SWL FEBRUARY 2015

PROJECT ID: 5019-00-70
WITH: N/A

COUNTY: MONROE

04

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5019-00-70	WISC 2015003	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 16 - SPARTA

(BIG CREEK BRIDGE B-41-0297)

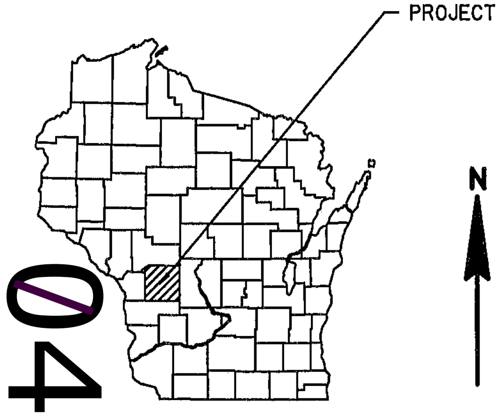
CTH BC
MONROE COUNTY

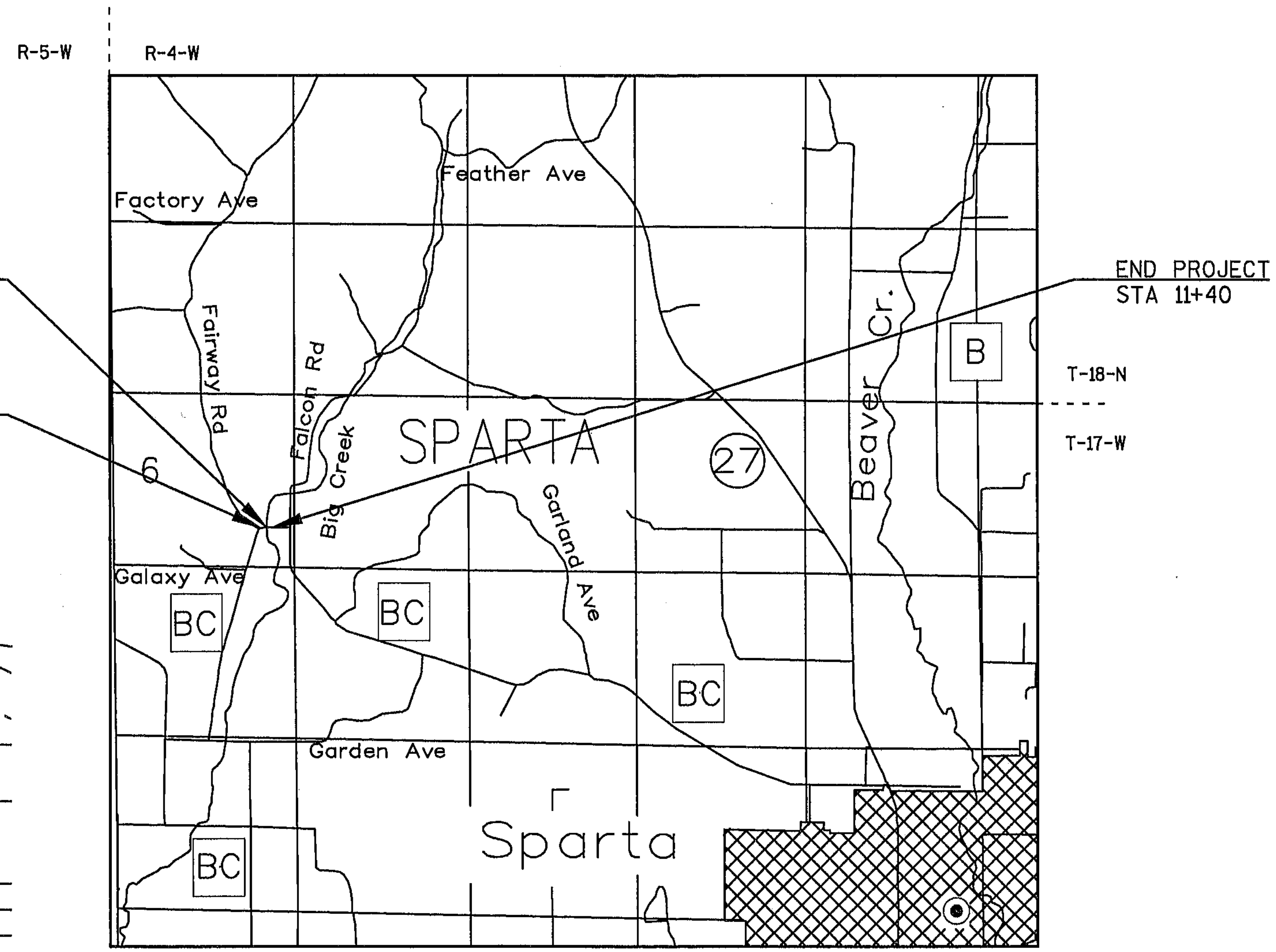
STATE PROJECT NUMBER
5019-00-70

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 (includes erosion control plans)
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





LAYOUT

SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.055 MI

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, MONROE COUNTY

DESIGN DESIGNATION

A.A.D.T. 2015	=	670
A.A.D.T. 2035	=	900
D.H.V.	=	89
D.D.	=	50/50
T.	=	5 %
DESIGN SPEED	=	40 MPH
ESALS	=	47,450

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

ACCEPTED FOR
COUNTY of MONROE

07/11/14 (Date) (Highway Commissioner)

ORIGINAL PLANS PREPARED BY

SEH — WISCONSIN DANIEL P. ... CHIPPEWA FALLS, WIS. 7-14-14 PROFESSIONAL ENGINEER

(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	SEH
Designer	SEH
Management Consultant	KJOHNSON ENGINEERS
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 7/29/14 (Management Consultant Signature)

E

2

STANDARD ABBREVIATIONS

ABU	ABUTMENT
AC	ACRE
AGG	AGGREGATE
AECPRC	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
ASPH	ASPHALTIC
AVG	AVERAGE
ADT	AVERAGE DAILY TRAFFIC
BF	BACK FACE
BM	BENCH MARK
BR	BRIDGE
CE	COMMERCIAL ENTRANCE
CL OR C/L OR ℄	CENTER LINE
	CENTRAL ANGLE OR DELTA
CONC	CONCRETE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CR	CREEK
CY	CUBIC YARD
C&G	CURB AND GUTTER
D	DEGREE OF CURVED
HV	DESIGN HOUR VOLUME
DISCH	DISCHARGE
DG	DITCH GRADE
DWY	DRIVEWAY
XEA	ST GRID COORDINATE
EAT	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
EOR	END POINT OF RADIUS
EL	ELEVATION
ENT	ENTRANCE
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
EXIST	EXISTING
FC	FACE OF CURB
FF	FACE TO FACE
FERT	FERTILIZE
FE	FIELD ENTRANCE
FL	FLOW LINE
FO	FIBER OPTIC
CWT	HUNDREDWEIGHT
HYD	HYDRANT
ID	INSIDE DIAMETER
INV	INVERT
IP	IRON PIPE ON PIN
LHF	LEFT-HAND FORWARD
L	LENGTH OF CURVE
LF	LINEAR FOOT
LC	LONG CHORD OF CURVE
LS	LUMP SUM
MH	MANHOLE
MOR	MID POINT OF RADIUS
NC	NORMAL CROWN
NO	NUMBER
OBLIT	OBLITERATE
PAVT	PAVEMENT
PE	PRIVATE ENTRANCE
PVRC	POINT OF VERTICAL REVERSE CURVE
QOR	QUARTER POINT OF RADIUS
R	RADIUS
REQ'D	REQUIRED
RES	RESIDENCE OR RESIDENTIAL
LRHF	RIGHT-HAND FORWARD
R/W	RIGHT-OF-WAY
R	RIVER
RDWY	ROADWAY
R/L OR ℞	REFERENCE LINE
SALV	SALVAGED
SAN	SANITARY SEWER
SF	SQUARE FEET
SY	SQUARE YARD
SDD	STANDARD DETAIL DRAWINGS
STA	STATION
SS	STORM SEWER
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
SE	SUPERELEVATION RATE
TC	TOP OF CURB
T OR TN	TOWN
T	TRUCKS (PERCENT OF)
TYP	TYPICAL
VAR	VARIABLE
VC	VERTICAL CURVE
YNORTH	GRID COORDINATE
YD	YARD

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE APPROXIMATE USGS DATUM.

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH TOPSOILED, FERTILIZED, AND SEEDED, AND MULCHED.

ALL CURB AND GUTTER RADII, PAVEMENT DIMENSIONS AND STATIONS ARE SHOWN TO THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT REMOVAL LIMITS. REMOVAL LIMITS WILL BE DETERMINED BY THE ENGINEER.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON OR ROCK EXCAVATION.

MILL TO MATCH PROPOSED CROSS SLOPE AND SUPER ELEVATION

THE LOCATION OF GUARDRAIL WILL BE DETERMINED BY THE ENGINEER

WISDOT MONUMENTS WILL BE SUPPLIED BY THE STATE AND INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

BEARINGS SHOWN ON THE PLAN ARE REFERENCED TO THE EXISTING ROADWAY CENTERLINE AND ARE ASSUMED.

4-INCH ASPHALTIC SURFACE CONSTRUCTED IN TWO 2-INCH LIFTS WITH 12.5-MM NOMINAL AGGREGATE SIZE AND PG58-28 BINDER.

WETLANDS ARE PRESENT IN THE PROJECT AREA BETWEEN STA 9+50 TO STA 10+50. THE CONTRACTOR MUST KEEP ALL MOTORIZED EQUIPMENT INSIDE THE SLOPE INTERCEPTS TO INSURE THAT THE WETLANDS REMAIN UNDISTURBED.

N

EXISTING RIGHT CURVE SIGN

EXISTING RIGHT ARROW SIGN

56.91'

46.48'

17.66'

CP 1
3/8" SPK 5' SOUTH E.O.B @ 25 MPH CURVE SIGN
7+52.04 27.16' LT
Y = 390925.668
X = 604568.996

BM 3/8" SPK
IN POWER POLE

BM 2
3/8" SPK
42" TREE

50.72'

PROJECT BRIDGE

80.08'

51.43'

SE CORNER OF BRIDGE

STN 1
PK 3' EAST E.O.B. 16' LT
STA STA 10+95.04 12.37' RT
Y = 390897.439
X = 604220.140

ALIGNMENT CONTROLS

UTILITY CONTACTS

CENTURYLINK
P.O. BOX 256
311 SOUTH COURT STREET
SPARTA, WI 54656
TELEPHONE: 608.269.0819
ATTENTION: BRET CLARK
EMAIL: BRET.CLARK@CENTURYLINK.COM

XCEL ENERGY
1003 SOUTH BLACK RIVER STREET
SPARTA, WI 54656
TELEPHONE: 608.789.3677 EXT. 14
ATTENTION: KAYE CROOK
EMAIL: KAYE.M.CROOK@XCELENERGY.COM

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

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

NOTE: WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

**NOT A MEMBER OF DIGGERS HOTLINE

MUNICIPALITY CONTACT

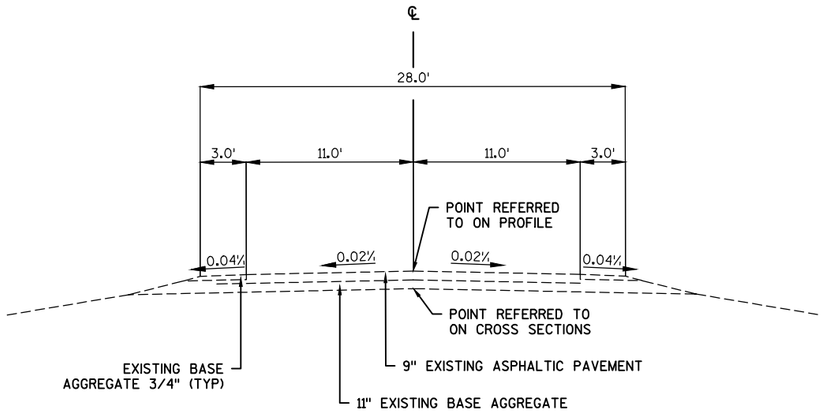
MONROE COUNTY HIGHWAY COMMISSIONER
803 WASHINGTON STREET
SPARTA, WI 54656
TELEPHONE: 608.685.6226
ATTENTION: JACK DITTMAR
EMAIL: JACK.DITTMAR@CO.MONROE.WI.US

DESIGN CONTACT

SEH
10 NORTH BRIDGE STREET
CHIPPEWA FALLS, WI 54729
TELEPHONE: 715.720.6267
ATTENTION: DAN GUSTAFSON
EMAIL: DGUSTAFSON@SEHINC.COM

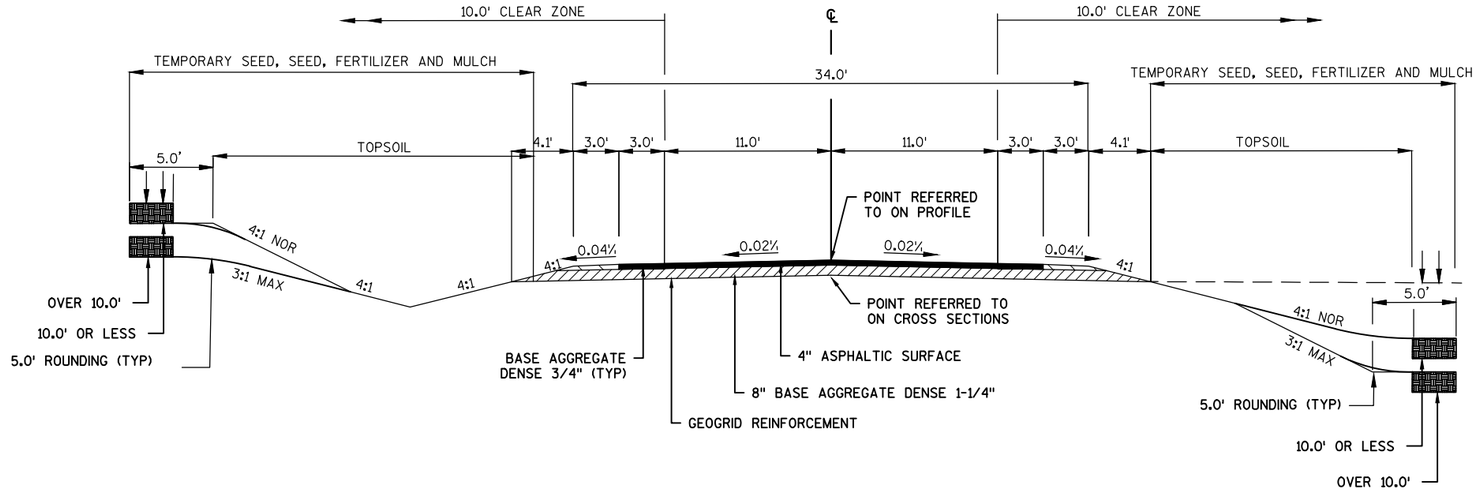
DNR CONTACT

KAREN KALVELAGE
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
TELEPHONE: 608.785.9115
EMAIL: KAREN.KALVELAGE@WISCONSIN.GOV



TYPICAL EXISTING SECTION

STA 8+50 TO STA 11+40



SUPERELEVATION TABLE

STATION	DESCRIPTION	LEFT SHOULDER	LEFT LANE	RIGHT LANE	RIGHT SHOULDER
8+50.00'	BEGIN PPROJECT	-4.00%	-0.64%	-2.84%	-4.00%
9+80.00'	BEGIN BRIDGE	2.63%	2.63%	-2.63%	-4.00%
10+20.00'	END BRIDGE	2.63%	2.63%	-2.63%	-4.00%
10+33.02'	REVERSE CROWN	2.00%	2.00%	-2.00%	-4.00%
10+74.35'	LEVEL CROWN	0.00%	0.00%	-2.00%	-4.00%
11+15.68'	BEGIN NORMAL SHOULDER	-4.00%	-2.00%	-2.00%	-4.00%
11+15.68'	BEGIN NORMAL CROWN	-4.00%	-2.00%	-2.00%	-4.00%
11+40.00'	END PROJECT	-4.00%	-2.00%	-2.00%	-4.00%

NORMAL CROWN RATE = 0.020
SHOULDER NORMAL CROWN SUPERELEVATION RATE = 0.040

TYPICAL FINISHED SECTION

STA 8+50 TO STA 9+78.75
STA 10+21.25 TO STA 11+40

PROJECT NO: 5019-00-70	HWY: CTH BC	COUNTY: MONROE	TYPICAL SECTIONS	SHEET 3	E

ALIGNMENT DATA

Tangent Data

Description	PT Station	Northing	Easting
Start:	5+21.782	390663.925	604163.662
End:	6+92.153	390827.423	604211.564

Tangent Data

Parameter	Value	Parameter	Value
Length:	170.372	Course:	N 16° 19' 47.1820" E

Curve Point Data

Description	Station	Northing	Easting
PC:	6+92.153	390827.423	604211.564
PI:	7+66.22	390898.50	604232.39
PT:	8+27.628	390919.103	604303.53

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	57° 31' 07.5721"	Type:	RIGHT
Radius:	134.95		
Length:	135.475	Tangent:	74.065
Mid-Ord:	16.646	External:	18.989
Chord:	129.858	Course:	N 45° 05' 20.9680" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	8+27.63	390919.10	604303.53
End:	8+27.63	390919.10	604303.53

Tangent Data

Parameter	Value	Parameter	Value
Length:	0.005	Course:	N 73° 50' 54.7531" E

Curve Point

Description	Station	Northing	Easting
PC:	8+27.634	390919.105	604303.535
PI:	9+00.21	390939.29	604373.25
PT:	9+71.782	390938.83	604445.824

Circular Curve

Parameter	Value	Parameter	Value
Delta:	16° 31' 05.4737"	Type:	RIGHT
Radius:	500		
Length:	144.148	Tangent:	72.578
Mid-Ord:	5.186	External:	5.24
Chord:	143.65	Course:	N 82° 06' 27.4910" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	9+71.782	390938.83	604445.824
End:	11+31.879	390937.805	604605.917

Tangent Data

Parameter	Value	Parameter	Value
Length:	160.097	Course:	S 89° 37' 59.7722" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	11+31.879	390937.805	604605.917
End:	16+17.935	390927.357	605091.861

Tangent Data

Parameter	Value	Parameter	Value
Length:	486.056	Course:	S 88° 46' 05.8802" E

DATE 18NOV14 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	5019-00-70 QUANTITY
0010	201.0105	CLEARING	STA	2.000	2.000
0020	201.0205	GRUBBING	STA	2.000	2.000
0030	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. STATION 10+00	LS	1.000	1.000
0040	205.0100	EXCAVATION COMMON **P**	CY	504.000	504.000
0050	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-41-297	LS	1.000	1.000
0060	210.0100	BACKFILL STRUCTURE	CY	218.000	218.000
0070	213.0100	FINISHING ROADWAY (PROJECT) 01. 5019-00-70	EACH	1.000	1.000
0080	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	60.000	60.000
0090	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	570.000	570.000
0100	455.0605	TACK COAT	GAL	50.000	50.000
0110	465.0105	ASPHALTIC SURFACE	TON	190.000	190.000
0120	502.0100	CONCRETE MASONRY BRIDGES	CY	80.000	80.000
0130	502.3200	PROTECTIVE SURFACE TREATMENT	SY	194.000	194.000
0140	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	5,200.000	5,200.000
0150	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	22,800.000	22,800.000
0160	513.7050	RAILING STEEL TYPE W (STRUCTURE) 01. B-41-297	LS	1.000	1.000
0170	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	20.000	20.000
0180	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	350.000	350.000
0190	606.0300	RIPRAP HEAVY	CY	170.000	170.000
0200	612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	60.000	60.000
0210	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	120.000	120.000
0220	614.2500	MGS THRIE BEAM TRANSITION	LF	158.000	158.000
0230	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000
0240	619.1000	MOBILIZATION	EACH	1.000	1.000
0250	625.0100	TOPSOIL **P**	SY	866.000	866.000
0260	627.0200	MULCHING **P**	SY	1,008.000	1,008.000
0270	628.1504	SILT FENCE	LF	650.000	650.000
0280	628.1520	SILT FENCE MAINTENANCE	LF	650.000	650.000
0290	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	3.000	3.000
0300	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	3.000	3.000
0310	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	110.000	110.000
0320	628.6005	TURBIDITY BARRIERS	SY	130.000	130.000
0330	628.7504	TEMPORARY DITCH CHECKS	LF	15.000	15.000
0340	629.0205	FERTILIZER TYPE A **P**	CWT	0.600	0.600
0350	630.0120	SEEDING MIXTURE NO. 20 **P**	LB	25.000	25.000
0360	630.0200	SEEDING TEMPORARY **P**	LB	25.000	25.000
0370	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	4.000	4.000
0380	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	1.000	1.000
0390	637.2230	SIGNS TYPE II REFLECTIVE F	SF	23.000	23.000
0400	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0410	643.0100	TRAFFIC CONTROL (PROJECT) 01. 5019-00-70	EACH	1.000	1.000
0420	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	290.000	290.000
0430	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	1,160.000	1,160.000
0440	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	248.000	248.000
0450	650.5000	CONSTRUCTION STAKING BASE	LF	248.000	248.000
0460	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-41-297	LS	1.000	1.000
0470	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 5019-00-70	LS	1.000	1.000

3

DATE 18NOV14 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	5019-00-70 QUANTITY
0480	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	290.000	290.000
0490	690.0150	SAWING ASPHALT	LF	48.000	48.000
0500	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,104.000	1,104.000
0510	SPV.0035	SPECIAL 01. SPECIAL FIBER REINFORCED CONCRETE MASONRY FOR BRIDGES STRUCTURE B-41-297	CY	104.000	104.000
0520	SPV.0180	SPECIAL 01. GEOGRID REINFORCEMENT	SY	1,300.000	1,300.000

3

CLEARING/GRUBBING

STATION - STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
CTH BC			
9+00 - 11+00	LT & RT	2	2
	TOTALS	2	2

EXCAVATION

STATION - STATION	LOCATION	**205.0100 COMMON CY	AIR FILL CY	EXPANDED FILL CY	WASTE BORROW CY
CTH BC					
8+50 - 9+79	LT & RT	223	151	197	-26
10+21 - 11+40	LT & RT	281	67	87	-194
	TOTALS	504	218	284	-220

NOTES:
1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN COMMON EXCAVATION.
2) FILL DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
3) FILL WILL BE BACKFILLED WITH CUT OR BORROW.
4) POSITIVE BORROW INDICATES A SHORTAGE OF MATERIAL.
5) EXPANSION FACTOR = 1.3
** PAY PLAN QUANTITY.

FINISHING ROADWAY (5019-00-70)

STATION - STATION	213.0100 EACH
CTH BC	
8+50 - 11+40	1
TOTAL	1

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	REMARKS
CTH BC				
8+50 - 9+79	~	-	210	MAINLINE
8+50 - 9+68	LT & RT	30	85	SHOULDERS
10+21 - 11+40	~	-	200	MAINLINE
10+30 - 11+40	LT & RT	30	75	SHOULDERS
	TOTALS	60	570	

ASPHALTIC PAVEMENT ITEMS

STATION - STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
CTH BC			
8+50 - 9+78.75	~	26	98
10+21.25 - 11+40	~	24	92
	TOTALS	50	190

GUARDRAIL ITEMS

STATION - STATION	LOCATION	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS TERMINAL EAT EACH
CTH BC			
8+75.97 9+30.93	RT	-	1
8+80.17 - 9+31.53	LT	-	1
9+30.93 - 9+69.67	RT	39.4	-
9+31.53 - 9+67.87	LT	39.4	-
10+30.26 - 10+67.76	RT	39.4	-
10+32.26 - 10+69.76	LT	39.4	-
10+67.76 - 11+20.84	RT	-	1
10+69.76 - 11+22.84	LT	-	1
	TOTALS	158	4

MOBILIZATION

STATION - STATION	619.1000 EACH
CTH BC	
8+50 - 11+40	1
TOTAL	1

TOPSOIL & SEEDING

STATION - STATION	LOCATION	**625.0100 TOPSOIL SY	**627.0200 MULCHING SY	**629.0205 FERTILIZER TYPE A CWT	**630.0120 SEEDING MIXTURE NO. 20 LB	**630.0200 SEEDING TEMPORARY LB
CTH BC						
8+50 - 9+78.75	LT & RT	460	537	0.3	13	13
10+21.25 - 11+40	LT & RT	406	471	0.3	12	12
	TOTALS	866	1008	0.6	25	25

** PAY PLAN QUANTITY.

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

EROSION CONTROL

STATION - STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.6005 TURBIDITY BARRIER SY	628.7504 TEMPORARY DITCH CHECKS LF
CTH BC						
8+50 - 9+79	LT & RT	325	325	55	65	
8+75	RT					5
10+21 - 11+40	LT & RT	325	325	55	65	
11+25	LT & RT					10
	TOTALS	650	650	110	130	15

PAVEMENT MARKING

STATION - STATION	LOCATION	646.0106 EPOXY 4-INCH LF	REMARKS
CTH BC			
8+50 - 11+40	~	580	DOUBLE YELLOW
8+50 - 11+40	LT & RT	580	WHITE EDGELINE
	TOTALS	1,160	

MOBILIZATION EROSION CONTROL

STATION - STATION	LOCATION	628.1905 MOBILIZATION EROSION CONTROL EACH	628.1910 MOBILIZATION EMERGANCY EROSION CONTROL EACH
CTH BC			
8+50 - 11+40		3	3
	TOTALS	3	3

CONSTRUCTION STAKING

STATION - STATION	650.4500 SUBGRADE LF	650.5000 BASE LF	*650.6500 STRUCTURE LAYOUT B-41-297 LS	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
CTH BC					
8+50 - 9+78.75	129	129	-	-	129
9+78.75 - 10+21.25	-	-	1	1	42
10+21.25 - 11+40	119	119	-	-	119
TOTALS	248	248	1	1	290

* CATEGORY 0020

PERMANENT SIGNING

SIGN GROUP CODE	SIGN CODE	MESSAGE	SIZE	637.2230 SIGNS TYPE II REFLECTIVE F SF	634.0612 POSTS WOOD 4X6-INCH 12-FT EACH	634.0616 POSTS WOOD 4X6-INCH 16-FT EACH	REMARKS
1-1	W5-52L	CLEARANCE STRIPER	12" X 36"	3	1	-	INSTALL SIGN & POST
1-2	W5-52R	CLEARANCE STRIPER	12" X 36"	3	1	-	INSTALL SIGN & POST
1-3	W5-52R	CLEARANCE STRIPER	12" X 36"	3	1	-	INSTALL SIGN & POST
1-4	W5-52L	CLEARANCE STRIPER	12" X 36"	3	1	-	INSTALL SIGN & POST
1-5	W1-1R	ARROW RIGHT	36" X 36"	9	-	1	INSTALL SIGNS & POST
	W13-1	25 MPH	24" X 24"	2	-	-	
			TOTALS	23	4	1	

SAWING ASPHALT

STATION - STATION	LOCATION	690.0150 LF
CTH BC		
8+50	LT & RT	24
11+40	LT & RT	24
	TOTAL	48

FIELD OFFICE TYPE B

PROJECT	642.5001 EACH
CTH BC	
8+50 - 11+40	1
TOTAL	1

TRAFFIC CONTROL (5019-00-70)

PROJECT	643.0100 EACH
CTH BC	
8+50 - 11+40	1
TOTAL	1

GEOGRID REINFORCEMENT

STATION - STATION	LOCATION	SPV.0180.01 SY
CTH BC		
8+50 - 9+79	LT & RT	675
10+21 - 11+40	LT & RT	625
	TOTALS	1300

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

CONVENTIONAL SIGNS AND ABBREVIATIONS

A.P.	ACCESS POINT
AC	ACRES
AG	AGRICULTURAL
ALUM.	ALUMINUM
ANT	ANTENNA
B.	BARN
℄	CENTERLINE
CONC	CONCRETE
COR.	CORNER
C.S.M.	CERTIFIED SURVEY MAP
C.T.H.	COUNTY TRUNK HIGHWAY
DOC.	DOCUMENT
EASE.	EASEMENT
ET.AL.	AND OTHERS
FDN	FOUNDATION
FE	FIELD ENTRANCE
FRL.	FRACTIONAL
G	GARAGE
GP	GAS PUMPS
GRAV	GRAVEL
GV	GAS
HSE	HOUSE
IP	IRON PIPE OR PIN
L	LENGTH OF CURVE
LC	LONG CHORD OR LAND CONTRACT
LCB	LONG CHORD BEARING
LT	LEFT
MH	MANHOLE
MON.	MONUMENT
O.L.	OUTLOT
P.	PAGE
PC	POINT OF CURVATURE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PK	PARKER-KALON FASTENER
P.L.	PROPERTY LINE
P.L.E.	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENCY
R	RADIUS OR RANGE
R.D.E.	RESTRICTED DEVELOPMENT EASEMENT
REM.	REMAINING
℞	REFERENCE LINE
RT	RIGHT
R/W	RIGHT OF WAY
S	SHED
SEC.	SECTION
SEPV	SEPTIC VENT
S.T.H.	STATE TRUNK HIGHWAY
STA.	STATION
T	TANGENT LENGTH OF CURVE OR TOWN
TAV	TAVERN
T.I.	TEMPORARY INTEREST
U.S.H.	UNITED STATES HIGHWAY
V.	VOLUME
W	WALL
X	EAST COORDINATE (GRID)
Y	NORTH COORDINATE (GRID)
N	NORTH COORDINATE (GROUND) OR NORTH
E	EAST COORDINATE (GROUND), EAST OR EXTERNAL
△	CENTRAL ANGLE OR DELTA

- STATE LINE
- COUNTY LINE
- TOWN OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- PROPOSED OR NEW R/W LINE
- EXISTING R/W LINE
- LOT LINE
- P.L. ± 58.1 PROPERTY LINE
- NO ACCESS (By Previous Acquisition)
- NO ACCESS (By Acquisition)
- NO ACCESS (By Statutory Authority)
- LIMITED EASEMENT (Temporary or Permanent)
- CORPORATE LIMITS

- SECTION CORNER
- RIGHT OF WAY POINT (NOT MONUMENTED)
- RIGHT OF WAY POINT (MONUMENTED)
- (Type) RECOVERED IRON PIN/PIPE
- TRIANGULATION POINT OR HORIZONTAL CONTROL STATION
- INLET
- HYDRANT

COMPENSABLE	NON COMPENSABLE	
●	⊖	TELEPHONE POLE
■	□	POWER POLE

243 RIGHT OF WAY POINT NUMBER

- (Size)W WATER
- (Size)G GAS
- T TELEPHONE OR TELEGRAPH
- E ELECTRIC
- TV CABLE TELEVISION
- FO FIBER OPTIC
- (Size)SAN SANITARY SEWER
- (Size) SS STORM SEWER
- CAUTION NOTATION FOR COMBUSTIBLE FLUIDS
- SERVICE PEDESTAL
- (Label) SILO, MANHOLE OR WELL, ETC.

- RAILROAD
- BRIDGE
- (Label) BUILDING
- (Label) FOUNDATION OR RUINS
- X X FENCE
- MARSH AREA
- LAKE OR POND
- WOODED OR SHRUB AREA
- TREE

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
5019-00-00	4.01	2
FEDERAL PROJECT NUMBER		

PLAT OF RIGHT-OF-WAY REQUIRED FOR

STH 16 - SPARTA

(BIG CREEK BRIDGE B-41-0297)

CTH BC — MONROE COUNTY

CONSTRUCTION PROJECT NUMBER

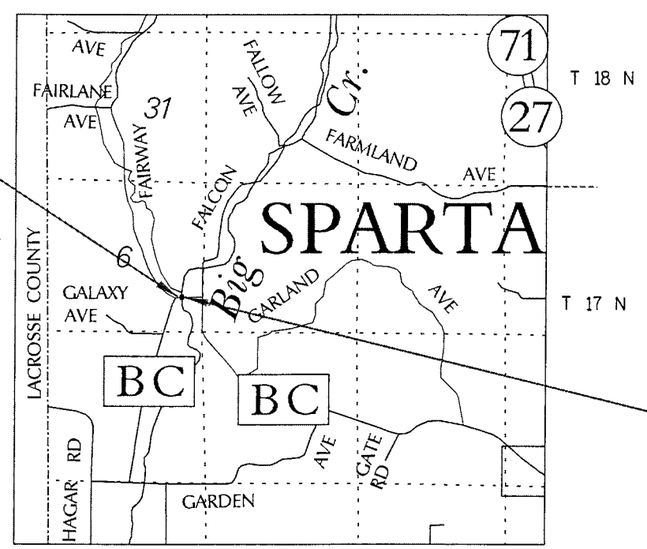
5019-00-70

BEGIN RELOCATION ORDER

STA. 8+27.65

Y= 390,919.109
X= 604,303.551
1,335.452 FEET SOUTH AND 879.878 FEET WEST OF THE EAST 1/4 CORNER OF SECTION 6, T17N, R4W

R 4 W



END RELOCATION ORDER

STA. 11+50

Y= 390,937.415
X= 604,624.035
1,317.145 FEET SOUTH AND 559.394 FEET WEST OF THE EAST 1/4 CORNER OF SECTION 6, T17N, R4W

LAYOUT
SCALE 0 1/2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.061 MI.

NOTES:

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, MONROE COUNTY (ENGLISH) NAD 83, 2011 ADJUSTMENT. ALL DISTANCES ARE GROUND LENGTH.

RIGHT OF WAY MONUMENTS ARE TYPE-2 (5/8" X 24" REINFORCEMENT BAR WEIGHING 1.04 lb/FT) AND ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

ORIGINAL PLANS PREPARED BY

SEH

WISCONSIN
JASON L. CANCE
S-2688
CHIPPEWA FALLS WI
LAND SURVEYOR

7-2-2014 (Date) (Signature)

REVISION DATE

ACCEPTED FOR

COUNTY of MONROE

07/15/14 (Date) (Signature) (Title)

FILE NAME : P:\KO\MN\Monroe\122831\CAD RW\RTCTHBC00.dgn PLOT TIME : 9:49:32 AM PLOT DATE : 7/2/2014 PLOT BY : SEH PLOT NAME : _____ PLOT SCALE : N/A

WISDOT/CADDS SHEET 50

SCHEDULE OF LANDS & INTERESTS REQUIRED

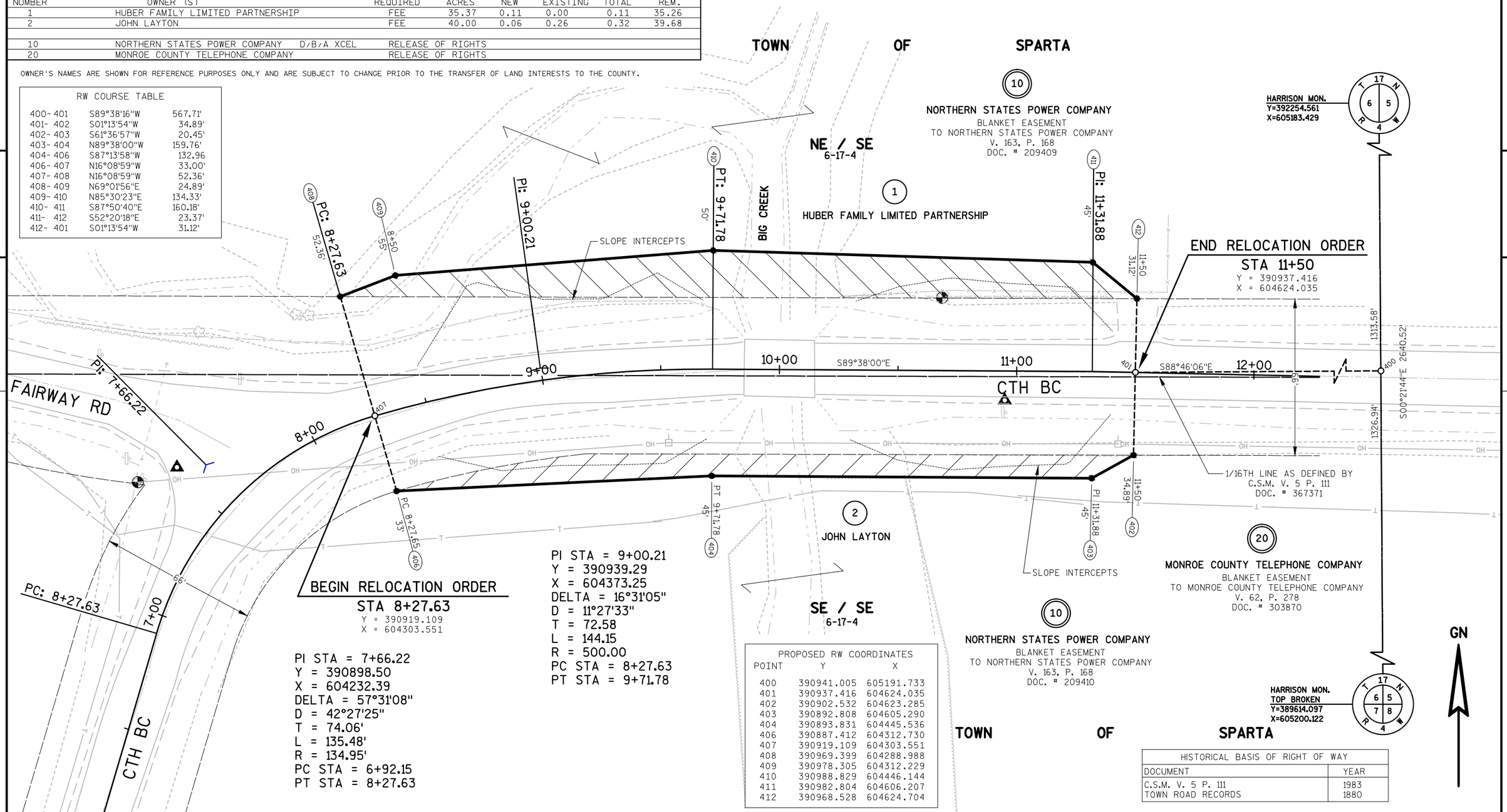
AREAS SHOWN IN THE TOTAL ACRES COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	TOTAL ACRES	R&W ACRES REQUIRED NEW	EXISTING	TOTAL	TOTAL ACRES REM.
1	HUBER FAMILY LIMITED PARTNERSHIP	FEE	35.37	0.11	0.00	0.11	35.26
2	JOHN LAYTON	FEE	40.00	0.06	0.26	0.32	39.68
10	NORTHERN STATES POWER COMPANY D/B/A XCEL	RELEASE OF RIGHTS					
20	MONROE COUNTY TELEPHONE COMPANY	RELEASE OF RIGHTS					

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE COUNTY.

RW COURSE TABLE

400- 401	S89°38'16"W	567.71'
401- 402	S01°13'54"W	34.89'
402- 403	S61°36'57"W	20.45'
403- 404	N89°38'00"W	159.76'
404- 406	S87°13'58"W	132.96
406- 407	N16°08'59"W	33.00'
407- 408	N16°08'59"W	52.36'
408- 409	N69°01'56"E	24.89'
409- 410	N85°30'23"E	134.33'
410- 411	S87°50'40"E	160.18'
411- 412	S52°20'18"E	23.37'
412- 401	S01°13'54"W	31.12'



PROPOSED RW COORDINATES

POINT	Y	X
400	390941.005	605191.733
401	390937.416	604624.035
402	390902.532	604623.285
403	390892.808	604605.290
404	390893.831	604445.536
406	390887.412	604312.730
407	390919.109	604303.551
408	390969.399	604288.988
409	390978.305	604312.229
410	390988.829	604446.144
411	390982.804	604606.207
412	390968.528	604624.704

HISTORICAL BASIS OF RIGHT OF WAY

DOCUMENT	YEAR
C.S.M. V. 5 P. 111	1983
TOWN ROAD RECORDS	1880

REVISION DATE	DATE 7-2-14	SCALE, FEET 0 20 40	HWY: CTH BC	STATE R/W PROJECT NUMBER 5019-00-00	PLAT SHEET 4.02
	GRID FACTOR N/A		COUNTY: MONROE	CONSTRUCTION PROJECT NUMBER 5019-00-70	PS&E SHEET --10 E

FILE NAME : P:\KO\M\MONRO\122831\CAD RW\RDCTHBC02.DWG PLOT DATE : 7/2/2014 2:53 PM PLOT BY : JASON CANCE PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 75

MGS GUARDRAIL ENERGY ABSORBING TERMINAL REQ'D
STA 8+75.97 TO STA 9+30.93 RT
STA 8+80.17 TO STA 9+31.53 LT
STA 10+67.76 TO STA 11+20.84 RT
STA 10+69.76 TO STA 11+22.84 LT

MGS THRIE BEAM TRANSITION REQ'D
STA 9+30.93 TO STA 9+69.67 RT
STA 9+31.53 TO STA 9+67.87 LT
STA 10+30.26 TO STA 10+69.76 RT
STA 10+32.26 TO STA 10+67.76 LT

PI STA = 9+00.21
Y = 390939.29
X = 604373.25
DELTA = 16°31'05"
D = 11°27'33"
T = 72.58
L = 144.15
R = 500.00
PC STA = 8+27.63
PT STA = 9+71.78

BENCHMARK TABLE			
NO.	STATION	DESCRIPTION	ELEVATION
1	7+39.63 35.9' LT	⅝" SPK IN PP	809.3570
2	10+68.34 28.4' LT	⅝" SPK IN 42" TREE	812.3700

ORIGIN OF LEVELS
BENCHMARK DATUM BASED ON NAVD 88

N

REPLACE 1-1 W5-52L 12" X 36"
REPLACE 1-2 W5-52R 12" X 36"
REPLACE 1-3 W5-52R 12" X 36"
REPLACE 1-4 W5-52L 12" X 36"
REPLACE 1-5 W1-1R 36"X36" W13-1 24"X24" 25 M.P.H.

FENCE TO BE REMOVED BY OTHERS PRIOR TO CONSTRUCTION
FENCE TO BE REMOVED BY OTHERS PRIOR TO CONSTRUCTION
FEE
HUBER FAMILY LIMITED PARTNERSHIP
R/W
JOHN LAYTON
XCEL
CENTYURYLINK
SLOPE INTERCEPTS
UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.

FAIRWAY DR.
CTH BC
BIG CREEK
BM 1
BM 2
CP 1
CP 2
S88° 46' 05.88"E

PC: 8+27.63
PI: 7+66.22
PI: 9+00.21
PT: 9+71.78
PI: 11+31.88
STA 8+80.17 END TAPER
STA 9+28.50 BEGIN TAPER
STA 10+72.88 BEGIN TAPER
STA 11+22.84 END TAPER
STA 8+75.97 END TAPER
STA 9+27.71 BEGIN TAPER
STA 10+70.88 BEGIN TAPER
STA 11+20.84 END TAPER

6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00

BEGIN PROJECT
STA 8+50
Y=390924.844
X=604325.151
SAWCUT REQ'D
MATCH EXISTING

END PROJECT
STA 11+40
SAWCUT REQ'D
MATCH EXISTING

LEGEND
- TURBIDITY BARRIER
- EROSION MAT URBAN
- SILT FENCE
- SURFACE WATER FLOW
- HEAVY RIP RAP

EARTHWORK SUMMARY
STA 8+50 TO STA 10+00

CUT	429	CY
FILL	151	CY
FILL AT 1.3% EXP	197	CY
WASTE	232	CY

EARTHWORK SUMMARY
STA 10+00 TO STA 11+40

CUT	552	CY
FILL	67	CY
FILL AT 1.3% EXP	87	CY
WASTE	465	CY

VCL = 180.00
K = 93.87

820 810 800 790

STA 8+50.00 EL 809.57
VPC STA 8+50.00 VPC EL 809.57
VPI STA 9+40.00 VPI EL 809.00
VPT STA 10+30.00 VPT EL 810.16
STA 11+40.00 EL 811.58

-0.63% 1.29%

FINISHED ℄ ELEVATION
EXISTING ℄ ELEVATION
HIGH WATER 100 YR EL 806.88
OBSERVED WATER (12-3-2012) EL 797.4

811.50 811.31 811.05 810.70 810.16 809.57 809.57 809.53 809.38 809.86 809.47 797.16 809.82 810.62 810.42 811.14 811.07 811.72 812.47 813.12 813.73 814.44 815.09

6+25 7+00 8+00 9+00 10+00 11+00 12+00 13+00 13+75

STATION 10+00
STRUCTURE B-41-0297 REQ'D
40' SINGLE SPAN CONC. FLAT SLAB
30' CLEAR ROADWAY WIDTH
SKEW: 0°

STATION 10+00
REMOVE STRUCTURE P-41-0946
STEEL DECK GIRDER BRIDGE
30.2' OVERALL LENGTH
24.8' OVERALL WIDTH

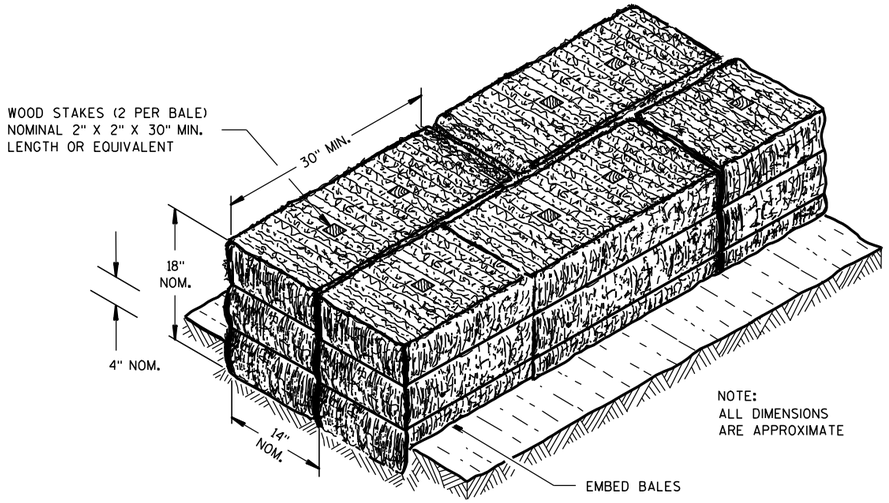
PROJECT NO: 5019-00-70	HWY: CTH BC	COUNTY: MONROE	PLAN AND PROFILE: CTH BC	SHEET E

FILE NAME : P:\KO\M\MONRO\122831\CIVIL 3D\50190070\SHEETSPLAN\050101_PP.DWG PLOT DATE : 11/18/2014 9:59 AM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1:50_XREF
WISDOT/CADDS SHEET 44

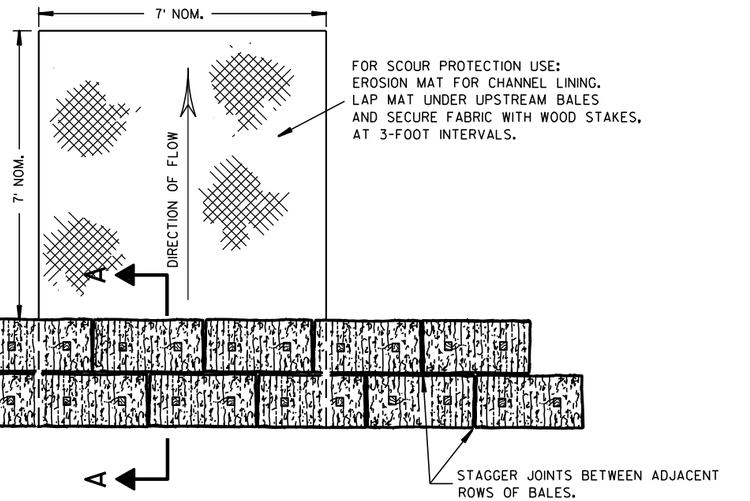
Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)

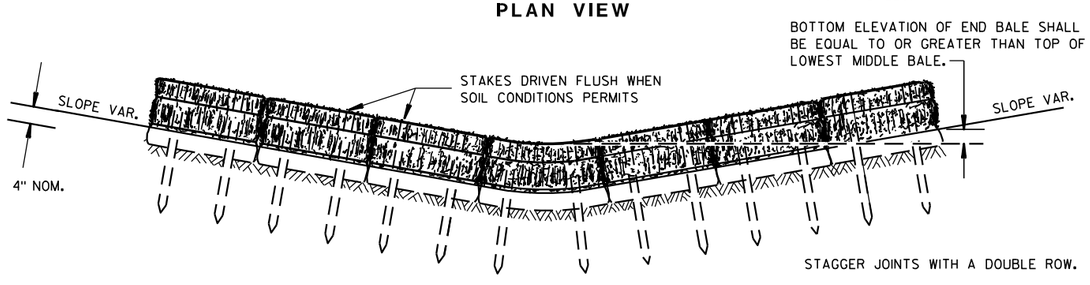
6



SECTION A-A



PLAN VIEW



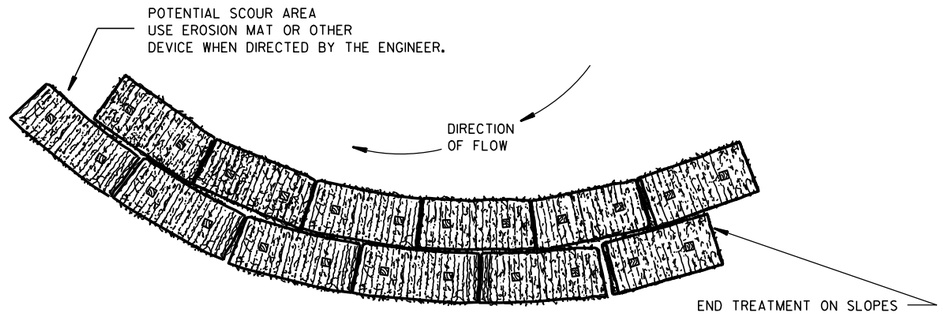
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

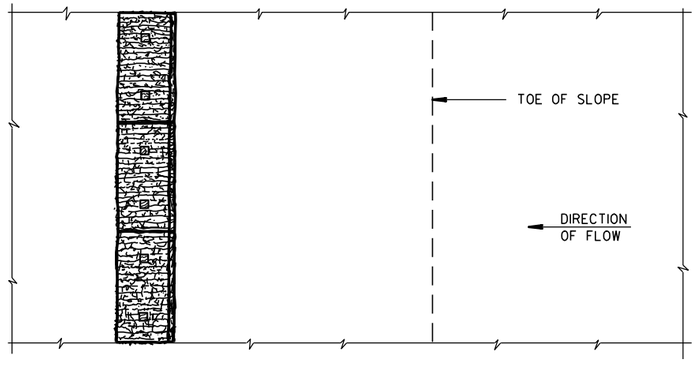
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(1) TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

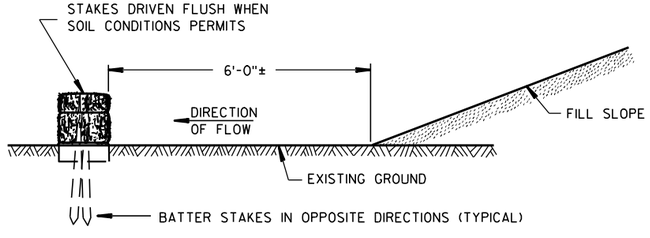


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

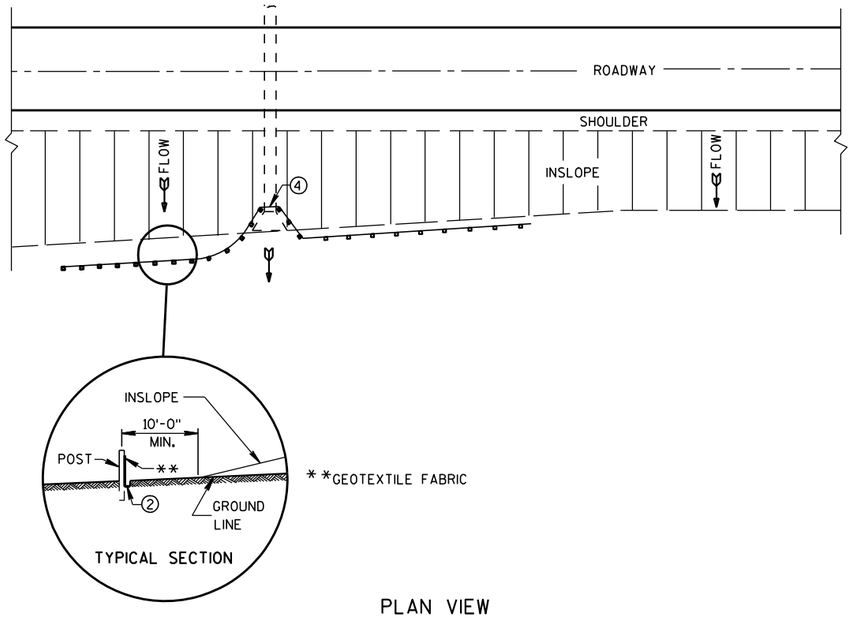
FHWA

6

S.D.D. 8 E 8-3

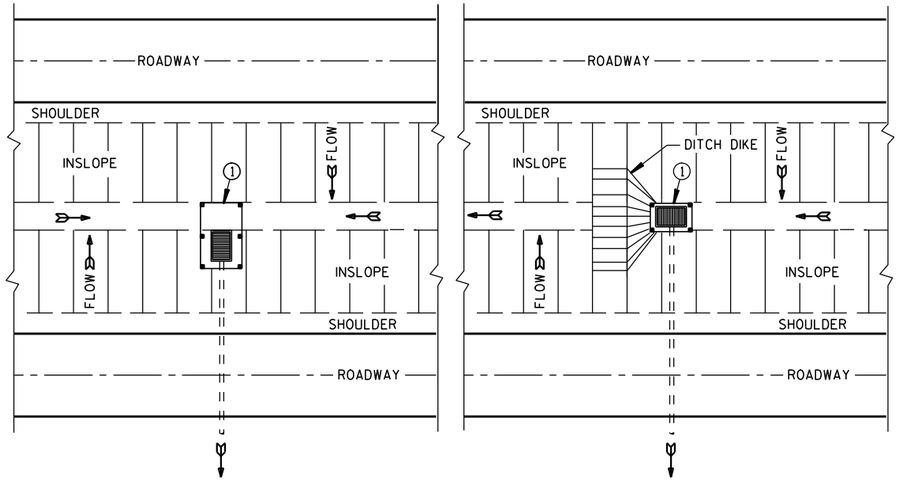
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



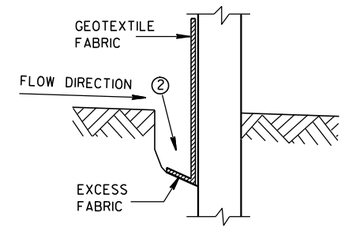
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

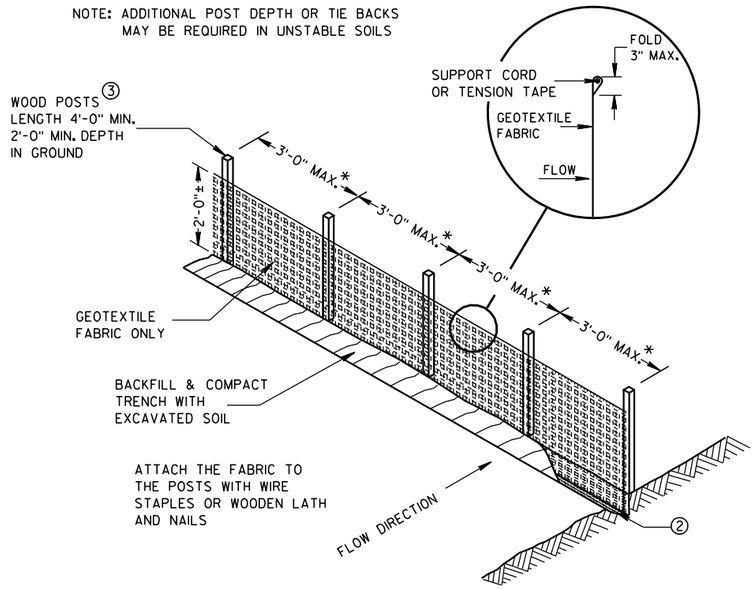
GENERAL NOTES

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

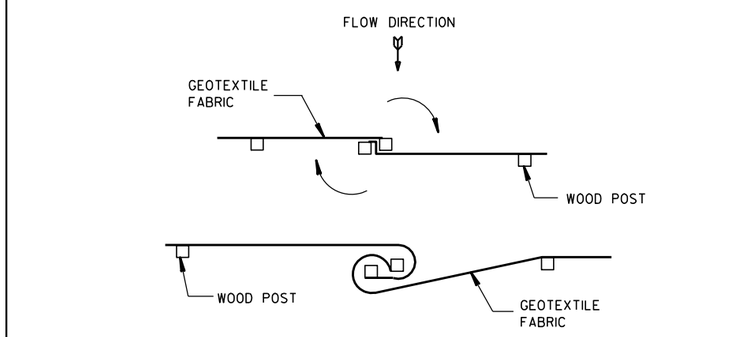
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL 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.



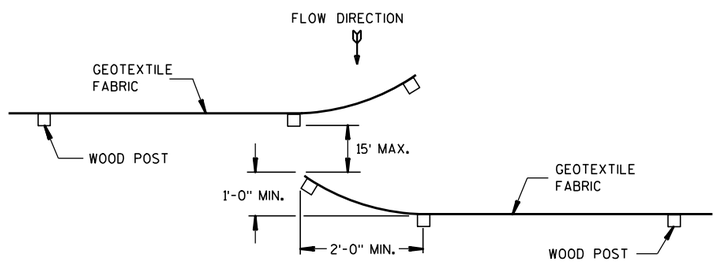
TRENCH DETAIL



SILT FENCE

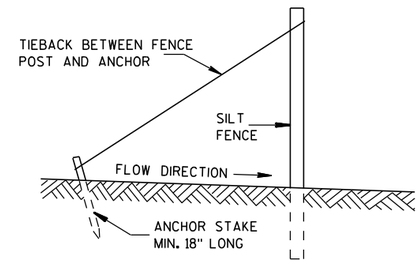


TWIST METHOD



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

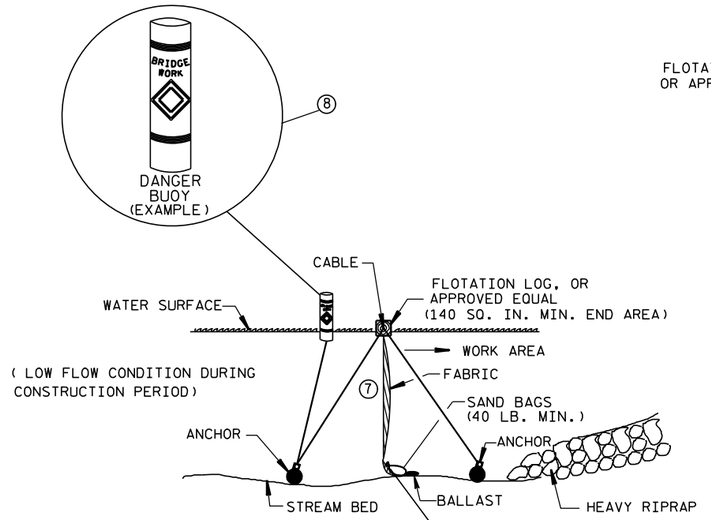
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

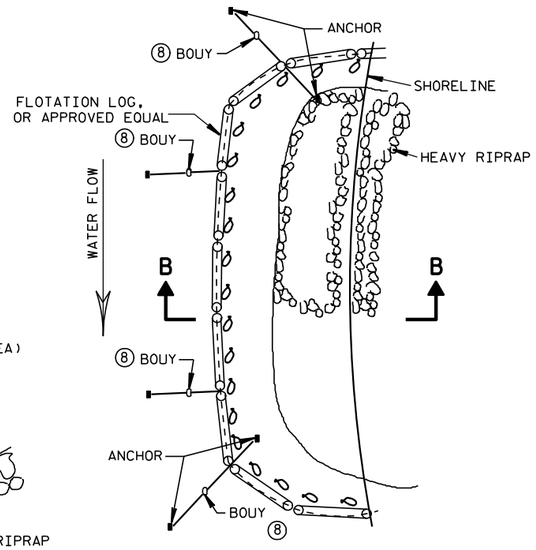
S.D.D. 8 E 9-6

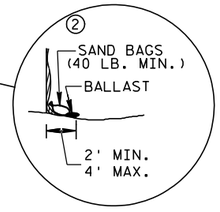
6

S.D.D. 8 E 9-6

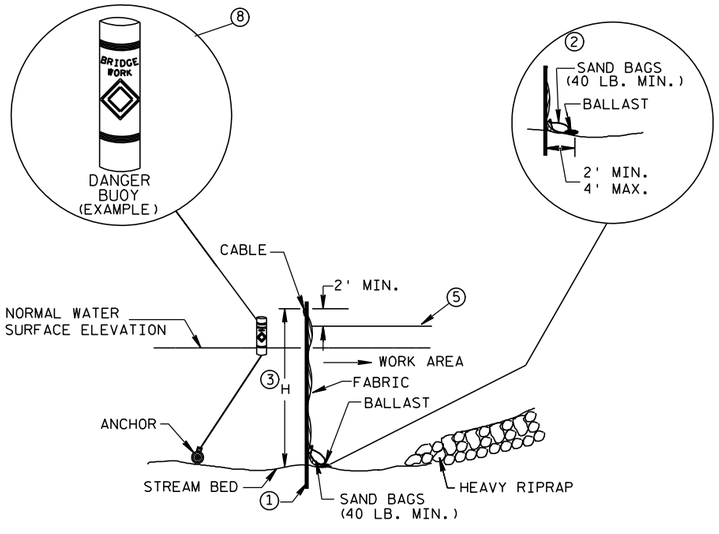


SECTION B-B

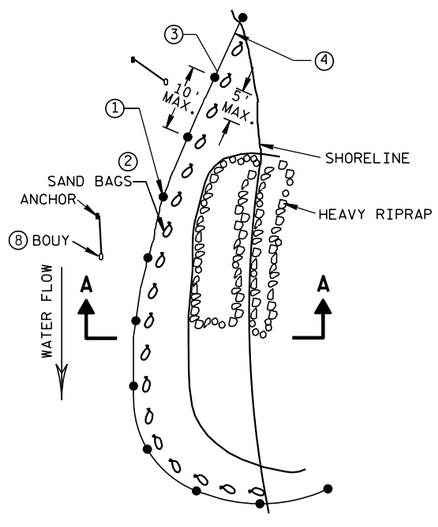




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

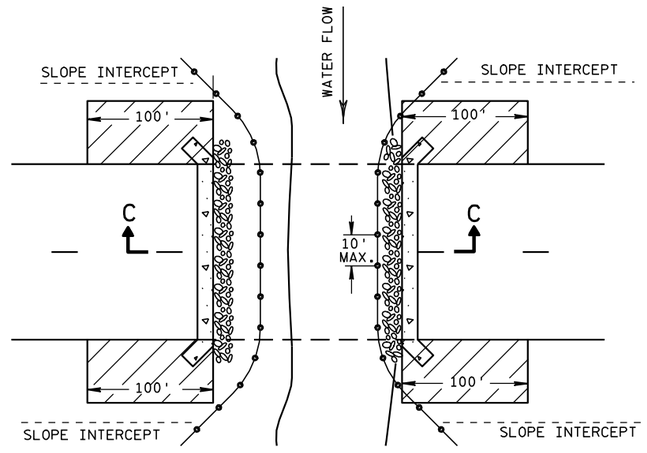
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

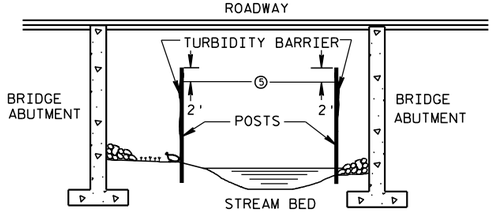
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



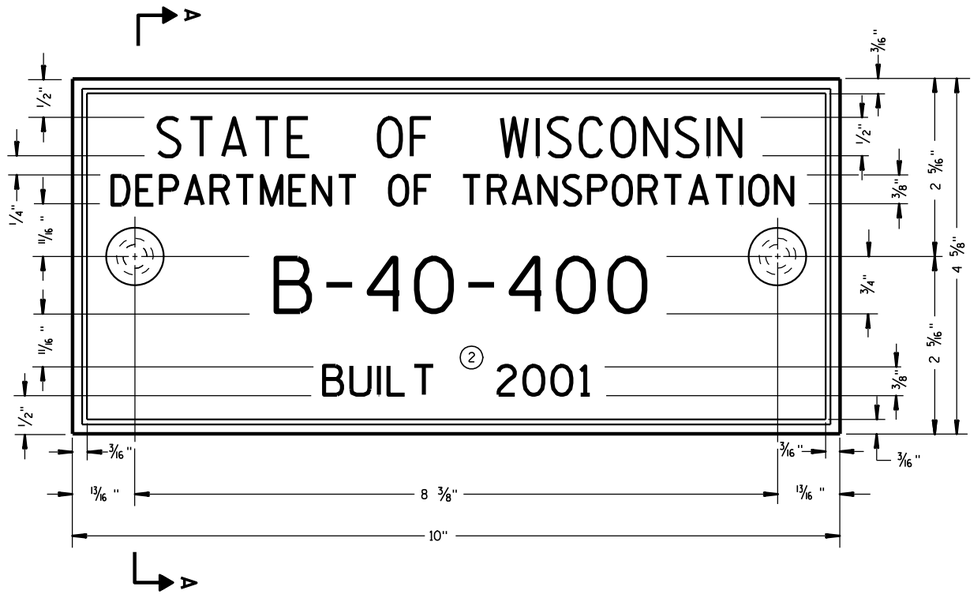
SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
6/04/02 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

6

S.D.D. 8 E 11-2



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

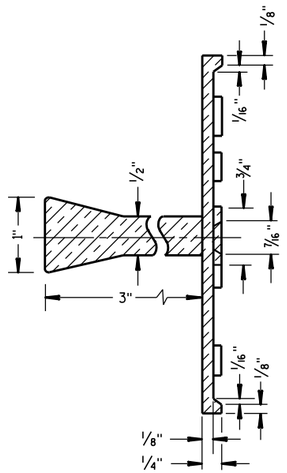
GENERAL NOTES

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.

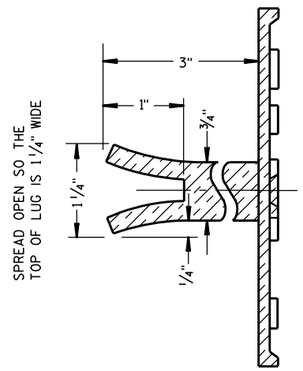
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

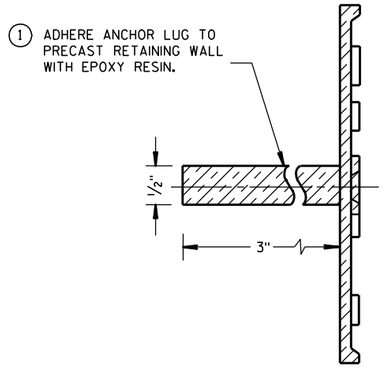
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



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 DEVELOP ENGINEER

FHWA

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

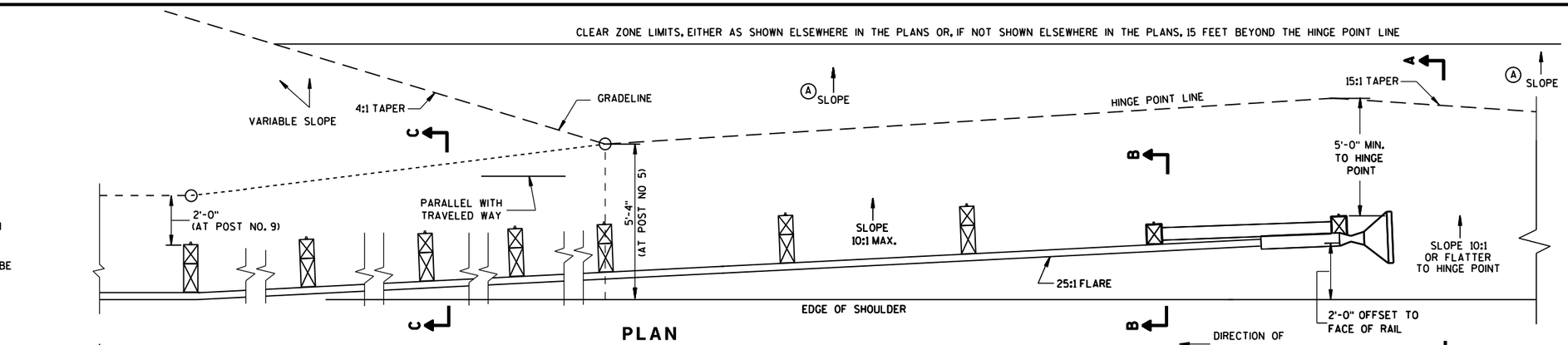
SEE SDD 14B42 FOR MORE INFORMATION.

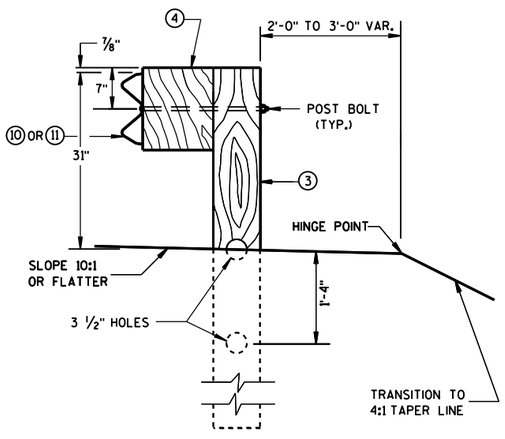
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

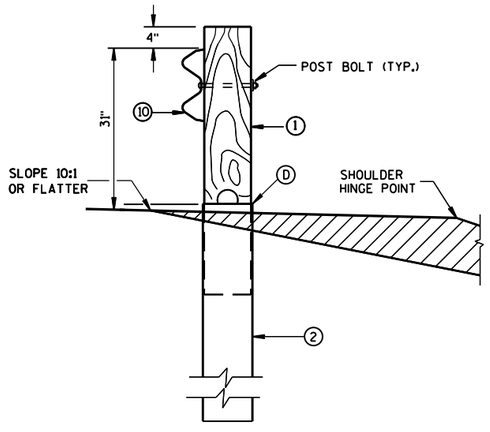
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

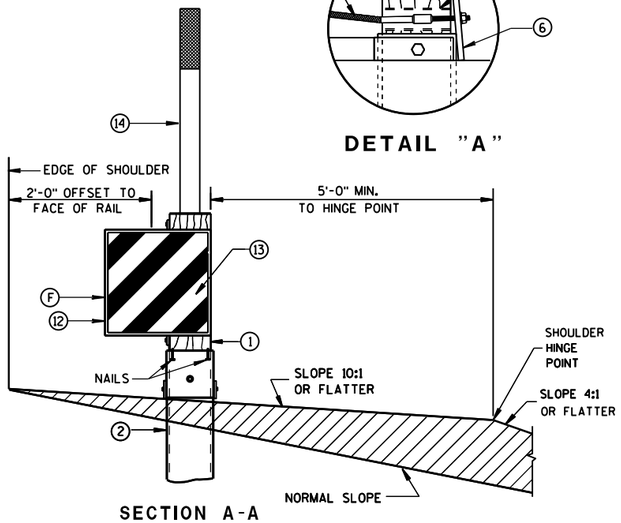




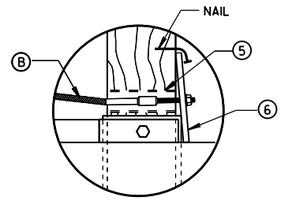
SECTION C-C
TYPICAL AT POST NOS. 3-9



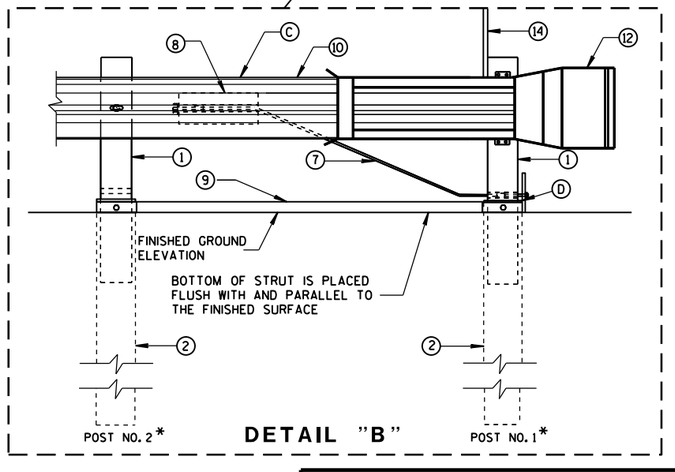
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



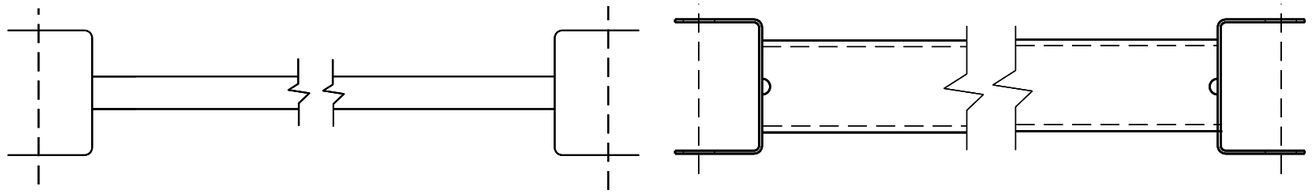
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

S.D.D. 14 B 44-2a

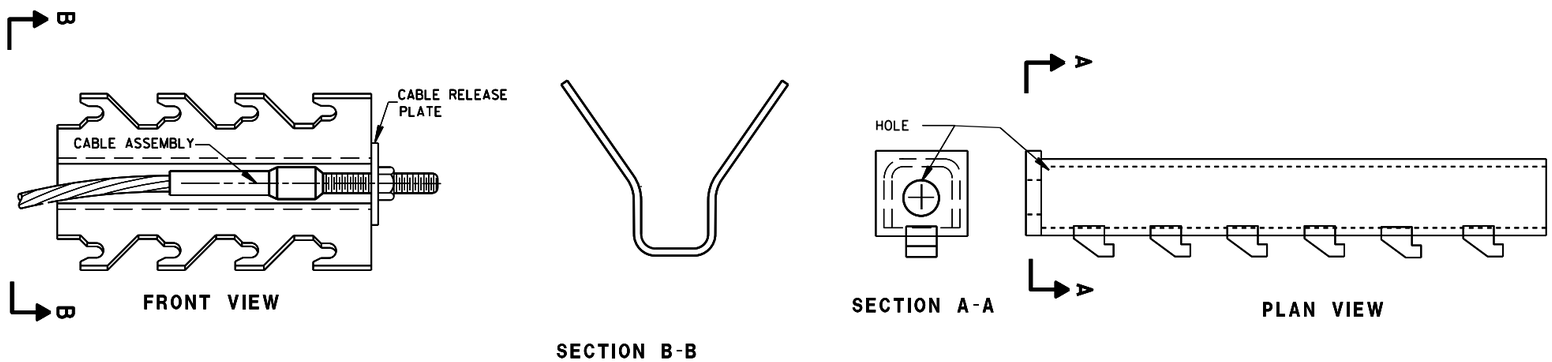
S.D.D. 14 B 44-2a



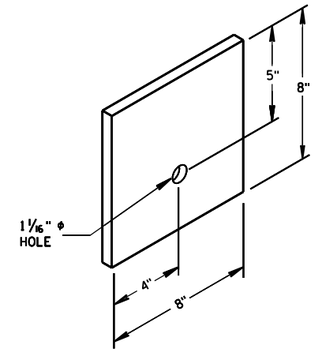
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)



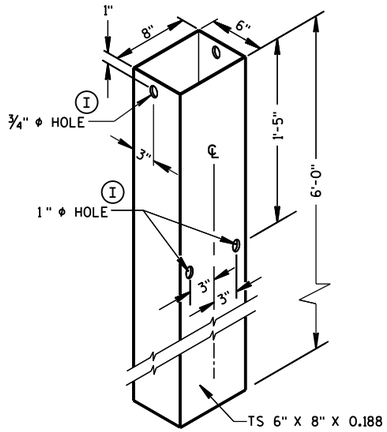
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

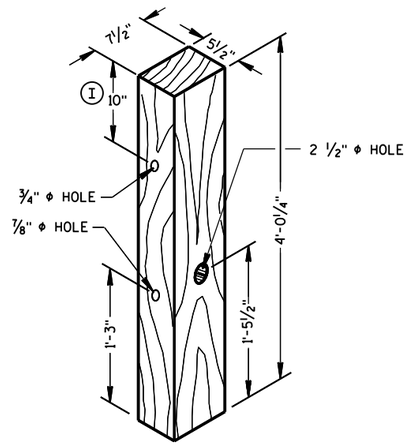
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 44-2b

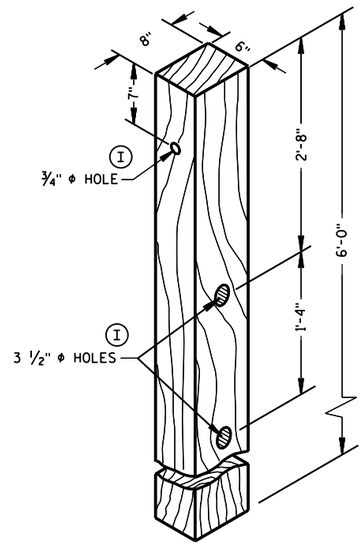


FOUNDATION TUBE (2)



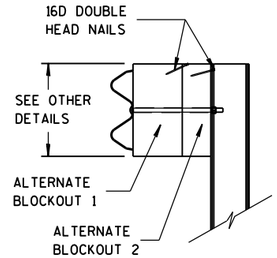
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

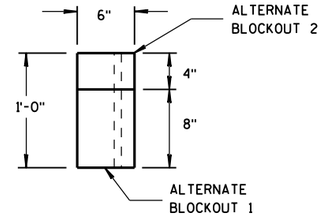


POSTS NUMBER 3-9

WOOD CRT POST (3)

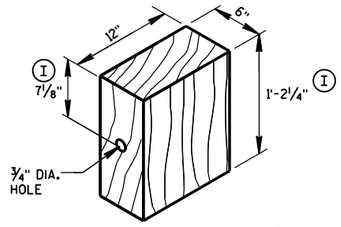


SIDE VIEW



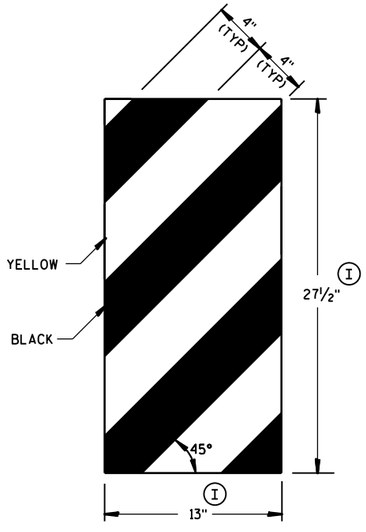
TOP VIEW

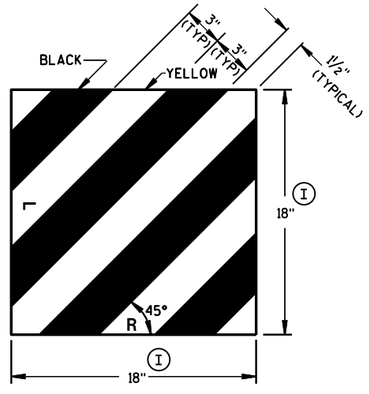
ALTERNATE WOOD BLOCKOUT DETAIL



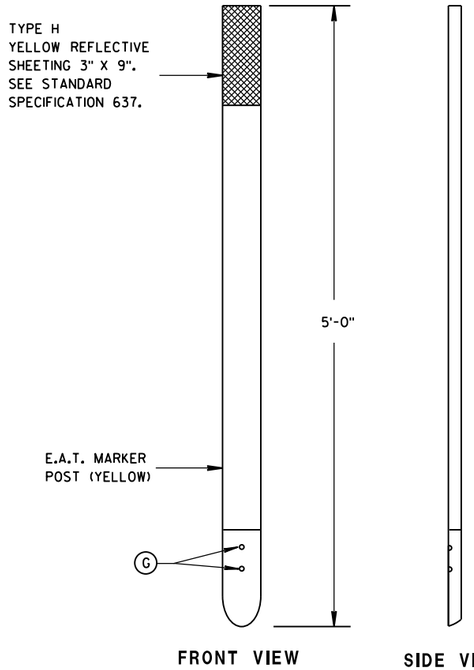
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





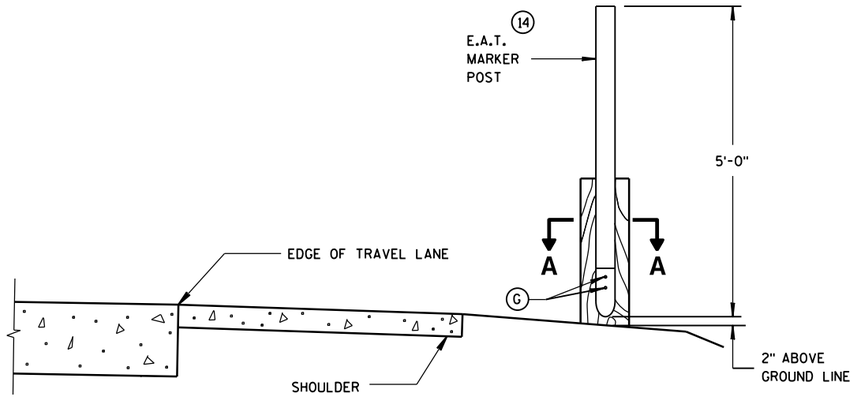
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

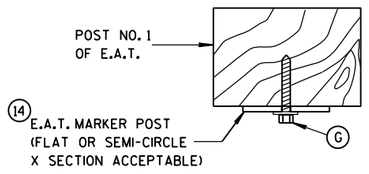
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

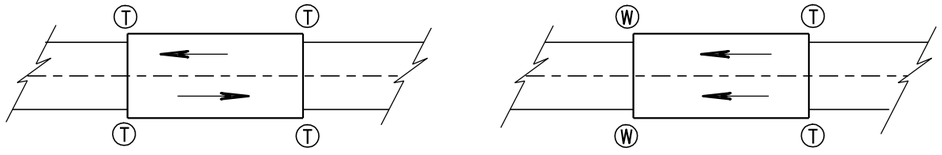
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

6

S.D.D. 14 B 44-2c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

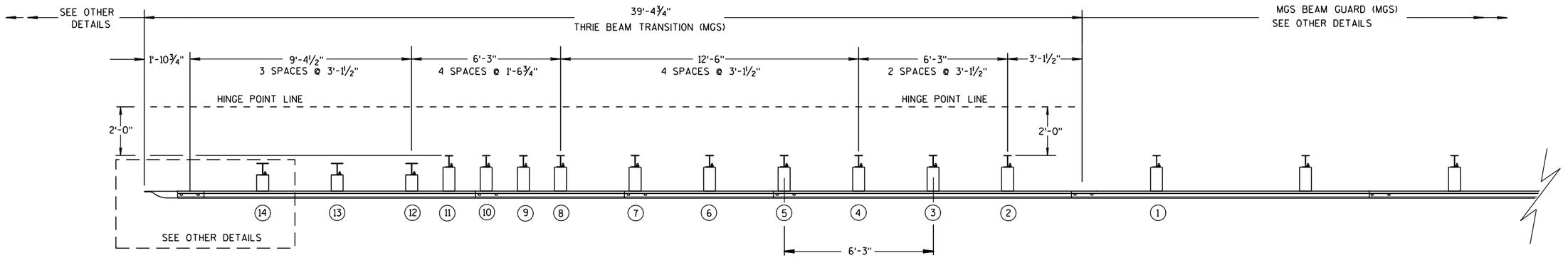
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

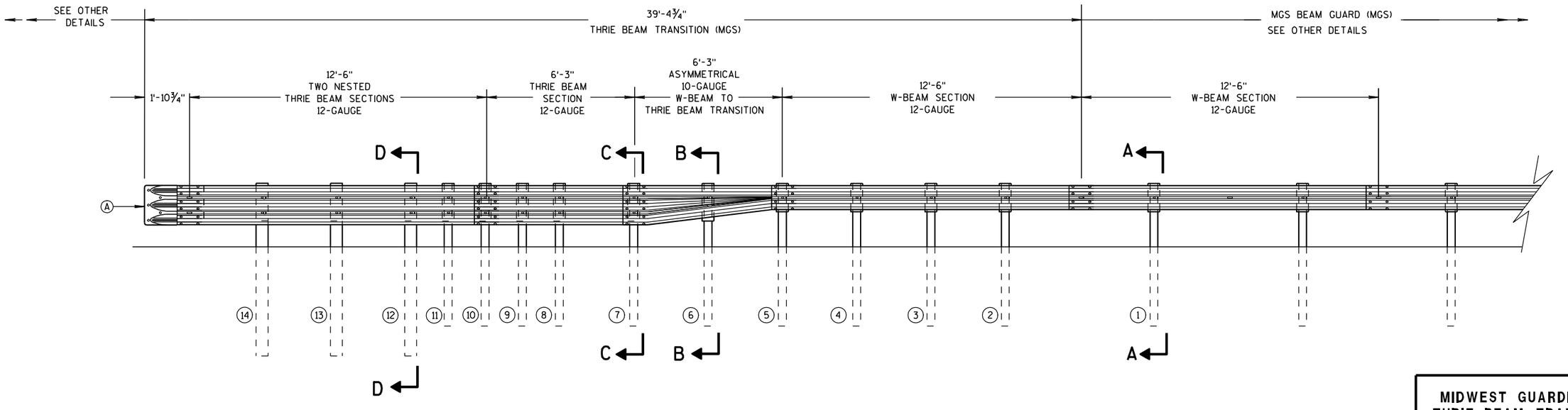
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	20

6

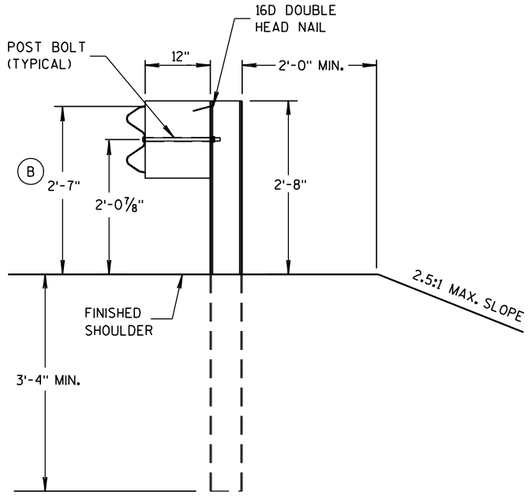
S.D.D. 14 B 45-3a

6

S.D.D. 14 B 45-3a

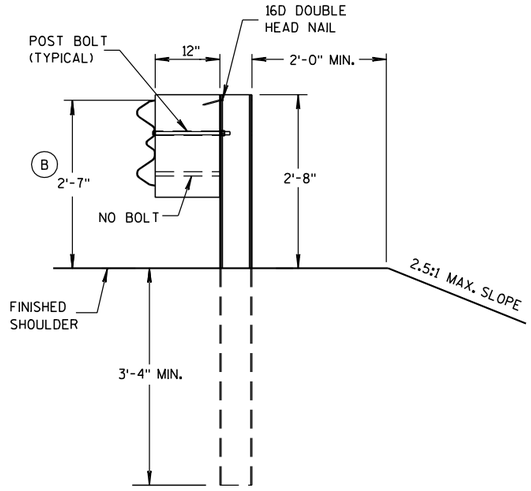
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



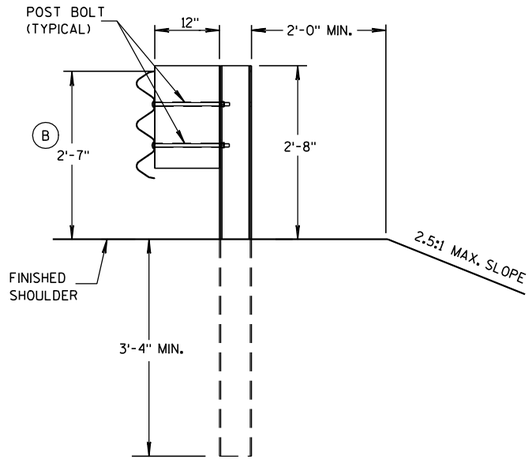
SECTION A-A

POSTS 1-5



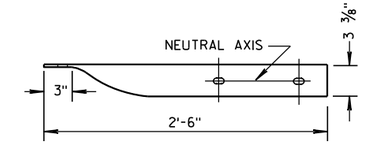
SECTION B-B

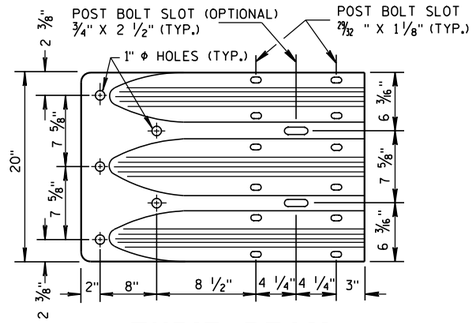
POST 6



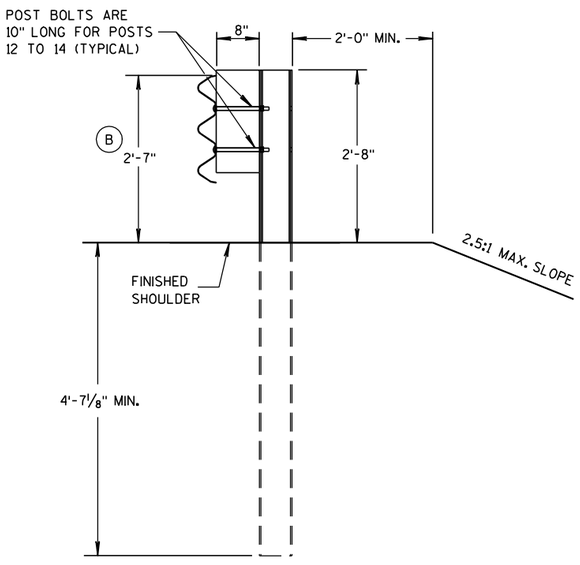
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

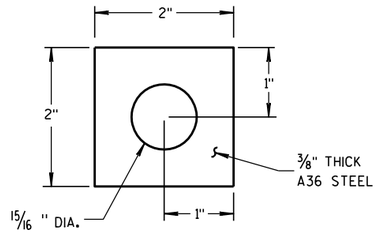
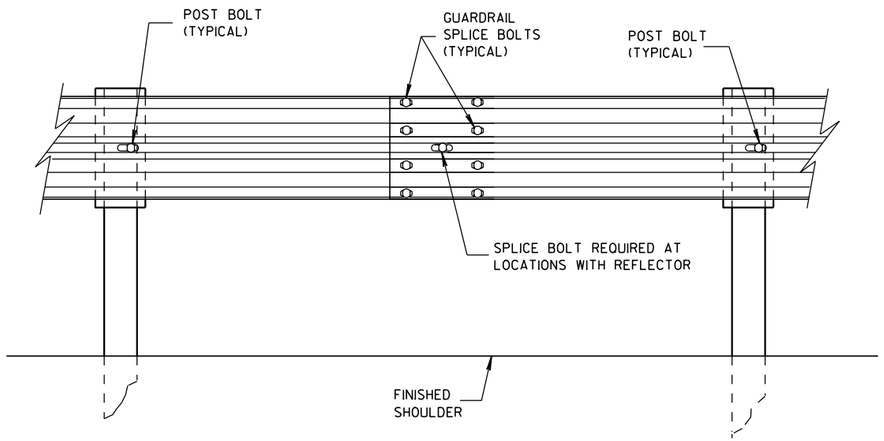
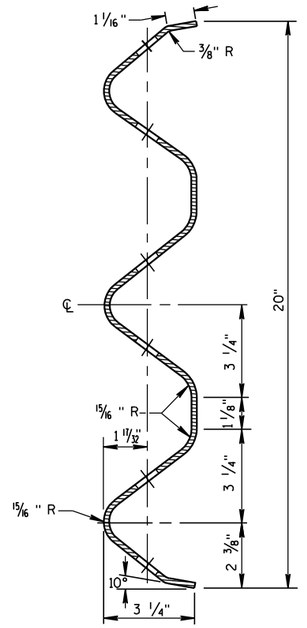


PLATE WASHER DETAIL



SPLICE DETAIL

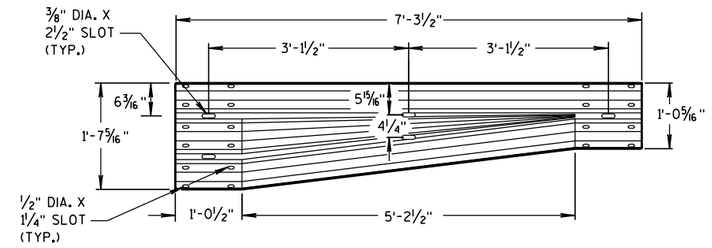


SECTION THRU THRIE BEAM RAIL ELEMENT

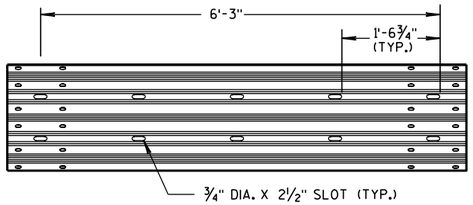
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

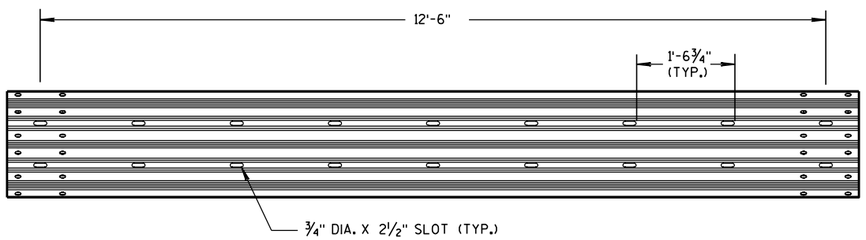
6
S.D.D. 14 B 45-3b



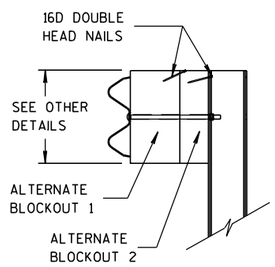
W-BEAM TO THRIE BEAM TRANSITION SECTION



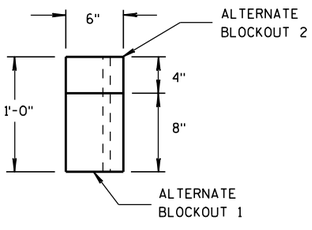
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

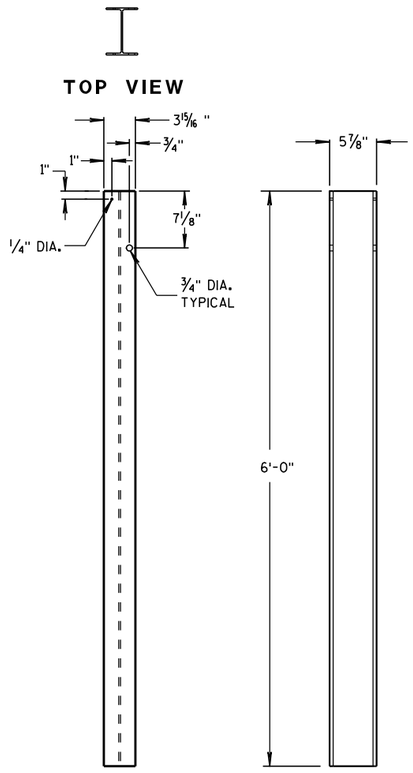


SIDE VIEW

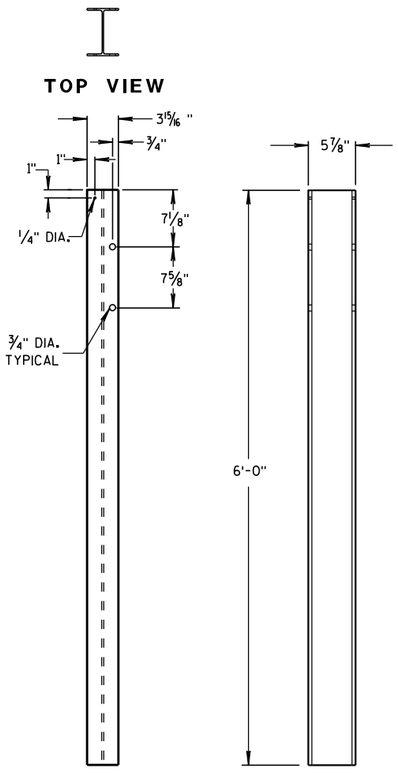


TOP VIEW

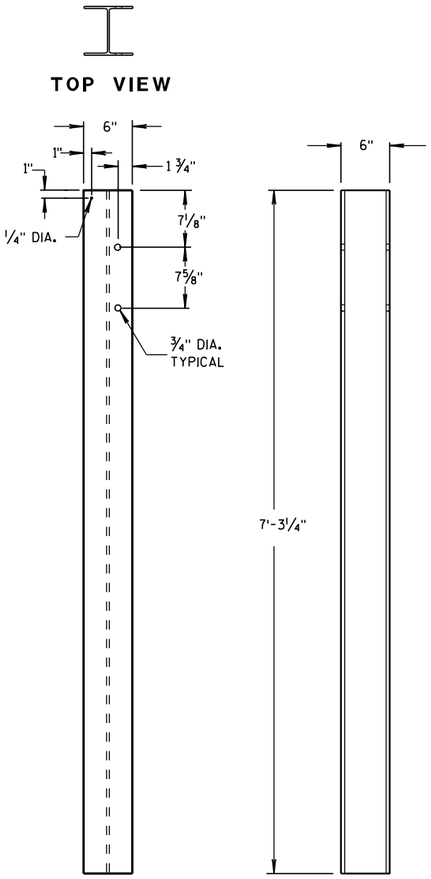
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

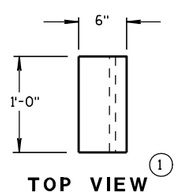


STEEL POSTS 6-11

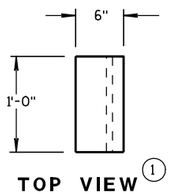


STEEL POSTS 12-14

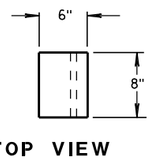
1 WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



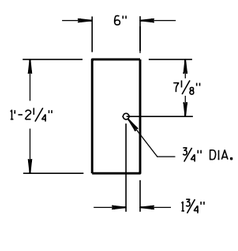
TOP VIEW (1)



TOP VIEW (1)

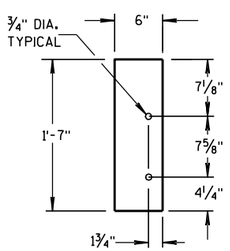


TOP VIEW



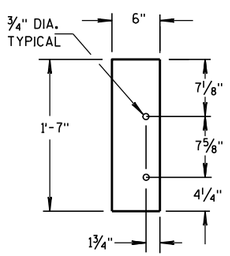
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

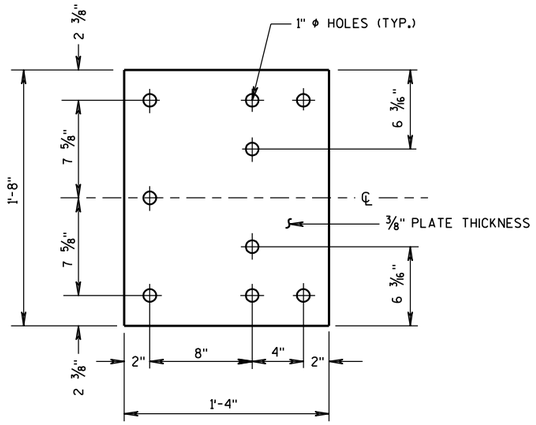
POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

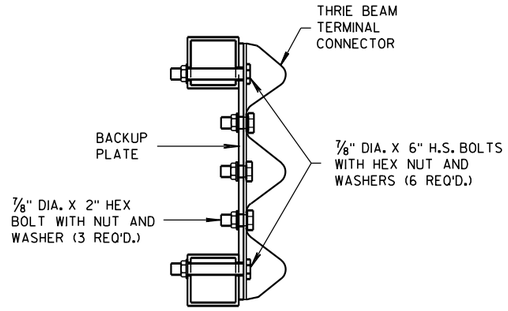
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 45-3c



BACK-UP PLATE DETAIL

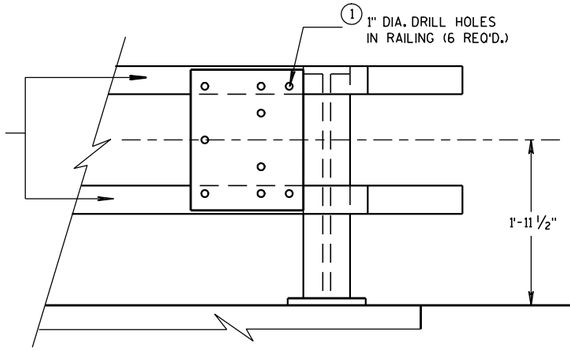


SECTION J-J

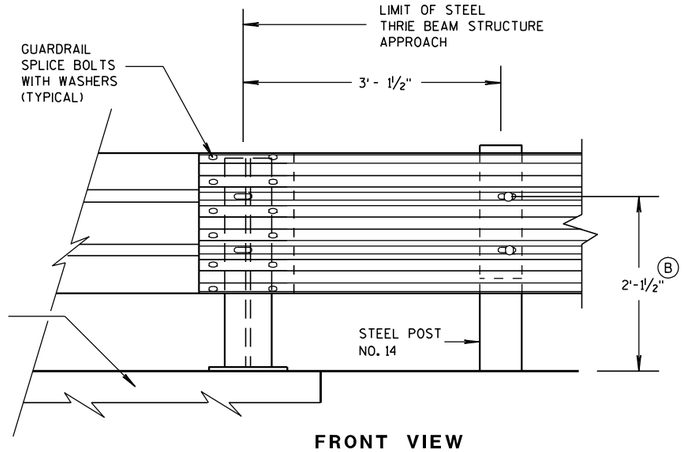
GENERAL NOTES

(1) DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(B) TOLERANCE FOR TOP OF BEAM IS ± 1".

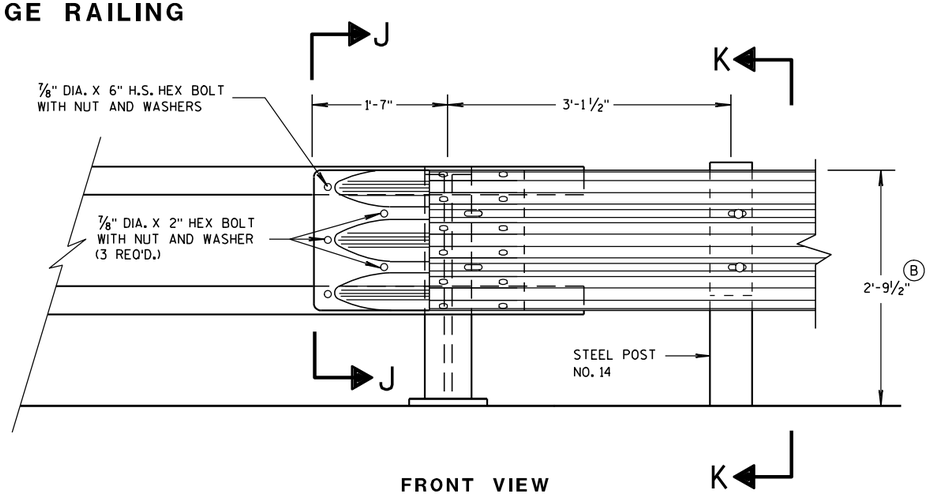


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

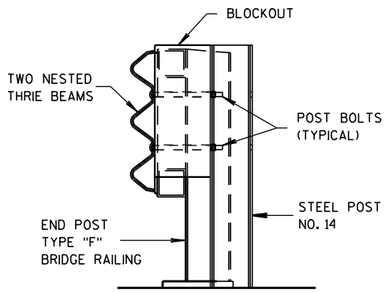


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

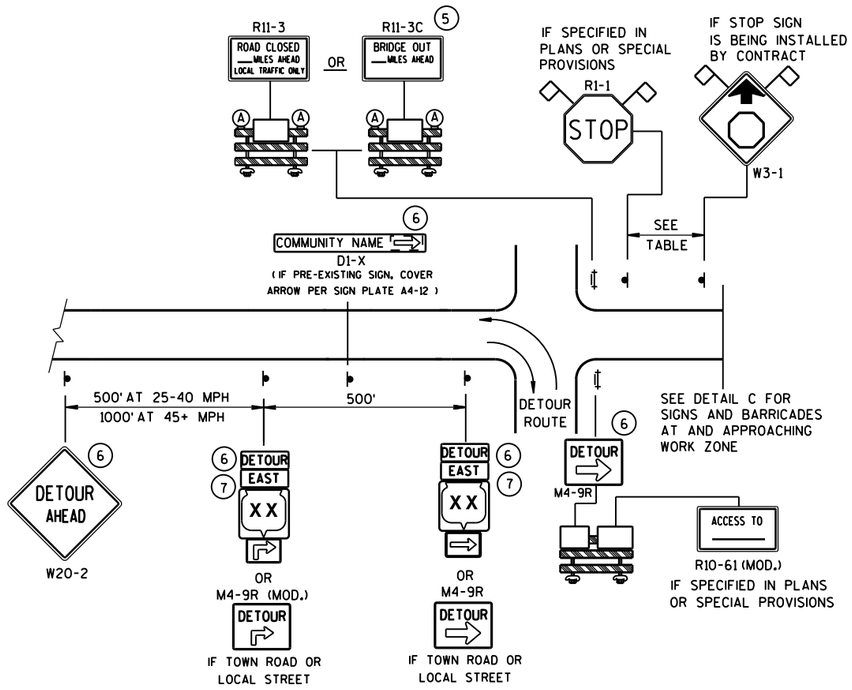
APPROVED
8/31/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 45-3g

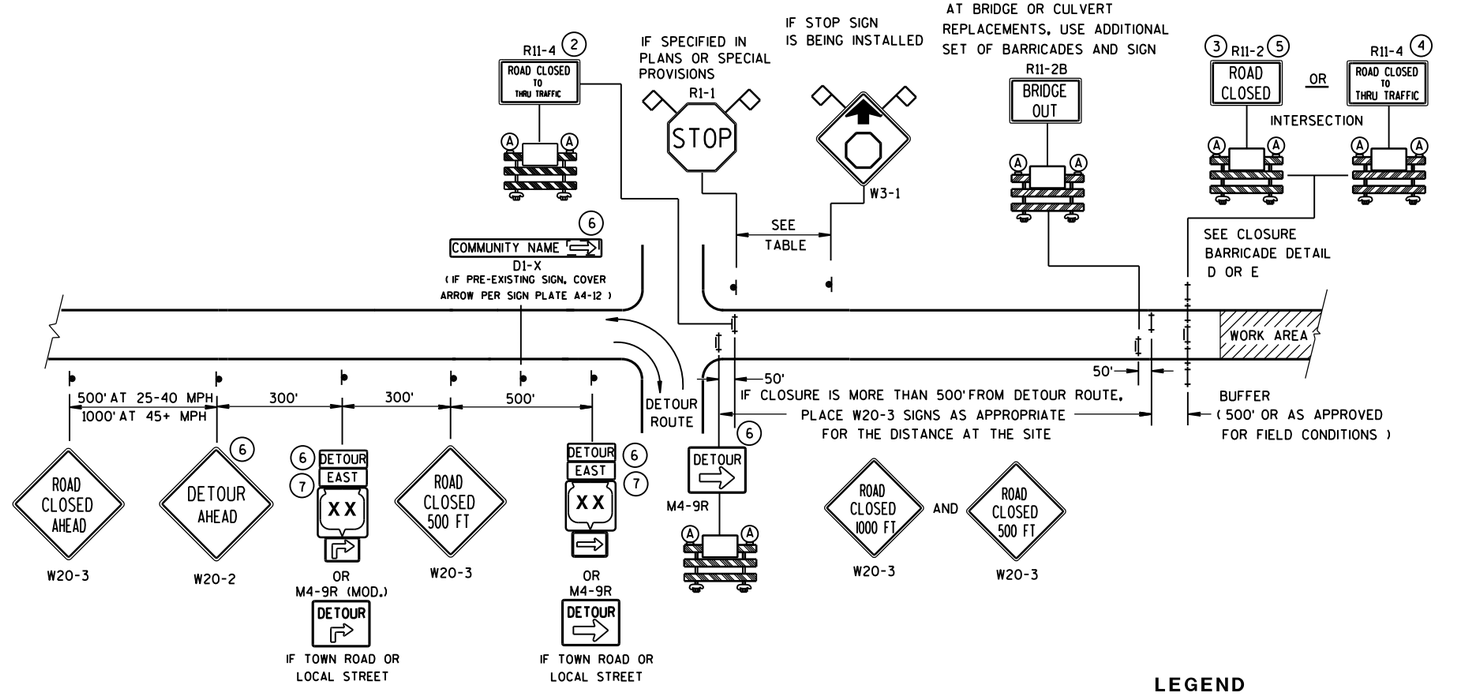
6

S.D.D. 14 B 45-3g



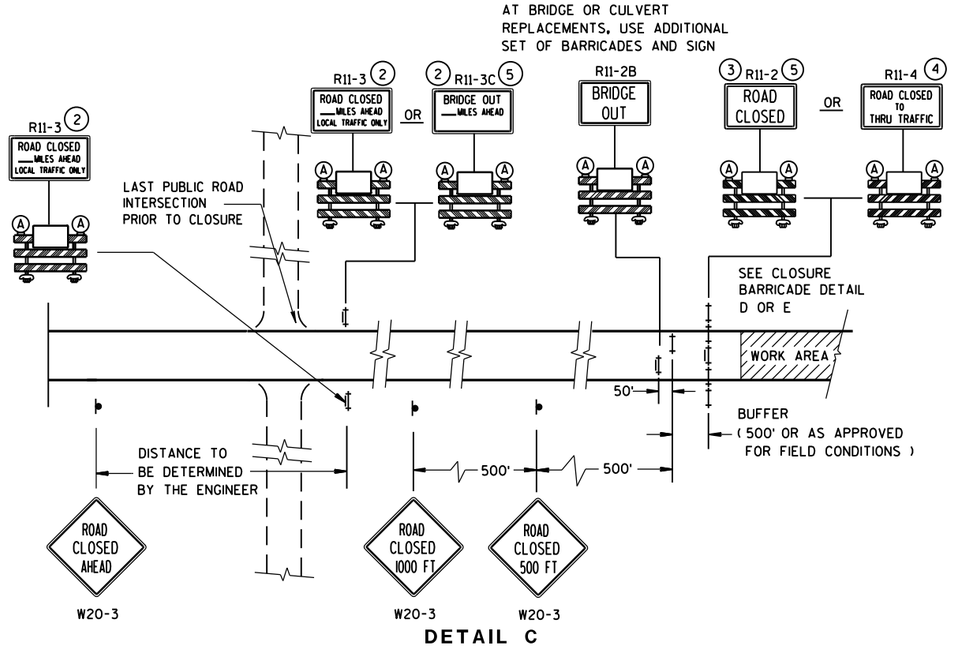
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

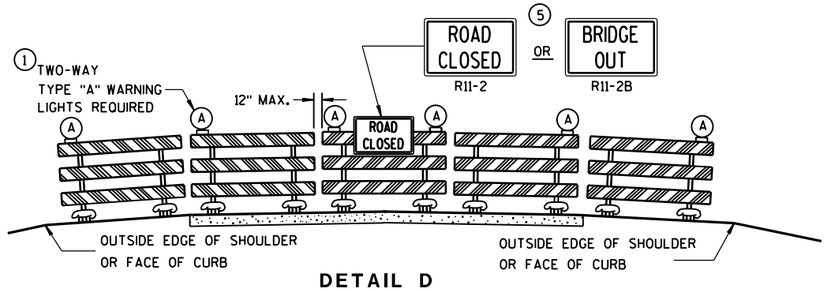
8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

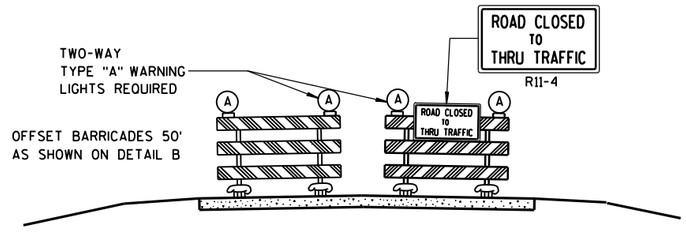
S.D.D. 15 C 2-5a



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.

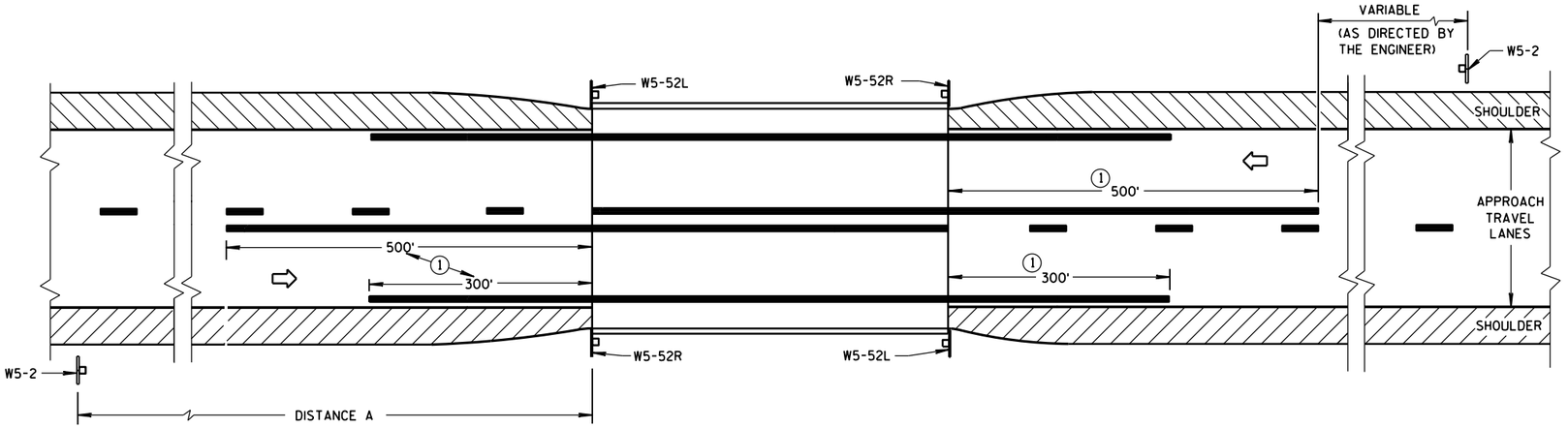
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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



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.

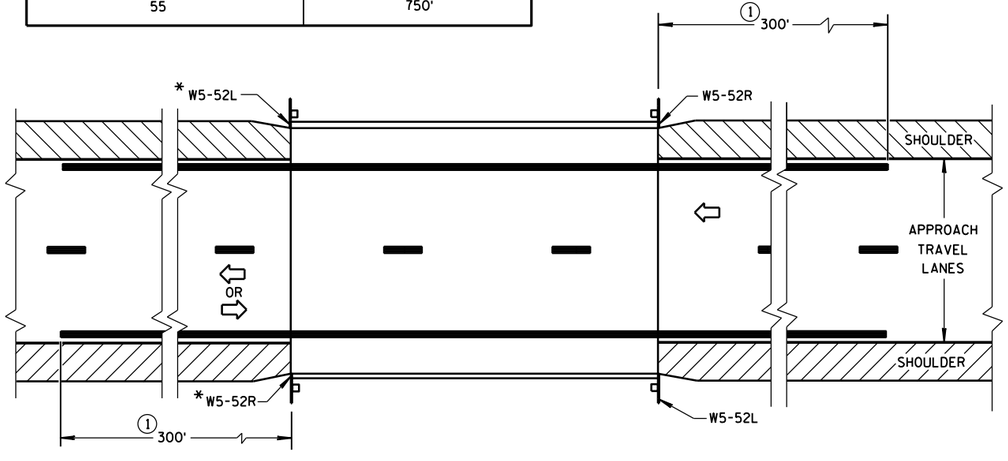
DISTANCE TABLE

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

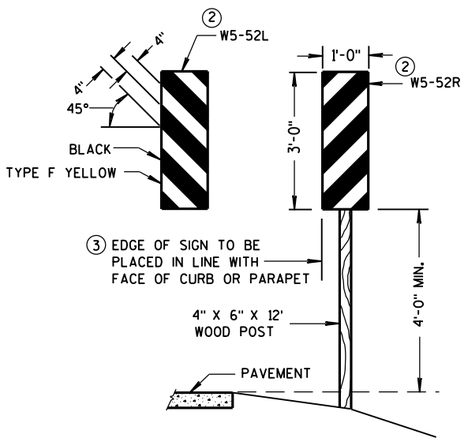


*OMIT ON ONE-WAY TRAVELLED WAYS

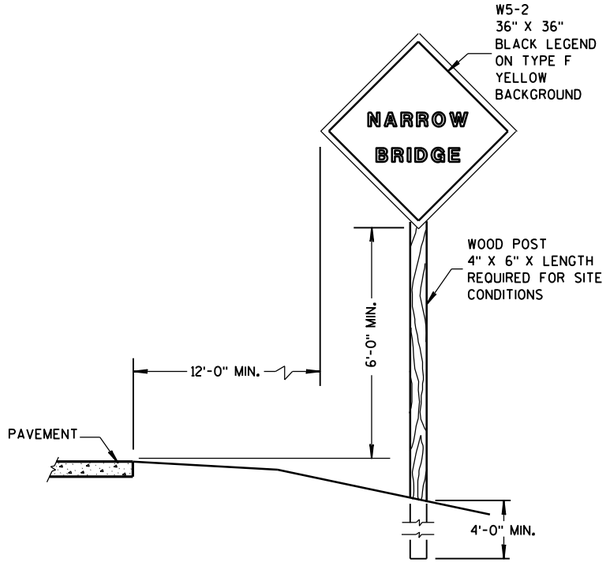
SITUATION 2

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

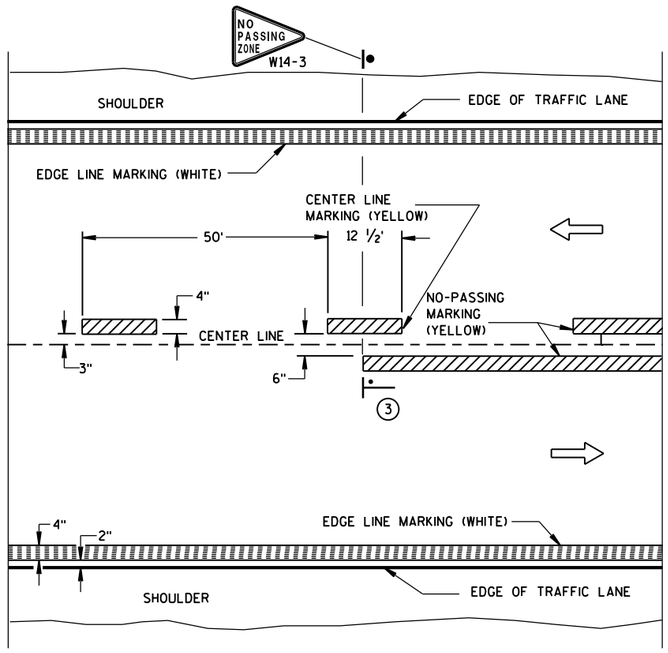
3-2014 DATE

/S/ Travis Feltes STATE TRAFFIC ENGINEER

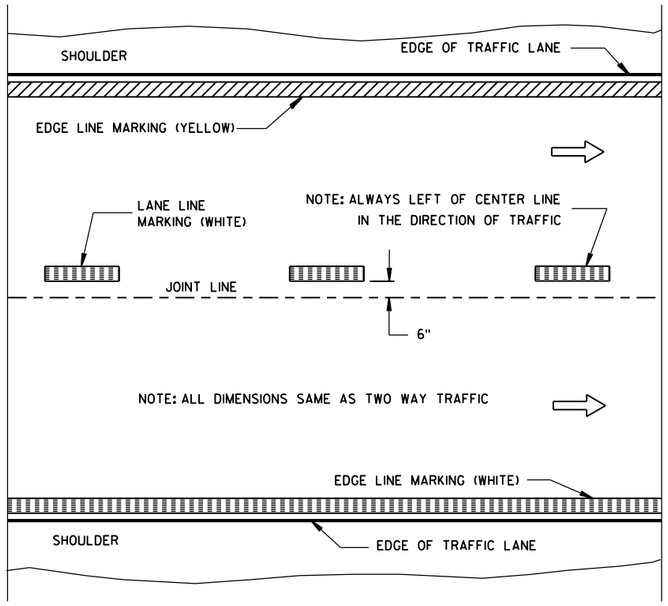
FHWA

6

S.D.D. 15 C 6-7

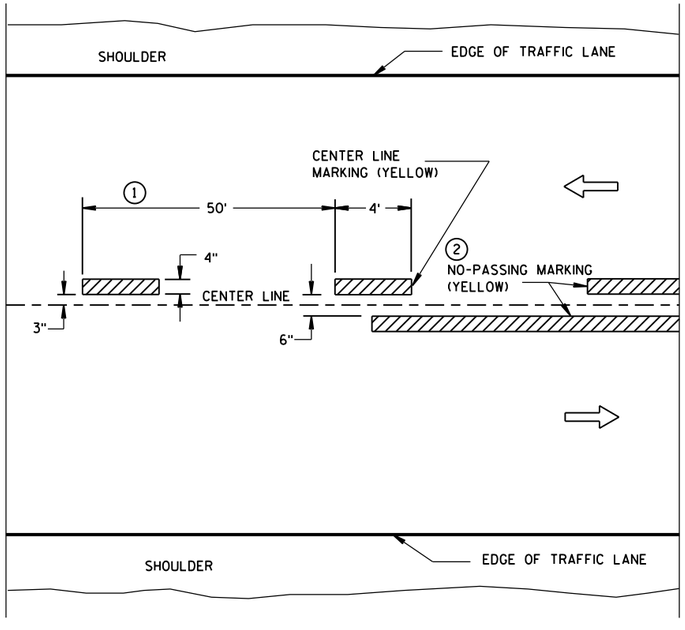


TWO WAY TRAFFIC

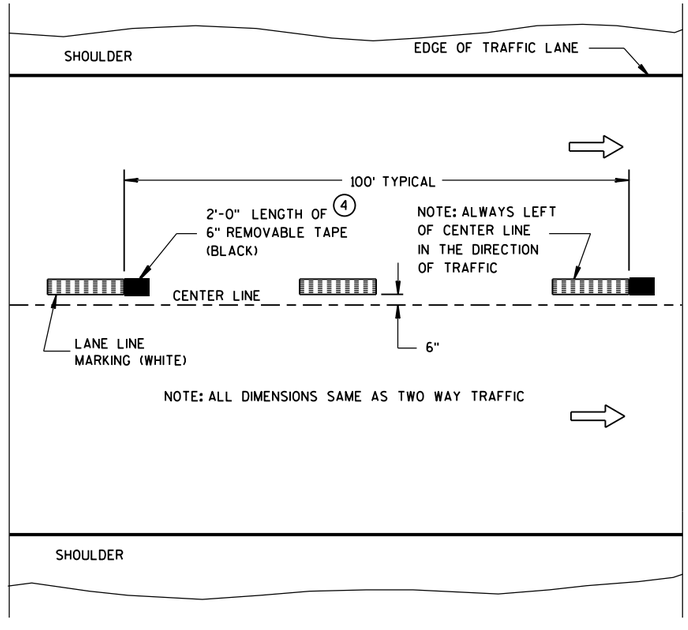


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

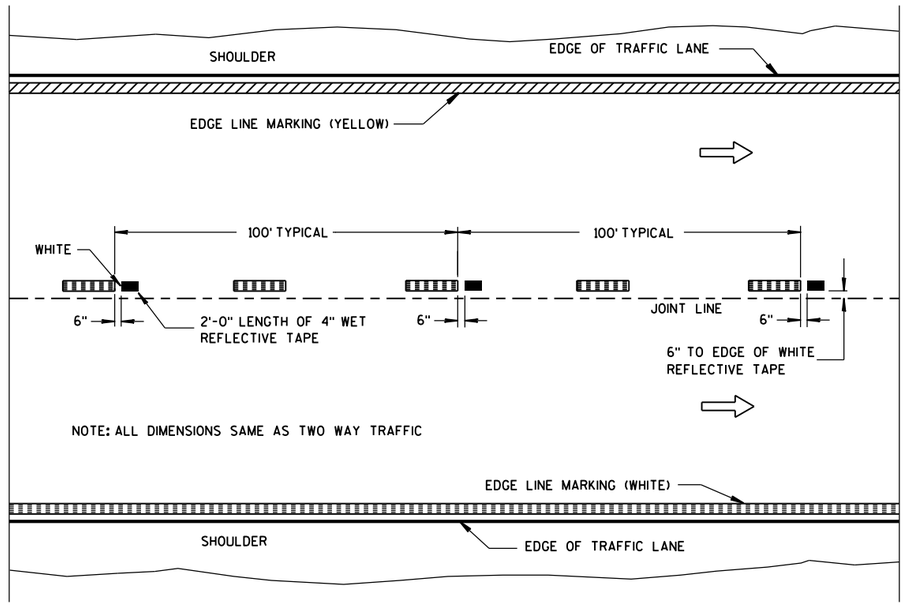
GENERAL NOTES

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

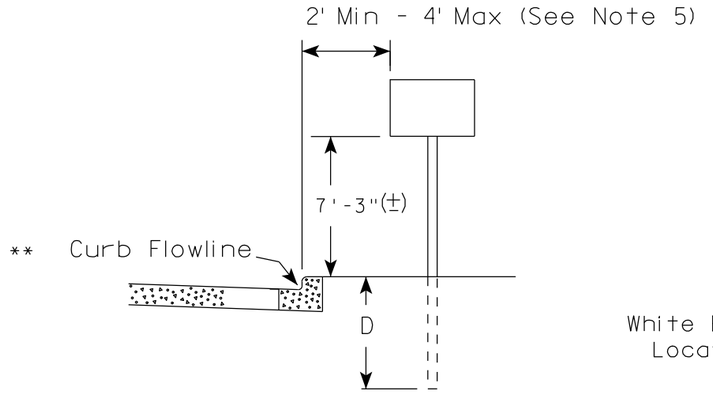
6

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

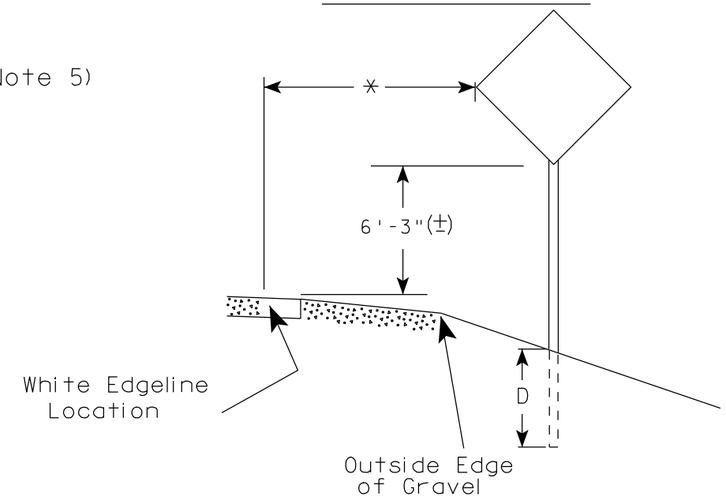
6

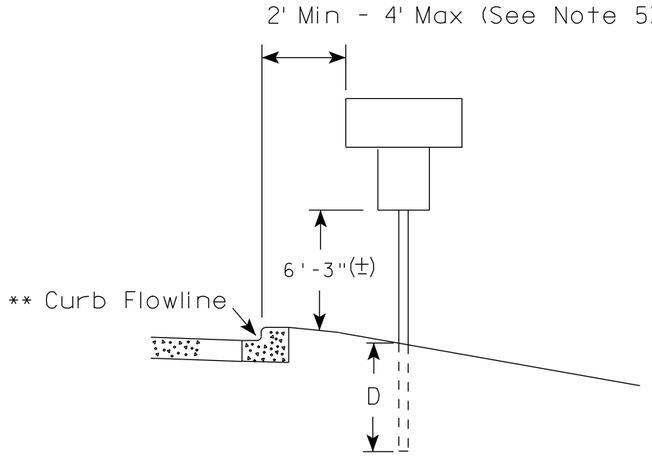
S.D.D. 15 C 8-16a

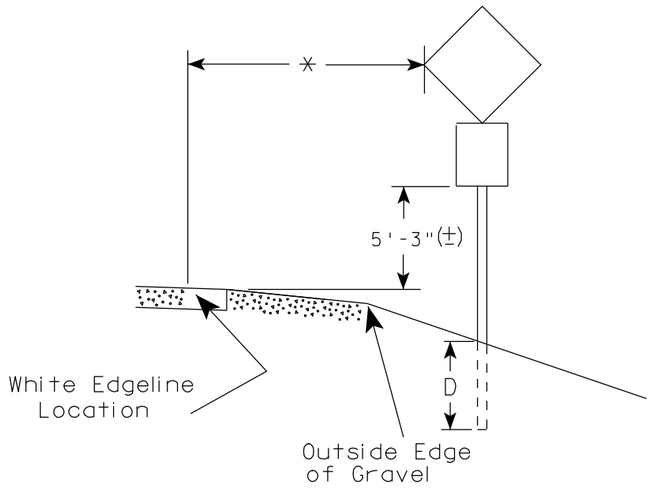
URBAN AREA



RURAL AREA (See Note 2)







** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

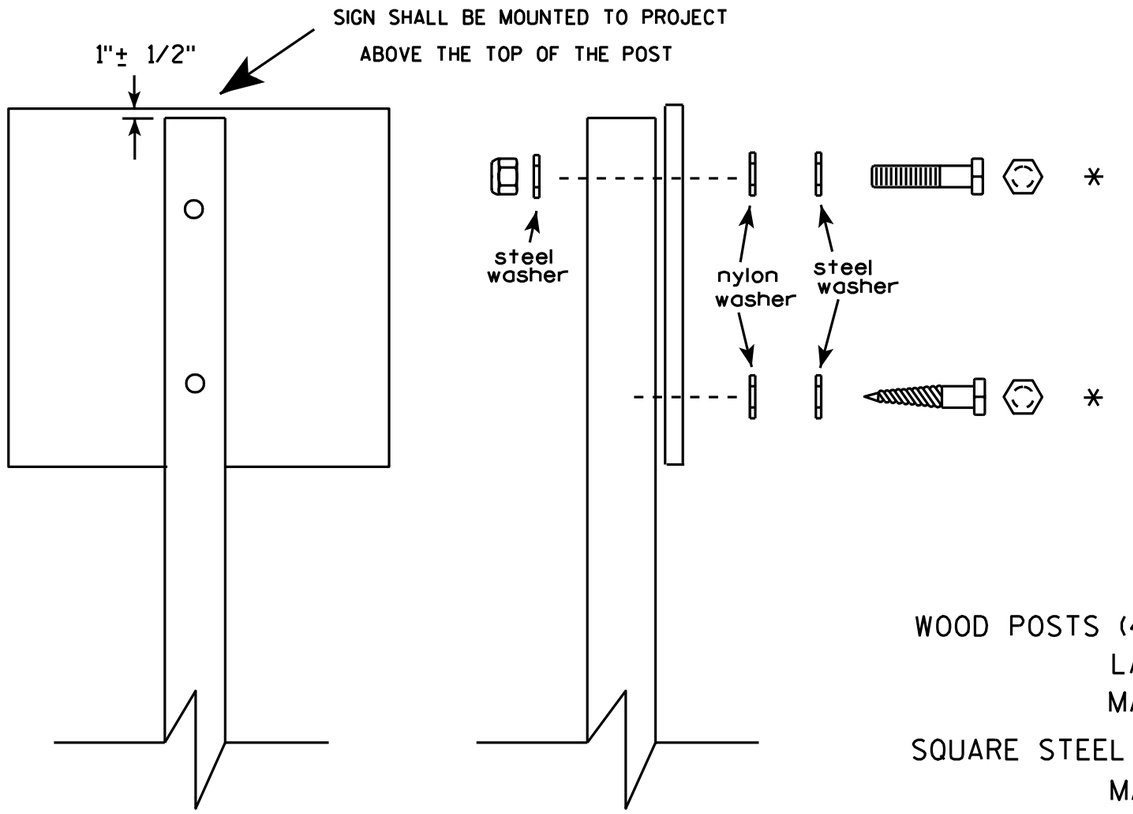
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-3.16

7

7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 28	E



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

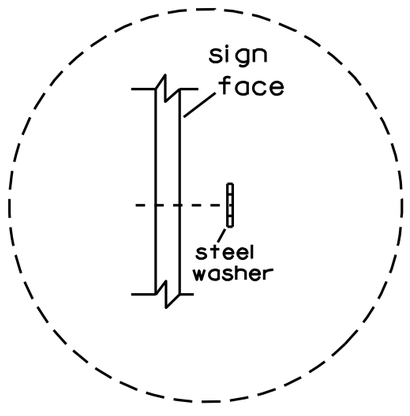
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

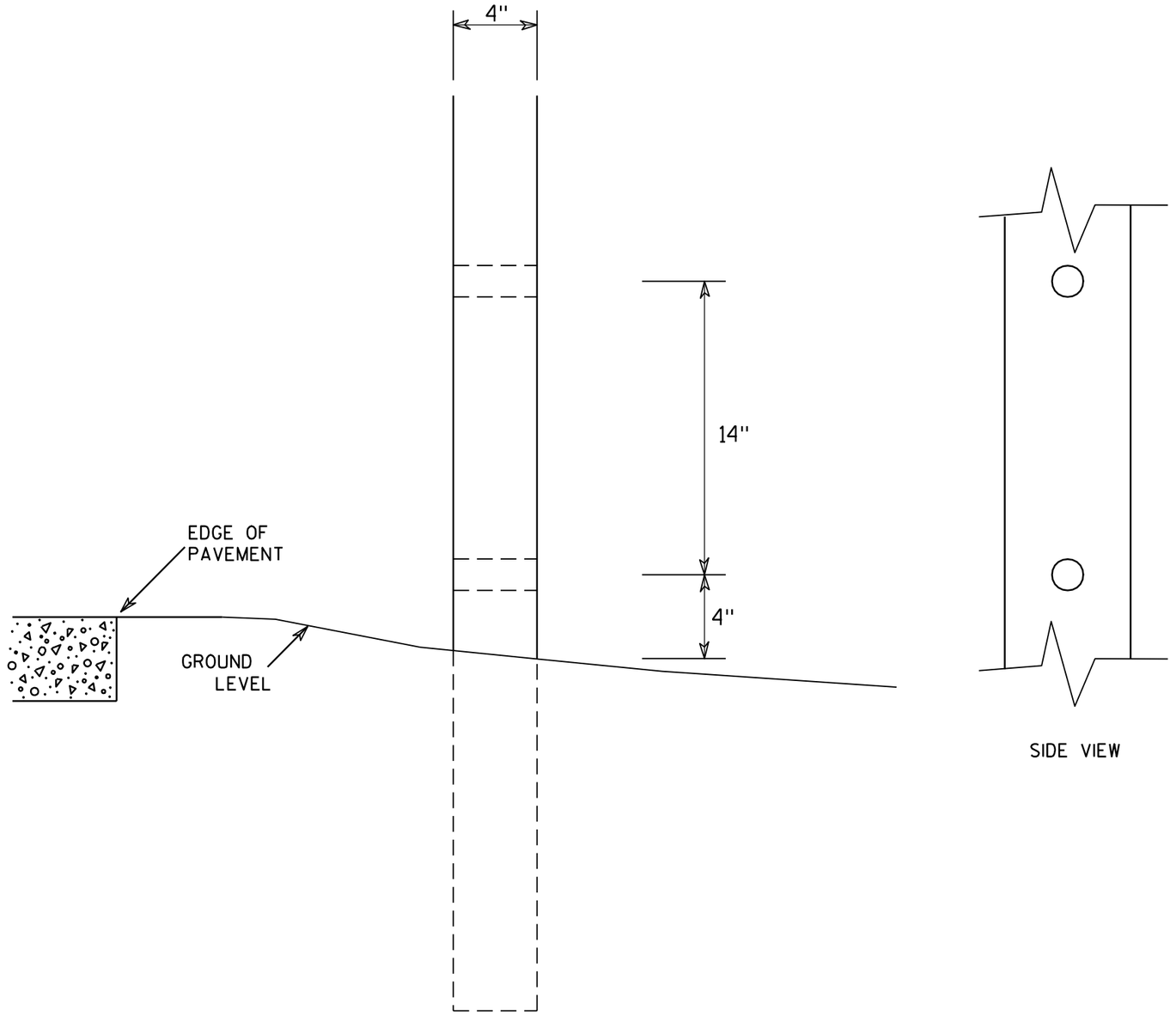
DATE 3/23/10 PLATE NO. A4-8.7

7

7

PROJECT NO:

SHEET NO: 29 E



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

7

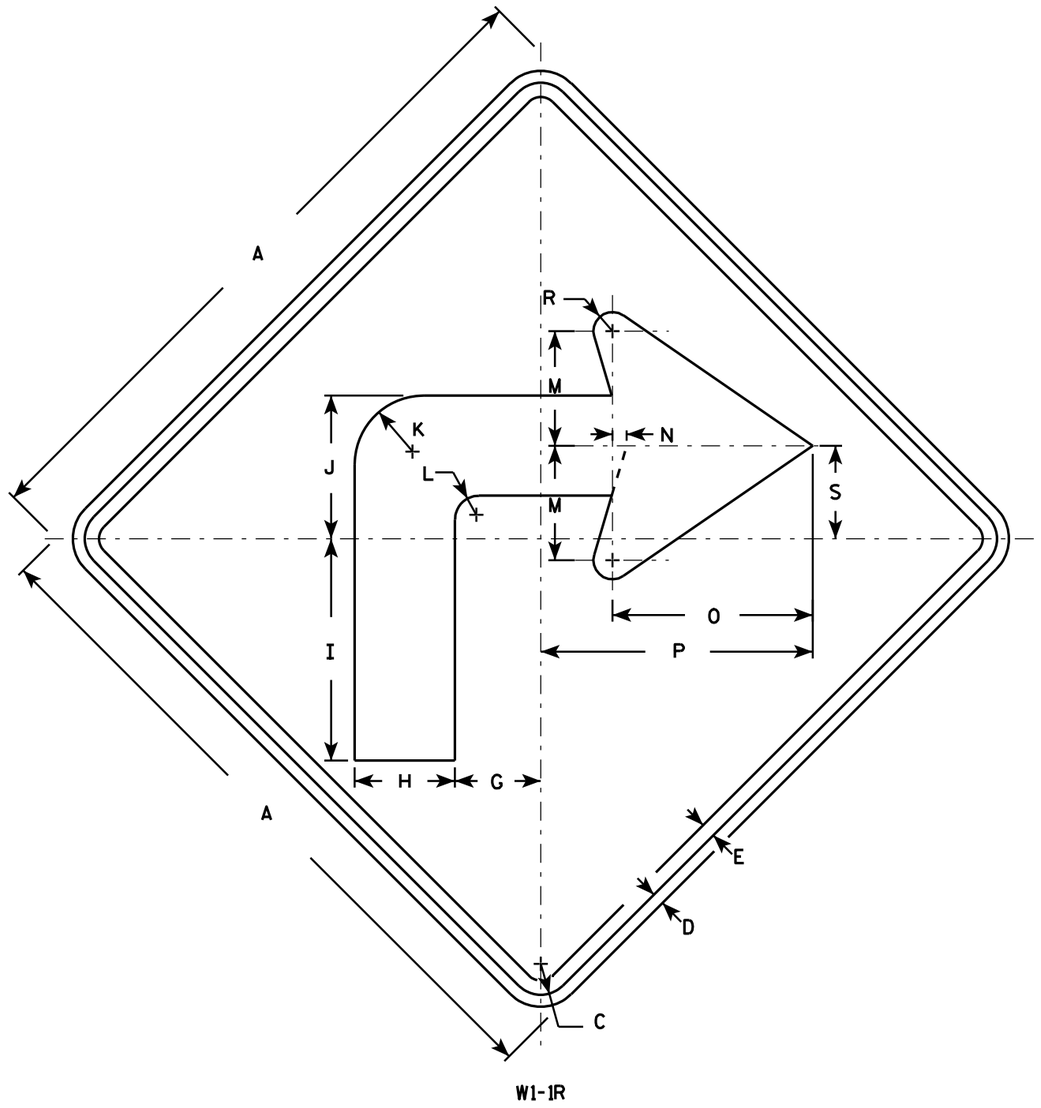
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 30	E



W1-1R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-1L is the same as W1-1R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		3	3 1/2	7 3/4	5	2 1/2	7/8	4	1/2	7	9 1/2		5/8	3 1/4								4.0
2S	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
2M	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
3	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
4	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0
5	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0

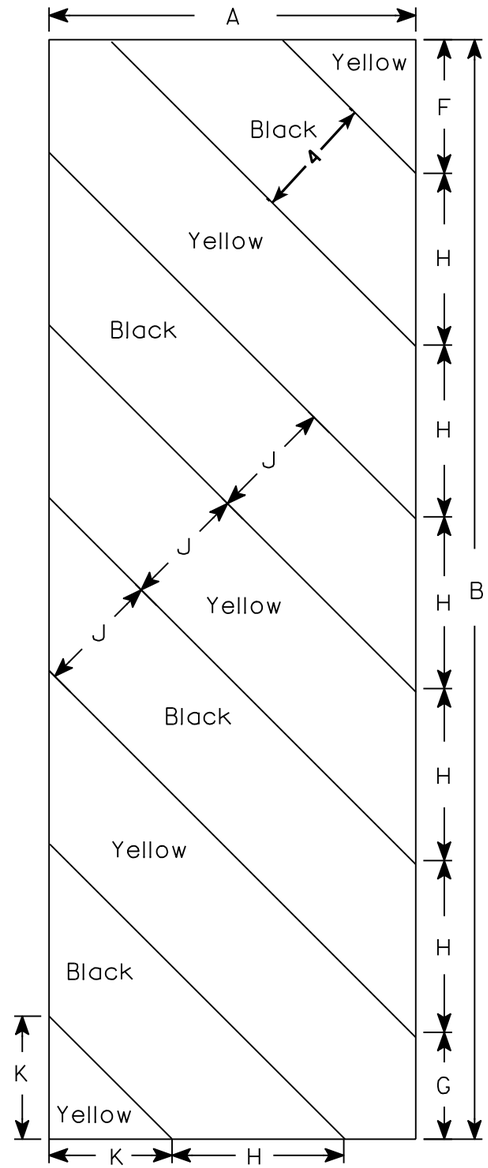
STANDARD SIGN
W1-1

WISCONSIN DEPT OF TRANSPORTATION

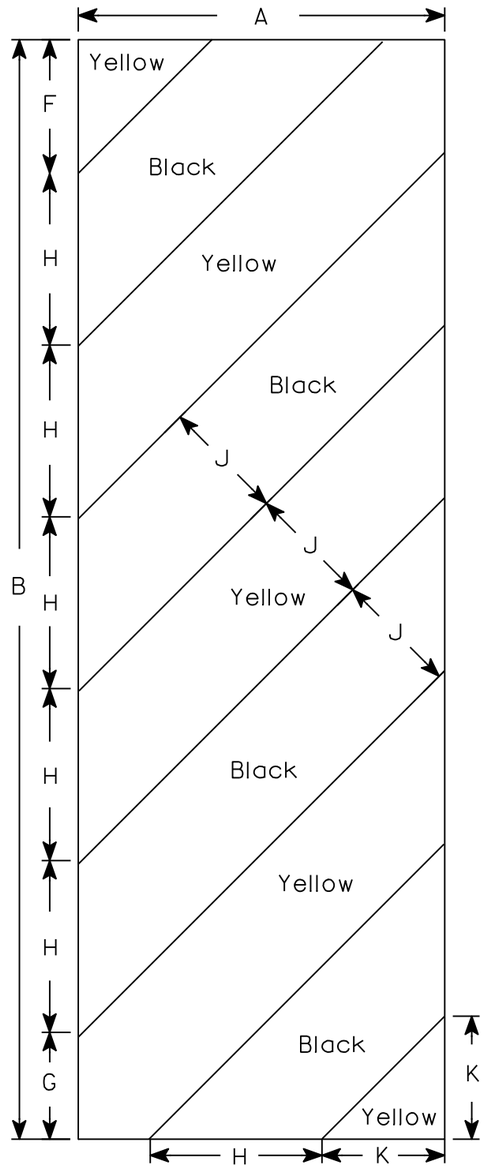
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 31 | E



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

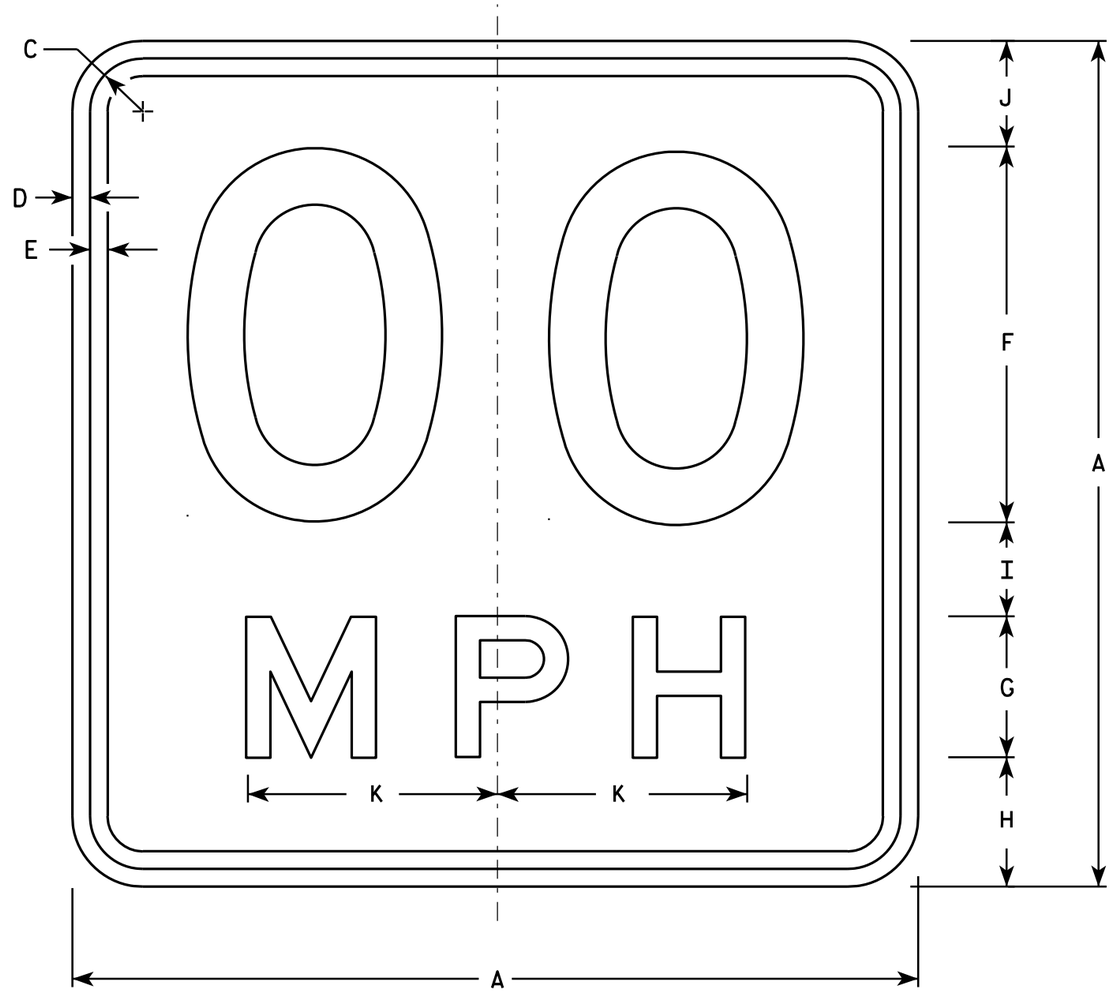
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 32	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W552.DGN PLOT DATE : 29-MAY-2012 13:03 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 4.961899:1.000000

WISDOT/CADDS SHEET 42

7

7



W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
	1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
	3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN
W13-1

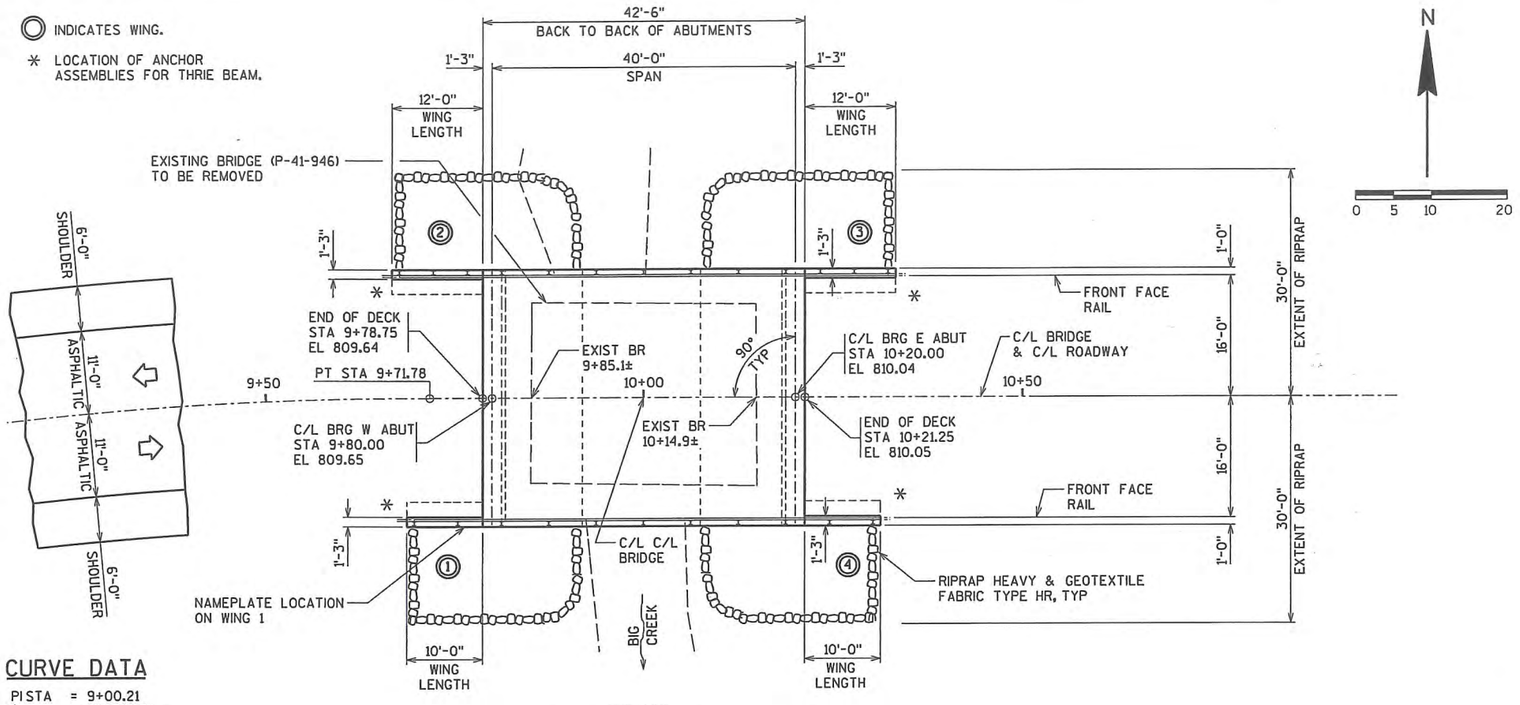
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 33 | E

STATE PROJECT NUMBER
5019-00-70

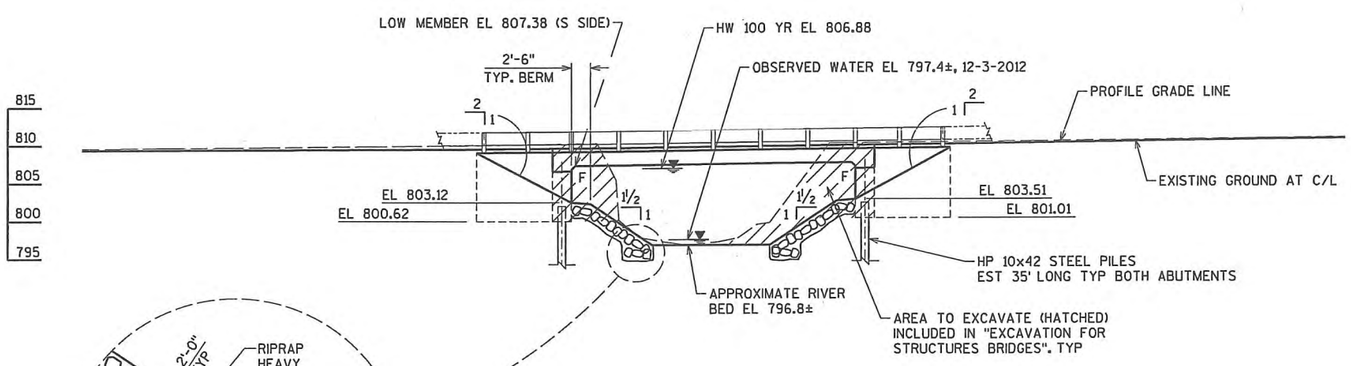


PLAN

SINGLE-SPAN REINFORCED CONCRETE FLAT SLAB

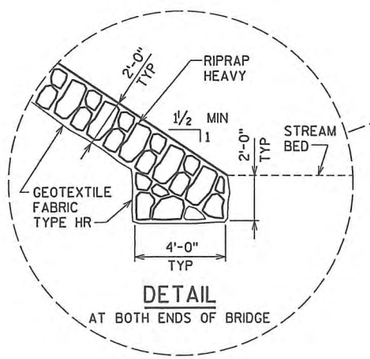
CURVE DATA

PI STA	=	9+00.21
Δ	=	16° 31' 05"
D	=	11° 27' 33"
T	=	72.58'
R	=	500.00'
L	=	144.15'
PC STA	=	8+27.63
PT STA	=	9+71.78



ELEVATION

LOOKING NORTH



DETAIL

AT BOTH ENDS OF BRIDGE

BENCHMARK (DATUM = NAVD 88)			
NO	STATION	DESCRIPTION	ELEV
1	7+39.63 35.9'LT	⅜" SPK IN PP	809.357
2	10+68.34 28.4'LT	⅜" SPK IN 42" TREE	812.370

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.12
OPERATING RATING FACTOR: RF = 1.45
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF

INVENTORY AND OPERATING RATINGS DO NOT INCLUDE FUTURE WEARING SURFACE.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY - SLAB	f'c =	4,000 psi
- ALL OTHER (GRADE A)	f'c =	3,500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT AASHTO GRADE 60	fy =	60,000 psi

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 35 FEET LONG AT EACH ABUTMENT.

*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

HYDRAULIC DATA

100 YEAR FREQUENCY		
Q_{100}	1600	CFS
Q_{100} THRU BRIDGE	1600	CFS
VELOCITY	9.52	FPS
HIGH WATER EL	806.88	FT
WATERWAY AREA	168.04	SQ FT
DRAINAGE AREA	8.40	SQ MI

2 YEAR FREQUENCY		
Q_2	282	CFS
HIGH WATER EL	801.76	FT

SCOUR CODE 8

TRAFFIC DATA

ADT (2014)	=	660
ADT (2034)	=	891
DHV	=	89
D	=	50 %
T	=	5 %
DESIGN SPEED	=	40 MPH

LIST OF DRAWINGS

WISCONSIN PROFESSIONAL ENGINEER
CHRISTOPHER J. BLUM
E-33157
MADISON
WI

2-24-14

SEH CONTACT: CHRIS BLUM, PE, 608.620.6192
WISDOT BRIDGE OFFICE CONTACT: BILL DREHER, PE, 608.266.8489

NO.	DATE	REVISION	BY

SEH
SHORT ELLIOTT HENDRICKSON INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 08/22/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-41-297

CTH BC OVER BIG CREEK

COUNTY	TOWN ~~CITY/VILLAGE~~
MONROE	SPARTA

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
CJB	NCT	DLF	CJB

GENERAL PLAN

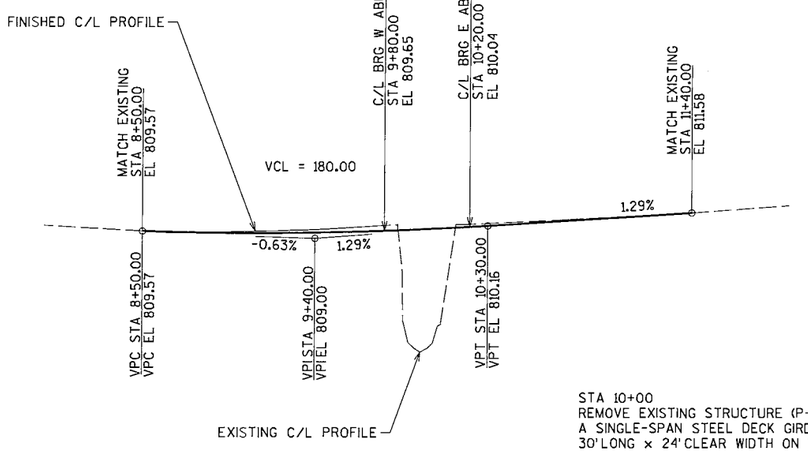
SHEET 1 OF 8

34

8

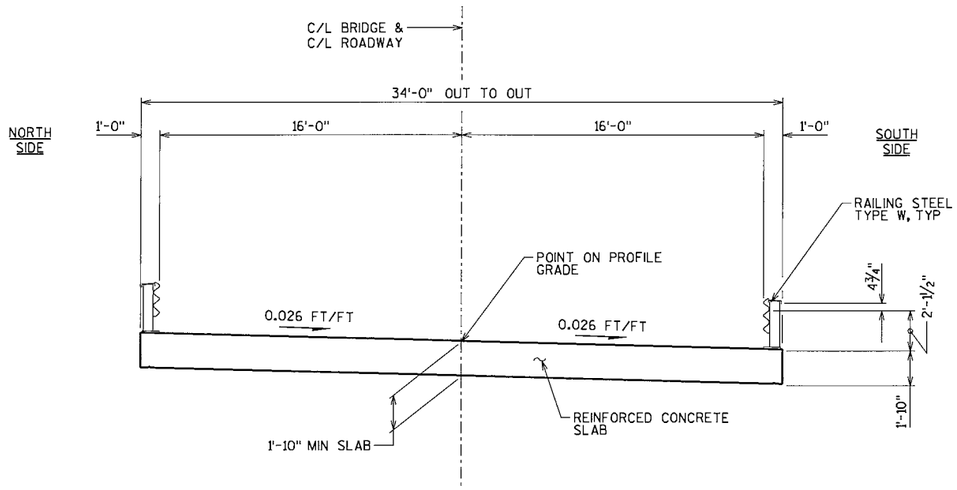
8

PLOT TIME: 8:53:21 AM
PLOT DATE: 2/20/2014
FILE NAME : S:\KO\M\Monroe\12283\5-final-dsgn\5i-drawings\20-Struct\bridge\b41297gd.dgn



STA 10+00
REMOVE EXISTING STRUCTURE (P-41-946)
A SINGLE-SPAN STEEL DECK GIRDER BRIDGE
30'LONG x 24'CLEAR WIDTH ON TIMBER ABUTMENTS.

PROFILE GRADE LINE



CROSS SECTION THRU BRIDGE
(LOOKING EAST)

TOTAL ESTIMATED QUANTITIES - B-41-297

BID ITEM NUMBER	BID ITEMS	UNIT	WEST ABUT	EAST ABUT	SUPER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 10+00	LS	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-41-297	LS	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	109	109	-	218
502.0100	CONCRETE MASONRY BRIDGES	CY	40	40	-	80
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	194	194
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2,600	2,600	-	5,200
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1,670	1,670	19,460	22,800
513.7050	RAILING STEEL TYPE W B-41-297	LS	-	-	-	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	-	20
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	175	175	-	350
606.0300	RIPRAP HEAVY	CY	85	85	-	170
(1) 612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	30	30	-	60
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	60	60	-	120
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	145	145	-	290
SPV.0035.01	SPECIAL FIBER REINFORCED CONCRETE MASONRY FOR BRIDGES STRUCTURE B-41-297	CY	-	-	104	104
	NON-BID ITEMS					
	FILLER	SIZE	———	———	———	½ & ¾

(1) INCLUDES REINFORCED CONCRETE APRON ENDWALL AND RODENT SHIELD PER SDD REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

SEE ROADWAY PLANS FOR EXISTING UTILITY LOCATIONS.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENTS DETAILS.

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

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

AT ABUTMENTS, ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL UNLESS OTHERWISE NOTED.

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

COAT WITH "PROTECTIVE SURFACE TREATMENT" PER THE STANDARD SPECIFICATIONS AND THE SUPERSTRUCTURE DETAILS SHEET.

FOR EXISTING STRUCTURE SEE PROFILE GRADE LINE THIS SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-41-297

DRAWN BY DLF | PLANS CK'D. CJB

CROSS SECTION AND QUANTITIES

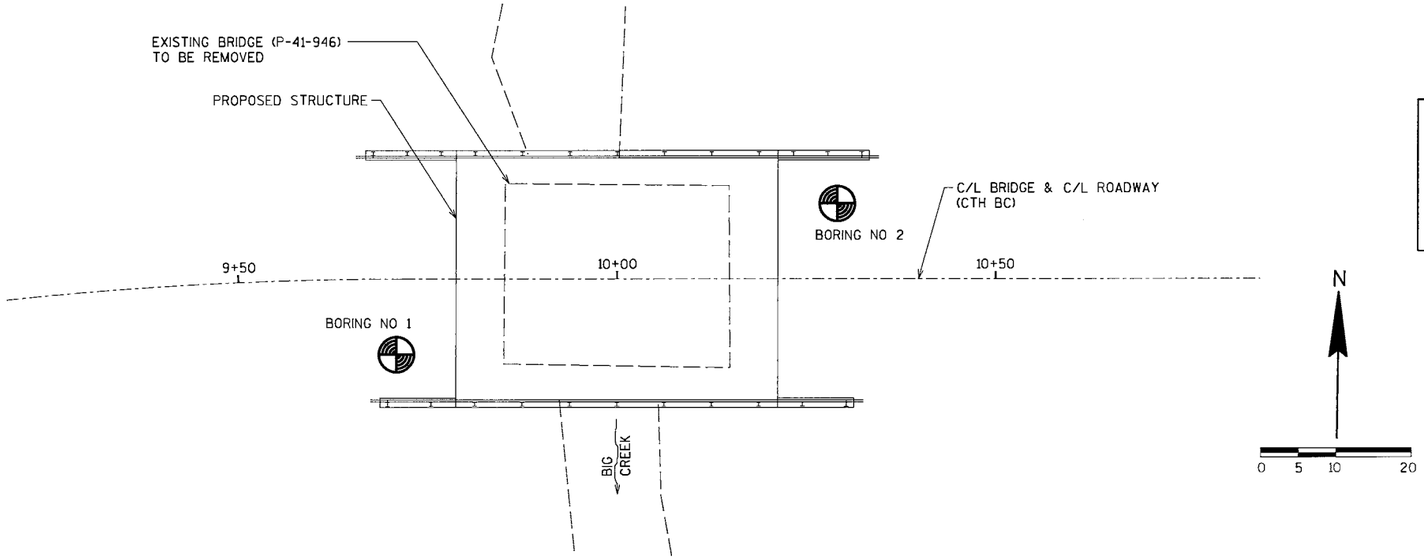
SHEET 2 OF 8
35

PLOT DATE: 3/1/2014 PLOT TIME: 7:33:58 AM

FILE NAME : S:\KO\M\Monro\22831\5-final-dsgn\5f-drawings\20-Struct\bridge\b41297g2.dgn

8

8



SOIL BORINGS PERFORMED BY:

MIDWEST ENGINEERING SERVICES, INC
12839 30th AVENUE, SUITE A
CHIPPEWA FALLS, WI 54729
PH:715-738-2770 FAX:715-738-2771

REPORT BY:
JAMES M BECCO, P.E.
REGION MANAGER

STATE PROJECT NUMBER

5019-00-70

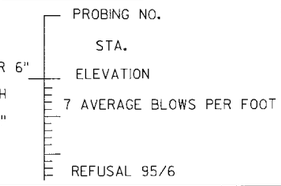
ABBREVIATIONS

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

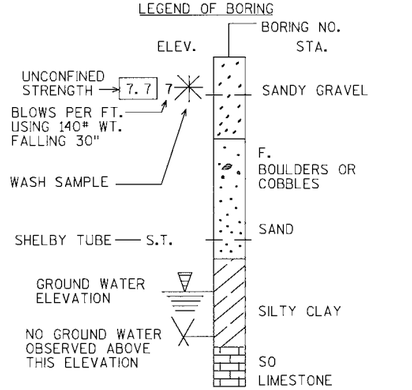
MATERIAL SYMBOLS

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

LEGEND OF PROBING



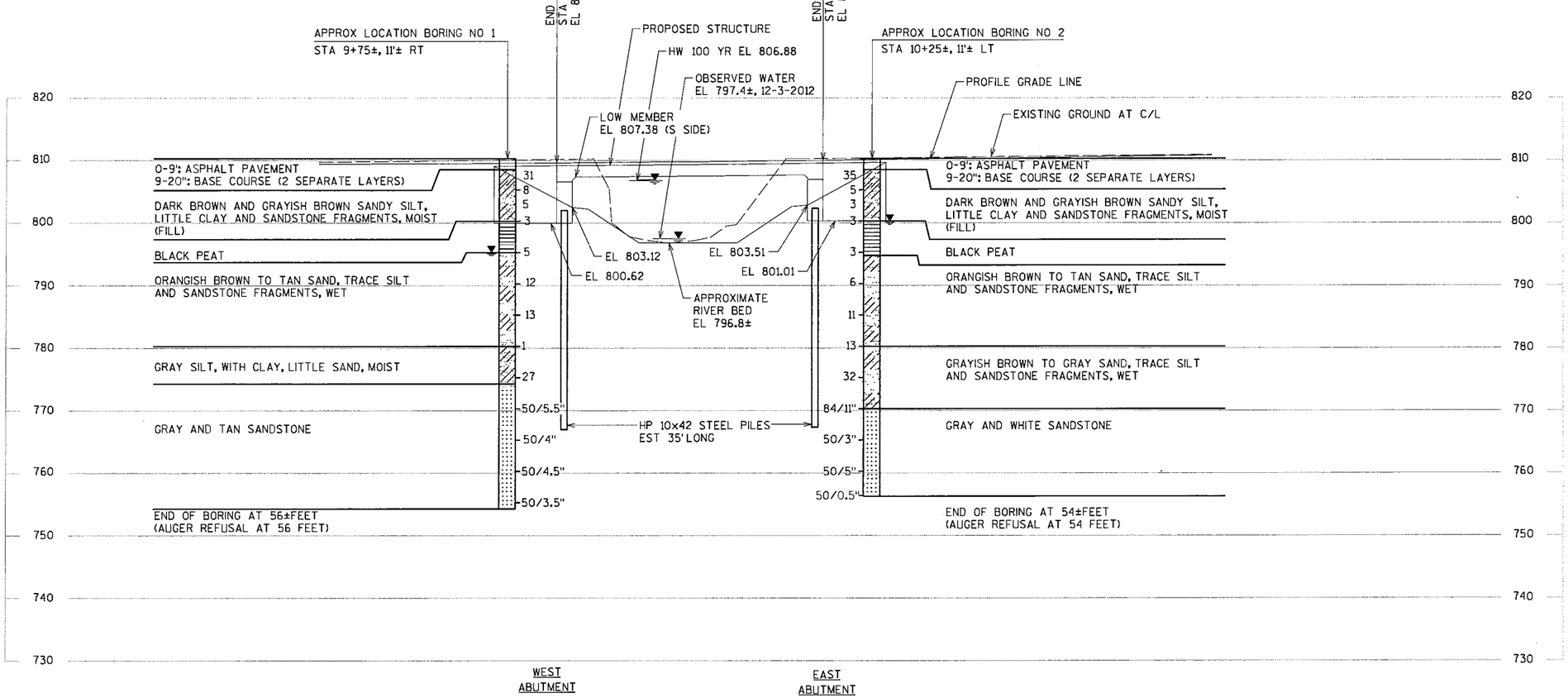
LEGEND OF BORING



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-41-297

DRAWN BY	DLF	PLANS CK'D.	CJB

SUBSURFACE EXPLORATION

SHEET 3 OF 8

36

8

8

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PLOT DATE: 2/20/2014
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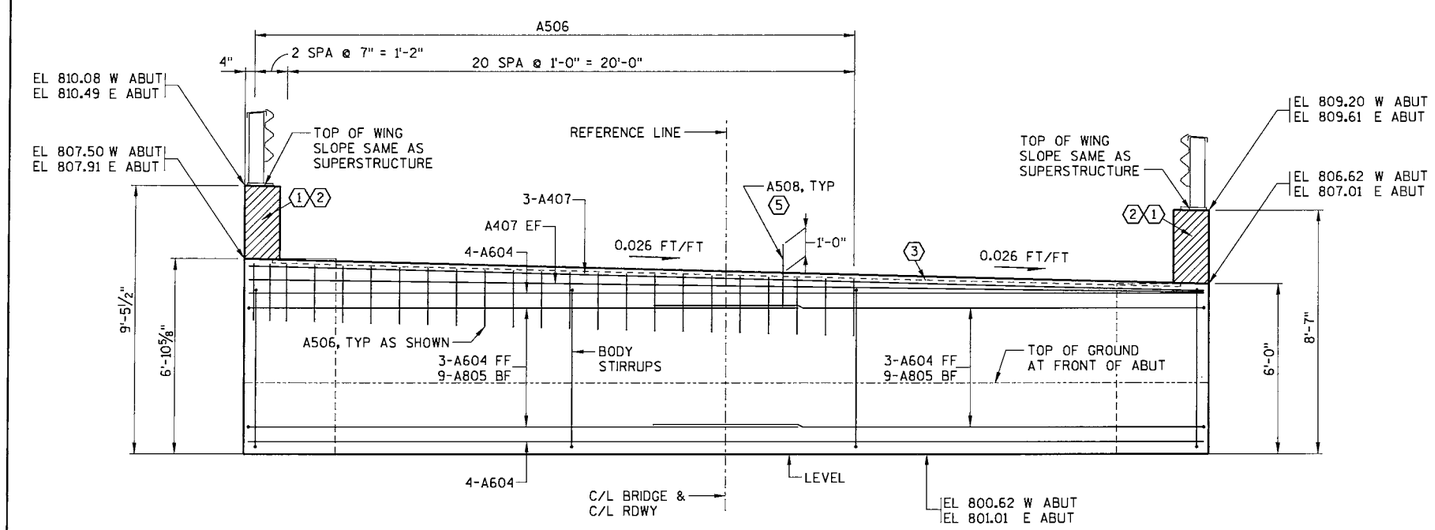
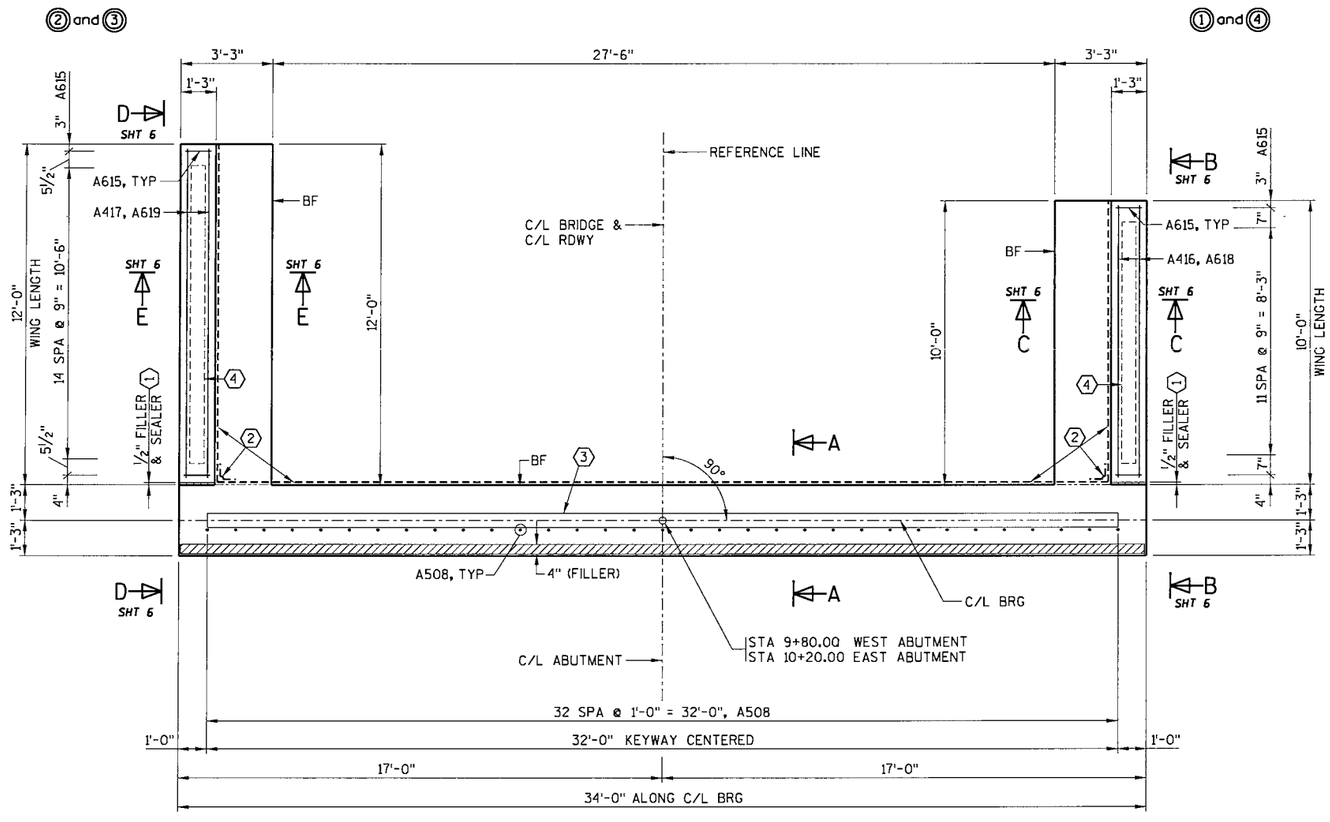


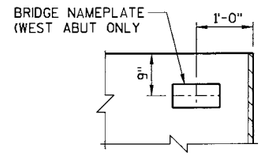
FRONT ELEVATION

(PILES NOT SHOWN FOR CLARITY)
EAST ABUTMENT SHOWN, WEST ABUTMENT SIMILAR EXCEPT OPPOSITE HAND AND AS SHOWN OR NOTED OTHERWISE.



PLAN

EAST ABUTMENT SHOWN, WEST ABUTMENT SIMILAR EXCEPT OPPOSITE HAND AND AS SHOWN OR NOTED OTHERWISE.
SEE SHEET 1 FOR ABUTMENT ORIENTATION

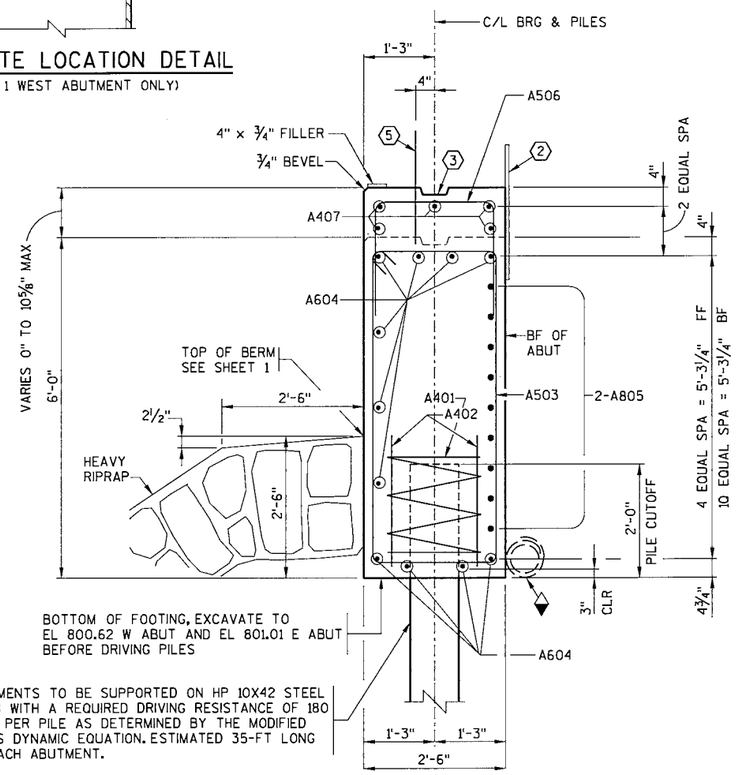


NAMEPLATE LOCATION DETAIL

(ON WING 1 WEST ABUTMENT ONLY)

STATE PROJECT NUMBER

5019-00-70



SECTION A-A
TYPICAL SECTION THRU BODY

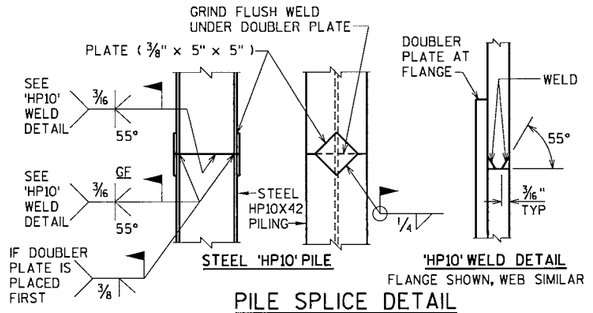
◎ INDICATES WING.

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

ABUTMENT NOTES

1. SEAL ALL EXPOSED HORIZ. AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-ASPHALTIC JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE). FILLER INCLUDED IN WING LENGTH.
2. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ & VERT JOINTS ON BACK-FACE. VERTICAL WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
3. KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2" X 6".
4. OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2" X 6" WITH MEMBRANE ON BACKFACE.
5. A508 BARS MAY BE PLACED AFTER CONC HAS BEEN POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

◆ PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN BEHIND ABUTMENT BODY AND WINGS. PIPE UNDERDRAIN UNPERFORATED TO BE PLACED OUTSIDE WINGS.



PILE SPLICE DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-41-297

DRAWN BY DLF | PLANS CK'D. CJB

ABUTMENT DETAILS

SHEET 4 OF 8

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8

8

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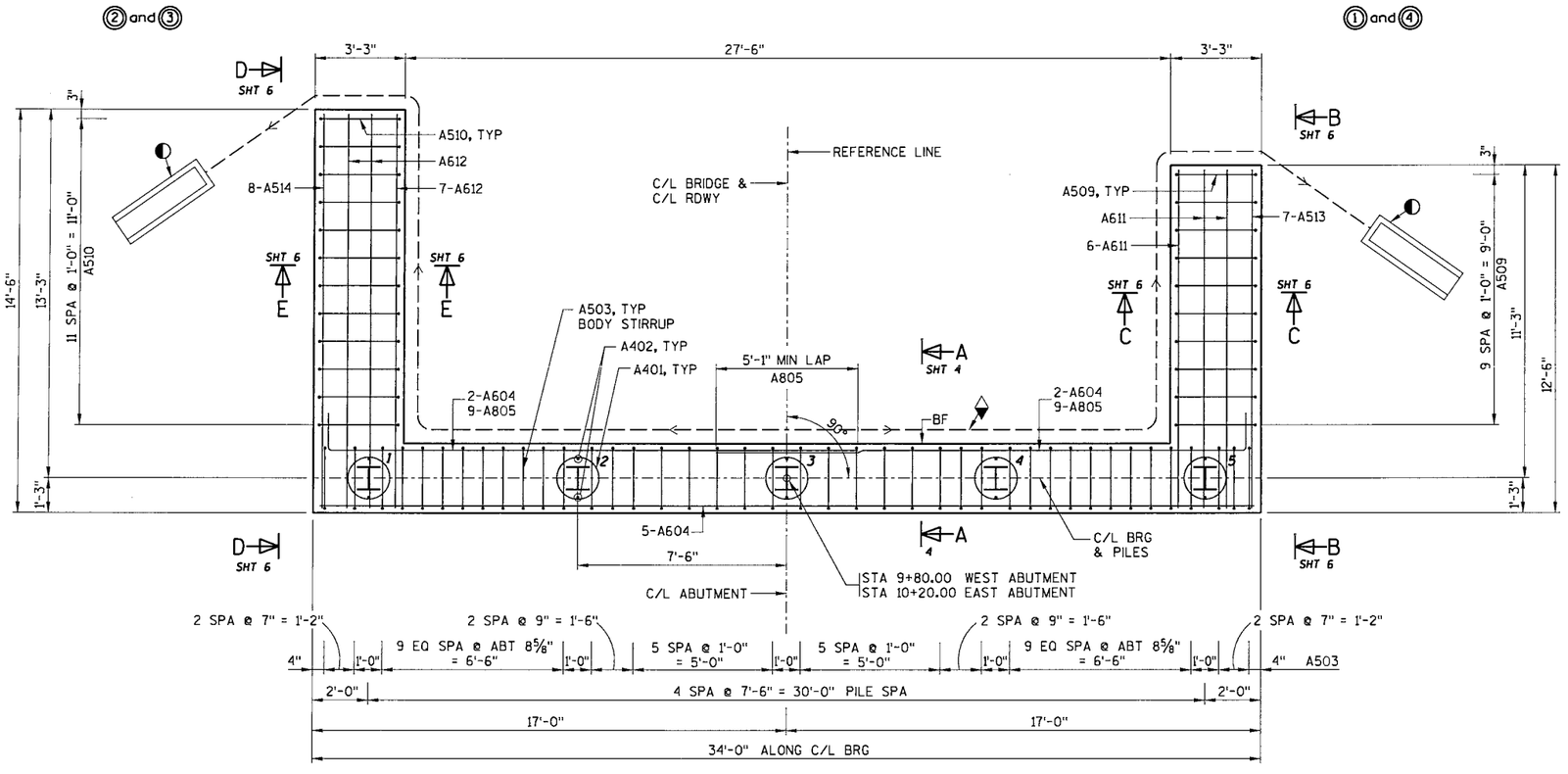
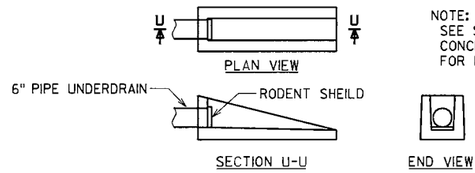


FOOTING LAYOUT

EAST ABUTMENT SHOWN, WEST ABUTMENT SIMILAR EXCEPT OPPOSITE HAND AND AS SHOWN OR NOTED OTHERWISE.
SEE SHEET 1FOR ABUTMENT ORIENTATION



NOTE:
SEE S.D.D.8F6: REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN.

◐CONCRETE APRON ENDWALL FOR UNDERDRAIN

ATTACH RODENT SHIELD PER SDD REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN. COST OF CONCRETE APRON ENDWALL AND RODENT SHIELD INCIDENTAL TO "PIPE UNDERDRAIN UNPERFORATED".

ABUTMENT NOTES

◆ SEE ABUTMENT NOTES ON SHEET 4.

FOR PILE SPLICE DETAIL SEE SHEET 4.

◎ INDICATES WING.

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-41-297

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ABUTMENT DETAILS

SHEET 5 OF 8
38

8

8

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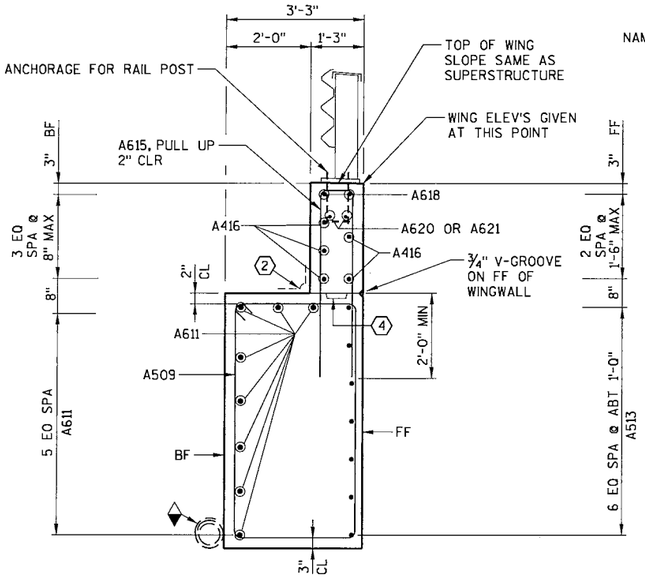
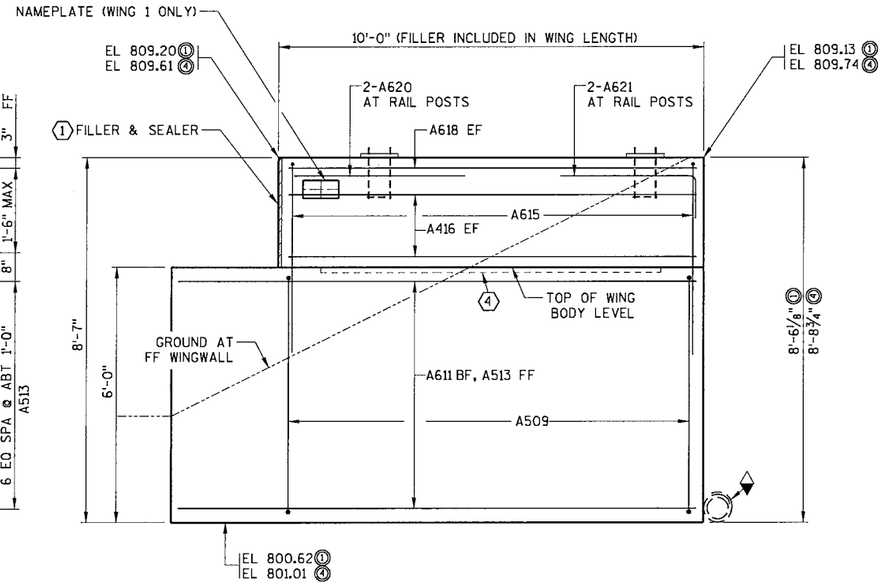
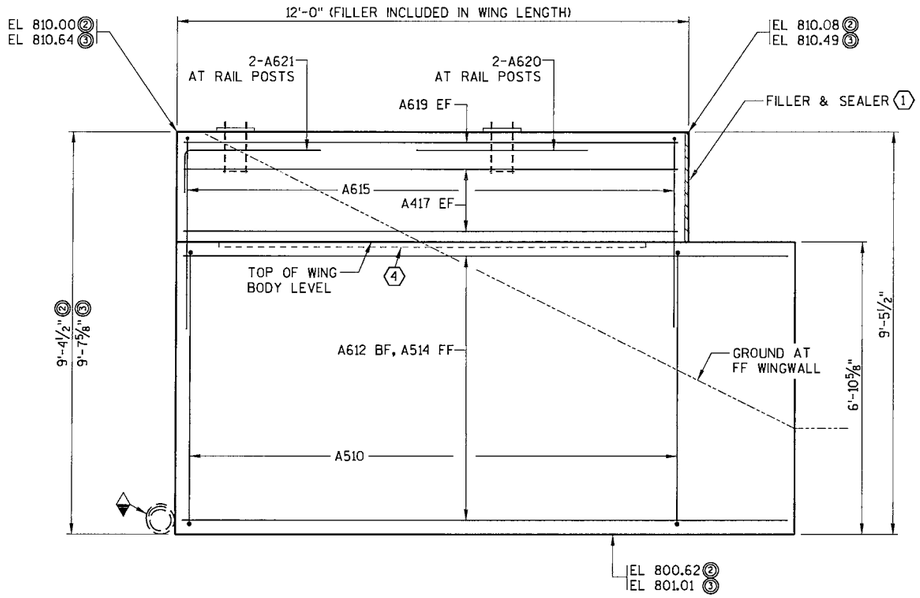


SECTION C-C

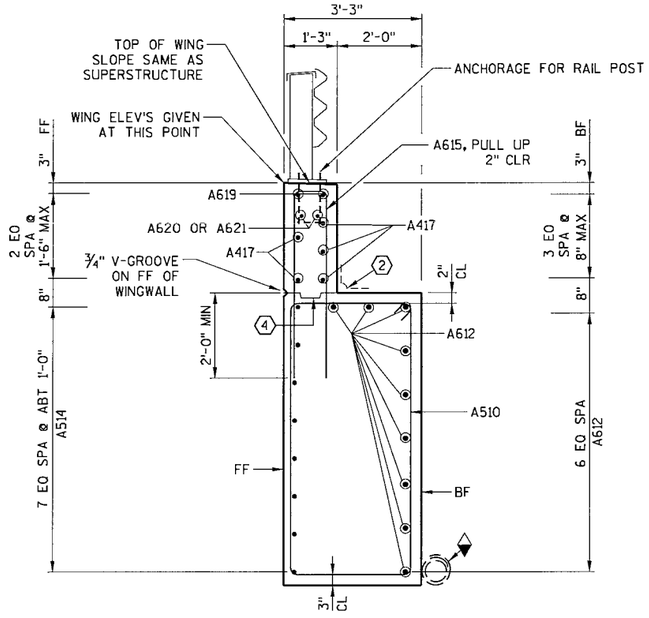


ELEVATION B-B

WING ①and④



ELEVATION D-D



SECTION E-E

WING ②and③

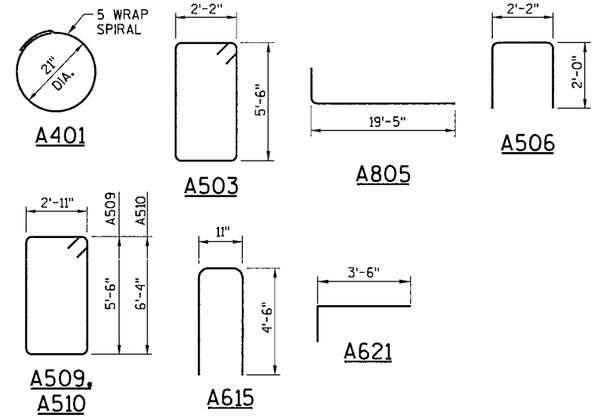
NOTE: THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE ENGLISH BAR DIAMETER SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

BILL OF BARS — ABUTMENTS
(FOR ONE ABUTMENT*)

BAR MARK	COAT	NO. REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
A401		5	28 - 0		X	BODY AT PILES
A402		10	2 - 3			BODY AT PILES
A503		42	15 - 11		X	BODY STIRRUPS
A604		11	33 - 8			BODY HORIZ
A805		18	20 - 6		X	BODY HORIZ BF
A506		23	5 - 10		X	BODY TOP TIE
A407		5	33 - 8			BODY HORIZ TOP
A508	X	33	2 - 0			BODY DOWELS
A509	X	10	17 - 5		X	WING 1 & 4 STIRRUPS
A510	X	12	19 - 1		X	WING 2 & 3 STIRRUPS
A611	X	8	12 - 2			WING 1 & 4 HORIZ BF & TOP
A612	X	9	14 - 2			WING 2 & 3 HORIZ BF & TOP
A513	X	7	12 - 2			WING 1 & 4 HORIZ FF
A514	X	8	14 - 2			WING 2 & 3 HORIZ FF
A615	X	31	9 - 7		X	ALL WINGS
A416	X	5	9 - 7			WING 1 & 4 HORIZ EF
A417	X	5	11 - 7			WING 2 & 3 HORIZ EF
A618	X	2	9 - 7			WING 1 & 4 HORIZ EF TOP
A619	X	2	11 - 7			WING 2 & 3 HORIZ EF TOP
A620	X	4	4 - 0			RAIL POST
A621	X	4	4 - 6		X	RAIL POST

* BAR LIST IS FOR ONE ABUTMENT.
WEST ABUT AND EAST ABUT BAR LISTS ARE IDENTICAL.



ABUTMENT NOTES

①②④◆ = SEE ABUTMENT NOTES ON SHEET 4.

◎ INDICATES WING.

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-41-297

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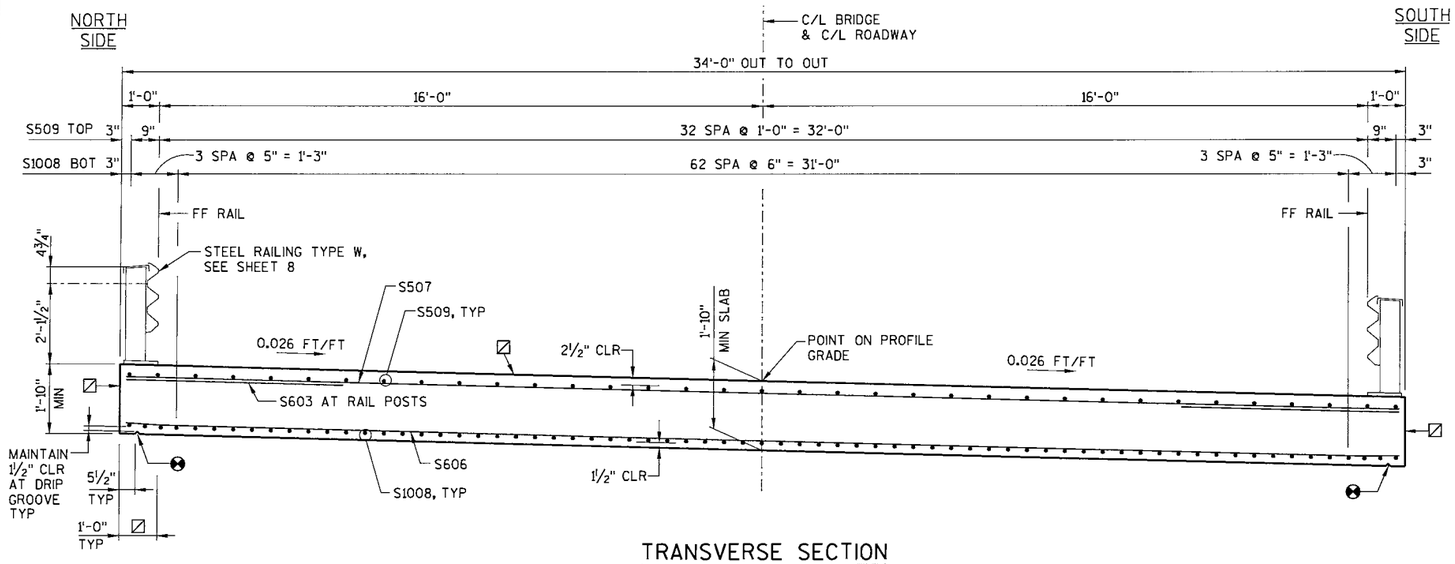
ABUTMENT DETAILS

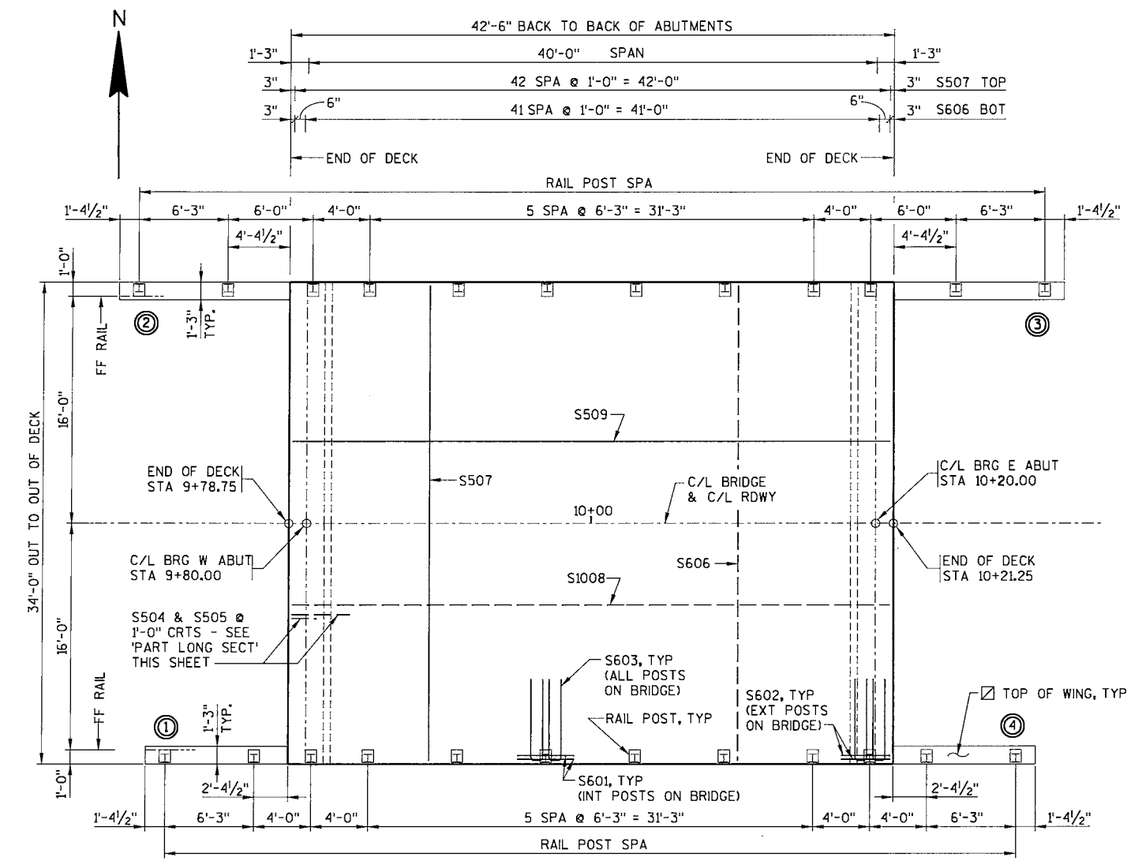
SHEET 6 OF 8

8

STATE PROJECT NUMBER
5019-00-70



TRANSVERSE SECTION



DECK PLAN

——— INDICATES TOP BAR STEEL REINFORCEMENT
— — — — INDICATES BOTTOM BAR STEEL REINFORCEMENT

SUPERSTRUCTURE NOTES:

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

TRANSVERSE BARS SHALL BE PLACED PLACED PARALLEL TO THE C/L OF SUBSTRUCTURE UNITS.

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 ON CONTINUOUS BAR CHAIRS APPROXIMATELY 4'-0" CENTERS.

⊗ ¾" V-GROOVE, EXTEND V-GROOVE TO 3" FROM FRONT FACE OF ABUT DIAPHRAM.

☐ COAT WITH "PROTECTIVE SURFACE TREATMENT" PER THE STANDARD SPECIFICATIONS.

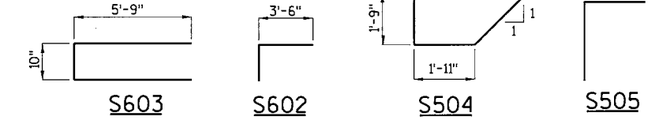
FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

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

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

BILL OF BARS SUPERSTRUCTURE

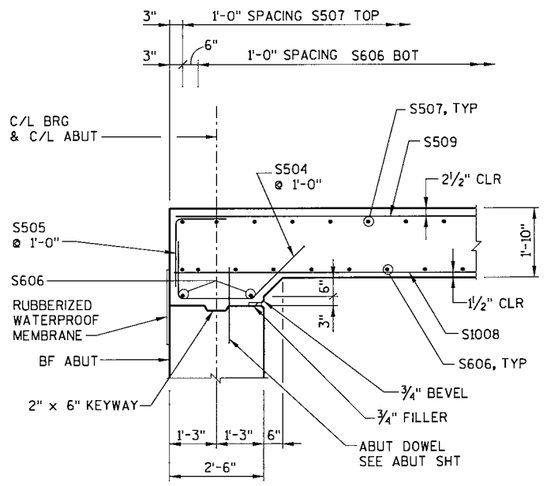
BAR MARK	COAT	NO. REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
S601	X	24	4 - 0			RAIL POST
S602	X	8	4 - 6		X	RAIL POST
S603	X	32	12 - 0		X	RAIL POST
S504	X	70	5 - 11		X	END OF DECK
S505	X	70	3 - 6		X	END OF DECK
S606	X	48	33 - 8			BOT TRANS
S507	X	43	33 - 8			TOP TRANS
S1008	X	69	42 - 2			BOT LONG
S509	X	35	42 - 2			TOP LONG



S603 S602 S504 S505

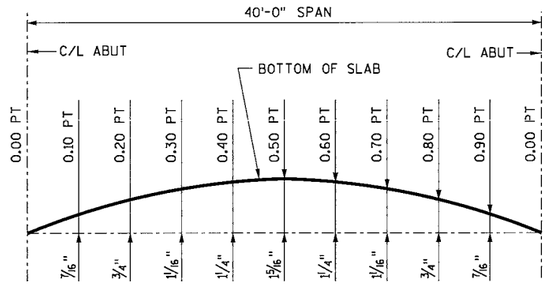
FINAL TOP OF DECK ELEVATIONS

	WEST ABUT	.1	.2	.3	.4	.5	.6	.7	.8	.9	EAST ABUT
NORTH EDGE OF DECK	810.09	810.12	810.16	810.19	810.23	810.26	810.30	810.35	810.39	810.43	810.48
C/L	809.65	809.68	809.71	809.75	809.78	809.82	809.86	809.90	809.95	809.99	810.04
SOUTH EDGE OF DECK	809.21	809.24	809.27	809.31	809.34	809.38	809.42	809.46	809.50	809.55	809.60



AT ABUTMENTS

PARTIAL LONGITUDINAL SECTION



CAMBER DIAGRAM

CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE VERTICAL ROADWAY PROFILE OR ALLOWANCE FOR FORM SETTLEMENT. DEAD LOAD DEFLECTION ONLY EQUALS APPROXIMATELY 1/3 OF CAMBER VALUES SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-41-297

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SUPERSTRUCTURE DETAILS

SHEET 7 OF 8

40

8

8

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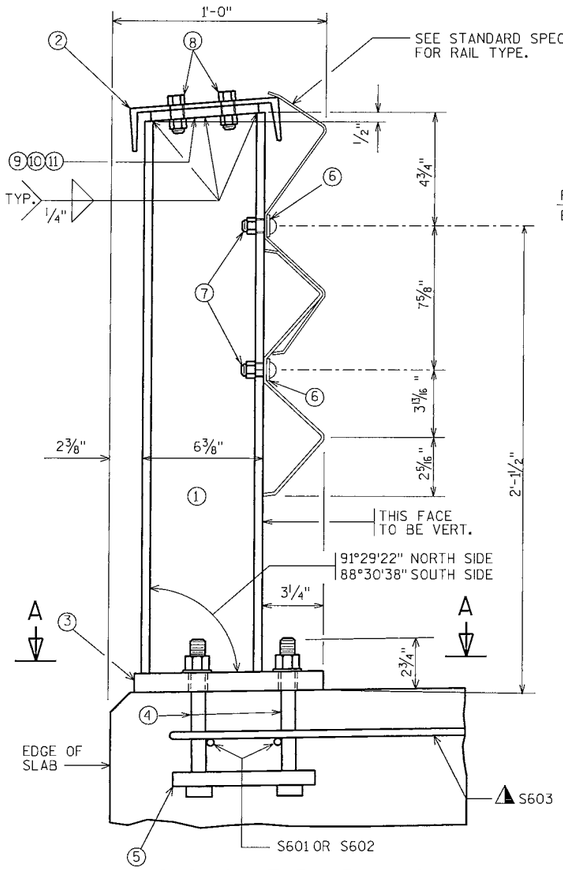
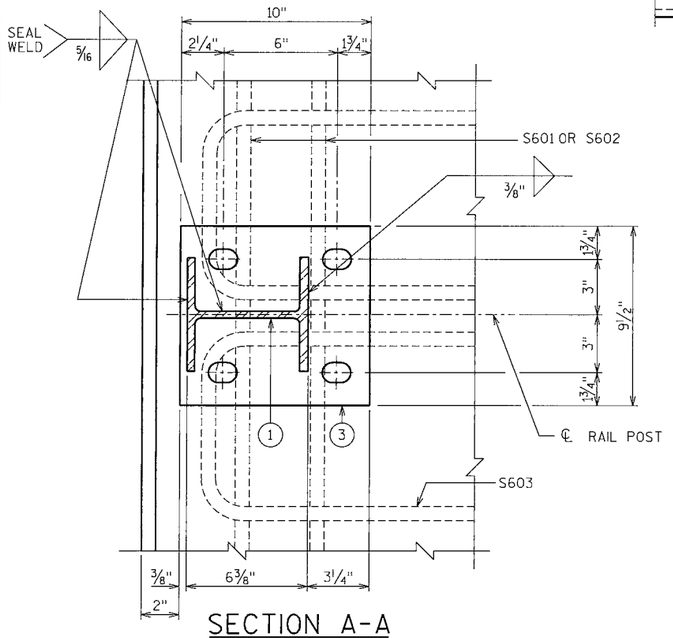
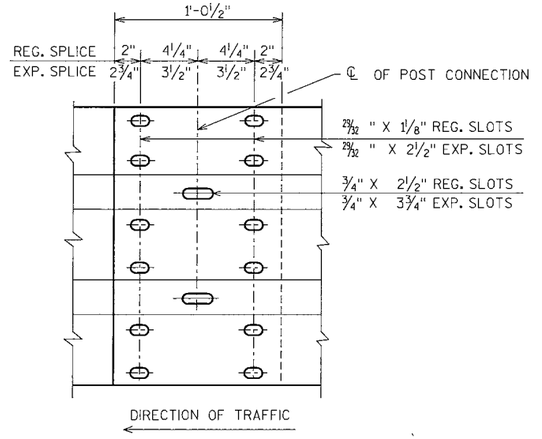


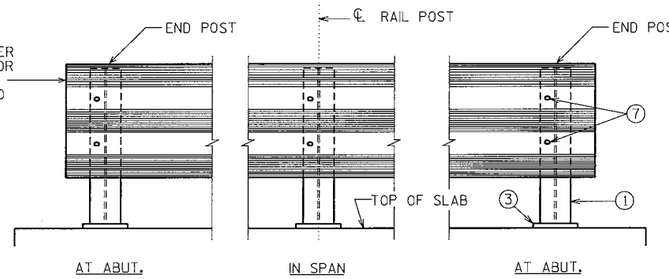
SECTION THRU RAILING



SECTION A-A



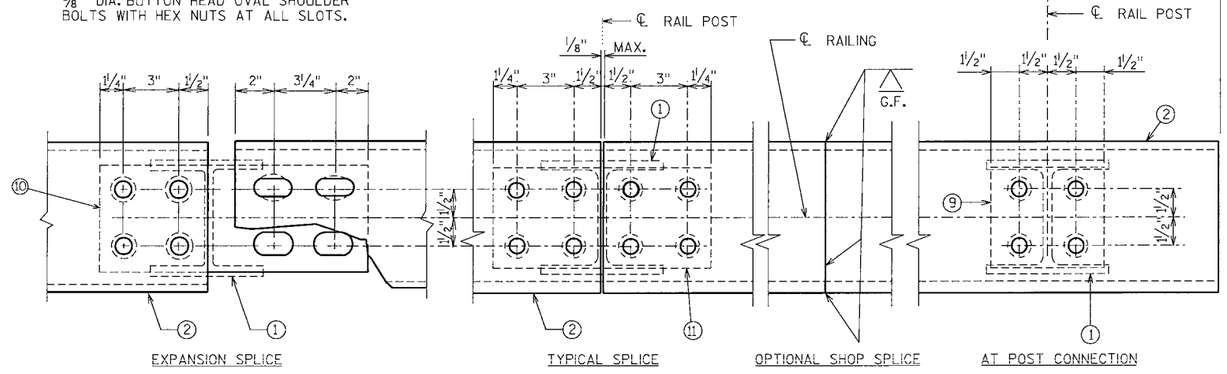
AT END POSTS, RAIL MEMBER SHALL HAVE PROVISIONS FOR A THRIE BEAM CONNECTION AS SHOWN ON SDD 14 B 20 STANDARDS.



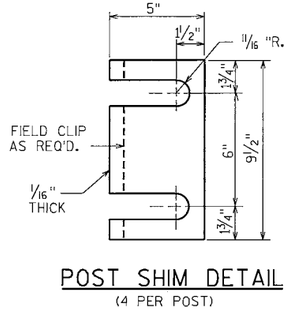
ELEVATION

RAIL MEMBER SPLICE

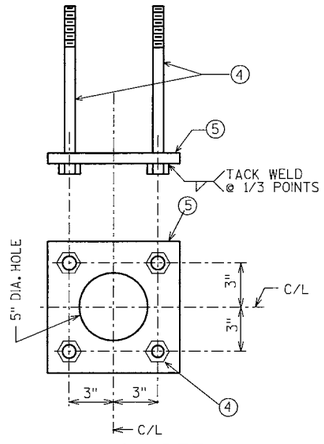
5/8" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS.



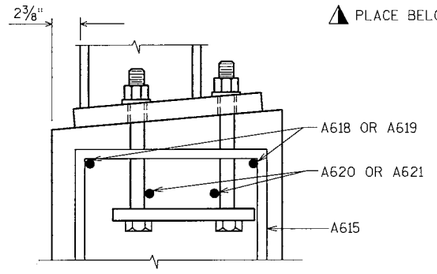
CHANNEL MEMBER DETAILS



POST SHIM DETAIL
(4 PER POST)



ANCHORAGE DETAIL



SECTION AT TOP OF WING

LEGEND

① W6x25 WITH 2 - 3/4" x 2 1/2" VERT. SLOTS IN FLG. (SLOT ON OTHER SIDE OF WEB IS OPTIONAL) FOR NO. 7. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POSTS VERTICAL AND NORMAL TO GRADE LINE.

② C8x11.5 WITH 13/16" DIA. HOLES FOR NO. 8.

③ BASE PLATE 1" X 9 1/2" x 10" WITH 1 1/16" x 1 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 4. WELD TO NO. 1 AS SHOWN.

④ A325 - 7/8" DIA. HEX BOLTS (GALVANIZED) WITH A325 NUT AND WASHER. 14" LONG AT END POSTS AND AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 15". USE 8" LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 3. CHAMFER TOP OF BOLTS BEFORE THREADING.

⑤ 1/4" x 8" x 8" FLAT BAR WITH 15/16" DIA. HOLES FOR ANCHOR BOLTS NO. 4.

⑥ 1 3/4" x 3" MOUNTING BOLT WASHER (GALVANIZED).

⑦ 5/8" DIA. BUTTON HEAD POST MOUNTING BOLT WITH ROUND WASHER AND NUT.

⑧ 5/8" DIA. x 2" HEX BOLTS WITH NUT AND TWO WASHERS EACH.

⑨ PLATE 1/2" x 5 3/4" x 6" AT BASIC POST CONNECTION. 1 1/4" DIA. HOLES IN PLATE. 13/16" DIA. HOLES IN CHANNEL.

⑩ PLATE 1/2" x 5 3/4" x 1'-2 1/2". 1 1/4" DIA. HOLES IN PLATE. 13/16" DIA. HOLES IN CHANNEL. EXPANSION SLOTS ON JOINT SIDE OF POST, 1/16" x 2 1/4" IN PLATE, 13/16" X 2 1/4" IN CHANNEL. (AT EXPANSION SPLICE.)

⑪ PLATE 1/2" x 5 3/4" x 11 1/2". 1 1/4" DIA. HOLES IN PLATE, 13/16" DIA. HOLES IN CHANNEL. (AT TYPICAL SPLICE.)

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE W B-41-297" WHICH INCLUDES ALL 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 MATERIAL EXCEPT ANCHORAGE DETAIL NO. 5 SHALL BE GALVANIZED AFTER FABRICATION.

PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND CHANNELS SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY SSPC SPECS.

ALL MATERIAL USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

FILL BOLT SLOT OPENINGS IN POST SHIMS & PLATE NO. 3 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CHANNEL MEMBER SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF EIGHT (EXCEPT AT ABUTMENTS).

AT EXPANSION SLOTS IN RAIL AND CHANNEL MEMBERS, TIGHTEN BOLTS, BACK OFF ONE HALF TURN AND BURR THREADS. RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

⚠ PLACE BELOW AND TIE TO TOP MAT OF STEEL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-41-297

DRAWN BY DLF | PLANS CK'D. CJB

STEEL RAILING TYPE "W"

SHEET 8 OF 8

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Station	Distance	AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut Note 1	Fill Note 2	Cut 1.00 Note 1	Expanded Fill 1.30 Note 3	Note 4
8+49.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0
8+50.00	1.00	33.0	0.0	0.6	0.0	1	0	1
8+75.97	25.97	49.0	39.5	39.4	19.0	40	25	15
8+80.17	4.20	50.0	40.3	7.7	6.2	48	33	15
9+01.89	21.72	55.5	23.6	42.4	25.7	90	66	24
9+04.29	2.40	56.2	22.9	5.0	2.1	95	69	26
9+27.71	23.42	59.7	25.7	50.3	21.1	145	96	49
9+28.50	0.79	59.2	26.2	1.7	0.8	147	97	50
9+50.00	21.50	48.5	61.3	42.9	34.8	190	143	47
9+69.68	19.68	40.5	52.4	32.4	41.4	222	196	26
9+70.00	0.32	0.0	0.0	0.2	0.3	223	197	26
10+30.00	0.00	0.0	0.0	0.0	0.0	222	196	26
10+30.23	0.23	30.3	52.6	0.1	0.2	223	197	26
10+50.00	19.77	45.0	40.7	27.6	34.2	250	241	9
10+70.88	20.88	91.3	9.0	52.7	19.2	303	266	37
10+72.88	2.00	95.7	7.1	6.9	0.6	310	267	43
10+95.86	22.98	85.4	6.1	77.1	5.6	387	274	113
10+97.86	2.00	85.0	6.0	6.3	0.4	393	275	118
11+20.84	22.98	78.0	5.6	69.4	4.9	463	281	181
11+22.84	2.00	76.7	5.7	5.7	0.4	468	282	187
11+40.00	17.16	33.0	0.0	34.9	1.8	503	284	219
11+41.00	1.00	0.0	0.0	0.6	0.0	504	284	220

Notes:
1) Salvaged/Unusable Pavement Material is included in Cut.
2) Does not include Unusable Pavement Excavation volume.
3) Will be backfilled with Cut or Borrow.
4) Plus quantity indicates an excess of material. Minus indicates a shortage of material.

9

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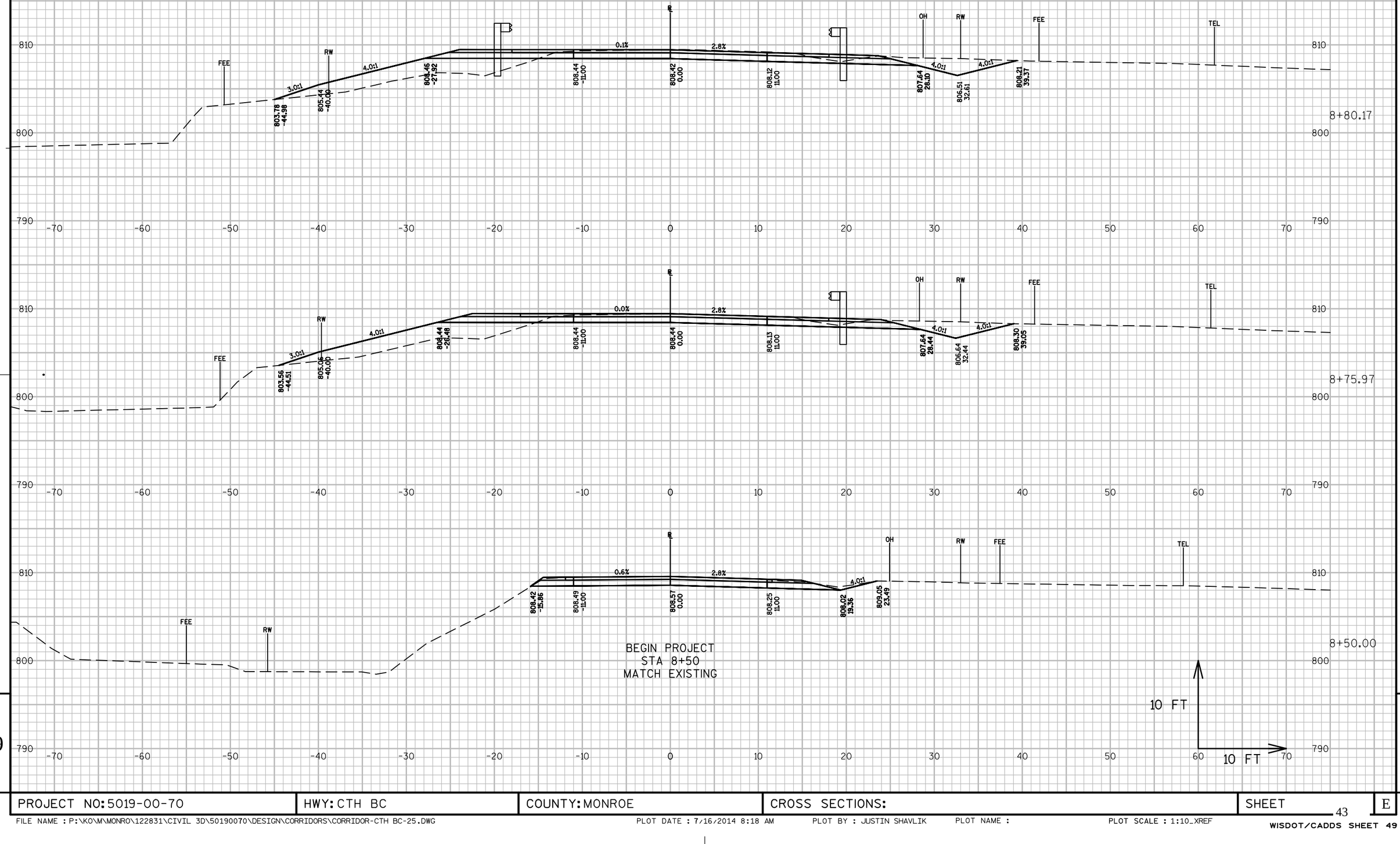
PROJECT NO: 5019-00-70 | HWY: CTH BC | COUNTY: MONROE | EARTHWORK TABULATIONS | SHEET 42 | E



PROJECT NO: 5019-00-70	HWY: CTH BC	COUNTY: MONROE	CROSS SECTIONS:	SHEET	E

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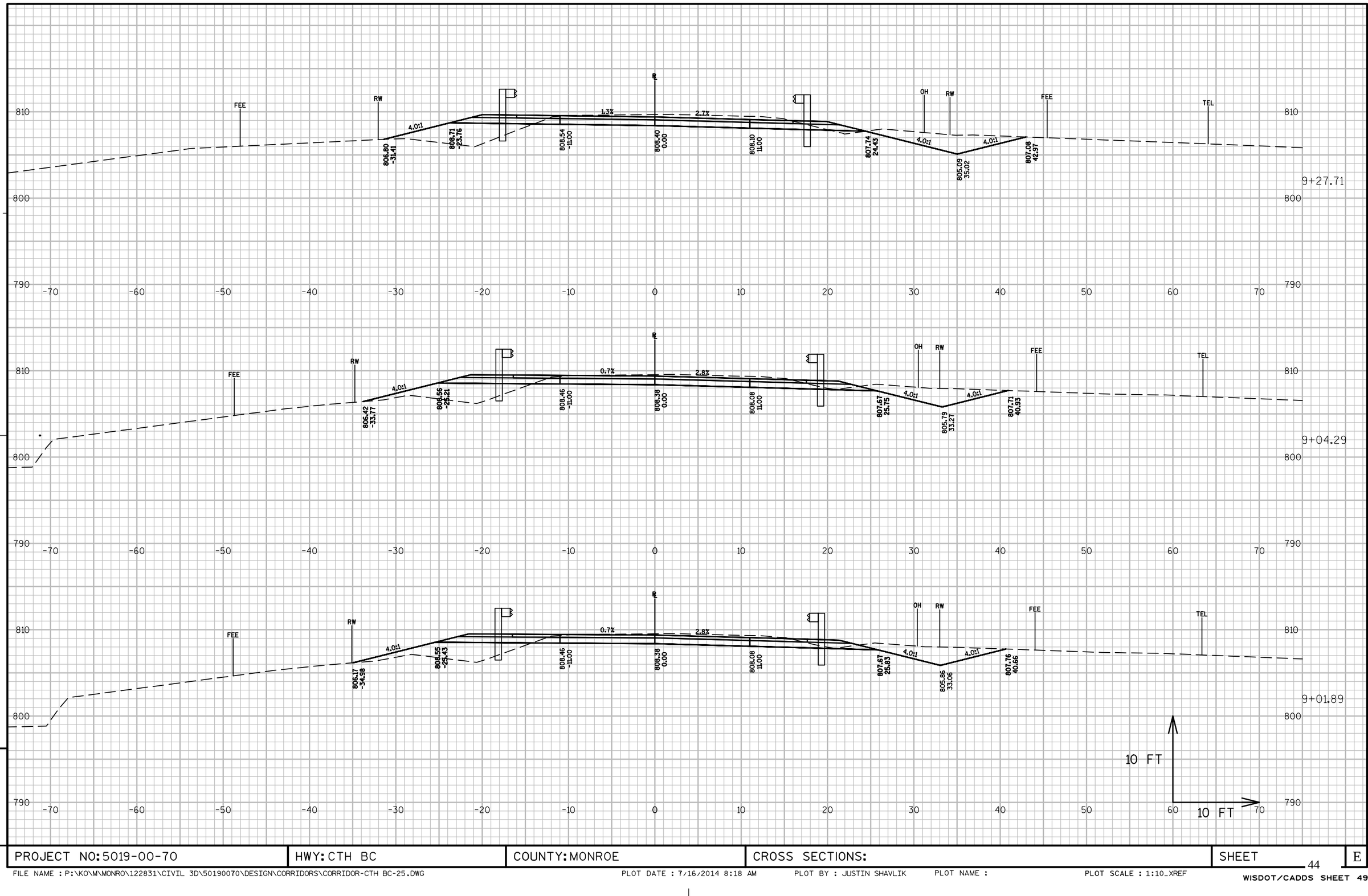

9

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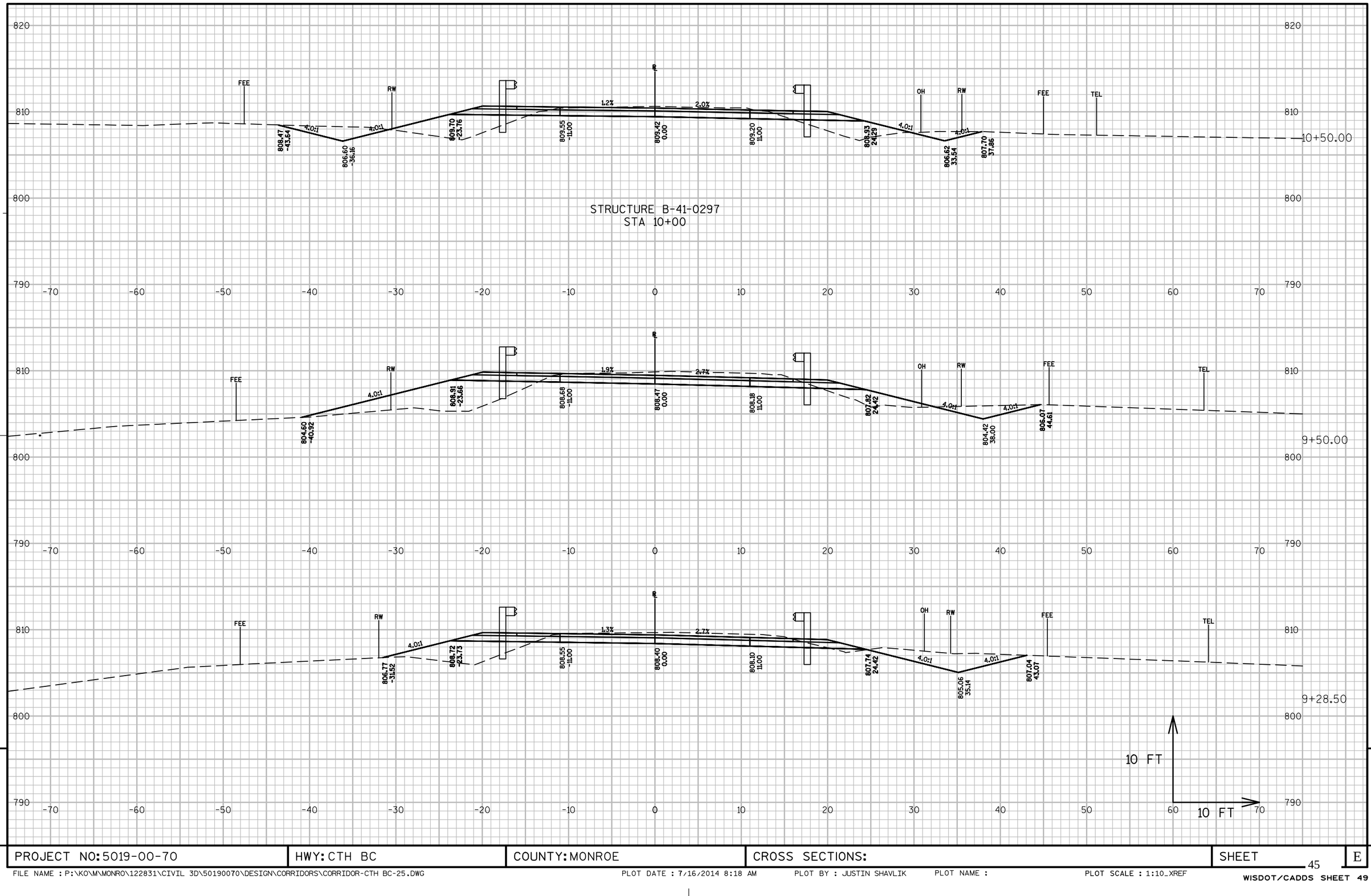
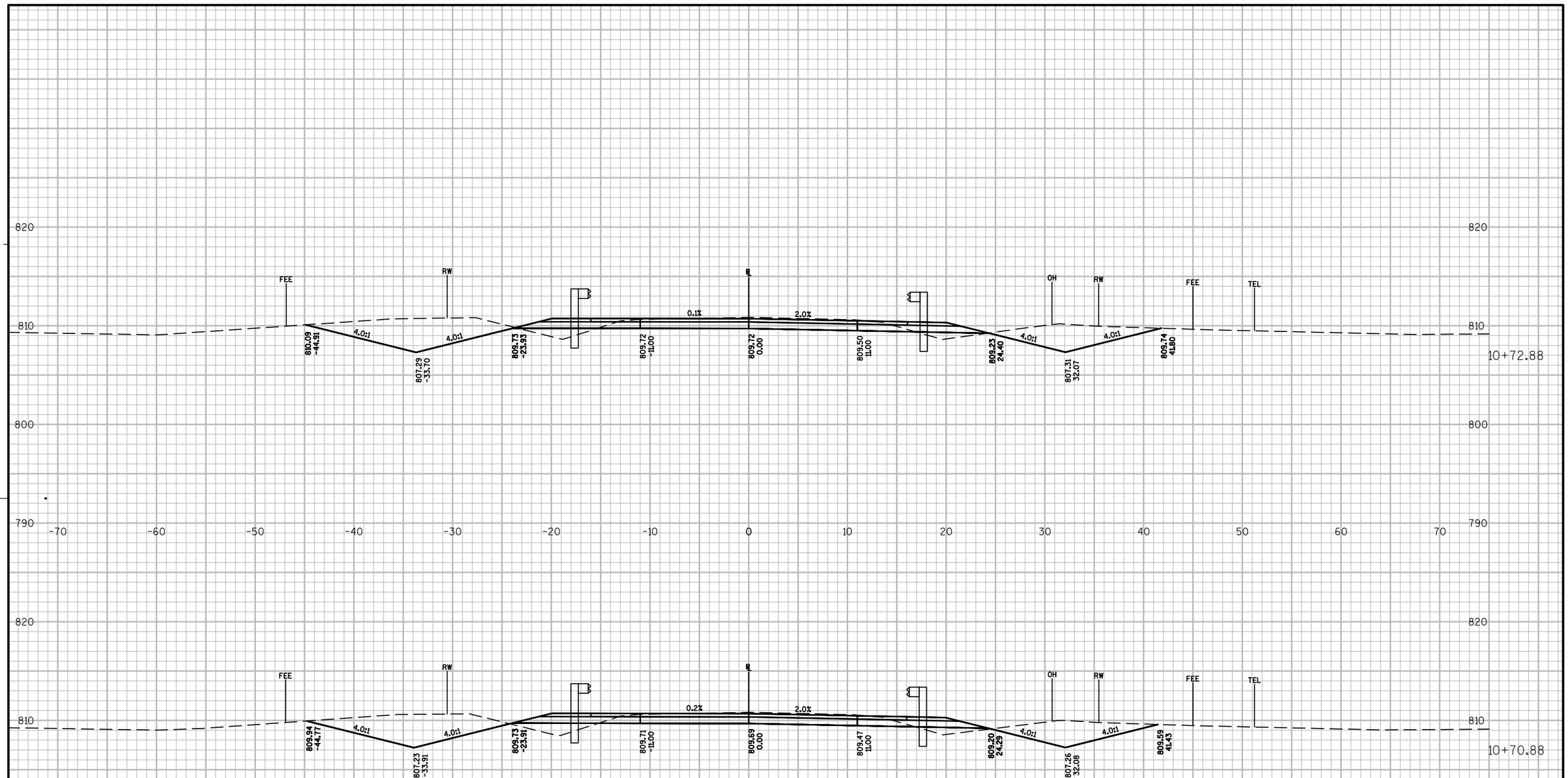
PROJECT NO: 5019-00-70	HWY: CTH BC	COUNTY: MONROE	CROSS SECTIONS:	SHEET 44	E



STRUCTURE B-41-0297
STA 10+00

PROJECT NO: 5019-00-70	HWY: CTH BC	COUNTY: MONROE	CROSS SECTIONS:	SHEET 45	E



PROJECT NO: 5019-00-70	HWY: CTH BC	COUNTY: MONROE	CROSS SECTIONS:	SHEET	E

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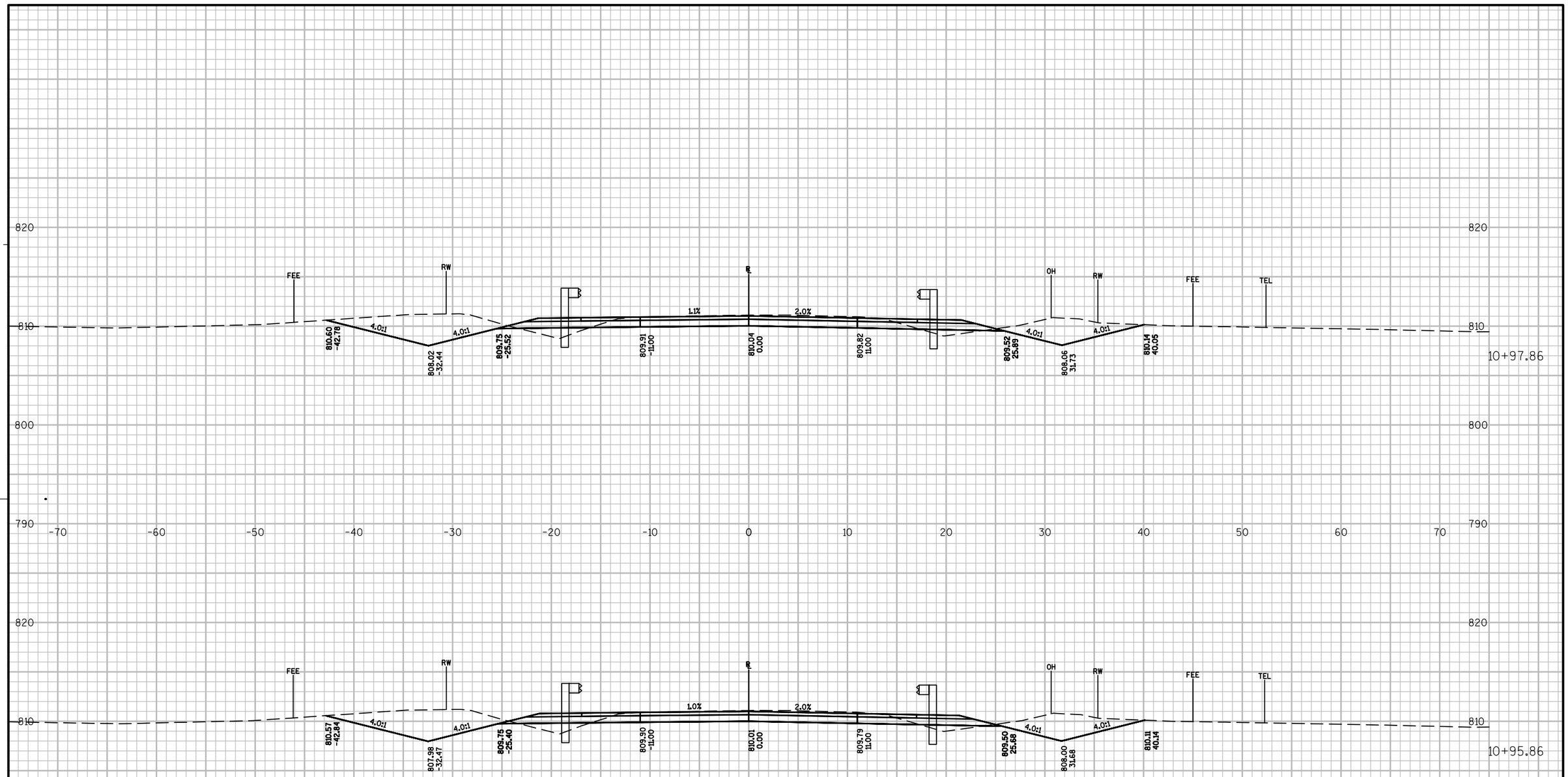

PROJECT NO: 5019-00-70	HWY: CTH BC	COUNTY: MONROE	CROSS SECTIONS:	SHEET 47	E

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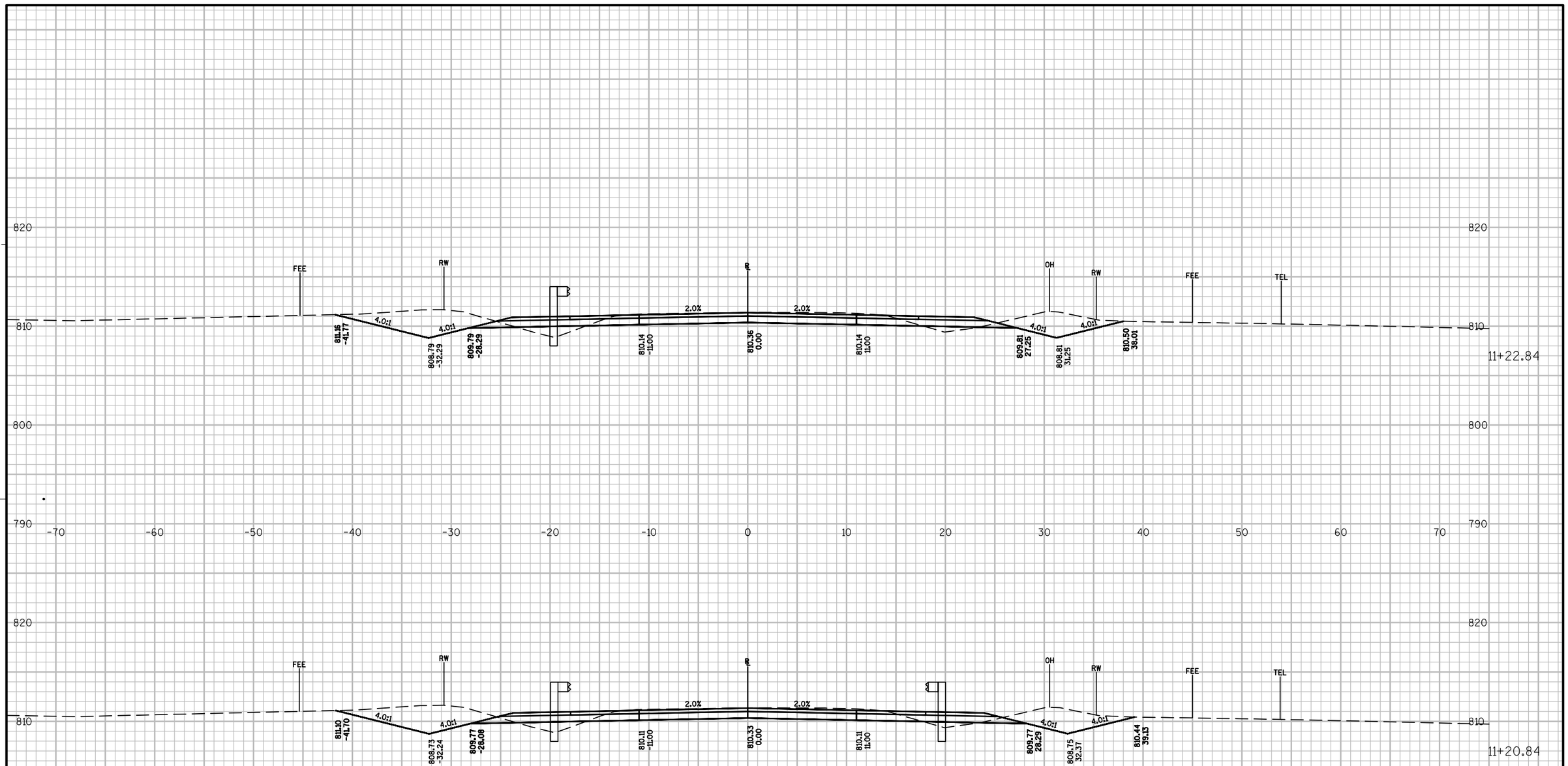

PROJECT NO: 5019-00-70	HWY: CTH BC	COUNTY: MONROE	CROSS SECTIONS:	SHEET 48	E

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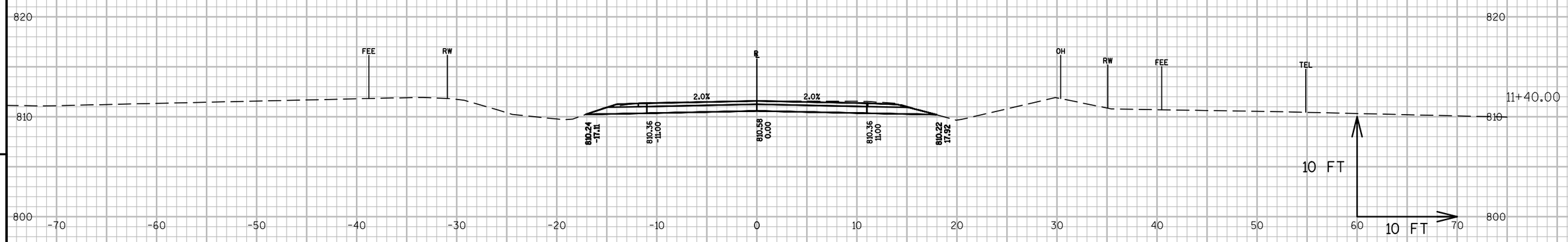
END PROJECT
STA 11+40
MATCH EXISTING



PROJECT NO: 5019-00-70	HWY: CTH BC	COUNTY: MONROE	CROSS SECTIONS:	SHEET	E

Wisconsin Department of Transportation

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