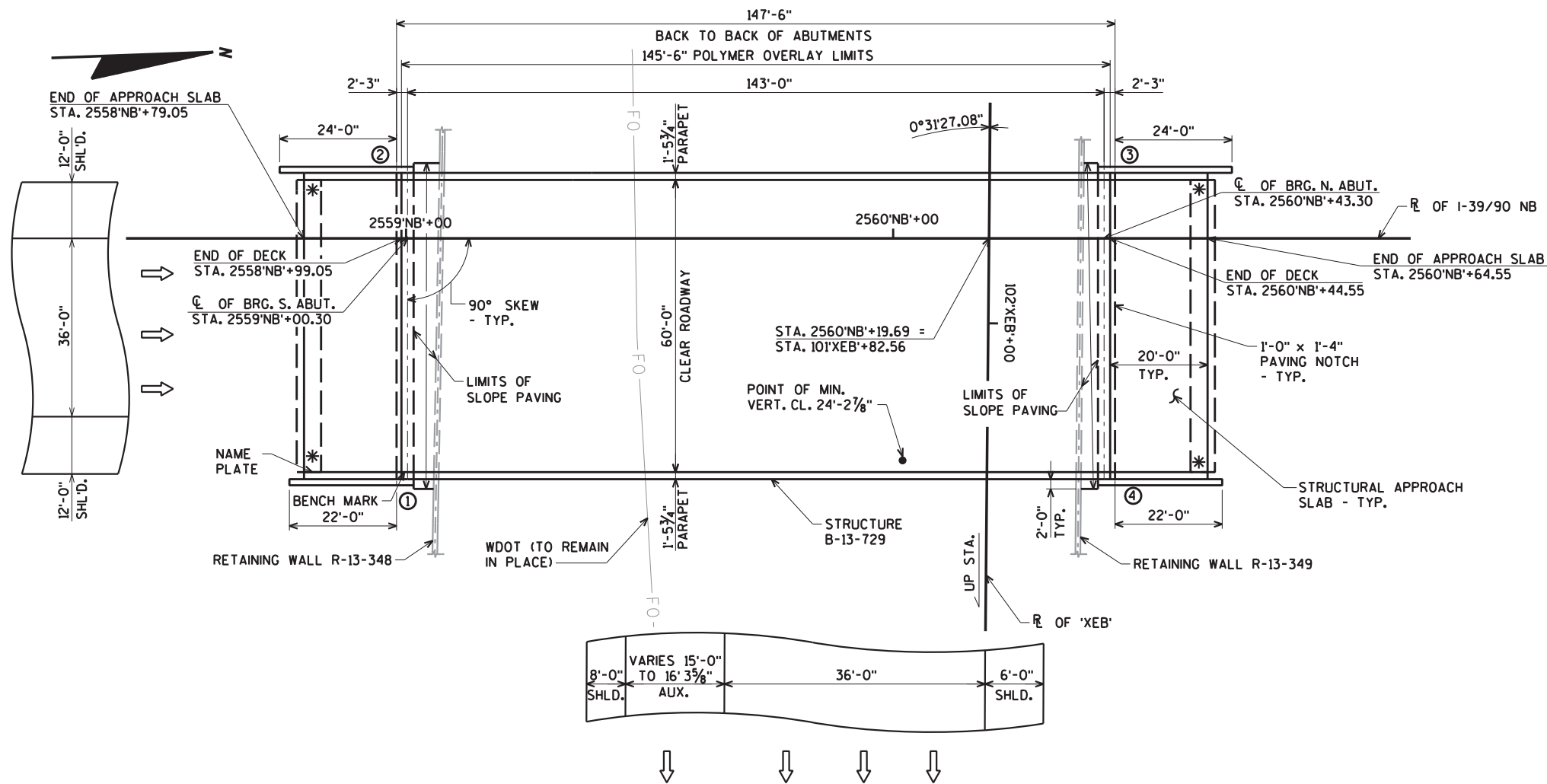


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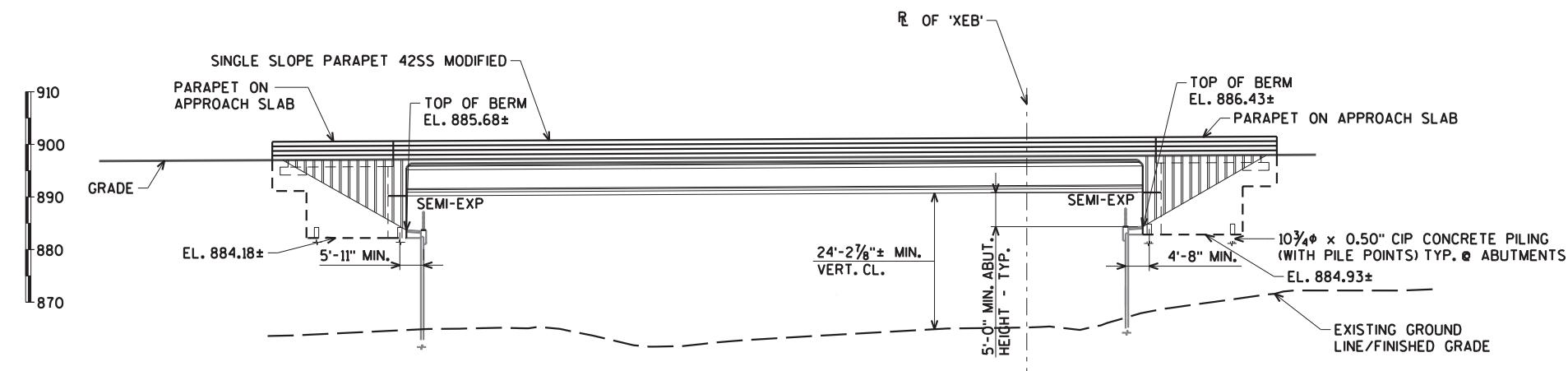
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8



PLAN

SINGLE SPAN - 72W" PRESTRESSED CONCRETE GIRDER BRIDGE



ELEVATION

(NORMAL TO R OF USH 12/18 EB)

LIST OF DRAWINGS

1. PRELIMINARY PLAN
2. TYPICAL SECTIONS
3. QUANTITIES AND GENERAL NOTES
4. SUBSURFACE EXPLORATION

*ANCHOR ASSEMBLY FOR THRE
BEAM TYPE GUARDRAIL.

○ DENOTES WING NUMBER

DESIGN DATA

LIVE LOAD:

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

STRUCTURE IS DESIGNED FOR A FUTURE WEARING
SURFACE OF 20" S.F.

RATING BASED ON PLACEMENT OF 5 p.s.f. POLYMER OVERLAY
UNDER THIS CONTRACT.

MATERIAL PROPERTIES:

CONCRETE MASONRY (SUPERSTRUCTURE (HPC DECK, PARAPET,
DIAPHRAGM, APPROACH SLAB) f'_c = 4,000 p.s.i.
ALL OTHER (INCL.
APPROACH SLAB FOOTING) f'_c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) f_y = 60,000 p.s.i.
STRUCTURAL CARBON STEEL ASTM A709 (GRADE 36) f_y = 36,000 p.s.i.
72W" PRESTRESSED GIRDER
CONCRETE MASONRY f'_c = 8,000 p.s.i.
STRANDS - 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF = 270,000 p.s.i.
STEEL PILING ASTM A252 (GRADE 3) f_y = 45,000 p.s.i.

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON 10 3/4" ϕ x 0.50" CIP CONCRETE PILING (WITH PILE POINTS)
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS * PER PILE AS DETERMINED BY
THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 65'-0" AT SOUTH
ABUTMENT, ESTIMATED LENGTH 65'-0" AT NORTH ABUTMENT.

*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 DATA:

I-39/90 NB

A.A.D.T. = 60,400 (2020)
A.A.D.T. = 72,000 (2040)
R.D.S. = 70 M.P.H.

USH 12/18 EB

A.A.D.T. = 46,300 (2020)
A.A.D.T. = 54,500 (2040)
R.D.S. = 60 M.P.H.

FOR TYPICAL SECTION
SEE SHEET 2

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED _____ CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-13-729			
I-39/90 NB OVER USH 12/18 EB			
COUNTY	DANE	TOWN/CITY/VILLAGE	BLOOMING GROVE
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS		
DESIGNED BY	CBM	DESIGN CK'D.	DRAWN BY JLB PLANS CK'D.
PRELIMINARY PLAN			SHEET 1 OF 5

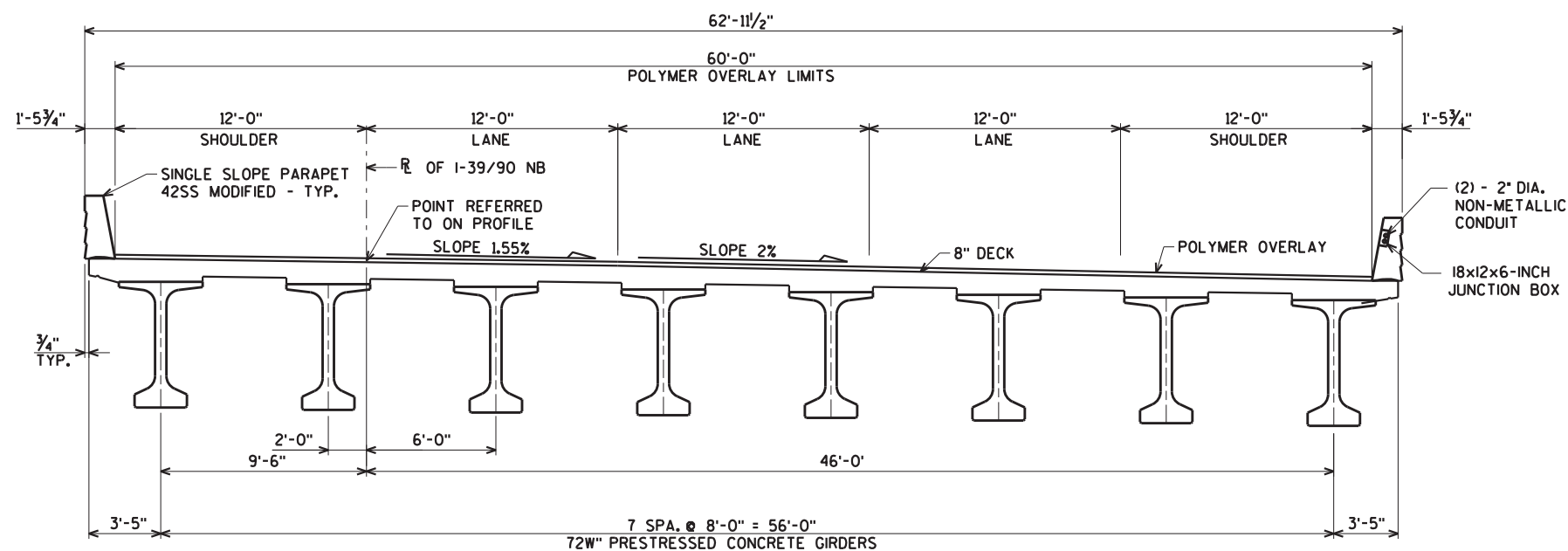
BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

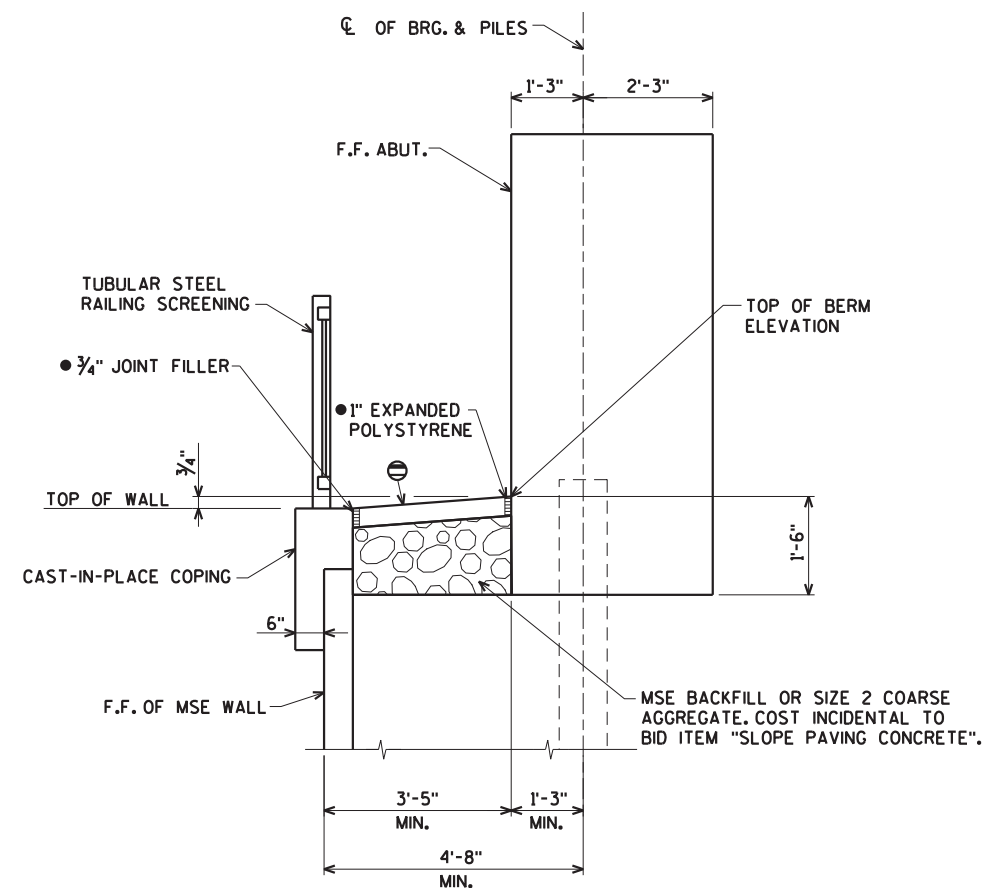
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STATE PROJECT NUMBER

1007-12-78



TYPICAL SECTION THRU BRIDGE
(LOOKING NORTH)



CROSS SECTION THRU ABUTMENT
AT MSE WALL
(NORMAL TO ABUTMENT AND WALL)

4" SLOPE PAVING CONCRETE

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

F.F. DENOTES FRONT FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-13-729			
DRAWN BY JLB		PLANS CK'D.	
TYPICAL SECTIONS			SHEET 2 OF 5

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

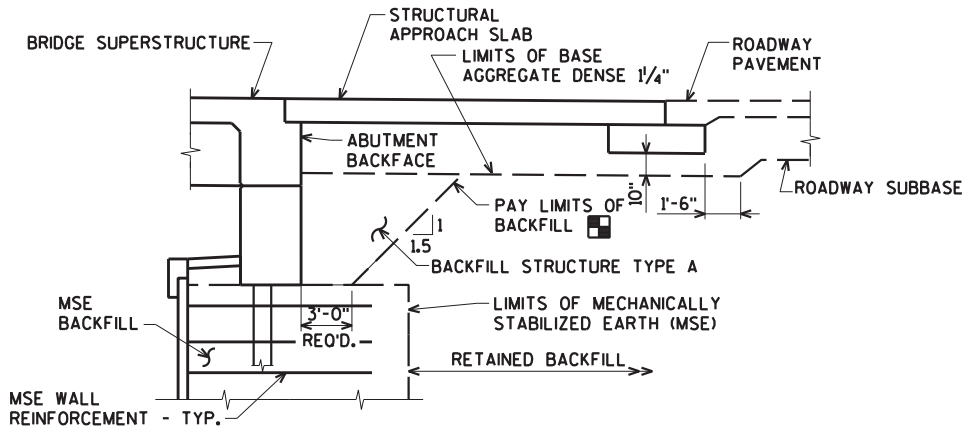
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Ut:41-0660.OX - IH-39 Dane Partners General Bridge Information:B-13-729 - I39.NB over USH 12&18 EB+bridge+prelim+B-13-729_gp.p

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S. STR. APR. SLAB	S. ABUT.	N. ABUT.	N. STR. APR. SLAB	SUPER.	TOTAL
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-13-729	LS	-----	-----	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	-----			-----	-----	
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON		-----	-----		-----	
501.1000.S	ICE HOT WEATHER CONCRETING	LB						
502.0100	CONCRETE MASONRY BRIDGES	CY					-----	
502.3200	PROTECTIVE SURFACE TREATMENT	SY		-----	-----		-----	
502.3210	PIGMENTED SURFACE SEALER	SY		-----	-----			
503.0172	PRESTRESSED GIRDER TYPE I 72W-INCH	LF	-----	-----	-----	-----		
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	-----			-----	-----	
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB						
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB		-----	-----		-----	
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-----			-----	-----	
506.4000	STEEL DIAPHRAGMS B-13-729	EACH	-----	-----	-----	-----		
509.5100.S	POLYMER OVERLAY	SY	-----	-----	-----	-----		
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-----			-----	-----	
517.1010.S	CONCRETE STAINING B-13-729	SF						
550.0500	PILE POINTS	EACH	-----			-----	-----	
550.2108	PILING CIP 10 3/4 X 0.50-INCH	LF	-----			-----	-----	
604.0400	SLOPE PAVING CONCRETE	SY	-----			-----	-----	
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH		-----	-----		-----	
652.0125	CONDUIT RIGID METALLIC 2-INCH	LF		-----	-----			
652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF		-----	-----			
653.0222	JUNCTION BOXES 18 X 12 X 6-INCH	EACH	-----	-----	-----	-----		
SPV.0035.700	HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES	CY		-----	-----			
SPV.0165.700	LONGITUDINAL GROOVING BRIDGE DECK	SY		-----	-----		-----	
	NON-BID ITEMS	SIZE	-----	-----	-----	-----	-----	1/2" & 3/4"
	FILLER							

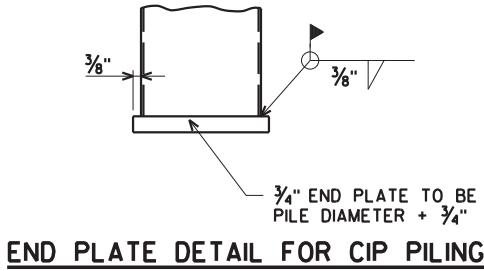
◆ HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES SHALL INCLUDE ALL SUPERSTRUCTURE CONCRETE AND ALL STRUCTURAL APPROACH SLAB CONCRETE, EXCEPT THE STRUCTURAL APPROACH SLAB FOOTING CONCRETE.

● PILING TO BE ASTM A252 (GRADE 3) WITH A $f_y = 45,000$ p.s.i.

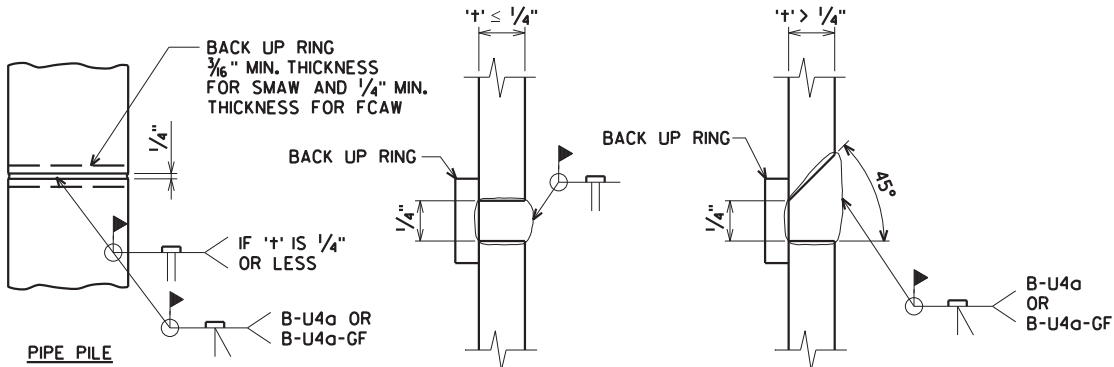


BACKFILL STRUCTURE LIMITS

■ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCLUDED WITH EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.



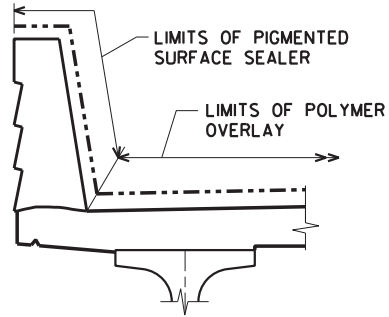
END PLATE DETAIL FOR CIP PILING



PILE SPLICE DETAIL

CAST-IN-PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

CIP PILE WELD DETAIL



POLYMER OVERLAY AND PIGMENTED SURFACE SEALER DETAILS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
THE FIRST DIGIT OF A THREE DIGIT BAR NO. OR THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.
JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II, OR III OR A.A.S.H.T.O. DESIGNATION M 213.
AT THE BACKFACE OF ABUTMENTS ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.
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 AND ABUTMENT WINGS 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 REQUIRES ENGINEER APPROVAL.
THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEET.
BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
POLYMER OVERLAY AND PIGMENTED SURFACE SEALER IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.
ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.
THE RUSTICATIONS IN THE ABUTMENTS ARE INCLUDED IN THE BID ITEM "CONCRETE MASONRY BRIDGES".
THE RUSTICATIONS AT THE BACK FACE OF THE PARAPETS ARE INCLUDED IN THE BID ITEM "HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES".
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.
DECK SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "POLYMER OVERLAY".

STATE PROJECT NUMBER

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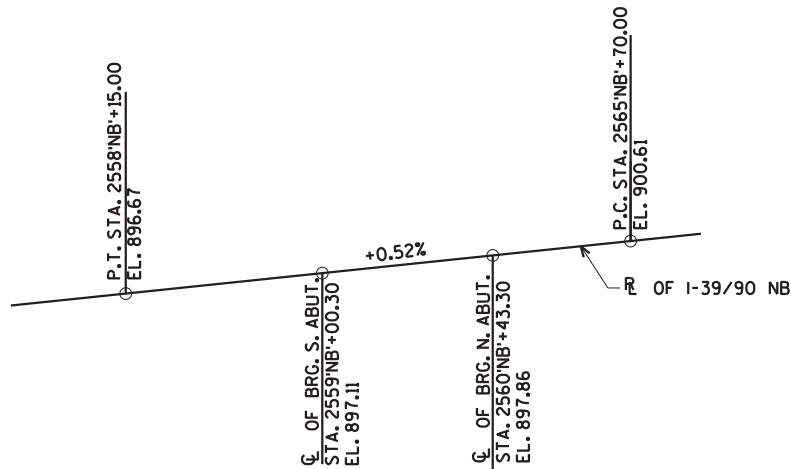
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-13-729			
DRAWN BY JLB		PLANS CK'D.	
QUANTITIES AND GENERAL NOTES			SHEET 3 OF 5

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

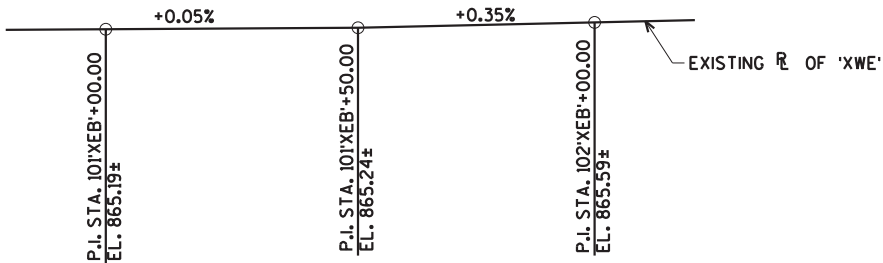
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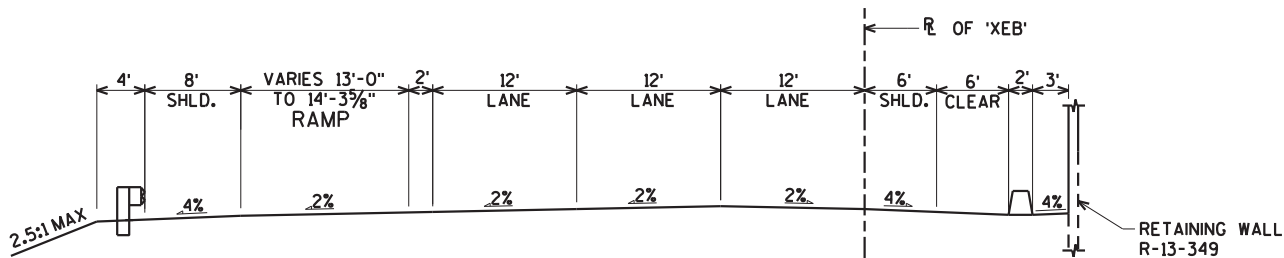
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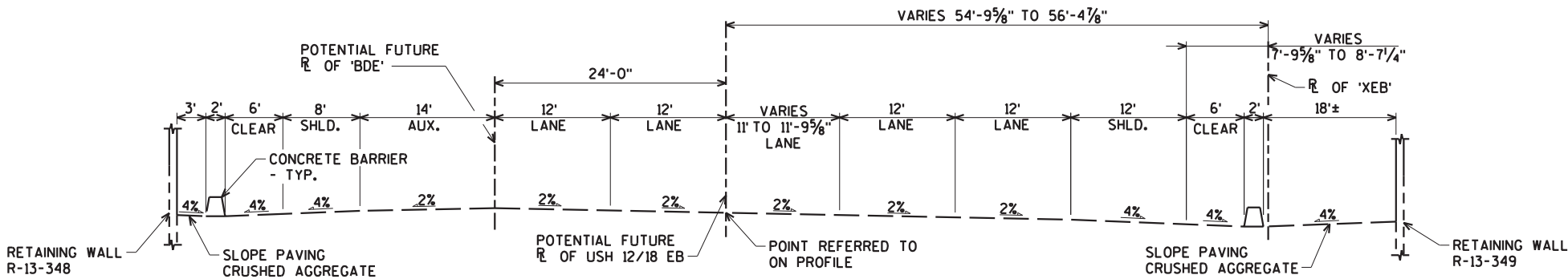
PROFILE GRADE LINE
(R of I-39/90 NB)



PROFILE GRADE LINE
(R of 'XEB')



TYPICAL FINISHED SECTION OF USH 12/18 EB
(LOOKING WEST)



POTENTIAL FUTURE TYPICAL FINISHED SECTION USH 12/18 EB
(LOOKING WEST)

8

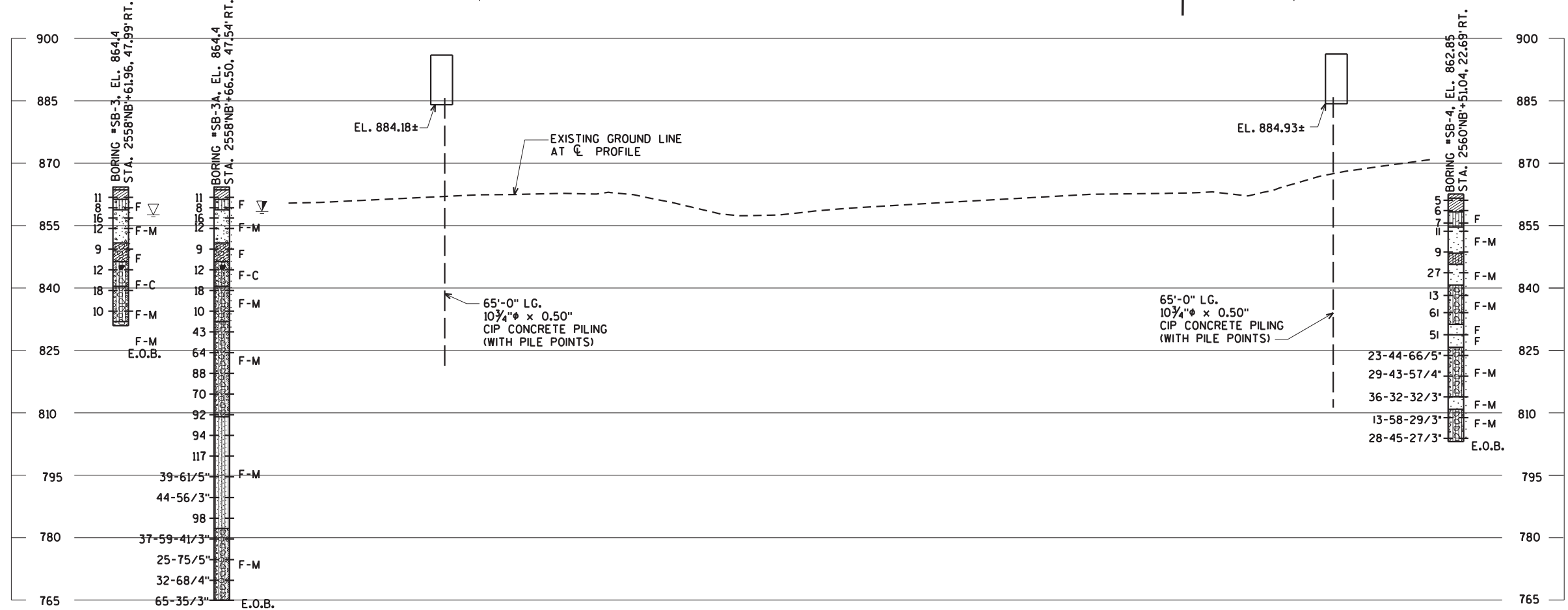
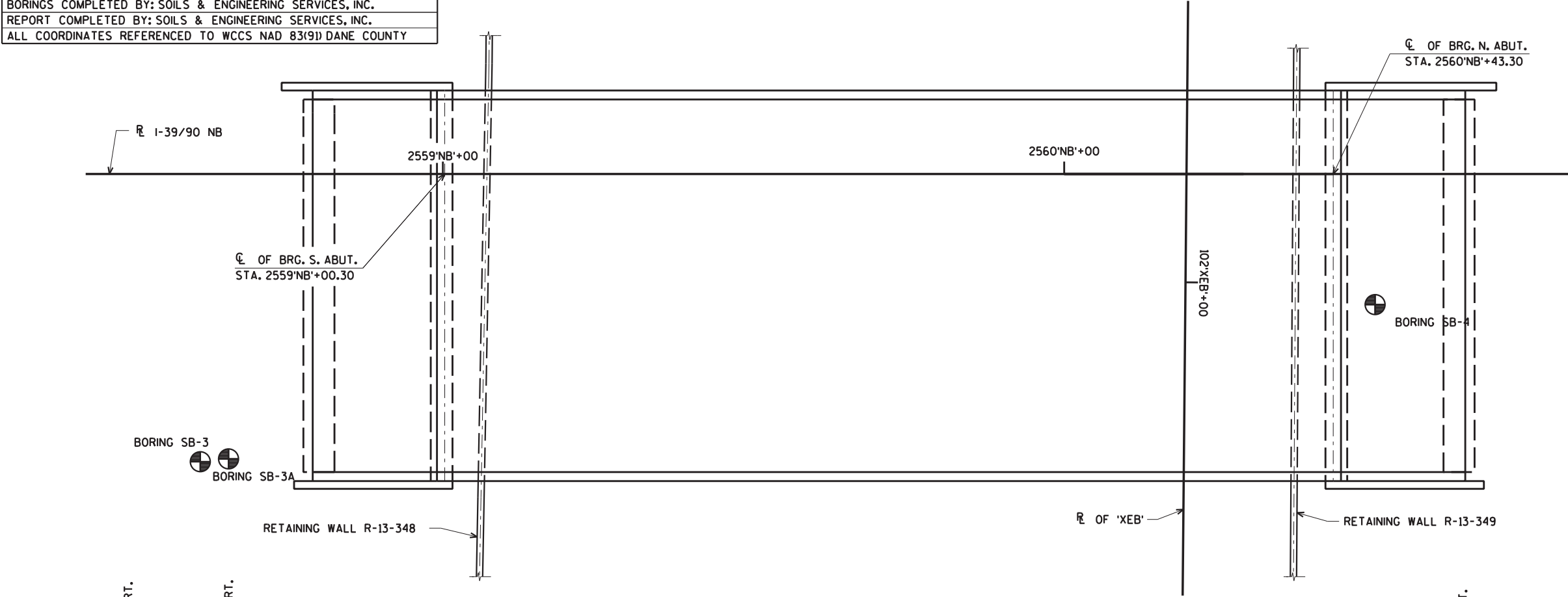
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-13-729			
DRAWN BY JLB		PLANS CK'D.	
TYPICAL SECTIONS AND PROFILES			SHEET 4 OF 5

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
SB-3	DECEMBER 7, 2018	472152.44	849716.29
SB-3A	DECEMBER 11, 2018	472157.00	849716.00
SB-4	JANUARY 16, 2019	472342.32	849697.91
BORINGS COMPLETED BY: SOILS & ENGINEERING SERVICES, INC.			
REPORT COMPLETED BY: SOILS & ENGINEERING SERVICES, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DANE COUNTY			



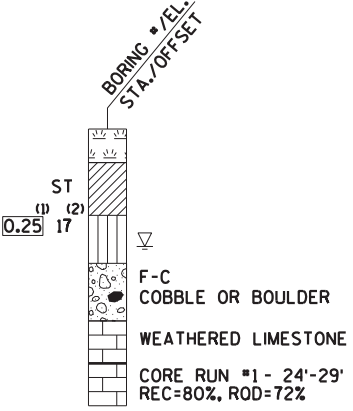
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MATERIAL SYMBOLS

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) 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			
STRUCTURE B-13-729			
DRAWN BY CJM		PLANS CK'D.	
SUBSURFACE EXPLORATION		SHEET 5 OF 5	