NEL

PROJECT ID: 4332-05-71
WITH: N/A

23

COUNTY: MANITOWOC

APR 2015

ORDER OF SHEETS

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

TOTAL SHEETS = 50

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

V MISHICOT, CTH B

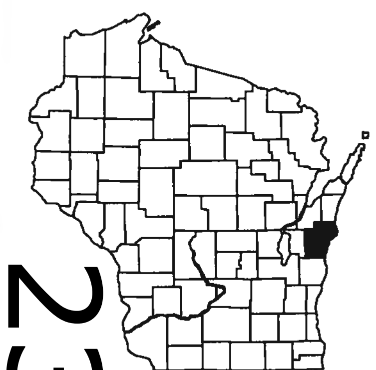
(EAST TWIN RIVER BRIDGE B-36-0318)

CTH B

MANITOWOC COUNTY

STATE PROJECT NUMBER
4332-05-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4332-05-71		



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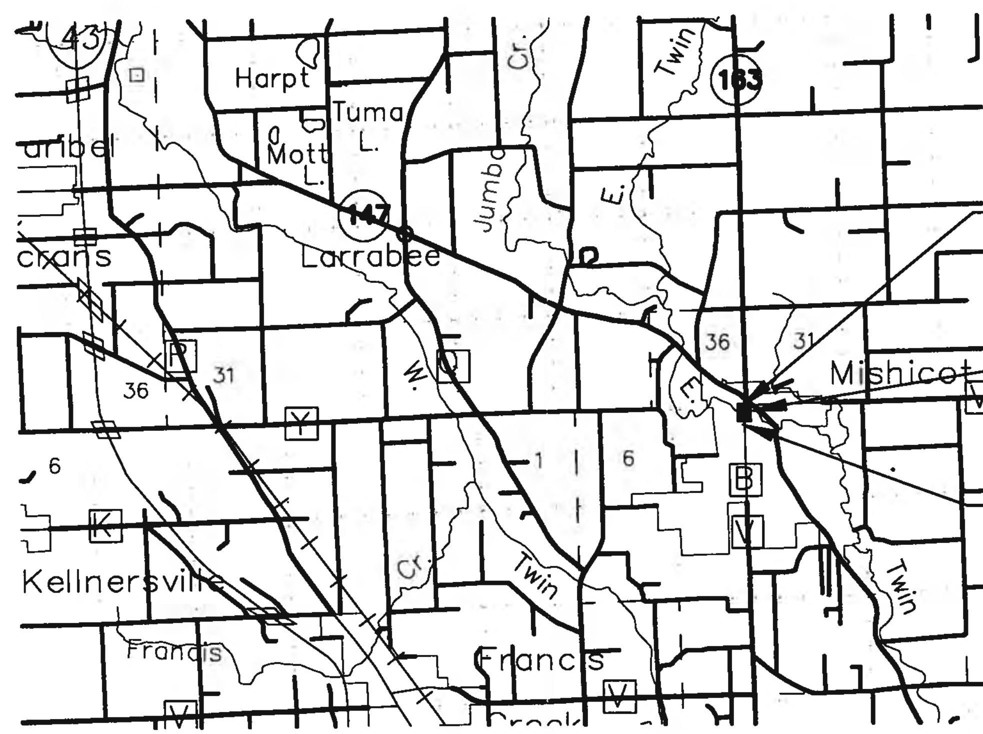


DESIGN DESIGNATION

A.A.D.T.	(2014)	=	3650
A.A.D.T.	(2034)	=	4000
D.H.V.	(2034)	=	520
D.D.		=	--
T.		=	5.6
DESIGN SPEED		=	40 MPH
ESALS		=	

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) — ROCK
- SPECIAL DITCH — LABEL
- GRADE ELEVATION — 95.36
- CULVERT (Profile View)

UTILITIES

- ELECTRIC — E
- FIBER OPTIC — FO
- GAS — G
- SANITARY SEWER — SAN
- STORM SEWER — SS
- TELEPHONE — T
- WATER — W
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

LAYOUT

SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.069 MI.

-"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MANITOWOC COUNTY."

ACCEPTED FOR

County of Manitowoc

9-24-14 (Date) — Greg L. Klennow (Signature) COMMISSIONER (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

WISCONSIN TIMOTHY J. MOYER E-39823 SHEBOYGAN, WI PROFESSIONAL ENGINEER

9-24-2014 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

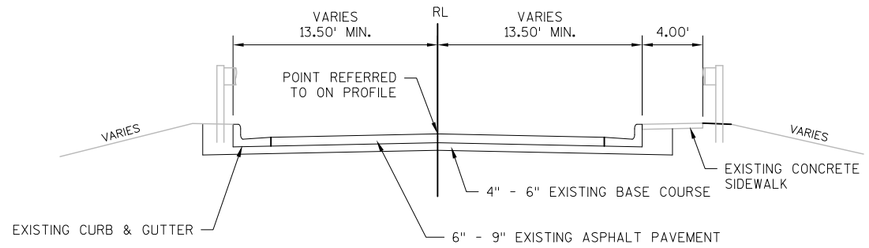
PREPARED BY

Surveyor	TerraTec
Designer	Donohue & Associates
Management Consultant	SEH
C.O. Examiner	

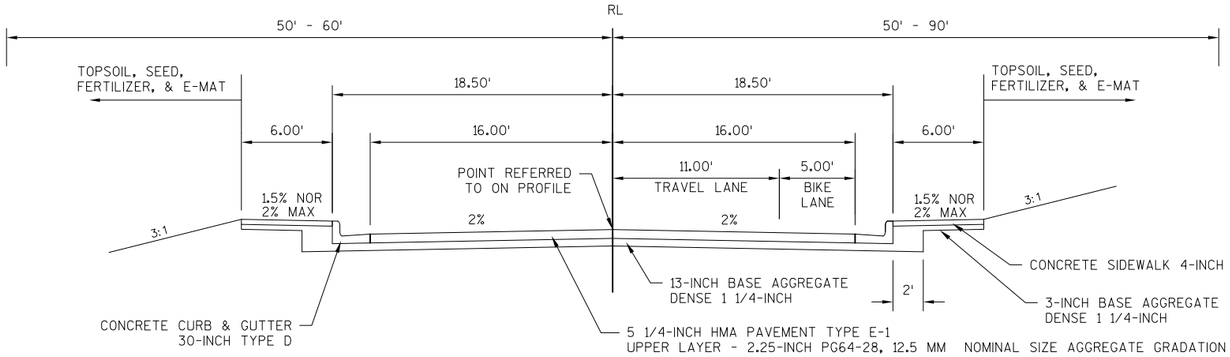
APPROVED FOR THE DEPARTMENT

DATE: 10/2/14 (Management Consultant Signature) SEH

E



TYPICAL EXISTING SECTION



TYPICAL FINISHED SECTION

GENERAL NOTES

THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY ARE TO BE FERTILIZED, SEEDED AND COVERED AS DIRECTED BY THE ENGINEER.

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

NO TREES (AND/OR SHRUBS) ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

CUT VOLUMES SHOWN ON THE EARTHWORK SUMMARY DO NOT INCLUDE QUANTITY GENERATED FROM THE ITEM "EXCAVATION FOR STRUCTURES, BRIDGES" AND THE EXCAVATION REQUIRED TO PLACE THE ITEM "RIPRAP HEAVY".

FILL VOLUMES SHOWN ON THE EARTHWORK SUMMARY DO NOT INCLUDE QUANTITY REQUIRED TO PLACE THE ITEM "BACKFILL STRUCTURE".

WETLANDS EXIST IN THE PROJECT AREA, EQUIPMENT SHALL NOT BE OPERATED OUTSIDE THE SLOPE INTERCEPTS WHERE THERE ARE WETLANDS.

THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR A MONUMENT WHICH SHALL BE SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.

ELEVATIONS REFERENCED ON THIS PLAN ARE BASED ON NGS MONUMENT PID*DH5555 (NAVD 88)

ALL CURB AND GUTTER RADII SHOWN ON THE PLANS ARE MEASURED TO THE FACE OF THE CURB UNLESS OTHERWISE NOTED.

PAVEMENT MARKING
NO DETAILS ARE INCLUDED IN THE PLAN. STRIPE DOUBLE YELLOW CENTERLINE AND EDGE LINES AT 11' OFF CENTERLINE ACCORDING TO SDD "PAVEMENT MARKING (MAINLINE)" FOR THE ENTIRE PROJECT LENGTH.

DNR CONTACT
MATT SCHAEVE
DNR NORTHEAST REGIONAL HQ
2984 SHAWNO AVE
GREEN BAY, WI 54313
(920) 662-5472
E-MAIL: MATTHEW.SCHAEVE@WISCONSIN.GOV

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

UTILITIES

UTILITY: WATER & SANITARY
VILLAGE OF MISHICOT
LARRY HLINAK
511 E. MAIN STREET
P.O. BOX 385
MISHICOT, WI 54228
PH: 920-973-4698
EMAIL: MWS@MISHICOT.ORG

UTILITY: FIBER OPTICS
CHARTER COMMUNICATIONS
NICK FRASE
3315 LINCOLN AVENUE
TWO RIVERS, WI 54241
PH: 920-263-0100
EMAIL: NICK.FRASE@CHARTERCOM.COM

UTILITY: TELEPHONE
FRONTIER COMMUNICATIONS
RYAN OSNESS
118 DIVISION STREET
PLYMOUTH, WI 53073
PH: 920-893-7455
EMAIL: RYAN.D.OSNESS@FTR.COM

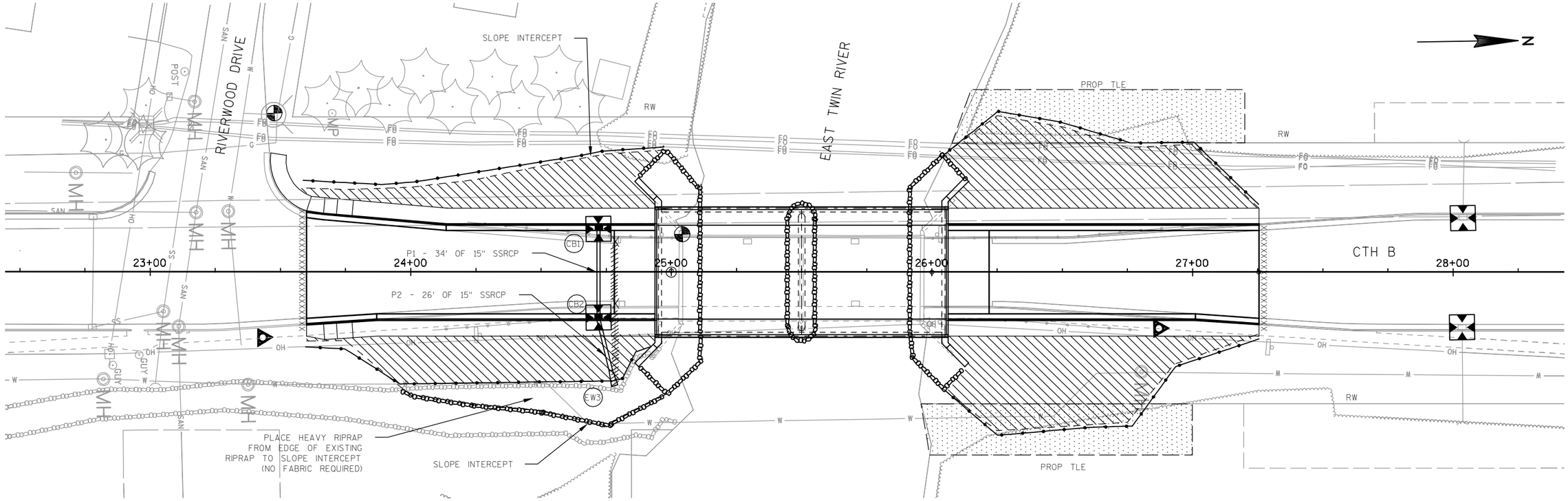
UTILITY: ELECTRIC
WISCONSIN PUBLIC SERVICE
LORI BUTRY
700 N ADAMS ST
PO BOX 19001
GREEN BAY, WI 54307-19001
920-433-1703

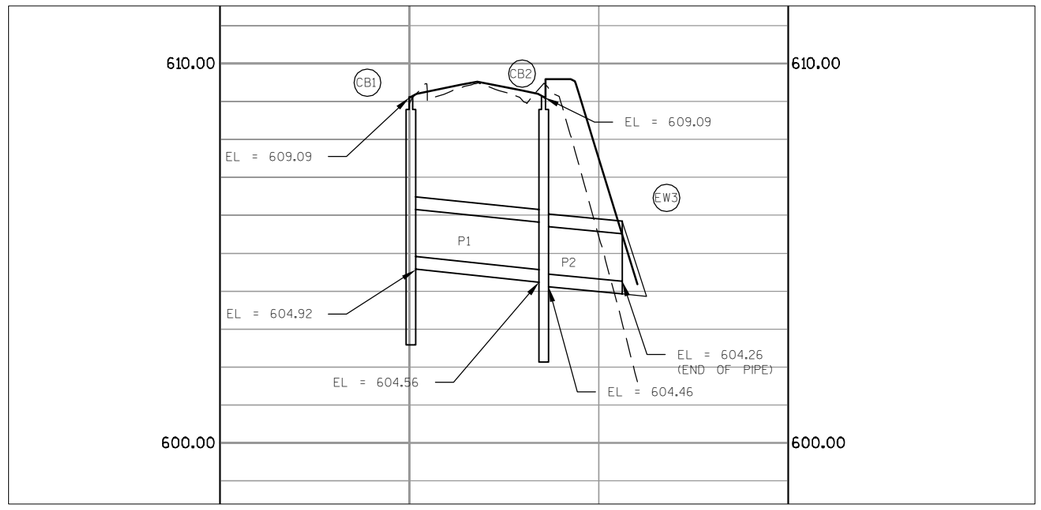
FIELD CONTACT: JERRY PEOT
800 COLUMBUS STREET
TWO RIVERS, WI 54241-0236
PH: 920-657-1815
EMAIL: GJPEOT@WISCONSINPUBLICSERVICE.COM

UTILITY: NATURAL GAS
WISCONSIN PUBLIC SERVICE
LORI BUTRY
700 N ADAMS ST
PO BOX 19001
GREEN BAY, WI 54307-19001
920-433-1703

FIELD CONTACT: JEFFREY PELISCHEK
800 COLUMBUS STREET
TWO RIVERS, WI 54241-0236
PH: 920-323-4836
EMAIL: JSPELISCHEK@WISCONSINPUBLICSERVICE.COM

PROJECT NO: 4332-05-71	HWY: CTH B	COUNTY: MANITOWOC	TYPICAL SECTIONS / NOTES	SHEET 2	E

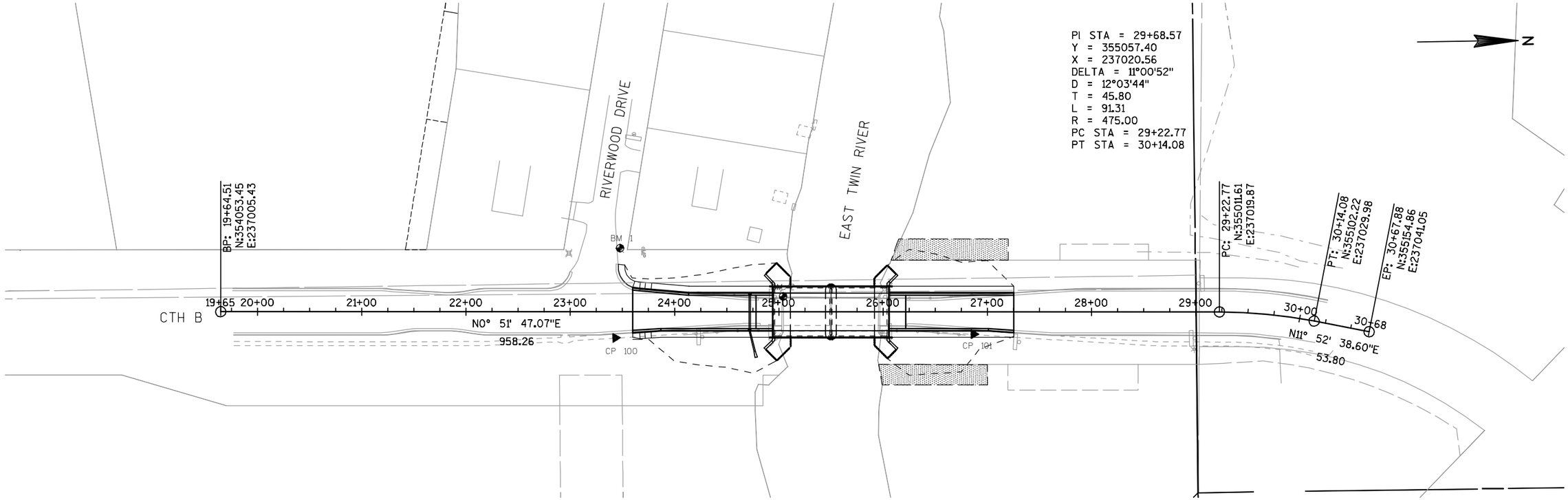




LEGEND

- X — REMOVE INLET
- ////// — REMOVING STORM SEWER 15-INCH
- INLET PROTECTION
- SILT FENCE
- RIPRAP
- TOPSOIL, SEED, FERTILIZER AND EMAT

PROJECT NO: 4332-05-71	HWY: CTH B	COUNTY: MANITOWOC	STORM SEWER AND EROSION CONTROL DETAILS	SHEET 3	E



CONTROL POINT 100
X= 354,431.8
Y= 237,036.2
Z= 611.21
SET MAG NAIL

CONTROL POINT 101
X= 354,775.6
Y= 237,037.8
Z= 608.95
SET MAG NAIL

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
1	23+48, LT	HYD NW FLANGE BOLT W/ TAG	613.10
2	25+04, LT	CHISLED SQ SW CORNER ABUTMENT	609.54

PROJECT NO: 4332-05-71	HWY: CTH B	COUNTY: MANITOWOC	STORM SEWER AND EROSION CONTROL DETAILS	SHEET 4	E

FILE NAME : L:\PROJECTS\12320\DWG\027201_AD.DWG PLOT DATE : PLOT BY : MOYER, TIM PLOT NAME : ----------

WISDOT/CADDS SHEET 40

DATE 18FEB15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	4332-05-71 QUANTITY
0010	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 25+50	LS	1.000	1.000
0020	204.0150	Removing Curb & Gutter	LF	542.000	542.000
0030	204.0155	Removing Concrete Sidewalk	SY	120.000	120.000
0040	204.0165	Removing Guardrail	LF	350.000	350.000
0050	204.0220	Removing Inlets	EACH	2.000	2.000
0060	204.0245	Removing Storm Sewer (size) 01. 15-Inch	LF	57.000	57.000
0070	205.0100	Excavation Common	CY	450.000	450.000
0080	206.1000	Excavation for Structures Bridges (structure) 01. B-36-318	LS	1.000	1.000
0090	208.0100	Borrow	CY	179.000	179.000
0100	210.0100	Backfill Structure	CY	840.000	840.000
0110	213.0100	Finishing Roadway (project) 01. 4332-05-71	EACH	1.000	1.000
0120	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	940.000	940.000
0130	415.0410	Concrete Pavement Approach Slab	SY	112.000	112.000
0140	455.0220	Asphaltic Material PG64-28	GAL	12.000	12.000
0150	455.0605	Tack Coat	GAL	20.000	20.000
0160	460.1101	HMA Pavement Type E-1	TON	225.000	225.000
0170	460.2000	Incentive Density HMA Pavement	DOL	150.000	150.000
0180	502.0100	Concrete Masonry Bridges	CY	641.000	641.000
0190	502.3200	Protective Surface Treatment	SY	746.000	746.000
0200	505.0405	Bar Steel Reinforcement HS Bridges	LB	11,392.000	11,392.000
0210	505.0605	Bar Steel Reinforcement HS Coated Bridges	LB	88,814.000	88,814.000
0220	513.7020	Railing Steel Type C4 (structure) 01. B-36-318	LS	1.000	1.000
0230	516.0500	Rubberized Membrane Waterproofing	SY	36.000	36.000
0240	522.1015	Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	EACH	1.000	1.000
0250	550.0500	Pile Points	EACH	31.000	31.000
0260	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	1,665.000	1,665.000
0270	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	510.000	510.000
0280	602.0405	Concrete Sidewalk 4-Inch	SF	3,185.000	3,185.000
0290	602.0515	Curb Ramp Detectable Warning Field Natural Patina	SF	16.000	16.000
0300	606.0200	Riprap Medium	CY	70.000	70.000
0310	606.0300	Riprap Heavy	CY	242.000	242.000
0320	608.0315	Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	LF	60.000	60.000
0330	611.0624	Inlet Covers Type H	EACH	2.000	2.000
0340	611.1230	Catch Basins 2x3-FT	EACH	2.000	2.000
0350	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0360	619.1000	Mobilization	EACH	1.000	1.000
0370	624.0100	Water	MGAL	3.500	3.500
0380	625.0100	Topsoil	SY	1,100.000	1,100.000
0390	628.1504	Silt Fence	LF	565.000	565.000
0400	628.1520	Silt Fence Maintenance	LF	565.000	565.000
0410	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0420	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0430	628.2004	Erosion Mat Class I Type B	SY	1,100.000	1,100.000
0440	628.7005	Inlet Protection Type A	EACH	4.000	4.000
0450	628.7015	Inlet Protection Type C	EACH	6.000	6.000
0460	629.0210	Fertilizer Type B	CWT	0.700	0.700
0470	630.0120	Seeding Mixture No. 20	LB	30.000	30.000

3

DATE 18FEB15 E S T I M A T E O F Q U A N T I T I E S

LINE 4332-05-71

NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	
0480	630.0200	Seeding Temporary	LB	30.000	30.000
0490	638.2602	Removing Signs Type II	EACH	4.000	4.000
0500	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0510	642.5001	Field Office Type B	EACH	1.000	1.000
0520	643.0100	Traffic Control (project) 01. 4332-05-71	EACH	1.000	1.000
0530	645.0120	Geotextile Fabric Type HR	SY	502.000	502.000
0540	646.0106	Pavement Marking Epoxy 4-Inch	LF	1,460.000	1,460.000
0550	650.4000	Construction Staking Storm Sewer	EACH	3.000	3.000
0560	650.4500	Construction Staking Subgrade	LF	255.000	255.000
0570	650.5000	Construction Staking Base	LF	255.000	255.000
0580	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	510.000	510.000
0590	650.6500	Construction Staking Structure Layout (structure) 01. B-36-318	LS	1.000	1.000
0600	650.9920	Construction Staking Slope Stakes	LF	255.000	255.000
0610	690.0150	Sawing Asphalt	LF	72.000	72.000
0620	690.0250	Sawing Concrete	LF	10.000	10.000
0630	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0640	715.0502	Incentive Strength Concrete Structures	DOL	3,846.000	3,846.000
0650	SPV.0195	Special 01. Select Crushed Material For Travel Corridor	TON	66.000	66.000

REMOVING CURB AND GUTTER, ITEM NO. 204.0150

LOCATION	LF
SW QUADRANT	143
SE QUADRANT	143
NW QUADRANT	128
NE QUADRANT	128
TOTAL	**542**

REMOVING CONCRETE SIDEWALK, ITEM NO. 204.0155

LOCATION	LF
SE QUADRANT	59
NE QUADRANT	61
TOTAL	**120**

REMOVING GUARDRAIL, ITEM NO. 204.0165

LOCATION	EACH
SW QUADRANT	80
SE QUADRANT	90
NW QUADRANT	105
NE QUADRANT	75
TOTAL	**350**

REMOVING INLETS, ITEM NO. 204.0220

LOCATION	EACH
25+78, LT	1
25+78, RT	1
TOTAL	**2**

REMOVING STORM SEWER 15-INCH, ITEM 204.0245

LOCATION	FROM	TO	LF
25+78	INLET LT	INLET RT	25
25+78	INLET RT	ENDWALL	32
TOTAL			**57**

BASE AGGREGATE DENSE 1 1/4-INCH, ITEM NO. 305.0120

LOCATION	TONS
23+60 - STRUCTURE	460
STRUCTURE - 27+25.45	415
SIDEWALKS	65
TOTALS	**940**

EARTHWORK SUMMARY

DIVISION	CAT	FROM/TO STATION	LOCATION	EXCAVATION COMMON (NOTE 1) (ITEM #205.0100)	SALVAGED / UNUSEABLE PAVEMENT MATERIAL (NOTE 3)	AVAILABLE MATERIAL (NOTE 4)	UNEXPANDED FILL (NOTE 5)	EXPANDED FILL (NOTE 6)	MASS ORDINATE +/- (NOTE 7)	WASTE	BORROW (ITEM #208.0100) (NOTE 8)
				CUT (NOTE 2)				FACTOR 1.25			FACTOR 1.15
4332-05-71											
1	0010	23+60 - 24+85	SOUTH OF BRIDGE	205	23	182	135	169	13	13	--
2	0010	26+15 - 27+24.45	NORTH OF BRIDGE	245	21	224	335	419	-195	--	179
TOTALS				450	44	406	470	588	-182	13	179

1) IF EBS IS REQUIRED IT WILL BE PAID AS COMMON EXCAVATION. ITEM NUMBER 205.0100
2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT
3) SALVAGED/UNUSABLE PAVEMENT MATERIAL EQUALS AREA OF PROJECT PAVEMENT REMOVAL * TYPICAL EXISTING PAVEMENT
4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
5) UNEXPANDED FILL IS A SUM OF CROSS SECTION AREAS FROM EACH DIVISIONAL SHEET
6) EXPANDED FILL FACTOR = 1.25, EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR
7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
8) BORROW = (ABSOLUTE VALUE OF MASS ORDINATE / EXPANDED FILL FACTOR) * BORROW FACTOR

CONCRETE PAVEMENT APPROACH SLAB, ITEM NO. 415.0410

LOCATION	SY
SOUTH APPROACH	56
NORTH APPROACH	56
TOTALS	**112**

STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH, ITEM NO. 608.0315

LOCATION	FROM	TO	LF	INV. ELEV.	DIS. ELEV
24+72, LT - 24+72, RT	CB1	CB2	34	604.92	604.56
24+72, RT - 24+78, RT	CB2	EW3	26	604.46	604.26
TOTAL			**60**		

DRAINAGE STRUCTURE TABLE

LOCATION	#611.0624 INLET COVERS TYPE H EACH	#611.1230 CATCH BASINS 2X3-FT EACH	#522.1015 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH EACH	FLOWLINE ELEVATION	BOTTOM ELEVATION	DEPTH
24+72, 17.6' LT	1	1	---	609.09	602.92	6.17
24+72, 17.5' RT	1	1	---	609.09	602.46	6.63
24+78, RT	---	---	1	---	604.26	---
TOTAL	**2**	**2**	**1**			

STRUCTURE DEPTH INCLUDES 2' FOR SUMP AND 0.75' FOR CASTING DEPTH AND ADJUSTING RINGS.

ASPHALT ITEMS

LOCATION	#455.0220 ASPHALTIC MATERIAL PG64-28 TON	#455.0605 TACK COAT GAL	#460.1101 HMA PAVEMENT TYPE E-1 TON
23+60 - STRUCTURE	7	11	128
STRUCTURE - 27+25.45	5	9	97
TOTALS	**12**	**20**	**225**

CONCRETE CURB AND GUTTER 30-INCH TYPE D, ITEM NO. 601.0411

LOCATION	LF
SW QUADRANT	135
SE QUADRANT	135
NW QUADRANT	120
NE QUADRANT	120
TOTAL	**510**

CONCRETE SIDEWALK 4-INCH, ITEM NO. 602.0405

LOCATION	SF
SW QUADRANT	950
SE QUADRANT	805
NW QUADRANT	715
NE QUADRANT	715
TOTAL	**3185**

WATER, ITEM NO. 624.0100

LOCATION	MGAL
23+60 - STRUCTURE	1.9
STRUCTURE - 27+25.45	1.6
TOTALS	**3.5**

EROSION CONTROL ITEMS

LOCATION	#606.0200 MEDIUM RIPRAP CY	#625.0105 TOPSOIL SY	#628.1504 SILT FENCE LF	#628.1520 SILT FENCE MAINTENANCE LF	628.2004 EROSION MAT CLASS 1 TYPE B SY	#629.0210 FERTILIZER TYPE B CWT	#630.0120 SEED MIXTURE NO. 20 LBS	#630.0200 SEEDING TEMPORARY LBS	#645.0120 * GEOTEXTILE FABRIC TYPE HR SY
NW QUADRANT	0	325	140	140	325	0.20	9	9	0
SW QUADRANT	0	175	140	140	175	0.13	5	5	0
NE QUADRANT	0	275	140	140	275	0.17	7	7	0
SE QUADRANT	70	325	145	145	325	0.20	9	9	100
TOTALS	**70**	**1100**	**565**	**565**	**1100**	**0.70**	**30**	**30**	**100 ***

*** - ADDITIONAL QUANTITIES SHOWN ON THE STRUCTURE PLANS FOR ITEM NO. 645.0120.**

INLET PROTECTION

LOCATION	#628.7005 INLET PROTECTION TYPE A EACH	#628.7015 INLET PROTECTION TYPE C EACH
SW QUADRANT	2	2
SE QUADRANT	2	2
NW QUADRANT	0	1
NE QUADRANT	0	1
TOTAL	**4**	**6**

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

LOCATION	#638.2602 REMOVING SIGNS TYPE II EACH	#638.3000 REMOVING SMALL SIGN SUPPORTS EACH
SW QUADRANT	1	1
SE QUADRANT	1	1
NW QUADRANT	1	1
NE QUADRANT	1	1
TOTAL	**4**	**4**

PAVEMENT MARKING EPOXY 4-INCH, ITEM NO. 646.0106

LOCATION	DESCRIPTION	LF
23+60 - 27+25.45	LEFT EDGELINE	365
23+60 - 27+25.45	CENTERLINE	730
23+60 - 27+25.45	RIGHT EDGELINE	365
TOTAL		**1460**

CONSTRUCTION STAKING

LOCATION	#650.4000 CONSTRUCTION STAKING STORM SEWER EACH	#650.4500 CONSTRUCTION STAKING SUBGRADE LF	#650.5000 CONSTRUCTION STAKING BASE LF	#650.5500 CONSTRUCTION STAKING CURB & GUTTER LF	#650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
23+60 - STRUCTURE	3	135	135	270	135
STRUCTURE - 27+25.45	0	120	120	240	120
TOTALS	**3**	**255**	**255**	**510**	**255**

SAWING ASPHALT AND SAWING CONCRETE

LOCATION	#690.0150 SAWING ASPHALT LF	#690.0250 SAWING CONCRETE LF
23+60	38	5
27+25.45	34	5
TOTALS	**72**	**10**

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
4332-06-71		
FEDERAL PROJECT NUMBER	4.0	2

PLAT OF RIGHT-OF-WAY REQUIRED FOR

CTH B

BRIDGE OVER EAST TWIN RIVER

CTH B VILLAGE OF MISHICOT, MANITOWOC COUNTY

CONSTRUCTION PROJECT NUMBER
4332-05-70

4

4

CONVENTIONAL ABBREVIATIONS

ACCESS POINT/ DRIVEWAY CONNECTION	AP	RELEASE OF RIGHTS	ROR
ACCESS RIGHTS	AR	REMAINING	REM.
ACRES	AC.	RIGHT-OF-WAY	R/W
AND OTHERS	ET.AL.	SECTION	SEC.
CENTERLINE	C/L	STATION	STA.
CERTIFIED SURVEY MAP	CSM	TEMPORARY LIMITED EASEMENT	TLE
CORNER	COR.	VOLUME	V.
DOCUMENT	DOC.		
EASEMENT	EASE.	**CURVE DATA**	
HIGHWAY EASEMENT	H.E.	LONG CHORD	LCH
LAND CONTRACT	LC	LONG CHORD BEARING	LCB
MONUMENT	MON.	RADIUS	R
PAGE	P.	DEGREE OF CURVE	D
PERMANENT LIMITED EASEMENT	PLE	CENTRAL ANGLE OR DELTA	DELTA
PROPERTY LINE	PL	LENGTH OF CURVE	L
RECORDED AS	(100')	TANGENT	TAN
REFERENCE LINE	R/L		

CONVENTIONAL SYMBOLS

FOUND IRON PIPE/PIN	⌀ (1" UNLESS NOTED)	PROPOSED R/W LINE	
		EXISTING H.E. LINE	
R/W MONUMENT	○ (SET)	PROPERTY LINE	
R/W STANDARD	△ (SET)	LOT & TIE LINES	
SIGN	ISIGN	SLOPE INTERCEPTS	
SECTION CORNER MONUMENT		CORPORATE LIMITS	
SECTION CORNER SYMBOL		RESTRICTED ACCESS (BY PREVIOUS ACQUISITION/CONTROL)	
FEE (HATCH VARIES)		RESTRICTED ACCESS (BY ACQUISITION)	
TEMPORARY LIMITED EASEMENT		NO ACCESS (BY STATUTORY AUTHORITY)	
PERMANENT LIMITED EASEMENT		SECTION LINE	
R/W BOUNDARY POINT	RWB20	QUARTER LINE	
PARCEL NUMBER	1	SIXTEENTH LINE	
SIGN NUMBER (OFF PREMISE)	2-1	EXISTING CENTERLINE	
BUILDING		PROPOSED REFERENCE LINE	
		PARALLEL OFFSET	

CONVENTIONAL UTILITY SYMBOLS

WATER	W	
GAS	G	
TELEPHONE	T	
OVERHEAD TRANSMISSION LINES ELECTRIC	OH	
CABLE TELEVISION	TV	
FIBER OPTIC	FO	
SANITARY SEWER	SAN	
STORM SEWER	SS	
	NON COMPENSABLE	COMPENSABLE
POWER POLE		
TELEPHONE POLE		
TELEPHONE PEDESTAL		
LIGHT POLE		

END RELOCATION ORDER
STA. 27+50.00

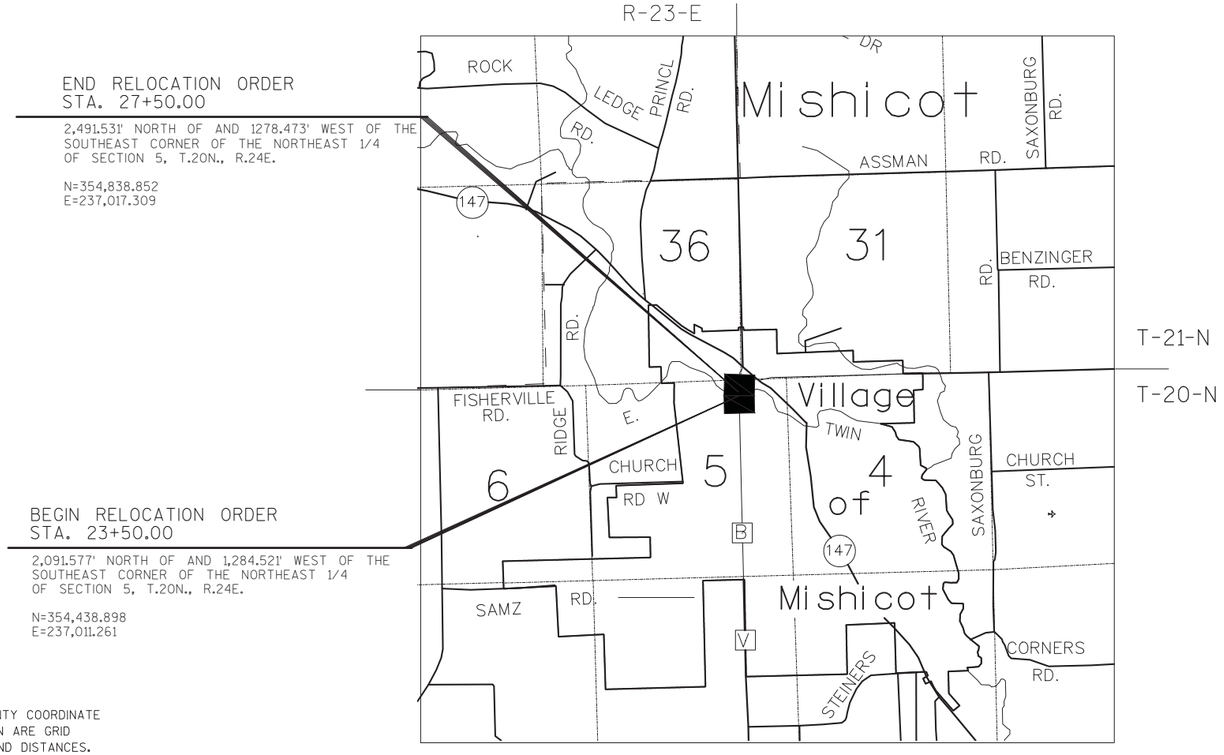
2,491.531' NORTH OF AND 1278.473' WEST OF THE SOUTHEAST CORNER OF THE NORTHEAST 1/4 OF SECTION 5, T.20N., R.24E.

N=354,838.852
E=237,017.309

BEGIN RELOCATION ORDER
STA. 23+50.00

2,091.577' NORTH OF AND 1,284.521' WEST OF THE SOUTHEAST CORNER OF THE NORTHEAST 1/4 OF SECTION 5, T.20N., R.24E.

N=354,838.898
E=237,011.261



LAYOUT
SCALE 0 2000 FT

TOTAL NET LENGTH OF CENTERLINE = 0.076 MI.

N

NOTES:

COORDINATES AND BEARINGS SHOWN ON THIS PLAT ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, MANITOWOC COUNTY, NAD83 (1997) ADJUSTMENT IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT. RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS OF PUBLIC RECORD". PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, TEMPORARY LIMITED EASEMENT INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. ALL (TLES) EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.

RIGHT-OF-WAY POINTS SHOWN ON THIS PLAT THAT DO NOT CONTAIN THE "R/W MONUMENT (SET)" SYMBOLS HAVE NOT BEEN SET. THE LOCATION IS INACCESSIBLE AND/OR OBSTRUCTED OR AN EXISTING MONUMENT WAS LOCATED AND DETERMINED TO BE IN THE CORRECT POSITION.

REVISION	DATE
9-12-14	

ACCEPTED FOR
MANITOWOC COUNTY

DATE: _____ _____
(Signature)

ORIGINAL PLANS PREPARED BY

TERRATEC ENGINEERING, LLC.
W67 N222 EVERGREEN BLVD., STE. 205
CEDARBURG, WI 53012
Tel.: 262.377.9905 - Fax: 262.375.1958

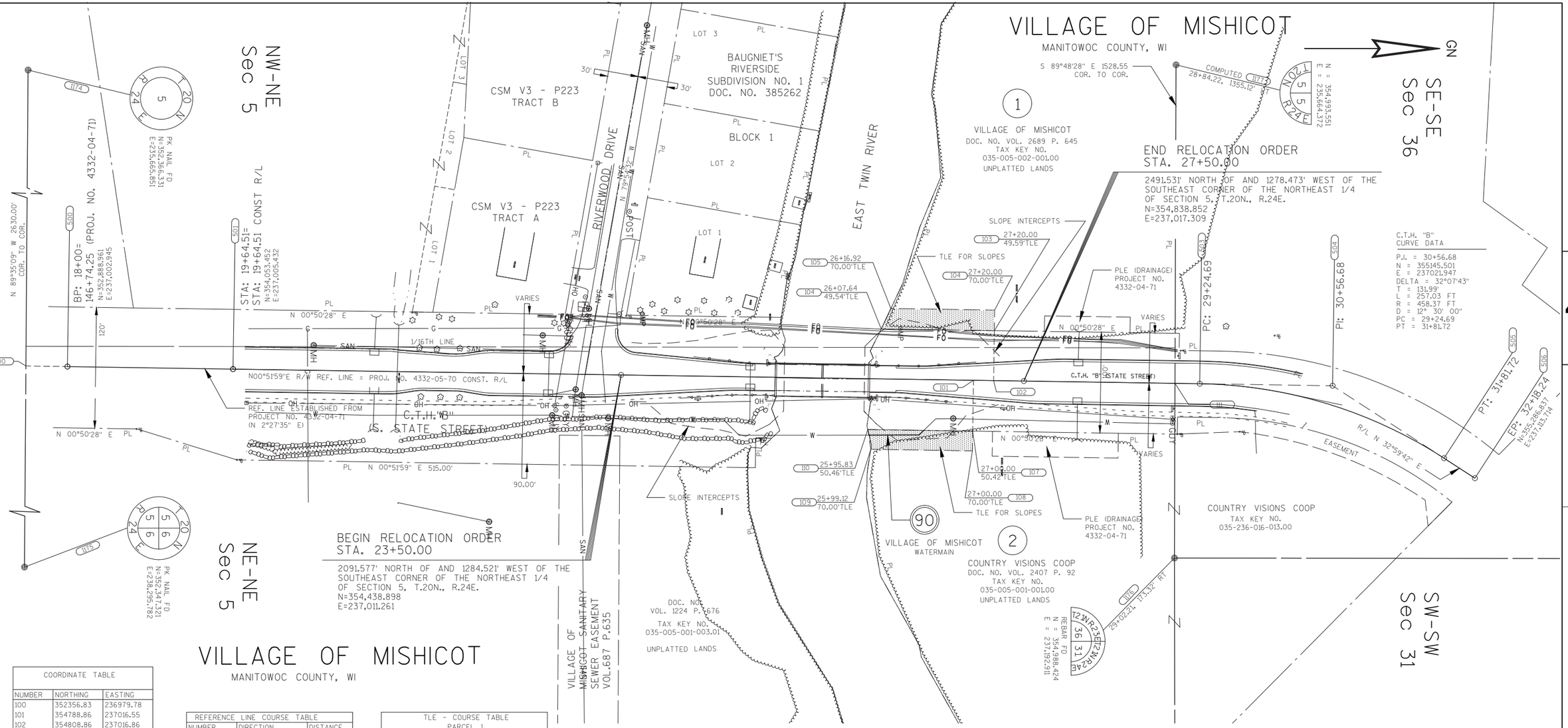
WISCONSIN
ROBERT F. SCHMALZER
1760
COLGATE, WI
LAND SURVEYOR

DATE: 12-12-13 Robert Schmalzer
(Signature)

E

VILLAGE OF MISHICOT

MANITOWOC COUNTY, WI



COORDINATE TABLE		
NUMBER	NORTHING	EASTING
100	352356.83	236979.78
101	354788.86	237016.55
102	354808.86	237016.86
103	354809.61	236967.27
104	354697.26	236965.62
105	354706.84	236945.31
106	354809.92	236946.86
107	354788.10	237066.97
108	354787.80	237086.55
109	354686.93	237085.02
110	354683.94	237065.44
111	354989.01	237019.58
500	353888.96	237002.94
501	354053.45	237005.43
502	354403.33	237010.72
503	355013.52	237019.95
504	355145.50	237021.95
505	355256.21	237093.83
506	355286.84	237113.71
507	355006.59	237478.27
1174	352366.33	235665.85
1175	352347.32	238295.78
1176	354988.42	237192.91
1177	354993.55	235664.37

REFERENCE LINE COURSE TABLE		
NUMBER	DIRECTION	DISTANCE
500-501	N 00°51'59" E	164.51'
501-502	N 00°51'59" E	349.92
502-503	N 00°51'59" E	610.27'
505-506	N 32°59'42" E	36.52'

SEC. LINE/REF. LINE TIE TABLE		
NUMBER	DIRECTION	DISTANCE
1175-100	N 89°35'09" W	1316.04'
100-500	N 00°51'59" E	1532.30'
1176-111	N 89°48'28" W	173.33'
111-1177	N 89°48'28" W	1355.22

MISC. LINE COURSE TABLE		
NUMBER	DIRECTION	DISTANCE
500-101	N 00°51'59" E	900.00'
101-107	S 89°08'01" E	50.42'
500-102	N 00°51'59" E	920.00'
102-103	N 89°08'01" W	49.59'

TLE - COURSE TABLE PARCEL 1		
NUMBER	DIRECTION	DISTANCE
103-104	S 00°50'28" W	112.36'
104-105	N 64°44'38" W	22.46'
105-106	N 00°51'59" E	103.09'
106-103	S 89°08'01" E	20.41'

TLE - COURSE TABLE PARCEL 2		
NUMBER	DIRECTION	DISTANCE
107-108	S 89°08'01" E	19.58'
108-109	S 00°51'59" W	100.88'
109-110	S 81°18'33" W	19.81'
110-107	N 00°50'28" E	104.17'

IRON PIPES FOUND		
DESCRIPTION	N	E
1" IP	354942.268	237185.142
1" IP	353957.504	237064.907
1" IP	354057.215	237095.528
1" IP	354573.031	237074.127
1" IP	355087.911	236972.234
1" IP	354994.446	236987.204
1" IP	354991.313	237069.964
1" IP	355053.197	237067.656
2" IP	354231.421	236949.353
1" IP	354443.843	236952.619

SCHEDULE OF LANDS AND INTEREST

PARCEL NO.	OWNER	INTEREST REQUIRED	AREA ACRES REQUIRED NEW	EXISTING	TOTAL	TLE SQ. FT. REQUIRED
1	VILLAGE OF MISHICOT	TLE	---	---	---	2201 SQ. FT.
2	COUNTRY VISIONS COOP	TLE	---	---	---	2005 SQ. FT
90	VILLAGE OF MISHICOT	RELEASE OF RIGHTS, TEMPORARY CONSTRUCTION EASEMENT (WATERMAIN)				

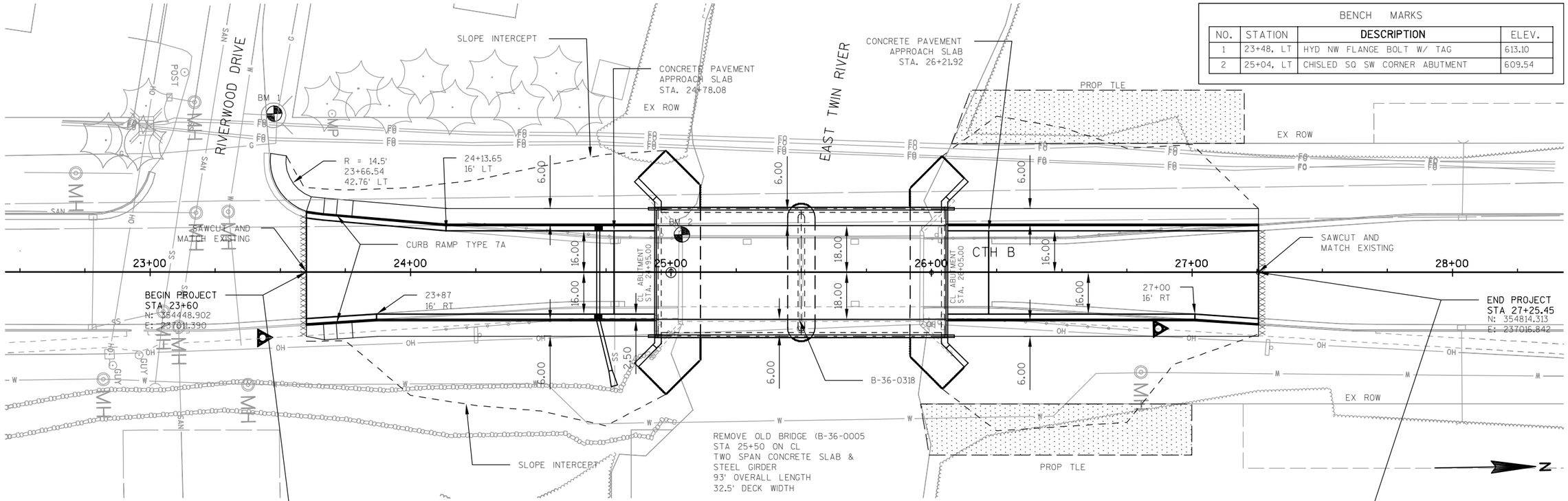
"OWNERS" NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE DEPARTMENT OF TRANSPORTATION.

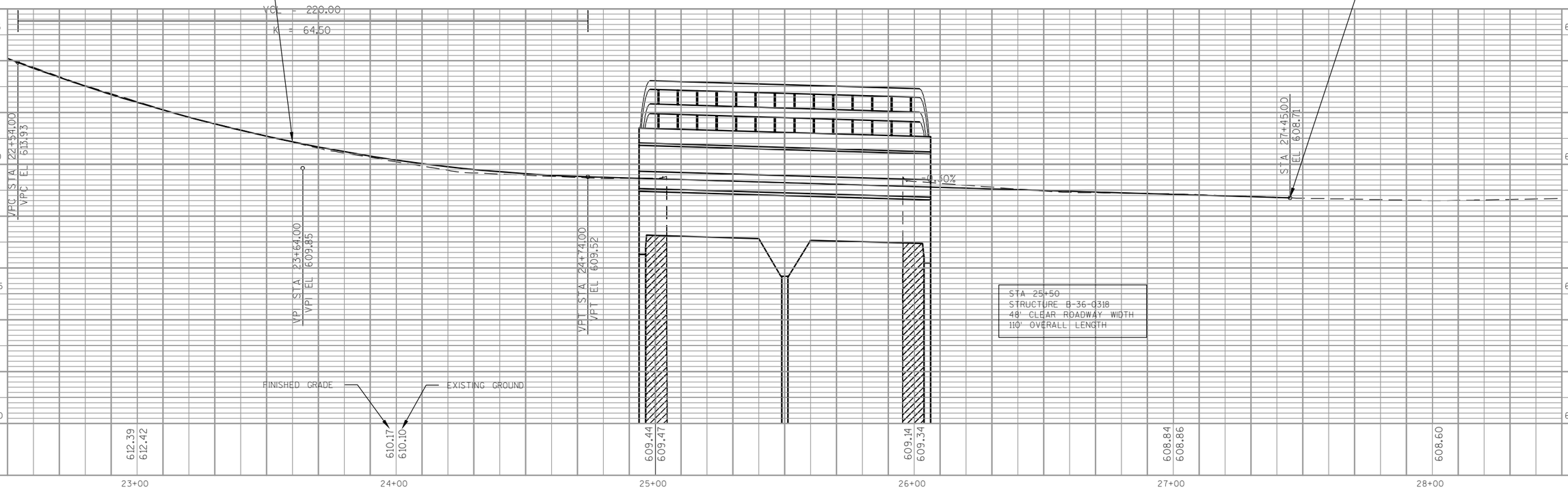
ROAD NAME	BASIS OF EXISTING R/W	WIDTH	YEAR
CTH B	PROJECT NO. 4332-04-71	VARIES	1999
CTH B	BAUGNIET'S RIVERSIDE SUBDIVISION NO. 1, DOC. NO. 385262	60'	1961
RIVERWOOD DRIVE	BAUGNIET'S RIVERSIDE SUBDIVISION NO. 1, DOC. NO. 385262	60'	1961

REVISION DATE 9-12-14	DATE: OCT 22, 2013	SCALE, FEET 0 50 100	HWY: C.T.H. B	STATE R/W PROJECT NUMBER 4332-06-71	PLAT SHEET 4.1
	GRID FACTOR: N/A		COUNTY: MANITOWOC	CONSTRUCTION PROJECT NUMBER 4332-05-70	PS&E SHEET ----- E

FILE NAME : C:\USERS\BOB\DOCUMENTS\BOB\2012 PROJECTS\CTH B BRIDGE SURVEY\CADD\4332-06-71-RW_008.DWG PLOT DATE : 9/12/2014 6:45 AM PLOT BY : BOB PLOT NAME : PLOT SCALE : 1:100_XREF

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
1	23+48, LT	HYD NW FLANGE BOLT W/ TAG	613.10
2	25+04, LT	CHISLED SQ SW CORNER ABUTMENT	609.54



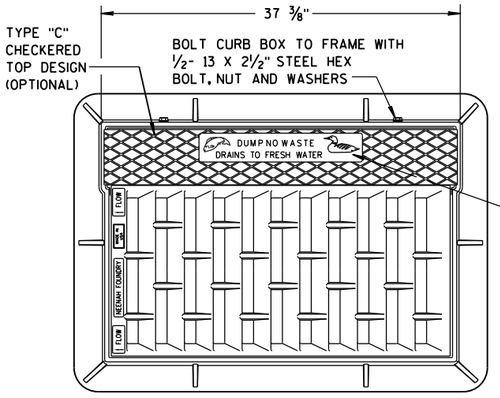


PROJECT NO: 4332-05-71	HWY: CTH B	COUNTY: MANITOWOC	ROADWAY PLAN & PROFILE	SHEET	E

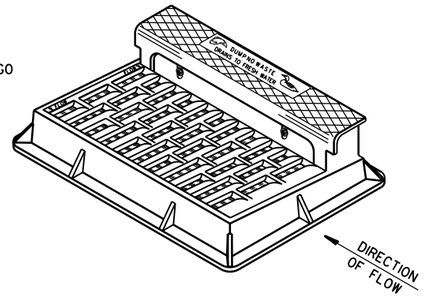
FILE NAME : L:\PROJECTS\12320\DWG\050101_PP.DWG PLOT DATE : 9/16/2014 9:11 AM PLOT BY : MOYER, TIM PLOT NAME : ----------

Standard Detail Drawing List

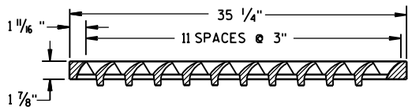
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A09-01	CATCH BASINS 2X3-FT AND 2.5X3-FT
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
13B02-07A	CONCRETE BRIDGE APPROACH
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C05-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

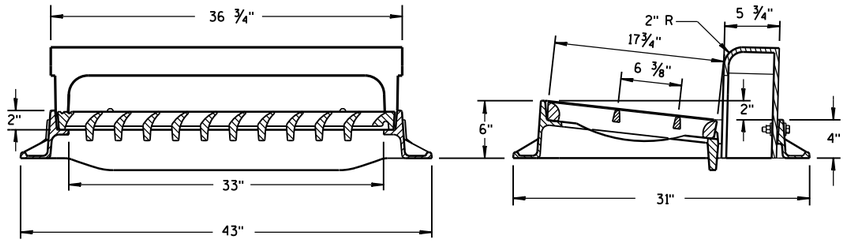


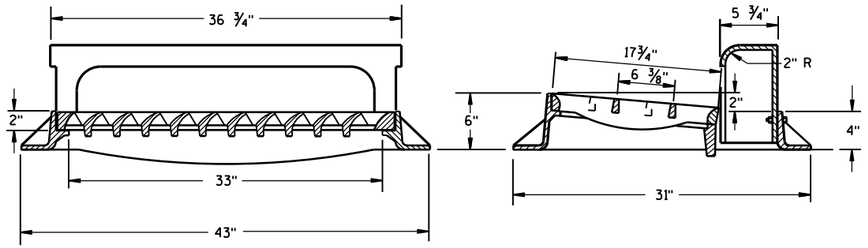
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

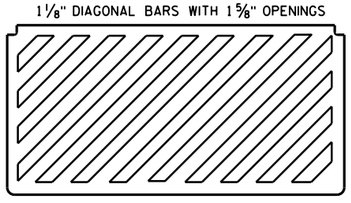






TYPE "H"

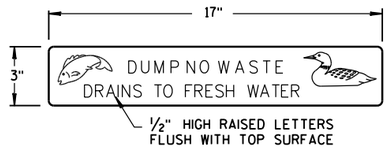
NOTE: EITHER CASTING IS ACCEPTABLE



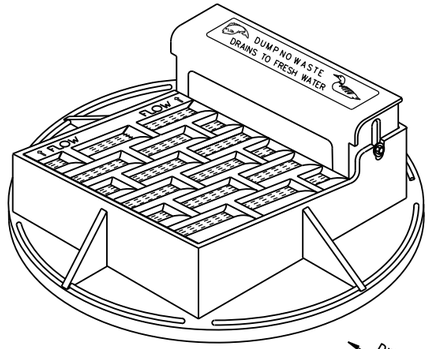
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

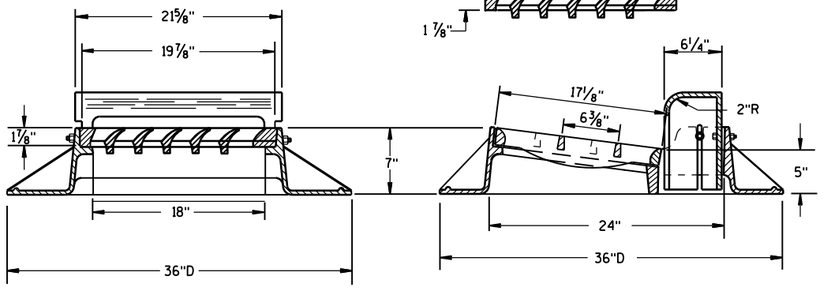


LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.



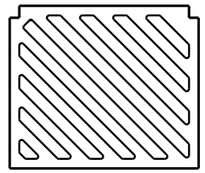
TYPE "A"

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

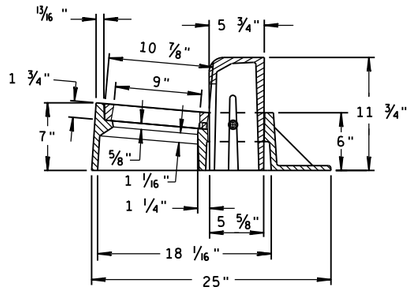
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

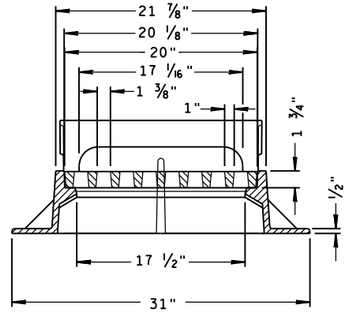


SPECIAL GRATE FOR TYPE "A" COVER

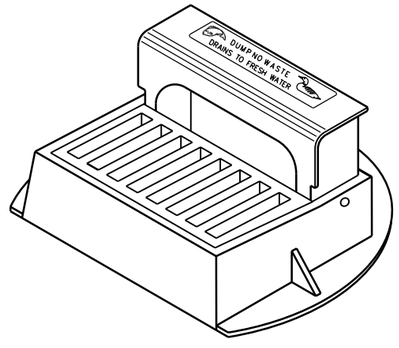
(MEASURES 19 3/4" X 17" X 1 7/8")

(NOTED AS TYPE A-S ON DRAINAGE TABLE)





TYPE "Z"



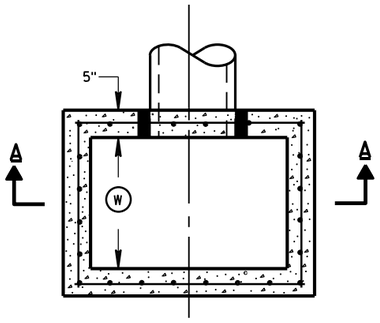
INLET COVERS
TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

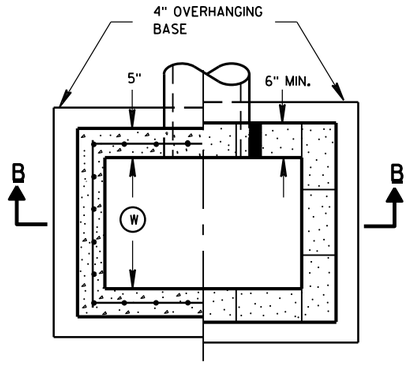
APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

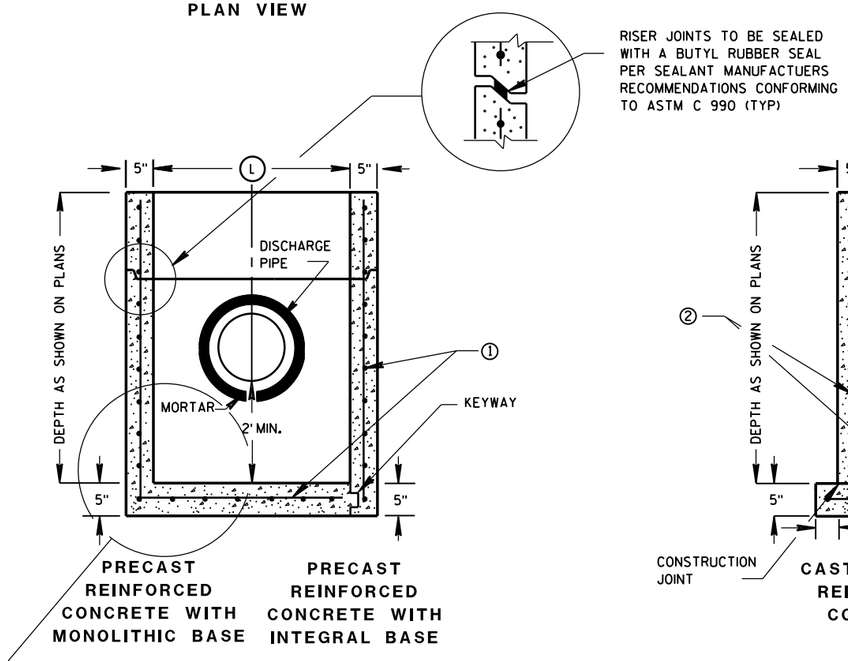
S.D.D. 8 A 5-19a



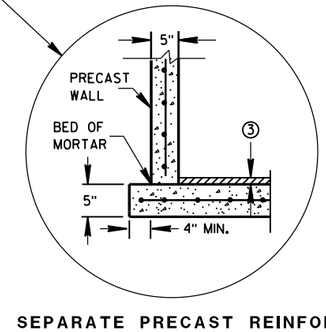
PLAN VIEW



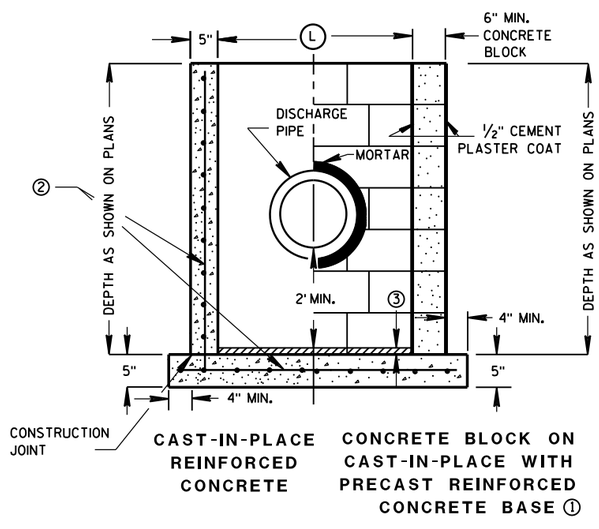
PLAN VIEW



SECTION A-A



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION



SECTION B-B

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST CATCH BASIN UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST CATCH BASIN UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS.
4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED.
OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

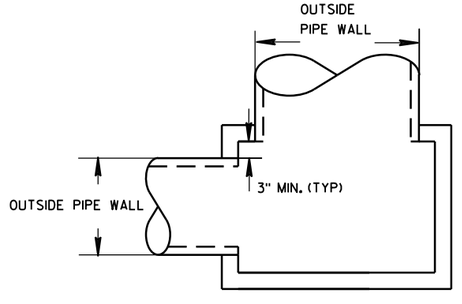
③ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER MATRIX

CATCH BASIN SIZE		INLET COVER TYPE	F	ALL H'S
	WIDTH (W) (FT)	LENGTH (L) (FT)		
2X3-FT	2	3		X
2.5X3-FT	2.5	3	X	

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	WIDTH (IN)	LENGTH (IN)
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

CATCH BASINS 2X3-FT AND 2.5X3-FT

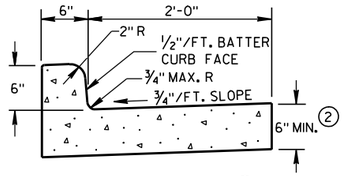
CATCH BASINS 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

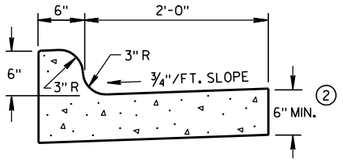
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

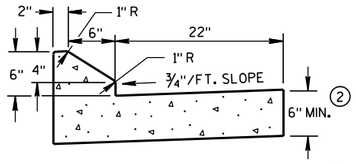
S.D.D. 8 A 9-1



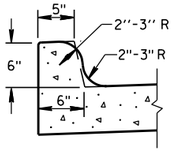
TYPES A & D (1)



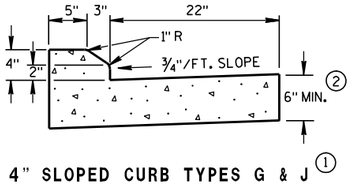
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

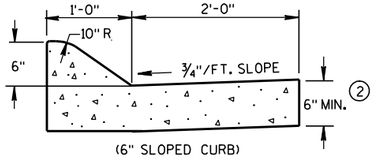


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

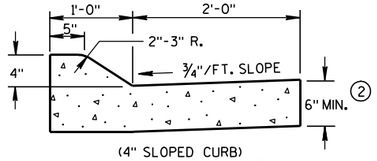


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

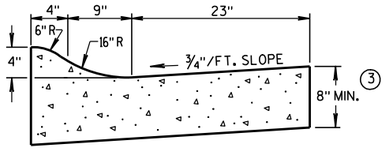


(6" SLOPED CURB)



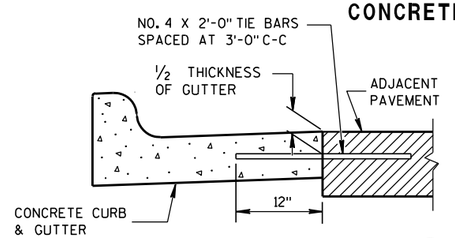
(4" SLOPED CURB)

TYPES A & D (1)

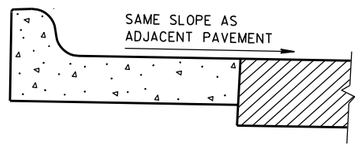


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION (1)



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

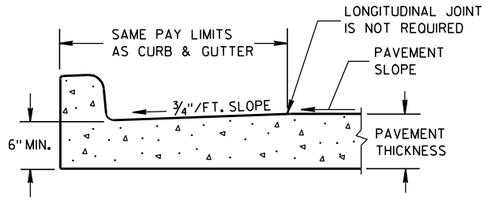
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

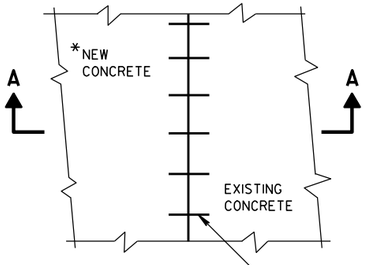
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(5) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

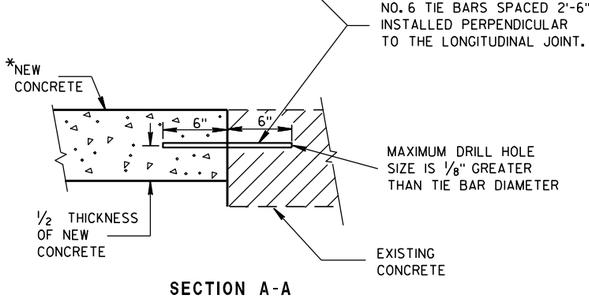


PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



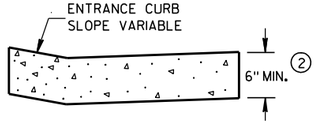
PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

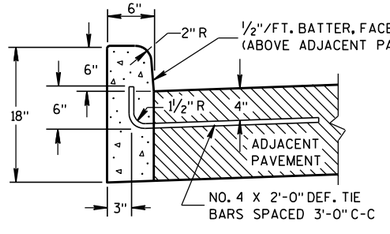


SECTION A-A

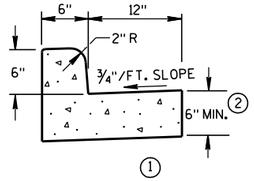
TIE BARS DRILLED INTO EXISTING PAVEMENT



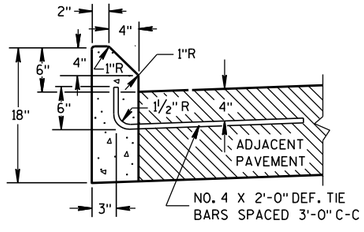
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



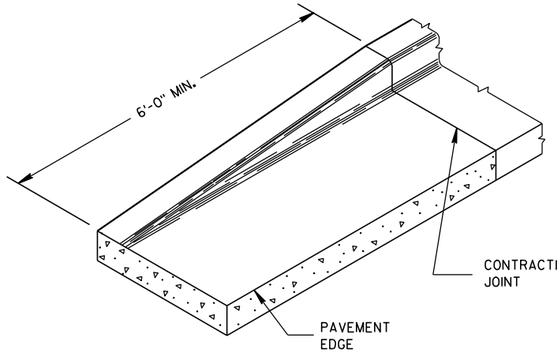
(1)
TYPES A & D



(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"



(1)
TYPES G & J



END SECTION CURB & GUTTER

CONCRETE CURB

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
9/4/08 DATE	/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER
FHWA	

6

S.D.D. 8 D 1-17

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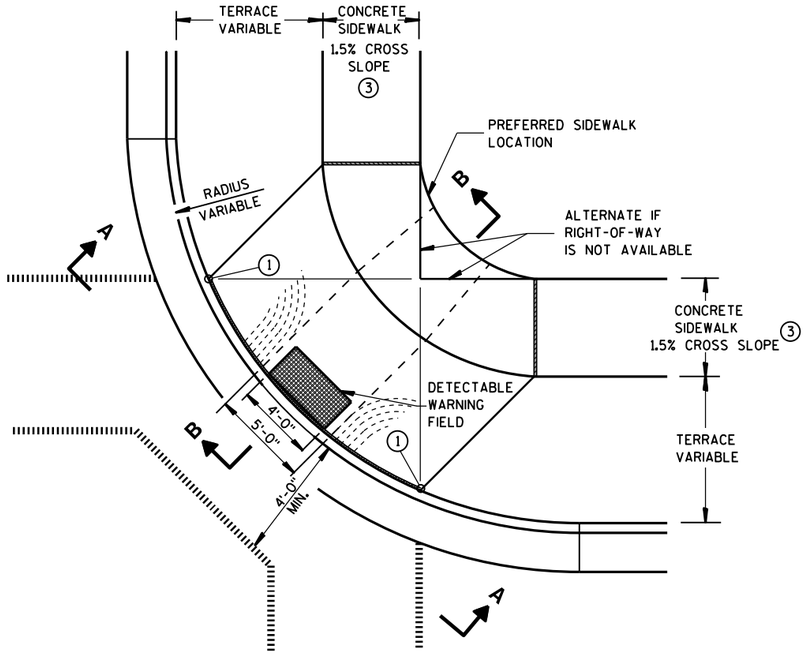
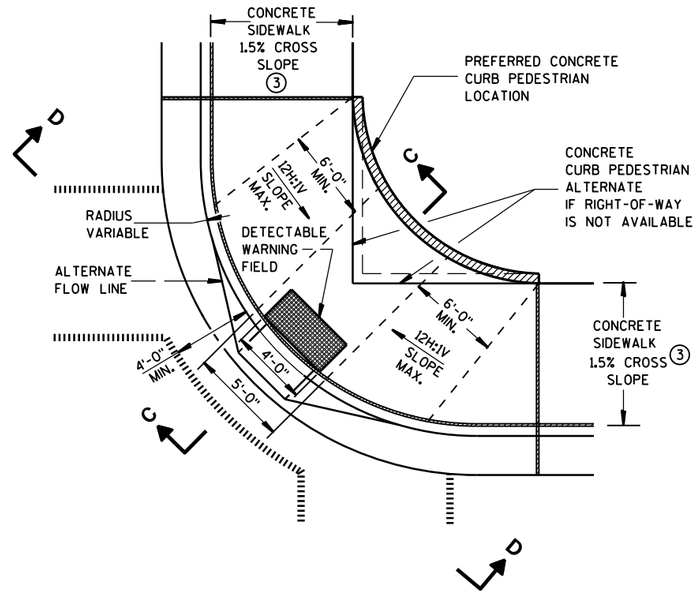
S.D.D. 8 D 1-17



PLAN VIEW

TYPE 1 RAMP

(CENTER OF CORNER RADIUS)



PLAN VIEW

TYPE 1-A RAMP

(NO TERRACE)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

RAMPS SHALL BE BUILT AT 12H:1V OR FLATTER. WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

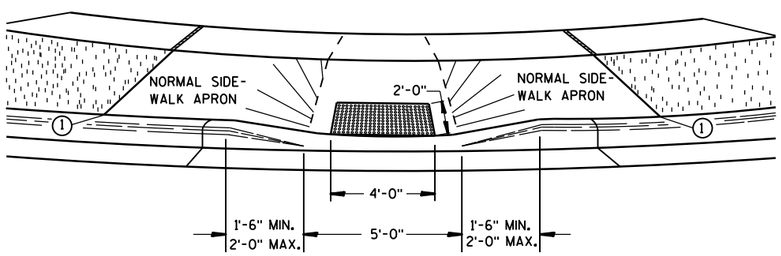
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

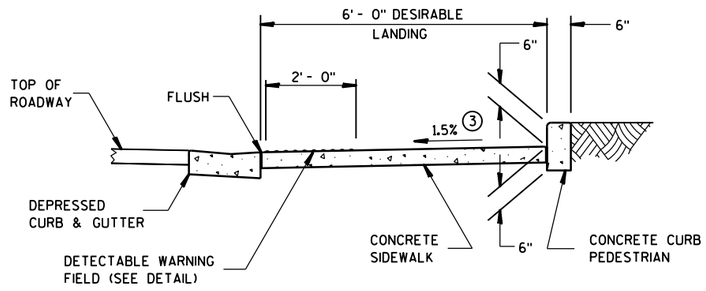
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

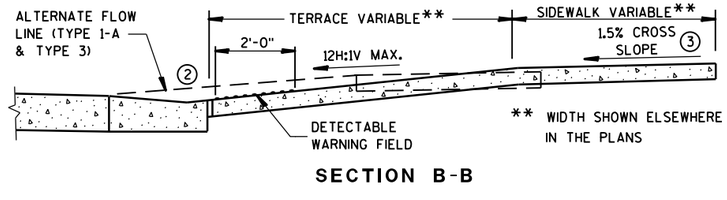
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



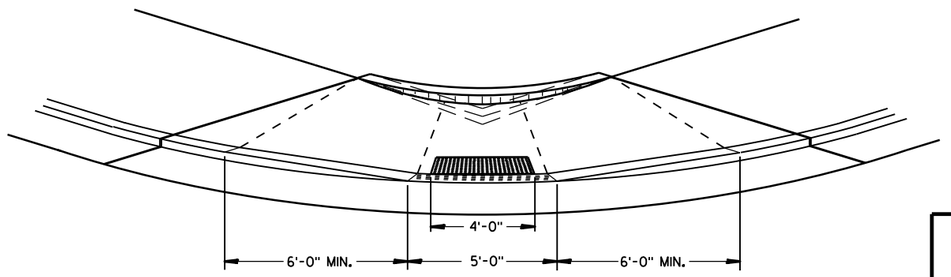
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

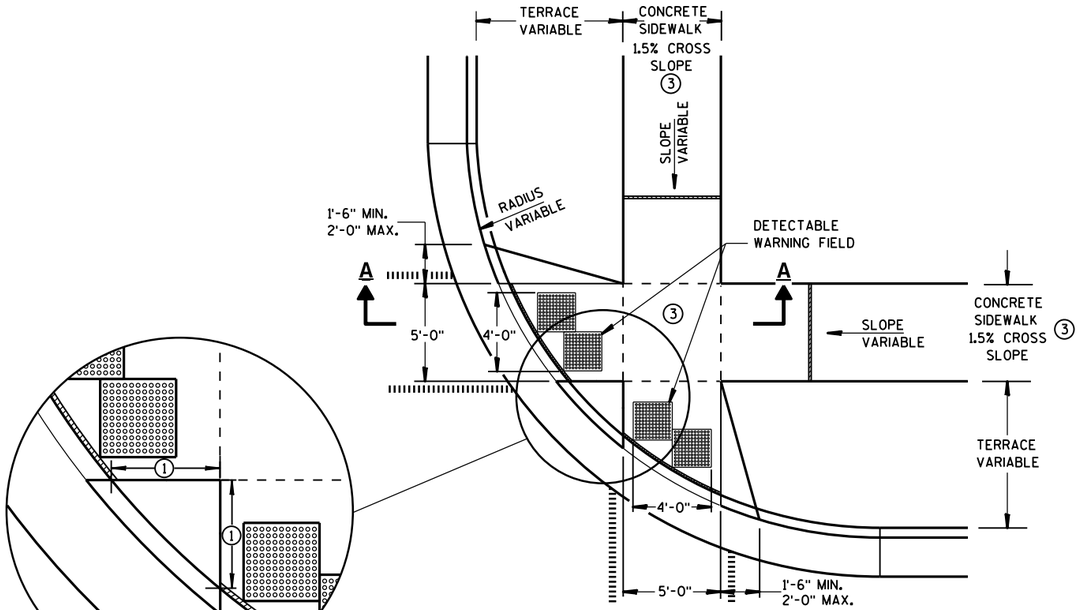
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15a

6

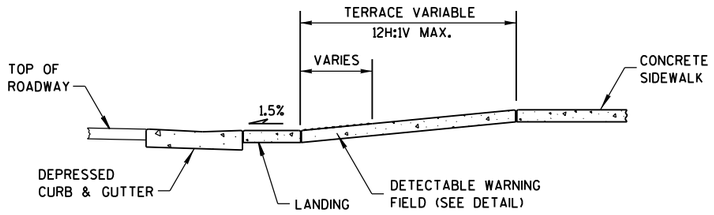
S.D.D. 8 D 5-15a



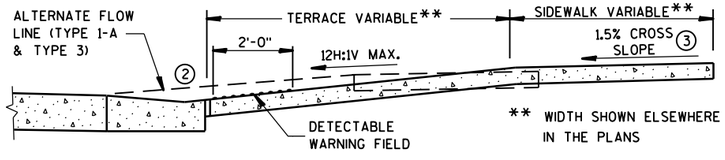
PLAN VIEW

TYPE 2 RAMP

(ON LINE WITH SIDEWALK)



SECTION A-A



SECTION B-B

GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

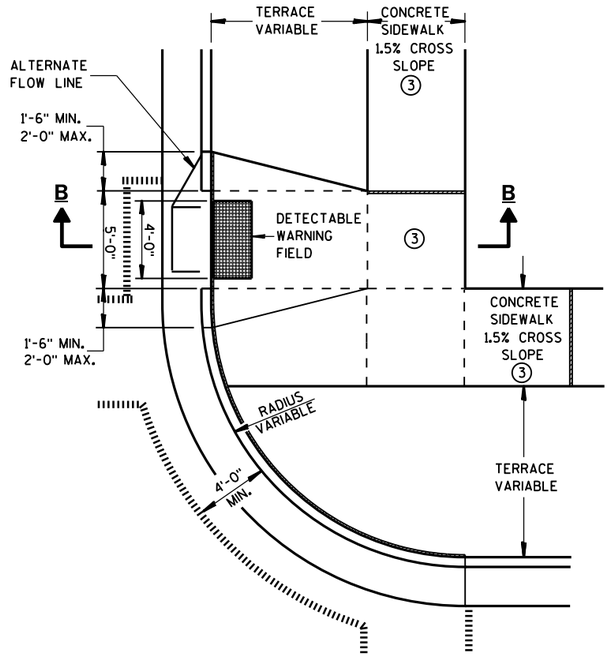
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



PLAN VIEW

TYPE 3 RAMP

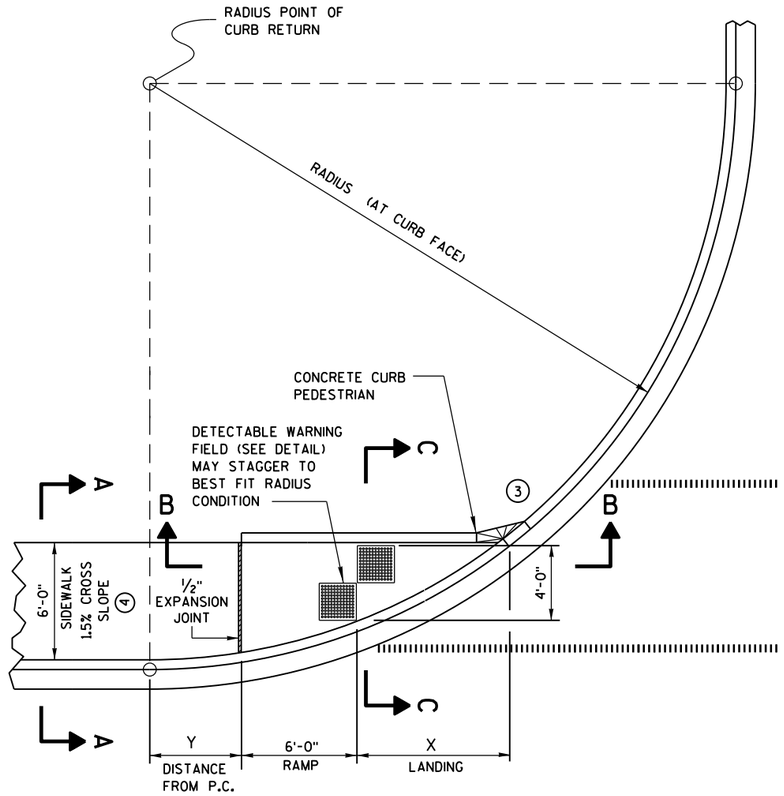
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS
TYPES 2 AND 3

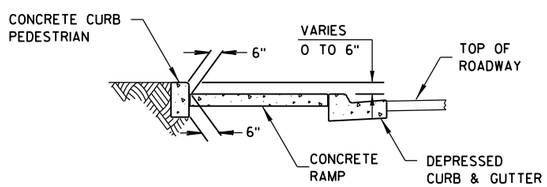
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

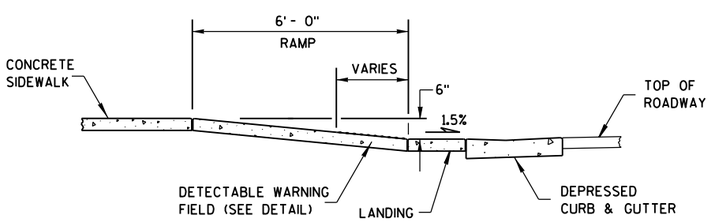
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



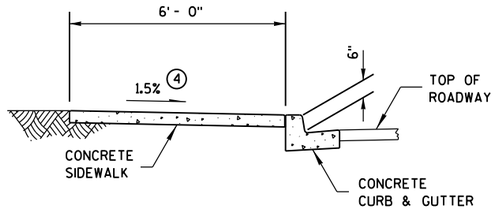
SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1¾"	2'-7¼"
30 FEET	7'-11¾"	4'-8¼"
40 FEET	9'-5¼"	6'-5"
50 FEET	10'-8¾"	7'-11¼"
60 FEET	11'-10¼"	9'-3½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

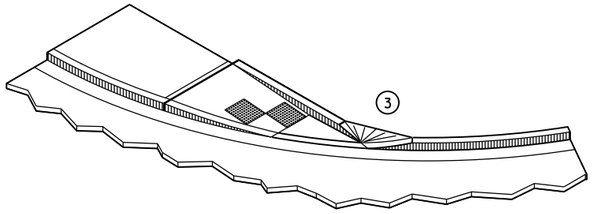
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

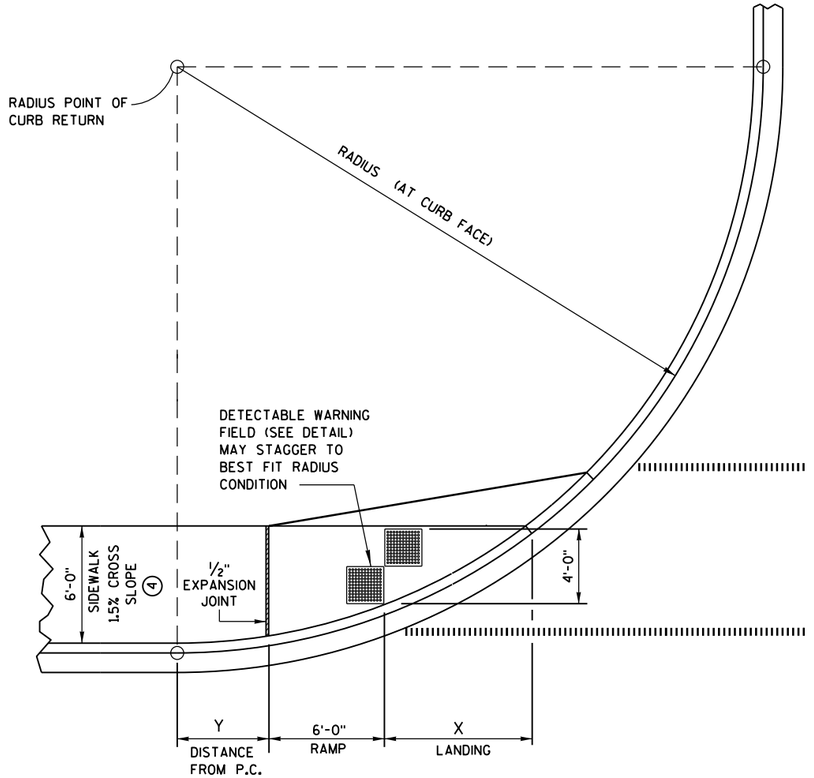
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

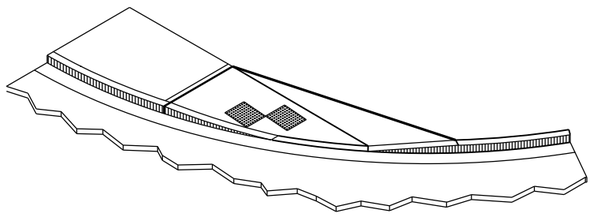
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

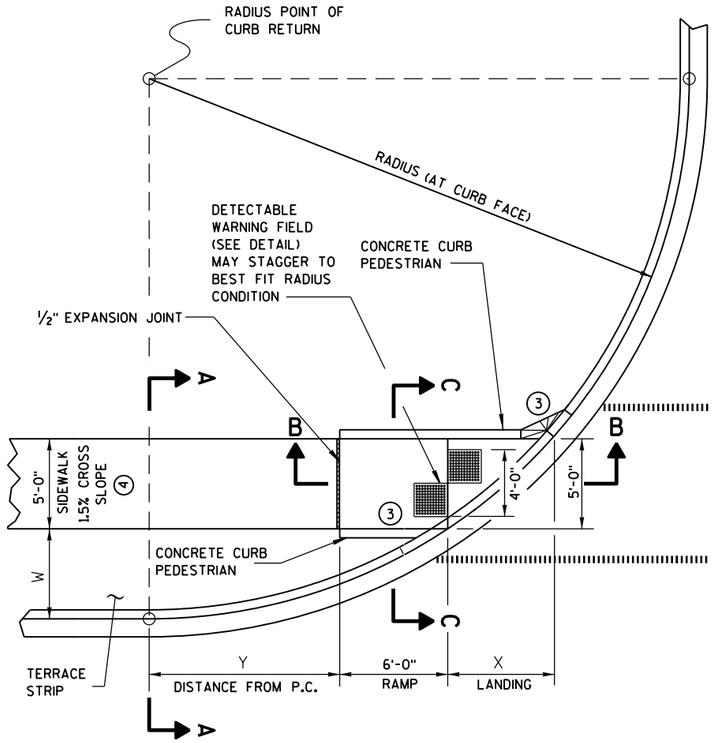
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

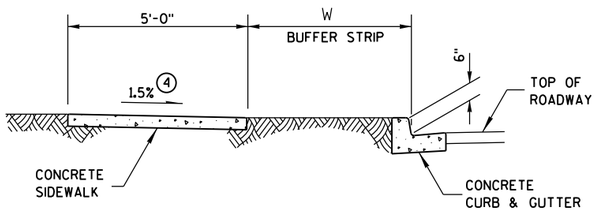
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

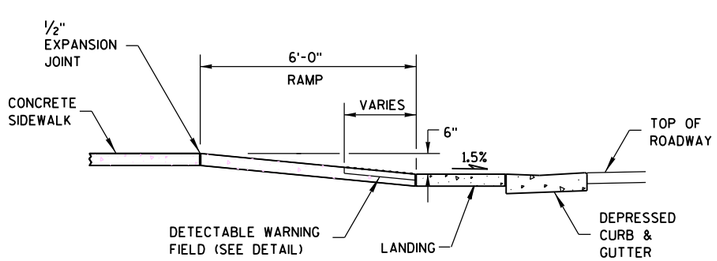
S.D.D. 8 D 5-15c



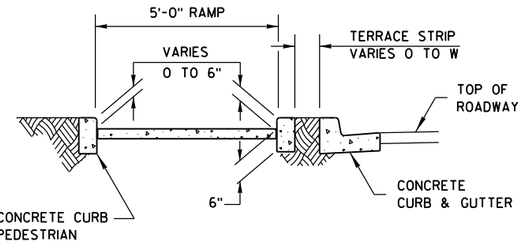
CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B



SECTION C-C FOR TYPE 4B

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-5½"	4'-6½"	4'-8½"	6'-0"	4'-1"	7'-2¾"	3'-7"	8'-3½"	3'-1½"	9'-2½"
30 FEET	7'-3¾"	7'-1"	6'-5½"	8'-11½"	5'-9¼"	10'-7"	5'-2½"	12'-0"	4'-8¾"	13'-3¼"
40 FEET	8'-9½"	9'-2½"	7'-10"	11'-5¼"	7'-1"	13'-4½"	6'-5¾"	15'-¾"	5'-11½"	16'-7¼"
50 FEET	10'-¾"	11'-¾"	9'-¼"	13'-7¼"	8'-2½"	15'-9½"	7'-6½"	17'-9"	6'-11¾"	19'-6¼"
60 FEET	11'-2½"	12'-8¾"	10'-¾"	15'-6½"	9'-2¼"	17'-11¾"	8'-5¾"	20'-1¾"	7'-10½"	22'-1½"

INTERMEDIATE RADII CAN BE INTERPOLATED

GENERAL NOTES

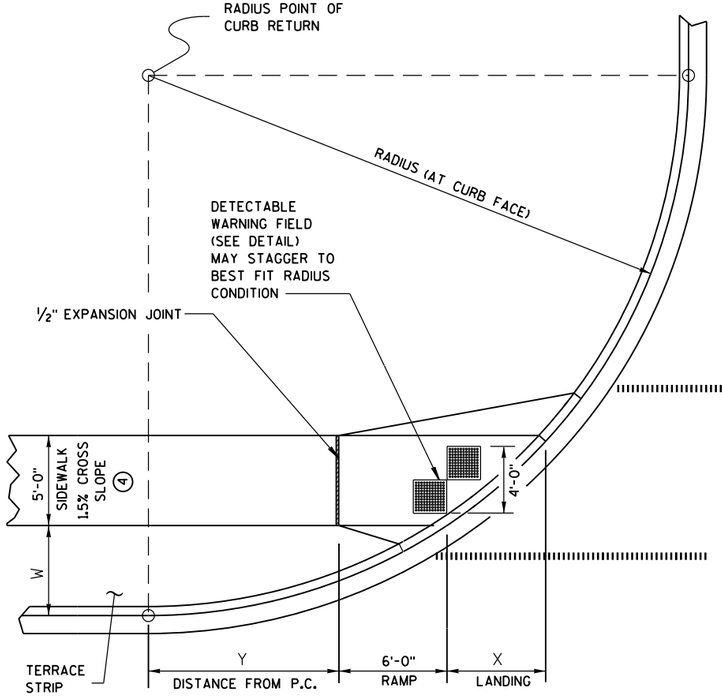
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

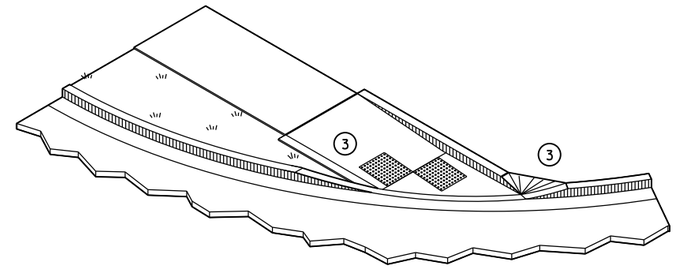
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

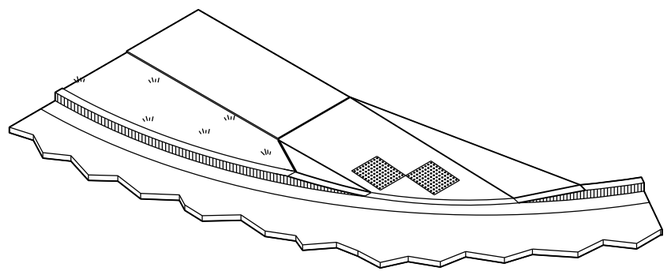
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



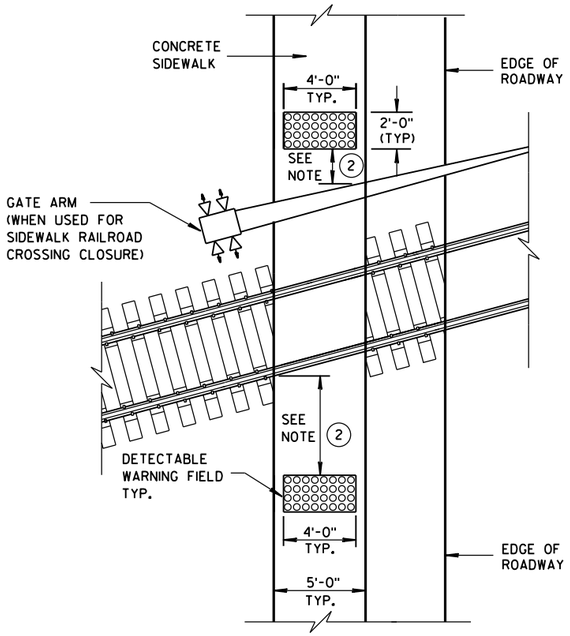
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

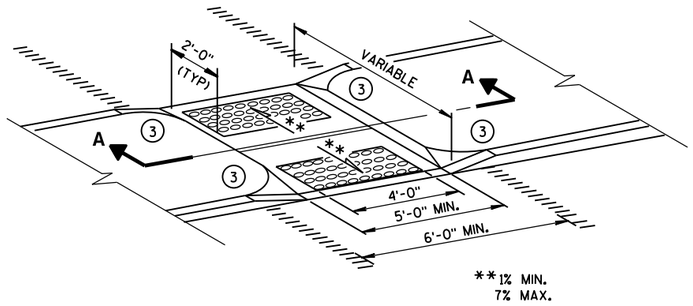
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

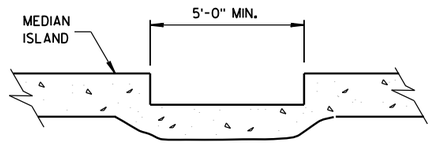
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(1) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

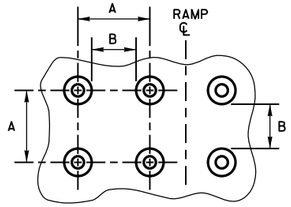
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



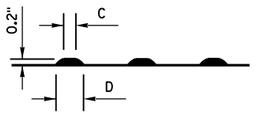
SECTION A-A



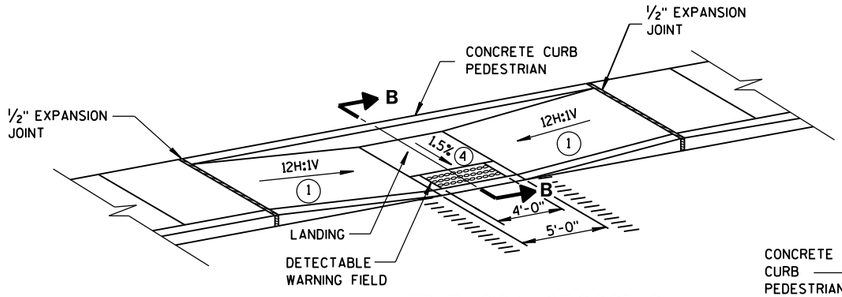
PLAN VIEW

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

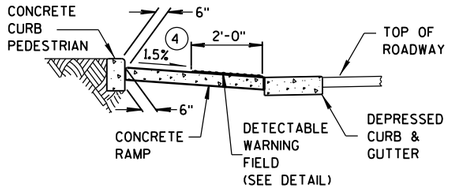
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

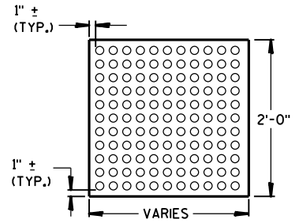


MID-BLOCK CROSSING
TYPE 7A



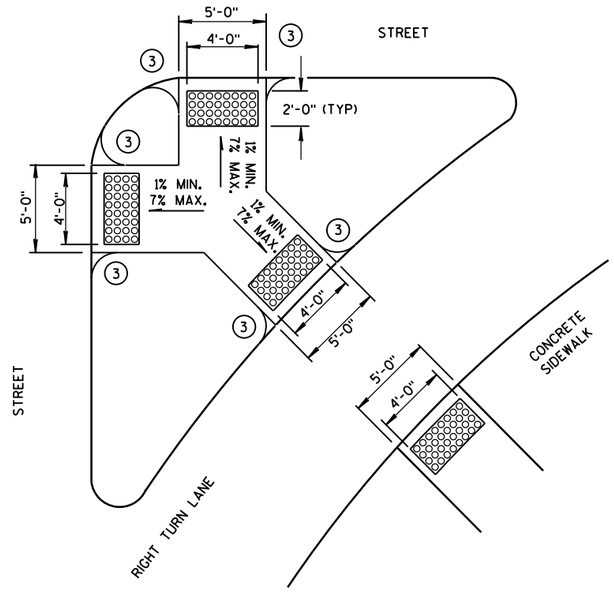
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

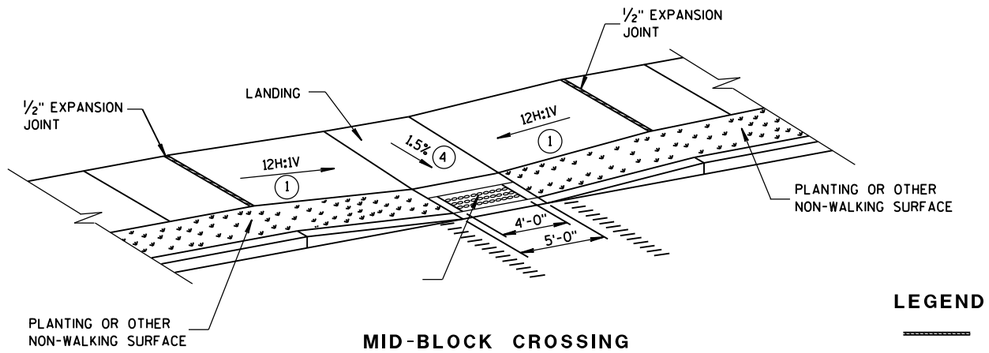


PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

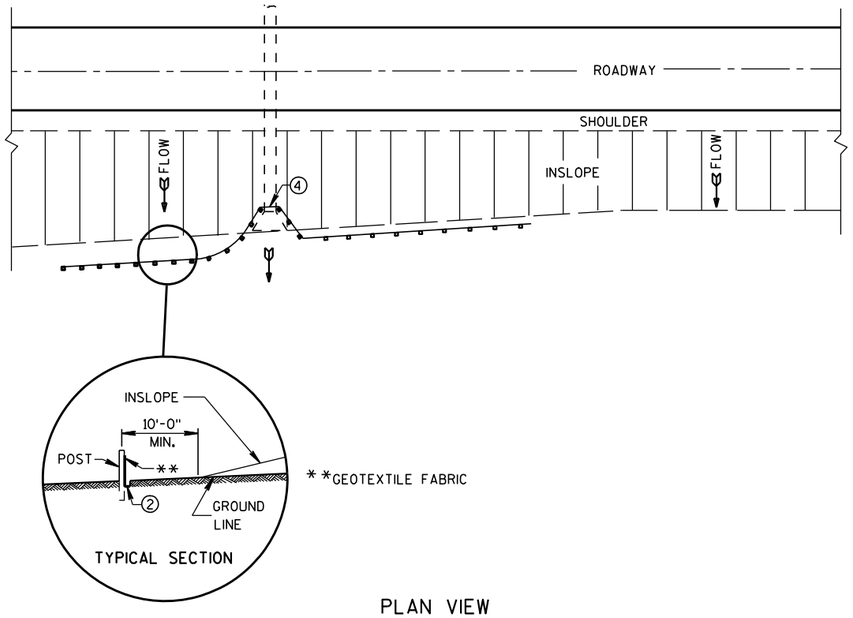
CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

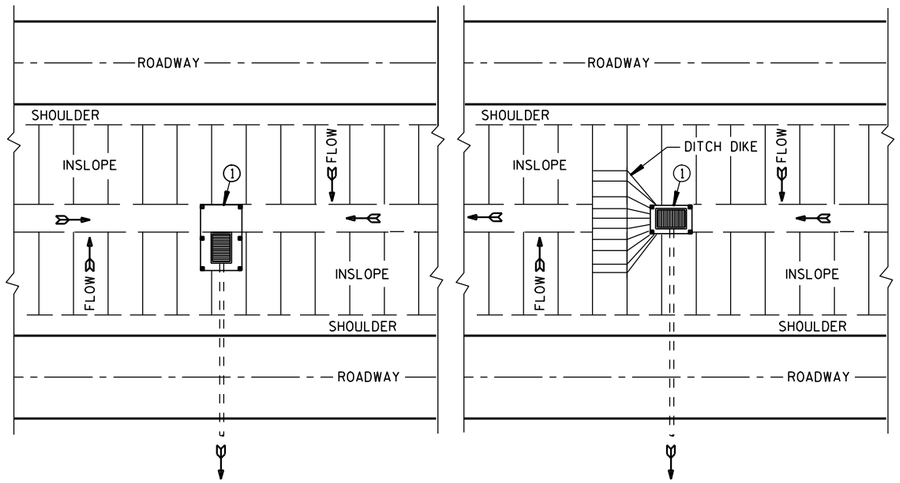
6

S.D.D. 8 D 5-15e



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

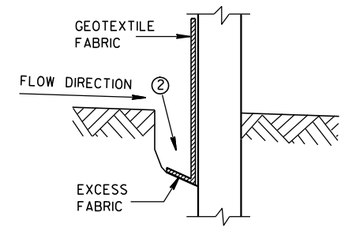
(1) HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

(2) FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

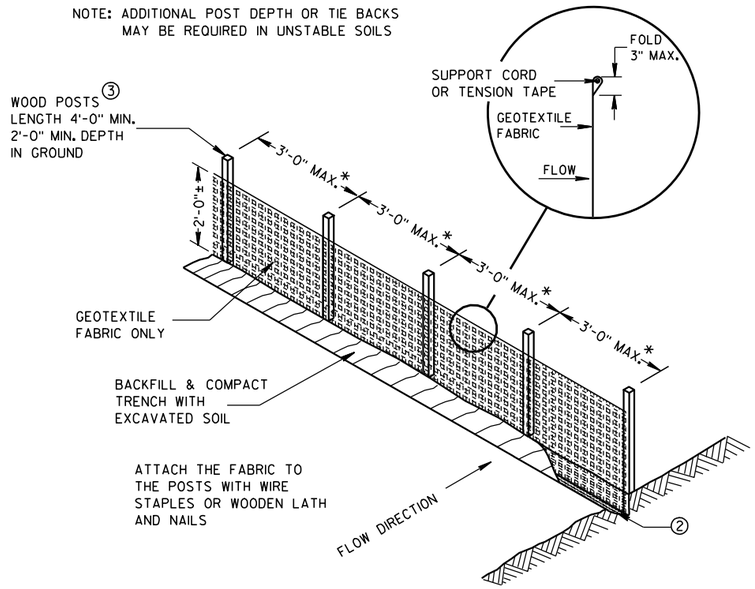
(3) WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

(4) SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

(5) CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

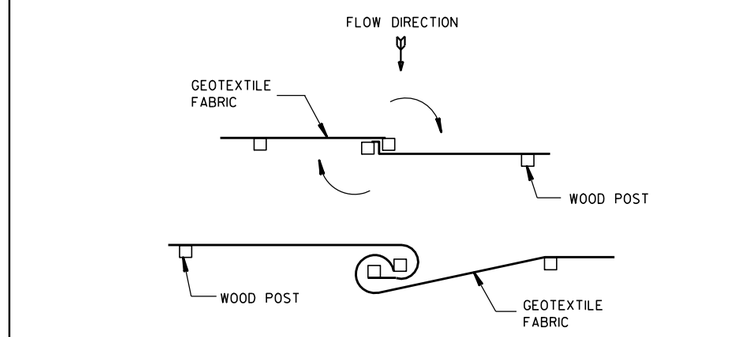


TRENCH DETAIL

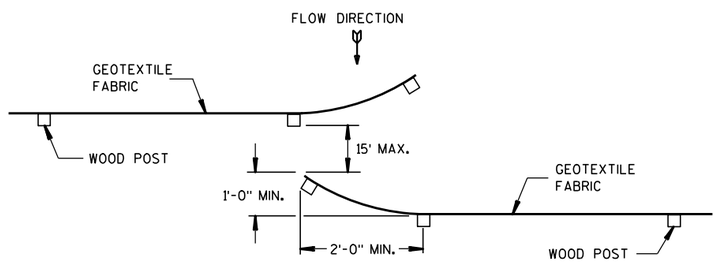


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

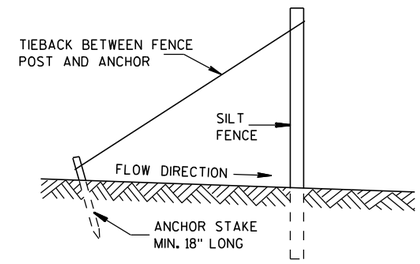


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

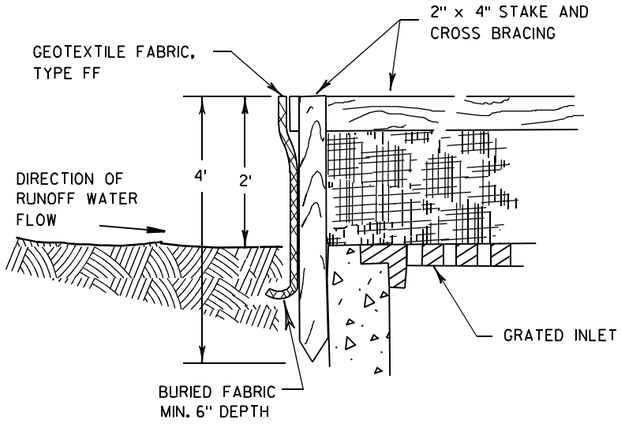
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

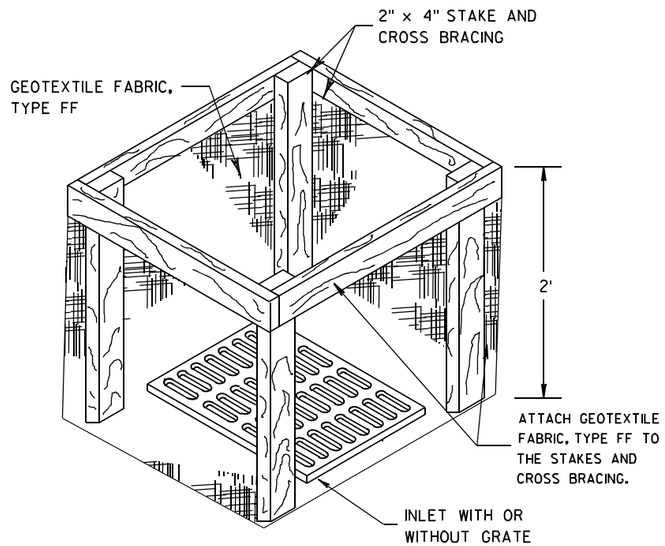
6

S.D.D. 8 E 9-6

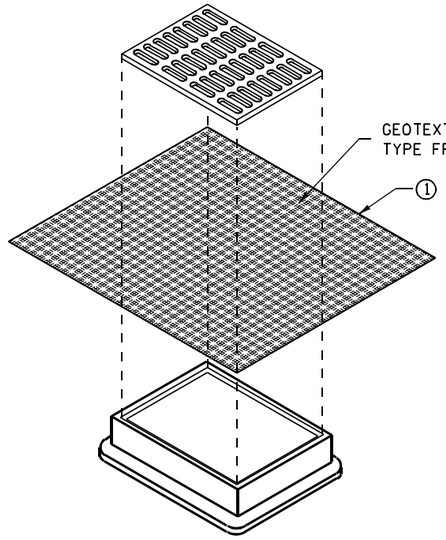
6

S.D.D. 8 E 9-6



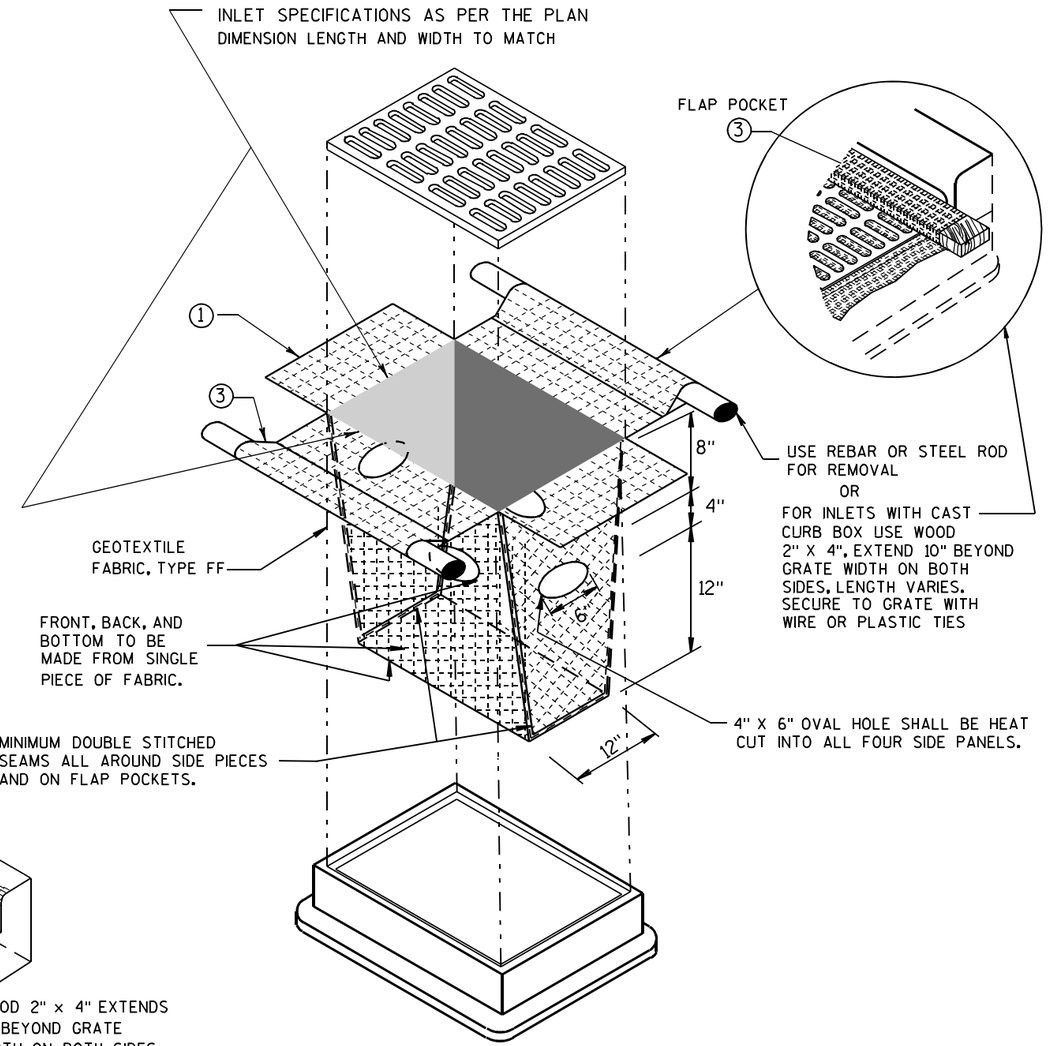


INLET PROTECTION, TYPE A



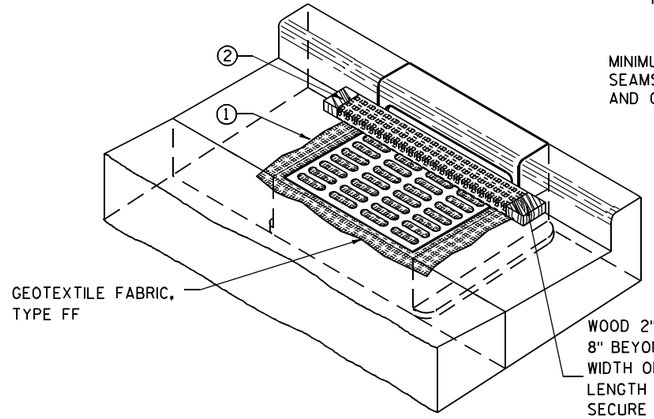
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH
OR WITHOUT A CURB BOX AS PER NOTE ②)



INLET PROTECTION, TYPE C (WITH CURB BOX)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 E 10-2

METAL APRON ENDWALLS

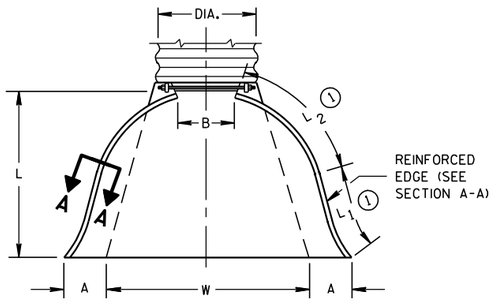
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

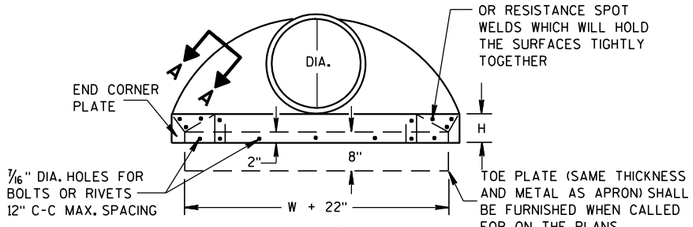
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

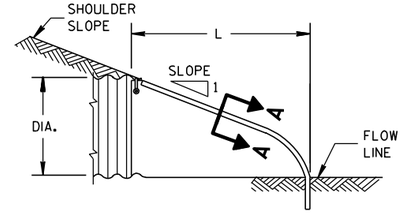
*MINIMUM
**MAXIMUM



PLAN VIEW

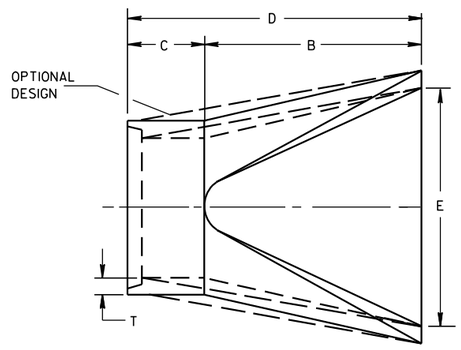


END VIEW

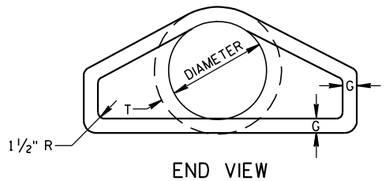


SIDE ELEVATION

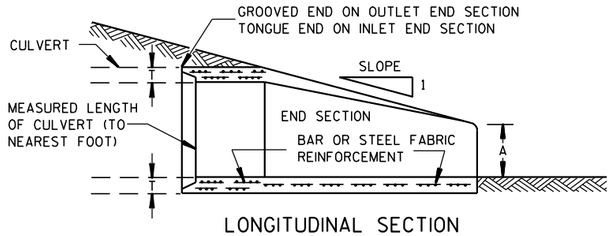
METAL ENDWALLS



PLAN

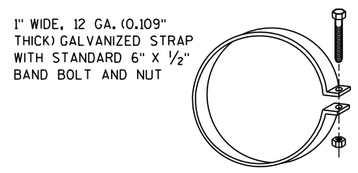


END VIEW



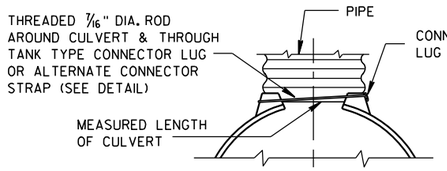
LONGITUDINAL SECTION

CONCRETE ENDWALLS

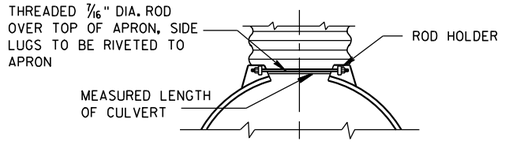


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

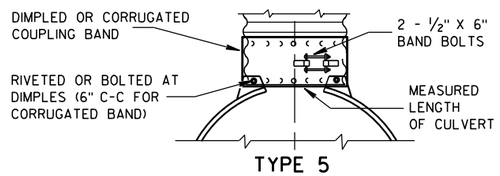


TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE

TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

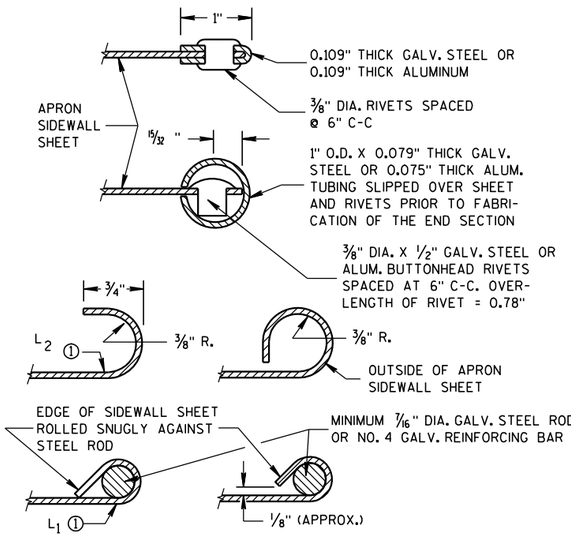
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

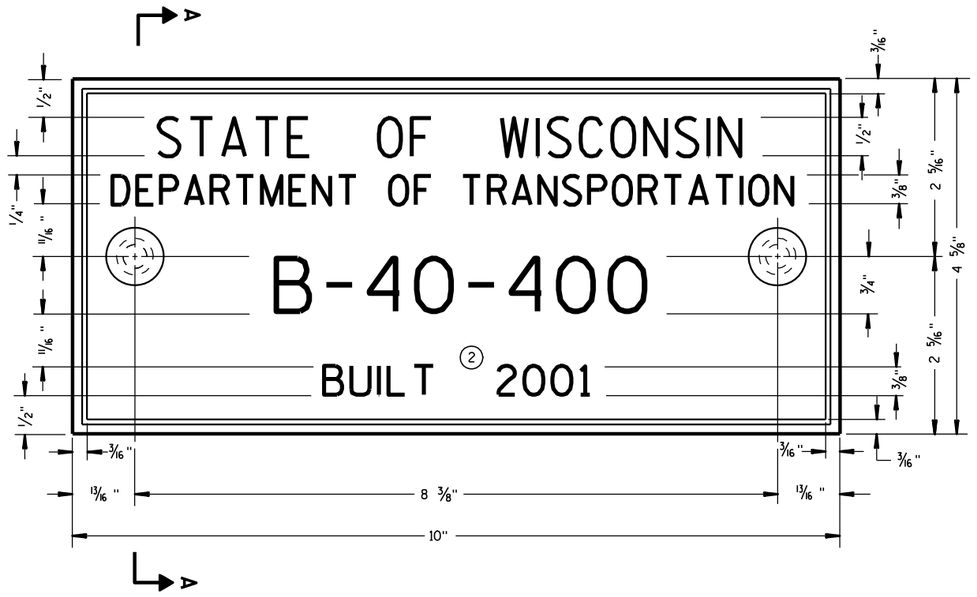
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 F 1-11



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

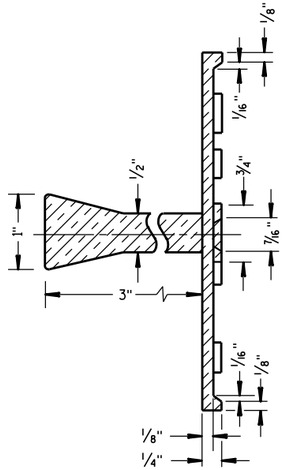
GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

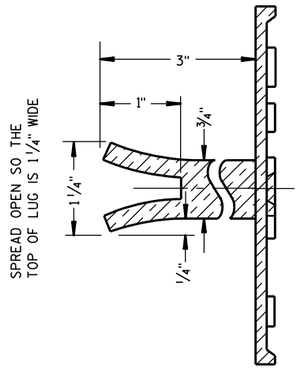
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

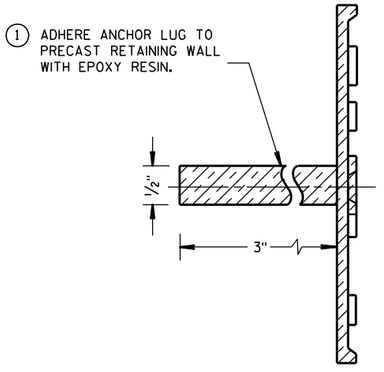
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

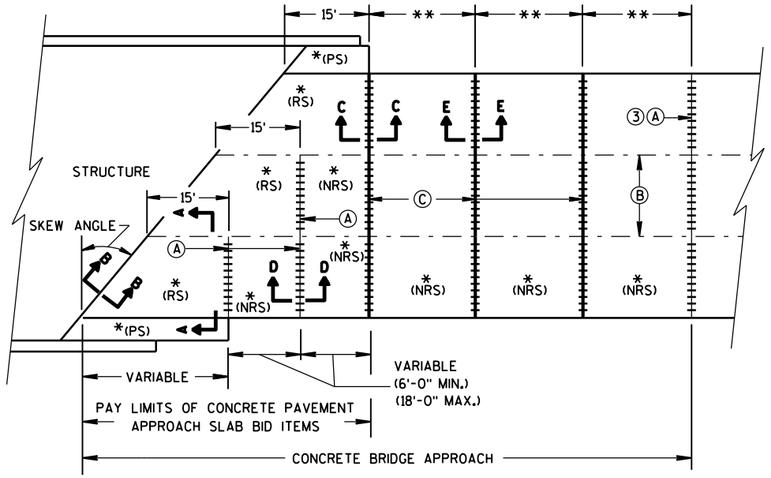
3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

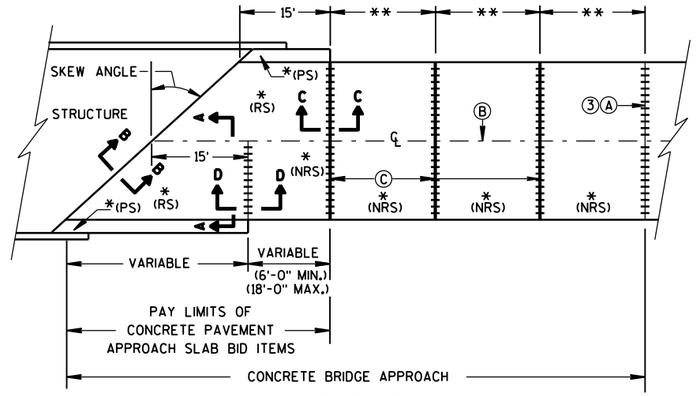
FHWA

6

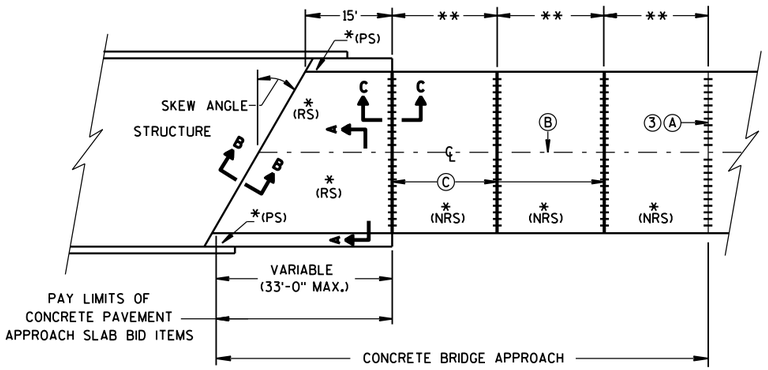
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



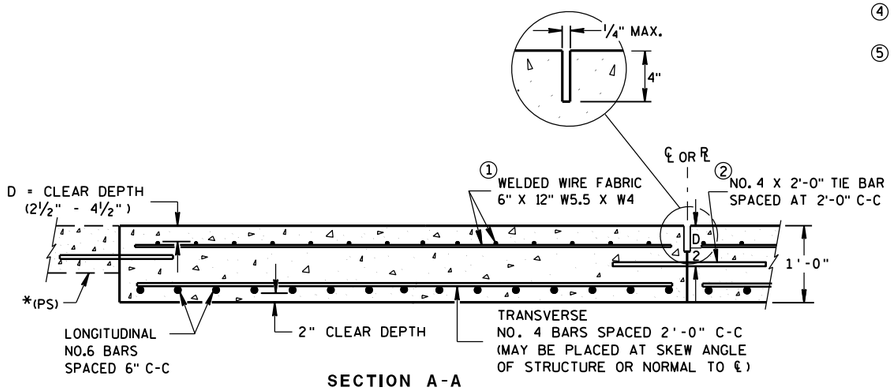
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

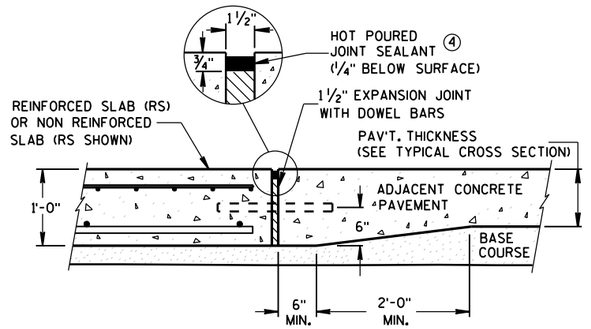
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN (SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)
***STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11, & SDD 13C13)

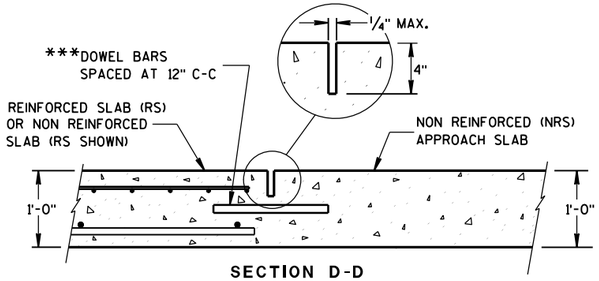
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
Ⓑ STANDARD LONGITUDINAL JOINT AND TIE BARS.
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

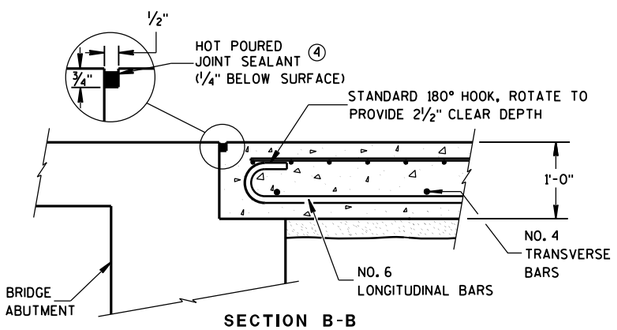
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

② THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

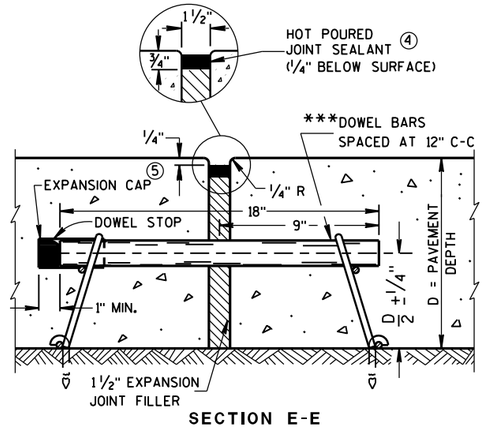
③ DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.

④ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION E-E
EXPANSION JOINT

CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2014 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE
EER
FHWA

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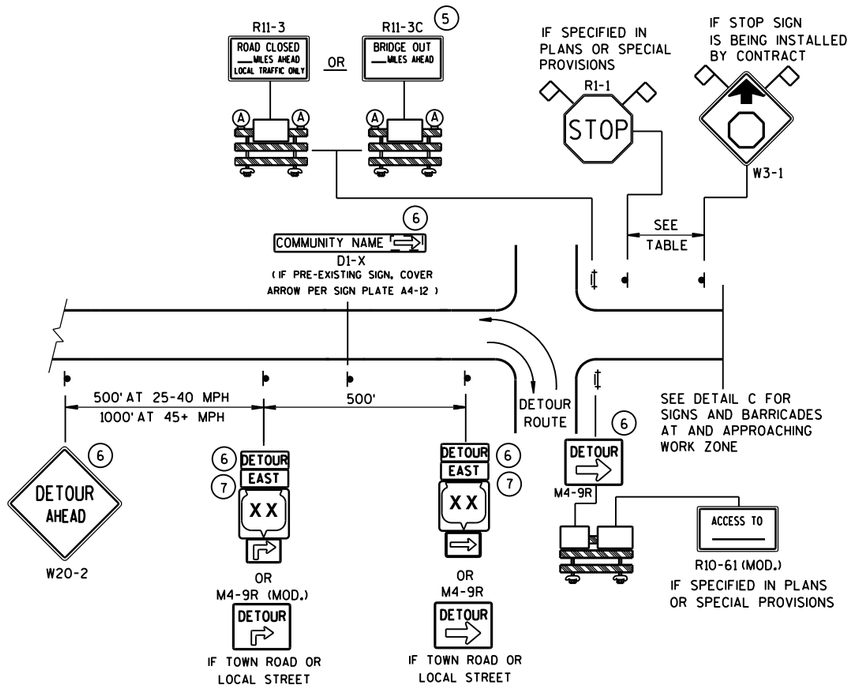
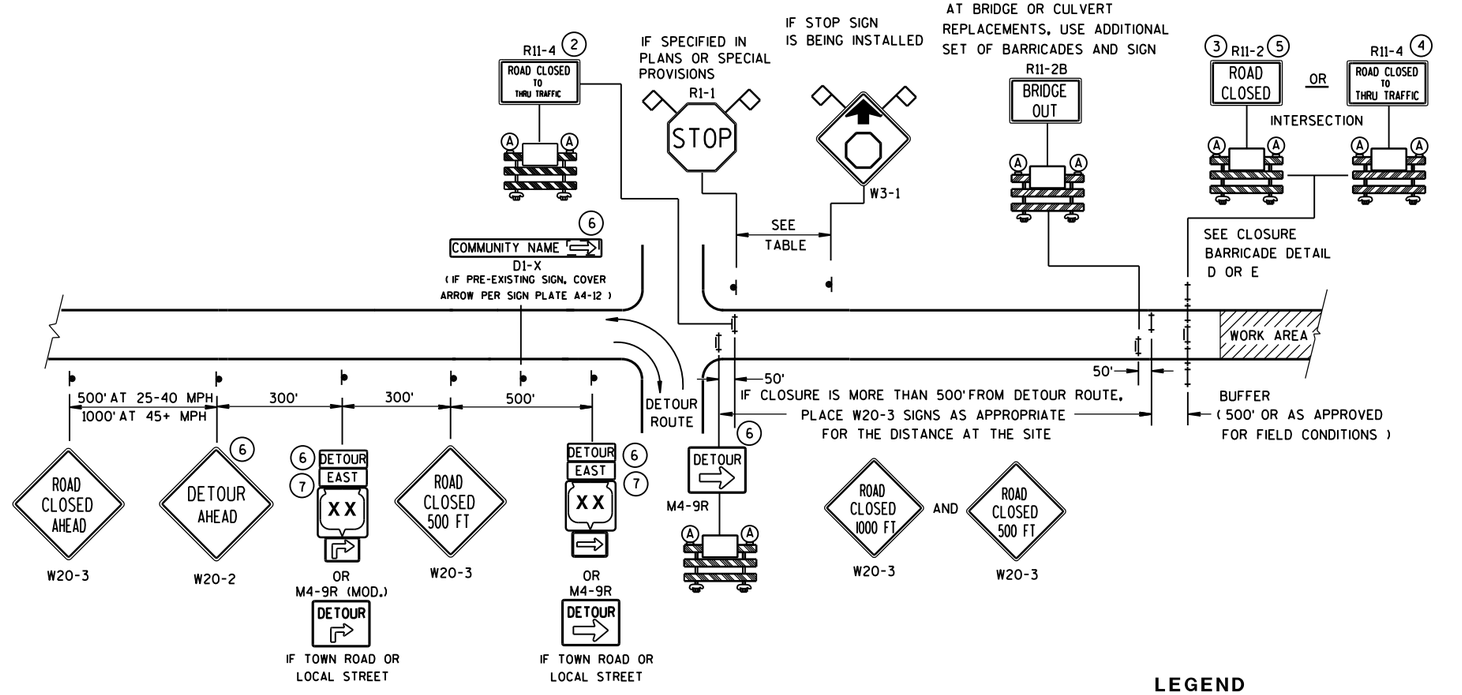
S.D.D. 13 B 2-7a



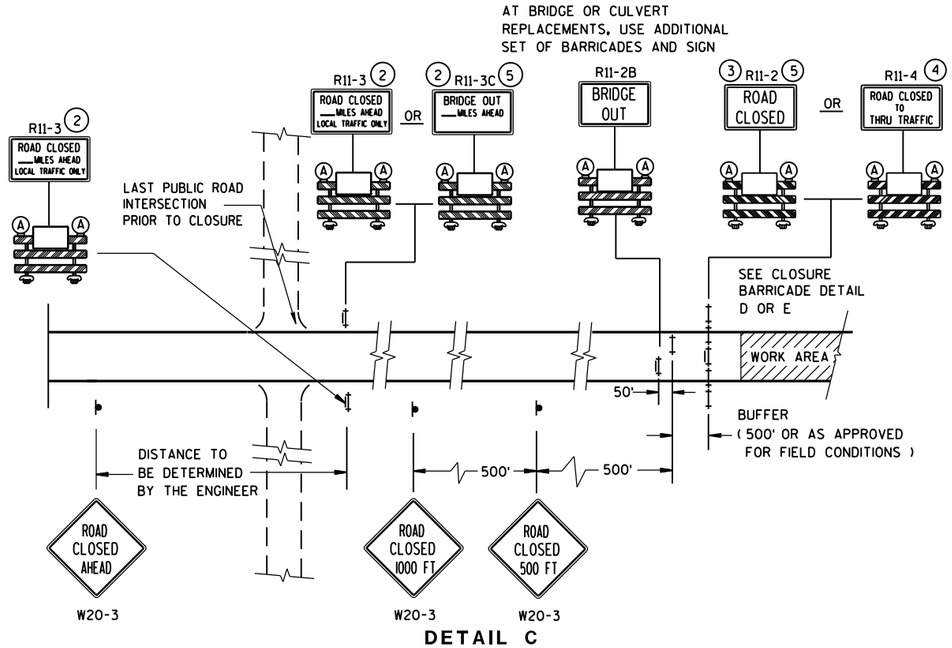
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-SHEET "**b**"
FOR GENERAL NOTES
AND FOOTNOTES (1) THROUGH (7)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

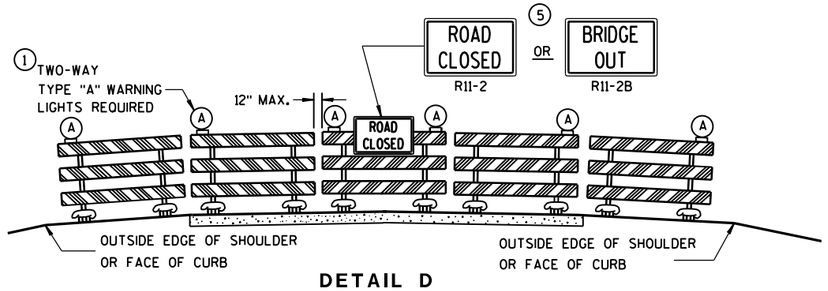
8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

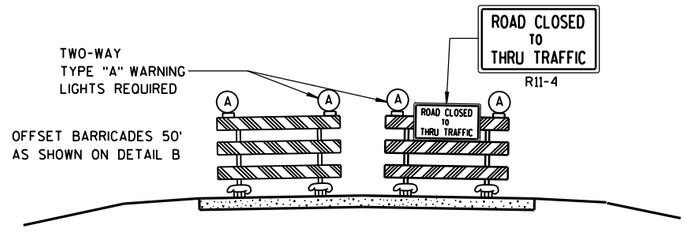
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

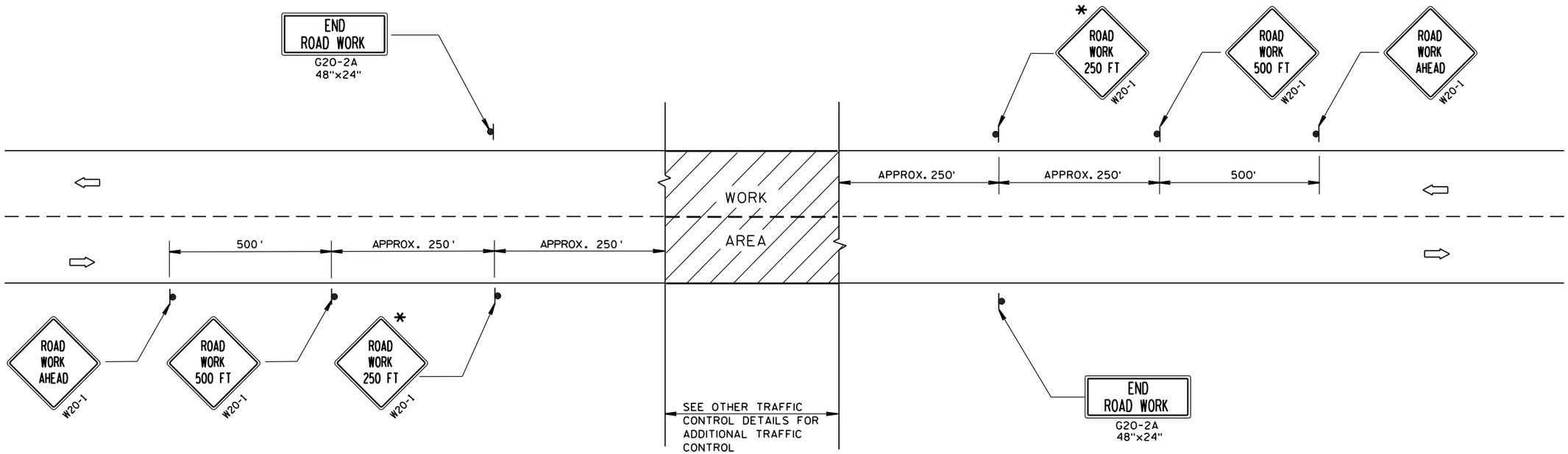
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

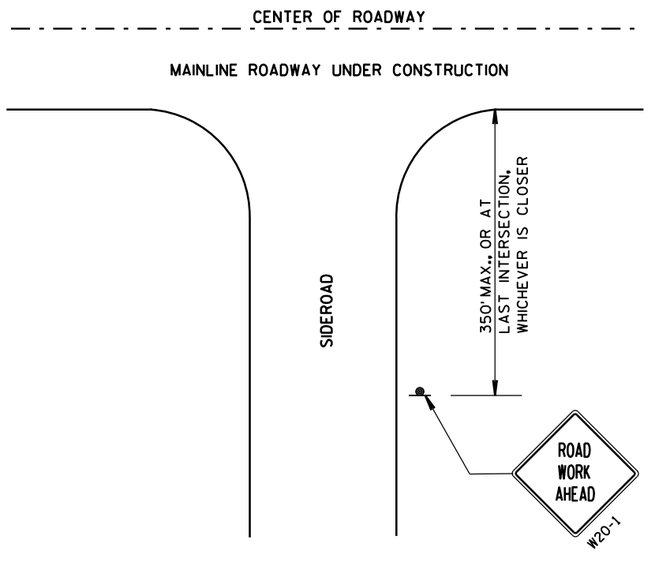
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 2-5b



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

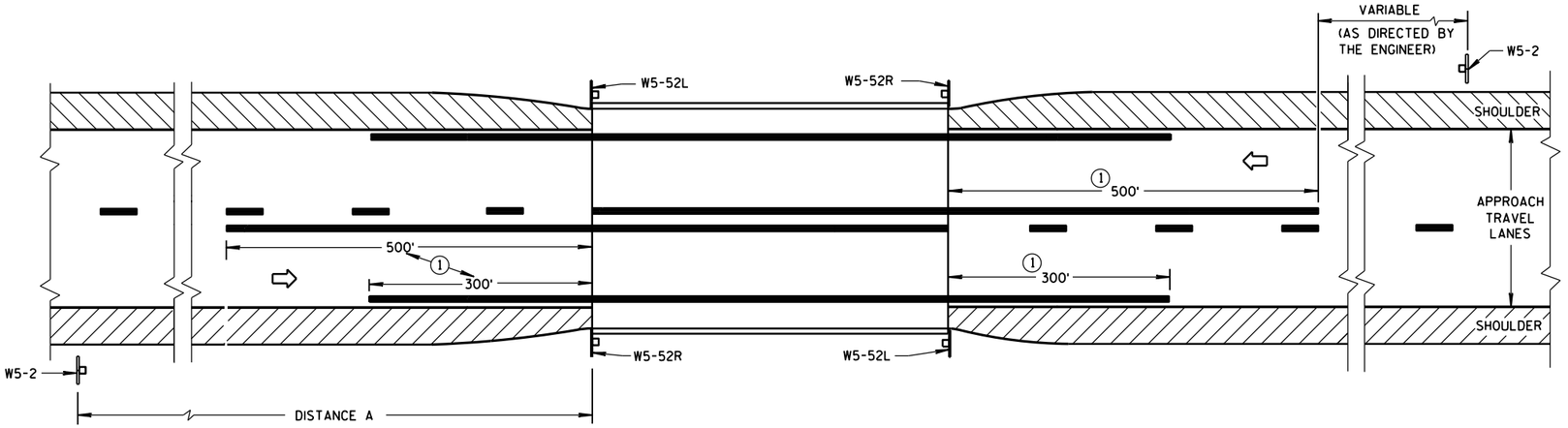
APPROVED

8/2013	/S/ Travis Feltes	
DATE	STATE TRAFFIC ENGINEER	SIGN

FHWA

6

S.D.D. 15 C 5-2



GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

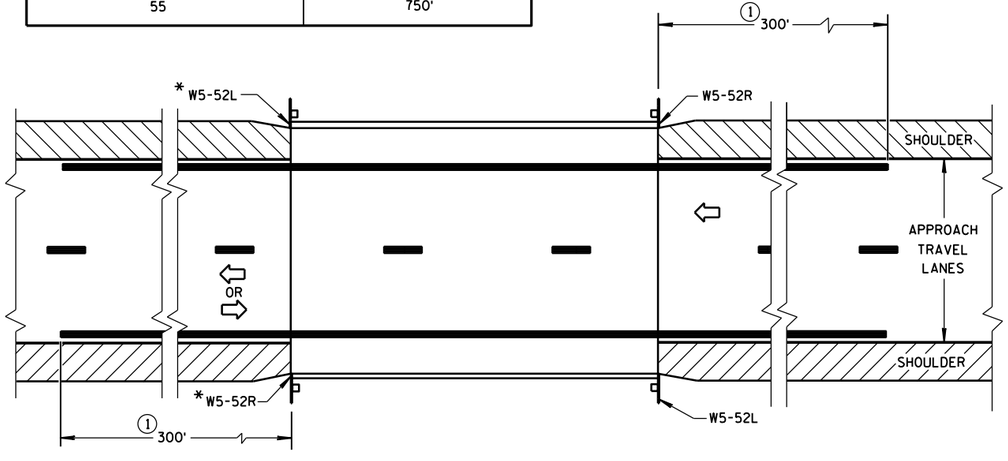
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

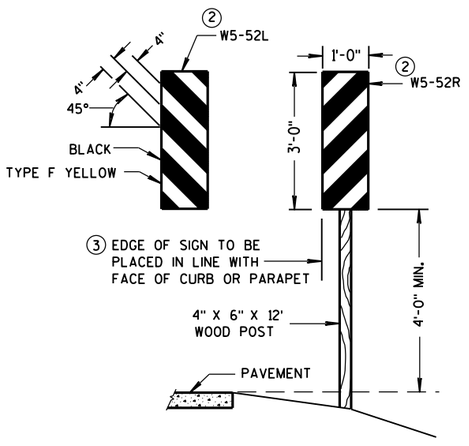


*OMIT ON ONE-WAY TRAVELLED WAYS

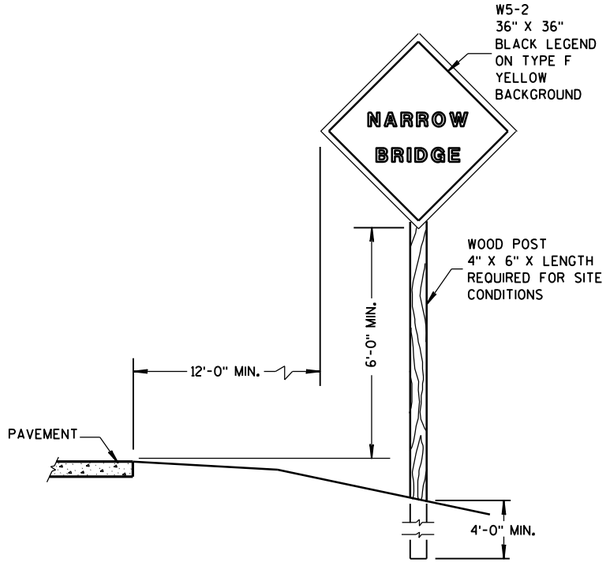
SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



OBJECT MARKER PLACEMENT



SIGN PLACEMENT

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

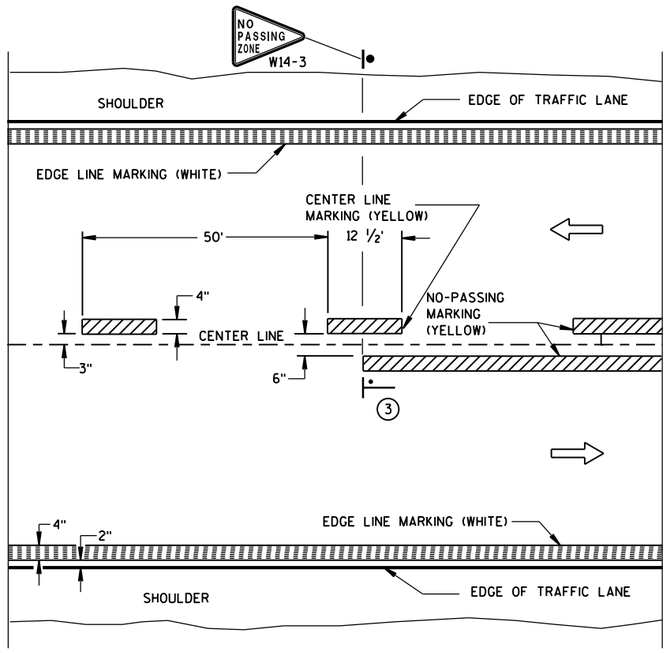
3-2014 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

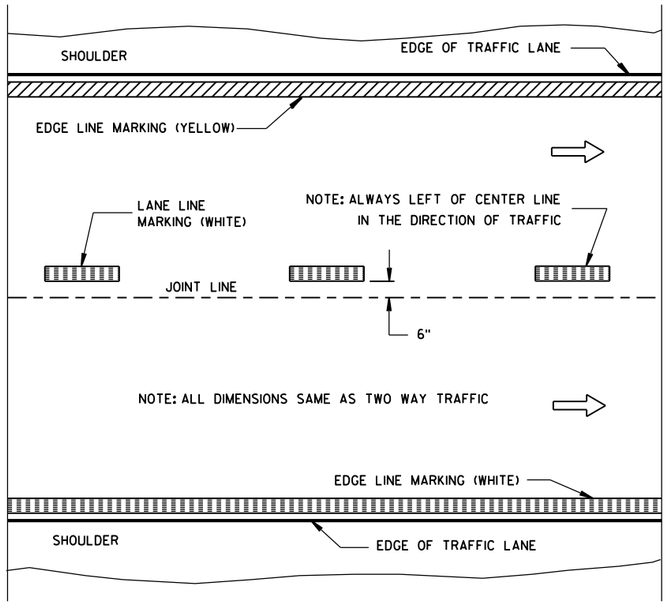
FHWA

6

S.D.D. 15 C 6-7

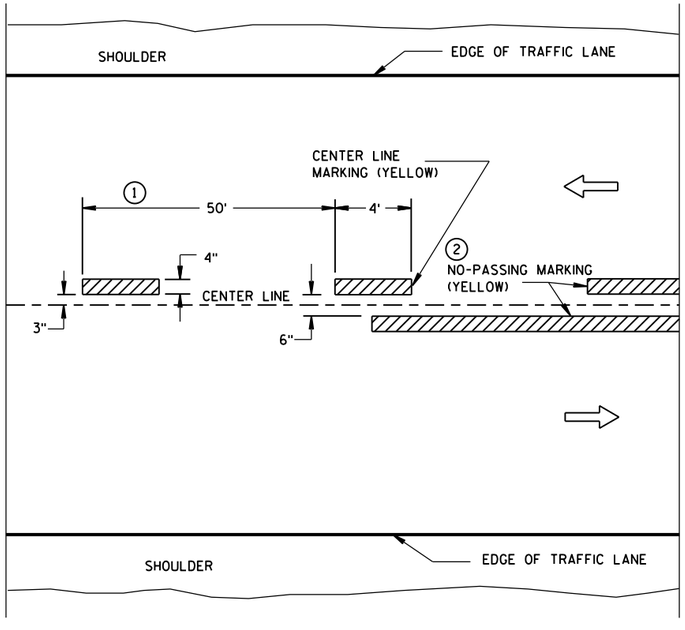


TWO WAY TRAFFIC

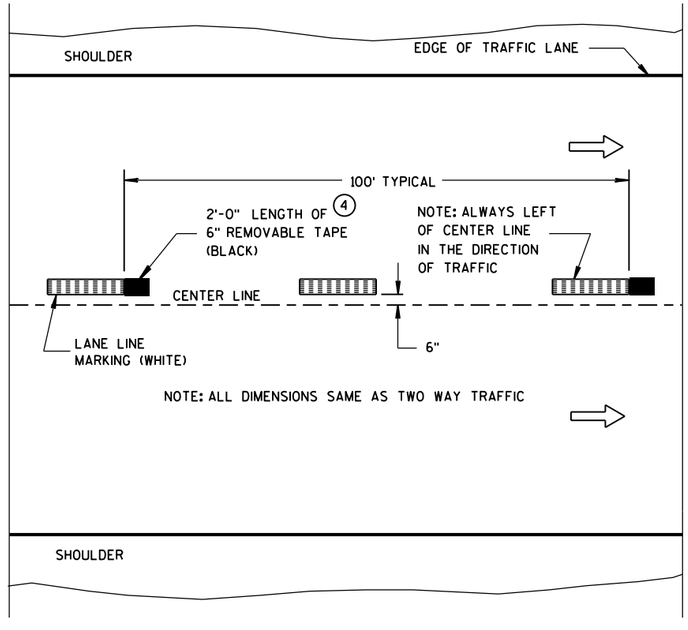


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

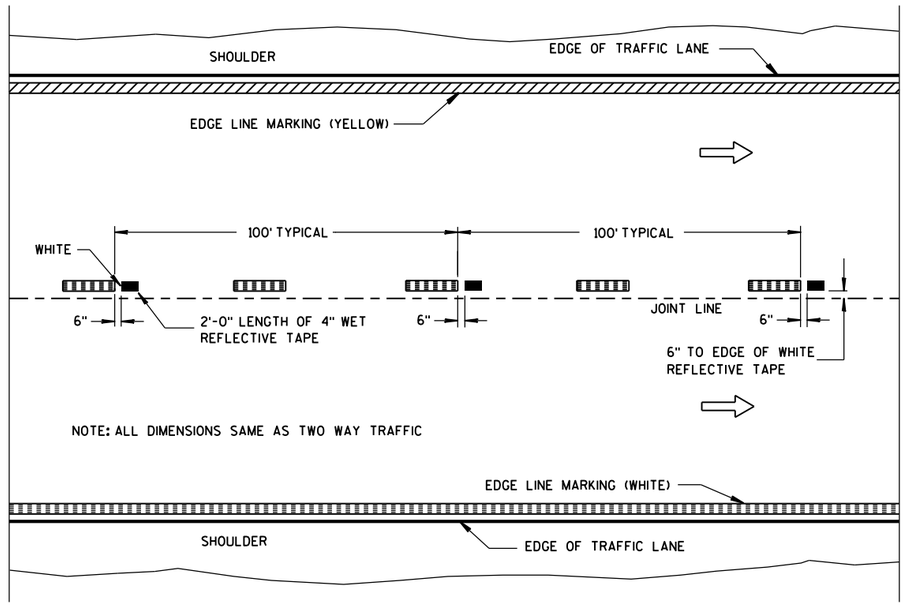
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC E

FHWA

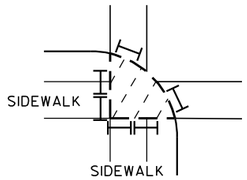
6

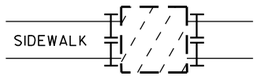
S.D.D. 15 C 8-16a

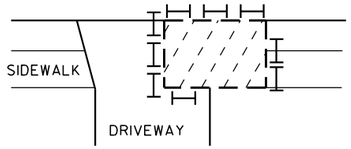
6

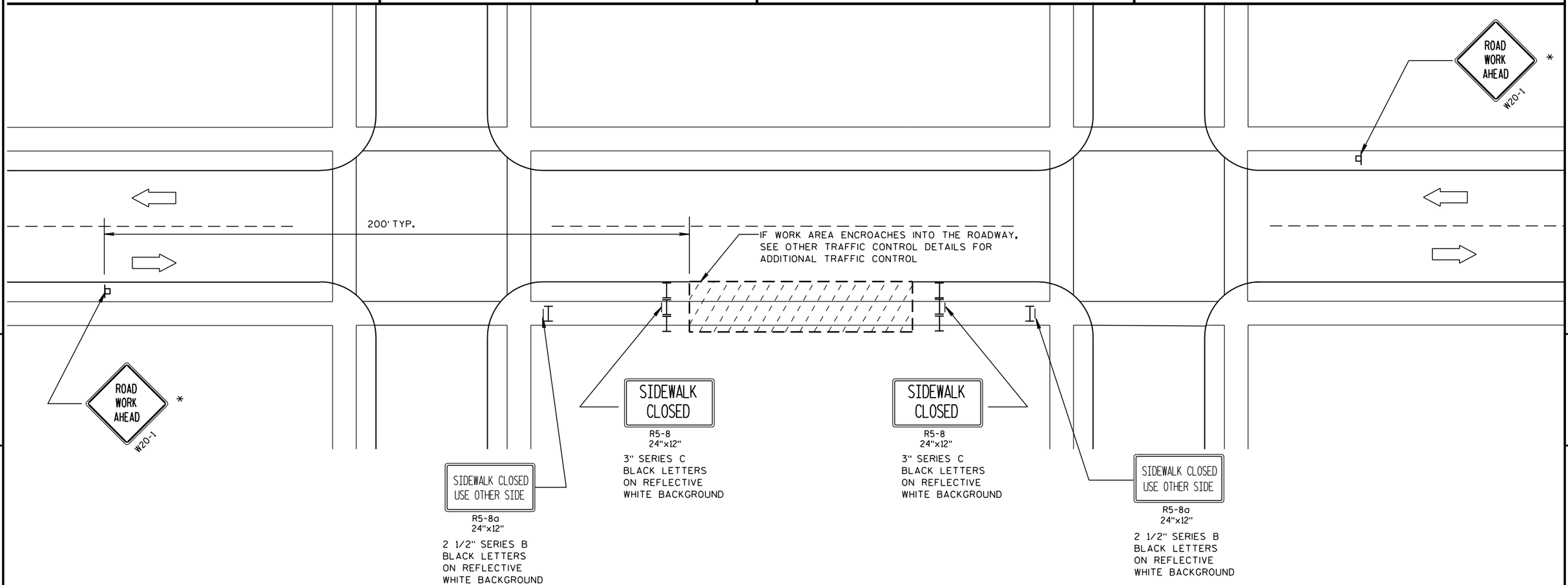
S.D.D. 15 C 8-16a

WARNING OF LOCALIZED SIDEWALK WORK AREAS









LEGEND

- POST MOUNTED SIGN
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- WORK AREA
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES :

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS, IF APPROVED BY DISTRICT TRAFFIC UNIT.

THE EXACT LOCATION AND PLACEMENT OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

* "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.

WARNING SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

TRAFFIC CONTROL, SIDEWALK CLOSURE

TRAFFIC CONTROL, SIDEWALK CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

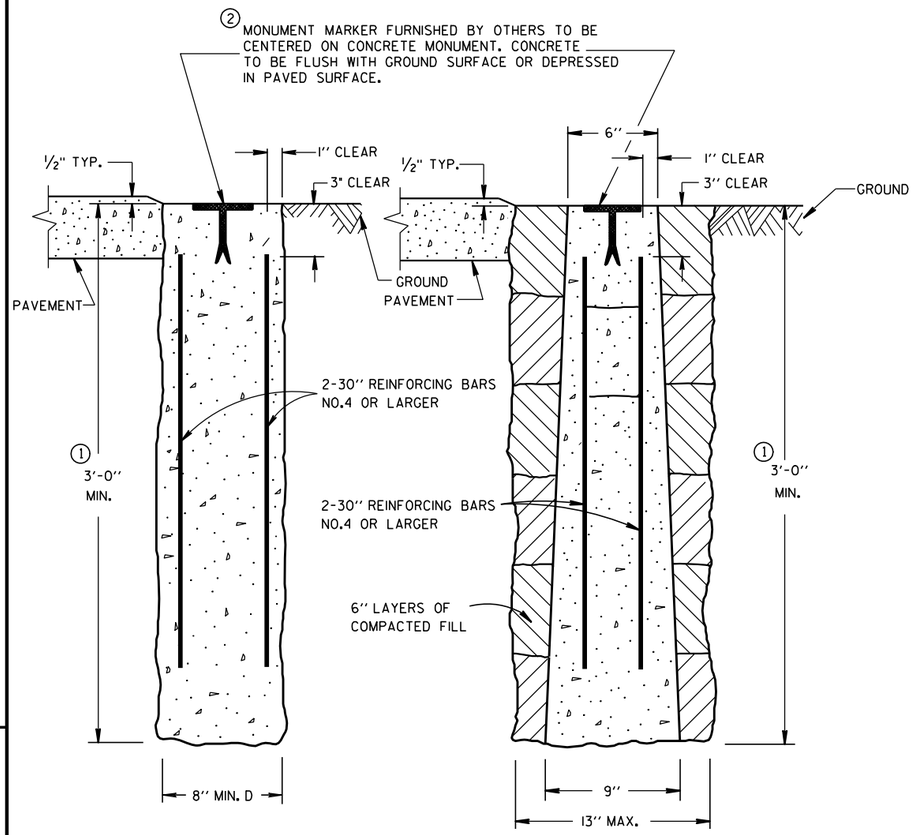
5/23/2000 DATE

/S/ Chester J. [illegible]
CHIEF SIGNS AND MARK[illegible]NEER

FHWA

6

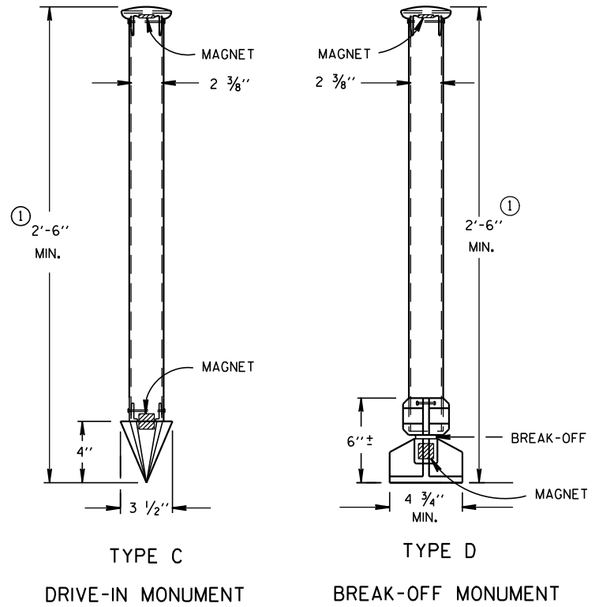
S.D.D. 15 D 30-1



CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C DRIVE-IN MONUMENT

TYPE D BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

INSTALLED METAL MONUMENTS MUST BE EASILY DETECTED WITH A DIP NEEDLE. INSERT PERMANENT MAGNETS SHALL BE ATTACHED NEAR THE TOP AND BOTTOM OF THOSE MONUMENTS CONSTRUCTED OF A METAL ALLOY WHICH IS NOT ATTRACTIVE TO A DIP NEEDLE.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

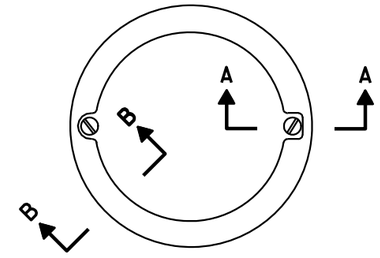
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

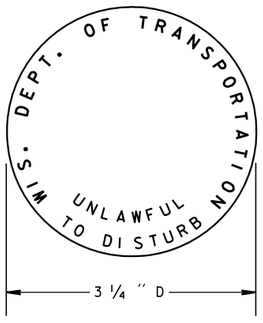
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.

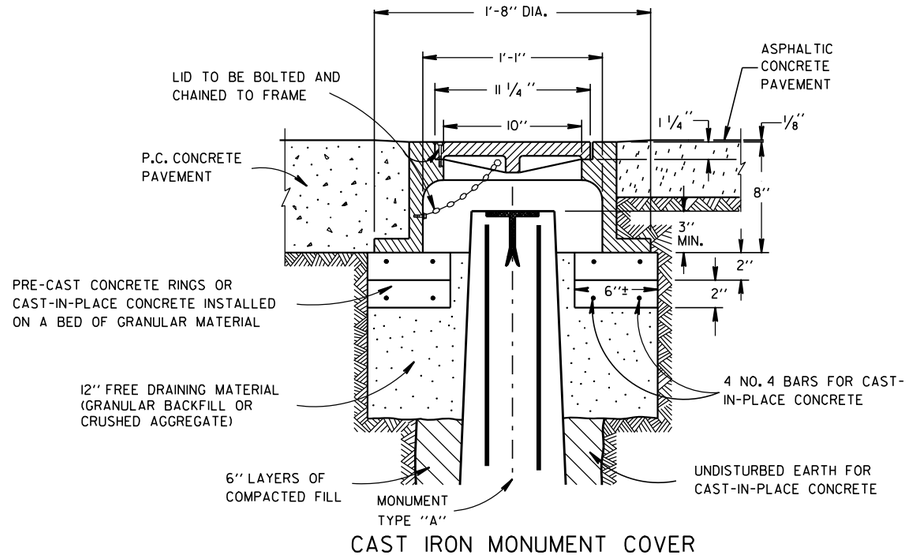
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

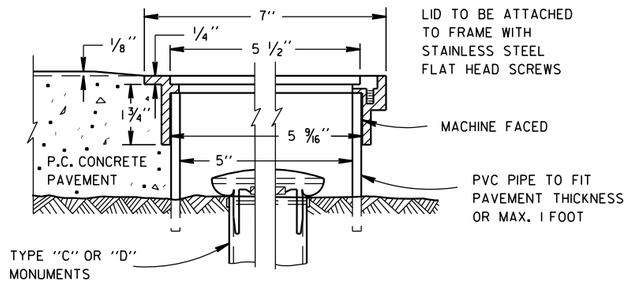


② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MOUNMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

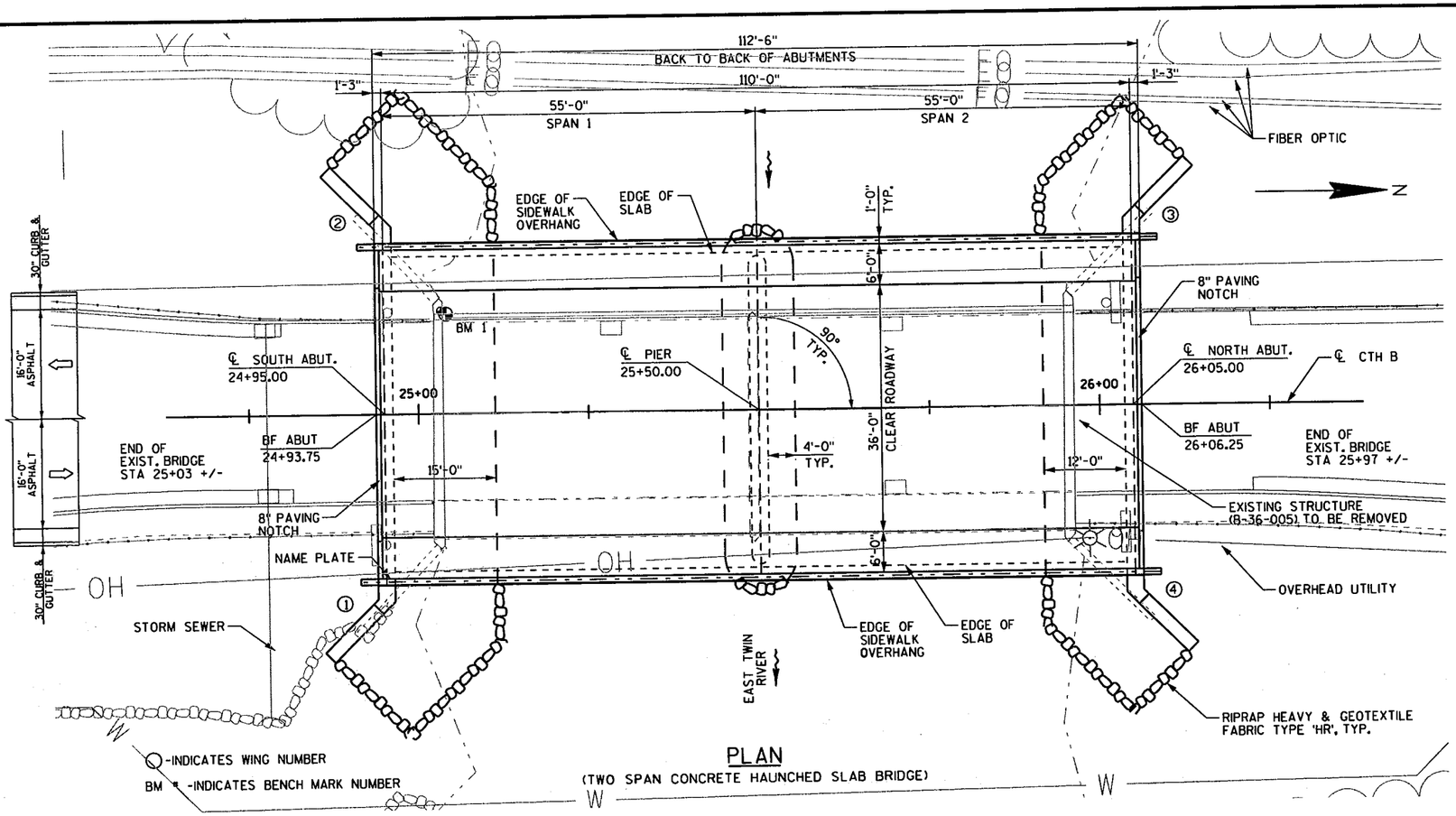
9/22/1999 DATE

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

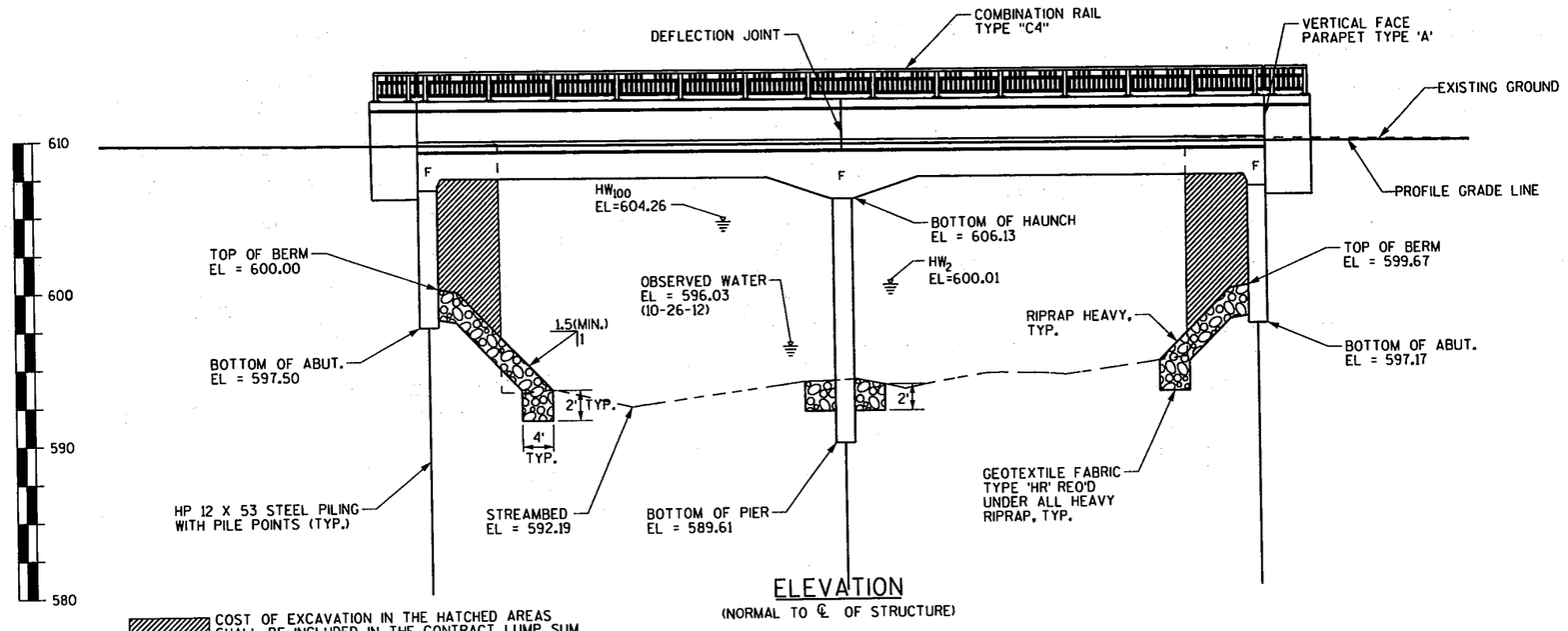
FHWA

6

S.D.D. 16 A 1-6



PLAN
(TWO SPAN CONCRETE HAUNCHED SLAB BRIDGE)



ELEVATION
(NORMAL TO ℄ OF STRUCTURE)

COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES (B-36-318)"

STATE PROJECT NUMBER
4332-05-71

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
608-266-8489

CONSULTANT CONTACT
PHIL ENGLEBERT
920-208-0296

DESIGN DATA

LIVE LOAD:
- DESIGN LOADING: HL-93
- INVENTORY RATING FACTOR: 1.07
- OPERATING RATING FACTOR: 1.39
- WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) = 250 KIPS
- STRUCTURE IS DESIGNED FOR 20#/SQ FT FUTURE WEARING SURFACE

ULTIMATE DESIGN STRESSES:
- CONCRETE MASONRY SLAB — f'c = 4,000 psi
- CONCRETE MASONRY ALL OTHER — f'c = 3,500 psi
- HIGH STRENGTH BAR STEEL REINFORCEMENT — fy = 60,000 psi

TRAFFIC VOLUME
- A.A.D.T. = 3650 (2014)
- A.A.D.T. = 4000 (2034)
- DESIGN SPEED = 40 MPH

HYDRAULIC DATA
- DRAINAGE AREA = 104 SQ. MILES
- WATERWAY AREA = 923 SQ. FEET
- Q_{100} = 5600 CFS
- VELOCITY = 6.07 FPS
- HIGH WATER$_{100}$ = EL. 604.26
- RDWY OVERTOPPING = N/A
- SCOUR CRITICAL CODE = 5
- Q_2 = 2400 CFS
- HIGH WATER$_2$ = EL. 600.01

WISCONSIN
PHILIP J. ENGLEBERT
E-16118
SHEBOYGAN, WIS.
PROFESSIONAL ENGINEER
2/16/15

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 12 X 53 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS † PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 45' LONG.

PIER TO BE SUPPORTED ON HP 12 X 53 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS † PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 50' 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.

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
1	25+04, LT	CHISELED □ WEST CORNER OF SOUTH ABUTMENT	609.54

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

LIST OF DRAWINGS

NO.	DATE	REVISION	BY

DONOHUE & ASSOCIATES

ACCEPTED William C. Drehen KAR 02/16/15
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-36-318

CTH B OVER EAST TWIN RIVER

COUNTY	~~TOWN/CITY~~/VILLAGE
MANITOWOC	MISHICOT

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DJN	DESIGN CK'D.	PJE	DRAWN BY	DJN	PLANS CK'D.	PJE

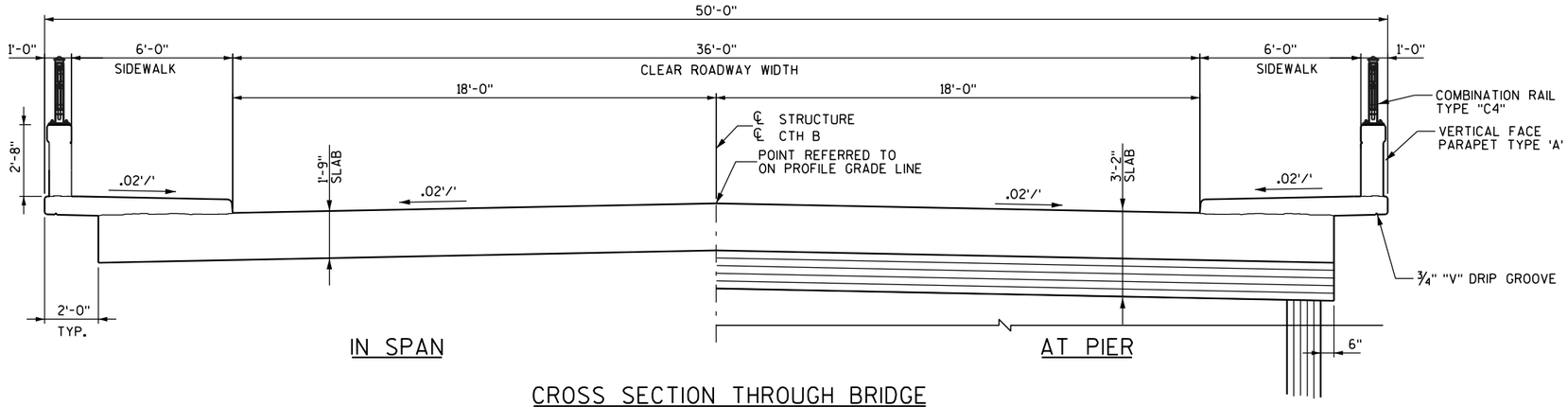
GENERAL PLAN

SHEET 1 OF 14

33

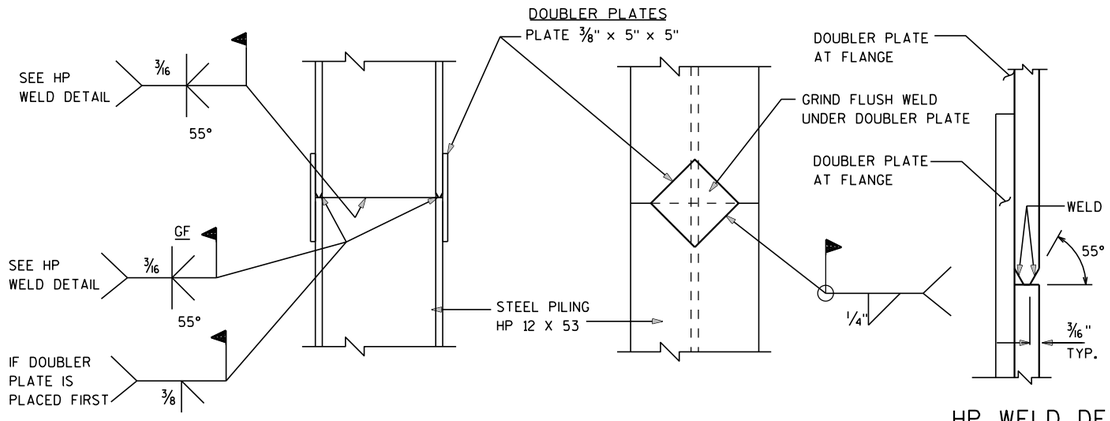
8

8



CROSS SECTION THROUGH BRIDGE

(LOOKING NORTH)



STEEL 'HP' SHAPES

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

TOTAL ESTIMATED QUANTITIES

BID ITEMS	BID ITEMS	UNIT	SOUTH ABUT.	PIER	NORTH ABUT.	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY, MINIMAL DEBRIS, STA 25+50	LS					1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-36-318)	LS					1
210.0100	BACKFILL STRUCTURE	CY	420		420		840
502.0100	CONCRETE MASONRY BRIDGES	CY	71	69	71	430	641
502.3200	PROTECTIVE SURFACE TREATMENT	SY				746	746
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	4041	3310	4041		11392
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	2002	90	2002	84720	88814
513.7020	RAILING STEEL TYPE C4 GALVANIZED (B-36-318)	LS					1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	18		18		36
550.0500	PILE POINTS	EACH	9	13	9		31
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	423	819	423		1665
606.0300	RIPRAP HEAVY	CY	117	31	94		242
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	80		80		160
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	189	57	156		402
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	36		30		66
	NON-BID ITEMS						
	PREFORMED JOINT FILLER	SIZE					½",¾"

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.

ALL VOIDS BETWEEN HEAVY RIPRAP SHALL BE "FILLED" USING "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR" ABOVE THE ORDINARY HIGH WATER MARK EL. 596.0.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

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

THE FINISHED GRADED SECTION SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

THE LOWER LIMITS OF EXCAVATION FOR STRUCTURES FOR THE ABUTMENTS SHALL BE THE BOTTOM OF THE SLOPE PROTECTION.

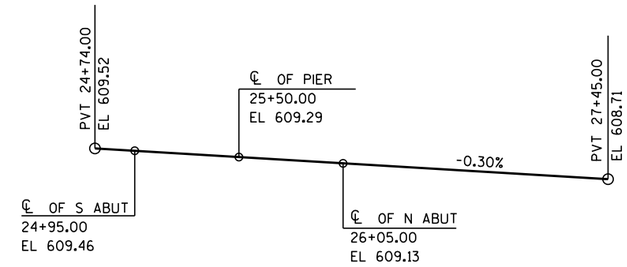
AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND SIDES OF THE DECK AND 1'-0" UNDER DECK AT EDGES.

THIS BRIDGE WILL REPLACE B-36-005, A TWO SPAN STEEL GIRDER AND CONCRETE DECK BRIDGE WITH TOTAL LENGTH OF 91.5' BETWEEN INSIDE FACE OF ABUTMENTS AND CLEAR ROADWAY WIDTH OF 26.3'.

AREA OCCUPIED BY THE PIER AND FORMWORK SHALL BE OVER-EXCAVATED A MINIMUM OF 2' BELOW THE BOTTOM OF THE PIER ELEVATION. FILL WITH CLEAN STONE APPROXIMATELY 6" BELOW CONCRETE GRADE. COST WILL BE INCLUDED IN EXCAVATION OF STRUCTURES.



PROFILE GRADE LINE

(CTH B)

STATE PROJECT NUMBER

4332-05-71

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-36-318

DRAWN BY DJN | PLANS CK'D. PJE

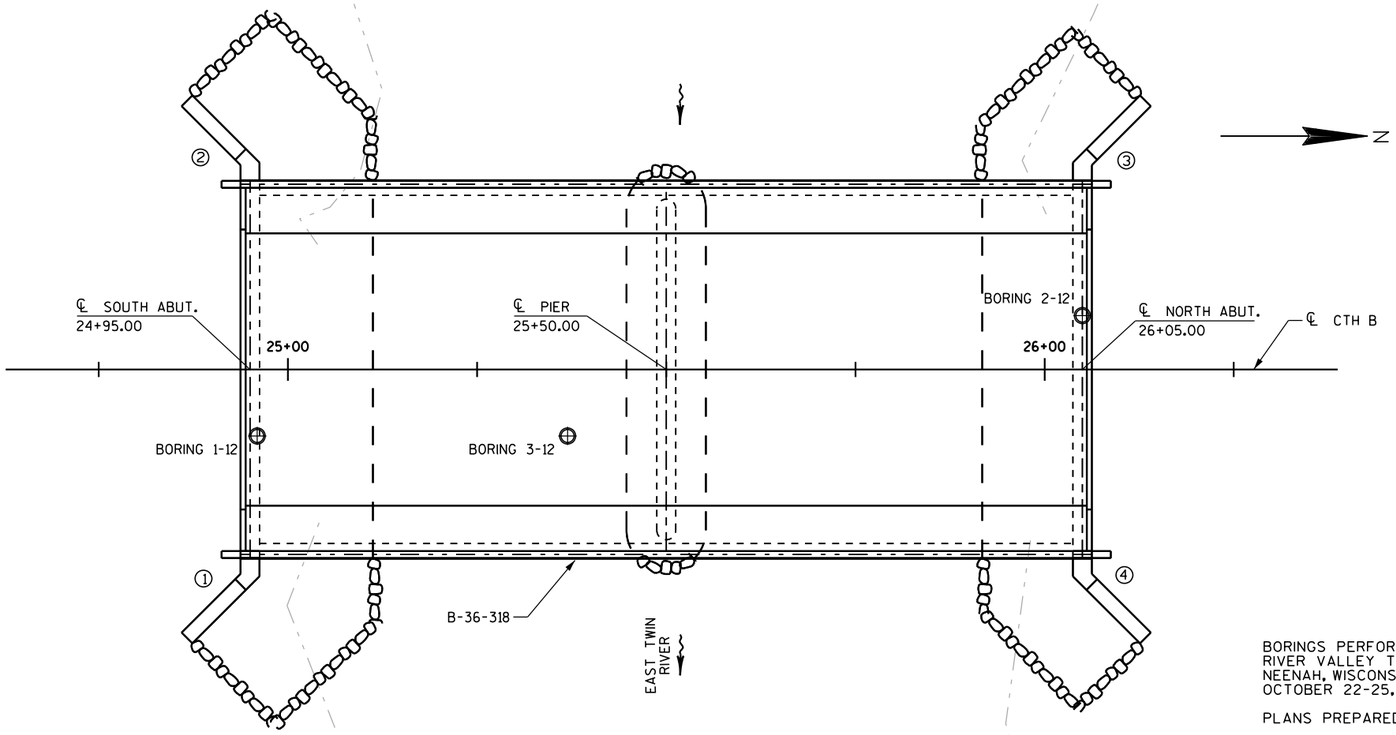
SECTION, NOTES & QUANTITIES

SHEET 2 OF 14

34

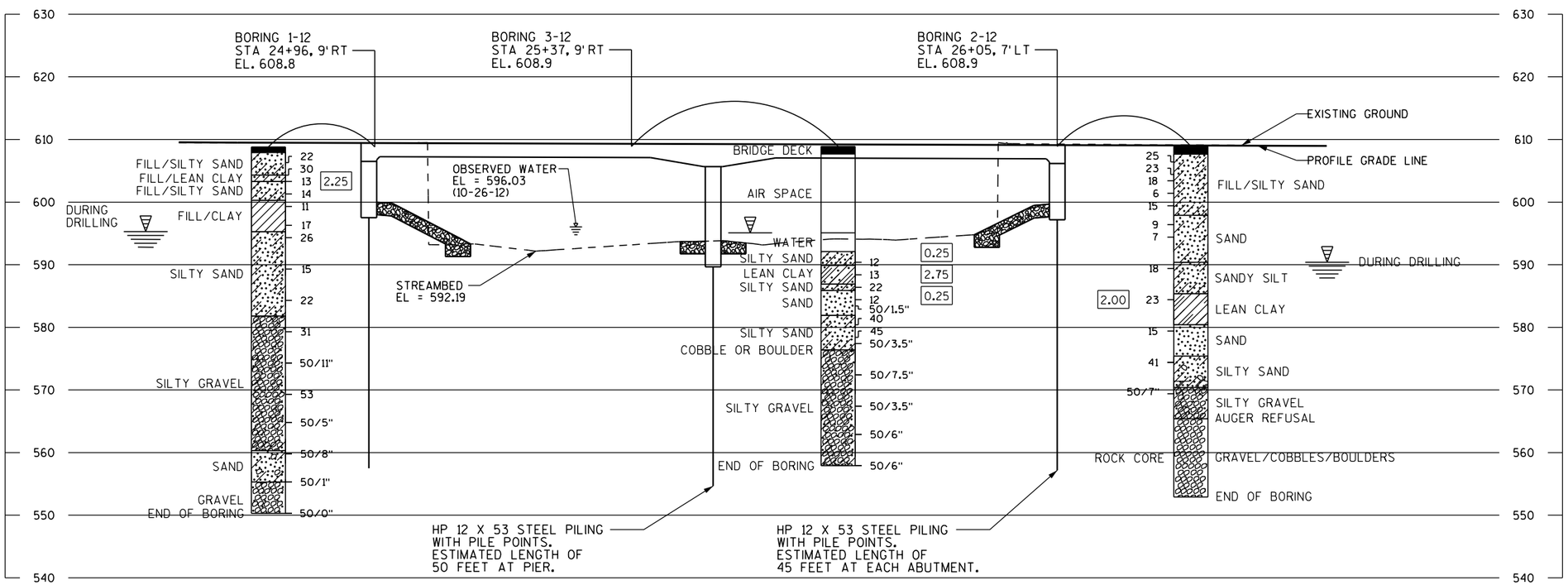
8

8



BORINGS PERFORMED BY:
RIVER VALLEY TESTING CORP.
NEENAH, WISCONSIN
OCTOBER 22-25, 2012

PLANS PREPARED BY DONOHUE & ASSOCIATES, INC.



STATE PROJECT NUMBER

4332-05-71

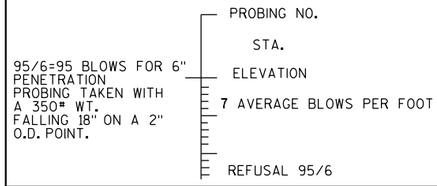
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

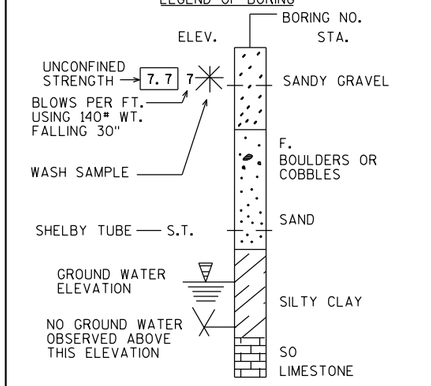
TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



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

LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-36-318

DRAWN BY DJN | PLANS CK'D. PJE

SUBSURFACE EXPLORATION

SHEET 3 OF 14

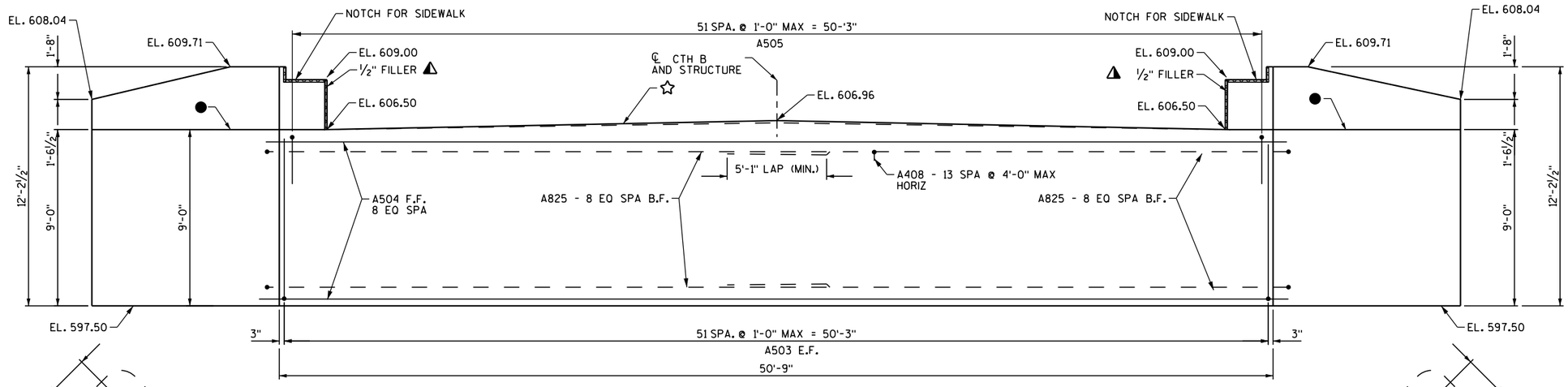
35

8

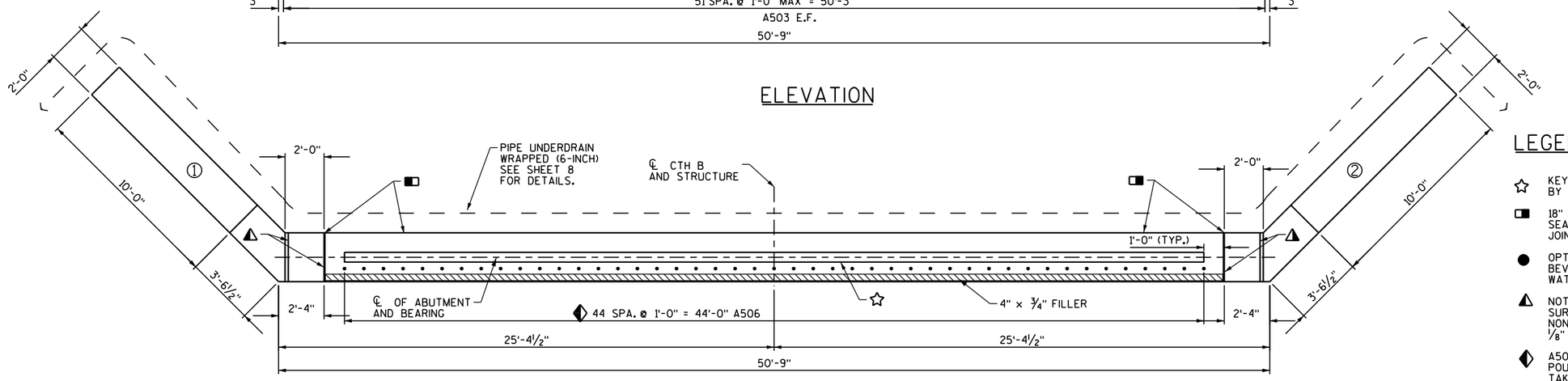
8

FILE NAME : L:\Projects\12320\Dwg\B-36-318\08_03subsurface.DGN PLOT DATE : 10/08/14 PLOT TIME : 8:10:23 AM PLOT BY : kgahagan

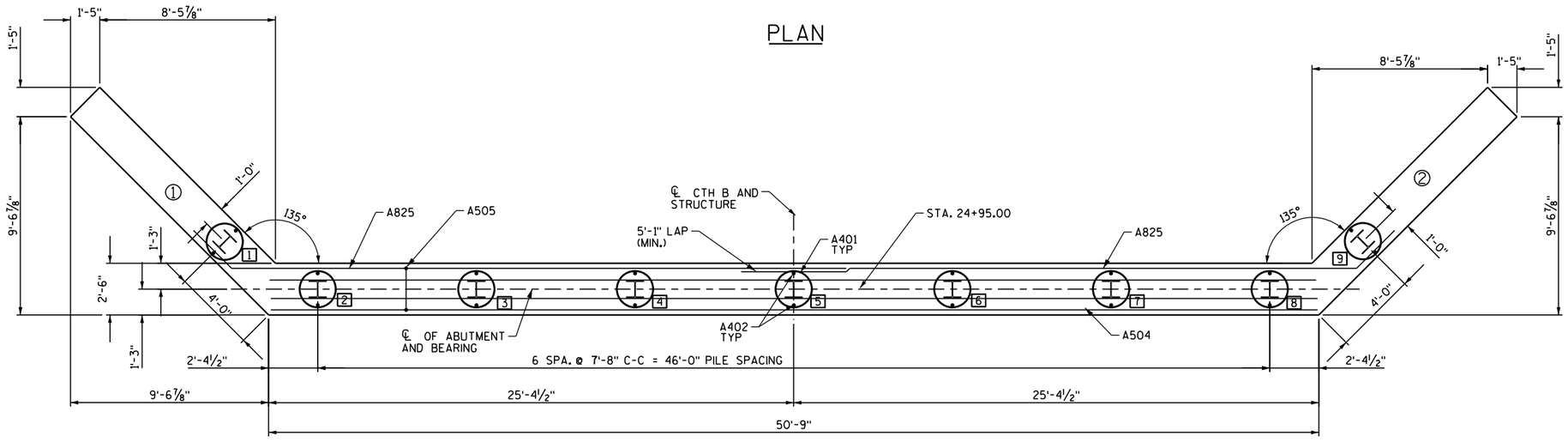
STATE PROJECT NUMBER
4332-05-71



ELEVATION



PLAN



PILE PLAN

LEGEND

- ☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".
- ◘ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◭ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- ◆ A506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".

FOR PILE SPLICE DETAIL SEE SHEET 2

B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-318

DRAWN BY DJN | PLANS CK'D. PJE

SOUTH ABUTMENT

SHEET 4 OF 14

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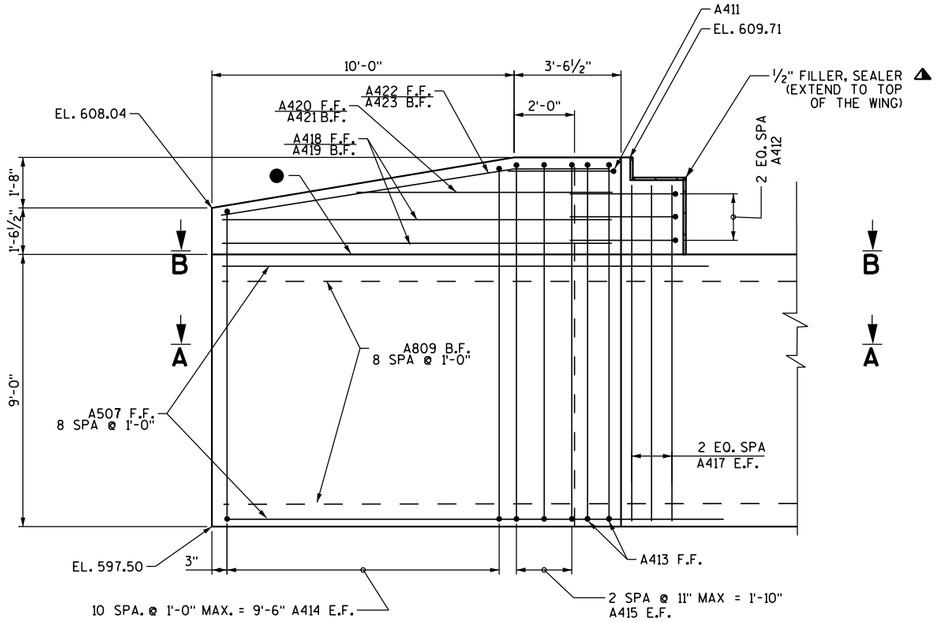
STATE PROJECT NUMBER

4332-05-71



ELEVATION - WING 1

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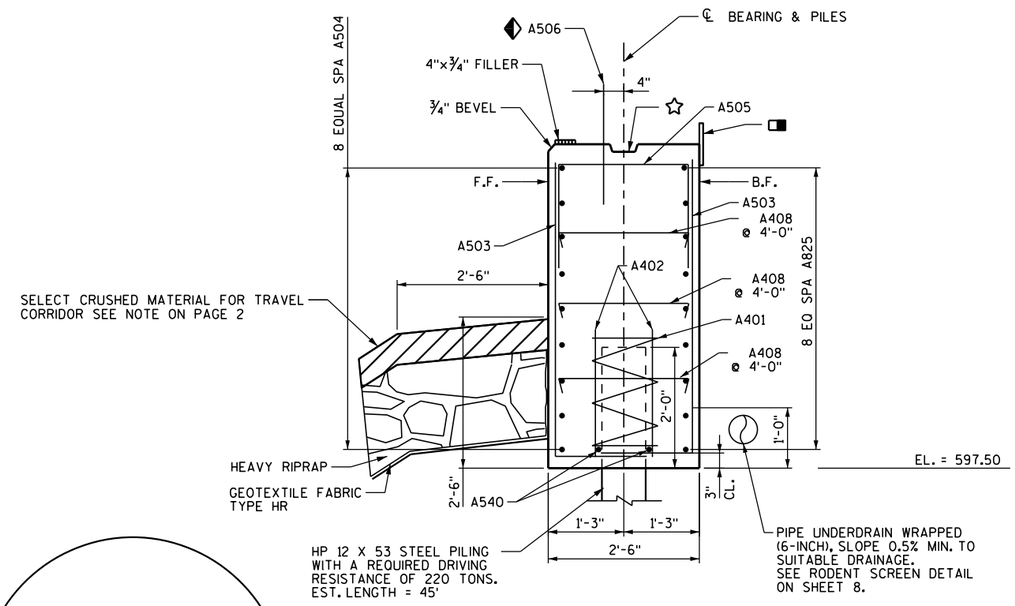
(WING 2 SIMILAR)



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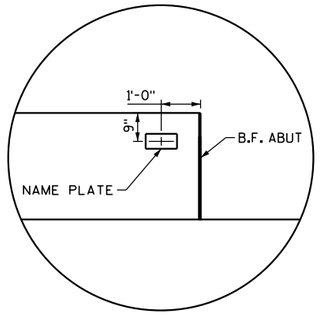
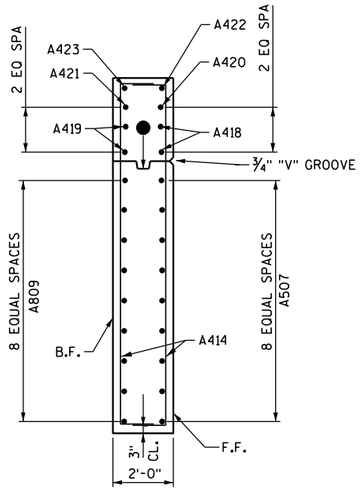


NAME PLATE LOCATION

(WING 1 ONLY)



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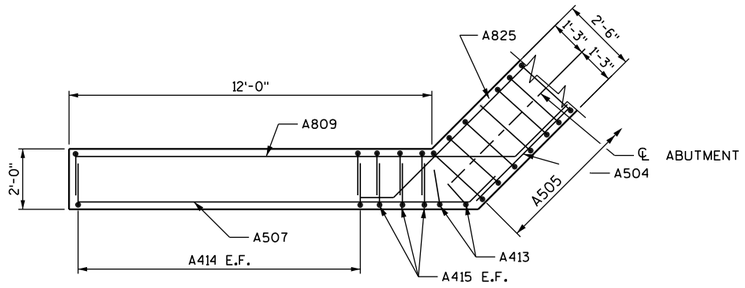
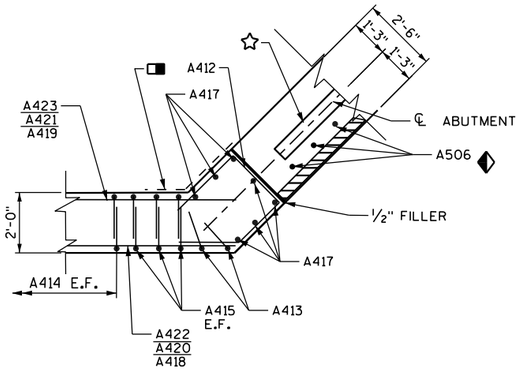


SECTION A



SECTION B

LEGEND

- ● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◨ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ▲ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- ◆ A506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- ☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-318

DRAWN BY DJN | PLANS CK'D. PJE

SOUTH ABUTMENT WINGS 1 & 2

SHEET 5 OF 14

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8

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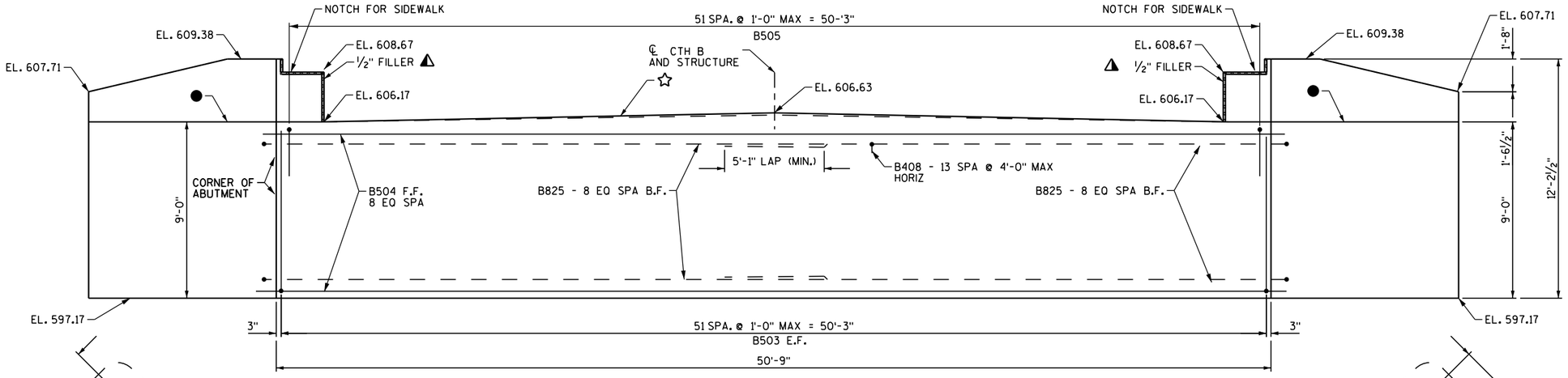
STATE PROJECT NUMBER

4332-05-71



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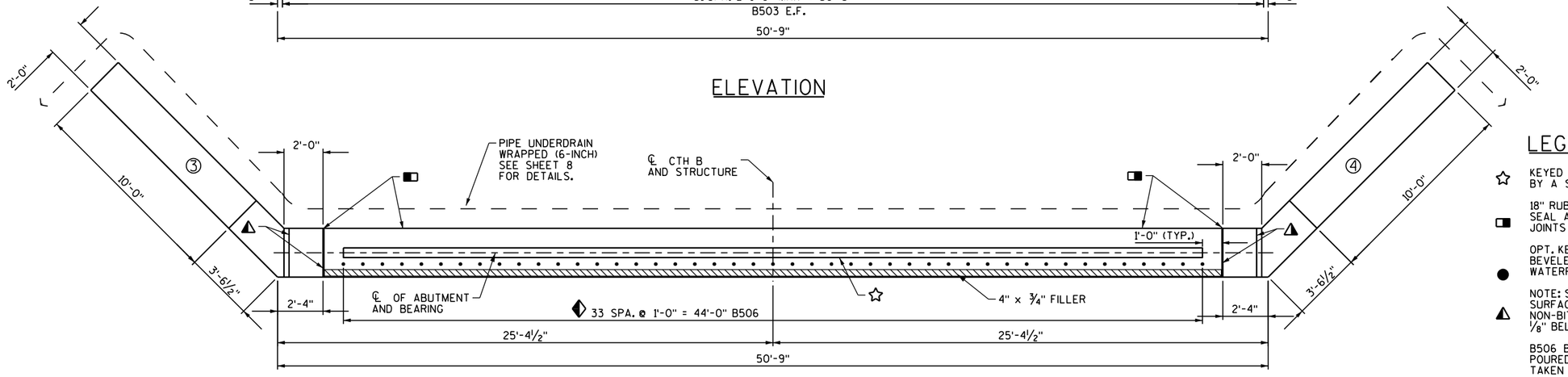
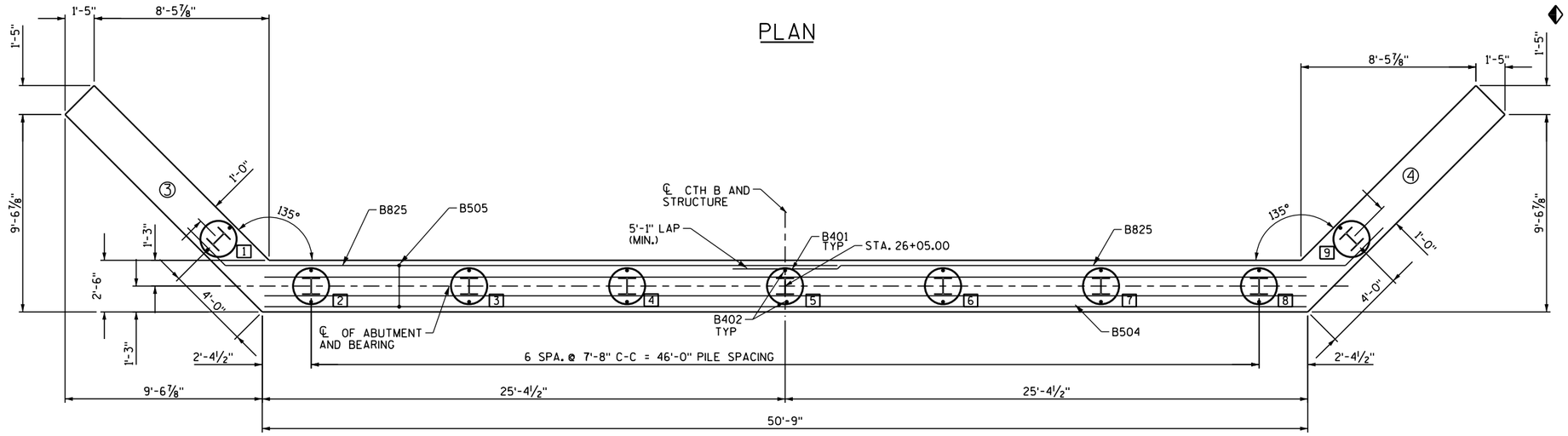


PLAN



PILE PLAN

LEGEND

☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

▬ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

▲ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

B506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".

◆ FOR PILE SPLICE DETAIL SEE SHEET 2

B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-318

DRAWN BY DJN | PLANS CK'D. PJE

NORTH ABUTMENT

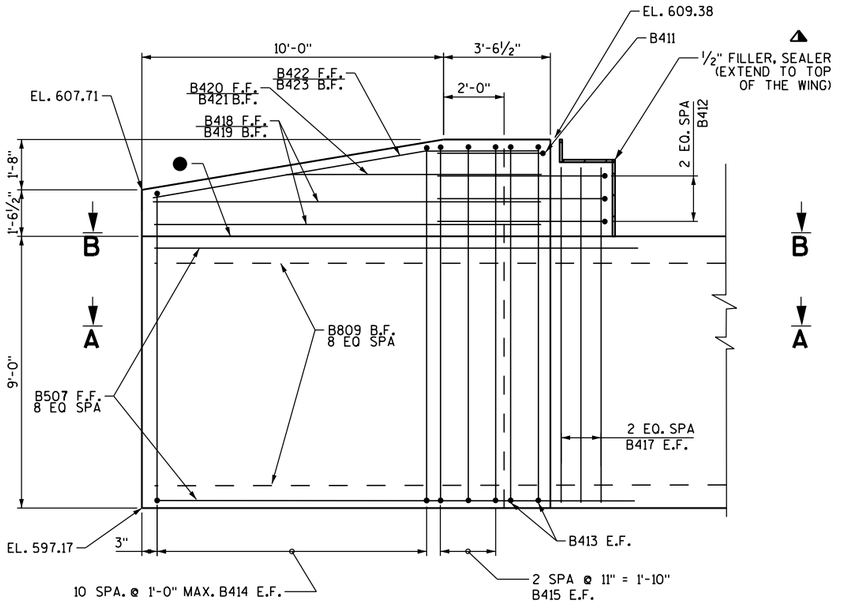
SHEET 6 OF 14

38

8

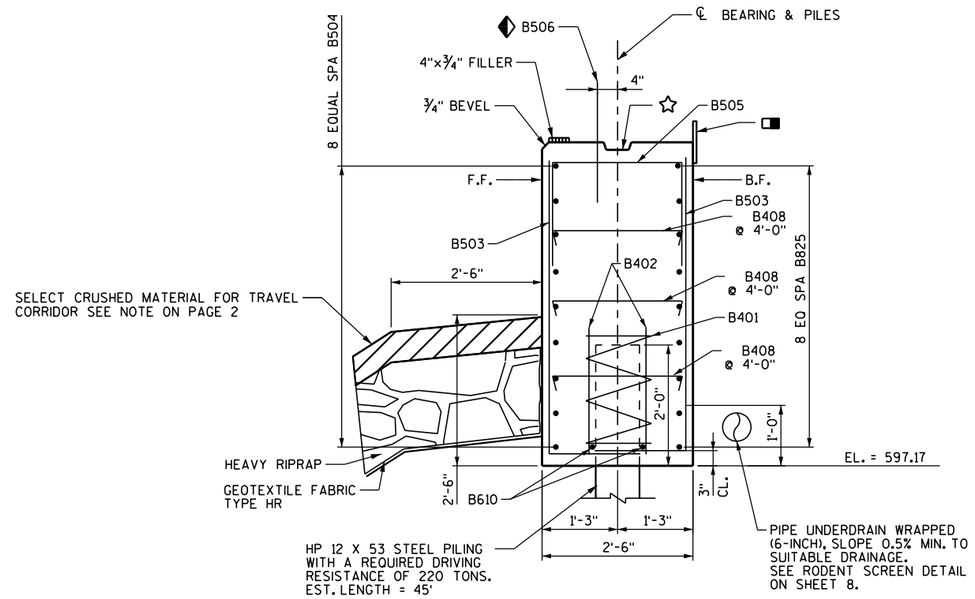
8

STATE PROJECT NUMBER
4332-05-71

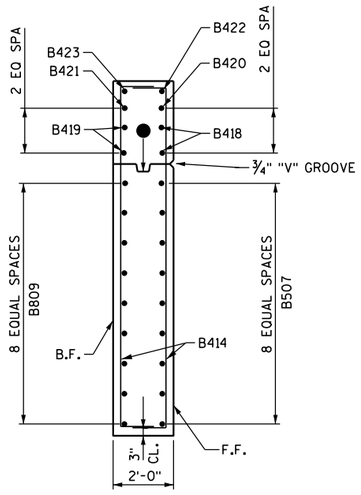


ELEVATION - WING 3

(LOOKING AT FRONT FACE)
(WING 4 SIMILAR)



SECTION THRU ABUT BODY



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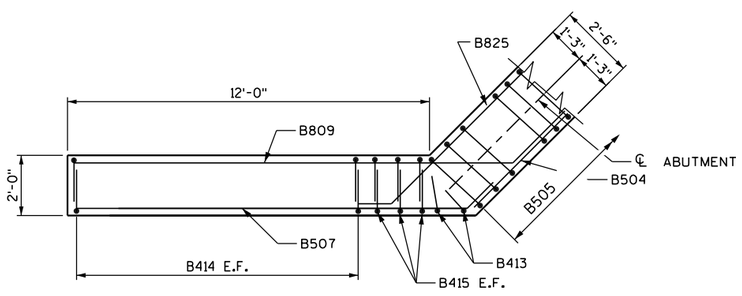
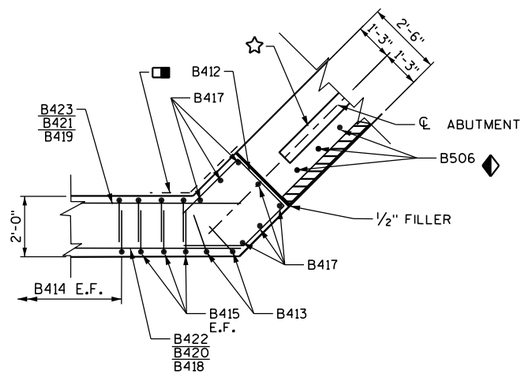


SECTION A



SECTION B

LEGEND

- ● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◨ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ◭ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)
- ◆ B506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- ☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-318

DRAWN BY DJN | PLANS CK'D. PJE

NORTH ABUTMENT WINGS 3 & 4

SHEET 7 OF 14

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8

8

STATE PROJECT NUMBER

4332-05-71

BILL OF BARS - SOUTH ABUTMENT

COATED: 2002 LBS
UNCOATED: 4041 LBS

BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
A401		9	60'-0"		X	BODY @ PILES
A402		18	5'-3"			BODY @ PILES
A503		104	10'-2"		X	BODY VERT.
A504		11	50'-8"			BODY HORIZ. F.F.
A505		52	8'-2"		X	BODY TIES
A506	X	45	2'-0"			BODY DOWELS
A507	X	18	14'-10"		X	WING 1 & 2 HORIZ. F.F.
A809	X	18	16'-0"		X	WING 1 & 2 HORIZ. B.F.
A411	X	2	7'-5"		X	WING 1 & 2 HORIZ. B.F.
A412	X	6	13'-8"		X	WING 1 & 2 HORIZ.
A413	X	4	14'-9"		X	WING 1 & 2 VERT.
A414	X	44	13'-11"	(X)	X	WING 1 & 2 VERT. E.F.
A415	X	12	14'-9"		X	WING 1 & 2 VERT. E.F.
A417	X	14	11'-1"			WING 1 & 2 VERT. E.F.
A418	X	4	13'-0"			WING 1 & 2 HORIZ. F.F.
A419	X	4	13'-0"		X	WING 1 & 2 HORIZ. B.F.
A420	X	2	8'-0"			WING 1 & 2 HORIZ. F.F.
A421	X	2	8'-0"			WING 1 & 2 HORIZ. B.F.
A422	X	2	13'-0"		X	WING 1 & 2 DIAG. F.F.
A423	X	2	13'-0"		X	WING 1 & 2 DIAG. B.F.
A825		18	31'-0"		X	BODY HORIZ. B.F.

BILL OF BARS - NORTH ABUTMENT

COATED: 2002 LBS
UNCOATED: 4041 LBS

BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
B401		9	60'-0"		X	BODY @ PILES
B402		18	5'-3"			BODY @ PILES
B503		104	10'-2"		X	BODY VERT.
B504		11	50'-8"			BODY HORIZ. F.F.
B505		52	8'-2"		X	BODY TIES
B506	X	45	2'-0"			BODY DOWELS
B507	X	18	14'-10"		X	WING 1 & 2 HORIZ. F.F.
B809	X	18	16'-0"		X	WING 1 & 2 HORIZ. B.F.
B411	X	2	7'-5"		X	WING 1 & 2 HORIZ. B.F.
B412	X	6	13'-8"		X	WING 1 & 2 HORIZ.
B413	X	4	14'-9"	(X)	X	WING 1 & 2 VERT.
B414	X	44	13'-11"		X	WING 1 & 2 VERT. E.F.
B415	X	12	14'-9"		X	WING 1 & 2 VERT. E.F.
B417	X	14	11'-1"			WING 1 & 2 VERT. E.F.
B418	X	4	13'-0"			WING 1 & 2 HORIZ. F.F.
B419	X	4	13'-0"		X	WING 1 & 2 HORIZ. B.F.
B420	X	2	8'-0"			WING 1 & 2 HORIZ. F.F.
B421	X	2	8'-0"			WING 1 & 2 HORIZ. B.F.
B422	X	2	13'-0"		X	WING 1 & 2 DIAG. F.F.
B423	X	2	13'-0"		X	WING 1 & 2 DIAG. B.F.
B825		18	31'-0"		X	BODY HORIZ. B.F.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

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

KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.

OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

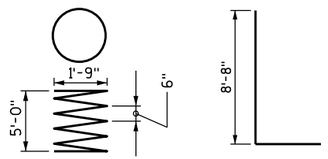
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

A506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".

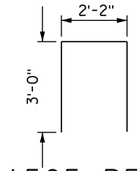
FOR PILE SPLICE DETAIL SEE SHEET 2

B.F. DENOTES BACK FACE

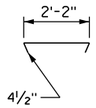
F.F. DENOTES FRONT FACE



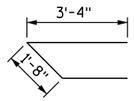
A401, B401 A503, B503



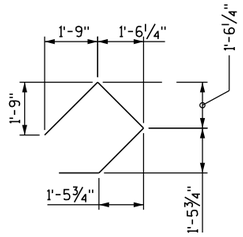
A505, B505



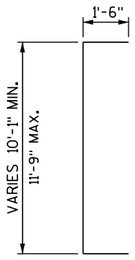
A408



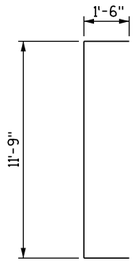
A411, B411



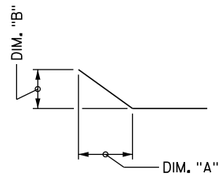
A412, B412



A414, B414

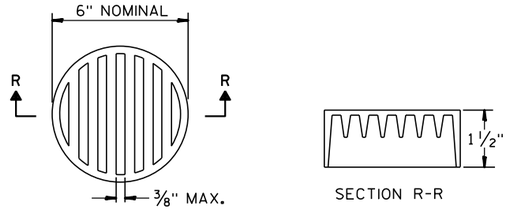


A413, B413
A415, B415



BAR MARK	DIM. "A"	DIM. "B"
A/B507	1' - 0¾"	1' - 0¾"
A/B809	1' - 0¾"	1' - 0¾"
A/B422	9' - 9"	1' - 8"
A/B423	9' - 9"	1' - 8"
A/B825	1' - 10"	1' - 10"

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 OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS. ORIENT SHIELD SO SLOTS ARE VERTICAL.



RODENT SCREEN

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A/B414	4 SERIES OF 11	10'-2" TO 11'-10"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-318

DRAWN BY DJN | PLANS CK'D. PJE

ABUTMENT
BILL OF BARS

SHEET 8 OF 14

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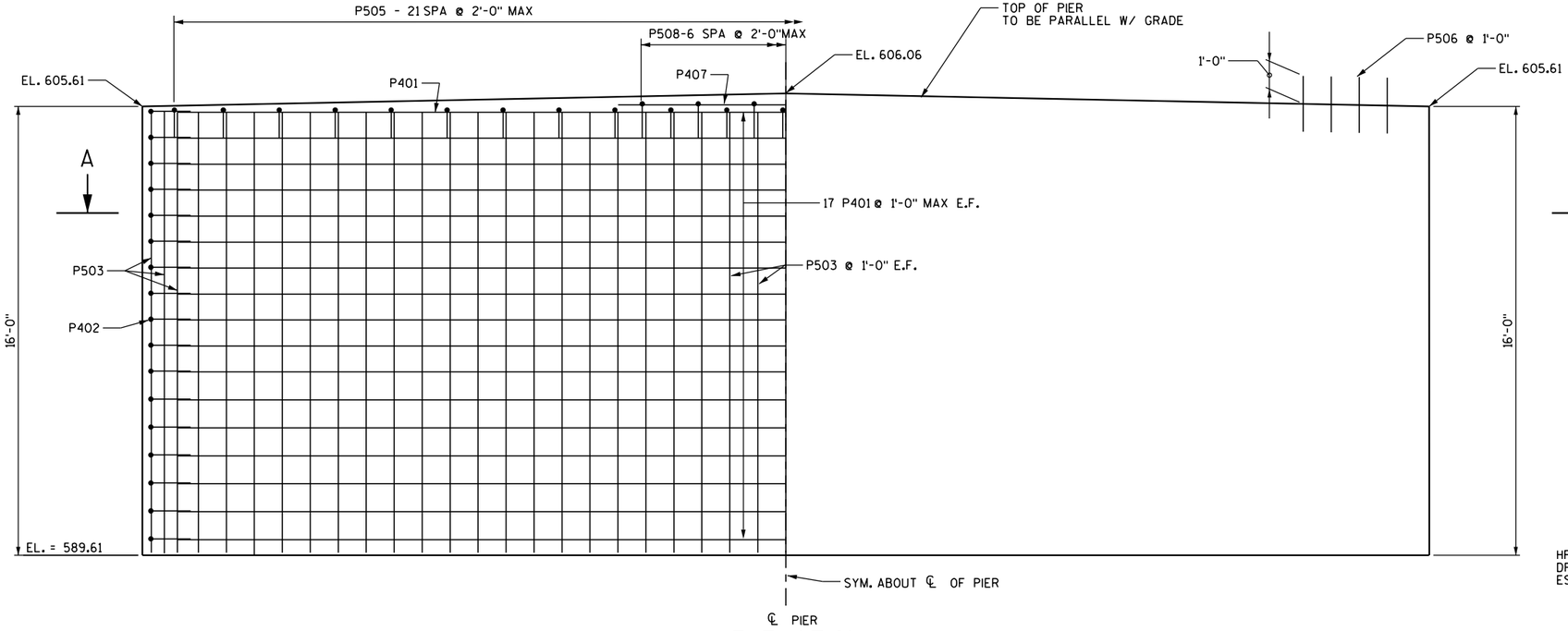
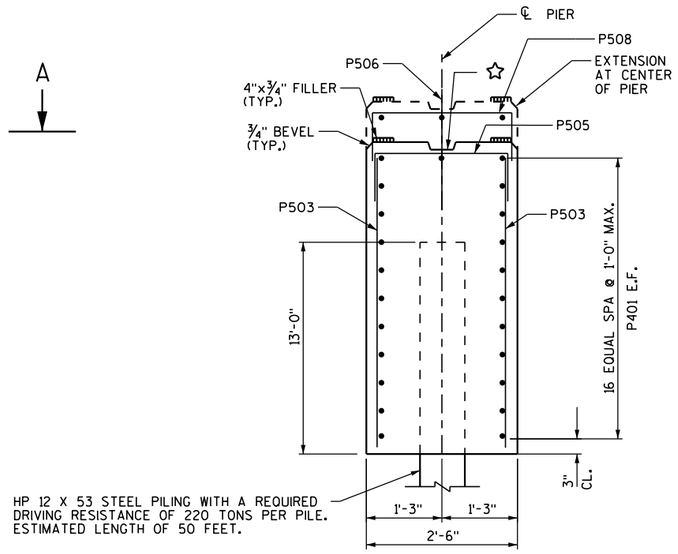
STATE PROJECT NUMBER

4332-05-71

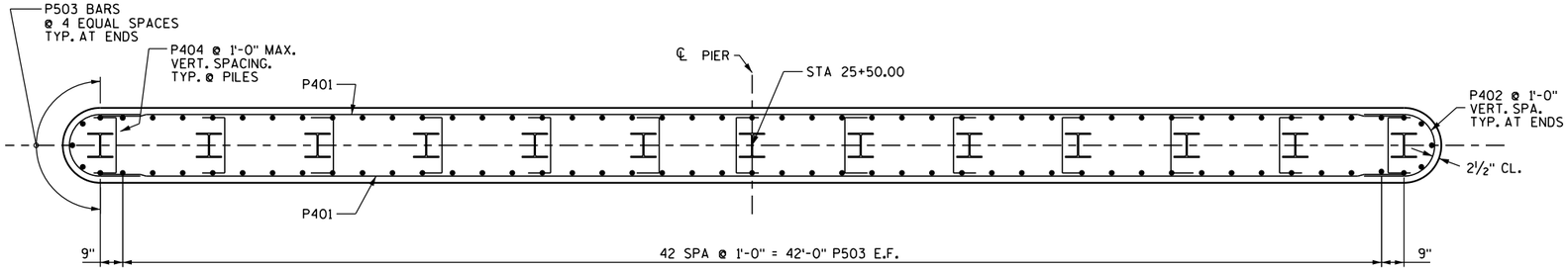


ELEVATION

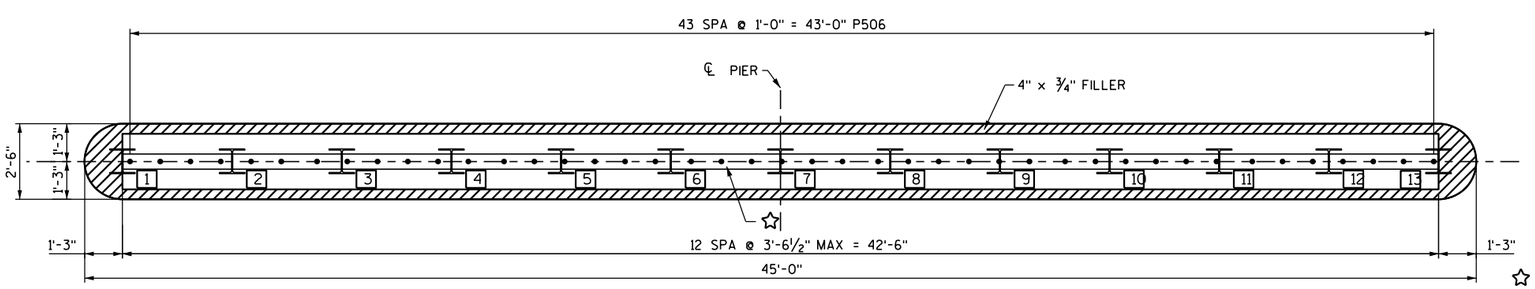
(LOOKING NORTH, PILING NOT SHOWN)
(ELEVATIONS AT ℄ OF PIER)



END VIEW



SECTION A

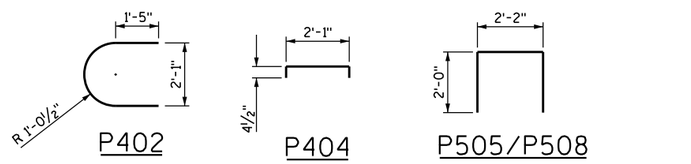


PILE PLAN

BILL OF BARS

COATED: 90 LBS
UNCOATED: 3310 LBS

BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
P401		35	42'-6"			BODY HORIZONTAL
P402		35	6'-1"		X	BODY HORIZONTAL ENDS
P503		96	15'-8"			BODY VERTICAL
P404		221	2'-8"		X	BODY TIES
P505		22	6'-0"		X	BODY TOP
P506	X	44	2'-0"			BODY VERTICAL DOWELS
P407		3	13'-0"			BODY HORIZONTAL TOP
P508		7	6'-0"		X	BODY TOP



LEGEND

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ¾" FILLER WITH NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

KEYED CONST. JOINT FORMED BY BEVELED 2" x 6".

☆ P506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".

FOR PILE SPLICE DETAIL SEE SHEET 2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-318

DRAWN BY DJN | PLANS CK'D. PJE

PIER DETAILS

SHEET 9 OF 14

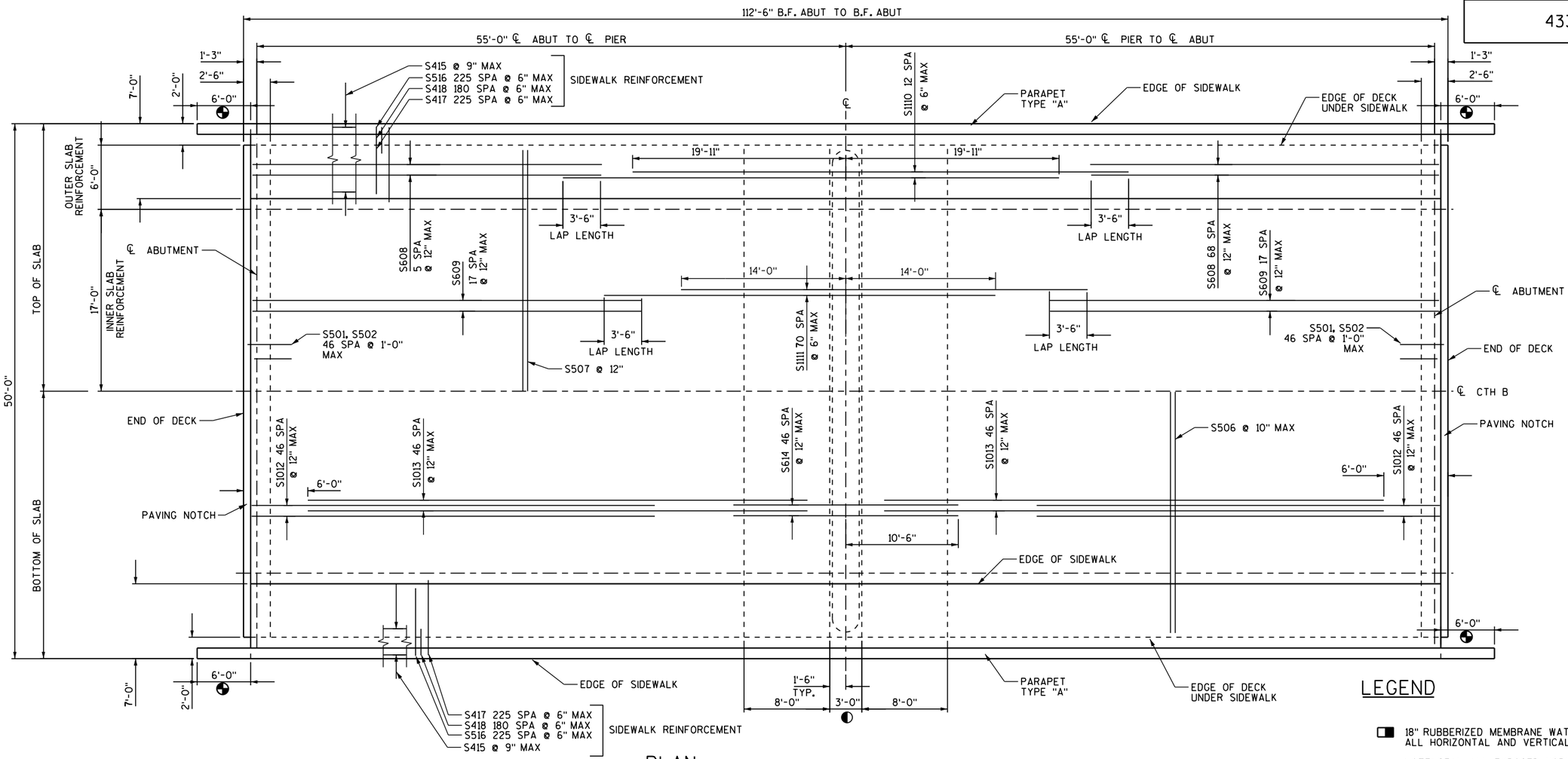
41

8

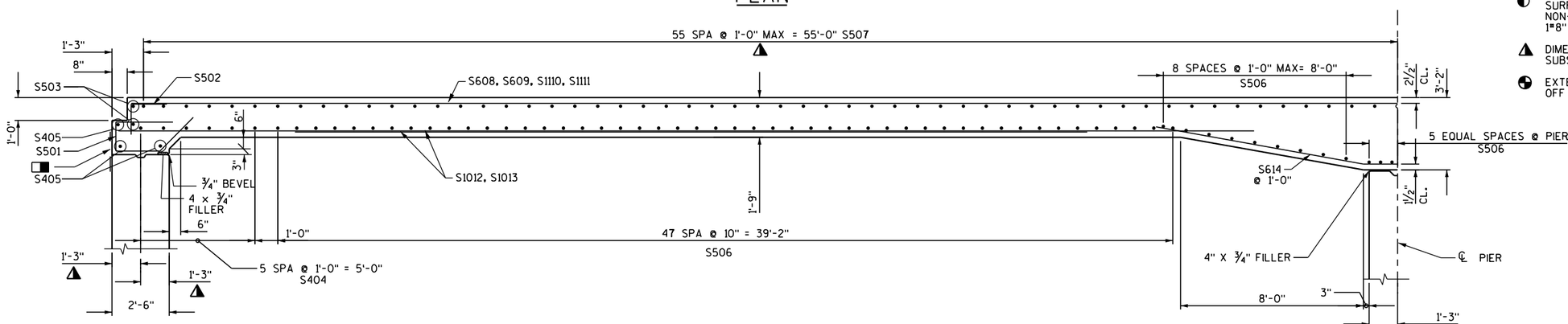
8

STATE PROJECT NUMBER

4332-05-71



PLAN



PARTIAL LONGITUDINAL SECTION

LEGEND

- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1"2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1"8" BELOW SURFACE OF CONCRETE.)
- DIMENSIONS MEASURED NORMAL TO ℄ OF SUBSTRUCTURE
- EXTEND PARAPET TYPE "A" AND TYPE C4 RAILING 6'-0" OFF SUPER STRUCTURE.

NO.	DATE	REVISION	BY

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STRUCTURE B-36-318

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SUPERSTRUCTURE

SHEET 10 OF 14

42

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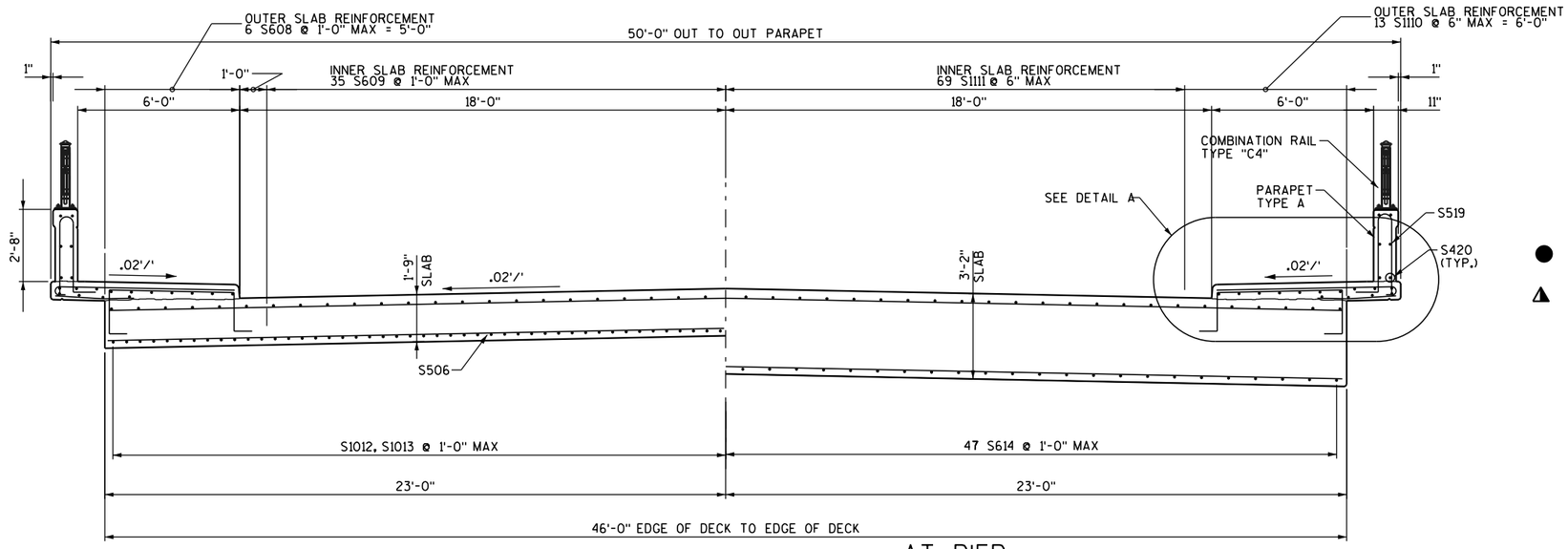


IN SPAN AT PIER

CROSS SECTION THRU ROADWAY

NOTES

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

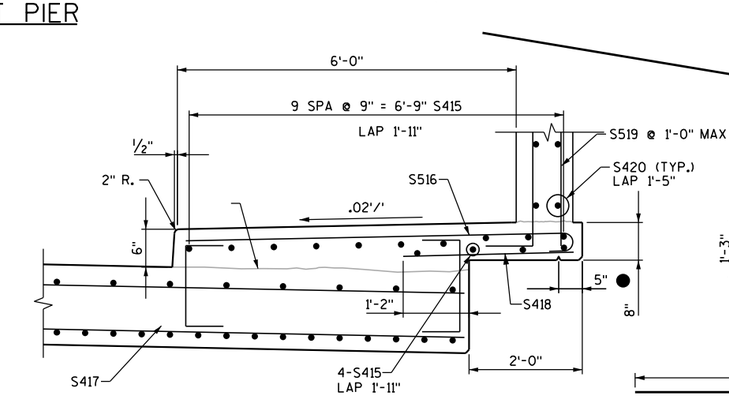
● ¾" CONTINUOUS DRIP GROOVE TO END 2'-0" AWAY FROM FACE OF ABUTMENT.

▲ SLAB UNDER SIDEWALK TO BE LEVEL.

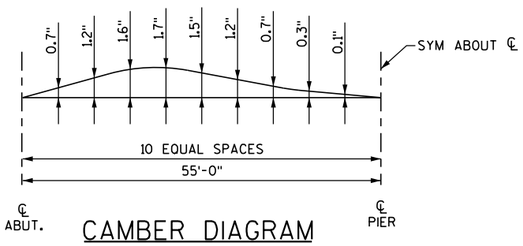
BILL OF BARS

COATED: 84720 LBS
UNCOATED: 0 LBS

BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
S501	X	94	7'-9"		X	AT ABUTMENT
S502	X	94	4'-7"		X	AT ABUTMENT
S503	X	4	45'-8"			AT ABUTMENT
S404	X	12	45'-8"			SLAB AT ABUTMENT
S405	X	6	45'-8"			AT ABUTMENT
S506	X	120	45'-8"			TRANSVERSE BOTTOM
S507	X	112	45'-8"			TRANSVERSE TOP
S608	X	24	32'-6"			LONGITUDINAL TOP OUTER SLAB
S609	X	70	35'-0"			LONGITUDINAL TOP INNER SLAB
S1110	X	26	46'-4"			LONGITUDINAL TOP OUTER SLAB
S1111	X	69	38'-0"			LONGITUDINAL TOP INNER SLAB
S1012	X	94	37'-8"			LONGITUDINAL BOTTOM
S1013	X	94	44'-6"			LONGITUDINAL BOTTOM
S614	X	47	19'-7"		X	LONGITUDINAL BOTTOM OVER PIER
S415	X	84	39'-5"			LONGITUDINAL SIDEWALK
S516	X	452	7'-6"		X	TRANSVERSE SIDEWALK
S417	X	452	3'-8"		X	TRANSVERSE SIDEWALK
S418	X	308	3'-0"		X	TRANSVERSE SIDEWALK
S519	X	226	6'-10"		X	VERT PARAPET
S420	X	48	29'-7"			LONGITUDINAL PARAPET
S421	X	24	7'-6"		X	PARAPET BASE
S422	X	40	5'-7"			LONGITUDINAL PARAPET & BASE
S423	X	16	4'-11"			PARAPET BASE
S424	X	452	3'-10"		X	TRANSVERSE SIDEWALK
S525	X	48	8'-2"		X	VERT PARAPET

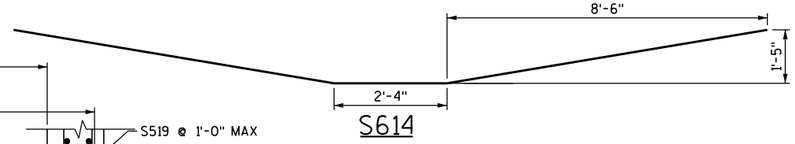


DETAIL A



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.



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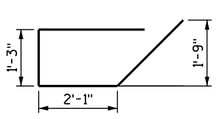

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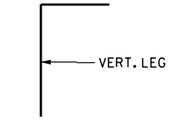

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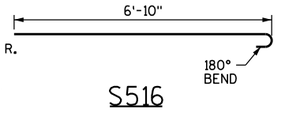
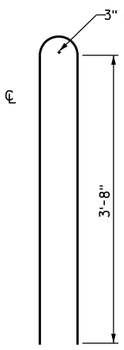


S516

S417 S424



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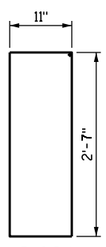

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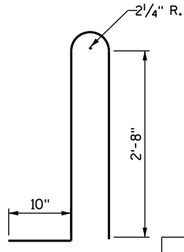

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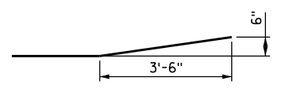

S418

TOP OF DECK ELEVATIONS

(OUT-TO-OUT OF CLEARWAY)

	℄ OF S. ABUT	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ OF PIER	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ OF N. ABUT
LT EDGE SIDEWALK	609.10	609.08	609.06	609.05	609.03	609.01	609.00	608.98	608.97	608.95	608.93	608.92	608.90	608.88	608.87	608.85	608.83	608.82	608.80	608.78	608.77
LEFT EDGE	609.10	609.08	609.06	609.05	609.03	609.01	609.00	608.98	608.97	608.95	608.93	608.92	608.90	608.88	608.87	608.85	608.83	608.82	608.80	608.78	608.77
℄	609.46	609.44	609.42	609.41	609.39	609.37	609.36	609.34	609.33	609.31	609.29	609.28	609.26	609.24	609.23	609.21	609.19	609.18	609.16	609.14	609.13
RIGHT EDGE	609.10	609.08	609.06	609.05	609.03	609.01	609.00	608.98	608.97	608.95	608.93	608.92	608.90	608.88	608.87	608.85	608.83	608.82	608.80	608.78	608.77
RT EDGE SIDEWALK	609.10	609.08	609.06	609.05	609.03	609.01	609.00	608.98	608.97	608.95	608.93	608.92	608.90	608.88	608.87	608.85	608.83	608.82	608.80	608.78	608.77

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-318

DRAWN BY DJN | PLANS CK'D. PJE

SUPERSTRUCTURE DETAILS

SHEET 11 OF 14

43

8

8

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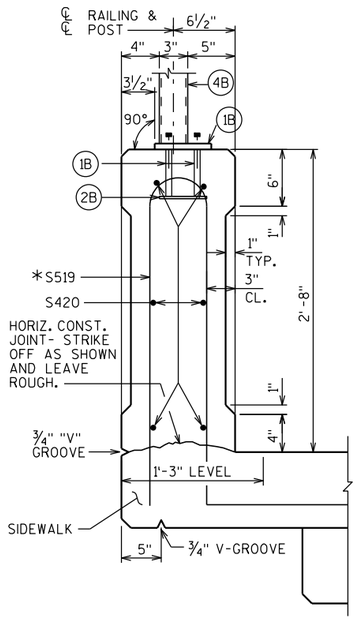
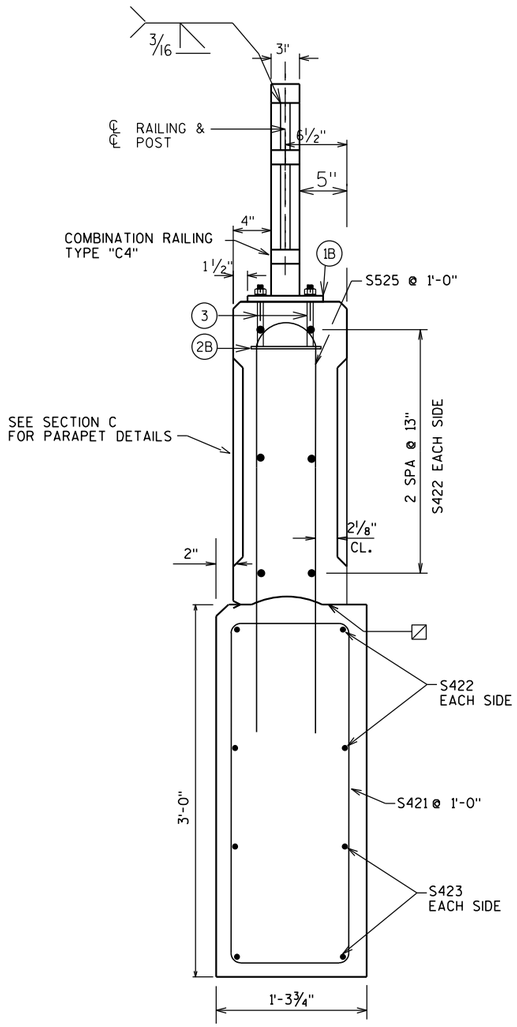
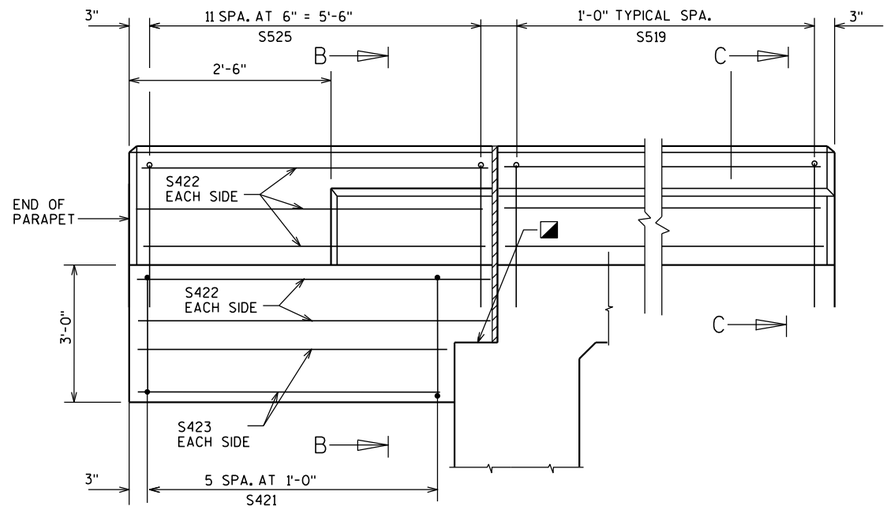


SECTION C

* ADJUST LOCATIONS OF BARS TO ALLOW PLACEMENT OF ANCHOR ASSEMBLY FOR RAILING AND BEAM GUARD.



SECTION B



VIEW SHOWING OUTSIDE FACE OF PARAPET & REINF.

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

◪ STEEL TROWEL HORIZONTAL SURFACE OF PAVING NOTCH. PLACE MULTIPLE LAYERS OF POLYETHLENE SHEETS BETWEEN PARAPET FOOTING AND HORIZONTAL SURFACE OF PAVING NOTCH. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

SEE SHEET 11 FOR PARAPET BILL OF BARS.

SEE SHEET 14 FOR NOTE LEGEND.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-318

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VERTICAL FACE PARAPET "A"

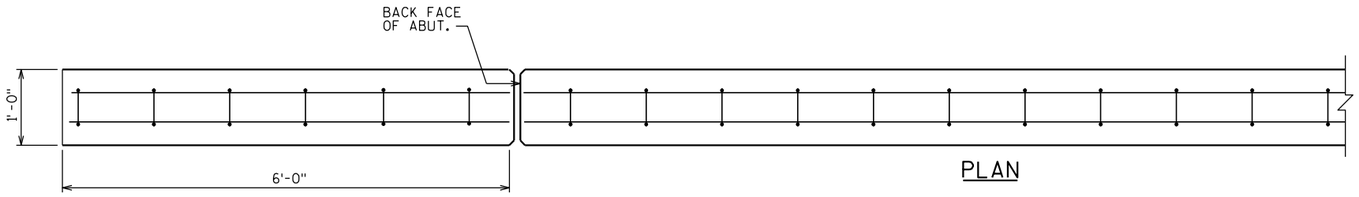
SHEET 12 OF 14
44

SCALE =

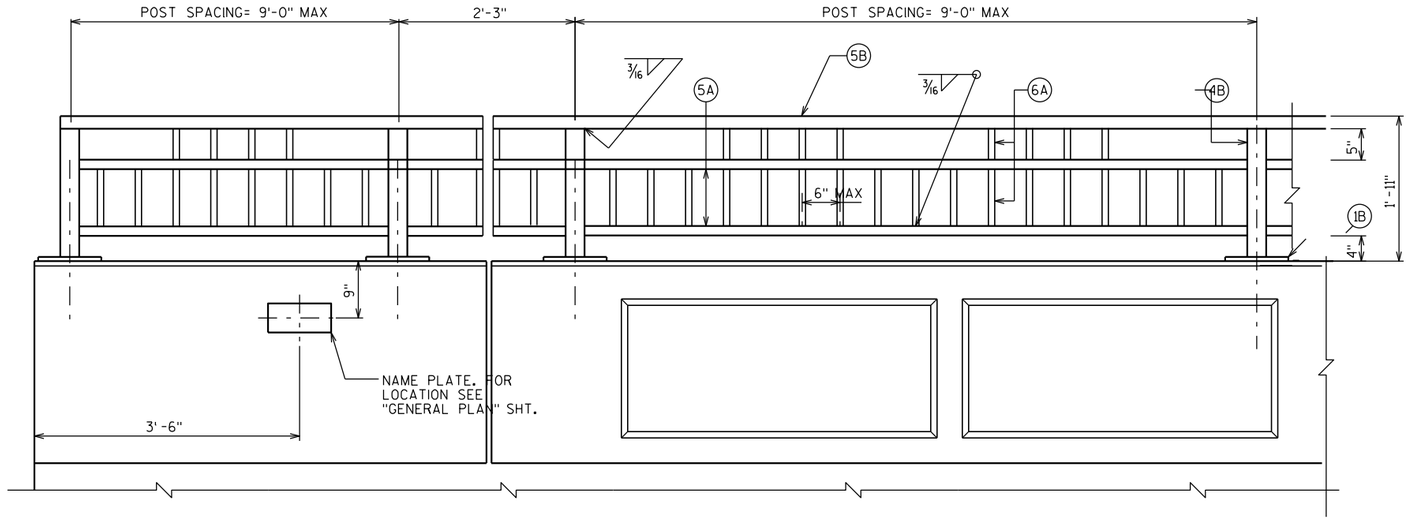
RAILH
7-13

STATE PROJECT NUMBER

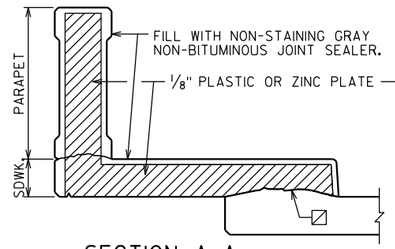
4332-05-71



PLAN



ELEVATION OF PARAPET



SECTION A-A

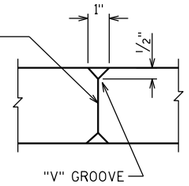
(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK.)

WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION A-A 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.

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

SEE SHEET 11 FOR PARAPET BILL OF BARS

SEE SHEET 14 FOR NOTE LEGEND



SECTION B-B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-318

DRAWN BY KAG | PLANS CK'D. PJE

COMBINATION
RAIL TYPE "C4"

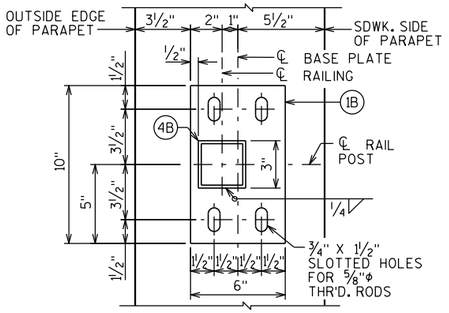
SHEET 13 OF 14
45

SCALE = 1.000

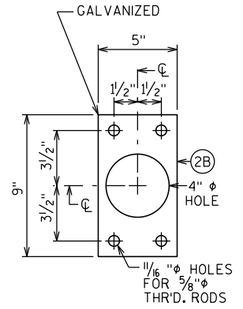
RAILCOMB
7-11

8

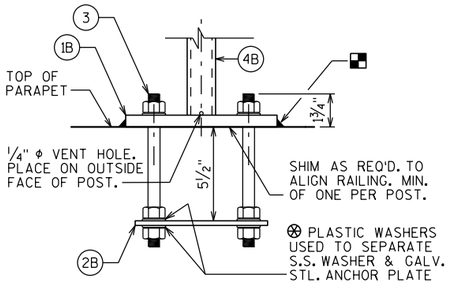
1 2 3 4 8 11 12



TYPICAL RAIL POST BASE PLATE

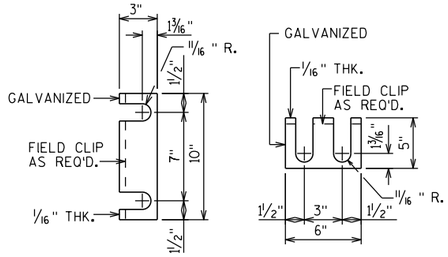


ANCHOR PLATE



ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.

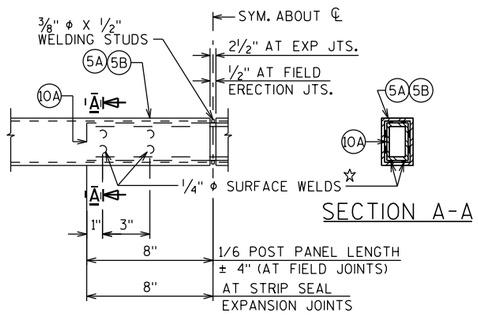


RAIL POST SHIM DETAIL

(2 SETS PER POST)

SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



SECTION A-A

FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

LEGEND

(1B) PLATE ⅝" X 6" X 10" WITH ¾" X 1½" SLOTTED HOLES

(2B) ¼" X 5" X 9" ANCHOR PLATE WITH 1¹⁄₁₆" Φ 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 WASHERS OF SAME ALLOY GROUP. (ALTERNATE RAIL POST ANCHORAGE: 4 EQUIVALENT STAINLESS STEEL CONCRETE MASONRY ANCHORS TYPE S ⅝-INCH. EMBED 7" IN CONCRETE FOR RAIL POSTS. EMBED 5" IN CONCRETE FOR END RAILS.)

(4B) STRUCTURAL TUBING 3" X 3" X ³⁄₁₆". PLACE VERTICAL. WELD TO NO. 1 & 5.

(5A) STRUCTURAL TUBING 3" X 1½" X ³⁄₁₆" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

(5B) STRUCTURAL TUBING 3" X 2" X ³⁄₁₆" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

(6A) BAR 1" X 1" PICKETS. WELD TO NO. 5 PLACE VERTICAL.

(9A) RECTANGULAR SLEEVE FABRICATED FROM ³⁄₁₆" PLATES. PROVIDE "SLIDING FIT".

(10A) RECTANGULAR SLEEVE FABRICATED FROM ³⁄₁₆" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL EXP. JTS.)

RAILING NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE C4 GALVANIZED B-36-318", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

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.

ALL PLATES, BARS, AND RECTANGULAR SLEEVES SHALL CONFORM TO ASTM A709 GRADE 36. ALL STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.

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

■ CAULK AROUND PERIMETER OF BASE PLATES, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3 & 12) 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 "BRIDGE SPECIAL PROVISIONS". THE RAILING SHALL BE PAINTED COLOR AS SELECTED BY OWNER.

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

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-318

DRAWN BY KAG | PLANS CK'D. PJE

COMBINATION RAIL TYPE "C4"

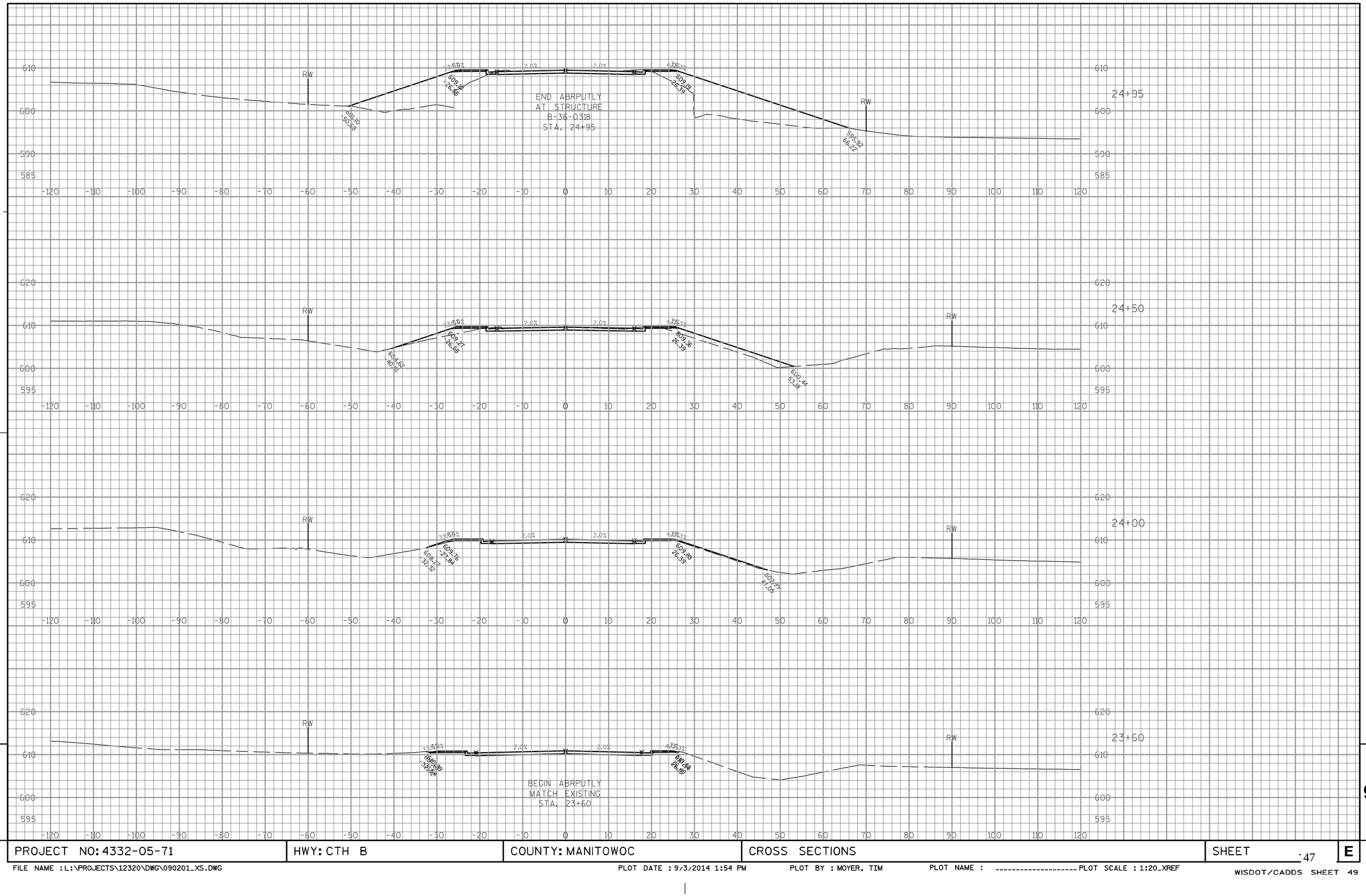
SHEET 14 OF 14
46

8

1234 8 11

SCALE = 1.000

RAILCOMBDET
7-13



9

9

PROJECT NO: 4332-05-71	HWY: CTH B	COUNTY: MANITOWOC	CROSS SECTIONS	SHEET 47	E

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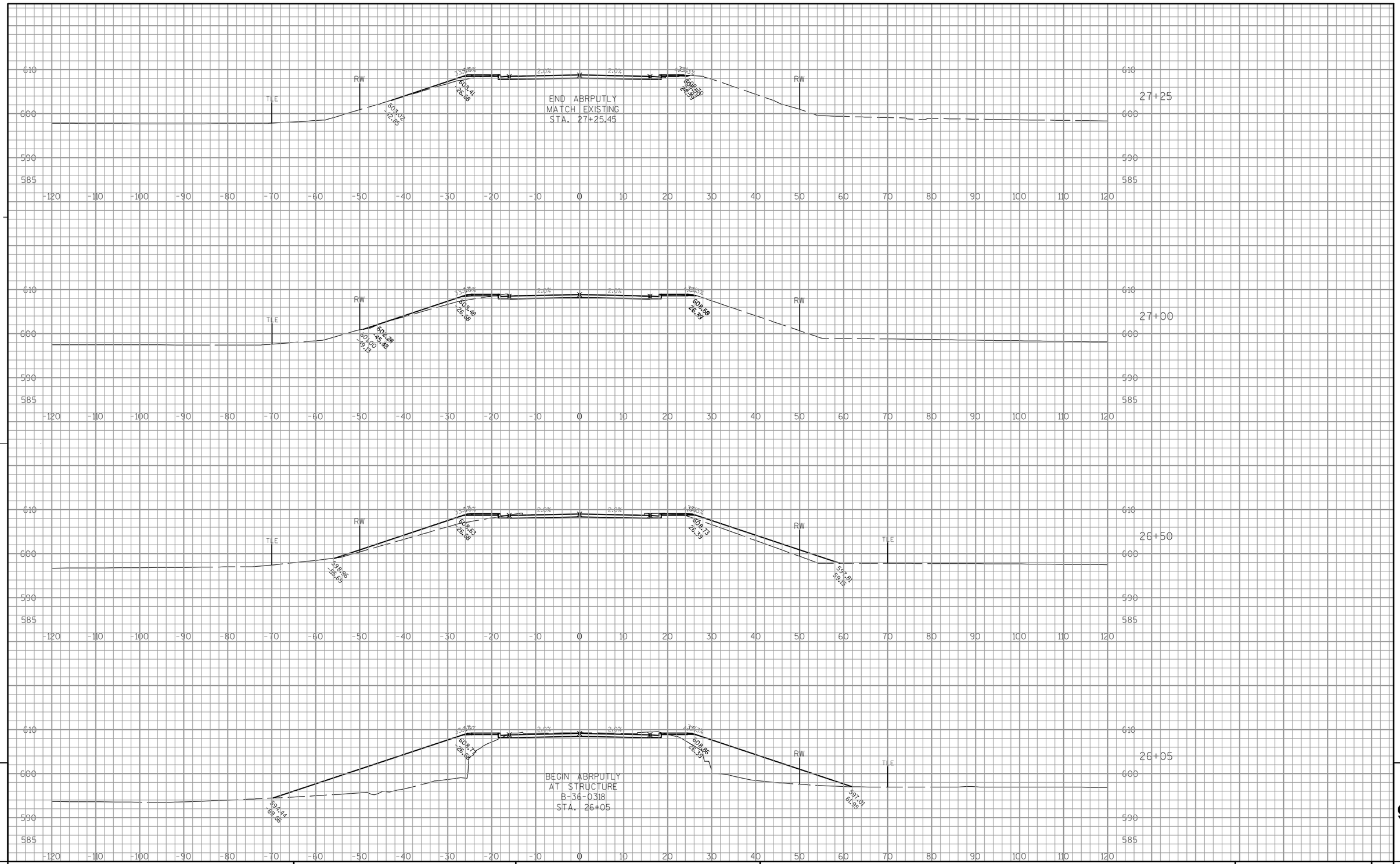
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 4332-05-71	HWY: CTH B	COUNTY: MANITOWOC	CROSS SECTIONS	SHEET 48	E

FILE NAME : L:\PROJECTS\12320\DWG\090201_XS.DWG PLOT DATE : 9/3/2014 1:54 PM PLOT BY : MOYER, TIM PLOT NAME : ---------- PLOT SCALE : 1:20_XREF

Notes

Wisconsin Department of Transportation

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