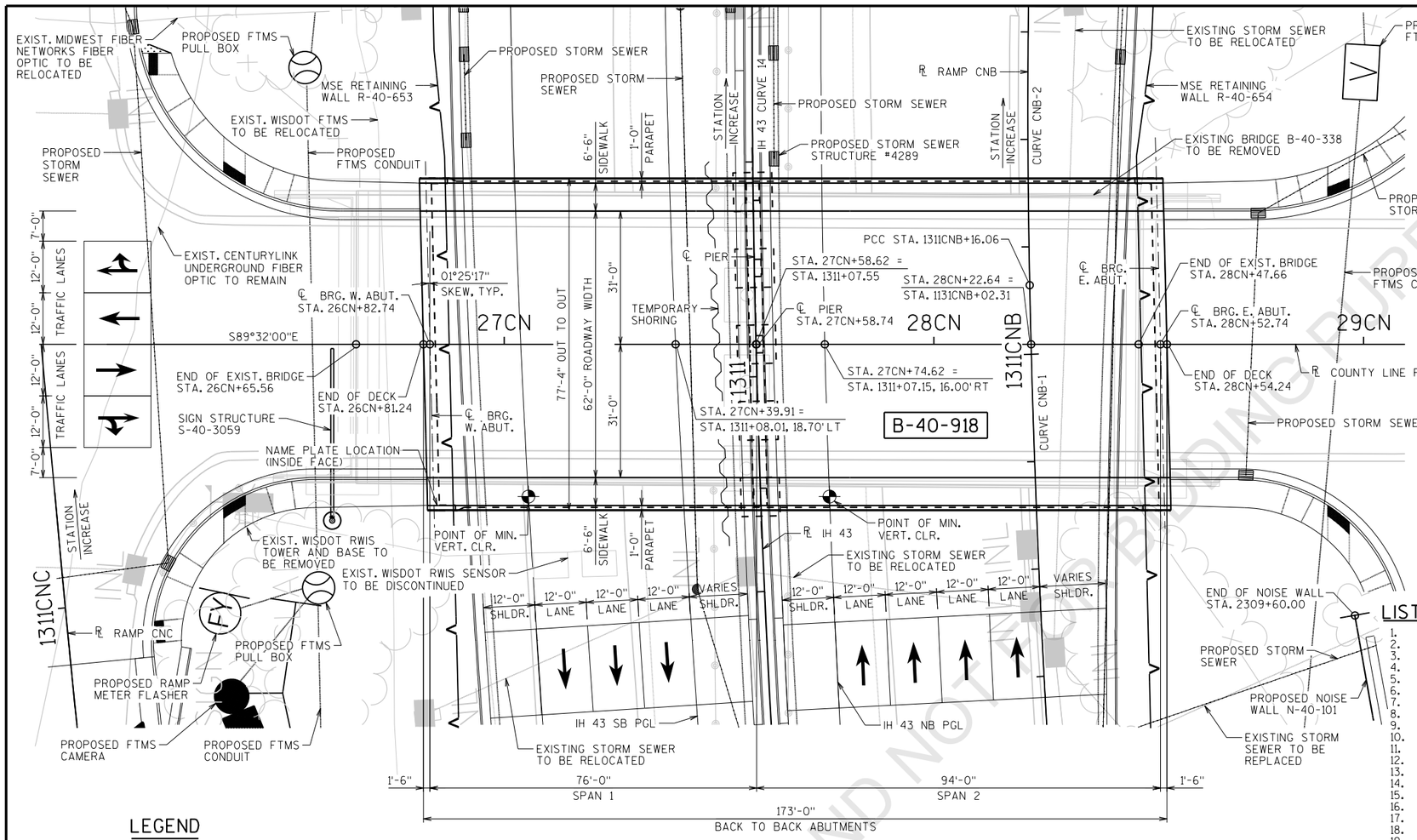
STATE PROJECT NUMBER
1229-04-74

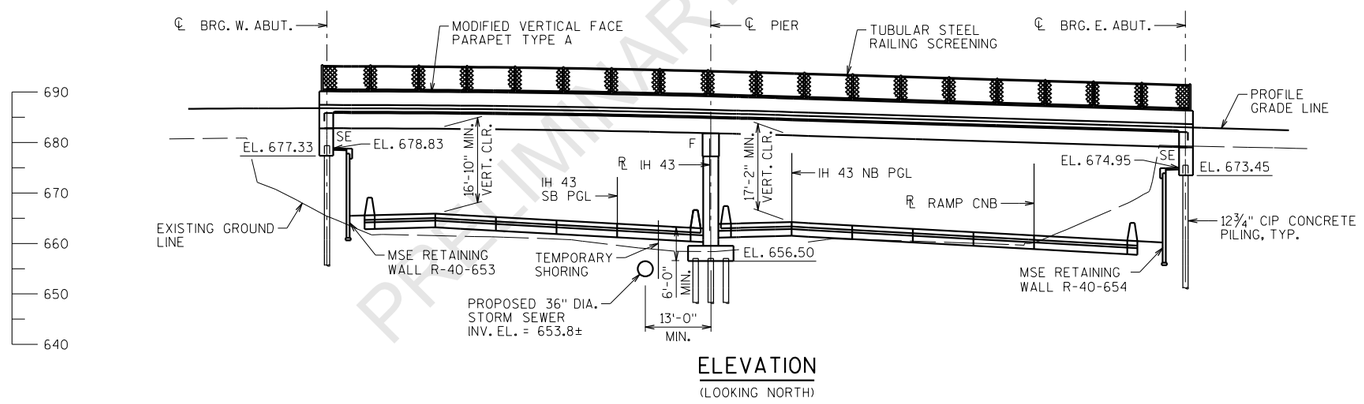


PLAN

(2 SPAN CONTINUOUS 36W" PRESTRESSED GIRDERS)

LEGEND

DIRECTION OF TRAFFIC



ELEVATION

(LOOKING NORTH)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.09
OPERATING RATING FACTOR: RF = 1.66
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 (HPC).....f'c = 4,000 P.S.I.
- SUBSTRUCTURE.....f'c = 3,500 P.S.I.
- CIP CONCRETE PILING.....f'c = 3,500 P.S.I.
- 36W-INCH PRESTRESSED GIRDERS.....f'c = 8,000 P.S.I.
- .....f'ci = 6,800 P.S.I.

BAR STEEL REINFORCEMENT.....fy = 60,000 P.S.I.
PRESTRESSING STRANDS ..... ULTIMATE TENSILE STRENGTH = 270,000 P.S.I.

FOUNDATION DATA

USING THE PDA/CAPWAP ACCEPTANCE METHOD:

ABUTMENTS AND PIER SHALL BE SUPPORTED ON 12¾" X 0.375" CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 160* TONS PER PILE AS DETERMINED BY THE PDA/CAPWAP ACCEPTANCE METHOD.

* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.65 USING PDA/CAPWAP METHOD TO DETERMINE DRIVEN PILE CAPACITY.

ESTIMATED PILE LENGTHS:
- WEST ABUTMENT .....75 FEET
- EAST ABUTMENT .....85 FEET
- PIER.....60 FEET

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTION
3. QUANTITIES & GENERAL NOTES
4. PROFILE GRADE LINES
5. SUBSURFACE EXPLORATION (1 OF 2)
6. SUBSURFACE EXPLORATION (2 OF 2)
7. WEST ABUTMENT
8. WEST ABUTMENT DETAILS
9. WEST ABUTMENT CLOSURE WALL DETAILS
10. WEST ABUTMENT BILL OF BARS
11. EAST ABUTMENT
12. EAST ABUTMENT DETAILS
13. EAST ABUTMENT CLOSURE WALL DETAILS
14. EAST ABUTMENT BILL OF BARS
15. PIER
16. PIER DETAILS (1 OF 2)
17. PIER DETAILS (2 OF 2)
18. 36W" PRESTRESSED GIRDER
19. 36W" PRESTRESSED GIRDER DETAILS
20. SUPERSTRUCTURE FRAMING PLAN
21. STEEL DIAPHRAGM
22. SUPERSTRUCTURE REINFORCEMENT
23. SUPERSTRUCTURE CROSS SECTIONS
24. SUPERSTRUCTURE REINFORCEMENT DETAILS
25. SUPERSTRUCTURE BILL OF BARS
26. MODIFIED VERTICAL FACE PARAPET A (1 OF 2)
27. MODIFIED VERTICAL FACE PARAPET A (2 OF 2)
28. TUBULAR STEEL RAILING SCREENING

TRAFFIC DATA

IH 43 NB	IH 43 SB
AADT = 32,000 (2019)	AADT = 40,700 (2019)
AADT = 34,500 (2025)	AADT = 44,000 (2025)
AADT = 37,800 (2045)	AADT = 47,100 (2045)
RDS = 70 MPH	RDS = 70 MPH

COUNTY LINE RD

AADT = 1,900 (2019)
AADT = 2,200 (2025)
AADT = 2,200 (2045)
RDS = 30 MPH

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
MOHAMMED ZAGLOUL (414) 751-7200

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

kapur
7711 N. Port Washington Road
Milwaukee, Wisconsin 53217
kapurinc.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-40-918

COUNTY LINE RD OVER IH 43

COUNTY	VILLAGE
MILWAUKEE	BAYSIDE

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
AJA	MHZ	SK	MHZ/AJA

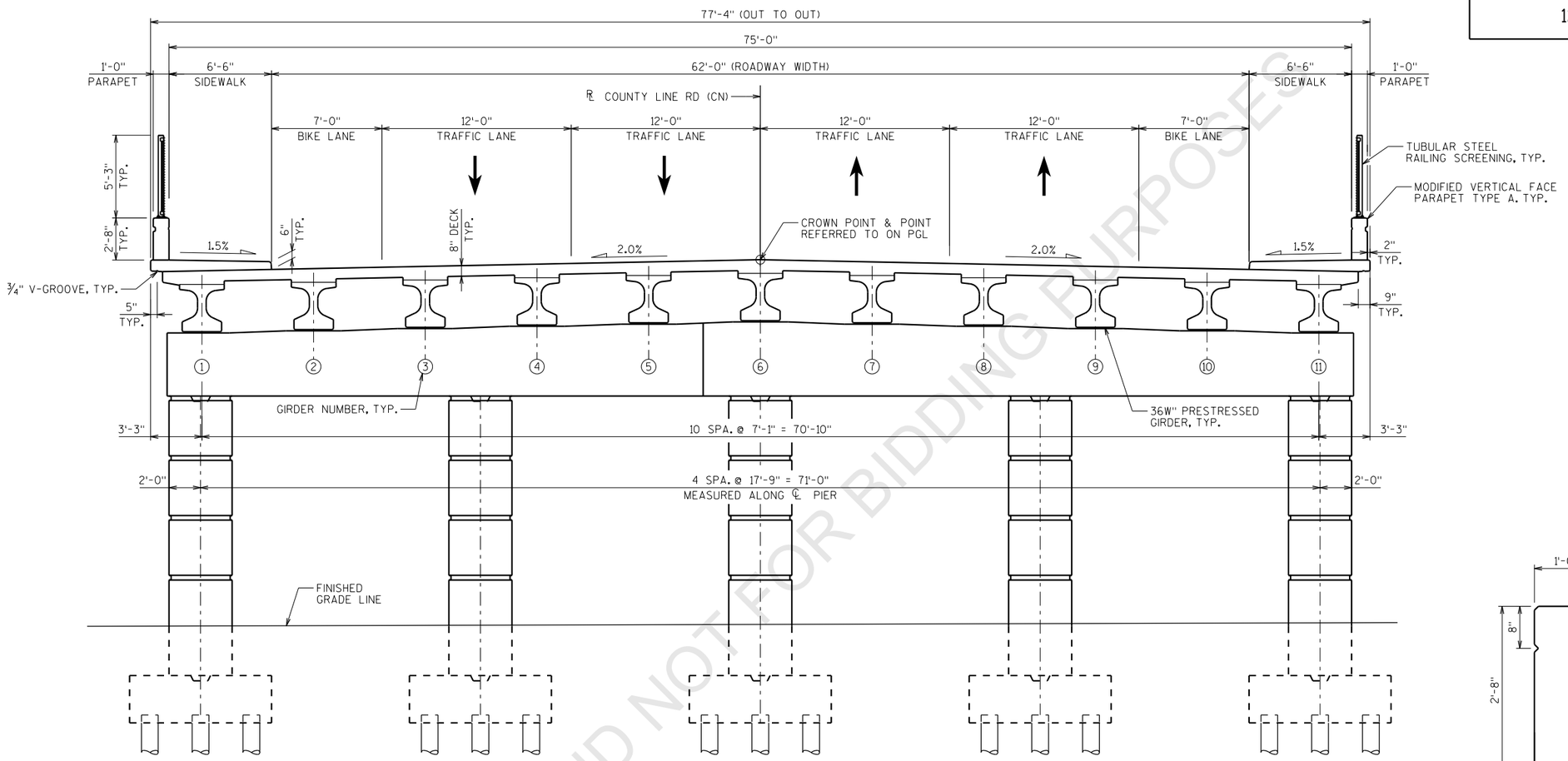
GENERAL PLAN & ELEVATION

SHEET 1 OF 28

WISCONSIN
ANDREW J. ASCHENBRENNER
E-45272-6
MILWAUKEE, WI.
7/30/2021
PROFESSIONAL ENGINEER

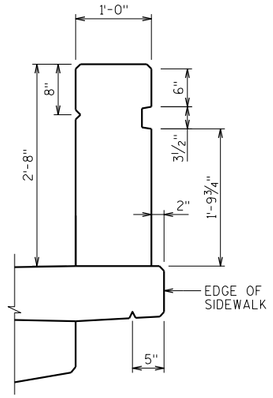
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
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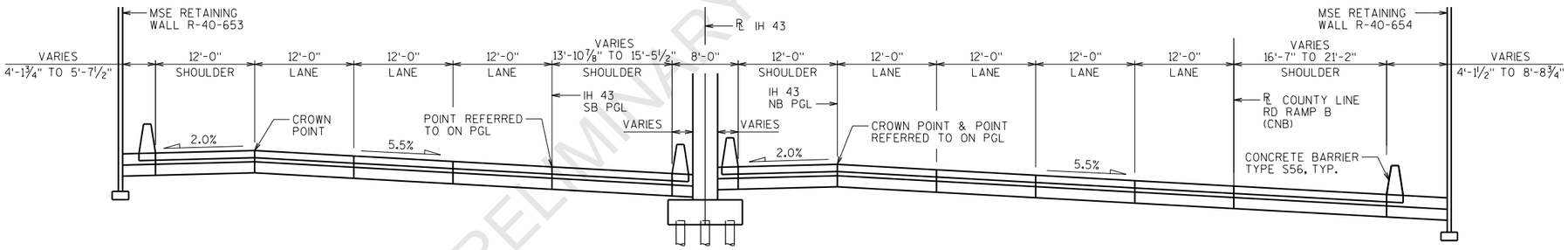
TYPICAL SECTION

(LOOKING EAST)



PARAPET DETAILS

(TUBULAR STEEL RAILING SCREENING NOT SHOWN FOR CLARITY)



PROPOSED IH 43 SECTION UNDER COUNTY LINE RD BRIDGE

(LOOKING NORTH)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

DRAWN BY	SK	PLANS CK'D.	MHZ

TYPICAL SECTION

SHEET 2 OF 28

STATE PROJECT NUMBER
1229-04-74

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD).

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 HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

THE UPPER LIMITS OF THE "EXCAVATION FOR STRUCTURES BRIDGES B-40-918" SHALL BE THE EXISITNG GROUNDLINE.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRED ENGINEER APPROVAL.

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

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

THE CONCRETE QUANTITY FOR THE ABUTMENTS AND PIER SHALL BE PAID FOR UNDER BID ITEM "CONCRETE MASONRY BRIDGES".

THE CONCRETE QUANTITY FOR THE DECK SLAB, HAUNCHES, CONCRETE DIAPHRAGMS, PARAPETS AND SIDEWALKS SHALL BE PAID FOR UNDER BID ITEM "HPC MASONRY STRUCTURES".

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP OF DECK AND EXPOSED SIDEWALK SURFACES.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE TOP AND INSIDE FACE OF THE PARAPETS.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M153 TYPE 1, 2, OR 3 OR AASHTO M213.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" JOINT FILLER WITH NON-STAINING, NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.) COLOR TO MATCH ADJACENT SURFACES.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON THE ABUTMENT DETAILS.

NAME PLATE SHALL BE CONSIDERED INCIDENTAL TO ITEM 502.0100 "CONCRETE MASONRY BRIDGES". FABRICATE IN ACCORDANCE TO SDD 12 A 3-10.

THE EXISTING BRIDGE B-40-338 IS A TWO SPAN STEEL PLATE GIRDER WITH HAUNCHED WEBS AT THE PIER. THE EXISTING STRUCTURE HAS AN OVERALL LENGTH OF 184'-4" BACK TO BACK OF ABUTMENTS AND AN OVERALL WIDTH OF 68'-0". THE EXISTING PIER AND ABUTMENTS ARE SUPPORTED ON SPREAD FOOTINGS. THE ENTIRE STRUCTURE WILL BE REMOVED IN ACCORDANCE WITH PROJECT CONSTRUCTION STAGING PLANS AND TO BE PAID FOR UNDER BID ITEM "REMOVING OLD STRUCTURE B-40-338".

THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF BRIDGE B-40-918 ABUTMENTS WITH CONSTRUCTION OF RETAINING WALLS R-40-653 AND R-40-654.

THE CONTRACTOR SHALL COORDINATE THE REMOVAL OF EXISTING BRIDGE B-40-338 AND CONSTRUCTION OF BRIDGE B-40-918 WITH THE CONSTRUCTION OF SIGN STRUCTURE S-40-3059.

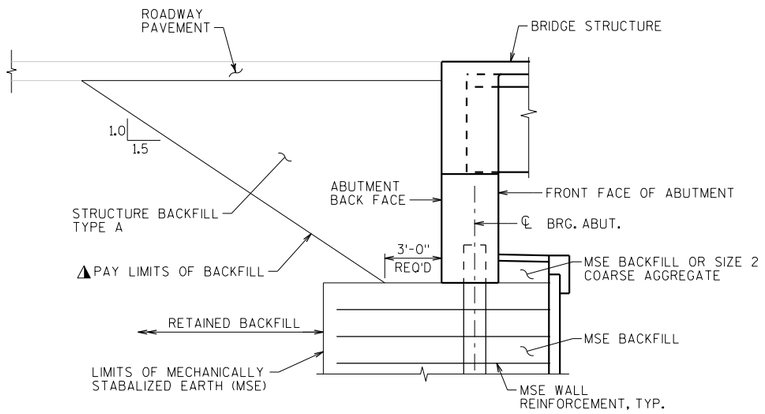
THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF BRIDGE B-40-918 PIER WITH THE CONSTRUCTION OF STORM SEWER STRUCTURE #4289. THE PIER SHALL BE CONSTRUCTED PRIOR TO THE INSTALLATION OF STORM SEWER STRUCTURE #4289.

MSE BACKFILL OR SIZE 2 COARSE AGGREGATE PLACED BETWEEN THE MSE RETAINING WALL & ABUTMENT SHALL BE INCIDENTAL TO BID ITEM "SLOPE PAVING CONCRETE".

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	WEST ABUTMENT	PIER	EAST ABUTMENT	SUPER.	TOTAL
203.0220.0001	REMOVING OLD STRUCTURE B-40-338	EACH	-	-	-	-	1
203.0211.S.0001	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-40-338	EACH	-	-	-	-	1
206.1000.0001	EXCAVATION FOR STRUCTURES BRIDGES B-40-918	LS	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	312	246	314	-	872
501.1000.S	ICE HOT WEATHER CONCRETING	LB	-	-	-	4,028	4,028
502.0100	CONCRETE MASONRY BRIDGES	CY	44	122	45	-	211
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	1,461	1,461
502.3210	PIGMENTED SURFACE SEALER	SY	-	-	-	141	141
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	-	-	-	1,879	1,879
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	3,960	4,000	4,820	-	12,780
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	350	22,550	350	115,250	138,500
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	11	22	11	-	44
506.4000.0001	STEEL DIAPHRAGMS B-40-918	EACH	-	-	-	30	30
511.1200.0001	TEMPORARY SHORING B-40-918	SF	-	-	-	480	480
513.4091	RAILING TUBULAR SCREENING	LF	-	-	-	346	346
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	15	-	15	-	30
550.0500	PILE POINTS	EACH	11	40	11	-	62
550.2126	PILING CIP CONCRETE 12¾ X 0.375 - INCH	LF	825	2,400	935	-	4,160
604.0400	SLOPE PAVING CONCRETE	SY	22	-	22	-	44
SPV.0035.4000	HPC MASONRY STRUCTURES	CY	-	-	-	537	537
SPV.0060.4000	PILE DYNAMIC ANALYZER (PDA) TESTING	EACH	2	2	2	-	6
SPV.0060.4001	PILE DYNAMIC ANALYZER (PDA) RESTRIKES	EACH	2	2	2	-	6
SPV.0060.4002	CASE PILE WAVE ANALYSIS PROGRAM (CAPWAP) EVALUATION	EACH	1	1	1	-	3
SPV.0165.4000	LONGITUDINAL GROOVING BRIDGE DECK	SF	-	-	-	10,726	10,726
	NON-BID ITEMS						
	NAME PLATE	EACH					1
	PREFORMED JOINT FILLER	SIZE					½"
	CORK FILLER	SIZE					¾"

ALL ITEMS ARE CATEGORY 2000



BACKFILL LIMITS

(DIMENSIONS ARE MEASURED NORMAL TO ABUTMENT)

LEGEND

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

DRAWN BY SK | PLANS CK'D. MHZ

QUANTITIES & GENERAL NOTES

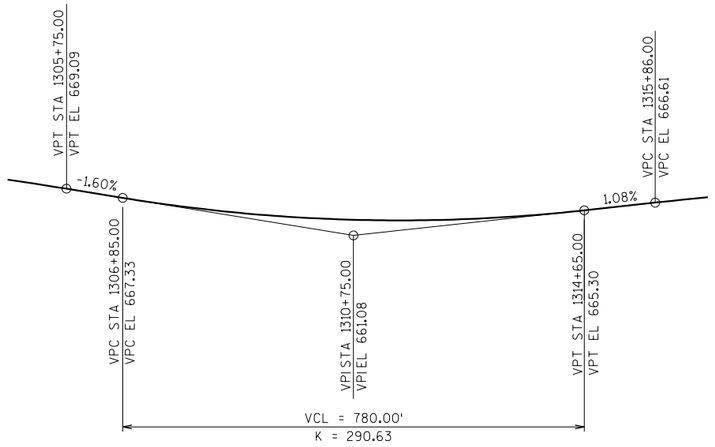
SHEET 3 OF 28

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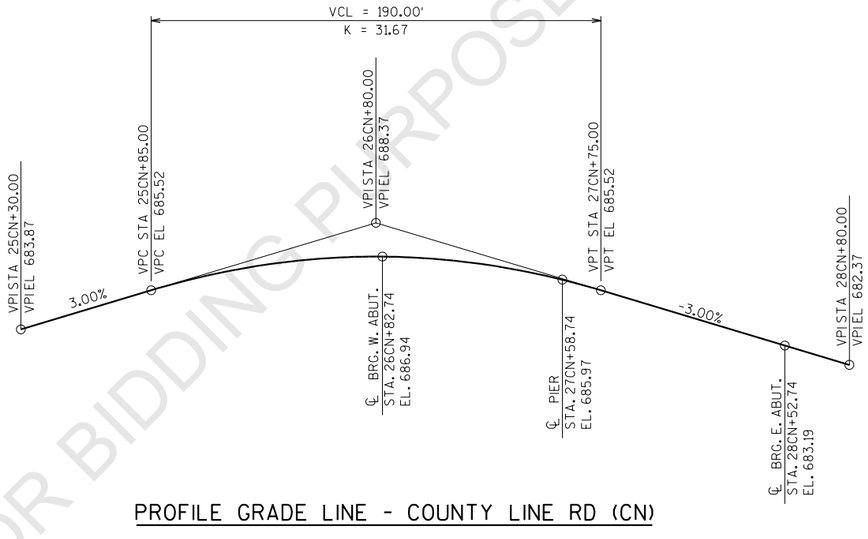
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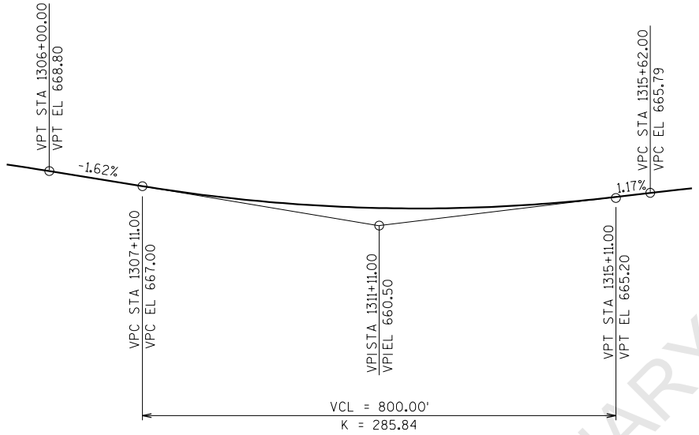
STATE PROJECT NUMBER
1229-04-74



PROFILE GRADE LINE - IH 43 NB



PROFILE GRADE LINE - COUNTY LINE RD (CN)



PROFILE GRADE LINE - IH 43 SB

HORIZONTAL CURVE DATA

IH 43 CURVE 14	CURVE CNB-1	CURVE CNB-2
PI STA. = 1312+49.06	PI STA. = 1310CNB+00.91	PI STA. = 1313CNB+38.02
Y = 355671.79	Y = 355429.44	Y = 355766.65
X = 602018.33	X = 602105.36	X = 602101.19
DELTA = 14°20'07"	DELTA = 4°39'19"	DELTA = 12°25'09"
D = 1°58'33"	D = 2°01'13"	D = 2°48'31"
T = 364.69'	T = 115.27'	T = 221.96'
L = 725.57'	L = 230.42'	L = 442.19'
R = 2900.00'	R = 2836.00'	R = 2040.00'
PC STA. = 1308+84.37	PC STA. = 1308CNB+85.64	PCC STA. = 1311CNB+16.06
Y = 355308.69	Y = 355314.67	Y = 355544.71
X = 602052.42	X = 602116.14	X = 602103.94
PT STA. = 1316+09.94	PCC STA. = 1311CNB+16.06	PT STA. = 1315CNB+58.24
Y = 356032.02	Y = 355544.71	Y = 355983.99
X = 602075.20	X = 602103.94	X = 602146.24

NOTE

THE PROFILE FOR REFERENCE LINE CNB BEGINS AT STA. 1314CNB+11.07. ELEVATIONS FOR REFERENCE LINE CNB AT BRIDGE B-40-918 ARE REFERENCED TO IH 43 NB PGL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

DRAWN BY	SK	PLANS CK'D.	MHZ

PROFILE GRADE LINES

SHEET 4 OF 28

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
CN-01	JULY 10, 2014	355570	601956
CN-02	APRIL 10, 2014	355572	602059
CN-03	JULY 11, 2014	355500	602156
CN-04	DECEMBER 14, 2014	355468	602067
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) MILWAUKEE COUNTY			

NOTE:

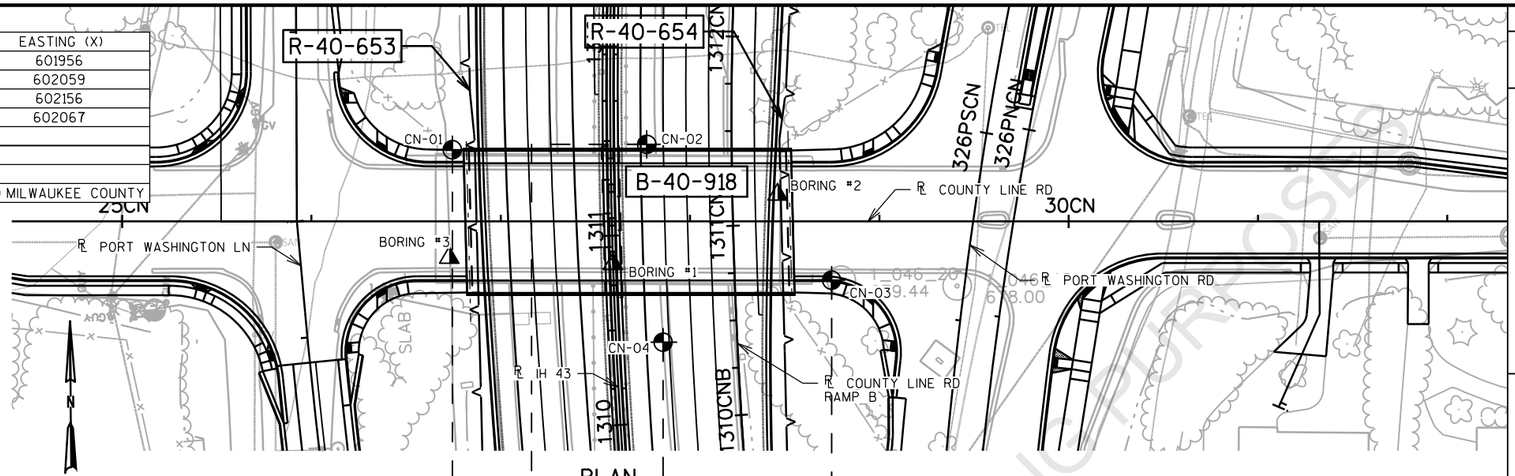
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

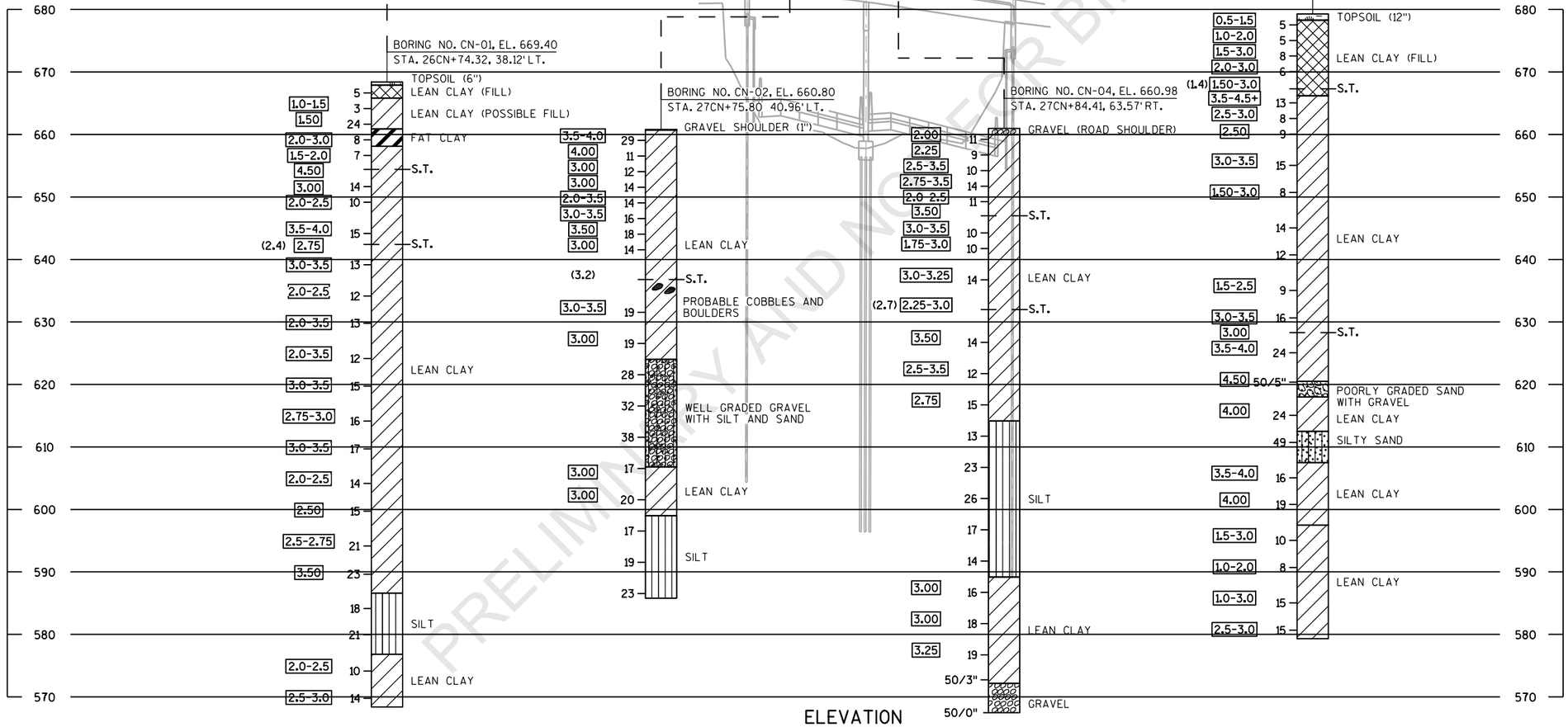
HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

DENOTES SOIL BORING LOCATION

DENOTES HISTORICAL BORING



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

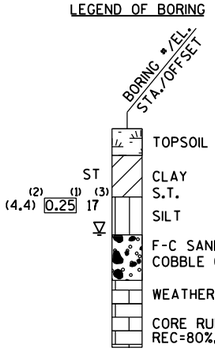
STATE PROJECT NUMBER

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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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE B-40-918

DRAWN BY NNM | PLANS CK'D. EAJ

SUBSURFACE EXPLORATION (1 OF 2)

SHEET 5 OF 28

8

8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-40-918\cds\B918_0001DetEdgr.dgn PLOT DATE : 5/27/2021 8:59:53 AM PLOT BY : crkasten PLOT NAME : $FILE$ PLOT SCALE : 80:1

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
CN-05	DECEMBER 22, 2014	355627	602106
CN-06	DECEMBER 29, 2014	355442	601973
CN-07	DECEMBER 29, 2014	355600	601964
CN-08	DECEMBER 22, 2014	355441	602109

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.
REPORT COMPLETED BY: HNTB CORP.
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) MILWAUKEE COUNTY

NOTE:

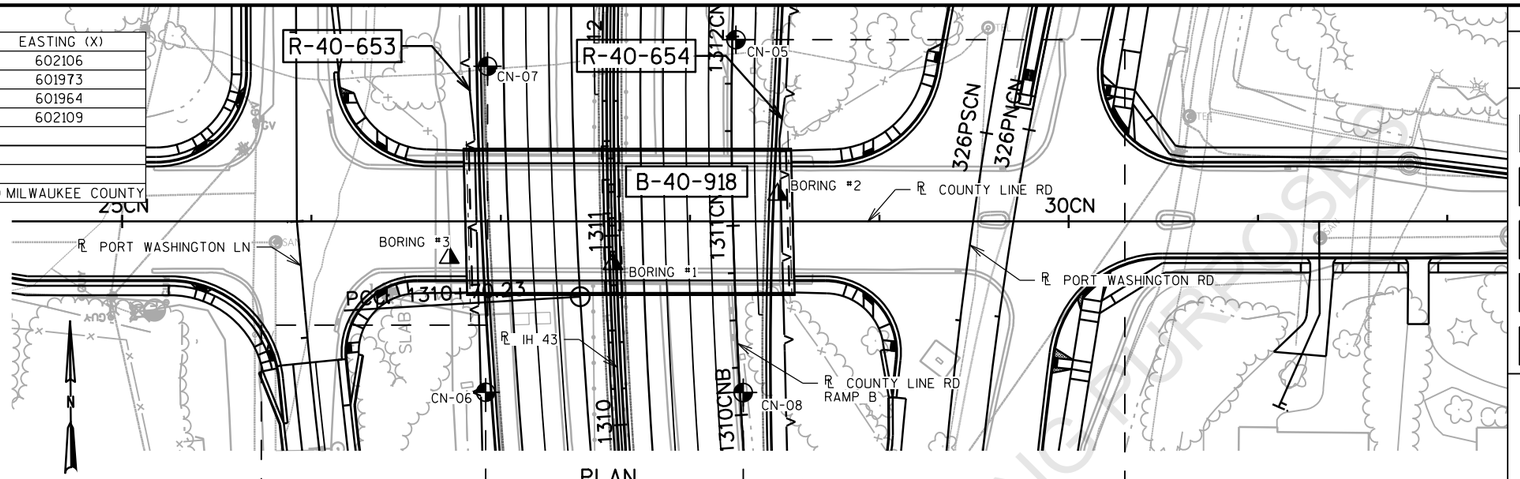
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WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

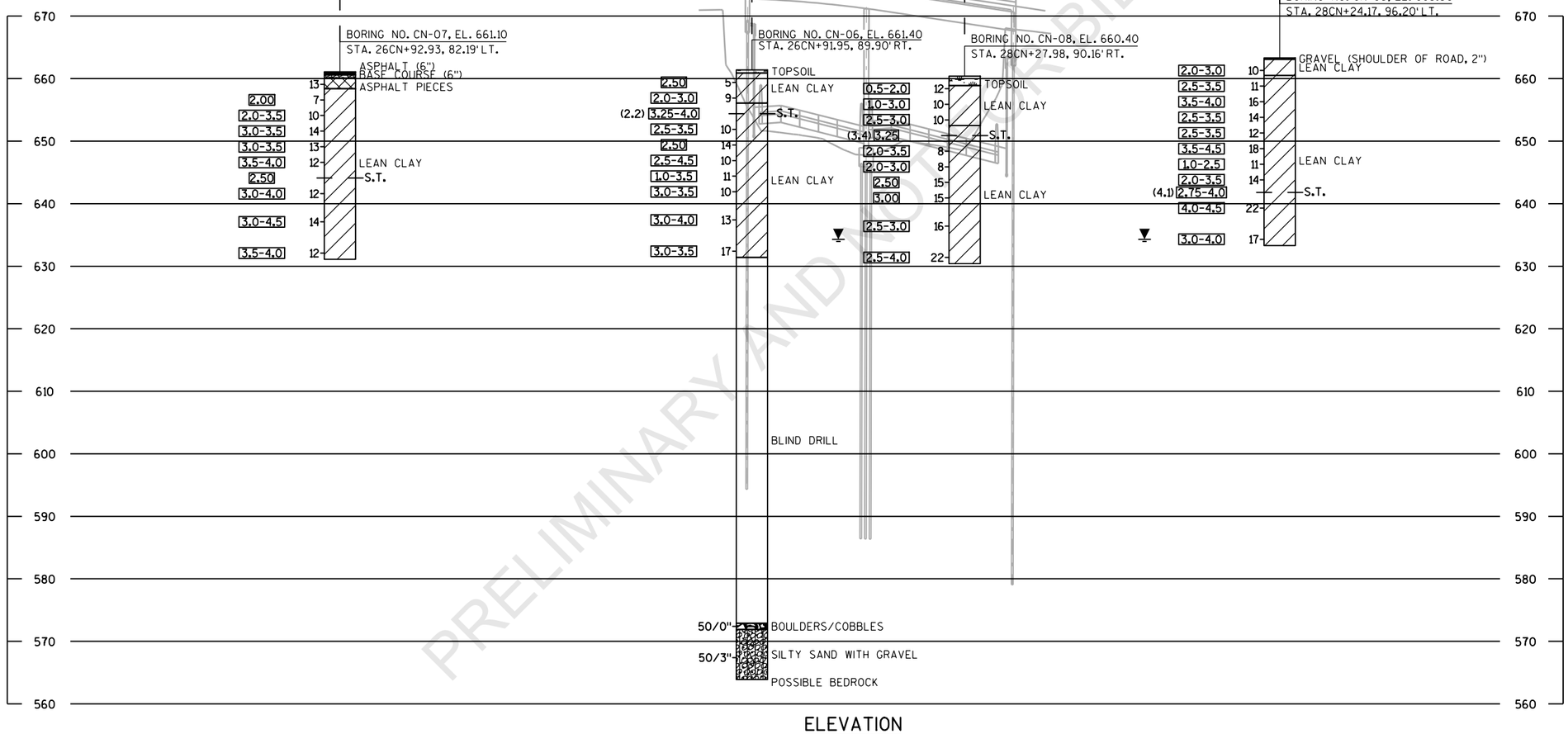
HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

DENOTES SOIL BORING LOCATION

DENOTES HISTORICAL BORING



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING OR CONSTRUCTION

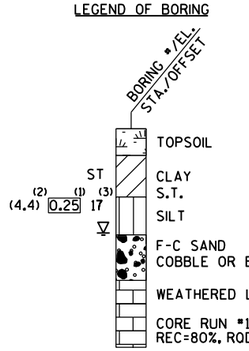
STATE PROJECT NUMBER

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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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

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DRAWN BY NNM | PLANS CK'D. EAJ

SUBSURFACE EXPLORATION (2 OF 2)

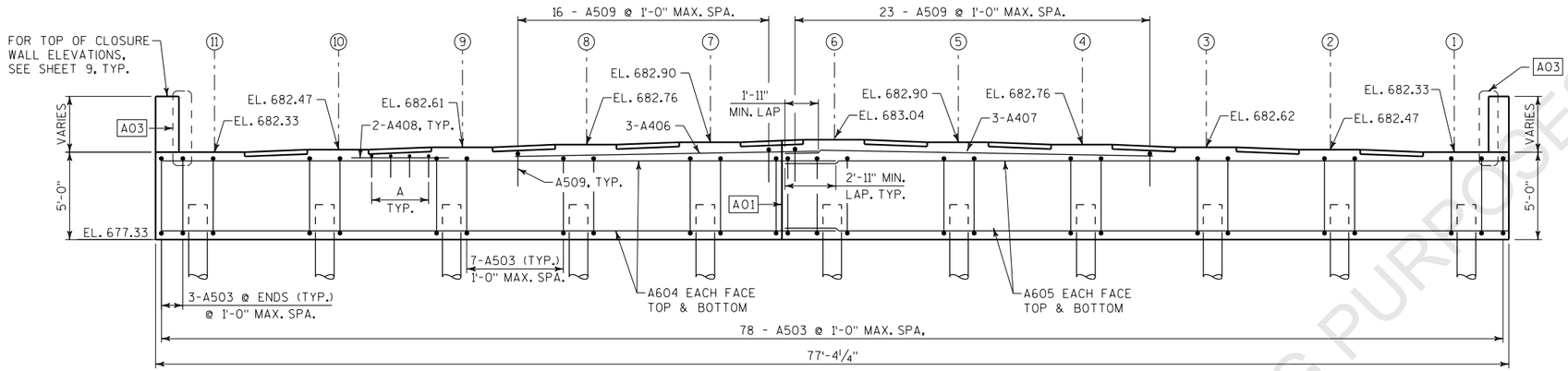
SHEET 6 OF 28

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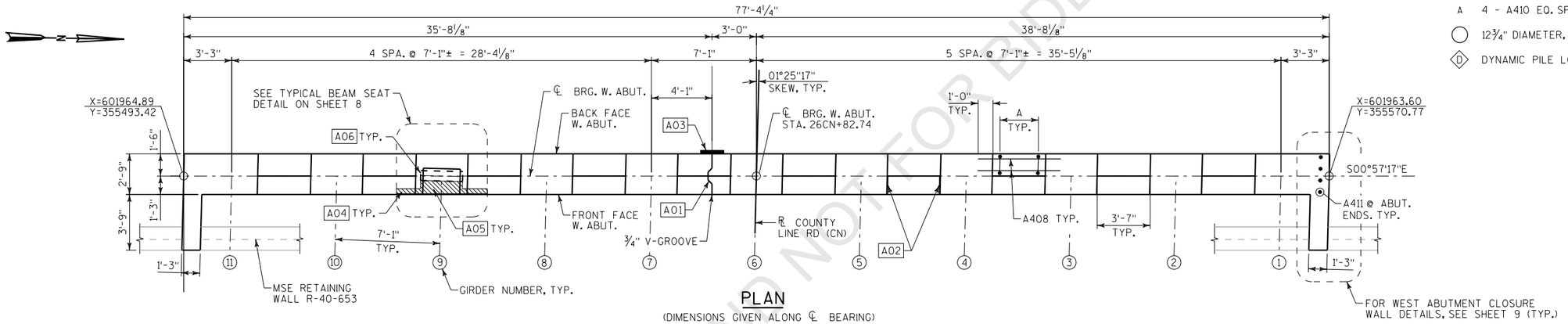
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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-40-918\cds\B918_0002DsnEdgr5/27/2021 8:58:44 AM PLOT BY : crkasten PLOT NAME : $FILE$ PLOT SCALE : 80:1

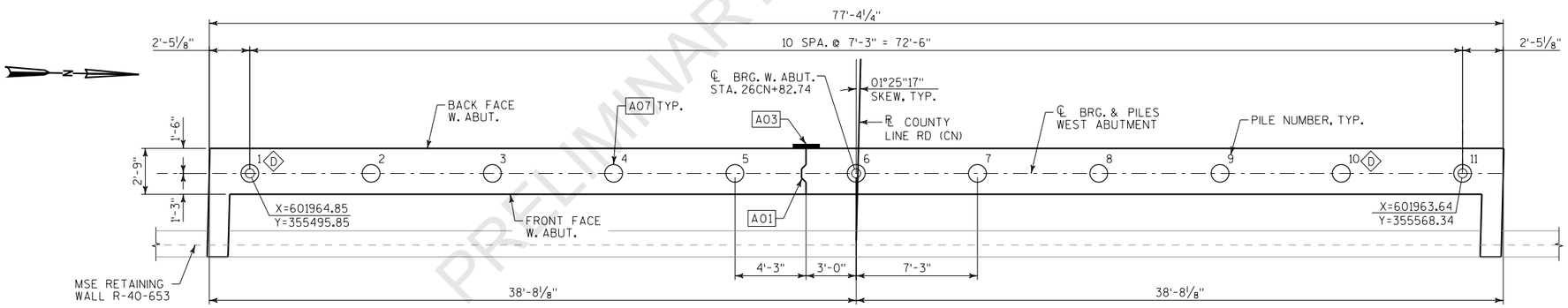
STATE PROJECT NUMBER
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ELEVATION
(LOOKING WEST)



PLAN
(DIMENSIONS GIVEN ALONG ℄ BEARING)



PILE PLAN
(DIMENSIONS GIVEN ALONG ℄ BEARING)

LEGEND

- A01 VERTICAL CONSTRUCTION JOINT KEYWAY FORMED BY A BEVELED 2" X 8". REINFORCEMENT EXTENDS THROUGH JOINT.
- A02 ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER, TYP.
- A03 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENTS.
- A04 4" X ½" PREFORMED JOINT FILLER, FULL LENGTH OF ABUTMENT, TYP.
- A05 ½" PREFORMED JOINT FILLER UNDER GIRDER FLANGE IN FRONT OF BEARING PAD, TYP.
- A06 ½" THICK X 8" X 2'-10" ELASTOMERIC BEARING PAD, TYP.
- A07 SUPPORT ABUTMENT ON 12¾" X 0.375" CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE AS DETERMINED BY THE PDA/CAPWAP ACCEPTANCE METHOD. ESTIMATED PILE LENGTH = 75 FEET
- (X) GIRDER NUMBER
- A 4 - A410 EQ. SPA. BETWEEN GIRDER SEATS, TYP.
- ◯ 12¾" DIAMETER, 0.375" WALL CIP CONCRETE PILING
- ◇D DYNAMIC PILE LOAD TESTING

NOTES

ELEVATIONS ARE GIVEN AT TOP OF CONCRETE AT THE INTERSECTION OF THE ℄ GIRDER & ℄ BEARING.

FOR TYPICAL SECTION THRU ABUTMENT BODY & FALL PROTECTION, SEE SHEET 8.

FOR WEST ABUTMENT CLOSURE WALL DETAILS, SEE SHEET 9.

FOR WEST ABUTMENT BILL OF BARS & ALTERNATE CONSTRUCTION JOINT, SEE SHEET 10.

NO.	DATE	REVISION	BY

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WEST ABUTMENT

SHEET 7 OF 28

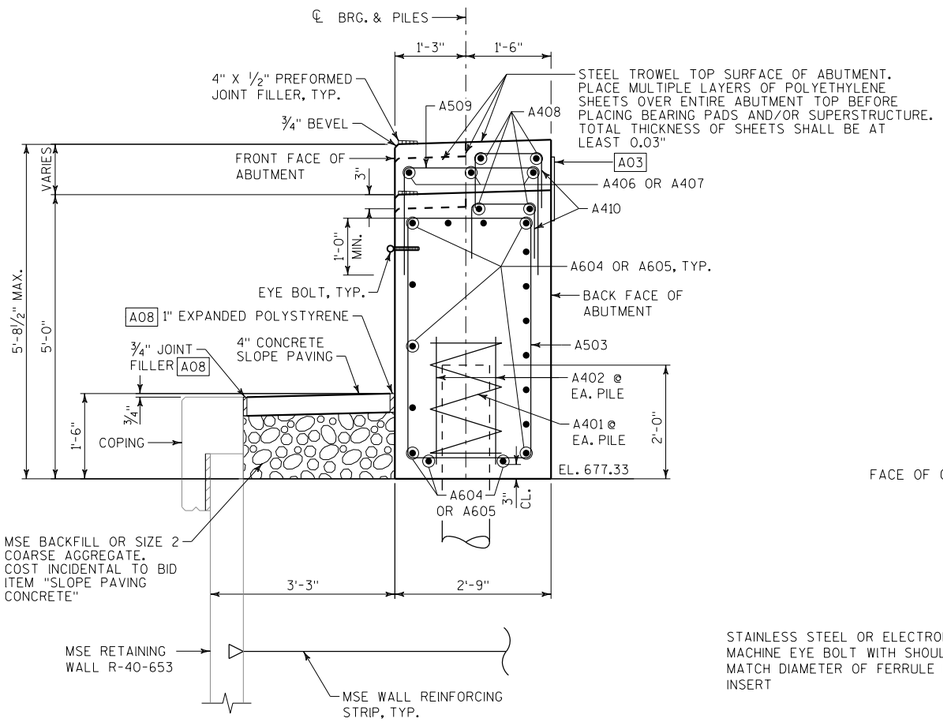
PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

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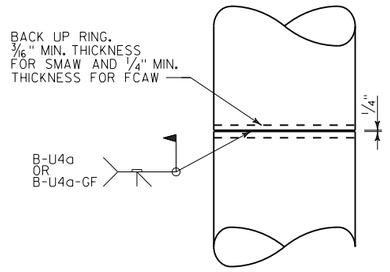
STATE PROJECT NUMBER

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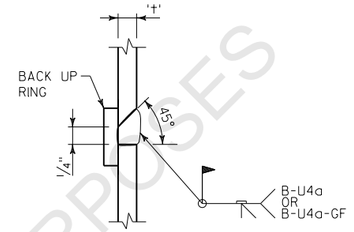


SECTION THRU ABUTMENT BODY

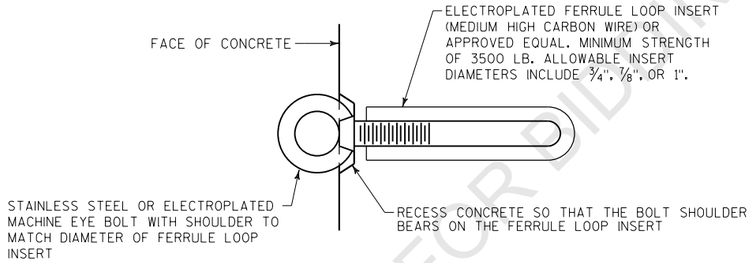
(LOOKING SOUTH)



CAST-IN-PLACE 'PIPE PILE'

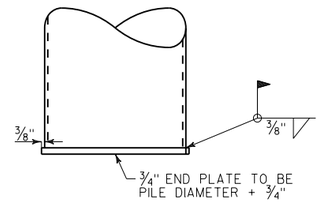


CIP PILE WELD DETAIL



EYE BOLT DETAIL

COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"



END PLATE DETAIL FOR CIP PILING

LEGEND

A02 ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER, TYP.

A03 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENTS.

A04 4" X ½" PREFORMED JOINT FILLER, FULL LENGTH OF ABUTMENT, TYP.

A05 ½" PREFORMED JOINT FILLER UNDER GIRDER FLANGE IN FRONT OF BEARING PAD, TYP.

A06 ½" THICK X 8" X 2'-10" ELASTOMERIC BEARING PAD, TYP.

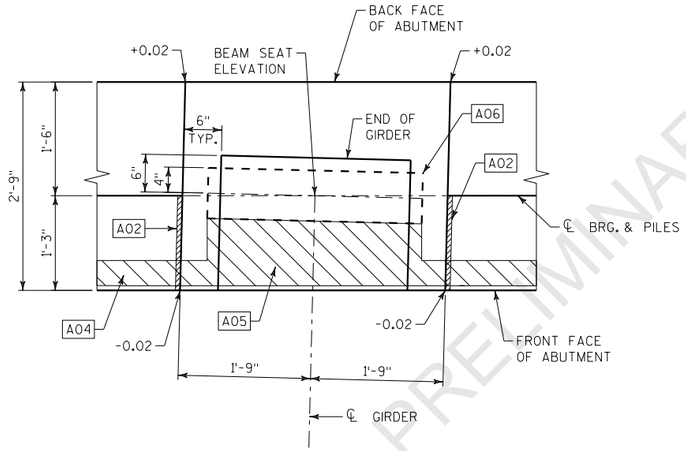
A08 SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER AND EXPANDED POLYSTYRENE WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

NOTES

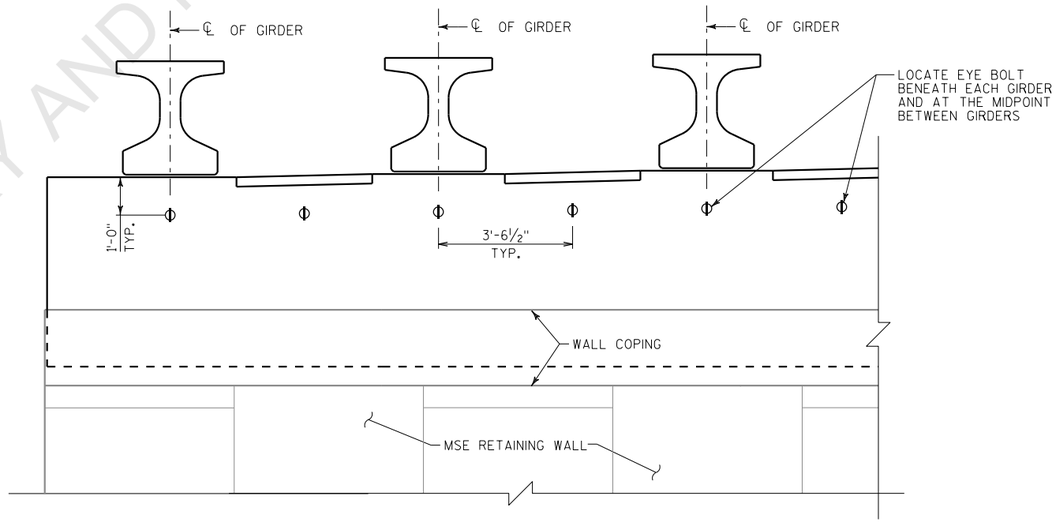
FOR WEST ABUTMENT PLAN & ELEVATION, SEE SHEET 7.

FOR WEST ABUTMENT CLOSURE WALL DETAILS, SEE SHEET 9.

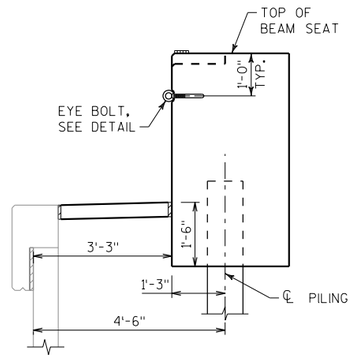
FOR WEST ABUTMENT BILL OF BARS & ALTERNATE CONSTRUCTION JOINT, SEE SHEET 10.



TYPICAL BEAM SEAT DETAIL



FALL PROTECTION ELEVATION



FALL PROTECTION ANCHOR

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

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WEST ABUTMENT DETAILS

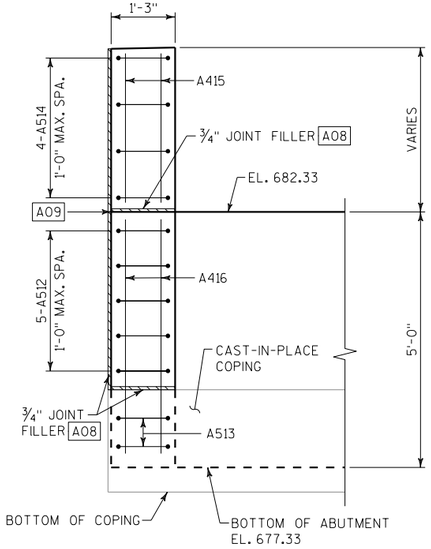
SHEET 8 OF 28

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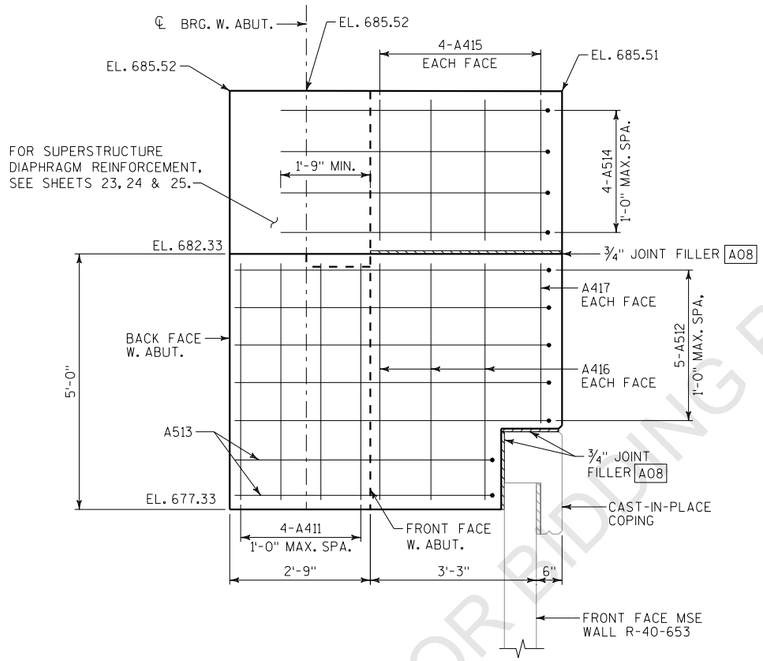
PRELIMINARY AND NOT FOR BIDDING PURPOSES

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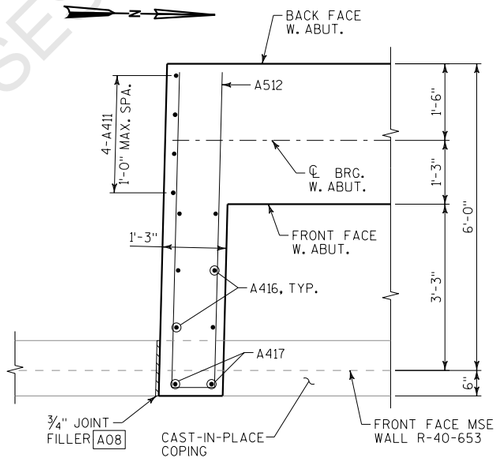
SOUTH CLOSURE WALL FRONT ELEVATION

(LOOKING WEST)

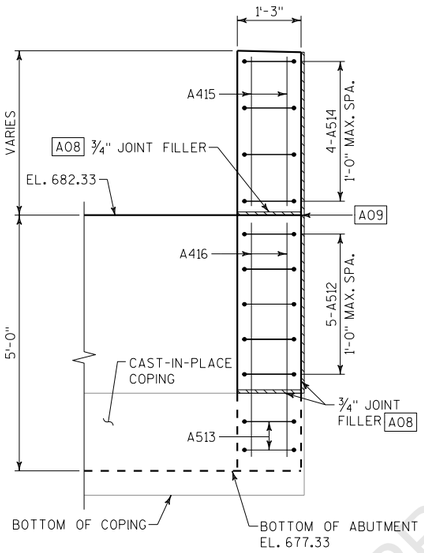


SIDE ELEVATION OF SOUTH CLOSURE WALL

(LOOKING NORTH)

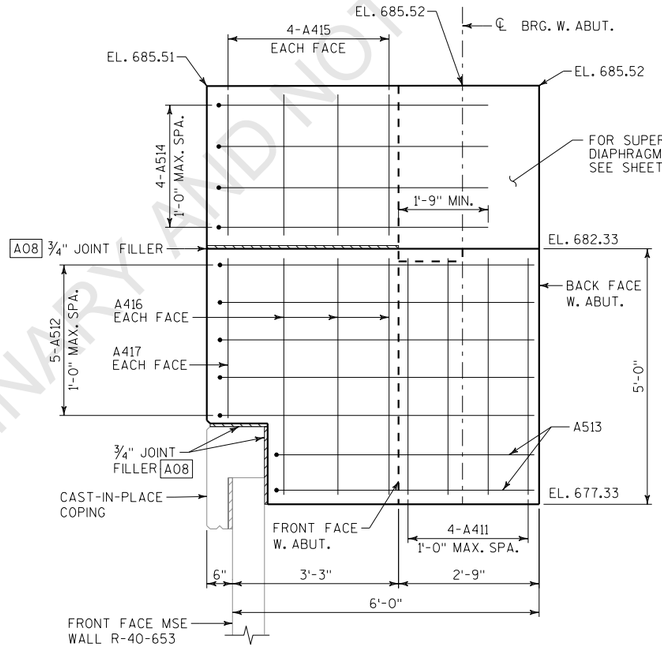


SOUTH CLOSURE WALL PLAN



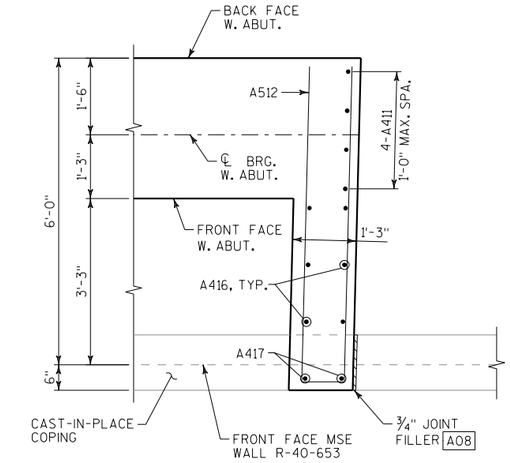
NORTH CLOSURE WALL FRONT ELEVATION

(LOOKING WEST)



SIDE ELEVATION OF NORTH CLOSURE WALL

(LOOKING SOUTH)



NORTH CLOSURE WALL PLAN

NOTES

FOR WEST ABUTMENT PLAN & ELEVATION, SEE SHEET 7.

FOR WEST ABUTMENT BILL OF BARS, SEE SHEET 10.

LEGEND

A08 SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE)

A09 EXTEND POLYETHYLENE SHEETING OVER ENTIRE LENGTH OF CLOSURE WALL

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WEST ABUTMENT CLOSURE WALL DETAILS

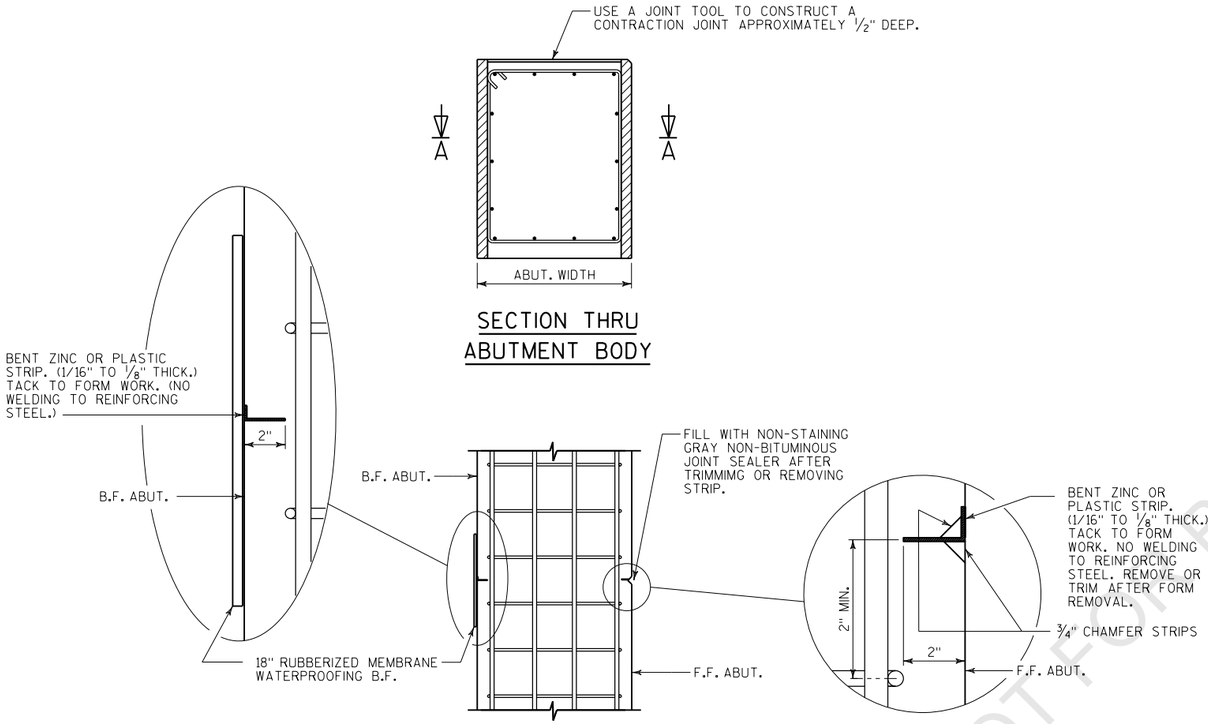
SHEET 9 OF 28

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

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SECTION THRU ABUTMENT BODY

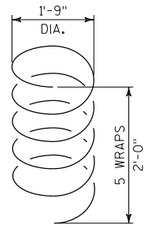
SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

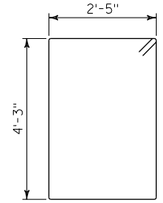
BILL OF BARS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
A401	-	11	28'-0"	X	-	ABUTMENT BODY AT PILE - SPIRAL
A402	-	22	2'-3"	-	-	ABUTMENT BODY AT PILE - VERT.
A503	-	78	14'-0"	X	-	ABUTMENT BODY - VERT.
A604	-	17	38'-8"	-	-	ABUTMENT BODY - LONG.
A605	-	17	41'-4"	-	-	ABUTMENT BODY - LONG.
A406	-	3	17'-5"	-	-	ABUTMENT BODY TOP - LONG.
A407	-	3	21'-1"	-	-	ABUTMENT BODY TOP - LONG.
A408	-	20	5'-8"	-	-	ABUTMENT BODY TOP - LONG.
A509	-	39	6'-2"	X	-	ABUTMENT BODY TOP - VERT.
A410	-	40	4'-0"	X	-	ABUTMENT BODY TOP - VERT.
A411	-	8	4'-7"	-	-	ABUTMENT ENDS - VERT.
A512	X	10	12'-11"	X	-	CLOSURE WALL - HORIZ.
A513	X	4	10'-5"	X	-	CLOSURE WALL - HORIZ.
A514	X	8	11'-5"	X	-	CLOSURE WALL - HORIZ.
A415	X	16	2'-9"	-	-	CLOSURE WALL - VERT.
A416	X	12	4'-7"	-	-	CLOSURE WALL - VERT.
A417	X	4	3'-2"	-	-	CLOSURE WALL - VERT.

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

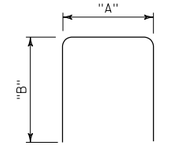


A401

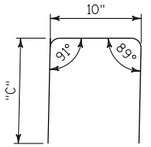


A503

BENDING DIAGRAMS



BAR MARK	DIM "A"	DIM "B"
A509	2'-5"	2'-0"
A410	1'-2"	1'-6"



BAR MARK	DIM "C"
A512	6'-2"
A513	4'-11"
A514	5'-5"

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRTE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

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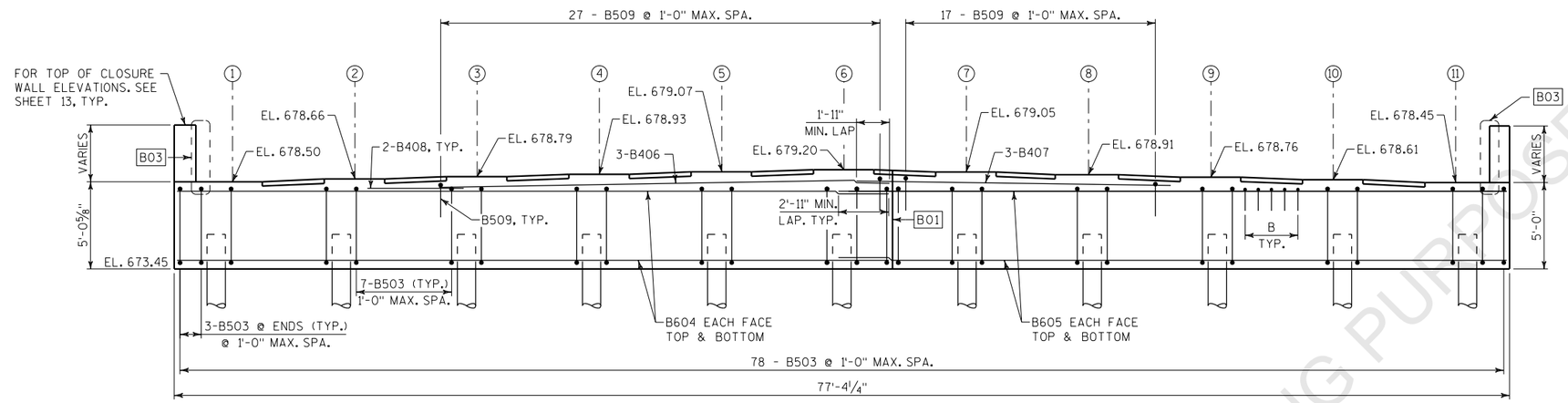
WEST ABUTMENT
BILL OF BARS

SHEET 10 OF 28

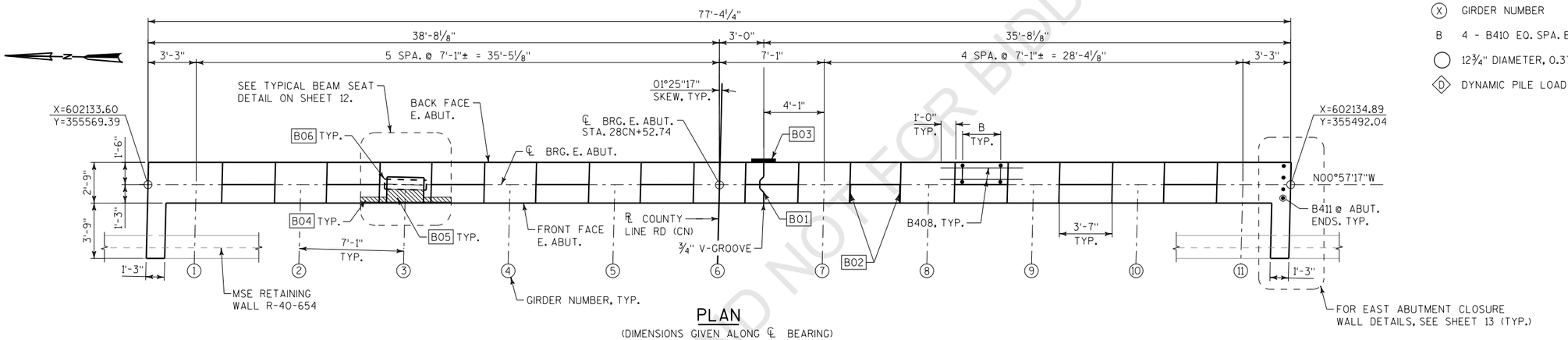
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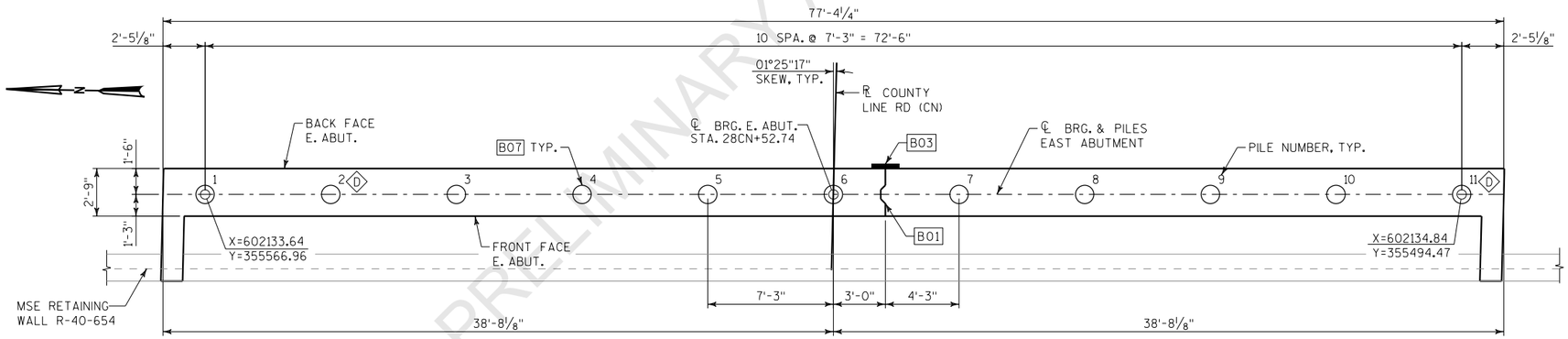
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ELEVATION
(LOOKING EAST)



PLAN
(DIMENSIONS GIVEN ALONG ℄ BEARING)



PILE PLAN
(DIMENSIONS GIVEN ALONG BEARING)

LEGEND

- B01 VERTICAL CONSTRUCTION JOINT KEYWAY FORMED BY A BEVELED 2" X 8". REINFORCEMENT EXTENDS THROUGH JOINT.
- B02 ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER, TYP.
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- B05 ½" PREFORMED JOINT FILLER UNDER GIRDER FLANGE IN FRONT OF BEARING PAD, TYP.
- B06 ½" THICK X 8" X 2'-10" ELASTOMERIC BEARING PAD, TYP.
- B07 SUPPORT ABUTMENT ON 12¾" X 0.375" CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE AS DETERMINED BY THE PDA/CAPWAP ACCEPTANCE METHOD. ESTIMATED PILE LENGTH = 85 FEET
- (X) GIRDER NUMBER
- B 4 - B410 EQ. SPA. BETWEEN GIRDER SEATS, TYP.
- ◯ 12¾" DIAMETER, 0.375" WALL CIP CONCRETE PILING
- ◇D DYNAMIC PILE LOAD TESTING

NOTES

ELEVATIONS ARE GIVEN AT TOP OF CONCRETE AT THE INTERSECTION OF THE ℄ GIRDER & ℄ BEARING.

FOR TYPICAL SECTION THRU ABUTMENT BODY & FALL PROTECTION, SEE SHEET 12.

FOR EAST ABUTMENT CLOSURE WALL DETAILS, SEE SHEET 13.

FOR EAST ABUTMENT BILL OF BARS & ALTERNATE CONSTRUCTION JOINT, SEE SHEET 14.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

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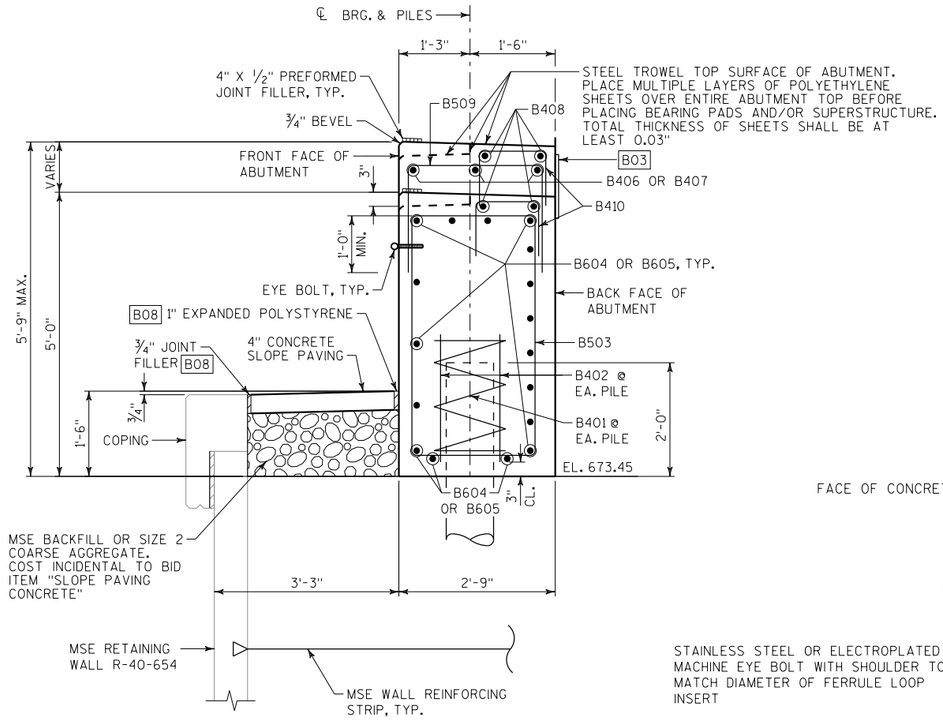
EAST ABUTMENT

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PRELIMINARY AND NOT FOR BIDDING PURPOSES

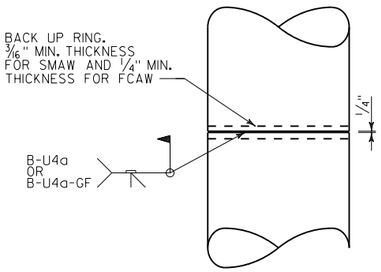
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PLOT DATE : 7/23/2021
PLOT BY : aaschenbrenner
PLOT NAME : $FILE$
PLOT SCALE : 1:8

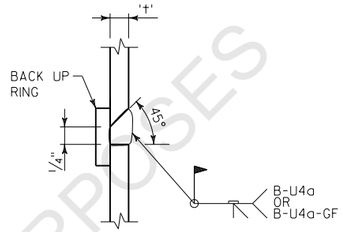


SECTION THRU ABUTMENT BODY

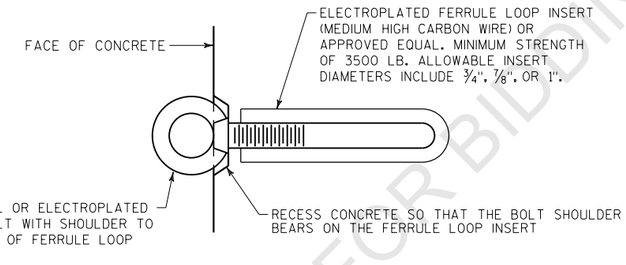
(LOOKING NORTH)



CAST-IN-PLACE 'PIPE PILE'

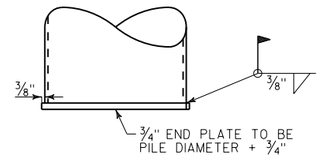


CIP PILE WELD DETAIL



EYE BOLT DETAIL

COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"



END PLATE DETAIL FOR CIP PILING

LEGEND

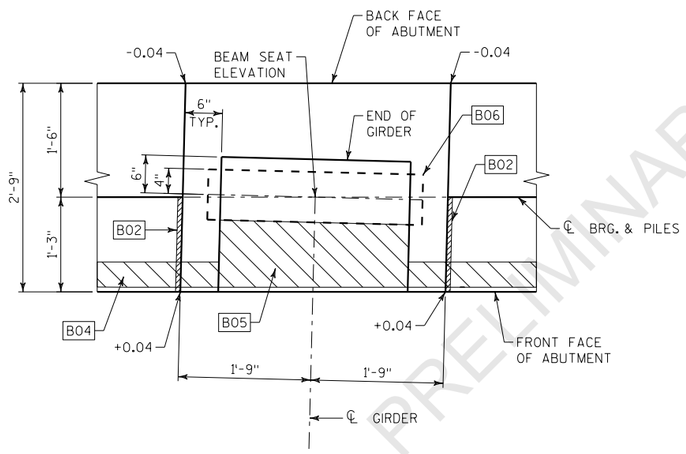
- B02 ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER, TYP.
- B03 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENTS.
- B04 4" X ½" PREFORMED JOINT FILLER, FULL LENGTH OF ABUTMENT, TYP.
- B05 ½" PREFORMED JOINT FILLER UNDER GIRDER FLANGE IN FRONT OF BEARING PAD, TYP.
- B06 ½" THICK X 8" X 2'-10" ELASTOMERIC BEARING PAD, TYP.
- B08 SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER AND EXPANDED POLYSTYRENE WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE)

NOTES

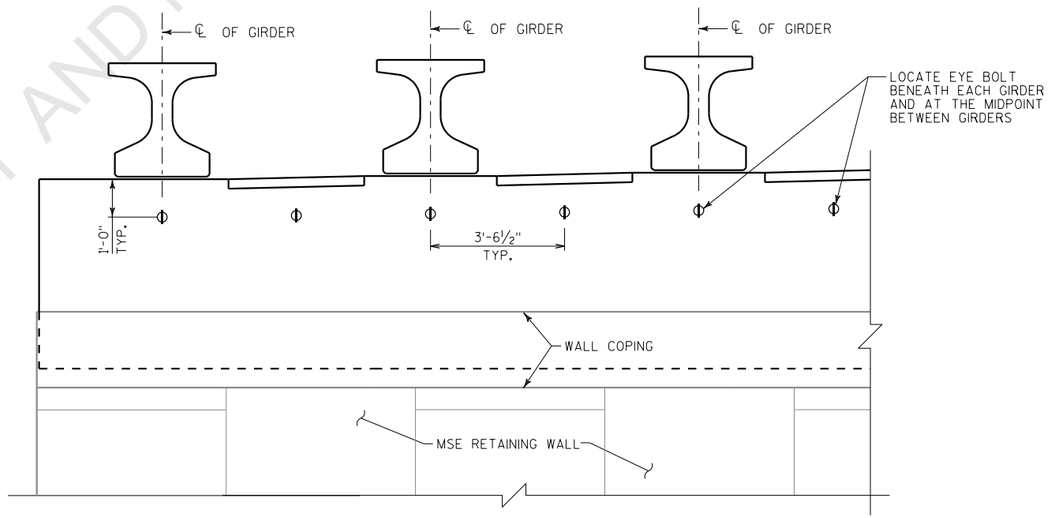
FOR EAST ABUTMENT PLAN & ELEVATION, SEE SHEET 11.

FOR EAST ABUTMENT CLOSURE WALL DETAILS, SEE SHEET 13.

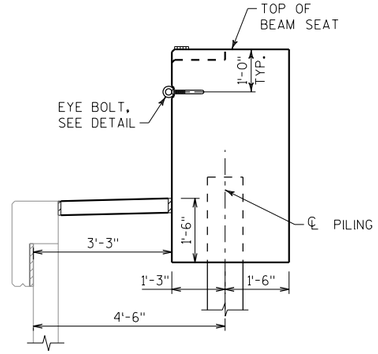
FOR EAST ABUTMENT BILL OF BARS & ALTERNATE CONSTRUCTION JOINT, SEE SHEET 14.



TYPICAL BEAM SEAT DETAIL



FALL PROTECTION ELEVATION



FALL PROTECTION ANCHOR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

DRAWN BY SK | PLANS CK'D. MHZ

EAST ABUTMENT DETAILS

SHEET 12 OF 28

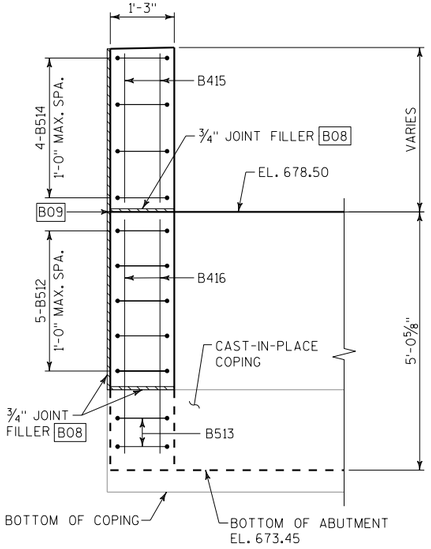
STATE PROJECT NUMBER

1229-04-74

PRELIMINARY AND NOT FOR BIDDING PURPOSES

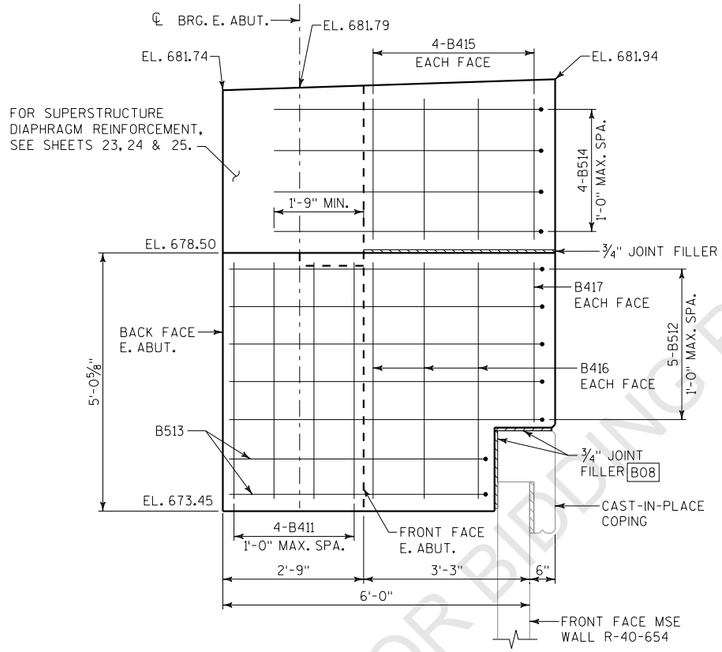
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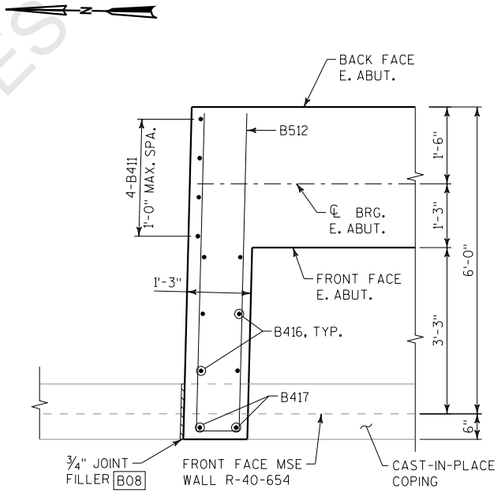
NORTH CLOSURE WALL FRONT ELEVATION

(LOOKING EAST)

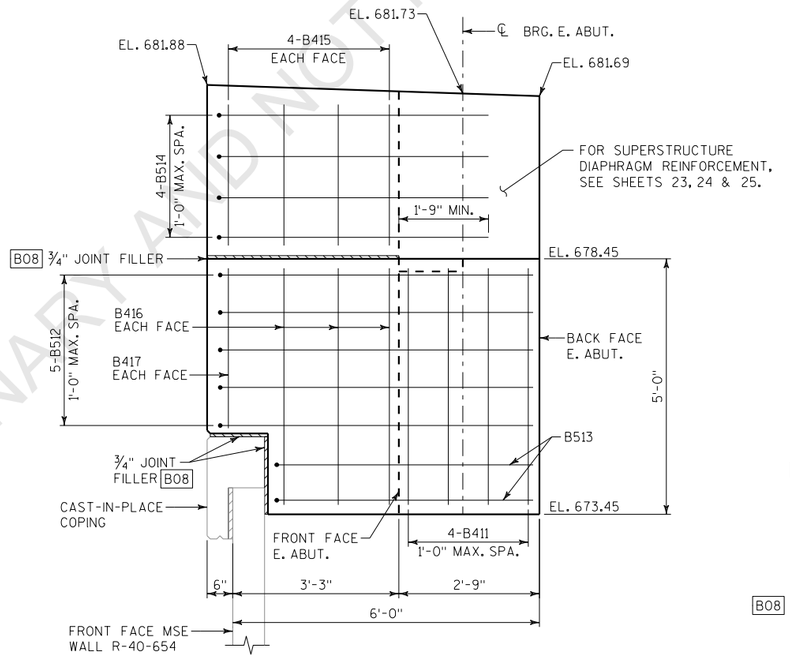


SIDE ELEVATION OF NORTH CLOSURE WALL

(LOOKING SOUTH)

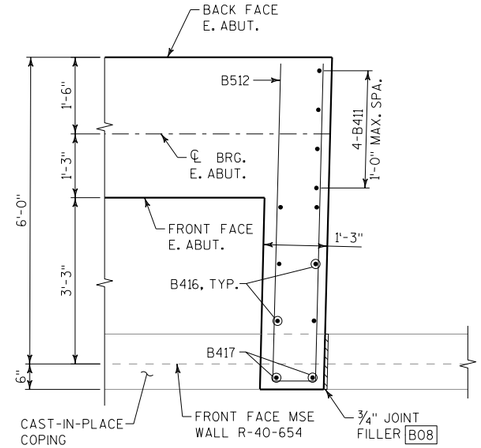


NORTH CLOSURE WALL PLAN

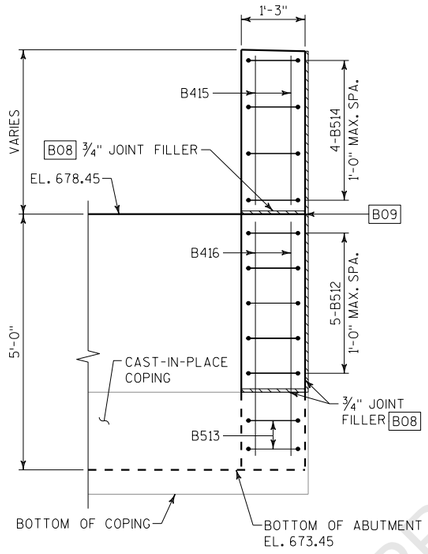


SIDE ELEVATION OF SOUTH CLOSURE WALL

(LOOKING NORTH)



SOUTH CLOSURE WALL PLAN



SOUTH CLOSURE WALL FRONT ELEVATION

(LOOKING EAST)

NOTES

FOR EAST ABUTMENT PLAN & ELEVATION, SEE SHEET 11.

FOR EAST ABUTMENT BILL OF BARS, SEE SHEET 14.

LEGEND

B08 SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

B09 EXTEND POLYETHYLENE SHEETING OVER ENTIRE LENGTH OF CLOSURE WALL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

DRAWN BY SK | PLANS CK'D. MHZ

EAST ABUTMENT CLOSURE WALL DETAILS

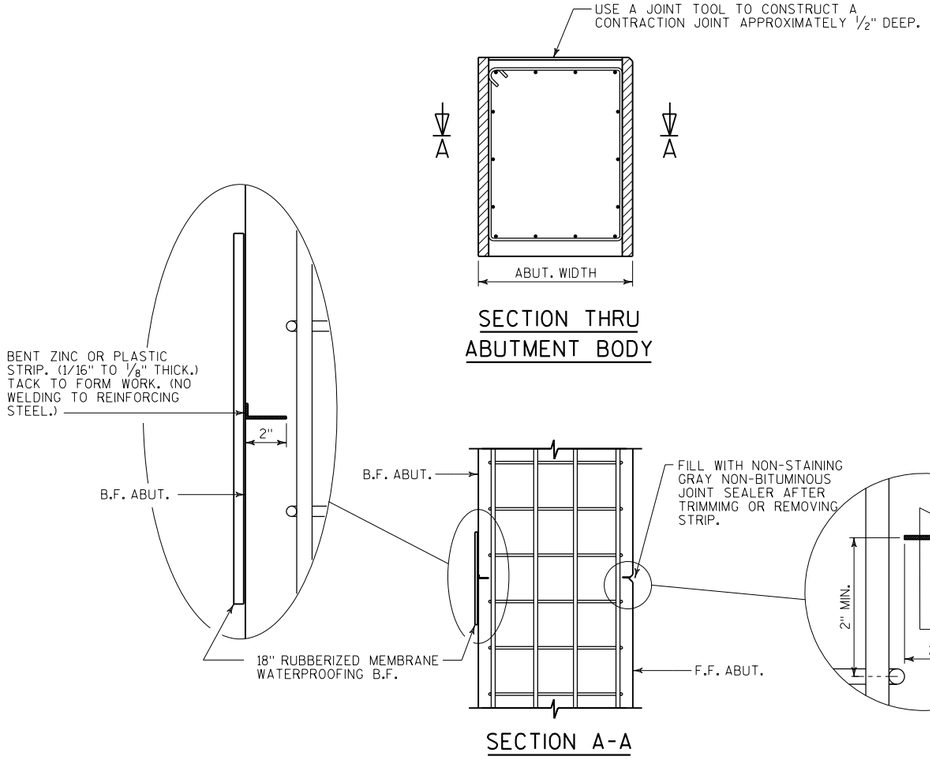
SHEET 13 OF 28

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

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PLOT DATE : 7/23/2021
PLOT BY : aaschenbrenner
PLOT NAME : $FILE$
PLOT SCALE : 1:8

STATE PROJECT NUMBER
1229-04-74



SECTION THRU ABUTMENT BODY

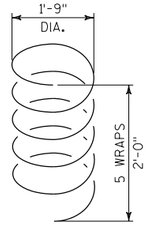
SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

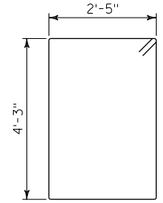
BILL OF BARS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
B401	-	11	28'-0"	X	-	ABUTMENT BODY AT PILE - SPIRAL
B402	-	22	2'-3"	-	-	ABUTMENT BODY AT PILE - VERTICAL
B503	-	78	14'-0"	X	-	ABUTMENT BODY - VERT.
B604	-	17	41'-4"	-	-	ABUTMENT BODY - LONG.
B605	-	17	38'-8"	-	-	ABUTMENT BODY - LONG.
B406	-	3	26'-2"	-	-	ABUTMENT BODY TOP - LONG.
B407	-	3	18'-3"	-	-	ABUTMENT BODY TOP - LONG.
B408	-	20	5'-8"	-	-	ABUTMENT BODY TOP - LONG.
B509	-	44	6'-2"	X	-	ABUTMENT BODY TOP - VERT.
B410	-	40	4'-0"	X	-	ABUTMENT BODY TOP - VERT.
B411	-	8	4'-7"	-	-	ABUTMENT ENDS - VERT.
B512	X	10	12'-11"	X	-	CLOSURE WALL - HORIZ.
B513	X	4	10'-5"	X	-	CLOSURE WALL - HORIZ.
B514	X	8	11'-5"	X	-	CLOSURE WALL - HORIZ.
B415	X	16	2'-9"	-	-	CLOSURE WALL - VERT.
B416	X	12	4'-7"	-	-	CLOSURE WALL - VERT.
B417	X	4	3'-2"	-	-	CLOSURE WALL - VERT.

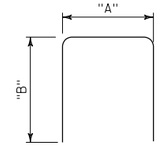
NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE



B401

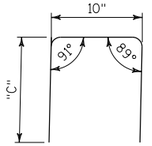


B503



BAR MARK	DIM "A"	DIM "B"
B509	2'-5"	2'-0"
B410	1'-2"	1'-6"

BENDING DIAGRAMS



BAR MARK	DIM "C"
B512	6'-2"
B513	4'-11"
B514	5'-5"

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRTE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

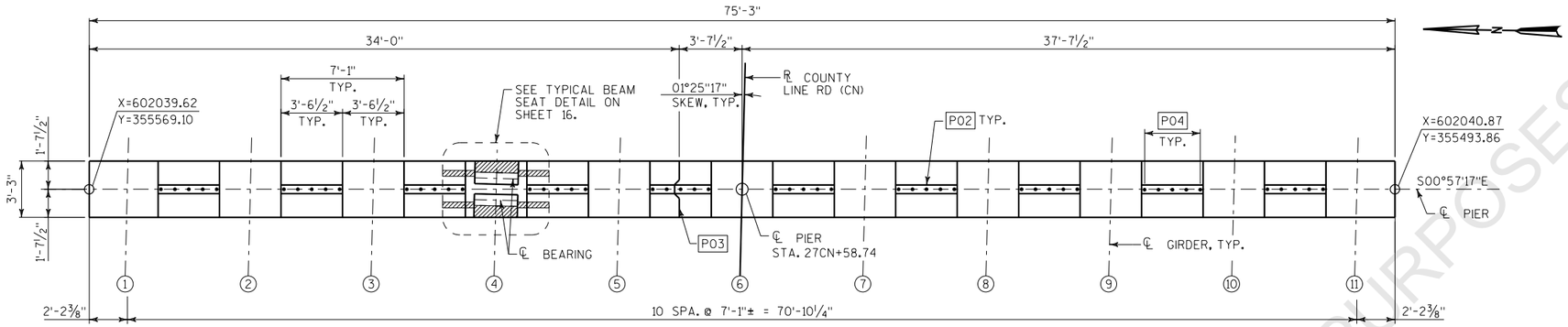
DRAWN BY SK | PLANS CK'D. MHZ

EAST ABUTMENT BILL OF BARS

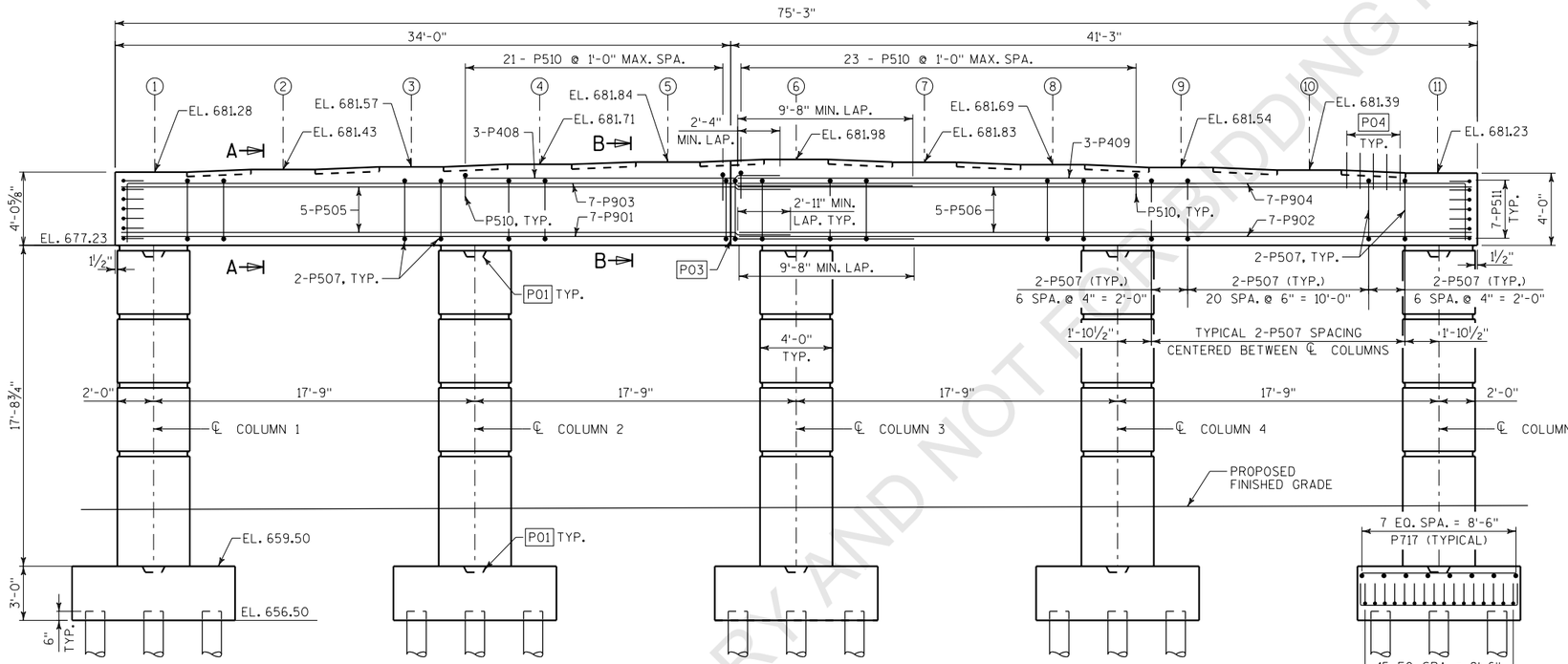
SHEET 14 OF 28

8

8

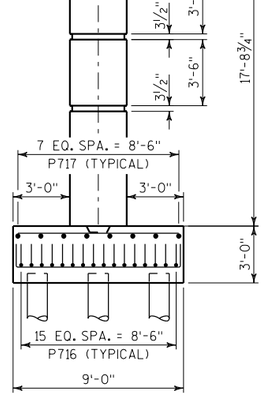


PIER CAP PLAN



ELEVATION

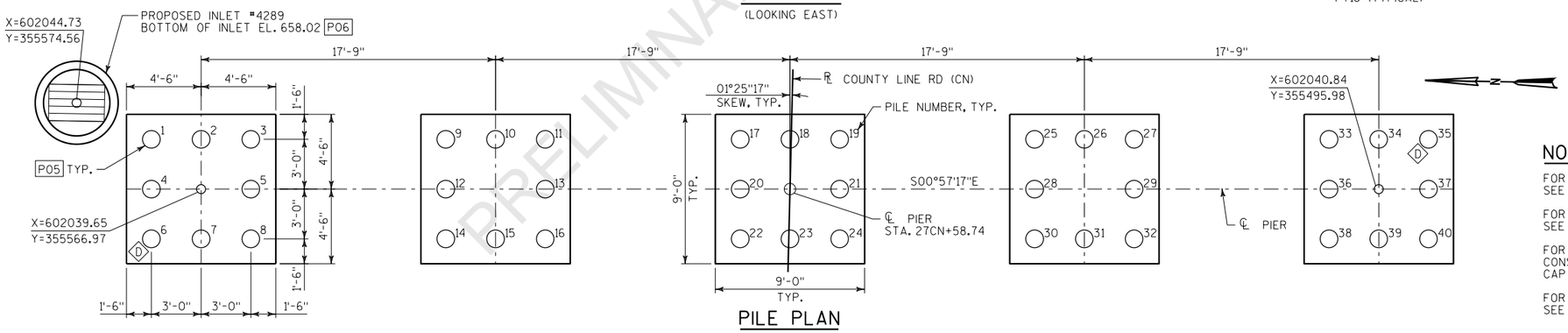
(LOOKING EAST)



NOTE:
COLUMN REINF. NOT SHOWN FOR CLARITY

END VIEW

(LOOKING NORTH)



PILE PLAN

NOTES

FOR SECTIONS A-A & B-B, SEE SHEET 16.

FOR COLUMN REINFORCEMENT, SEE SHEET 16.

FOR ALTERNATE CONSTRUCTION JOINT IN PIER CAP DETAILS, SEE SHEET 17.

FOR PIER BILL OF BARS, SEE SHEET 17.

LEGEND

P01 1'-3" X 2'-0" X 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.

P02 2" X 6" BEVELED KEYWAY BETWEEN GIRDERS.

P03 BEVELED 2" X 8" KEYED VERTICAL CONSTRUCTION JOINT.

P04 5-P512 BARS AT 1'-0" CENTERS, BETWEEN BEAM SEATS, MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBEDED 1'-0" INTO CONCRETE.)

P05 SUPPORT PIER ON 12¾" X 0.375" CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE AS DETERMINED BY THE PDA/CAPWAP ACCEPTANCE METHOD.
ESTIMATED PILE LENGTH = 60 FEET

P06 PROPOSED INLET #4289 TO BE INSTALLED AFTER THE CONSTRUCTION OF THE PIER FOOTING

(X) GIRDER NUMBER

◯ 12¾" DIAMETER, 0.375 WALL CIP CONCRETE PILING

◇D DYNAMIC PILE LOAD TESTING

STATE PROJECT NUMBER

1229-04-74

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

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PIER

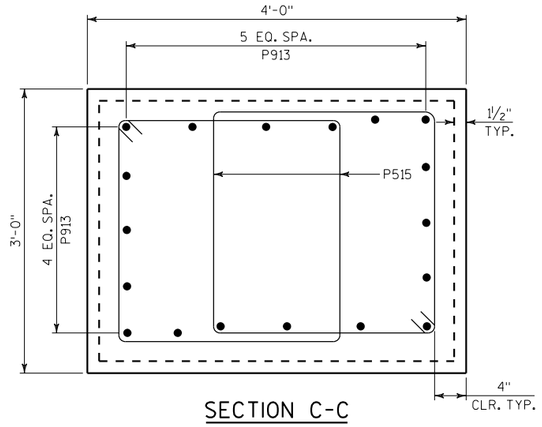
SHEET 15 OF 28

PRELIMINARY AND NOT FOR BIDDING PURPOSES

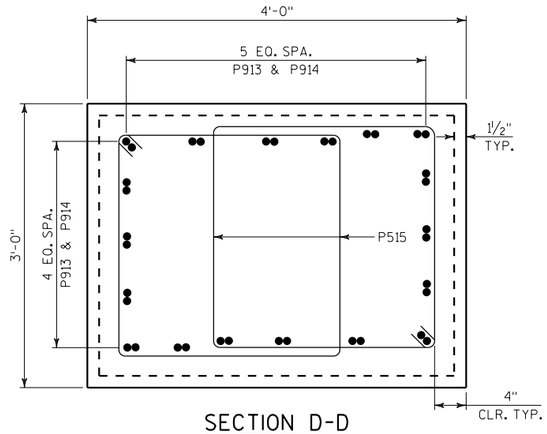
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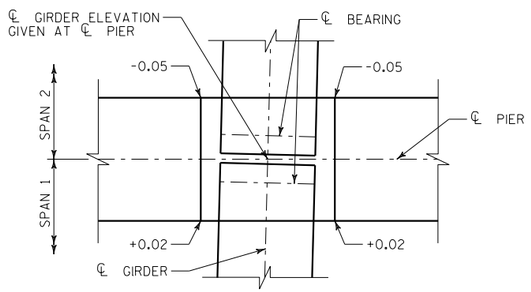
STATE PROJECT NUMBER
1229-04-74



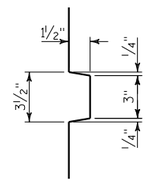
SECTION C-C



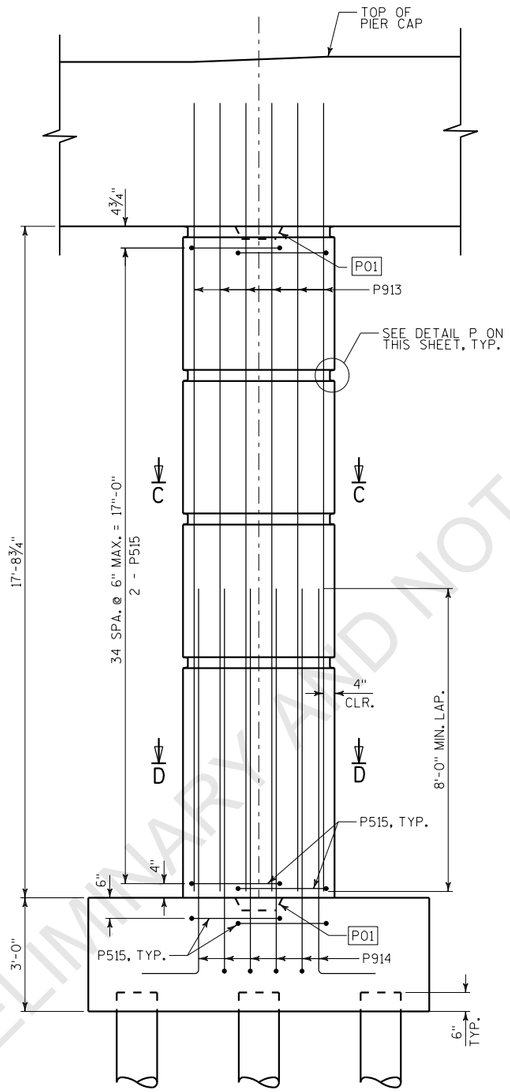
SECTION D-D



SLOPING BEAM SEAT DETAILS

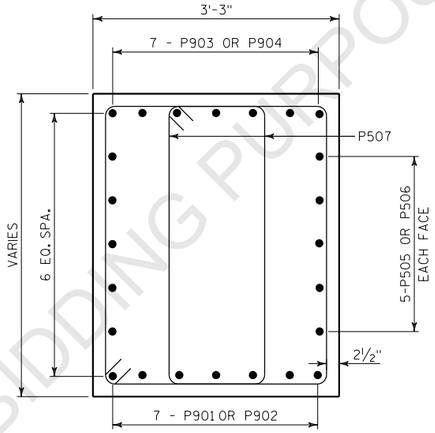


DETAIL P

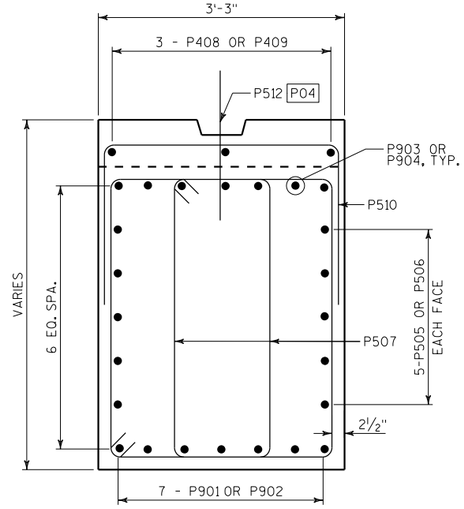


COLUMN SECTION

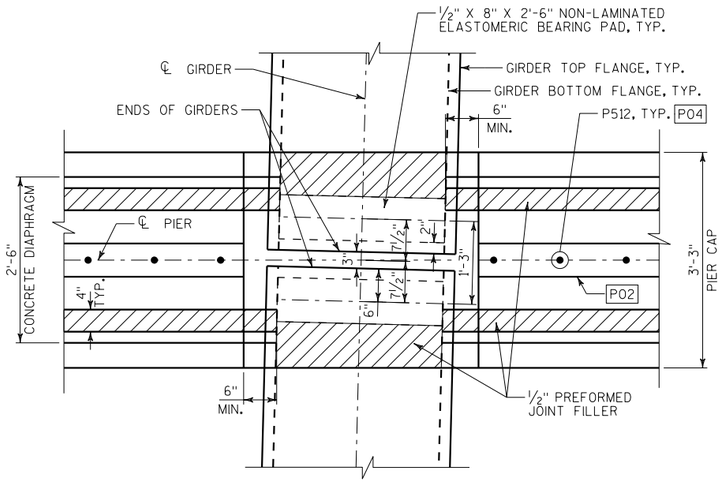
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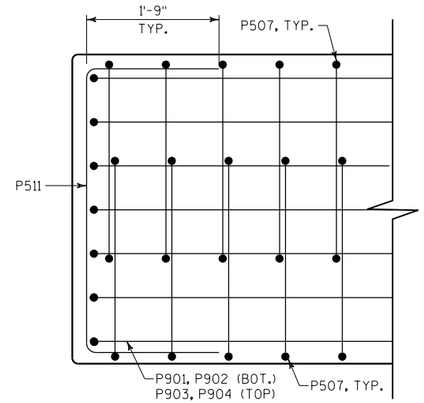
SECTION A-A



SECTION B-B



TYPICAL BEAM SEAT DETAIL



PLAN VIEW SHOWING END OF PIER CAP REINF.

LEGEND

P01 1'-3" X 2'-0" X 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.

P02 2" X 6" BEVELED KEYWAY BETWEEN GIRDERS.

P04 5-P512 BARS AT 1'-0" CENTERS, BETWEEN BEAM SEATS, MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBEDED 1'-0" INTO CONCRETE.)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

DRAWN BY	SK	PLANS CK'D.	MHZ

PIER DETAILS (1 OF 2)

SHEET 16 OF 28

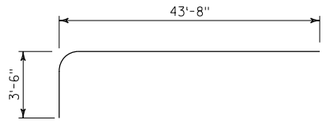
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FILE NAME : c:\caddlib\pw\hntb_andrew.aschenbrenner\greatlakes\d0231182\B918_080402_pi.dgn PLOT DATE : 7/23/2021 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:8

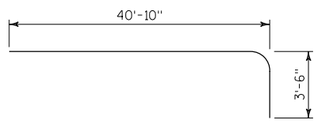
STATE PROJECT NUMBER
1229-04-74

BILL OF BARS

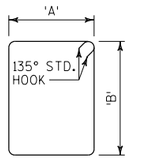
BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
P901	X	7	43'-8"	-	-	PIER CAP BOTTOM - LONG.
P902	X	7	40'-10"	-	-	PIER CAP BOTTOM - LONG.
P903	X	7	46'-11"	X	-	PIER CAP TOP - LONG.
P904	X	7	44'-1"	X	-	PIER CAP TOP - LONG.
P505	X	10	36'-11"	-	-	PIER CAP SIDES - LONG.
P506	X	10	40'-10"	-	-	PIER CAP SIDES - LONG.
P507	X	264	11'-10"	X	-	PIER CAP - STIRRUP
P408	X	3	22'-1"	-	-	PIER CAP SEAT - LONG.
P409	X	3	22'-5"	-	-	PIER CAP SEAT - LONG.
P510	X	44	6'-7"	X	-	PIER CAP SEAT - VERT.
P511	X	14	5'-11"	X	-	PIER CAP ENDS - HORIZ.
P512	X	50	2'-0"	-	-	PIER CAP BETWEEN BEAM SEATS - VERTICAL
P913	X	90	20'-9"	-	-	PIER COLUMN - VERT.
P914	X	90	11'-10"	X	-	PIER COLUMN - VERT.
P515	X	360	10'-0"	X	-	PIER COLUMN - STIRRUP
P716	-	160	10'-6"	X	-	PIER FOOTING - BOTTOM
P717	-	80	8'-6"	-	-	PIER FOOTING - TOP



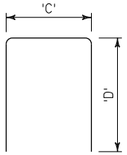
P903



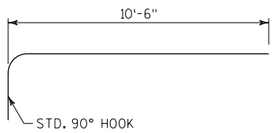
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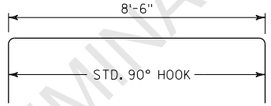
BAR MARK	DIM. 'A'	DIM. 'B'
P507	2'-0"	3'-7"
P515	2'-4"	2'-4"



BAR MARK	DIM. 'C'	DIM. 'D'
P510	2'-10"	2'-0"
P511	2'-8"	1'-9"

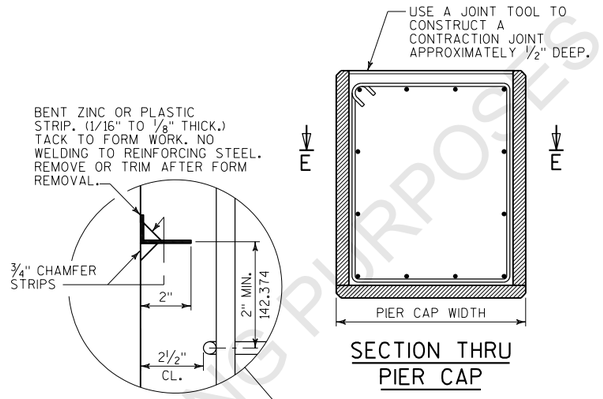


P914



P716

BENDING DIAGRAMS



SECTION THRU PIER CAP

SECTION E-E

ALTERNATE CONSTRUCTION JOINT AT PIER CAP

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED.

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STRUCTURE B-40-918

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PIER DETAILS (2 OF 2)

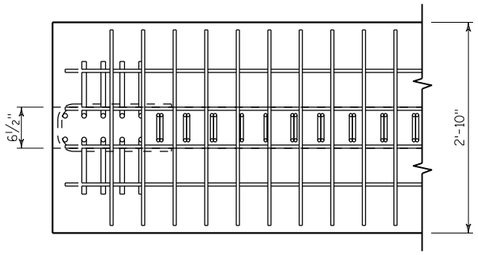
SHEET 17 OF 28

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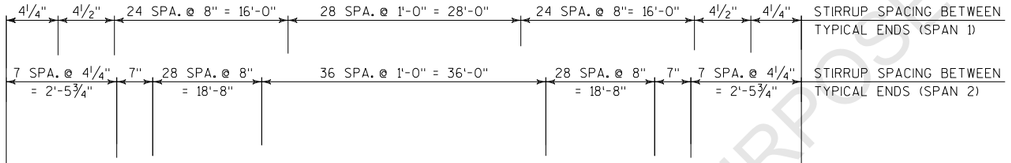
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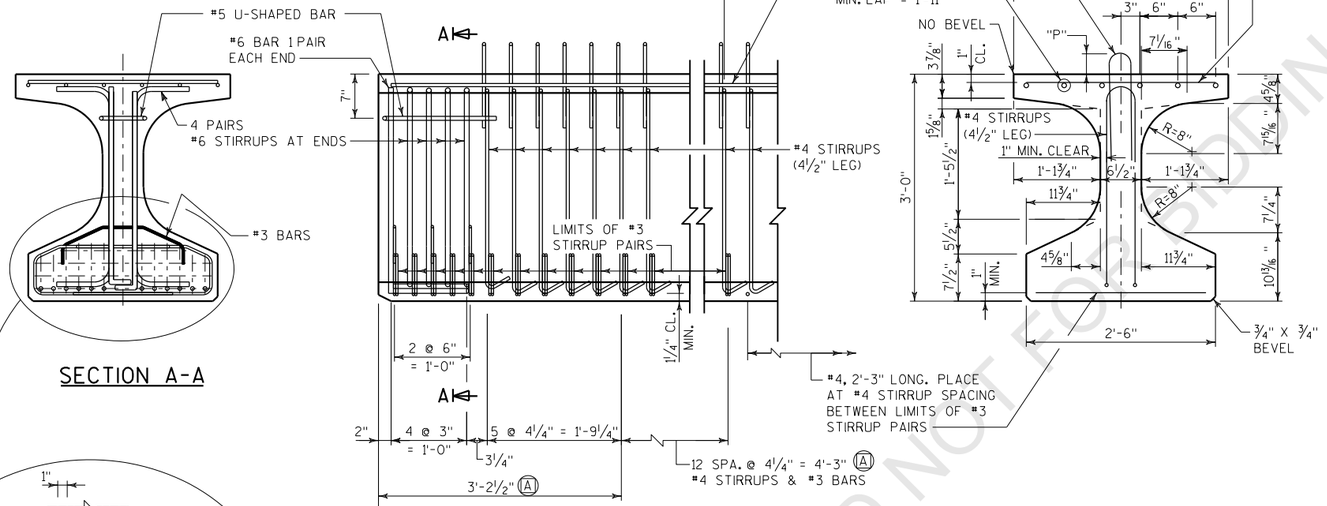
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STATE PROJECT NUMBER
1229-04-74

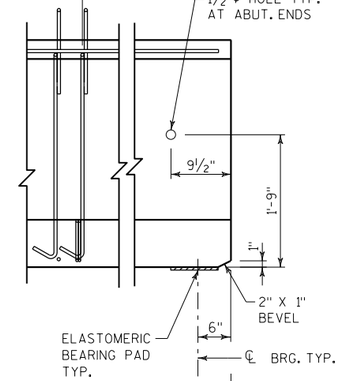


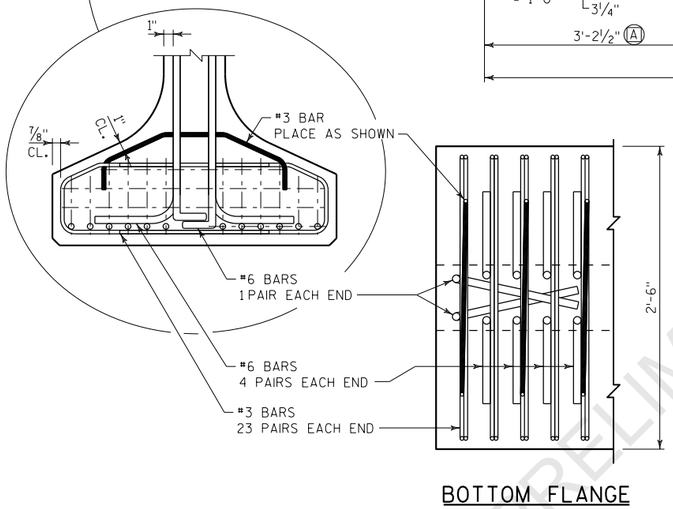
TOP FLANGE





SECTION A-A



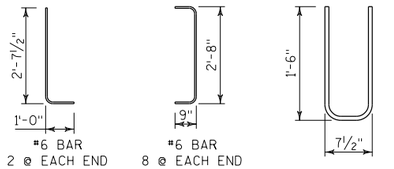


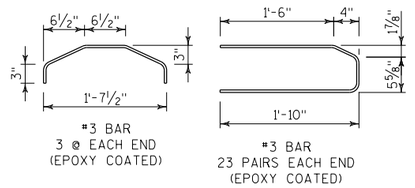
BOTTOM FLANGE

SIDE VIEW & TYP. SECTION IN SPAN

(A) DETAIL TYP. AT EACH END

"P" - SEE GIRDER DATA ON SHEET 19





GIRDER NOTES

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.

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

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 THE END OF GIRDER AND ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

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.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

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36W" PRESTRESSED GIRDER

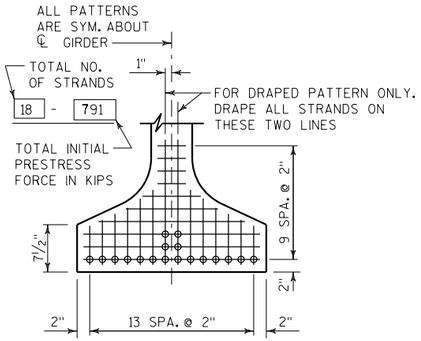
SHEET 18 OF 28

8

FILE NAME : c:\caddlib\pw\hntb_andrew.aschenbrenner\greatlakes\d0231182\B918_080501_gr.dgn PLOT DATE : 7/23/2021 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:2

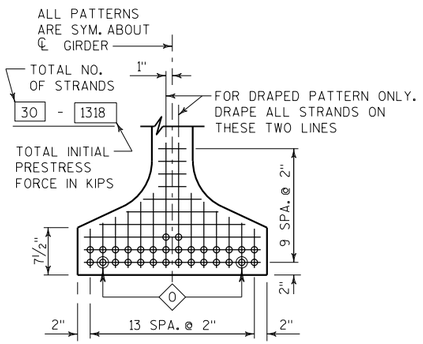
STATE PROJECT NUMBER

1229-04-74



STRAND PATTERN - SPAN 1

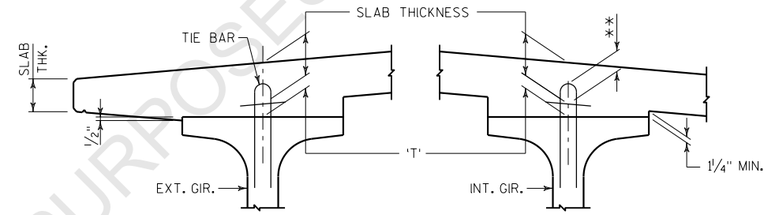
ALL GIRDERS
0.6" DIA. STRANDS



STRAND PATTERN - SPAN 2

0.6" DIA. STRANDS
DEBONDING BOTH ENDS AT EXTERIOR GIRDERS ONLY

◇0 DEBOND LENGTH = 2'-0" (2 STRANDS)



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'

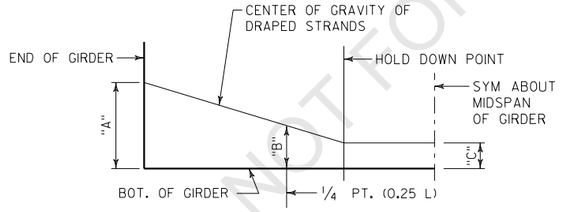
NOTE: AN AVERAGE HAUNCH ('T') OF 3¼" WAS USED IN THE QUANTITY "HPC MASONRY STRUCTURES".

SPAN	PRESTRESS CAMBER* (IN.)	DEAD LOAD DEFLECTION (IN.)	RESIDUAL CAMBER (IN.)
1 (EXT)	1⅜	⅞	½
1 (INT)	1⅜	1	⅜
2 (EXT)	3½	2⅛	1⅜
2 (INT)	3½	2¼	1¼

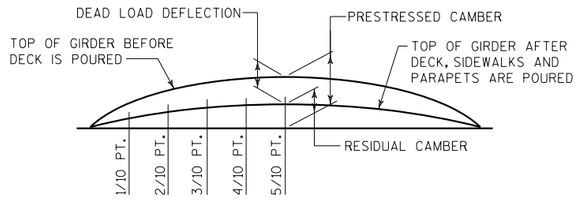
*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM

GIRDER DATA

SPAN	GIRDER	LOCATION	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 ⅓ OF GIRDER	"P" MID ⅓ OF GIRDER	"P" END ⅓ OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	NO. OF DEBONDED STRANDS
1	1 & 11	EXTERIOR	76'-4½"	¼	½	¾	⅞	⅞	⅞	¾	½	¼	8000	8"	8"	8"	0.6	18	6800	32	11	14	4	-
1	2 - 10	INTERIOR	76'-4½"	¼	⅝	¾	1	1	⅞	¾	⅝	¼	8000	8"	8"	8"	0.6	18	6800	32	11	14	4	-
2	1 & 11	EXTERIOR	94'-4½"	⅝	1¼	1⅝	2	2⅛	2	1¾	1¼	⅝	8000	7"	7"	7"	0.6	30	6800	32	11	14	4	2
2	2 - 10	INTERIOR	94'-4½"	⅝	1⅜	1⅞	2⅛	2¼	2⅛	1⅞	1⅜	¾	8000	7"	7"	7"	0.6	30	6800	32	11	14	4	-

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

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NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

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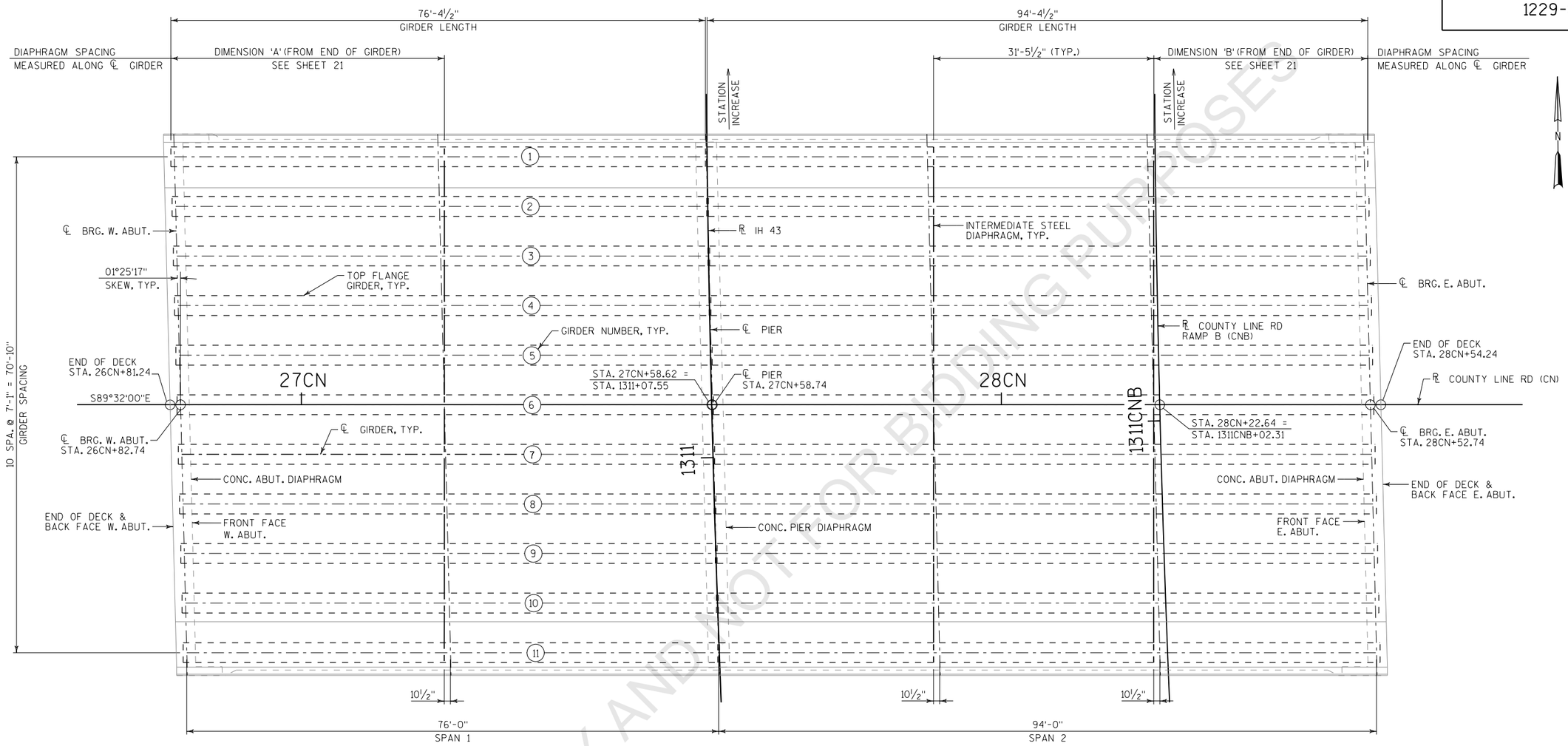
36W" PRESTRESSED GIRDER DETAILS

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FRAMING PLAN

TOP OF DECK ELEVATIONS

LOCATION	℄ BRG. W. ABUT.	SPAN 1									℄ PIER	SPAN 2									℄ BRG. E. ABUT.
		0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L		0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	
N. EDGE OF DECK	686.19	686.17	686.14	686.09	686.02	685.94	685.83	685.71	685.57	685.41	685.23	684.99	684.71	684.43	684.15	683.87	683.59	683.30	683.02	682.74	682.46
℄ GIRDER 1	686.24	686.22	686.19	686.14	686.07	685.99	685.88	685.76	685.62	685.46	685.28	685.03	684.76	684.48	684.20	683.92	683.63	683.35	683.07	682.79	682.51
N. SIDEWALK TOE	686.32	686.31	686.28	686.23	686.16	686.07	685.97	685.84	685.70	685.54	685.37	685.12	684.85	684.56	684.28	684.00	683.72	683.44	683.15	682.87	682.59
℄ GIRDER 2	686.38	686.36	686.33	686.28	686.21	686.13	686.02	685.90	685.75	685.60	685.42	685.17	684.90	684.62	684.33	684.05	683.77	683.49	683.21	682.92	682.64
℄ GIRDER 3	686.52	686.50	686.47	686.42	686.35	686.26	686.16	686.04	685.89	685.73	685.55	685.31	685.03	684.75	684.47	684.19	683.91	683.62	683.34	683.06	682.78
℄ GIRDER 4	686.66	686.65	686.61	686.56	686.49	686.40	686.30	686.17	686.03	685.87	685.69	685.44	685.17	684.89	684.61	684.33	684.04	683.76	683.48	683.20	682.92
℄ GIRDER 5	686.80	686.79	686.75	686.70	686.63	686.54	686.44	686.31	686.17	686.01	685.83	685.58	685.31	685.03	684.74	684.46	684.18	683.90	683.62	683.33	683.05
℄ GIRDER 6 (CROWN & PGL)	686.94	686.93	686.89	686.84	686.77	686.68	686.58	686.45	686.31	686.15	685.97	685.72	685.44	685.16	684.88	684.60	684.32	684.03	683.75	683.47	683.19
℄ GIRDER 7	686.80	686.79	686.75	686.70	686.63	686.54	686.43	686.31	686.16	686.00	685.82	685.57	685.30	685.01	684.73	684.45	684.17	683.89	683.60	683.32	683.04
℄ GIRDER 8	686.66	686.64	686.61	686.56	686.48	686.40	686.29	686.16	686.02	685.85	685.67	685.43	685.15	684.87	684.59	684.30	684.02	683.74	683.46	683.18	682.89
℄ GIRDER 9	686.52	686.50	686.47	686.41	686.34	686.25	686.14	686.02	685.87	685.71	685.53	685.28	685.00	684.72	684.44	684.16	683.88	683.59	683.31	683.03	682.75
℄ GIRDER 10	686.38	686.36	686.32	686.27	686.20	686.11	686.00	685.87	685.73	685.56	685.38	685.13	684.86	684.57	684.29	684.01	683.73	683.45	683.16	682.88	682.60
S. SIDEWALK TOE	686.32	686.31	686.27	686.22	686.14	686.05	685.94	685.82	685.67	685.51	685.33	685.08	684.80	684.52	684.24	683.95	683.67	683.39	683.11	682.83	682.54
℄ GIRDER 11	686.23	686.22	686.18	686.13	686.05	685.96	685.85	685.73	685.58	685.42	685.24	684.99	684.71	684.43	684.15	683.86	683.58	683.30	683.02	682.74	682.45
S. EDGE OF DECK	686.18	686.17	686.13	686.08	686.00	685.91	685.80	685.68	685.53	685.37	685.18	684.93	684.66	684.37	684.09	683.81	683.53	683.25	682.96	682.68	682.40

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NOTE

FOR DIMENSION 'A', DIMENSION 'B' & DIAPHRAGM INSERT/CONNECTION DETAILS, SEE SHEET 21.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

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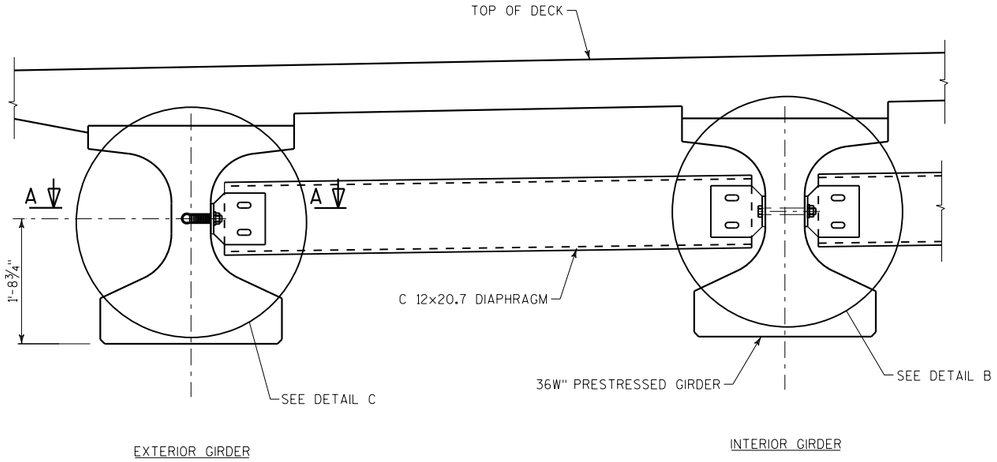
SUPERSTRUCTURE FRAMING PLAN

SHEET 20 OF 28

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FILE NAME : c:\caddlib\pw\hntb_andrew.aschenbrenner\greatlakes\d0231182\B918_080510_ss.dgn PLOT DATE : 7/23/2021 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:16

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EXTERIOR GIRDER

INTERIOR GIRDER

DIAPHRAGM SPACING

GIRDER NUMBER	SPAN 1 DIM. 'A'	SPAN 2 DIM. 'B'
1	39'-0¾"	30'-7"
2	38'-10⅝"	30'-9⅛"
3	38'-8⅝"	30'-11⅛"
4	38'-6½"	31'-1¼"
5	38'-4⅜"	31'-3⅜"
6	38'-2¼"	31'-5½"
7	38'-0⅛"	31'-7⅝"
8	37'-10"	31'-9¾"
9	37'-7⅞"	31'-11⅞"
10	37'-5⅞"	32'-1⅞"
11	37'-3¾"	32'-4"

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-40-918, EACH.

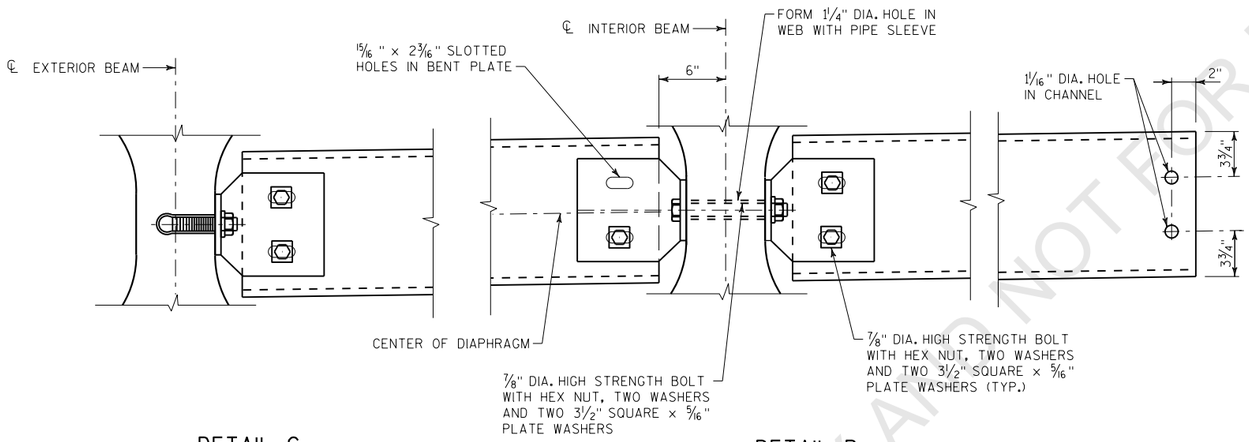
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

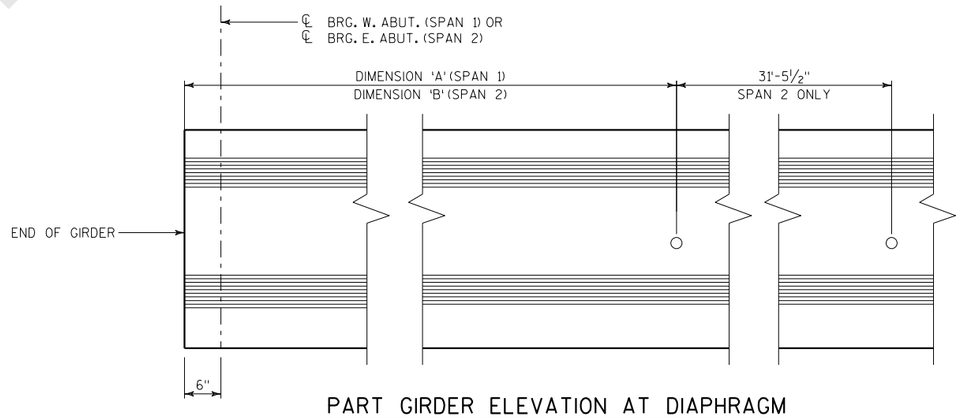
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

PART TRANSVERSE SECTION AT DIAPHRAGM

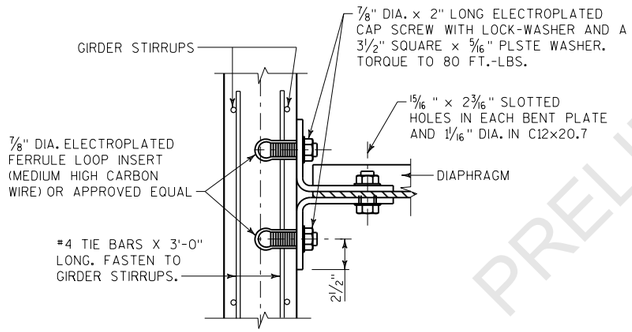




PART GIRDER ELEVATION AT DIAPHRAGM

(LOOKING NORTH - SPAN 1)
(LOOKING SOUTH - SPAN 2)

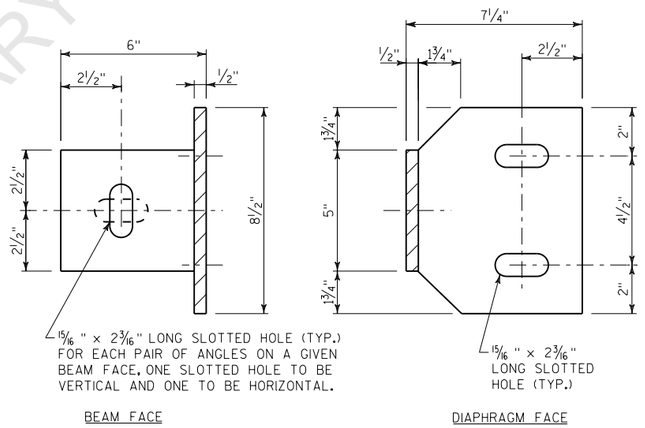
DETAIL C



SECTION A-A

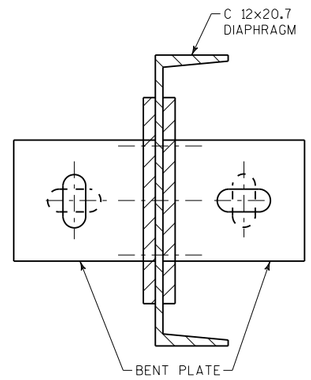
(FOR EXTERIOR ATTACHMENT)

DETAIL B



BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

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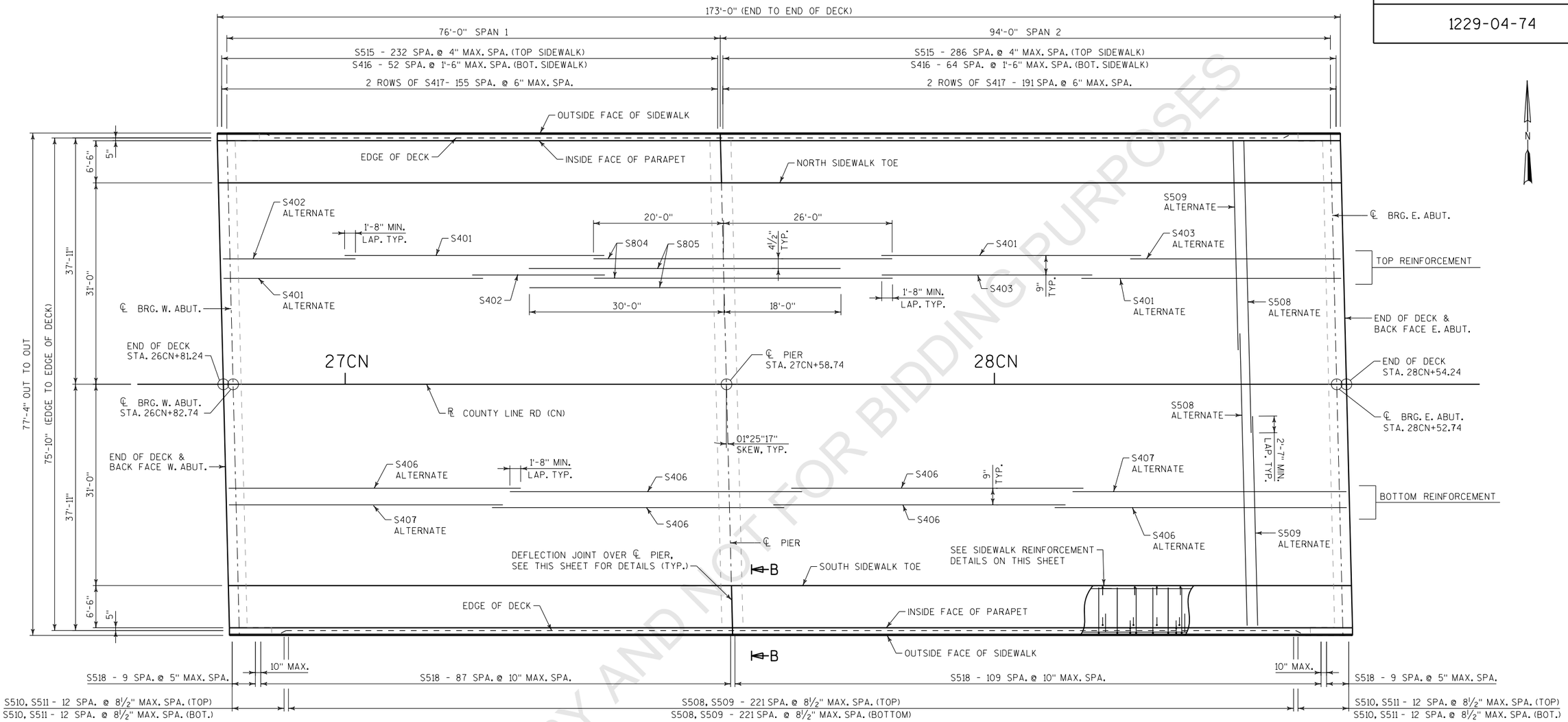
STEEL DIAPHRAGM

SHEET 21 OF 28

8

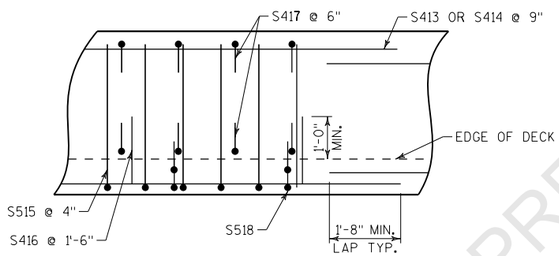
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STATE PROJECT NUMBER
1229-04-74

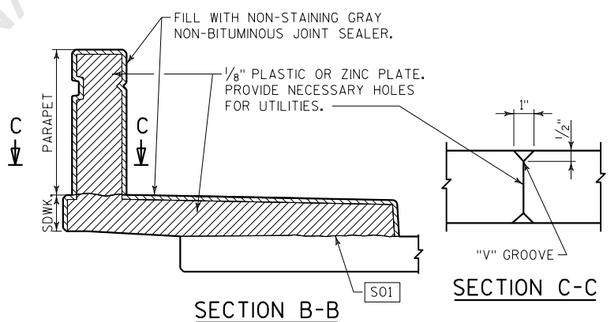


DECK REINFORCEMENT PLAN

(PARAPET REINFORCEMENT NOT SHOWN FOR CLARITY)



SIDEWALK REINFORCEMENT DETAIL



SECTION B-B

(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK.)

SECTION C-C

NOTES

WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF ⅛" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION B-B BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.

FOR REINFORCEMENT CROSS SECTION, SEE SHEET 23.

FOR SUPERSTRUCTURE DIAPHRAGM REINFORCEMENT DETAILS, SEE SHEET 24.

FOR SUPERSTRUCTURE BILL OF BARS, SEE SHEET 25.

FOR PARAPET REINFORCEMENT, SEE SHEET 26.

LEGEND

S01 CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

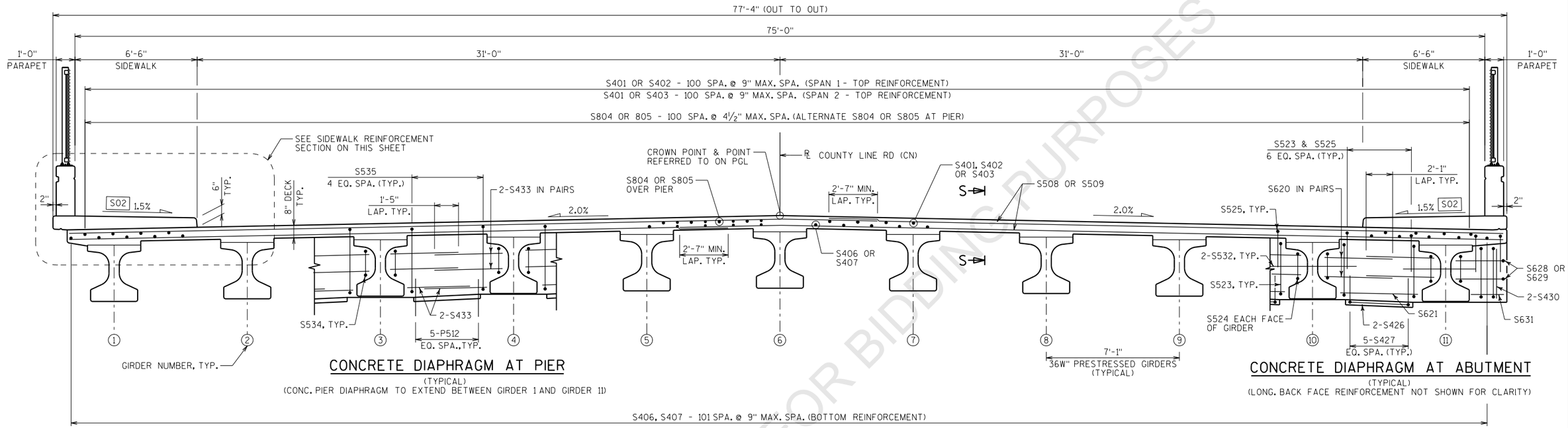
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SUPERSTRUCTURE REINFORCEMENT

SHEET 22 OF 28

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74



CONCRETE DIAPHRAGM AT PIER

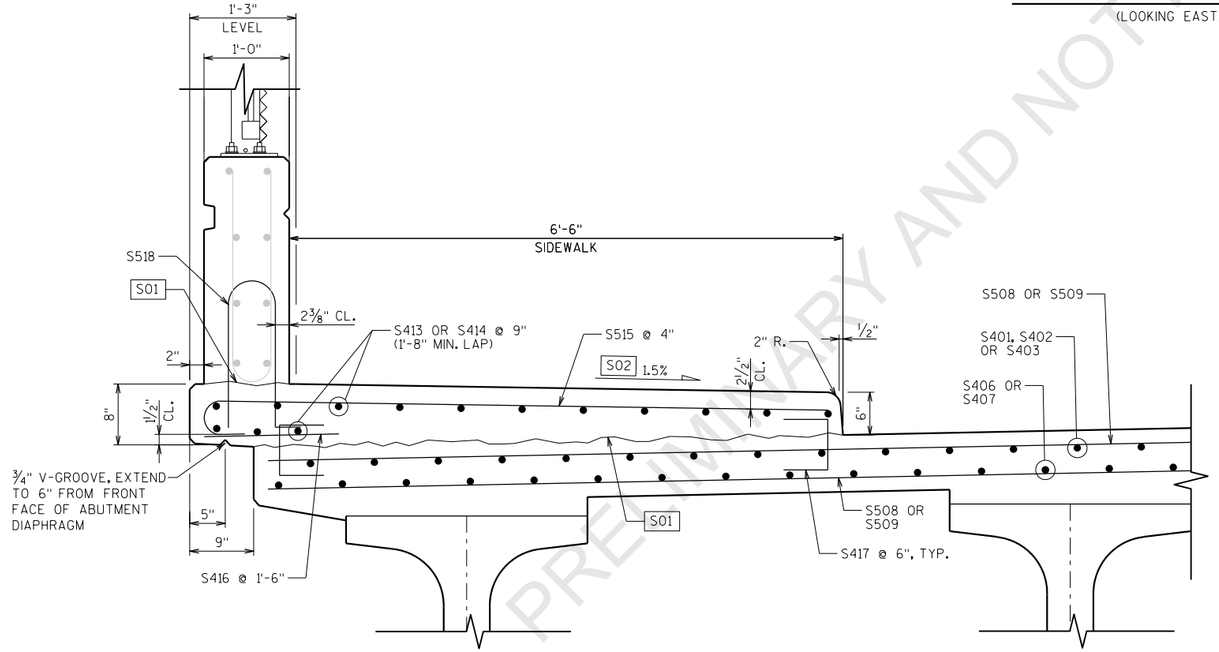
(TYPICAL)
(CONC. PIER DIAPHRAGM TO EXTEND BETWEEN GIRDER 1 AND GIRDER 11)

CONCRETE DIAPHRAGM AT ABUTMENT

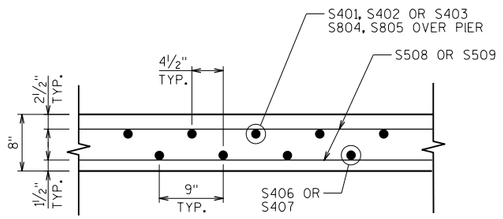
(TYPICAL)
(LONG. BACK FACE REINFORCEMENT NOT SHOWN FOR CLARITY)

CROSS SECTION THRU DECK

(LOOKING EAST)



SIDEWALK REINFORCEMENT SECTION



SECTION S-S

LEGEND

S01 CONSTRUCTION JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

S02 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

NOTES

FOR DECK REINFORCEMENT PLAN, SEE SHEET 22.

FOR SUPERSTRUCTURE DIAPHRAGM REINFORCEMENT DETAILS, SEE SHEET 24.

FOR SUPERSTRUCTURE BILL OF BARS, SEE SHEET 25.

FOR PARAPET REINFORCEMENT, SEE SHEET 26.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

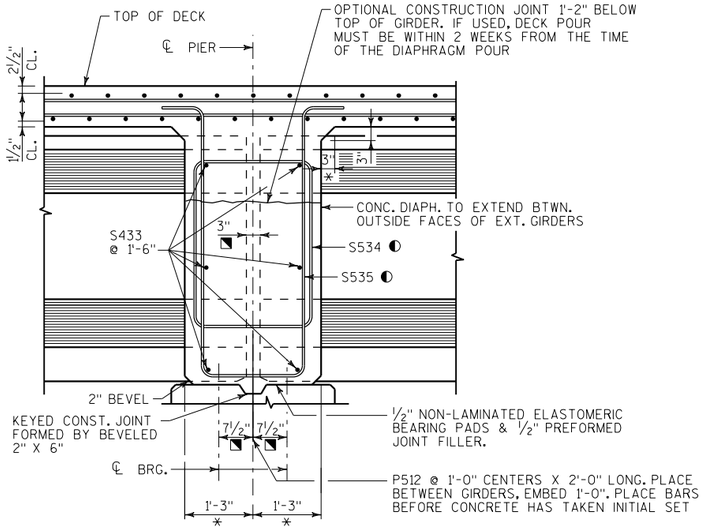
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SUPERSTRUCTURE CROSS SECTIONS

SHEET 23 OF 28

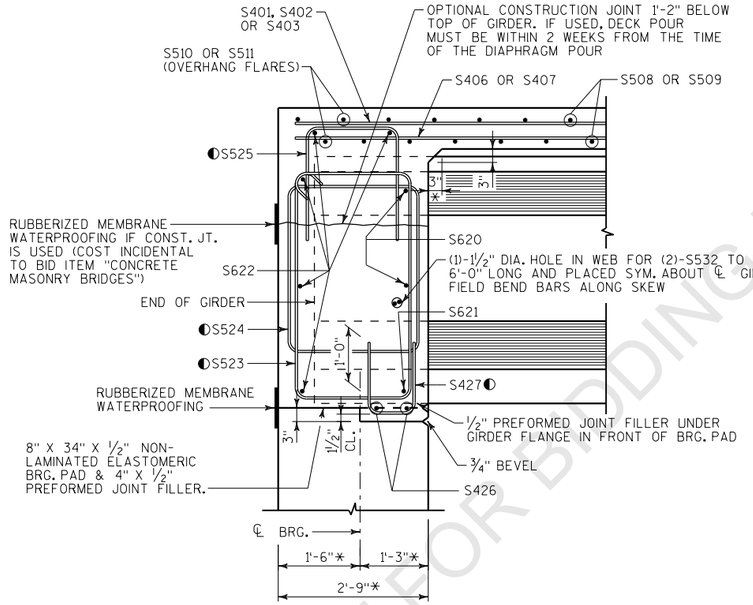
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74



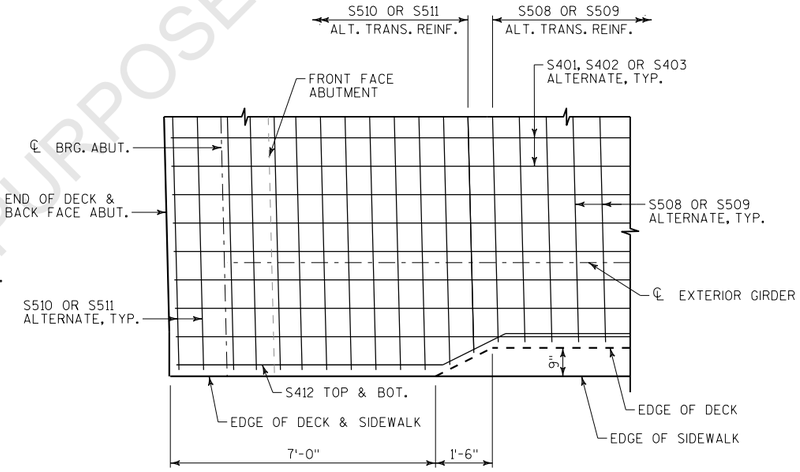
AT PIER DIAPHRAGM

(CONC. DIAPHRAGM TO EXTEND BETWEEN INSIDE WEB FACES OF EXTERIOR GIRDERS)
(SEE SHEETS 15 & 16 FOR PIER BEAM SEAT DETAILS)



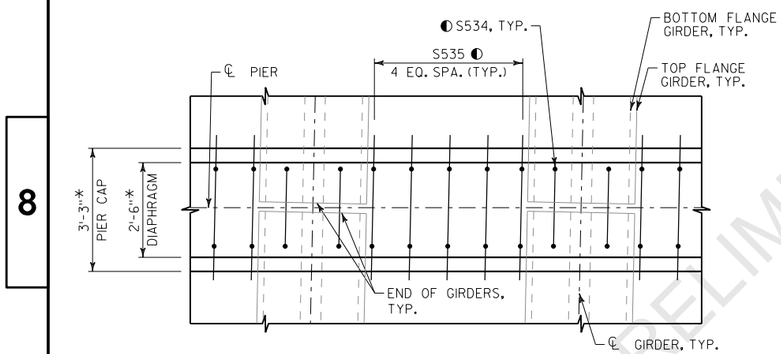
PART LONGITUDINAL SECTION AT ABUTMENT

(CONC. DIAPHRAGM TO EXTEND OUT TO OUT OF BRIDGE DECK & SIDEWALK)
(SEE SHEETS 7, 8, 11 & 12 FOR ABUTMENT BEAM SEAT DETAILS)



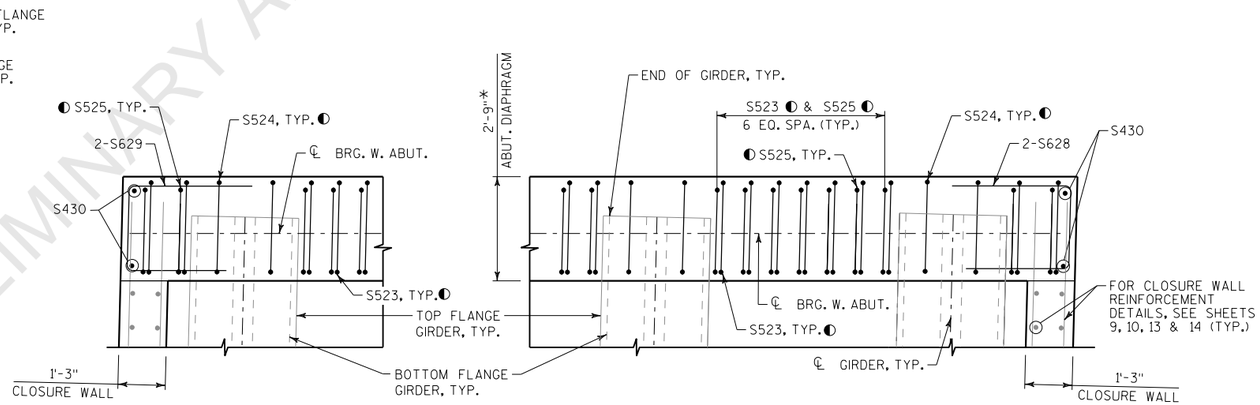
PARTIAL PLAN DECK OVERHANG FLARES AT ABUTMENTS

(DETAIL IS TYPICAL FOR ALL CORNERS OF BRIDGE DECK)
(BOTTOM REINFORCEMENT NOT SHOWN FOR CLARITY)



PARTIAL PLAN PIER DIAPHRAGM

(LONGITUDINAL BARS NOT SHOWN FOR CLARITY)



PARTIAL PLAN WEST ABUTMENT DIAPHRAGM

(LONGITUDINAL BARS NOT SHOWN FOR CLARITY)
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)

LEGEND

◹ DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

◐ BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO ℄ GIRDERS

NOTES

FOR DECK REINFORCEMENT PLAN, SEE SHEET 22.

FOR REINFORCEMENT CROSS SECTION, SEE SHEET 23.

FOR SUPERSTRUCTURE BILL OF BARS, SEE SHEET 25.

FOR PARAPET REINFORCEMENT, SEE SHEET 26.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

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SUPERSTRUCTURE REINFORCEMENT DETAILS

SHEET 24 OF 28

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

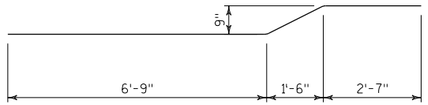
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STATE PROJECT NUMBER
1229-04-74

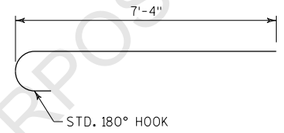
BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	202	40'-0"	-	-	DECK TOP - LONG.
S402	X	101	20'-8"	-	-	DECK TOP - LONG.
S403	X	101	32'-8"	-	-	DECK TOP - LONG.
S804	X	101	46'-0"	-	-	DECK TOP OVER PIER - LONG.
S805	X	101	48'-0"	-	-	DECK TOP OVER PIER - LONG.
S406	X	306	45'-0"	-	-	DECK BOTTOM - LONG.
S407	X	102	42'-8"	-	-	DECK BOTTOM - LONG.
S508	X	444	45'-0"	-	-	DECK TOP AND BOTTOM - TRANS.
S509	X	444	33'-2"	-	-	DECK TOP AND BOTTOM - TRANS.
S510	X	52	45'-0"	-	-	DECK TOP AND BOTTOM OVERHANG FLARES- TRANS.
S511	X	52	34'-8"	-	-	DECK TOP AND BOTTOM OVERHANG FLARES- TRANS.
S412	X	8	10'-11"	X	-	DECK TOP AND BOTTOM OVERHANG FLARES- LONG.
S413	X	56	39'-5"	-	-	SIDEWALK TOP AND BOTTOM LONG. - SPAN 1
S414	X	84	32'-10"	-	-	SIDEWALK TOP AND BOTTOM LONG. - SPAN 2
S515	X	1040	7'-11"	X	-	SIDEWALK TOP - TRANS.
S416	X	236	1'-7"	-	-	SIDEWALK BOTTOM - TRANS.
S417	X	1392	2'-6"	X	-	SIDEWALK VERTICAL
S518	X	436	4'-4"	X	-	PARAPET DOWEL
S620	X	80	4'-2"	-	-	ABUTMENT DIAPHRAGM F.F. - LONG.
S621	X	20	4'-3"	-	-	ABUTMENT DIAPHRAGM F.F. - LONG.
S622	X	20	40'-3"	-	-	ABUTMENT DIAPHRAGM B.F. - LONG.
S523	X	148	10'-10"	X	-	ABUTMENT DIAPHRAGM - VERTICAL
S524	X	44	8'-2"	X	-	ABUTMENT DIAPHRAGM - VERTICAL
S525	X	148	6'-8"	X	-	ABUTMENT DIAPHRAGM - VERTICAL
S426	X	40	3'-1"	-	-	ABUTMENT DIAPHRAGM - BEAM SEAT LONG.
S427	X	100	3'-9"	X	-	ABUTMENT DIAPHRAGM - BEAM SEAT VERTICAL
S628	X	4	7'-11"	X	-	ABUTMENT DIAPHRAGM SE & NW CORNERS - HORIZ.
S629	X	4	7'-11"	X	-	ABUTMENT DIAPHRAGM SW & NE CORNERS - HORIZ.
S430	X	8	2'-6"	-	-	ABUTMENT DIAPHRAGM ENDS - VERTICAL
S631	X	4	1'-8"	-	-	ABUTMENT DIAPHRAGM ENDS - HORIZ.
S532	X	44	6'-0"	-	-	ABUTMENT DIAPHRAGM THRU GIRDER - LONG.
S433	X	120	3'-10"	-	-	PIER DIAPHRAGM - LONG.
S534	X	20	7'-8"	X	-	PIER DIAPHRAGM - VERTICAL
S535	X	50	10'-2"	X	-	PIER DIAPHRAGM - VERTICAL

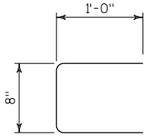
NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR
FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE



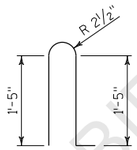
S412



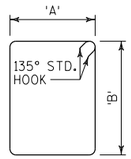
S515



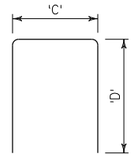
S417



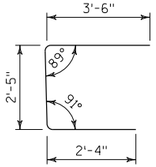
S518



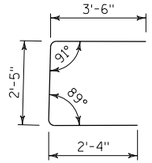
BAR MARK	DIM. 'A'	DIM. 'B'
S523	2'-5"	2'-8"
S524	2'-5"	1'-4"
S534	2'-2"	1'-4"



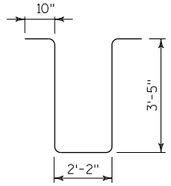
BAR MARK	DIM. 'C'	DIM. 'D'
S525	2'-5"	2'-3"
S427	11"	1'-6"



S628



S629



S535

BENDING DIAGRAMS

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

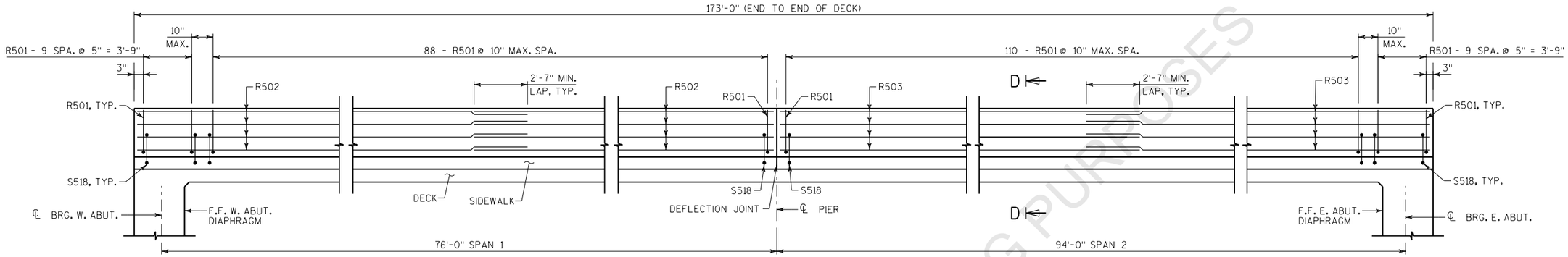
STRUCTURE B-40-918

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SUPERSTRUCTURE BILL OF BARS

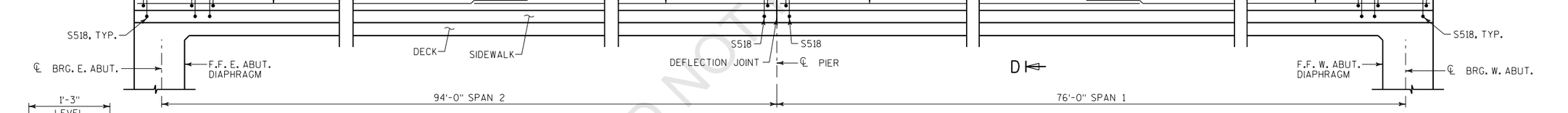
SHEET 25 OF 28

STATE PROJECT NUMBER
1229-04-74



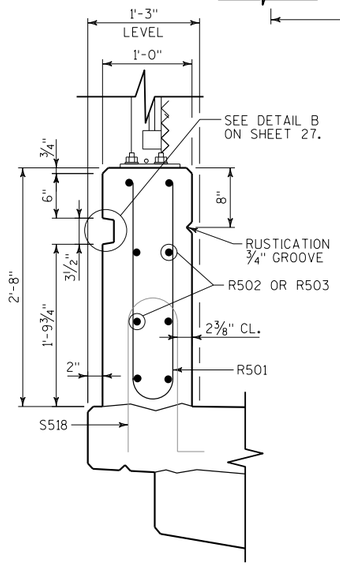
INSIDE ELEVATION OF NORTH PARAPET

(LOOKING NORTH)



INSIDE ELEVATION OF SOUTH PARAPET

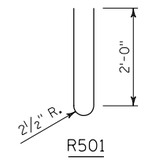
(LOOKING SOUTH)



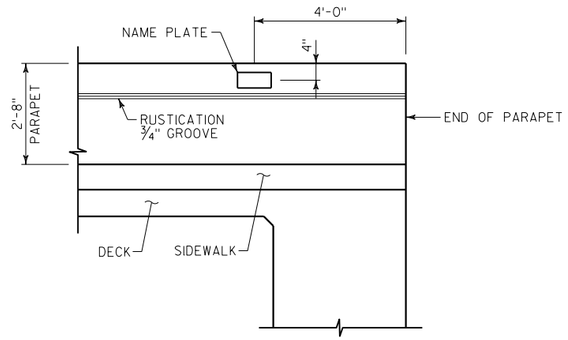
SECTION D-D

BILL OF BARS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	436	4'-9"	X	-	PARAPET - VERTICAL
R502	X	32	40'-1"	-	-	PARAPET - LONG. SPAN 1
R503	X	32	49'-1"	-	-	PARAPET - LONG. SPAN 2



BENDING DIAGRAM



INSIDE FACE OF SOUTH PARAPET

(WEST END, LOOKING SOUTH)

NOTES

FOR DEFLECTION JOINT DETAIL, SEE SHEET 22.

FOR SIDEWALK AND SUPERSTRUCTURE REINFORCEMENT DETAILS, SEE SHEETS 22, 23 & 24.

FOR LETTERING LOCATION AND PARAPET DETAILS, SEE SHEET 27.

FOR RAIL POST SPACING & TUBULAR STEEL RAILING SCREENING DETAILS, SEE SHEETS 27 & 28.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

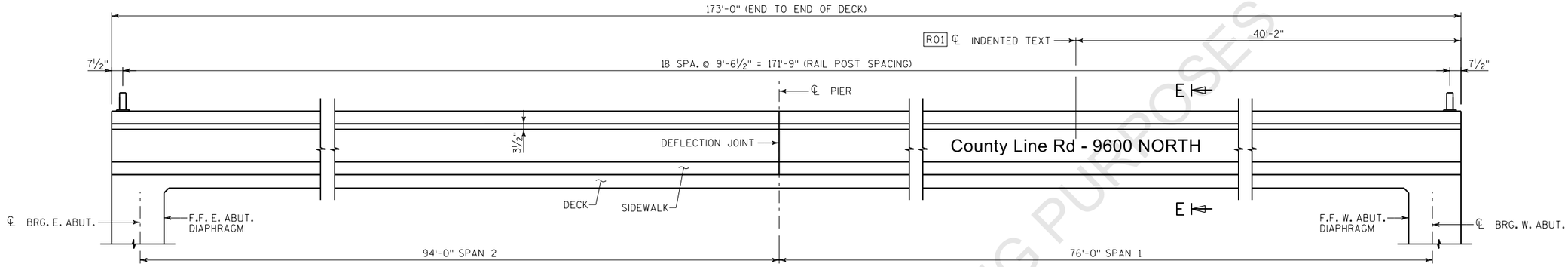
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MODIFIED VERTICAL FACE PARAPET A (1 OF 2)

SHEET 26 OF 28

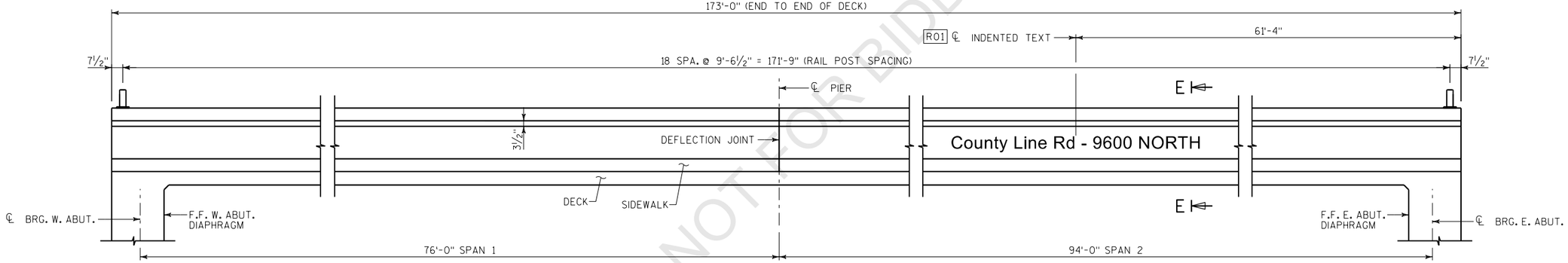
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74



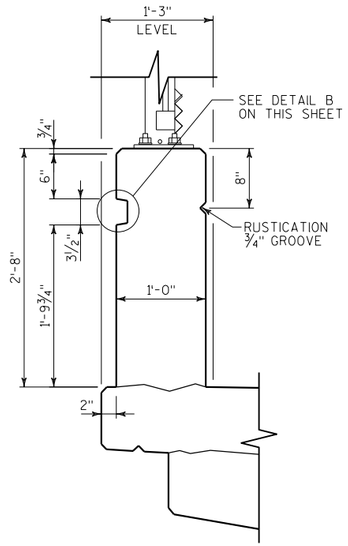
OUTSIDE ELEVATION OF NORTH PARAPET

DIMENSIONS MEASURED ALONG OUTSIDE EDGE OF DECK/OUTSIDE FACE OF PARAPET
(LOOKING SOUTH)

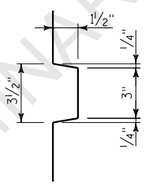


OUTSIDE ELEVATION OF SOUTH PARAPET

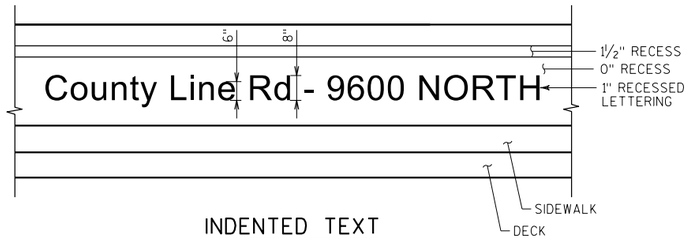
DIMENSIONS MEASURED ALONG OUTSIDE EDGE OF DECK/OUTSIDE FACE OF PARAPET
(LOOKING NORTH)



SECTION E-E



DETAIL B



INDENTED TEXT

EXTERIOR FACE OF PARAPET ONLY

INDENTED TEXT NOTES:
1. LETTERING SHALL BE HELVETICA. 8" UPPER CASE AND 6" LOWER CASE.
2. LETTERING IS ONLY ON EXTERIOR FACE OF PARAPET.
3. FORMING OF LETTERING INCIDENTAL TO "CONCRETE MASONRY BRIDGES".
4. STAIN RECESSED LETTERING BLACK, FEDERAL COLOR #37038. INCIDENTAL TO "CONCRETE MASONRY BRIDGES".

LEGEND

R01 INDENTED TEXT TO BE CENTERED OVER I-43 THRU LANES.

NOTES

FOR DEFLECTION JOINT DETAIL, SEE SHEET 22.

TUBULAR STEEL RAILING SCREENING DETAILS, SEE SHEET 28.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

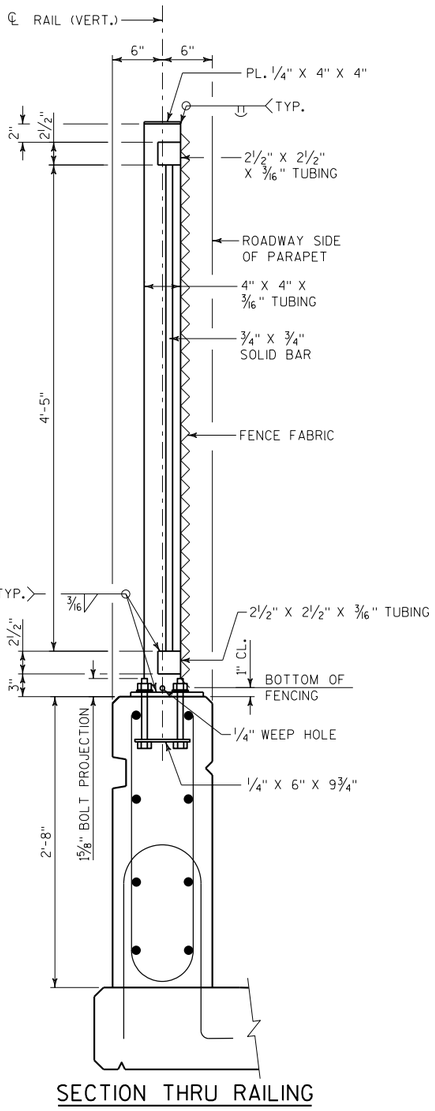
STRUCTURE B-40-918

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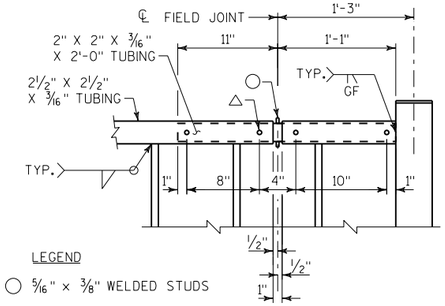
MODIFIED VERTICAL FACE PARAPET A (2 OF 2)

SHEET 27 OF 28

PRELIMINARY AND NOT FOR BIDDING PURPOSES



SECTION THRU RAILING

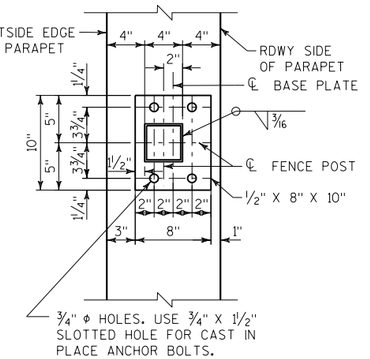


LEGEND

○ 5/16" × 3/8" WELDED STUDS

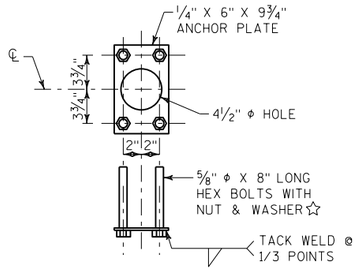
△ WELD BEAD ON EACH SIDE OF TUBE. GRIND BEADS SO THAT SLEEVE FITS FREELY INSIDE THE 2 1/2" x 2 1/2" TUBE.

RAILING EXPANSION JOINT DETAIL



3/4" Φ HOLES. USE 3/4" X 1 1/2" SLOTTED HOLE FOR CAST IN PLACE ANCHOR BOLTS.

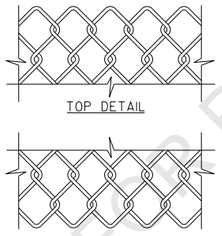
BASE PLATE



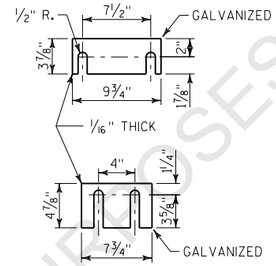
ANCHORAGE DETAIL

☆ ALTERNATIVE ANCHORAGE: ADHESIVE ANCHORS 5/8-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS.

NOTE: ANCHOR PLATE NOTE REQUIRED WHEN ADHESIVE ANCHORS ARE USED.

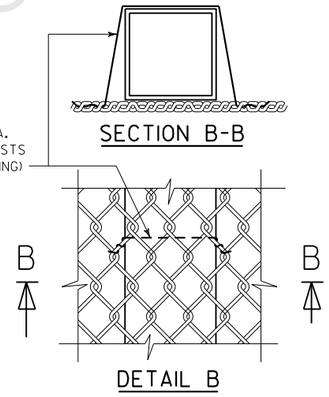


FENCE FABRIC



SHIM PLATE DETAILS

TWO SHIMS OF EACH SIZE REQUIRED PER POST



SECTION B-B

DETAIL B

NOTES

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. PLATES, ANGLES, BARS AND SHIMS SHALL CONFORM TO ASTM A709, GRADE 36. FENCE FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPACINGS ARE TAKEN HORIZONTAL ALONG CENTERLINE OF RAILING AT BASE OF POST.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED. ☆

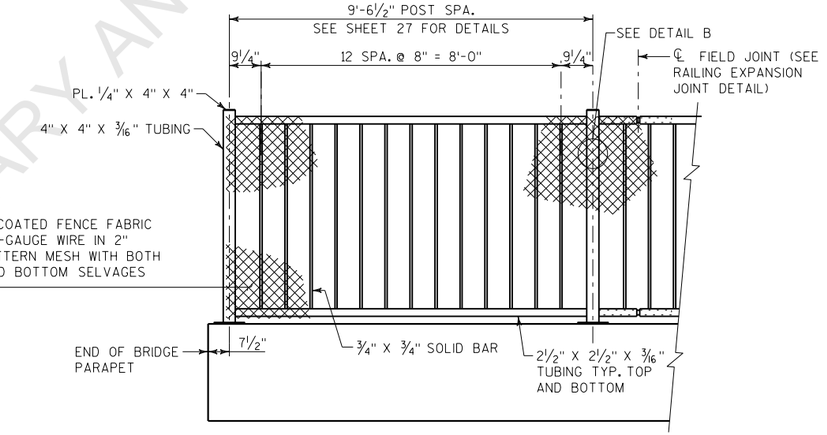
THE BID ITEM SHALL BE "RAILING TUBULAR SCREENING" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

ALL RAILING MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED AMS STD. COLOR NO. 27038 BLACK. FENCE FABRIC AND TIES TO BE VINYL-COATED. COLOR SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.



INSIDE ELEVATION OF RAILING

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-918

DRAWN BY SK | PLANS CK'D. MHZ

TUBULAR STEEL RAILING SCREENING

SHEET 28 OF 28

8

FILE NAME : c:\caddlib\pw\hntb_andrew.aschenbrenner\greatlakes\d0231182\B918_080603_rp.dgn
PLOT DATE : 7/23/2021
PLOT BY : aaschenbrenner
PLOT NAME : $FILE$
PLOT SCALE : 1:4

PGL IH 43 NB

PGL IH 43 SB

225'-11½" BACK TO BACK OF ABUTMENTS

108'-0" SPAN 1

108'-0" SPAN 2

4'-11¾"

344PSCN

346PSCN

B-45-103

℄ IH 43

46°33'0" TYP.

N34°40'56"W

4'-0" MEDIAN

℄ PSCN PORT WASHINGTON RD. SB

END OF STRUCTURAL APPROACH SLAB STA. 343PNCN+81.34

END OF STRUCTURAL APPROACH SLAB STA 346PNCN+47.28

344PNCN

346PNCN

℄ PNCN PORT WASHINGTON RD. NB

N34°40'56"W

STA 345PNCN+13.77 = STA 1329+91.99

END OF DECK STA. 344PNCN+01.34

END OF DECK STA 346PNCN+27.28

℄ BRG. E. ABUT. STA 344PNCN+06.31

℄ PIER STA 345PNCN+14.31

℄ BRG. W. ABUT. STA 346PNCN+22.31

2'-0" 12'-0" 12'-0" 2'-0" TRAFFIC LANES

45'-0"

57'-8" EDGE/DECK TO ℄ PORT WASH. RD.

1'-0" PARAPET

7'-6" SDWK.

B-45-102

℄ BRG. E. ABUT.

℄ BRG. W. ABUT.

NAME PLATE LOCATION

78°

20'

℄ PIER

POINT OF MIN. VERT. CLEARANCE

POINT OF MIN. VERT. CLEARANCE

EXISTING BRIDGE B-45-17 TO BE REMOVED IS A FOUR-SPAN CONTINUOUS STEEL PLATE BRIDGE SUPPORTED ON CONCRETE ABUTMENTS AND PIERS WITH TIMBER PILING AT ABUTMENTS. LENGTH IS 291'-1½" BACK FACE TO BACK FACE OF ABUTMENTS.

RETAINING WALL R-45-27

RETAINING WALL R-45-28

CAUTION

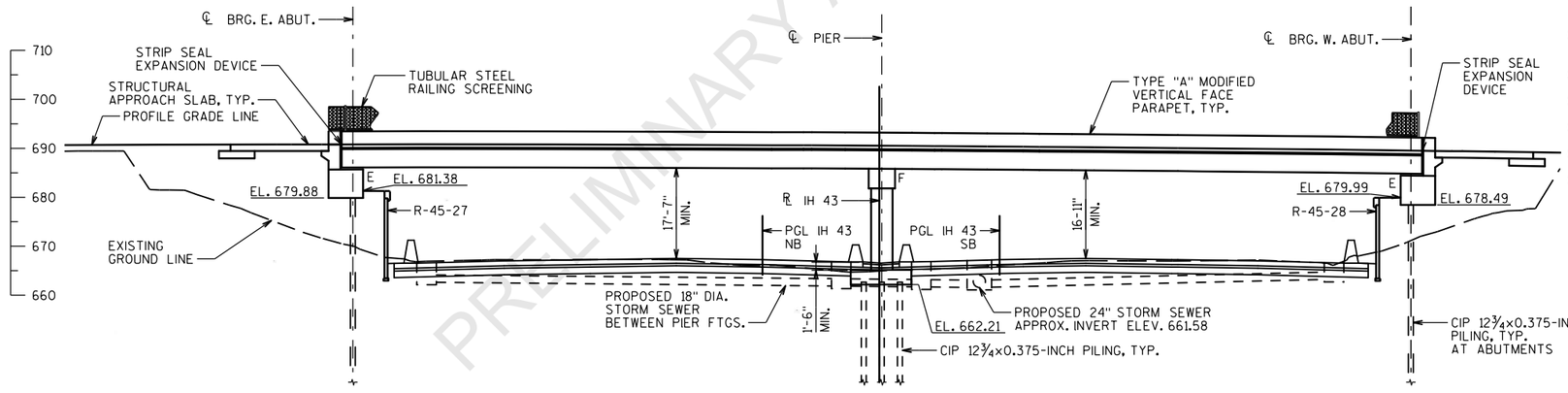
OH

12'-0" SHLD. 12'-0" TRAFFIC LANES 12'-0" SHLD.

12'-0" SHLD. 12'-0" TRAFFIC LANES 12'-0" SHLD.

PLAN

2 SPAN 45W" PRESTRESSED CONCRETE GIRDER



ELEVATION

LOOKING SOUTH

UTILITY & STORM SEWER NOTES

1. EXISTING WISDOT FTMS TO BE REMOVED
2. EXISTING CENTURYLINK FIBER OPTIC LINE TO BE RELOCATED
3. EXISTING OVERHEAD ELECTRIC LINE TO BE RELOCATED
4. EXISTING WISDOT STORM SEWER TO BE REMOVED
5. PROPOSED WISDOT STORM SEWER
6. PROPOSED LIGHTING
7. PROPOSED SIGNALS
8. PROPOSED FTMS
9. PROPOSED SIGNALS INTERCONNECT

LEGEND

INDICATES DIRECTION OF TRAFFIC

ANGLE TAKEN TO TANGENT OF IH 43 ℄

STATE PROJECT NUMBER

1229-04-74

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTION
3. QUANTITIES, NOTES & DESIGN DATA
4. PROFILE GRADE LINES & EXCAVATION/ BACKFILL DIAGRAMS
5. SUBSURFACE EXPLORATION (1 OF 2)
6. SUBSURFACE EXPLORATION (2 OF 2)
7. EAST ABUTMENT
8. EAST ABUTMENT DETAILS (1 OF 3)
9. EAST ABUTMENT DETAILS (2 OF 3)
10. EAST ABUTMENT DETAILS (3 OF 3)
11. EAST ABUTMENT BILL OF BARS
12. WEST ABUTMENT
13. WEST ABUTMENT DETAILS (1 OF 3)
14. WEST ABUTMENT DETAILS (2 OF 3)
15. WEST ABUTMENT DETAILS (3 OF 3)
16. WEST ABUTMENT BILL OF BARS
17. PIER
18. PIER DETAILS & REINFORCEMENT
19. 45W" PRESTRESSED GIRDER
20. 45W" PRESTRESSED GIRDER DETAILS
21. EXPANSION BEARING DETAILS
22. SUPERSTRUCTURE FRAMING PLAN
23. STEEL DIAPHRAGM
24. SUPERSTRUCTURE REINFORCEMENT
25. SUPERSTRUCTURE CROSS SECTION
26. SUPERSTRUCTURE DETAILS (1 OF 2)
27. SUPERSTRUCTURE DETAILS (2 OF 2)
28. EXPANSION JOINT (1 OF 2)
29. EXPANSION JOINT (2 OF 2)
30. SUPERSTRUCTURE BILL OF BARS
31. EAST STRUCTURAL APPROACH SLAB (1 OF 2)
32. EAST STRUCTURAL APPROACH SLAB (2 OF 2)
33. WEST STRUCTURAL APPROACH SLAB (1 OF 2)
34. WEST STRUCTURAL APPROACH SLAB (2 OF 2)
35. STRUCTURAL APPROACH SLAB DETAILS
36. APPROACH VERTICAL FACE PARAPET DETAILS
37. CONDUIT DETAILS
38. TUBULAR STEEL RAILING SCREENING (1 OF 2)
39. TUBULAR STEEL RAILING SCREENING (2 OF 2)

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
HEATHER ANDERS (414) 410-6899

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

HNTB 250 E. WISCONSIN AVE. #2000 MILWAUKEE, WI 53202 (414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-45-102

PORT WASHINGTON RD NB OVER IH 43

COUNTY	CITY
OZAUKEE	MEQUON

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
CVH/EAJ	MSS	EAJ	HDA

GENERAL PLAN & ELEVATION

SHEET 1 OF 39

WISCONSIN HEATHER D. ANDERS, P.E. 33441-006 CEDARBURG, WI PROFESSIONAL ENGINEER

7-29-2021

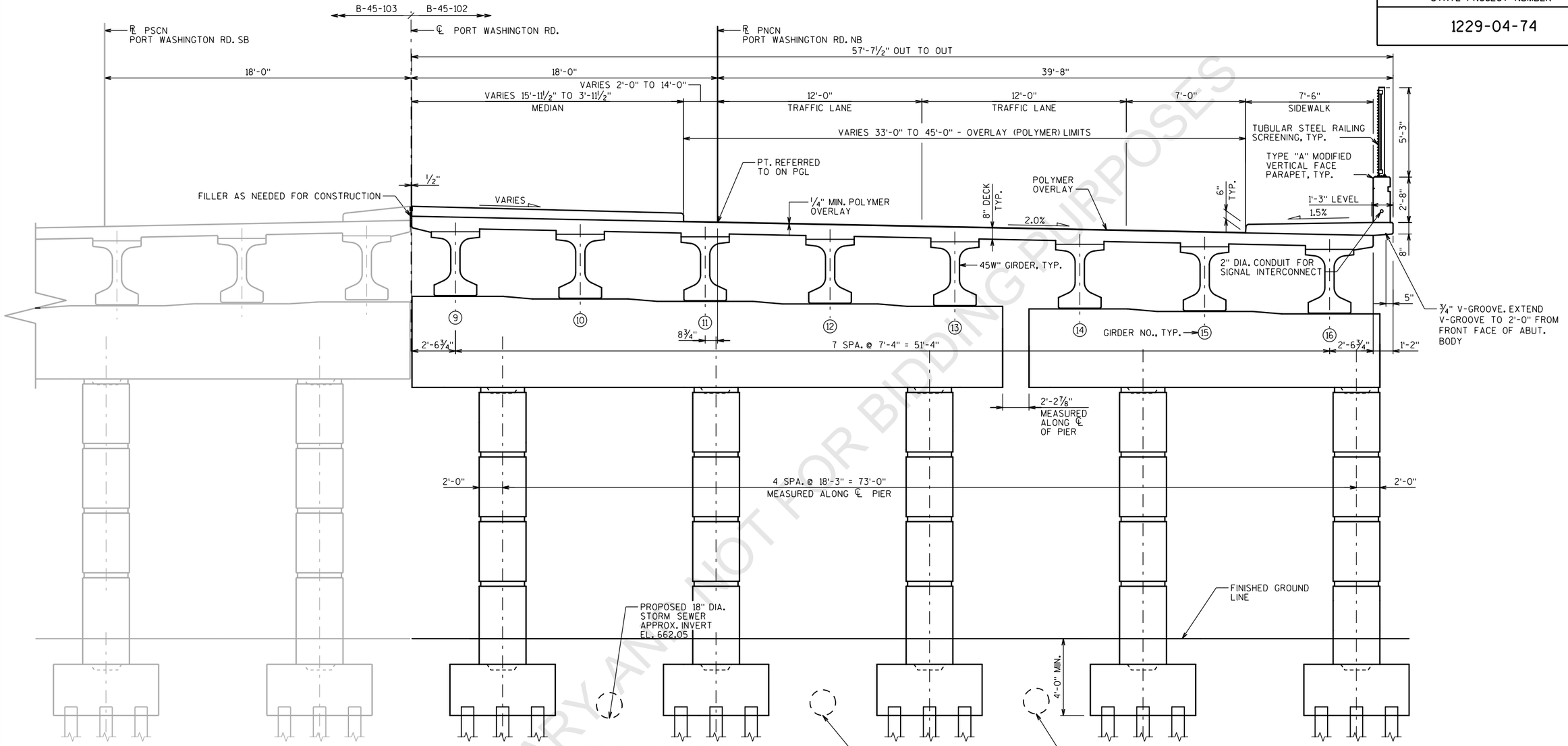
Heather D. Anders

PRELIMINARY AND NOT FOR CONSTRUCTION

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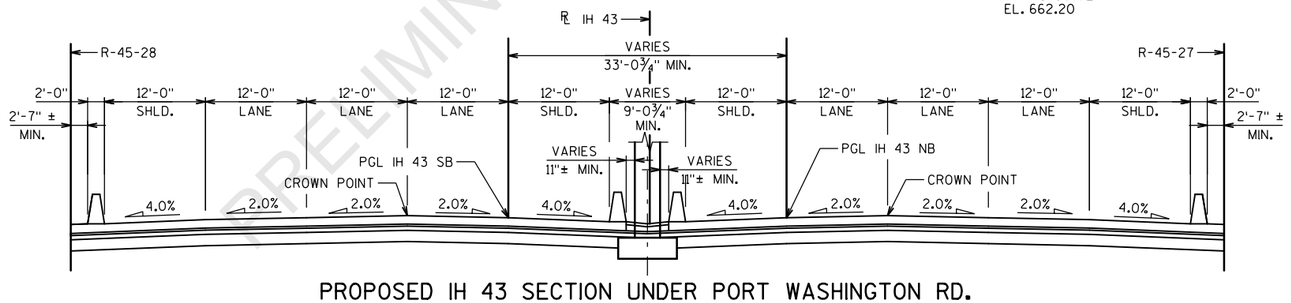
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STATE PROJECT NUMBER
1229-04-74



PROPOSED TYPICAL SECTION

LOOKING WEST



PROPOSED IH 43 SECTION UNDER PORT WASHINGTON RD.

LOOKING NORTH
(MEASUREMENTS SHOWN ARE NORMAL TO ℄ IH 43)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY	CVH	PLANS CK'D.	HDA

TYPICAL SECTION

SHEET 2 OF 39

8

8

STATE PROJECT NUMBER
1229-04-74

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEM	UNIT	SUPER	EAST APPR. SLAB	EAST ABUT.	PIER	WEST ABUT.	WEST APPR. SLAB	TOTAL
203.0220.0002	REMOVING STRUCTURE B-45-17	EACH	--	--	--	--	--	--	1
203.0211.S.0002	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-45-17	EACH	--	--	--	--	--	--	1
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	--	--	198	--	174	--	372
501.1000.S	ICE HOT WEATHER CONCRETING	LB	3,750	753	945	960	930	656	7,994
502.0100	CONCRETE MASONRY BRIDGES	CY	--	23	126	128	124	23	424
502.2000	COMPRESSION JOINT SEALER PREFORMED ELASTOMERIC 2 1/4-INCH	LF	221	--	--	--	--	--	221
502.3101	EXPANSION DEVICE	LF	--	--	82	--	82	--	164
502.3200	PROTECTIVE SURFACE TREATMENT	SY	1,442	163	--	--	--	150	1,755
502.3210	PIGMENTED SURFACE SEALER	SY	94	9	--	--	--	9	112
503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	1,735	--	--	--	--	--	1,735
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	--	--	6,400	2,680	6,300	--	15,380
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	108,670	15,470	4,030	22,210	3,850	17,300	171,530
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	--	--	1,410	--	1,410	--	2,820
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	--	--	--	16	--	--	16
506.2610	BEARING PADS ELASTOMERIC LAMINATED	EACH	--	--	8	--	8	--	16
506.4000.0002	STEEL DIAPHRAGMS B-45-102	EACH	28	--	--	--	--	--	28
509.5100.S	POLYMER OVERLAY	SY	1,050	--	--	--	--	--	1,050
511.1200.0002	TEMPORARY SHORING B-45-102	SF	--	--	--	1,000	--	--	1,000
513.4091	RAILING TUBULAR SCREENING	LF	222	19	--	--	--	--	241
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	--	--	18	--	17	--	35
550.0500	PILE POINTS	EACH	--	--	12	36	12	--	60
550.2126	PILING CIP CONCRETE 12 3/4 x 0.375-INCH	LF	--	--	1,020	1,980	900	--	3,900
604.0400	SLOPE PAVING CONCRETE	SY	--	--	27	--	27	---	54
652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	53	--	--	--	--	--	53
652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	175	25	--	--	25	--	225
653.0220	JUNCTION BOXES 18X6X6-INCH	EACH	2	--	--	--	--	--	2
SPV.0035.4000	HPC MASONRY STRUCTURES	CY	500	78	--	--	--	65	643
SPV.0195.4000	EXCAVATION, HAULING, AND DISPOSAL OF CREOSOTE CONTAMINATED SOIL	TON	--	--	769	--	1,138	--	1,907
	NON-BID ITEMS								
	NAME PLATE	EACH							1
	PREFORMED JOINT FILLER	SIZE							1/2", 3/4", 1"
	EXPANDED POLYSTYRENE	SIZE							1"
	SIZE 2 COARSE AGGREGATE	CY							--

ALL ITEMS ARE CATEGORY 2010

DESIGN DATA

DESIGN SPECIFICATION:
AASHTO LRFD DESIGN SPECIFICATIONS, 9TH EDITION, 2020 WITH INTERIM REVISIONS, UNLESS OTHERWISE NOTED.

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.13
OPERATING RATING FACTOR: RF = 1.49
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 KIPS

STRUCTURE IS DESIGNED FOR A POLYMER OVERLAY OF 5 POUNDS PER SQUARE FOOT AND FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY:
SUPERSTRUCTURE ..... f'c = 4,000 psi
SUBSTRUCTURE ..... f'c = 3,500 psi
45W-INCH PRESTRESSED GIRDERS ..... f'c = 8,000 psi
f'ci = 6,800 psi
BAR STEEL REINFORCEMENT ..... fy = 60,000 psi
PRESTRESSING STRANDS ..... ULTIMATE TENSILE STRENGTH = 270,000 psi
STEEL PIPE PILE (ASTM A252 GRADE 3)..... Fy = 45,000 psi

TRAFFIC DATA

PORT WASHINGTON RD NB

ADT = 6,300 (2019)
AADT = 6,900 (2045)
RDS = 40 MPH

IH 43 NB

AADT = 32,000 (2019)
AADT = 37,800 (2045)
RDS = 75 MPH

IH 43 SB

AADT = 40,700 (2019)
AADT = 47,100 (2045)
RDS = 75 MPH

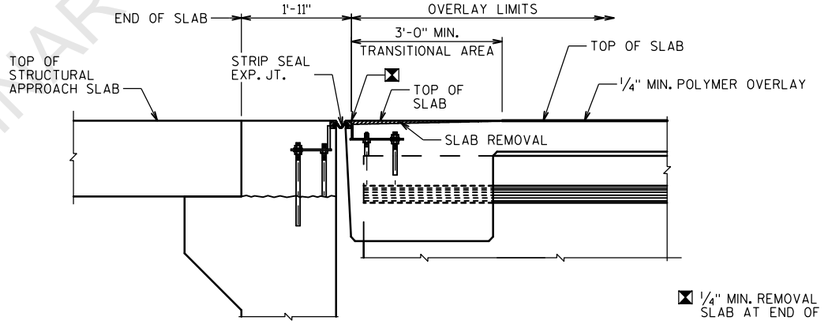
FOUNDATION DATA

USING THE MODIFIED GATES ACCEPTANCE METHOD:

ABUTMENTS AND PIER SHALL BE SUPPORTED ON CIP CONCRETE 12 3/4 x 0.375-INCH PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES ACCEPTANCE METHOD.

THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.50 USING MODIFIED GATES ACCEPTANCE METHOD TO DETERMINE DRIVEN PILE CAPACITY.

ESTIMATED PILE LENGTHS:
WEST ABUTMENT ..... 75 FEET
EAST ABUTMENT ..... 85 FEET
PIER ..... 55 FEET



SECTION THRU ABUTMENT TRANSITIONAL AREA ON SLAB AT EXPANSION JOINT

REMOVAL AND OVERLAY THICKNESS NOT TO SCALE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), OZAUKEE COUNTY, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

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. BAR DIMENSIONS ARE OUT TO OUT.

BEVEL ALL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "45W PRESTRESSED GIRDER DETAILS" SHEET.

EXISTING BRIDGE B-45-17 TO BE REMOVED IS A FOUR SPAN CONTINUOUS STEEL GIRDER SUPERSTRUCTURE SUPPORTED ON CONCRETE PIERS AND ABUTMENTS. LENGTH IS APPROXIMATELY 291' BACK FACE TO BACK FACE ABUTMENTS. WIDTH IS 66' OUT TO OUT.

COORDINATE THE REMOVAL OF EXISTING STRUCTURE B-45-17, CONSTRUCTION OF NEW BRIDGES B-45-102 AND B-45-103 AND CONSTRUCTION OF NEW RETAINING WALLS R-45-27 AND R-45-28 WITH NEW STORM SEWERS.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE FOLLOWING COMPLETED SURFACES:
- TOP OF DECK SLAB AND APPROACH SLAB
- EXPOSED SIDEWALK AND MEDIAN SURFACES
- PAVING NOTCH (PRIOR TO PLACING STRUCTURAL APPROACH SLAB)

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE FOLLOWING COMPLETED SURFACES:
- TOP AND INSIDE FACES OF EXTERIOR PARAPET ON BRIDGE AND APPROACH SLABS

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

PILE SPLICES SHALL BE MADE MY A CERTIFIED WELDER, PER AWS D1.1.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M153 TYPE 1, 2, OR 3, OR AASHTO M213.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF JOINT FILLER WITH NON-STAINING, NON-ASPHALTIC JOINT SEALER (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE.) COLOR TO MATCH ADJACENT SURFACES.

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

EXISTING STRUCTURE SUPPORTED ON CREOSOTE TREATED TIMBER PILES. SOIL IN DIRECT VICINITY OF EXISTING TIMBER PILES IS ASSUMED TO BE CONTAMINATED. REMOVE SOIL PER DIRECTION IN "EXCAVATION, HAULING, AND DISPOSAL OF CREOSOTE CONTAMINATED SOIL" SPECIAL PROVISIONS.

COORDINATE THE CONSTRUCTION OF BRIDGE B-45-102 WITH RETAINING WALLS R-45-27 AND R-45-28 AND BRIDGE B-45-103.

GEOTECHNICAL ANALYSIS SHOWED VARIABILITY IN THE EMBEDMENT REQUIRED TO REACH THE REQUIRED DRIVING RESISTANCE, PILES MAY DRIVE SHORTER THAN LENGTHS PROVIDED.

SEE ROADWAY PLANS AND PROJECT SPECIAL PROVISIONS FOR INFORMATION ON TIMING OF POLYMER OVERLAY PLACEMENT.

SHOT BLASTING, DECK SURFACE PREPARATIONS, AND TRANSITIONAL AREAS ARE INCLUDED IN THE BID ITEM "POLYMER OVERLAY".

CONCRETE IN THE FOLLOWING COMPONENTS TO BE PAID FOR AS "HPC MASONRY STRUCTURES".
- DECK SLAB, INCLUDING HAUNCHES
- DIAPHRAGMS
- SIDEWALKS AND MEDIANS ON DECK SLAB AND ON STRUCTURAL APPROACH SLABS
- PARAPETS ON BRIDGE AND ON STRUCTURAL APPROACH SLABS
- STRUCTURAL APPROACH SLABS (NOT THE APPROACH SLAB FOOTINGS)

PRELIMINARY - NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

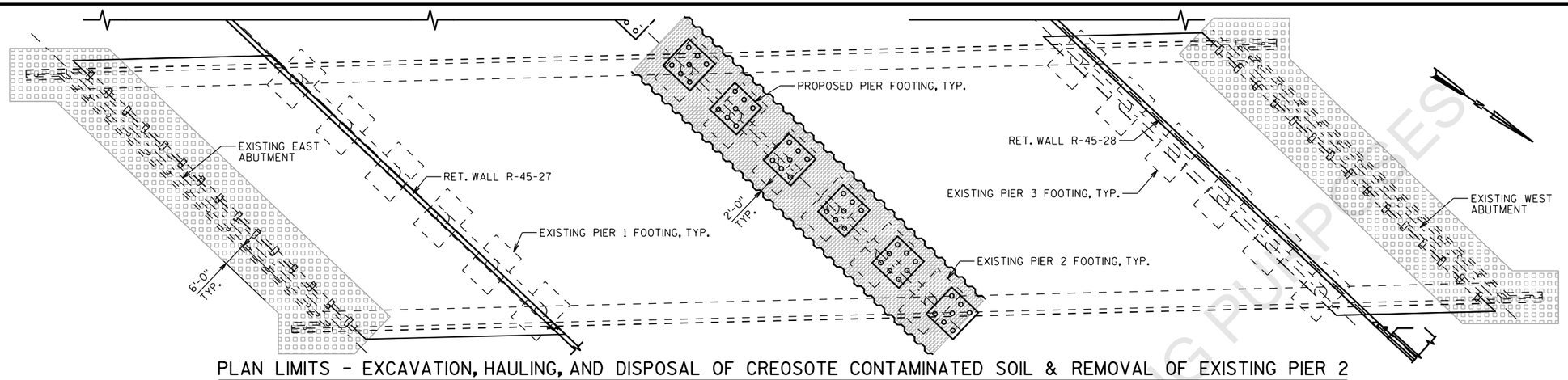
QUANTITIES, NOTES & DESIGN DATA

SHEET 3 OF 39

8

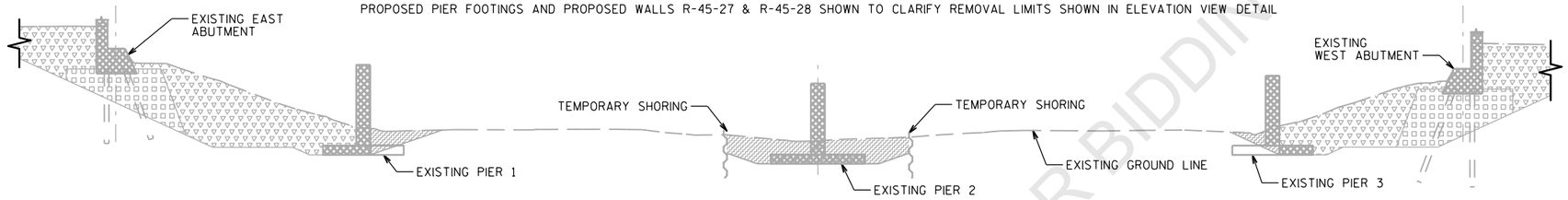
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PLOT BY : ejelinek
PLOT SCALE : 1.33333:1

STATE PROJECT NUMBER
1229-04-74



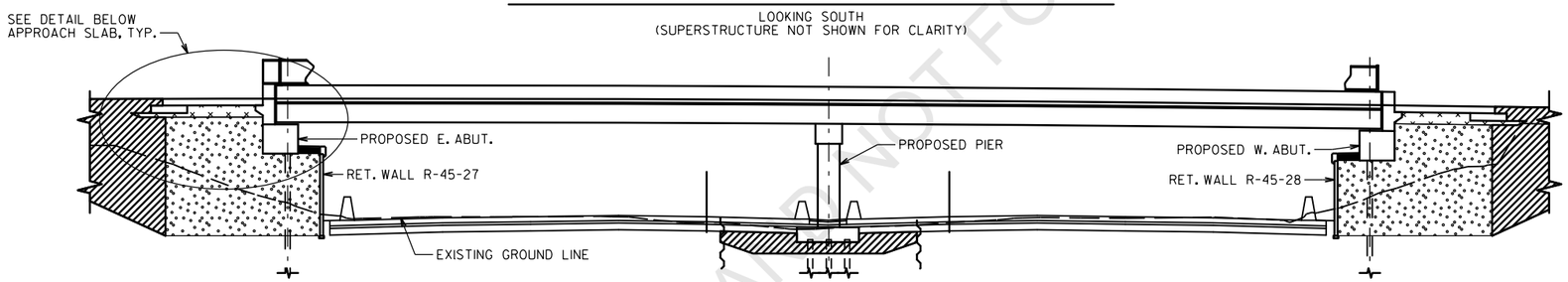
PLAN LIMITS - EXCAVATION, HAULING, AND DISPOSAL OF CREOSOTE CONTAMINATED SOIL & REMOVAL OF EXISTING PIER 2

PROPOSED PIER FOOTINGS AND PROPOSED WALLS R-45-27 & R-45-28 SHOWN TO CLARIFY REMOVAL LIMITS SHOWN IN ELEVATION VIEW DETAIL



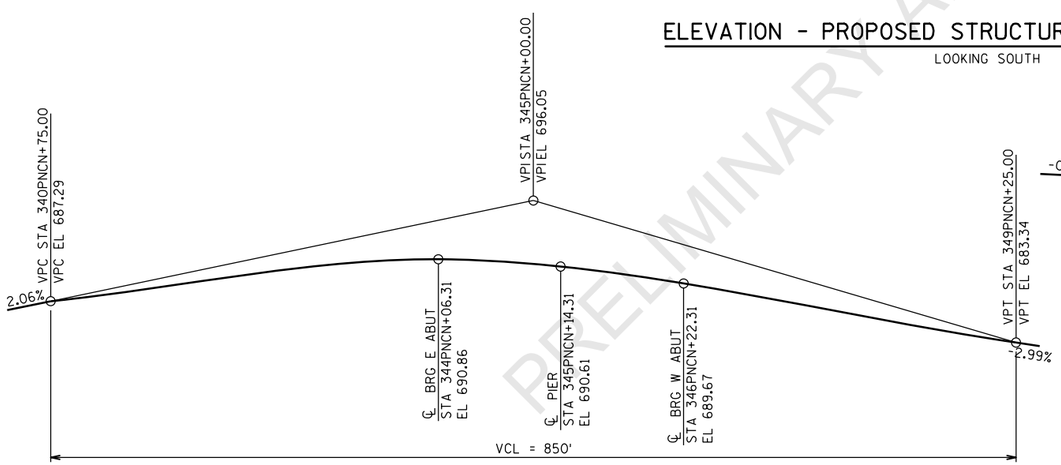
ELEVATION - EXISTING STRUCTURE B-45-17 REMOVAL

LOOKING SOUTH
(SUPERSTRUCTURE NOT SHOWN FOR CLARITY)

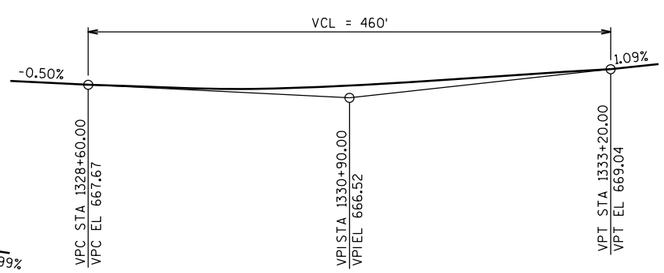


ELEVATION - PROPOSED STRUCTURE B-45-102 BACKFILL

LOOKING SOUTH



PROFILE GRADE LINE - PORT WASHINGTON RD. NB (PNCN)



PROFILE GRADE LINE - IH 43 NB & SB

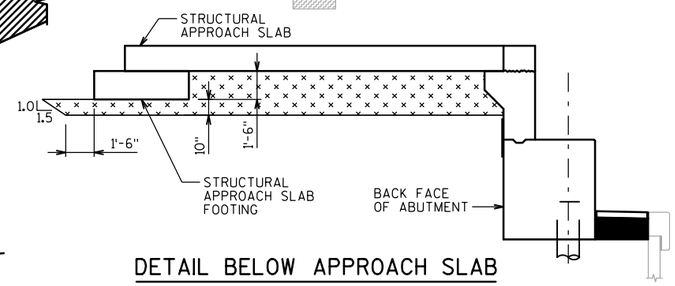
HORIZONTAL CURVE DATA

IH 43 - CURVE 15

P.I. = 1330+71.43
Δ = 1°06'48"
D = 0°09'10"
T = 364.22'
L = 728.42'
R = 37,484.00'
P.C. = 1327+07.21
P.T. = 1334+35.63

LEGEND

- FILL MATERIAL - SEE ROADWAY PLANS
- MSE BACKFILL - SEE RETAINING WALL PLANS FOR R-45-27 & R-45-28
- SEE ABUTMENT DETAIL SHEETS
- BASE AGGREGATE DENSE 1¼"
- REMOVING OLD STRUCTURE
- WALL EXCAVATION - SEE RETAINING WALL PLANS FOR R-45-27 & R-45-28
- EXCAVATION, HAULING AND DISPOSAL OF CREOSOTE CONTAMINATED SOIL - HORIZONTAL LIMITS DEFINING FOOTPRINT BASED ON 6'-0" OFFSET FROM EDGES OF EXISTING TREATED PILING
- EXCAVATION INCLUDED WITH REMOVING OLD STRUCTURE



DETAIL BELOW APPROACH SLAB

PRELIMINARY - NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

PROFILE GRADE LINES & EXCAVATION/ BACKFILL DIAGRAMS

SHEET 4 OF 39

8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
PW-01	APRIL 15, 2014	357366	602224
PW-03	MAY 1, 2014	357308	602299
PW-06	JANUARY 12, 2015	357168	602319
PW-06A	DECEMBER 23, 2014	357204	602323
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) OZAUKEE COUNTY			

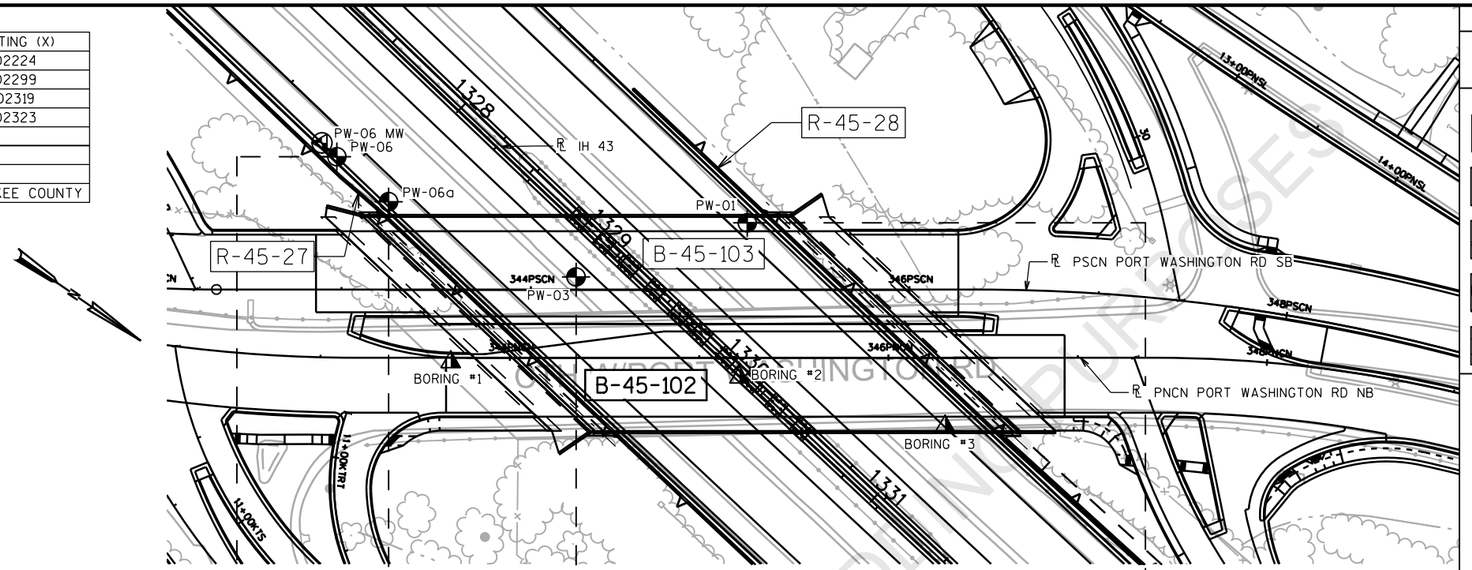
NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

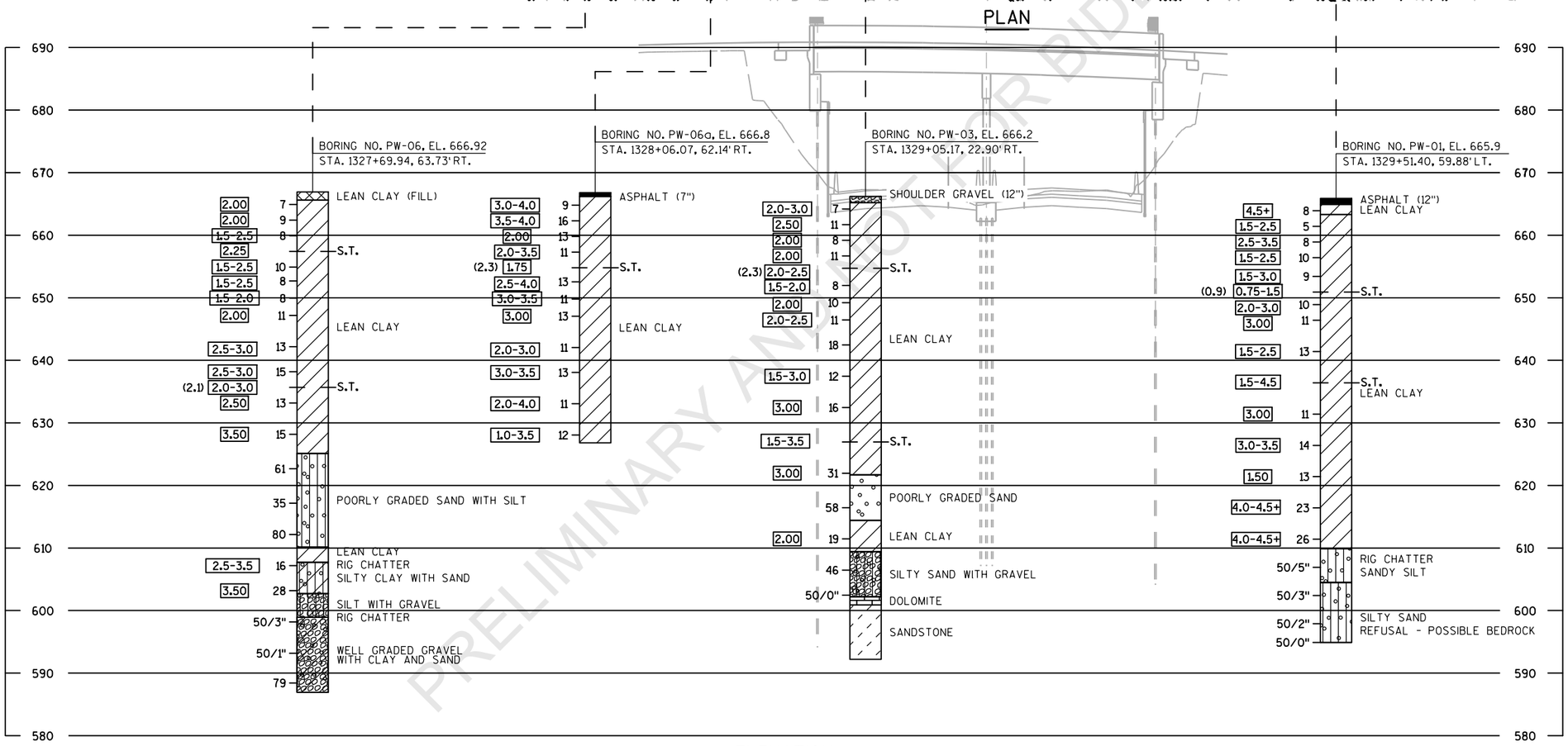
WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

- DENOTES SOIL BORING LOCATION
- DENOTES MONITORING WELL LOCATION
- DENOTES HISTORICAL BORING



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

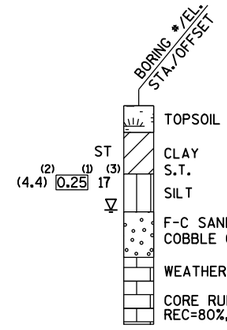
STATE PROJECT NUMBER

1229-04-74

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

(2) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE B-45-102

DRAWN BY NNM | PLANS CK'D. HDA

SUBSURFACE EXPLORATION (1 OF 2)

SHEET 5 OF 39

8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
PW-02	APRIL 29, 2014	357505	602190
PW-04	APRIL 17, 2014	357405	602353
PW-05	JUNE 16, 2014	357205	602408
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) OZAUKEE COUNTY			

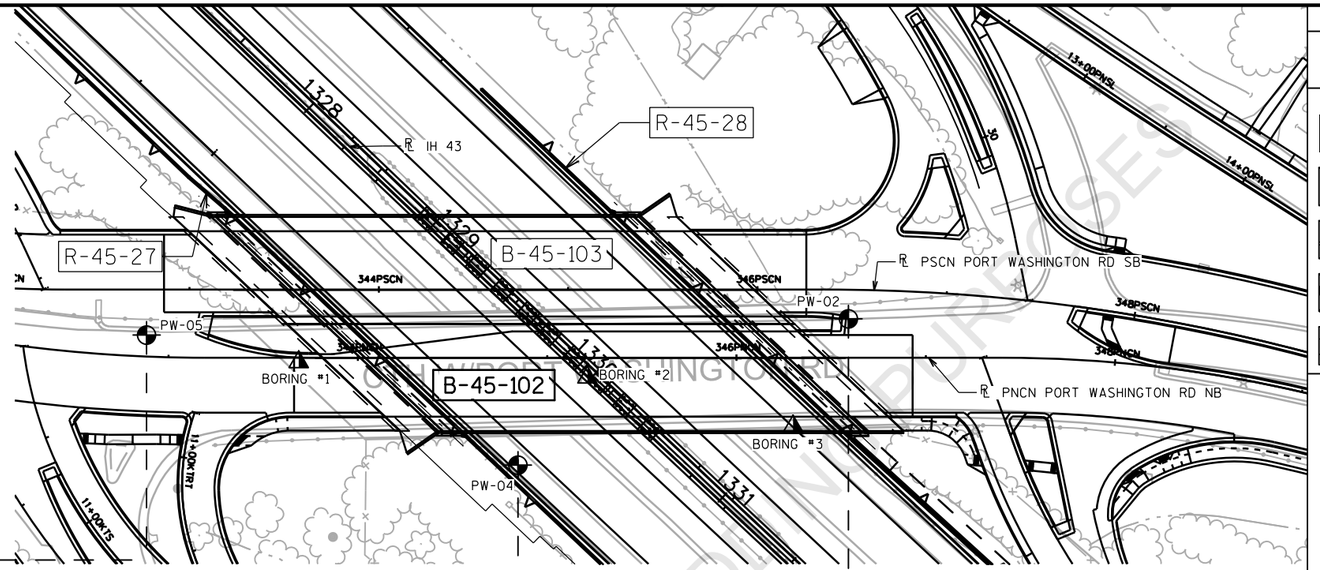
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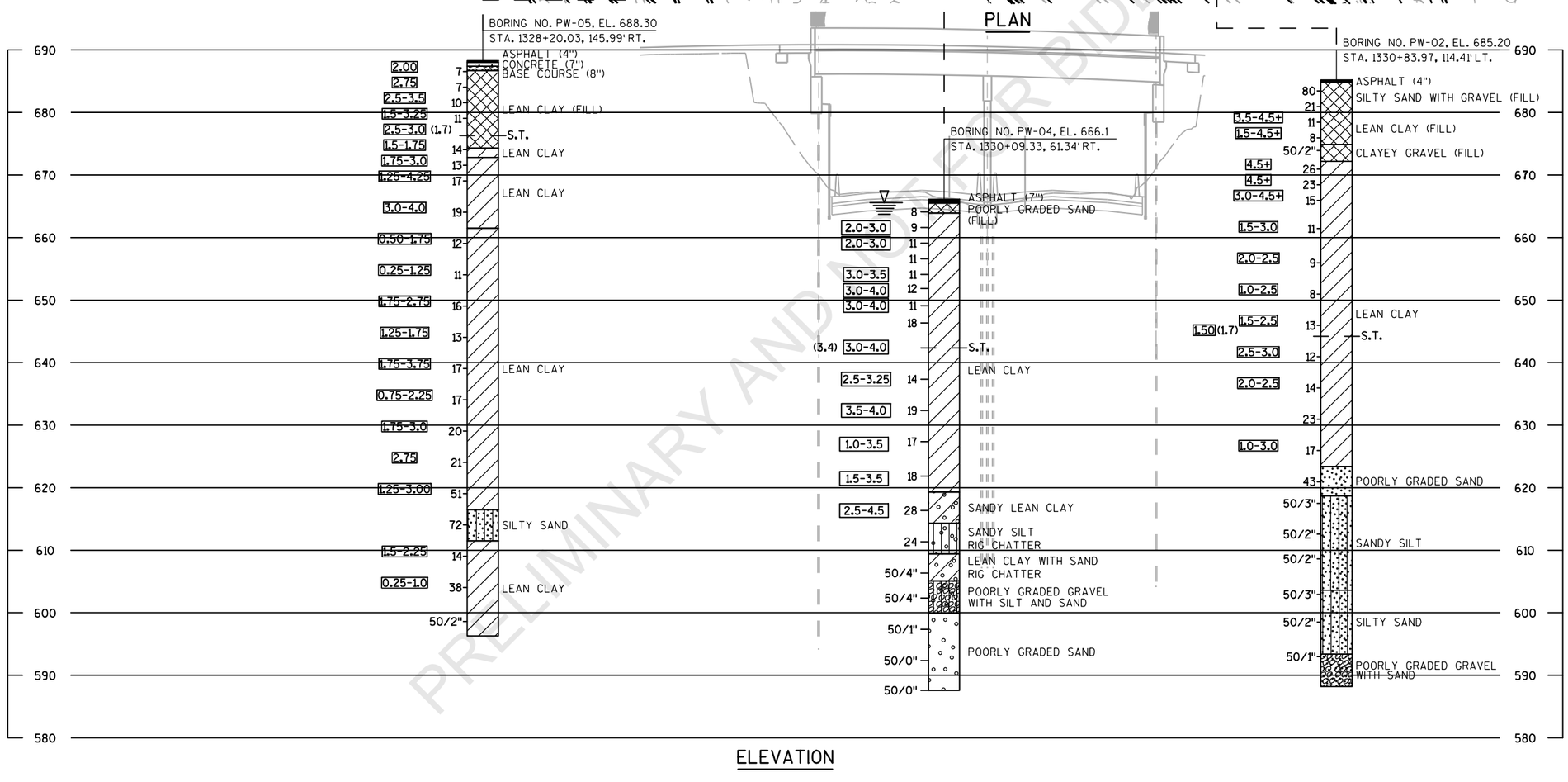
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ELEVATION

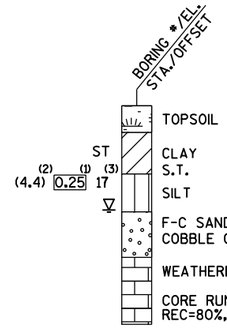
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74

MATERIAL SYMBOLS

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CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	DOLOMITE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY NNM | PLANS CK'D. HDA

SUBSURFACE EXPLORATION (2 OF 2)

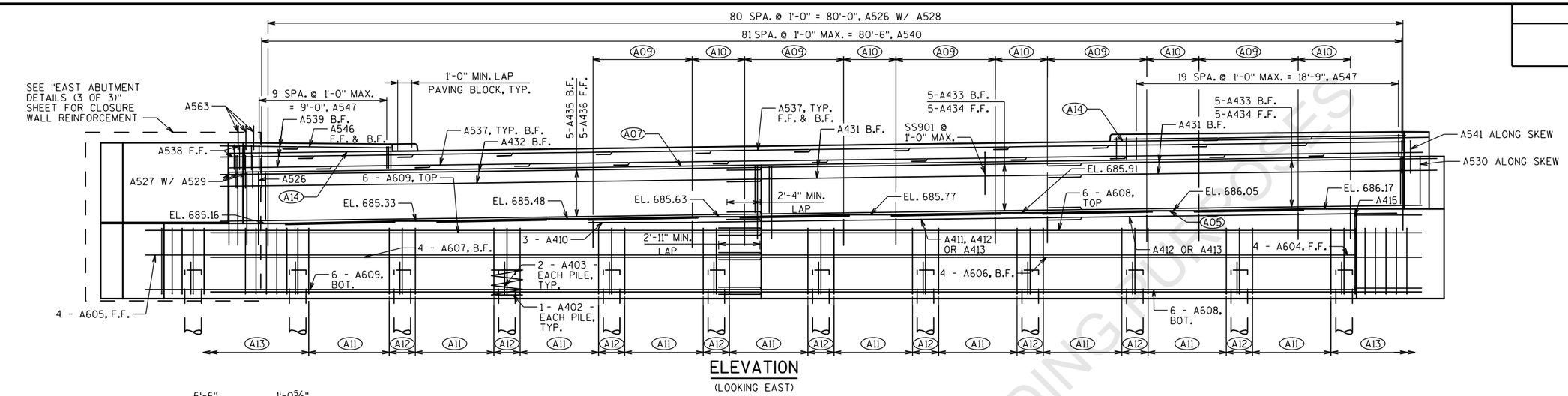
SHEET 6 OF 39

8

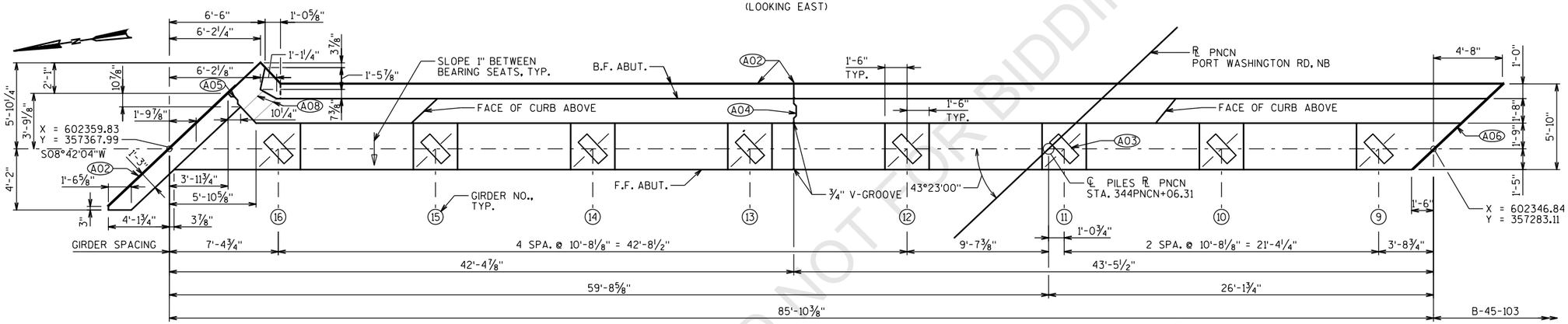
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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-102\cds\B102_080202_se.dgn PLOT DATE : 7/28/2021 7:54:18 PM PLOT BY : ejelinek PLOT SCALE : 80:1

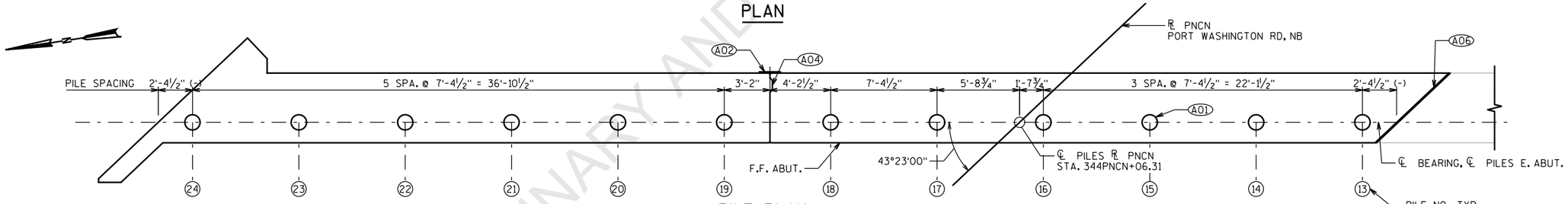
STATE PROJECT NUMBER
1229-04-74



ELEVATION
(LOOKING EAST)



PLAN



PILE PLAN

LEGEND

(A01) ABUTMENT SUPPORTED ON CIP CONCRETE 12¾x0.375-INCH PILING WITH A MAXIMUM DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES METHOD. ESTIMATED PILING LENGTH = 85 FEET. PILE POINTS ARE REQUIRED.

(A02) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENTS.

(A03) 2'-0" x 10" STEEL LAMINATED ELASTOMERIC BEARING PAD, TYPICAL. SEE "EXPANSION BEARING DETAILS" SHEET FOR DETAILS.

(A04) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x8" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

(A05) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

(A06) 1" FILLER PLACED BETWEEN B-45-102 EAST ABUTMENT AND B-45-103 EAST ABUTMENT.

LEGEND CON'T

(A07) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKEOFF AND LEAVE ROUGH.

(A08) SEE "APPROACH VERTICAL FACE PARAPET DETAILS" SHEET

(A09) 7 SPA. @ 1'-0" MAX. = 7'-0", A414

(A10) 5 SPA. @ 9" MAX. = 3'-8½", A414

(A11) 6 SPA. @ 1'-0" MAX. = 5'-6⅜" MAX., A616

(A12) 2 SPA. @ 1'-0" MAX. = 1'-10⅛", A617 OVER PILE

(A13) SEE "EAST ABUTMENT DETAILS (1 OF 3)" SHEET FOR MORE INFORMATION.

(A14) OPTIONAL CONSTRUCTION JOINT

F.F. FRONT FACE

B.F. BACK FACE

NOTES

HORIZONTAL DIMENSIONS SHOWN TIED TO THE SOUTH EDGE DO NOT INCLUDE THE FILLER THICKNESS.

ALL DIMENSIONS, EXCEPT THE SIDEWALL WIDTH DIMENSION, ARE GIVEN ALONG OR NORMAL TO ℄ BEARING AND PILES.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

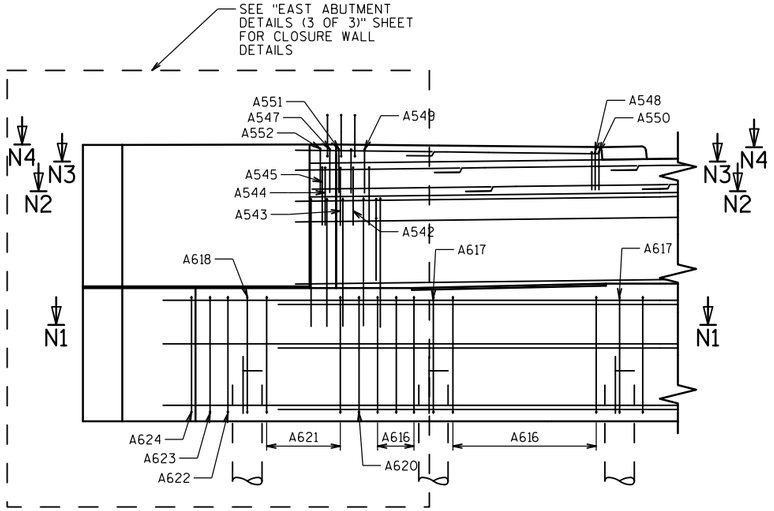
EAST ABUTMENT

SHEET 7 OF 39

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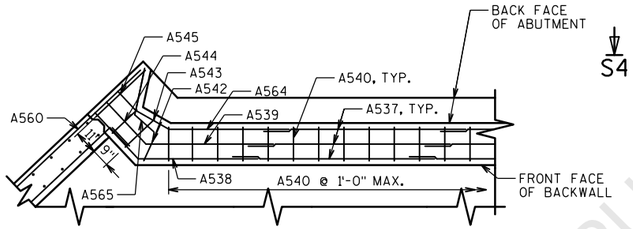
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PLOT DATE : 7/28/2021 7:54:21 PM
PLOT BY : ejelinek
PLOT SCALE : 8:1

STATE PROJECT NUMBER
1229-04-74



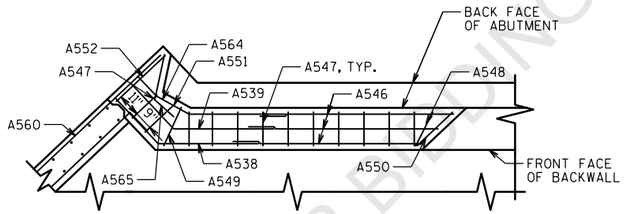
ELEVATION NORTH END

(LOOKING EAST)



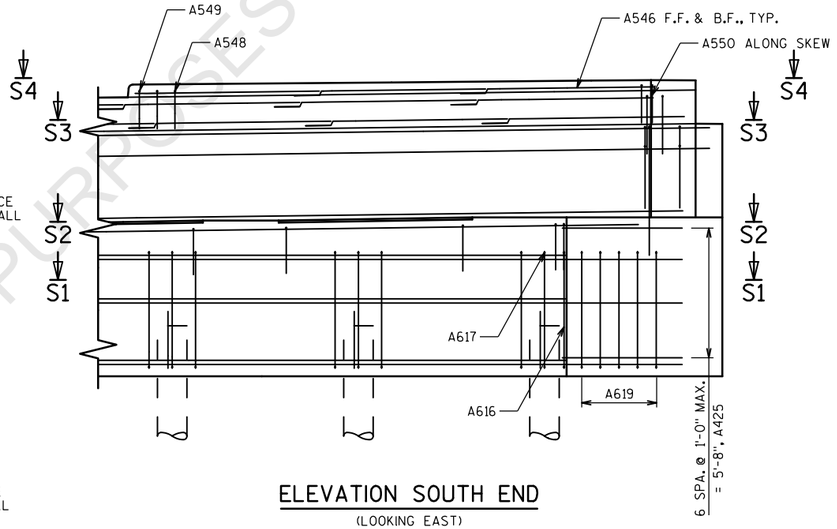
SECTION N3-N3

AT PAVING BLOCK



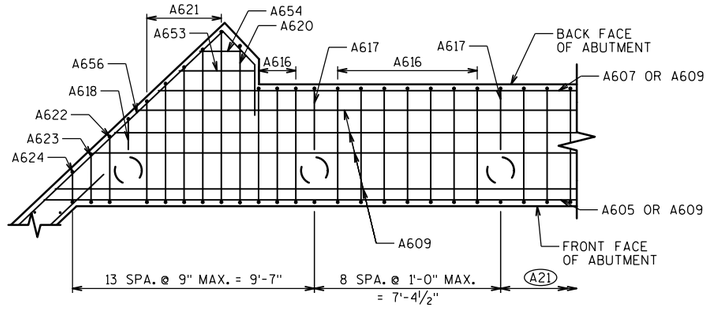
SECTION N4-N4

AT MEDIAN



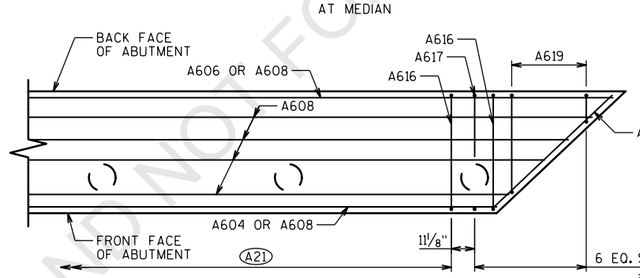
ELEVATION SOUTH END

(LOOKING EAST)



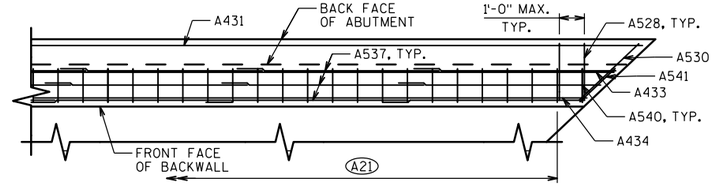
SECTION N1-N1

PILE REINFORCEMENT NOT SHOWN
AT ABUTMENT BODY



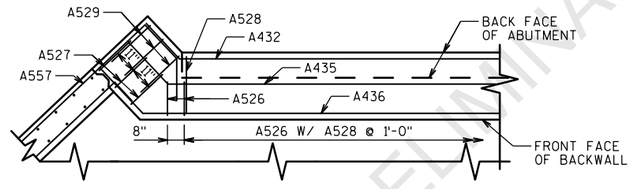
SECTION S1-S1

PILE REINFORCEMENT NOT SHOWN
AT ABUTMENT BODY



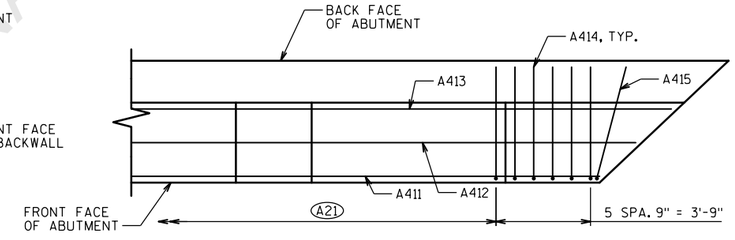
SECTION S3-S3

AT BOTTOM OF PAVING BLOCK/ TOP OF BACKWALL



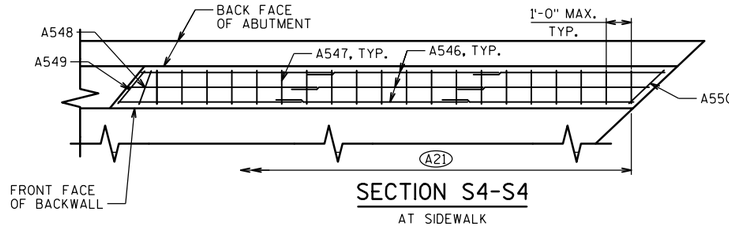
SECTION N2-N2

AT BACKWALL



SECTION S2-S2

AT BEAM SEAT



SECTION S4-S4

AT SIDEWALK

LEGEND

(A21) SEE " EAST ABUTMENT" SHEET

F.F. FRONT FACE

B.F. BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

EAST ABUTMENT DETAILS (1 OF 3)

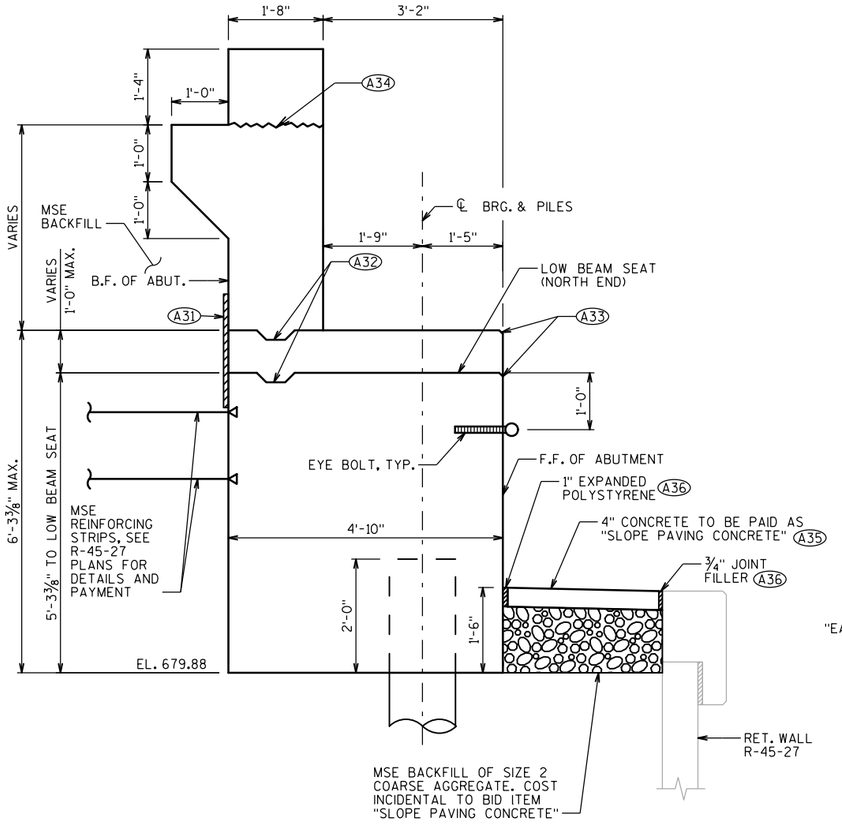
SHEET 8 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

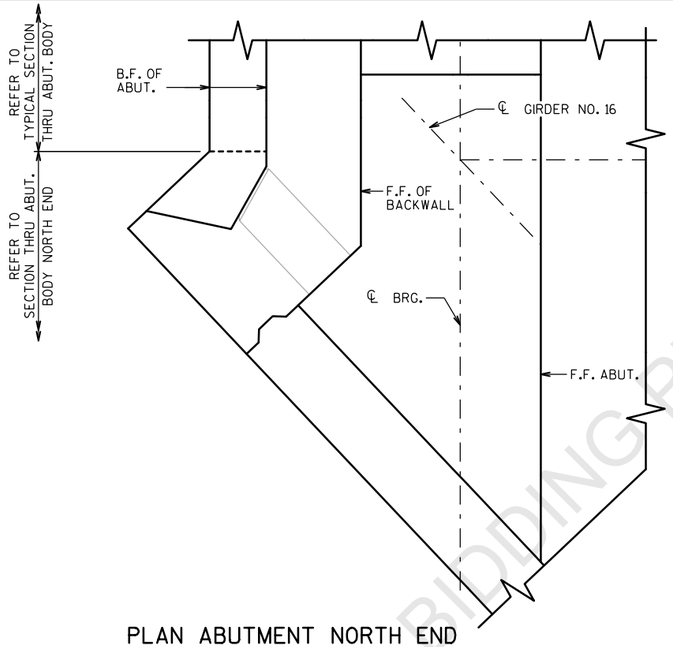
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PLOT BY : ejelinek
PLOT SCALE : 6:1

STATE PROJECT NUMBER
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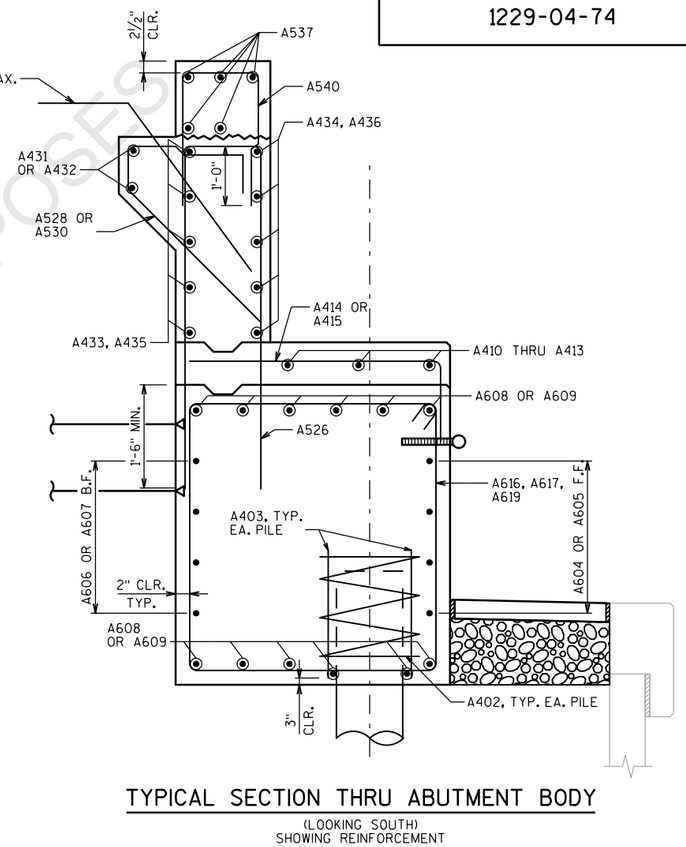
TYPICAL SECTION THRU ABUTMENT BODY

(LOOKING SOUTH)
HORIZONTAL DIMENSIONS SHOWN TAKEN NORMAL TO ℄ OF ABUTMENT



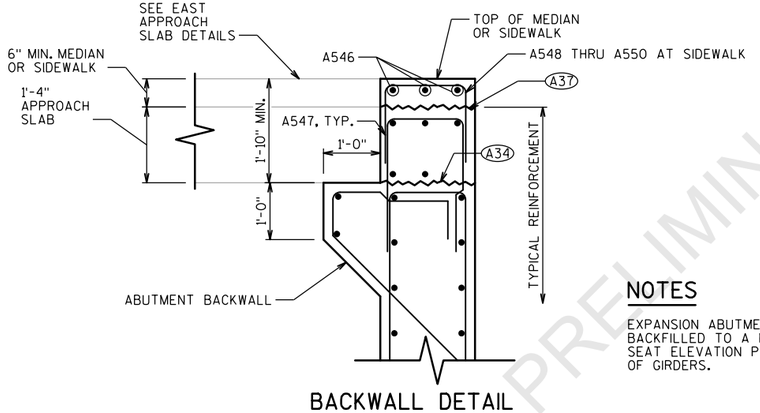
PLAN ABUTMENT NORTH END

SEE "EAST ABUTMENT DETAILS (1 OF 3)" AND
"EAST ABUTMENT DETAILS (3 OF 3)" SHEETS FOR PLAN VIEW REINFORCEMENT DETAILS



TYPICAL SECTION THRU ABUTMENT BODY

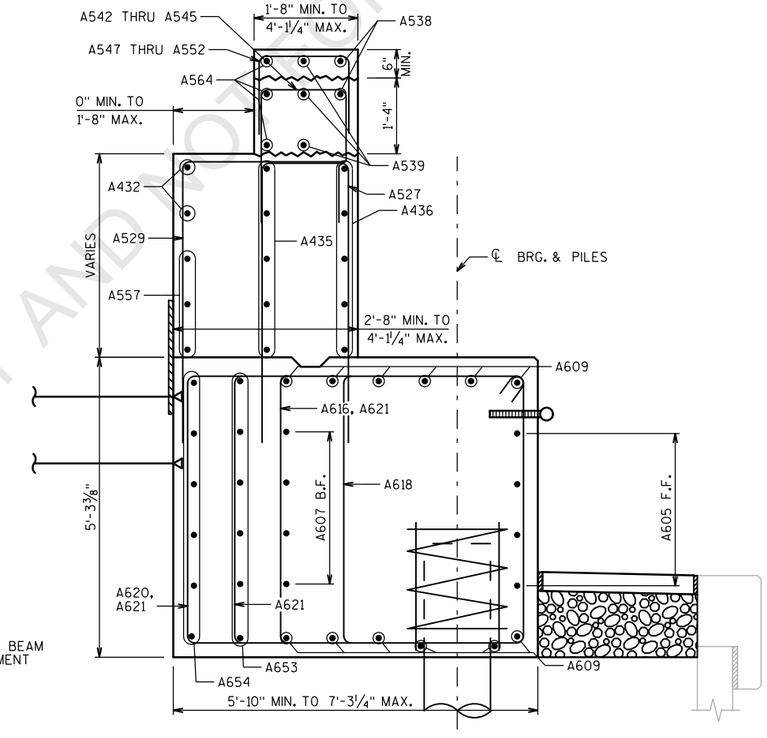
(LOOKING SOUTH)
SHOWING REINFORCEMENT



BACKWALL DETAIL AT SIDEWALK & MEDIAN

NOTES

EXPANSION ABUTMENTS TO BE BACKFILLED TO A MINIMUM OF THE BEAM SEAT ELEVATION PRIOR TO PLACEMENT OF GIRDERS.



SECTION THRU ABUTMENT BODY NORTH END

(LOOKING SOUTH)
HORIZONTAL DIMENSIONS SHOWN TAKEN NORMAL TO ℄ OF ABUTMENT
SEE TYPICAL SECTION THRU BODY FOR ADDITIONAL INFORMATION

LEGEND

(A31) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENTS.

(A32) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

(A33) ¾" BEVEL

(A34) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKEOFF AND LEAVE ROUGH.

(A35) SLOPE DOWN ¾" FROM FRONT FACE OF ABUTMENT TO BACK OF CONCRETE COPING.

(A36) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER WITH NON-STAINING, NON-BITUMINOUS JOINT SEALER, (1" DEEP) AND HOLD ⅛" BELOW SURFACE OF CONCRETE.

(A37) OPTIONAL CONSTRUCTION JOINT.

F.F. - FRONT FACE

B.F. - BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

EAST ABUTMENT DETAILS (2 OF 3)

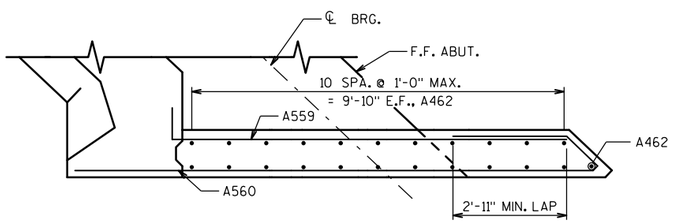
SHEET 9 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

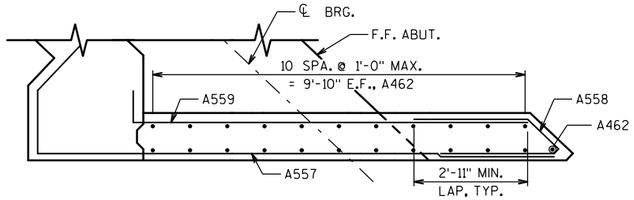
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PLOT BY : ejelinek
PLOT SCALE : 2.66667:1

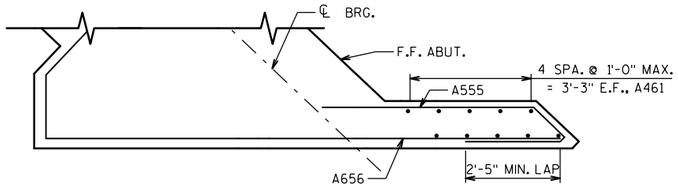
STATE PROJECT NUMBER
1229-04-74



SECTION A1-A1



SECTION A2-A2



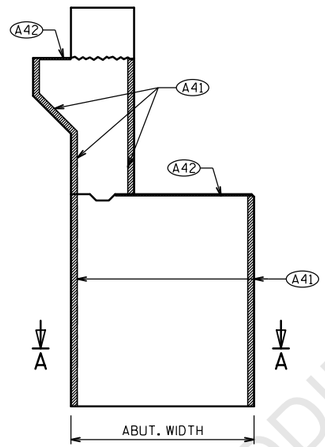
SECTION A3-A3

LEGEND

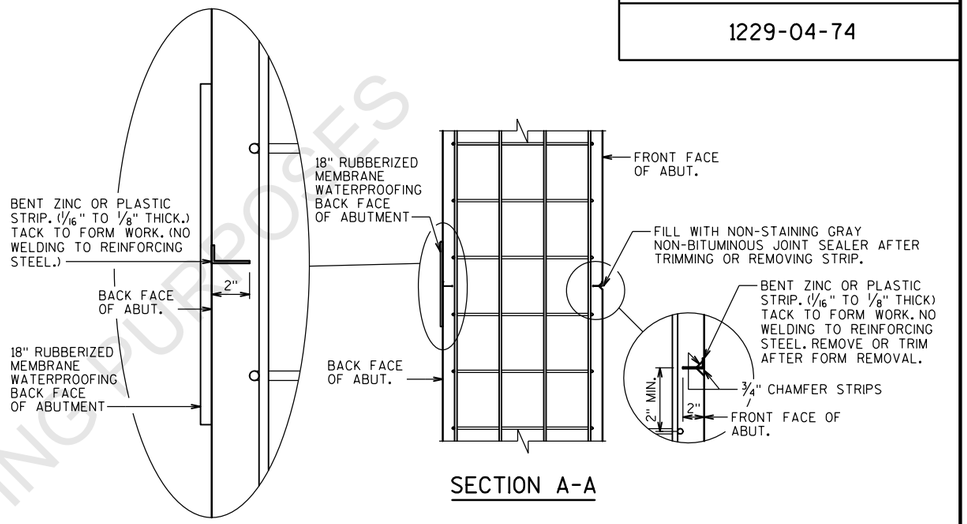
- (A41) BENT OR ZINC PLASTIC STRIP
- (A42) USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.
- (A43) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER OR EXPANDED POLYSTYRENE WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- (A44) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- (A45) OPTIONAL CONSTRUCTION JOINT. COORDINATE CONSTRUCTION OF THE SIDEWALL WITH BACKFILLING OF RETAINING WALL R-45-27.
- (A46) OPTIONAL CONSTRUCTION JOINT

F.F. - FRONT FACE

E.F. - EACH FACE



SECTION THRU ABUTMENT BODY



SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

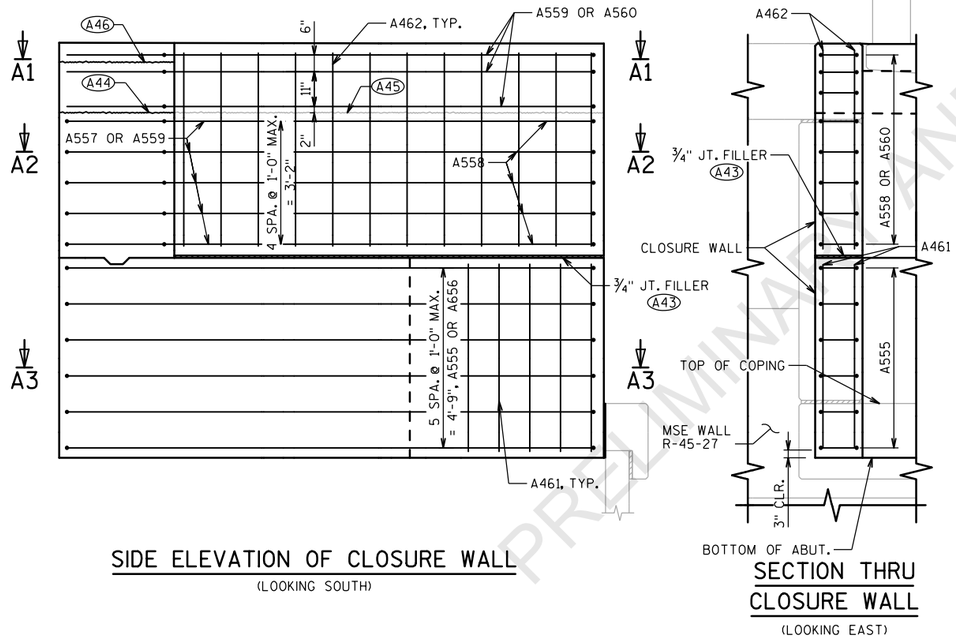
NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED.

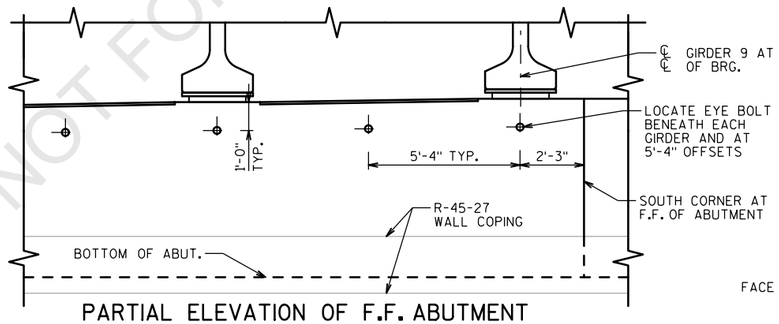


SIDE ELEVATION OF CLOSURE WALL

(LOOKING SOUTH)

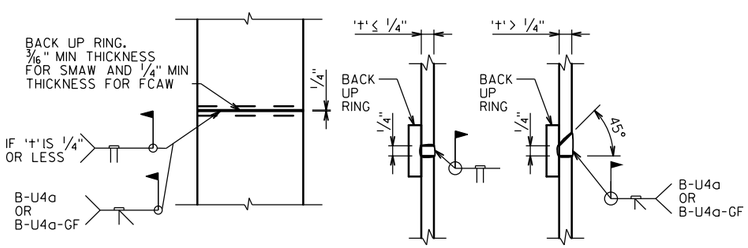
SECTION THRU CLOSURE WALL

(LOOKING EAST)



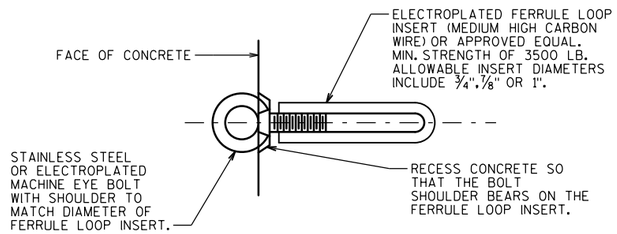
PARTIAL ELEVATION OF F.F. ABUTMENT SHOWING EYE BOLT FALL PROTECTION

(LOOKING EAST, SOUTH END SHOWN)



CAST-IN-PLACE 'PIPE PILE' CIP PILE WELD DETAIL

PILE SPLICE DETAIL



EYE BOLT DETAIL

COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

EAST ABUTMENT DETAILS (3 OF 3)

SHEET 10 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-102\cds\B102_080304_ab.dgn PLOT DATE : 7/28/2021 7:55:15 PM PLOT BY : ejelinek PLOT SCALE : 2:1

BILL OF BARS

BAR MARK	EPOXY COATED	STAIN-LESS STEEL	NO. REQ'D.	LENGTH	BENT	SERIES	LOCATION
SS901		X	83	5'-0"	X		CONCRETE BACKWALL TO APPROACH SLAB
A402			12	28'-0"	X		ABUT. BODY PILES
A403			24	2'-3"			ABUT. BODY PILES
A604			4	45'-0"			ABUT. BODY FRONT FACE - HORIZ.
A605			4	43'-3"			ABUT. BODY FRONT FACE - HORIZ.
A606			4	49'-8"			ABUT. BODY BACK FACE - HORIZ.
A607			4	38'-9"			ABUT. BODY BACK FACE - HORIZ.
A608			12	47'-4"		▲	ABUT. BODY TOP & BOT. - HORIZ.
A609			12	41'-0"		▲	ABUT. BODY TOP & BOT. - HORIZ.
A410			3	12'-1"			ABUT. BODY TOP - HORIZ.
A411			1	44'-5"			ABUT. BODY TOP - HORIZ.
A412			2	24'-2"			ABUT. BODY TOP - HORIZ.
A413			2	24'-10"			ABUT. BODY TOP - HORIZ.
A414			61	6'-5"	X		ABUT. BODY TOP - TIE
A415			1	6'-7"	X		ABUT. BODY TOP - TIE EDGE
A616			74	19'-2"	X		ABUT. BODY - STIRRUP
A617			11	15'-10"	X		ABUT. BODY - STIRRUP AT PILE
A618			1	13'-3"	X		ABUT. BODY - STIRRUP AT END PILE
A619			5	14'-11"	X	▲	ABUT. BODY - STIRRUP AT SOUTH END
A620			1	22'-8"	X		ABUT. BODY - STIRRUP AT NORTH END
A621			5	20'-10"	X	▲	ABUT. BODY - STIRRUP AT NORTH END
A622			1	15'-2"	X		ABUT. BODY - STIRRUP AT NORTH END
A623			1	13'-10"	X		ABUT. BODY - STIRRUP AT NORTH END
A624			1	12'-6"	X		ABUT. BODY - STIRRUP AT NORTH END
A425			7	6'-6"			ABUT. BODY - HORIZ. SOUTH END
A526	X		82	11'-5"	X		ABUT. BACKWALL - VERT. STIRRUP
A527	X		3	11'-9"	X		ABUT. BACKWALL - VERT. STIRRUP NORTH END
A528	X		81	7'-0"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH
A529	X		3	7'-0"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH NORTH END
A530	X		1	8'-0"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH SOUTH END
A431	X		4	26'-1"			ABUT. BACKWALL - HORIZ. BELOW PAVING NOTCH
A432	X		2	36'-9"	X		ABUT. BACKWALL - HORIZ. BELOW PAVING NOTCH
A433	X		10	25'-6"			ABUT. BACKWALL - HORIZ. B.F.
A434	X		10	24'-11"			ABUT. BACKWALL - HORIZ. F.F.
A435	X		5	37'-8"	X		ABUT. BACKWALL - HORIZ. B.F.
A436	X		5	38'-10"	X		ABUT. BACKWALL - HORIZ. F.F.
A537	X		55	8'-0"			AT PAVING BLOCK
A538	X		2	7'-3"	X		AT PAVING BLOCK F.F. NORTH END
A539	X		3	7'-4"	X		AT PAVING BLOCK B.F. NORTH END
A540	X		82	5'-9"	X		STIRRUP AT PAVING BLOCK
A541	X		1	6'-4"	X		STIRRUP AT PAVING BLOCK SOUTH END
A542	X		1	6'-1"	X		STIRRUP AT PAVING BLOCK NORTH END
A543	X		1	6'-0"	X		STIRRUP AT PAVING BLOCK NORTH END
A544	X		1	5'-9"	X		STIRRUP AT PAVING BLOCK NORTH END
A545	X		1	7'-1"	X		STIRRUP AT PAVING BLOCK NORTH END
A546	X		12	7'-7"			HORIZ. AT MEDIAN AND SIDEWALK
A547	X		31	3'-11"	X		STIRRUP AT MEDIAN AND SIDEWALK
A548	X		2	4'-0"	X		STIRRUP AT MEDIAN AND SIDEWALK
A549	X		2	4'-3"	X		STIRRUP AT MEDIAN AND SIDEWALK
A550	X		2	4'-5"	X		STIRRUP AT MEDIAN AND SIDEWALK
A551	X		1	4'-2"	X		STIRRUP AT SIDEWALK
A552	X		1	5'-0"	X		STIRRUP AT SIDEWALK
A653			6	3'-0"			ABUT. BODY BACK FACE - HORIZ. - NORTH END
A654			6	1'-8"			ABUT. BODY BACK FACE - HORIZ. - NORTH END
A555			6	9'-7"	X		CLOSURE WALL STIRRUPS - LOWER
A656			6	17'-1"	X		CLOSURE WALL STIRRUPS - LOWER
A557	X		5	17'-1"	X		CLOSURE WALL STIRRUPS - UPPER
A558	X		5	7'-0"	X		CLOSURE WALL STIRRUPS - UPPER
A559	X		8	11'-5"	X		CLOSURE WALL STIRRUPS - UPPER
A560	X		3	17'-7"	X		CLOSURE WALL STIRRUPS - UPPER
A461			10	4'-10"			CLOSURE WALL VERTICAL - LOWER
A462	X		23	5'-2"			CLOSURE WALL VERTICAL - UPPER
A563	X		3	4'-4"	X		PARAPET TIES
A564	X		3	7'-3"	X		HORIZONTAL AT PAVING BLOCK - NORTH END
A565	X		3	2'-10"	X		HORIZONTAL AT PAVING BLOCK - NORTH END

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

LEGEND

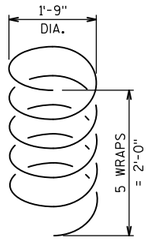
F.F. FRONT FACE

B.F. BACK FACE

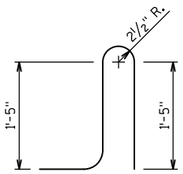
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A608	2 SERIES OF 6	45'-0" TO 49'-8"
A609	2 SERIES OF 6	38'-9" TO 43'-3"
A619	1 SERIES OF 5	12'-2" TO 17'-8"
A621	1 SERIES OF 5	18'-0" TO 23'-8"

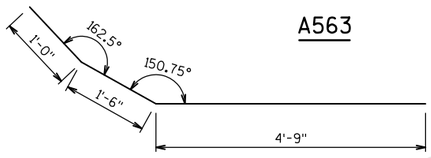
BUNDLE AND TAG EACH SERIES SEPARATELY



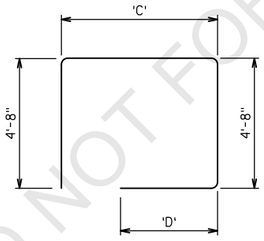
A402



A563

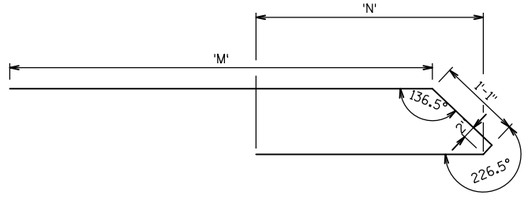


A564



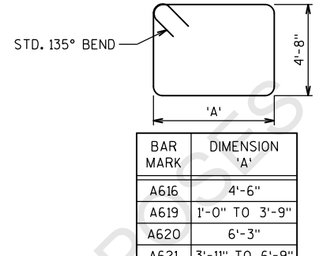
BAR MARK	DIMENSION 'C'	DIMENSION 'D'
A617	4'-6"	2'-6"
A618	3'-3"	1'-2"

A617, A618



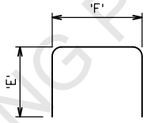
BAR MARK	DIMENSION 'M'	DIMENSION 'N'
A555	5'-7"	2'-6"
A558	3'-0"	3'-0"
A560	3'-0"	13'-7"

A555, A558, A560



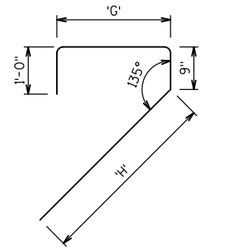
BAR MARK	DIMENSION 'A'
A616	4'-6"
A619	1'-0" TO 3'-9"
A620	6'-3"
A621	3'-11" TO 6'-9"
A622	2'-6"
A623	1'-10"
A624	1'-2"

A616, A619, A620, A621, A622, A623, A624



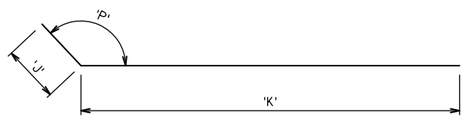
BAR MARK	DIMENSION 'E'	DIMENSION 'F'
A526	5'-2"	1'-4"
A527	5'-2"	1'-8"
A540	2'-4"	1'-4"
A541	2'-4"	1'-11"
A542	2'-4"	1'-8"
A543	2'-4"	1'-7"
A544	2'-4"	1'-4"
A545	2'-4"	2'-8"
A547	1'-5"	1'-4"
A548	1'-5"	1'-5"
A549	1'-5"	1'-8"
A550	1'-5"	1'-10"
A551	1'-5"	1'-7"
A552	1'-5"	2'-5"

A526, A527, A540, A541, A542, A543, A544, A545, A547, A548, A549, A550, A551, A552



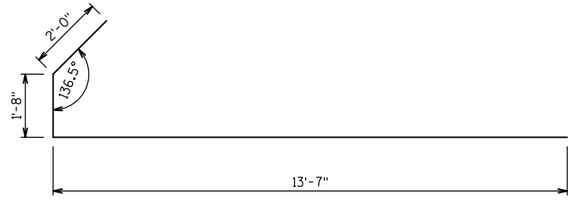
BAR MARK	DIMENSION 'G'	DIMENSION 'H'
A528	2'-3"	3'-3"
A530	3'-0"	3'-6"

A528, A530

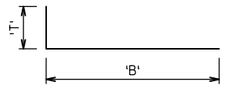


BAR MARK	DIMENSION 'J'	DIMENSION 'K'	ANGLE 'P'
A432	1'-11"	34'-10"	133.25°
A435	2'-4"	35'-4"	133.25°
A436	2'-6"	36'-4"	133.25°
A538	2'-6"	4'-9"	133.25°
A539	2'-3"	5'-1"	133.25°
A565	1'-0"	1'-10"	120°

A432, A435, A436, A538, A539, A565

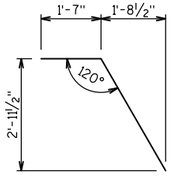


A656, A557



BAR MARK	DIMENSION 'B'	DIMENSION 'T'
A414	4'-5"	2'-1"
A415	4'-7"	2'-1"
A529	5'-2"	2'-0"
A559	10'-6"	1'-0"

A414, A415, A529, A559



SS901

STATE PROJECT NUMBER

1229-04-74

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

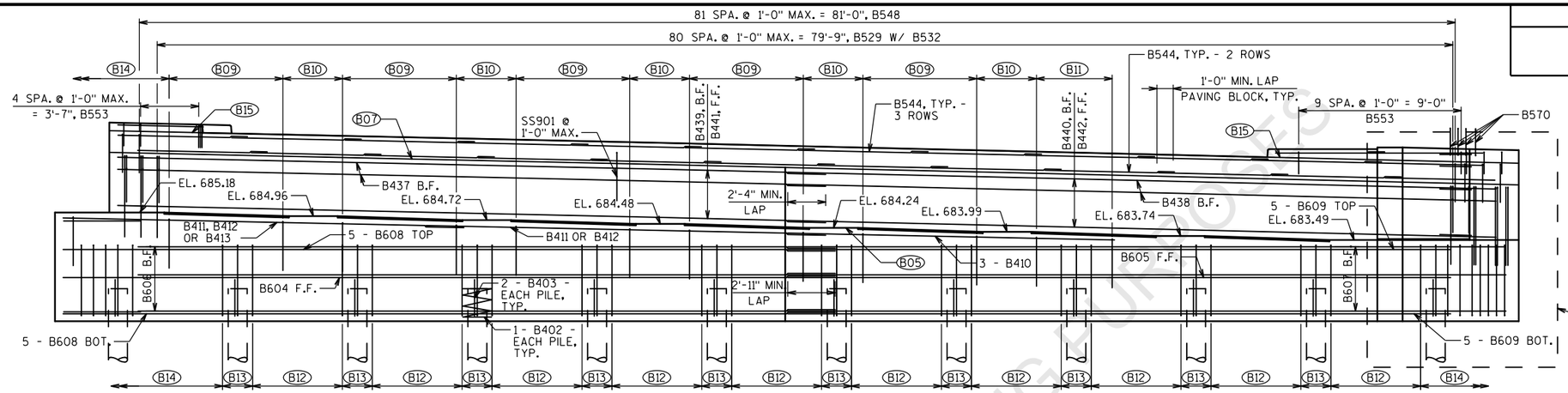
DRAWN BY EAJ | PLANS CK'D. HDA

EAST ABUTMENT
BILL OF BARS

SHEET 11 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74

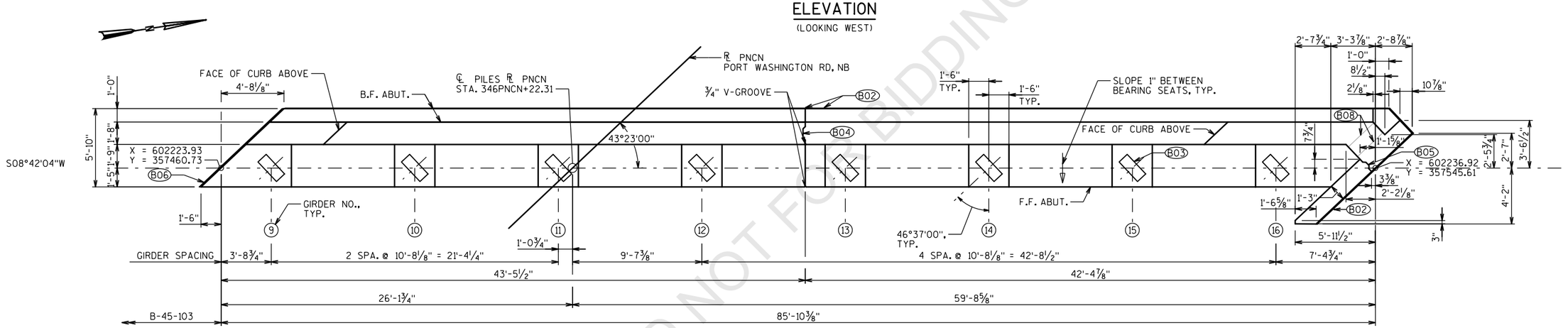


ELEVATION
(LOOKING WEST)

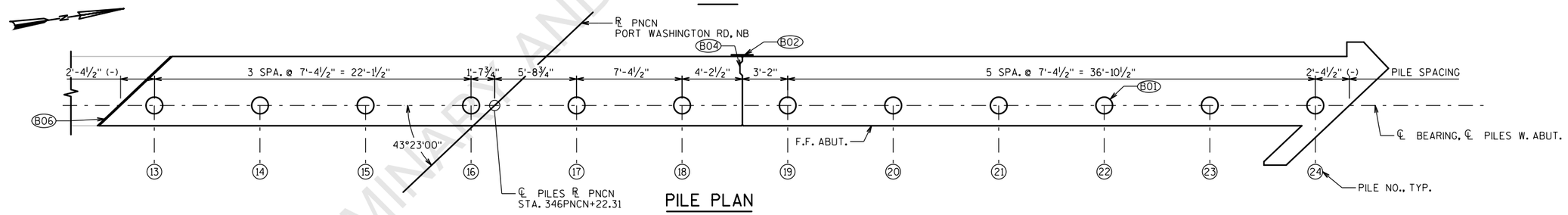
NOTES

HORIZONTAL DIMENSIONS SHOWN TIED TO THE SOUTH EDGE DO NOT INCLUDE THE FILLER THICKNESS.

ALL DIMENSIONS, EXCEPT THE SIDEWALL WIDTH DIMENSION, ARE GIVEN ALONG OR NORMAL TO ℄ BEARING AND PILES.



PLAN



PILE PLAN

LEGEND

(B01) ABUTMENT SUPPORTED ON CIP CONCRETE 12¾x0.375-INCH PILING WITH A MAXIMUM DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES METHOD. ESTIMATED PILING LENGTH = 75 FEET. PILE POINTS ARE REQUIRED.

(B02) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENTS.

(B03) 2'-0" x 10" STEEL LAMINATED ELASTOMERIC BEARING PAD, TYPICAL. SEE "EXPANSION BEARING DETAILS" SHEET FOR DETAILS.

(B04) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x8" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

LEGEND CON'T

(B05) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

(B06) 1" FILLER PLACED BETWEEN B-45-102 WEST ABUTMENT AND B-45-103 WEST ABUTMENT.

(B07) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKEOFF AND LEAVE ROUGH.

(B08) SEE "APPROACH VERTICAL FACE PARAPET DETAILS" SHEET

(B09) 7 SPA. @ 1'-0" MAX. = 7'-0", B414

LEGEND CON'T

(B10) 5 SPA. @ 9" MAX. = 3'-8⅛", B414

(B11) 5 EQ. SPA. @ 1'-0" MAX. = 4'-8", B414

(B12) 6 SPA. @ 1'-0" MAX. = 5'-6⅜" MAX., B615

(B13) 2 SPA. @ 1'-0" MAX. = 1'-10⅛", B616 OVER PILE

(B14) SEE "WEST ABUTMENT DETAILS (1 OF 3)" SHEET FOR MORE INFORMATION.

(B15) OPTIONAL CONSTRUCTION JOINT

F.F. FRONT FACE

B.F. BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

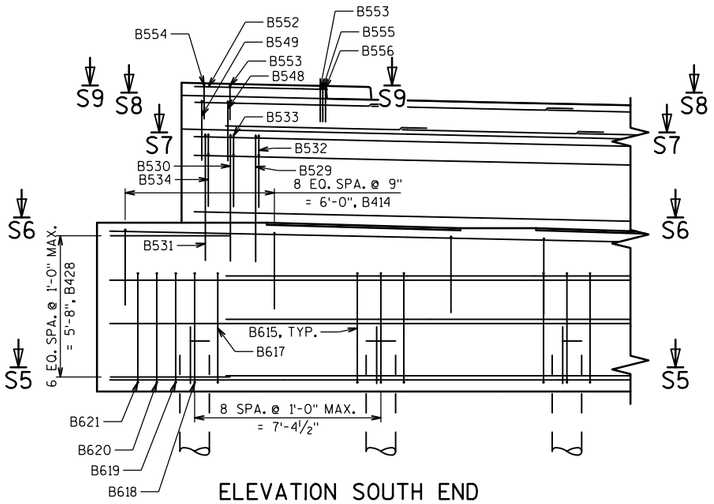
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WEST ABUTMENT

SHEET 12 OF 39

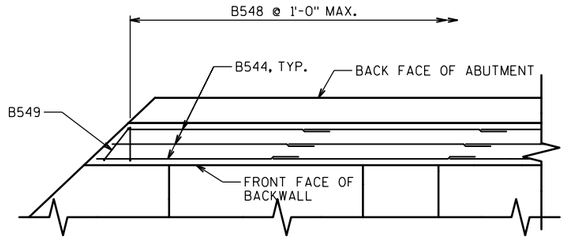
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74



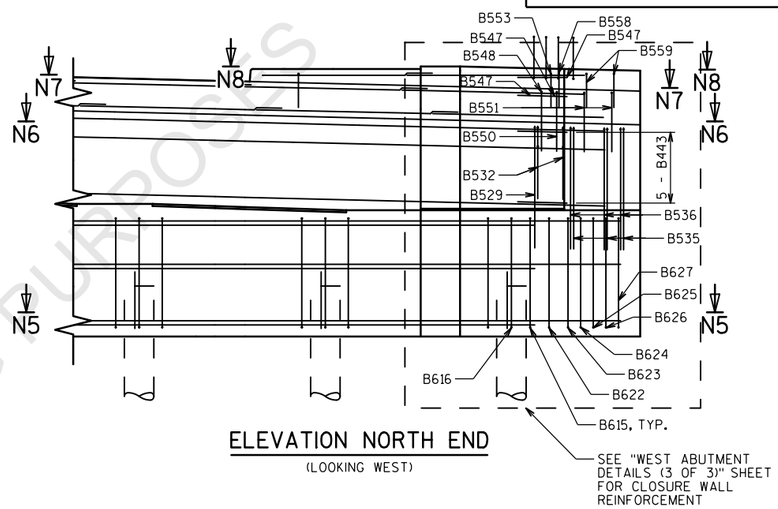
ELEVATION SOUTH END

(LOOKING WEST)



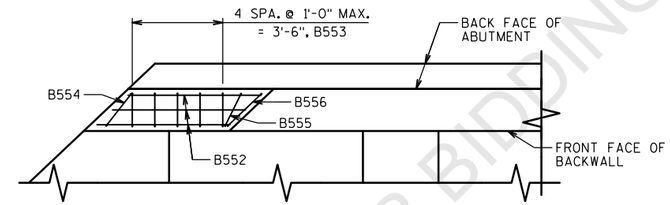
SECTION S8-S8

AT PAVING BLOCK



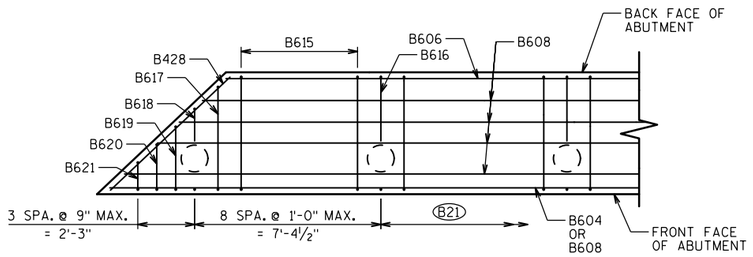
ELEVATION NORTH END

(LOOKING WEST)



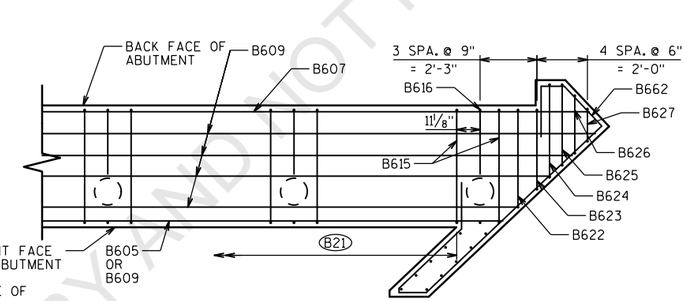
SECTION S9-S9

AT MEDIAN



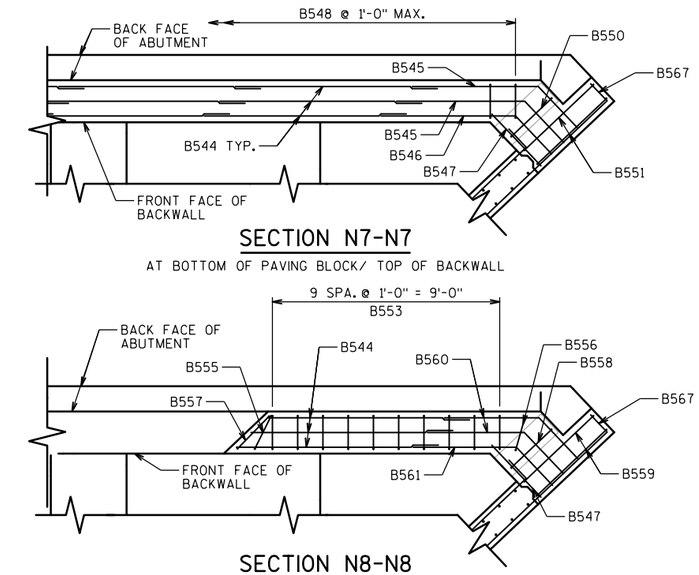
SECTION S5-S5

PILE REINFORCEMENT NOT SHOWN
AT ABUTMENT BODY



SECTION N5-N5

PILE REINFORCEMENT NOT SHOWN
AT ABUTMENT BODY

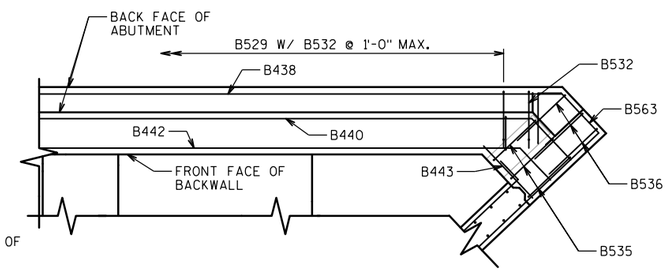


SECTION N7-N7

AT BOTTOM OF PAVING BLOCK/ TOP OF BACKWALL

SECTION N8-N8

AT SIDEWALK



SECTION S7-S7

AT BACKWALL

SECTION N6-N6

AT BEAM SEAT

LEGEND

(B21) SEE "WEST ABUTMENT" SHEET

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

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WEST ABUTMENT DETAILS (1 OF 3)

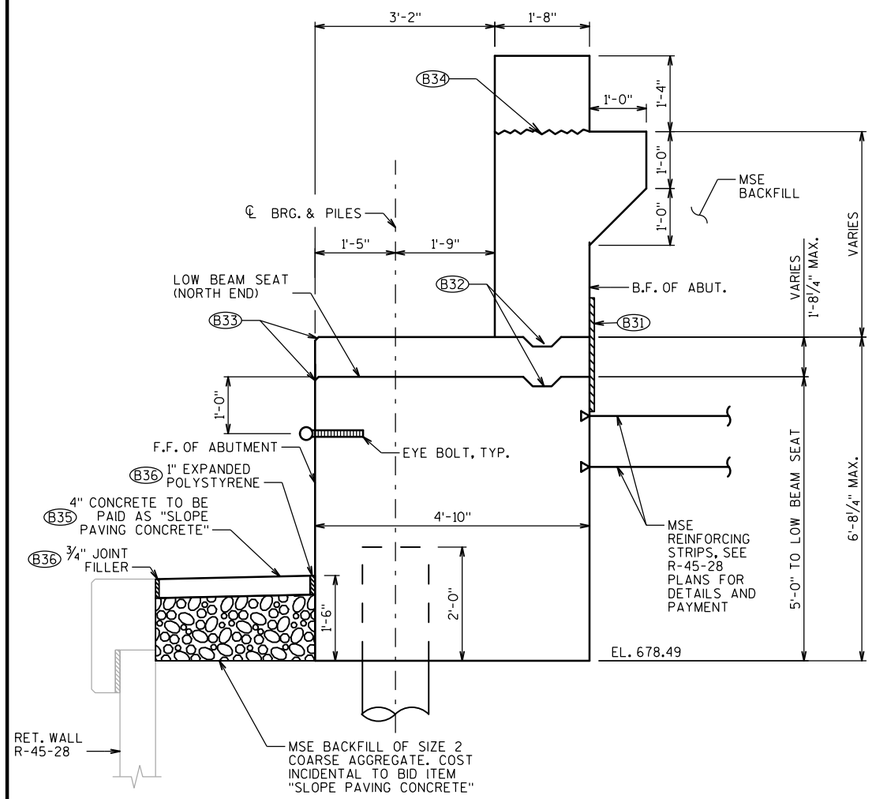
SHEET 13 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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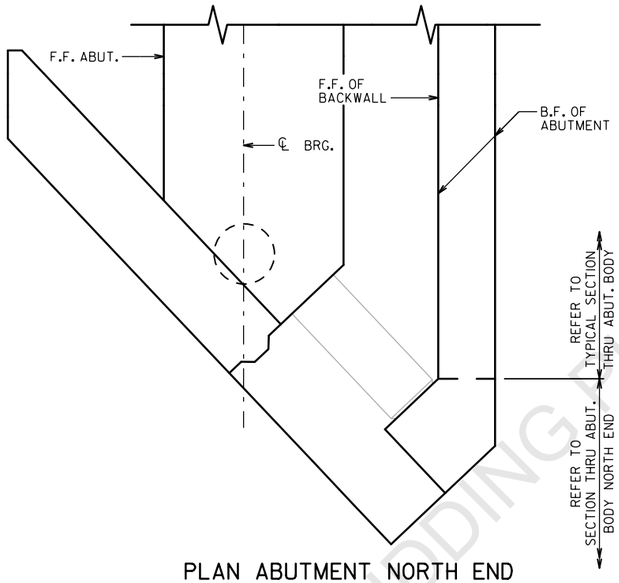
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PLOT DATE : 7/28/2021 7:55:28 PM
PLOT BY : ejelinek
PLOT SCALE : 6:1

STATE PROJECT NUMBER
1229-04-74



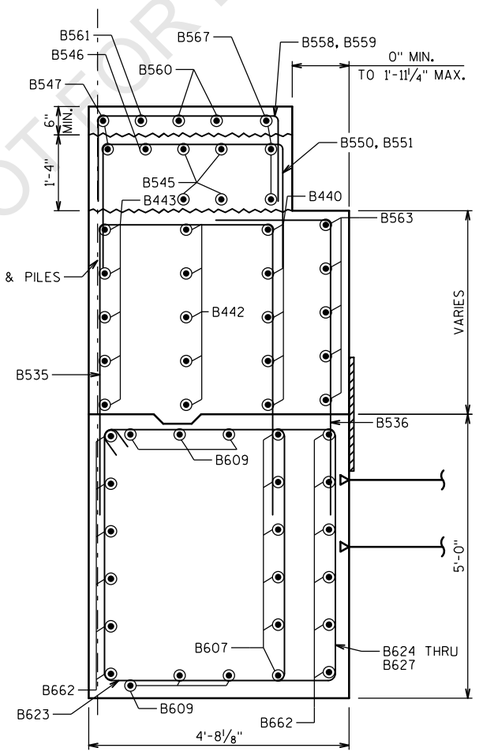
TYPICAL SECTION THRU ABUTMENT BODY

(LOOKING SOUTH)
HORIZONTAL DIMENSIONS SHOWN TAKEN NORMAL TO ℄ OF ABUTMENT



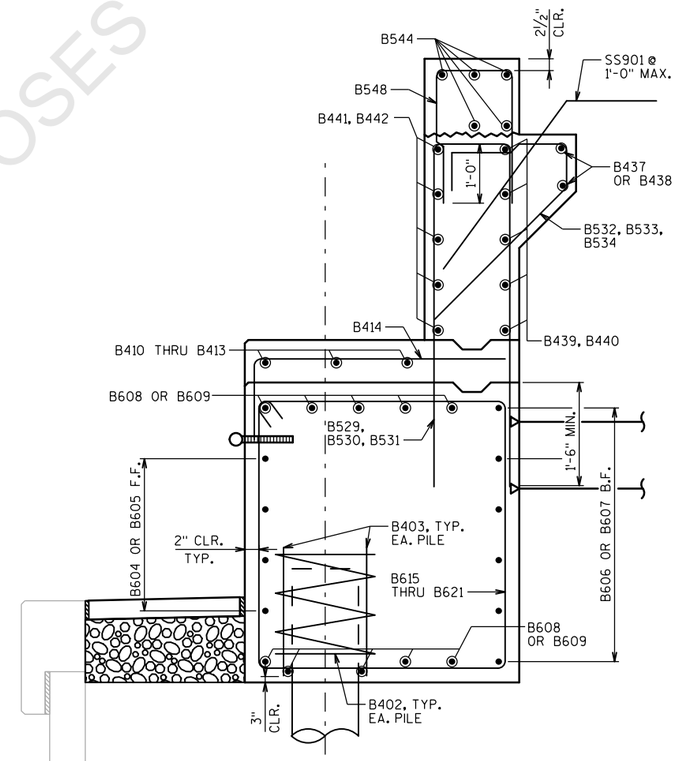
PLAN ABUTMENT NORTH END

SEE "WEST ABUTMENT DETAILS (1 OF 3)" AND
"WEST ABUTMENT DETAILS (3 OF 3)" SHEETS FOR PLAN VIEW REINFORCEMENT DETAILS



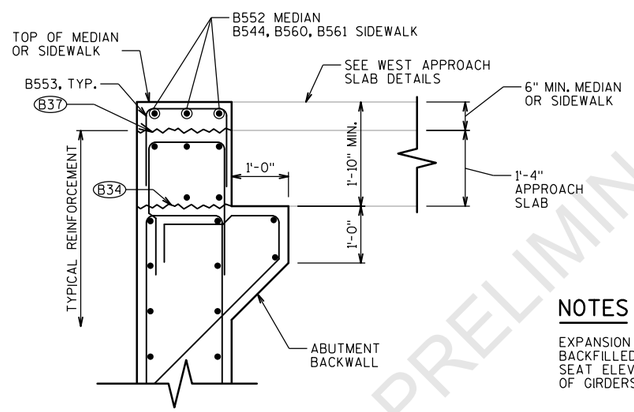
SECTION THRU ABUTMENT BODY NORTH END

(LOOKING SOUTH)
HORIZONTAL DIMENSIONS SHOWN TAKEN NORMAL TO ℄ OF ABUTMENT
SEE TYPICAL SECTION THRU BODY FOR ADDITIONAL INFORMATION



TYPICAL SECTION THRU ABUTMENT BODY

(LOOKING SOUTH)
SHOWING REINFORCEMENT



BACKWALL DETAIL AT SIDEWALK & MEDIAN

(LOOKING SOUTH)
HORIZONTAL DIMENSIONS SHOWN TAKEN NORMAL TO ℄ OF ABUTMENT

NOTES

EXPANSION ABUTMENTS TO BE BACKFILLED TO A MINIMUM OF THE BEAM SEAT ELEVATION PRIOR TO PLACEMENT OF GIRDERS.

LEGEND

- (B31) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENTS.
- (B32) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.
- (B33) ¾" BEVEL
- (B34) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKEOFF AND LEAVE ROUGH.
- (B35) SLOPE DOWN ¾" FROM FRONT FACE OF ABUTMENT TO BACK OF CONCRETE COPING.
- (B36) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER WITH NON-STAINING, NON-BITUMINOUS JOINT SEALER, (1" DEEP) AND HOLD ⅛" BELOW SURFACE OF CONCRETE.
- (B37) OPTIONAL CONSTRUCTION JOINT.

F.F. - FRONT FACE

B.F. - BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY	EAJ	PLANS CK'D.	HDA

WEST ABUTMENT DETAILS (2 OF 3)

SHEET 14 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-102\cds\B102_080308_ab.dgn
PLOT DATE : 7/28/2021 7:55:33 PM
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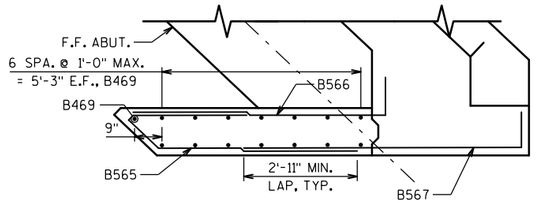
STATE PROJECT NUMBER
1229-04-74

LEGEND

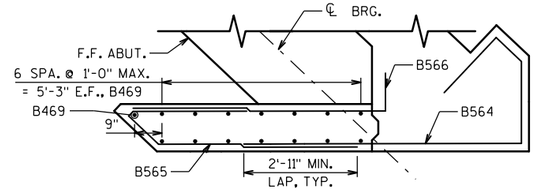
- (B41) BENT OR ZINC PLASTIC STRIP
- (B42) USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY ½" DEEP.
- (B43) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER OR EXPANDED POLYSTYRENE WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).
- (B44) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- (B45) OPTIONAL CONSTRUCTION JOINT. COORDINATE CONSTRUCTION OF THE SIDEWALL WITH BACKFILLING OF RETAINING WALL R-45-28.
- (B46) OPTIONAL CONSTRUCTION JOINT

E.F. - EACH FACE

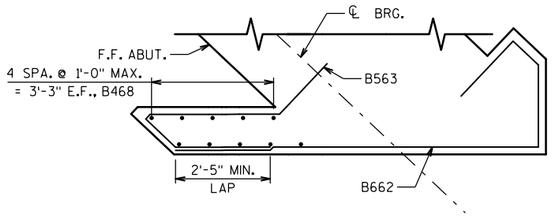
F.F. - FRONT FACE



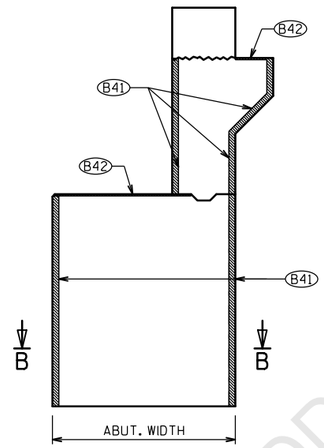
SECTION B1-B1



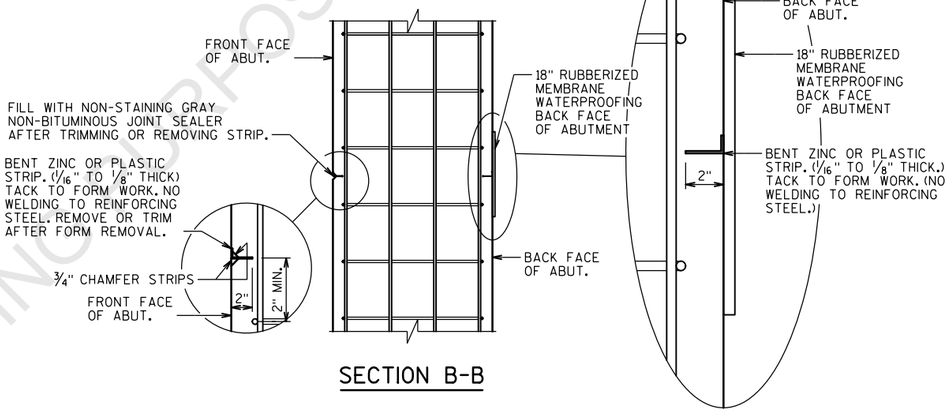
SECTION B2-B2



SECTION B3-B3

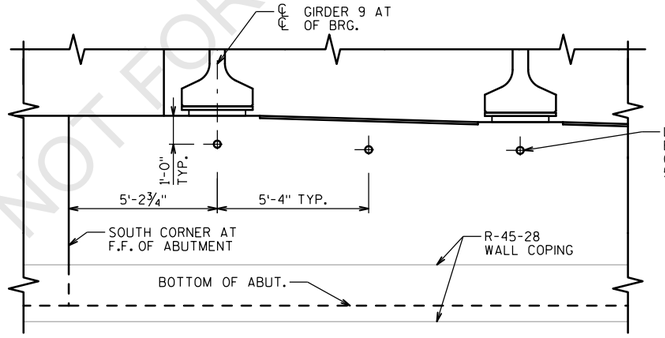


SECTION THRU ABUTMENT BODY



SECTION B-B

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT



PARTIAL ELEVATION OF F.F. ABUTMENT SHOWING EYE BOLT FALL PROTECTION

(LOOKING WEST, SOUTH END SHOWN)

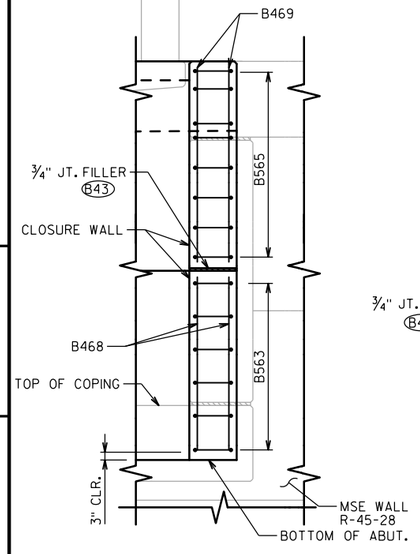
NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

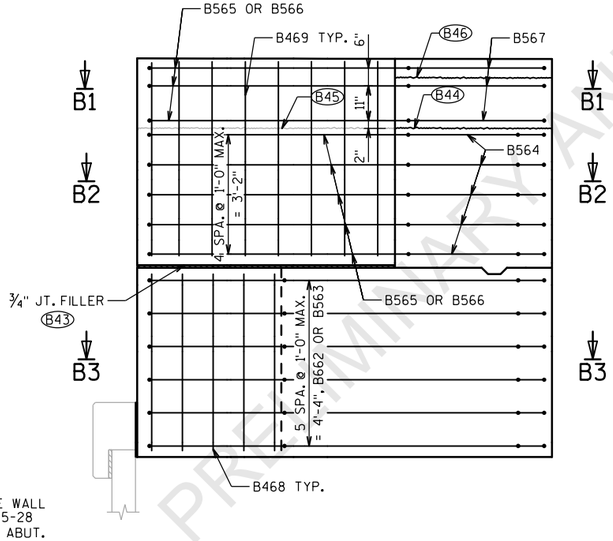
CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED.



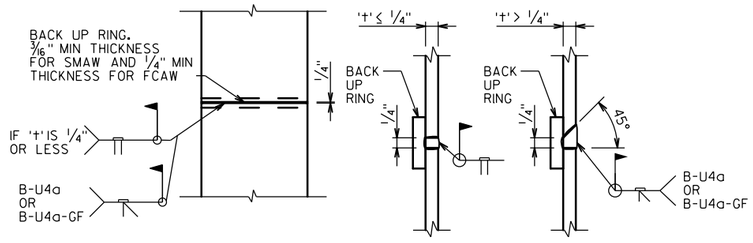
SECTION THRU CLOSURE WALL

(LOOKING WEST)



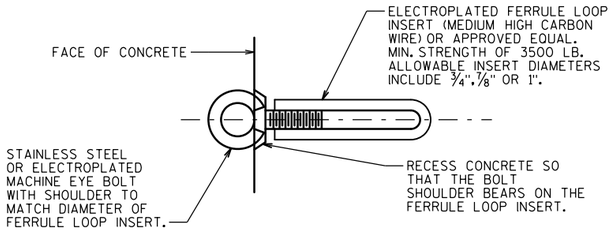
SIDE ELEVATION OF CLOSURE WALL

(LOOKING SOUTH)



CAST-IN-PLACE 'PIPE PILE' CIP PILE WELD DETAIL

PILE SPLICE DETAIL



EYE BOLT DETAIL

COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

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WEST ABUTMENT DETAILS (3 OF 3)

SHEET 15 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-102\cds\B102_080309_ab.dgn PLOT DATE : 7/28/2021 7:55:37 PM PLOT BY : ejelinek PLOT SCALE : 2:1

BILL OF BARS

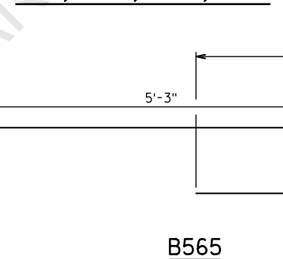
BAR MARK	EPOXY COATED	STAIN-LESS STEEL	NO. REQ'D.	LENGTH	BENT	SERIES	LOCATION
SS901		X	83	5'-0"	X		CONCRETE BACKWALL TO APPROACH SLAB
B402			12	28'-0"	X		ABUT. BODY PILES
B403			24	2'-3"			ABUT. BODY PILES
B604			4	47'-7"			ABUT. BODY FRONT FACE - HORIZ.
B605			4	40'-10"			ABUT. BODY FRONT FACE - HORIZ.
B606			6	42'-11"			ABUT. BODY BACK FACE - HORIZ.
B607			6	44'-3"			ABUT. BODY BACK FACE - HORIZ.
B608			10	45'-9"		▲	ABUT. BODY TOP & BOT. - HORIZ.
B609			10	42'-8"		▲	ABUT. BODY TOP & BOT. - HORIZ.
B410			3	20'-3"			ABUT. BODY TOP - HORIZ.
B411			2	24'-8"			ABUT. BODY TOP - HORIZ.
B412			2	23'-11"			ABUT. BODY TOP - HORIZ.
B413			1	44'-1"			ABUT. BODY TOP - HORIZ.
B414			74	7'-1"	X		ABUT. BODY TOP - TIE
B615			78	18'-8"	X		ABUT. BODY - STIRRUP
B616			11	15'-4"	X		ABUT. BODY - STIRRUP AT PILE
B617			1	17'-8"	X		ABUT. BODY - STIRRUP AT SOUTH END
B618			1	12'-9"	X		ABUT. BODY - STIRRUP AT END PILE
B619			1	14'-6"	X		ABUT. BODY - STIRRUP AT SOUTH END
B620			1	13'-2"	X		ABUT. BODY - STIRRUP AT SOUTH END
B621			1	11'-8"	X		ABUT. BODY - STIRRUP AT SOUTH END
B622			1	17'-2"	X		ABUT. BODY - STIRRUP AT NORTH END
B623			1	15'-10"	X		ABUT. BODY - STIRRUP AT NORTH END
B624			1	17'-0"	X		ABUT. BODY - STIRRUP AT NORTH END
B625			1	16'-0"	X		ABUT. BODY - STIRRUP AT NORTH END
B626			1	14'-2"	X		ABUT. BODY - STIRRUP AT NORTH END
B627			1	12'-2"	X		ABUT. BODY - STIRRUP AT NORTH END
B428			7	6'-6"			ABUT. BODY - HORIZ. SOUTH END
B529	X		81	11'-5"	X		ABUT. BACKWALL - VERT. STIRRUP
B530	X		1	11'-7"	X		ABUT. BACKWALL - VERT. STIRRUP SOUTH END
B531	X		1	11'-9"	X		ABUT. BACKWALL - VERT. STIRRUP SOUTH END
B532	X		82	7'-0"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH
B533	X		1	7'-4"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH SOUTH END
B534	X		1	8'-0"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH SOUTH END
B535	X		3	6'-8"	X		ABUT. BACKWALL - VERT. STIRRUP NORTH END
B536	X		3	7'-0"	X		ABUT. BACKWALL - VERT. STIRRUP NORTH END
B437	X		2	40'-11"			ABUT. BACKWALL - HORIZ. BELOW PAVING NOTCH
B438	X		2	43'-3"			ABUT. BACKWALL - HORIZ. BELOW PAVING NOTCH
B439	X		5	41'-11"			ABUT. BACKWALL - HORIZ. B.F.
B440	X		5	44'-4"	X		ABUT. BACKWALL - HORIZ. B.F.
B441	X		5	43'-1"			ABUT. BACKWALL - HORIZ. F.F.
B442	X		5	43'-6"	X		ABUT. BACKWALL - HORIZ. F.F.
B443	X		5	2'-10"			ABUT. BACKWALL - HORIZ. F.F.
B544	X		58	8'-0"			AT PAVING BLOCK & SIDEWALK HORIZ.
B545	X		4	7'-4"	X		AT PAVING BLOCK B.F. NORTH END
B546	X		1	7'-5"	X		AT PAVING BLOCK F.F. NORTH END
B547	X		2	2'-10"			AT PAVING BLOCK F.F. NORTH END
B548	X		82	5'-9"	X		STIRRUP AT PAVING BLOCK
B549	X		1	6'-0"	X		STIRRUP AT PAVING BLOCK SOUTH END
B550	X		1	6'-7"	X		STIRRUP AT PAVING BLOCK NORTH END
B551	X		2	8'-1"	X		STIRRUP AT PAVING BLOCK NORTH END
B552	X		3	5'-3"			MEDIAN HORIZ.
B553	X		15	3'-11"	X		STIRRUP AT SIDEWALK & MEDIAN
B554	X		1	4'-2"	X		STIRRUP AT MEDIAN
B555	X		2	4'-0"	X		STIRRUP AT SIDEWALK & MEDIAN
B556	X		2	4'-5"	X		STIRRUP AT SIDEWALK & MEDIAN
B557	X		1	4'-4"	X		STIRRUP AT SIDEWALK
B558	X		1	4'-9"	X		STIRRUP AT SIDEWALK
B559	X		2	6'-4"	X		STIRRUP AT SIDEWALK
B560	X		2	6'-0"	X		SIDEWALK HORIZ.
B561	X		1	6'-2"	X		SIDEWALK HORIZ.
B662			6	14'-4"	X		CLOSURE WALL STIRRUPS - LOWER
B563			6	8'-8"	X		CLOSURE WALL STIRRUPS - LOWER
B564	X		5	12'-2"	X		CLOSURE WALL STIRRUPS - UPPER
B565	X		8	9'-1"	X		CLOSURE WALL STIRRUPS - UPPER
B566	X		8	7'-4"	X		CLOSURE WALL STIRRUPS - UPPER
B567	X		3	8'-0"	X		CLOSURE WALL STIRRUPS - UPPER
B468			10	4'-7"			CLOSURE WALL VERTICAL - LOWER
B469	X		15	5'-2"			CLOSURE WALL VERTICAL - UPPER
B570	X		4	4'-4"	X		PARAPET TIES

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

BAR SERIES TABLE

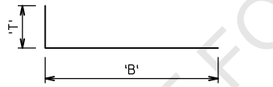
BAR MARK	NO. REQ'D.	LENGTH
B608	2 SERIES OF 5	43'-11" TO 47'-7"
B609	2 SERIES OF 5	40'-10" TO 44'-6"

BUNDLE AND TAG EACH SERIES SEPARATELY



BAR MARK	DIMENSION 'C'	DIMENSION 'D'
B616	4'-6"	2'-6"
B618	3'-2"	1'-3"

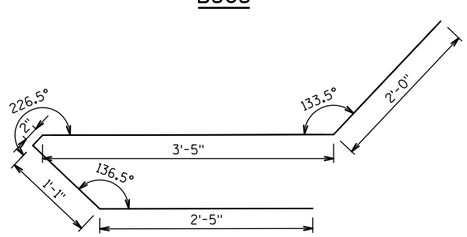
B616, B618



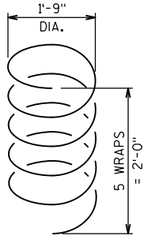
BAR MARK	DIMENSION 'B'	DIMENSION 'T'
B414	4'-5"	2'-9"
B536	5'-2"	2'-0"
B566	6'-8"	10"
B567	7'-4"	10"

B414, B536, B566, B567

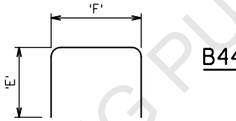
B565



B563

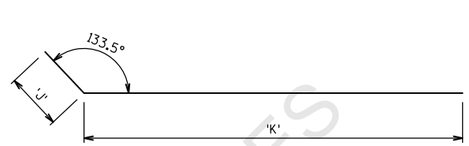


B402



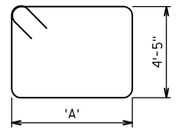
BAR MARK	DIMENSION 'E'	DIMENSION 'F'
B529	5'-2"	1'-4"
B530	5'-2"	1'-6"
B531	5'-2"	1'-8"
B535	2'-4"	2'-3"
B548	2'-4"	1'-4"
B549	2'-4"	1'-7"
B550	2'-4"	2'-2"
B551	2'-4"	3'-8"
B553	1'-5"	1'-4"
B554	1'-5"	1'-7"
B555	1'-5"	1'-5"
B556	1'-5"	1'-10"
B557	1'-5"	1'-9"
B558	1'-5"	2'-2"
B559	1'-5"	3'-9"

B529, B530, B531, B535 B548, B549, B550, B551, B553, B554, B555, B556, B557, B558, B559



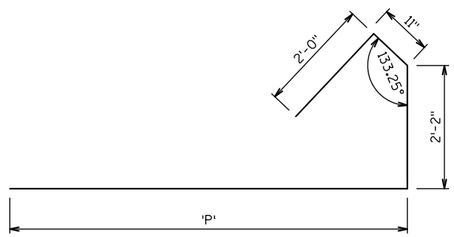
BAR MARK	DIMENSION 'J'	DIMENSION 'K'
B440	2'-3"	42'-1"
B442	1'-9"	41'-9"
B545	2'-3"	5'-1"
B546	2'-1"	5'-4"
B560	3'-10"	2'-3"
B561	4'-1"	2'-1"

B440, B442, B545, B546, B560, B561



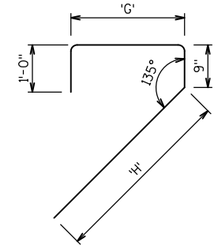
BAR MARK	DIMENSION 'A'
B615	4'-6"
B617	4'-0"
B619	2'-5"
B620	1'-9"
B621	1'-0"
B622	3'-9"
B623	3'-1"
B624	3'-8"
B625	3'-2"
B626	2'-3"
B627	1'-3"

B615, B617, B619, B620, B621, B622, B623, B624, B625, B626, B627



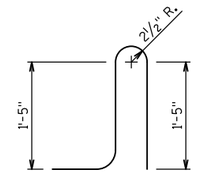
B662, B564

BAR MARK	DIMENSION 'P'
B662	9'-7"
B564	7'-4"

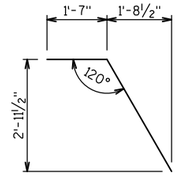


BAR MARK	DIMENSION 'G'	DIMENSION 'H'
B532	2'-3"	3'-3"
B533	2'-6"	3'-4"
B534	3'-0"	3'-6"

B532, B533, B534



B570



SS901

LEGEND

F.F. FRONT FACE

B.F. BACK FACE

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER

1229-04-74

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

WEST ABUTMENT
BILL OF BARS

SHEET 16 OF 39

8

8

STATE PROJECT NUMBER
1229-04-74

LEGEND

(P01) PIER SUPPORTED ON 12¾" DIA. x 0.375" CIP PILING DRIVEN TO EL. 607.00 OR A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE, WHICHEVER COMES FIRST. USE THE MODIFIED GATES ACCEPTANCE METHOD TO DETERMINE REQUIRED DRIVING RESISTANCE. PILE POINTS ARE REQUIRED.

(P02) 1'-3" x 2'-0" x 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY, TYPICAL TOP AND BOTTOM OF ALL COLUMNS.

(P03) KEYED CONSTRUCTION JOINT FORMED BY A SURFACED BEVELED 2" x 6" BETWEEN BEAM SEATS.

(P04) ¾" PREFORMED FILLER

(P05) ½" X 8" X 2'-6" NON-LAMINATED ELASTOMERIC BEARING PAD

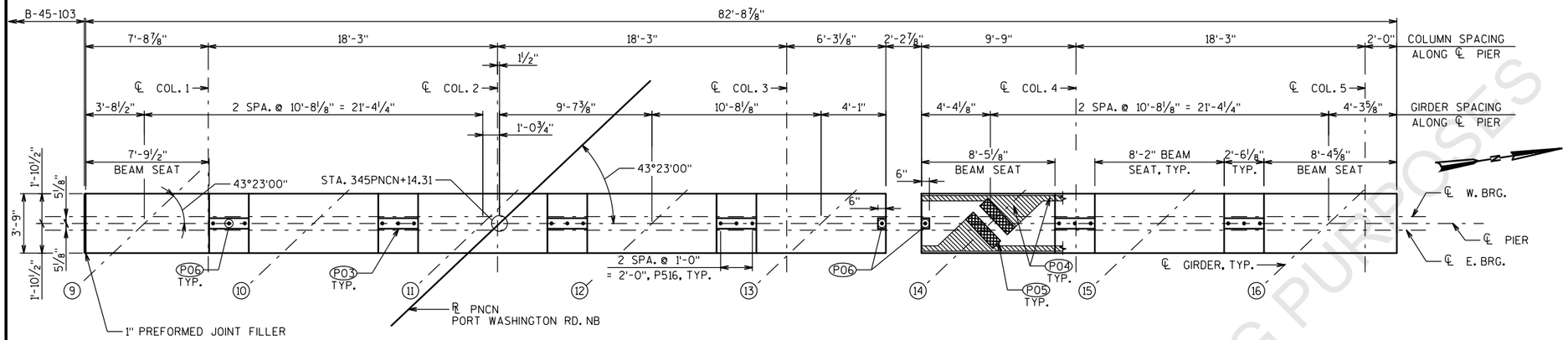
(P06) P516 BARS AT 1'-0" CENTERS, BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBEDED 1'-0" INTO CONCRETE)

'A' - 7 SPA. @ 6" = 3'-6" (DOUBLE STIRRUP)
'B' - 12 SPA. @ 4" = 4'-0" (DOUBLE STIRRUP)
'C' - 11 SPA. @ 4" = 3'-8" (DOUBLE STIRRUP)
'D' - 8 SPA. @ 1'-0" = 8'-0" (DOUBLE STIRRUP)
'E' - 7 SPA. @ 4" = 2'-4" (DOUBLE STIRRUP)

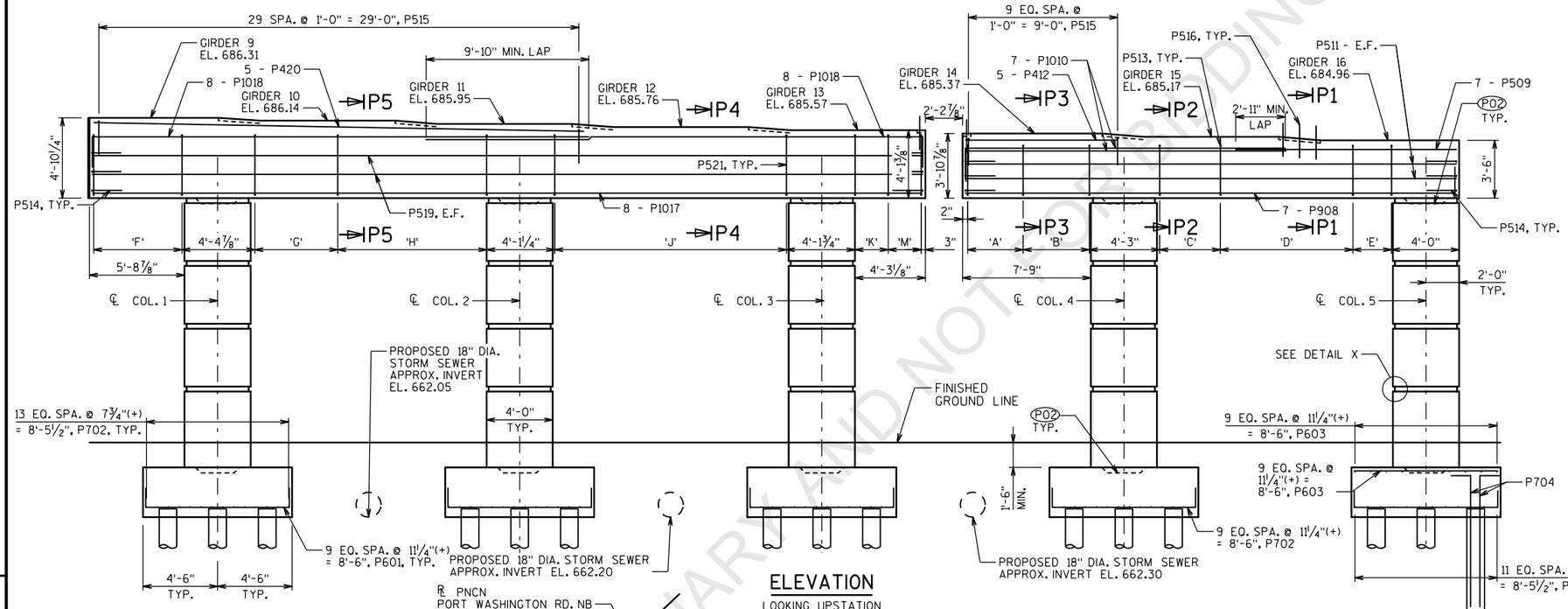
'F' - 16 SPA. @ 4" = 5'-4" (DOUBLE STIRRUP)
'G' - 10 SPA. @ 6" = 5'-0" (DOUBLE STIRRUP)
'H' - 9 SPA. @ 1'-0" = 9'-0" (DOUBLE STIRRUP)
'J' - 14 SPA. @ 1'-0" = 14'-0" (DOUBLE STIRRUP)
'K' - 6 SPA. @ 4" = 2'-0" (TRIPLE STIRRUP)
'M' - 4 SPA. @ 6" = 2'-0" (DOUBLE STIRRUP)

NOTES

1. GIRDER ELEVATIONS ARE GIVEN AT THE TOP OF THE PIER AT THE INTERSECTION OF THE ℄ GIRDER AND ℄ PIER.
2. FOR COLUMN REINFORCEMENT, ADDITIONAL DETAILS AND SECTIONS P1-P1 THRU P5-P5 SEE "PIER DETAILS & REINFORCEMENT" SHEET.

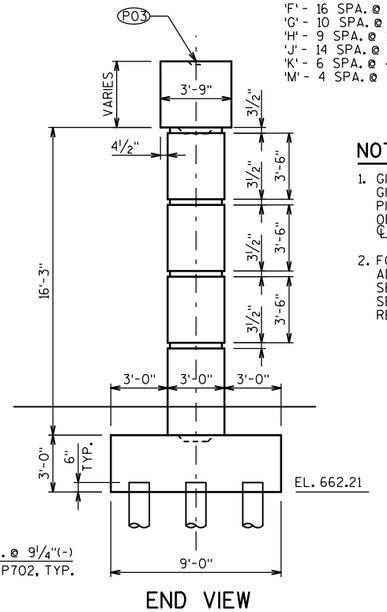


PLAN OF PIER CAP



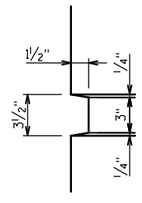
ELEVATION

LOOKING UPSTATION

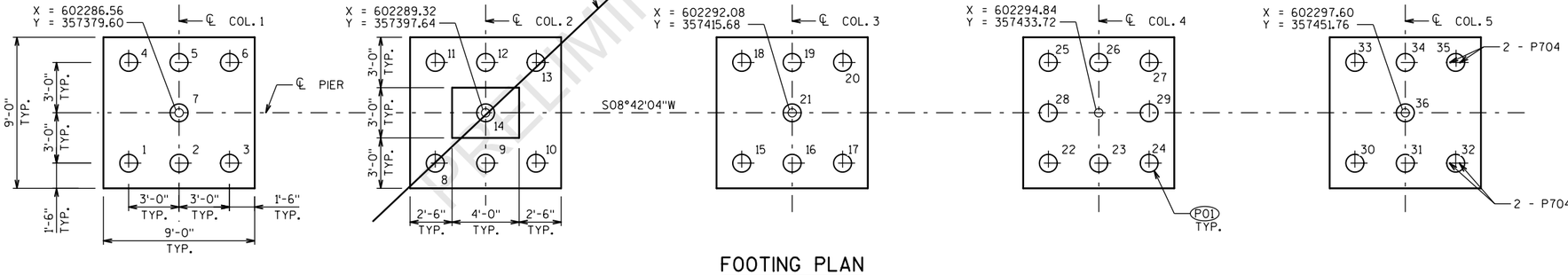


END VIEW

LOOKING SOUTH



DETAIL X



FOOTING PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

PIER

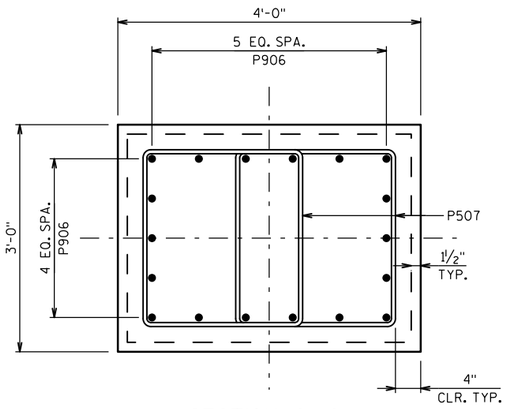
SHEET 17 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

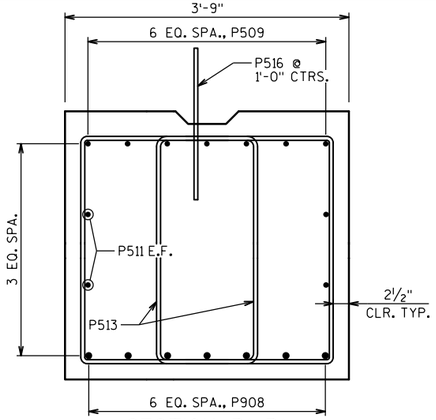
STATE PROJECT NUMBER
1229-04-74

BILL OF BARS

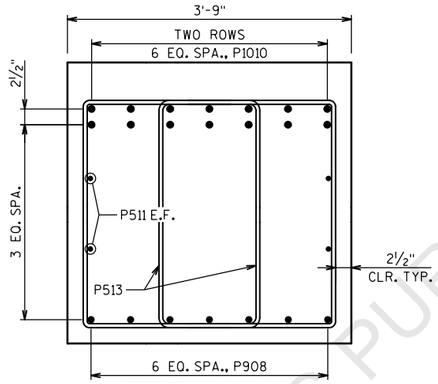
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P601		40	10'-3"	X		FOOTING HORIZ. BOTTOM
P702		78	10'-7"	X		FOOTING HORIZ. BOTTOM
P603		20	8'-7"			FOOTING HORIZ. TOP
P704		4	15'-0"	X		UPLIFT ANCHORS PILES 31 & 34
P905	X	90	10'-8"	X		COLUMN VERT.
P906	X	90	18'-7"			COLUMN VERT.
P507	X	340	10'-0"	X		COLUMN - HORIZ. STIRRUP
P908	X	7	30'-11"	X		PIER CAP HORIZ. - BOTTOM
P509	X	7	13'-4"			PIER CAP HORIZ. - TOP
P1010	X	14	20'-10"	X		PIER CAP HORIZ. - TOP
P511	X	4	29'-8"			PIER CAP HORIZ. - SIDES
P412	X	5	9'-2"			PIER CAP HORIZ. - TOP
P513	X	94	11'-4"	X		PIER CAP - STIRRUP
P514	X	12	6'-7"	X		PIER CAP - STIRRUP ENDS
P515	X	40	7'-1"	X		PIER CAP - STIRRUP TOP
P516	X	20	2'-0"			PIER CAP DOWEL
P1017	X	8	50'-1"			PIER CAP HORIZ. - BOTTOM
P1018	X	16	31'-6"	X		PIER CAP HORIZ. - TOP
P519	X	4	50'-2"			PIER CAP HORIZ. - SIDES
P420	X	5	29'-7"			PIER CAP HORIZ. - TOP
P521	X	133	12'-6"	X		PIER CAP - STIRRUP



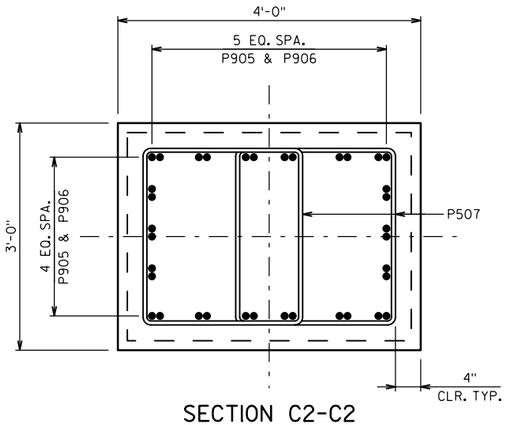
SECTION C1-C1



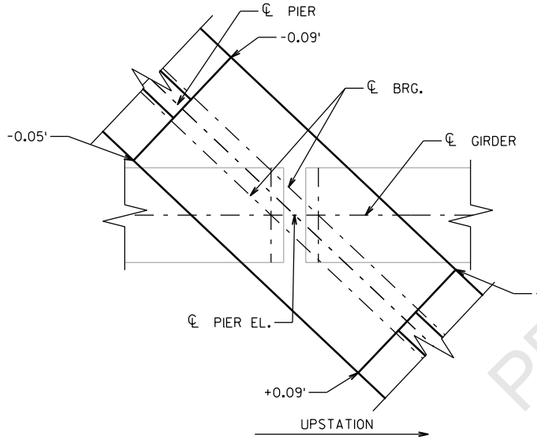
SECTION P1-P1



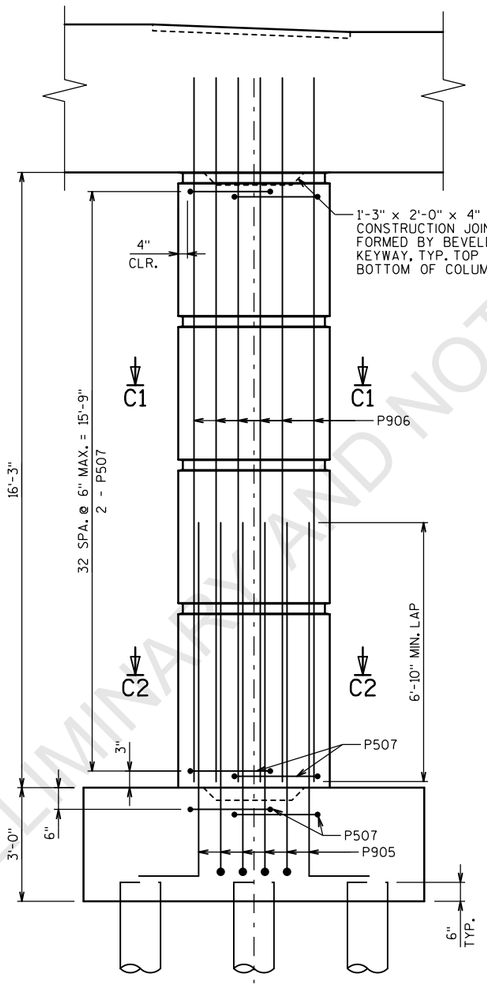
SECTION P2-P2



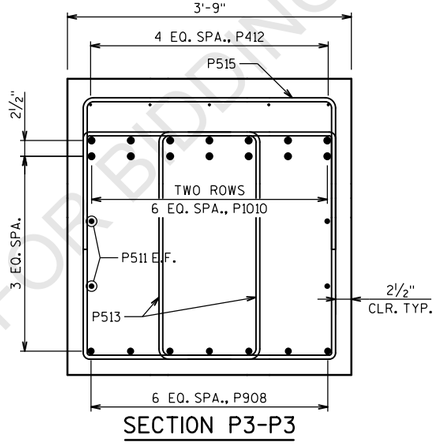
SECTION C2-C2



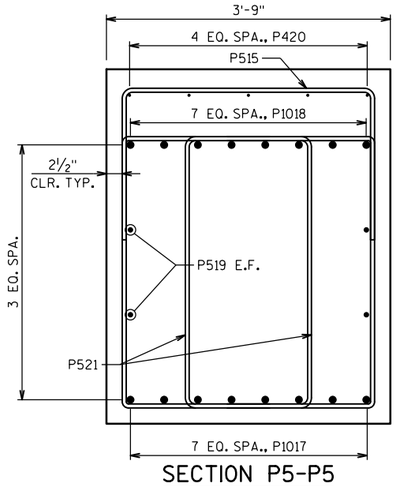
SLOPED BEAM SEAT DETAIL



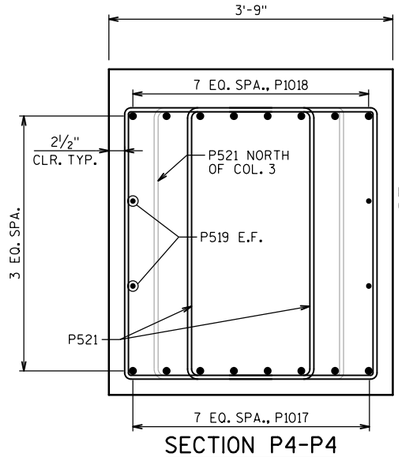
COLUMN SECTION
(LOOKING WEST)



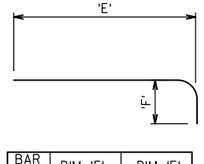
SECTION P3-P3



SECTION P5-P5

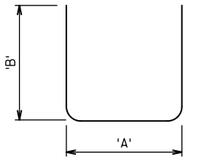


SECTION P4-P4



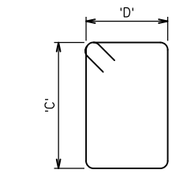
BAR MARK	DIM. 'E'	DIM. 'F'
P704	14'-0"	1'-2"
P905	9'-4"	1'-7"
P908	29'-7"	1'-7"
P1010	19'-4"	1'-9½"
P1018	30'-0"	1'-9½"

P704, P905, P908, P1010 & P1018



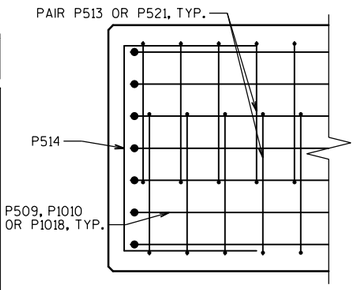
BAR MARK	DIM. 'A'	DIM. 'B'
P601	8'-7"	1'-0"
P702	8'-7"	1'-2"
P514	3'-4"	1'-9"
P515	3'-4"	2'-0"

P601, P702, P514 & P515



BAR MARK	DIM. 'C'	DIM. 'D'
P507	2'-4"	2'-4"
P513	3'-0"	2'-4"
P521	3'-7"	2'-4"

P507, P513 & P521



PLAN VIEW SHOWING END OF CAP REINFORCEMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

PIER DETAILS & REINFORCEMENT

SHEET 18 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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STATE PROJECT NUMBER
1229-04-74

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL (IN.) **									CONC STRGTH f'c (PSI)	"P" (IN.)			DIA OF STRAND (IN.)	DRAPED PATTERN						NO. OF DEBONDED STRANDS ***
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10		1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER		TOTAL NO. OF STRANDS	f'ci (PSI) *	(IN.) "A"	"B" MIN	"B" MAX	"C"	
1	9	108'-5½"	5/8"	1 1/8"	1 5/8"	1 7/8"	2"	1 7/8"	1 5/8"	1 1/8"	5/8"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	-
1	10-15	108'-5½"	5/8"	1 3/8"	1 7/8"	2 1/8"	2 1/4"	2 1/8"	1 7/8"	1 3/8"	5/8"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	-
1	16	108'-5½"	5/8"	1 3/8"	1 7/8"	2 1/4"	2 3/8"	2 1/4"	1 7/8"	1 3/8"	5/8"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	6
2	9	108'-5½"	5/8"	1 1/8"	1 5/8"	1 7/8"	2"	1 7/8"	1 5/8"	1 1/8"	5/8"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	-
2	10-15	108'-5½"	5/8"	1 1/4"	1 3/4"	2 1/8"	2 1/4"	2 1/8"	1 3/4"	1 1/4"	5/8"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	-
2	16	108'-5½"	1/2"	1 3/8"	1 7/8"	2 1/4"	2 1/4"	2 1/4"	1 7/8"	1 3/8"	1/2"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	6

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

** SEE DEAD LOAD DEFLECTION DIAGRAM ON SHEET "45W" PRESTRESSED GIRDER DETAILS"

*** DEBOND STRANDS AT THE PIER END OF THE GIRDER ONLY. THE DEBONDED END OF GIRDER SHALL BE MARKED TO BE EASILY IDENTIFIABLE DURING ERECTION.

GIRDER NOTES

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.

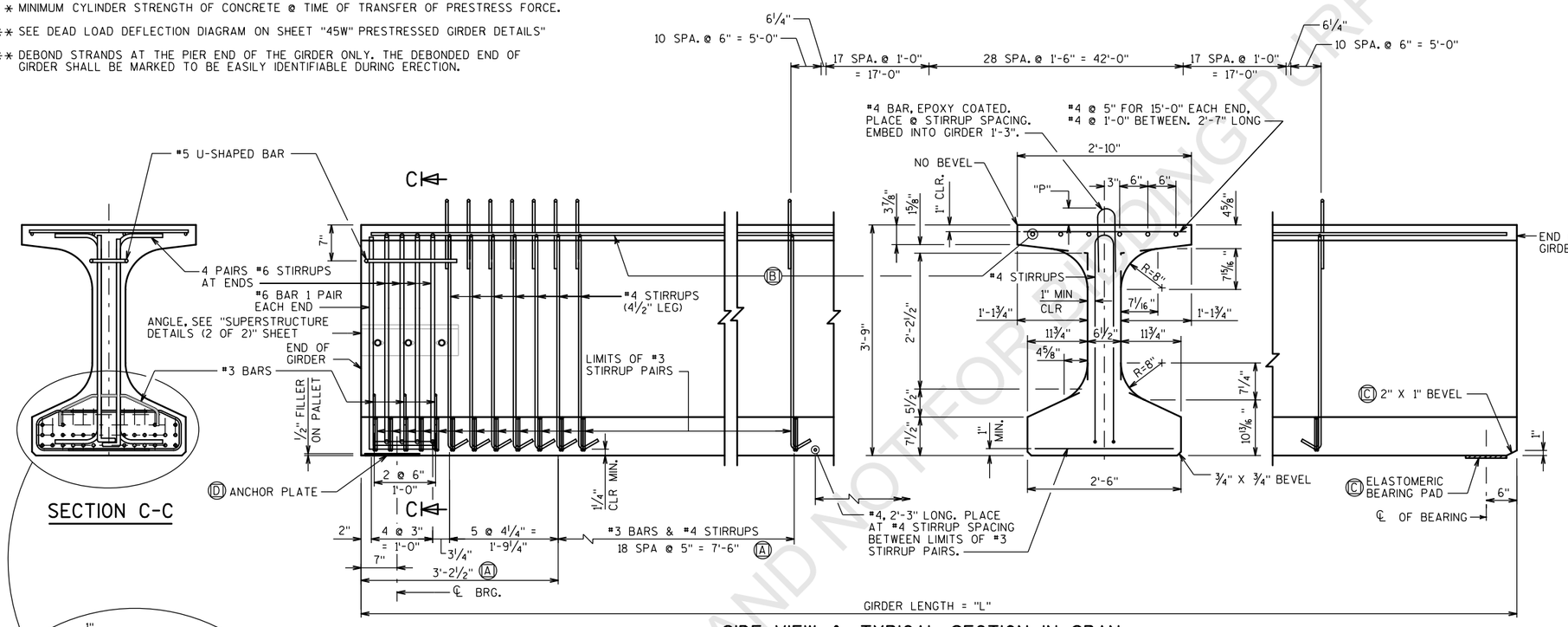
STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2-FEET OF THE GIRDER ENDS 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 EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

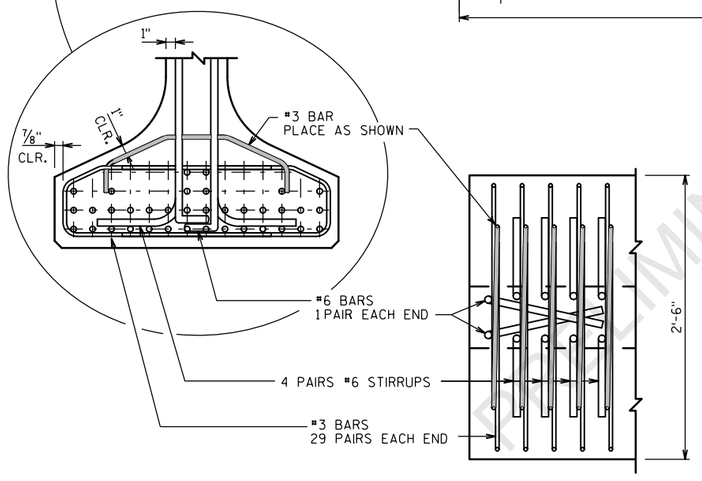
PRESTRESSING STRANDS SHALL BE 0.6" DIA.-7-WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.



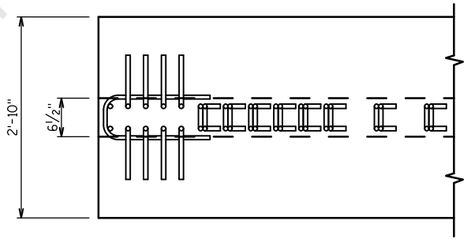
SECTION C-C

SIDE VIEW & TYPICAL SECTION IN SPAN

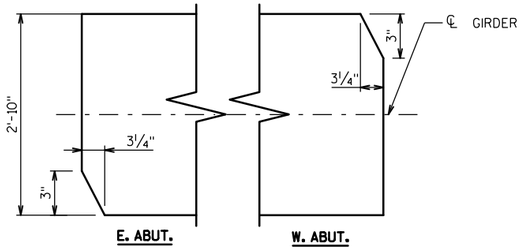
(A) DETAIL TYP AT EACH END
(B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-8"
(C) DETAIL TYPICAL AT EACH PIER END
(D) DETAIL TYPICAL AT EACH ABUTMENT END



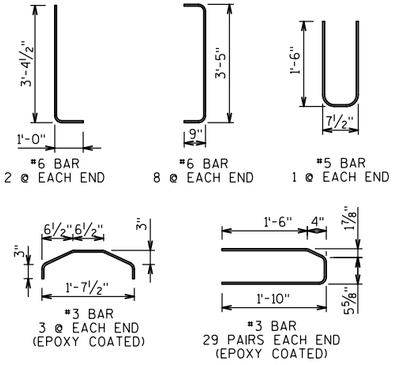
BOTTOM FLANGE



TOP FLANGE



TOP FLANGE CORNER CLIP DETAIL



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

45W" PRESTRESSED GIRDER

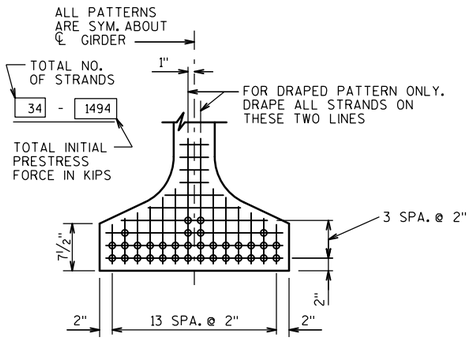
SHEET 19 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

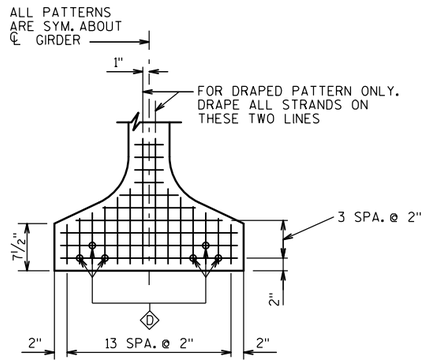
FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-102\cds\B102_080501_gr.dgn
PLOT DATE : 7/28/2021 7:55:52 PM PLOT BY : ejelinek
PLOT SCALE : 5.33333:1

STATE PROJECT NUMBER
1229-04-74



TYP. STRAND PATTERN

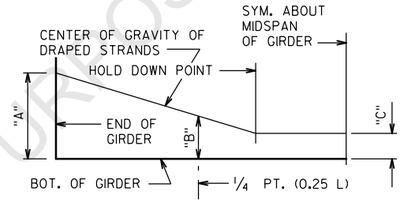
0.6" DIA. STRANDS



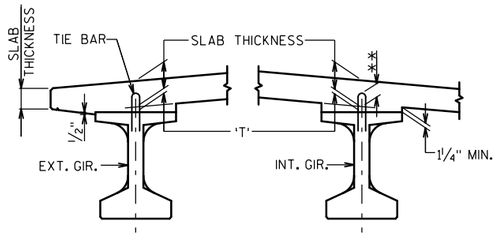
DEBONDED STRANDS
GIRDER 16

DEBOND AT PIER END ONLY

◇D DEBOND LENGTH = 10'-0" (6 STRANDS)



DRAPED STRAND PROFILE



SLAB HAUNCH DETAIL

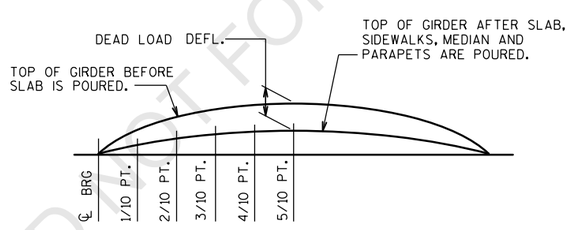
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

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

TO DETERMINE 'T', ELEV. OF TOP OF 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
\- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2½" WAS USED IN THE QUANTITY "HPC MASONRY STRUCTURES".



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS ARE SYMMETRIC ABOUT MID POINT OF BEAM

*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	3.44
2	3.44

THESE VALUES ARE PRESENTED FOR INFORMATION ONLY. THE CAMBER VALUES ARE NOT TO BE USED IN DETERMINING HAUNCH HEIGHT 'T'.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

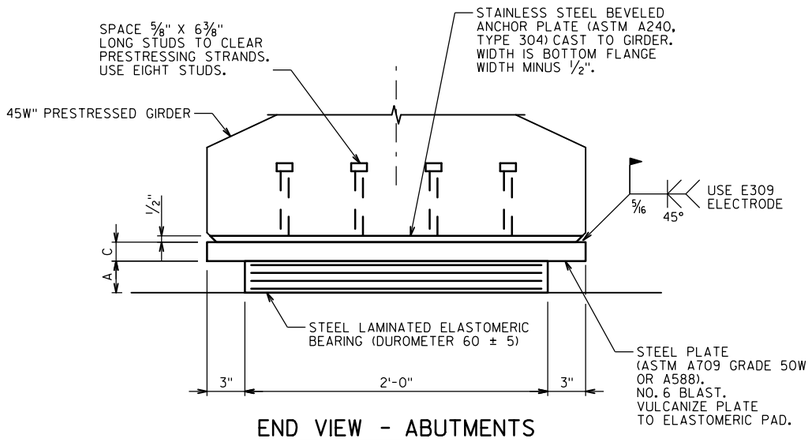
STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

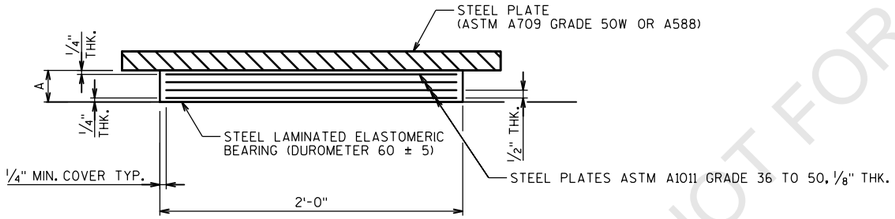
45W" PRESTRESSED GIRDER DETAILS

SHEET 20 OF 39

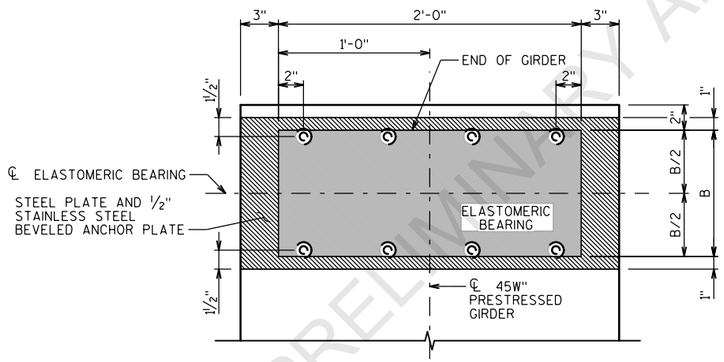
STATE PROJECT NUMBER
1229-04-74



END VIEW - ABUTMENTS



SECTION THRU ELASTOMERIC BEARING



PLAN VIEW - ABUTMENTS

NOTES

BEARINGS SHALL NOT BE PLACED AT A TEMPERATURE GREATER THAN 85° F.

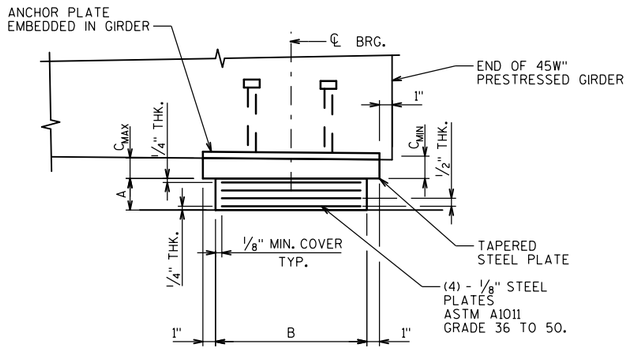
ALL MATERIAL USED FOR BEARINGS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING PADS ELASTOMERIC LAMINATED", EACH.

ALL STRUCTURAL STEEL PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

BEARING TABLE

	A	B	C_{MIN} (IN)	C_{MAX} (IN)
EAST ABUTMENT	2.5"	10"	1 1/2"	1 1/2"
WEST ABUTMENT	2.5"	10"	1 1/2"	1 5/8"



SECTION THRU BEARING WEST ABUTMENT

LOOKING SOUTH
(WEST END OF GIRDER SHOWN)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

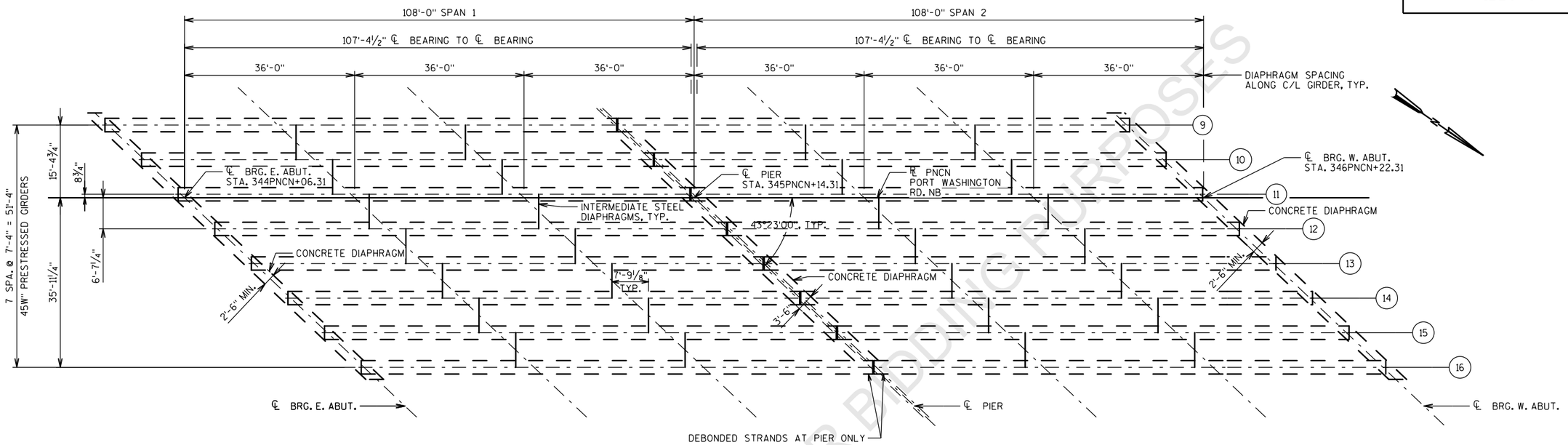
STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

EXPANSION BEARING DETAILS

SHEET 21 OF 39

STATE PROJECT NUMBER
1229-04-74



FRAMING PLAN

TOP OF DECK ELEVATIONS

LOCATION	℄ BRG. E. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ PIER	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ BRG. W. ABUT.
SOUTH EDGE OF DECK	691.19	691.21	691.22	691.23	691.22	691.21	691.20	691.18	691.15	691.11	691.06	691.01	690.96	690.89	690.82	690.74	690.66	690.56	690.47	690.36	690.25
GIRDER 9	691.14	691.16	691.17	691.17	691.17	691.16	691.14	691.12	691.09	691.05	691.00	690.95	690.89	690.82	690.75	690.67	690.58	690.49	690.39	690.28	690.17
GIRDER 10	691.01	691.02	691.03	691.03	691.02	691.00	690.98	690.95	690.91	690.87	690.82	690.76	690.70	690.62	690.55	690.46	690.37	690.27	690.16	690.05	689.93
GIRDER 11	690.87	690.88	690.88	690.87	690.86	690.84	690.81	690.78	690.73	690.69	690.63	690.57	690.50	690.42	690.34	690.25	690.15	690.05	689.94	689.82	689.70
R/L PNCN, PGL	690.86	690.87	690.87	690.86	690.84	690.82	690.79	690.76	690.72	690.67	690.61	690.55	690.48	690.40	690.32	690.23	690.13	690.03	689.91	689.80	689.67
GIRDER 12	690.73	690.73	690.73	690.72	690.70	690.67	690.64	690.60	690.55	690.50	690.44	690.37	690.30	690.22	690.13	690.03	689.93	689.82	689.71	689.58	689.45
GIRDER 13	690.59	690.58	690.57	690.56	690.53	690.50	690.47	690.42	690.37	690.31	690.25	690.17	690.09	690.01	689.91	689.81	689.71	689.59	689.47	689.34	689.21
GIRDER 14	690.44	690.43	690.42	690.39	690.37	690.33	690.29	690.24	690.18	690.12	690.05	689.97	689.89	689.79	689.70	689.59	689.48	689.36	689.23	689.10	688.96
GIRDER 15	690.29	690.27	690.25	690.23	690.19	690.15	690.11	690.05	689.99	689.92	689.85	689.76	689.67	689.58	689.48	689.37	689.25	689.12	688.99	688.86	688.71
GIRDER 16	690.13	690.11	690.09	690.06	690.02	689.97	689.92	689.86	689.79	689.72	689.64	689.55	689.46	689.36	689.25	689.14	689.01	688.88	688.75	688.61	688.46
NORTH EDGE OF DECK	690.08	690.06	690.03	690.00	689.96	689.91	689.86	689.79	689.73	689.65	689.57	689.48	689.38	689.28	689.17	689.05	688.93	688.80	688.66	688.52	688.37

PRELIMINARY - NOT FOR BIDDING PURPOSES

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

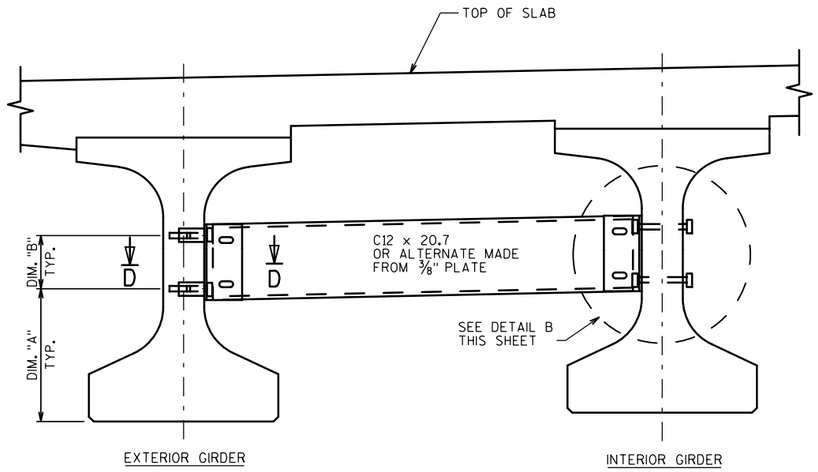
STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

SUPERSTRUCTURE FRAMING PLAN

SHEET 22 OF 39

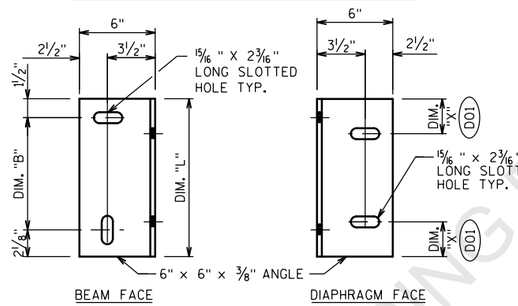
STATE PROJECT NUMBER
1229-04-74



PART TRANSVERSE SECTION AT DIAPHRAGM

DIMENSION TABLE

GIRDER HEIGHT	DIM. "A"	DIM. "B"	DIM. "L"	DIM "X" (D01)
45W"	1'-9 1/8"	8 7/8"	1'-0 1/2"	2 3/4"



DIAPHRAGM SUPPORT

(D01) 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM

NOTES

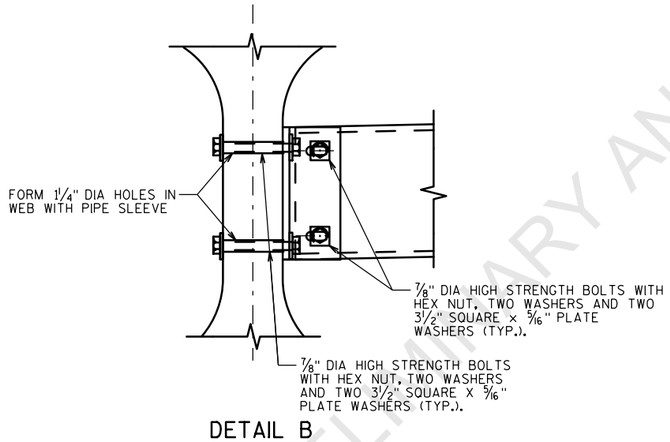
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-45-102", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

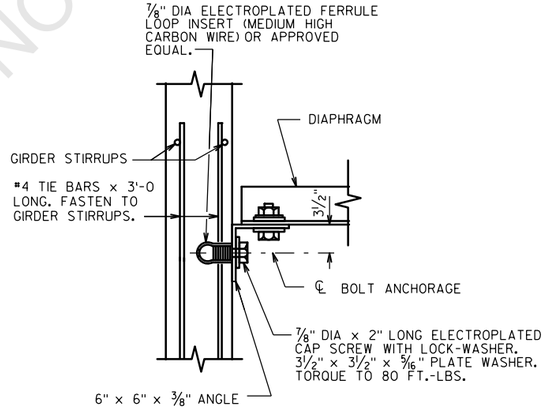
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

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 A449.



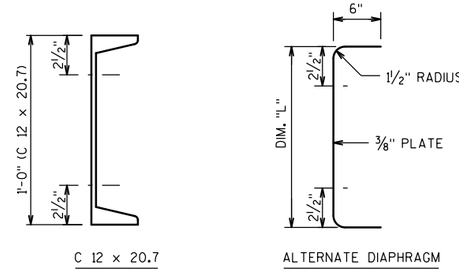
DETAIL B

SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°



SECTION D-D

(FOR EXTERIOR ATTACHMENT)



SECTION THRU DIAPHRAGM

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

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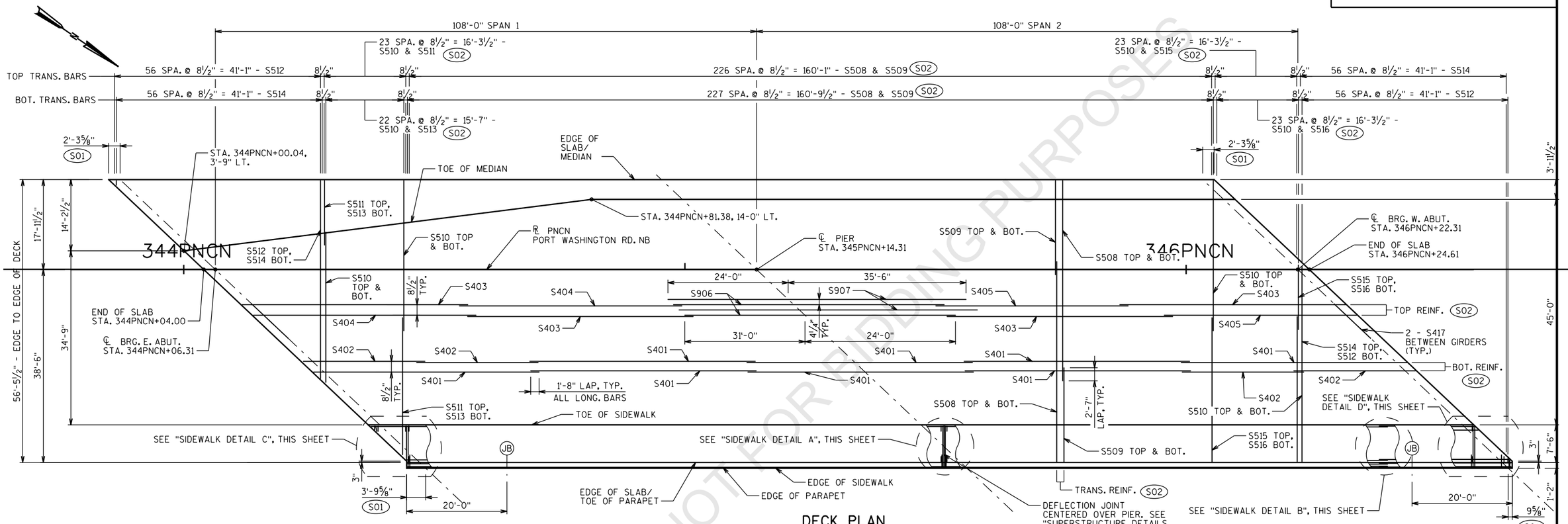
STEEL DIAPHRAGM

SHEET 23 OF 39

8

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STATE PROJECT NUMBER
1229-04-74



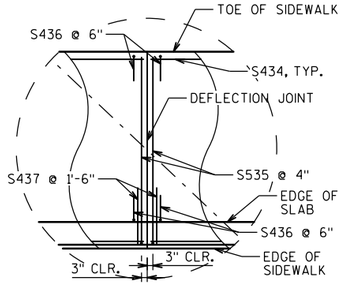
DECK PLAN

PARAPET REINFORCEMENT NOT SHOWN



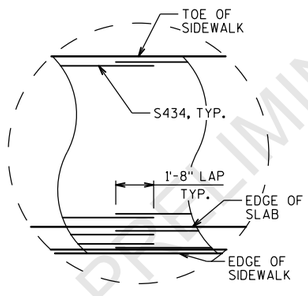
PARAPET PLAN

SHOWING LONG. REINFORCEMENT ONLY (NOT TO SCALE)



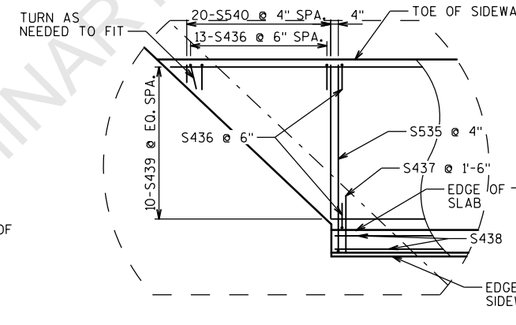
SIDEWALK DETAIL A

AT DEFLECTION JOINT



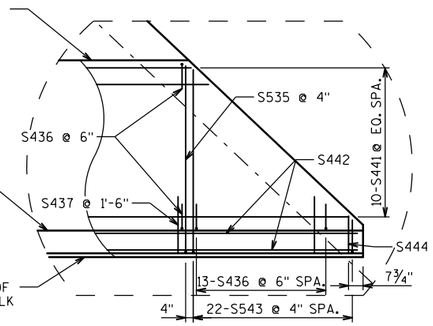
SIDEWALK DETAIL B

LAP DETAIL



SIDEWALK DETAIL C

EAST END



SIDEWALK DETAIL D

WEST END

NOTE

SEE "SUPERSTRUCTURE DETAILS (1 OF 2)" SHEET FOR MEDIAN REINFORCEMENT DETAILS

SEE "SUPERSTRUCTURE CROSS SECTION" SHEET FOR ADDITIONAL PARAPET REINFORCEMENT DETAILS

LEGEND

(S01) MEASURED FROM ℄ OF BEARING AT EDGE OF RAISED SIDEWALK OR MEDIAN.

(S02) ALTERNATE LAPS AS SHOWN

(JB) JUNCTION BOX LOCATIONS. SEE "SUPERSTRUCTURE CROSS SECTION" SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY	EAJ	PLANS CK'D.	HDA

SUPERSTRUCTURE REINFORCEMENT

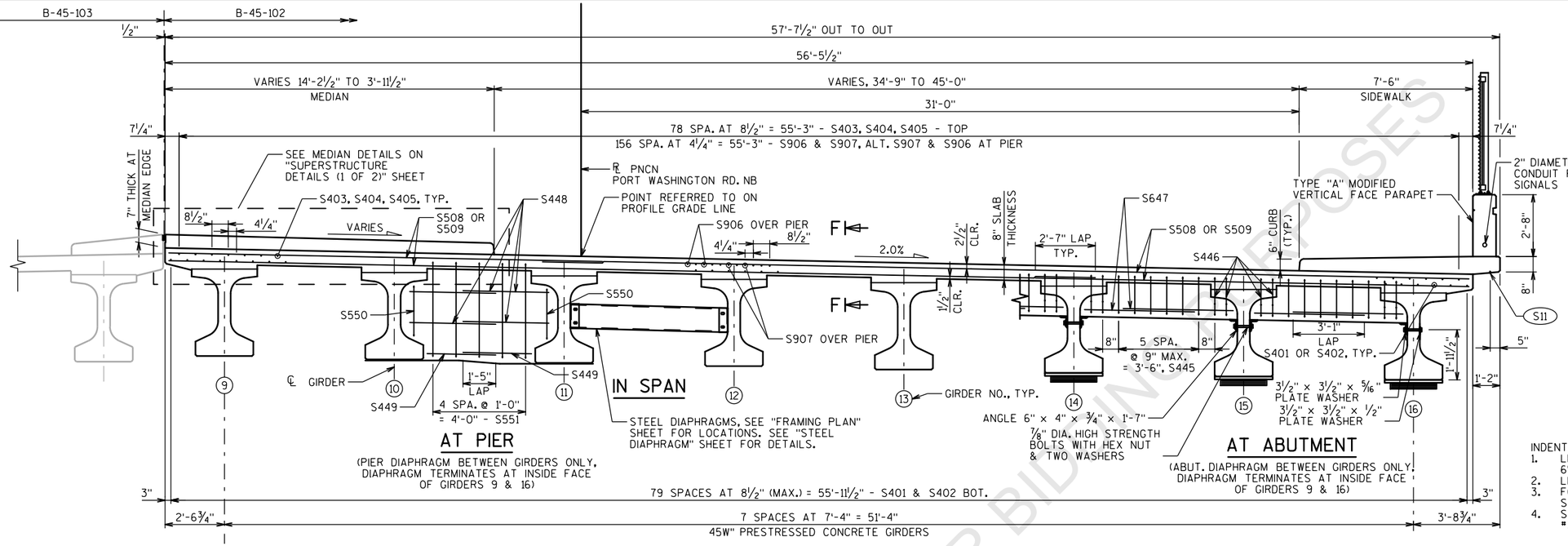
SHEET 24 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

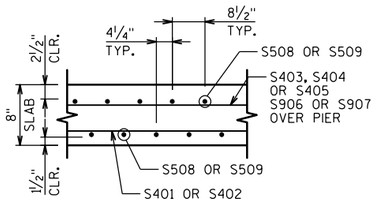
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PLOT DATE : 7/28/2021 7:56:32 PM
PLOT BY : ejelinek
PLOT SCALE : 20:1

STATE PROJECT NUMBER
1229-04-74



CROSS SECTION THRU SUPERSTRUCTURE

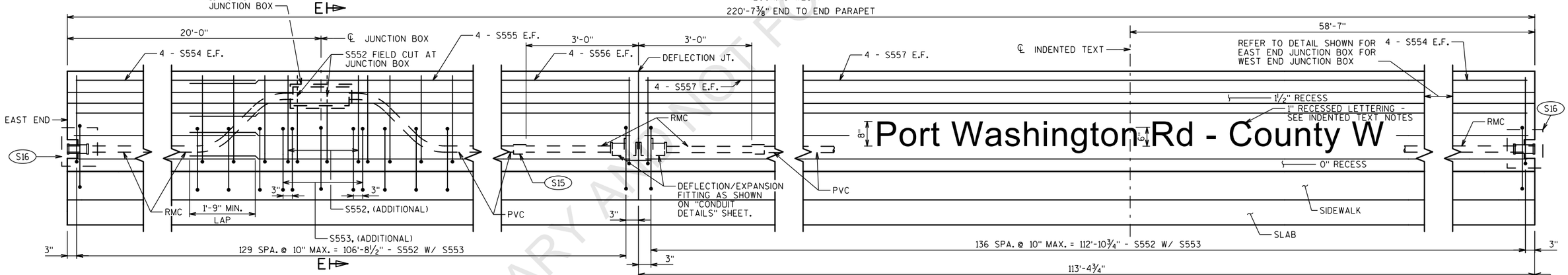


SECTION F-F

NOTES

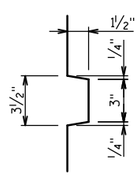
SEE "SUPERSTRUCTURE DETAILS (1 OF 2)" SHEET FOR DEFLECTION JOINT DETAILS THRU PARAPET

INDENTED TEXT NOTES:
1. LETTERING SHALL BE HELVETICA. 8" UPPER CASE AND 6" LOWER CASE.
2. LETTERING IS ONLY ON EXTERIOR FACE OF PARAPET.
3. FORMING OF LETTERING INCIDENTAL TO "HPC MASONRY STRUCTURES".
4. STAIN RECESSED LETTERING BLACK, FEDERAL COLOR #37038. INCIDENTAL TO "HPC MASONRY STRUCTURES".

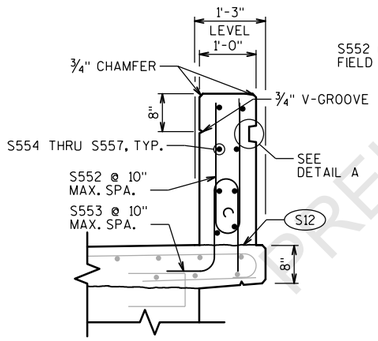


OUTSIDE ELEVATION OF NORTH PARAPET

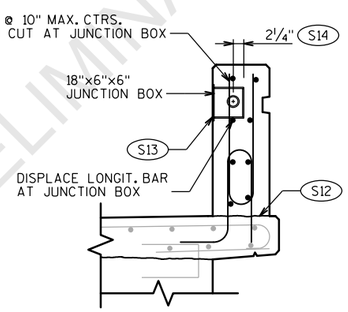
LOOKING SOUTH - JUNCTION BOX AT WEST END SIMILAR (RAILING NOT SHOWN FOR CLARITY)



DETAIL A



SECTION THRU PARAPET



SECTION E-E

LEGEND

- (S11) 3/4" V-GROOVE REQUIRED. EXTEND V-GROOVE TO 2'-0" FROM FRONT FACE OF ABUTMENT BODY.
- (S12) CONSTRUCTION JOINT, STRIKE OFF AS SHOWN.
- (S13) CUT OUT ± 1" OF GASKET AT BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE.
- (S14) LOCATION OF CONDUIT IS MEASURED FROM OUTSIDE EDGE OF JUNCTION BOX.
- (S15) NONMETALLIC CONDUIT TO METALLIC CONDUIT ADAPTER FITTING (UL OR NRTL LISTED FOR ELECTRICAL USE SHALL BE USED).
- (S16) SEE "CONDUIT DETAILS" SHEET

PVC = POLYVINYL CHLORIDE (RIGID NONMETALLIC) CONDUIT

RMC = RIGID METALLIC CONDUIT

E.F. = EACH FACE

PRELIMINARY AS NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

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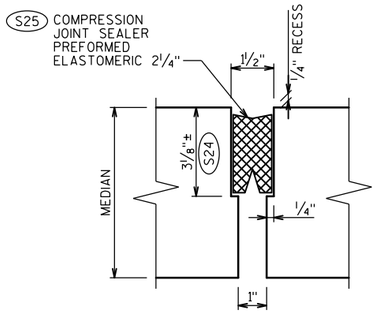
SUPERSTRUCTURE CROSS SECTION

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8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-102\cds\B102_080507_ss.dgn PLOT DATE : 7/28/2021 7:56:39 PM PLOT BY : ejelinek PLOT SCALE : 5.33333:1

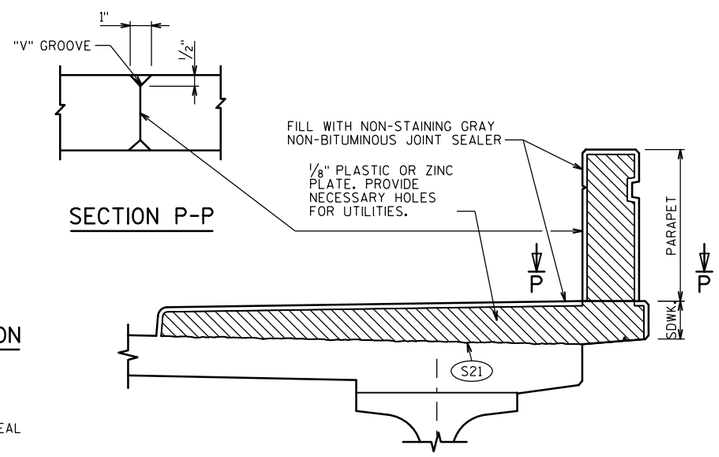
STATE PROJECT NUMBER
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ELASTOMERIC COMPRESSION SEAL DETAIL

(S24) VARIES BASED ON JOINT MANUFACTURER

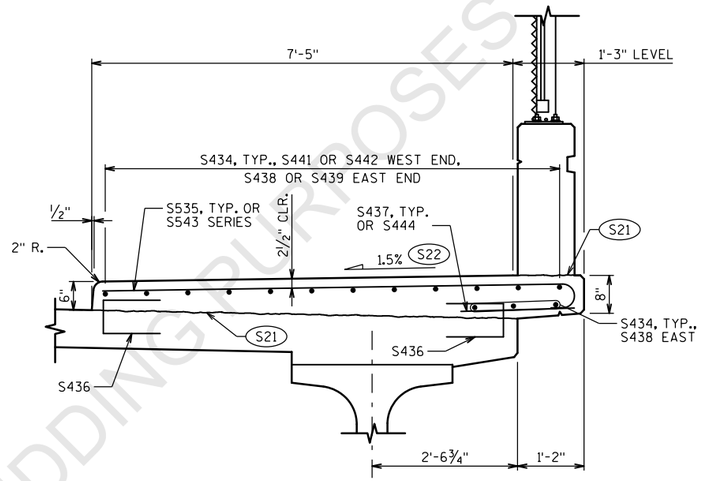
(S25) MANUFACTURER SHALL LABEL TOP OF SEAL



DEFLECTION JOINT DETAIL

(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK)

WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF ⅛" ZINC OR PLASTIC PLATE CUT AS SHOWN ABOVE BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.



SIDEWALK DETAIL

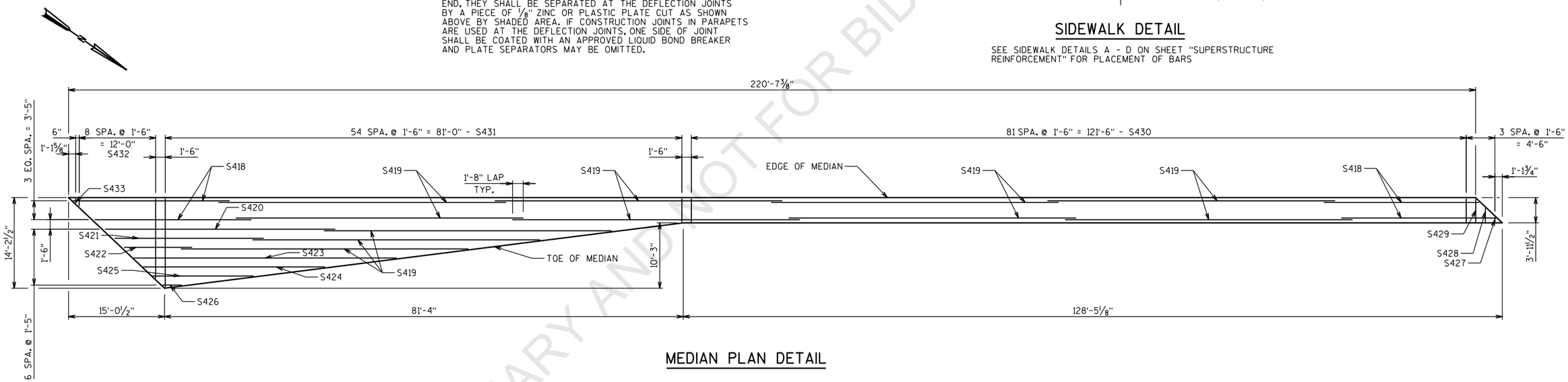
SEE SIDEWALK DETAILS A - D ON SHEET "SUPERSTRUCTURE REINFORCEMENT" FOR PLACEMENT OF BARS

LEGEND

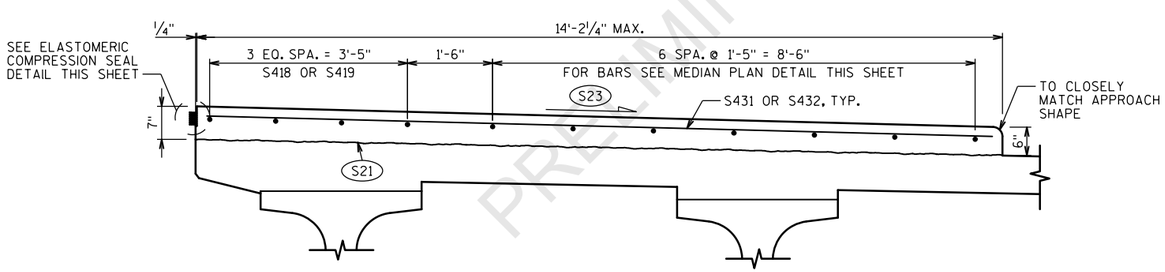
(S21) CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH FOR DECK POUR, MATCH BRIDGE CROSS SLOPE.

(S22) +/- 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(S23) MEDIAN SLOPE VARIES. CONSTANT 6" CURB HEIGHT. CONSTANT 7" MEDIAN THICKNESS AT NORTH EDGE OF SLAB.

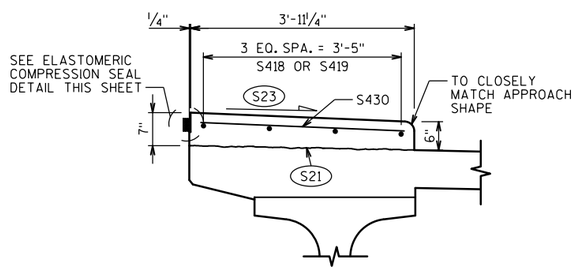


MEDIAN PLAN DETAIL



MEDIAN DETAIL EAST END

(LOOKING WEST)



MEDIAN DETAIL WEST END

(LOOKING WEST)

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

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SUPERSTRUCTURE DETAILS (1 OF 2)

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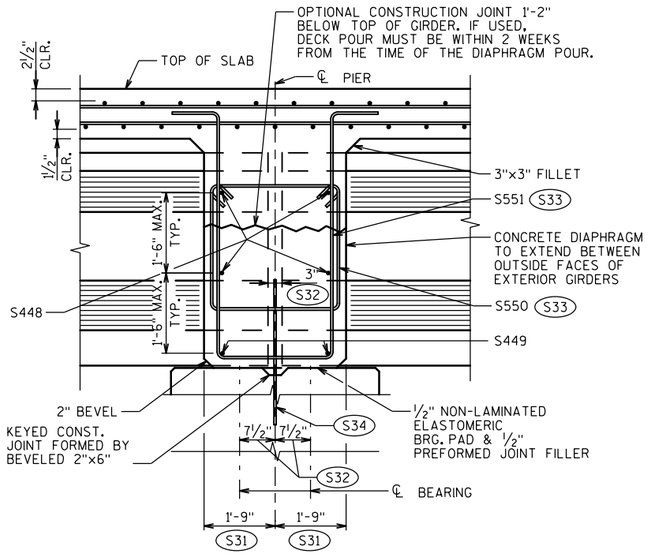
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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-102\cds\B102_080508_ss.dgn

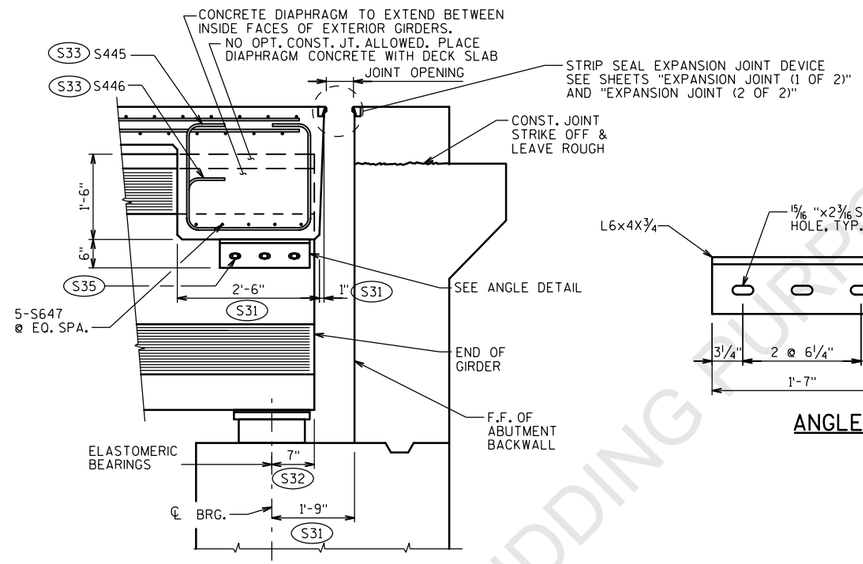
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PLOT SCALE : 2.66667:1

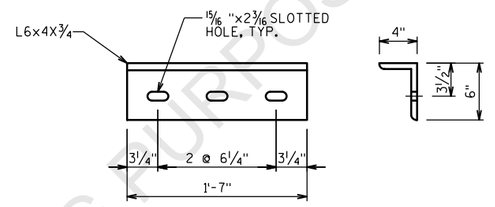
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DIAPHRAGM AT ½" ELASTOMERIC BEARING



EXPANSION END AT ABUTMENTS



ANGLE DETAIL

NOTES

ALL DIAPHRAGM SUPPORT HARDWARE SHALL BE INCIDENTAL TO "HPC MASONRY STRUCTURES".

DIAPHRAGM SUPPORT ANGLES SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM SUPPORT HARDWARE INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM SUPPORT ANGLE TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

LEGEND

(S31) DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

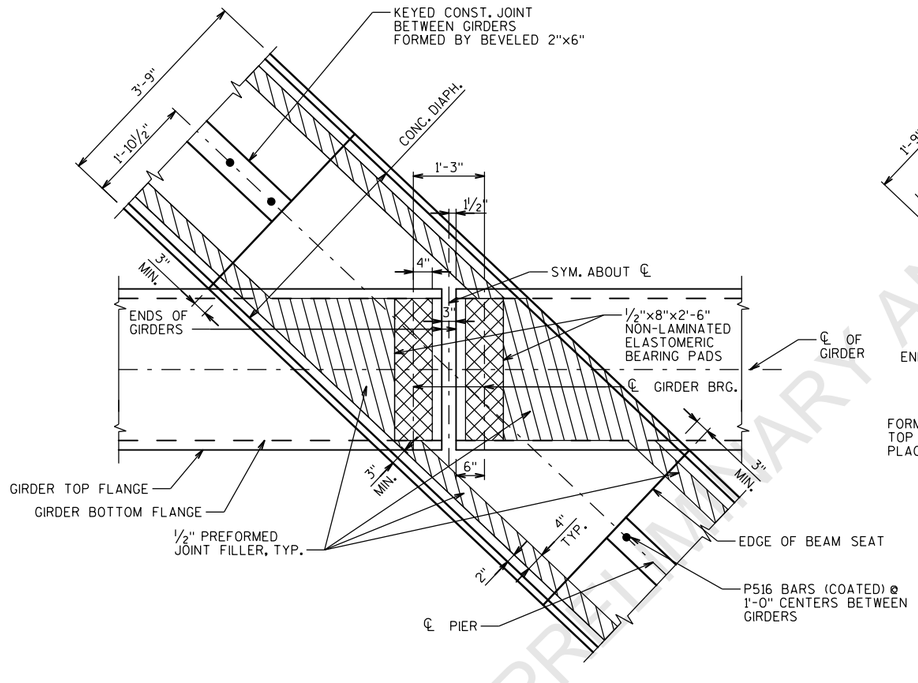
(S32) DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

(S33) BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO ℄ OF GIRDERS.

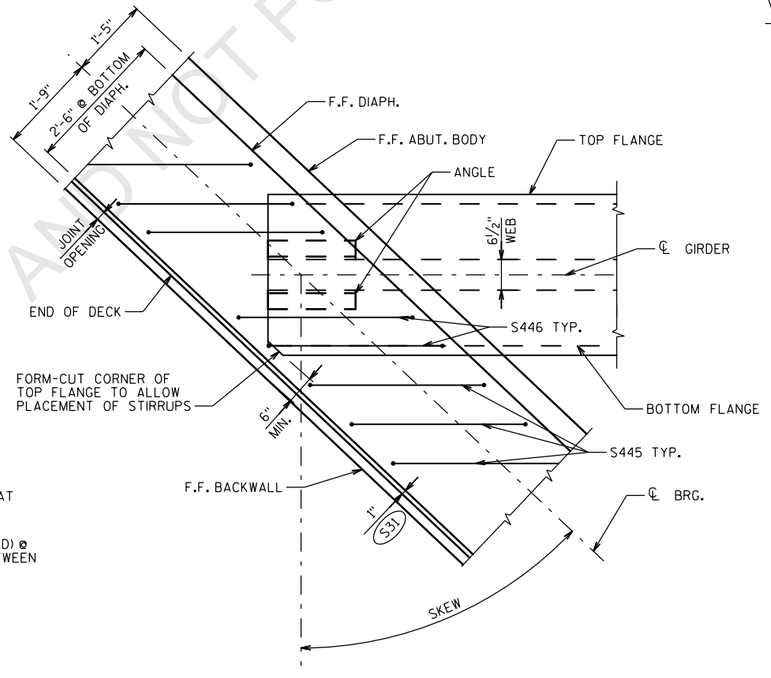
(S34) P516 BARS AT 1'-0" CENTERS x 2'-0" LONG. PLACE BETWEEN GIRDERS, EMBED 1'-0". PLACE BARS BEFORE CONCRETE HAS TAKEN INITIAL SET. SEE PIER SHEETS FOR ADDITIONAL INFORMATION.

(S35) FORM HOLES IN WEB WITH 1¼" SCHEDULE 40 GALVANIZED PIPE. 15/16 " x 2 3/16 " LONG SLOTTED HOLE (TYP.) IN ANGLE FOR ⅞" DIA. HIGHER STRENGTH BOLTS.

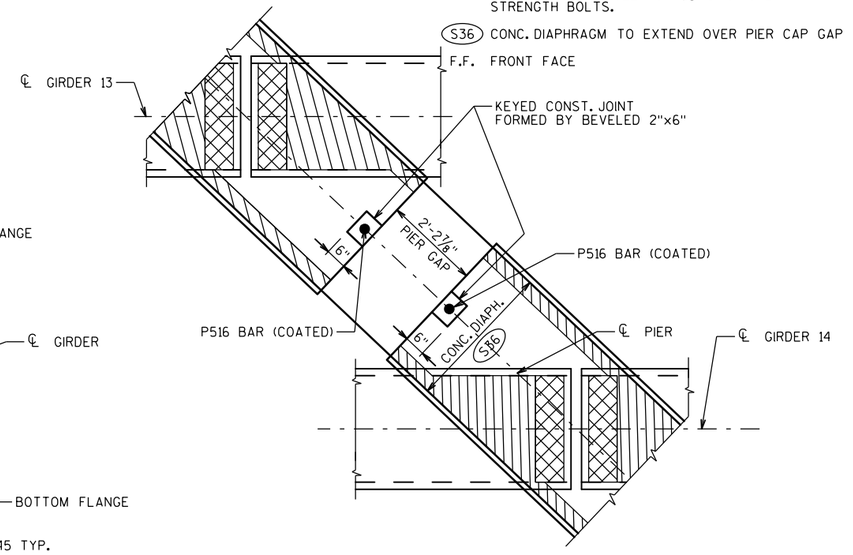
(S36) CONC. DIAPHRAGM TO EXTEND OVER PIER CAP GAP



TYPICAL BEARING PAD DETAIL AT PIER



TOP VIEW OF DIAPHRAGM AT ABUTMENTS



BEARING PAD DETAIL AT PIER GAP

SEE TYPICAL DETAIL FOR ADDITIONAL INFORMATION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

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SUPERSTRUCTURE DETAILS (2 OF 2)

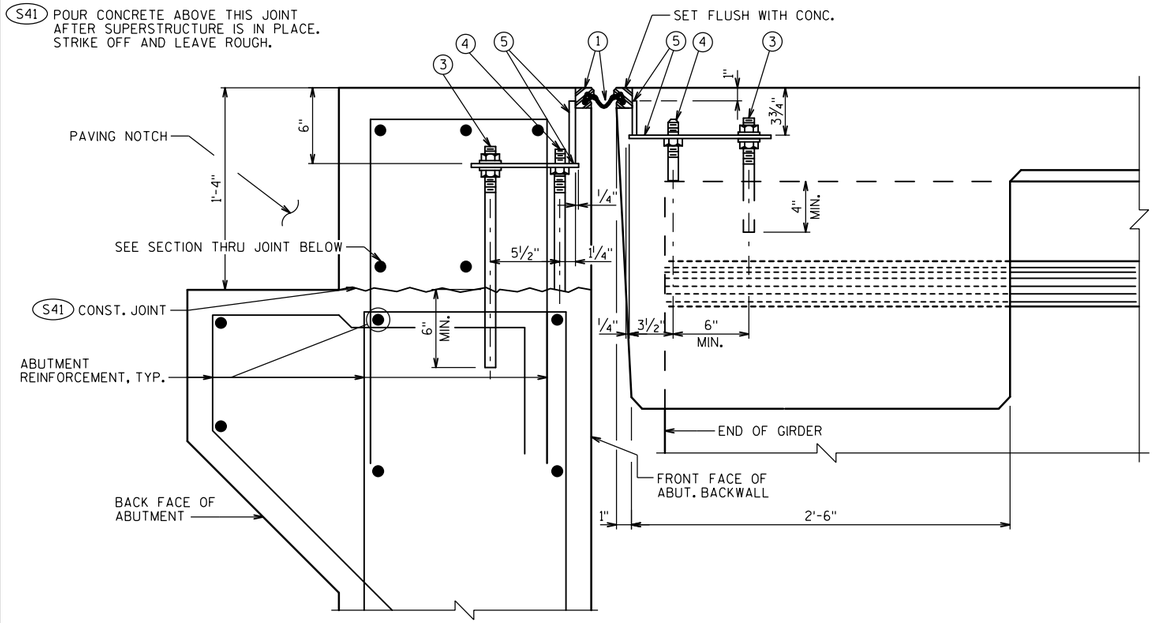
SHEET 27 OF 39

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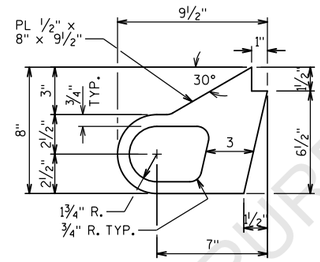
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STATE PROJECT NUMBER
1229-04-74

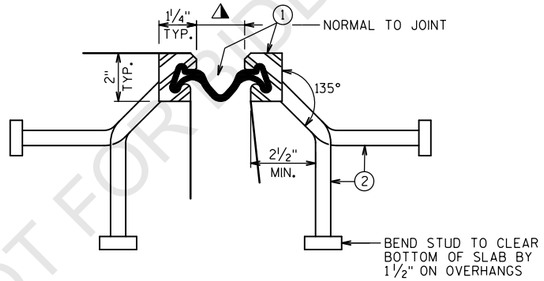


SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE

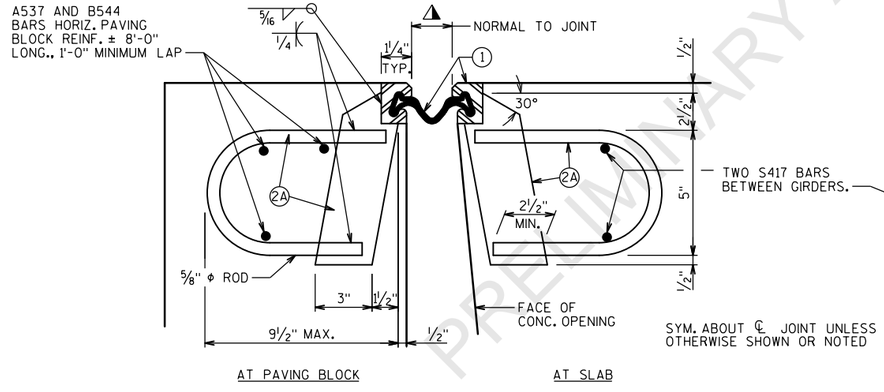


ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

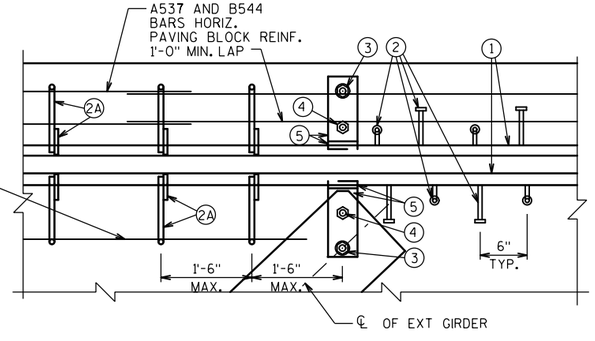
EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPET, MEDIAN AND SIDEWALK



SYM. ABOUT ℄ JOINT UNLESS OTHERWISE SHOWN OR NOTED

SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS



PART PLAN

LEGEND

⚠ (1) NEOPRENE STRIP SEAL (4-INCH) & STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾". JOINT OPENINGS GIVEN NORMAL TO JOINT.

(2) STUDS ⅝" ϕ x 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.

(2A) ½" THICK ANCHOR PLATE WITH ⅝" ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PL. TO NO. 1 AT 1'-6" CTRS. BETWEEN GIRDERS.

(3) ¾" ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. FOR PRESTRESSED GIRDERS, GROUT THREADED ROD INTO FIELD DRILLED HOLES ON C/L OF GIRDER. FOR STEEL GIRDERS, WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.

(4) ¾" ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.

(5) FABRICATE SUPPORT FROM 3" x ½" BAR AS SHOWN OR EQUIVALENT. ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" ϕ HOLE FOR NO. 3 & 1" ϕ HOLE FOR NO. 4.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, ANCHOR PLATES SHALL BE PROVIDED 3" FROM EACH SIDE OF THE FIELD SPLICE. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

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

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

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED. SLIP RESISTANT SURFACE IS APPLIED TO THE SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

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

ALL MATERIAL IN THE EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID AT THE UNIT PRICE BID FOR "EXPANSION DEVICE", LF.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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DEPARTMENT OF TRANSPORTATION

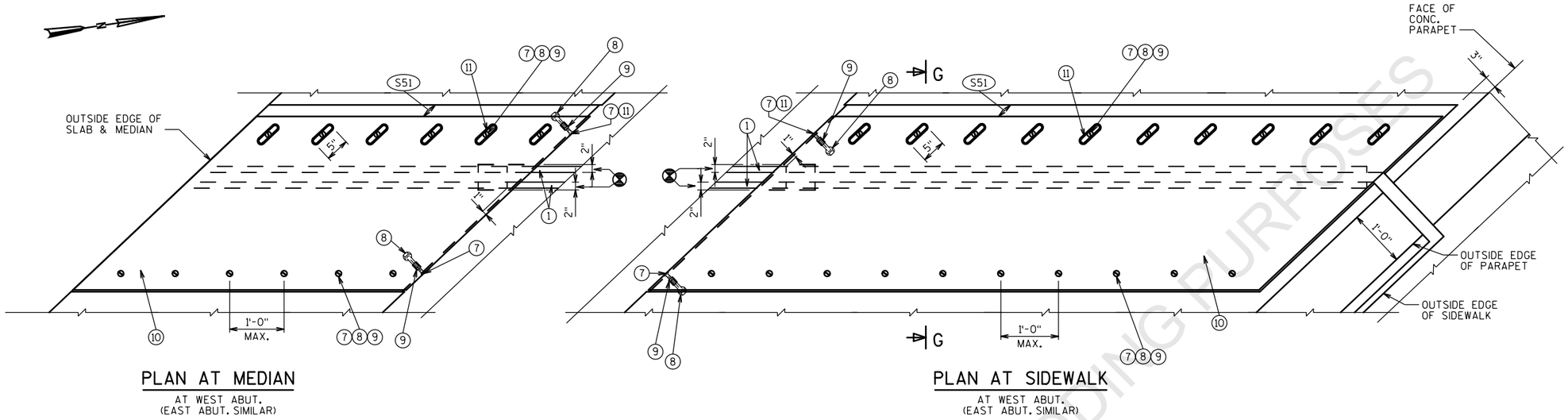
STRUCTURE B-45-102

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EXPANSION JOINT (1 OF 2)

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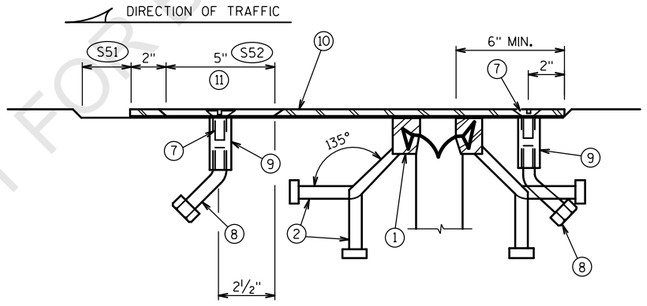


PLAN AT MEDIAN

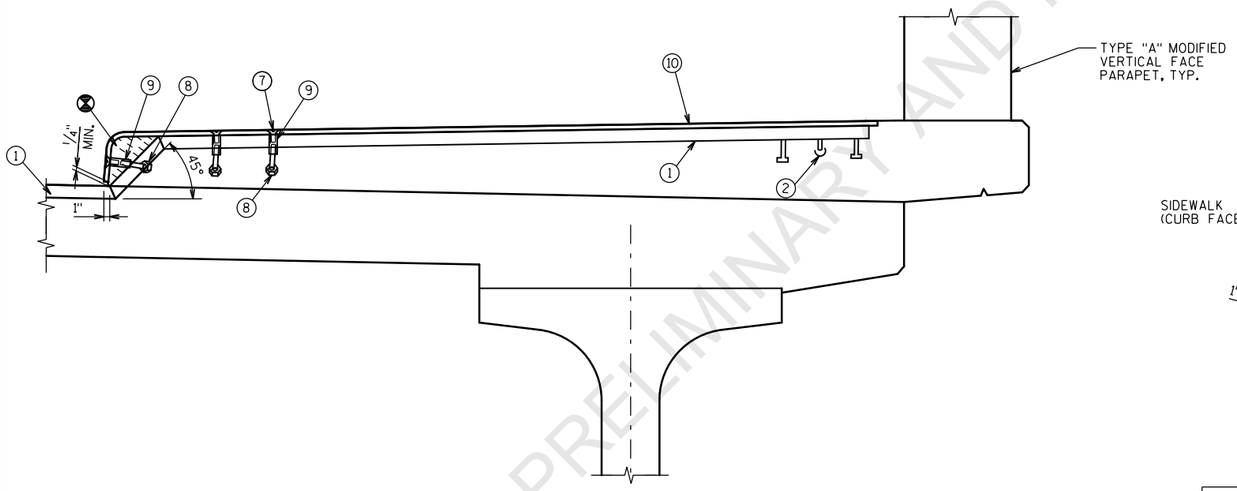
AT WEST ABUT.
(EAST ABUT. SIMILAR)

PLAN AT SIDEWALK

AT WEST ABUT.
(EAST ABUT. SIMILAR)

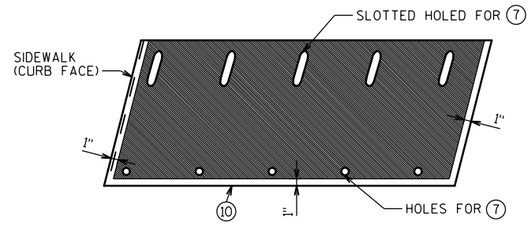


SECTION G-G



SECTION AT SIDEWALK

(LOOKING WEST)
(MEDIAN SIMILAR DETAIL)



PLAN OF SIDEWALK COVER PLATE WITH SLIP-RESISTANT SURFACE

PLACE SLIP-RESISTANT SURFACE ON TOP OF WALKING SURFACE IN SHADED AREA ONLY (NOT ON CURB FACE).

APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170

LEGEND

- (7) ¾" ϕ × 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
- (8) ¾" ϕ × 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- (9) ¾" ϕ × 2¼" GALVANIZED THREADED COUPLING.
- (10) SIDEWALK COVER PLATE ⅜" × 3'-0" × LIMITS SHOWN. BEND DOWN FACE OF SIDEWALK WITH HOLES FOR NO. 7. GALVANIZE PLATE AFTER SLIP RESISTANT SURFACE IS APPLIED.
- (11) 1" × 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. SLOT PARALLEL TO DIRECTION OF MOVEMENT.
- ⊠ BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING
- (S51) JOINT OPENING DIM. ALONG SKEW PLUS ½"
- (S52) DIMENSION ALONG DIRECTION OF MOVEMENT

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STATE OF WISCONSIN
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STRUCTURE B-45-102

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EXPANSION JOINT (2 OF 2)

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PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
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BILL OF BARS

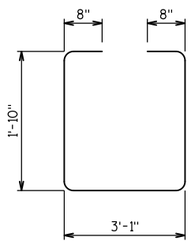
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	SERIES	LOCATION
S401	X	320	45'-0"			SLAB LONG. - BOT.
S402	X	160	24'-3"			SLAB LONG. - BOT.
S403	X	158	45'-0"			SLAB LONG. - TOP
S404	X	79	38'-0"			SLAB LONG. - TOP
S405	X	79	45'-0"			SLAB LONG. - TOP
S906	X	78	55'-0"			SLAB LONG. - TOP CONTINUITY STEEL OVER PIER
S907	X	79	59'-6"			SLAB LONG. - TOP CONTINUITY STEEL OVER PIER
S508	X	455	40'-0"			SLAB TRANS. - TOP & BOT.
S509	X	455	18'-8"			SLAB TRANS. - TOP & BOT.
S510	X	95	30'-0"			SLAB TRANS. - TOP & BOT.
S511	X	24	20'-7"		▲	SLAB TRANS. - TOP
S512	X	114	20'-2"		▲	SLAB TRANS. - TOP & BOT.
S513	X	23	20'-7"		▲	SLAB TRANS. - BOT.
S514	X	114	20'-6"		▲	SLAB TRANS. - TOP & BOT.
S515	X	24	20'-11"		▲	SLAB TRANS. - TOP
S516	X	24	20'-7"		▲	SLAB TRANS. - BOT.
S417	X	28	10'-0"			BETWEEN GIRDERS AT EXPANSION JOINTS
S418	X	8	24'-3"			MEDIAN LONG.
S419	X	19	45'-0"			MEDIAN LONG.
S420	X	1	36'-5"			MEDIAN LONG.
S421	X	1	23'-8"			MEDIAN LONG.
S422	X	1	11'-0"			MEDIAN LONG.
S423	X	1	41'-6"			MEDIAN LONG.
S424	X	1	28'-9"			MEDIAN LONG.
S425	X	1	16'-0"			MEDIAN LONG.
S426	X	1	3'-3"			MEDIAN LONG.
S427	X	1	0'-8"			MEDIAN TRANS. - WEST END
S428	X	1	2'-0"			MEDIAN TRANS. - WEST END
S429	X	1	3'-5"			MEDIAN TRANS. - WEST END
S430	X	82	3'-7"			MEDIAN TRANS.
S431	X	55	8'-9"		▲	MEDIAN TRANS.
S432	X	9	6'-9"		▲	MEDIAN TRANS. - EAST END
S433	X	1	0'-8"			MEDIAN TRANS. - EAST END
S434	X	60	45'-0"			SIDEWALK - LONG.
S535	X	638	8'-10"	X		SIDEWALK - TRANS.
S436	X	874	2'-5"	X		SIDEWALK TRANS. TIE TO DECK
S437	X	147	2'-6"			SIDEWALK BOT. - TRANS.
S438	X	5	20'-6"			SIDEWALK EAST END - LONG.
S439	X	10	24'-1"		▲	SIDEWALK EAST END - LONG.
S540	X	20	3'-9"		▲	SIDEWALK EAST END - TRANS.
S441	X	10	22'-6"		▲	SIDEWALK WEST END - LONG.
S442	X	5	26'-5"			SIDEWALK WEST END - LONG.
S543	X	22	5'-4"	X	▲	SIDEWALK WEST END - TRANS.
S444	X	1	1'-7"			SIDEWALK BOT. - TRANS.
S445	X	84	7'-9"	X		ABUTMENT DIAPH. STIRRUPS
S446	X	56	6'-7"	X		ABUTMENT DIAPH. STIRRUPS
S647	X	140	6'-4"			ABUTMENT DIAPH. HORIZ.
S448	X	56	5'-6"			PIER DIAPH. HORIZ.
S449	X	28	4'-1"			PIER DIAPH. HORIZ.
S550	X	14	13'-11"	X		PIER DIAPH. STIRRUPS
S551	X	35	13'-11"	X		PIER DIAPH. STIRRUPS
S552	X	271	4'-9"	X		PARAPET VERT.
S553	X	271	4'-4"	X		PARAPET VERT.
S554	X	16	18'-0"			PARAPET LONGITUDINAL SPANS 1 & 2
S555	X	16	10'-0"			PARAPET LONGITUDINAL SPANS 1 & 2
S556	X	16	42'-0"			PARAPET LONGITUDINAL SPAN 1
S557	X	16	45'-2"			PARAPET LONGITUDINAL SPAN 2

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH

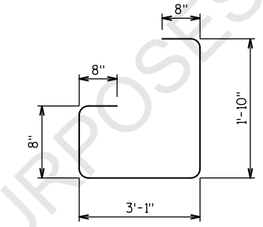
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
S511	1 SERIES OF 24	12'-10" TO 28'-3"
S512	2 SERIES OF 57	9" TO 39'-6"
S513	1 SERIES OF 23	13'-2" TO 27'-11"
S514	2 SERIES OF 57	1'-0" TO 39'-11"
S515	1 SERIES OF 24	13'-2" TO 28'-7"
S516	1 SERIES OF 24	12'-11" TO 28'-3"
S431	1 SERIES OF 55	3'-7" TO 13'-10"
S432	1 SERIES OF 9	1'-1" TO 12'-5"
S439	1 SERIES OF 10	20'-6" TO 27'-7"
S540	1 SERIES OF 20	9" TO 6'-8"
S441	1 SERIES OF 10	18'-11" TO 26'-0"
S543	1 SERIES OF 22	2'-0" TO 8'-7"

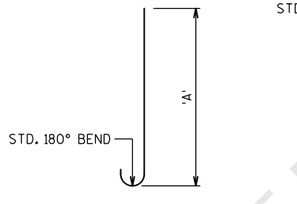
BUNDLE AND TAG EACH SERIES SEPARATELY



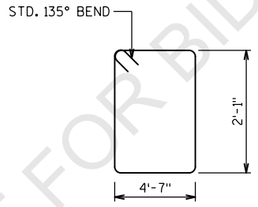
S445



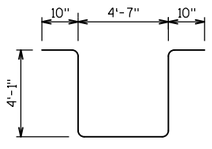
S446



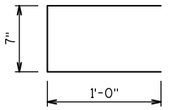
BAR MARK	DIMENSION 'A'
S535	8'-3"
S543	1'-5" TO 8'-0"



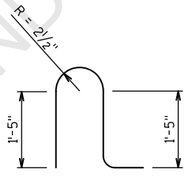
S550



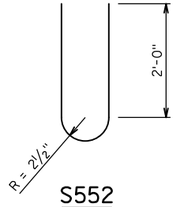
S551



S436



S553



S552

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

SUPERSTRUCTURE BILL OF BARS

SHEET 30 OF 39

STATE PROJECT NUMBER
1229-04-74

NOTES

SEE "EAST STRUCTURAL APPROACH SLAB (2 OF 2)" SHEET FOR REINFORCEMENT LAYOUT.

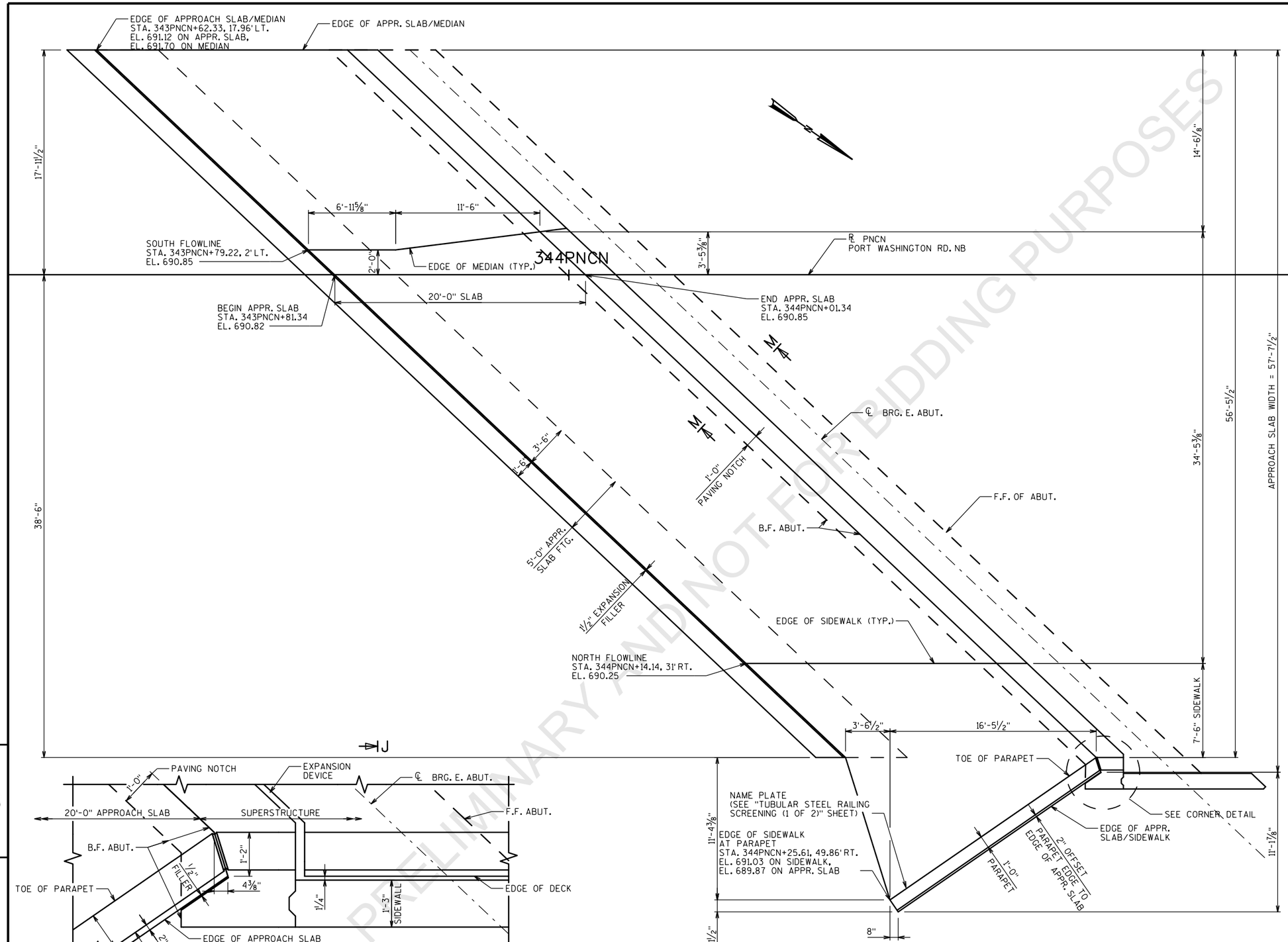
SEE "STRUCTURAL APPROACH SLAB DETAILS" SHEET FOR SECTIONS.

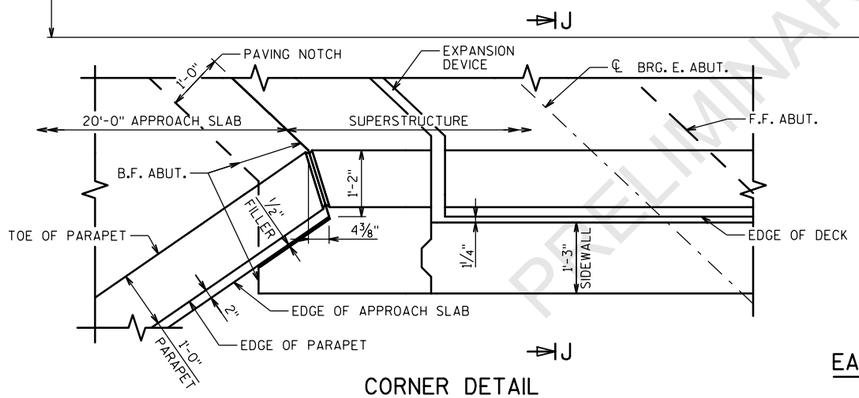
SEE "STRUCTURAL APPROACH SLAB DETAILS" AND "APPROACH VERTICAL FACE PARAPET DETAILS" SHEETS FOR PARAPET REINFORCING TIE PLACEMENT REQUIRED IN THE APPROACH SLABS.

LEGEND

F.F. FRONT FACE

B.F. BACK FACE





CORNER DETAIL

EAST APPROACH SLAB PLAN

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

EAST STRUCTURAL APPROACH SLAB (1 OF 2)

SHEET 31 OF 39

8

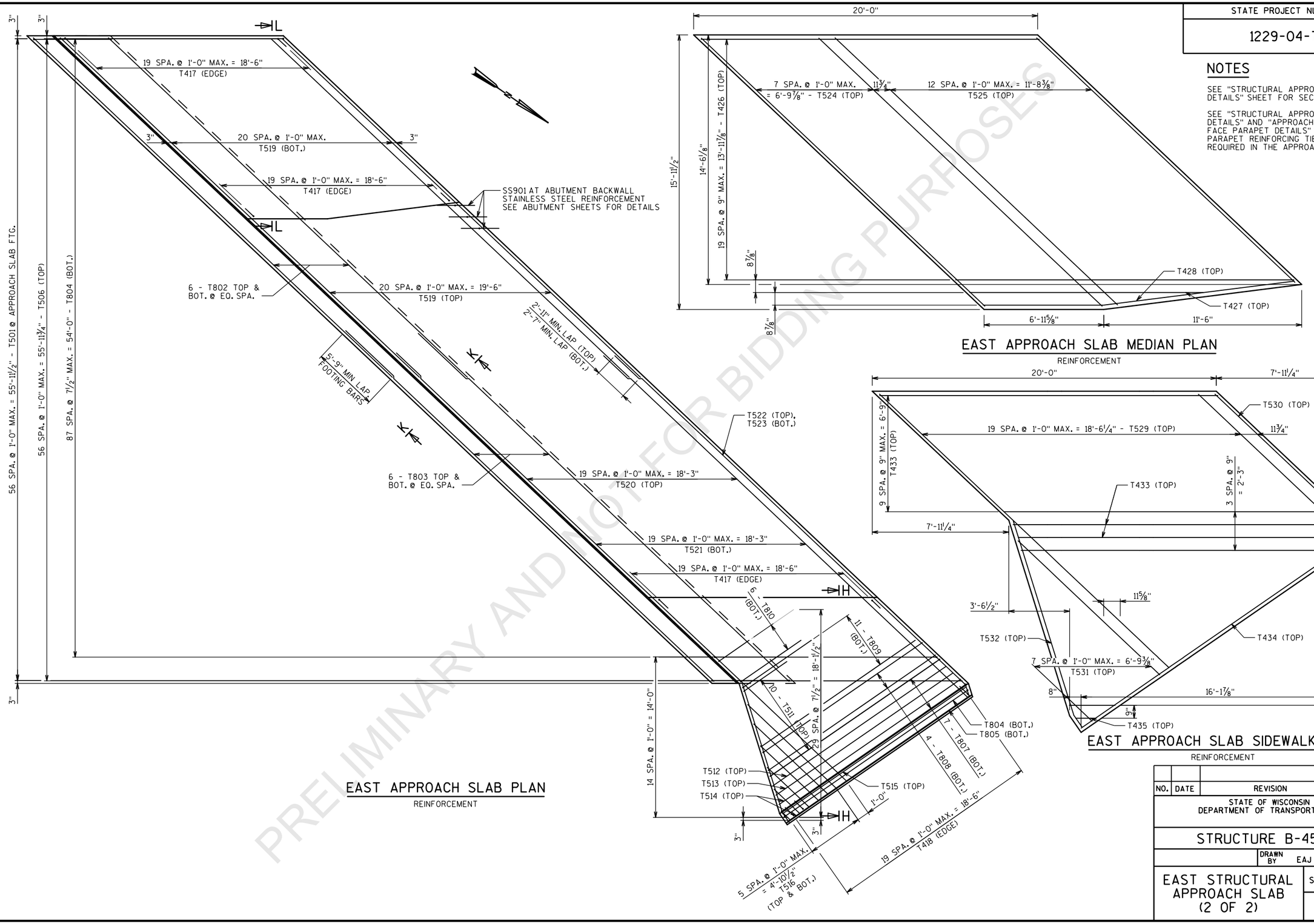
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STATE PROJECT NUMBER
1229-04-74

NOTES

SEE "STRUCTURAL APPROACH SLAB DETAILS" SHEET FOR SECTIONS.

SEE "STRUCTURAL APPROACH SLAB DETAILS" AND "APPROACH VERTICAL FACE PARAPET DETAILS" SHEETS FOR PARAPET REINFORCING TIE PLACEMENT REQUIRED IN THE APPROACH SLABS.

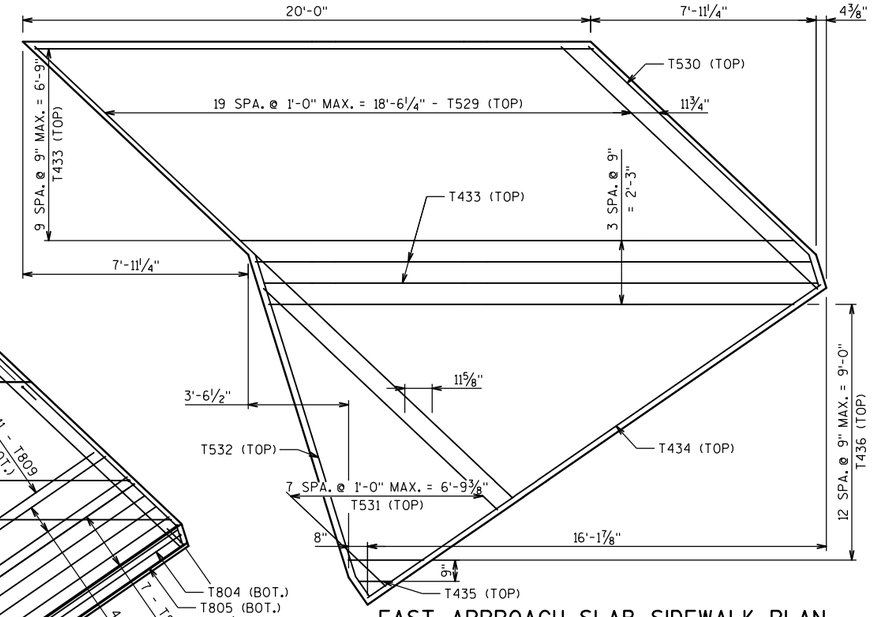


EAST APPROACH SLAB PLAN

REINFORCEMENT

EAST APPROACH SLAB MEDIAN PLAN

REINFORCEMENT



EAST APPROACH SLAB SIDEWALK PLAN

REINFORCEMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

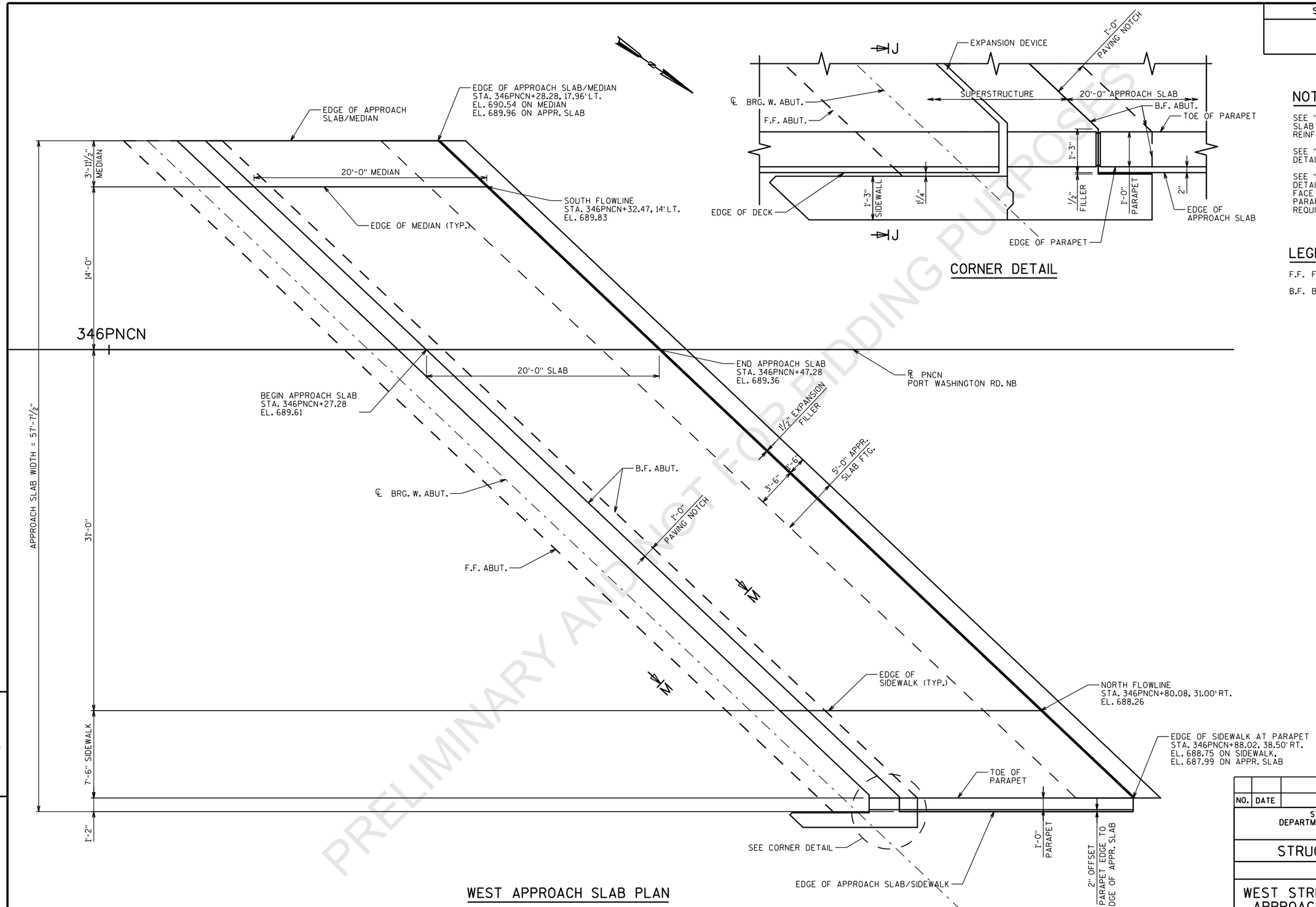
DRAWN BY EAJ | PLANS CK'D. HDA

EAST STRUCTURAL APPROACH SLAB (2 OF 2)

SHEET 32 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74



WEST APPROACH SLAB PLAN

CORNER DETAIL

NOTES

SEE "WEST STRUCTURAL APPROACH SLAB (2 OF 2)" SHEET FOR REINFORCEMENT LAYOUT.

SEE "STRUCTURAL APPROACH SLAB DETAILS" SHEET FOR SECTIONS.

SEE "STRUCTURAL APPROACH SLAB DETAILS" AND "APPROACH VERTICAL FACE PARAPET DETAILS" SHEETS FOR PARAPET REINFORCING TIE PLACEMENT REQUIRED IN THE APPROACH SLABS.

LEGEND

F.F. FRONT FACE

B.F. BACK FACE

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

WEST STRUCTURAL APPROACH SLAB (1 OF 2)

SHEET 33 OF 39

8

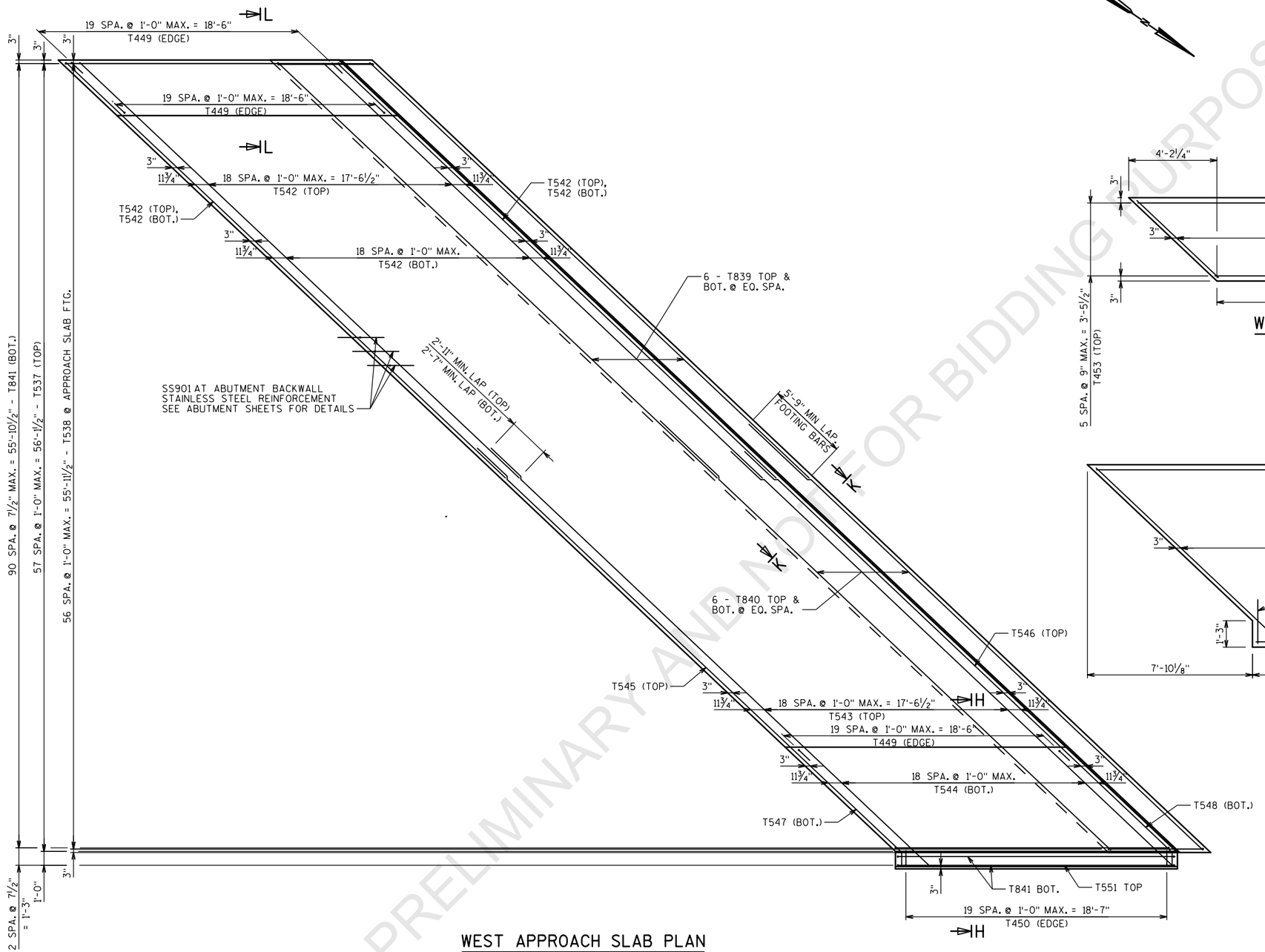
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STATE PROJECT NUMBER
1229-04-74

NOTES

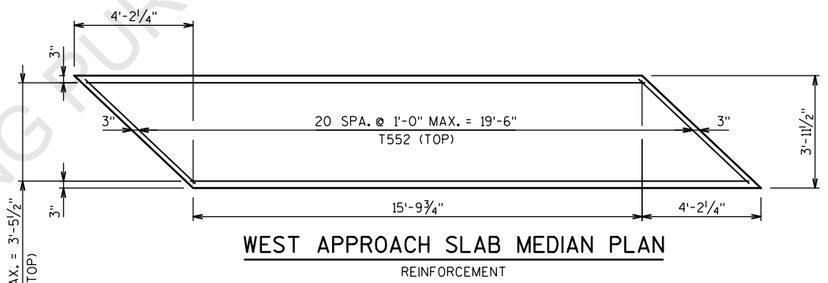
SEE "STRUCTURAL APPROACH SLAB DETAILS" SHEET FOR SECTIONS.

SEE "STRUCTURAL APPROACH SLAB DETAILS" AND "APPROACH VERTICAL FACE PARAPET DETAILS" SHEETS FOR PARAPET REINFORCING TIE PLACEMENT REQUIRED IN THE APPROACH SLABS.



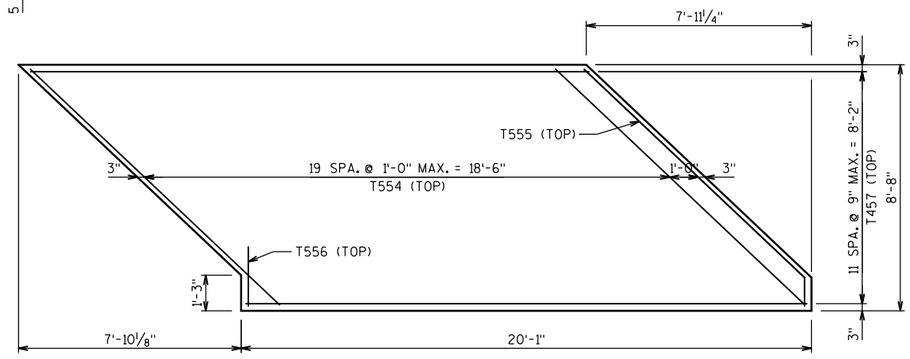
WEST APPROACH SLAB PLAN

REINFORCEMENT



WEST APPROACH SLAB MEDIAN PLAN

REINFORCEMENT



WEST APPROACH SLAB SIDEWALK PLAN

REINFORCEMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

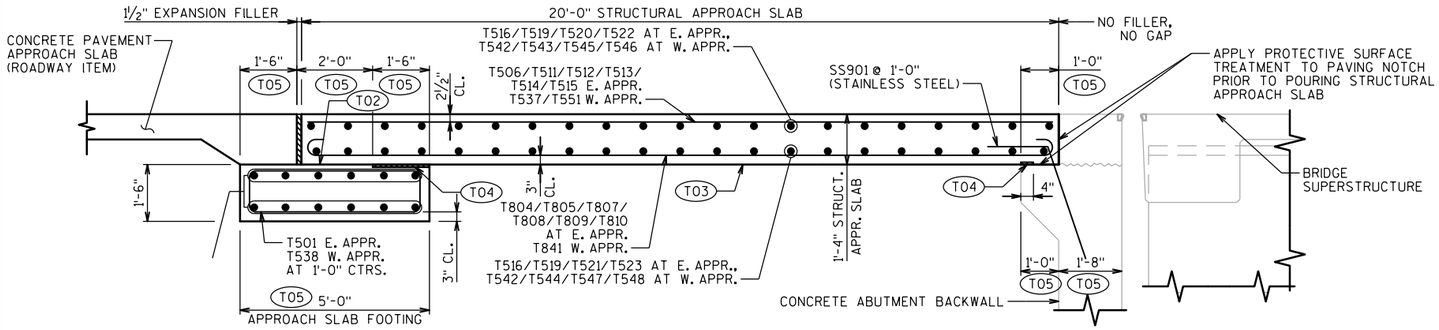
WEST STRUCTURAL APPROACH SLAB (2 OF 2)

SHEET 34 OF 39

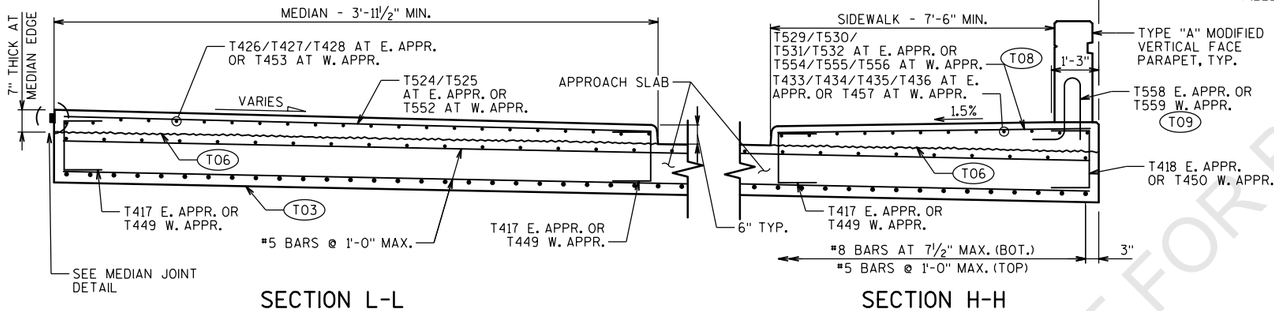
PRELIMINARY AND NOT FOR BIDDING PURPOSES

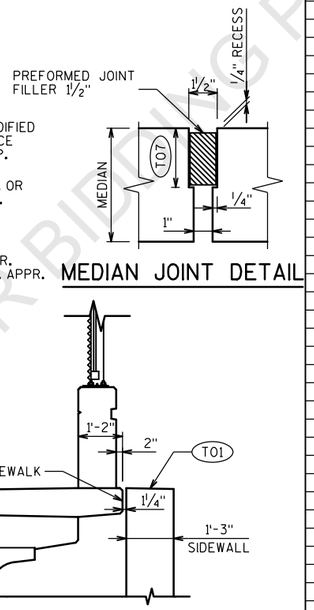
STATE PROJECT NUMBER

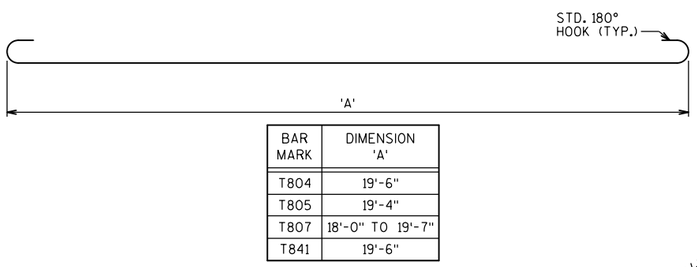
1229-04-74



SECTION THRU STRUCTURAL APPROACH SLAB

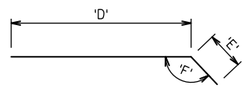




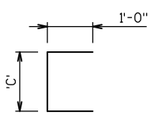


BAR MARK	DIMENSION 'A'
T804	19'-6"
T805	19'-4"
T807	18'-0" TO 19'-7"
T841	19'-6"

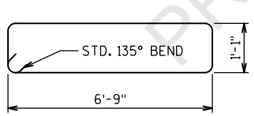
BAR MARK	DIMENSION 'B'
T808	16'-11" TO 17'-8"
T809	7'-3" TO 16'-4"
T810	3'-2" TO 6'-4"



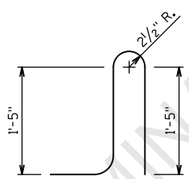
BAR MARK	DIMENSION 'D'	DIMENSION 'E'	ANGLE 'F'
T522	42'-1"	1'-2"	150.75°
T523	41'-9"	1'-2"	150.75°
T428	11'-1"	6'-11"	172.75°
T530	10'-8"	1'-2"	150.75°
T532	11'-10"	10"	162.75°
T545	41'-7"	1'-2"	133.5°
T546	41'-11"	10"	133.5°
T547	41'-3"	1'-2"	133.5°
T548	41'-7"	10"	133.5°
T555	10'-8"	10"	133.5°



BAR MARK	DIMENSION 'C'
T417	1'-4"
T418	1'-7" TO 1'-11"
T449	1'-4"
T450	1'-7"



T501, T538



T558, T559

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
T807	1 SERIES OF 7	19'-10" TO 21'-5"
T808	1 SERIES OF 4	17'-10" TO 18'-7"
T809	1 SERIES OF 11	8'-2" TO 17'-3"
T810	1 SERIES OF 6	4'-1" TO 7'-3"
T511	1 SERIES OF 10	4'-7" TO 17'-8"
T516	2 SERIES OF 6	1'-0" TO 10'-10"
T418	1 SERIES OF 20	3'-6" TO 3'-10"
T520	1 SERIES OF 20	43'-8" TO 54'-5"
T521	1 SERIES OF 20	43'-4" TO 54'-0"
T525	1 SERIES OF 13	20'-8" TO 22'-7"
T529	1 SERIES OF 20	12'-4" TO 23'-2"
T531	1 SERIES OF 8	2'-0" TO 11'-3"
T436	1 SERIES OF 13	2'-7" TO 18'-5"

BUNDLE AND TAG EACH SERIES SEPARATELY

LEGEND

(T01) SLOPE TO DRAIN. SEE ABUTMENT SHEETS FOR DETAIL.

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

(T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.

(T04) ¾" PREFORMED JOINT FILLER ACCORDING TO STD. SPEC 502.2.7. (1'-6" WIDE × PAVING NOTCH LENGTH)

(T05) MEASURED NORMAL TO THE ABUTMENT.

(T06) CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR MATCH BRIDGE X-SLOPE.

(T07) TO MATCH DEPTH OF COMPRESSION JOINT SEAL NOTCH ON BRIDGE

(T08) +/- 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(T09) SEE "APPROACH VERTICAL FACE PARAPET DETAILS" SHEET FOR LAYOUT

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	SERIES	LOCATION
T501	X	57	16'-4"	X		EAST APPROACH SLAB FTG. - STIRRUP
T802	X	12	43'-0"			EAST APPROACH SLAB FTG. - TRANS.
T803	X	12	44'-6"			EAST APPROACH SLAB FTG. - TRANS.
T804	X	89	21'-4"	X		EAST APPROACH SLAB - LONG. - BOT.
T805	X	1	21'-2"	X		EAST APPROACH SLAB - LONG. - BOT. (NORTH EDGE)
T506	X	57	19'-6"			EAST APPROACH SLAB - LONG. - TOP
T807	X	7	20'-8"	X	▲	EAST APPROACH SLAB - LONG. - BOT. (NORTH END)
T808	X	4	18'-3"	X	▲	EAST APPROACH SLAB - LONG. - BOT. (NORTH END)
T809	X	11	12'-9"	X	▲	EAST APPROACH SLAB - LONG. - BOT. (NORTH END)
T810	X	6	5'-8"	X	▲	EAST APPROACH SLAB - LONG. - BOT. (NORTH END)
T511	X	10	11'-2"		▲	EAST APPROACH SLAB - LONG. - TOP (NORTH END)
T512	X	1	18'-4"			EAST APPROACH SLAB - LONG. - TOP (NORTH EDGE)
T513	X	1	18'-9"			EAST APPROACH SLAB - LONG. - TOP (NORTH EDGE)
T514	X	2	19'-3"			EAST APPROACH SLAB - LONG. - TOP (NORTH EDGE)
T515	X	1	19'-5"			EAST APPROACH SLAB - LONG. - TOP (NORTH EDGE)
T516	X	12	5'-11"		▲	EAST APPROACH SLAB - TRANS. - TOP & BOT. (NORTHEAST CORNER)
T417	X	60	3'-3"	X		EAST APPOACH - VERT. - SIDEWALK & MEDIAN EDGES
T418	X	20	3'-8"	X	▲	EAST APPOACH - VERT. - SIDEWALK EDGE
T519	X	42	43'-0"			EAST APPROACH - TRANS. - TOP & BOT.
T520	X	20	49'-1"		▲	EAST APPROACH - TRANS. - TOP
T521	X	20	48'-8"		▲	EAST APPROACH - TRANS. - BOT.
T522	X	1	43'-3"	X		EAST APPROACH - TRANS. - TOP (EDGE)
T523	X	1	42'-11"	X		EAST APPROACH - TRANS. - BOT. (EDGE)
T524	X	8	22'-8"			EAST APPROACH - TRANS. - MEDIAN
T525	X	13	21'-8"		▲	EAST APPROACH - TRANS. - MEDIAN
T426	X	20	19'-6"			EAST APPROACH - LONG. - MEDIAN
T427	X	1	13'-6"			EAST APPROACH - LONG. - MEDIAN
T428	X	1	18'-0"	X		EAST APPROACH - LONG. - MEDIAN
T529	X	20	17'-9"		▲	EAST APPROACH - TRANS. - SIDEWALK
T530	X	1	11'-10"	X		EAST APPROACH - TRANS. - SIDEWALK
T531	X	8	6'-8"		▲	EAST APPROACH - TRANS. - SIDEWALK
T532	X	1	12'-8"	X		EAST APPROACH - TRANS. - SIDEWALK
T433	X	12	19'-5"			EAST APPROACH - LONG. - SIDEWALK
T434	X	1	19'-4"			EAST APPROACH - LONG. - SIDEWALK
T435	X	1	1'-2"			EAST APPROACH - EDGE - SIDEWALK
T436	X	13	10'-6"		▲	EAST APPROACH - LONG. - SIDEWALK
T537	X	58	19'-6"			WEST APPROACH SLAB - LONG. - TOP
T538	X	57	16'-4"	X		WEST APPROACH SLAB - FTG. - STIRRUP
T839	X	12	43'-1"			WEST APPROACH SLAB FTG. - TRANS.
T840	X	12	44'-4"			WEST APPROACH SLAB FTG. - TRANS.
T841	X	93	21'-4"	X		WEST APPROACH SLAB - LONG. - BOT.
T542	X	42	43'-0"			WEST APPROACH SLAB - TRANS. - TOP & BOT.
T543	X	19	43'-7"			WEST APPROACH SLAB - TRANS. - TOP
T544	X	19	43'-3"			WEST APPROACH SLAB - TRANS. - BOT.
T545	X	1	42'-9"	X		WEST APPROACH SLAB - TRANS. - TOP
T546	X	1	42'-9"	X		WEST APPROACH SLAB - TRANS. - TOP
T547	X	1	42'-5"	X		WEST APPROACH SLAB - TRANS. - BOT.
T548	X	1	42'-5"	X		WEST APPROACH SLAB - TRANS. - BOT.
T449	X	60	3'-3"	X		WEST APPROACH - EDGE - MEDIAN & SIDEWALK
T450	X	20	3'-6"	X		WEST APPROACH - EDGE - SIDEWALK
T551	X	1	19'-9"			WEST APPROACH SLAB - LONG. - TOP (EDGE)
T552	X	21	5'-4"			WEST APPROACH - TRANS. - MEDIAN
T453	X	6	19'-8"			WEST APPROACH - LONG. - MEDIAN
T554	X	20	12'-1"			WEST APPROACH - TRANS. - SIDEWALK
T555	X	1	11'-6"	X		WEST APPROACH - TRANS. - SIDEWALK
T556	X	1	2'-1"			WEST APPROACH - TRANS. - SIDEWALK (CORNER)
T457	X	12	19'-8"			WEST APPORACH - LONG. - SIDEWALK
T558	X	24	4'-4"	X		EAST APPROACH - PARAPET VERT.
T559	X	25	4'-4"	X		WEST APPROACH - PARAPET VERT.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

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STRUCTURE B-45-102

DRAWN BY EAJ | PLANS CK'D. HDA

STRUCUTRAL APPROACH SLAB DETAILS

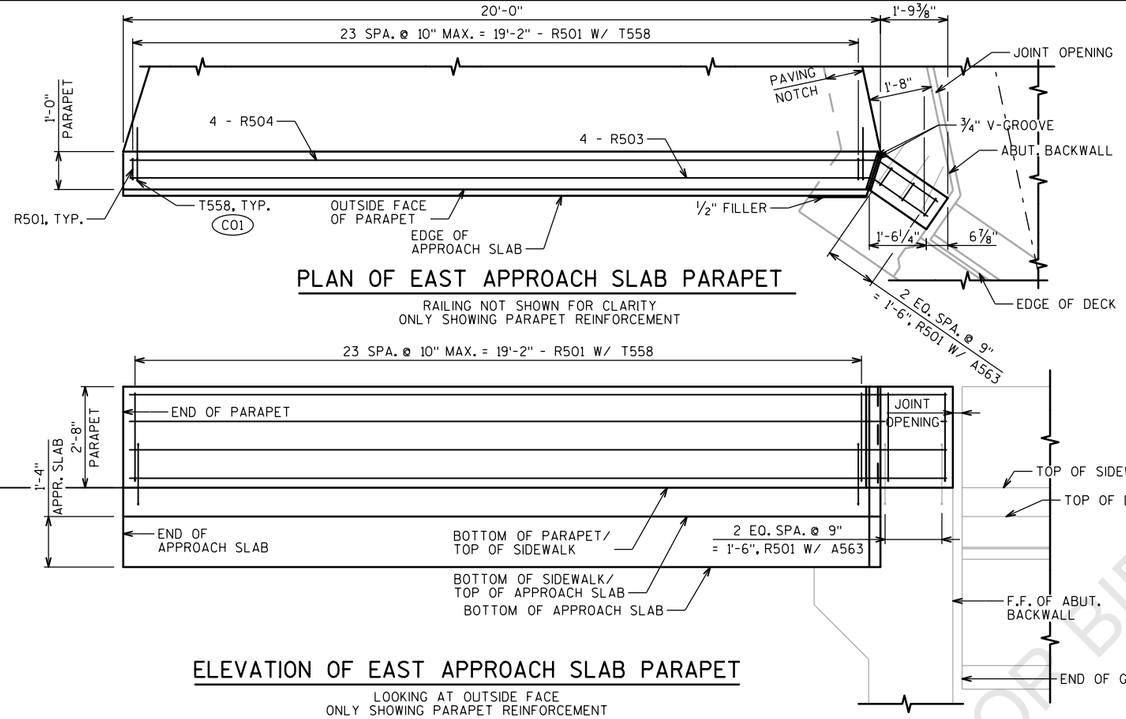
SHEET 35 OF 39

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-102\cds\B102_080517_ss.dgn PLOT DATE : 7/28/2021 7:57:33 PM PLOT BY : ejelinek PLOT SCALE : 4:1

STATE PROJECT NUMBER
1229-04-74

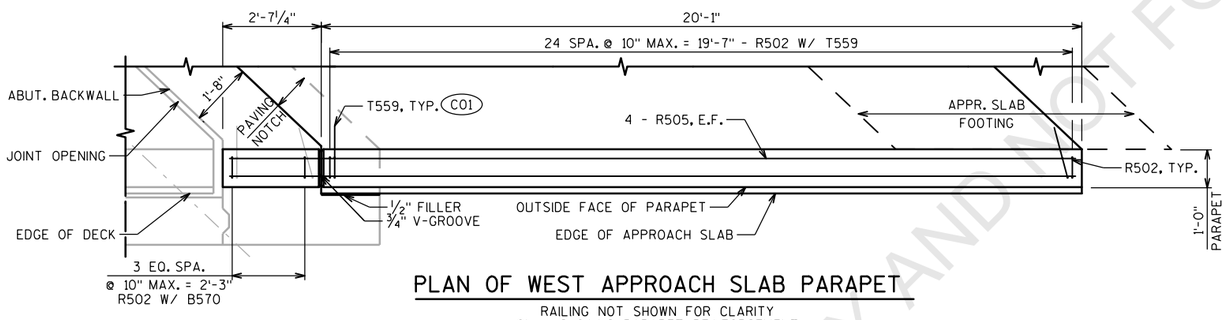


PLAN OF EAST APPROACH SLAB PARAPET

RAILING NOT SHOWN FOR CLARITY
ONLY SHOWING PARAPET REINFORCEMENT

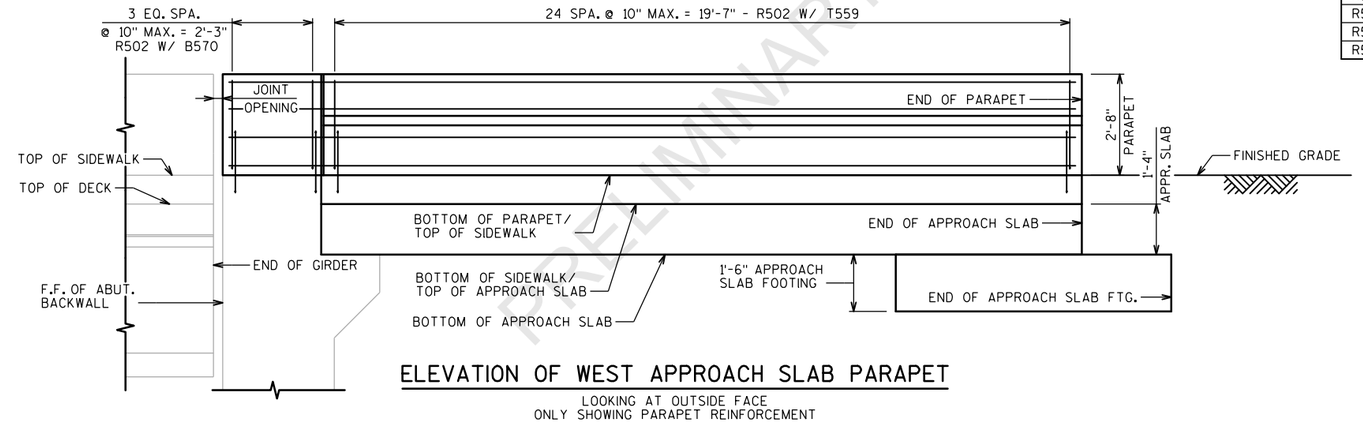
ELEVATION OF EAST APPROACH SLAB PARAPET

LOOKING AT OUTSIDE FACE
ONLY SHOWING PARAPET REINFORCEMENT



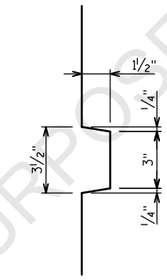
PLAN OF WEST APPROACH SLAB PARAPET

RAILING NOT SHOWN FOR CLARITY
ONLY SHOWING PARAPET REINFORCEMENT

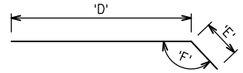


ELEVATION OF WEST APPROACH SLAB PARAPET

LOOKING AT OUTSIDE FACE
ONLY SHOWING PARAPET REINFORCEMENT



DETAIL A

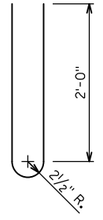


R503 & R504

BAR MARK	DIMENSION 'D'	DIMENSION 'E'	ANGLE 'F'
R503	19'-7"	1'-9"	145.25°
R504	19'-9"	1'-11"	145.25°

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
R501	X	27	4'-9"	X	EAST PARAPET VERT.
R502	X	29	4'-9"	X	WEST PARAPET VERT.
R503	X	8	21'-4"	X	EAST PARAPET LONGITUDINAL
R504	X	4	21'-8"	X	EAST PARAPET LONGITUDINAL
R505	X	4	22'-4"		WEST PARAPET LONGITUDINAL



R501, R502

LEGEND

(C01) T558 OR T559 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL AND ABUT. STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

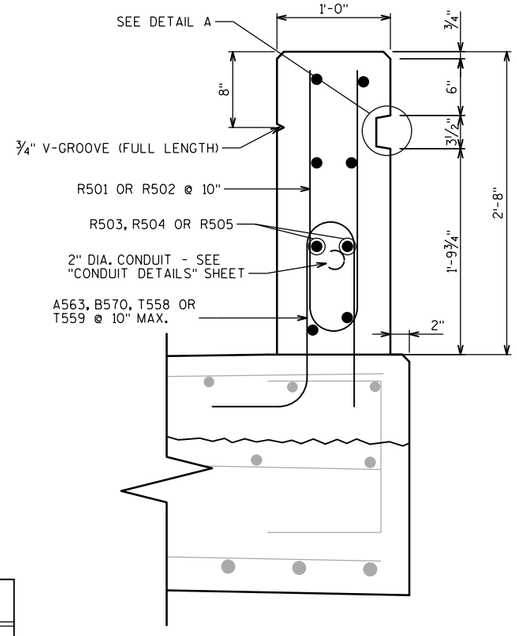
E.F. EACH FACE

NOTES

FOR PARAPET ON SUPERSTRUCTURE SEE "SUPERSTRUCTURE CROSS SECTION" SHEET

FOR A AND B BARS, SEE ABUTMENT SHEETS

FOR T BARS, SEE "STRUCTURAL APPROACH SLAB" SHEETS



SECTION THRU PARAPET

ON APPROACH SLAB SIDEWALK - AT ABUTMENT SIMILAR
(RAILING NOT SHOWN FOR CLARITY)

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STRUCTURE B-45-102

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APPROACH VERTICAL FACE PARAPET DETAILS

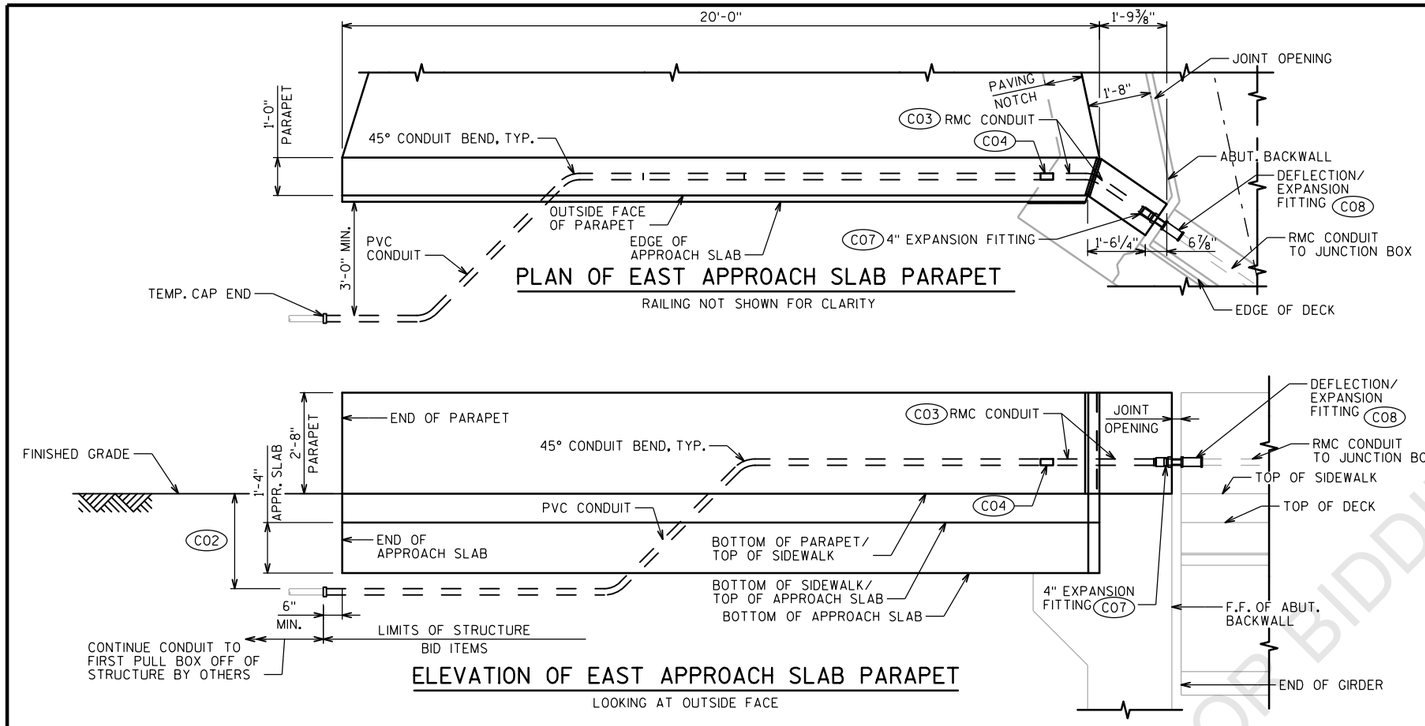
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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-102\cds\B102_080601_ppt.dgn
PLOT DATE : 7/28/2021 7:57:38 PM PLOT BY : ejelinek
PLOT SCALE : 4:1

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PLAN OF EAST APPROACH SLAB PARAPET

RAILING NOT SHOWN FOR CLARITY

ELEVATION OF EAST APPROACH SLAB PARAPET

LOOKING AT OUTSIDE FACE

LEGEND

(C02) 1'-6" MIN CONDUIT COVER. CONDUIT COVER SHOULD NOT EXCEED 3'-0".

(C03) USE 2" DIA. RIGID METALLIC (RMC) CONDUIT AT FITTINGS. PROVIDE RMC FOR 3'-0" MIN. ON EACH SIDE OF JOINT OPENINGS UNLESS NOTED OTHERWISE.

(C04) NONMETALLIC CONDUIT TO METALLIC CONDUIT ADAPTER FITTING (UL OR NRTL LISTED FOR ELECTRICAL USE SHALL BE USED)

(C05) SPONGE RUBBER WRAP TO BE AASHTO M153, TYPE 1 OR EQUIVALENT - 1/4" MINIMUM THICKNESS. PROVIDE WRAP FOR THE ENTIRE LENGTH OF THE FITTING OR AS SHOWN. SPONGE RUBBER WRAP INCIDENTAL TO "CONDUIT RIGID METALLIC 2-INCH"

(C06) POSITION MOVEABLE 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.

(C07) EXPANSION FITTING REQUIREMENTS:
4" TOTAL CONDUIT MOVEMENT WITH BONDING JUMPER

(C08) DEFLECTION/EXPANSION FITTING REQUIREMENTS:
UP TO 3/4" CONDUIT CONTRACTION OR EXPANSION AND UP TO 30 DEGREES OF ANGULAR MISALIGNMENT IN ANY DIRECTION WITH BONDING JUMPER

NOTES

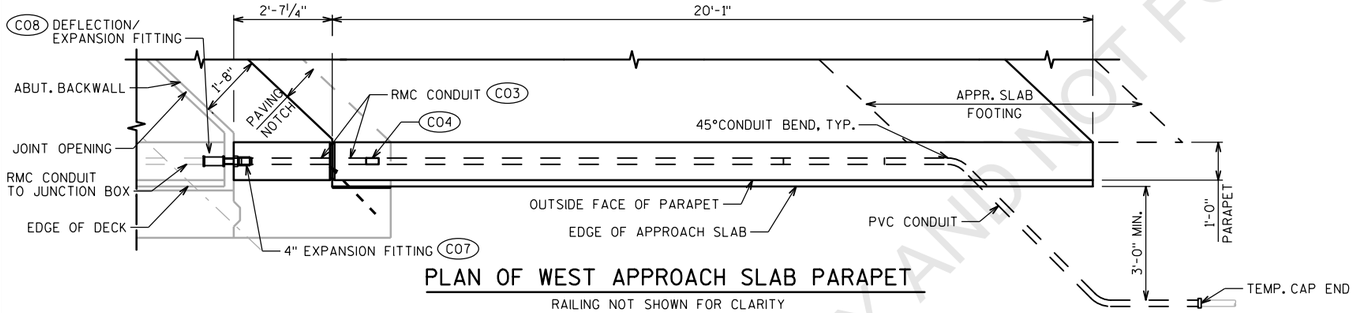
FOR PARAPET ON SUPERSTRUCTURE SEE "SUPERSTRUCTURE CROSS SECTION" SHEET

CONDUIT SHALL BE EMBEDDED 2" CLEAR.

USE 2" RIGID NONMETALLIC CONDUIT (PVC) UNLESS NOTED OTHERWISE.

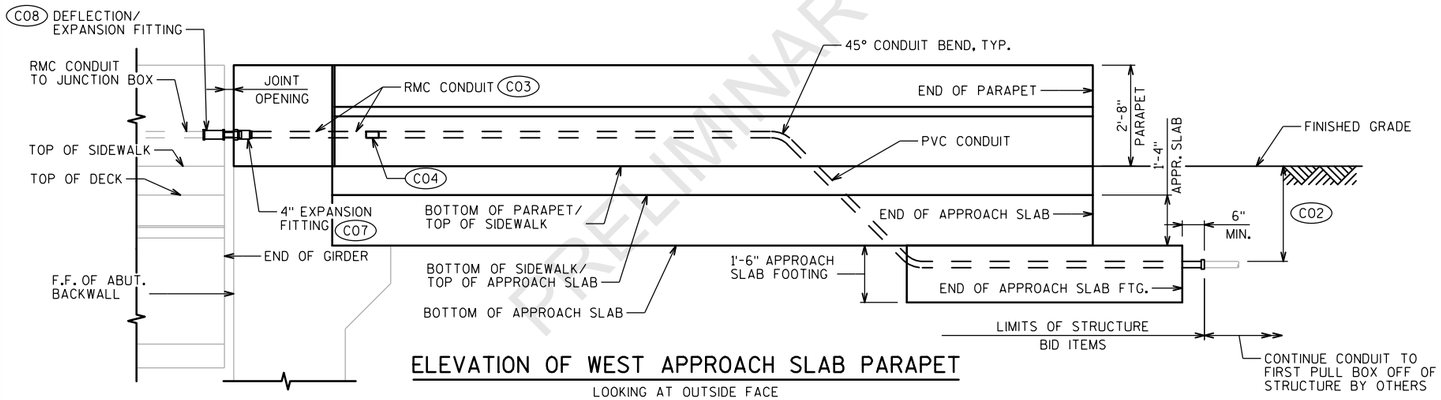
CONDUIT FITTINGS, CONDUIT BENDS, AND ADAPTER FITTINGS INCIDENTAL TO CONDUIT WORK.

CONDUIT BENDS SHALL CONFORM TO THE NATIONAL ELECTRIC CODE.



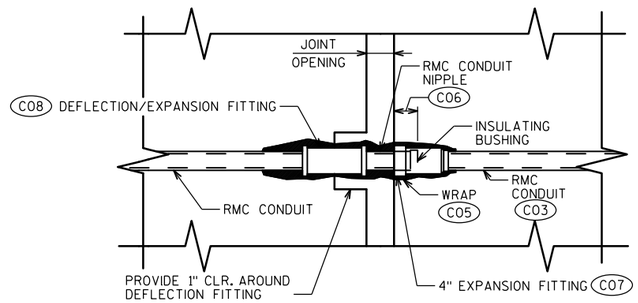
PLAN OF WEST APPROACH SLAB PARAPET

RAILING NOT SHOWN FOR CLARITY



ELEVATION OF WEST APPROACH SLAB PARAPET

LOOKING AT OUTSIDE FACE



DEFLECTION/EXPANSION AND 4" EXPANSION FITTING

BOND JUMPER NOT SHOWN FOR CLARITY

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STRUCTURE B-45-102

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CONDUIT DETAILS

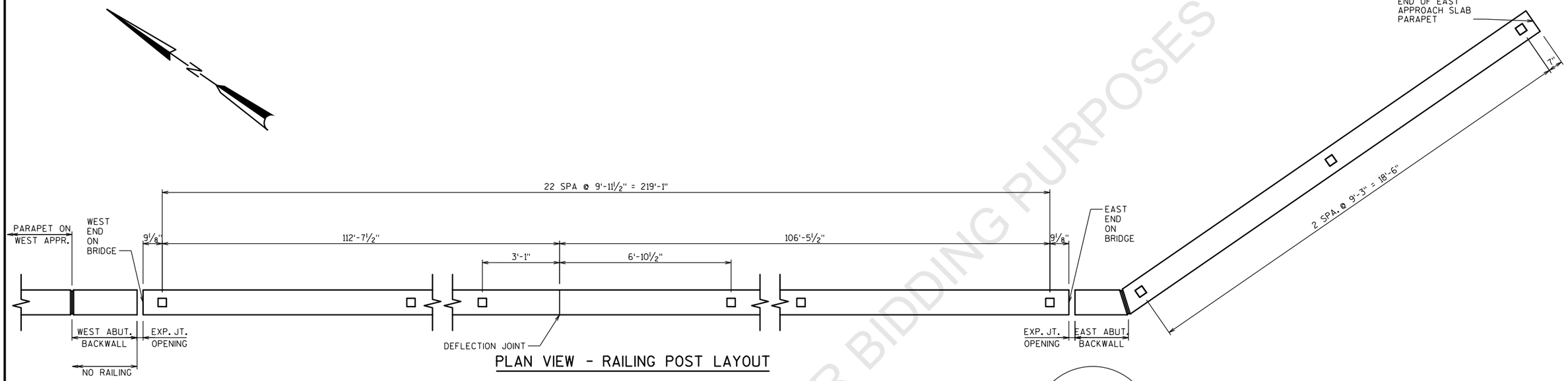
SHEET 37 OF 39

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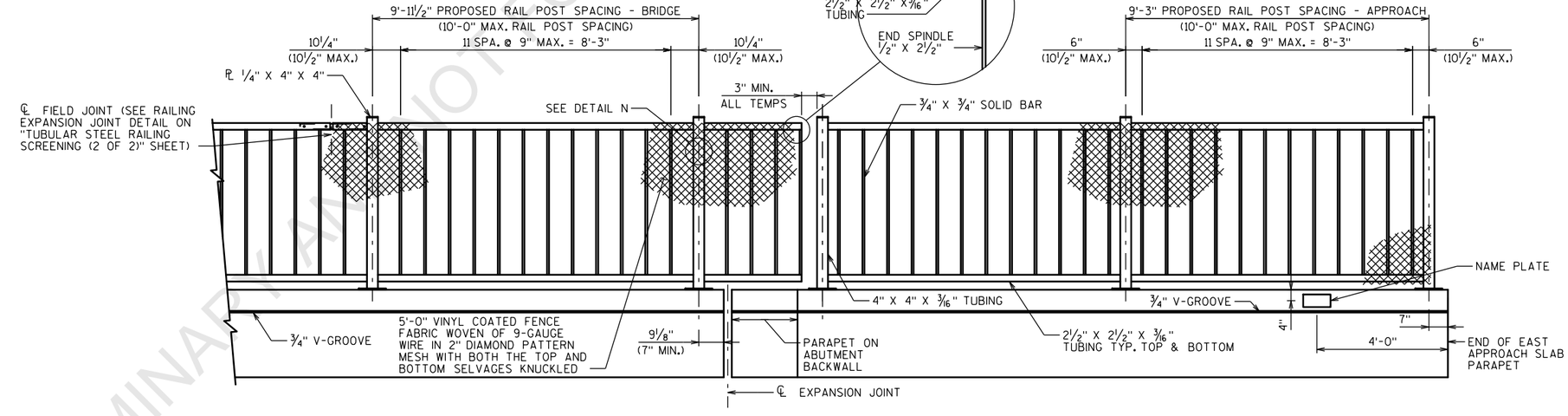
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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-102\cds\B102_080602_ppt.dgn PLOT DATE : 7/28/2021 7:57:42 PM PLOT BY : ejelinek PLOT SCALE : 4:1

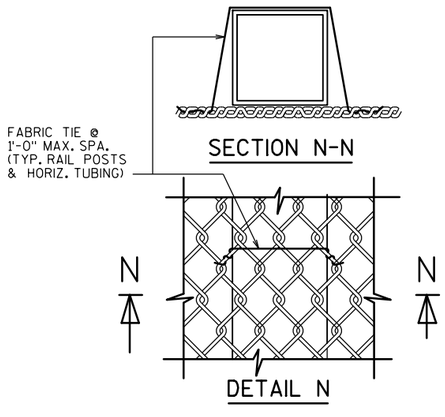
STATE PROJECT NUMBER
1229-04-74



PLAN VIEW - RAILING POST LAYOUT



INSIDE ELEVATION OF RAILING



DETAIL N

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-102

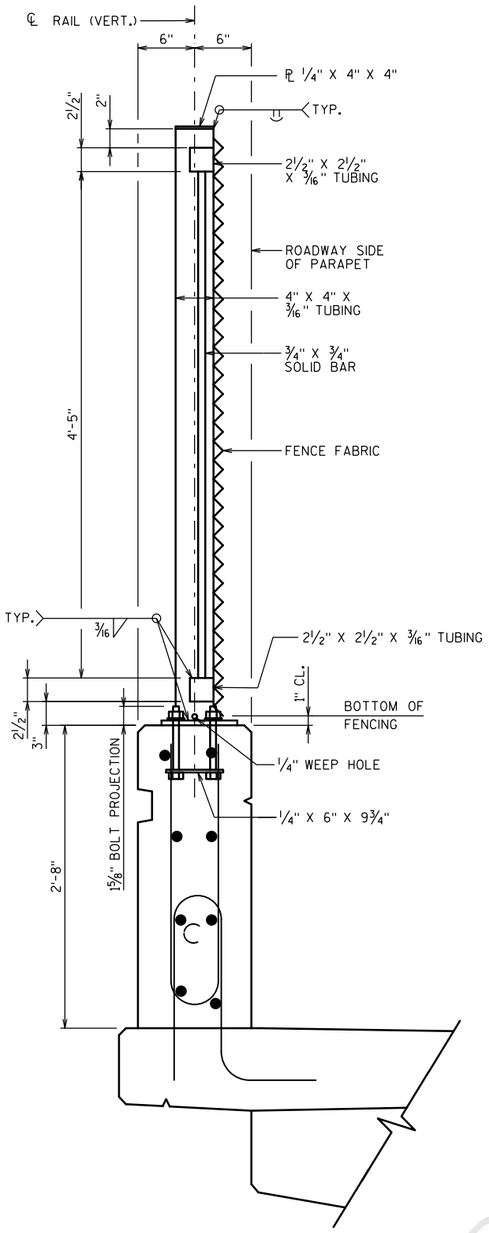
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TUBULAR STEEL RAILING SCREENING (1 OF 2)

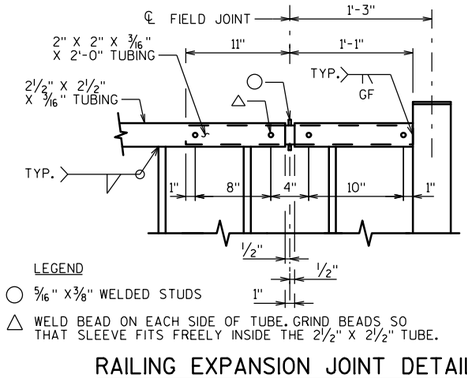
SHEET 38 OF 39

PRELIMINARY - NOT FOR BIDDING PURPOSES

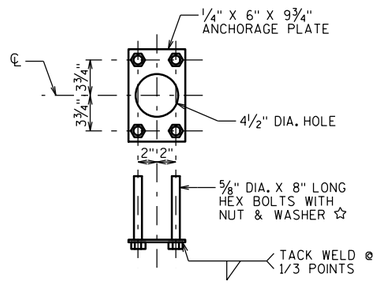
STATE PROJECT NUMBER
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SECTION THRU RAILING



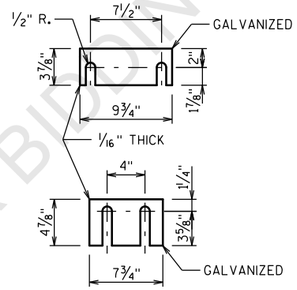
RAILING EXPANSION JOINT DETAIL



ANCHORAGE DETAIL

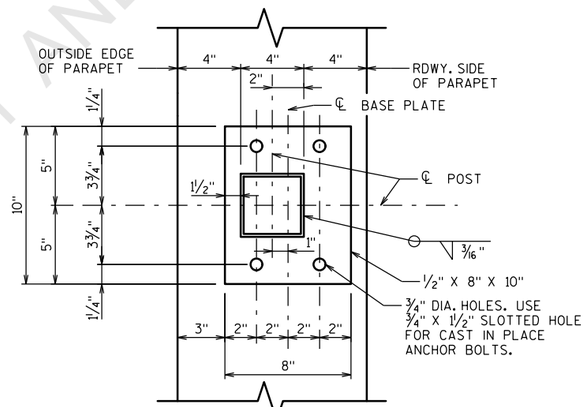
☆ALTERNATIVE ANCHORAGE: ADHESIVE ANCHORS 5/8-INCH, EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS.

NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.



SHIM PLATE DETAILS

TWO SHIMS OF EACH SIZE REQUIRED PER POST



BASE PLATE

NOTES

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. PLATES, ANGLES, BARS AND SHIMS SHALL CONFORM TO ASTM A709, GRADE 36. FENCE FABRIC SHALL CONFORM TO F668, CLASS 2B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPACINGS ARE TAKEN HORIZONTAL ALONG CENTERLINE OF RAILING AT BASE OF POST.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.☆

THE BID ITEM SHALL BE "RAILING TUBULAR SCREENING" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

ALL RAILING MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED FEDERAL COLOR NO. 27038, BLACK. FENCE FABRIC AND TIES TO BE VINYL-COATED. COLOR SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

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STRUCTURE B-45-102

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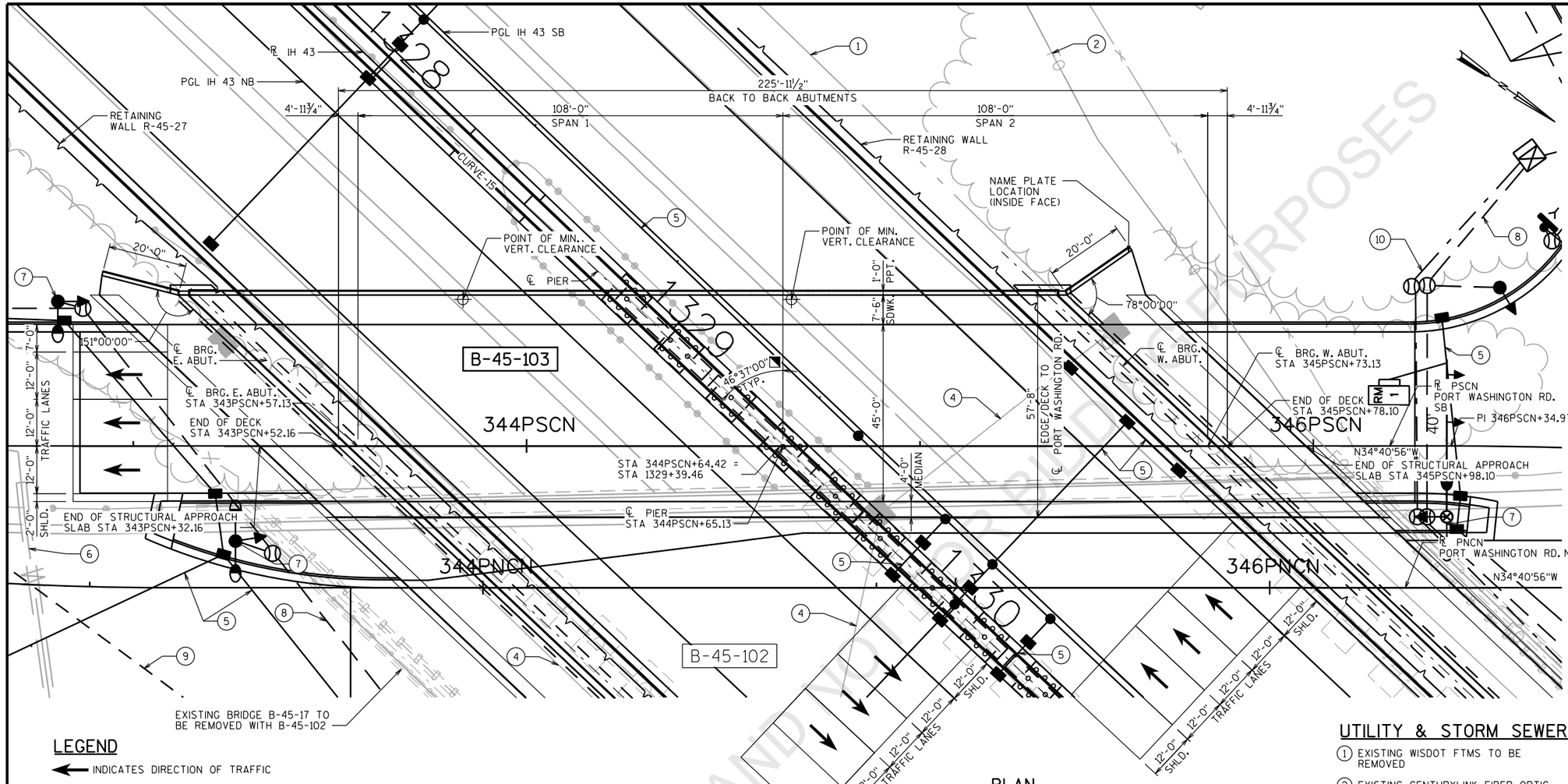
TUBULAR STEEL RAILING SCREENING (2 OF 2)

SHEET 39 OF 39

STATE PROJECT NUMBER
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LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTION
3. QUANTITIES, NOTES & DESIGN DATA
4. PROFILE GRADE LINES
5. SUBSURFACE EXPLORATION (1 OF 2)
6. SUBSURFACE EXPLORATION (2 OF 2)
7. EAST ABUTMENT
8. EAST ABUTMENT DETAILS (1 OF 3)
9. EAST ABUTMENT DETAILS (2 OF 3)
10. EAST ABUTMENT DETAILS (3 OF 3)
11. EAST ABUTMENT BILL OF BARS
12. WEST ABUTMENT
13. WEST ABUTMENT DETAILS (1 OF 3)
14. WEST ABUTMENT DETAILS (2 OF 3)
15. WEST ABUTMENT DETAILS (3 OF 3)
16. WEST ABUTMENT BILL OF BARS
17. PIER
18. PIER DETAILS & REINFORCEMENT
19. 45W" PRESTRESSED GIRDER
20. 45W" PRESTRESSED GIRDER DETAILS
21. EXPANSION BEARING DETAILS
22. SUPERSTRUCTURE FRAMING PLAN
23. STEEL DIAPHRAGM
24. SUPERSTRUCTURE REINFORCEMENT
25. SUPERSTRUCTURE CROSS SECTION
26. SUPERSTRUCTURE DETAILS (1 OF 2)
27. SUPERSTRUCTURE DETAILS (2 OF 2)
28. EXPANSION JOINT (1 OF 2)
29. EXPANSION JOINT (2 OF 2)
30. SUPERSTRUCTURE BILL OF BARS
31. EAST STRUCTURAL APPROACH SLAB (1 OF 2)
32. EAST STRUCTURAL APPROACH SLAB (2 OF 2)
33. WEST STRUCTURAL APPROACH SLAB (1 OF 2)
34. WEST STRUCTURAL APPROACH SLAB (2 OF 2)
35. STRUCTURAL APPROACH SLAB DETAILS
36. APPROACH VERTICAL FACE PARAPET DETAILS
37. TUBULAR STEEL RAILING SCREENING (1 OF 2)
38. TUBULAR STEEL RAILING SCREENING (2 OF 2)

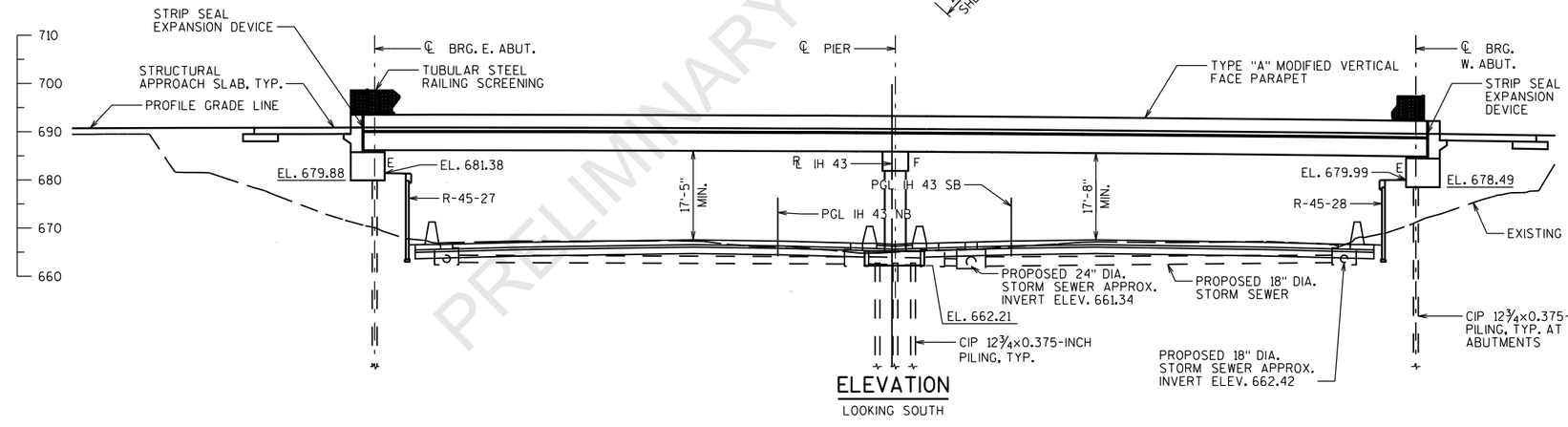


PLAN

2 SPAN 45W" PRESTRESSED CONCRETE GIRDER

LEGEND

- INDICATES DIRECTION OF TRAFFIC
- ANGLE TAKEN TO TANGENT OF IH 43 ℄



ELEVATION

LOOKING SOUTH

UTILITY & STORM SEWER NOTES

1. EXISTING WISDOT FTMS TO BE REMOVED
2. EXISTING CENTURYLINK FIBER OPTIC LINE TO BE RELOCATED
4. EXISTING WISDOT STORM SEWER TO BE REMOVED
5. PROPOSED WISDOT STORM SEWER
6. EXISTING CITY OF MEQUON WATER LINE TO REMAIN
7. PROPOSED LIGHTING
8. PROPOSED SIGNALS
9. PROPOSED FTMS
10. PROPOSED SIGNAL INTERCONNECT

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
HEATHER ANDERS (414) 410-6899

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

HNTB 250 E. WISCONSIN AVE. #2000 MILWAUKEE, WI 53202 (414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-45-103

PORT WASHINGTON RD SB OVER IH 43

COUNTY	CITY
OZAUKEE	MEQUON

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	CVH/EAJ	DESIGN CK'D.	MSS	DRAWN BY	EAJ	PLANS CK'D.	HDA

GENERAL PLAN & ELEVATION

SHEET 1 OF 38

WISCONSIN
HEATHER D. ANDERS, P.E.
33441-006
CEDARBURG, WI
PROFESSIONAL ENGINEER
7-29-2021
Heather D. Anders

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74

B-45-103 B-45-102

℄ PSCN PORT WASHINGTON RD. SB

℄ PORT WASHINGTON RD.

℄ PNCN PORT WASHINGTON RD. NB

57'-7½" OUT TO OUT

39'-8" | 18'-0" | 18'-0"

7'-6" SIDEWALK | 7'-0" | 12'-0" TRAFFIC LANE | 12'-0" TRAFFIC LANE | 12'-0" TRAFFIC LANE | 2'-0" | 3'-11½" MEDIAN

45'-0" - OVERLAY (POLYMER) LIMITS

5'-3"

2'-8"

8"

TUBULAR STEEL RAILING SCREENING, TYP.

TYPE "A" MODIFIED VERTICAL FACE PARAPET, TYP.

1'-3" LEVEL

1.5%

6" TYP.

¼" MIN. POLYMER OVERLAY

2.0%

POLYMER OVERLAY

8" DECK TYP.

PT. REFERRED TO ON PGL

½"

VARIES

FILLER AS NEEDED FOR CONSTRUCTION

5"

45W" GIRDER, TYP.

8¾"

1'-2"

2'-6¾"

① ② ③ ④ GIRDER NO., TYP. ⑤ ⑥ ⑦ ⑧

7 SPA. @ 7'-4" = 51'-4"

2'-6¾"

¾" V-GROOVE. EXTEND V-GROOVE TO 2'-0" FROM FRONT FACE OF ABUT. BODY

2'-2⅞" MEASURED ALONG ℄ OF PIER

2'-0"

4 SPA. @ 18'-3" = 73'-0" MEASURED ALONG ℄ PIER

2'-0"

FINISHED GROUND LINE

4'-0" MIN.

PROPOSED TYPICAL SECTION

LOOKING WEST

℄ IH 43

R-45-28

R-45-27

VARIES 33'-0¾" MIN.

2'-0" | 2'-7" ± MIN. | 12'-0" SHLD. | 12'-0" LANE | 12'-0" LANE | 12'-0" LANE | 12'-0" SHLD. | VARIES 9'-0¾" MIN. | 12'-0" SHLD. | 12'-0" LANE | 12'-0" LANE | 12'-0" LANE | 12'-0" SHLD. | 2'-0" | 2'-7" ± MIN.

VARIES 11"± MIN.

VARIES 11"± MIN.

PGL IH 43 SB

PGL IH 43 NB

CROWN POINT

CROWN POINT

4.0% | 2.0% | 2.0% | 2.0% | 4.0% | 2.0% | 2.0% | 2.0% | 4.0%

PROPOSED IH 43 SECTION UNDER PORT WASHINGTON RD.

LOOKING NORTH
(MEASUREMENTS SHOWN ARE NORMAL TO ℄ IH 43)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

DRAWN BY EAJ | PLANS CK'D. HDA

TYPICAL SECTION

SHEET 2 OF 38

STATE PROJECT NUMBER
1229-04-74

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEM	UNIT	SUPER	EAST APPR. SLAB	EAST ABUT.	PIER	WEST ABUT.	WEST APPR. SLAB	TOTAL
206.1000.0003	EXCAVATION FOR STRUCTURES BRIDGES B-45-103	LS	--	--	--	--	--	--	1
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	--	--	187	--	198	--	385
501.1000.S	ICE HOT WEATHER CONCRETING	LB	3,668	696	915	945	1,050	729	8,003
502.0100	CONCRETE MASONRY BRIDGES	CY	--	23	122	126	140	23	434
502.3101	EXPANSION DEVICE	LF	--	--	82	--	82	--	164
502.3200	PROTECTIVE SURFACE TREATMENT	SY	1,443	156	--	--	--	163	1,762
502.3210	PIGMENTED SURFACE SEALER	SY	94	9	--	--	--	9	112
503.0146	PRESTRESSED GIRDER TYPE 145W-INCH	LF	1,735	--	--	--	--	--	1,735
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	--	--	6,210	2,680	6,910	--	15,800
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	105,440	15,740	3,870	22,280	3,950	16,570	167,850
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	--	--	1,410	--	1,410	--	2,820
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	--	--	--	16	--	--	16
506.2610	BEARING PADS ELASTOMERIC LAMINATED	EACH	--	--	8	--	8	--	16
506.4000.0003	STEEL DIAPHRAGMS B-45-103	EACH	28	--	--	--	--	--	28
509.5100.S	POLYMER OVERLAY	SY	1,103	--	--	--	--	--	1,103
513.4091	RAILING TUBULAR SCREENING	LF	222	19	--	--	19	--	260
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	--	--	17	--	18	--	35
550.0500	PILE POINTS	EACH	--	--	12	36	12	--	60
550.2126	PILING CIP CONCRETE 12 3/4 x 0.375-INCH	LF	--	--	1,020	1,980	900	--	3,900
604.0400	SLOPE PAVING CONCRETE	SY	--	--	27	--	27	---	54
SPV.0035.4000	HPC MASONRY STRUCTURES	CY							633
	NON-BID ITEMS								
	NAME PLATE	EACH							1
	PREFORMED JOINT FILLER	SIZE							1/2", 3/4"
	EXPANDED POLYSTYRENE	SIZE							1"
	SIZE 2 COARSE AGGREGATE	CY							

ALL ITEMS ARE CATEGORY 2020

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), OZAUKEE COUNTY, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

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. BAR DIMENSIONS ARE OUT TO OUT.

BEVEL ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "45W PRESTRESSED GIRDER DETAILS" SHEET.

COORDINATE THE REMOVAL OF EXISTING STRUCTURE B-45-17, CONSTRUCTION OF NEW BRIDGES B-45-102 AND B-45-103 AND CONSTRUCTION OF NEW RETAINING WALLS R-45-27 AND R-45-28 WITH NEW STORM SEWERS.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE FOLLOWING COMPLETED SURFACES:
- TOP OF DECK SLAB AND APPROACH SLAB
- EXPOSED SIDEWALK AND MEDIAN SURFACES
- PAVING NOTCH (PRIOR TO PLACING STRUCTURAL APPROACH SLAB)

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE FOLLOWING COMPLETED SURFACES:
- TOP AND INSIDE FACES OF EXTERIOR PARAPET ON BRIDGE AND APPROACH SLABS

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

PILE SPLICES SHALL BE MADE MY A CERTIFIED WELDER, PER AWS D1.1.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M153 TYPE 1, 2, OR 3, OR AASHTO M213.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF JOINT FILLER WITH NON-STAINING, NON-ASPHALTIC JOINT SEALER (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE.) COLOR TO MATCH ADJACENT SURFACES.

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

COORDINATE THE CONSTRUCTION OF BRIDGE B-45-103 WITH RETAINING WALLS R-45-27 AND R-45-28 AND BRIDGE B-45-102.

GEOTECHNICAL ANALYSIS SHOWED VARIABILITY IN THE EMBEDMENT REQUIRED TO REACH THE REQUIRED DRIVING RESISTANCE, PILES MAY DRIVE SHORTER THAN LENGTHS PROVIDED.

SEE ROADWAY PLANS AND PROJECT SPECIAL PROVISIONS FOR INFORMATION ON TIMING OF POLYMER OVERLAY PLACEMENT.

SHOT BLASTING, DECK SURFACE PREPARATIONS, AND TRANSITIONAL AREAS ARE INCLUDED IN THE BID ITEM "POLYMER OVERLAY".

CONCRETE IN THE FOLLOWING COMPONENTS TO BE PAID FOR AS "HPC MASONRY STRUCTURES".
-DECK SLAB, INCLUDING HAUNCHES
-DIAPHRAGMS
-SIDEWALKS AND MEDIANS ON DECK SLAB AND ON STRUCTURAL APPROACH SLABS
-PARAPETS ON BRIDGE AND ON STRUCTURAL APPROACH SLABS
-STRUCTURAL APPROACH SLABS (NOT THE APPROACH SLAB FOOTINGS)

DESIGN DATA

DESIGN SPECIFICATION:
AASHTO LRFD DESIGN SPECIFICATIONS, 9TH EDITION, 2020 WITH INTERIM REVISIONS, UNLESS OTHERWISE NOTED.

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.14
OPERATING RATING FACTOR: RF = 1.50
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 KIPS

STRUCTURE IS DESIGNED FOR A POLYMER OVERLAY OF 5 POUNDS PER SQUARE FOOT AND FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY:
- SUPERSTRUCTURE ..... f'c = 4,000 psi
- SUBSTRUCTURE ..... f'c = 3,500 psi
- 45W-INCH PRESTRESSED GIRDERS ..... f'c = 8,000 psi, f'ci = 6,800 psi

BAR STEEL REINFORCEMENT ..... fy = 60,000 psi
PRESTRESSING STRANDS ..... ULTIMATE TENSILE STRENGTH = 270,000 psi
STEEL PIPE PILE (ASTM A252 GRADE 3) ..... Fy = 45,000 psi

TRAFFIC DATA

PORT WASHINGTON RD SB

ADT = 4,000 (2019)
AADT = 4,300 (2045)
RDS = 40 MPH

IH 43 NB

AADT = 32,000 (2019)
AADT = 37,800 (2045)
RDS = 75 MPH

IH 43 SB

AADT = 40,700 (2019)
AADT = 47,100 (2045)
RDS = 75 MPH

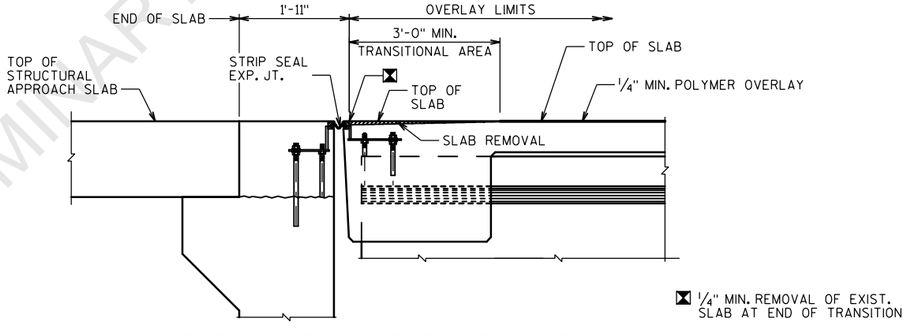
FOUNDATION DATA

USING THE MODIFIED GATES ACCEPTANCE METHOD:

ABUTMENTS AND PIER SHALL BE SUPPORTED ON CIP CONCRETE 12¾ x 0.375-INCH PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES ACCEPTANCE METHOD.

THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.50 USING MODIFIED GATES ACCEPTANCE METHOD TO DETERMINE DRIVEN PILE CAPACITY.

ESTIMATED PILE LENGTHS:
- WEST ABUTMENT ..... 75 FEET
- EAST ABUTMENT ..... 85 FEET
- PIER ..... 55 FEET



SECTION THRU ABUTMENT TRANSITIONAL AREA ON SLAB AT EXPANSION JOINT

REMOVAL AND OVERLAY THICKNESS NOT TO SCALE

PRELIMINARY - NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

DRAWN BY EAJ | PLANS CK'D. HDA

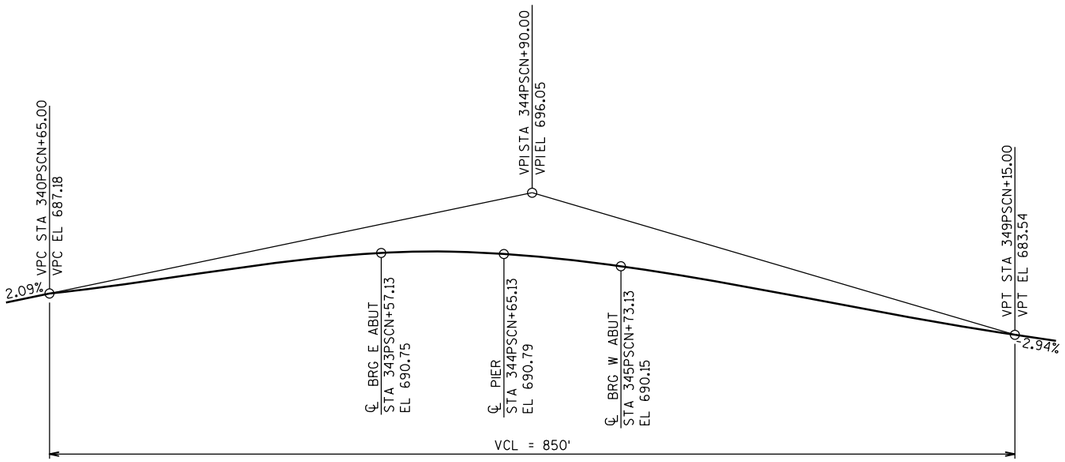
QUANTITIES, NOTES & DESIGN DATA

SHEET 3 OF 38

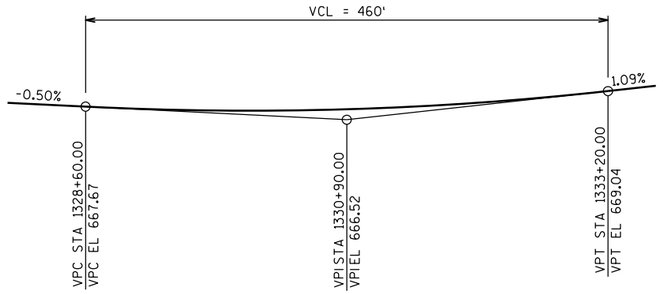
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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-103\cds\B103_080103_gn.dgn
PLOT DATE : 7/29/2021 11:06:50 AM PLOT BY : nmeisner
PLOT SCALE : 1.33333:1

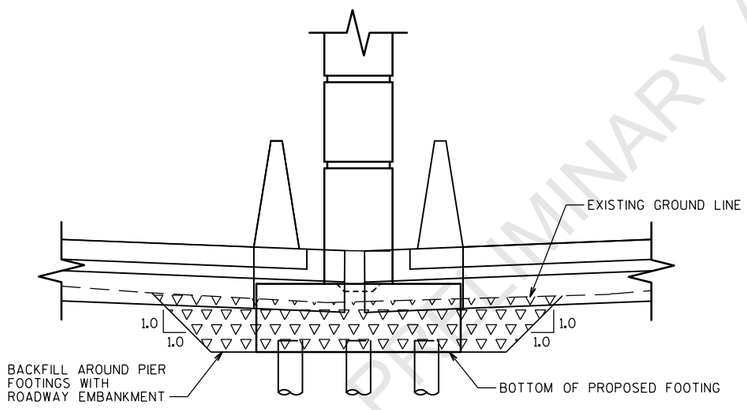
STATE PROJECT NUMBER
1229-04-74



PROFILE GRADE LINE - PORT WASHINGTON RD. SB (PSCN)



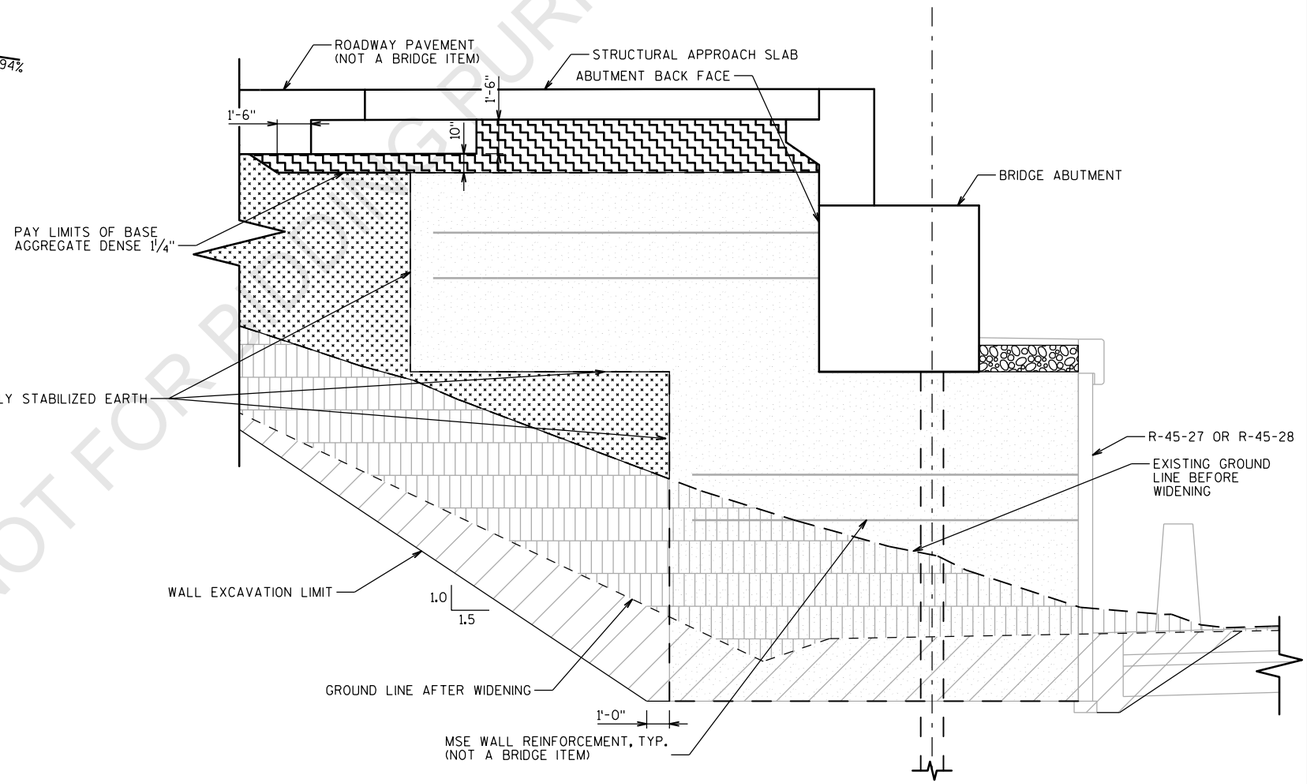
PROFILE GRADE LINE - IH 43 NB & SB



EXCAVATION AT PIER

LEGEND

- WALL EXCAVATION - NOT A BRIDGE ITEM
- FILL MATERIAL - NOT A BRIDGE ITEM. SEE ROADWAY PLANS.
- MSE BACKFILL OR SIZE 2 COARSE AGGREGATE - INCIDENTAL. SEE ABUTMENT DETAIL SHEETS
- MSE BACKFILL - NOT A BRIDGE ITEM
- EXCAVATION INCLUDED WITH ROADWAY WIDENING - NOT A BRIDGE ITEM
- EXCAVATION FOR STRUCTURES BRIDGES B-45-103
- BASE AGGREGATE DENSE 1¼"



EXCAVATION AND BACKFILL DIAGRAM

HORIZONTAL CURVE DATA

IH 43 - CURVE 15

P.I. = 1330+71.43
Δ = 1°06'48"
D = 0°09'10"
T = 364.22'
L = 728.42'
R = 37,484.00'
P.C. = 1327+07.21
P.T. = 1334+35.63

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

DRAWN BY EAJ | PLANS CK'D. HDA

PROFILE GRADE LINES

SHEET 4 OF 38

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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
PW-01	APRIL 15, 2014	357366	602224
PW-03	MAY 1, 2014	357308	602299
PW-06	JANUARY 12, 2015	357168	602319
PW-06A	DECEMBER 23, 2014	357204	602323
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) OZAUKEE COUNTY			

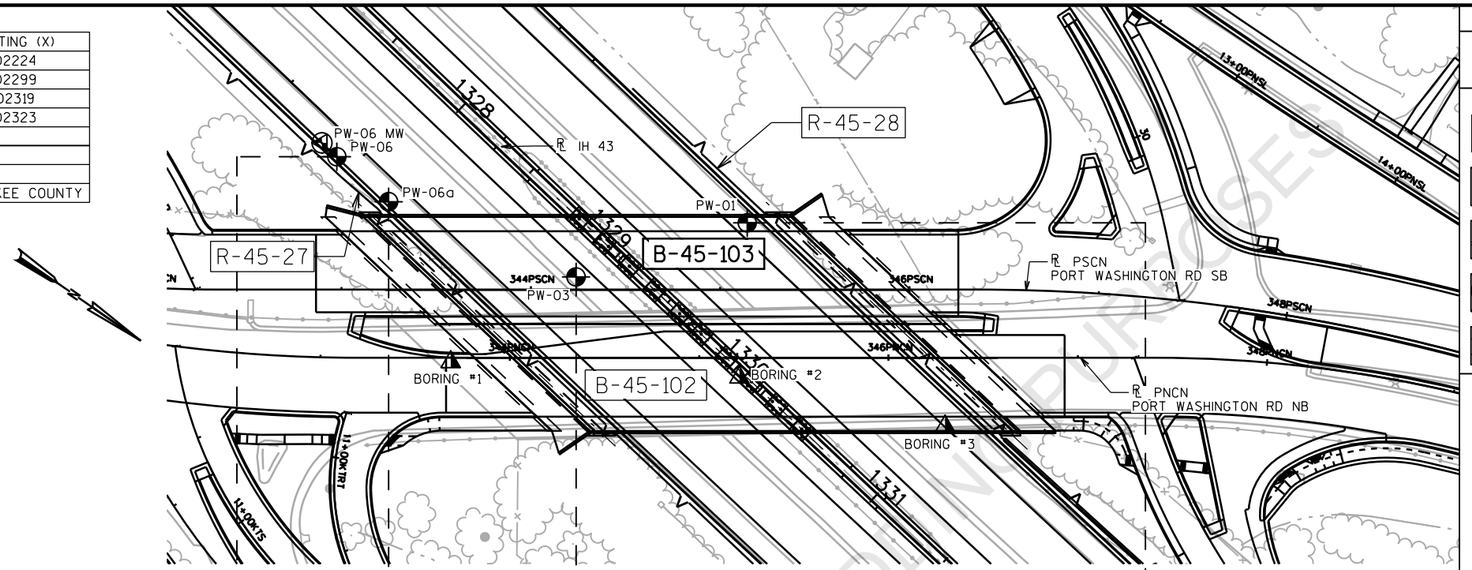
NOTE:

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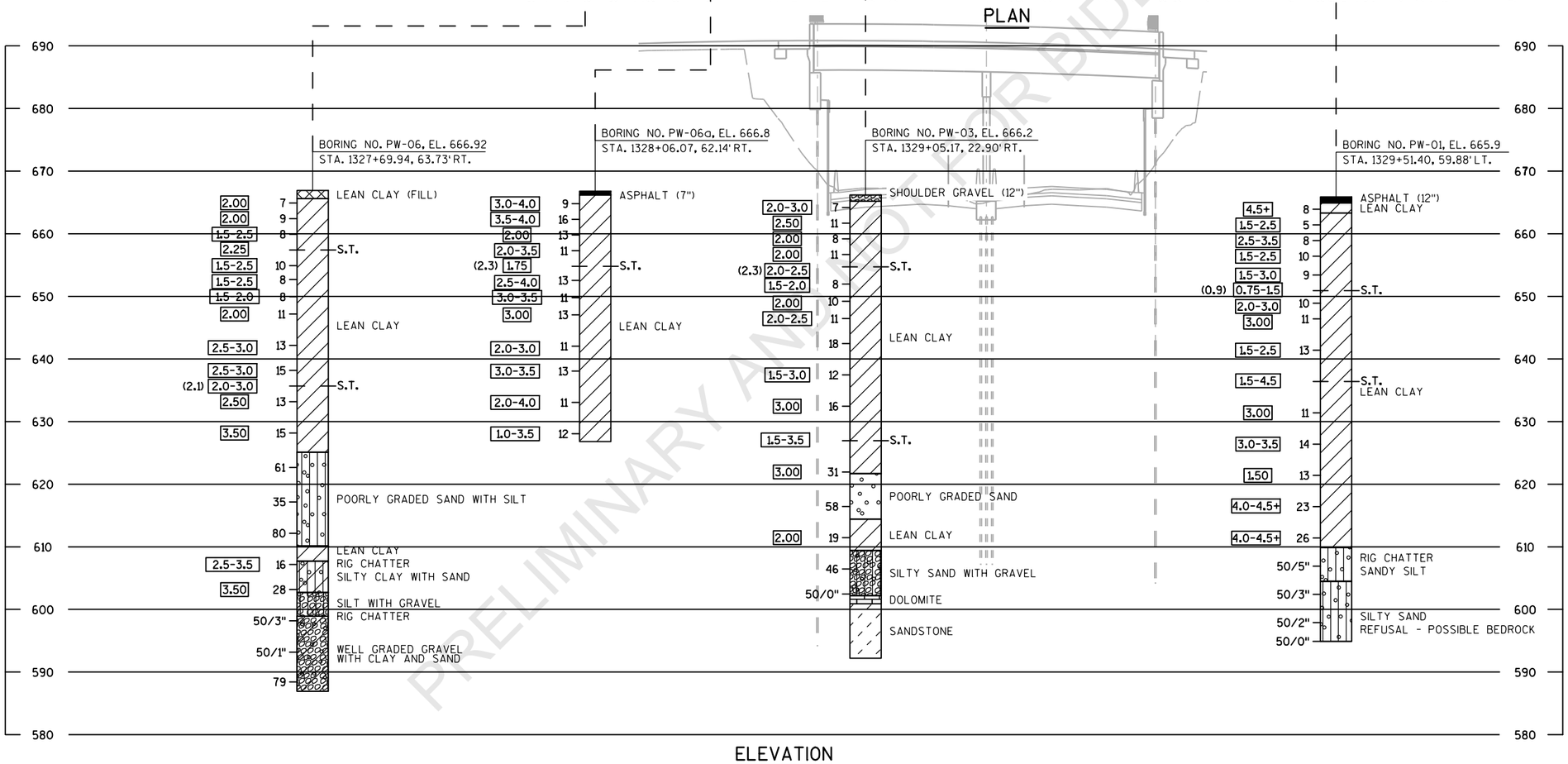
WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

- DENOTES SOIL BORING LOCATION
- DENOTES MONITORING WELL LOCATION
- DENOTES HISTORICAL BORING



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

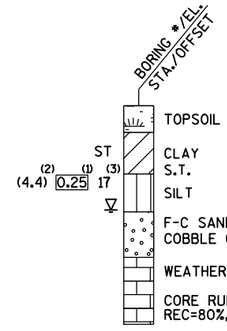
STATE PROJECT NUMBER

1229-04-74

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

(2) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE B-45-103

DRAWN BY NNM | PLANS CK'D. EAJ

SUBSURFACE EXPLORATION (1 OF 2)

SHEET 5 OF 38

8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-103\cds\B103_080201_se.dgn PLOT DATE : 7/28/2021 6:23:03 PM PLOT BY : ejelinek PLOT SCALE : 80:1

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
PW-02	APRIL 29, 2014	357505	602190
PW-04	APRIL 17, 2014	357405	602353
PW-05	JUNE 16, 2014	357205	602408
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) OZAUKEE COUNTY			

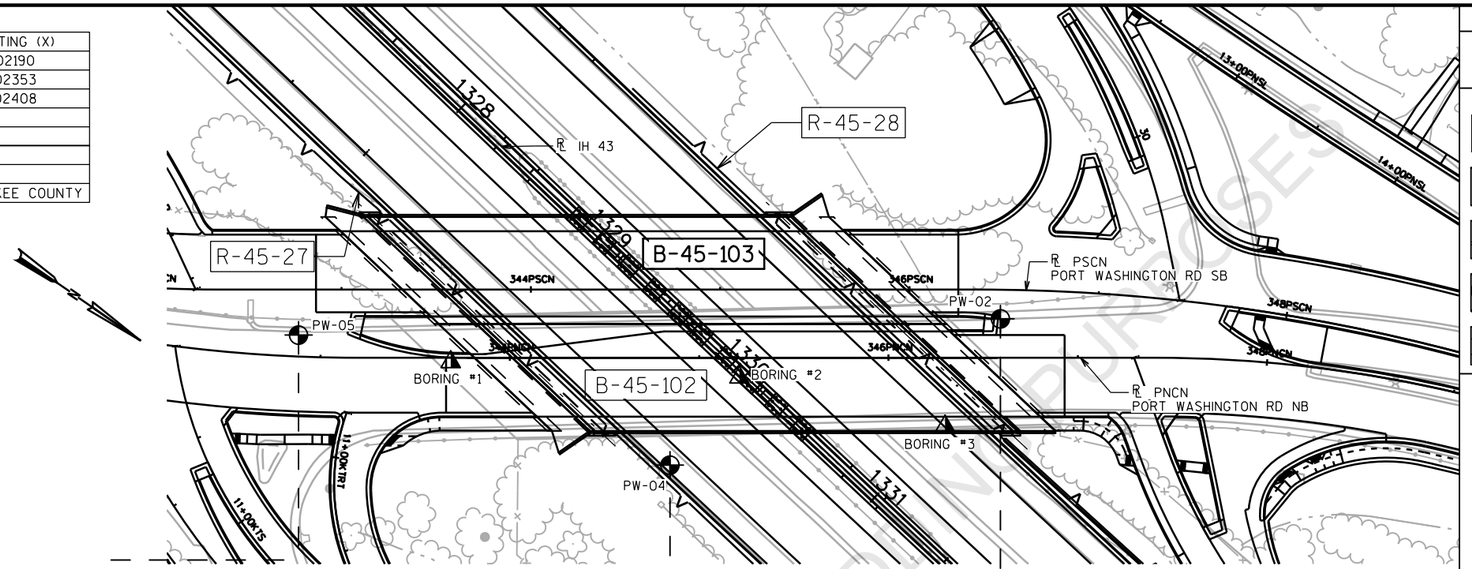
NOTE:

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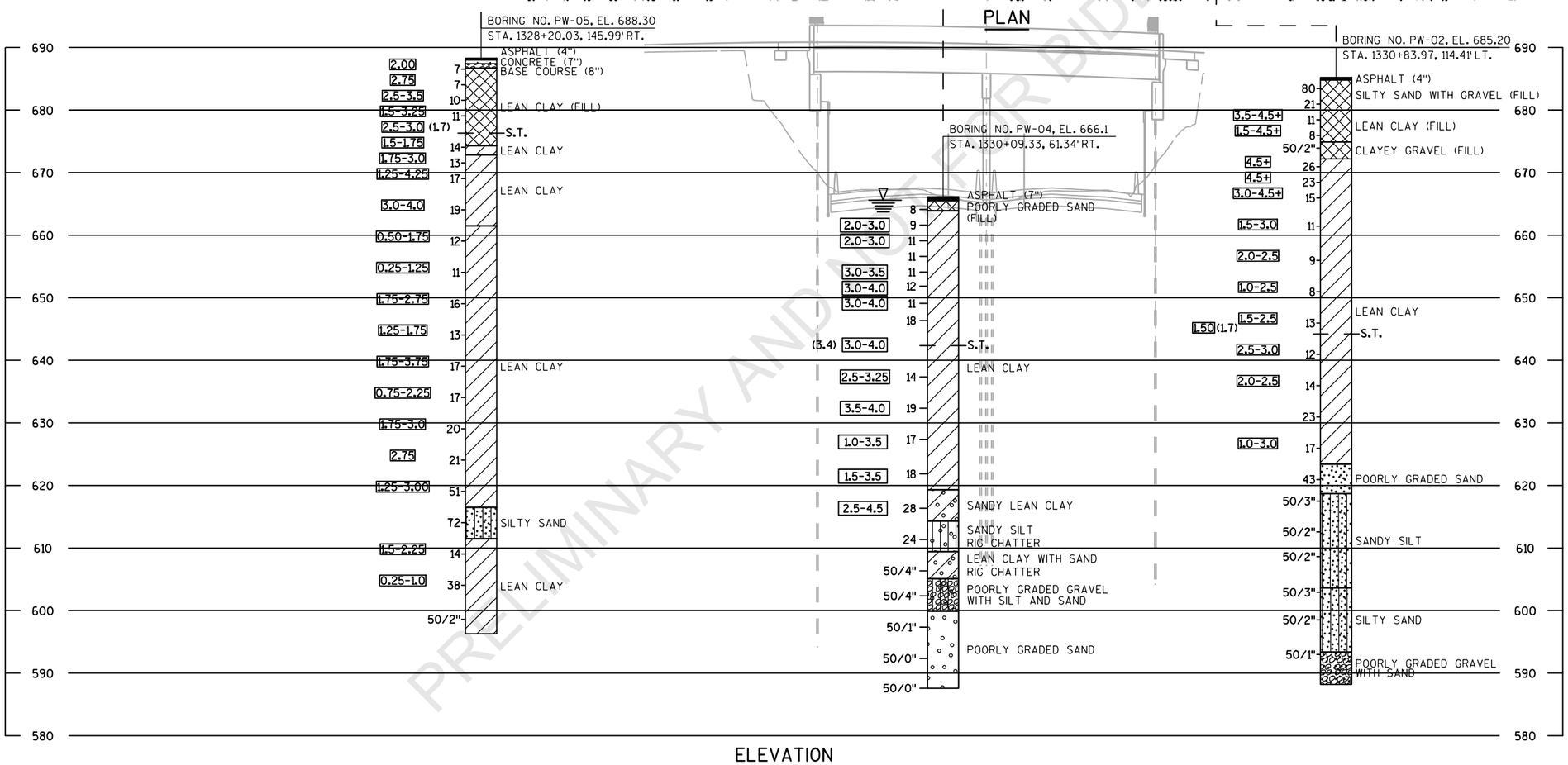
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- DENOTES MONITORING WELL LOCATION
- DENOTES HISTORICAL BORING



PLAN



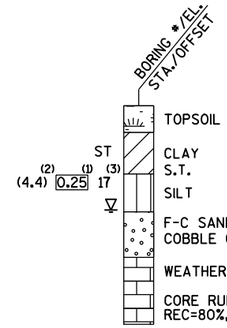
ELEVATION

STATE PROJECT NUMBER
1229-04-74

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

(2) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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.

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

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE S.T.-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

STRUCTURE B-45-103

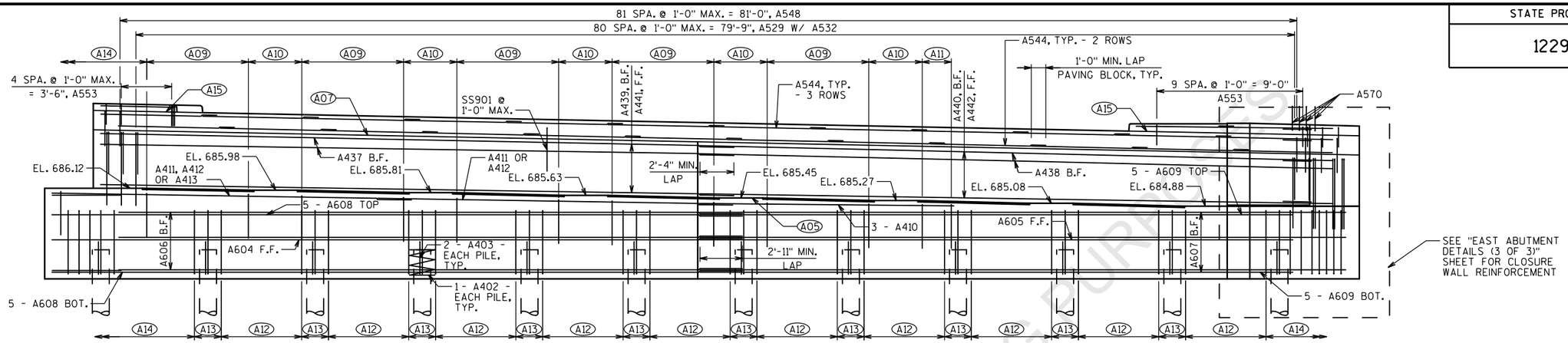
DRAWN BY	NNM	PLANS CK'D.	EAJ

SUBSURFACE EXPLORATION (2 OF 2)

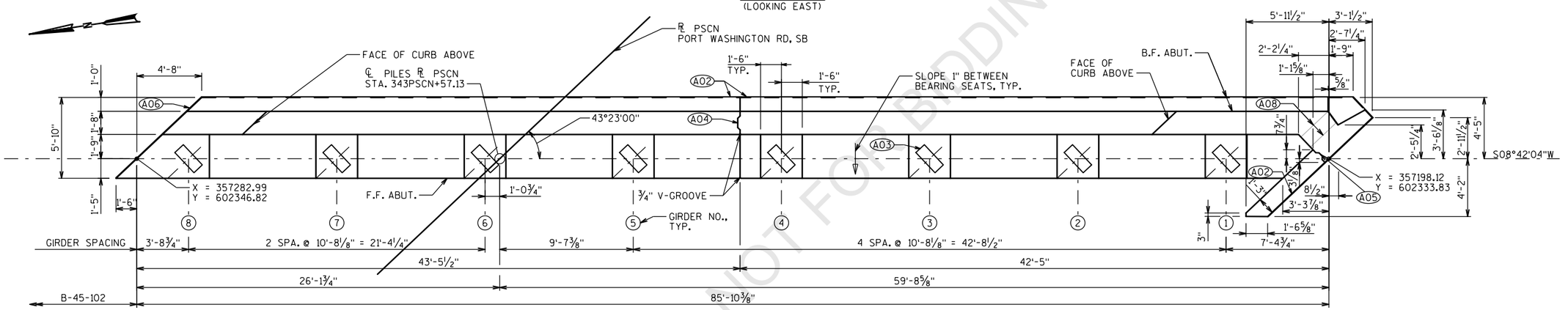
SHEET 6 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

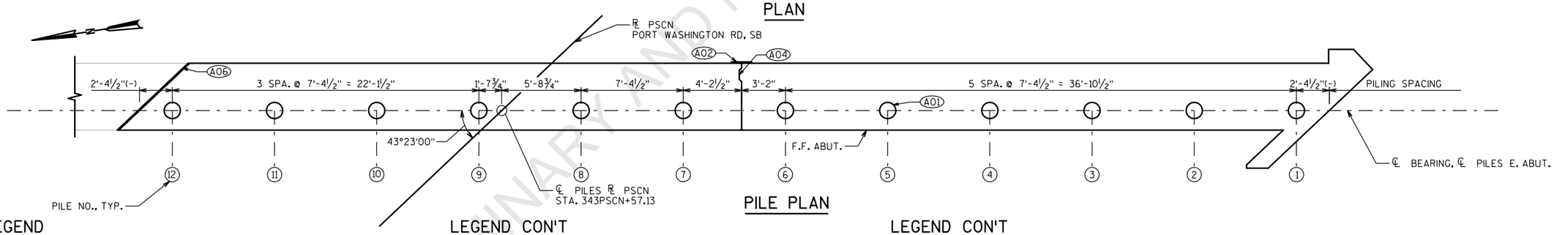
STATE PROJECT NUMBER
1229-04-74



ELEVATION
(LOOKING EAST)



PLAN



PILE PLAN

LEGEND

(A01) ABUTMENT SUPPORTED ON CIP CONCRETE 12¾×0.375-INCH PILING WITH A MAXIMUM DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES METHOD. ESTIMATED PILING LENGTH = 85 FEET. PILE POINTS ARE REQUIRED.

(A02) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENTS.

(A03) 2'-0" x 10" STEEL LAMINATED ELASTOMERIC BEARING PAD, TYPICAL. SEE "EXPANSION BEARING DETAILS" SHEET FOR DETAILS.

(A04) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x8" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

(A05) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

(A06) 1" FILLER PLACED BETWEEN B-45-102 EAST ABUTMENT AND B-45-103 EAST ABUTMENT.

LEGEND CON'T

(A07) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKEOFF AND LEAVE ROUGH.

(A08) SEE "APPROACH VERTICAL FACE PARAPET DETAILS" SHEET

(A09) 7 SPA. @ 1'-0" MAX. = 7'-0", A414

(A10) 5 SPA. @ 9" MAX. = 3'-8⅛", A414

(A11) 2 SPA. @ 1'-0" MAX. = 2'-0", A414

(A12) 6 SPA. @ 1'-0" MAX. = 5'-6⅜" MAX., A615

(A13) 2 SPA. @ 1'-0" MAX. = 1'-10⅛", A616 OVER PILE

(A14) SEE "EAST ABUTMENT DETAILS (1 OF 3)" SHEET FOR MORE INFORMATION.

(A15) OPTIONAL CONSTRUCTION JOINT

LEGEND CON'T

F.F. FRONT FACE

B.F. BACK FACE

NOTES

HORIZONTAL DIMENSIONS SHOWN TIED TO THE NORTH EDGE DO NOT INCLUDE THE FILLER THICKNESS.

ALL DIMENSIONS, EXCEPT THE SIDEWALL WIDTH DIMENSION, ARE GIVEN ALONG OR NORMAL TO ℄ BEARING AND PILES.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

DRAWN BY EAJ | PLANS CK'D. HDA

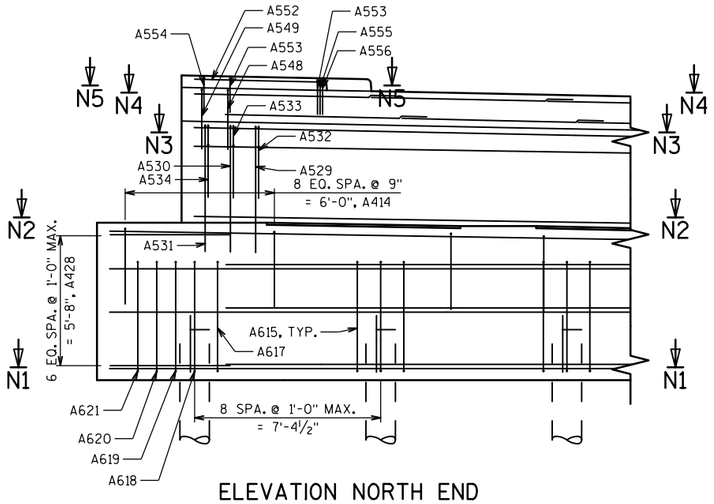
EAST ABUTMENT

SHEET 7 OF 38

8

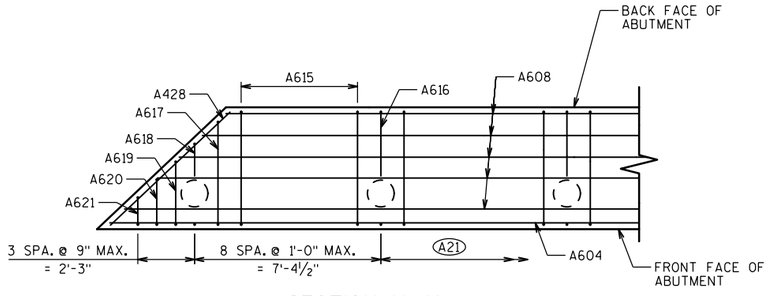
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PLOT DATE : 7/28/2021 6:23:11 PM
PLOT BY : ejelinek
PLOT SCALE : 8:1

STATE PROJECT NUMBER
1229-04-74



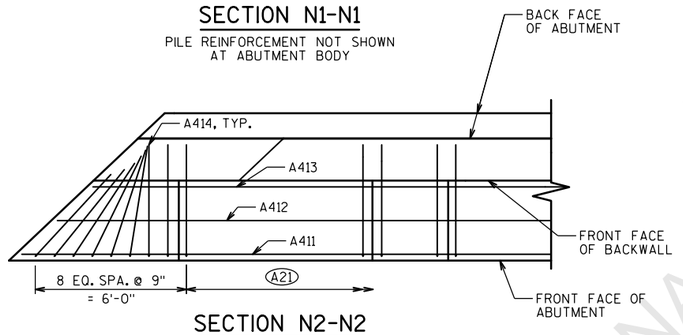
ELEVATION NORTH END

(LOOKING EAST)



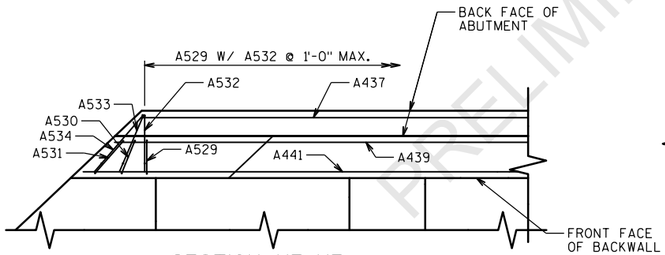
SECTION N1-N1

PILE REINFORCEMENT NOT SHOWN AT ABUTMENT BODY



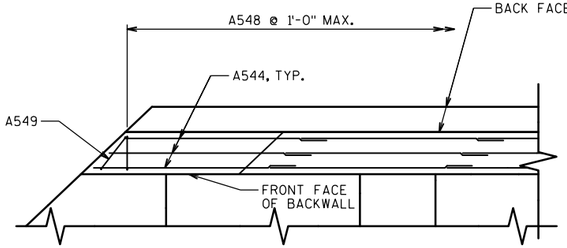
SECTION N2-N2

AT ABUTMENT BODY



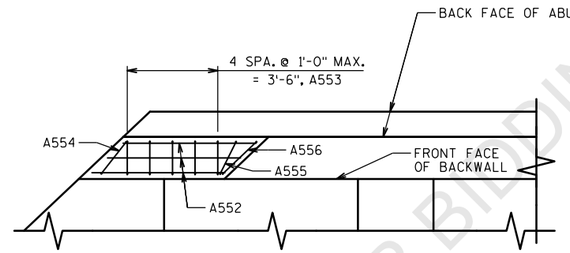
SECTION N3-N3

AT BACKWALL



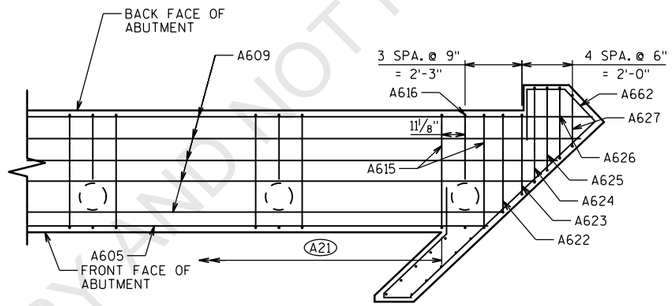
SECTION N4-N4

AT PAVING BLOCK



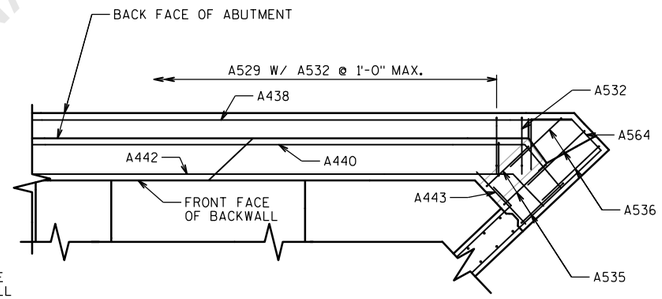
SECTION N5-N5

AT MEDIAN



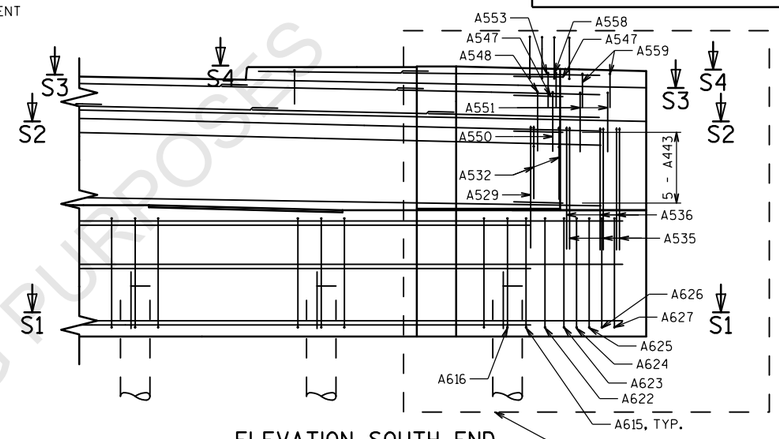
SECTION S1-S1

AT ABUTMENT BODY



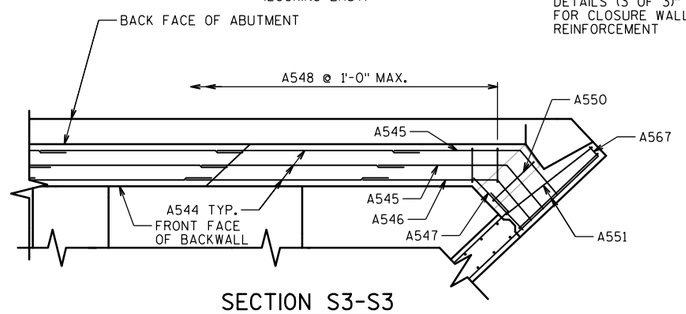
SECTION S2-S2

AT BACKWALL



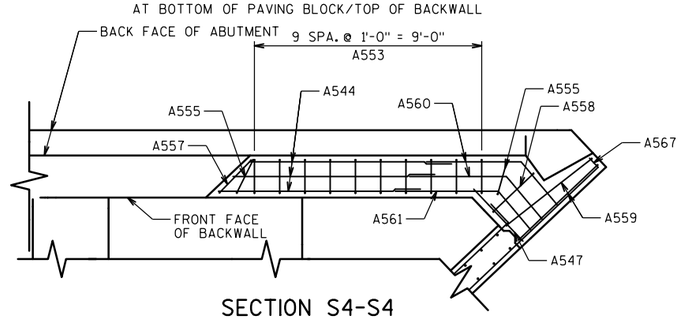
ELEVATION SOUTH END

(LOOKING EAST)



SECTION S3-S3

AT BOTTOM OF PAVING BLOCK/TOP OF BACKWALL



SECTION S4-S4

AT SIDEWALK

LEGEND

(A21) SEE "EAST ABUTMENT" SHEET

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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EAST ABUTMENT DETAILS (1 OF 3)

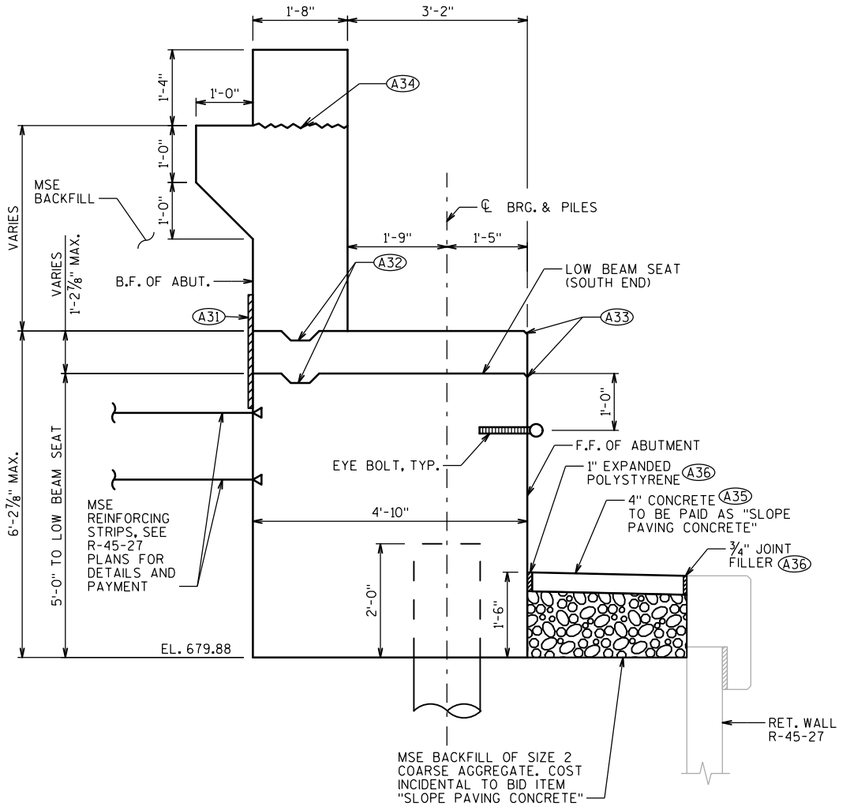
SHEET 8 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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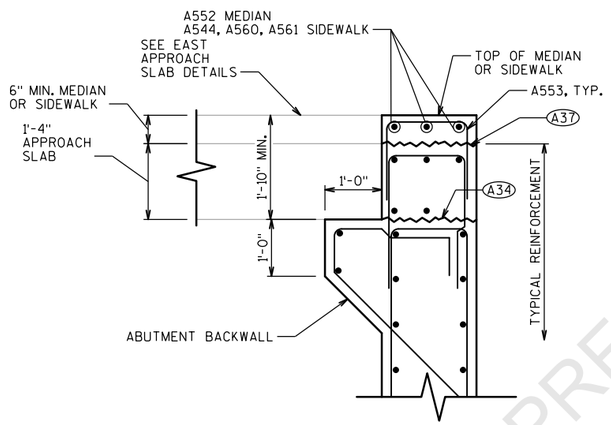
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TYPICAL SECTION THRU ABUTMENT BODY

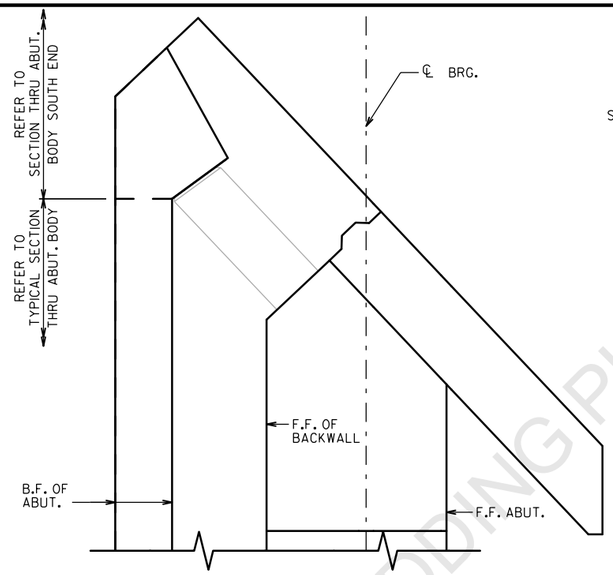
(LOOKING SOUTH)
HORIZONTAL DIMENSIONS SHOWN TAKEN NORMAL TO ℄ OF ABUTMENT



BACKWALL DETAIL AT SIDEWALK & MEDIAN

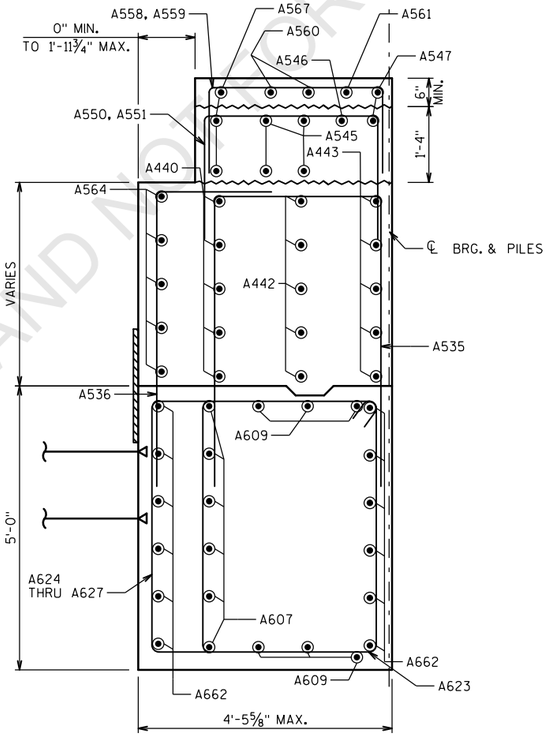
NOTES

EXPANSION ABUTMENTS TO BE BACKFILLED TO A MINIMUM OF THE BEAM SEAT ELEVATION PRIOR TO PLACEMENT OF GIRDERS.



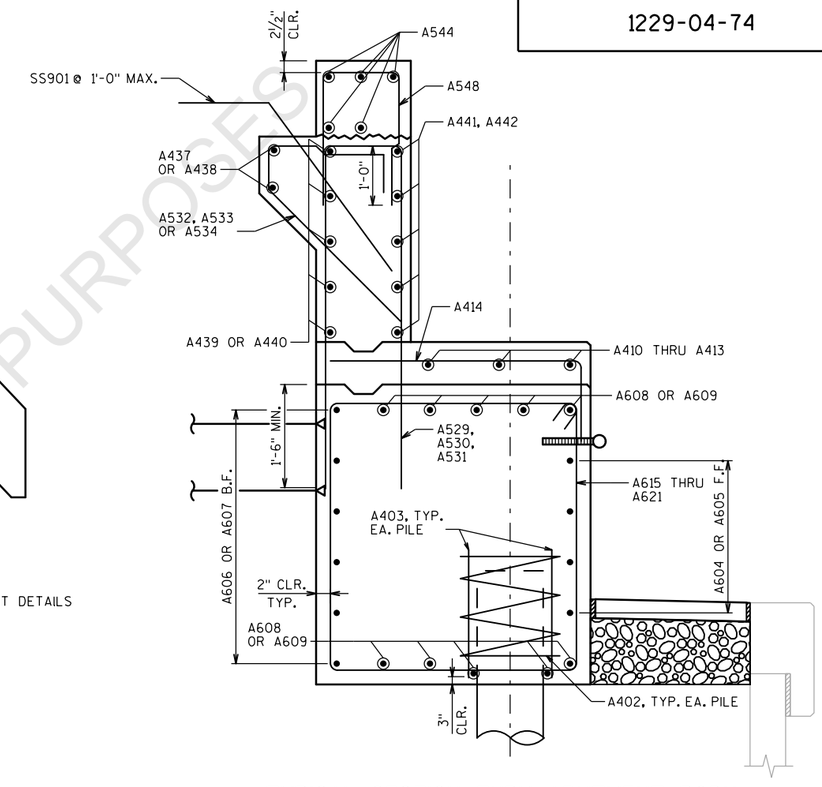
PLAN ABUTMENT SOUTH END

SEE "EAST ABUTMENT DETAILS (1 OF 3)" AND
"EAST ABUTMENT DETAILS (3 OF 3)" SHEETS FOR PLAN VIEW REINFORCEMENT DETAILS



SECTION THRU ABUTMENT BODY SOUTH END

(LOOKING SOUTH)
HORIZONTAL DIMENSIONS SHOWN TAKEN NORMAL TO ℄ OF ABUTMENT
SEE TYPICAL SECTION THRU BODY FOR ADDITIONAL INFORMATION



TYPICAL SECTION THRU ABUTMENT BODY

(LOOKING SOUTH)
SHOWING REINFORCEMENT

LEGEND

(A31) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENTS.

(A32) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

(A33) ¾" BEVEL

(A34) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKEOFF AND LEAVE ROUGH.

(A35) SLOPE DOWN ¾" FROM FRONT FACE OF ABUTMENT TO BACK OF CONCRETE COPING.

(A36) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER WITH NON-STAINING, NON-BITUMINOUS JOINT SEALER, (1" DEEP) AND HOLD ⅛" BELOW SURFACE OF CONCRETE.

(A37) OPTIONAL CONSTRUCTION JOINT.

F.F. - FRONT FACE

B.F. - BACK FACE

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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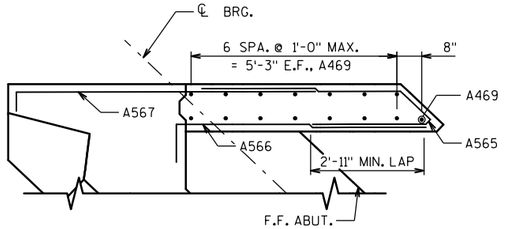
EAST ABUTMENT DETAILS (2 OF 3)

SHEET 9 OF 38

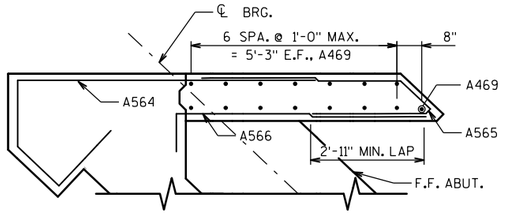
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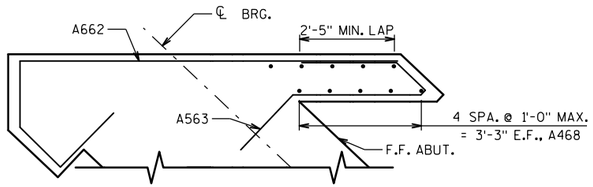
STATE PROJECT NUMBER
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SECTION A1-A1



SECTION A2-A2



SECTION A3-A3

LEGEND

(A41) BENT OR ZINC PLASTIC STRIP

(A42) USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY ½" DEEP.

(A43) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER OR EXPANDED POLYSTYRENE WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

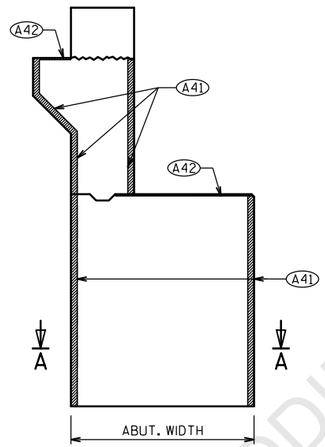
(A44) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.

(A45) OPTIONAL CONSTRUCTION JOINT. COORDINATE CONSTRUCTION OF THE SIDEWALL WITH BACKFILLING OF RETAINING WALL R-45-27.

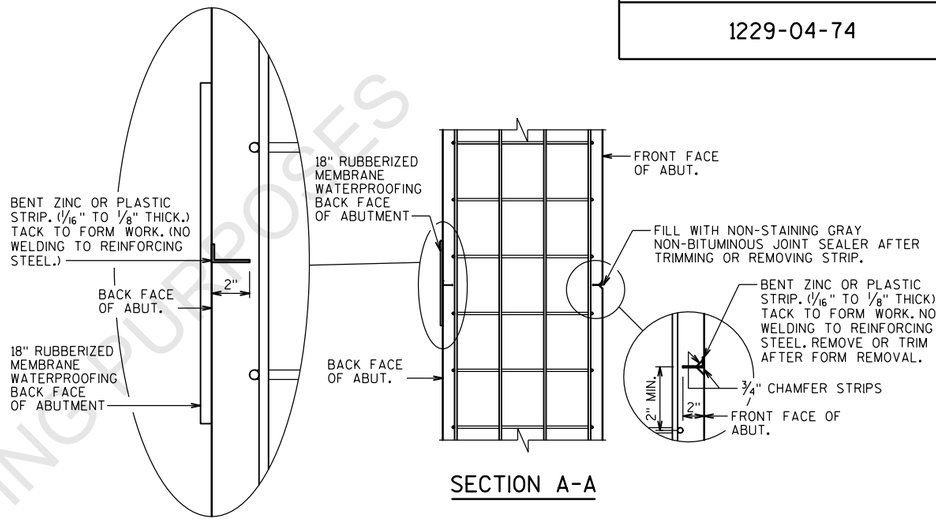
(A46) OPTIONAL CONSTRUCTION JOINT

F.F. - FRONT FACE

E.F. - EACH FACE



SECTION THRU ABUTMENT BODY



SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

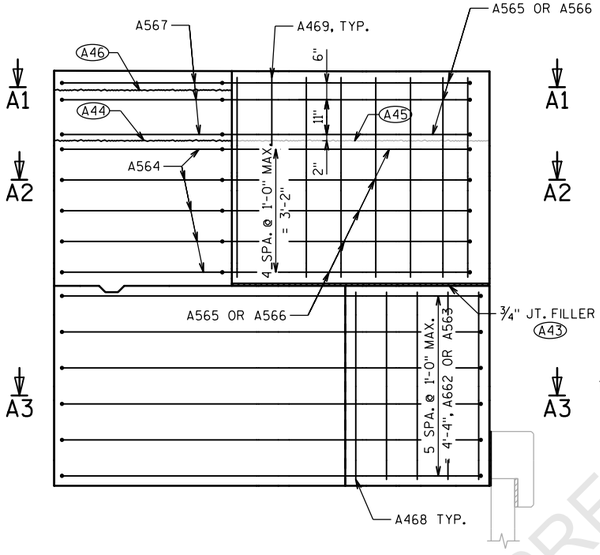
NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

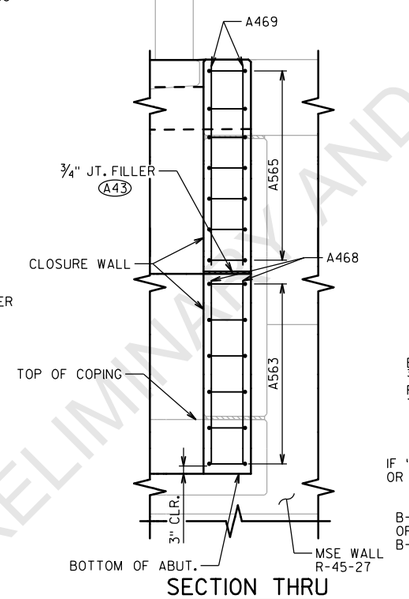
CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED.



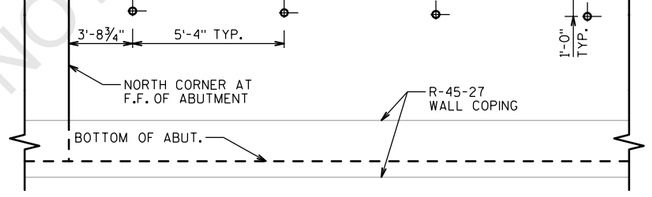
SIDE ELEVATION OF CLOSURE WALL

(LOOKING SOUTH)



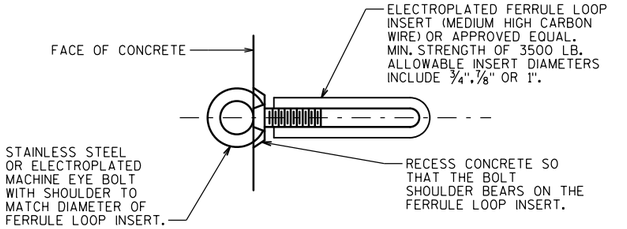
SECTION THRU CLOSURE WALL

(LOOKING EAST)



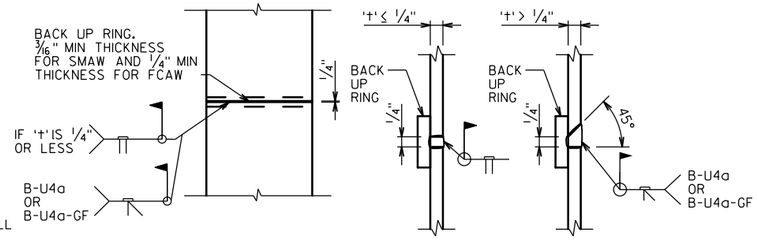
PARTIAL ELEVATION OF F.F. ABUTMENT SHOWING EYE BOLT FALL PROTECTION

(LOOKING EAST, NORTH END SHOWN)



EYE BOLT DETAIL

COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"



CAST-IN-PLACE 'PIPE PILE' CIP PILE WELD DETAIL

PILE SPLICE DETAIL

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STRUCTURE B-45-103

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EAST ABUTMENT DETAILS (3 OF 3)

SHEET 10 OF 38

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8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-103\cds\B103_080304_ab.dgn PLOT DATE : 7/28/2021 6:23:19 PM PLOT BY : ejelinek PLOT SCALE : 2:1

BILL OF BARS

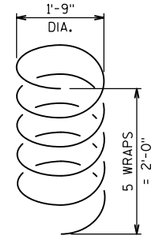
BAR MARK	EPOXY COATED	STAIN-LESS STEEL	NO. REQ'D.	LENGTH	BENT	SERIES	LOCATION
SS901		X	83	5'-0"	X		CONCRETE BACKWALL TO APPROACH SLAB
A402			12	28'-0"	X		ABUT. BODY PILES
A403			24	2'-3"			ABUT. BODY PILES
A604			4	47'-7"			ABUT. BODY FRONT FACE - HORIZ.
A605			4	40'-10"			ABUT. BODY FRONT FACE - HORIZ.
A606			6	42'-11"			ABUT. BODY BACK FACE - HORIZ.
A607			6	44'-11"			ABUT. BODY BACK FACE - HORIZ.
A608			10	45'-9"		▲	ABUT. BODY TOP & BOT. - HORIZ.
A609			10	42'-8"		▲	ABUT. BODY TOP & BOT. - HORIZ.
A410			3	17'-9"			ABUT. BODY TOP - HORIZ.
A411			1	24'-8"			ABUT. BODY TOP - HORIZ.
A412			1	23'-11"			ABUT. BODY TOP - HORIZ.
A413			1	44'-1"			ABUT. BODY TOP - HORIZ.
A414			71	6'-7"	X		ABUT. BODY TOP - TIE
A615			77	18'-8"	X		ABUT. BODY - STIRRUP
A616			11	15'-4"	X		ABUT. BODY - STIRRUP AT PILE
A617			1	17'-8"	X		ABUT. BODY - STIRRUP AT NORTH END
A618			1	12'-9"	X		ABUT. BODY - STIRRUP AT END PILE
A619			1	14'-6"	X		ABUT. BODY - STIRRUP AT NORTH END
A620			1	13'-2"	X		ABUT. BODY - STIRRUP AT NORTH END
A621			1	11'-8"	X		ABUT. BODY - STIRRUP AT NORTH END
A622			1	17'-2"	X		ABUT. BODY - STIRRUP AT SOUTH END
A623			1	15'-10"	X		ABUT. BODY - STIRRUP AT SOUTH END
A624			1	17'-0"	X		ABUT. BODY - STIRRUP AT SOUTH END
A625			1	16'-0"	X		ABUT. BODY - STIRRUP AT SOUTH END
A626			1	14'-2"	X		ABUT. BODY - STIRRUP AT SOUTH END
A627			1	12'-2"	X		ABUT. BODY - STIRRUP AT SOUTH END
A428			7	6'-6"			ABUT. BODY - HORIZ. NORTH END
A529	X		81	11'-5"	X		ABUT. BACKWALL - VERT. STIRRUP
A530	X		1	11'-7"	X		ABUT. BACKWALL - VERT. STIRRUP NORTH END
A531	X		1	11'-9"	X		ABUT. BACKWALL - VERT. STIRRUP NORTH END
A532	X		82	7'-0"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH
A533	X		1	7'-4"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH NORTH END
A534	X		1	8'-0"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH NORTH END
A535	X		3	12'-4"	X		ABUT. BACKWALL - VERT. STIRRUP SOUTH END
A536	X		3	7'-0"	X		ABUT. BACKWALL - VERT. STIRRUP SOUTH END
A437	X		2	40'-11"			ABUT. BACKWALL - HORIZ. BELOW PAVING NOTCH
A438	X		2	43'-3"			ABUT. BACKWALL - HORIZ. BELOW PAVING NOTCH
A439	X		5	41'-11"			ABUT. BACKWALL - HORIZ. B.F.
A440	X		5	44'-4"	X		ABUT. BACKWALL - HORIZ. B.F.
A441	X		5	43'-1"			ABUT. BACKWALL - HORIZ. F.F.
A442	X		5	43'-6"	X		ABUT. BACKWALL - HORIZ. F.F.
A443	X		5	2'-10"			ABUT. BACKWALL - HORIZ. F.F.
A544	X		58	8'-0"			AT PAVING BLOCK & SIDEWALK HORIZ.
A545	X		4	7'-4"	X		AT PAVING BLOCK B.F. SOUTH END
A546	X		1	7'-5"	X		AT PAVING BLOCK F.F. SOUTH END
A547	X		2	2'-10"			AT PAVING BLOCK F.F. SOUTH END
A548	X		82	5'-9"	X		STIRRUP AT PAVING BLOCK
A549	X		1	6'-0"	X		STIRRUP AT PAVING BLOCK NORTH END
A550	X		1	6'-7"	X		STIRRUP AT PAVING BLOCK SOUTH END
A551	X		2	8'-8"	X		STIRRUP AT PAVING BLOCK SOUTH END
A552	X		3	5'-3"			MEDIAN HORIZ.
A553	X		15	3'-11"	X		STIRRUP AT SIDEWALK & MEDIAN
A554	X		1	4'-2"	X		STIRRUP AT MEDIAN
A555	X		3	4'-0"	X		STIRRUP AT SIDEWALK & MEDIAN
A556	X		1	4'-5"	X		STIRRUP AT MEDIAN
A557	X		1	4'-4"	X		STIRRUP AT SIDEWALK
A558	X		1	4'-9"	X		STIRRUP AT SIDEWALK
A559	X		2	6'-10"	X		STIRRUP AT SIDEWALK
A560	X		2	6'-1"	X		SIDEWALK HORIZ.
A561	X		1	6'-2"	X		SIDEWALK HORIZ.
A662			6	14'-11"	X		CLOSURE WALL STIRRUPS - LOWER
A563			6	8'-8"	X		CLOSURE WALL STIRRUPS - LOWER
A564	X		5	12'-9"	X		CLOSURE WALL STIRRUPS - UPPER
A565	X		8	9'-1"	X		CLOSURE WALL STIRRUPS - UPPER
A566	X		8	7'-4"	X		CLOSURE WALL STIRRUPS - UPPER
A567	X		3	7'-4"	X		CLOSURE WALL STIRRUPS - UPPER
A468			10	4'-7"			CLOSURE WALL VERTICAL - LOWER
A469	X		15	5'-2"			CLOSURE WALL VERTICAL - UPPER
A570	X		4	4'-4"	X		PARAPET TIES

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

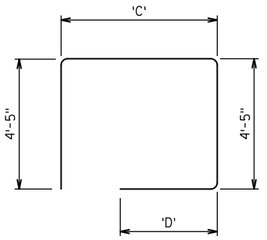
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A608	2 SERIES OF 5	43'-11" TO 47'-7"
A609	2 SERIES OF 5	40'-10" TO 44'-6"

BUNDLE AND TAG EACH SERIES SEPARATELY

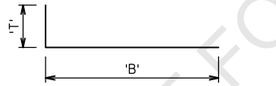


A402



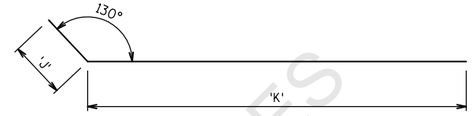
BAR MARK	DIMENSION 'C'	DIMENSION 'D'
A616	4'-6"	2'-6"
A618	3'-2"	1'-3"

A616, A618



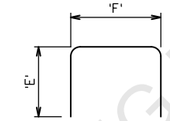
BAR MARK	DIMENSION 'B'	DIMENSION 'T'
A414	4'-5"	2'-3"
A536	5'-2"	2'-0"
A566	6'-8"	10"
A567	6'-8"	10"

A414, A536, A566, A567



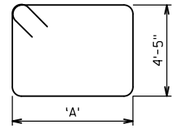
BAR MARK	DIMENSION 'J'	DIMENSION 'K'
A440	2'-3"	42'-1"
A442	1'-9"	41'-9"
A545	2'-3"	5'-1"
A546	2'-1"	5'-4"
A560	3'-10"	2'-3"
A561	4'-1"	2'-1"

A440, A442, A545, A546, A560, A561



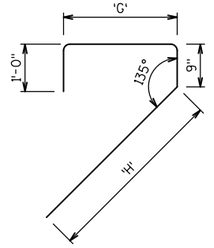
BAR MARK	DIMENSION 'E'	DIMENSION 'F'
A529	5'-2"	1'-4"
A530	5'-2"	1'-6"
A531	5'-2"	1'-8"
A535	5'-2"	2'-3"
A548	2'-4"	1'-4"
A549	2'-4"	1'-7"
A550	2'-4"	2'-2"
A551	2'-4"	4'-3"
A553	1'-5"	1'-4"
A554	1'-5"	1'-7"
A555	1'-5"	1'-5"
A556	1'-5"	1'-10"
A557	1'-5"	1'-9"
A558	1'-5"	2'-2"
A559	1'-5"	4'-3"

A529, A530, A531, A535 A548, A549, A550, A551, A553, A554, A555, A556, A557, A558, A559



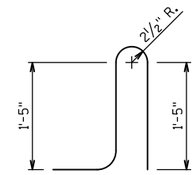
BAR MARK	DIMENSION 'A'
A615	4'-6"
A617	4'-0"
A619	2'-5"
A620	1'-9"
A621	1'-0"
A622	3'-9"
A623	3'-1"
A624	3'-8"
A625	3'-3"
A626	2'-9"
A627	1'-11"

A615, A617, A619, A620, A621, A622, A623, A624, A625, A626, A627

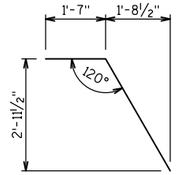


BAR MARK	DIMENSION 'G'	DIMENSION 'H'
A532	2'-3"	3'-3"
A533	2'-6"	3'-4"
A534	3'-0"	3'-6"

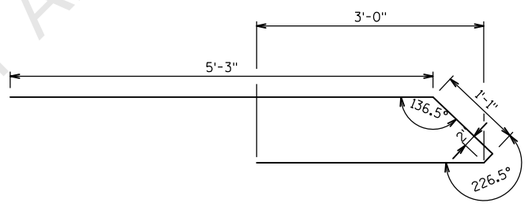
A532, A533, A534



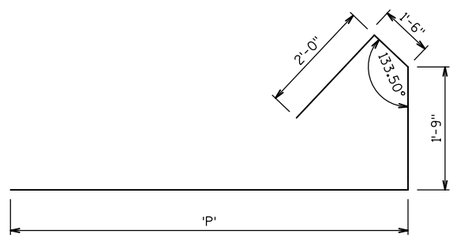
A570



SS901

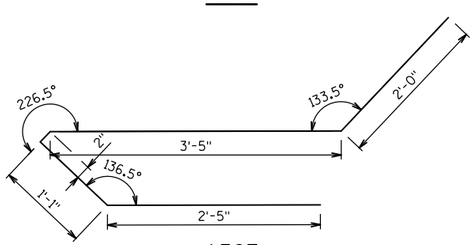


A565



A662, A564

BAR MARK	DIMENSION 'P'
A662	10'-0"
A564	7'-10"



A563

LEGEND

F.F. - FRONT FACE

B.F. - BACK FACE

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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EAST ABUTMENT
BILL OF BARS

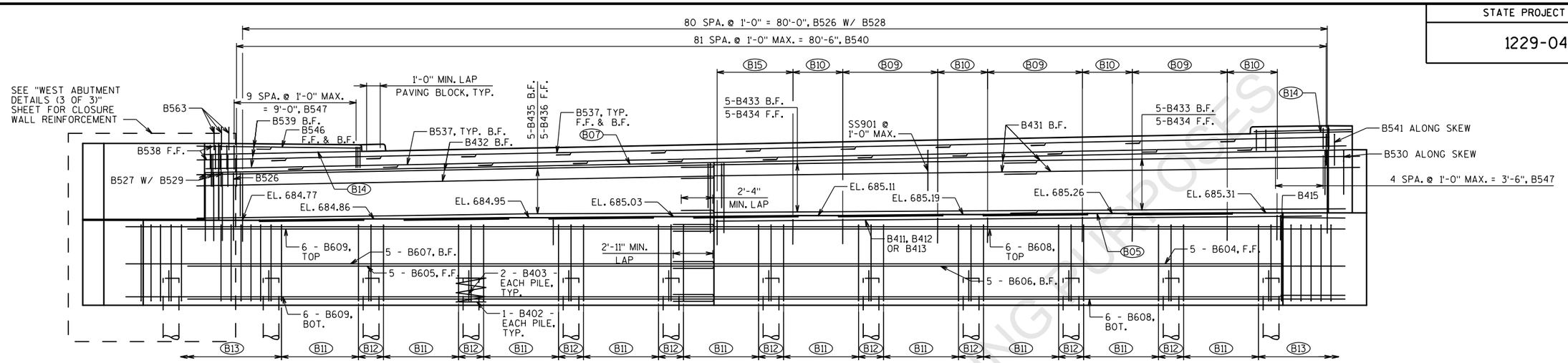
SHEET 11 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

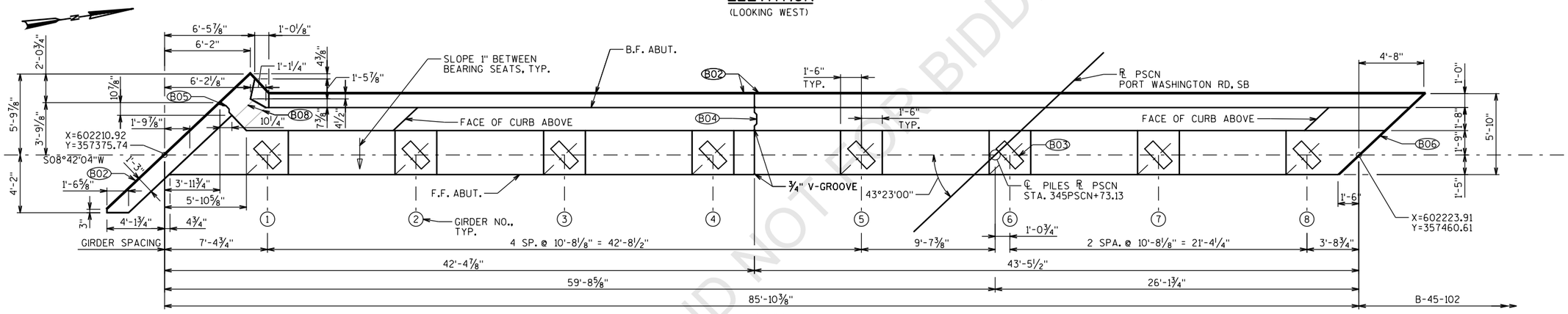
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PLOT BY : ejelinek
PLOT SCALE : 2:1

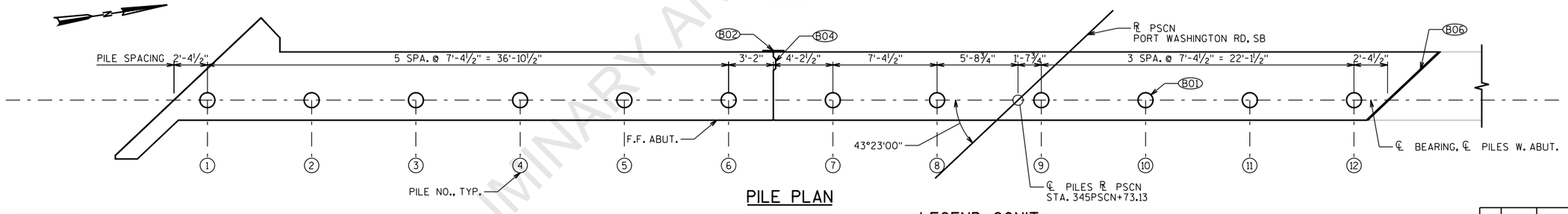
STATE PROJECT NUMBER
1229-04-74



ELEVATION
(LOOKING WEST)



PLAN



PILE PLAN

LEGEND

(B01) ABUTMENT SUPPORTED ON CIP CONCRETE 12¾x0.375-INCH PILING WITH A MAXIMUM DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES METHOD. ESTIMATED PILING LENGTH = 75 FEET. PILE POINTS ARE REQUIRED.

(B02) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENTS.

(B03) 2'-0" x 10" STEEL LAMINATED ELASTOMERIC BEARING PAD, TYPICAL. SEE "EXPANSION BEARING DETAILS" SHEET FOR DETAILS.

(B04) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x8" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

LEGEND CON'T

(B05) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

(B06) 1" FILLER PLACED BETWEEN B-45-102 WEST ABUTMENT AND B-45-103 WEST ABUTMENT.

(B07) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKEOFF AND LEAVE ROUGH.

(B08) SEE "APPROACH VERTICAL FACE PARAPET DETAILS" SHEET

(B09) 7 SPA. @ 1'-0" MAX. = 7'-0", B414

LEGEND CON'T

(B10) 5 SPA. @ 9" MAX. = 3'-8 1/8", B414

(B11) 6 SPA. @ 1'-0" MAX. = 5'-6 3/8" MAX., B616

(B12) 2 SPA. @ 1'-0" MAX. = 1'-10 1/8", B617 OVER PILE

(B13) SEE "WEST ABUTMENT DETAILS (1 OF 3)" SHEET FOR MORE INFORMATION.

(B14) OPTIONAL CONSTRUCTION JOINT

(B15) 6 SPA. @ 1'-0" MAX. = 5'-5 7/8", B414

F.F. FRONT FACE

B.F. BACK FACE

NOTES

HORIZONTAL DIMENSIONS SHOWN TIED TO THE NORTH EDGE DO NOT INCLUDE THE FILLER THICKNESS.

ALL DIMENSIONS, EXCEPT THE SIDEWALL WIDTH DIMENSION, ARE GIVEN ALONG OR NORMAL TO ℄ BEARING AND PILES.

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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WEST ABUTMENT

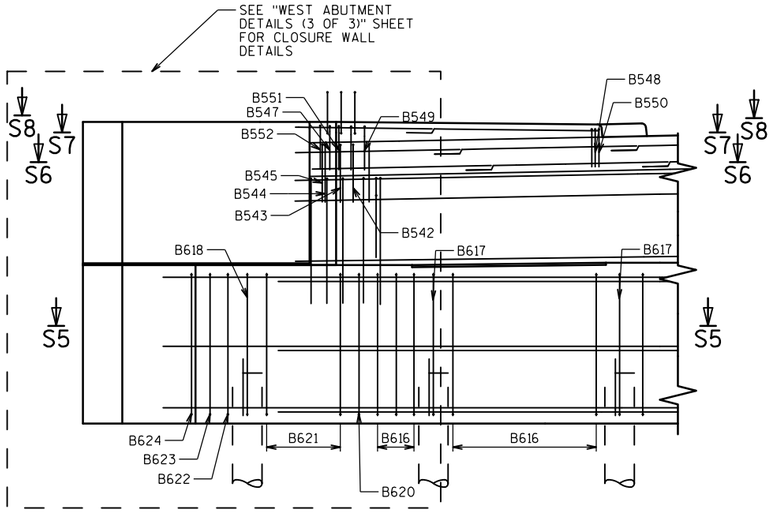
SHEET 12 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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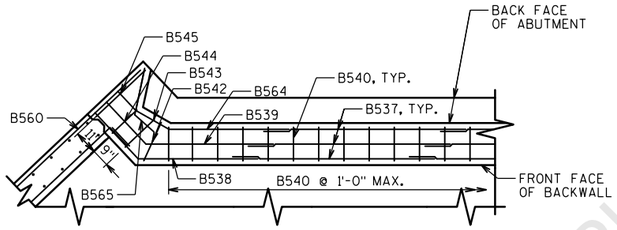
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STATE PROJECT NUMBER
1229-04-74



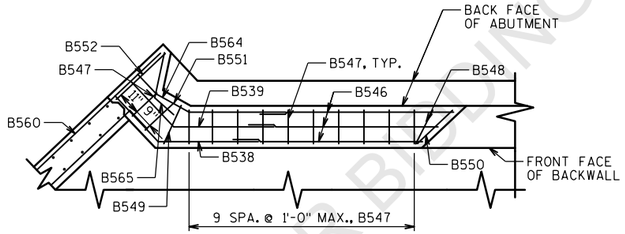
ELEVATION SOUTH END

(LOOKING WEST)



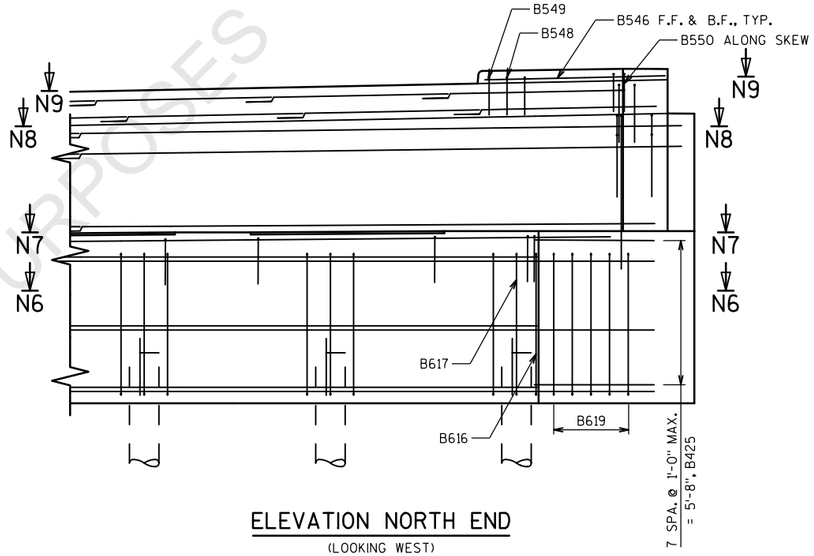
SECTION S7-S7

AT BOTTOM OF PAVING BLOCK/ TOP OF BACKWALL



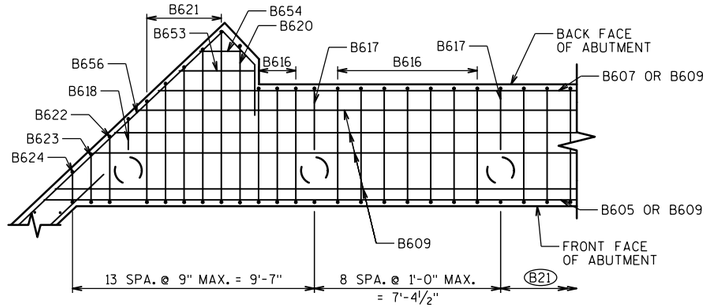
SECTION S8-S8

AT SIDEWALK



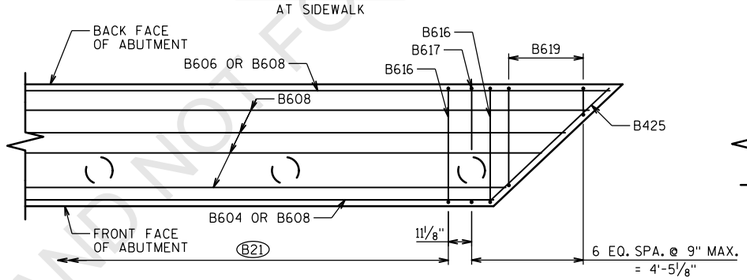
ELEVATION NORTH END

(LOOKING WEST)



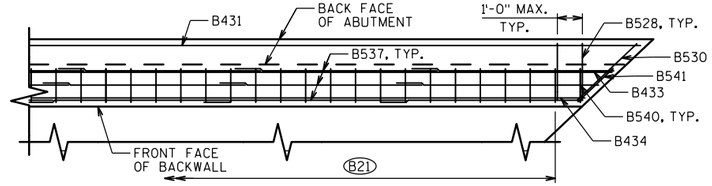
SECTION S5-S5

PILE REINFORCEMENT NOT SHOWN AT ABUTMENT BODY



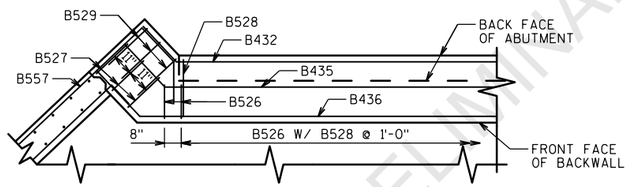
SECTION N6-N6

PILE REINFORCEMENT NOT SHOWN AT ABUTMENT BODY



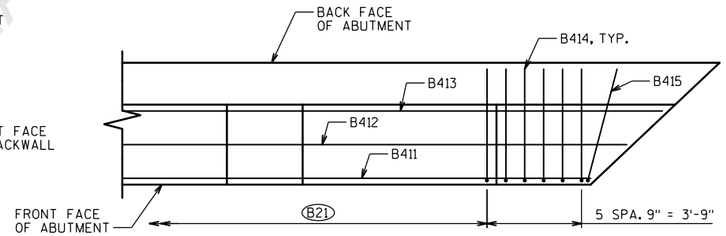
SECTION N8-N8

AT BACKWALL



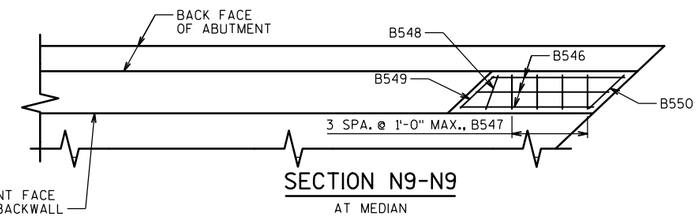
SECTION S6-S6

AT BACKWALL



SECTION N7-N7

AT ABUTMENT BODY



SECTION N9-N9

AT MEDIAN

LEGEND

(B21) SEE "WEST ABUTMENT" SHEET

F.F. - FRONT FACE

B.F. - BACK FACE

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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WEST ABUTMENT DETAILS (1 OF 3)

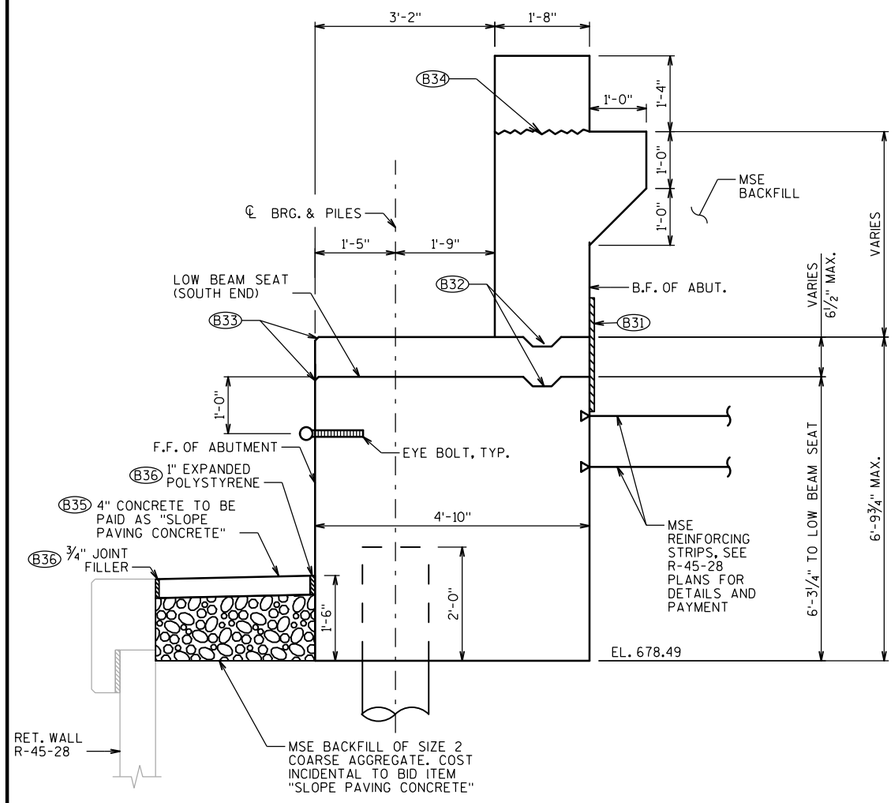
SHEET 13 OF 38

8

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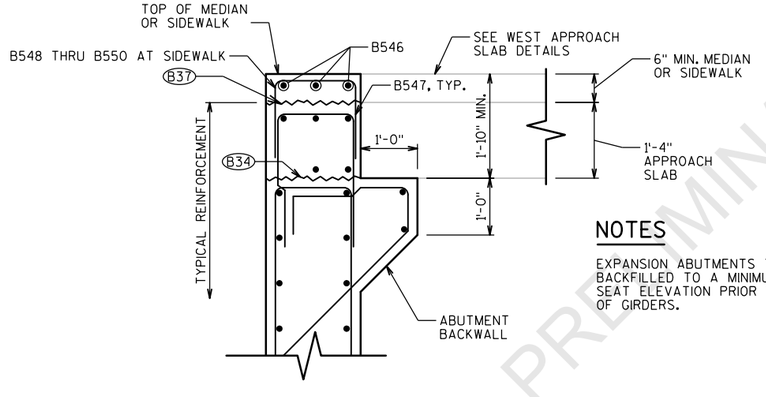
STATE PROJECT NUMBER

1229-04-74



TYPICAL SECTION THRU ABUTMENT BODY

(LOOKING SOUTH)
HORIZONTAL DIMENSIONS SHOWN TAKEN NORMAL TO ℄ OF ABUTMENT

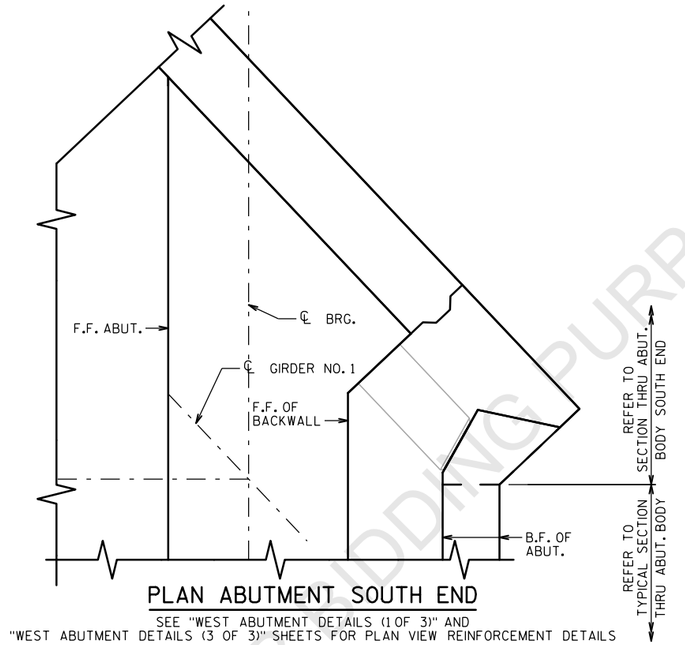


BACKWALL DETAIL AT SIDEWALK & MEDIAN

(LOOKING SOUTH)
HORIZONTAL DIMENSIONS SHOWN TAKEN NORMAL TO ℄ OF ABUTMENT

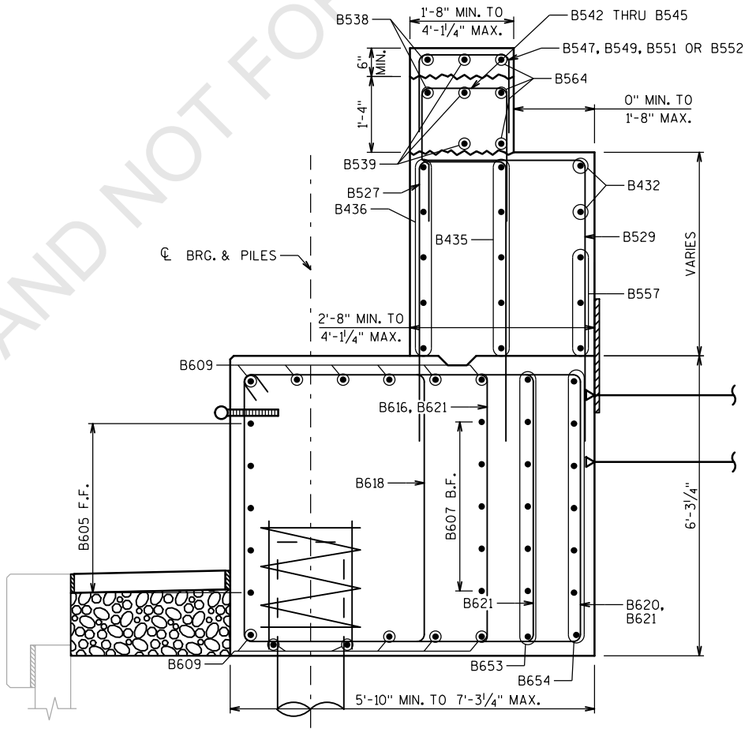
NOTES

EXPANSION ABUTMENTS TO BE BACKFILLED TO A MINIMUM OF THE BEAM SEAT ELEVATION PRIOR TO PLACEMENT OF GIRDERS.



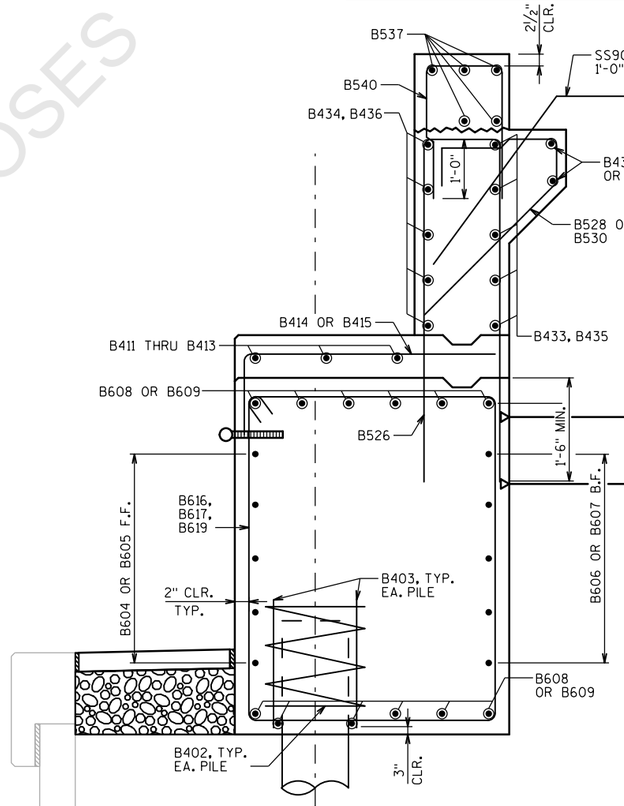
PLAN ABUTMENT SOUTH END

SEE "WEST ABUTMENT DETAILS (1 OF 3)" AND "WEST ABUTMENT DETAILS (3 OF 3)" SHEETS FOR PLAN VIEW REINFORCEMENT DETAILS



SECTION THRU ABUTMENT BODY SOUTH END

(LOOKING SOUTH)
HORIZONTAL DIMENSIONS SHOWN TAKEN NORMAL TO ℄ OF ABUTMENT
SEE TYPICAL SECTION THRU BODY FOR ADDITIONAL INFORMATION



TYPICAL SECTION THRU ABUTMENT BODY

(LOOKING SOUTH)
SHOWING REINFORCEMENT

LEGEND

(B31) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENTS.

(B32) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6" KEYWAY. REINFORCEMENT EXTENDS THROUGH JOINT.

(B33) ¾" BEVEL

(B34) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKEOFF AND LEAVE ROUGH.

(B35) SLOPE DOWN ¾" FROM FRONT FACE OF ABUTMENT TO BACK OF CONCRETE COPING.

(B36) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER WITH NON-STAINING, NON-BITUMINOUS JOINT SEALER, (1" DEEP) AND HOLD ⅛" BELOW SURFACE OF CONCRETE.

(B37) OPTIONAL CONSTRUCTION JOINT.

F.F. - FRONT FACE

B.F. - BACK FACE

NO.	DATE	REVISION	BY

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STRUCTURE B-45-103

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WEST ABUTMENT DETAILS (2 OF 3)

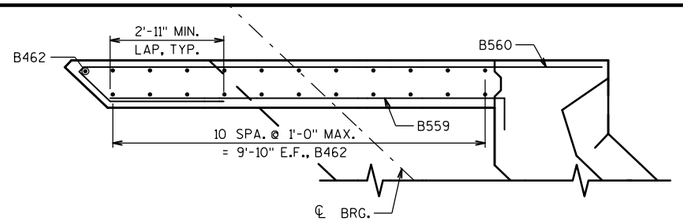
SHEET 14 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

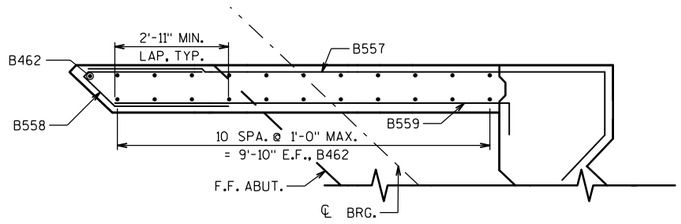
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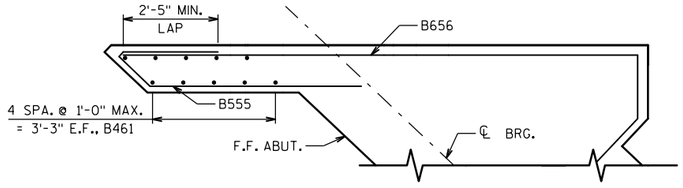
STATE PROJECT NUMBER
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SECTION B1-B1



SECTION B2-B2



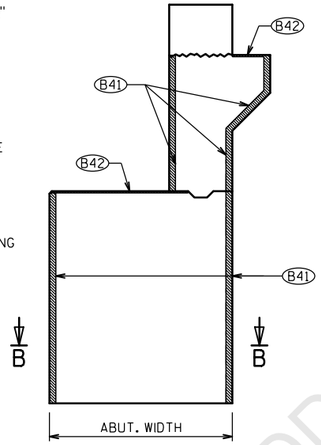
SECTION B3-B3

LEGEND

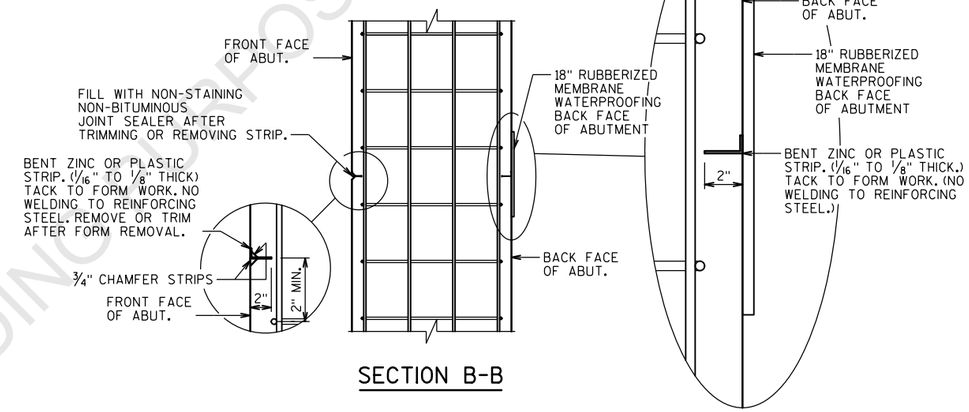
- (B41) BENT OR ZINC PLASTIC STRIP
- (B42) USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.
- (B43) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF FILLER OR EXPANDED POLYSTYRENE WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- (B44) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- (B45) OPTIONAL CONSTRUCTION JOINT. COORDINATE CONSTRUCTION OF THE SIDEWALL WITH BACKFILLING OF RETAINING WALL R-45-28.
- (B46) OPTIONAL CONSTRUCTION JOINT

E.F. - EACH FACE

F.F. - FRONT FACE

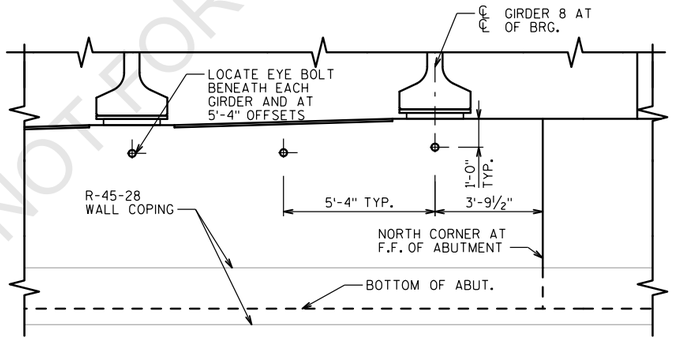


SECTION THRU ABUTMENT BODY



SECTION B-B

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT



PARTIAL ELEVATION OF F.F. ABUTMENT SHOWING EYE BOLT FALL PROTECTION

(LOOKING WEST, NORTH END SHOWN)

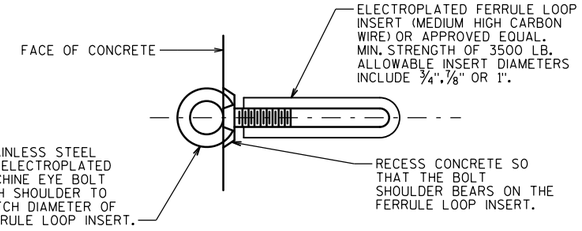
NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

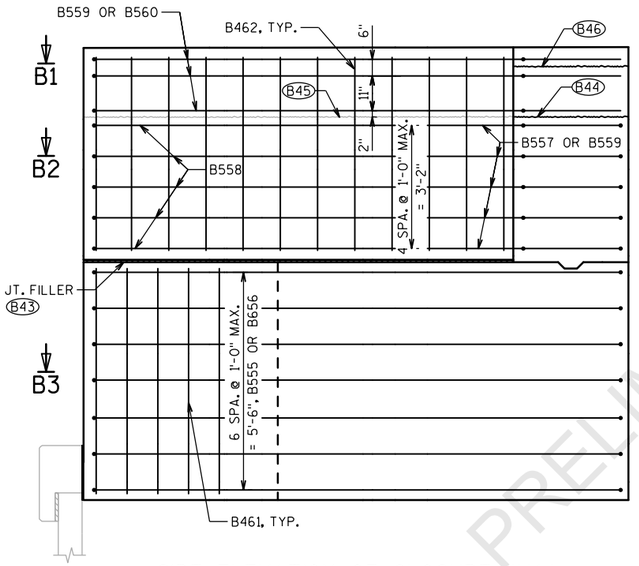
CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED.



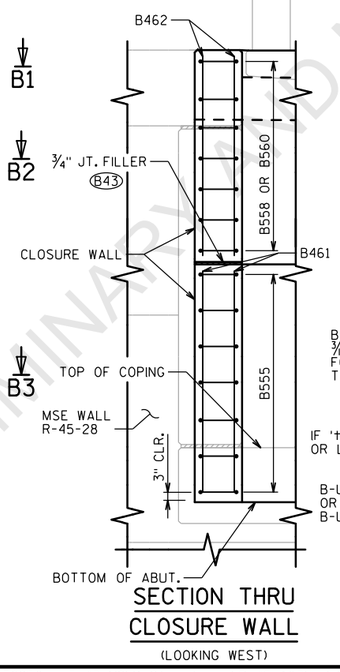
EYE BOLT DETAIL

COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"



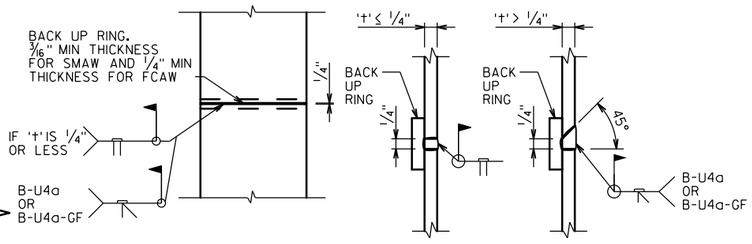
SIDE ELEVATION OF CLOSURE WALL

(LOOKING SOUTH)



SECTION THRU CLOSURE WALL

(LOOKING WEST)



CAST-IN-PLACE 'PIPE PILE' CIP PILE WELD DETAIL

PILE SPLICE DETAIL

NO.	DATE	REVISION	BY

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STRUCTURE B-45-103

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WEST ABUTMENT DETAILS (3 OF 3)

SHEET 15 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-103\cds\B103_080309_ab.dgn
PLOT DATE : 7/28/2021 6:23:30 PM PLOT BY : ejelinek PLOT SCALE : 2:1

STATE PROJECT NUMBER
1229-04-74

BILL OF BARS

BAR MARK	EPOXY COATED	STAIN-LESS STEEL	NO. REQ'D.	LENGTH	BENT	SERIES	LOCATION
SS901		X	83	5'-0"	X		CONCRETE BACKWALL TO APPROACH SLAB
B402			12	28'-0"	X		ABUT. BODY PILES
B403			24	2'-3"			ABUT. BODY PILES
B604			5	45'-0"			ABUT. BODY FRONT FACE - HORIZ.
B605			5	43'-3"			ABUT. BODY FRONT FACE - HORIZ.
B606			5	49'-8"			ABUT. BODY BACK FACE - HORIZ.
B607			5	38'-9"			ABUT. BODY BACK FACE - HORIZ.
B608			12	47'-4"		▲	ABUT. BODY TOP & BOT. - HORIZ.
B609			12	41'-0"		▲	ABUT. BODY TOP & BOT. - HORIZ.
B411			1	41'-9"			ABUT. BODY TOP - HORIZ.
B412			1	43'-2"			ABUT. BODY TOP - HORIZ.
B413			1	44'-7"			ABUT. BODY TOP - HORIZ.
B414			48	6'-1"	X		ABUT. BODY TOP - TIE
B415			1	6'-3"	X		ABUT. BODY TOP - TIE EDGE
B616			74	21'-2"	X		ABUT. BODY - STIRRUP
B617			11	17'-10"	X		ABUT. BODY - STIRRUP AT PILE
B618			1	15'-3"	X		ABUT. BODY - STIRRUP AT END PILE
B619			5	16'-11"	X	▲	ABUT. BODY - STIRRUP AT NORTH END
B620			1	24'-8"	X		ABUT. BODY - STIRRUP AT SOUTH END
B621			5	22'-10"	X	▲	ABUT. BODY - STIRRUP AT SOUTH END
B622			1	17'-2"	X		ABUT. BODY - STIRRUP AT SOUTH END
B623			1	15'-10"	X		ABUT. BODY - STIRRUP AT SOUTH END
B624			1	14'-6"	X		ABUT. BODY - STIRRUP AT SOUTH END
B425			8	6'-6"			ABUT. BODY - HORIZ. NORTH END
B526	X		82	12'-1"	X		ABUT. BACKWALL - VERT. STIRRUP
B527	X		3	12'-5"	X		ABUT. BACKWALL - VERT. STIRRUP SOUTH END
B528	X		81	7'-0"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH
B529	X		3	7'-4"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH SOUTH END
B530	X		1	8'-0"	X		ABUT. BACKWALL VERT. - BELOW PAVING NOTCH NORTH END
B431	X		4	26'-3"			ABUT. BACKWALL - HORIZ. BELOW PAVING NOTCH
B432	X		2	36'-9"	X		ABUT. BACKWALL - HORIZ. BELOW PAVING NOTCH
B433	X		10	25'-8"			ABUT. BACKWALL - HORIZ. B.F.
B434	X		10	25'-1"			ABUT. BACKWALL - HORIZ. F.F.
B435	X		5	37'-8"	X		ABUT. BACKWALL - HORIZ. B.F.
B436	X		5	38'-10"	X		ABUT. BACKWALL - HORIZ. F.F.
B537	X		55	8'-0"			AT PAVING BLOCK
B538	X		2	7'-3"	X		AT PAVING BLOCK F.F. SOUTH END
B539	X		3	7'-4"	X		AT PAVING BLOCK B.F. SOUTH END
B540	X		82	5'-9"	X		STIRRUP AT PAVING BLOCK
B541	X		1	6'-4"	X		STIRRUP AT PAVING BLOCK NORTH END
B542	X		1	6'-1"	X		STIRRUP AT PAVING BLOCK SOUTH END
B543	X		1	6'-0"	X		STIRRUP AT PAVING BLOCK SOUTH END
B544	X		1	5'-9"	X		STIRRUP AT PAVING BLOCK SOUTH END
B545	X		1	6'-11"	X		STIRRUP AT PAVING BLOCK SOUTH END
B546	X		3	7'-7"			HORIZ. AT MEDIAN AND SIDEWALK
B547	X		15	3'-11"	X		STIRRUP AT MEDIAN AND SIDEWALK
B548	X		2	4'-0"	X		STIRRUP AT MEDIAN AND SIDEWALK
B549	X		2	4'-3"	X		STIRRUP AT MEDIAN AND SIDEWALK
B550	X		2	4'-5"	X		STIRRUP AT MEDIAN AND SIDEWALK
B551	X		1	4'-2"	X		STIRRUP AT SIDEWALK
B552	X		1	5'-1"	X		STIRRUP AT SIDEWALK
B653			7	3'-0"			ABUT. BODY BACK FACE - HORIZ. - SOUTH END
B654			7	1'-8"			ABUT. BODY BACK FACE - HORIZ. - SOUTH END
B555			7	9'-2"	X		CLOSURE WALL STIRRUPS - LOWER
B656			7	17'-1"	X		CLOSURE WALL STIRRUPS - LOWER
B557	X		5	17'-1"	X		CLOSURE WALL STIRRUPS - UPPER
B558	X		5	7'-1"	X		CLOSURE WALL STIRRUPS - UPPER
B559	X		8	11'-4"	X		CLOSURE WALL STIRRUPS - UPPER
B560	X		3	17'-8"	X		CLOSURE WALL STIRRUPS - UPPER
B461			10	5'-10"			CLOSURE WALL VERTICAL - LOWER
B462	X		23	5'-2"			CLOSURE WALL VERTICAL - UPPER
B563	X		3	4'-4"	X		PARAPET TIES
B564	X		3	7'-3"	X		HORIZONTAL AT PAVING BLOCK - SOUTH END
B565	X		3	2'-10"	X		HORIZONTAL AT PAVING BLOCK - SOUTH END

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

LEGEND

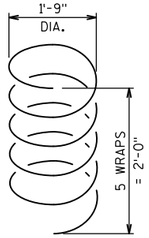
F.F. - FRONT FACE

B.F. - BACK FACE

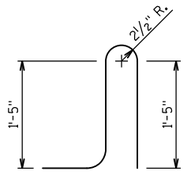
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
B608	2 SERIES OF 6	45'-0" TO 49'-8"
B609	2 SERIES OF 6	38'-9" TO 43'-3"
B619	1 SERIES OF 5	14'-2" TO 19'-8"
B621	1 SERIES OF 5	20'-0" TO 25'-8"

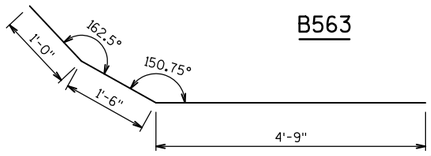
BUNDLE AND TAG EACH SERIES SEPARATELY



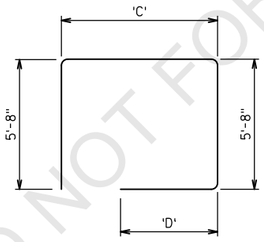
B402



B563

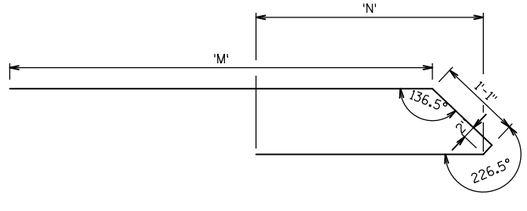


B564



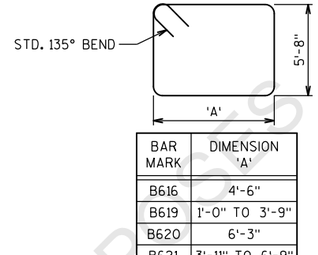
BAR MARK	DIMENSION 'C'	DIMENSION 'D'
B617	4'-6"	2'-6"
B618	3'-3"	1'-2"

B617, B618



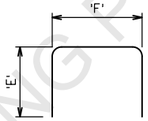
BAR MARK	DIMENSION 'M'	DIMENSION 'N'
B555	5'-7"	2'-6"
B558	3'-0"	3'-0"
B560	3'-0"	13'-7"

B555, B558, B560



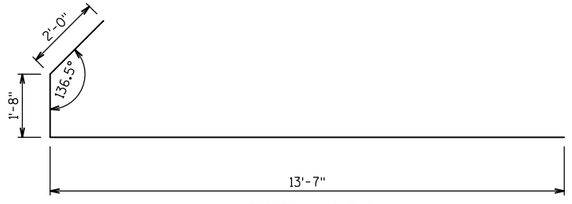
BAR MARK	DIMENSION 'A'
B616	4'-6"
B619	1'-0" TO 3'-9"
B620	6'-3"
B621	3'-11" TO 6'-9"
B622	2'-6"
B623	1'-10"
B624	1'-2"

B616, B619, B620, B621, B622, B623, B624

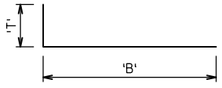


BAR MARK	DIMENSION 'E'	DIMENSION 'F'
B526	5'-6"	1'-4"
B527	5'-6"	1'-8"
B540	2'-4"	1'-4"
B541	2'-4"	1'-11"
B542	2'-4"	1'-8"
B543	2'-4"	1'-7"
B544	2'-4"	1'-4"
B545	2'-4"	2'-6"
B547	1'-5"	1'-4"
B548	1'-5"	1'-5"
B549	1'-5"	1'-8"
B550	1'-5"	1'-10"
B551	1'-5"	1'-7"
B552	1'-5"	2'-6"

B526, B527, B540, B541, B542, B543, B544, B545, B547, B548, B549, B550, B551, B552

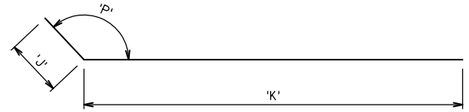


B656, B557



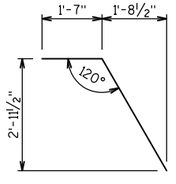
BAR MARK	DIMENSION 'B'	DIMENSION 'T'
B414	4'-5"	1'-9"
B415	4'-7"	1'-9"
B529	5'-6"	2'-0"
B559	10'-6"	1'-0"

B414, B415, B529, B559

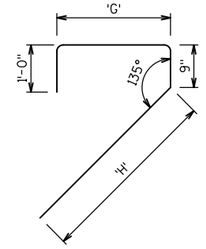


BAR MARK	DIMENSION 'J'	DIMENSION 'K'	ANGLE 'P'
B432	1'-11"	34'-10"	133.25°
B435	2'-4"	35'-4"	133.25°
B436	2'-6"	36'-4"	133.25°
B538	2'-6"	4'-9"	133.25°
B539	2'-3"	5'-1"	133.25°
B565	1'-0"	1'-10"	120°

B432, B435, B436, B538, B539, B565



SS901



BAR MARK	DIMENSION 'G'	DIMENSION 'H'
B528	2'-3"	3'-3"
B530	3'-0"	3'-6"

B528, B530

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

DRAWN BY EAJ | PLANS CK'D. HDA

WEST ABUTMENT
BILL OF BARS

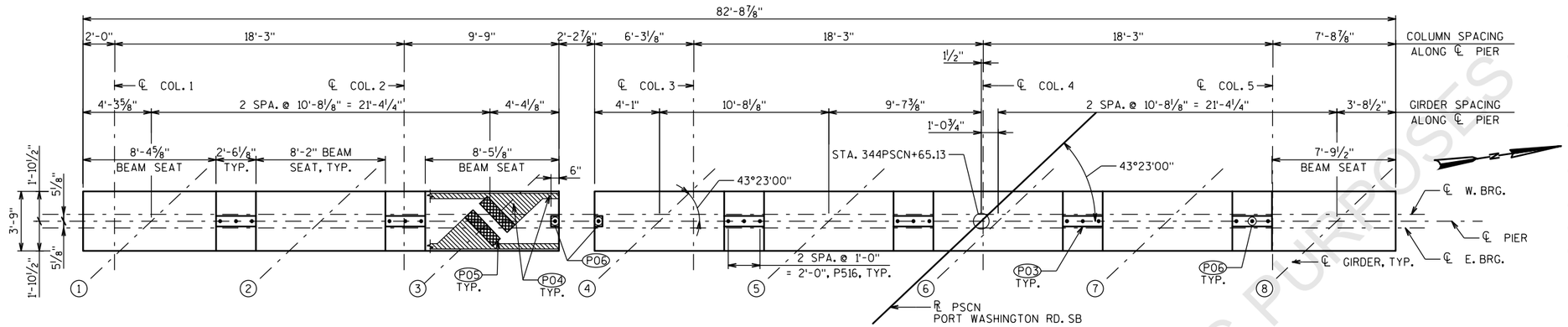
SHEET 16 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

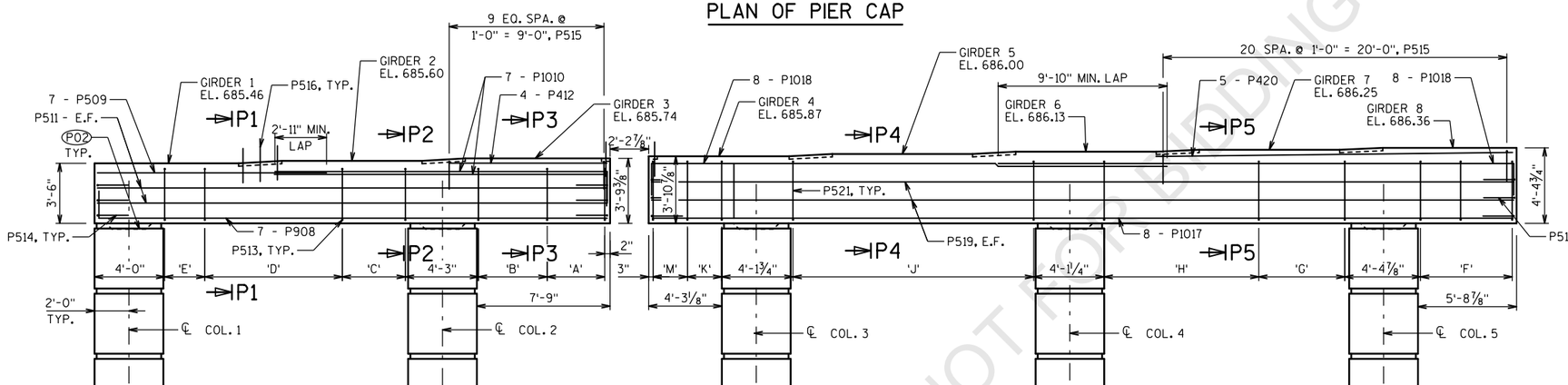
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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-103\cds\B103_080310_ab.dgn
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STATE PROJECT NUMBER
1229-04-74

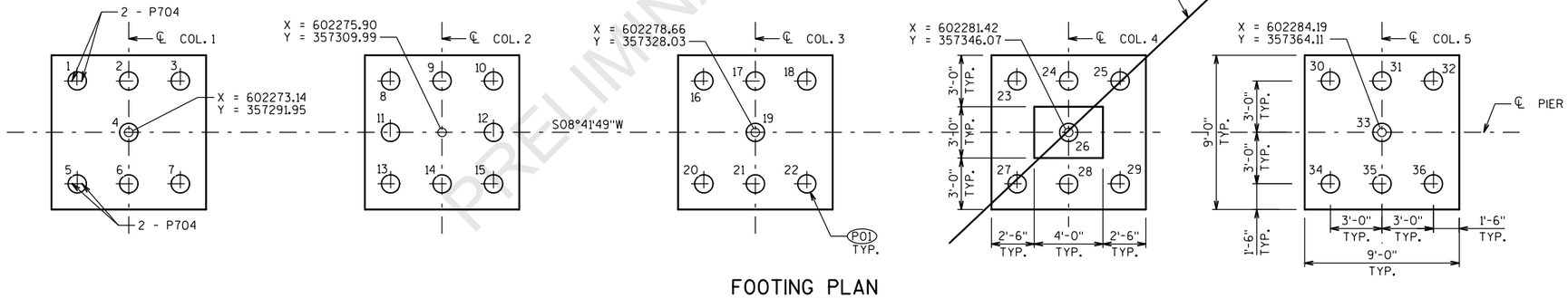


PLAN OF PIER CAP

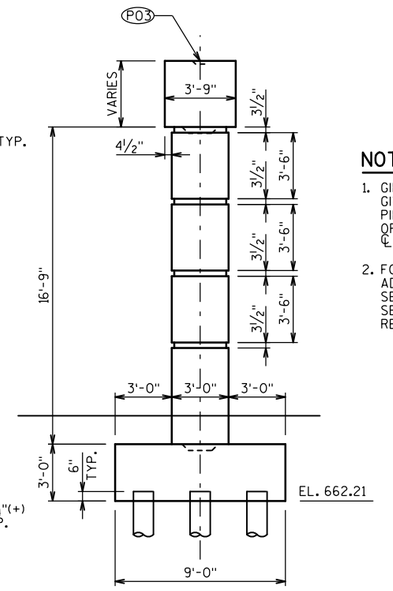


ELEVATION

LOOKING UPSTATION

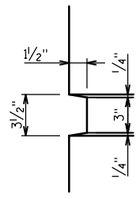


FOOTING PLAN



END VIEW

LOOKING SOUTH



DETAIL X

LEGEND

(P01) PIER SUPPORTED ON 12¾" DIA. x 0.375" CIP PILING DRIVEN TO EL. 607.00 OR A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE, WHICHEVER COMES FIRST. USE THE MODIFIED GATES ACCEPTANCE METHOD TO DETERMINE REQUIRED DRIVING RESISTANCE, PILE POINTS ARE REQUIRED.

(P02) 1'-3" x 2'-0" x 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY, TYPICAL TOP AND BOTTOM OF ALL COLUMNS.

(P03) KEYED CONSTRUCTION JOINT FORMED BY A SURFACED BEVELED 2" x 6" BETWEEN BEAM SEATS.

(P04) ¾" PREFORMED FILLER

(P05) ½" X 8" X 2'-6" NON-LAMINATED ELASTOMERIC BEARING PAD

(P06) P516 BARS AT 1'-0" CENTERS, BETWEEN BEAM SEATS, MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBEDED 1'-0" INTO CONCRETE)

'A' - 7 SPA. @ 6" = 3'-6" (DOUBLE STIRRUP)
'B' - 12 SPA. @ 4" = 4'-0" (DOUBLE STIRRUP)
'C' - 11 SPA. @ 4" = 3'-8" (DOUBLE STIRRUP)
'D' - 8 SPA. @ 1'-0" = 8'-0" (DOUBLE STIRRUP)
'E' - 7 SPA. @ 4" = 2'-4" (DOUBLE STIRRUP)

'F' - 16 SPA. @ 4" = 5'-4" (DOUBLE STIRRUP)
'G' - 10 SPA. @ 6" = 5'-0" (DOUBLE STIRRUP)
'H' - 9 SPA. @ 1'-0" = 9'-0" (DOUBLE STIRRUP)
'J' - 14 SPA. @ 1'-0" = 14'-0" (DOUBLE STIRRUP)
'K' - 6 SPA. @ 4" = 2'-0" (TRIPLE STIRRUP)
'M' - 4 SPA. @ 6" = 2'-0" (DOUBLE STIRRUP)

NOTES

1. GIRDER ELEVATIONS ARE GIVEN AT THE TOP OF THE PIER AT THE INTERSECTION OF THE ℄ GIRDER AND ℄ PIER.
2. FOR COLUMN REINFORCEMENT, ADDITIONAL DETAILS AND SECTIONS P1-P1 THRU P4-P4 SEE "PIER DETAILS & REINFORCEMENT" SHEET.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

DRAWN BY	EAJ	PLANS CK'D.	HDA

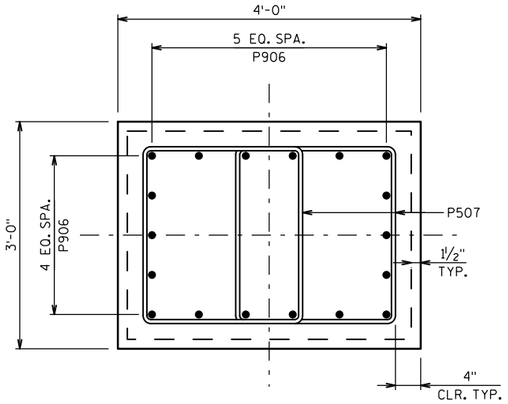
PIER

SHEET 17 OF 38

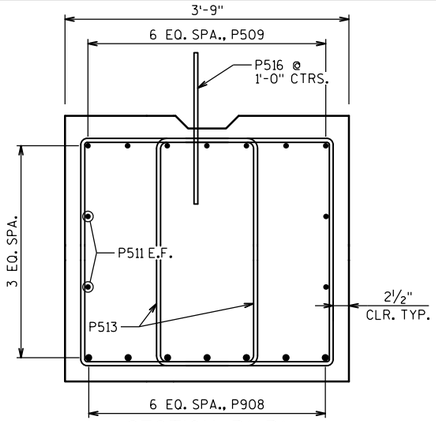
STATE PROJECT NUMBER
1229-04-74

BILL OF BARS

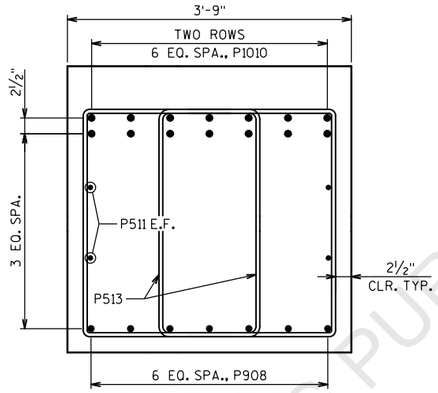
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P601		40	10'-3"	X		FOOTING HORIZ. BOTTOM
P702		78	10'-7"	X		FOOTING HORIZ. BOTTOM
P603		20	8'-7"			FOOTING HORIZ. TOP
P704		4	15'-0"	X		UPLIFT ANCHORS PILES 1 & 5
P905	X	90	10'-8"	X		COLUMN VERT.
P906	X	90	19'-1"			COLUMN VERT.
P507	X	350	10'-0"	X		COLUMN - HORIZ. STIRRUP
P908	X	7	30'-11"	X		PIER CAP HORIZ. - BOTTOM
P509	X	7	13'-4"			PIER CAP HORIZ. - TOP
P1010	X	14	20'-10"	X		PIER CAP HORIZ. - TOP
P511	X	4	29'-8"			PIER CAP HORIZ. - SIDES
P412	X	5	9'-2"			PIER CAP HORIZ. - TOP
P513	X	94	11'-4"	X		PIER CAP - STIRRUP
P514	X	12	6'-7"	X		PIER CAP - STIRRUP ENDS
P515	X	31	6'-3"	X		PIER CAP - STIRRUP TOP
P516	X	20	2'-0"			PIER CAP DOWEL
P1017	X	8	50'-1"			PIER CAP HORIZ. - BOTTOM
P1018	X	16	31'-6"	X		PIER CAP HORIZ. - TOP
P519	X	4	50'-2"			PIER CAP HORIZ. - SIDES
P420	X	5	20'-7"			PIER CAP HORIZ. - TOP
P521	X	133	12'-1"	X		PIER CAP - STIRRUP



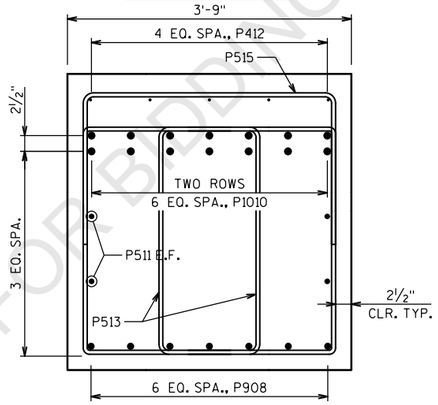
SECTION C2-C2



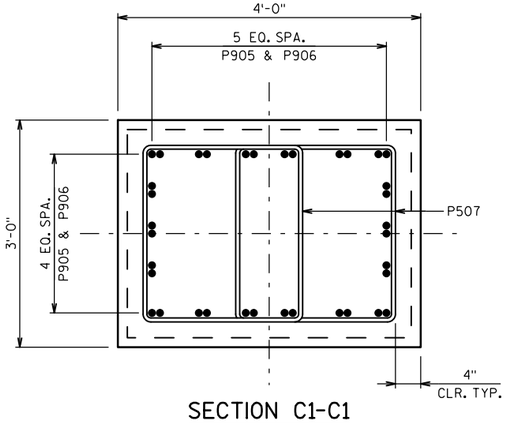
SECTION P1-P1



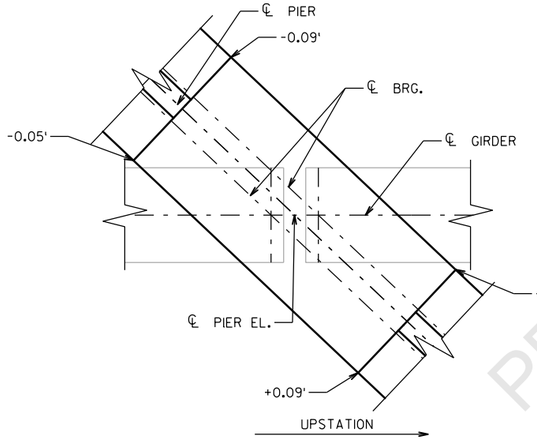
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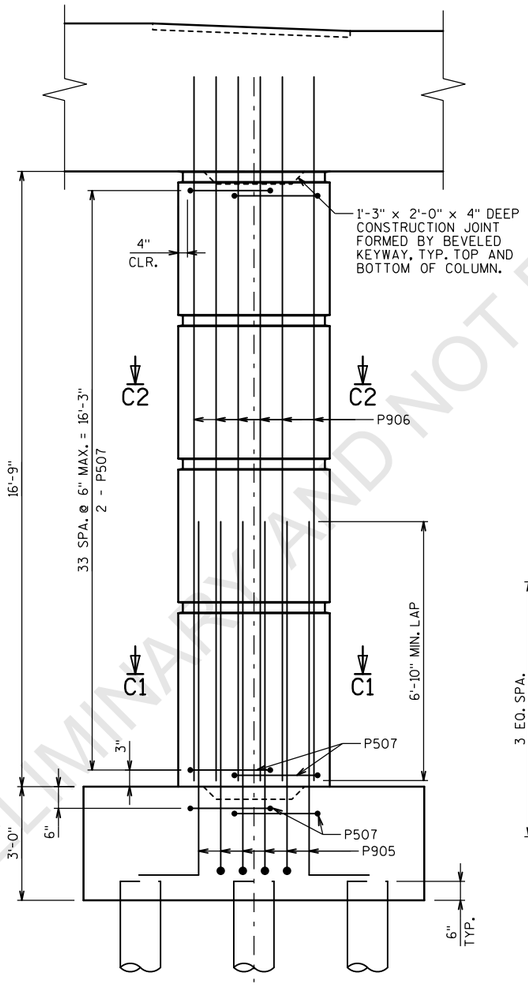
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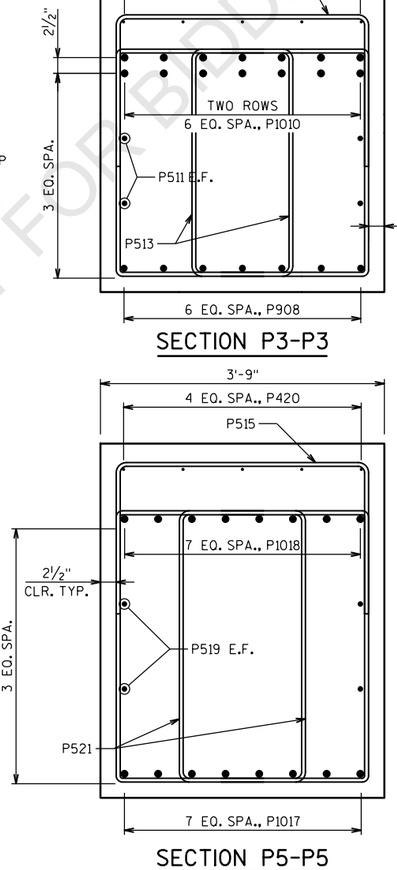
SECTION C1-C1



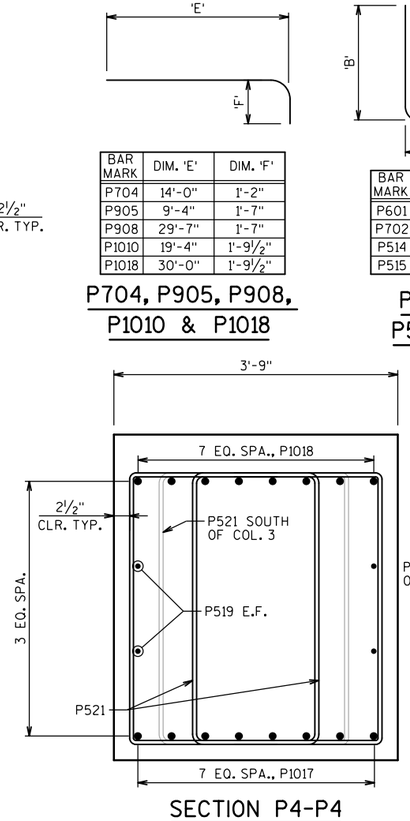
SLOPED BEAM SEAT DETAIL



COLUMN SECTION
(LOOKING WEST)



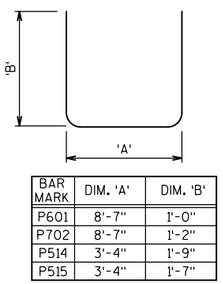
SECTION P5-P5



SECTION P4-P4

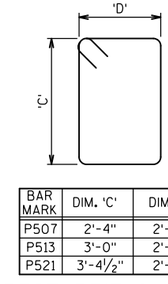
BAR MARK	DIM. 'E'	DIM. 'F'
P704	14'-0"	1'-2"
P905	9'-4"	1'-7"
P908	29'-7"	1'-7"
P1010	19'-4"	1'-9½"
P1018	30'-0"	1'-9½"

P704, P905, P908, P1010 & P1018



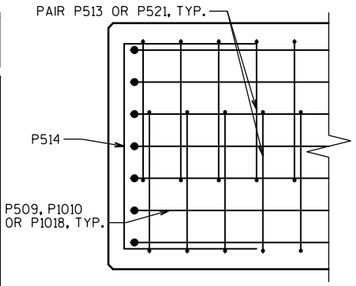
BAR MARK	DIM. 'A'	DIM. 'B'
P601	8'-7"	1'-0"
P702	8'-7"	1'-2"
P514	3'-4"	1'-9"
P515	3'-4"	1'-7"

P601, P702, P514 & P515



BAR MARK	DIM. 'C'	DIM. 'D'
P507	2'-4"	2'-4"
P513	3'-0"	2'-4"
P521	3'-4½"	2'-4"

P507, P513 & P521



PLAN VIEW SHOWING END OF CAP REINFORCEMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

DRAWN BY EAJ | PLANS CK'D. HDA

PIER DETAILS & REINFORCEMENT

SHEET 18 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

STATE PROJECT NUMBER
1229-04-74

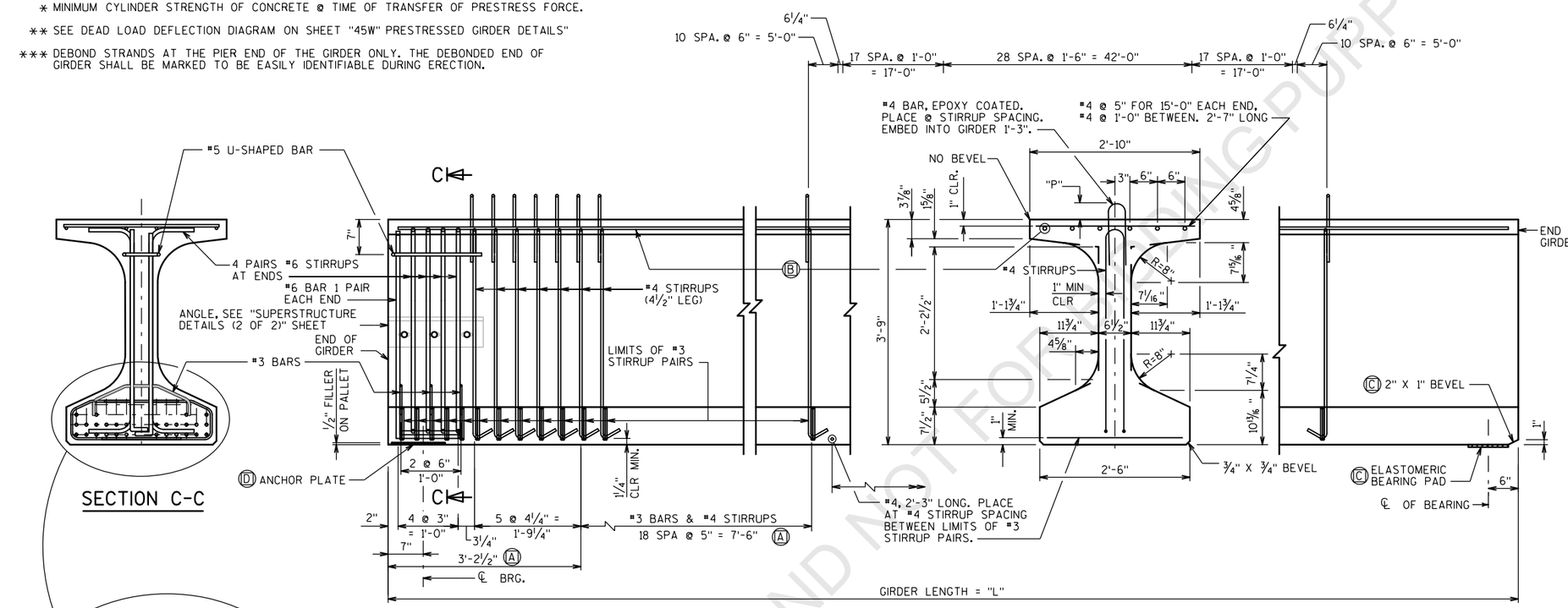
GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL (IN.) **									CONC STRGTH f'c (PSI)	"P" (IN.)			DIA OF STRAND (IN.)	DRAPED PATTERN						NO. OF DEBONDED STRANDS ***
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10		1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER		TOTAL NO. OF STRANDS	f'ci (PSI) *	(IN.) "A"	"B" MIN	"B" MAX	"C"	
1	8	108'-5½"	5/8"	1⅛"	1⅝"	1⅞"	2"	1⅞"	1⅝"	1⅛"	5/8"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	-
1	2-7	108'-5½"	5/8"	1⅜"	1⅞"	2⅛"	2¼"	2⅛"	1⅞"	1⅜"	5/8"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	-
1	1	108'-5½"	5/8"	1⅜"	1⅞"	2¼"	2⅜"	2¼"	1⅞"	1⅜"	5/8"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	6
2	8	108'-5½"	5/8"	1⅛"	1⅝"	1⅞"	2"	1⅞"	1⅝"	1⅛"	5/8"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	-
2	2-7	108'-5½"	5/8"	1¼"	1¾"	2⅛"	2¼"	2⅛"	1¾"	1¼"	5/8"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	-
2	1	108'-5½"	½"	1⅜"	1⅞"	2¼"	2⅜"	2¼"	1⅞"	1⅜"	½"	8000	7"	7"	7"	0.6	34	6800	39	13.5	16.5	5	6

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

** SEE DEAD LOAD DEFLECTION DIAGRAM ON SHEET "45W" PRESTRESSED GIRDER DETAILS"

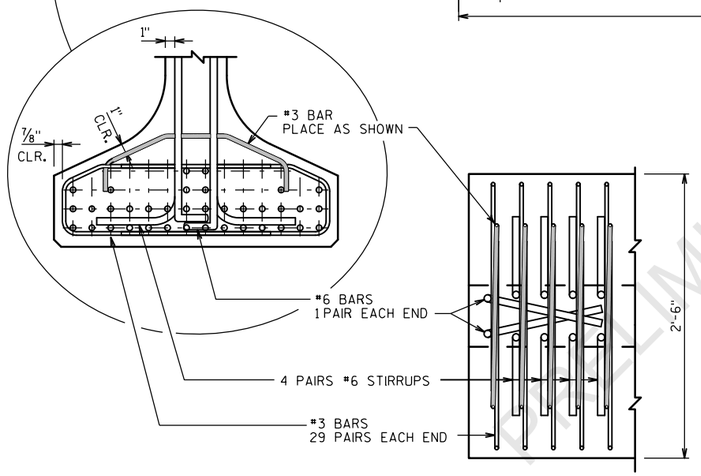
*** DEBOND STRANDS AT THE PIER END OF THE GIRDER ONLY. THE DEBONDED END OF GIRDER SHALL BE MARKED TO BE EASILY IDENTIFIABLE DURING ERECTION.



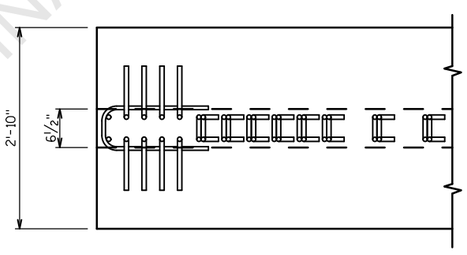
SECTION C-C

SIDE VIEW & TYPICAL SECTION IN SPAN

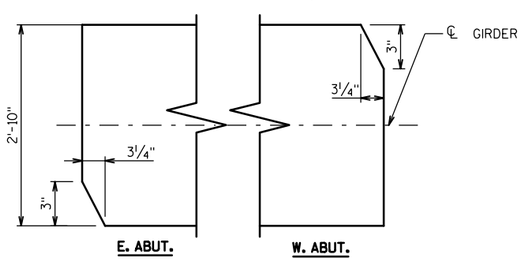
Ⓐ DETAIL TYP AT EACH END
Ⓑ 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-8"
Ⓒ DETAIL TYPICAL AT EACH PIER END
Ⓓ DETAIL TYPICAL AT EACH ABUTMENT END



BOTTOM FLANGE



TOP FLANGE



TOP FLANGE CORNER CLIP DETAIL

GIRDER NOTES

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.

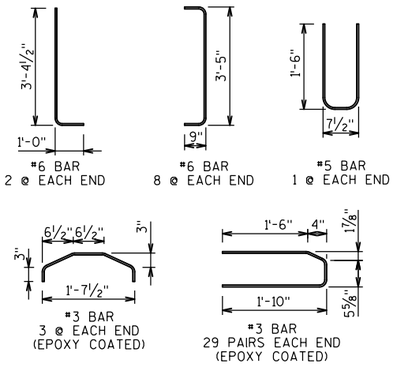
STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2-FEET OF THE GIRDER ENDS 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 EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

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



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STRUCTURE B-45-103

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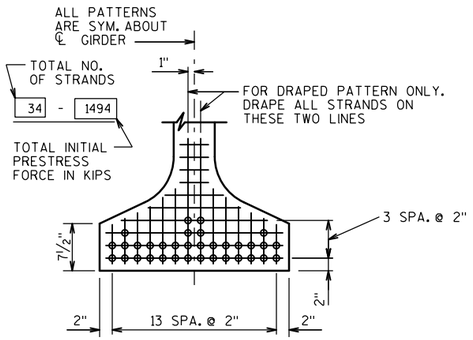
45W" PRESTRESSED GIRDER

SHEET 19 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

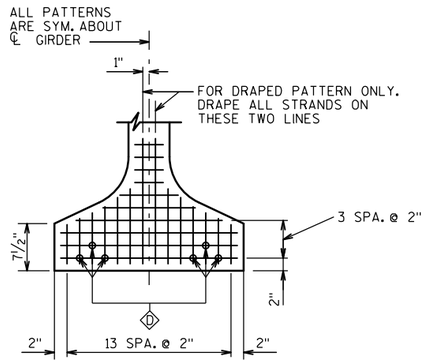
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TYP. STRAND PATTERN

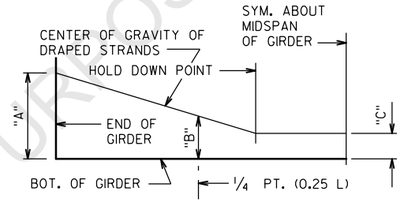
0.6" DIA. STRANDS



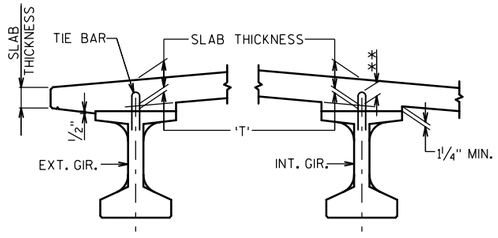
DEBONDED STRANDS GIRDER 1

DEBOND AT PIER END ONLY

◇D DEBOND LENGTH = 10'-0" (6 STRANDS)



DRAPED STRAND PROFILE



SLAB HAUNCH DETAIL

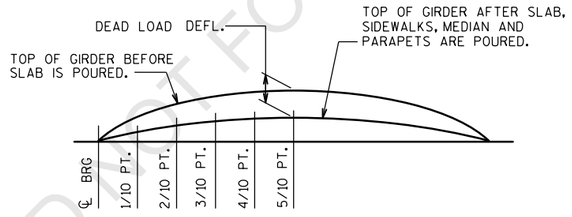
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

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

TO DETERMINE 'T', ELEV. OF TOP OF 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
\- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2½" WAS USED IN THE QUANTITY "HPC MASONRY STRUCTURES".



DEAD LOAD DEFLECTION DIAGRAM

DEFLECTIONS ARE SYMMETRIC ABOUT MID POINT OF BEAM

*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	3.44
2	3.44

THESE VALUES ARE PRESENTED FOR INFORMATION ONLY. THE CAMBER VALUES ARE NOT TO BE USED IN DETERMINING HAUNCH HEIGHT 'T'.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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DEPARTMENT OF TRANSPORTATION

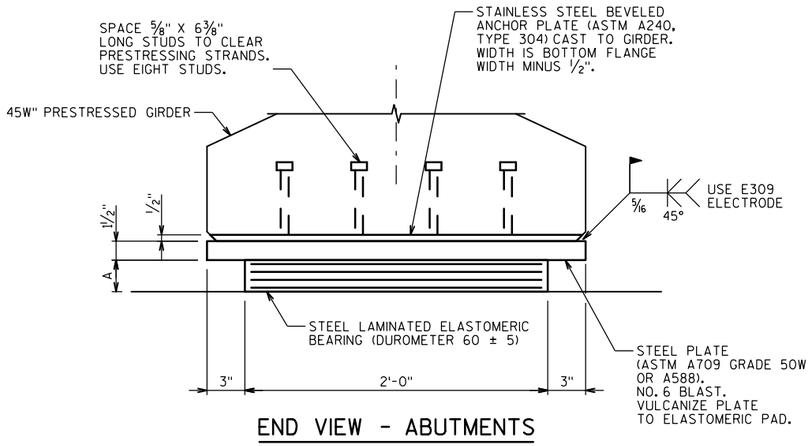
STRUCTURE B-45-103

DRAWN BY EAJ | PLANS CK'D. HDA

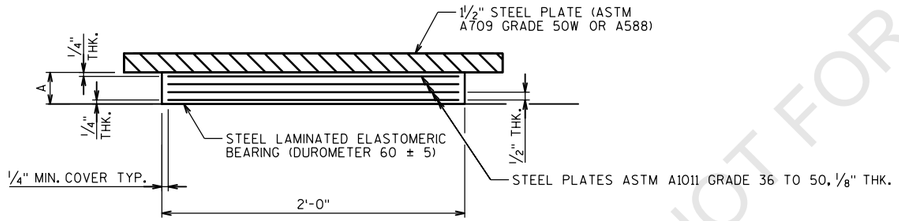
45W" PRESTRESSED GIRDER DETAILS

SHEET 20 OF 38

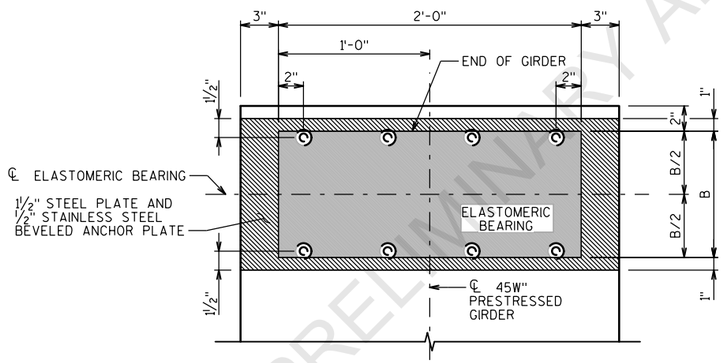
STATE PROJECT NUMBER
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END VIEW - ABUTMENTS



SECTION THRU ELASTOMERIC BEARING



PLAN VIEW - ABUTMENTS

NOTES

BEARINGS SHALL NOT BE PLACED AT A TEMPERATURE GREATER THAN 85° F.

ALL MATERIAL USED FOR BEARINGS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING PADS ELASTOMERIC LAMINATED", EACH.

ALL STRUCTURAL STEEL PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

BEARING TABLE

	A	B
EAST ABUTMENT	2.5"	10"
WEST ABUTMENT	2.5"	10"

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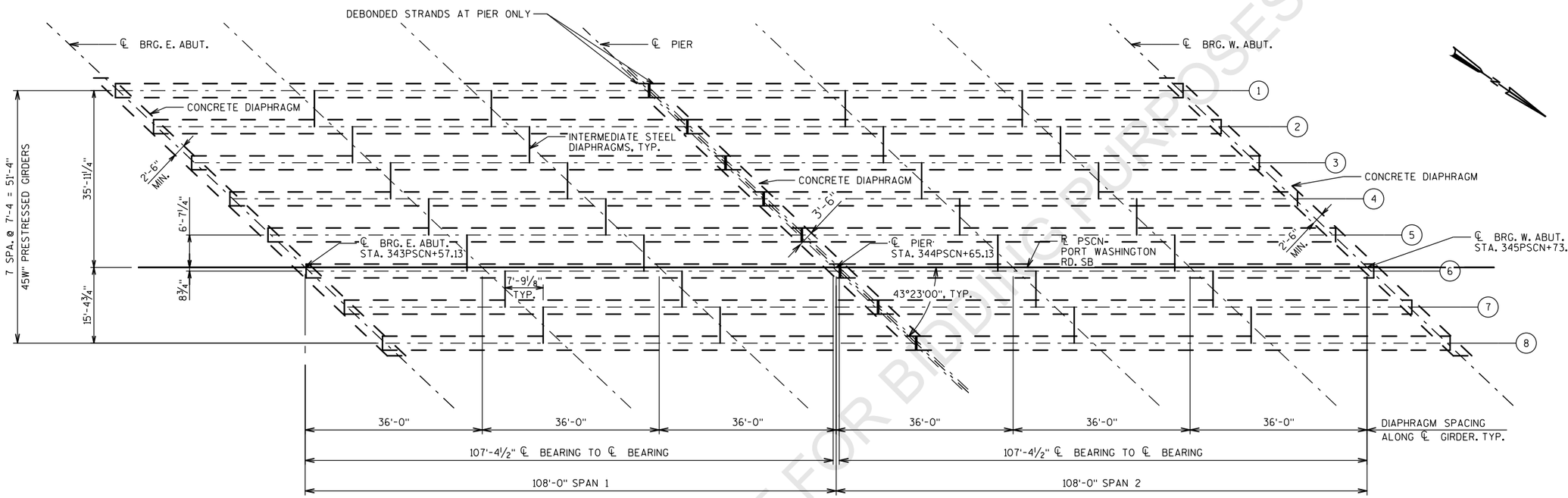
STRUCTURE B-45-103

DRAWN BY EAJ | PLANS CK'D. HDA

EXPANSION BEARING DETAILS

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FRAMING PLAN

TOP OF DECK ELEVATIONS

LOCATION	℄ BRG. E. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ PIER	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ BRG. W. ABUT.
SOUTH EDGE OF DECK	689.78	689.84	689.90	689.95	689.99	690.02	690.05	690.07	690.08	690.09	690.09	690.08	690.07	690.04	690.02	689.98	689.94	689.89	689.83	689.77	689.70
GIRDER 1	689.85	689.91	689.96	690.01	690.05	690.08	690.10	690.12	690.13	690.14	690.14	690.13	690.11	690.09	690.06	690.02	689.98	689.93	689.87	689.81	689.73
GIRDER 2	690.04	690.09	690.14	690.18	690.22	690.24	690.27	690.28	690.29	690.29	690.28	690.26	690.24	690.21	690.18	690.14	690.09	690.03	689.97	689.90	689.83
GIRDER 3	690.23	690.28	690.32	690.36	690.38	690.41	690.42	690.43	690.43	690.43	690.42	690.40	690.37	690.34	690.30	690.25	690.20	690.14	690.07	690.00	689.91
GIRDER 4	690.41	690.45	690.49	690.52	690.55	690.57	690.58	690.58	690.58	690.57	690.55	690.52	690.49	690.46	690.41	690.36	690.30	690.24	690.16	690.08	690.00
GIRDER 5	690.59	690.63	690.66	690.69	690.71	690.72	690.73	690.72	690.72	690.70	690.68	690.65	690.61	690.57	690.52	690.46	690.40	690.33	690.25	690.17	690.08
R/L PSCN, PGL	690.75	690.78	690.81	690.83	690.85	690.86	690.86	690.85	690.84	690.82	690.79	690.76	690.72	690.67	690.62	690.56	690.49	690.41	690.33	690.24	690.15
GIRDER 6	690.77	690.80	690.83	690.85	690.86	690.87	690.87	690.87	690.85	690.83	690.81	690.77	690.73	690.68	690.63	690.57	690.50	690.42	690.34	690.25	690.16
GIRDER 7	690.94	690.97	690.99	691.01	691.02	691.02	691.02	691.00	690.99	690.96	690.93	690.89	690.84	690.79	690.73	690.66	690.59	690.51	690.42	690.33	690.23
GIRDER 8	691.11	691.13	691.15	691.16	691.17	691.16	691.15	691.14	691.11	691.08	691.05	691.00	690.95	690.90	690.83	690.76	690.68	690.60	690.50	690.40	690.30
NORTH EDGE OF DECK	691.17	691.19	691.21	691.21	691.22	691.21	691.20	691.18	691.16	691.13	691.09	691.04	690.99	690.93	690.86	690.79	690.71	690.62	690.53	690.43	690.32

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

DRAWN BY NNM | PLANS CK'D. HDA

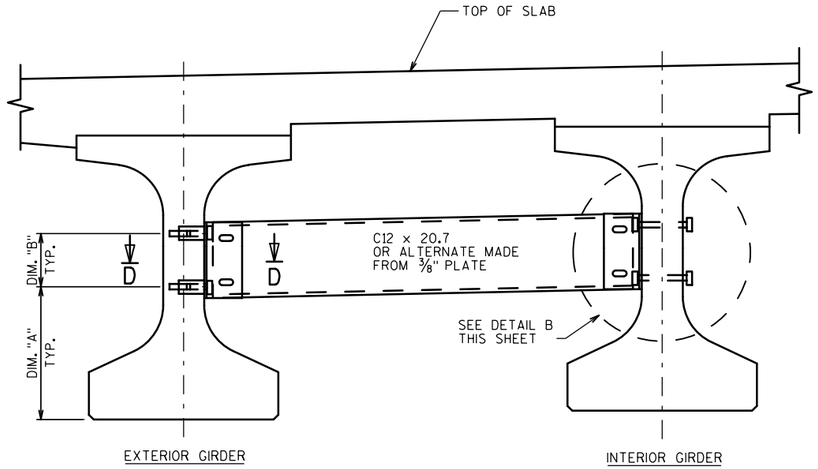
SUPERSTRUCTURE FRAMING PLAN

SHEET 22 OF 38

8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-103\cds\B103_0B5704D45Edgn 7/28/2021 6:23:47 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 23.3333:1

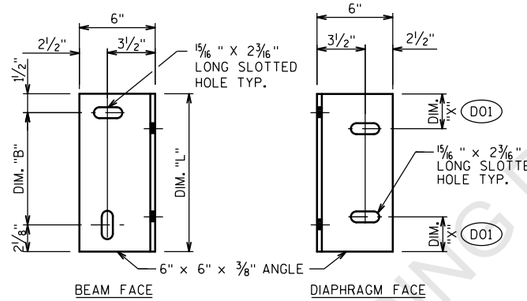
STATE PROJECT NUMBER
1229-04-74



PART TRANSVERSE SECTION AT DIAPHRAGM

DIMENSION TABLE

GIRDER HEIGHT	DIM. "A"	DIM. "B"	DIM. "L"	DIM. "X" (D01)
45W"	1'-9 1/8"	8 7/8"	1'-0 1/2"	2 3/4"



DIAPHRAGM SUPPORT

(D01) 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM

NOTES

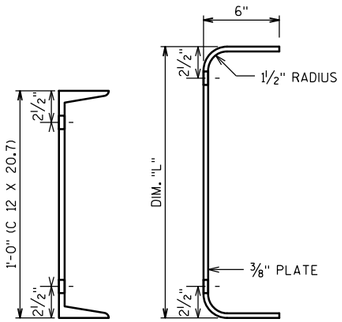
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-45-103", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

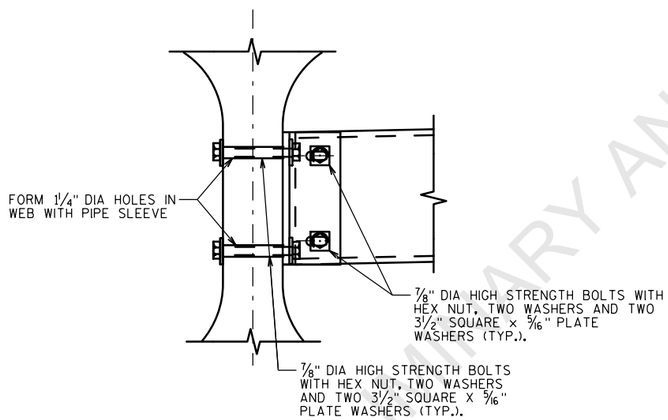
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

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 A449.



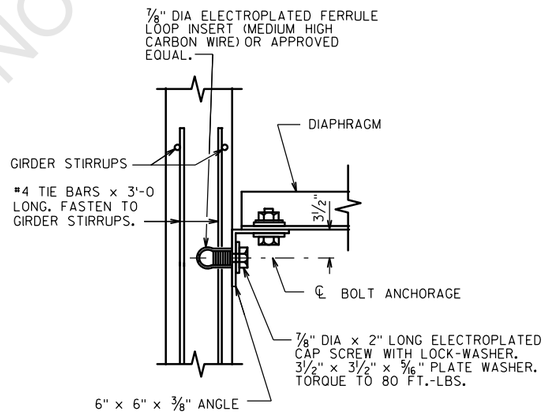
C 12 X 20.7 ALTERNATE DIAPHRAGM

SECTION THRU DIAPHRAGM



DETAIL B

SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°



SECTION D-D

(FOR EXTERIOR ATTACHMENT)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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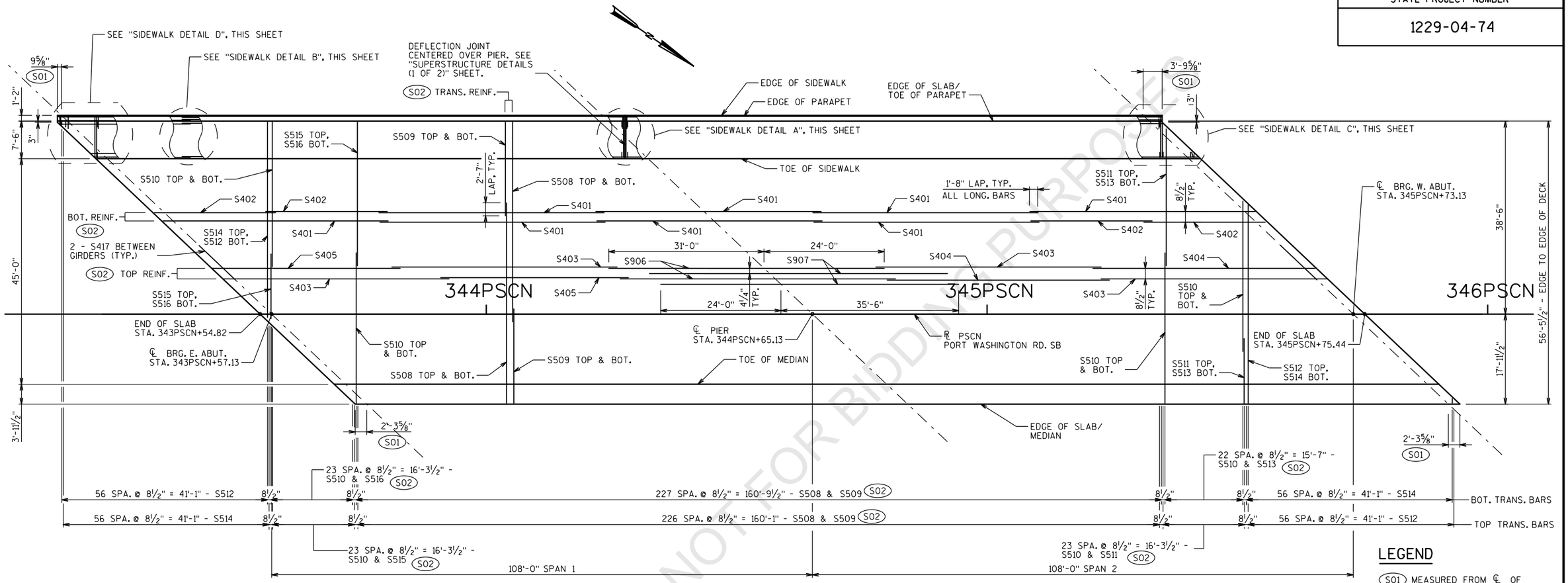
STEEL DIAPHRAGM

SHEET 23 OF 38

8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\B-45-103\cds\B103_0B0705D.dgn PLOT DATE : 7/26/2021 6:23:49 PM PLOT BY : ejelinek PLOT NAME : $FILE$ PLOT SCALE : 2:1

STATE PROJECT NUMBER
1229-04-74



DECK PLAN

PARAPET REINFORCEMENT NOT SHOWN



PARAPET PLAN

SHOWING LONG. REINFORCEMENT ONLY (NOT TO SCALE)

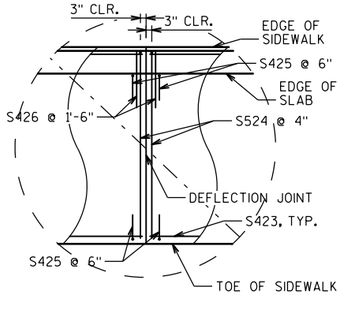
LEGEND

- S01 MEASURED FROM ℄ OF BEARING AT EDGE OF RAISED SIDEWALK OR MEDIAN.
- S02 ALTERNATE LAPS AS SHOWN

NOTE

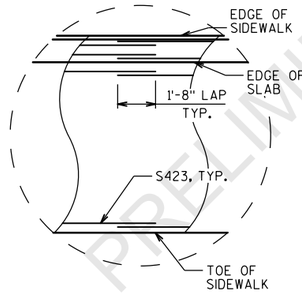
SEE "SUPERSTRUCTURE DETAILS (1 OF 2)" SHEET FOR MEDIAN REINFORCEMENT DETAILS

SEE "SUPERSTRUCTURE CROSS SECTION" SHEET FOR ADDITIONAL PARAPET REINFORCEMENT DETAILS



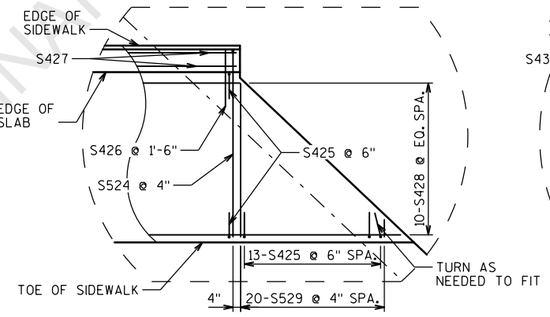
SIDEWALK DETAIL A

AT DEFLECTION JOINT



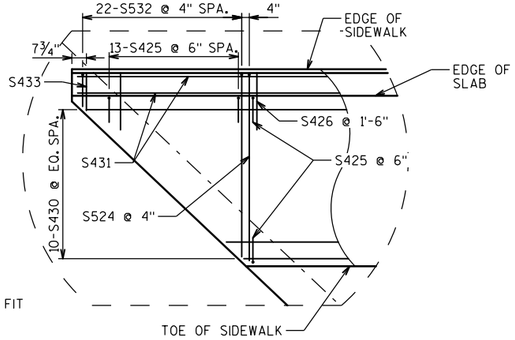
SIDEWALK DETAIL B

LAP DETAIL



SIDEWALK DETAIL C

WEST END



SIDEWALK DETAIL D

EAST END

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

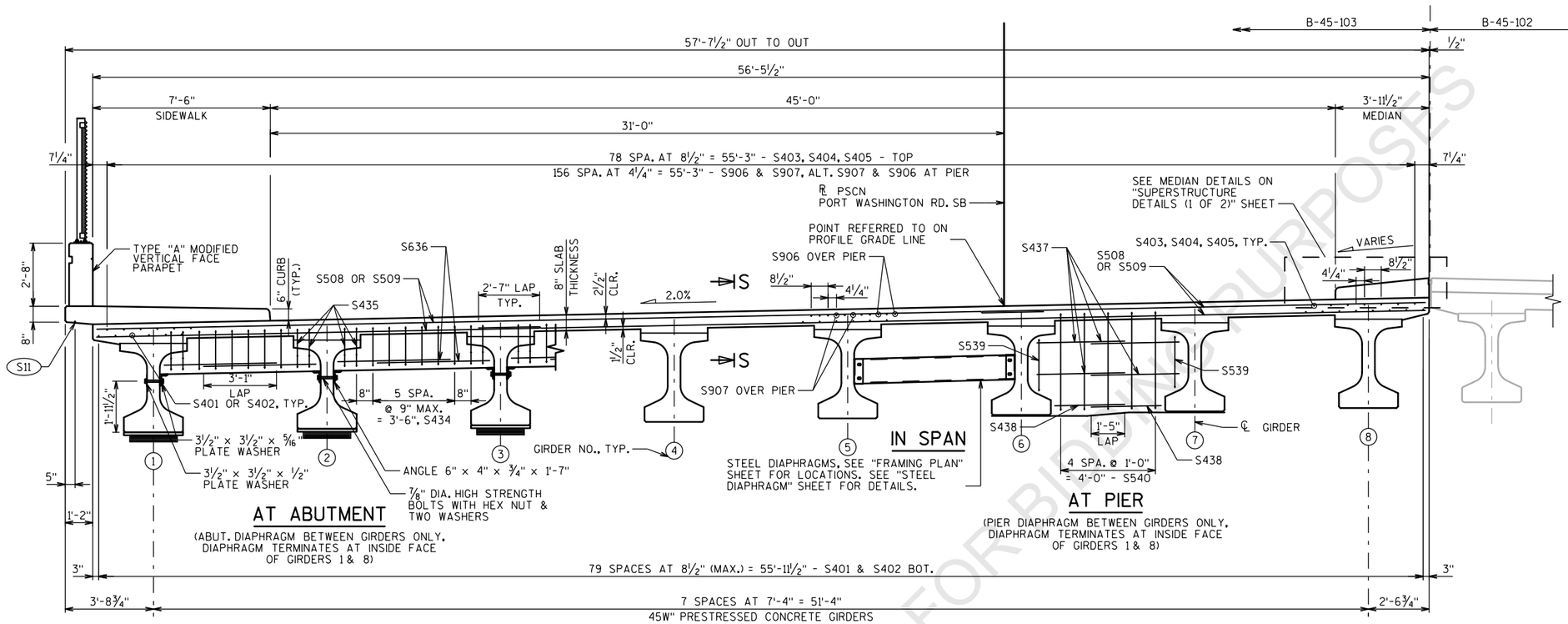
DRAWN BY	NNM	PLANS CK'D.	HDA

SUPERSTRUCTURE REINFORCEMENT

SHEET 24 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74

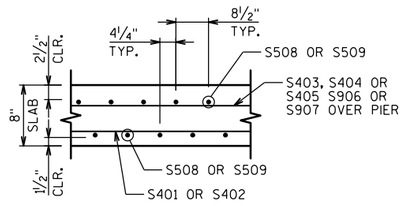


CROSS SECTION THRU SUPERSTRUCTURE

(LOOKING WEST)

NOTES

SEE "SUPERSTRUCTURE DETAILS (1 OF 2)" SHEET FOR DEFLECTION JOINT DETAILS THRU PARAPET



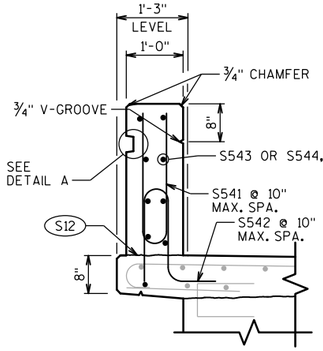
SECTION S-S

LEGEND

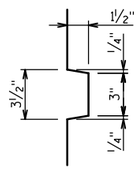
(S11) ¾" V-GROOVE REQUIRED. EXTEND V-GROOVE TO 2'-0" FROM FRONT FACE OF ABUTMENT BODY.

(S12) CONSTRUCTION JOINT. STRIKE OFF AS SHOWN.

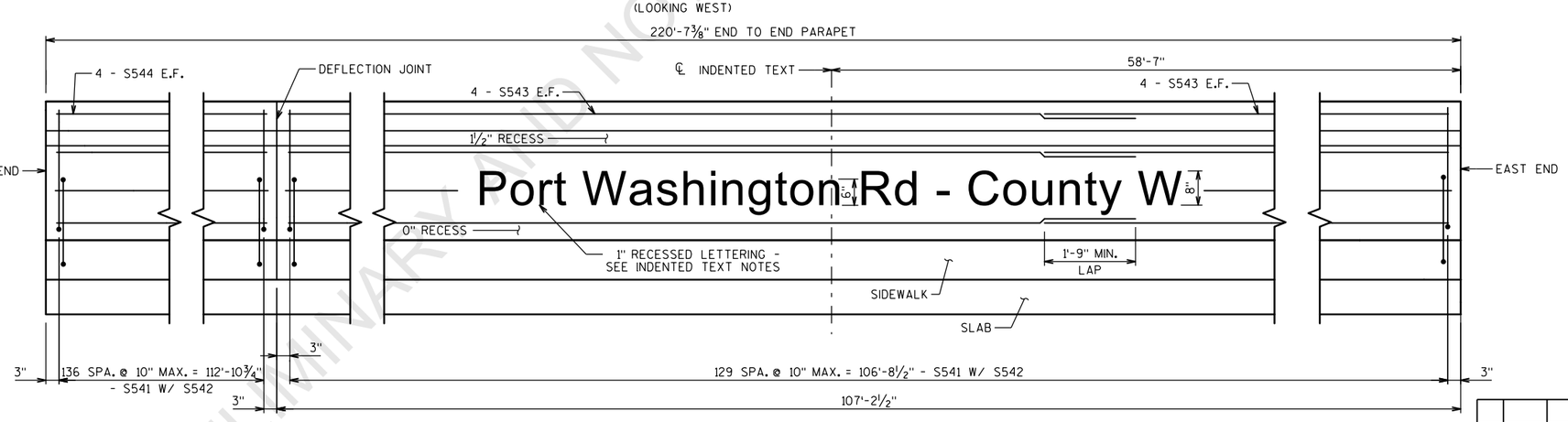
E.F. EACH FACE



SECTION THRU PARAPET



DETAIL A



OUTSIDE ELEVATION OF SOUTH PARAPET

(LOOKING NORTH)
(RAILING NOT SHOWN FOR CLARITY)

INDENTED TEXT NOTES:
1. LETTERING SHALL BE HELVETICA, 8" UPPER CASE AND 6" LOWER CASE.
2. LETTERING IS ONLY ON EXTERIOR FACE OF PARAPET.
3. FORMING OF LETTERING INCIDENTAL TO "HPC MASONRY STRUCTURES".
4. STAIN RECESSED LETTERING BLACK, FEDERAL COLOR #37038. INCIDENTAL TO "HPC MASONRY STRUCTURES".

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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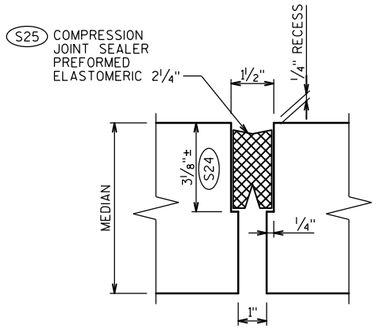
SUPERSTRUCTURE CROSS SECTION

SHEET 25 OF 38

8

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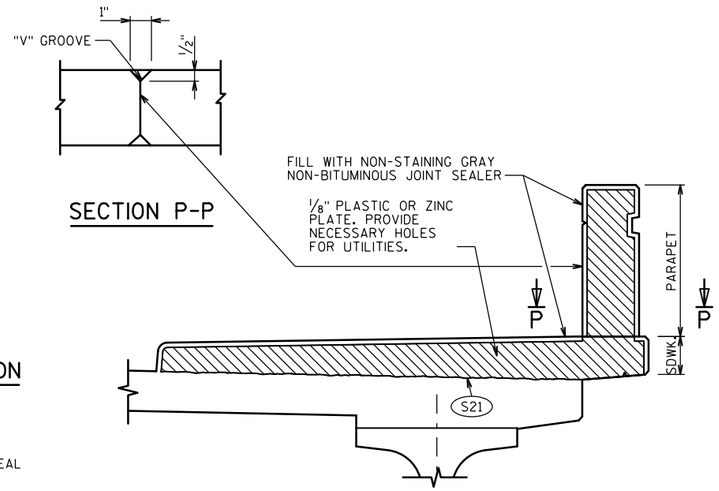
STATE PROJECT NUMBER
1229-04-74



ELASTOMERIC COMPRESSION SEAL DETAIL

(S24) VARIES BASED ON JOINT MANUFACTURER

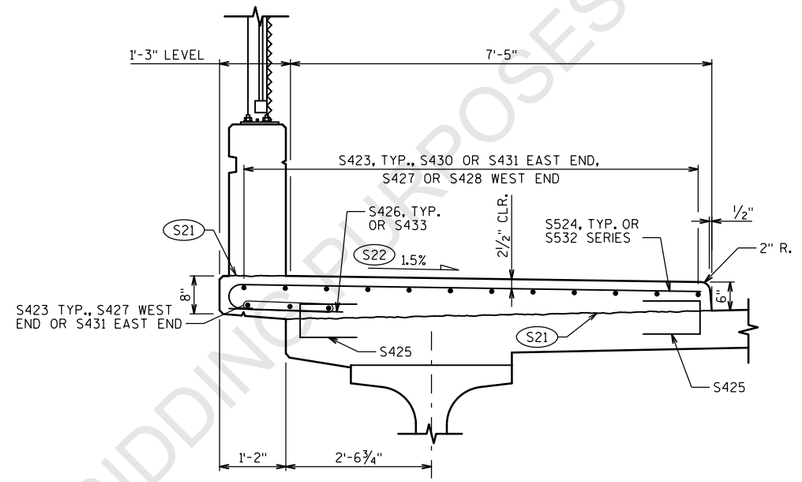
(S25) MANUFACTURER SHALL LABEL TOP OF SEAL



DEFLECTION JOINT DETAIL

(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK.)

WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF ⅛" ZINC OR PLASTIC PLATE CUT AS SHOWN ABOVE BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.



SIDEWALK DETAIL

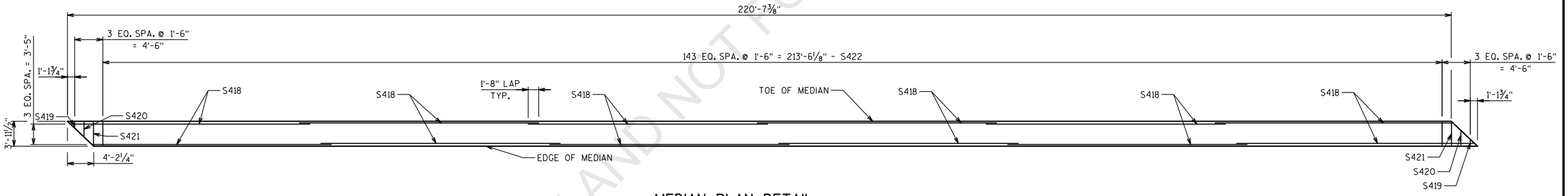
SEE SIDEWALK DETAILS A-D ON SHEET "SUPERSTRUCTURE REINFORCEMENT" FOR PLACEMENT OF BARS

LEGEND

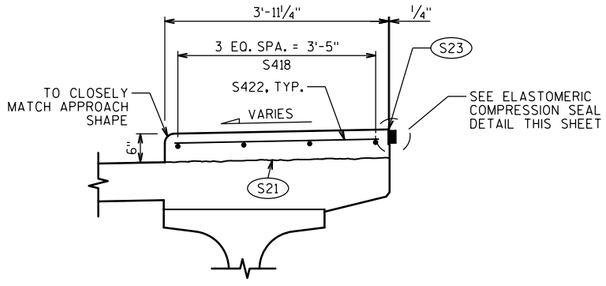
(S21) CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH FOR DECK POUR, MATCH BRIDGE CROSS SLOPE.

(S22) +/- 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(S23) MATCH EDGE ELEVATION TO B-45-102 ELEVATION.



MEDIAN PLAN DETAIL



MEDIAN DETAIL EAST END

(LOOKING WEST)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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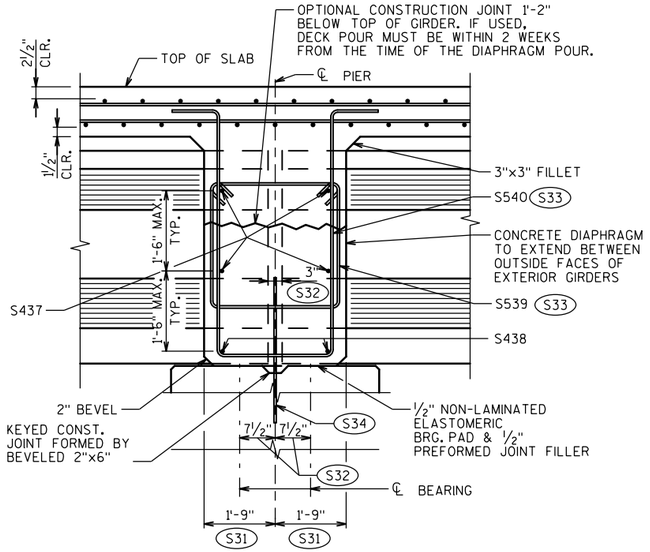
SUPERSTRUCTURE DETAILS (1 OF 2)

SHEET 26 OF 38

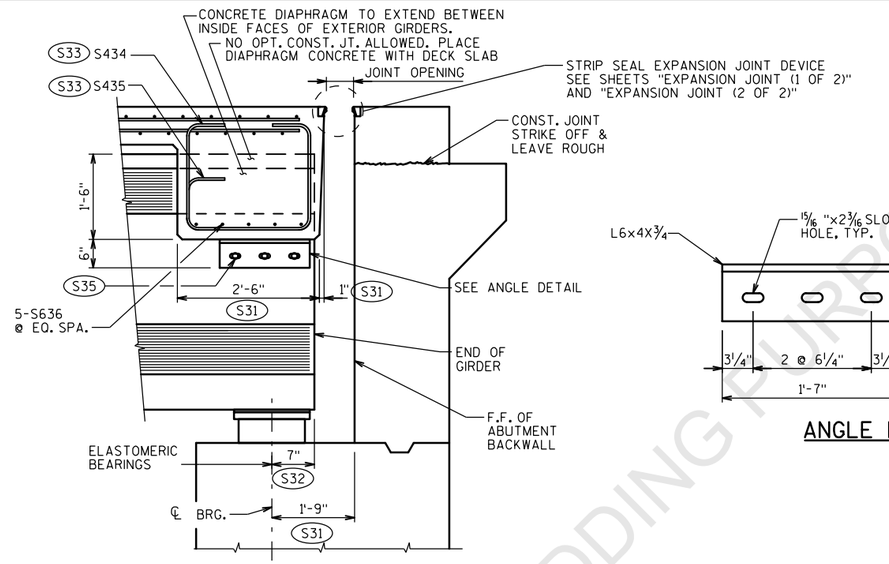
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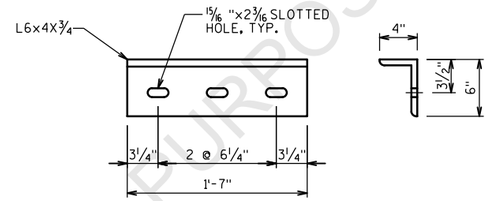
STATE PROJECT NUMBER
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DIAPHRAGM AT ½" ELASTOMERIC BEARING



EXPANSION END AT ABUTMENTS



ANGLE DETAIL

NOTES

ALL DIAPHRAGM SUPPORT HARDWARE SHALL BE INCIDENTAL TO "HPC MASONRY STRUCTURES".

DIAPHRAGM SUPPORT ANGLES SHALL BE ASTM A709 GRADE 36.

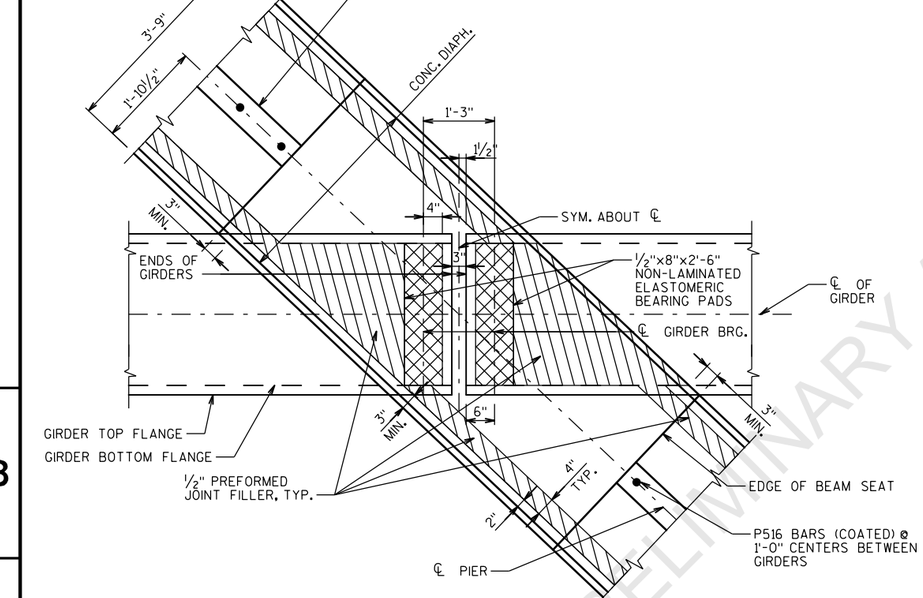
ALL DIAPHRAGM SUPPORT HARDWARE INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM SUPPORT ANGLE TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼TURN. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

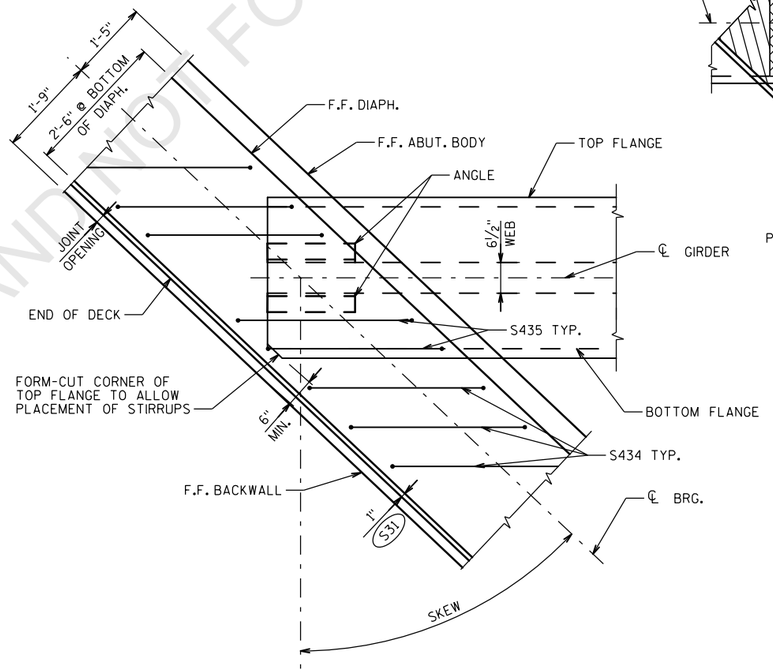
LEGEND

- (S31) DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.
- (S32) DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.
- (S33) BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO ℄ OF GIRDERS.
- (S34) P516 BARS AT 1'-0" CENTERS x 2'-0" LONG. PLACE BETWEEN GIRDERS, EMBED 1'-0". PLACE BARS BEFORE CONCRETE HAS TAKEN INITIAL SET. SEE PIER SHEETS FOR ADDITIONAL INFORMATION.
- (S35) FORM HOLES IN WEB WITH 1¼" SCHEDULE 40 GALVANIZED PIPE. 15/16 " x 2 3/16" LONG SLOTTED HOLE (TYP.) IN ANGLE FOR ⅞" DIA. HIGHER STRENGTH BOLTS.
- (S36) CONC. DIAPHRAGM TO EXTEND OVER PIER CAP GAP

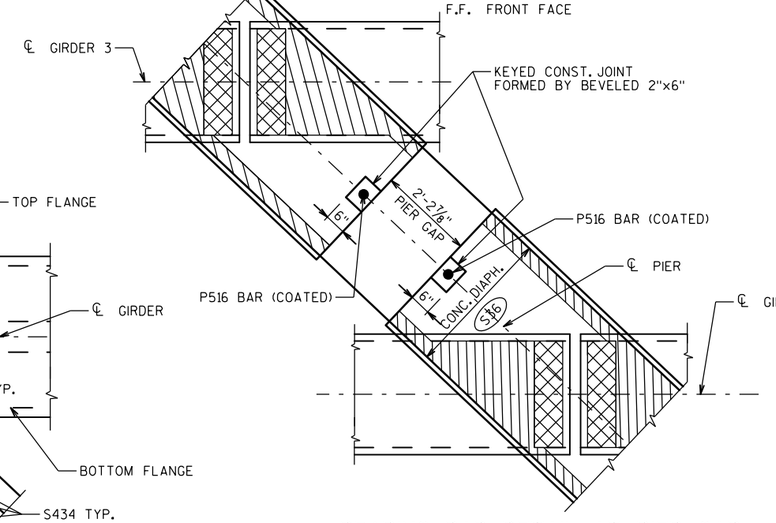
F.F. FRONT FACE



BEARING PAD DETAIL AT PIER



TOP VIEW OF DIAPHRAGM AT ABUTMENTS



BEARING PAD DETAIL AT PIER GAP

SEE TYPICAL DETAIL FOR ADDITIONAL INFORMATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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STRUCTURE B-45-103

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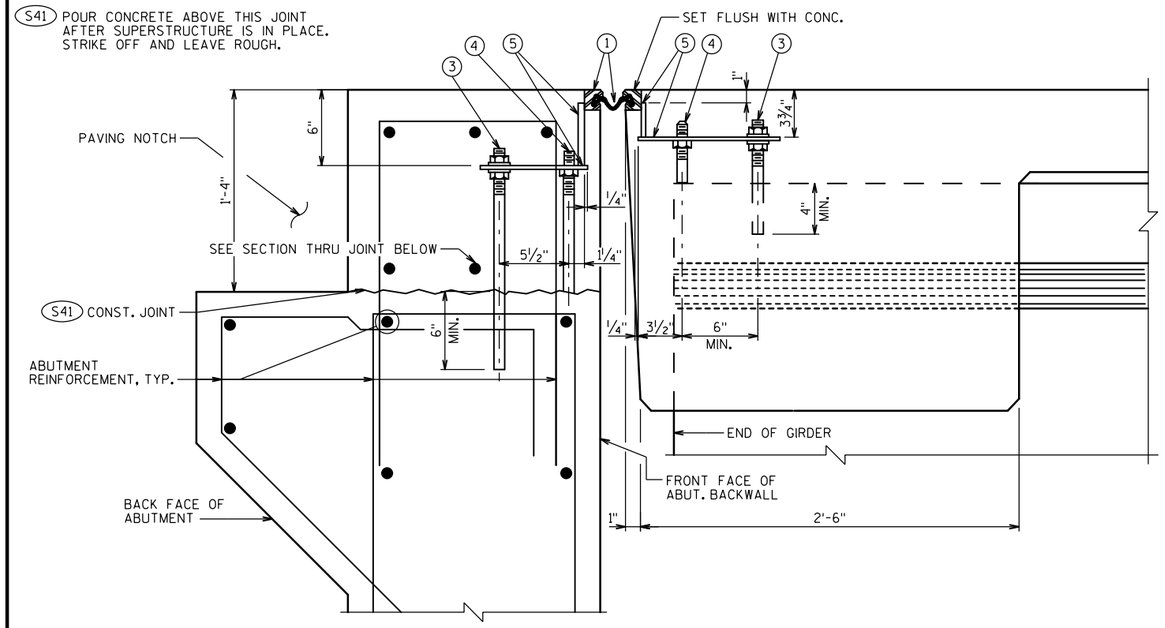
SUPERSTRUCTURE DETAILS (2 OF 2)

SHEET 27 OF 38

8

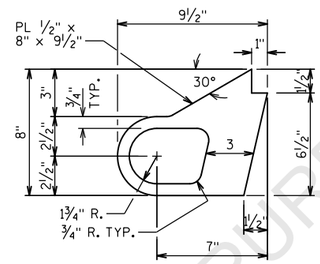
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STATE PROJECT NUMBER
1229-04-74

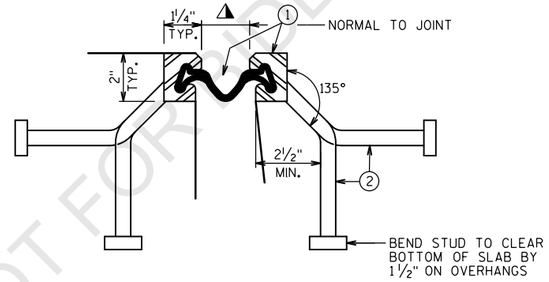


SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE



ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPET, MEDIAN AND SIDEWALK

LEGEND

△ (1) NEOPRENE STRIP SEAL (4-INCH) & STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾". JOINT OPENINGS GIVEN NORMAL TO JOINT.

(2) STUDS ⅝" ϕ x 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.

(2A) ½" THICK ANCHOR PLATE WITH ⅝" ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PL. TO NO. 1 AT 1'-6" CTRS. BETWEEN GIRDERS.

(3) ¾" ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. FOR PRESTRESSED GIRDERS, GROUT THREADED ROD INTO FIELD DRILLED HOLES ON C/L OF GIRDER. FOR STEEL GIRDERS, WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.

(4) ¾" ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.

(5) FABRICATE SUPPORT FROM 3" x ½" BAR AS SHOWN OR EQUIVALENT. ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" ϕ HOLE FOR NO. 3 & 1" ϕ HOLE FOR NO. 4.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, ANCHOR PLATES SHALL BE PROVIDED 3" FROM EACH SIDE OF THE FIELD SPLICE. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

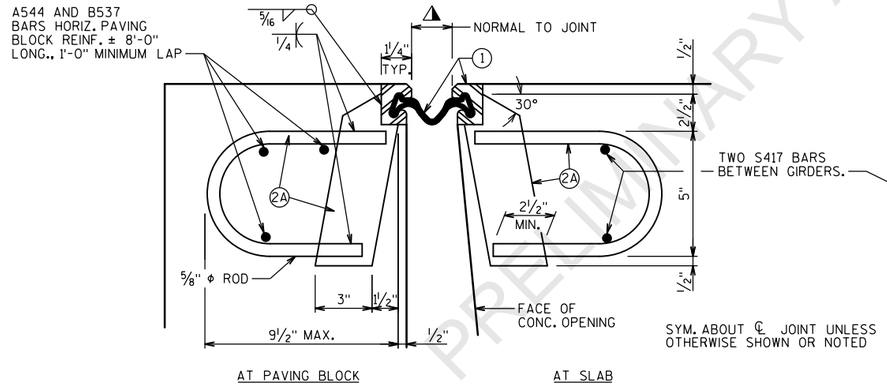
AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

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

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED. SLIP RESISTANT SURFACE IS APPLIED TO THE SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

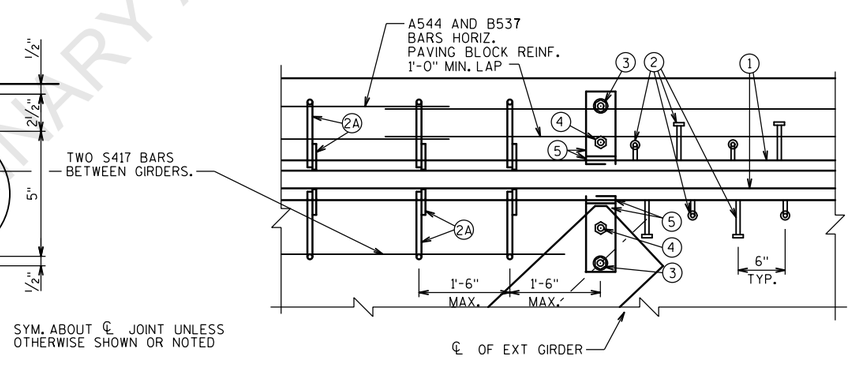
ANCHOR SYSTEM NO. 8 & NO. 9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D.

ALL MATERIAL IN THE EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID AT THE UNIT PRICE BID FOR "EXPANSION DEVICE", LF.



SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS



PART PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

DRAWN BY NNM | PLANS CK'D. HDA

EXPANSION JOINT (1 OF 2)

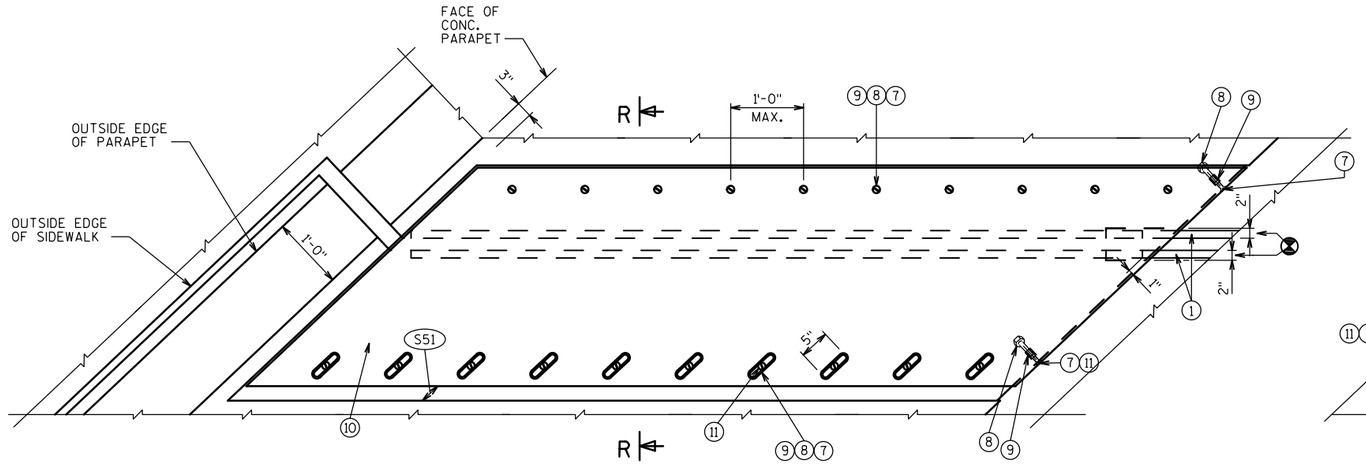
SHEET 28 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

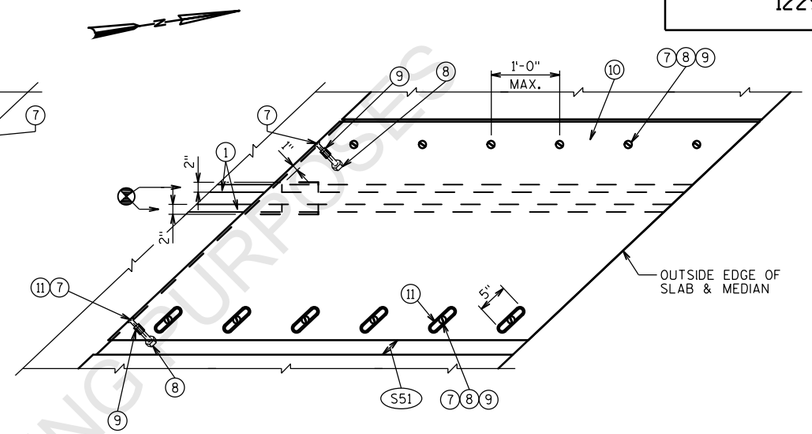
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STATE PROJECT NUMBER
1229-04-74



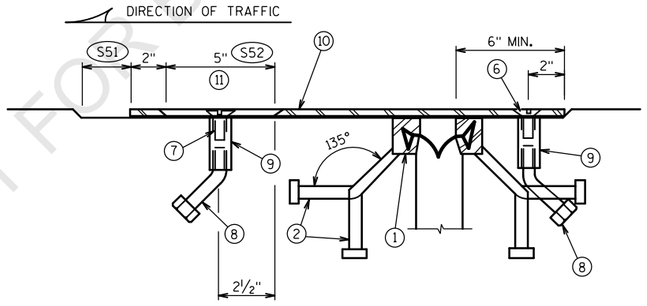
PLAN AT SIDEWALK

AT WEST ABUT.
(EAST ABUT. SIMILAR)

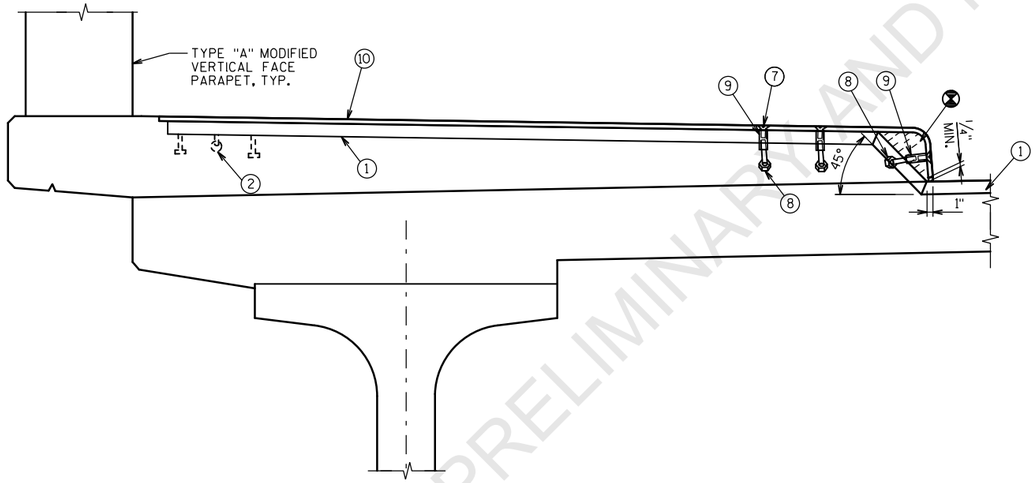


PLAN AT MEDIAN

AT WEST ABUT.
(EAST ABUT. SIMILAR)

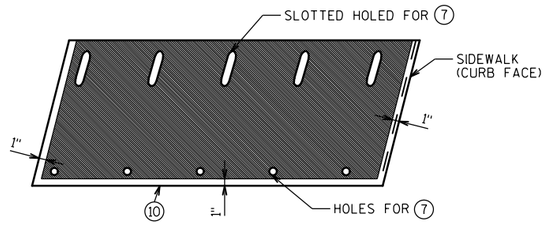


SECTION R-R



SECTION AT SIDEWALK

(LOOKING WEST)
(MEDIAN SIMILAR DETAIL)



PLAN OF SIDEWALK COVER PLATE WITH SLIP-RESISTANT SURFACE

PLACE SLIP-RESISTANT SURFACE ON TOP OF WALKING SURFACE IN SHADED AREA ONLY (NOT ON CURB FACE).

APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170

LEGEND

- (7) ¾" ϕ x 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
- (8) ¾" ϕ x 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- (9) ¾" ϕ x 2¼" GALVANIZED THREADED COUPLING.
- (10) SIDEWALK COVER PLATE ⅜" x 3'-0" x LIMITS SHOWN. BEND DOWN FACE OF SIDEWALK WITH HOLES FOR NO. 7. GALVANIZE PLATE AFTER SLIP RESISTANT SURFACE IS APPLIED.
- (11) 1" x 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. SLOT PARALLEL TO DIRECTION OF MOVEMENT.
- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING
- (S51) JOINT OPENING DIM. ALONG SKEW PLUS ½"
- (S52) DIMENSION ALONG DIRECTION OF MOVEMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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EXPANSION JOINT (2 OF 2)

SHEET 29 OF 38

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PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74

BILL OF BARS

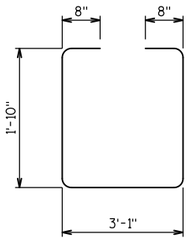
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	SERIES	LOCATION
S401	X	320	45'-0"			SLAB LONG. - BOT.
S402	X	160	24'-3"			SLAB LONG. - BOT.
S403	X	158	45'-0"			SLAB LONG. - TOP
S404	X	79	44'-6"			SLAB LONG. - TOP
S405	X	79	37'-7"			SLAB LONG. - TOP
S906	X	79	55'-0"			SLAB LONG. - TOP CONTINUITY STEEL OVER PIER
S907	X	78	59'-6"			SLAB LONG. - TOP CONTINUITY STEEL OVER PIER
S508	X	455	40'-0"			SLAB TRANS. - TOP & BOT.
S509	X	455	18'-8"			SLAB TRANS. - TOP & BOT.
S510	X	95	30'-0"			SLAB TRANS. - TOP & BOT.
S511	X	24	20'-7"		▲	SLAB TRANS. - TOP
S512	X	114	20'-2"		▲	SLAB TRANS. - TOP & BOT.
S513	X	23	20'-7"		▲	SLAB TRANS. - BOT.
S514	X	114	20'-6"		▲	SLAB TRANS. - TOP & BOT.
S515	X	24	20'-11"		▲	SLAB TRANS. - TOP
S516	X	24	20'-7"		▲	SLAB TRANS. - BOT.
S417	X	28	10'-0"			BETWEEN GIRDERS AT EXPANSION JOINTS
S418	X	24	38'-2"			MEDIAN LONG.
S419	X	2	0'-8"			MEDIAN TRANS. - END
S420	X	2	2'-0"			MEDIAN TRANS. - END
S421	X	2	3'-5"			MEDIAN TRANS. - END
S422	X	144	3'-7"			MEDIAN TRANS.
S423	X	60	45'-0"			SIDEWALK - LONG.
S524	X	638	8'-10"	X		SIDEWALK - TRANS.
S425	X	874	2'-5"	X		SIDEWALK TRANS. TIE TO DECK
S426	X	147	2'-6"			SIDEWALK BOT. - TRANS.
S427	X	5	20'-6"			SIDEWALK WEST END - LONG.
S428	X	10	24'-1"		▲	SIDEWALK WEST END - LONG.
S529	X	20	3'-9"		▲	SIDEWALK WEST END - TRANS.
S430	X	10	22'-6"		▲	SIDEWALK EAST END - LONG.
S431	X	5	26'-5"			SIDEWALK EAST END - LONG.
S532	X	22	5'-4"	X	▲	SIDEWALK EAST END - TRANS.
S433	X	1	1'-7"			SIDEWALK BOT. - TRANS.
S434	X	84	7'-9"	X		ABUTMENT DIAPH. STIRRUPS
S435	X	56	6'-7"	X		ABUTMENT DIAPH. STIRRUPS
S636	X	140	6'-4"			ABUTMENT DIAPH. HORIZ.
S437	X	56	5'-6"			PIER DIAPH. HORIZ.
S438	X	28	4'-1"			PIER DIAPH. HORIZ.
S539	X	14	13'-11"	X		PIER DIAPH. STIRRUPS
S540	X	35	13'-11"	X		PIER DIAPH. STIRRUPS
S541	X	271	4'-9"	X		PARAPET VERT.
S542	X	271	4'-4"	X		PARAPET VERT.
S543	X	24	36'-9"			PARAPET LONGITUDINAL SPAN 1
S544	X	24	38'-10"			PARAPET LONGITUDINAL SPAN 2

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH

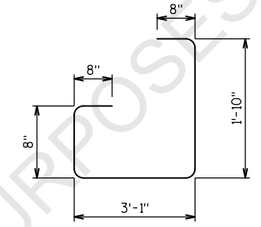
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
S511	1 SERIES OF 24	12'-10" TO 28'-3"
S512	2 SERIES OF 57	9" TO 39'-6"
S513	1 SERIES OF 23	13'-2" TO 27'-11"
S514	2 SERIES OF 57	1'-0" TO 39'-11"
S515	1 SERIES OF 24	13'-2" TO 28'-7"
S516	1 SERIES OF 24	12'-11" TO 28'-3"
S428	1 SERIES OF 10	20'-6" TO 27'-7"
S529	1 SERIES OF 20	9" TO 6'-8"
S430	1 SERIES OF 10	18'-11" TO 26'-0"
S532	1 SERIES OF 22	2'-0" TO 8'-7"

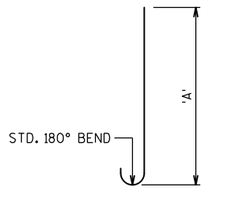
BUNDLE AND TAG EACH SERIES SEPARATELY



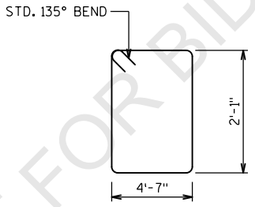
S434



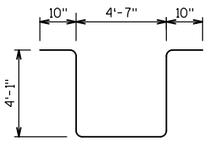
S435



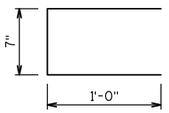
BAR MARK	DIMENSION 'A'
S524	8'-3"
S532	1'-5" TO 8'-0"



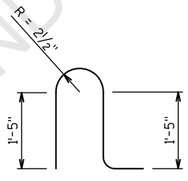
S539



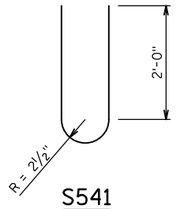
S540



S425



S542



S541

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STATE OF WISCONSIN
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STRUCTURE B-45-103

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SUPERSTRUCTURE
BILL OF BARS

SHEET 30 OF 38

8

8

STATE PROJECT NUMBER
1229-04-74

NOTES

SEE "EAST STRUCTURAL APPROACH SLAB (2 OF 2)" SHEET FOR REINFORCEMENT LAYOUT.

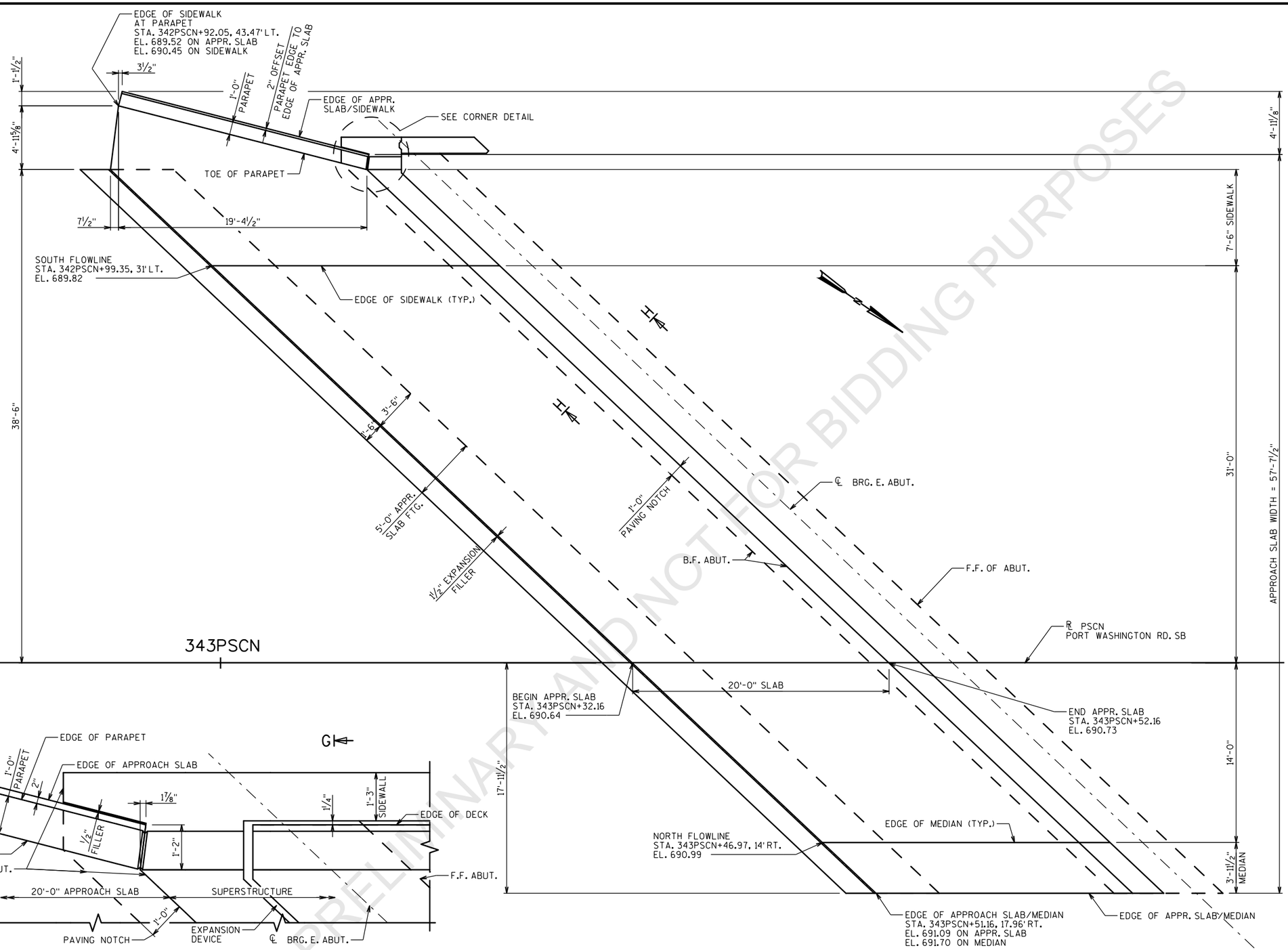
SEE "STRUCTURAL APPROACH SLAB DETAILS" SHEET FOR SECTIONS.

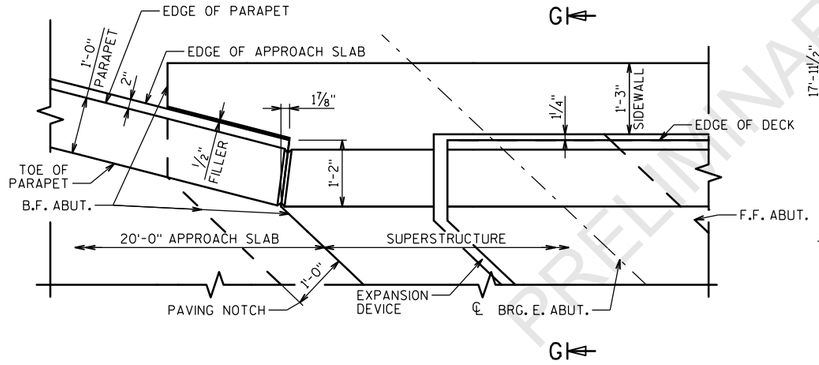
SEE "STRUCTURAL APPROACH SLAB DETAILS" AND "APPROACH VERTICAL FACE PARAPET DETAILS" SHEETS FOR PARAPET REINFORCING TIE PLACEMENT REQUIRED IN THE APPROACH SLABS.

LEGEND

F.F. FRONT FACE

B.F. BACK FACE





CORNER DETAIL

EAST APPROACH SLAB PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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EAST STRUCTURAL APPROACH SLAB (1 OF 2)

SHEET 31 OF 38

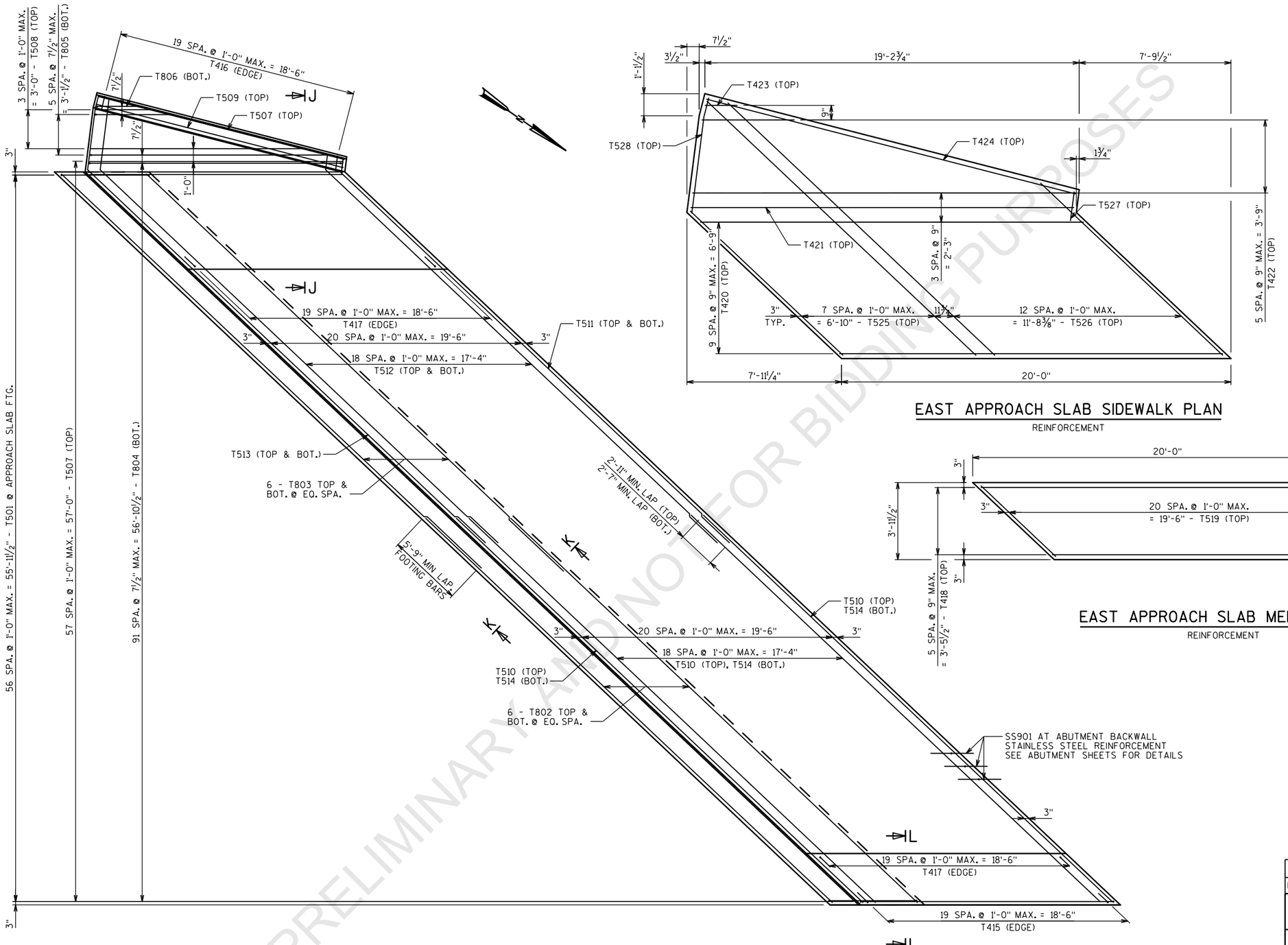
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74

NOTES

SEE "STRUCTURAL APPROACH SLAB DETAILS" SHEET FOR SECTIONS.

SEE "STRUCTURAL APPROACH SLAB DETAILS" SHEET AND "APPROACH VERTICAL FACE PARAPET DETAILS" SHEET FOR PARAPET REINFORCING TIE PLACEMENT IN THE APPROACH SLAB.

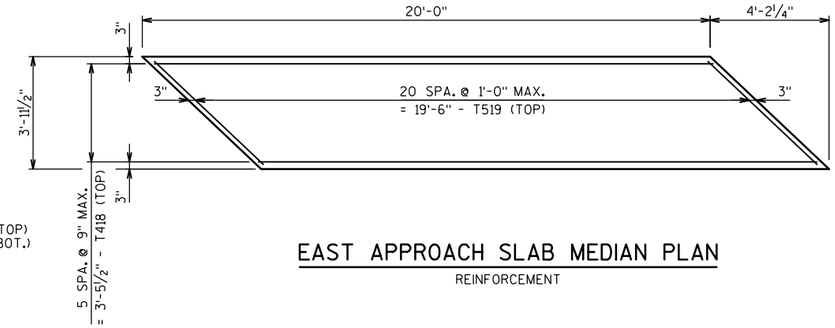


EAST APPROACH SLAB PLAN

REINFORCEMENT

EAST APPROACH SLAB SIDEWALK PLAN

REINFORCEMENT



EAST APPROACH SLAB MEDIAN PLAN

REINFORCEMENT

SS901 AT ABUTMENT BACKWALL
STAINLESS STEEL REINFORCEMENT
SEE ABUTMENT SHEETS FOR DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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EAST STRUCTURAL APPROACH SLAB (2 OF 2)

SHEET 32 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

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PLOT BY : ejelinek
PLOT SCALE : 8:1

STATE PROJECT NUMBER
1229-04-74

NOTES

SEE "WEST STRUCTURAL APPROACH SLAB (2 OF 2)" SHEET FOR REINFORCEMENT LAYOUT.

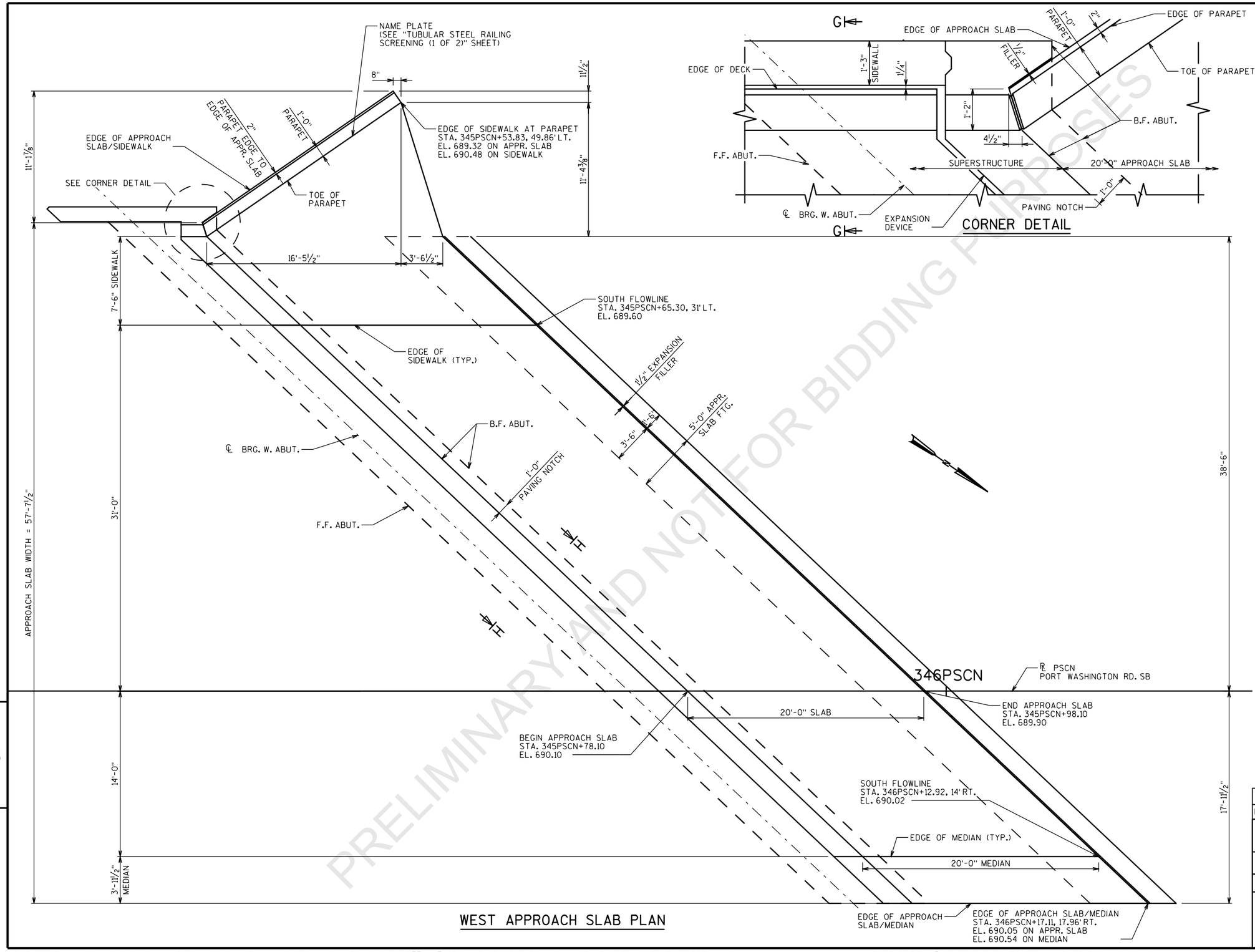
SEE "STRUCTURAL APPROACH SLAB DETAILS" SHEET FOR SECTIONS.

SEE "STRUCTURAL APPROACH SLAB DETAILS" AND "APPROACH VERTICAL FACE PARAPET DETAILS" SHEETS FOR PARAPET REINFORCING TIE PLACEMENT REQUIRED IN THE APPROACH SLABS.

LEGEND

F.F. FRONT FACE

B.F. BACK FACE



WEST APPROACH SLAB PLAN

CORNER DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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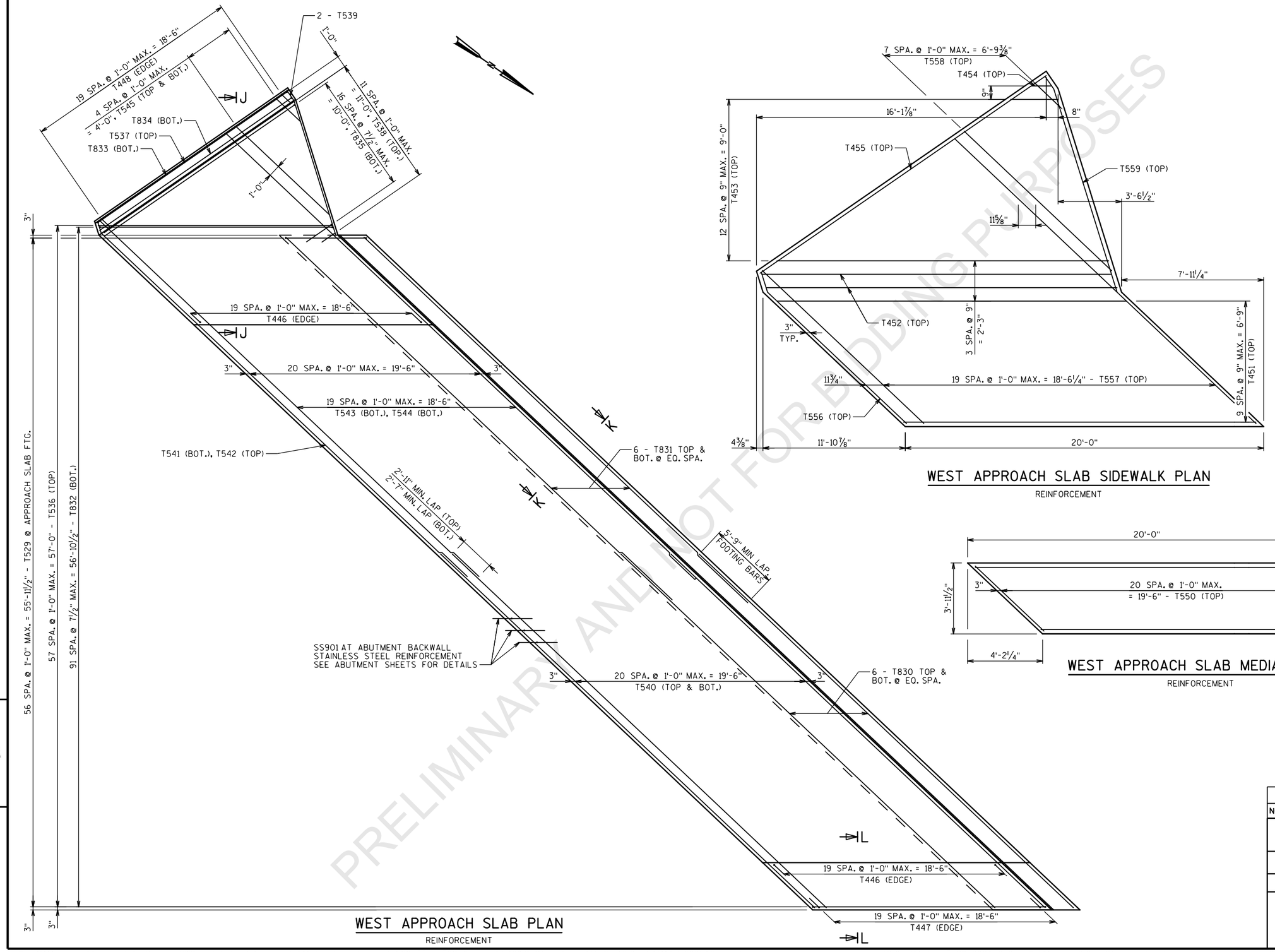
WEST STRUCTURAL APPROACH SLAB (1 OF 2)

SHEET 33 OF 38

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

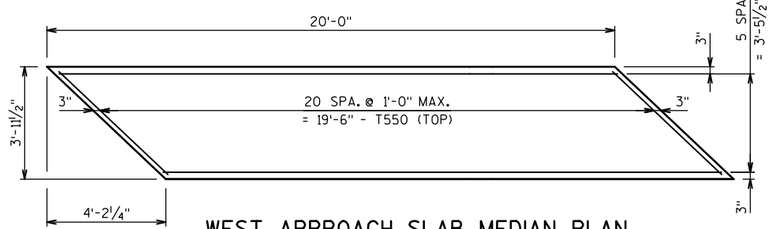


WEST APPROACH SLAB PLAN

REINFORCEMENT

WEST APPROACH SLAB SIDEWALK PLAN

REINFORCEMENT



WEST APPROACH SLAB MEDIAN PLAN

REINFORCEMENT

STATE PROJECT NUMBER

1229-04-74

NOTES

SEE "STRUCTURAL APPROACH SLAB DETAILS" SHEET FOR SECTIONS.

SEE "STRUCTURAL APPROACH SLAB DETAILS" SHEET AND "APPROACH VERTICAL FACE PARAPET DETAILS" SHEET FOR PARAPET REINFORCING TIE PLACEMENT IN THE APPROACH SLAB.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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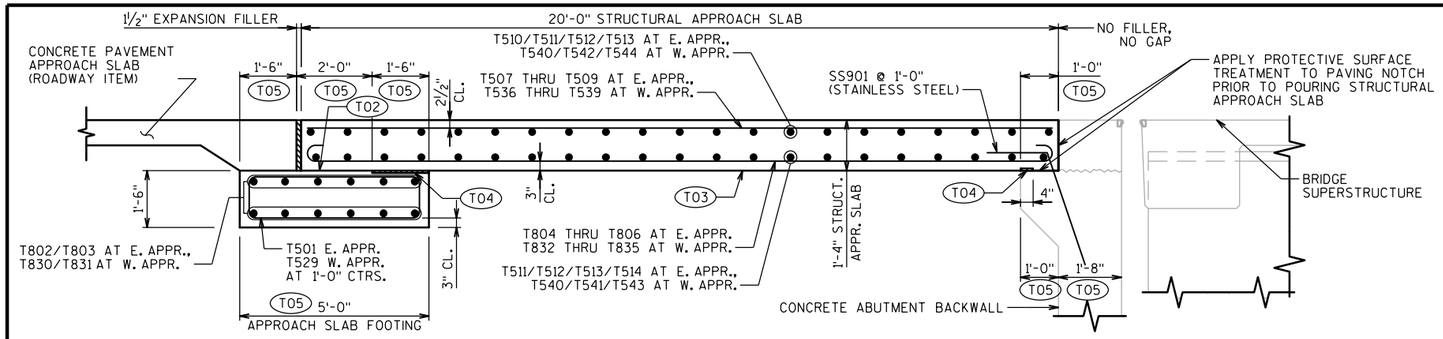
WEST STRUCTURAL APPROACH SLAB (2 OF 2)

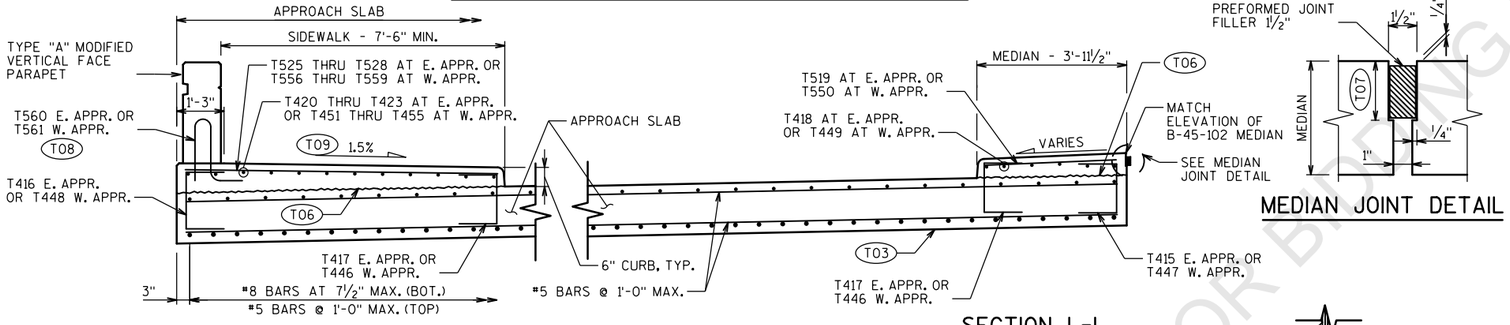
SHEET 34 OF 38

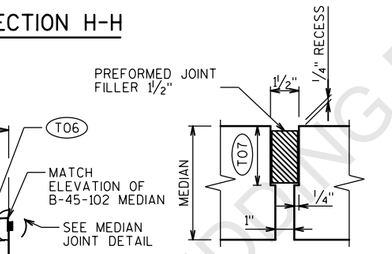
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PLOT DATE : 7/28/2021 6:24:38 PM
PLOT BY : ejelinek
PLOT SCALE : 8:1

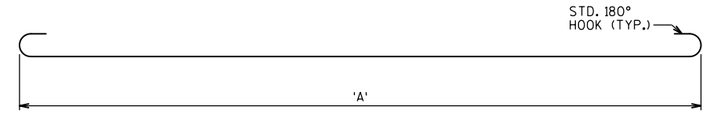
STATE PROJECT NUMBER
1229-04-74



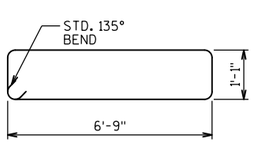




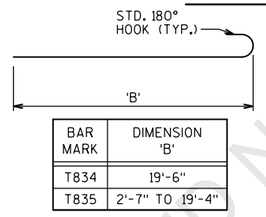
MEDIAN JOINT DETAIL



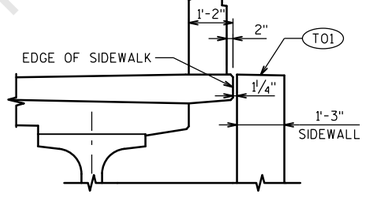
BAR MARK	DIMENSION 'A'
T804	19'-6"
T805	6'-0" TO 18'-7"
T806	3'-6"
T832	19'-6"
T833	19'-4"



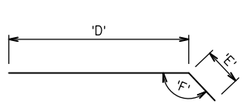
T501, T529



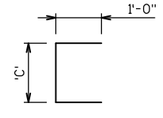
BAR MARK	DIMENSION 'B'
T834	19'-6"
T835	2'-7" TO 19'-4"



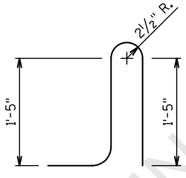
SECTION G-G



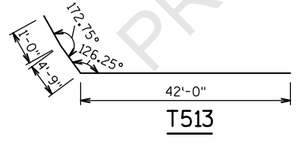
BAR MARK	DIMENSION 'D'	DIMENSION 'E'	ANGLE 'F'
T511	41'-3"	1'-2"	126.25°
T512	42'-4"	1'-2" TO 5'-7"	126.25°
T528	5'-0"	1'-0"	172.75°
T539	11'-10"	1'-0"	162.5°
T541	42'-0"	1'-0"	150.5°
T542	42'-4"	1'-0"	150.5°
T556	10'-8"	1'-2"	150.75°
T559	11'-10"	1'-10"	162.5°



BAR MARK	DIMENSION 'C'
T415	1'-4"
T416	1'-7" TO 1'-9"
T417	1'-4"
T446	1'-4"
T447	1'-4"
T448	1'-7" TO 2'-0"



T560, T561



T513

LEGEND

(T01) SLOPE TO DRAIN. SEE ABUTMENT SHEETS FOR DETAIL.

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

(T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.

(T04) ¾" PREFORMED JOINT FILLER ACCORDING TO STD. SPEC 502.2.7. (1'-6" WIDE x PAVING NOTCH LENGTH)

(T05) MEASURED NORMAL TO THE ABUTMENT.

(T06) CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR MATCH BRIDGE X-SLOPE.

(T07) TO MATCH DEPTH OF COMPRESSION JOINT SEAL NOTCH ON BRIDGE.

(T08) SEE "APPROACH VERTICAL FACE PARAPET DETAILS" SHEET FOR LAYOUT.

(T09) +/- 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
T805	1 SERIES OF 6	7'-10" TO 20'-5"
T508	1 SERIES OF 4	4'-6" TO 16'-7"
T512	2 SERIES OF 19	43'-6" TO 47'-11"
T416	1 SERIES OF 20	3'-5" TO 3'-7"
T422	1 SERIES OF 6	4'-8" TO 19'-8"
T525	1 SERIES OF 8	10'-9" TO 18'-11"
T526	1 SERIES OF 13	12'-10" TO 18'-10"
T835	1 SERIES OF 17	3'-6" TO 20'-3"
T538	1 SERIES OF 12	1'-4" TO 19'-4"
T543	1 SERIES OF 20	43'-2" TO 53'-10"
T544	1 SERIES OF 20	43'-6" TO 54'-2"
T545	2 SERIES OF 5	2'-8" TO 10'-8"
T448	1 SERIES OF 20	3'-5" TO 3'-10"
T453	1 SERIES OF 13	2'-7" TO 18'-6"
T557	1 SERIES OF 20	12'-5" TO 23'-1"
T558	1 SERIES OF 8	2'-0" TO 11'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	SERIES	LOCATION
T501	X	57	16'-4"	X		EAST APPROACH SLAB FTG. - STIRRUP
T802	X	12	43'-1"			EAST APPROACH SLAB FTG. - TRANS.
T803	X	12	44'-6"			EAST APPROACH SLAB FTG. - TRANS.
T804	X	92	21'-4"	X		EAST APPROACH SLAB - LONG. - BOT.
T805	X	6	14'-2"	X	▲	EAST APPROACH SLAB - LONG. - BOT. (SOUTH EDGE)
T806	X	1	5'-3"	X		EAST APPROACH SLAB - LONG. - BOT. (SOUTH END)
T507	X	59	19'-6"			EAST APPROACH SLAB - LONG. - TOP
T508	X	4	10'-6"		▲	EAST APPROACH SLAB - LONG. - TOP (SOUTH END)
T509	X	1	19'-7"			EAST APPROACH SLAB - LONG. - TOP (SOUTH END)
T510	X	21	43'-4"			EAST APPROACH SLAB - TRANS. - TOP (NORTH HALF)
T511	X	2	42'-5"	X		EAST APPROACH SLAB - TRANS. - TOP & BOT. (SOUTH HALF EDGE)
T512	X	38	45'-9"	X	▲	EAST APPROACH SLAB - TRANS.TOP & BOT. (SOUTH HALF)
T513	X	2	47'-9"	X		EAST APPROACH SLAB - TRANS. - TOP & BOT. (SOUTH HALF EDGE)
T514	X	21	43'-0"			EAST APPROACH SLAB - TRANS. - BOT. (NORTH HALF)
T415	X	20	3'-3"	X		EAST APPROACH - VERT. - MEDIAN OUTSIDE EDGE
T416	X	20	3'-6"	X	▲	EAST APPROACH - VERT. - SIDEWALK OUTSIDE EDGE
T417	X	40	3'-3"	X		EAST APPROACH - VERT. - SIDEWALK & MEDIAN INSIDE EDGE
T418	X	6	19'-8"			EAST APPROACH - LONG. - MEDIAN
T519	X	21	3'-6"			EAST APPROACH - TRANS. - MEDIAN
T420	X	10	19'-8"			EAST APPROACH - LONG. - SIDEWALK
T421	X	1	19'-7"			EAST APPROACH - LONG. - SIDEWALK
T422	X	6	12'-2"		▲	EAST APPROACH - LONG. - SIDEWALK
T423	X	1	1'-7"			EAST APPROACH - LONG. - SIDEWALK
T424	X	1	19'-6"			EAST APPROACH - LONG. - SIDEWALK (EDGE)
T525	X	8	14'-10"		▲	EAST APPROACH - TRANS. - SIDEWALK
T526	X	13	15'-10"		▲	EAST APPROACH - TRANS. - SIDEWALK
T527	X	1	1'-6"			EAST APPROACH - TRANS. - SIDEWALK (EDGE)
T528	X	1	6'-0"	X		EAST APPROACH - TRANS. - SIDEWALK (EDGE)
T529	X	57	16'-4"	X		WEST APPROACH SLAB FTG. - STIRRUP
T830	X	12	43'-1"			WEST APPROACH SLAB FTG. - TRANS.
T831	X	12	44'-6"			WEST APPROACH SLAB FTG. - TRANS.
T832	X	92	21'-4"	X		WEST APPROACH SLAB - LONG. - BOT.
T833	X	1	21'-2"	X		WEST APPROACH SLAB - LONG. - BOT. SOUTH EDGE
T834	X	1	20'-5"	X		WEST APPROACH SLAB - LONG. - BOT. (SOUTH EDGE)
T835	X	17	11'-10"	X	▲	WEST APPROACH SLAB - LONG. - BOT. (SOUTH END)
T536	X	58	19'-6"			WEST APPROACH SLAB - LONG. - TOP
T537	X	1	19'-4"			WEST APPROACH SLAB - LONG. - TOP (SOUTH END)
T538	X	12	10'-4"		▲	WEST APPROACH SLAB - LONG. - TOP (SOUTH END)
T539	X	2	12'-10"	X		WEST APPROACH SLAB - LONG. - TOP & BOT. (SOUTH END - WEST EDGE)
T540	X	42	43'-1"			WEST APPROACH SLAB - TRANS. - TOP & BOT. (NORTH HALF)
T541	X	1	43'-0"	X		WEST APPROACH SLAB - TRANS. - BOT. (SOUTH HALF EDGE)
T542	X	1	43'-4"	X		WEST APPROACH SLAB - TRANS. - TOP (SOUTH HALF EDGE)
T543	X	20	48'-6"		▲	WEST APPROACH SLAB - TRANS. - BOT. (SOUTH HALF)
T544	X	20	48'-10"		▲	WEST APPROACH SLAB - TRANS. - TOP (SOUTH HALF)
T545	X	10	6'-8"		▲	WEST APPROACH SLAB - TRANS.TOP & BOT. (SOUTH HALF CORNER)
T446	X	40	3'-3"	X		WEST APPROACH - VERT. - SIDEWALK & MEDIAN INSIDE EDGE
T447	X	20	3'-3"	X		WEST APPROACH - VERT. - MEDIAN OUTSIDE EDGE
T448	X	20	3'-7"	X	▲	WEST APPROACH - VERT. - SIDEWALK OUTSIDE EDGE
T449	X	6	19'-8"			WEST APPROACH - LONG. - MEDIAN
T550	X	21	3'-6"			WEST APPROACH - TRANS. - MEDIAN
T451	X	10	19'-8"			WEST APPROACH - LONG. - SIDEWALK
T452	X	2	19'-6"			WEST APPROACH - LONG. - SIDEWALK
T453	X	13	10'-7"		▲	WEST APPROACH - LONG. - SIDEWALK
T454	X	1	1'-1"			WEST APPROACH - LONG. - SIDEWALK
T455	X	1	19'-4"			WEST APPROACH - LONG. - SIDEWALK (EDGE)
T556	X	1	11'-10"	X		WEST APPROACH - TRANS. - SIDEWALK
T557	X	20	17'-9"		▲	WEST APPROACH - TRANS. - SIDEWALK
T558	X	8	6'-8"		▲	WEST APPROACH - TRANS. - SIDEWALK
T559	X	1	12'-8"	X		WEST APPROACH - TRANS. - SIDEWALK (EDGE)
T560	X	25	4'-4"	X		EAST APPROACH - PARAPET VERT.
T561	X	24	4'-4"	X		WEST APPROACH - PARAPET VERT.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

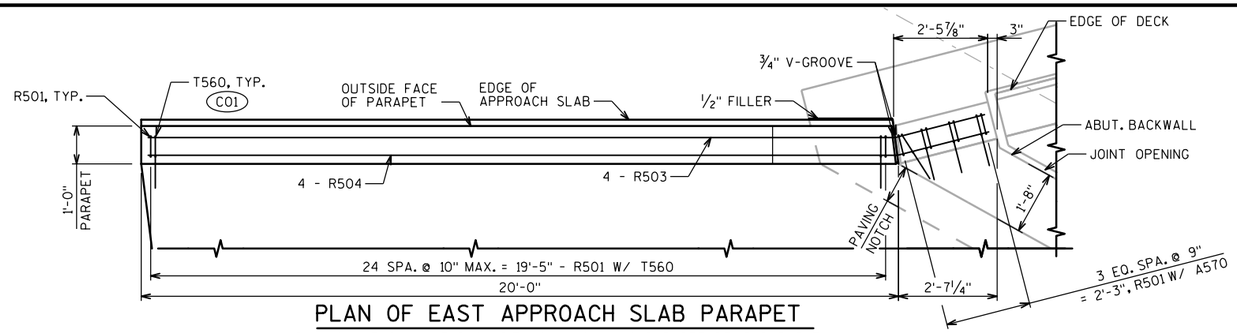
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STRUCUTRAL APPROACH SLAB DETAILS

SHEET 35 OF 38

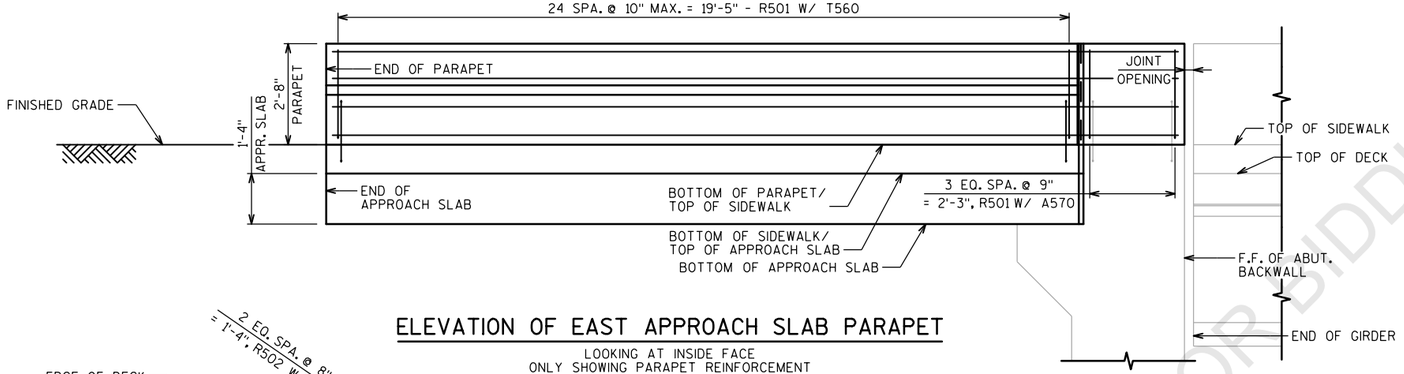
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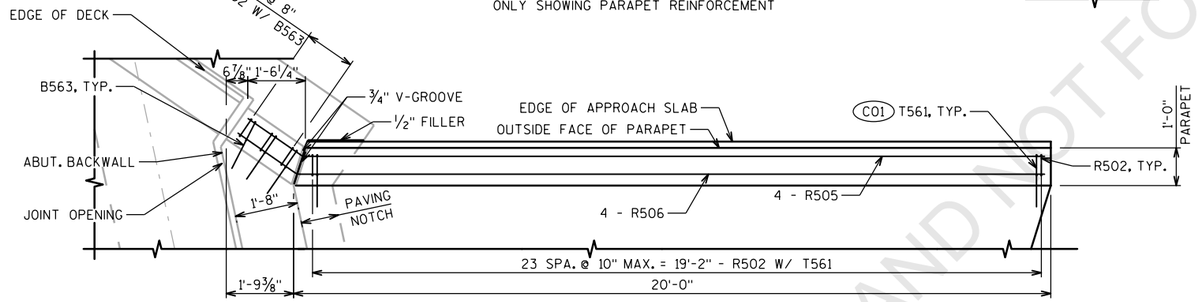
PLAN OF EAST APPROACH SLAB PARAPET

RAILING NOT SHOWN FOR CLARITY ONLY SHOWING PARAPET REINFORCEMENT



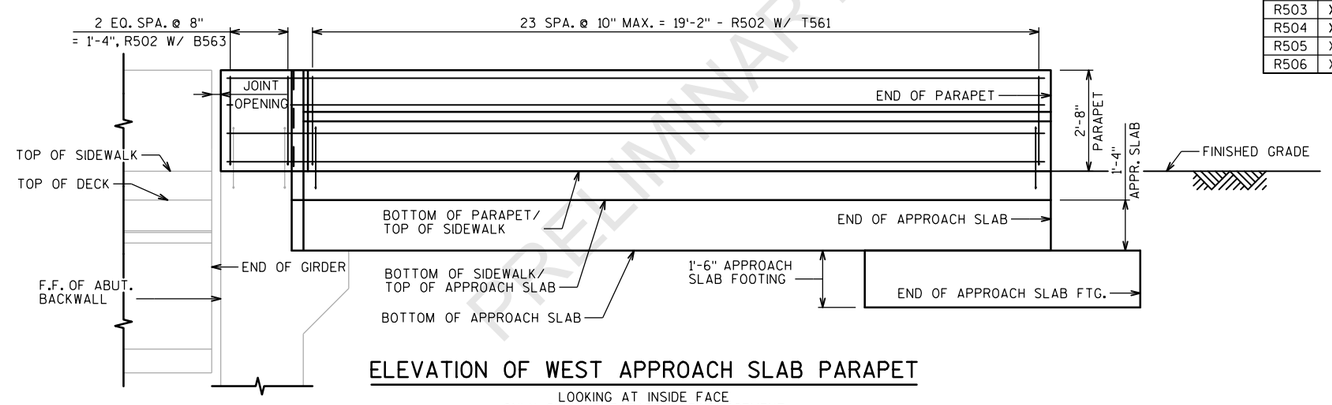
ELEVATION OF EAST APPROACH SLAB PARAPET

LOOKING AT INSIDE FACE
ONLY SHOWING PARAPET REINFORCEMENT



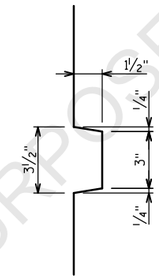
PLAN OF WEST APPROACH SLAB PARAPET

RAILING NOT SHOWN FOR CLARITY
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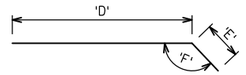


ELEVATION OF WEST APPROACH SLAB PARAPET

LOOKING AT INSIDE FACE
ONLY SHOWING PARAPET REINFORCEMENT



DETAIL A

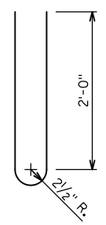


R503, R504, R505 & R506

BAR MARK	DIMENSION 'D'	DIMENSION 'E'	ANGLE 'F'
R503	19'-8"	2'-4"	166°
R504	19'-9"	2'-5"	166°
R505	19'-7"	1'-9"	145.25°
R506	19'-9"	1'-11"	145.25°

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
R501	X	29	4'-9"	X	EAST PARAPET VERT.
R502	X	27	4'-9"	X	WEST PARAPET VERT.
R503	X	4	22'-0"	X	EAST PARAPET LONGITUDINAL
R504	X	4	22'-2"	X	EAST PARAPET LONGITUDINAL
R505	X	4	21'-4"	X	WEST PARAPET LONGITUDINAL
R506	X	4	21'-8"	X	WEST PARAPET LONGITUDINAL



R501 & R502

LEGEND

C01 T560 OR T561 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL AND ABUT. STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

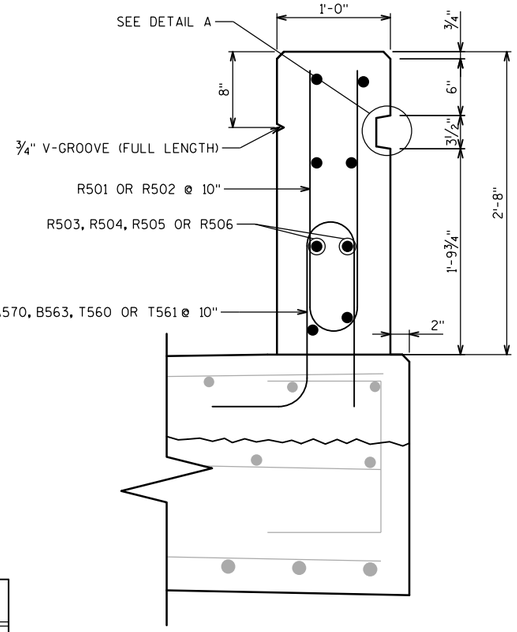
F.F. FRONT FACE

NOTES

FOR PARAPET ON SUPERSTRUCTURE SEE "SUPERSTRUCTURE CROSS SECTION" SHEET

FOR A AND B BARS, SEE ABUTMENT SHEETS.

FOR T BARS, SEE STRUCTURAL APPROACH SLAB SHEETS.



SECTION THRU PARAPET

ON APPROACH SLAB SIDEWALK - AT ABUTMENT SIMILAR
(RAILING NOT SHOWN FOR CLARITY)

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APPROACH VERTICAL FACE PARAPET DETAILS

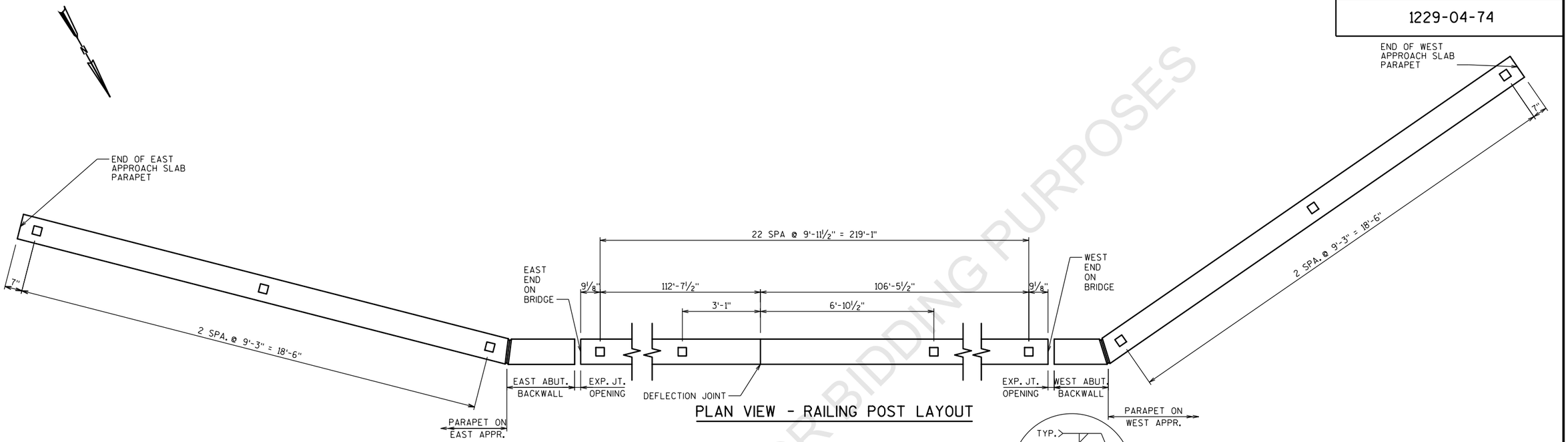
SHEET 36 OF 38

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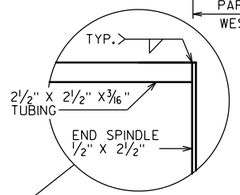
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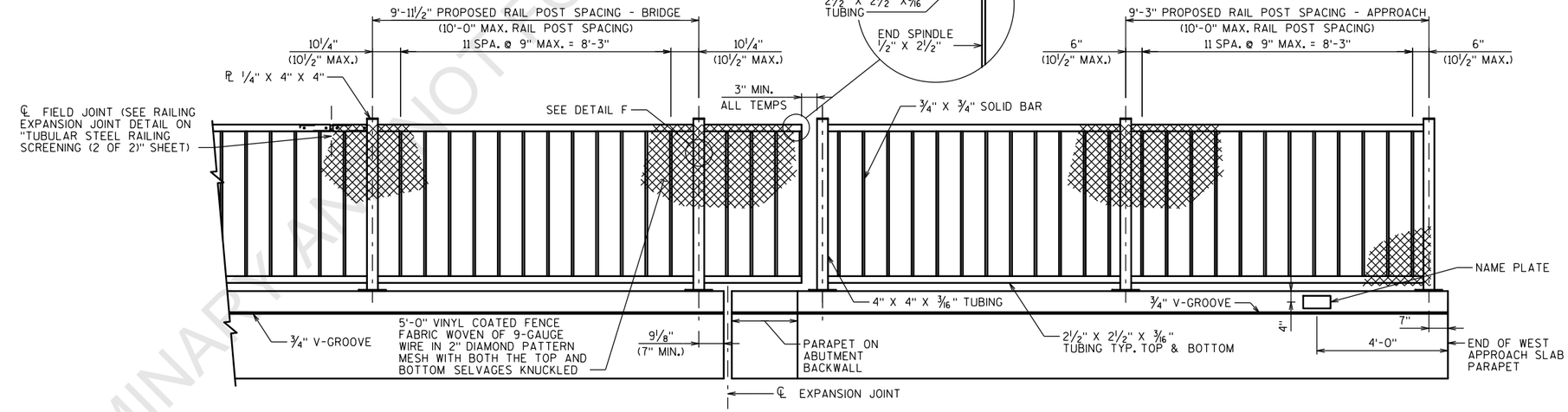
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PLOT SCALE : 4:1

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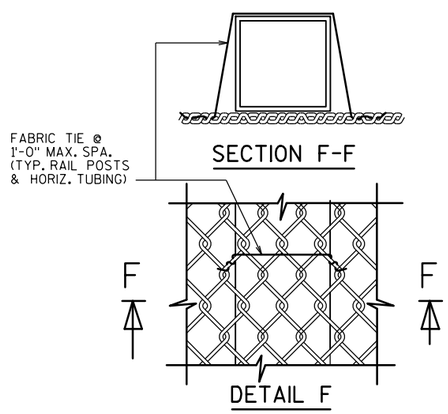


PLAN VIEW - RAILING POST LAYOUT





INSIDE ELEVATION OF RAILING



DETAIL F

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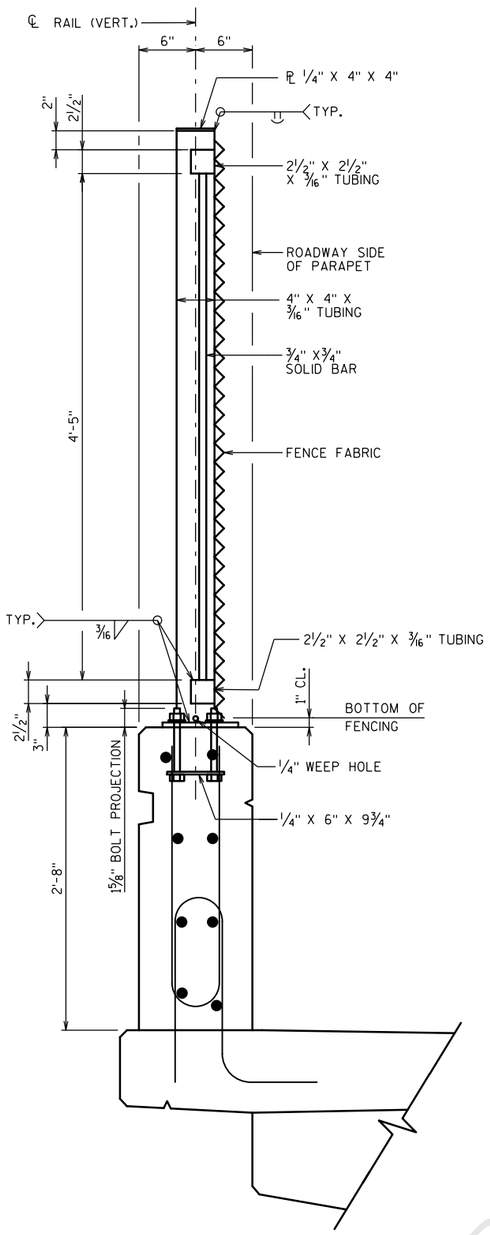
TUBULAR STEEL RAILING SCREENING (1 OF 2)

SHEET 37 OF 38

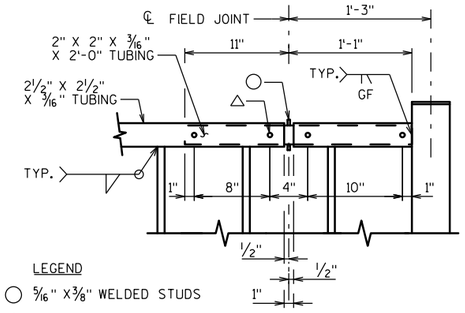
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SECTION THRU RAILING

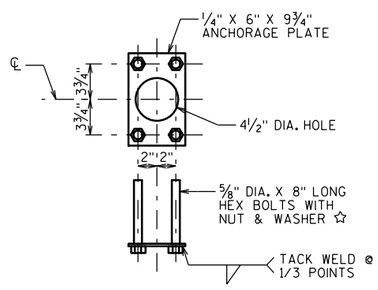


LEGEND

○ 5/16" X 3/8" WELDED STUDS

△ WELD BEAD ON EACH SIDE OF TUBE. GRIND BEADS SO THAT SLEEVE FITS FREELY INSIDE THE 2 1/2" X 2 1/2" TUBE.

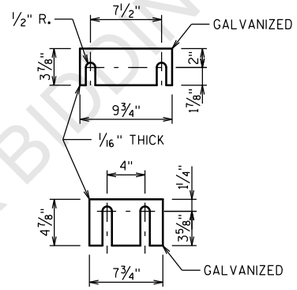
RAILING EXPANSION JOINT DETAIL



ANCHORAGE DETAIL

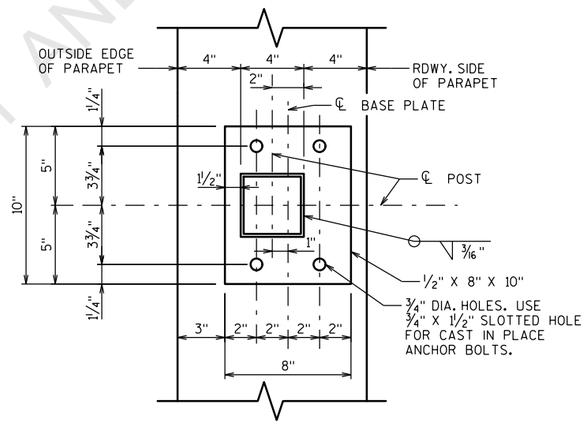
☆ALTERNATIVE ANCHORAGE: ADHESIVE ANCHORS 5/8-INCH, EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS.

NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.



SHIM PLATE DETAILS

TWO SHIMS OF EACH SIZE REQUIRED PER POST



BASE PLATE

NOTES

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. PLATES, ANGLES, BARS AND SHIMS SHALL CONFORM TO ASTM A709, GRADE 36. FENCE FABRIC SHALL CONFORM TO F668, CLASS 2B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPACINGS ARE TAKEN HORIZONTAL ALONG CENTERLINE OF RAILING AT BASE OF POST.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.☆

THE BID ITEM SHALL BE "RAILING TUBULAR SCREENING" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

ALL RAILING MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED FEDERAL COLOR NO. 27038, BLACK. FENCE FABRIC AND TIES TO BE VINYL-COATED. COLOR SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-103

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TUBULAR STEEL RAILING SCREENING (2 OF 2)

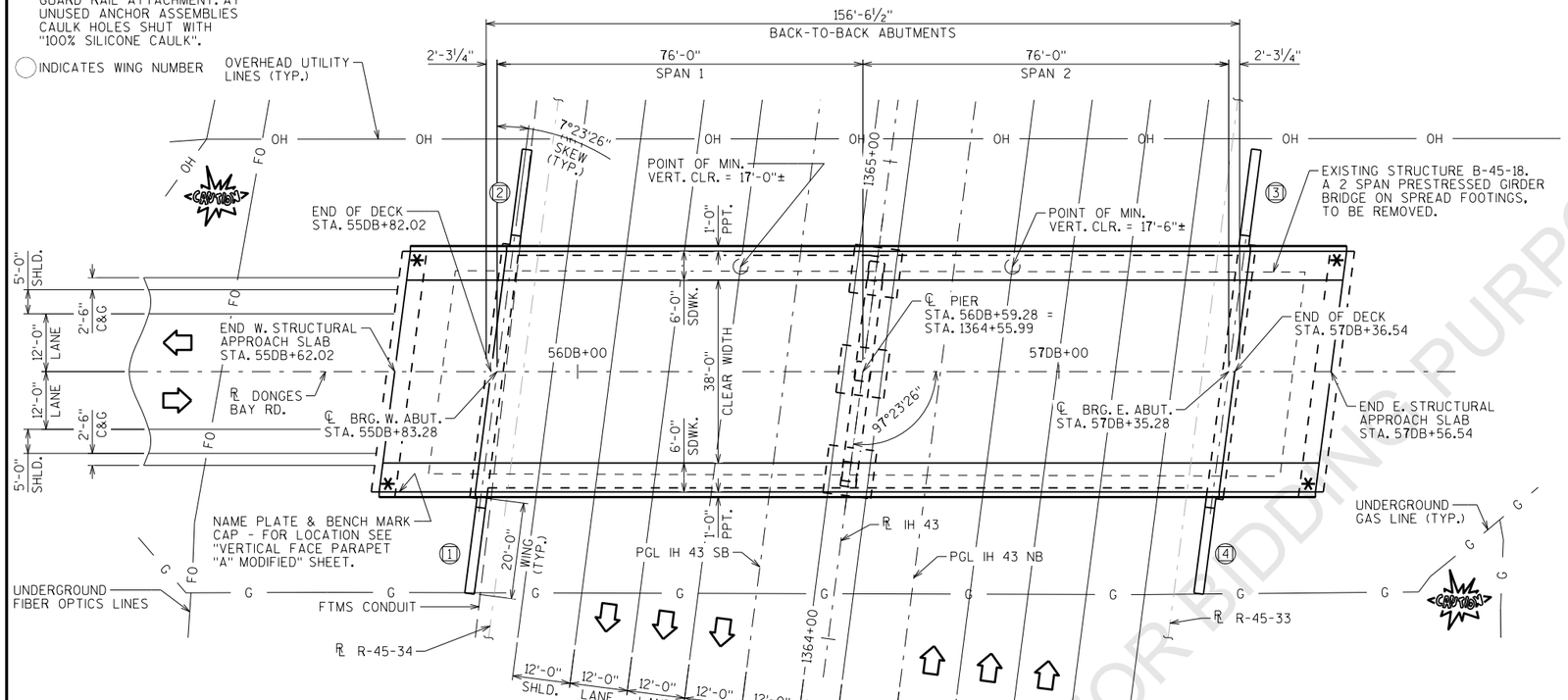
SHEET 38 OF 38

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1229-04-74

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

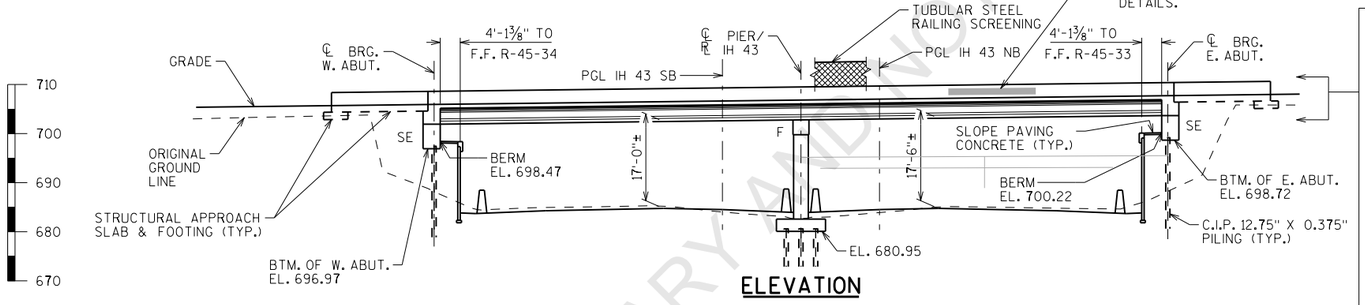
◯ INDICATES WING NUMBER



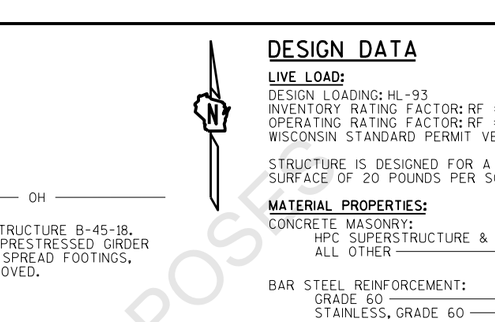
PLAN

2-SPAN, 36W" PRESTRESSED GIRDERS

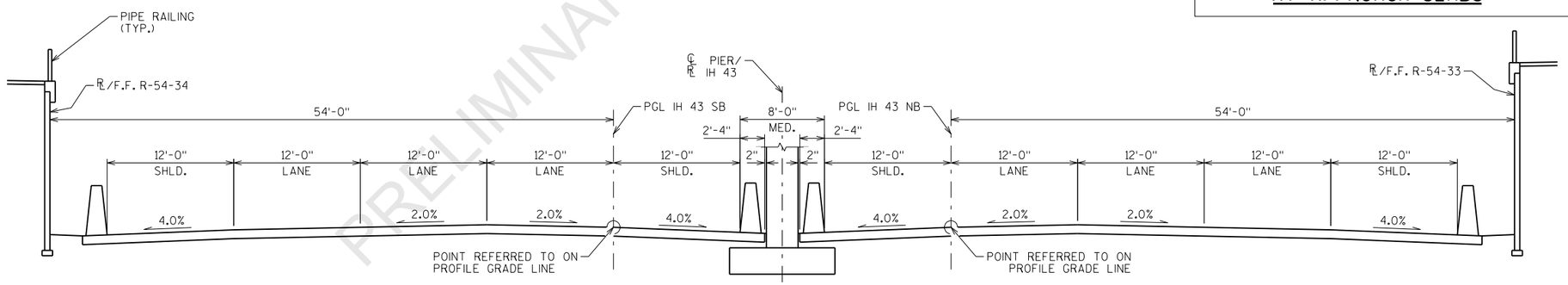
ROADWAY NAME. SEE "VERTICAL FACE PARAPET "A" MODIFIED" SHEET FOR DETAILS.



ELEVATION



TYPICAL FILL SECTION AT APPROACH SLABS



TYPICAL FINISHED SECTION THRU IH 43

NORMAL TO IH 43

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.01
OPERATING RATING FACTOR: RF = 1.31
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:
HPC SUPERSTRUCTURE & STRUCTURAL APPROACH SLAB — 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.
STAINLESS, 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 C.I.P. 12.75" X 0.375" PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS ✱✱ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 100 FEET LONG AT WEST ABTMENT.
ESTIMATED 105 FEET LONG AT EAST ABUTMENT.

PIER TO BE SUPPORTED ON C.I.P. 12.75" X 0.375" PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS ✱✱ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 70 FEET LONG.

✱✱ 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

DONGES BAY RD.
ADT = 3,800 (2045)
R.D.S. = 40 M.P.H.

IH 43
ADT = 84,300 (2045)
R.D.S. = 75 M.P.H.

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. PIER
9. PIER DETAILS
10. 36W" PRESTRESSED GIRDER DETAILS 1
11. 36W" PRESTRESSED GIRDER DETAILS 2
12. STEEL DIAPHRAGM
13. SUPERSTRUCTURE DETAILS 1
14. SUPERSTRUCTURE DETAILS 2
15. SUPERSTRUCTURE DETAILS 3
16. SUPERSTRUCTURE DETAILS 4
17. VERTICAL FACE PARAPET "A" MODIFIED
18. TUBULAR STEEL RAILING SCREENING
19. WEST STRUCTURAL APPROACH SLAB
20. WEST STRUCTURAL APPROACH SLAB DETAILS
21. EAST STRUCTURAL APPROACH SLAB
22. EAST STRUCTURAL APPROACH SLAB DETAILS
23. ALTERNATE CONSTRUCTION JOINT

STRUCTURE DESIGN CONTACTS:
JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-45-106

DONGES BAY RD OVER IH 43

COUNTY	CITY
OZAUKEE	MEQUON

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
JLR	MWB	WWR	JLR

GENERAL PLAN

SHEET 1 OF 23

I.D. 1229-04-02B

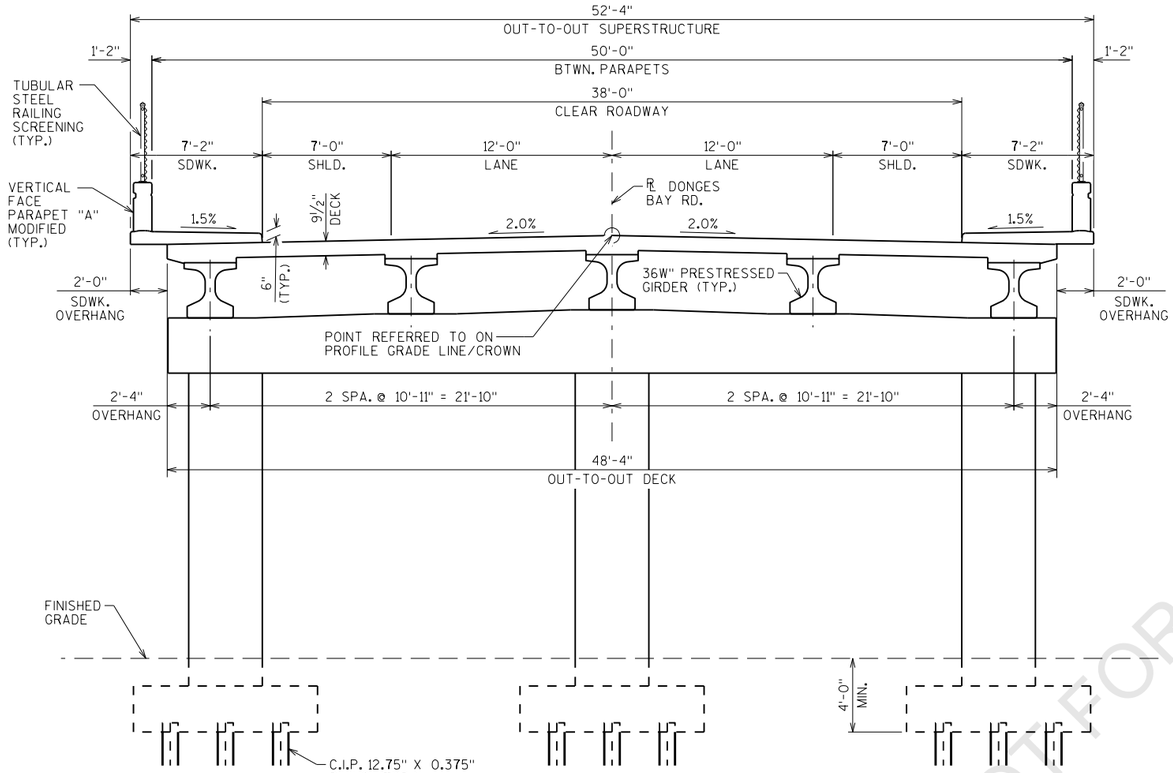
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PRELIMINARY AND NOT TO BE USED FOR BIDDING PURPOSES

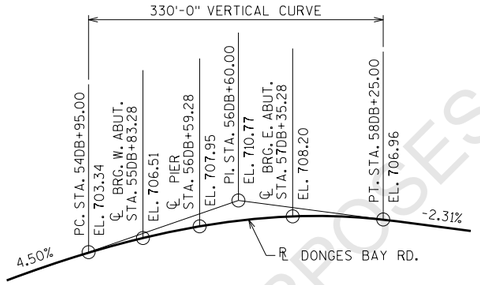
STATE PROJECT NUMBER

1229-04-74

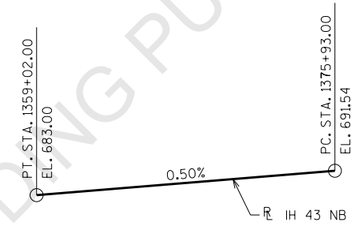


CROSS SECTION THRU BRIDGE

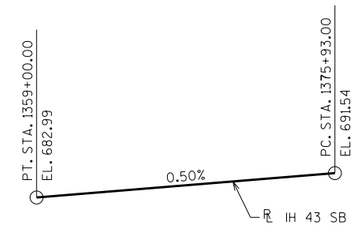
LOOKING UPSTATION



PROFILE GRADE LINE - DONGES BAY RD.



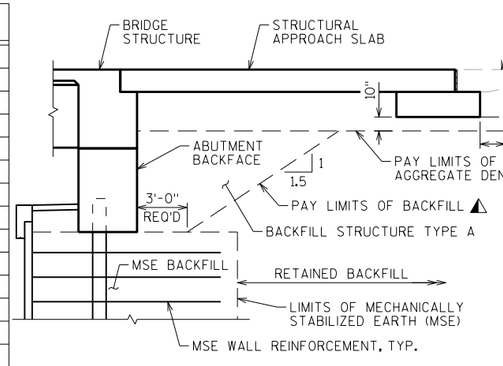
PROFILE GRADE LINE - IH 43 NB



PROFILE GRADE LINE - IH 43 SB

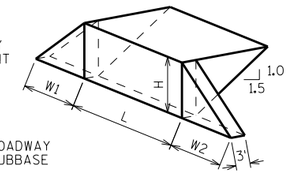
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	W. STRUCT. APP. SLAB	WEST ABUT.	PIER	EAST ABUT.	E. STRUCT. APP. SLAB	TOTALS
203.0220	REMOVING STRUCTURE B-45-18	EACH	——	——	——	——	——	——	1
203.0211.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-45-18	EACH	——	——	——	——	——	——	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-45-106	EACH	——	——	——	——	——	——	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	——	——	205	——	205	——	410
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	——	165	——	——	——	165	330
501.1000.S	ICE HOT WEATHER CONCRETING	LB	2798	473	——	——	——	473	3744
502.0100	CONCRETE MASONRY BRIDGES	CY	——	15	61	74	60	15	225
502.3200	PROTECTIVE SURFACE TREATMENT	SY	903	114	——	——	——	114	1131
502.3210	PIGMENTED SURFACE SEALER	SY	129	17	——	——	——	17	163
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	764	——	——	——	——	——	764
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	——	——	3750	2220	3660	——	9630
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	76,910	11,520	2270	11,920	2280	11,520	116,420
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	1800	——	——	——	——	——	1800
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	——	——	5	10	5	——	20
506.4000	STEEL DIAPHRAGMS B-45-106	EACH	8	——	——	——	——	——	8
513.4091	RAILING TUBULAR SCREENING	LF	309	40	——	——	——	40	389
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	——	——	12	——	12	——	24
550.2126	PILING CIP CONCRETE 12 3/4 X 0.375-INCH	LF	——	——	1000	1330	1050	——	3380
604.0400	SLOPE PAVING CONCRETE	SY	——	——	38	——	38	——	76
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	——	2	——	——	——	2	4
SPV.0035	HIGH PERFORMANCE CONCRETE (HPC) STRUCTURES	CY	373	63	——	——	——	63	499
SPV.0165	LONGITUDINAL GROOVING BRIDGE DECK	SF	5872	760	——	——	——	760	7392
	NON-BID ITEMS								
	FILLER	SIZE	---	---	---	---	---	---	½", ¾", 1½"



TYPICAL SECTION THRU ABUTMENT

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



ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ABUTMENT

L = OUT TO OUT OF ABUTMENT BODY (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
W1 = WING 1 LENGTH (FT)
W2 = WING 2 LENGTH (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)

$V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3.0')(0.5)(W1+W2)(H)$
$V_{CY} = V_{CF}\,(EF)/27$
$V_{TON} = V_{CY}\,(2.0)$

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.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-45-106" SHALL BE THE EXISTING GROUNDLINE.

AT THE BACK FACE 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 TYPE A. ALSO EXCLUDED IS THE "BASE AGGREGATE DENSE 1 1/4-INCH" AS DETAILED ON THE STRUCTURAL APPROACH SLAB SHEETS.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

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 EXPOSED TOP OF DECK, SIDEWALK, AND APPROACH SLAB SURFACES AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING CONCRETE TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "36W PRESTRESSED GIRDER DETAILS 2" SHEET.

COORDINATE CONSTRUCTION OF ABUTMENTS WITH CONSTRUCTION OF RETAINING WALLS R-45-33 & R-45-34.

HIGH PERFORMANCE CONCRETE SHALL BE USED ON DECK, DECK HAUNCHES, CONCRETE DIAPHRAGMS, SIDEWALKS, PARAPETS (INCLUDING SIDEWALKS & PARAPETS ON STRUCTURAL APPROACH SLABS), AND STRUCTURAL APPROACH SLABS. (NOT INCLUDING STRUCTURAL APPROACH SLAB FOOTINGS)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

CROSS SECTION & QUANTITIES

SHEET 2

8

8

SCALE = 4.00

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
DB-01	JANUARY 9, 2020	360845	602653
DB-02	JANUARY 14, 2020	360799	602738
DB-03	JANUARY 7, 2020	360812	602880
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) OZAUKEE COUNTY			

NOTE:

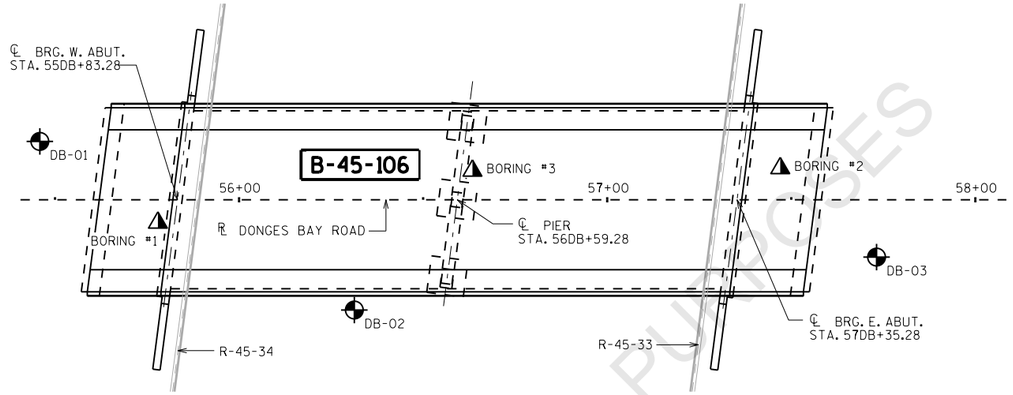
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

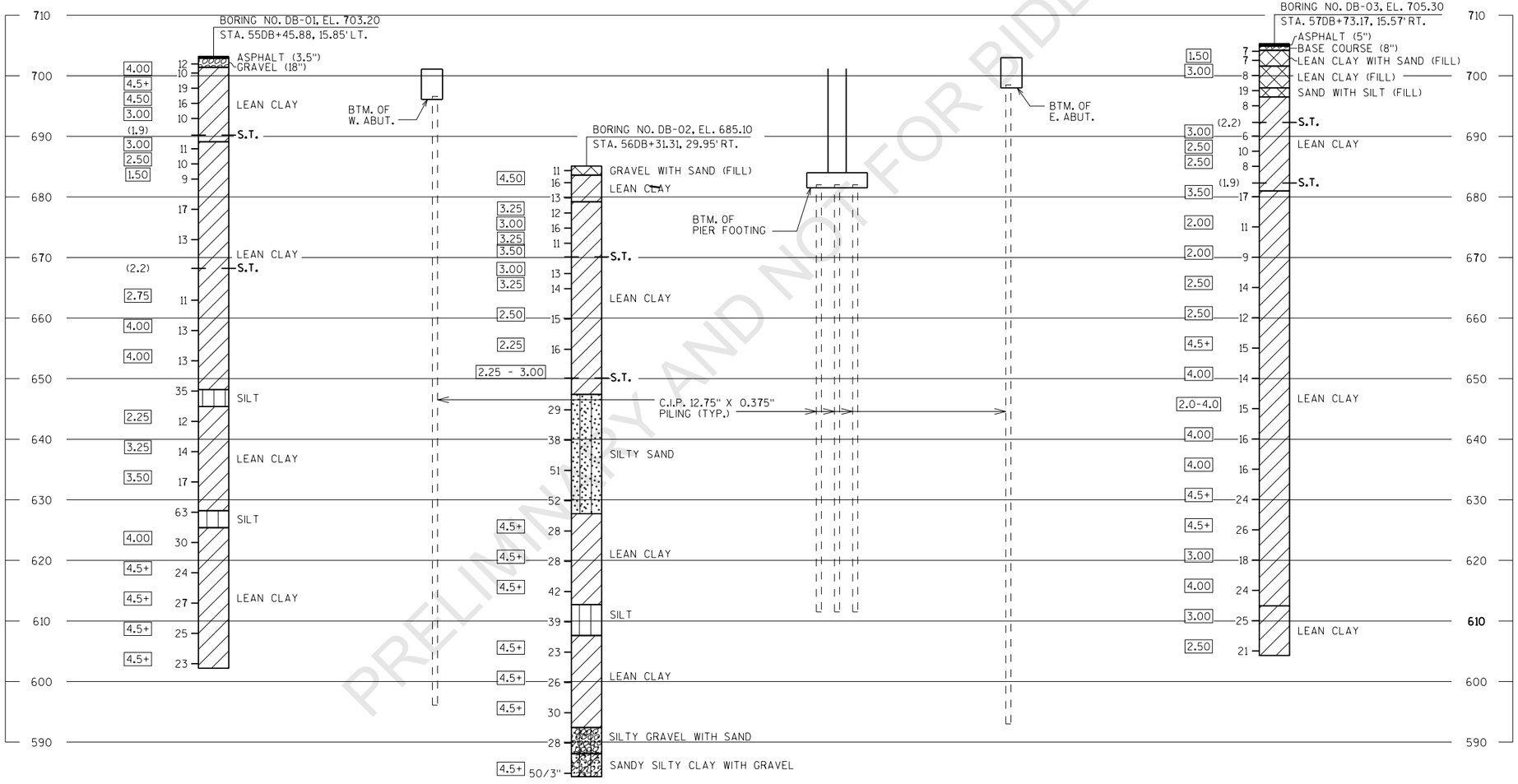
HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

DENOTES SOIL BORING LOCATION

DENOTES HISTORICAL BORING



PLAN



PRELIMINARY AND NOT FOR BIDDING PURPOSES

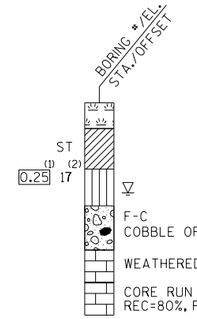
STATE PROJECT NUMBER

1229-04-74

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-45-106

DRAWN BY WWR | PLANS CK'D. JLR

SUBSURFACE EXPLORATION

SHEET 3

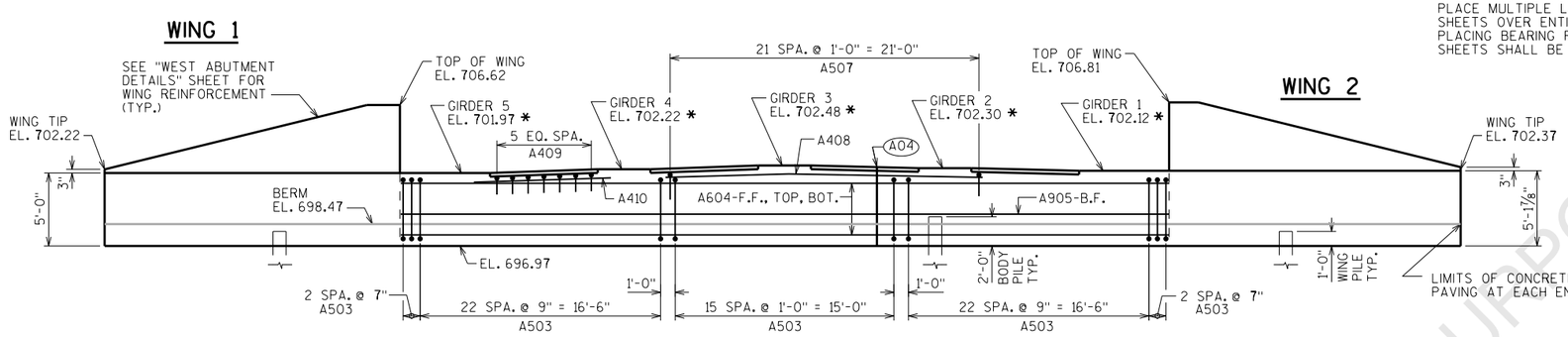
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STATE PROJECT NUMBER

1229-04-74



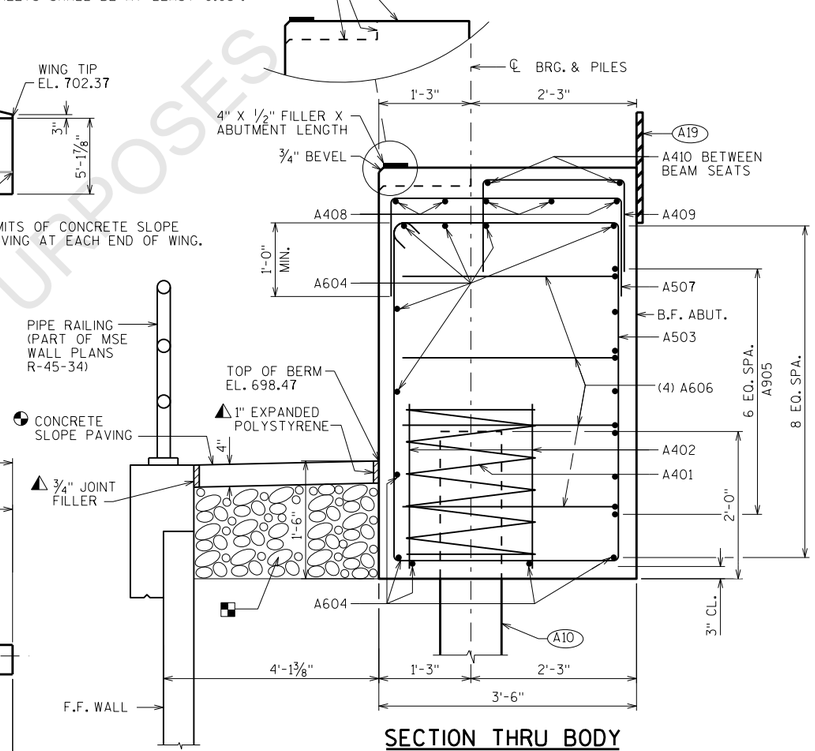
ELEVATION

LOOKING WEST
(SHOWING ABUT. BODY REINF. ONLY)

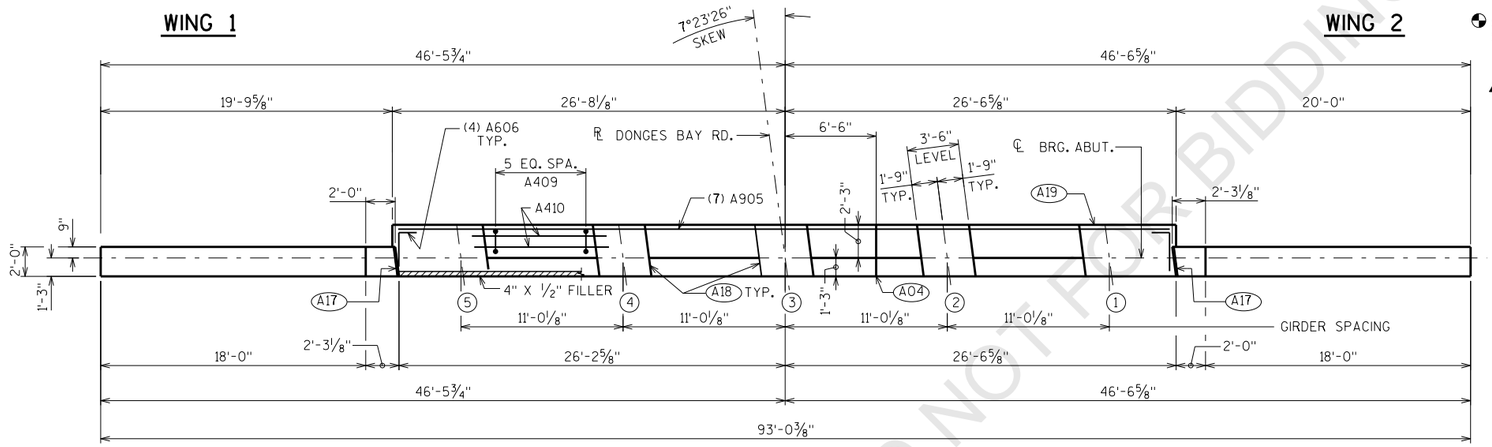
* BEAM SEAT ELEVATIONS ARE AT ℄ BRG.

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

LIMITS OF CONCRETE SLOPE PAVING AT EACH END OF WING.

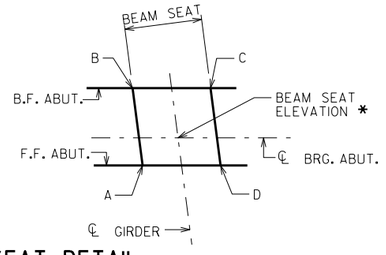


SECTION THRU BODY

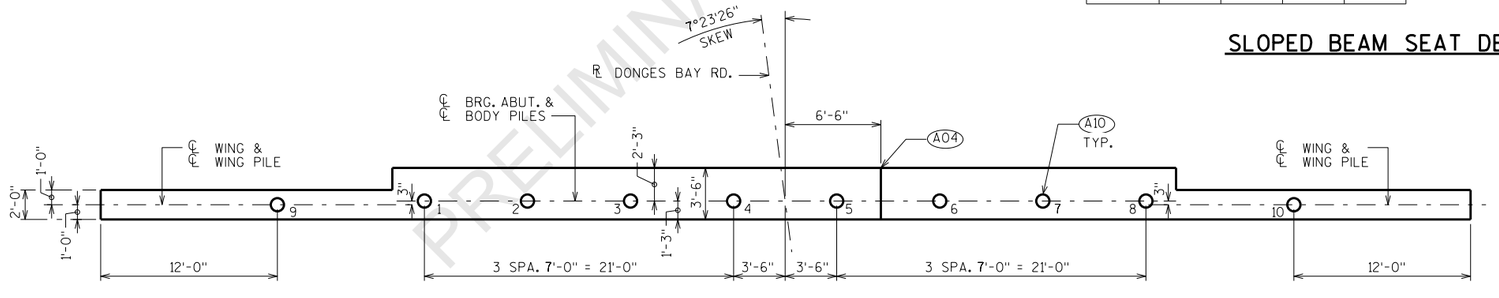


PLAN

GIRDER	A ELEV.	B ELEV.	C ELEV.	D ELEV.
1	702.14	702.06	702.07	702.15
2	702.32	702.24	702.25	702.33
3	702.50	702.42	702.43	702.51
4	702.25	702.17	702.18	702.26
5	701.99	701.90	701.92	702.00



SLOPED BEAM SEAT DETAIL



PILE PLAN

(A04) VERT. CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 8. 3/4" "V" GROOVE @ THE FRONT FACE AND 18" RMW @ BACKFACE. FOR OPTIONAL DETAILS SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.

(A10) SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 100'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.

(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.

◔ 4" CONCRETE (SLOPE ¾") TO BE PAID AS "SLOPE PAVING CONCRETE".

◭ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER AND EXPANDED POLYSTYRENE WITH NON-STAINING, GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

◪ MSE BACKFILL OR SIZE 2 COARSE AGGREGATE. COST INCIDENTAL TO BID ITEM "SLOPE PAVING CONCRETE".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

WEST ABUTMENT

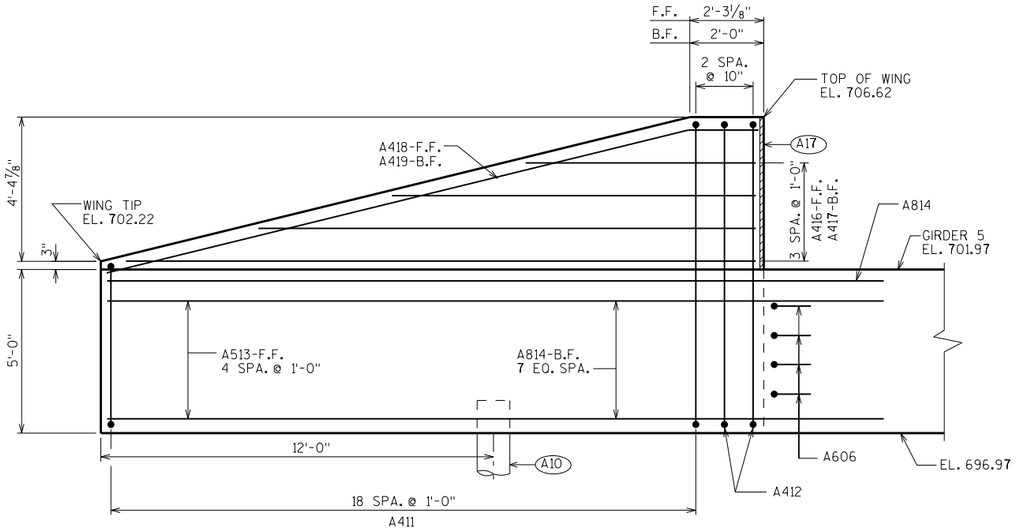
SHEET 4

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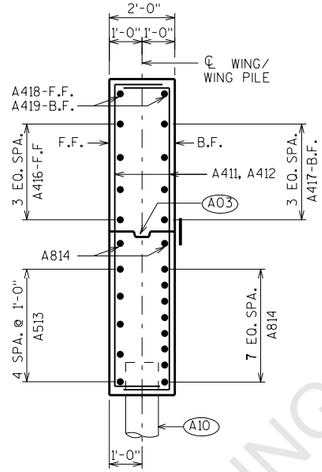
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1229-04-74

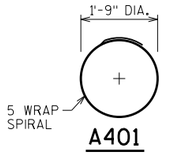


WING 1 ELEVATION

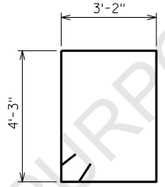
LOOKING AT F.F.



WING 1 SECTION



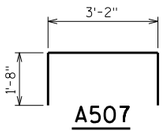
A401



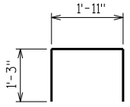
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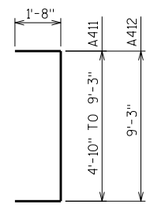
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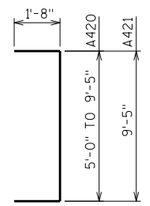
A507



A409



A411, A412



A420, A421

BILL OF BARS

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

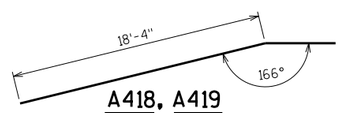
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A401		8	28'-0"	X		BODY-1 PER BODY PILE
A402		16	2'-3"			BODY-2 PER BODY PILE
A503		66	15'-6"	X		BODY-VERT. STIRRUP
A604		11	52'-10"			BODY-HORIZ.-F.F., BOT., TOP
A905		7	52'-10"			BODY-HORIZ.-B.F.
A606		8	3'-10"	X		BODY-HORIZ. END L-BARS
A507		22	6'-3"	X		BODY-VERT. U-BAR TOP
A408		5	21'-4"			BODY-HORIZ. TOP
A409		24	4'-3"	X		BODY-VERT. U-BAR BTWN. BEAM SEATS
A410		8	9'-4"			BODY-HORIZ. BTWN. BEAM SEATS
A411	X	38	10'-3"	X	⚠	WING 1-VERT.
A412	X	4	12'-5"	X		WING 1-VERT.
A513	X	5	21'-10"			WING 1-HORIZ. F.F.
A814	X	10	23'-6"			WING 1-HORIZ. B.F.
		NOT	USED			
A416	X	4	13'-2"		⚠	WING 1-HORIZ.-F.F.
A417	X	4	13'-2"		⚠	WING 1-HORIZ.-B.F.
A418	X	2	20'-5"	X		WINGS 1 & 2-HORIZ. TOP SLOPE
A419	X	2	20'-2"	X		WINGS 1 & 2-HORIZ. TOP SLOPE
A420	X	38	10'-5"	X	⚠	WING 2-VERT.
A421	X	4	12'-7"	X		WING 2-VERT.
A522	X	5	21'-7"			WING 2-HORIZ. F.F.
A823	X	10	23'-9"			WING 2-HORIZ. B.F.
		NOT	USED			
A425	X	4	13'-1"		⚠	WING 2-HORIZ.
A426	X	4	13'-4"		⚠	WING 2-HORIZ.

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

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A411	2 SERIES OF 19	8'-0" TO 12'-5"
A416	1 SERIES OF 4	7'-1" TO 19'-3"
A417	1 SERIES OF 4	6'-10" TO 19'-0"
A420	2 SERIES OF 19	8'-2" TO 12'-7"
A425	1 SERIES OF 4	7'-0" TO 19'-2"
A426	1 SERIES OF 4	7'-3" TO 19'-5"

BUNDLE AND TAG EACH SERIES SEPARATELY.



A418, A419

WING 2 ELEVATION

LOOKING AT F.F.

WING 2 SECTION

C.I.P. END PLATE DETAIL

CAST-IN-PLACE 'PIPE PILE'

C.I.P. PILE WELD DETAIL

PILE DETAILS

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

A10 SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 100'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.

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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

WEST ABUTMENT DETAILS

SHEET 5

SCALE = 2.25

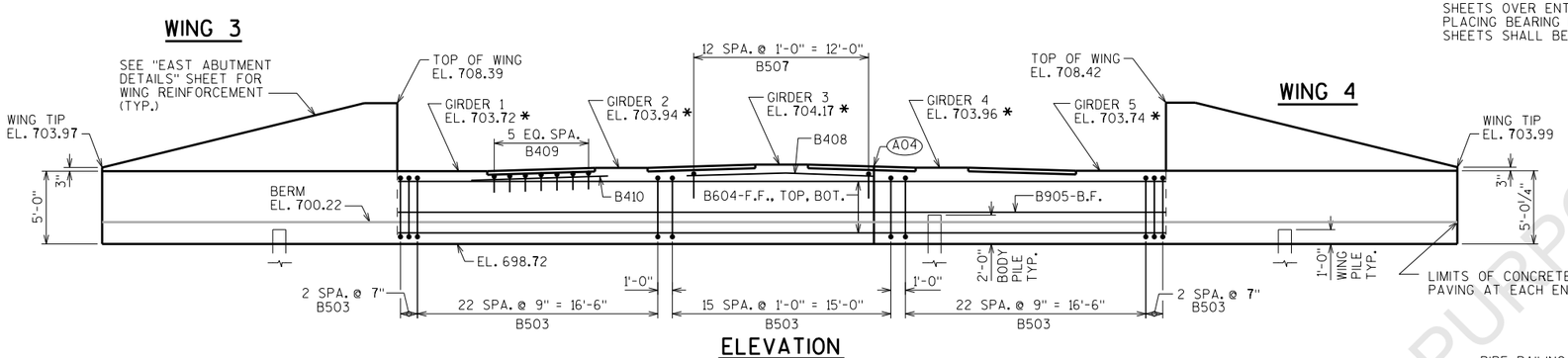
PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

STATE PROJECT NUMBER

1229-04-74



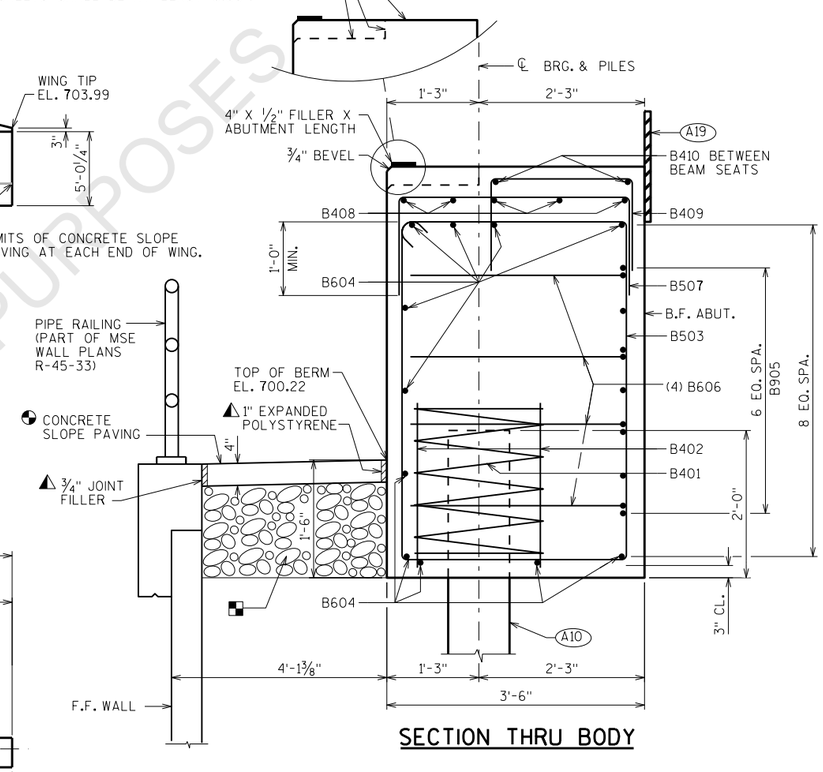
ELEVATION

LOOKING EAST

(SHOWING ABUT. BODY REINF. ONLY)

* BEAM SEAT ELEVATIONS ARE AT ℄ BRG.

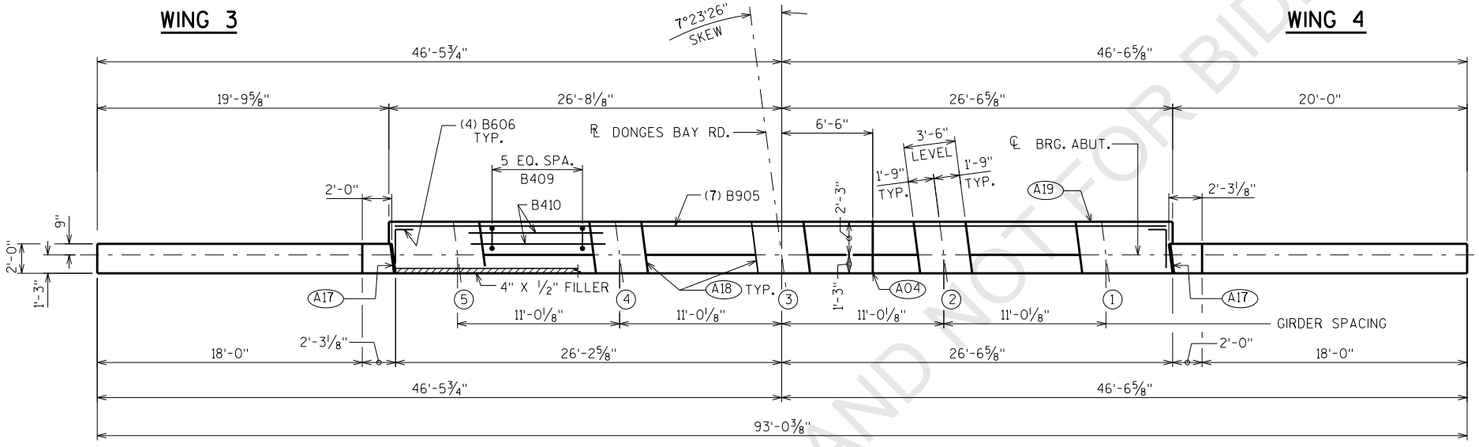
STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".



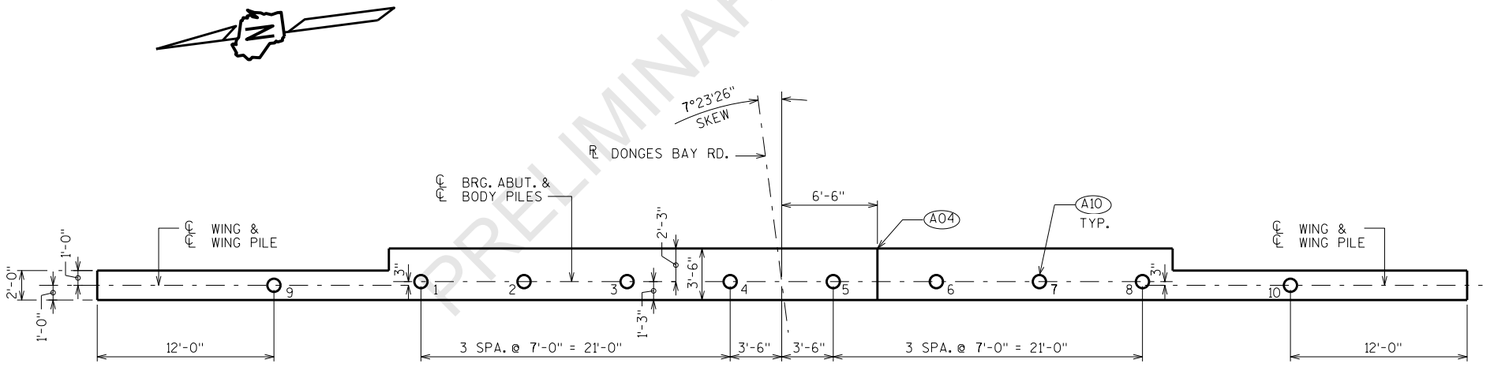
SECTION THRU BODY

WING 3

WING 4



PLAN



PILE PLAN

A04 VERT. CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 8. 3/4" "V" GROOVE @ THE FRONT FACE AND 18" RMW @ BACKFACE. FOR OPTIONAL DETAILS SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.

A10 SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 105'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.

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.

4" CONCRETE (SLOPE ¾") TO BE PAID AS "SLOPE PAVING CONCRETE".

SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER AND EXPANDED POLYSTYRENE WITH NON-STAINING, GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

MSE BACKFILL OR SIZE 2 COARSE AGGREGATE. COST INCIDENTAL TO BID ITEM "SLOPE PAVING CONCRETE".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

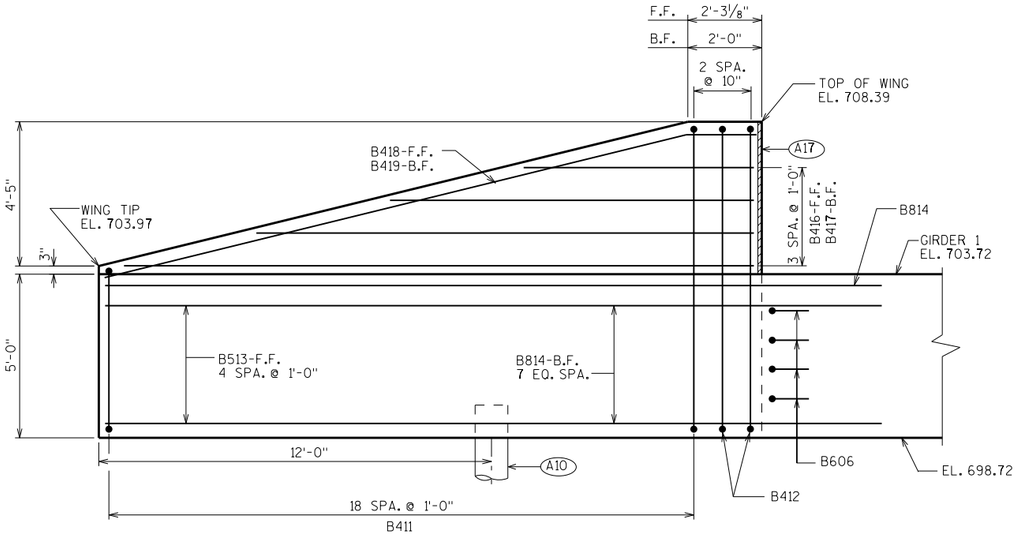
DRAWN BY WWR | PLANS CK'D. JLR

EAST ABUTMENT

SHEET 6

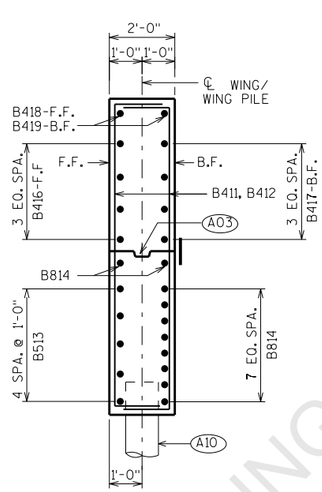
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PRELIMINARY AND NOT FOR BIDDING PURPOSES

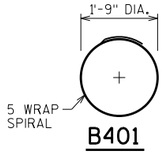


WING 3 ELEVATION

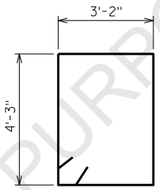
LOOKING AT F.F.



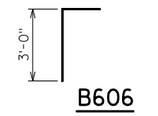
WING 3 SECTION



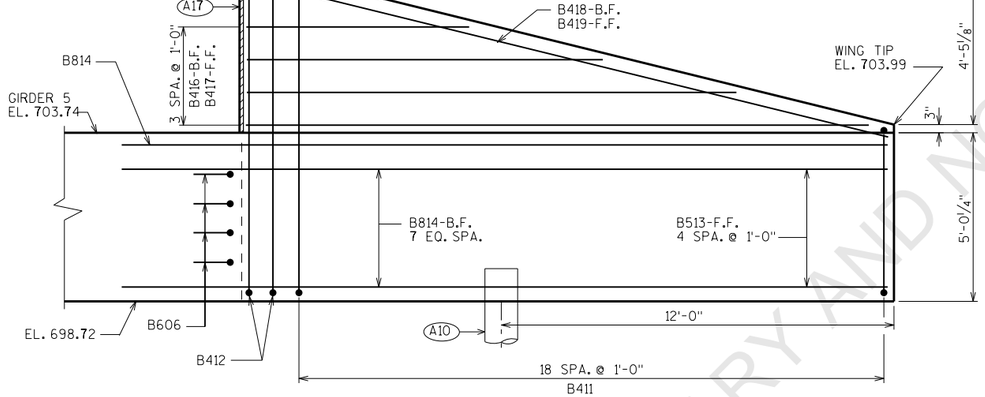
B401



B503

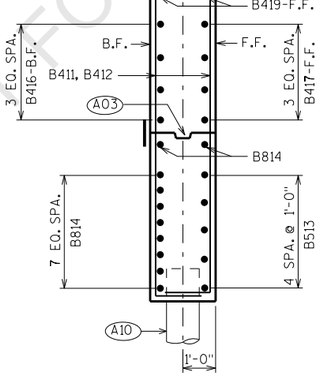


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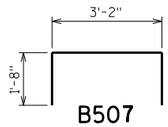


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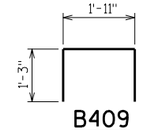
LOOKING AT F.F.



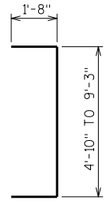
WING 4 SECTION



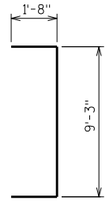
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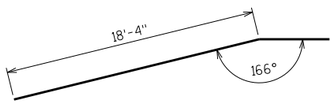
B409



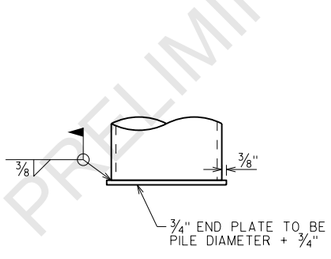
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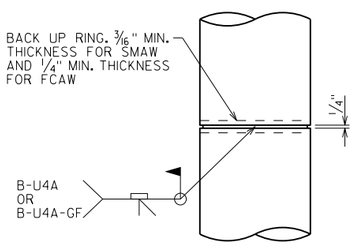
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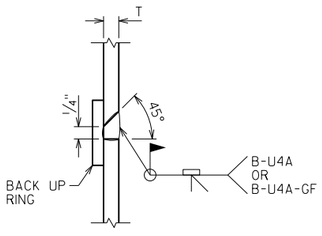
B418, B419



C.I.P. END PLATE DETAIL



CAST-IN-PLACE 'PIPE PILE'



C.I.P. PILE WELD DETAIL

PILE DETAILS

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER

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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
B401		8	28'-0"	X		BODY-1 PER BODY PILE
B402		16	2'-3"			BODY-2 PER BODY PILE
B503		66	15'-6"	X		BODY-VERT. STIRRUP
B604		11	52'-10"			BODY-HORIZ.-F.F., BOT., TOP
B905		7	52'-10"			BODY-HORIZ.-B.F.
B606		8	3'-10"	X		BODY-HORIZ. END L-BARS
B507		13	6'-3"	X		BODY-VERT. U-BAR TOP
B408		5	12'-4"			BODY-HORIZ. TOP
B409		24	4'-3"	X		BODY-VERT. U-BAR BTWN. BEAM SEATS
B410		8	9'-4"			BODY-HORIZ. BTWN. BEAM SEATS
B411	X	76	10'-3"	X	⚠	WING 3 & 4-VERT.
B412	X	8	12'-5"	X		WING 3 & 4-VERT.
B513	X	10	21'-10"			WING 3 & 4-HORIZ. F.F.
B814	X	20	23'-9"			WING 3 & 4-HORIZ. B.F.
		NOT	USED			
B416	X	8	13'-2"		⚠	WING 3 & 4-HORIZ.
B417	X	8	13'-2"		⚠	WING 3 & 4-HORIZ.
B418	X	2	20'-5"	X		WING 3 & 4-HORIZ. TOP SLOPE
B419	X	2	20'-2"	X		WING 3 & 4-HORIZ. TOP SLOPE

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

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
B411	4 SERIES OF 19	8'-0" TO 12'-5"
B416	2 SERIES OF 4	7'-1" TO 19'-3"
B417	2 SERIES OF 4	6'-10" TO 19'-0"

BUNDLE AND TAG EACH SERIES SEPARATELY.

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

(A10) SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 105'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.

(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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

EAST ABUTMENT DETAILS

SHEET 7

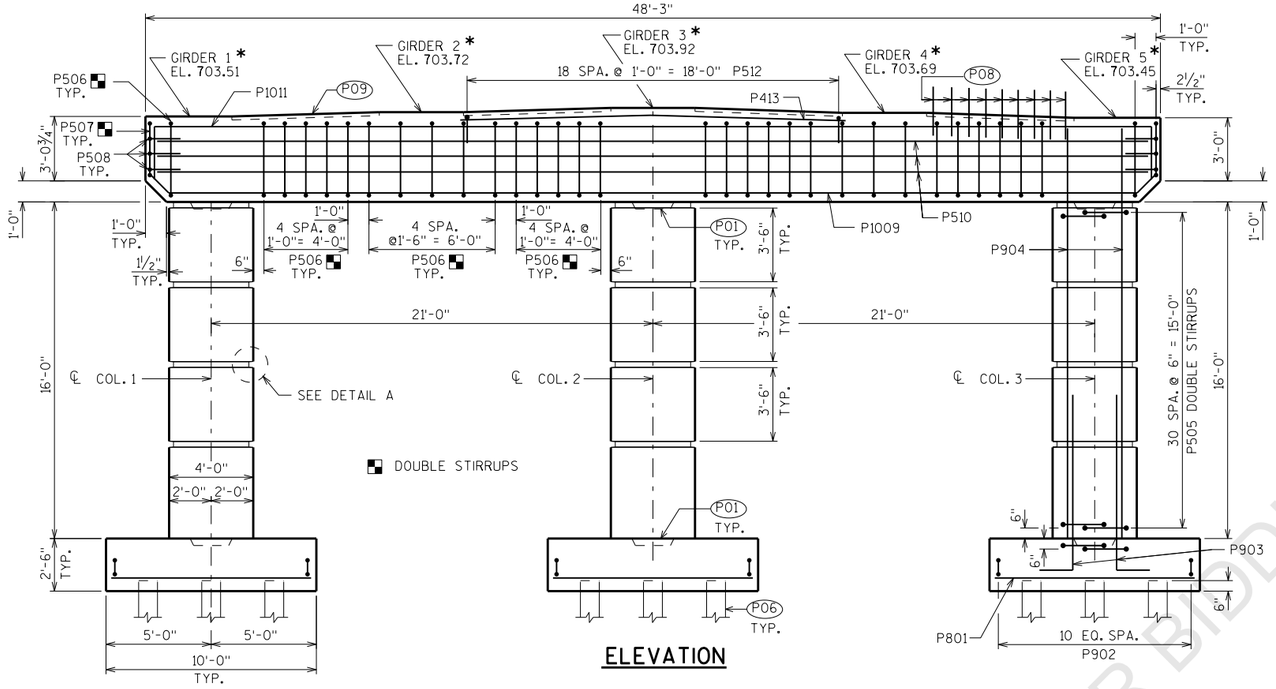
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8

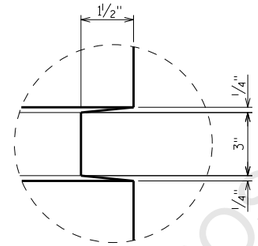
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STATE PROJECT NUMBER

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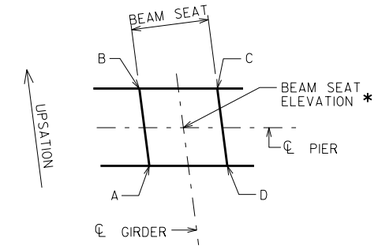
ELEVATION



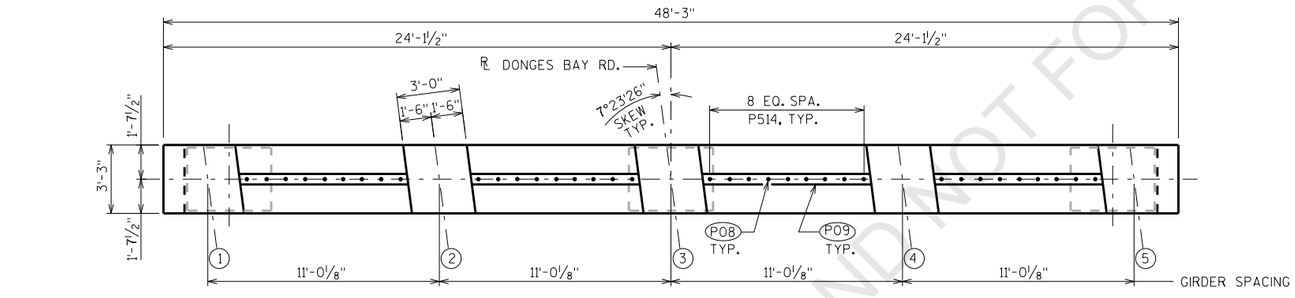
DETAIL A

* BEAM SEAT ELEVATION GIVEN AT ℄ PIER.

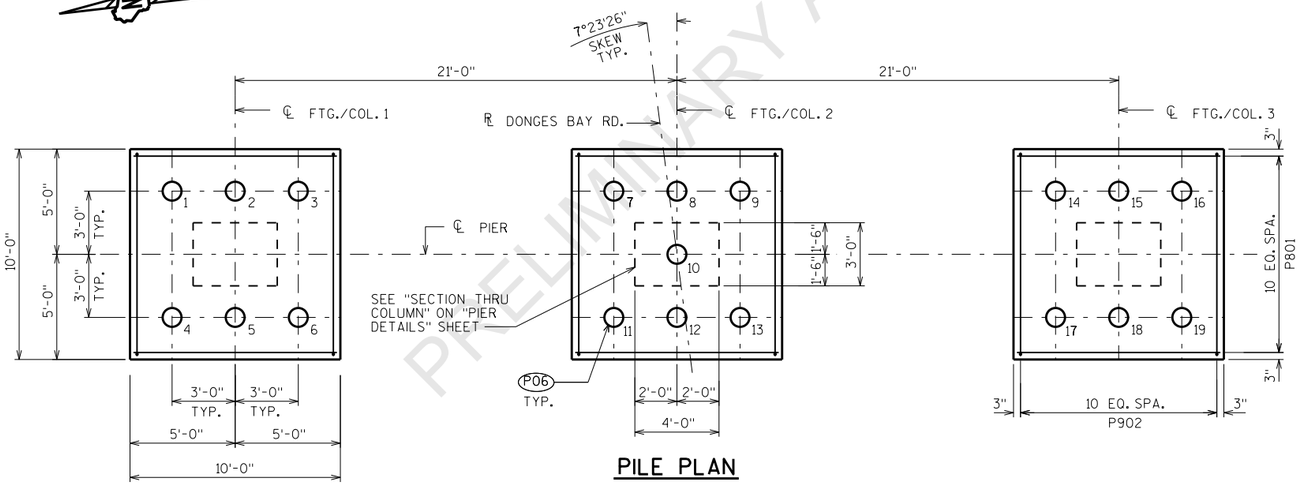
GIRDER	A ELEV.	B ELEV.	C ELEV.	D ELEV.
1	703.50	703.53	703.53	703.49
2	703.70	703.74	703.73	703.70
3	703.90	703.94	703.94	703.90
4	703.67	703.71	703.70	703.66
5	703.43	703.47	703.47	703.43



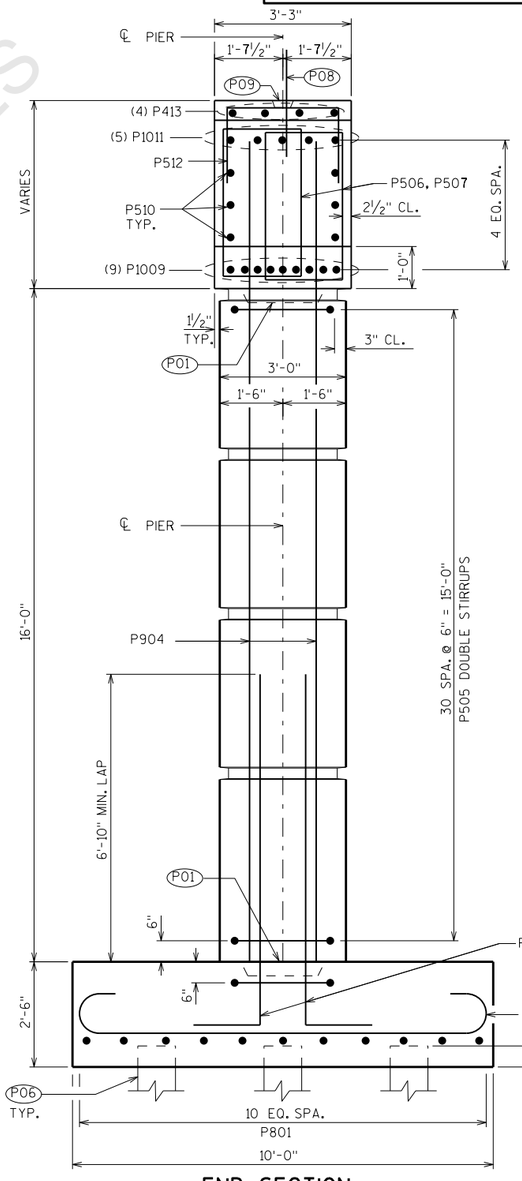
SLOPED BEAM SEAT DETAIL



CAP PLAN



PILE PLAN



END SECTION

(P01) 1'-3" × 2'-0" × 4" CONST. JOINT FORMED BY BEVELED KEYWAY.

(P06) SUPPORT PIER ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 70'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.

(P08) P514 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

(P09) KEYED CONST. JOINT-FORMED BY BEVELED 2 × 6 BETWEEN BEAM SEATS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

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PIER

SHEET 8

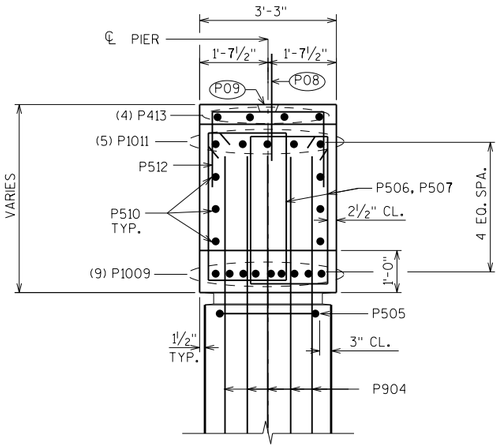
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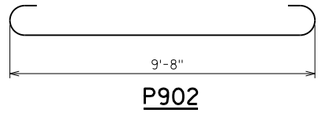
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER

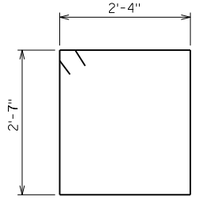
1229-04-74



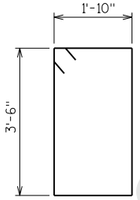
SECTION THRU CAP W/COLUMN BARS



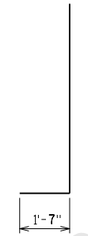
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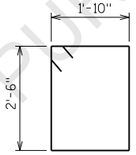
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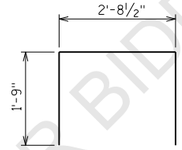
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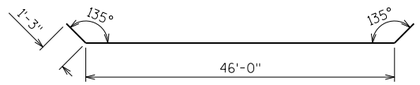
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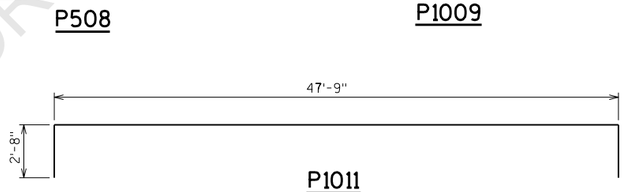
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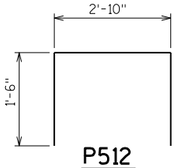
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P1009



P1011

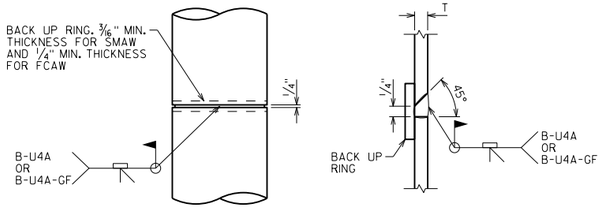


P512

BILL OF BARS

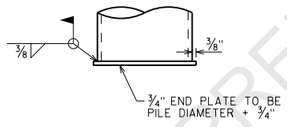
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P801		33	9'-8"			FOOTING-HORIZ.
P902		33	12'-2"	X		FOOTING-HORIZ.
P903	X	54	10'-2"	X		FOOTING/COLUMN-VERT.
P904	X	54	19'-6"			COLUMN-VERT.
P505	X	192	10'-6"	X		COLUMN-HORIZ.
P506	X	64	11'-4"	X		CAP-VERT. STIRRUP
P507	X	4	9'-4"	X		CAP-VERT. STIRRUP ENDS
P508	X	6	6'-0"	X		CAP-HORIZ END U-BAR
P1009	X	9	48'-3"	X		CAP-HORIZ.-BOT.
P510	X	6	47'-10"			CAP-HORIZ.-MIDDLE
P1011	X	5	52'-6"	X		CAP-HORIZ.-TOP
P512	X	19	5'-7"	X		CAP-VERT.-TOP
P413	X	4	18'-4"			CAP-HORIZ.TOP
P514	X	36	2'-0"			CAP-VERT. DOWEL

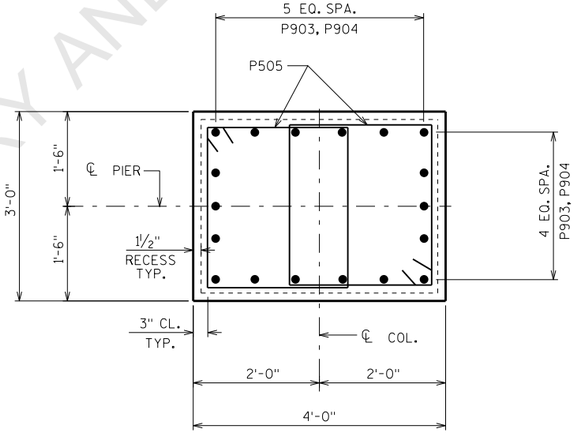


CAST-IN-PLACE 'PIPE PILE' C.I.P. PILE WELD DETAIL

PILE DETAILS



END PLATE DETAIL



SECTION THRU COLUMN

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

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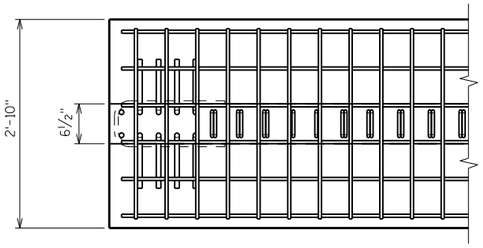
PIER DETAILS

SHEET 9

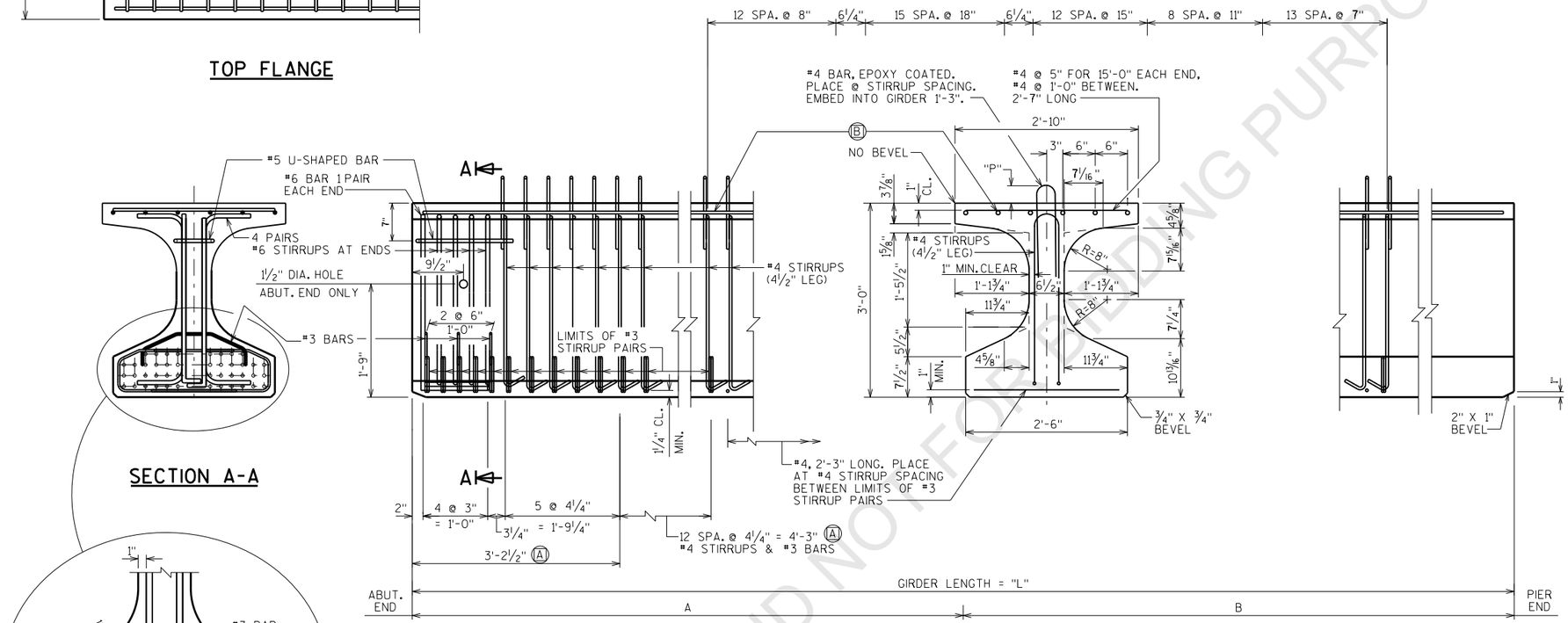
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STATE PROJECT NUMBER

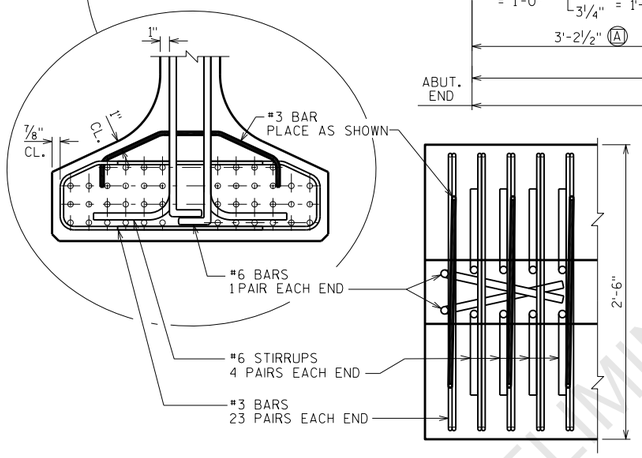
1129-04-74



TOP FLANGE



SECTION A-A



BOTTOM FLANGE

SIDE VIEW & TYPICAL SECTION IN SPAN

(A) DETAIL TYP. AT EACH END

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

NOTES

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.

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

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 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 THE APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

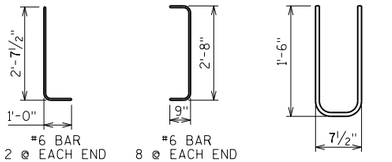
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

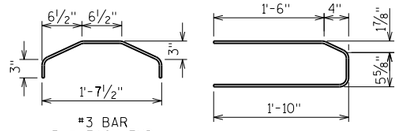
PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

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

STEEL DIAPHRAGM INSERT HOLE LOCATION

GIRDER	SPAN	A	B
1	1	35'-4¼"	41'-0¼"
2	1	36'-9¼"	39'-7¼"
3	1	38'-2¼"	38'-2¼"
4	1	39'-7¼"	36'-9¼"
5	1	41'-0¼"	35'-4¼"
1	2	41'-0¼"	35'-4¼"
2	2	39'-7¼"	36'-9¼"
3	2	38'-2¼"	38'-2¼"
4	2	36'-9¼"	39'-7¼"
5	2	35'-4¼"	41'-0¼"





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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	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" (IN.) 1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	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	1 & 5	76.38	0.46	0.86	1.17	1.36	1.41	1.32	1.11	0.79	0.40	8,000	7.0	7.0	7.0	0.60	28	6,400	32.0	11.0	14.0	4.0		
1	2-4	76.38	0.54	1.02	1.40	1.64	1.71	1.62	1.38	1.00	0.52	8,000	7.0	7.0	7.0	0.60	28	6,400	32.0	11.0	14.0	4.0		
2	1 & 5	76.38	0.40	0.79	1.11	1.32	1.41	1.36	1.17	0.86	0.46	8,000	7.0	7.0	7.0	0.60	28	6,400	32.0	11.0	14.0	4.0		
2	2-4	76.38	0.52	1.00	1.38	1.62	1.71	1.64	1.40	1.02	0.54	8,000	7.0	7.0	7.0	0.60	28	6,400	32.0	11.0	14.0	4.0		

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

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36W" PRESTRESSED GIRDER DETAILS 1

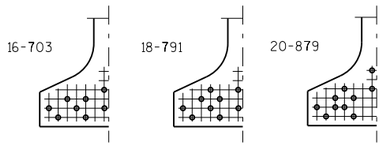
SHEET 10

SCALE =

PRELIMINARY AND NOT FOR BIDDING PURPOSES

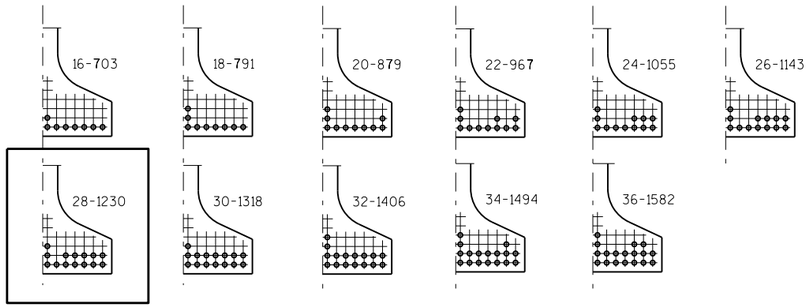
STATE PROJECT NUMBER

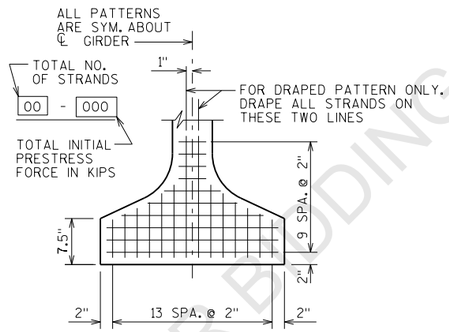
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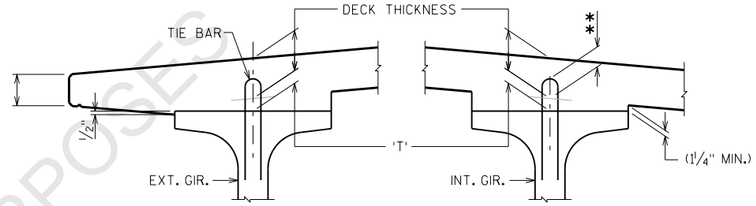
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6" DIA. 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,

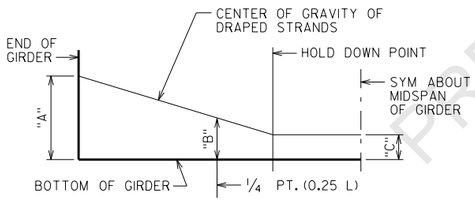
** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

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 2⅝" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS



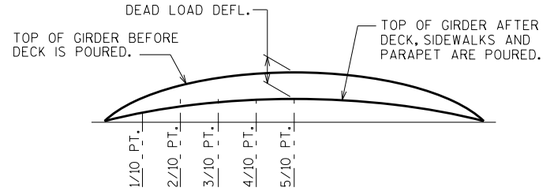
DRAPED STRAND PROFILE

*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	2.74
2	2.74

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

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36W" PRESTRESSED GIRDER DETAILS 2

SHEET 11

SCALE =

8

8

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER

1229-04-74

NOTES

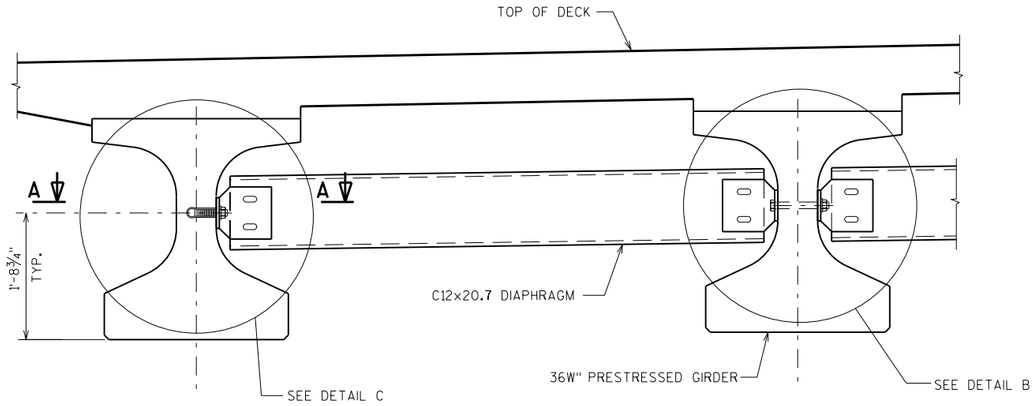
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-45-106", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

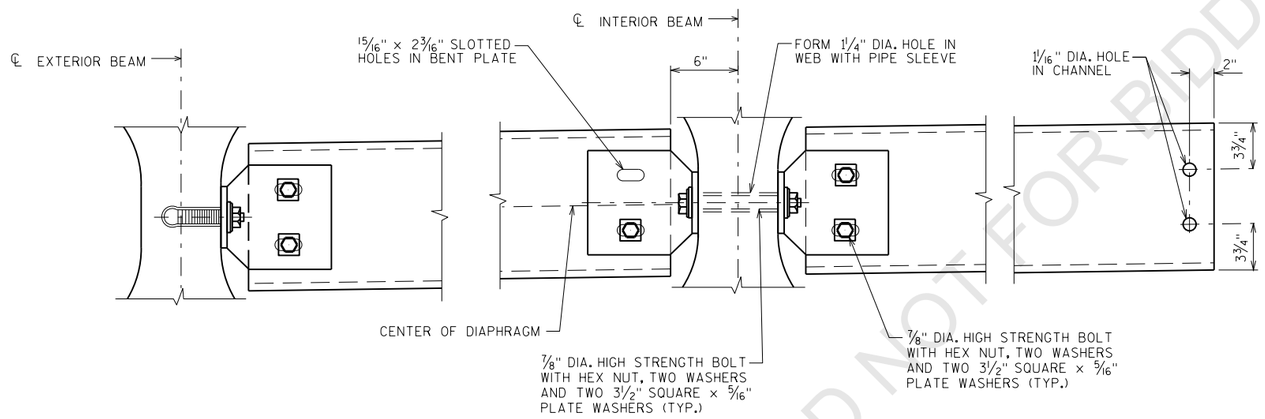
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE 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 A449.

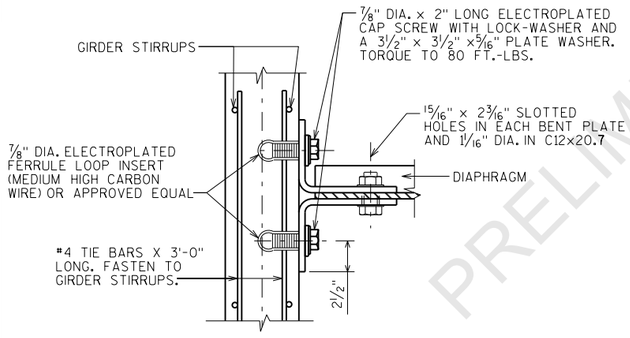


PART TRANSVERSE SECTION AT DIAPHRAGM

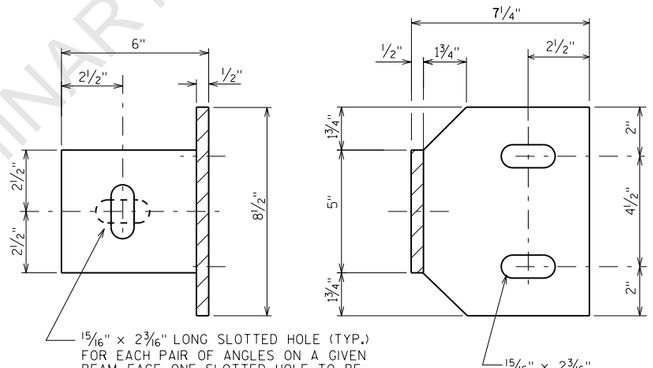


DETAIL C

DETAIL B

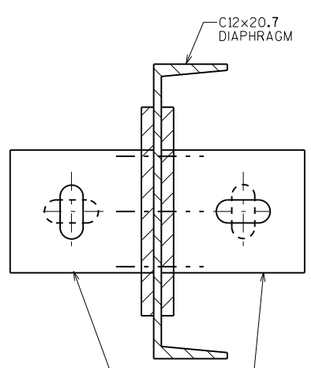


SECTION A-A
(FOR EXTERIOR ATTACHMENT)



BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY: WWR | PLANS CK'D.: JLR

STEEL DIAPHRAGM

SHEET 12

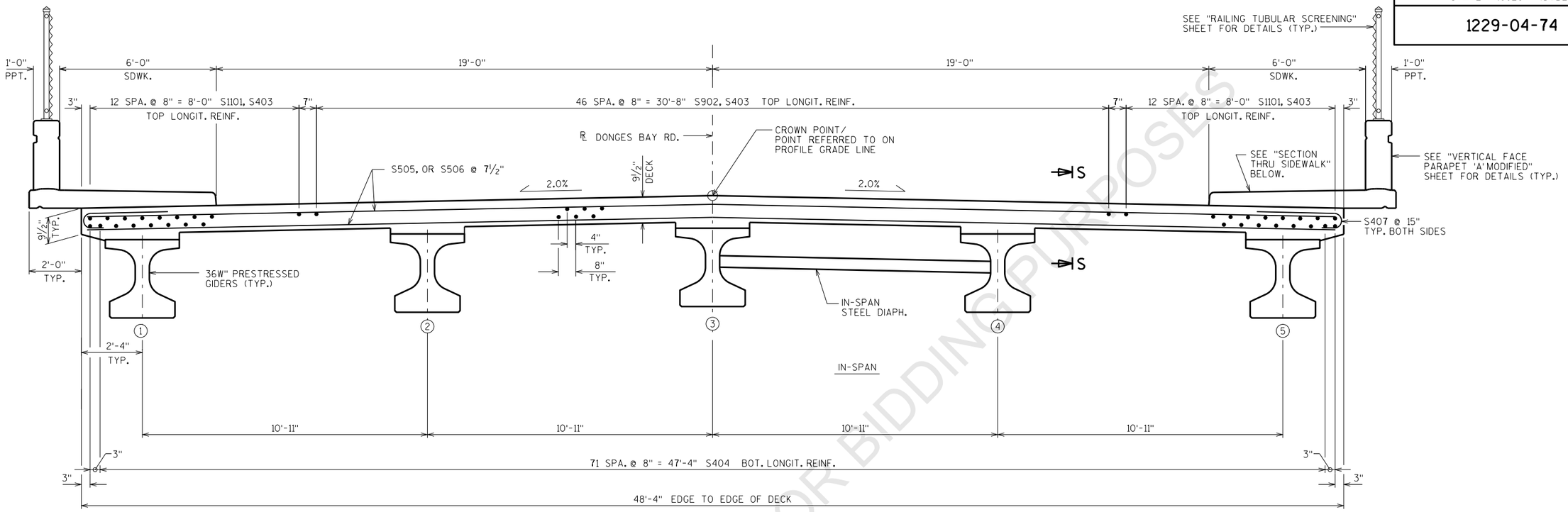
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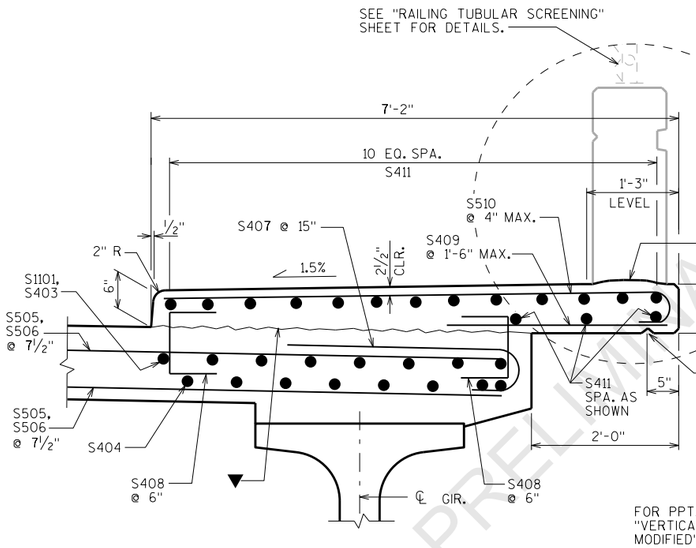
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74



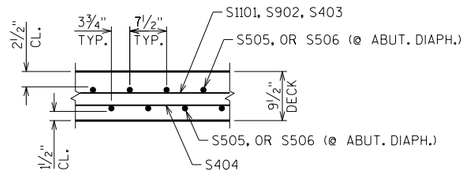
CROSS SECTION THRU ROADWAY

(LOOKING UPSTATION)

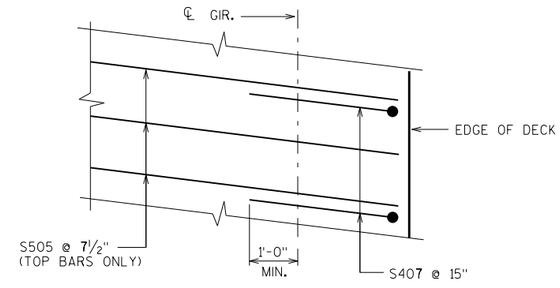


SECTION THRU SIDEWALK

(TYPICAL BOTH SIDES)



SECTION S-S



PLAN

ADDITIONAL OVERHANG REINFORCEMENT DETAIL

▼ CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

SUPERSTRUCTURE DETAILS 1

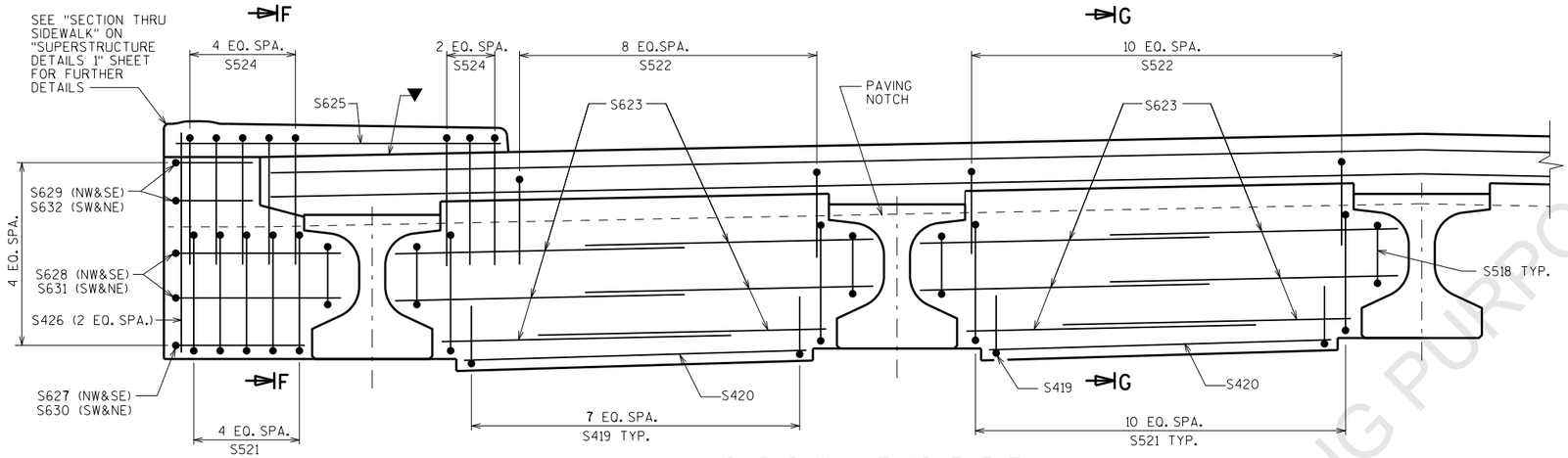
SHEET 13

SCALE = 2.00

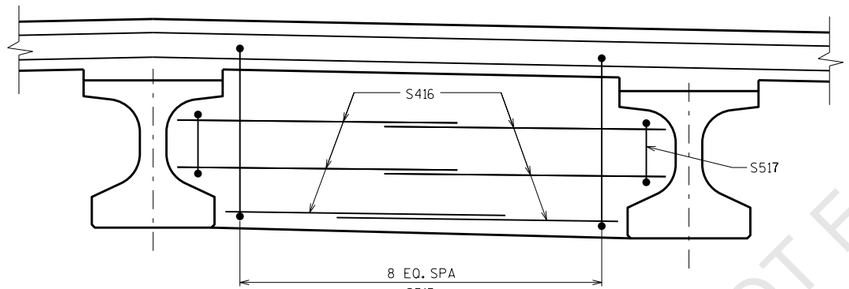
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER

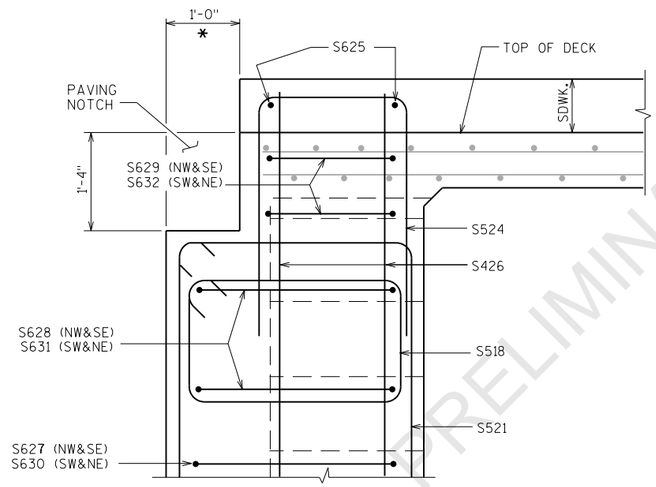
1229-04-74



DIAPHRAGM AT ABUTMENT

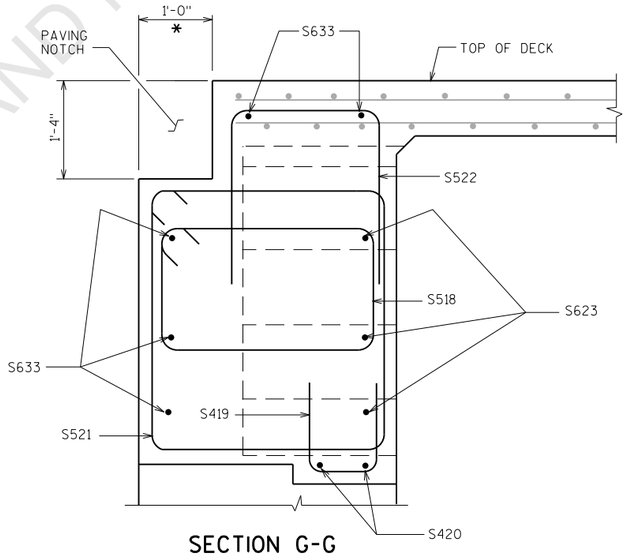


DIAPHRAGM AT PIER



SECTION F-F

SHOWING END DIAPH. STEEL ONLY.



SECTION G-G

SHOWING INTERIOR DIAPH. STEEL ONLY.

* DIMENSION IS TAKEN NORMAL TO RE SUBSTRUCTURE UNITS.

▼ CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

SUPERSTRUCTURE DETAILS 2

SHEET 14

SCALE = 1.50

8

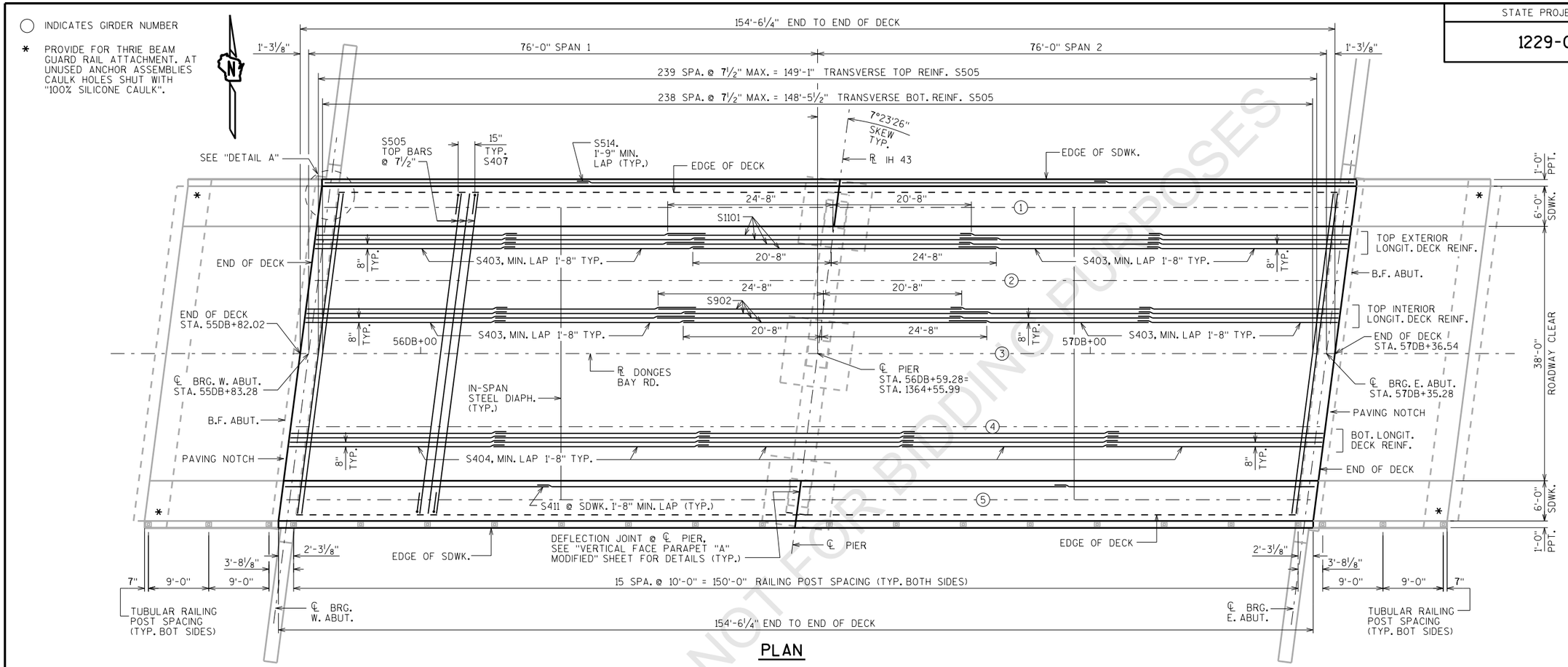
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STATE PROJECT NUMBER

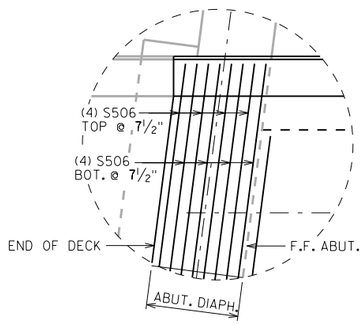
1229-04-74

○ INDICATES GIRDER NUMBER

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



PLAN



DETAIL A

ONLY TRANSVERSE DECK REINFORCEMENT OVER ABUTMENT DIAPHRAGM SHOWN. (TYP. AT BOTH ABUTMENTS)

TOP OF DECK ELEVATIONS

	℄ BRG. W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ PIER	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. E. ABUT.
N. EOD	706.11	706.30	706.48	706.65	706.81	706.95	707.09	707.21	707.32	707.41	707.50	707.57	707.63	707.68	707.72	707.75	707.76	707.76	707.75	707.73	707.70
GIRDER 1	706.15	706.34	706.52	706.69	706.85	706.99	707.13	707.25	707.36	707.46	707.54	707.62	707.68	707.73	707.77	707.79	707.81	707.81	707.80	707.78	707.74
GIRDER 2	706.33	706.52	706.71	706.88	707.04	707.19	707.32	707.45	707.56	707.66	707.75	707.82	707.89	707.94	707.98	708.01	708.02	708.03	708.02	708.00	707.97
GIRDER 3	706.51	706.71	706.89	707.07	707.23	707.38	707.52	707.64	707.76	707.86	707.95	708.03	708.09	708.15	708.19	708.22	708.24	708.25	708.24	708.22	708.20
GIRDER 4	706.25	706.45	706.64	706.82	706.98	707.13	707.27	707.40	707.52	707.62	707.71	707.79	707.86	707.92	707.96	708.00	708.02	708.03	708.02	708.01	707.98
GIRDER 5	706.00	706.20	706.39	706.57	706.73	706.89	707.03	707.16	707.28	707.38	707.48	707.56	707.63	707.69	707.74	707.77	707.80	707.81	707.81	707.80	707.77
S. EOD	705.94	706.14	706.34	706.51	706.68	706.84	706.98	707.11	707.23	707.34	707.43	707.51	707.59	707.64	707.69	707.73	707.75	707.76	707.76	707.75	707.73

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

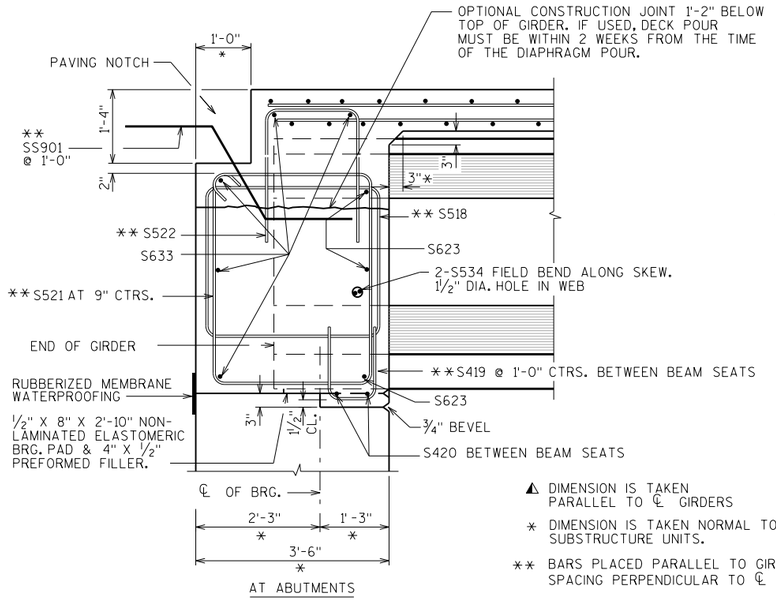
SUPERSTRUCTURE DETAILS 3

SHEET 15

SCALE = 8.00

8

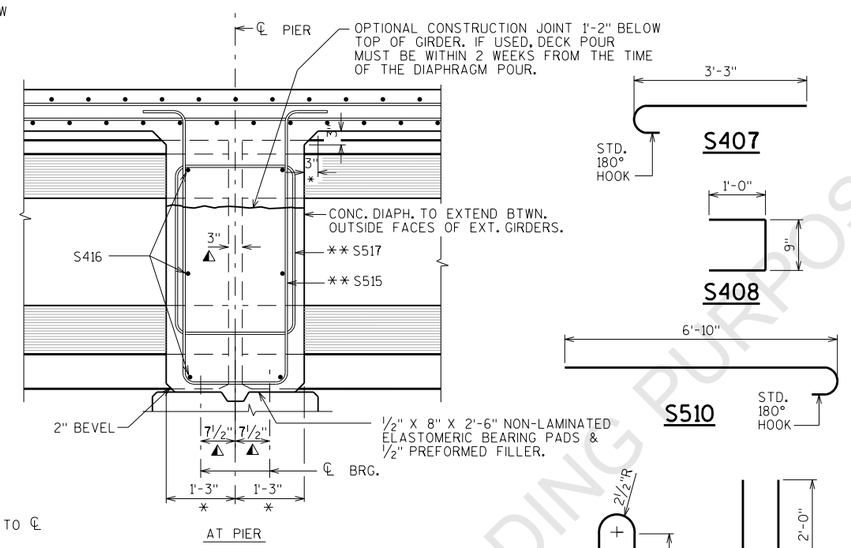
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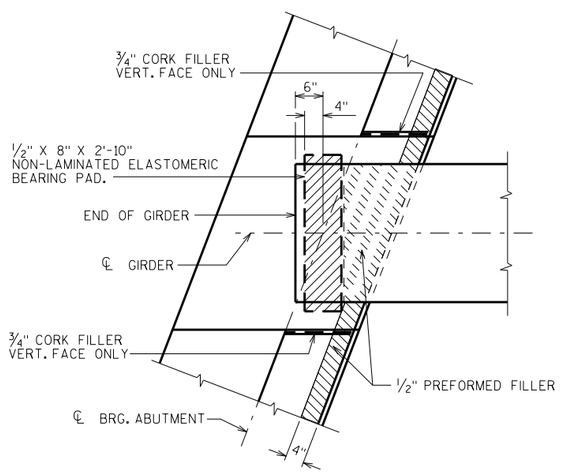
▲ DIMENSION IS TAKEN PARALLEL TO ℄ GIRDERS

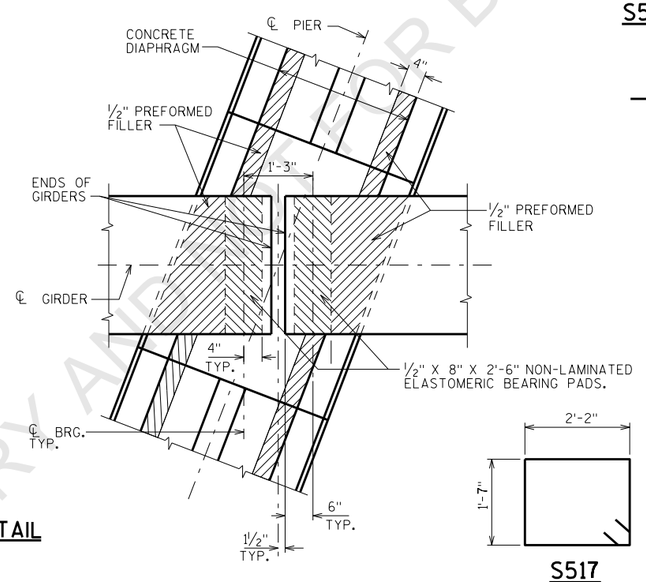
* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

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



PART LONGIT. SECTION



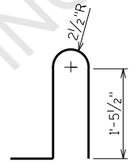


BEARING PAD DETAIL

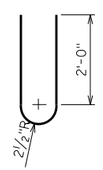
S407

S408

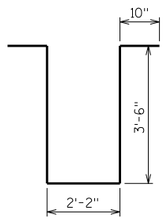
S510



S512

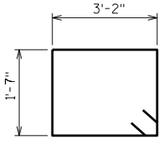


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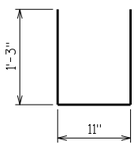


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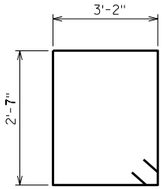
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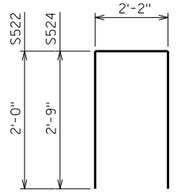
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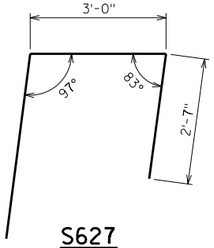
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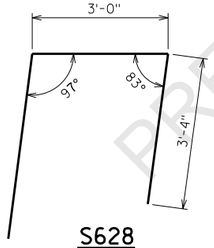
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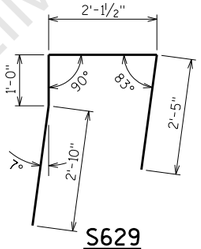
S522, S524



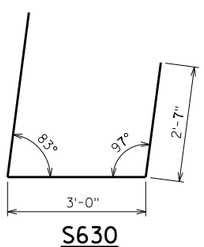
S627



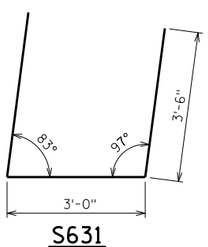
S628



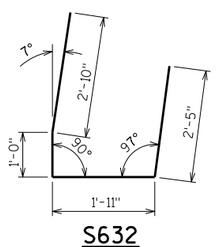
S629



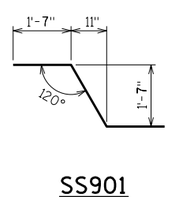
S630



S631



S632



SS901

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
S1101	X	26	45'-4"			DECK - LONGIT. - CONTINUITY - EXT.
S902	X	47	45'-4"			DECK - LONGIT. - CONTINUITY - INT.
S403	X	292	30'-0"			DECK - LONGIT. - TOP
S404	X	370	32'-6"			DECK - LONGIT. - BOT.
S505	X	479	48'-5"			DECK - TRANS. - TOP & BOT.
S506	X	16	52'-5"			DECK - TRANS. - ABOVE ABUT. DIAPH.
S407	X	240	3'-9"	X		DECK - TRANS. - DECK EDGE
S408	X	1236	2'-7"	X		DECK/SDWK. - VERT.
S409	X	206	3'-4"			SDWK. - TRANS. - BOT.
S510	X	928	7'-6"	X		SDWK. - TRANS. - TOP
S411	X	112	39'-4"			SDWK. - LONGIT. - TOP & BOT.
S512	X	372	4'-4"	X		SDWK./PPT. - VERT.
S513	X	372	4'-9"	X		PPT. - VERT.
S514	X	64	39'-4"			PPT. - HORIZ.
S515	X	36	10'-4"	X		PIER DIAPH. - VERT.
S416	X	48	5'-10"			PIER DIAPH. - HORIZ.
S517	X	8	8'-2"	X		PIER DIAPH. - VERT. STIRRUP
S518	X	20	10'-2"	X		ABUT. DIAPH. - VERT. STIRRUP
S419	X	64	3'-3"	X		ABUT. DIAPH. - VERT. U-BAR
S420	X	16	7'-1"			ABUT. DIAPH.
S521	X	108	12'-2"	X		ABUT. DIAPH. - VERT. STIRRUP
S522	X	80	5'-11"	X		ABUT. DIAPH. - VERT. U-BAR
S623	X	48	6'-2"			ABUT. DIAPH. - HORIZ. F.F.
S524	X	32	7'-5"	X		ABUT. DIAPH. - SDWK. - VERT. STIRRUP
S625	X	8	6'-10"			ABUT. DIAPH. - SDWK. - HORIZ.
S426	X	8	4'-7"			ABUT. DIAPH. - VERT. END
S627	X	2	8'-11"	X		ABUT. DIAPH. - HORIZ. END - NW & SE CORNERS
S628	X	4	9'-8"	X		ABUT. DIAPH. - HORIZ. END - NW & SE CORNERS
S629	X	4	8'-1"	X		ABUT. DIAPH. - HORIZ. END - NW & SE CORNERS
S630	X	2	8'-11"	X		ABUT. DIAPH. - HORIZ. END - SW & NE CORNERS
S631	X	4	9'-10"	X		ABUT. DIAPH. - HORIZ. END - SW & NE CORNERS
S632	X	4	7'-10"	X		ABUT. DIAPH. - HORIZ. END - SW & NE CORNERS
S633	X	10	52'-5"			ABUT. DIAPH. - HORIZ. B.F.
S534	X	20	6'-0"			ABUT. DIAPH. - HORIZ. THRU GIRDERS
STAINLESS STEEL → SS901		106	5'-0"	X		ABUT. DIAPH./STRUCT. APP. SLAB - VERT.

STATE PROJECT NUMBER

1229-04-74

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

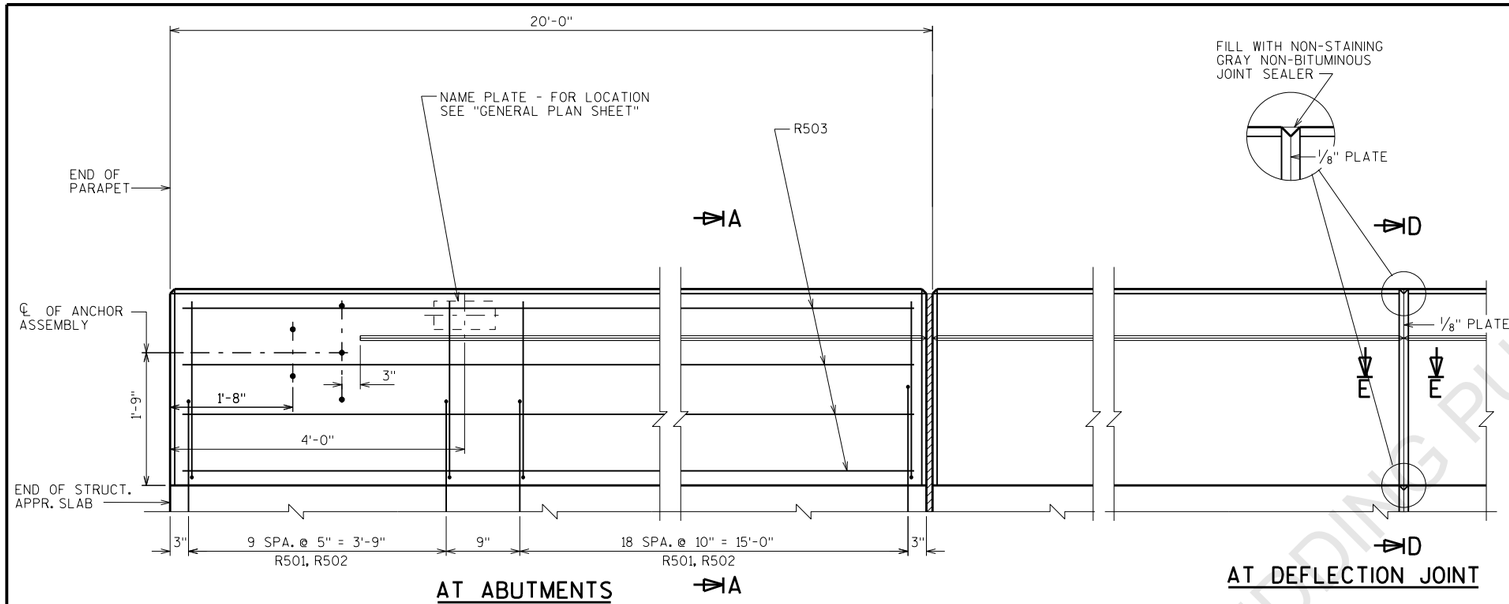
DRAWN BY WWR | PLANS CK'D. JLR

SUPERSTRUCTURE DETAILS 4

SHEET 16

SCALE =

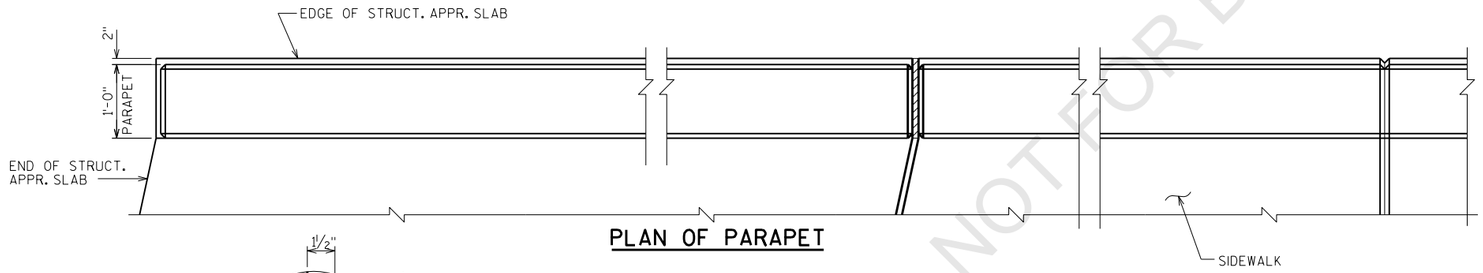
PRELIMINARY AND NOT FOR BIDDING PURPOSES



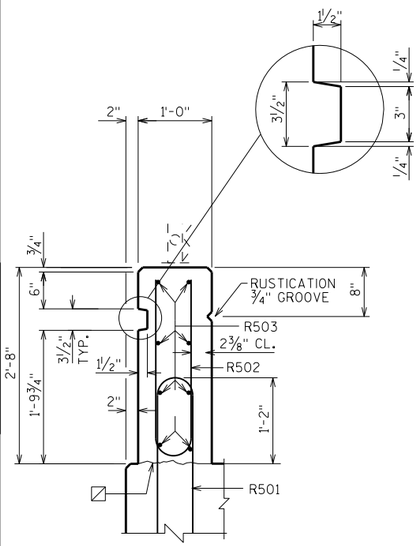
AT ABUTMENTS

AT DEFLECTION JOINT

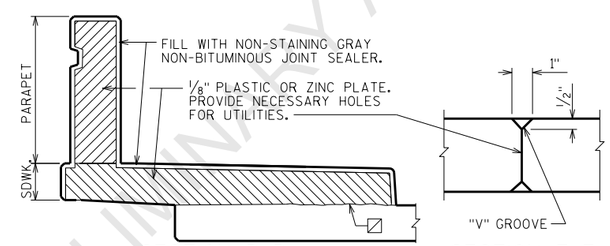
INSIDE ELEVATION OF PARAPET



PLAN OF PARAPET



SECTION A-A



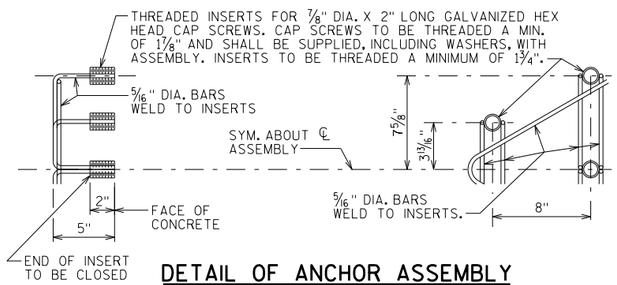
SECTION D-D

(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK.)

WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF ⅛" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION B-B BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.

SECTION E-E

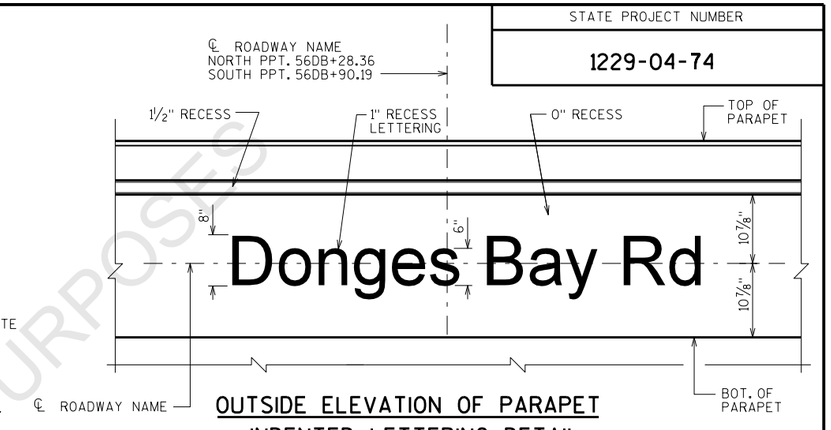
☒ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.



DETAIL OF ANCHOR ASSEMBLY

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

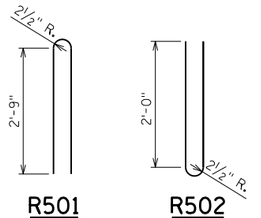
ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.



OUTSIDE ELEVATION OF PARAPET INDENTED LETTERING DETAIL

EXTERIOR FACE OF PARAPET ONLY

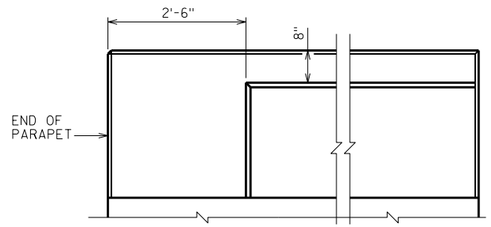
INDENTED TEXT NOTES:
1. LETTERING SHALL BE HELVETICA, 8" UPPER CASE AND 6" LOWER CASE.
2. LETTERING IS ONLY ON EXTERIOR FACE OF PARAPET.
3. SEE "OUTSIDE ELEVATION OF PARAPET INDENTED LETTERING DETAIL" THIS SHEET FOR LOCATIONS.
4. FORMING OF LETTERING INCIDENTAL TO "CONCRETE MASONRY BRIDGES".
5. STAIN RECESSED LETTERING BLACK, FEDERAL COLOR #27038. INCIDENTAL TO "CONCRETE MASONRY BRIDGES".



R501 R502

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	116	6'-2"	X		PARAPET VERT.
R502	X	116	4'-9"	X		PARAPET VERT.
R503	X	32	19'-8"			PARAPET HORIZ.



OUTSIDE FACE OF PARAPET

STATE PROJECT NUMBER

1229-04-74

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

VERTICAL FACE PARAPET "A" MODIFIED

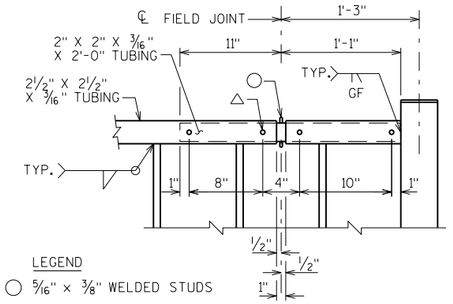
SHEET 17

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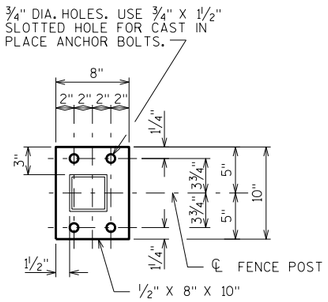
8

8

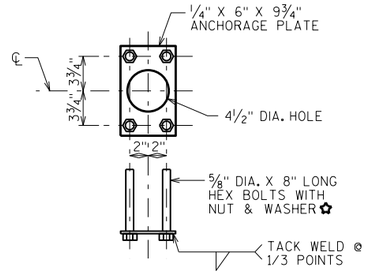
PRELIMINARY AND NOT FOR BIDDING PURPOSES



RAILING EXPANSION JOINT DETAIL



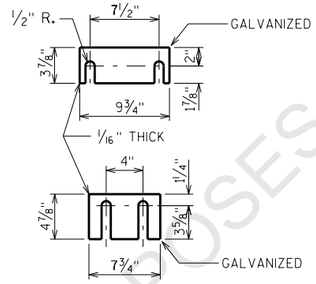
BASE PLATE



ANCHORAGE DETAIL

✿ALTERNATIVE ANCHORAGE: ADHESIVE ANCHORS ⅝-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS.

NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.



SHIM PLATE DETAILS

TWO SHIMS OF EACH SIZE REQUIRED PER POST

STATE PROJECT NUMBER

1229-04-74

NOTES

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. PLATES, ANGLES, BARS AND SHIMS SHALL CONFORM TO ASTM A709, GRADE 36. FENCE FABRIC SHALL CONFORM TO F668, CLASS 2B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPACINGS ARE TAKEN HORIZONTAL ALONG CENTERLINE OF RAILING AT BASE OF POST.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED. ✿

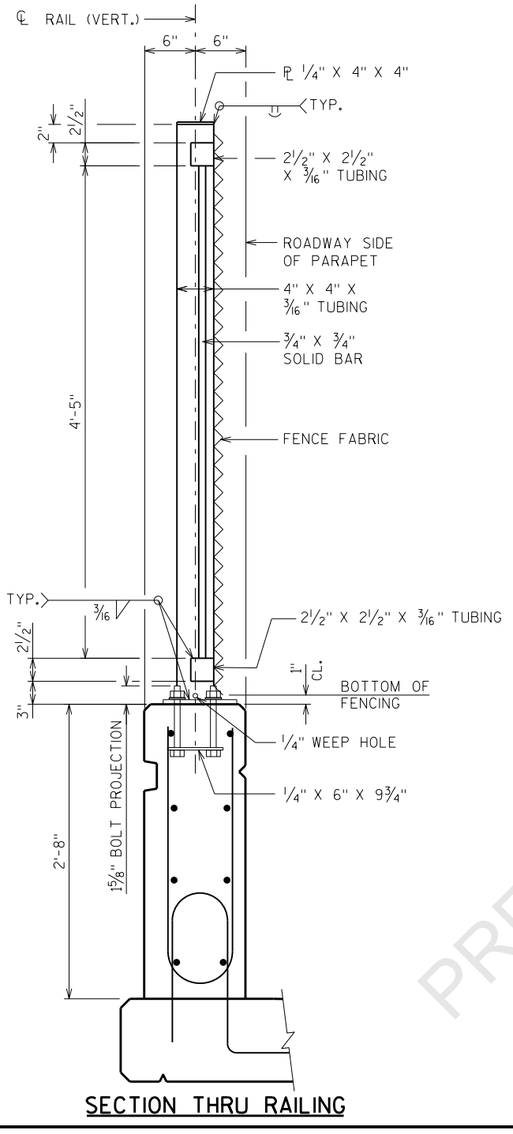
THE BID ITEM SHALL BE "RAILING TUBULAR SCREENING B-45-106" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

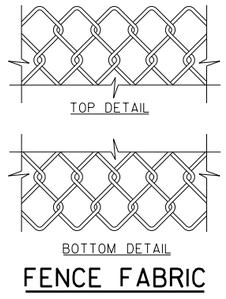
VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

ALL RAILING MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED AMS STD. COLOR NO. 27038, BLACK. FENCE FABRIC AND TIES TO BE VINYL-COATED. COLOR SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

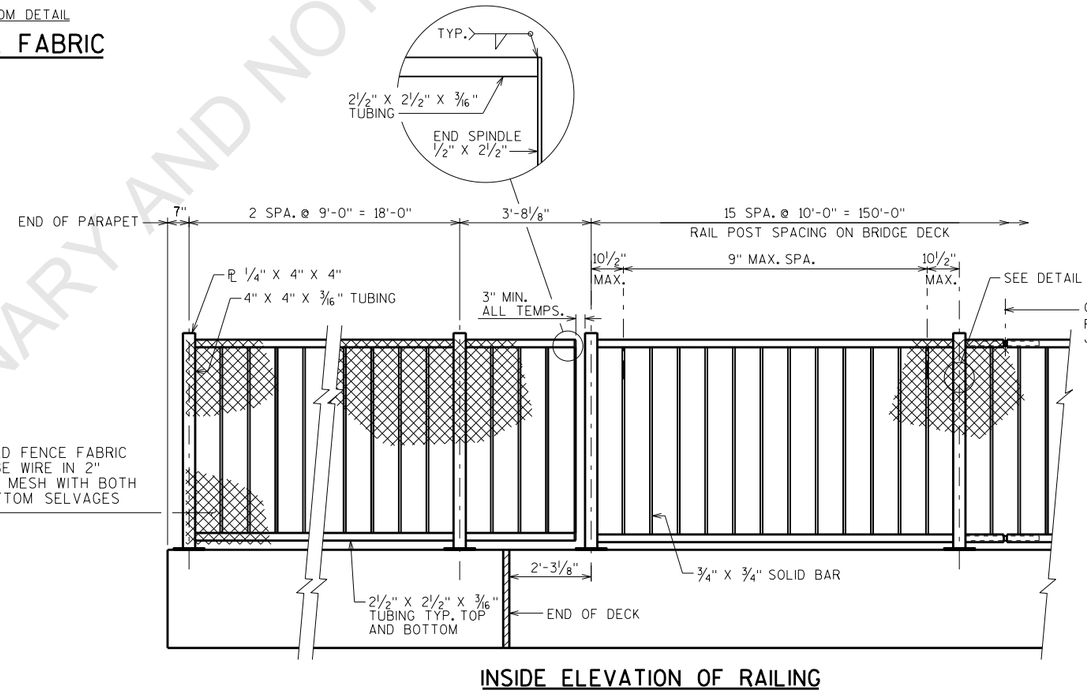
THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.



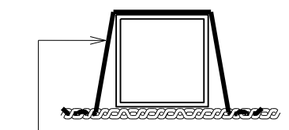
SECTION THRU RAILING



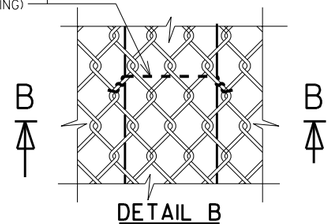
FENCE FABRIC



INSIDE ELEVATION OF RAILING



SECTION B-B



DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

TUBULAR STEEL RAILING SCREENING

SHEET 18

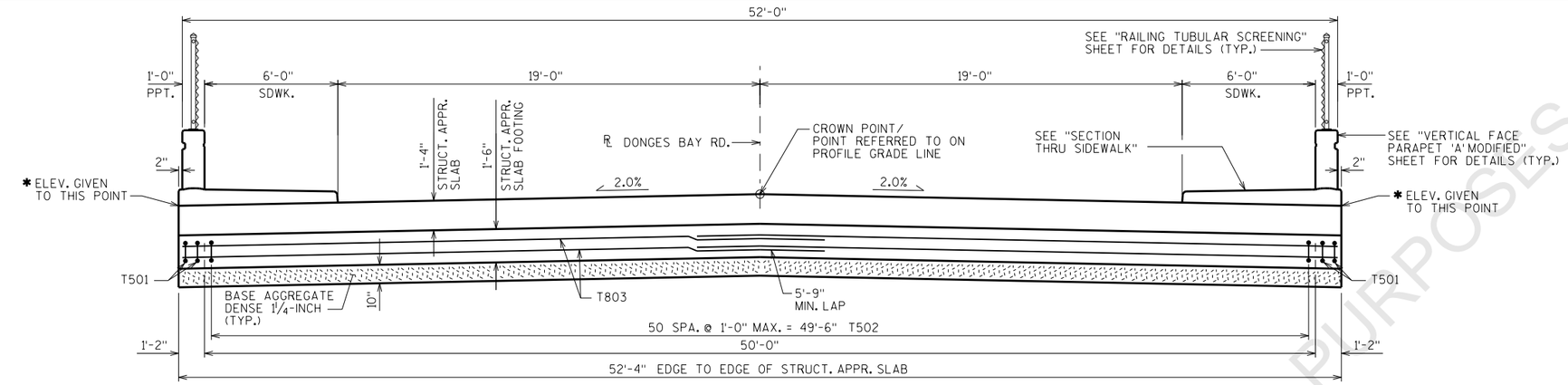
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8

SCALE =

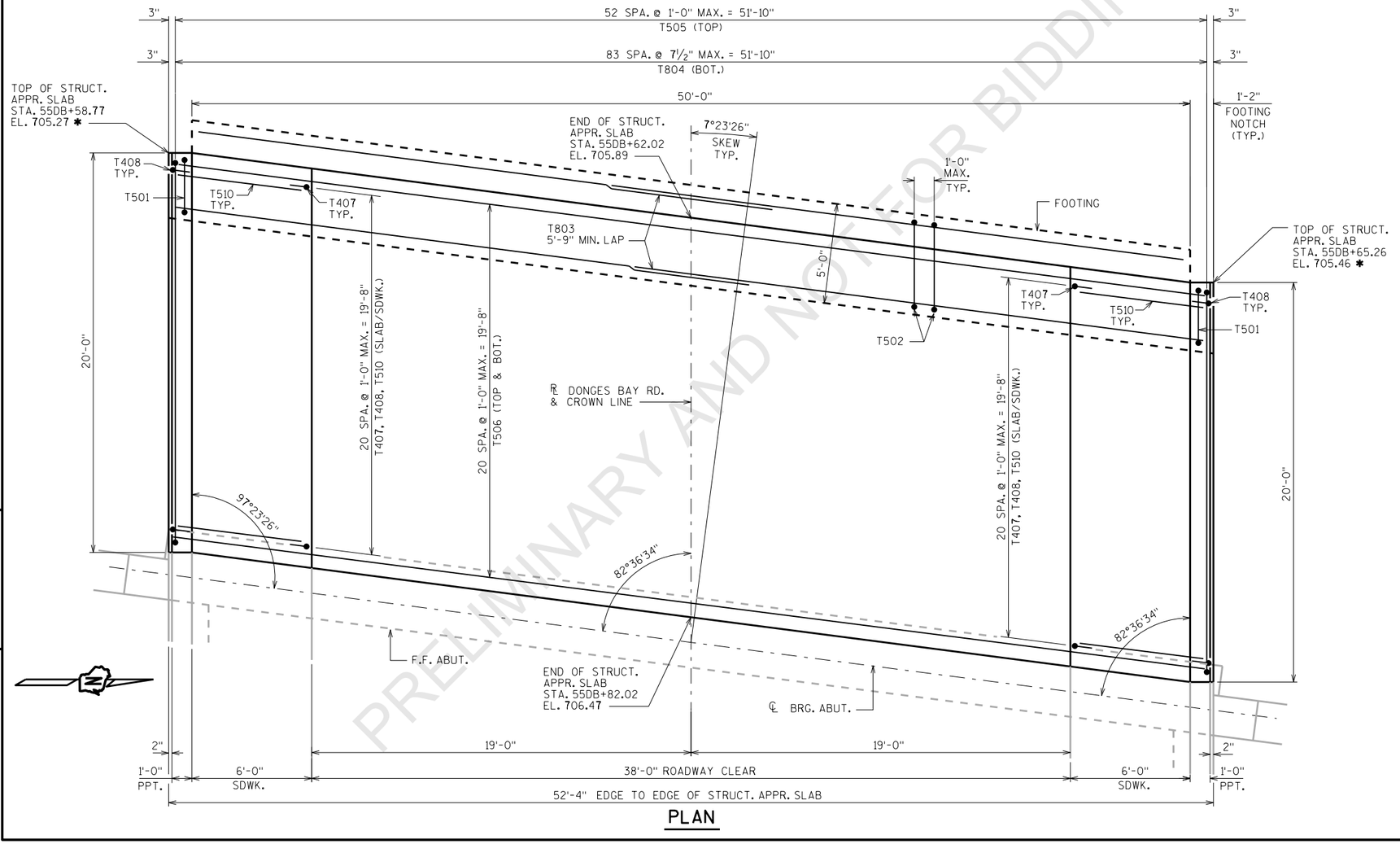
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74



CROSS SECTION THRU ROADWAY

LOOKING WEST
(SHOWING FOOTING STEEL ONLY)



PLAN

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

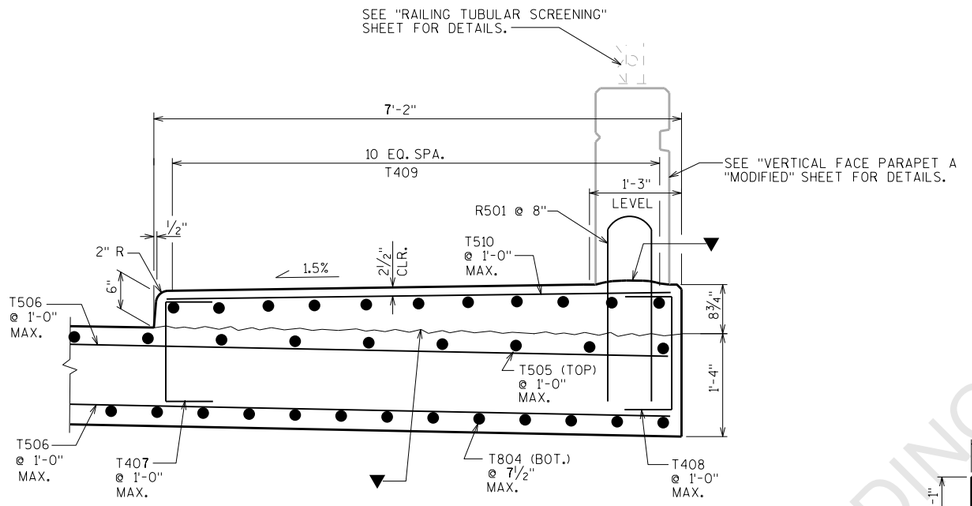
WEST STRUCTURAL APPROACH SLAB

SHEET 19

SCALE = 3.00

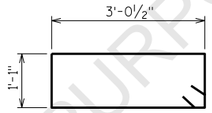
STATE PROJECT NUMBER

1229-04-74

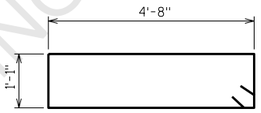


SECTION THRU SIDEWALK

(TYPICAL BOTH SIDES)



T501

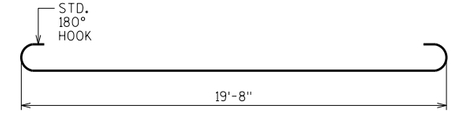


T502

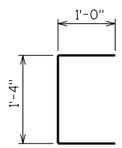
BILL OF BARS

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

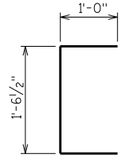
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
T501	X	4	8'-11"	X		FOOTING-VERT. STIRRUP
T502	X	51	12'-2"	X		FOOTING-VERT. STIRRUP
T803	X	24	29'-2"			FOOTING-HORIZ.
T804	X	84	21'-6"	X		SLAB-HORIZ.-BOT.
T505	X	53	19'-8"			SLAB-HORIZ.-TOP
T506	X	42	52'-5"			SLAB-HORIZ.-TRANS.-TOP & BOT.
T407	X	42	3'-2"	X		SLAB/SDWK.-VERT. (FRONT)
T408	X	42	3'-5"	X		SLAB/SDWK.-VERT. (BACK)
T409	X	22	19'-8"			SDWK.-LONGIT.
T510	X	42	6'-10"			SDWK.-TRANS.



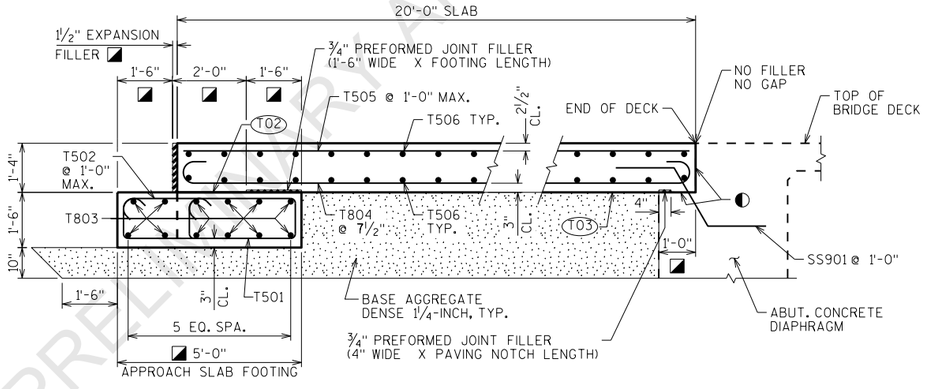
T804



T407



T408



SECTION THRU APPROACH SLAB

▼ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR STRUCTURAL APPROACH SLAB, MATCH STRUCTURAL APPROACH SLAB X-SLOPE.

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

◪ MEASURED NORMAL TO ABUTMENT

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

(T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE SUBGRADE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

WEST STRUCTURAL APPROACH SLAB DETAILS

SHEET 20

SCALE = 3.00

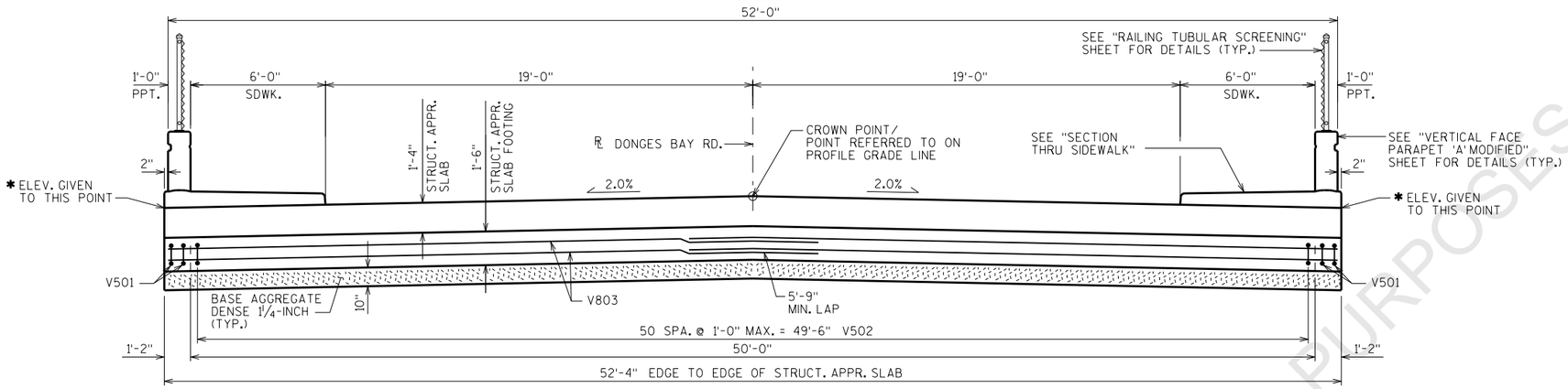
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PRELIMINARY AND NOT FOR BIDDING PURPOSES

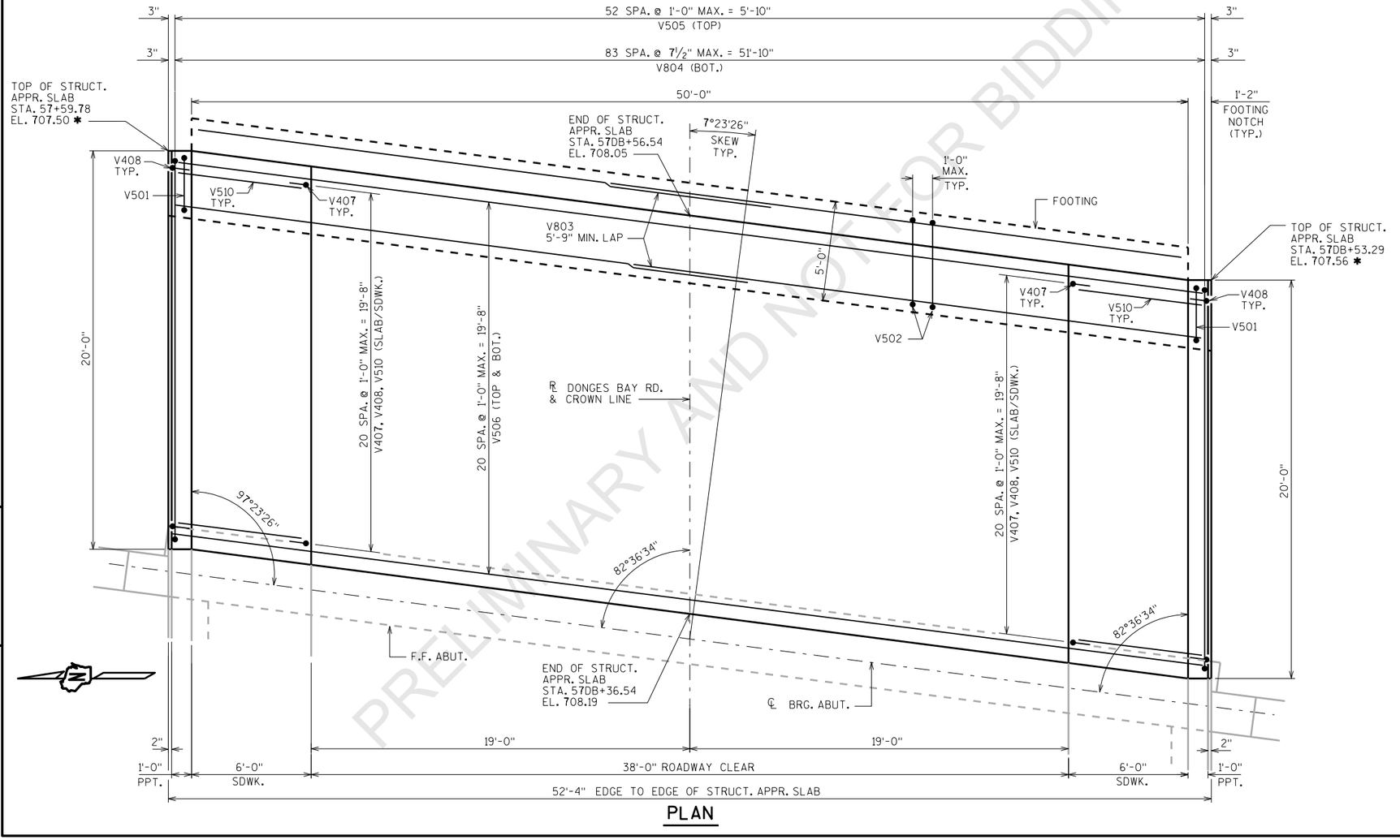
STATE PROJECT NUMBER

1229-04-74



CROSS SECTION THRU ROADWAY

LOOKING EAST
(SHOWING FOOTING STEEL ONLY)



PLAN

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

EAST STRUCTURAL APPROACH SLAB

SHEET 21

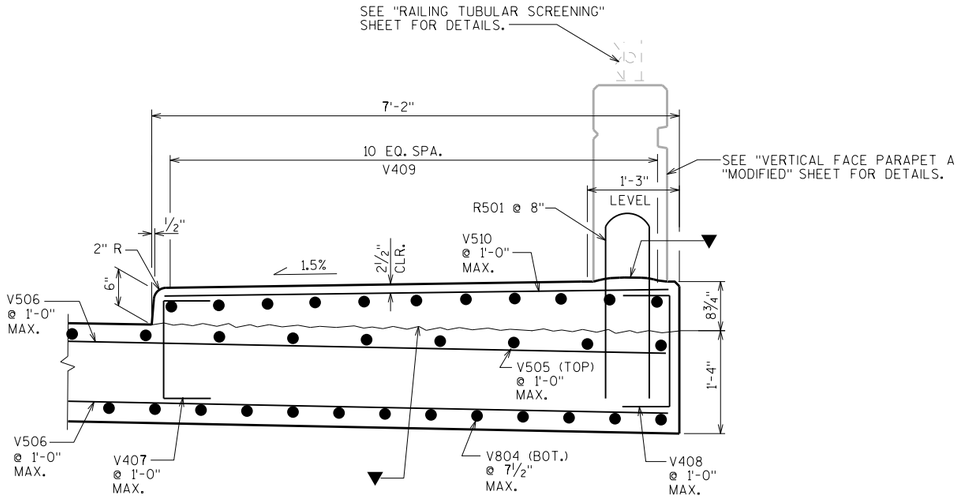
SCALE = 3.00

8

8

STATE PROJECT NUMBER

1229-04-74



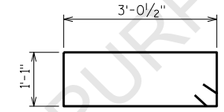
SECTION THRU SIDEWALK

(TYPICAL BOTH SIDES)

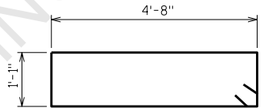
BILL OF BARS

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

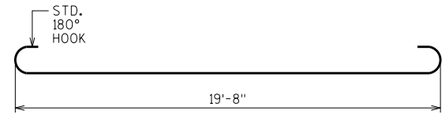
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
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V502	X	51	12'-2"	X		FOOTING-VERT. STIRRUP
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V407	X	42	3'-2"	X		SLAB/SDWK.-VERT. (FRONT)
V408	X	42	3'-5"	X		SLAB/SDWK.-VERT. (BACK)
V409	X	22	19'-8"			SDWK.-LONGIT.
V510	X	42	6'-10"			SDWK.-TRANS.



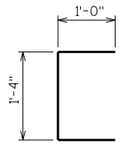
V501



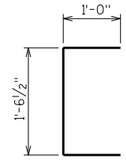
V502



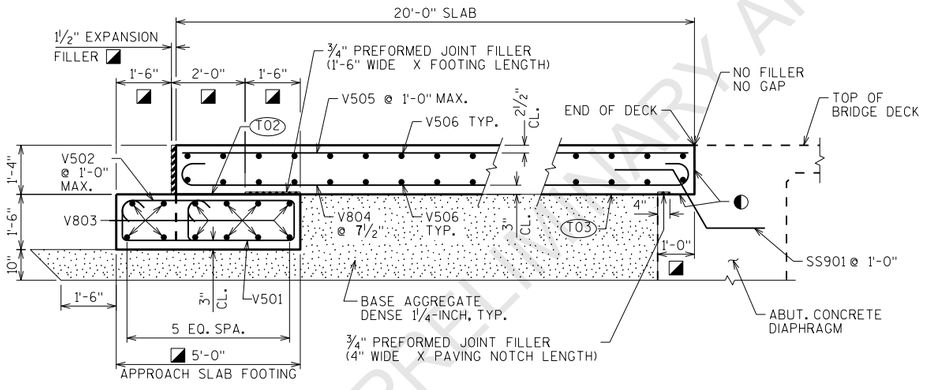
V804



V407



V408



SECTION THRU APPROACH SLAB

▼ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR STRUCTURAL APPROACH SLAB, MATCH STRUCTURAL APPROACH SLAB X-SLOPE.

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

◪ MEASURED NORMAL TO ABUTMENT

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

(T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE SUBGRADE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

EAST STRUCTURAL APPROACH SLAB DETAILS

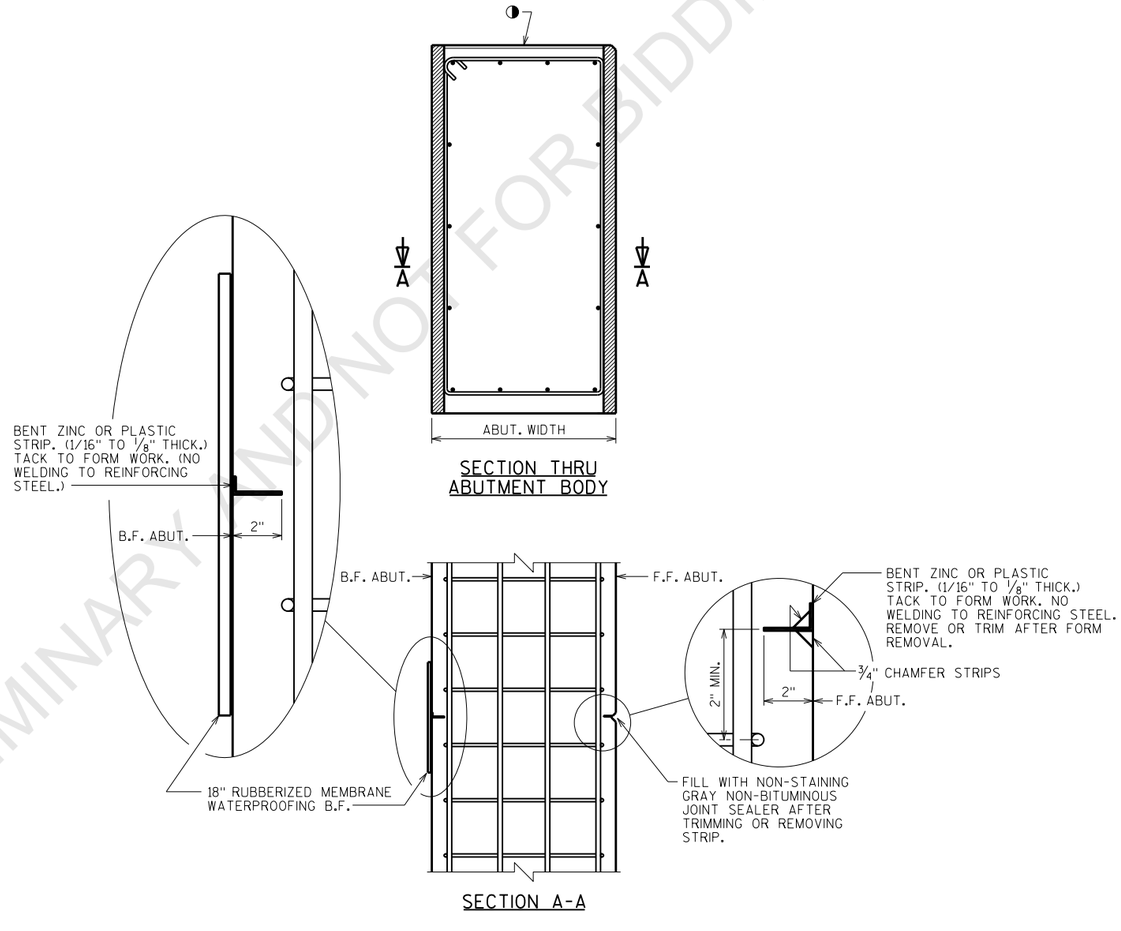
SHEET 22

SCALE = 3.00

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74

PRELIMINARY AND NOT FOR BIDDING PURPOSES



SECTION THRU ABUTMENT BODY

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED.

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-45-106

DRAWN BY WWR | PLANS CK'D. JLR

ALTERNATE CONSTRUCTION JOINT

SHEET 23

8

8

SCALE =

STATE PROJECT NUMBER
1229-04-74

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION (1 OF 2)
2. GENERAL PLAN & ELEVATION (2 OF 2)
3. QUANTITIES & PROFILES
4. STAGING PLAN (1 OF 2)
5. STAGING PLAN (2 OF 2)
6. TYPICAL SECTIONS
7. JUNCTION STRUCTURE LAYOUT
8. JUNCTION STRUCTURE ELEVATION VIEWS
9. JUNCTION STRUCTURE REINF. (1 OF 4)
10. JUNCTION STRUCTURE REINF. (2 OF 4)
11. JUNCTION STRUCTURE REINF. (3 OF 4)
12. JUNCTION STRUCTURE REINF. (4 OF 4)
13. JUNCTION STRUCTURE BILL OF BARS
14. PANELS 1& 2 REINFORCEMENT PLAN
15. PANEL 3 REINFORCEMENT PLAN
16. PANELS 4-6 REINFORCEMENT PLAN
17. PANEL 7 REINFORCEMENT PLAN
18. PANELS 8-11 REINFORCEMENT PLAN
19. PANEL 12 REINFORCEMENT PLAN
20. PANELS 1-2 SECTION & BILL OF BARS
21. PANELS 3-7 SECTION & BILL OF BARS
22. PANELS 8-12 SECTION & BILL OF BARS
23. BOX CULVERT DETAILS
24. OUTLET APRON & WING DETAILS (1 OF 2)
25. OUTLET APRON & WING DETAILS (2 OF 2)
26. SUBSURFACE EXPLORATION (1 OF 2)
27. SUBSURFACE EXPLORATION (2 OF 2)

TRAFFIC DATA

KATHERINE DR

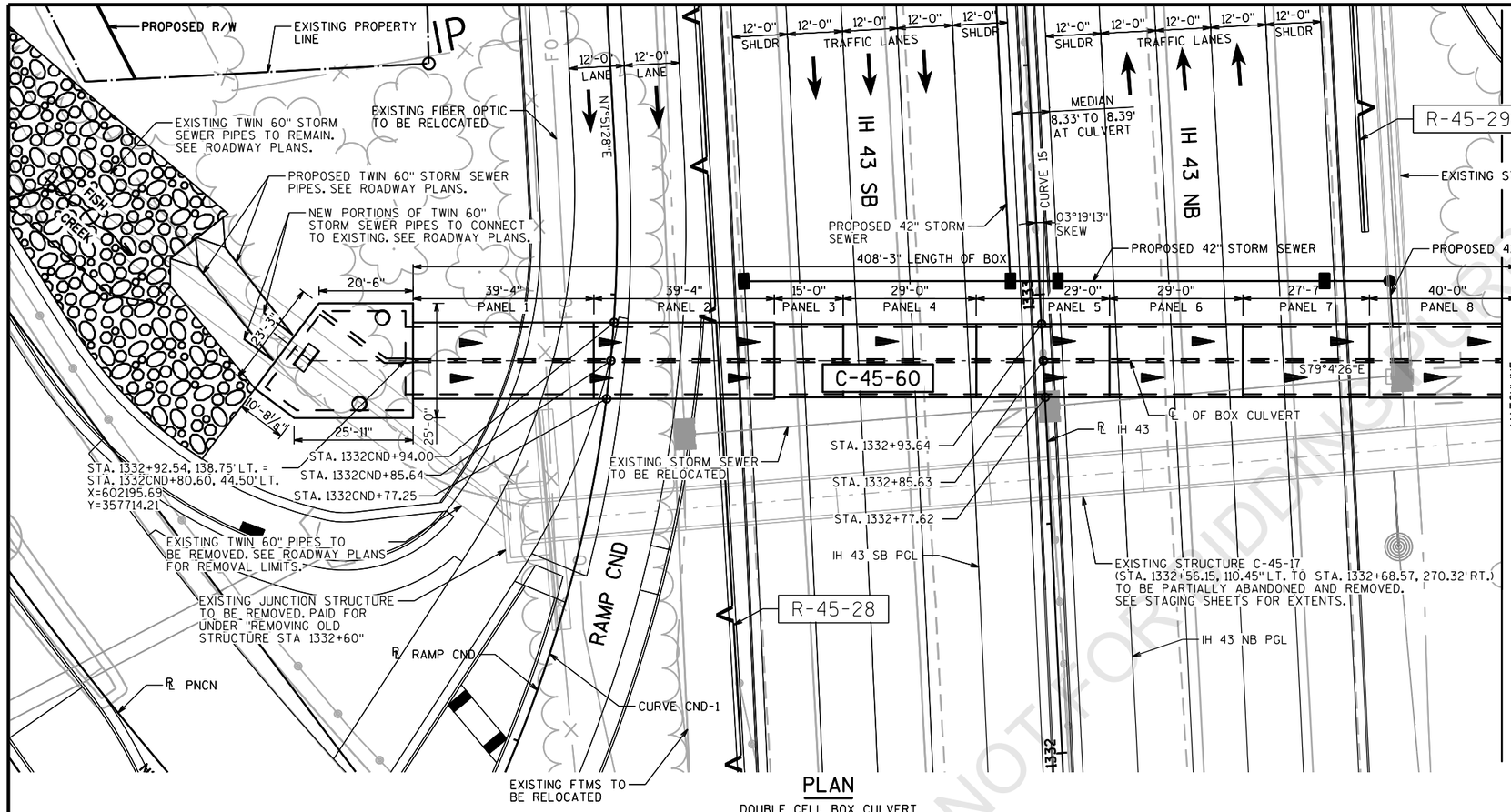
AADT = 2,700 (2019)
AADT = 3,900 (2045)
RDS = 40 MPH

IH 43

AADT = 68,600 (2019)
AADT = 84,300 (2045)
RDS = 75 MPH

RAMP CND

AADT = 1,700 (2045)
RDS = 30-65 MPH

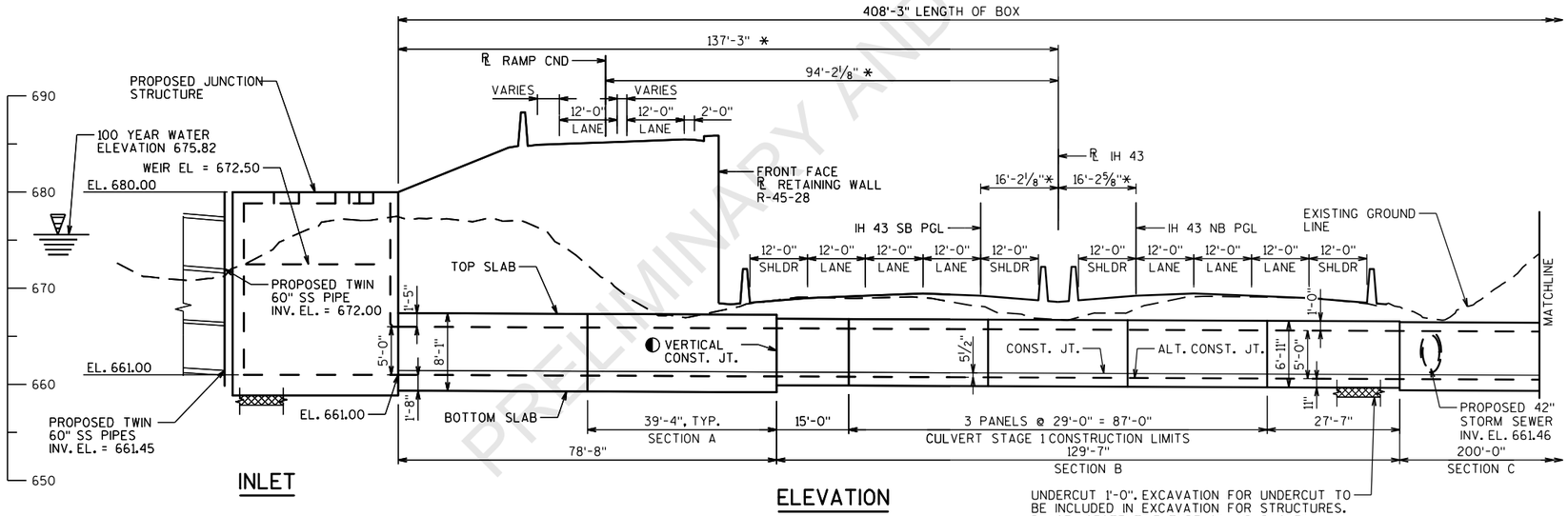


PLAN

DOUBLE CELL BOX CULVERT

LEGEND

- ← DIRECTION OF TRAFFIC
- ◐ 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING UP WALL & ACROSS TOP SLAB
- * MEASURED ALONG C/L OF BOX CULVERT



INLET

ELEVATION

LOOKING NORTH
STRUCTURE DIMENSIONS ALONG ℄ OF BOX CULVERT
ROADWAY DIMENSIONS NORMAL TO R/L UNLESS NOTED OTHERWISE

UNDERCUT 1'-0". EXCAVATION FOR UNDERCUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN"

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
HEATHER ANDERS (414) 410-6899

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

HNTB
250 E. WISCONSIN AVE. #2000
MILWAUKEE, WI 53202
(414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER — DATE

WISCONSIN PROFESSIONAL ENGINEER
MARK P. MATHU
E-25826
WHITEFISH BAY, WI
7-30-2021

Mark P Mathu

STRUCTURE C-45-60

FISH CREEK CULVERT UNDER IH 43

COUNTY	CITY
OZAUKEE	MEQUON

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JWO	MPM	CRK/HDA	MPM

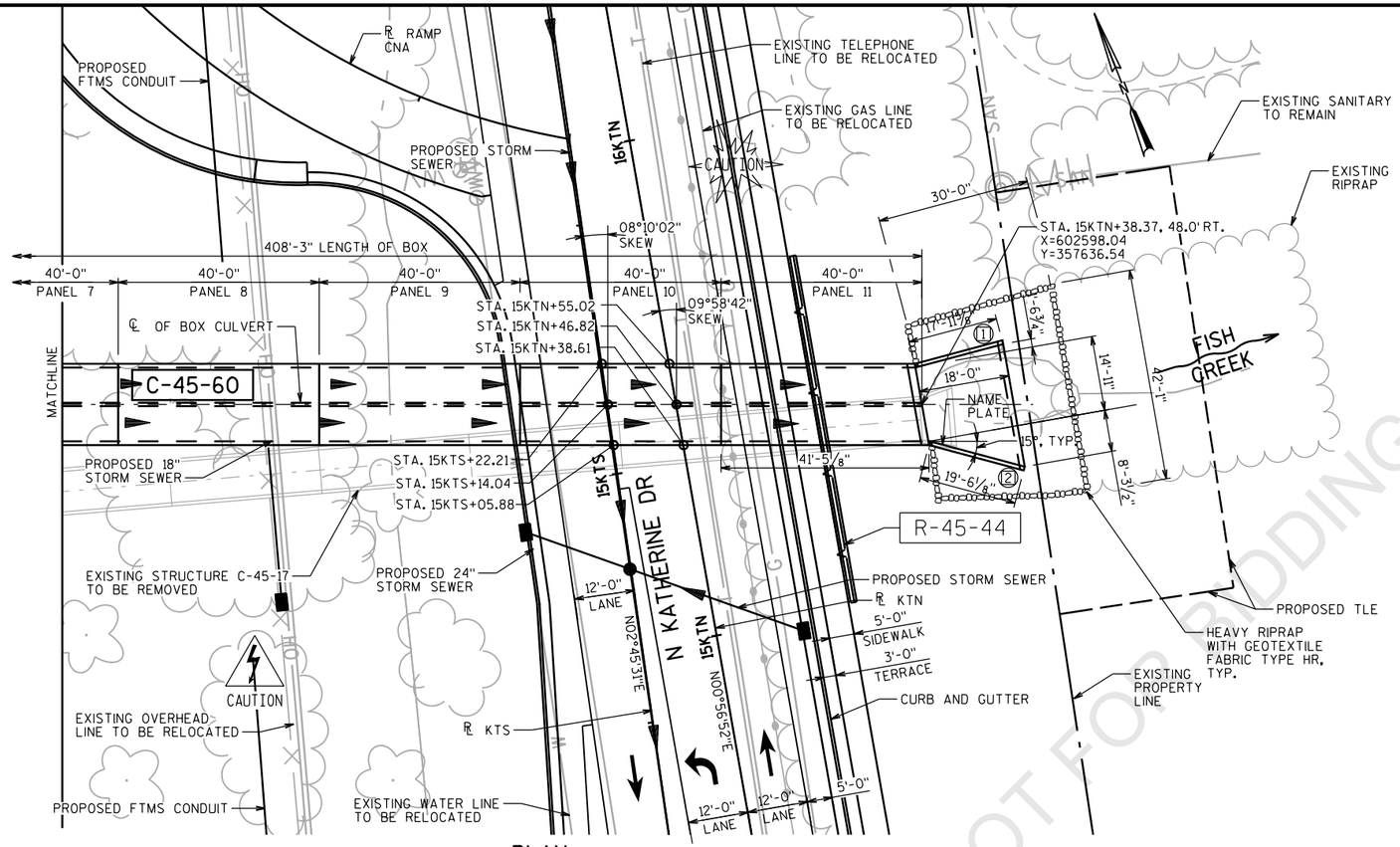
GENERAL PLAN & ELEVATION (1 OF 2)

SHEET 1 OF 27

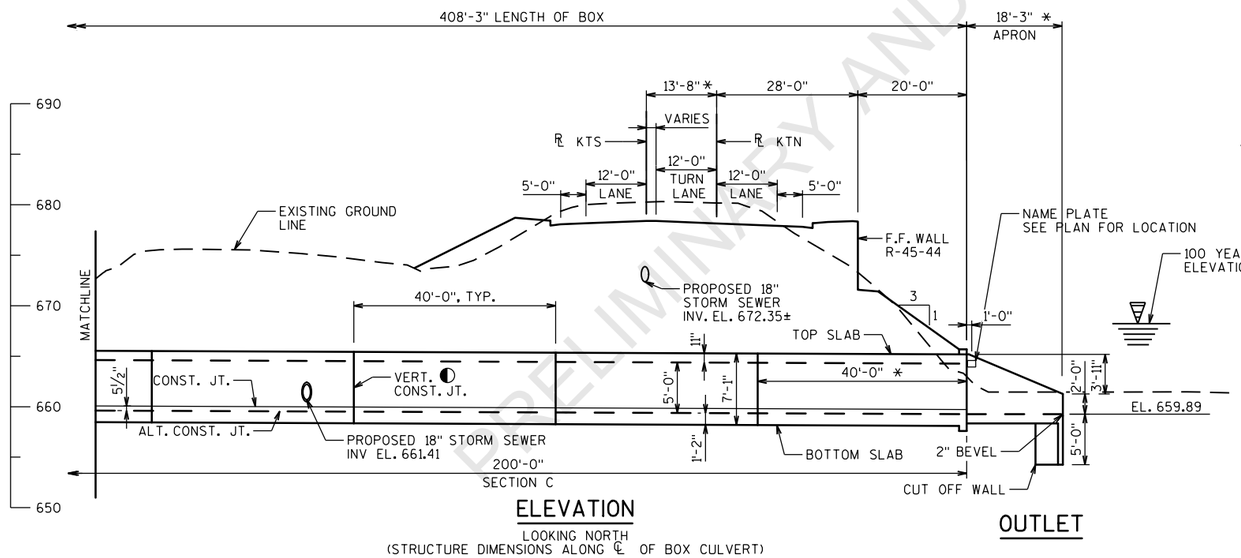
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8

STATE PROJECT NUMBER
1229-04-74



PLAN
DOUBLE CELL BOX CULVERT



ELEVATION
LOOKING NORTH
(STRUCTURE DIMENSIONS ALONG ℄ OF BOX CULVERT)

OUTLET

GENERAL NOTES

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD) 88 (2007).

DRAWINGS SHALL NOT BE SCALED.

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

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

THE UTILITY AND STORM SEWER INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AND STORM SEWERS AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

NAME PLATE SHALL BE CONSIDERED INCIDENTAL TO BID ITEM "CONCRETE MASONRY CULVERTS". REFER TO S.D.D. "NAME PLATE (STRUCTURES)" FOR NAME PLATE DETAILS.

THE EXISTING STRUCTURE IS A SINGLE CELL 8'X4' CONCRETE BOX CULVERT WITH AN APPROXIMATE LENGTH OF 380 FEET. STRUCTURE TO BE REMOVED AND PARTIALLY ABANDONED PER THE LIMITS SHOWN IN THE STAGING PLAN. REMOVAL PAID FOR UNDER BID ITEM "REMOVING OLD STRUCTURE STA 1332+60". ABANDONMENT TO BE PAID FOR UNDER BID ITEM "ABANDONING SEWER", INCLUDED WITH ROADWAY PLANS.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMIT OF "EXCAVATION FOR STRUCTURES CULVERTS C-45-60."

△ THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE B" REQUIRED ON THE BOX CULVERT SIDES AND BEHIND APRON WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

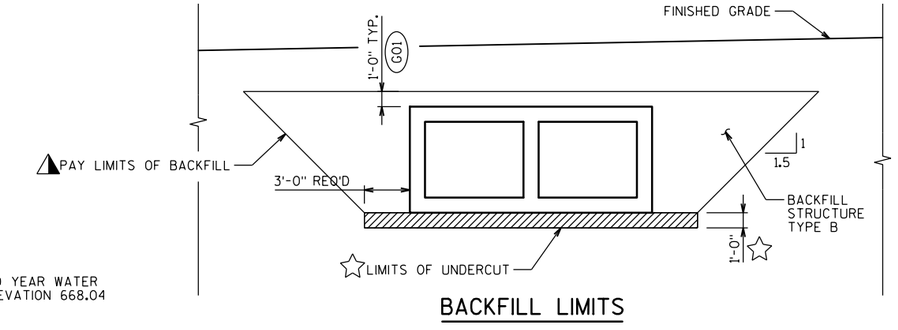
☆ UNDERCUT 1'-0". EXCAVATION FOR UNDERCUT TO BE INCLUDED IN "EXCAVATION FOR STRUCTURES CULVERTS C-45-60". PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN".

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE OR BREAKER RUN SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE B TO THE ELEVATION SHOWN IN THE "BACKFILL LIMITS" DETAIL. FILL ABOVE THE BACKFILL IS INCLUDED IN THE EARTHWORK QUANTITIES IN THE ROAD PLANS.

THE CONCRETE IN THE CUT OFF WALL MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

THE "ALTERNATE CUT OFF WALL" DETAIL MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONCRETE CUT OFF WALLS. PAYMENT SHALL BE BASED ON CONCRETE CUT OFF WALL.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES MAINTENANCE SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS IN CHAPTER 36 STANDARDS OF THE CURRENT WISCONSIN DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES". A PRECAST JUNCTION CHAMBER ALTERNATIVE IS NOT ALLOWED.



BACKFILL LIMITS

LEGEND

- → DIRECTION OF TRAFFIC
- (X) WINGWALL NUMBER
- ◐ 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING UP WALL & ACROSS TOP SLAB
- * MEASURED ALONG C/L OF BOX CULVERT
- (G01) NO BACKFILL ON TOP OF JUNCTION STRUCTURE (TOP SLAB EXPOSED). DEPTH OF BACKFILL AT SECTION B AS REQUIRED FOR DEPTH OF ROADWAY PAVEMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

DRAWN BY CRK/HDA | PLANS CK'D. MPM

GENERAL PLAN (2 OF 2)

SHEET 2 OF 27

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\C-45-60\cds\C060_08102_02.dgn 7/26/2021 9:46:56 AM PLOT BY : HAnders PLOT NAME : $FILE$ PLOT SCALE : 30:1

STATE PROJECT NUMBER
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TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	JUNCTION STRUCTURE	BOX CULVERTS	EAST APRON	TOTAL
203.0220.0013	REMOVING STRUCTURE C-45-17	EACH				1
206.2000.0013	EXCAVATION FOR STRUCTURES CULVERTS C-45-60	LS				1
210.2500	BACKFILL STRUCTURE TYPE B	TON	6,000	5,060	100	11,160
311.0110	BREAKER RUN	TON	60	590	40	690
504.0100	CONCRETE MASONRY CULVERTS	CY	194	714	21	930
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	33,200	74,040	740	107,980
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB			860	860
511.1200.0013	TEMPORARY SHORING C-45-60	SF	3,200	1,060		4,260
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	33	59	9	101
606.0300	RIPRAP HEAVY	CY			60	60
611.0550	MANHOLE COVERS TYPE M	EACH	2			2
611.0642	INLET COVERS TYPE MS	EACH	2			2
645.0105	GEOTEXTILE TYPE C	SY	110	1,010	70	1,190
645.0120	GEOTEXTILE TYPE HR	SY			130	130
SPV.0060.4004	TEMPORARY WATER DIVERSION CULVERT C-45-60	EACH				1
SPV.0060.4005	TEMPORARY WATER DIVERSION JUNCTION CHAMBER	EACH				1
	NON-BID ITEMS					
	NAME PLATE	EACH				1
	PREFORMED JOINT FILLER	SIZE				3/4"
	MANHOLE STEPS	EACH	28			28

ALL ITEMS ARE CATEGORY 4000

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.05
OPERATING RATING FACTOR: RF = 1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 255 KIPS

EARTH LOAD:

SECTION A DESIGNED FOR EQUIVALENT FILL HEIGHT OF 31.8 FEET
(INCL. RETAINING WALL SURCHARGES)
SECTION B DESIGNED FOR FILL HEIGHT OF 0.73 FEET
(PLUS LL SURCHARGE)
SECTION C DESIGNED FOR EQUIVALENT FILL HEIGHT OF 16.5 FEET
(INCL. RETAINING WALL SURCHARGES)

MATERIAL PROPERTIES:

CONCRETE MASONRY _____ f'c = 3,500 psi
BAR STEEL REINFORCEMENT _____ fy = 60,000 psi

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 902 C.F.S.
VEL. = 13.8 F.P.S. (MAX. WITHIN THE CULVERT CELLS)
HW_{100} = EL. 668.04
WATERWAY AREA = 70 SQ.FT.
DRAINAGE AREA = 1.25 SQ.MI.
ROADWAY OVERTOPPING = N.A.
SCOUR CODE = 8

2 YEAR FREQUENCY

Q_2 = 165 C.F.S.
VEL. = 7.90 F.P.S. (MAX. WITHIN LOW-FLOW CULVERT CELL)
HW_2 = EL. 663.46

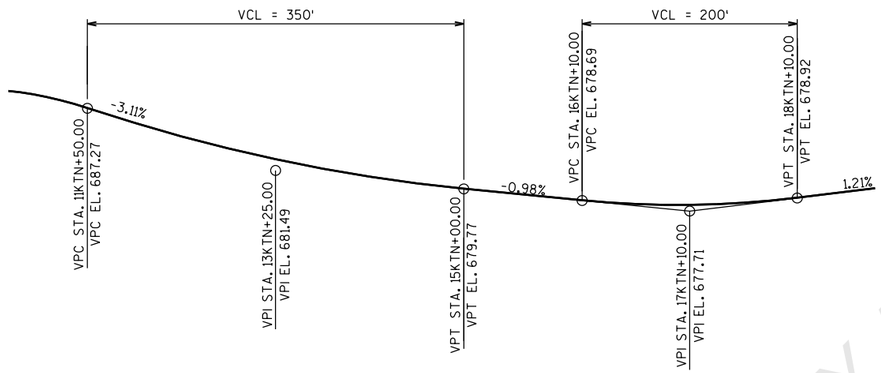
HORIZONTAL CURVE DATA

CURVE 15

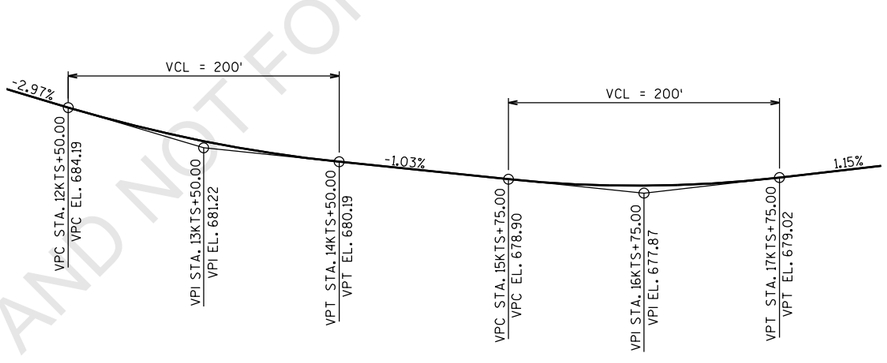
PI = STA. 1330+71.43
X = 602303.10
Y = 357475.62
DELTA = 01°06'48"
D = 00°09'10"
R = 37484.00'
T = 364.22'
L = 728.42'
PC = STA. 1327+07.21
X = 602246.30
Y = 357115.86
PT = STA. 1334+35.63
X = 602352.90
Y = 357836.43

CURVE CND-1

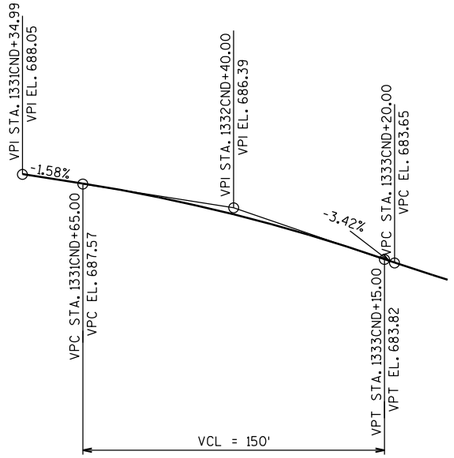
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X = 602239.02
Y = 357676.92
DELTA = 27°27'36"
D = 19°05'55"
R = 300.00'
T = 73.30'
L = 143.78'
PC = STA. 1331CND+86.70
X = 602196.64
Y = 357617.11
PT = STA. 1133CND+30.48
X = 602249.04
Y = 357749.53



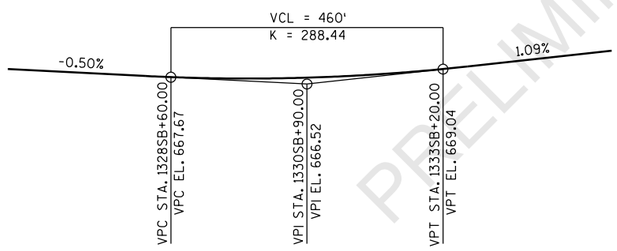
PROFILE GRADE LINE - KATHERINE DR NB



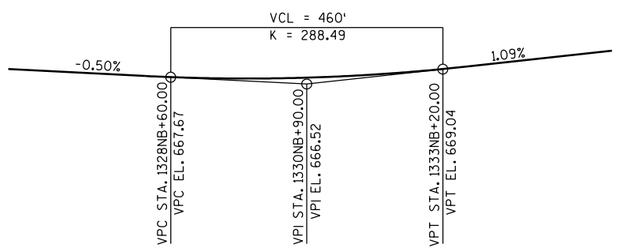
PROFILE GRADE LINE - KATHERINE DR SB



PROFILE GRADE LINE - COUNTY LINE RD RAMP D



PROFILE GRADE LINE - IH 43 SB



PROFILE GRADE LINE - IH 43 NB

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

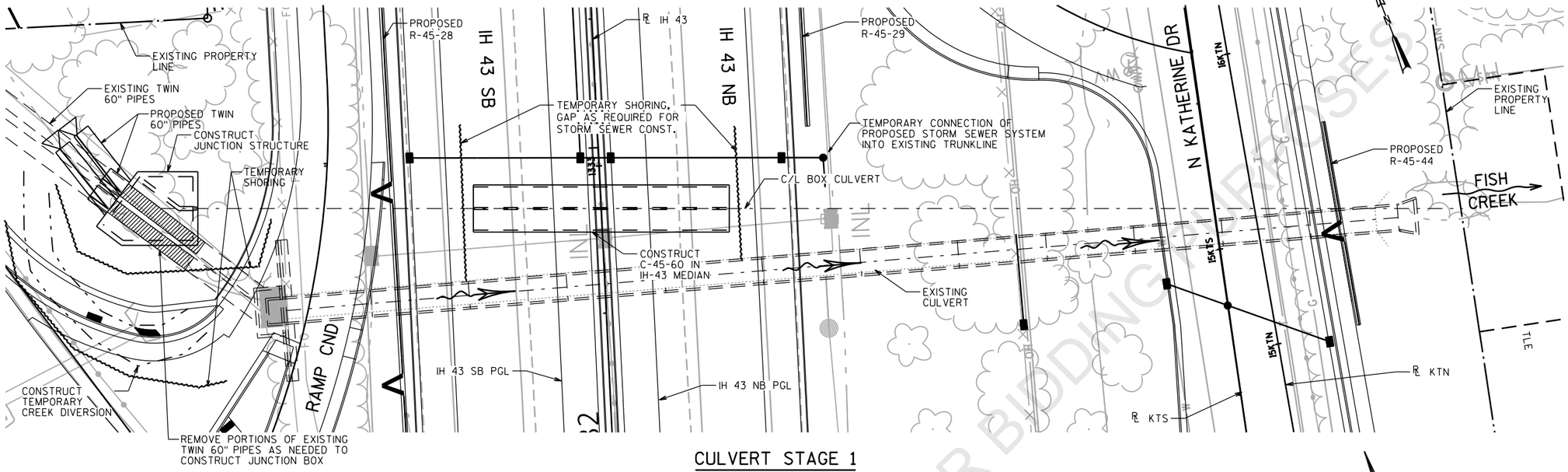
STRUCTURE C-45-60

DRAWN BY CRK/HDA | PLANS CK'D. MPM

QUANTITIES & PROFILES

SHEET 3 OF 27

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CULVERT STAGE 1

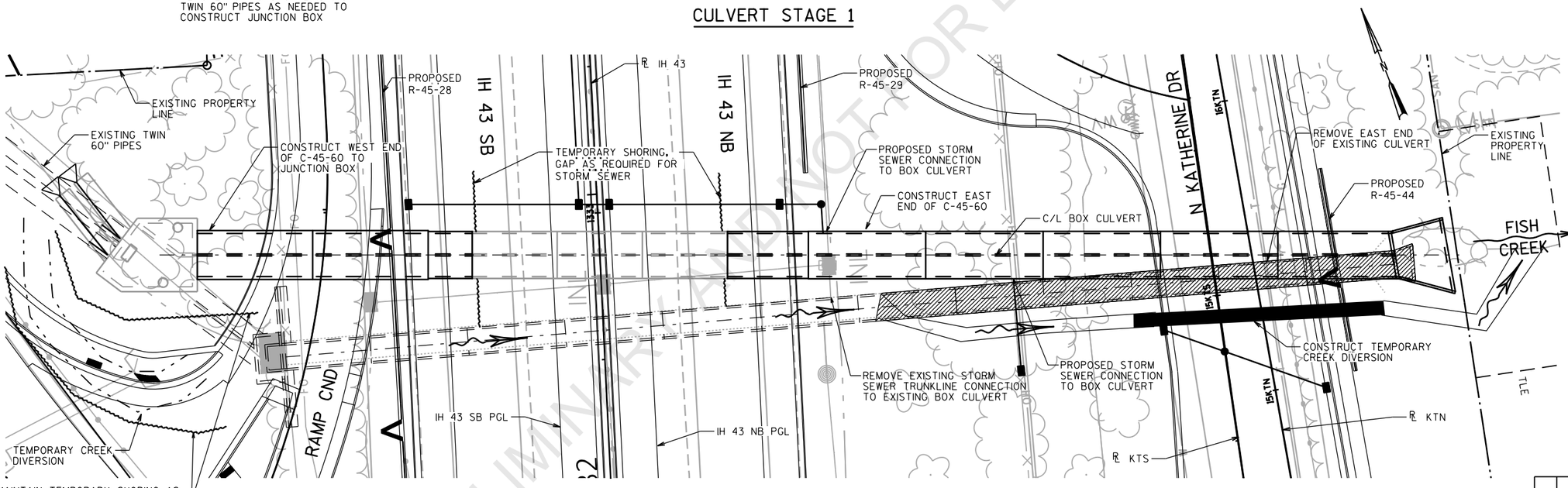
CULVERT STAGE 1

TRAFFIC - TO BE PUSHED TO THE OUTSIDE OF IH 43 NB AND SB WHILE THE MEDIAN IS CONSTRUCTED. KATHERINE DRIVE TO REMAIN OPEN.

FLOW -THROUGH DIVERSION CHANNEL AROUND JUNCTION BOX CONSTRUCTION AND THROUGH EXISTING BOX CULVERT UNDER IH 43 ENTIRE STAGE AND THROUGH EXISTING BOX CULVERT UNDER KATHERINE DRIVE.

CONSTRUCT - THE NEW SECTION OF BOX CULVERT WILL BE CONSTRUCTED IN THE MEDIAN. CONSTRUCT JUNCTION STRUCTURE ON UPSTREAM END OF BOX CULVERT.

REMOVE - PORTIONS OF 60" TWIN PIPES.



CULVERT STAGE 2

CULVERT STAGE 2

TRAFFIC - KATHERINE DRIVE TO BE CLOSED FOR A MAXIMUM OF 2 MONTHS AFTER DONGES BAY RD BRIDGE IS OPEN. IH 43 TRAFFIC ON NEWLY CONSTRUCTED INSIDE LANES.

FLOW - THROUGH EXISTING BOX CULVERT UNDER IH 43 AND THROUGH DIVERSION CHANNEL AND PIPE UNDER KATHERINE DRIVE.

CONSTRUCT - NEW SEGMENTS OF BOX CULVERT UNDER KATHERINE DRIVE. CONSTRUCT PANEL 8 LAST TO MAINTAIN TEMPORARY STORM SEWER CONNECTIONS.

REMOVE - EAST END OF THE EXISTING BOX CULVERT.

LEGEND

REMOVAL LIMITS

NOTES

CULVERT STAGE NUMBERS DO NOT CORRESPOND TO ROADWAY STAGE NUMBERS. SEE ROADWAY STAGING PLANS FOR ADDITIONAL INFORMATION.

C-45-60 STRUCTURE WORK BEGINS IN ROADWAY STAGE 2.

PRELIMINARY - NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

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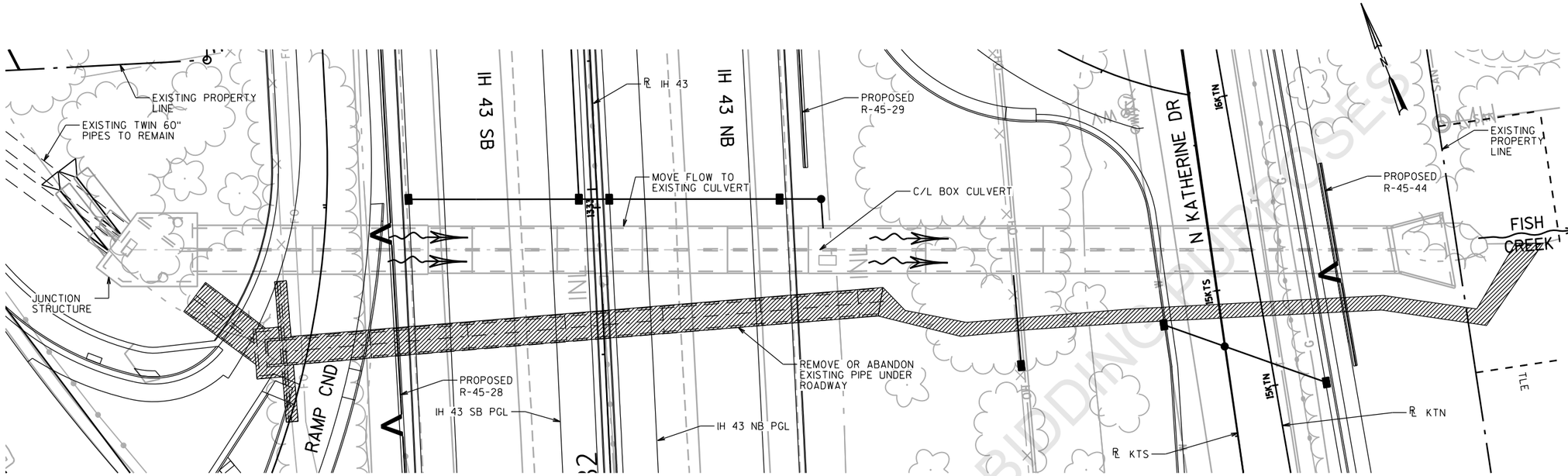
STAGING PLAN (1 OF 2)

SHEET 4 OF 27

8

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STATE PROJECT NUMBER
1229-04-74



CULVERT STAGE 3

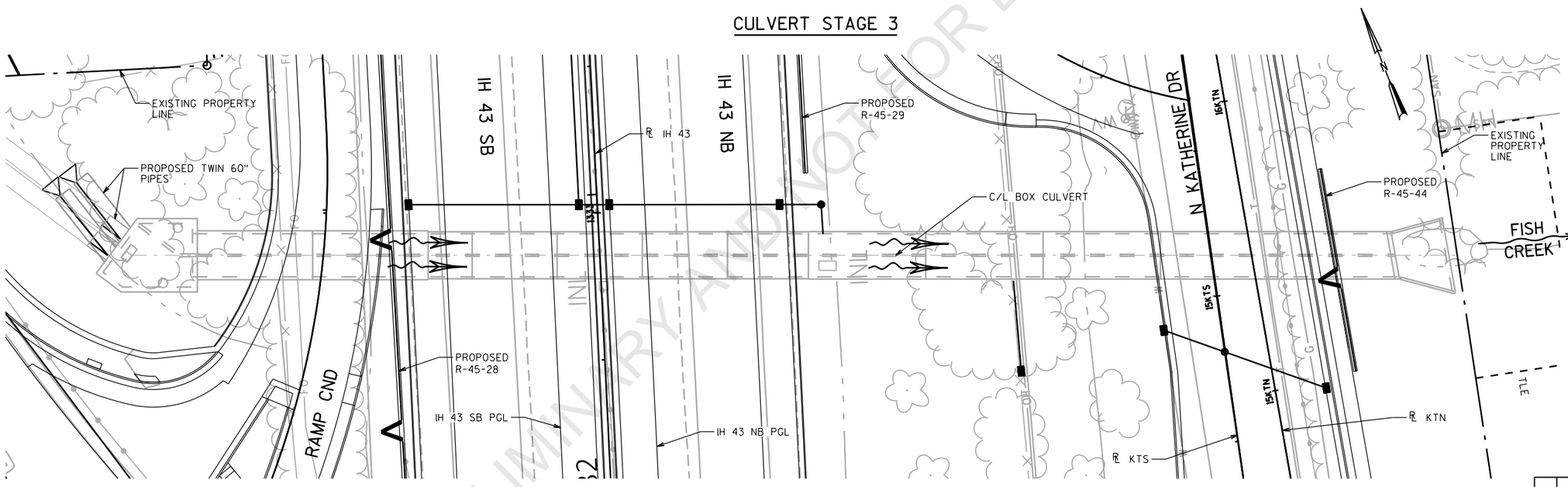
CULVERT STAGE 3

TRAFFIC - IH 43 NB AND IH 43 SB TRAFFIC WILL REMAIN ON NEWLY CONSTRUCTED INSIDE LANES. KATHERINE DRIVE WILL BE CLOSED CONTINUOUS WITH THE PREVIOUS STAGE.

FLOW - THROUGH NEW CULVERT C-45-60.

CONSTRUCT - R-45-44.

REMOVE/ABANDON - ABANDON EXISTING CULVERT UNDER IH 43. REMOVE ACCESSIBLE SECTIONS OUTSIDE OF ROADWAY AND REMOVE TEMPORARY PIPE UNDER KATHERINE DRIVE. BID ITEM "ABANDONING SEWER" NOT A CULVERT ITEM, SEE DRAINAGE PLANS.



CULVERT STAGE 4

CULVERT STAGE 4

TRAFFIC - IH 43 NB AND IH 43 SB TRAFFIC WILL REMAIN ON NEWLY CONSTRUCTED INSIDE LANES.

FLOW - THROUGH NEW BOX CULVERT UNDER IH 43 SB AND KATHERINE DRIVE.

CONSTRUCT - R-45-44 AND BACKFILL DIVERSION TRENCH AND BOX CULVERT TRENCH UNDER KATHERINE DRIVE.

REMOVE - NONE.

LEGEND

REMOVAL OR ABANDON LIMITS

NOTES

CULVERT STAGE NUMBERS DO NOT CORRESPOND TO ROADWAY STAGE NUMBERS. SEE ROADWAY STAGING PLANS FOR ADDITIONAL INFORMATION.

C-45-60 STRUCTURE WORK BEGINS IN ROADWAY STAGE 2.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

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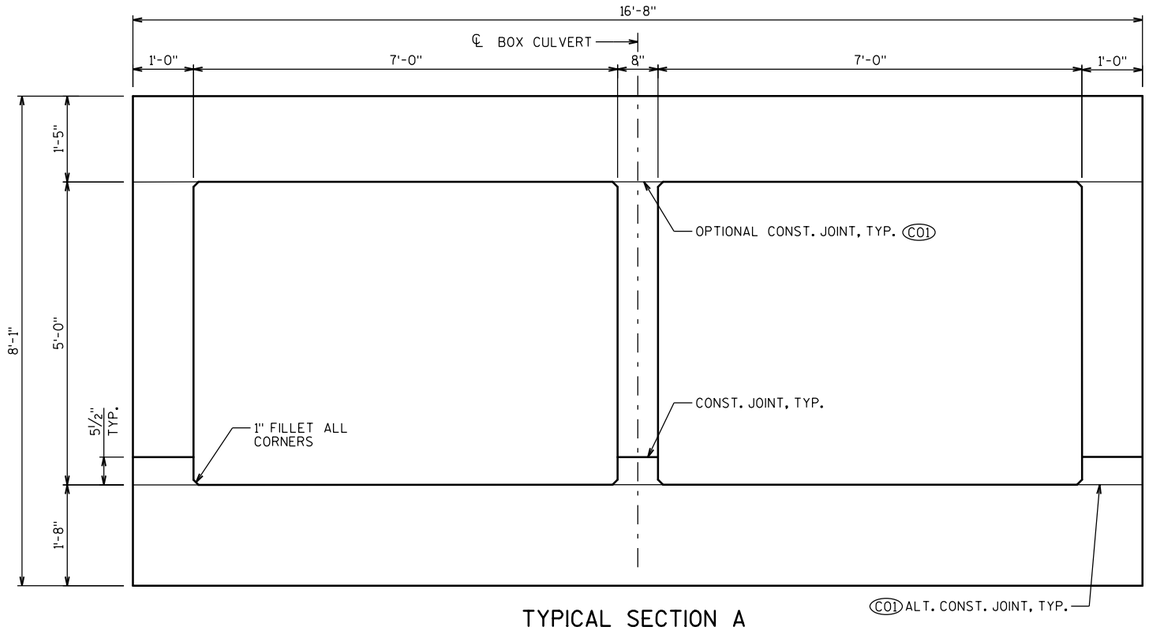
STAGING PLAN (2 OF 2)

SHEET 5 OF 27

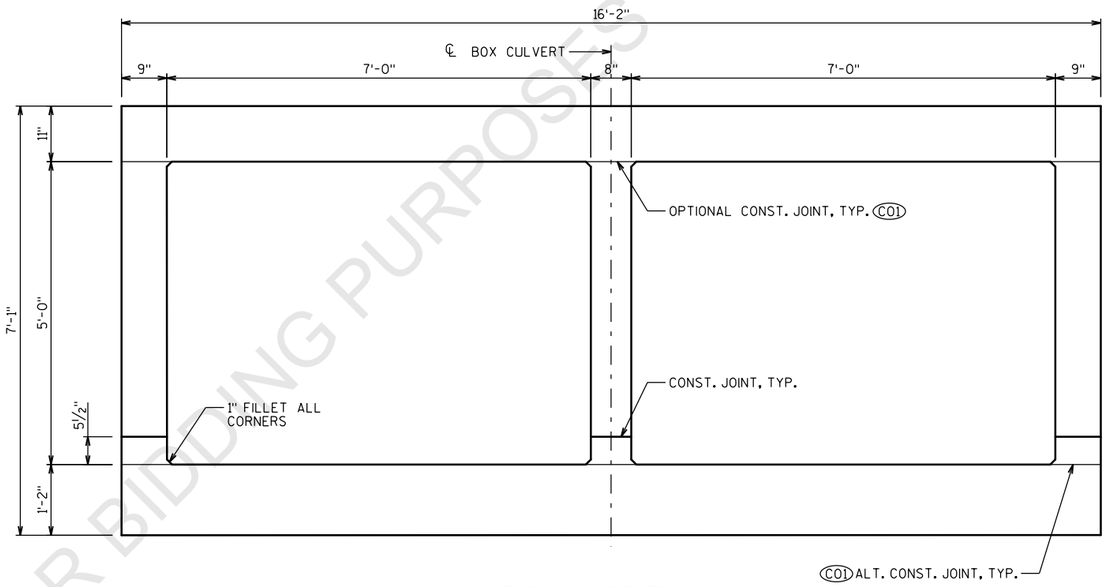
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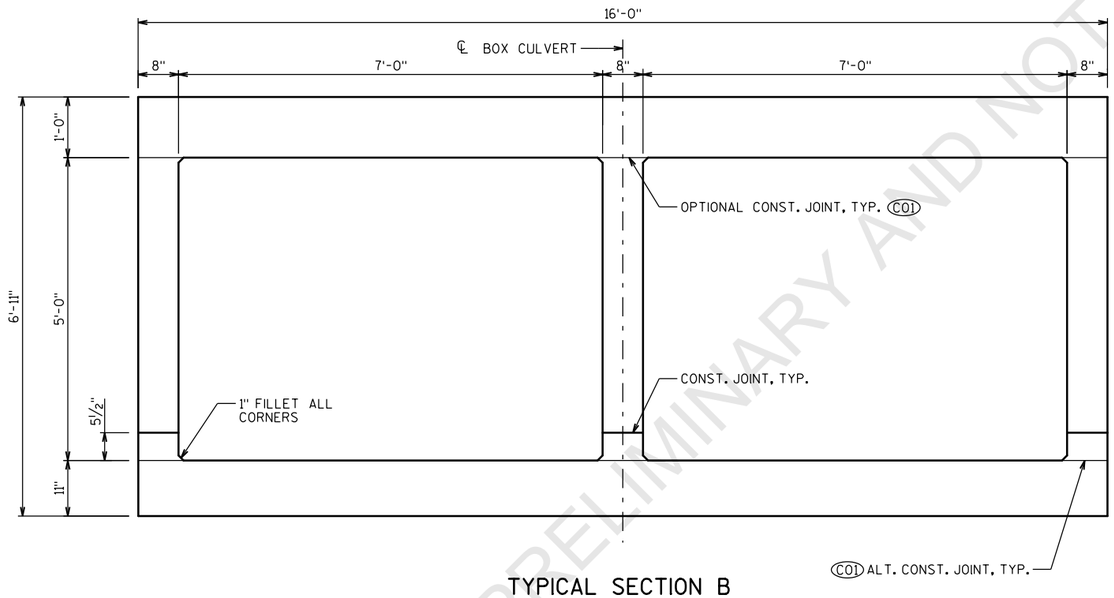
STATE PROJECT NUMBER
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TYPICAL SECTION A



TYPICAL SECTION C



TYPICAL SECTION B

LEGEND

(C01) OMIT 1" FILLET IF ALTERNATIVE OR OPTIONAL CONSTRUCTION JOINT IS USED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

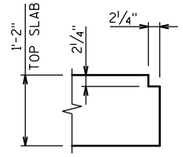
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TYPICAL SECTIONS

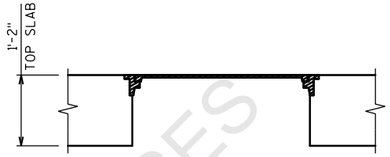
SHEET 6 OF 27

PRELIMINARY AND NOT FOR BIDDING PURPOSES

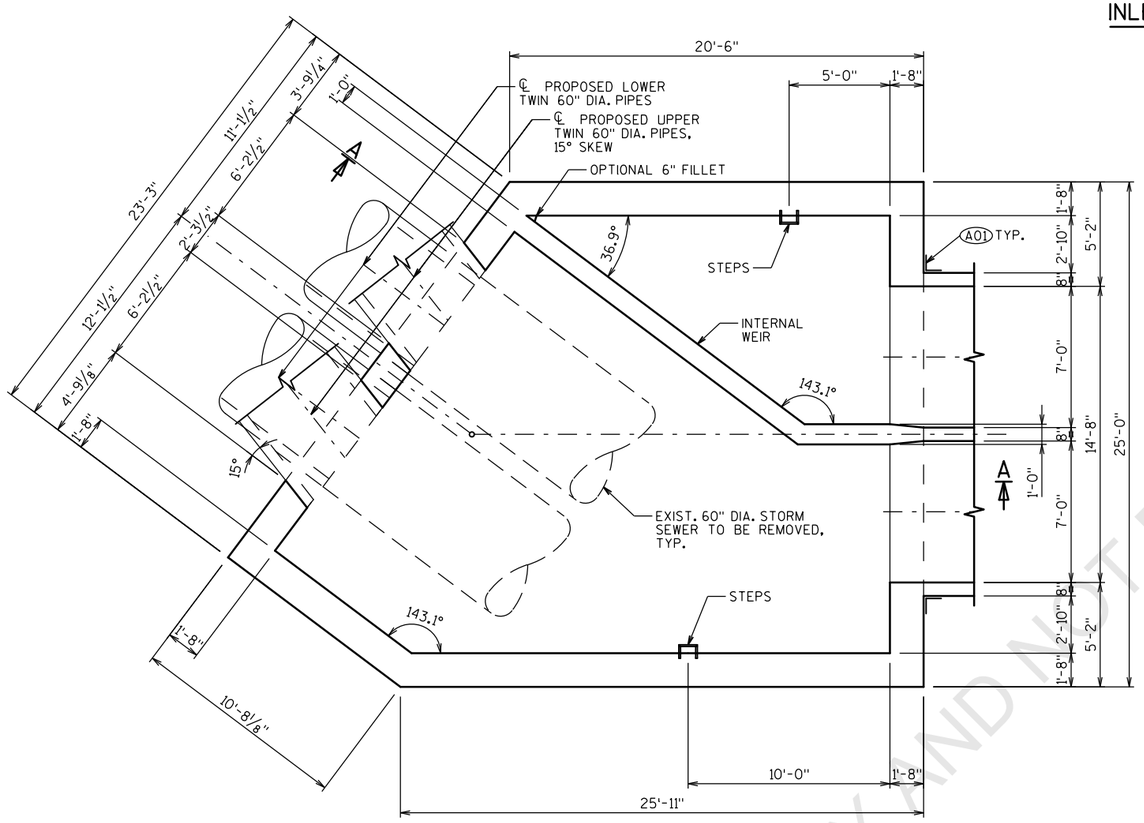
STATE PROJECT NUMBER
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SECTION THRU SLAB AT
INLET GRATE OPENING

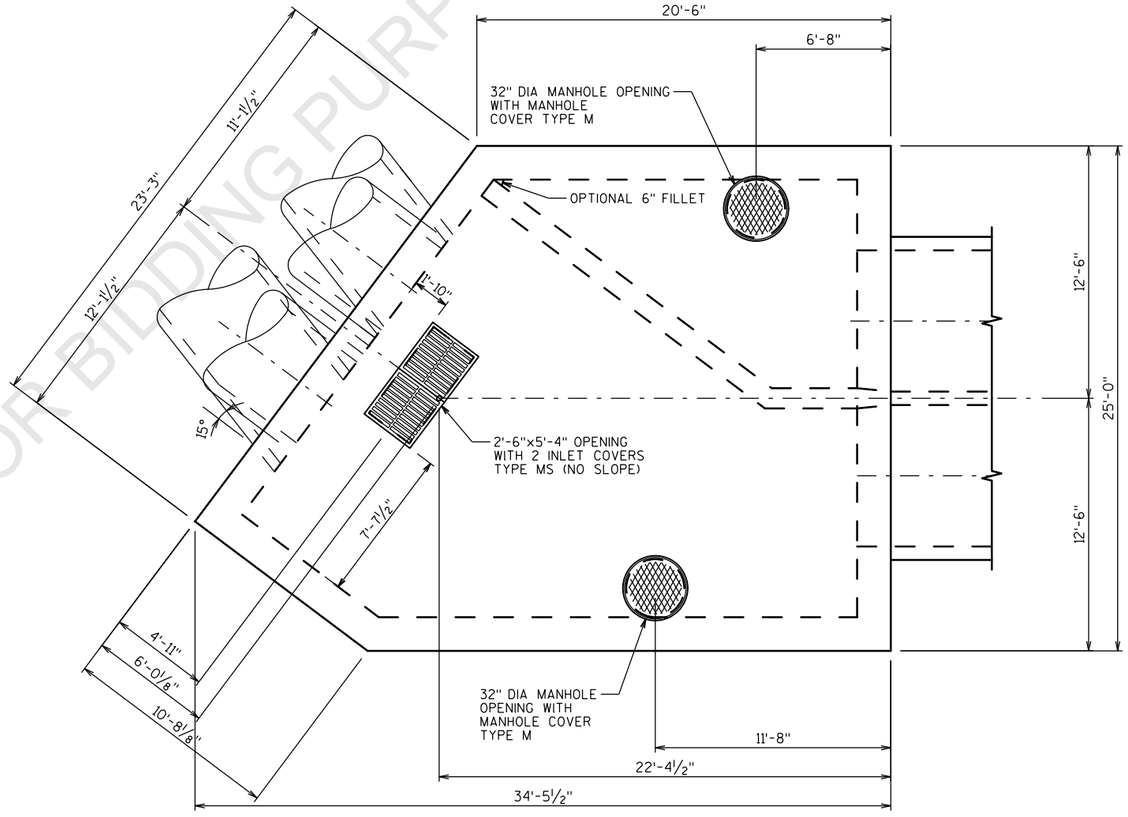


SECTION THRU MANHOLE COVER TYPE M



JUNCTION STRUCTURE LAYOUT

TOP SLAB NOT SHOWN



JUNCTION STRUCTURE TOP SLAB DETAIL

LEGEND

(A01) 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW) ACROSS TOP AND DOWN SIDES OF JOINT BETWEEN JUNCTION STRUCTURE AND BOX CULVERT PANEL 1. EXTEND RMW 6" MIN. BELOW THE TOP OF THE BOTTOM SLAB.

NOTES

UNDERCUT STRUCTURE 1'-0". EXCAVATION FOR UNDERCUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES, PLACE GEOTEXTILE TYPE C, AND BACKFILL WITH BREAKER RUN.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED AS SHOWN: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2" AND MEET THE REQUIREMENTS OF ASTM A615.

STEPS ARE INCIDENTAL TO BID ITEM "CONCRETE MASONRY CULVERTS".

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

DRAWN BY HDA | PLANS CK'D. MPM

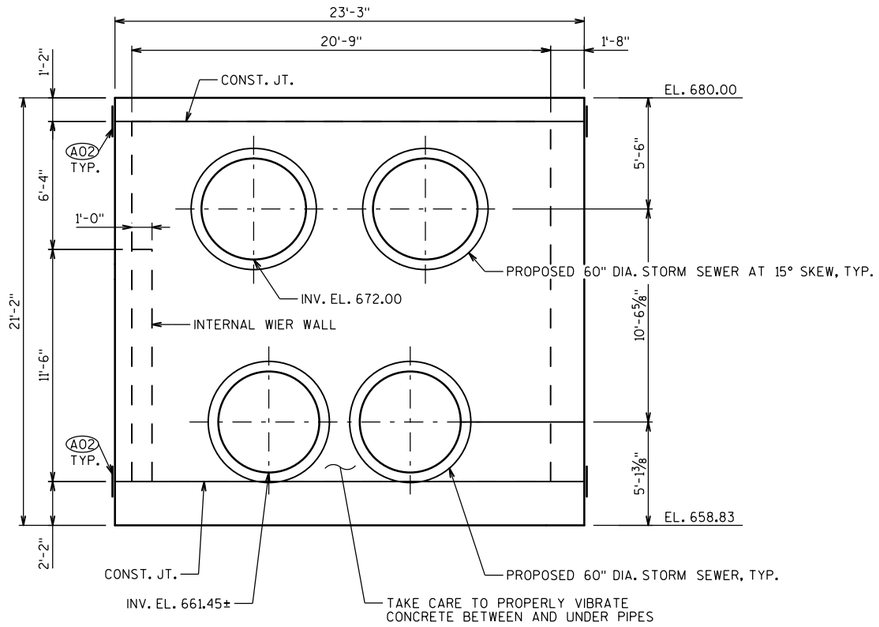
JUNCTION STRUCTURE LAYOUT

SHEET 7 OF 27

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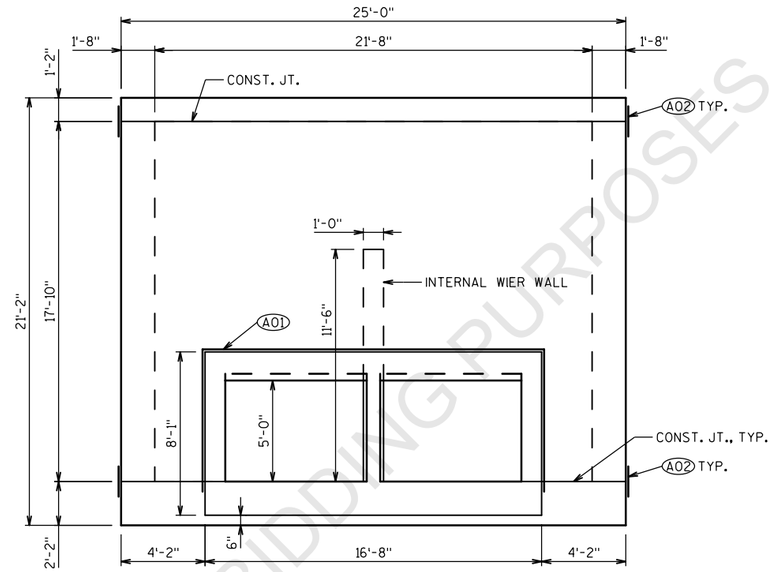
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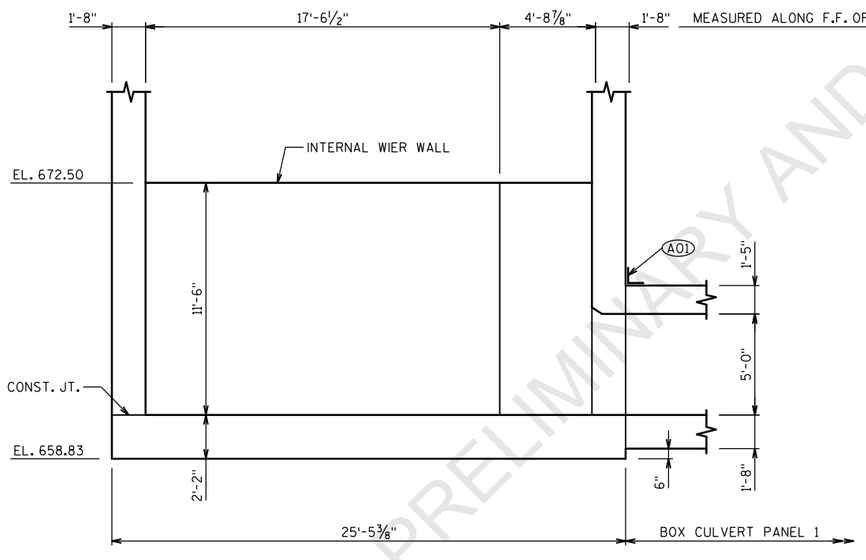
NW WALL ELEVATION

LOOKING AT OUTSIDE FACE OF WALL



EAST WALL ELEVATION

LOOKING AT OUTSIDE FACE OF WALL



SECTION A-A

SECTION THRU JUNCTION STRUCTURE

LEGEND

(A01) 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW) ACROSS TOP AND DOWN SIDES OF JOINT BETWEEN JUNCTION STRUCTURE AND BOX CULVERT PANEL 1. EXTEND RMW 6" MIN. BELOW THE TOP OF THE BOTTOM SLAB.

(A02) 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL JOINTS AT TOP AND BOTTOM SLABS.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

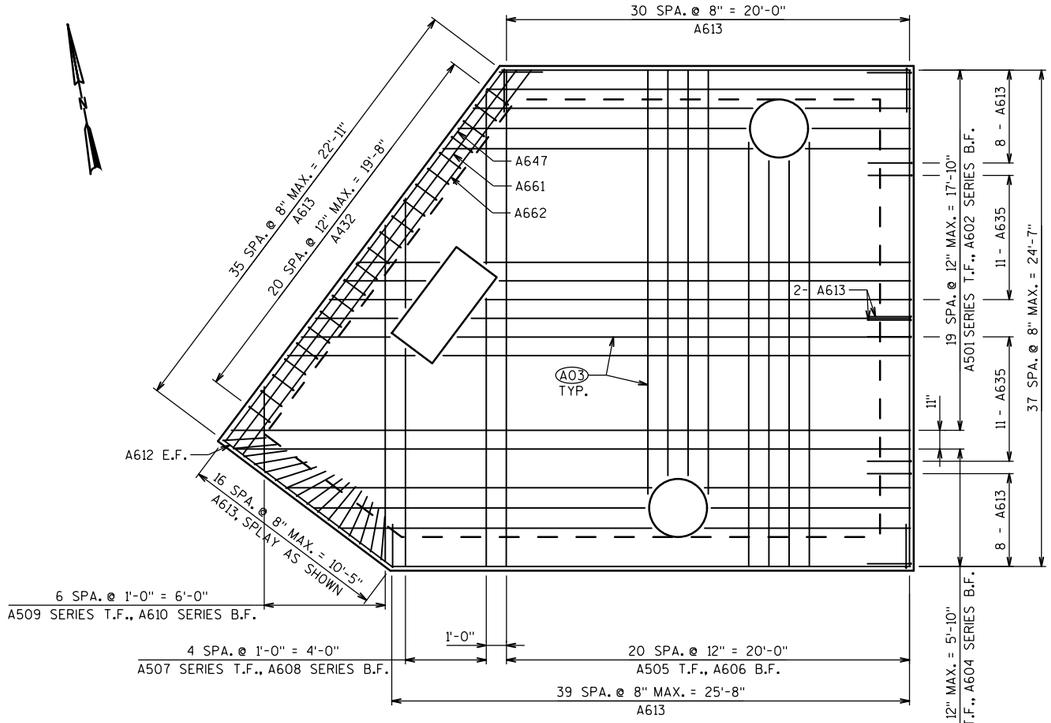
STRUCTURE C-45-60

DRAWN BY HDA | PLANS CK'D. MPM

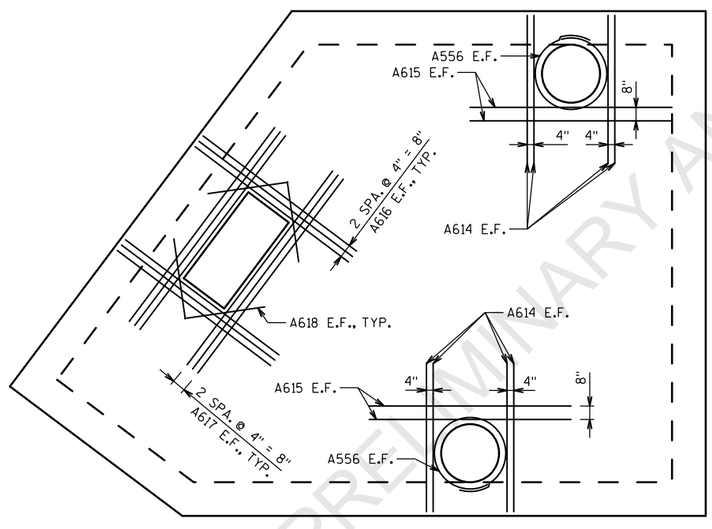
JUNCTION STRUCTURE ELEVATIONS

SHEET 8 OF 27

STATE PROJECT NUMBER
1229-04-74

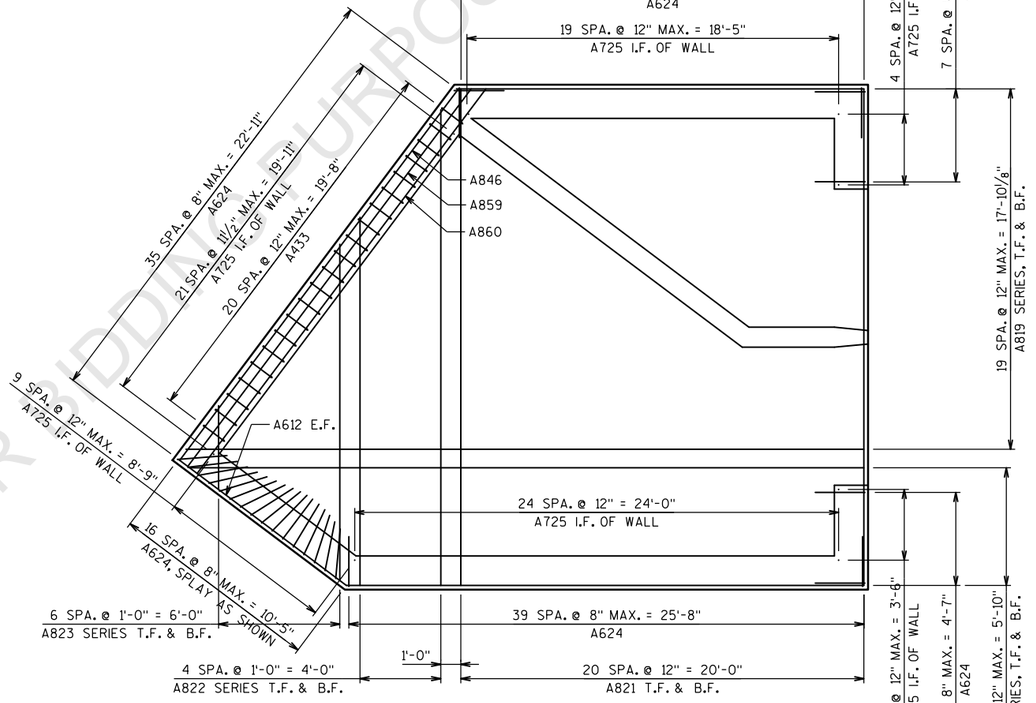


TOP SLAB REINFORCEMENT PLAN



TOP SLAB REINFORCEMENT PLAN

SHOWING ADDITIONAL REINFORCEMENT AT OPENINGS



BOTTOM SLAB REINFORCEMENT PLAN

LEGEND

(A03) JUNCTION STRUCTURE REINFORCEMENT, FIELD CUT 2" CLEAR AROUND OPENINGS

I.F. INSIDE FACE

O.F. OUTSIDE FACE

T.F. TOP FACE

B.F. BOTTOM FACE

E.F. EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

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JUNCTION STRUCTURE REINF. (1 OF 4)

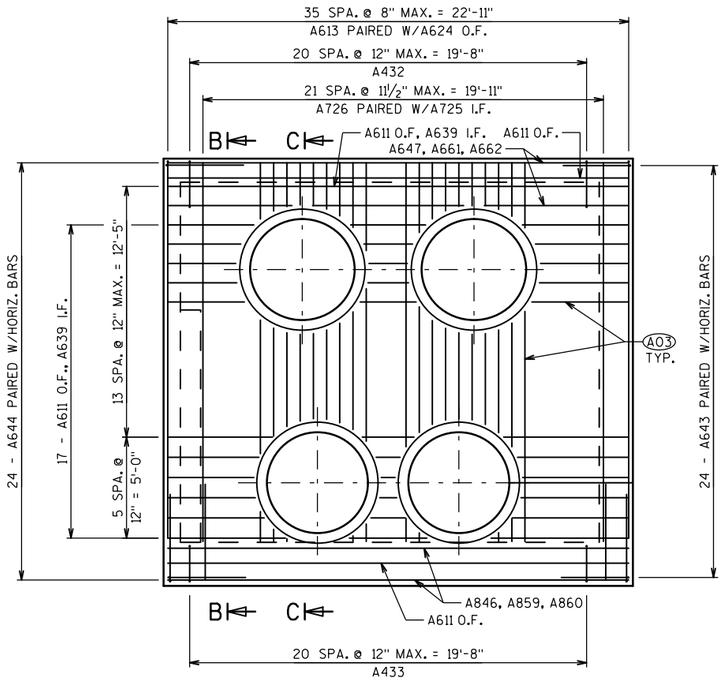
SHEET 9 OF 27

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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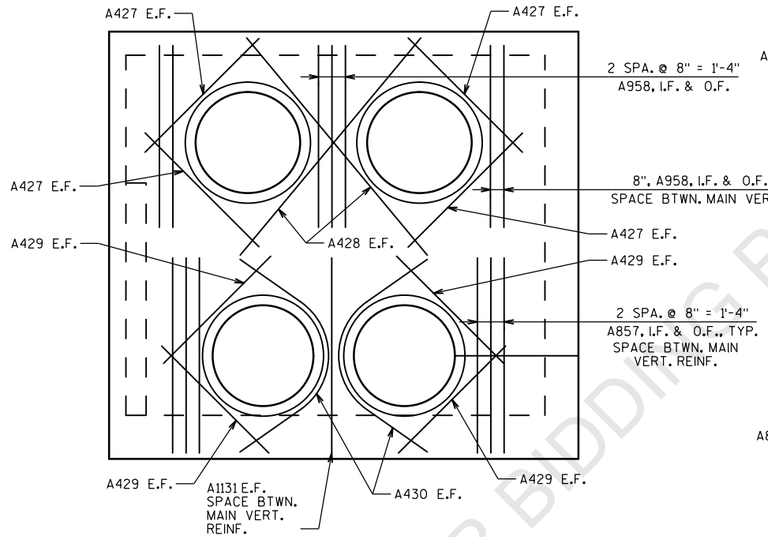
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STATE PROJECT NUMBER
1229-04-74



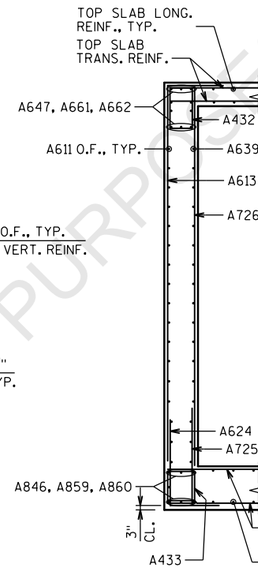
NW WALL ELEVATION

LOOKING AT OUTSIDE FACE OF WALL



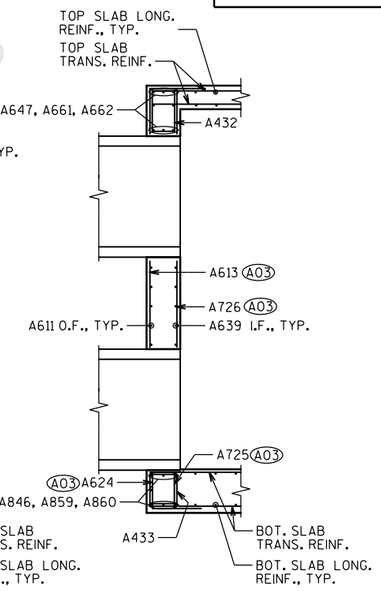
NW WALL ELEVATION

LOOKING AT OUTSIDE FACE OF WALL
SHOWING ADDITIONAL REINFORCEMENT AT OPENINGS



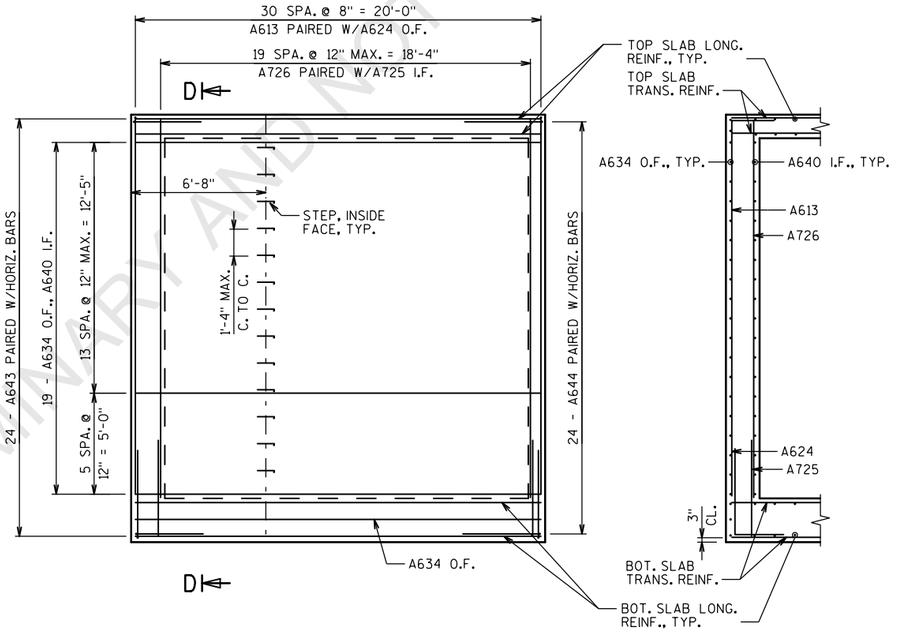
SECTION B-B

THRU NW WALL



SECTION C-C

THRU NW WALL AT OPENINGS



NORTH WALL ELEVATION

LOOKING AT OUTSIDE FACE OF WALL

SECTION D-D

THRU NORTH WALL

LEGEND

(A03) JUNCTION STRUCTURE REINFORCEMENT, FIELD CUT 2" CLEAR AROUND OPENINGS

I.F. INSIDE FACE

O.F. OUTSIDE FACE

E.F. EACH FACE

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE C-45-60

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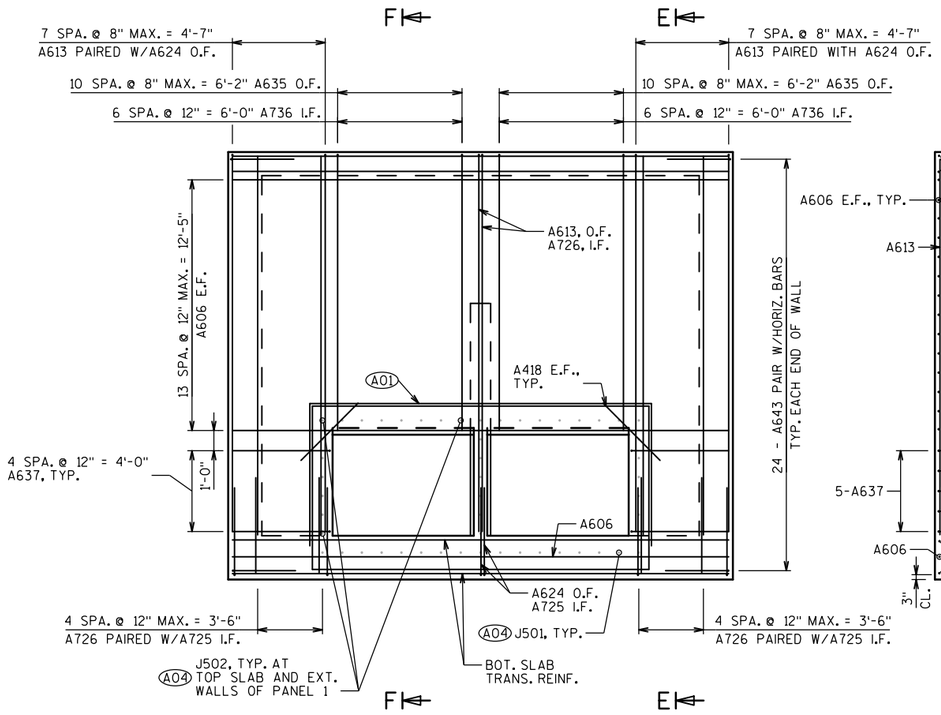
JUNCTION STRUCTURE REINF. (2 OF 4)

SHEET 10 OF 27

8

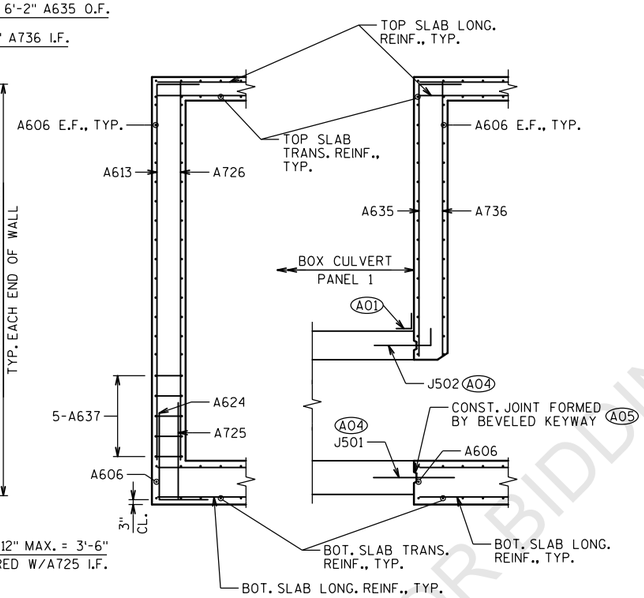
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STATE PROJECT NUMBER
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EAST WALL ELEVATION

LOOKING AT OUTSIDE FACE OF WALL

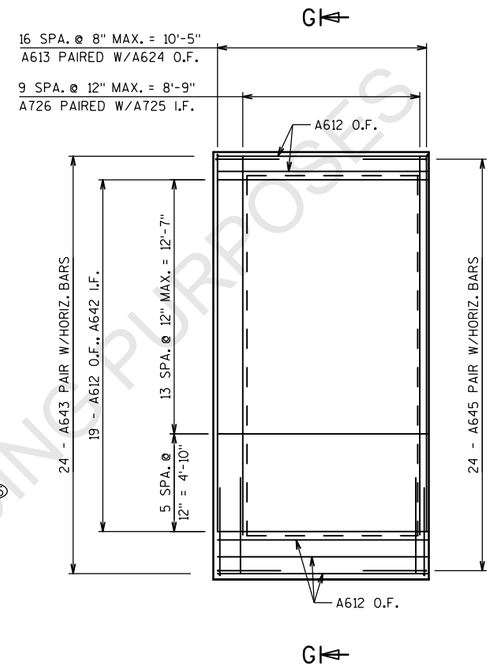


SECTION E-E

THRU EAST WALL

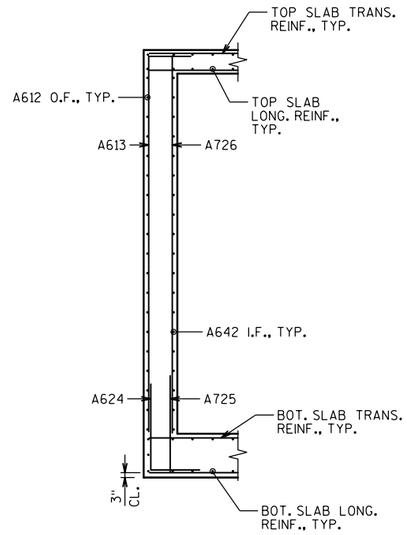
SECTION F-F

THRU EAST WALL
AT CULVERT OPENING



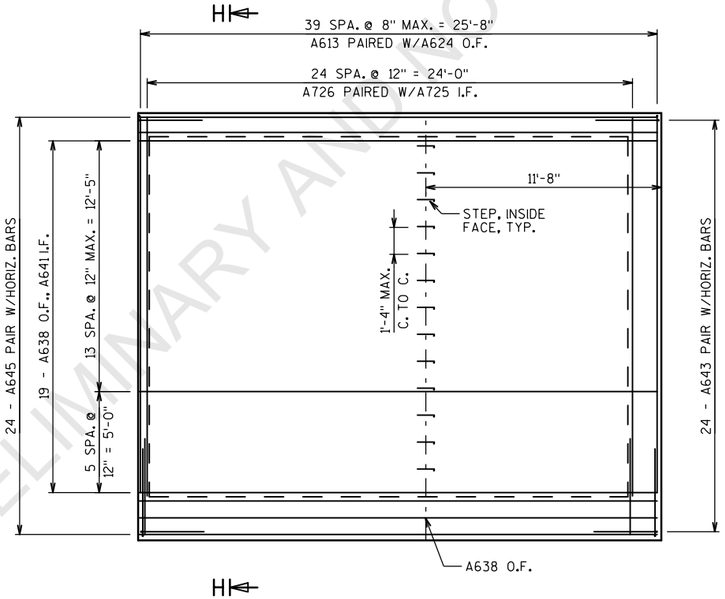
SW WALL ELEVATION

LOOKING AT OUTSIDE FACE OF WALL



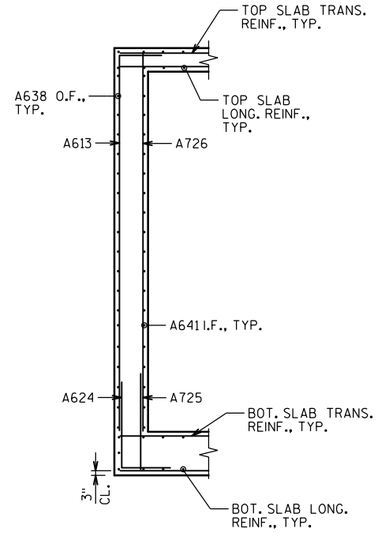
SECTION G-G

THRU SW WALL



SOUTH WALL ELEVATION

LOOKING AT OUTSIDE FACE OF WALL



SECTION H-H

THRU SOUTH WALL

LEGEND

(A01) 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW) ACROSS TOP AND DOWN SIDES OF JOINT BETWEEN JUNCTION STRUCTURE AND BOX CULVERT PANEL 1. EXTEND RMW 6" MIN. BELOW THE TOP OF THE BOTTOM SLAB.

(A04) J501 AND J502 JOINT DOWEL BARS ACCOUNTED FOR SEPARATELY. SEE "BOX CULVERT DETAILS" SHEET FOR BARS AND JOINT DETAIL.

(A05) SEE VERTICAL CONSTRUCTION JOINT DETAIL ON "BOX CULVERT DETAILS" SHEET FOR KEYWAY DIMENSIONS.

I.F. INSIDE FACE

O.F. OUTSIDE FACE

E.F. EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

DRAWN BY HDA | PLANS CK'D. MPM

JUNCTION STRUCTURE REINF. (3 OF 4)

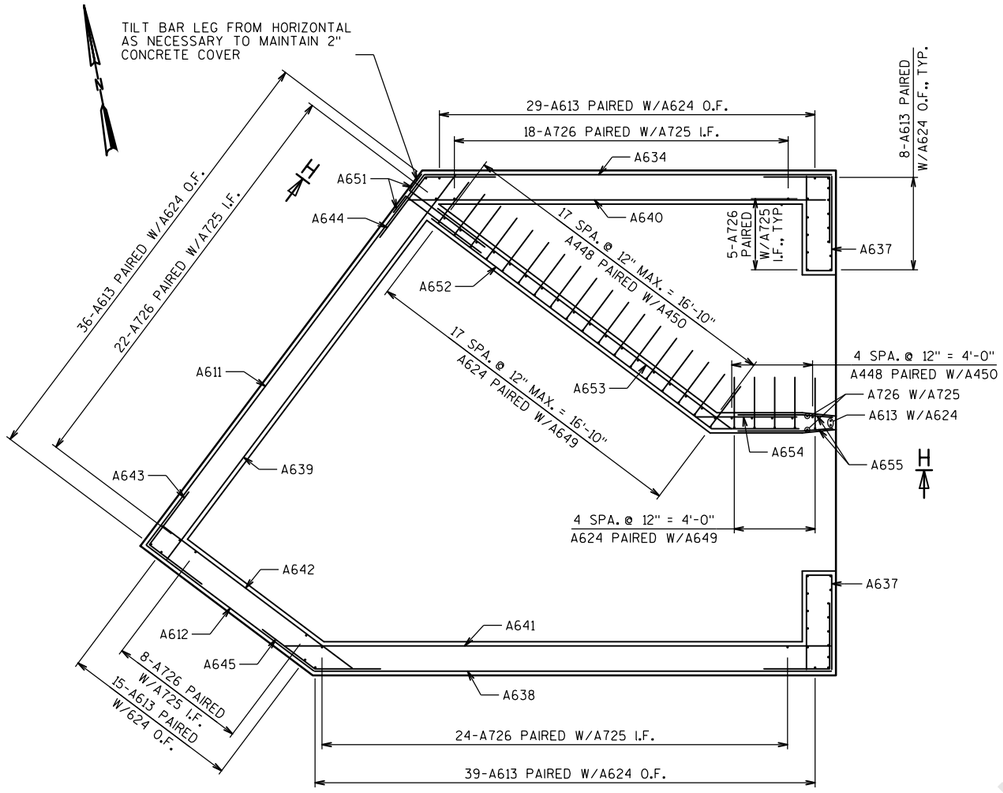
SHEET 11 OF 27

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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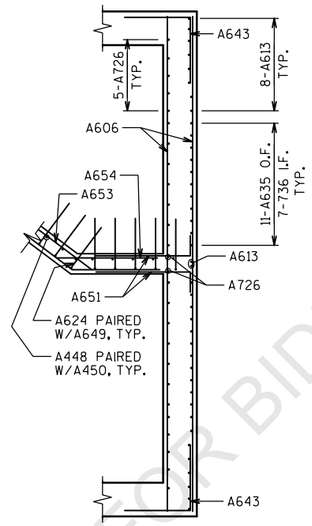
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STATE PROJECT NUMBER
1229-04-74



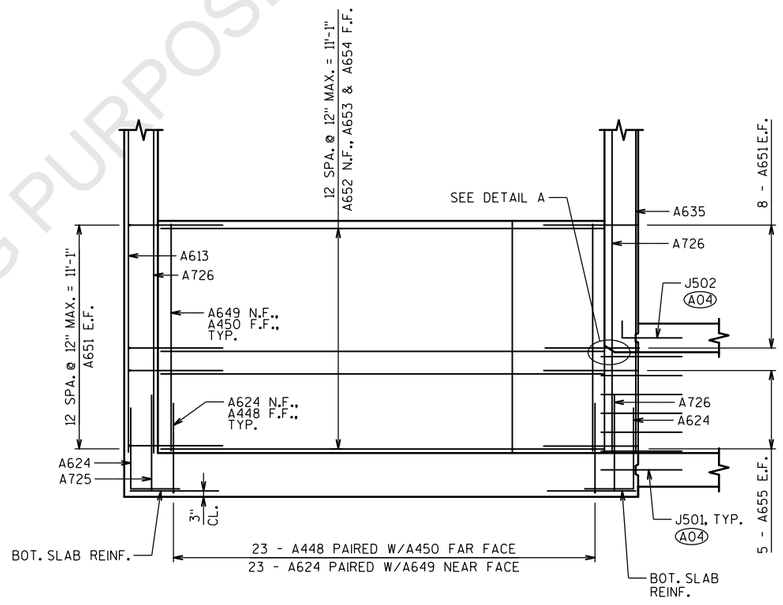
HORIZONTAL SECTION THRU JUNCTION STRUCTURE

AT BOX CULVERT OPENING



PARTIAL SECTION THRU JUNCTION STRUCTURE

THRU JUNCTION STRUCTURE WALLS ABOVE BOX CULVERT OPENING



SECTION H-H

VERTICAL SECTION THRU JUNCTION STRUCTURE
ELEVATION VIEW OF INTERNAL WIER WALL

LEGEND

(A04) J501 AND J502 JOINT DOWEL BARS ACCOUNTED FOR SEPARATELY. SEE "BOX CULVERT DETAILS SHEET" FOR BARS AND JOINT DETAIL.

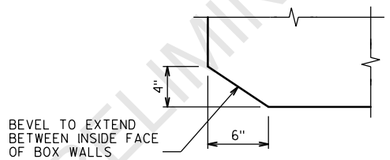
I.F. INSIDE FACE

O.F. OUTSIDE FACE

N.F. NEAR FACE

F.F. FACE FACE

E.F. EACH FACE



DETAIL A

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

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JUNCTION STRUCTURE REINF. (4 OF 4)

SHEET 12 OF 27

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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\C-45-60\cds\C060_08R405_Detail.dgn 5/30/2021 2:16:48 PM PLOT BY : fgillen PLOT NAME : $FILE$ PLOT SCALE : 7.5:1

STATE PROJECT NUMBER
1229-04-74

BILL OF BARS - JUNCTION STRUCTURE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
A501		20	26'-10"		X	TOP SLAB - LONG. - TOP FACE
A602		20	26'-10"		X	TOP SLAB - LONG. - BOTTOM FACE
A503		7	29'-6"		X	TOP SLAB - LONG. - TOP FACE
A604		7	29'-6"		X	TOP SLAB - LONG. - BOTTOM FACE
A505		21	24'-7"			TOP SLAB - TRANS. - TOP FACE
A606		50	24'-6"			TOP SLAB - TRANS. - BOT. FACE, EAST WALL HORIZ. - BOTH FACES
A507		5	20'-10"		X	TOP SLAB - TRANS. - TOP FACE
A608		5	20'-10"		X	TOP SLAB - TRANS. - BOTTOM FACE
A509		7	10'-4"		X	TOP SLAB - TRANS. - TOP FACE
A610		7	10'-4"		X	TOP SLAB - TRANS. - BOTTOM FACE
A611		20	22'-11"			NW WALL - HORIZ. - OUTSIDE FACE
A612		24	10'-4"			SW WALL - HORIZ. - OUTSIDE FACE
A613		137	20'-6"	X		WALLS OUTSIDE FACE / TOP SLAB - CORNERS
A614		16	7'-4"			TOP SLAB - AT OPENINGS - BOTH FACES
A615		8	10'-0"			TOP SLAB - AT OPENINGS - BOTH FACES
A616		12	9'-6"			TOP SLAB - AT OPENINGS - BOTH FACES
A617		12	12'-0"			TOP SLAB - AT OPENINGS - BOTH FACES
A618		8	4'-0"			TOP SLAB - AT OPENINGS - BOTH FACES
A819		40	26'-10"		X	BOT. SLAB - LONG. - BOTH FACES
A820		14	29'-6"		X	BOT. SLAB - LONG. - BOTH FACES
A821		42	24'-7"			BOT. SLAB - TRANS. - BOTH FACES
A822		10	20'-10"		X	BOT. SLAB - TRANS. - BOTH FACES
A823		14	10'-4"		X	BOT. SLAB - TRANS. - BOTH FACES
A624		160	6'-6"	X		WALLS OUTSIDE FACE & WIER WALL
A725		84	4'-9"			WALLS - INSIDE FACE
A726		84	18'-8"			WALLS - INSIDE FACE
A427		8	8'-0"			NW WALL - AT OPENINGS - BOTH FACES
A428		4	14'-0"			NW WALL - AT OPENINGS - BOTH FACES
A429		8	7'-6"			NW WALL - AT OPENINGS - BOTH FACES
A430		4	13'-7"	X		NW WALL - AT OPENINGS - BOTH FACES
A1131		2	9'-8"			NW WALL - AT OPENINGS - BOTH FACES
A432		21	7'-0"	X		NW WALL - TOP STIRRUP
A433		21	6'-0"	X		NW WALL - BOTTOM STIRRUP
A634		20	20'-2"			NORTH WALL - HORIZ. - OUTSIDE FACE
A635		22	15'-5"	X		EAST WALL - VERT. - OUTSIDE FACE
A736		14	13'-3"			EAST WALL - VERT. - INSIDE FACE
A637		10	10'-1"	X		EAST WALL - HORIZ.
A638		20	25'-7"			SOUTH WALL - HORIZ. - OUTSIDE FACE
A639		18	23'-10"			NW WALL - HORIZ. - INSIDE FACE
A640		19	20'-10"			NORTH WALL - HORIZ. - INSIDE FACE
A641		19	27'-0"			SOUTH WALL - HORIZ. - INSIDE FACE
A642		19	11'-9"			SW WALL - HORIZ. - INSIDE FACE
A643		72	6'-4"	X		WALL CORNERS - HORIZ.
A644		24	6'-4"	X		WALL CORNERS - HORIZ.
A645		24	6'-6"	X		WALL CORNERS - HORIZ.
A846		2	22'-10"			EAST WALL - BOTTOM HEADER
A647		2	22'-10"			EAST WALL - TOP HEADER
A448		23	2'-8"			WIER WALL
A649		23	11'-2"			WIER WALL - VERT.
A450		23	11'-2"			WIER WALL - VERT.
A651		42	5'-6"	X		WIER WALL - HORIZ.
A652		13	21'-8"	X		WIER WALL - HORIZ.
A653		13	18'-2"			WIER WALL - HORIZ.
A654		13	5'-0"			WIER WALL - HORIZ.
A655		10	4'-8"	X		WIER WALL - HORIZ. - NOSING AT CULVERT
A556		4	12'-8"	X		TOP SLAB - AT OPENINGS - BOTH FACES
A857		12	9'-8"			NW WALL - AT OPENINGS - BOTH FACES
A958		14	9'-0"			NW WALL - AT OPENINGS - BOTH FACES
A859		2	23'-3"			EAST WALL - BOTTOM HEADER
A860		2	23'-8"			EAST WALL - BOTTOM HEADER
A661		2	23'-3"			EAST WALL - TOP HEADER
A662		2	23'-8"			EAST WALL - TOP HEADER

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A501	1 SERIES OF 20	20'-2" TO 33'-6"
A602	1 SERIES OF 20	20'-2" TO 33'-6"
A503	1 SERIES OF 7	25'-7" TO 33'-5"
A604	1 SERIES OF 7	25'-7" TO 33'-5"
A507	1 SERIES OF 5	18'-2" TO 23'-6"
A608	1 SERIES OF 5	18'-2" TO 23'-6"
A509	1 SERIES OF 7	4'-1" TO 16'-7"
A610	1 SERIES OF 7	4'-1" TO 16'-7"
A819	2 SERIES OF 20	20'-2" TO 33'-6"
A820	2 SERIES OF 7	25'-7" TO 33'-5"
A822	2 SERIES OF 5	18'-2" TO 23'-6"
A823	2 SERIES OF 7	4'-1" TO 16'-7"

BUNDLE AND TAG EACH SERIES SEPARATELY

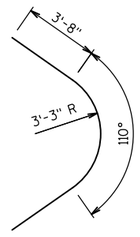
NOTES

JOINT DOWEL BARS ACCOUNTED FOR SEPARATELY. SEE "BOX CULVERT DETAILS" SHEET.

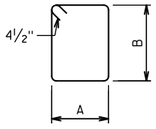


MARK	A
A613	2'-1"
A624	2'-5"
A635	2'-1"
A643	3'-3"
A651	1'-0"

A613, A624, A635, A643, A651

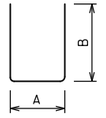


A430



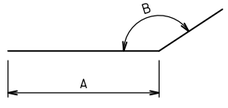
MARK	A	B
A432	1'-3"	2'-0"
A433	1'-3"	1'-6"

A432, A433
(STIRRUP)



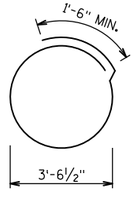
MARK	A	B
A637	1'-3"	4'-7"

A637



MARK	A	B
A644	3-3"	127°
A645	3'-3"	143°
A652	4'-4"	143°
A655	3'-2"	175°

A644, A645, A652, A655



A556

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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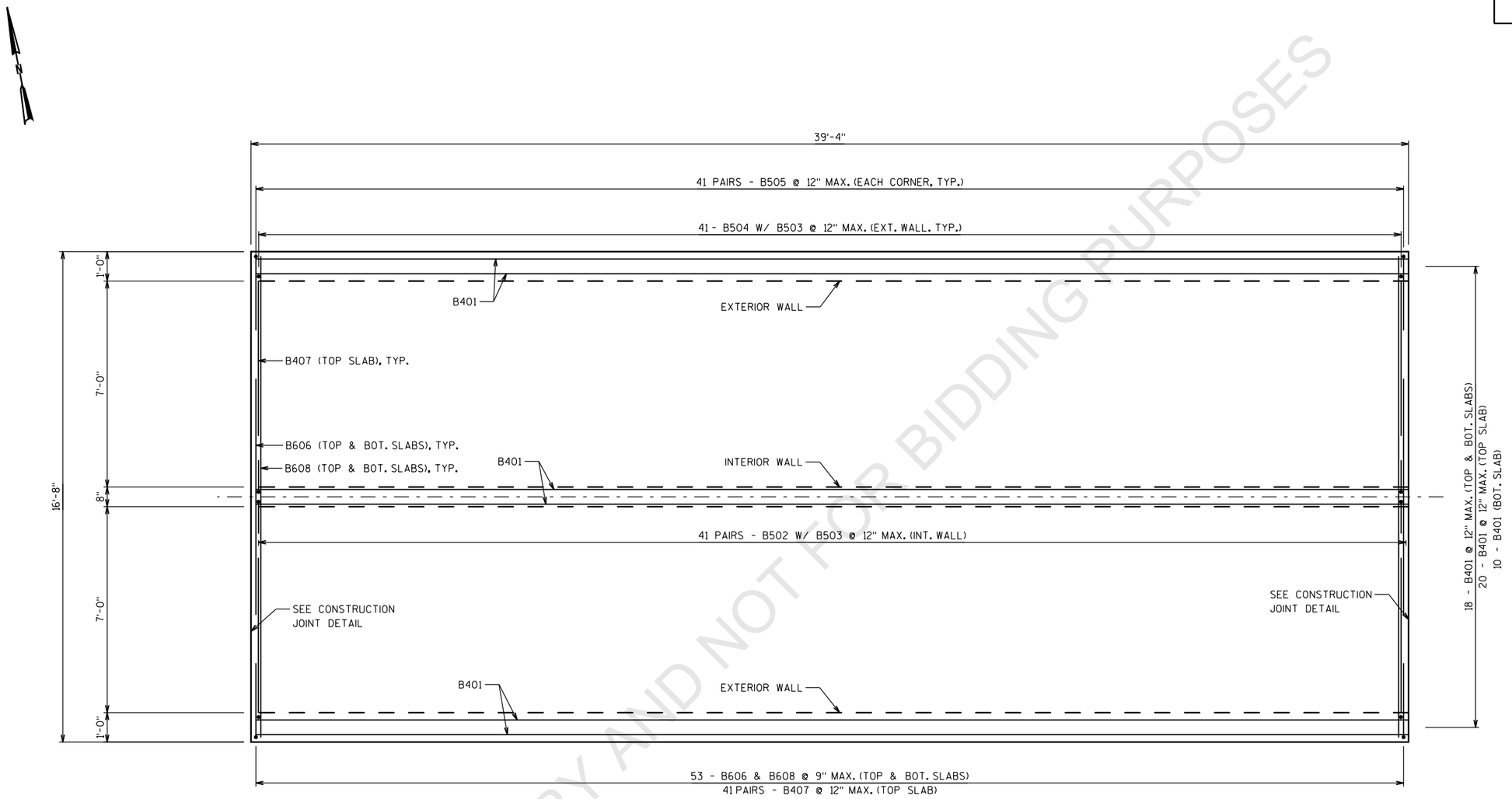
STRUCTURE C-45-60

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JUNCTION STRUCTURE BILL OF BARS

SHEET 13 OF 27

STATE PROJECT NUMBER
1229-04-74



PRELIMINARY AND NOT FOR BIDDING PURPOSES

PANELS 1 AND 2 (SECTION A)

8

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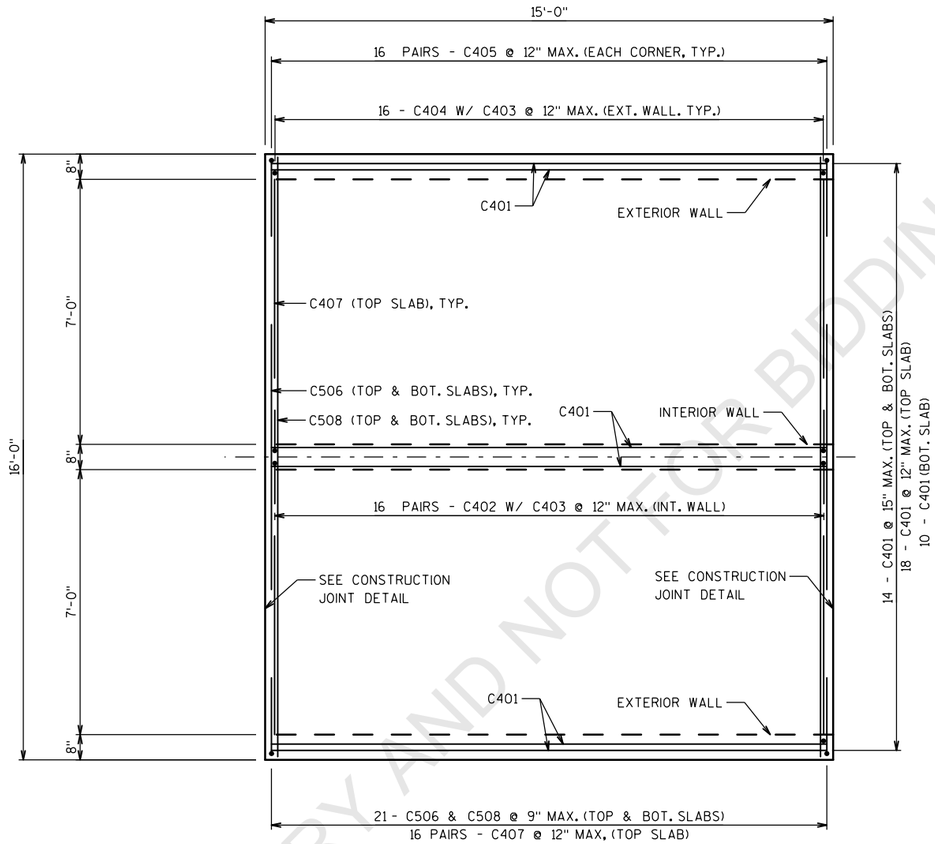
STRUCTURE C-45-60

DRAWN BY HDA | PLANS CK'D. MPM

PANELS 1 & 2 REINFORCEMENT PLAN

SHEET 14 OF 27

STATE PROJECT NUMBER
1229-04-74



PANEL 3 (SECTION B)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

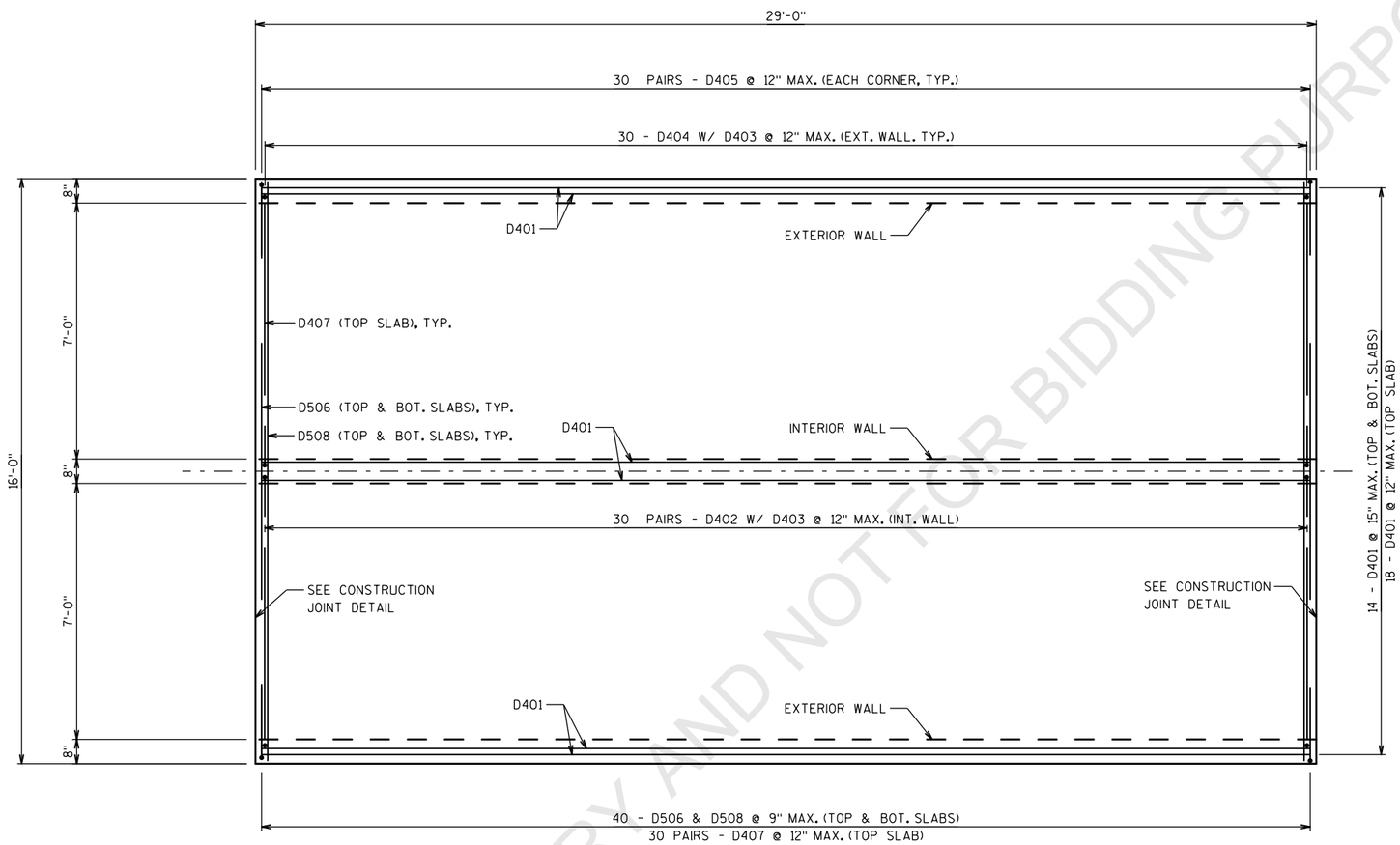
STRUCTURE C-45-60

DRAWN BY HDA | PLANS CK'D. MPM

PANEL 3
REINFORCEMENT
PLAN

SHEET 15 OF 27

STATE PROJECT NUMBER
1229-04-74



PANELS 4 - 6 (SECTION B)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

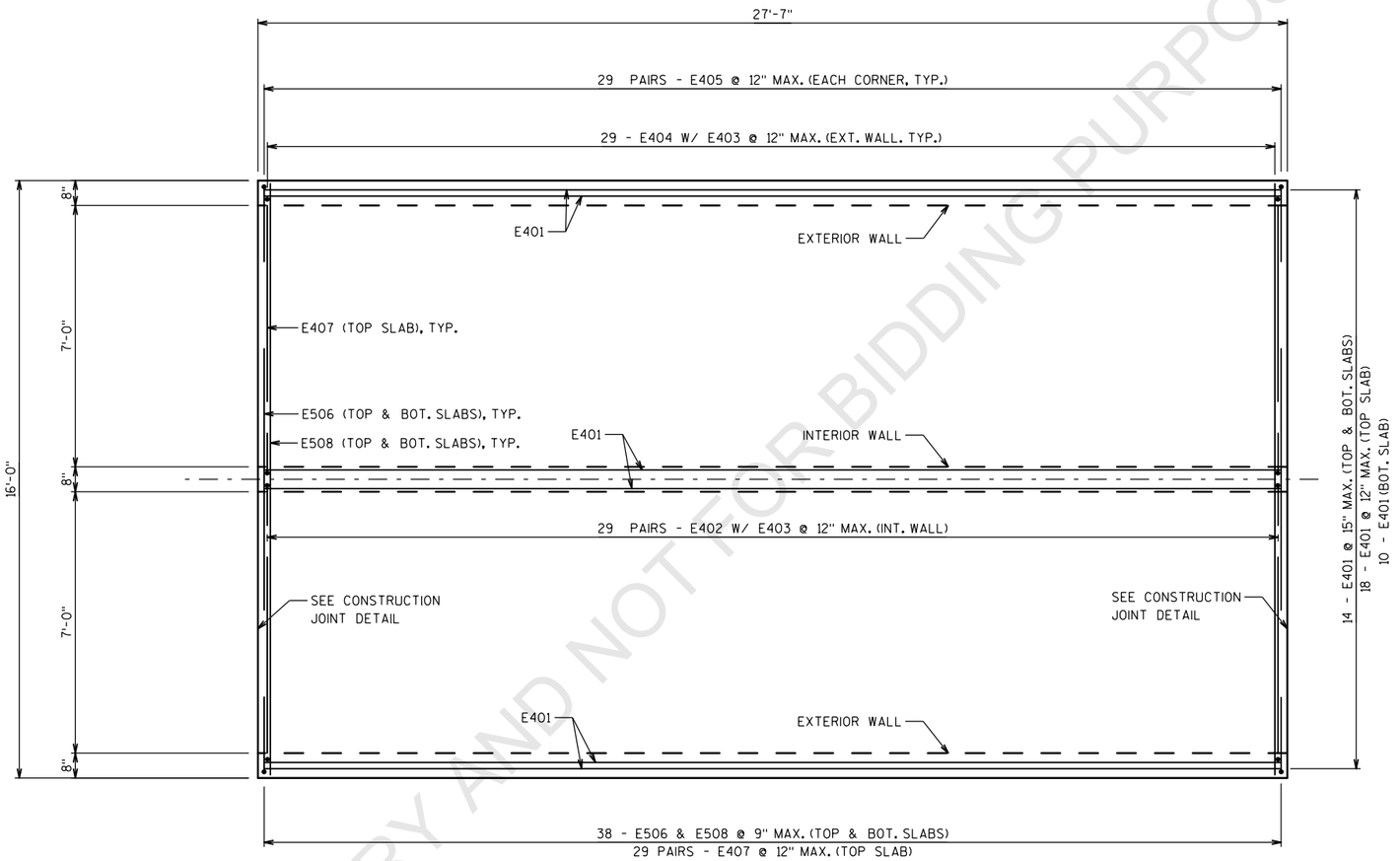
STRUCTURE C-45-60

DRAWN BY JWO | PLANS CK'D. MPM

PANELS 4 - 6
REINFORCEMENT
PLAN

SHEET 16 OF 27

STATE PROJECT NUMBER
1229-04-74



PANEL 7 (SECTION B)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

DRAWN BY JWO | PLANS CK'D. MPM

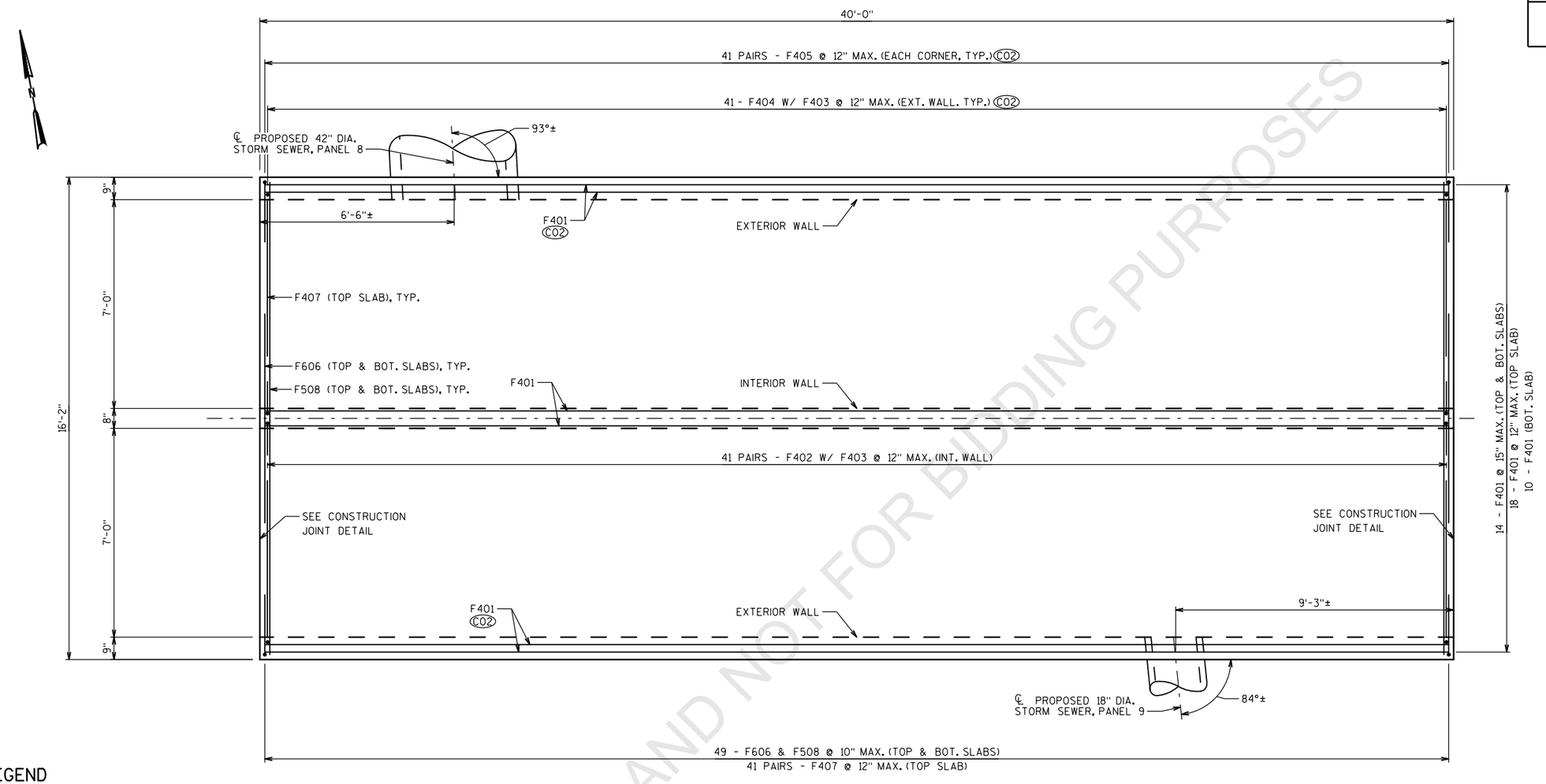
PANEL 7
REINFORCEMENT
PLAN

SHEET 17 OF 27

8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\C-45-60\cds\C060_08507_01.dgn 5/30/2021 2:17:05 PM PLOT BY : fgillen PLOT NAME : $FILE$ PLOT SCALE : 4:1

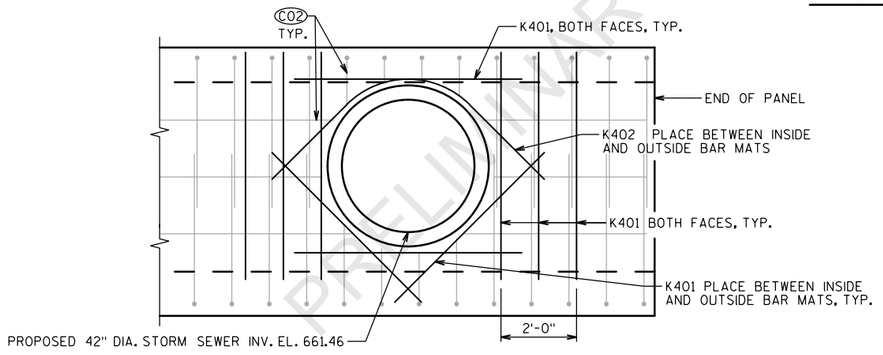
STATE PROJECT NUMBER
1229-04-74



LEGEND

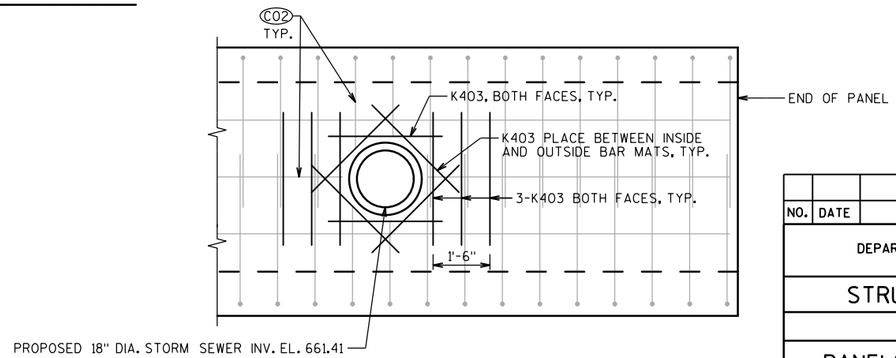
C02 FIELD CUT REINFORCEMENT 2" CLEAR AROUND OPENINGS

PANELS 8 - 11 (SECTION C)



PARTIAL ELEVATION AT PANEL 8 PIPE OPENING

LOOKING AT OUTSIDE FACE OF WALL



PARTIAL ELEVATION AT PANEL 9 PIPE OPENING

LOOKING AT OUTSIDE FACE OF WALL

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

DRAWN BY JWO | PLANS CK'D. MPM

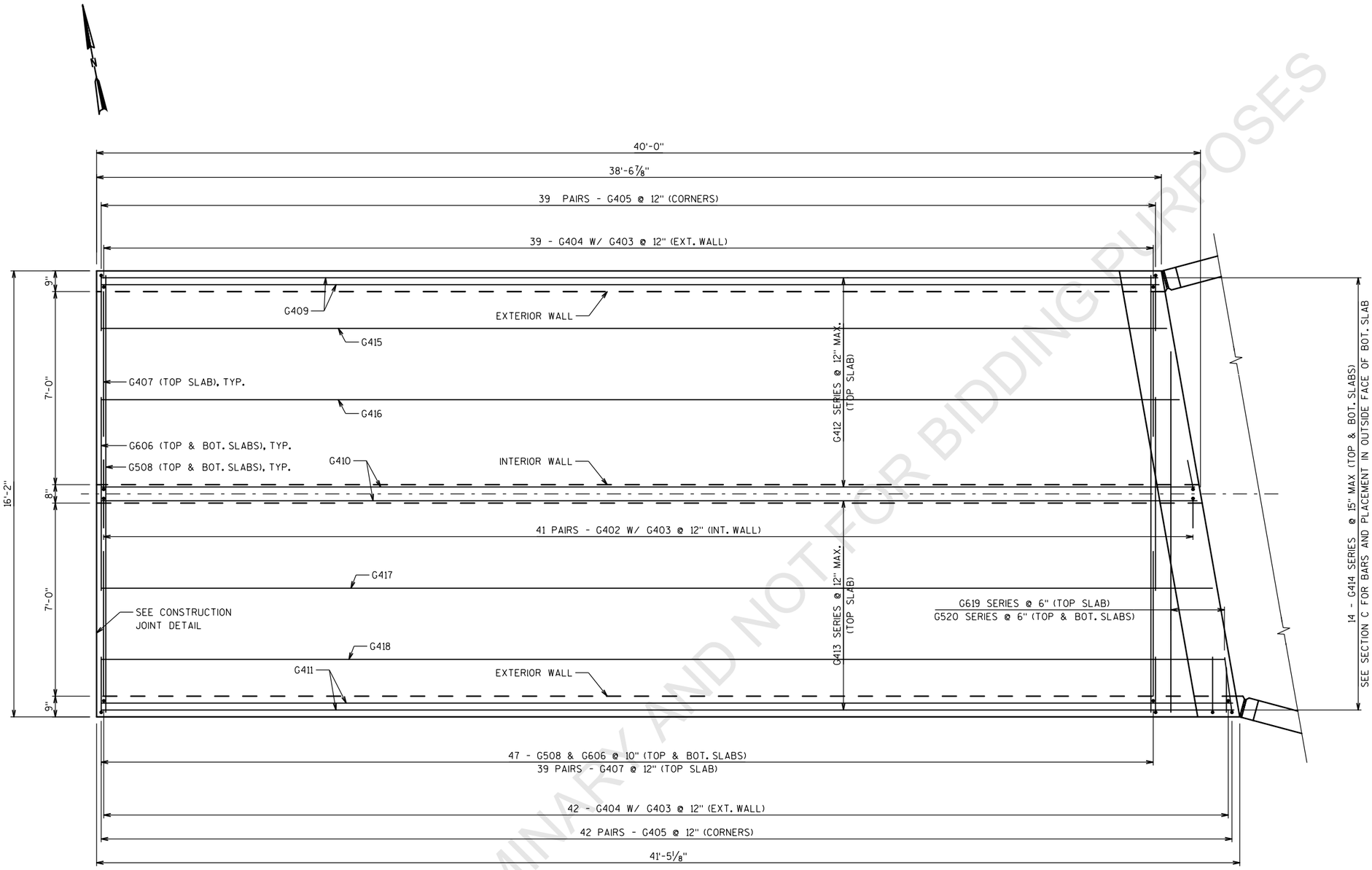
PANELS 8 - 11 REINFORCEMENT PLAN

SHEET 18 OF 27

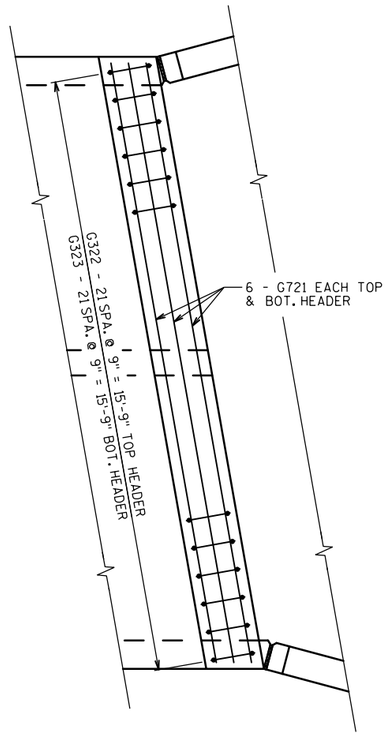
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STATE PROJECT NUMBER
1229-04-74



PANEL 12 (SECTION C)



HEADER REINFORCEMENT

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

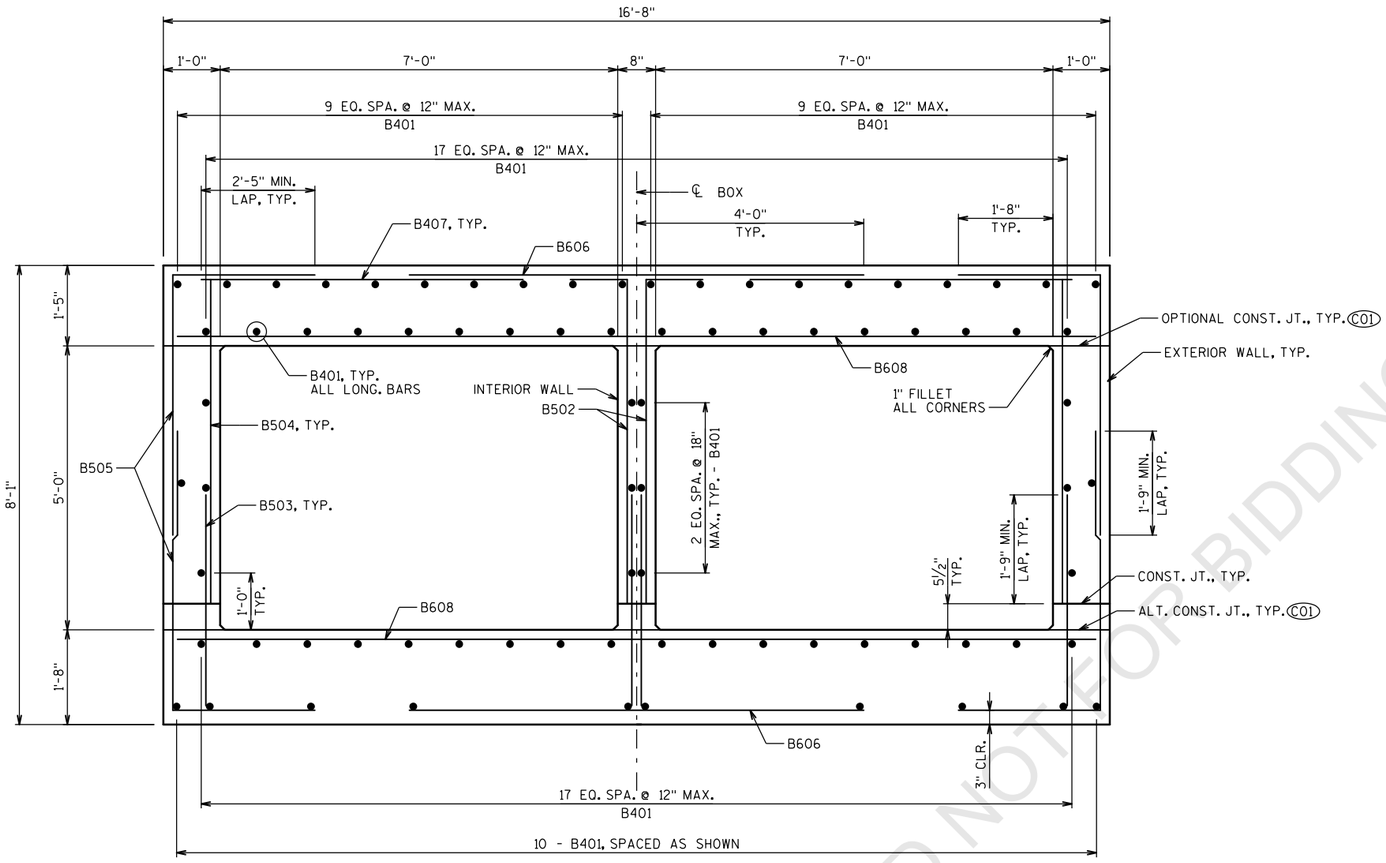
STRUCTURE C-45-60

DRAWN BY JWO | PLANS CK'D. MPM

PANEL 12 REINFORCEMENT PLAN

SHEET 19 OF 27

STATE PROJECT NUMBER
1229-04-74



SECTION A THRU CULVERT

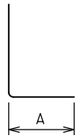
PANELS 1& 2

BILL OF BARS - PANELS 1& 2

BILL OF BARS IS FOR ONE PANEL ONLY

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
B401		80	38'-11"			SLABS AND WALLS - LONG.
B502		82	6'-8"	X		INTERIOR WALL - VERT.
B503		164	3'-8"			WALLS - VERTICAL - DOWEL
B504		82	5'-9"			EXTERIOR WALLS - VERT.
B505		164	7'-2"	X		CORNERS
B606		106	8'-0"			TOP & BOT. SLAB - EXT. FACE - MIDDLE TRANS.
B407		82	6'-6"			TOP SLAB - EXT. FACE - TRANS.
B608		106	16'-3"			TOP & BOT. SLAB - INTERIOR FACE - TRANS.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.



MARK	A
B502	1'-0"
B505	2'-6"

B502, B505

NOTES

JOINT DOWEL BARS ACCOUNTED FOR SEPARATELY. SEE "BOX CULVERT DETAILS" SHEET.

LEGEND

C01 OMIT 1" FILLET IF ALTERNATIVE OR OPTIONAL CONSTRUCTION JOINT IS USED.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

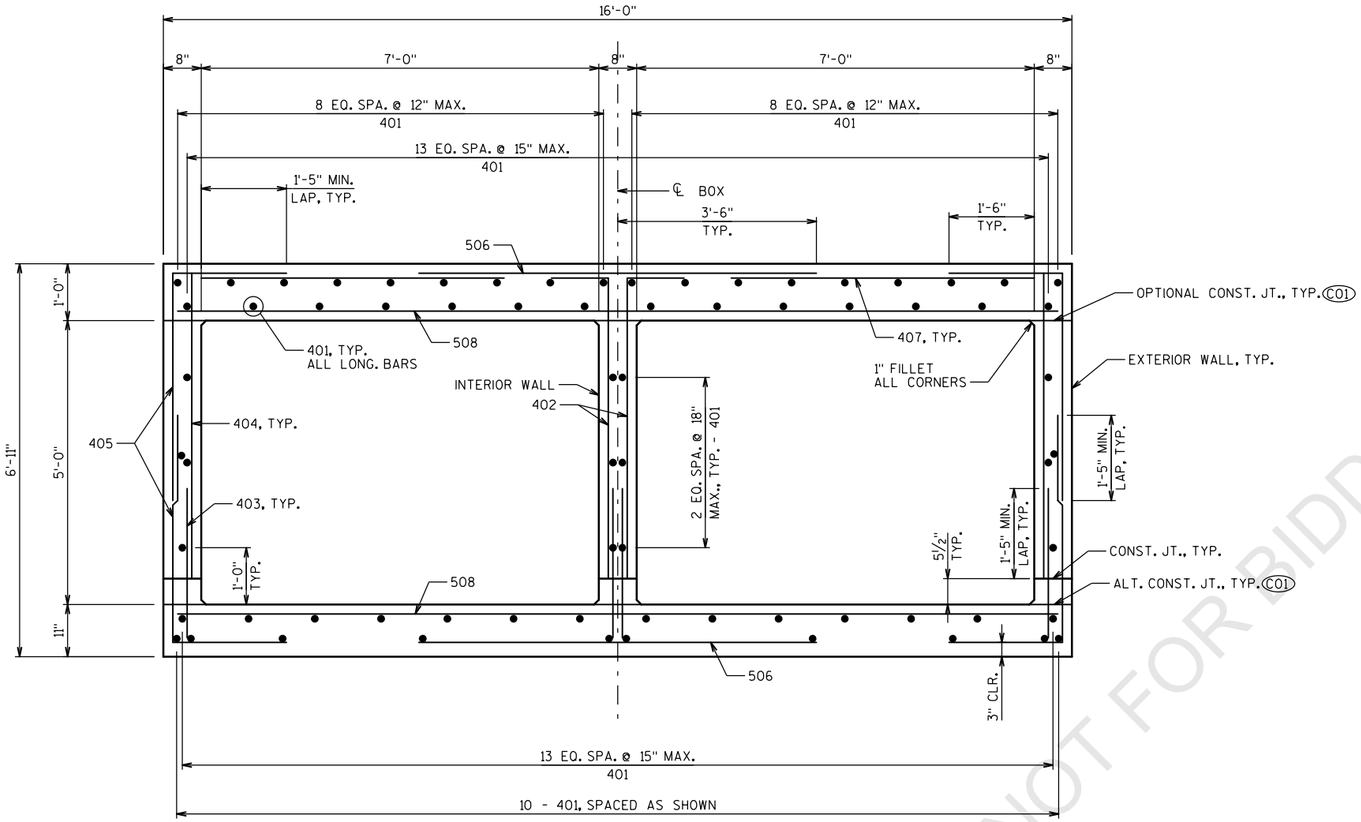
STRUCTURE C-45-60

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PANELS 1 & 2
SECTION &
BILL OF BARS

SHEET 20 OF 27

STATE PROJECT NUMBER
1229-04-74



SECTION B THRU CULVERT

PANEL 3 - C BARS
PANELS 4 - 6 - D BARS
PANEL 7 - E BARS

BILL OF BARS - PANEL 3

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
C401		70	14'-7"			SLABS AND WALLS - LONG.
C402		32	6'-3"	X		INTERIOR WALL - VERT.
C403		64	2'-7"			WALLS - VERTICAL - DOWEL
C404		32	5'-4"			EXTERIOR WALLS - VERT.
C405		64	5'-11"	X		CORNERS
C506		42	7'-0"			TOP & BOT. SLAB - EXT. FACE - MIDDLE TRANS.
C407		32	5'-3"			TOP SLAB - EXT. FACE - TRANS.
C508		42	15'-7"			TOP & BOT. SLAB - INTERIOR FACE - TRANS.

BILL OF BARS - PANELS 4 - 6

BILL OF BARS IS FOR ONE PANEL ONLY

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
D401		70	28'-7"			SLABS AND WALLS - LONG.
D402		60	6'-3"	X		INTERIOR WALL - VERT.
D403		120	2'-7"			WALLS - VERTICAL - DOWEL
D404		60	5'-4"			EXTERIOR WALLS - VERT.
D405		120	5'-11"	X		CORNERS
D506		80	7'-0"			TOP & BOT. SLAB - EXT. FACE - MIDDLE TRANS.
D407		60	5'-3"			TOP SLAB - EXT. FACE - TRANS.
D508		80	15'-7"			TOP & BOT. SLAB - INTERIOR FACE - TRANS.

BILL OF BARS - PANEL 7

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
E401		70	27'-2"			SLABS AND WALLS - LONG.
E402		58	6'-3"	X		INTERIOR WALL - VERT.
E403		116	2'-7"			WALLS - VERTICAL - DOWEL
E404		58	5'-4"			EXTERIOR WALLS - VERT.
E405		116	5'-11"	X		CORNERS
E506		76	7'-0"			TOP & BOT. SLAB - EXT. FACE - MIDDLE TRANS.
E407		58	5'-3"			TOP SLAB - EXT. FACE - TRANS.
E508		76	15'-7"			TOP & BOT. SLAB - INTERIOR FACE - TRANS.

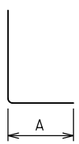
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

NOTES

JOINT DOWEL BARS ACCOUNTED FOR SEPARATELY. SEE "BOX CULVERT DETAILS" SHEET.

LEGEND

C01 OMIT 1" FILLET IF ALTERNATIVE OR OPTIONAL CONSTRUCTION JOINT IS USED.



MARK	A
402	1'-0"
405	2'-0"

402, 405

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

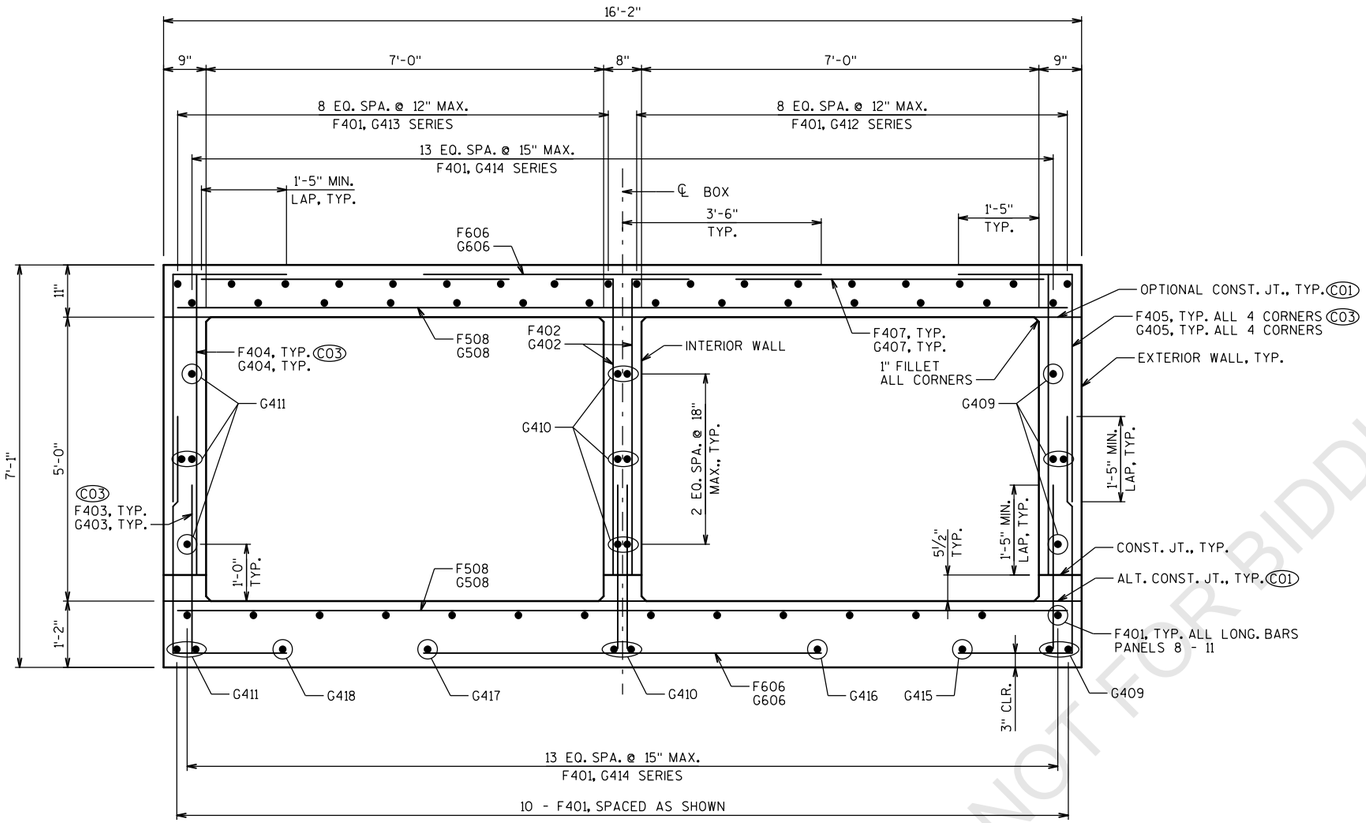
STRUCTURE C-45-60

DRAWN BY HDA | PLANS CK'D. MPM

PANELS 3 - 7
SECTION &
BILL OF BARS

SHEET 21 OF 27

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SECTION C THRU CULVERT

LOOKING UPSTREAM
PANELS 8-11 - F BARS
PANEL 12 - G BARS (BAR SERIES AT SKEWED OUTLET END NOT SHOWN, SEE PLAN VIEW)

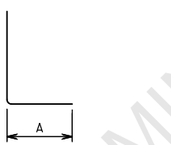
NOTES

JOINT DOWEL BARS ACCOUNTED FOR SEPARATELY. SEE "BOX CULVERT DETAILS" SHEET.

LEGEND

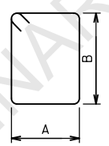
C01 OMIT 1" FILLET IF ALTERNATIVE OR OPTIONAL CONSTRUCTION JOINT IS USED.

C02 FIELD CUT REINFORCEMENT 2" CLEAR AROUND OPENINGS IN PANELS 8 AND 9. SEE SHEET "PANELS 8 - 11 REINFORCEMENT PLAN" FOR OPENING LOCATIONS.



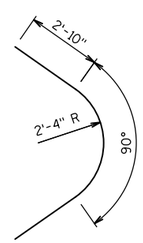
MARK	A
F402	1'-0"
F405	2'-0"
G402	1'-0"
G405	2'-0"

F402, F405
G402, G405



MARK	A	B
G322	1'-2"	1'-1"
G323	1'-0"	1'-3"

G322, G323



K402

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
G412	1 SERIES OF 9	38'-3" TO 39'-7"
G413	1 SERIES OF 9	39'-8" TO 41'-0"
G414	2 SERIES OF 14	38'-3" TO 41'-0"
G619	1 SERIES OF 5	1'-7" TO 13'-0"
G520	2 SERIES OF 5	1'-7" TO 13'-0"

BUNDLE AND TAG EACH SERIES SEPARATELY

BILL OF BARS - PANELS 8-11

BILL OF BARS IS FOR ONE PANEL ONLY

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
F401		70	39'-7"			SLABS AND WALLS - LONG.
F402		82	6'-2"	X		INTERIOR WALL - VERT.
F403		164	2'-10"			WALLS - VERTICAL - DOWEL
F404		82	5'-3"			EXTERIOR WALLS - VERT.
F405		164	6'-0"	X		CORNERS
F606		98	7'-0"			TOP & BOT. SLAB - EXT. FACE - MIDDLE TRANS.
F407		82	5'-3"			TOP SLAB - EXT. FACE - TRANS.
F508		98	15'-9"			TOP & BOT. SLAB - INTERIOR FACE - TRANS.

BILL OF BARS - PANEL 12

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
G401						NOT USED
G402		82	6'-2"	X		INTERIOR WALL - VERT.
G403		163	2'-10"			WALLS - VERTICAL - DOWEL
G404		81	5'-3"			EXTERIOR WALLS - VERT.
G405		162	6'-0"	X		CORNERS
G606		94	7'-0"			TOP & BOT. SLAB - EXT. FACE - MIDDLE TRANS.
G407		78	5'-3"			TOP SLAB - EXT. FACE - TRANS.
G508		94	15'-9"			TOP & BOT. SLAB - INSIDE FACE - TRANS.
G409		6	38'-3"			NORTH EXTERIOR WALL - LONG.
G410		8	39'-7"			INTERIOR WALL - LONG.
G411		6	41'-0"			SOUTH EXTERIOR WALL - LONG.
G412		9	38'-11"		X	TOP SLAB - NORTH CELL - EXT. FACE - LONG.
G413		9	40'-4"		X	TOP SLAB - SOUTH CELL - EXT. FACE - LONG.
G414		28	39'-8"		X	TOP SLAB - INSIDE FACE - LONG.
G415		1	38'-7"			BOT. SLAB - EXT. FACE. - LONG.
G416		1	39'-0"			BOT. SLAB - EXT. FACE. - LONG.
G417		1	40'-3"			BOT. SLAB - EXT. FACE. - LONG.
G418		1	40'-8"			BOT. SLAB - EXT. FACE. - LONG.
G619		5	7'-4"		X	TOP SLAB - EXT. FACE - TRANS.
G520		10	7'-4"		X	TOP & BOT. SLABS - INSIDE FACE - TRANS.
G721		12	16'-0"			TOP & BOT. HEADER - HORIZ.
G322		22	4'-11"	X		TOP HEADER - STIRRUP VERT.
G323		22	4'-11"	X		BOT. HEADER - STIRRUP VERT.

BILL OF BARS - ADD'L BARS AT OPENINGS AT PANELS 8 & 9

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
K401		18	6'-0"			PANEL 8 - AT PIPE OPENING
K402		1	9'-4"	X		PANEL 9 - AT PIPE OPENING
K403		20	4'-0"			PANEL 9 - AT PIPE OPENING

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PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

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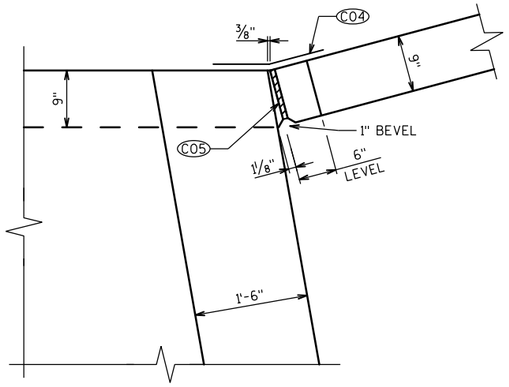
PANELS 8 - 12
SECTION &
BILL OF BARS

SHEET 22 OF 27

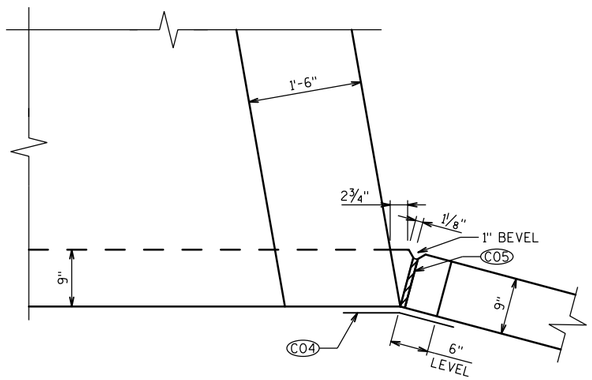
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STATE PROJECT NUMBER
1229-04-74

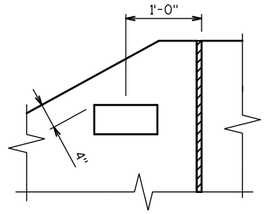


WING 1



WING 2

CORNER DETAILS



NAME PLATE LOCATION

WING 2

LEGEND

(C04) 18-INCH RUBBERIZED MEMBRANE WATERPROOFING, EXTEND FROM HORIZONTAL CONSTRUCTION JOINT TO TOP OF WALL. (FLUSH WITH FACE OF CONCRETE)

(C05) 3/4" FILLER TO EXTEND FROM HORIZONTAL CONSTRUCTION JOINT TO TOP OF WING

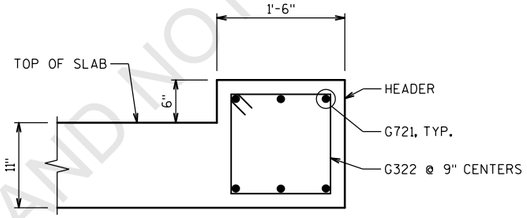
(C06) IN LIEU OF CONSTRUCTION JOINTS IN THE BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAW CUTS WITHIN 12 HOURS AFTER POURING. #5 BARS 4'-0" AT 1'-0" CENTERS REQUIRED.

BILL OF BARS - JOINT DOWELS

BILL OF BARS INCLUDES ALL JOINTS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
J501		561	4'-0"			CONSTRUCTION JOINT DOWEL
J502		28	3'-6"	X		CONSTRUCTION JOINT BETWEEN PANEL 1 AND JUNCTION STRUCT.

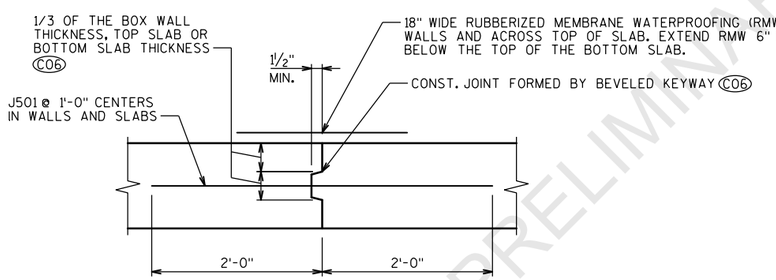
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.



SECTION THRU TOP HEADER

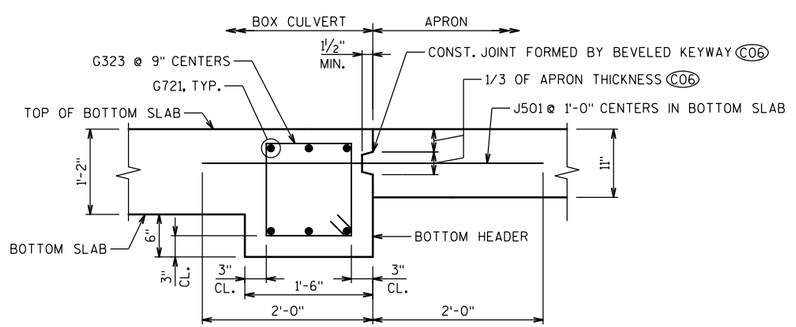


J502



VERTICAL CONSTRUCTION JOINT BETWEEN BOX PANELS

SEE SHEET "JUNCTION STRUCTURE REINF. (3 OF 4)" FOR DOWELS BETWEEN JUNCTION STRUCTURE AND PANEL 1



APRON CONNECTION DETAIL

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

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BOX CULVERT DETAILS

SHEET 23 OF 27

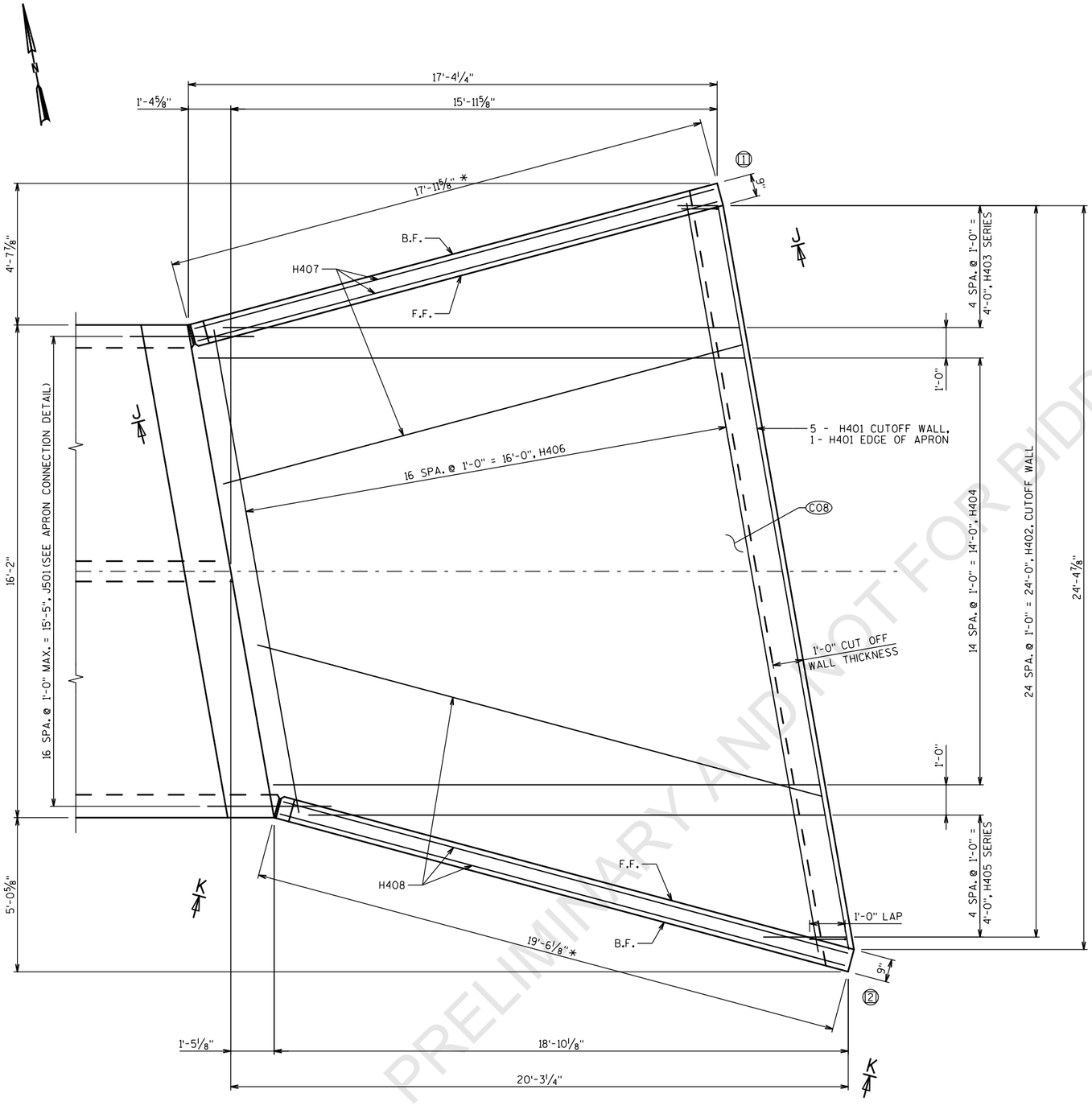
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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\C-45-60\cds\C060_08501_DATE dt 1/28/2021 2:17:21 PM PLOT BY : fgillen PLOT NAME : $FILE$ PLOT SCALE : 2:1

STATE PROJECT NUMBER
1229-04-74

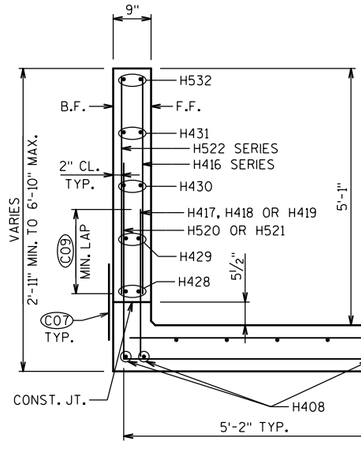
LEGEND

- (X) WINGWALL NUMBER
- * WINGWALL LENGTH INCLUDES 3/4" FILLER
- (C07) 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING ALONG HORIZ. CONST. JOINT IN WING
- (C08) TINE APRON SURFACE PER STD. SPEC. 415.3.8
- (C09) MIN. LAP #4 BAR F.F. = 1'-8"
  MIN. LAP #5 BAR B.F. = 2'-7"

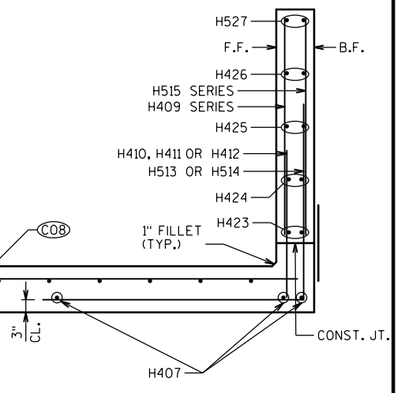


OUTLET APRON PLAN

APRON AND CUTOFF WALL REINFORCEMENT SHOWN
SEE OTHER DETAILS FOR WING REINFORCEMENT



WING 2



WING 1

SECTION THRU WINGS

NORMAL TO WING WALLS

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

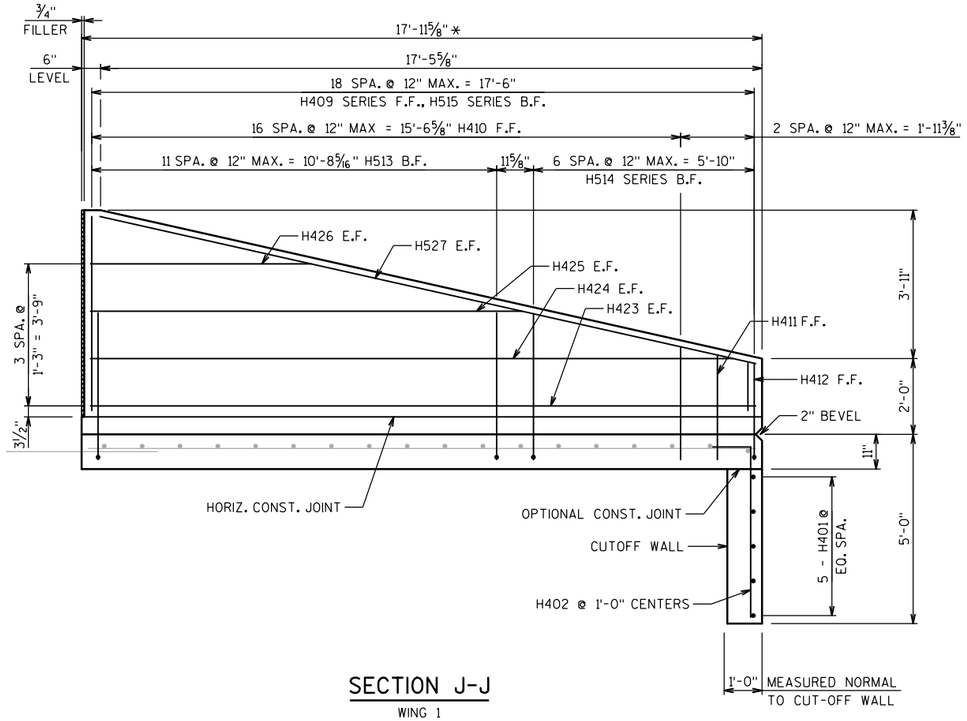
STRUCTURE C-45-60

DRAWN BY HDA | PLANS CK'D. MPM

OUTLET APRON & WING DETAILS (1 OF 2)

SHEET 24 OF 27

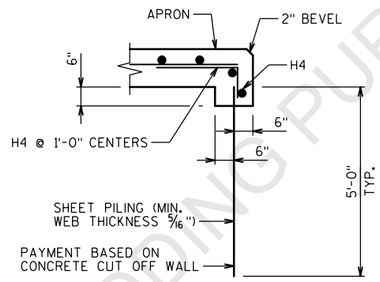
STATE PROJECT NUMBER
1229-04-74



SECTION J-J
WING 1

LEGEND

* WINGWALL LENGTH INCLUDES ¾" FILLER



ALTERNATE CUT-OFF WALL

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR ▲ SERIES	LOCATION
H401		6	24'-9"			CUTOFF WALL & EDGE OF APRON
H402		25	5'-5"	X		CUTOFF WALL
H403		5	9'-1"		X	APRON - LONG.
H404		15	17'-11"			APRON - LONG.
H405		5	9'-10"		X	APRON - LONG.
H406		17	20'-6"		X	APRON - TRANS.
H407		3	17'-5"			APRON - LONG.
H408		3	19'-2"			APRON - LONG.
H409	X	19	3'-2"		X	WING 1 - VERT. - F.F.
H410	X	17	3'-0"			WING 1 - VERT. - F.F.
H411	X	1	2'-9"			WING 1 - VERT. - F.F.
H412	X	1	2'-6"			WING 1 - VERT. - F.F.
H513	X	12	9'-0"	X		WING 1 - VERT. - B.F.
H514	X	7	8'-2"	X	X	WING 1 - VERT. - B.F.
H515	X	19	3'-2"		X	WING 1 - VERT. - B.F.
H416	X	20	3'-2"		X	WING 2 - VERT. - F.F.
H417	X	18	3'-0"			WING 2 - VERT. - F.F.
H418	X	1	2'-9"			WING 2 - VERT. - F.F.
H419	X	1	2'-6"			WING 2 - VERT. - F.F.
H520	X	13	9'-0"	X		WING 2 - VERT. - B.F.
H521	X	7	8'-2"	X	X	WING 2 - VERT. - B.F.
H522	X	20	3'-2"		X	WING 2 - VERT. - B.F.
H423	X	2	17'-6"			WING 1 - HORIZ.
H424	X	2	17'-0"			WING 1 - HORIZ.
H425	X	2	11'-5"			WING 1 - HORIZ.
H426	X	2	5'-10"			WING 1 - HORIZ.
H527	X	2	17'-9"			WING 1 - HORIZ. - TOP
H428	X	2	19'-1"			WING 2 - HORIZ.
H429	X	2	18'-5"			WING 2 - HORIZ.
H430	X	2	12'-4"			WING 2 - HORIZ.
H431	X	2	6'-3"			WING 2 - HORIZ.
H532	X	2	19'-3"			WING 2 - HORIZ. - TOP

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTH.

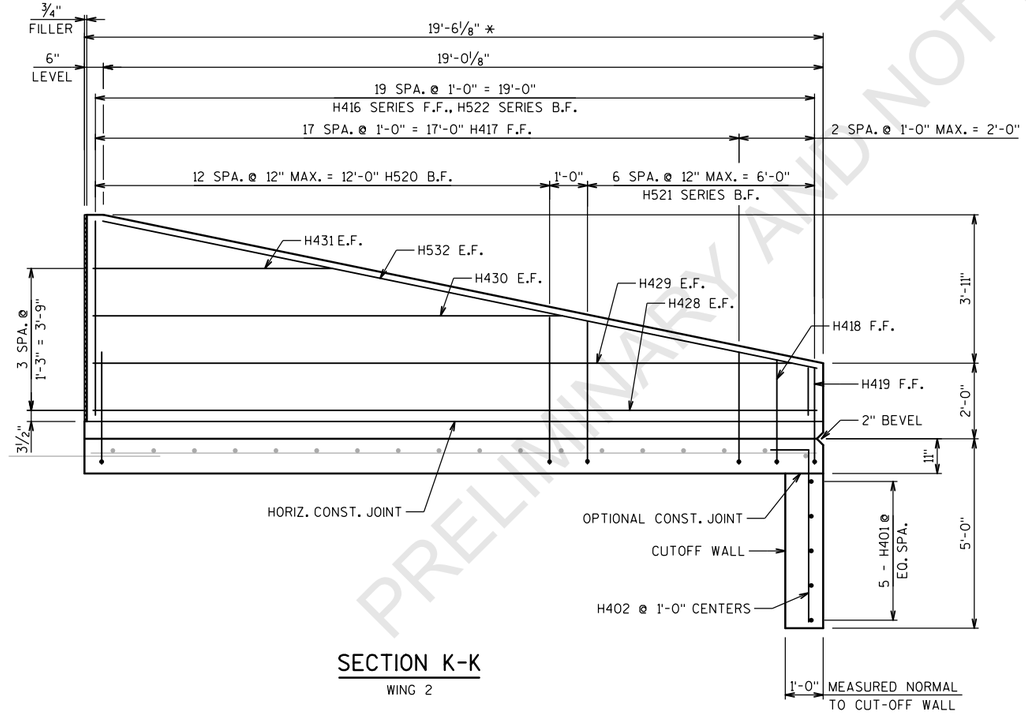


MARK	A
H402	1'-0"
H513	5'-2"
H514	5'-2"
H520	5'-2"
H521	5'-2"

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
H403	1 SERIES OF 5	1'-3" TO 16'-11"
H405	1 SERIES OF 5	2'-9" TO 16'-11"
H406	1 SERIES OF 17	16'-1" TO 24'-11"
H409	1 SERIES OF 19	1'-3" TO 5'-1"
H514	1 SERIES OF 7	7'-6" TO 8'-10"
H515	1 SERIES OF 19	1'-3" TO 5'-1"
H416	1 SERIES OF 20	1'-3" TO 5'-1"
H521	1 SERIES OF 7	7'-7" TO 8'-9"
H522	1 SERIES OF 20	1'-3" TO 5'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY



SECTION K-K
WING 2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

DRAWN BY HDA | PLANS CK'D. MPM

OUTLET APRON & WING DETAILS (2 OF 2)

SHEET 25 OF 27

8

8

PRELIMINARY AND NOT FOR BIDDING PURPOSES

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
CFC-03	SEPTEMBER 11, 2014	357649	602263
PWD-01	APRIL 14, 2014	357721	602278
CFC-02	SEPTEMBER 9, 2014	357649	602346
CFC-06	AUGUST 19, 2020	357600	602547

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

REPORT COMPLETED BY: HNTB CORP.

ALL COORDINATES REFERENCED TO WCCS NAD83 (2007) OZAUKEE COUNTY

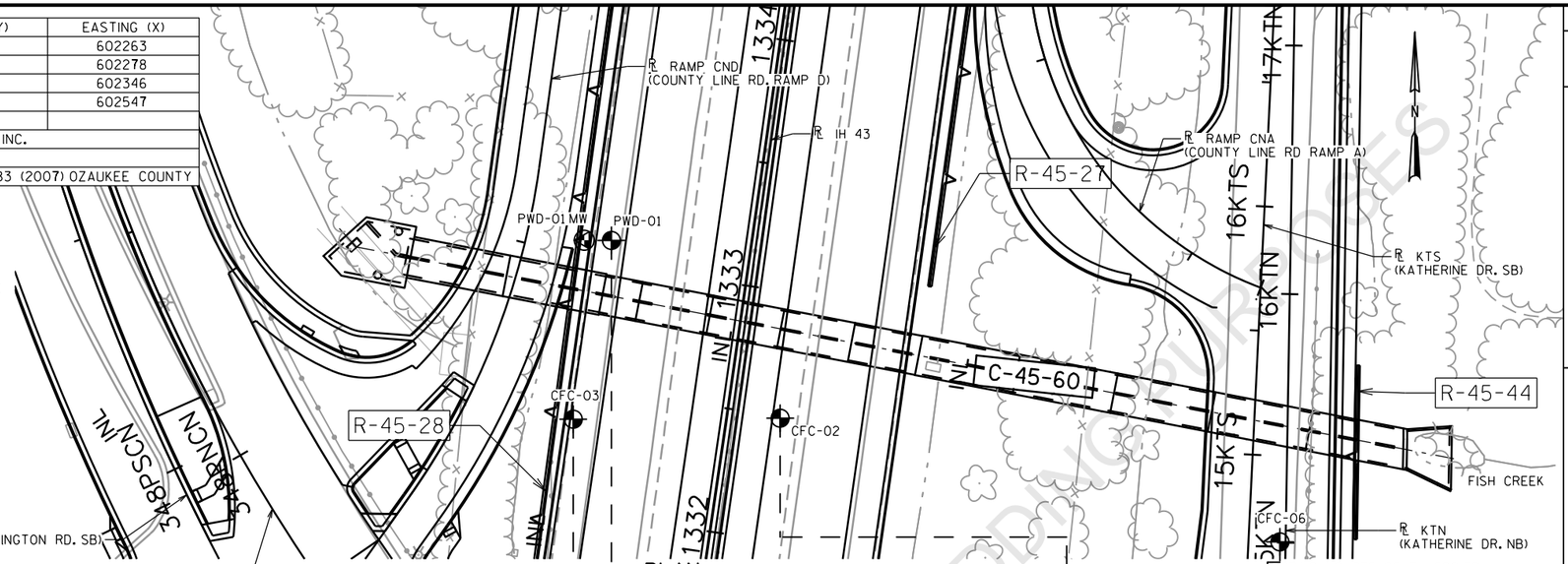
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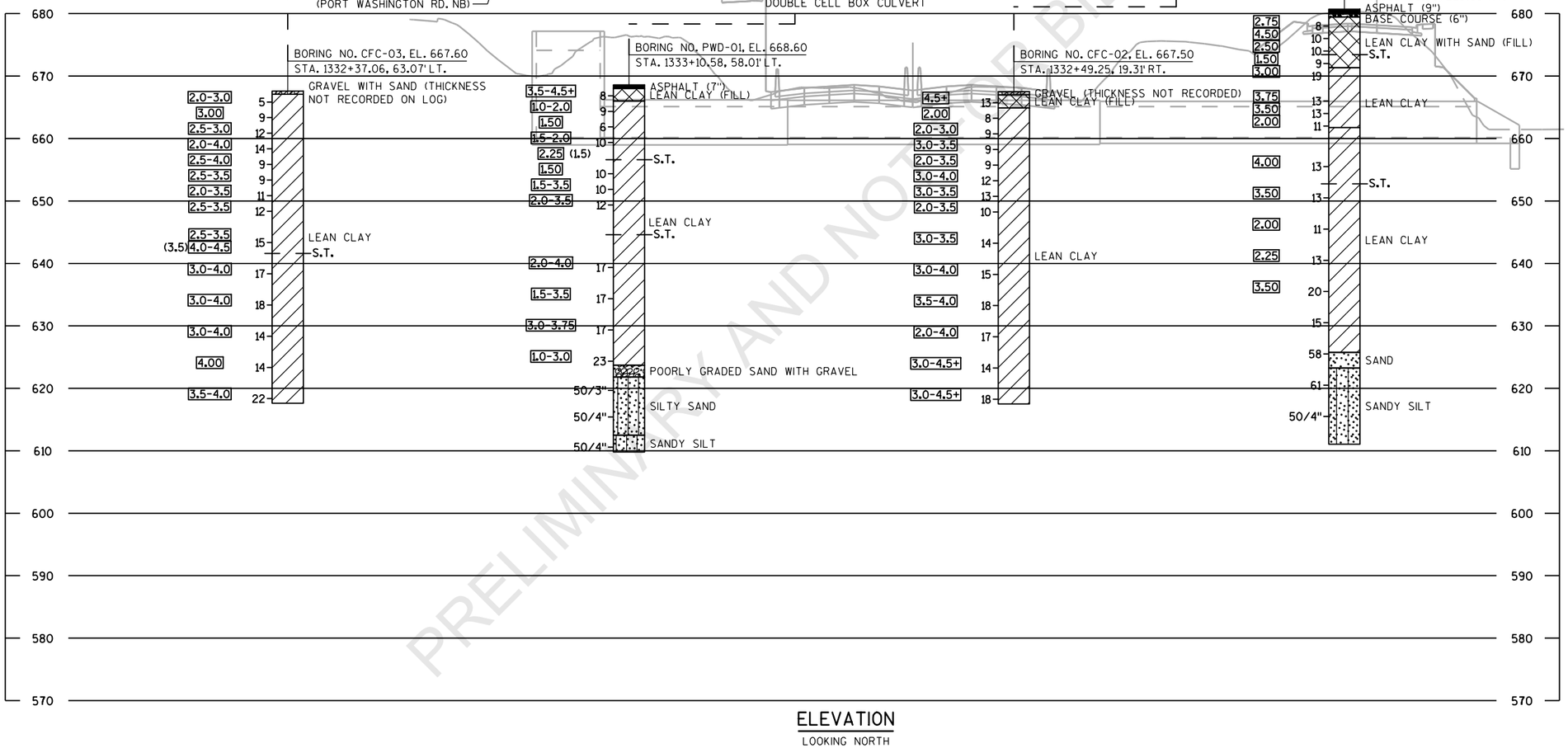
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

⊕ DENOTES SOIL BORING LOCATION

⊕ DENOTES MONITORING WELL LOCATION





ELEVATION

LOOKING NORTH

PRELIMINARY AND NOT FOR BIDDING PURPOSES

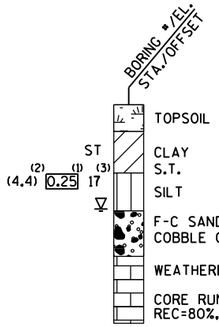
STATE PROJECT NUMBER

1229-04-74

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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE C-45-60

DRAWN BY EAJ | PLANS CK'D. NNM/MPM

SUBSURFACE EXPLORATION (1 OF 2)

SHEET 26 OF 27

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
CFC-01	AUGUST 27, 2014	357692	602404
CFC-05A	AUGUST 18, 2020	357651	602549
CFC-05	FEBRUARY 10, 2020	357648	602549
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD83 (2007) OZAUKEE COUNTY			

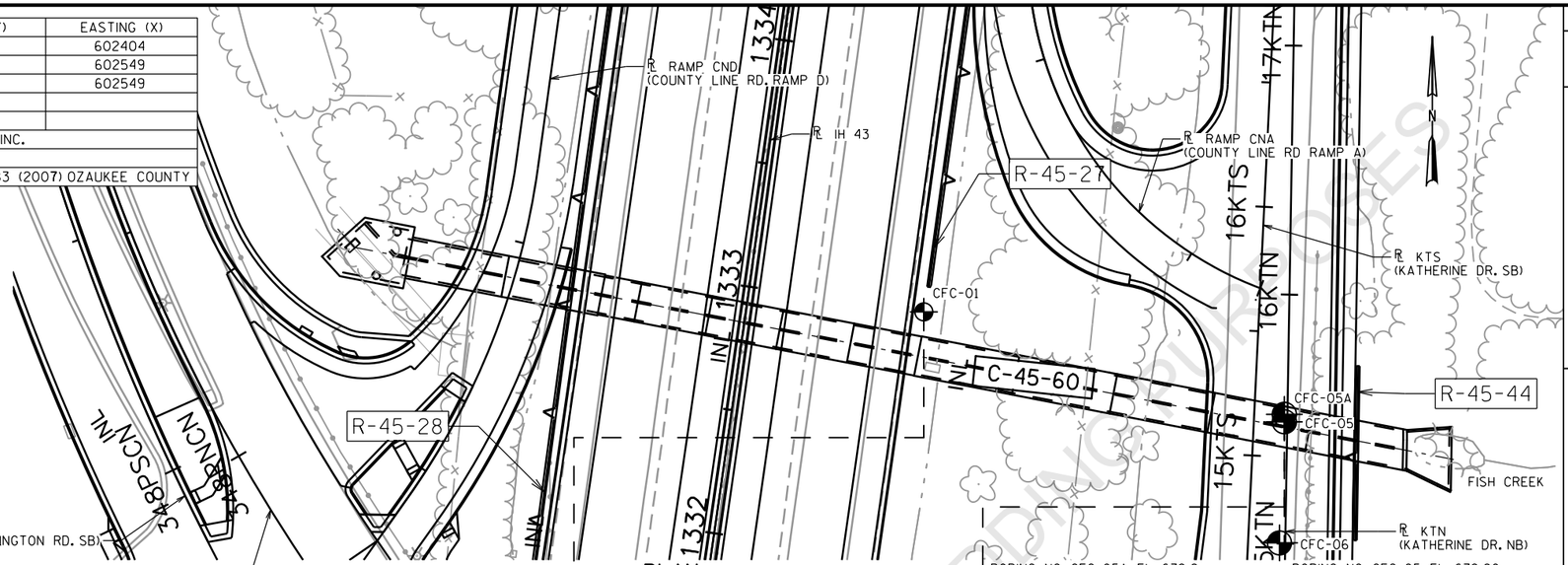
NOTE:

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WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

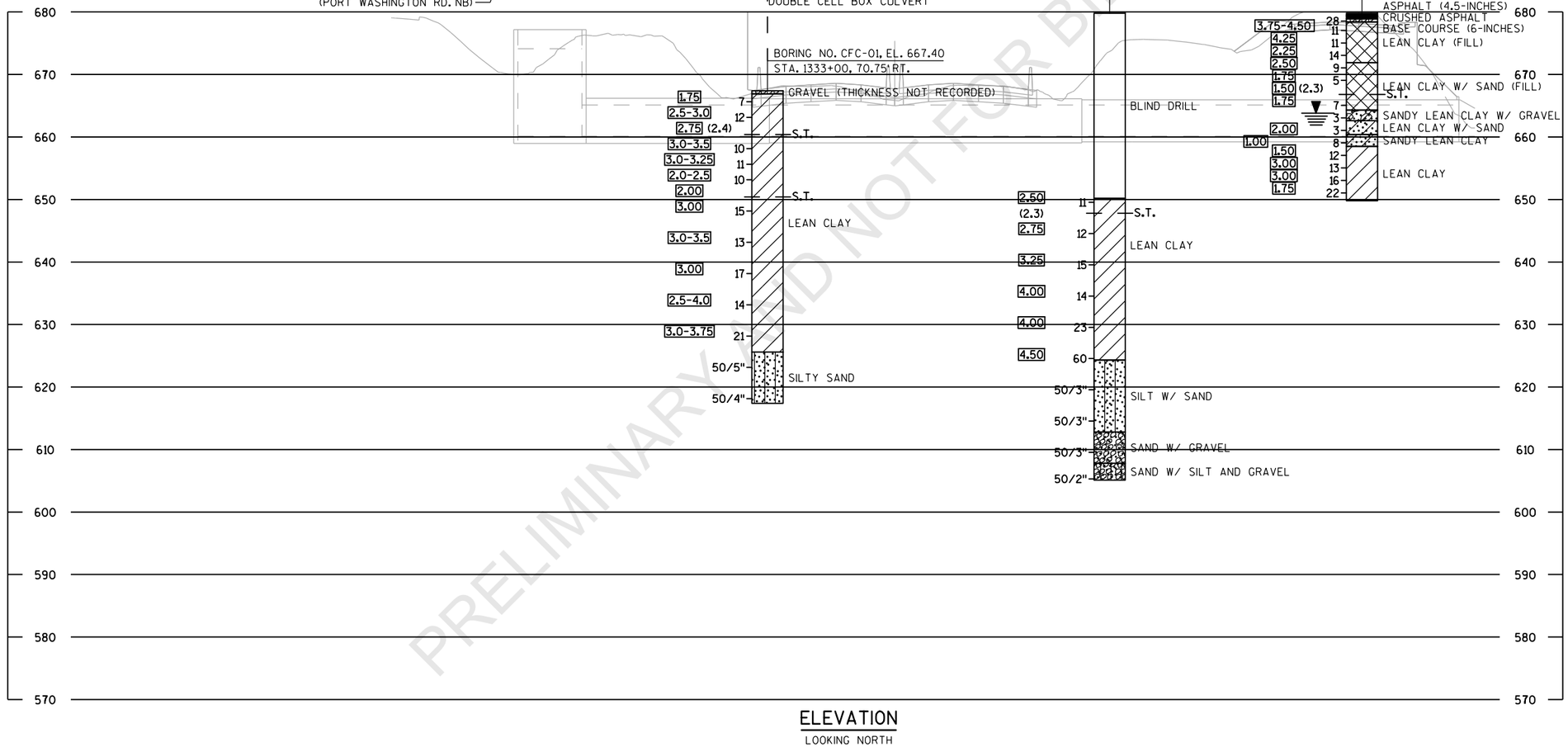
DENOTES SOIL BORING LOCATION

DENOTES MONITORING WELL LOCATION



PLAN

DOUBLE CELL BOX CULVERT



ELEVATION

LOOKING NORTH

PRELIMINARY AND NOT FOR BIDDING PURPOSES

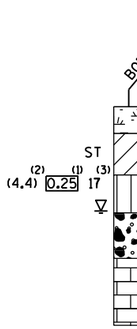
STATE PROJECT NUMBER

1229-04-74

MATERIAL SYMBOLS

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

LEGEND OF BORING



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(2) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-45-60

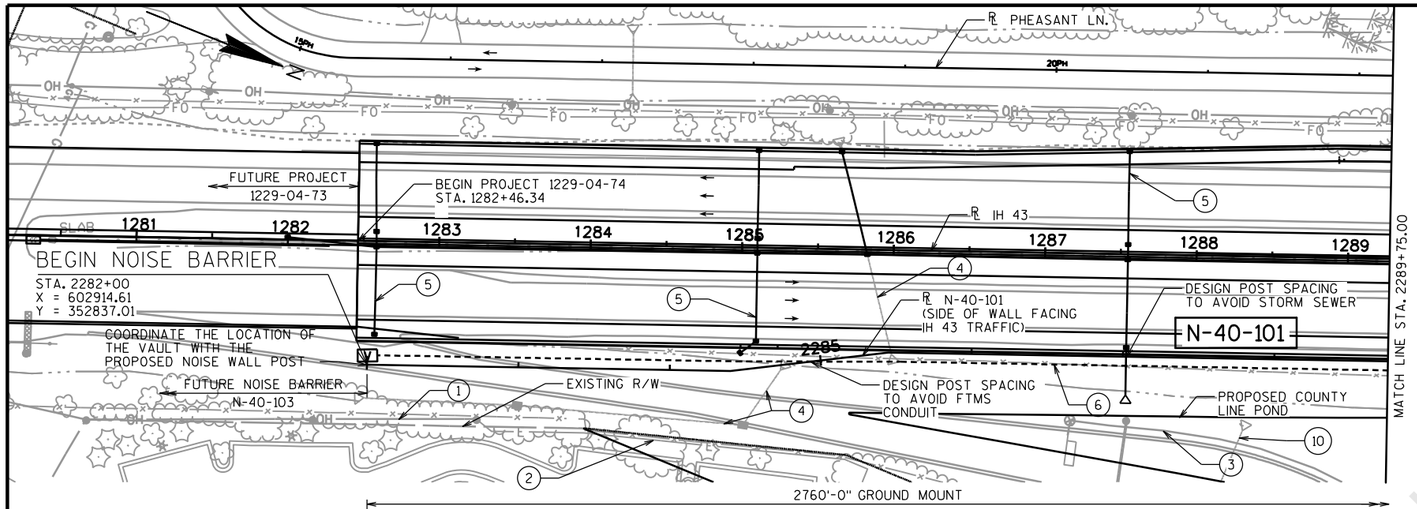
DRAWN BY EAJ | PLANS CK'D. NNM/MPM

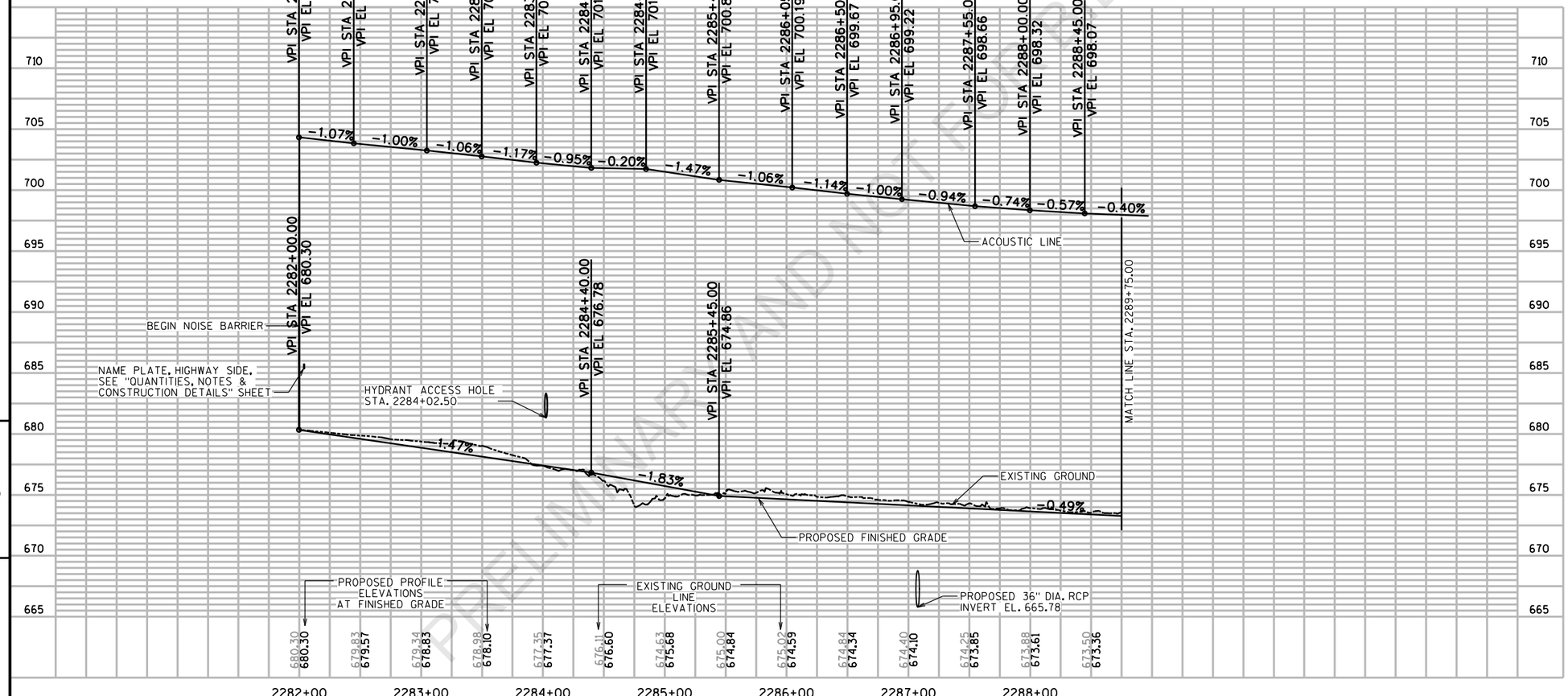
SUBSURFACE EXPLORATION (2 OF 2)

SHEET 27 OF 27

8

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PLAN & PROFILE: NOISE BARRIER N-40-101

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION (1 OF 3)
2. GENERAL PLAN & ELEVATION (2 OF 3)
3. GENERAL PLAN & ELEVATION (3 OF 3)
4. ALIGNMENT PLAN
5. QUANTITIES, NOTES & CONSTRUCTION DETAILS
6. AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE
7. AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE
8. SUBSURFACE EXPLORATION (1 OF 4)
9. SUBSURFACE EXPLORATION (2 OF 4)
10. SUBSURFACE EXPLORATION (3 OF 4)
11. SUBSURFACE EXPLORATION (4 OF 4)

UTILITY & STORM SEWER LEGEND

1. EXISTING WE ENERGIES OVERHEAD ELECTRIC TO REMAIN
2. EXISTING WE ENERGIES BURIED ELECTRIC TO REMAIN
3. EXISTING SIGNALS TO BE REMOVED
4. EXISTING DRAINAGE STRUCTURE TO BE REMOVED
5. PROPOSED WISDOT STORM SEWER
6. PROPOSED FTMS

STATE PROJECT NUMBER
1229-04-74

NOTES

SEE "ALIGNMENT PLAN" SHEET FOR GEOMETRY INFORMATION.

LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 4.0' ABOVE THE BOTTOM OF THE NOISE BARRIER UNLESS NOTED OTHERWISE AT SPECIFIC LOCATIONS SHOWN ON THE PROFILE.

LEGEND

→ TRAFFIC DIRECTION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

WISCONSIN
ELIZABETH A. JELINEK
E-40123
MILWAUKEE
WI
7/29/21
PROFESSIONAL ENGINEER

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
HEATHER ANDERS (414) 410-6899

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

HNTB
250 E. WISCONSIN AVE. #2000
MILWAUKEE, WI 53202
(414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE N-40-101

NOISE BARRIER ALONG IH 43 SOUTH OF COUNTY LINE

COUNTY	~~TOWN/CITY~~/VILLAGE
MILWAUKEE	BAYSIDE

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	EAJ	DESIGN CK'D.	RAM	DRAWN BY	EAJ	PLANS CK'D.	CRK

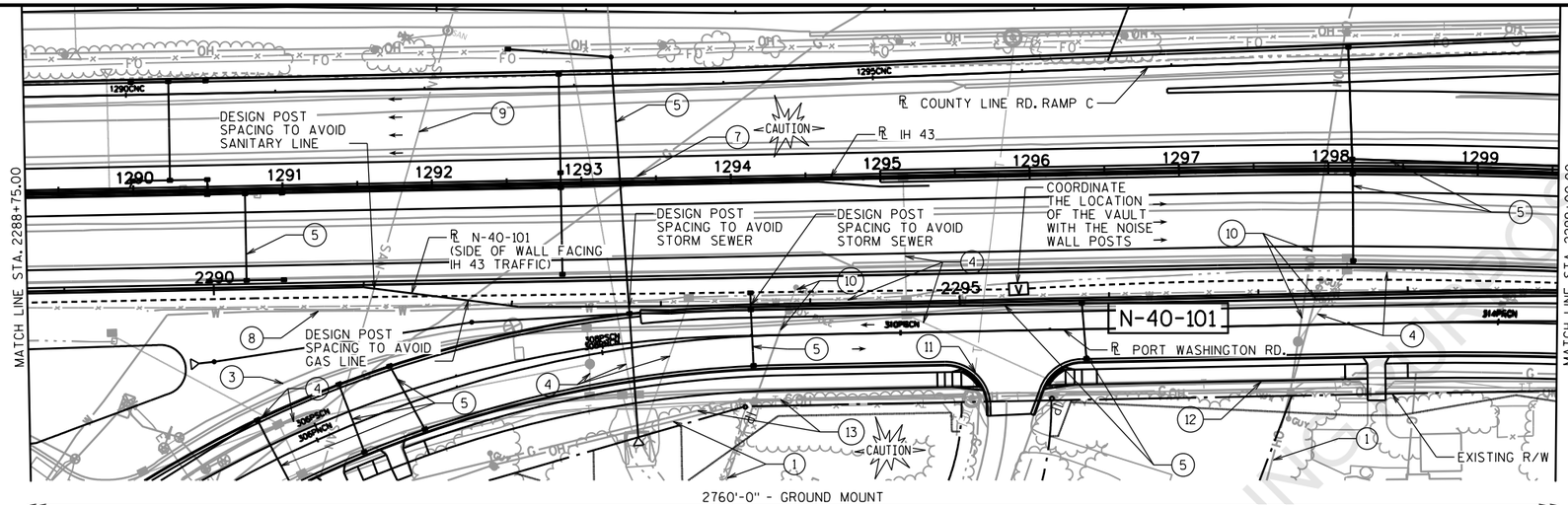
GENERAL PLAN & ELEVATION (1 OF 3)

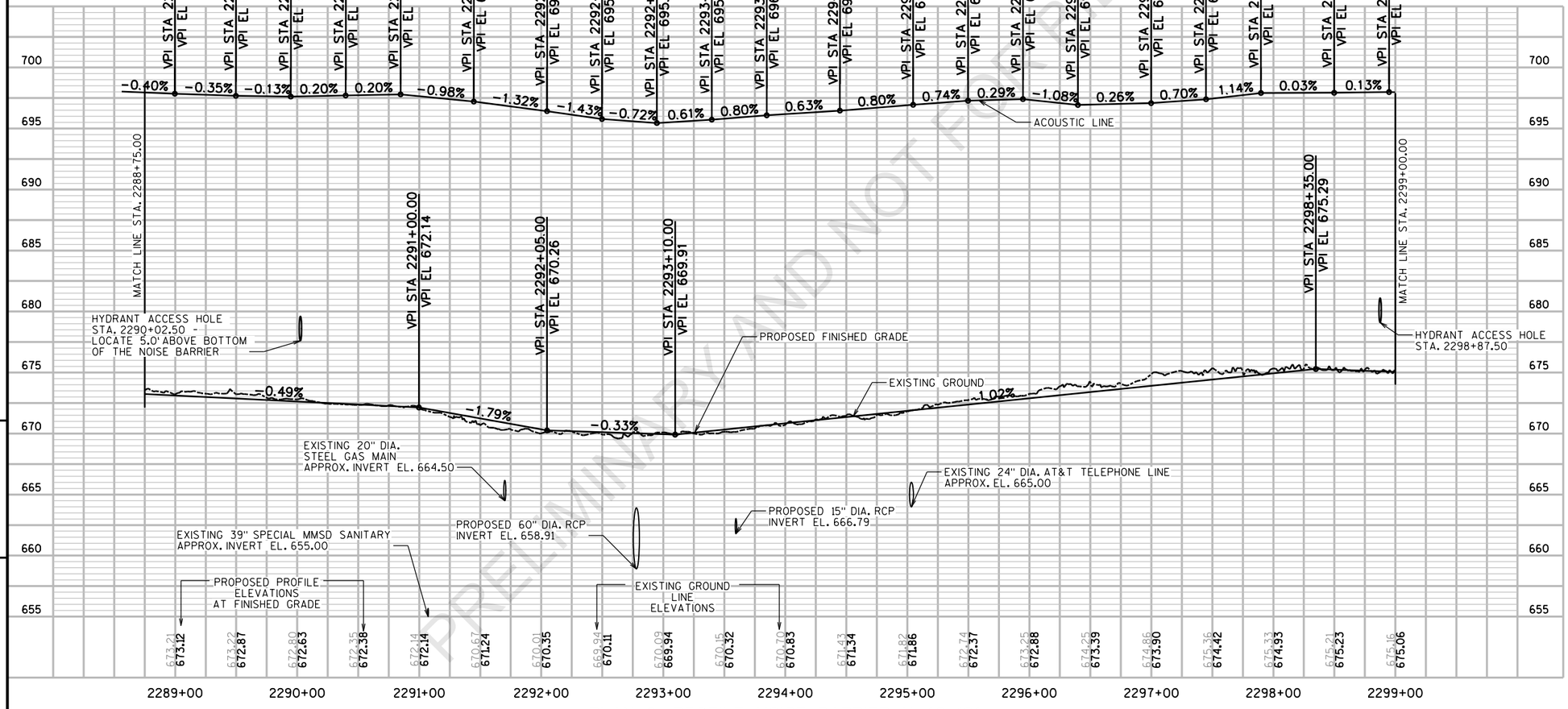
SHEET 1 OF 11

8

8

STATE PROJECT NUMBER
1229-04-74





PLAN & PROFILE: NOISE BARRIER N-40-101

UTILITY & STORM SEWER LEGEND

1. EXISTING WE ENERGIES OVERHEAD ELECTRIC TO REMAIN
2. EXISTING WE ENERGIES BURIED ELECTRIC TO REMAIN
3. EXISTING SIGNALS TO BE REMOVED
4. EXISTING DRAINAGE STRUCTURE TO BE REMOVED
5. PROPOSED WISDOT STORM SEWER
6. PROPOSED FTMS
7. EXISTING WE ENERGIES GAS LINE TO BE RELOCATED
8. EXISTING CITY OF MEQUON WATER MAIN TO BE RELOCATED
9. EXISTING MMSD SANITARY LINE TO REMAIN
10. GUY WIRES AND PORTIONS OF EXISTING WE ENERGIES OVERHEAD ELECTRIC TO BE REMOVED AND RELOCATED
11. EXISTING TELEPHONE LINE TO REMAIN
12. EXISTING TELEPHONE LINE TO REMAIN
13. EXISTING WE ENERGIES GAS LINE TO REMAIN

NOTES

SEE "ALIGNMENT PLAN" SHEET FOR GEOMETRY INFORMATION.

LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 4.0' ABOVE THE BOTTOM OF THE NOISE BARRIER UNLESS NOTED OTHERWISE AT SPECIFIC LOCATIONS SHOWN ON THE PROFILE.

LEGEND

→ TRAFFIC DIRECTION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-101

DRAWN BY EAJ | PLANS CK'D. CRK

GENERAL PLAN & ELEVATION (2 OF 3)

SHEET 2 OF 11

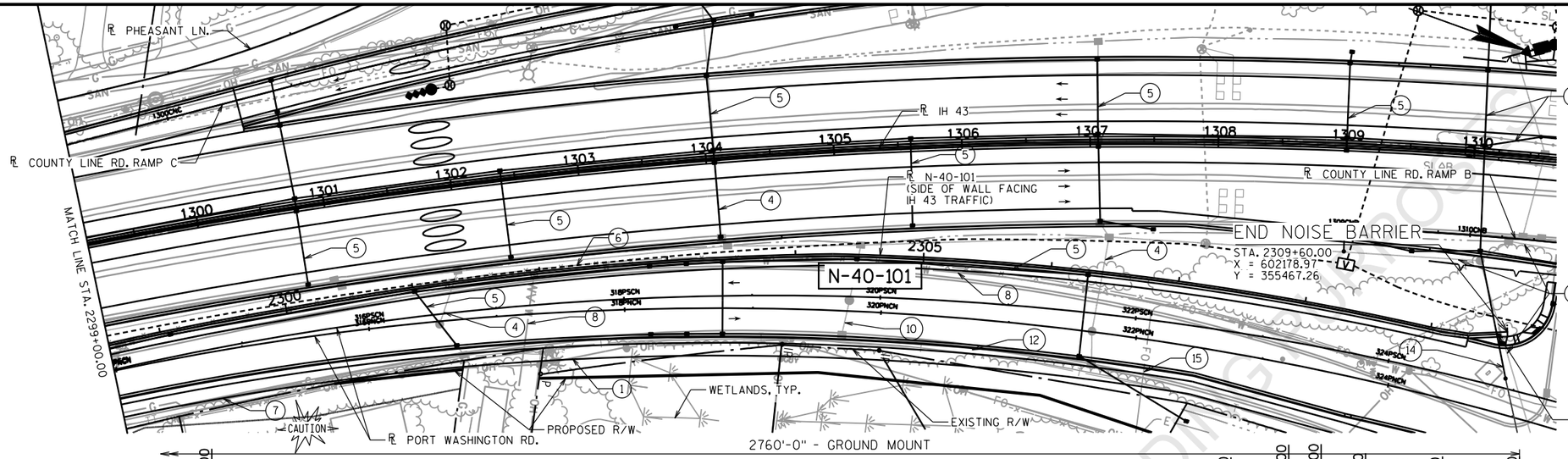
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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\NoiseBarrierWalls\N-40-101_S_of_CountyLine\cds\N101_080102_gp.dgn PLOT DATE : 7/28/2021 11:35:48 PM PLOT BY : ejelinek

PLOT SCALE : 100:1

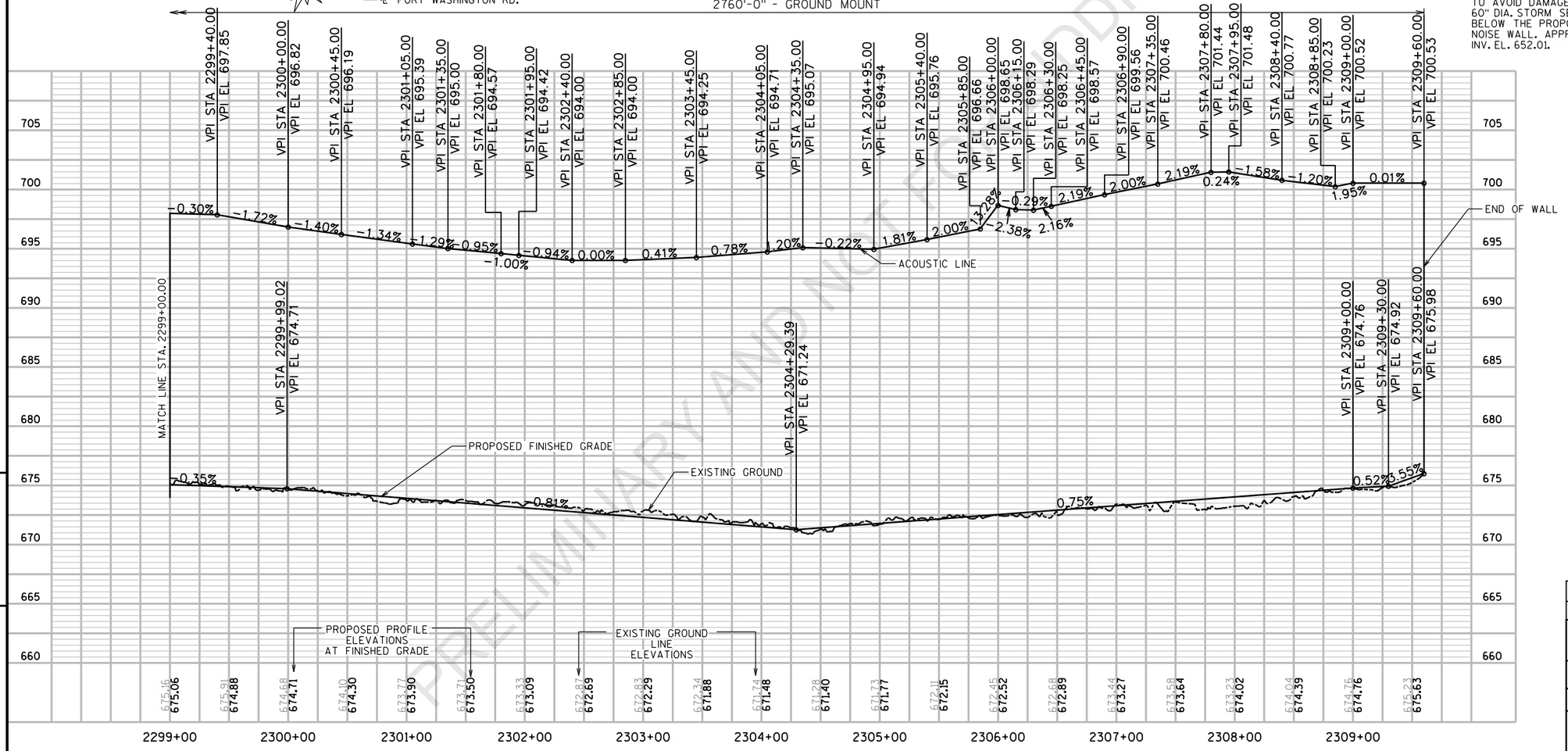
STATE PROJECT NUMBER
1229-04-74



UTILITY & STORM SEWER LEGEND

1. EXISTING WE ENERGIES OVERHEAD ELECTRIC TO BE RELOCATED
4. EXISTING DRAINAGE STRUCTURE TO BE REMOVED
5. PROPOSED WISDOT STORM SEWER
6. PROPOSED FTMS
7. EXISTING WE ENERGIES GAS LINE TO REMAIN
8. EXISTING CITY OF MEQUON WATER MAIN TO BE RELOCATED
12. EXISTING TELEPHONE LINE TO REMAIN
15. EXISTING MIDWEST FIBER NETWORK FIBER OPTIC LINE TO BE RELOCATED
14. PROPOSED 60" DIA. STORM SEWER

USE CAUTION WHEN INSTALLING END POSTS TO AVOID DAMAGE TO 60" DIA. STORM SEWER BELOW THE PROPOSED NOISE WALL. APPROX. INV. EL. 652.01.



PLAN & PROFILE: NOISE BARRIER N-40-101

NOTES

SEE "ALIGNMENT PLAN" SHEET FOR GEOMETRY INFORMATION.

LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 4.0' ABOVE THE BOTTOM OF THE NOISE BARRIER UNLESS NOTED OTHERWISE AT SPECIFIC LOCATIONS SHOWN ON THE PROFILE.

LEGEND

→ TRAFFIC DIRECTION

PRELIMINARY AND NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE N-40-101

DRAWN BY EAJ | PLANS CK'D. CRK

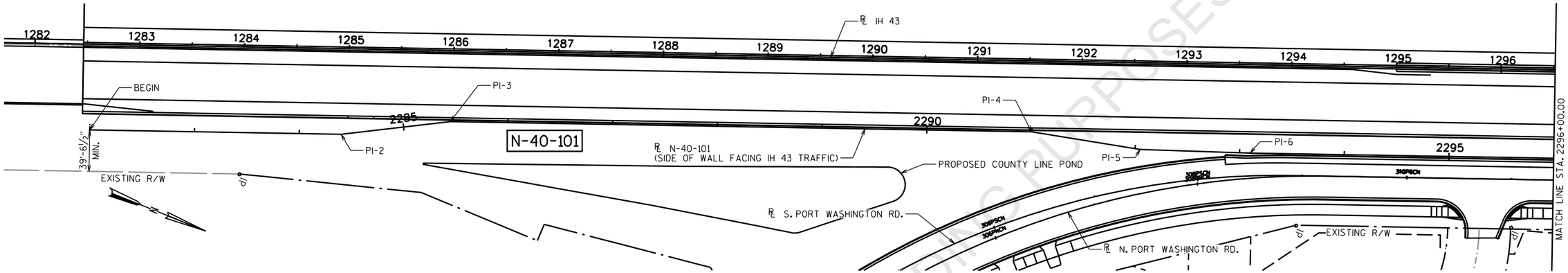
GENERAL PLAN & ELEVATION (3 OF 3)

SHEET 3 OF 11

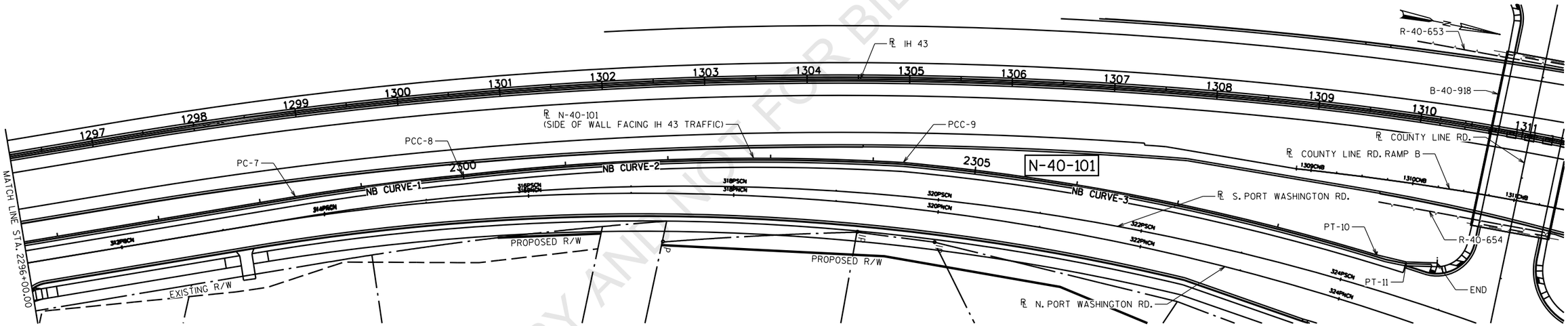
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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\NoiseBarrierWalls\N-40-101_S_of_CountyLine\cds\N101_080103_gp.dgn PLOT DATE : 7/28/2021 11:39:06 PM PLOT BY : ejelinek PLOT SCALE : 100:1

STATE PROJECT NUMBER
1229-04-74



ALIGNMENT: NOISE BARRIER N-40-101



ALIGNMENT: NOISE BARRIER N-40-101

ALIGNMENT DATA

LABEL	STATION	X	Y	BEARING
BEGIN	2282+00.00	602914.61	352837.01	N20°51'19.18"W
PI-2	2284+40.00	602829.17	353061.28	N28°30'56.94"W
PI-3	2285+45.00	602779.04	353153.54	N20°51'17.25"W
PI-4	2291+00.00	602581.46	353672.18	N12°36'44.71"W
PI-5	2292+05.00	602558.53	353774.65	N19°57'56.30"W
PI-6	2293+10.00	602522.68	353873.34	N20°53'02.63"W
PC-7	2298+35.00	602335.53	354363.85	--
PCC-8	2299+99.02	602282.79	354519.12	--
PCC-9	2304+29.39	602185.88	354937.89	--
PT-10	2309+00.00	602182.93	355407.70	--
PI-11	2309+30.00	602183.96	355437.68	N01°57'48.93"E
END	2309+60.00	602178.97	355467.26	N09°34'24.74"W

HORIZONTAL CURVE DATA

NB CURVE-1

P.I. = 2299+17.04
X = 602306.42
Y = 354440.55
Δ = 4° 02' 57" RT.
D = 2° 28' 07.53"
T = 82.04'
L = 164.02'
R = 2,320.83'
P.C. = 2298+35.000
X = 602335.53
Y = 354363.85
P.C.C. = 2299+99.02
X = 602282.79
Y = 354519.12

NB CURVE-2

P.I. = 2302+14.74
X = 602216.30
Y = 354724.33
Δ = 9° 50' 54" RT.
D = 2° 17' 17.92"
T = 215.72'
L = 430.37'
R = 2503.85'
P.C.C. = 2299+99.02
X = 602282.79
Y = 354519.12
P.C.C. = 2304+29.39
X = 602185.88
Y = 354937.89

NB CURVE-3

P.I. = 2306+65.50
X = 602160.63
Y = 355172.65
Δ = 11° 33' 31" RT.
D = 2° 27' 21.82"
T = 236.11'
L = 470.61'
R = 2332.83'
P.C.C. = 2304+29.39
X = 602185.88
Y = 354937.89
P.T. = 2309+00.00
X = 602182.93
Y = 355407.70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

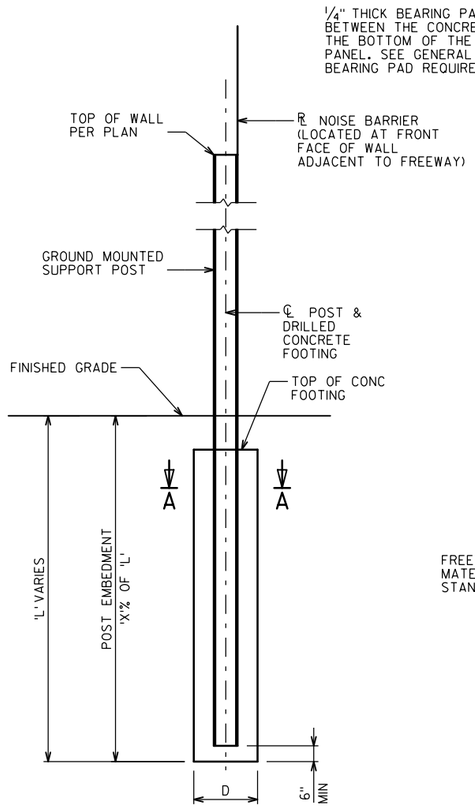
STRUCTURE N-40-101

DRAWN BY EAJ | PLANS CK'D. CRK

ALIGNMENT PLAN

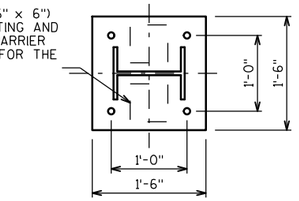
SHEET 4 OF 11

PRELIMINARY AND NOT FOR BIDDING PURPOSES

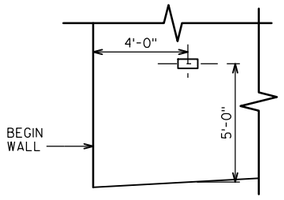


SECTION THRU GROUND MOUNTED POST & DRILLED CONC FOOTING

TYPICAL AT EACH POST LOCATION
(NOT TO SCALE)
('D', 'L' AND 'X' TO BE DETERMINED BY SUPPLIER)

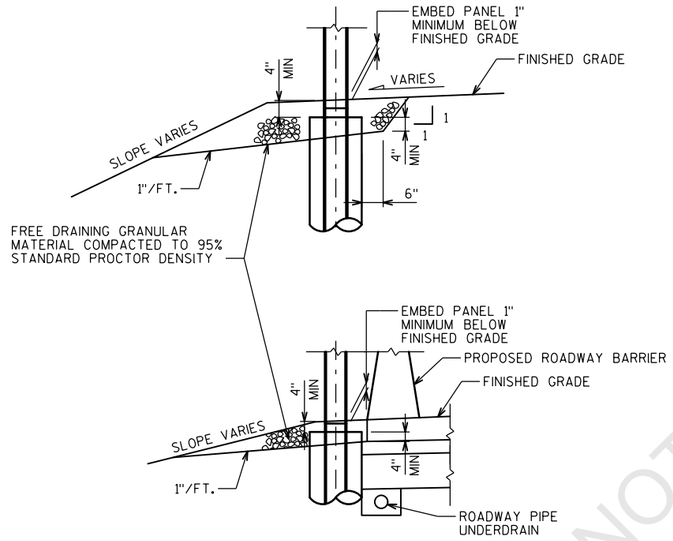


BASE PLATE DETAILS



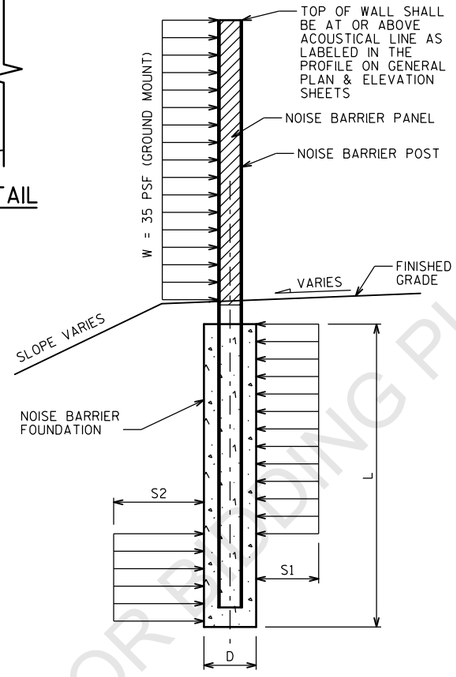
NAME PLATE DETAIL

(NOT TO SCALE)



POST AND PANEL DRAINAGE BACKFILL DETAIL

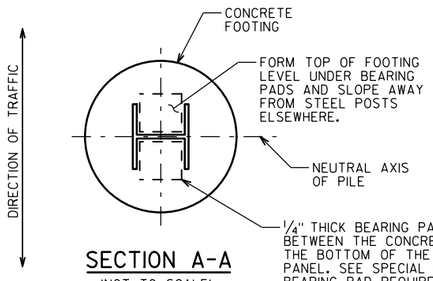
(NOT TO SCALE)



W = DESIGN WIND LOAD
L = NOISE BARRIER FOUNDATION DEPTH BELOW EXISTING GROUND
D = NOISE BARRIER FOUNDATION DIAMETER
S = ALLOWABLE SOIL PRESSURE

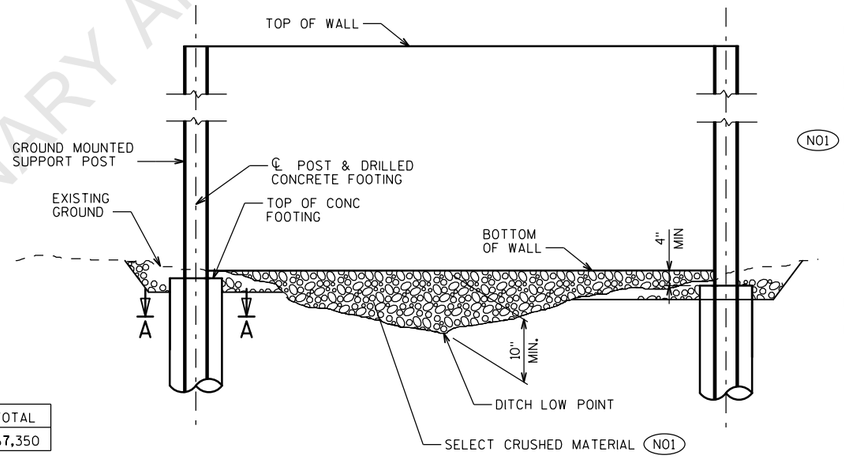
NOISE BARRIER LOADING DIAGRAM

(NOT TO SCALE)



SECTION A-A

(NOT TO SCALE)



PARTIAL WALL ELEVATION OVER DITCH

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	TOTAL
541.0300.S.0019	NOISE BARRIER DOUBLE-SIDED SOUND ABSORPTIVE N-40-101	SF	67,350

ALL ITEMS ARE CATEGORY 9000

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

PLANS, ELEVATIONS AND DETAILS SHOWN ARE INTENDED TO INDICATE LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE NOISE BARRIER IS TO BE DESIGNED USING THE FINISHED GRADE LINE AND THE ACOUSTICAL LINE SHOWN ON THE GENERAL PLAN AND ELEVATION SHEETS.

THE ACOUSTICAL LINE IS THE TOP PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-101". NOISE BARRIER PLACED ABOVE THE ACOUSTICAL LINE WILL NOT BE MEASURED FOR PAYMENT.

THE FINISHED GRADE LINE IS THE BOTTOM PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-101". NOISE BARRIER PLACED BELOW THE FINISHED GRADE LINE WILL NOT BE MEASURED FOR PAYMENT.

ALL NOISE BARRIERS SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT "GUIDE SPECIFICATIONS FOR STRUCTURAL DESIGN OF SOUND BARRIERS", PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO).

THE FOLLOWING DESIGN PRESSURES SHALL BE USED IN ACCORDANCE WITH THE SPECIAL PROVISIONS:
35 P.S.F. FOR GROUND MOUNTED BARRIERS

REINFORCING STEEL IN THE CONCRETE CORE OF THE NOISE BARRIER PANELS SHALL HAVE A MINIMUM CLEARANCE OF 1-INCH. THE CONCRETE CORE SHALL BE DESIGNED TO RESIST THE LOADS WITHOUT CONSIDERING ANY COMPOSITE ACTION FROM OTHER MATERIAL IN THE PANEL.

BOTTOM OF NOISE BARRIER PANELS SHALL BE DESIGNED TO SUPPORT THE DEAD LOAD (WEIGHT) OF THE PANELS DIRECTLY ABOVE IT AND ITS OWN DEAD LOAD. THE DEAD LOAD SHALL BE DISTRIBUTED UNIFORMLY ASSUMING SIMPLE BEAM ACTION WITH SUPPORTS AT THE POSTS. BOTTOM PANELS SHALL HAVE A MINIMUM AMOUNT OF PERIMETER REINFORCEMENT OF A #4 BAR WHICH SHALL BE CONTINUOUS AROUND THE CORNERS.

A COMPRESSIBLE BEARING PAD OF 1/4" THICKNESS SHALL BE PROVIDED BETWEEN THE FOUNDATION AND THE BOTTOM PANELS. THE BEARING PADS SHALL BE PREFORMED EPDM RUBBER CONFORMING TO ASTM D-2000, GRADE 2, TYPE A, CLASS A WITH A MINIMUM DUROMETER HARDNESS OF 80. BEARING SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE SIDED SOUND ABSORPTIVE N-40-101".

PRECAST CONCRETE PEDESTALS PLACED BETWEEN THE FOUNDATION AND BOTTOM PANELS SHALL BE REINFORCED IF OVER 1'-0" HIGH.

INCLUDE THE COST OF SURFACE TREATMENT, REVEALS, AND COATING OF STEEL POSTS AND CONNECTIONS UNDER THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-101".

LOCATE HYDRANT ACCESS HOLES IN NOISE BARRIERS WITH COVER SIGNS AT LOCATIONS SHOWN ON THE GENERAL PLAN & ELEVATION SHEETS. PROVIDING HYDRANT ACCESS HOLES IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE SIDED SOUND ABSORPTIVE N-40-101".

INSTALL FREE DRAINING GRANULAR MATERIAL ALONG THE ENTIRE LENGTH OF WALL AT THE BOTTOM OF NOISE BARRIERS AS SHOWN IN THE NOISE BARRIER PLANS AND AS REQUIRED TO FILL GAPS UNDER THE NOISE BARRIER PANEL. FREE DRAINING GRANULAR MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-101".

THE SUBSURFACE INFORMATION PRESENTED IN THESE PLANS IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

ALL CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IS SUBJECT TO THE QMP REQUIREMENTS FOR CLASS II ANCILLARY CONCRETE. PERFORM QMP TESTING OF CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IN ACCORDANCE WITH SECTION 716 OF THE STANDARD SPECIFICATIONS FOR CLASS II ANCILLARY CONCRETE. QMP TESTING IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-101".

HOTLINE ALL UTILITIES. IN AREAS WHERE EXISTING UTILITIES ARE WITHIN 3 FEET OF THE PROPOSED WALL, EXPOSE EXISTING UTILITIES PRIOR TO EXCAVATION.

THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ANY TEMPORARY GRADING DOES NOT IMPACT UTILITIES OR TO COORDINATE WITH AFFECTED UTILITIES TO ACCOMMODATE TEMPORARY GRADING.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE NOISE BARRIER IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE NOISE BARRIER MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-101".

(N01) PLACE SELECT CRUSHED MATERIAL IN DRAINAGE DITCH WHERE NOISE BARRIER CROSSES FLOW LINE. SELECT CRUSHED MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-101".

COORDINATE THE DRILLING OF CONCRETE FOOTING WITH CONSTRUCTION OF PROPOSED ROADWAY, ROADWAY BARRIER, INSTALLATION OF ROADWAY PIPE UNDERDRAIN AND INSTALLATION OF PROPOSED STORM SEWER.

ASSUMED POST DEPTH IS 10". IF THE PROPOSED POST DEPTH IS LARGER THAN ASSUMED, ADJUST THE NOISE WALL ALIGNMENT ALONG PORT WASHINGTON ROAD TO MAINTAIN 1'-0" MINIMUM CLEAR BETWEEN BACK FACE OF THE ROADWAY BARRIER AND THE FACE OF THE POST NEAREST THE BACK FACE OF THE ROADWAY BARRIER.

STATE PROJECT NUMBER

1229-04-74

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-101

DRAWN BY EAJ | PLANS CK'D. CRK

QUANTITIES, NOTES & CONSTRUCTION DETAILS

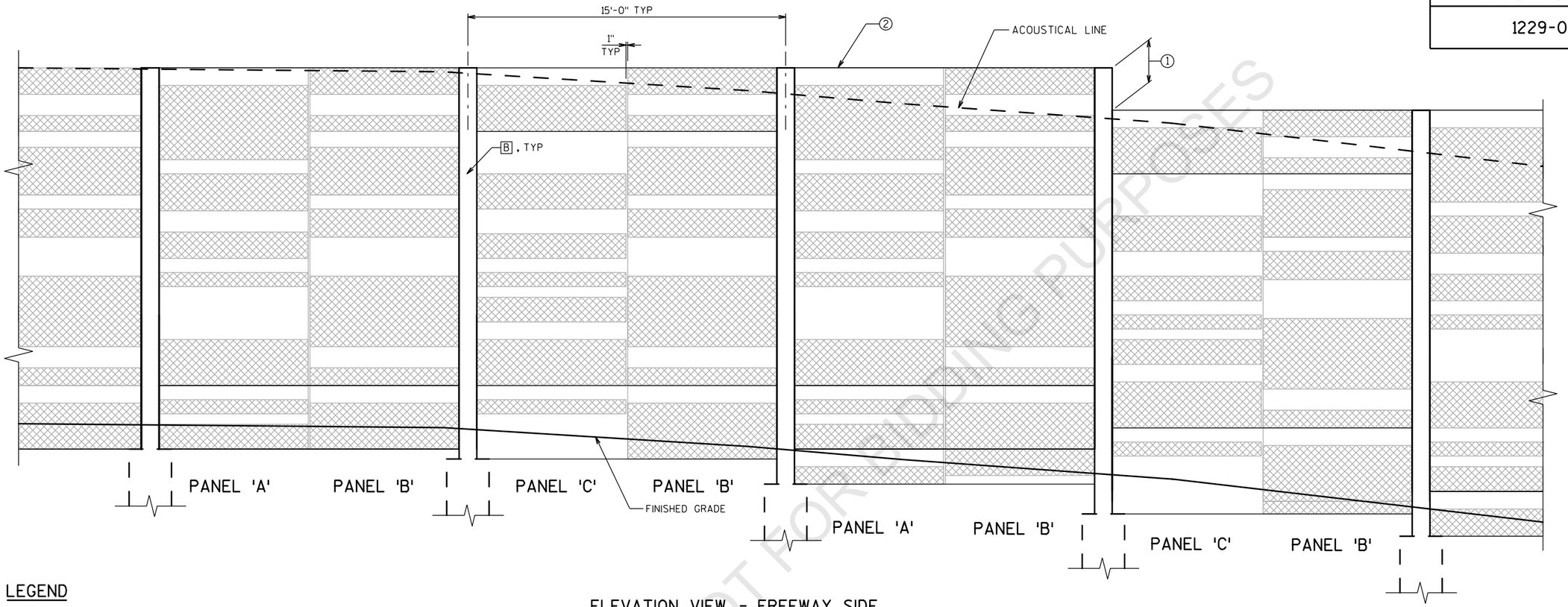
SHEET 5 OF 11

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\NoiseBarrierWalls\N-40-101_S_of_CountyLine\cds\N101_080105_gn PLOT DATE : 7/28/2021 11:00:29 PM PLOT BY : ejelinek PLOT SCALE : 1:1

STATE PROJECT NUMBER
1229-04-74



ELEVATION VIEW - FREEWAY SIDE

LEGEND

B POST PAINT COLOR

(1) STEP PANELS IN INCREMENTS OF 2'-0"'. STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.

(2) ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.

(3) 0.5 X (POST SPA - POST FLANGE WIDTH - 1")

PANEL THICKNESS + 0"

PANEL THICKNESS - ¾" MIN, 1" MAX

COLORS

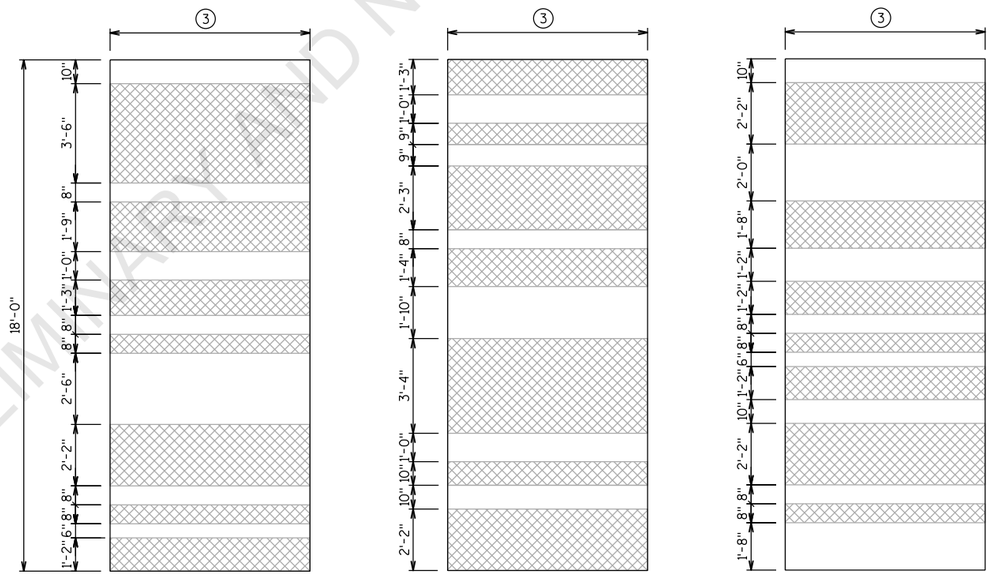
NOISE BARRIER PANELS TO BE PLAIN CONCRETE WITH NO STAIN OR PAINT.

POSTS TO BE PAINTED FEDERAL COLOR NO. 26293, GRAY.

NOTES

ALTERNATE PANEL PATTERNS AS SHOWN. DO NOT PLACE SAME PATTERN HORIZONTALLY ADJACENT TO EACH OTHER.

THE PATTERNS SHALL REPEAT VERTICALLY STARTING FROM THE TOP OF WALL AND WORKING DOWNWARD IF WALL HEIGHT GREATER 18'-0" IS REQUIRED.



PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-101

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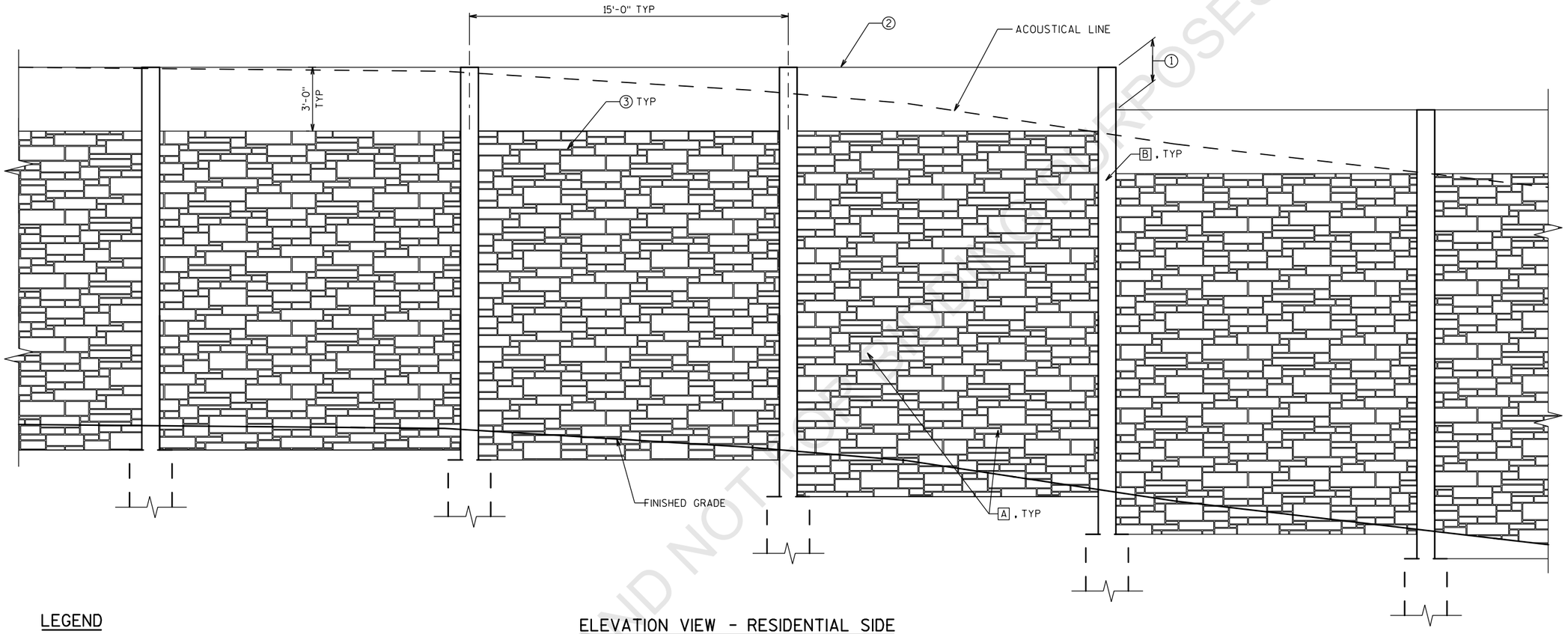
AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE

SHEET 6 OF 11

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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\NoiseBarrierWalls\N-40-101_S_of_CountyLine\cds\N101_080106_ae.dgn PLOT DATE : 7/28/2021 11:00:31 PM PLOT BY : ejelinek PLOT SCALE : 5.33333:1

STATE PROJECT NUMBER
1229-04-74



ELEVATION VIEW - RESIDENTIAL SIDE

LEGEND

B POST PAINT COLOR

1. STEP PANELS IN INCREMENTS OF 2'-0". STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.
2. ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.
3. THE RESIDENTIAL SIDE WALL PATTERN SHALL BE A "RANDOM SPLIT EDGE ASHLAR" PATTERN. THE PATTERN SHALL CONSIST OF RANDOM SIZED PIECES RANGING FROM A MINIMUM OF 1½" HIGH BY 4" LONG TO A MAXIMUM OF 10" HIGH BY 31" LONG WITH A MAXIMUM RELIEF 1½".

COLORS

NOISE BARRIER PANELS TO BE PLAIN CONCRETE WITH NO STAIN OR PAINT.

POSTS TO BE PAINTED FEDERAL COLOR NO. 26293, GRAY.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-101

DRAWN BY EAJ | PLANS CK'D. CRK

AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE

SHEET 7 OF 11

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\NoiseBarrierWalls\N-40-101_S_of_CountyLine\cds\N101_080107_ae.dgn PLOT DATE : 7/28/2021 11:00:33 PM PLOT BY : ejelinek PLOT SCALE : 5.33333:1

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
NCN-08	DECEMBER 17, 2020	353044	602810
NCN-09	DECEMBER 17, 2020	353321	602704

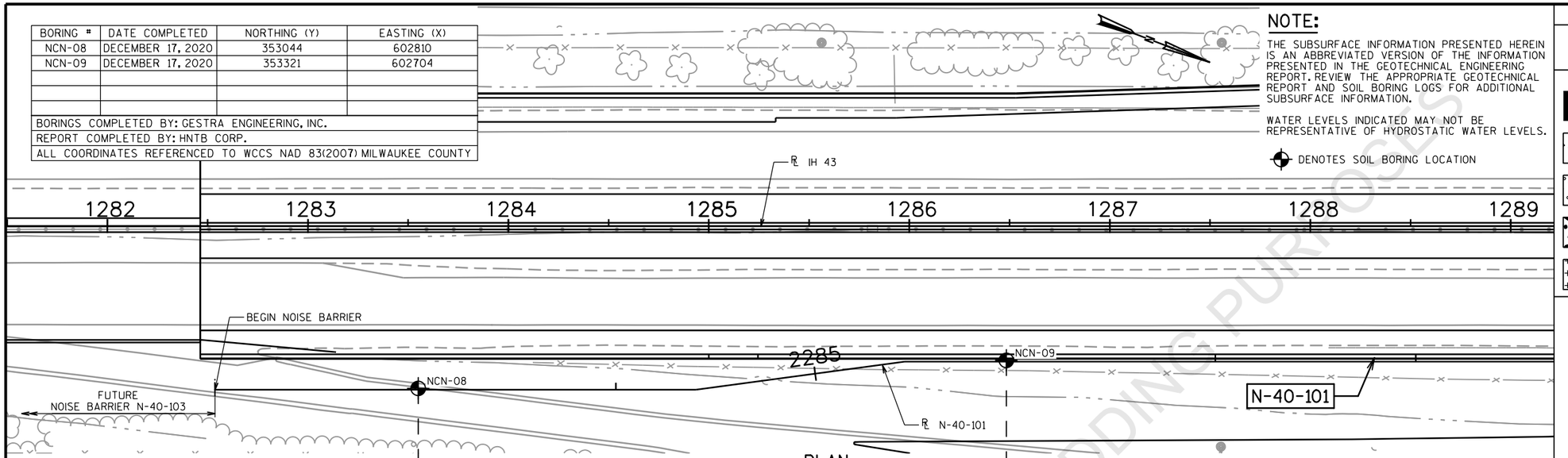
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.
REPORT COMPLETED BY: HNTB CORP.
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) MILWAUKEE COUNTY

NOTE:

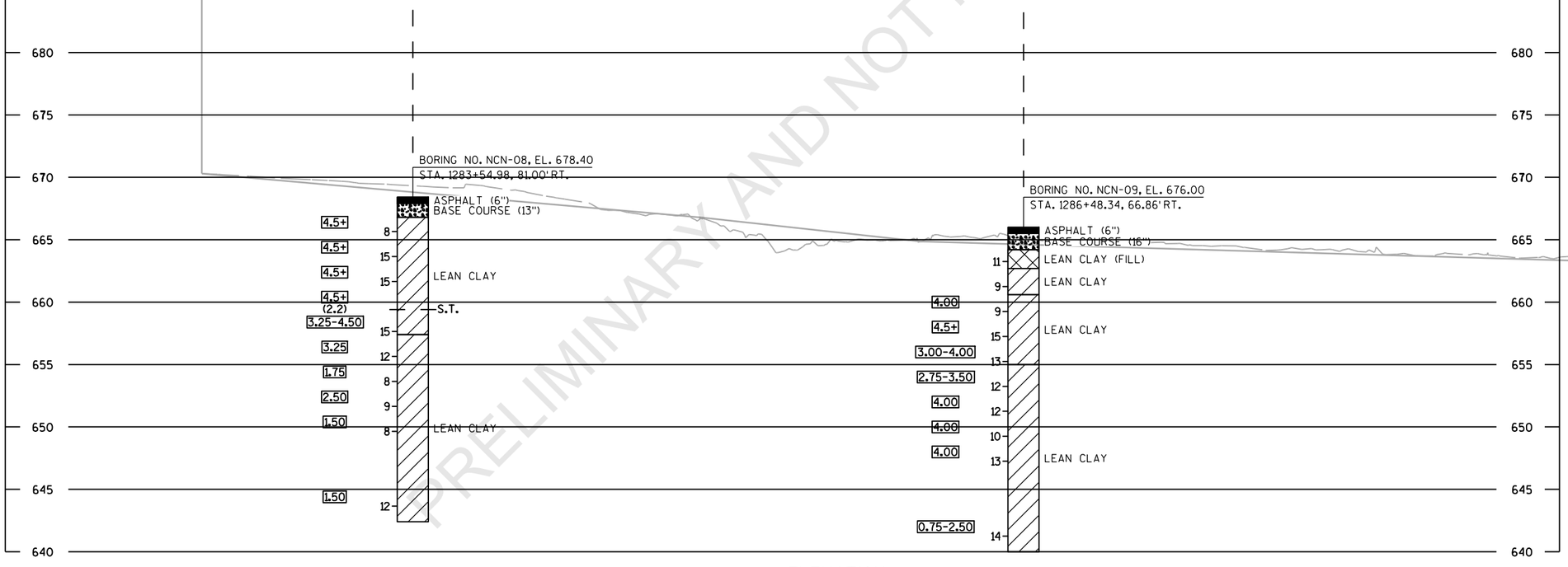
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

DENOTES SOIL BORING LOCATION



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

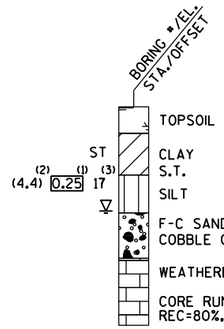
STATE PROJECT NUMBER

1229-04-74

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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE N-40-101

DRAWN BY FEG | PLANS CK'D. AM

SUBSURFACE EXPLORATION (1 OF 4)

SHEET 8 OF 11

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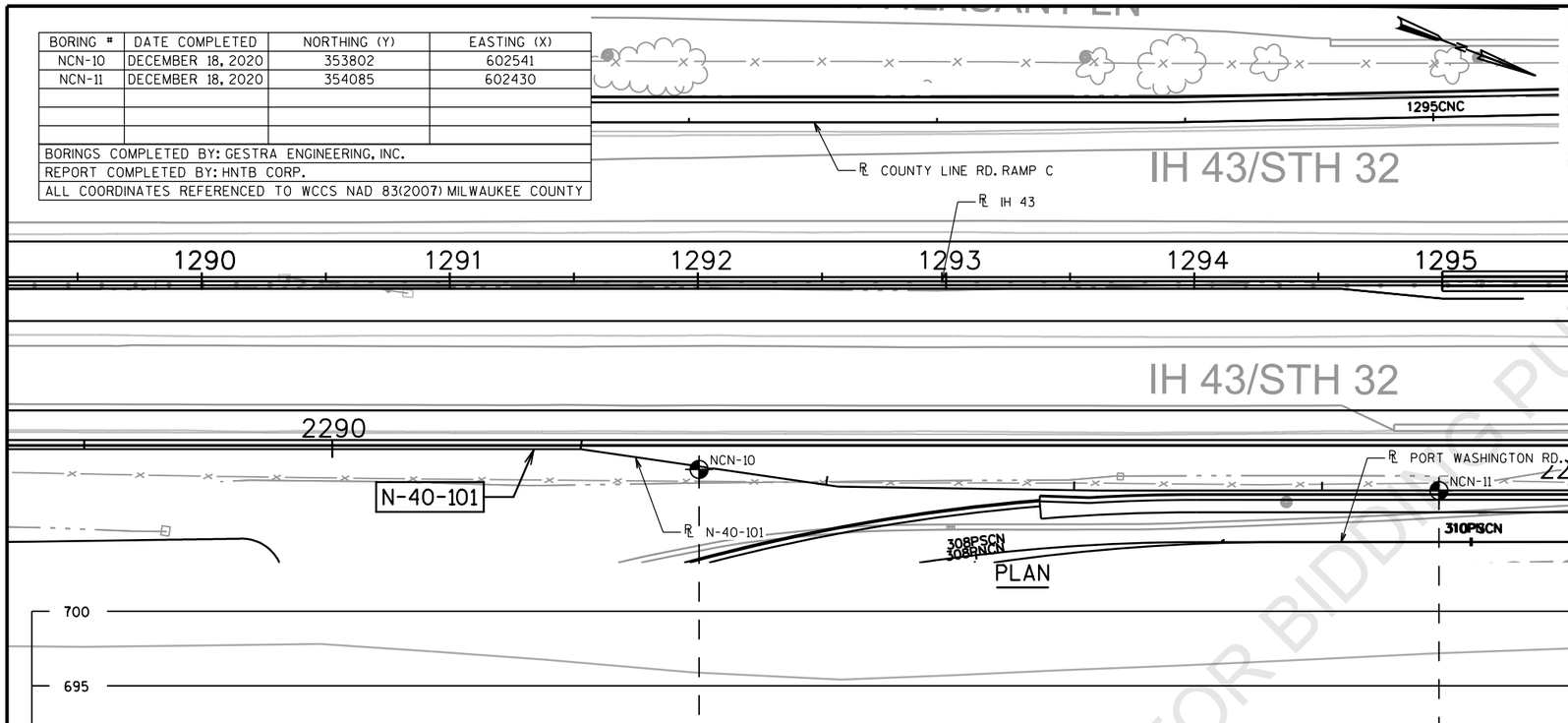
FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\NoiseBarrierWalls\N-40-101_S_of_CountyLine\cds\N101_080201_se.dgn PLOT DATE : 7/28/2021 11:01:08 PM PLOT BY : ejelinek PLOT SCALE : 60:1

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
NCN-10	DECEMBER 18, 2020	353802	602541
NCN-11	DECEMBER 18, 2020	354085	602430

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

REPORT COMPLETED BY: HNTB CORP.

ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) MILWAUKEE COUNTY



ELEVATION

NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

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⌖ DENOTES SOIL BORING LOCATION

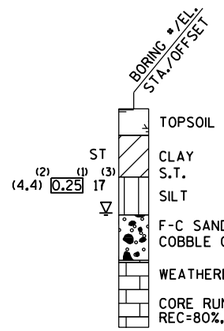
STATE PROJECT NUMBER

1229-04-74

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
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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

STRUCTURE N-40-101

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SUBSURFACE EXPLORATION (2 OF 4)

SHEET 9 OF 11

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
NCN-12	NOVEMBER 6, 2020	354370	602318
NCN-13	DECEMBER 17, 2020	354652	602225
NCN-14	NOVEMBER 6, 2020	354945	602174

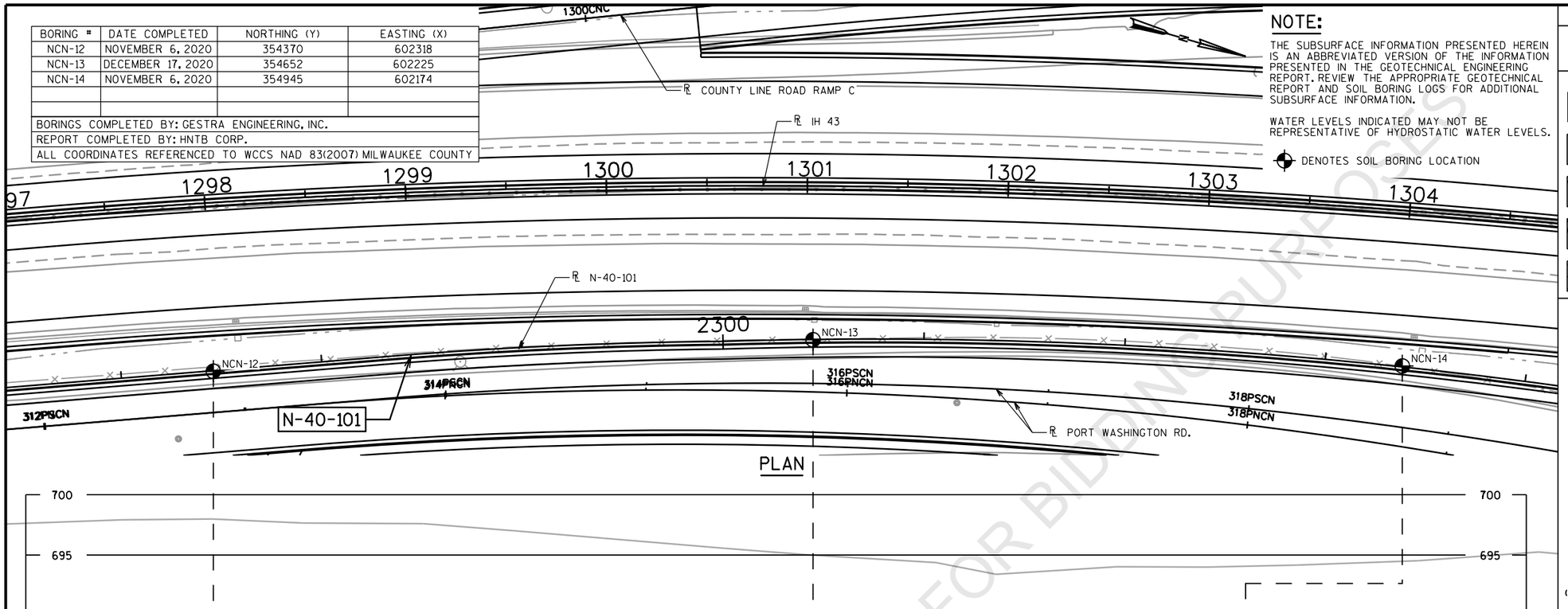
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.
REPORT COMPLETED BY: HNTB CORP.
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) MILWAUKEE COUNTY

NOTE:

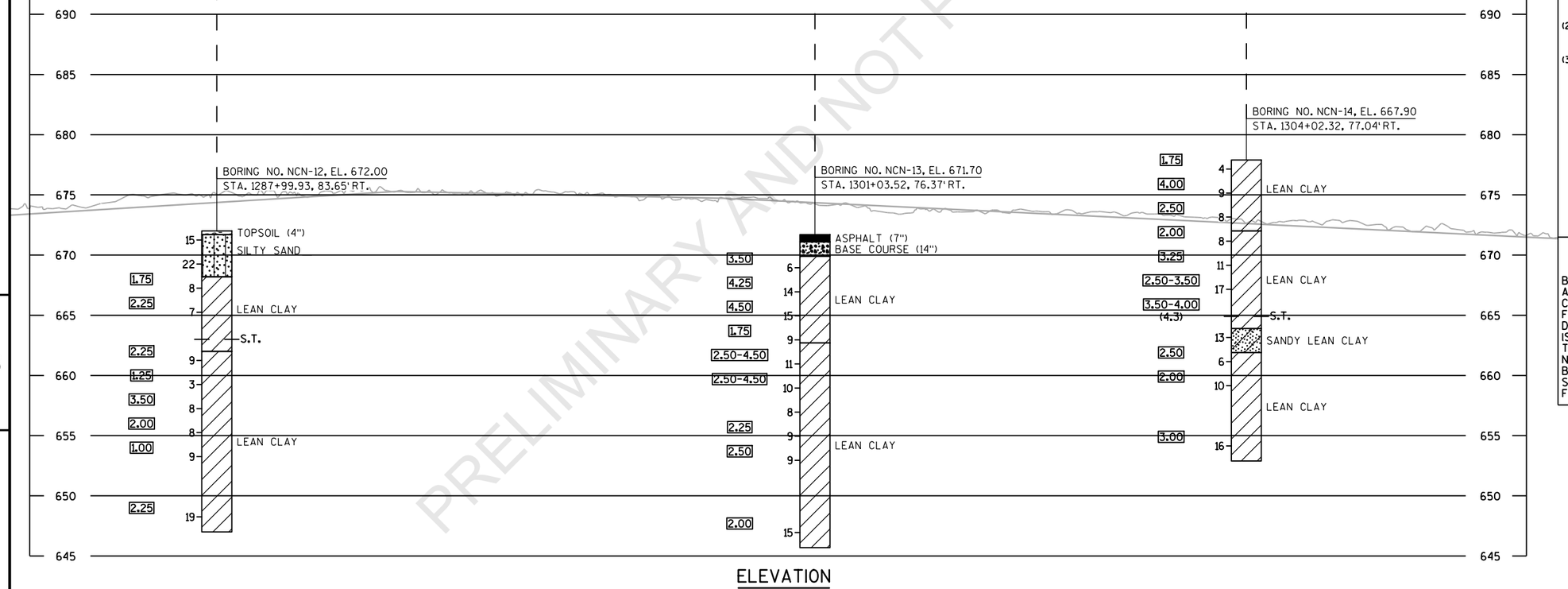
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

DENOTES SOIL BORING LOCATION



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

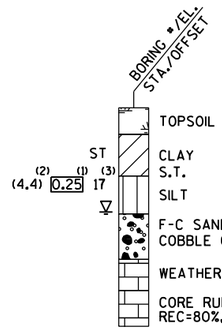
STATE PROJECT NUMBER

1229-04-74

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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE N-40-101

DRAWN BY	FEG	PLANS CK'D.	AM

SUBSURFACE EXPLORATION (3 OF 4)

SHEET 10 OF 11

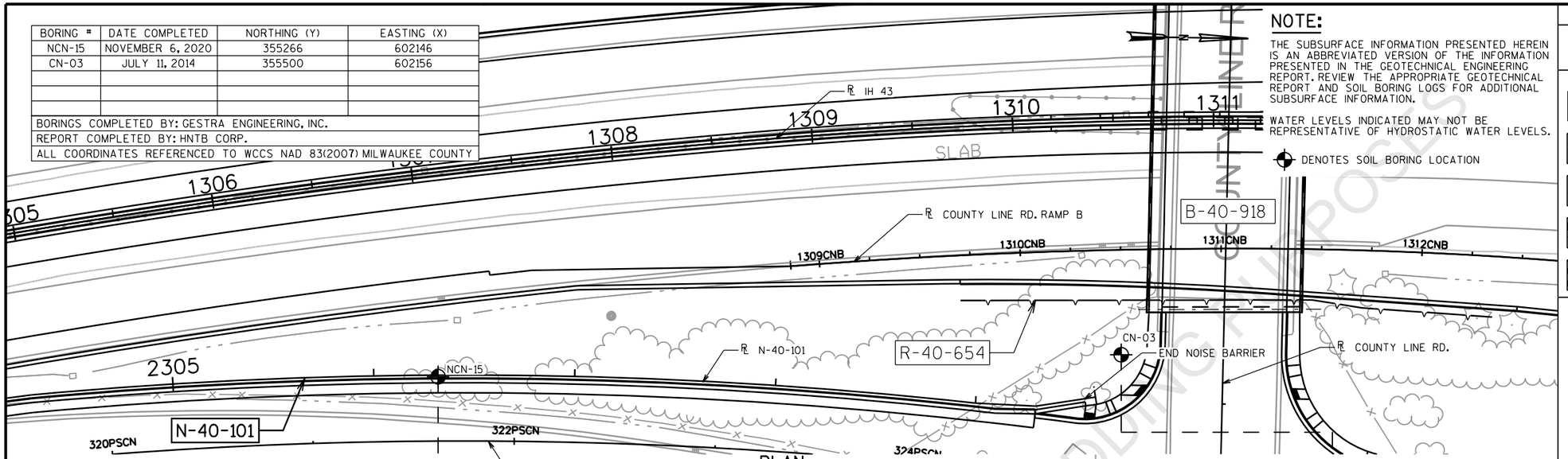
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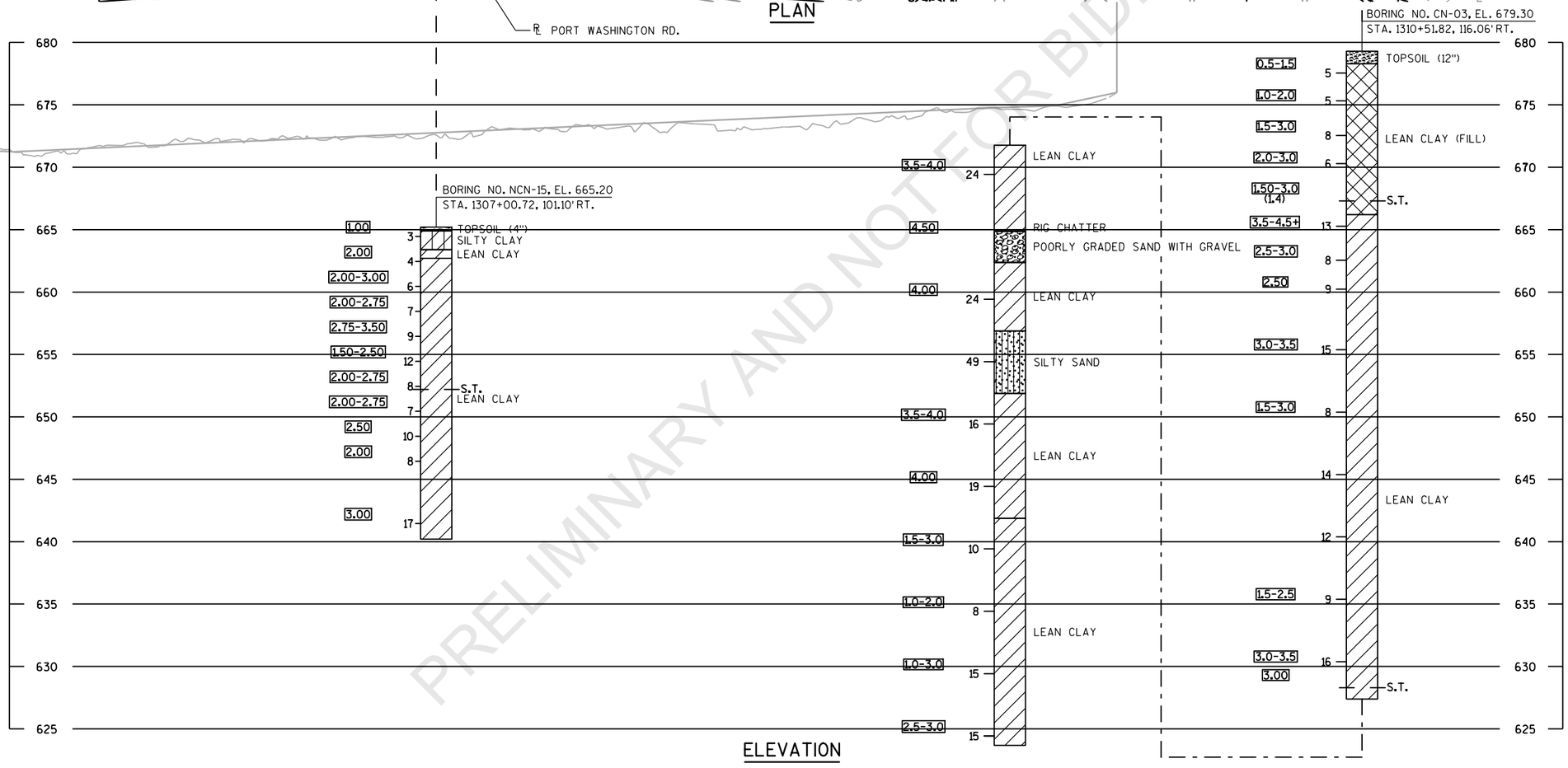
FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\NoiseBarrierWalls\N-40-101_S_of_CountyLine\cds\N101_080203_se.dgn PLOT DATE : 7/28/2021 11:01:31 PM PLOT BY : ejelinek PLOT SCALE : 60:1

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
NCN-15	NOVEMBER 6, 2020	355266	602146
CN-03	JULY 11, 2014	355500	602156

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.
REPORT COMPLETED BY: HNTB CORP.
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) MILWAUKEE COUNTY



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NOTE:

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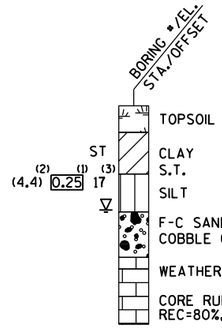
STATE PROJECT NUMBER

1229-04-74

MATERIAL SYMBOLS

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

LEGEND OF BORING



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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-101

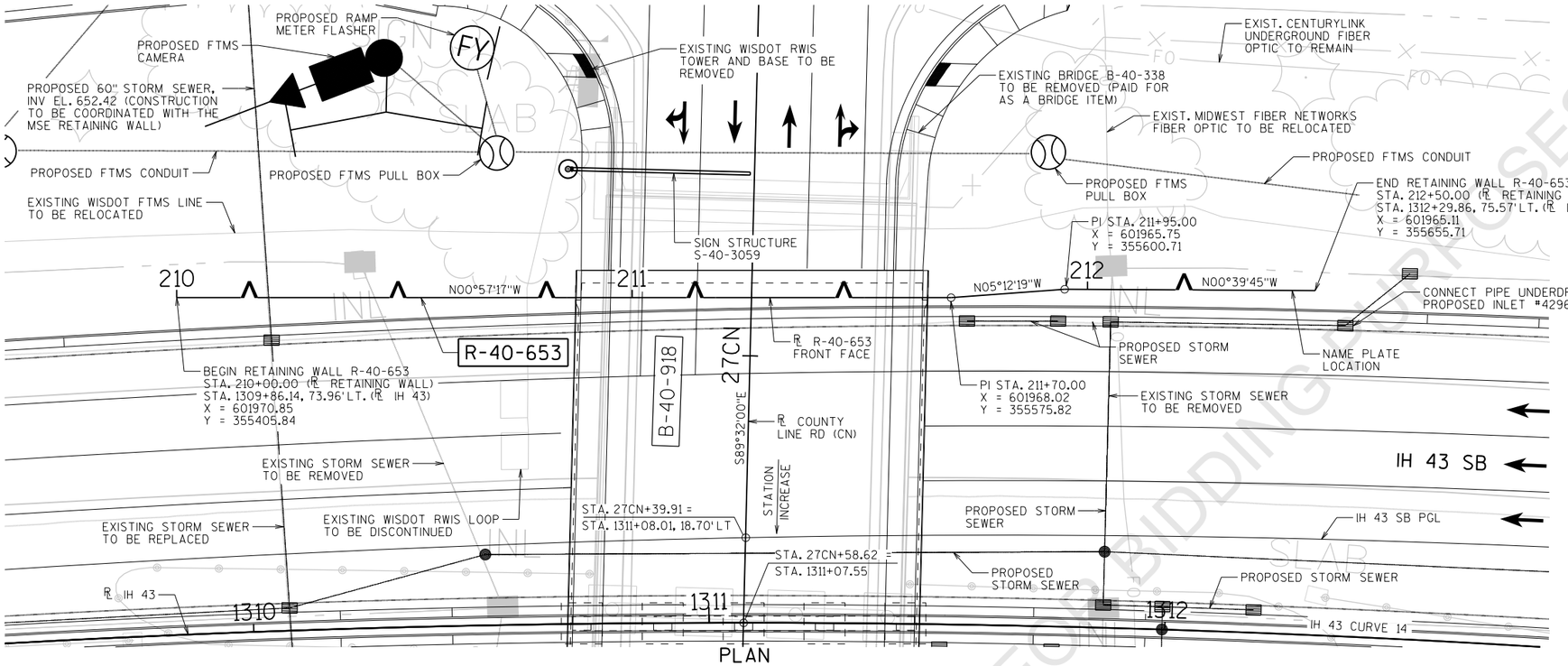
DRAWN BY FEG | PLANS CK'D. AM

SUBSURFACE EXPLORATION (4 OF 4)

SHEET 11 OF 11

8

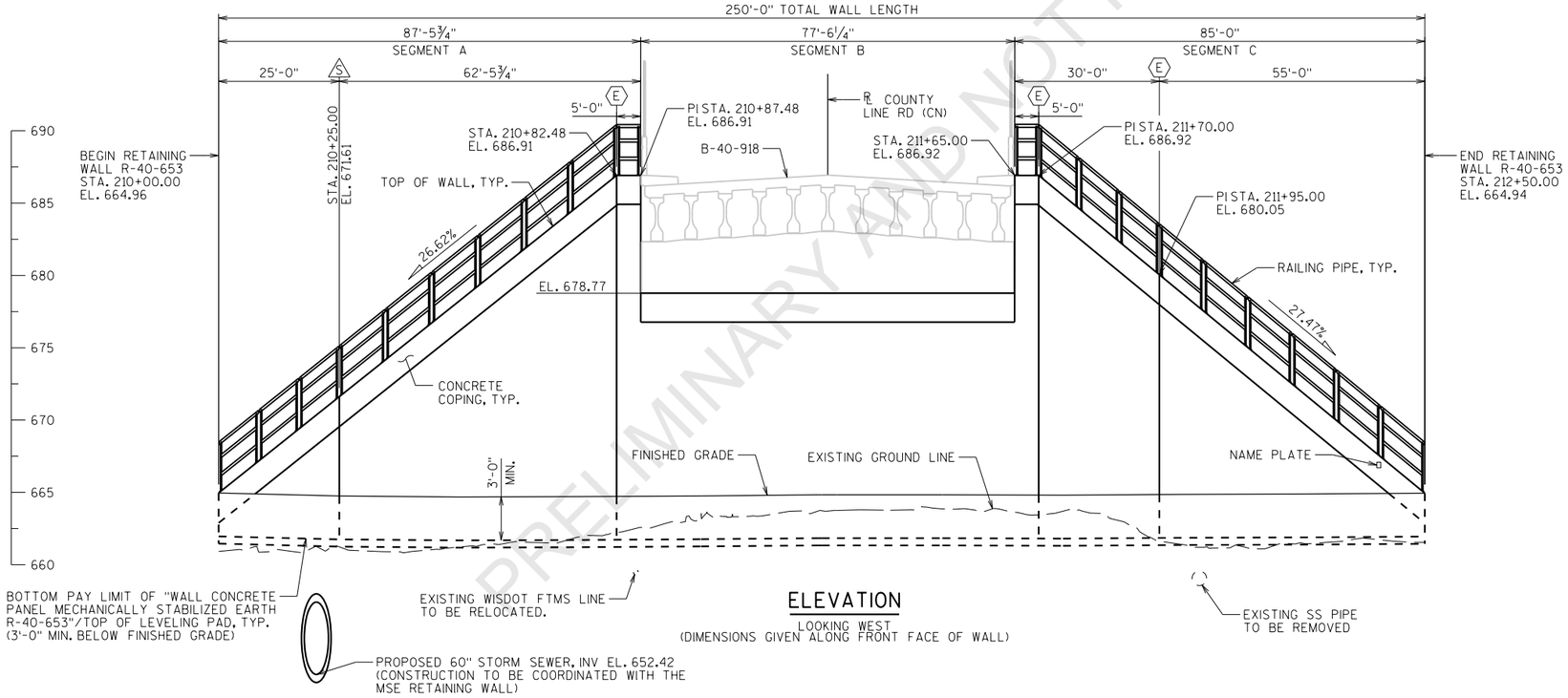
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PLAN

MSE RETAINING WALL

250'-0" TOTAL WALL LENGTH



ELEVATION

LOOKING WEST

(DIMENSIONS GIVEN ALONG FRONT FACE OF WALL)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74

DESIGN DATA

LIVE LOAD:

LIVE LOAD SURCHARGE: 240 PSF

MATERIAL PROPERTIES:

CONCRETE MASONRY RETAINING WALL..... f'c = 4,000 psi
PRECAST CONCRETE WALL PANELS..... f'c = 4,000 psi
BAR STEEL REINFORCEMENT..... fy = 60,000 psi

LEGEND

- DIRECTION OF TRAFFIC
- (E) EXPANSION JOINT
- (S) VERTICAL SLIP JOINT

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTIONS
3. GENERAL NOTES & QUANTITIES
4. PROFILE GRADE LINES & DESIGN DATA
5. COPING DETAILS
6. SEGMENTS A AND C COPING PLAN & ELEVATION
7. SEGMENT B COPING PLAN & ELEVATION
8. RAILING PIPE DETAILS
9. SUBSURFACE EXPLORATION

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
MOHAMMED ZAGLOUL (414) 751-7200

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

kapur
7711 N. Port Washington Road
Milwaukee, Wisconsin 53217
kapurinc.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

WISCONSIN
ANDREW J. ASCHENBRENNER
E-45272-6
PROFESSIONAL ENGINEER
Andrew Aschenbrenner
7/30/2021

STRUCTURE R-40-653

COUNTY LINE RD WEST ABUTMENT RETAINING WALL

COUNTY	VILLAGE
MILWAUKEE	BAYSIDE

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
AJA	MHZ	AJA	MHZ

GENERAL PLAN & ELEVATION

SHEET 1 OF 9

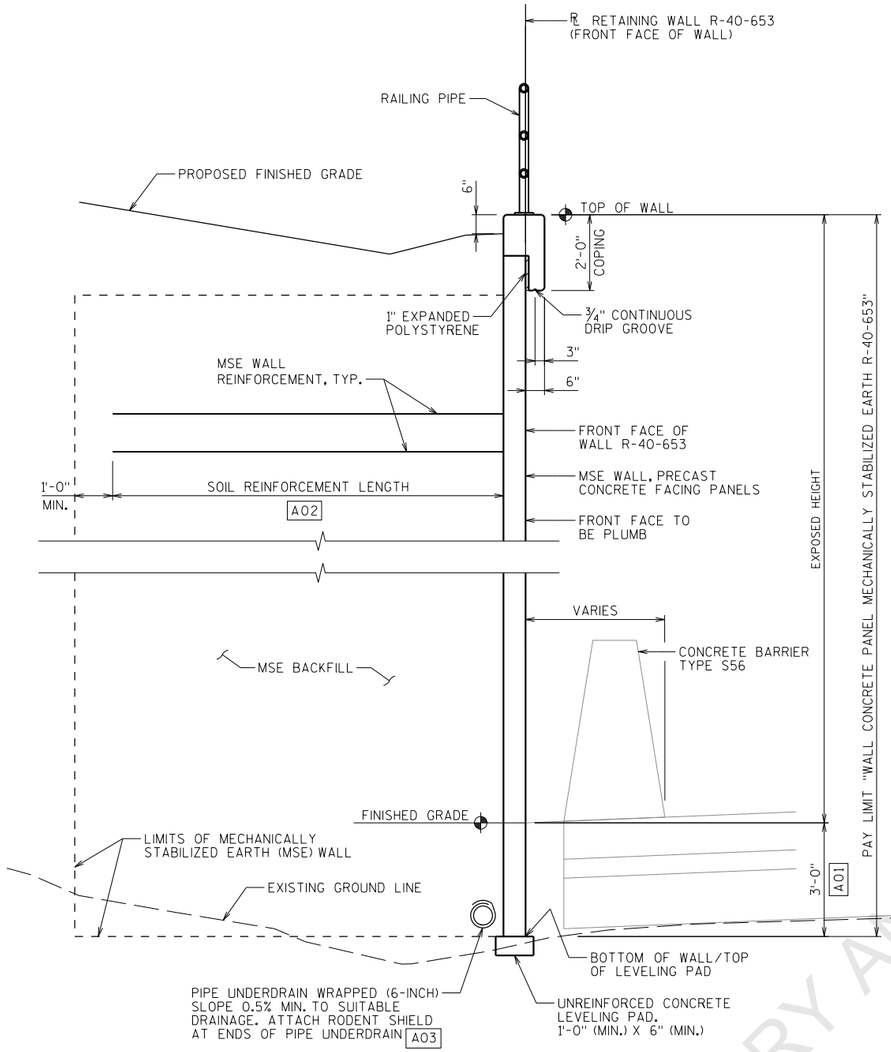
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FILE NAME : c:\caddlib\pw\hntb_samruddhi.kolhe\greatlakes\d0231187\R653_080101_gp.dgn PLOT DATE : 7/27/2021 PLOT BY : skolhe PLOT NAME : $FILE$ PLOT SCALE : 1:30

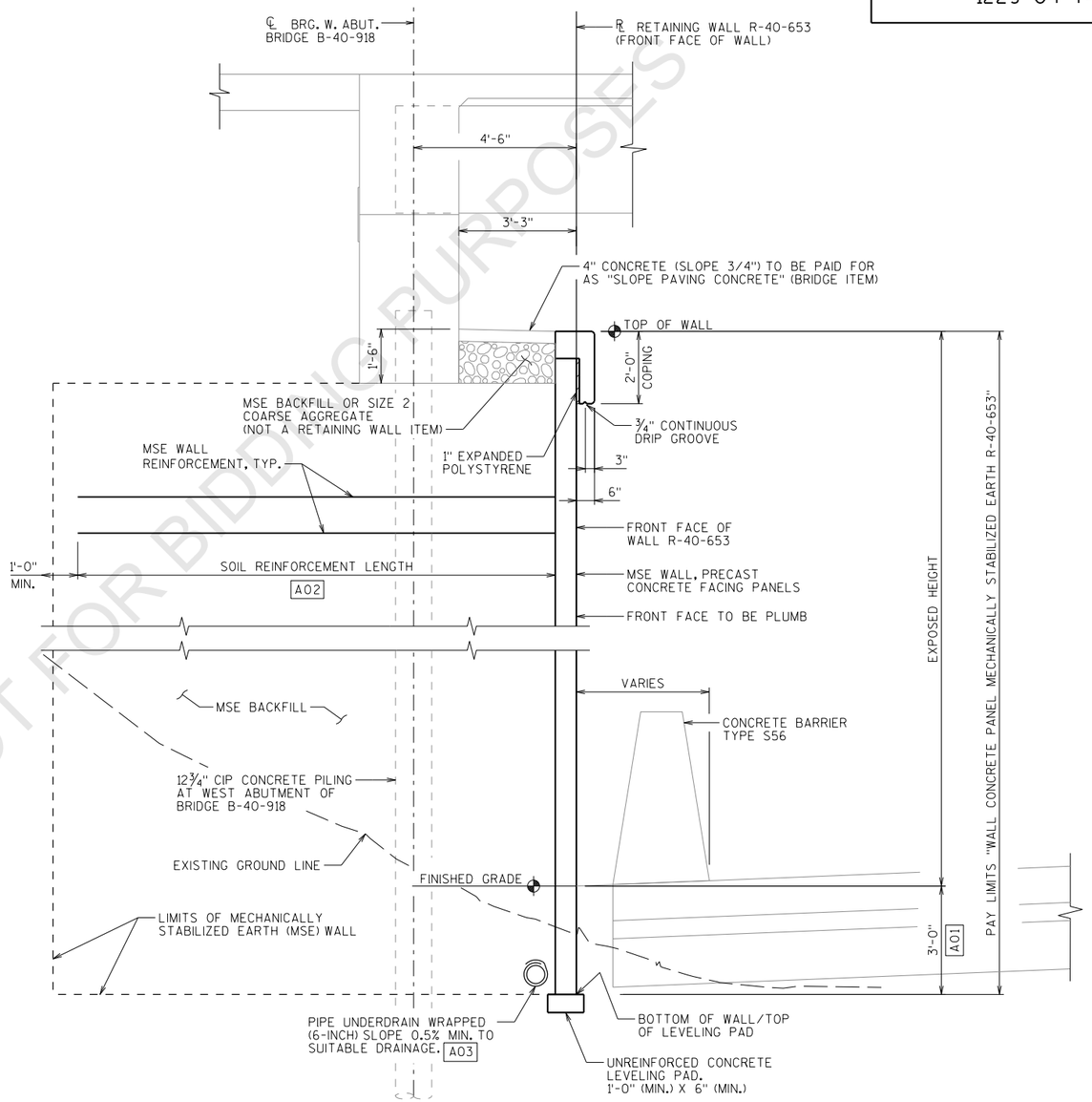
STATE PROJECT NUMBER

1229-04-74



TYPICAL WALL SECTION

LOOKING NORTH
(SEGMENT A - STA. 210+00.00 TO 210+87.48)
(SEGMENT C - STA. 211+65.00 TO 212+50.00)



TYPICAL WALL SECTION

LOOKING NORTH
(SEGMENT B - STA. 210+87.48 TO 211+65.00)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

LEGEND

A01 MINIMUM DIMENSION FROM FINISHED GRADE AT FRONT FACE OF WALL TO TOP OF LEVELING PAD AS SHOWN. COORDINATE CONSTRUCTION OF THE LEVELING PAD WITH THE WALL PANEL FABRICATOR. PAY LIMITS BASED ON MINIMUM DIMENSION.

A02 SEE WALL EXTERNAL STABILITY EVALUATION TABLE ON "PROFILE GRADE LINES & DESIGN DATA" SHEET FOR MINIMUM LENGTH OF MSE WALL REINFORCING STRIPS. SOIL REINFORCEMENT MUST EXTEND A MINIMUM OF 3.0 FEET BEYOND THE FAILURE PLANE FOR INTERNAL STABILITY AS DEFINED BY AASHTO SPECIFICATIONS.

A03 CONNECT PIPE UNDERDRAIN WRAPPED TO INLET #4296 USING PIPE UNDERDRAIN UNPERFORATED. (CONNECTIONS ARE INCIDENTAL TO "PIPE UNDERDRAIN UNPERFORATED 6-INCH"). SEE GENERAL PLAN AND ELEVATION SHEET. FOR RODENT SHIELD DETAIL, SEE GENERAL NOTES & QUANTITIES SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-653

DRAWN BY AJA | PLANS CK'D. MHZ

TYPICAL SECTIONS

SHEET 2 OF 9

8

8

STATE PROJECT NUMBER
1229-04-74

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-653".

THE COST OF FURNISHING AND PLACING MSE BACKFILL WITHIN THE REINFORCED SOIL ZONE IS TO BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-653".

THE COST OF FURNISHING AND PLACING THE UNREINFORCED CONCRETE LEVELING PAD UNDER THE MSE PRECAST WALL PANELS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-653".

ALL STATIONS AND DIMENSIONS ARE ALONG THE FRONT FACE OF WALL, UNLESS SHOWN OTHERWISE.

ONLY WALL CONCRETE PANEL MSE WALL SYSTEMS THAT USE STRIP TYPE SOIL REINFORCEMENT THAT ARE HINGED AT THE PANEL CONNECTION CAN BE USED FOR THIS PROJECT.

SOIL REINFORCEMENT MAY BE PLACED UP TO A MAXIMUM OF 15° FROM PERPENDICULAR IF NECESSARY TO AVOID INTERFERENCE WITH ITEMS BEHIND THE WALL. ANGLES GREATER THAN 15° REQUIRE APPROVAL FROM THE BUREAU OF STRUCTURES DESIGN SECTION.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER, UNLESS SHOWN OTHERWISE.

ALL BAR STEEL REINFORCEMENT IN CAST-IN-PLACE CONCRETE TO BE EPOXY COATED.

PLAN DIMENSIONS, QUANTITIES AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 7½ INCHES. FOR PANEL THICKNESSES DIFFERENT THAN 7½ INCHES, THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF WALL R-40-653 WITH THE WEST ABUTMENT OF BRIDGE B-40-918.

THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF WALL R-40-653 WITH THE 60" STORM SEWER CONSTRUCTION.

THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF WALL R-40-653 WITH THE CONSTRUCTION OF SIGN STRUCTURE S-40-3059.

THE QUANTITIES OF CONCRETE MASONRY & BAR STEEL REINFORCEMENT FOR THE CAST-IN-PLACE COPING ARE INCIDENTAL TO THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-653".

THE QUANTITY FOR RUBBERIZED MEMBRANE WATERPROOFING IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-653".

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-653" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS. THE TOP OF LEVELING PAD IS TAKEN AS A CONSTANT 3'-0" BELOW FINISHED GRADE FOR MEASUREMENT PURPOSES. WALL AREAS CONSTRUCTED OUTSIDE THESE LIMITS WILL NOT BE MEASURED FOR PAYMENT.

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

THE UTILITY AND STORM SEWER 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 DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

REFER TO S.D.D. "NAME PLATE (STRUCTURES)" FOR NAME PLATE DETAILS. NAME PLATE SHALL BE CONSIDERED INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-653".

THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF THE STORM SEWER COMPONENTS INCLUDING INLETS, LATERALS AND STRUCTURES WITH THE CONSTRUCTION OF THE MSE WALL.

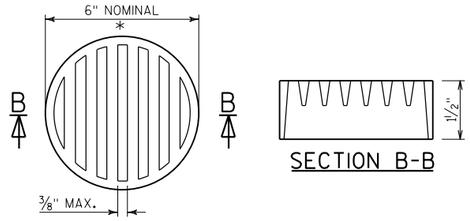
STRUCTURAL BACKFILL ON TOP OF 60" STORM SEWER SHALL EXTEND A MINIMUM 1'-6" FROM THE FRONT FACE OF WALL TO THE LIMITS OF MECHANICALLY STABILIZED EARTH (MSE) WALL WITH A MINIMUM WIDTH OF THE STORM SEWER DIAMETER. THE STRUCTURAL FILL SHALL BE INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-653".

MSE WALL PANEL SHAPES SHALL BE SQUARE OR RECTANGULAR.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SEGMENT A	SEGMENT B	SEGMENT C	TOTAL
513.2001	RAILING PIPE	LF	88	-	85	173
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	1	-	1	2
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	-	-	20	20
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	90	80	90	260
SPV.0165.4001	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-653	SF	1,295	1,315	1,250	3,860
	NON-BID ITEMS					
	NAME PLATE	EACH				1
	RODENT SHIELD	EACH				2
	PREFORMED JOINT FILLER	SIZE				¾"
	NON-BITUMINOUS JOINT SEALER	SIZE				1"
	EXPANDED POLYSTYRENE	SIZE				1"

ALL ITEMS ARE CATEGORY 3000



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.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-653

DRAWN BY AJA | PLANS CK'D. MHZ

GENERAL NOTES & QUANTITIES

SHEET 3 OF 9

8

8

STATE PROJECT NUMBER

1229-04-74

SOIL PARAMETERS

	STRATUM LOCATIONS & SOIL DESCRIPTIONS	UNIT WEIGHT (PCF)	SHORT-TERM (UNDRAINED) FRICTION ANGLE (DEGREES)	SHORT-TERM (UNDRAINED) COHESION (PSF)	LONG-TERM (DRAINED) FRICTION ANGLE (DEGREES)	LONG-TERM (DRAINED) COHESION (PSF)
	GRANULAR BACKFILL (REINFORCED ZONE OR BACKFILL)	120	30	0	30	0
	RETAINED SOIL - GRANULAR *	120	30	0	30	0
	RETAINED SOIL - CLAY *	120	0	1,500	28	0
BORING CN-01	TOPSOIL EL. 669.4 - EL. 668.9	-	-	-	-	-
BORING CN-01	FILL-LEAN CLAY EL. 668.9 - EL. 666.8	120	0	1,000	30	0
BORING CN-01	POSSIBLE FILL - LEAN CLAY EL. 666.8 - EL. 661.9	120	0	1,250	29	0
BORING CN-01	FAT CLAY EL. 661.9 - EL. 659.1	130	0	2,250	29	25
BORING CN-01	LEAN CLAY EL. 659.1 - EL. 587.6	130	0	2,000	30	50
BORING CN-01	SILT EL. 587.6 - EL. 577.8	125	32	0	32	0
BORING CN-01	LEAN CLAY EL. 577.8 - EL. 569.4	130	0	2,000	30	0
BORING CN-06	TOPSOIL EL. 661.4 - EL. 660.9	-	-	-	-	-
BORING CN-06	LEAN CLAY EL. 660.9 - EL. 656.1	130	0	2,250	30	25
BORING CN-06	LEAN CLAY EL. 656.1 - EL. 631.4	130	0	2,250	30	25
BORING CN-06	BLIND DRILLED EL. 631.4 - EL. 572.9	-	-	-	-	-
BORING CN-06	BOULDERS/COBBLES EL. 572.9 - EL. 571.9	135	36/42	0	36/42	0
BORING CN-06	SILTY SAND WITH GRAVEL EL. 571.9 - EL. 563.9	135	36/42	0	36/42	0
BORING CN-07	ASPHALT (6")/BASE COURSE (6") EL. 661.1 - EL. 660.1	-	-	-	-	-
BORING CN-07	ASPHALT PIECES EL. 660.1 - EL. 658.4	-	-	-	-	-
BORING CN-07	LEAN CLAY EL. 658.4 - EL. 631.1	130	0	2,000	30	50

* DESIGN WALL FOR THESE VALUES

WALL ELEVATIONS ◐

STATION & OFFSET	WALL STATION	TOP OF WALL ELEVATION	FINISHED GRADE ELEVATION
1309+86.14, 73.96'LT	210+00.00	664.96	664.96
1310+10.51, 73.02'LT	210+25.00	671.61	664.76
1310+34.88, 72.29'LT	210+50.00	678.27	664.69
1310+59.27, 71.77'LT	210+75.00	684.92	664.71
1310+66.57, 71.65'LT	210+82.48	686.91	664.73
1310+71.45, 71.59'LT	210+87.48	686.91	664.74
1310+71.45, 71.59'LT	210+87.48	678.77	664.74
1310+83.67, 71.46'LT	211+00.00	678.77	664.76
1311+08.07, 71.36'LT	211+25.00	678.77	664.84
1311+32.47, 71.47'LT	211+50.00	678.77	664.83
1311+47.11, 71.63'LT	211+65.00	678.77	664.82
1311+47.11, 71.63'LT	211+65.00	686.92	664.82
1311+51.98, 71.70'LT	211+70.00	686.92	664.82
1311+56.84, 72.16'LT	211+75.00	685.55	664.82
1311+76.26, 74.04'LT	211+95.00	680.05	664.86
1311+81.14, 74.14'LT	212+00.00	678.68	664.87
1312+05.51, 74.75'LT	212+25.00	671.81	664.89
1312+29.86, 75.57'LT	212+50.00	664.94	664.94

HORIZONTAL CURVE DATA

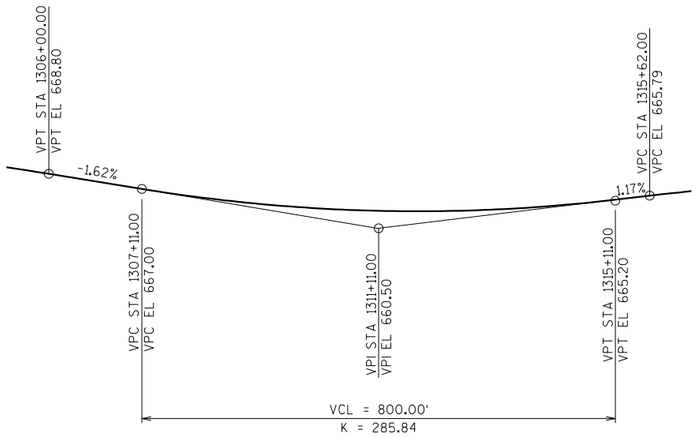
IH 43 CURVE 14

PI STA. = 1312+49.06
Y = 355671.79
X = 602018.33
DELTA = 14°20'07"
D = 1°58'33"
T = 364.69'
L = 725.57'
R = 2900.00'
PC STA. = 1308+84.37
Y = 355308.69
X = 602052.42
PT STA. = 1316+09.94
Y = 356032.02
X = 602075.20

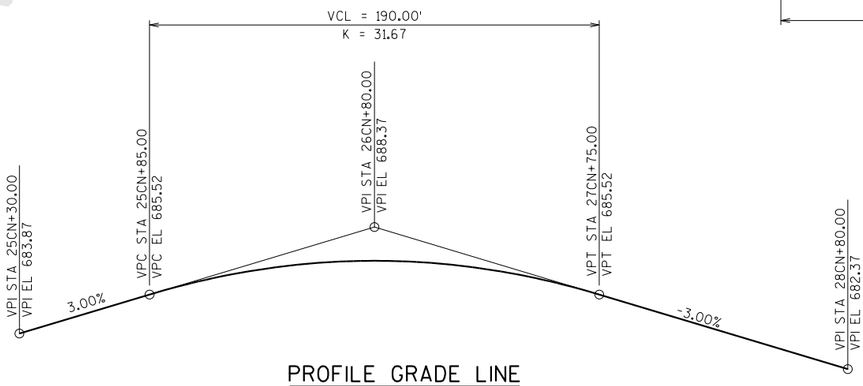
WALL EXTERNAL & OVERALL STABILITY EVALUATION

DIMENSIONS		EVALUATED LOCATIONS		
WALL HEIGHT (FEET)		17.0	25.0	10.5
EXPOSED WALL HEIGHT (FEET)		14.0	22.0	7.5
MINIMUM LENGTH OF REINFORCEMENT (FEET) **		15.3	18.8	8.4
REINFORCEMENT LENGTH/RETAINED HEIGHT RATIO		0.90H	0.75H	0.80
WALL STATION		210+88	210+87	210+25
BORING USED		CN-01, 06, 07	CN-01, 06, 07	CN-01, 06, 07
CAPACITY TO DEMAND RATIO (CDR)				
SLIDING (CDR>1.0)		1.15	1.11	1.10
ECCENTRICITY (CDR>1.0)		1.52	1.85	2.02
BEARING RESISTANCE (CDR>1.0)		1.02	1.01	1.43
FACTRED BEARING RESISTANCE (PSF)		6,321	7,376	4,384
GLOBAL STABILITY	END OF CONSTRUCTION	2.13	2.25	2.73
GLOBAL STABILITY	LONG TERM	1.13	1.27	1.13

** THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND GLOBAL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNED LOCATIONS REPRESENT TRYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGNED LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNED LOCATIONS.



PROFILE GRADE LINE
MAINLINE IH 43 SB



PROFILE GRADE LINE
COUNTY LINE RD

LEGEND

◐ LINEARLY INTERPOLATE WALL ELEVATIONS BETWEEN STATIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-653

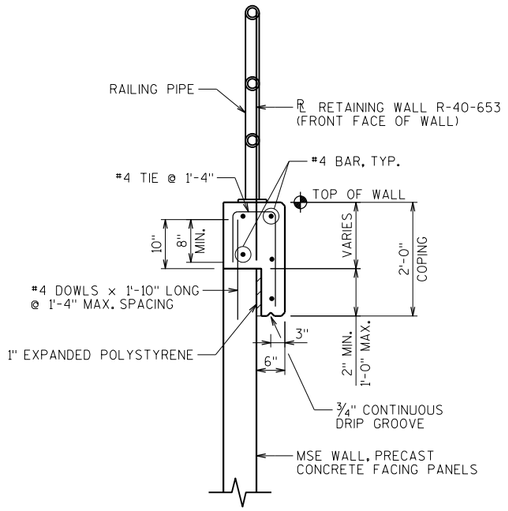
DRAWN BY AJA | PLANS CK'D. MHZ

PROFILE GRADE LINES & DESIGN DATA

SHEET 4 OF 9

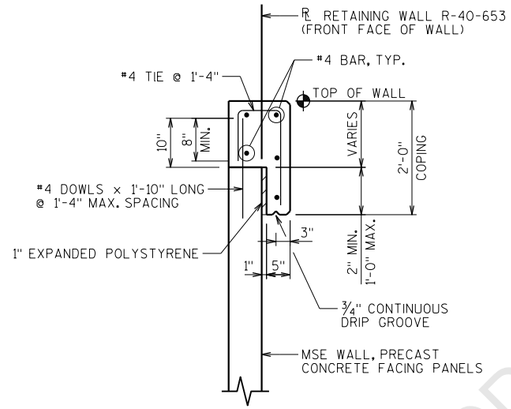
PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74



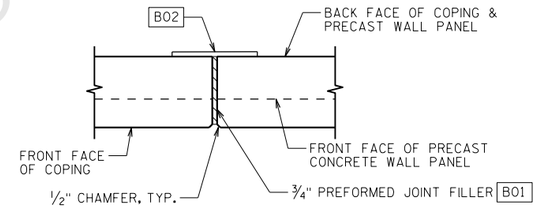
COPING DETAIL AT SEGMENTS A & C

(LOOKING NORTH)



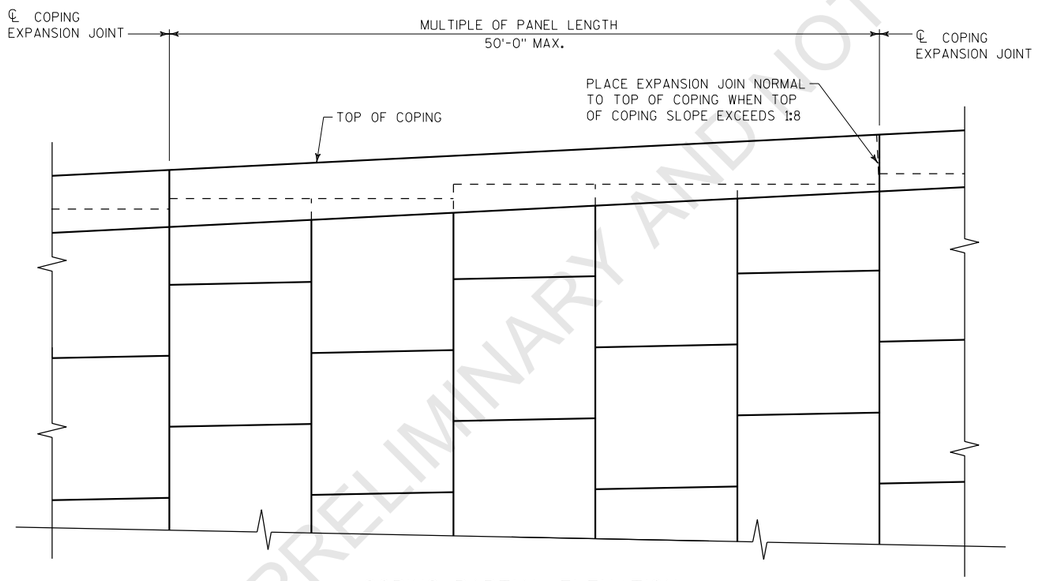
COPING DETAIL AT SEGMENT B

(LOOKING NORTH)



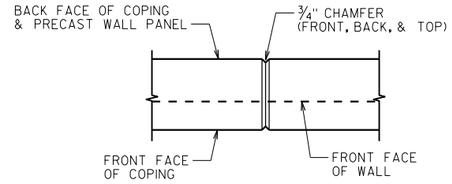
COPING EXPANSION JOINT

(DO NOT RUN BAR STEEL THRU JOINT)
(MAX. SPACING OF JOINT = 50'-0")



COPING PARTIAL ELEVATION

NOTE: ALL JOINTS SHALL BE LOCATED AS SHOWN ON THE WALL ELEVATIONS
AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE



COPING CONTRACTION JOINT

(DO NOT RUN BAR STEEL THRU JOINT)
(MAX. SPACING OF JOINT = 12'-0")

LEGEND

B01 SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

B02 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-653

DRAWN BY AJA | PLANS CK'D. MHZ

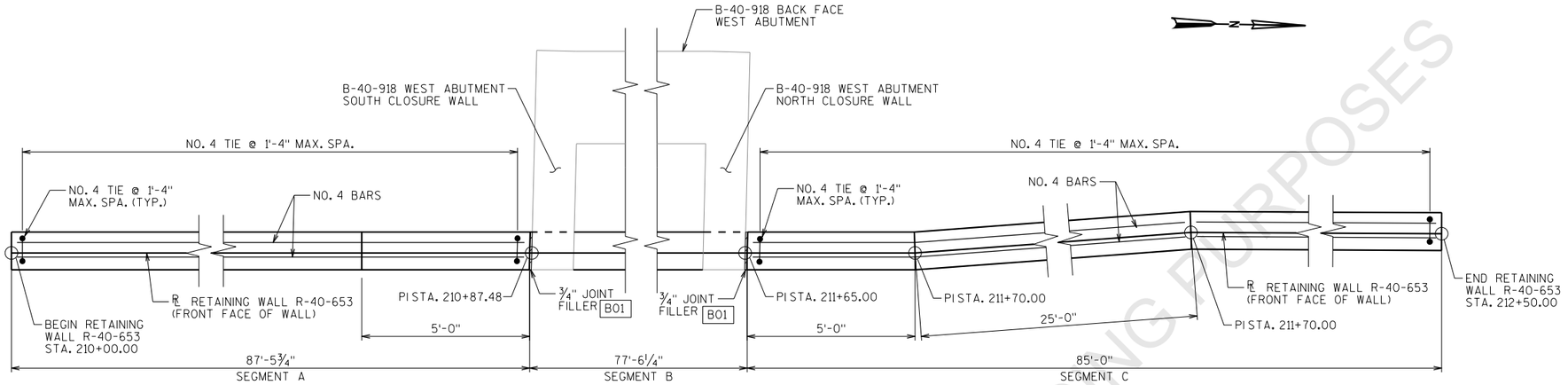
COPING DETAILS

SHEET 5 OF 9

8

8

STATE PROJECT NUMBER
1229-04-74

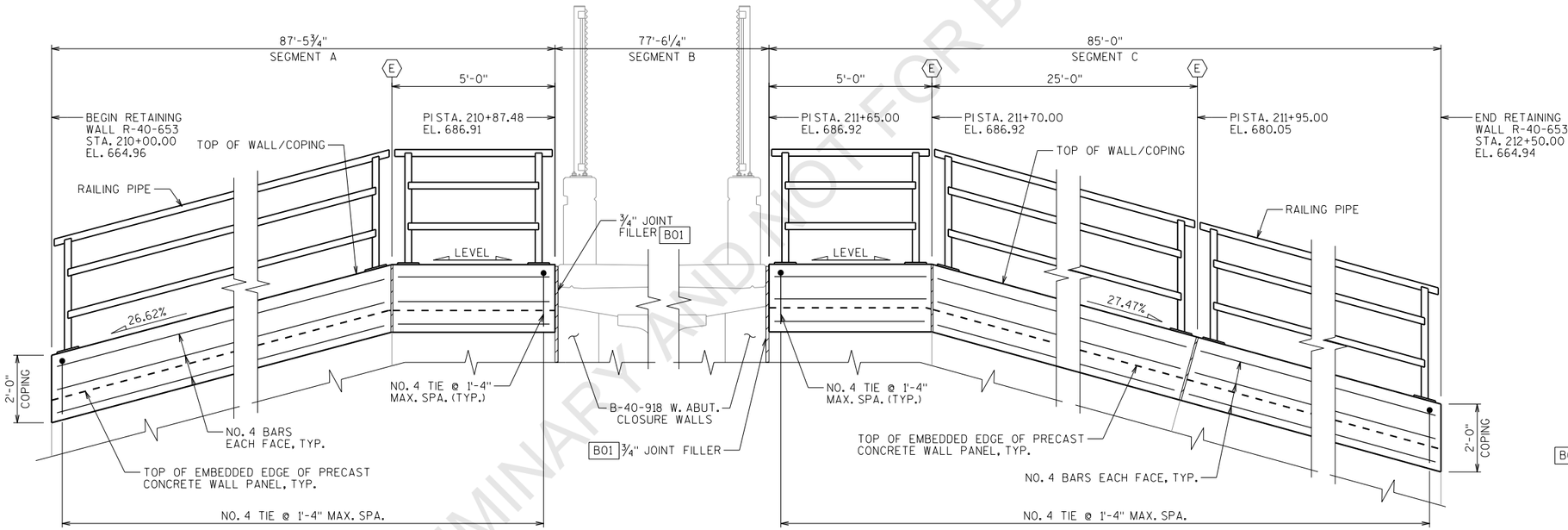


PLAN - SEGMENT A

(DIMENSIONS ARE ALONG ℄ R-40-653)

PLAN - SEGMENT C

(DIMENSIONS ARE ALONG ℄ R-40-653)



ELEVATION - SEGMENT A

(LOOKING WEST)
(DIMENSIONS ARE ALONG ℄ R-40-653)

ELEVATION - SEGMENT C

(LOOKING WEST)
(DIMENSIONS ARE ALONG ℄ R-40-653)

NOTE

FOR COPING EXPANSION AND CONTRACTION JOINT DETAILS, SEE SHEET 5.

LEGEND

B01 SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

(E) EXPANSION JOINT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-653

DRAWN BY AJA | PLANS CK'D. MHZ

SEGMENTS A AND C
COPING PLAN
& ELEVATION

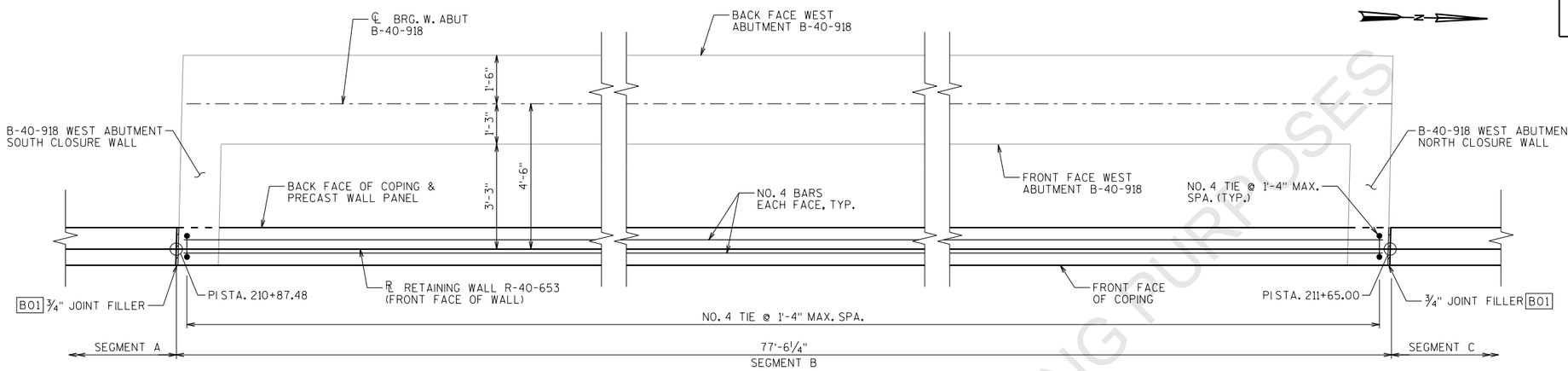
SHEET 6 OF 9

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

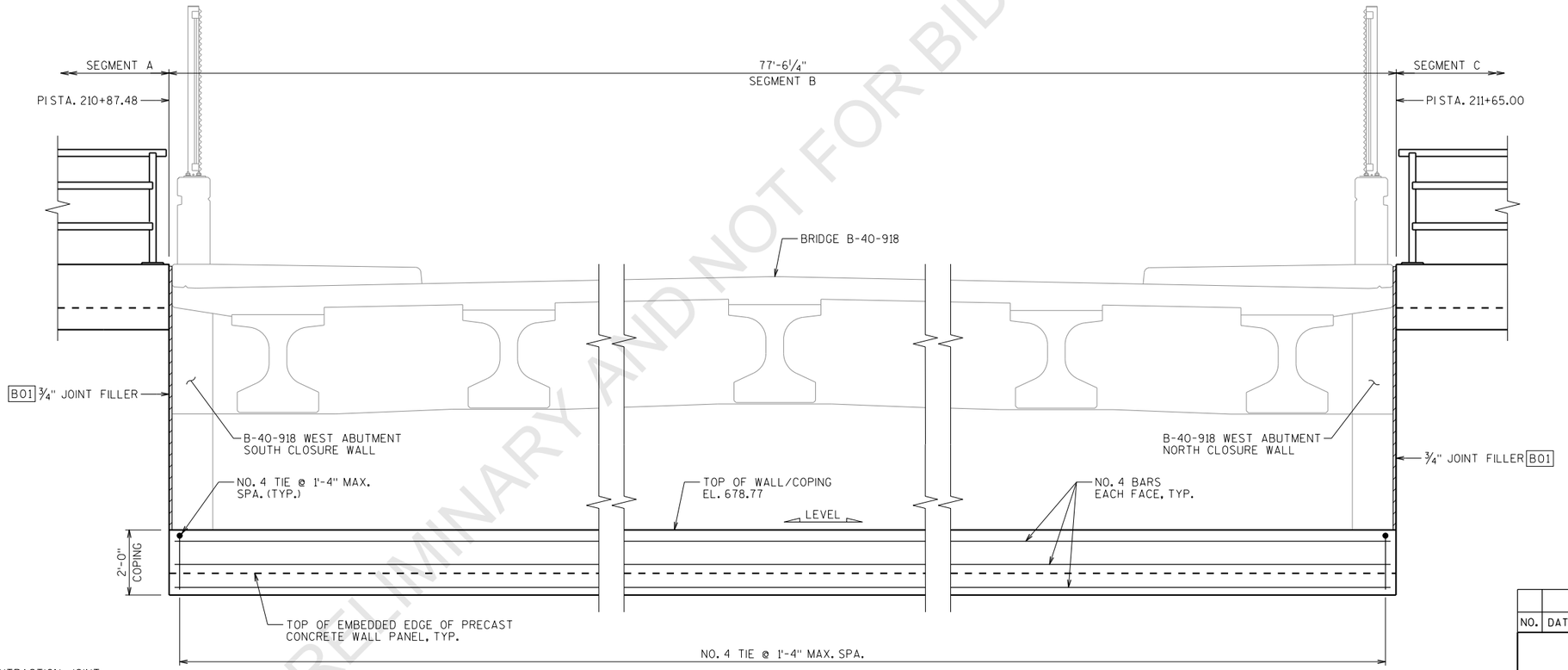
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STATE PROJECT NUMBER
1229-04-74



PLAN - SEGMENT B

(DIMENSIONS ARE ALONG ℞ R-40-653)



ELEVATION - SEGMENT B

(LOOKING WEST)
(DIMENSIONS ARE ALONG ℞ R-40-653)

NOTE

FOR EXPANSION AND CONTRACTION JOINT DETAILS, SEE SHEET 5.

LEGEND

B01 SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-BITUMINOUS JOINT SEALER, COLOR TO MATCH CONCRETE STAIN. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-653

DRAWN BY AJA | PLANS CK'D. MHZ

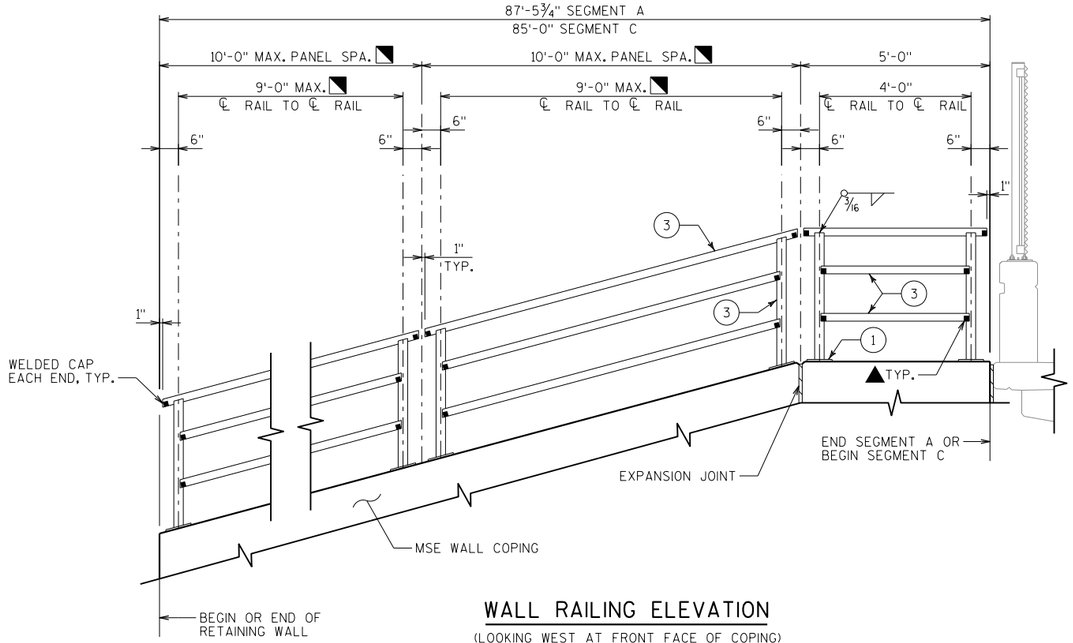
SEGMENT B COPING PLAN & ELEVATION

SHEET 7 OF 9

8

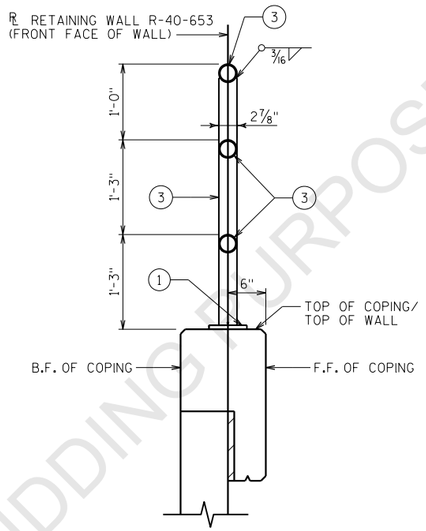
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STATE PROJECT NUMBER
1229-04-74

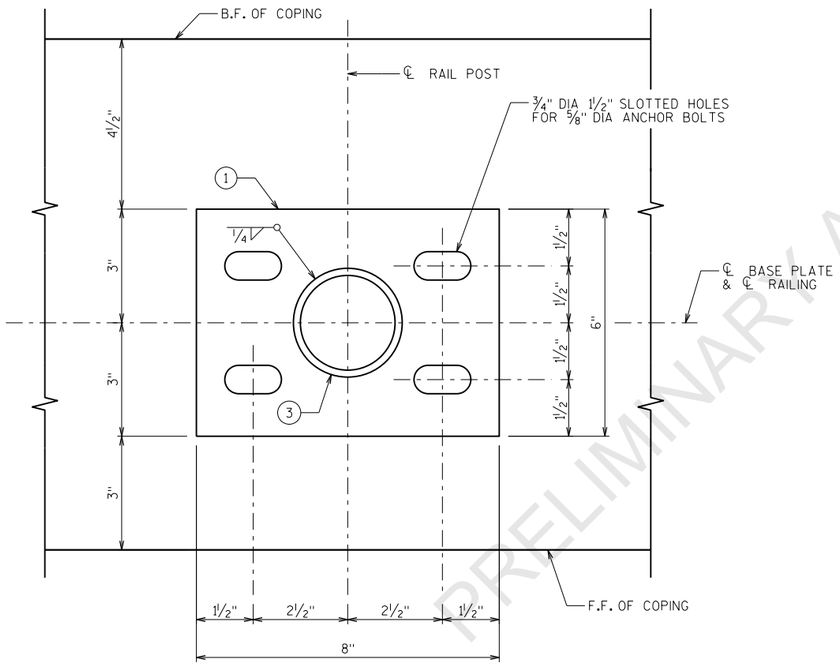


WALL RAILING ELEVATION

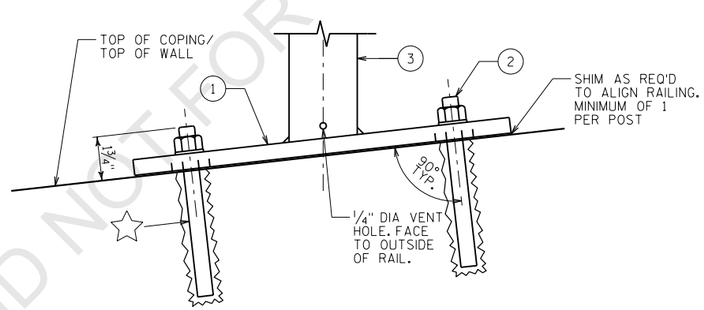
(LOOKING WEST AT FRONT FACE OF COPING)
(DIMENSIONS AND STATIONS GIVEN ALONG ℄ R-40-653)



WALL RAILING SECTION

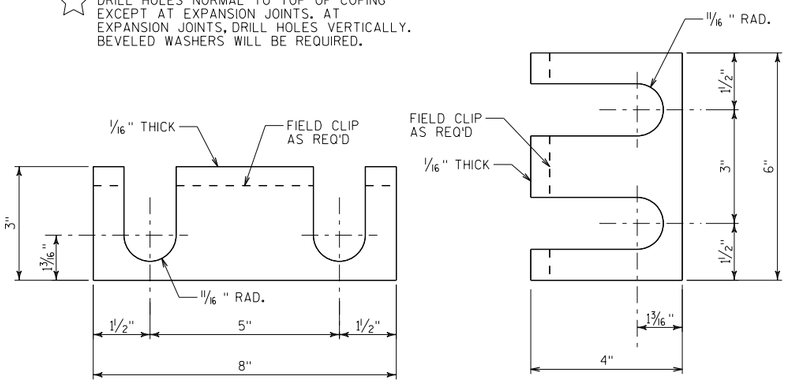


RAIL POST BASE PLATE



ANCHOR BOLTS FOR RAIL POST

(BETWEEN EXPANSION JOINTS)
☆ DRILL HOLES NORMAL TO TOP OF COPING EXCEPT AT EXPANSION JOINTS. AT EXPANSION JOINTS, DRILL HOLES VERTICALLY. BEVELED WASHERS WILL BE REQUIRED.



RAIL POST SHIM DETAIL

(2 SETS PER POST)

LEGEND

1. PLATE ⅝" × 6" × 8" WITH ¾" × 1½" SLOTTED HOLES.
2. STAINLESS STEEL CONCRETE ADHESIVE ANCHORS, ⅝" DIA. × 8¾" LONG WITH NUT AND WASHER. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.
3. 2½" DIA STANDARD PIPE RAIL (2.875" O.D.). PLACE POSTS VERTICAL. WELD TO 1. PLACE RAILS PARALLEL TO TOP OF COPING/ TOP OF WALL. WELD TO 3.

▲ ½" DIA. DRAIN HOLE AT BOTTOM OF EACH RAIL END.

◥ COORDINATE COPING EXPANSION JOINT PLACEMENT AND RAILING PANEL SPACING. COPING EXPANSION JOINT, WALL PANEL JOINT AND EDGE OF PANEL JOINT TO ALIGN AS SHOWN IN WALL RAILING ELEVATION DETAIL.

NOTES

BID ITEM "RAILING PIPE" INCLUDES ALL STEEL ITEMS SHOWN, CONCRETE ADHESIVE ANCHORS, GALVANIZING, AND PAINTING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO. 1 SHALL CONFORM TO A.S.T.M. A709 GRADE 36. STANDARD PIPE RAIL SHALL CONFORM TO A.S.T.M. A500 GRADE B (NO. 3).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE. ☆

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED AND USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

FILL BOLT SLOT OPENINGS IN SHIMS AND PLATE NO. 1 AND CAULK AROUND PERIMETER OF PLATE NO. 1 WITH NON-STAINING BLACK NON-BITUMINOUS JOINT SEALER.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

GALVANIZE AFTER FABRICATION AND THEN PAINT GALVANIZED RAILING ASSEMBLIES WITH A TWO COAT SYSTEM SPECIFICALLY INTENDED FOR PAINTING OF GALVANIZED SURFACES PER THE STANDARD SPECIFICATIONS. SHIMS SHALL BE GALVANIZED PER ASTM 123. THE FINISH COLOR SHALL BE FEDERAL COLOR NO. 27038 BLACK.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 2 POSTS.

PAINT TOUCH-UP TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-653

DRAWN BY AJA | PLANS CK'D. MHZ

RAILING PIPE DETAILS

SHEET 8 OF 9

8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
CN-01	JULY 10, 2014	355570	601956
CN-06	DECEMBER 29, 2014	355442	601973
CN-07	DECEMBER 29, 2014	355600	601964
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) MILWAUKEE COUNTY			

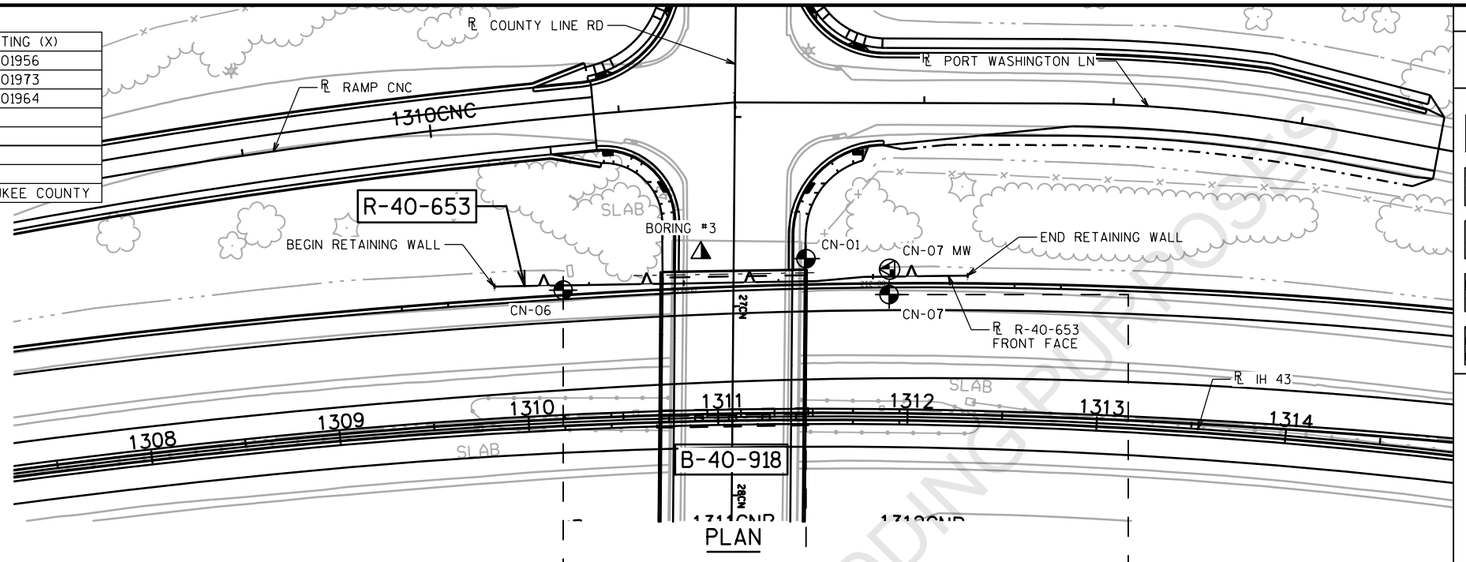
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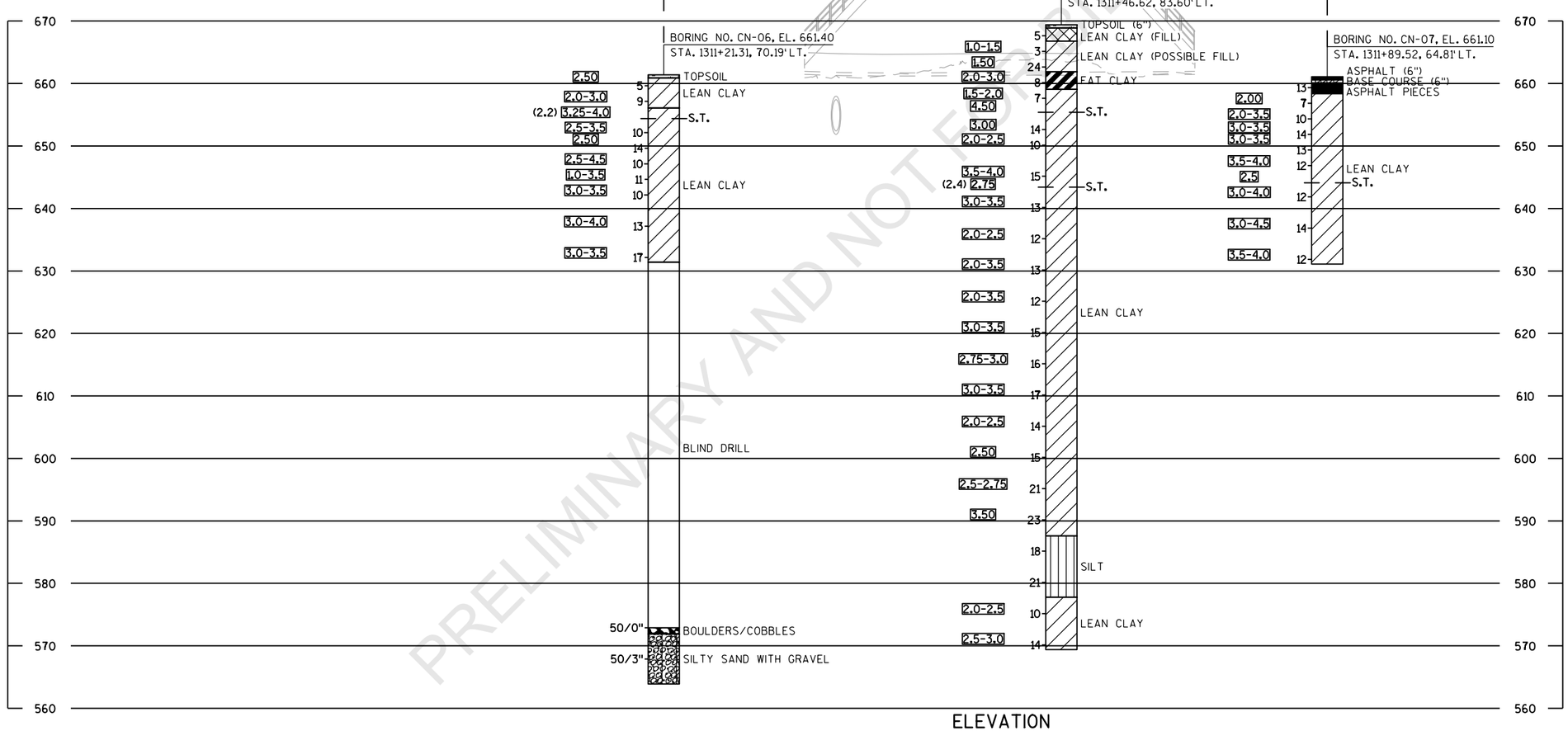
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

- DENOTES SOIL BORING LOCATION
- DENOTES MONITORING WELL LOCATION
- DENOTES HISTORICAL BORING





ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

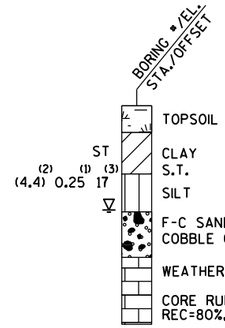
STATE PROJECT NUMBER

1229-04-74

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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE R-40-653

DRAWN BY	NNM	PLANS CK'D.	EAJ

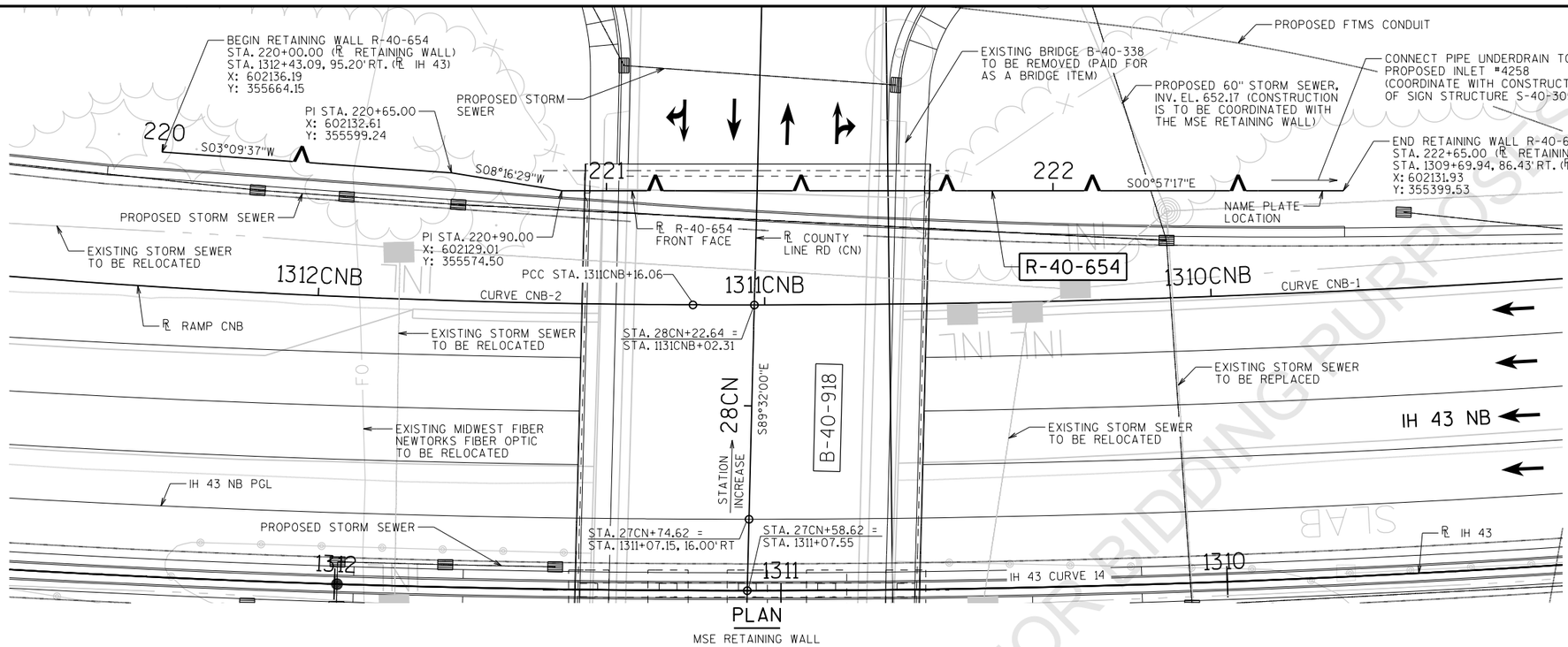
SUBSURFACE EXPLORATION

SHEET 9 OF 9

8

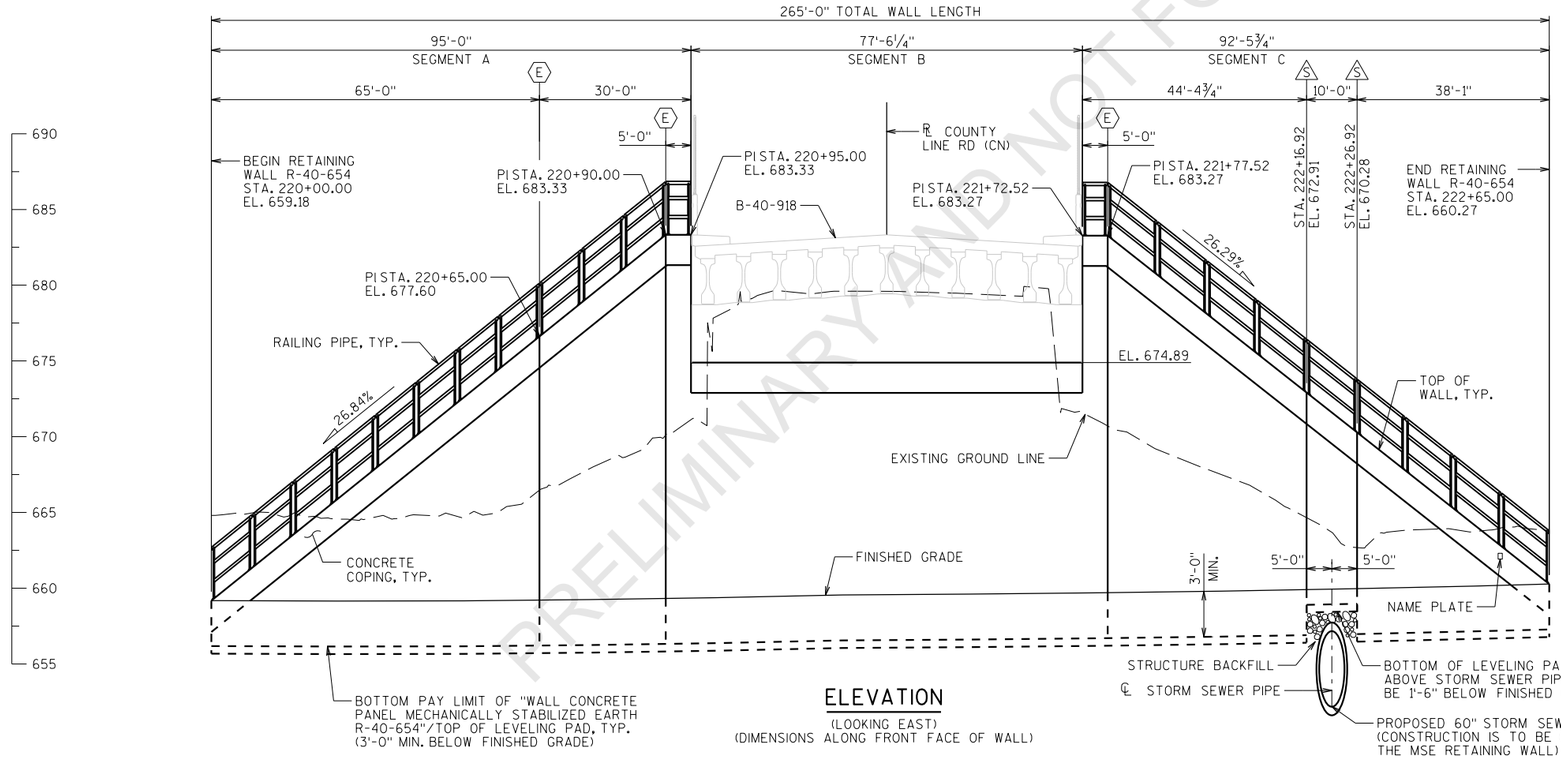
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STATE PROJECT NUMBER
1229-04-74



PLAN

MSE RETAINING WALL



ELEVATION

(LOOKING EAST)
(DIMENSIONS ALONG FRONT FACE OF WALL)

DESIGN DATA

LIVE LOAD:

LIVE LOAD SURCHARGE (ROADWAY): 240 PSF

MATERIAL PROPERTIES:

CONCRETE MASONRY RETAINING WALL..... f'c = 4,000 psi
PRECAST CONCRETE WALL PANELS..... f'c = 4,000 psi
BAR STEEL REINFORCEMENT..... fy = 60,000 psi

LEGEND

- DIRECTION OF TRAFFIC
- (E) EXPANSION JOINT
- (S) VERTICAL SLIP JOINT

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTIONS
3. GENERAL NOTES & QUANTITIES
4. PROFILE GRADE LINES & DESIGN DATA
5. COPING DETAILS
6. SEGMENTS A AND C COPING PLAN & ELEVATION
7. SEGMENT B COPING PLAN & ELEVATION
8. RAILING PIPE DETAILS
9. SUBSURFACE EXPLORATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
MOHAMMED ZAGLOUL (414) 751-7200

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

kapur

7711 N. Port Washington Road
Milwaukee, Wisconsin 53217
kapurinc.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

WISCONSIN
ANDREW J. ASCHENBRENNER
E-45272-6
MILWAUKEE
WI
PROFESSIONAL ENGINEER
7/30/2021

STRUCTURE R-40-654

COUNTY LINE RD EAST ABUTMENT RETAINING WALL

COUNTY	VILLAGE
MILWAUKEE	BAYSIDE

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
AJA	MHZ	AJA	MHZ

GENERAL PLAN & ELEVATION

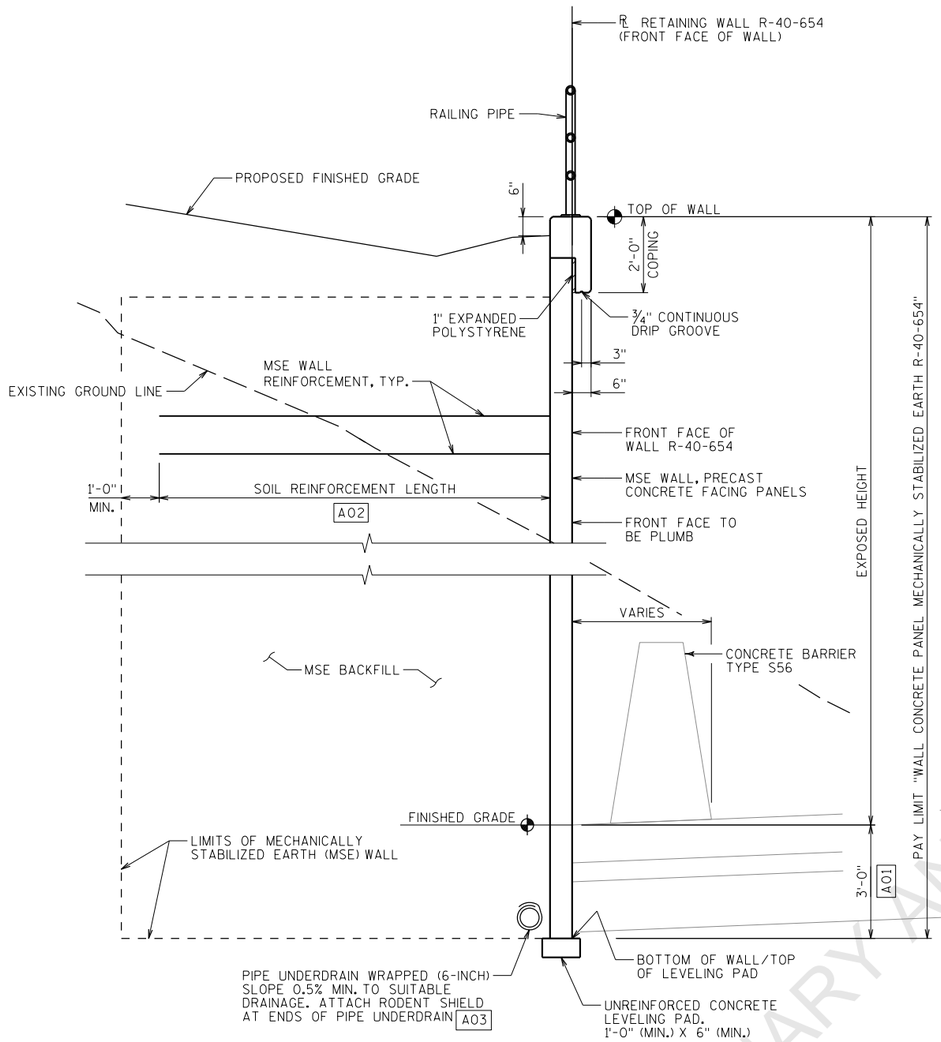
SHEET 1 OF 9

8

8

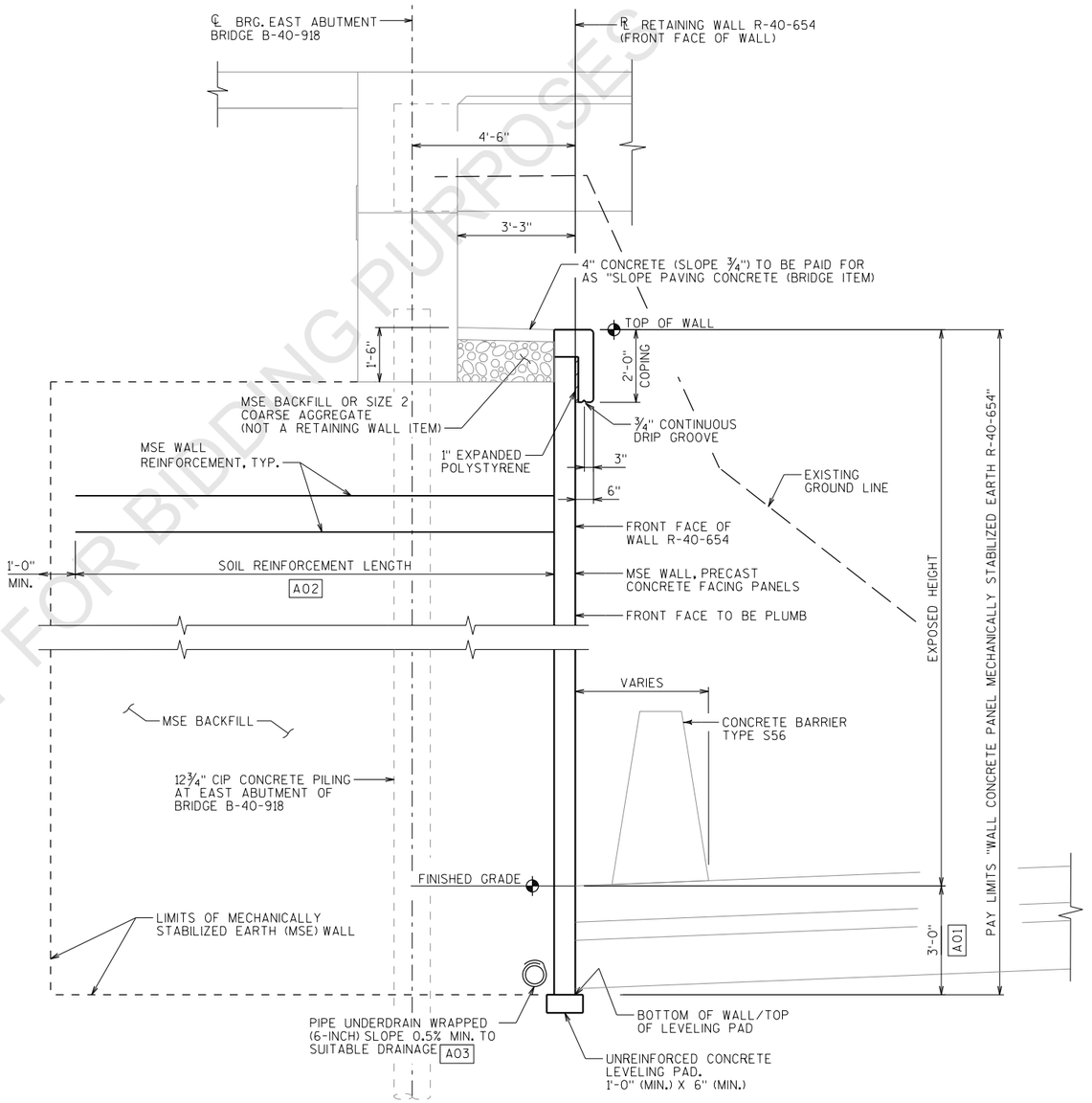
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PLOT BY : skolhe
PLOT NAME : $FILE$
PLOT SCALE : 1:30

STATE PROJECT NUMBER
1229-04-74



TYPICAL WALL SECTION

(LOOKING SOUTH)
(SEGMENT A - STA. 220+00.00 TO STA. 220+95.00)
(SEGMENT C - STA. 221+72.52 TO STA. 222+65.00)



TYPICAL WALL SECTION

(LOOKING SOUTH)
(SEGMENT B - STA. 220+95.00 TO STA. 221+72.52)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

LEGEND

A01 MINIMUM DIMENSION FROM FINISHED GRADE AT FRONT FACE OF WALL TO TOP OF LEVELING PAD AS SHOWN. COORDINATE CONSTRUCTION OF THE LEVELING PAD WITH THE WALL PANEL FABRICATOR. PAY LIMITS BASED ON MINIMUM DIMENSION.

A02 SEE WALL EXTERNAL STABILITY EVALUATION TABLE ON "PROFILE GRADE LINES & DESIGN DATA" SHEET FOR MINIMUM LENGTH OF MSE WALL REINFORCING STRIPS. SOIL REINFORCEMENT MUST EXTEND A MINIMUM OF 3.0 FEET BEYOND THE FAILURE PLANE FOR INTERNAL STABILITY AS DEFINED BY AASHTO SPECIFICATIONS.

A03 CONNECT PIPE UNDERDRAIN WRAPPED TO INLET #4258 USING PIPE UNDERDRAIN UNPERFORATED. (CONNECTIONS ARE INCIDENTAL TO "PIPE UNDERDRAIN UNPERFORATED 6-INCH"). SEE GENERAL PLAN & ELEVATION SHEET. FOR RODENT SHIELD DETAIL, SEE GENERAL NOTES & QUANTITIES SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-654

DRAWN BY AJA | PLANS CK'D. MHZ

TYPICAL SECTIONS

SHEET 2 OF 9

8

8

FILE NAME : c:\caddlib\pw\hntb_andrew.aschenbrenner\greatlakes\d0231189\R654_080102_ts.dgn PLOT DATE : 6/1/2021 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:4

STATE PROJECT NUMBER
1229-04-74

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-654".

THE COST OF FURNISHING AND PLACING MSE BACKFILL WITHIN THE REINFORCED SOIL ZONE IS TO BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-654".

THE COST OF FURNISHING AND PLACING THE UNREINFORCED CONCRETE LEVELING PAD UNDER THE MSE PRECAST WALL PANELS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-654".

ALL STATIONS AND DIMENSIONS ARE ALONG THE FRONT FACE OF WALL, UNLESS SHOWN OTHERWISE.

ONLY WALL CONCRETE PANEL MSE WALL SYSTEMS THAT USE STRIP TYPE SOIL REINFORCEMENT THAT ARE HINGED AT THE PANEL CONNECTION CAN BE USED FOR THIS PROJECT.

SOIL REINFORCEMENT MAY BE PLACED UP TO A MAXIMUM OF 15° FROM PERPENDICULAR IF NECESSARY TO AVOID INTERFERENCE WITH ITEMS BEHIND THE WALL. ANGLES GREATER THAN 15° REQUIRE APPROVAL FROM THE BUREAU OF STRUCTURES DESIGN SECTION.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER, UNLESS SHOWN OTHERWISE.

ALL BAR STEEL REINFORCEMENT IN CAST-IN-PLACE CONCRETE TO BE EPOXY COATED.

THE QUANTITIES AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 7½ INCHES. FOR PANEL THICKNESSES DIFFERENT THAN 7½ INCHES, THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF WALL R-40-654 WITH THE EAST ABUTMENT OF BRIDGE B-40-918.

THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF WALL R-40-654 WITH THE 60" STORM SEWER CONSTRUCTION.

THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF THE PIPE UNDERDRAIN WITH THE CONSTRUCTION OF SIGN STRUCTURE S-40-3058.

THE QUANTITIES OF CONCRETE MASONRY & BAR STEEL REINFORCEMENT FOR THE CAST-IN-PLACE COPING ARE INCIDENTAL TO THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-654".

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-654" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS. THE TOP OF LEVELING PAD IS TAKEN AS A CONSTANT 3'-0" BELOW FINISHED GRADE FOR MEASUREMENT PURPOSES. WALL AREAS CONSTRUCTED OUTISDE THESE LIMITS WILL NOT BE MEASURED FOR PAYMENT.

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

THE UTILITY AND STORM SEWER 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 DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

REFER TO S.D.D. "NAME PLATE (STRUCTURES)" FOR NAME PLATE DETAILS. NAME PLATE SHALL BE CONSIDERED INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-654".

THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF THE STORM SEWER COMPONENTS INCLUDING INLETS, LATERALS AND STRUCTURES WITH THE CONSTRUCTION OF THE MSE WALL.

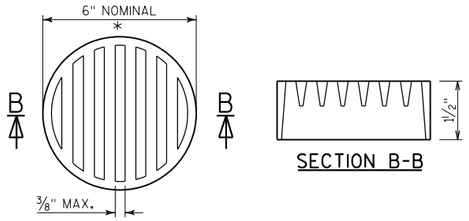
STRUCTURAL BACKFILL ON TOP OF 60" STORM SEWER SHALL EXTEND A MINIMUM OF 1'-6" FROM THE FRONT FACE OF WALL TO THE LIMITS OF MECHANICALLY STABILIZED EARTH (MSE) WALL WITH A MINIMUM WIDTH OF STORM SEWER DIAMETER. THE STRUCTURAL FILL SHALL BE INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-654".

MSE WALL PANEL SHAPES SHALL BE SQUARE OR RECTANGULAR.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SEGMENT A	SEGMENT B	SEGMENT C	TOTAL
513.2001	RAILING PIPE	LF	95	-	93	188
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	1	-	1	2
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	-	-	65	65
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	80	95	275
SPV.0165.4002	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-654	SF	1,490	1,422	1,409	4,321
	NON-BID ITEMS					
	NAME PLATE	EACH				1
	PREFORMED JOINT FILLER	SIZE				2
	NON-BITUMINOUS JOINT SEALER	SIZE				¾"
	CORK FILLER	SIZE				1"
	EXPANDED POLYSTYRENE	SIZE				1"

ALL ITEMS ARE CATEGORY 3010



RODENT SHIELD

* 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.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-654

DRAWN BY AJA | PLANS CK'D. MHZ

GENERAL NOTES & QUANTITIES

SHEET 3 OF 9

STATE PROJECT NUMBER
1229-04-74

SOIL PARAMETERS

	STRATUM LOCATIONS & SOIL DESCRIPTIONS	UNIT WEIGHT (PCF)	SHORT-TERM (UNDRAINED) FRICTION ANGLE (DEGREES)	SHORT-TERM (UNDRAINED) COHESION (PSF)	LONG-TERM (DRAINED) FRICTION ANGLE (DEGREES)	LONG-TERM (DRAINED) COHESION (PSF)
	GRANULAR BACKFILL (REINFORCING ZONE OR BACKFILL)	120	30	0	30	0
	RETAINED SOIL - GRANULAR	120	30	0	30	0
	RETAINED SOIL - CLAY	120	0	1,500	28	0
BORING CN-03	TOPSOIL EL. 679.3 - EL. 678.3	-	-	-	-	-
BORING CN-03	FILL - LEAN CLAY EL. 678.3 - EL. 666.2	120	0	2,000	30	25
BORING CN-03	LEAN CLAY EL. 666.2 - EL. 620.5	125	0	3,000	30	50
BORING CN-03	POORLY GRADED SAND WITH GRAVEL EL. 620.5 - EL. 618.0	135	36	4,500	36	0
BORING CN-03	LEAN CLAY EL. 618.0 - EL. 612.5	130	0	4,000	31	50
BORING CN-03	SILTY SAND EL. 612.5 - EL. 607.5	130	36	0	36	0
BORING CN-03	LEAN CLAY EL. 607.5 - EL. 597.5	130	0	4,000	30	50
BORING CN-03	LEAN CLAY EL. 597.5 - EL. 579.3	125	0	2,250	30	25
BORING CN-05	GRAVEL EL. 663.3 - EL. 663.1	-	-	-	-	-
BORING CN-05	LEAN CLAY EL. 663.1 - EL. 660.5	125	0	2,500	30	50
BORING CN-05	LEAN CLAY EL. 660.5 - EL. 633.3	130	0	3,250	31	50
BORING CN-08	TOPSOIL EL. 660.4 - EL. 658.9	-	-	-	-	-
BORING CN-08	LEAN CLAY EL. 658.9 - EL. 652.5	125	0	2,000	30	50
BORING CN-08	LEAN CLAY EL. 652.5 - EL. 630.4	130	0	2,750	31	50

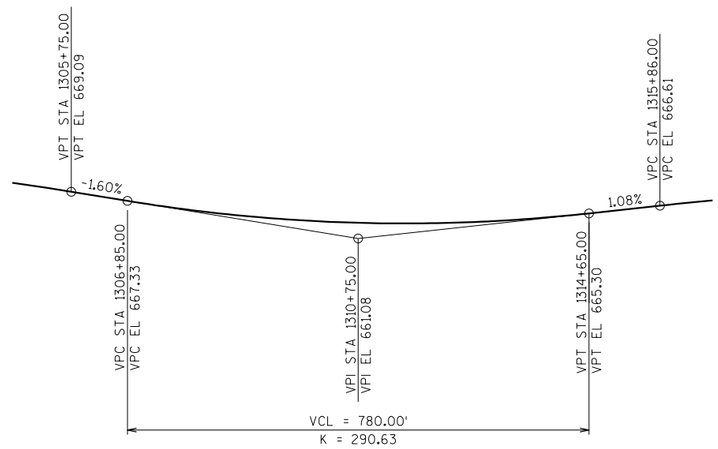
* DESIGN WALL FOR THESE VALUES

WALL ELEVATIONS ◐

STATION & OFFSET	WALL STATION	TOP OF WALL ELEVATION	FINISHED GRADE ELEVATION
1312+43.09, 95.20' RT	220+00.00	659.18	659.18
1312+17.26, 94.46' RT	220+25.00	665.89	659.15
1311+91.44, 93.50' RT	220+50.00	672.60	659.16
1311+75.96, 92.82' RT	220+65.00	676.62	659.21
1311+65.73, 91.43' RT	220+75.00	679.30	659.25
1311+50.41, 89.28' RT	220+90.00	683.33	659.33
1311+45.25, 89.35' RT	220+95.00	683.33	659.35
1311+45.25, 89.35' RT	220+95.00	674.89	659.35
1311+40.09, 89.41' RT	221+00.00	674.89	659.38
1311+14.30, 89.58' RT	221+25.00	674.89	659.55
1310+88.50, 89.53' RT	221+50.00	674.89	659.61
1310+65.26, 89.29' RT	221+72.52	674.89	659.68
1310+65.26, 89.29' RT	221+72.52	683.27	659.68
1310+62.71, 89.26' RT	221+75.00	683.27	659.69
1310+60.11, 89.22' RT	221+77.52	683.27	659.70
1310+36.92, 88.76' RT	222+00.00	677.36	659.81
1310+11.14, 88.04' RT	222+25.00	670.79	659.96
1309+85.38, 87.10' RT	222+50.00	664.22	660.14
1309+69.94, 86.43' RT	222+65.00	660.27	660.27

HORIZONTAL CURVE DATA

IH 43 CURVE 14	CURVE CNB-1	CURVE CNB-2
PI STA. = 1312+49.06	PI STA. = 1310CNB+00.91	PI STA. = 1313CNB+38.02
Y = 355671.79	Y = 355429.44	Y = 355766.65
X = 602018.33	X = 602105.36	X = 602101.19
DELTA = 14°20'07"	DELTA = 4°39'19"	DELTA = 12°25'09"
D = 1°58'33"	D = 2°01'13"	D = 2°48'31"
T = 364.69'	T = 115.27'	T = 221.96'
L = 725.57'	L = 230.42'	L = 442.19'
R = 2900.00'	R = 2836.00'	R = 2040.00'
PC STA. = 1308+84.37	PC STA. = 1308CNB+85.64	PCC STA. = 1311CNB+16.06
Y = 355308.69	Y = 355314.67	Y = 355544.71
X = 602052.42	X = 602116.14	X = 602103.94
PT STA. = 1316+09.94	PCC STA. = 1311CNB+16.06	PT STA. = 1315CNB+58.24
Y = 356032.02	Y = 355544.71	Y = 355983.99
X = 602075.20	X = 602103.94	X = 602146.24

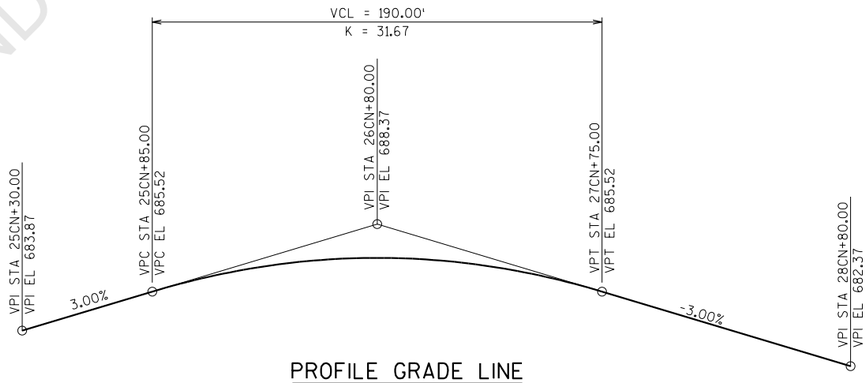


PROFILE GRADE LINE
MAINLINE IH 43 NB

WALL EXTERNAL & OVERALL STABILITY EVALUATION

DIMENSIONS		EVALUATED LOCATIONS		
WALL HEIGHT (FEET)		19.1	27.5	13.0
EXPOSED WALL HEIGHT (FEET)		16.1	24.5	12.0
MINIMUM LENGTH OF REINFORCEMENT (FEET) **		18.1	19.3	10.4
REINFORCEMENT LENGTH/RETAINED HEIGHT RATIO		0.95H	0.70H	0.80H
WALL STATION		220+96	220+94	222+23
BORING USED		CN-03, 05, 08	CN-03, 05, 08	CN-03, 05, 08
CAPACITY TO DEMAND RATIO (CDR)				
SLIDING (CDR>1.0)		1.30	1.43	1.17
ECCENTRICITY (CDR>1.0)		1.75	1.72	2.05
BEARING RESISTANCE (CDR>1.0)		1.08	1.08	1.33
FACTRED BEARING RESISTANCE (PSF)		6,874	6,876	4,927
GLOBAL STABILITY	END OF CONSTRUCTION	3.15	3.29	4.64
GLOBAL STABILITY	LONG TERM	1.12	1.19	1.06

** THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND GLOBAL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNED LOCATIONS REPRESENT TRYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGNED LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNED LOCATIONS.



PROFILE GRADE LINE
COUNTY LINE RD

NOTE

THE PROFILE FOR REFERENCE LINE CNB BEGINS AT STA. 1314CNB+11.07. ELEVATIONS FOR REFERENCE LINE CNB AT BRIDGE B-40-918 AND RETAINING WALL R-40-654 ARE REFERENCED TO IH 43 NB PGL.

LEGEND

◐ LINEARLY INTERPOLATE WALL ELEVATIONS BETWEEN STATIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-654

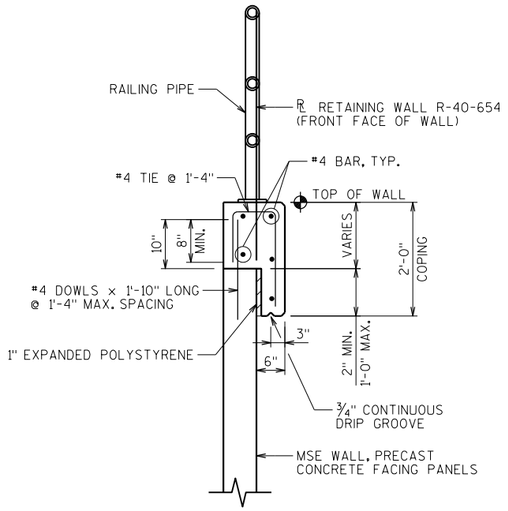
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PROFILE GRADE LINES & DESIGN DATA

SHEET 4 OF 9

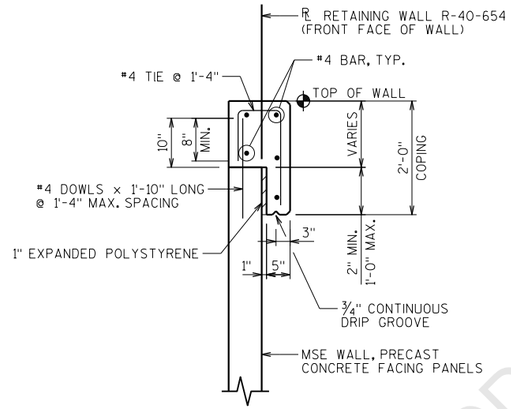
PRELIMINARY AND NOT FOR BIDDING PURPOSES

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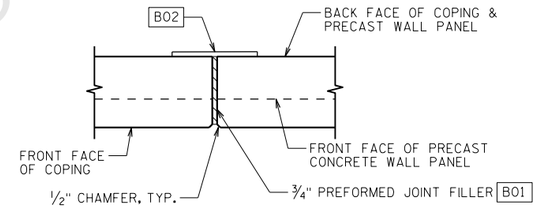
COPING DETAIL AT SEGMENTS A & C

(LOOKING SOUTH)



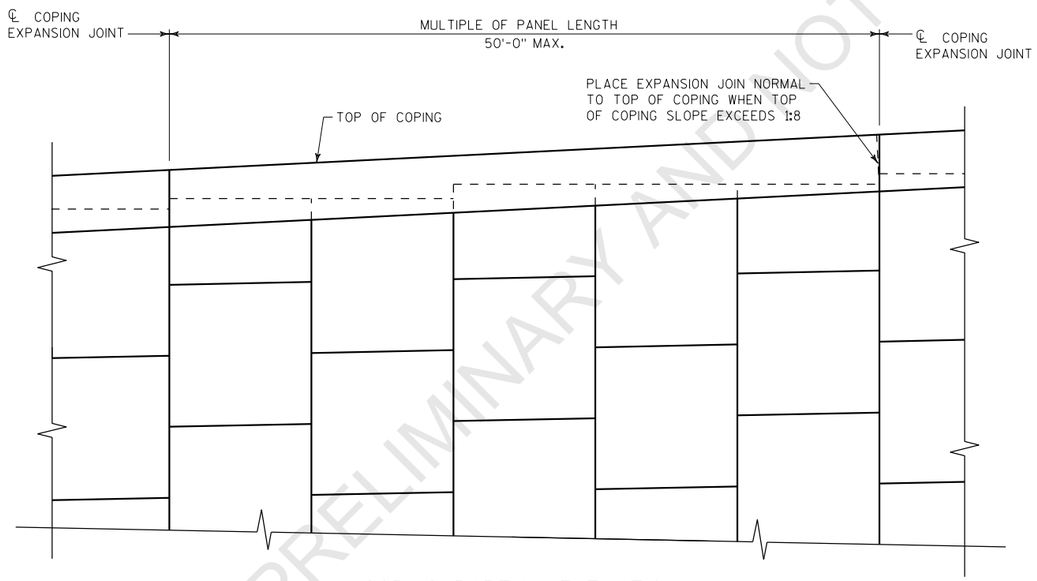
COPING DETAIL AT SEGMENT B

(LOOKING SOUTH)



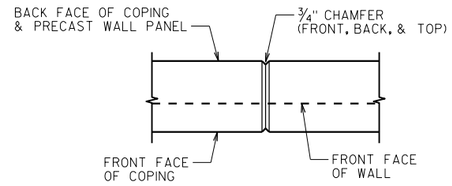
COPING EXPANSION JOINT

(DO NOT RUN BAR STEEL THRU JOINT)
(MAX. SPACING OF JOINT = 50'-0")



COPING PARTIAL ELEVATION

NOTE: ALL JOINTS SHALL BE LOCATED AS SHOWN ON THE WALL ELEVATIONS
AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE



COPING CONTRACTION JOINT

(DO NOT RUN BAR STEEL THRU JOINT)
(MAX. SPACING OF JOINT = 12'-0")

LEGEND

B01 SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

B02 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-654

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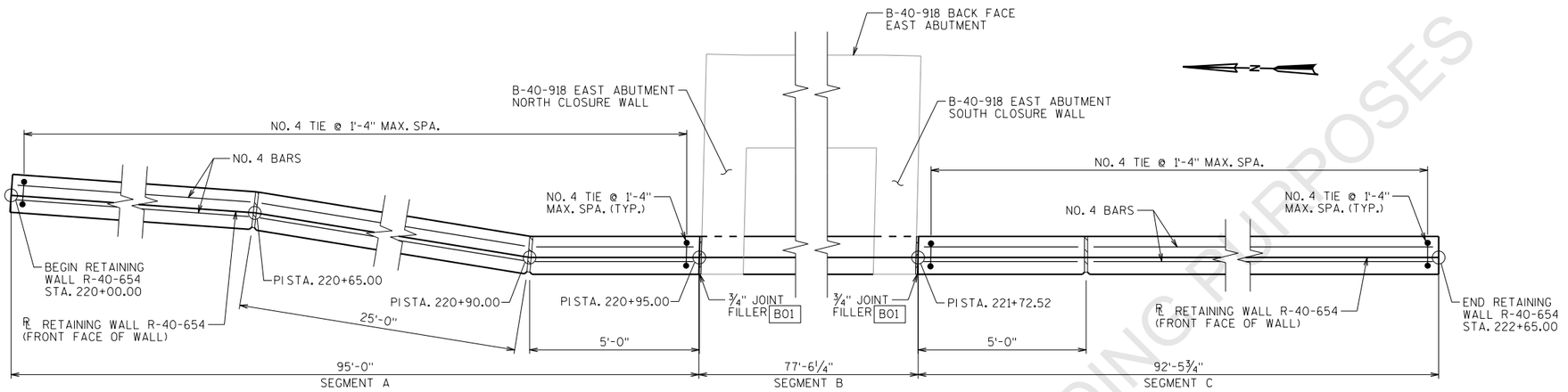
COPING DETAILS

SHEET 5 OF 9

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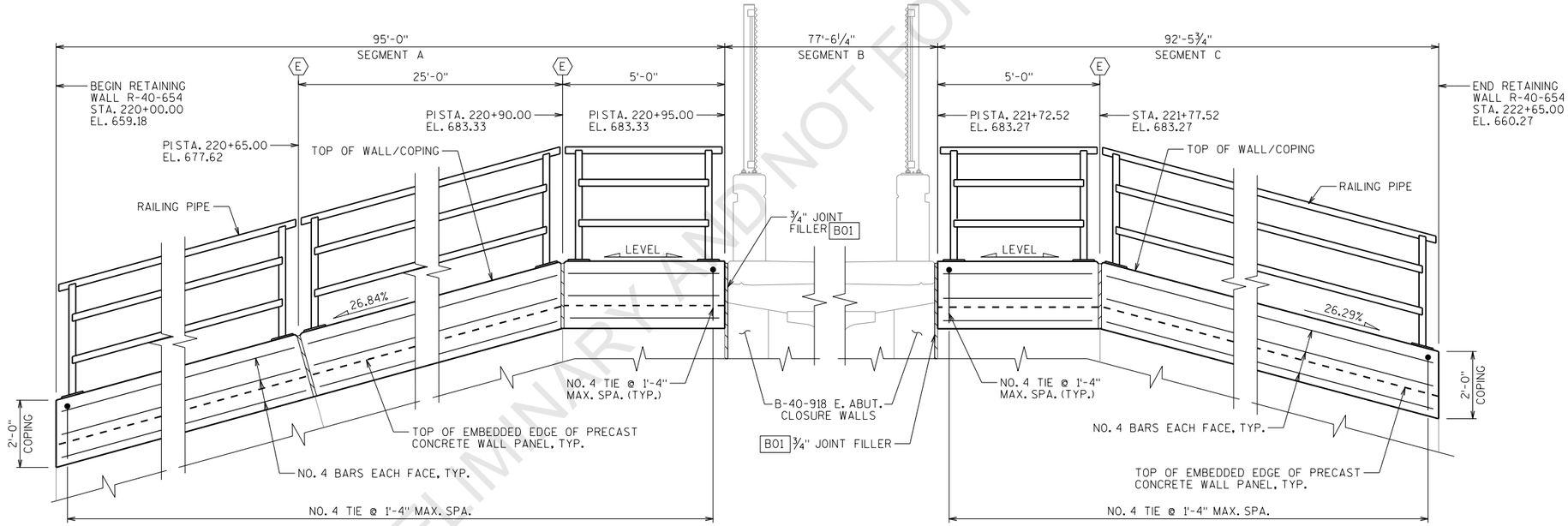
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STATE PROJECT NUMBER
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PLAN - SEGMENT A
(DIMENSIONS ARE ALONG ℄ R-40-654)

PLAN - SEGMENT C
(DIMENSIONS ARE ALONG ℄ R-40-654)



ELEVATION - SEGMENT A
(LOOKING EAST)
(DIMENSIONS ARE ALONG ℄ R-40-654)

ELEVATION - SEGMENT C
(LOOKING EAST)
(DIMENSIONS ARE ALONG ℄ R-40-654)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NOTE
FOR COPING EXPANSION AND CONTRACTION JOINT DETAILS, SEE SHEET 5.

LEGEND
B01 SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

(E) EXPANSION JOINT

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-654

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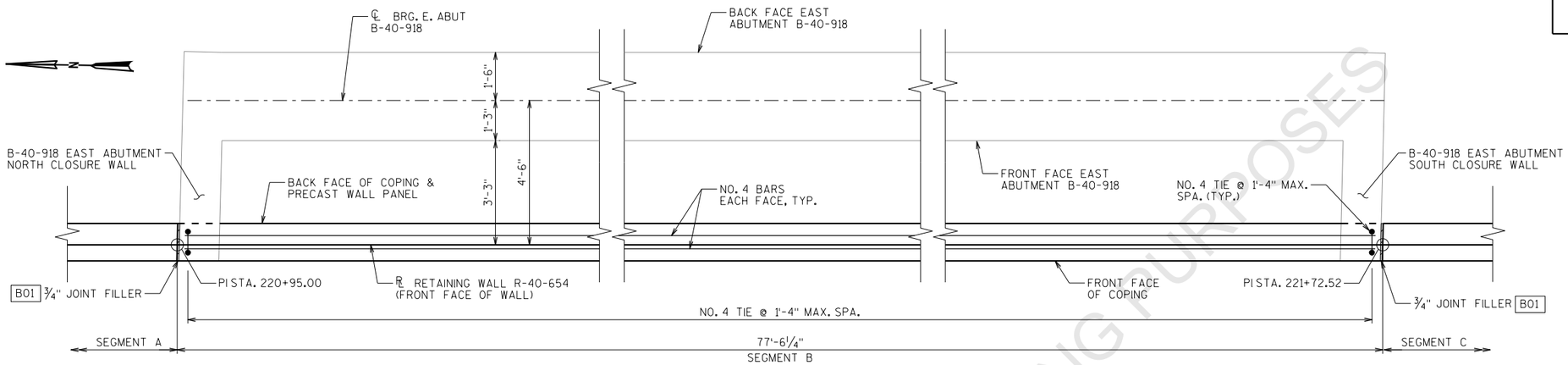
SEGMENTS A AND C
COPING PLAN
& ELEVATION

SHEET 6 OF 9

8

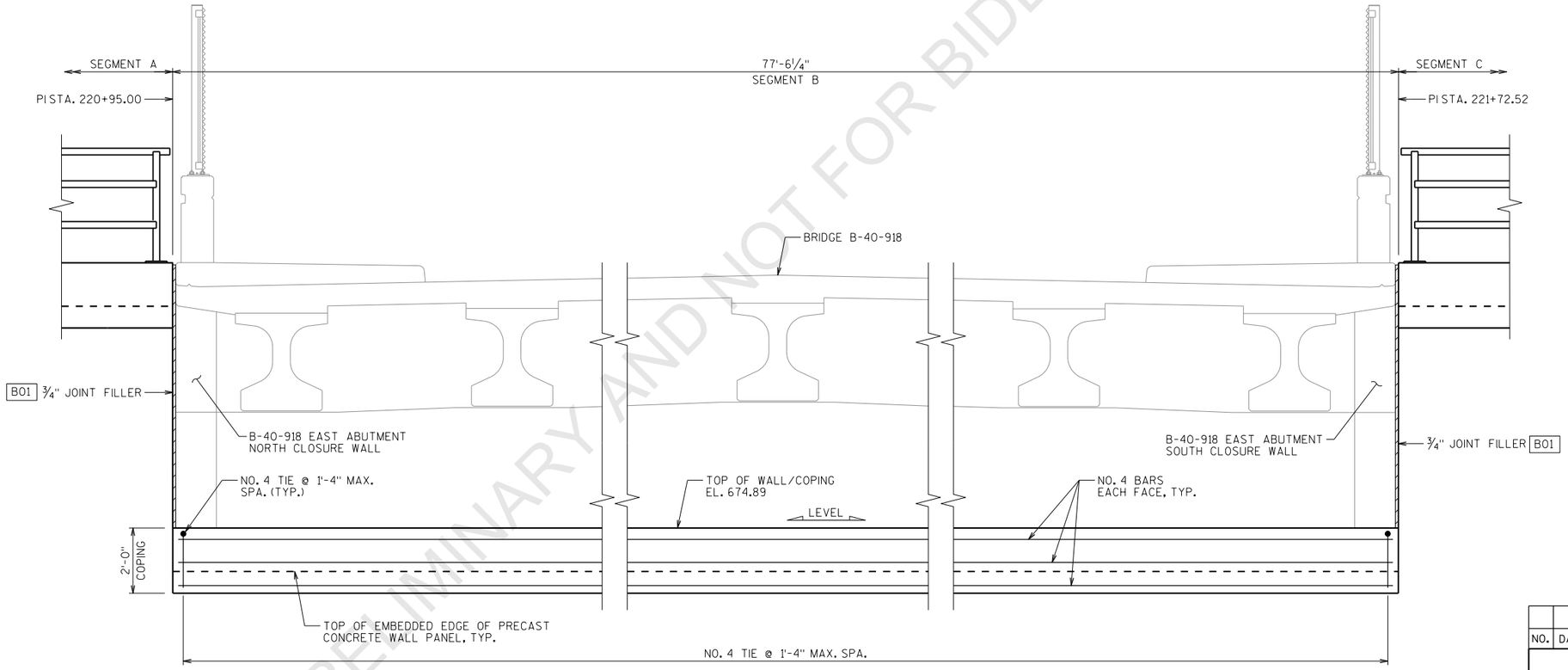
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PLOT DATE : 6/1/2021
PLOT BY : aaschenbrenner
PLOT NAME : $FILE$
PLOT SCALE : 1:4

STATE PROJECT NUMBER
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PLAN - SEGMENT B

(DIMENSIONS ARE ALONG ℞ R-40-654)



ELEVATION - SEGMENT B

(LOOKING EAST)
(DIMENSIONS ARE ALONG ℞ R-40-654)

NOTE

FOR EXPANSION AND CONTRACTION JOINT DETAILS, SEE SHEET 5.

LEGEND

B01 SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

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STRUCTURE R-40-654

DRAWN BY AJA | PLANS CK'D. MHZ

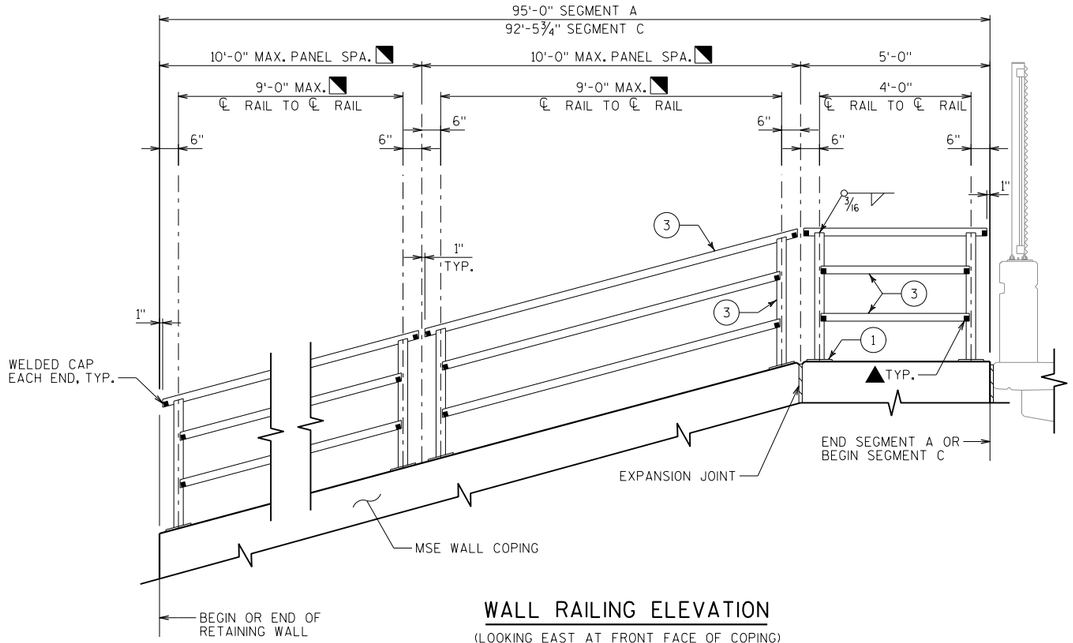
SEGMENT B COPING PLAN & ELEVATION

SHEET 7 OF 9

8

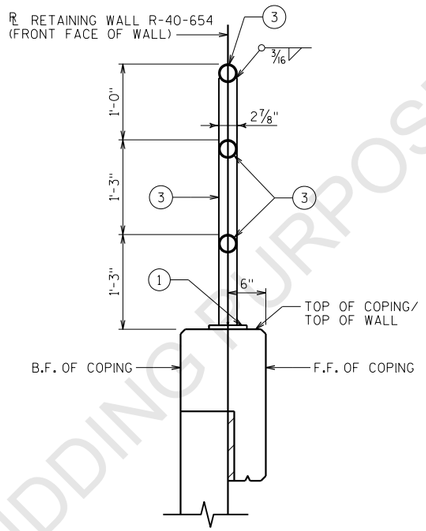
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STATE PROJECT NUMBER
1229-04-74

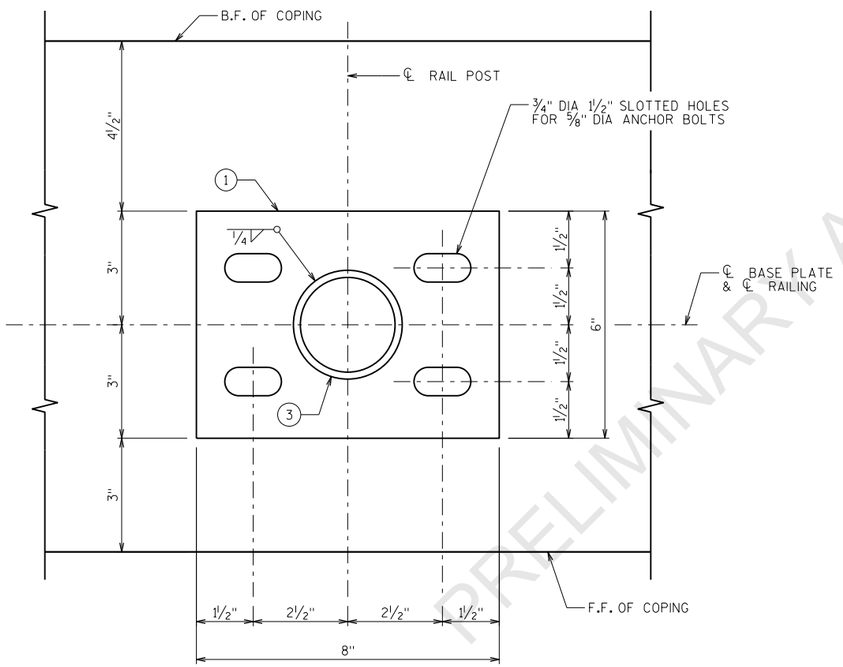


WALL RAILING ELEVATION

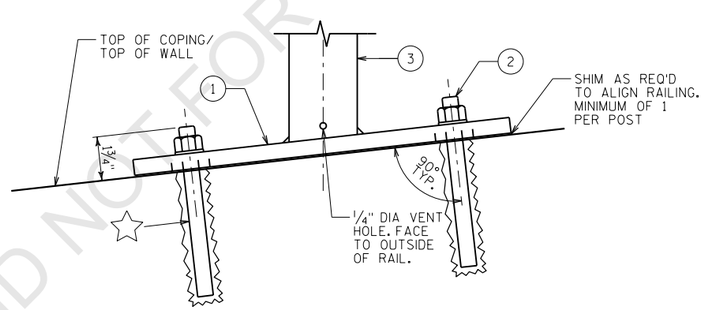
(LOOKING EAST AT FRONT FACE OF COPING)
(DIMENSIONS AND STATIONS GIVEN ALONG ℞ R-40-654)



WALL RAILING SECTION

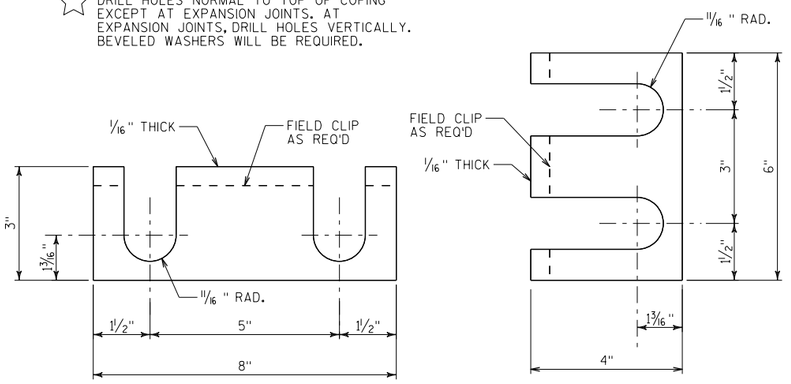


RAIL POST BASE PLATE



ANCHOR BOLTS FOR RAIL POST

(BETWEEN EXPANSION JOINTS)
☆ DRILL HOLES NORMAL TO TOP OF COPING EXCEPT AT EXPANSION JOINTS. AT EXPANSION JOINTS, DRILL HOLES VERTICALLY. BEVELED WASHERS WILL BE REQUIRED.



RAIL POST SHIM DETAIL

(2 SETS PER POST)

LEGEND

1. PLATE ⅝" × 6" × 8" WITH ¾" × 1½" SLOTTED HOLES.
2. STAINLESS STEEL CONCRETE ADHESIVE ANCHORS, ⅝" DIA. × 8¾" LONG WITH NUT AND WASHER. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.
3. 2½" DIA STANDARD PIPE RAIL (2.875" O.D.). PLACE POSTS VERTICAL. WELD TO 1. PLACE RAILS PARALLEL TO TOP OF COPING/ TOP OF WALL. WELD TO 3.

▲ ½" DIA. DRAIN HOLE AT BOTTOM OF EACH RAIL END.

◥ COORDINATE COPING EXPANSION JOINT PLACEMENT AND RAILING PANEL SPACING. COPING EXPANSION JOINT, WALL PANEL JOINT AND EDGE OF PANEL JOINT TO ALIGN AS SHOWN IN WALL RAILING ELEVATION DETAIL.

NOTES

BID ITEM "RAILING PIPE" INCLUDES ALL STEEL ITEMS SHOWN, CONCRETE ADHESIVE ANCHORS, GALVANIZING, AND PAINTING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO. 1 SHALL CONFORM TO A.S.T.M. A709 GRADE 36. STANDARD PIPE RAIL SHALL CONFORM TO A.S.T.M. A500 GRADE B (NO. 3).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE. ☆

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED AND USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

FILL BOLT SLOT OPENINGS IN SHIMS AND PLATE NO. 1 AND CAULK AROUND PERIMETER OF PLATE NO. 1 WITH NON-STAINING BLACK NON-BITUMINOUS JOINT SEALER.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

GALVANIZE AFTER FABRICATION AND THEN PAINT GALVANIZED RAILING ASSEMBLIES WITH A TWO COAT SYSTEM SPECIFICALLY INTENDED FOR PAINTING OF GALVANIZED SURFACES PER THE STANDARD SPECIFICATIONS. SHIMS SHALL BE GALVANIZED PER ASTM 123. THE FINISH COLOR SHALL BE FEDERAL COLOR NO. 27038 BLACK.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 2 POSTS.

PAINT TOUCH-UP TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-654

DRAWN BY AJA | PLANS CK'D. MHZ

RAILING PIPE DETAILS

SHEET 8 OF 9

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
CN-03	JULY 11, 2014	355500	602156
CN-05	DECEMBER 22, 2014	355627	602106
CN-08	DECEMBER 22, 2014	355441	602109
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) MILWAUKEE COUNTY			

NOTE:

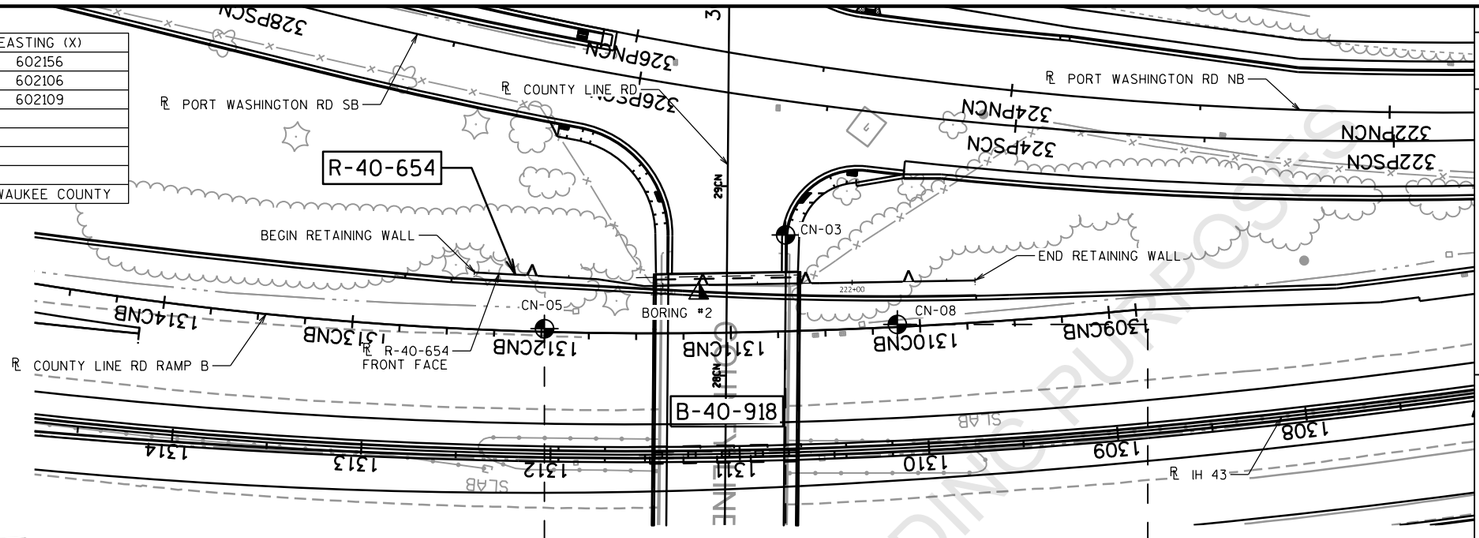
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

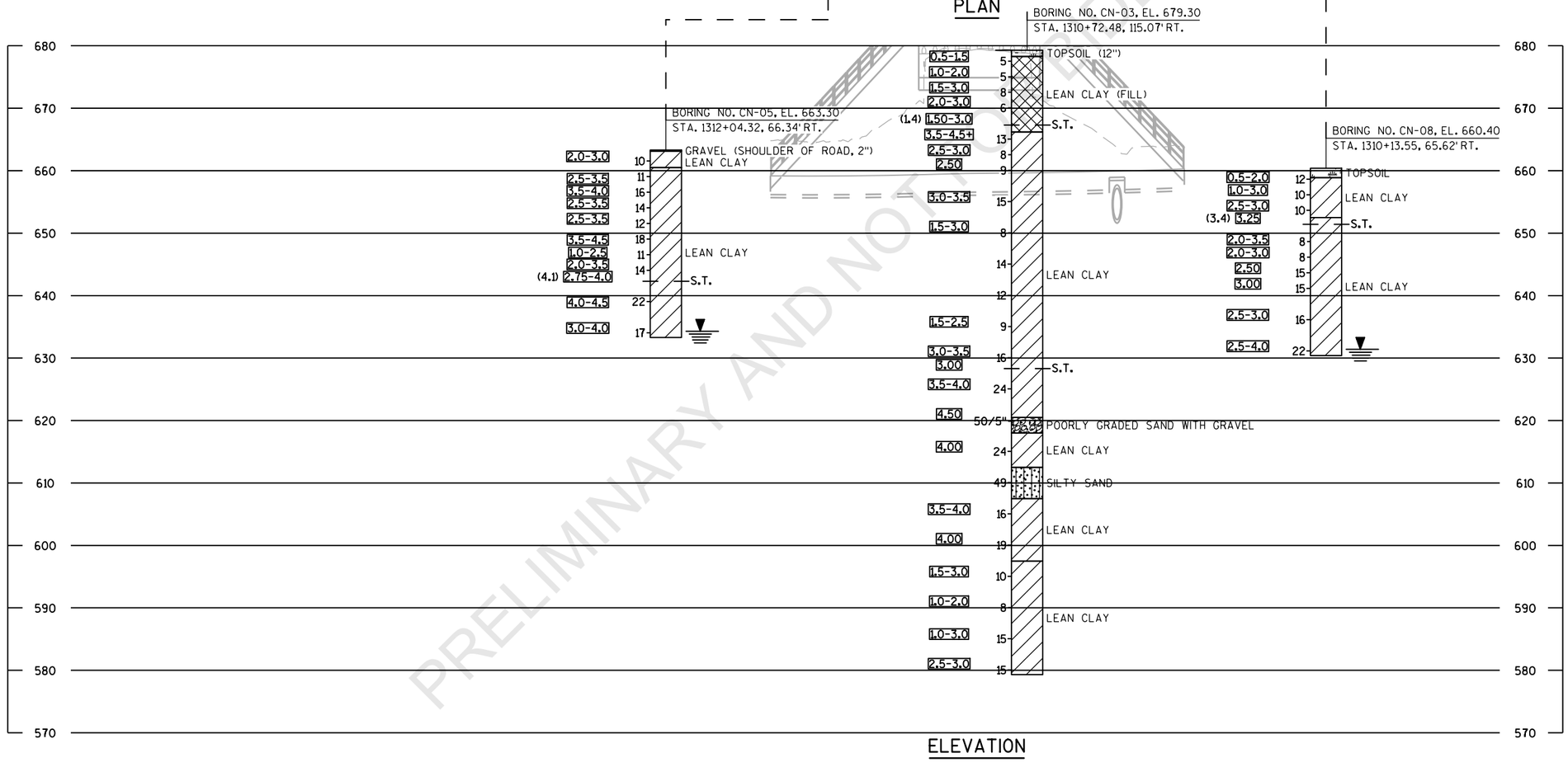
HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

DENOTES SOIL BORING LOCATION

DENOTES HISTORICAL BORING



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

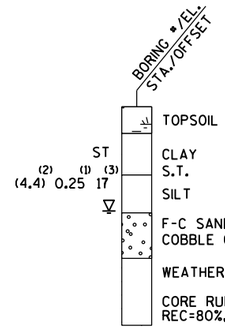
STATE PROJECT NUMBER

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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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE R-40-654

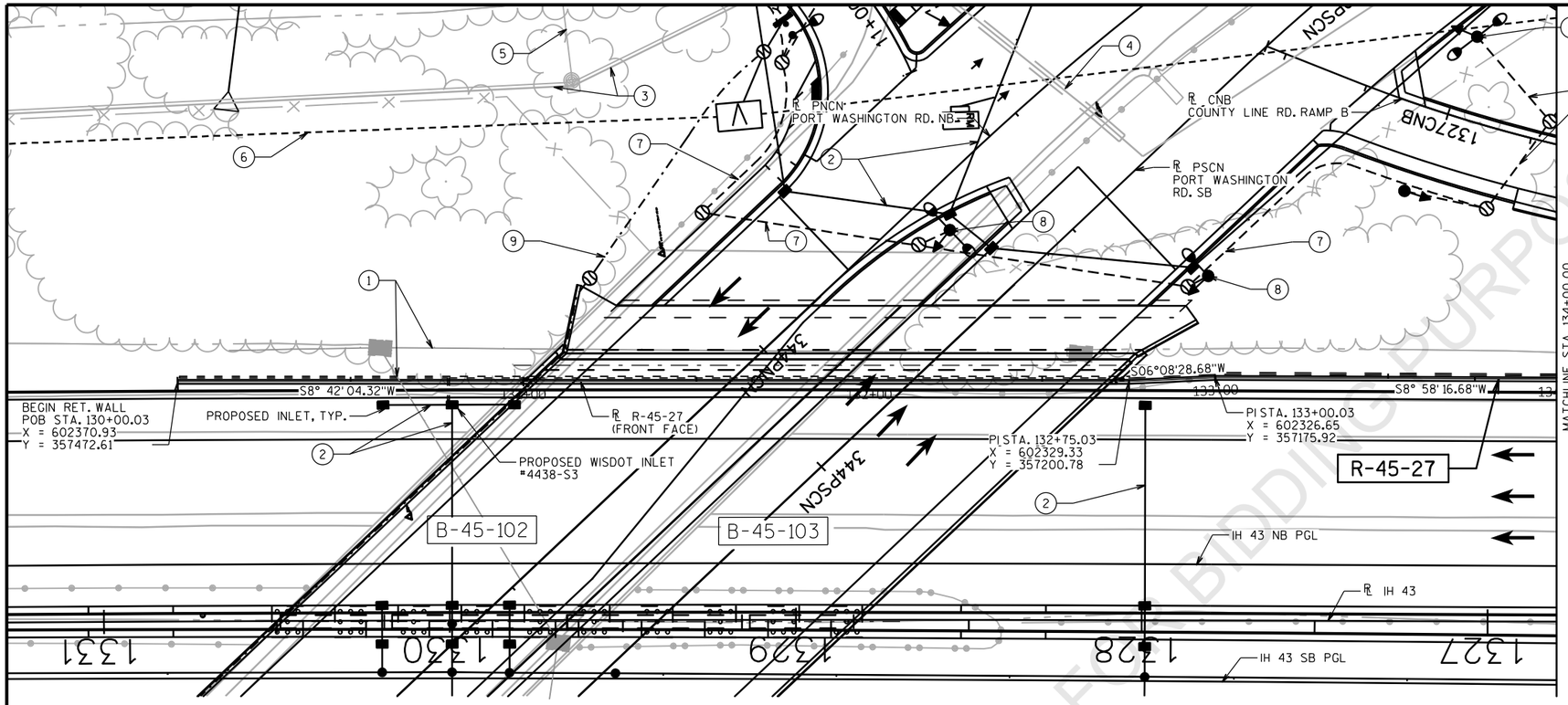
DRAWN BY NNM | PLANS CK'D. EAJ

SUBSURFACE EXPLORATION

SHEET 9 OF 9

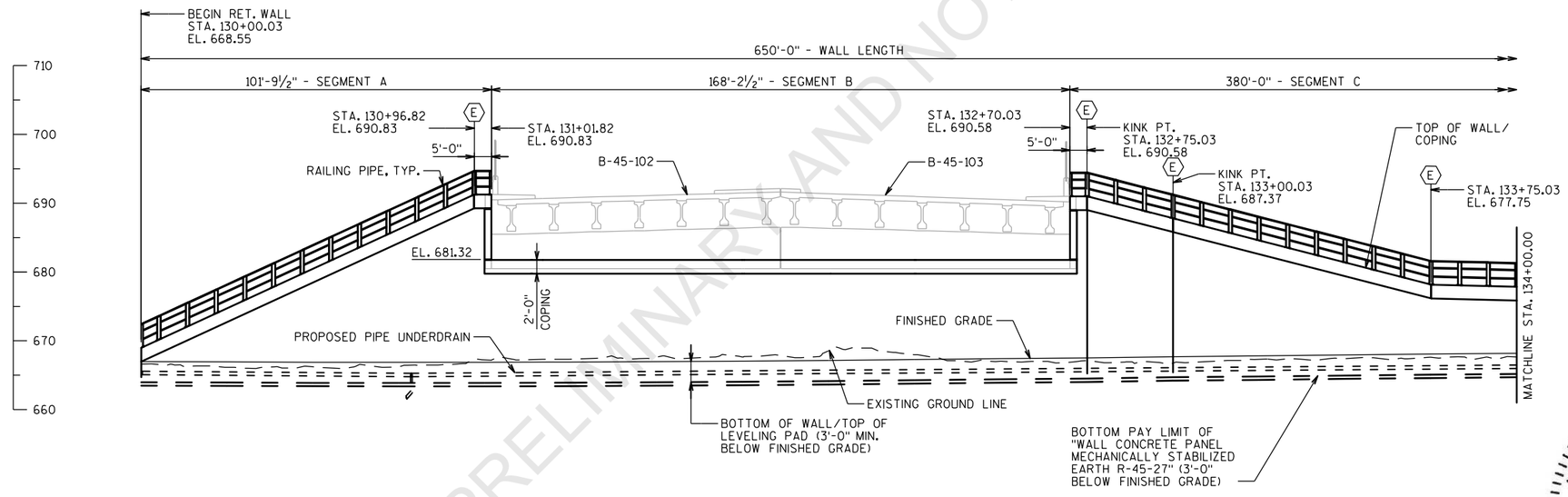
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PLAN

MSE RETAINING WALL



ELEVATION

LOOKING EAST

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION (1 OF 2)
2. GENERAL PLAN & ELEVATION (2 OF 2)
3. NOTES, QUANTITIES & PROFILE GRADE LINE
4. DESIGN DATA
5. EXCAVATION & BACKFILL LIMITS
6. TYPICAL SECTIONS
7. COPING DETAILS (1 OF 2)
8. COPING DETAILS (2 OF 2)
9. PIPE RAILING DETAILS
10. SUBSURFACE EXPLORATION (1 OF 2)
11. SUBSURFACE EXPLORATION (2 OF 2)

LEGEND

- TRAFFIC DIRECTION
- (E) EXPANSION JOINT "SEE COPING DETAILS (1 OF 2)" SHEET TO DETERMINE THE PLACEMENT OF ADDITIONAL EXPANSION JOINTS

UTILITY NOTES

1. EXISTING STORM SEWER TO BE REMOVED
2. PROPOSED WISDOT STORM SEWER
3. EXISTING OVERHEAD ELECTRIC TO BE RELOCATED
4. EXISTING CITY OF MEQUON WATER MAIN TO REMAIN
5. EXISTING UNDERGROUND ELECTRIC TO BE DISCONTINUED
6. PROPOSED FTMS
7. PROPOSED SIGNALS
8. PROPOSED LIGHTING
9. PROPOSED SIGNAL INTERCONNECT

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
HEATHER ANDERS (414) 410-6899

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

HNTB 250 E. WISCONSIN AVE. #2000 MILWAUKEE, WI 53202 (414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE R-45-27

WALL E. OF IH 43 UNDER PORT WASHINGTON RD.

COUNTY	CITY
OZAUKEE	MEQUON

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EAJ	HDA	EAJ	HDA

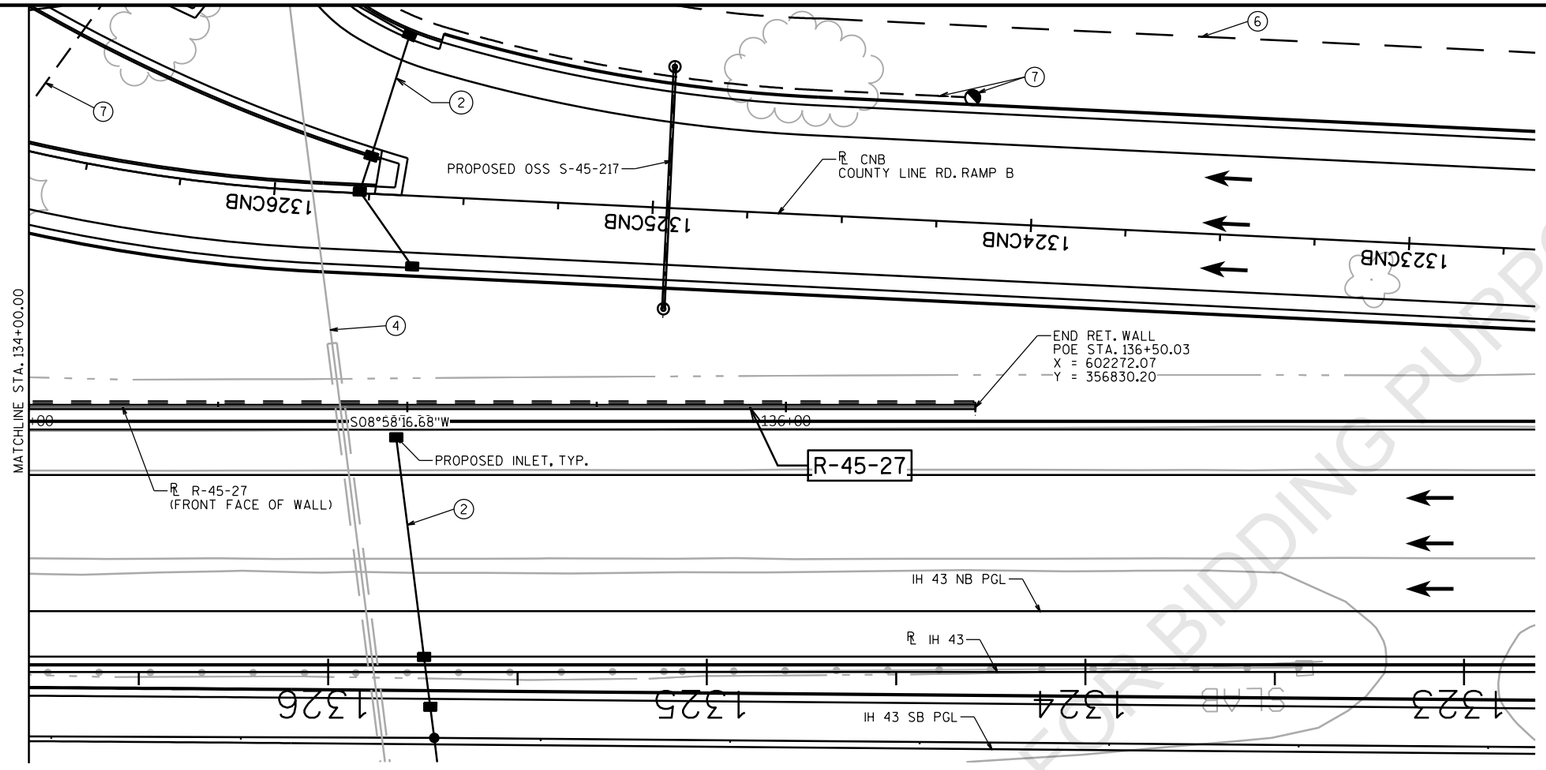
GENERAL PLAN & ELEVATION (1 OF 2)

SHEET 1 OF 11

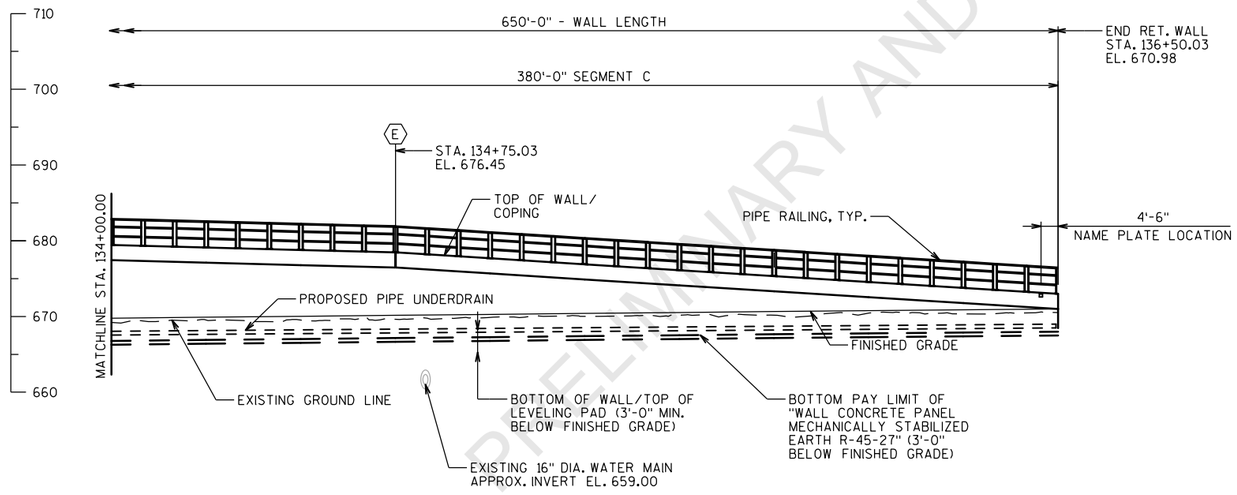
WISCONSIN PROFESSIONAL ENGINEER
ELIZABETH A. JELINEK
E-40123
MILWAUKEE
WI
7/29/21

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PLAN
MSE RETAINING WALL



ELEVATION
LOOKING EAST

LEGEND

TRAFFIC DIRECTION

(E) EXPANSION JOINT
"SEE COPING DETAILS (1 OF 2)" SHEET TO DETERMINE THE PLACEMENT OF ADDITIONAL EXPANSION JOINTS

UTILITY NOTES

(2) PROPOSED WISDOT STORM SEWER
(4) EXISTING CITY OF MEQUON WATER MAIN TO REMAIN
(6) PROPOSED FTMS
(7) PROPOSED SIGNALS

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-27

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GENERAL PLAN & ELEVATION (2 OF 2)

SHEET 2 OF 11

STATE PROJECT NUMBER
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GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

ALL STATIONS AND DIMENSIONS ARE ALONG THE FRONT FACE OF WALL, UNLESS SHOWN OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER, UNLESS SHOWN OTHERWISE.

ALL BAR STEEL REINFORCEMENT WITHIN CAST-IN-PLACE CONCRETE IS TO BE EPOXY COATED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL.

THE QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT FOR CAST-IN-PLACE COPING ARE PAID FOR UNDER "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27".

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

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS. THE TOP OF LEVELING PAD IS TAKEN AS A CONSTANT 3'-0" DEPTH BELOW FINISHED GRADE FOR MEASUREMENT PURPOSES. WALL AREAS CONSTRUCTED OUTSIDE THESE LIMITS WILL NOT BE MEASURED FOR PAYMENT.

THE COST OF FURNISHING AND PLACING THE MSE BACKFILL WITHIN THE REINFORCED SOIL ZONE IS TO BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27".

PLAN DIMENSIONS, QUANTITIES AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 7½" INCHES. FOR PANEL THICKNESSES OTHER THAN 7½" INCHES, THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

COORDINATE CONSTRUCTION OF R-45-27 WITH THE EAST ABUTMENTS OF B-45-102 AND B-45-103.

"SLOPE PAVING CONCRETE" ITEMS TO BE PAID AS PART OF BRIDGE PLAN.

THE REMOVAL OF THE EXISTING BRIDGE B-45-17 IS INCLUDED AS A LUMP SUM PAY ITEM AS PART OF THE B-45-102 QUANTITIES.

COORDINATE CONSTRUCTION OF R-45-27 WITH PROPOSED SIGNALS AND LIGHTING.

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALL IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27".

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN IN THESE PLANS.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE AS SHOWN ON THE "TYPICAL SECTIONS" SHEET.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE OF 240 PSF.

SOIL REINFORCEMENT MAY BE PLACED UP TO A MAXIMUM OF 15° FROM PERPENDICULAR IF NECESSARY TO AVOID INTERFERENCE WITH ITEMS BEHIND THE WALL. ANGLES GREATER THAN 15° REQUIRE APPROVAL FROM THE BUREAU OF STRUCTURES DESIGN SECTION.

ONLY WALL CONCRETE PANEL MSE SYSTEMS THAT USE STRIP SOIL TYPE REINFORCEMENT THAT ARE HINGED AT THE PANEL CONNECTION CAN BE USED FOR THIS PROJECT.

MSE WALL PANEL SHAPES SHALL BE SQUARE OR RECTANGULAR.

DESIGN THE ADDITIONAL MSE WALL REINFORCING STRIPS INSTALLED ON THE BACK FACES OF THE B-45-102 AND B-45-103 EAST ABUTMENTS. TO RESIST ALL HORIZONTAL EARTH PRESSURE, LIVE LOAD SURCHARGE NOTED ABOVE ACTING ON THE BACK FACE AND THE LOADS SPECIFIED ON THE "TYPICAL SECTIONS" SHEET. MSE STRAPS ATTACHED TO THE ABUTMENT INCLUDED IN BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27".

DESIGN SPECIFICATION:
AASHTO LRFD DESIGN SPECIFICATIONS, 9TH EDITION, 2020 WITH INTERIM REVISIONS, UNLESS OTHERWISE NOTED.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SEGMENT A	SEGMENT B	SEGMENT C	TOTAL
513.2001	RAILING PIPE	LF	105	-	381	486
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	10	-	-	10
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	102	169	380	651
SPV.0165.4003	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27	SF	1,707	2,964	4,755	9,426
	NON-BID ITEMS					
	NAME PLATE	EACH	-	-	-	1
	PREFORMED JOINT FILLER	SIZE	-	-	-	3/4", 1"
	NON-BITUMINOUS JOINT SEALER	SIZE	-	-	-	3/4", 1"
	EXPANDED POLYSTYRENE	SIZE	-	-	-	1"

ALL ITEMS ARE CATEGORY 3020



PROFILE GRADE LINE IH 43 NB

MATERIAL PROPERTIES

CONCRETE MASONRY
MSE WALL COPING _____ f'c = 3,500 P.S.I.
PRECAST CONCRETE WALL PANELS _____ f'c = 4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 _____ fy = 60,000 P.S.I.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-27

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NOTES, QUANTITIES & PROFILE GRADE LINE

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STATE PROJECT NUMBER
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MSE WALL SOIL PARAMETERS

	SOIL DESCRIPTION	TOTAL UNIT WEIGHT (PCF)	UNDRAINED		DRAINED	
			FRICTION ANGLE (DEGREES)	COHESION (PSF)	FRICTION ANGLE (DEGREES)	COHESION (PSF)
	MSE WALL REINFORCED ZONE ✳	120	30	N/A	30	--
	RETAINED SOIL - GRANULAR	120	30	N/A	30	--
	RETAINED SOIL - CLAY	120	--	1,500	28	--
BORING PWB-01	GRAVEL (5") BASE COURSE (6") EL. 668.8 - EL. 667.9	--	--	--	--	--
BORING PWB-01	FILL - CL (BR - GR) EL. 667.9 - EL. 666.3	125	--	2,000	30	25
BORING PWB-01	CL (GR) EL. 666.3 - EL. 628.8	125	--	2,250	30	50
BORING PWB-02	ASPHALT (7") EL. 666.7 - EL. 666.1	--	--	--	--	--
BORING PWB-02	CL (GR) EL. 666.1 - EL. 660	125	--	2250	30	50
BORING PWB-02	CL (GR) EL. 660 - EL. 645	125	--	1250	29	--
BORING PWB-02	CL (GR) EL. 645 - EL. 624.9	125	--	2250	30	50
BORING PWB-02	SP-SM (GR) EL. 624.9 - EL. 605.1	130	36	--	36	--
BORING PWB-02	CL W. SAND & GRAVEL (GR) EL. 605.1 - EL. 596.2	125	--	2,000	30	25
BORING PWB-02	SANDY CL-ML EL. 596.2 - EL. 595.3	140	--	--	36/42	100
BORING PW-04	ASPHALT (7") EL. 666.1 - EL. 665.5	--	--	--	--	--
BORING PW-04	FILL-POORLY GRADED SAND EL. 665.5 - EL. 663.9	130	30	--	30	--
BORING PW-04	GRAY LEAN CLAY EL. 663.9 - EL. 630	133	--	3,000	31	50
BORING PW-04	GRAY LEAN CLAY EL. 630 - EL. 614.3	133	--	3,000	31	50
BORING PW-04	GRAY SANDY SILT EL. 614.3 - EL. 609.4	135	32	--	32	--
BORING PW-04	GRAY LEAN CLAY WITH SAND EL. 609.4 - EL. 604.9	135	--	9,000	36	--
BORING PW-04	GRAY POORLY GRADED GRAVEL W SILT/SAND EL. 604.9 - EL. 599.9	135	36/42	--	36/42	--
BORING PW-04	GRAY POORLY GRADED SAND, POSS. ROCK EL. 599.9 - EL. 587.6	135	42	--	42	--
BORING PW-06 & PW-06A	FILL - BROWN CL EL. 666.9 - EL. 665.6	130	--	1,500	29	25
BORING PW-06 & PW-06A	BROWN LEAN CLAY EL. 665.6 - EL. 650	135	--	2,250	30	50
BORING PW-06 & PW-06A	BROWN LEAN CLAY EL. 650 - EL. 630	132	--	3,000	31	75
BORING PW-06 & PW-06A	BROWN LEAN CLAY EL. 630 - EL. 625.1	132	--	3,000	31	75
BORING PW-06 & PW-06A	LT. GRAY POORLY GRADED SAND WITH SILT EL. 625.1 - EL. 610.1	135	38	--	38	--
BORING PW-06 & PW-06A	GRAY CL-ML/CL/ML EL. 610.1 - EL. 598.9	135	--	3,000	32	--
BORING PW-06 & PW-06A	GRAY GW-GC EL. 598.9 - EL. 587	130	40	--	40	--

✳ DESIGN WALL FOR THESE VALUES

WALL ELEVATIONS SEGMENT A ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
130+00.03	668.55	666.56	666.19
130+25.00	674.30	666.50	665.73
130+50.00	680.05	666.47	665.78
130+75.00	685.44	666.45	665.83
130+96.82	690.83	666.46	666.92
131+00.00	690.83	666.46	666.80
131+01.82	690.83	666.46	666.77

WALL ELEVATIONS SEGMENT B ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
131+01.82	681.32	666.46	666.77
131+25.00	681.32	666.49	666.90
131+50.00	681.32	666.55	667.21
131+75.00	681.32	666.63	667.23
132+00.00	681.32	666.72	668.16
132+25.00	681.32	666.84	667.56
132+50.00	681.32	666.97	666.63
132+70.00	681.32	667.07	666.47
132+70.03	681.32	667.07	666.47

WALL ELEVATIONS SEGMENT C ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
132+70.03	690.58	667.07	666.47
132+75.00	690.58	667.10	666.67
132+75.03	690.58	667.10	666.68
133+00.00	687.37	667.27	666.31
133+00.03	687.37	667.27	666.32
133+25.00	684.17	667.40	666.88
133+50.00	680.96	667.52	666.98
133+75.00	677.75	667.65	667.18
133+75.03	677.75	667.65	667.18
134+00.00	677.43	667.77	667.20
134+25.00	677.10	667.90	667.53
134+50.00	676.78	668.02	667.52
134+75.00	676.45	668.15	667.64
134+75.03	676.46	668.15	667.63
135+00.00	675.67	668.27	667.85
135+25.00	674.89	668.40	668.02
135+50.00	674.11	668.52	668.17
135+75.00	673.33	668.65	668.17
136+00.00	672.54	668.77	668.43
136+25.00	671.76	668.88	668.34
136+50.00	670.98	668.98	668.51
136+50.03	670.98	668.98	668.51

LEGEND

◥ LINEARLY INTERPOLATE WALL ELEVATIONS BETWEEN STATIONS.

WALL EXTERNAL STABILITY EVALUATION

DIMENSIONS				
	WALL HEIGHT (FEET)	27.4	17.9	13.1
	EXPOSED WALL HEIGHT (FEET)	24.4	14.9	10.1
(T01)	MINIMUM LENGTH OF REINFORCEMENT/WALL WIDTH (FEET)	19.2	19.2	9.2
	REINFORCEMENT LENGTH/RETAINED HEIGHT RATIO	0.70	1.07	0.70
	WALL STATION	131+00	131+02	133+75
	BORING USED	PW-06	PW-06A	PW-06A
	CAPACITY TO DEMAND RATIO (CDR)			
	SLIDING	1.31	1.41	1.26
	ECCENTRICITY	1.52	2.10	1.60
	BEARING RESISTANCE	1.09	1.24	1.96
	FACTORED BEARING RESISTANCE (PSF)	7,517	7,517	6,799
GLOBAL STABILITY	END OF CONSTRUCTION	2.0	1.9	2.9
GLOBAL STABILITY	LONG-TERM	1.2	1.2	1.2

NOTES

(T01) THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND GLOBAL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGNED LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

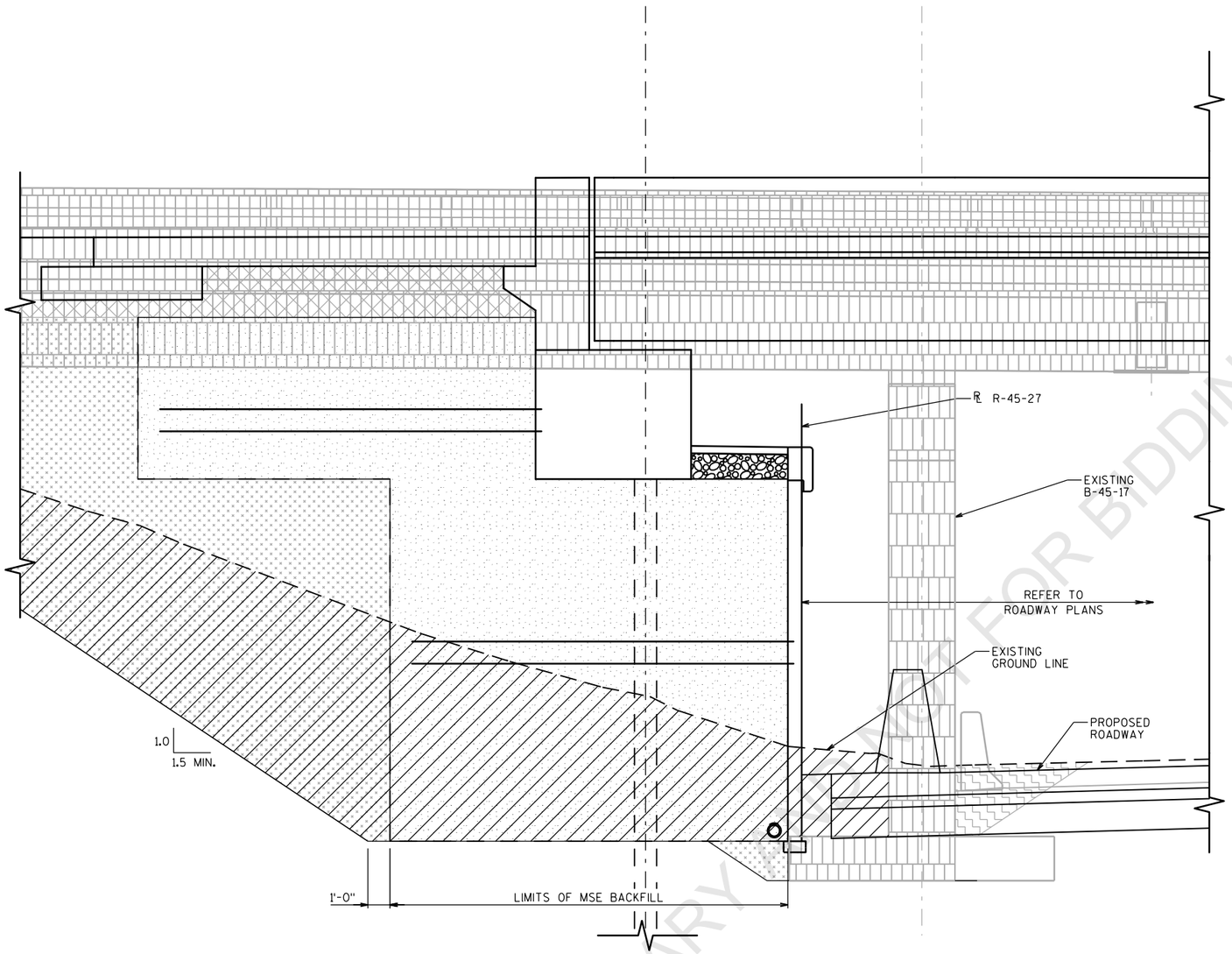
STRUCTURE R-45-27

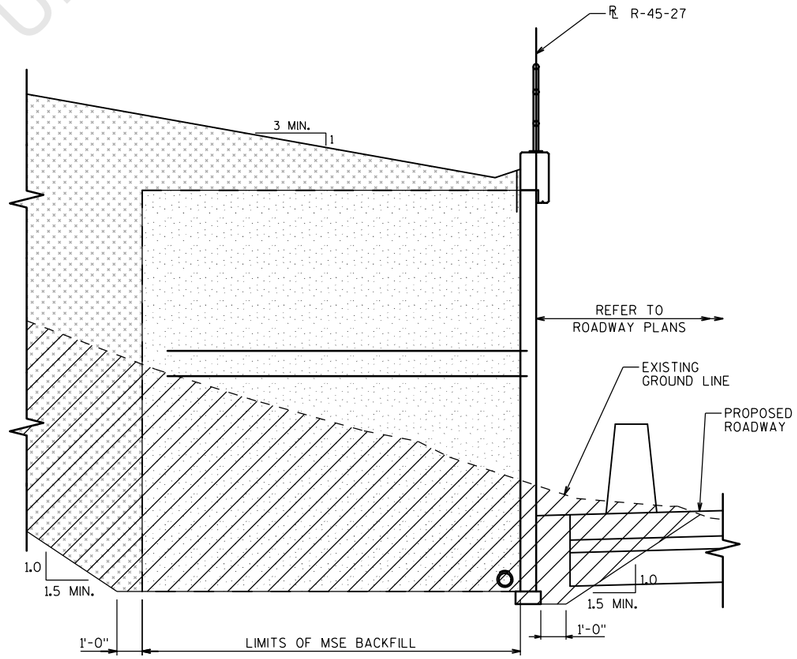
DRAWN BY EAJ | PLANS CK'D. HDA

DESIGN DATA

SHEET 4 OF 11

STATE PROJECT NUMBER
1229-04-74





EXCAVATION AND BACKFILL LIMITS

PRELIMINARY - NOT FOR BIDDING PURPOSES

8

8

LEGEND

- WALL EXCAVATION - INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27".
- MSE BACKFILL - INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27".
- BASE AGGREGATE DENSE 1¼" - NOT A RETAINING WALL ITEM. SEE BRIDGE PLANS.
- EXCAVATION INCLUDED WITH REMOVING STRUCTURE - NOT A RETAINING WALL ITEM. SEE BRIDGE PLANS.
- FILL MATERIAL - NOT A RETAINING WALL ITEM. SEE ROADWAY PLANS.
- REMOVING STRUCTURE - NOT A RETAINING WALL ITEM. SEE BRIDGE PLANS B-45-102.
- MSE BACKFILL OR SIZE 2 COARSE AGGREGATE - NOT A RETAINING WALL ITEM. SEE BRIDGE PLANS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-27

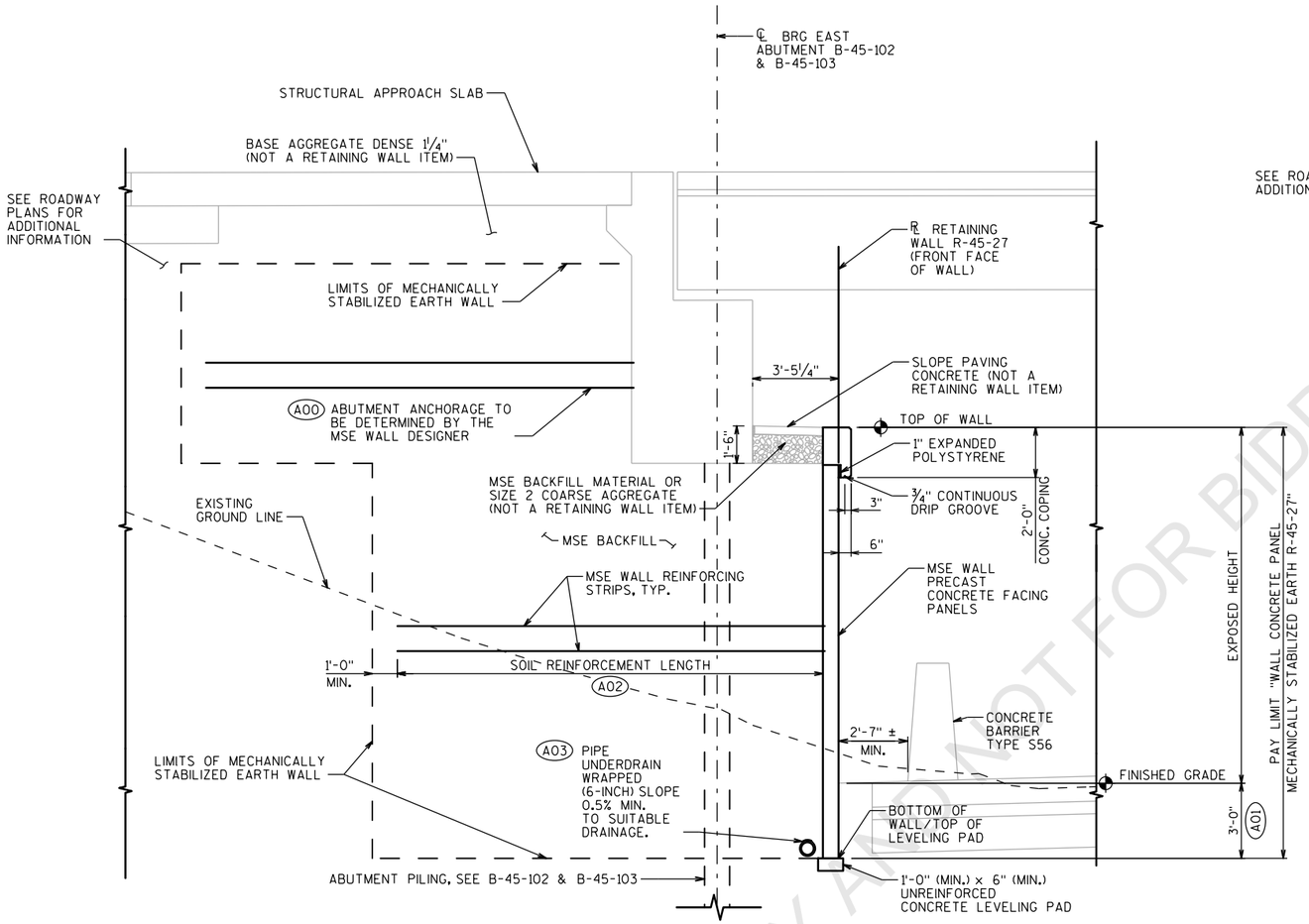
DRAWN BY EAJ | PLANS CK'D. HDA

EXCAVATION & BACKFILL LIMITS

SHEET 5 OF 11

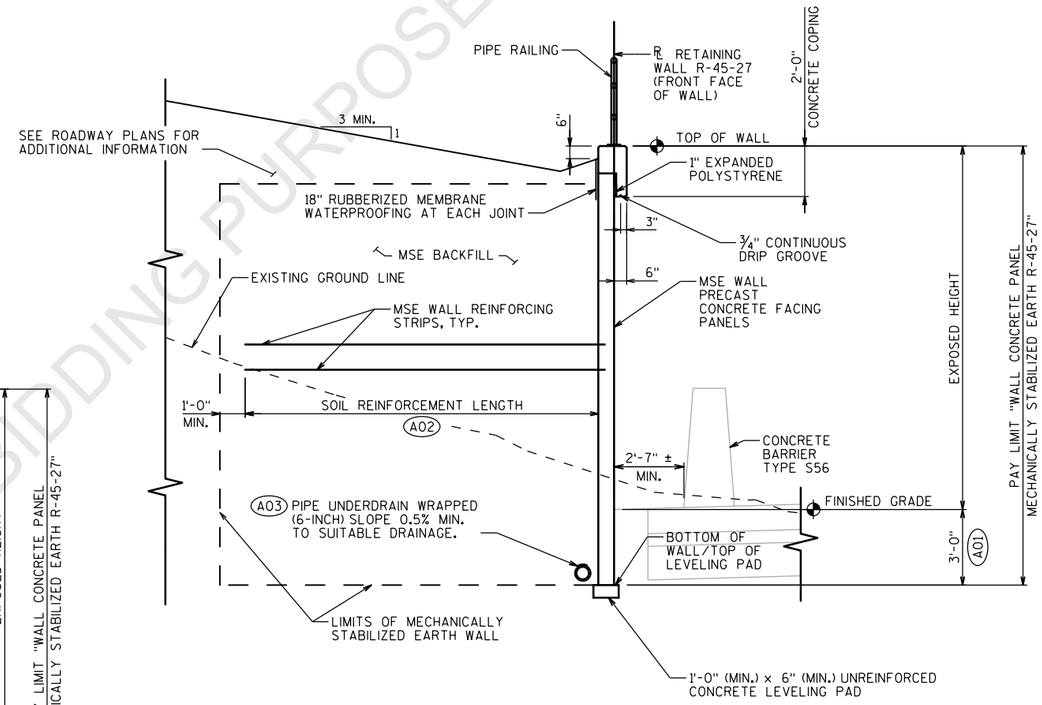
FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\R-45-27\cds\R45-27_080105_ex.dgn PLOT DATE : 7/28/2021 9:17:28 PM PLOT BY : ejelinek PLOT SCALE : 6:1

STATE PROJECT NUMBER
1229-04-74



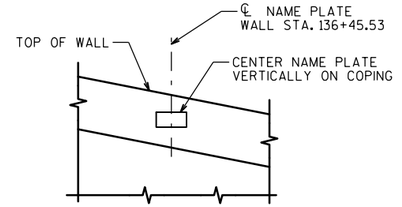
TYPICAL SECTION AT ABUTMENT - SEGMENT B

STA. 131+01.82 TO STA. 132+70.03
(LOOKING SOUTH)



TYPICAL SECTION - SEGMENTS A & C

SEGMENT A - STA. 130+00.03 TO STA. 131+01.82
SEGMENT C - STA. 132+70.03 TO STA. 136+50.03
(LOOKING SOUTH)



NAME PLATE DETAIL

LEGEND

(A00) UNFACTORED SUPERSTRUCTURE LATERAL LOADS TRANSFERRED TO THE ABUTMENT ARE TAKEN TO BE KIPS PER FOOT OF ABUTMENT LENGTH. THE VALUES ARE TO BE USED FOR THE LRFD DESIGN OF THE ABUTMENT ANCHORAGE BY THE MSE MANUFACTURER (MSE SYSTEM, DEAD MAN ANCHOR, OTHER). THE FOLLOWING AASHTO LINE LOADS SHALL BE NOTED ON PLAN:

BR = 0 KLF WS = 0 KLF
TU = 1.2 KLF WL = 0 KLF

(A01) MINIMUM DIMENSION FROM FINISHED GRADE AT FRONT FACE OF WALL TO TOP OF LEVELING PAD AS SHOWN. PAY LIMITS BASED ON MINIMUM DIMENSION.

(A02) SEE WALL EXTERNAL STABILITY EVALUATION TABLE ON "DESIGN DATA" SHEET FOR MINIMUM LENGTH OF MSE WALL REINFORCING STRIPS. SOIL REINFORCEMENT MUST EXTEND A MINIMUM OF 3.0 FEET BEYOND THE FAILURE PLANE FOR INTERNAL STABILITY AS DEFINED BY AASHTO SPECIFICATIONS.

(A03) CONNECT PIPE UNDERDRAIN WRAPPED TO PIPE UNDERDRAIN UNPERFORATED AT APPROXIMATE WALL STA. 130+78.00. RUN PIPE UNDER WALL AND CONNECT TO PROPOSED WISDOT INLET NO. 4438-S3.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-27

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TYPICAL SECTIONS

SHEET 6 OF 11

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STATE PROJECT NUMBER
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LEGEND

(A04) 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FULL HEIGHT OF CLOSURE WALL. INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27"

(A05) 1" EXPANDED POLYSTYRENE

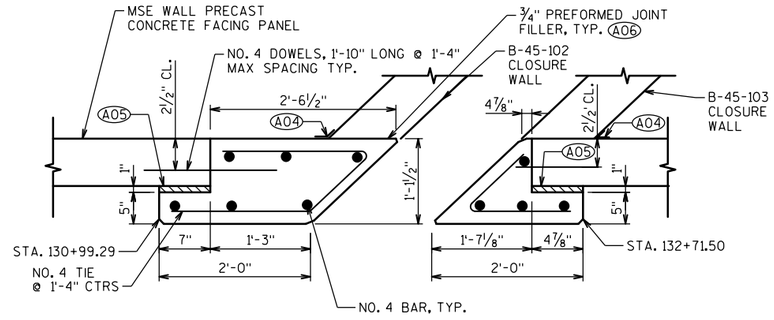
(A06) SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

(A13) SEE "DESIGN DATA" SHEET FOR ELEVATION INFORMATION.

(A15) MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANEL. INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27".

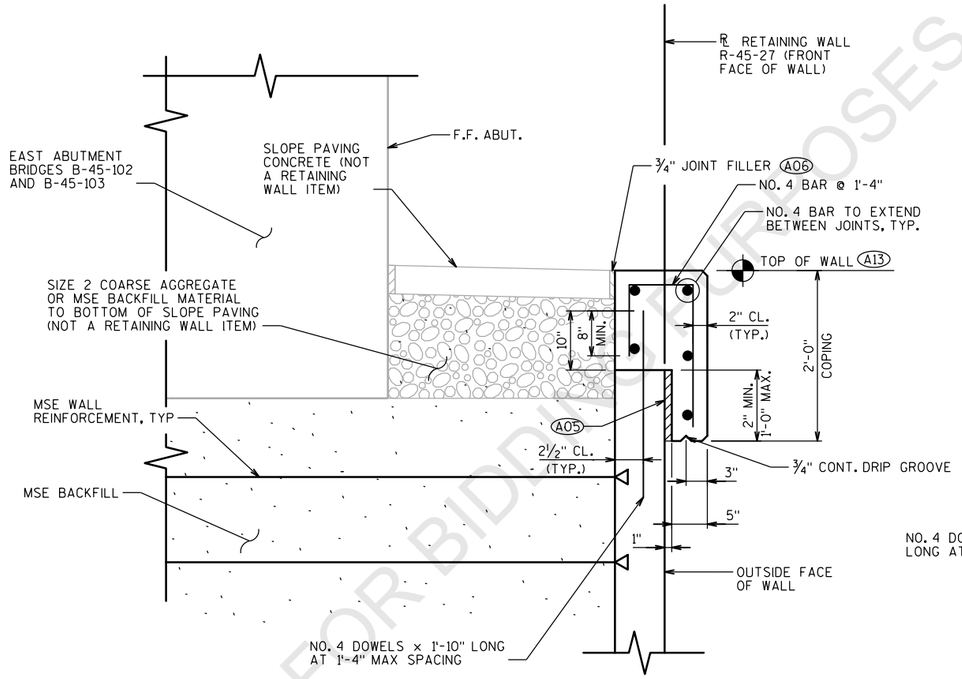
F.F. FRONT FACE

B.F. BACK FACE



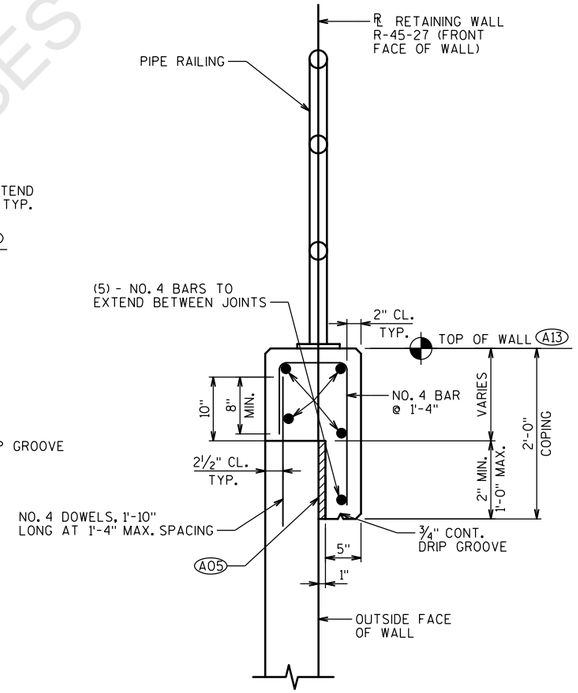
VERTICAL COPING DETAIL

(VERTICAL COPING SEGMENTS A & C)



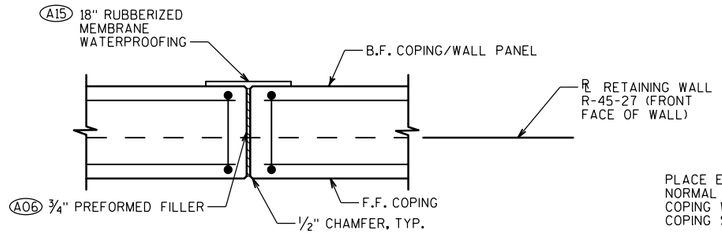
CROSS SECTION THRU ABUTMENT AT MSE WALL & COPING DETAIL AT SEGMENT B

REINFORCEMENT AND CONCRETE SHOWN IN COPING DETAIL ARE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27"



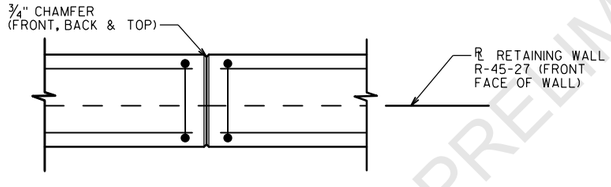
CAST-IN-PLACE CONCRETE COPING DETAIL AT SEGMENTS A & C

REINFORCEMENT AND CONCRETE SHOWN IN COPING DETAIL ARE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27"



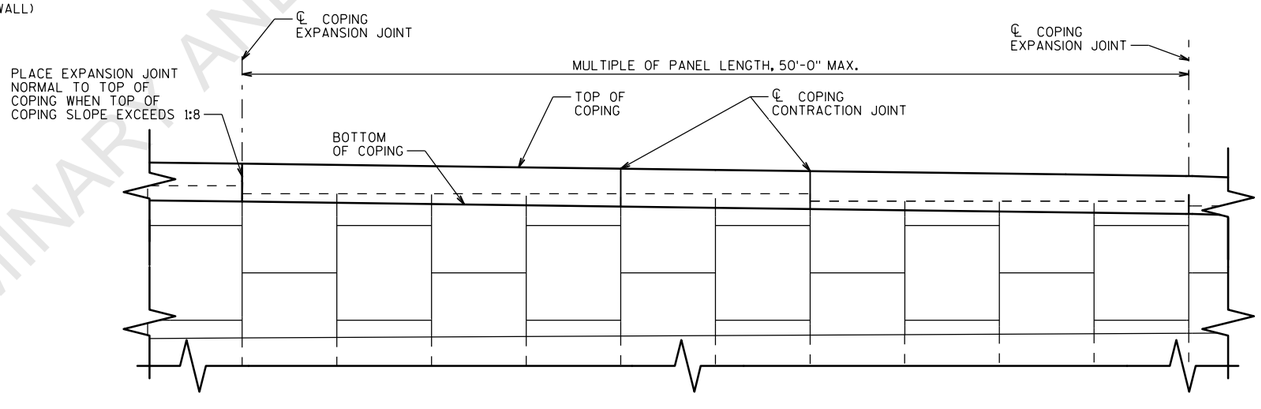
COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT.
MAX. SPACING OF JOINT = 50'
MUST COINCIDE WITH PANEL JOINT ON FRONT FACE



COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT.
MAX. SPACING OF JOINT = 12'
MUST COINCIDE WITH PANEL JOINT ON FRONT FACE



PARTIAL ELEVATION

NOTE: ALL JOINTS SHALL BE LOCATED AS SHOWN AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-27

DRAWN BY EAJ | PLANS CK'D. HDA

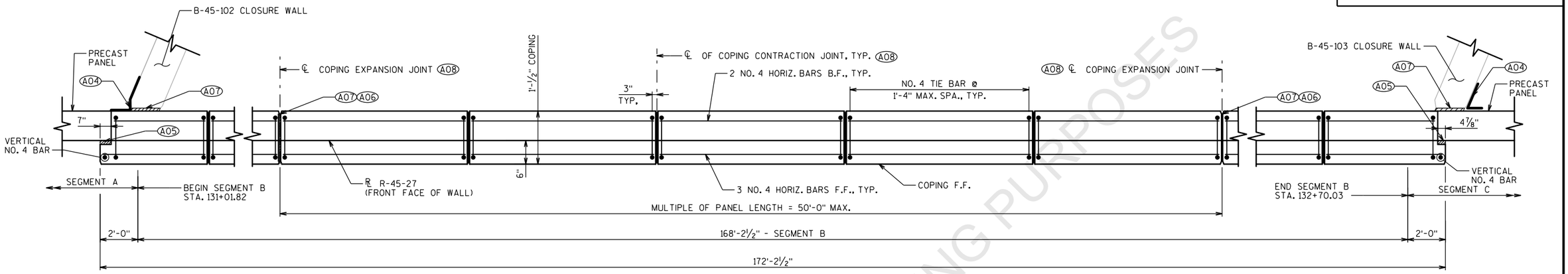
COPING DETAILS (1 OF 2)

SHEET 7 OF 11

8

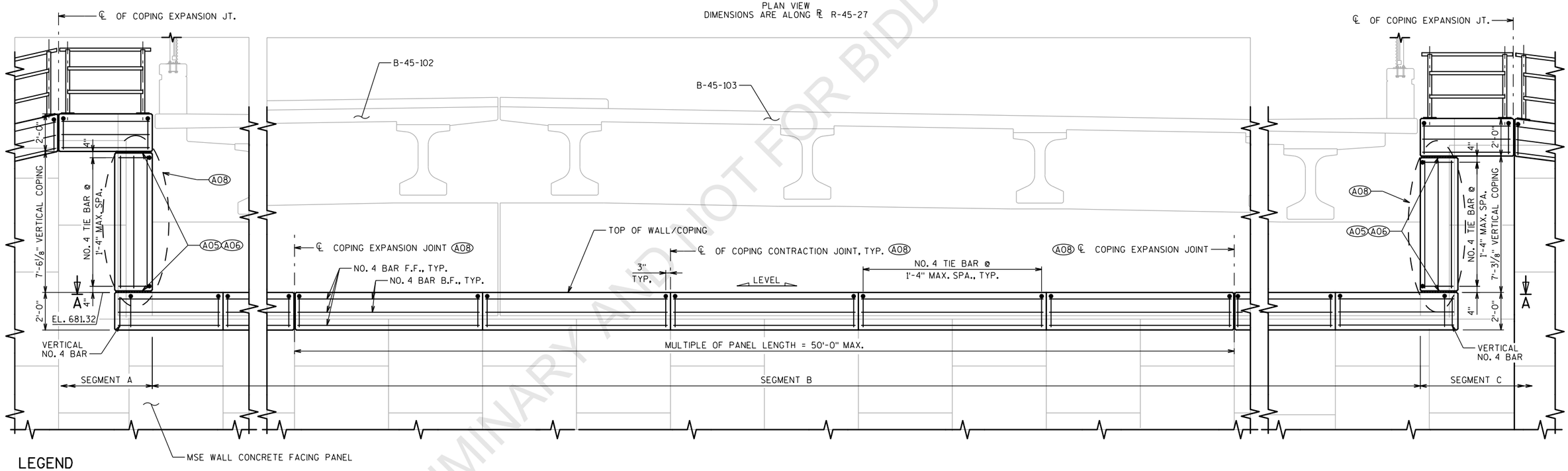
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PLOT DATE : 7/28/2021 9:17:35 PM
PLOT BY : ejelinek
PLOT SCALE : 2.66667:1

STATE PROJECT NUMBER
1229-04-74



SECTION A-A

PLAN VIEW
DIMENSIONS ARE ALONG ℞ R-45-27



LEGEND

- A04 — 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FULL HEIGHT OF CLOSURE WALL. INCLUDED IN BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-27".
- A05 — 1" PREFORMED JOINT FILLER.
- A06 — SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)
- A07 — ¾" PREFORMED JOINT FILLER
- A08 — REFER TO "COPING DETAILS (1 OF 2)" FOR ADDITIONAL DETAILS
- F.F. — FRONT FACE
- B.F. — BACK FACE

ELEVATION SEGMENT B

LOOKING AT FRONT FACE OF WALL
DIMENSIONS ARE ALONG ℞ R-45-27

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-27

DRAWN BY EAJ | PLANS CK'D. HDA

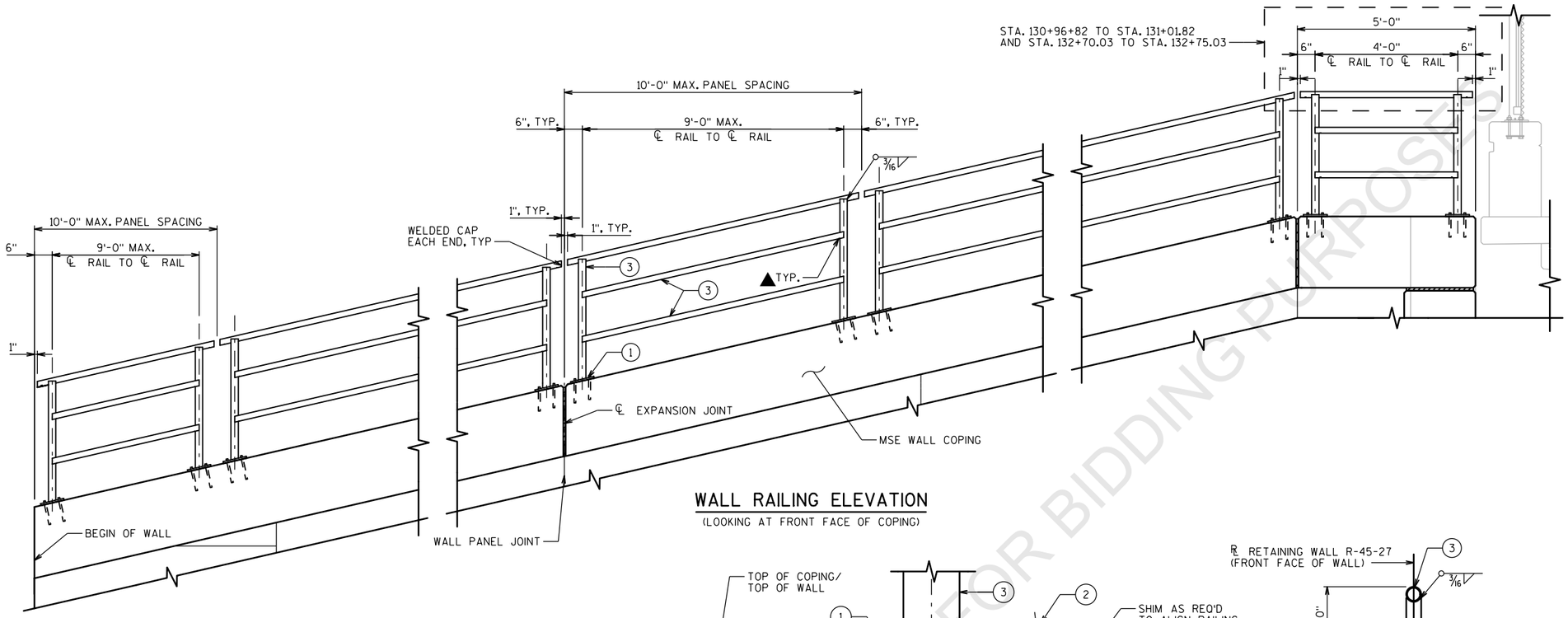
COPING DETAILS (2 OF 2)

SHEET 8 OF 11

8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\R-45-27\cds\R45-27_080302_de.dgn
PLOT DATE : 7/28/2021 9:17:38 PM
PLOT BY : ejelinek
PLOT SCALE : 5.33333:1

STATE PROJECT NUMBER
1229-04-74



WALL RAILING ELEVATION

(LOOKING AT FRONT FACE OF COPING)

LEGEND

1. PLATE 5/8" × 6" × 8" WITH 3/4" × 1 1/2" SLOTTED HOLES.
2. STAINLESS STEEL CONCRETE ADHESIVE ANCHORS, 5/8" DIA. × 8 3/4" LONG WITH NUT AND WASHER. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.
3. 2 1/2" DIA STANDARD PIPE RAIL (2.875" O.D.). PLACE POSTS VERTICAL. WELD TO NO.(1). PLACE RAILS PARALLEL TO TOP OF COPING/ TOP OF WALL. WELD TO NO.(3).

▲ 1/2" DIA. DRAIN HOLE AT BOTTOM OF EACH RAIL END.

NOTES

BID ITEM "RAILING PIPE" INCLUDES ALL STEEL ITEMS SHOWN, CONCRETE ADHESIVE ANCHORS, GALVANIZING, AND PAINTING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO.(1) SHALL CONFORM TO A.S.T.M. A709 GRADE 36. STANDARD PIPE RAIL SHALL CONFORM TO A.S.T.M. A500 GRADE B (NO.(3)).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED AND USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

FILL BOLT SLOT OPENINGS IN SHIMS AND PLATE NO.(1) AND CAULK AROUND PERIMETER OF PLATE NO.(1) WITH NON-STAINING BLACK NON-BITUMINOUS JOINT SEALER.

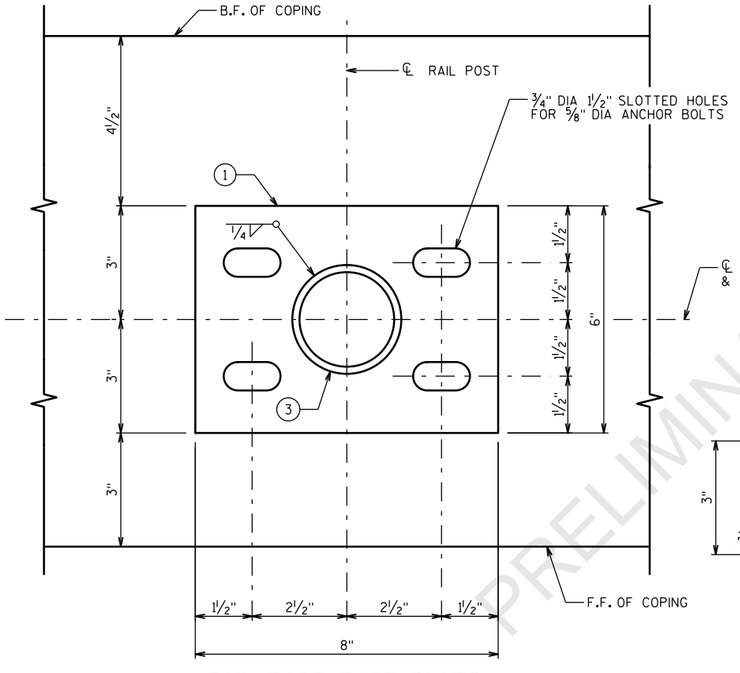
VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

GALVANIZE AFTER FABRICATION AND THEN PAINT GALVANIZED RAILING ASSEMBLIES WITH A TWO COAT SYSTEM SPECIFICALLY INTENDED FOR PAINTING OF GALVANIZED SURFACES PER THE STANDARD SPECIFICATIONS. SHIMS SHALL BE GALVANIZED PER ASTM 123. THE FINISH COLOR SHALL BE FEDERAL COLOR NO. 27038 BLACK.

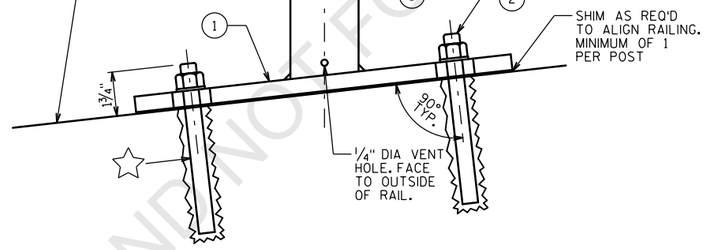
RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 2 POSTS.

PAINT TOUCH-UP TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

COORDINATE COPING EXPANSION JOINT PLACEMENT AND RAILING PANEL SPACING. COPING EXPANSION JOINT, WALL PANEL JOINT AND EDGE OF PANEL JOINT TO ALIGN AS SHOWN IN WALL RAILING ELEVATION DETAIL.



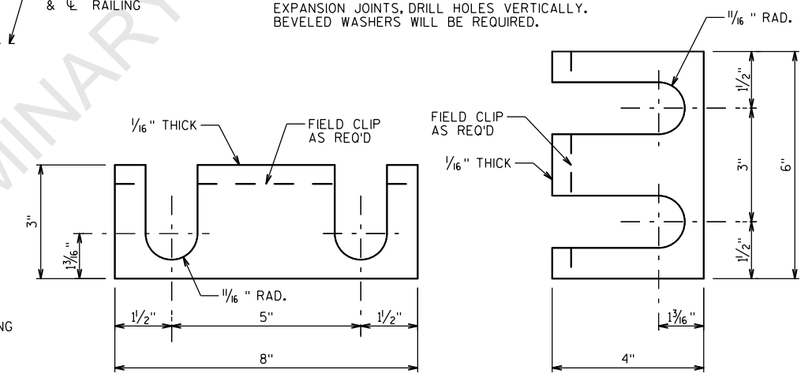
RAIL POST BASE PLATE



ANCHOR BOLTS FOR RAIL POST

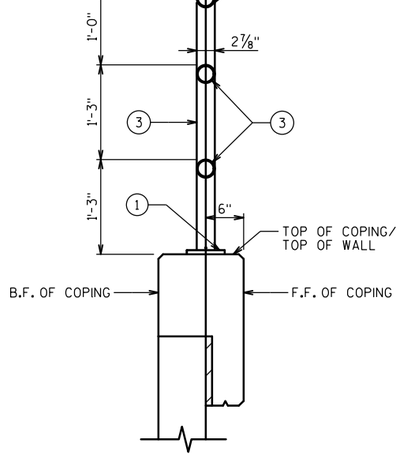
(BETWEEN EXPANSION JOINTS)

☆ DRILL HOLES NORMAL TO TOP OF COPING EXCEPT AT EXPANSION JOINTS. AT EXPANSION JOINTS, DRILL HOLES VERTICALLY. BEVELED WASHERS WILL BE REQUIRED.



RAIL POST SHIM DETAIL

(2 SETS PER POST)



WALL RAILING SECTION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-27

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PIPE RAILING DETAILS

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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
PWB-02	APRIL 16, 2014	357010	602305
PW-04	APRIL 17, 2014	357405	602353
PW-06	JANUARY 12, 2015	357168	602319
PW-06A	DECEMBER 23, 2014	357204	602323

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

REPORT COMPLETED BY: HNTB CORP.

ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) OZAUKEE COUNTY

NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

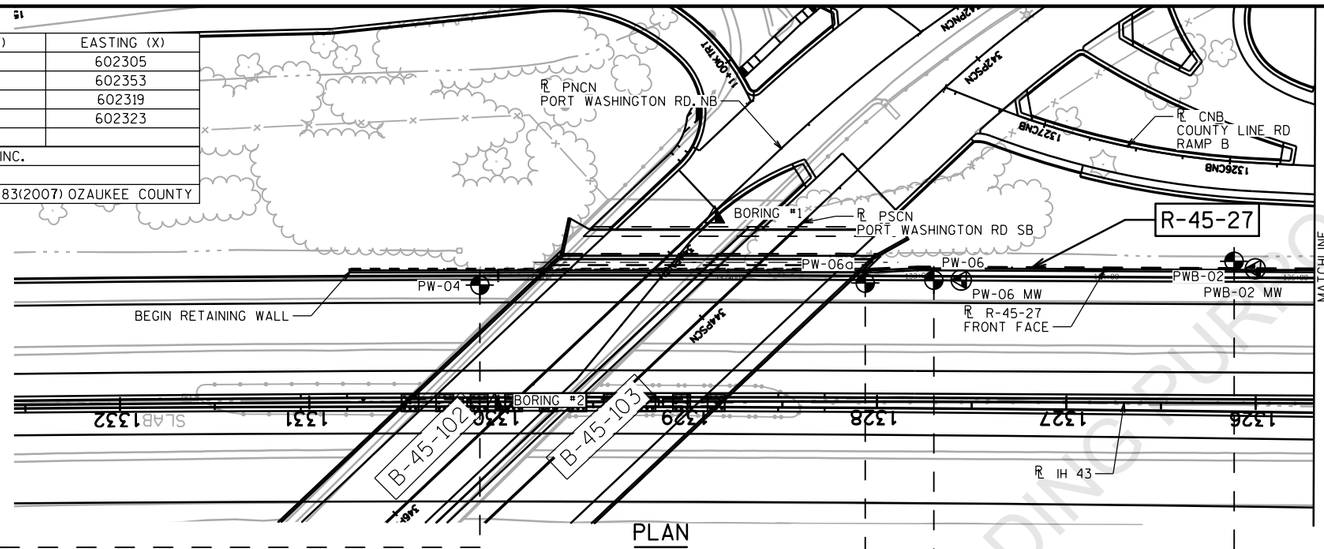
WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

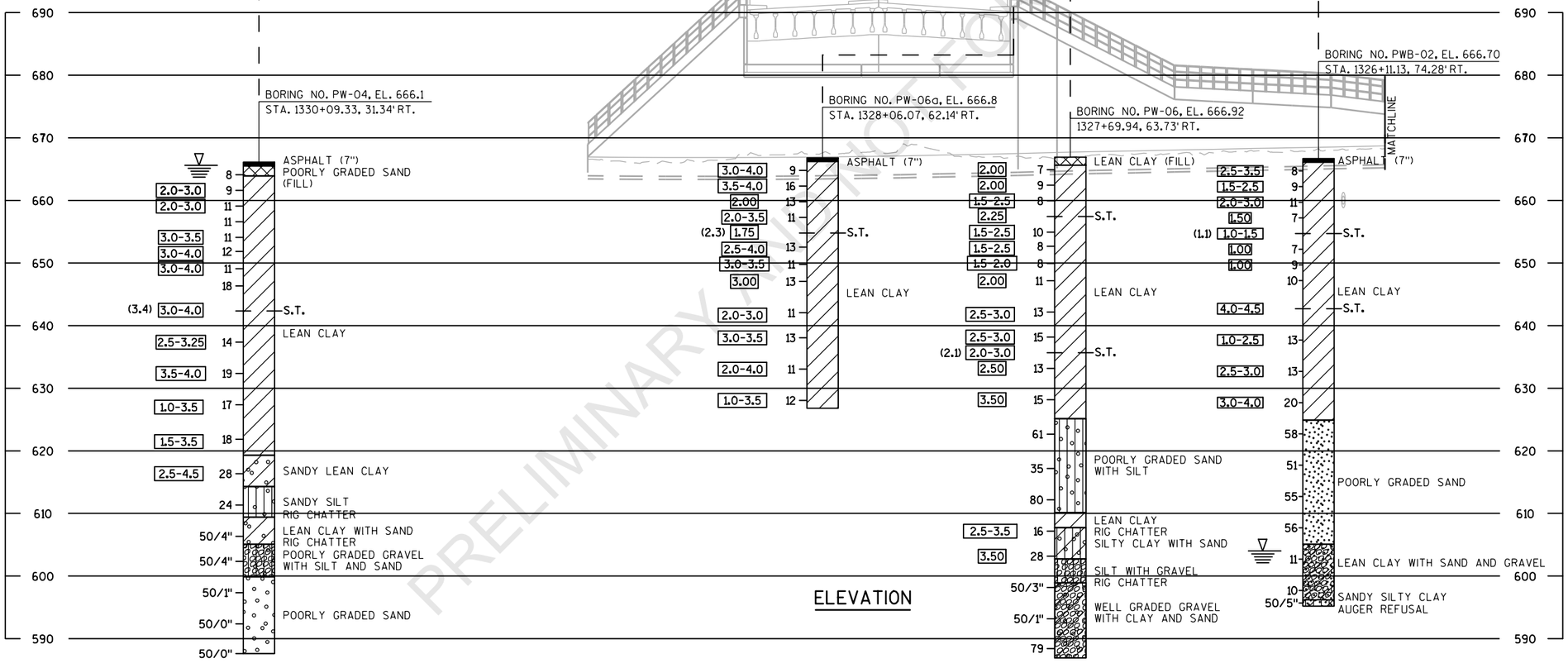
DENOTES SOIL BORING LOCATION

DENOTES MONITORING WELL LOCATION

DENOTES HISTORICAL BORING



PLAN



ELEVATION

PRELIMINARY - NOT FOR BIDDING PURPOSES

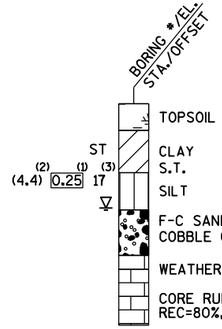
STATE PROJECT NUMBER

1229-04-74

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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE R-45-27

DRAWN BY NNM | PLANS CK'D. CVH

SUBSURFACE EXPLORATION (1 OF 2)

SHEET 10 OF 11

8

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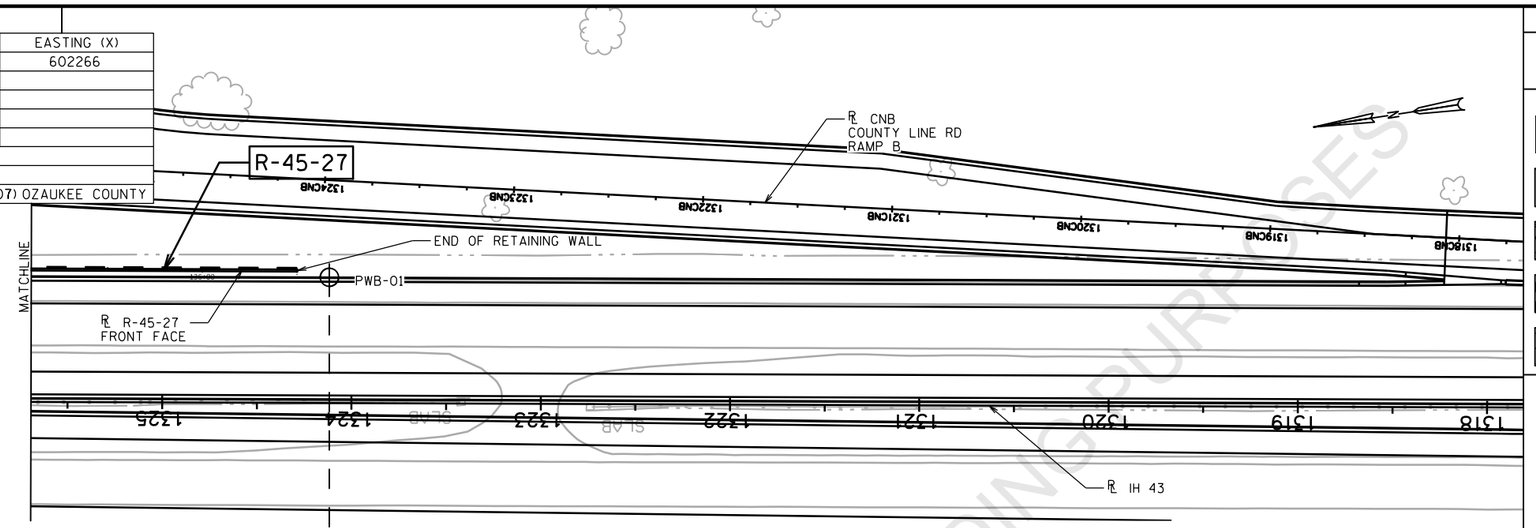
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
PWB-01	JUNE 26, 2014	356814	602266
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) OZAUKEE COUNTY			

NOTE:

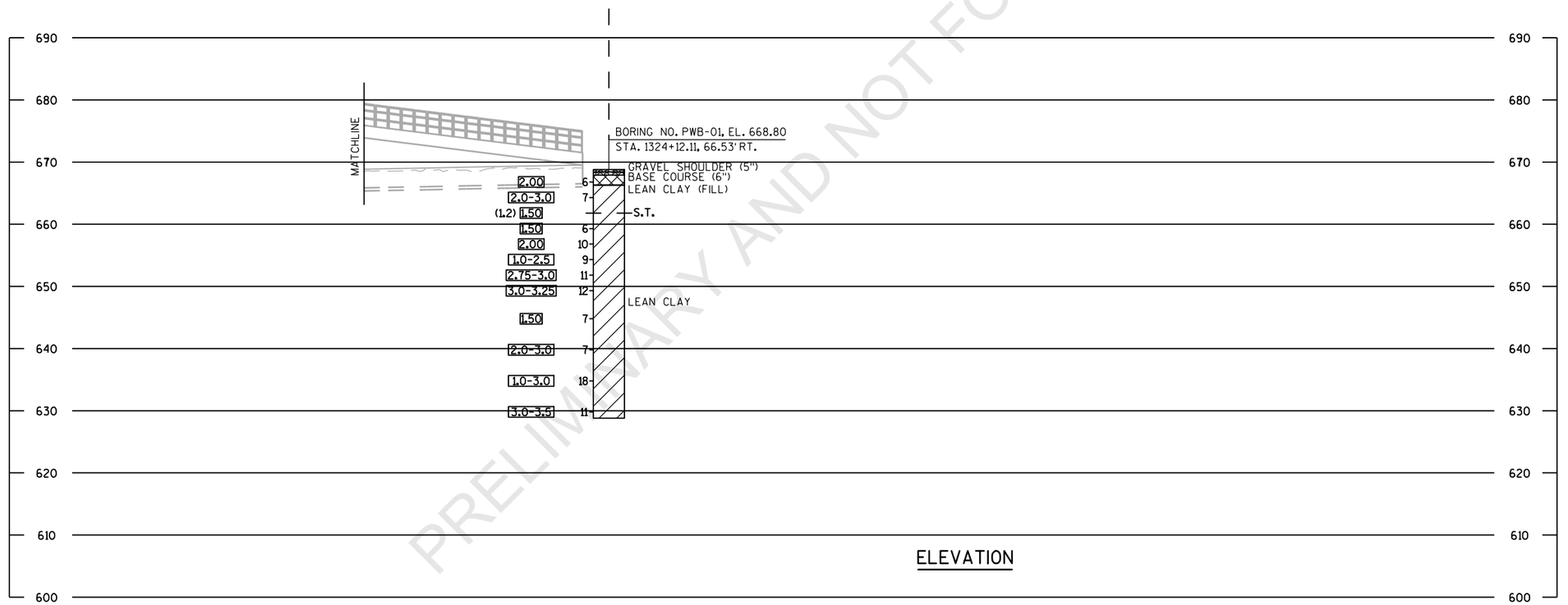
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

⊕ DENOTES SOIL BORING LOCATION



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

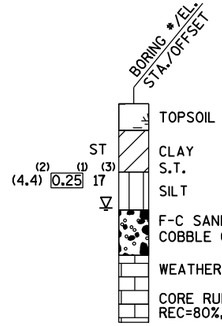
STATE PROJECT NUMBER

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-27

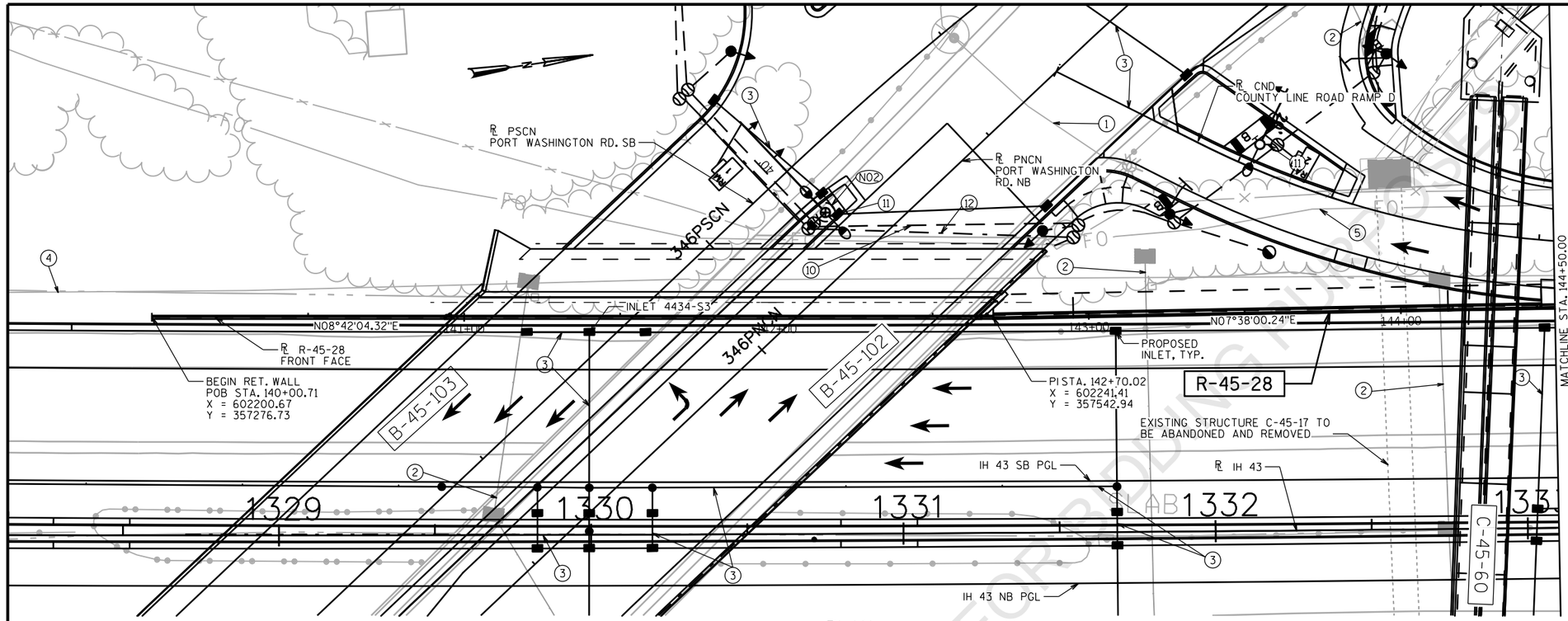
DRAWN BY NNM | PLANS CK'D. CVH

SUBSURFACE EXPLORATION (2 OF 2)

SHEET 11 OF 11

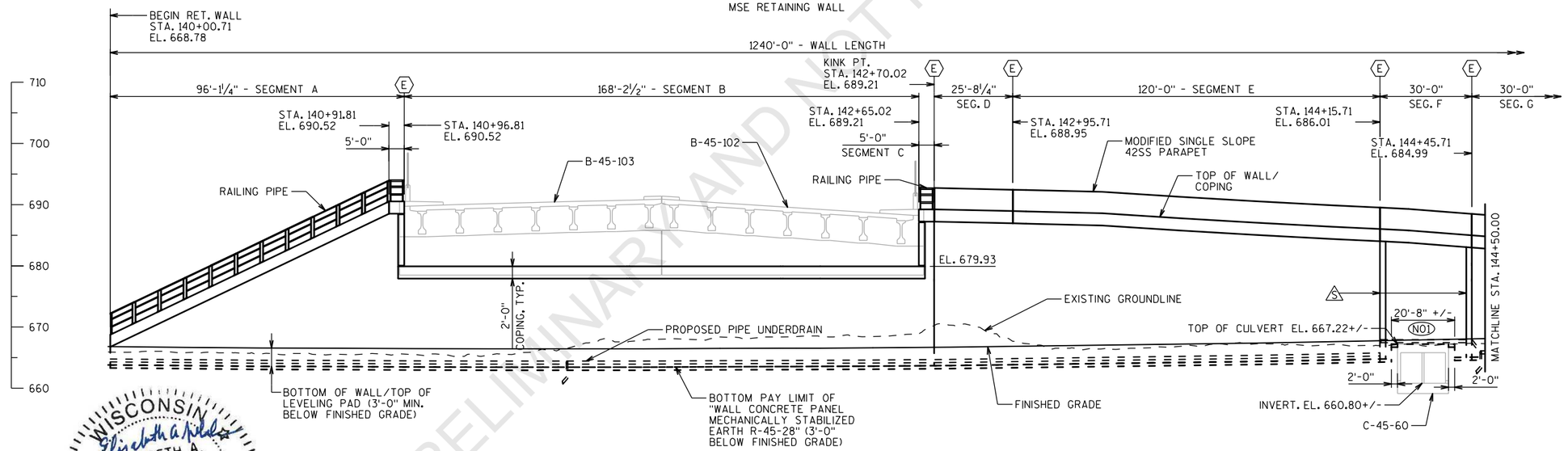
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PLAN

MSE RETAINING WALL



ELEVATION

LOOKING WEST

PRELIMINARY AND NOT FOR BIDDING PURPOSES

WISCONSIN
ELIZABETH A. JELINEK
E-40123
MILWAUKEE
WI
7/29/21
PROFESSIONAL ENGINEER

STATE PROJECT NUMBER

1229-04-74

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION (1 OF 3)
2. GENERAL PLAN & ELEVATION (2 OF 3)
3. GENERAL PLAN & ELEVATION (3 OF 3)
4. NOTES, QUANTITIES & PROFILE GRADE LINE
5. DESIGN DATA
6. EXCAVATION & BACKFILL LIMITS
7. TYPICAL SECTIONS (1 OF 3)
8. TYPICAL SECTIONS (2 OF 3)
9. TYPICAL SECTIONS (3 OF 3)
10. COPING DETAILS (1 OF 2)
11. COPING DETAILS (2 OF 2)
12. PARAPET & ANCHOR SLAB DETAILS (1 OF 6)
13. PARAPET & ANCHOR SLAB DETAILS (2 OF 6)
14. PARAPET & ANCHOR SLAB DETAILS (3 OF 6)
15. PARAPET & ANCHOR SLAB DETAILS (4 OF 6)
16. PARAPET & ANCHOR SLAB DETAILS (5 OF 6)
17. PARAPET & ANCHOR SLAB DETAILS (6 OF 6)
18. PIPE RAILING DETAILS
19. SUBSURFACE EXPLORATION (1 OF 2)
20. SUBSURFACE EXPLORATION (2 OF 2)

LEGEND

- TRAFFIC DIRECTION
- (E) EXPANSION JOINT
- (S) SLIP JOINT
- (NO1) TYPICAL WALL EMBEDMENT 3'-0" MIN., EXCEPT AS NOTED WHERE BOTTOM OF PROPOSED WALL MATCHES TOP OF C-45-60 CULVERT
- (NO2) CONCRETE BASE SLEEVE FOR TYPE 10-SPECIAL CONCRETE BASE. CENTER @ N 357495.00, E 602200.17. SLEEVE BOT. EL. = 672.66, SLEEVE DIA. = 36".

UTILITY AND STORM SEWER NOTES

1. EXISTING CITY OF MEQUON LIGHTING TO BE RELOCATED
2. EXISTING WISDOT STORM SEWER TO BE REMOVED
3. PROPOSED WISDOT STORM SEWER
4. EXISTING WISDOT FTMS TO BE RELOCATED
5. EXISTING CENTURYLINK FIBER OPTIC TO BE RELOCATED
10. PROPOSED SIGNALS
11. PROPOSED LIGHTING
12. PROPOSED SIGNAL INTERCONNECT

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
HEATHER ANDERS (414) 410-6899

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

HNTB
250 E. WISCONSIN AVE. #2000
MILWAUKEE, WI 53202
(414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE R-45-28

WALL W. OF IH 43 UNDER PORT WASHINGTON RD.

COUNTY	CITY
OZAUKEE	MEQUON

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

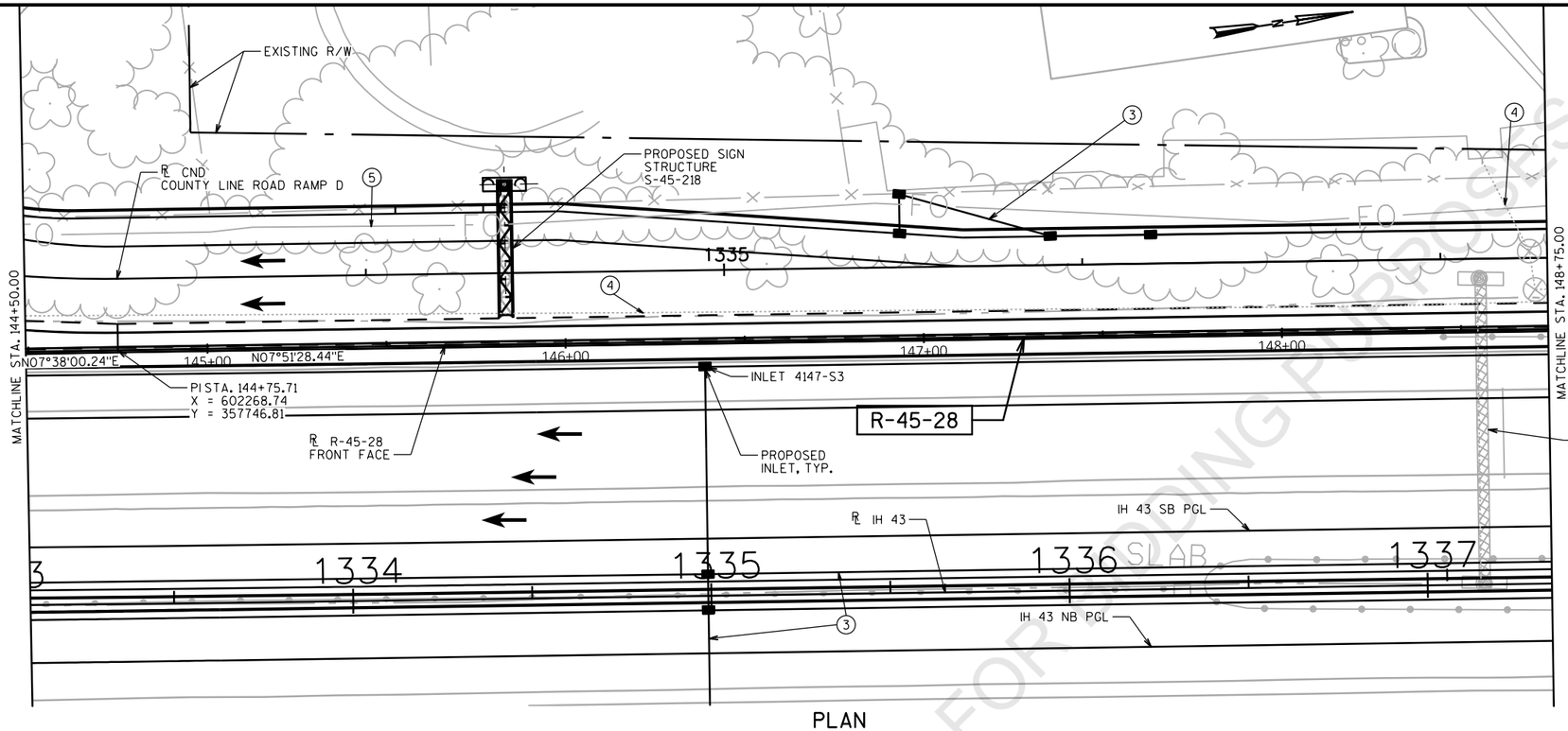
DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EAJ	CVH	EAJ	HDA

GENERAL PLAN & ELEVATION (1 OF 3)

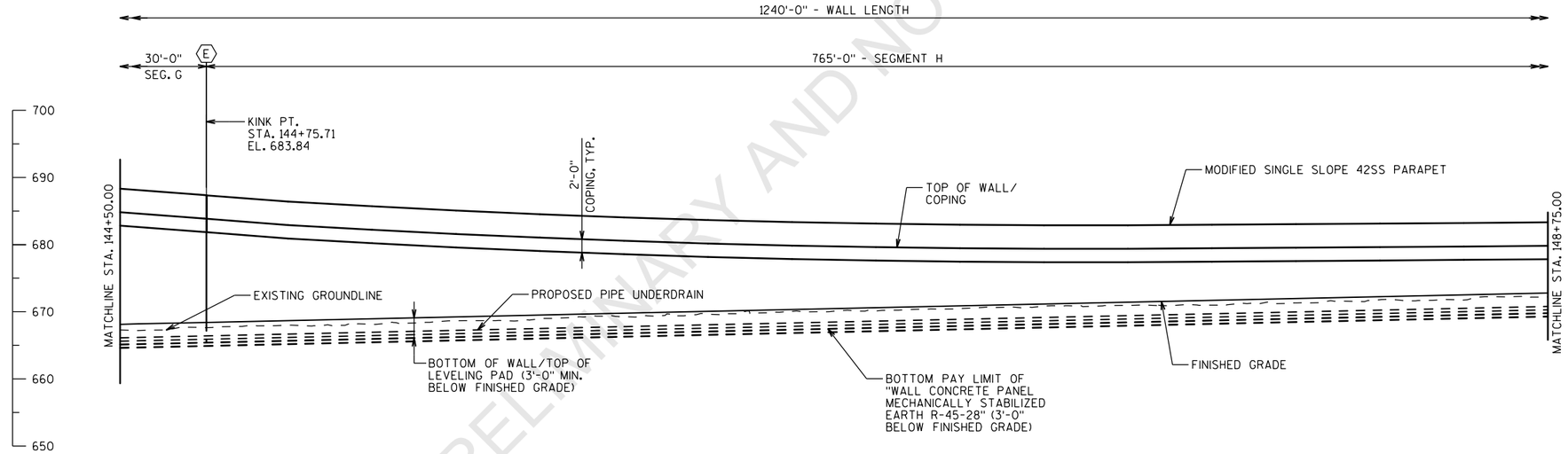
SHEET 1 OF 20

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\R-45-28\cds\R45-28_080101_gp.dgn
PLOT DATE : 7/29/2021 7:36:20 AM
PLOT BY : ejelinek
PLOT SCALE : 40:1

STATE PROJECT NUMBER
1229-04-74



PLAN
MSE RETAINING WALL



ELEVATION
LOOKING WEST

LEGEND

- TRAFFIC DIRECTION
- (E) EXPANSION JOINT

UTILITY AND STORM SEWER NOTES

(3) PROPOSED WISDOT STORM SEWER
(4) EXISTING WISDOT FTMS TO BE RELOCATED
(5) EXISTING CENTURYLINK FIBER OPTIC TO BE RELOCATED

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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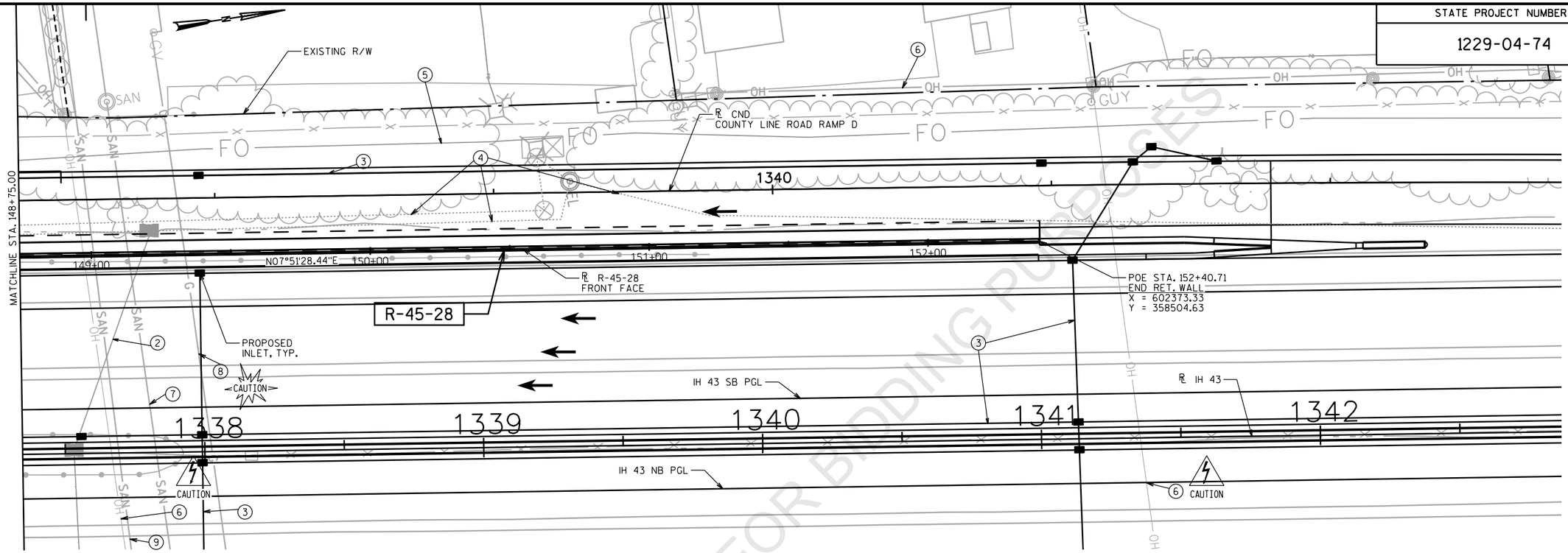
STRUCTURE R-45-28

DRAWN BY EAJ | PLANS CK'D. HDA

GENERAL PLAN & ELEVATION (2 OF 3)

SHEET 2 OF 20

STATE PROJECT NUMBER
1229-04-74


EXISTING R/W
CND
COUNTY LINE ROAD RAMP D
1340
MATCHLINE STA. 148+75.00
149+00
N07°51'28.44"E
150+00
151+00
152+00
R-45-28
R-45-28
FRONT FACE
POE STA. 152+40.71
END RET. WALL
X = 602373.33
Y = 358504.63
PROPOSED
INLET, TYP.
CAUTION
IH 43 SB PGL
IH 43
1338
1339
1340
1341
1342
IH 43 NB PGL
CAUTION
CAUTION
SAN
SAN
SAN
SAN
SAN
SAN
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OH
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GUY
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SAN

STATE PROJECT NUMBER
1229-04-74

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALL IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28".

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN IN THESE PLANS.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE AS SHOWN ON THE "TYPICAL SECTIONS" SHEETS.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE OF 240 PSF.

SOIL REINFORCEMENT MAY BE PLACED UP TO A MAXIMUM OF 15° FROM PERPENDICULAR IF NECESSARY TO AVOID INTERFERENCE WITH ITEMS BEHIND THE WALL. ANGLES GREATER THAN 15° REQUIRE APPROVAL FROM THE BUREAU OF STRUCTURES DESIGN SECTION.

ONLY WALL CONCRETE PANEL MSE SYSTEMS THAT USE STRIP SOIL TYPE REINFORCEMENT THAT ARE HINGED AT THE PANEL CONNECTION CAN BE USED FOR THIS PROJECT.

MSE WALL PANEL SHAPES SHALL BE SQUARE OR RECTANGULAR.

DESIGN THE ADDITIONAL MSE WALL REINFORCING STRIPS INSTALLED ON THE BACK FACES OF THE B-45-102 AND B-45-103 WEST ABUTMENTS. TO RESIST ALL HORIZONTAL EARTH PRESSURE, LIVE LOAD SURCHARGE NOTED ABOVE ACTING ON THE BACK FACE AND THE LOADS SPECIFIED ON THE "TYPICAL SECTIONS (1 OF 3)" SHEET. MSE STRAPS ATTACHED TO THE ABUTMENT INCLUDED IN BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28".

DESIGN SPECIFICATION:
AASHTO LRFD DESIGN SPECIFICATIONS, 9TH EDITION, 2020 WITH INTERIM REVISIONS, UNLESS OTHERWISE NOTED.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

ALL STATIONS AND DIMENSIONS ARE ALONG THE FRONT FACE OF WALL, UNLESS SHOWN OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER, UNLESS SHOWN OTHERWISE.

ALL BAR STEEL REINFORCEMENT WITHIN CAST-IN-PLACE CONCRETE IS TO BE EPOXY COATED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL.

THE QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT FOR SEGMENTS A, B & C CAST-IN-PLACE COPING ARE PAID FOR UNDER "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28".

THE QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT FOR SEGMENTS D, E, F, G & H CAST-IN-PLACE ANCHOR SLAB, COPING AND PARAPET ARE PAID FOR UNDER ITEMS "CONCRETE MASONRY RETAINING WALLS" AND "BAR STEEL REINFORCEMENT HS COATED STRUCTURES" RESPECTIVELY.

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

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS. THE TOP OF LEVELING PAD IS TAKEN AS A CONSTANT 3'-0" DEPTH BELOW FINISHED GRADE FOR MEASUREMENT PURPOSES. WALL AREAS CONSTRUCTED OUTSIDE THESE LIMITS WILL NOT BE MEASURED FOR PAYMENT.

THE COST OF FURNISHING AND PLACING THE MSE BACKFILL WITHIN THE REINFORCED SOIL ZONE IS TO BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28".

PLAN DIMENSIONS, QUANTITIES AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 7½" INCHES. FOR PANEL THICKNESSES OTHER THAN 7½" INCHES, THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

COORDINATE CONSTRUCTION OF R-45-28 WITH THE WEST ABUTMENTS OF B-45-102 AND B-45-103.

COORDINATE CONSTRUCTION OF R-45-28 WITH ADJACENT SIGNALS AND LIGHTING. NO COMPONENTS TO BE PLACED WITHIN MSE REINFORCED BACKFILL LIMITS.

"SLOPE PAVING CONCRETE" ITEMS TO BE PAID AS PART OF BRIDGE PLAN.

REMOVAL OF EXISTING BRIDGE B-45-17 INCLUDED WITH B-45-102.

APPLY PROTECTIVE SURFACE TREATMENT TO THE EXPOSED TOP SURFACE OF THE ANCHOR SLAB.

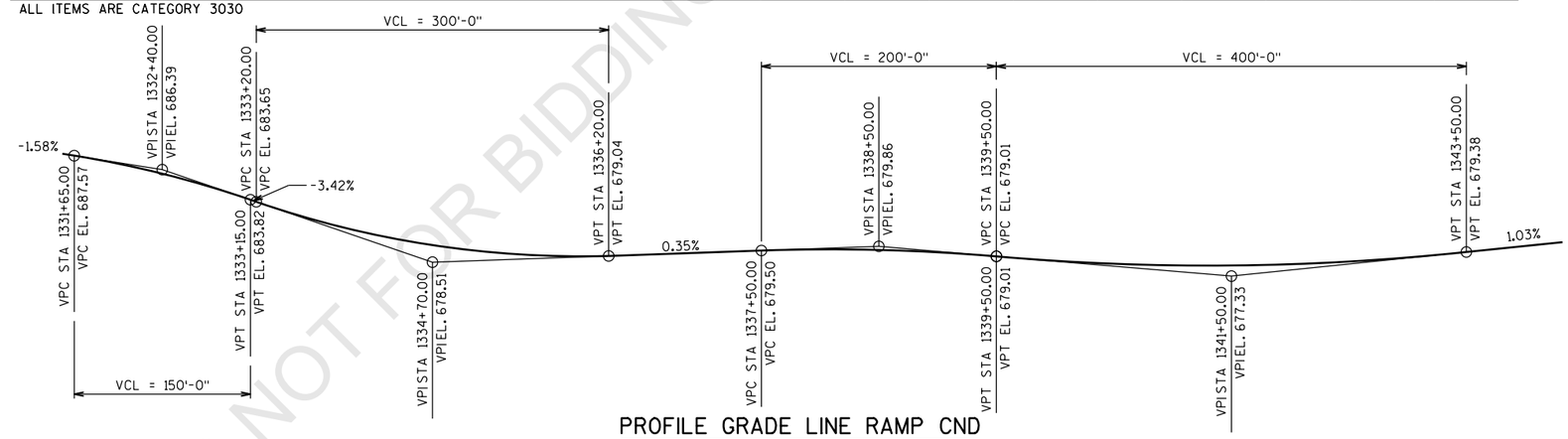
APPLY PIGMENTED SURFACE SEALER TO THE TOP AND INSIDE FACES OF THE PARAPET.

EXISTING DMS OSS S-45-401 AND WEST FOUNDATION REMOVAL INCLUDED WITH ROADWAY REMOVALS. SEE ROADWAY PLANS.

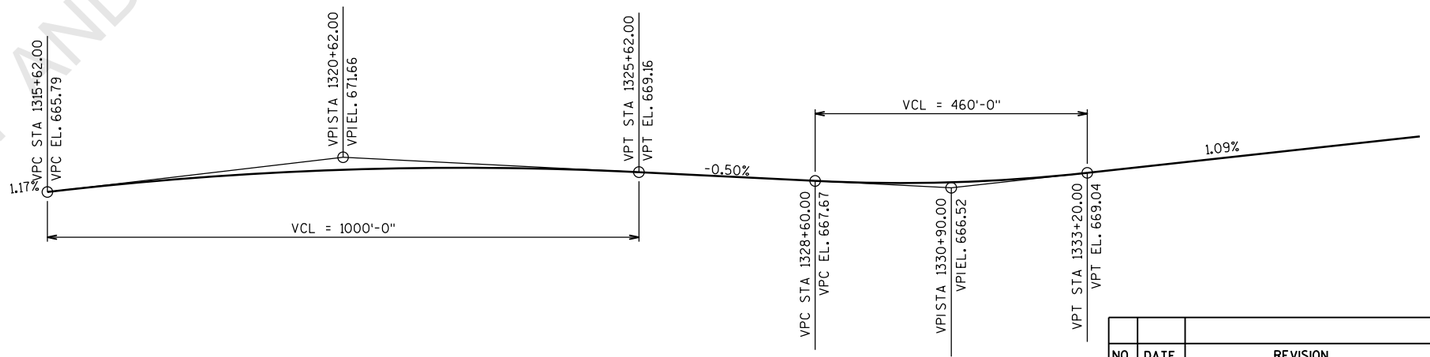
TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SEGMENT A	SEGMENT B	SEGMENT C	SEGMENT D	SEGMENT E	SEGMENT F	SEGMENT G	SEGMENT H	TOTAL
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	1	7	2	15	340	365
502.3210	PIGMENTED SURFACE SEALER	SY	-	-	-	13	60	15	15	377	480
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	-	-	-	12	56	14	26	540	648
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	-	-	-	1,420	6,960	1,700	2,640	64,110	76,830
513.2001	RAILING PIPE	LF	99	-	5	-	-	-	-	-	104
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-	-	-	3	3	2	1	12	21
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	-	8	-	-	-	-	10	-	18
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	97	169	5	26	120	30	30	765	1,242
SPV.0060.4003	CONCRETE BASE SLEEVES	EACH	-	1	-	-	-	-	-	-	1
SPV.0165.4004	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28	SF	1,459	2,524	121	609	2,606	523	527	6,670	15,040
	NON-BID ITEMS										
	NAME PLATE	EACH	-	-	-	-	-	-	-	-	1
	PREFORMED JOINT FILLER	SIZE	-	-	-	-	-	-	-	-	3/4", 1"
	CORK FILLER	SIZE	-	-	-	-	-	-	-	-	1"
	NON-BITUMINOUS JOINT SEALER	SIZE	-	-	-	-	-	-	-	-	1"
	EXPANDED POLYSTYRENE	SIZE	-	-	-	-	-	-	-	-	1"

ALL ITEMS ARE CATEGORY 3030



PROFILE GRADE LINE RAMP CND



PROFILE GRADE LINE IH 43 SB

MATERIAL PROPERTIES

CONCRETE MASONRY
ANCHOR SLAB & PARAPET _____ f'c = 4,000 P.S.I.
MSE WALL COPING _____ f'c = 3,500 P.S.I.
PRECAST CONCRETE WALL PANELS _____ f'c = 4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 _____ fy = 60,000 P.S.I.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-28

DRAWN BY EAJ | PLANS CK'D. HDA

NOTES, QUANTITIES & PROFILE GRADE LINE

SHEET 4 OF 20

8

8

MSE WALL SOIL PARAMETERS

	SOIL DESCRIPTION	TOTAL UNIT WEIGHT (PCF)	UNDRAINED		DRAINED	
			FRICTION ANGLE (DEGREES)	COHESION (PSF)	FRICTION ANGLE (DEGREES)	COHESION (PSF)
	MSE WALL REINFORCED ZONE ✳	120	--	N/A	30	--
	RETAINED SOIL - GRANULAR	120	--	N/A	30	--
	RETAINED SOIL - CLAY	120	--	1,500	28	--
BORING PW-01	ASPHALT (12") EL. 665.9 - EL. 664.9	130	--	--	--	--
	CL (BR-GR) EL. 664.9 - EL. 663.3	130	--	3,000	31	50
	CL (GR) EL. 663.3 - EL. 650.0	132	--	2,000	30	25
	CL (GR) EL. 650.0 - EL. 630.0	134	--	2,500	31	50
	CL (GR) EL. 630.0 - EL. 620.0	134	--	2,500	31	50
	CL (GR) EL. 620.0 - EL. 609.9	135	--	4,000	32	100
	SANDY ML (GR) EL. 609.9 - EL. 594.9	135	--	--	36/42	--
BORING CFC-03	GRAVEL WITH SAND EL. 667.6 - EL. 667.1	--	--	--	--	--
	CL T. GRAVEL (BR) EL. 667.1 - EL. 660.0	125	--	2,750	30	50
	CL T. GRAVEL (GR) EL. 660.0 - EL. 617.6	130	--	3,500	31	50
BORING PWD-01	ASPHALT (7") EL. 668.6 - EL. 668.0	--	--	--	--	--
	FILL - CL (GR) EL. 668.0 - EL. 666.0	130	--	3,000	31	50
	CL (GR) EL. 666.0 - EL. 652.0	125	--	1,750	30	--
	CL (GR) EL. 652.0 - EL. 623.7	130	--	2,750	31	50
	SP W. GRAVEL (GR) EL. 623.7 - EL. 621.8	135	--	--	32	--
	SM (GR) EL. 621.8 - EL. 612.5	140	--	--	36/42	--
	SANDY ML (GR) EL. 612.5 - EL. 609.8	140	--	--	36/42	--
BORING PWD-02	ASPHALT (7") EL. 670.2 - EL. 669.6	--	--	--	--	--
	CL (BR) EL. 669.6 - EL. 667.7	135	--	4,000	32	100
	CL (GR) EL. 667.7 - EL. 657.0	125	--	2,500	30	50
	CL (GR) EL. 657.0 - EL. 633.4	130	--	3,500	31	75
	SM T. GRAVEL (GR) EL. 633.4 - EL. 630.3	135	--	--	36	--
BORING PWD-09	ASPHALT (6") BASE COURSE (7") EL. 672.5 - EL. 671.4	--	--	--	--	--
	CL (GR-BR) EL. 671.4 - EL. 669.5	125	--	2,250	30	50
	CL (GR) EL. 669.5 - EL. 647.5	130	--	3,000	31	50

✳ DESIGN WALL FOR THESE VALUES

WALL ELEVATIONS SEGMENT A ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
140+00.71	668.78	666.80	665.91
140+25.00	674.58	666.69	665.80
140+50.00	680.54	666.60	665.61
140+75.00	686.51	666.53	665.53
140+91.81	690.52	666.49	665.48
140+96.81	690.52	666.48	665.60

WALL ELEVATIONS SEGMENT B ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
140+96.81	679.93	666.48	665.60
141+00.00	679.93	666.48	665.50
141+25.00	679.93	666.45	665.47
141+50.00	679.93	666.44	666.51
141+75.00	679.93	666.46	667.89
142+00.00	679.93	666.49	668.38
142+25.00	679.93	666.55	668.44
142+50.00	679.93	666.63	668.45
142+65.02	679.93	666.69	668.92

WALL ELEVATIONS SEGMENT C ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
142+65.02	689.21	666.69	668.92
142+70.02	689.21	666.71	670.27

LEGEND

◥ LINEARLY INTERPOLATE WALL ELEVATIONS BETWEEN STATIONS.

WALL ELEVATIONS SEGMENT D ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
142+70.02	689.21	666.71	670.27
142+75.00	689.16	666.73	670.31
142+95.71	688.95	666.84	667.67

WALL ELEVATIONS SEGMENT E ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
142+95.71	688.95	666.84	667.67
143+00.00	688.91	666.87	667.31
143+25.00	688.61	667.03	666.43
143+50.00	687.79	667.20	666.84
143+75.00	687.04	667.40	667.25
144+00.00	686.37	667.63	667.16
144+15.71	686.01	667.78	666.97

WALL ELEVATIONS SEGMENT F ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
144+15.71	686.01	667.78	666.97
144+25.00	685.80	667.87	667.25
144+45.71	684.99	668.08	667.36

WALL ELEVATIONS SEGMENT G ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
144+45.71	684.99	668.08	667.36
144+50.00	684.82	668.13	667.29
144+75.00	683.87	668.41	667.60
144+75.71	683.84	668.41	667.62

WALL ELEVATIONS SEGMENT H ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
144+75.71	683.84	668.41	667.62
145+00.00	682.92	668.68	667.98
145+25.00	682.21	668.96	667.98
145+50.00	681.58	669.24	668.66
145+75.00	681.03	669.51	668.96
146+00.00	680.56	669.79	669.23
146+25.00	680.17	670.06	669.66
146+50.00	679.85	670.30	670.06
146+75.00	679.62	670.61	670.12
147+00.00	679.46	670.88	670.43
147+25.00	679.38	671.15	670.84
147+50.00	679.38	671.43	670.94
147+75.00	679.46	671.70	670.98
148+00.00	679.55	671.98	671.31
148+25.00	679.63	672.25	671.79
148+50.00	679.72	672.52	671.74
148+75.00	679.81	672.80	672.19
149+00.00	679.90	673.07	672.33
149+25.00	679.96	673.34	672.69
149+50.00	679.99	673.62	672.93
149+75.00	679.97	673.89	673.31
150+00.00	679.92	674.16	673.61
150+25.00	679.84	674.44	673.54
150+50.00	679.71	674.71	673.75
150+75.00	679.55	674.99	673.81
151+00.00	679.35	675.26	674.05
151+25.00	679.16	675.53	674.45
151+50.00	679.00	675.81	674.38
151+75.00	678.87	676.08	674.70
152+00.00	678.77	676.35	674.81
152+25.00	678.69	676.63	675.07
152+40.71	678.66	676.80	675.16

WALL EXTERNAL STABILITY EVALUATION

	DIMENSIONS				
	WALL HEIGHT (FEET)	27.0	17.5	18.6	19.7
	EXPOSED WALL HEIGHT (FEET)	24	14.5	17.9	16.7
(T01)	MINIMUM LENGTH OF REINFORCEMENT/WALL WIDTH (FEET)	19.4	19.4	13.0	13.8
	REINFORCEMENT LENGTH/RETAINED HEIGHT RATIO	0.72	1.11	0.70	0.70
	WALL STATION	140+90	141+00	144+25	144+50
	BORING USED	PW-01	PW-01	PWD-01	PWD-01
	CAPACITY TO DEMAND RATIO (CDR)				
	SLIDING	1.34	1.42	1.24	1.25
	ECCENTRICITY	1.60	2.15	1.42	1.43
	BEARING RESISTANCE	1.00	1.07	1.26	1.13
	FACTORED BEARING RESISTANCE (PSF)	6,682	6,682	6,191	5,847
	GLOBAL STABILITY – END OF CONSTRUCTION	2.0	2.0	3.6	2.6
	GLOBAL STABILITY – LONG-TERM	1.2	1.2	2.2	1.2

NOTES

(T01) THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND GLOBAL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGNED LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-28

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DESIGN DATA

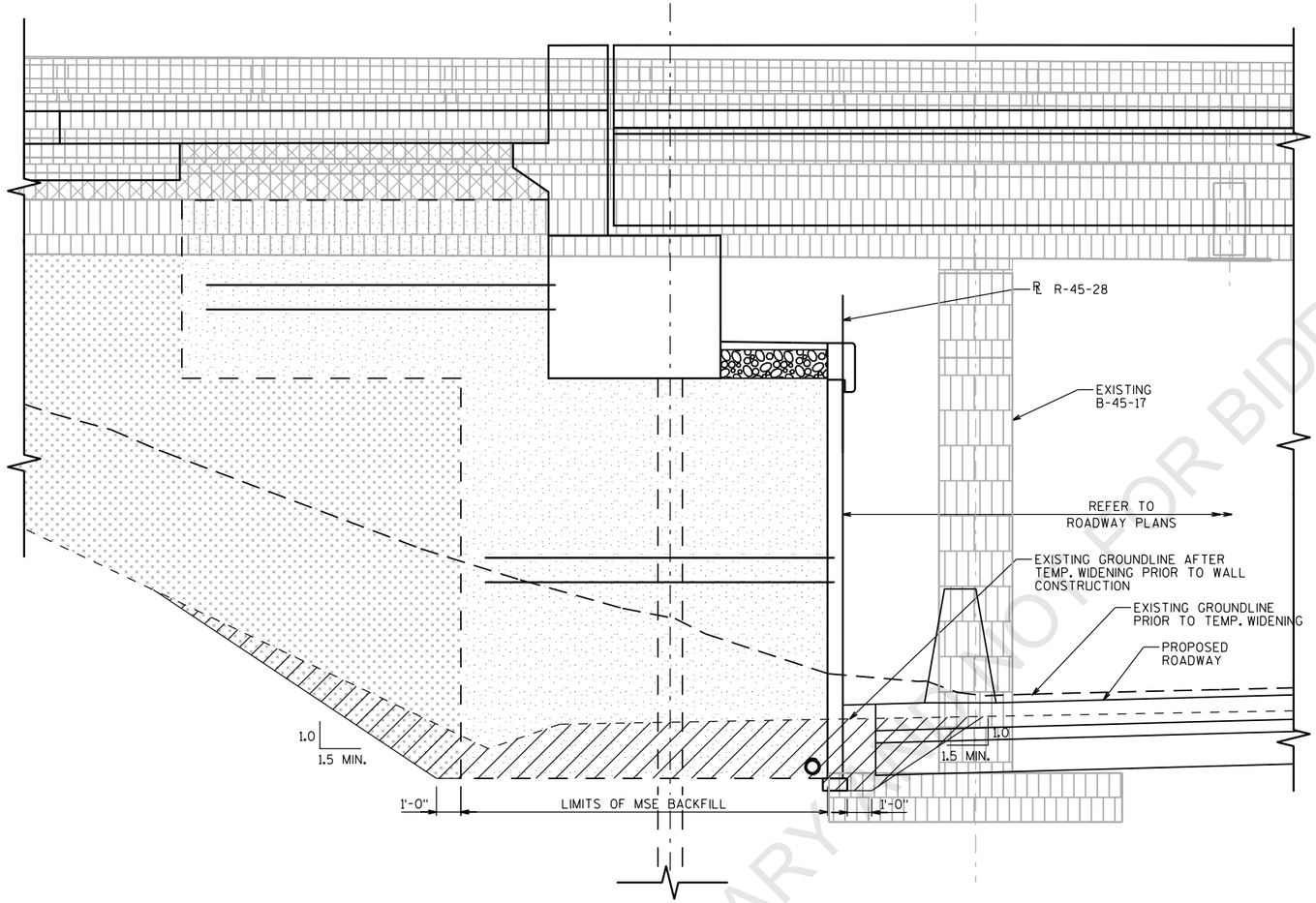
SHEET 5 OF 20

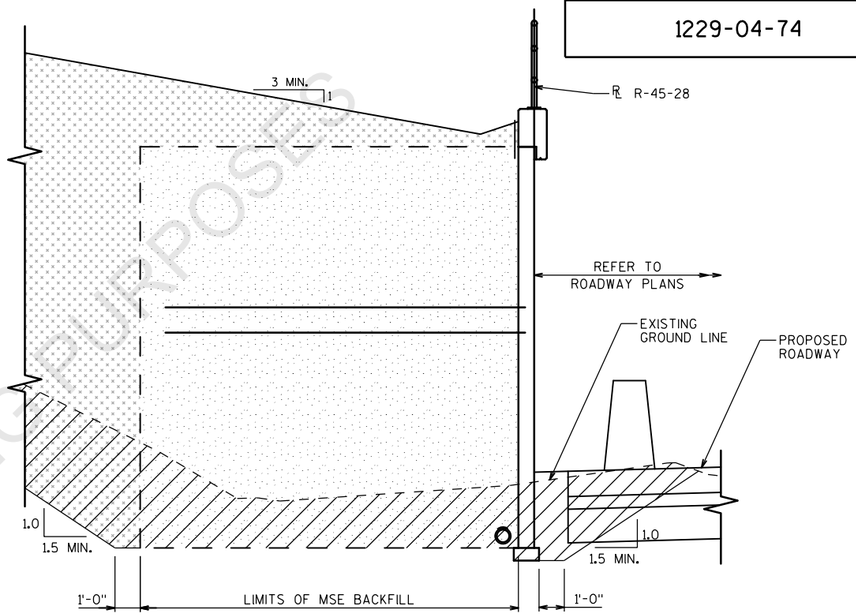
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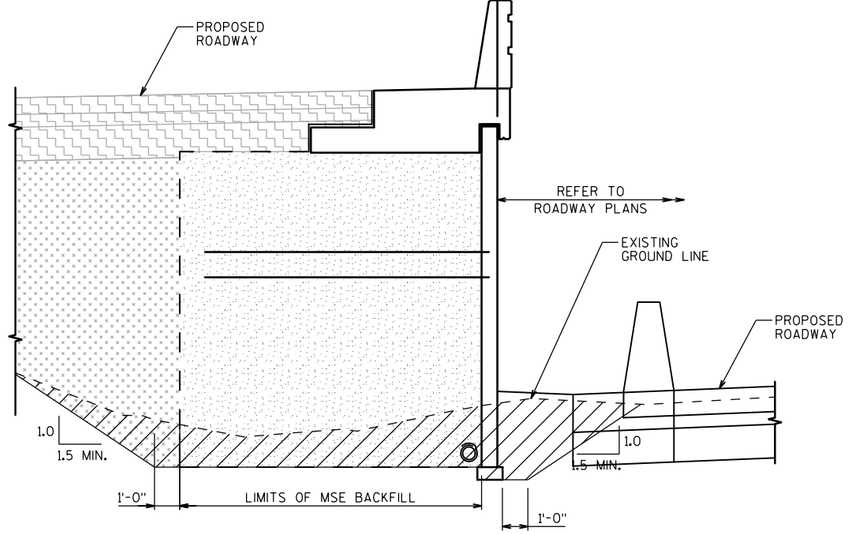
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8

EXCAVATION AND BACKFILL LIMITS

LEGEND

- WALL EXCAVATION - INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28".
- MSE BACKFILL - INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28".
- BASE AGGREGATE DENSE 1¼" - NOT A RETAINING WALL ITEM. SEE BRIDGE PLANS.
- FILL MATERIAL - NOT A RETAINING WALL ITEM. SEE ROADWAY PLANS.
- REMOVING STRUCTURE - NOT A RETAINING WALL ITEM. SEE BRIDGE PLANS B-45-102. EXCAVATION FOR REMOVING STRUCTURE INCLUDED WITH ROADWAY WIDENING.
- MSE BACKFILL OR SIZE 2 COARSE AGGREGATE - NOT A RETAINING WALL ITEM. SEE BRIDGE PLANS.
- ROADWAY FINISHED SECTION. SEE ROADWAY PLANS.

NOTE

REFER TO CULVERT C-45-60 PLANS FOR EXCAVATION FOR SEGMENT F.

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STRUCTURE R-45-28

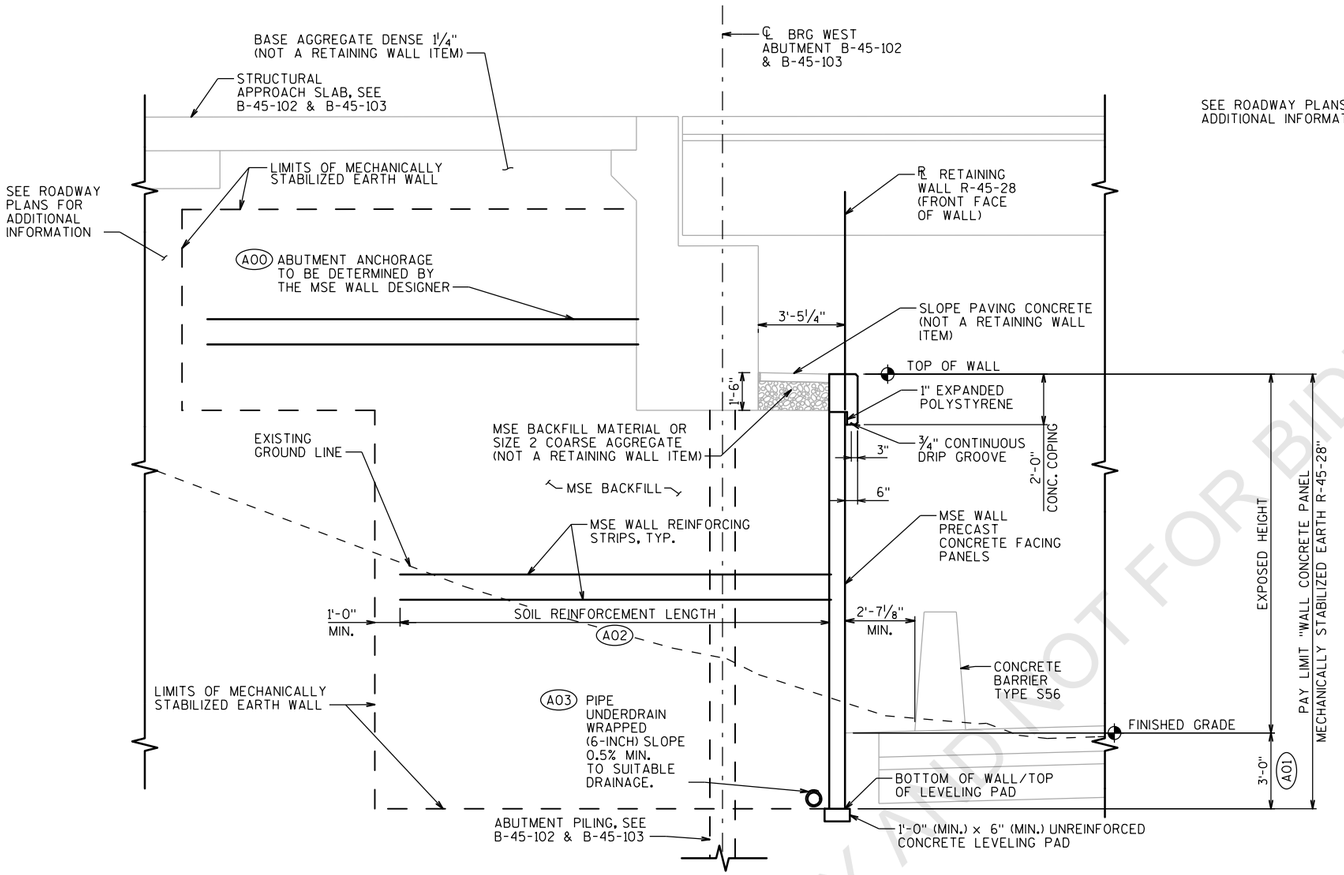
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EXCAVATION & BACKFILL LIMITS

SHEET 6 OF 20

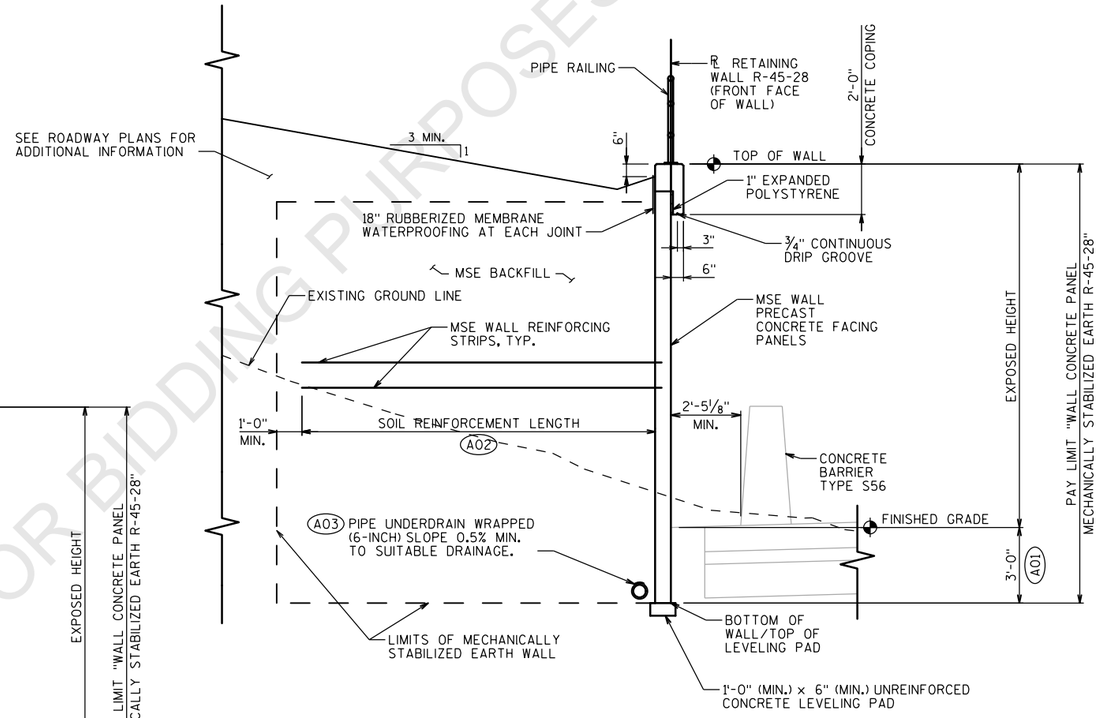
PRELIMINARY - NOT FOR BIDDING PURPOSES

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TYPICAL SECTION AT ABUTMENT - SEGMENT B

STA. 140+96.81 TO STA. 142+65.02
(LOOKING NORTH)



TYPICAL SECTION - SEGMENTS A & C

SEGMENT A - STA. 140+00.71 TO STA. 140+96.81
SEGMENT C - STA. 142+65.02 TO STA. 142+70.02
(LOOKING NORTH)

LEGEND

(A00) UNFACTORED SUPERSTRUCTURE LATERAL LOADS TRANSFERRED TO THE ABUTMENT ARE TAKEN TO BE KIPS PER FOOT OF ABUTMENT LENGTH. THE VALUES ARE TO BE USED FOR THE LRFD DESIGN OF THE ABUTMENT ANCHORAGE BY THE MSE MANUFACTURER (MSE SYSTEM, DEAD MAN ANCHOR, OTHER). THE FOLLOWING AASHTO LINE LOADS SHALL BE NOTED ON PLAN:

BR = 0 KLF WS = 0 KLF
TU = 1.2 KLF WL = 0 KLF

(A01) MINIMUM DIMENSION FROM FINISHED GRADE AT FRONT FACE OF WALL TO TOP OF LEVELING PAD AS SHOWN. PAY LIMITS BASED ON MINIMUM DIMENSION.

(A02) SEE WALL EXTERNAL STABILITY EVALUATION TABLE ON "DESIGN DATA" SHEET FOR MINIMUM LENGTH OF MSE WALL REINFORCING STRIPS. SOIL REINFORCEMENT MUST EXTEND A MINIMUM OF 3.0 FEET BEYOND THE FAILURE PLANE FOR INTERNAL STABILITY AS DEFINED BY AASHTO SPECIFICATIONS.

(A03) FOR SEGMENTS A THRU E CONNECT PIPE UNDERDRAIN WRAPPED TO PIPE UNDERDRAIN UNPERFORATED AT APPROXIMATE WALL STA. 141+42.00. RUN PIPE UNDER WALL AND CONNECT TO PROPOSED WISDOT INLET NO. 4434-S3.

PRELIMINARY NOT FOR BIDDING PURPOSES

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DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-28

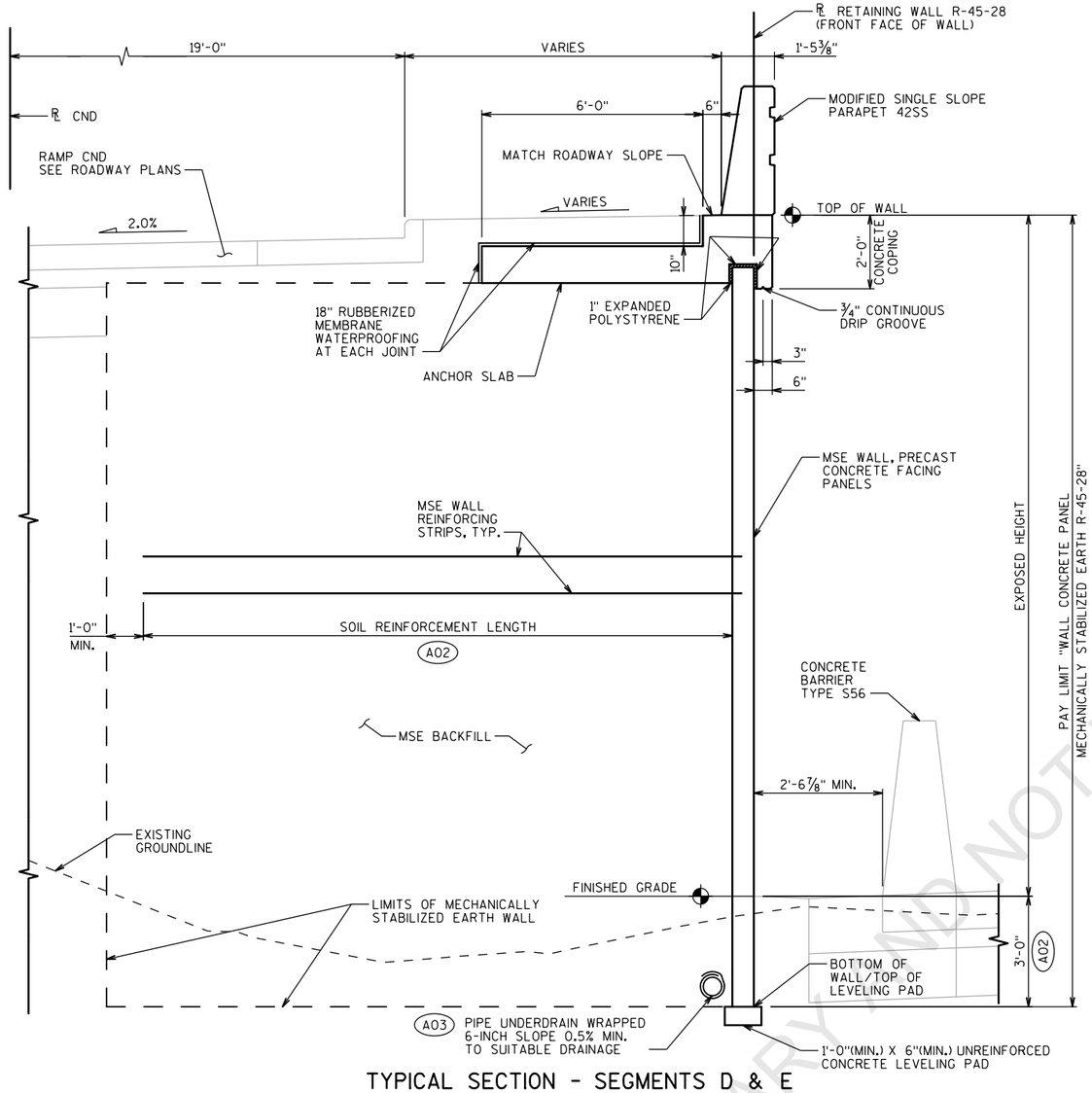
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TYPICAL SECTIONS (1 OF 3)

SHEET 7 OF 20

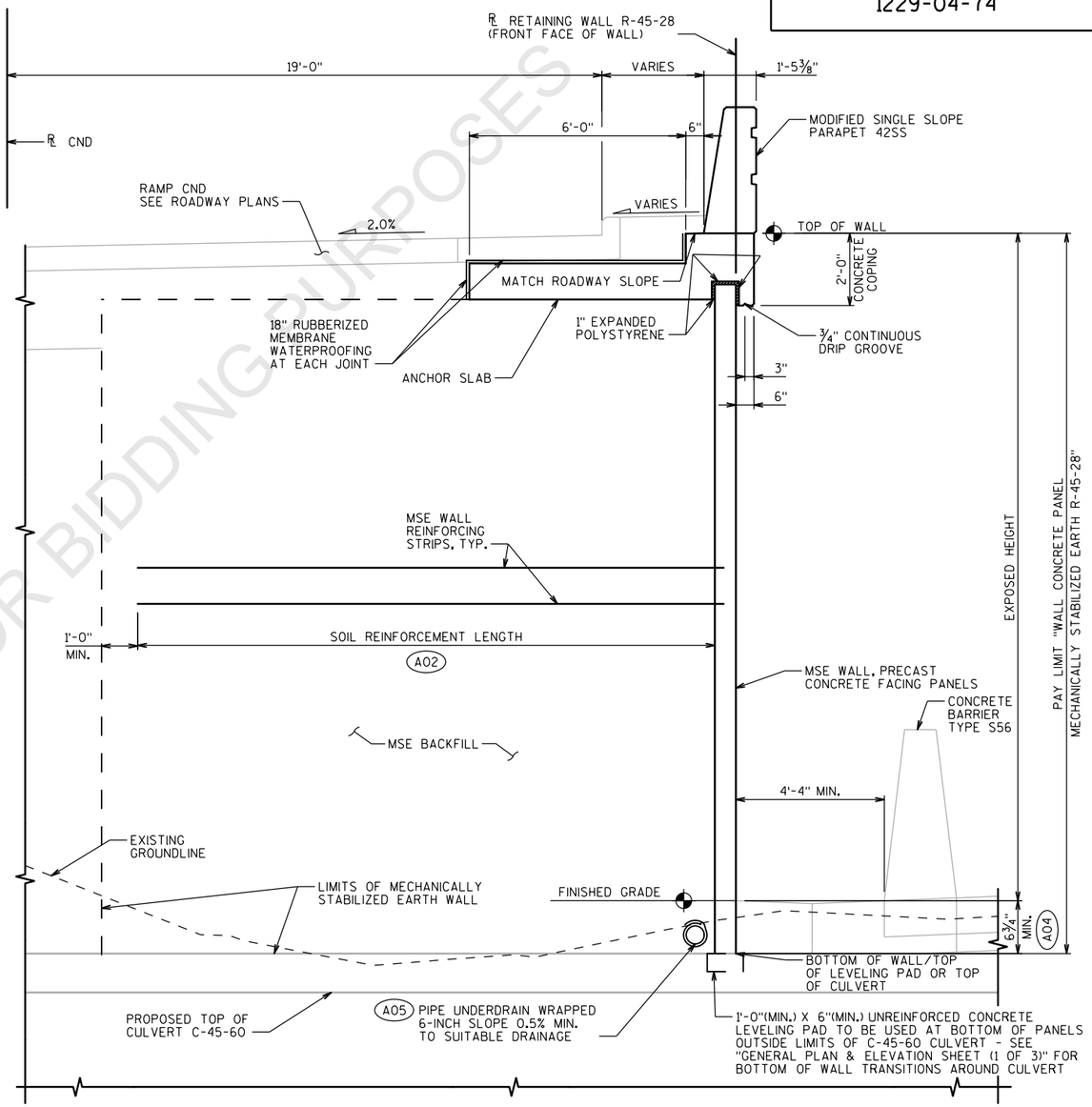
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TYPICAL SECTION - SEGMENTS D & E

LOOKING NORTH
SEGMENT D - STA. 142+70.02 TO STA. 142+95.71
SEGMENT E - STA. 142+95.71 TO STA. 144+15.71



TYPICAL SECTION - SEGMENT F

LOOKING NORTH
SEGMENT F - STA. 144+15.71 TO STA. 144+45.71

LEGEND

(A01) MINIMUM DIMENSION FROM FINISHED GRADE AT FRONT FACE OF WALL TO TOP OF LEVELING PAD AS SHOWN. PAY LIMITS BASED ON MINIMUM DIMENSION.

(A02) SEE WALL EXTERNAL STABILITY EVALUATION TABLE ON "DESIGN DATA" SHEET FOR MINIMUM LENGTH OF MSE WALL REINFORCING STRIPS. SOIL REINFORCEMENT MUST EXTEND A MINIMUM OF 3.0 FEET BEYOND THE FAILURE PLANE FOR INTERNAL STABILITY AS DEFINED BY AASHTO SPECIFICATIONS.

(A03) FOR SEGMENTS A THRU E CONNECT PIPE UNDERDRAIN WRAPPED TO PIPE UNDERDRAIN UNPERFORATED AT APPROXIMATE WALL STA. 141+42.00. RUN PIPE UNDER WALL AND CONNECT TO PROPOSED WISDOT INLET NO. 4434-S3.

(A04) WALL PANEL TO BEAR DIRECTLY ON TOP OF CULVERT. APPROXIMATE TOP OF CULVERT EL. 667.22.

(A05) FOR SEGMENTS F THRU H CONNECT PIPE UNDERDRAIN WRAPPED TO PIPE UNDERDRAIN UNPERFORATED AT APPROXIMATE WALL STA. 146+40.00. RUN PIPE UNDER WALL AND CONNECT TO PROPOSED WISDOT INLET NO. 4147-S3.

PRELIMINARY - NOT FOR BIDDING PURPOSES

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STATE OF WISCONSIN
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STRUCTURE R-45-28

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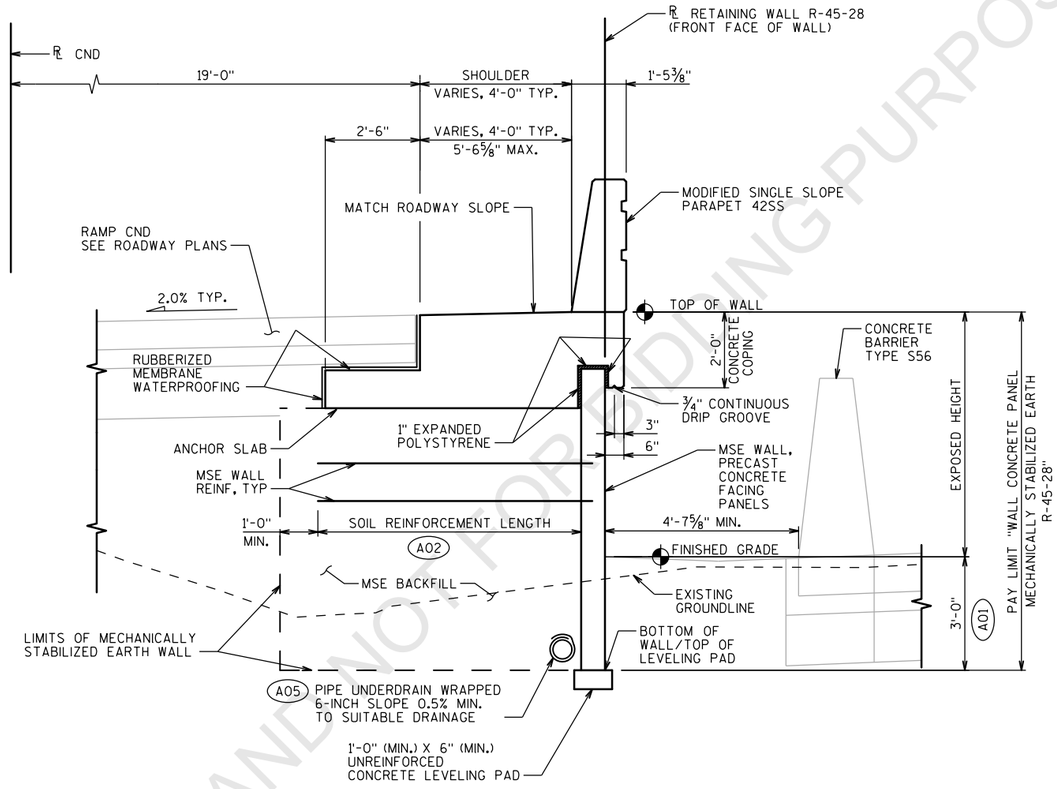
TYPICAL SECTIONS
(2 OF 3)

SHEET 8 OF 20

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TYPICAL SECTION - SEGMENTS G & H

LOOKING NORTH
SEGMENT G - STA. 144+45.71 TO STA. 144+75.71
SEGMENT H - STA. 144+75.71 TO STA. 152+40.71

LEGEND

(A01) MINIMUM DIMENSION FROM FINISHED GRADE AT FRONT FACE OF WALL TO TOP OF LEVELING PAD AS SHOWN. PAY LIMITS BASED ON MINIMUM DIMENSION.

(A02) SEE WALL EXTERNAL STABILITY EVALUATION TABLE ON "DESIGN DATA" SHEET FOR MINIMUM LENGTH OF MSE WALL REINFORCING STRIPS. SOIL REINFORCEMENT MUST EXTEND A MINIMUM OF 3.0 FEET BEYOND THE FAILURE PLANE FOR INTERNAL STABILITY AS DEFINED BY AASHTO SPECIFICATIONS.

(A05) FOR SEGMENTS F THRU H CONNECT PIPE UNDERDRAIN WRAPPED TO PIPE UNDERDRAIN UNPERFORATED AT APPROXIMATE WALL STA. 146+40.00. RUN PIPE UNDER WALL AND CONNECT TO PROPOSED WISDOT INLET NO. 4147-S3.

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STRUCTURE R-45-28

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TYPICAL SECTIONS
(3 OF 3)

SHEET 9 OF 20

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LEGEND

(A10) 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FULL HEIGHT OF CLOSURE WALL. INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28"

(A11) 1" EXPANDED POLYSTYRENE

(A12) SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

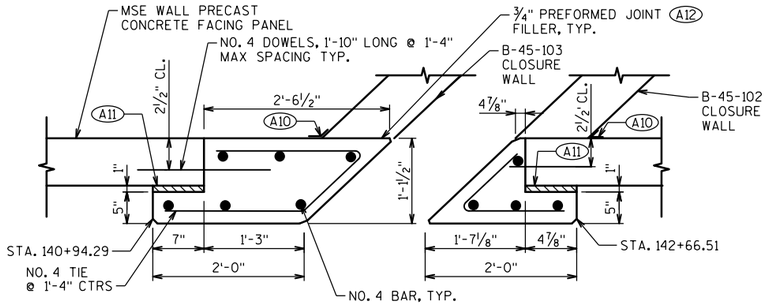
(A13) SEE "DESIGN DATA" SHEET FOR ELEVATION INFORMATION.

(A14) MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANEL. INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28"

F.F. FRONT FACE

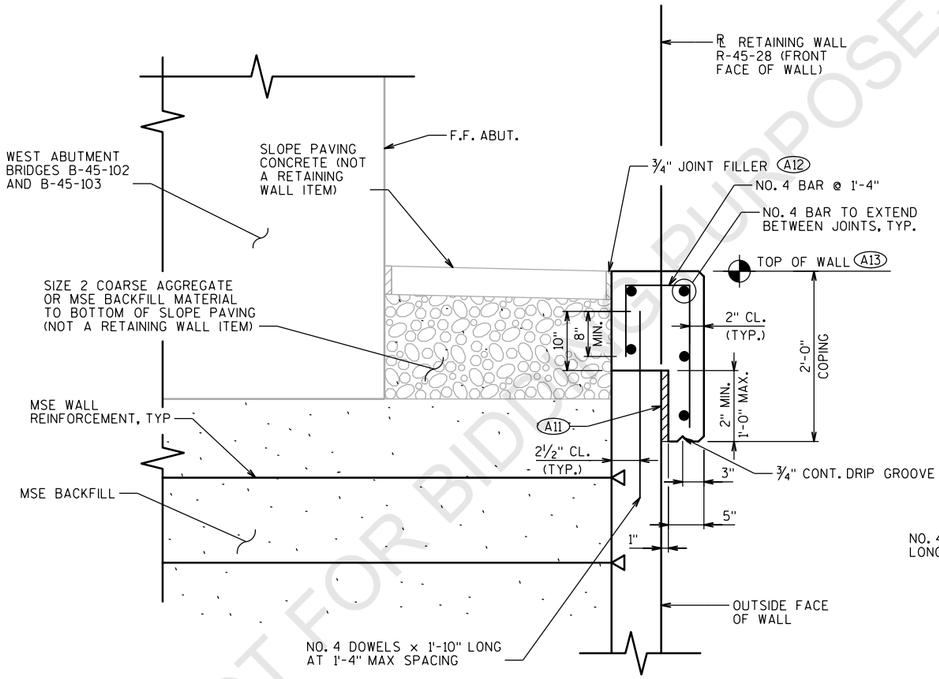
B.F. BACK FACE

C.I.P. CAST-IN-PLACE



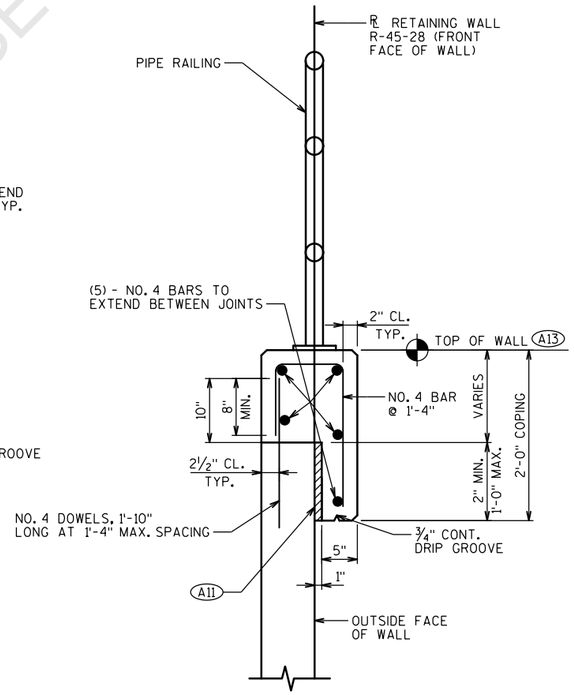
VERTICAL COPING DETAIL

(VERTICAL COPING SEGMENTS A & C)



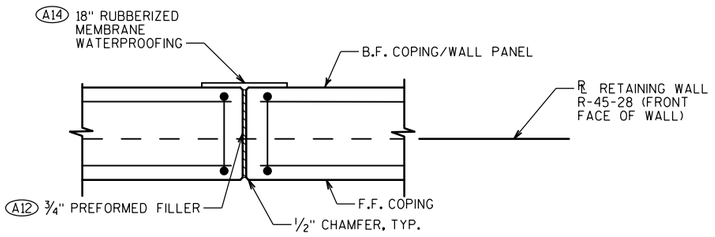
CROSS SECTION THRU ABUTMENT AT MSE WALL & COPING DETAIL AT SEGMENT B

REINFORCEMENT AND CONCRETE SHOWN IN COPING DETAIL ARE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28"



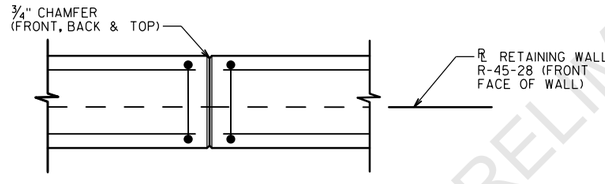
CAST-IN-PLACE CONCRETE COPING DETAIL AT SEGMENTS A & C

REINFORCEMENT AND CONCRETE SHOWN IN COPING DETAIL ARE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28"



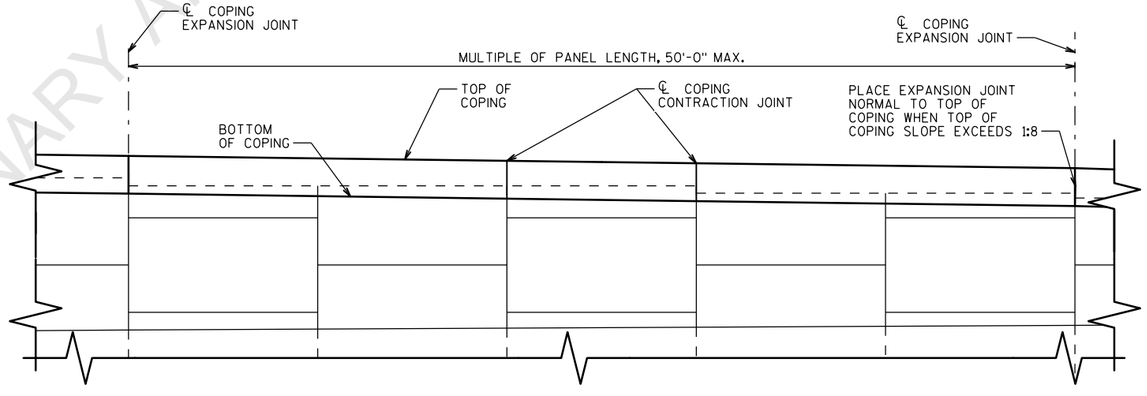
COPING EXPANSION JOINT SEGMENTS A, B & C

DO NOT RUN BAR STEEL THRU JOINT.
MAX. SPACING OF JOINT = 50'
MUST COINCIDE WITH PANEL JOINT ON FRONT FACE



COPING CONTRACTION JOINT SEGMENTS A, B & C

DO NOT RUN BAR STEEL THRU JOINT.
MAX. SPACING OF JOINT = 12'
MUST COINCIDE WITH PANEL JOINT ON FRONT FACE



PARTIAL ELEVATION

NOTE: ALL JOINTS SHALL BE LOCATED AS SHOWN AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE.

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STRUCTURE R-45-28

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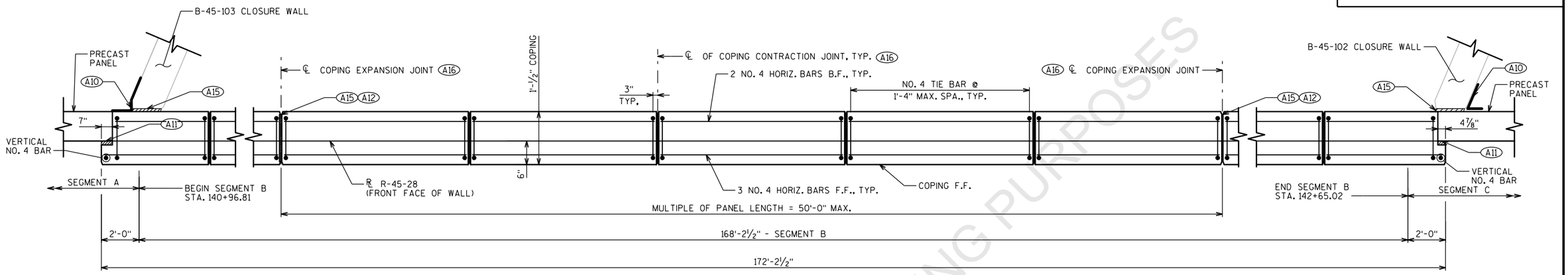
COPING DETAILS (1 OF 2)

SHEET 10 OF 20

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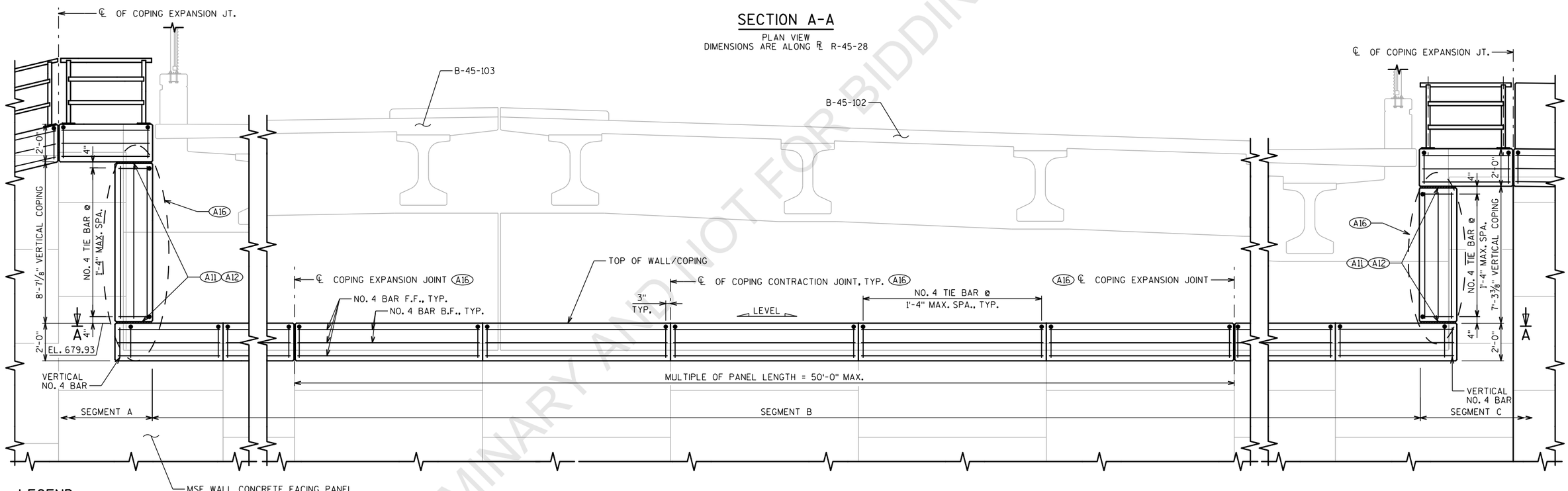
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SECTION A-A

PLAN VIEW
DIMENSIONS ARE ALONG ℞ R-45-28



LEGEND

- (A10) 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FULL HEIGHT OF CLOSURE WALL. INCLUDED IN BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28".
- (A11) 1" PREFORMED JOINT FILLER.
- (A12) SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)
- (A15) ¾" PREFORMED JOINT FILLER
- (A16) REFER TO "COPING DETAILS (1 OF 2)" FOR ADDITIONAL DETAILS
- F.F. FRONT FACE
- B.F. BACK FACE

ELEVATION SEGMENT B

LOOKING AT FRONT FACE OF WALL
DIMENSIONS ARE ALONG ℞ R-45-28

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-28

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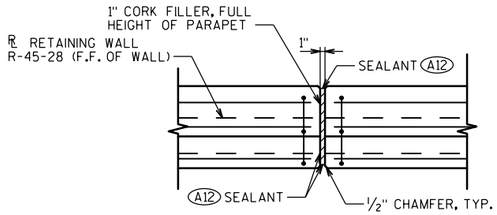
COPING DETAILS (2 OF 2)

SHEET 11 OF 20

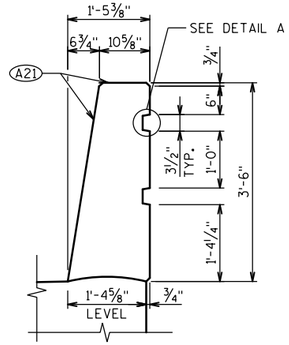
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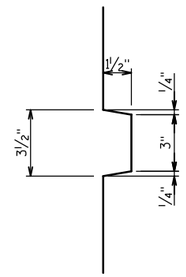
STATE PROJECT NUMBER
1229-04-74



(A20) PARAPET EXPANSION JOINT



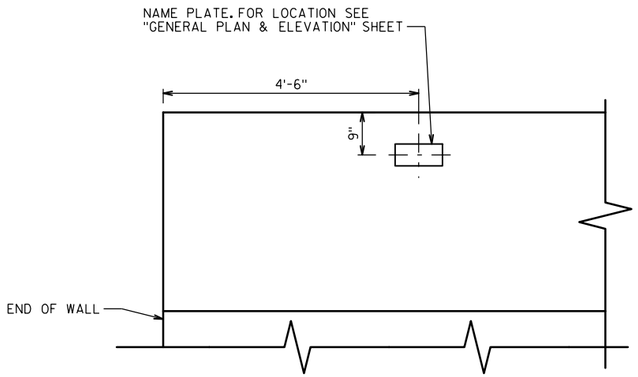
MODIFIED SINGLE SLOPE PARAPET 42SS DIMENSIONS



DETAIL A

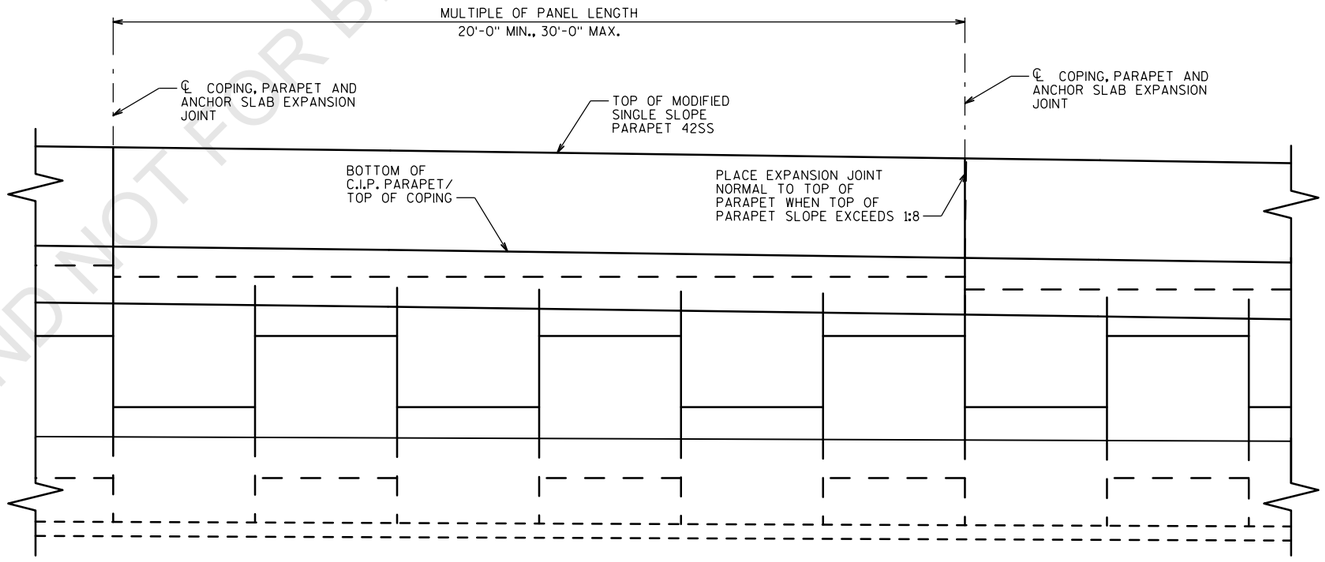
LEGEND

- (A12) SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)
- (A20) EXPANSION JOINTS TO BE SPACED AT A MINIMUM OF 20'-0" AND A MAXIMUM OF 30'-0". LOCATE EXPANSION JOINTS OVER WALL JOINTS. DO NOT RUN BAR STEEL THRU JOINT, EXCEPT DOWEL BARS. JOINT TO EXTEND FULL DEPTH OF PARAPET AND ANCHOR SLAB.
- (A21) APPLY PIGMENTED SURFACE SEALER.
- F.F. FRONT FACE
- C.I.P. CAST-IN-PLACE



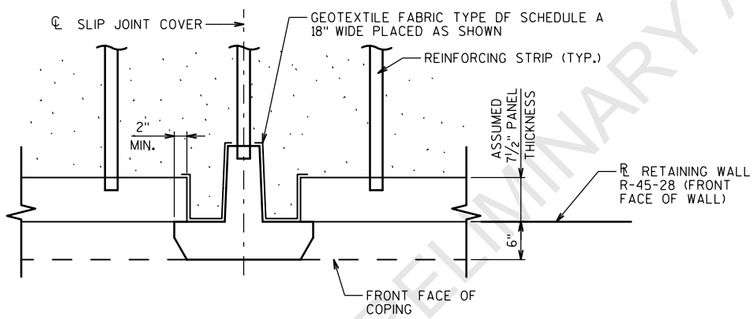
NAME PLATE LOCATION

INSIDE ELEVATION



PARTIAL ELEVATION

NOTE: ALL JOINTS SHALL BE LOCATED AS SHOWN AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE.



SLIP JOINT COVER DETAIL

SLIP JOINT COVER AND GEOTEXTILE FABRIC TYPE DF SCHEDULE A INCIDENTAL TO "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-28"

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

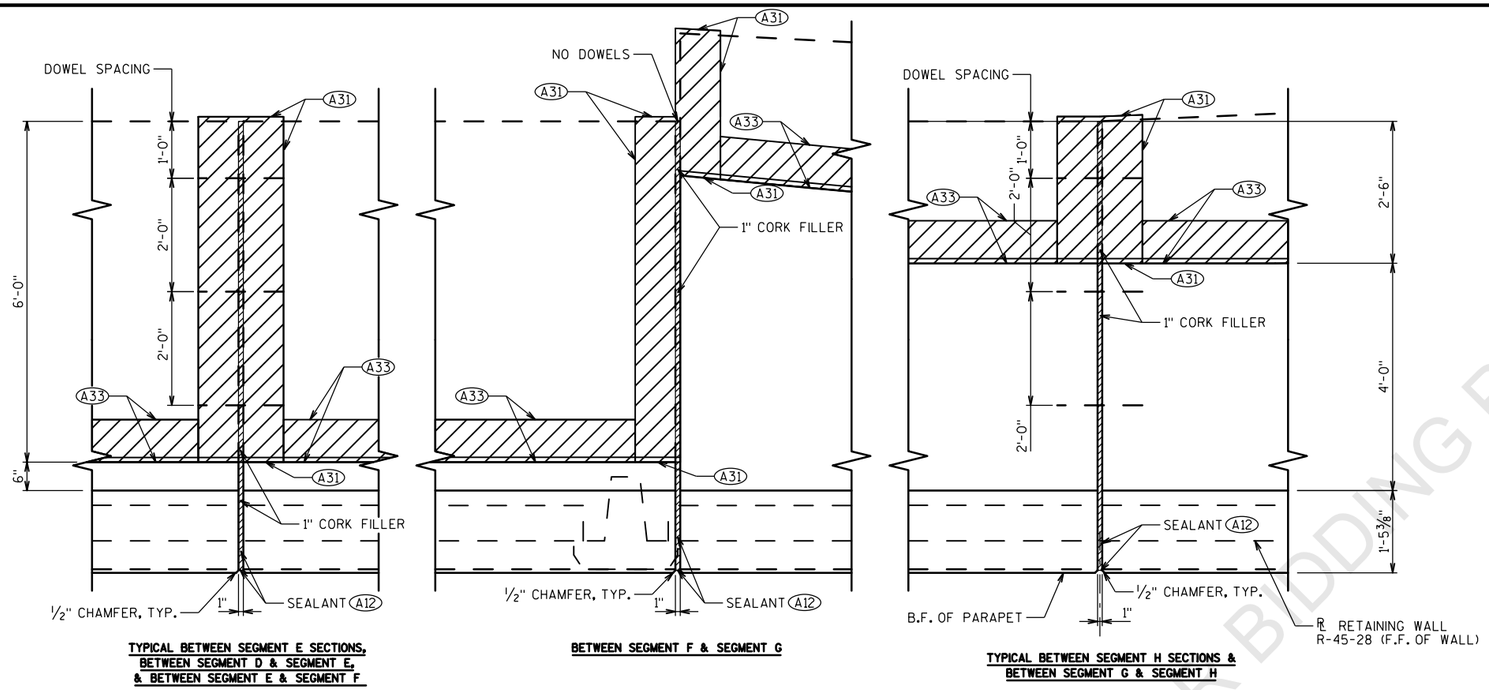
STRUCTURE R-45-28

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PARAPET & ANCHOR SLAB DETAILS (1 OF 6)

SHEET 12 OF 20

STATE PROJECT NUMBER
1229-04-74



TYPICAL BETWEEN SEGMENT E SECTIONS, BETWEEN SEGMENT D & SEGMENT E, & BETWEEN SEGMENT E & SEGMENT F

BETWEEN SEGMENT F & SEGMENT G

TYPICAL BETWEEN SEGMENT H SECTIONS & BETWEEN SEGMENT G & SEGMENT H

LEGEND

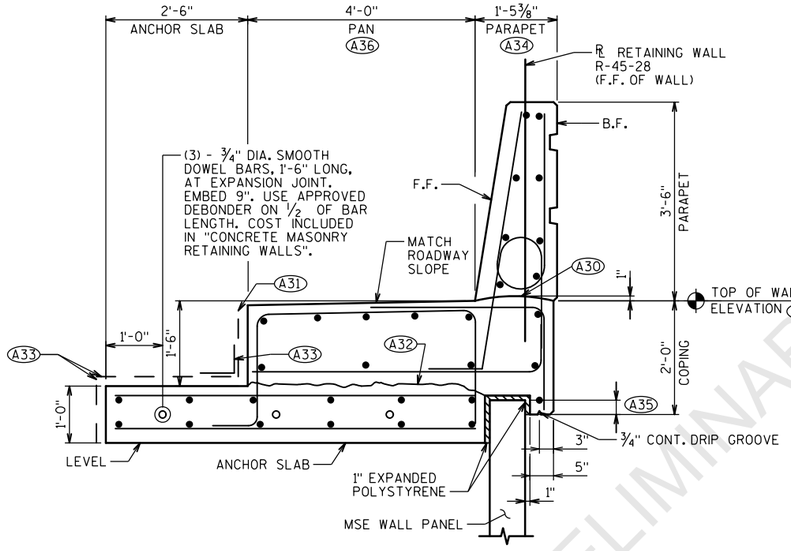
- A12 SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)
- A13 SEE "DESIGN DATA" SHEET FOR ELEVATION INFORMATION.
- A20 EXPANSION JOINTS TO BE SPACED AT A MINIMUM OF 20'-0" AND A MAXIMUM OF 30'-0". LOCATE EXPANSION JOINTS OVER WALL JOINTS. DO NOT RUN BAR STEEL THRU JOINT, EXCEPT DOWEL BARS. JOINT TO EXTEND FULL DEPTH OF PARAPET AND ANCHOR SLAB.
- A30 CONSTRUCTION JOINT - STRIKE OFF AS SHOWN.
- A31 18" RUBBERIZED MEMBRANE WATERPROOFING TO BE PLACED ON THESE SURFACES AT EACH JOINT.
- A32 OPTIONAL CONSTRUCTION JOINT. LEAVE SURFACE ROUGHENED.
- A33 IF THE OPT. CONST. JOINT IS USED, PLACE 18" MEMBRANE WATERPROOFING ALONG THE ENTIRE LONGITUDINAL JOINT. THE MEMBRANE WATERPROOFING SEALING THE OPTIONAL CONSTRUCTION JOINT IS INCIDENTAL TO THE CONCRETE MASONRY BID ITEM.
- A34 SEE MODIFIED SINGLE SLOPE PARAPET 42SS DIMENSIONS DETAIL ON "PARAPET & ANCHOR SLAB DETAILS (1 OF 6)" SHEET.
- A35 3" MIN., 6" MAX.
- A36 APPLY PROTECTIVE SURFACE TREATMENT TO HORIZONTAL EXPOSED SURFACE.
- E.F. EACH FACE
- F.F. FRONT FACE
- B.F. BACK FACE
- C.I.P. CAST-IN-PLACE

NOTE

FOR REINFORCEMENT DETAILS AND BILL OF BARS SEE "PARAPET & ANCHOR SLAB DETAILS (3 OF 6)" THRU "PARAPET & ANCHOR SLAB DETAILS (6 OF 6)" SHEETS.

A20 ANCHOR SLAB EXPANSION JOINT DETAILS

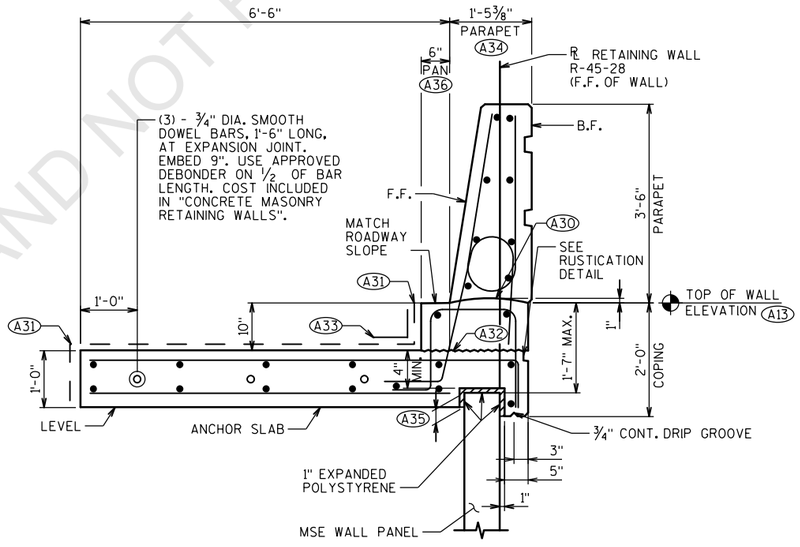
PLAN VIEW



C.I.P. MODIFIED SINGLE SLOPE PARAPET 422SS/ ANCHOR SLAB DETAIL FOR 4'-0" PAN FOR PRECAST WALL PANELS

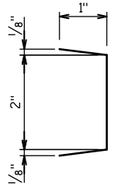
(SEGMENT G VARIABLE SECTION SIMILAR - SEE "PARAPET & ANCHOR SLAB DETAILS 6 OF 6" SHEET SECTION B-B DETAIL FOR ADDITIONAL INFORMATION)

- OPTIONAL CONSTRUCTION JOINTS IN THE PARAPET AND ANCHOR SLAB BETWEEN EXPANSION JOINTS MAY BE USED.
- RUN BAR REINFORCEMENT THROUGH THE JOINT.
- MINIMUM LAP LENGTH OF PARAPET BARS = 1'-9".
- MINIMUM LAP LENGTH OF ANCHOR SLAB LONGITUDINAL #4 BARS = 1'-0".
- DEFINE CONSTRUCTION JOINT WITH 3/4" "V" GROOVE.
- CONCRETE QUANTITY BASED ON 3" PANEL EMBEDMENT.



C.I.P. MODIFIED SINGLE SLOPE PARAPET 422SS/ ANCHOR SLAB DETAIL FOR 6" PAN FOR PRECAST WALL PANELS

- OPTIONAL CONSTRUCTION JOINTS IN THE PARAPET AND ANCHOR SLAB BETWEEN EXPANSION JOINTS MAY BE USED.
- RUN BAR REINFORCEMENT THROUGH THE JOINT.
- MINIMUM LAP LENGTH OF PARAPET BARS = 1'-9".
- MINIMUM LAP LENGTH OF ANCHOR SLAB LONGITUDINAL #4 BARS = 1'-0".
- DEFINE CONSTRUCTION JOINT WITH 3/4" "V" GROOVE.
- CONCRETE QUANTITY BASED ON 3" PANEL EMBEDMENT.



RUSTICATION DETAIL

PROVIDE RUSTICATION IF OPT. CONST. JOINT IS USED.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-28

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PARAPET & ANCHOR SLAB DETAILS (2 OF 6)

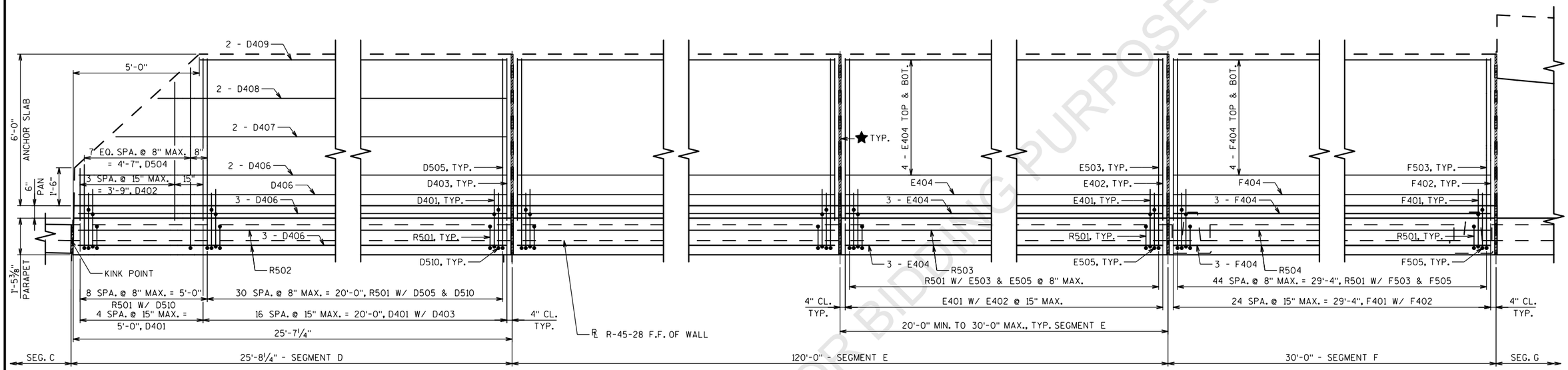
SHEET 13 OF 20

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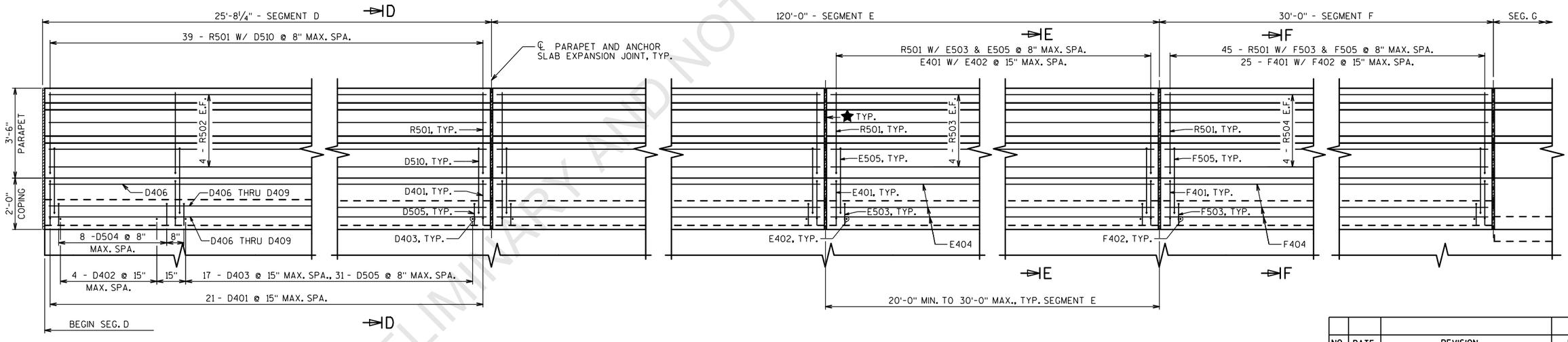
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PLOT BY : ejelinek
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STATE PROJECT NUMBER
1229-04-74



PLAN

DIMENSIONS ALONG ℄ R-45-28



ELEVATION

DIMENSIONS ALONG ℄ R-45-28 - LOOKING AT FRONT FACE OF WALL

PRELIMINARY AND NOT FOR BIDDING PURPOSES

LEGEND

★ 1" CORK FILLER

NOTES

FOR BILL OF BARS AND SECTIONS D-D, E-E & F-F SEE "PARAPET & ANCHOR SLAB DETAILS (5 OF 6)" SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

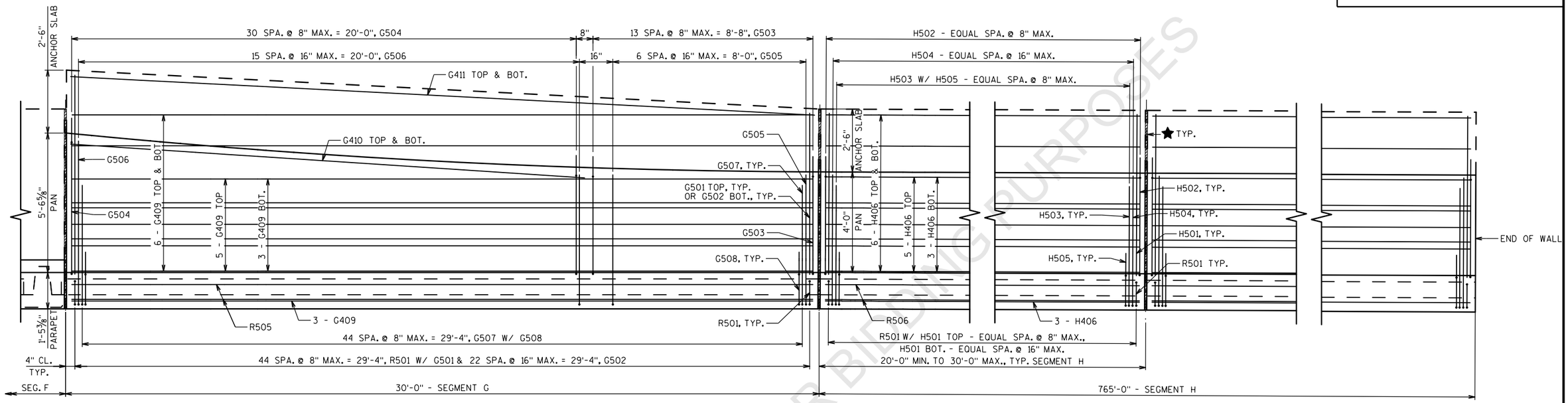
STRUCTURE R-45-28

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PARAPET & ANCHOR SLAB DETAILS (3 OF 6)

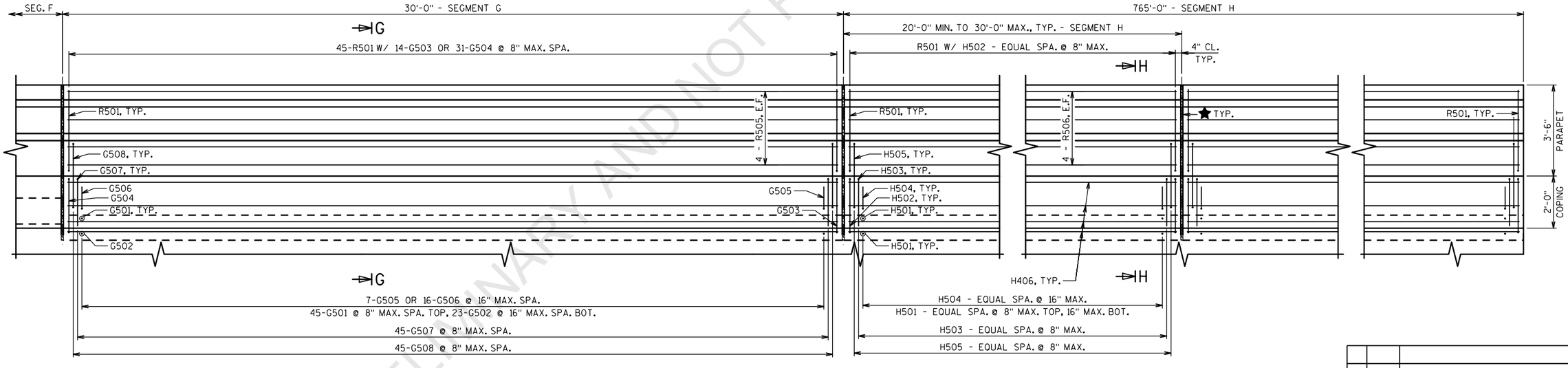
SHEET 14 OF 20

STATE PROJECT NUMBER
1229-04-74



PLAN

DIMENSIONS ALONG ℄ R-45-28



ELEVATION

DIMENSIONS ALONG ℄ R-45-28 - LOOKING AT FRONT FACE OF WALL

PRELIMINARY AND NOT FOR BIDDING PURPOSES

LEGEND

★ 1" CORK FILLER

NOTES

FOR BILL OF BARS AND SECTIONS G-G & H-H SEE "PARAPET & ANCHOR SLAB DETAILS (6 OF 6)" SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-28

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PARAPET & ANCHOR SLAB DETAILS (4 OF 6)

SHEET 15 OF 20

STATE PROJECT NUMBER
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BILL OF BARS - SEGMENT D

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	SERIES	NOTE	LOCATION
D401	X	21	4'-9"	X			COPING - VERT. TIE
D402	X	4	3'-9"		⚠		ANCHOR SLAB - TRANS. BOT.
D403	X	17	6'-4"				ANCHOR SLAB - TRANS. BOT.
D504	X	8	5'-10"	X	⚠		ANCHOR SLAB - TRANS. TOP
D505	X	31	8'-2"	X			ANCHOR SLAB - TRANS. TOP
D406	X	9	25'-2"				ANCHOR SLAB & COPING - HORIZ.
D407	X	2	23'-8"				ANCHOR SLAB & COPING - HORIZ.
D408	X	2	22'-0"				ANCHOR SLAB & COPING - HORIZ.
D409	X	2	20'-4"				ANCHOR SLAB & COPING - HORIZ.
D510	X	39	5'-10"	X			PARAPET/COPING - VERT. TIE
R501	X	39	6'-8"	X			PARAPET - VERT. TIE
R502	X	8	25'-2"				PARAPET - HORIZ.

BILL OF BARS - SEGMENT E

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	SERIES	NOTE	LOCATION
E401	X	102	4'-9"	X			COPING - VERT. TIE
E402	X	102	6'-4"				ANCHOR SLAB - TRANS. BOT.
E503	X	186	8'-2"	X			ANCHOR SLAB - TRANS. TOP
E404	X	15	119'-6"			④	ANCHOR SLAB & COPING - HORIZ.
E505	X	186	5'-10"	X			PARAPET/COPING - VERT. TIE
R501	X	186	6'-8"	X			PARAPET - VERT. TIE
R503	X	8	119'-6"			④	PARAPET - HORIZ.

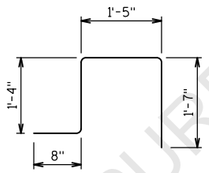
BILL OF BARS - SEGMENT F

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	SERIES	NOTE	LOCATION
F401	X	25	4'-9"	X			COPING - VERT. TIE
F402	X	25	6'-4"				ANCHOR SLAB - TRANS. BOT.
F503	X	45	8'-2"	X			ANCHOR SLAB - TRANS. TOP
F404	X	15	29'-6"				ANCHOR SLAB & COPING - HORIZ.
F505	X	45	5'-10"	X			PARAPET/COPING - VERT. TIE
R501	X	45	6'-8"	X			PARAPET - VERT. TIE
R504	X	8	29'-6"				PARAPET - HORIZ.

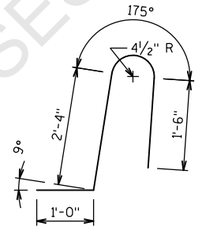
⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

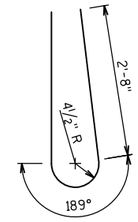
MARK	NO. REQ'D.	LENGTH
D402	1 SERIES OF 4	2'-0" TO 5'-5"
D504	1 SERIES OF 8	3'-10" TO 7'-9"



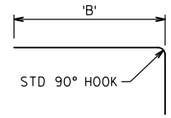
D401, E401, F401



D510, E505, F505

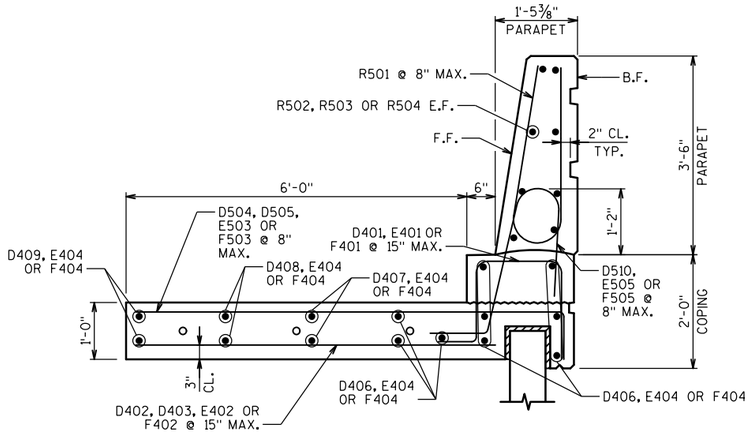


R501



D504, D505, E503, F503

MARK	DIMENSION 'B'
D504	3'-2" TO 7'-1"
D505	7'-6"
E503	7'-6"
F503	7'-6"



SECTION D-D, E-E, F-F

NOTE

④ LENGTH SHOWN FOR BAR IS OVERALL LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. THE NUMBER REQUIRED IS THE BARS IN THE CROSS SECTION AND BARS SHALL BE CUT OR PROVIDED AS NEEDED FOR EXPANSION JOINTS.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-28

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PARAPET & ANCHOR SLAB DETAILS (5 OF 6)

SHEET 16 OF 20

STATE PROJECT NUMBER
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BILL OF BARS - SEGMENT G

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	SERIES	NOTE	LOCATION
G501	X	45	7'-1"		⚠		ANCHOR SLAB - TRANS. TOP
G502	X	23	7'-1"		⚠		ANCHOR SLAB - TRANS. BOT.
G503	X	14	8'-4"	X			COPING - VERT TIE
G504	X	31	9'-0"	X	⚠		COPING - VERT TIE
G505	X	7	5'-10"	X			COPING - HORIZ. TIE
G506	X	16	6'-6"	X	⚠		COPING - HORIZ. TIE
G507	X	45	4'-8"	X			COPING - HORIZ. TIE
G508	X	45	5'-11"	X			ANCHOR SLAB/COPING TO PARAPET - VERT. TIE
G409	X	23	29'-6"				ANCHOR SLAB & COPING - HORIZ.
G410	X	2	20'-6"				ANCHOR SLAB & COPING - HORIZ. EDGE
G411	X	2	29'-7"				ANCHOR SLAB & COPING - HORIZ. EDGE
R501	X	45	6'-8"	X			PARAPET - VERT. TIE
R505	X	8	29'-6"				PARAPET - HORIZ.

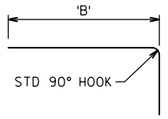
BILL OF BARS - SEGMENT H

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	SERIES	NOTE	LOCATION
H501	X	1760	6'-4"				ANCHOR SLAB - TRANS. TOP & BOT.
H502	X	1148	8'-4"	X			COPING - VERT TIE
H503	X	1148	4'-8"	X			COPING - HORIZ. TIE
H504	X	612	5'-10"	X			COPING - HORIZ. TIE
H505	X	1148	5'-11"	X			ANCHOR SLAB/COPING TO PARAPET - VERT. TIE
H406	X	23	764'-6"			④	ANCHOR SLAB & COPING - HORIZ.
R501	X	1148	6'-8"	X			PARAPET - VERT. TIE
R506	X	8	764'-6"			④	PARAPET - HORIZ.

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

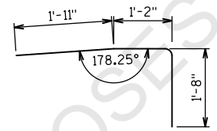
BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
G501	1 SERIES OF 45	6'-4" TO 7'-11"
G502	1 SERIES OF 23	6'-4" TO 7'-11"
G504	1 SERIES OF 31	8'-4" TO 9'-8"
G506	1 SERIES OF 16	5'-10" TO 7'-2"

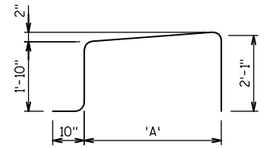


G505, G506, H504

MARK	DIMENSION 'B'
G505	5'-1"
G506	5'-1" TO 6'-5"
H504	5'-1"

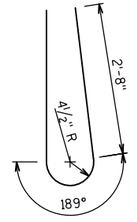


G507, H503

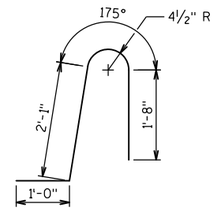


G503, G504, H502

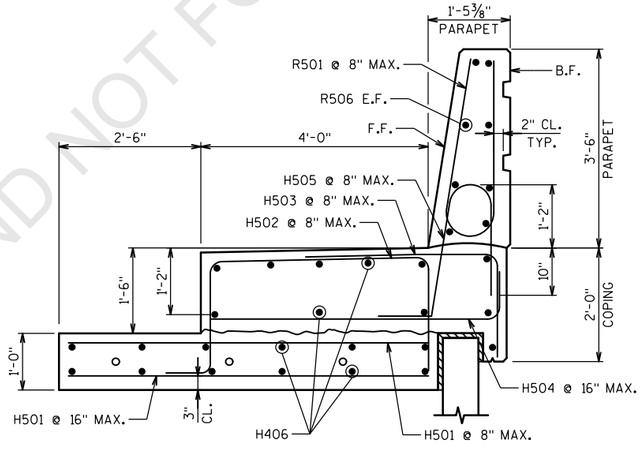
MARK	DIMENSION 'A'
G503	3'-11"
G504	3'-11" TO 5'-3"
H502	3'-11"



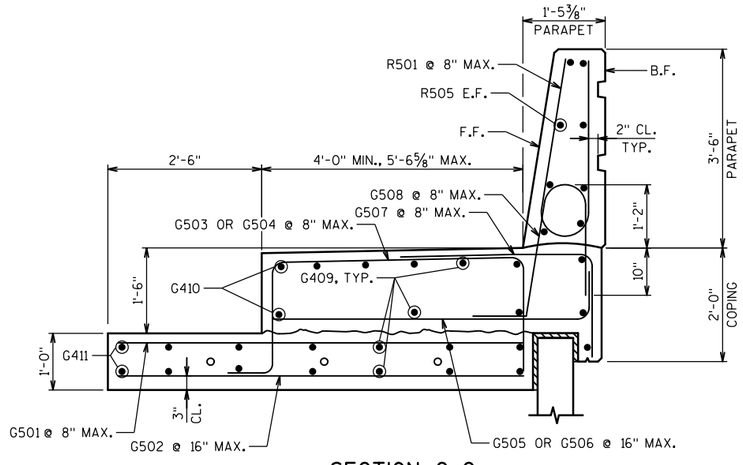
R501



G508, H505



SECTION H-H



SECTION G-G

NOTE

④ LENGTH SHOWN FOR BAR IS OVERALL LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. THE NUMBER REQUIRED IS THE BARS IN THE CROSS SECTION AND BARS SHALL BE CUT OR PROVIDED AS NEEDED FOR EXPANSION JOINTS.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-28

DRAWN BY EAJ | PLANS CK'D. HDA

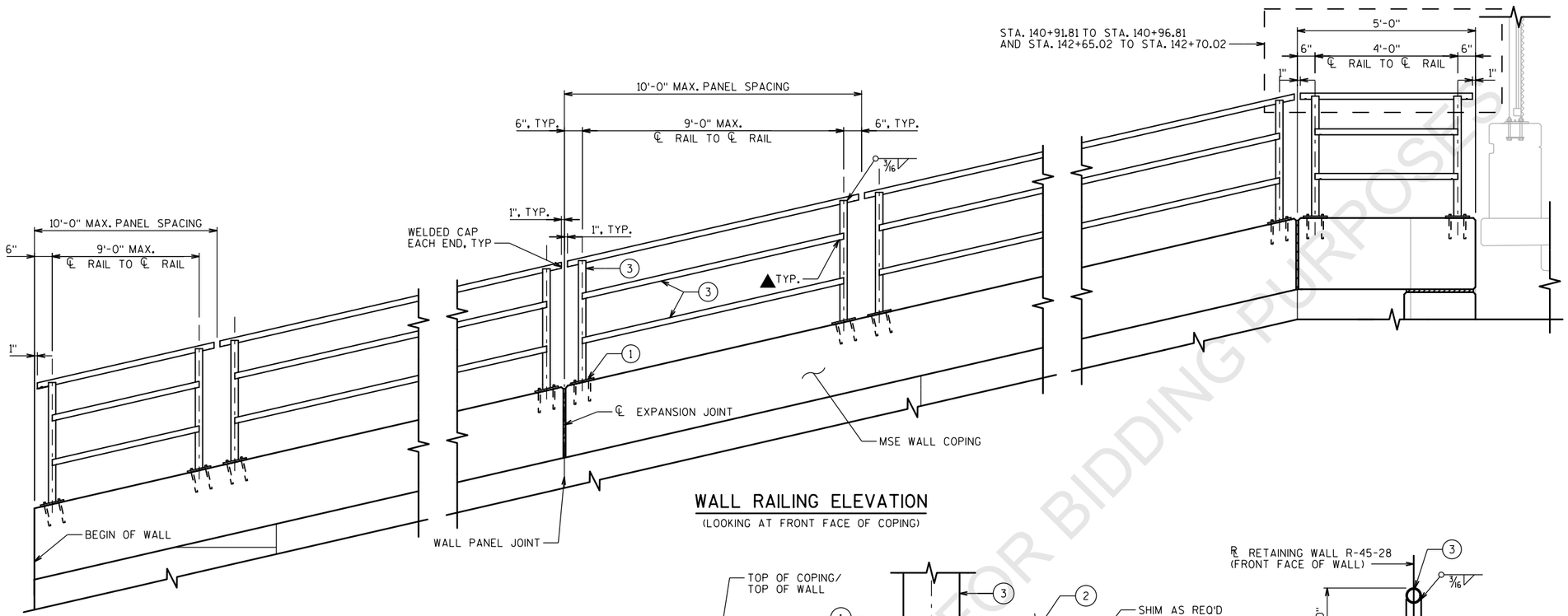
PARAPET & ANCHOR SLAB DETAILS (6 OF 6)

SHEET 17 OF 20

8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\R-45-28\cds\R45-28_080308_de.dgn PLOT DATE : 7/29/2021 8:34:38 AM PLOT BY : ejelinek PLOT SCALE : 2.66667:1

STATE PROJECT NUMBER
1229-04-74



WALL RAILING ELEVATION

(LOOKING AT FRONT FACE OF COPING)

LEGEND

1. PLATE 5/8" x 6" x 8" WITH 3/4" x 1 1/2" SLOTTED HOLES.
2. STAINLESS STEEL CONCRETE ADHESIVE ANCHORS, 5/8" DIA. x 8 3/4" LONG WITH NUT AND WASHER. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.
3. 2 1/2" DIA STANDARD PIPE RAIL (2.875" O.D.). PLACE POSTS VERTICAL. WELD TO NO.(1). PLACE RAILS PARALLEL TO TOP OF COPING/ TOP OF WALL. WELD TO NO.(3).

▲ 1/2" DIA. DRAIN HOLE AT BOTTOM OF EACH RAIL END.

NOTES

BID ITEM "RAILING PIPE" INCLUDES ALL STEEL ITEMS SHOWN, CONCRETE ADHESIVE ANCHORS, GALVANIZING, AND PAINTING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO.(1) SHALL CONFORM TO A.S.T.M. A709 GRADE 36. STANDARD PIPE RAIL SHALL CONFORM TO A.S.T.M. A500 GRADE B (NO.(3)).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE. ☆

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED AND USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

FILL BOLT SLOT OPENINGS IN SHIMS AND PLATE NO.(1) AND CAULK AROUND PERIMETER OF PLATE NO.(1) WITH NON-STAINING BLACK NON-BITUMINOUS JOINT SEALER.

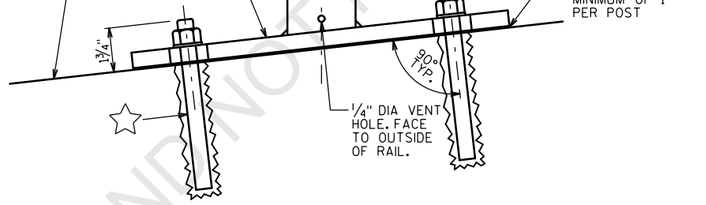
VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

GALVANIZE AFTER FABRICATION AND THEN PAINT GALVANIZED RAILING ASSEMBLIES WITH A TWO COAT SYSTEM SPECIFICALLY INTENDED FOR PAINTING OF GALVANIZED SURFACES PER THE STANDARD SPECIFICATIONS. SHIMS SHALL BE GALVANIZED PER ASTM 123. THE FINISH COLOR SHALL BE FEDERAL COLOR NO. 27038 BLACK.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 2 POSTS.

PAINT TOUCH-UP TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

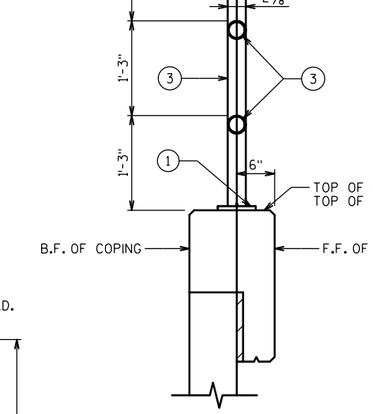
COORDINATE COPING EXPANSION JOINT PLACEMENT AND RAILING PANEL SPACING. COPING EXPANSION JOINT, WALL PANEL JOINT AND EDGE OF PANEL JOINT TO ALIGN AS SHOWN IN WALL RAILING ELEVATION DETAIL.



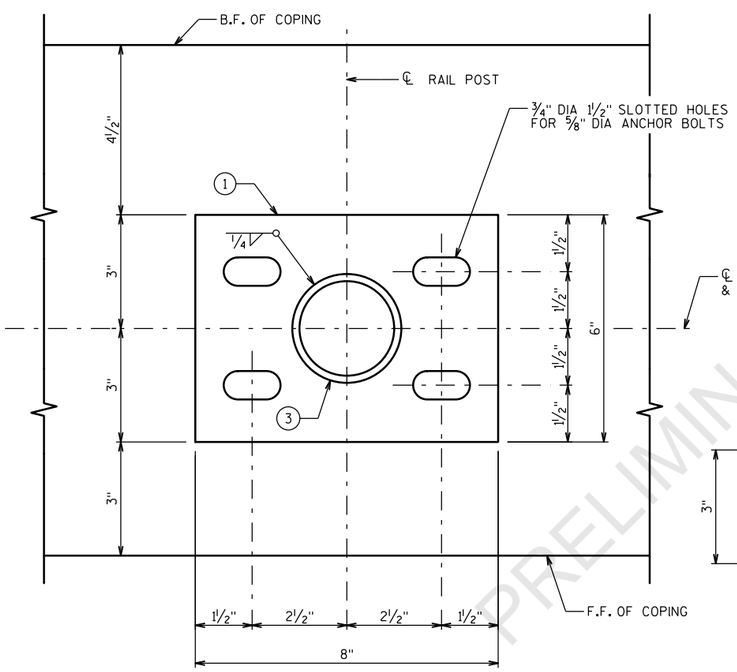
ANCHOR BOLTS FOR RAIL POST

(BETWEEN EXPANSION JOINTS)

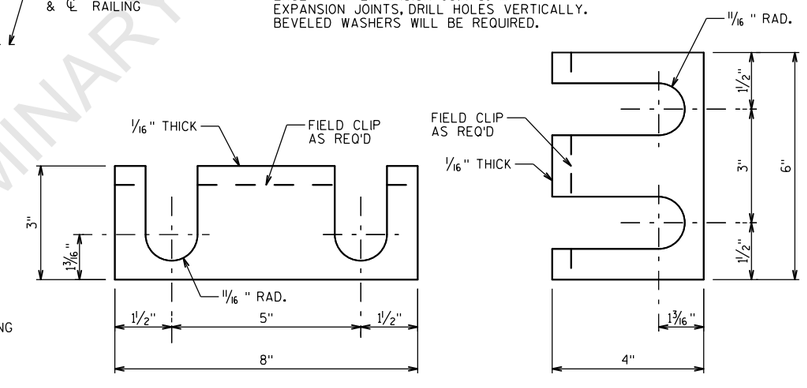
☆ DRILL HOLES NORMAL TO TOP OF COPING EXCEPT AT EXPANSION JOINTS. AT EXPANSION JOINTS, DRILL HOLES VERTICALLY. BEVELED WASHERS WILL BE REQUIRED.



WALL RAILING SECTION



RAIL POST BASE PLATE



RAIL POST SHIM DETAIL

(2 SETS PER POST)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-28

DRAWN BY EAJ | PLANS CK'D. HDA

PIPE RAILING DETAILS

SHEET 18 OF 20

8

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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
CFC-03	SEPTEMBER 11, 2014	357649	602263
PW-01	APRIL 15, 2014	357366	602224
PWD-01	APRIL 14, 2014	357721	602278

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

REPORT COMPLETED BY: HNTB CORP.

ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) OZAUKEE COUNTY

NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

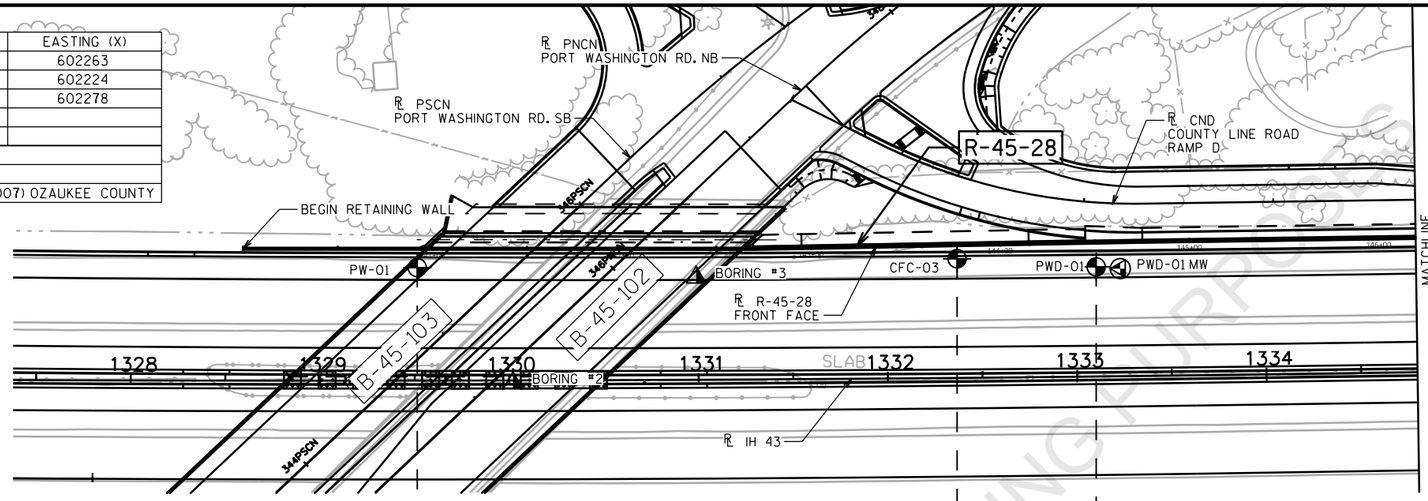
WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

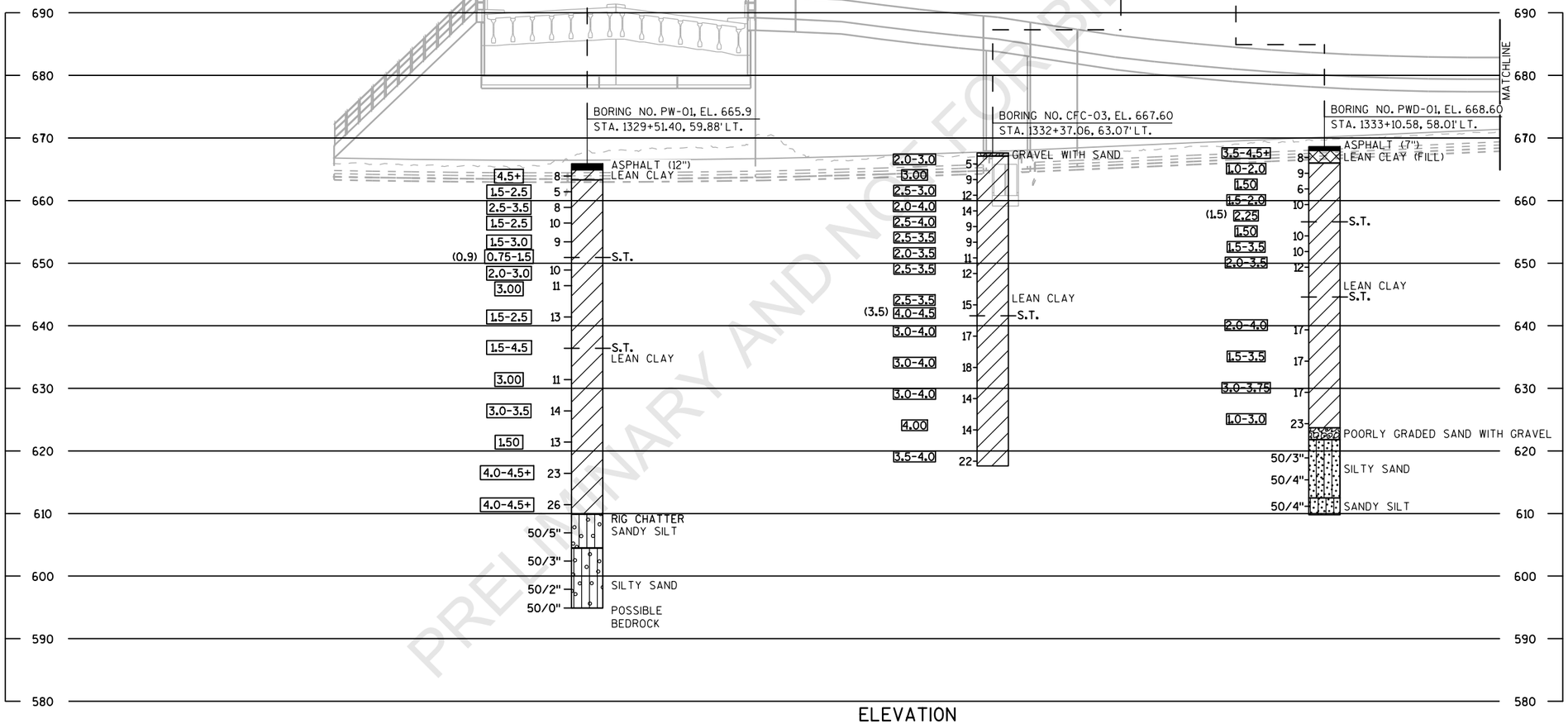
DENOTES SOIL BORING LOCATION

DENOTES MONITORING WELL LOCATION

DENOTES HISTORICAL BORING



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

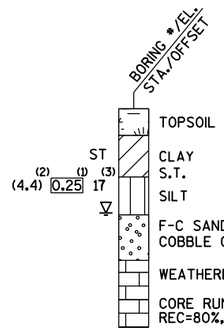
STATE PROJECT NUMBER

1229-04-74

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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE R-45-28

DRAWN BY NNM | PLANS CK'D. CVH

SUBSURFACE EXPLORATION (1 OF 2)

SHEET 19 OF 20

8

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FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\R-45-28\cds\R45-28_080601_se.dgn

PLOT DATE : 7/29/2021 9:32:33 AM PLOT BY : nmeisner

PLOT SCALE : 80:1

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
PWD-02	APRIL 14, 2014	357905	602293
PWD-09	DECEMBER 30, 2014	358103	602321

BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

REPORT COMPLETED BY: HNTB CORP.

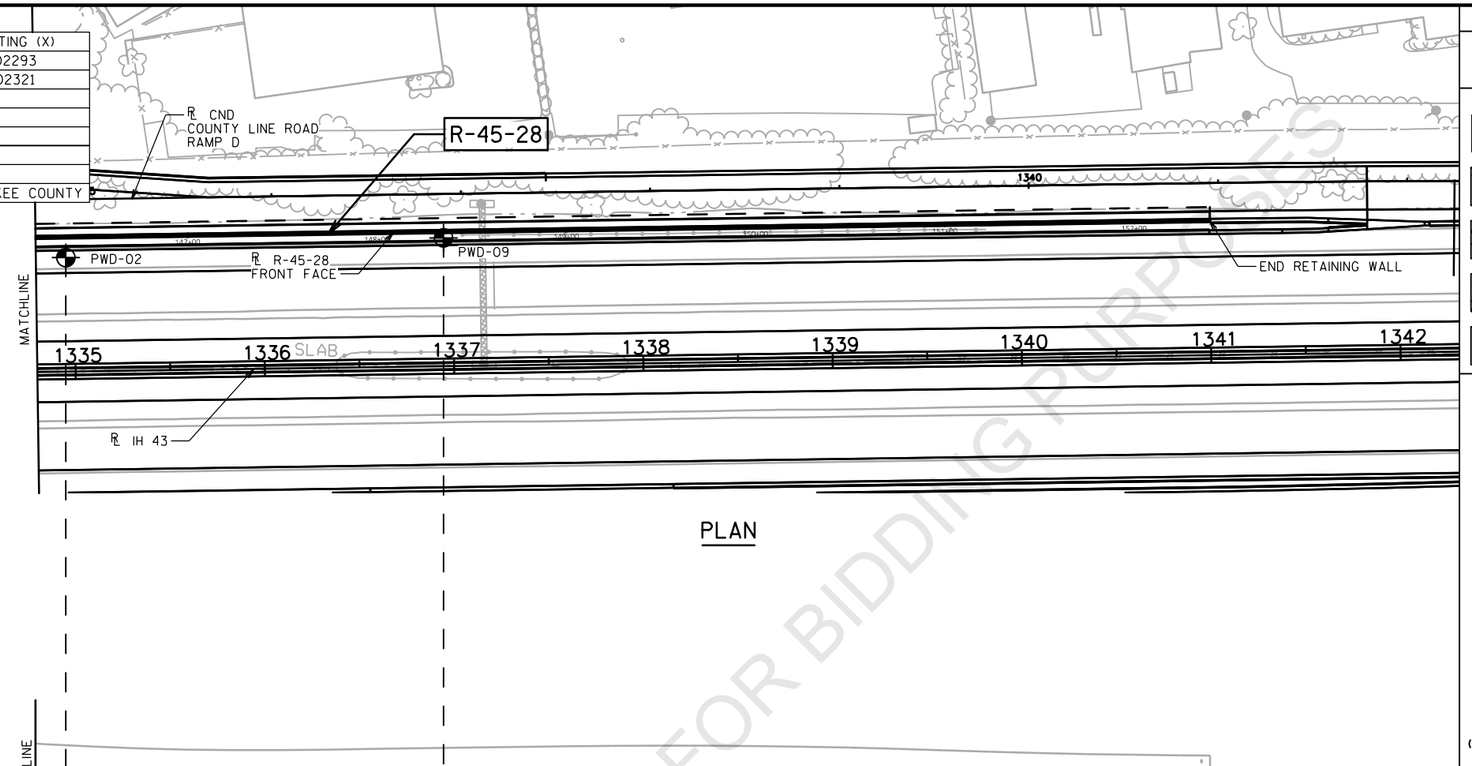
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) OZAUKEE COUNTY

NOTE:

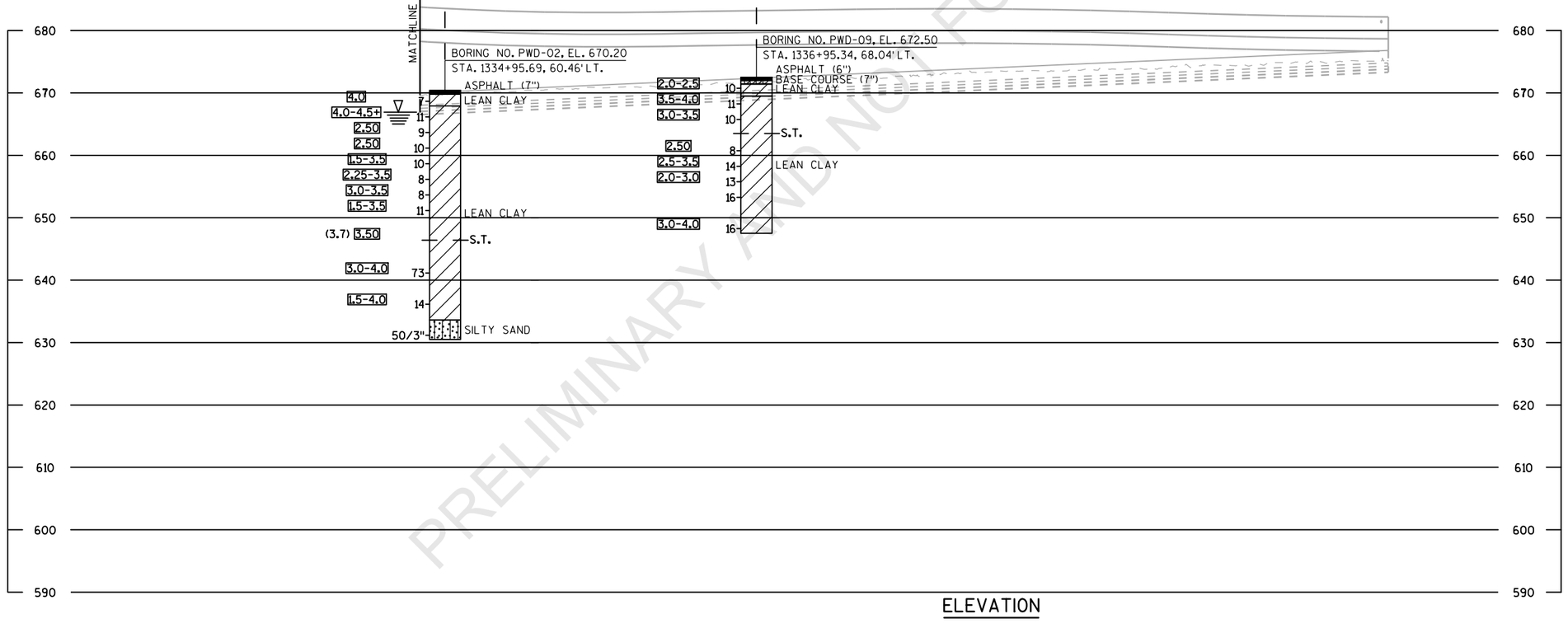
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

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DENOTES SOIL BORING LOCATION



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

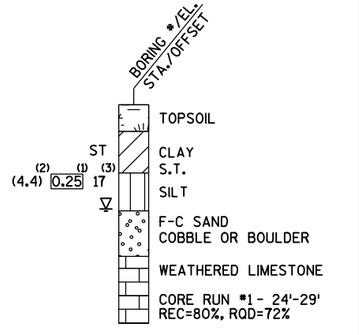
STATE PROJECT NUMBER

1229-04-74

MATERIAL SYMBOLS

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

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-28

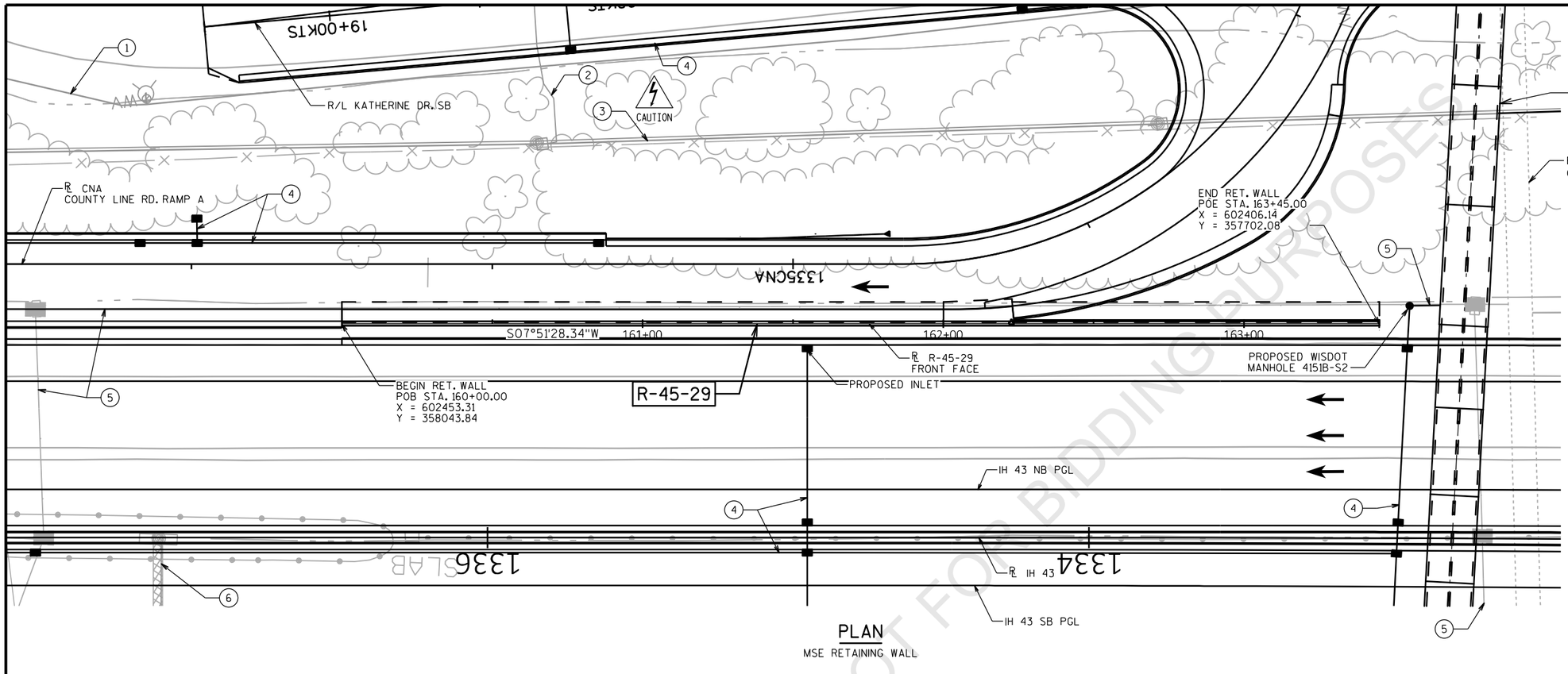
DRAWN BY NNM | PLANS CK'D. CVH

SUBSURFACE EXPLORATION (2 OF 2)

SHEET 20 OF 20

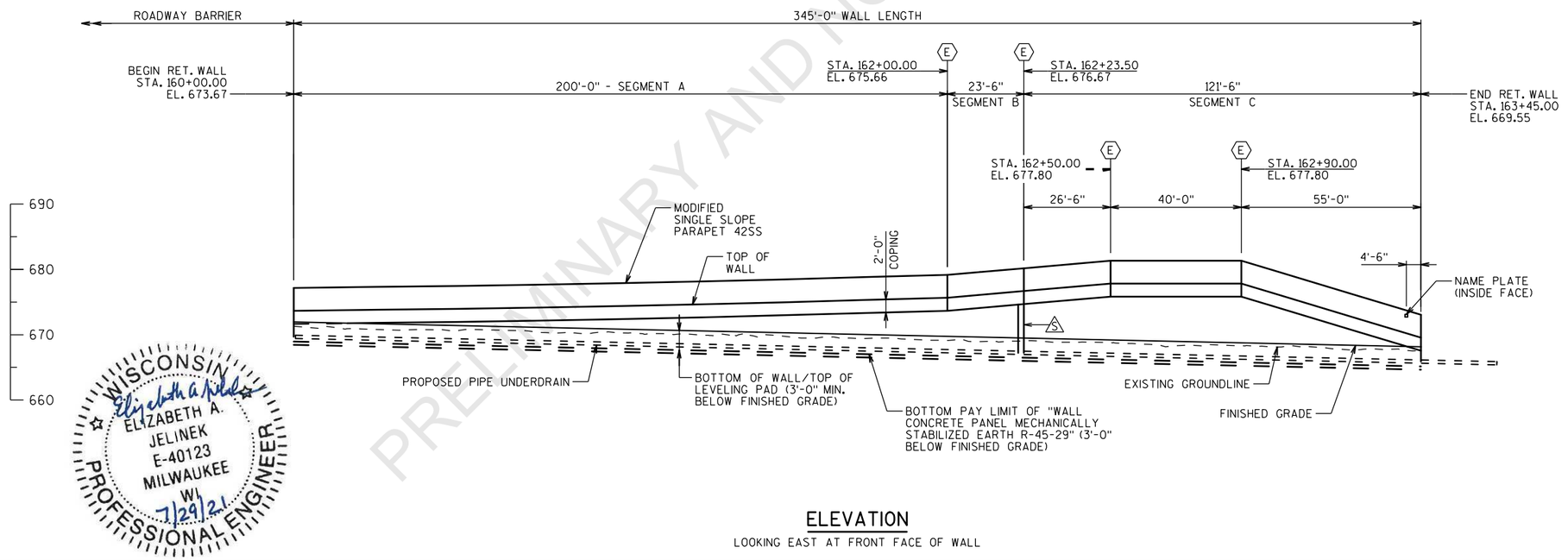
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PLAN

MSE RETAINING WALL



ELEVATION

LOOKING EAST AT FRONT FACE OF WALL

PRELIMINARY AND NOT FOR BIDDING PURPOSES

WISCONSIN
ELIZABETH A. JELINEK
E-40123
MILWAUKEE
WI
7/29/21
PROFESSIONAL ENGINEER

C-45-60

EXISTING BOX CULVERT C-45-17 TO BE REMOVED
(INCLUDED WITH C-45-60)

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. GENERAL NOTES & QUANTITIES
3. DESIGN DATA & PROFILE GRADE LINES
4. TYPICAL SECTIONS
5. PARAPET & ANCHOR SLAB DETAILS (1 OF 5)
6. PARAPET & ANCHOR SLAB DETAILS (2 OF 5)
7. PARAPET & ANCHOR SLAB DETAILS (3 OF 5)
8. PARAPET & ANCHOR SLAB DETAILS (4 OF 5)
9. PARAPET & ANCHOR SLAB DETAILS (5 OF 5)
10. SUBSURFACE EXPLORATION

LEGEND

- TRAFFIC DIRECTION
- (E) EXPANSION JOINT
- (S) SLIP JOINT

UTILITY AND STORM SEWER NOTES

1. EXISTING WATER MAIN TO REMAIN
2. EXISTING UNDERGROUND ELECTRIC LINE TO BE DISCONTINUED
3. EXISTING OVERHEAD ELECTRIC LINE TO BE RELOCATED
4. PROPOSED WISDOT STORM SEWER
5. EXISTING WISDOT STORM SEWER TO BE REMOVED
6. EXISTING WISDOT FTMS TO BE REMOVED

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
HEATHER ANDERS (414) 410-6899

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
HNTB
250 E. WISCONSIN AVE. #2000
MILWAUKEE WI 53202
(414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE R-45-29

WALL BETWEEN IH 43 NB & RAMP CNA

COUNTY	CITY
OZAUKEE	MEQUON

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EAJ	HDA	BTH/AKR	HDA

GENERAL PLAN & ELEVATION

SHEET 1 OF 10

STATE PROJECT NUMBER
1229-04-74

8

8

STATE PROJECT NUMBER
1229-04-74

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-29".

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN IN THESE PLANS.

DESIGN THE MSE WALL FOR A HORIZONTAL BACKSLOPE BEHIND THE WALL AND A LIVE LOAD VERTICAL SURCHARGE OF 240 PSF.

SOIL REINFORCEMENT MAY BE PLACED UP TO A MAXIMUM OF 15° FROM PERPENDICULAR IF NECESSARY TO AVOID INTERFERENCE WITH ITEMS BEHIND THE WALL. ANGLES GREATER THAN 15° REQUIRE APPROVAL FROM THE BUREAU OF STRUCTURES DESIGN SECTION.

ONLY WALL CONCRETE PANEL MSE WALL SYSTEMS THAT USE STRIP SOIL TYPE REINFORCEMENT THAT ARE HINGED AT THE PANEL CONNECTION CAN BE USED FOR THIS PROJECT.

MSE WALL PANEL SHAPES SHALL BE SQUARE OR RECTANGULAR.

DESIGN SPECIFICATION:
AASHTO LRFD DESIGN SPECIFICATIONS, 9TH EDITION, 2020 WITH INTERIM REVISIONS, UNLESS OTHERWISE NOTED.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST RESULTS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007).

ALL STATIONS AND DIMENSIONS ARE ALONG THE FRONT FACE OF WALL, UNLESS SHOWN OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER, UNLESS SHOWN OTHERWISE.

ALL BAR STEEL REINFORCEMENT WITHIN CAST-IN-PLACE CONCRETE IS TO BE EPOXY COATED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL.

THE UTILITY AND STORM SEWER INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AND STORM SEWERS AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

PLAN DIMENSIONS, QUANTITIES AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 7½" INCHES. FOR PANEL THICKNESSES OTHER THAN 7½" INCHES, THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-29" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS. THE TOP OF LEVELING PAD IS TAKEN AS A CONSTANT 3'-0" BELOW FINISHED GRADE FOR MEASUREMENT PURPOSES. WALL AREAS CONSTRUCTED OUTSIDE THESE LIMITS WILL NOT BE MEASURED FOR PAYMENT.

THE QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT FOR CAST-IN-PLACE ANCHOR SLAB, COPING AND PARAPET ARE PAID FOR UNDER ITEMS "CONCRETE MASONRY RETAINING WALLS" AND "BAR STEEL REINFORCEMENT HS COATED STRUCTURES", RESPECTIVELY.

APPLY PROTECTIVE SURFACE TREATMENT TO THE EXPOSED TOP SURFACE OF THE ANCHOR SLAB.

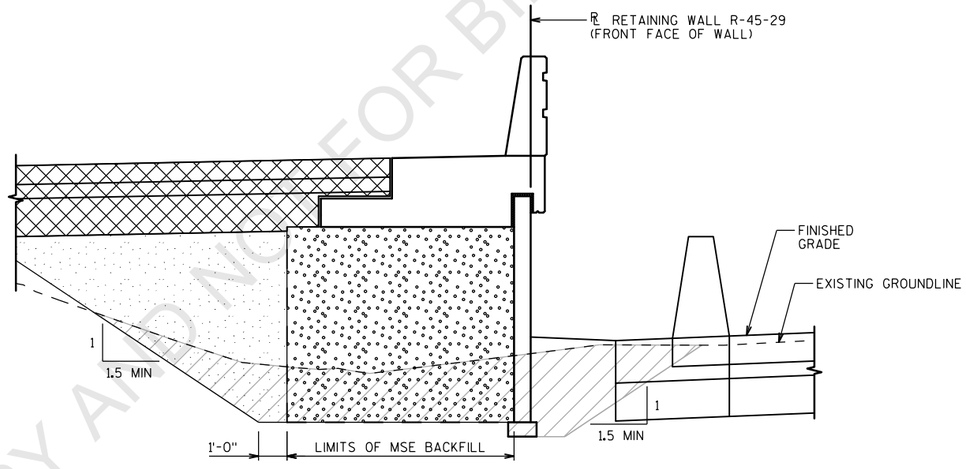
APPLY PIGMENTED SURFACE SEALER TO THE TOP AND INSIDE FACES OF THE PARAPET.

THE COST OF FURNISHING AND PLACING THE MSE BACKFILL WITHIN THE REINFORCED SOIL ZONE IS TO BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-29".

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SEG. A	SEG. B	SEG. C	TOTAL
502.3200	PROTECTIVE SURFACE TREATMENT	SY	89	11	7	107
502.3210	PIGMENTED SURFACE SEALER	SY	99	12	60	171
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	140	17	60	217
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	16,750	2,080	6,980	25,810
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	1	6	14
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	-	-	15	15
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	200	24	122	346
SPV.0165.4005	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-29	SF	1,330	225	1,216	2,771
	NON-BID ITEMS					
	NAME PLATE	EACH	-	-	-	1
	CORK FILLER	SIZE	-	-	-	1"
	NON-BITUMINOUS JOINT SEALER	SIZE	-	-	-	1"
	EXPANDED POLYSTYRENE	SIZE	-	-	-	1"

ALL ITEMS ARE CATEGORY 3040



TYPICAL WALL EXCAVATION LIMITS DIAGRAM

LOOKING SOUTH

LEGEND

- LINEARLY INTERPOLATE WALL ELEVATIONS BETWEEN STATIONS.
- WALL EXCAVATION - INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-29".
- MSE BACKFILL - INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-29".
- ROADWAY ITEM - NOT A RETAINING WALL ITEM. SEE ROADWAY PLANS.
- EMBANKMENT - NOT A RETAINING WALL ITEM. SEE ROADWAY PLANS.

WALL ELEVATIONS SEGMENT A ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
160+00.00	673.67	671.92	671.26
160+25.00	673.78	671.65	670.81
160+50.00	673.94	671.37	670.60
160+70.00	674.10	671.15	670.61
160+75.00	674.14	671.10	670.36
161+00.00	674.37	670.82	670.25
161+25.00	674.64	670.55	669.93
161+50.00	674.95	670.27	669.74
161+75.00	675.29	670.00	669.41
162+00.00	675.66	669.72	669.10

WALL ELEVATIONS SEGMENT B ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
162+00.00	675.66	669.72	669.10
162+23.50	676.67	669.46	669.03

WALL ELEVATIONS SEGMENT C ◥

STATION	TOP OF WALL EL	FINISHED GRADE EL	EXISTING GROUND EL
162+23.50	676.67	669.46	669.03
162+25.00	676.73	669.45	669.06
162+50.00	677.80	669.17	668.78
162+90.00	677.80	668.73	668.32
163+00.00	676.30	668.62	668.11
163+25.00	672.55	668.35	667.65
163+45.00	669.55	668.14	667.62

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NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-29

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GENERAL NOTES & QUANTITIES

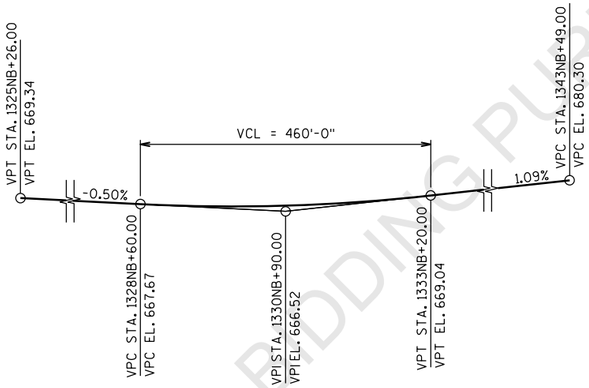
SHEET 2 OF 10

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MSE WALL SOIL PARAMETERS

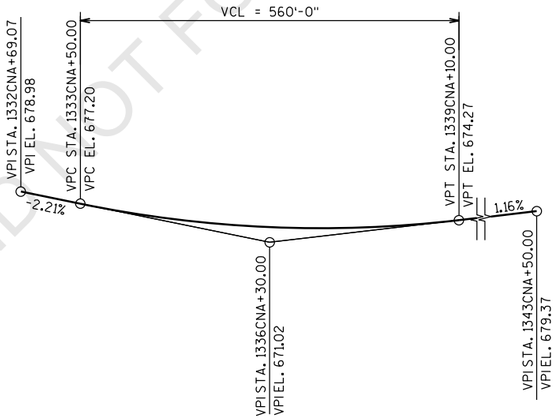
	SOIL DESCRIPTION	TOTAL UNIT WEIGHT (PCF)	UNDRAINED		DRAINED	
			FRICTION ANGLE (DEGREES)	COHESION (PSF)	FRICTION ANGLE (DEGREES)	COHESION (PSF)
◐	MSE WALL REINFORCED ZONE	120	30	N/A	30	--
	RETAINED SOIL - GRANULAR	120	30	N/A	30	--
	RETAINED SOIL - CLAY	120	--	1,500	28	--
BORING CFC-01	GRAVEL (ASSUMED 6") EL. 667.4 - EL. 666.9	--	--	--	--	--
BORING CFC-01	CL T. GRAVEL (BR - GR) EL. 666.9 - EL. 625.6	135	--	2,750	31	50
BORING CFC-01	SM T./W. GRAVEL (GR) EL. 625.6 - EL. 617.4	140	36	--	36	--
BORING PWA-01	TOPSOIL (6") EL. 676.8 - EL. 676.3	--	--	--	--	--
BORING PWA-01	CL (BR) EL. 676.3 - EL. 666.3	135	--	4,250	32	100
BORING PWA-01	CL (GR) EL. 666.3 - EL. 637.3	130	--	3,000	31	50
BORING PWA-01	ML (GR) EL. 637.3 - EL. 632.8	130	32	--	32	--
BORING PWA-01	SP-SM (GR) EL. 632.8 - EL. 630.1	140	36	--	36	--
BORING PWA-01	SANDY ML (GR) EL. 630.1 - EL. 625.4	140	36	--	36	--
BORING PWA-01	SM (GR) EL. 625.4 - EL. 620.7	140	36	--	36	--
BORING PWA-01	SANDY ML T. GRAVEL (GR) EL. 620.7 - EL. 603.2	140	36	--	36	--
BORING PWA-02	TOPSOIL (12") EL. 679.6 - EL. 678.6	--	--	--	--	--
BORING PWA-02	CL T. SAND & GRAVEL (BR) EL. 678.6 - EL. 674.0	135	--	4,000	32	75
BORING PWA-02	CL T. SAND & GRAVEL (BR) EL. 674.0 - EL. 667.0	130	--	2,250	30	25
BORING PWA-02	CL T. GRAVEL (GR) EL. 667.0 - EL. 639.6	130	--	3,250	31	50
BORING PWA-03	FILL - SP W. GRAVEL (BR) EL. 669.3 - EL. 668.8	125	--	--	--	--
BORING PWA-03	CL (BR) EL. 668.8 - EL. 665.0	135	--	3,500	31	75
BORING PWA-03	CL (BR) EL. 665.0 - EL. 659.0	125	--	2,250	30	50
BORING PWA-03	CL (GR - BR) EL. 659.0 - EL. 639.3	135	--	3,250	31	50

◐ DESIGN WALL FOR THESE VALUES



PROFILE GRADE LINE IH 43 NB

℄ 'NB'



PROFILE GRADE LINE COUNTY LINE RD. RAMP A

℄ 'CNA'

MATERIAL PROPERTIES

CONCRETE MASONRY RETAINING WALL _____ f'c = 4,000 PSI
PRECAST CONCRETE WALL PANELS _____ f'c = 4,000 PSI
BAR STEEL REINFORCEMENT _____ Fy = 60,000 PSI

WALL EXTERNAL STABILITY EVALUATION

	DIMENSIONS			
	WALL HEIGHT (FEET)		10.7	11.8
	EXPOSED WALL HEIGHT (FEET)		7.7	8.8
T01	MINIMUM LENGTH OF REINFORCEMENT/WALL WIDTH (FEET)		8.3	9.0
	REINFORCEMENT LENGTH/RETAINED HEIGHT RATIO		0.78	0.76
	WALL STATION		163+00	162+80
	BORING USED		PWA-02	PWA-02
	CAPACITY TO DEMAND RATIO (CDR)			
	SLIDING		1.13	1.23
	ECCENTRICITY		1.92	1.49
	BEARING RESISTANCE		1.00	1.02
	FACTORED BEARING RESISTANCE (PSF)		3,175	3,253
	GLOBAL STABILITY	END OF CONSTRUCTION	6.02	7.88
		LONG-TERM	1.40	1.65

NOTES

T01 THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND GLOBAL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGN LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

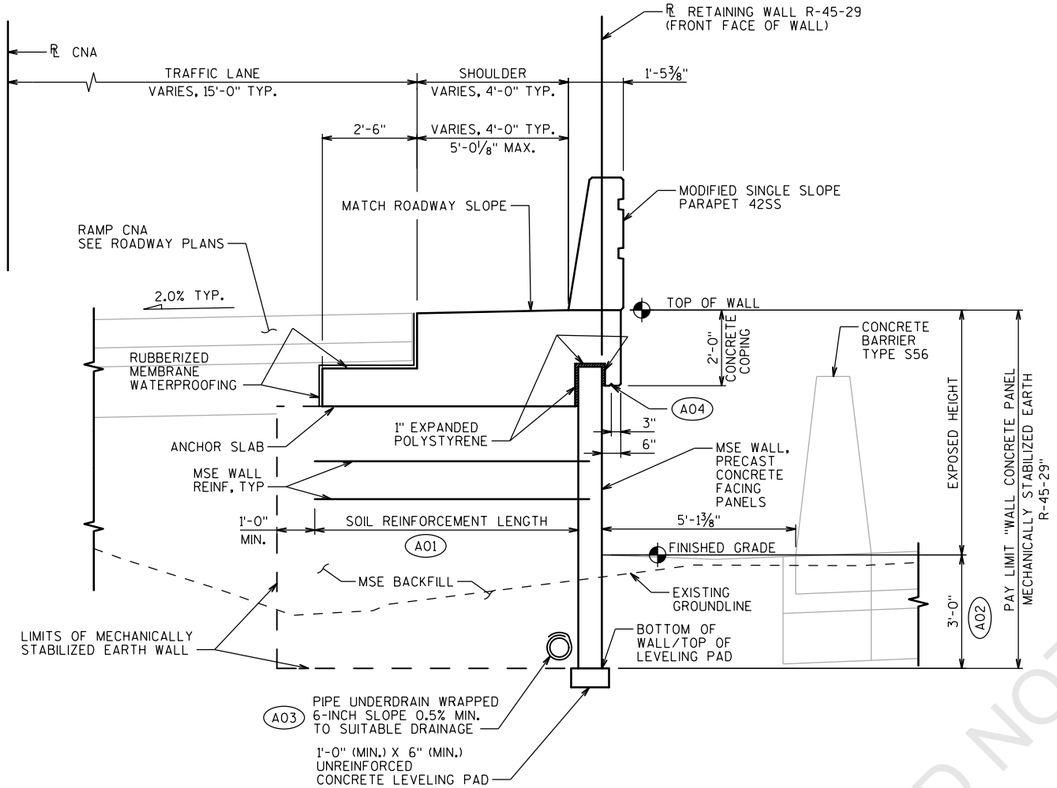
STRUCTURE R-45-29

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DESIGN DATA & PROFILE GRADE LINES

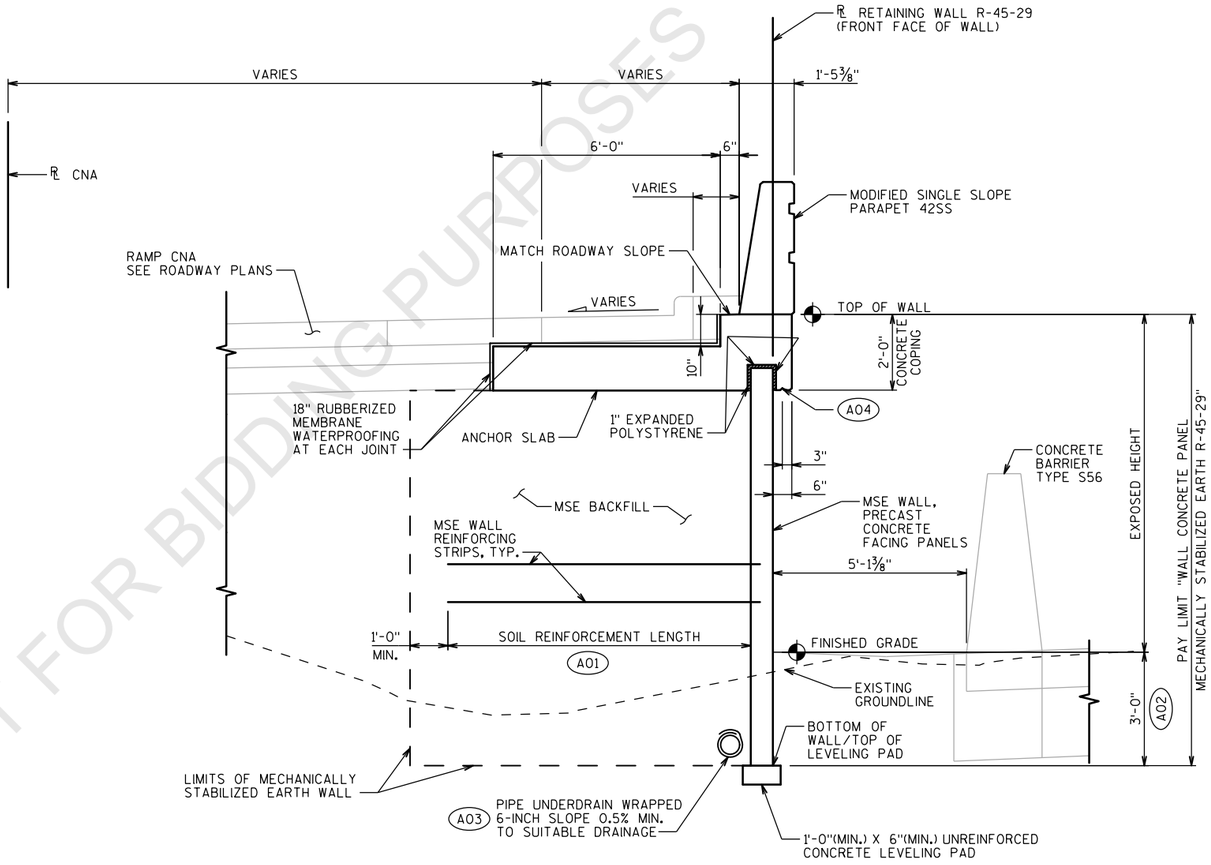
SHEET 3 OF 10

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TYPICAL SECTION

LOOKING SOUTH
(ROADWAY AS SHOWN - STA. 160+00.00 TO STA. 162+23.50)



TYPICAL SECTION

LOOKING SOUTH
(ROADWAY AS SHOWN - STA. 162+23.50 TO STA. 163+45.00)

PRELIMINARY AND NOT FOR BIDDING PURPOSES

LEGEND

(A01) SEE WALL EXTERNAL STABILITY EVALUATION TABLE ON "DESIGN DATA & PROFILE GRADE LINES" SHEET FOR MINIMUM LENGTH OF MSE WALL REINFORCING STRIPS. SOIL REINFORCEMENT MUST EXTEND A MINIMUM OF 3.0 FEET BEYOND THE FAILURE PLANE FOR INTERNAL STABILITY AS DEFINED BY AASHTO SPECIFICATIONS.

(A02) MINIMUM DIMENSION FROM FINISHED GRADE AT FRONT FACE OF WALL TO TOP OF LEVELING PAD AS SHOWN. PAY LIMITS BASED ON MINIMUM DIMENSION.

(A03) CONNECT PIPE UNDERDRAIN WRAPPED TO PIPE UNDERDRAIN UNPERFORATED AT THE END OF THE WALL AND CONNECT TO PROPOSED WISDOT STORM SEWER MANHOLE 4151B-S2.

(A04) ¾" CONTINUOUS DRIP GROOVE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-29

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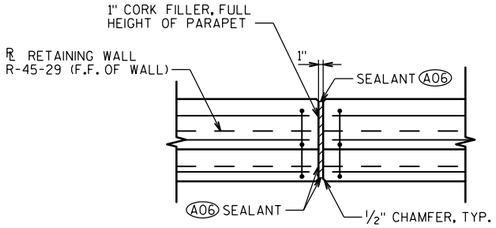
TYPICAL SECTIONS

SHEET 4 OF 10

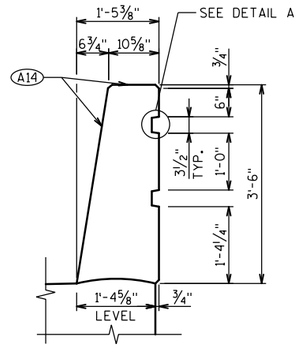
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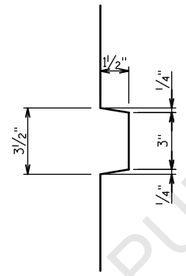
STATE PROJECT NUMBER
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A11 PARAPET EXPANSION JOINT



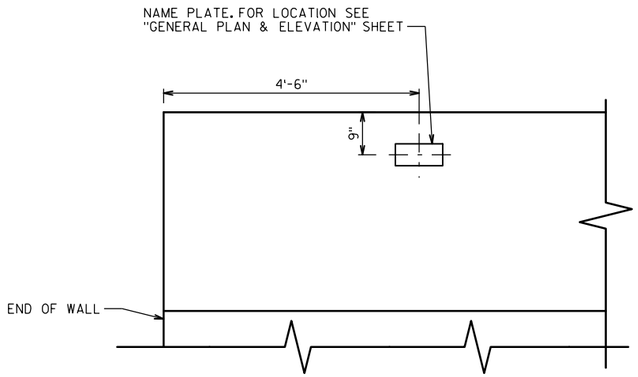
MODIFIED SINGLE SLOPE PARAPET 42SS DIMENSIONS



DETAIL A

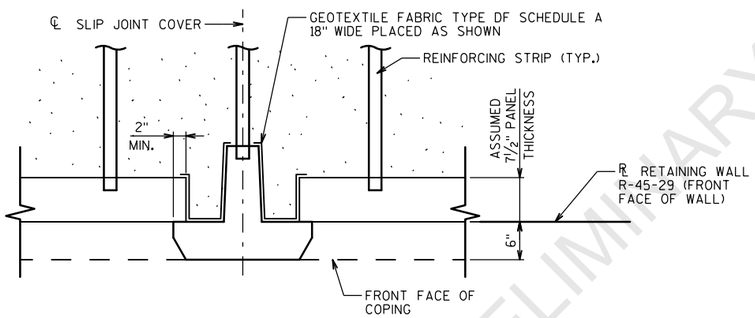
LEGEND

- A06 SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)
- A11 EXPANSION JOINTS TO BE SPACED AT A MINIMUM OF 20'-0" AND A MAXIMUM OF 30'-0". LOCATE EXPANSION JOINTS OVER WALL JOINTS. DO NOT RUN BAR STEEL THRU JOINT, EXCEPT DOWEL BARS. JOINT TO EXTEND FULL DEPTH OF PARAPET AND ANCHOR SLAB.
- A14 APPLY PIGMENTED SURFACE SEALER.
- F.F. FRONT FACE
- C.I.P. CAST-IN-PLACE



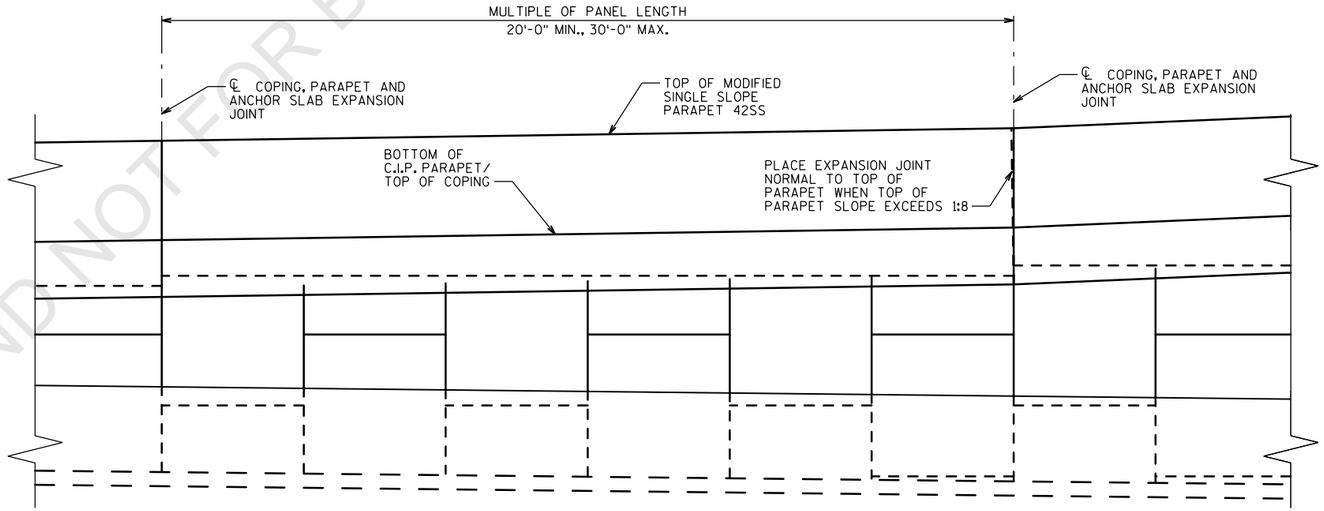
NAME PLATE LOCATION

INSIDE ELEVATION



SLIP JOINT COVER DETAIL

SLIP JOINT COVER AND GEOTEXTILE FABRIC TYPE DF SCHEDULE A INCIDENTAL TO "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-29"



PARTIAL ELEVATION

NOTE: ALL JOINTS SHALL BE LOCATED AS SHOWN AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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DEPARTMENT OF TRANSPORTATION

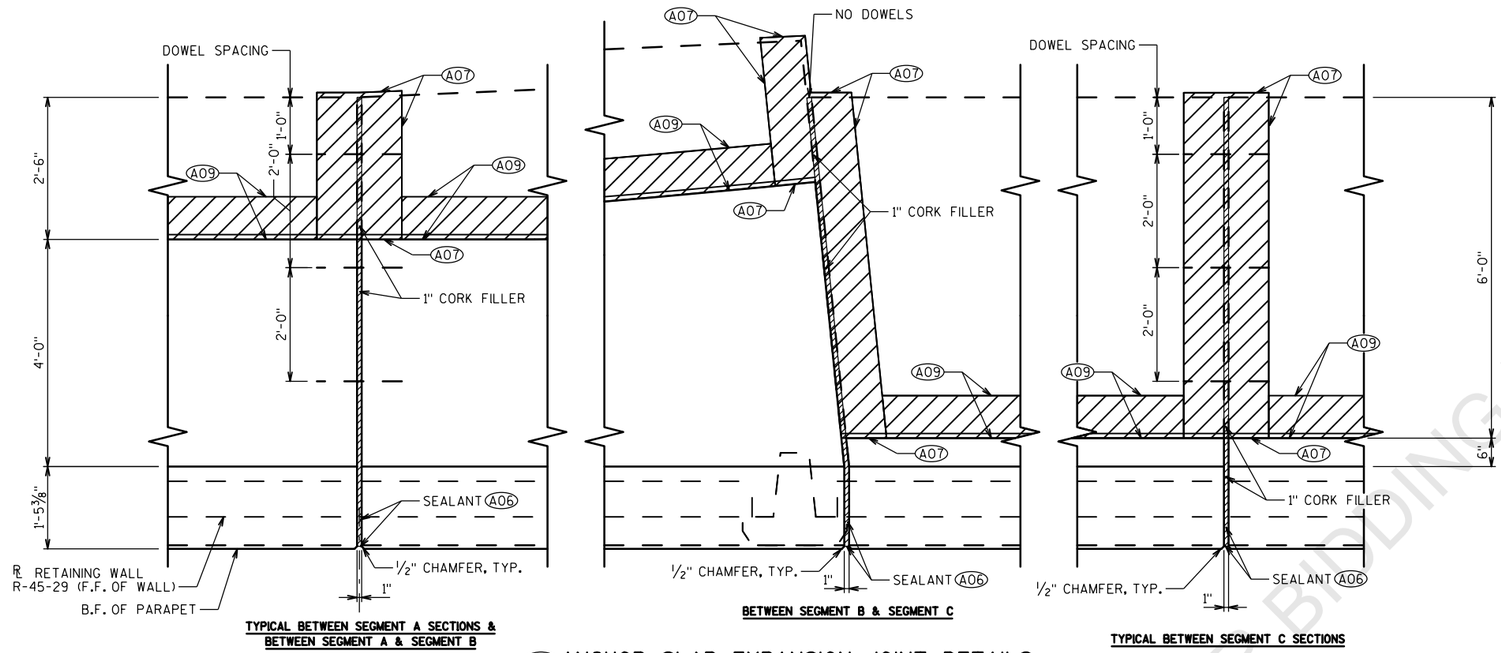
STRUCTURE R-45-29

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PARAPET & ANCHOR SLAB DETAILS (1 OF 5)

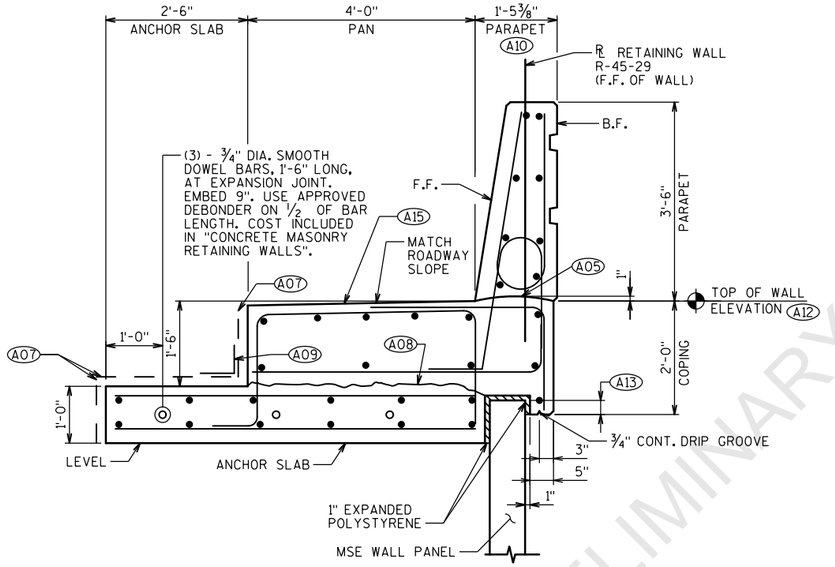
SHEET 5 OF 10

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A11 ANCHOR SLAB EXPANSION JOINT DETAILS

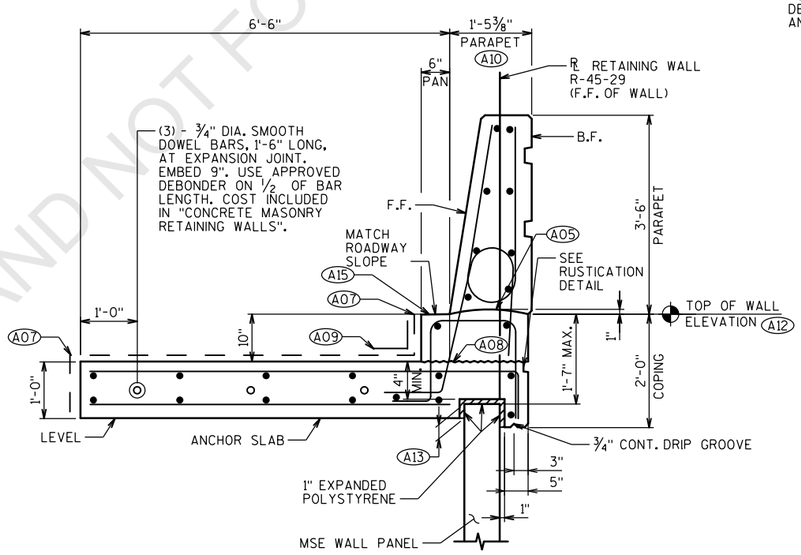
PLAN VIEW



C.I.P. MODIFIED SINGLE SLOPE PARAPET 422SS/ ANCHOR SLAB DETAIL FOR 4'-0" PAN FOR PRECAST WALL PANELS

(SEGMENT B VARIABLE SECTION SIMILAR - SEE "PARAPET & ANCHOR SLAB DETAILS 5 OF 5" SHEET SECTION B-B DETAIL FOR ADDITIONAL INFORMATION)

- OPTIONAL CONSTRUCTION JOINTS IN THE PARAPET AND ANCHOR SLAB BETWEEN EXPANSION JOINTS MAY BE USED.
- RUN BAR REINFORCEMENT THROUGH THE JOINT.
- MINIMUM LAP LENGTH OF PARAPET BARS = 1'-9".
- MINIMUM LAP LENGTH OF ANCHOR SLAB LONGITUDINAL #4 BARS = 1'-0".
- DEFINE CONSTRUCTION JOINT WITH ¾" "V" GROOVE.
- CONCRETE QUANTITY BASED ON 3" PANEL EMBEDMENT.



C.I.P. MODIFIED SINGLE SLOPE PARAPET 422SS/ ANCHOR SLAB DETAIL FOR 6" PAN FOR PRECAST WALL PANELS

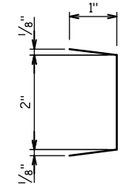
- OPTIONAL CONSTRUCTION JOINTS IN THE PARAPET AND ANCHOR SLAB BETWEEN EXPANSION JOINTS MAY BE USED.
- RUN BAR REINFORCEMENT THROUGH THE JOINT.
- MINIMUM LAP LENGTH OF PARAPET BARS = 1'-9".
- MINIMUM LAP LENGTH OF ANCHOR SLAB LONGITUDINAL #4 BARS = 1'-0".
- DEFINE CONSTRUCTION JOINT WITH ¾" "V" GROOVE.
- CONCRETE QUANTITY BASED ON 3" PANEL EMBEDMENT.

LEGEND

- A05 CONSTRUCTION JOINT - STRIKE OFF AS SHOWN.
- A06 SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)
- A07 18" RUBBERIZED MEMBRANE WATERPROOFING TO BE PLACED ON THESE SURFACES AT EACH JOINT.
- A08 OPTIONAL CONSTRUCTION JOINT. LEAVE SURFACE ROUGHENED.
- A09 IF THE OPT. CONST. JOINT IS USED, PLACE 18" MEMBRANE WATERPROOFING ALONG THE ENTIRE LONGITUDINAL JOINT. THE MEMBRANE WATERPROOFING SEALING THE OPTIONAL CONSTRUCTION JOINT IS INCIDENTAL TO THE CONCRETE MASONRY BID ITEM.
- A10 SEE MODIFIED SINGLE SLOPE PARAPET 42SS DIMENSIONS DETAIL ON "PARAPET & ANCHOR SLAB DETAILS (1 OF 5)" SHEET.
- A11 EXPANSION JOINTS TO BE SPACED AT A MINIMUM OF 20'-0" AND A MAXIMUM OF 30'-0". LOCATE EXPANSION JOINTS OVER WALL JOINTS. DO NOT RUN BAR STEEL THRU JOINT, EXCEPT DOWEL BARS. JOINT TO EXTEND FULL DEPTH OF PARAPET AND ANCHOR SLAB.
- A12 SEE "GENERAL NOTES & QUANTITIES" SHEET FOR ELEVATION INFORMATION.
- A13 3" MIN., 6" MAX.
- A15 APPLY PROTECTIVE SURFACE TREATMENT TO HORIZONTAL EXPOSED SURFACE.
- E.F. EACH FACE
- F.F. FRONT FACE
- B.F. BACK FACE
- C.I.P. CAST-IN-PLACE

NOTE

FOR REINFORCEMENT DETAILS AND BILL OF BARS SEE "PARAPET & ANCHOR SLAB DETAILS (3 OF 5)", "PARAPET & ANCHOR SLAB DETAILS (4 OF 5)" AND "PARAPET & ANCHOR SLAB DETAILS (5 OF 5)" SHEETS.



RUSTICATION DETAIL

PROVIDE RUSTICATION IF OPT. CONST. JOINT IS USED.

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DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-29

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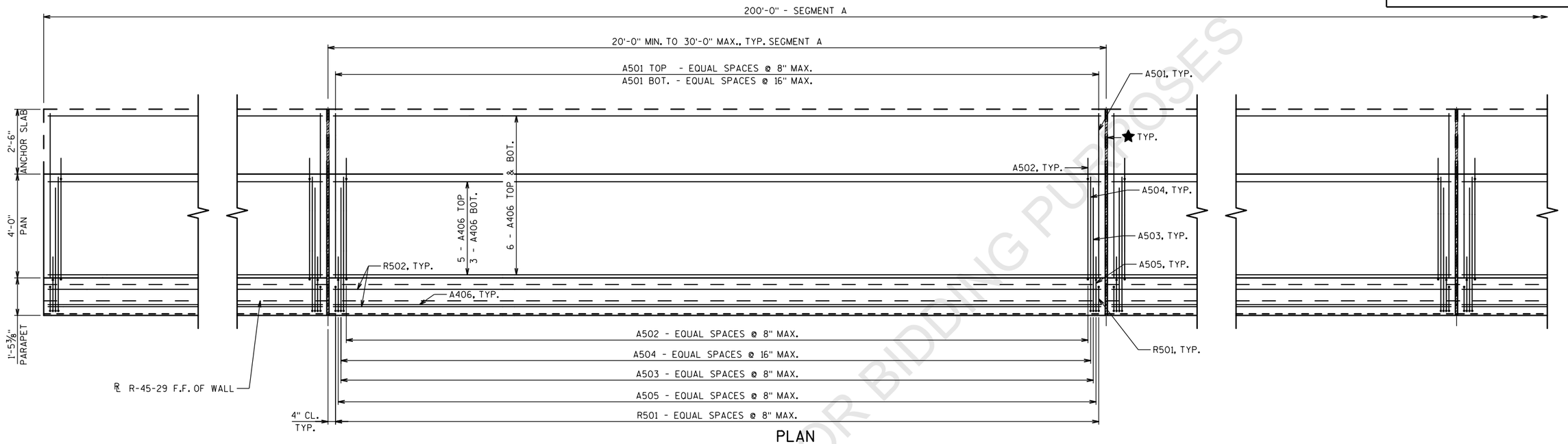
PARAPET & ANCHOR SLAB DETAILS (2 OF 5)

SHEET 6 OF 10

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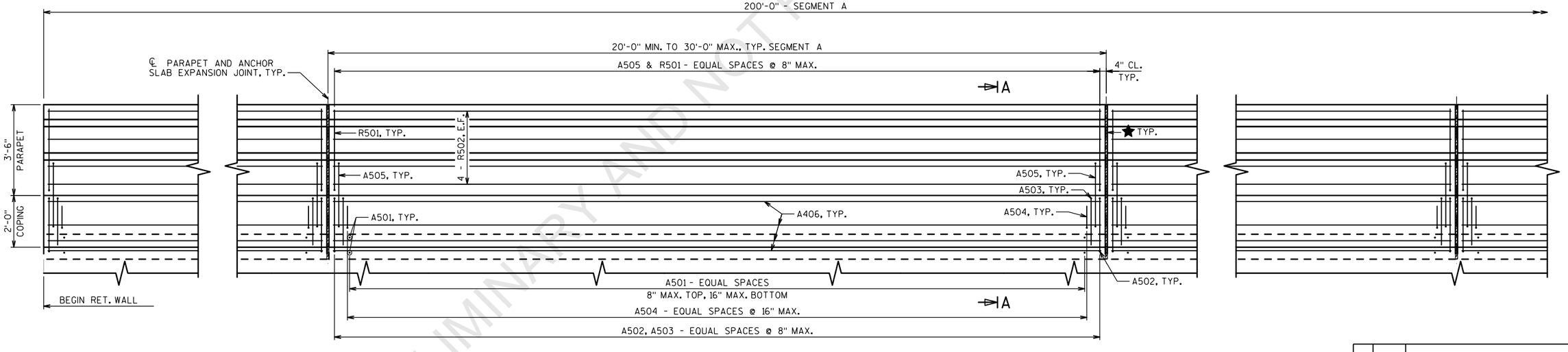
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PLAN

DIMENSIONS ALONG ℄ R-45-29



ELEVATION

DIMENSIONS ALONG ℄ R-45-29 - LOOKING AT FRONT FACE OF WALL

LEGEND

★ 1" CORK FILLER

E.F. EACH FACE

NOTES

FOR BILL OF BARS AND SECTION A-A SEE "PARAPET & ANCHOR SLAB DETAILS (5 OF 5)" SHEET.

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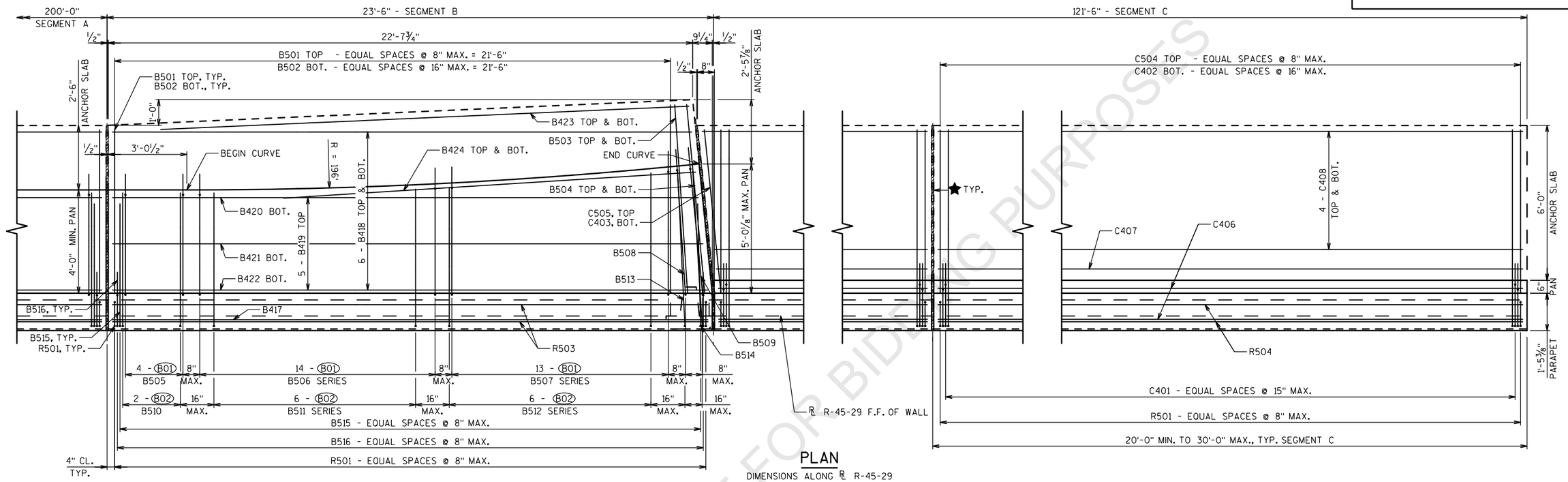
STRUCTURE R-45-29

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PARAPET & ANCHOR SLAB DETAILS (3 OF 5)

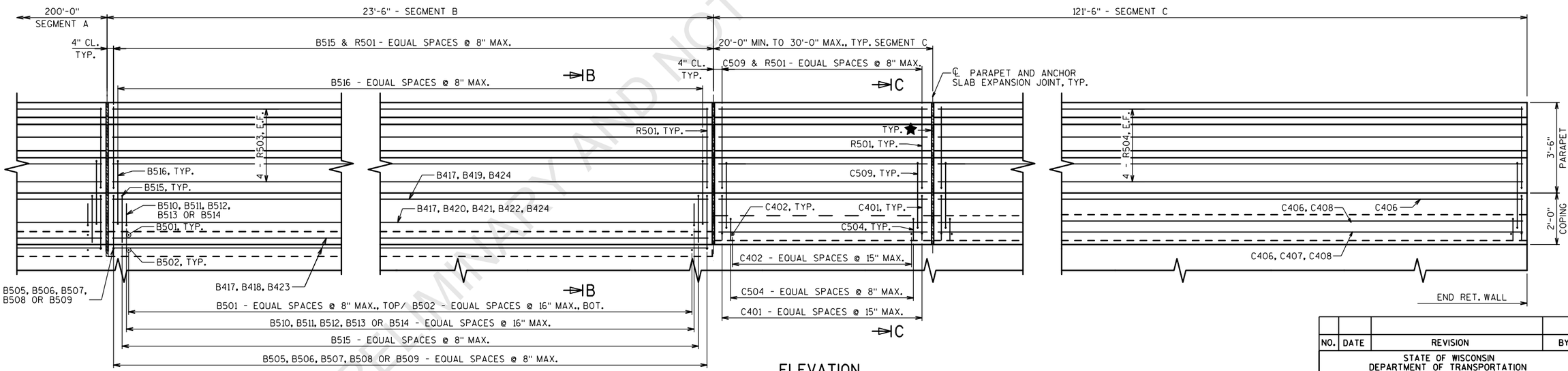
SHEET 7 OF 10

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PLAN

DIMENSIONS ALONG ℄ R-45-29



ELEVATION

DIMENSIONS ALONG ℄ R-45-29 - LOOKING AT FRONT FACE OF WALL

LEGEND

- (B01) EQUAL SPA. @ 8" MAX.
- (B02) EQUAL SPA. @ 16" MAX.
- ★ 1" CORK FILLER
- E.F. EACH FACE

NOTES

FOR BILL OF BARS, SECTION B-B AND SECTION C-C SEE "PARAPET & ANCHOR SLAB DETAILS (5 OF 5)" SHEET.

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DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-29

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PARAPET & ANCHOR SLAB DETAILS (4 OF 5)

SHEET 8 OF 10

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PLOT BY : ejelinek
PLOT SCALE : 4:1

STATE PROJECT NUMBER

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BILL OF BARS - SEGMENT A

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	SERIES	NOTE	LOCATION
A501	X	460	6'-4"				ANCHOR SLAB - TRANS. TOP & BOT.
A502	X	300	8'-4"	X			COPING - VERT TIE
A503	X	300	4'-8"	X			COPING - HORIZ. TIE
A504	X	160	5'-10"	X			COPING - HORIZ. TIE
A505	X	300	5'-11"	X			ANCHOR SLAB/COPING TO PARAPET - VERT. TIE
A406	X	23	199'-7"			(4)	ANCHOR SLAB & COPING - HORIZ.
R501	X	300	6'-8"	X			PARAPET - VERT. TIE
R502	X	8	199'-7"			(4)	PARAPET - HORIZ.

BILL OF BARS - SEGMENT B

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	SERIES	NOTE	LOCATION
B501	X	34	6'-9"		⚠		ANCHOR SLAB - TRANS. TOP
B502	X	18	6'-9"		⚠		ANCHOR SLAB - TRANS. BOT.
B503	X	2	7'-3"				ANCHOR SLAB - TRANS. TOP & BOT.
B504	X	2	7'-4"				ANCHOR SLAB - TRANS. TOP & BOT.
B505	X	5	8'-4"	X			COPING - VERT TIE
B506	X	15	8'-5"	X	⚠		COPING - VERT TIE
B507	X	14	8'-11"	X	⚠		COPING - VERT TIE
B508	X	1	9'-3"	X			COPING - VERT TIE
B509	X	1	9'-4"	X			COPING - VERT TIE
B510	X	3	5'-10"	X			COPING - HORIZ. TIE
B511	X	7	5'-11"	X	⚠		COPING - HORIZ. TIE
B512	X	7	6'-5"	X	⚠		COPING - HORIZ. TIE
B513	X	1	6'-9"	X			COPING - HORIZ. TIE
B514	X	1	6'-10"	X			COPING - HORIZ. TIE
B515	X	36	4'-8"	X			COPING - HORIZ. TIE
B516	X	36	5'-11"	X			ANCHOR SLAB/COPING TO PARAPET - VERT. TIE
B417	X	3	23'-0"				ANCHOR SLAB & COPING - HORIZ
B418	X	12	22'-9"		⚠		ANCHOR SLAB & COPING - HORIZ
B419	X	5	22'-10"		⚠		ANCHOR SLAB & COPING - HORIZ
B420	X	1	22'-8"				ANCHOR SLAB & COPING - HORIZ
B421	X	1	22'-10"				ANCHOR SLAB & COPING - HORIZ
B422	X	1	23'-0"				ANCHOR SLAB & COPING - HORIZ
B423	X	2	20'-6"				ANCHOR SLAB & COPING - HORIZ EDGE
B424	X	2	16'-0"				ANCHOR SLAB & COPING - HORIZ EDGE
R501	X	36	6'-8"	X			PARAPET - VERT. TIE
R503	X	8	23'-0"				PARAPET - HORIZ.

BILL OF BARS - SEGMENT C

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	SERIES	NOTE	LOCATION
C401	X	102	4'-9"	X			COPING - VERT. TIE
C402	X	102	6'-4"				ANCHOR SLAB - TRANS. BOT.
C403	X	1	6'-5"				ANCHOR SLAB - TRANS. BOT.
C504	X	185	8'-2"	X			ANCHOR SLAB - TRANS. TOP
C505	X	1	8'-3"	X			ANCHOR SLAB - TRANS. TOP
C406	X	6	121'-1"			(4)	ANCHOR SLAB & COPING - HORIZ
C407	X	1	121'-2"			(4)	ANCHOR SLAB & COPING - HORIZ
C408	X	8	121'-6"		⚠	(4)	ANCHOR SLAB & COPING - HORIZ
C509	X	185	5'-10"	X			PARAPET/COPING - VERT. TIE
R501	X	185	6'-8"	X			PARAPET - VERT. TIE
R504	X	8	121'-1"			(4)	PARAPET - HORIZ.

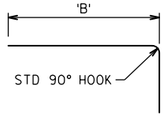
NOTE

(4) LENGTH SHOWN FOR BAR IS OVERALL LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. THE NUMBER REQUIRED IS THE BARS IN THE CROSS SECTION AND BARS SHALL BE CUT OR PROVIDED AS NEEDED FOR EXPANSION JOINTS.

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

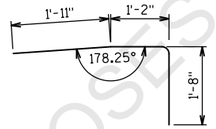
BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
B501	1 SERIES OF 34	6'-4" TO 7'-3"
B502	1 SERIES OF 18	6'-4" TO 7'-3"
B506	1 SERIES OF 15	8'-4" TO 8'-6"
B507	1 SERIES OF 14	8'-7" TO 9'-2"
B511	1 SERIES OF 7	5'-10" TO 6'-0"
B512	1 SERIES OF 7	6'-1" TO 6'-8"
B418	2 SERIES OF 6	22'-5" TO 23'-0"
B419	1 SERIES OF 5	22'-8" TO 23'-0"
C408	2 SERIES OF 4	121'-3" TO 121'-9"

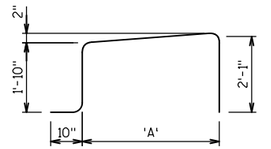


A504, B510, B511, B512, B513, B514, C504, C505

MARK	DIMENSION 'B'
A504	5'-1"
B510	5'-1"
B511	5'-1" TO 5'-3"
B512	5'-4" TO 5'-11"
B513	6'-0"
B514	6'-1"
C504	7'-6"
C505	7'-7"

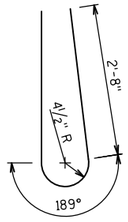


A503, B515

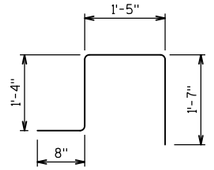


A502, B505, B506, B507, B508, B509

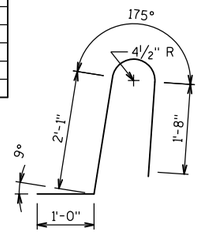
MARK	DIMENSION 'A'
A502	3'-11"
B505	3'-11"
B506	3'-11" TO 4'-1"
B507	4'-2" TO 4'-9"
B508	4'-10"
B509	4'-11"



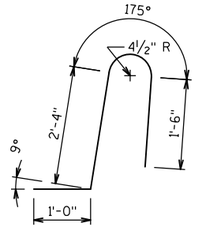
R501



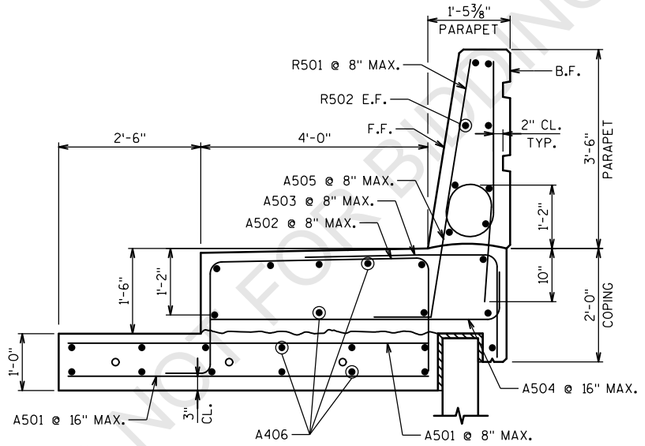
C401



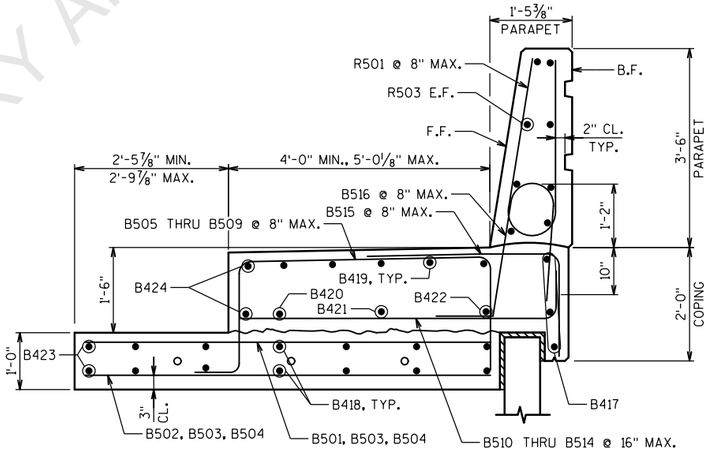
A505, B516



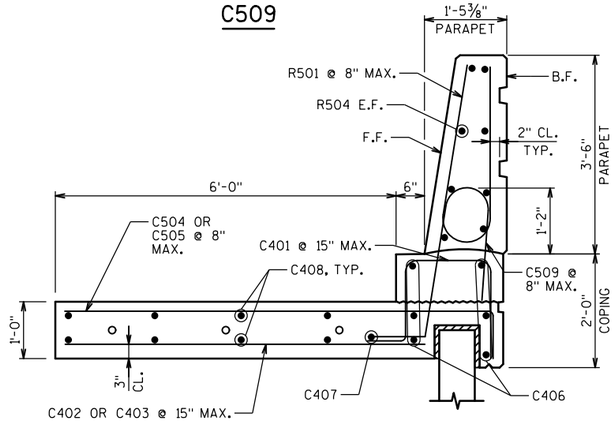
C509



SECTION A-A



SECTION B-B



SECTION C-C

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-29

DRAWN BY EAJ | PLANS CK'D. HDA

PARAPET & ANCHOR SLAB DETAILS (5 OF 5)

SHEET 9 OF 10

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

FILE NAME : pw:\\pw-int.hntb.org:PWGreat_Lakes\Documents\Milwaukee Projects\62577 - 76950 - I-43 NS\K_Structures\R-45-29\cds\R45-29_080305_de.dgn PLOT DATE : 7/28/2021 10:01:09 PM PLOT BY : ejelinek PLOT SCALE : 2.66667:1

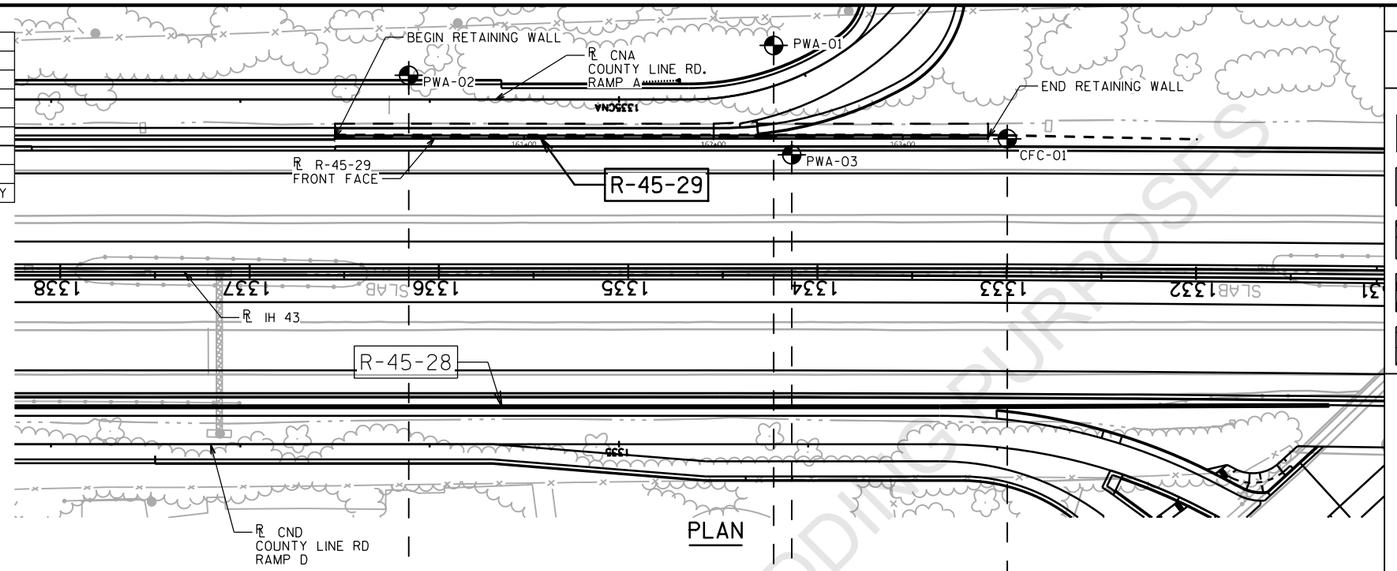
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
CFC-01	AUGUST 27, 2014	357692	602404
PWA-01	APRIL 17, 2014	357808	602470
PWA-02	JULY 13, 2014	358001	602481
PWA-03	JANUARY 15, 2015	357806	602411
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: HNTB CORP.			
ALL COORDINATES REFERENCED TO WCCS NAD83 (2007) OZAUKEE COUNTY			

NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

DENOTES SOIL BORING LOCATION



PLAN

ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

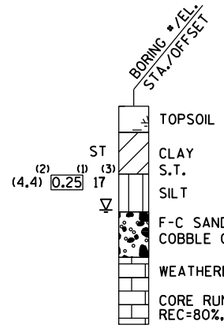
STATE PROJECT NUMBER

1229-04-74

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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE R-45-29

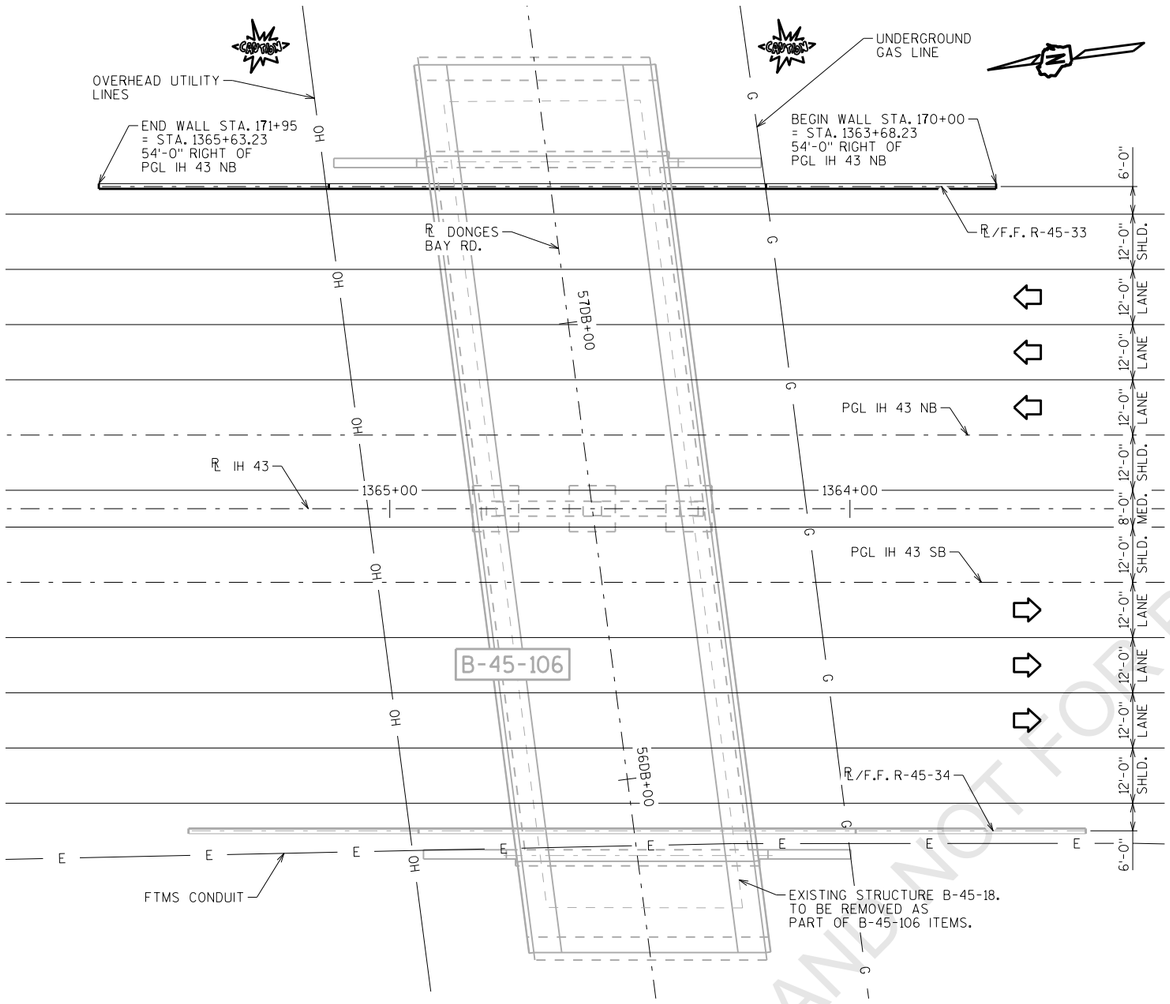
DRAWN BY NNM | PLANS CK'D. EAJ

SUBSURFACE EXPLORATION

SHEET 10 OF 10

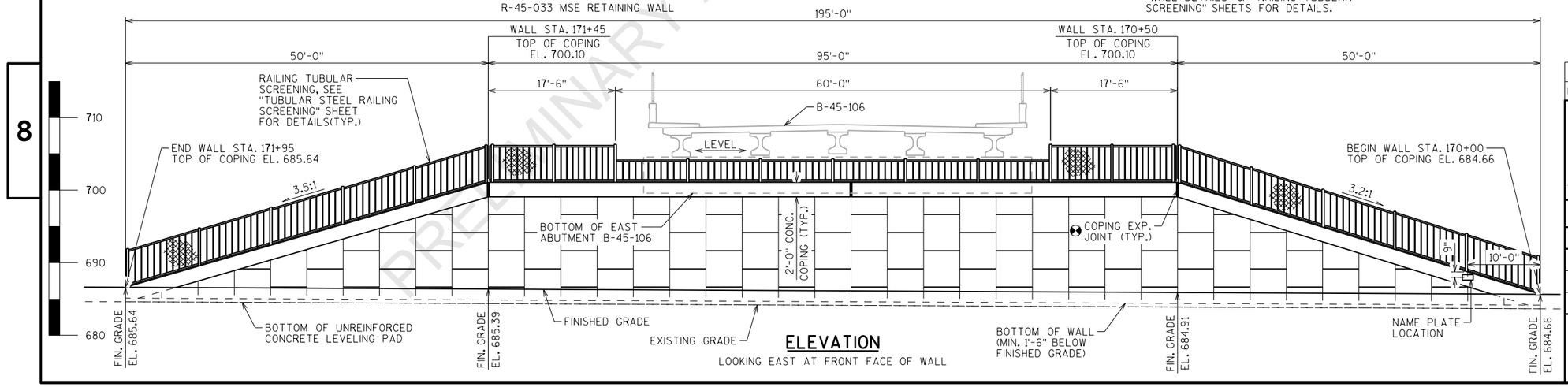
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GENERAL PLAN

R-45-033 MSE RETAINING WALL



ELEVATION

LOOKING EAST AT FRONT FACE OF WALL

RAILING TUBULAR SCREENING EXPANSION JOINT TO CORRESPOND WITH COPING EXPANSION JOINT. SEE "WALL DETAILS" & "RAILING TUBULAR SCREENING" SHEETS FOR DETAILS.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

PRELIMINARY PLAN

STATE PROJECT NUMBER

1229-04-75

DESIGN DATA

MATERIAL PROPERTIES:

CONCRETE MASONRY:
CONCRETE MASONRY CAST-IN-PLACE COPING ——— f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT:
GRADE 60 ——— fy = 60,000 P.S.I.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALL IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETIANING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-33".

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON THIS SHEET.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AS SHOWN.

ALLOWABLE WALL SYSTEMS

WALL CONCRETE PANEL M.S.E.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES R-45-33" SHALL BE THE EXISTING GROUNDLINE.

ALL WALL STATIONING AND OFFSETS ARE GIVEN TO THE FRONT FACE OF WALL.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-33" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE WALL TO A CONSTANT DEPTH OF 1'-6" BELOW FINISHED GRADE.

THE QUANTITY OF CONCRETE MASONRY & REINFORCING STEEL, FOR THE CAST-IN-PLACE COPING, IS PAID FOR UNDER THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-33".

THE BACKFILL BEHIND THE MSE WALL SHOULD BE GRANULAR AND FREE DRAINING.

THE SOILS ENGINEER SHALL REVIEW THE SUBSURFACE CONDITIONS PRIOR TO CONSTRUCTION OF THE WALL.

COORDINATE THE CONSTRUCTION OF RETAINING WALL R-45-33 WITH THE CONSTRUCTION OF THE EAST ABUTMENT OF BRIDGE B-45-106.

LIST OF DRAWINGS

1. M.S.E. CONCRETE PANEL WALL
2. QUANTITIES, WALL DATA, & PROFILE
3. WALL DETAILS
4. TUBULAR STEEL RAILING SCREENING

STRUCTURE DESIGN CONTACTS:
JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE R-45-33

MSE WALL ALONG IH 43 NB

COUNTY	CITY
OZAUKEE	MEQUON

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
JLR	WAH	JLR	WAH

M.S.E. CONCRETE PANEL WALL

SHEET 1 OF 4

I.D. 1229-04-01G

DATE: SEPT/2020

SCALE = 16.00

STATE PROJECT NUMBER

1229-04-75

SOIL PARAMETERS

SOIL DESCRIPTIONS	FRICTION ANGLE (DEGREES)	COHESION (PSF)	UNIT WEIGHT (PCF)
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
BORING X-1, STA. XXX+XX (WALL STA. XXX+XX)			
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
BORING X-1, STA. XXX+XX (WALL STA. XXX+XX)			
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
BORING X-1, STA. XXX+XX (WALL STA. XXX+XX)			
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX

WALL EXTERNAL & OVERALL STABILITY EVALUATION

DIMENSIONS			
WALL HEIGHT (FEET) [1]	XX	XX	XX
EXPOSED WALL HEIGHT (FEET)	XX	XX	XX
LENGTH OF REINFORCEMENT (FEET) [3]	XX	XX	XX
LENGTH OF REIN./WALL HEIGHT	XX	XX	XX
WALL STATION	XX	XX	XX
BORING USED	XX	XX	XX
CAPACITY TO DEMAND RATIO (CDR) [4]			
SLIDING (CDR > 1.0)	XX	XX	XX
ECCENTRICITY (CDR > 1.0)	XX	XX	XX
GLOBAL STABILITY (CDR > 1.0)	XX	XX	XX
BEARING RESISTANCE (CDR > 1.0)	XX	XX	XX
FACTORED BEARING RESISTANCE (PSF)	XX	XX	XX

NOTES:

1.
2.
3.
4.
5.

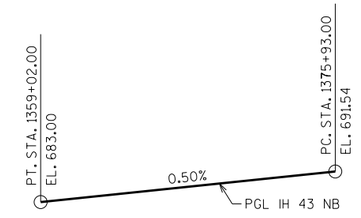
NOTE:

GEOMETRY TABLE

WALL STATION	PGL IH 43 NB STA.	PGL OFFSET TO F.F. WALL	TOP OF WALL ELEVATION	FINISHED GRADE ELEVATION	LOCATION
170+00	1363+68.23	54.00' RT.	684.66	684.66	BEGIN WALL
170+15	1363+83.23	54.00' RT.	689.29	684.74	
170+30	1363+98.23	54.00' RT.	693.93	684.81	
170+45	1364+13.23	54.00' RT.	698.56	684.89	
170+50	1364+18.23	54.00' RT.	700.10	684.91	BEGIN TOP WALL
170+60	1364+28.23	54.00' RT.	700.10	684.96	
170+75	1364+43.23	54.00' RT.	700.10	685.04	
170+90	1364+58.23	54.00' RT.	700.10	685.11	
171+05	1364+73.23	54.00' RT.	700.10	685.19	
171+20	1364+88.23	54.00' RT.	700.10	685.26	
171+35	1365+03.23	54.00' RT.	700.10	685.34	
171+45	1365+13.23	54.00' RT.	700.10	685.39	END TOP WALL
171+50	1365+18.23	54.00' RT.	698.65	685.41	
171+65	1365+33.23	54.00' RT.	694.32	685.49	
171+80	1365+48.23	54.00' RT.	689.98	685.56	
171+95	1365+63.23	54.00' RT.	685.64	685.64	END WALL

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
206.3000	EXCAVATION FOR STRUCTURES RETAINING WALLS R-45-33	LS	1
513.4091	RAILING TUBULAR SCREENING	LF	---
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---
SPV.0165	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-33	SF	---
	NON-BID ITEMS		
	PREFORMED JOINT FILLER	SIZE	¾"
	EXPANDED POLYSTYRENE	SIZE	1"



PROFILE GRADE LINE - IH 43 NB

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-45-33

DRAWN BY JLR | PLANS CK'D. WAH

QUANTITIES, WALL DATA, & PROFILE

SHEET 2

SCALE = 1.00

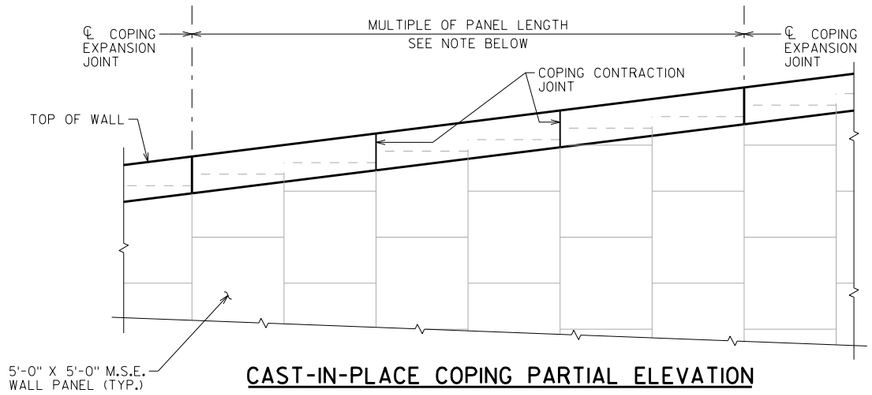
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PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER

1229-04-75

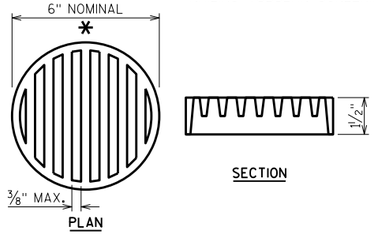


CAST-IN-PLACE COPING PARTIAL ELEVATION

LOOKING AT F.F. WALL

NOTE:
ALL JOINTS MUST COINCIDE WITH PANEL JOINT ON FRONT FACE.

RAILING TUBULAR SCREENING NOT SHOWN FOR CLARITY. SEE "RAILING TUBULAR SCREENING" SHEET FOR DETAILS.

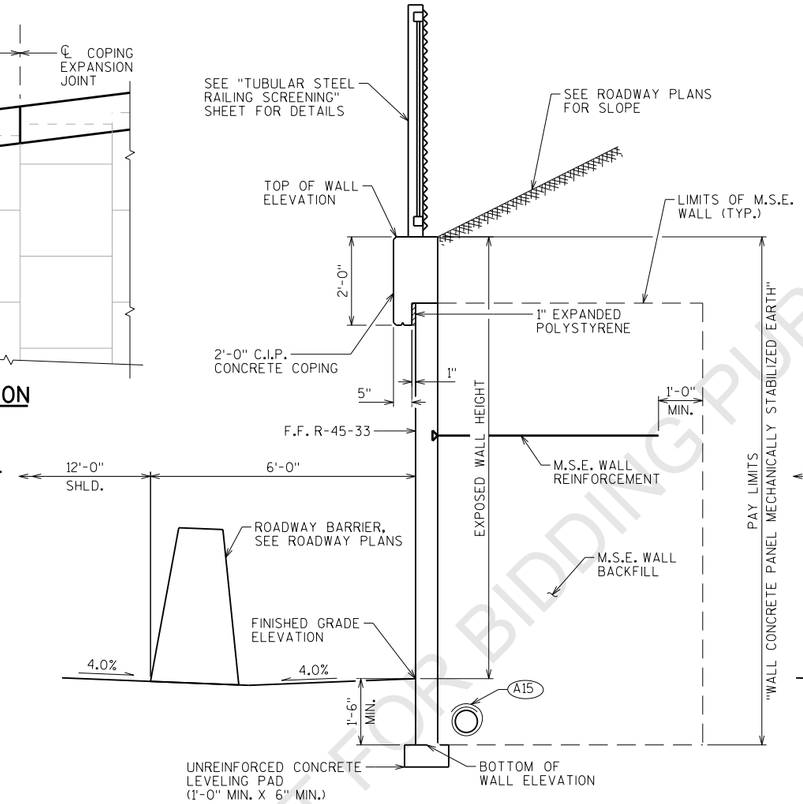


RODENT SHIELD DETAIL

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

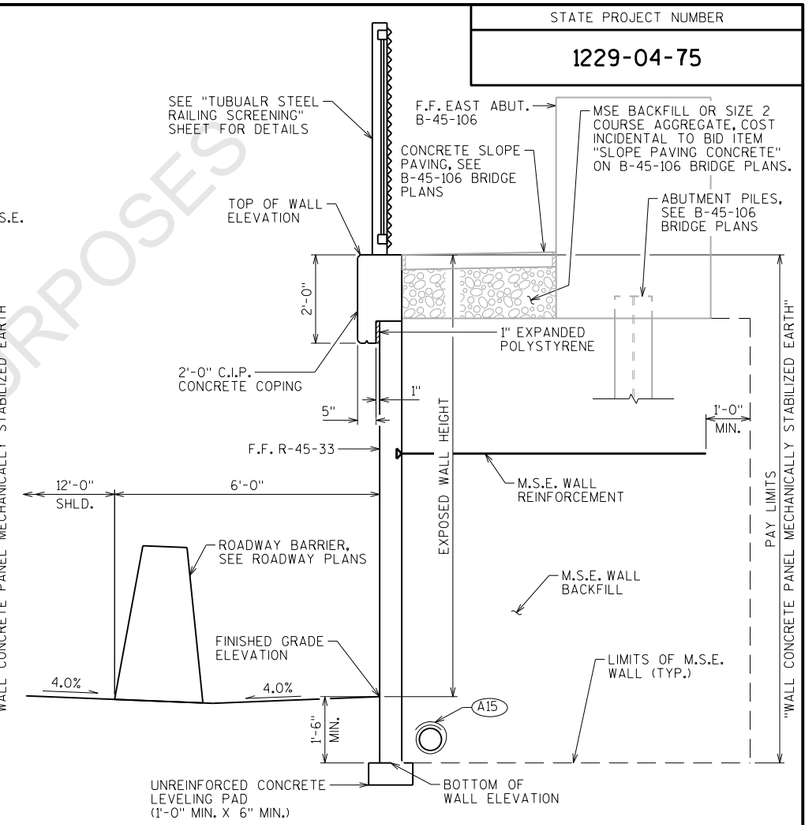
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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.



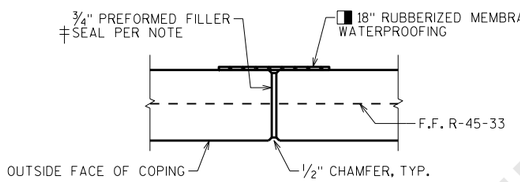
TYPICAL MSE WALL SECTION WITH NO ABUTMENT

LOOKING NORTH



TYPICAL MSE WALL SECTION AT ABUTMENT

LOOKING NORTH

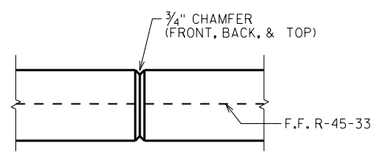


COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT.
MAX. SPACING OF JOINT = 50'

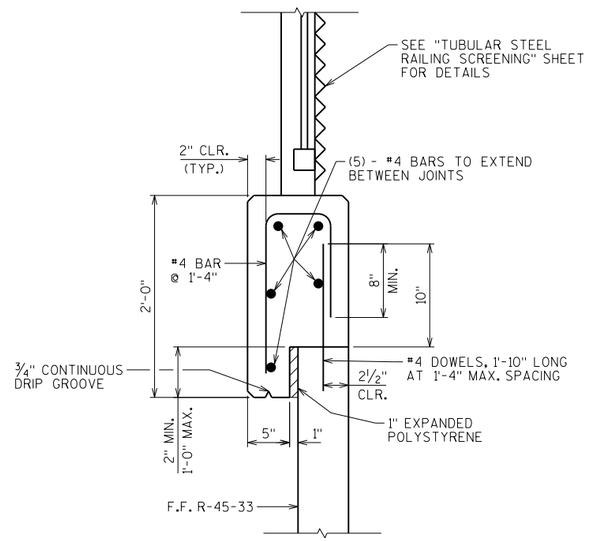
‡ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)

◨ MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS.



COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT.
MAX. SPACING OF JOINT = 12'



SECTION THRU COPING

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-45-33

DRAWN BY JLR | PLANS CK'D. WAH

WALL DETAILS

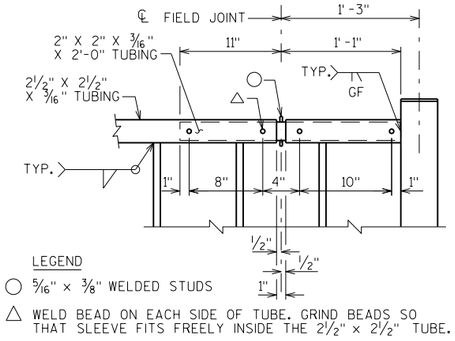
SHEET 3

SCALE = 5.00

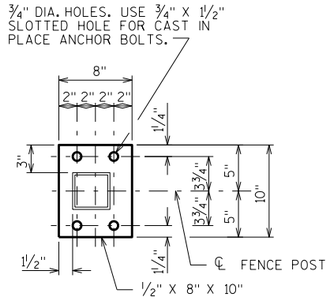
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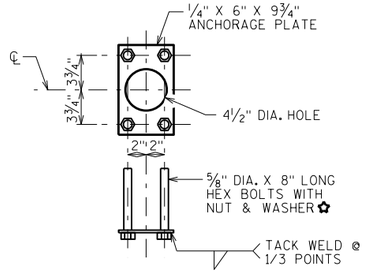
PRELIMINARY AND NOT FOR BIDDING PURPOSES



RAILING EXPANSION JOINT DETAIL



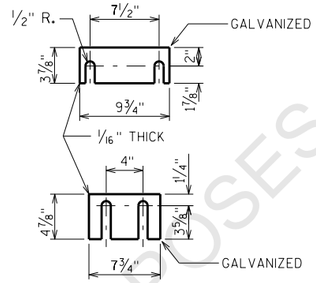
BASE PLATE



ANCHORAGE DETAIL

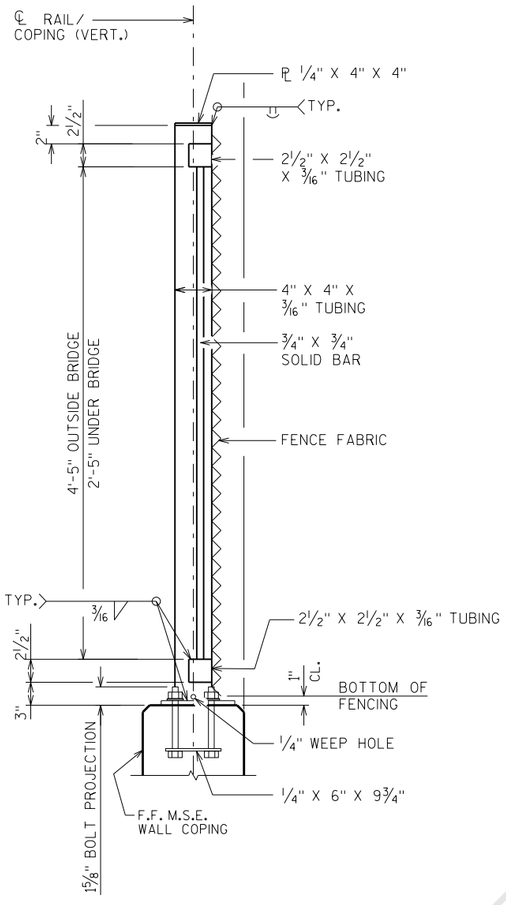
✿ALTERNATIVE ANCHORAGE: ADHESIVE ANCHORS ⅝-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS.

NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.

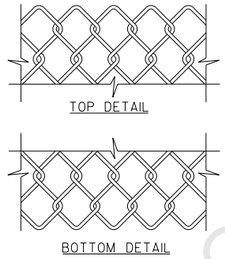


SHIM PLATE DETAILS

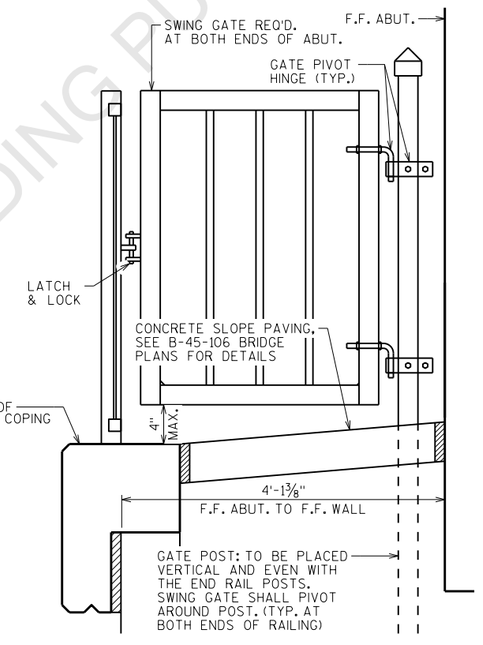
TWO SHIMS OF EACH SIZE REQUIRED PER POST



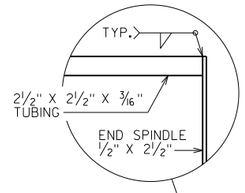
SECTION THRU RAILING

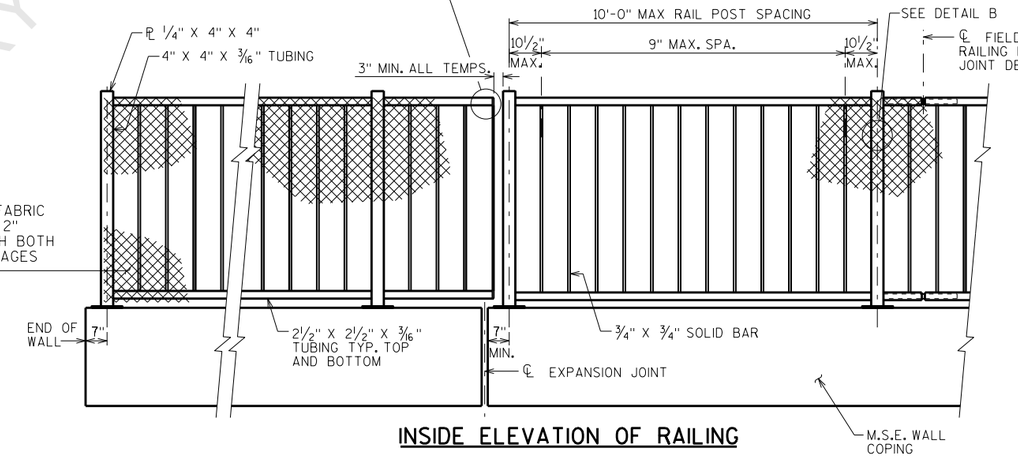


FENCE FABRIC

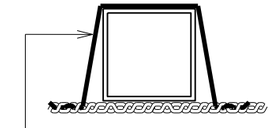


SECTION THRU WALL AT GATES



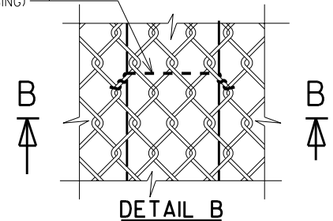


INSIDE ELEVATION OF RAILING



SECTION B-B

FABRIC TIE @ 1'-0" MAX. SPA. (TYP. RAIL POSTS & HORIZ. TUBING)



DETAIL B

NOTES

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. PLATES, ANGLES, BARS AND SHIMS SHALL CONFORM TO ASTM A709, GRADE 36. FENCE FABRIC SHALL CONFORM TO F668, CLASS 2B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPACINGS ARE TAKEN HORIZONTAL ALONG CENTERLINE OF RAILING AT BASE OF POST.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED. ✿

THE BID ITEM SHALL BE "RAILING TUBULAR SCREENING" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

ALL RAILING MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED AMS STD. COLOR NO. 27038, BLACK.
FENCE FABRIC AND TIES TO BE VINYL-COATED. COLOR SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

STATE PROJECT NUMBER

1229-04-75

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-45-33

DRAWN BY JLR | PLANS CK'D. WAH

TUBULAR STEEL RAILING SCREENING

SHEET 4

SCALE = 1.00

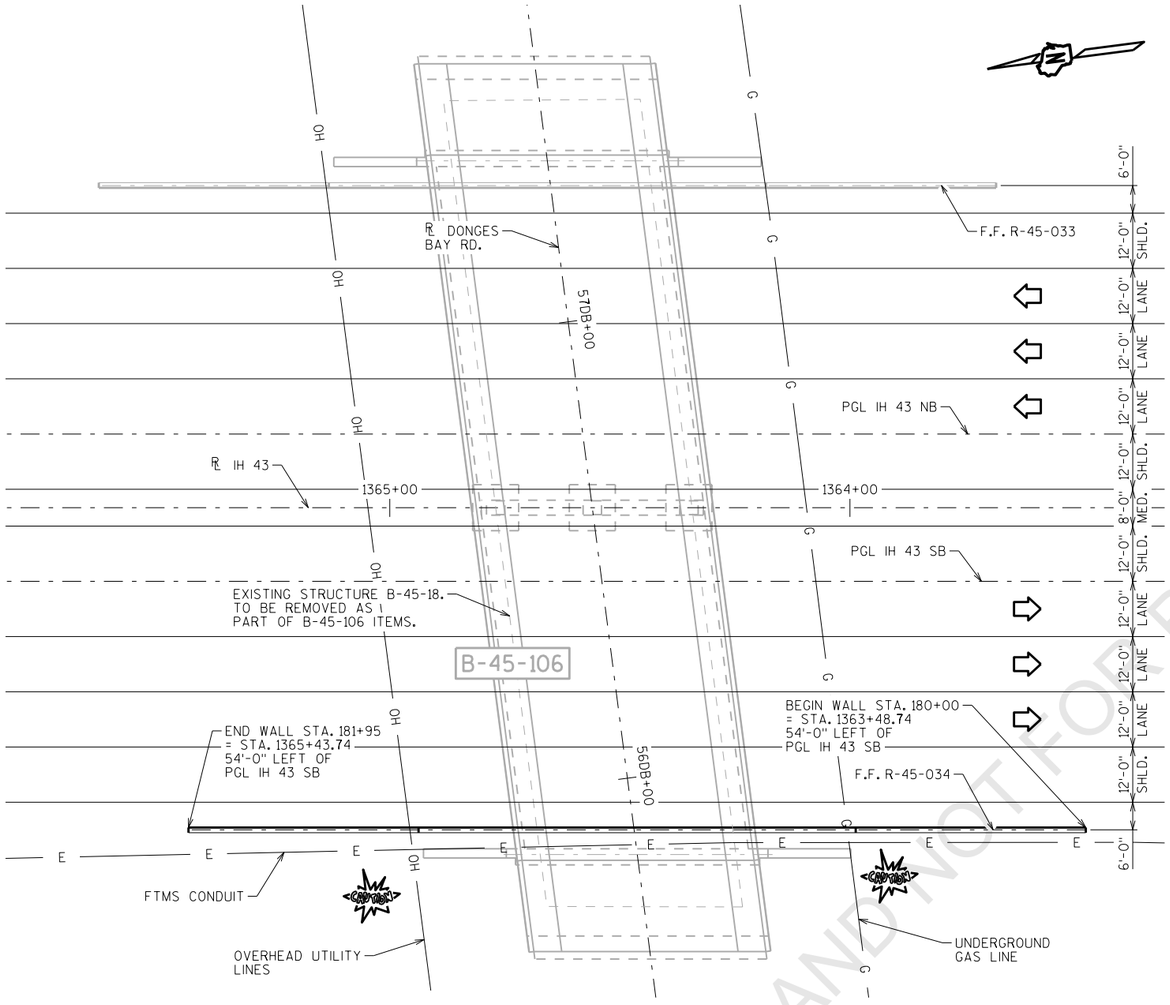
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PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER

1229-04-75



GENERAL PLAN

R-45-034 MSE RETAINING WALL

DESIGN DATA

MATERIAL PROPERTIES:

CONCRETE MASONRY:
CONCRETE MASONRY CAST-IN-PLACE COPING ——— f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT:
GRADE 60 ——— fy = 60,000 P.S.I.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALL IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETIANING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH".

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON THIS SHEET.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AS SHOWN.

ALLOWABLE WALL SYSTEMS

WALL CONCRETE PANEL M.S.E.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES R-45-34" SHALL BE THE EXISTING GROUNDLINE.

ALL WALL STATIONING AND OFFSETS ARE GIVEN TO THE FRONT FACE OF WALL.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-34" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE WALL TO A CONSTANT DEPTH OF 1'-6" BELOW FINISHED GRADE.

THE QUANTITY OF CONCRETE MASONRY & REINFORCING STEEL, FOR THE CAST-IN-PLACE COPING, IS PAID FOR UNDER THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-34".

THE BACKFILL BEHIND THE MSE WALL SHOULD BE GRANULAR AND FREE DRAINING.

THE SOILS ENGINEER SHALL REVIEW THE FILL SUBSURFACE CONDITIONS PRIOR TO CONSTRUCTION OF THE WALL.

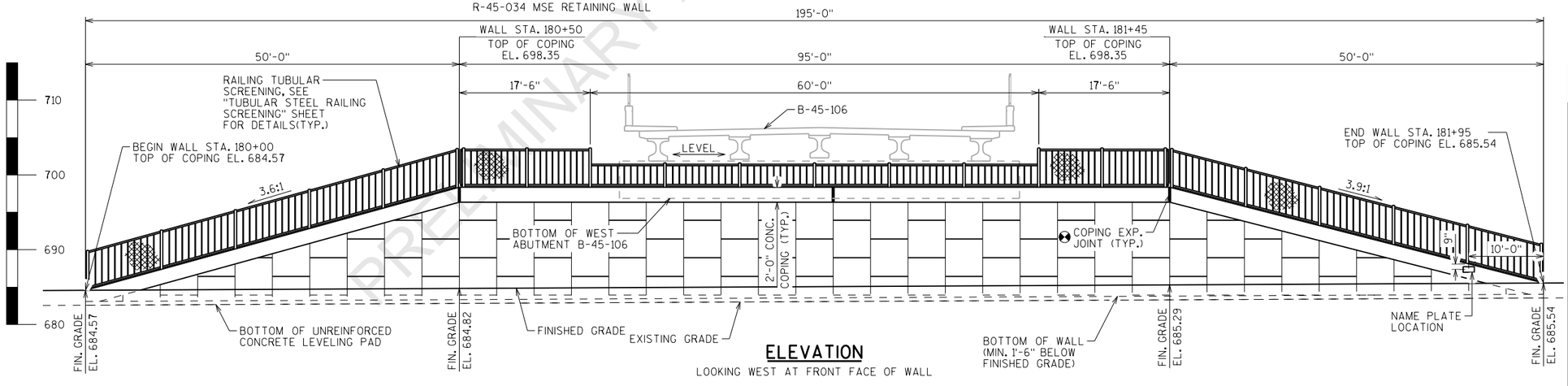
COORDINATE THE CONSTRUCTION OF RETAINING WALL R-45-34 WITH THE CONSTRUCTION OF THE WEST ABUTMENT OF BRIDGE B-45-106.

PRELIMINARY PLAN

℄ RAILING TUBULAR SCREENING EXPANSION JOINT TO CORRESPOND WITH COPING EXPANSION JOINT. SEE "WALL DETAILS" & "RAILING TUBULAR SCREENING" SHEETS FOR DETAILS.

LIST OF DRAWINGS

1. M.S.E. CONCRETE PANEL WALL
2. QUANTITIES, WALL DATA, & PROFILE
3. WALL DETAILS
4. TUBULAR STEEL RAILING SCREENING



ELEVATION

LOOKING WEST AT FRONT FACE OF WALL

STRUCTURE DESIGN CONTACTS:

JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED _____ CHIEF STRUCTURES DESIGN ENGINEER _____ DATE

STRUCTURE R-45-34

MSE WALL ALONG IH 43 SB

COUNTY	CITY
OZAUKEE	MEQUON

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
JLR	WAH	JLR	WAH

M.S.E. CONCRETE PANEL WALL

SHEET 1 OF 4

I.D. 1229-04-01H

DATE: SEPT/2020

SCALE = 16.00

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER

1229-04-75

SOIL PARAMETERS

SOIL DESCRIPTIONS	FRICTION ANGLE (DEGREES)	COHESION (PSF)	UNIT WEIGHT (PCF)
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
BORING X-1, STA. XXX+XX (WALL STA. XXX+XX)			
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
BORING X-1, STA. XXX+XX (WALL STA. XXX+XX)			
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
BORING X-1, STA. XXX+XX (WALL STA. XXX+XX)			
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX
SOIL TYPE	XX	XX	XX

WALL EXTERNAL & OVERALL STABILITY EVALUATION

DIMENSIONS			
WALL HEIGHT (FEET) [1]	XX	XX	XX
EXPOSED WALL HEIGHT (FEET)	XX	XX	XX
LENGTH OF REINFORCEMENT (FEET) [3]	XX	XX	XX
LENGTH OF REIN./WALL HEIGHT	XX	XX	XX
WALL STATION	XX	XX	XX
BORING USED	XX	XX	XX
CAPACITY TO DEMAND RATIO (CDR) [4]			
SLIDING (CDR > 1.0)	XX	XX	XX
ECCENTRICITY (CDR > 1.0)	XX	XX	XX
GLOBAL STABILITY (CDR > 1.0)	XX	XX	XX
BEARING RESISTANCE (CDR > 1.0)	XX	XX	XX
FACTORED BEARING RESISTANCE (PSF)	XX	XX	XX

NOTES:

1.
2.
3.
4.
5.

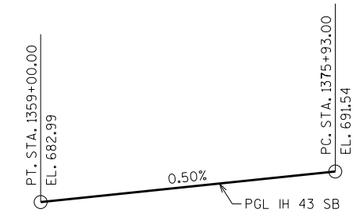
NOTE:

GEOMETRY TABLE

WALL STATION	PGL IH 43 SB STA.	PGL OFFSET TO F.F. WALL	TOP OF WALL ELEVATION	FINISHED GRADE ELEVATION	LOCATION
180+00	1363+48.74	54.00'LT.	684.57	684.57	BEGIN WALL
180+15	1363+63.74	54.00'LT.	688.70	684.64	
180+30	1363+78.74	54.00'LT.	692.84	684.72	
180+45	1363+93.74	54.00'LT.	696.97	684.79	
180+50	1363+98.74	54.00'LT.	698.35	684.82	BEGIN TOP WALL
180+60	1364+08.74	54.00'LT.	698.35	684.87	
180+75	1364+23.74	54.00'LT.	698.35	684.94	
180+90	1364+38.74	54.00'LT.	698.35	685.02	
181+05	1364+53.74	54.00'LT.	698.35	685.09	
181+20	1364+68.74	54.00'LT.	698.35	685.17	
181+35	1364+83.74	54.00'LT.	698.35	685.24	
181+45	1364+93.74	54.00'LT.	698.35	685.29	END TOP WALL
181+50	1364+98.74	54.00'LT.	697.07	685.32	
181+65	1365+13.74	54.00'LT.	693.23	685.39	
181+80	1365+28.74	54.00'LT.	689.38	685.47	
181+95	1365+43.74	54.00'LT.	685.54	685.54	END WALL

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
206.3000	EXCAVATION FOR STRUCTURES RETAINING WALLS R-45-34	LS	1
513.4091	RAILING TUBULAR SCREENING	LF	---
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---
SPV.0165	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-34	SF	---
	NON-BID ITEMS		
	PREFORMED JOINT FILLER	SIZE	¾"
	EXPANDED POLYSTYRENE	SIZE	1"



PROFILE GRADE LINE - IH 43 SB

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-45-34

DRAWN BY JLR | PLANS CK'D. WAH

QUANTITIES, WALL DATA, & PROFILE

SHEET 2

SCALE = 1.00

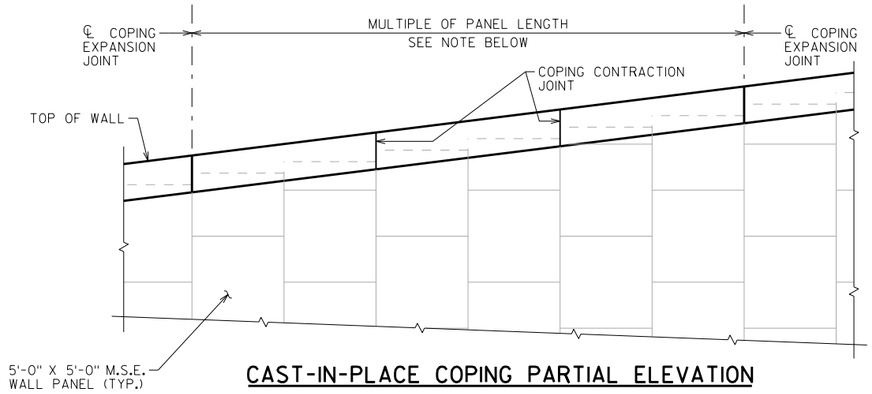
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PRELIMINARY AND NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER

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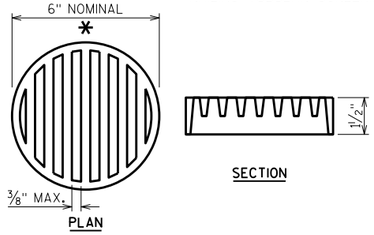


CAST-IN-PLACE COPING PARTIAL ELEVATION

LOOKING AT F.F. WALL

NOTE:
ALL JOINTS MUST COINCIDE WITH PANEL JOINT ON FRONT FACE.

RAILING TUBULAR SCREENING NOT SHOWN FOR CLARITY. SEE "RAILING TUBULAR SCREENING" SHEET FOR DETAILS.

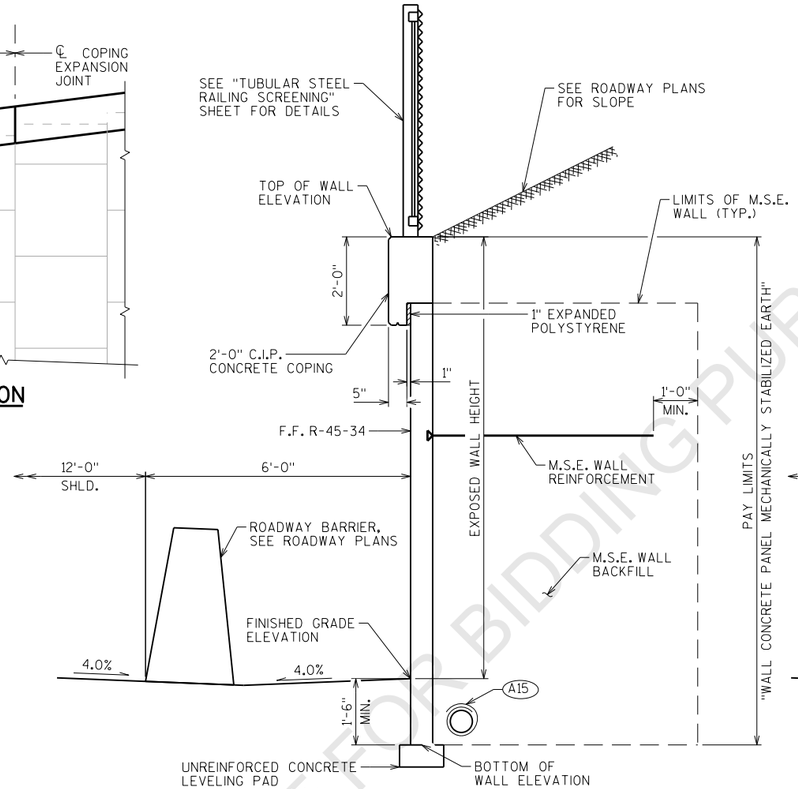


RODENT SHIELD DETAIL

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

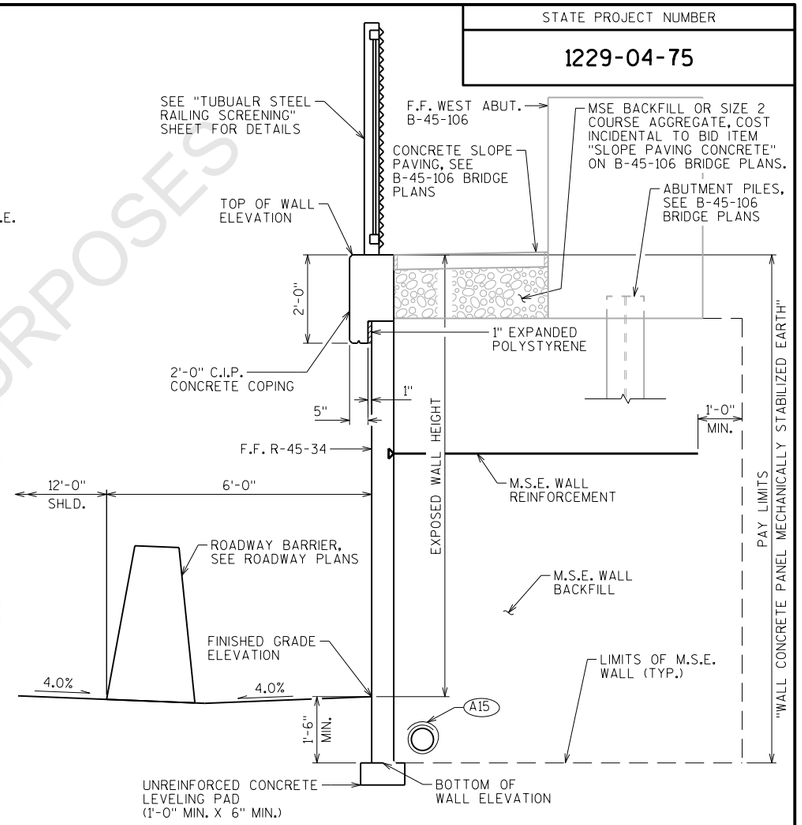
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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.



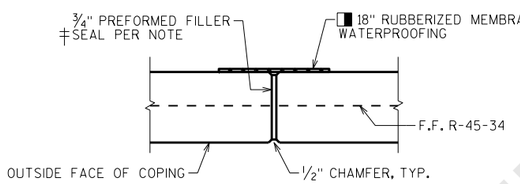
TYPICAL MSE WALL SECTION WITH NO ABUTMENT

LOOKING SOUTH



TYPICAL MSE WALL SECTION AT ABUTMENT

LOOKING SOUTH

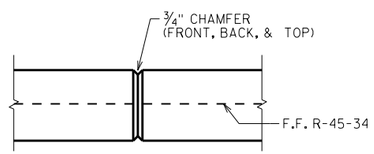


COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT.
MAX. SPACING OF JOINT = 50'

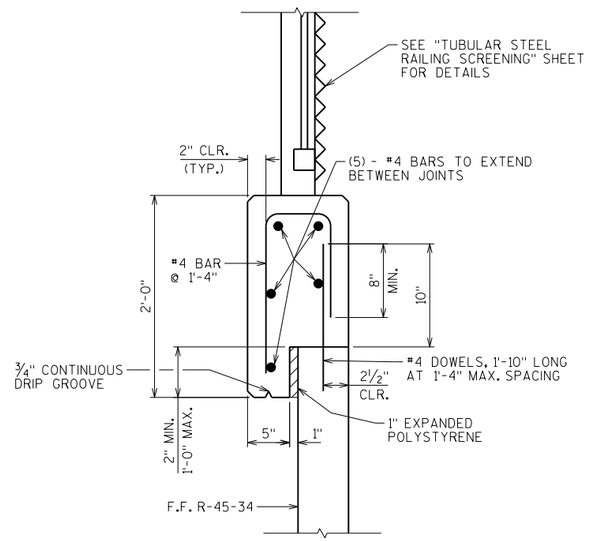
‡ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)

◨ MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS.



COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT.
MAX. SPACING OF JOINT = 12'



SECTION THRU COPING

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-45-34

DRAWN BY JLR | PLANS CK'D. WAH

WALL DETAILS

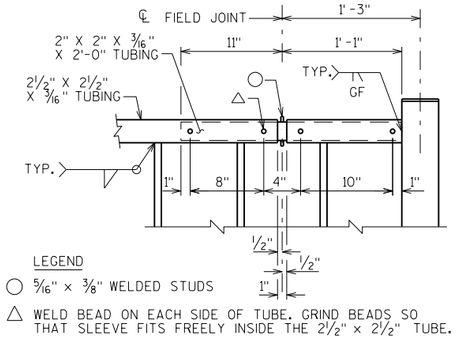
SHEET 3

SCALE = 5.00

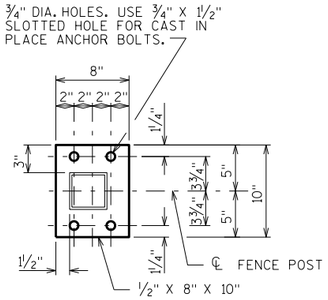
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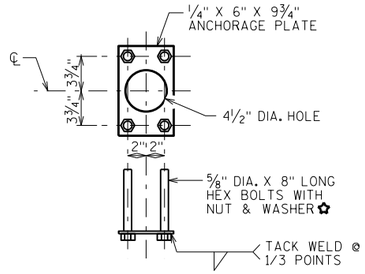
PRELIMINARY AND NOT FOR BIDDING PURPOSES



RAILING EXPANSION JOINT DETAIL



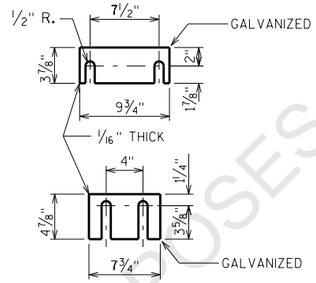
BASE PLATE



ANCHORAGE DETAIL

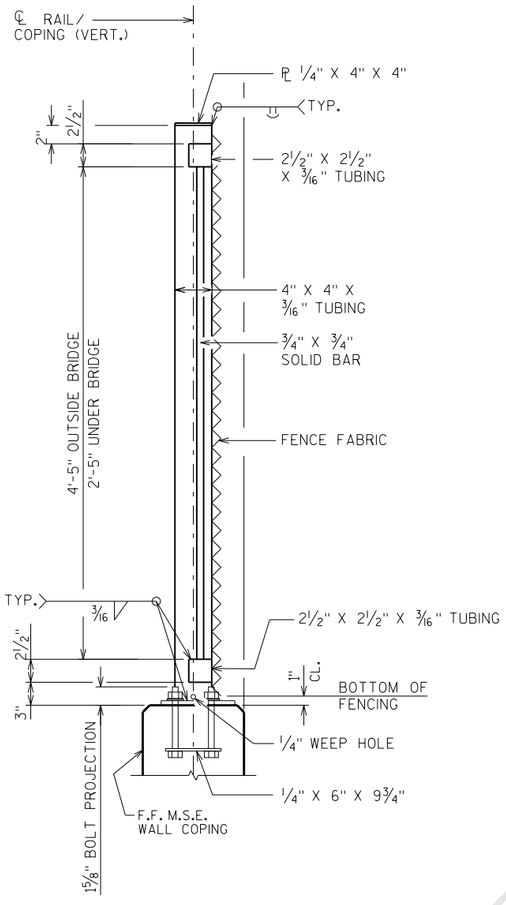
✿ALTERNATIVE ANCHORAGE: ADHESIVE ANCHORS ⅝-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS.

NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.

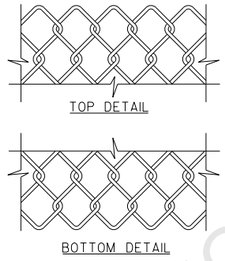


SHIM PLATE DETAILS

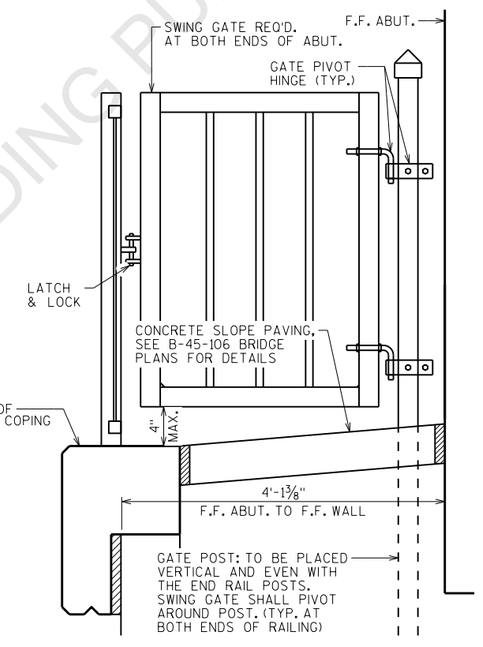
TWO SHIMS OF EACH SIZE REQUIRED PER POST



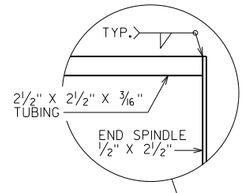
SECTION THRU RAILING

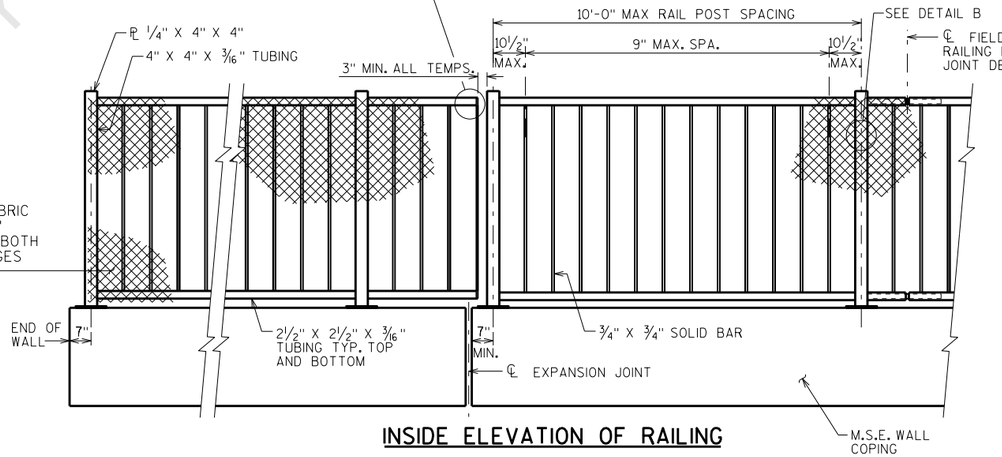


FENCE FABRIC

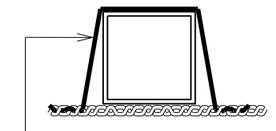


SECTION THRU WALL AT GATES



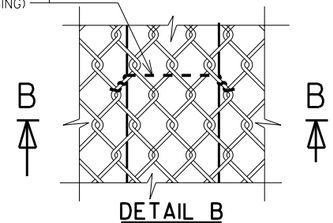


INSIDE ELEVATION OF RAILING



SECTION B-B

FABRIC TIE @ 1'-0" MAX. SPA. (TYP. RAIL POSTS & HORIZ. TUBING)



DETAIL B

NOTES

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. PLATES, ANGLES, BARS AND SHIMS SHALL CONFORM TO ASTM A709, GRADE 36. FENCE FABRIC SHALL CONFORM TO F668, CLASS 2B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPACINGS ARE TAKEN HORIZONTAL ALONG CENTERLINE OF RAILING AT BASE OF POST.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED. ✿

THE BID ITEM SHALL BE "RAILING TUBULAR SCREENING" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

ALL RAILING MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED AMS STD. COLOR NO. 27038, BLACK.
FENCE FABRIC AND TIES TO BE VINYL-COATED. COLOR SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE R-45-34

DRAWN BY JLR | PLANS CK'D. WAH

TUBULAR STEEL RAILING SCREENING

SHEET 4

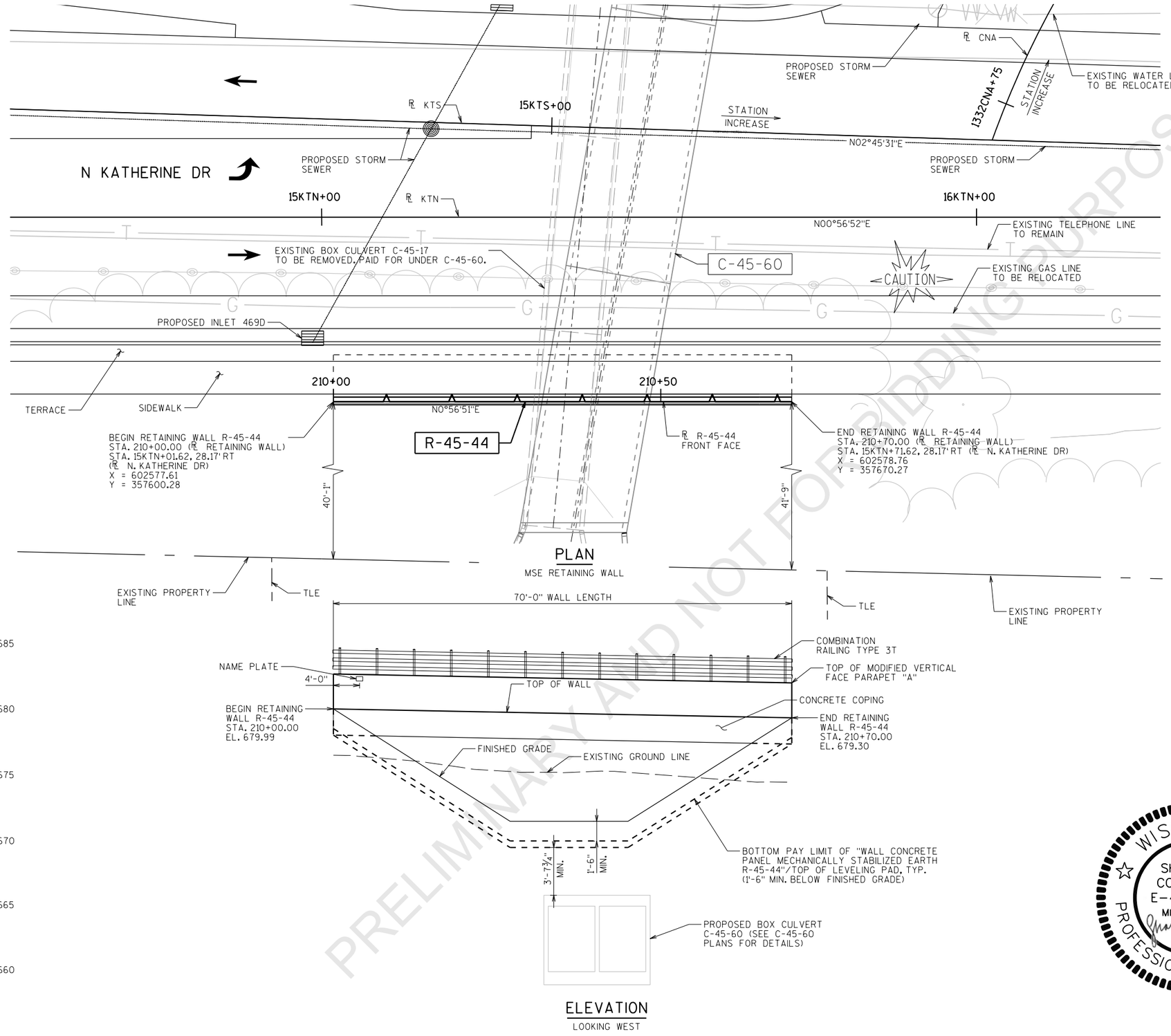
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PRELIMINARY AND NOT FOR BIDDING PURPOSES

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DESIGN DATA

LIVE LOAD:

LIVE LOAD SURCHARGE (ROADWAY): 240 PSF

MATERIAL PROPERTIES:

CONCRETE MASONRY RETAINING WALL ..... f'c = 4,000 psi
PRECAST CONCRETE WALL PANELS ..... f'c = 4,000 psi
BAR STEEL REINFORCEMENT ..... fy = 60,000 psi

DESIGN THE RETAINING WALL FOR A HORIZONTAL BACKSLOPE BEHIND THE WALL AND A LIVE LOAD VERTICAL SURCHARGE OF 240 PSF.

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTION
3. GENERAL NOTES & QUANTITIES
4. PROFILE GRADE LINES & DESIGN DATA
5. PARAPET & ANCHOR SLAB DETAILS (1 OF 2)
6. PARAPET & ANCHOR SLAB DETAILS (2 OF 2)
7. RAILING DETAILS
8. SUBSURFACE EXPLORATION

LEGEND

→ DIRECTION OF TRAFFIC

PRELIMINARY AND NOT FOR BIDDING PURPOSES

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
MOHAMMED ZAGLOUL (414) 751-7200

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

kapur
7711 N. Port Washington Road
Milwaukee, Wisconsin 53217
kapurinc.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER — DATE

WISCONSIN
SHANNON CONNOLLY
E-44309-6
MILWAUKEE
WI
7/30/2021
PROFESSIONAL ENGINEER

STRUCTURE R-45-44

RETAINING WALL ALONG N. KATHERINE DRIVE

COUNTY	CITY
OZAUKEE	MEQUON

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	SMC	DESIGN CK'D.	MHZ	DRAWN BY	SMC	PLANS CK'D.	MHZ

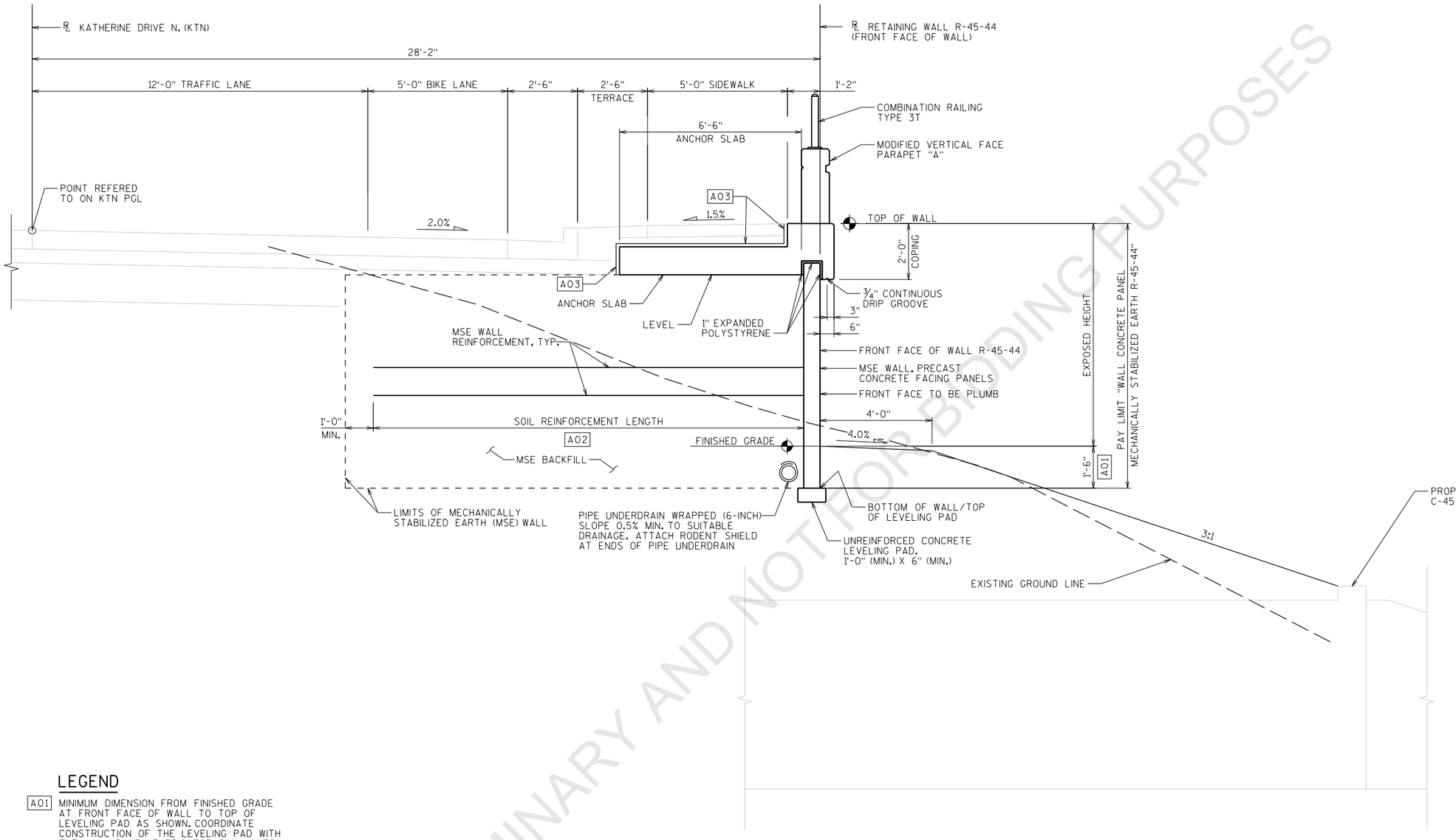
GENERAL PLAN & ELEVATION

SHEET 1 OF 8

8

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STATE PROJECT NUMBER
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LEGEND

A01 MINIMUM DIMENSION FROM FINISHED GRADE AT FRONT FACE OF WALL TO TOP OF LEVELING PAD AS SHOWN. COORDINATE CONSTRUCTION OF THE LEVELING PAD WITH THE WALL PANEL FABRICATOR. PAY LIMITS BASED ON MINIMUM DIMENSION.

A02 SEE WALL EXTERNAL STABILITY EVALUATION TABLE ON THE "PROFILE GRADE LINES & DESIGN DATA" SHEET FOR MINIMUM LENGTH OF MSE WALL REINFORCING STRIPS. SOIL REINFORCEMENT MUST EXTEND A MINIMUM OF 3.0 FEET BEYOND THE FAILURE PLANE FOR INTERNAL STABILITY AS DEFINED BY AASHTO SPECIFICATIONS.

A03 18" RUBBERIZED MEMBRANE WATERPROOFING TO BE PLACED ON THESE SURFACES AT EACH JOINT.

TYPICAL WALL SECTION

(LOOKING NORTH)
(WALL STA. 210+00.00 TO WALL STA.210+70.00)

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-44

DRAWN BY MM | PLANS CK'D. MHZ

TYPICAL SECTION

SHEET 2 OF 8

FILE NAME : c:\caddlib\pw\sconnolly\greatlakes\d0246800\R44_080102_ts.dgn
PLOT DATE : 6/1/2021
PLOT BY : sconnolly
PLOT NAME : $FILE$
PLOT SCALE : 1:4

STATE PROJECT NUMBER
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GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), OZAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM, NAVD 88 (2007).

THESE PLANS ARE FOR A PRECAST CONCRETE PANEL MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALL.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-44".

THE COST OF FURNISHING AND PLACING MSE BACKFILL WITHIN THE REINFORCED SOIL ZONE IS TO BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-44.

THE COST OF FURNISHING AND PLACING THE UNREINFORCED CONCRETE LEVELING PAD UNDER THE MSE PRECAST WALL PANELS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-44".

ALL STATIONS AND DIMENSIONS ARE ALONG THE FRONT FACE OF WALL, UNLESS SHOWN OTHERWISE.

ONLY WALL CONCRETE PANEL MSE WALL SYSTEMS THAT USE STRIP TYPE SOIL REINFORCEMENT THAT ARE HINGED AT THE PANEL CONNECTION CAN BE USED FOR THIS PROJECT.

SOIL REINFORCEMENT MAY BE PLACED UP TO A MAXIMUM OF 15° FROM PERPENDICULAR IF NECESSARY TO AVOID INTERFERENCE WITH ITEMS BEHIND THE WALL. ANGLES GREATER THAN 15° REQUIRE APPROVAL FROM THE BUREAU OF STRUCTURES DESIGN SECTION.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER, UNLESS SHOWN OTHERWISE.

ALL BAR STEEL REINFORCEMENT WITHIN CAST-IN-PLACE CONCRETE TO BE EPOXY COATED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

THE QUANTITIES AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 7½ INCHES. FOR PANEL THICKNESSES DIFFERENT THAN 7½ INCHES, THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF WALL R-45-44 WITH THE CONSTRUCTION OF BOX CULVERT C-45-60.

THE QUANTITIES OF CONCRETE MASONRY & BAR STEEL REINFORCEMENT FOR THE CAST-IN-PLACE ANCHOR SLAB ARE PAID FOR UNDER THE ITEMS "CONCRETE MASONRY RETAINING WALLS" & "BAR STEEL REINFORCEMENT HS COATED STRUCTURES", RESPECTIVELY.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-44" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF THE LEVELING PAD TO THE TOP OF WALL AS SHOWN IN THE PLANS. THE TOP OF LEVELING PAD IS TAKEN AS A CONSTANT 1'-6" BELOW FINISHED GRADE FOR MEASUREMENT PURPOSES. WALL AREAS CONSTRUCTED OUTSIDE THESE LIMITS WILL NOT BE MEASURED FOR PAYMENT.

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

THE UTILITY AND STORM SEWER 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 DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

APPLY PROTECTIVE SURFACE TREATMENT TO THE EXPOSED TOP SURFACE OF THE ANCHOR SLAB.

APPLY PIGMENTED SURFACE SEALER TO THE TOP AND INSIDE FACE OF THE PARAPET.

REFER TO S.D.D. "NAME PLATE (STRUCTURES)" FOR NAME PLATE DETAILS. NAME PLATE SHALL BE CONSIDERED INCIDENTAL TO BIT ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-44".

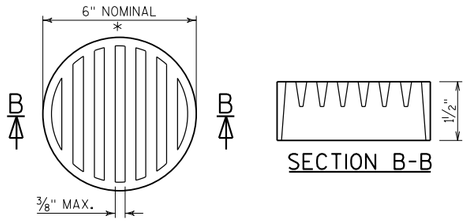
THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF THE STORM SEWER COMPONENTS, INCLUDING INLETS, LATERALS AND STRUCTURES WITH THE CONSTRUCTION OF THE MSE WALL.

MSE WALL PANEL SHAPES SHALL BE SQUARE OR RECTANGULAR.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
502.3200	PROTECTIVE SURFACE TREATMENT	SY	4
502.3210	PIGMENTED SURFACE SEALER	SY	29
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	30
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	3,760
513.7093	RAILING STEEL TYPE 3T	LF	70
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	3
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	20
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	75
SPV.0165.4008	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-45-44	SF	362
	NON-BID ITEMS		
	NAME PLATE	EACH	1
	RODENT SHIELD	EACH	2
	NON-BITUMINOUS JOINT SEALER	SIZE	1"
	CORK FILLER	SIZE	1"
	EXPANDED POLYSTYRENE	SIZE	1"

ALL ITEMS ARE CATEGORY 3070



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.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-44

DRAWN BY SMC | PLANS CK'D. MHZ

GENERAL NOTES & QUANTITIES

SHEET 3 OF 8

STATE PROJECT NUMBER
1229-04-74

WALL EXTERNAL & OVERALL STABILITY EVALUATION

DIMENSIONS		EVALUATED LOCATIONS	
WALL HEIGHT (FEET)		9.6	9.8
EXPOSED WALL HEIGHT (FEET)		8.1	8.3
MINIMUM LENGTH OF REINFORCEMENT (FEET) ◪		9.2	9.3
REINFORCEMENT LENGTH/RETAINED HEIGHT RATIO		0.95H	0.95H
WALL STATION		210+45	210+27
BORING USED		CFC-05, 05A, 06	CFC-05, 05A, 06
CAPACITY TO DEMAND RATIO (CDR)			
SLIDING (CDR>1.0)		1.69	1.70
ECCENTRICITY (CDR>1.0)		2.52	2.54
BEARING RESISTANCE (CDR>1.0)		1.10	1.10
FACTORED BEARING RESISTANCE (PSF)		2,566	2,594
OVERALL STABILITY (CDR>1.0)	END OF CONSTRUCTION	1.2	1.1
	LONG TERM	1.2	1.1

◪ THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND OVERALL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGN LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.

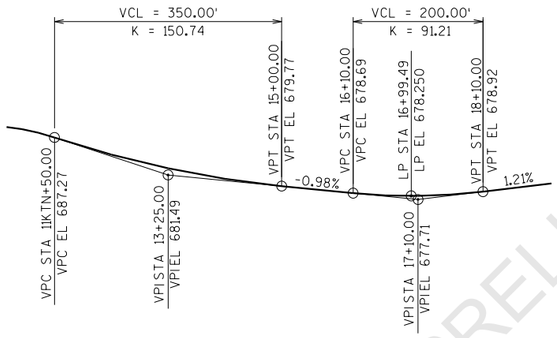
SOIL PARAMETERS

	STRATUM LOCATIONS & SOIL DESCRIPTIONS	UNIT WEIGHT (PCF)	SHORT-TERM (UNDRAINED)		LONG-TERM (DRAINED)	
			FRICTION ANGLE (DEGREES)	COHESION (PSF)	FRICTION ANGLE (DEGREES)	COHESION (PSF)
	GRANULAR BACKFILL (REINFORCING ZONE OR BACKFILL)	120	30	0	30	0
	RETAINED SOIL - GRANULAR	120	30	0	30	0
	RETAINED SOIL - CLAY	120	0	1,500	28	0
BORING CFC-05	ASPHALT (11")/BASE COURSE (6") EL. 679.8 - EL. 678.4	-	-	-	-	-
	FILL-LEAN CLAY EL. 678.4 - EL. 671.9	135	0	3,500	31	75
	FILL - LEAN CLAY WITH SAND EL. 671.9 - EL. 664.3	125	0	2,000	30	25
	SANDY LEAN CLAY WITH GRAVEL EL. 664.3 - EL. 662.6	120	0	500	28	0
	LEAN CLAY WITH SAND EL. 662.6 - EL. 660.4	120	0	2,000	30	25
	SANDY LEAN CLAY EL. 660.4 - EL. 658.5	120	0	1,000	29	0
	LEAN CLAY EL. 658.5 - EL. 649.8	125	0	2,500	30	50
BORING CFC-05A	BLIND DRILLED EL. 679.8 - EL. 650.3	-	-	-	-	-
	LEAN CLAY EL. 650.3 - EL. 637.5	130	0	2,500	30	75
	LEAN CLAY EL. 637.5 - EL. 624.3	135	0	4,000	31	100
	SILT WITH SAND EL. 624.3 - EL. 612.8	140	36	0	36	0
	SAND WITH GRAVEL EL. 612.8 - EL. 607.8	140	36	0	36	0
	SAND WITH SILT AND GRAVEL EL. 607.8 - EL. 605.1	140	36	0	36	0
BORING CFC-06	ASPHALT (9")/BASE COURSE (6") EL. 680.6 - EL. 679.3	-	-	-	-	-
	FILL - LEAN CLAY WITH SAND EL. 679.3 - EL. 671.2	125	0	2,500	30	50
	LEAN CLAY EL. 671.2 - EL. 661.6	130	0	3,000	31	50
	LEAN CLAY EL. 661.6 - EL. 625.6	135	0	2,500	30	50
	SAND EL. 625.6 - EL. 623.1	135	36	0	36	0
	SANDY SILT EL. 623.1 - EL. 610.9	140	36	0	36	0

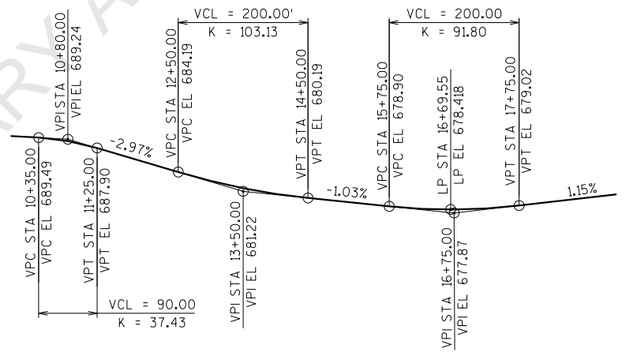
* DESIGN WALL FOR THESE VALUES

WALL ELEVATIONS ◪

STATION & OFFSET	WALL STATION	TOP OF WALL ELEVATION	FINISHED GRADE ELEVATION
15KTN+01.62, 28.17' RT	210+00.00	679.99	679.99
15KTN+26.62, 28.17' RT	210+25.00	679.74	672.04
15KTN+28.62, 28.17' RT	210+27.00	679.73	671.40
15KTN+48.62, 28.17' RT	210+45.00	679.55	671.40
15KTN+51.62, 28.17' RT	210+50.00	679.50	672.98
15KTN+71.62, 28.17' RT	210+70.00	679.30	679.30



PROFILE GRADE LINE
N. KATHERINE DR NB



PROFILE GRADE LINE
N. KATHERINE DR SB

PRELIMINARY AND NOT FOR BIDDING PURPOSES

8

8

LEGEND

◪ LINEARLY INTERPOLATE WALL ELEVATIONS BETWEEN STATIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

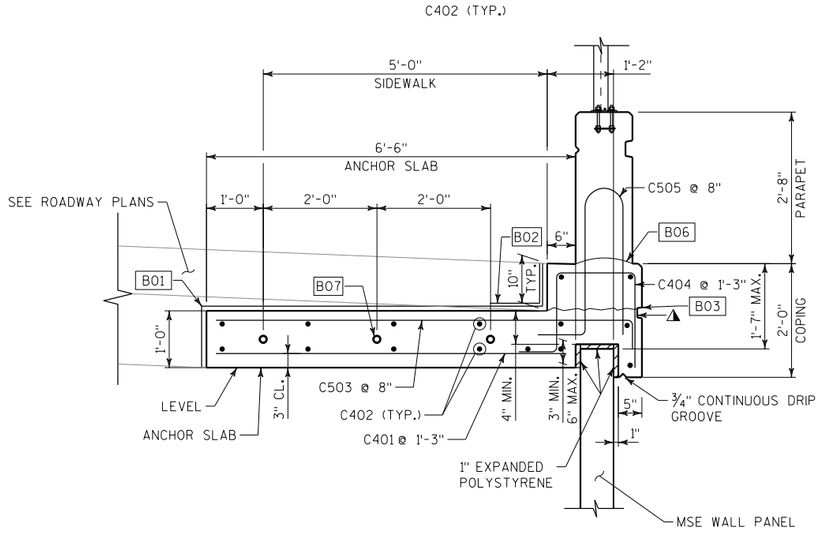
STRUCTURE R-45-44

DRAWN BY SMC | PLANS CK'D. MHZ

PROFILE GRADE LINES & DESIGN DATA

SHEET 4 OF 8

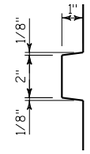
STATE PROJECT NUMBER
1229-04-74



CAST-IN-PLACE CONCRETE MODIFIED SINGLE SLOPE PARAPET 42SS/ ANCHOR SLAB DETAIL FOR PRECAST WALL PANELS

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPET AND ANCHOR SLAB BETWEEN EXPANSION JOINTS MAY BE USED. RUN BAR REINFORCEMENT THRU THE JOINT.

LAP LONGITUDINAL #4 BARS A MINMUM 1'-0"



RUSTICATION DETAIL

⚠ PROVIDE RUSTICATION IF OPT. CONST. JOINT IS USED.

NOTES

B01 18" RUBBERIZED MEMBRANE WATERPROOFING TO BE PLACED ON THESE SURFACES AT EACH JOINT.

B02 IF THE OPTIONAL CONST. JOINT IS USED, PLACE 18" RUBBERIZED MEMBRANE WATERPROOFING ALONG THE ENTIRE LONGITUDINAL JOINT. THE MEMBRANE WATERPROOFING SEALING THE OPTIONAL CONST. JOINT IS INCIDENTAL TO BID ITEM "CONCRETE MASONRY RETAINING WALLS".

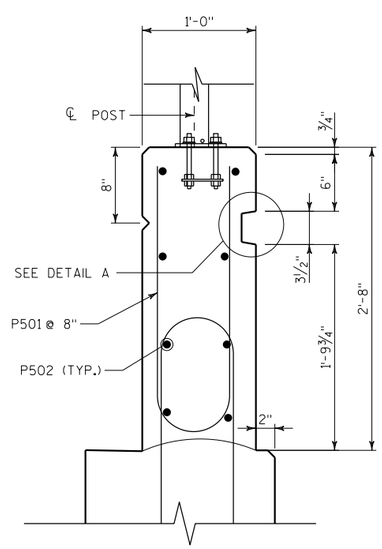
B03 OPTIONAL CONST. JT. LEAVE SURFACE ROUGHENED

B04 SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

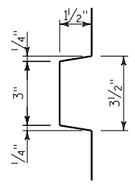
B05 EXPANSION JOINTS TO BE SPACED AT A MINIMUM OF 20'-0" AND A MAXIMUM OF 30'-0". LOCATE EXPANSION JOINTS OVER WALL JOINTS. DO NOT RUN BAR THRU JOINT, EXCEPT FOR DOWEL BARS. JOINT TO EXTEND FULL DEPTH OF PARAPET AND ANCHOR SLAB.

B06 CONST. JOINT - STRIKE OFF AS SHOWN

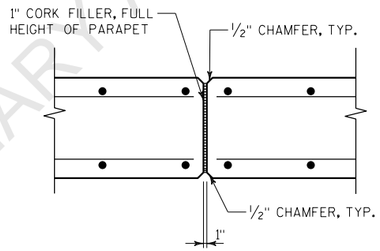
B07 3/4" DIAMETER SMOOTH DOWEL BARS. 1'-6" LONG. AT EXPANSION JOINT. EMBED 9". USE APPROVED DEBONDER ON 1/2" OF BARS LENGTH. COST INCLUDED IN "CONCRETE MASONRY RETAINING WALLS".



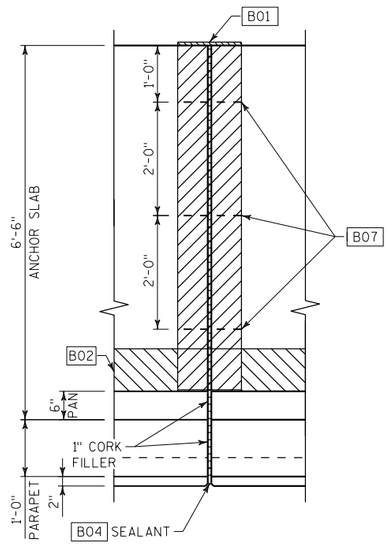
MODIFIED VERTICAL FACE PARAPET A



DETAIL A



PARAPET EXPANSION JOINT



ANCHOR SLAB EXPANSION JOINT DETAILS B05

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STRUCTURE R-45-44

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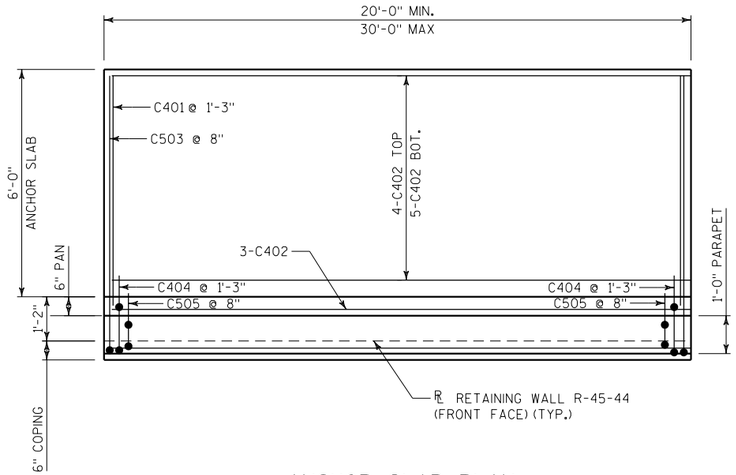
PARAPET & ANCHOR SLAB DETAILS (1 OF 2)

SHEET 5 OF 8

8

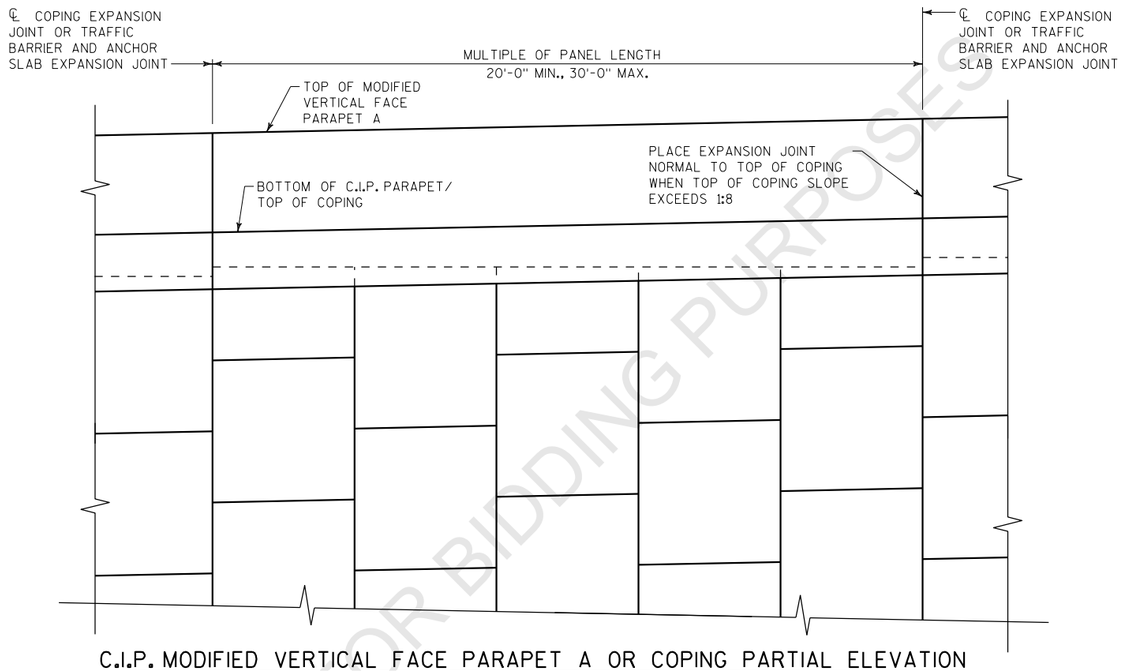
FILE NAME : c:\caddlib\pw\sconnolly\greatlakes\d0246800\R44_080301_de.dgn PLOT DATE : 7/22/2021 PLOT BY : sconnolly PLOT NAME : $FILE$ PLOT SCALE : 1:2.66667

STATE PROJECT NUMBER
1229-04-74



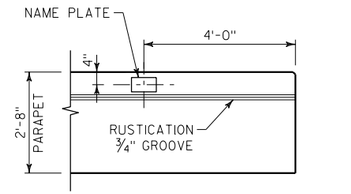
ANCHOR SLAB PLAN

(PARAPET REINFORCEMENT NOT SHOWN FOR CLARITY)



C.I.P. MODIFIED VERTICAL FACE PARAPET A OR COPING PARTIAL ELEVATION

NOTE: ALL JOINTS SHALL BE LOCATED AS SHOWN ON THE WALL ELEVATIONS AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE



INSIDE ELEVATION SOUTH END

(LOOKING EAST)

OUTSIDE ELEVATION

(LOOKING WEST)
(RAILING NOT SHOWN FOR CLARITY)

ANCHOR SLAB BILL OF BARS

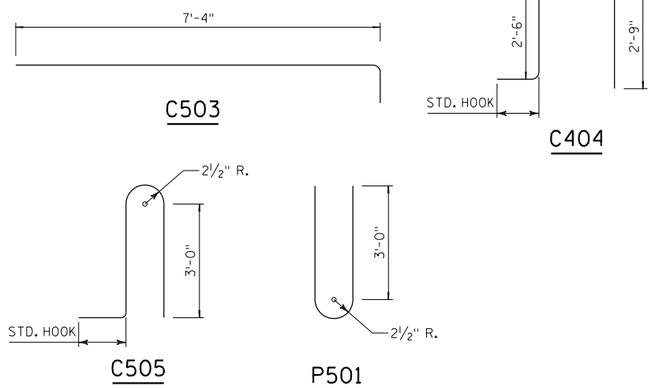
BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
C401	X	59	6'-1"	-	-	ANCHOR SLAB - TRANS.
C402	X	15	70'-0"	-	-	ANCHOR SLAB - LONG.
C503	X	107	8'-1"	X	-	ANCHOR SLAB - TRANS.
C404	X	59	4'-11"	X	-	ANCHOR SLAB - TRANS.
C505	X	107	5'-6"	X	-	ANCHOR SLAB/PARAPET DOWEL

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

PARAPET BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	LOCATION
P501	X	107	4'-9"	X	PARAPET - VERT.
P502	X	8	70'-0"	-	PARAPET - LONG.

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



BENDING DIAGRAMS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-44

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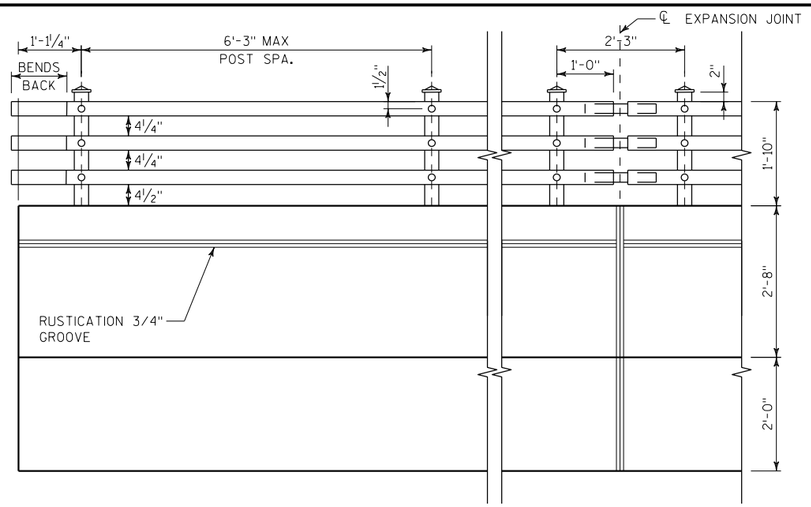
PARAPET & ANCHOR SLAB DETAILS (2 OF 2)

SHEET 6 OF 8

8

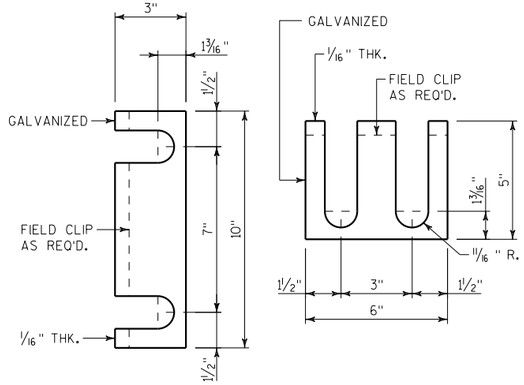
PRELIMINARY - NOT FOR BIDDING PURPOSES

STATE PROJECT NUMBER
1229-04-74



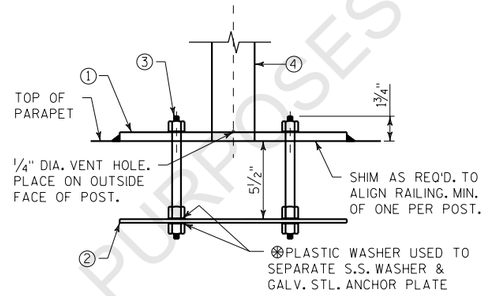
INSIDE ELEVATION

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



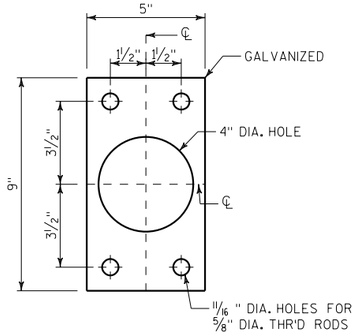
RAIL POST SHIM DETAILS

(2 SETS PER POST)



ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED



ANCHOR PLATE

NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE 3T", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WRAP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL. ALL PLATES CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ENDS OF STRUCTURAL TUBING SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.

ALL PLATES, AND RECTANGULAR SLEEVES SHALL CONFORM TO ASTM A709 GRADE 36. ALL STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.

ANCHORAGE SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATE NO. 1, WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

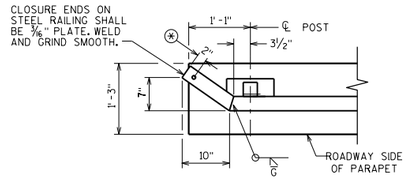
CAULK AROUND PERIMETER OF BASE PLATE, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL JOINT IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3 & 12) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS.

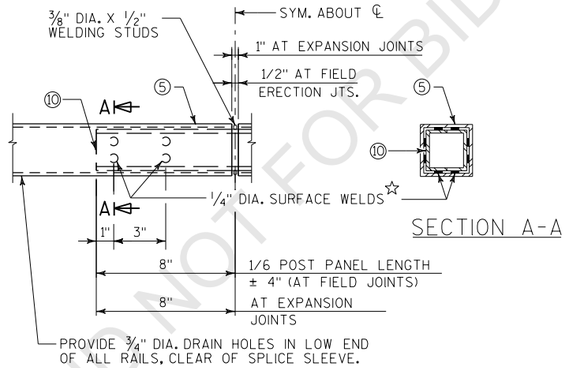
VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATES GALVANIZING AND DRAINAGE.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.



END POST DETAIL

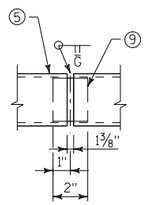
⊛¾" DIA. DRAIN HOLE IN BOTTOM OF ALL TUBES



SECTION A-A

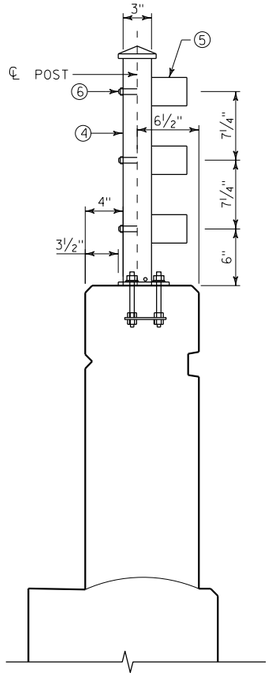
FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

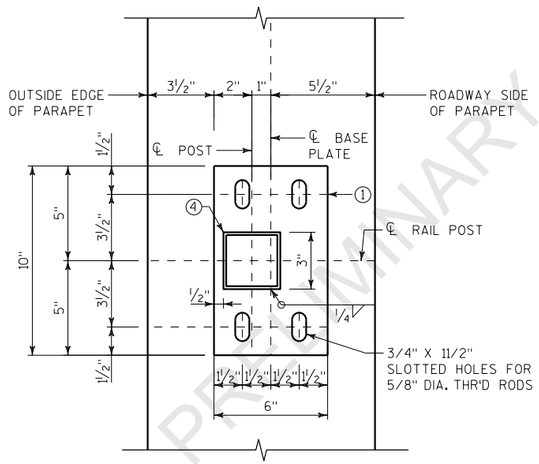


SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



RAILING END VIEW



TYPICAL RAIL POST BASE PLATE

LEGEND

① BASE PLATE ⅝" X 6" X 10" WITH ¾" X 1½" SLOTTED HOLES FOR THR'D RODS NO. 3. WELD TO NO. 4 AS SHOWN. SLOTS PARALLEL TO LONG SIDE OF PLATE.

② ¼" X 5" X 9" ANCHOR PLATE (GALVANIZED) WITH 11/16" DIA. HOLES FOR THR'D. RODS NO. 3.

③ ⅝" DIA. X 9" LONG. TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHER OF SAME ALLOY GROUP. ☆

④ STRUCTURAL TUBING 3" X 3" X ⅜" POSTS, PLACE VERTICAL. WELD TO NO. 1 AND USE 1" DIA. HOLES (FRONT AND BACK) FOR BOLT NO. 6.

⑤ STRUCTURAL TUBING 3" X 3" X ⅜" RAILS, WITH 11/16" DIA. HOLES (FRONT AND BACK) FOR BOLT NO. 6. BOLT TO NO. 4.

⑥ ⅝" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT. ⅜" X 1½" X 1½" WASHER, AND LOCK WASHER.

⑨ RECTANGULAR SLEEVE FABRICATED FROM ⅜" PLATES. PROVIDE "SLIDING FIT".

⑩ RECTANGULAR SLEEVE FABRICATED FROM ⅜" PLATES. (1-4" @ FIELD ERECTION AND EXP. JTS.)

☆ ALTERNATE ANCHORAGE: 4 EQUIVALENT STAINLESS STEEL CONCRETE ADHESIVE ANCHORS 5/8-INCH. EMBEDED IN CONCRETE. ADHESIVE ANCHOR SHALL CONFIRM TO SECTIONS 502.3.14 OF THE STANDARD SPECIFICATION.

PRELIMINARY AND NOT FOR BIDDING PURPOSES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-45-44

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RAILING DETAILS

SHEET 7 OF 8

8

FILE NAME : c:\caddlib\pw\sconnolly\greatlakes\d0246800\R44_080303_de.dgn
PLOT DATE : 7/22/2021
PLOT BY : sconnolly
PLOT NAME : $FILE$
PLOT SCALE : 1:2.66667

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
CFC-05	FEBRUARY 10, 2020	357648	602549
CFC-05A	AUGUST 18, 2020	357651	602549
CFC-06	AUGUST 19, 2020	357599	602547

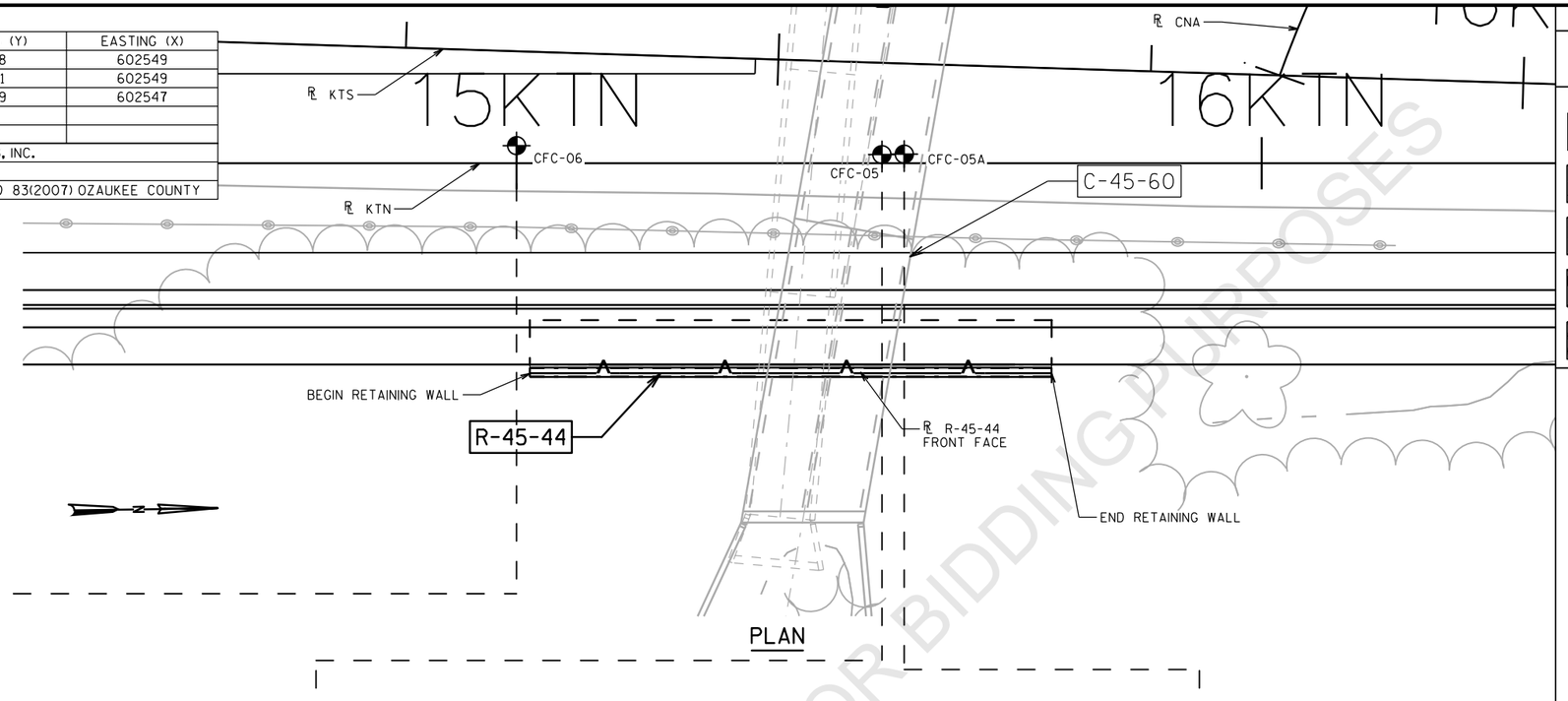
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.
REPORT COMPLETED BY: HNTB CORP.
ALL COORDINATES REFERENCED TO WCCS NAD 83(2007) OZAUKEE COUNTY

NOTE:

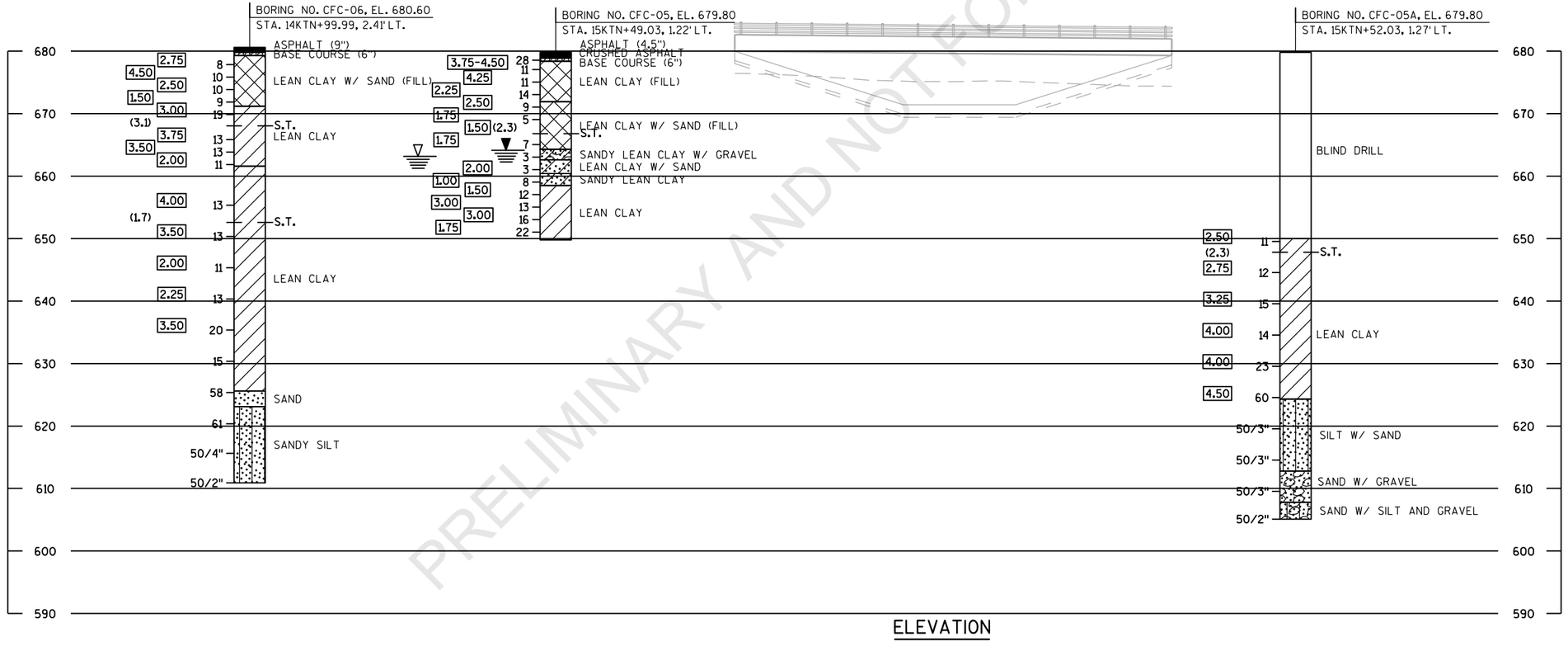
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

⌖ DENOTES SOIL BORING LOCATION



PLAN



ELEVATION

PRELIMINARY AND NOT FOR BIDDING PURPOSES

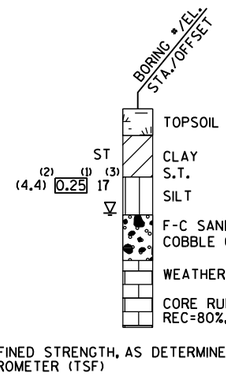
STATE PROJECT NUMBER

1229-04-74

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) UNCONFINED STRENGTH, AS DETERMINED BY UNCONFINED COMPRESSION TEST

(3) 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 S.T.-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

STRUCTURE R-45-44

DRAWN BY EAJ | PLANS CK'D. NNM

SUBSURFACE EXPLORATION

SHEET 8 OF 8

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