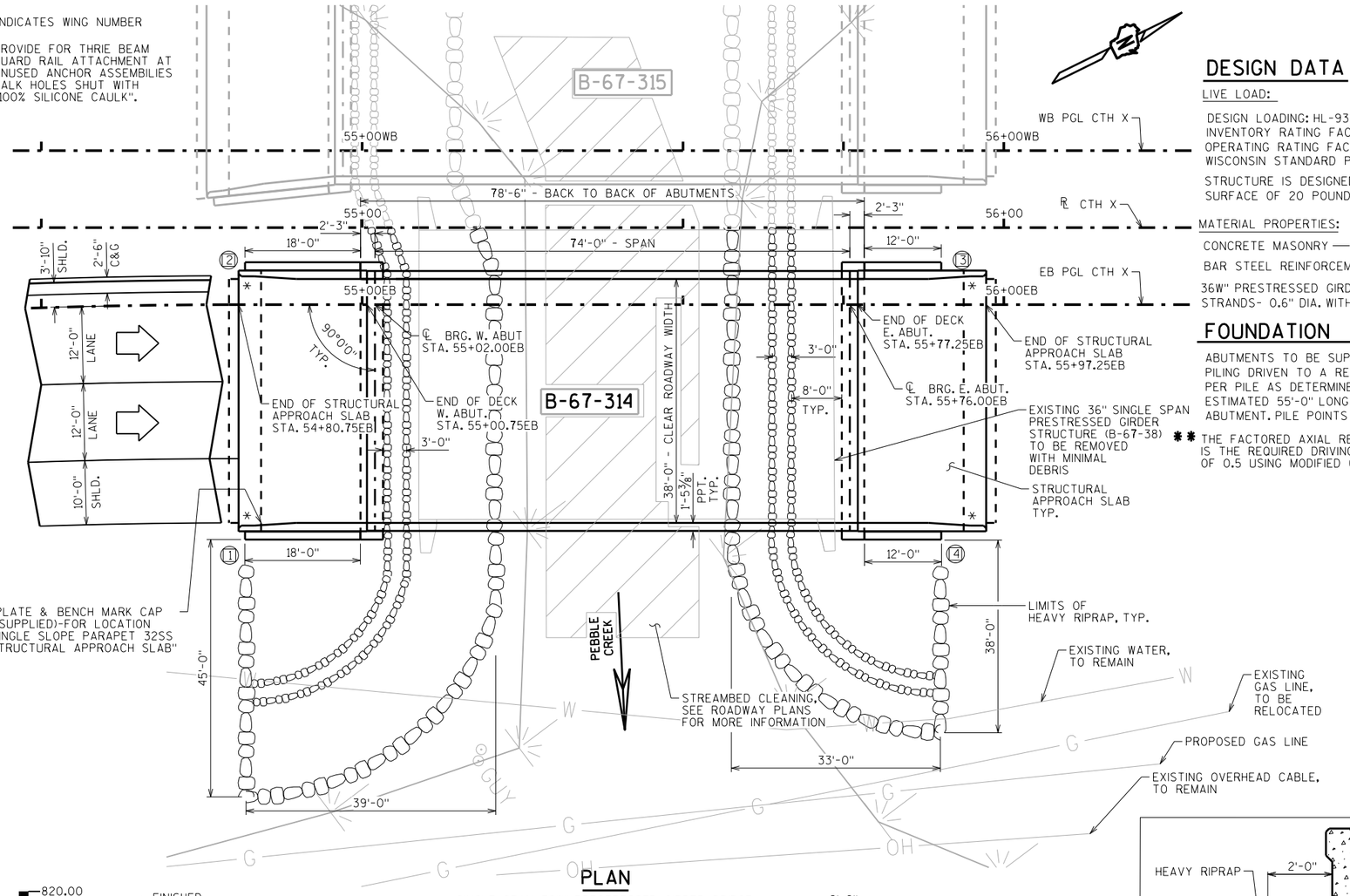
STATE PROJECT NUMBER

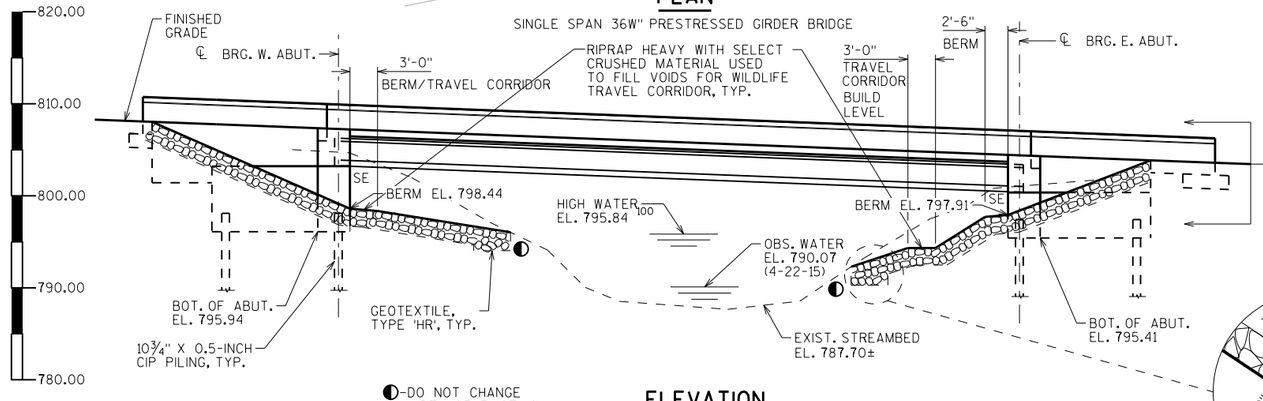
2788-00-71

INDICATES WING NUMBER

* PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT AT UNUSED ANCHOR ASSEMBLIES CALK HOLES SHUT WITH "100% SILICONE CAULK".

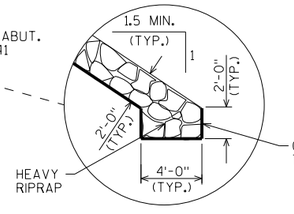


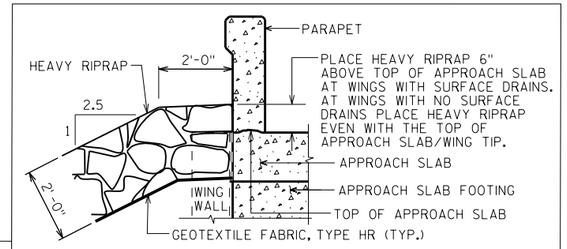
PLAN



ELEVATION

LOOKING NORTH (UPSTREAM)





TYPICAL FILL SECTION AT END OF STRUCTURAL APPROACH SLABS

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.08
OPERATING RATING FACTOR: RF=1.40
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

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

MATERIAL PROPERTIES:

CONCRETE MASONRY — SUPERSTRUCTURE — f'c = 4,000 P.S.I. ALL OTHER — f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.
36W" PRESTRESSED GIRDERS, CONCRETE MASONRY — f'c = 8,000 P.S.I.
STRANDS- 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON 10¾" DIA. X 0.5-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 55'-0" LONG AT WEST ABUTMENT AND 65'-0" LONG AT EAST ABUTMENT. PILE POINTS REQUIRED.

** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

CTH X
A.A.D.T.=18,000 (2037)
R.D.S.=50 M.P.H.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} =1,710 C.F.S.
VEL. =8.21 F.P.S.
HW.= EL. 795.84
WATERWAY AREA= 208.30 SQ. FT.
DRAINAGE AREA= 17.97 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q_2 =764 C.F.S.
$HW._2$= EL. 793.11

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. 36W" PRESTRESSED GIRDER DETAILS 1
9. 36W" PRESTRESSED GIRDER DETAILS 2
10. STEEL DIAPHRAGMS
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE DETAILS
13. APPROACH SLAB DETAILS
14. SINGLE SLOPE PARPAPET 32SS WITH STRUCTURAL APPROACH SLAB

STRUCTURE DESIGN CONTACTS:

MAX KULICK (608) 261-6108
AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 6/23/17
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-67-314

CTH X (GENESEE RD) EB OVER PEBBLE CREEK

COUNTY: WAUKESHA
TOWN/~~CITY/VILLAGE~~: WAUKESHA

DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY MJK/SGN	DESIGN CK'D. MSC	DRAWN BY MJK	PLANS CK'D. SAD

GENERAL PLAN

SHEET 1 OF 14

I.D. 2788-00-01A

DATE: MAY 2017

SCALE = 10.0

8

8

STATE PROJECT NUMBER

2788-00-71

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-67-314" SHALL BE THE EXISTING GROUNDLINE.

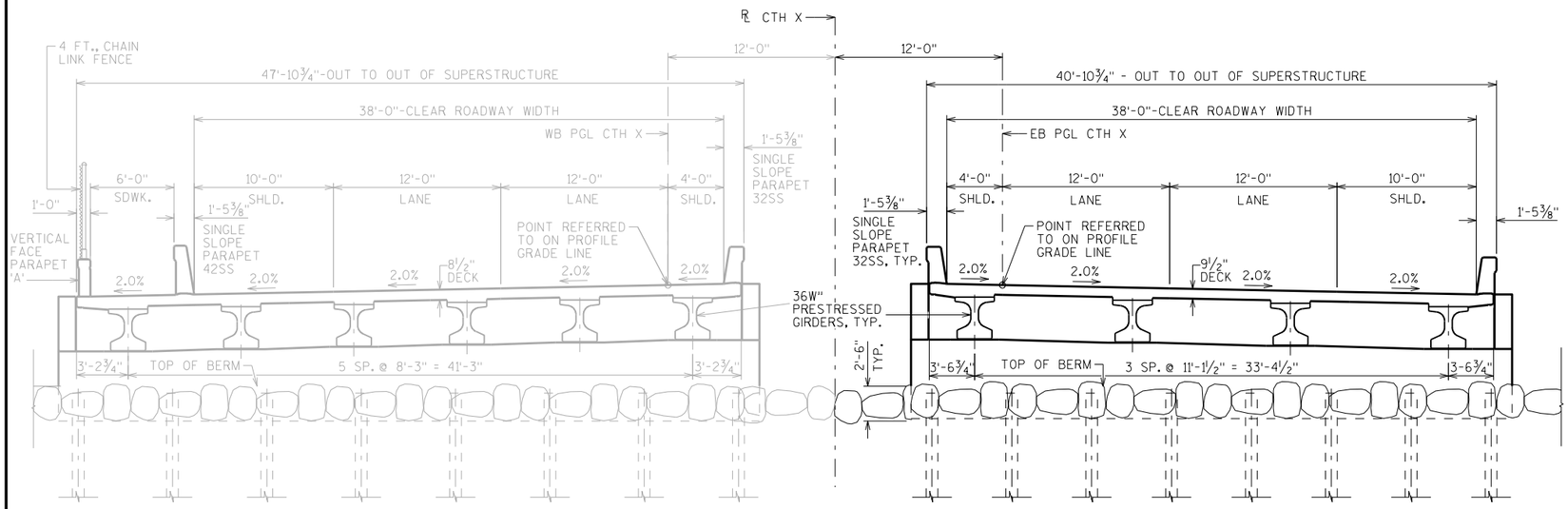
⚠ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK AND STRUCTURAL APPROACH SLAB SURFACES.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON STRUCTURAL APPROACH SLABS.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

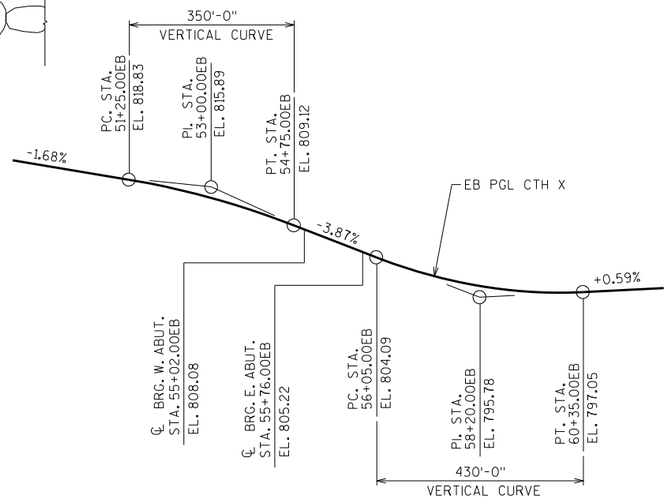


CROSS SECTION THRU ROADWAY B-67-315

LOOKING EAST

CROSS SECTION THRU ROADWAY B-67-314

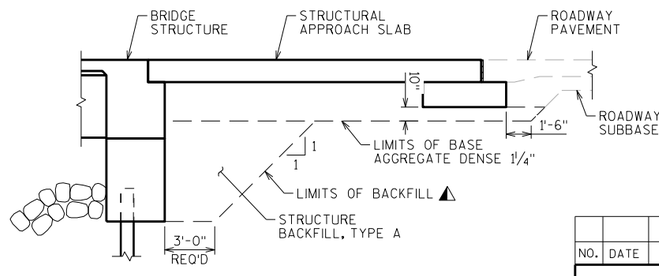
LOOKING EAST



EB PROFILE GRADE LINE CTH X

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST APPROACH	WEST ABUT.	EAST ABUT.	EAST APPROACH	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 55+50	LS	——	——	——	——	——	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-67-314	LS	——	——	——	——	——	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	——	——	186	111	——	297
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	——	125	——	——	125	250
501.1000.S	ICE HOT WEATHER CONCRETEING	LB	1,163	420	548	368	420	2,919
502.0100	CONCRETE MASONRY BRIDGES	CY	155	56	73	49	56	389
502.3200	PROTECTIVE SURFACE TREATMENT	SY	343	85	——	——	85	513
502.3210	PIGMENTED SURFACE SEALER	SY	64	17	——	——	17	98
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	300	——	——	——	——	300
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	——	——	3,915	2,605	——	6,520
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	22,085	9,420	2,885	1,540	9,420	45,350
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	1,395	——	——	——	——	1,395
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	8	——	——	——	——	8
506.4000	STEEL DIAPHRAGMS B-67-314	EACH	3	——	——	——	——	3
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	——	——	12	12	——	24
550.0500	PILE POINTS	EACH	——	——	12	11	——	23
550.2108	PILING CIP CONCRETE 10 3/4 X 0.50-INCH	LF	——	——	660	715	——	1,375
606.0300	RIPRAP HEAVY	CY	——	——	200	173	——	373
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	——	——	100	100	——	200
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	——	——	——	——	4
645.0120	GEOTEXTILE TYPE HR	SY	——	——	338	260	——	598
SPV.0195.XX	SELECT CRUSHED MATERIAL FOR WILDLIFE TRAVEL CORRIDOR	TON	——	——	17	17	——	34
			——	——	——	——	——	——
	NON-BID ITEMS		——	——	——	——	——	——
	FILLER	SIZE	——	——	——	——	——	½", ¾", 1½"



TYPICAL SECTION THRU ABUTMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

DRAWN BY MJK | PLANS CK'D. SAD

CROSS SECTION & QUANTITIES

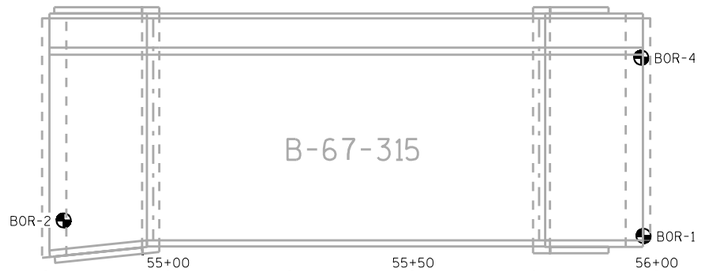
SHEET 2

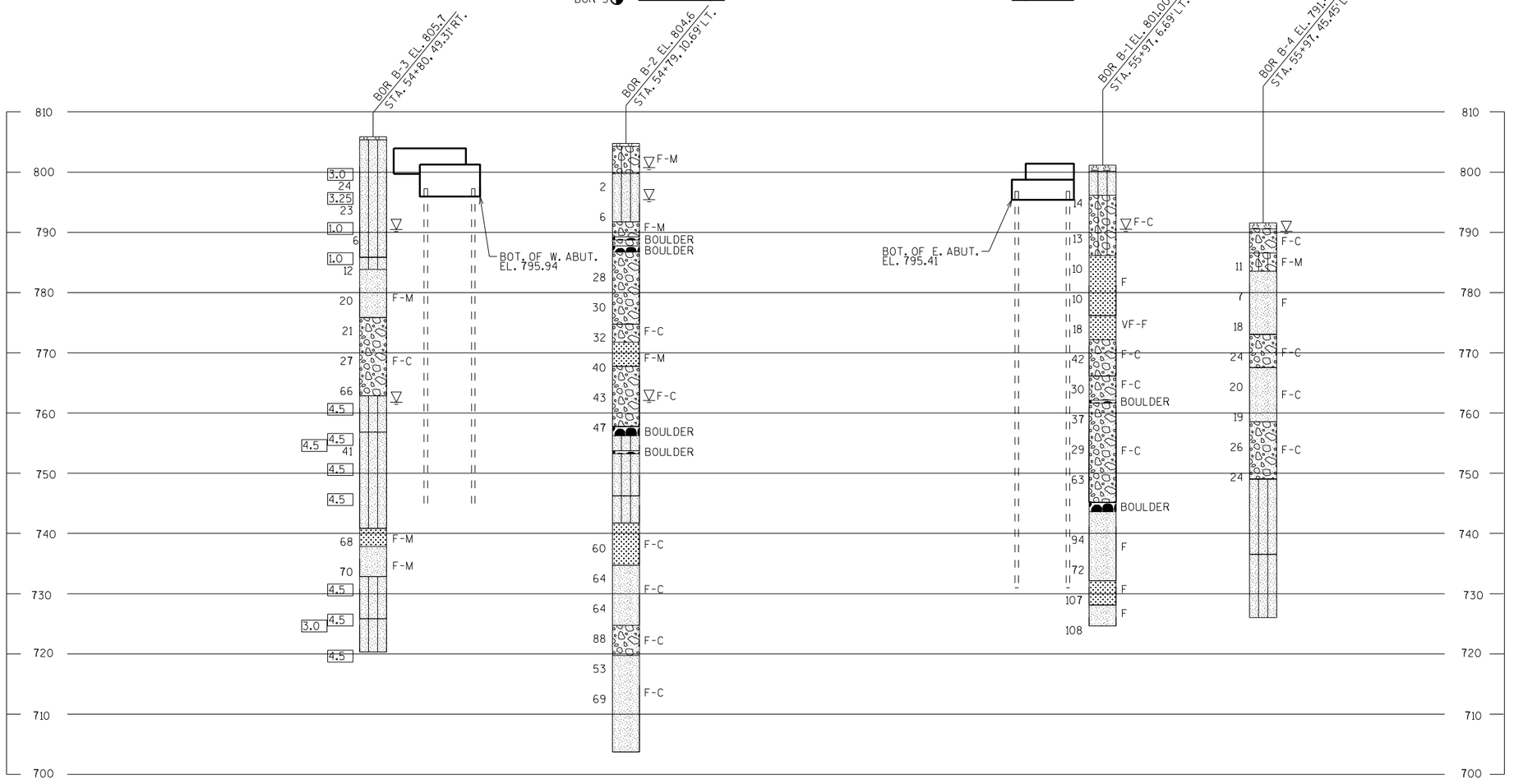
SCALE = 5

8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	10/21/2015	150391.451	672222.446
2	11/3/2015	150298.392	672148.682
3	11/5/2015	150260.375	672195.443
4	11/10/2015	150412.99	672192.969
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) WAUKESHA COUNTY			





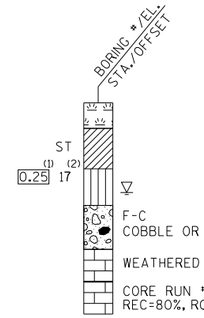
STATE PROJECT NUMBER

2788-00-01

MATERIAL SYMBOLS

ASPHALT · TOPSOIL · PEAT · CONCRETE · FILL · GRAVEL · SAND · CLAY · SILT · BOULDERS OR COBBLES · LIMESTONE · BEDROCK (UNKNOWN) · SHALE · SANDSTONE · IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

F-FINE · M-MEDIUM · C-COARSE · ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

DRAWN BY TLP/MJK | PLANS CK'D. SAD

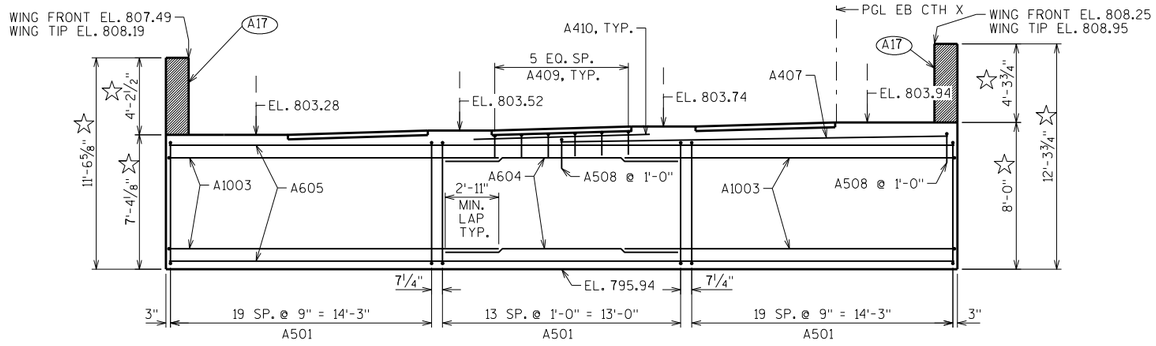
SUBSURFACE EXPLORATION

SHEET 3

SCALE = 1.5

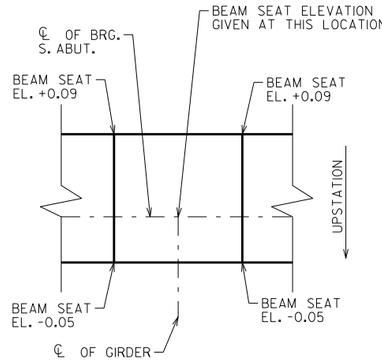
STATE PROJECT NUMBER

2788-00-71

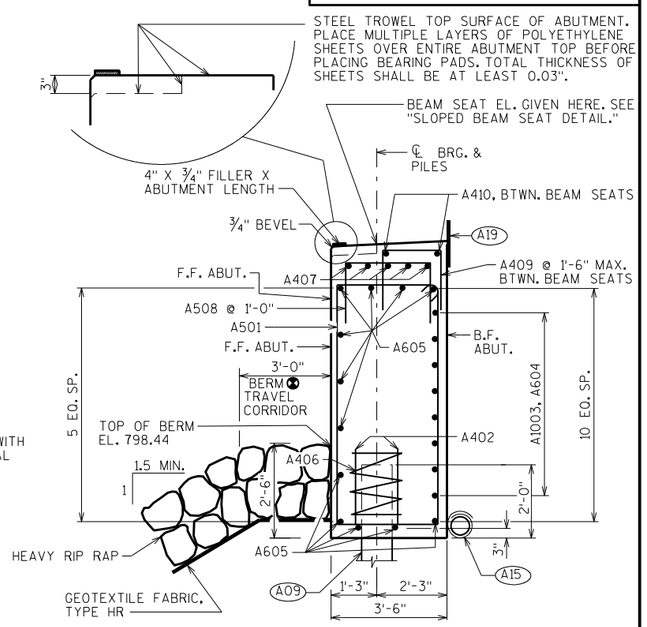


ELEVATION

LOOKING WEST AT F.F. ABUT.
ADJUST STIRRUP SPACING TO MISS PILES



SLOPED BEAM SEAT DETAIL

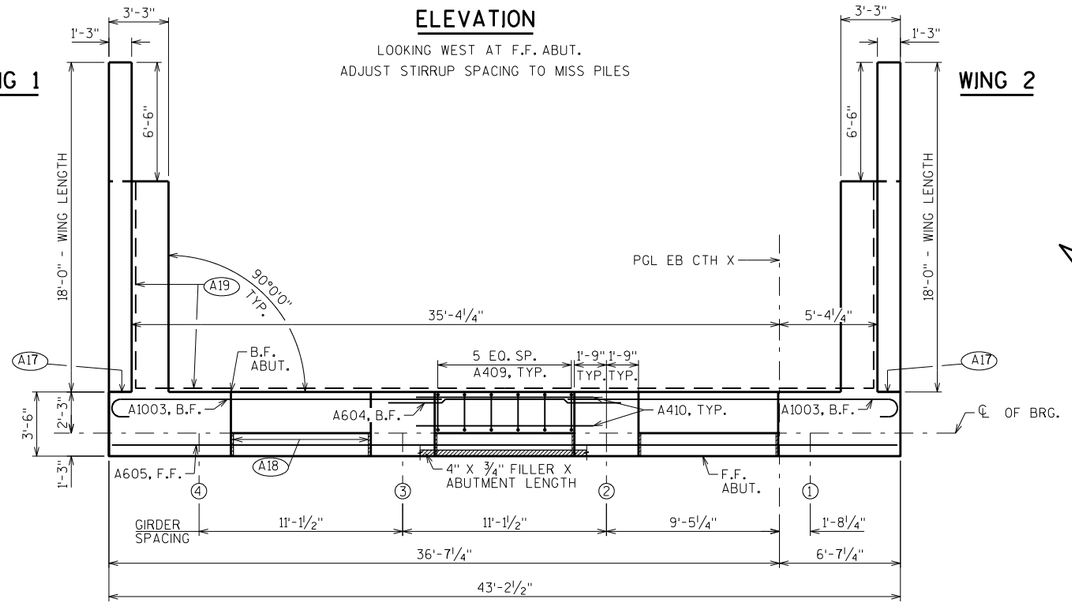


SECTION THRU BODY

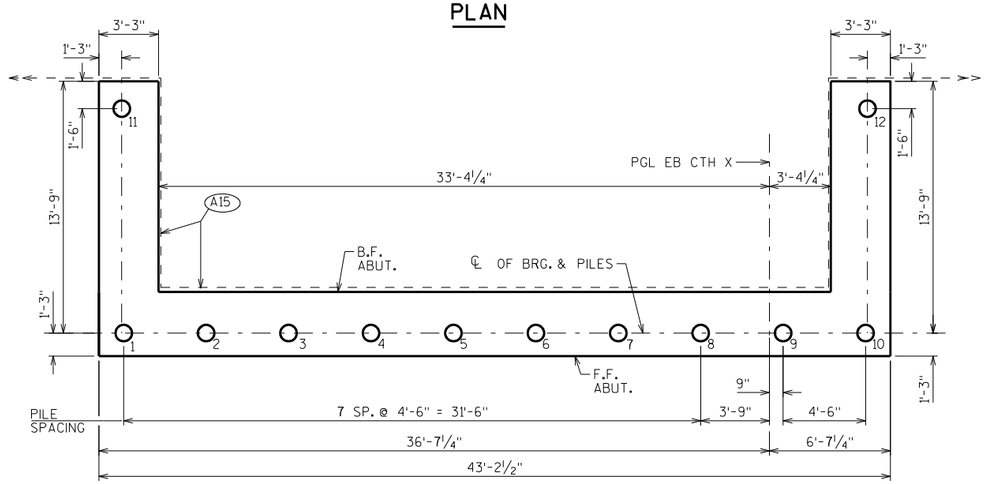
● FILL RIPRAP VOIDS AT BERM/TRAVEL CORRIDOR WITH SELECT CRUSHED MATERIAL

WING 1

WING 2



PLAN



PILE PLAN

☆ MEASURED AT ℄ BRG.

◯ INDICATES GIRDER NUMBER

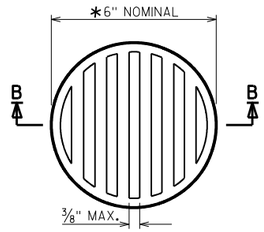
(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.5" CIP CONCRETE PILING, ESTIMATED 55'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE. PILE POINTS ARE REQUIRED.

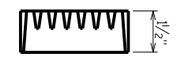
(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.





SECTION B-B

RODENT SHIELD DETAIL

✱ DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

DRAWN BY MJK | PLANS CK'D. SAD

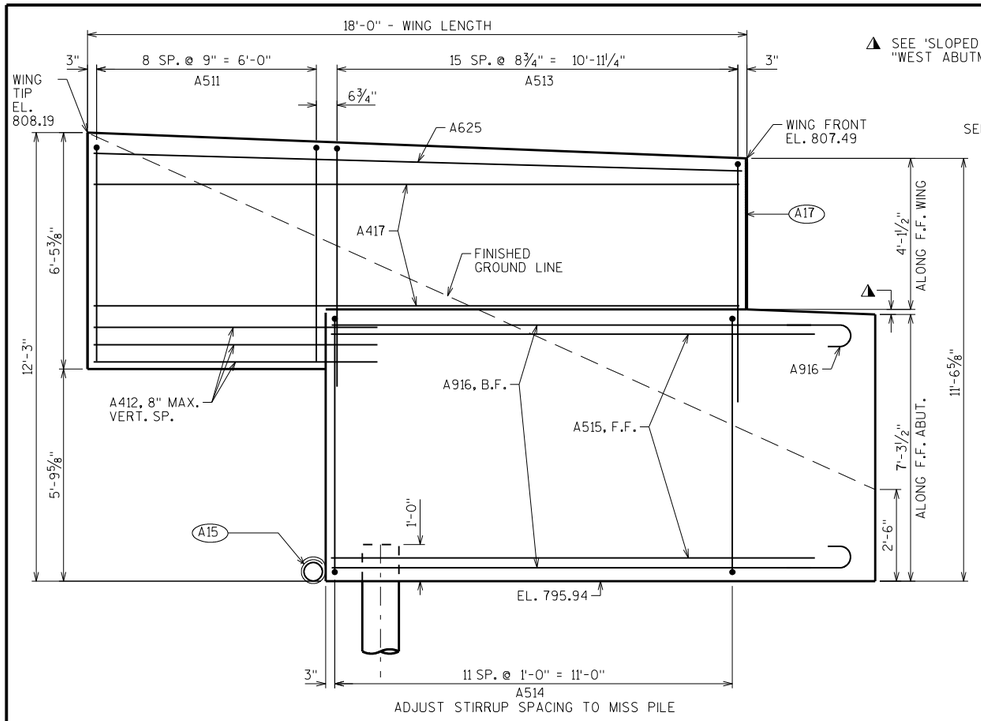
WEST ABUTMENT

SHEET 4

SCALE = 4.0

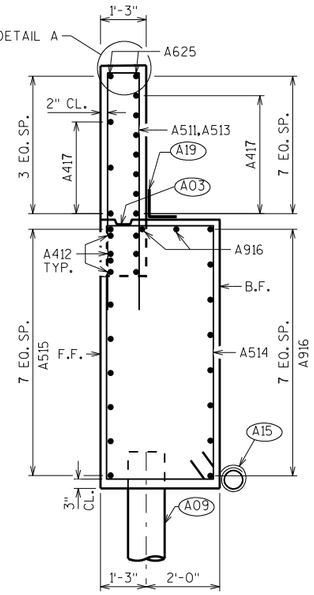
8

8

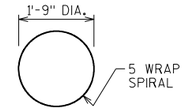


WING 1 ELEVATION

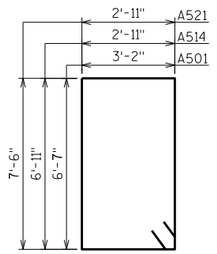
◭ SEE 'SLOPED BEAM SEAT DETAIL' ON "WEST ABUTMENT" SHEET.



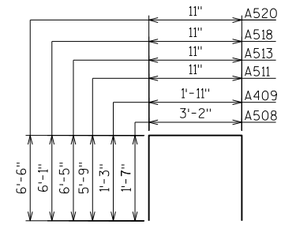
WING 1 SECTION



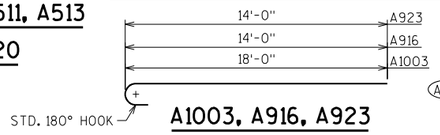
A406



A501, A514, A521



A508, A409, A511, A513 A518, A520



A1003, A916, A923

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		54	20'-2"	X		BODY - STIRRUPS
A402		20	2'-3"			PILES - 2 PER BODY PILE
A1003		16	19'-5"	X		BODY - HORIZONTAL - B.F.
A604		8	12'-9"			BODY - HORIZONTAL - B.F.
A605		12	42'-10"			BODY - HORIZONTAL
A406		10	28'-0"	X		BODY - VERTICAL - 1 PER BODY PILES
A407		5	21'-2"			BODY - HORIZ. OVER GIRS. 1 & 2
A508		22	6'-1"	X		BODY - TOP - VERT. OVER GIRS. 1 & 2
A409		18	4'-3"	X		BODY - VERTICAL - BTWN. BEAM SEATS
A410		6	9'-8"			BODY - HORIZONTAL- BTWN. BEAM SEATS
A511	X	9	12'-2"	X		WING 1 - VERTICAL - UPPER WING
A412	X	6	7'-9"			WING 1 - HORIZONTAL- UPPER WING
A513	X	16	13'-6"	X		WING 1 - VERTICAL - UPPER WING
A514	X	12	20'-4"	X		WING 1 - STIRRUPS - LOWER WING
A515	X	8	13'-1"			WING 1 - HORIZONTAL - F.F. - LOWER WING
A916	X	10	15'-3"	X		WING 1 - HORIZ. - B.F. - LOWER WING
A417	X	10	17'-7"			WING 1 - HORIZONTAL - UPPER WING
A518	X	9	12'-10"	X		WING 2 - VERTICAL - UPPER WING
A419	X	6	7'-9"			WING 2 - HORIZONTAL- UPPER WING
A520	X	16	13'-8"	X		WING 2 - VERTICAL - UPPER WING
A521	X	12	21'-6"	X		WING 2 - STIRRUPS - LOWER WING
A522	X	9	13'-1"			WING 2 - HORIZONTAL - F.F. - LOWER WING
A923	X	10	15'-3"	X		WING 2 - HORIZONTAL - B.F. - LOWER WING
A424	X	10	17'-7"			WING 2 - HORIZONTAL - UPPER WING
A625	X	2	17'-7"			WING 1 - HORIZONTAL - UPPER WING
A626	X	2	17'-7"			WING 2 - HORIZONTAL - UPPER WING

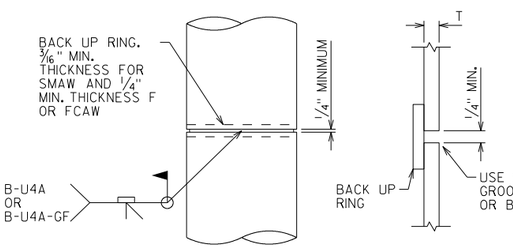
(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.5" CIP CONCRETE PILING, ESTIMATED 55'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE. PILE POINTS REQUIRED.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

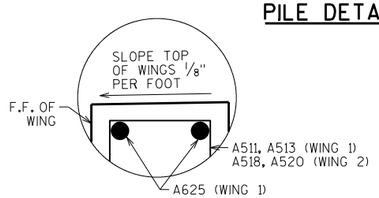
(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

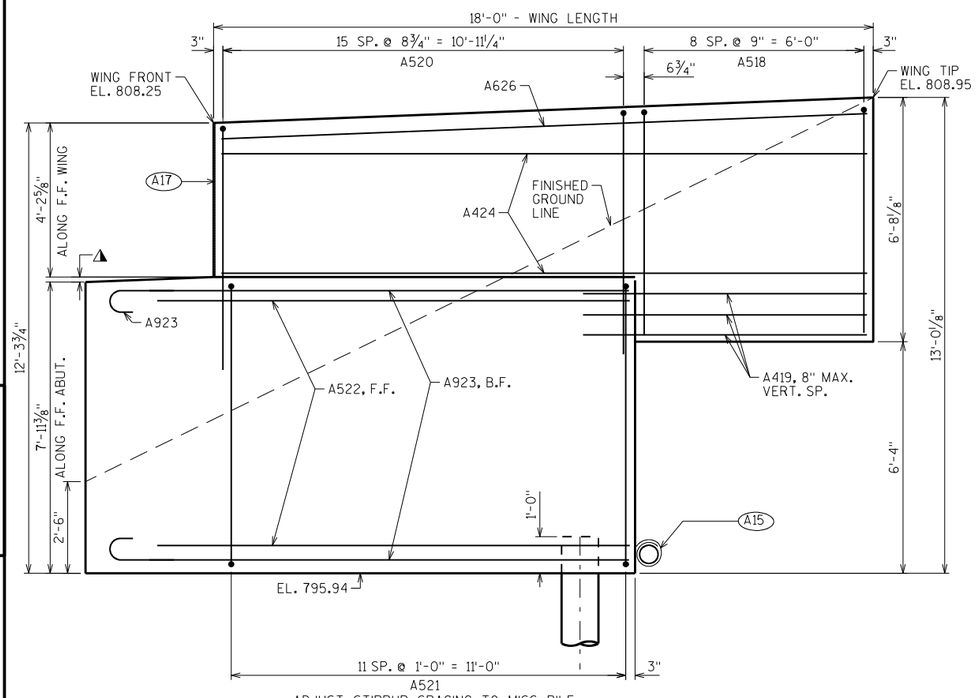


CAST-IN-PLACE 'PIPE PILE' **C.J.P. PILE WELD DETAIL**

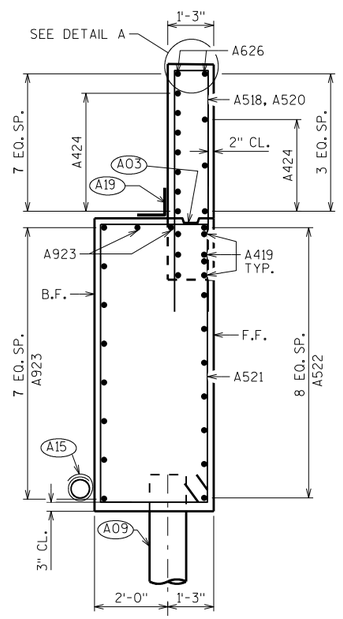
PILE DETAILS



DETAIL A



WING 2 ELEVATION



WING 2 SECTION

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STRUCTURE B-67-314

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WEST ABUTMENT DETAILS

SHEET 5

STATE PROJECT NUMBER

2788-00-71

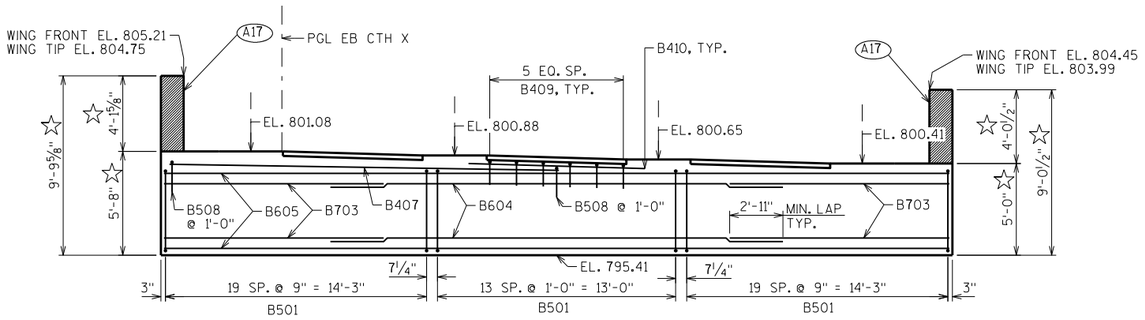
8

8

SCALE = 2.0

STATE PROJECT NUMBER

2788-00-71

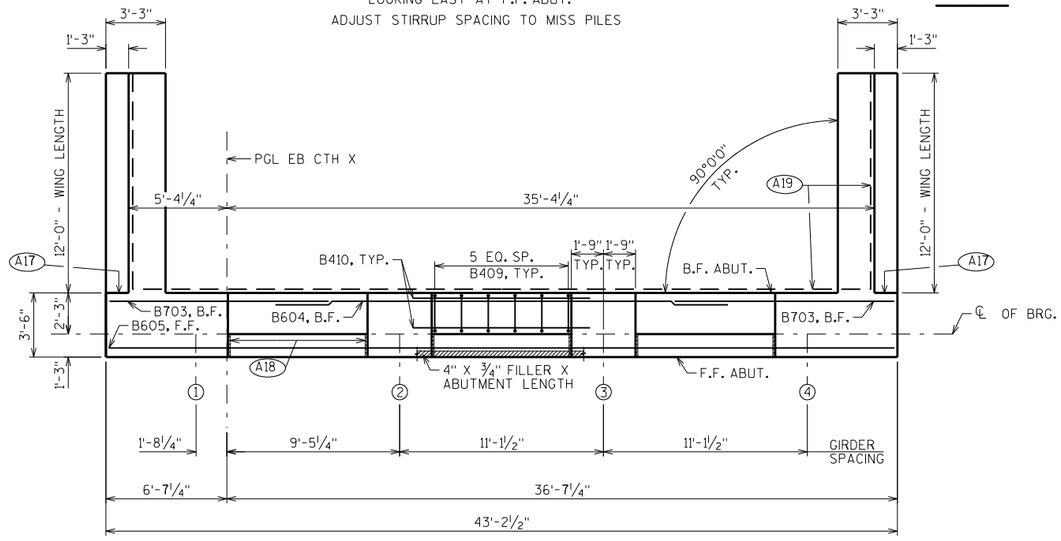


ELEVATION

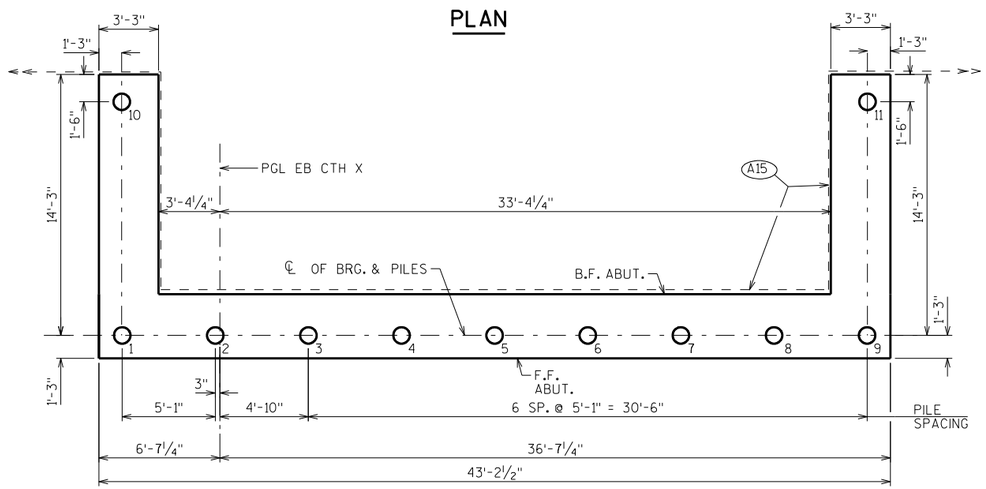
LOOKING EAST AT F.F. ABUT.
ADJUST STIRRUP SPACING TO MISS PILES

WING 3

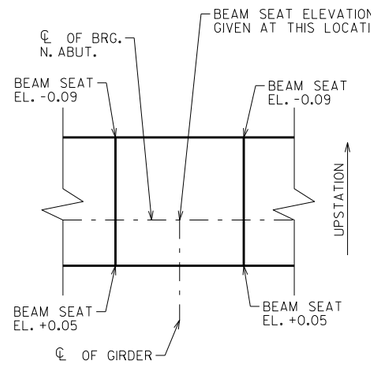
WING 4



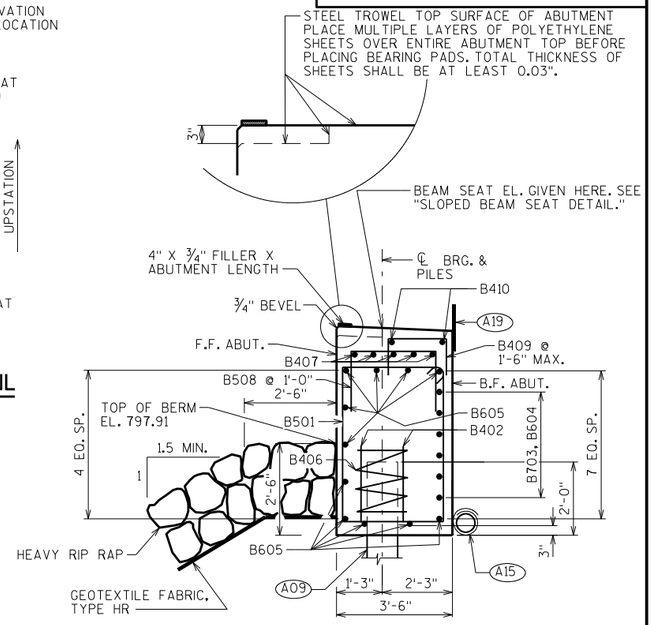
PLAN



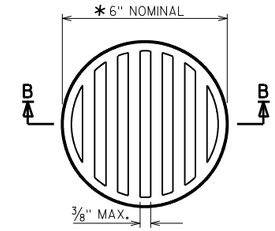
PILE PLAN



SLOPED BEAM SEAT DETAIL



SECTION THRU BODY



SECTION B-B

RODENT SHIELD DETAIL

☆ MEASURED AT ℄ BRG.

○ INDICATES GIRDER NUMBER

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.5" CIP CONCRETE PILING, ESTIMATED 65'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE. PILE POINTS REQUIRED.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

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STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

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EAST ABUTMENT

SHEET 6

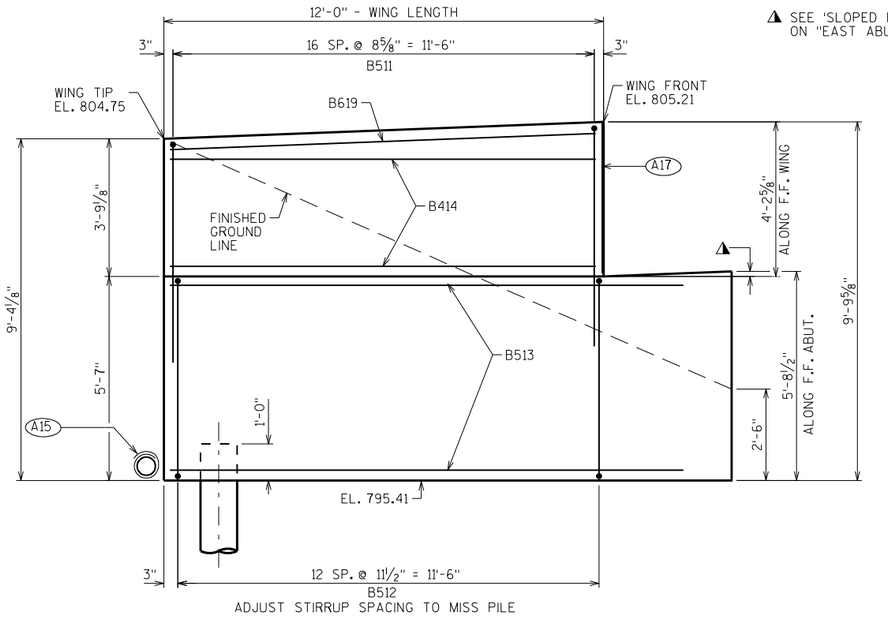
SCALE = 4.0

8

8

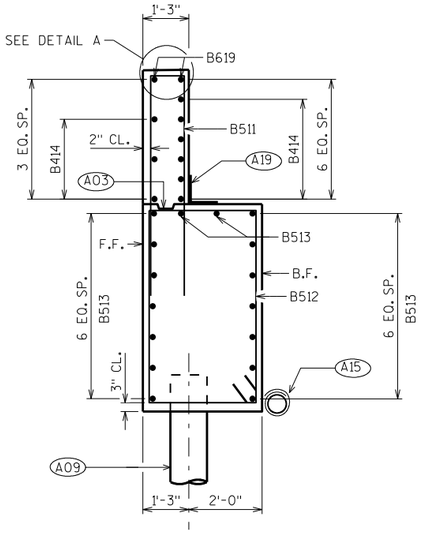
STATE PROJECT NUMBER

2788-00-71

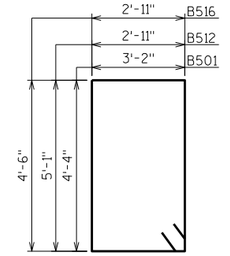


SEE 'SLOPED BEAM SEAT' DETAIL ON "EAST ABUTMENT" SHEET.

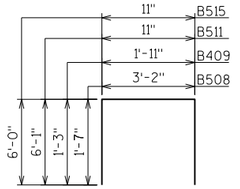
WING 3 ELEVATION



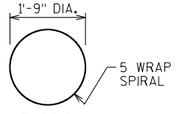
WING 3 SECTION



B501, B512, B516



B508, B409, B511, B515

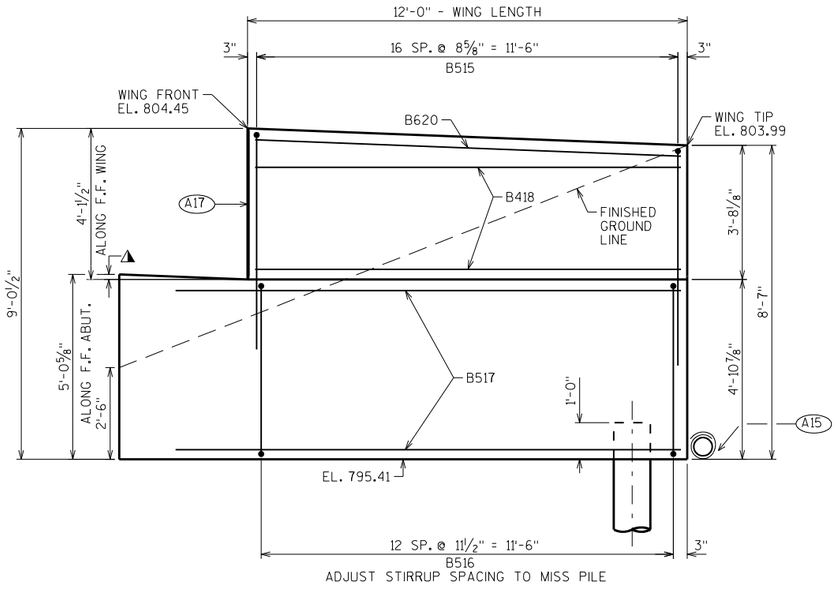


B406

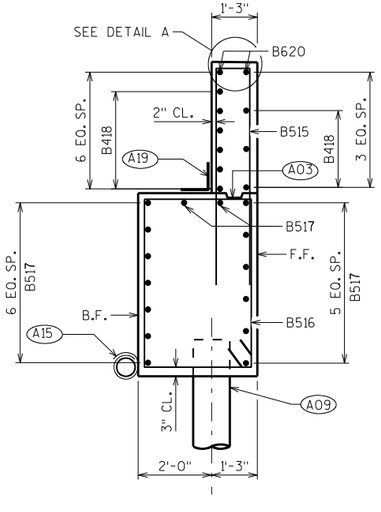
BILL OF BARS

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

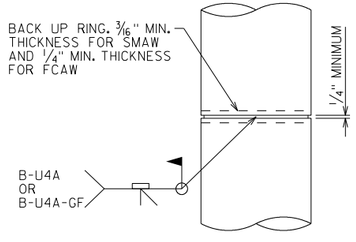
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		54	15'-8"	X		BODY - STIRRUPS
B402		18	2'-3"			PILES - 2 PER BODY PILE
B703		12	12'-0"	X		BODY - HORIZONTAL - B.F.
B604		6	24'-9"			BODY - HORIZONTAL - B.F.
B605		11	42'-10"			BODY - HORIZONTAL
B406		9	28'-0"	X		BODY - VERTICAL - 1 PER BODY PILES
B407		5	21'-4"			BODY - HORIZ. OVER GIRS. 1 & 2
B508		22	6'-1"	X		BODY - TOP - VERT. OVER GIRS. 1 & 2
B409		18	4'-3"	X		BODY - VERTICAL - BTWN. BEAM SEATS
B410		6	9'-8"			BODY - HORIZONTAL - BTWN. BEAM SEATS
B511	X	17	12'-10"	X		WING 3 - VERTICAL - UPPER WING
B512	X	13	16'-8"	X		WING 3 - STIRRUPS - LOWER WING
B513	X	16	13'-7"			WING 3 - HORIZONTAL - LOWER WING
B414	X	9	11'-7"			WING 3 - HORIZONTAL - UPPER WING
B515	X	17	12'-8"	X		WING 4 - VERTICAL - UPPER WING
B516	X	13	15'-6"	X		WING 4 - STIRRUPS - LOWER WING
B517	X	15	13'-7"			WING 4 - HORIZONTAL - LOWER WING
B418	X	9	11'-7"			WING 4 - HORIZONTAL - UPPER WING
B619	X	2	11'-7"	X		WING 3 - HORIZONTAL - UPPER WING
B620	X	2	11'-7"	X		WING 4 - HORIZONTAL - UPPER WING



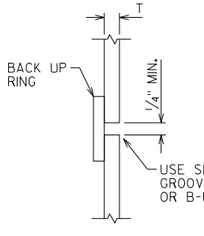
WING 4 ELEVATION



WING 4 SECTION

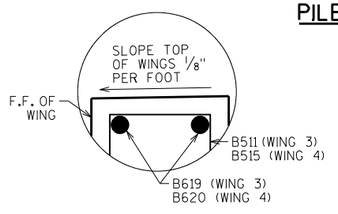


CAST-IN-PLACE 'PIPE PILE'



C.I.P. PILE WELD DETAIL

PILE DETAILS



DETAIL A

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.5" CIP CONCRETE PILING, ESTIMATED 65'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE. PILE POINTS REQUIRED.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

DRAWN BY MJK | PLANS CK'D. SAD

EAST ABUTMENT DETAILS

SHEET 7

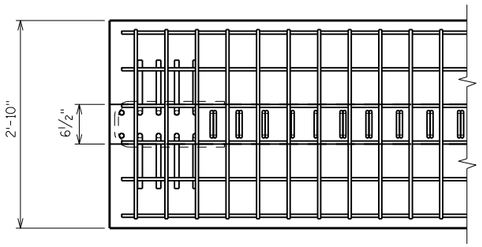
8

8

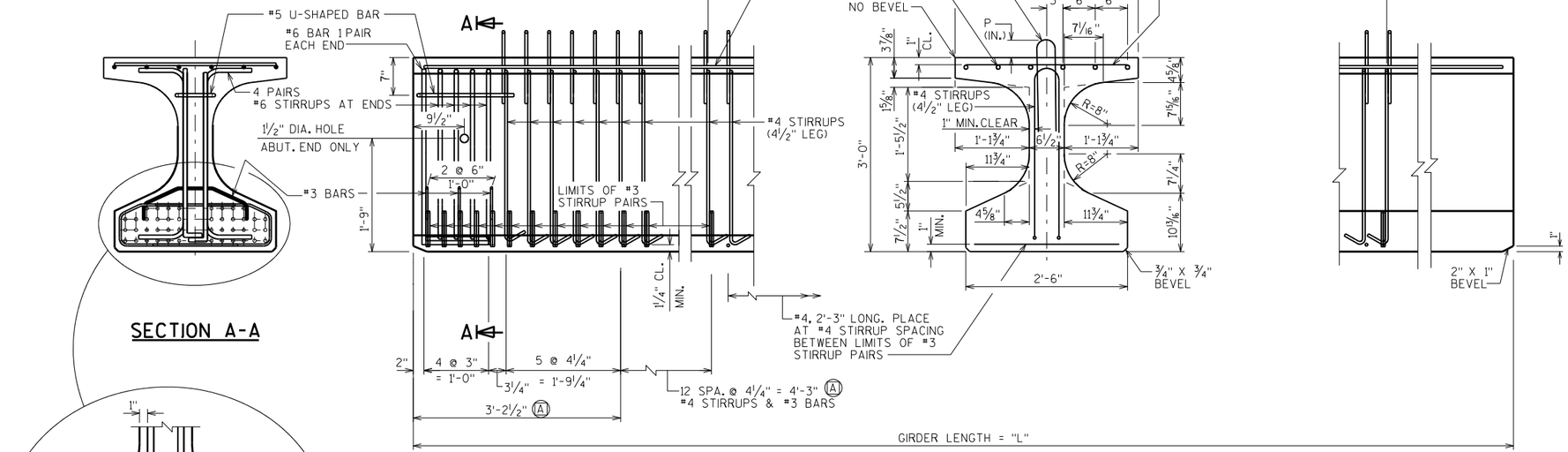
SCALE = 2.0

STATE PROJECT NUMBER

2788-00-71



TOP FLANGE

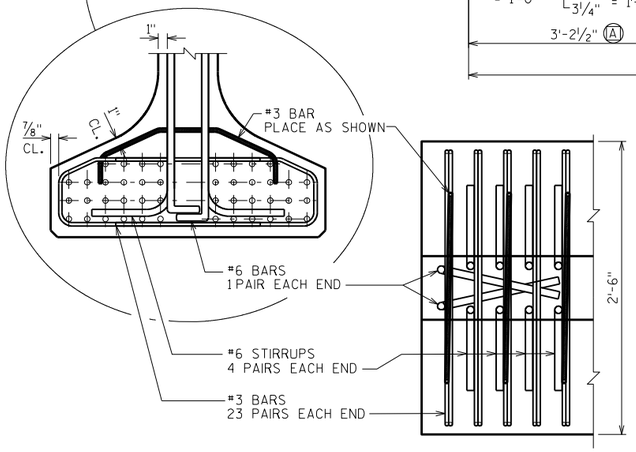


SIDE VIEW & TYPICAL SECTION IN SPAN

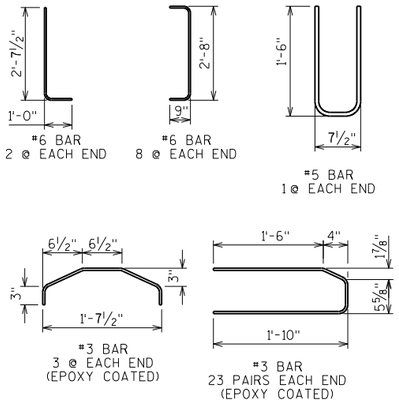
(A) DETAIL TYP. AT EACH END

(B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"

SECTION A-A



BOTTOM FLANGE



NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" 1ST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳
1	2&3	75	0.5	1.0	1.3	1.5	1.6	1.5	1.3	1.0	0.5	8,000	8"	7"	8"	0.6"	32	6,600	31	11.5	14.5	5		
1	1&4	75	0.4	0.8	1.1	1.3	1.4	1.3	1.1	0.8	0.4	8,000	8"	7"	8"	0.6"	32	6,600	31	11.5	14.5	5		

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STRUCTURE B-67-314

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36W" PRESTRESSED GIRDER DETAILS 1

SHEET 8

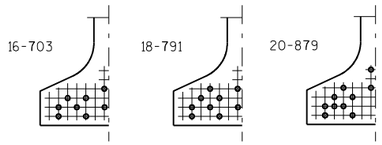
SCALE = 1.0

8

8

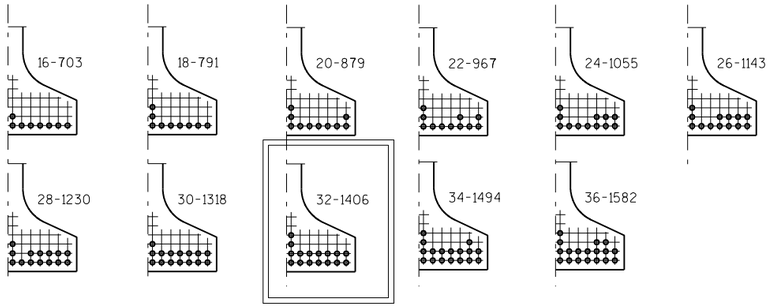
STATE PROJECT NUMBER

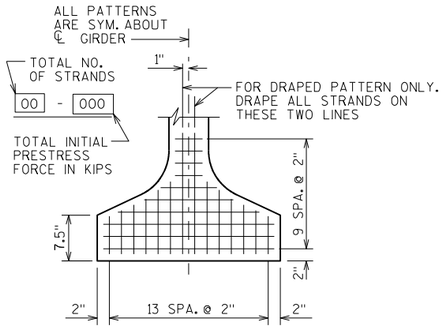
2788-00-71



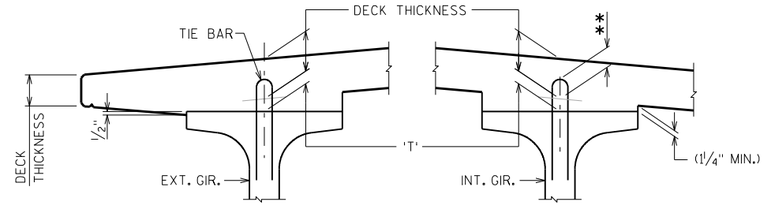
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6"Φ STRANDS





TYP. STRAND PATTERN



DECK HAUNCH DETAIL

IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

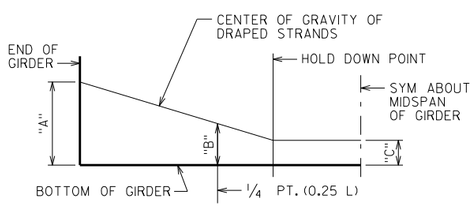
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
\- TOP OF GIRDER ELEVATION
\+ DEAD LOAD DEFLECTION
\- DECK THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 3.0" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"Φ STRANDS



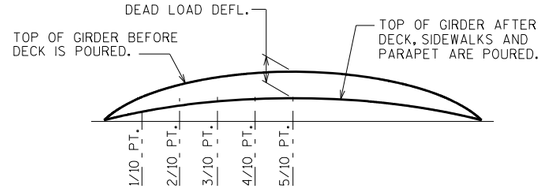
DRAPED STRAND PROFILE

*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	3.05

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



DEAD LOAD DEFLECTION DIAGRAM

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STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

DRAWN BY MJK | PLANS CK'D. SAD

36W" PRESTRESSED GIRDER DETAILS 2

SHEET 9

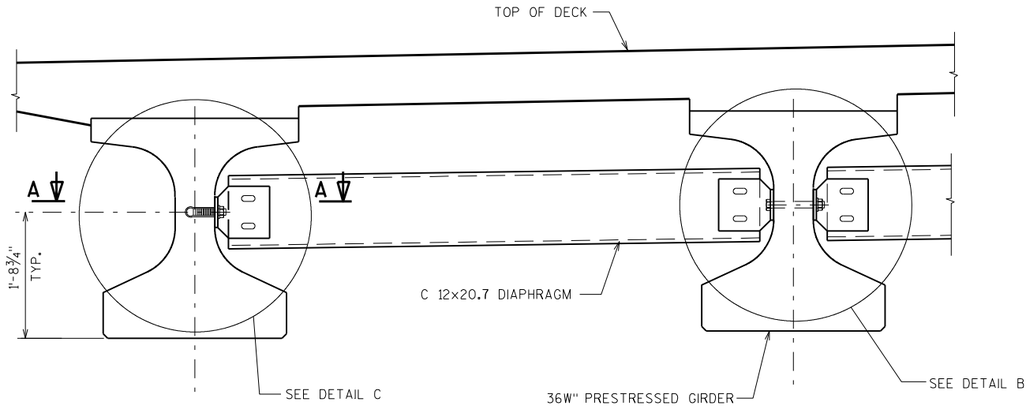
SCALE = 1.0

8

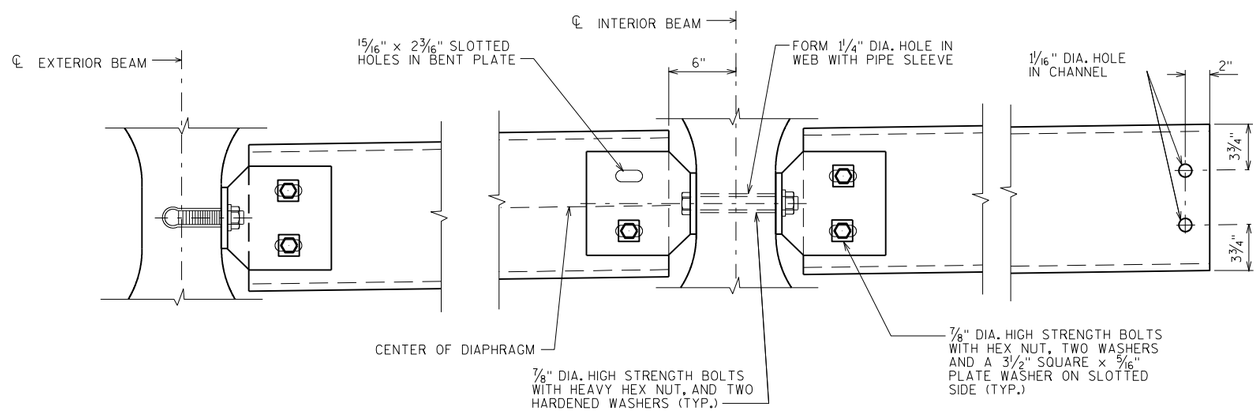
8

STATE PROJECT NUMBER

2788-00-01

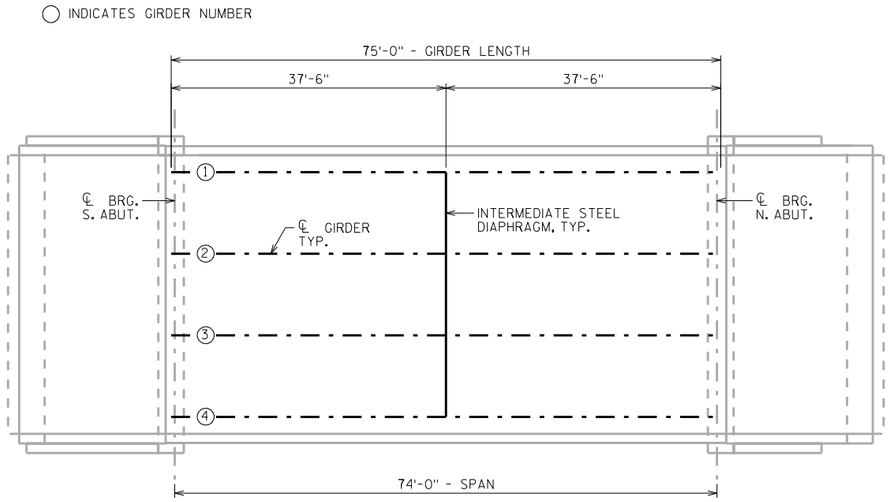


PART TRANSVERSE SECTION AT DIAPHRAGM

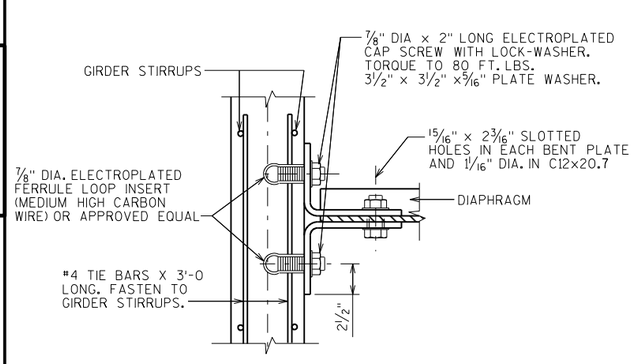


DETAIL C

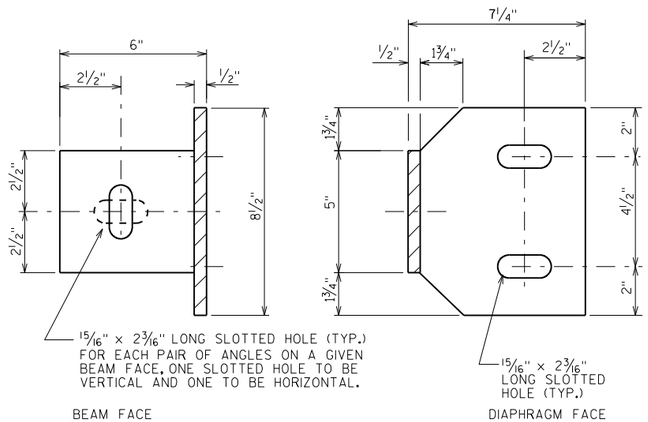
DETAIL B

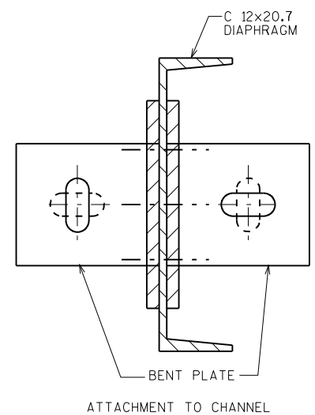


DIAPHRAGM FRAMING PLAN



SECTION A-A
(FOR EXTERIOR ATTACHMENT)





ATTACHMENT TO CHANNEL

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-67-314", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

DRAWN BY MJK | PLANS CK'D. SAD

STEEL DIAPHRAGMS

SHEET 10

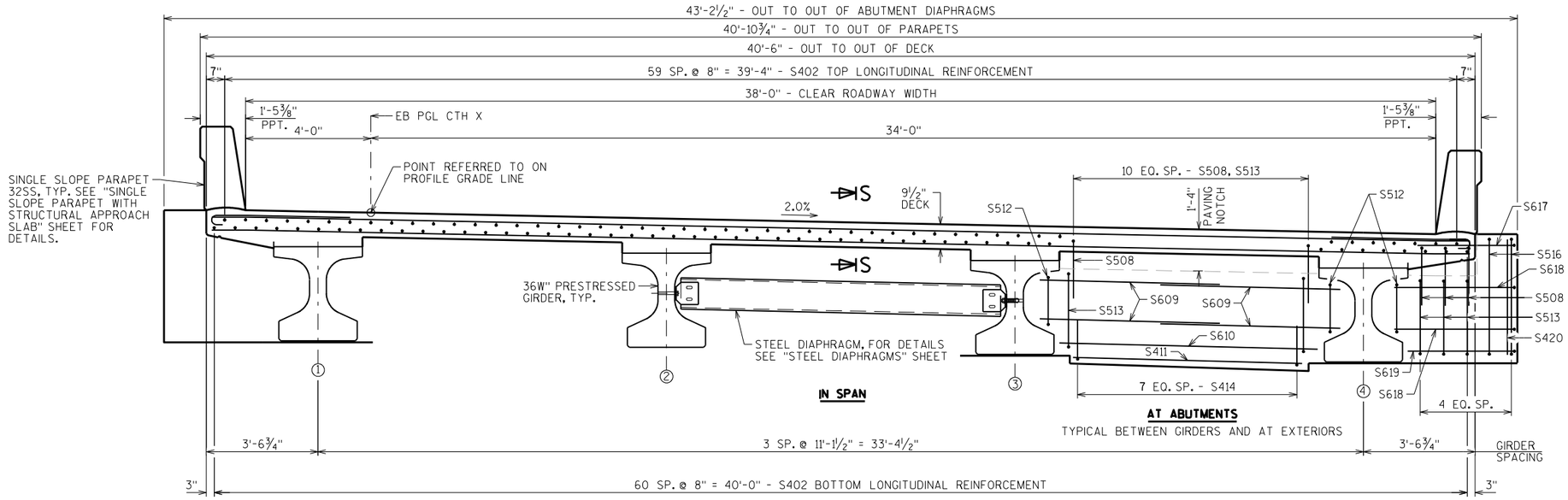
SCALE = 1.0

8

8

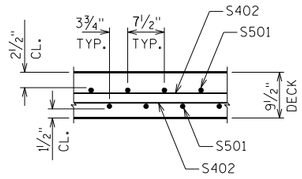
STATE PROJECT NUMBER

2788-00-71

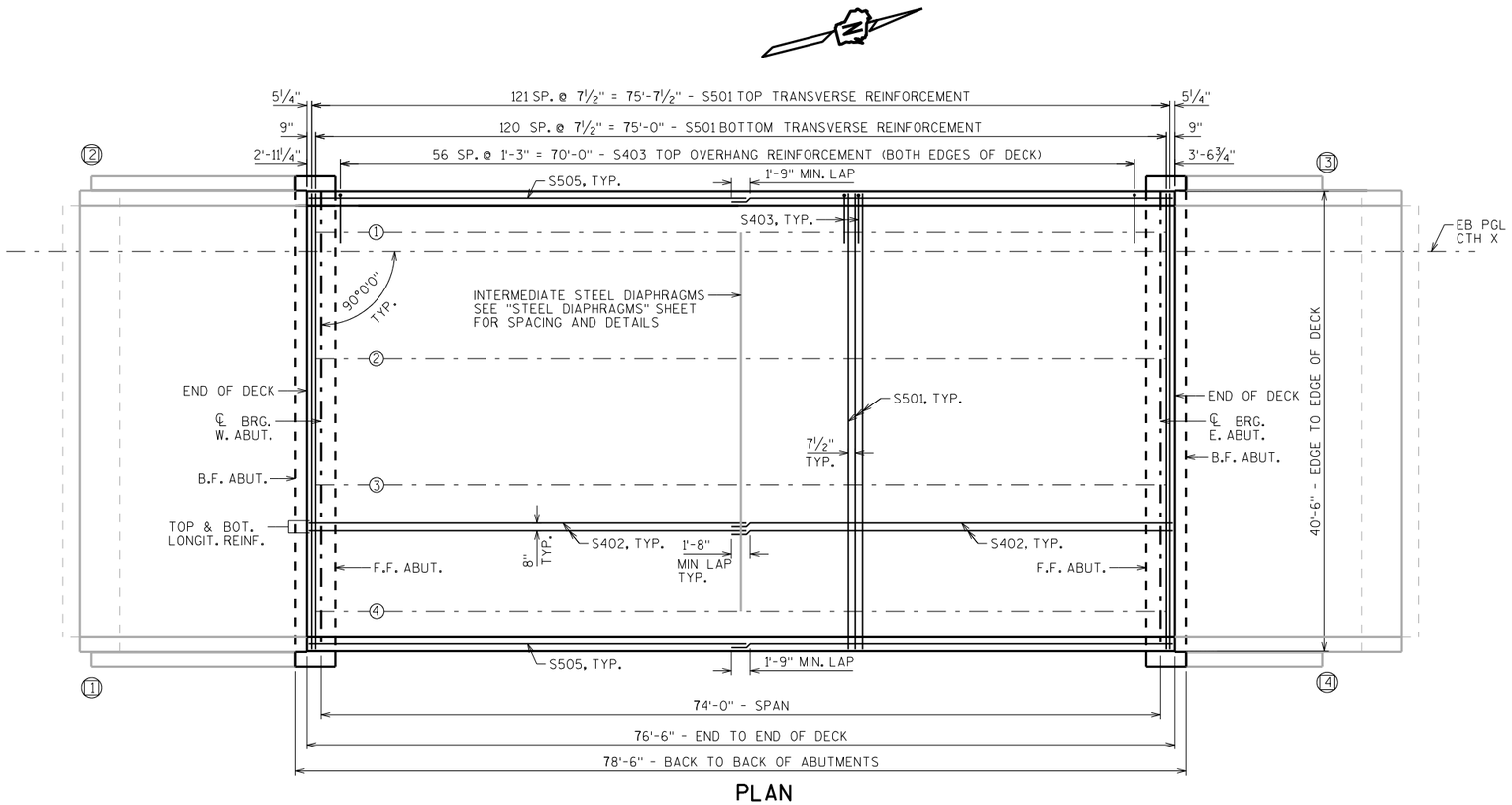


CROSS SECTION THRU ROADWAY

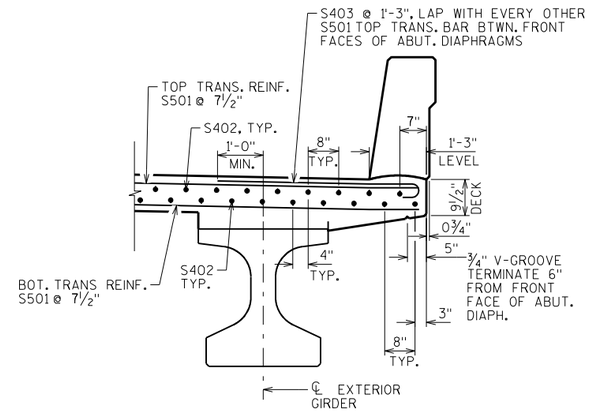
LOOKING EAST



SECTION S-S



PLAN



EDGE OF DECK DETAIL

(TYP. AT BOTH EDGES)

◯ INDICATES GIRDER NUMBER

⬡ INDICATES WING NUMBER

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

DRAWN BY MJK | PLANS CK'D. SAD

SUPERSTRUCTURE | SHEET 11

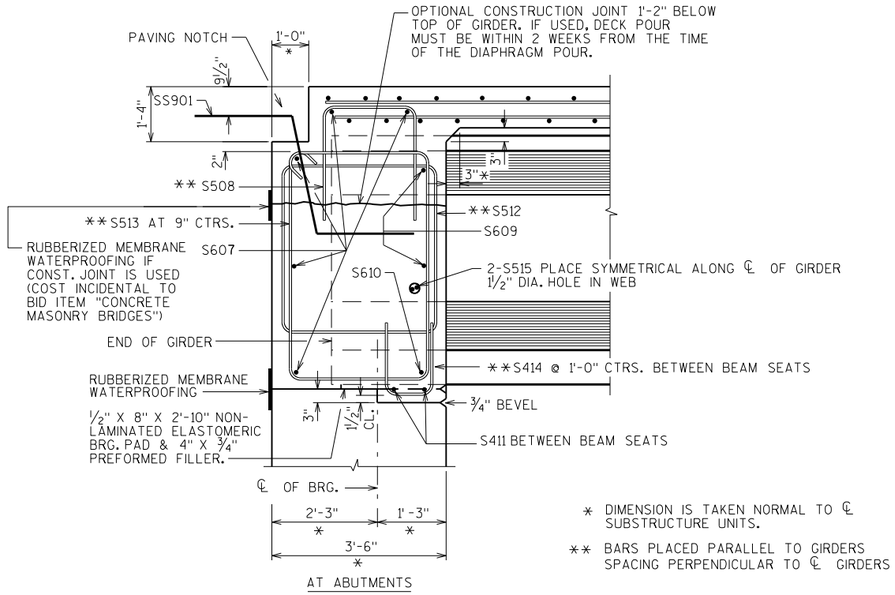
SCALE = 8.0

8

8

STATE PROJECT NUMBER

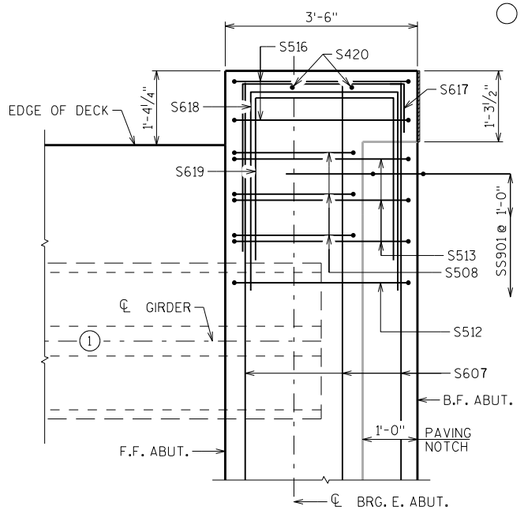
2788-00-71



PART LONGIT. SECTION

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO ℄ GIRDERS



PLAN - EXTERIOR ABUTMENT DIAPHRAGM

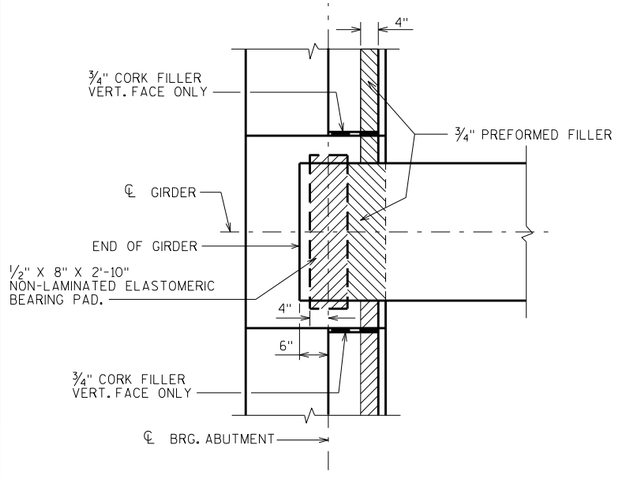
WING 3 SHOWN
OTHER WINGS SIMILAR

○ INDICATES GIRDER NUMBER

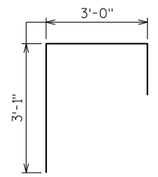
BILL OF BARS

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

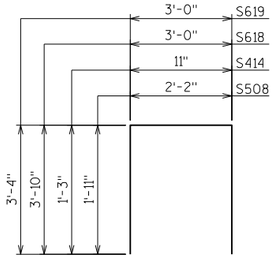
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	243	40'-2"			DECK-TOP & BOT. HORIZ.-TRANS.
S402	X	242	38'-11"			DECK-TOP & BOT.-HORIZ.-LONGIT.
S403	X	114	4'-11"	X		DECK-TOP VERT.-TRANS-HOOK BARS
S504	X	115	4'-5"	X		PARAPET/DECK-VERT.-TRANS.
S505	X	24	39'-0"			PARAPET-HORIZ.-LONGIT.
S506	X	115	5'-0"	X		PARAPET-VERT.-TRANS.
S607	X	10	42'-10"			ABUT. DIAPH.-HORIZ.
S508	X	78	5'-9"	X		ABUT. DIAPH.-VERT.-BTWN. GIR. & AT EXTERIORS
S609	X	24	5'-9"			ABUT. DIAPH.-HORIZ.-BTWN. GIR.
S610	X	6	8'-3"			ABUT. DIAPH.-HORIZ.-BTWN. GIR.
S411	X	12	7'-3"			ABUT. DIAPH.-HORIZ.-BTWN. GIR.
S512	X	16	10'-0"	X		ABUT. DIAPH.-STIRRUP-AT GIR.
S513	X	78	11'-8"	X		ABUT. DIAPH.-STIRRUP-BTWN. GIR. & AT EXTERIORS
S414	X	48	3'-3"	X		ABUT. DIAPH.-VERT.-BTWN. GIR.
S515	X	16	6'-0"			ABUT. DIAPH.-HORIZ.-THRU GIR.
S516	X	8	14'-4"	X		ABUT. DIAPH.-STIRRUP-EXTERIORS-WINGS
S617	X	4	6'-8"	X		ABUT. DIAPH.-HORIZ.-EXTERIORS-WINGS
S618	X	8	10'-4"	X		ABUT. DIAPH.-HORIZ.-EXTERIORS-WINGS
S619	X	4	9'-4"	X		ABUT. DIAPH.-HORIZ.-EXTERIORS-WINGS
S420	X	8	3'-8"			ABUT. DIAPH.-VERT.-EXTERIORS-WINGS
STAINLESS STEEL → SS901		82	5'-0"	X		ABUT. DIAPH./APPROACH SLAB TIE



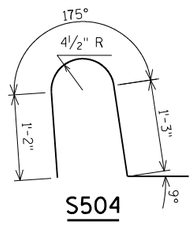
BEARING PAD DETAIL



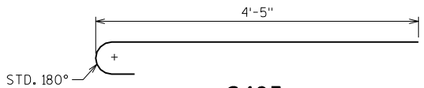
S617



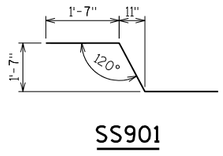
S508, S414, S618, S619



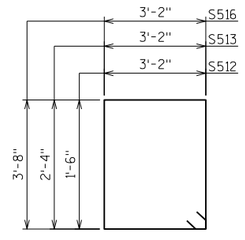
S504



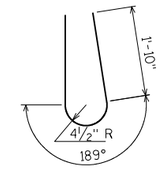
S403



SS901



S512, S513, S516



S506

TOP OF DECK ELEVATIONS

	℄ BRG. W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ BRG. E. ABUT.
N. EOD	808.16	807.87	807.59	807.30	807.01	806.73	806.44	806.15	805.87	805.58	805.30
GIRDER 1	808.11	807.83	807.54	807.25	806.97	806.68	806.39	806.11	805.82	805.54	805.25
GIRDER 2	807.89	807.60	807.32	807.03	806.75	806.46	806.17	805.89	805.60	805.31	805.03
GIRDER 3	807.67	807.38	807.10	806.81	806.52	806.24	805.95	805.66	805.38	805.09	804.80
GIRDER 4	807.45	807.16	806.87	806.59	806.30	806.01	805.73	805.44	805.15	804.87	804.58
S. EOD	807.40	807.11	806.83	806.54	806.25	805.97	805.68	805.39	805.11	804.82	804.54

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

DRAWN BY MJK | PLANS CK'D. SAD

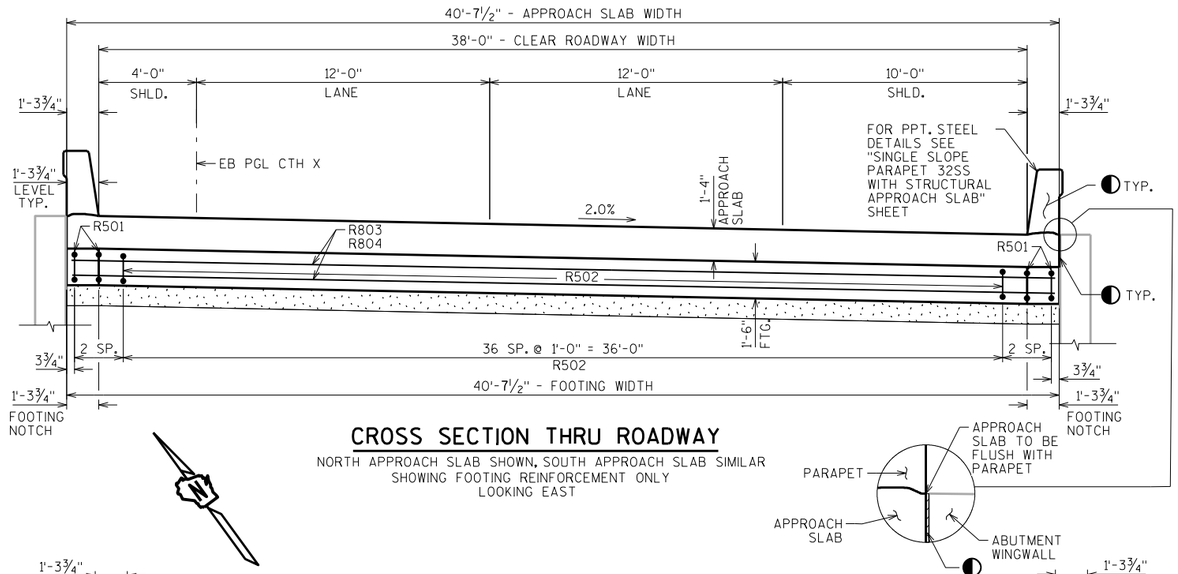
SUPERSTRUCTURE DETAILS

SHEET 12

SCALE = 1.33333

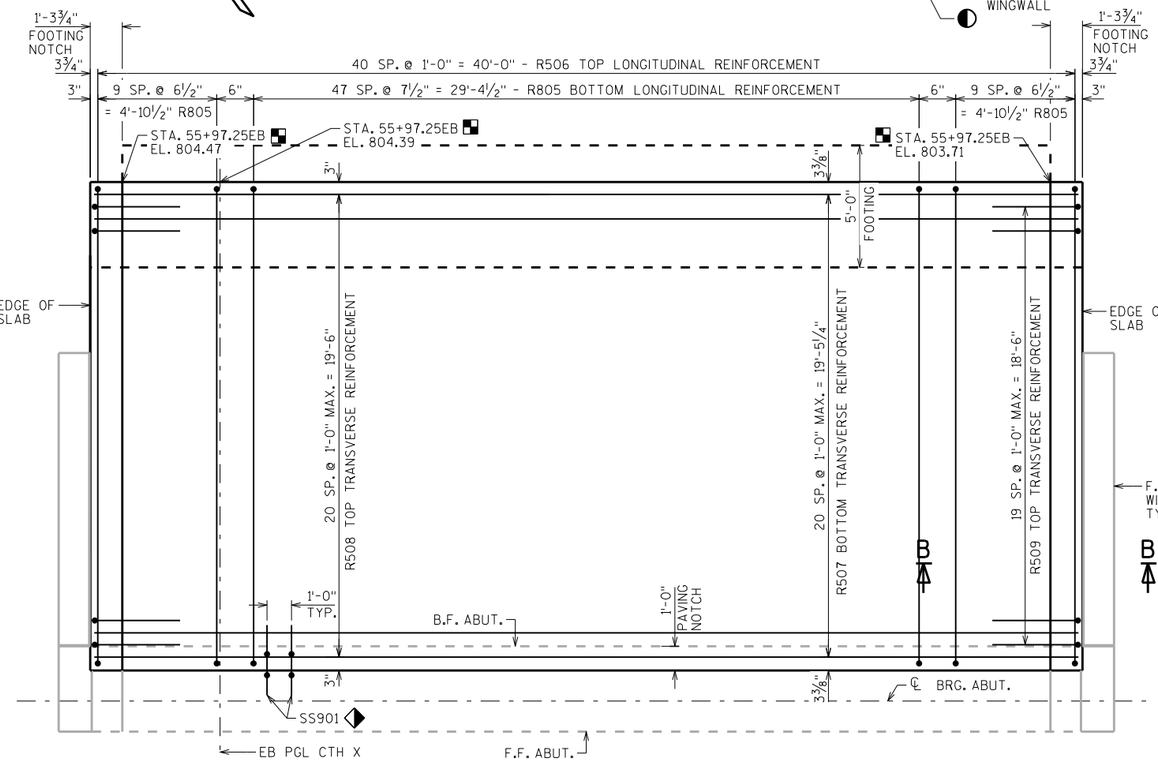
8

8



CROSS SECTION THRU ROADWAY

NORTH APPROACH SLAB SHOWN, SOUTH APPROACH SLAB SIMILAR
SHOWING FOOTING REINFORCEMENT ONLY
LOOKING EAST



PLAN

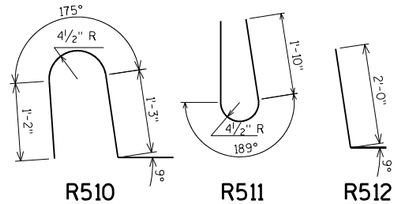
EAST APPROACH SLAB SHOWN, WEST APPROACH SLAB SIMILAR
FOOTING REINFORCEMENT NOT SHOWN

WEST APPROACH SLAB ◪ TOP OF SLAB ELEVATIONS

STA.	OFFSET TO EB PGL	ELEV.
54+80.75NB	4' LT.	808.98
54+80.75NB	0'	808.90
54+80.75NB	34' RT.	808.22

DESIGN DATA

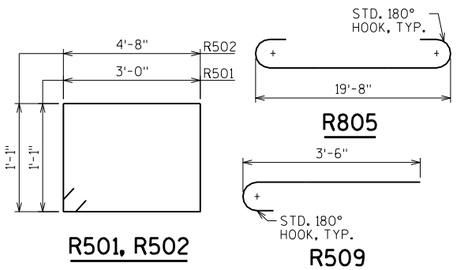
CONCRETE STRENGTH, f'c:	4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60, fy:	60,000 P.S.I
ALLOWABLE SOIL BEARING PRESSURE:	2,000 P.S.F.

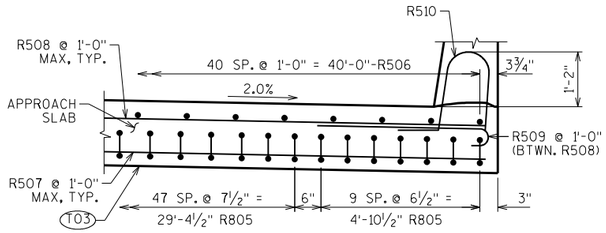


NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

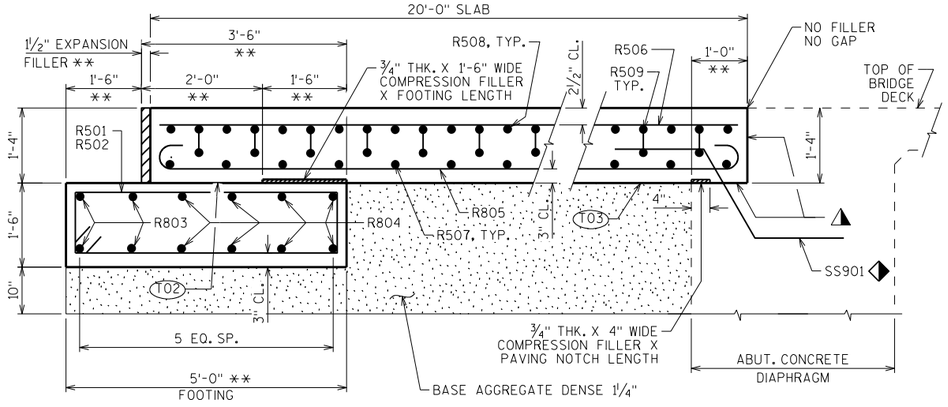
BILL OF BARS

BAR MARK	COAT	NO. REQUIRED EAST SLAB	NO. REQUIRED WEST SLAB	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	4	4	8'-10"	X		APPROACH SLABS-FOOTING-STIRRUPS-NOTCHES
R502	X	37	37	12'-2"	X		APPROACH SLABS-FOOTING-STIRRUPS
R803	X	4	4	37'-8"			APPROACH SLABS-FOOTING-TRANS.
R804	X	8	8	40'-3"			APPROACH SLABS-FOOTING-TRANS.
R805	X	68	68	21'-6"	X		APPROACH SLAB-LONGIT.-BOTTOM
R506	X	41	41	19'-8"			APPROACH SLAB-LONGIT.-TOP
R507	X	21	21	40'-3"			APPROACH SLAB-TRANS.-BOTTOM
R508	X	21	21	40'-3"			APPROACH SLAB-TRANS.-TOP
R509	X	40	40	4'-1"	X		APPROACH SLAB-TRANS.-TOP-EDGES
R510	X	34	34	4'-5"	X		PARAPET-VERT.
R511	X	34	34	5'-0"	X		PARAPET-VERT.
R512	X	24	24	2'-9"	X		PARAPET-VERT.
R513	X	34	34	4'-4"	X		PARAPET-VERT.
R514	X	22	22	4'-9"	X		PARAPET-VERT.
R515	X	12	12	4'-10"	X		PARAPET-VERT.
R516	X	2	2	19'-6"	X		PARAPET-HORIZ.
R517	X	10	10	19'-6"			PARAPET-HORIZ.





SECTION B-B



SECTION THRU APPROACH SLAB

** MEASURED NORMAL TO ABUTMENT.

◭ APPLY PROTECTIVE SURFACE TREATMENT TO PAVING NOTCH SURFACES PRIOR TO POURING STRUCTURAL APPROACH SLAB.

◆ STAINLESS STEEL, SEE "SUPERSTRUCTURE DETAILS" SHEET FOR BILL OF BARS.

T02 STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THICKNESS) OF POLYETHELENE SHEETS OVER THE ENTIRE TOP OF FOOTING

T03 PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THICKNESS) OF POLYETHELENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE. POLYETHYLENE SHEETS SHALL BE INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES".

◐ ½" FILLER (INCLUDED IN PARAPET LENGTH), AND PLACED BTWN. ABUT. WINGWALL AND APPROACH SLAB: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

STATE PROJECT NUMBER

2788-00-71

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

DRAWN BY MJK | PLANS CK'D. SAD

APPROACH SLAB DETAILS

SHEET 13

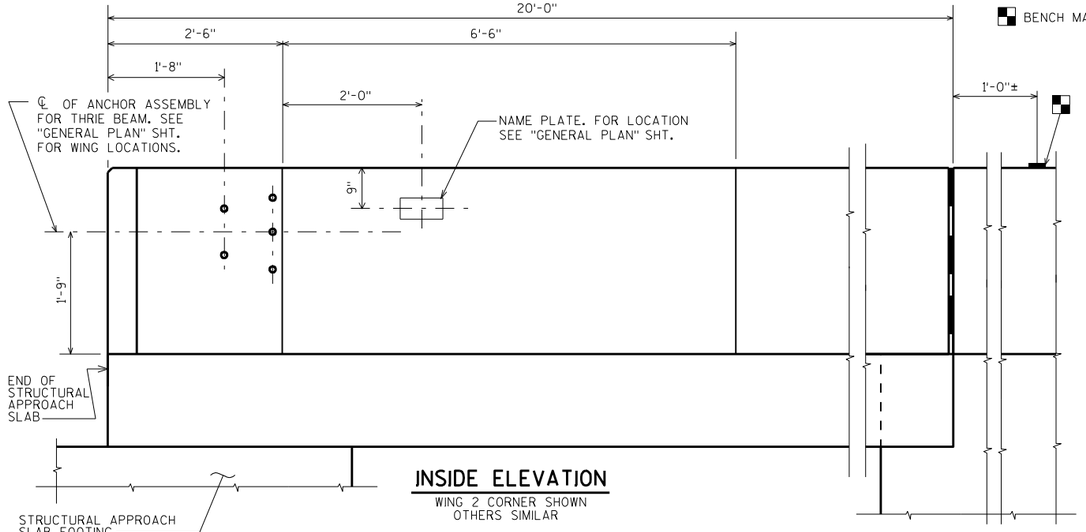
8

8

SCALE = 3.0

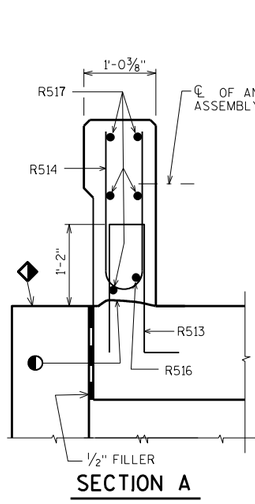
STATE PROJECT NUMBER

2788-00-71

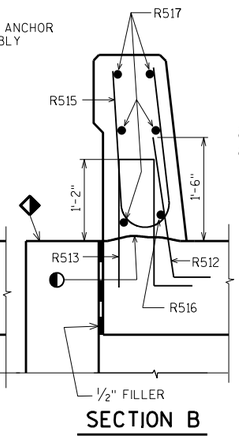


INSIDE ELEVATION

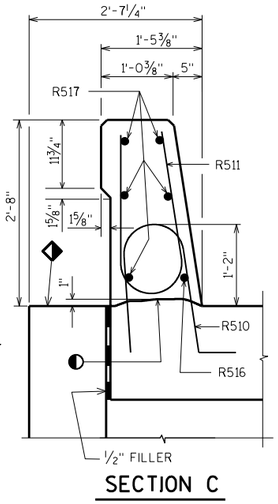
WING 2 CORNER SHOWN
OTHERS SIMILAR



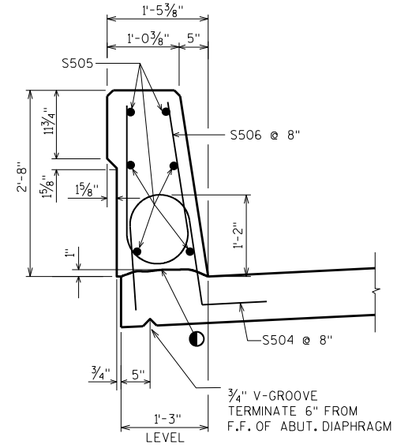
SECTION A



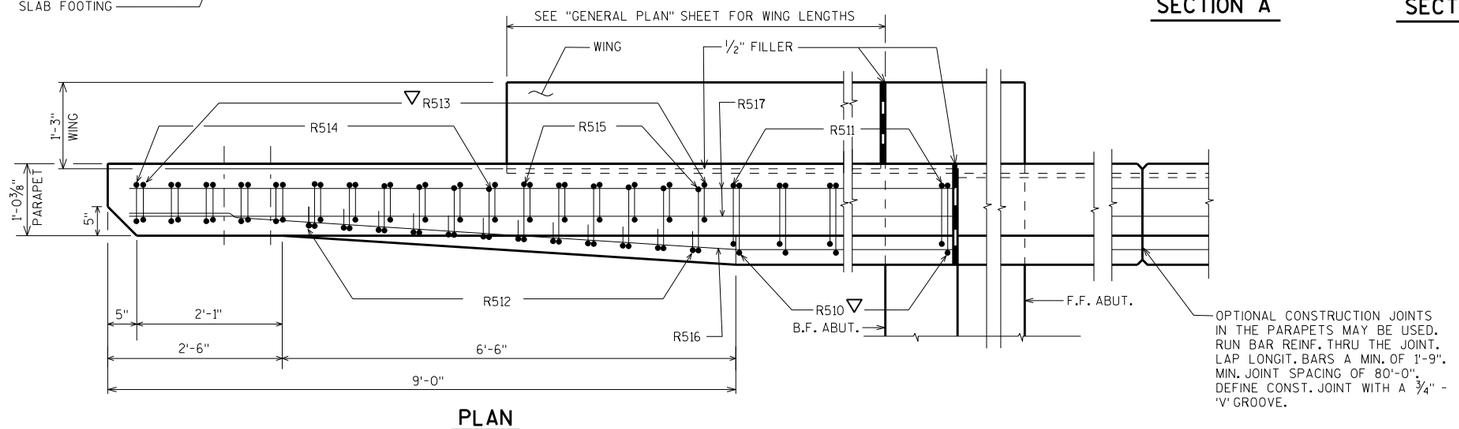
SECTION B



SECTION C

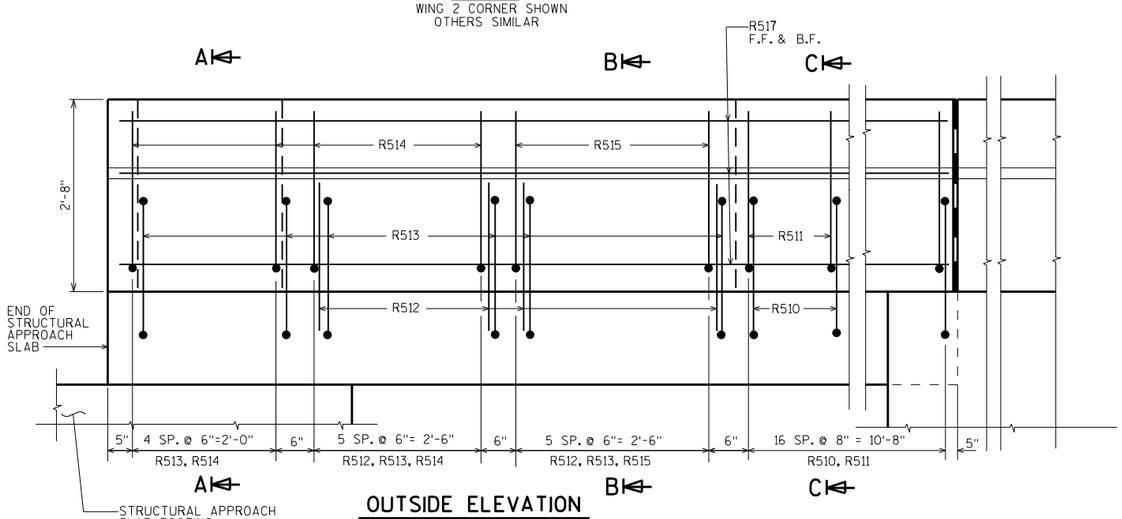


SECTION THRU PARAPET ON DECK



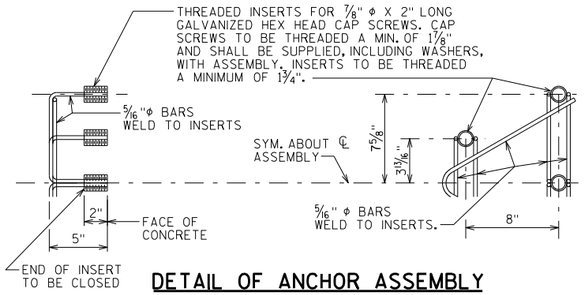
PLAN

WING 2 CORNER SHOWN
OTHERS SIMILAR



OUTSIDE ELEVATION

WING 1 CORNER SHOWN, OTHERS SIMILAR
(WING NOT SHOWN FOR CLARITY)



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

◆ SLOPE FOR DRAINAGE

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

▽ R510 AND R513 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-314

DRAWN BY MJK | PLANS CK'D. SAD

SINGLE SLOPE PARAPET 32SS WITH STRUCTURAL APPROACH SLAB

SHEET 14

SCALE = 1.05

8

8