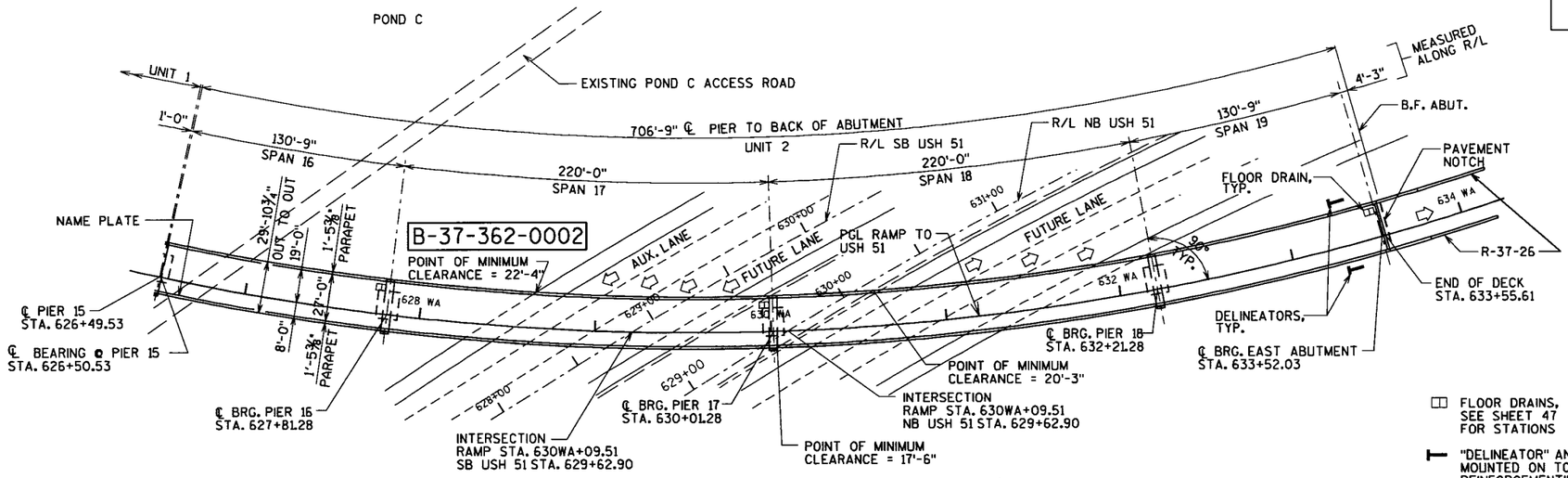
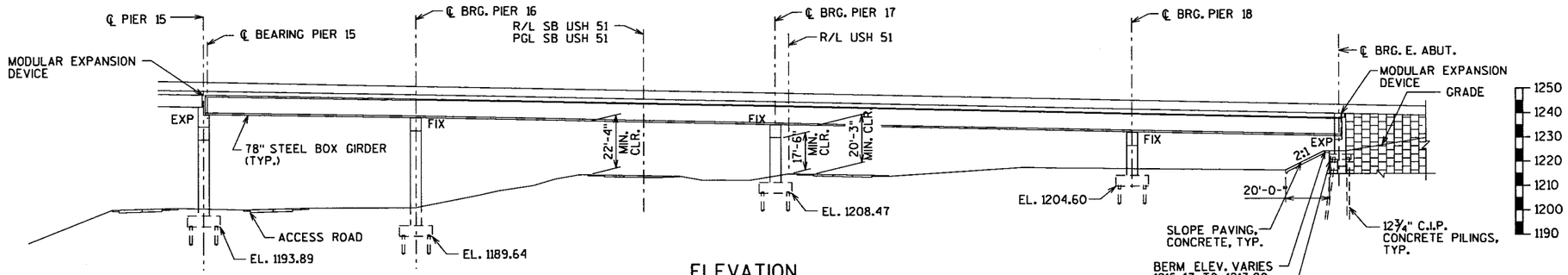
STATE PROJECT NUMBER
1166-11-75



PLAN - UNIT 2

4-SPAN - 78" STEEL BOX GIRDERS

NORTH



ELEVATION

(ALONG ℄ EB STH 29 TO NB USH 51 RAMP)

TRAFFIC VOLUME

EB STH 29 TO NB USH 51 RAMP	USH 51
A.D.T. (2010) = 1400	A.D.T. (2010) = 56,100
A.D.T. (2030) = 3300	A.D.T. (2030) = 62,200
R.D.S.= 60 M.P.H.	R.D.S.= 70 M.P.H.

DESIGN DATA

LIVE LOAD:

DESIGN RATING; HS-25
INVENTORY RATING; HS- 29
OPERATIONAL RATING; HS- 49
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 250 KIPS.

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

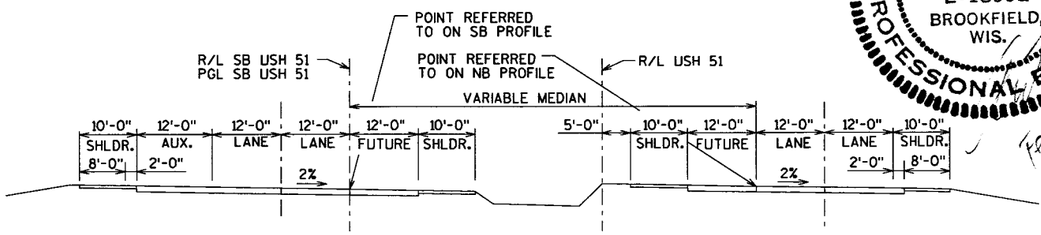
ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY	
DECK	f'c = 4,000 P.S.I.
ALL OTHER	f'c = 3,500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy = 60,000 P.S.I.
HIGH STRENGTH STRUCTURAL STEEL (ASTM A709 / A-03A, HPS 50WT)	fy = 50,000 P.S.I.

FOUNDATION DATA

EAST ABUTMENT TO BE SUPPORTED ON 12¾" DIA. CAST IN PLACE CONCRETE PILING DRIVEN TO A MINIMUM BEARING VALUE OF 70 TONS PER PILE. ESTIMATED 60 FEET LONG.

PIERS TO BE SUPPORTED ON 12¾" DIA. CAST IN PLACE CONCRETE PILING DRIVEN TO A MINIMUM BEARING VALUE OF 70 TONS PER PILE. ESTIMATED 85 FEET LONG AT PIER 16, AND 75 FEET LONG AT PIERS 17 & 18.



TYPICAL FINISHED SECTION - USH 51 6-LANE SECTION

(FUTURE CONDITION)

BUREAU OF STRUCTURES CONTACT = WILLIAM DREHER (608) 261-8205
CONSULTANT CONTACT = ALBERT M. LINDNER (414) 259-1500

WISCONSIN
ALBERT M. LINDNER
E-18992
BROOKFIELD, WIS.
PROFESSIONAL ENGINEER
4/18/08

NO.	DATE	REVISION	BY

PLANS PREPARED BY: GRAEF ANHALT SCHLOEMER and Associates Inc.
ENGINEERS & SCIENTISTS
One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1470

WISDOT
BUREAU OF STRUCTURES

STRUCTURE B-37-362-002

EB STH 29 TO NB USH 51 RAMP

COUNTY MARATHON		CITY WAUSAU	
DESIGN SPEC. AASHTO 2002		LOAD HS-25	CONST. SPEC. 2008
DESIGNED BY SST	DESIGN CK'D. KGW	DRAWN BY RBH	PLANS CK'D. AML

APPROVED William C. Dreher — CHIEF STRUCTURAL DESIGN ENGINEER — 4/18/08 DATE

GENERAL PLAN AND ELEVATION

SHEET 1 OF 54

DA1303

8

STATE PROJECT NUMBER
1166-11-75

LIST OF DRAWINGS

1. GENERAL PLAN AND ELEVATION
2. LIST OF DRAWINGS
3. CROSS SECTION & PROFILES
4. GENERAL NOTES
5. QUANTITIES
6. SUBSURFACE EXPLORATION
7. EAST ABUTMENT
8. EAST ABUTMENT DETAILS
9. EAST ABUTMENT BILL OF BARS
10. PIER 16
11. PIER 16 DETAILS
12. PIER 17 & 18
13. PIER 17 & 18 DETAILS
14. PIER 16, 17 & 18 BILL OF BARS
15. EAST ABUTMENT ARCHITECTURAL DETAILS
16. BEARING LAYOUT
17. BEARING DETAILS
18. JACKING PROVISIONS
19. GIRDER SECTION
20. FRAMING PLAN
21. GIRDER PLAN & ELEVATION SECTIONS 1 & 2
22. GIRDER PLAN & ELEVATION SECTION 3
23. GIRDER PLAN & ELEVATION SECTION 4
24. GIRDER PLAN & ELEVATION SECTION 5
25. GIRDER PLAN & ELEVATION SECTIONS 5, 6, & 7
26. FIELD SPLICE DETAILS
27. INTERIOR PIER DIAPHRAGMS
28. END DIAPHRAGM AT PIER 15
29. END DIAPHRAGM AT E. ABUTMENT
30. INTERMEDIATE K-FRAMES (K1 TYPE)
31. INTERMEDIATE K-FRAMES (K2 TYPE)
32. EXTERIOR DIAPHRAGMS
33. LATERAL BRACING DETAILS
34. ACCESS HATCH DETAILS 1
35. ACCESS HATCH DETAILS 2
36. MISCELLANEOUS GIRDER DETAILS
37. CAMBER DIAGRAM
38. CAMBER AND DECK ELEVATIONS: SECTIONS #1 & #2
39. CAMBER AND DECK ELEVATIONS: SECTIONS #3 & #4
40. CAMBER AND DECK ELEVATIONS: SECTION #5
41. CAMBER AND DECK ELEVATIONS: SECTIONS #6 & #7
42. DECK POUR SEQUENCE
43. DECK SECTIONS
44. DECK REINFORCEMENT 1
45. DECK REINFORCEMENT 2
46. SUPERSTRUCTURE BILL OF BARS
47. FLOOR DRAIN TYPE "GC"
48. DOWNSPOUT
49. TYPICAL EXPANSION JOINT LAYOUT
50. EXPANSION JOINT SECTIONS
51. EXPANSION JOINT REINFORCEMENT
52. MODULAR EXPANSION DEVICE
53. MODULAR EXPANSION DEVICE COVERPLATES
54. SLOPE PAVING DETAIL

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	EB	PLANS CK'D.	AML

LIST OF DRAWINGS

SHEET 2 OF 54
304

STATE PROJECT NUMBER
1166-11-75

EB STH 29 (B-37-362) TO NB USH 51 RAMP CURVE #2 DATA

P.I. STA. = 626+16.69
N = 199,744.79
E = 271,605.87
PC STA. = 614+65.58
PT STA. = 634+04.89
Δ = 77°34'22" (LT)
D = 4°0'0"
T = 1151.11'
L = 1939.32'
R = 1432.39'
S.E. = *

NB USH 51 CURVE DATA

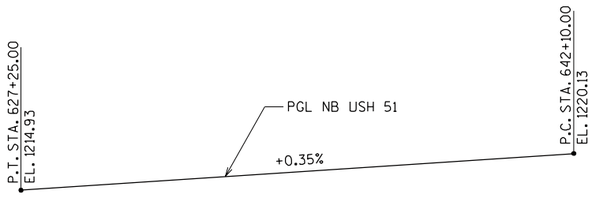
P.I. STA. = 639+97.93
N = 201,533.78
E = 271,659.69
PC STA. = 629+07.93
PT STA. = 649+45.79
Δ = 50°21'12"
D = 2°28'15"
T = 1090.01'
L = 2037.86'
R = 2318.83'
S.E. = 0.059%

SB USH 51 CURVE DATA

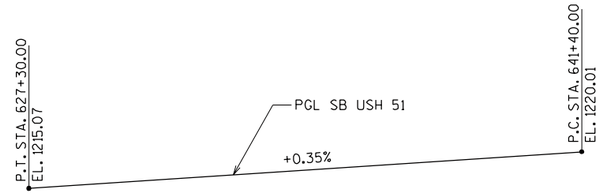
P.I. STA. = 640+47.90
N = 201,584.16
E = 271,623.68
PC STA. = 628+49.29
PT STA. = 650+89.83
Δ = 50°24'43"
D = 2°15'0"
T = 1198.61'
L = 2240.53'
R = 2546.48'
S.E. = 0.058%

* START OF BRIDGE TO STA. 614+12.00 S.E. = 0.020%
STA. 614+12.00 TO STA. 615+19.00 SUPERELEVATION TRANSITION 0.020% TO 0.060%
STA. 615+19.00 TO END OF BRIDGE S.E. = 0.060%

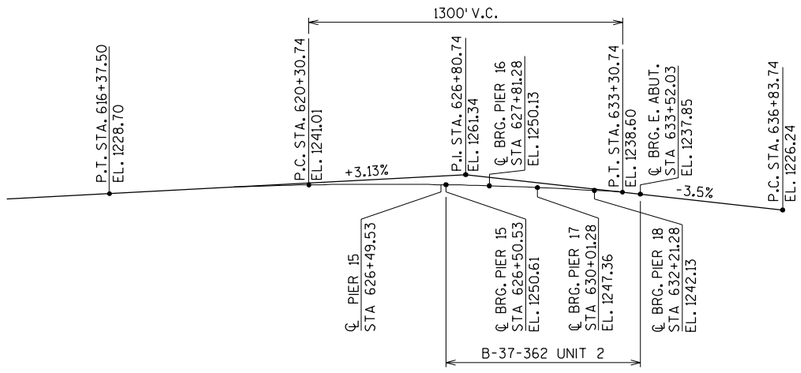
BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEVATION
	59+45.76 40.97'RT 28th Ave.	REBAR (N.199,704.70, E.270,722.30)	1178.80



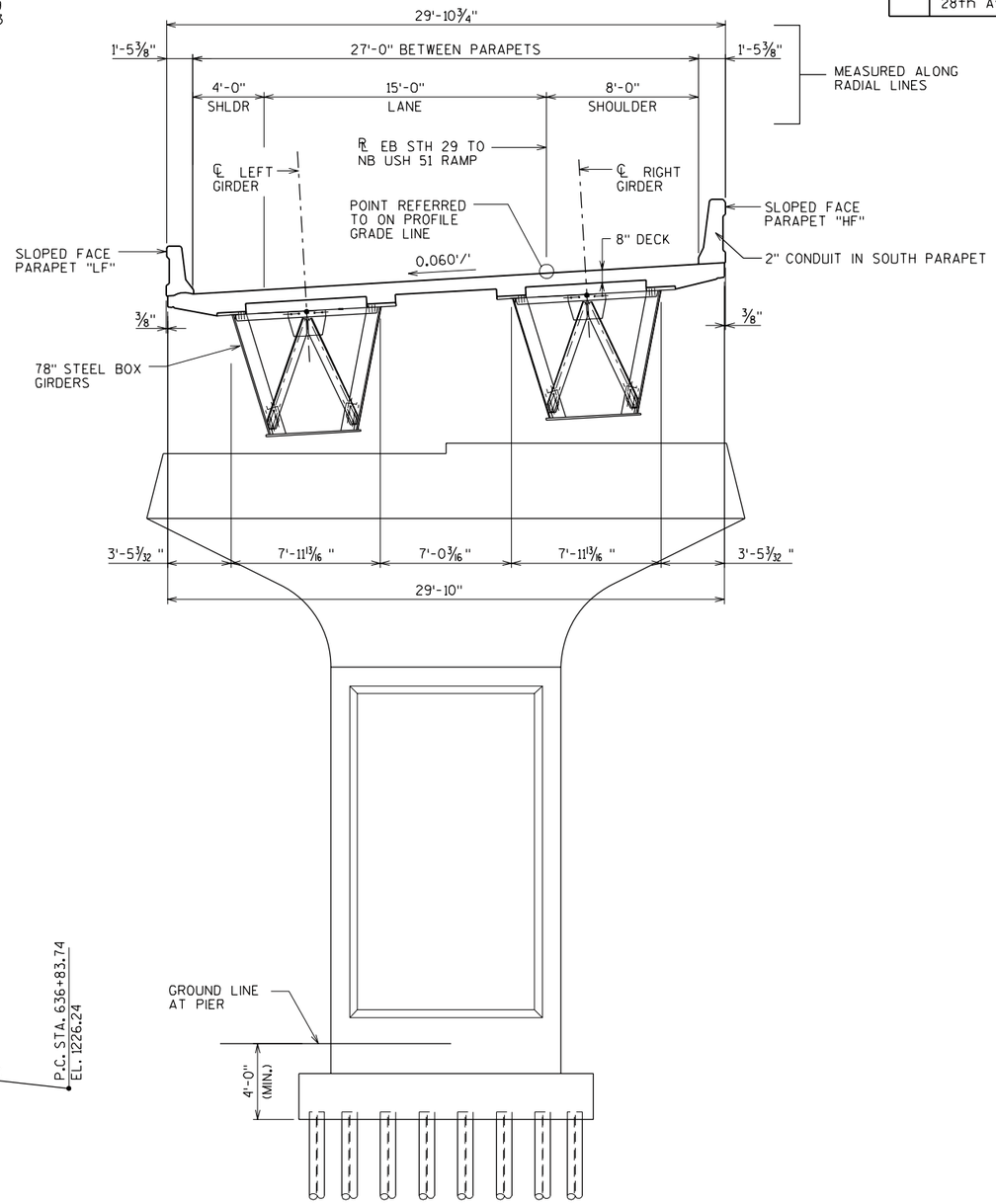
PROFILE GRADE LINE NB USH 51



PROFILE GRADE LINE SB USH 51



PROFILE GRADE LINE
EB STH 29 TO NB USH 51 RAMP



B-37-362
CROSS SECTION THRU ROADWAY - UNIT 2
(LOOKING UPSTATION)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	RBH	PLANS CK'D.	AML

CROSS SECTION & PROFILES

SHEET 3 OF 54
305

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8

STATE PROJECT NUMBER
1166-11-75

GENERAL

1. DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

6. FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153, TYPE 1, 11 OR 111, OR M213.

EXCAVATION AND BACKFILL

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

DESIGN CRITERIA

8. 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 2008, EXCEPT AS OTHERWISE NOTED.

9. DESIGN IS IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SEVENTEENTH EDITION, 2002, LOAD FACTOR DESIGN UNLESS NOTED OTHERWISE.

10. STEEL BOX GIRDERS ARE DESIGNED IN ACCORDANCE WITH THE 2003 AASHTO GUIDE SPECIFICATIONS FOR HORIZONTALLY CURVED STEEL GIRDER HIGHWAY BRIDGES MODIFIED AS FOLLOWS:

11. LIVE LOAD DEFLECTION LIMIT = SPAN / 1200 (HS20).

LIVE LOAD

12. DESIGN RATING; HS-25

13. INVENTORY RATING; HS-31

14. OPERATIONAL RATING; HS-52

15. MAXIMUM STANDARD PERMIT VEHICLE LOAD= 250 KIPS

OTHER DESIGN LOADS

16. STRUCTURE IS DESIGNED FOR (20 PSF) OF FUTURE WEARING SURFACE.

17. TEMPERATURE CHANGE FOR COMPUTING TEMPERATURE FORCE AT SUBSTRUCTURE = 90°F

18. ABSOLUTE TEMPERATURE RANGE FOR DETERMINING BEARING AND EXPANSION JOINT MOVEMENTS = -30°F TO +120°F

19. ALL OTHER LOADS IN ACCORDANCE WITH AASHTO.

REINFORCING STEEL

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

21. REINFORCEMENT SCHEDULES AND BREAKDOWNS IN THIS PLAN SET ARE FOR INFORMATION ONLY. VERIFY ALL REINFORCING BAR DIMENSIONS AND PLAN QUANTITIES AND BE RESPONSIBLE FOR ANY VARIATIONS.

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

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

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

25. PLACE REINFORCEMENT IN FOOTINGS AND PILECAPS WITH A MINIMUM CLEAR COVER OF 3" ON SIDES AND 4" TOP AND BOTTOM UNLESS NOTED OTHERWISE.

26. PLACE TOP LAYER OF REINFORCING STEEL IN THE DECK SURFACE WITH 2½" CLEAR COVER TO TOP OF SLAB.

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

28. 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.

29. LAP SPLICE LENGTHS THAT ARE NOT EXPLICITLY DIMENSIONED OR EVIDENT FROM THE BAR LENGHTS DETAILED SHALL CONFORM TO THE FOLLOWING TABLE.

#4	1'-6"	#8	4'-8"
#5	2'-5"	#9	5'-10"
#6	2'-10"	#10	7'-5"
#7	3'-7"	#11	9'-2"

STRUCTURAL STEEL

30. ALL STRUCTURAL STEEL FOR BOX GIRDERS SHALL BE HIGH STRENGTH ASTM A709/A-03A, HPS 50WT WITH SUPPLEMENTARY REQUIREMENT S83, ZONE 2. SEE STEEL DRAWINGS FOR SPECIFIC LOCATIONS.

31. SOME MEMBERS REQUIRE FABRICATION AND TESTING IN ACCORDANCE WITH REQUIREMENTS FOR FRACTURE CRITICAL MEMBERS (FCM).

32. ALL ROLLED SECTIONS SHALL BE IN ACCORDANCE WITH ASTM A709 GRADE 50 (Fy=50 KSI).

33. CHARPY V-NOTCH TOUGHNESS REQUIREMENTS FOR ALL STEEL SHALL CONFORM TO THE REQUIREMENTS FOR ZONE 2. ITEMS THAT DO NOT NEED CHARPY V-NOTCH TOUGHNESS REQUIREMENTS ARE: SHIM/FILL PLATES, BEARINGS, SOLE PLATES AND MASONRY PLATES.

34. ALL WELDING SHALL BE IN ACCORDANCE WITH AASHTO D1.5 BRIDGE WELDING CODE.

35. SEE SHEET 19 FOR TABLE OF MINIMUM FILLET WELD SIZES. USE THESE SIZES AT ALL LOCATIONS WHERE A SPECIFIC WELD SIZE IS NOT OTHERWISE INDICATED.

36. 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.

37. BEARING AND EXPANSION JOINT ASSEMBLIES SHALL BE FABRICATED FROM ASTM A709 GRADE 50 MATERIAL (Fy=50 KSI) AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.

38. ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM F1554 (GRADE 105). HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M232.

39. ALL BOLTS SHALL BE ASTM A325 TYPE 1. BOLTS SHALL BE ⅞" DIAMETER UNLESS NOTED OTHERWISE. ALL HOLES SHALL BE STANDARD DIAMETER - NO OVERSIZE HOLES. ALL CONNECTIONS SHALL BE FABRICATED AND ASSEMBLED AS SLIP-CRITICAL CONNECTIONS. DESIGN ASSUMED SURFACE CLASS A.

40. PAINT ALL STRUCTURAL STEEL, INCLUDING SURFACES AND BRACING MEMBERS ON THE INSIDE OF THE BOX GIRDERS. SELECT THE FINISH COAT COLOR FOR EXTERIOR SURFACES TO MATCH THE SAMPLE TO BE PROVIDED BY THE DEPARTMENT. OBTAIN APPROVAL OF THE COLOR MATCH FROM THE ENGINEER BEFORE ORDERING. FINISH COAT FOR INTERIOR SURFACES SHALL BE WHITE.

41. CAMBER DIAGRAMS HAVE BEEN DEVELOPED ASSUMING A CONSTANT 4" HAUNCH HEIGHT, MEASURED FROM THE UNDERSIDE OF THE TOP FLANGE TO THE UNDERSIDE OF THE DECK (TOP OF STAY-IN-PLACE METAL FORMS). ANY ADDITIONAL QUANTITIES REQUIRED AS A RESULT OF VARIATION IN THE HAUNCH HEIGHT ARE ASSUMED TO BE INCIDENTAL TO OTHER PAY ITEMS AND WILL NOT BE PAID FOR SEPARATELY. THIS INCLUDES ADDITIONAL CONCRETE IN THE HAUNCH, ADDITIONAL OR MORE COMPLICATED FORMWORK, EXTRA SHEAR STUD LENGTH AND ANY REQUIRED REINFORCEMENT IN THE HAUNCH.

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

43. DESIGN 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.

44. TOP OF STAY-IN-PLACE METAL FORMS (OPTIONAL FORMS) SHALL BE ALIGNED WITH THE UNDERSIDE OF THE 8" DECK SLAB AS SHOWN IN THE SECTIONS ON SHEET 43.

CONCRETE

45. MINIMUM 28-DAY STRENGTH (f'c) SHALL BE AS FOLLOWS:

    CONCRETE MASONRY, SUBSTRUCTURES: 3,500 PSI
    CONCRETE MASONRY, SLAB: 4,000 PSI

46. CONCRETE QUANTITY IN THE HAUNCHES IS CALCULATED BASED ON A 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.

47. CHAMFER ALL EXPOSED OUTSIDE CORNERS ¾" UNLESS NOTED OTHERWISE.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	RBH	PLANS CK'D.	SST

GENERAL NOTES

SHEET 4 OF 54
306

STATE PROJECT NUMBER
1166-11-75

TOTAL ESTIMATED QUANTITIES - UNIT 2

ITEM NUMBERS	BID ITEMS	UNIT	SUPER.	PIER 15	PIER 16	PIER 17	PIER 18	EAST ABUT.	TOTALS
206.1000.02	EXCAVATION FOR STRUCTURES BRIDGES B-37-362-002	LS	———	———	———	———	———	———	1
206.6000.S	TEMPORARY SHORING	SF	-	-	250	250	125	-	625
210.0100	BACKFILL STRUCTURE	CY	-	-	-	-	-	228	228
502.0100	CONCRETE MASONRY BRIDGES	CY	794	-	136	104	88	76	1198
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	-	-	2760	3050	1740	2140	9690
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	238,780	-	21,900	15,300	14,500	1790	292,270
506.3020	WELDED STUD SHEAR CONNECTORS 7/8X7-INCH	EACH	4365	-	-	-	-	-	4365
510.2005	PREBORING CIP CONCRETE PILING	LF	-	-	0	610	470	385	1465
510.3033	PILING CIP CONCRETE DELIVERED AND DRIVEN 12 3/4X 0.25-INCH	LF	-	-	2210	1950	1800	660	6620
514.0445	FLOOR DRAINS TYPE GC	EACH	3	-	-	-	-	-	3
514.2625	DOWNSPOUT 6-INCH	LF	-	-	56	34	-	18	108
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-	-	-	-	-	5	5
604.0400	SLOPE PAVING CONCRETE	SY	-	-	-	-	-	84	84
633.0500	DELINEATORS	EACH	16	-	-	-	-	-	16
633.1000	DELINEATORS BRACKETS	EACH	16	-	-	-	-	-	16
650.6500.02	CONSTRUCTION STAKING STRUCTURE LAYOUT B-37-362-002	LS	-	-	-	-	-	-	1
652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	10	-	-	-	-	3	13
652.0325	CONDUIT RIGID NON-METALLIC SCHEDULE 80 2-INCH	LF	700	-	-	-	-	-	700
653.0220	JUNCTION BOXES 18X6X6 - INCH	EACH	5	-	-	-	-	-	5
SPV.0060.02	ACCESS DOORS	EACH	4	-	-	-	-	-	4
SPV.0060.03	BEARINGS HIGH LOAD MULTI-ROTATIONAL FIXED	EACH	-	-	2	2	2	-	6
SPV.0060.06	BEARINGS HIGH LOAD MULTI-ROTATIONAL UNI-DIRECTIONAL	EACH	-	2	-	-	-	2	4
SPV.0085.01	STRUCTURAL STEEL HPS 50W	LB	1,399,100	-	-	-	-	-	1,399,100
SPV.0105.05	EXPANSION DEVICE MODULAR B-37-362-002	LS	-	-	-	-	-	-	1
SPV.0105.06	PAINTING EPOXY SYSTEM B-37-362-002	LS	-	-	-	-	-	-	1
SPV.0165.02	CONCRETE STAINING B-37-362-002	SF	8580	-	1710	1100	1020	250	12,660 ☆
SPV.0180.01	ANTI SKID TREATMENT	SY	2110	-	-	-	-	-	2110
	NON-BID ITEMS								
	FILLER	SIZE	———	———	———	———	———		1/2" & 3/4"
	BRIDGE SEAT PROTECTION	LS							1

☆ CONCRETE STAIN SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS. STAIN SHALL BE FEDERAL COLOR= 36424, SHALL EXTEND 1'-0" BELOW PROPOSED GRADE, AND SHALL BE APPLIED TO THE FOLLOWING AREAS:
- PARAPETS: OUTSIDE FACE ONLY (NOT ALONG TOP)
- OUTSIDE EDGE OF DECK AND BOTTOM OF OVERHANGS
- PIERS: ENTIRE PIER EXCEPT TOP OF CAP
- ABUTMENTS: FRONT FACE AND SIDES

8

8

NO.	DATE	REVISION	BY

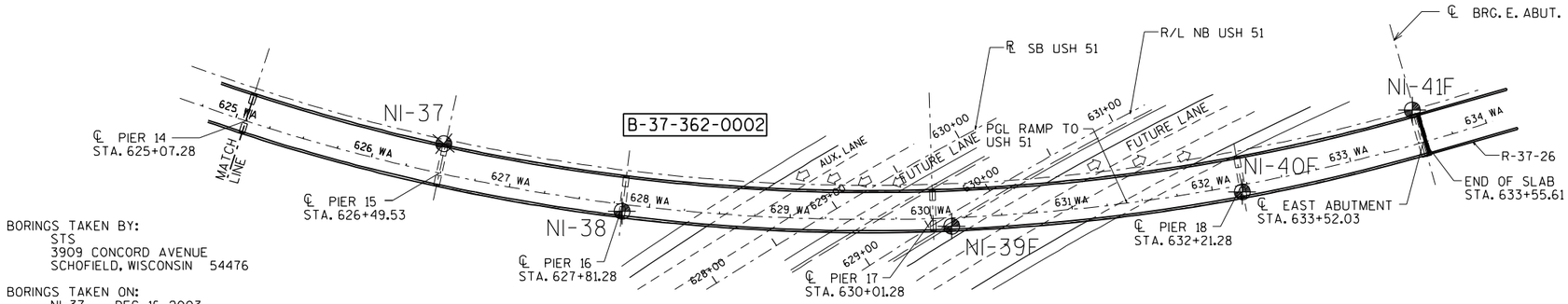
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

DRAWN BY | PLANS CK'D.

QUANTITIES

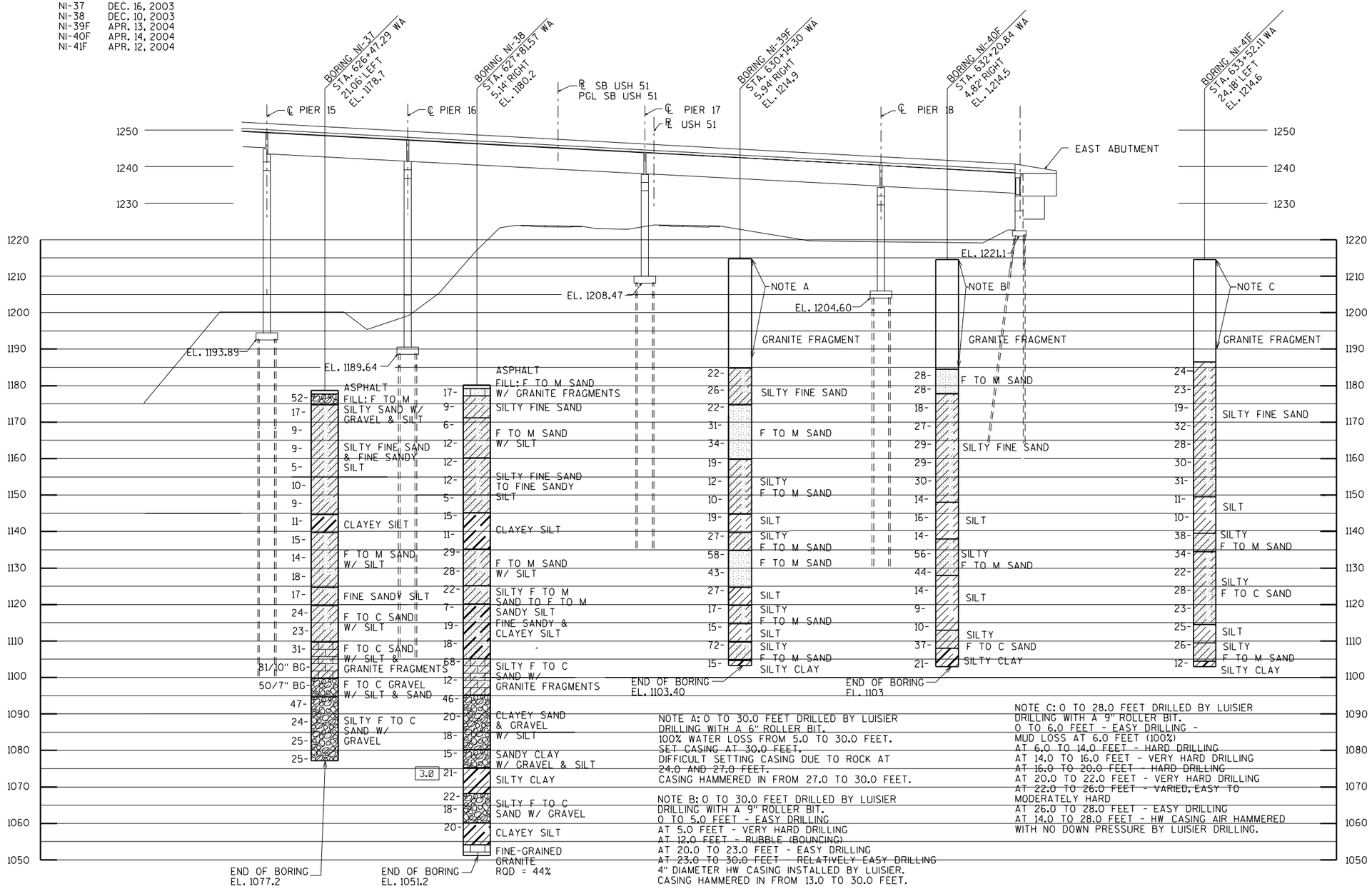
SHEET 5 OF 54
307



BORINGS TAKEN BY:
STS
3909 CONCORD AVENUE
SCHOFIELD, WISCONSIN 54476

BORINGS TAKEN ON:

NI-37	DEC. 16, 2003
NI-38	DEC. 10, 2003
NI-39F	APR. 13, 2004
NI-40F	APR. 14, 2004
NI-41F	APR. 12, 2004



NOTE A: 0 TO 30.0 FEET DRILLED BY LUISIER DRILLING WITH A 6" ROLLER BIT.
100% WATER LOSS FROM 5.0 TO 30.0 FEET.
~~SET CASING AT 30.0 FEET.~~
DIFFICULT SETTING CASING DUE TO ROCK AT ~~24.0 AND 27.0 FEET.~~
CASING HAMMERED IN FROM 27.0 TO 30.0 FEET.

NOTE B: 0 TO 30.0 FEET DRILLED BY LUISIER DRILLING WITH A 9" ROLLER BIT.
0 TO 5.0 FEET - EASY DRILLING
AT 5.0 FEET - VERY HARD DRILLING
~~AT 12.0 FEET - RUBBLE (BOUNCING)~~
AT 20.0 TO 23.0 FEET - EASY DRILLING
~~AT 23.0 TO 30.0 FEET - RELATIVELY EASY DRILLING~~
4" DIAMETER HW CASING INSTALLED BY LUISIER.
CASING HAMMERED IN FROM 13.0 TO 30.0 FEET.

NOTE C: 0 TO 28.0 FEET DRILLED BY LUISIER DRILLING WITH A 9" ROLLER BIT.
0 TO 6.0 FEET - EASY DRILLING - MUD LOSS AT 6.0 FEET (100%)
AT 6.0 TO 14.0 FEET - HARD DRILLING
AT 14.0 TO 16.0 FEET - VERY HARD DRILLING
~~AT 16.0 TO 20.0 FEET - HARD DRILLING~~
AT 20.0 TO 22.0 FEET - VERY HARD DRILLING
~~AT 22.0 TO 26.0 FEET - VARIED, EASY TO~~ MODERATELY HARD
AT 26.0 TO 28.0 FEET - EASY DRILLING
AT 14.0 TO 28.0 FEET - HW CASING AIR HAMMERED WITH NO DOWN PRESSURE BY LUISIER DRILLING.

STATE PROJECT NUMBER

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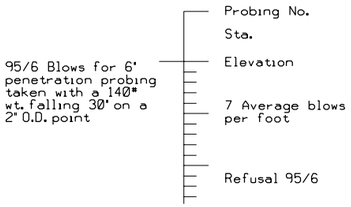
ABBREVIATIONS

F ---- Fine M ---- Medium C ---- Coarse
Ws ---- Weathered So ---- Sound

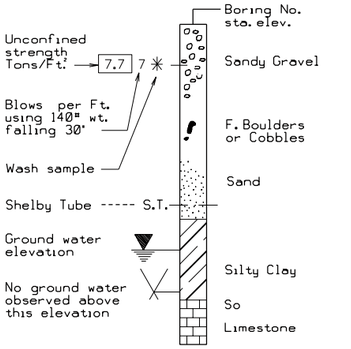
MATERIAL SYMBOLS

Fill, Topsoil, Sand, Gravel, Silt, Silty Clay, Clay, Sandy Gravel, Limestone, Clayey Silt, Silty Sand

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 sub-surface 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 Division of Highways 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-37-362-002

DRAWN BY RBH | PLANS CK'D. KGW

SUBSURFACE EXPLORATION

SHEET 6 OF 54
308

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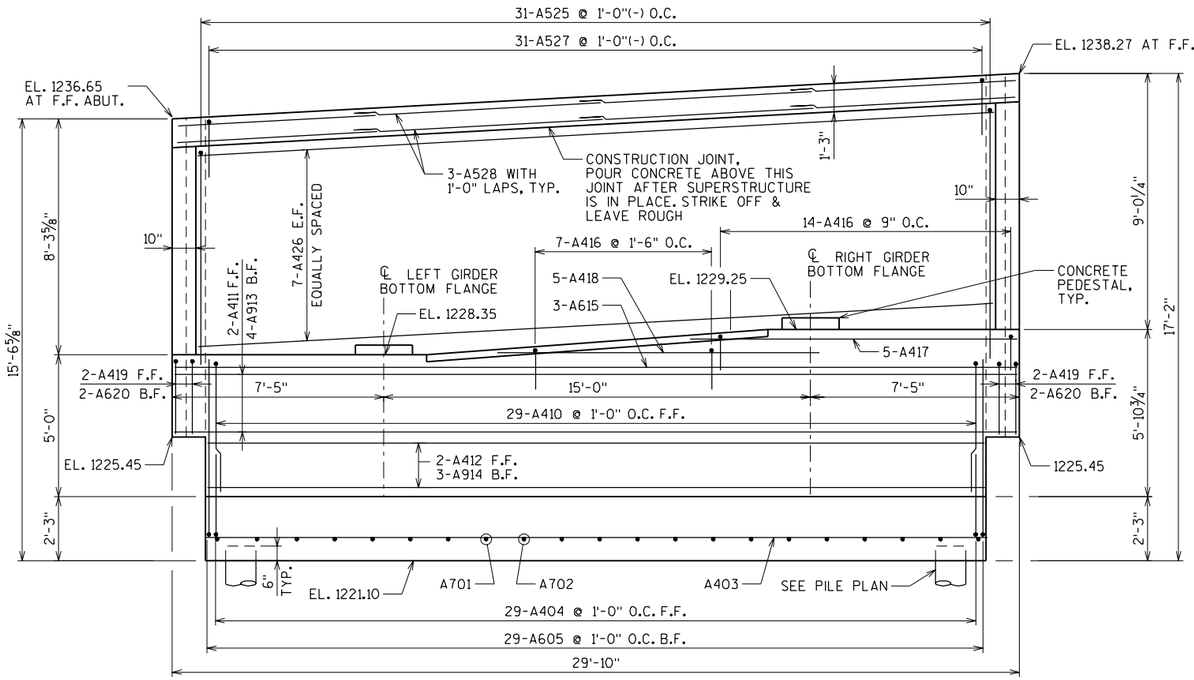
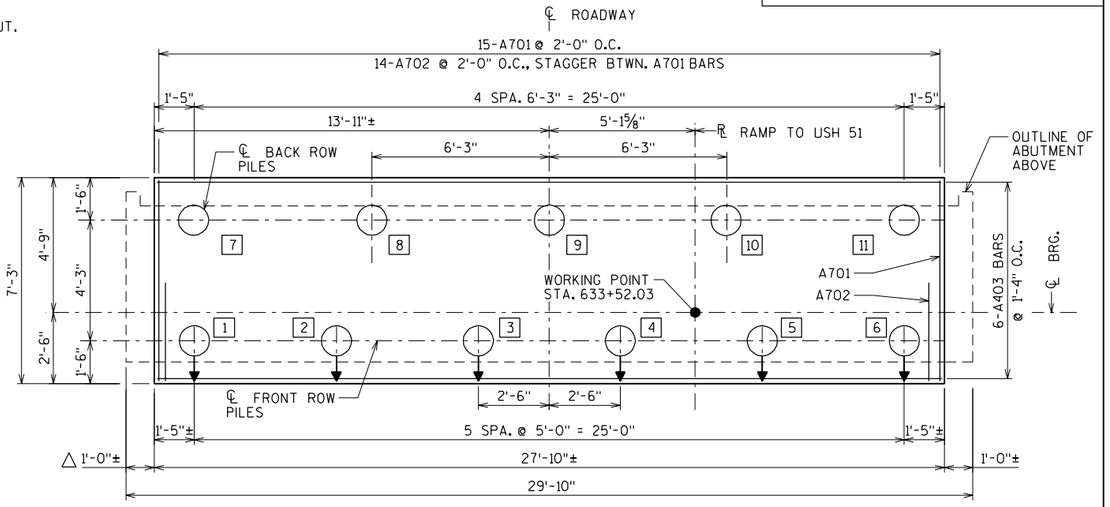
8

I:\jobs2001\20015020\d4.11661100ec\design\1175\mil\362 unit 2\gs_B-37-362-002-06.dgn 2/1/2008 2:17:36 PM

STATE PROJECT NUMBER
1166-11-75



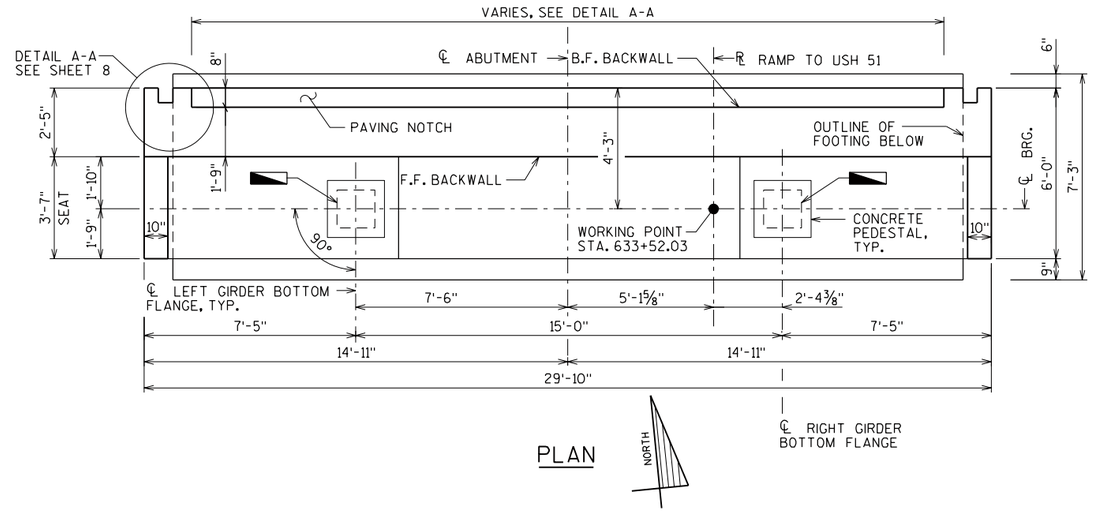
ELEVATION
(LOOKING EAST)



PILE & FOOTING PLAN

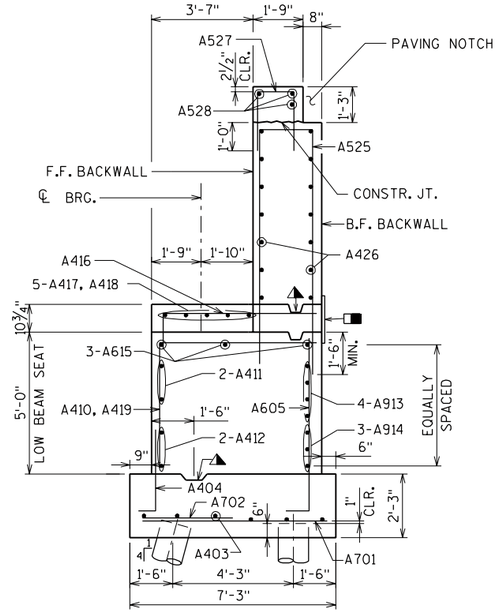
△ DIMENSIONS DEPEND ON THICKNESS OF MSE PANELS. PROVIDE 1" FILLER ON EACH FACE OF PANEL.

NORTH



PLAN

NORTH



SECTION THRU BODY

NOTES

- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE ABOVE FOOTING.
- KEYED CONST. JOINT FORMED BY BEVELED 2" X 1'-4" x 1'-4".
- 2"x16"x16" KEYED CONST. JOINT FORMED BY BEVELED KEYWAY
- (X) GIRDER NUMBER
- EAST ABUTMENT SUPPORTED ON 12¾" DIA. CAST-IN-PLACE CONCRETE PILING DRIVEN TO A CAPACITY OF 70 TONS/PILE ESTIMATED LENGTH = 60 FEET MAY PREBORE PILES TO ELEV. 1186.0, IF NEEDED
- BATTERED PILE

NOTE: SOIL EXPLORATION OF BORING N1-41 HAD 6 ATTEMPTS AND DIDN'T GO BELOW ELEVATION 1210, GRANITE FRAGMENTS WERE ABOVE ELEVATION 1210.00. LUISIER DRILLING WAS USED TO ELEVATION 1185.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MSM	PLANS CK'D.	AML

EAST ABUTMENT

SHEET 7 OF 54
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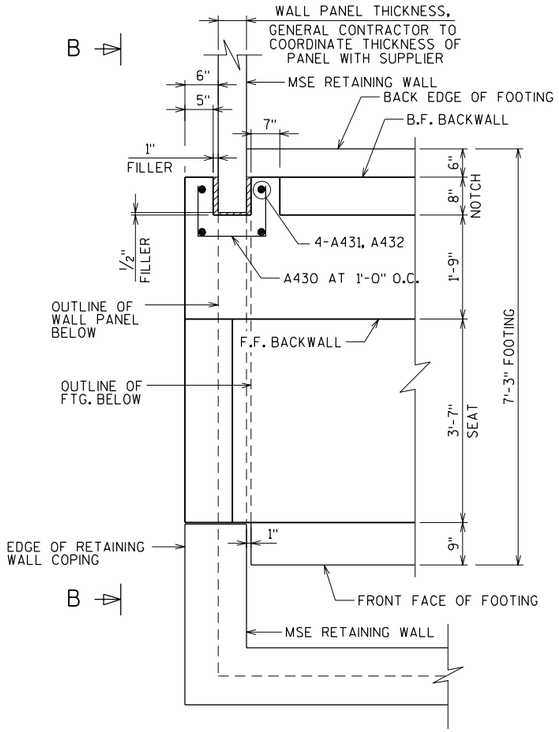
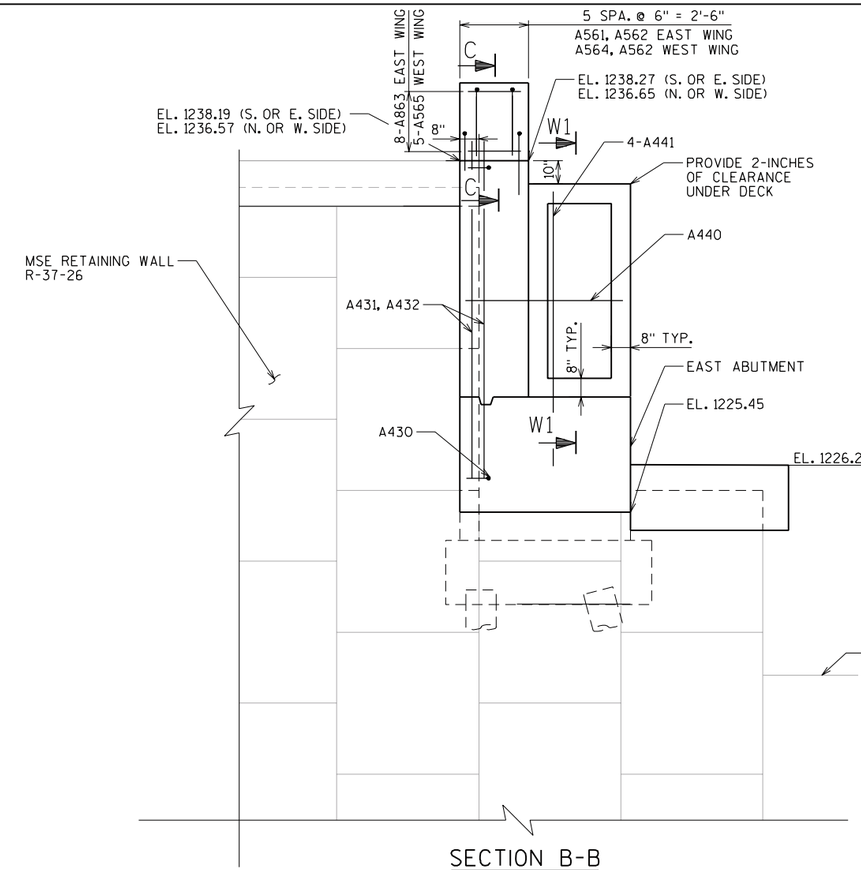
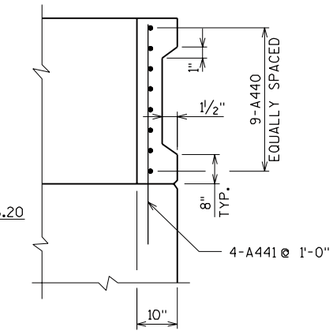


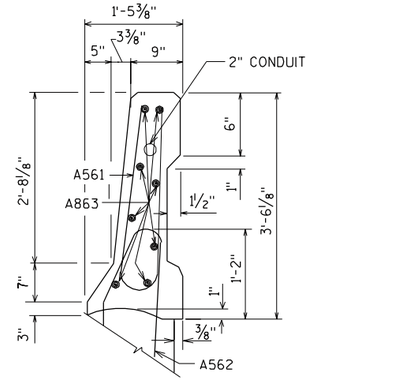
DETAIL A-A



SECTION B-B

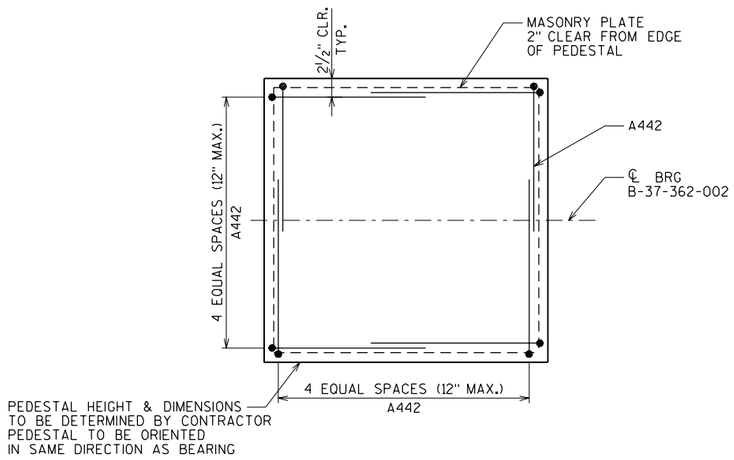


SECTION W1



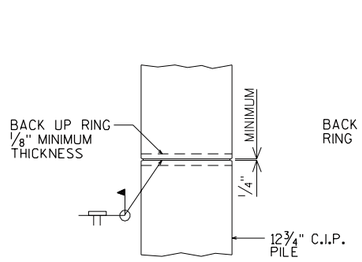
SECTION C - TYPE 'HF' PARAPET

EAST WING

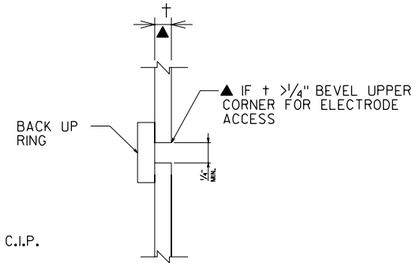


BEARING PEDESTAL PLAN

*SEE BEARING LAYOUT SHEET FOR BEARING DETAILS



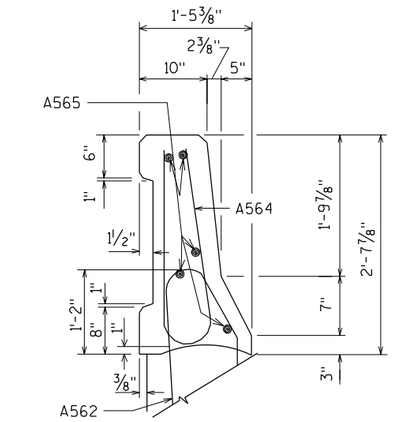
CAST-IN-PLACE PIPE PILE



C.I.P PIPE WELD DETAIL

NOTE

CAST-IN-PLACE PILE SHALL BE A.S.T.M. DESIGNATION A-252, GRADE 2 OR EQUAL. MINIMUM WALL THICKNESS = 0.25 IN.



SECTION C - TYPE 'LF' PARAPET

WEST WING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MSM	PLANS CK'D.	AYN

EAST ABUTMENT DETAILS

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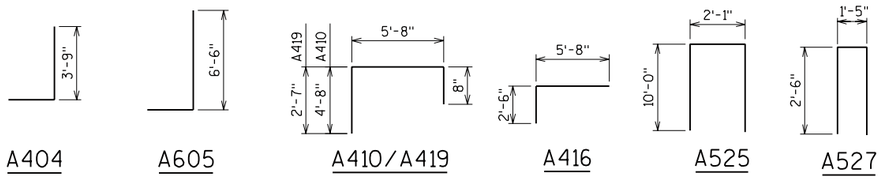
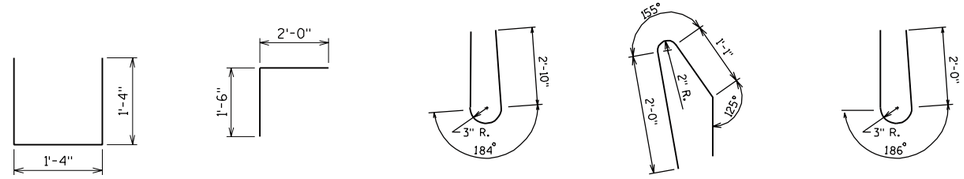
THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK INDICATES BAR SIZE.
ALL DIMENSIONS IN THE BAR BENDS ARE OUT TO OUT.

EAST ABUTMENT - BILL OF BARS

MARK	COATED	NO. REQ'D.	LENGTH	BAR SERIES	BENT	LOCATION
A701		15	6'-9"			FOOTING TRANSVERSE
A702		14	3'-3"			FOOTING TRANSVERSE
A403		6	27'-4"			FOOTING LONGITUDINAL TOE
A404		29	4'-4"		X	FOOTING DOWELS F.F.
A605		29	7'-4"		X	FOOTING DOWELS B.F.
A410		29	10'-10"		X	BODY VERTICAL F.F
A411		2	29'-6"			BODY HORIZONTAL F.F.
A412		2	27'-5"			BODY HORIZONTAL F.F.
A913		4	29'-6"			BODY HORIZONTAL B.F.
A914		3	27'-5"			BODY HORIZONTAL B.F.
A615		3	29'-6"			BODY HORIZONTAL TOP
A416		21	8'-1"		X	BODY VERTICAL TOP AT SEAT
A417		5	9'-3"			BODY HORIZONTAL TOP AT SEAT
A418		5	12'-0"			BODY HORIZONTAL TOP BTWN. SEATS
A419		4	8'-9"		X	BODY VERTICAL F.F. ENDS
A620		4	2'-7"			BODY VERTICAL B.F. ENDS
A525	X	31	21'-10"		X	BACKWALL VERTICAL
A426	X	14	29'-6"			BACKWALL HORIZONTAL
A527	X	31	6'-2"		X	BACKWALL VERTICAL
A528	X	12	8'-6"			BACKWALL HORIZONTAL
A430	X	20	3'-10"		X	BACKWALL HORIZONTAL @ WALL PANEL POCKET
A431	X	4	11'-0"			BACKWALL VERTICAL @ WALL PANEL POCKET SOUTH
A432	X	4	9'-4"			BACKWALL VERTICAL @ WALL PANEL POCKET NORTH
A440	X	18	5'-8"			SIDEWALL HORIZONTAL
A441	X	8	9'-6"			SIDEWALL VERTICAL
A442	X	40	3'-4"		X	PEDESTAL DOWEL
A561	X	6	6'-6"		X	PARAPET VERT. EAST WINGWALL HF
A562	X	12	4'-7"		X	PARAPET VERT. EAST WEST WINGWALL
A863	X	8	2'-1"			PARAPET HORIZ. EAST WINGWALL HF
A564	X	6	4'-10"		X	PARAPET VERT. WEST WINGWALL LF
A565	X	5	2'-1"			PARAPET HORIZ. WEST WINGWALL LF



A404 A605 A410/A419 A416 A525 A527



A430 A442 A561 A562 A564

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MSM	PLANS CK'D.	AYN/AML

EAST ABUTMENT
BILL OF BARS

SHEET 9 OF 54
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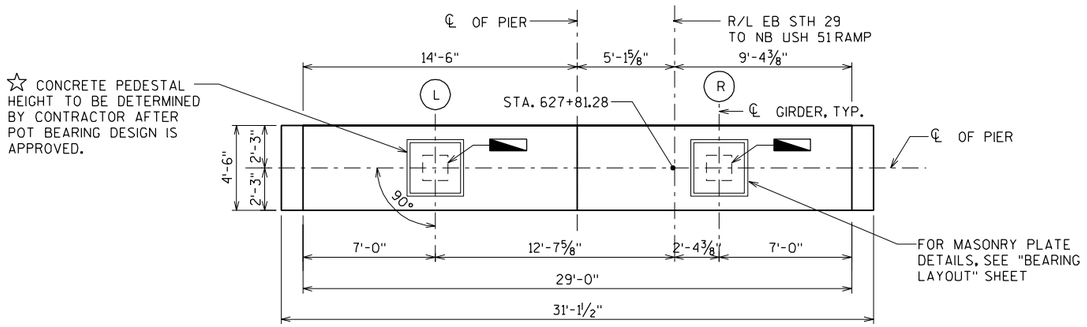
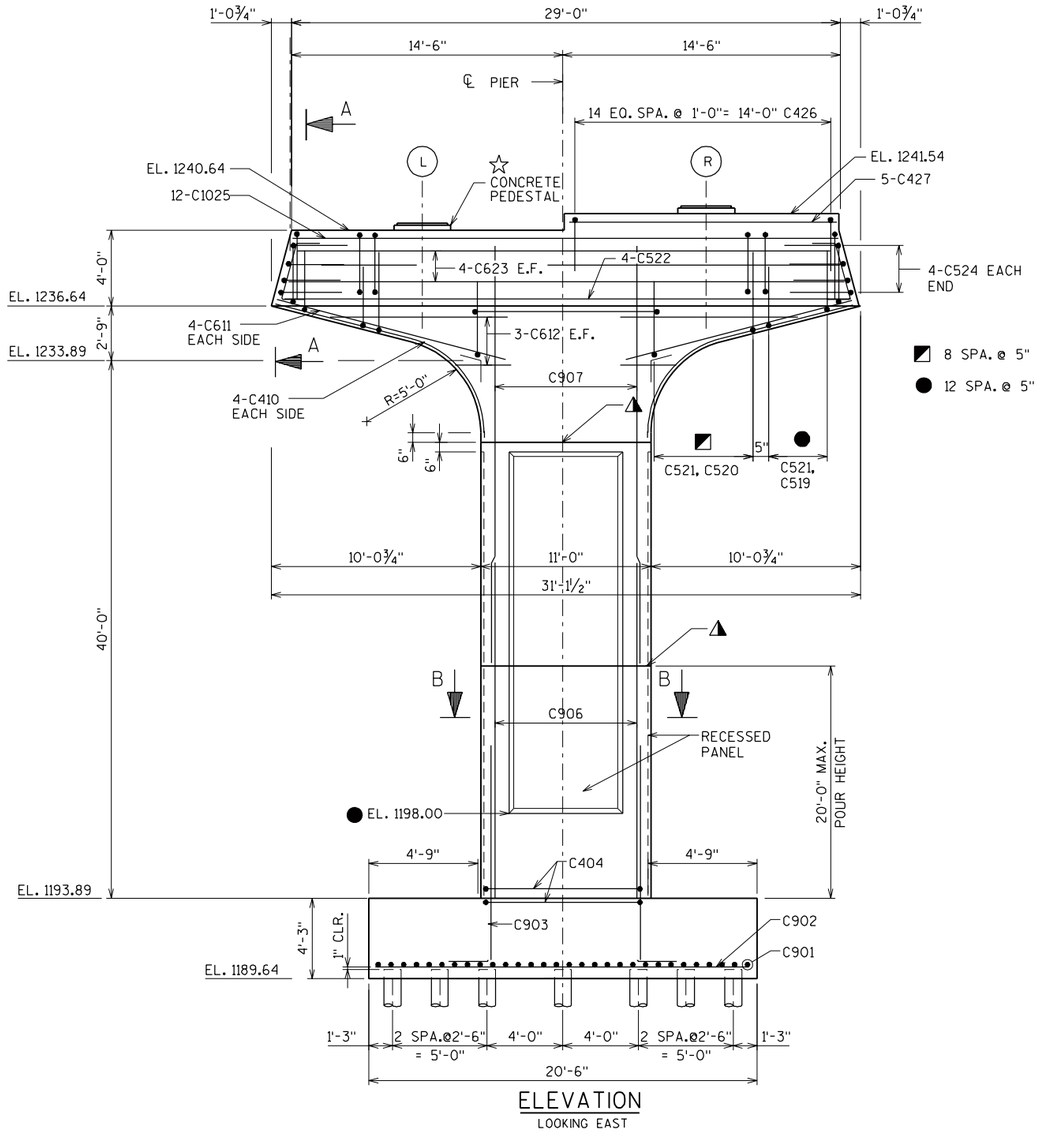
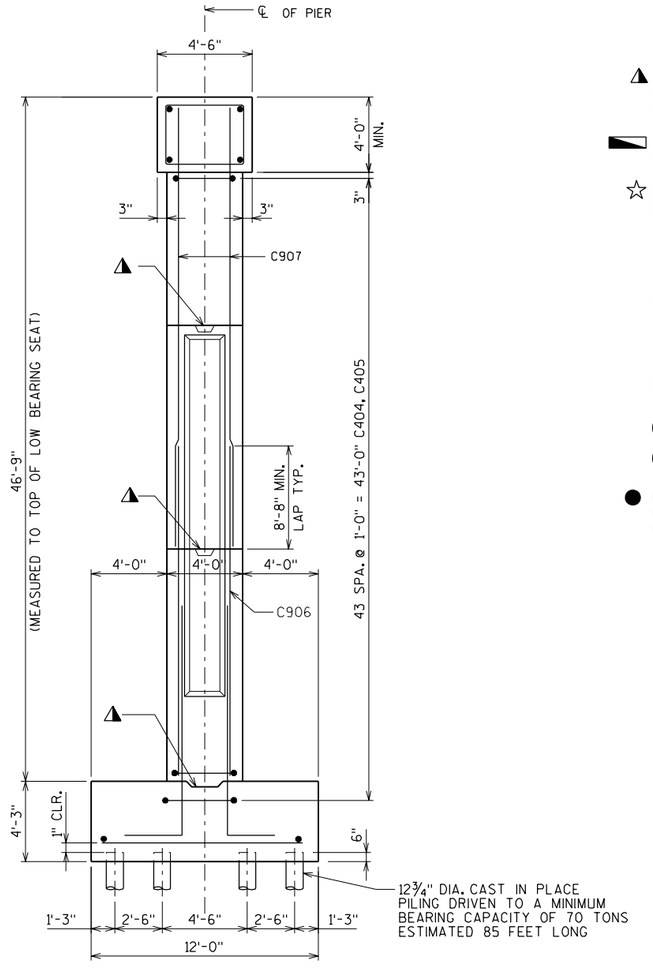
STATE PROJECT NUMBER
1166-11-75



PLAN - PIER 16



ELEVATION
LOOKING EAST



END VIEW

NOTES

▲ KEYED CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY 4"x1'-2"x6'-8". EXPOSED EDGES OF CONSTRUCTION JOINT SHALL BE FLUSH AND NOT BEVELED.

▬ KEYED CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY 2"x16"x16".

☆ CONCRETE PEDESTAL HEIGHT WAS ASSUMED TO BE 4" FOR DETERMINING PIER SEAT ELEVATIONS. FINAL TOTAL HEIGHT FOR BEARING AND PEDESTAL SHALL EQUAL TOTAL OF ASSUMED HEIGHTS SHOWN ON THE PLANS. SEE BEARING LAYOUT SHEET FOR ASSUMED PIER BEARING HEIGHTS.

OPTIONAL KEYED CONSTR. JOINTS IN SHAFT SHALL BE LOCATED IN ORDER THAT MAXIMUM HEIGHT OF POUR DOES NOT EXCEED 20'-0".

FOR ARCHITECTURAL DETAILS ON COLUMN SHAFTS SEE SHEET 15.

SEE SHEET 11 FOR SECTIONS A-A & B-B

(L) - LEFT GIRDER

(R) - RIGHT GIRDER

● ELEVATION TO BE 3 FEET ABOVE FINISHED GRADE. ELEVATION TO BE ADJUSTED IF FINAL GROUND ELEVATION DIFFERES FROM PLANS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MSM	PLANS CK'D.	AML

PIER 16

SHEET 10 OF 54
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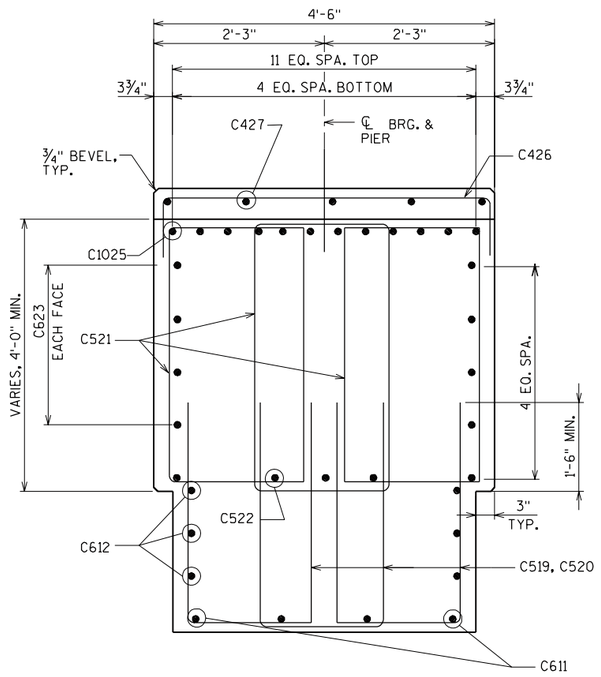
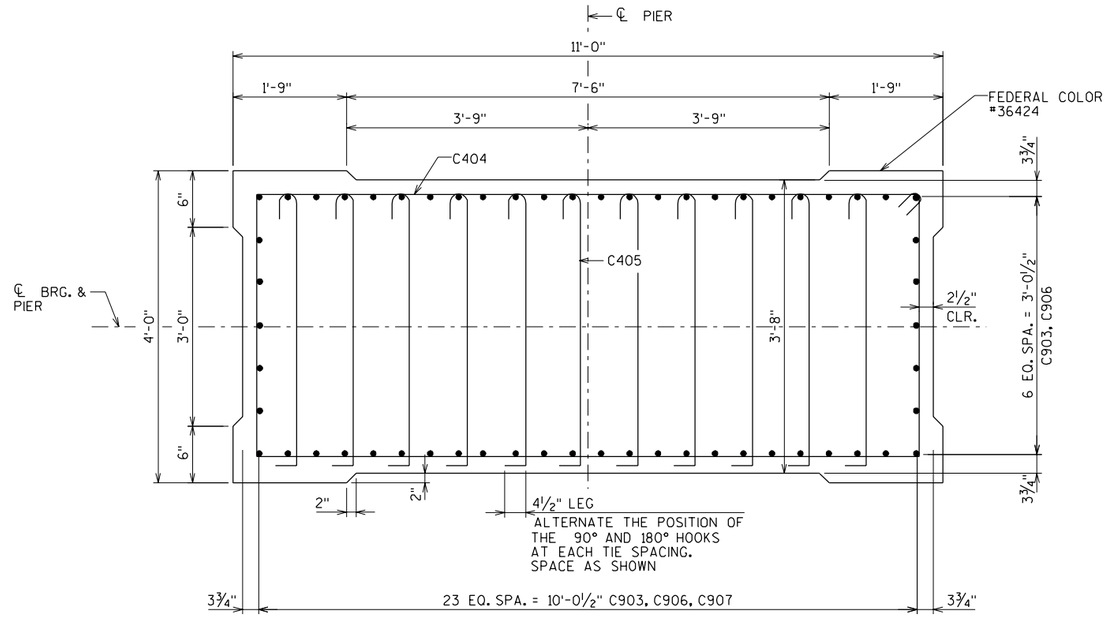
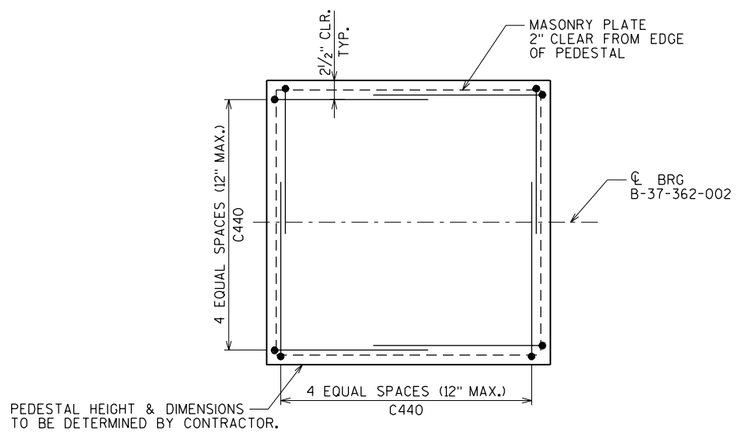
STATE PROJECT NUMBER
1166-11-75



SECTION A-A

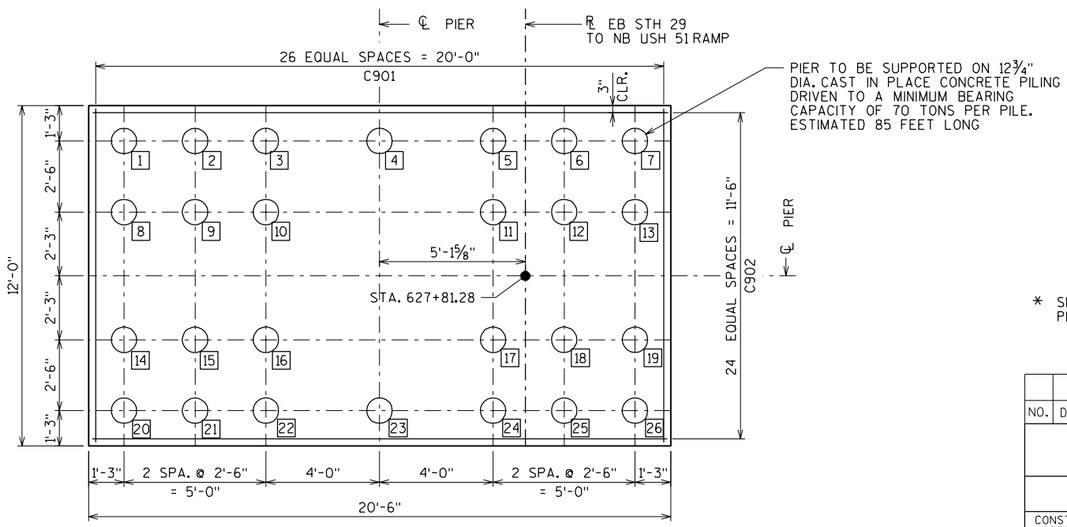


SECTION B-B



BEARING PEDESTAL PLAN

*SEE BEARING LAYOUT SHEET FOR BEARING DETAILS



PILE PLAN - PIER 16

* SEE SHEET 8 FOR PILE SPLICE DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	RBH	PLANS CK'D.	AML

PIER 16 DETAILS

SHEET 11 OF 54
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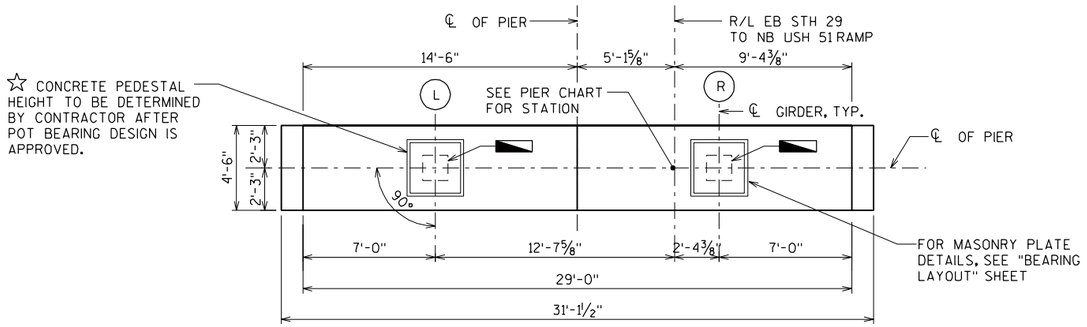
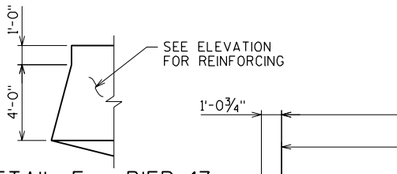
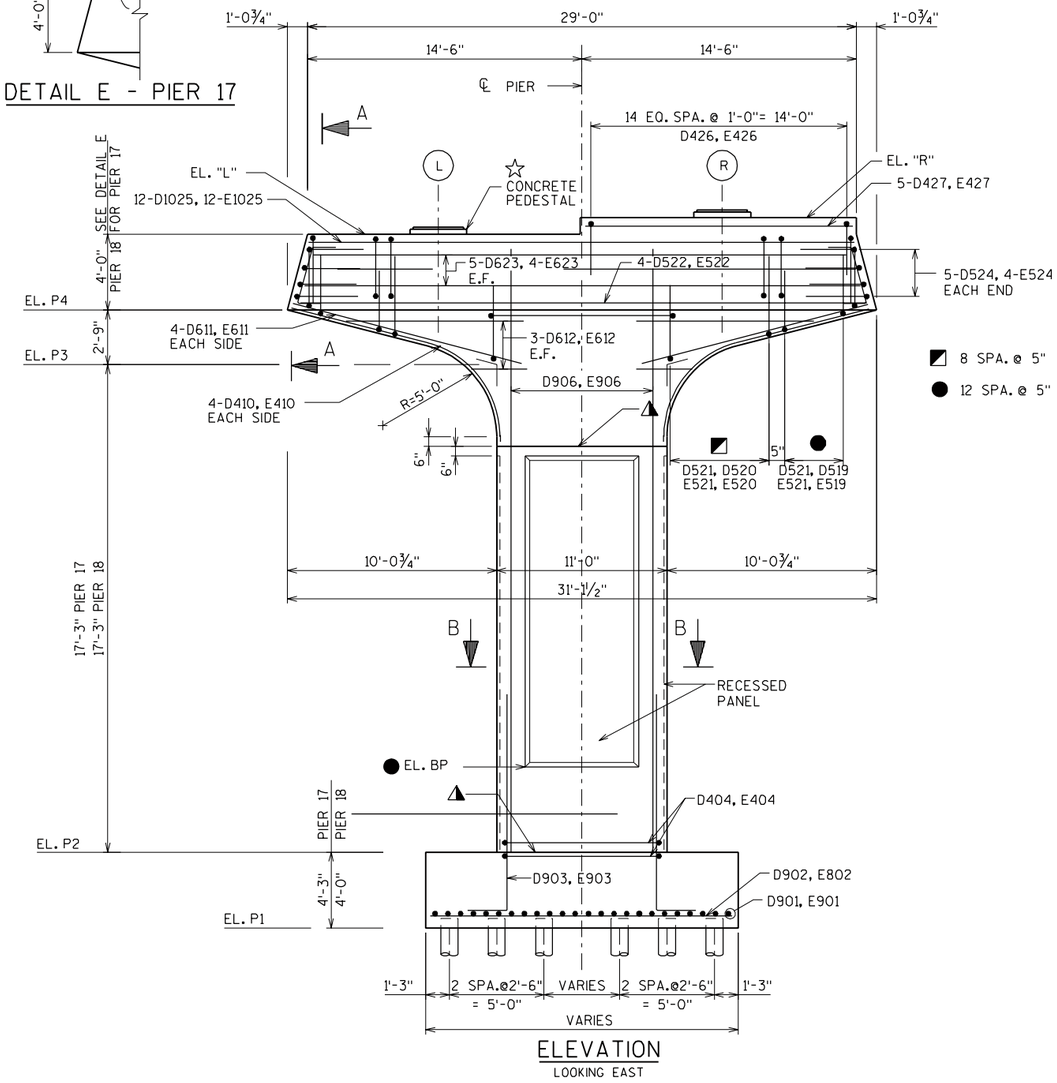
STATE PROJECT NUMBER
1166-11-75



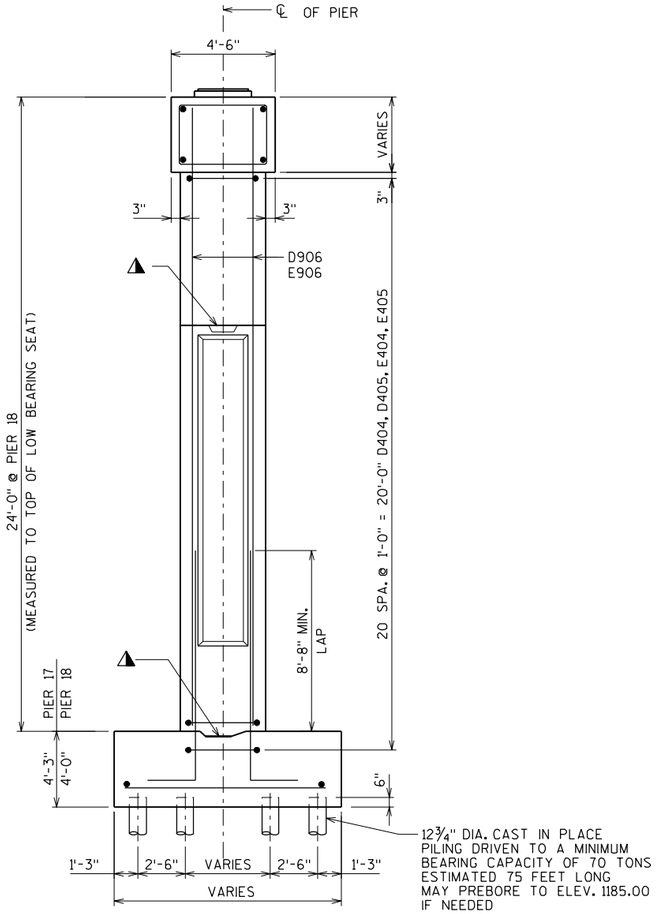
PLAN - PIER 17 & 18



DETAIL E - PIER 17



ELEVATION
LOOKING EAST



END VIEW

PIER ELEVATION CHART		
ITEM	PIER #17	PIER #18
STATION	630+01.28	632+21.28
EL. L	1237.72	1232.60
EL. R	1238.62	1233.50
EL. P4	1232.72	1228.60
EL. P3	1229.97	1225.85
EL. P2	1212.72	1208.60
EL. P1	1208.47	1204.60
EL. BP	1217.00	1213.00

NOTES

▲ KEYED CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY 4"x1'-2"x6'-8". EXPOSED EDGES OF CONSTRUCTION JOINT SHALL BE FLUSH AND NOT BEVELED.

▬ KEYED CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY 2"x16"x16".

☆ CONCRETE PEDESTAL HEIGHT WAS ASSUMED TO BE 4" FOR DETERMINING PIER SEAT ELEVATIONS. FINAL TOTAL HEIGHT FOR BEARING AND PEDESTAL SHALL EQUAL TOTAL OF ASSUMED HEIGHTS SHOWN ON THE PLANS. SEE BEARING LAYOUT SHEET FOR ASSUMED PIER BEARING HEIGHTS.

FOR ARCHITECTURAL DETAILS ON COLUMN SHAFTS SEE SHEET 15.

(X) DENOTES GIRDER NUMBER

SEE SHEET 13 FOR SECTIONS A-A & B-B

● ELEVATION TO BE 3 FEET ABOVE FINISHED GRADE. ELEVATION TO BE ADJUSTED IF FINAL GROUND ELEVATION DIFFERS FROM PLANS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MSM	PLANS CK'D.	AML

PIERS 17 & 18

SHEET 12 OF 54
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STATE PROJECT NUMBER
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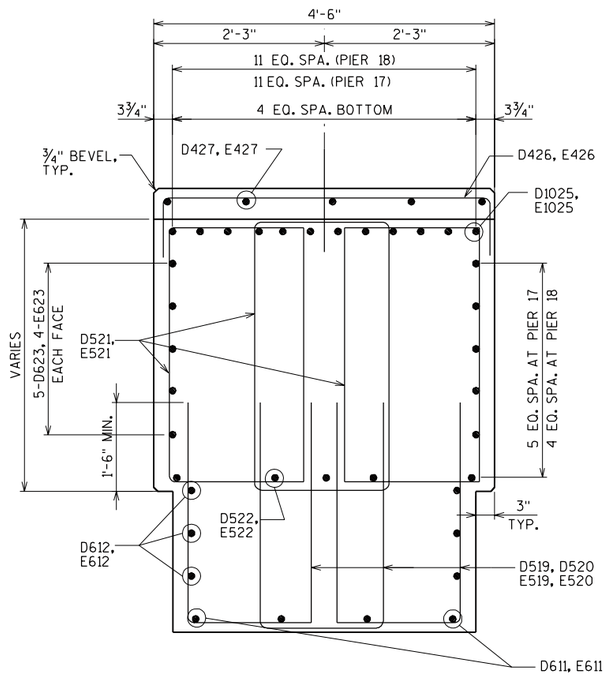
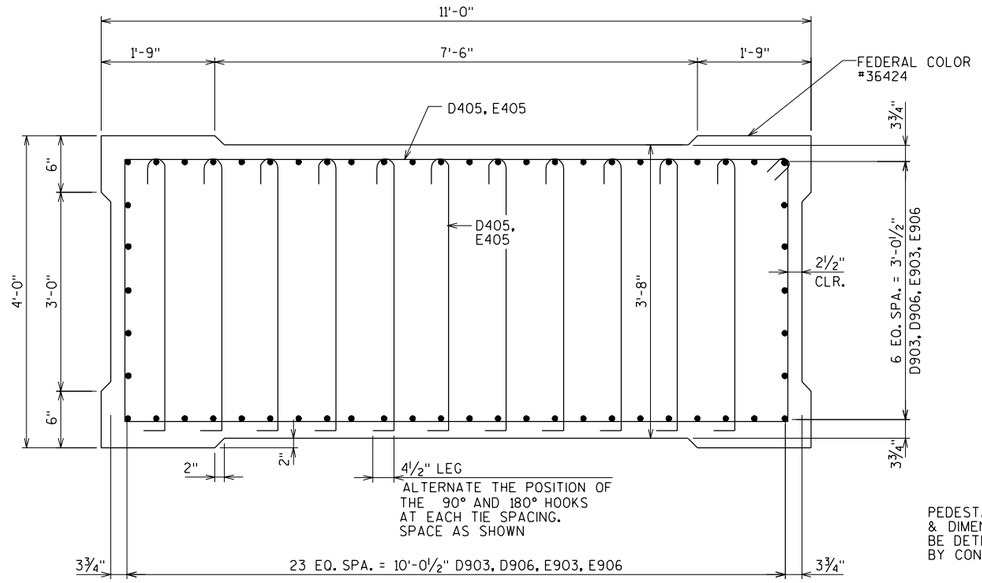
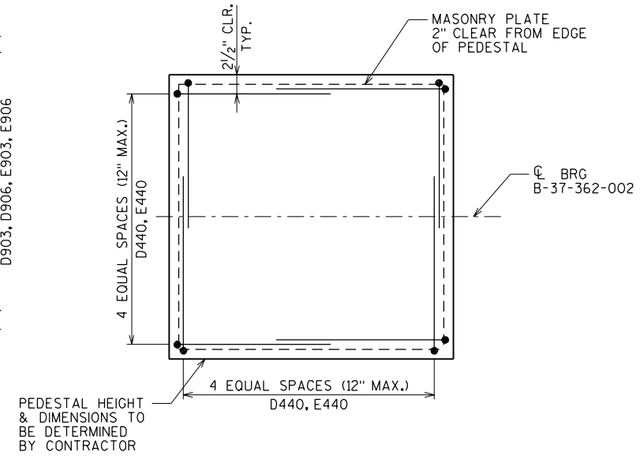


SECTION A-A

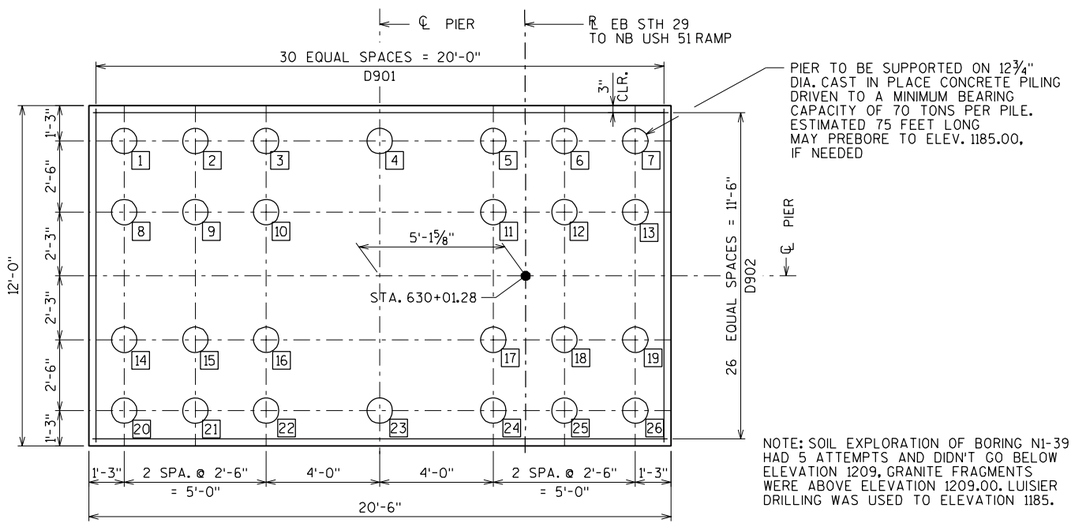


SECTION B-B



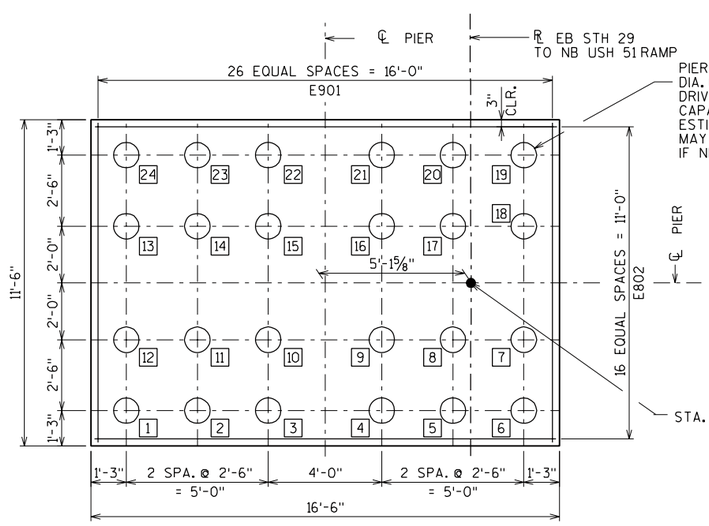
BEARING PEDESTAL PLAN

*SEE BEARING LAYOUT SHEET FOR BEARING DETAILS



NOTE: SOIL EXPLORATION OF BORING N1-39 HAD 5 ATTEMPTS AND DIDN'T GO BELOW ELEVATION 1209. GRANITE FRAGMENTS WERE ABOVE ELEVATION 1209.00. LUISIER DRILLING WAS USED TO ELEVATION 1185.

PILE PLAN - PIER 17



NOTE: SOIL EXPLORATION OF BORING N1-40 HAD 6 ATTEMPTS AND DIDN'T GO BELOW ELEVATION 1210. GRANITE FRAGMENTS WERE ABOVE ELEVATION 1210.00. LUISIER DRILLING WAS USED TO ELEVATION 1185.

PILE PLAN - PIER 18

* SEE "EAST ABUTMENT PILE PLAN" SHEET FOR PILE SPLICE DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	RBH	PLANS CK'D.	AML

PIERS 17 & 18 DETAILS

SHEET 13 OF 54
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STATE PROJECT NUMBER

1166-11-75

PIER 16 - BILL OF BARS

MARK	COATED	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
C901		27	11'-6"			FOOTING HORIZONTAL
C902		25	20'-0"			FOOTING HORIZONTAL
C903	X	58	13'-4"	X		FOOTING DOWELS
C404	X	44	27'-6"	X		SHAFT TIES
C405	X	484	4'-4"	X		SHAFT TIES
C906	X	58	29'-0"			SHAFT VERTICAL
C907	X	58	26'-2"			SHAFT VERTICAL
C410	X	8	13'-7"	X		SHAFT TO CAP TRANSITION BOTTOM
C611	X	8	11'-0"			SHAFT TO CAP TRANSITION BOTTOM
C612	X	12	6'-9"		x	SHAFT TO CAP TRANSITION EACH FACE
C519	X	78	9'-6"	X		CAP STIRRUPS
C520	X	54	12'-6"	X		CAP STIRRUPS
C521	X	132	12'-3"	X		CAP STIRRUPS
C522	X	5	30'-8"			CAP HORIZONTAL BOTTOM
C623	X	8	29'-0"			CAP HORIZONTAL SIDES
C524	X	8	10'-9"	X		CAP ENDS
C1025	X	12	35'-8"	X		CAP HORIZONTAL TOP
C426	X	15	9'-11"	X		CAP VERTICAL SEAT 'R'
C427	X	5	14'-2"			CAP HORIZONTAL SEAT 'R'
C440	X	40	4'-1"	X		DOWEL PEDESTAL

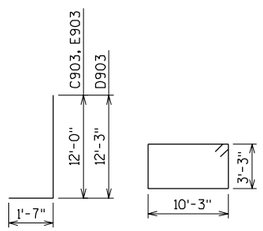
PIER 17 - BILL OF BARS

MARK	COATED	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
D901		31	11'-6"			FOOTING HORIZONTAL
D902		27	20'-0"			FOOTING HORIZONTAL
D903	X	58	13'-7"	X		FOOTING DOWELS
D404	X	21	27'-6"	X		SHAFT TIES
D405	X	231	4'-4"	X		SHAFT TIES
D906	X	58	24'-6"			SHAFT VERTICAL
D410	X	8	13'-7"	X		SHAFT TO CAP TRANSITION BOTTOM
D611	X	8	11'-0"			SHAFT TO CAP TRANSITION BOTTOM
D612	X	12	6'-9"		x	SHAFT TO CAP TRANSITION EACH FACE
D519	X	78	11'-6"	X		CAP STIRRUPS
D520	X	54	12'-6"	X		CAP STIRRUPS
D521	X	132	14'-3"	X		CAP STIRRUPS
D522	X	5	30'-8"			CAP HORIZONTAL BOTTOM
D623	X	10	29'-0"			CAP HORIZONTAL SIDES
D524	X	10	10'-9"	X		CAP ENDS
D1025	X	12	35'-8"	X		CAP HORIZONTAL TOP
D426	X	15	9'-11"	X		CAP VERTICAL SEAT 'R'
D427	X	5	14'-2"			CAP HORIZONTAL SEAT 'R'
D440	X	40	4'-1"	X		DOWEL PEDESTAL

PIER 18 - BILL OF BARS

MARK	COATED	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
E901		27	11'-0"			FOOTING HORIZONTAL
E802		17	16'-0"			FOOTING HORIZONTAL
E903	X	58	13'-4"	X		FOOTING DOWELS
E404	X	21	27'-6"	X		SHAFT TIES
E405	X	231	4'-4"	X		SHAFT TIES
E906	X	58	23'-6"			SHAFT VERTICAL
E410	X	8	13'-7"	X		SHAFT TO CAP TRANSITION BOTTOM
E611	X	8	11'-0"			SHAFT TO CAP TRANSITION BOTTOM
E612	X	12	6'-9"		x	SHAFT TO CAP TRANSITION EACH FACE
E519	X	78	9'-6"	X		CAP STIRRUPS
E520	X	54	12'-6"	X		CAP STIRRUPS
E521	X	132	12'-3"	X		CAP STIRRUPS
E522	X	5	30'-8"			CAP HORIZONTAL BOTTOM
E623	X	8	29'-0"			CAP HORIZONTAL SIDES
E524	X	8	10'-9"	X		CAP ENDS
E1025	X	12	35'-8"	X		CAP HORIZONTAL TOP
E426	X	15	9'-11"	X		CAP VERTICAL SEAT 'R'
E427	X	5	14'-2"			CAP HORIZONTAL SEAT 'R'
E440	X	40	4'-1"	X		DOWEL PEDESTAL

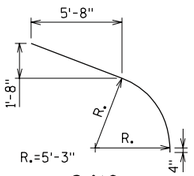
THE FIRST DIGIT OF A THREE DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK INDICATES BAR SIZE.
ALL DIMENSIONS IN THE BAR BENDS ARE OUT TO OUT.



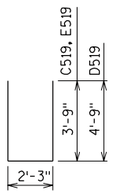
C903, D903, E903

C404, D404, E404

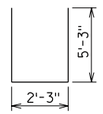
C405, D405, E405



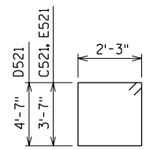
C410, D410, E410



C519, D519, E519



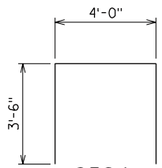
C520, D520, E520



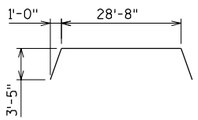
C521, D521, E521

BAR SERIES TABLE		
MARK	NO. REQ'D.	LENGTH
C612	4 SERIES OF 3	3'-6" TO 10'-0"
D612	4 SERIES OF 3	3'-6" TO 10'-0"
E612	4 SERIES OF 3	3'-6" TO 10'-0"

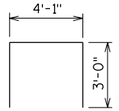
⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS. BUNDLE AND TAG EACH SERIES SEPARATELY.



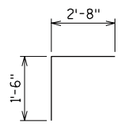
C524, D524, E524



C1025, D1025, E1025



C426, D426, E426



C440, D440, E440

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	RBH	PLANS CK'D.	AML

PIERS 16,17&18 BILL OF BARS

SHEET 14 OF 54

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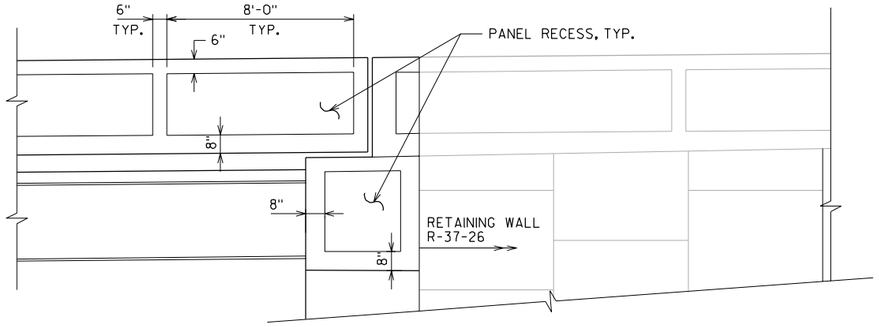
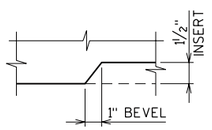
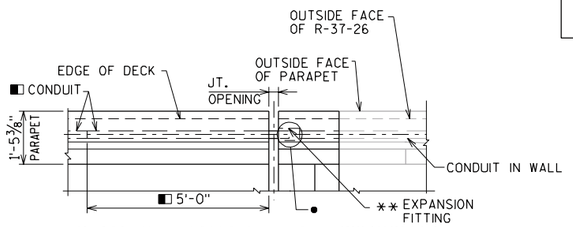


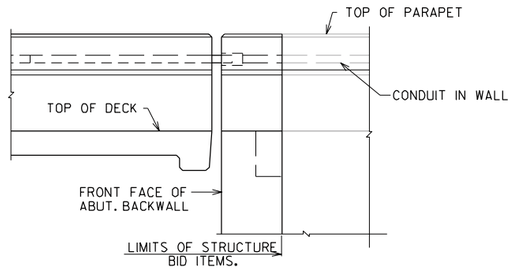
OUTSIDE ELEVATION AT ABUTMENT



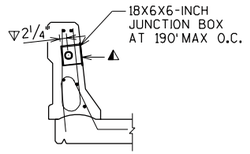
TYPICAL PANEL RECESS DETAIL



PLAN OF PARAPET AT WINGWALL



OUTSIDE ELEVATION OF PARAPET AT WINGWALL



SECTION THRU PARAPET

● 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 IN THE DECK BELOW IT. TAKE CARE TO INSTALL EXPANSION FITTING AND CONDUIT EXACTLY PARALLEL TO BRIDGE MOVEMENT.

◧ USE 2"Φ RIGID NONMETALLIC CONDUIT EXCEPT AT ALL EXPANSION FITTING. AT ALL EXPANSION FITTING USE RIGID METALLIC CONDUIT 5'-0" INTO PARAPET ON DECK SIDE AND THRU PARAPET AND WINGWALL TO A MINIMUM OF 6" BEYOND END OF WINGWALL. (FOR GROUNDING PURPOSES.)

▲ 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.

NOTES

ELECTRICAL BID ITEMS, LISTED BELOW, ARE TO BE LOCATED IN THE SOUTH SIDE PARAPET ONLY, FOR FUTURE USE.
"JUNCTION BOXES 18X6X6-INCH", EACH.
"CONDUIT RIGID NONMETALLIC SCHEDULE 80 2-INCH"
"CONDUIT RIGID METALLIC 2-INCH"

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

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

APPROVED MANUFACTURERS - JUNCTION BOXES:
SEE APPROVED MATERIAL LIST.

APPROVED MANUFACTURER OR EQUIVALENT - EXPANSION FITTING (SPECIFY SIZE ON PLANS):
O-Z/GEDNEY TYPE AX-200 AND BONDING JUMPER (4" TOTAL CONDUIT MOVEMENT).
O-Z/GEDNEY TYPE AX-8-200 AND BONDING JUMPER (8" TOTAL CONDUIT MOVEMENT).
O-Z/GEDNEY TYPE EX-200 WITH PBS-200-12S AND BONDING JUMPER (10" TOTAL CONDUIT MOVEMENT).

JUNCTION BOX REQUIREMENTS
USE A JUNCTION BOX TO KEEP A CONTINUOUS RUN OF CONDUIT (PULL LENGTH) TO A MAXIMUM OF 190 FT. AS DIRECTED BY THE ENGINEER.

** EXPANSION FITTING REQUIREMENTS
USE AN APPROVED EXPANSION FITTING AT EACH SEMI EXPANSION OR EXPANSION JOINT. RUN CONDUIT STRAIGHT THROUGH (WITHOUT A FITTING) AT EACH FIXED JOINT.

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STRUCTURES DESIGN SECTION

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EAST ABUTMENT ARCHITECTURAL DETAILS

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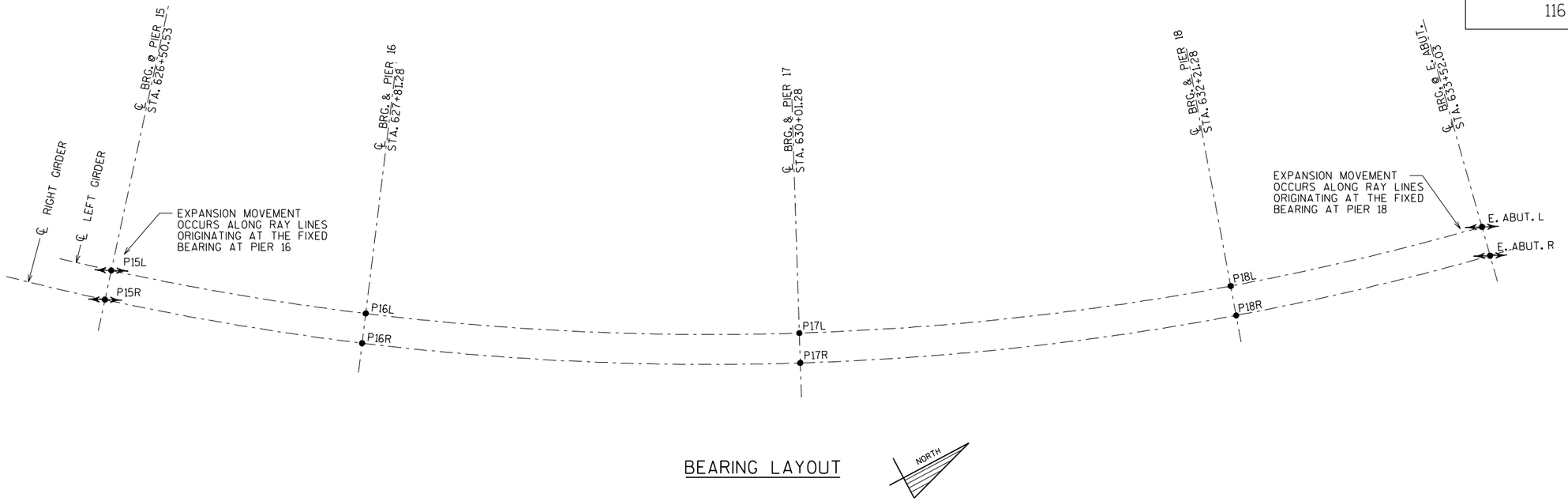
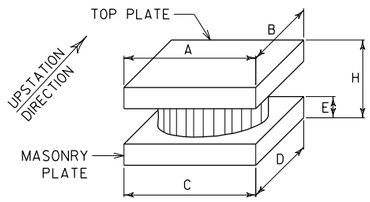
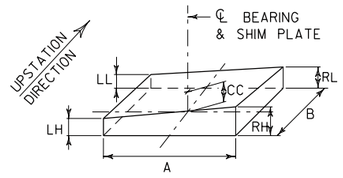


BEARING LAYOUT

BEARING MARK	BEARING TYPE	SKEW ANGLE 'SK'	TOP OF DECK ELEV. AT ℄ GIRDER	ASSUMED TOP OF PEDESTAL ELEV.	DEAD LOAD (KIPS)	TOTAL LOAD (KIPS)	HORIZ FORCES		MOVEMENT RANGE		SHIM PLATE THICKNESS					BEARING DIMENSIONS						ANCHOR BOLTS
							TRANS (KIPS)	LONG (KIPS)	TRANS (IN)	LONG (IN)	LL (IN)	RL (IN)	LH (IN)	RH (IN)	CC (IN)	A (IN)	B (IN)	C (IN)	D (IN)	E (IN)	H (IN)	
P15L	GUIDED	2°37' RHF	1249.83	1241.47	129	266	30	30	0	4 1/8	1 1/4	2 11/16	1 5/16	2 3/4	2	24	26	24	20	1 1/2	7 1/2	4'-1"Φ
P15R	GUIDED	2°37' RHF	1250.73	1242.37	143	298	30	30	0	4 1/8	1 1/4	2 11/16	1 5/16	2 3/4	2	24	26	24	20	1 1/2	7 1/2	4'-1"Φ
P16L	FIXED	0	1249.36	1240.97	636	967	170	170	0	0	1 1/16	3 3/16	1 5/16	3 3/16	2 1/4	36	36	36	36	1 1/2	7	4'-1 1/2"Φ
P16R	FIXED	0	1250.26	1241.87	632	973	170	170	0	0	1 1/16	3 3/16	1 5/16	3 3/16	2 1/4	36	36	36	36	1 1/2	7	4'-1 1/2"Φ
P17L	FIXED	0	1246.59	1238.05	823	1205	170	170	0	0	1 1/16	3 1/4	1 3/4	3 15/16	2 1/2	36	36	38	38	1 1/2	7	4'-1 1/2"Φ
P17R	FIXED	0	1247.49	1238.95	784	1166	170	170	0	0	1 1/16	3 1/4	1 3/4	3 15/16	2 1/2	36	36	38	38	1 1/2	7	4'-1 1/2"Φ
P18L	FIXED	0	1241.35	1232.93	636	967	170	170	0	0	1	3 3/16	2 1/16	4 1/4	2 5/8	36	36	36	36	1 1/2	7	4'-1 1/2"Φ
P18R	FIXED	0	1242.25	1233.83	632	973	170	170	0	0	1	3 3/16	2 1/16	4 1/4	2 5/8	36	36	36	36	1 1/2	7	4'-1 1/2"Φ
E. ABUT L	GUIDED	2°37' LHF	1237.07	1228.68	129	266	30	30	0	4 1/8	1 1/16	2 1/2	2	3 3/16	2 1/4	24	26	24	20	1 1/2	7 1/2	4'-1"Φ
E. ABUT R	GUIDED	2°37' LHF	1237.97	1229.58	143	298	30	30	0	4 1/8	1 1/16	2 1/2	2	3 3/16	2 1/4	24	26	24	20	1 1/2	7 1/2	4'-1"Φ



BEARING DIMENSION KEY



SHIM PLATE DIMENSION KEY

BEARING LEGEND

◄► MULTIROTATIONAL UNIDIRECTIONAL (GUIDED) ARROWHEADS DENOTE MOVEMENT DIRECTIONS.

● MULTIROTATIONAL FIXED

NOTES

1. SEE SHEET 17 FOR TYPICAL BEARING DETAILS
2. BEARING DIMENSIONS SHOWN ARE NOMINAL VALUES ONLY AND WILL VARY WITH THE SELECTED MANUFACTURER.

   MAKE ALL NECESSARY ADJUSTMENTS TO DIMENSIONS AND ELEVATIONS OF THE PEDESTAL AS REQUIRED TO INCORPORATE THE SPECIFIC BEARINGS SELECTED. PEDESTAL HEIGHT IS ASSUMED TO BE 4"
3. ALL FORCES SPECIFIED ARE SERVICE (UNFACTORED) FORCES.
4. HORIZONTAL FORCES SPECIFIED IN THE TABLE ARE THE EXPECTED APPLIED FORCES. DESIGN BEARINGS FOR THESE VALUES OR 20 PERCENT OF THE VERTICAL DEAD LOAD, WHICHEVER IS LARGER.

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

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BEARING LAYOUT

SHEET 16 OF 54
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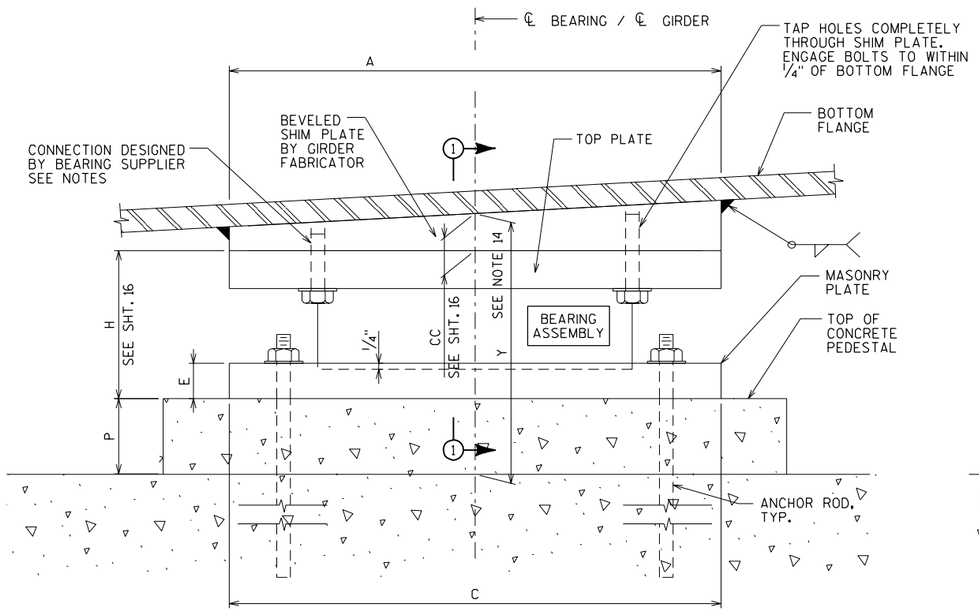
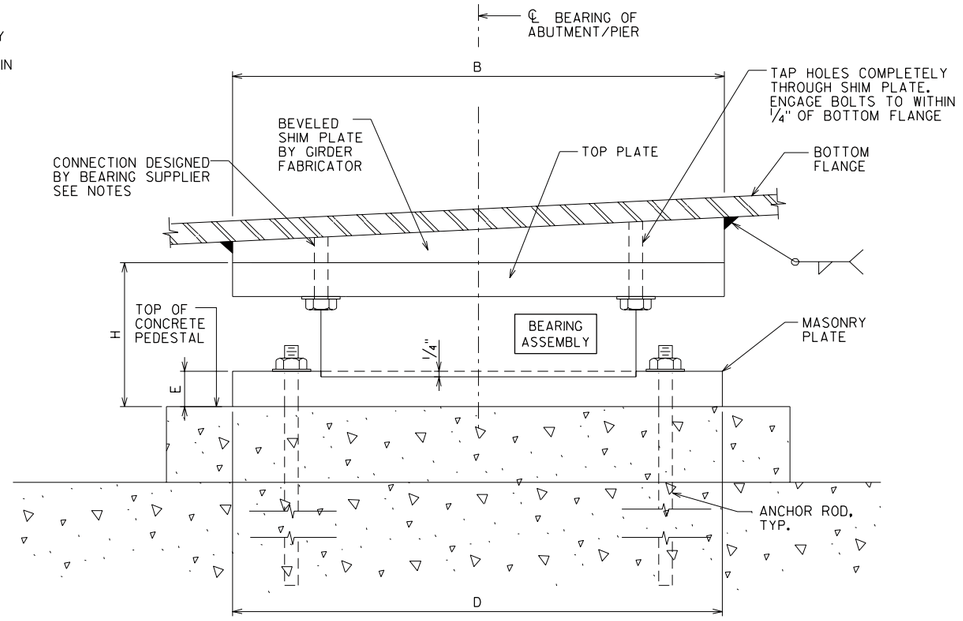
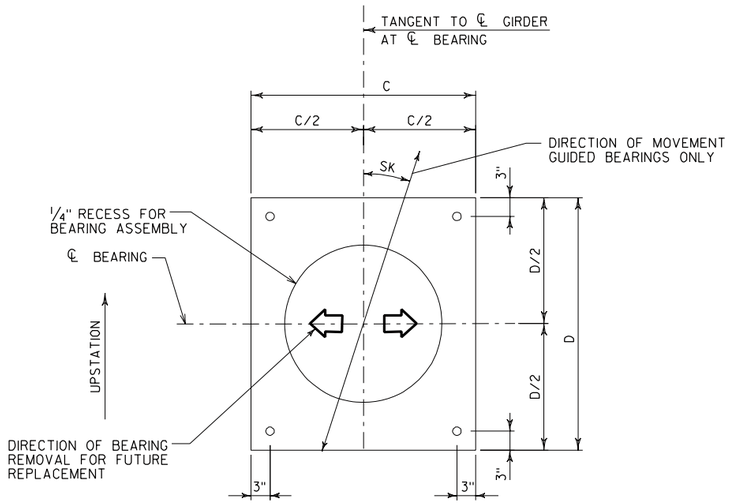


FRONT ELEVATION



SECTION 1-1



PLAN - MASONRY PLATE

NOTES

1. SEE SHEET 16 FOR BEARING LAYOUT AND LOCATION-SPECIFIC DIMENSIONS.
2. SEE SHEET 18 FOR BEARING REPLACEMENT JACKING PADS.
3. DESIGN BOLTED CONNECTION BETWEEN TOP PLATE AND SHIM PLATE FOR A MINIMUM OF 1.25 TIMES THE COMBINED SPECIFIED HORIZONTAL LOADS.

   ARRANGE CONNECTION TO ENSURE ALL BOLTS CAN BE REMOVED WITHOUT INTERFERENCE FROM ANCHOR RODS OR OTHER OBSTRUCTIONS AFTER BEARING IS INSTALLED.

   TAPPED HOLE ARRANGEMENT SHOWN MAY BE REPLACED BY BOLTING DOWNWARD THROUGH THE GIRDER BOTTOM FLANGE USING BEVELED WASHER PLATES BELOW BOLT HEADS.

   HOLES IN TOP PLATE MAY BE SLOTTED OR OVERSIZED AS REQUIRED TO FACILITATE STEEL ERECTION. IF OVERSIZE OR SLOTTED HOLES ARE USED, THE CONNECTION SHALL BE DESIGNED AS SLIP-RESISTANT.

   NOTE THAT SPECIFIED BEARING LOADS ARE INTENDED FOR WORKING STRESS DESIGN AND ALREADY INCLUDE THE OVERSTRESS PERCENTAGE FROM COLUMN 14 OF TABLE 3.22.1A OF AASHTO STANDARD SPECIFICATIONS - NO FURTHER REDUCTION IS PERMITTED.
4. SKEW ANGLE SHOWN IS LEFT HAND FORWARD (LHF) - SKEW ANGLES THAT ARE RIGHT HAND FORWARD (RHF) WILL BE OPPOSITE TO THAT SHOWN.
5. GROUT SHALL BE HIGH MODULUS FLOWABLE EPOXY RESIN GROUT, SIKADUR 42 GROUT-PAK OR ACCEPTED EQUAL.
6. FOR PAYMENT PURPOSES, GROUTING MATERIALS AND INSTALLATION ARE CONSIDERED INCIDENTAL TO THE PAY ITEM FOR THE BEARING ASSEMBLY.
7. HOLES IN MASONRY PLATE SHALL BE A MAXIMUM OF 1/8" LARGER THAN THE SPECIFIED ANCHOR ROD DIAMETER.
8. TOP PLATE, SHIM PLATE AND MASONRY PLATES ARE ALIGNED WITH THE GIRDER AND/OR THE PIER BELOW, EVEN FOR GUIDED BEARINGS WITH A NON-ZERO SKEW ANGLE. ONLY THE MOVEMENT DIRECTION VARIES AS SHOWN.
9. TOP PLATE THICKNESS TO BE SELECTED BY THE BEARING DESIGNER. MINIMUM 1".
10. MASONRY PLATE THICKNESS TO BE CONFIRMED BY THE BEARING DESIGNER AND INCREASED IF REQUIRED. NO REDUCTION PERMITTED.
11. ANCHOR RODS SHALL BE IN ACCORDANCE WITH ASTM F1554 (GRADE 105) AND HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M232.
12. BEARINGS SHALL BE DESIGNED TO PERMIT REPLACEMENT BY JACKING THE BRIDGE A MAXIMUM OF 1/2".
13. SHIM PLATES SHALL BE FABRICATED BY STEEL GIRDER CONTRACTOR COORDINATING WITH THE BEARING MANUFACTURER.
14. FINAL DISTANCE BETWEEN BOTTOM OF STEEL GIRDER AND TOP OF PIER, Y, IS THE SUMMATION OF "CC", THE ACTUAL "H", OF THE BEARING AND THE ACTUAL PEDESTAL HEIGHT "P". HEIGHT "P" WAS ASSUMED TO BE 4" FOR DETERMINING PIER ELEVATION.

NO.	DATE	REVISION	BY

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STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

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BEARING DETAILS

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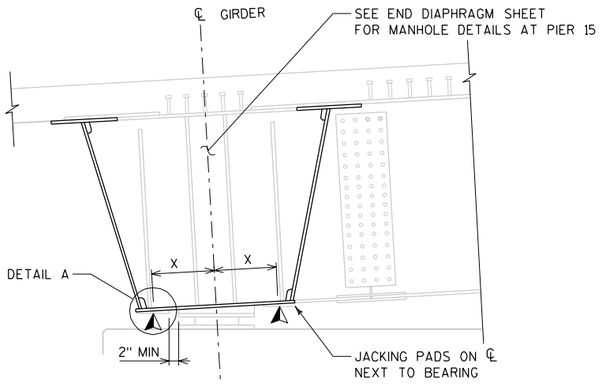
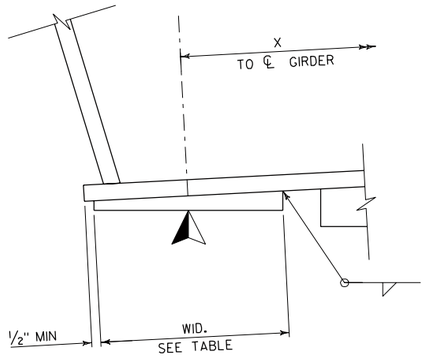
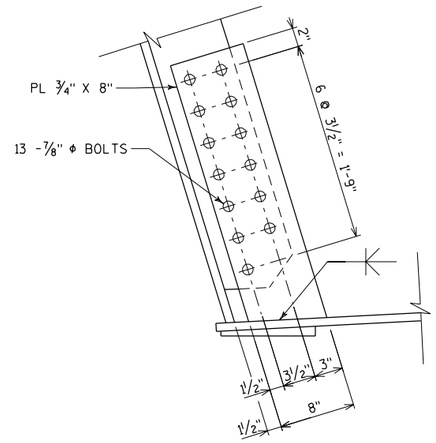


SECTION AT ℄ E. ABUT & PIER 15



DETAIL A
NOT TO SCALE



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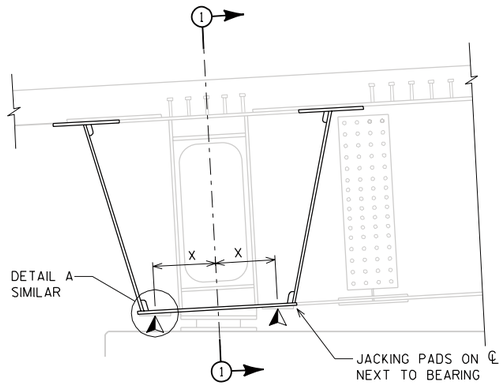
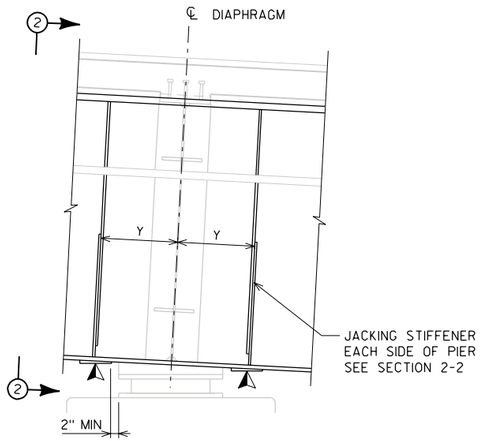
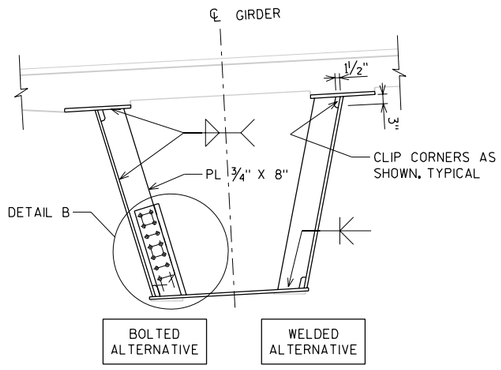
NOT TO SCALE



SECTION AT ℄ PIER 16, 17, & 18

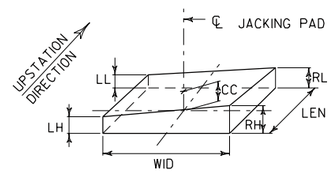


SECTION 1-1



SECTION 2-2

LOCATION	NUMBER OF PADS (PER EACH GIRDER)	JACKING PAD DIMENSIONS							OFFSET 'X'	OFFSET 'Y'	MIN. JACK FORCE (KIP)
		WID (IN)	LEN (IN)	LL (IN)	RL (IN)	LH (IN)	RH (IN)	CC (IN)			
PIER 15	2	9	16	3/4	1 1/4	3/4	1 1/4	1	2'-0"	0"	80
PIER 16	4	10	10	11/16	1 1/4	3/4	1 5/16	1	2'-0 1/2"	1'-5"	160
PIER 17	4	10	10	5/8	1 3/16	13/16	1 3/8	1	2'-0 1/2"	1'-5"	210
PIER 18	4	10	10	13/16	1 3/8	1 1/8	1 11/16	1 1/4	2'-0 1/2"	1'-5"	160
E. ABUT.	2	9	16	11/16	1 1/4	1 1/4	1 13/16	1 1/4	2'-0"	0"	80



JACKING PAD DIMENSION KEY

LEGEND

▲ SUGGESTED JACKING LOCATIONS FOR FUTURE BEARING REPLACEMENT.

NOTES

1. THIS DRAWING SHOWS DETAILS AND LOCATION OF JACKING PADS AND ADDITIONAL WEB STIFFENERS REQUIRED FOR FUTURE BEARING REPLACEMENT.
2. JACKING PAD DIMENSIONS AND LOCATIONS ARE BASED ON THE MINIMUM CLEARANCES SHOWN AND THE NOMINAL BEARING DIMENSIONS GIVEN ON SHEET 17. MAKE ADJUSTMENTS AS REQUIRED TO ACCOMMODATE ACTUAL BEARINGS SUPPLIED.
3. 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.
4. ESTIMATED JACKING FORCES ARE GIVEN AT EACH PAD AND ARE BASED ON DEAD LOAD REACTIONS ONLY - NO LIVE LOAD IS INCLUDED 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.
5. FORCES AND RECOMMENDATIONS ARE PROVIDED FOR INFORMATION ONLY AND MUST BE VERIFIED BY THE ENGINEER RESPONSIBLE FOR JACKING OPERATIONS.
6. JACKING PROVISIONS HAVE BEEN DESIGNED ASSUMING THAT THE STRUCTURE IS CLOSED TO TRAFFIC AT ALL TIMES THAT THE STRUCTURE IS NOT RESTING ON THE PERMANENT BEARINGS.
7. CONTROL JACKS TO ENSURE THAT FORCES APPLIED TO ALL JACKING PADS AT A SINGLE BEARING LOCATION ARE APPROXIMATELY EQUAL.

   IF THIS REQUIREMENT IS NOT MET, A COMPLETE ANALYSIS OF THE PIER DIAPHRAGM SYSTEM WILL BE REQUIRED IN ORDER TO ACCOUNT FOR THE REDISTRIBUTION OF FORCES WITHIN THE SYSTEM.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

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JACKING PROVISIONS

8

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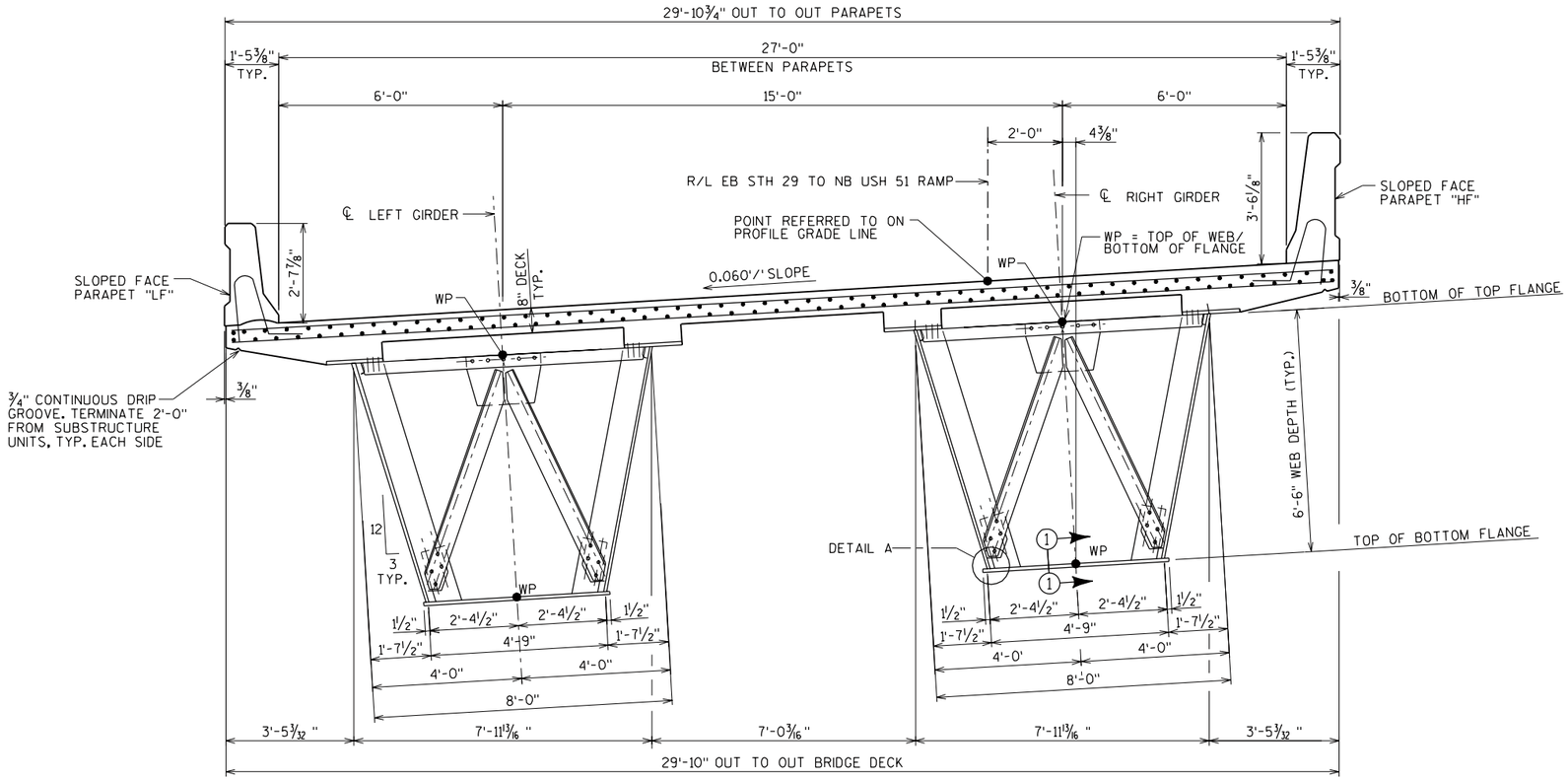
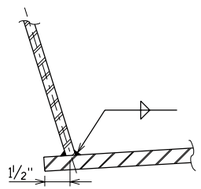
STATE PROJECT NUMBER
1166-11-75

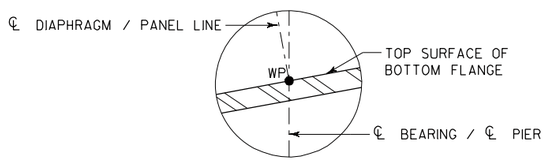


CROSS SECTION

(LOOKING UPSTATION)



DETAIL A



SECTION 1-1

NOTES

1. ENSURE THE STABILITY OF ALL COMPONENTS DURING FABRICATION, HANDLING, TRANSPORTATION AND ERECTION UNTIL THE STRUCTURAL STEEL IS IN FINAL POSITION WITH ALL PERMANENT BRACING, CONNECTIONS AND SUPPORTS IN PLACE AND THE CONCRETE IN THE DECK HAS REACHED THE SPECIFIED DESIGN STRENGTH.

   DESIGN AND USE TEMPORARY CROSS FRAMES, SUPPORTS, BRACES OR WHATEVER OTHER MEANS AND METHODS DEEMED NECESSARY.
2. CONTRACTOR SHALL CARRY OUT DESIGN CALCULATIONS AS REQUIRED TO VERIFY MATERIAL STRESSES AND SUPPORT FORCES (INCLUDING UPLIFT) DURING ALL STAGES OF ERECTION AS REQUIRED BY AASHTO SPECIFICATIONS.
3. CAMBER DIAGRAMS HAVE BEEN DEVELOPED ASSUMING THAT ALL SLAB WEIGHT IS APPLIED TO A NON-COMPOSITE STRUCTURE. VERIFY THE VALIDITY OF THIS ASSUMPTION BASED ON THE SELECTED POUR SEQUENCE. ADJUST CAMBER TABLES AS NECESSARY FOR ANY EXPECTED VARIATIONS EXCEEDING .04' (½").
4. CAMBER GIRDERS TO THE VALUES SHOWN ON SHEETS 38 TO 41, AFTER INCORPORATING ANY REQUIRED ADJUSTMENTS FOR THE SELECTED POUR SEQUENCE.
5. TOP OF ERECTED STEEL ELEVATION INCLUDES DEFLECTIONS DUE TO SELF WEIGHT OF STEEL AND STAY-IN-PLACE METAL FORMWORK ONLY. ELEVATIONS ARE GIVEN AT CENTERLINE OF TOP FLANGE OR TOP FLANGE SPLICE PLATE, AS APPLICABLE.
6. STEEL FABRICATION AND TESTING STANDARDS SHALL BE THE SAME AS IF TOP AND BOTTOM GIRDER FLANGES (WITHIN TENSION ZONES) AND ALL WEB PLATES WERE CLASSIFIED AS FRACTURE CRITICAL MEMBERS (FCM).

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"

1. MINIMUM WELD SIZES SHOWN SHALL BE USED WHEN A SIZE IS NOT OTHERWISE SPECIFIED OR SHOWN.
2. WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART BEING JOINED.
3. FOR ALL WELDS 5/16" OR LARGER, THE MINIMUM PASS SIZE SHALL BE 5/16".

8

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

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GIRDER SECTION

SHEET 19 OF 54
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STATE PROJECT NUMBER

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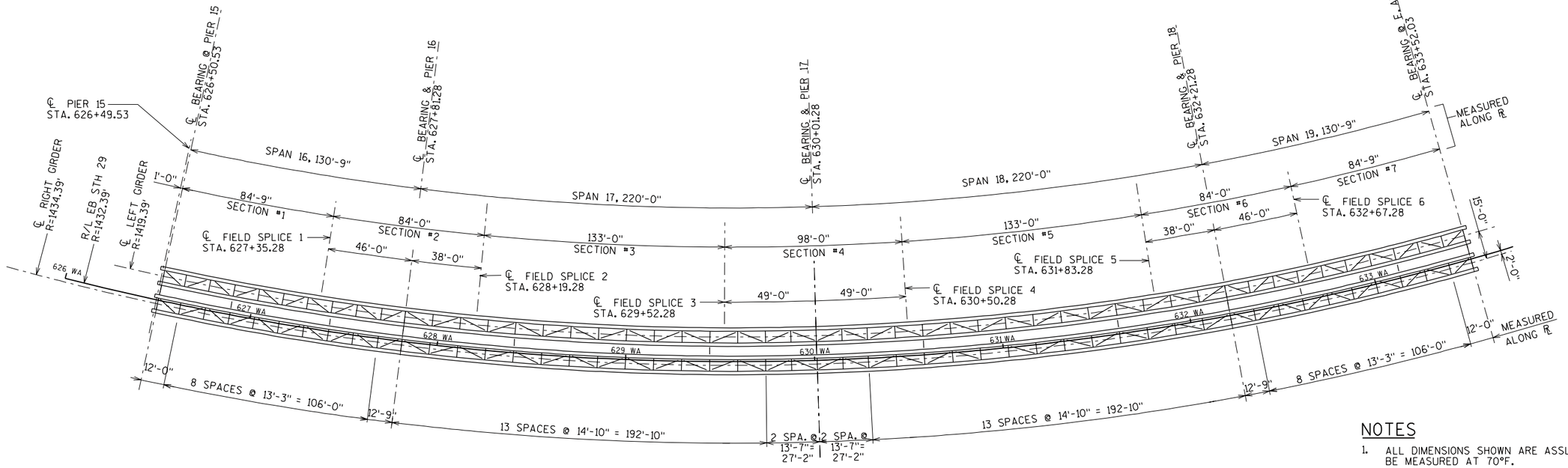
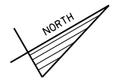


FRAMING PLAN



NOTES

1. ALL DIMENSIONS SHOWN ARE ASSUMED TO BE MEASURED AT 70°F.
2. SPAN AND UNIT LENGTHS SHOWN ARE MEASURED HORIZONTALLY ALONG THE VERTICAL PLANE DEFINED BY THE REFERENCE LINE.
3. FIELD SECTION LENGTHS ARE MEASURED ALONG THE OUTSIDE EDGE OF THE LONGEST TOP FLANGE AND ARE ROUNDED UP TO THE NEXT EVEN FOOT.
4. CURVE LENGTHS SHOWN ARE MEASURED HORIZONTALLY ALONG THE VERTICAL PLANE DEFINED BY THE CENTERLINE OF LEFT OR RIGHT GIRDER AS APPLICABLE. SEE SHEET 19 FOR LOCATION OF CENTERLINE GIRDER WORK POINTS.
5. RELOCATION OF FIELD SPLICES MAY BE ACCEPTED BUT MAY REQUIRE REDESIGN BY THE CONTRACTOR AND ACCEPTANCE BY THE ENGINEER. ADDITIONAL FIELD SPLICES WILL NOT BE ACCEPTED.
6. ADDITIONAL SHOP SPLICES MAY BE ADDED IF REQUIRED TO SUIT AVAILABLE MATERIAL LENGTHS. THE NUMBER AND LOCATION OF ADDITIONAL SPLICES IS SUBJECT TO ACCEPTANCE BY THE ENGINEER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	DRAWN BY	PLANS CK'D.
2008	EB	SST/AML

FRAMING PLAN

SHEET 20 OF 54
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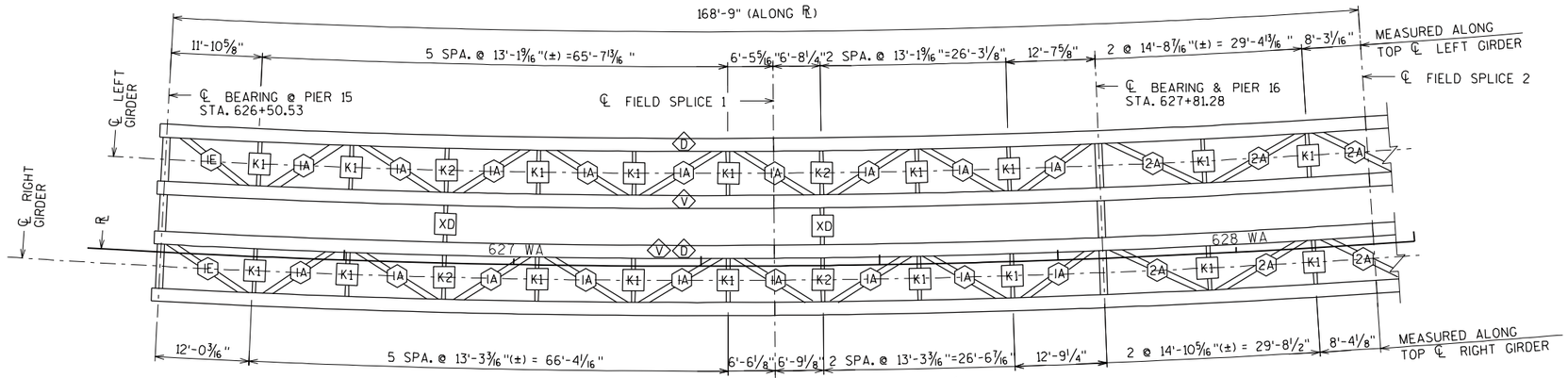
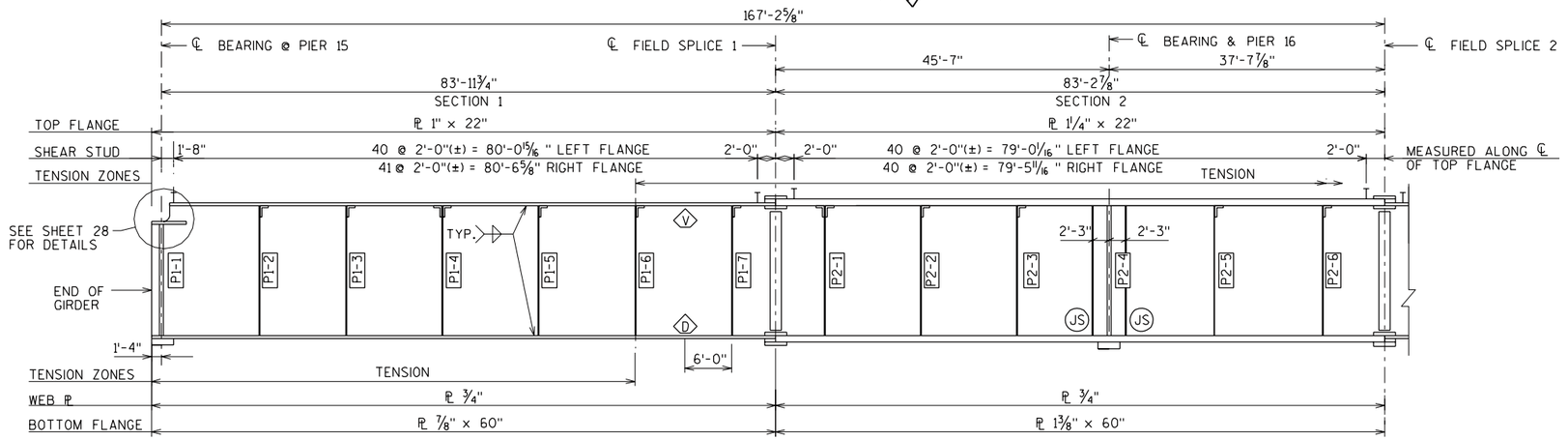


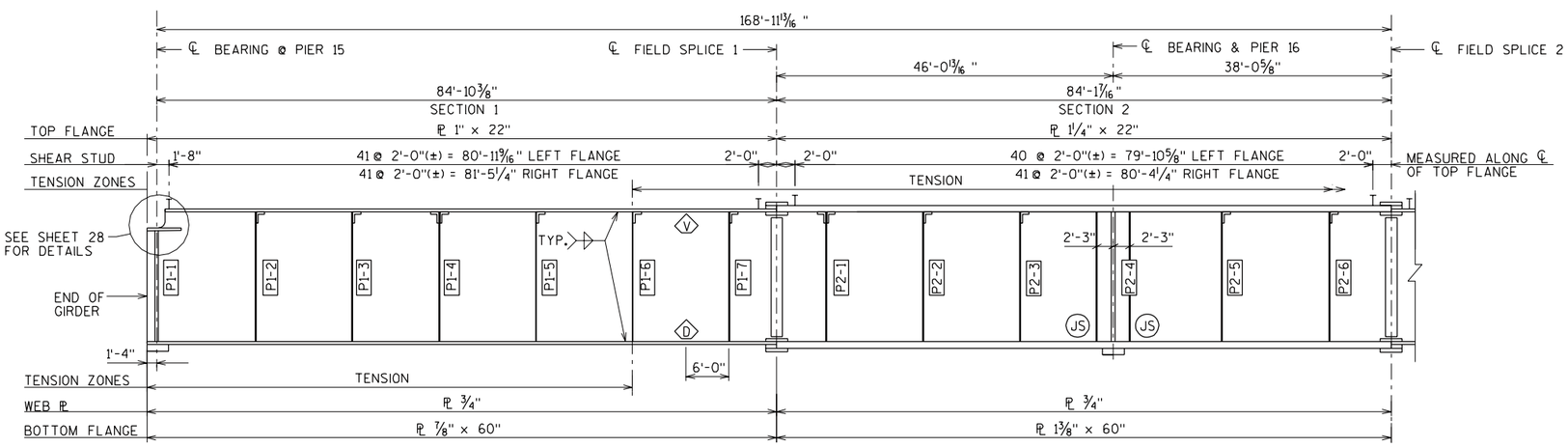
GIRDER PLAN

NORTH



LEFT GIRDER INTERIOR ELEVATION

VERTICAL SCALE EXAGGERATED



RIGHT GIRDER INTERIOR ELEVATION

VERTICAL SCALE EXAGGERATED

LEGEND

- K1 — INTERNAL K-FRAME LOCATION. SEE DETAIL ON SHEETS 30 AND 31.
- XD — EXTERIOR DIAPHRAGM LOCATION. SEE DETAIL ON SHEET 32.
- IA — LATERAL BRACING MARK NUMBER. SEE SHEET 33.
- D — BOTTOM FLANGE DRAIN HOLE LOCATION. SEE DETAIL ON SHEET 36.
- V — WEB PLATE VENT HOLE LOCATION. SEE DETAIL ON SHEET 36.
- AH — BOTTOM FLANGE ACCESS HATCH LOCATION. SEE DETAIL ON SHEET 34.
- P1-X — PANEL POINT LOCATION NUMBER
- JS — JACKING STIFFENER LOCATION. SEE DETAIL ON SHEET 18.

NOTES

1. SEE SHEET 27 FOR INTERIOR DIAPHRAGMS AT PIER 16, 17, AND 18.
2. SEE SHEET 28 FOR END DIAPHRAGM AT PIER 15 AND SHEET 29 FOR END DIAPHRAGM AT E. ABUT.
3. SEE SHEET 36 FOR MISCELLANEOUS GIRDER DETAILS.
4. SEE SHEET 37 FOR CAMBER REQUIREMENTS.
5. ALL SHEAR STUDS ARE ⅞" DIA. BY 7" LONG. EACH POSITION SHOWN REPRESENTS 3 STUDS ON EACH GIRDER FLANGE, LOCATED 3" FROM EDGES OF FLANGE AND EQUALLY SPACED BETWEEN. SEE DETAIL ON SHEET 36.
6. ALL STRUCTURAL STEEL FOR BOX GIRDERS SHALL BE HIGH STRENGTH ASTM A709/A-03A, HPS 50WT WITH SUPPLEMENTARY REQUIREMENT S83, ZONE 2.
7. DIMENSIONS MEASURED ALONG TOP CENTERLINE OF EACH GIRDER UNLESS NOTED OTHERWISE.
8. SEE SHEET 19, NOTE 6 FOR MINIMUM WELD SIZES.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	EB	PLANS CK'D.	SST/AML

GIRDER PLAN & ELEVATION SECTIONS 1 & 2

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STATE PROJECT NUMBER
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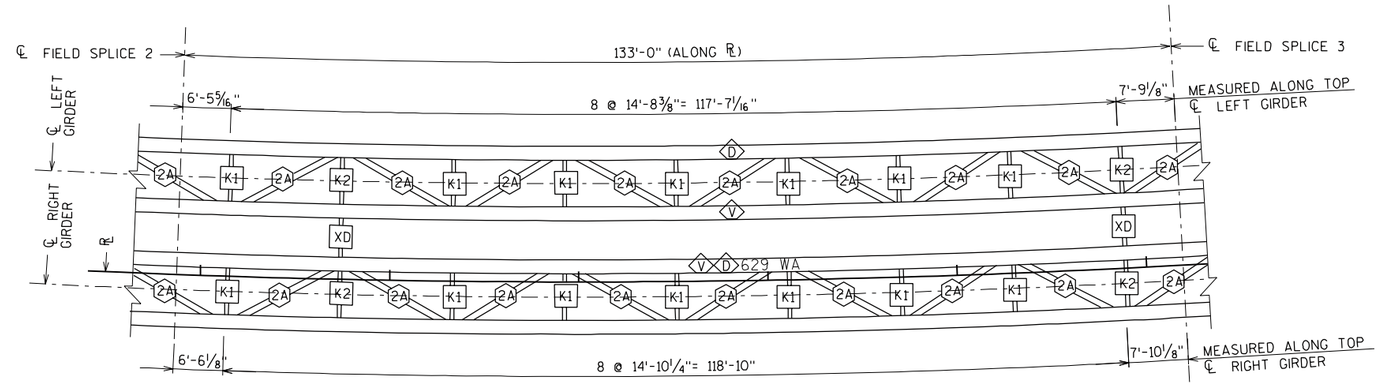
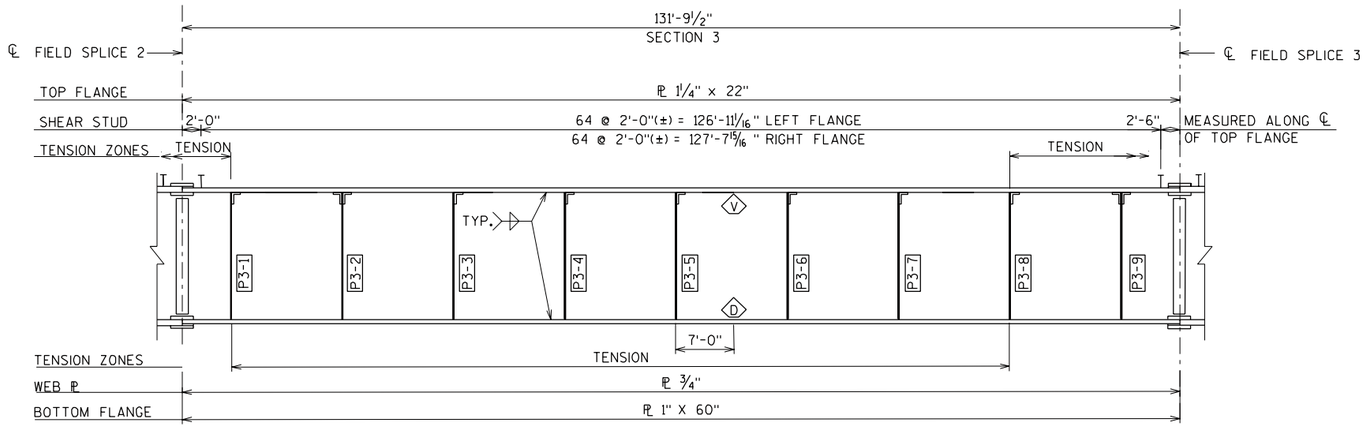
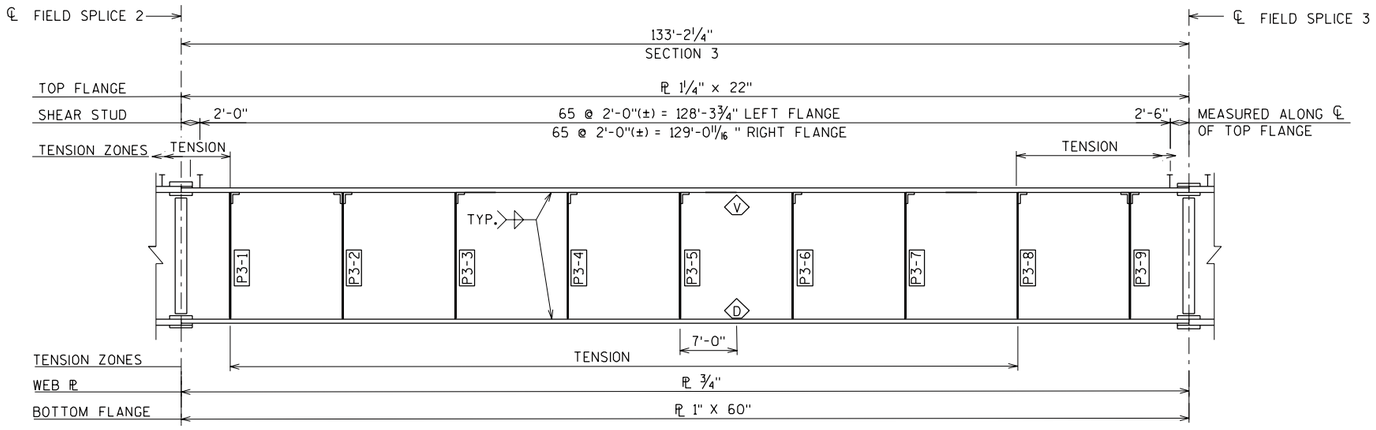


GIRDER PLAN



LEFT GIRDER INTERIOR ELEVATION

VERTICAL SCALE EXAGGERATED



RIGHT GIRDER INTERIOR ELEVATION

VERTICAL SCALE EXAGGERATED

LEGEND

- K1 — INTERNAL K-FRAME LOCATION. SEE DETAIL ON SHEETS 30 AND 31.
- XD — EXTERIOR DIAPHRAGM LOCATION. SEE DETAIL ON SHEET 32.
- 1A — LATERAL BRACING MARK NUMBER. SEE SHEET 33.
- D — BOTTOM FLANGE DRAIN HOLE LOCATION. SEE DETAIL ON SHEET 36.
- V — WEB PLATE VENT HOLE LOCATION. SEE DETAIL ON SHEET 36.
- AH — BOTTOM FLANGE ACCESS HATCH LOCATION. SEE DETAIL ON SHEET 34.
- P1-X — PANEL POINT LOCATION NUMBER
- JS — JACKING STIFFENER LOCATION. SEE DETAIL ON SHEET 18.

NOTES

1. SEE SHEET 27 FOR INTERIOR DIAPHRAGMS AT PIER 16, 17, AND 18.
2. SEE SHEET 28 FOR END DIAPHRAGM AT PIER 15 AND SHEET 29 FOR END DIAPHRAGM AT E. ABUT.
3. SEE SHEET 36 FOR MISCELLANEOUS GIRDER DETAILS.
4. SEE SHEET 37 FOR CAMBER REQUIREMENTS.
5. ALL SHEAR STUDS ARE 7/8" DIA. BY 7" LONG. EACH POSITION SHOWN REPRESENTS 3 STUDS ON EACH GIRDER FLANGE, LOCATED 3" FROM EDGES OF FLANGE AND EQUALLY SPACED BETWEEN. SEE DETAIL ON SHEET 36.
6. ALL STRUCTURAL STEEL FOR BOX GIRDERS SHALL BE HIGH STRENGTH ASTM A709/A-03A, HPS 50WT WITH SUPPLEMENTARY REQUIREMENT S83, ZONE 2.
7. DIMENSIONS MEASURED ALONG TOP CENTERLINE OF EACH GIRDER UNLESS NOTED OTHERWISE.
8. SEE SHEET 19, NOTE 6 FOR MINIMUM WELD SIZES.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	EB	PLANS CK'D.	SST/AML

GIRDER PLAN & ELEVATION SECTION 3

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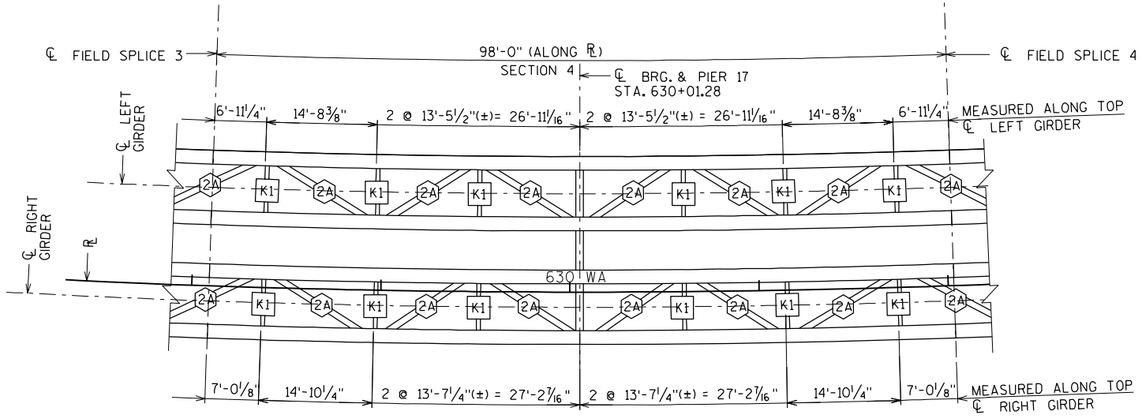
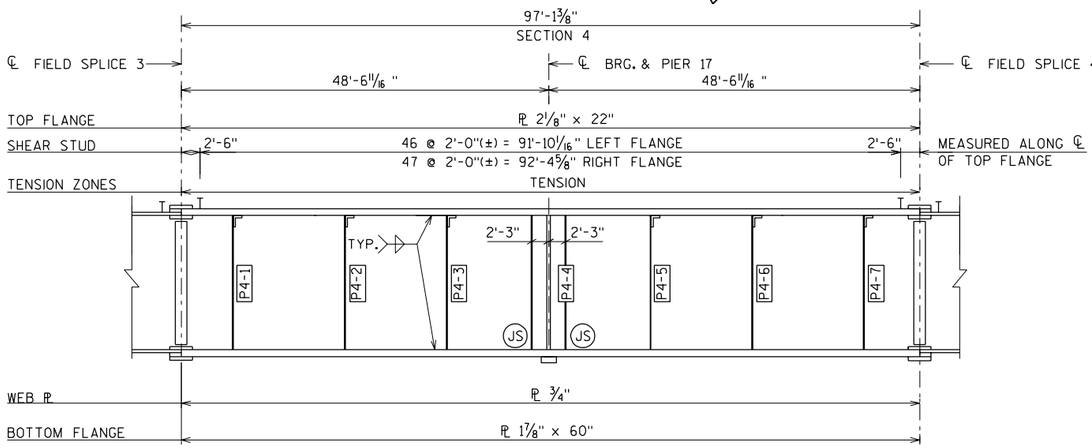
STATE PROJECT NUMBER
1166-11-75



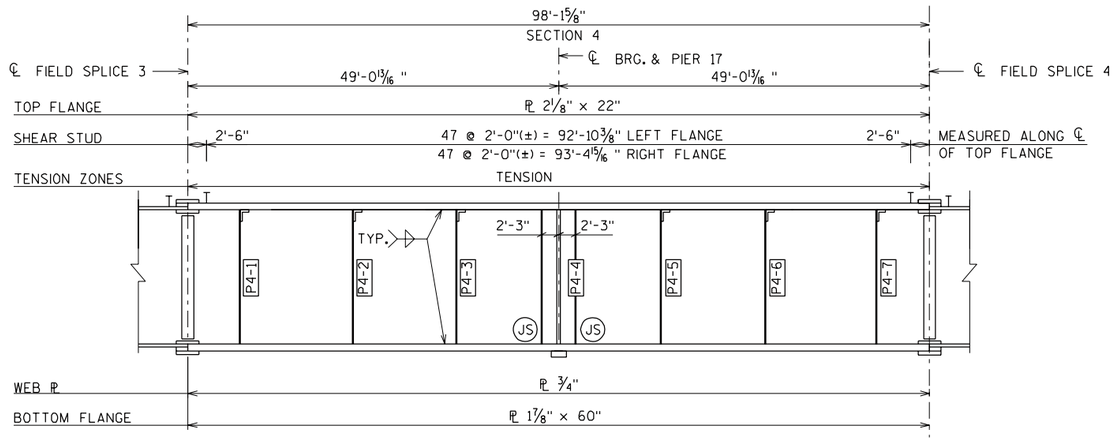
GIRDER PLAN

NORTH



LEFT GIRDER INTERIOR ELEVATION

VERTICAL SCALE EXAGGERATED



RIGHT GIRDER INTERIOR ELEVATION

VERTICAL SCALE EXAGGERATED

LEGEND

- K1 — INTERNAL K-FRAME LOCATION. SEE DETAIL ON SHEETS 30 AND 31.
- XD — EXTERIOR DIAPHRAGM LOCATION. SEE DETAIL ON SHEET 32.
- IA — LATERAL BRACING MARK NUMBER. SEE SHEET 33.
- D — BOTTOM FLANGE DRAIN HOLE LOCATION. SEE DETAIL ON SHEET 36.
- V — WEB PLATE VENT HOLE LOCATION. SEE DETAIL ON SHEET 36.
- AH — BOTTOM FLANGE ACCESS HATCH LOCATION. SEE DETAIL ON SHEET 34.
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NOTES

1. SEE SHEET 27 FOR INTERIOR DIAPHRAGMS AT PIER 16, 17, AND 18.
2. SEE SHEET 28 FOR END DIAPHRAGM AT PIER 15 AND SHEET 29 FOR END DIAPHRAGM AT E. ABUT.
3. SEE SHEET 36 FOR MISCELLANEOUS GIRDER DETAILS.
4. SEE SHEET 37 FOR CAMBER REQUIREMENTS.
5. ALL SHEAR STUDS ARE ⅞" DIA. BY 7" LONG. EACH POSITION SHOWN REPRESENTS 3 STUDS ON EACH GIRDER FLANGE, LOCATED 3" FROM EDGES OF FLANGE AND EQUALLY SPACED BETWEEN. SEE DETAIL ON SHEET 36.
6. ALL STRUCTURAL STEEL FOR BOX GIRDERS SHALL BE HIGH STRENGTH ASTM A709/A-03A, HPS 50WT WITH SUPPLEMENTARY REQUIREMENT S86, ZONE 2.
7. DIMENSIONS MEASURED ALONG TOP CENTERLINE OF EACH GIRDER UNLESS NOTED OTHERWISE.
8. SEE SHEET 19, NOTE 6 FOR MINIMUM WELD SIZES.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

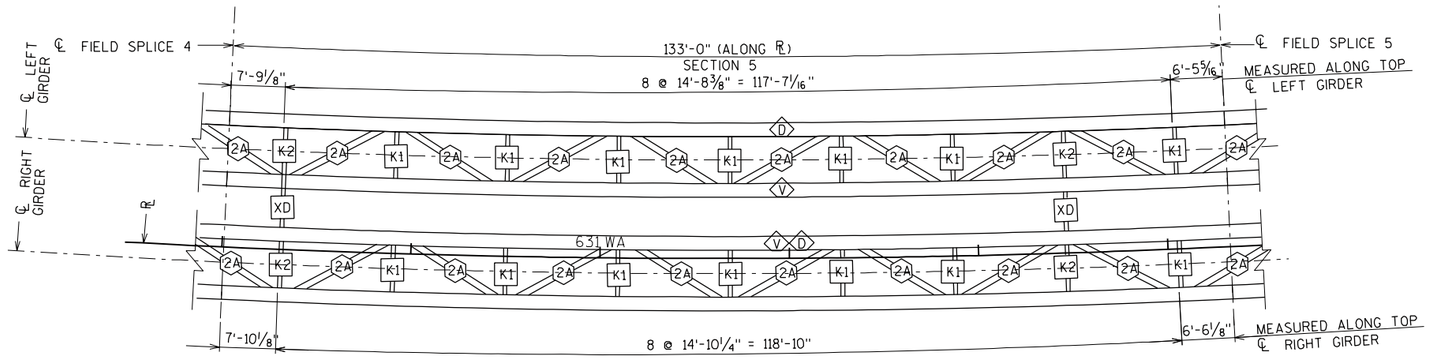
CONST. SPEC	2008	DRAWN BY	EB	PLANS CK'D.	SST/AML

GIRDER PLAN & ELEVATION SECTION 4

SHEET 23 OF 54
325

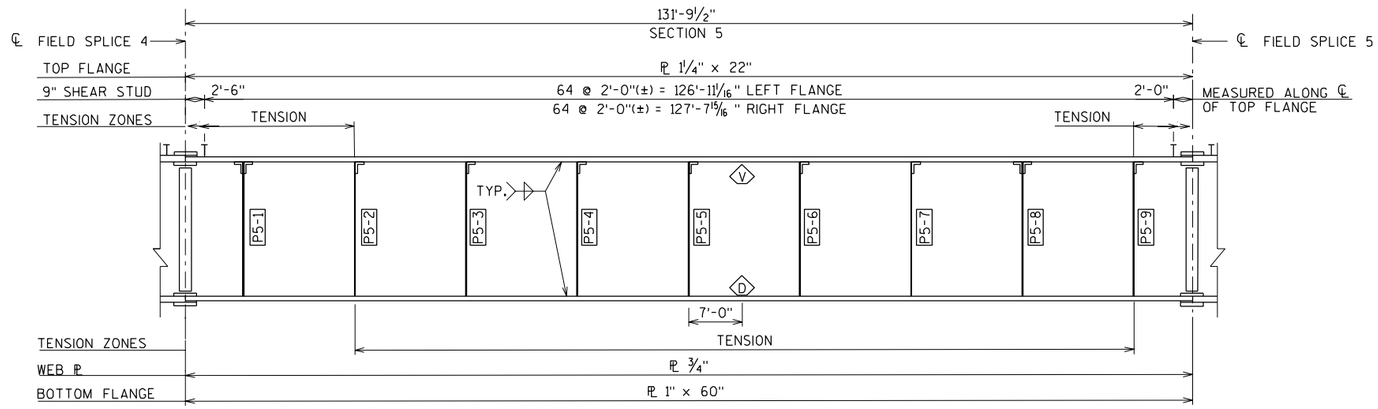
STATE PROJECT NUMBER

1166-11-75



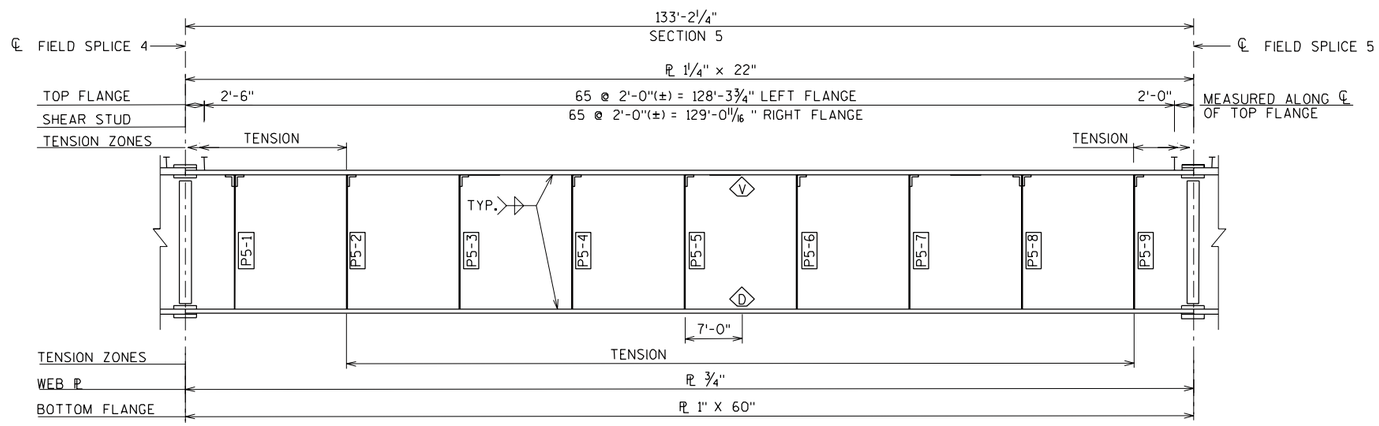
GIRDER PLAN

NORTH



LEFT GIRDER INTERIOR ELEVATION

VERTICAL SCALE EXAGGERATED



RIGHT GIRDER INTERIOR ELEVATION

VERTICAL SCALE EXAGGERATED

LEGEND

- K1 — INTERNAL K-FRAME LOCATION. SEE DETAIL ON SHEETS 30 AND 31.
- XD — EXTERIOR DIAPHRAGM LOCATION. SEE DETAIL ON SHEET 32.
- IA — LATERAL BRACING MARK NUMBER. SEE SHEET 33.
- D — BOTTOM FLANGE DRAIN HOLE LOCATION. SEE DETAIL ON SHEET 36.
- V — WEB PLATE VENT HOLE LOCATION. SEE DETAIL ON SHEET 36.
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- P1-X — PANEL POINT LOCATION NUMBER
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NOTES

1. SEE SHEET 27 FOR INTERIOR DIAPHRAGMS AT PIER 16, 17, AND 18.
2. SEE SHEET 28 FOR END DIAPHRAGM AT PIER 15 AND SHEET 29 FOR END DIAPHRAGM AT E. ABUT.
3. SEE SHEET 36 FOR MISCELLANEOUS GIRDER DETAILS.
4. SEE SHEET 37 FOR CAMBER REQUIREMENTS.
5. ALL SHEAR STUDS ARE 7/8" DIA. BY 7" LONG. EACH POSITION SHOWN REPRESENTS 3 STUDS ON EACH GIRDER FLANGE, LOCATED 3" FROM EDGES OF FLANGE AND EQUALLY SPACED BETWEEN. SEE DETAIL ON SHEET 36.
6. ALL STRUCTURAL STEEL FOR BOX GIRDERS SHALL BE HIGH STRENGTH ASTM A709/A-03A, HPS 50WT WITH SUPPLEMENTARY REQUIREMENT S83, ZONE 2.
7. DIMENSIONS MEASURED ALONG TOP CENTERLINE OF EACH GIRDER UNLESS NOTED OTHERWISE.
8. SEE SHEET 19, NOTE 6 FOR MINIMUM WELD SIZES.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC 2008	DRAWN BY EB	PLANS CK'D SST/AML

GIRDER PLAN & ELEVATION SECTION 5

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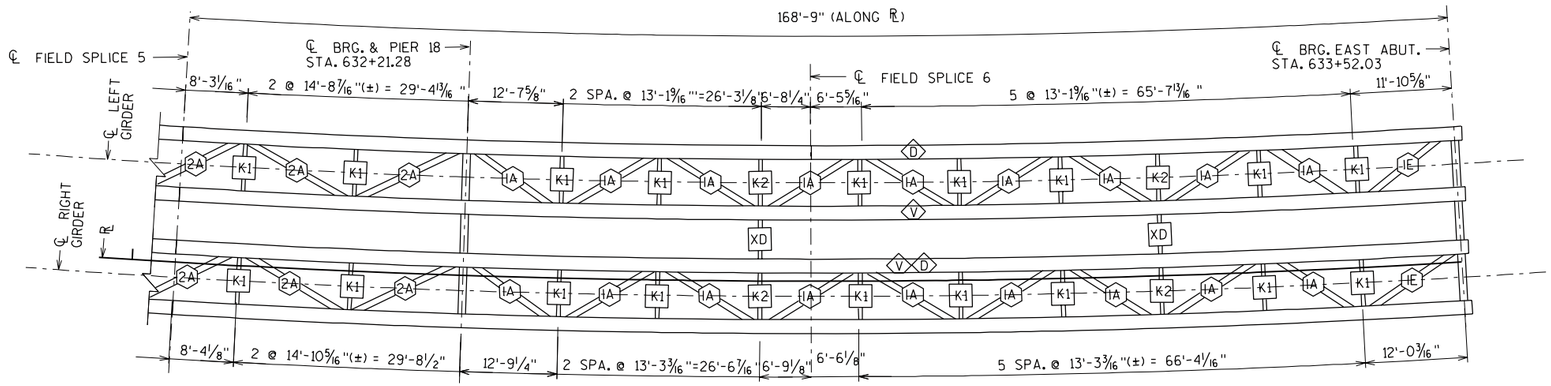
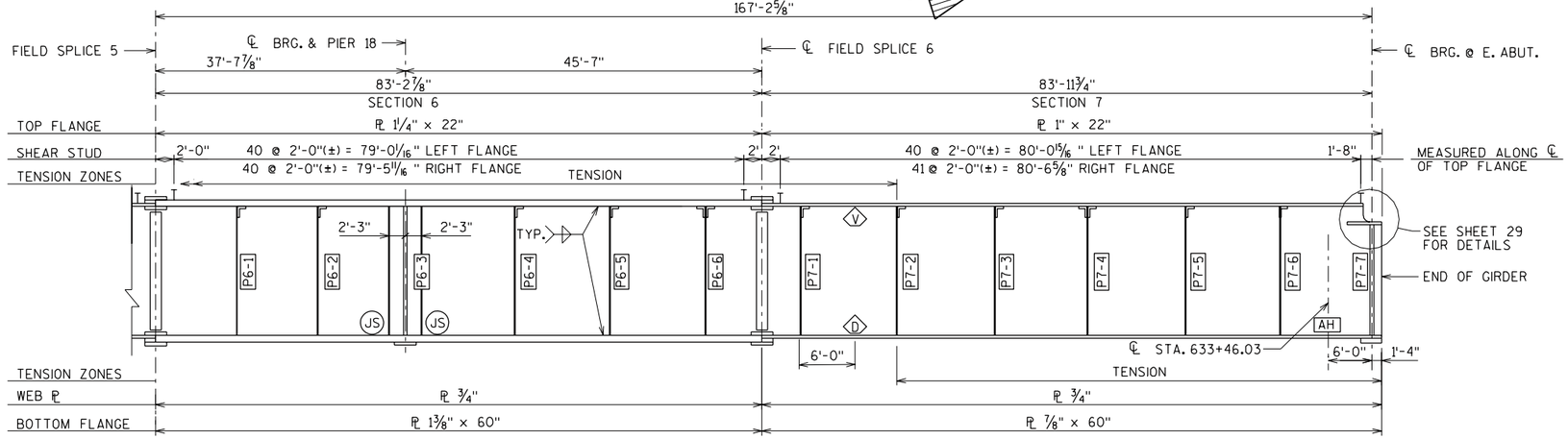
STATE PROJECT NUMBER
1166-11-75



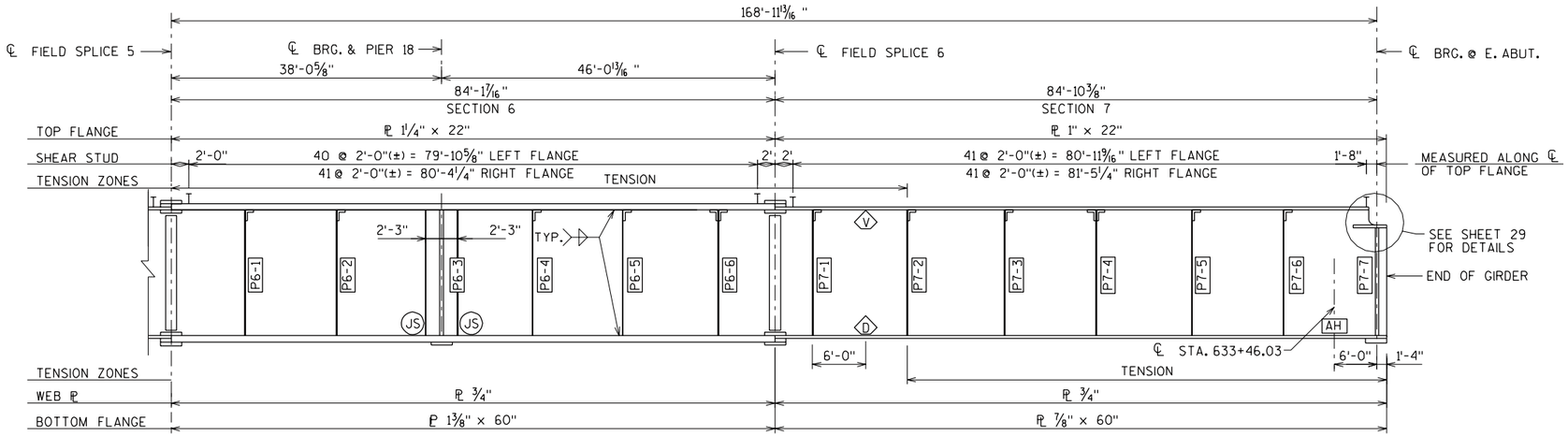
GIRDER PLAN

NORTH



LEFT GIRDER INTERIOR ELEVATION

VERTICAL SCALE EXAGGERATED



RIGHT GIRDER INTERIOR ELEVATION

VERTICAL SCALE EXAGGERATED

LEGEND

K1	INTERNAL K-FRAME LOCATION. SEE DETAIL ON SHEETS 30 AND 31.
XD	EXTERIOR DIAPHRAGM LOCATION. SEE DETAIL ON SHEET 32.
IA	LATERAL BRACING MARK NUMBER. SEE SHEET 33.
D	BOTTOM FLANGE DRAIN HOLE LOCATION. SEE DETAIL ON SHEET 36.
V	WEB PLATE VENT HOLE LOCATION. SEE DETAIL ON SHEET 36.
AH	BOTTOM FLANGE ACCESS HATCH LOCATION. SEE DETAIL ON SHEET 34.
P1-X	PANEL POINT LOCATION NUMBER
JS	JACKING STIFFENER LOCATION. SEE DETAIL ON SHEET 18.

NOTES

1. SEE SHEET 27 FOR INTERIOR DIAPHRAGMS AT PIER 16, 17, AND 18.
2. SEE SHEET 28 FOR END DIAPHRAGM AT PIER 15 AND SHEET 29 FOR END DIAPHRAGM AT E. ABUT.
3. SEE SHEET 36 FOR MISCELLANEOUS GIRDER DETAILS.
4. SEE SHEET 37 FOR CAMBER REQUIREMENTS.
5. ALL SHEAR STUDS ARE 7/8" DIA. BY 7" LONG. EACH POSITION SHOWN REPRESENTS 3 STUDS ON EACH GIRDER FLANGE, LOCATED 3" FROM EDGES OF FLANGE AND EQUALLY SPACED BETWEEN. SEE DETAIL ON SHEET 36.
6. ALL STRUCTURAL STEEL AND PLATES WELDED TO GIRDERS SHALL BE ASTM A709.
7. ALL STRUCTURAL STEEL FOR BOX GIRDERS SHALL BE HIGH STRENGTH ASTM A709/A-03A, HPS 50WT WITH SUPPLEMENTARY REQUIREMENT S83, ZONE 2.
8. DIMENSIONS MEASURED ALONG TOP CENTERLINE OF EACH GIRDER UNLESS NOTED OTHERWISE.
9. SEE SHEET 19, NOTE 6 FOR MINIMUM WELD SIZES.

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NO.	DATE	REVISION	BY

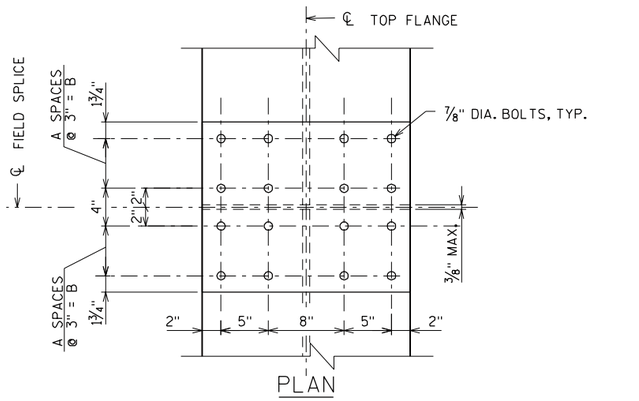
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

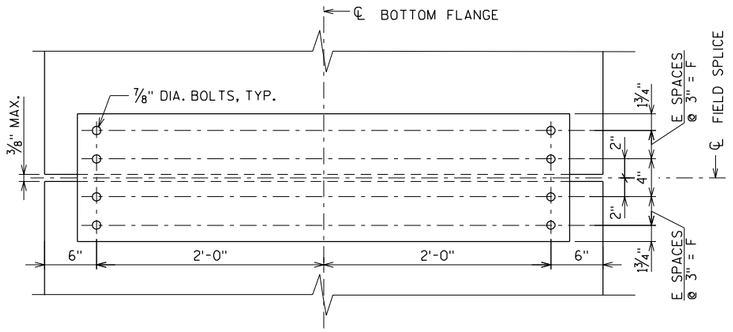
CONST. SPEC	DRAWN BY	PLANS CK'D.
2008	EB	SST/AML

GIRDER PLAN & ELEVATION SECTION 6 & 7

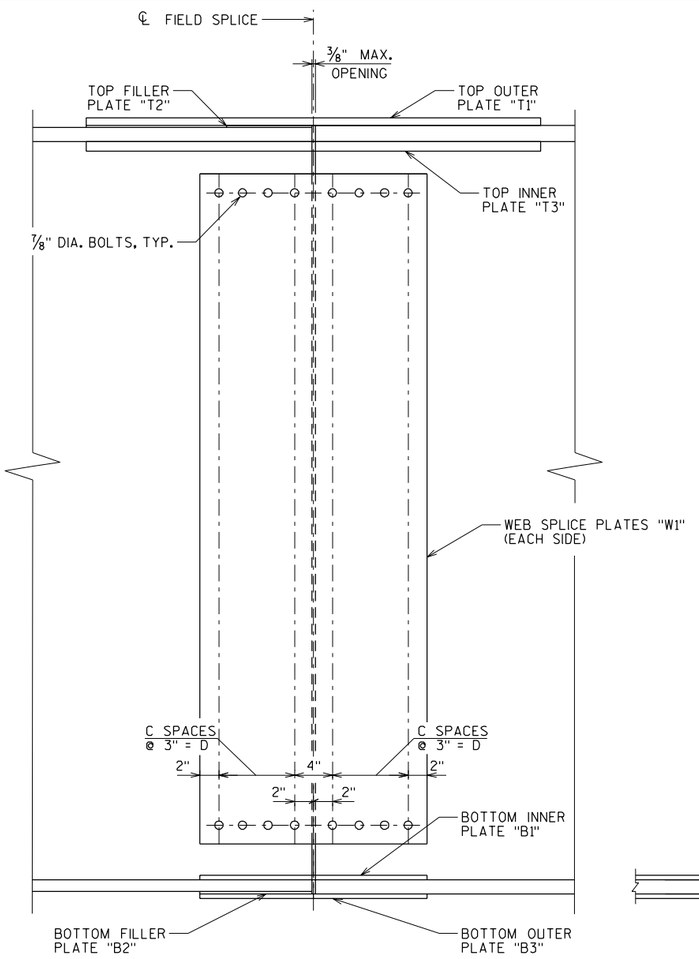
SHEET 25 OF 54
327

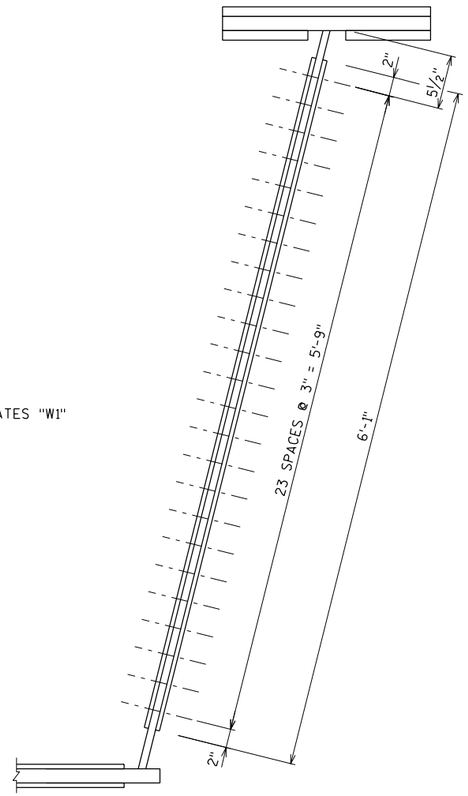


TOP FLANGE CONNECTION



BOTTOM FLANGE CONNECTION





WEB FIELD SPLICE PLATE

FIELD SPLICE PLATE DIMENSIONS

SPLICE LOCATION	TOP FLANGE SPLICE					WEB SPLICE			BOTTOM FLANGE SPLICE				
	PLATE "T1"	PLATE "T2"	PLATE "T3"	A	B	PLATE "W1"	C	D	PLATE "B1"	PLATE "B2"	PLATE "B3"	E	F
F.S. # 1 & 6	PL ¾"×3'-7½"×1'-10"	PL ¼"×1'-9½"×1'-10"	PL ⅞"×3'-7½"×9"	6	18	PL 7/16"×2'-2"×6'-1"	3	9	PL ⅝"×2'-1½"×4'-4"	PL ½"×1'-0½"×4'-4"	PL ⅝"×2'-1½"×4'-4"	3	9
F.S. # 2 & 5	PL ¾"×3'-7½"×1'-10"	--------	PL ⅞"×3'-7½"×9"	6	18	PL 7/16"×2'-2"×6'-1"	3	9	PL ⅝"×2'-1½"×4'-4"	PL ⅜"×1'-0½"×4'-4"	PL ⅝"×2'-1½"×4'-4"	3	9
F.S. # 3 & 4	PL ¾"×5'-1½"×1'-10"	PL ⅞"×2'-6½"×1'-10"	PL ⅞"×5'-1½"×9"	9	24	PL 7/16"×2'-2"×6'-1"	3	9	PL ⅝"×2'-7½"×4'-4"	PL ⅞"×1'-3½"×4'-4"	PL ⅝"×2'-7½"×4'-4"	4	12

NOTES

1. ALL BOLTS SHOWN ARE ⅞" DIAMETER ASTM A325 TYPE 1.
2. ALL HOLES SHALL BE STANDARD DIAMETER - NO OVERSIZE HOLES.
3. ALL CONNECTIONS SHALL BE FABRICATED AND ASSEMBLED AS SLIP-CRITICAL CLASS A CONNECTIONS.

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	EB	PLANS CK'D.	SST/AML

FIELD SPLICE DETAILS

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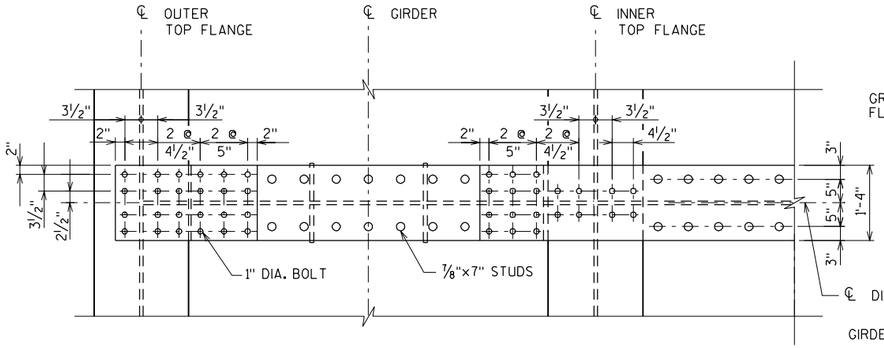
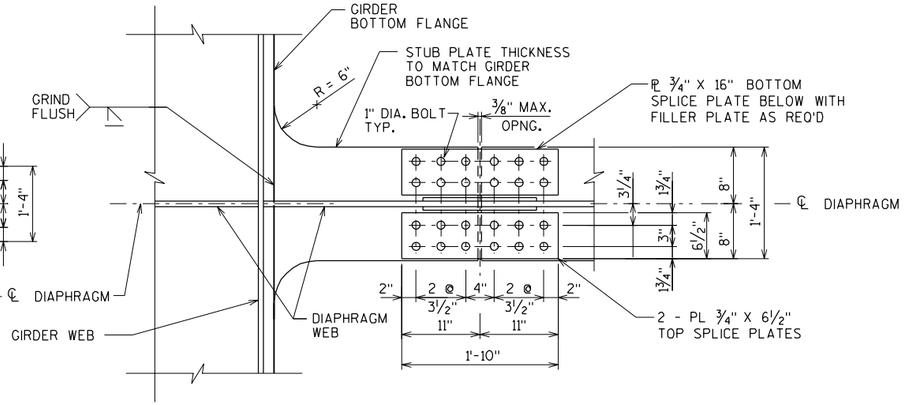
STATE PROJECT NUMBER

1166-11-75



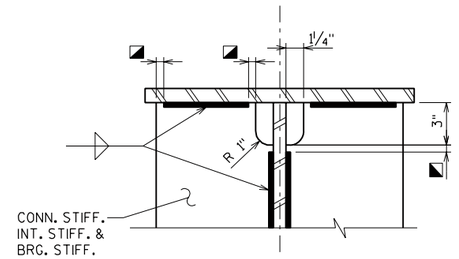
PLAN

VIEWED NORMAL TO DECK SURFACE

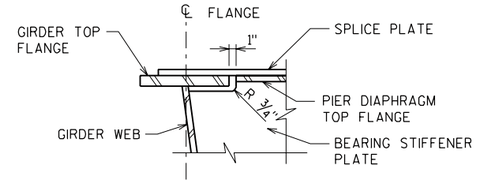


SECTION 3-3

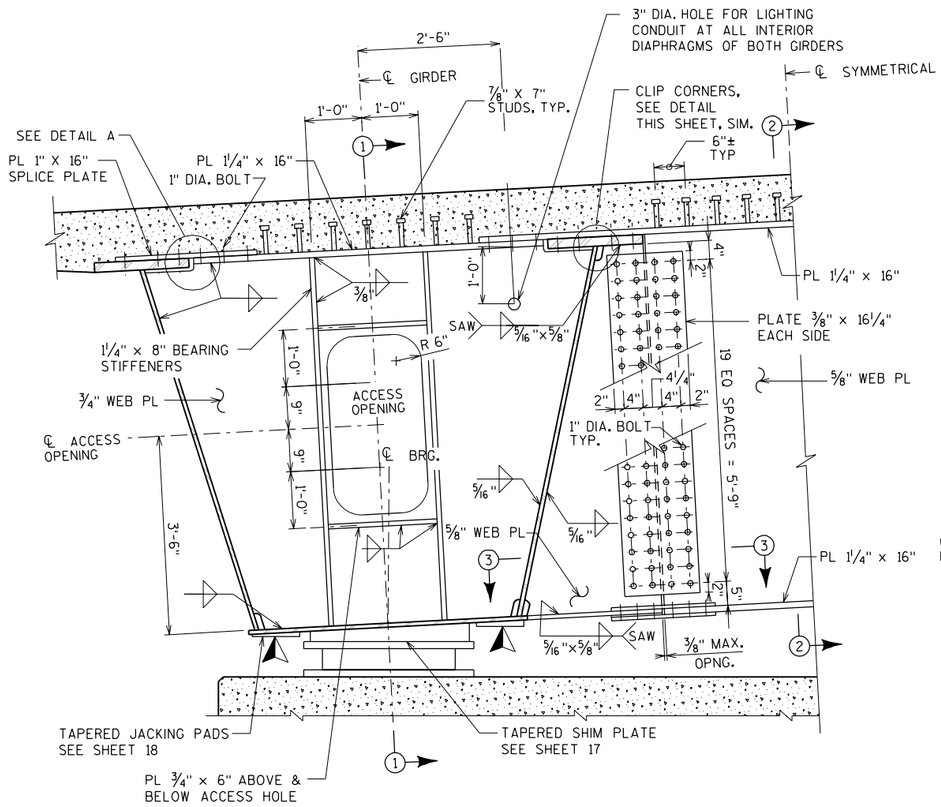
NOT TO SCALE



CLIP CORNERS DETAIL

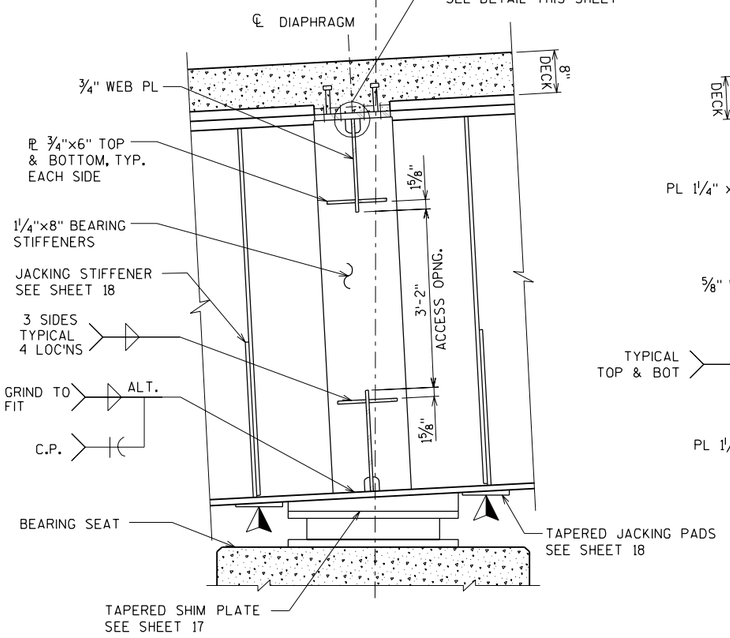


DETAIL A

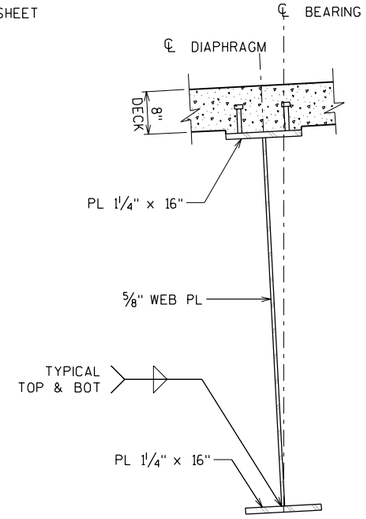


ELEVATION

(LOOKING UPSTATION)



SECTION 1-1



SECTION 2-2

LEGEND

SUGGESTED JACKING LOCATIONS FOR FUTURE BEARING REPLACEMENT. SEE SHEET 18 FOR DETAILS.

NOTES

1. SEE SHEET 19 FOR DETAIL DEFINING WORKPOINT BETWEEN DIAPHRAGM AND BEARING CENTERLINES.
2. ALL BOLTS IN PIER DIAPHRAGMS ARE 1" DIAMETER ASTM A325 TYPE 1.
3. DIAPHRAGMS AND CROSS FRAMES ARE ALIGNED NORMAL TO THE GIRDER UNLESS OTHERWISE NOTED.
4. THIS DRAWING SHOWS TYPICAL DIAPHRAGM DETAILS FOR ONE SPECIFIC GRADE AND SUPERELEVATION. GRADE AND SUPERELEVATION VARY BETWEEN PIER LOCATIONS.
5. ADJACENT LATERAL BRACING CONNECTIONS ARE NOT SHOWN FOR CLARITY. SEE SHEET 33 FOR BRACING LAYOUT AND CONNECTION DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	EB	PLANS CK'D.	SST/ AML

INTERIOR PIER DIAPHRAGMS

SHEET 27 OF 54

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STATE PROJECT NUMBER
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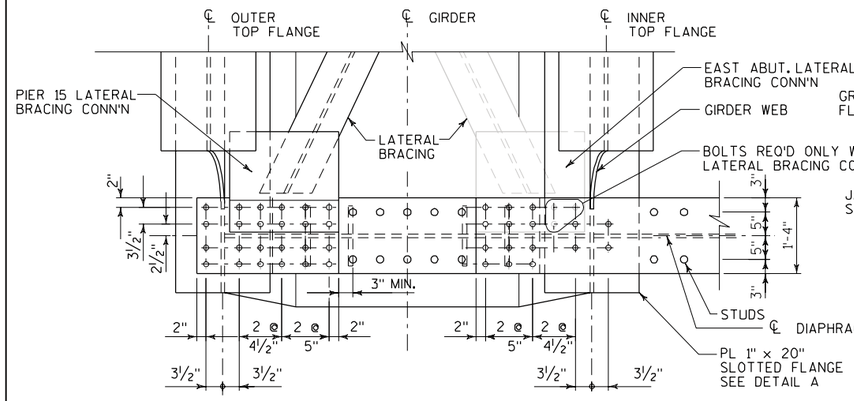
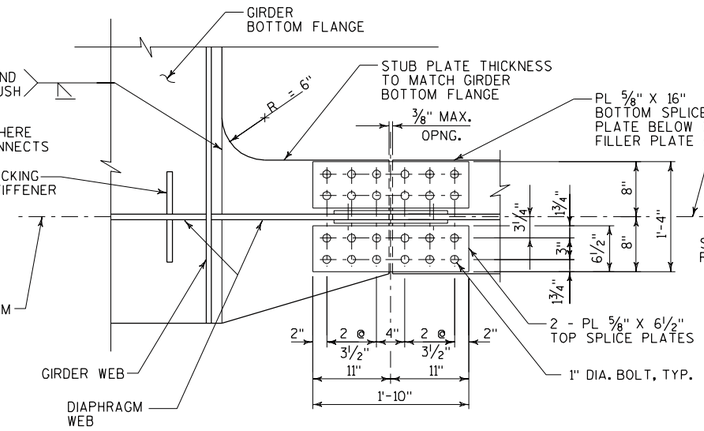
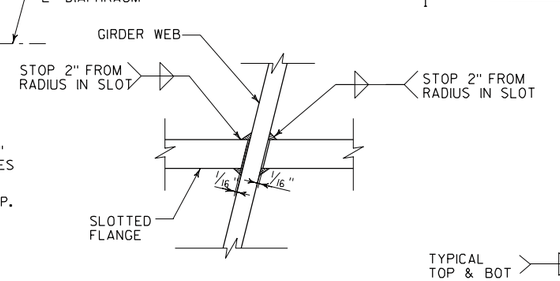


PLAN

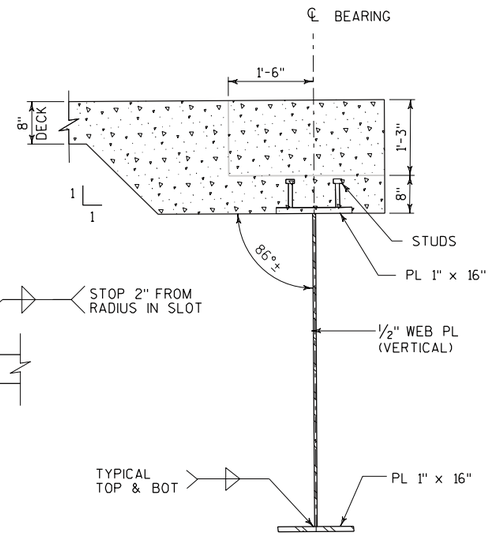
VIEWED NORMAL TO DECK SURFACE



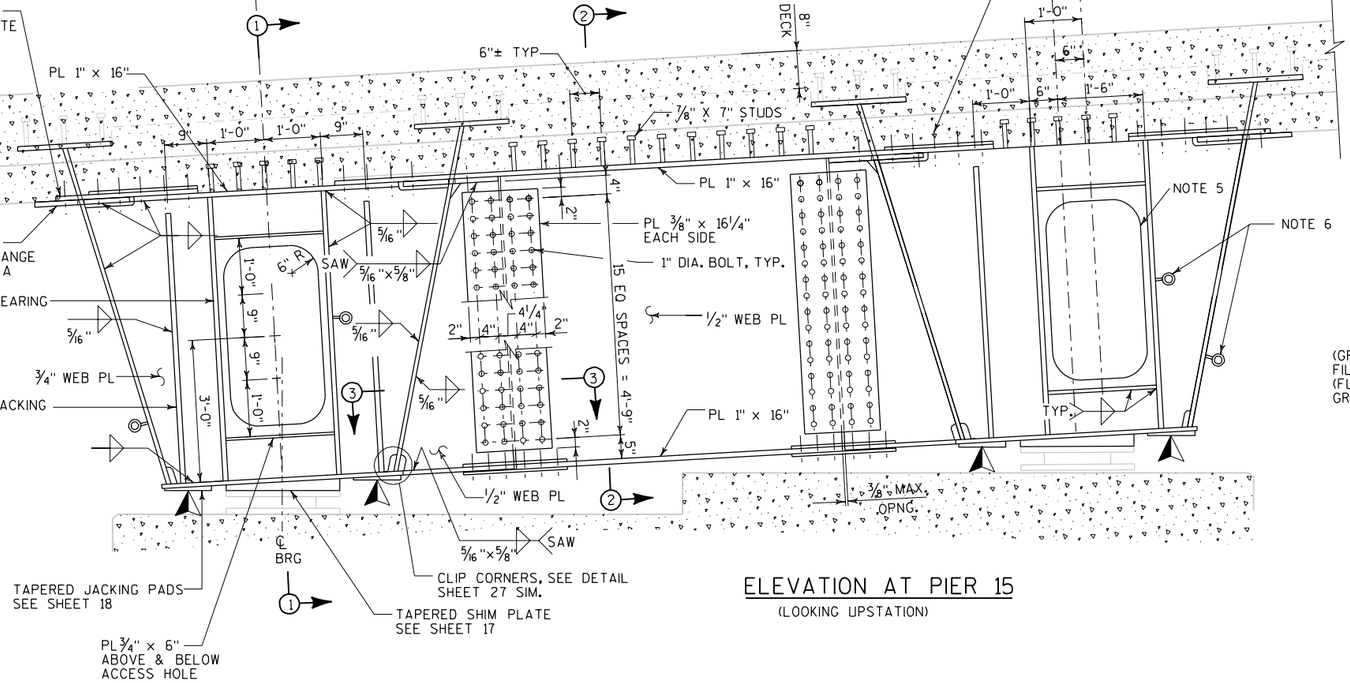
SECTION 3-3



DETAIL A

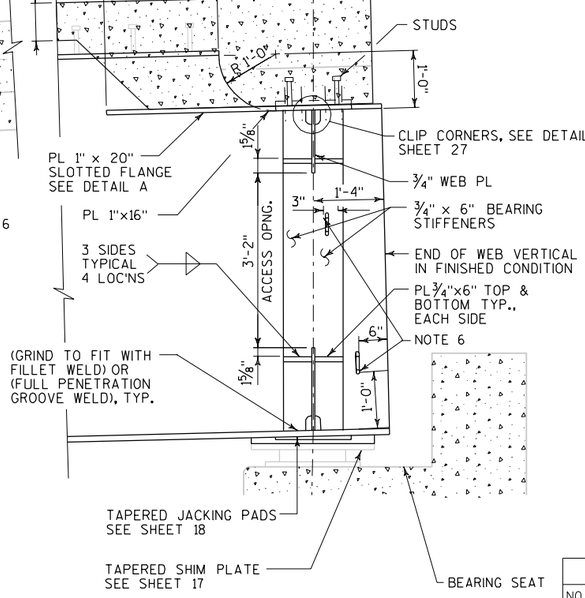


SECTION 2-2



ELEVATION AT PIER 15

(LOOKING UPSTATION)



SECTION 1-1

LEGEND

SUGGESTED JACKING LOCATIONS FOR FUTURE BEARING REPLACEMENT. SEE SHEET 18 FOR DETAILS.

FIELD WELD 1/2" X 6" X 6" COVER PLATE TO DIAPHRAGM PLATE TO SEAL ANY OPENINGS PROVIDED WHERE NO CONDUIT IS TO BE INSTALLED.

NOTES

1. SEE SHEET 19 FOR DETAIL DEFINING WORKPOINT BETWEEN DIAPHRAGM AND BEARING CENTERLINES.
2. ALL BOLTS IN PIER DIAPHRAGMS ARE 1" DIAMETER ASTM A325 TYPE 1.
3. DIAPHRAGMS AND CROSS FRAMES ARE ALIGNED NORMAL TO THE GIRDER UNLESS OTHERWISE NOTED.
4. SEE SHEET 33 FOR LATER BRACING DIRECTION AND LATERAL BRACING CONNECTION PLATE.
5. PROVIDE DOOR HINGES ON LOW SIDE OF GIRDER SO DOOR WILL SWING OPEN IF NOT HATCHED
6. PROVIDE 2-5/8" STAINLESS STEEL EYE-HOOK W/ NUT & WASHER ON EACH SIDE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MM	PLANS CK'D.	SST/AML

END DIAPHRAGM AT PIER 15

SHEET 28 OF 54
330

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STATE PROJECT NUMBER
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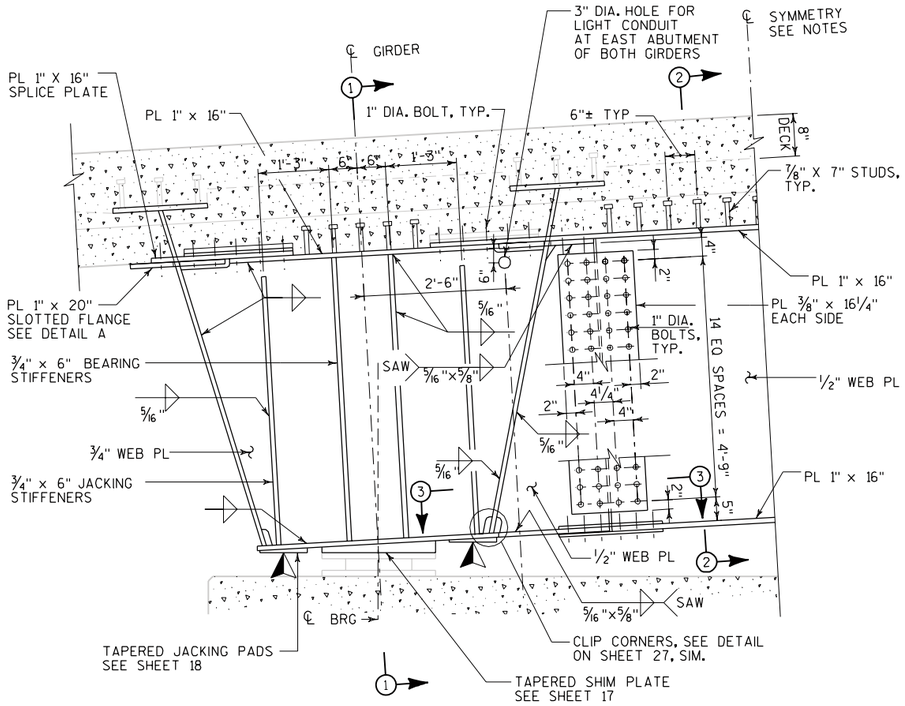
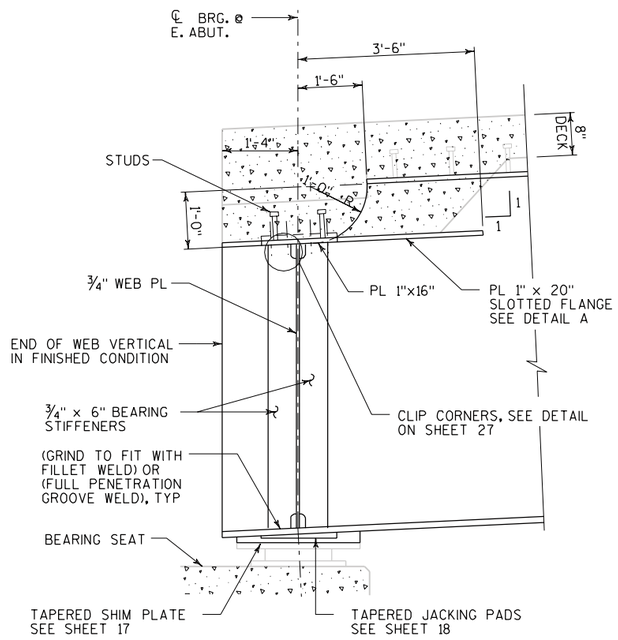
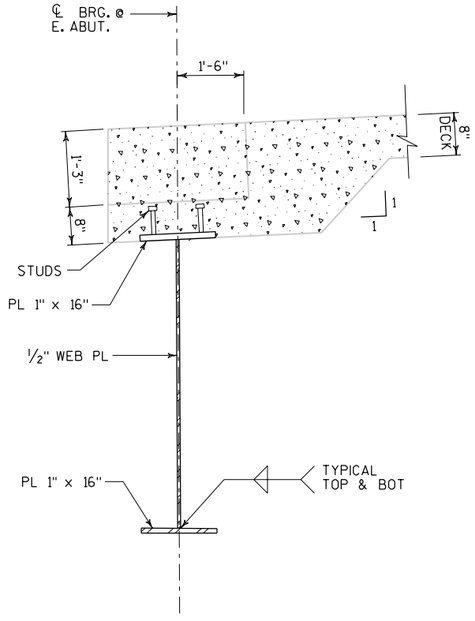


ELEVATION AT E. ABUTMENT

(LOOKING UPSTATION)



SECTION 1-1



SECTION 2-2

NOTES

1. SEE SHEET 28 FOR SECTION 3-3, PLAN, AND DETAIL A.
2. SEE SHEET 28 FOR LEGEND AND NOTES.
3. DIAPHRAGM IS SYMMETRIC ABOUT THE INDICATED LINE WITH THE EXCEPTION OF LATERAL BRACING DIRECTION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MM	PLANS CK'D.	SST

END DIAPHRAGMS AT E. ABUTMENT

SHEET 29 OF 54

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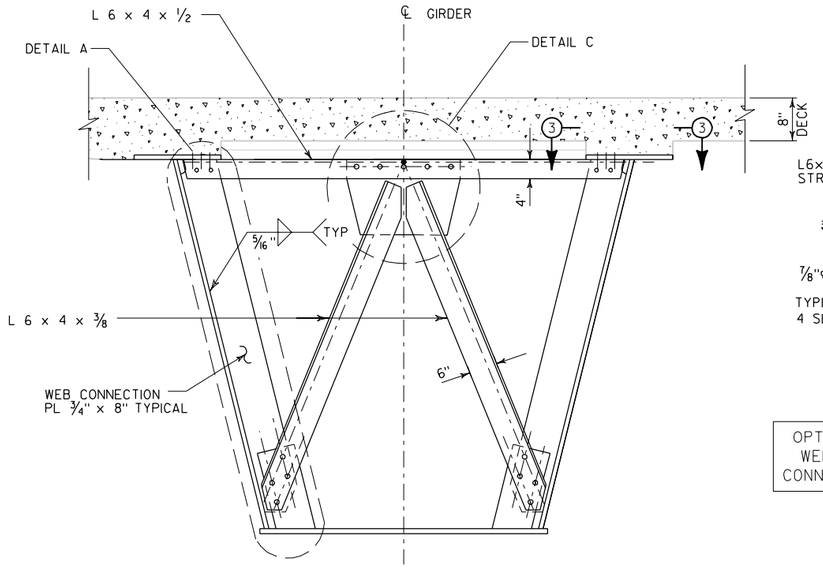
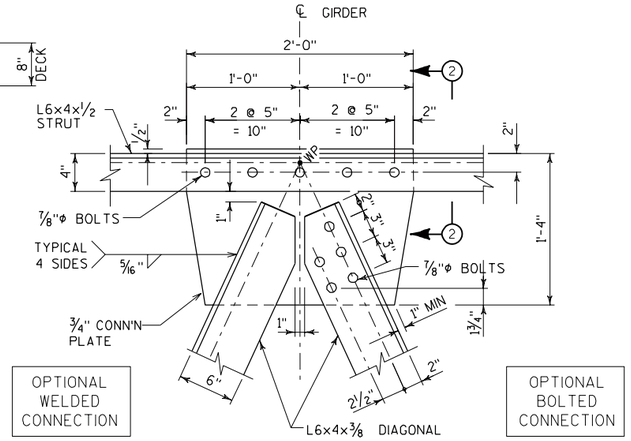
STATE PROJECT NUMBER

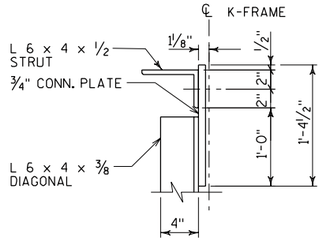
1166-11-75



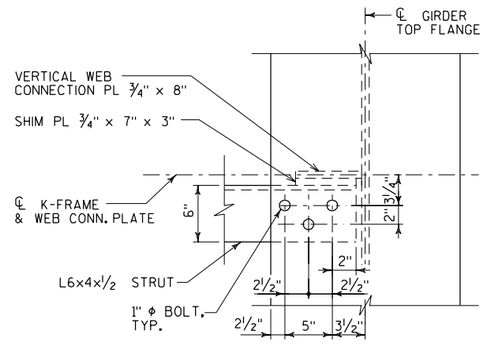
TYPICAL SECTION AT K1-FRAME



DETAIL C



SECTION 2-2

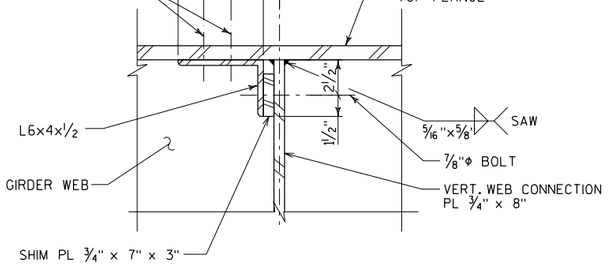


SECTION 3-3

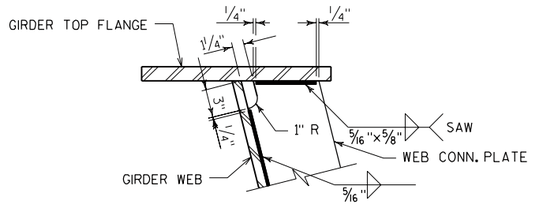
NOTES

1. BOLTS CONNECTING K-FRAME STRUTS TO TOP FLANGE ARE 1" DIAMETER ASTM A325 TYPE 1.
2. BOLTS CONNECTING K-FRAME DIAGONALS TO WEB STIFFENERS AND TOP STRUT ARE ⅞" DIAMETER ASTM A325 TYPE 1.
3. ALL CONNECTIONS SHALL BE FABRICATED AND ASSEMBLED AS SLIP-CRITICAL CLASS A CONNECTIONS.
4. K-FRAMES ARE ALIGNED NORMAL TO THE GIRDER UNLESS OTHERWISE NOTED.
5. ALL DIAGONALS AT EACH SPECIFIC K-FRAME LOCATION SHALL USE THE SAME CONNECTION DETAIL, EITHER BOLTED OR WELDED.
6. CONNECTION PLATES WELDED TO WEBS SHALL MATCH THE GIRDER STEEL GRADE. ALL OTHER STEEL SHALL BE GRADE 50.

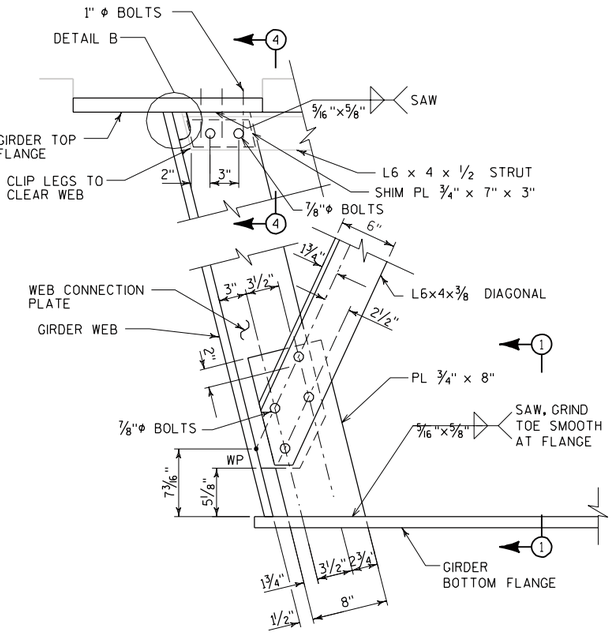
   NOTE THAT THE REQUIREMENTS OF THE AASHTO GUIDE SPECIFICATIONS FOR HORIZONTALLY CURVED STEEL GIRDER HIGHWAY BRIDGES 2003, CLAUSE 10.2.2.3. FOR TRANSVERSE BRACING MEMBERS ACROSS THE BOTTOM FLANGE AT INTERMEDIATE BRACING LOCATIONS WAS EXPLICITLY SUPERCEDED BY THE DESIGN CRITERIA.
7. SPECIAL K-FRAME STRUT CONNECTION DETAIL TO TOP FLANGE & LATERAL BRACING, SEE SECTION 3-3 & DETAIL E ON SHEET 33.
8. CONNECTION PLATES WELDED TO WEBS SHALL MATCH THE GIRDER STEEL GRADE. ALL OTHER STEEL SHALL BE GRADE 50.



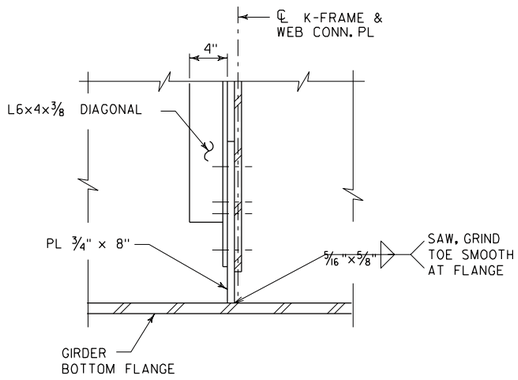
SECTION 4-4



DETAIL B



DETAIL A



SECTION 1-1

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MM	PLANS CK'D.	SST

INTERMEDIATE K-FRAMES (K1 TYPE)

SHEET 30 OF 54

332

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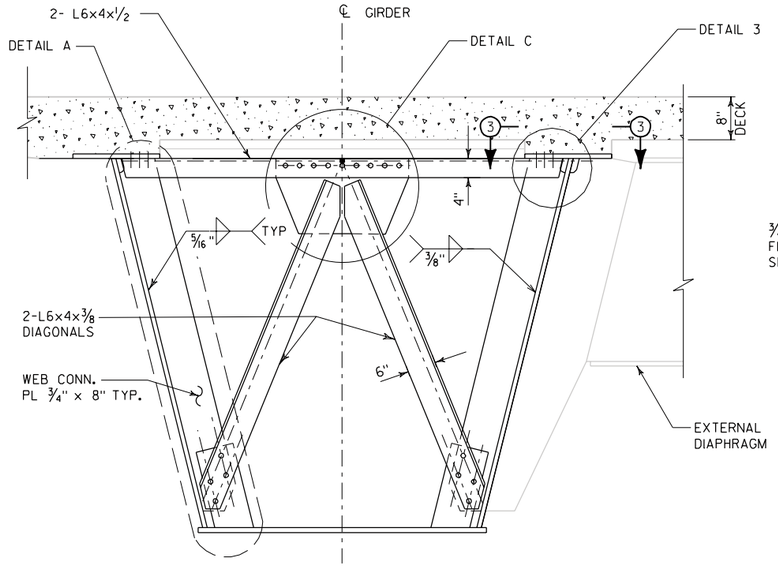
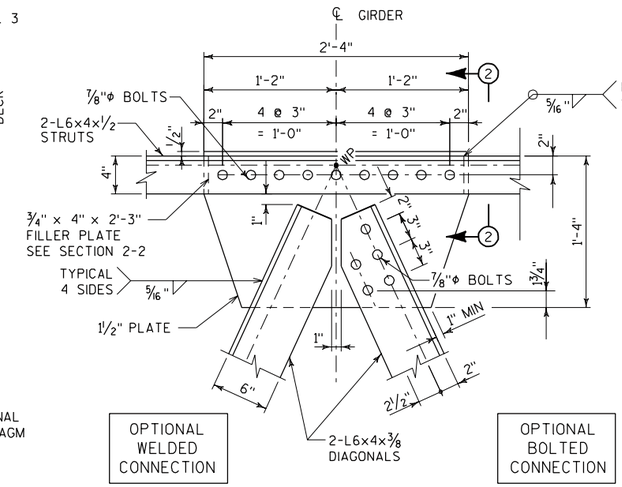
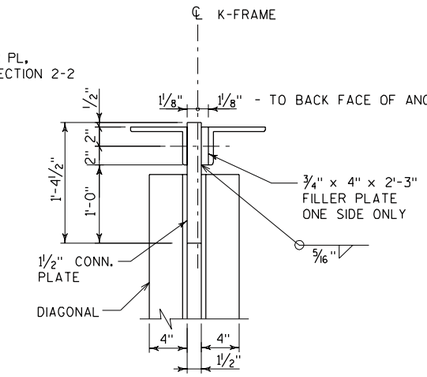
STATE PROJECT NUMBER
1166-11-75



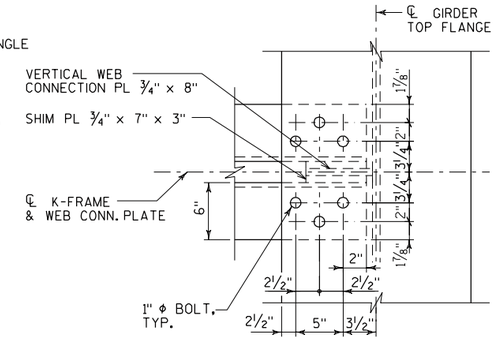
TYPICAL SECTION AT K2-FRAMES



DETAIL C



SECTION 2-2

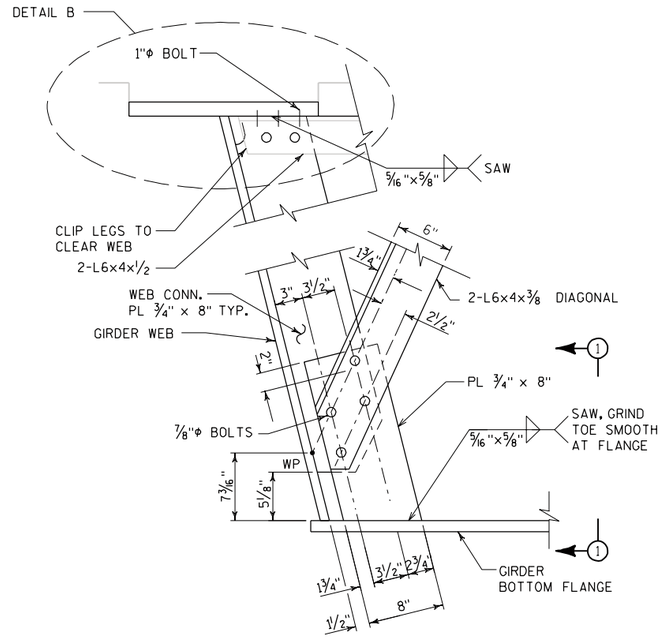


SECTION 3-3

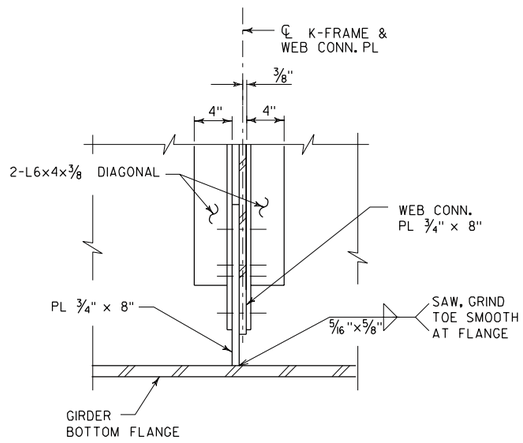
NOTES

1. BOLTS CONNECTING K-FRAME STRUTS TO TOP FLANGE ARE 1" DIAMETER ASTM A325 TYPE 1.
2. BOLTS CONNECTING K-FRAME DIAGONALS TO WEB STIFFENERS AND TOP STRUT ARE 7/8" DIAMETER ASTM A325 TYPE 1.
3. ALL CONNECTIONS SHALL BE FABRICATED AND ASSEMBLED AS SLIP-CRITICAL CLASS A CONNECTIONS.
4. K-FRAMES ARE ALIGNED NORMAL TO THE GIRDER UNLESS OTHERWISE NOTED.
5. AT DETAIL C, ALL DIAGONALS AT EACH SPECIFIC K-FRAME LOCATION SHALL USE THE SAME CONNECTION DETAIL, EITHER BOLTED OR WELDED.
6. CONNECTION PLATES WELDED TO WEBS SHALL MATCH THE GIRDER STEEL GRADE. ALL OTHER STEEL SHALL BE GRADE 50.

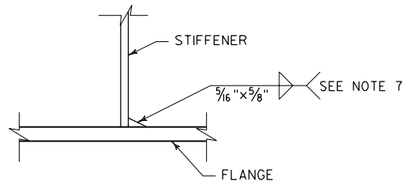
   NOTE THAT THE REQUIREMENTS OF THE AASHTO GUIDE SPECIFICATIONS FOR HORIZONTALLY CURVED STEEL GIRDER HIGHWAY BRIDGES 2003, CLAUSE 10.2.2.3, FOR TRANSVERSE BRACING MEMBERS ACROSS THE BOTTOM FLANGE AT INTERMEDIATE BRACING LOCATIONS WAS EXPLICITLY SUPERCEDED BY THE DESIGN CRITERIA.
7. ALL STIFFENER TO WEB WELDS SHALL BE MADE WITH UNEQUAL LENGTH WELDS.



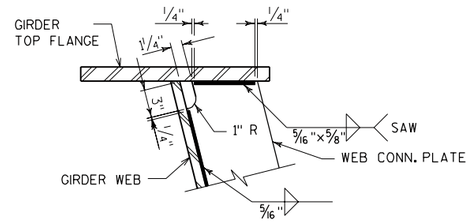
DETAIL A



SECTION 1-1



UNEQUAL LEG FILLET WELD DETAIL



DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MM	PLANS CK'D.	SST

INTERMEDIATE K-FRAMES (K2 TYPE)

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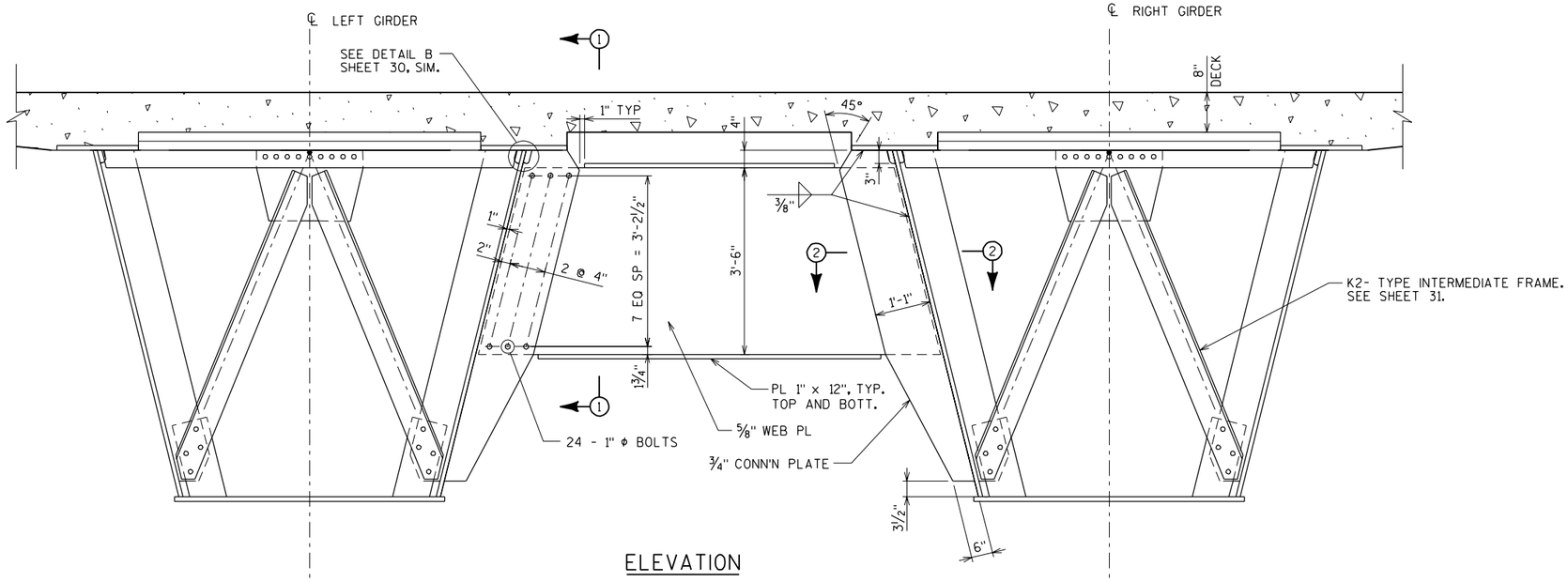
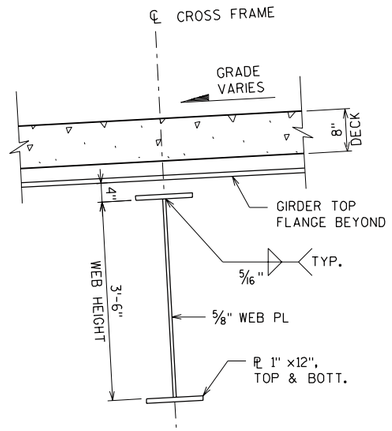
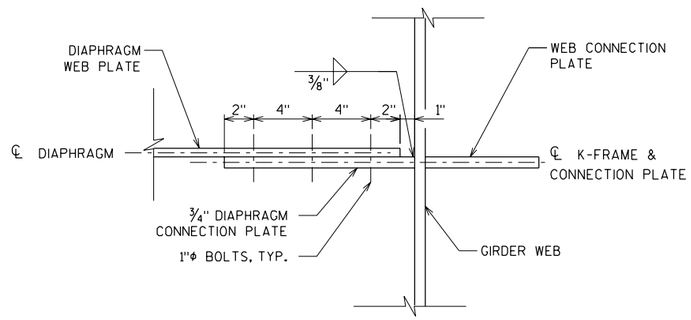


ELEVATION



SECTION 1-1



SECTION 2-2

NOT TO SCALE

NOTES

1. ALL BOLTS CONNECTING EXTERIOR DIAPHRAGMS ARE 1" DIAMETER ASTM A325 TYPE 1.
2. ALL HOLES SHALL BE STANDARD DIAMETER - NO OVERSIZE HOLES.
3. ALL CONNECTIONS SHALL BE FABRICATED AND ASSEMBLED AS SLIP-CRITICAL CLASS A CONNECTIONS.
4. STEEL GRADE FOR CONNECTION PLATES SHALL MATCH THE BOX GIRDER STEEL GRADE AT THE EXTERIOR DIAPHRAGMS LOCATION.
5. CROSS FRAMES ARE ALIGNED NORMAL TO THE GIRDERS.
6. CONNECTION PLATES SHALL BE LOCATED DIRECTLY IN LINE WITH THE CORRESPONDING WEB CONNECTION PLATE LOCATED INSIDE THE BOX.

8

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NO.	DATE	REVISION	BY

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EXTERIOR DIAPHRAGMS

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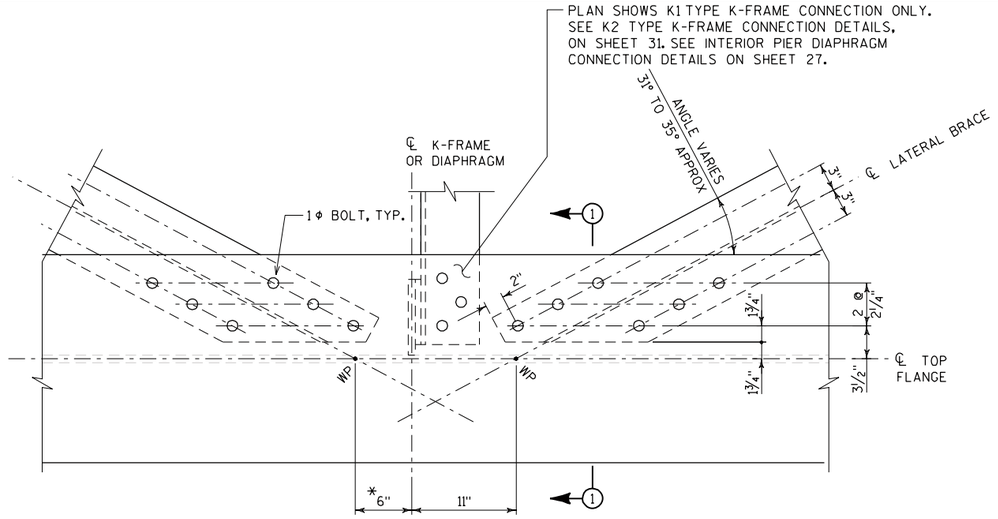
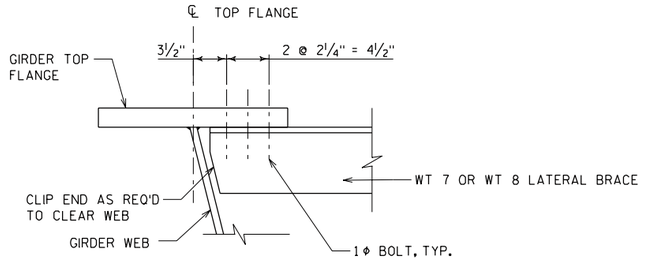


DETAIL A

* USE 11" AT K2 TYPE K-FRAME & INTERIOR PIER DIAPHRAGM LOCATIONS
USE 6" AT K1 TYPE K-FRAME LOCATIONS



SECTION 1-1

SECTION MARKS

THE FIRST DIGIT OF THE LATERAL BRACING MARK NUMBER IDENTIFIES THE SECTION AS FOLLOWS:

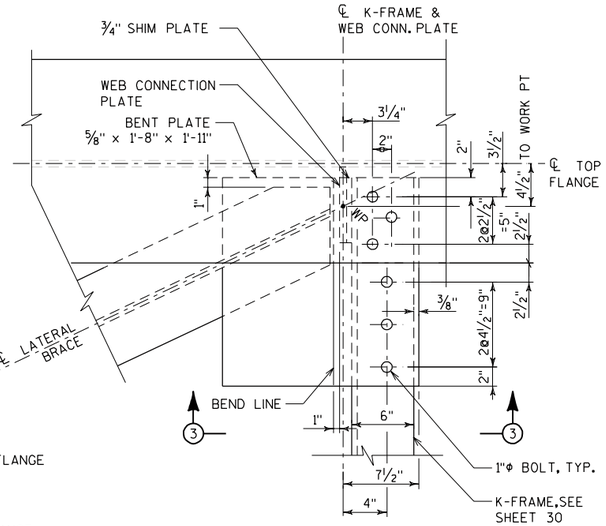
1 WT 7 X 30.5

2 WT 8 X 33.5

THE SECOND CHARACTER OF THE LATERAL BRACING MARK NUMBER IDENTIFIES THE END CONNECTION DETAIL TO BE USED AND RELATES DIRECTLY TO DETAILS ON THIS SHEET.

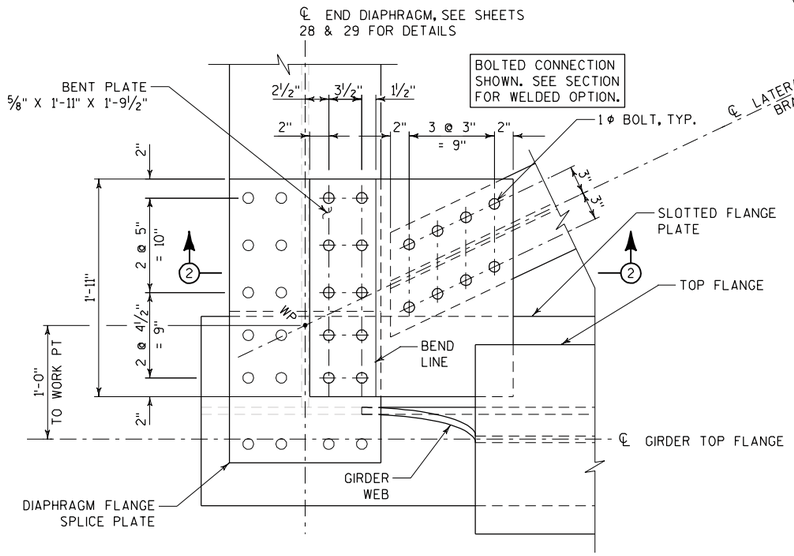
NOTES

1. ALL BOLTS CONNECTING LATERAL BRACING MEMBER ARE 1" DIAMETER ASTM A325 TYPE 1.
2. SEE FRAMING AND GIRDER PLANS ON SHEETS 20 TO 25 FOR ALIGNMENT OF ALL LATERAL BRACE MEMBERS.
3. ALL CONNECTIONS SHALL BE FABRICATED AND ASSEMBLED AS SLIP-CRITICAL CLASS A CONNECTIONS.



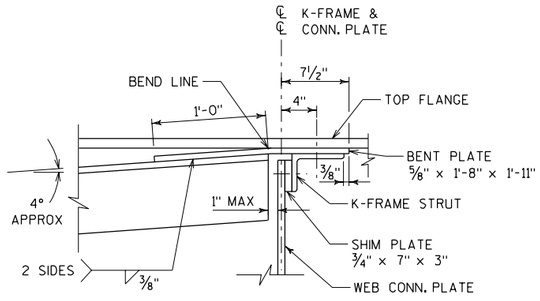
DETAIL E

AT FIRST K-FRAME

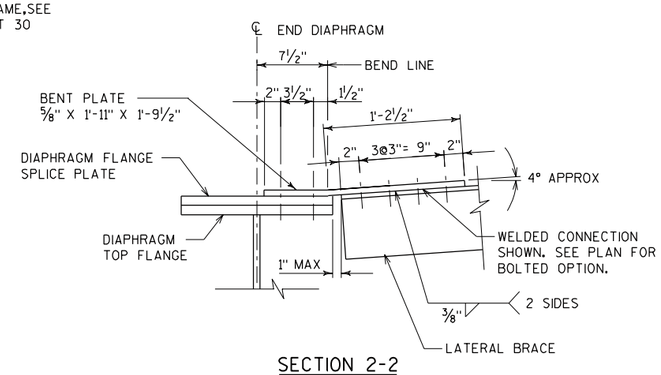


DETAIL E

AT END DIAPHRAGM



SECTION 3-3



SECTION 2-2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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CONST. SPEC	2008	DRAWN BY	MM	PLANS CK'D.	SST

LATERAL BRACING DETAILS

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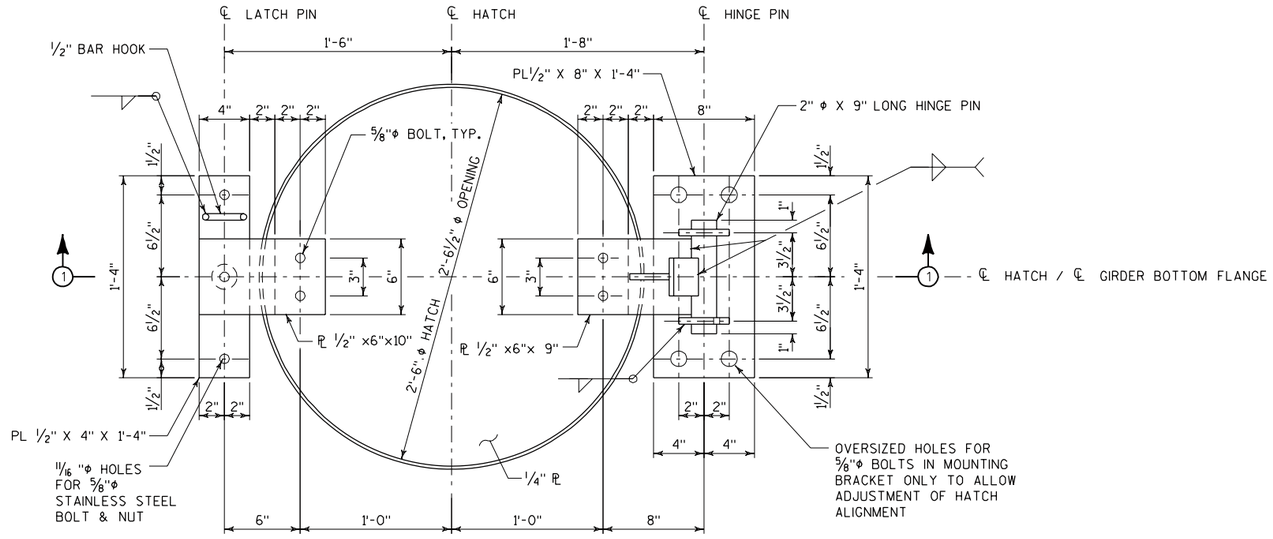
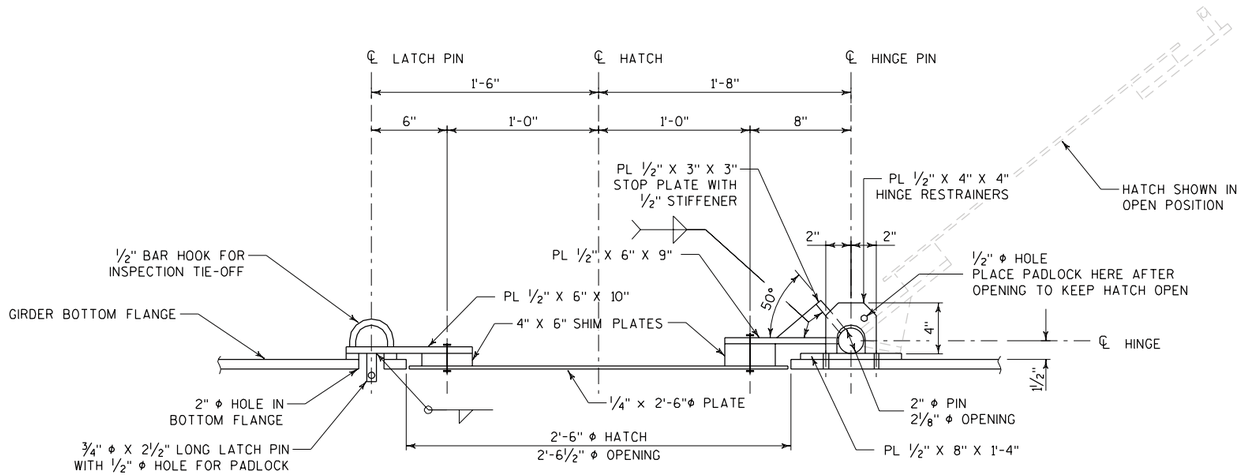


PLAN



SECTION 1-1

NOTES

1. ALL BOLTS SHOWN ARE 5/8" DIAMETER STAINLESS STEEL.
2. ACCESS HATCHES AH ARE NEAR E. ABUTMENT. SEE SHEET 25 FOR LOCATION.
3. HATCHES SHALL BE ALIGNED WITH THE HINGE SIDE DIRECTED TOWARDS THE EAST ABUTMENT.

NO.	DATE	REVISION	BY

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ACCESS HATCH DETAILS 1

8

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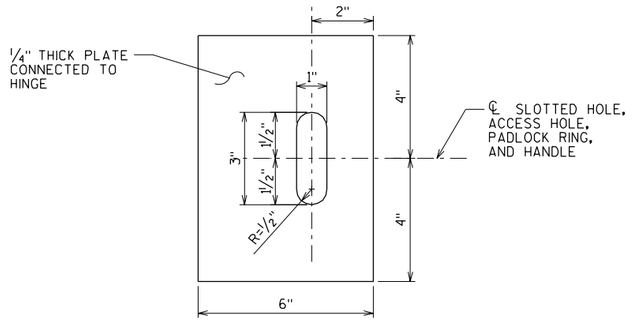
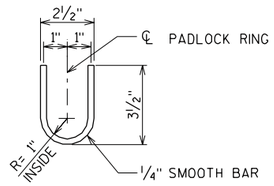
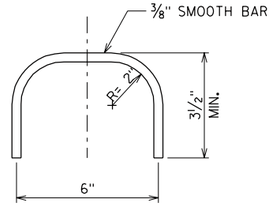


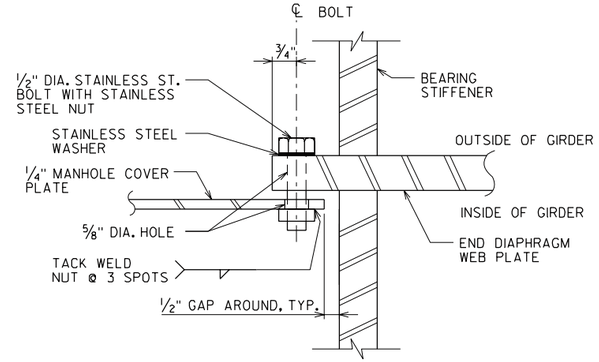
PADLOCK ASSEMBLY PLATE DETAIL



PADLOCK RING DETAIL



HANDLE DETAIL



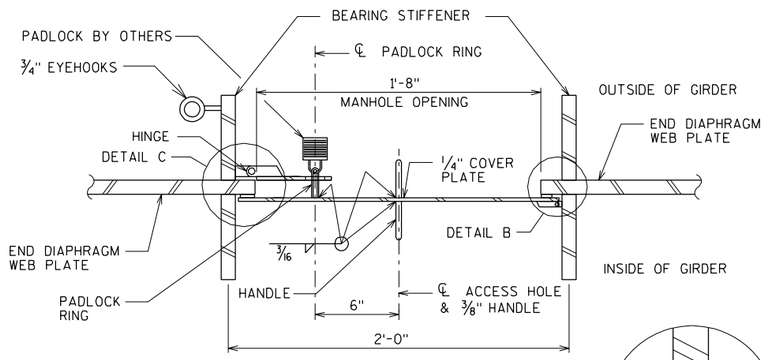
SECTION 2-2

ELEVATION AT PIER 15

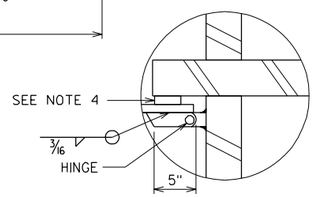
(FROM INSIDE OF BOX GIRDER)

LEFT GIRDER SHOWN. SEE SHEET 28 FOR ACCESS HOLE LOCATION AT RIGHT GIRDER.

DETAIL C



SECTION 1-1



DETAIL B

NOTES:

1. DOORS REQUIRED AT PIER 15.
2. DOOR OPENS TOWARDS THE INSIDE OF THE BOX GIRDERS.
3. 2 HANDLES, ONE AT EACH SIDE OF DOORS.
4. 1/4" x 1" NEOPRENE SEAL ATTACHED ALL AROUND THE ACCESS OPENING AS SHOWN TO ATTAIN A WATERTIGHT FIT.
5. ACCESS OPENINGS ON THIS SHEET ARE AT PIER 15.

NO.	DATE	REVISION	BY

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ACCESS HATCH DETAILS 2

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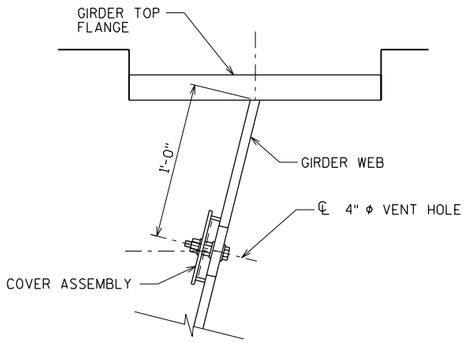
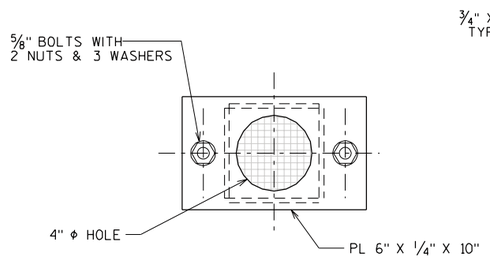
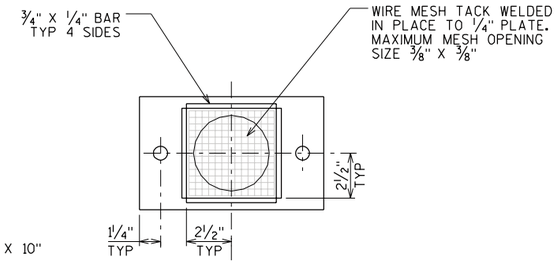


VENT HOLE
(SEE GIRDER ELEVATIONS FOR LOCATION)

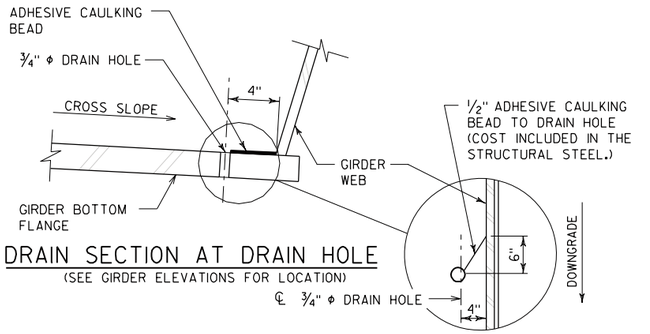


INSIDE FACE



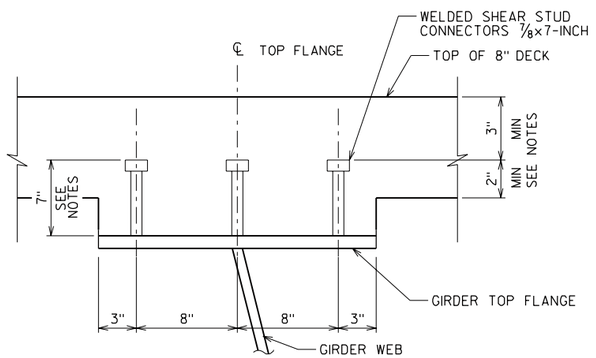
BACK FACE

VENT HOLE COVER ASSEMBLY
NOT TO SCALE



DRAIN SECTION AT DRAIN HOLE
(SEE GIRDER ELEVATIONS FOR LOCATION)

PLAN OF DRAIN HOLES



SHEAR STUD DETAIL

NOTES

1. 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.
2. VENT HOLE COVER ASSEMBLIES SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
3. LOCATE ALL DRAIN HOLES ON THE LOW SIDE OF THE GIRDER AS SHOWN.
4. WHERE THE HAUNCH HEIGHT VARIES, USE LONGER OR SHORTER STUD LENGTHS AS NECESSARY TO MEET ALL OF THE REQUIREMENTS SHOWN.

8

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MISCELLANEOUS GIRDER DETAILS

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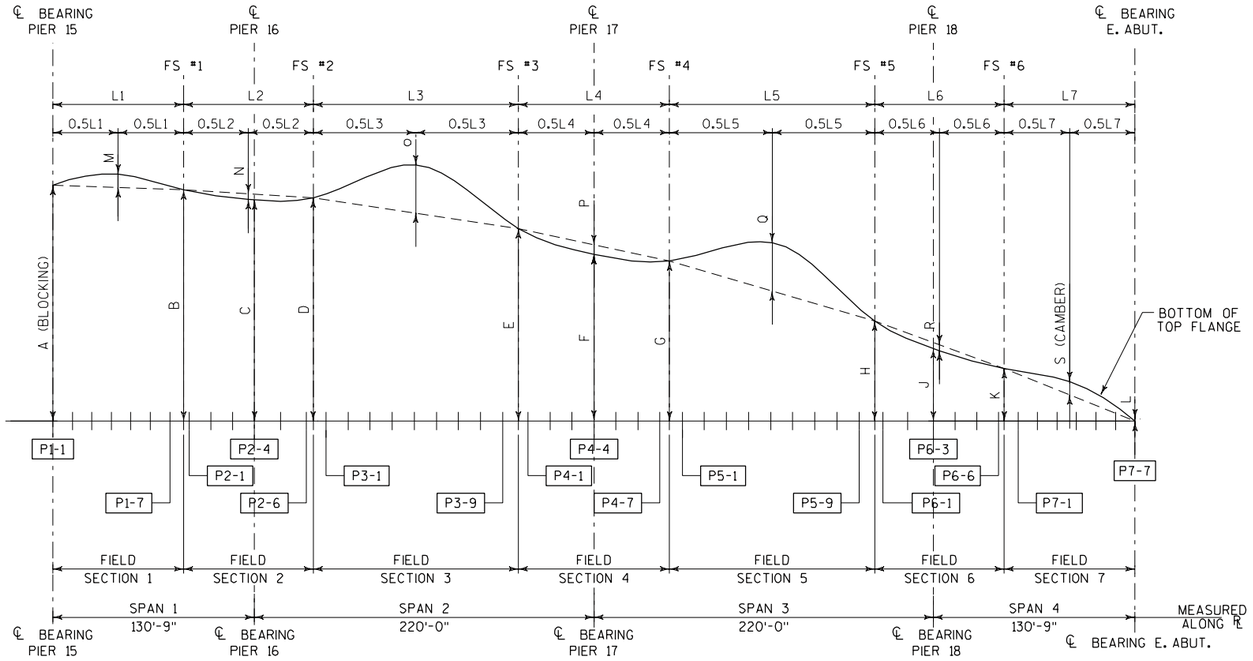
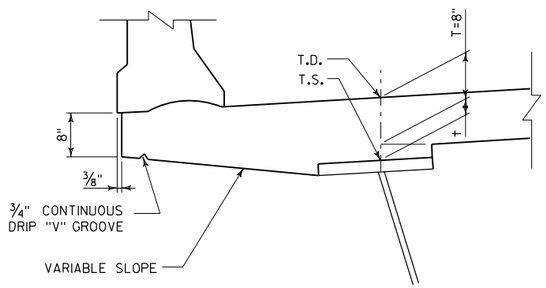


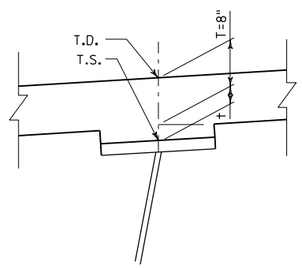
CAMBER & BLOCKING DIAGRAM

CAMBER & BLOCKING TABLE

LOCATION	BLOCKING HEIGHT											CAMBER (INCHES)						
	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S
LEFT GIRDER FASCIA WEB	12'-9 1/8"	12'-6 7/8"	12'-3 1/4"	12'-1 1/4"	10'-4 3/4"	9'-5 1/8"	8'-7 3/8"	5'-5 7/8"	4'-3 1/8"	2'-10 3/4"	0	1 7/8"	-5/8"	4 3/8"	-7/8"	4 3/8"	-5/8"	1 7/8"
LEFT GIRDER INTERIOR WEB	12'-9 1/8"	12'-6 7/8"	12'-3 1/4"	12'-1 3/8"	10'-4 7/8"	9'-5 1/8"	8'-7 3/8"	5'-5 7/8"	4'-3 1/8"	2'-10 3/4"	0	2"	-5/8"	4 1/2"	-1"	4 1/2"	-5/8"	2"
RIGHT GIRDER INTERIOR WEB	12'-9 1/8"	12'-6 7/8"	12'-3 1/4"	12'-1 3/8"	10'-4 7/8"	9'-5 1/8"	8'-7 3/8"	5'-5 7/8"	4'-3 1/8"	2'-10 3/4"	0	2"	-5/8"	4 1/2"	-1"	4 1/2"	-5/8"	2"
RIGHT GIRDER FASCIA WEB	12'-9 1/8"	12'-6 7/8"	12'-3 1/4"	12'-1 1/8"	10'-5"	9'-5 1/8"	8'-7 3/8"	5'-5 7/8"	4'-3 1/8"	2'-10 3/4"	0	2"	-1/2"	4 3/4"	-1 1/8"	4 3/4"	-1/2"	2"



FASCIA WEB



INTERIOR WEB

HAUNCH NOTE:

+= HAUNCH HEIGHT AT CENTERLINE OF GIRDER.
HAUNCH HEIGHTS WILL NORMALLY BE MADE 2" AT EDGE OF GIRDER, AT ABUTMENTS, HINGES, AND FIELD SPLICES.

HAUNCH DEPTH VARIATIONS NEED NOT BE SHOWN ON THE PLANS.

(TO DETERMINE "+" AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED. ELEVATIONS OF THE TOP FLANGES, TOP OF SPLICE PLATES, OR TOP OF COVER PLATES, WHICHEVER APPLES, SHALL BE TAKEN AT CENTERLINE OF BEARINGS, CENTERLINE OF FIELD SPLICES, AND AT O.I. POINTS.

TOP OF DECK ELEV. AT FINAL GRADE.

\- TOP OF STEEL ELEV. AFTER PLACEMENT.

\+ CONC. ONLY DEFLECTIONS: DOWNWARD DEFLECTION IS ADDES, UPWARD IS ADDED, UPWARD DEFLECTION IS SUBTRACTED.

\- SLAB THICKNESS (8")

= "+" VALUE FOR SETTING HAUCH.

LEGEND

P1-7 INTERMEDIATE ELEVATION POINT (PANEL POINT LOCATION).

IN THIS EXAMPLE, '1' IS THE FIELD SECTION NUMBER AND '7' IS THE PANEL POINT NUMBER WITHIN THIS FIELD SECTION.

NOTES

1. SEE SHEET 4 FOR GENERAL NOTES. SEE SHEETS 19 AND 20 FOR ADDITIONAL STEEL FABRICATION NOTES.
2. POSITIVE DEFLECTIONS ARE DOWNWARD.
3. POSITIVE CAMBER IS UPWARD RELATIVE TO A CHORD LINE JOINING THE FIELD SECTION ENDPOINTS.
4. T.S. 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 PONTS SHALL BE CHECKED, AND CORRECTED, IF POSSIBLE, AFTER ERECTION AND BEFORE PERMANENTLY BOLTING THE DIAPHRAGMS IN PLACE.
5. T.D. ELEVATIONS ARE TO TOP OF DECK.
6. CAMBERS SHOWN ON THIS DIAGRAM ARE EXAGGERATED FOR CLARITY

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CONST. SPEC	2008	DRAWN BY	MM	PLANS CK'D.	SST

CAMBER DIAGRAM

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STATE PROJECT NUMBER
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ELEVATIONS AT TOP OF DECK (T.D.) & TOP OF STEEL (T.S.)

POSITION NO.		PANEL POINT & FIELD SPLICE LOCATION														
		PIER 15 & P1-1	P1-2	P1-3	P1-4	P1-5	P1-6	P1-7	F.S. #1	P2-1	P2-2	P2-3	PIER 16 & P2-4	P2-5	P2-6	F.S. #2
1. LEFT DECK EDGE	T.D.	1249.39	1249.38	1249.37	1249.34	1249.31	1249.26	1249.21	1249.18	1249.15	1249.08	1249.00	1248.92	1248.81	1248.69	1248.61
2. LEFT GIRDER FASCIA WEB	T.D.	1249.60	1249.59	1249.57	1249.55	1249.51	1249.47	1249.42	1249.39	1249.36	1249.29	1249.21	1249.12	1249.01	1248.89	1248.82
	T.S.	1247.76							1248.57				1248.29			1248.07
3. LEFT GIRDER INTERIOR WEB	T.D.	1250.08	1250.07	1250.05	1250.03	1249.99	1249.95	1249.90	1249.87	1249.83	1249.77	1249.69	1249.60	1249.49	1249.37	1249.30
	T.S.	1248.24							1249.05				1248.77			1248.55
4. RIGHT GIRDER INTERIOR WEB	T.D.	1250.50	1250.49	1250.47	1250.45	1250.41	1250.37	1250.32	1250.29	1250.26	1250.19	1250.11	1250.02	1249.91	1249.79	1249.72
	T.S.	1248.66							1249.47				1249.19			1248.97
5. RIGHT GIRDER FASCIA WEB	T.D.	1250.98	1250.97	1250.95	1250.93	1250.89	1250.85	1250.80	1250.77	1250.73	1250.67	1250.59	1250.50	1250.39	1250.27	1250.20
	T.S.	1249.14							1249.95				1249.67			1249.46
6. RIGHT DECK EDGE	T.D.	1251.18	1251.17	1251.16	1251.13	1251.10	1251.05	1251.00	1250.97	1250.94	1250.87	1250.79	1250.71	1250.60	1250.48	1250.40

DEAD LOAD DEFLECTIONS (UNIT= INCH)

POSITION NO.		PANEL POINT & FIELD SPLICE LOCATION														
		PIER 15 & P1-1	P1-2	P1-3	P1-4	P1-5	P1-6	P1-7	F.S. #1	P2-1	P2-2	P2-3	PIER 16 & P2-4	P2-5	P2-6	F.S. #2
2. LEFT GIRDER FASCIA WEB	CONCRETE DECK & PARAPET	0	1/8	1/4	3/8	3/8	3/8	1/4	1/8	1/8	0	0	0	1/4	3/4	1
	TOTAL DL	0	1/4	3/8	1/2	1/2	1/2	1/4	1/4	1/8	0	0	0	1/2	1 1/8	1 1/2
3. LEFT GIRDER INTERIOR WEB	CONCRETE DECK & PARAPET	0	1/8	1/4	3/8	3/8	1/4	1/4	1/8	1/8	0	-1/8	0	1/4	3/4	1
	TOTAL DL	0	1/4	3/8	1/2	1/2	3/8	1/4	1/4	1/8	0	-1/8	0	3/8	1 1/8	1 1/2
4. RIGHT GIRDER INTERIOR WEB	CONCRETE DECK & PARAPET	0	1/8	1/4	3/8	3/8	1/4	1/4	1/8	1/8	0	0	0	3/8	3/4	1
	TOTAL DL	0	1/4	3/8	1/2	1/2	3/8	1/4	1/4	1/8	0	-1/8	0	1/2	1 1/8	1 1/2
5. RIGHT GIRDER FASCIA WEB	CONCRETE DECK & PARAPET	0	1/8	1/4	3/8	3/8	3/8	1/4	1/8	1/8	0	0	0	3/8	3/4	1 1/8
	TOTAL DL	0	1/4	3/8	1/2	1/2	1/2	1/4	1/4	1/8	0	-1/8	0	1/2	1 1/8	1 3/8

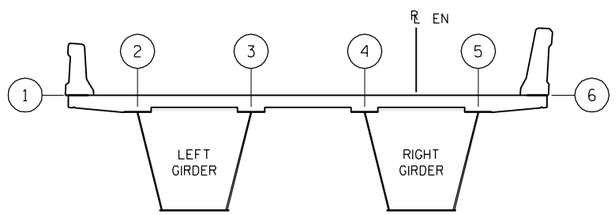
LEGEND

P1-7 INTERMEDIATE ELEVATION POINT (PANEL POINT LOCATION).

IN THIS EXAMPLE, '1' IS THE FIELD SECTION NUMBER AND '7' IS THE PANEL POINT NUMBER WITHIN THIS FIELD SECTION.

NOTES

1. SEE SHEET 4 FOR GENERAL NOTES. SEE SHEETS 19 AND 20 FOR ADDITIONAL STEEL FABRICATION NOTES.
2. POSITIVE DEFLECTIONS ARE DOWNWARD.
3. POSITIVE CAMBER IS UPWARD RELATIVE TO A CHORD LINE JOINING THE FIELD SECTION ENDPOINTS.
4. T.S. 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 PONTS SHALL BE CHECKED, AND CORRECTED, IF POSSIBLE, AFTER ERECTION AND BEFORE PERMANENTLY BOLTING THE DIAPHRAGMS IN PLACE.
5. T.D. ELEVATIONS ARE TO TOP OF DECK.
6. CAMBERS SHOWN ON THIS DIAGRAM ARE EXAGGERATED FOR CLARITY



HORIZONTAL LOCATION KEY

LOOKING UPSTATION

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC 2008	DRAWN BY MM	PLANS CK'D. SST

CAMBER AND DECK ELEVATIONS: SECTIONS #1 & #2

SHEET 38 OF 54

340

STATE PROJECT NUMBER
1166-11-75

ELEVATIONS AT TOP OF DECK (T.D.) & TOP OF STEEL (T.S.)

POSITION NO.		PANEL POINT & FIELD SPLICE LOCATION																		
		F.S. #2	P3-1	P3-2	P3-3	P3-4	P3-5	P3-6	P3-7	P3-8	P3-9	F.S. #3	P4-1	P4-2	P4-3	Pier 17 & P4-4	P4-5	P4-6	P4-7	F.S. #4
1. LEFT DECK EDGE	T.D.	1248.61	1248.56	1248.42	1248.27	1248.10	1247.93	1247.75	1247.55	1247.34	1247.13	1246.98	1246.9	1246.66	1246.41	1246.15	1245.87	1245.59	1245.3	1245.19
2. LEFT GIRDER FASCIA WEB	T.D.	1248.82	1248.77	1248.62	1248.47	1248.31	1248.14	1247.95	1247.76	1247.55	1247.33	1247.18	1247.10	1246.86	1246.61	1246.35	1246.08	1245.80	1245.5	1245.40
	T.S.	1248.07										1246.43				1245.52				1244.64
3. LEFT GIRDER INTERIOR WEB	T.D.	1249.30	1249.24	1249.10	1248.95	1248.79	1248.62	1248.43	1248.24	1248.03	1247.81	1247.66	1247.58	1247.34	1247.09	1246.83	1246.56	1246.28	1245.98	1245.88
	T.S.	1248.55										1246.91				1246.00				1245.13
4. RIGHT GIRDER INTERIOR WEB	T.D.	1249.72	1249.67	1249.52	1249.37	1249.21	1249.04	1248.85	1248.66	1248.45	1248.23	1248.08	1248.0	1247.76	1247.51	1247.25	1246.98	1246.70	1246.4	1246.30
	T.S.	1248.97										1247.33				1246.42				1245.55
5. RIGHT GIRDER FASCIA WEB	T.D.	1250.20	1250.14	1250.00	1249.85	1249.69	1249.52	1249.33	1249.14	1248.93	1248.71	1248.56	1248.48	1248.24	1247.99	1247.73	1247.46	1247.18	1246.88	1246.78
	T.S.	1249.46										1247.82				1246.90				1246.04
6. RIGHT DECK EDGE	T.D.	1250.40	1250.35	1250.21	1250.06	1249.89	1249.72	1249.54	1249.34	1249.13	1248.92	1248.77	1248.69	1248.45	1248.20	1247.94	1247.66	1247.38	1247.0	1246.98

DEAD LOAD DEFLECTIONS (UNIT= INCH)

POSITION NO.		PANEL POINT & FIELD SPLICE LOCATION																		
		F.S. #2	P3-1	P3-2	P3-3	P3-4	P3-5	P3-6	P3-7	P3-8	P3-9	F.S. #3	P4-1	P4-2	P4-3	Pier 17 & P4-4	P4-5	P4-6	P4-7	F.S. #4
2. LEFT GIRDER FASCIA WEB	CONCRETE DECK & PARAPET	1	1 1/8	1 5/8	1 7/8	2 1/8	2 1/4	2 1/8	1 7/8	1 5/8	1 1/8	1	3/4	3/8	1/8	0	1/8	3/8	3/4	1
	TOTAL DL	1 1/2	1 3/4	2 3/8	2 7/8	3 1/8	3 1/4	3 1/8	2 7/8	2 3/8	1 3/4	1 3/8	1 1/8	5/8	1/8	0	1/8	5/8	1 1/8	1 3/8
3. LEFT GIRDER INTERIOR WEB	CONCRETE DECK & PARAPET	1	1 1/8	1 5/8	2	2 1/4	2 1/4	2 1/8	2	1 5/8	1 1/4	1	3/4	3/8	1/8	0	1/8	3/8	3/4	1
	TOTAL DL	1 1/2	1 3/4	2 3/8	3	3 1/4	3 3/8	3 1/4	3	2 3/8	1 7/8	1 1/2	1 1/4	5/8	1/4	0	1/4	5/8	1 1/8	1 1/2
4. RIGHT GIRDER INTERIOR WEB	CONCRETE DECK & PARAPET	1	1 1/4	1 5/8	2	2 1/4	2 1/4	2 1/4	2	1 5/8	1 1/4	1	3/4	3/8	1/8	0	1/8	3/8	3/4	1
	TOTAL DL	1 1/2	1 7/8	2 1/2	3	3 3/8	3 1/2	3 3/8	3	2 1/2	1 7/8	1 1/2	1 1/4	5/8	1/4	0	1/4	5/8	1 1/8	1 1/2
5. RIGHT GIRDER FASCIA WEB	CONCRETE DECK & PARAPET	1 1/8	1 1/4	1 3/4	2 1/8	2 3/8	2 1/2	2 3/8	2 1/8	1 3/4	1 3/8	1 1/8	7/8	1/2	1/8	0	1/8	1/2	7/8	1 1/8
	TOTAL DL	1 3/8	1 7/8	2 5/8	3 1/4	3 5/8	3 3/4	3 5/8	3 1/4	2 5/8	2	1 5/8	1 1/4	5/8	1/4	0	1/4	5/8	1 1/4	1 5/8

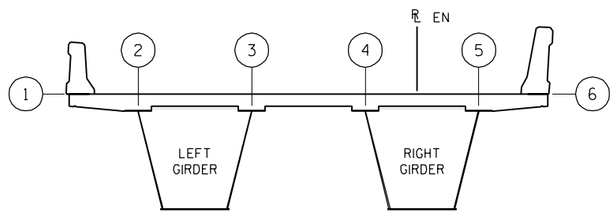
LEGEND

P1-7 INTERMEDIATE ELEVATION POINT (PANEL POINT LOCATION).

IN THIS EXAMPLE, '1' IS THE FIELD SECTION NUMBER AND '7' IS THE PANEL POINT NUMBER WITHIN THIS FIELD SECTION.

NOTES

1. SEE SHEET 4 FOR GENERAL NOTES. SEE SHEETS 19 AND 20 FOR ADDITIONAL STEEL FABRICATION NOTES.
2. POSITIVE DEFLECTIONS ARE DOWNWARD.
3. POSITIVE CAMBER IS UPWARD RELATIVE TO A CHORD LINE JOINING THE FIELD SECTION ENDPOINTS.
4. T.S. 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 PONTS SHALL BE CHECKED, AND CORRECTED, IF POSSIBLE, AFTER ERECTION AND BEFORE PERMANENTLY BOLTING THE DIAPHRAGMS IN PLACE.
5. T.D. ELEVATIONS ARE TO TOP OF DECK.
6. CAMBERS SHOWN ON THIS DIAGRAM ARE EXAGGERATED FOR CLARITY



HORIZONTAL LOCATION KEY

LOOKING UPSTATION

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC 2008	DRAWN BY MM	PLANS CK'D. SST

CAMBER AND DECK ELEVATIONS: SECTIONS #3 & #4

SHEET 39 OF 54

341

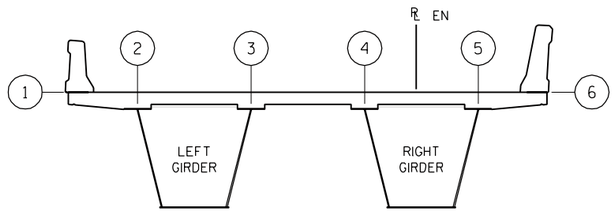
STATE PROJECT NUMBER
1166-11-75

ELEVATIONS AT TOP OF DECK (T.D.) & TOP OF STEEL (T.S.)

POSITION NO.		PANEL POINT & FIELD SPLICE LOCATION										
		F.S. #4	P5-1	P5-2	P5-3	P5-4	P5-5	P5-6	P5-7	P5-8	P5-9	F.S. #5
1. LEFT DECK EDGE	T.D.	1245.19	1244.99	1244.67	1244.35	1244.01	1243.66	1243.30	1242.93	1242.55	1242.15	1241.99
2. LEFT GIRDER FASCIA WEB	T.D.	1245.40	1245.20	1244.88	1244.55	1244.22	1243.87	1243.51	1243.13	1242.75	1242.36	1242.20
	T.S.	1244.64										1241.44
3. LEFT GIRDER INTERIOR WEB	T.D.	1245.88	1245.68	1245.36	1245.03	1244.69	1244.34	1243.98	1243.61	1243.23	1242.84	1242.67
	T.S.	1245.13										1241.92
4. RIGHT GIRDER INTERIOR WEB	T.D.	1246.30	1246.10	1245.78	1245.45	1245.12	1244.77	1244.41	1244.03	1243.65	1243.26	1243.10
	T.S.	1245.55										1242.35
5. RIGHT GIRDER FASCIA WEB	T.D.	1246.78	1246.58	1246.26	1245.93	1245.59	1245.24	1244.88	1244.51	1244.13	1243.74	1243.57
	T.S.	1246.04										1242.83
6. RIGHT DECK EDGE	T.D.	1246.98	1246.78	1246.46	1246.14	1245.80	1245.45	1245.09	1244.72	1244.34	1243.94	1243.78

DEAD LOAD DEFLECTIONS (UNIT= INCH)

POSITION NO.		PANEL POINT & FIELD SPLICE LOCATION										
		F.S. #4	P5-1	P5-2	P5-3	P5-4	P5-5	P5-6	P5-7	P5-8	P5-9	F.S. #5
2. LEFT GIRDER FASCIA WEB	CONCRETE DECK & PARAPET	1	1 1/8	1 1/2	1 7/8	2 1/8	2 1/8	2 1/8	1 7/8	1 1/2	1 1/8	1
	TOTAL DL	1 3/8	1 3/4	2 1/4	2 3/4	3 1/8	3 1/4	3 1/8	2 3/4	2 3/8	1 5/8	1 1/2
3. LEFT GIRDER INTERIOR WEB	CONCRETE DECK & PARAPET	1	1 1/4	1 5/8	2	2 1/8	2 1/4	2 1/8	2	1 5/8	1 1/8	1
	TOTAL DL	1 1/2	1 3/4	2 3/8	2 7/8	3 1/4	3 3/8	3 1/4	2 7/8	2 3/8	1 3/4	1 1/2
4. RIGHT GIRDER INTERIOR WEB	CONCRETE DECK & PARAPET	1	1 1/4	1 5/8	2	2 1/4	2 1/4	2 1/4	2	1 5/8	1 1/4	1
	TOTAL DL	1 1/2	1 7/8	2 1/2	3	3 3/8	3 3/8	3 3/8	3	2 1/2	1 3/4	1 1/2
5. RIGHT GIRDER FASCIA WEB	CONCRETE DECK & PARAPET	1 1/8	1 3/8	1 3/4	2 1/8	2 3/8	2 1/2	2 3/8	2 1/8	1 3/4	1 1/4	1 1/8
	TOTAL DL	1 5/8	2	2 5/8	3 1/4	3 1/2	3 3/4	3 1/2	3 1/4	2 5/8	1 7/8	1 3/8



HORIZONTAL LOCATION KEY

LOOKING UPSTATION

LEGEND

P1-7 INTERMEDIATE ELEVATION POINT (PANEL POINT LOCATION).

IN THIS EXAMPLE, '1' IS THE FIELD SECTION NUMBER AND '7' IS THE PANEL POINT NUMBER WITHIN THIS FIELD SECTION.

NOTES

1. SEE SHEET 4 FOR GENERAL NOTES. SEE SHEETS 19 AND 20 FOR ADDITIONAL STEEL FABRICATION NOTES.
2. POSITIVE DEFLECTIONS ARE DOWNWARD.
3. POSITIVE CAMBER IS UPWARD RELATIVE TO A CHORD LINE JOINING THE FIELD SECTION ENDPOINTS.
4. T.S. 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 PONTS SHALL BE CHECKED, AND CORRECTED, IF POSSIBLE, AFTER ERECTION AND BEFORE PERMANENTLY BOLTING THE DIAPHRAGMS IN PLACE.
5. T.D. ELEVATIONS ARE TO TOP OF DECK.
6. CAMBERS SHOWN ON THIS DIAGRAM ARE EXAGGERATED FOR CLARITY

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MM	PLANS CK'D.	SST

CAMBER AND DECK ELEVATIONS: SECTION #5

SHEET 40 OF 54

342

STATE PROJECT NUMBER
1166-11-75

ELEVATIONS AT TOP OF DECK (T.D.) & TOP OF STEEL (T.S.)

POSITION NO.		PANEL POINT & FIELD SPLICE LOCATION														
		F.S. #5	P6-1	P6-2	PIER 18 & P6-3	P6-4	P6-5	P6-6	F.S. #6	P7-1	P7-2	P7-3	P7-4	P7-5	P7-6	E. ABUT.
1. LEFT DECK EDGE	T.D.	1241.99	1241.75	1241.33	1240.91	1240.52	1240.12	1239.72	1239.50	1239.30	1238.88	1238.44	1238.00	1237.55	1237.09	1236.63
2. LEFT GIRDER FASCIA WEB	T.D.	1242.20	1241.96	1241.54	1241.11	1240.73	1240.33	1239.92	1239.71	1239.51	1239.08	1238.65	1238.21	1237.76	1237.30	1236.83
	T.S.	1241.44			1240.28				1238.89							1235.00
3. LEFT GIRDER INTERIOR WEB	T.D.	1242.67	1242.43	1242.02	1241.59	1241.20	1240.81	1240.40	1240.19	1239.99	1239.56	1239.13	1238.69	1238.24	1237.78	1237.31
	T.S.	1241.92			1240.76				1239.36							1235.48
4. RIGHT GIRDER INTERIOR WEB	T.D.	1243.10	1242.86	1242.44	1242.01	1241.63	1241.23	1240.80	1240.61	1240.41	1239.98	1239.55	1239.11	1238.66	1238.20	1237.73
	T.S.	1242.35			1241.18				1239.79							1235.90
5. RIGHT GIRDER FASCIA WEB	T.D.	1243.57	1243.33	1242.92	1242.49	1242.10	1241.71	1241.30	1241.09	1240.89	1240.46	1240.03	1239.59	1239.14	1238.68	1238.21
	T.S.	1242.83			1241.66				1240.27							1236.38
6. RIGHT DECK EDGE	T.D.	1243.78	1243.54	1243.12	1242.70	1242.31	1241.91	1241.51	1241.29	1241.09	1240.6	1240.2	1239.79	1239.34	1238.88	1238.42

DEAD LOAD DEFLECTIONS (UNIT= INCH)

POSITION NO.		PANEL POINT & FIELD SPLICE LOCATION														
		F.S. #5	P6-1	P6-2	PIER 18 & P6-3	P6-4	P6-5	P6-6	F.S. #	D7-1	P7-2	P7-3	P7-4	P7-5	P7-6	E. ABUT.
2. LEFT GIRDER FASCIA WEB	CONCRETE DECK & PARAPET	1	3/4	1/4	0	0	0	1/8	1/8	1/4	3/8	3/8	3/8	1/4	1/8	0
	TOTAL DL	1 1/2	1	1/2	0	0	0	1/8	1/4	1/4	1/2	1/2	1/2	3/8	1/4	0
3. LEFT GIRDER INTERIOR WEB	CONCRETE DECK & PARAPET	1	3/4	1/4	0	0	0	1/8	1/8	1/4	1/4	3/8	3/8	1/4	1/8	0
	TOTAL DL	1 1/2	1	3/8	0	-1/8	0	1/8	1/4	1/4	3/8	1/2	1/2	3/8	1/4	0
4. RIGHT GIRDER INTERIOR WEB	CONCRETE DECK & PARAPET	1	3/4	3/8	0	0	0	1/8	1/8	1/4	1/4	3/8	3/8	1/4	1/8	0
	TOTAL DL	1 1/2	1 1/8	1/2	0	-1/8	0	1/8	1/4	1/4	3/8	1/2	1/2	3/8	1/4	0
5. RIGHT GIRDER FASCIA WEB	CONCRETE DECK & PARAPET	1 1/8	3/4	3/8	0	0	0	1/8	1/8	1/4	3/8	3/8	3/8	1/4	1/8	0
	TOTAL DL	1 3/8	1 1/8	1/2	0	-1/8	0	1/8	1/4	1/4	1/2	1/2	1/2	3/8	1/4	0

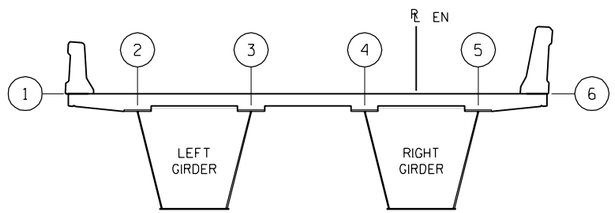
LEGEND

P1-7 INTERMEDIATE ELEVATION POINT (PANEL POINT LOCATION).

IN THIS EXAMPLE, '1' IS THE FIELD SECTION NUMBER AND '7' IS THE PANEL POINT NUMBER WITHIN THIS FIELD SECTION.

NOTES

1. SEE SHEET 4 FOR GENERAL NOTES. SEE SHEETS 19 AND 20 FOR ADDITIONAL STEEL FABRICATION NOTES.
2. POSITIVE DEFLECTIONS ARE DOWNWARD.
3. POSITIVE CAMBER IS UPWARD RELATIVE TO A CHORD LINE JOINING THE FIELD SECTION ENDPOINTS.
4. T.S. 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 PONTS SHALL BE CHECKED, AND CORRECTED, IF POSSIBLE, AFTER ERECTION AND BEFORE PERMANENTLY BOLTING THE DIAPHRAGMS IN PLACE.
5. T.D. ELEVATIONS ARE TO TOP OF DECK.
6. CAMBERS SHOWN ON THIS DIAGRAM ARE EXAGGERATED FOR CLARITY



HORIZONTAL LOCATION KEY

LOOKING UPSTATION

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

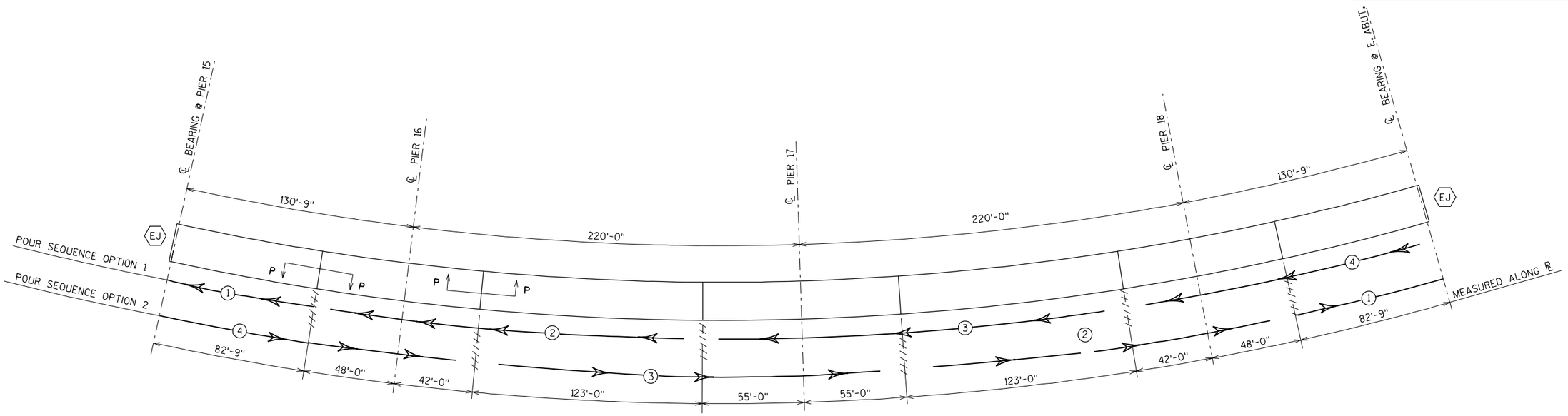
CONST. SPEC 2008	DRAWN BY MM	PLANS CK'D. SST

CAMBER AND DECK ELEVATIONS: SECTIONS #6 & #7

SHEET 41 OF 54

343

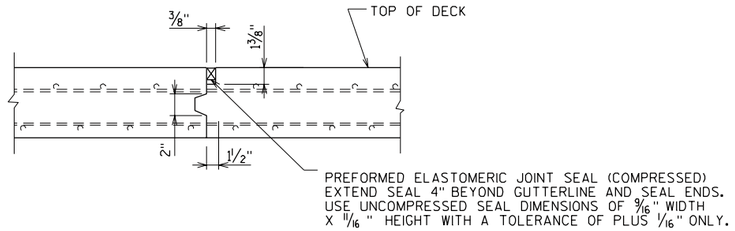
STATE PROJECT NUMBER
1166-11-75



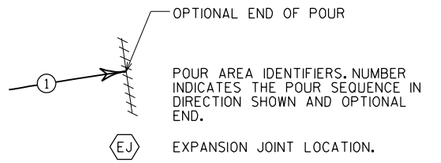
CONCRETE DECK POUR SEQUENCE

NOTES

1. SEE SHEET 4 FOR GENERAL NOTES.
2. SEE SHEETS 49 TO 51 FOR BLOCKOUTS AND OTHER DETAILS REQUIRED AT EXPANSION JOINT LOCATIONS.
3. DIMENSIONS ON THIS DRAWING ARE MEASURED ALONG THE ACTUAL PROFILE OF THE FINISHED EDGE OF DECK.
4. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING DECK POURS TO BEST SUIT THE MEANS AND METHODS AVAILABLE, SUBJECT TO THE FOLLOWING RESTRICTIONS.
5. CONTRACTOR MAY PLACE THE DECK CONTINUOUSLY FROM EITHER END OF THE STRUCTURE. IF MORE THAN ONE POUR IS REQUIRED, BULKHEADS BETWEEN POURS SHALL BE POSITIONED AT THE LOCATIONS IDENTIFIED ON THIS PLAN - SEE LEGEND.
6. CONTROL POUR SEQUENCE AND PLACEMENT RATE TO ENSURE THAT BEFORE THE CONCRETE IN ANY 'PIER' AREA REACHES THE INITIAL SET CONDITION, THE CONCRETE IN BOTH ADJACENT 'SPAN' AREAS IS ALREADY BE IN PLACE.
7. PREVENT UPLIFT AT ALL BEARING LOCATIONS. NOTE THAT ANY POUR SEQUENCE THAT REQUIRES POURING THE FIRST INTERIOR SPAN BEFORE THE ADJACENT END SPAN (SUCH AS THE END-TO-END SEQUENCES REFERRED TO ABOVE) WILL RESULT IN UPLIFT FORCES AT THE EXPANSION END BEARINGS. THE CONTRACTOR SHALL ACCOUNT FOR THIS CONDITION.
8. DEPOSIT FRESH CONCRETE FIRST IN THE AREA BETWEEN THE GIRDERS FOLLOWED BY THE OVERHANG AREA TO THE INSIDE OF THE CURVE AND THEN BY THE OVERHANG AREA TO THE OUTSIDE OF THE CURVE.
9. CONTROL THE PLACEMENT TO ENSURE THAT THE FURTHEST PROGRESS OF FRESH CONCRETE VARIES BY NO MORE THAN 10 FEET ACROSS THE WIDTH OF THE DECK.
10. PREVIOUSLY PLACED DECK CONCRETE MUST HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI BEFORE THE AREAS IMMEDIATELY ADJACENT MAY BE PLACED.
11. FOLLOW PROCEDURES OUTLINED IN THE SPECIAL PROVISIONS FOR PROMPTLY FOGGING, COVERING AND CURING FRESHLY PLACED CONCRETE.
12. STAY-IN-PLACE METAL FORMS WILL ONLY BE PERMITTED INSIDE THE BOX GIRDERS - THE OVERHANGS AND THE ZONE BETWEEN THE GIRDERS SHALL USE CONVENTIONAL TEMPORARY FORMS.
13. THE USE OF STAY-IN-PLACE METAL FORMS IS OPTIONAL - CONVENTIONAL FORMWORK MAY BE USED INSIDE THE BOXES BUT MUST BE COMPLETELY REMOVED.
14. DESIGN CONNECTION BETWEEN STAY-IN-PLACE METAL FORMS AND GIRDER FLANGES TO PROVIDE ADJUSTMENT OF VERTICAL POSITION BASED ON THE ACTUAL HAUNCH HEIGHT REQUIRED. WELDING TO THE GIRDER FLANGES WILL NOT BE ALLOWED.
15. ALL STEEL SHALL BE SECURED IN ITS PROPER PLACE & ELEVATION PRIOR TO ANY CONCRETE PLACEMENT.



SECTION P-P



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MM	PLANS CK'D.	SST

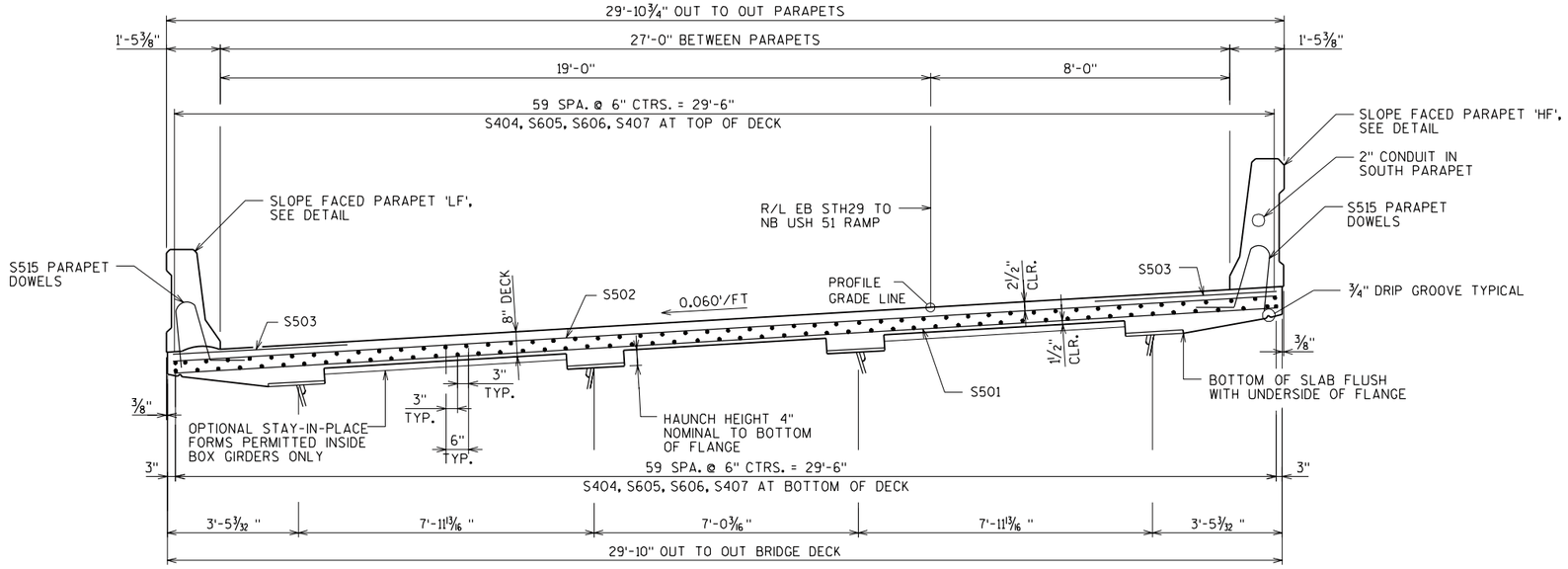
DECK POUR SEQUENCE

SHEET 42 OF 54
344

8

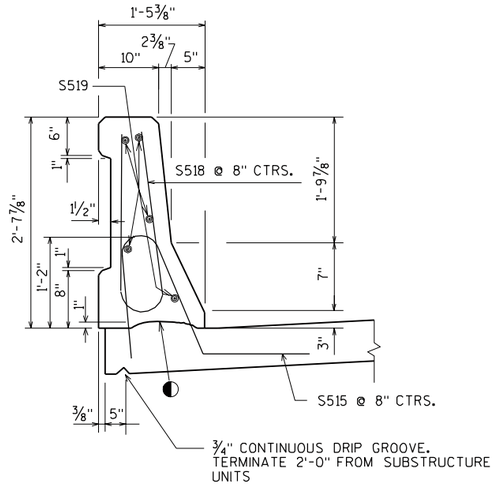
8

STATE PROJECT NUMBER
1166-11-75



DECK SECTION REINFORCEMENT

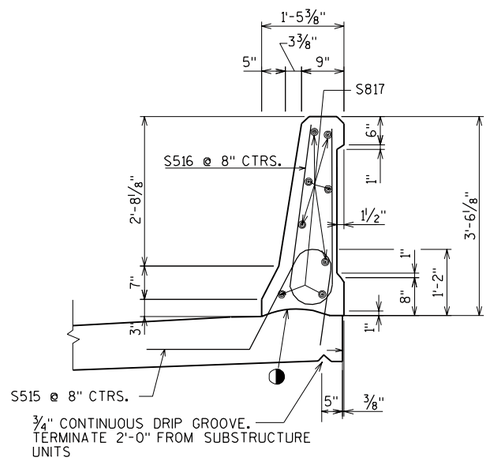
(LOOKING UPSTATION)



SECTION A-A

SLOPE FACE PARAPET TYPE 'LF'

◐ - CONSTRUCTION JOINT - STRIKE OFF AS SHOWN



SECTION B-B

SLOPE FACE PARAPET TYPE 'HF'

◐ - CONSTRUCTION JOINT - STRIKE OFF AS SHOWN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC 2008	DRAWN BY RBH	PLANS CK'D. SST/AML

DECK SECTIONS

SHEET 43 OF 54
345

8

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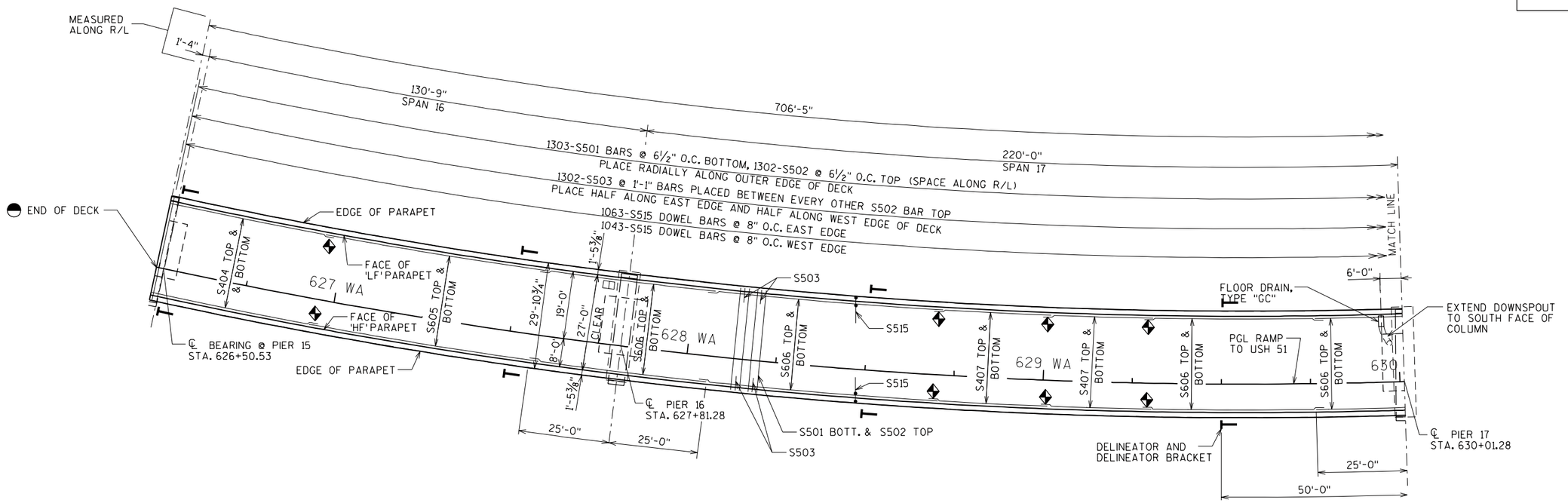
STATE PROJECT NUMBER
1166-11-75



PLAN - UNIT 2

NORTH

LEGEND

◆ SPLICE ALL DECK LONGITUDINAL BARS 3'-6" UNLESS NOTED OTHERWISE THUS ◆ ON PLAN. ◆ = 2'-3"

◓ END OF DECK = END OF GIRDER AT PIER 15. SEE SECTION AT PIER 15 ON THE "EXPANSION JOINT SECTIONS" SHEET 50 FOR FURTHER INFORMATION.

□ FLOOR DRAINS. SEE SHEET 47 FOR STATIONS

⊢ "DELINEATOR" AND "DELINEATOR BRACKETS" MOUNTED ON TOP OF THE PARAPET , SPACED APPROX. 100' ALONG THE RIGHT SIDE OF THE BRIDGE. YELLOW, ON THE LEFT SIDE OF THE ROADWAY, CRYSTAL, ON THE RIGHT SIDE OF THE ROADWAY. THE LEFT SIDE AND RIGHT SIDE DELINEATORS SHALL BE PERPENDICULAR FROM EACH OTHER.

THE UNIT SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER AND THE ADHESIVE SHALL BE APPLIED TO THE BASE OF THE DELINEATOR FOR BONDING TO CONCRETE BARRIER. DO NOT INSTALL WHEN TEMPERATURES LESS THAN 50° FAHRENHEIT.

NOTES:

1. 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.
2. THE TOP LONGITUDINAL BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS IN TRANSVERSE DIRECTION ON 4'-0" CENTERS.
3. ALL TRANSVERSE BAR STEEL SHALL BE PLACED RADIALLY TO THE STH 29 EB SYSTEM RAMP REFERENCE LINE.
4. ALL LONGITUDINAL BAR STEEL SHALL BE PLACED CONCENTRIC TO THE STH 29 EB SYSTEM RAMP REFERENCE LINE.
5. FOR FLOOR DRAIN DETAILS, SEE SHEET 47.

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STRUCTURE B-37-362-002

CONST. SPEC 2008	DRAWN BY MM	PLANS CK'D. SST/AML

DECK REINFORCEMENT 1

SHEET 44 OF 54
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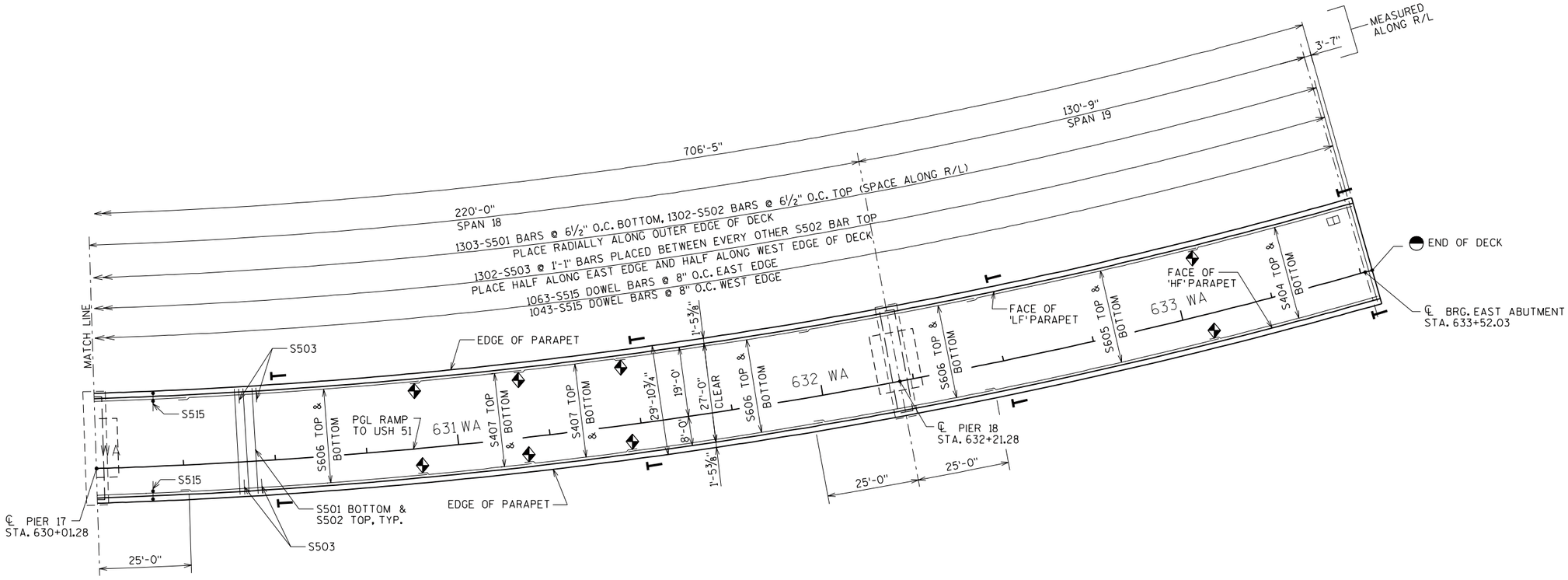
STATE PROJECT NUMBER
1166-11-75



PLAN - UNIT 2

NORTH

LEGEND

- ◆ SPLICE ALL DECK LONGITUDINAL BARS 3'-6" UNLESS NOTED OTHERWISE THUS ◆ ON PLAN. ◆ = 2'-3"
- ◓ END OF DECK= END OF PAVING NOTCH AT E. ABUTMENT SEE SECTION AT ABUTMENT ON THE "EXPANSION JOINT SECTIONS" SHEET 50 FOR FURTHER INFORMATION.
- ⊢ "DELINEATOR" AND "DELINEATOR BRACKETS" MOUNTED ON TOP OF THE PARAPET , SPACED APPROX. 100' ALONG THE RIGHT SIDE OF THE BRIDGE. YELLOW, ON THE LEFT SIDE OF THE ROADWAY, CRYSTAL ON THE RIGHT SIDE OF THE ROADWAY. THE LEFT SIDE AND RIGHT SIDE DELINEATORS SHALL BE PERPENDICULAR FROM EACH OTHER.

  THE UNIT SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER AND THE ADHESIVE SHALL BE APPLIED TO THE BASE OF THE DELINEATOR FOR BONDING TO CONCRETE BARRIER. DO NOT INSTALL WHEN TEMPERATURES LESS THAN 50° FAHRENHEIT.

NOTES:

1. 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.
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3. ALL TRANSVERSE BAR STEEL SHALL BE PLACED RADIALLY TO THE STH 29 EB SYSTEM RAMP REFERENCE LINE.
4. ALL LONGITUDINAL BAR STEEL SHALL BE PLACED CONCENTRIC TO THE STH 29 EB SYSTEM RAMP REFERENCE LINE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MM	PLANS CK'D.	SST/AML

DECK REINFORCEMENT 2

SHEET 45 OF 54
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THE FIRST DIGIT OF A BAR MARK INDICATES BAR SIZE.
ALL DIMENSIONS IN THE BAR BENDS ARE OUT TO OUT.

STATE PROJECT NUMBER
1166-11-75

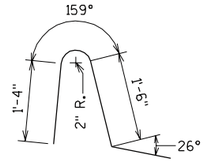
SUPERSTRUCTURE - BILL OF BARS

MARK	COATED	NO. REQ'D.	LENGTH	BAR SERIES	BENT	LOCATION
S501	X	1303	29'-6"			DECK, TRANVERSE, BOTTOM
S502	X	1302	29'-6"			DECK, TRANVERSE, TOP
S503	X	1302	5'-6"			DECK EDGES, TRANVERSE, TOP
S404	X	240	60'-0"			DECK, LONGITUDINAL, TOP & BOTTOM, SPANS 16 & 19
S605	X	240	52'-0"			DECK, LONGITUDINAL, TOP & BOTTOM, SPANS 16 & 19
S606	X	840	50'-0"			DECK, LONGITUDINAL, TOP & BOTTOM, SPANS 16 THRU 19
S407	X	480	42'-6"			DECK, LONGITUDINAL, TOP & BOTTOM, SPANS 16 & 19
S608	X	12	7'-6"			FLOOR DRAIN
S814	X	8	31'-0"			'HF' PARAPET, HORIZONTAL
S515	X	2106	4'-1"		X	PARAPET DOWEL, VERTICAL
S516	X	1063	6'-6"		X	'HF' PARAPET, VERTICAL
S817	X	96	60'-0"			'HF' PARAPET, HORIZONTAL
S518	X	1043	4'-10"		X	'LF' PARAPET, VERTICAL
S519	X	60	60'-0"			'LF' PARAPET, HORIZONTAL
S420	X	120	5'-9"		X	EXP.JT.
S521	X	104	7'-5"		X	EXP.JT.
S422	X	104	5'-5"		X	EXP.JT.
S523	X	40	16'-0"			EXP.JT.
S524	X	82	5'-4"		X	EXP.JT.
S825	X	16	19'-2"		X	EXP.JT.
S626	X	48	5'-9"			EXP.JT.
S627	X	16	3'-5"		X	EXP.JT.
S628	X	24	5'-3"			EXP.JT.
S529	X	20	16'-9"		X	EXP.JT.
S430	X	16	5'-10"	△	X	EXP.JT.
S531	X	8	4'-8"	△	X	EXP.JT.

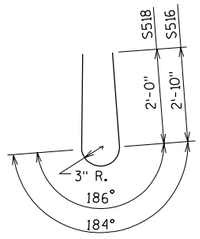
BAR SERIES TABLE

MARK	NO. REQ'D	LENGTH
S430	4 SERIES OF 4	5'-4" TO 6'-3"
S531	4 SERIES OF 2	4'-4" TO 5'-0"

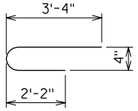
△ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES FOR ACTUAL LENGTHS. BUNDLE AND TAG EACH SERIES SEPARATELY.



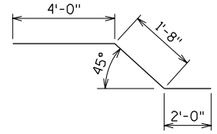
S515



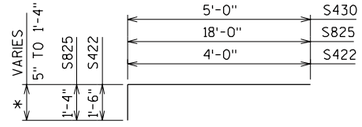
S516, S518



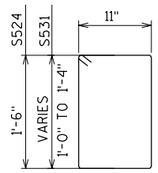
S420



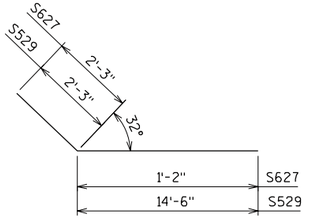
S521



S422, S825, S430



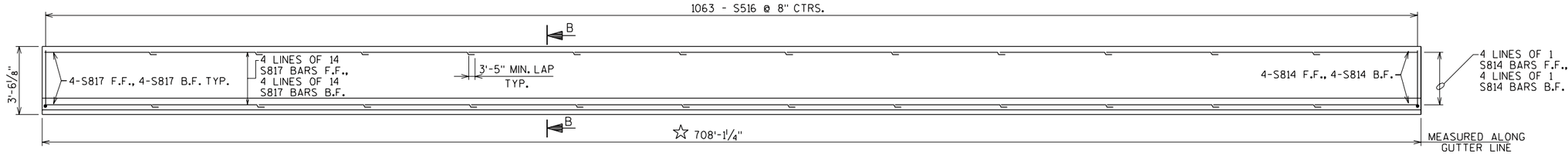
S524, S531



S627, S529

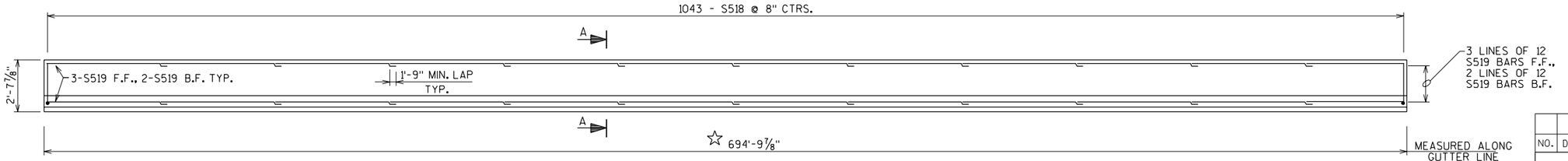
NOTE:

"*", "**" DENOTE AVERAGE DIMENSIONS FOR BAR SERIES, SEE THE "REMARKS" COLUMN FOR COMPLETE SERIES INFORMATION.



INSIDE ELEVATION OF "H.F." PARAPET (EAST EDGE)

SEE SHEET 43 FOR SECT. B-B



INSIDE ELEVATION OF "L.F." PARAPET (WEST EDGE)

SEE SHEET 43 FOR SECT. A-A

☆ APPROXIMATE DIMENSION MEASURED FROM EXP. JT. TO EXP. JT.

8

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	EB	PLANS CK'D.	SST/AML

SUPERSTRUCTURE BILL OF BARS

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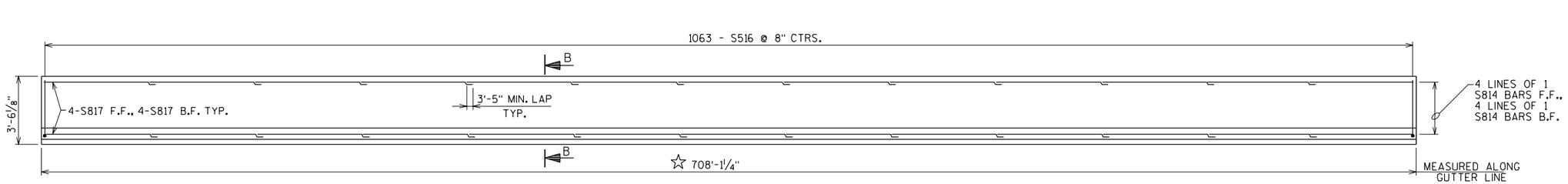
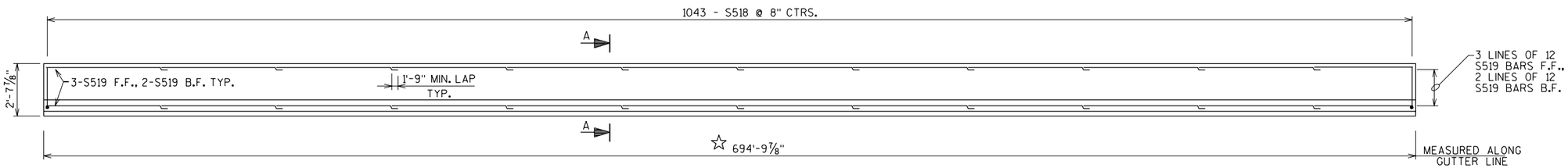
STATE PROJECT NUMBER
1166-11-75



INSIDE ELEVATION OF "H.F." PARAPET (EAST EDGE)

SEE SHEET 43 FOR SECT. B-B



INSIDE ELEVATION OF "L.F." PARAPET (WEST EDGE)

SEE SHEET 43 FOR SECT. A-A

☆ APPROXIMATE DIMENSION MEASURED FROM EXP. JT. TO EXP. JT.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC 2008	DRAWN BY	PLANS CK'D.

CROSS SECTION & QUANTITIES

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STATE PROJECT NUMBER

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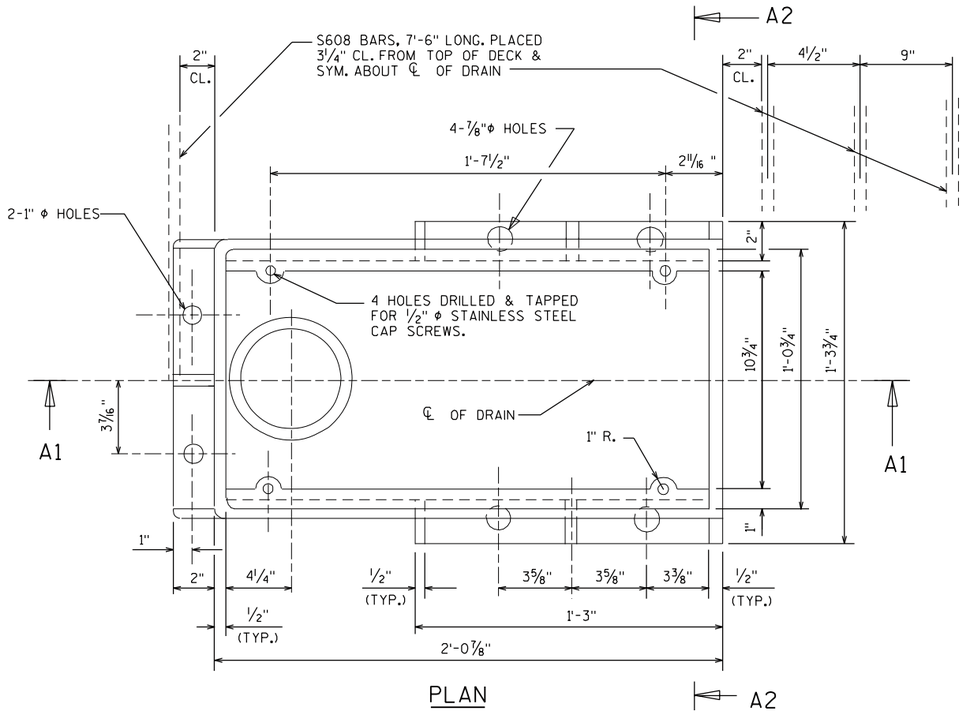
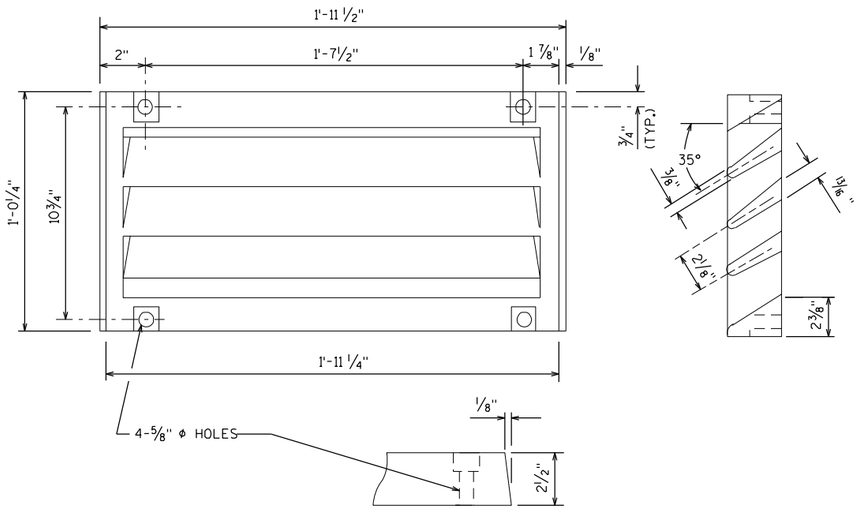




GRATE CASTING DETAIL

ATTACH GRATE TO FRAME FOR SHIPMENT

GENERAL NOTES

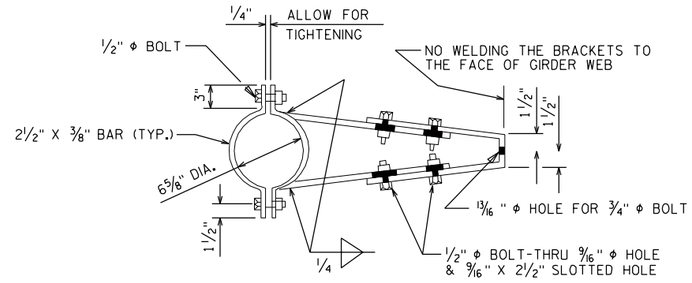
ALL MATERIAL FOR TYPE "GC" CASTING, EXCLUDING GRATE HOLD DOWN SCREWS, SHALL BE GRAY IRON CONFORMING TO ASTM A48, CLASS 30.

MATERIAL FOR BRACKETS SHALL CONFORM TO ASTM A36.

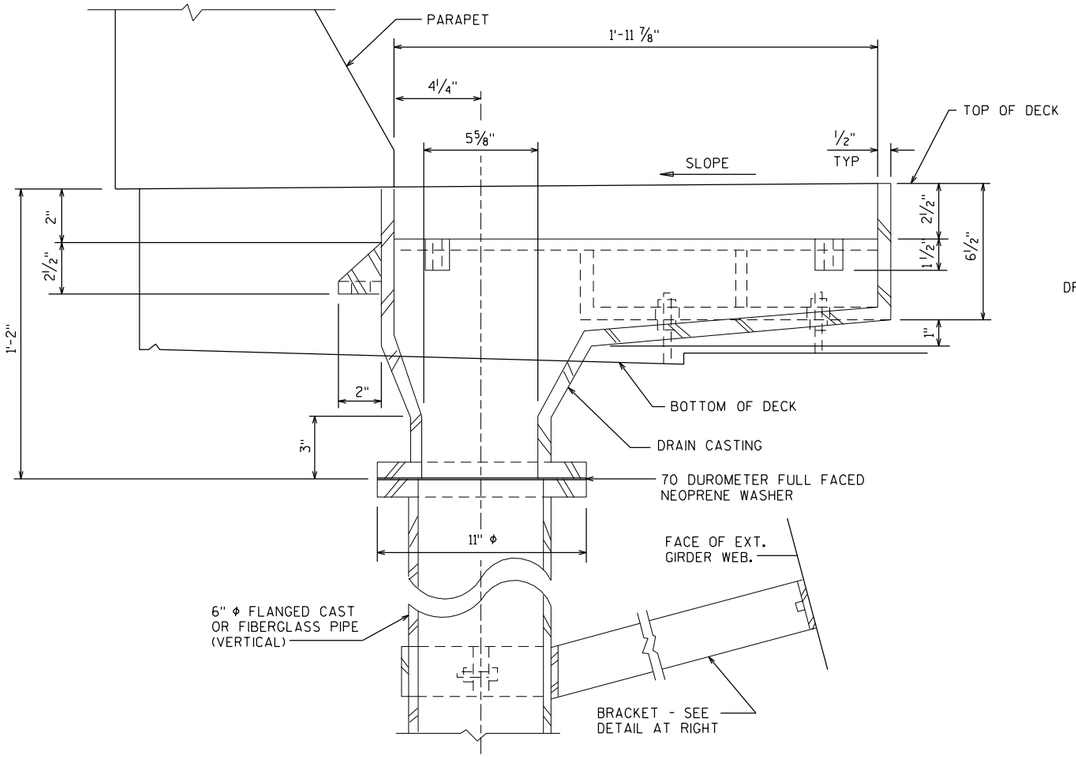
THE CONTRACTOR MAY PROPOSE AN ALTERNATE TYPE OF BRACKET. THE PROPOSED ALTERNATE DETAILS SHALL BE SUBMITTED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

FLANGED 6" DIA. DOWNSPOUTS SHALL BE EITHER CAST MATERIAL OR FIBERGLASS CONFORMING TO ASTM D2996, GRADE 1, CLASS A.

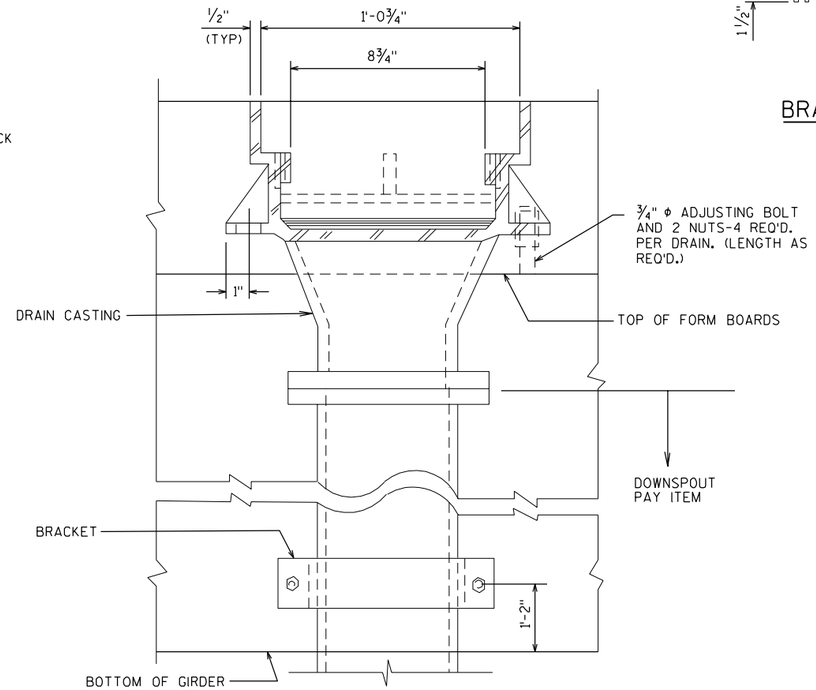
TRANS. AND LONGIT. DECK BAR REINF. TO BE CUT A MAX. OF 1" CL. FROM DRAIN FRAME. DISPLACE BARS WHERE POSSIBLE.



BRACKET DETAIL



SECTION A1



SECTION A2

FLOOR DRAIN LOCATION
STA. 627+78.28
STA. 629+98.28
STA. 633+45.00

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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CONST. SPEC	2008	DRAWN BY	RBH	PLANS CK'D.	KGW

FLOOR DRAIN TYPE "GC"

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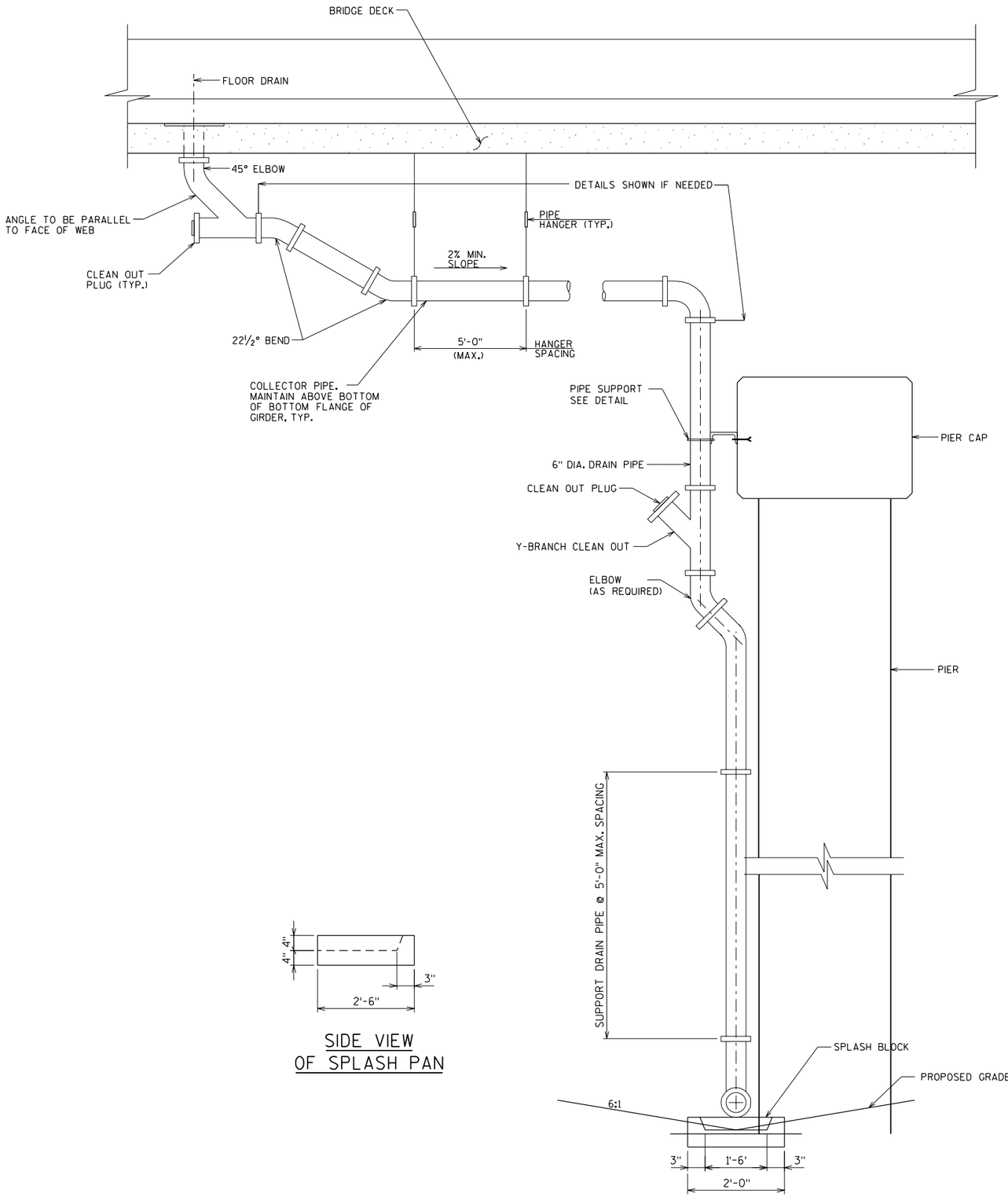
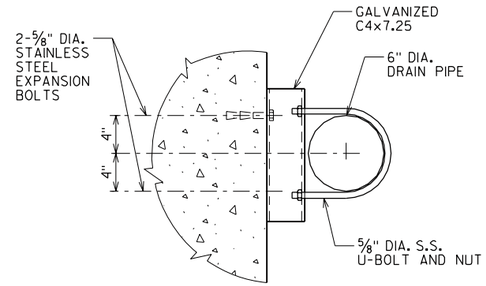
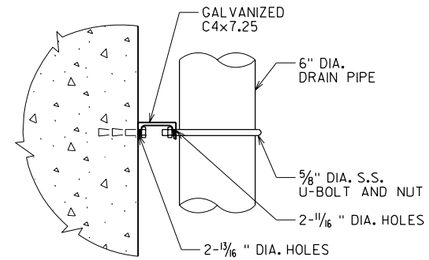


SIDE VIEW
OF SPLASH PAN



PLAN



ELEVATION

PIPE SUPPORT DETAILS

NOTES:

1. COLLECTOR AND DRAIN PIPES AND FITTINGS SHALL BE 6" SCHEDULE 80, PVC CONFORMING TO ASTM STANDARDS D1785, D2464 OR D2467.
2. ALL HARDWARE, HANGERS, SPLASH BLOCKS, STEEL, AND ANY OTHER MISCELLANEOUS ITEMS SHOWN ARE INCLUDED AND INCIDENTAL IN THE BID ITEM "DOWNSPOUT 6-INCH".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
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STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	RBH	PLANS CK'D.	AL

DOWNSPOUT

SHEET 48 OF 54
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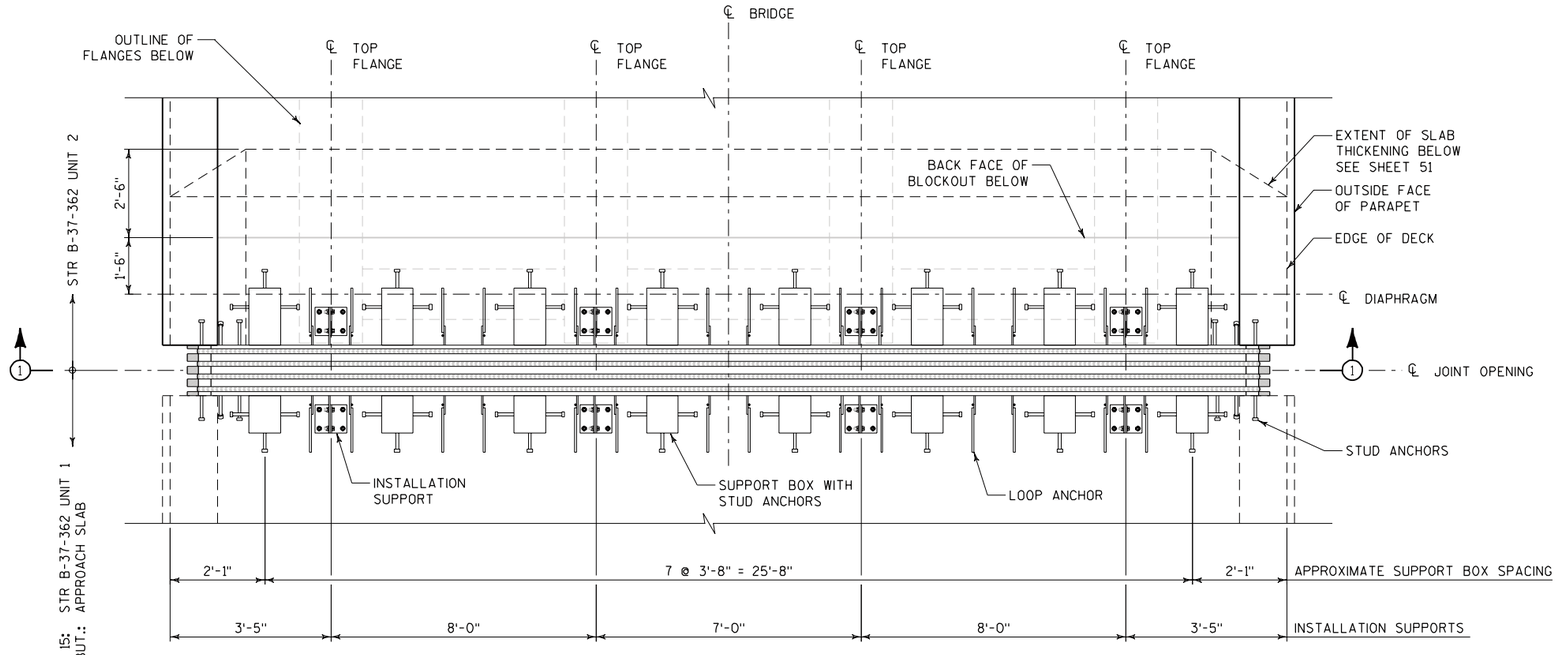
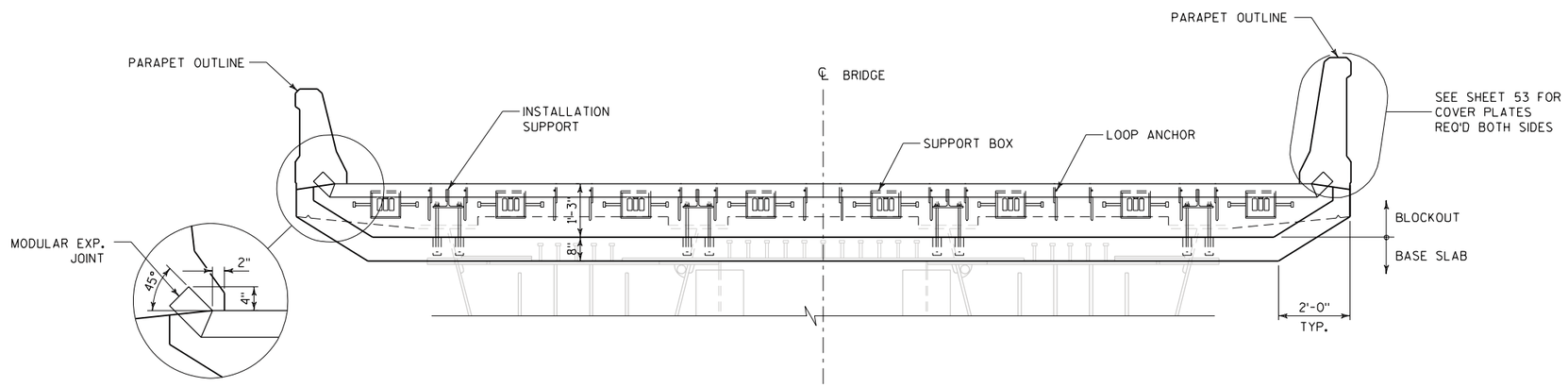
STATE PROJECT NUMBER
1166-11-75



PLAN



SECTION 1-1
(LOOKING UPSTATION)

NOTES

1. SEE SHEETS 28 & 29 FOR END DIAPHRAGM DETAILS.
2. SEE SHEET 50 FOR SECTIONS THROUGH EXPANSION JOINT REGIONS.
3. SEE SHEET 51 FOR CONCRETE REINFORCEMENT IN EXPANSION JOINT REGIONS.
4. SEE SHEET 52 FOR DETAILS OF THE MODULAR EXPANSION DEVICES INCLUDING REQUIRED MOVEMENT CAPACITY, NUMBER OF SEALS, ANCHORAGES AND TEMPORARY SUPPORTS.
5. SEE SHEET 53 FOR DETAILS OF THE PARAPET COVER PLATES.

   COVER PLATES ARE REQUIRED AT ALL PARAPETS BUT FOR CLARITY ARE NOT SHOWN ON THIS DRAWING.
6. SUPPORT BOX SIZE AS SHOWN IS APPROXIMATE ONLY AND IS BASED ON A 4-SEAL EXPANSION DEVICE. DIMENSIONS WILL VARY FOR DIFFERENT JOINT SIZES AND MANUFACTURERS.
7. EXPANSION DEVICE DETAILS SHOWN ON THIS DRAWING (INCLUDING SIZE AND SPACING OF SUPPORT BOXES, LOOP ANCHORS AND INSTALLATION SUPPORTS) ARE PICTORIAL ONLY.
8. ALL CONSTRUCTION SHALL BE CARRIED OUT USING THE APPROVED EXPANSION JOINT SHOP DRAWINGS ONLY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-362-002

CONST. SPEC	2008	DRAWN BY	MM	PLANS CK'D.	SST

TYPICAL EXPANSION JOINT LAYOUT

SHEET 49 OF 54
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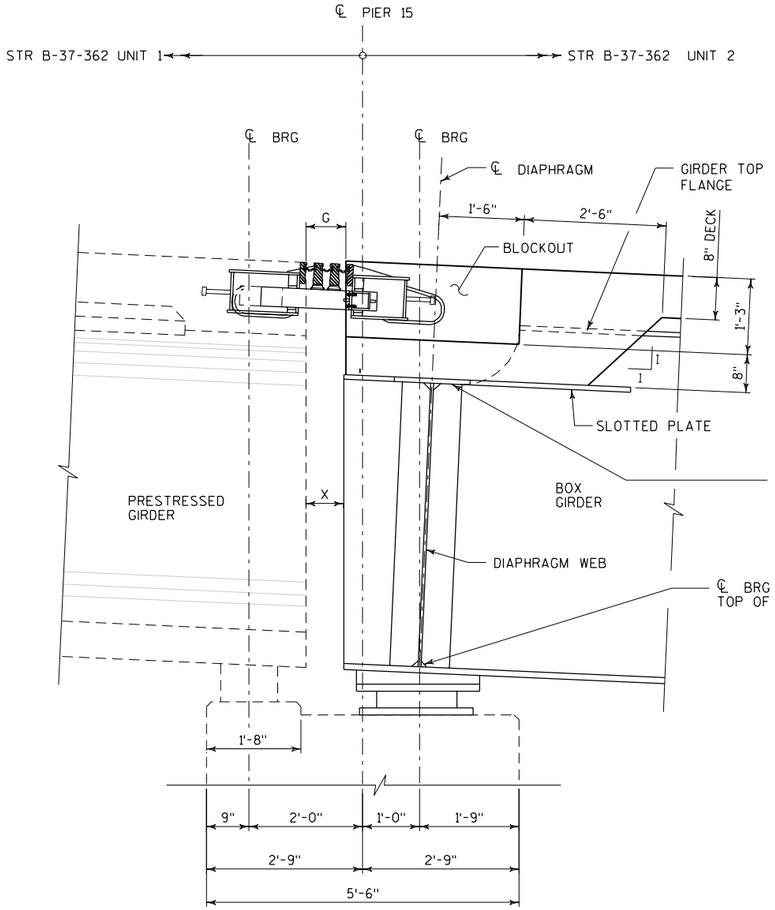
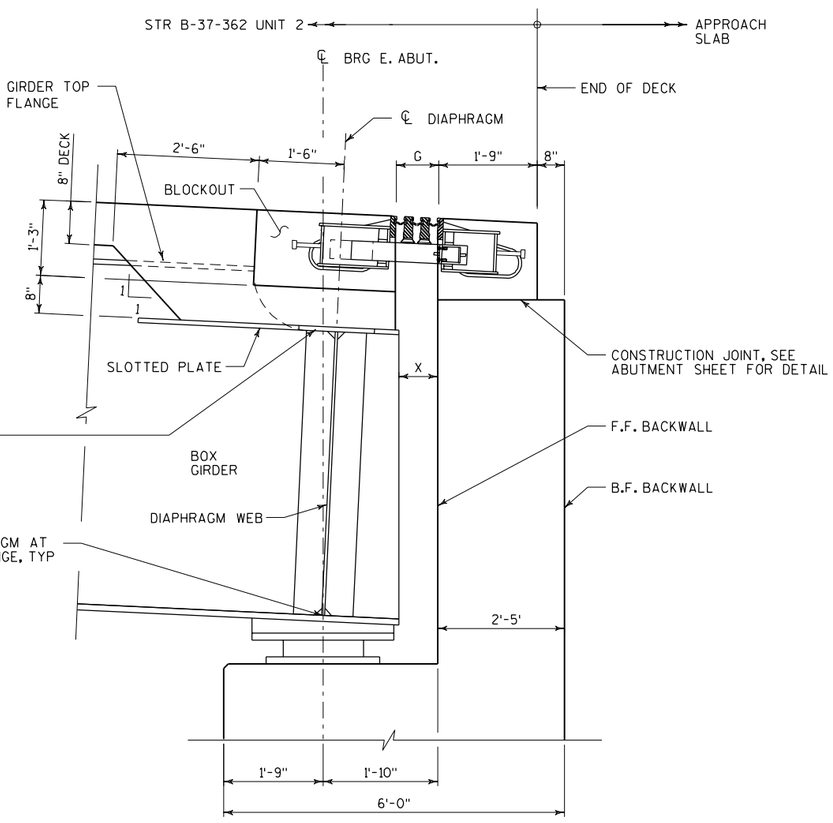


SECTION AT PIER 15



SECTION AT E. ABUT.

NOTES

1. SEE SHEETS 28 AND 29 FOR END DIAPHRAGM DETAILS.
2. SEE SHEET 49 FOR PLAN LAYOUT OF EXPANSION JOINTS.
3. SEE SHEET 51 FOR CONCRETE REINFORCEMENT IN EXPANSION JOINT REGIONS.
4. SEE SHEET 52 FOR DETAILS OF THE MODULAR EXPANSION DEVICES INCLUDING REQUIRED MOVEMENT CAPACITY, NUMBER OF SEALS, ANCHORAGES AND TEMPORARY SUPPORTS.
5. JOINT OPENING DIMENSION 'G' VARIES WITH LOCATION AND SETTING TEMPERATURE. SEE SHEET 52 FOR MORE INFORMATION.
6. ADJACENT STRUCTURES ARE SHOWN FOR EASE OF REFERENCE ONLY. ALL INFORMATION RELATING TO THESE STRUCTURES SHALL BE VERIFIED FROM THE APPROPRIATE PLAN SET.
7. MINIMUM SPACE BETWEEN ANY PORTION OF ADJACENT STRUCTURES (DIMENSION 'X') SHALL BE AS GIVEN IN THE TABLE ON THIS SHEET.
   MEASURE THIS DIMENSION PRIOR TO PLACING THE EXPANSION DEVICE IN THE BLOCKOUTS.
   IF ACTUAL MEASURED DIMENSION IS LESS THAN THE SPECIFIED MINIMUM, NOTIFY THE ENGINEER AND WAIT FOR INSTRUCTIONS BEFORE PROCEEDING FURTHER WITH EXPANSION DEVICE INSTALLATION AT THE DEFICIENT LOCATION.
8. SUPPORT BARS ARE SHOWN SLOPED TO FOLLOW DECK GRADE. BECAUSE THE BEARINGS ARE INSTALLED HORIZONTAL, DETAILED DESIGN OF THE MODULAR EXPANSION DEVICE MAY REQUIRE THESE BARS TO BE HORIZONTAL ALSO. CONFIRM BLOCKOUT DIMENSIONS AFTER EXPANSION DEVICES HAVE BEEN DETAILED.

MINIMUM SPACE - DIM'N 'X'	
AMBIENT TEMP	PIER 15 & E. ABUT.
5°F	8"
15°F	7½"
25°F	6½"
35°F	6"
45°F	5½"
55°F	5"
65°F	4½"
75°F	3½"
85°F	3"
95°F	2½"

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STRUCTURE B-37-362-002

CONST. SPEC 2008	DRAWN BY MM	PLANS CK'D. SST

EXPANSION JOINT SECTIONS

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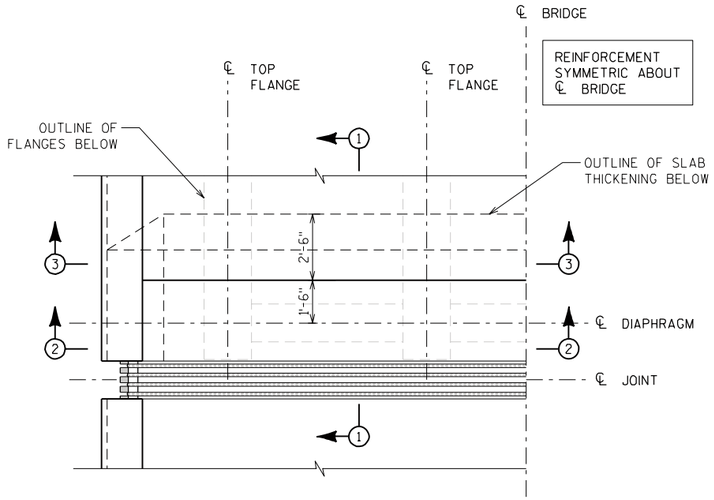
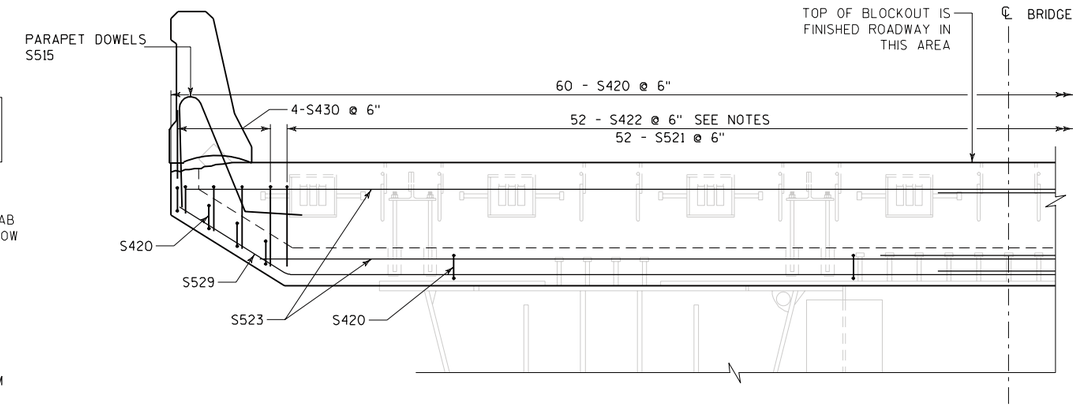


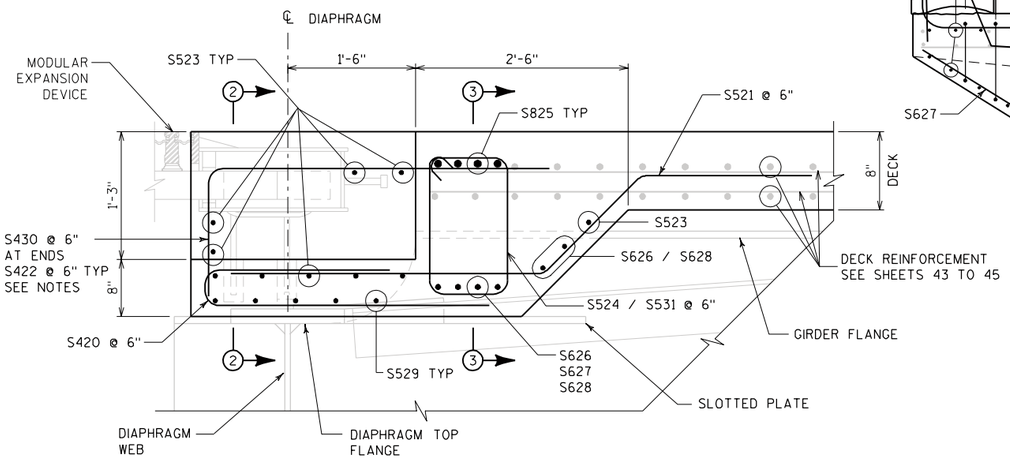
PARTIAL PLAN

NOT TO SCALE



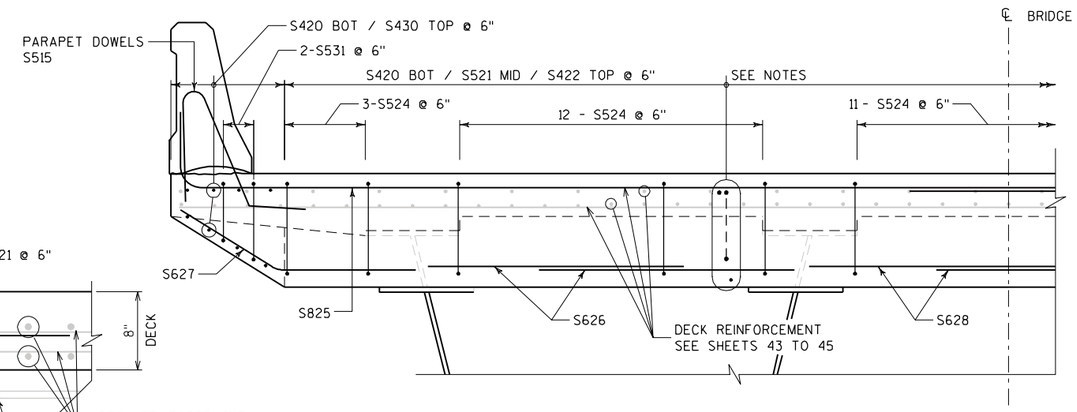
SECTION 2-2

NOT TO SCALE



SECTION 1-1

NOT TO SCALE



SECTION 3-3

NOT TO SCALE

NOTES

1. SPACING SHOWN FOR BAR MARK S422 IS A NOMINAL VALUE ONLY AND SHALL BE ADJUSTED TO SUIT THE SELECTED EXPANSION DEVICE.

   PREPARE PLACING DIAGRAMS FOR THESE BARS AFTER THE EXPANSION JOINTS HAVE BEEN DETAILED.

   PROVIDE SPECIFIC OFFSETS FOR EACH BAR TO MAINTAIN THE TOTAL NUMBER OF BARS AND AVOID CONFLICT WITH THE EXPANSION DEVICE. LOOP ANCHORS AND INSTALLATION SUPPORTS.
2. SEE SHEETS 28 AND 29 FOR END DIAPHRAGM DETAILS.
3. SEE SHEET 49 FOR PLAN LAYOUT OF EXPANSION JOINTS.
4. SEE SHEET 52 FOR DETAILS OF THE MODULAR EXPANSION DEVICE.
5. EXPANSION JOINT DETAILS SHOWN ON THIS DRAWING ARE PICTORIAL ONLY.

   ALL SIZE, SPACING AND DETAIL INFORMATION SHALL BE TAKEN ONLY FROM THE APPROVED EXPANSION JOINT SHOP DRAWINGS.
6. REBAR SCHEDULE AND DETAILS ARE ON SHEET 46.

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EXPANSION JOINT REINFORCEMENT

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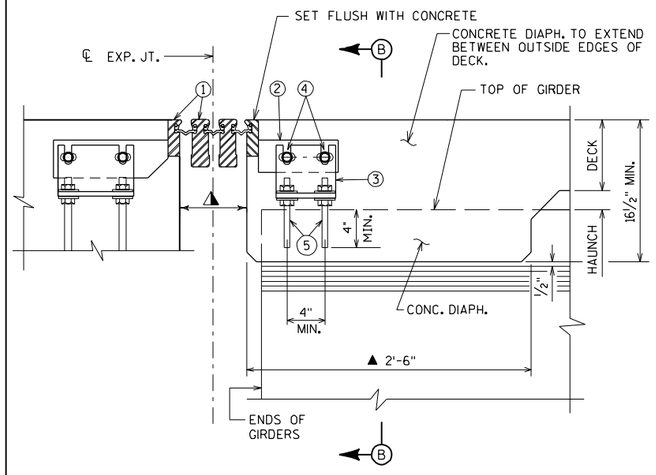
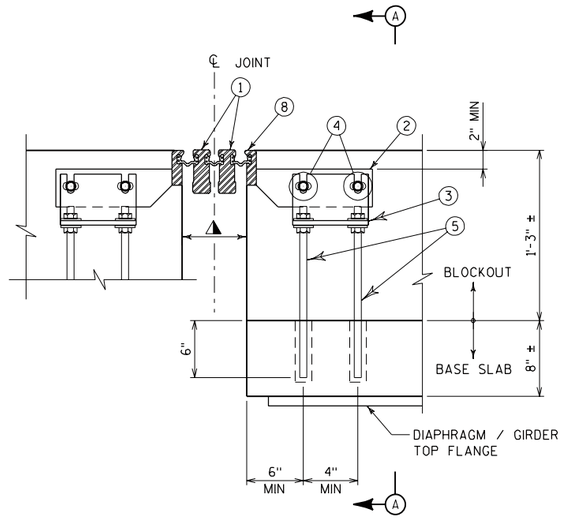
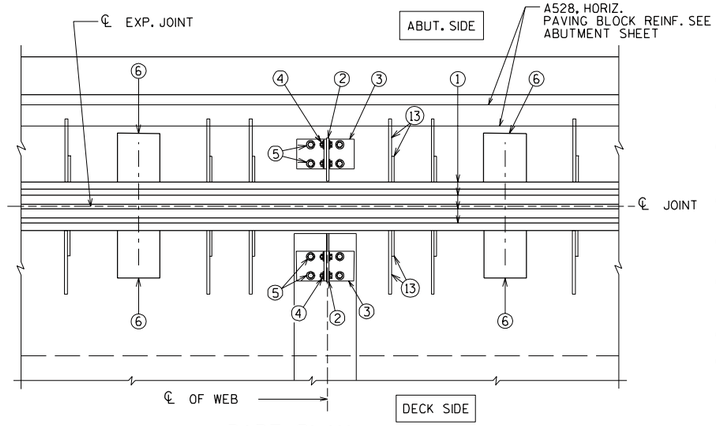


INSTALLATION SUPPORT- SECTION (PRESTRESSED GIRDERS)



INSTALLATION SUPPORT- SECTION (STEEL GIRDER)



PART PLAN

NOTE:
FABRICATOR WILL DESIGN EACH JOINT DEPENDING ON THE CONDITIONS AND THE DESIGN CRITERIA USED BY THE SUPPLIER. FABRICATION DRAWING IS SUBJECT TO THE APPROVAL OF THE BUREAU OF STRUCTURES.

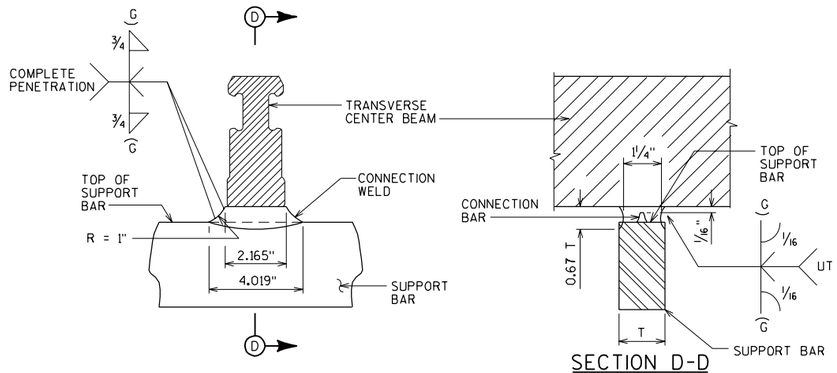
SUPPORT BOXES ARE SHOWN FOR GENERAL INFORMATION AND LOCATION MAY VARY ACCORDING TO FABRICATOR DESIGN.

LEGEND

1. MODULAR EXPANSION JOINT DEVICE.
2. ½" PLATE. ONE PER GIRDER MIN. PROVIDE 2 - 1" X 2" MIN. SLOTTED HOLES PLACED HORIZONTALLY FOR NO. 4.
3. WT 6 X 29 (OR EQUIVALENT BUILT UP T-SECTION). ONE PER GIRDER. PROVIDE 2 - 1" X 3" MIN. SLOTTED HOLES PLACED VERTICALLY IN WEB OF WT FOR BOLTS NO. 4.
4. ¾" Φ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. (A325 GALV.)
5. ¾" Φ THREADED ROD WITH 2 NUTS & WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES. (GALV.)
6. SUPPORT BOX ASSEMBLY FOR SUPPORT BAR (SPA. PER MANUFACTURER). SPACE TO MISS GIRDERS. FABRICATE BOX FROM ½" PLATES.
7. ⅜" BULKHEAD PLATE. WELD TO NO. 1, NO. 8 AND NO.14.
8. INSIDE PLATE. FABRICATE FROM ⅜" PLATE.
9. OUTSIDE PLATE. FABRICATE FROM ⅝" PLATE.
10. ⅞" SQUARE BAR. WELD TO NO. 8 AS SHOWN.
11. ¾" Φ X 4" LONG STUDS. WELD TO NO. 8 , NO. 7 & NO. 14 AS SHOWN.
12. ¾" Φ X 2" STAINLESS STEEL FLAT CTSK. SLOTTED HEAD CAP SCREWS. RECESS 1/16" BELOW PLATE SURFACE.
13. ½" PLATE WITH ⅝" Φ LOOP ANCHOR FABRICATED AS SHOWN. SPACED AT MANUFACTURER'S SPEC.
14. INSIDE PLATE. FABRICATE FROM ⅝" PLATE
15. ADIPRENE BUTTON. SEE DETAIL. SET IN OUTSIDE PLATE.

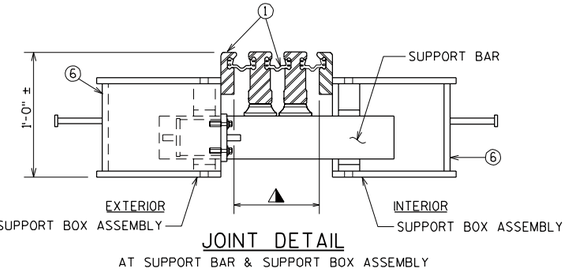
▲ MANUFACTURER'S RECOMMENDED JOINT OPENING BASED ON THE TEMPERATURE ON THE DAY OF PLACEMENT PER TEMPERATURE TABLE.

▲ JOINT MANUFACTURER SHALL INFORM AND PROVIDE NECESSARY DETAILS TO THE PRESTRESSED GIRDER FABRICATOR, WHEN FORM-OUT OF THE TOP FLANGE IS REQ'D. TO ALLOW PLACEMENT OF SUPPORT BOX ASSEMBLY.



MODULAR EXPANSION JOINT CONNECTION DETAIL AND WELD SPECIFICATION

SECTION D-D



JOINT DETAIL

AT SUPPORT BAR & SUPPORT BOX ASSEMBLY

NOTES

MOVEMENT CAPACITY AND NUMBER OF SEALS SHALL BE AS FOLLOWS:
PIER 15 = 8 INCHES / 3 SEALS
E. ABUT. = 5 INCHES / 2 SEALS

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

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

NO EXPANSION JOINT PROTRUSIONS PERMITTED ABOVE ROADWAY SURFACE, ON PARAPET ROADWAY FACE.

THE EXPANSION JOINT SEALS SHALL BE PLACED, BONDED & SEALED AS RECOMMENDED BY THE MANUFACTURER. FORM WORK SHALL BE PLACED BETWEEN THE SUPPORT BOXES TO PREVENT CONCRETE INTRUSION INTO THE SUPPORT BOX. A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER SHALL BE PRESENT DURING INSTALLATION. PRIOR TO SETTING THE JOINT ASSEMBLY INTO POSITION, THE PROJECT ENGINEER SHALL DETERMINE THE PROPER JOINT OPENING.

EXPANSION JOINT EXTRUSIONS SHALL BE FABRICATED TO CONFORM TO ROADWAY CROWN & GRADE. FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST BARS, PLATES, WT-SECTION, ANCHORAGE LOOP, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THIS ASSEMBLY SHALL BE HOT DIPPED GALVANIZED.

COST OF FURNISHING & PLACING OF THE EXPANSION JOINTS COMPLETE WITH PARAPET PLATES & SIDEWALK PLATES SHALL BE PAID FOR UNDER THE PRICE BID FOR "EXPANSION DEVICE MODULAR B-37-362-002.

BAR STEEL REINF. IN DECK AND CONC. DIAPHRAGM SHALL BE RESPACED AS NECESSARY TO ALLOW PLACEMENT OF JOINT ASSEMBLY.

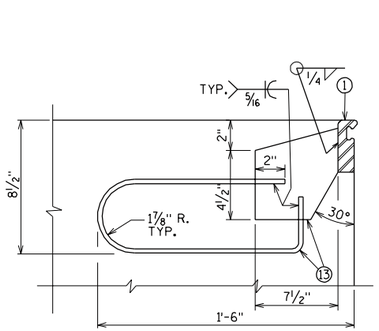
ALL STEEL FABRICATIONS SHALL BE HOT-DIP GALVANIZED.

TEMP. TABLE

TEMPERATURE TABLE FOR SETTING JOINT OPENINGS TO BE DETERMINED BY JOINT MANUFACTURER WITH THE FOLLOWING DESIGN DATA:

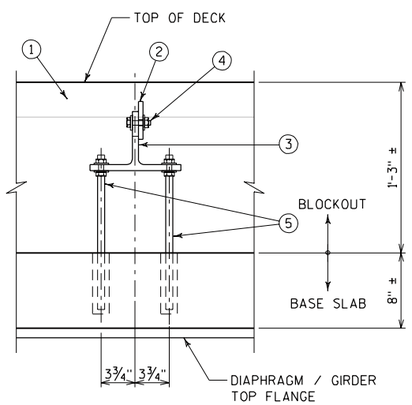
1. ESTIMATED MOVEMENT PER 10°F CHANGE IN TEMP. AS FOLLOWS:
   PIER 15 = 0.53"
   E. ABUT. = 0.28"
2. MEDIAN TEMPERATURE OF 45° F
3. TEMP. RANGE IN TABLE FROM (- 5° F) TO (+ 95°F)
4. ESTIMATED LONG TERM INCREASE IN JOINT OPENING DUE TO SHRINKAGE= PIER 15 =¾"

A TABLE OF JOINT OPENINGS BASED ON ABOVE DATA SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

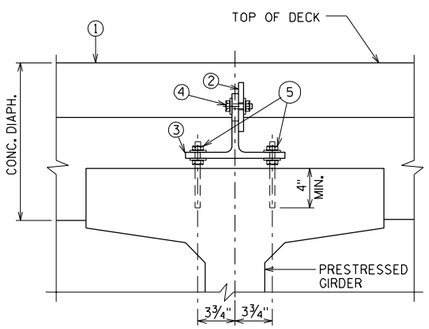


ANCHORAGE DETAIL

PLACE ADJACENT TO SUPPORT BOXES IN DECK @ CONC. DIAPH.



SECTION A-A



SECTION B-B

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MODULAR EXPANSION DEVICE

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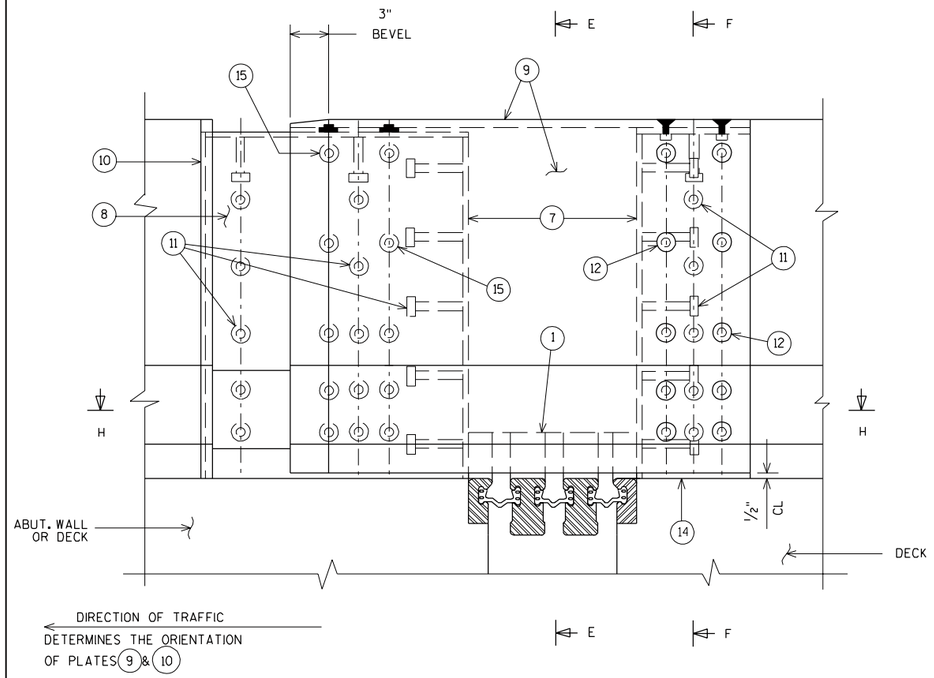
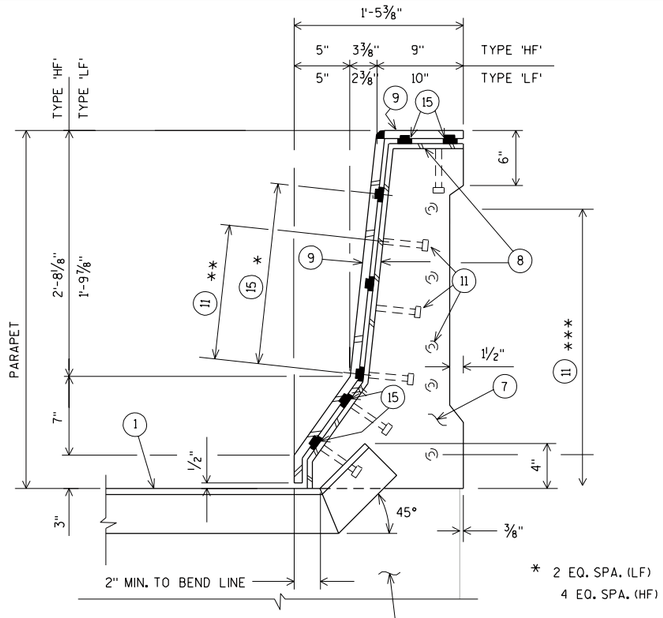
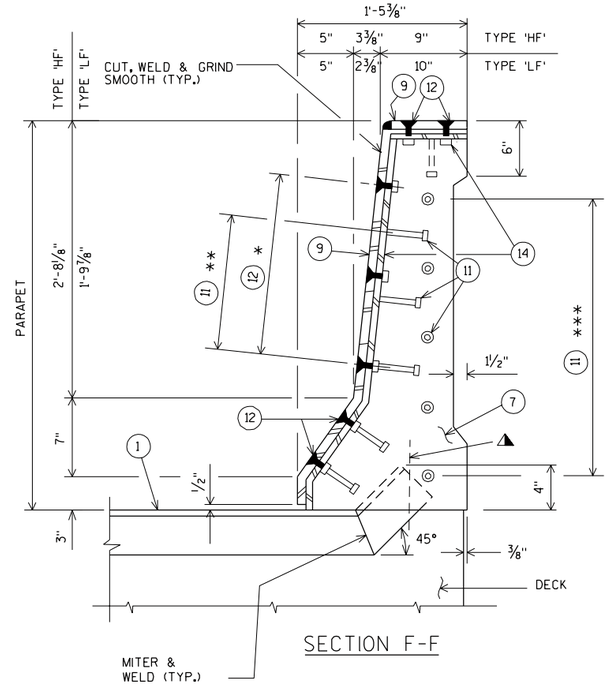


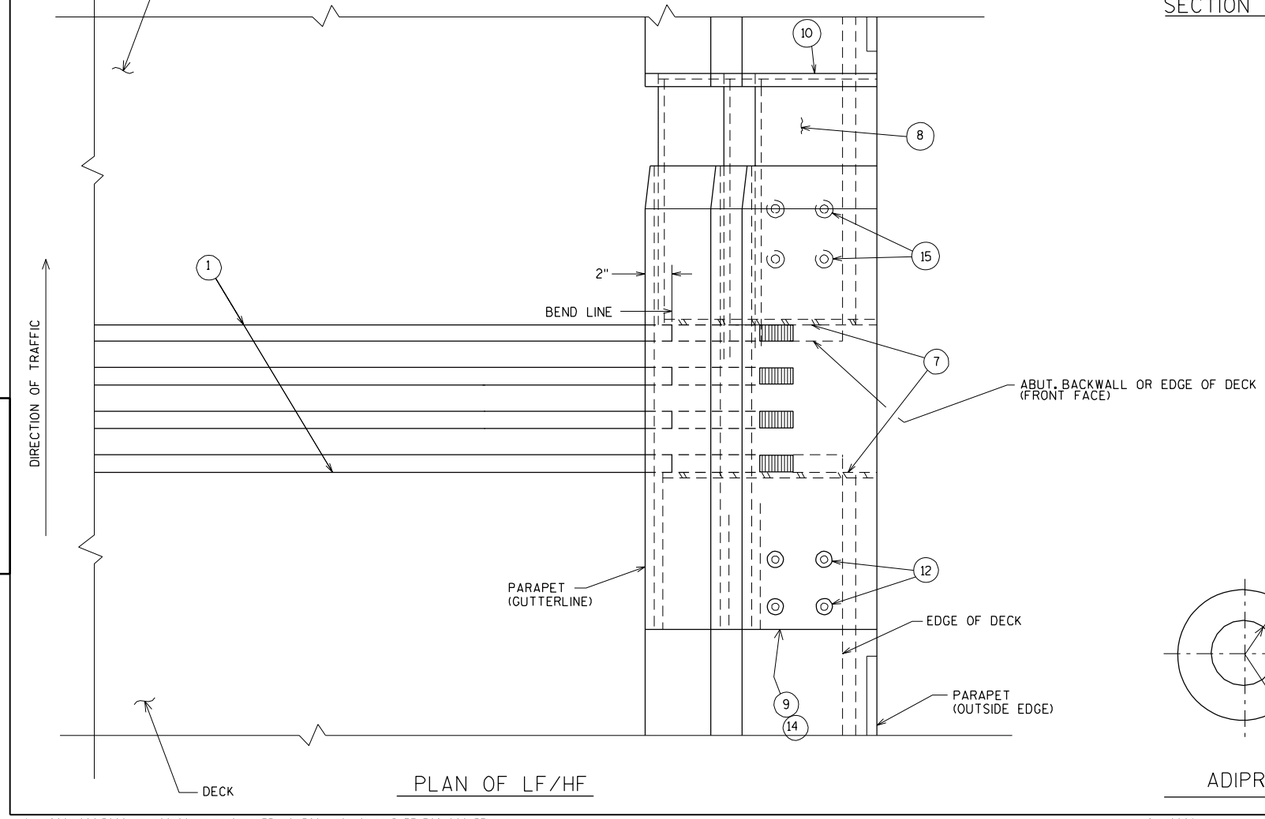
ELEVATION OF PARAPET LF/HF



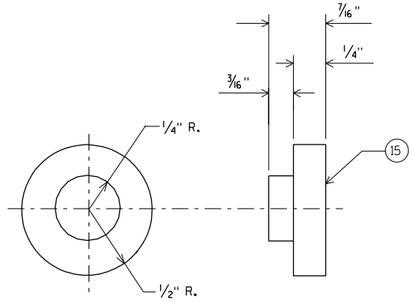
SECTION E-E



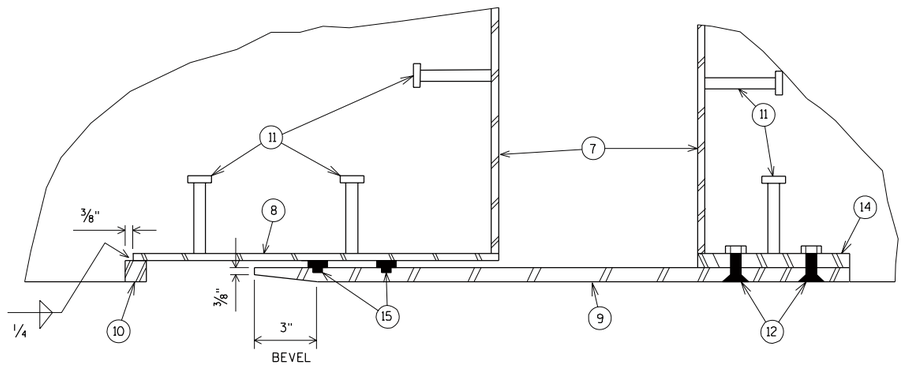
SECTION F-F



PLAN OF LF/HF



ADIPRENE BUTTON DETAIL



SECTION H-H

NOTE:
WORK THIS SHEET WITH SHEET 52.

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MODULAR EXPANSION DEVICE COVERPLATES

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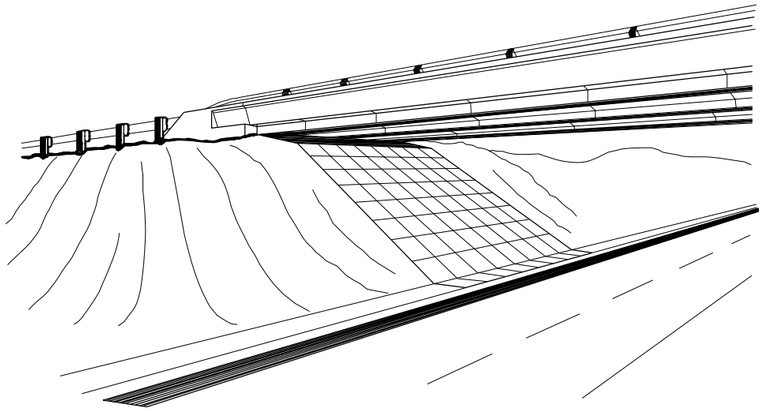
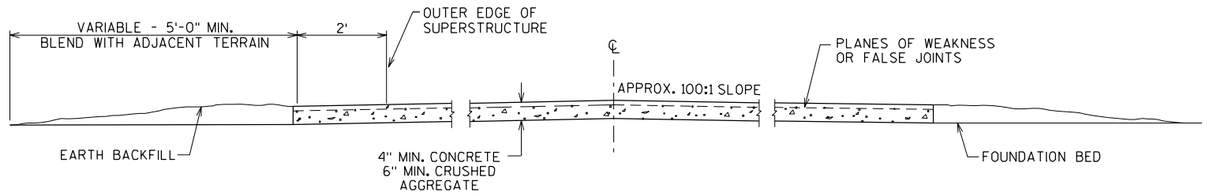
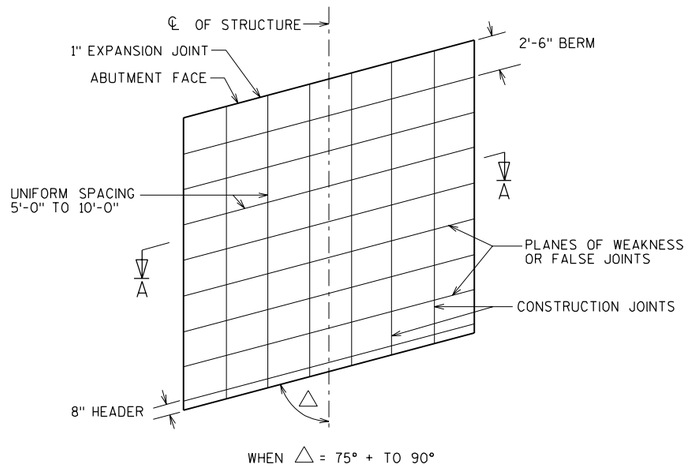


SLOPE PAVING UNDER STRUCTURES



SECTION A-A

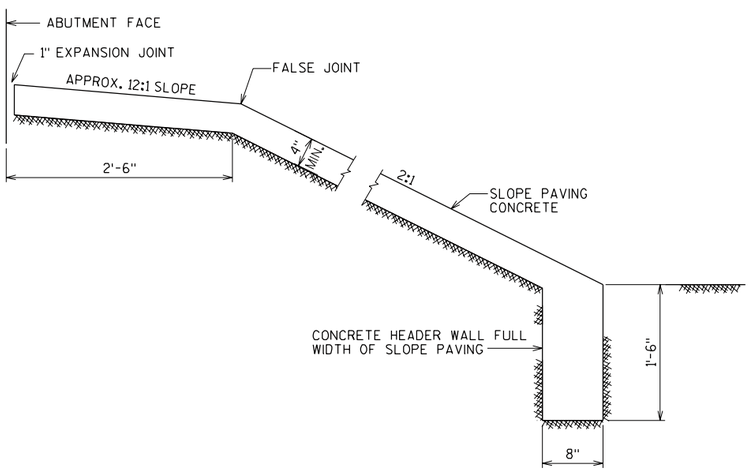
TO BE USED WHEN △ = 75° + TO 90°



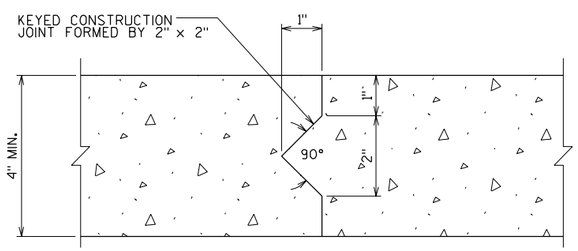
WHEN △ = 75° + TO 90°

CONSTRUCTION JOINT DESIGNS

SHOWING PLANES OF WEAKNESS FOR
SKEWED TYPE INSTALLATIONS



TYPICAL SECTION



SLOPE PAVING CONSTRUCTION JOINT

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
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STRUCTURE B-37-362-002

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SLOPE PAVING DETAILS

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