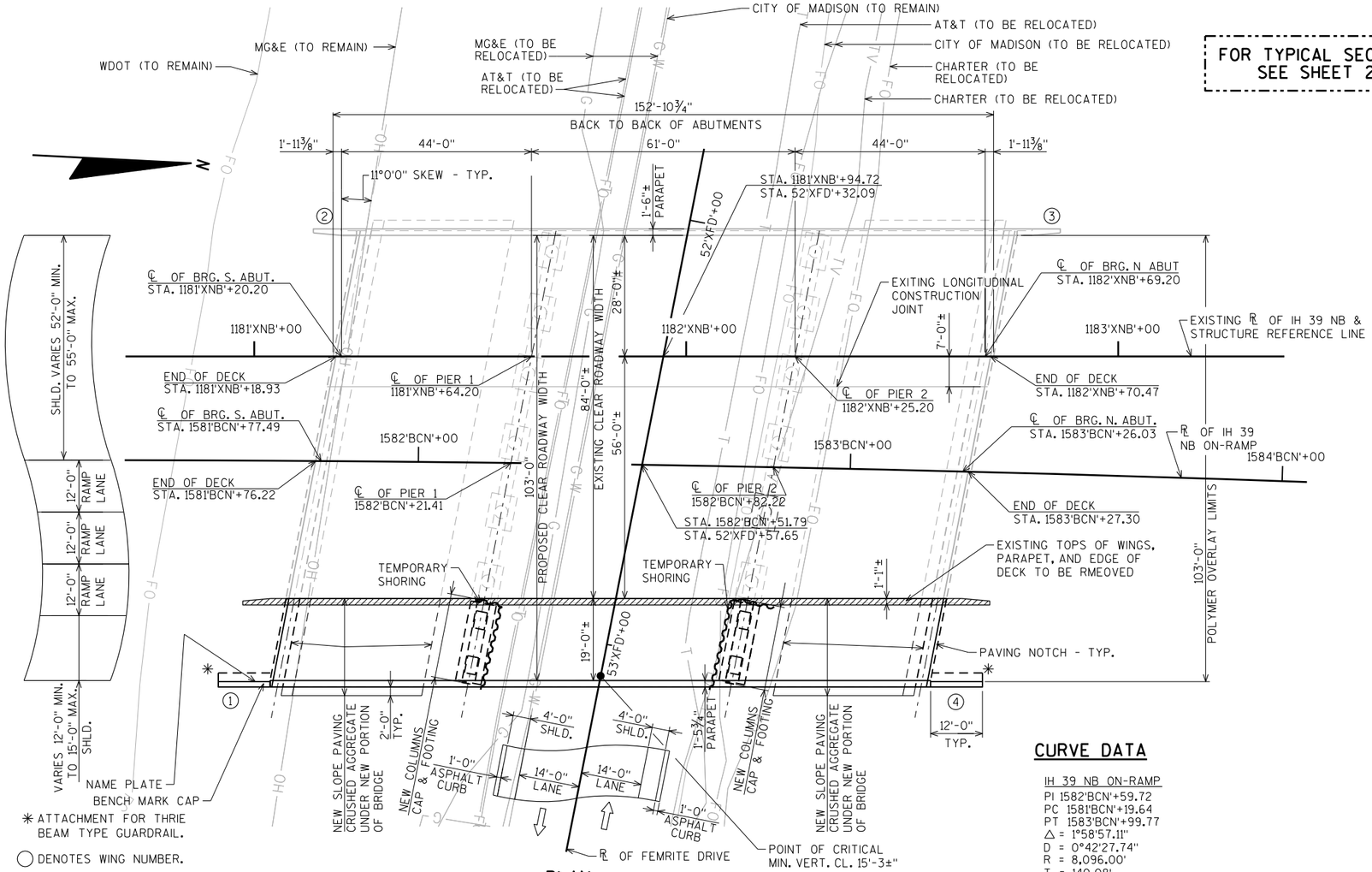
STATE PROJECT NUMBER
1007-12-80

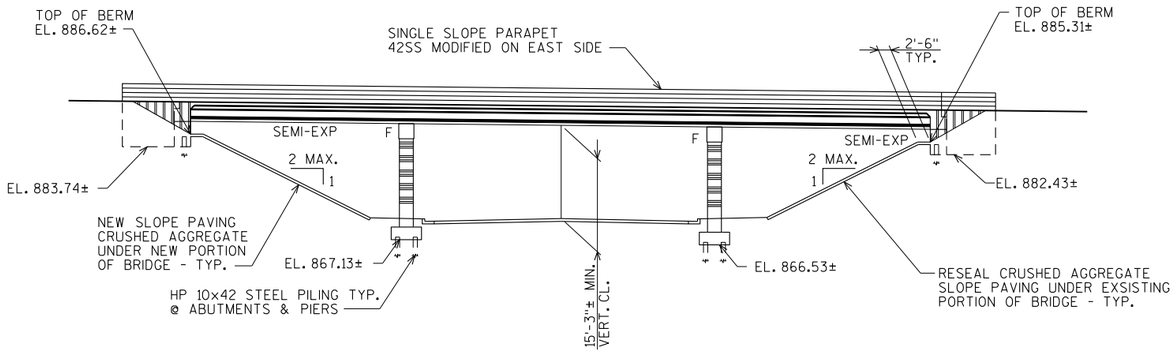


PLAN

THREE SPAN - 36" PRESTRESSED CONCRETE GIRDER BRIDGE - WIDENING

CURVE DATA

IH 39 NB ON-RAMP
PI 1582'BCN'+59.72
PC 1581'BCN'+19.64
PT 1583'BCN'+99.77
△ = 1°58'57.11"
D = 0°42'27.74"
R = 8,096.00'
T = 140.08'
L = 280.14'
SE = 2%



ELEVATION

(NORMAL TO ℄ OF FEMRITE DRIVE)

DESIGN DATA

LIVE LOAD (PROPOSED WIDENING):

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

LIVE LOAD (EXISTING BRIDGE):

DESIGN LOADING: HS-20
INVENTORY RATING:
OPERATING RATING:
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)	f'_c	= 4,000 p.s.i.
CONCRETE MASONRY (ALL OTHER	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.

36" 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.

FOUNDATION DATA:

SOUTH ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ǂ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 50'-0".

NORTH ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ǂ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 45'-0".

PIERS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ǂ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 25'-0" AT PIERS 1 AND 2.

ǂ 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:

IH 39 NB ON-RAMP
A.A.D.T. = 60,400 (2009)
A.A.D.T. = 72,000 (2040)
R.D.S. = 60 M.P.H.

FEMRITE DRIVE
A.A.D.T. = 3,800 (2020)
A.A.D.T. = 9,800 (2040)
R.D.S. = 40 M.P.H.

LIST OF DRAWINGS

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

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

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-13-463

IH 39 NB ON-RAMP OVER FEMRITE DRIVE

COUNTY	~~TOWN~~/CITY/~~VILLAGE~~
DANE	MADISON

DESIGN SPEC. REHABILITATOIN N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
CBM		JLB	

PRELIMINARY PLAN

SHEET 1 OF 5

I.D.

DATE:

10/7/2019
PENTABLE:Wisdot_shd.tbl

DATE:
DATE:
DATE:

CHECKED BY:
BACK CHECKED BY:
CORRECTED BY:

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STATE PROJECT NUMBER
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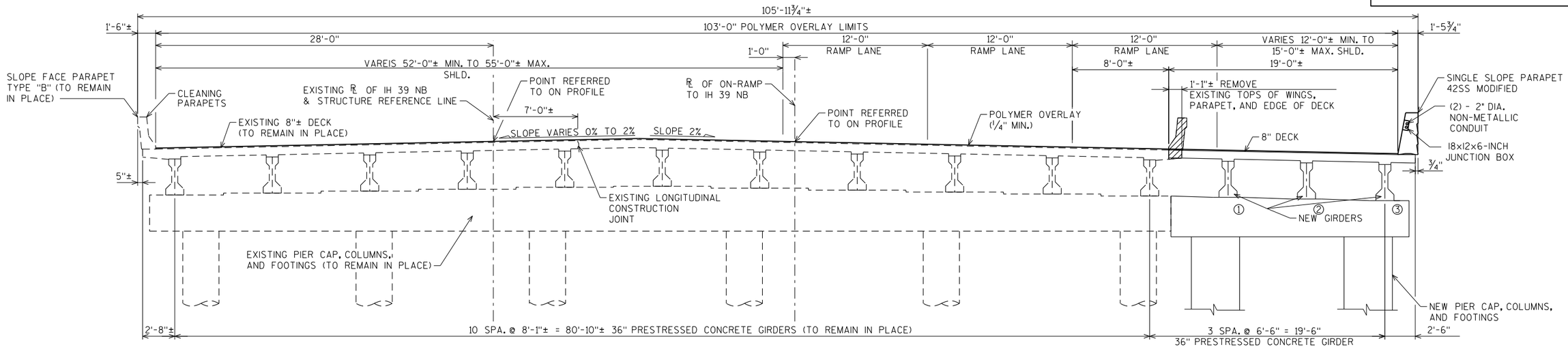
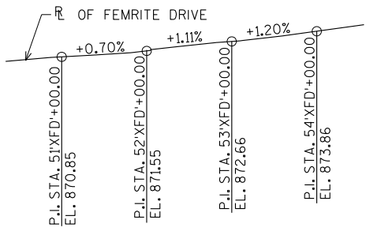
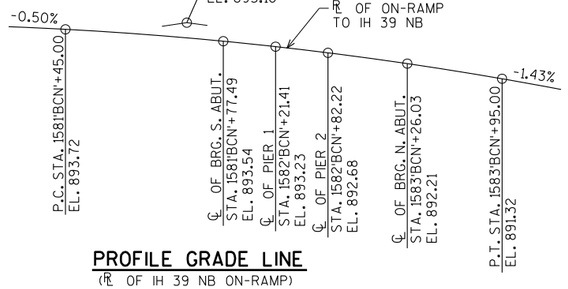


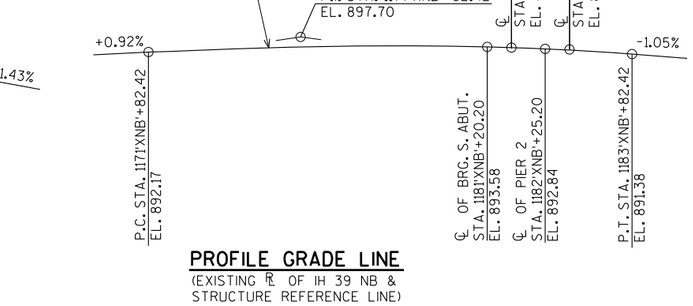
TYPICAL SECTION THRU BRIDGE
(LOOKING NORTH)



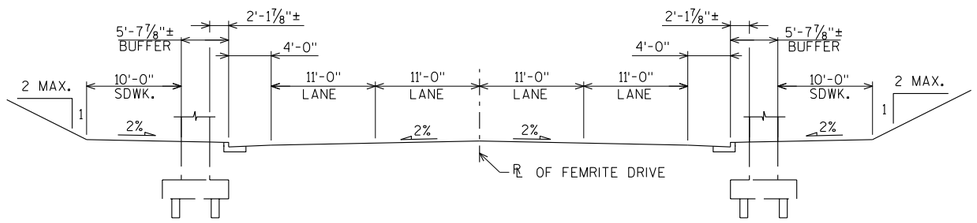
PROFILE GRADE LINE
(FEMRITE DRIVE)



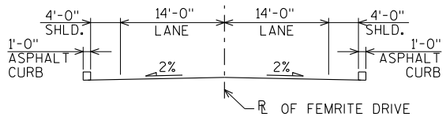
PROFILE GRADE LINE
(℄ OF IH 39 NB ON-RAMP)



PROFILE GRADE LINE
(EXISTING ℄ OF IH 39 NB & STRUCTURE REFERENCE LINE)



POTENTIAL FUTURE TYPICAL FINISHED SECTION FEMRITE DRIVE
(LOOKING WEST)



EXISTING TYPICAL SECTION FEMRITE DRIVE
(LOOKING WEST)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-463

DRAWN BY JLB | PLANS CK'D.

TYPICAL SECTIONS

SHEET 2 OF 5

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STATE PROJECT NUMBER
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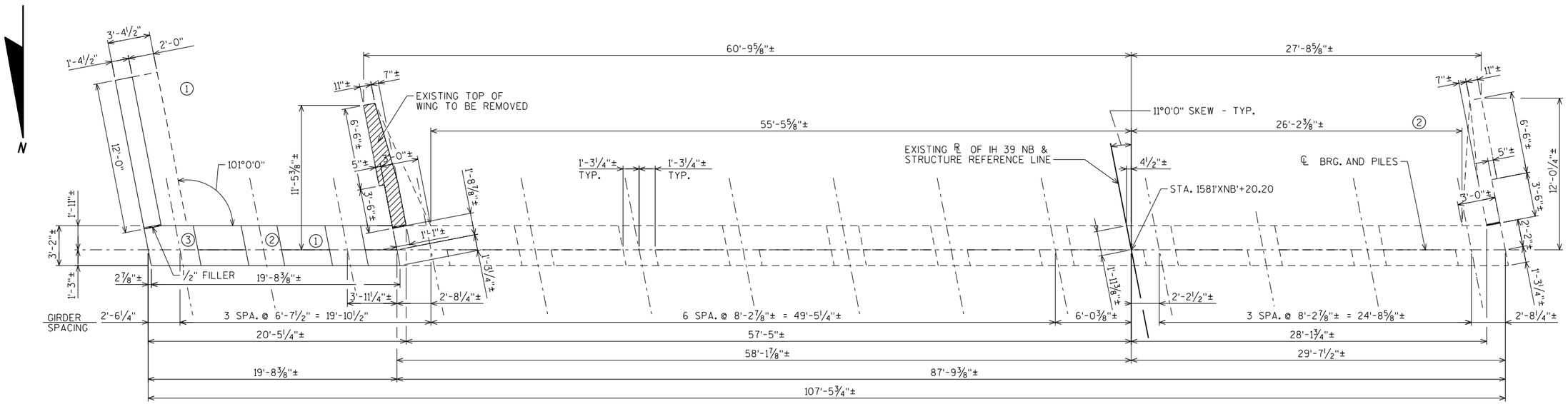
10/2/2019
PENTABLE:Wisdot_shd.tbl

NOTE: PARAPETS NOT SHOWN

ELEVATION

(LOOKING SOUTH)
(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)



PLAN

(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)

NO.	DATE	REVISION	BY

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STRUCTURE B-13-463

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ABUTMENT DETAILS

SHEET 3 OF 5

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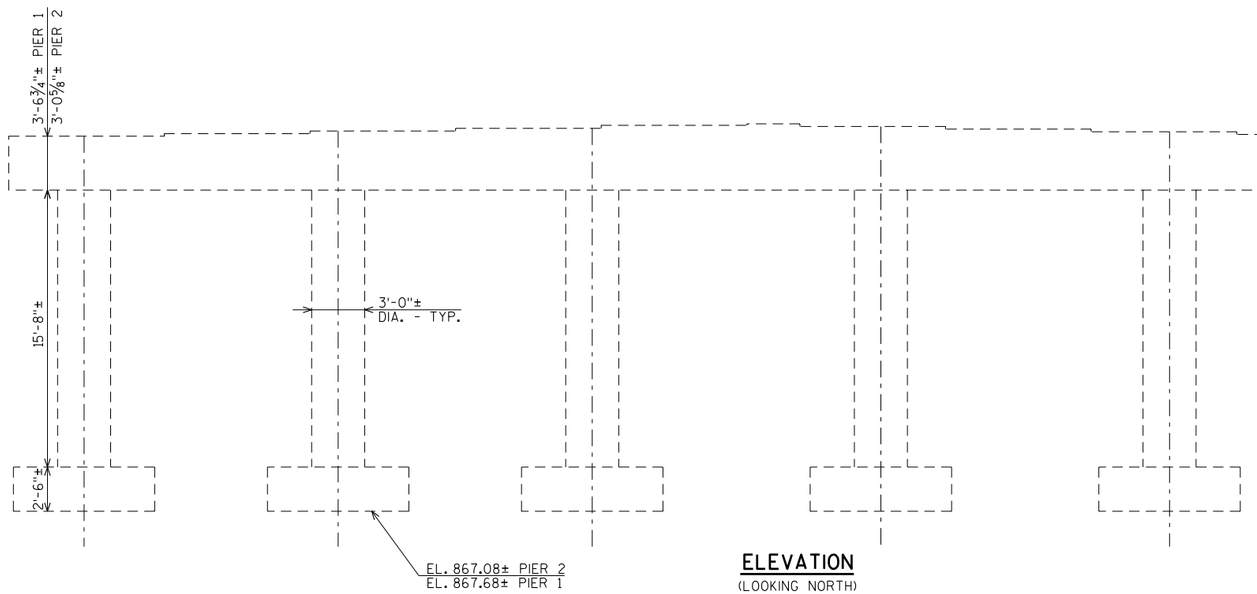
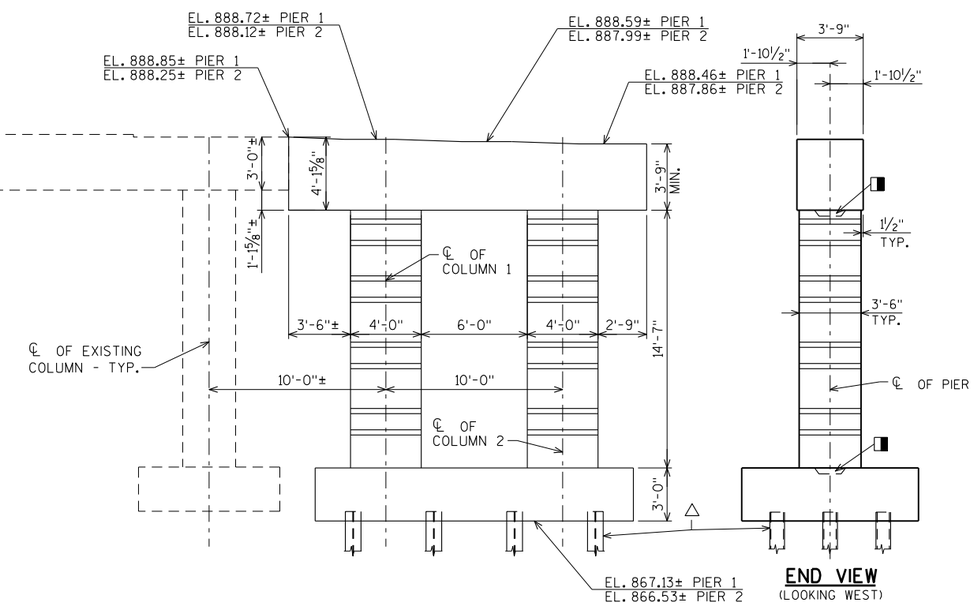
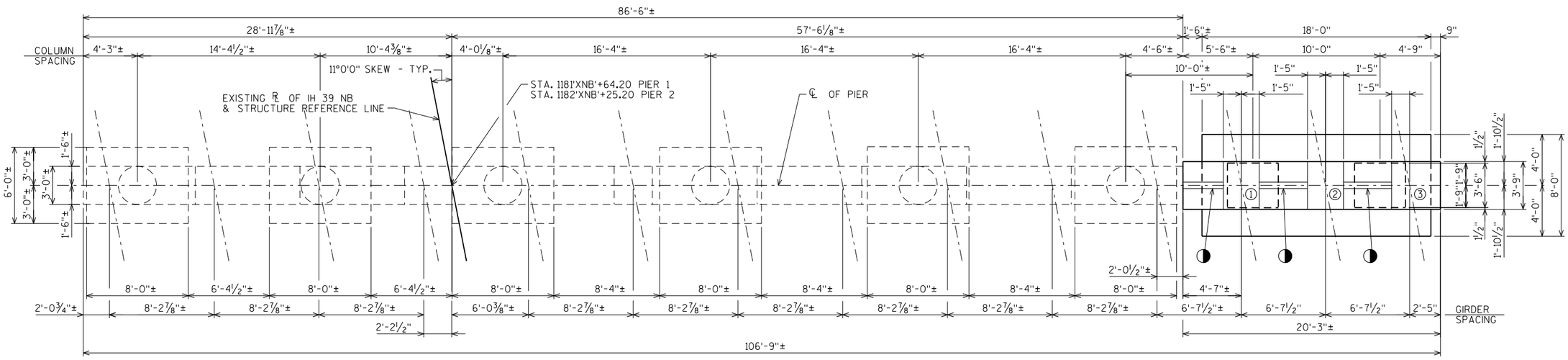


ELEVATION
(LOOKING NORTH)



END VIEW
(LOOKING WEST)



PLAN

◑ KEYED CONSTRUCTION JOINT. FORMED BY A SURFACED BEVELED 2"x6" BETWEEN BEAM SEATS.

◨ 1'-3" x 2'-0" x 4" DEEP CONSTUCTION JOINT FORMED BY BEVELED KEYWAY - TYP.

△ PIER TO BE SUPPORTED ON HP 10x42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS/PILE. EST. LENGTH 25'-0".

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STRUCTURE B-13-463

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PIER DETAILS

SHEET 4 OF 5

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10/2/2019
PENTABLE:Wisdot_shd.tbl

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	PIER 1	PIER 2	N. ABUT.	SUPER.	TOTAL
203.0200	REMOVING OLD STRUCTURE STATION 1582'BCN'+52	LS	-----	-----	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-13-463	LS	-----	-----	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON		-----	-----		-----	
501.1000.S	ICE HOT WEATHER CONCRETING	LB						
502.0100	CONCRETE MASONRY BRIDGES	CY					-----	
502.3210	PIGMENTED SURFACE SEALER	SY		-----	-----			
502.4204	ADHESIVE ANCHORS NO. 4 BAR	EACH						
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH						
502.4206	ADHESIVE ANCHORS NO. 6 BAR	EACH						
503.0136	PRESTRESSED GIRDER TYPE I 36-INCH	LF	-----	-----	-----	-----		
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB					-----	
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB						
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH					-----	
506.4000	STEEL DIAPHRAGMS B-13-463	EACH	-----	-----	-----	-----		
◑ 509.1500	CONCRETE SURFACE REPAIR	SF	-----	-----	-----	-----	-----	100
509.5100.S	POLYMER OVERLAY	SY	-----	-----	-----	-----		
509.9050.S	CLEANING PARAPETS	SY		-----	-----			
511.1200.700	TEMPORARY SHORING B-13-463	SF	-----			-----	-----	
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY		-----	-----		-----	
517.1010.S	CONCRETE STAINING B-13-463	SF						
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF					-----	
604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY		-----	-----		-----	
604.9015.S	RESEAL CRUSHED AGGREGATE SLOPE PAVING	SY		-----	-----		-----	
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF		-----	-----		-----	
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH		-----	-----		-----	
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY		-----	-----		-----	
652.0125	CONDUIT RIGID METALLIC 2-INCH	LF		-----	-----			
652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF		-----	-----			
653.0220	JUNCTION BOXES 18 X 6 X 6-INCH	EACH	-----	-----	-----	-----		
✦ SPV.0035.700	HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES	CY	-----	-----	-----	-----		
	NON-BID ITEMS							
	FILLER	SIZE	-----	-----	-----	-----	-----	½" & ¾"

✦ HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES SHALL INCLUDE ALL SUPERSTRUCTURE CONCRETE.

◑ UNDISTRIBUTED FOR ABUTMENTS, PIERS, AND W. PARAPET AS DIRECTED BY ENDINEER IN THE FIELD.

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.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING CRUSHED AGGREGATE TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

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 EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-13-463".

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

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. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

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

DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1" DEEP SAW CUT.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWING. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR AS 1997.

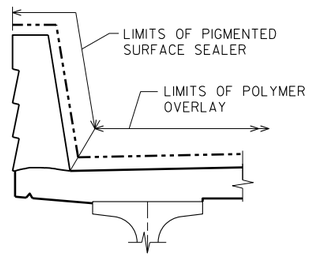
AT THE BACKFACE OF ABUTMENTS ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.

THE RUSTIFICATIONS IN THE ABUTMENTS AND PIERS ARE INCLUDED IN THE BID ITEM "CONCRETE MASONRY BRIDGES".

THE RUSTIFICATIONS AT THE BACK FACE OF THE PARAPETS ARE INCLUDED IN THE BID ITEM "HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES"

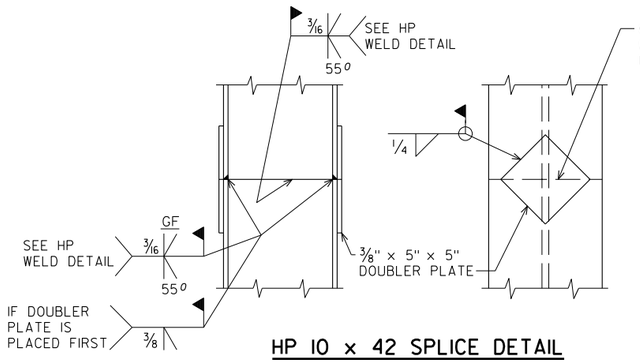
DECK SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "POLYMER OVERLAY".

THE INSIDE FACE AND TOP SURFACE OF THE EXISTING WEST PARAPET SHALL BE RESEALED WITH PIGMENTED SURFACE SEALER.

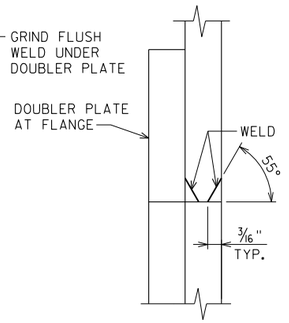


POLYMER OVERLAY AND PIGMENTED SURFACE SEALER DETAILS

(EAST SIDE SHOWN, WEST SIDE SIMILAR)

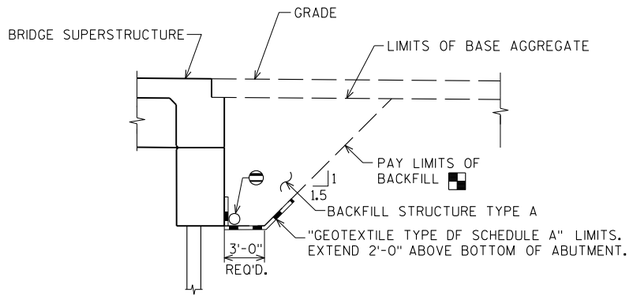


HP 10 x 42 SPLICE DETAIL



HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR



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.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET x.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-463

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QUANTITIES AND NOTES

SHEET 5 OF 5

ORIGINAL PLANS PREPARED BY
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