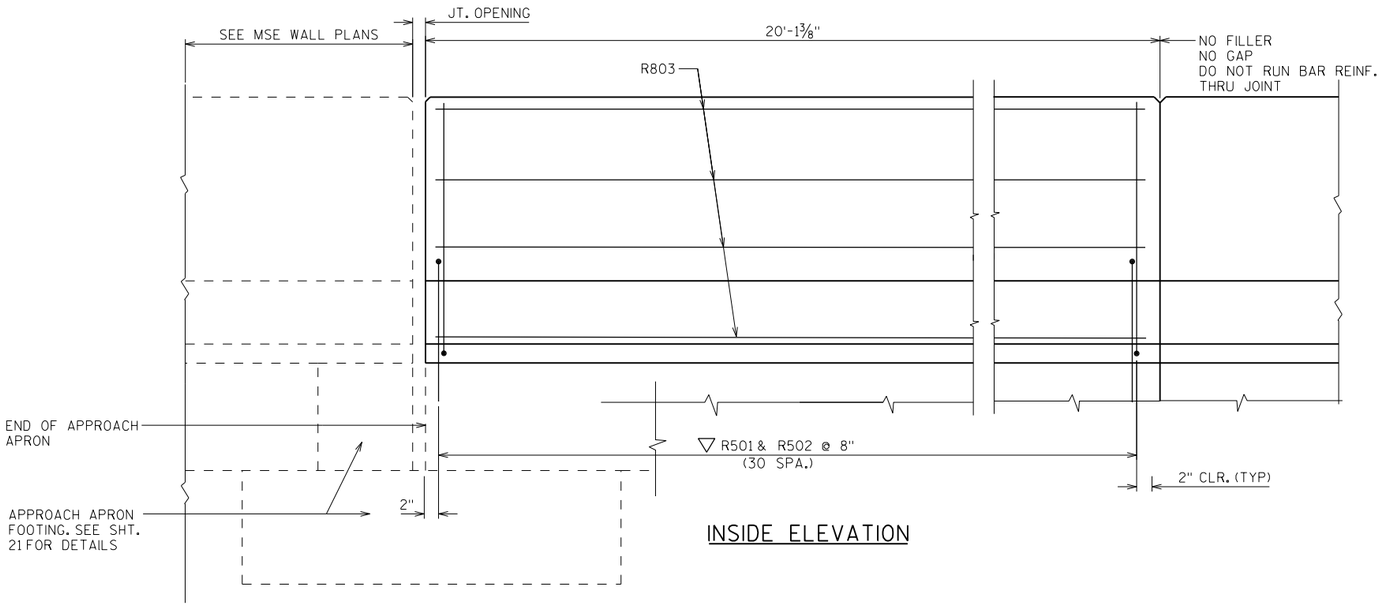
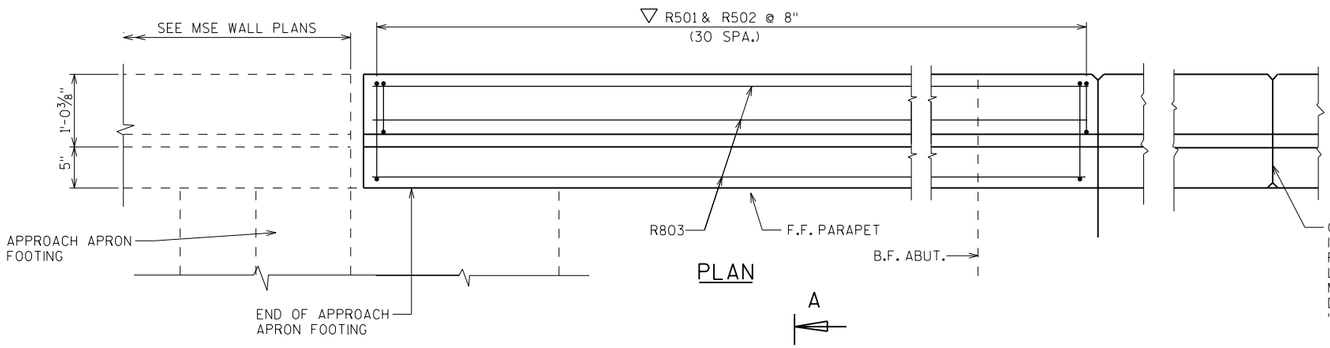
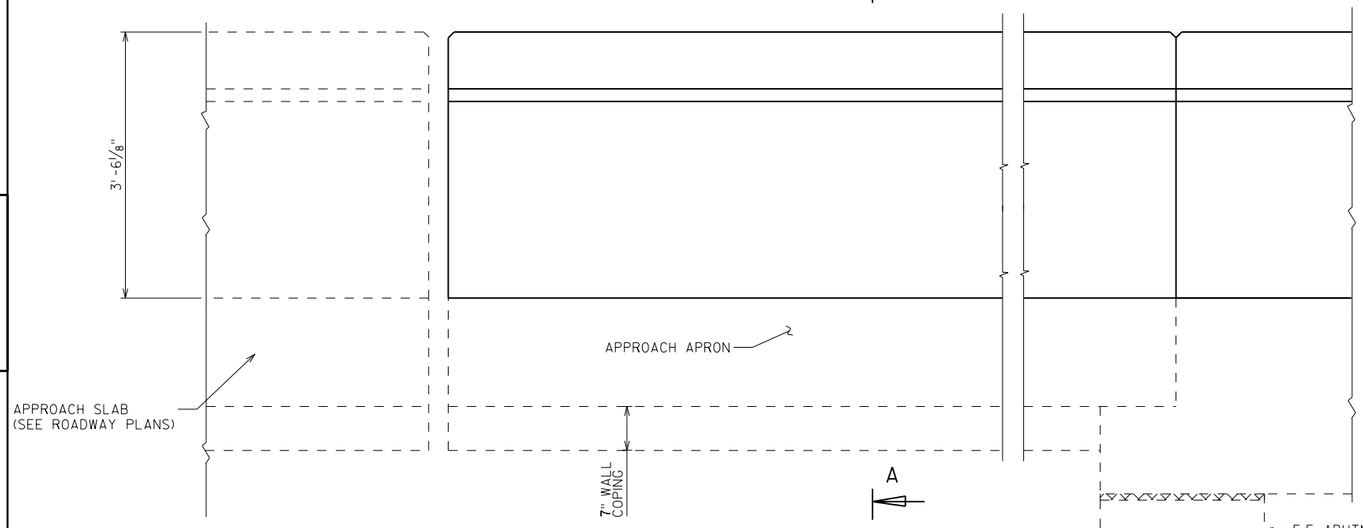
1133-03-82



INSIDE ELEVATION



PLAN



OUTSIDE ELEVATION

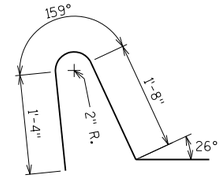
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 3'-5" MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A ¾" "V" GROOVE.

BILL OF BARS

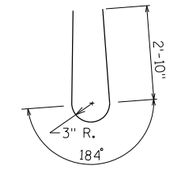
FOR "HF" PARAPETS AT APPROACH APRON

BAR MARK	NO. REQUIRED		LENGTH	WEIGHT (LB)		BENT	LOCATION
	W. APRON	E. APRON		W. APRON	E. APRON		
R501	31	31	4'-9"	154	154	X	VERT.
R502	31	31	6'-6"	210	210	X	VERT.
R803	8	8	19'-9"	422	422		HORIZ.
			TOTAL	786	786		

ALL BARS ARE EPOXY COATED.



R501



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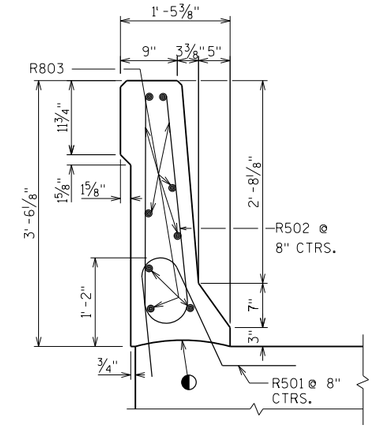


SECTION A-A

PARAPET ON APPROACH APRON

LEGEND

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

▽ R501 BARS TO BE TIED TO APPROACH APRON STEEL BEFORE APPROACH APRON IS POURED.

NOTE

THE PARAPET TRANSITION FROM SLOPED FACE TO VERTICAL FOR CONNECTION OF THE STEEL PLATE BEAM GUARD TAKES PLACE AT THE END OF THE MSE WALL. SEE MSE WALL PLANS R-05-66 AND R-05-231 FOR DETAILS.

STEEL ERECTION AND SITE CONSTRUCTION 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

SLOPED FACE PARAPET "HF"

SHEET 25 OF 36
495

8

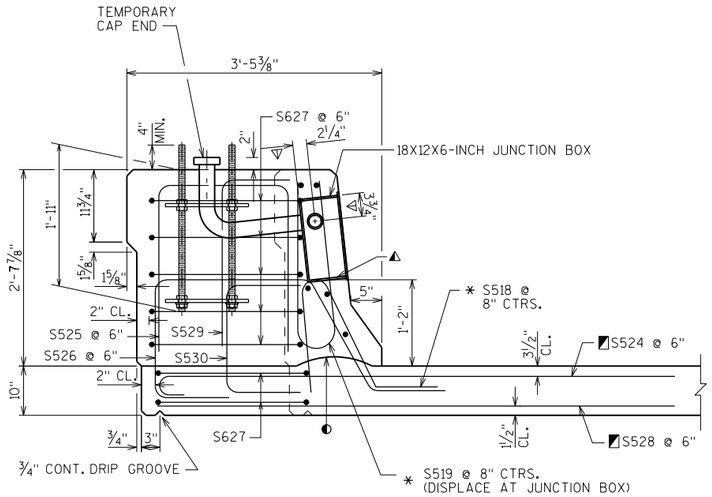
8

FILE= P:\Transportation\Brown County Bridges LSH 41\CADD\Sheets\B-5-661 (RemainingStructure)\025 B-05-661-SLOPED FACE PARAPET 'HF'.dgn

DATE: 1/26/2011
I.D.

STATE PROJECT NUMBER

1133-03-82



SECTION A-A

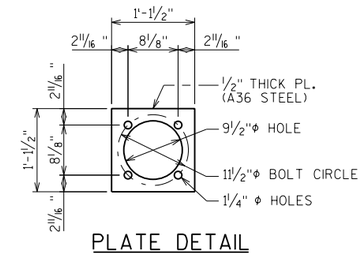
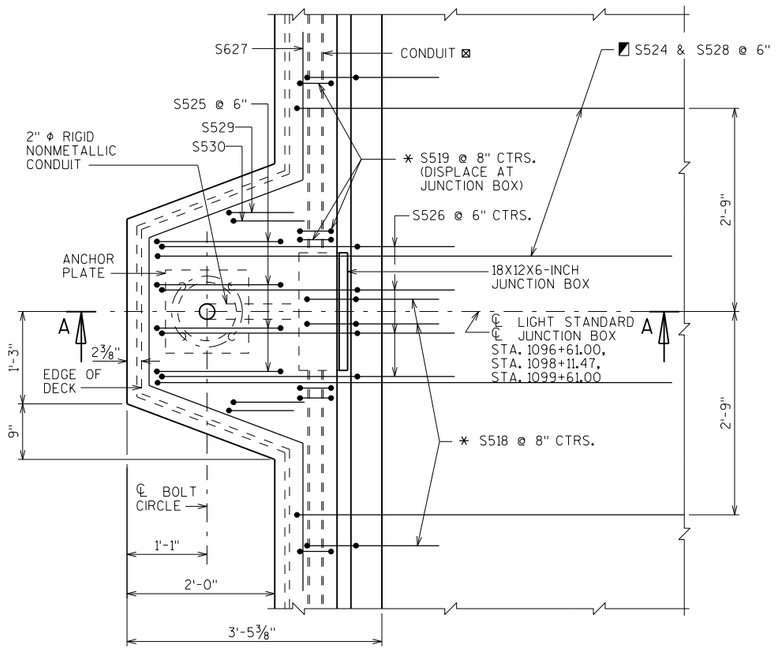
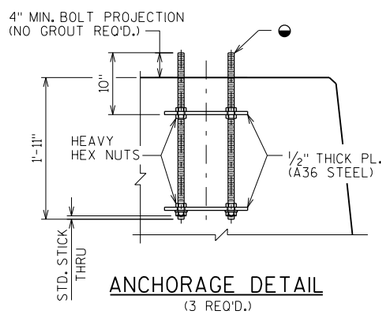


PLATE DETAIL

(6 REQ'D. FOR 3 LIGHT STANDARDS)



PLAN AT LIGHT STANDARD



ANCHORAGE DETAIL

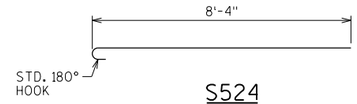
(3 REQ'D.)

BILL OF BARS

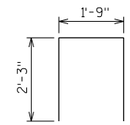
LIGHT STANDARD BARS. MAIN DECK AND PARAPET BAR BILL ON SHT. 20.

BAR MARK	NO. REQ'D	LENGTH	WEIGHT (LB)	BENT	LOCATION
S524	30	8'-11"	279	X	DECK TRANSVERSE AT LIGHT STD.
S525	12	6'-0"	75	X	PARAPET VERT. AT LIGHT STD.
S526	12	7'-0"	88	X	PARAPET VERT. AT LIGHT STD.
S627	21	10'-0"	315	X	PARAPET HORZ. AT LIGHT STD.
S528	30	8'-4"	261		DECK TRANSVERSE AT LIGHT STD.
S529	6	3'-2"	20	X	PARAPET VERT. AT LIGHT STD.
S530	6	3'-5"	21	X	PARAPET VERT. AT LIGHT STD.
		TOTAL	1,059		

ALL BARS ARE EPOXY COATED.



S524



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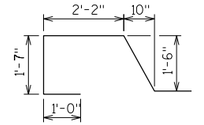

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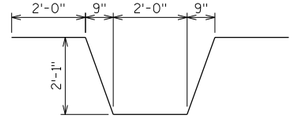

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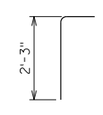
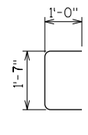


S529



S530

LEGEND

◐ CONSTR. JT. STRIKE OFF AS SHOWN

◭ CUT OUT ± 1" OF GASKET AT BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE.

▽ LOCATION OF CONDUIT IS MEASURED FROM OUTSIDE EDGE OF JUNCTION BOX.

◩ THESE BARS ARE IN ADDITION TO STANDARD TRANSVERSE BARS IN DECK.

◒ 1"Φ THREADED ANCHOR BOLTS ASTM A449 OR AASHTO M 314-90 GR 55. HOT DIP ASTM A153, CLASS C, ENTIRE ANCHORAGE. PROVIDE ENLARGED THREAD ON NUTS FOR PROPER FIT AFTER GALVANIZING. PROVIDE DOUBLE FLAT WASHERS & NUTS.

✳ SEE SHT. 20 "DECK SECTION" FOR ADDITIONAL BAR STEEL DETAILS.

⊠ USE 2" DIA. RIGID NON-METALLIC CONDUIT EXCEPT AT EXPANSION FITTING. AT EXPANSION FITTING USE RIGID METALLIC CONDUIT 5'-0" INTO WALL SEGMENT OR PARAPET. PROVIDE #10 AWG BONDING JUMPER BETWEEN METALLIC CONDUIT AND JUNCTION BOX. BONDING JUMPERS SHALL EITHER ENTER THE JUNCTION BOX AND BE TERMINATED TO THE GROUNDING LUG USING TERMINAL BLOCKS; OR CAN BE EXOTHERMICALLY WELDED TO A FIELD INSTALLED GROUNDING LUG ON THE BACK SIDE OF THE JUNCTION BOX. BONDING JUMPERS WILL BE PAID FOR UNDER BID ITEM 652.0125 "CONDUIT RIGID METALLIC 2-INCH"

NOTES

BID ITEMS SHALL BE:
"JUNCTION BOXES 18X12X6-INCH", EACH.
"CONDUIT RIGID METALLIC 2-INCH"
"CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH"

APPROVED MANUFACTURERS - JUNCTION BOXES:
SEE APPROVED MATERIAL LIST.

APPROVED MANUFACTURER OR EQUIVALENT - EXPANSION FITTING:
O-Z/GEDNEY TYPE AXDX-200 / AX-200 AND BONDING JUMPER COMBINATION
EXPANSION AND DEFLECTION FITTING (4" TOTAL LONGITUDINAL CONDUIT MOVEMENT).
SEE SHT. 25 "SLOPED FACE PARAPET 'LF'" FOR LOCATION OF EXPANSION FITTING.

EXPANSION FITTINGS, ANGLES AND ADAPTER FITTINGS TO BE INCIDENTAL TO "CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH".

WHEN CONNECTING NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS U.L. LISTED FOR ELECTRICAL USE SHALL BE USED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MJA | PLANS CK'D. MDR

LIGHT STANDARD

SHEET 26 OF 36
496

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

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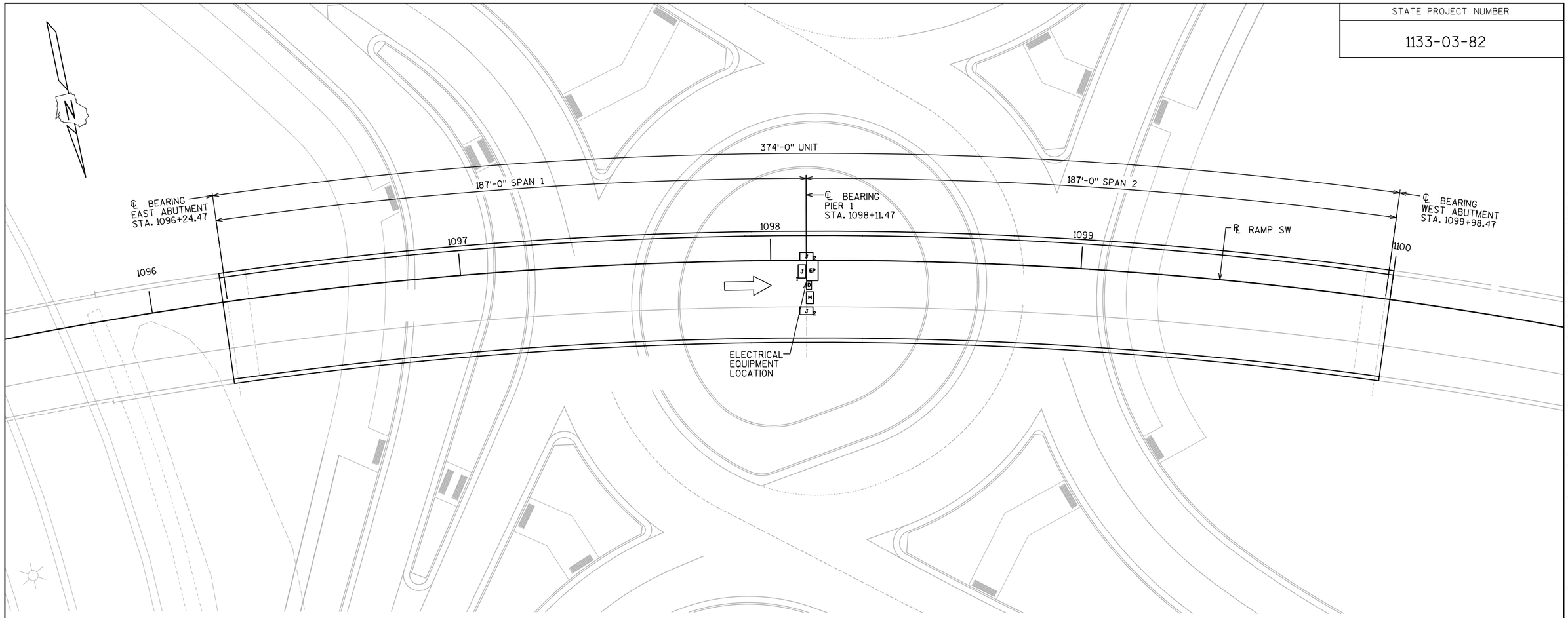
FILE= P:\Transportation\Brown County Bridges LSH 41\CADD\Sheets\B-5-661 (RemainingStructure)\026 B-05-661-LIGHT STANDARD DETAILS.dgn

DATE: 2/24/2011
I.D.

STATE PROJECT NUMBER

1133-03-82



ELECTRICAL SITE PLAN

LEGEND

- EP — MAIN ELECTRICAL PANEL "EP"
- J_1 — JUNCTION BOX, STAINLESS STEEL, 18"X12"X6"
- J_2 — JUNCTION BOX, STAINLESS STEEL, 12"X12"X4"
- D — DISCONNECT SWITCH
- M — METER SOCKET AND METER

ELECTRICAL GENERAL NOTES:

1. VERIFY ALL OF THE INFORMATION SHOWN ON THE CONTRACT DRAWINGS, WHICH WOULD AFFECT THE WORK UNDER THIS CONTRACT.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN EXISTING FIELD CONDITIONS BEFORE BIDDING ON THIS PROJECT.
3. ALL NEW CONDUITS, DIRECT BURIAL CABLES, AND APPURTENANCES ARE INDICATED DIAGRAMMATICALLY ON THE DRAWINGS. THE ACTUAL LOCATIONS IN THE FIELD SHALL MEET WITH APPROVAL OF THE ENGINEER.
4. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE 2011 WISDOT STANDARD SPECIFICATIONS AND LATEST EDITION OF THE NEC CODE.
5. FURNISH AND INSTALL LUMINAIRE LAMPS IN ACCORDANCE WITH THE SUPPLIER'S RECOMMENDATIONS AND IN ACCORDANCE WITH THE SPECIFICATIONS. INCLUDE THE COST OF THIS WORK AND MATERIAL IN THE APPLICABLE LUMINAIRE PAY ITEM. SEPARATE PAYMENT WILL NOT BE MADE.

NOTES (CONTINUED):

6. FURNISH AND INSTALL ALL MATERIALS, EQUIPMENT AND LABOR FOR THE ELECTRIC SERVICE INSTALLATION.
   INSTALL AND EXTEND A 240/120 V, 1-PHASE, ELECTRIC SERVICE FROM THE UTILITY TRANSFORMER TO THE METER SOCKET. INCLUDE FURNISHING AND INSTALLING THE DISCONNECT SWITCH AND THE ELECTRICAL PANEL IN THE SERVICE INSTALLATION PAY ITEM AS NOTED ON SHEET 33.
7. DON'T WELD TO ANY STEEL ELEMENTS OF THE BOX GIRDER SYSTEMS FOR ATTACHEMENT OR SUPPORT OF ELECTRICAL ITEMS.
8. REFER TO STRUCTURAL PLANS (FROM SEPARATE FABRICATION CONTRACT INCLUDED IN THIS CONTRACT SET OF PLANS) FOR PROVISIONS MADE DURING FABRICATION FOR ACCOMODATION OF ELECTRICAL ITEMS.

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MAE | PLANS CK'D. DAD

ELECTRICAL SITE PLAN

SHEET 27 OF 36
497

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DATE: 11/15/2010
I.D.

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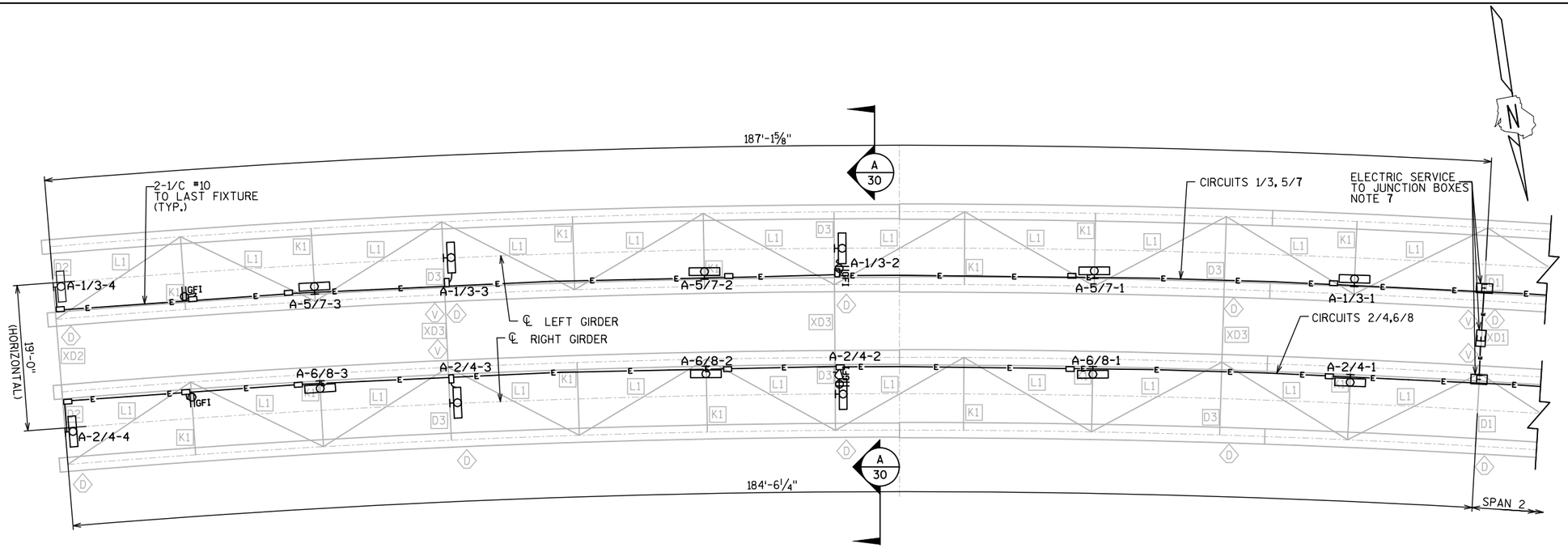
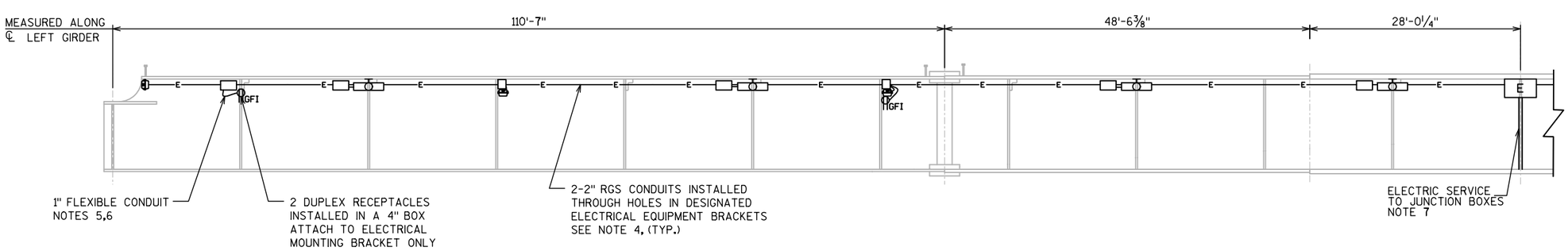
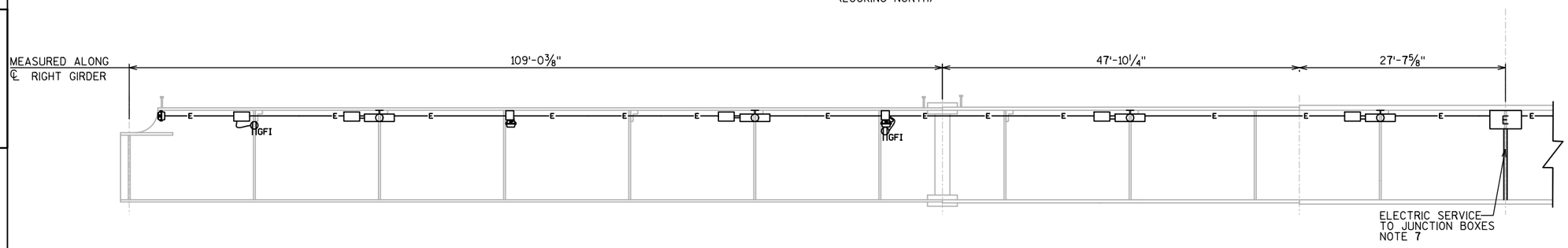


GIRDER INTERIOR LIGHTING PLAN - SPAN 1



LEFT GIRDER LIGHTING ELEVATION - SPAN 1

(LOOKING NORTH)



RIGHT GIRDER LIGHTING ELEVATION - SPAN 1

(LOOKING SOUTH)

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

STATE PROJECT NUMBER

1133-03-82

LEGEND

- A — FLUORESCENT LUMINAIRE, ENCLOSED, GASKETED, 4', 2-34W, T12 TYPE, 240V
- HGFI — GFI RECEPTACLE, TWO DUPLEX RECEPTACLES IN A 4" BOX, 120V
- JUNCTION BOX, STAINLESS STEEL, 12"X12"X4"
- E — JUNCTION BOX, STAINLESS STEEL, 12"X12"X4" FOR INCOMING SERVICE
- —E— 2-2" RGS CONDUITS WITH 4-1/C #10, FOR LIGHTING IN ONE CONDUIT, 2-1/C #10 FOR RECEPTACLES IN SECOND
- 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

FIXTURE TYPE
CIRCUIT NUMBER
FIXTURE NUMBER
A-1/3-1

NOTES:

1. FURNISH AND INSTALL FLUORESCENT LUMINAIRES THAT ARE ENCLOSED, GASKETED, AND RATED FOR DAMP AND WET LOCATIONS.
2. INSTALL ELECTRICAL CONDUITS THROUGH HOLES IN STEEL BOX GIRDER DIAPHRAGMS.
3. FURNISH AND INSTALL CABLES FOR THE LIGHTING CIRCUITS AND RECEPTACLES IN SEPARATE CONDUITS. THE LIGHTING CIRCUITS ARE ON SEPARATE BREAKERS.
4. DO NOT PERFORM DRILLING IN ANY STRUCTURAL MEMBERS. DRILL ONLY ON ELECTRICAL BRACKETS. DO NOT DRILL FOR INTO BOTTOM OF CONCRETE DECK.
5. INSTALL GFCI RECEPTACLES IN DESIGNATED LOCATIONS SPACED AT APPROXIMATELY 100'. PROVIDE TWO (2) DUPLEX RECEPTACLES IN ONE BOX AT EACH LOCATION WITH COVER PLATE.
6. PROVIDE AND INSTALL 1" LIQUIDTIGHT FLEXIBLE METAL CONDUITS BETWEEN JUNCTION BOXES AND RECEPTACLES AND LUMINAIRES, AS NEEDED. COST OF SUCH CONDUITS SHALL BE INCLUDED IN THE COST OF THE RECEPTACLES OR LUMINAIRES. NO ADDITIONAL COMPENSATION WILL BE MADE FOR MATERIALS OR LABOR TO PERFORM THIS WORK.
7. FURNISH AND INSTALL ALL NECESSARY CONDUITS, JUNCTION BOXES, AND WIRING TO PROVIDE ELECTRIC SERVICE TO THE LIGHTS AND RECEPTACLES INSIDE THE BOX GIRDERS, AS SHOWN. SEE ELECTRIC SERVICE DETAILS ON SHEET 32.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MAE | PLANS CK'D. DAD

GIRDER LIGHTING PLAN & ELEVATION SPAN 1

SHEET 28 OF 36
498

8

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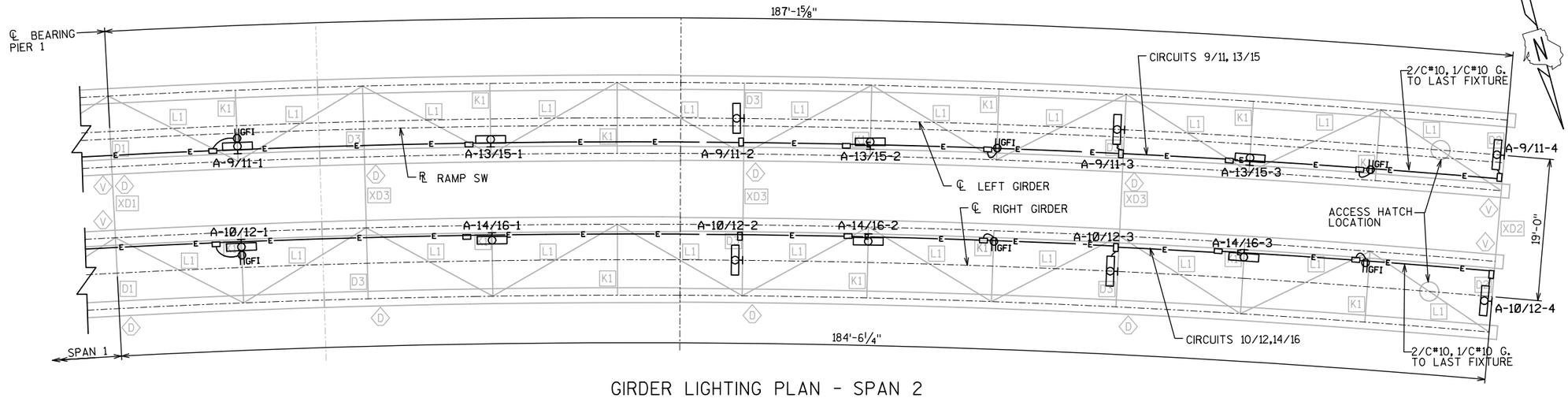
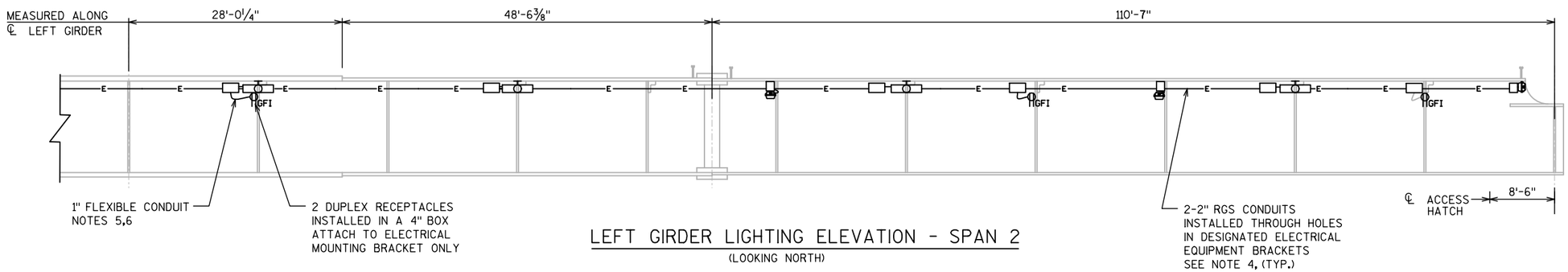
FILE= O:\WisDot_12345678_US41Bridges\Lighting\PLANS\B-5-661\01_Final_100%\028 B-5-661-GIRDER PLAN AND ELEV 1.dgn

DATE: 11/15/2010
I.D.

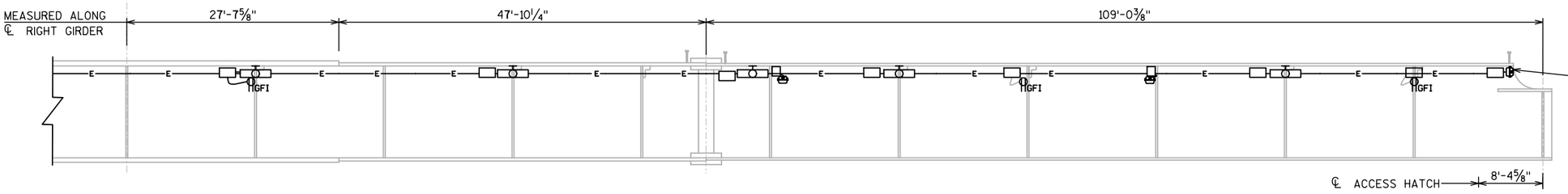


GIRDER LIGHTING PLAN - SPAN 2



LEFT GIRDER LIGHTING ELEVATION - SPAN 2

(LOOKING NORTH)



RIGHT GIRDER LIGHTING ELEVATION - SPAN 2

(LOOKING SOUTH)

STATE PROJECT NUMBER

1133-03-82

LEGEND

- A — FLUORESCENT LUMINAIRE, ENCLOSED, GASKETED, 4', 2-34W, T12 TYPE, 240V
- HGFI — GFI RECEPTACLE, TWO DUPLEX RECEPTACLES IN A 4" BOX, 120V
- JUNCTION BOX, STAINLESS STEEL, 12"X12"X4"
- —E— 2-2" RGS CONDUITS WITH 4-1/C #10, FOR LIGHTING IN ONE CONDUIT, 2-1/C #10 FOR RECEPTACLES IN SECOND
- 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

FIXTURE TYPE
CIRCUIT NUMBER
FIXTURE NUMBER
A-1-1

NOTES:

1. FURNISH AND INSTALL FLUORESCENT LUMINAIRES THAT ARE ENCLOSED, GASKETED, AND RATED FOR DAMP AND WET LOCATIONS.
2. INSTALL ELECTRICAL CONDUITS THROUGH HOLES IN STEEL BOX GIRDER DIAPHRAGMS.
3. FURNISH AND INSTALL CABLES FOR THE LIGHTING CIRCUITS AND RECEPTACLES IN SEPARATE CONDUITS. THE LIGHTING CIRCUITS ARE ON SEPARATE BREAKERS.
4. DO NOT PERFORM DRILLING IN ANY STRUCTURAL MEMBERS. DRILL ONLY ON ELECTRICAL BRACKETS. DO NOT DRILL FOR INTO BOTTOM OF CONCRETE DECK.
5. INSTALL GFCI RECEPTACLES IN DESIGNATED LOCATIONS SPACED AT APPROXIMATELY 100'. PROVIDE TWO (2) DUPLEX RECEPTACLES IN ONE BOX AT EACH LOCATION WITH COVER PLATE.
6. PROVIDE AND INSTALL 1" LIQUIDTIGHT FLEXIBLE METAL CONDUITS BETWEEN JUNCTION BOXES AND RECEPTACLES AND LUMINAIRES, AS NEEDED. COST OF SUCH CONDUITS SHALL BE INCLUDED IN THE COST OF THE RECEPTACLES OR LUMINAIRES. NO ADDITIONAL COMPENSATION WILL BE MADE FOR MATERIALS OR LABOR TO PERFORM THIS WORK.
7. FURNISH AND INSTALL ALL NECESSARY CONDUITS, JUNCTION BOXES, AND WIRING TO PROVIDE ELECTRIC SERVICE TO THE LIGHTS AND RECEPTACLES INSIDE THE BOX GIRDERS, AS SHOWN. SEE ELECTRIC SERVICE DETAILS ON SHEET 32.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MAE | PLANS CK'D. DAD

GIRDER LIGHTING PLAN & ELEVATION SPAN 2

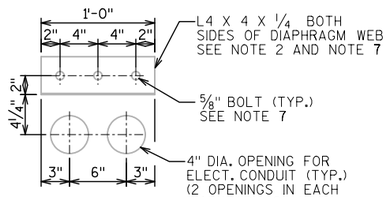
SHEET 29 OF 36
499

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

8

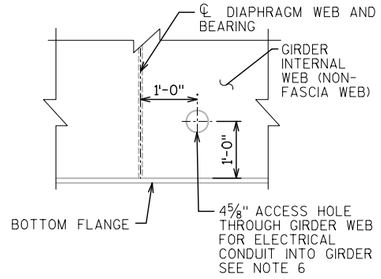
STATE PROJECT NUMBER

1133-03-82



OPENINGS AND CONNECTION BRACKET DETAILS FOR ELECTRICAL

SEE NOTE 7

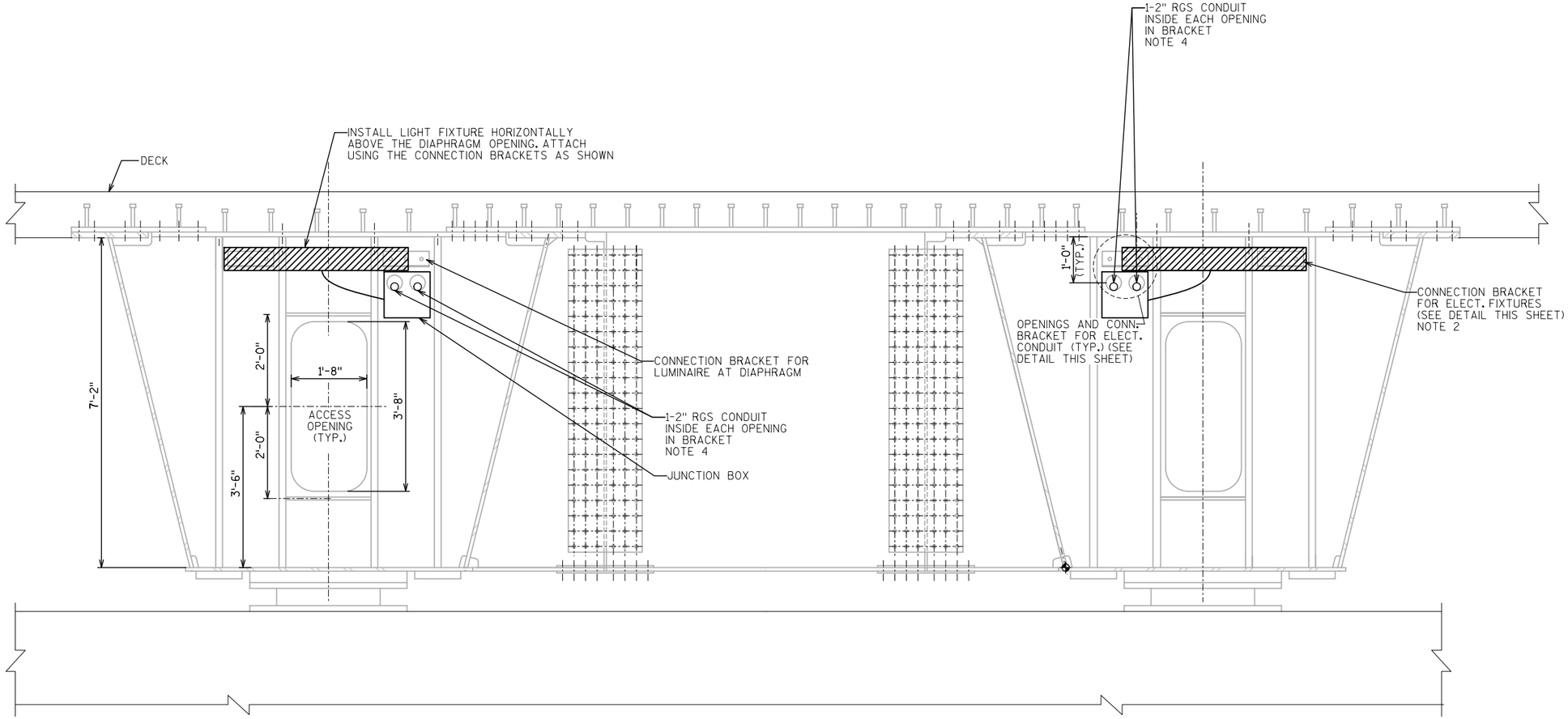


EXTERNAL ELECTRICAL ACCESS DETAIL

TWO ACCESS LOCATIONS FOR INCOMING POWER TO INTERIOR OF GIRDER (TYP. BOTH GIRDERS)

NOTES:

1. INSTALL LIGHT FIXTURES, RECEPTACLE BOXES, AND JUNCTION BOXES ON SUPPLIED ELECTRICAL CONNECTION BRACKETS.
2. DRILLING IS ONLY ALLOWED IN ELECTRICAL CONNECTION BRACKETS.
3. INSTALL ELECTRICAL CONDUITS INSIDE PRE-DRILLED ACCESS HOLES IN THE ELECTRICAL CONNECTION BRACKETS, AS SHOWN.
4. FURNISH AND INSTALL SEPARATE CONDUITS AND CABLES FOR THE LIGHTING AND RECEPTACLE CIRCUITS.
5. SEE GIRDER LIGHTING PLAN AND ELEVATION SHEETS FOR ELECTRICAL AND LIGHTING EQUIPMENT LOCATIONS.
6. FURNISH AND INSTALL 3" LIQUIDTIGHT FLEXIBLE METAL CONDUITS (LTFMC) INSIDE EXTERNAL ELECTRICAL ACCESS HOLE. INSTALL THE FLEXIBLE CONDUITS TO CONNECT THE RIGID GALVANIZED STEEL CONDUIT (RGS) OUTSIDE THE BOX GIRDER TO THE JUNCTION BOX. INCLUDE COST OF THIS CONDUIT IN THE COST OF THE 3" RGS CONDUIT.
7. CONNECTION BRACKETS AND ATTACHING BOLTS SHOWN ARE FURNISHED BY STEEL GIRDER FABRICATOR FOR USE BY THE ELECTRICAL CONTRACTOR TO ATTACH THE LIGHT FIXTURES, CONDUITS AND BOXES. MODIFY BRACKETS AS NECESSARY AND FURNISH AND INSTALL MOUNTING HARDWARE TO PROVIDE A PROPER INSTALLATION FOR THE ELECTRICAL EQUIPMENT.



INTERNAL DIAPHRAGM D3 | EXTERNAL DIAPHRAGM 'XD3' | INTERNAL DIAPHRAGM D3

SECTION A-A ELEVATION

(SUPERELEVATION NOT SHOWN) (LOOKING UPSTATION)

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MAE | PLANS CK'D. DAD

ELECTRICAL INSTALLATION DETAILS 1

SHEET 30 OF 36

500

8

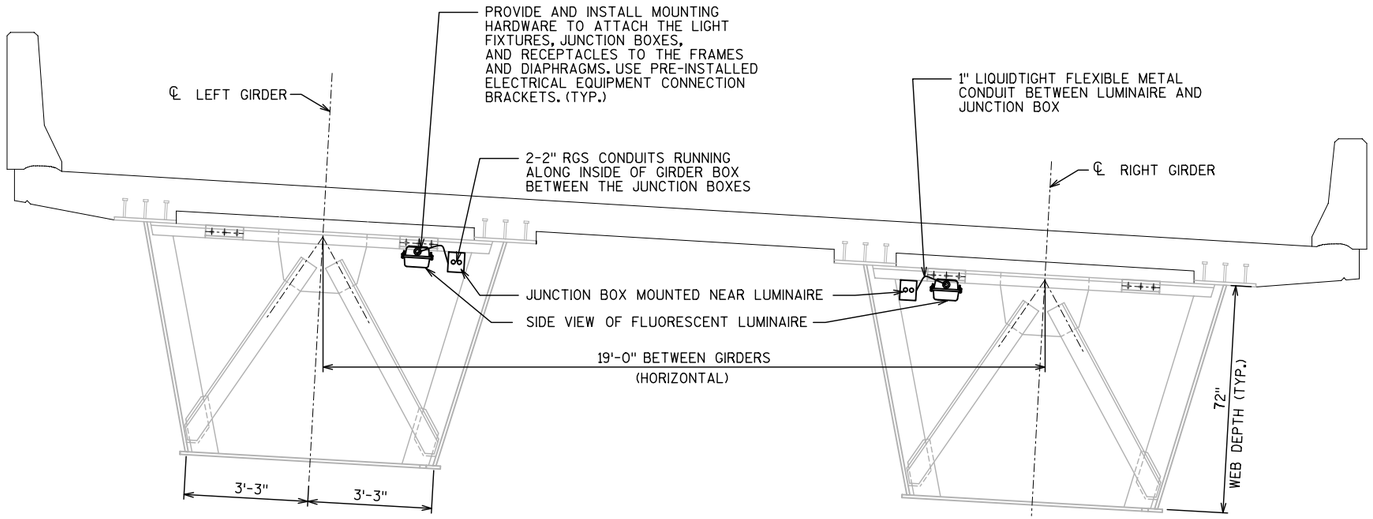
8

FILE= O:\WisDot_12345678_US41Bridges\Lighting\PLANS\B-5-661\01_Final_100%\030 B-5-661 Electrical Details 1.dgn

DATE: 11/15/2010

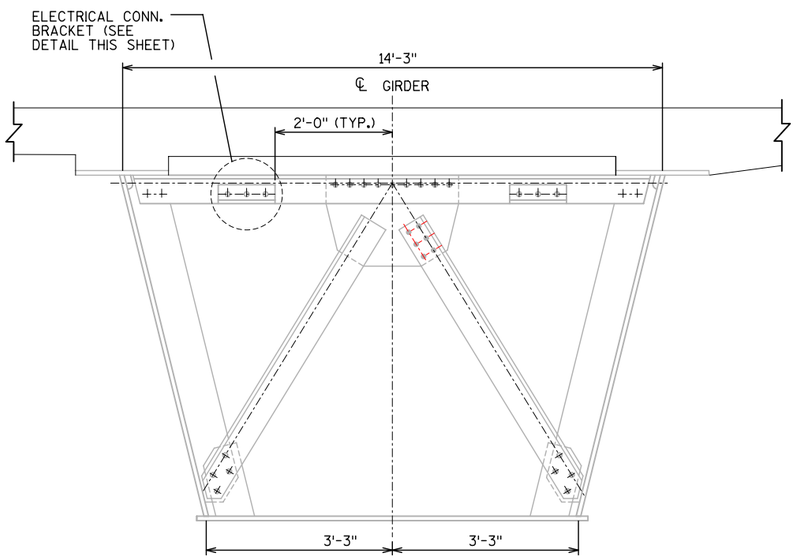
I.D.

STATE PROJECT NUMBER
1133-03-82

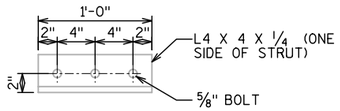


TYPICAL CROSS SECTION AT K FRAME

(LOOKING UPSTATION)



TYPICAL SECTION AT K-FRAME



DETAIL FOR ELECTRICAL CONNECTION BRACKET

SEE NOTE 1

NOTE:

1. CONNECTION BRACKETS AND ATTACHING BOLTS SHOWN ARE FURNISHED BY STEEL GIRDER FABRICATOR FOR USE BY THE ELECTRICAL CONTRACTOR TO ATTACH THE LIGHT FIXTURES, CONDUITS AND BOXES. MODIFY BRACKETS AS NECESSARY AND FURNISH AND INSTALL MOUNTING HARDWARE TO PROVIDE A PROPER INSTALLATION FOR THE ELECTRICAL EQUIPMENT.

8

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

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ELECTRICAL INSTALLATION DETAILS 2

SHEET 31 OF 36
501

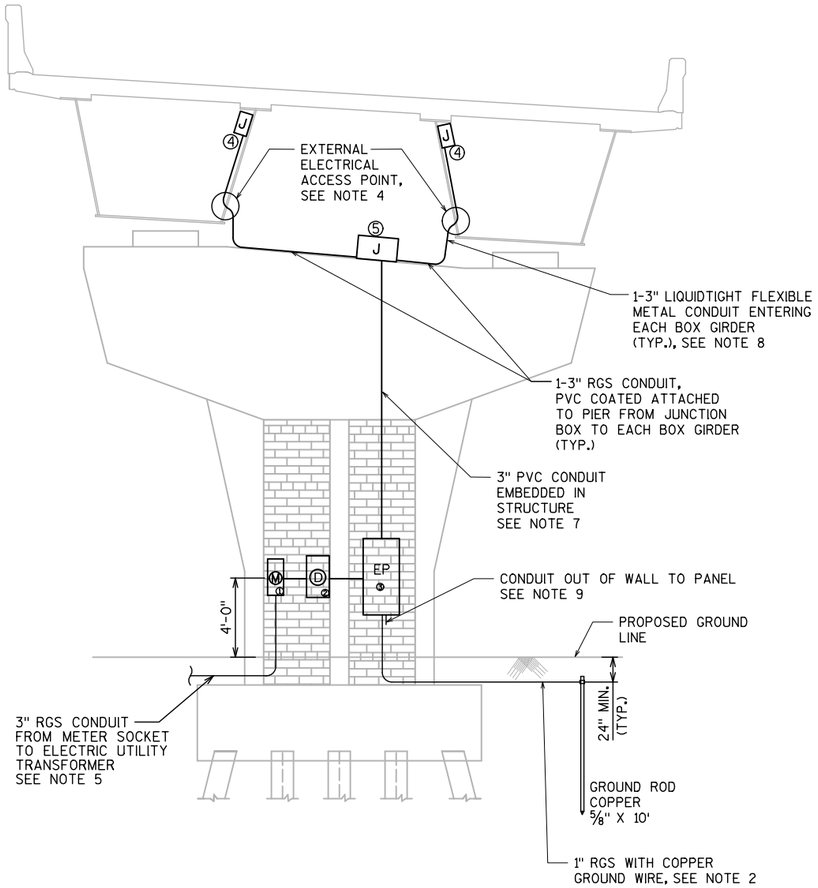
STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

FILE= 0:\WisDot_12345678_US41Br_dgn\Lighting\PLANS\B-5-661\01_Final_100%\031 B-5-661 Electrical Details 2.dgn

DATE: 11/15/2010
I.D.

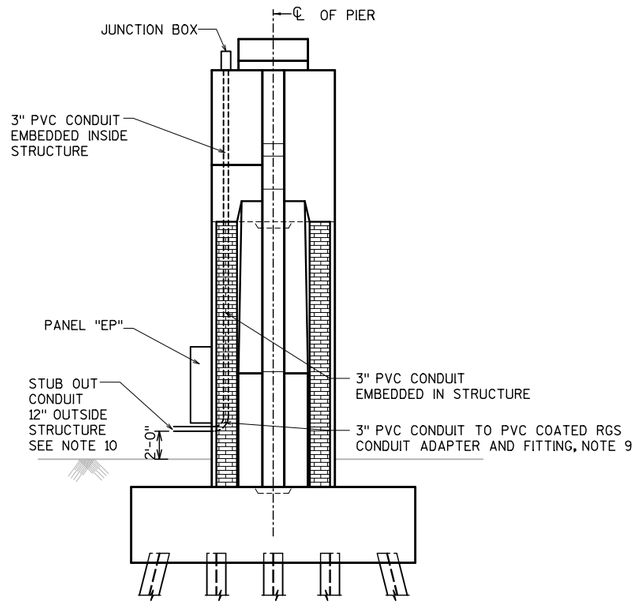
STATE PROJECT NUMBER

1133-03-82



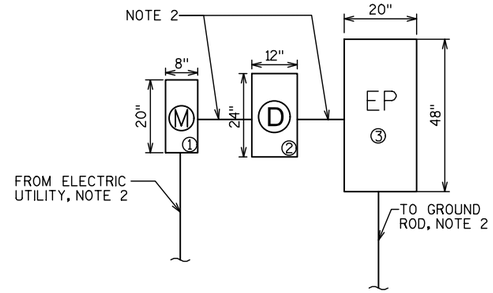
PIER ELEVATION AND BRIDGE CROSS-SECTION

(LOOKING UPSTATION)
NOT TO SCALE



END VIEW

(NORTH END SHOWN, SOUTH END SIMILAR)
NOT TO SCALE



ELECTRICAL SERVICE EQUIPMENT DETAILS

NOT TO SCALE

* DIMENSIONS ARE APPROXIMATE AND VARY BY MANUFACTURER.

LEGEND:

① METER SOCKET AND METER
② DISCONNECT SWITCH, 100A,
③ ELECTRICAL PANEL, 100A, 240V/120, 1-PH
④ STAINLESS STEEL JUNCTION BOX, 12"X12"X4"
⑤ STAINLESS STEEL JUNCTION BOX, 18"X12"X6"

NOTES:

1. FURNISH AND INSTALL NEMA 4X RATED STAINLESS STEEL OUTDOOR CABINETS AND ENCLOSURES.
2. PAYMENT FOR ALL MATERIALS, EQUIPMENT, AND LABOR NEEDED TO INSTALL AND CONNECT THE SERVICE FROM THE UTILITY TRANSFORMER TO THE ELECTRICAL PANEL "EP" IS PAID FOR AS PART OF PAY ITEM NO. SPV.0105.700 - ELECTRICAL SERVICE INSTALLATION. THAT PAYMENT INCLUDES THE APPROVED METER SOCKET, ELECTRICAL PANEL, DISCONNECT SWITCH, CABLES, CONDUITS, GROUNDING, AND TRENCHING FOR CONDUITS SHOWN ON THE PLANS. ALL CONNECTIONS, SPLICING, AND WIRING TO THE NEW ELECTRICAL PANEL AND DISCONNECT SWITCH IS ALSO INCLUDED UNDER THE SAME PAY ITEM. THE SERVICE CABLE AND CONDUIT SIZE SHALL BE AS SHOWN ON OTHER PLANS. FURNISH, INSTALL, AND PAY FOR ELECTRICAL PANEL GROUNDING MATERIALS, EQUIPMENT AND LABOR UNDER THIS PAY ITEM.
3. EXTEND THE SERVICE UP THE PIER TO A DISTRIBUTION JUNCTION BOX. FROM THERE, ROUTE THE BRANCH CIRCUIT WIRING TO EACH BOX GIRDER.
4. SEE EXTERNAL ELECTRICAL ACCESS DETAIL ON SHEET 30. ALSO SEE INTERMEDIATE PIER DIAPHRAGMS XD1 AND D1 FOR EXACT LOCATION OF ELECTRICAL ACCESS HOLE.
5. DETERMINE THE SIZE OF THE SERVICE CONDUCTORS BASED UPON THE DISTANCE TO THE ELECTRIC UTILITY TRANSFORMER IN WITH THE ACTUAL LOAD AND THE SIZE OF THE MAIN CIRCUIT BREAKER IN THE ELECTRICAL PANEL "EP". ALLOWABLE VOLTAGE DROP OF 3%.
6. THE ENGINEER TO PROVIDE THE LOCATION OF THE ELECTRIC SERVICE TRANSFORMER.
7. FURNISH AND INSTALL ONE 3" RIGID NONMETALLIC SCHEDULE 40 CONDUIT CAST INTO THE PIER (EMBEDDED) AS SHOWN. INSTALL ONE CONDUIT INSIDE EACH BOX GIRDER THAT WILL HAVE THE CONDUCTORS FOR BOTH THE LIGHTING AND THE GFI RECEPTACLE CIRCUITS.
8. FURNISH AND INSTALL 3" LIQUIDTIGHT FLEXIBLE METAL CONDUITS (LTFMC) WHEN ENTERING THE BOX GIRDERS THROUGH THE ELECTRICAL ACCESS HOLES. INSTALL THE LTFMC BETWEEN THE RIGID GALVANIZED STEEL CONDUITS. SEAL THE AREA AROUND THE FLEXIBLE CONDUITS ENTERING THE BOX GIRDERS AT THE ACCESS HOLE WITH BUSHINGS TO PROVIDE A TIGHT SEAL. PAYMENT FOR LIQUIDTIGHT FLEXIBLE METAL CONDUITS IS INCLUDED UNDER THE PVC COATED RGS CONDUIT PAY ITEM, AND NO SEPARATE PAYMENT WILL BE MADE.
9. STUB CONDUIT EMBEDDED IN STRUCTURE OUT OF WALL UNDER THE ELECTRICAL PANEL "EP". FURNISH AND INSTALL, 3" PVC COATED RGS CONDUIT BETWEEN THE PVC CONDUIT EMBEDDED IN THE PIER AND THE ELECTRICAL PANEL "EP". FURNISH AND INSTALL ALL NECESSARY ELBOWS, FITTINGS, AND PVC TO RGS ADAPTERS TO COMPLETE THE INSTALLATION. INCLUDE COST FOR THE MATERIALS AND LABOR NEEDED, AND DESCRIBED HERE, IN THE COST OF THE ELECTRICAL PANEL.

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

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ELECTRICAL INSTALLATION DETAILS 3

SHEET 32 OF 36
502

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DATE: 1/26/2011
I.D.

STATE PROJECT NUMBER

1133-03-82

PANELBOARD ELECTRICAL "EP"
VOLTAGE 240V/120
PHASE/WIRE 1/3
AIC RATING 22000 AMPS

MAINS 100A. MCB
BUS RATING 100A.
MOUNTING WALL
LOCATION CENTER PIER

DESCRIPTION	CKT NO.	LOAD (VA) A	B	C	AMPS/ POLES	CKT BKR	CKT BKR	AMPS/ POLES	LOAD (VA) A	B	C	CKT NO.	DESCRIPTION
BOX GIRDER LIGHTS-SPAN 1	1	200			20/2			20/2	200			2	BOX GIRDER LIGHTS-SPAN 1
	3		200							200		4	
BOX GIRDER LIGHTS-SPAN 1	5			150	20/2			20/2			150	6	BOX GIRDER LIGHTS-SPAN 1
	7	150							150			8	
BOX GIRDER LIGHTS-SPAN 2	9		200		20/2			20/2		200		10	BOX GIRDER LIGHTS-SPAN 2
	11			200							200	12	
BOX GIRDER LIGHTS-SPAN 2	13	150			20/2			20/2	150			14	BOX GIRDER LIGHTS-SPAN 2
	15		150							150		16	
BOX GIRDER RECEPTACLES-SPAN 1	17			720	20/1			20/1			720	18	BOX GIRDER RECEPTACLES-SPAN 1
BOX GIRDER RECEPTACLES-SPAN 2	19	1080			20/1			20/1	1080			20	BOX GIRDER RECEPTACLES-SPAN 2
SPARE	21		-		20/1			20/1		-		22	SPARE
SPARE	23			-	20/1			20/1			-	24	SPARE
SPARE	25	-			20/1			20/1	-			26	SPARE
SPARE	27		-		20/1			20/1		-		28	SPARE
SPARE	29			-	20/1			20/1			-	30	SPARE
SUBTOTAL "A"		1580							1580				
SUBTOTAL "B"			550							550			
SUBTOTAL "C"				1070							1070		
TOTAL CONNECTED LOAD "A,B,C" = 6400 VA									TOTAL DEMAND LOAD "A,B,C" = 5120 W				

NOTES:

1. CONTROL THE OPERATION OF THE BOX GIRDER LIGHTING FROM THE ELECTRICAL PANEL "EP". LIGHT SWITCHES INSIDE THE BOX GIRDERS WILL NOT BE INSTALLED. USE MAIN BREAKER IN PANEL "EP" TO TURN ALL LIGHTS ON OR OFF. USE INDIVIDUAL BRANCH CIRCUIT BREAKERS TO TURN ON/OFF INDIVIDUAL CIRCUITS FOR LIGHTING OR RECEPTACLES.
2. USE FOUR (4) CIRCUIT BREAKERS TO WIRE THE LIGHTING FIXTURES IN EACH BOX GIRDER. USE TWO (2) CIRCUITS TO WIRE THE GFI RECEPTACLES INSIDE EACH BOX GIRDER.
3. FURNISH AND INSTALL SPARE BREAKERS FOR ALL UNUSED CIRCUITS, NO EMPTY SPACES IN PANEL.
4. USE COPPER FOR ALL WIRING AND BUS BARS.
5. FURNISH AND INSTALL HEAVY DUTY, COMMERCIAL QUALITY, OUTDOOR RATED EQUIPMENT, PANELS, JUNCTION BOXES, AND CABINETS. FURNISH AND INSTALL NEMA 4X RATED JUNCTION BOXES, RECEPTACLE BOXES AND NEMA 4X RATED ENCLOSURES FOR ALL OUTDOOR ELECTRICAL EQUIPMENT. DISCONNECT SWITCH SHALL BE SERVICE ENTRANCE RATED.

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NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

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ELECTRICAL INSTALLATION DETAILS 4

SHEET 33 OF 36
503

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

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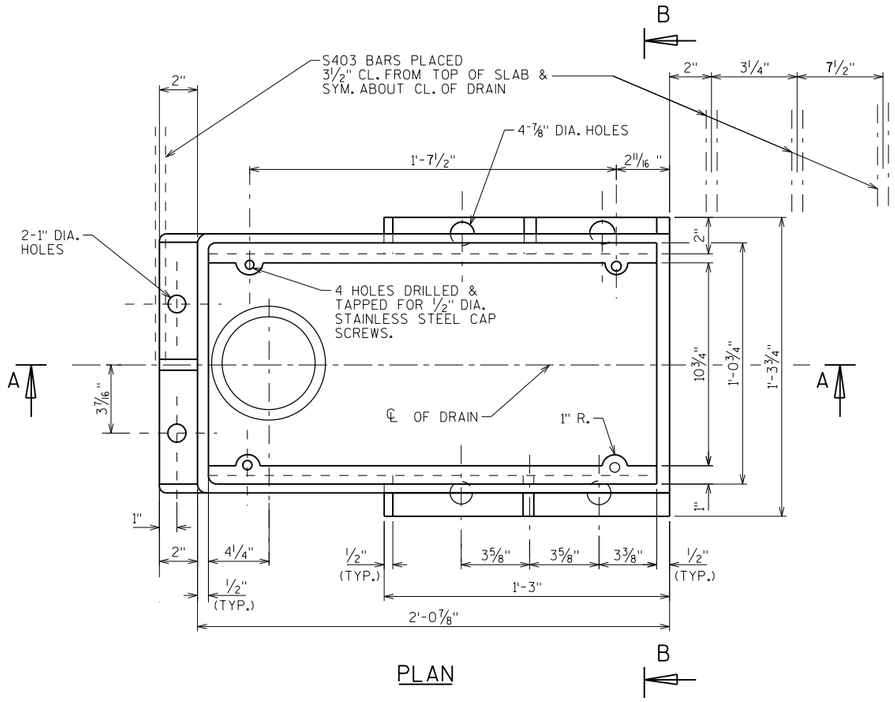
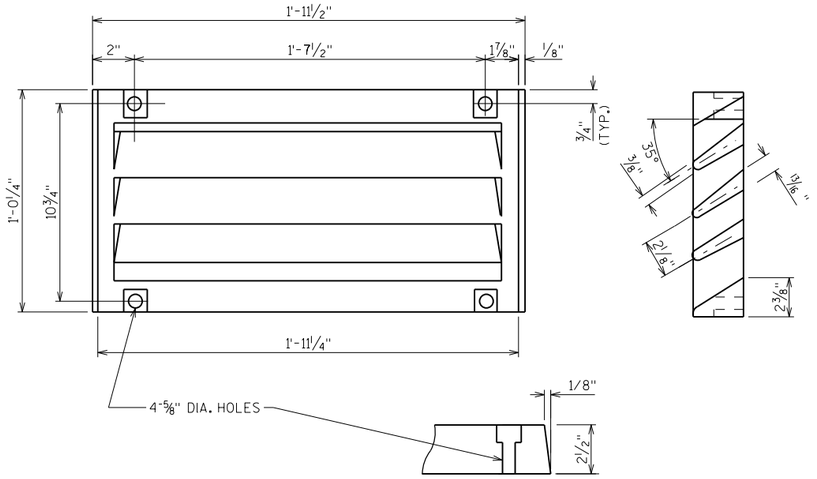
DATE: 11/15/2010
I.D.

STATE PROJECT NUMBER

1133-03-82



PLAN



GRATE CASTING DETAIL

ATTACH GRATE TO FRAME FOR SHIPMENT

NOTES

ALL MATERIAL FOR TYPE "GC" CASTINGS, EXCLUDING GRATE HOLD DOWN SCREWS, SHALL BE GRAY IRON CONFORMING TO A.S.T.M. A48, CLASS 30. (APPROX. WEIGHT= 225#)

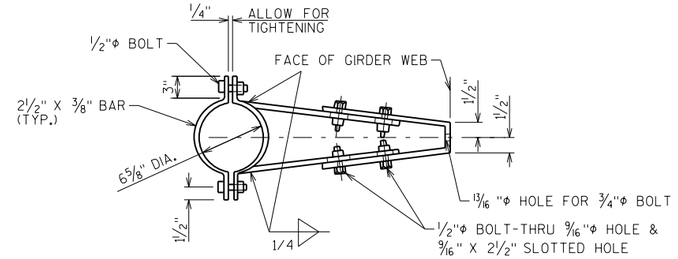
MATERIAL FOR BRACKETS SHALL CONFORM TO A.S.T.M. A36.

THE CONTRACTOR MAY PROPOSE AN ALTERNATE TYPE OF BRACKET. THE PROPOSED ALTERNATE DETAILS SHALL BE SUBMITTED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

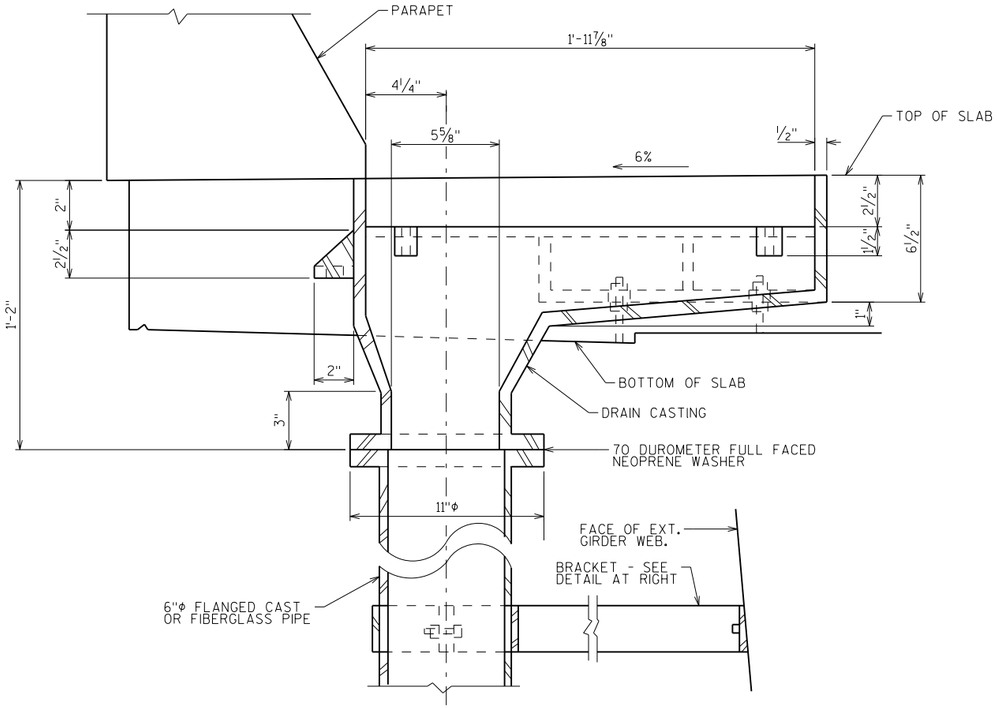
FLANGED 6" DIA. DOWNSPOUTS SHALL FIBERGLASS CONFORMING TO A.S.T.M. D2996, GRADE 1, CLASS A.

TRANSVERSE AND LONGITUDINAL SLAB BAR REINFORCEMENT TO BE CUT A MINIMUM 1" CLEAR FROM DRAIN. DISPLACE BARS WHERE POSSIBLE.

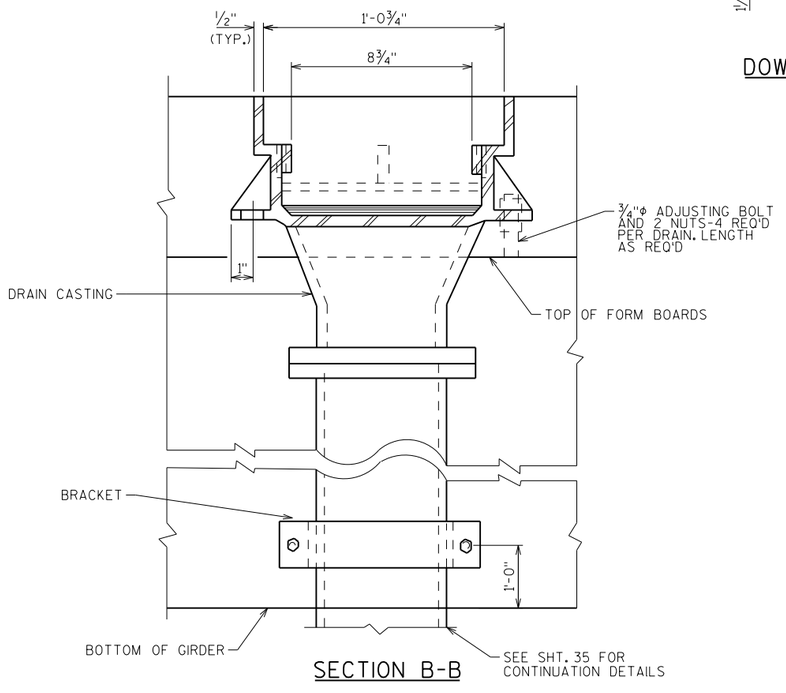
DO NOT PLACE SHEAR STUDS ON TOP FLANGE OF RIGHT GIRDER WHERE THEY INTERFERE WITH THE FLOOR DRAIN.



DOWNSPOUT BRACKET DETAIL



SECTION A-A



SECTION B-B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

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FLOOR DRAIN TYPE 'GC'

SHEET 34 OF 36
504

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

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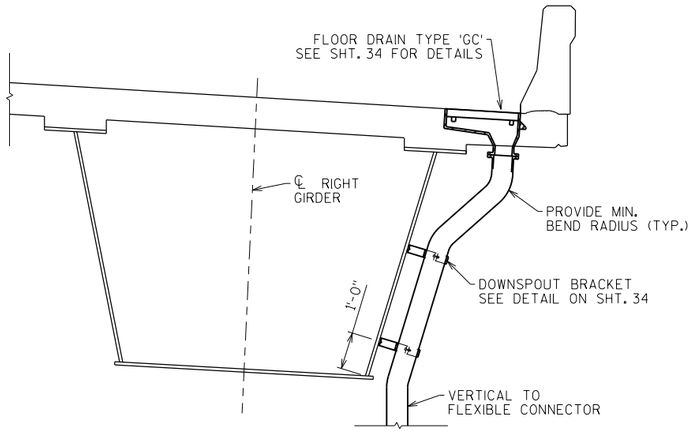
DATE: 12/1/2010
I.D.

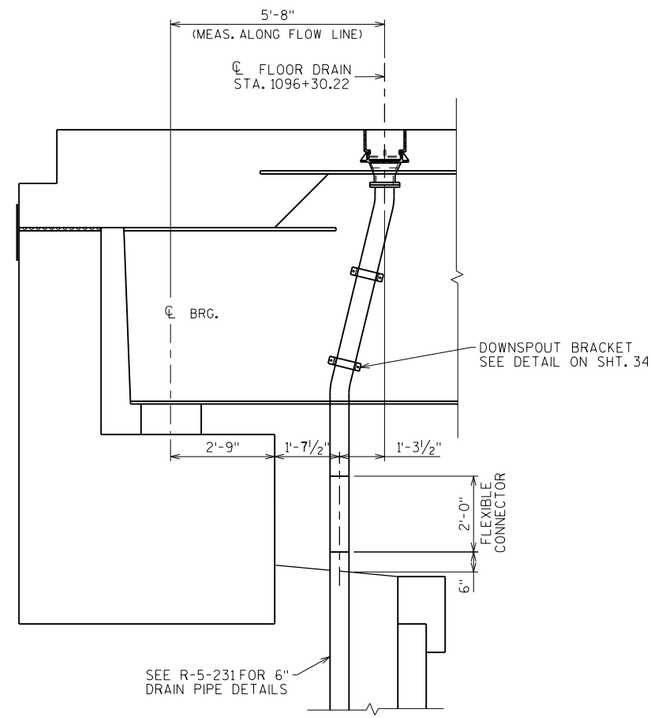
STATE PROJECT NUMBER

1133-03-82



PART SECTION THRU BRIDGE

(LOOKING UPSTATION)



ELEVATION

(LOOKING SOUTH)

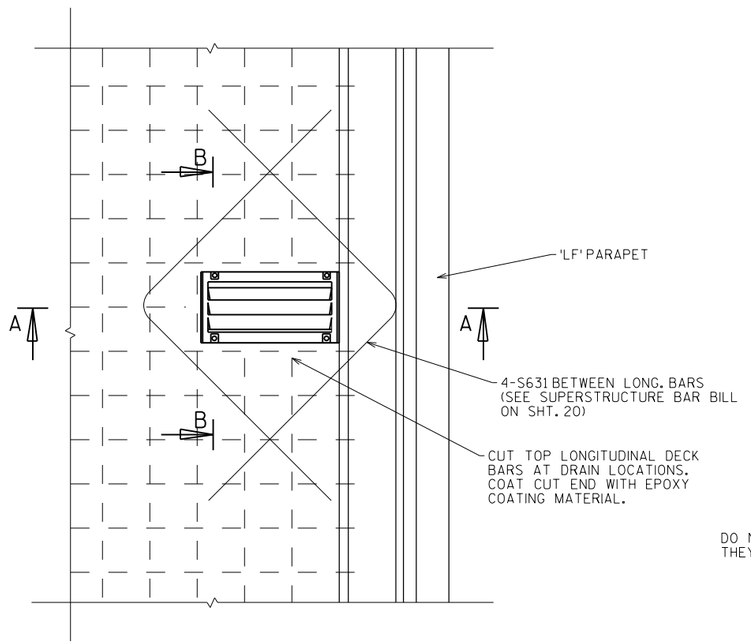
NOTES

SEE SHEETS 18 TO 20 FOR TYPICAL DECK SLAB AND PARAPET REINFORCEMENT.

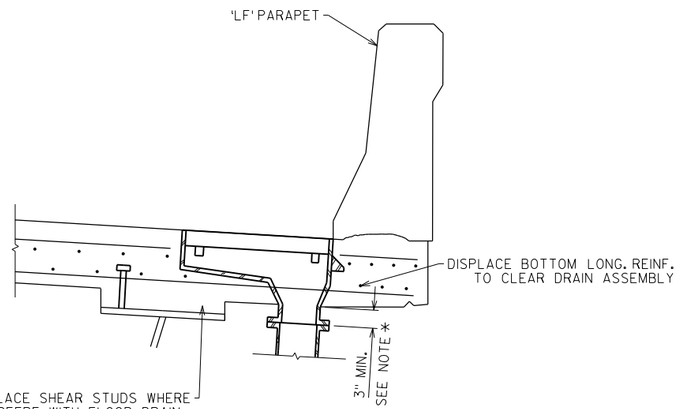
PARAPET REINFORCEMENT AND DOWELS NOT SHOWN FOR CLARITY - RESPACE LOCALLY AS REQUIRED TO CLEAR FLOOR DRAIN.

* FORM DECK AROUND DRAIN PIPE CASTING TO ALLOW SUFFICIENT CLEARANCE TO TIGHTEN FLANGE BOLTS.

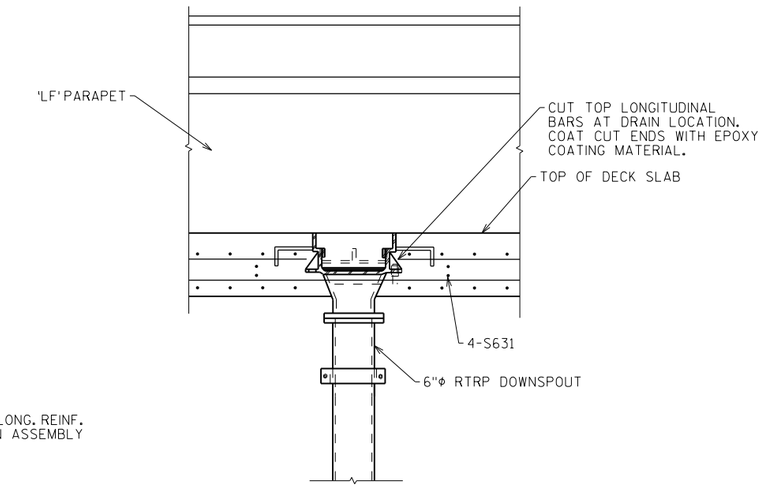
PAYMENT FOR 6"Φ DOWNSPOUT, FLEXIBLE CONNECTOR, DOWNSPOUT BRACKETS, AND ALL NECESSARY HARDWARE IS INCLUDED IN BID ITEM SPV.0090.700 "DOWNSPOUT RTRP 6-INCH."



PLAN



SECTION A-A



SECTION B-B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

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FLOOR DRAIN DETAILS

SHEET 35 OF 36
505

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

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FILE= P:\Transportation\Brown County Bridges USH 41\CADD\Sheets\B-5-661 (RemainingStructure)\035 B-05-661-FLOOR DRAIN DETAILS.dgn

DATE:12/1/2010
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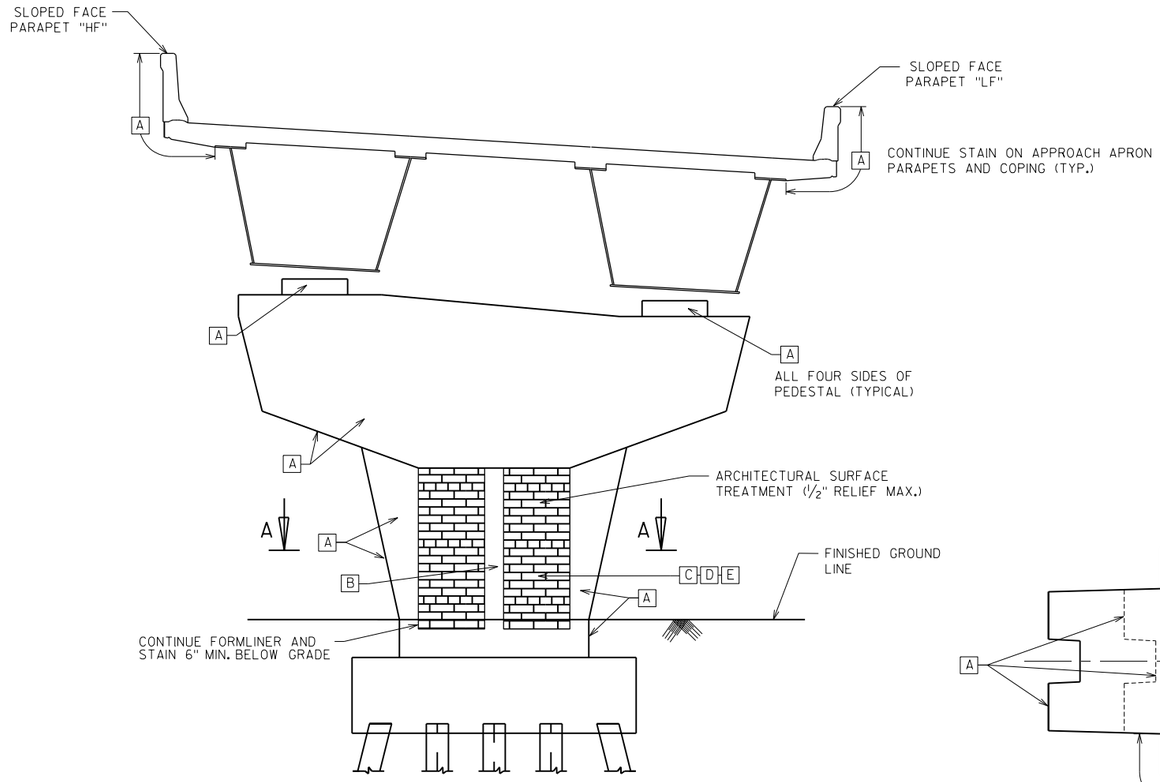
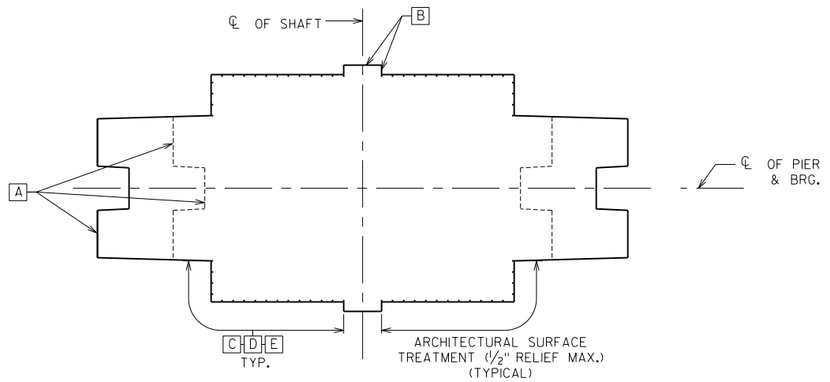
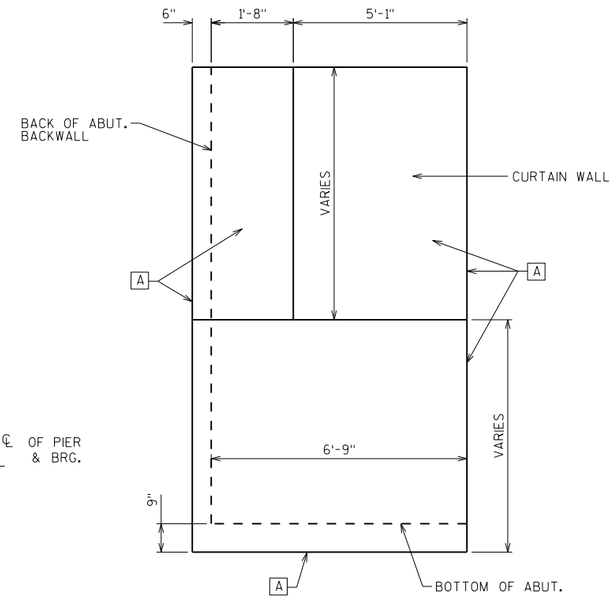


PIER ELEVATION AND BRIDGE CROSS-SECTION

(LOOKING UPSTATION)



SECTION A-A



ABUTMENT ELEVATION

CONCRETE STAINING SCHEDULE

MARK	COLOR	FEDERAL COLOR	LOCATION
A	BASE COLOR	33522	BRIDGES, PARAPETS, WALLS
B	ACCENT COLOR #1	33303	REVEALS, STEEL BOX GIRDERS
C	ACCENT COLOR #2	12160	BRICK COLOR (70% OF BRICK)
D	ACCENT COLOR #3	10091	BRICK COLOR (15% OF BRICK)
E	ACCENT COLOR #4	10219	BRICK COLOR (15% OF BRICK)

NOTE: 1. ALL COLOR DESIGNATIONS ARE FEDERAL STANDARD COLORS.
2. FINISH ON COLORS IS FLAT (LUSTERLESS).

NOTES:

FORMLINER COURSING ON PIERS SHALL BE LEVEL.

THE FORMLINER COURSING ON ALL FACES OF EACH COLUMN SHALL BE VERTICALLY ALIGNED.

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

FOR ABUT. AND PIER DETAILS SEE SHTS. 7-13.

STEEL ERECTION AND SITE CONSTRUCTION CONTRACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

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AESTHETIC DETAILS

SHEET 36 OF 36
506

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DATE: 12/1/2010
I.D.

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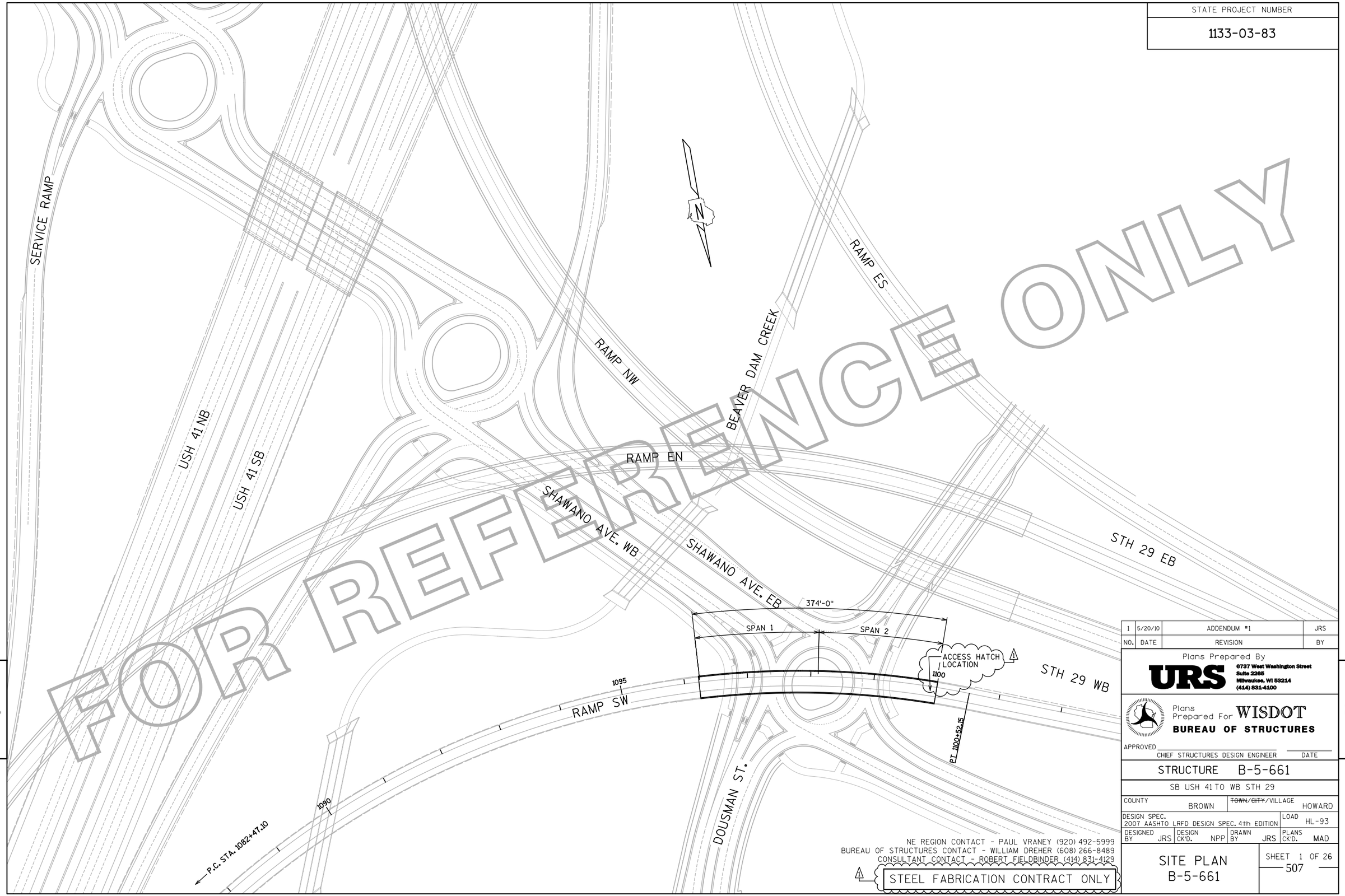
STATE PROJECT NUMBER
1133-03-83



NO.	DATE	REVISION	BY
1	5/20/10	ADDENDUM #1	JRS

Plans Prepared By
URS
6737 West Washington Street
Suite 2265
Milwaukee, WI 53214
(414) 831-4100

Plans Prepared For WISDOT
BUREAU OF STRUCTURES

APPROVED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-5-661

SB USH 41 TO WB STH 29

COUNTY	~~TOWN/CITY~~/VILLAGE
BROWN	HOWARD

DESIGN SPEC.	LOAD
2007 AASHTO LRFD DESIGN SPEC. 4th EDITION	HL-93

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JRS	NPP	JRS	MAD

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

1 STEEL FABRICATION CONTRACT ONLY

SITE PLAN
B-5-661

SHEET 1 OF 26
507

I.D.

DATE: APR. 2010

8

8

STATE PROJECT NUMBER
1133-03-83

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 XD1 AND 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 #1 AND #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	761,500
SPV.0085.02	FABRICATED STRUCTURAL STEEL HS	LB	57,800
SPV.0105.03	PAINTING POLYSILOXANE SYSTEM STRUCTURE B-05-661	LS	1

2

1

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 1½" 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 <= ½"	3/16"
½" < T <= ¾"	¼"
¾" < T <= 1½"	5/16"
1½" < T <= 2¼"	⅜"
T > 2¼"	½"

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".

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NO.	DATE	REVISION	BY
2	5/27/10	ADDENDUM #2	MDR
1	5/20/10	ADDENDUM #1	JRS

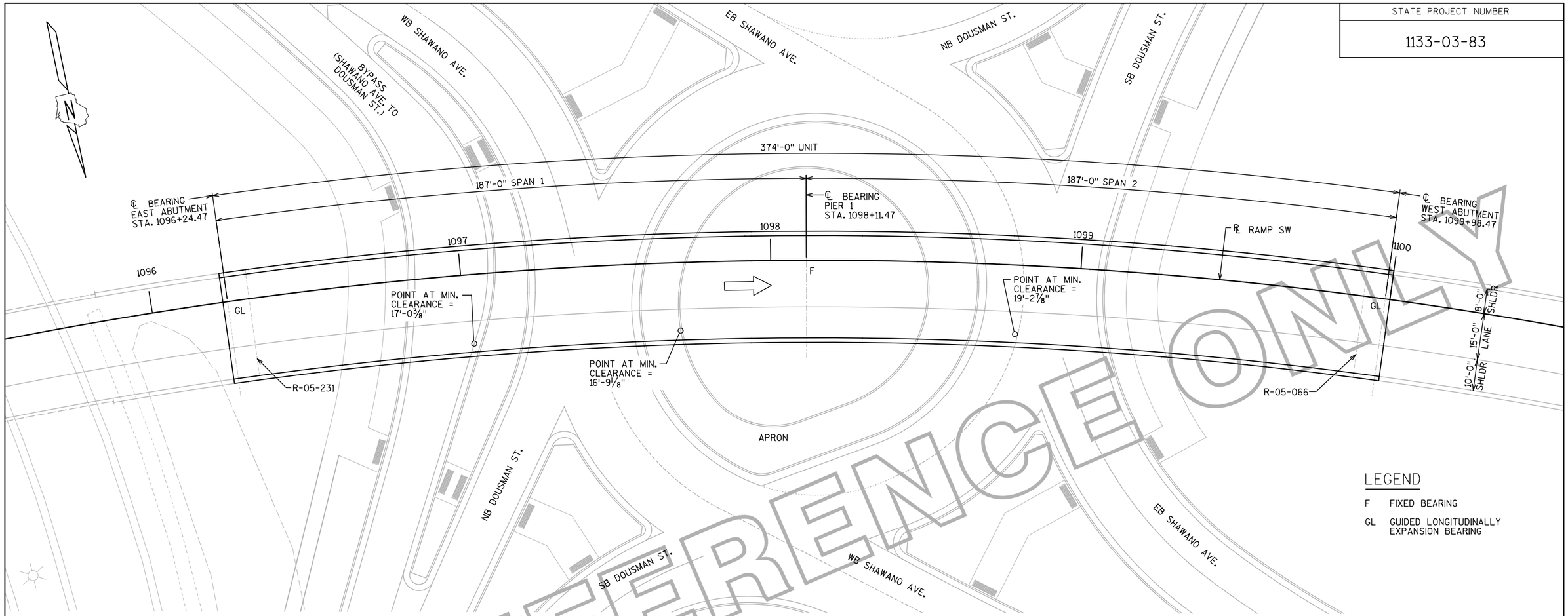
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

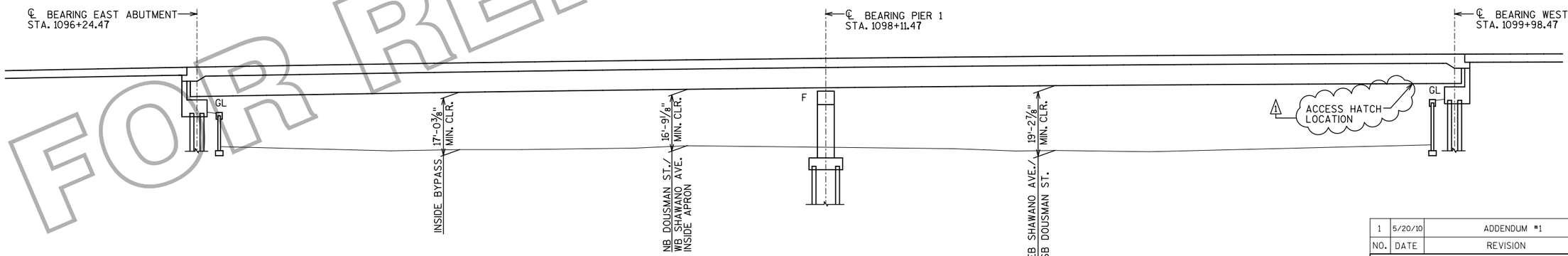
DRAWN BY MJA | PLANS CK'D. MDR

DRAWING LIST AND GENERAL NOTES

STATE PROJECT NUMBER
1133-03-83



PLAN



ELEVATION

LEGEND

F FIXED BEARING

GL GUIDED LONGITUDINALLY EXPANSION BEARING

NO.	DATE	REVISION	BY
1	5/20/10	ADDENDUM #1	JRS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY JRS | PLANS CK'D. MAD

GENERAL PLAN & ELEVATION

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STATE PROJECT NUMBER

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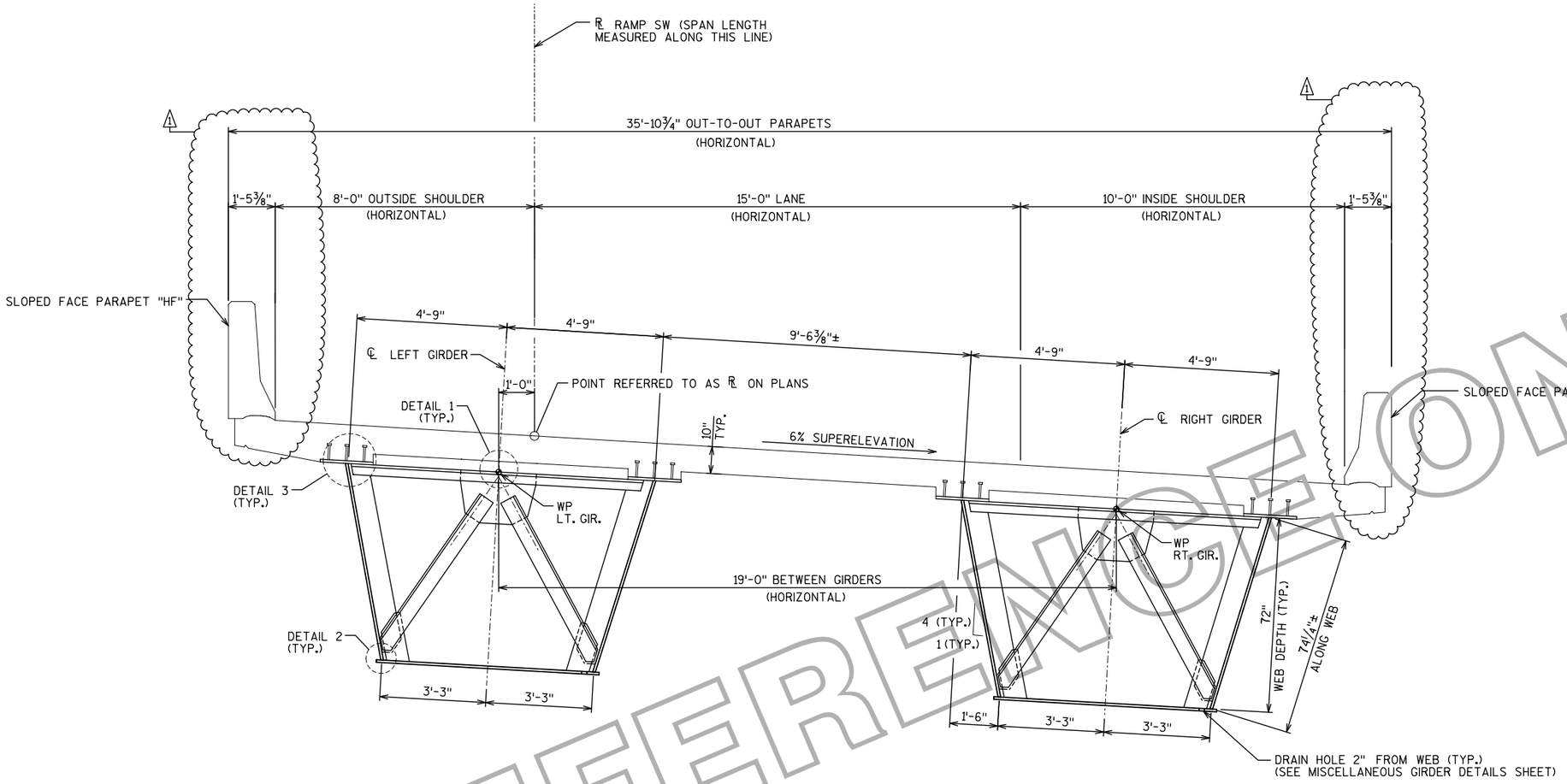
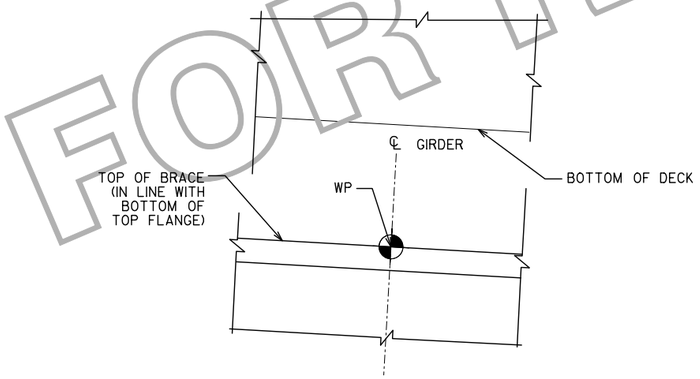
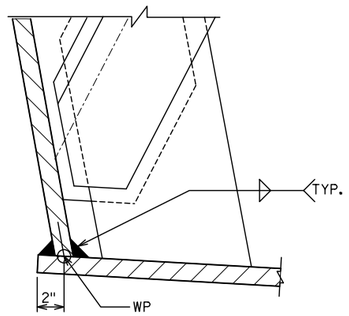


TYPICAL CROSS SECTION

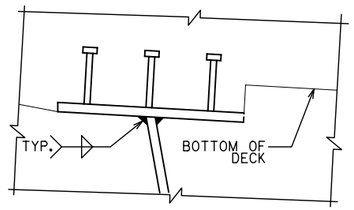
(LOOKING UPSTATION)



DETAIL 1



DETAIL 2



DETAIL 3

(LATERAL BRACING NOT SHOWN FOR CLARITY)

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
1	5/20/10	ADDENDUM #1	JRS

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
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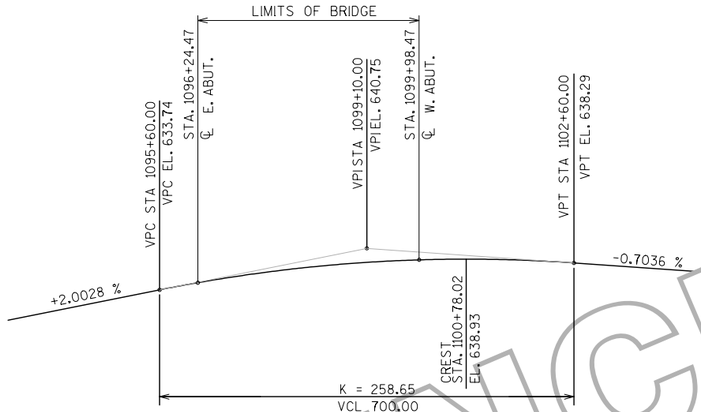
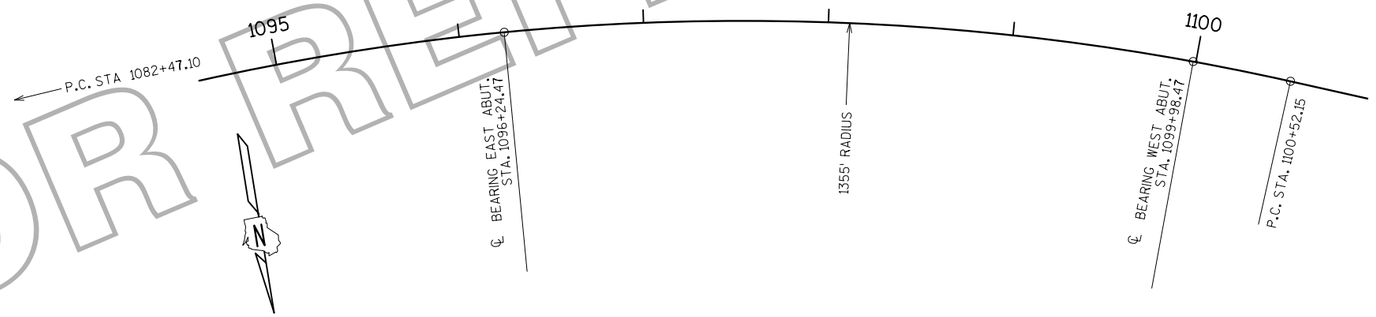
STATE PROJECT NUMBER
1133-03-83



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
△= 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
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

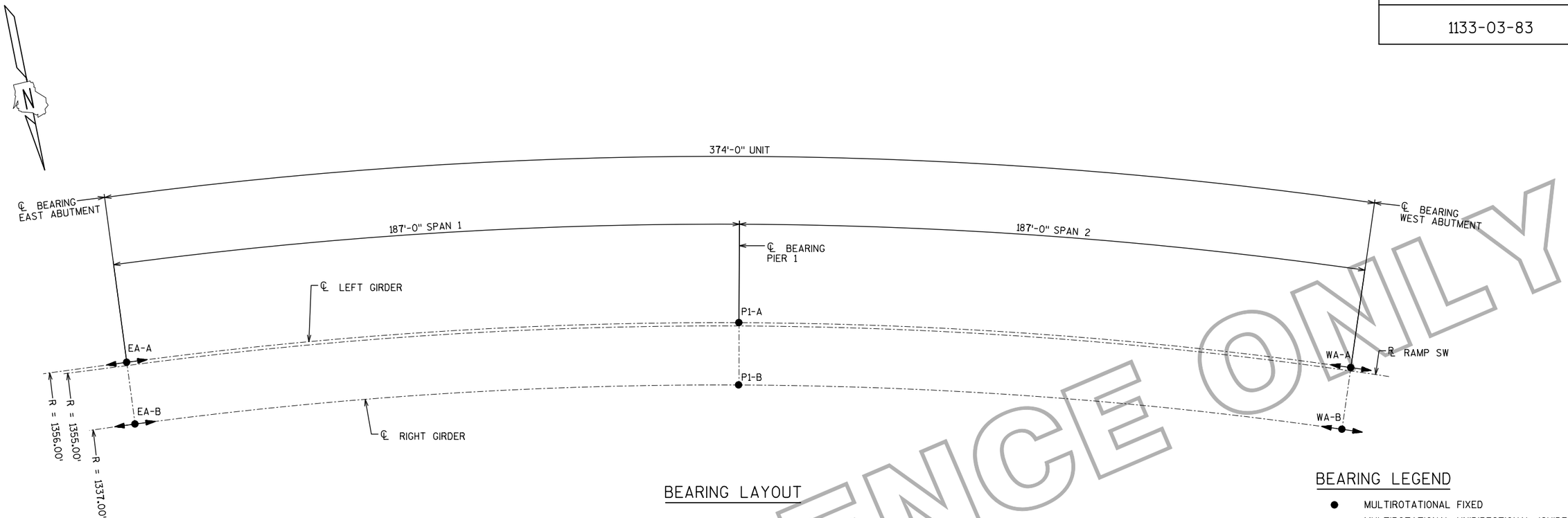
STRUCTURE B-5-661

DRAWN BY MJA | PLANS CK'D. MDR

ALIGNMENT LAYOUT

△1

STATE PROJECT NUMBER
1133-03-83

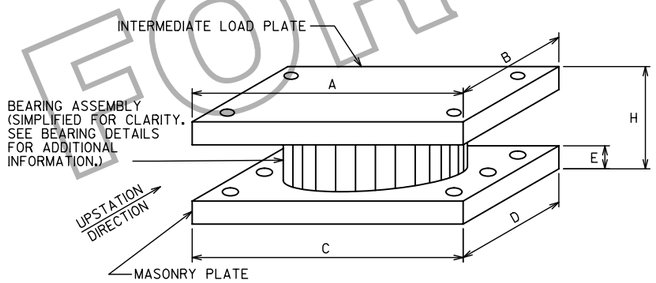


BEARING LAYOUT

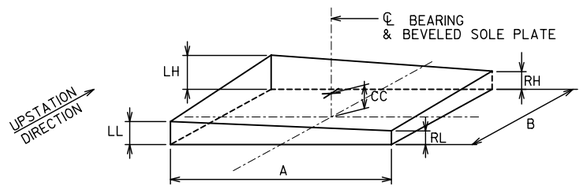
BEARING LEGEND

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

BEARING MARK	BEARING TYPE	SERVICE I LIMIT STATE VERTICAL LOADS		SERVICE I LIMIT STATE HORIZ. LOADS		ROTATIONS		MOVEMENT RANGE (FOR 180 DEG.)	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)	LONGIT. (IN)	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.



BEARING DIMENSION KEY



BEVELED SOLE PLATE DIMENSION KEY

(HOLES MATCHING INTERMEDIATE LOAD PLATE NOT SHOWN FOR CLARITY)

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.

2 HORIZONTAL FORCES SPECIFIED IN THE TABLE ARE THE EXPECTED APPLIED FORCES. DESIGN BEARINGS AND CONNECTIONS FOR THESE VALUES OR 15 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 RADIANS FOR FABRICATION AND INSTALLATION TOLERANCES, AND 0.005 RADIANS FOR UNCERTAINTIES. DESIGN ALL BEARINGS FOR A MINIMUM 0.020 RADIANS OF TOTAL ROTATION.

1

NO.	DATE	REVISION	BY
2	5/27/10	ADDENDUM #2	JRS
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY JRS | PLANS CK'D. MAD

BEARING LAYOUT

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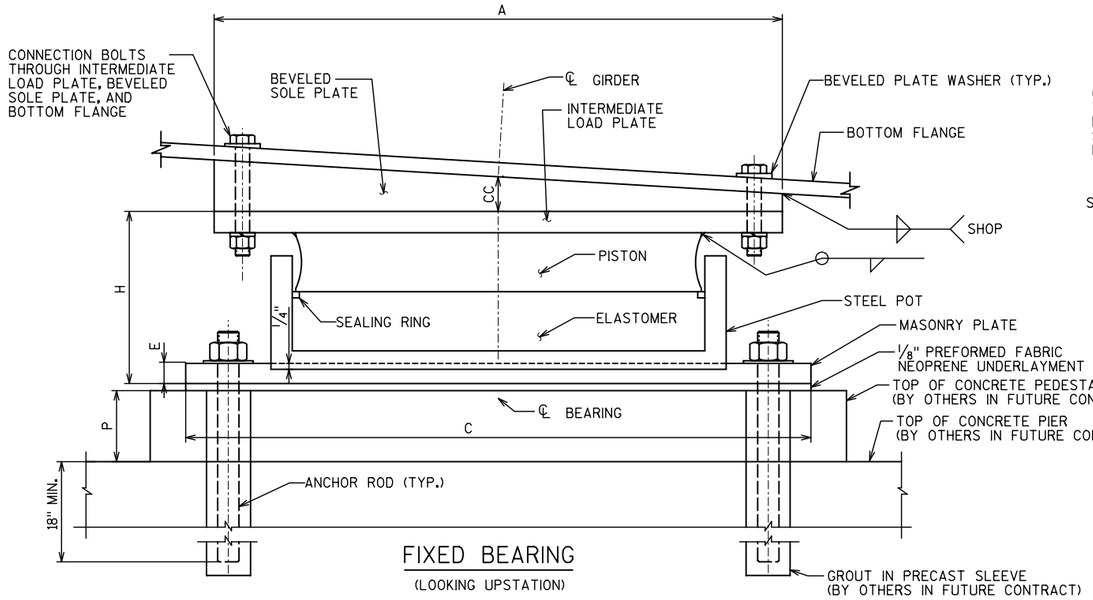
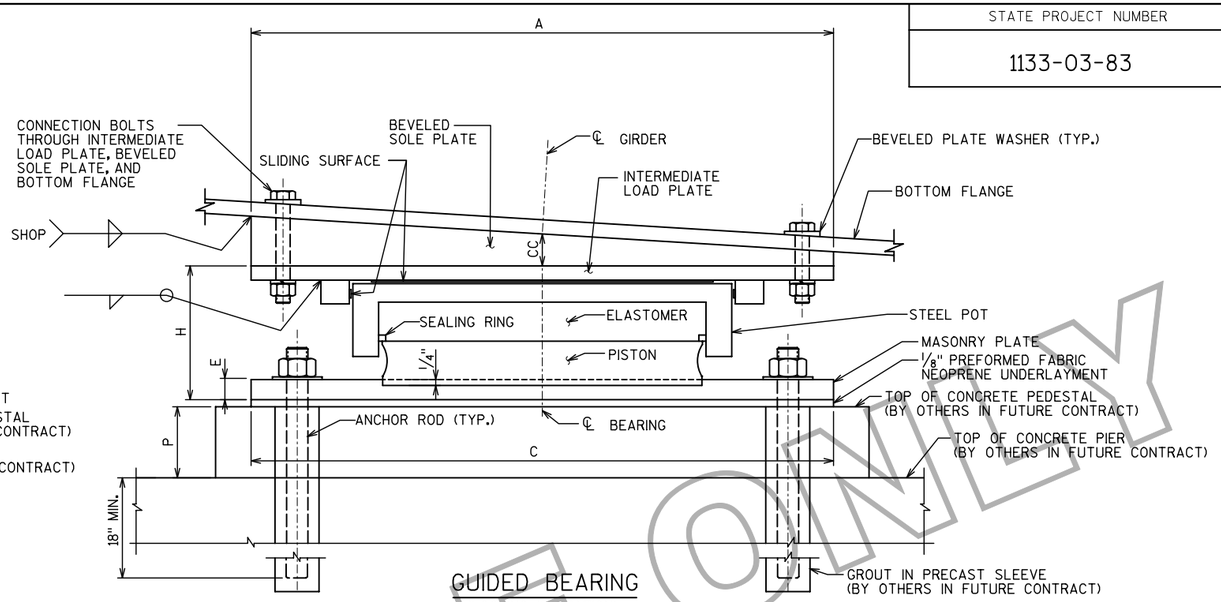


FIXED BEARING

(LOOKING UPSTATION)



GUIDED BEARING

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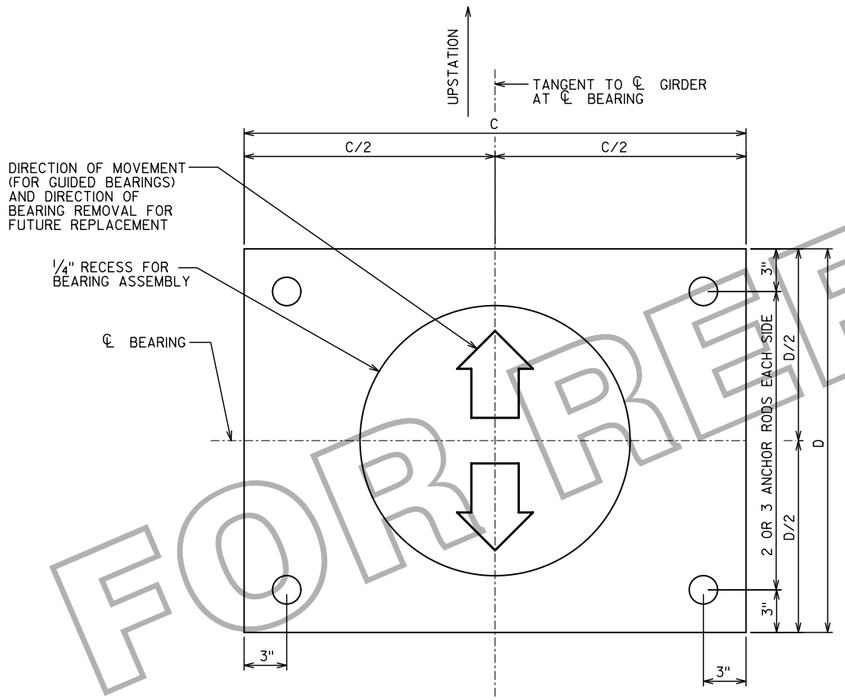
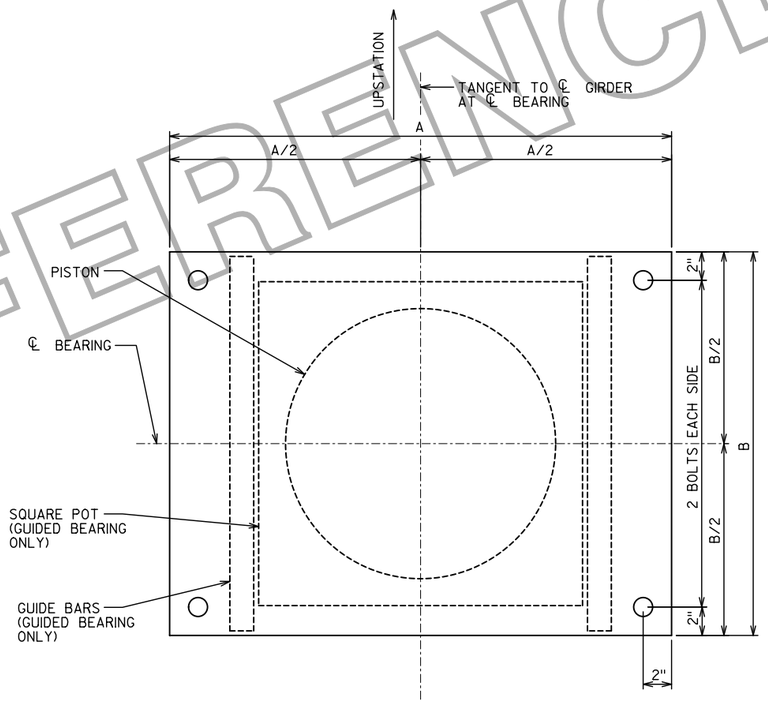


PLAN - MASONRY PLATE



PLAN - INTERMEDIATE LOAD PLATE

(BEVELED SOLE PLATE SIMILAR)

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
1	5/20/10	ADDENDUM #1	JRS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY JRS | PLANS CK'D. MAD

BEARING DETAILS

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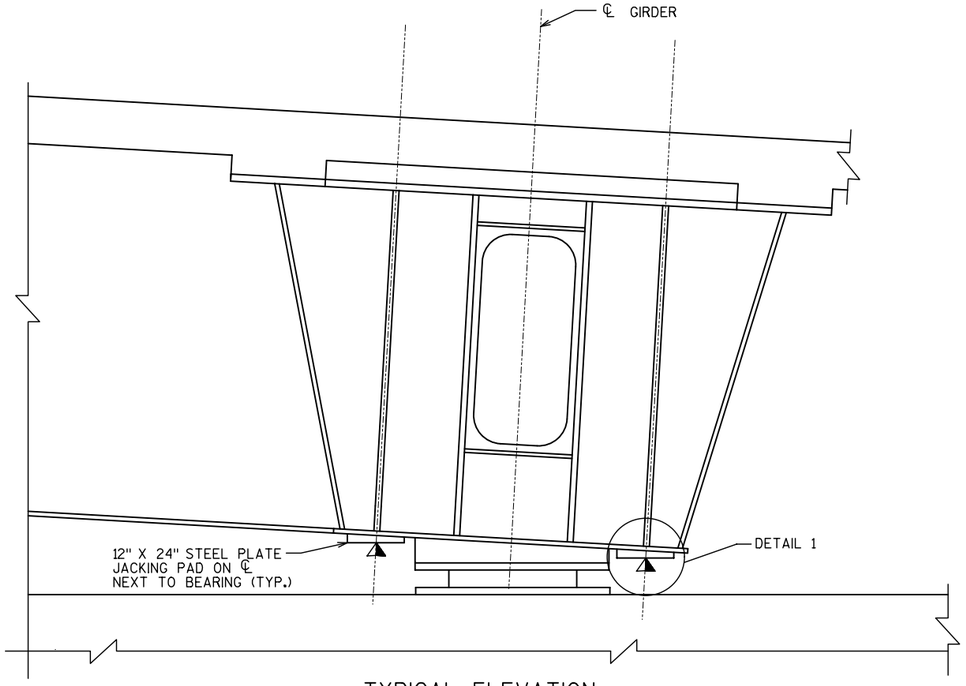
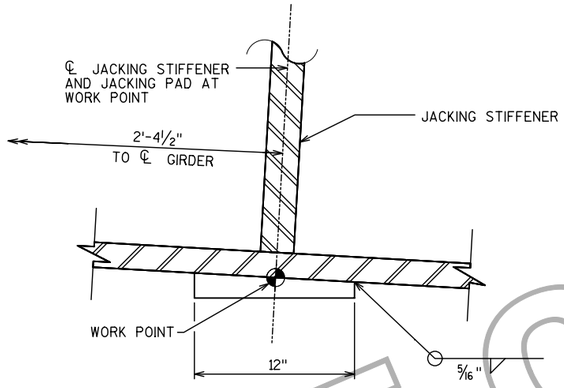


TYPICAL ELEVATION

(LOOKING UPSTATION)



DETAIL 1

NOT TO SCALE

LEGEND:

△1 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.

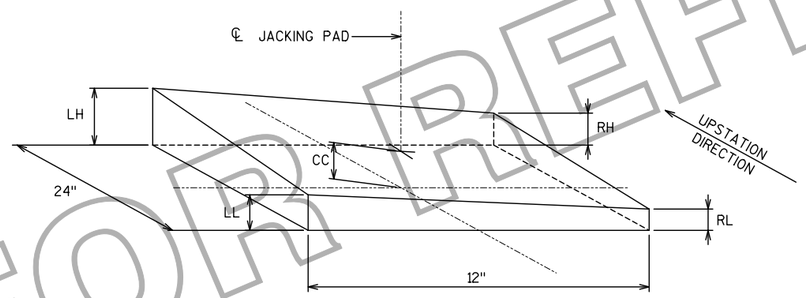
JACKING PADS ARE PROVIDED TO GIVE A JACKING SURFACE THAT IS APPROXIMATELY LEVEL AND TO ENSURE THAT JACKING LOADS ARE APPLIED TO THE CORRECT LOCATION.

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.



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.

△1

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY JRS | PLANS CK'D. MAD

JACKING PROVISIONS

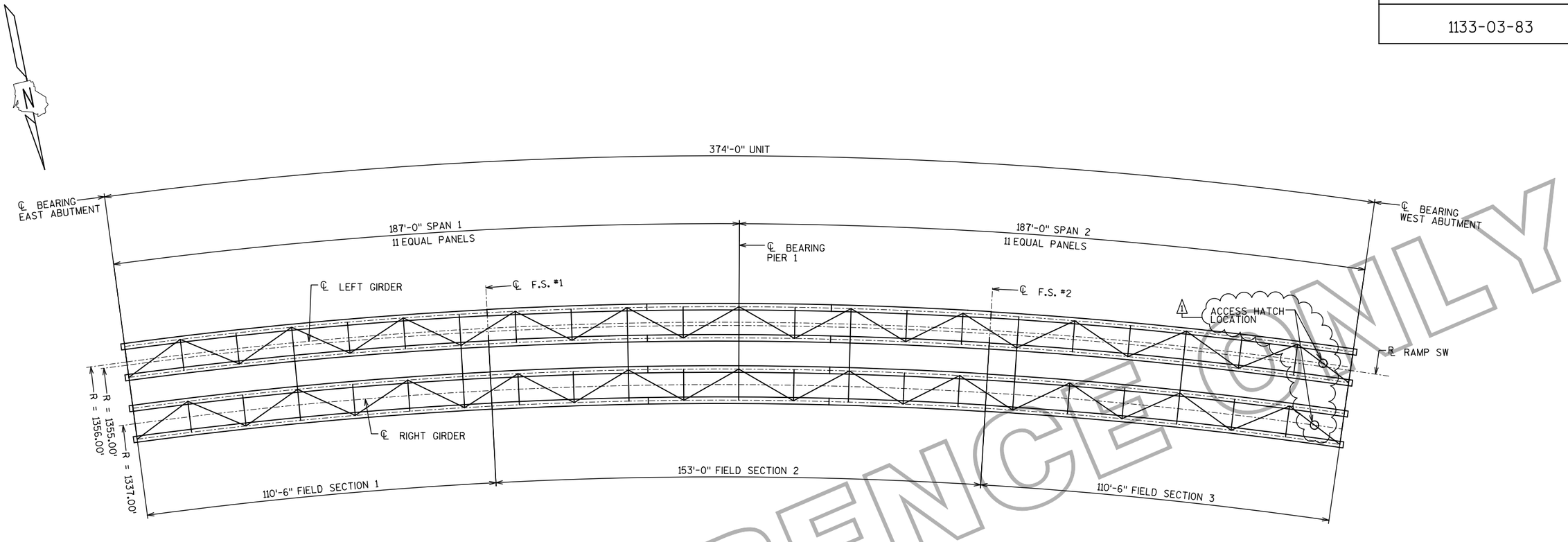
SHEET 8 OF 26

514

8

8

STATE PROJECT NUMBER
1133-03-83



FRAMING PLAN

LEGEND

F.S. = BOLTED FIELD SPLICE

FIELD SECTION WEIGHTS

	LEFT GIRDER	RIGHT GIRDER
FIELD SECTION 1	103,000 LBS	101,700 LBS
FIELD SECTION 2	181,700 LBS	180,000 LBS
FIELD SECTION 3	103,000 LBS	101,700 LBS

FIELD SECTION WEIGHTS DO NOT INCLUDE SPLICE PLATES, SPLICE PLATE BOLTS, BEARING ASSEMBLIES OR PORTIONS OF EXTERNAL DIAPHRAGMS NOT SHOP-CONNECTED TO THE BOX GIRDER.

NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY JRS | PLANS CK'D. MAD

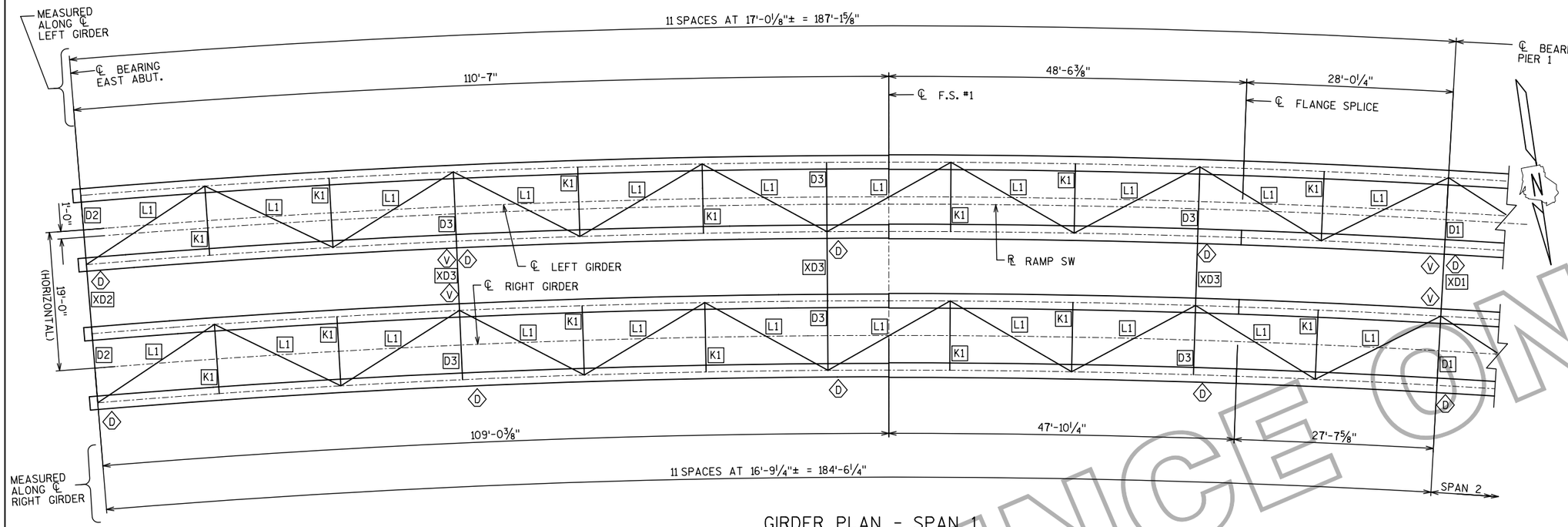
FRAMING PLAN

SHEET 9 OF 26
515

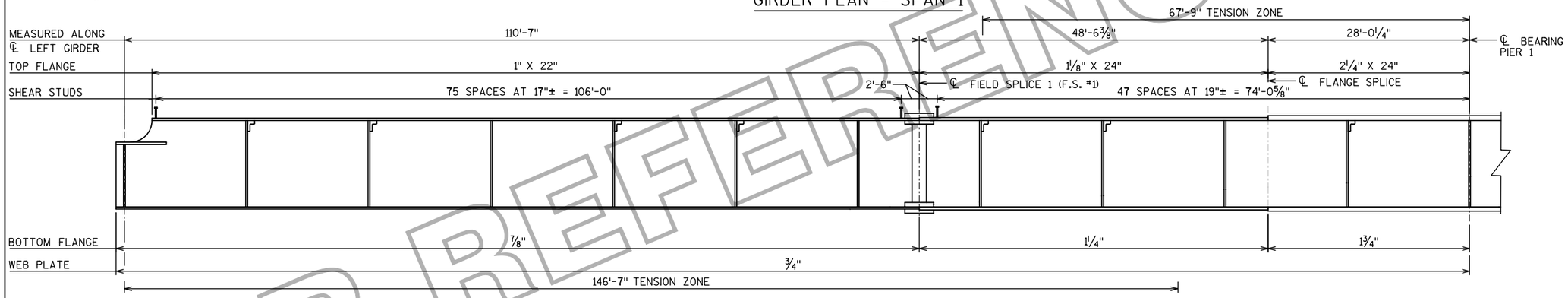
8

8

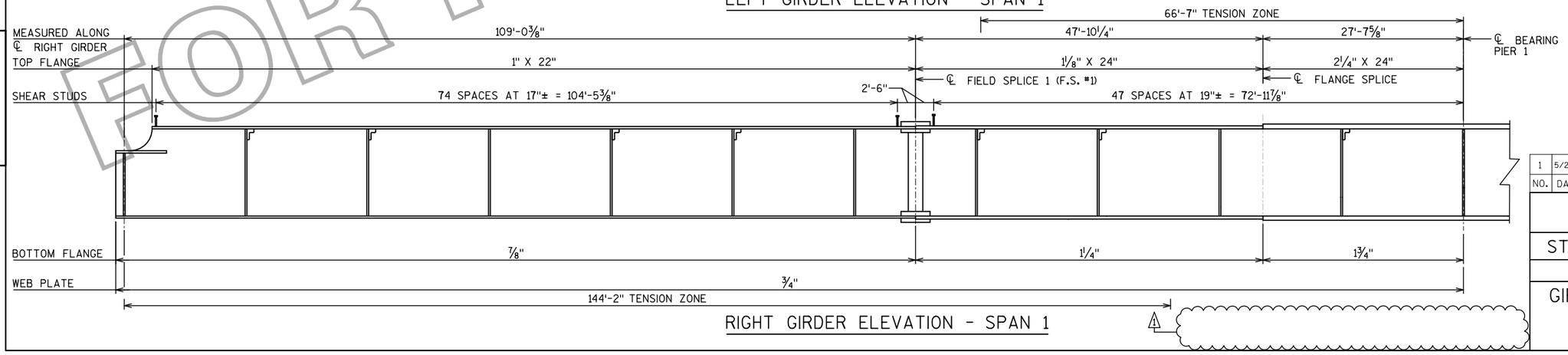
STATE PROJECT NUMBER
1133-03-83



GIRDER PLAN - SPAN 1



LEFT GIRDER ELEVATION - SPAN 1



RIGHT GIRDER ELEVATION - SPAN 1

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.

8

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NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

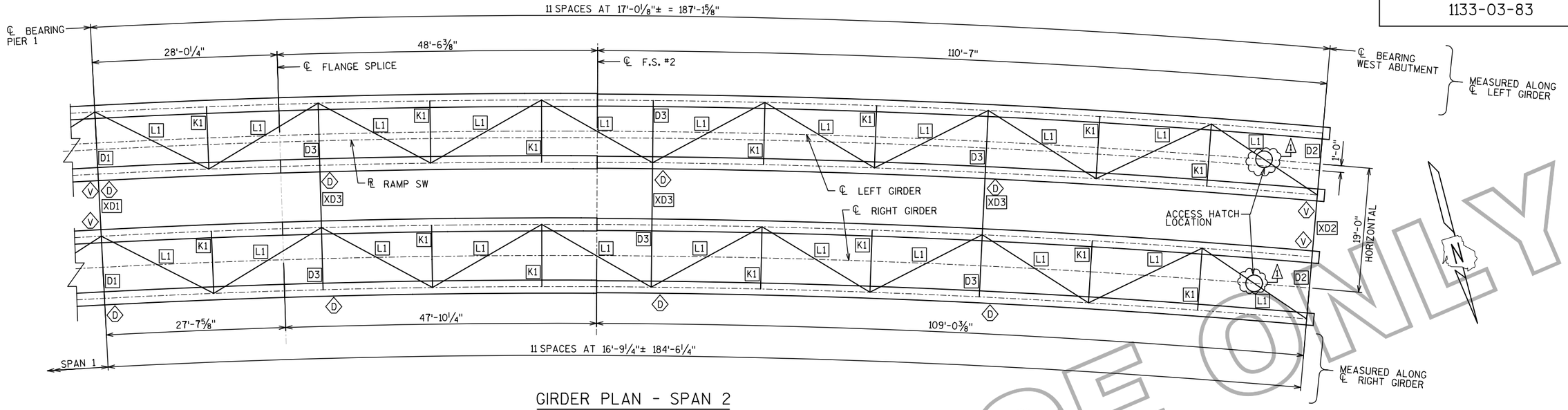
STRUCTURE B-5-661

DRAWN BY JRS | PLANS CK'D. MAD

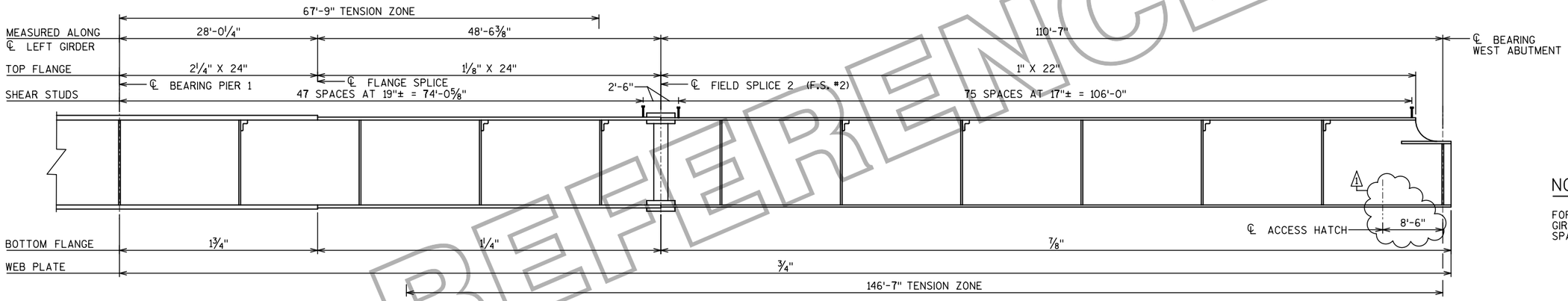
GIRDER PLAN & ELEVATION SPAN 1

SHEET 10 OF 26
516

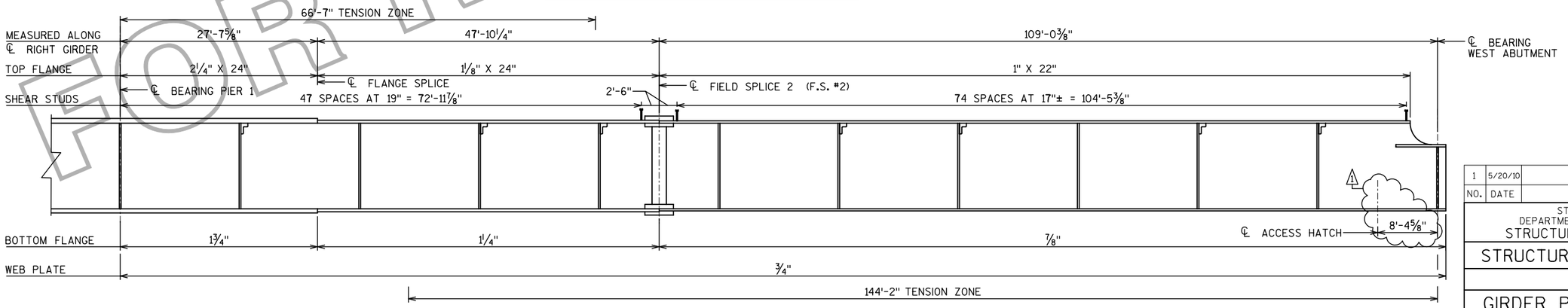
STATE PROJECT NUMBER
1133-03-83



GIRDER PLAN - SPAN 2



LEFT GIRDER ELEVATION - SPAN 2



RIGHT GIRDER ELEVATION - SPAN 2

NOTES:

FOR NOTES AND LEGEND SEE GIRDER PLAN AND ELEVATION SPAN 1

NO.	DATE	REVISION	BY
1	5/20/10	ADDENDUM #1	JRS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

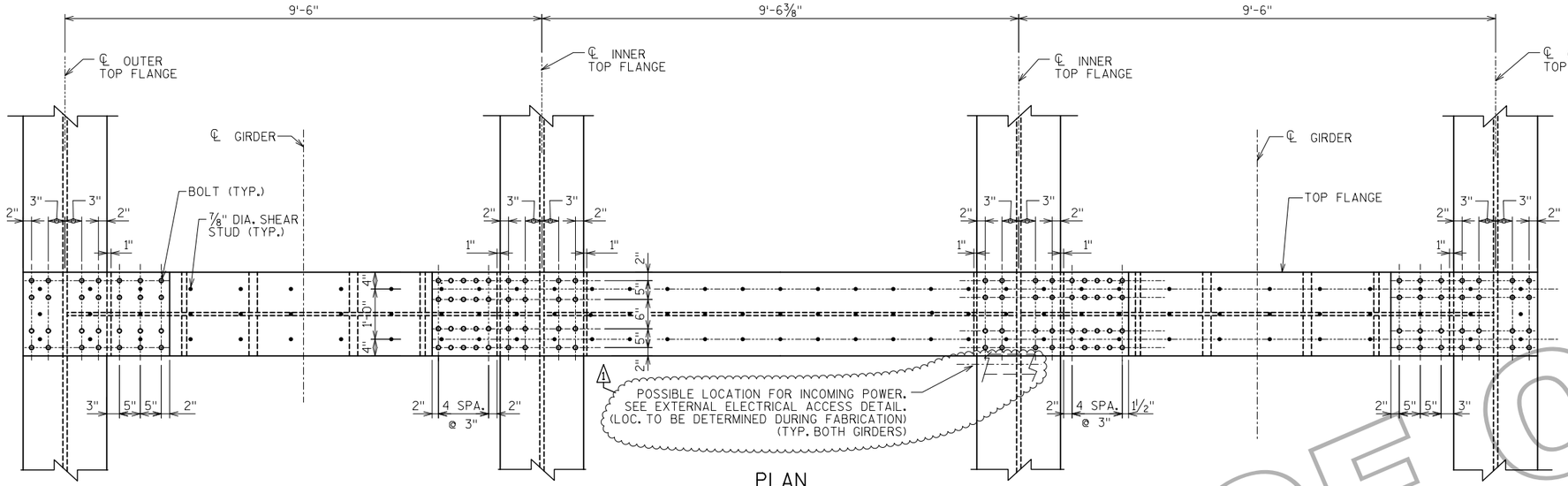
STRUCTURE B-5-661

DRAWN BY JRS | PLANS CK'D. MAD

GIRDER PLAN & ELEVATION SPAN 2

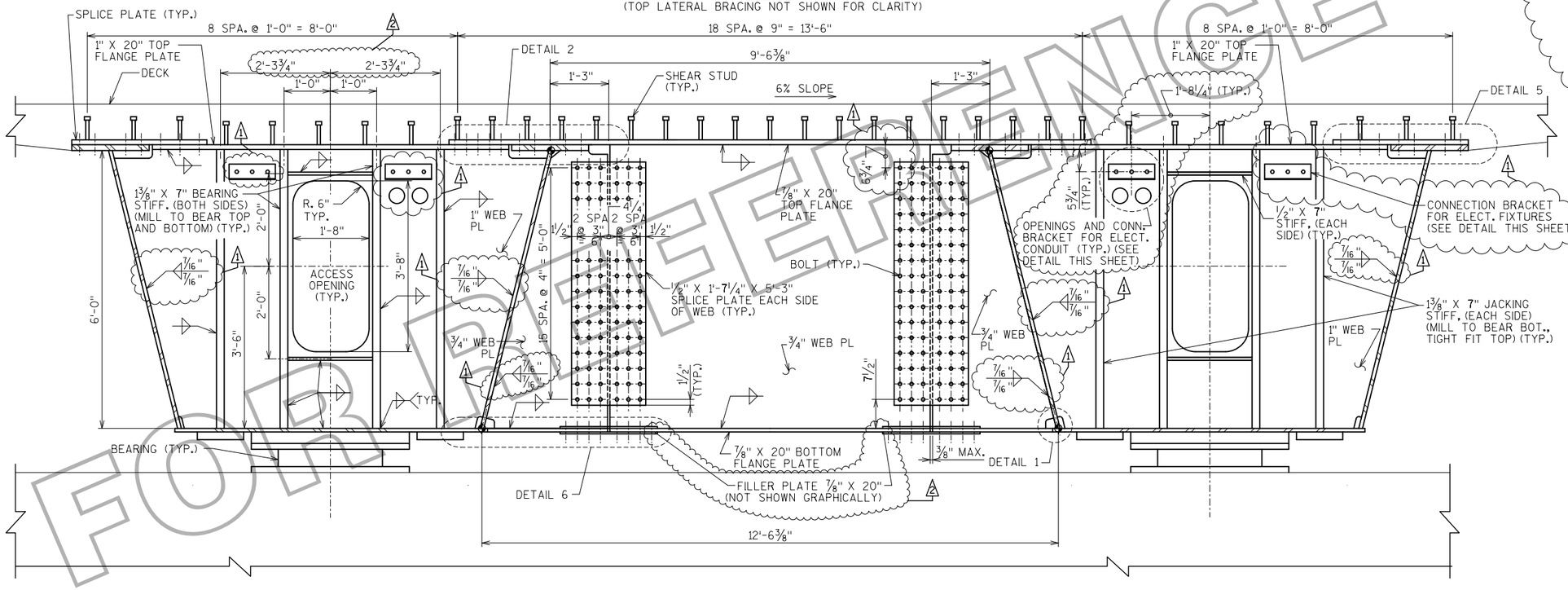
8

STATE PROJECT NUMBER
1133-03-83



PLAN

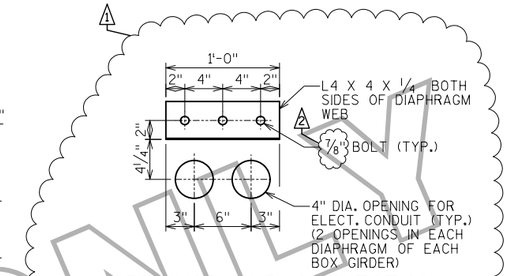
(TOP LATERAL BRACING NOT SHOWN FOR CLARITY)



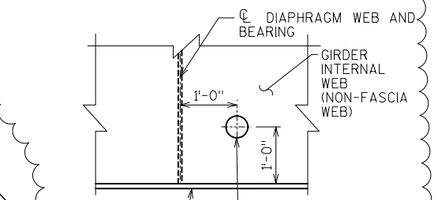
INTERNAL DIAPHRAGM D1 | EXTERNAL DIAPHRAGM XD1 | INTERNAL DIAPHRAGM D1

ELEVATION

(SUPERELEVATION NOT SHOWN)
(LOOKING UPSTATION)



OPENINGS AND CONNECTION BRACKET DETAILS FOR ELECTRICAL



EXTERNAL ELECTRICAL ACCESS DETAIL

ONE ACCESS LOCATION FOR INCOMING POWER TO INTERIOR OF GIRDER (LOC. TO BE DETERMINED DURING FABRICATION) (TYP. BOTH GIRDERS)

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, 5 AND 6 AND SECTIONS.

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

NO.	DATE	REVISION	BY
2	7/13/10	RFI	MDR
1	5/20/10	ADDENDUM #1	JRS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

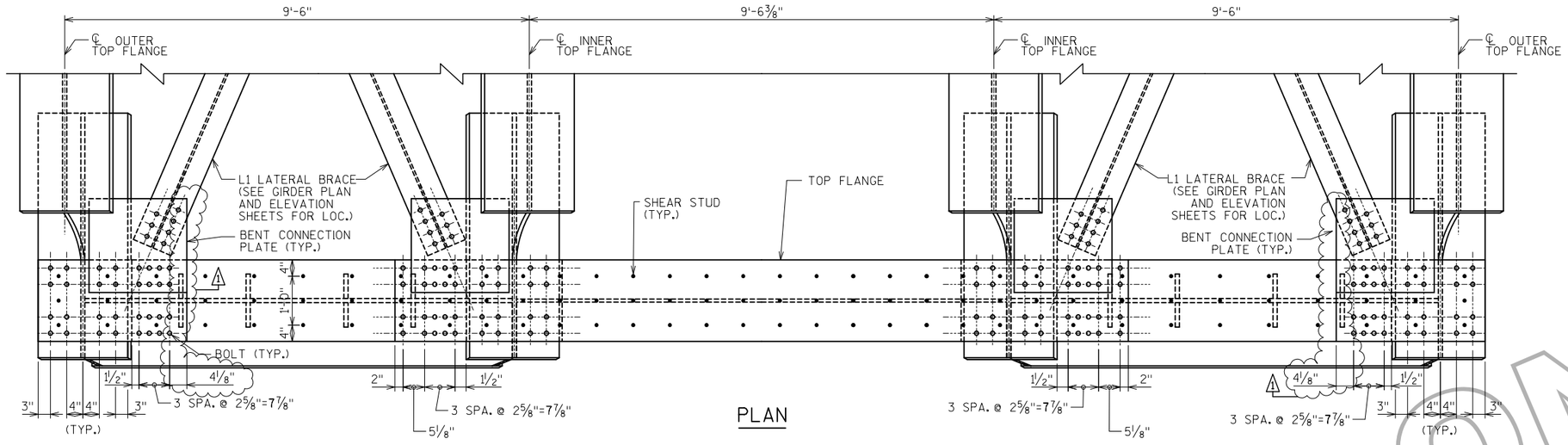
STRUCTURE B-5-661

DRAWN BY MJA | PLANS CK'D. MDR

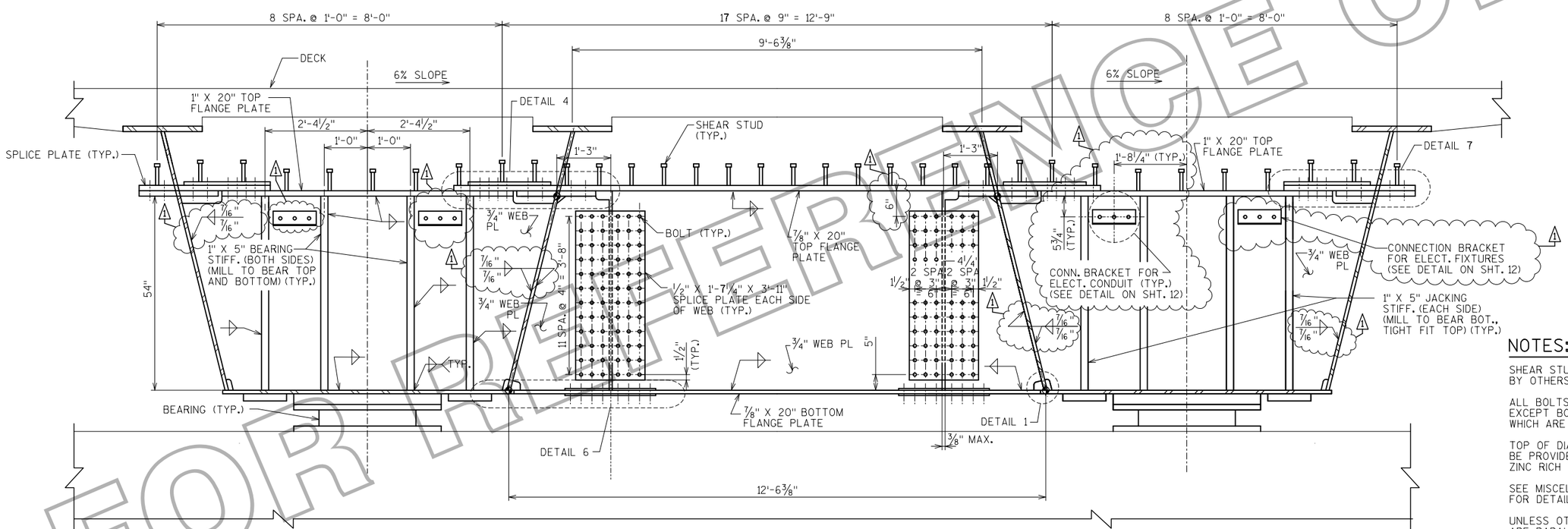
INTERMEDIATE PIER DIAPHRAGMS XD1 AND D1

SHEET 12 OF 26
518

STATE PROJECT NUMBER
1133-03-83



PLAN



INTERNAL DIAPHRAGM D2

EXTERNAL DIAPHRAGM XD2
(BETWEEN TWO "D2" DIAPHRAGMS)

INTERNAL DIAPHRAGM D2

ELEVATION
(SUPERELEVATION NOT SHOWN)

NOTES:

SHEAR STUDS FURNISHED AND INSTALLED BY OTHERS DURING ERECTION.

ALL BOLTS SHOWN SHALL BE 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
1	5/20/10	ADDENDUM #1	JRS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MJA | PLANS CK'D. MDR

ABUTMENT DIAPHRAGMS XD2 & D2

8

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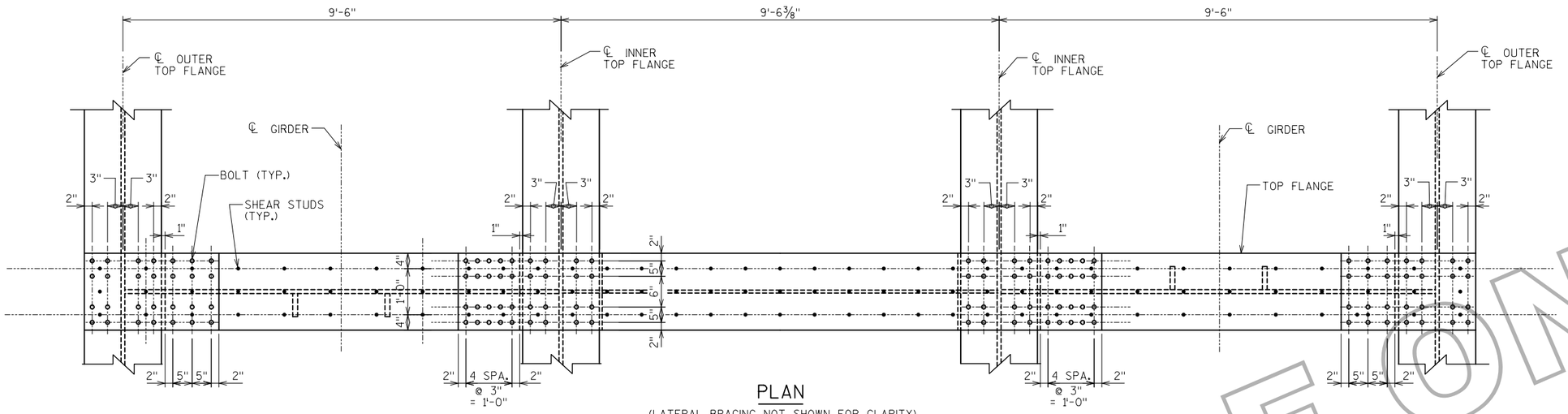
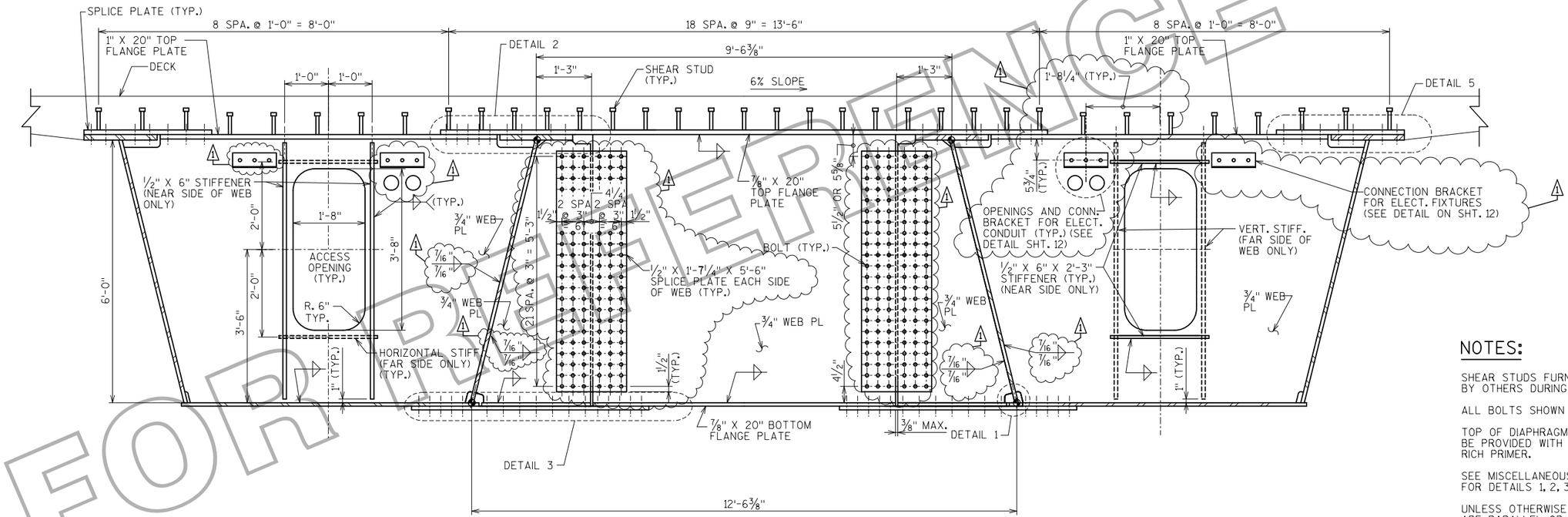
STATE PROJECT NUMBER
1133-03-83



PLAN

(LATERAL BRACING NOT SHOWN FOR CLARITY)



INTERNAL DIAPHRAGM D3

(SHOWING FACE WITH VERTICAL STIFFENERS)

EXTERNAL DIAPHRAGM XD3

ELEVATION

(SUPERELEVATION NOT SHOWN)
(LOOKING UPSTATION)

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
1	5/20/10	ADDENDUM #1	JRS

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

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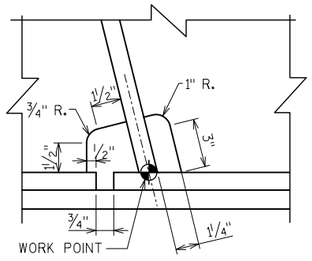
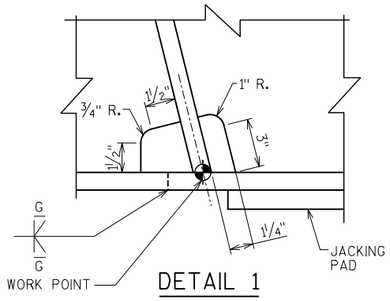
STATE PROJECT NUMBER

1133-03-83



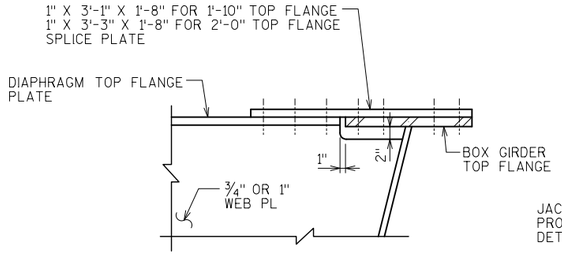
DETAIL 1

DIAPHRAGM XD3/D3



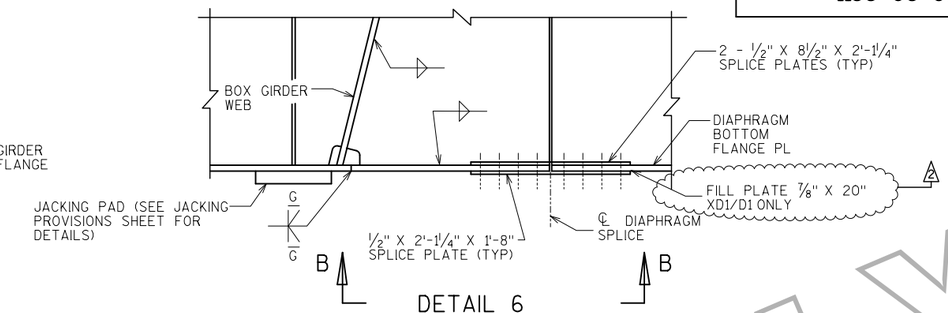
DETAIL 1

DIAPHRAGMS XD1/D1 AND XD2/D2



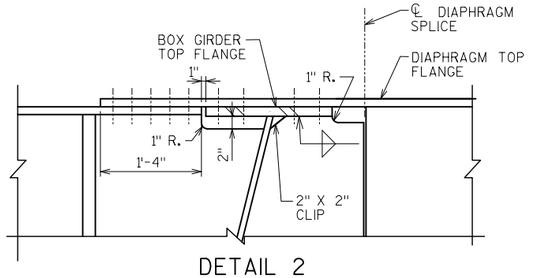
DETAIL 5

DIAPHRAGMS XD1/D1 AND XD3/D3



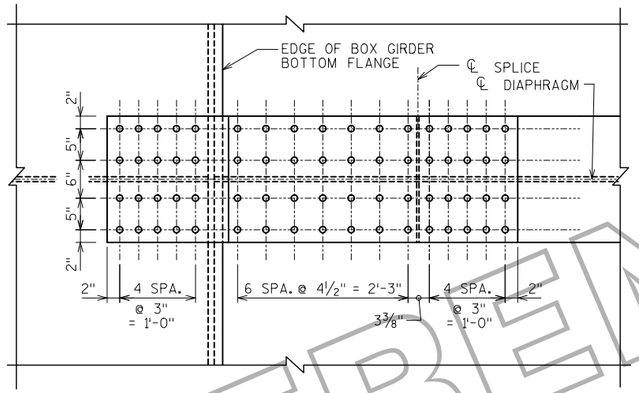
DETAIL 6

DIAPHRAGMS XD1/D1 AND XD2/D2



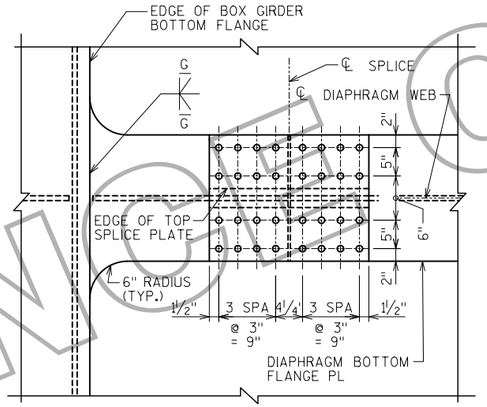
DETAIL 2

XD1/D1 AND XD3/D3



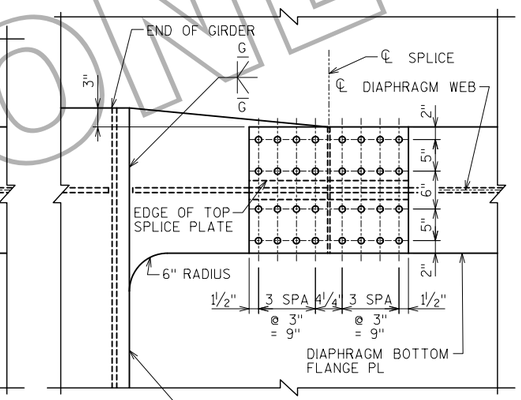
SECTION A-A

THIS SHEET



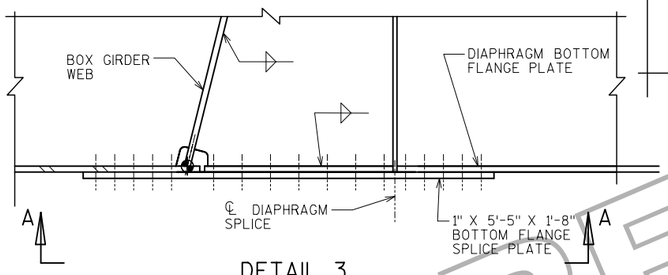
SECTION B-B

THIS SHEET
(DIAPHRAGM XD1/D1)



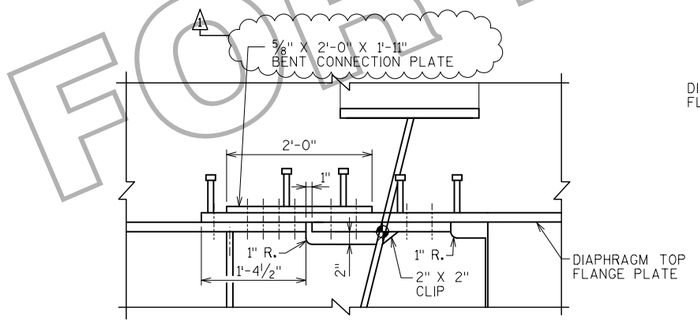
SECTION B-B

THIS SHEET
(DIAPHRAGM XD2/D2)



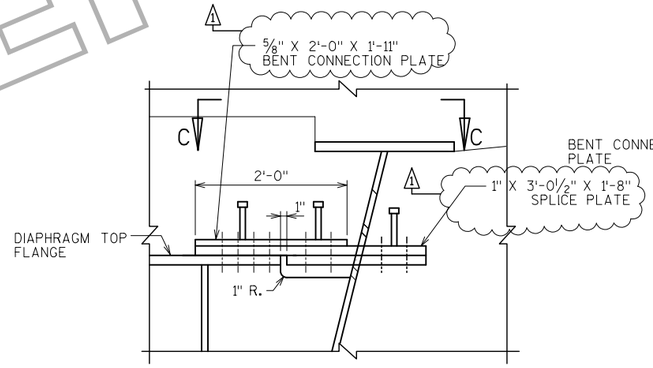
DETAIL 3

DIAPHRAGM XD3/D3



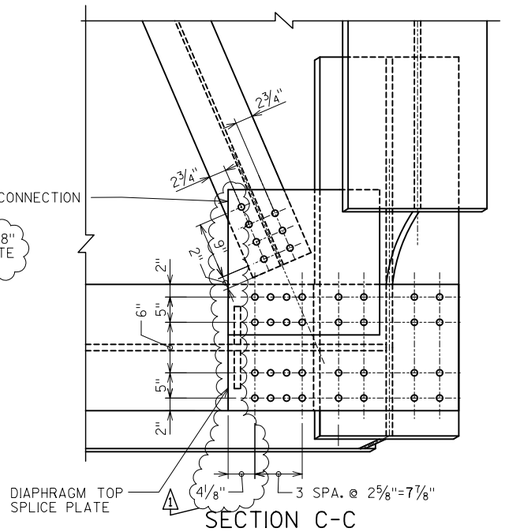
DETAIL 4

DIAPHRAGMS XD2/D2



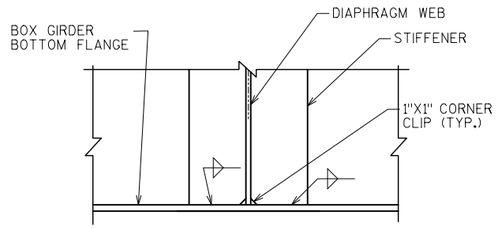
DETAIL 7

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
2	7/13/10	RFI	MDR
1	5/20/10	ADDENDUM #1	JRS

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
521

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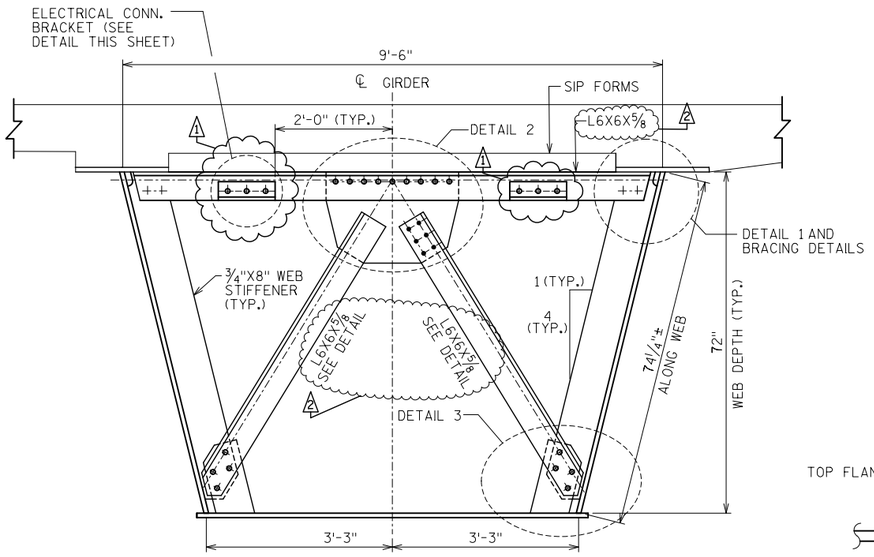
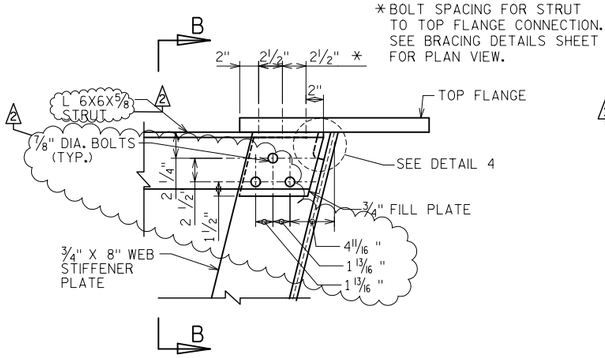
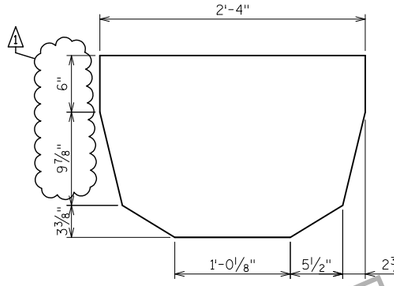
STATE PROJECT NUMBER
1133-03-83



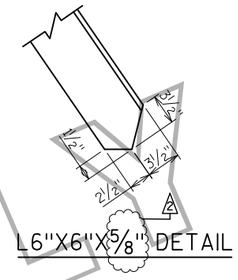
TYPICAL SECTION AT K-FRAME



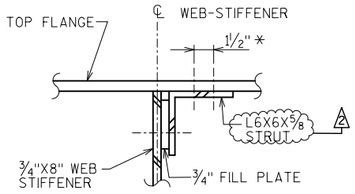
DETAIL 1



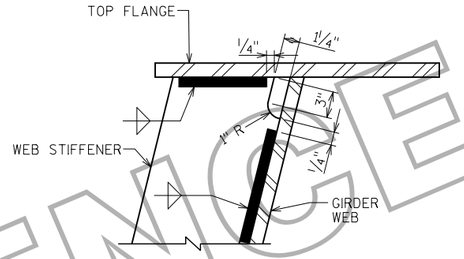
3/4" CONN. PLATE DETAIL



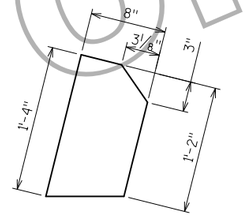
L6"X6"X5/8" DETAIL



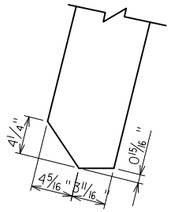
SECTION B-B



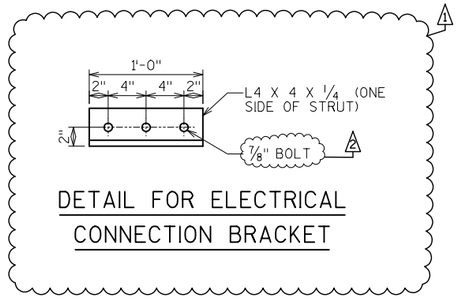
DETAIL 4



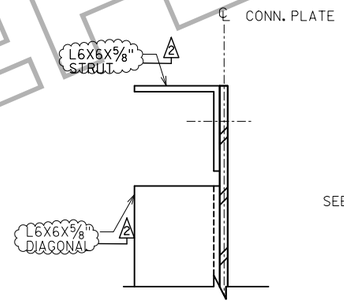
PL 3/4"X8" DETAIL



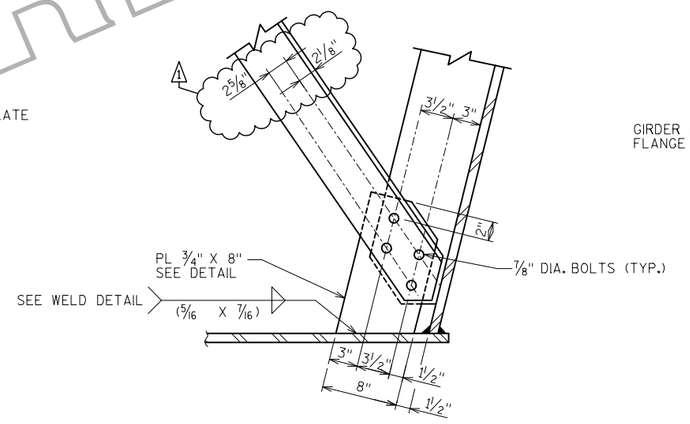
WEB STIFFENER DETAIL



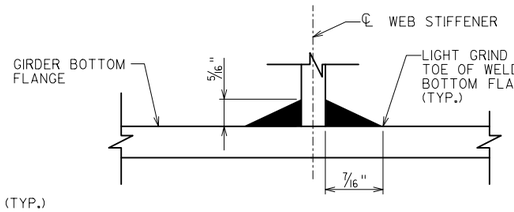
DETAIL FOR ELECTRICAL CONNECTION BRACKET



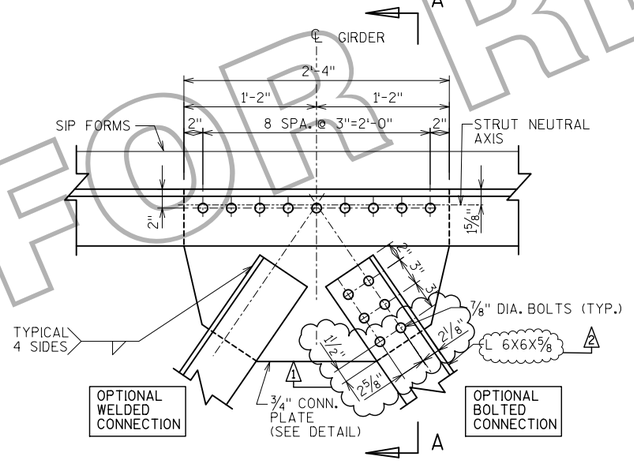
SECTION A-A



DETAIL 3



WEB STIFFENER WELD DETAIL



DETAIL 2

NO.	DATE	REVISION	BY
2	7/13/10	RFI	MDR
1	5/20/10	ADDENDUM #1	JRS

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
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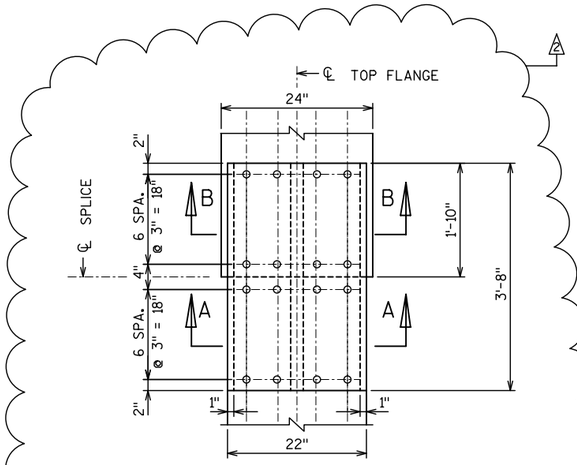
8

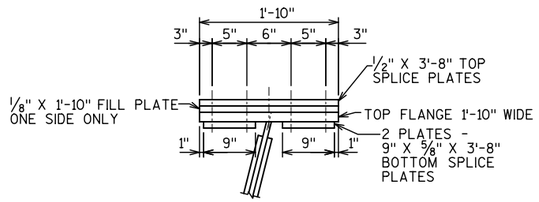
8

STATE PROJECT NUMBER

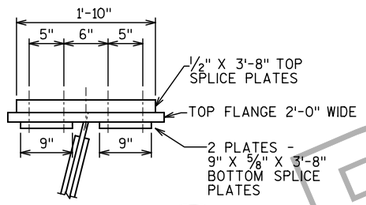
1133-03-83



PLAN

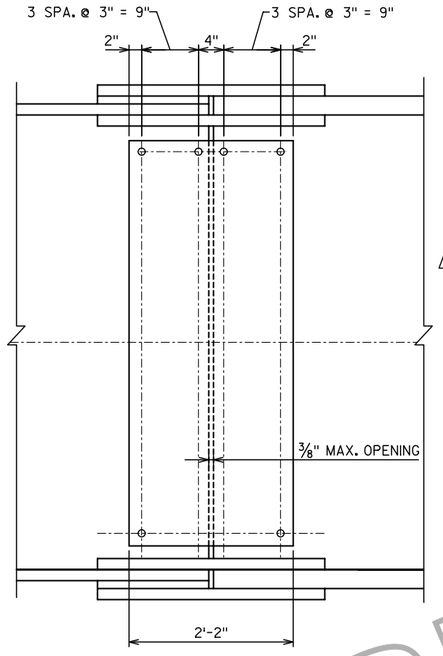


SECTION A-A

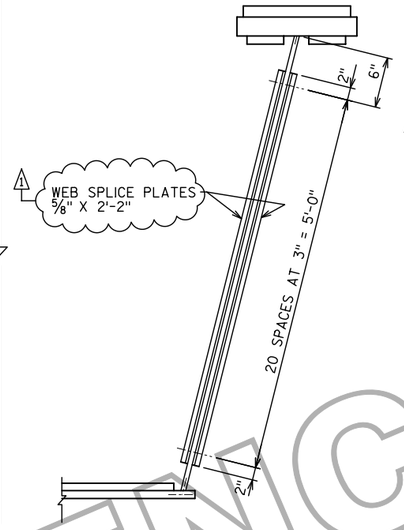


SECTION B-B

TYPICAL TOP FLANGE CONNECTION

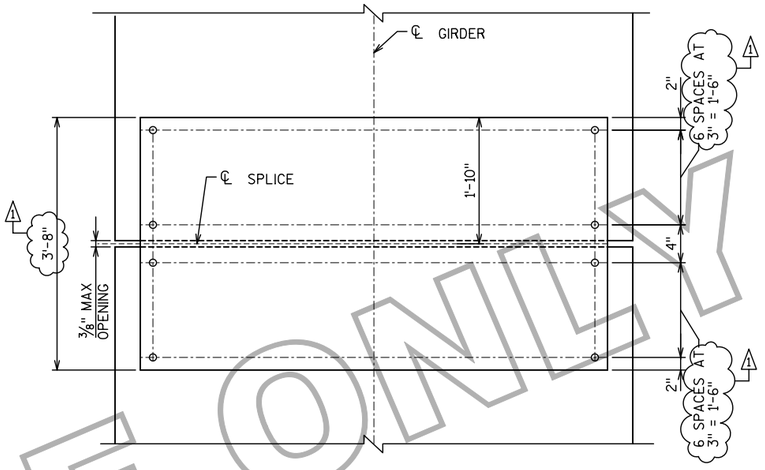


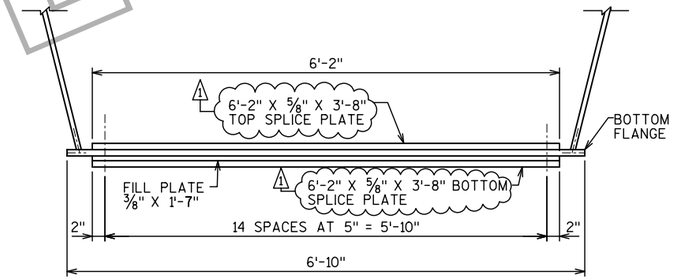
ELEVATION



SECTION

TYPICAL WEB CONNECTION





SECTION

TYPICAL BOTTOM FLANGE CONNECTION

NOTES:

ALL BOLTS SHOWN ARE 7/8" DIAMETER ASTM A325 TYPE 1.

ALL HOLES SHALL BE STANDARD DIAMETER NO OVERSIZE HOLES.

ALL CONNECTIONS SHALL BE FABRICATED AND ASSEMBLED AS SLIP-CRITICAL CLASS A CONNECTIONS

ALL SPLICE PLATES SHALL BE ASTM A709 GRADE HPS 50W.

NO.	DATE	REVISION	BY
2	7/13/10	RFI	JRS
1	5/20/10	ADDENDUM #1	JRS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY JRS | PLANS CK'D. MAD

FIELD SPLICE DETAILS

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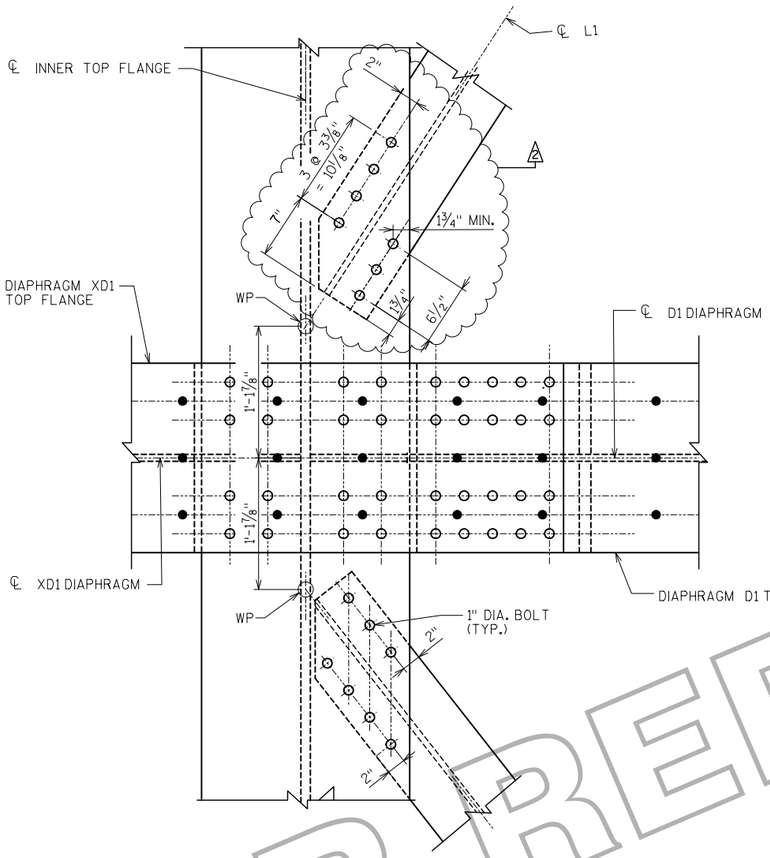
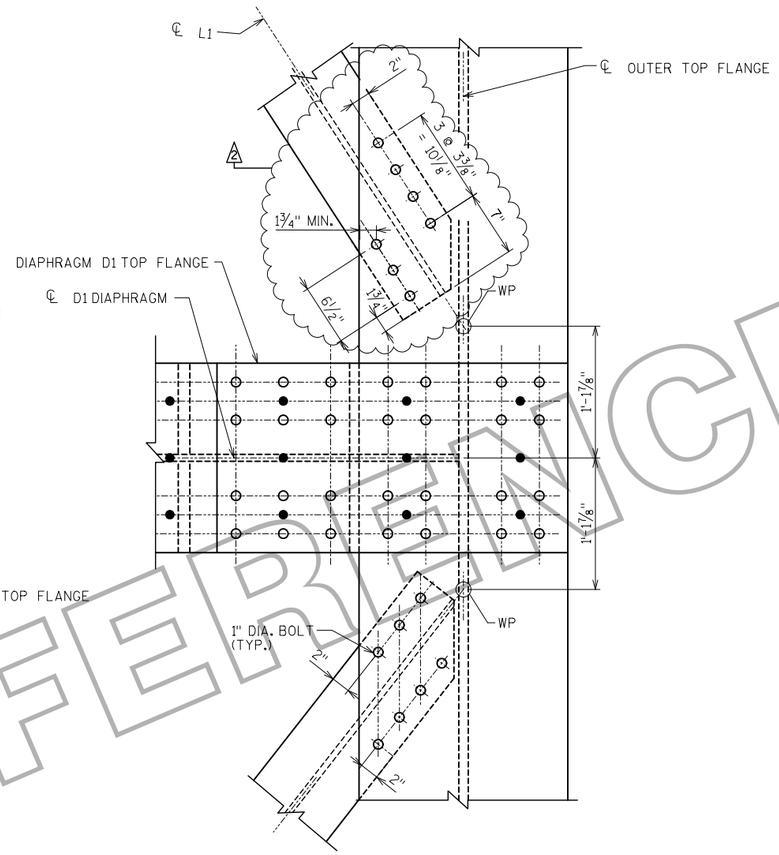
STATE PROJECT NUMBER
1133-03-83



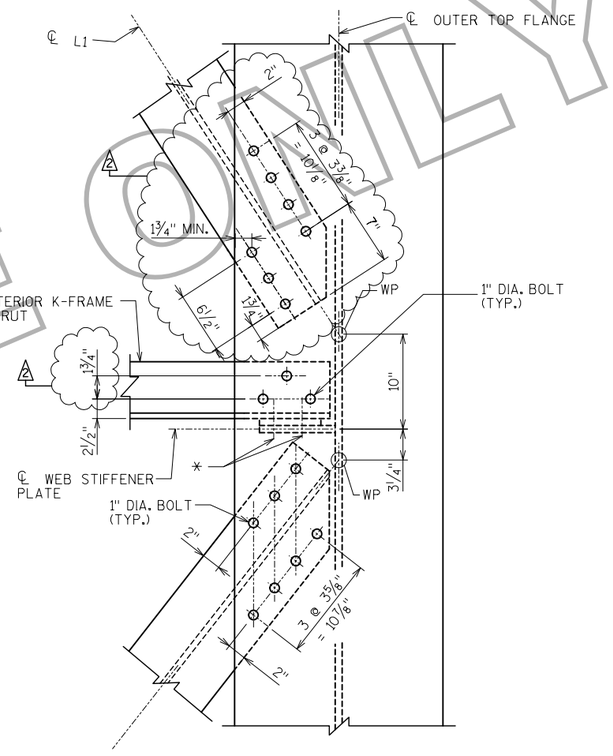
PLAN VIEW AT DIAPHRAGM XD1/D1

(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)

8

8

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.

NO.	DATE	REVISION	BY
2	7/13/10	RFI	MDR
1	5/20/10	ADDENDUM #1	JRS

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
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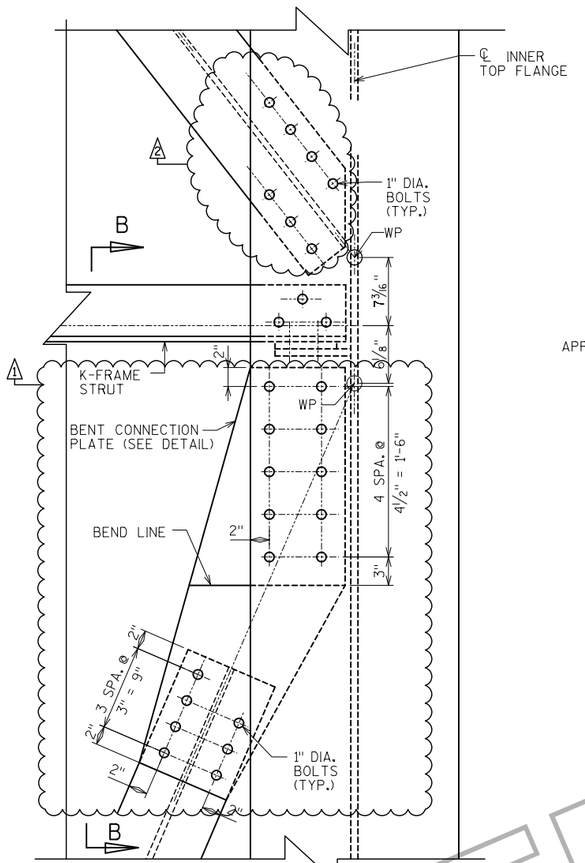
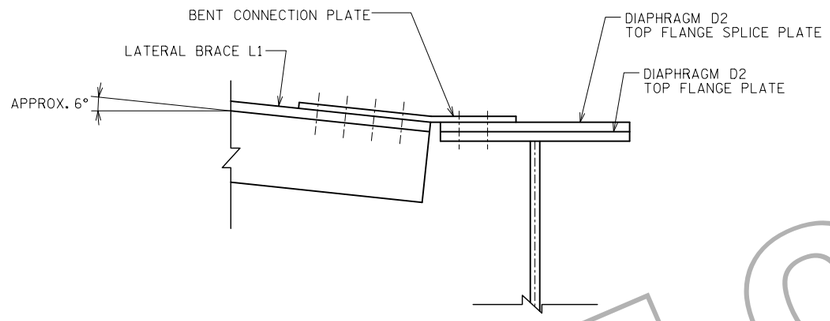
STATE PROJECT NUMBER

1133-03-83

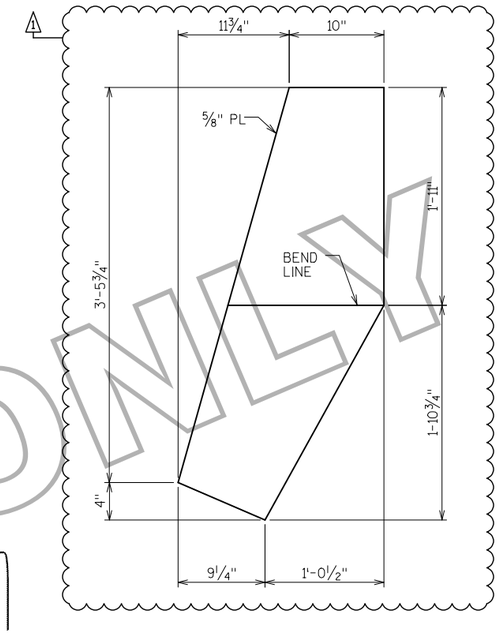


PLAN VIEW AT K-FRAME ADJACENT TO UNIT END

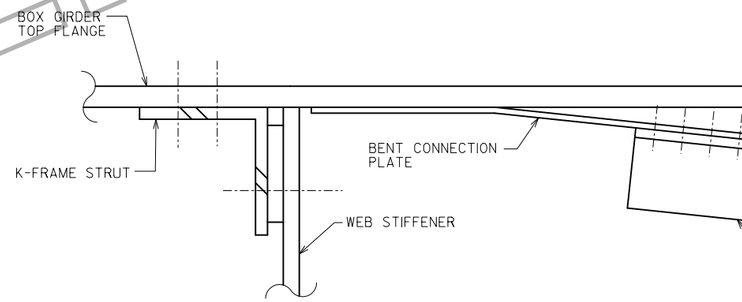


SECTION A-A

THIS SHEET

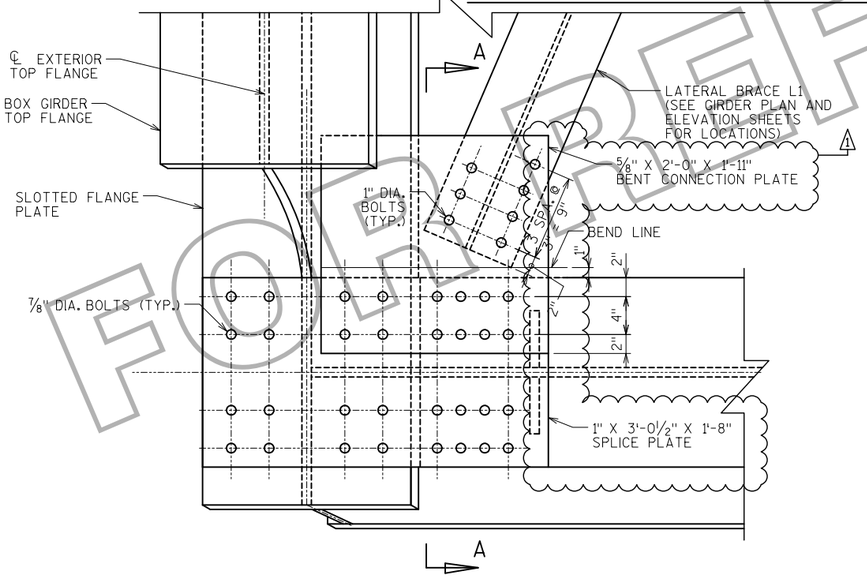


BENT CONNECTION PLATE DETAIL



SECTION B-B

THIS SHEET



PLAN VIEW AT UNIT END DIAPHRAGM

(EXTERIOR GIRDER SHOWN, INTERIOR GIRDER SIMILAR)

NOTES:

SEE GIRDER PLAN AND ELEVATION SHEETS FOR LOCATIONS OF DETAILS

NO.	DATE	REVISION	BY
2	7/13/10	RFI	MDR
1	5/20/10	ADDENDUM #1	JRS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

DRAWN BY MJA | PLANS CK'D. MDR

BRACING CONNECTION DETAILS SHEET 2

SHEET 19 OF 26

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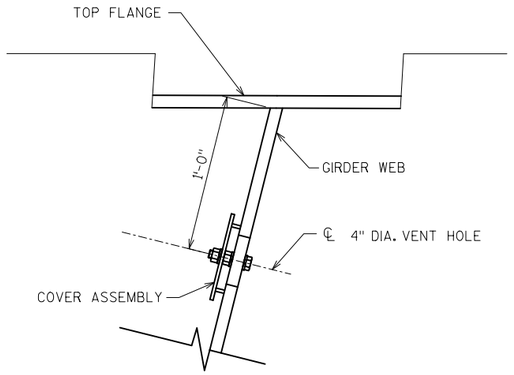
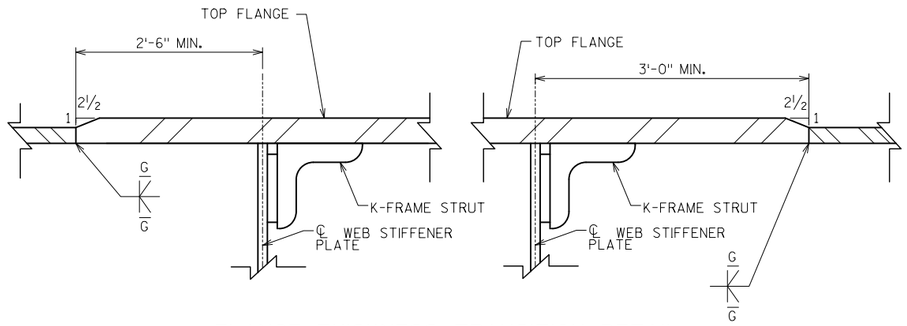
STATE PROJECT NUMBER
1133-03-83

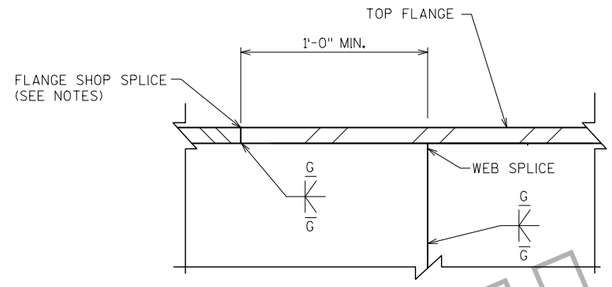


VENT HOLE LOCATION



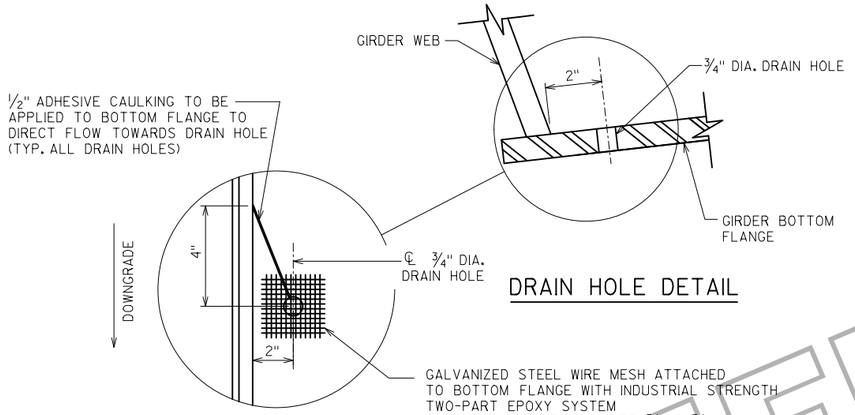
FLANGE THICKNESS TRANSITION DETAIL

NOT TO SCALE



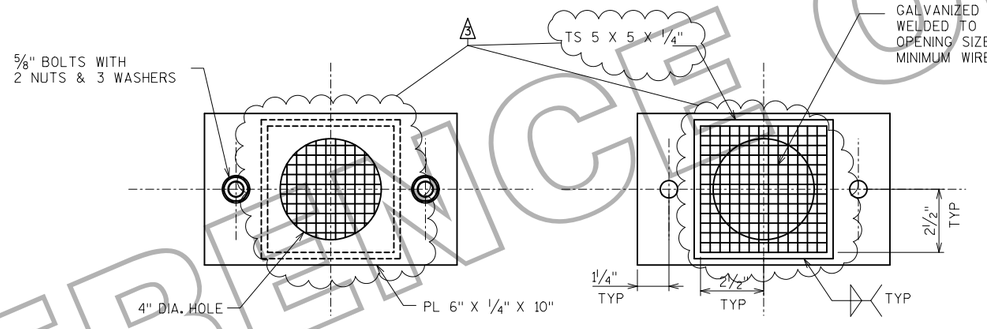
OPTIONAL SHOP SPLICE DETAIL

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



INSIDE FACE

BACK FACE

VENT HOLE COVER ASSEMBLY

NOT TO SCALE

GALVANIZED STEEL WIRE MESH TACK WELDED TO ¼" PLATE MAXIMUM MESH OPENING SIZE: ⅜" X ⅜"
MINIMUM WIRE GAUGE: 18 AWG (0.04")

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.

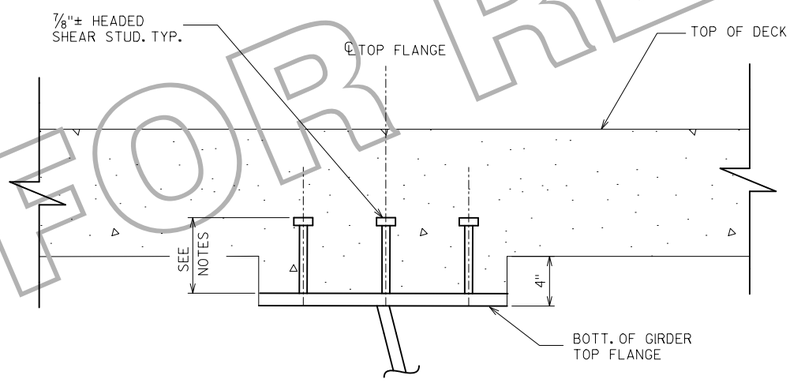
LOCATE ALL DRAIN HOLES ON THE LOW SIDE OF THE GIRDER AS SHOWN.

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

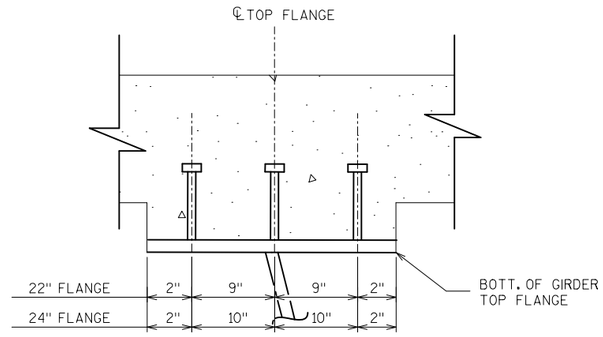
SHEAR STUD CONNECTORS ARE SHOWN FOR REFERENCE ONLY AND ARE NOT FURNISHED OR INSTALLED AS PART OF THIS CONTRACT.

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

FOR WEB PLATES WITH LENGTHS MORE THAN 90'-0", ONE OPTIONAL WELDED SHOP SPLICE IS ALLOWED PER FIELD SECTION. FOR ALL FLANGE PLATES, A MAXIMUM OF TWO OPTIONAL WELDED SHOP SPLICES IS ALLOWED PER FIELD SECTION. NO ADDITIONAL PAYMENT WILL BE MADE FOR OPTIONAL WELDED SHOP SPLICES OR FOR SHOP SPLICES AS REQUIRED DUE TO MAXIMUM PLATE LENGTHS AVAILABLE FROM THE MILL.



SHEAR STUD DETAIL



SHEAR STUD SPACING

NO.	DATE	REVISION	BY
3	7/13/10	RFI	MDR
2	5/27/10	ADDENDUM #2	MJA
1	5/20/10	ADDENDUM #1	JRS

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
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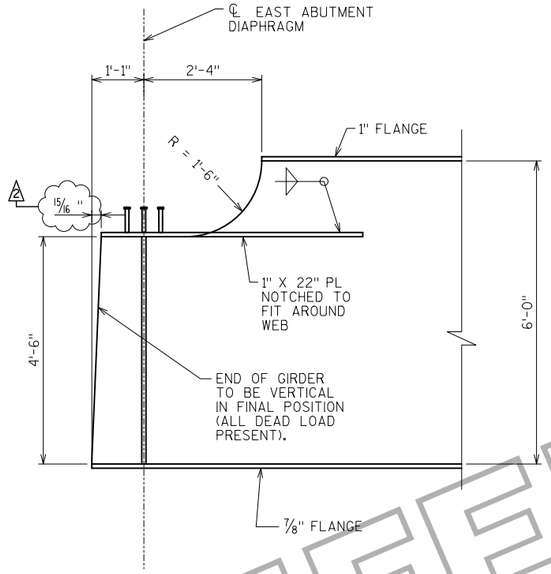
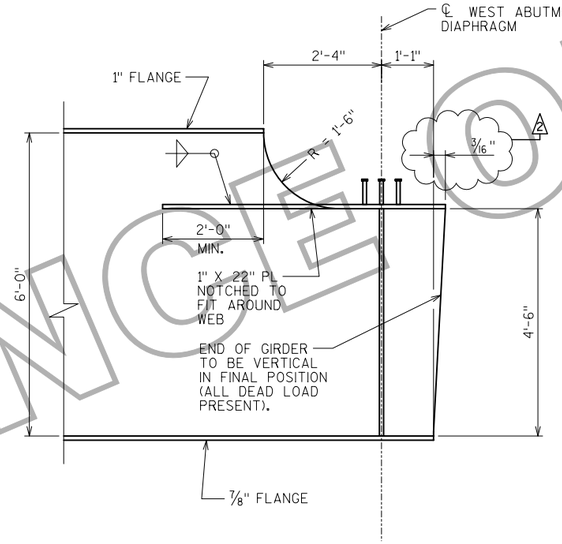
STATE PROJECT NUMBER

1133-03-83



SPAN 1
EAST ABUTMENT



SPAN 2
WEST ABUTMENT

NOTES:

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
2	7/13/10	RFI	JRS
1	5/20/10	ADDENDUM #1	JRS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

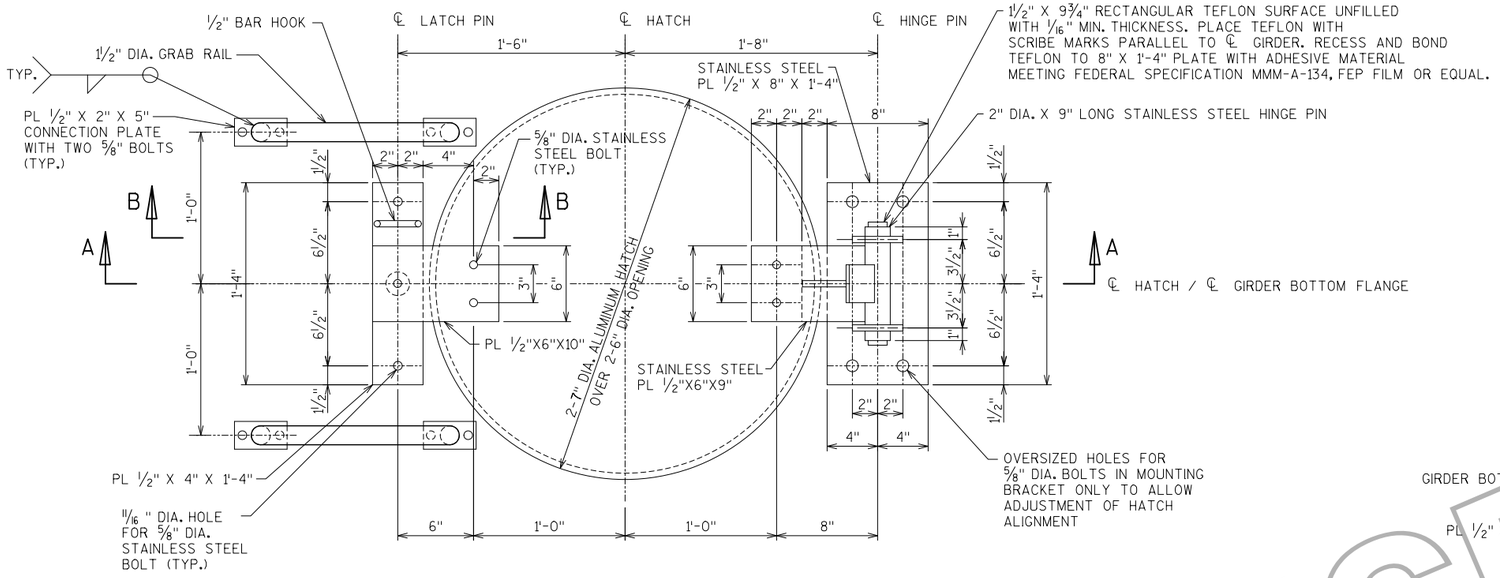
DRAWN BY JRS | PLANS CK'D. MAD

MISCELLANEOUS GIRDER DETAILS SHEET 2

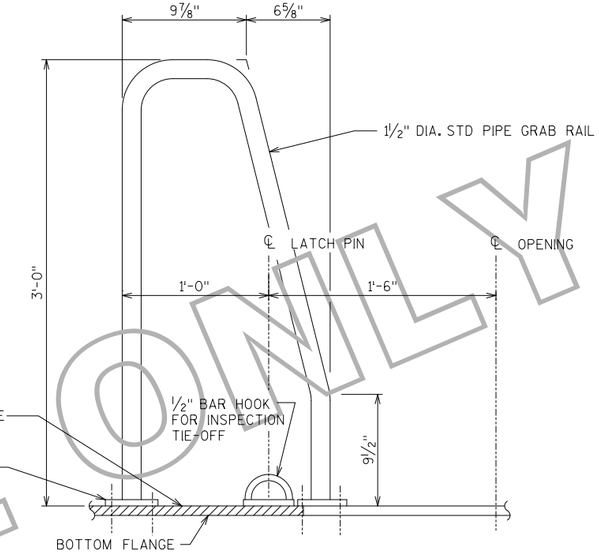
8

8

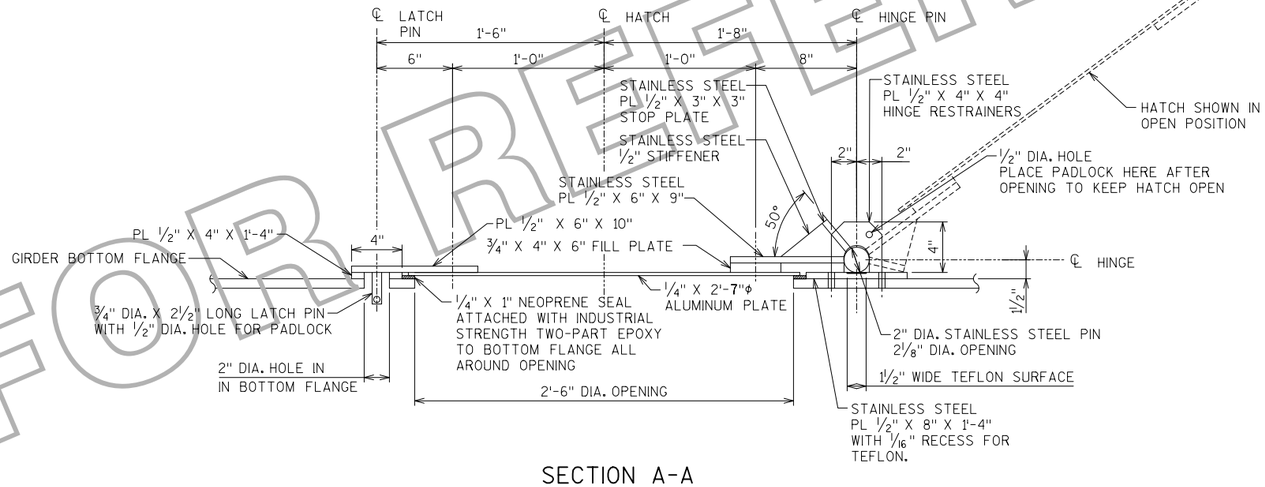
STATE PROJECT NUMBER
1133-03-83



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
1	5/20/10	ADDENDUM #1	JRS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

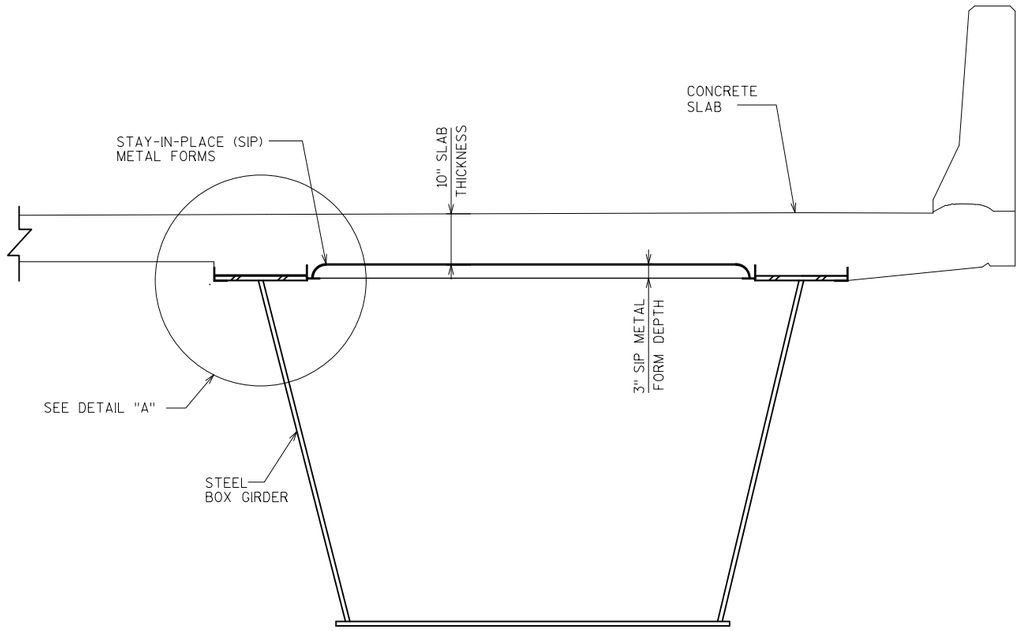
STRUCTURE B-5-661

DRAWN BY MJA | PLANS CK'D. MDR

ACCESS HATCH DETAILS

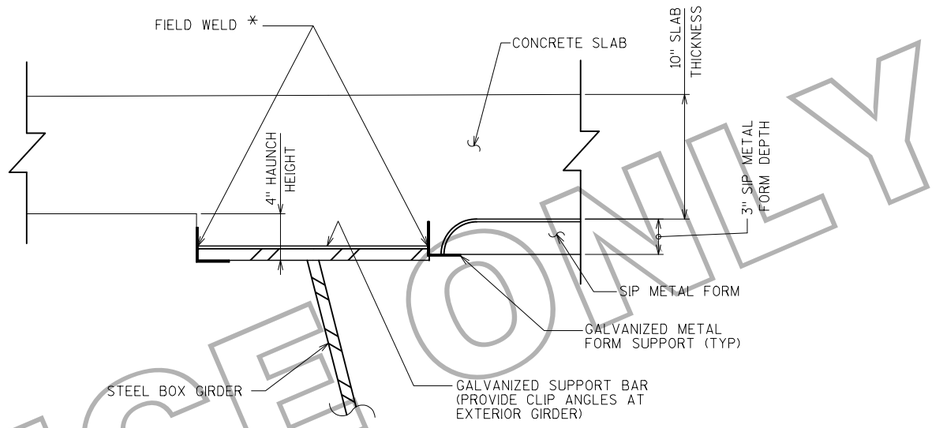
1

STATE PROJECT NUMBER
1133-03-83



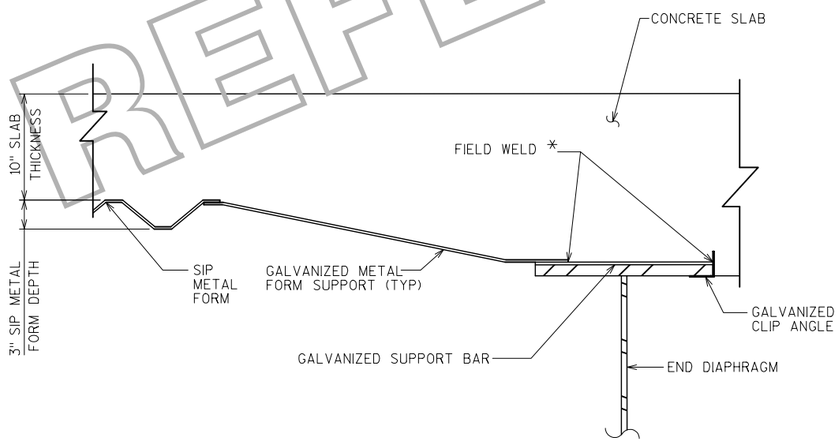
PARTIAL SECTION THROUGH SUPERSTRUCTURE

(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
1	5/20/10	ADDENDUM #1	JRS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-5-661

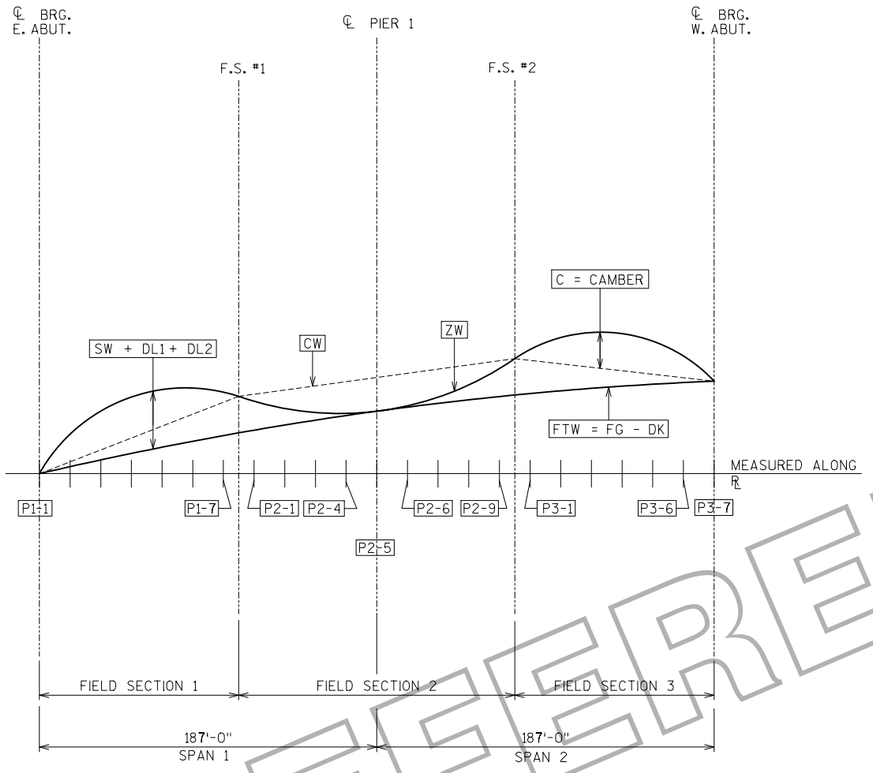
DRAWN BY MJA | PLANS CK'D. MDR

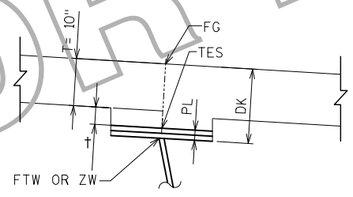
SUPERSTRUCTURE DETAILS

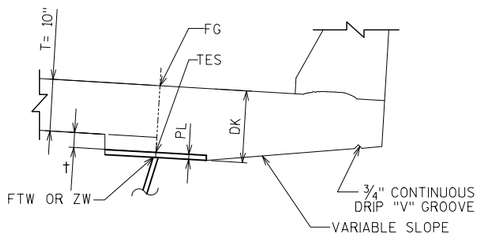
8

8

STATE PROJECT NUMBER
1133-03-83







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
1	5/20/10	ADDENDUM #1	JRS

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
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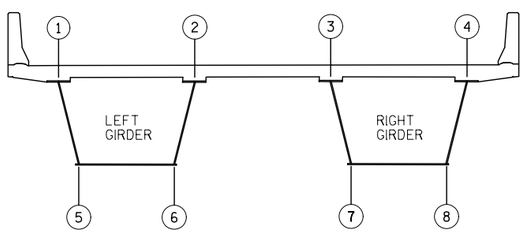
STATE PROJECT NUMBER
1133-03-83

FIELD SECTION 1

HORIZ. LOC.	VALUE	POSITION AND STATION							
		E. ABUT. 1096+24.47	P1- 2 1096+41.47	P1- 3 1096+58.47	P1- 4 1096+75.47	P1- 5 1096+92.47	P1- 6 1097+09.47	P1- 7 1097+26.47	FS #1 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
LEFT GIRDER	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
LEFT GIRDER	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
RIGHT GIRDER	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
RIGHT GIRDER	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 1097+34.97	P2-1 1097+43.47	P2-2 1097+60.47	P2-3 1097+77.47	P2-4 1097+94.47	Pier 1 1098+11.47	P2-6 1098+28.47	P2-7 1098+45.47	P2-8 1098+62.47	P2-9 1098+79.47	FS #2 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
LEFT GIRDER	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	0.02	0.08	0.15	0.23	0.27
	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
LEFT GIRDER	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	636.16	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
RIGHT GIRDER	ZW	635.07	635.13	635.23	635.33	635.49	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	0.05	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
RIGHT GIRDER	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
1	5/20/10	ADDENDUM #1	JRS

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
531

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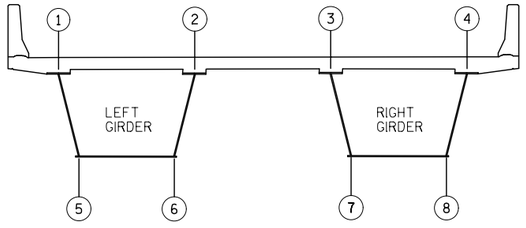
STATE PROJECT NUMBER
1133-03-83

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	FG	638.57	638.64	638.75	638.85	638.94	639.02	639.09	639.15
	TES	637.84	637.88	638.04	638.15	638.20	638.19	638.15	638.07
LEFT GIRDER	ZW	637.80	637.91	638.08	638.19	638.23	638.19	638.11	637.98
	CW	637.80	637.81	637.84	637.87	637.90	637.93	637.96	637.98
	SW	0.10	0.11	0.12	0.12	0.11	0.08	0.04	0.00
LEFT WEB	DL1	0.27	0.30	0.34	0.34	0.31	0.23	0.12	0.00
	DL2	0.03	0.03	0.04	0.04	0.03	0.02	0.01	0.00
	C	0.00	0.10	0.24	0.32	0.33	0.27	0.15	0.00
2	FG	638.00	638.07	638.18	638.28	638.37	638.45	638.52	638.58
	TES	637.26	637.31	637.46	637.57	637.62	637.62	637.57	637.41
LEFT GIRDER	ZW	637.22	637.33	637.50	637.60	637.64	637.62	637.53	637.41
	CW	637.22	637.24	637.27	637.29	637.32	637.35	637.38	637.41
	SW	0.09	0.11	0.12	0.12	0.11	0.08	0.04	0.00
RIGHT WEB	DL1	0.26	0.29	0.33	0.33	0.30	0.22	0.12	0.00
	DL2	0.03	0.03	0.04	0.04	0.03	0.02	0.01	0.00
	C	0.00	0.09	0.23	0.31	0.32	0.26	0.15	0.00
3	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
RIGHT GIRDER	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
	SW	0.09	0.10	0.12	0.12	0.10	0.08	0.04	0.00
LEFT WEB	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	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
RIGHT GIRDER	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
	SW	0.09	0.10	0.11	0.11	0.10	0.08	0.04	0.00
RIGHT WEB	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:

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1	5/20/10	ADDENDUM #1	JRS

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

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