

SWL

NOVEMBER 2017

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details (Includes Erosion Control Plan)
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plan
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 72

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

USH 61 - LIVINGSTON

(LEGGETT CREEK BRIDGE B-22-0286)

CTH E
GRANT COUNTY

STRUCTURE AS-BUILT PLAN

SUPERVISOR: Tim Maedke

PROJECT LEADER: Gretchen Bockenbauer, IIW PC

CONTRACTOR: Larson Construction, Company

WORK COMPLETED 9/13/18

STATE PROJECT NUMBER

5587-00-72

BEGIN PROJECT 5587-00-72

STA 7+00.00

Y = 543,441.877

X = 858,443.022

STRUCTURE B-22-0286

STA 8+65.94

END PROJECT

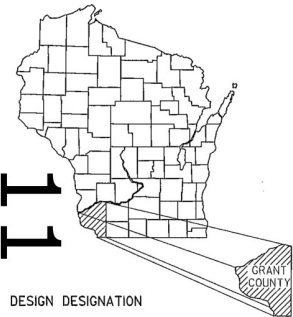
STA 10+20.00

Y = 543,412.210

X = 858,761.640

SUBCONTRACTOR LIST

Arbor Green
Augelli Concrete & Excavating
Guide Line Pavement Markings
H. James and Sons
Hard Rock Sawing & Drilling
Hegg Contractor
Hi-Boom Erecting
Iverson Construction
Safemark, LLC
SJK Engineering LLC



DESIGN DESIGNATION

A.A.D.T. 2017	=	480
A.A.D.T. 2037	=	580
D.H.V. 2033	=	---
D.D.	=	---
T. 2033	=	5%
DESIGN SPEED	=	30 mph
ESALS	=	131,400

CONVENTIONAL SYMBOLS

PLAN
CORPORATE LIMITS
PROPERTY LINE
LOT LINE
LIMITED HIGHWAY EASEMENT
EXISTING RIGHT OF WAY
PROPOSED OR NEW R/W LINE

SLOPE INTERCEPT
REFERENCE LINE
EXISTING CULVERT
PROPOSED CULVERT
(Box or Pipe)

COMBUSTIBLE FLUIDS

MARSH AREA

WOODED OR SHRUB AREA



PROFILE

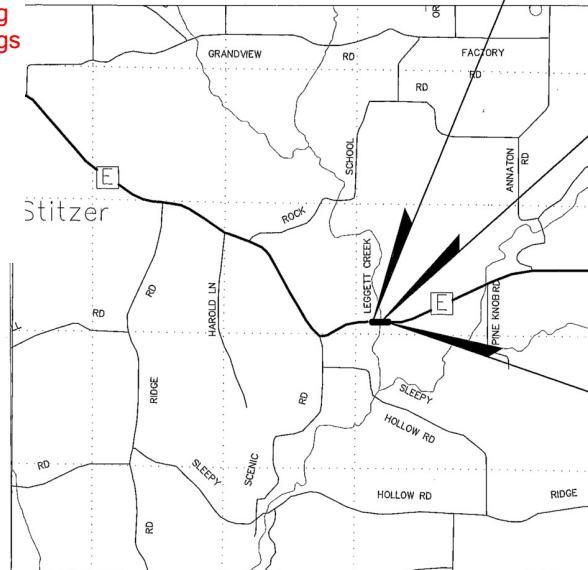
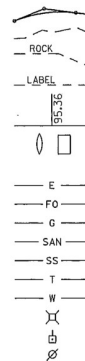
GRADE LINE
ORIGINAL GROUND
MARSH OR ROCK PROFILE
(To be noted as such)
SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

ELECTRIC
FIBER OPTIC
GAS
SANITARY SEWER
STORM SEWER
TELEPHONE
WATER
UTILITY PEDESTAL
POWER POLE
TELEPHONE POLE



R-2-W

R-1-W

LAYOUT

SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.060 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY
COORDINATE SYSTEM (WCCS), 'GRANT' COUNTY.

STATE PROJECT

5587-00-72

FEDERAL PROJECT

PROJECT
WISC 2017507CONTRACT
1

ACCEPTED FOR

COUNTY of GRANT

4/05/17

David J. Hunt
(COUNTY HIGHWAY ENGINEER)

ORIGINAL PLANS PREPARED BY

Mead & Hunt
Mead & Hunt, Inc.
6501 Watts Road
Madison, WI 53719
608.273.6380
fax: 608.273.6391
www.meadhunt.com



Keith Kosbau
4-4-2017

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

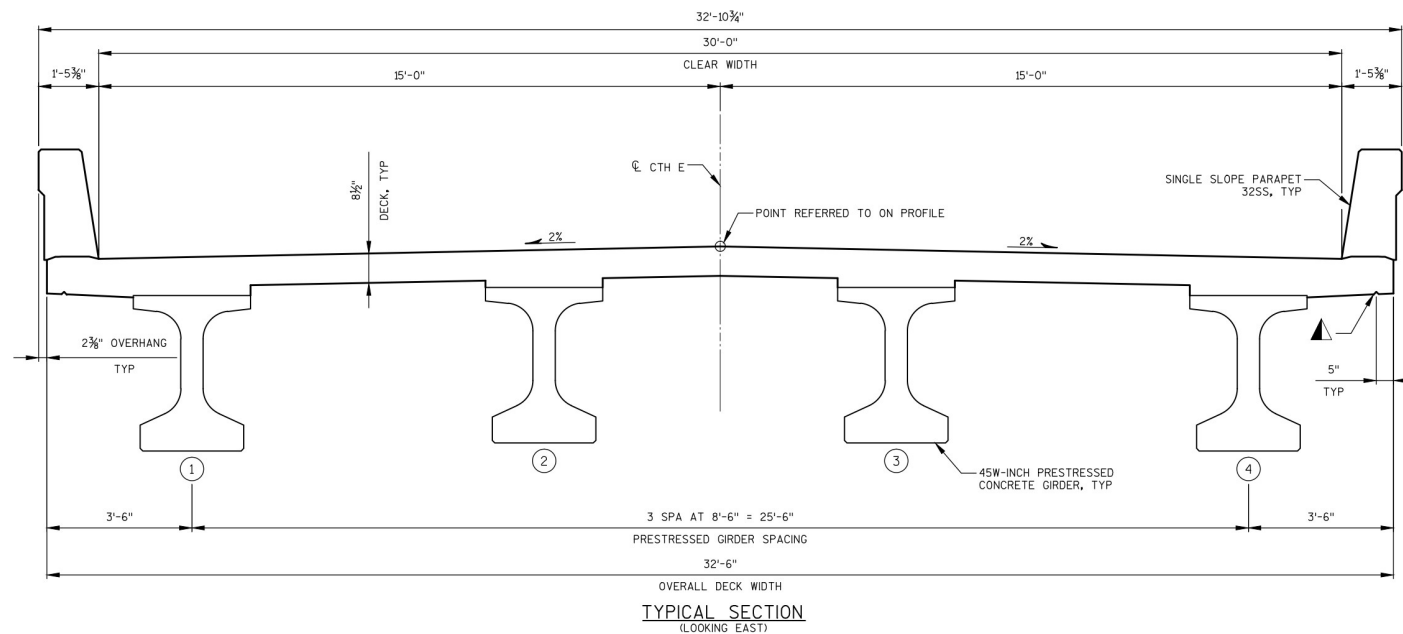
PREPARED BY

Surveyor: Mead & Hunt, Inc.
Designer: Mead & Hunt, Inc.
Management: KL ENGINEERING
Consultant:

APPROVED FOR THE DEPARTMENT

DATE: 4/28/17
(Managing Consultant Signature)

E



BENCH MARKS

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
1	7+63.6	14.3' RT	SOUTH SIDE PK NAIL	855.34
2	10+15.8	27.3' LT	NORTH SIDE REBAR IN SHOULDER	862.76

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	W ABUT	E ABUT	SUPER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 9+12	LS	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-22-286	LS	---	---	---	1
210.1500	STRUCTURE BACKFILL TYPE A	TON	230	240	---	470
502.0100	CONCRETE MASONRY BRIDGES	CY	38	39	140	217
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	320	320
502.3210	PIGMENTED SURFACE SEALER	SY	10	10	80	100
503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	---	---	376	376
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1680	1680	---	3360
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2350	2370	22990	27710
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	---	---	8	8
506.4000	STEEL DIAPHRAGMS B-22-286	EACH	---	---	6	6
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	7	---	14
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	210	210	---	420
606.0300	RIPRAP HEAVY	CY	205	210	---	415
606.0700	GROUTED RIPRAP HEAVY	CY	---	100	---	100
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	79	79	---	158
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	2	---	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	50	50	---	100
645.0120	GEOTEXTILE TYPE HR	SY	360	530	---	890
NON BID ITEMS						
	FILLER	SIZE				1/2" & 3/4"

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.

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

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 EXISTING STRUCTURE TO BE REMOVED IS A 135' LONG BY 24.0' CLEAR ROADWAY WIDTH, THREE SPAN STEEL GIRDER BRIDGE WITH CONCRETE ABUTMENTS AND PIERS (B-22-0037).

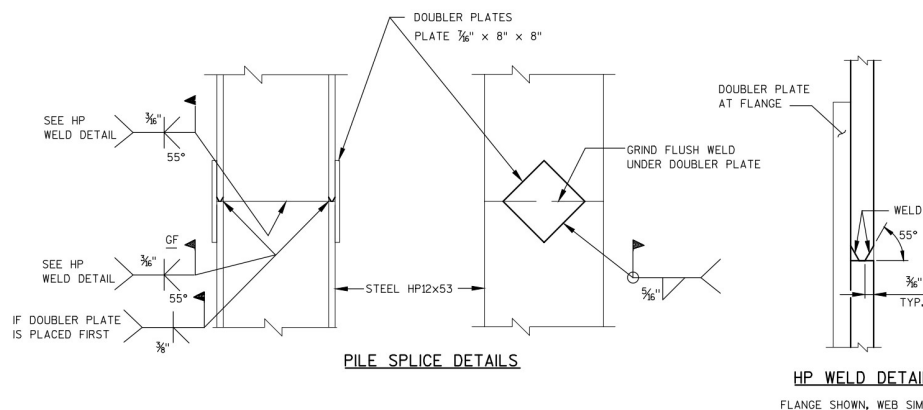
ALL STATIONS AND ELEVATIONS ARE IN FEET.

● ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO NAVD88.

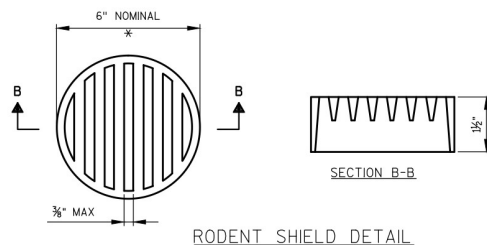
▲ 3/4" V-GROOVE REQ'D. EXTEND TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAIL SHEET.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURE BRIDGES B-22-286" SHALL BE THE EXISTING GROUNDLINE.



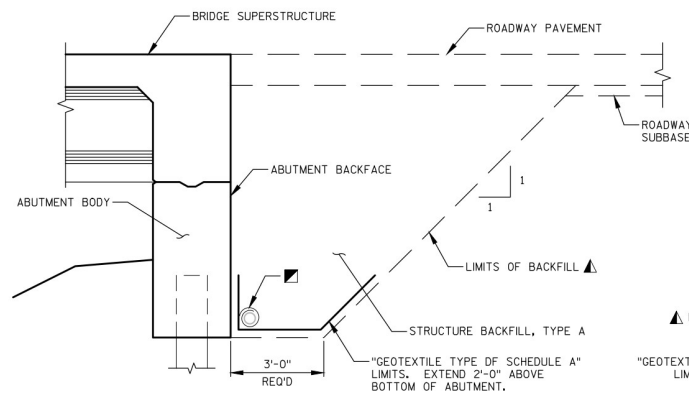
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY		JAK	PLANS CK'D. JSH
TYPICAL SECTION, GENERAL NOTES, AND QUANTITIES		SHEET 46	OF 16



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

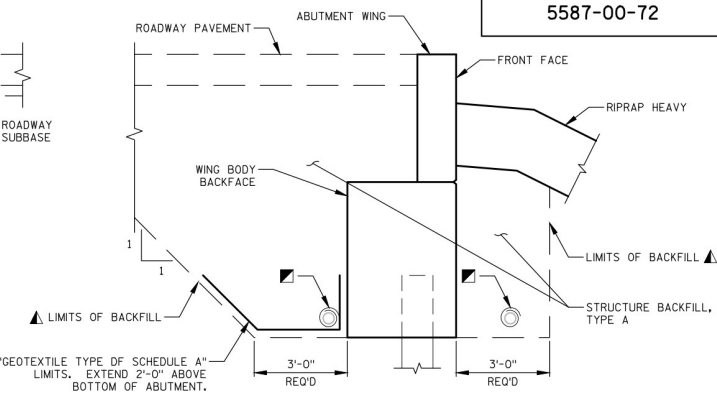
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY 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.



STRUCTURE BACKFILL & PIPE UNDERDRAIN DETAIL

(TYPICAL AT BOTH ABUTMENTS)

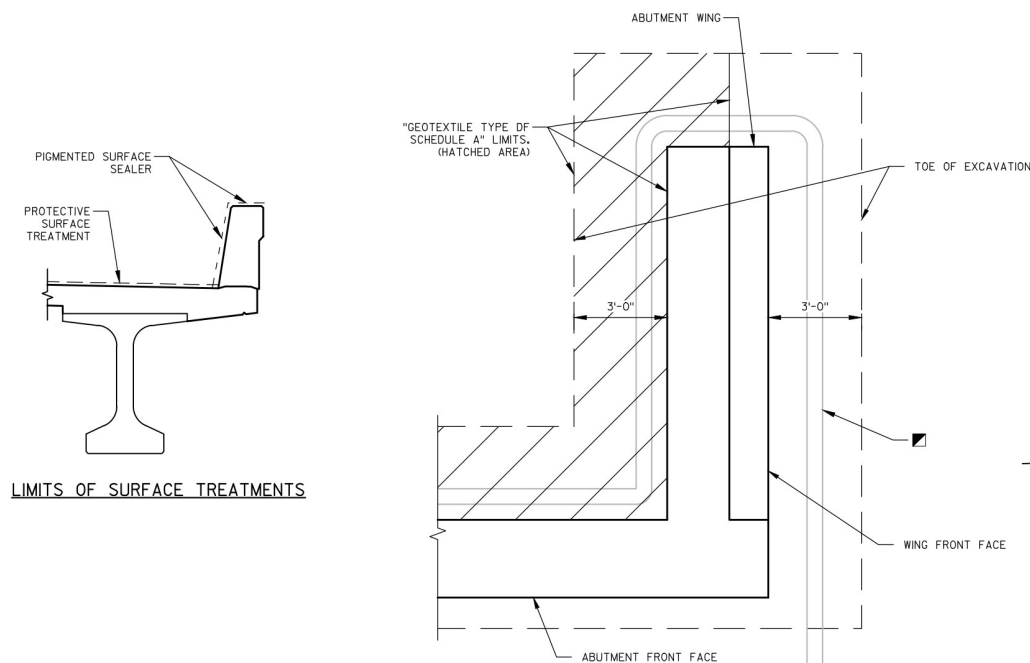


TYPICAL SECTION THRU WING

(SHOWING STRUCTURE BACKFILL LIMITS)

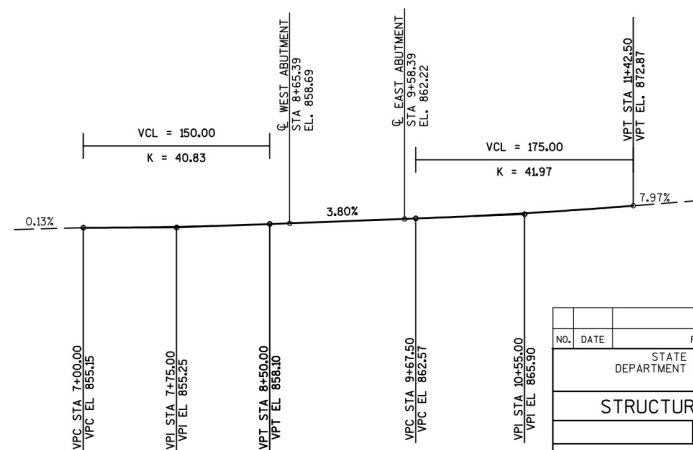
▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

■ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



ABUTMENT PLAN WITH WING

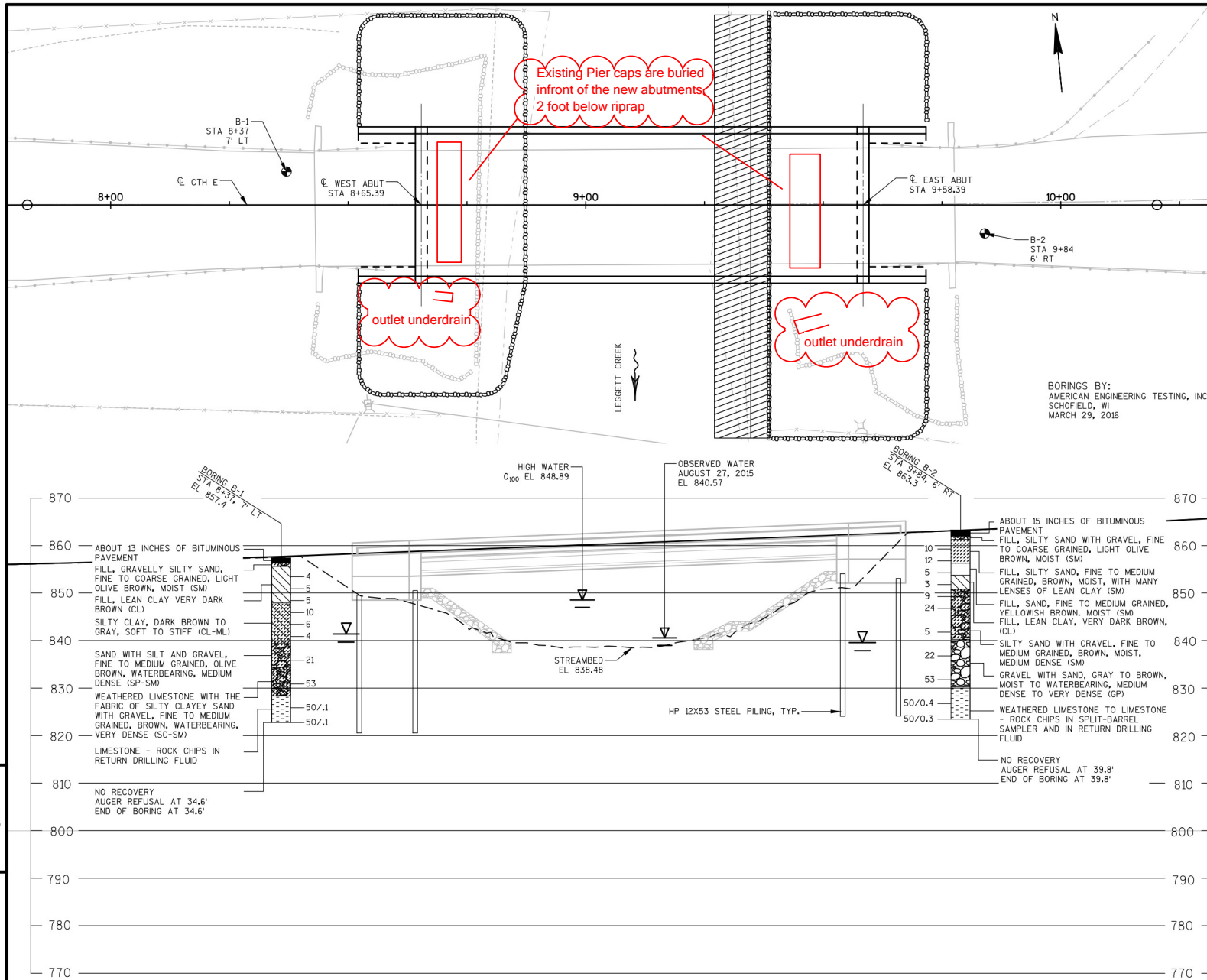
(SHOWING STRUCTURE BACKFILL LIMITS)



PROFILE GRADE LINE, CTH E

LIMITS OF SURFACE TREATMENTS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY		PLANS CK'D.	JSH
SHEI 47		16	



STATE PROJECT NUMBER

5587-00-72

ABBREVIATIONS

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

MATERIAL SYMBOLS

Asphalt Concrete Gravel

Silt Peat Clay

Sand Air Water

LEGEND OF PROBING

Probing No.
Sta.
Elevation
7 Average Blows Per Foot
Refusal 95/6

95/6=95 BLOWS FOR 6"
PENETRATION
PROBING TAKEN WITH
A 350* WT.
FALLING 18" ON A 2"
O.D. POINT.

LEGEND OF BORING

Boring No.
Sta.
Elev.
Unconfined STRENGTH
Blows Per Ft.
USING 140* WT.
FALLING 30"
Wash Sample
Shelby Tube— S.T.
Ground Water
No Ground Water
OBSERVED ABOVE
THIS ELEVATION

Sandy Gravel
F. Boulders or COBBLES
Sand
Silty Clay
So
Limestone

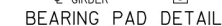
UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 14" I.D. SPLIT SPOON SAMPLER WITH A 140* HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CAGED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

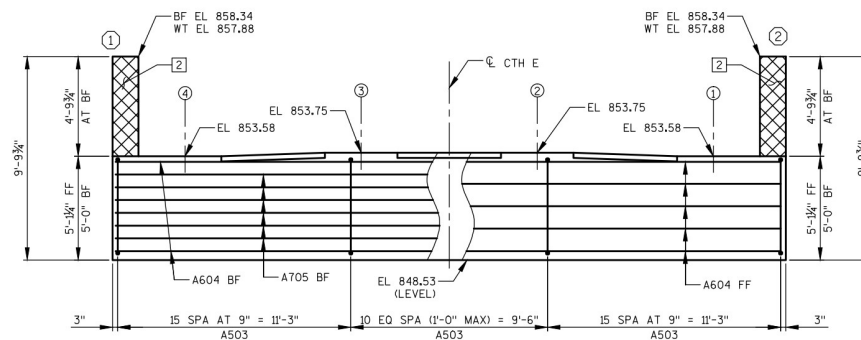
TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY		JAK	CKD. JSH
SUBSURFACE EXPLORATION		SHEET 48	16

WT - WING TIP



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY		PLANS MJB	CK'D. J
WEST ABUTMENT		SHEET 49	OF 50

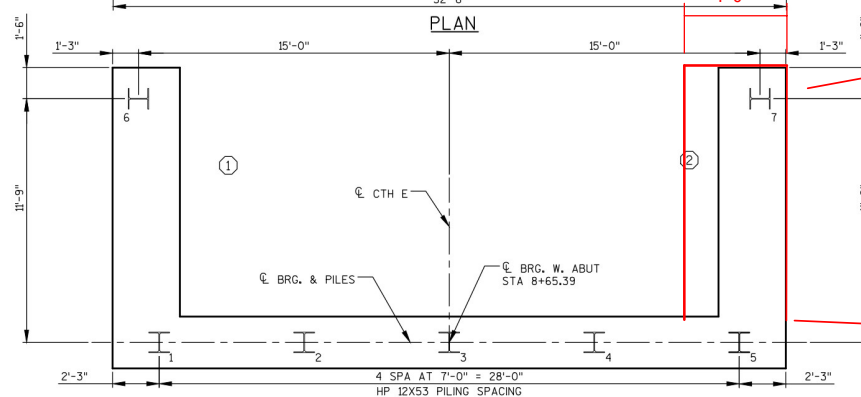


ELEVATION (LOOKING WEST)

Dimensions and components shown in the elevation:

- Overall width: 3'-3" TYP.
- Overall height: 12'-0" TYP.
- Internal width: 15'-0" and 13'-0" (multiple instances).
- Internal height: 1'-3" TYP.
- Labels: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Labels: C. TH E, C. BRG. W. ABUT STA 8+65.39, A413, TYP., BF, FF, TYP., 3 SPA AT 1'-6" = 4'-6", A406 (TYP.), 3 SPA AT 8'-6" = 25'-6", 45W PRESTRESSED GIRDER SPACING 32'-6", 4'-0".

PLAN



PILE PLAN

- Construction Joint-the wing was placed and removed to encapsulate the piling.

BILL OF BARS

304# COATED

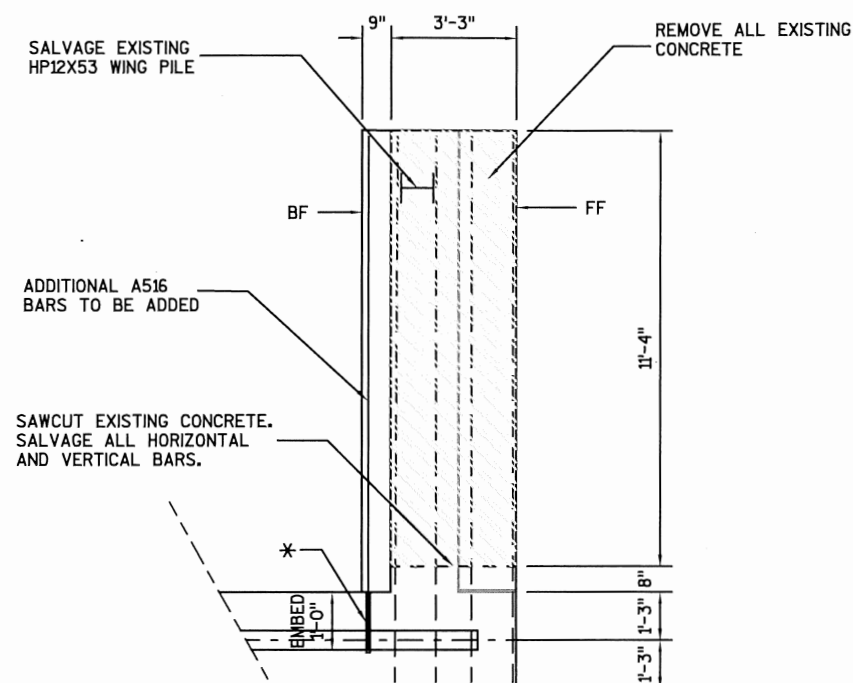
BAR MARK	COAT	NO. REQUIRED	LENGTH	BENT	BAR SERIES	LOCATION
A515	X	12	16'-9"	X		ADDITIONAL WING WALL - VERT
* A516	X	7	12'-10"			ADDITIONAL WING WALL - HORZ

NOTE: BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

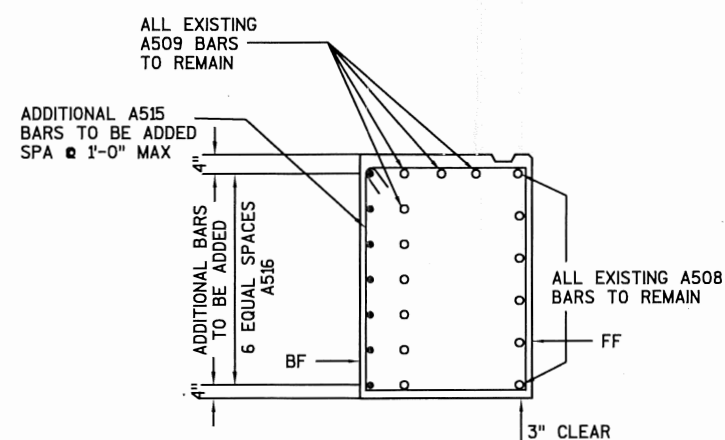
* ADHESIVE ANCHORS NO. 5. EMBED 1'-0" INTO EXISTING CONCRETE ABUTMENT.

GENERAL NOTES

THIS SHEET MODIFIES WING 2 OF THE WEST ABUTMENT ONLY.
ALL OTHER REINFORCEMENT IS TO FOLLOW THE ORIGINAL PLANS.

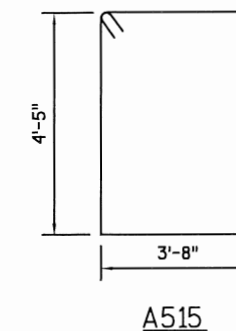


WING 2 PLAN



BF = BACK FACE
FF = FRONT FACE

TYPICAL SECTION THRU WING 2



A515

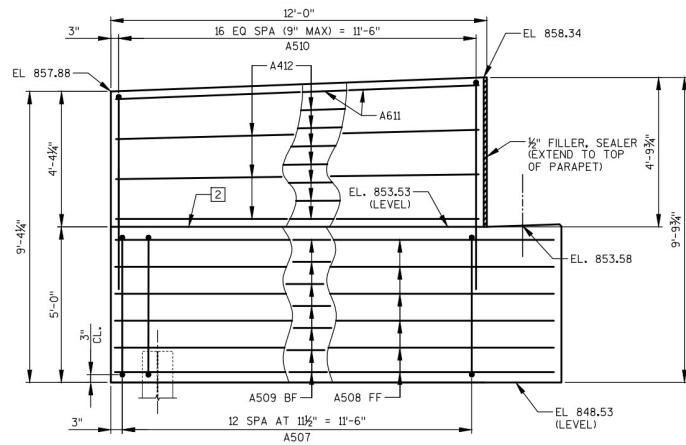
WEST ABUTMENT



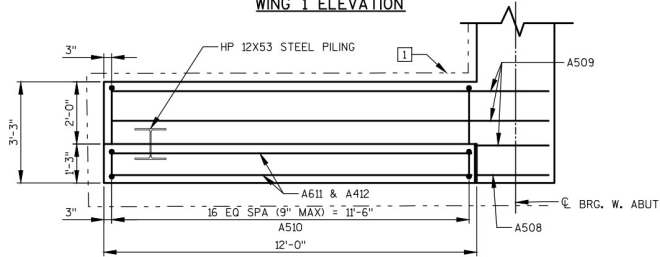
6/26/18



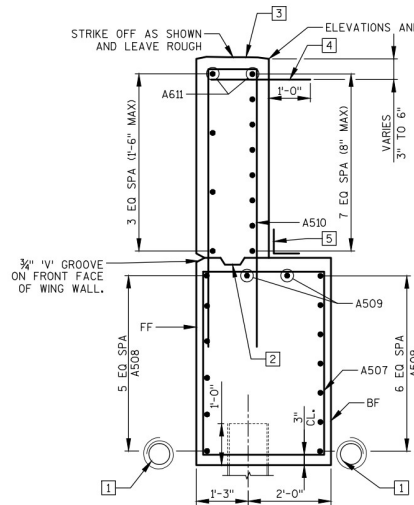
NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
Cedar corporation MENOMONIE - MADISON - GREEN BAY www.cedarcorp.com 800-472-7372			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY ATA		PLANS CKD. TLP	
WING 2 MODIFICATION			SHEET 1 OF 1



WING 1 ELEVATION

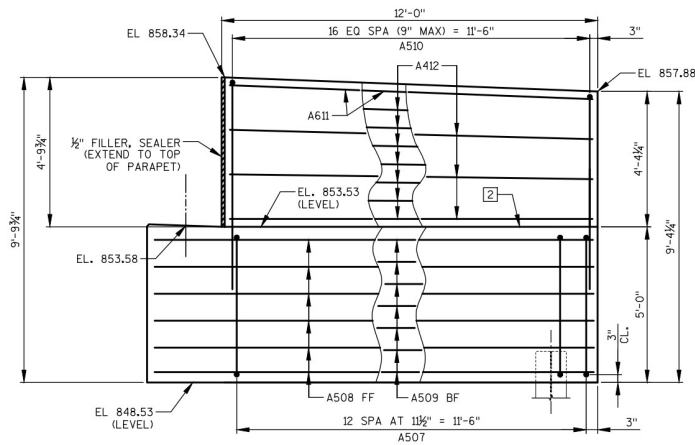


WING 1 PLAN

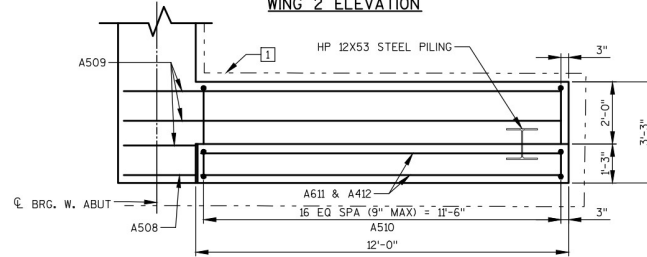


WING 1 SECTION

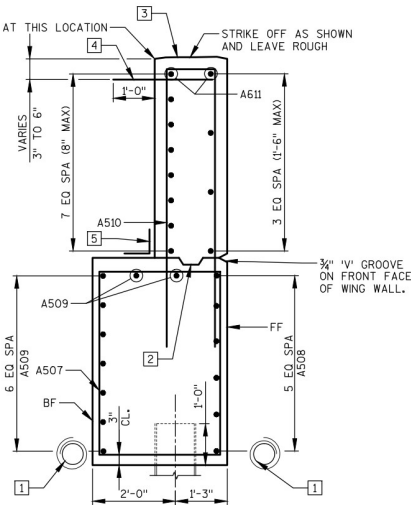
ALL HORIZONTAL BARS NOT LABELED IN
WING TOP ARE A412 BARS.



WING 2 ELEVATION



WING 2 PLAN



WING 2 SECTION

ALL HORIZONTAL BARS NOT LABELED IN
WING TOP ARE A412 BARS.

NOTES:

- 1 PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 3 FOR RODENT SHIELD DETAILS.
- 2 OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.
- 3 PARAPET REINFORCEMENT NOT SHOWN FOR CLARITY. SEE SHEET 16 FOR DETAILS.
- 4 A414 DOWELS AT 1'-0" MAX. SPACING ALONG ENTIRE WING LENGTH. SEE STANDARD DETAIL DRAWING "CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES".
- 5 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

FF - FRONT FACE
BF - BACK FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY		PLANS CK'D.	JSH
WEST ABUTMENT DETAILS		SHEET 50	16

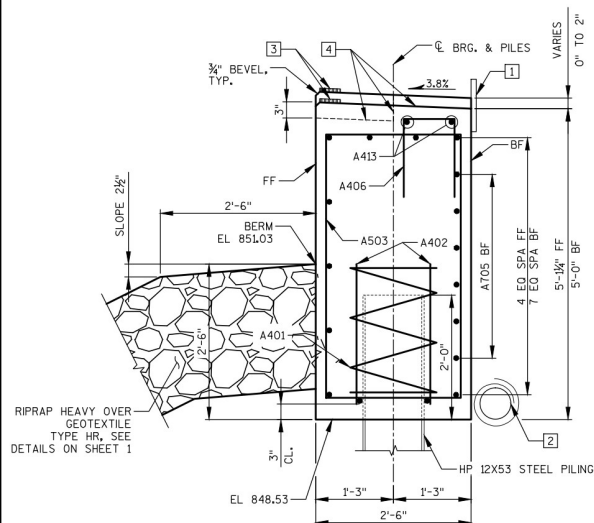
1 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

2 PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 3 FOR RODENT SHIELD DETAILS.

3 4" X 3/4" FILLER LENGTH OF ABUTMENT.

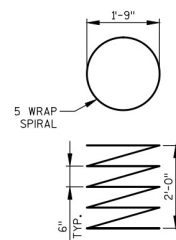
4 STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND SUPERSTRUCTURE. TOTAL THICKNESS OF ALL SHEETS TO BE AT LEAST 0.03".

FF - FRONT FACE
BF - BACK FACE

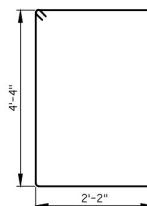


SECTION THRU ABUTMENT BODY

ALL HORIZONTAL BARS NOT LABELED ARE A604 BARS.



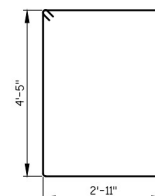
A401



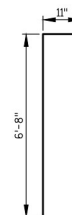
A503



A406



A507



A510

COATED= 1620 LBS.
UNCOATED= 1680 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
A401	5	28 - 0	X		ABUTMENT BODY - 1 PER PILE	SPIRA
A402	10	2 - 3			ABUTMENT BODY - 2 PER PILE	VERT
A503	41	13 - 8	X		ABUTMENT BODY - STRIPUS	VERT
A604	11	32 - 2			ABUTMENT BODY - FF, TOP, BTM	HORIZ
A705	6	32 - 2			ABUTMENT BODY - BF	HORIZ
A406	12	3 - 4	X		ABUTMENT BODY - SEAT STEP	VERT
A507	26	15 - 4	X		WING WALL - BODY	VERT
A508	12	14 - 2			WING WALL - FF OF BODY	VERT
A509	18	14 - 2			WING WALL - BODY	HORIZ
A510	34	14 - 0	X		WING WALL - TOP TEES	VERT
A611	4	11 - 7			WING WALL - TOP	HORIZ
A412	20	11 - 7			WING WALL - TOP	HORIZ
A413	6	7 - 0			ABUTMENT BODY - SEAT STEP	HORIZ
A414	24	2 - 0			WING WALL - TOP DOWELS	HORIZ

BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.

SEE SHEET 10 FOR SECTION THRU ABUTMENT BODY.

FILL/EXCAVATE TO BOTTOM OF EAST ABUTMENT EL 852.06 BEFORE
DRIVING PILING.

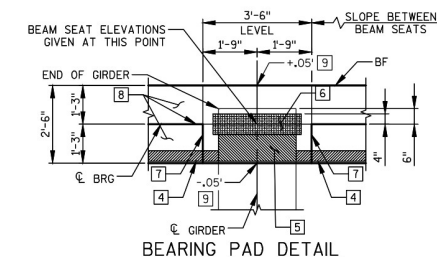
EAST ABUTMENT TO BE SUPPORTED ON HP 12X53 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED AT 30' LONG.

- 1) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- 2) 3/4" FILLER - TO EXTEND FROM BRIDGE SEAT TO TOP OF CONCRETE PARAPET, INCLUDED IN BRIDGE LENGTH. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 3/4" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. 1" DEEP AND HOLD 3/4" BELOW SURFACE OF CONCRETE. EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- 3) PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 3 FOR RODENT SHIELD DETAILS.
- 4) 4" x 3/4" FILLER LENGTH OF ABUTMENT.
- 5) 3/4" PERFORMED FILLER UNDER GIRDERS.
- 6) NON-LAMINATED ELASTOMERIC BEARING PAD 1/2" x 8" x 2'-10".
- 7) 3/4" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- 8) STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND SUPERSTRUCTURE. TOTAL THICKNESS OF ALL SHEETS TO BE AT LEAST 0.03".
- 9) SLOPED BEAM SEAT REQUIRED. USE THESE ADJUSTMENTS FROM ELEVATIONS GIVEN TO LAYOUT BEAM SEAT AT FRONT FACE AND BACK FACE.

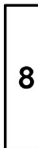
INDICATES WING NUMBER

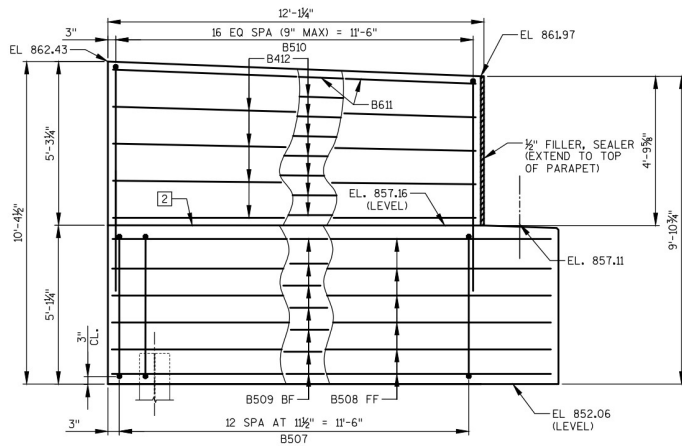
(#) INDICATES GIRDER NUMBER

FF - FRONT FACE
BF - BACK FACE

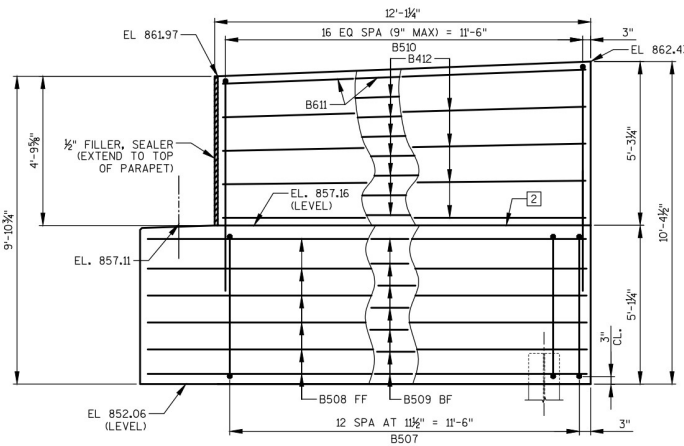


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY		PLANS MJB	CK'D. J
EAST ABUTMENT		SHEET 52	OF 52

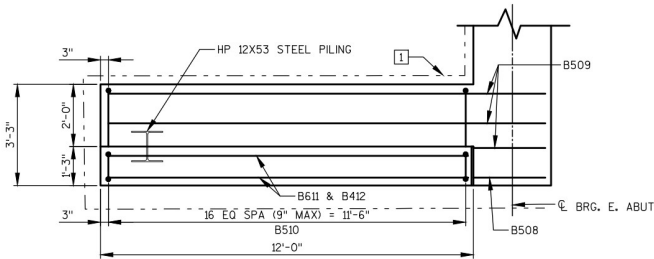




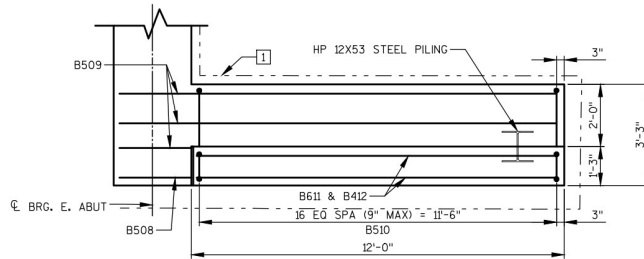
WING 3 ELEVATION



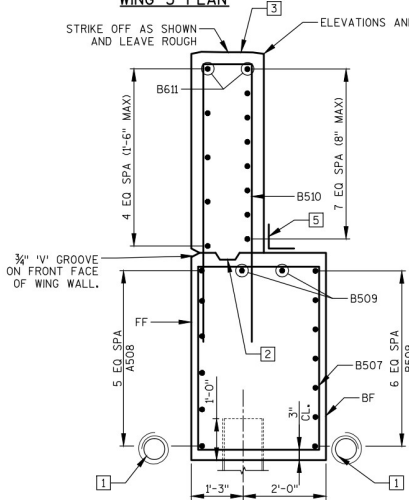
WING 4 ELEVATION



WING 3 PLAN

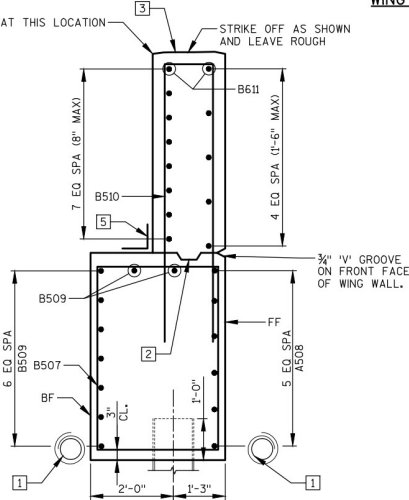


WING 4 PLAN



WING 3 SECTION

ALL HORIZONTAL BARS NOT LABELED IN WING TOP ARE B412 BARS.



WING 4 SECTION

ALL HORIZONTAL BARS NOT LABELED IN WING TOP ARE B412 BARS.

NOTES:

- PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 3 FOR RODENT SHIELD DETAILS.
 - OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.
 - PARAPET REINFORCEMENT NOT SHOWN FOR CLARITY. SEE SHEET 16 FOR DETAILS.
 - A414 DOWELS AT 1'-0" MAX. SPACING ALONG ENTIRE WING LENGTH. SEE STANDARD DETAIL DRAWING "CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES".
 - 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- FF - FRONT FACE
BF - BACK FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
EAST ABUTMENT DETAILS		DRAWN BY: MJB PLANS CKD: JSH	SHEET 53 OF 16

NOTES:

- [1] 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- [2] PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 3 FOR RODENT SHIELD DETAILS.
- [3] 4" X 3/4" FILLER LENGTH OF ABUTMENT.
- [4] STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND SUPERSTRUCTURE. TOTAL THICKNESS OF ALL SHEETS TO BE AT LEAST 0.03".

FF - FRONT FACE
BF - BACK FACE

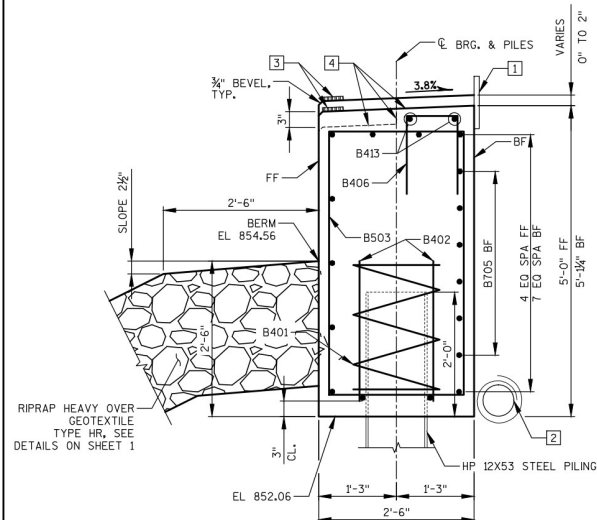
BILL OF BARS
EAST ABUTMENT

COATED= 1640 LBS.
UNCOATED= 1680 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
			FT - IN			
B401	5	28 - 0	X			ABUTMENT BODY - 1 PER PILE SPIRAL
B402	10	2 - 3				ABUTMENT BODY - 2 PER PILE VERT
B503	41	13 - 8	X			ABUTMENT BODY - STIRRUPS VERT
B604	11	32 - 2				ABUTMENT BODY - FF, TOP, BTM HORIZ
B705	6	32 - 2				ABUTMENT BODY - BF HORIZ
B406	12	3 - 5	X			ABUTMENT BODY - SEAT STEP VERT
B507	26	15 - 6	X			WING WALL - BODY VERT
B508	12	14 - 2				WING WALL - FF OF BODY HORIZ
B509	18	14 - 2				WING WALL - BODY HORIZ
B510	34	15 - 0	X			WING WALL - TOP TIES VERT
B611	4	11 - 7				WING WALL - TOP HORIZ
B412	22	11 - 7				WING WALL - TOP HORIZ
B413	6	7 - 0				ABUTMENT BODY - SEAT STEP HORIZ

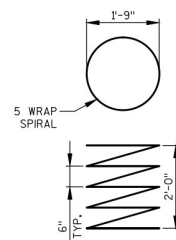
BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

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

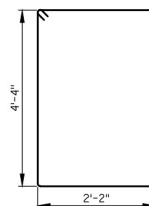


SECTION THRU ABUTMENT BODY

ALL HORIZONTAL BARS NOT LABELED ARE B604 BARS.



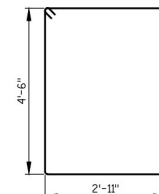
B401



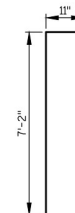
B503



B406



B507



B510

NO.	DATE	REVISION		BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION				
STRUCTURE B-22-286				
		DRAWN BY	MJB	PLANS CK'D. JS
EAST ABUTMENT DETAILS			SHEET 54	OF 16

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT 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.

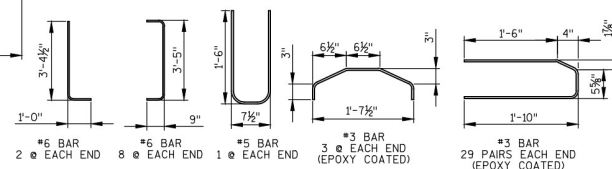
THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECTION 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

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 APPLICATION OF THE SEALER.

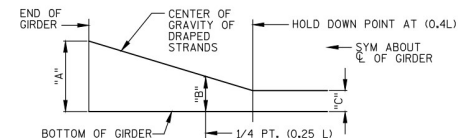
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

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.



(A) DETAIL TYPICAL AT EACH END
(B) 6-#4 BARS, FULL LENGTH, MIN. LAP = 2'-4"



AREA OF HORIZ. WIRE SHALL BE $\geq 40\%$ OF VERT. WIRE AREA (ASTM A497)

#4 BAR, EPOXY COATED. PLACE @ STIRRUP SPACING REQUIRED FOR NON WWF STIRRUPS. EMBED INTO GIRDER 1'-3"



IF 1½" 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 SLAB 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 GIRDERS AT C 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
- SLAB THICKNESS

= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 3 $\frac{5}{8}$ " WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

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

SPAN GIRDER		GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)								CONC. STRENGTH (P.S.I.)	DRAPED PATTERN				UNDRAPED PATTERN								
			%	%	%	%	%	%	%	%		%	%	%	%	%	%	%	%					
1	ALL	94'-0"	1/2	1	1 1/2	1 3/4	1 3/4	1 3/4	1 3/4	1	1/2	8000	8	7	8	0.6	36	6400	33	12	15	5	—	—

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 JOB SITE PLACEMENT.

SPAN	CAMBER (IN.)
1	3 $\frac{5}{8}$

THESE VALUES ARE NOT TO BE
USED IN DETERMINING 'T'. USE
ACTUAL GIRDER SHOTS.
THESE VALUES ARE FOR
INFORMATIONAL PURPOSES ONLY.

ALL PATTERNS ARE SYM. ABOUT C/L GIRDER

1"

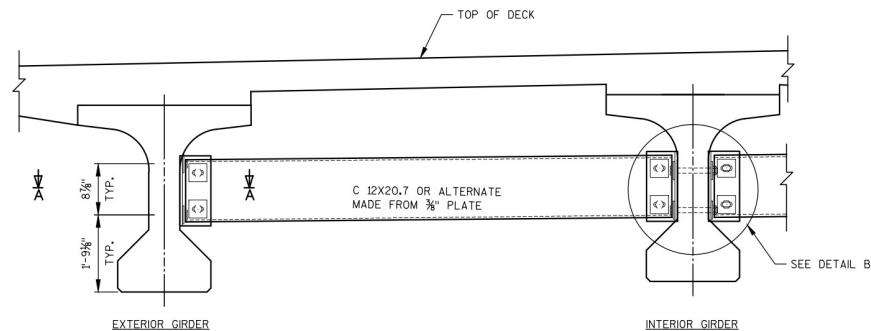
TOTAL NO. OF STRANDS

36

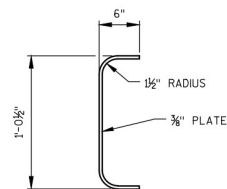
1582

FOR DRAPED PATTERN ONLY. DRAPE ALL STRANDS ON THESE TWO LINES

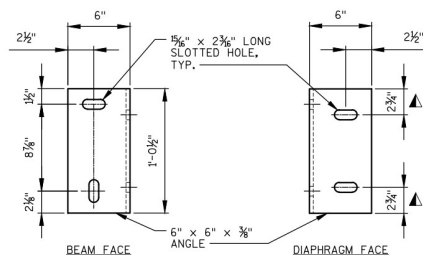
TYP STRAND PATTERN



PART TRANSVERSE SECTION AT DIAPHRAGM

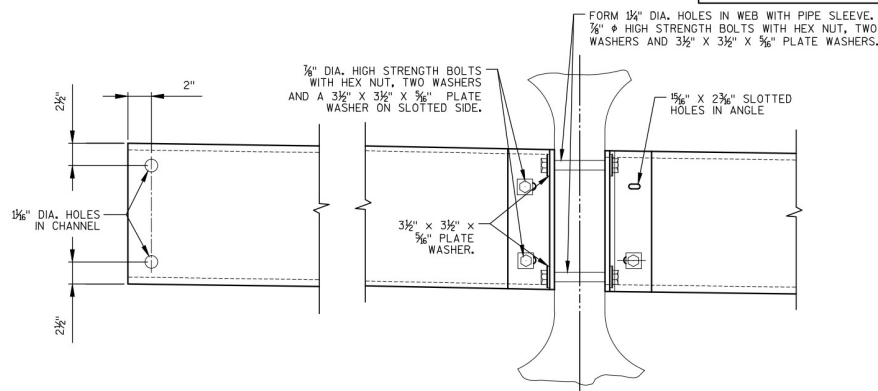


SECTION THRU ALTERNATE DIAPHRAGM



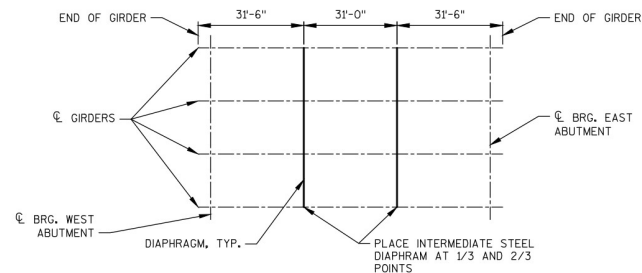
DIAPHRAGM SUPPORT

▲ IF ALTERNATE DIAPHRAGM IS USED THIS
DIMENSION TO BE 2 1/2"



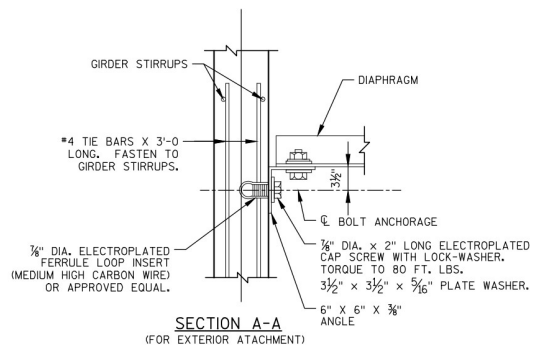
DETAIL B

(FOR CONTINUOUS LINE OF DIAPHRAGMS)



PLAN VIEW OF DIAPHRAGM

(SHOWING TYPICAL SPAN)



NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER
SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS
B-22-286", EACH.

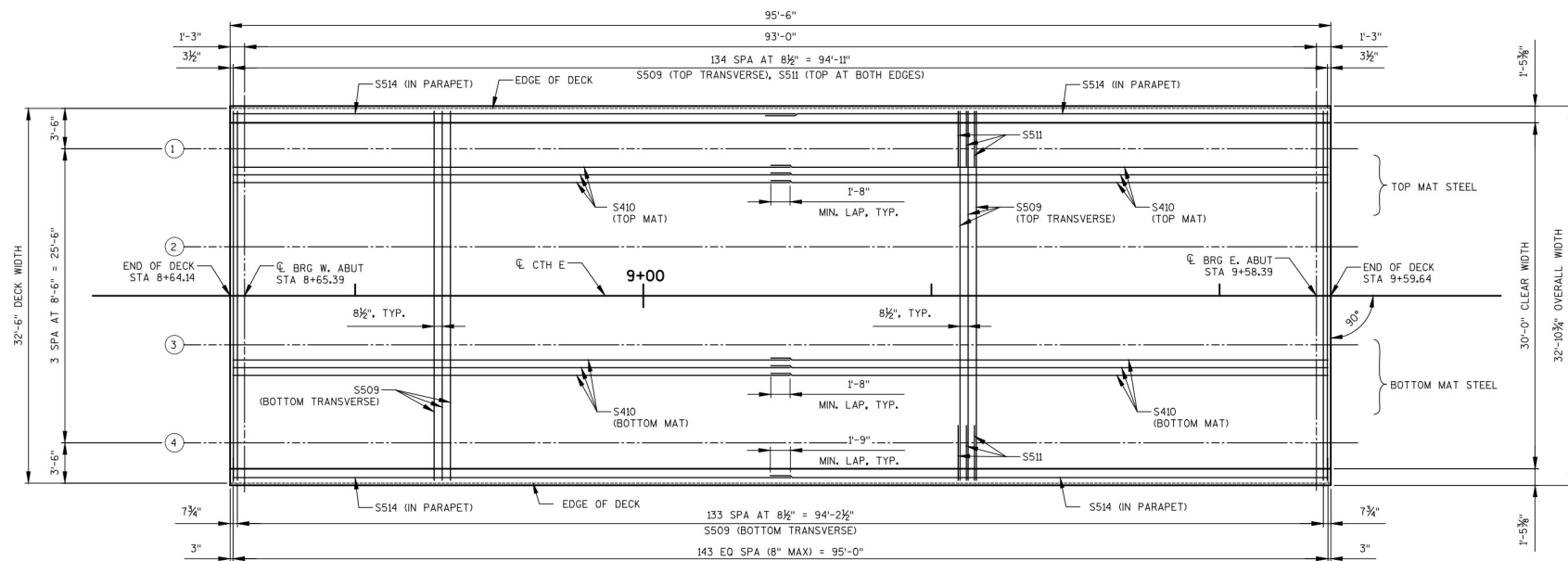
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

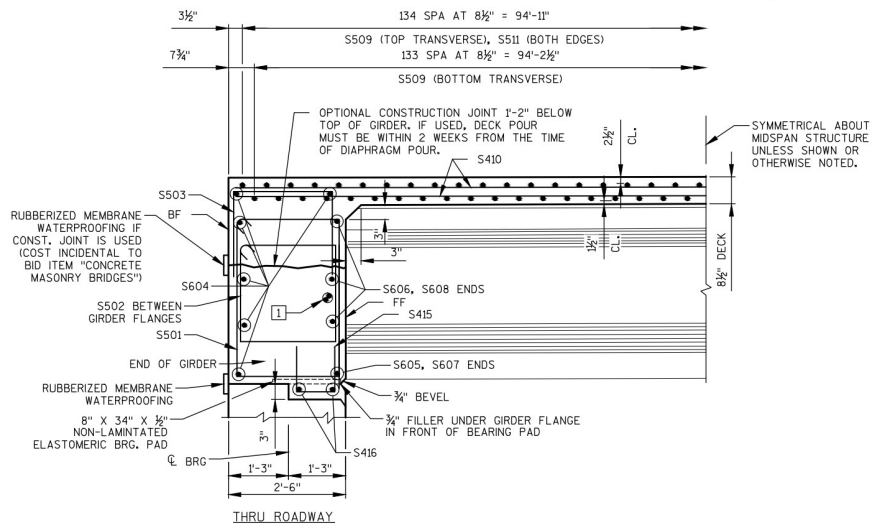
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS
SHALL GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE
SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH
STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE
REQUIREMENTS FOR ASTM A325 OR ASTM A443.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY		MJB	PLANS CKD. JSH
INTERMEDIATE STEEL DIAPHRAGMS		SHEI 56	16



REINFORCEMENT PLAN



PARTIAL LONGITUDINAL SECTION

NOTES

INDICATES GIRDER NUMBER

① 1) -1/4" DIA. HOLE IN WEB FOR (2) S517 HORIZ. BARS AND PLACED SYM. ABOUT CL OF GIRDER.

FF - FRONT FACE

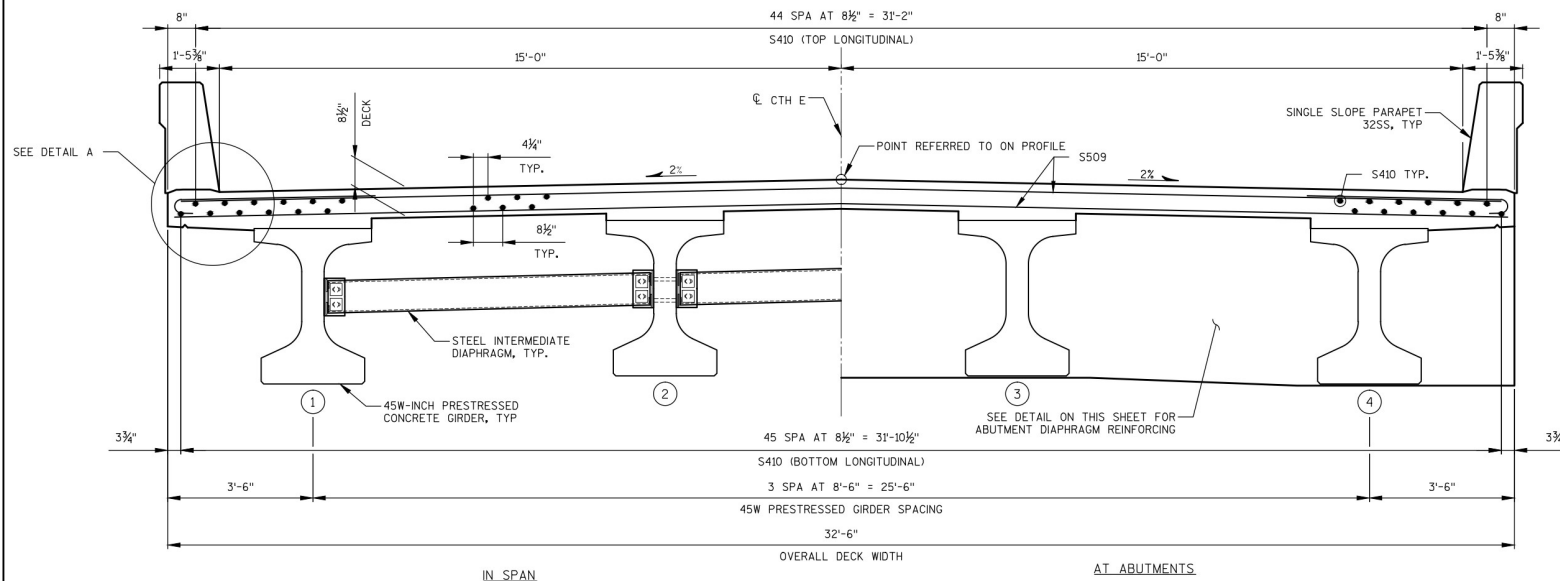
BF - BACK FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY		MJB	PLANS CKD. JSH
SUPERSTRUCTURE		SHEET 57	OF 16

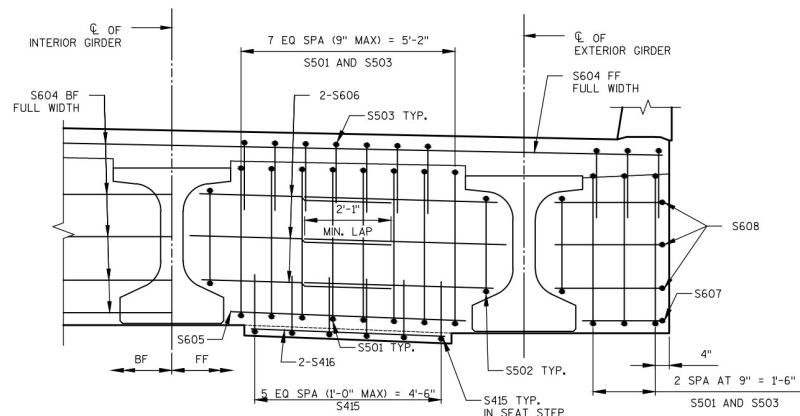
NOTES:

- 1 3/4" V-GROOVE REQ'D. EXTEND TO 6" FROM FF OF ABUTMENT DIAPHRAGM.
- 2 HORIZONTAL CONSTRUCTION JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

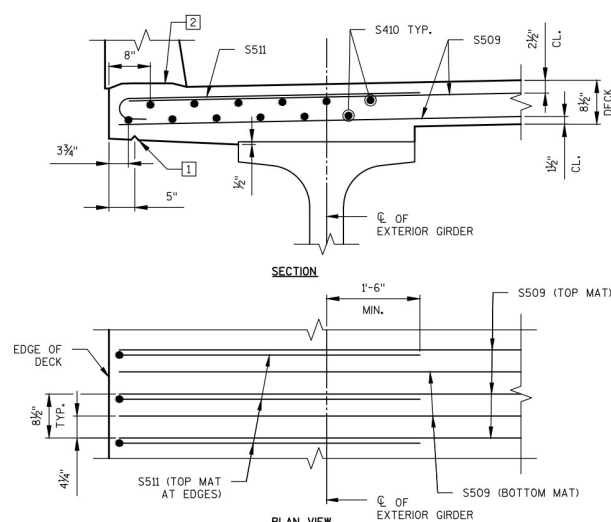
FF - FRONT FACE
BF - BACK FACE



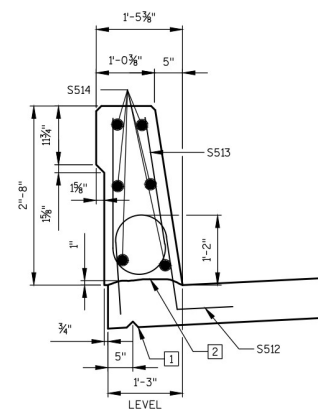
CROSS SECTION THRU ROADWAY
(LOOKING EAST)



ABUTMENT DIAPHRAGMS
DECK STEEL NOT SHOWN FOR CLARITY



DETAIL A

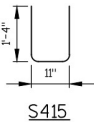
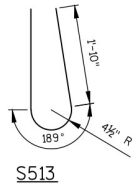
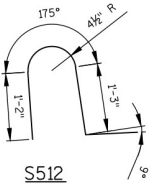
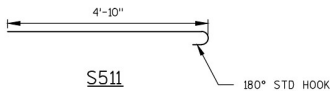
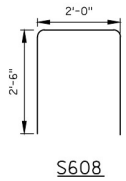
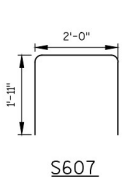
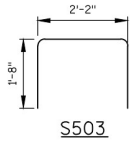
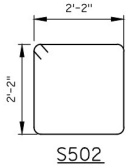
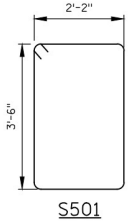


SECTION THRU PARAPET ON BRIDGE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY		PLANS CKD.	JSH
SUPERSTRUCTURE DETAILS		SHEET 58	OF 16

DECK ELEVATIONS

SPAN POINT	LEFT EDGE OF DECK	GIRDER 1		GIRDER 2		REFERENCE LINE		GIRDER 3		GIRDER 4		RIGHT EDGE OF DECK
	ELEVATION	TD	TG	TD	TG	STATION	ELEVATION	TD	TG	TD	TG	ELEVATION
C/L W. ABUT.	858.39	858.43	857.37	858.60	857.54	8+65.39	858.69	858.60	857.54	858.43	857.37	858.39
0.1	858.74	858.79		858.96		8+74.69	859.04	858.96		858.79		858.74
0.2	859.09	859.14		859.31		8+83.99	859.39	859.31		859.14		859.09
0.3	859.45	859.49		859.66		8+93.29	859.75	859.66		859.49		859.45
0.4	859.80	859.85		860.02		9+02.59	860.10	860.02		859.85		859.80
0.5	860.15	860.20		860.37		9+11.89	860.45	860.37		860.20		860.15
0.6	860.51	860.55		860.72		9+21.19	860.81	860.72		860.55		860.51
0.7	860.86	860.91		861.08		9+30.49	861.16	861.08		860.91		860.86
0.8	861.21	861.26		861.43		9+39.79	861.51	861.43		861.26		861.21
0.9	861.57	861.61		861.78		9+49.09	861.87	861.78		861.61		861.57
C/L E. ABUT.	861.92	861.97	860.90	862.14	861.07	9+58.39	862.22	862.14	861.07	861.97	860.90	861.92



BILL OF BARS
SUPERSTRUCTURE

COATED= 22990 LBS.
UNCOATED= 0 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
S501	60	12	0	X		DIAPHRAGM - STIRRUPS VERT
S502	16	9	4	X		DIAPHRAGM - STIRRUPS VERT
S503	60	5	3	X		DIAPHRAGM - TIES VERT
S604	12	32	2			DIAPHRAGM - BF TRANS
S605	6	5	8			DIAPHRAGM - FF BETWEEN GIRDERS TRANS
S606	36	4	11			DIAPHRAGM - FF BETWEEN GIRDERS TRANS
S607	4	5	6	X		DIAPHRAGM - AT ENDS HORIZ
S608	12	6	8	X		DIAPHRAGM - AT ENDS HORIZ
S509	269	32	2			SLAB - TOP & BOTTOM TRANS
S410	182	48	5			SLAB - TOP & BOTTOM LONGIT
S511	270	5	5	X		SLAB - TOP AT EDGES TRANS
S512	288	4	5	X		PARAPET - TIES VERT
S513	288	5	0	X		PARAPET - STIRRUPS VERT
S514	24	48	5			PARAPET LONGIT
S415	36	3	5	X		DIAPHRAGM - SEAT STEP VERT
S416	12	4	8			DIAPHRAGM - BETWEEN BEAM SEATS HORIZ
S517	16	6	0			DIAPHRAGM - BETWEEN BEAM SEATS HORIZ

BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY		MJB	PLANS CK'D. JSH
SUPERSTRUCTURE DETAILS		SHEET 59	OF 16

WEST ABUTMENT COATED = 730 LBS.
 WEST ABUTMENT UNCOATED = 0 LBS.
 EAST ABUTMENT COATED = 730 LBS.
 EAST ABUTMENT UNCOATED = 0 LBS.

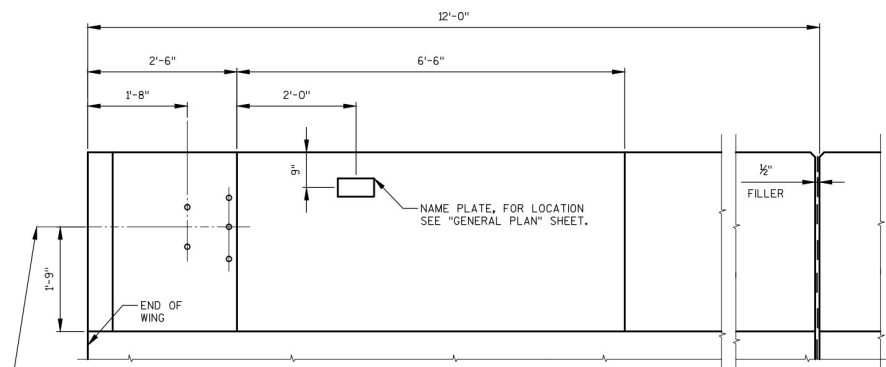
BILL OF BARS SINGLE SLOPE PARAPET 32SS

MARK	COATED	NO. REQ'D.		LENGTH FT - IN	BENT	BAR SERIES	LOCATION
		WEST ABUTMENT	EAST ABUTMENT				
R501	X	12	12	5 - 10	X		PARAPET TIE VERT
R502	X	12	12	5 - 0	X		PARAPET STIRRUP VERT
R503	X	24	24	3 - 0	X		PARAPET TIE VERT
R504	X	34	34	5 - 7	X		PARAPET TIE VERT
R505	X	22	22	4 - 9	X		PARAPET STIRRUP VERT
R506	X	12	12	4 - 10	X		PARAPET STIRRUP VERT
R507	X	2	2	11 - 7	X		PARAPET - LONGITUDINAL - TRANSITION HORIZ
R508	X	10	10	11 - 7	X		PARAPET - LONGITUDINAL HORIZ

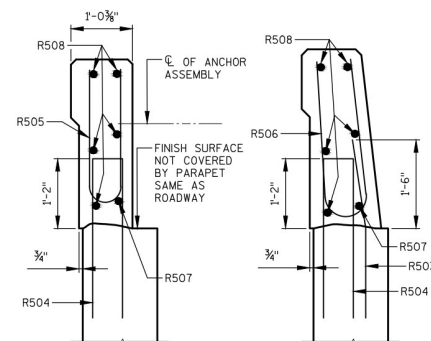
BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

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

INCLUDED IN ABUTMENT QUANTITIES FOR BAR STEEL REINFORCEMENT AND CONCRETE MASONRY

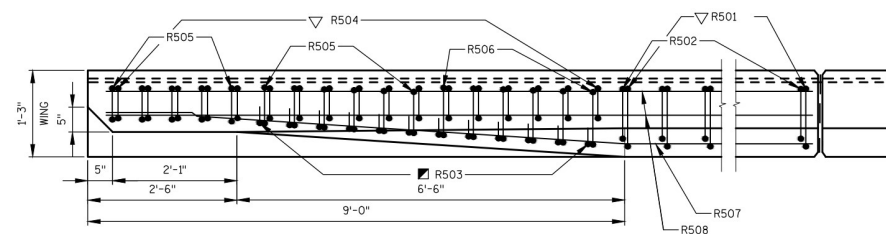


INSIDE ELEVATION



SECTION A

SECTION B



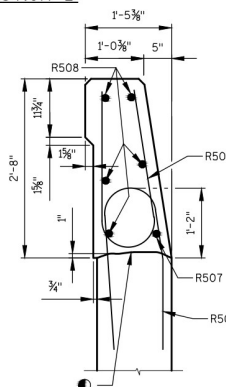
PLAN

OPTIONAL CONSTRUCTION JOINTS
 IN THE PARAPETS MAY BE USED.
 RUN BAR REINF. THRU THE JOINT.
 LAP LONGIT. BARS A MIN. OF 1'-9".
 MIN. JOINT SPACING OF 80'-0".
 DEFINE CONST. JOINT WITH A 3/4" -
 V GROOVE.

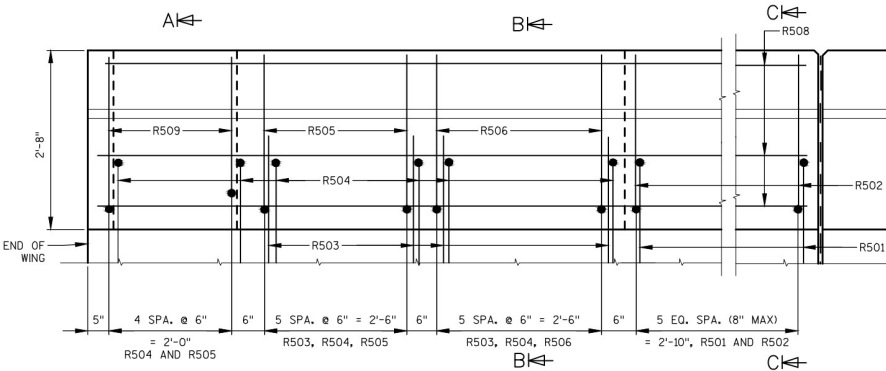
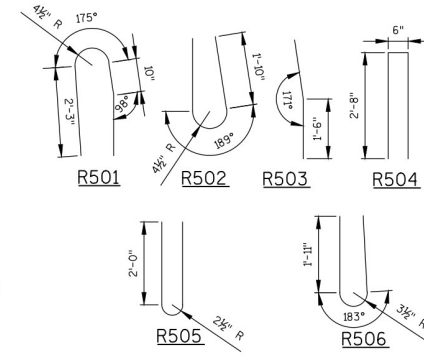
● CONST. JOINT - STRIKE OFF AS SHOWN.

■ R503 BARS MAY BE PLACED AFTER
 CONCRETE IS POURED BUT BEFORE INITIAL
 SET HAS TAKEN PLACE. USE CARE TO
 PLACE R503 BARS CORRECTLY ALONG
 TRANSITION OF PARAPET.

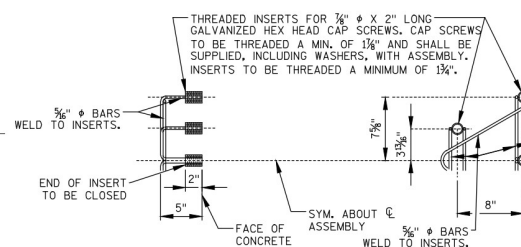
▽ R501 AND R504 BARS TO BE TIED TO WING
 STEEL BEFORE WING IS POURED.



SECTION C



OUTSIDE ELEVATION

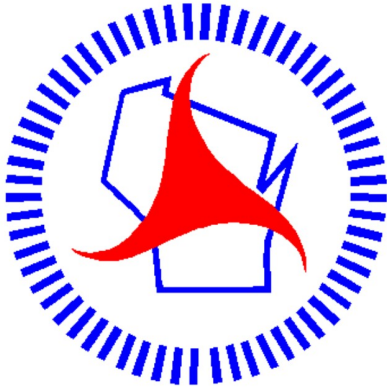


DETAIL OF ANCHOR ASSEMBLY

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

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-286			
DRAWN BY	MJB	PLANS CK'D.	JSH
SINGLE SLOPE PARAPET 32SS			
SHEET 60 OF 16			



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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