WIS

MAR 13

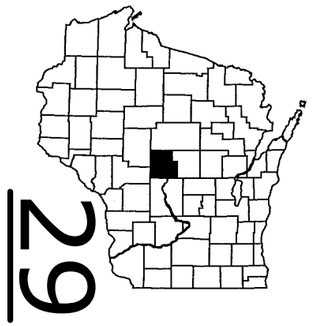
PROJECT ID: 1620-02-64
WITH: 1620-02-71, 73, 74

COUNTY: WOOD

ORDER OF SHEETS

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

TOTAL SHEETS = 60



29

N

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WISCONSIN RAPIDS - MARSHFIELD

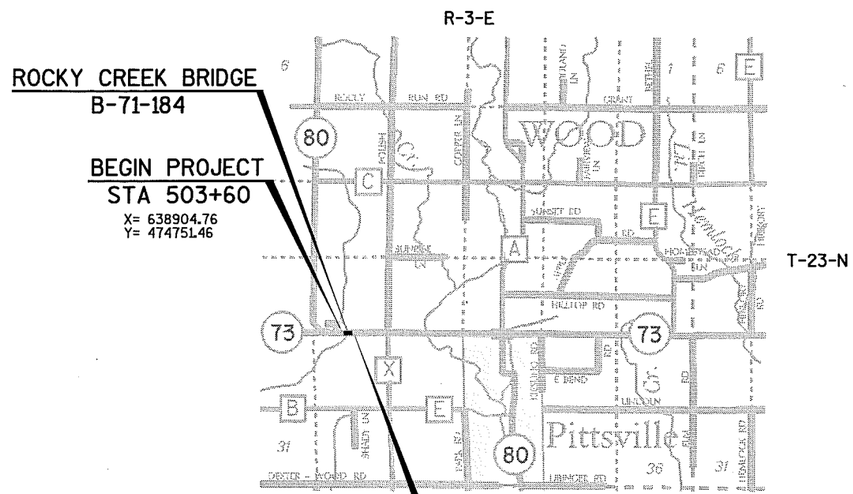
ROCKY CREEK BRIDGE

STH 73/80

WOOD COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1620-02-64		

STATE PROJECT NUMBER
1620-02-64



DESIGN DESIGNATION

A.A.D.T.	2012	=	4,400
A.A.D.T.	2032	=	5,500
D.H.V.		=	
D.D.	2032	=	62/38
T.	2032	=	16.7%
DESIGN SPEED		=	60 MPH
ESALS		=	2,160,800

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.1193 MI.

Elevations shown on this plan are referenced to the North American Vertical Datum of NAVD 88 (2007)

Coordinates on this plan are referenced to the Wisconsin County Coordinate System (WCCS), Wood County, NAD 1983 (2007)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NC REGION
Designer	ELIZABETH COLLINS
Project Manager	KEVIN GARRIGAN
Regional Examiner	CHERYL SIMON
Regional Supervisor	
C.O. Examiner	WISDOT BPD

APPROVED FOR THE DEPARTMENT
DATE: 12/30/12
(Signature)

E

2

GENERAL NOTES

NO TREES OR SHRUBS OUTSIDE THE GRADING LIMITS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE PAVING LIMIT FOR CHICAGO DRIVE WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

SECTIONS AS SHOWN ON THE CROSS SECTION SHEETS INCLUDE THE THICKNESS OF TOPSOIL.

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

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

UTILITIES

TDS TELECOM - COMMUNICATION LINE
ATTN: STEVE JAKUBIEC
SUITE 218A
10 COLLEGE AVE
APPLETON WI 54911
(920)882-4166
steve.jakubiec@tdstelecom.com

DNR

MARC HERSHFIELD
473 GRIFFITH DR
WISCONSIN RAPIDS WI 54494
715-421-7867
marc.hershfield@wi.gov

DIGGERS HOTLINE

Call 811 3 Work Days Before You Dig
Or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

2

PROJECT OVERVIEW

N

BEGIN PROJECT
STA 503+60

END PROJECT
STA 509+90



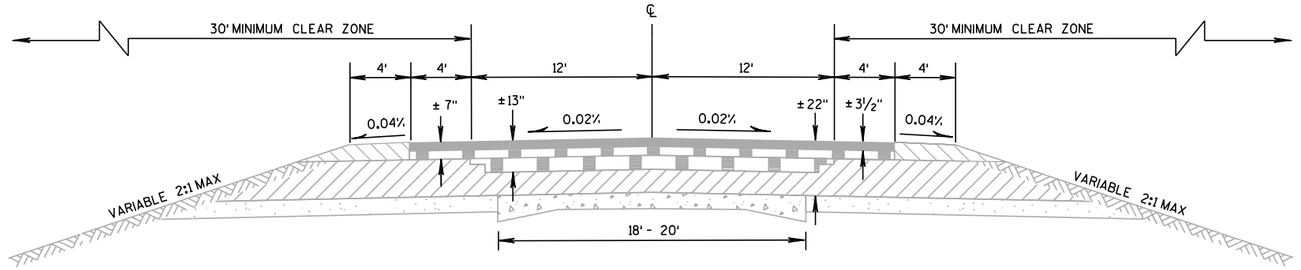
EXISTING STRUCTURE C-71-13 TO BE REMOVED
PROPOSED STRUCTURE B-71-184 REQUIRED

PROJECT NO: 1620-02-64	HWY: STH 73/80	COUNTY: WOOD	PROJECT OVERVIEW	SHEET 3	E

2

LEGEND

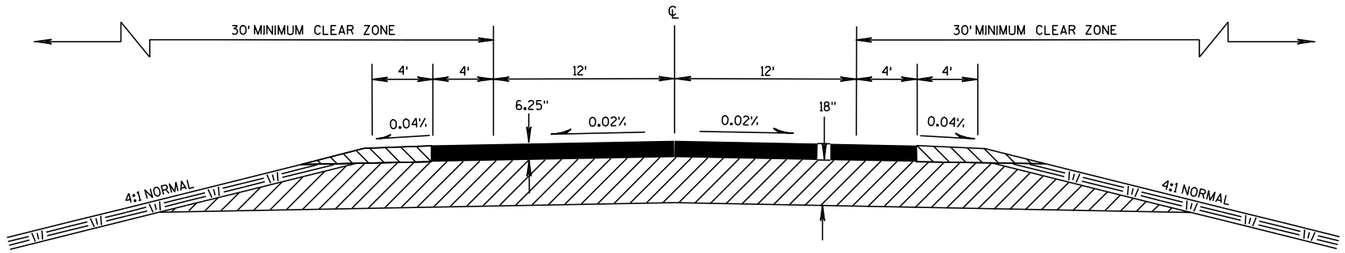
- EXISTING ASPHALT PAVEMENT
- EXISTING ASPHALT PAVEMENT
- EXISTING BASE AGGREGATE DENSE SHOULDER
- EXISTING BASE AGGREGATE DENSE
- EXISTING GRANULAR SUBBASE
- EXISTING 6½" (9" OUTSIDE) CONC PAVT
- ORIGINAL GROUND
- BASE AGGREGATE DENSE 1 1/4-INCH
- BASE AGGREGATE DENSE 3/4-INCH
- HMA PAVEMENTTYPE E-3
- CONC PAVT APPROACH SLAB & CONC PAVT
- SALVAGED TOPSOIL, SEED, FERTILIZER & MULCH



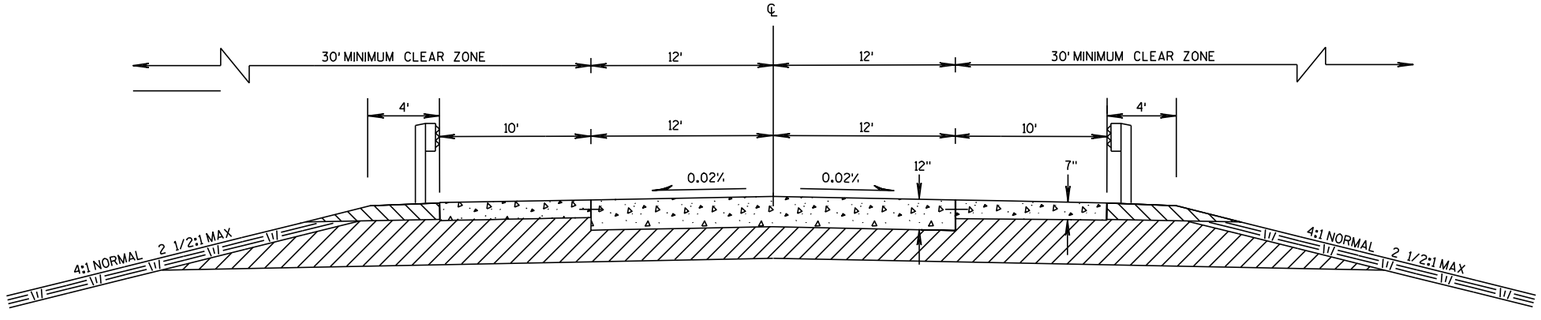
TYPICAL EXISTING SECTION
STA 503+60 TO STA 509+90

NOTE: PLACE THE 6¼" OF HMA PVEMENT TYPE E-3 IN THREE LAYERS:

1-1¾" THICK UPPER LAYER
2-2¼" THICK LOWER LAYERS



TYPICAL PROPOSED SECTION
STA 503+60 TO STA 509+90



TYPICAL PROPOSED STRUCTURE APPROACH

PROJECT NO: 1620-02-64	HWY: STH 73/80	COUNTY: WOOD	TYPICAL SECTIONS	SHEET	E

FILE NAME : p:\projects\D4_16200201ED\D4_16200201 Rocky Creek\020301_ts.DGN PLOT DATE : 24-OCT-2012 07:26 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 10.000031:1
WISDOT/CADDS SHEET 42

2

LEGEND

* ASPHALTIC FLUME

CONCRETE PAVEMENT 7-INCH

CONCRETE SURFACE DRAIN

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM1	506+61.3 18.6RT	BLUE KIEL SQUARE ON SW WINGWALL	1048.727

N

T 23 N
20
29
R 3 E

ROCKY CREEK

STA 506+75 STRUCTURE B-71-184 REQUIRED

EXISTING STRUCTURE C-71-13
TO BE REMOVED

SLOPE INTERCEPT

END PROJECT
STA 509+90
MATCH EXISTING

50'

EXISTING R/W

MGS GUARDRAIL
TERMINAL EAT REQD

TRANSITION REQD
MGS THRIE BEAM

15:1 TAPER

MGS GUARDRAIL
3 REQD

4'

10'

12'

504+00

505+00

25'
TYPICAL

506+00

CONC PAVT
APPROACH
SLAB

507+00

508+00

509+00

BM1

FLOW

BEGIN PROJECT
STA 503+60
MATCH EXISTING

EXISTING R/W

MGS GUARDRAIL
TERMINAL EAT REQD

15:1 TAPER

MGS GUARDRAIL
3 REQD

TRANSITION REQD
MGS THRIE BEAM

SLOPE INTERCEPT

PROJECT NO: 1620-02-64	HWY: STH 73/80	COUNTY: WOOD	PLAN DETAIL	SHEET	E

FILE NAME : p:\projects\D4_16200201ED\D4_16200201 Rocky Creek\021201_pd.dgn PLOT DATE : 25-OCT-2012 10:04 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

2

PERMITTED WETLAND IMPACT AREAS

N

T 23 N
20
29
R 3 E

WATERS EDGE

ROCKY CREEK

STA 506+75 STRUCTURE B-71-184 REQUIRED

SLOPE INTERCEPT

EXISTING R/W

WET MEADOW

RIPARIAN EMERGENT
WET MEADOW

RIPARIAN EMERGENT
WET MEADOW

WET MEADOW

SLOPE INTERCEPT

END PROJECT
STA 509+90
MATCH EXISTING

4'
4'
12'
12'
4'
10'
12'
10'

504+00
505+00
506+00
507+00
508+00
509+00

BEGIN PROJECT
STA 503+60
MATCH EXISTING

WET MEADOW

RIPARIAN EMERGENT
WET MEADOW

SLOPE INTERCEPT

FLOW

RIPARIAN EMERGENT
WET MEADOW

WET MEADOW

EXISTING R/W

SLOPE INTERCEPT

WATERS EDGE

PROJECT NO: 1620-02-64	HWY: STH 73/80	COUNTY: WOOD	PERMITTED WETLAND IMPACT AREAS	SHEET	E

FILE NAME : p:\projects\D4_16200201ED\D4_16200201 Rocky Creek\022002_ec.dgn PLOT DATE : 17-OCT-2012 12:41 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 40:1

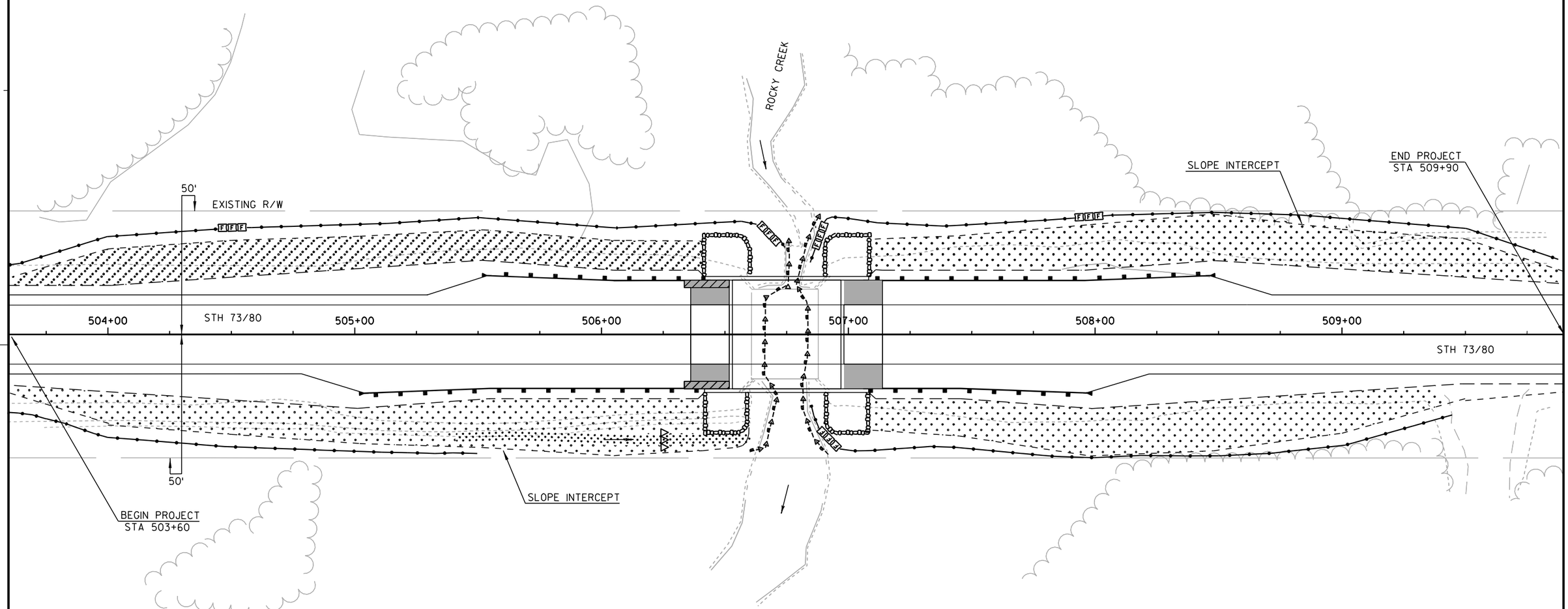
WISDOT/CADDS SHEET 42

2

LEGEND

- MULCH
- EROSION MAT CLASS II TYPE C
- SILT FENCE RELIEF
- SILT FENCE
- TURBIDITY BARRIER
- ROCK BAGS USED FOR TEMPORARY DITCH CHECKS

N



PROJECT NO: 1620-02-64	HWY: STH 73/80	COUNTY: WOOD	EROSION CONTROL	SHEET 7	E

FILE NAME : P:\projects\D4_16200201ED\D4_16200201 Rocky Creek\022001_ec.dgn PLOT DATE : 15-JAN-2013 08:48 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 40:1

= WORK ZONE

= STH 80 DETOUR ROUTE
CTH A - USH 10

DETOUR

FOR INFORMATION PURPOSES

SEE PROJECT 1620-02-71 DETOUR/TRAFFIC CONTROL PLAN SHEETS FOR DETAILS

N

1620-02-64
B-71-184

1620-02-71
B-71-179

Pittsville

Arpin

Hewitt

Marshfield

PROJECT NO: 1620-02-64	HWY: STH 73/80	COUNTY: WOOD	DETOUR PLAN	SHEET 8	E

DATE 16JAN13 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	1620-02-64 QUANTITY
0040	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. STA 506+75	LS	1.000	1.000
0080	204.0100	REMOVING PAVEMENT	SY	1,298.000	1,298.000
0100	205.0100	EXCAVATION COMMON	CY	1,977.000	1,977.000
0110	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-71-184	LS	1.000	1.000
0170	210.0100	BACKFILL STRUCTURE	CY	240.000	240.000
0180	213.0100	FINISHING ROADWAY (PROJECT) 01. 1620-02-64	EACH	1.000	1.000
0220	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	284.000	284.000
0230	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	2,700.000	2,700.000
0280	415.1410	CONCRETE PAVEMENT APPROACH SLAB HES	SY	83.600	83.600
0290	416.0610	DRILLED TIE BARS	EACH	28.000	28.000
0310	416.1015	CONCRETE SURFACE DRAINS HES	CY	5.200	5.200
0320	455.0105	ASPHALTIC MATERIAL PG58-28	TON	43.500	43.500
0330	455.0605	TACK COAT	GAL	116.000	116.000
0340	460.1103	HMA PAVEMENT TYPE E-3	TON	791.000	791.000
0350	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	510.000	510.000
0360	465.0315	ASPHALTIC FLUMES	SY	16.000	16.000
0370	502.0100	CONCRETE MASONRY BRIDGES	CY	246.000	246.000
0390	502.3200	PROTECTIVE SURFACE TREATMENT	SY	275.000	275.000
0420	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	5,630.000	5,630.000
0430	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	30,875.000	30,875.000
0480	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	24.000	24.000
0620	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	280.000	280.000
0640	606.0200	RIPRAP MEDIUM	CY	3.000	3.000
0650	606.0300	RIPRAP HEAVY	CY	114.000	114.000
0690	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	150.000	150.000
0700	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4.000	4.000
0750	614.0920	SALVAGED RAIL	LF	295.100	295.100
0760	614.0925	SALVAGED GUARDRAIL END TREATMENTS	EACH	4.000	4.000
0770	614.2300	MGS GUARDRAIL 3	LF	100.000	100.000
0780	614.2500	MGS THRIE BEAM TRANSITION	LF	157.600	157.600
0790	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000
0800	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 1620-02-64	EACH	1.000	1.000
0840	619.1000	MOBILIZATION	EACH	0.050	0.050
0850	621.0100	LANDMARK REFERENCE MONUMENTS	EACH	4.000	4.000
0870	625.0500	SALVAGED TOPSOIL	SY	1,820.000	1,820.000
0880	627.0200	MULCHING	SY	1,820.000	1,820.000
0890	628.1504	SILT FENCE	LF	1,075.000	1,075.000
0900	628.1520	SILT FENCE MAINTENANCE	LF	1,075.000	1,075.000
0910	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	3.000	3.000
0920	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0940	628.2027	EROSION MAT CLASS II TYPE C	SY	52.000	52.000
0950	628.6005	TURBIDITY BARRIERS	SY	162.000	162.000
0970	628.7570	ROCK BAGS	EACH	123.000	123.000
0980	629.0210	FERTILIZER TYPE B	CWT	1.000	1.000
0990	630.0110	SEEDING MIXTURE NO. 10	LB	25.000	25.000
1010	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	3.000	3.000
1030	637.0202	SIGNS REFLECTIVE TYPE II	SF	18.000	18.000
1040	638.2602	REMOVING SIGNS TYPE II	EACH	7.000	7.000

3

DATE 16JAN13 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	1620-02-64 QUANTITY
1050	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	7.000	7.000
1070	643.0100	TRAFFIC CONTROL (PROJECT) 01. 1620-02-64	EACH	1.000	1.000
1190	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	134.000	134.000
1200	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	1,503.000	1,503.000
1220	648.0100	LOCATING NO-PASSING ZONES	MI	0.120	0.120
1230	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	584.000	584.000
1240	650.5000	CONSTRUCTION STAKING BASE	LF	584.000	584.000
1260	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-71-184	LS	1.000	1.000
1300	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 1620-02-64	LS	1.000	1.000
1340	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	584.000	584.000
1350	690.0150	SAWING ASPHALT	LF	64.000	64.000
1370	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,476.000	1,476.000
1380	SPV.0060	SPECIAL 01. REESTABLISH SECTION CORNER MONUMENTS	EACH	1.000	1.000
1390	SPV.0070	SPECIAL 01. SPRAYED ASPHALTIC SHOULDER TREATMENT	GAL	424.000	424.000
1400	SPV.0180	SPECIAL 01. CONCRETE PAVEMENT 7-INCH HES	SY	58.800	58.800

3

EARTHWORK SUMMARY

Station - Station	Location	ITEM # 205.0100 Common Excavation (1)	Salvaged/Unusable Pavement Material (2)	Available Material (3)	Unexpanded Fill	Expanded Fill Factor (4) 1.25	Mass Ordinate +/- (5)
503+60 - 506+41	Rt & Lt	1040	367 (315 Asph Pav't and 52 Conc Pav't)	673	289	361	312
507+08 - 509+90	Rt & Lt	937	371 (319 Asph Pav't and 52 Conc Pav't)	566	372	465	101
Project Totals		1977	738	1239	661	826	413

1) Common Excavation is the sum of the Cut
2) Salvaged/Unusable Pavement Material is included in the Cut
3) Available Material = Cut - Salvaged/Unusable Pavement Material
4) Expanded Fill Factor = 1.25
5) The Mass Ordinate is the + or - quantity calculated. A plus quantity indicates an excess of material and a minus indicates a shortage of material.

REMOVING PAVEMENT

STATION - STATION	WIDTH FT	204.0100 SY	REMARKS
503+60 - 506+52	20	649	UNDERLYING EXIST CONC PAVT
506+98- 509+90	20	649	UNDERLYING EXIST CONC PAVT
	TOTAL	1298	

ASPHALTIC FLUMES

STATION	LOCATION	465.0315 SY	REMARKS
507+12	RT	8	FLUME BETWEEN MGS POSTS 13 & 14
507+12	LT	8	FLUME BETWEEN MGS POSTS 13 & 14
	TOTAL	16	

CONCRETE PAVEMENT 7-INCH HES

STATION - STATION	LOCATION	SPV.0180.01 SY
506+51.8 - 506+36.1	RT & LT	29.4
506+98.2 - 507+13.9	RT & LT	29.4
	TOTAL	58.8

CONCRETE PAVEMENT APPROCH SLAB HES

STATION - STATION	415.1410 SY	REMARKS
506+51.8 - 506+36.1	41.8	WEST APPROACH
506+98.2 - 507+13.9	41.8	EAST APPROACH
TOTAL	83.6	

CONCRETE SURFACE DRAINS

STATION - STATION	LOCATION	416.0610 DRILLED TIE BARS EACH	416.1015 CONCRETE SURFACE DRAINS HES CY	REMARKS
506+33.5 - 506+51.7	RT	14	2.6	FLUME BETWEEN POSTS 12 AND 13
506+33.5 - 506+51.7	LT	14	2.6	FLUME BETWEEN POSTS 12 AND 13
	TOTALS	28	5.2	

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

3

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0120 1 1/4-INCH TON	305.0110 3/4-INCH TON	REMARKS
503+60 - 509+90	CL	2700	---	MAINLINE
503+52 - 506+42	RT	---	72	SHOULDER
503+60 - 506+42	LT	---	70	SHOULDER
507+08 - 509+90	RT	---	70	SHOULDER
507+08 - 509+98	LT	---	72	SHOULDER
	TOTALS	2700	284	

HMA PAVEMENT TYPE E-3

STATION - STATION	LOCATION	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GALS	460.1103 HMA PAVEMENT TYPE E-3 TON	REMARKS
503+60 - 506+52	RT & LT	21.7	58	395	WEST APPROACH
507+14- 509+90	RT & LT	21.8	58	396	EAST APPROACH
	TOTALS	43.5	116	791	

3

SALVAGED RAIL

STATION - STATION	LOCATION	614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARDRAIL END TREATMENTS EACH
505+98 - 507+52	RT	153.8	---
506+04 - 507+45	LT	141.3	---
505+48 - 505+98	RT	---	1
507+52 - 508+02	RT	---	1
505+54 - 506+04	LT	---	1
507+45 - 507+95	LT	---	1
	TOTALS	295.1	4

MIDWEST GUARDRAIL SYSTEM

STATION - STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
505+02 - 505+55	RT	---	---	1
505+55 - 506+05	RT	50	---	---
506+05 - 506+44	RT	---	39.4	---
505+52 - 506+05	LT	---	---	1
506+05 - 506+44	LT	---	39.4	---
507+06 - 507+45	RT	---	39.4	---
507+45 - 507+98	RT	---	---	1
507+06 - 507+45	LT	---	39.4	---
507+45 - 507+95	LT	50	---	---
507+95 - 508+48	LT	---	---	1
	TOTALS	100	157.6	4

SECTION CORNER MONUMENTS

STATION	LOCATION	621.0100 LANDMARK REFERENCE MONUMENTS EACH	SPV. 0060.01 REESTABLISH SECTION CORNER MONUMENTS EACH
507+87	1.7' LT	4	1
	TOTALS	4	1

RIPRAP AND GEOTEXTILE FABRIC

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY	REMARKS
506+34.5	RT	1.5	3	SURFACE DRAIN APRON ENDWALL
506+34.5	LT	1.5	3	SURFACE DRAIN APRON ENDWALL
	TOTALS	3	6	

3

SILT FENCE

STATION	LOCATION	628.1504 LF	628.1520 MAINTENANCE LF
503+60 - 505+50	RT	193	193
503+60 - 506+74	LT	320	320
506+90 - 509+45	RT	258	258
506+87 - 509+90	LT	304	304
	TOTALS	1075	1075

MOBILIZATIONS EROSION CONTROL

STATION - STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
503+60 - 509+90	3	2
TOTALS	3	2

3

EROSION MAT

STATION	LOCATION	628.2027 CLASS II TYPE C SY	REMARKS
505+42 - 506+60	RT	52	DITCH
	TOTAL	52	

TURBIDITY BARRIERS

LOCATION	628.6005 SY
WEST ABUTMENT	80
EAST ABUTMENT	82
TOTAL	162

ROCK BAGS

STATION	LOCATION	628.7570 EACH	REMARKS
504+50	44' LT	17	SILT FENCE RELIEF
506+25	42' RT	13	TEMPORARY DITCH CHECK
506+67	41' LT	17	SILT FENCE RELIEF
506+88	41' LT	17	SILT FENCE RELIEF
506+92	42' RT	17	SILT FENCE RELIEF
508+00	48' LT	17	SILT FENCE RELIEF
UNDISTRIBUTED	---	25	PROJECT
	TOTAL	123	

TOPSOIL, FERTILIZER, AND SEEDING

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0110 SEEDING MIXTURE NO. 10 LB
503+00 - 506+40	LT	395	395	0.24	5
503+00 - 506+60	RT	508	508	0.32	7
507+13 - 509+90	LT	485	485	0.31	7
507+13 - 509+90	RT	432	432	0.27	6
	TOTALS	1820	1820	1	25

SIGN LISTING

LOCATION	SIGN CODE	MESSAGE	634.0616 POSTS WOOD 4X6-INCH 16-FT EACH	637.0202 SIGNS REFLECTIVE TYPE II SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
RT	13-1	ROCKY CREEK 36"X24"	1	6.0	---	---
LT	13-1	ROCKY CREEK 36"X24"	1	6.0	---	---
RT	---	NARROW BRIDGE	---	---	1	1
RT	W14-3	NO PASSING ZONE	1	6.0	1	1
RT	---	TIGER BOARD	---	---	1	1
LT	---	TIGER BOARD	---	---	1	1
RT	---	TIGER BOARD	---	---	1	1
LT	---	TIGER BOARD	---	---	1	1
LT	---	NARROW BRIDGE	---	---	1	1
		TOTALS	3	18.0	7	7

PAVEMENT MARKING EPOXY

STATION - STATION	LOCATION	646.0106 4-INCH EDGELINE MARKING (WHITE) LF	646.0106 4-INCH CENTER LINE MARKING (YELLOW) LF	646.0106 4-INCH NO-PASSING MARKING (YELLOW) LF
503+60 - 509+90	CL	---	158	---
503+60 - 509+90	RT & LT	1260	---	85
503+60 - 504+45				
	TOTALS	1260	158	85
	TOTAL	1503		

TRAFFIC CONTROL

PROJECT	643.0100 EACH
1620-02-64	1
TOTAL	1

LOCATING NO-PASSING ZONES

STATION - STATION	648.0100 MILES
503+60 - 509+90	0.12
TOTAL	0.12

SAWING ASPHALT

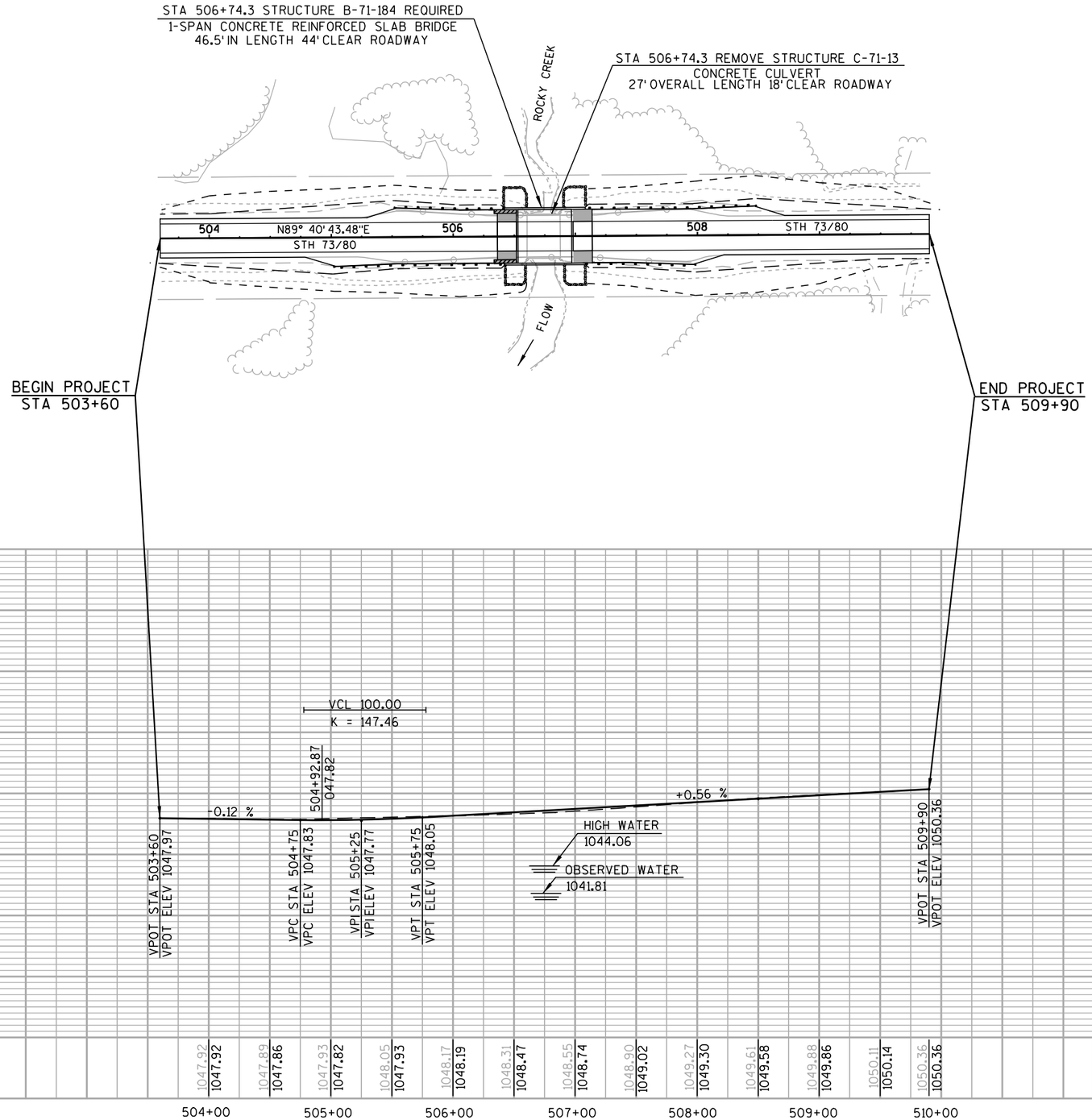
STATION	LOCATION	690.0150 LF	REMARKS
503+60	RT & LT	32	BEGIN PROJECT
509+90	RT & LT	32	END PROJECT
	TOTAL	64	

CONSTRUCTION STAKING

STATION - STATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6500.01 STRUCTURE LAYOUT LS	650.9910.01 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
503+60 - 506+52	292	292	---	---	292
506+98 - 509+90	292	292		---	292
B-71-184	---	---	1	---	---
506+30 - 509+90	---	---	---	1	---
TOTALS	584	584	1	1	584

SPRAYED ASPHALTIC SHOULDER TREATMENT

STATION - STATION	LOCATION	SPV.0070.01 GALS
505+02 - 506+42	RT	129
505+52 - 506+42	LT	83
507+08 - 507+98	RT	83
507+08 - 508+48	LT	129
	TOTAL	424

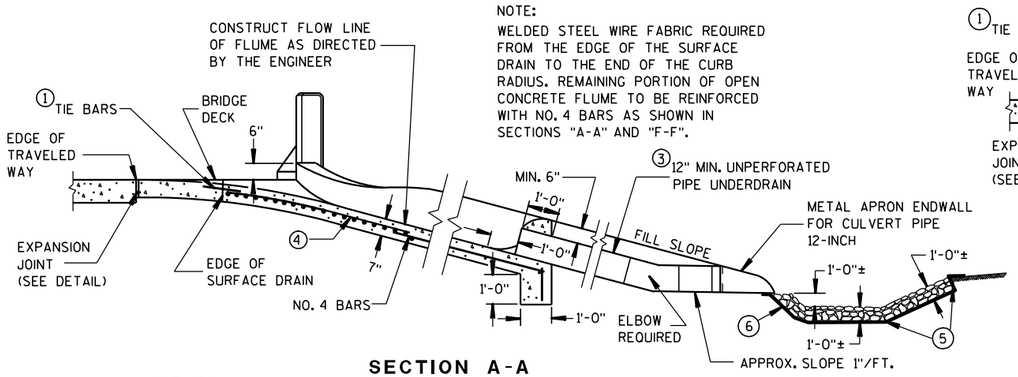


PROJECT NO: 1620-02-64	HWY: STH 73/80	COUNTY: WOOD	PLAN AND PROFILE	SHEET 15	E

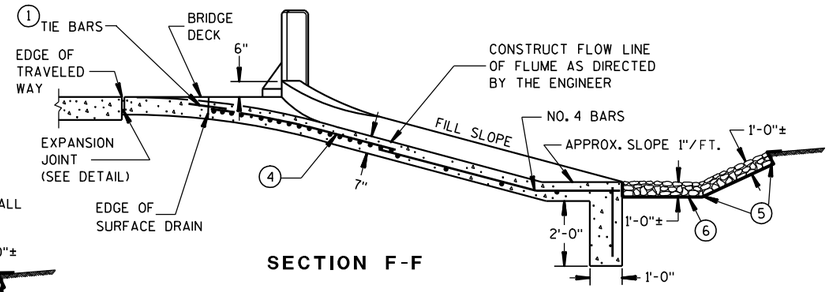
FILE NAME : P:\projects\D4_16200201ED\D4_16200201 Rocky Creek\050101_pp.dgn PLOT DATE : 27-SEP-2012 16:09 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 100:1

Standard Detail Drawing List

08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-02A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C08-15A	PAVEMENT MARKING (MAINLINE)
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS



SECTION A-A



SECTION F-F

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.

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

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.

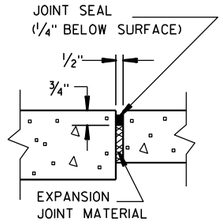
(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

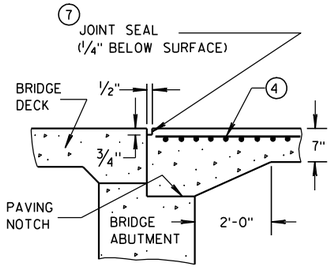
(6) GEOTEXTILE FABRIC, TYPE 'R"

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

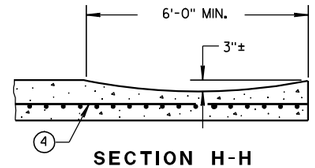
(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



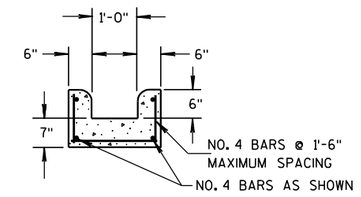
EXPANSION JOINT DETAIL



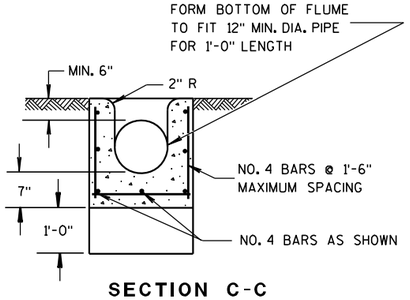
SECTION D-D



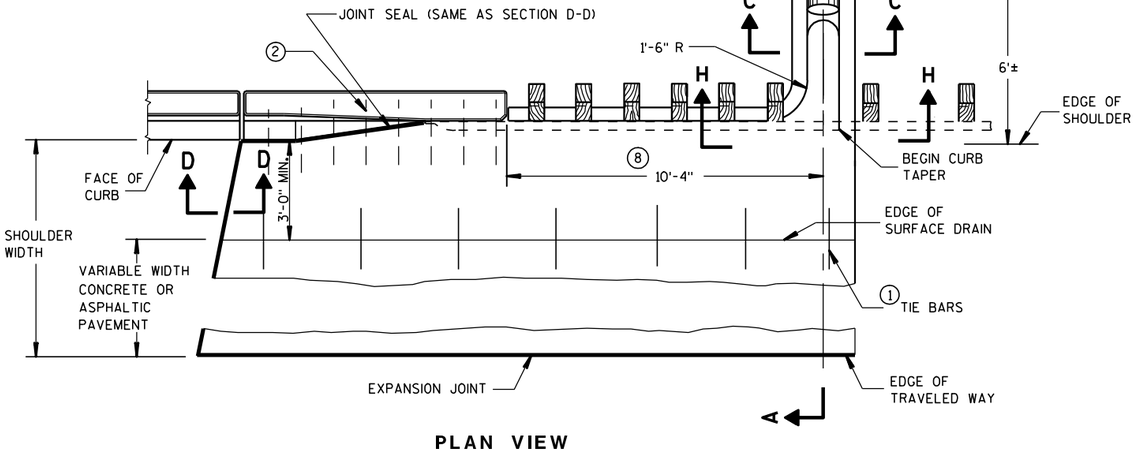
SECTION H-H



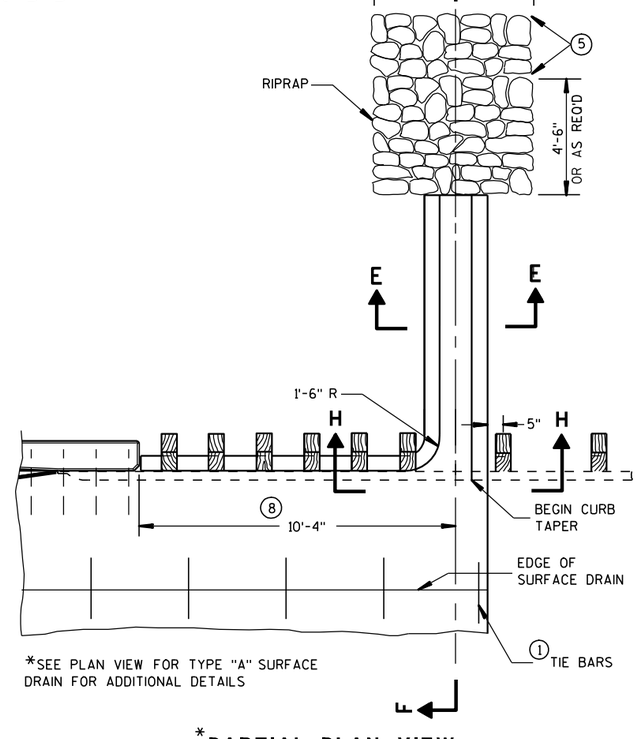
SECTION E-E



SECTION C-C

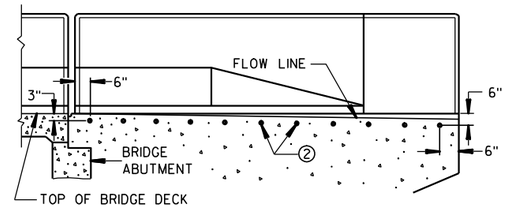


PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



*SEE PLAN VIEW FOR TYPE "A" SURFACE DRAIN FOR ADDITIONAL DETAILS

*PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"



LOCATION OF
TIE BARS IN WINGWALL

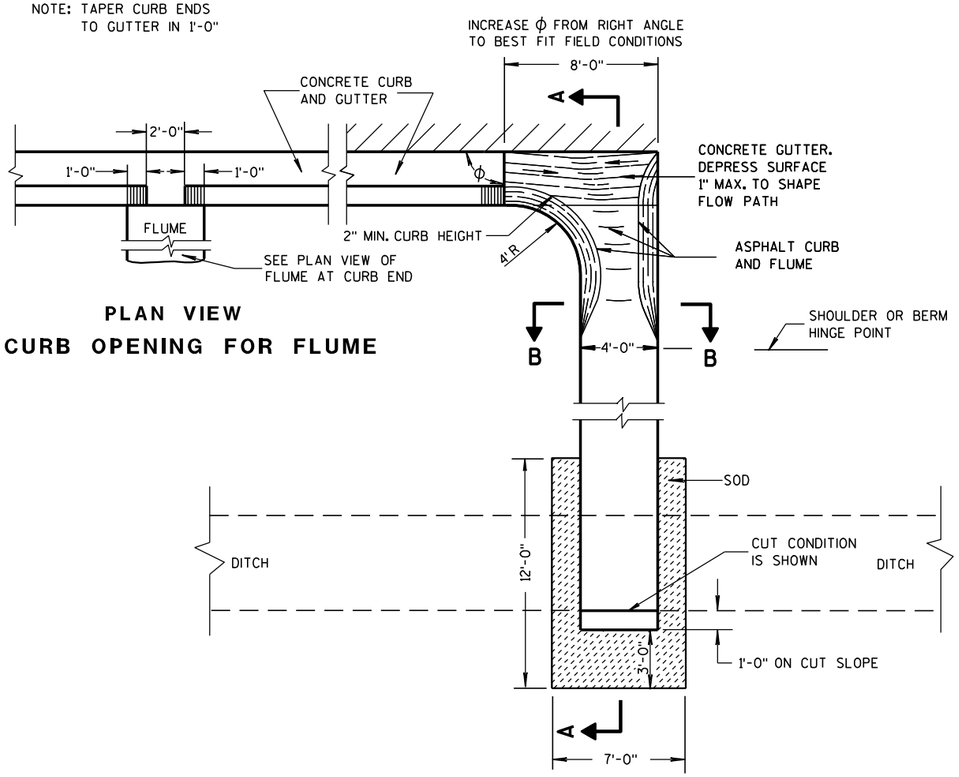
CONCRETE SURFACE DRAINS
FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

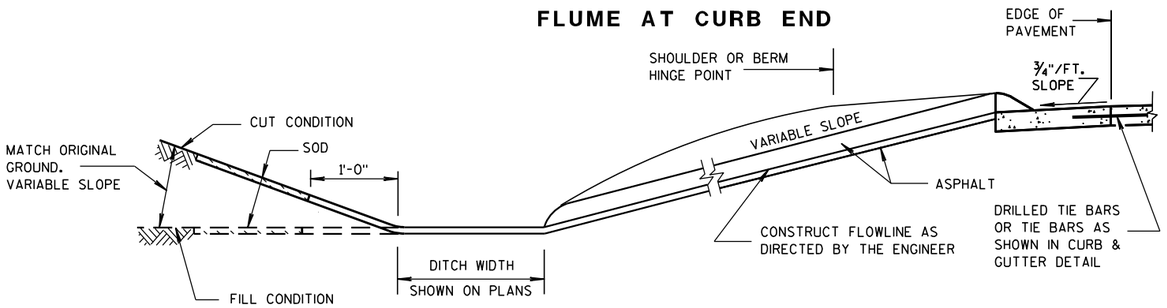
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S.D.D. 8 D 2-6

ASPHALTIC FLUME

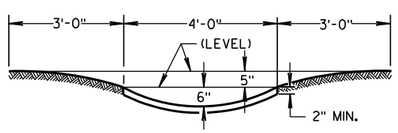


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

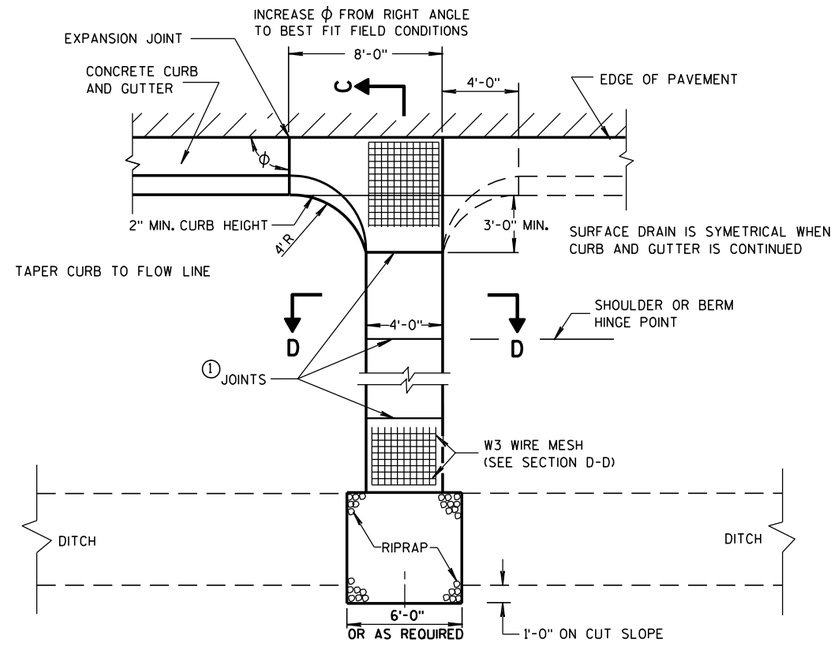
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

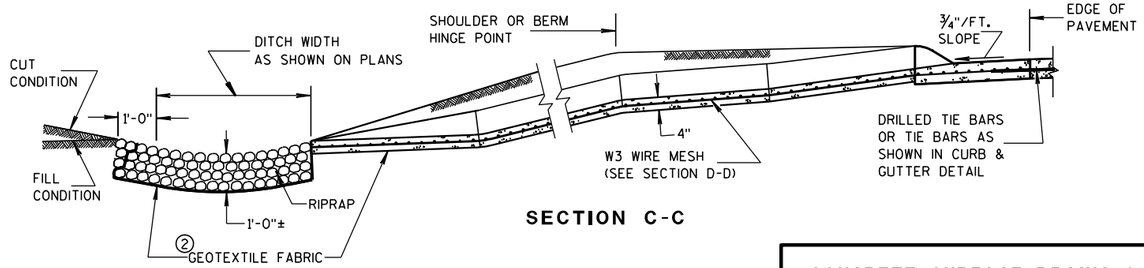
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

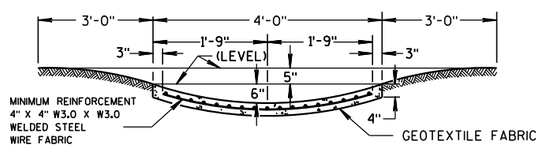
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C

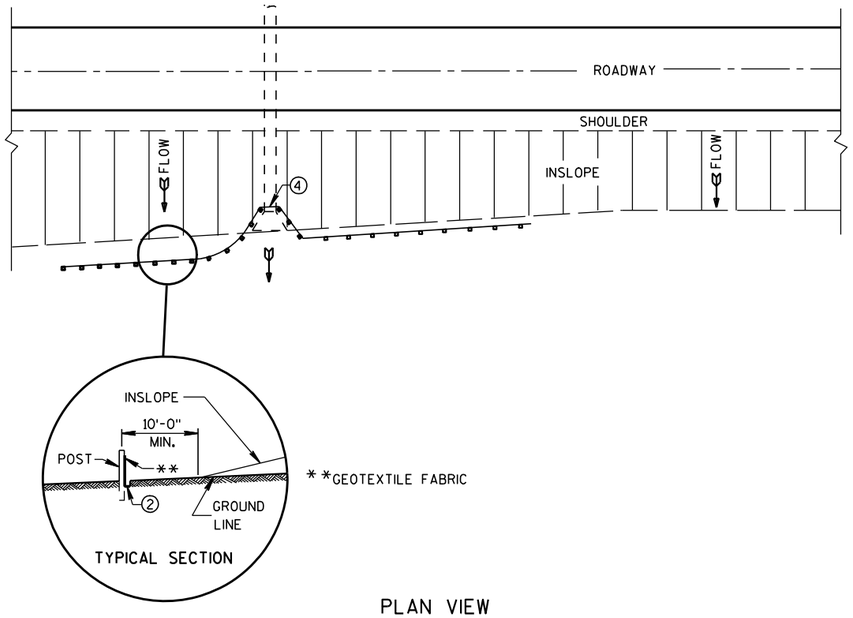


SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

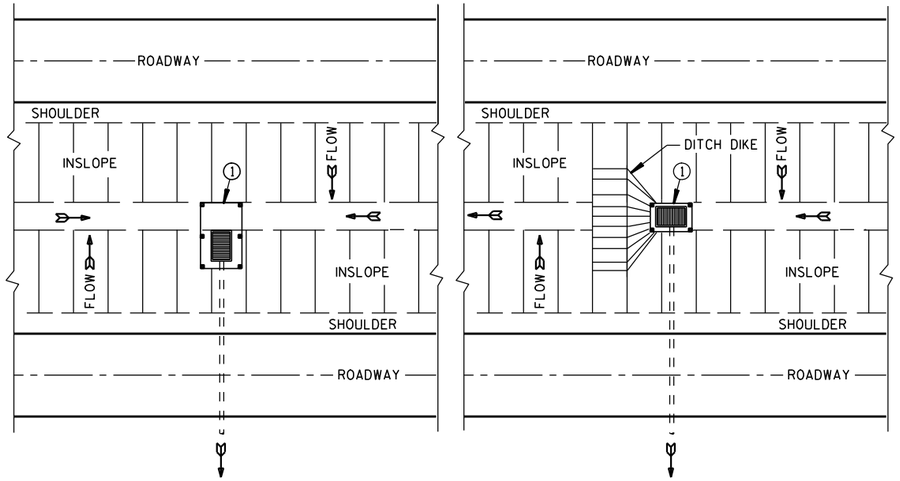
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT
FHWA



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



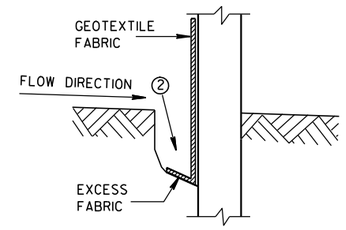
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

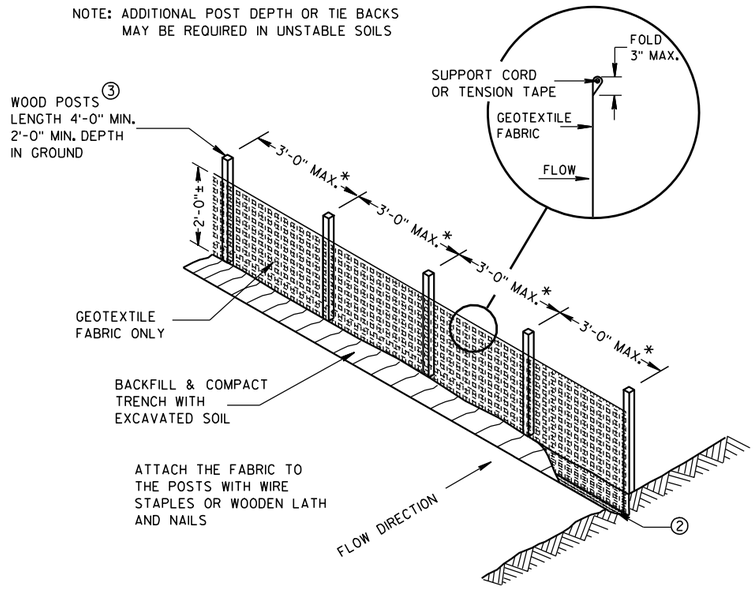
GENERAL NOTES

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

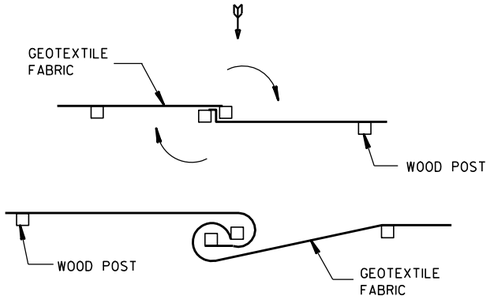
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



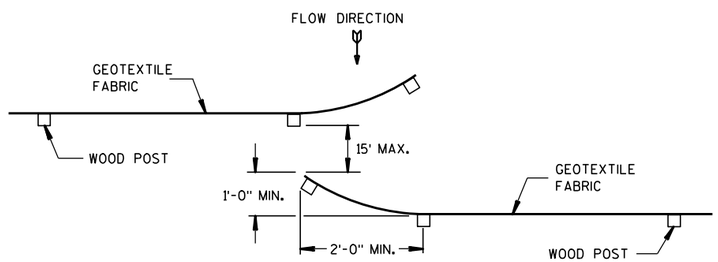
TRENCH DETAIL



SILT FENCE

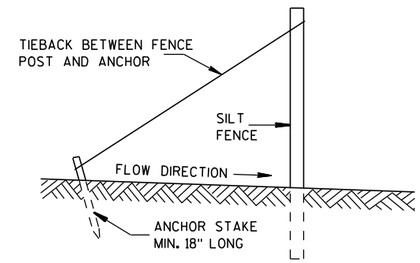


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

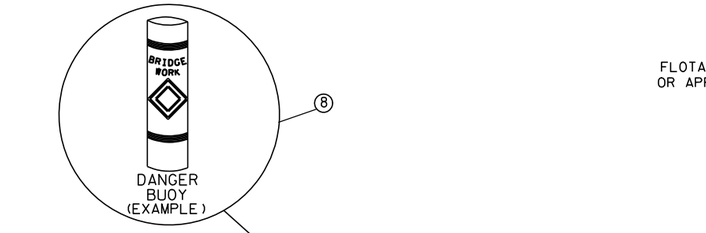
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

6

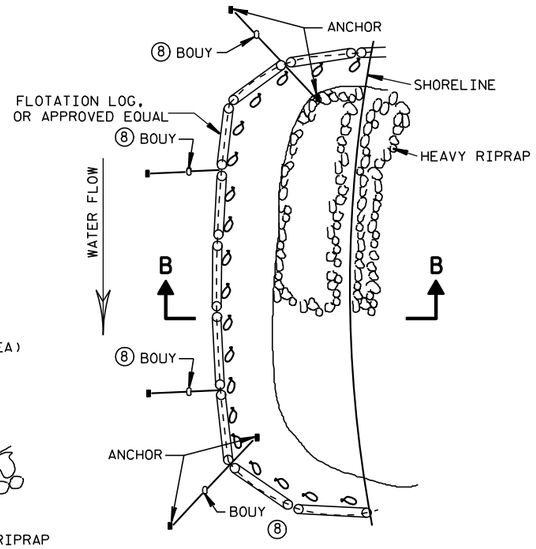
S.D.D. 8 E 9-6

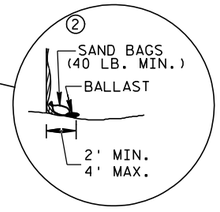
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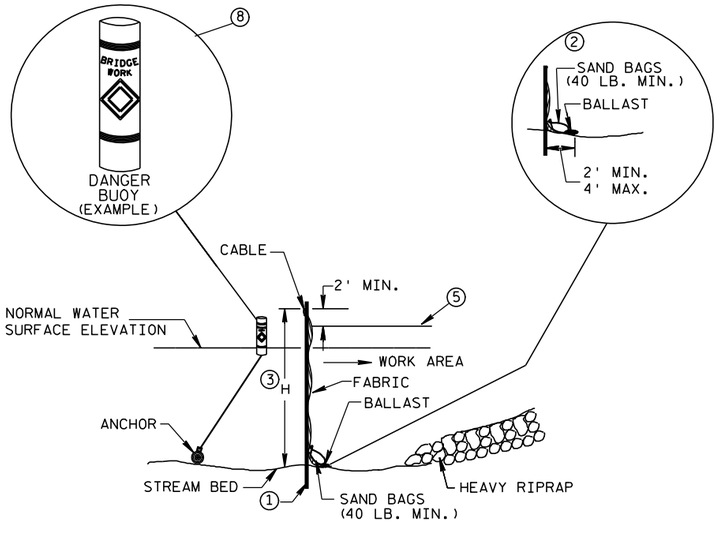


SECTION B-B

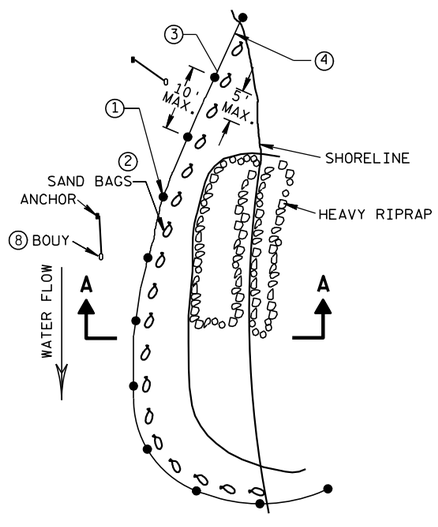




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

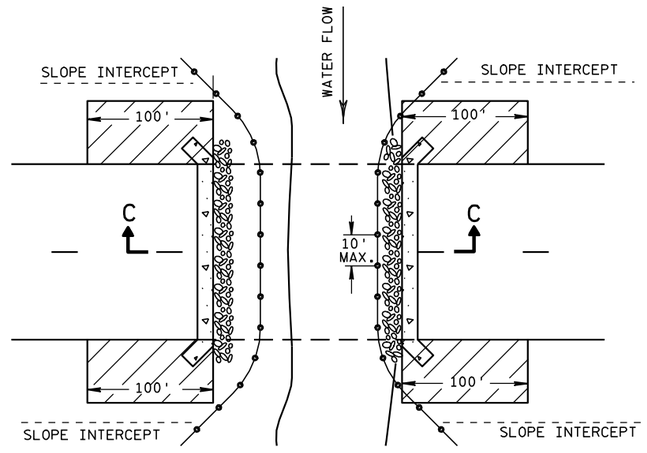
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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.

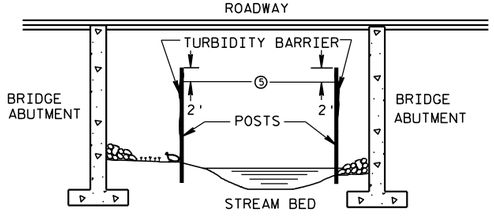
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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



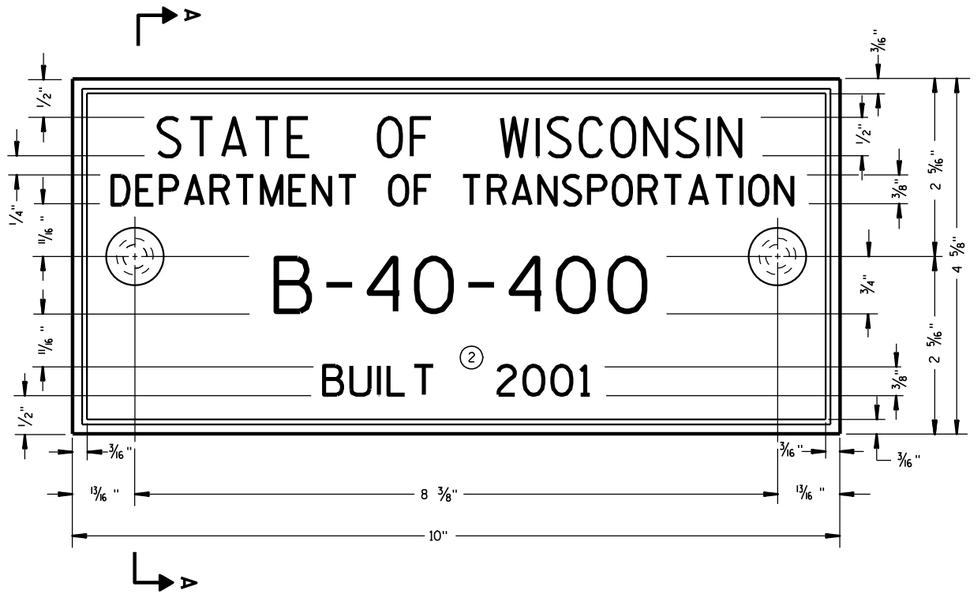
SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

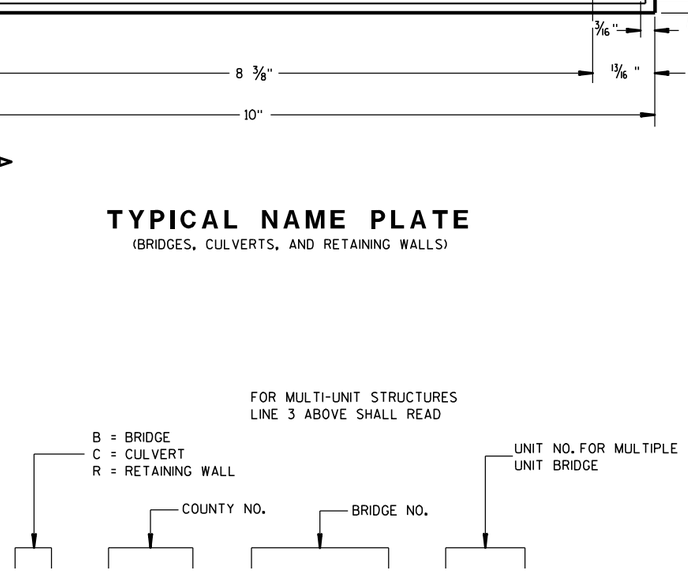
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



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



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

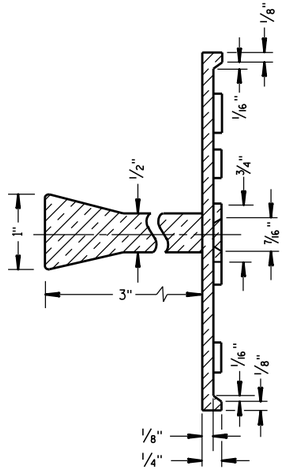
GENERAL NOTES

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

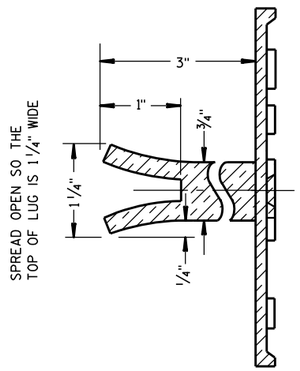
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

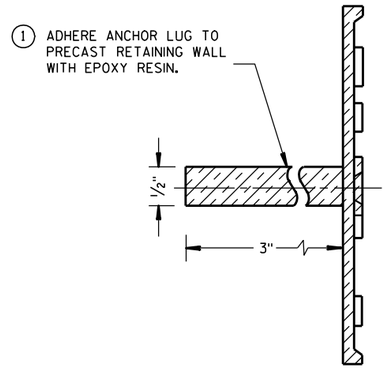
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

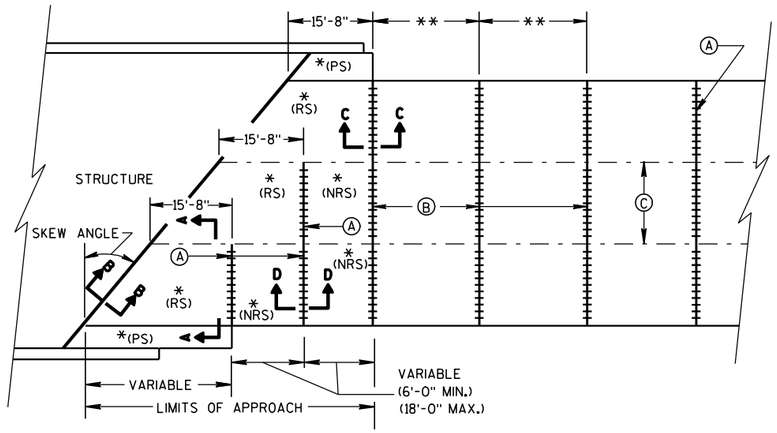
3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

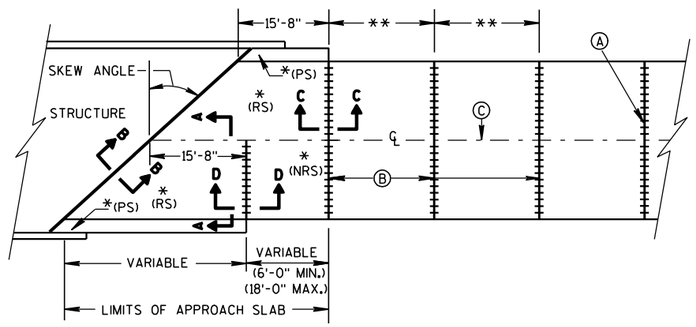
FHWA

6

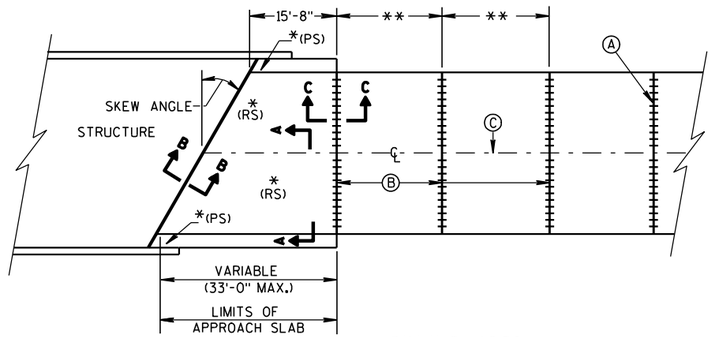
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



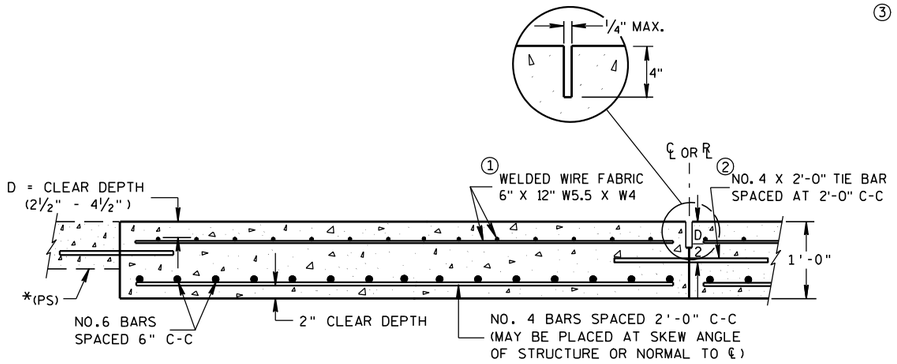
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

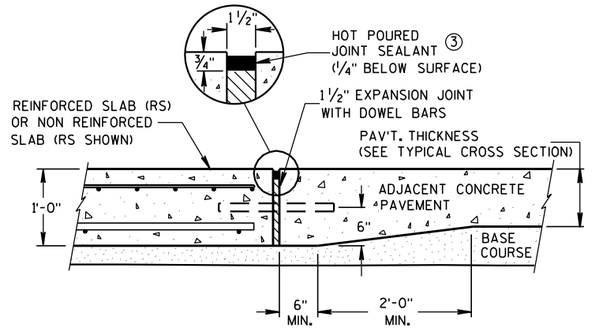
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

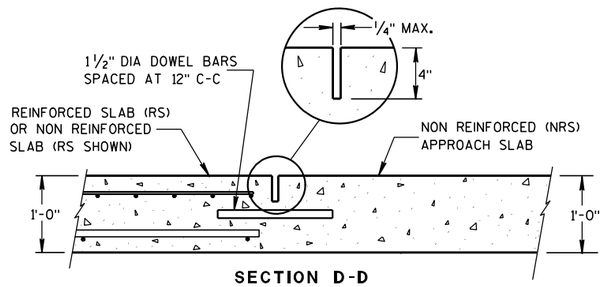
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

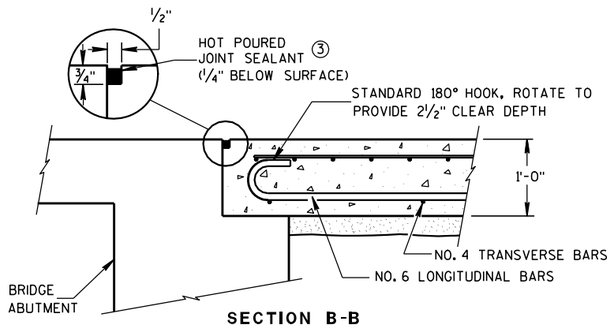
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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

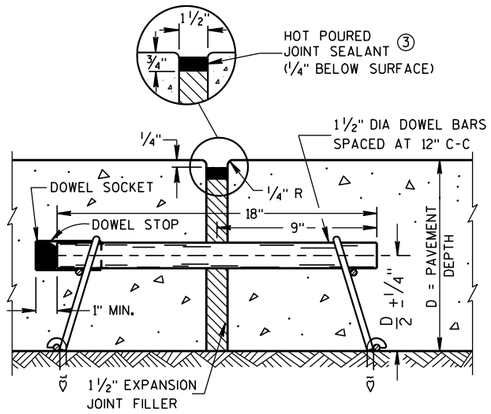
(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

(3) USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DESIGN ENGINEER
FHWA

GENERAL NOTES

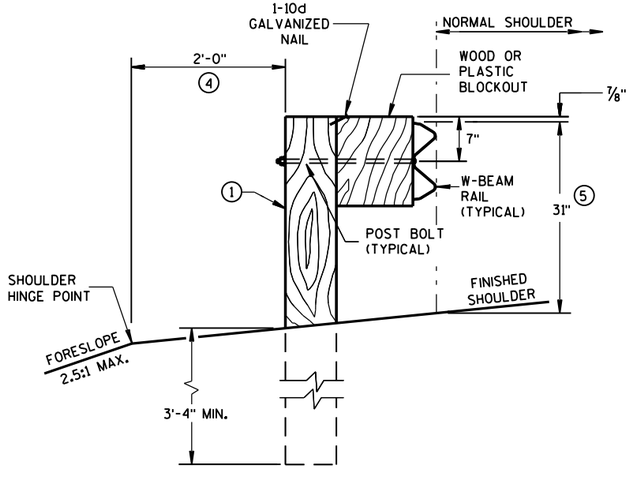
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

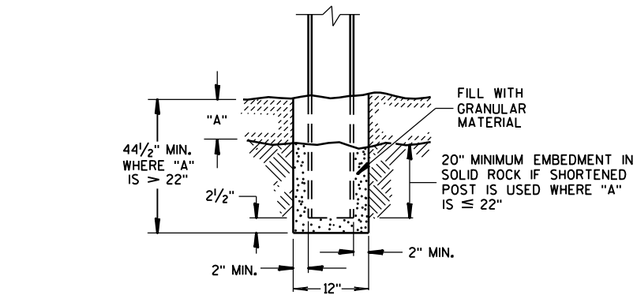
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".



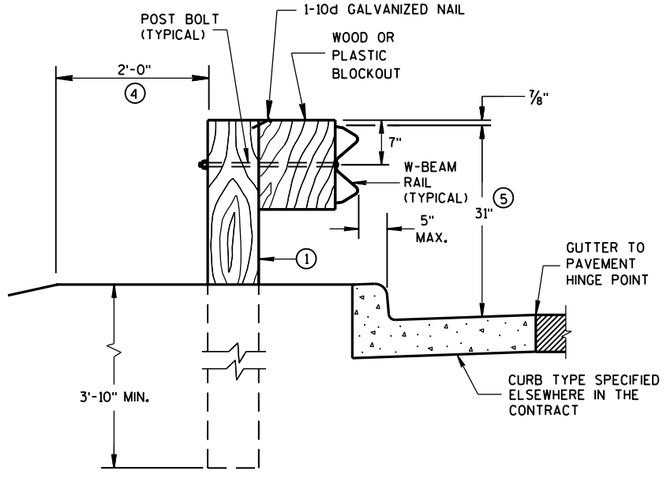
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



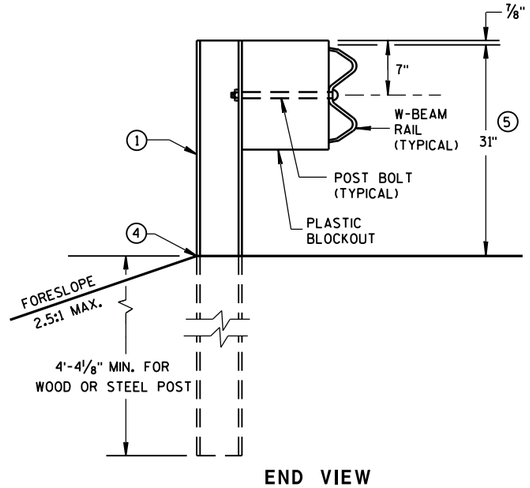
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



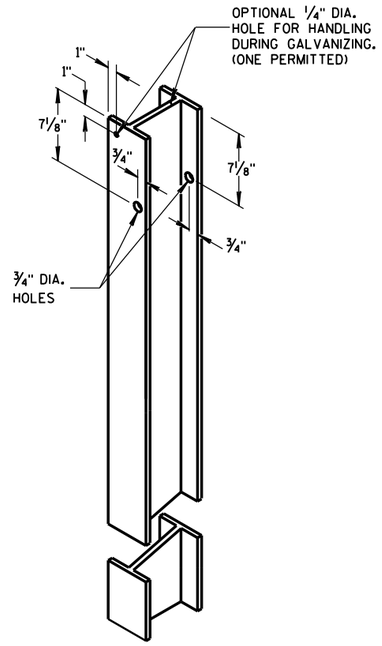
END VIEW

LOCATED ALONG A CURBED ROADWAY

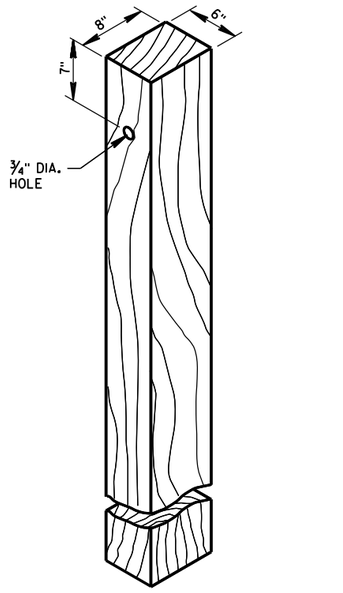


END VIEW

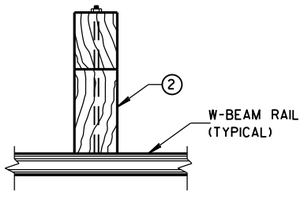
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



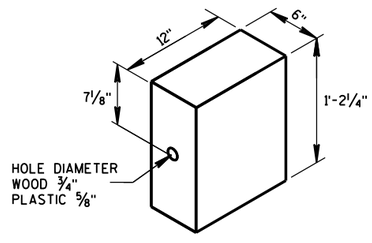
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



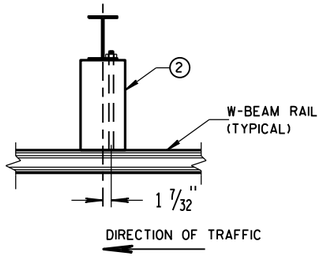
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

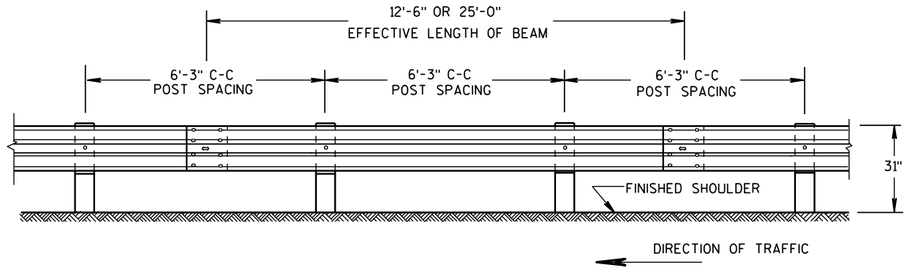


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

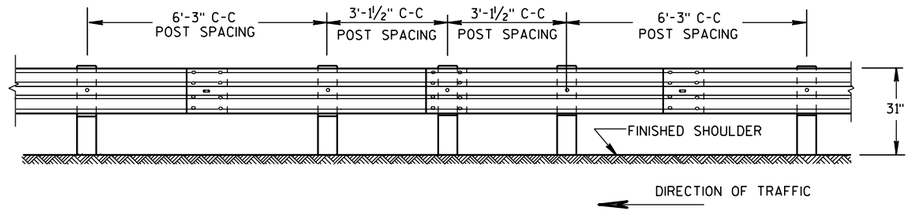
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 42-2a



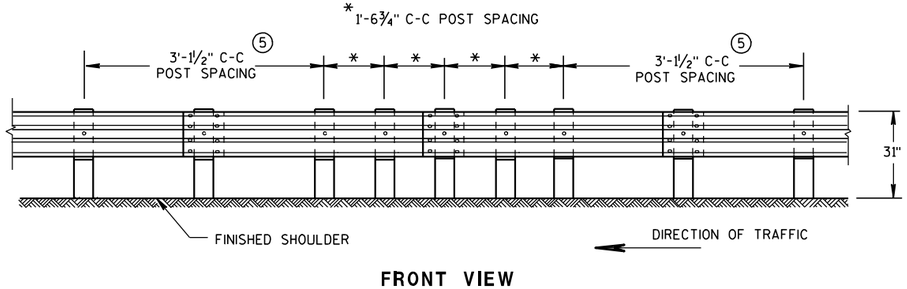
FRONT VIEW

POST SPACING STANDARD INSTALLATION



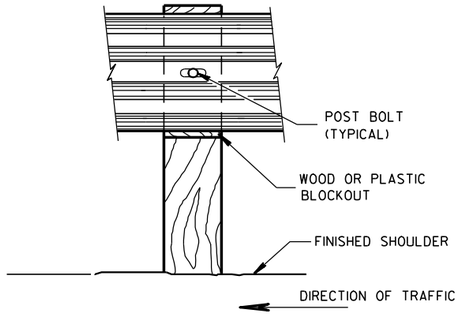
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

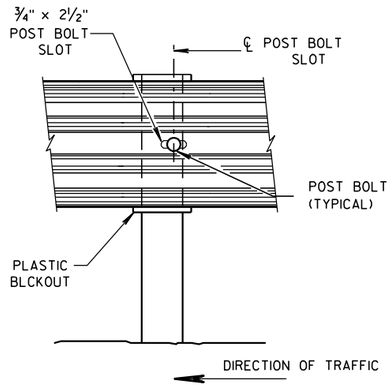


FRONT VIEW

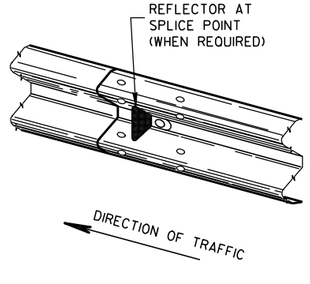
QUARTER POST SPACING (QS)

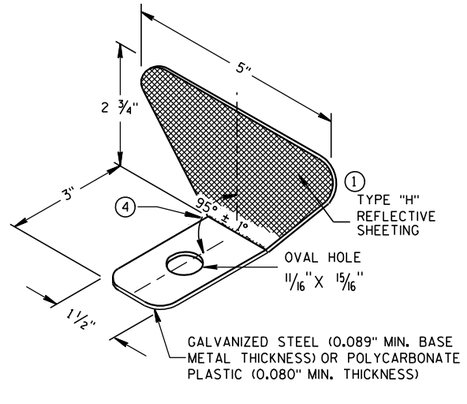


FRONT VIEW AT WOOD POST

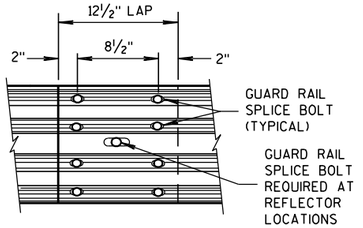


FRONT VIEW AT STEEL POST



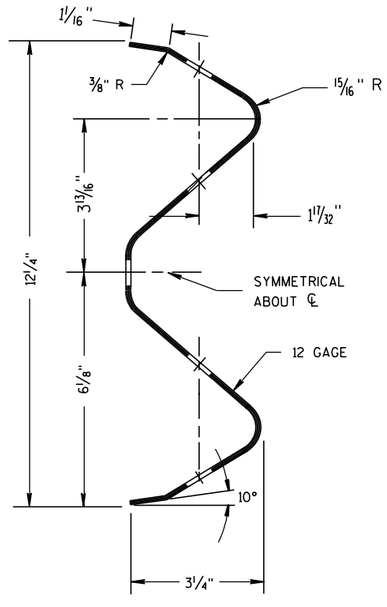


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①



FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL

GENERAL NOTES

① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.

② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

④ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

⑤ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING ②

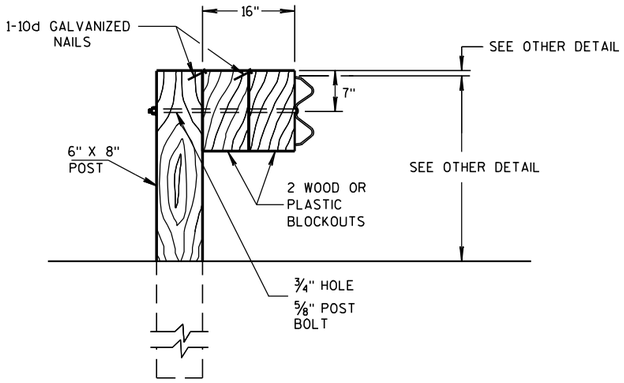
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ③ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ④ 2	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

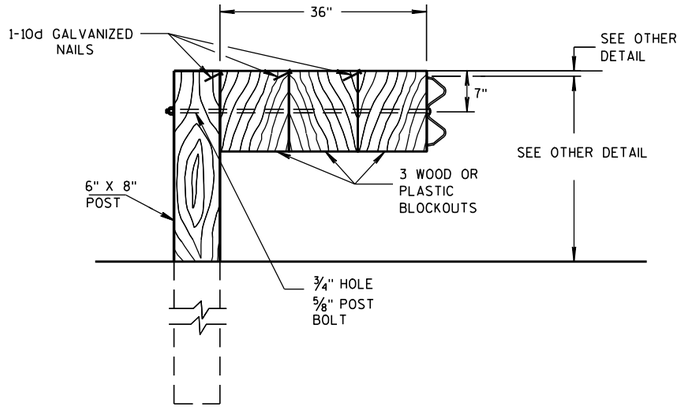
S.D.D. 14 B 42-2b

S.D.D. 14 B 42-2b



DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

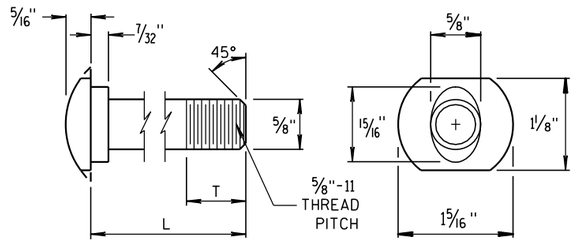


DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

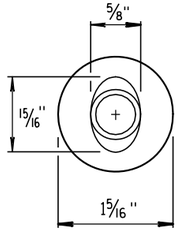
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

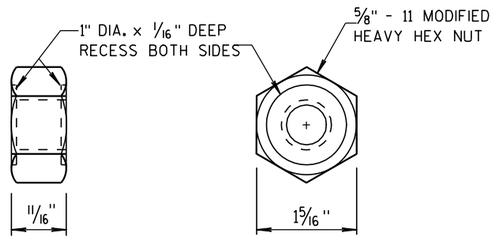


POST BOLT TABLE

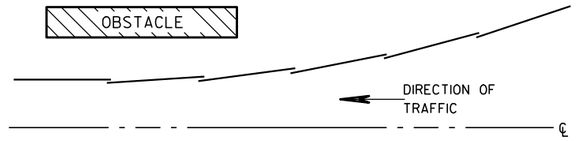
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

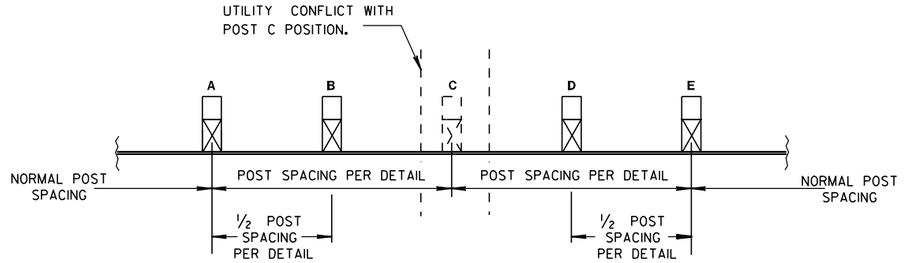


POST BOLT AND RECESS NUT

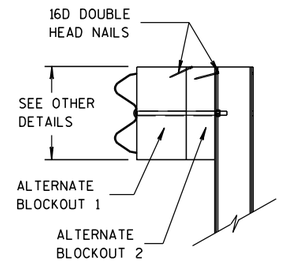


PLAN VIEW

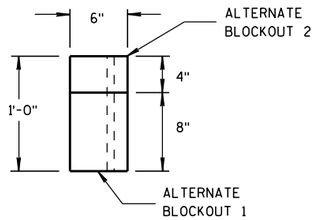
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011 DATE

/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER

FHWA

25

ENT

6

S.D.D. 14 B 42-2c

6

S.D.D. 14 B 42-2c

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), 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) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(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.

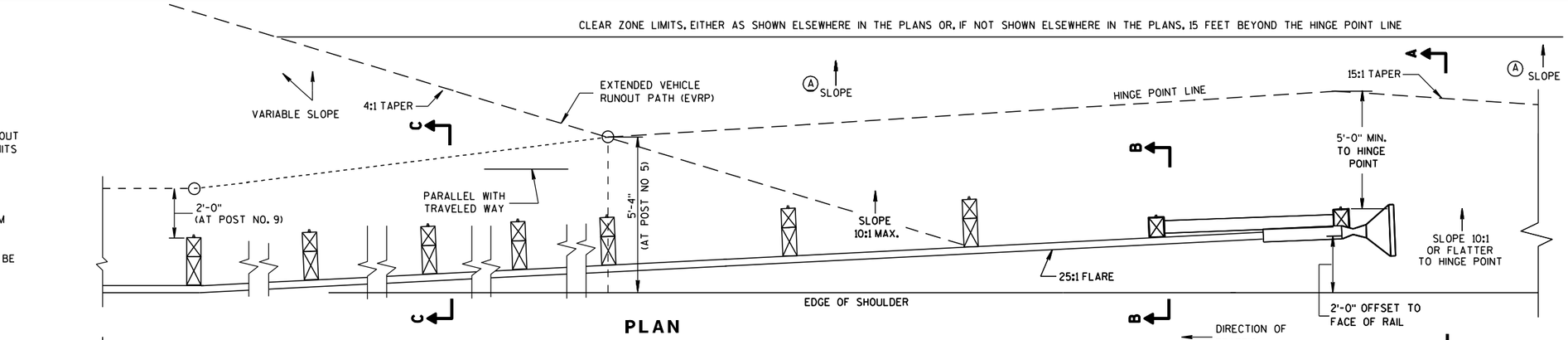
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

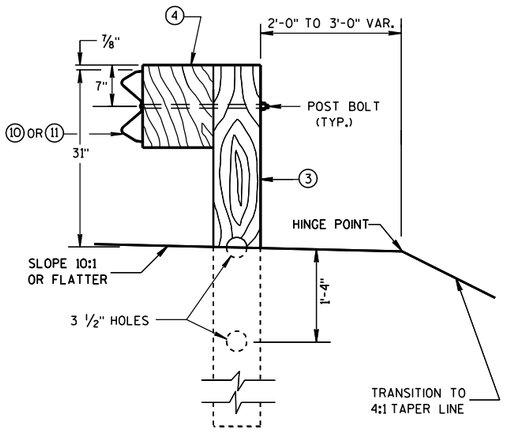
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

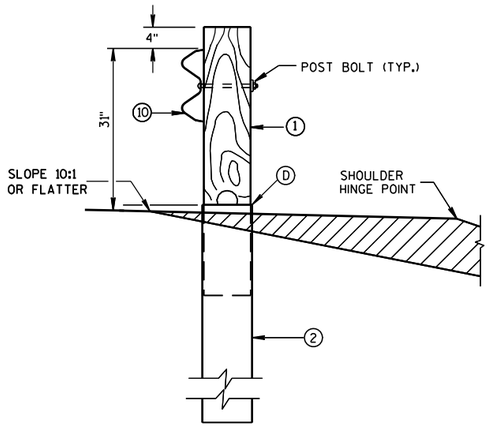
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

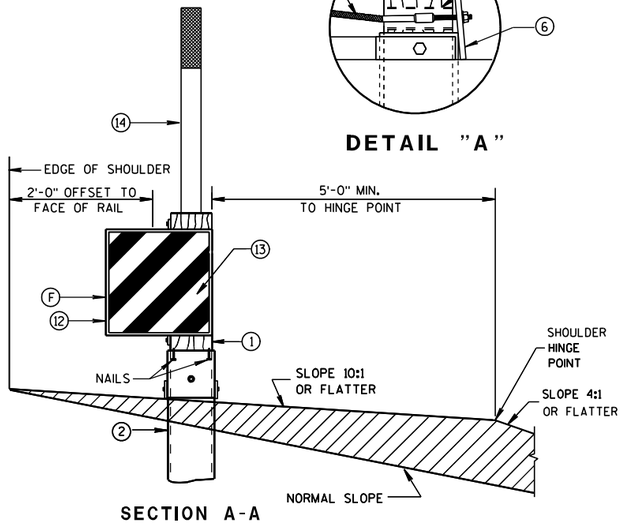




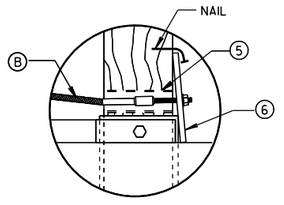
SECTION C-C
TYPICAL AT POST NOS. 3-9



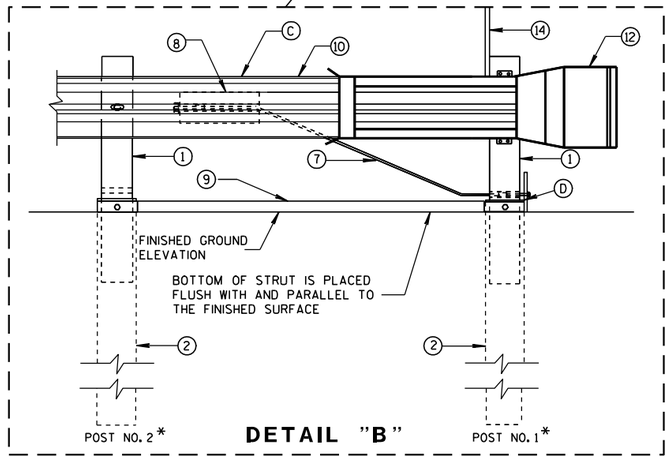
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

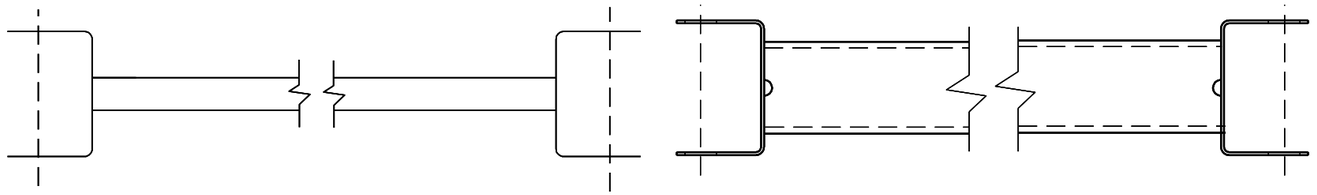


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

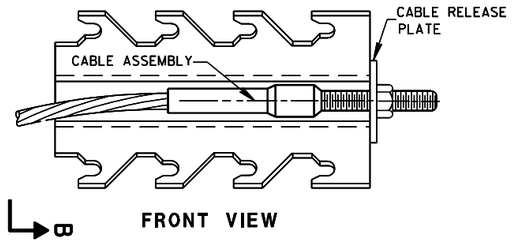
6
S.D.D. 14 B 44-1a



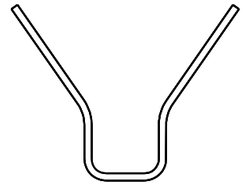
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

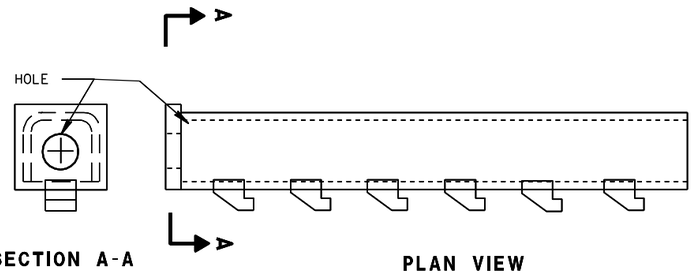
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR 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 H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



FRONT VIEW



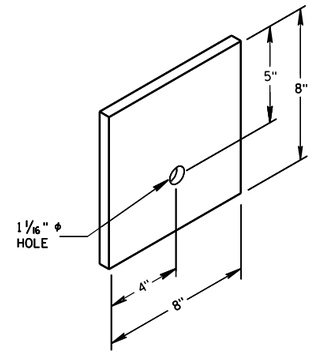
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



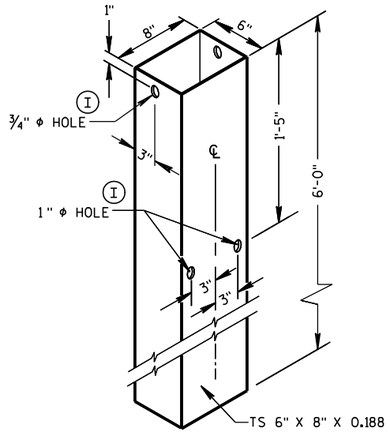
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

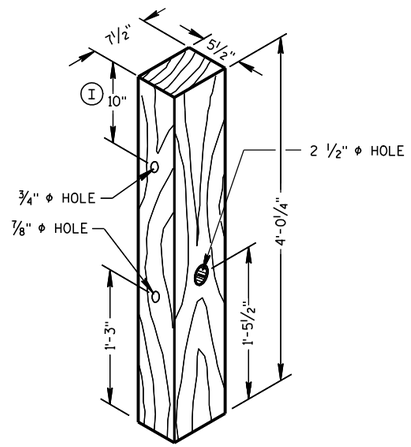
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

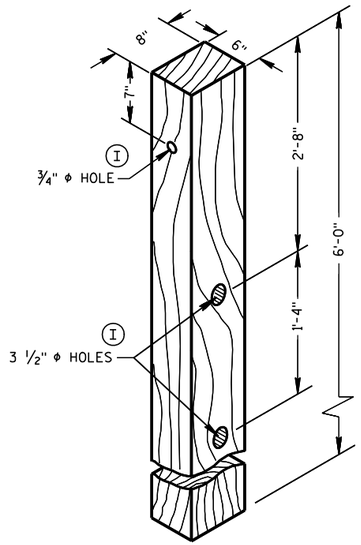


FOUNDATION TUBE (2)



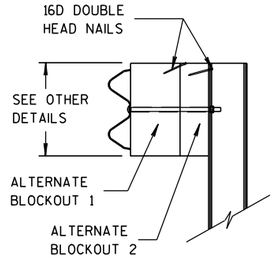
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

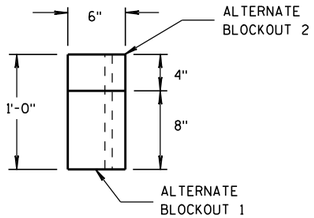


POSTS NUMBER 3-9

WOOD CRT POST (3)

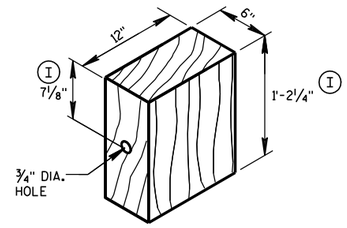


SIDE VIEW



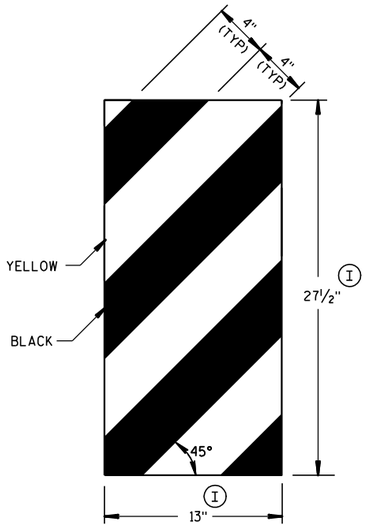
TOP VIEW

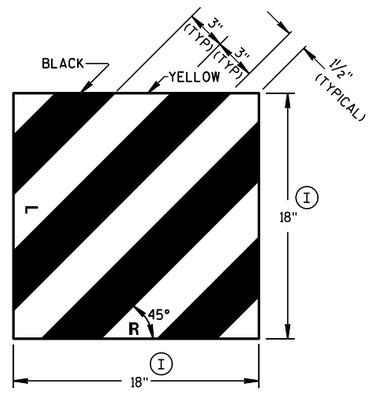
ALTERNATE WOOD BLOCKOUT DETAIL



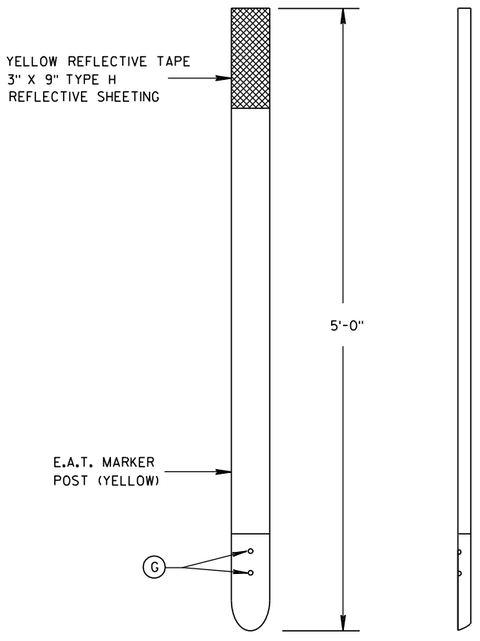
WOOD BLOCKOUT (4)

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



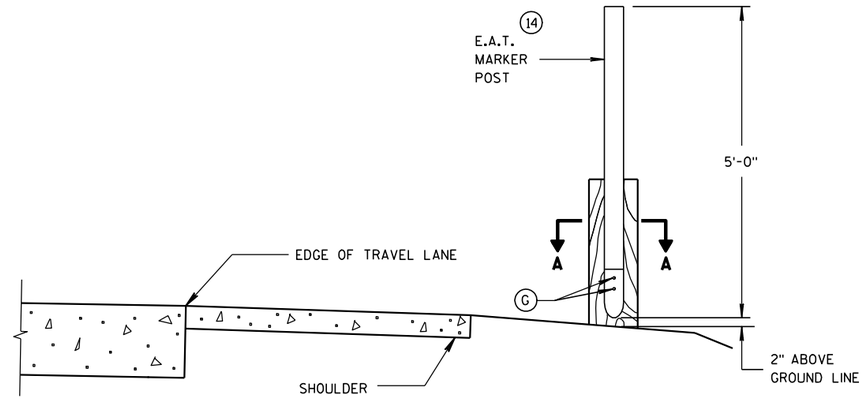


GENERIC REFLECTIVE SHEETING (13) (H)



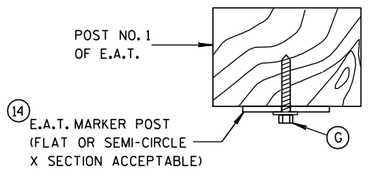
FRONT VIEW **SIDE VIEW**

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

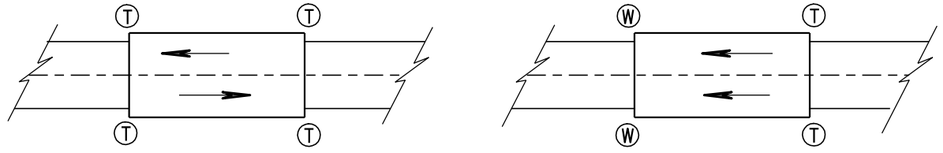
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-1c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

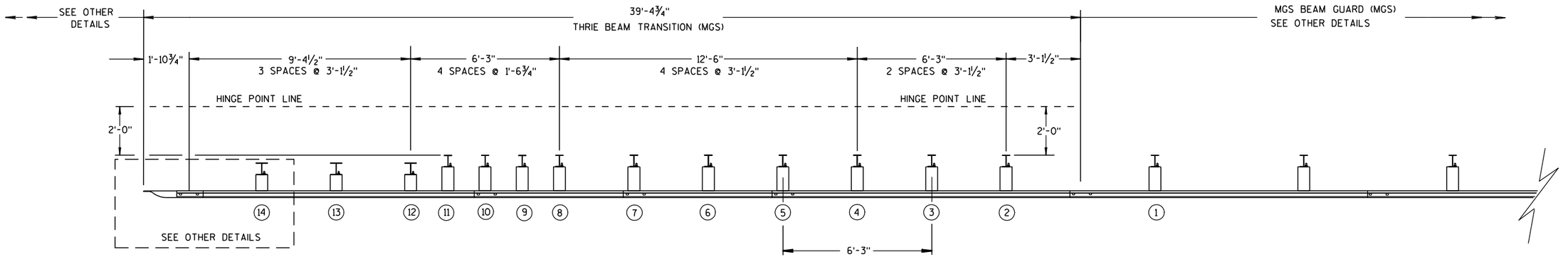
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED DURING EXCAVATION, SEE STANDARD DETAIL DRAWING 14 B 42.

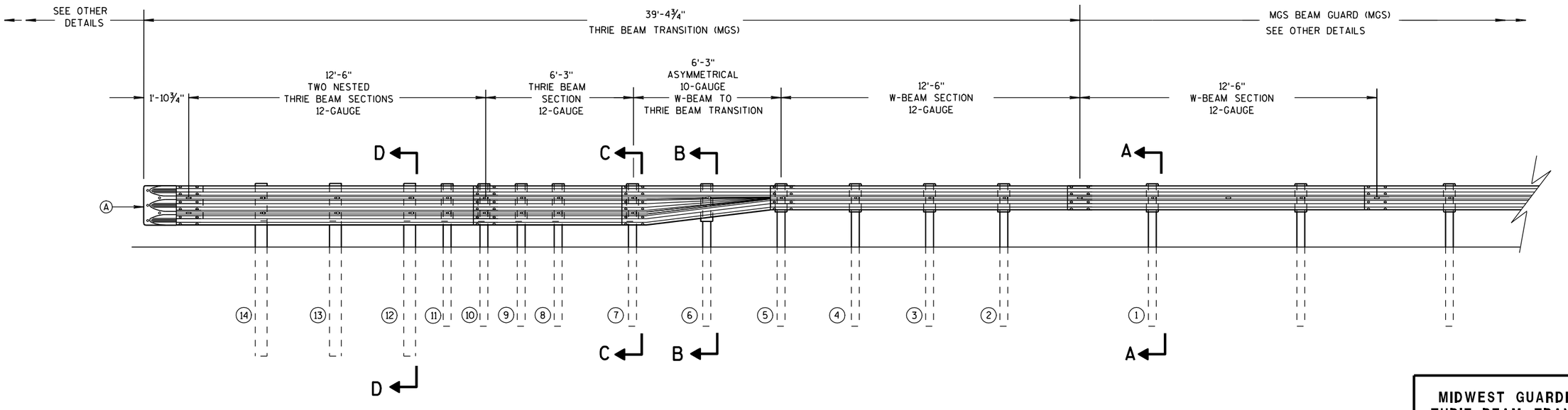
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

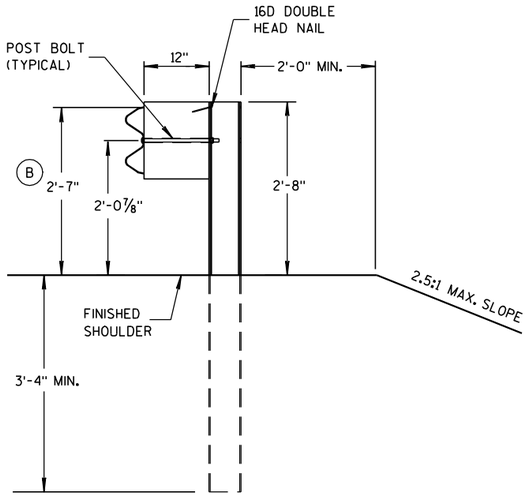
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-2a

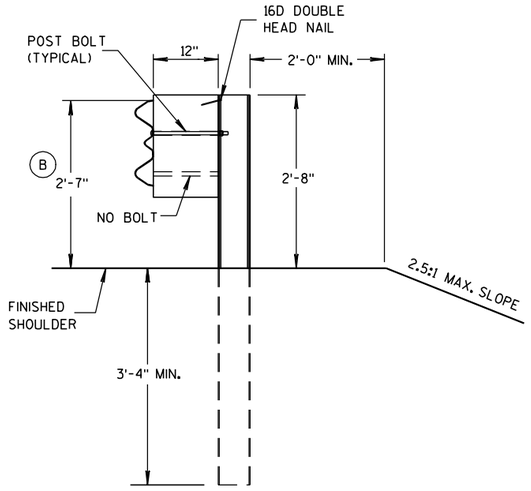
GENERAL NOTES

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



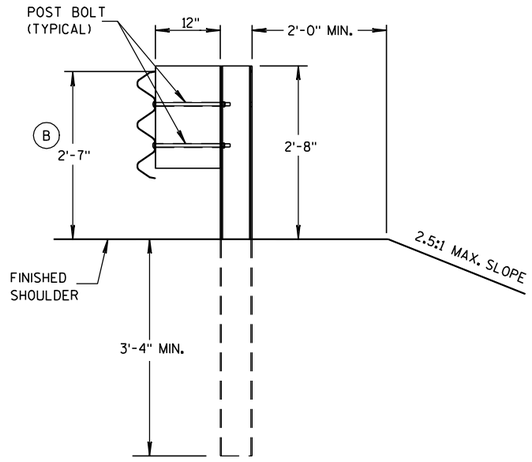
SECTION A-A

POSTS 1-5



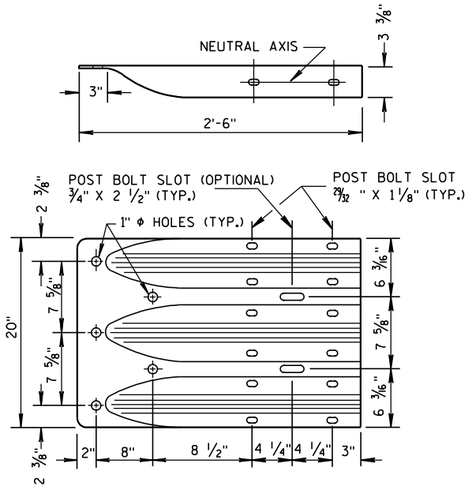
SECTION B-B

POST 6

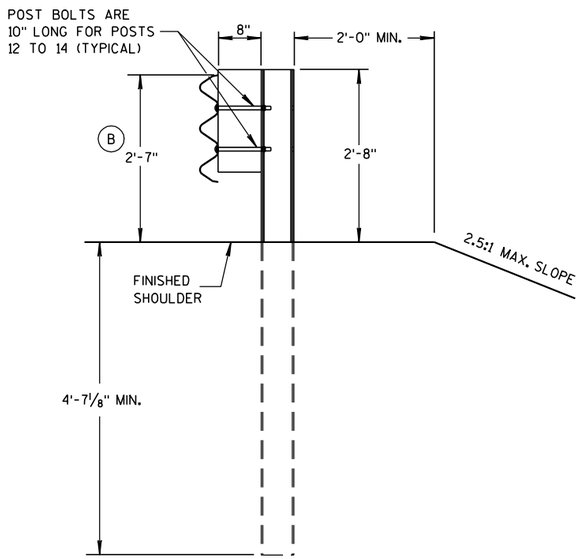


SECTION C-C

POSTS 7-11

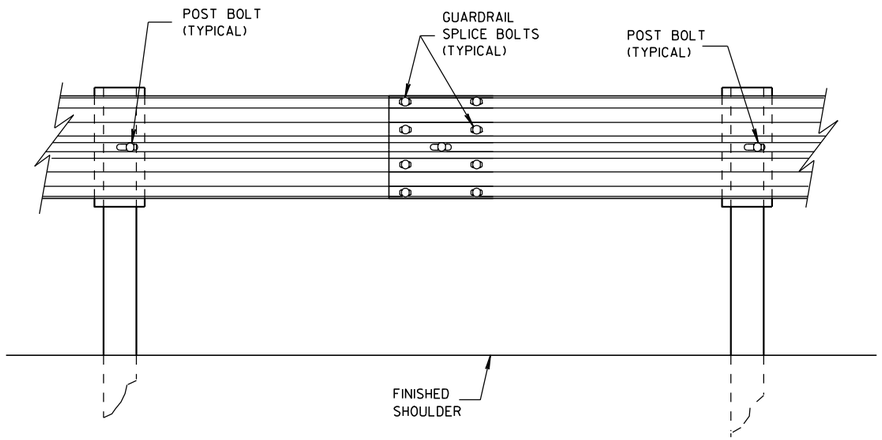


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14



SPLICE DETAIL

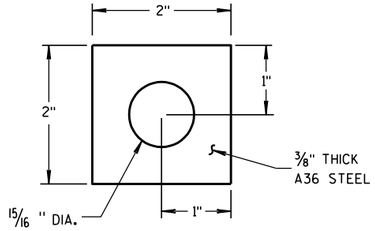
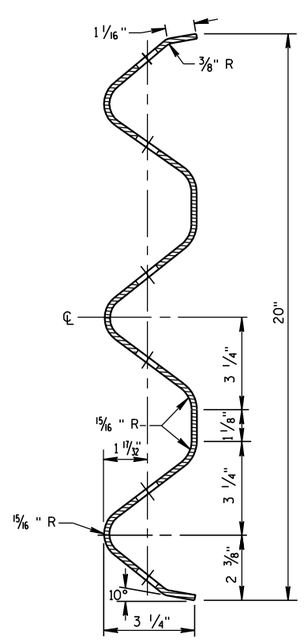


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

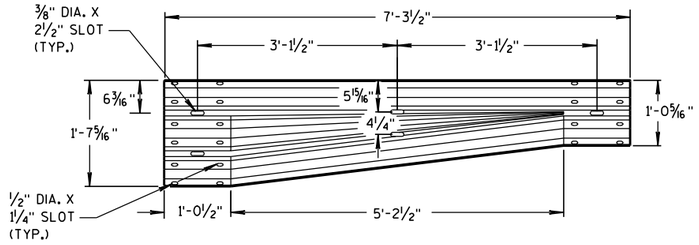
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

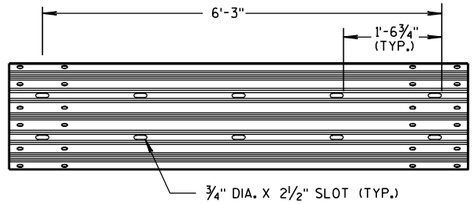
S.D.D. 14 B 45-2b

6

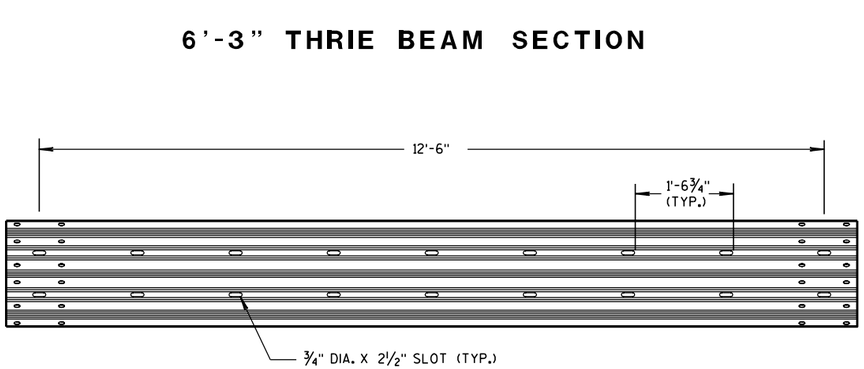
S.D.D. 14 B 45-2b



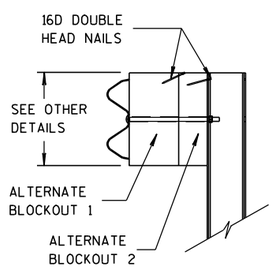
W-BEAM TO THRIE BEAM TRANSITION SECTION



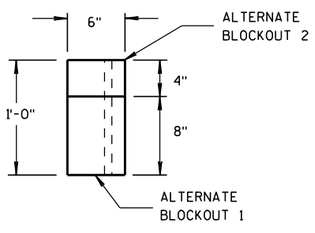
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

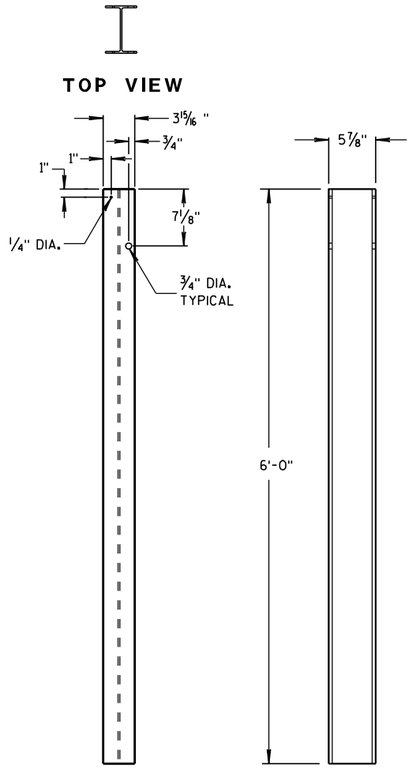


SIDE VIEW

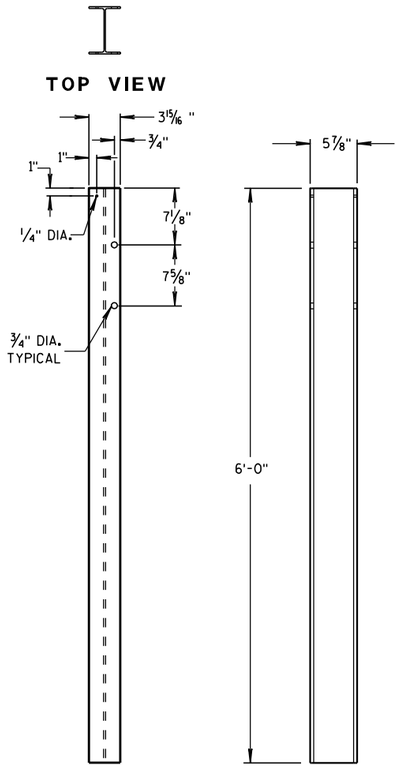


TOP VIEW

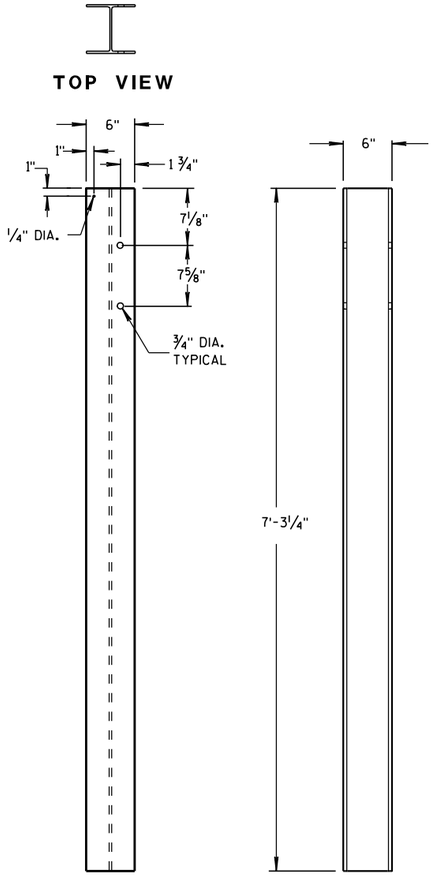
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

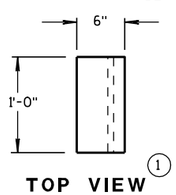


STEEL POSTS 6-11

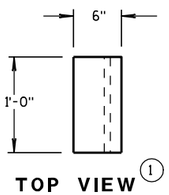


STEEL POSTS 12-14

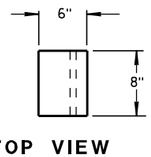
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



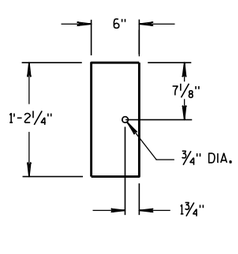
TOP VIEW (1)



TOP VIEW (1)

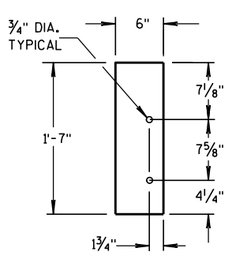


TOP VIEW



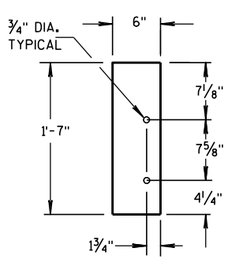
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

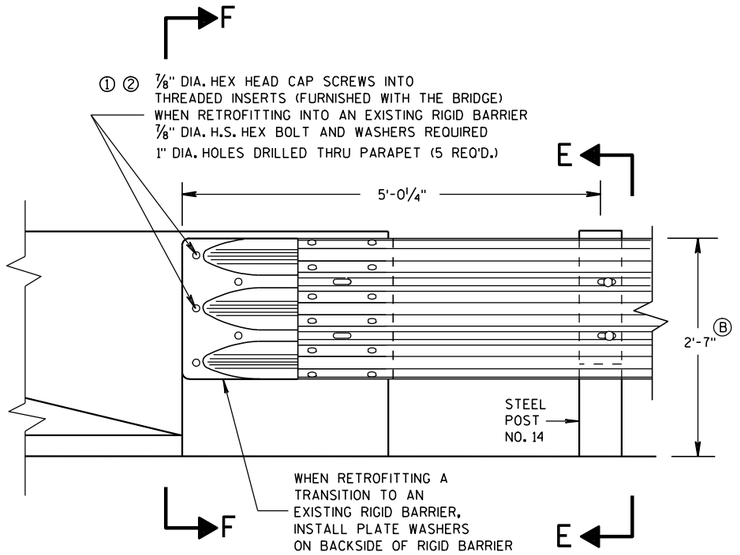
POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

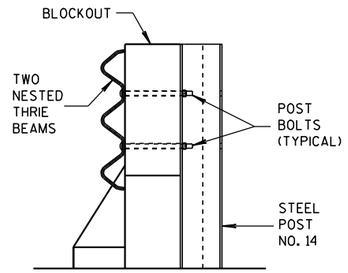
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 45-2c



FRONT VIEW



SECTION E-E

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

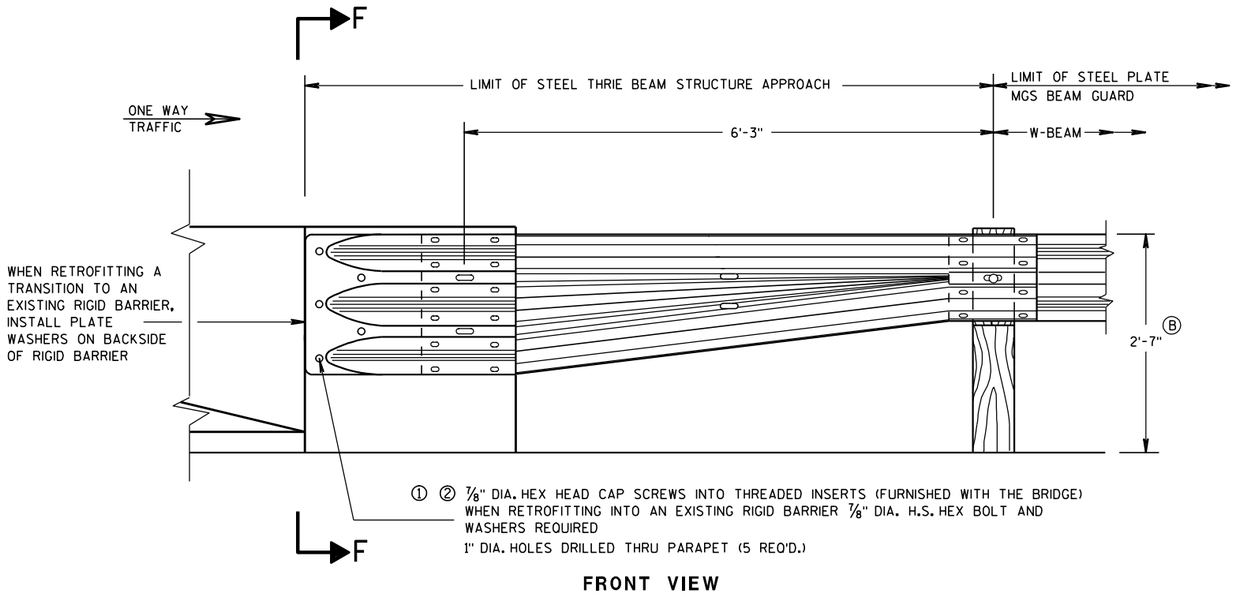
① INCLUDE THE PAYMENT FOR DRILLING BOLT HOLES THROUGH THE PARAPET, AND ALL BOLTS, NUTS AND WASHERS IN THE ITEM "STEEL THRIE BEAMSTRUCTURAL APPROACH".

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

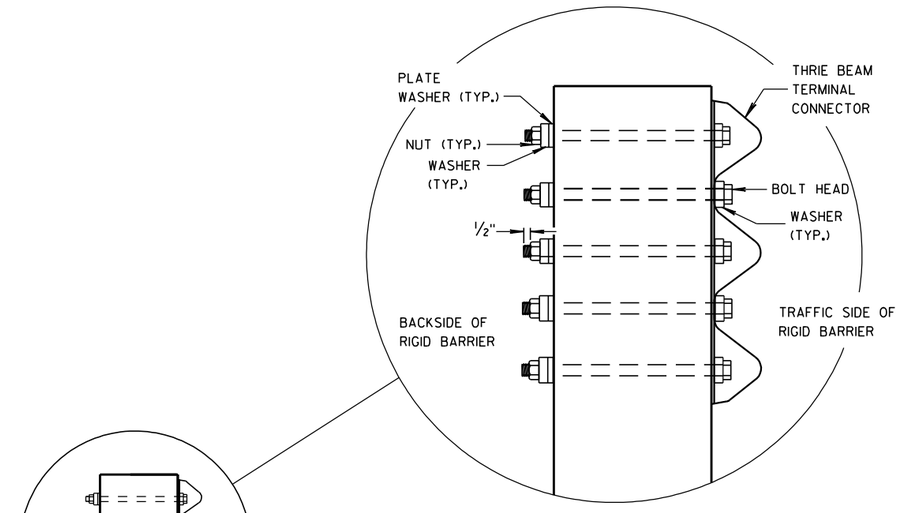
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

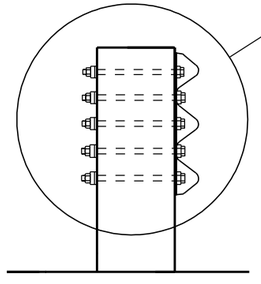
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW





SECTION F-F

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2/8/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

FHWA

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

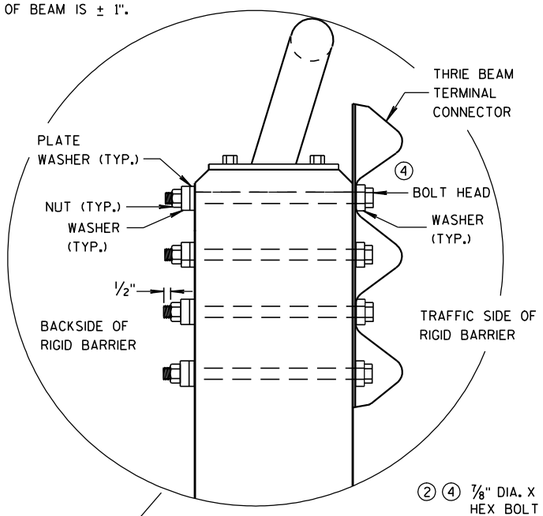
① INCLUDE THE PAYMENT FOR DRILLING BOLT HOLES THROUGH THE PARAPET, AND ALL BOLTS, NUTS AND WASHERS IN THE ITEM "STEEL THRIE BEAMSTRUCTURAL APPROACH".

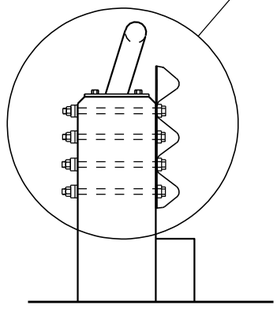
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

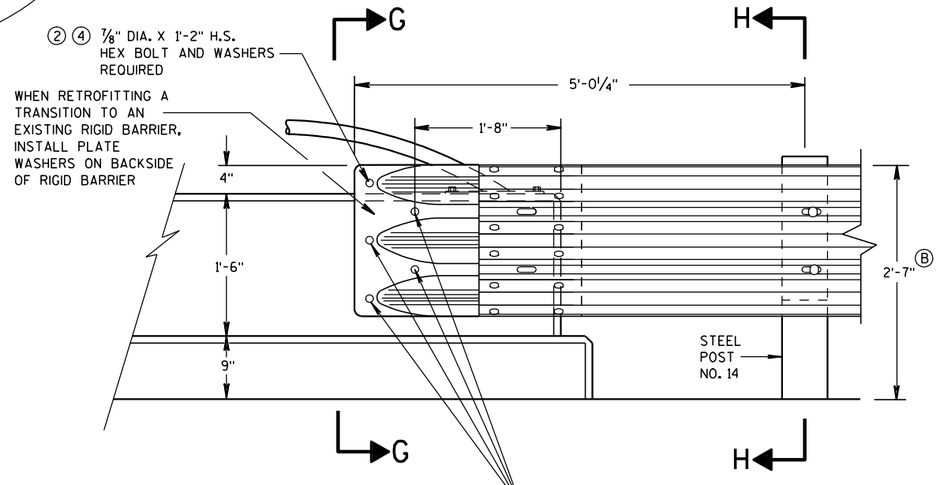
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

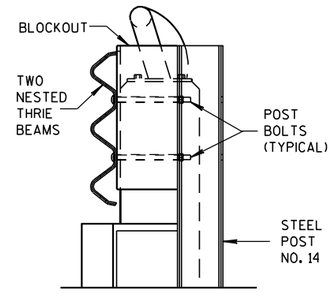




SECTION G-G

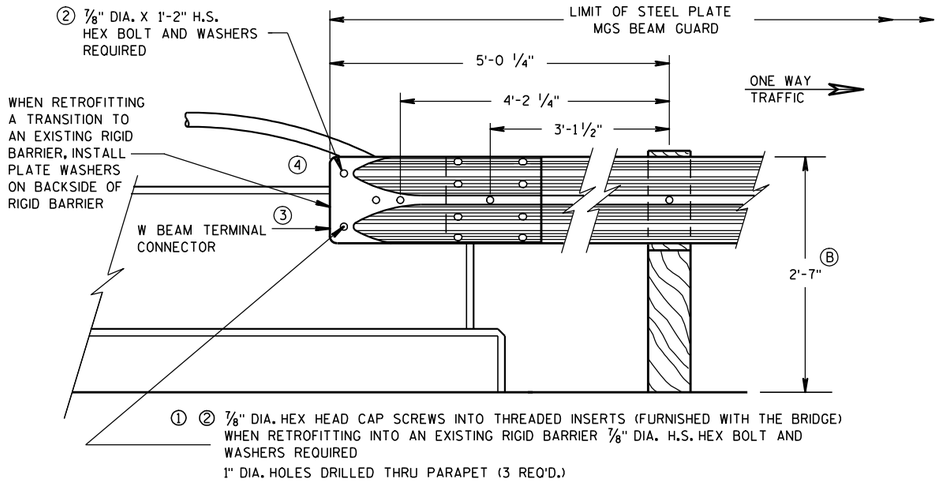


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS DEVELOPMENT ENGINEER

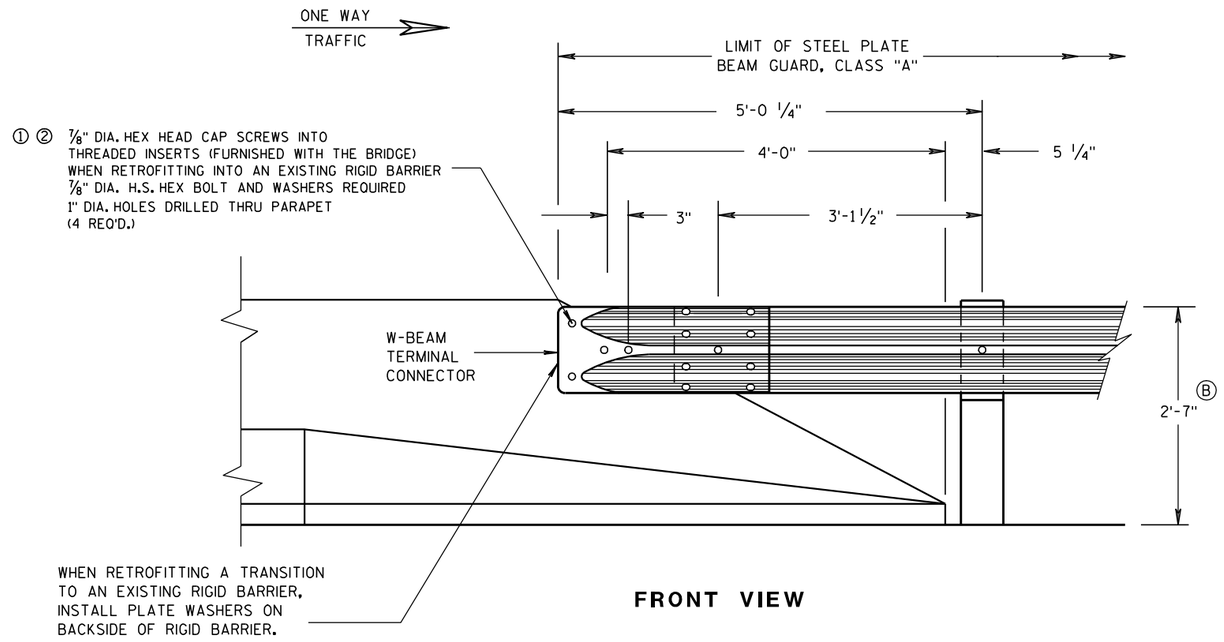
FHWA

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S.D.D. 14 B 45-2e

6

S.D.D. 14 B 45-2e



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

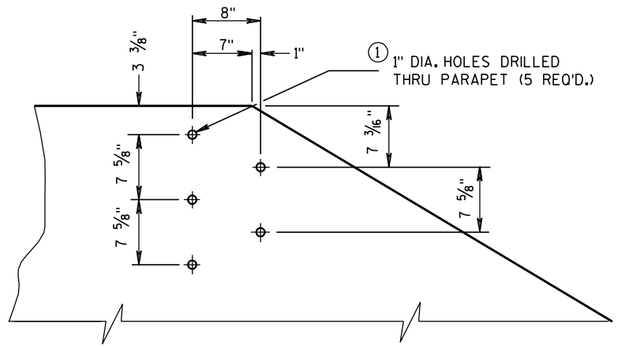
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

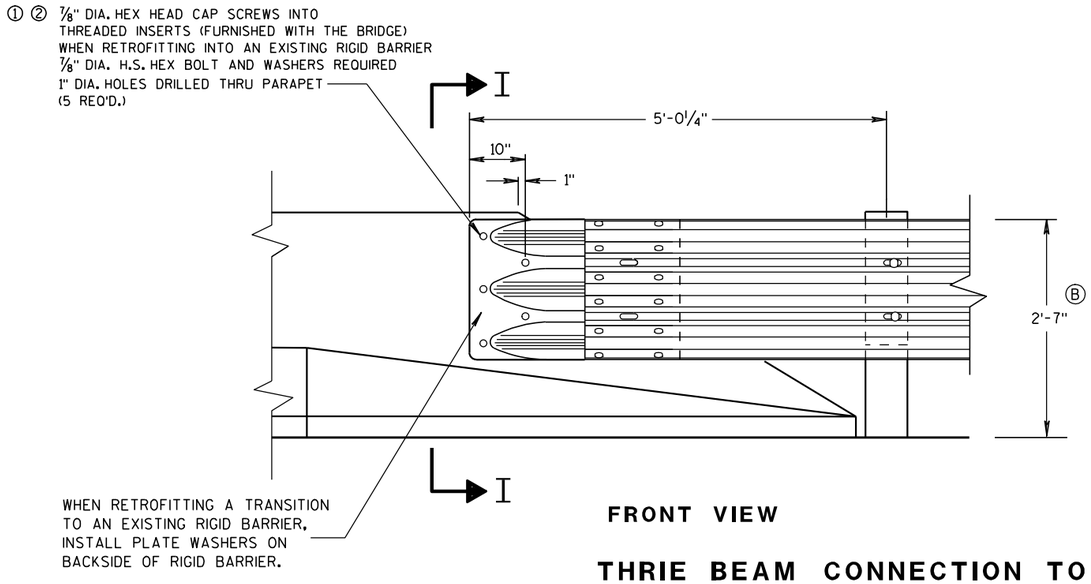
① INCLUDE THE PAYMENT FOR DRILLING BOLT HOLES THROUGH THE PARAPET, AND ALL BOLTS, NUTS AND WASHERS IN THE ITEM "STEEL THRIE BEAM STRUCTURAL APPROACH".

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

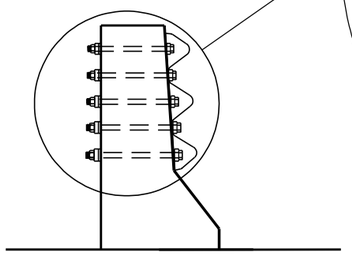
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



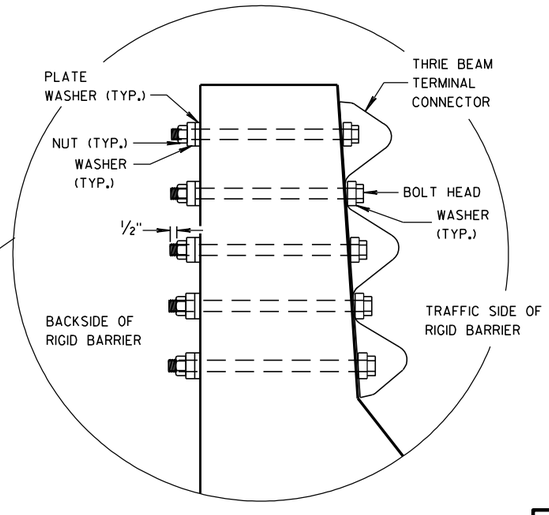
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

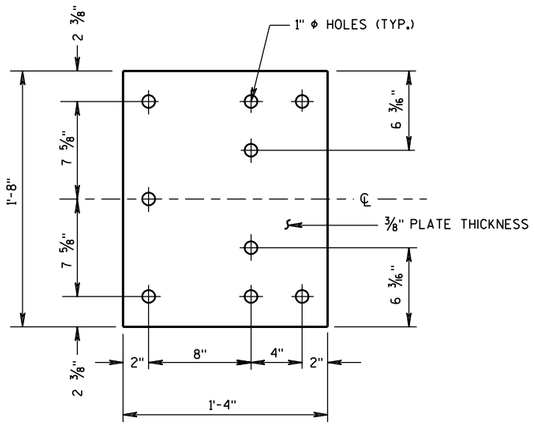
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

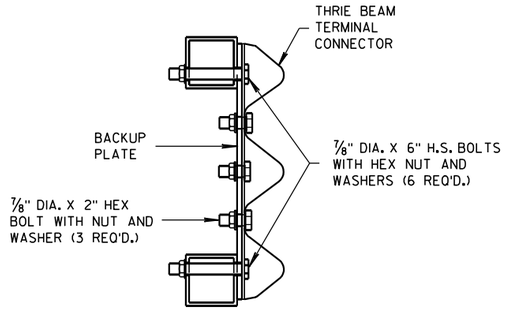
APPROVED

2-8-2012	/S/ Jerry H. Zogg	
DATE	ROADWAY STANDARDS ENGINEER	ENT

FHWA



BACK-UP PLATE DETAIL

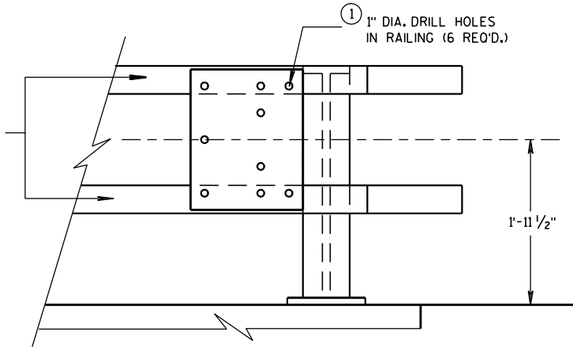


SECTION J-J

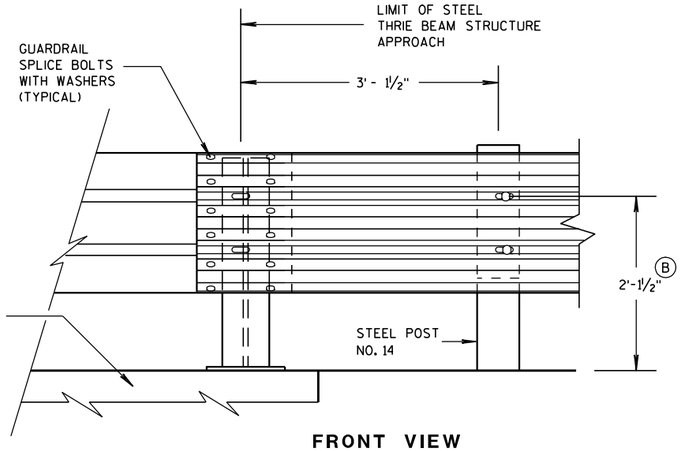
GENERAL NOTES

(1) INCLUDE THE PAYMENT FOR DRILLING HOLES IN RAILING IN THE ITEM "STEEL THRIE BEAM STRUCTURE APPROACH".

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

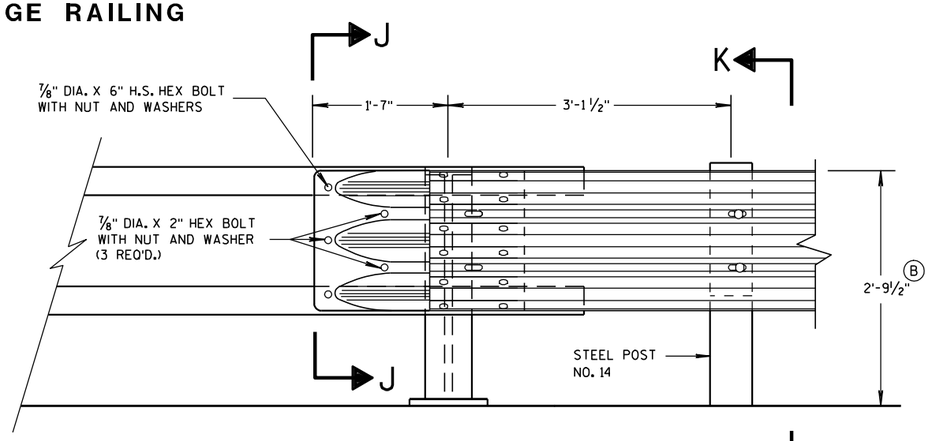


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

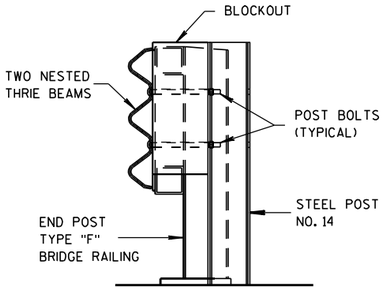


FRONT VIEW

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
2-8-2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS [illegible] ENGINEER
FHWA

6

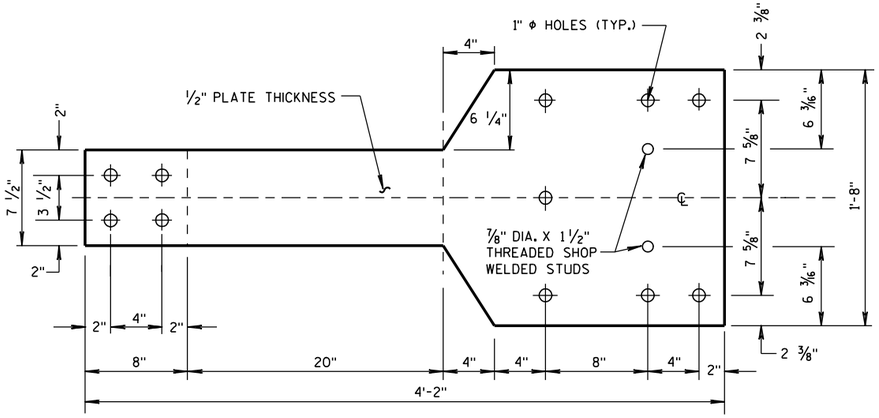
S.D.D. 14 B 45-2g

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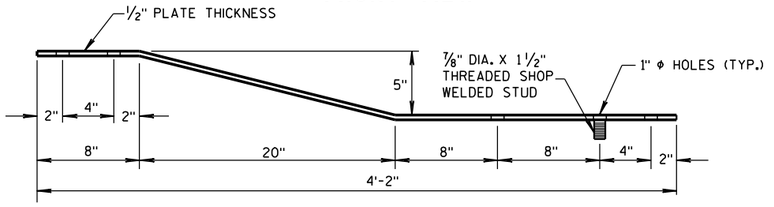
S.D.D. 14 B 45-2g

GENERAL NOTES

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

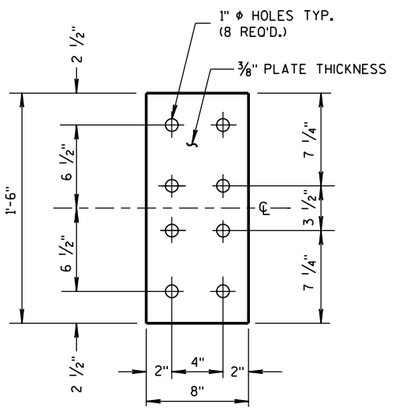


FRONT VIEW



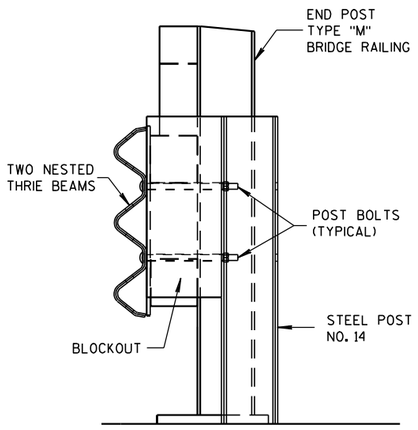
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

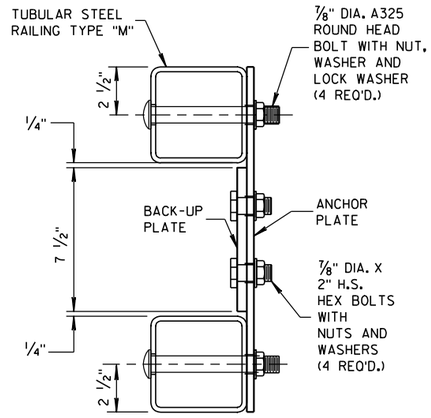


FRONT VIEW

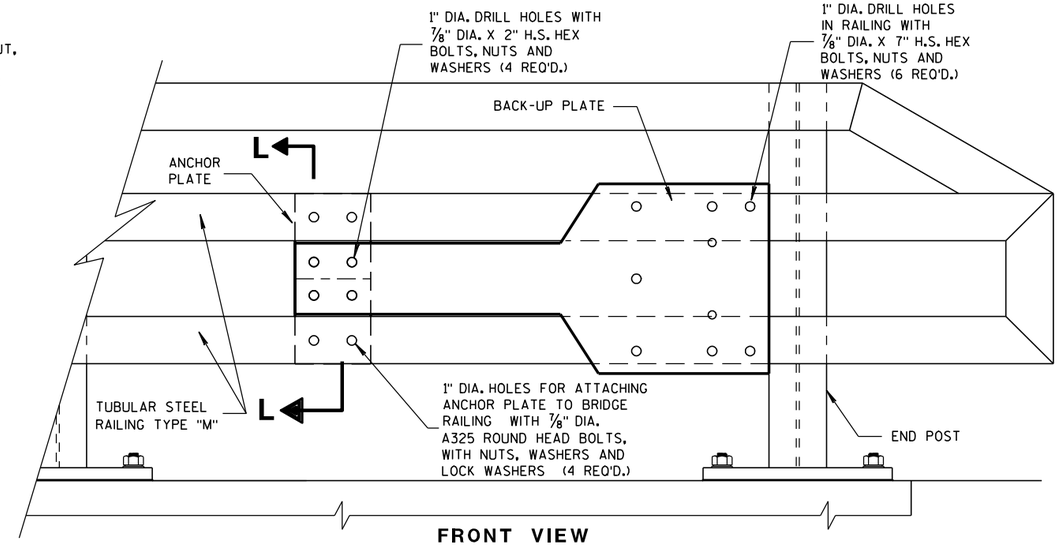
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

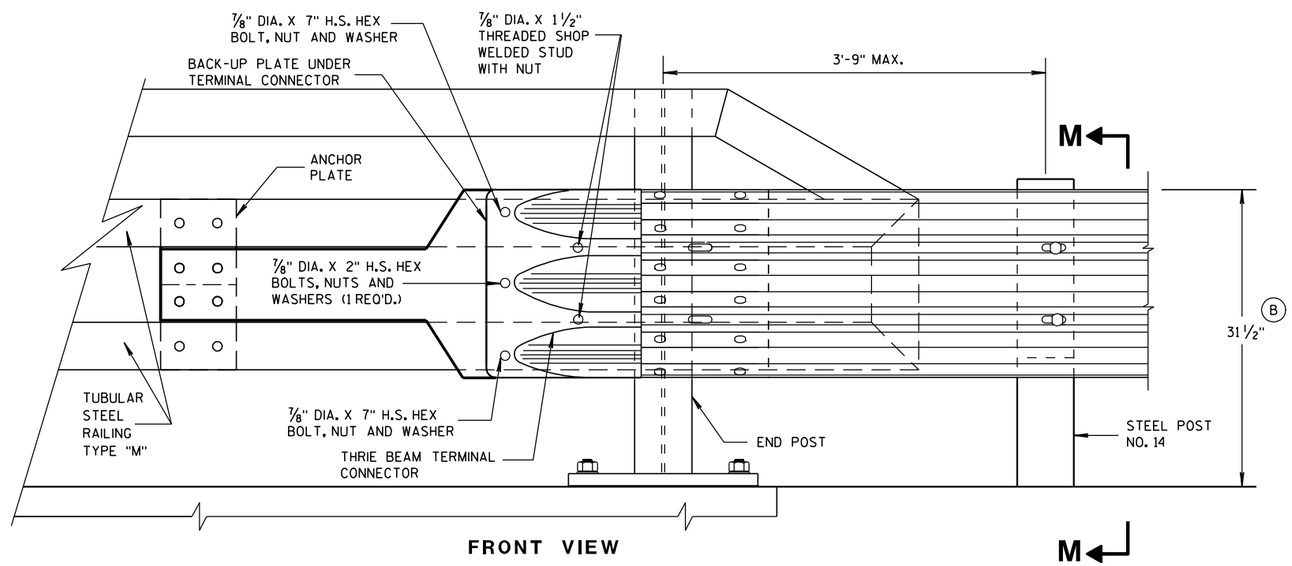


SECTION L-L

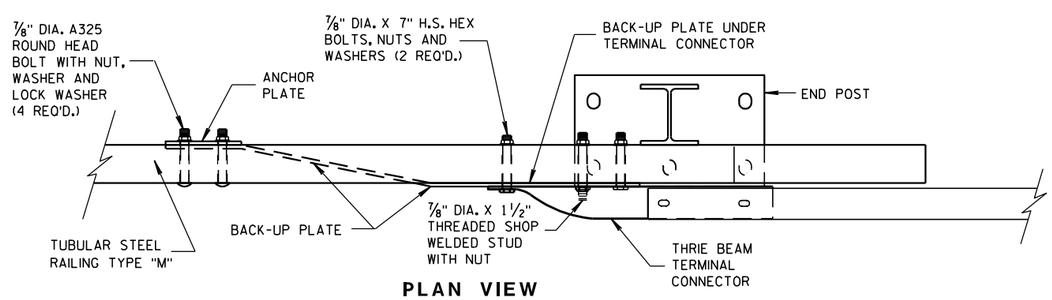


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

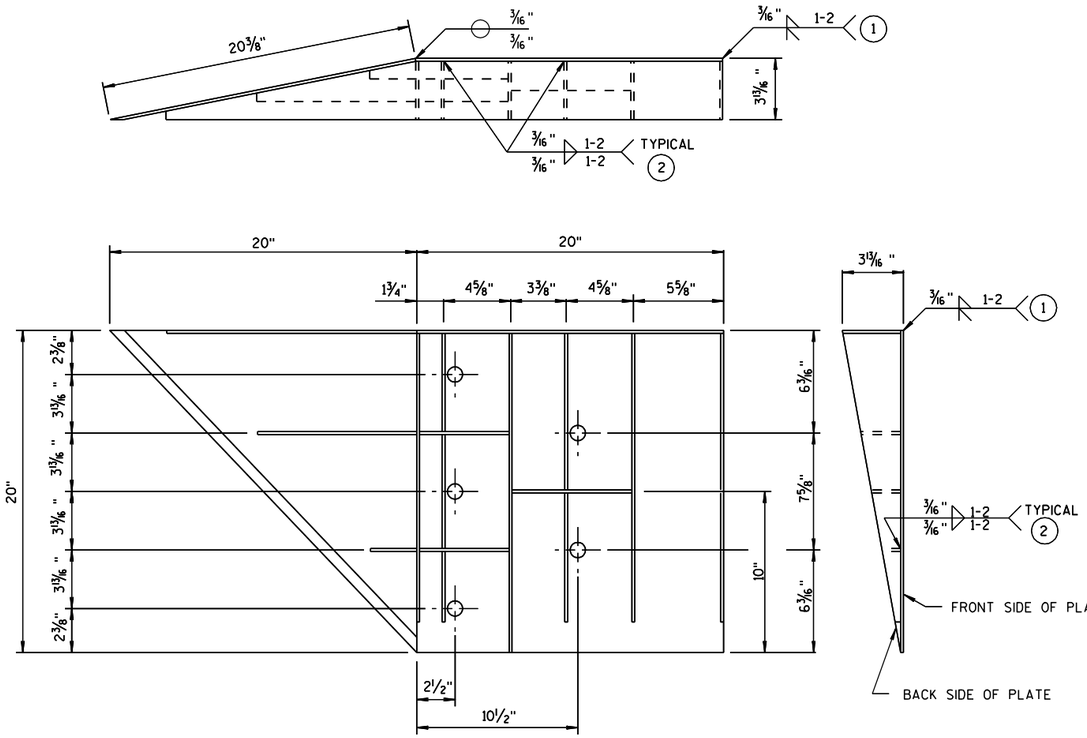
2-8-2012 DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

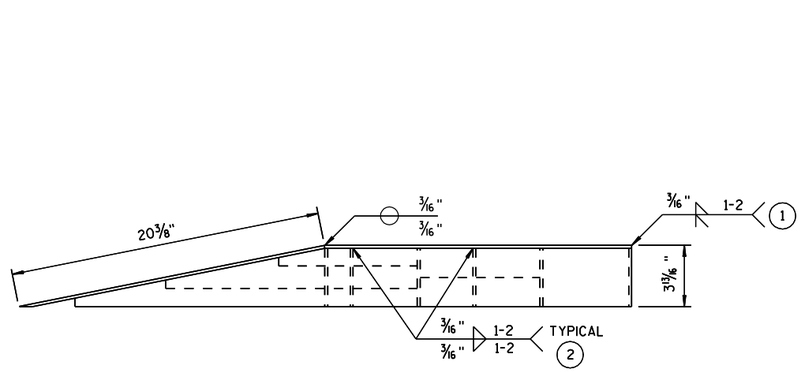
6

S.D.D. 14 B 45-2h



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)



GENERAL NOTES

COVER PLATE PANELS ARE 3⁄16" THICK.

ALL STIFFENERS ARE 1⁄4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3⁄16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3⁄16" FILLET WELD BY 1" LONG SPACED AT 2".

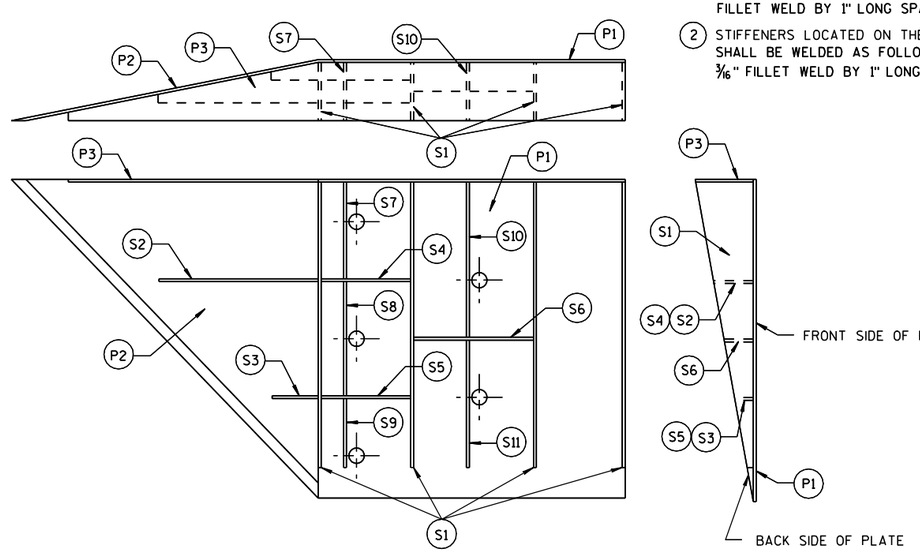


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3⁄16"
P2	1		20" x 20" x 28⁹⁄₁₆"	3⁄16"
P3	1		39" x 3⅝" x 20" x 19⁵⁄₁₆"	3⁄16"
S1	4		18⁷⁄₁₆" x 3⅜" x 18¾"	1⁄4"
S2	1		10¼" x 2⁷⁄₁₆" x 10⅜" x ½"	1⁄4"
S3	1		3" x 1¹⁄₁₆" x 3⅛" x ½"	1⁄4"
S4	1		6⅛" x 2⁷⁄₁₆"	1⁄4"
S5	1		6⅛" x 1¹⁄₁₆"	1⁄4"
S6	1		7¾" x 1¾"	1⁄4"
S7	1		2⁹⁄₁₆" x 6" x 3⅝" x 5⅞"	1⁄4"
S8	1		1⁵⁄₃₂" x 7½" x 2½" x 7⅜"	1⁄4"
S9	1		6¹⁄₁₆" x 6³⁄₁₆" x 1³⁄₃₂"	1⁄4"
S10	1		1⅞" x 9⅞" x 3⅝" x 9¹¹⁄₁₆"	1⁄4"
S11	1		8½" x 8¾" x 1¹³⁄₁₆"	1⁄4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012
DATE

/S/ Jerry H. Zaas
ROADWAY STANDARDS ENGINEER

37

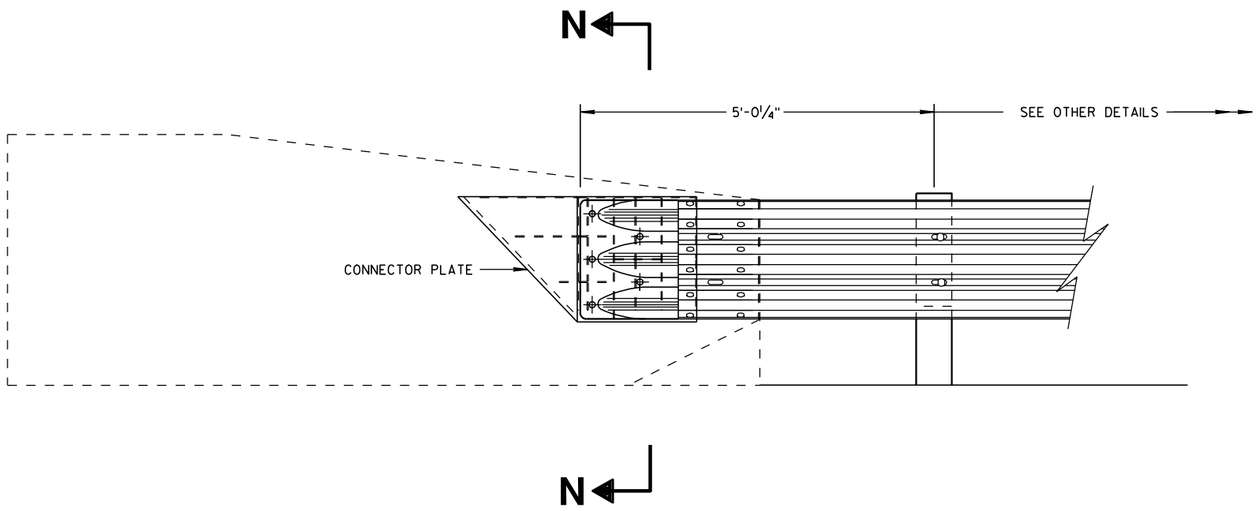
FHWA

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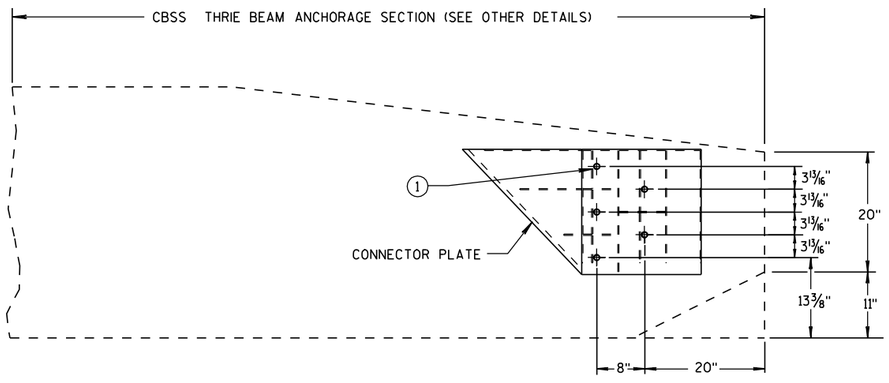
S.D.D. 14 B 45-2i

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S.D.D. 14 B 45-2i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

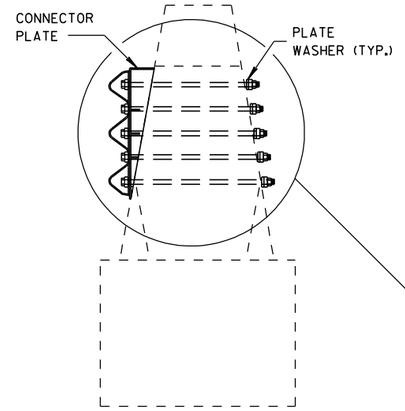


SINGLE SLOPE CONNECTION PLATE PLACEMENT

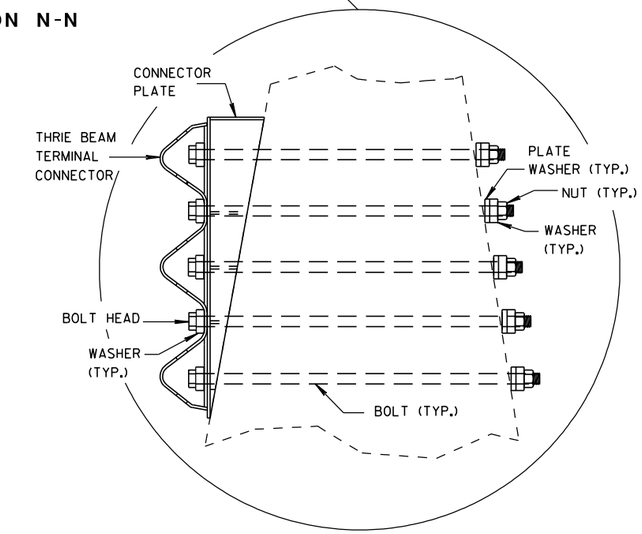
GENERAL NOTES

CONNECTION PLATE INCIDENTAL TO STEEL THRIE BEAM TRANSITION.

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

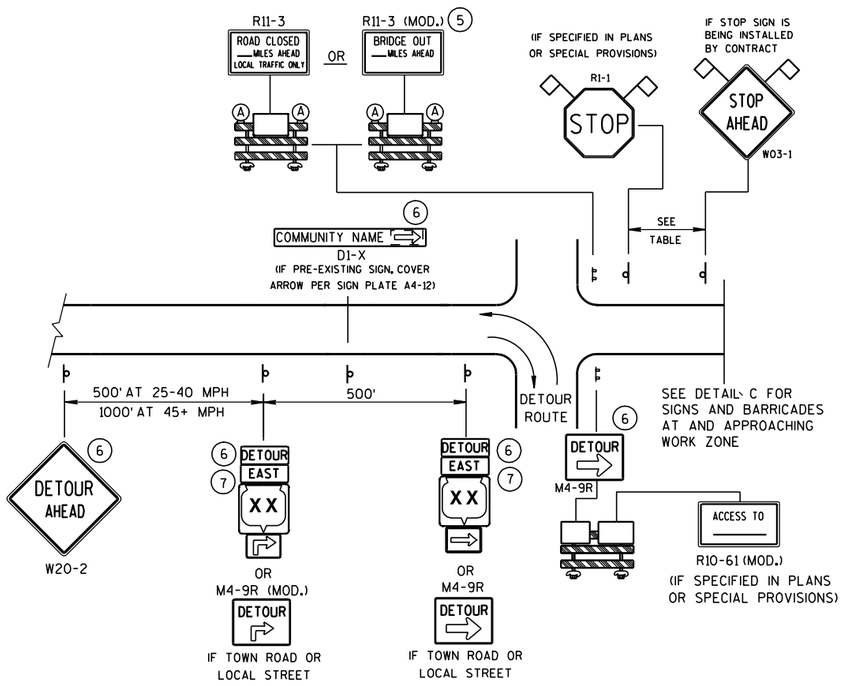
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S.D.D. 14 B 45-2j

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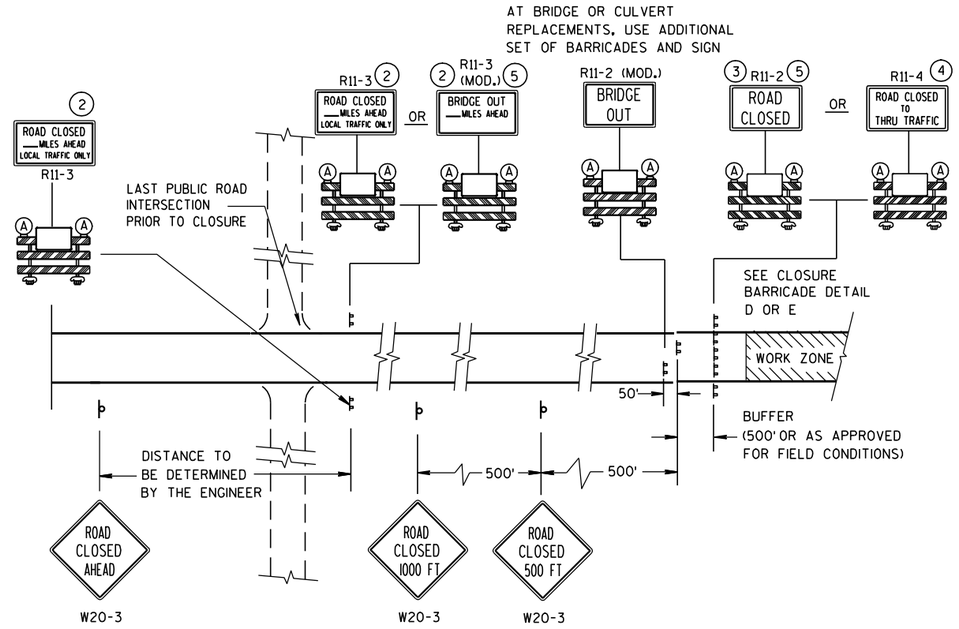
S.D.D. 14 B 45-2j



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

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

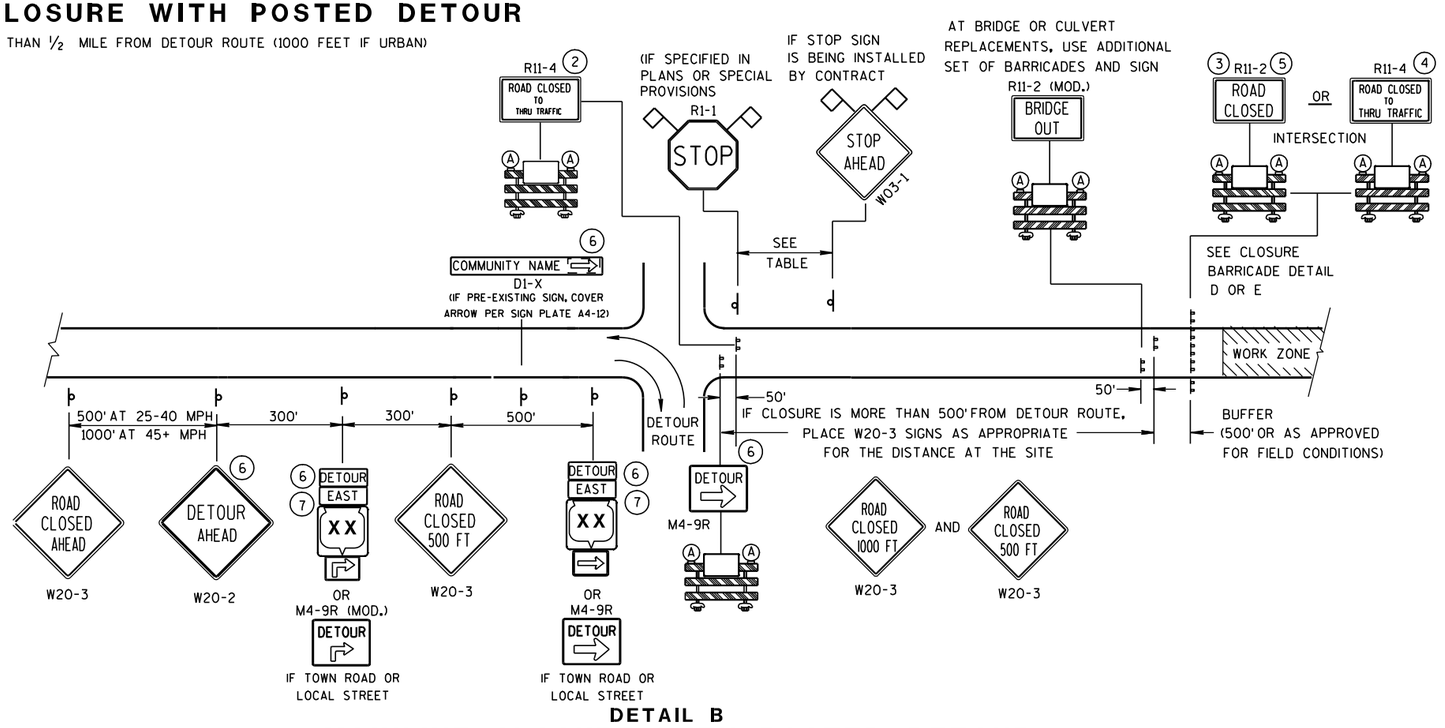


SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

SEE SDD 15C2-4b FOR GENERAL NOTES AND FOOTNOTES ① THROUGH ⑦



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

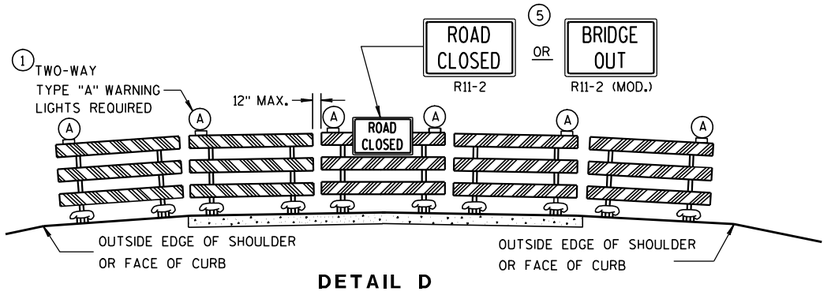
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4
- COUNTY XX — M1-5A
- XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

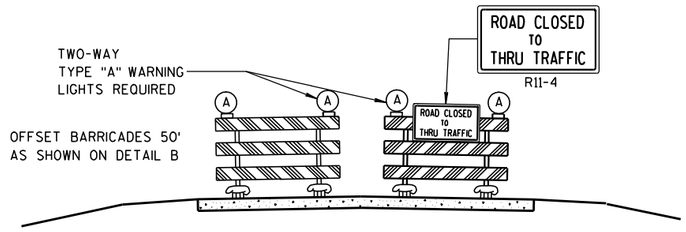
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a 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.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

"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 AND 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

APPROVED

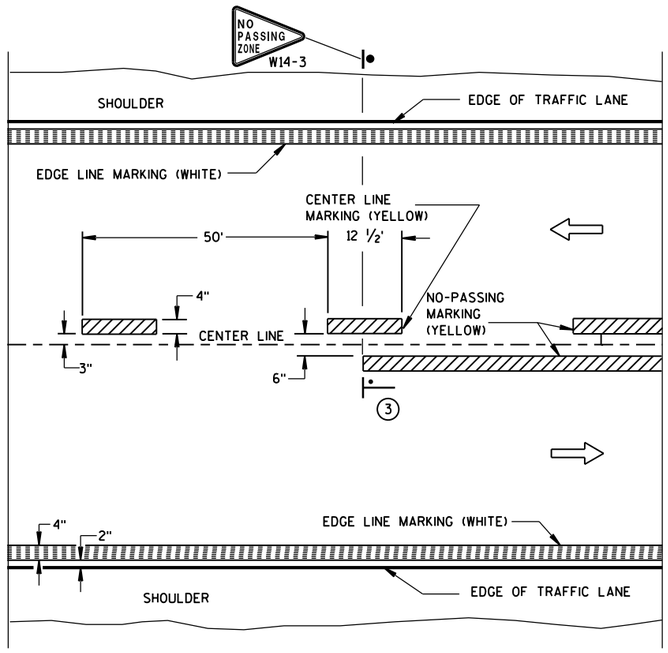
9/16/03 — DATE

/S/ Thomas N. N[illegible] — CHIEF SIGNS AND MARKINGS ENGINEER

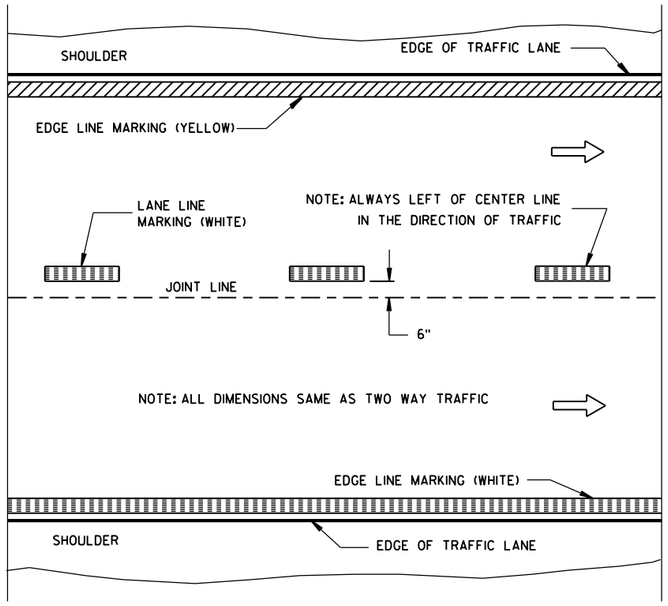
FHWA

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S.D.D. 15 C 2-4b

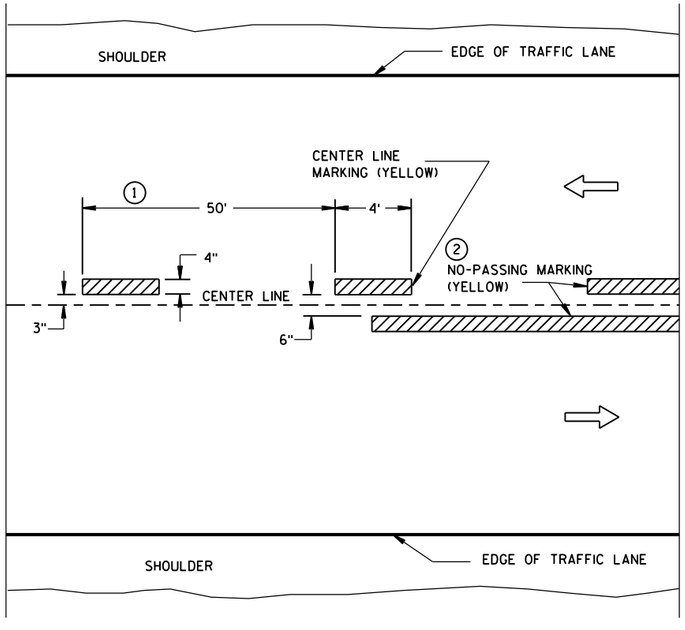


TWO WAY TRAFFIC

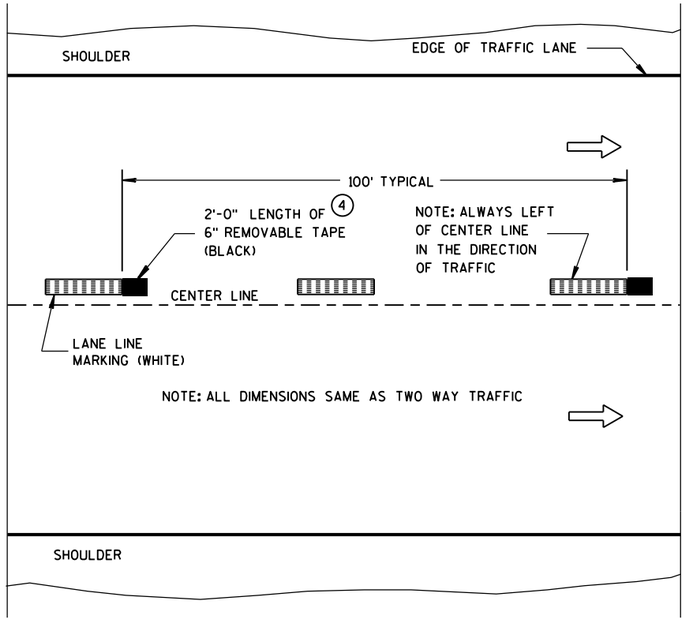


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

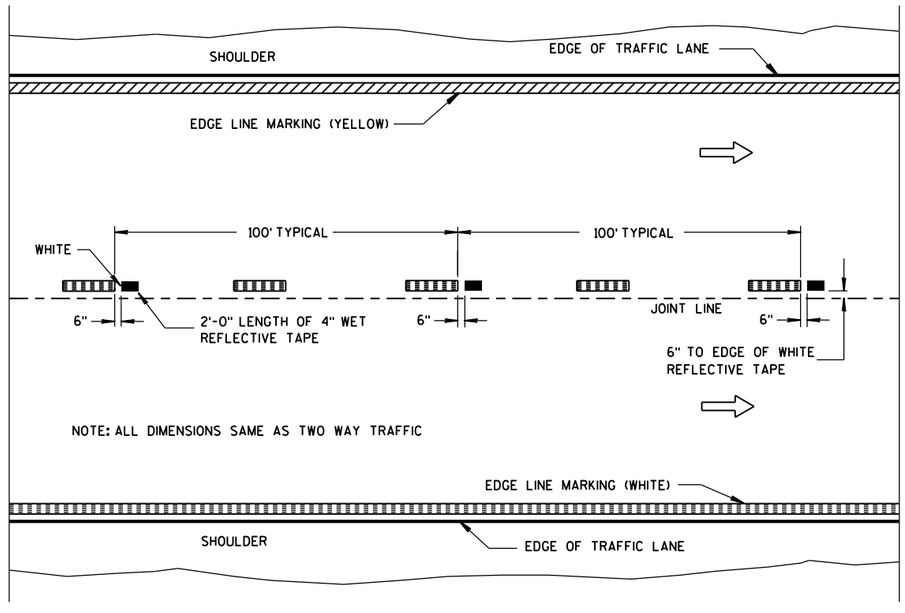
GENERAL NOTES

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

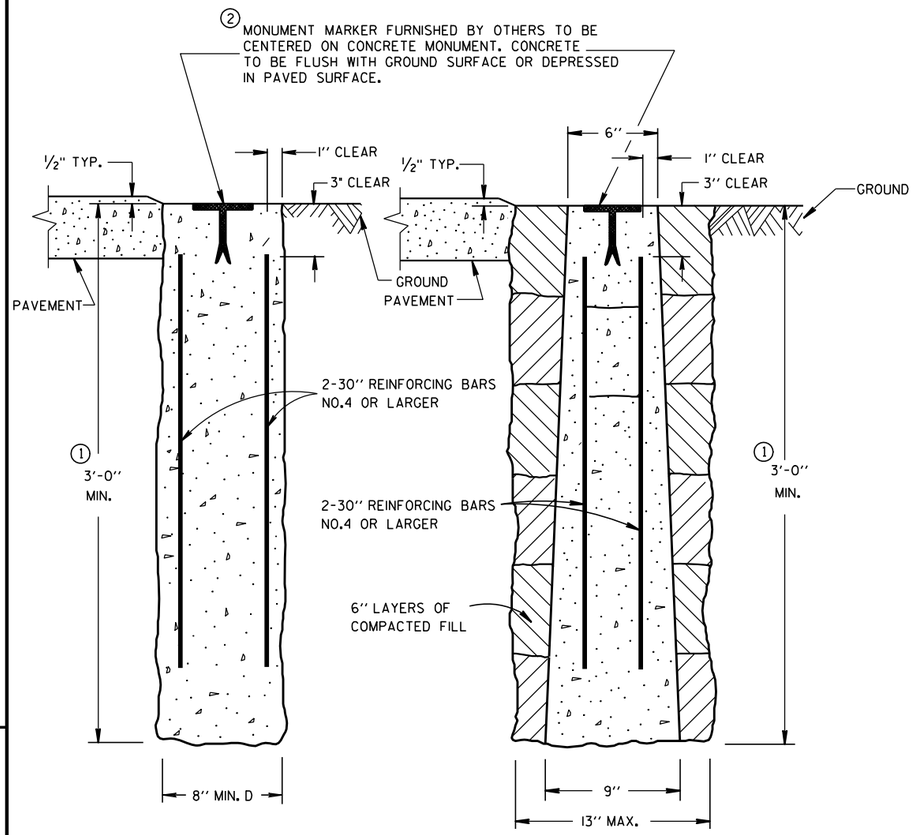
APPROVED
10-1-2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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

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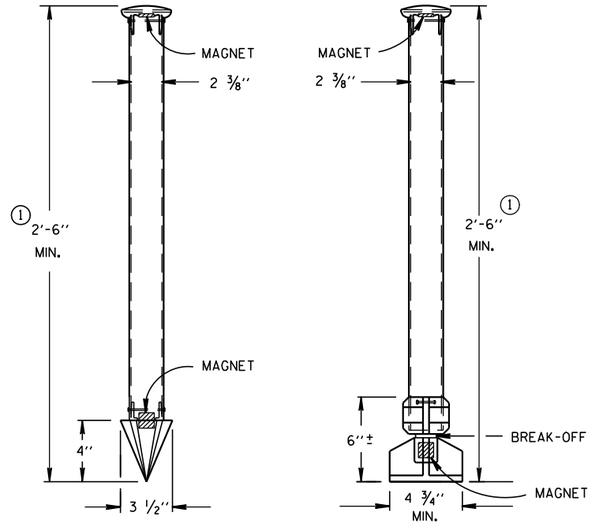
S.D.D. 15 C 8-15a



CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C DRIVE-IN MONUMENT

TYPE D BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

GENERAL NOTES

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

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

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

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

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

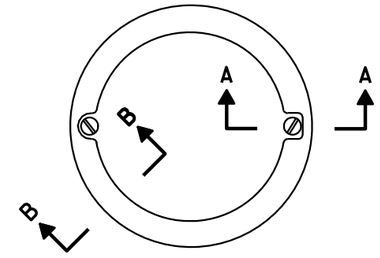
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

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

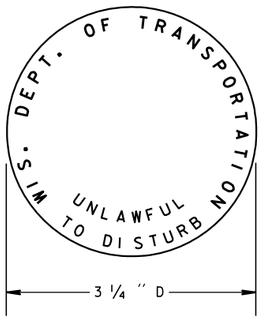
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

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

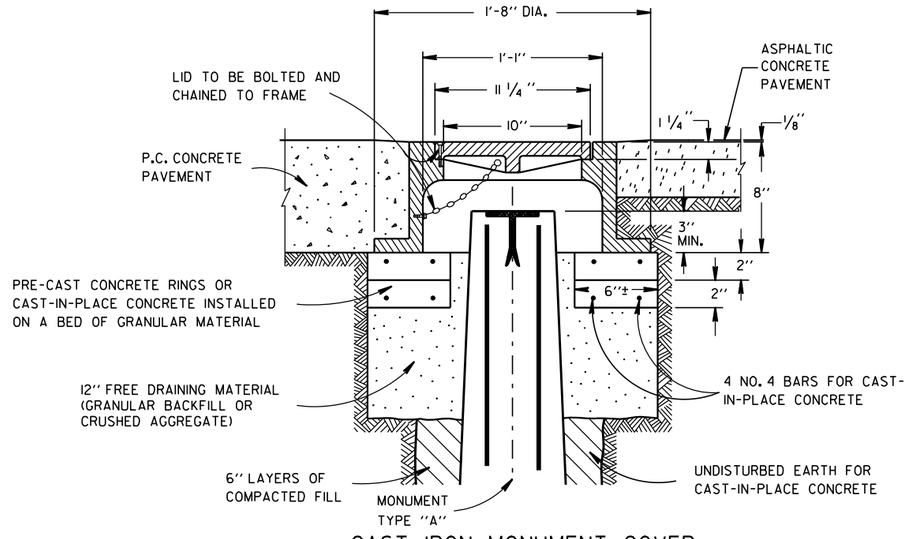
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

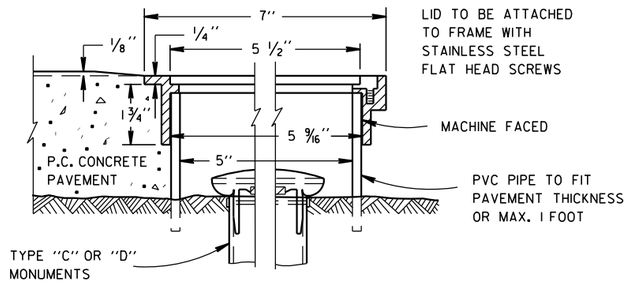


② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MOUNMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

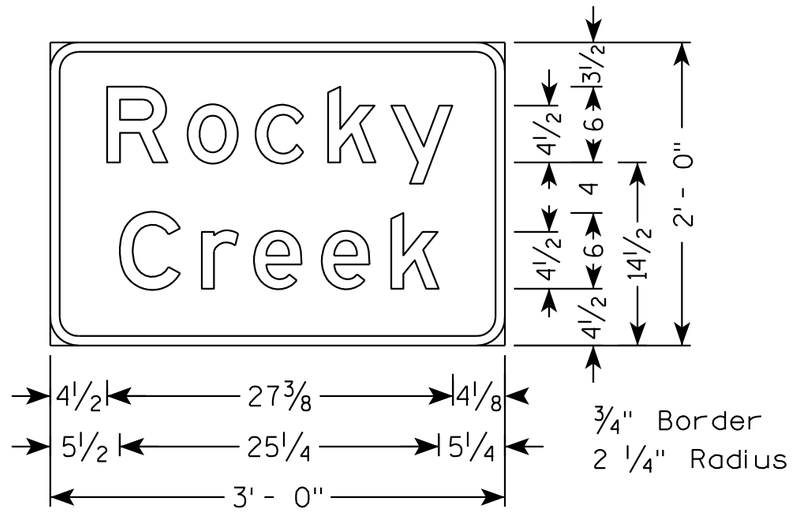
APPROVED
9/22/1999 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

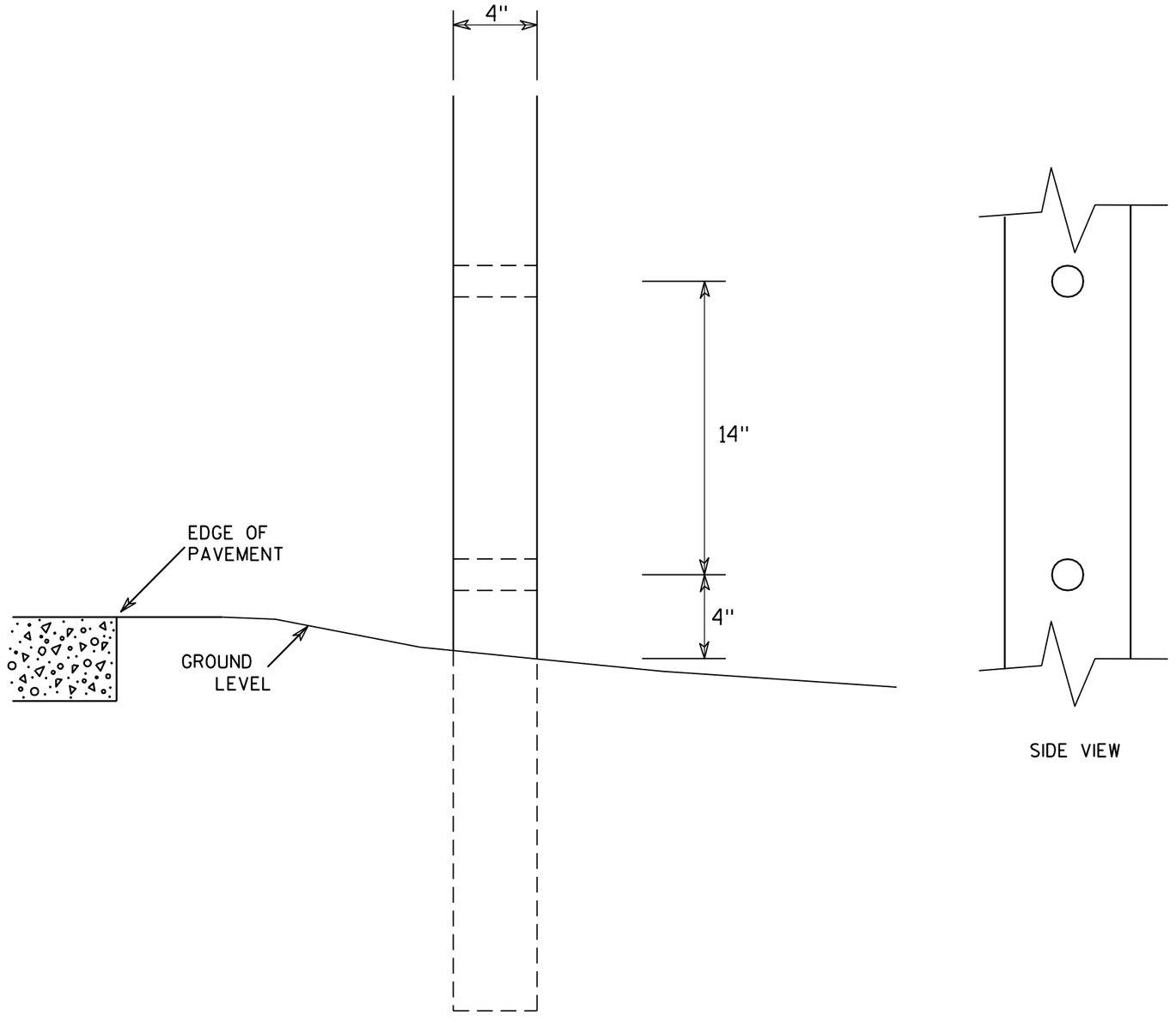
S.D.D. 16 A 1-6

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E



I3-1



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

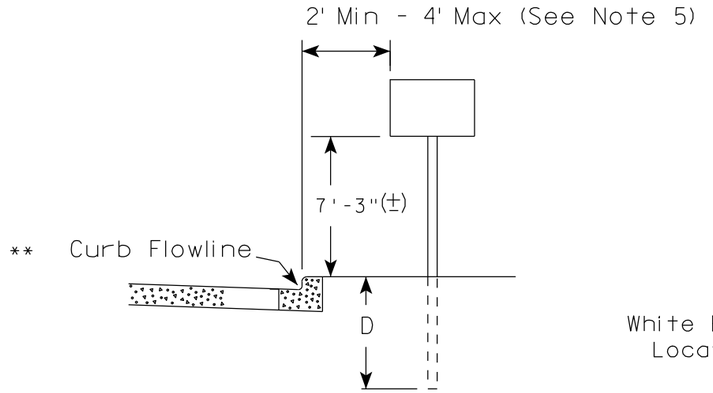
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

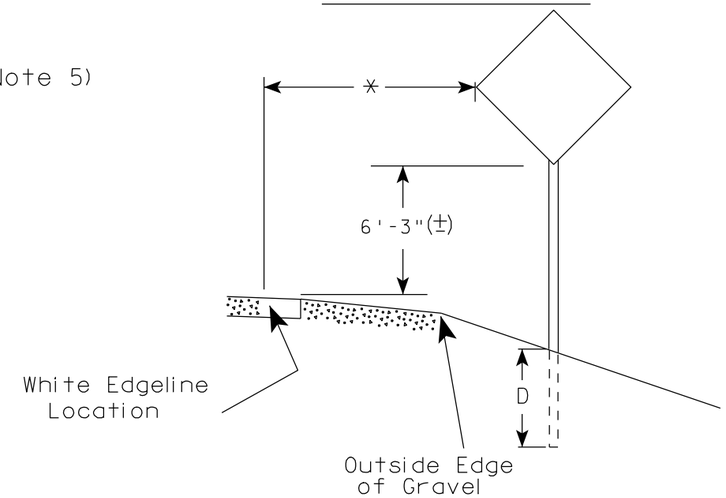
DATE 3/27/97 PLATE NO. A4-11.2

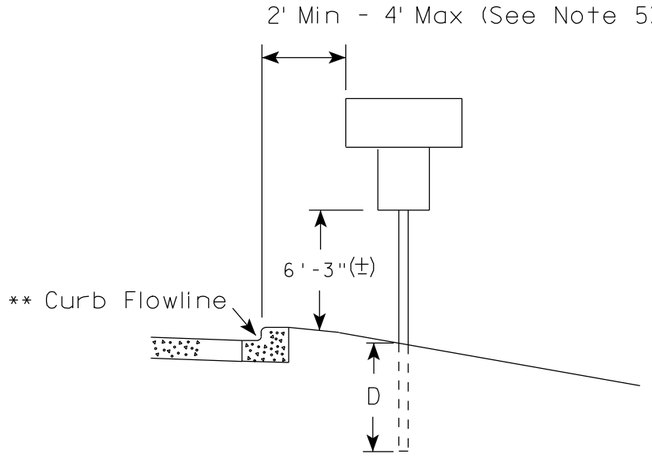
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 44	E

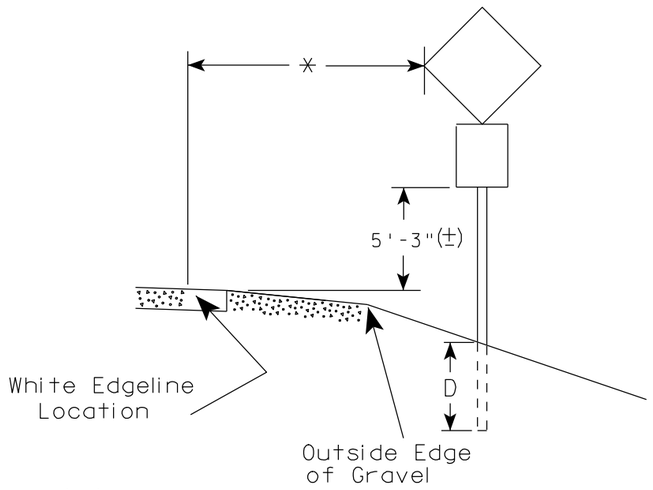
URBAN AREA



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

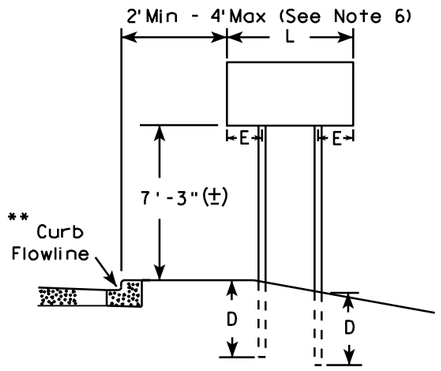
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

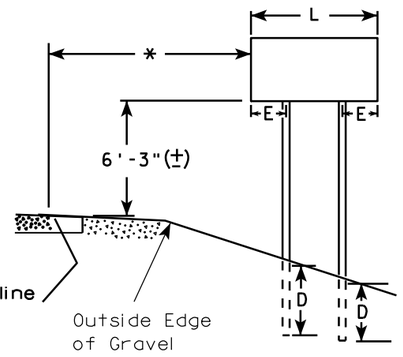
DATE 9/21/2011 PLATE NO. A4-3.16

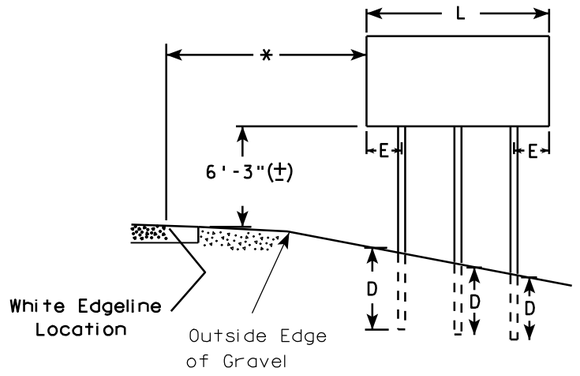
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 45	E

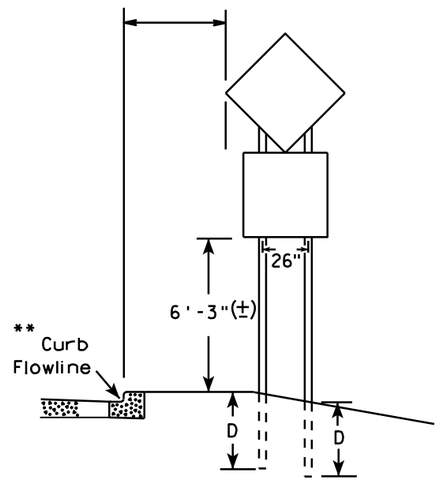
URBAN AREA



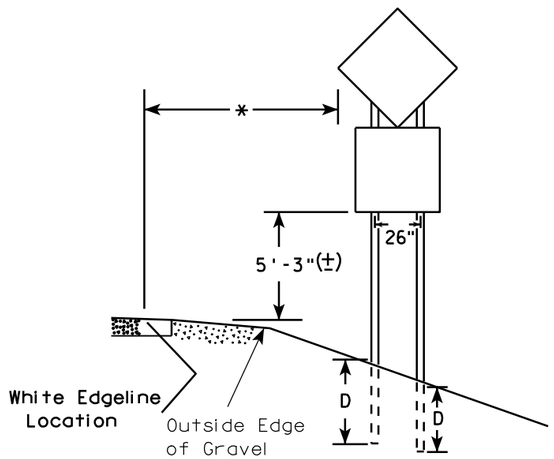
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
*** Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. 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" (±).

* 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.

** 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.

*** See A4-3 sign plate for signs 4' or less in width or 20 S.F. or less in area.

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

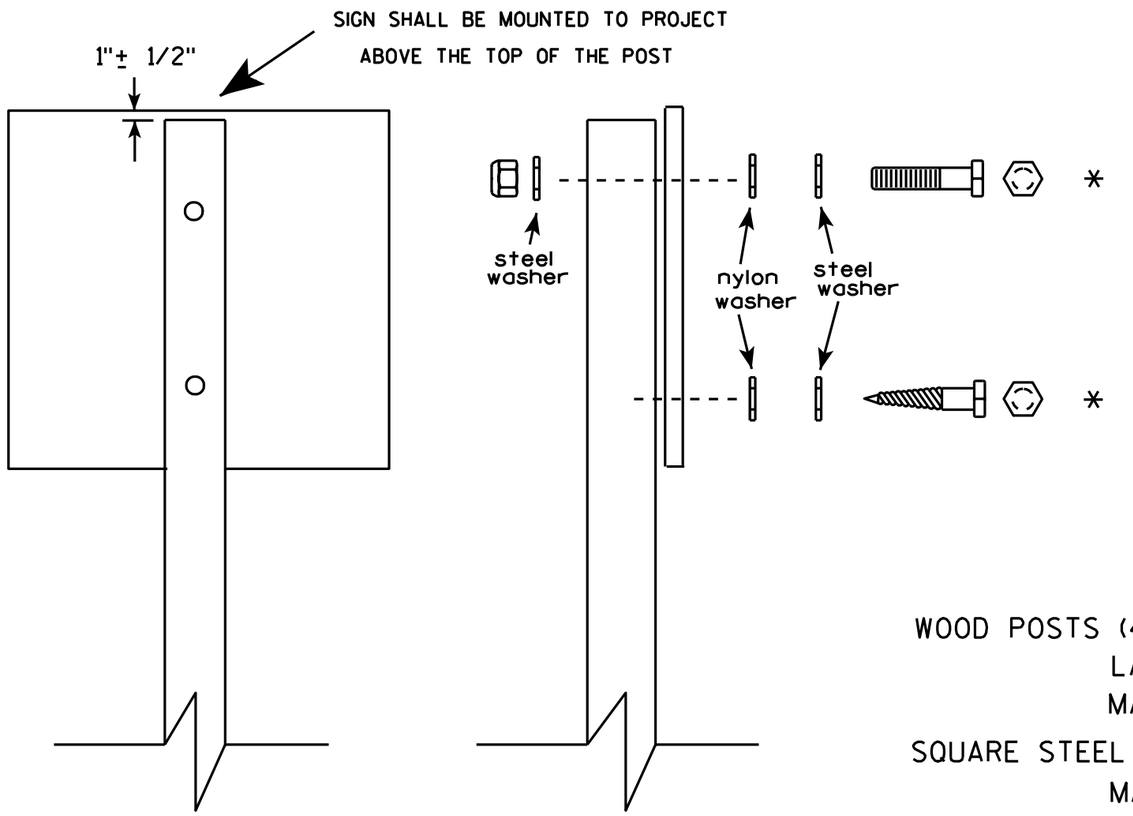
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 46	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\A44.DGN PLOT DATE : 21-SEP-2011 13:36 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 109.249131:1.000000 WISDOT/CADDS SHEET 42



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

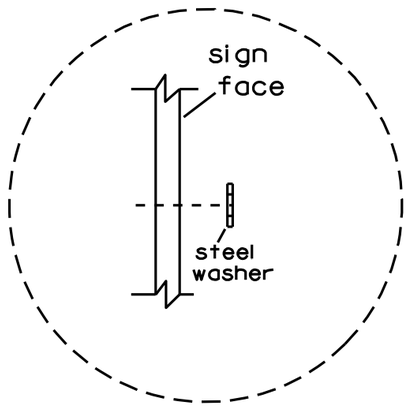
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

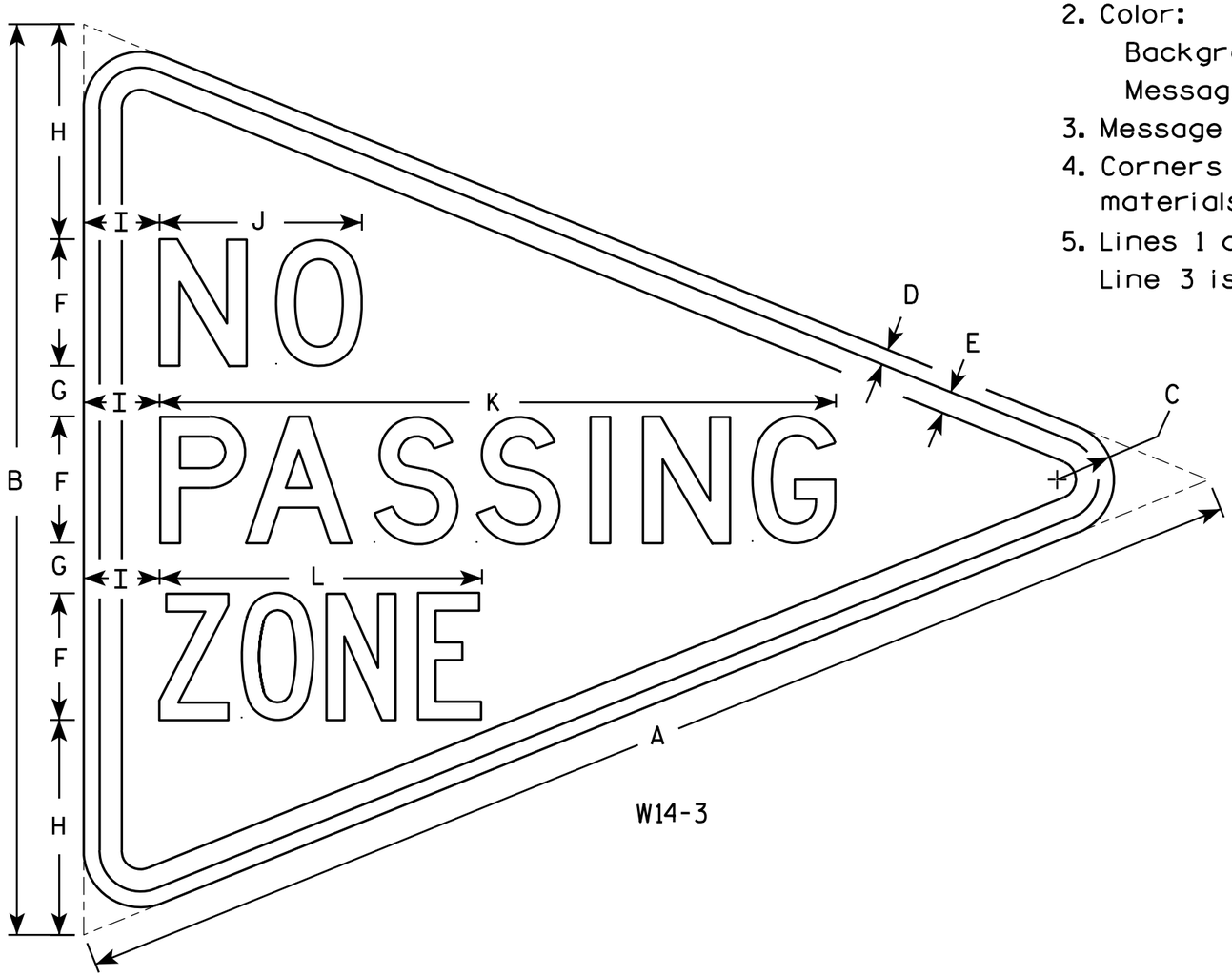
7

PROJECT NO:

SHEET NO: 47 E

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 5
4. Corners and borders shall be rounded on all base materials for this sign.
5. Lines 1 and 2 are Series D.
   Line 3 is series C.



W14-3

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7
4																											
5																											

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W14-3.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 48	E

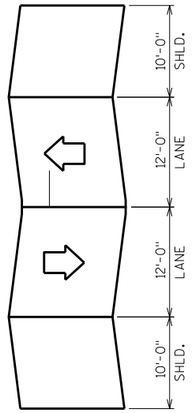
STATE PROJECT NUMBER

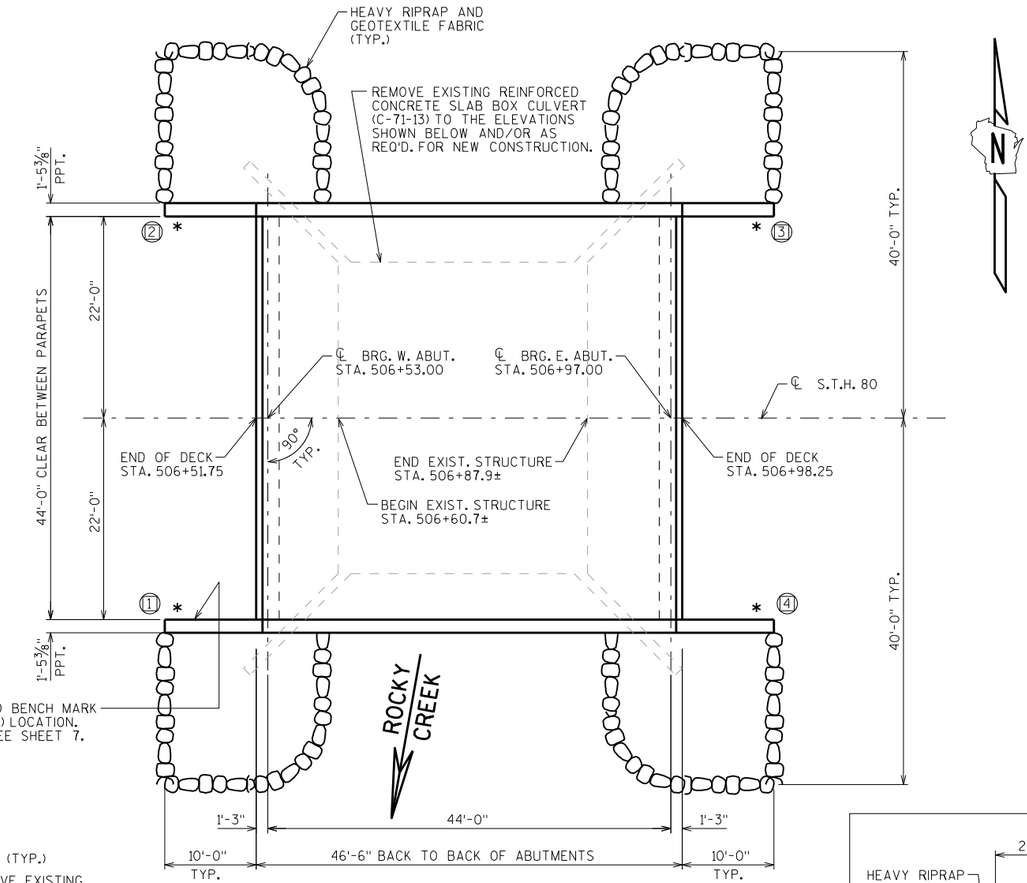
1620-02-64

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

(2) INDICATES WING NUMBER

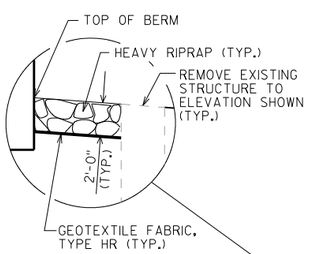
SURFACE DRAIN ANCHORS REQ'D AT WINGS 1 & 2

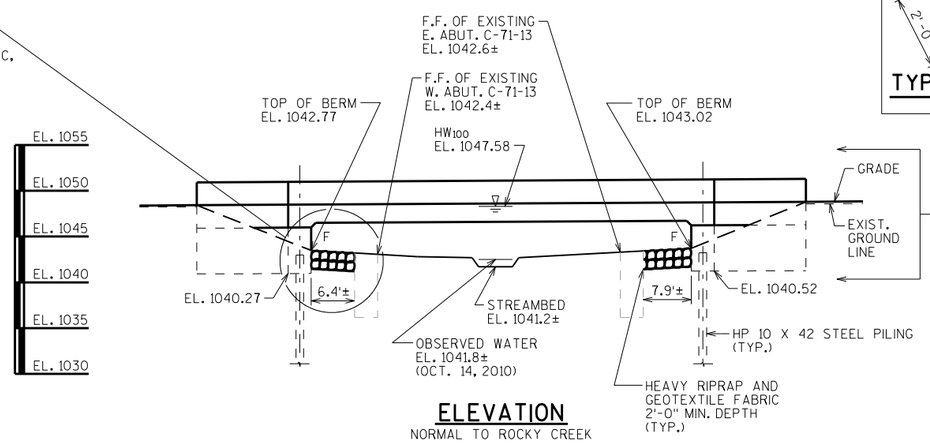




PLAN

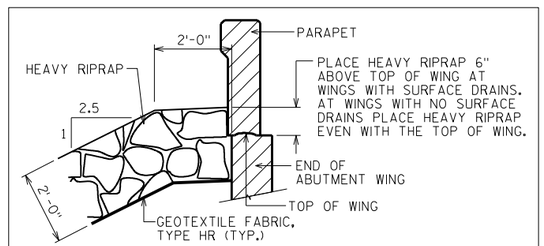
SINGLE SPAN - FLAT SLAB





ELEVATION

NORMAL TO ROCKY CREEK



TYPICAL FILL SECTION AT WING TIPS

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.08
OPERATING RATING FACTOR: RF=1.40
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB — f'c = 4,000 P.S.I. ALL OTHER — f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 155 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 20'-0" LONG.

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

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} =1035 C.F.S.
VEL. =8.54 F.P.S.
HW.= EL. 1047.58
WATERWAY AREA= 161.88 SQ. FT.
DRAINAGE AREA= 3.54 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q_2 =260 C.F.S.
$HW._2$ = EL. 1044.42

TRAFFIC VOLUME

S.T.H. 80
A.D.T.=6200 (2033)
R.D.S.=60 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. ABUTMENT
5. ABUTMENT DETAILS
6. SUPERSTRUCTURE
7. SLOPED FACE PARAPET LF

STRUCTURE DESIGN CONTACTS:
ANDREW SMITH (608) 266-0989

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher DIR 9/20/12
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-71-184

S.T.H. 80 OVER ROCKY CREEK

COUNTY	TOWN/~~CITY/VILLAGE~~
WOOD	WOOD

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ADS	MWL	ADS	DDS

GENERAL PLAN

SHEET 1 OF 7

49

I.D. 1620-02-01A

DATE: JUNE 2012

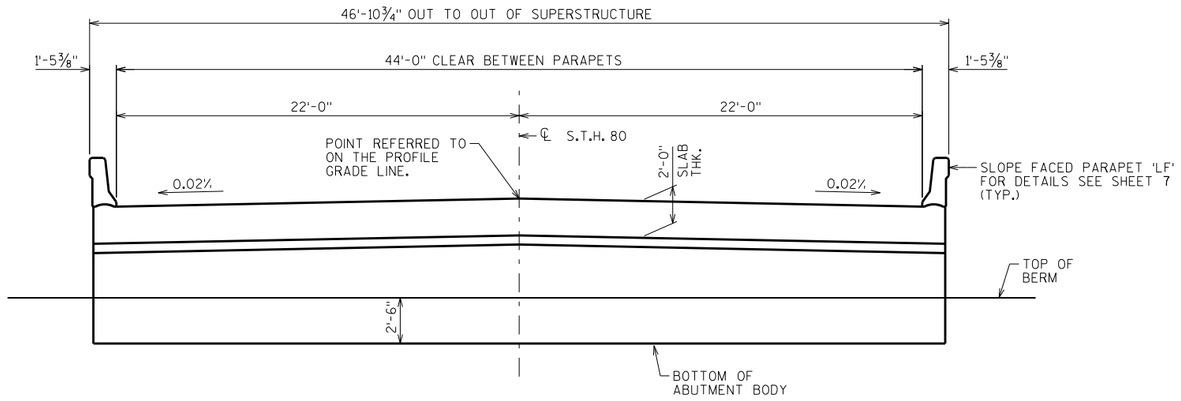
SCALE = 8.00

8

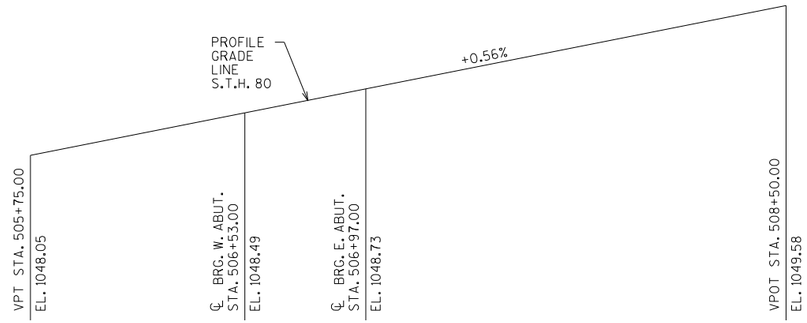
8

STATE PROJECT NUMBER

1620-02-64



CROSS SECTION THRU ROADWAY LOOKING EAST



S.T.H. 80 - PROFILE GRADE LINE

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 506+75.00	LS	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-71-184	LS	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	———	120	120	240
502.0100	CONCRETE MASONRY BRIDGES	CY	168	39	39	246
502.3200	PROTECTIVE SURFACE TREATMENT	SY	275	———	———	275
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	———	2,815	2,815	5,630
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	27,545	1,665	1,665	30,875
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	12	12	24
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	———	140	140	280
606.0300	RIPRAP HEAVY	CY	———	57	57	114
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	75	75	150
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	———	2	2	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	———	64	64	128
			———	———	———	
			———	———	———	
	FILLER	SIZE	———	———	———	½" & ¾"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE AND THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

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

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-184

DRAWN BY DDS | PLANS CK'D. DDS

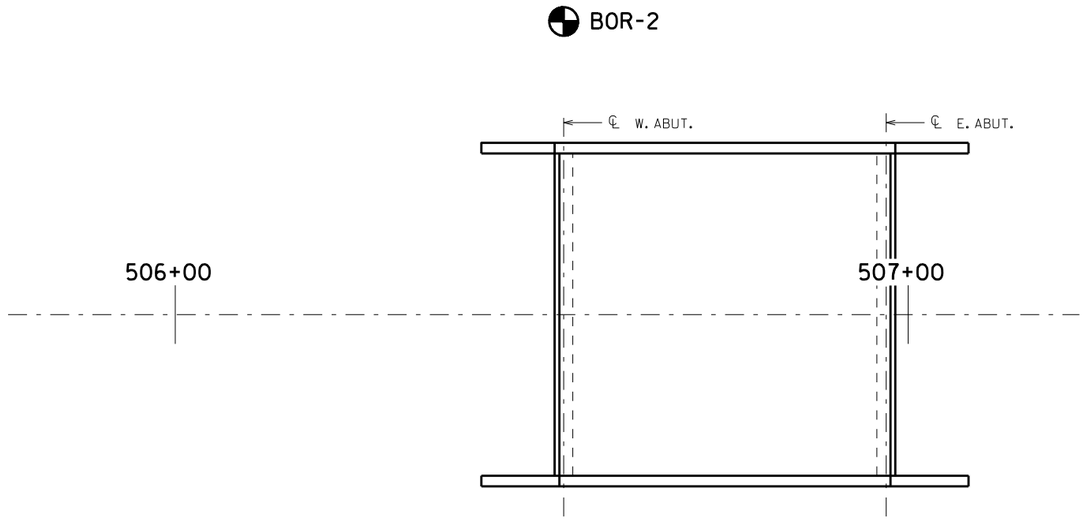
CROSS SECTION & QUANTITIES

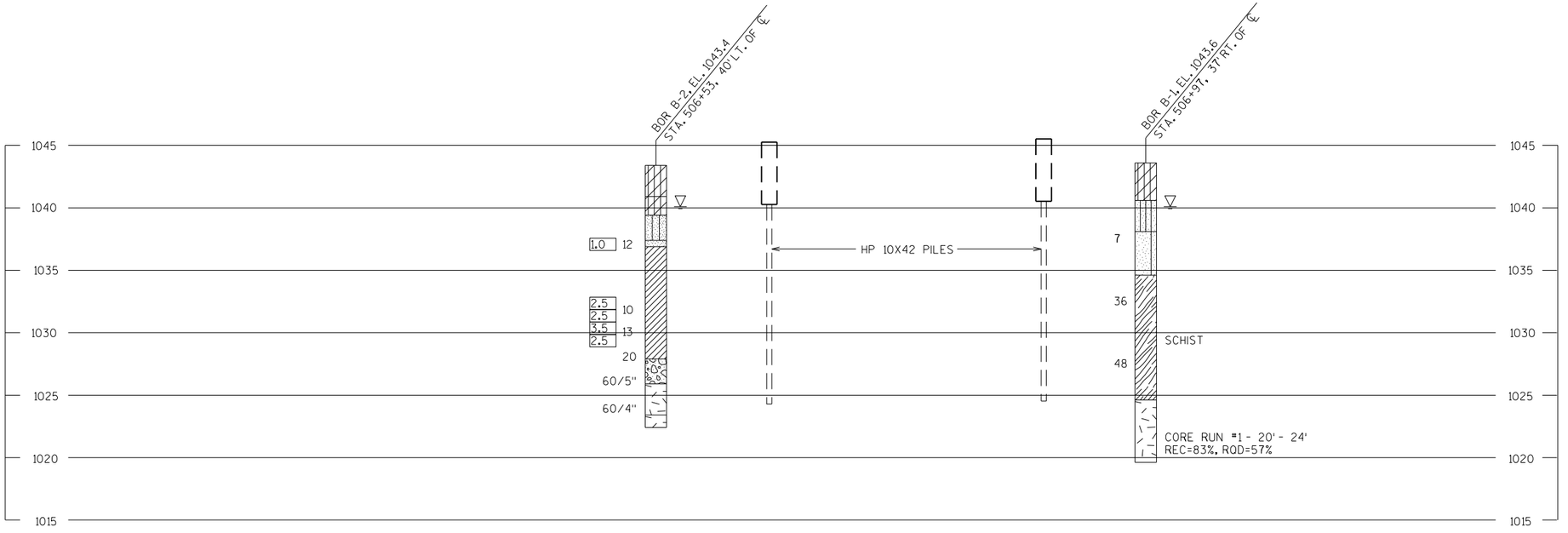
SHEET 2

50

SCALE =

WISCONSIN RAPIDS - MARSHFIELD
YELLOW RIVER BRIDGE





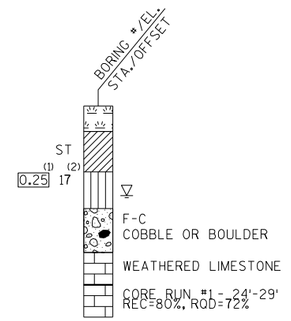
STATE PROJECT NUMBER

1620-02-64

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-184

DRAWN BY PR/ADS | PLANS CK'D. DDS

SUBSURFACE EXPLORATION

SHEET 3

51

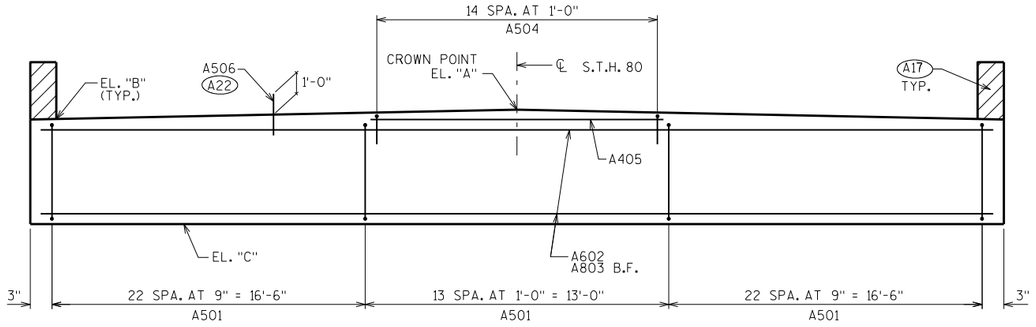
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SCALE =

STATE PROJECT NUMBER

1620-02-64

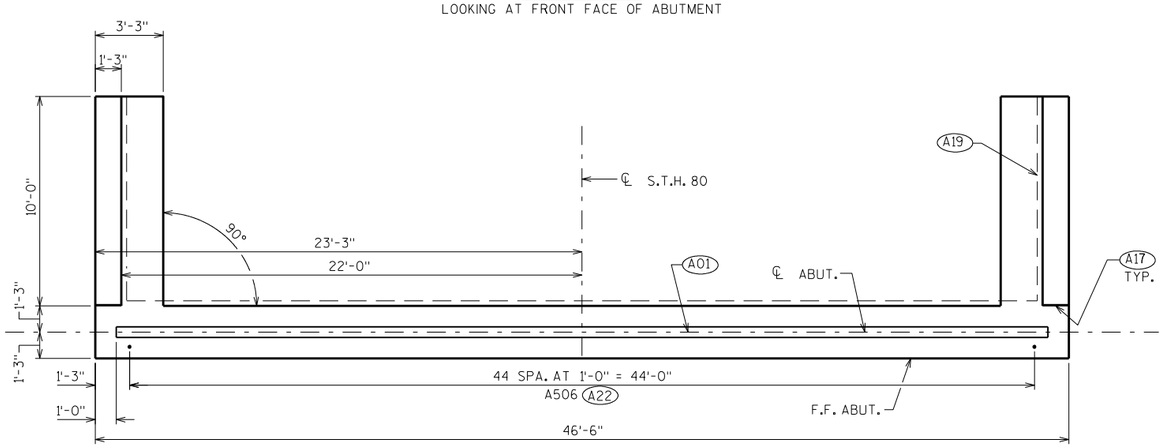


ELEVATION

LOOKING AT FRONT FACE OF ABUTMENT

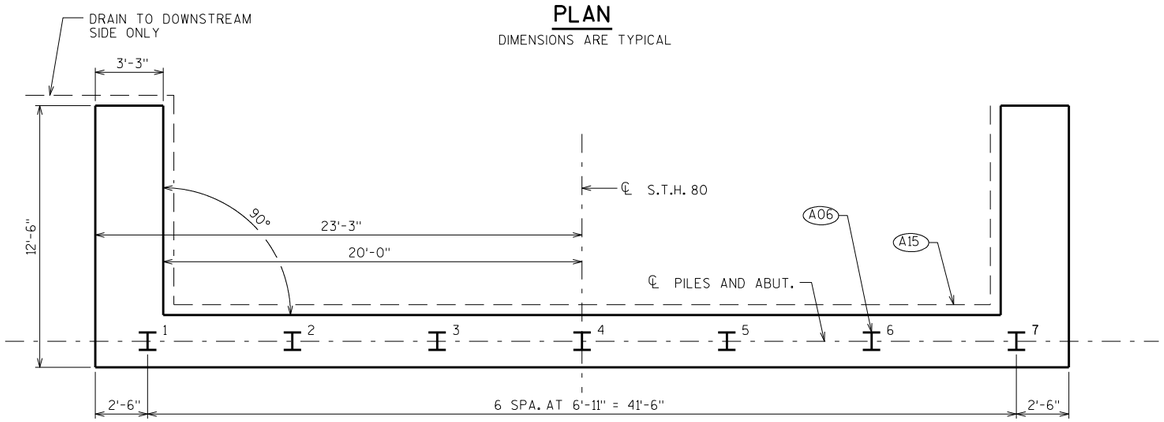
ELEVATION TABLE		
ELEV.	W.ABUT	E.ABUT
A	1045.74	1045.99
B	1045.27	1045.52
C	1040.27	1040.52
D	1042.77	1043.02
E	1048.01	1048.27
F	1047.95	1048.33

☆ SEE SHEET 5



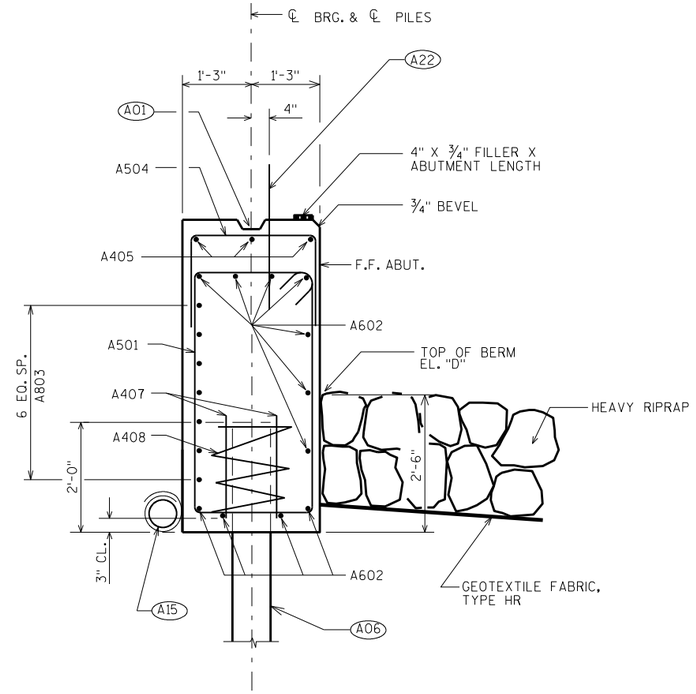
PLAN

DIMENSIONS ARE TYPICAL

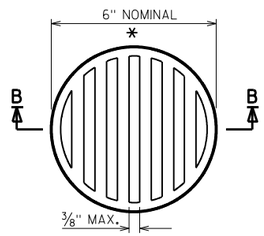


PILE PLAN

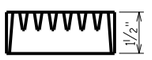
DIMENSIONS ARE TYPICAL



SECTION THRU BODY



RODENT SCREEN DETAIL



SECTION B-B

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 20'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 155 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATER-PROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A22) A506 MAY BE PLACED AFTER CONC. HAS BEEN POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-184

DRAWN BY ADS | PLANS CK'D. DDS

ABUTMENT

SHEET 4

52

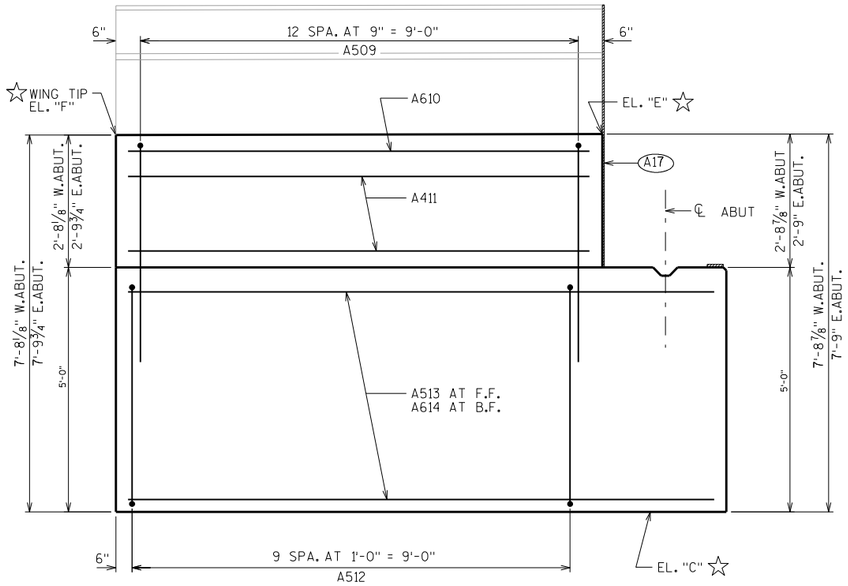
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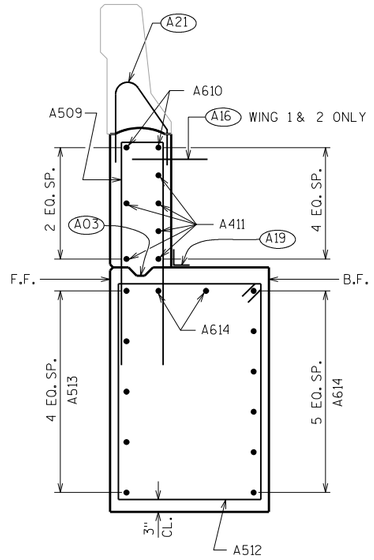
STATE PROJECT NUMBER

1620-02-64



WING ELEVATION

☆ SEE TABLE ON SHEET 4

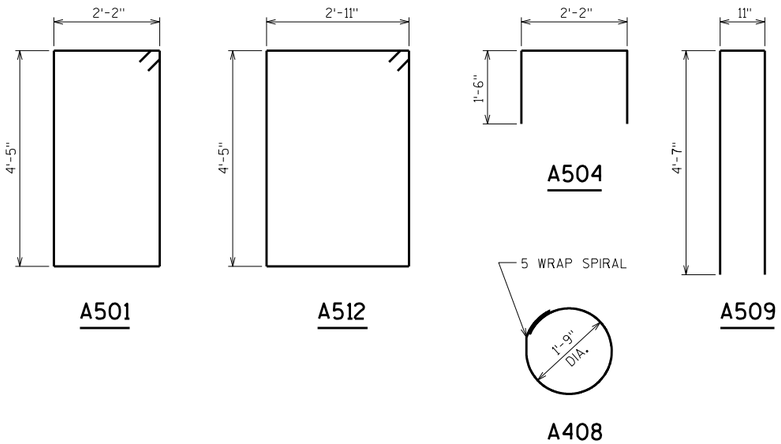


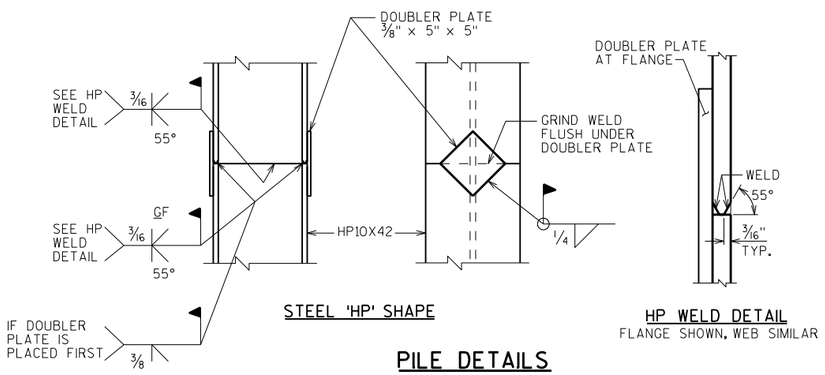
SECTION THRU WING

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		116	13-10	X		BODY - STIRRUPS
A602		22	46-2			BODY - HORIZ.
A803		14	46-2			BODY - B.F. - HORIZ.
A504		30	4-11	X		BODY - TOP - VERT.
A405		6	14-0			BODY - TOP - HORIZ.
A506		90	2-0			BODY - TOP - VERT.
A407		28	2-3			BODY - 2 PER PILE
A408		14	28-0	X		BODY - 1 PER PILE
A509	X	52	9-10	X		WING - TOP - VERT.
A610	X	8	9-8			WING - TOP - HORIZ.
A411	X	24	9-8			WING - TOP - HORIZ.
A512	X	40	15-4	X		WING - STIRRUPS
A513	X	20	12-1			WING - F.F. - HORIZ.
A614	X	32	12-1			WING - B.F. - HORIZ.
A415	X	20	2-0			DRAIN ANCHORS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
"NO. REQ'D." VALUE INCLUDES BOTH ABUTMENT QUANITIES





STEEL 'HP' SHAPE

HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE DETAILS

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

(A16) A415 BARS SPACED @ 1'-0" CTRS. EMBED 1'-0" INTO WING CONC. LOCATE 3" DOWN FROM TOP OF WING @ BACKFACE TO 6" DOWN @ WING TIP. (DRILLED IN EPOXY ANCHORED #4 BARS 2'-0" LONG MAY BE USED.) COST INCIDENTAL TO BID ITEM "BAR STEEL REINFORCEMENT HS COATED BRIDGES".

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-184

DRAWN BY ADS | PLANS CK'D. DDS

ABUTMENT DETAILS

SHEET 5

53

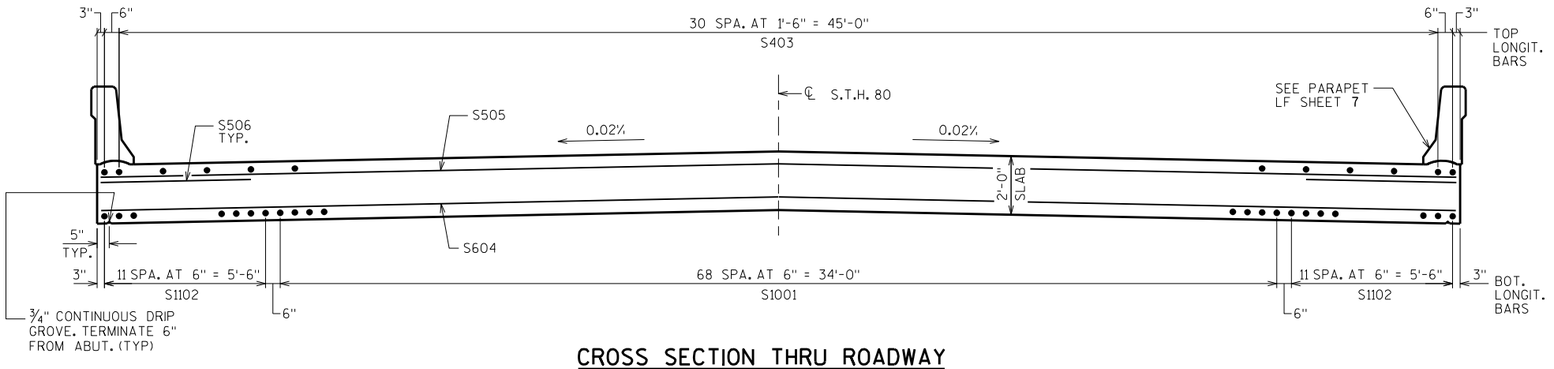
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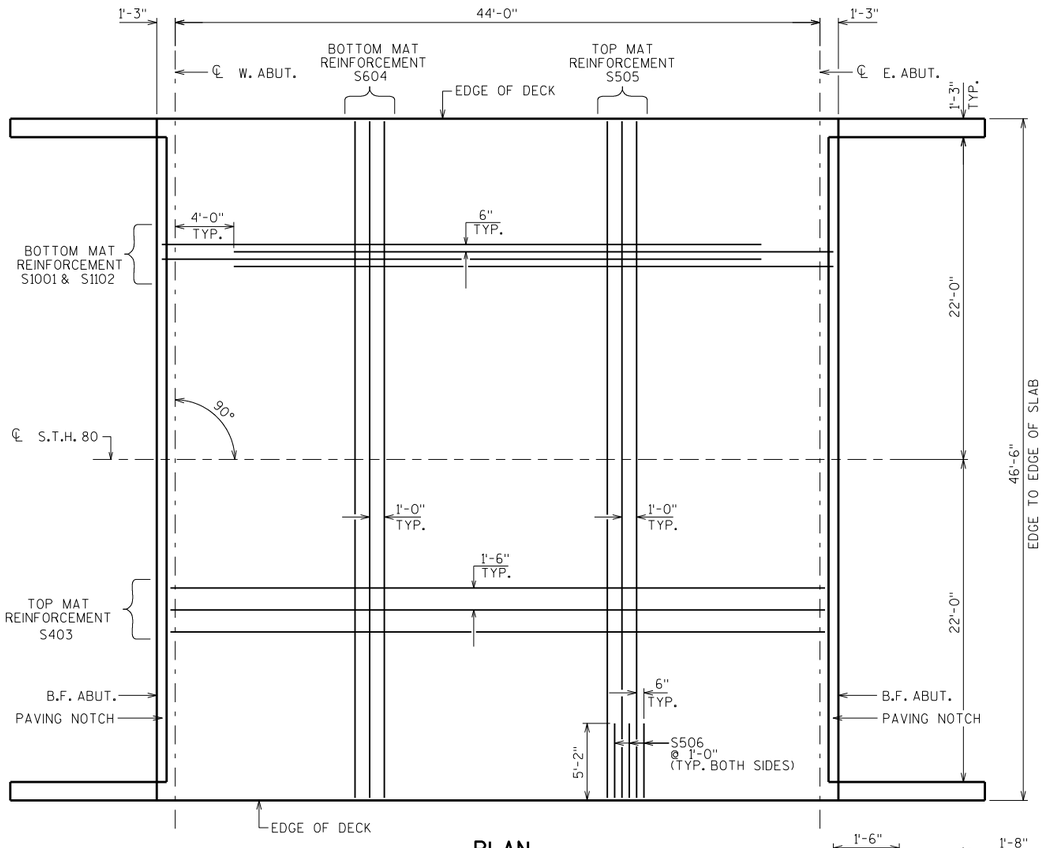
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CROSS SECTION THRU ROADWAY



PLAN

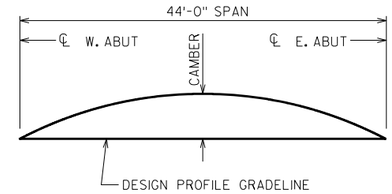
BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S1001	X	69	41-1			SLAB BOTT LONGIT - INT. STRIP
S1102	X	24	41-1			SLAB BOTT LONGIT - EXT. STRIP
S403	X	33	44-10			SLAB TOP LONGIT
S604	X	53	46-2			SLAB BOTT TRANS
S505	X	45	46-2			SLAB TOP TRANS
S506	X	88	5-0			SLAB TOP TRANS - AT EDGES OF SLAB
S507	X	94	3-8	X		SLAB AT ABUTS - VERTICAL
S508	X	94	6-9	X		SLAB AT ABUTS - VERTICAL
S509	X	10	46-2			PARAPET LF
S510	X	140	4-10	X		PARAPET LF
S511	X	136	4-2	X		PARAPET LF
S512	X	4	4-7	X		PARAPET LF - AT PAVING NOTCH

TOP OF SLAB ELEVATIONS AND CAMBER VALUES

LOCATION	NORTH EDGE OF SLAB ELEV.	℄ ELEV.	SOUTH EDGE OF SLAB ELEV.	CAMBER VALUE (INCHES)
W. ABUT	1048.02	1048.49	1048.02	0
1/10	1048.04	1048.51	1048.04	½
2/10	1048.07	1048.54	1048.07	1
3/10	1048.09	1048.56	1048.09	1⅜
4/10	1048.12	1048.59	1048.12	1⅝
5/10	1048.14	1048.61	1048.14	1¾
6/10	1048.17	1048.64	1048.17	1⅝
7/10	1048.19	1048.66	1048.19	1⅜
8/10	1048.22	1048.69	1048.22	1
9/10	1048.24	1048.71	1048.24	½
E. ABUT	1048.27	1048.74	1048.27	0



CAMBER DIAGRAM

CAMBER IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PARAPETS SHOWN ABOVE THE HORIZ. CONST. JT. SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR CENTERLINE FOLLOW THIS PROCEDURE:

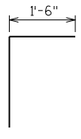
	TOP OF DECK ELEVATION AT FINAL GRADE
LESS	SLAB THICKNESS
PLUS	CAMBER
PLUS	FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS	TOP OF SLAB FALSEWORK ELEVATION.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE ℄ OF ABUTMENTS AND AT 5/10 PTS. TO VERIFY CAMBER.

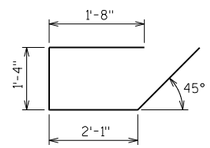
NOTES

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

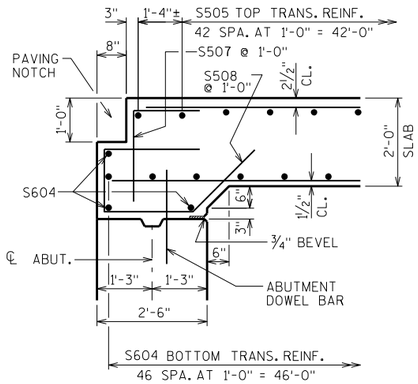
SLAB THICKNESS DIMENSION IS MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPENCIES ARE TO BE PLUS (+).



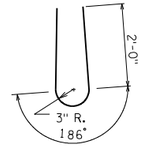
S507



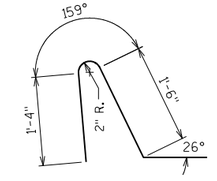
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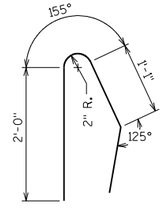
SLAB DETAIL
AT ABUTMENTS



S510



S511



S512

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-184

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SUPERSTRUCTURE

SHEET 6

54

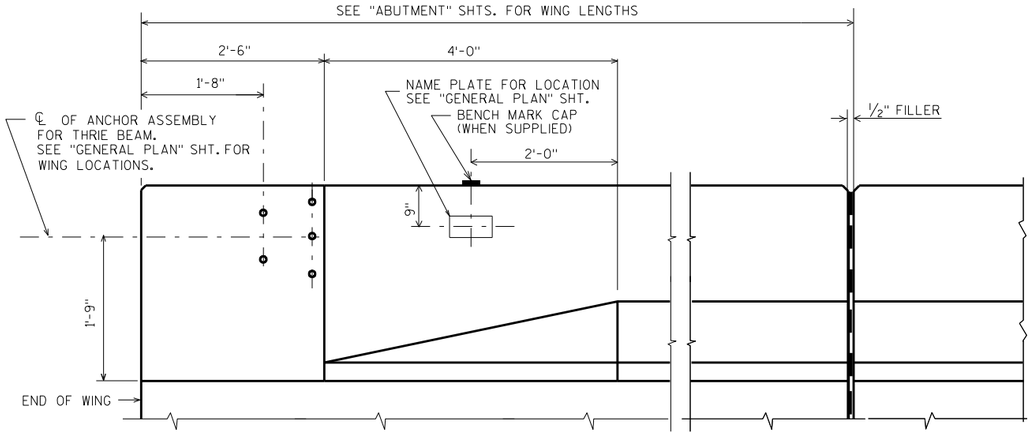
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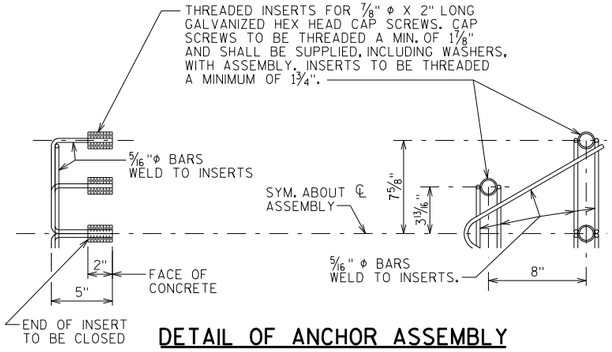
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8

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DETAIL OF ANCHOR ASSEMBLY

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

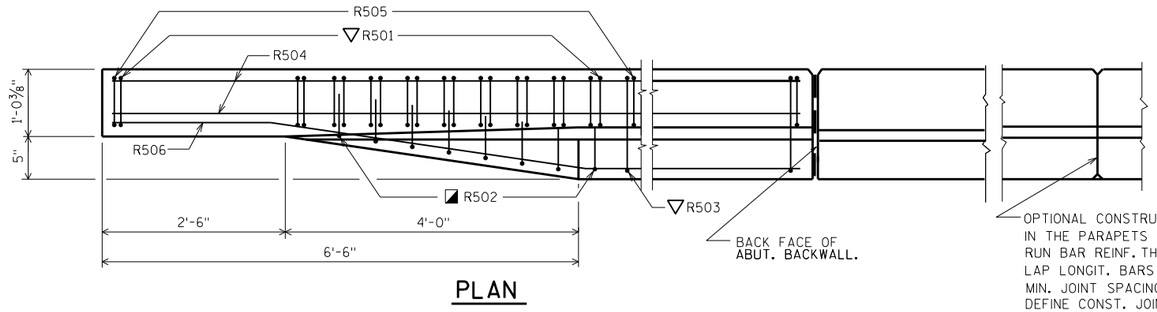
ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

BILL OF BARS

FOR ABUTMENT PARAPETS

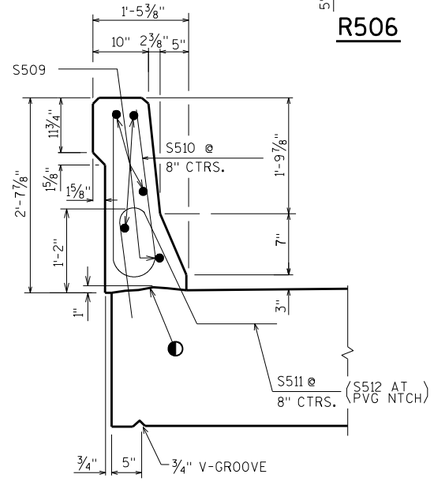
BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	28	28	4-7	X		PARAPET VERT.
R502	X	16	16	2-4	X		PARAPET VERT.
R503	X	10	10	4-7	X		PARAPET VERT.
R504	X	8	8	9-8			PARAPET HORIZ.
R505	X	38	38	4-10	X		PARAPET VERT.
R506	X	2	2	9-8	X		PARAPET HORIZ.

INSIDE ELEVATION

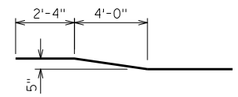


PLAN

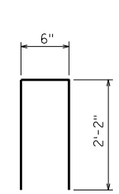
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" 'V' GROOVE.



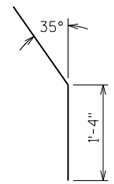
SECTION THRU PARAPET ON BRIDGE



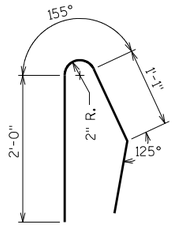
R506



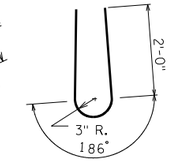
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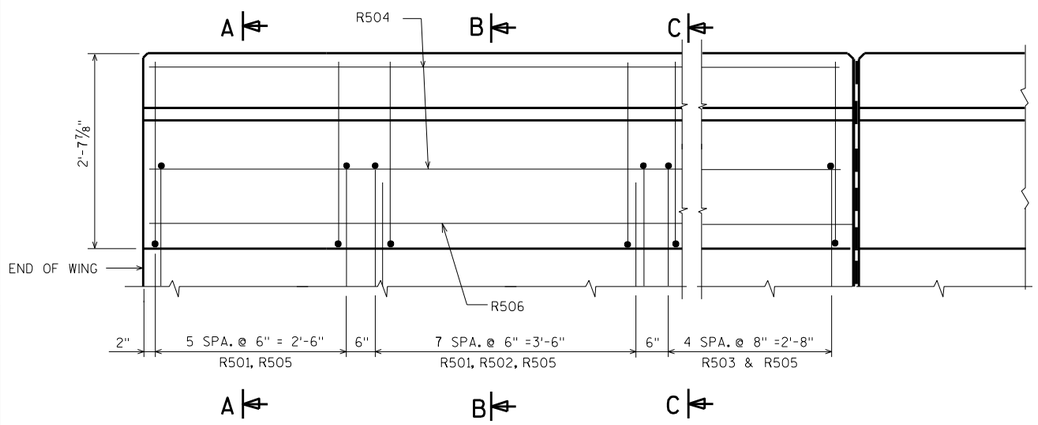
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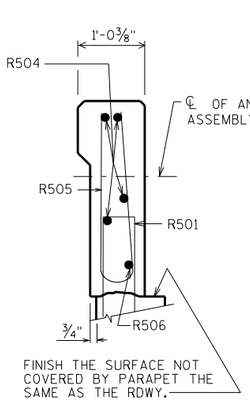
R503



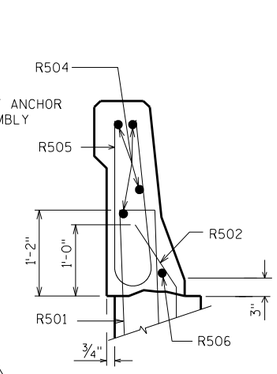
R505



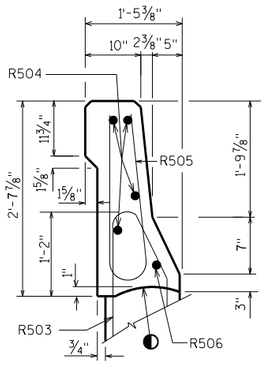
OUTSIDE ELEVATION



SECTION A



SECTION B



SECTION C

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ R502 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R502 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R503 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-184

DRAWN BY ADS | PLANS CK'D. DDS

SLOPED FACE PARAPET LF

SHEET 7

55

SCALE =

LFWIN
7-11

8

12 7 12

WEST APPROACH

Station	Distance	Area(SF) Cut	Salvaged/Unusable Pavement Material	Area(SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) Salvaged/Unusable Pavement Material	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut 1.00	Expanded Fill 1.25	Mass Ordinate
503+60		81	34	0						
504+00	40	91	34	22	127	50	16	127	20	57
504+50	50	89	34	37	167	63	55	294	89	92
505+02	52	101	34	36	183	65	70	477	177	122
505+52	50	121	39	19	206	68	51	683	240	196
506+05	53	108	36	30	225	74	48	907	300	287
506+41	36	91	34	43	133	47	49	1,040	361	312
				TOTALS	1,040	367	289	1,040	361	312

NOTE: UNUSABLE PAVEMENT MATERIAL INCLUDES 2-INCHES OF THE EXISTING UNDERLYING CONCRETE PAVEMENT INTO THE SUBGRADE

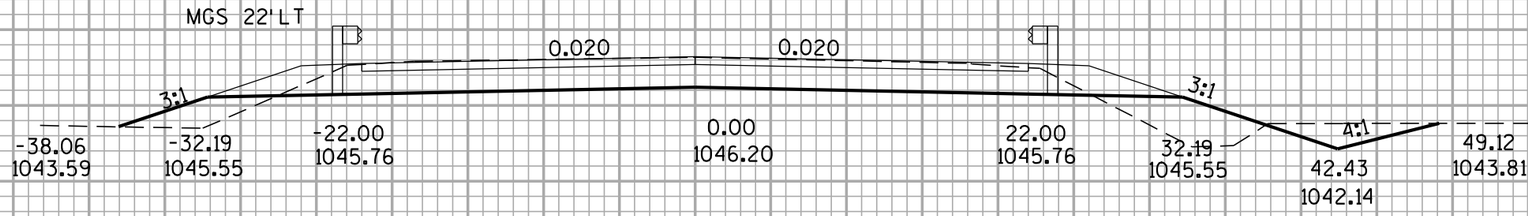
EAST APPROACH

Station	Distance	Area(SF) Cut	Salvaged/Unusable Pavement Material	Area (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) Salvaged/Unusable Pavement Material	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut 1.00	Expanded Fill 1.25	Mass Ordinate
507+08		79	34	39						
507+45	37	94	38	26	119	49	44	119	56	14
507+98	53	106	39	40	196	76	65	315	136	54
508+48	50	89	34	69	181	68	101	495	262	40
509+00	52	85	34	37	168	65	102	663	390	15
509+50	50	81	34	15	154	63	48	817	451	45
509+90	40	81	34	0	120	50	11	937	465	101
				TOTALS	937	371	372	937	465	101

NOTE: UNUSABLE PAVEMENT MATERIAL INCLUDES 2-INCHES OF THE EXISTING UNDERLYING CONCRETE PAVEMENT INTO THE SUBGRADE

R/W

MGS 22'LT

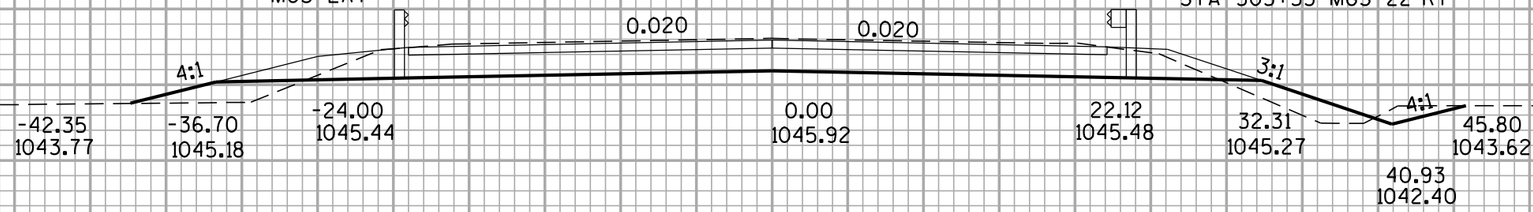


506+05

R/W

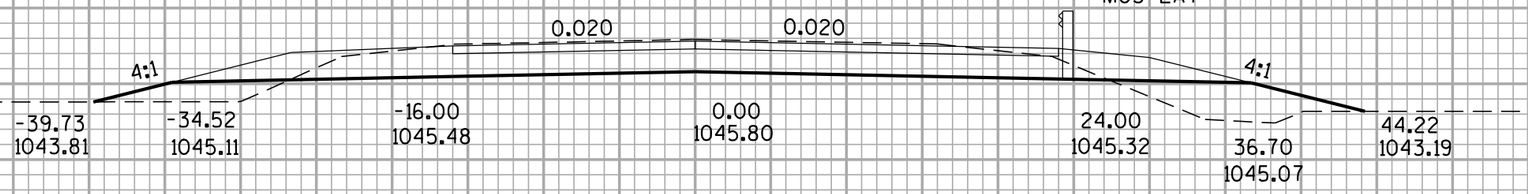
MGS EAT

STA 505+55 MGS 22'RT

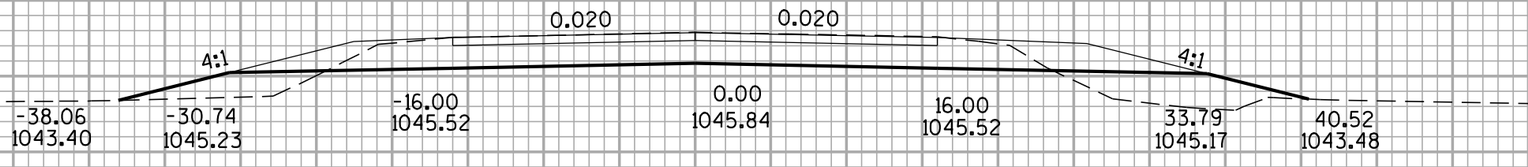


505+52

MGS EAT



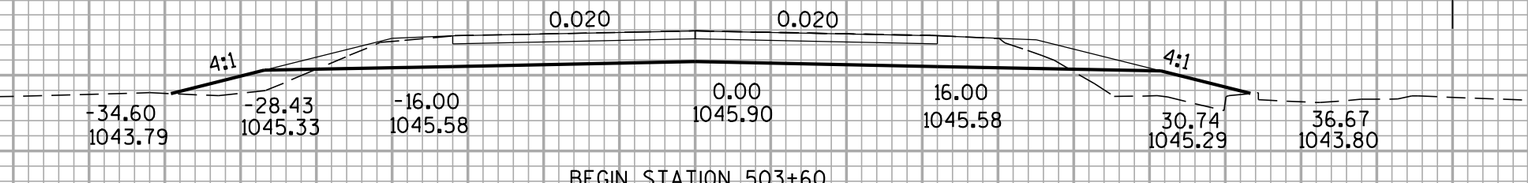
505+02



504+50

R/W

R/W



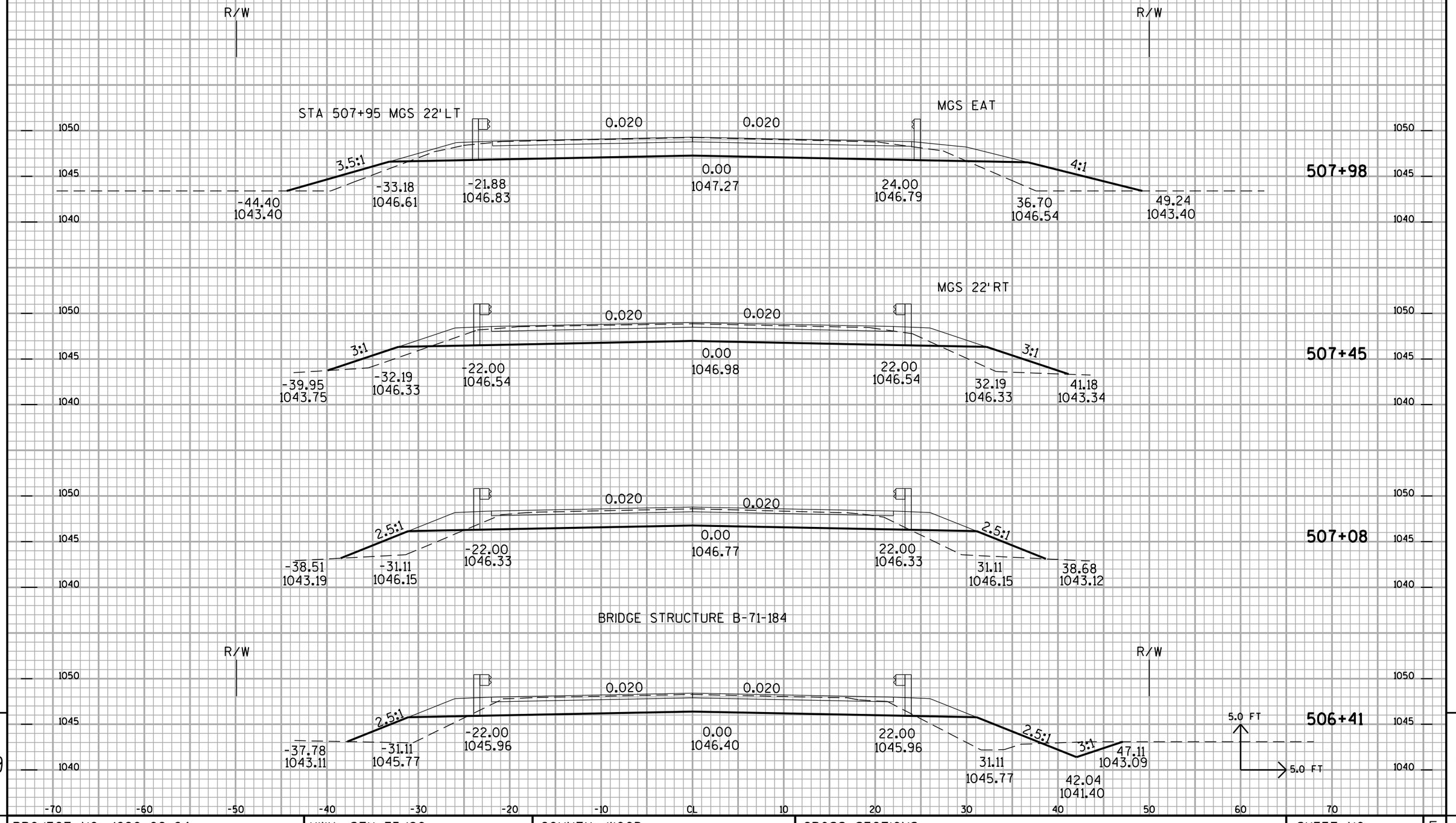
504+00

BEGIN STATION 503+60

-70 -60 -50 -40 -30 -20 -10 CL 10 20 30 40 50 60 70

PROJECT NO: 1620-02-64	HWY: STH 73/80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

FILE NAME : p:\projects\D4_16200201ED\D4_16200201 Rocky Creek\090201_xs.dgn PLOT DATE : 27-SEP-2012 16:11 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 2:1



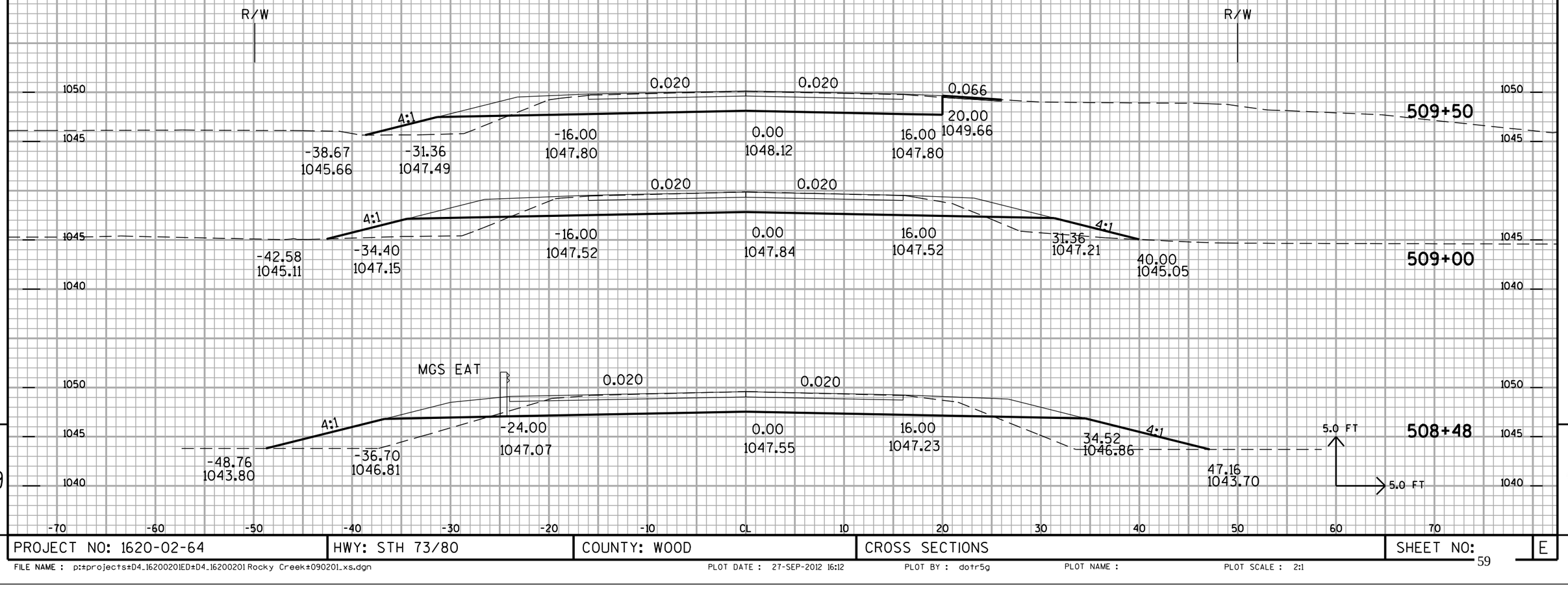
9

9

PROJECT NO: 1620-02-64	HWY: STH 73/80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

FILE NAME : p:\projects\D4_16200201ED\D4_16200201 Rocky Creek\090201_xs.dgn PLOT DATE : 27-SEP-2012 16:12 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 2:1

END STATION 509+90



9

9

PROJECT NO: 1620-02-64	HWY: STH 73/80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

FILE NAME : p:\projects\D4_16200201ED\D4_16200201Rocky Creek\090201_xs.dgn PLOT DATE : 27-SEP-2012 16:12 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 2:1

Wisconsin Department of Transportation

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WIS

MAR 13

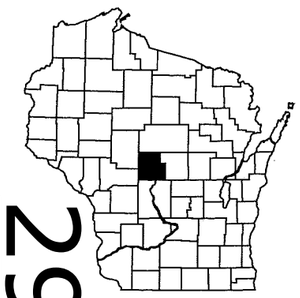
PROJECT ID: 1620-02-71
WITH: 1620-02-64,73,74

COUNTY: WOOD

ORDER OF SHEETS

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

TOTAL SHEETS =



29

N

DESIGN DESIGNATION

A.A.D.T.	2012	=	4,400
A.A.D.T.	2032	=	5,500
D.H.V.		=	
D.D.	2032	=	62/38
T.	2032	=	16.7%
DESIGN SPEED		=	60 MPH
ESALS		=	2,160,800

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WISCONSIN RAPIDS - MARSHFIELD

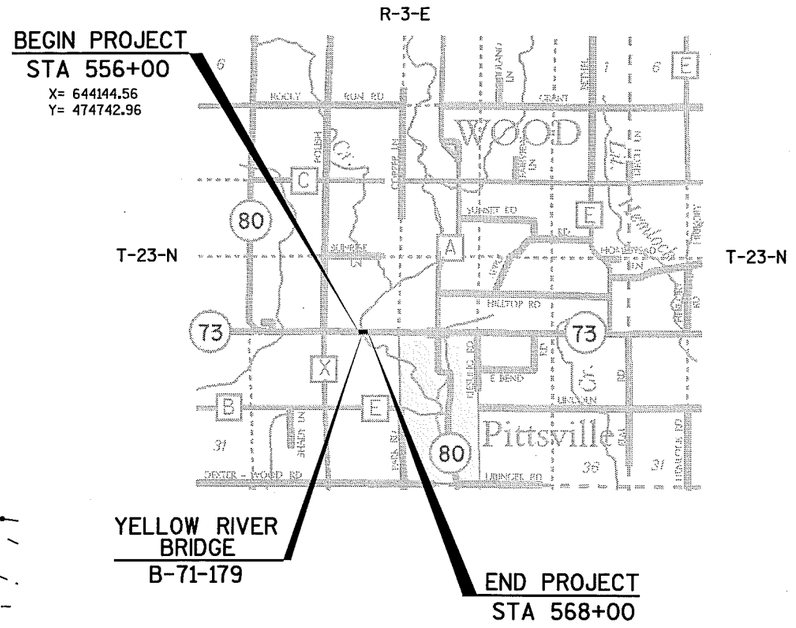
YELLOW RIVER BRIDGE

STH 73/80

WOOD COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1620-02-71		

STATE PROJECT NUMBER
1620-02-71



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.2273 MI.

Elevations shown on this plan are referenced to the North American Vertical Datum of NAVD 88 (2007)

Coordinates on this plan are referenced to the Wisconsin County Coordinate System (WCCS), Wood County, NAD 1983 (2007)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NC REGION
Designer	ELIZABETH COLLINS
Project Manager	KEVIN GARRIGAN
Regional Examiner	CHERYL SIMON
Regional Supervisor	
C.O. Examiner	WISDOT BPD

APPROVED FOR THE DEPARTMENT
DATE: 10/30/12 (Signature)

E

GENERAL NOTES

NO TREES OR SHRUBS OUTSIDE THE GRADING LIMITS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE PAVING LIMIT FOR RIVER LOOP LANE WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

SECTIONS AS SHOWN ON THE CROSS SECTION SHEETS INCLUDE THE THICKNESS OF TOPSOIL.

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

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

2

UTILITIES

ALLIANT ENERGY - ELECTRICITY
ATTN: JASON HOGAN
SUITE 1000
4902 N BILTMORE LANE
MADISON WI 53718
(608)395-7395
jasonhogan@alliantenergy.com

TDS TELECOM - COMMUNICATION LINE
ATTN: STEVE JAKUBIEC
SUITE 218A
10 COLLEGE AVE
APPLETON WI 54911
(920)882-4166
steve.jakubiec@tdstelecom.com

DNR

MARC HERSHFIELD
473 GRIFFITH DR
WISCONSIN RAPIDS WI 54494
715-421-7867
marc.hershfield@wi.gov

DIGGERS HOTLINE

Call 811 3 Work Days Before You Dig
Or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

2

PROJECT OVERVIEW

N

BEGIN PROJECT
STA. 556+00

EXISTING STRUCTURE B-71-755
TO BE REMOVED
STRUCTURE B-71-179 REQUIRED

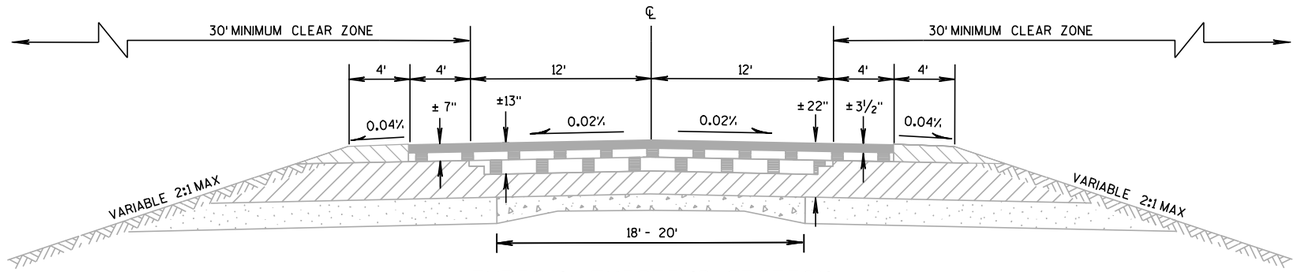
END PROJECT
STA. 568+00



PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : P:\projects\D4_16200201ED\020201_po.DGN PLOT DATE : 23-OCT-2012 15:28 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 200:1

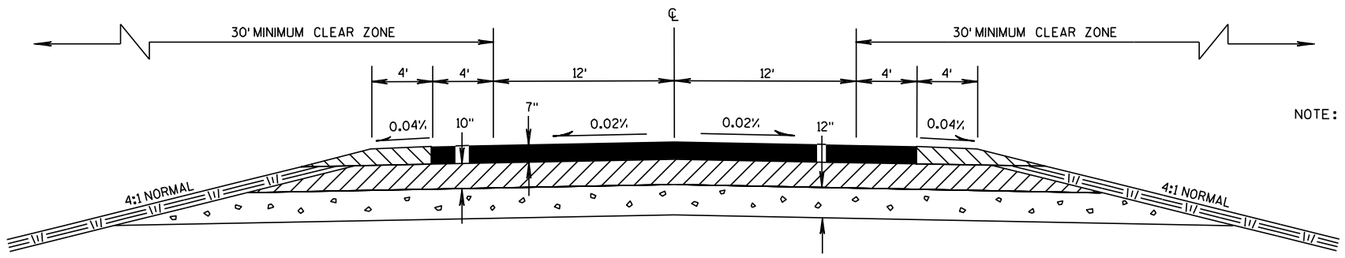
WISDOT/CADDS SHEET 42



TYPICAL EXISTING SECTION
STA 556+00 TO STA 568+00

LEGEND

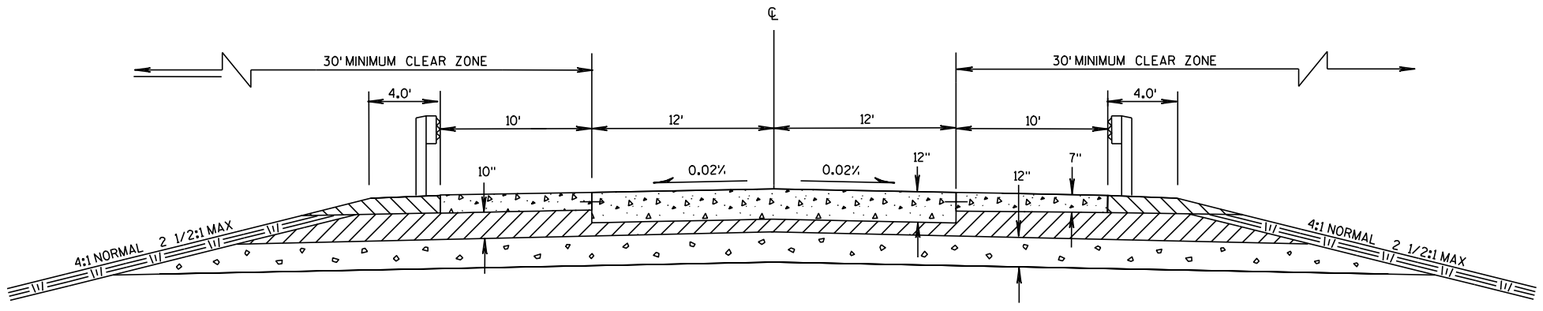
- EXISTING ASPHALT PAVEMENT
- EXISTING ASPHALT PAVEMENT
- EXISTING BASE AGGREGATE DENSE SHOULDER
- EXISTING BASE AGGREGATE DENSE
- EXISTING GRANULAR SUBBASE
- EXISTING 6½" (9" OUTSIDE EDGES) CONC PAVT
- ORIGINAL GROUND
- SELECT CRUSHED MATERIAL
- BASE AGGREGATE DENSE 1 1/4-INCH
- BASE AGGREGATE DENSE 3/4-INCH
- HMA PAVEMENTTYPE E-3
- CONC PAVT APPROACH SLAB & CONC PAVT
- SALVAGED TOPSOIL, SEED, FERTILIZER AND MULCH



TYPICAL PROPOSED SECTION
STA 556+00 TO STA 568+00

NOTE: PLACE THE 7" OF HMA PVEMENT TYPE E-3 IN THREE LAYERS:

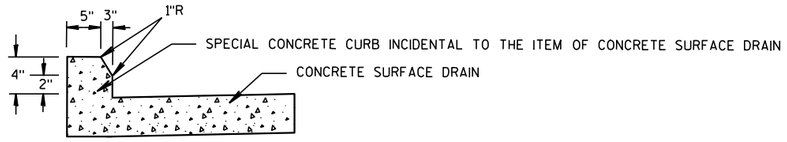
2" THICK UPPER LAYER
2-2½" THICK LOWER LAYERS



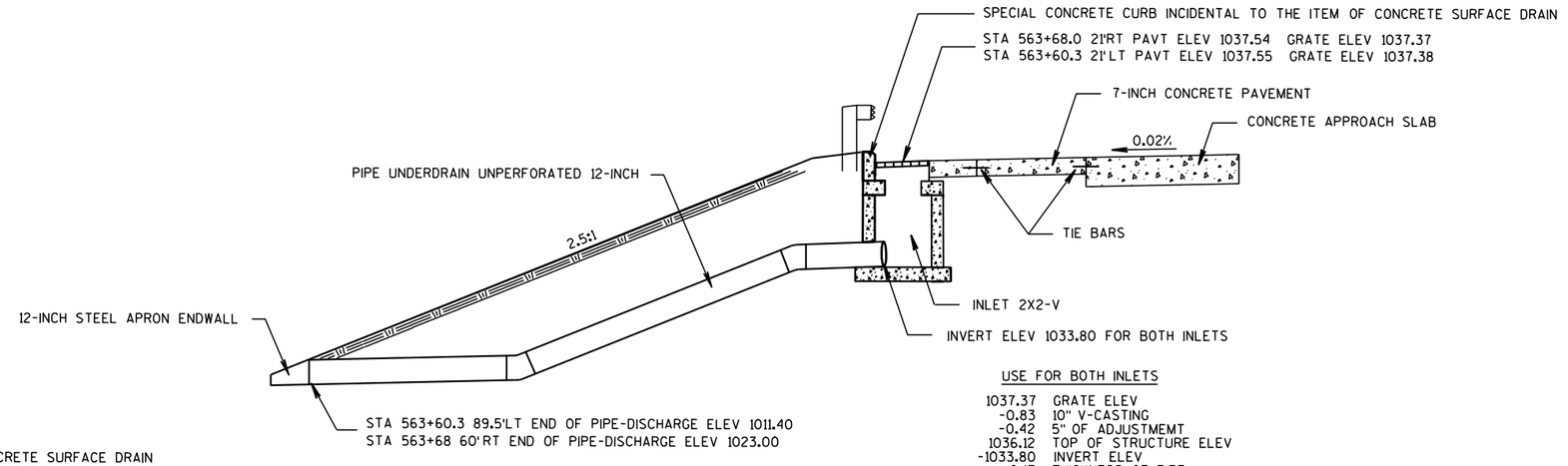
TYPICAL PROPOSED STRUCTURE APPROACH

PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	TYPICAL SECTIONS	SHEET	E

2



SPECIAL CONCRETE CURB

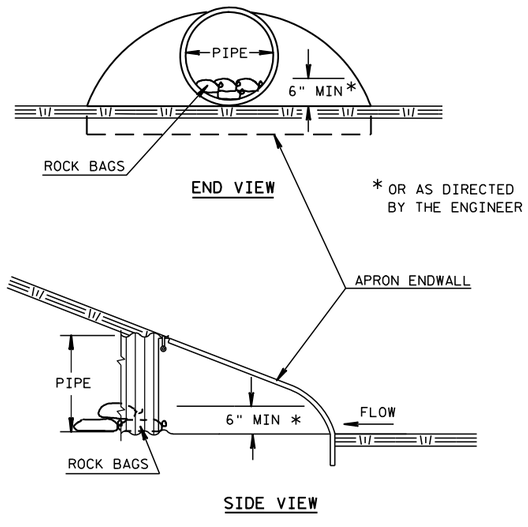


USE FOR BOTH INLETS

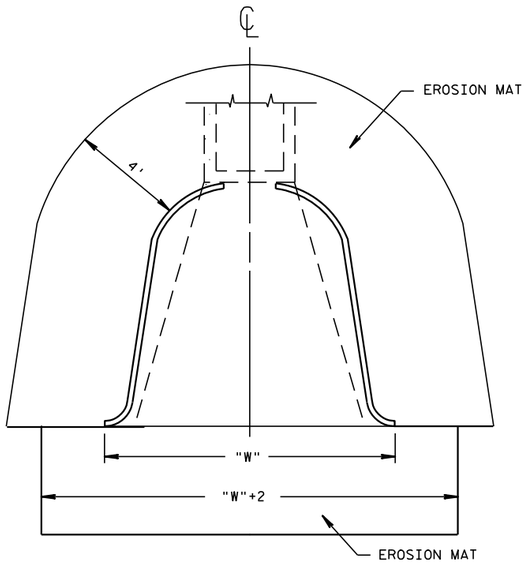
1037.37	GRATE ELEV
-0.83	10" V-CASTING
-0.42	5" OF ADJUSTMEMT
1036.12	TOP OF STRUCTURE ELEV
-1033.80	INVERT ELEV
+0.17	THICKNESS OF PIPE
= 2.49	DEPTH OF STRUCTURE

CONCRETE SURFACE DRAIN DROP INLET
STA 563+60.3 LT AND 563+68.0 RT
BETWEEN MGS POSTS (12) AND (13)

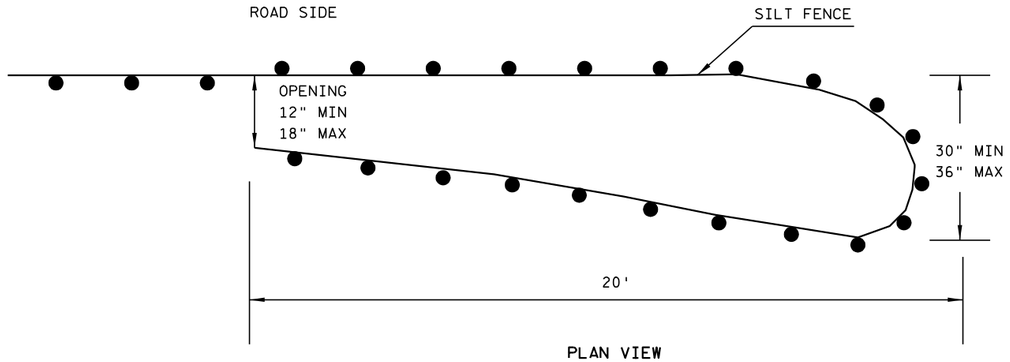
NOTE: SEE STANDARD DETAIL DRAWINGS "CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES", AND "CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES" FOR ADDITIONAL INFORMATION



CULVERT PIPE CHECKS



EROSION MAT AT PIPE ENDS

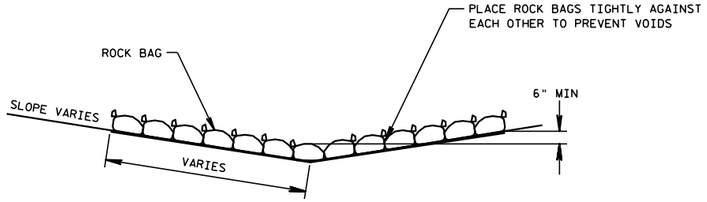


PLAN VIEW

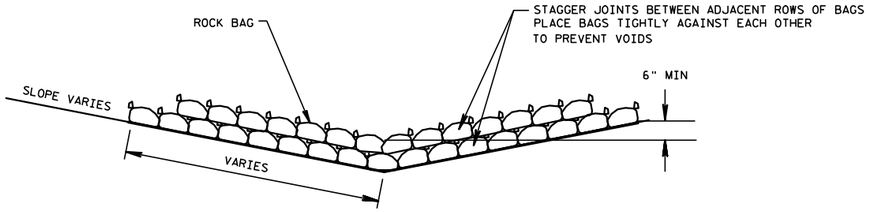
GENERAL NOTES:

THE PURPOSE OF THE TURTLE TURN-AROUNDS ARE TO REDIRECT THE TURTLES AWAY FROM THE CONSTRUCTION ZONE. DESIGN SHOULD ALSO INCLUDE TRENCHED-IN SEDIMENT FENCING AND FENCING SUPPORTS ON UPSLOPE SIDE OF FENCE. SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND.

TEMPORARY TURTLE TURN-AROUND DETAIL

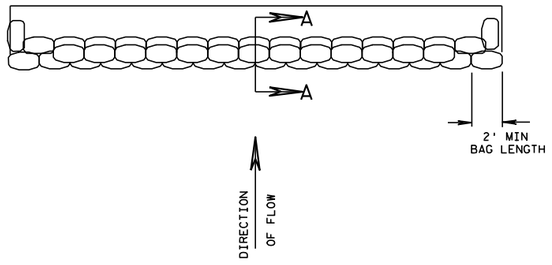


SIDE VIEW (SINGLE LAYER)

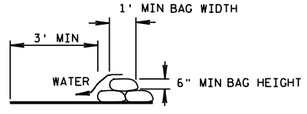


* LENGTH AND NUMBER OF BAGS MAY VARY
DEPENDING ON DESIRED DEPTH OF WATER POOL

SIDE VIEW (MULTIPLE LAYER)

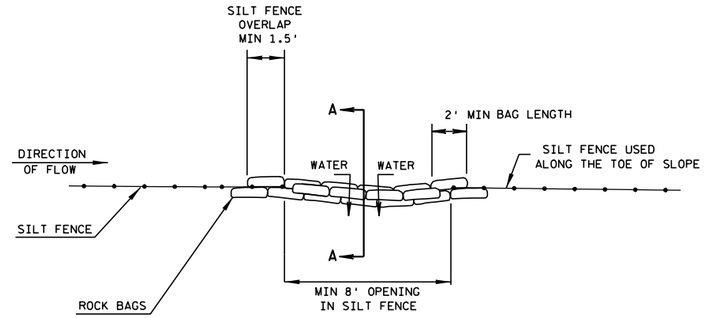


TOP VIEW (MULTIPLE LAYER)

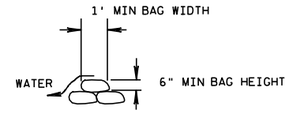


SECTION A-A

ROCK BAGS USED FOR DITCH CHECKS DETAIL



TOP VIEW



SECTION A-A

ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL

2

N

T 23 N
21
28
R 3 E

100'

EXISTING R/W

OH OH OH OH OH OH OH OH

1-54"X14' RCCP CLASS III EXTENSION REQD
SALVAGE 54-INCH AEW FOR CULVERT PIPE
INVERT ELEV=1032.41

GRAVEL
PE
20'
+81

30' R +

ASPHALTIC APRON APPROACH

+ 30' R

PISTA 650+25
N 474738.090
E 644569.540

MGS GUARDRAIL
TERMINAL EAT REQD

MGS THRIE BEAM
TRANSITION REQD

15:1 TAPER

4' 4' 4' 4'

12'

556+00 557+00 558+00 559+00 560+00 561+00

12'

4' 4'

BEGIN PROJECT
STA 556+00
MATCH EXISTING
SAW CUT REQD

INV
1038.40
28'RT

+54
20'
GRAVEL PE

25' R +

INV
1037.55
33'RT

+ 25' R

ASPHALTIC APRON APPROACH

STA 556+54 RT
1-18"X54' CORRUGATED STEEL CULVERT PIPE REQD
2-18" STEEL SLOPED SECTION AEWS FOR CP REQD

50'

1-54"X104' EXISTING RCCP AND
APRON ENDWALL TO REMAIN IN PLACE

25'
TYPICAL

MGS GUARDRAIL
3 REQD

15:1 TAPER

+24
GRAVEL PE
TO BE
ELIMINATED

MGS THRIE BEAM
TRANSITION REQD

EXISTING R/W

MGS GUARDRAIL
TERMINAL EAT REQD

OH

PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	PLAN DETAIL 1 OF 3	SHEET	E

FILE NAME : p:\projects\D4_16200201ED\021201_pd.dgn PLOT DATE : 10-OCT-2012 13:42 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

2

LEGEND

* ASPHALTIC FLUME

CONCRETE PAVEMENT 7-INCH

CONCRETE SURFACE DRAIN DROP INLET TYPE

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM1	561+49.0 20.0LT	DISK IN CONCRETE	1035.660

N

T 23 N
21
28
R 3 E

EXISTING R/W

EXISTING R/W

100'

SALVAGE EXISTING RAIL
SALVAGE EXISTING GUARDRAIL
END TREATMENTS

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL REQD

STEEL PLATE BEAM GUARD
24FT SHORT RADIUS REQD

GRAVEL
PE
+85

1-21"X24' EXISTING CMCP
TO BE REMOVED

STA 564+85 43'LT
1-21"X38' CSCP REQ'D
2-21" AE.W'S FOR CP REQ'D

MGS GUARDRAIL
TERMINAL EAT REQD

MGS THRIE BEAM
TRANSITION REQD

STEEL THRIE BEAM
STRUCTURE APPROACH REQD

15:1 TAPER

BM1

560+00 561+00 562+00 563+00 564+00 565+00

10' 12' 12' 10' 10' 12'

MGS GUARDRAIL
3 REQD

CONC PAVT
APPROACH
SLAB

CONC PAVT
APPROACH
SLAB

+24
GRAVEL PE
TO BE
ELIMINATED

MGS THRIE BEAM
TRANSITION REQD

MGS THRIE BEAM
TRANSITION REQD

MGS GUARDRAIL
TERMINAL EAT REQD

15:1 TAPER

3'

50'

EXISTING R/W

NEW R/W

45'R

RIVER LOOP LANE

92'

10' 10'

40'R

1-21"X48" EXISTING CMCP TO BE REMOVED

STA 565+35 RT 1-21"X64' CSCP REQ'D
2-21" STEEL SLOPED SECTION AEW'S FOR CP REQ'D

MATCH EXISTING
SAW CUT REQ'D

SALVAGE EXISTING RAIL
SALVAGE EXISTING GUARDRAIL
END TREATMENTS

PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	PLAN DETAIL 2 OF 3	SHEET	E

FILE NAME : p:\projects\D4_16200201ED\021202_pd.dgn PLOT DATE : 25-OCT-2012 10:49 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 40:1

2

N

EXISTING R/W

100'

OH

GRAVEL
PE
+85

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL REQD

STEEL PLATE BEAM GUARD
24 FT SHORT RADIUS REQD

1-21"X24' EXISTING CMCP TO BE REMOVED

STA 564+85 43'LT 1-21"X38' CSCP REQ'D
2-21" AEW'S FOR STEEL CP REQ'D

INV
1033.97

INV
1034.16

MGS GUARDRAIL
TERMINAL EAT REQD

STEEL THRIE BEAM
STRUCTURE APPROACH REQD

BLEND INTO EXISTING DITCH LINE

15:1 TAPER

4'

4'

12'

564+00

565+00

MGS GUARDRAIL
3 REQD

566+00

25'
TYPICAL

567+00

568+00

END PROJECT
STA 568+00

MATCH EXISTING
SAW CUT REQ'D

12'

4'

4'

3'

15:1 TAPER

3'

BLEND INTO EXISTING DITCH LINE

INV
1033.86
46.1' RT

45' R

INV
1034.76
42.5' RT

40' R

X=645134.2252
Y=474671.3994

EXISTING R/W

50'

NEW R/W

75'

X=645019.1670
Y=474667.7491

RIVER LOOP LANE

92'

10'

10'

1-21"X48" EXISTING CMCP TO BE REMOVED

STA 565+35 RT 1-21"X64' CSCP REQ'D
2-21" STEEL SLOPED SECTION AEW'S FOR CP REQ'D

MATCH EXISTING
SAW CUT REQD

SALVAGE EXISTING RAIL
SALVAGE EXISTING GUARDRAIL
END TREATMENTS

PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	PLAN DETAIL 3 OF 3	SHEET 9	E

2

2

WATERS EDGE

YELLOW RIVER

PERMITTED WETLAND IMPACT AREAS

N

EXISTING R/W

EXISTING R/W

RIPARIAN EMERGENT

RIPARIAN FOREST

OH

560+00

561+00

562+00

563+00

564+00

565+00

10'

12'

12'

10'

PIER FOOTING

AQUATIC BED

EXISTING R/W

EXISTING R/W

RIVER LOOP LANE

T

RIPARIAN EMERGENT

FLOW

WATERS EDGE

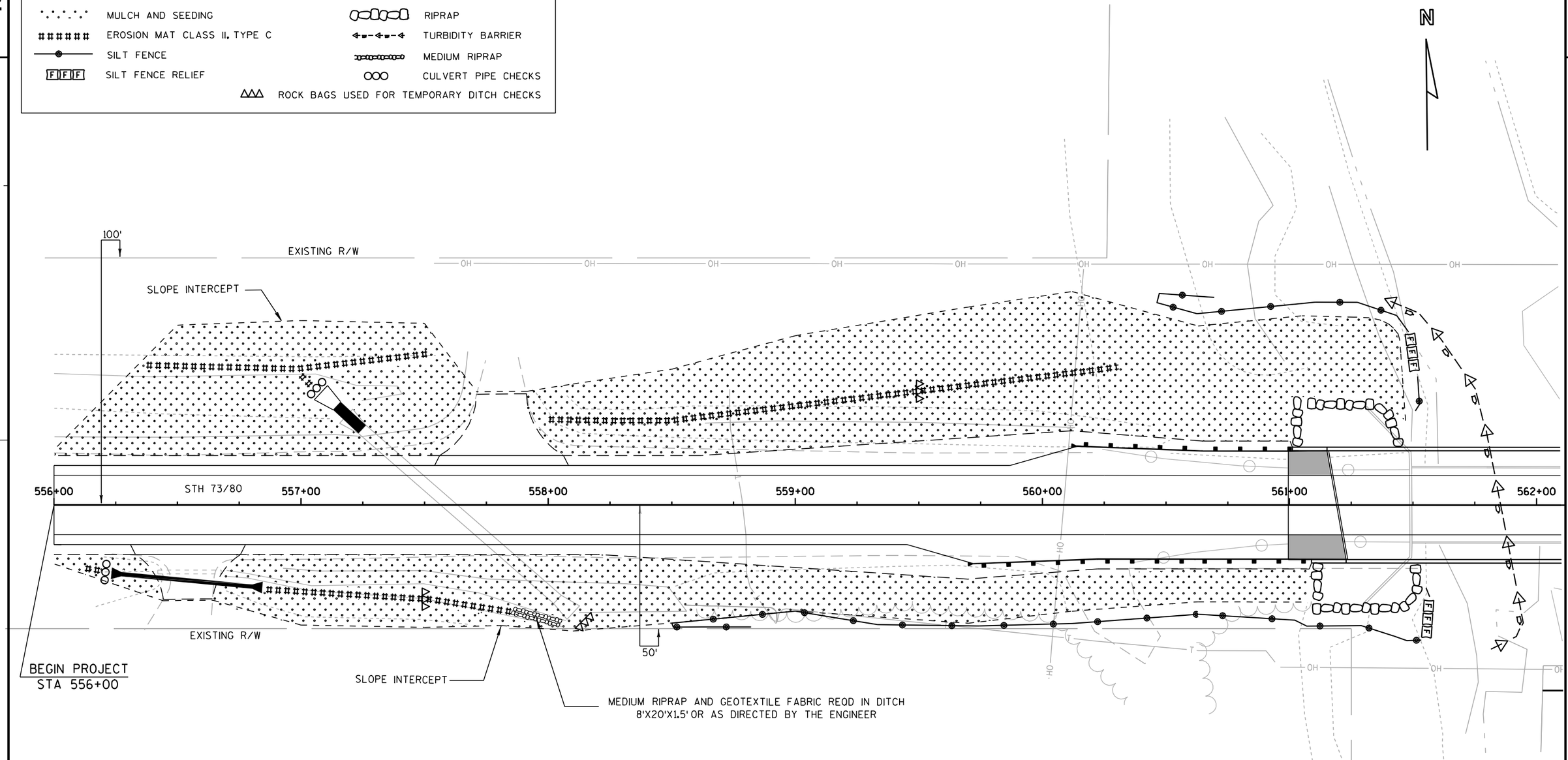
PROJECT NO: 1620-02-71	HWY: 73/80	COUNTY: WOOD	PERMITTED WETLAND IMPACT AREAS	SHEET	E

FILE NAME : p:\projects\D4_16200201ED\022006_ec.dgn PLOT DATE : 17-OCT-2012 12:42 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 40:1

2

LEGEND

- MULCH AND SEEDING
- EROSION MAT CLASS II, TYPE C
- SILT FENCE
- F F F SILT FENCE RELIEF
- RIPRAP
- TURBIDITY BARRIER
- MEDIUM RIPRAP
- CULVERT PIPE CHECKS
- ROCK BAGS USED FOR TEMPORARY DITCH CHECKS



PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	EROSION CONTROL	SHEET 11	E

2

LEGEND

- MULCH AND SEEDING
- EROSION MAT CLASS II, TYPE C
- SILT FENCE
- SILT FENCE RELIEF
- RIPRAP
- TURBIDITY BARRIER
- MEDIUM RIPRAP
- CULVERT PIPE CHECKS
- ROCK BAGS USED FOR TEMPORARY DITCH CHECKS

N

SLOPE INTERCEPT

560+00 STH 73/80 561+00 562+00 563+00 564+00 565+00 566+00

STH 73/80

EXISTING R/W

NEW R/W

SLOPE INTERCEPT

PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	EROSION CONTROL	SHEET 12	E

FILE NAME : P:\projects\D4_16200201ED\022004_ec.dgn PLOT DATE : 15-JAN-2013 08:45 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 40:1

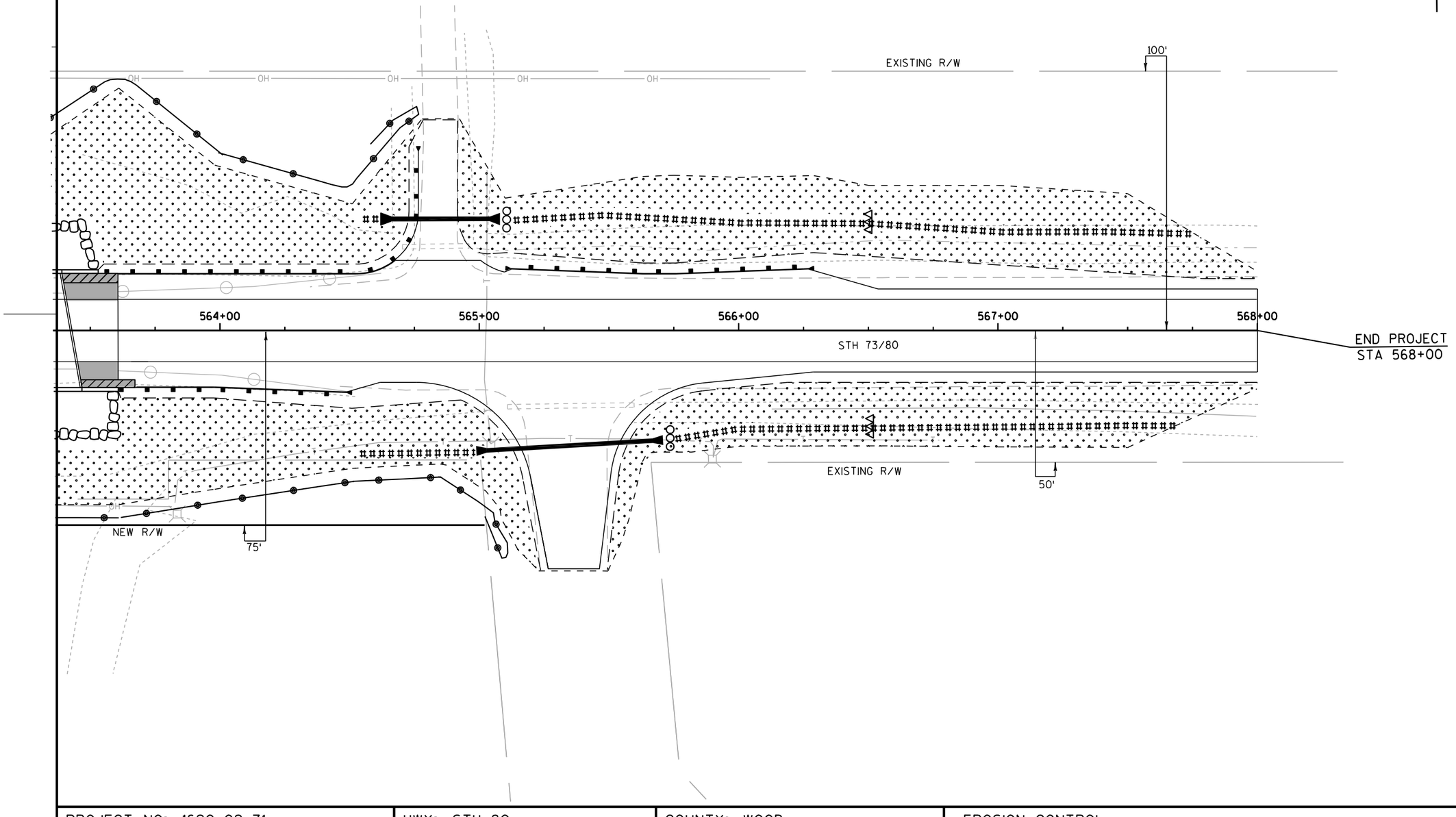
WISDOT/CADDS SHEET 42

2

LEGEND

MULCH AND SEEDING	RIPRAP
EROSION MAT CLASS II, TYPE C	TURBIDITY BARRIER
SILT FENCE	MEDIUM RIPRAP
SILT FENCE RELIEF	CULVERT PIPE CHECKS
ROCK BAGS USED FOR TEMPORARY DITCH CHECKS	

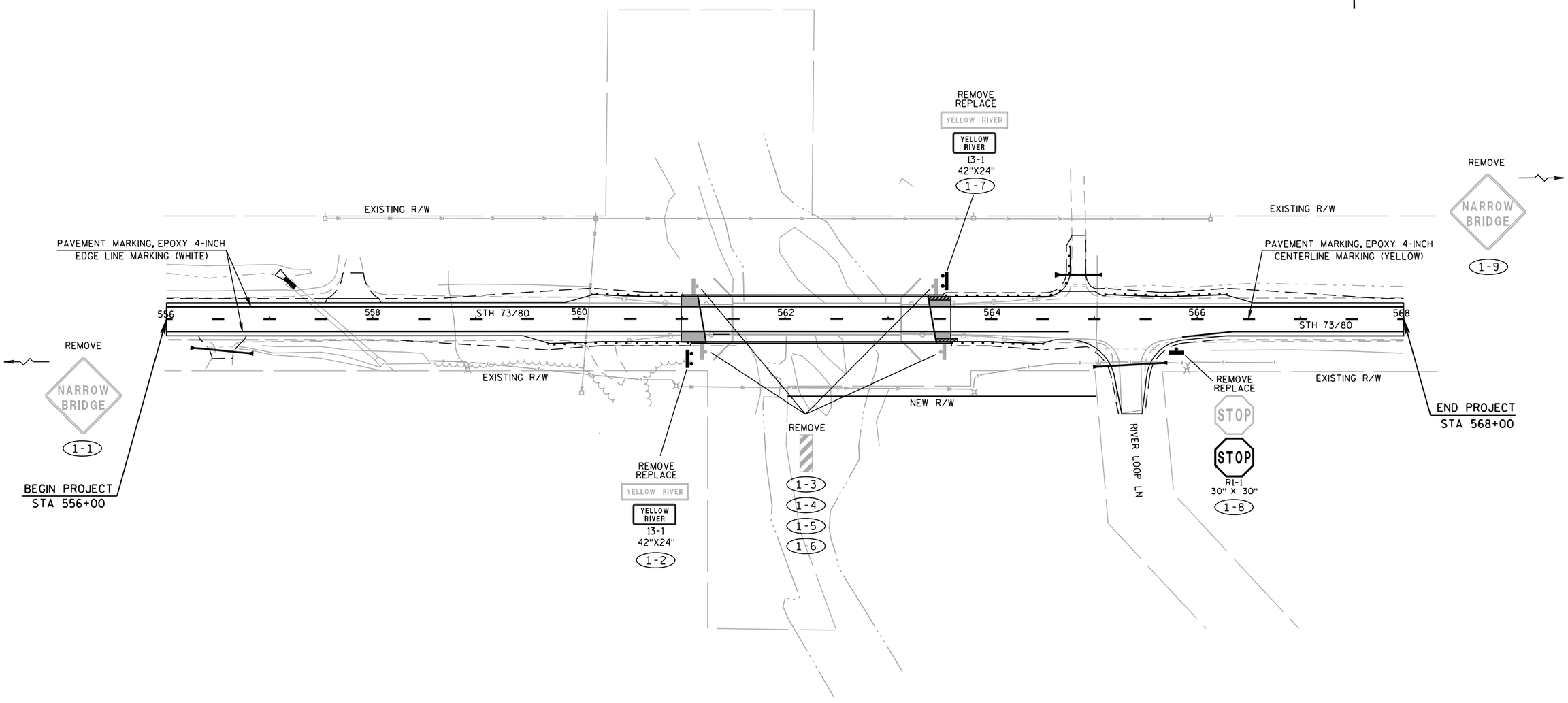
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2

PROJECT NO: 1620-02-71	HWY: STH 80	COUNTY: WOOD	EROSION CONTROL	SHEET 13	E

2



PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	PERMANENT SIGNING & PAVEMENT MARKING	SHEET 14	E

2

= WORK ZONE

= STH 80 DETOUR ROUTE
CTH A - USH 10

DETOUR

N

Marshfield

Pittsville

Arpin

Hewitt

1620-02-64
B-71-184

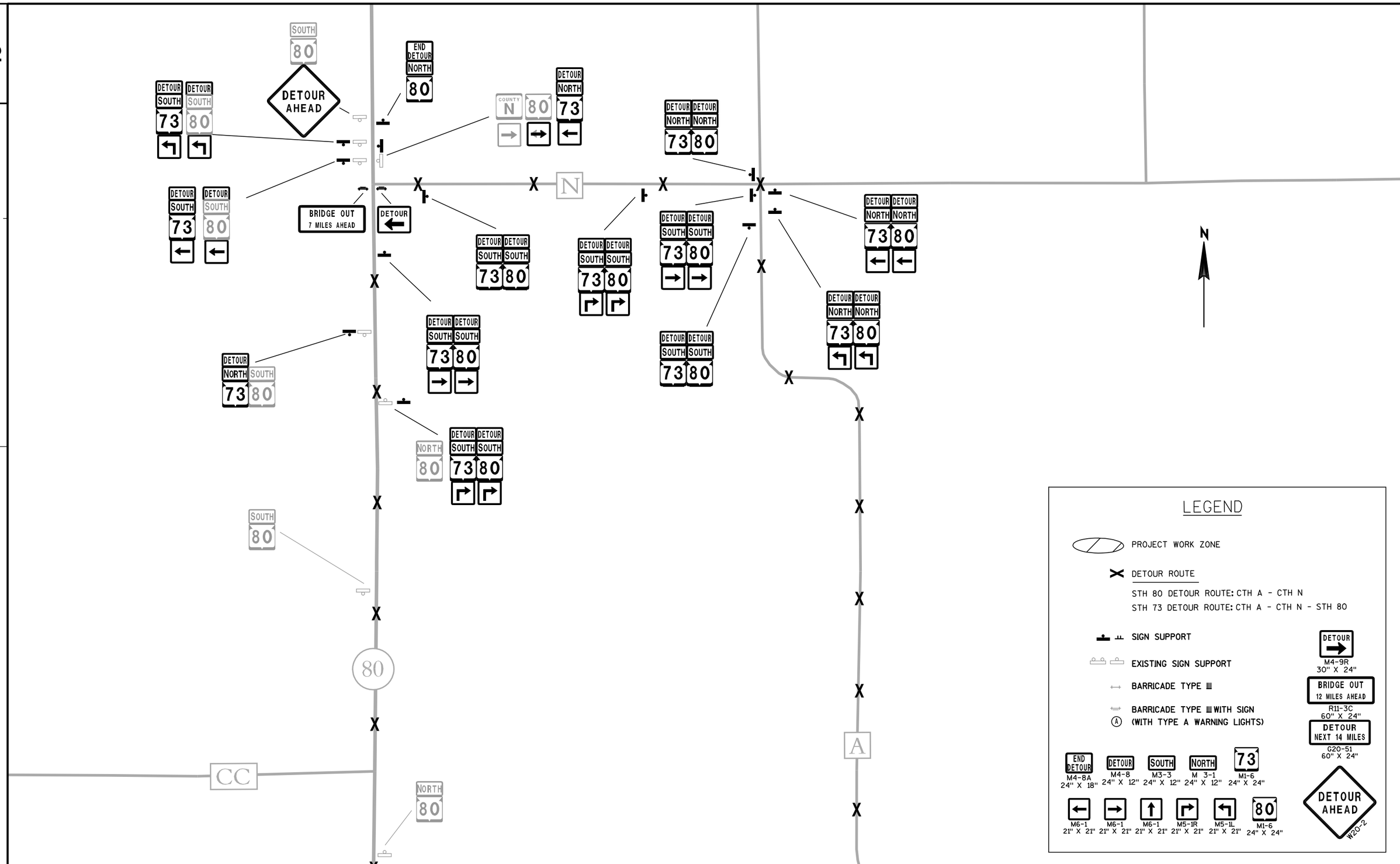
1620-02-71
B-71-179

PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	DETOUR PLAN	SHEET 15	E

FILE NAME : P:\projects\D4_16200201ED\027003_dt.dgn PLOT DATE : 10-OCT-2012 14:34 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 8000:1

WISDOT/CADDS SHEET 42

PROJECT NO: 1620-02-71	HWY: 73/80	COUNTY: WOOD	DETOUR SIGNING PLAN	SHEET 16	E



PROJECT NO: 1620-02-71	HWY: 73/80	COUNTY: WOOD	DETOUR SIGNING PLAN	SHEET 17	E

FILE NAME : P:\projects\D4_16200201ED\027002_dt.dgn PLOT DATE : 30-OCT-2012 11:19 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 2400:1

DATE 16JAN13 — 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	1620-02-71 QUANTITY
0010	201.0105	CLEARING	STA	8.000	8.000
0020	201.0205	GRUBBING	STA	8.000	8.000
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	3.000	3.000
0050	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 02. STA 562+31	LS	1.000	1.000
0080	204.0100	REMOVING PAVEMENT	SY	2,301.000	2,301.000
0100	205.0100	EXCAVATION COMMON	CY	4,779.000	4,779.000
0120	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 02. B-71-179	LS	1.000	1.000
0150	206.5000	COFFERDAMS (STRUCTURE) 01. B-71-179	LS	1.000	1.000
0160	208.0100	BORROW	CY	76.000	76.000
0170	210.0100	BACKFILL STRUCTURE	CY	685.000	685.000
0190	213.0100	FINISHING ROADWAY (PROJECT) 02. 1620-02-71	EACH	1.000	1.000
0220	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	539.000	539.000
0230	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	3,431.000	3,431.000
0240	305.0500	SHAPING SHOULDERS	STA	211.000	211.000
0250	312.0110	SELECT CRUSHED MATERIAL	TON	4,709.000	4,709.000
0260	415.0070	CONCRETE PAVEMENT 7-INCH	SY	52.000	52.000
0270	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	94.800	94.800
0290	416.0610	DRILLED TIE BARS	EACH	42.000	42.000
0300	416.1010	CONCRETE SURFACE DRAINS	CY	4.000	4.000
0320	455.0105	ASPHALTIC MATERIAL PG58-28	TON	89.100	89.100
0330	455.0605	TACK COAT	GAL	210.400	210.400
0340	460.1103	HMA PAVEMENT TYPE E-3	TON	1,621.000	1,621.000
0350	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	1,040.000	1,040.000
0360	465.0315	ASPHALTIC FLUMES	SY	38.000	38.000
0370	502.0100	CONCRETE MASONRY BRIDGES	CY	669.000	669.000
0380	502.1100	CONCRETE MASONRY SEAL	CY	84.000	84.000
0390	502.3200	PROTECTIVE SURFACE TREATMENT	SY	1,290.000	1,290.000
0410	503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	1,325.000	1,325.000
0420	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	25,930.000	25,930.000
0430	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	100,685.000	100,685.000
0440	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	24.000	24.000
0450	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-71-179	EACH	20.000	20.000
0480	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	24.000	24.000
0490	521.0118	CULVERT PIPE CORRUGATED STEEL 18-INCH	LF	54.000	54.000
0500	521.0121	CULVERT PIPE CORRUGATED STEEL 21-INCH	LF	102.000	102.000
0510	521.1012	APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH	EACH	2.000	2.000
0520	521.1021	APRON ENDWALLS FOR CULVERT PIPE STEEL 21-INCH	EACH	2.000	2.000
0530	521.1518	APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS STEEL 18-INCH 6 TO 1	EACH	2.000	2.000
0540	521.1521	APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS STEEL 21-INCH 6 TO 1	EACH	2.000	2.000
0580	522.0154	CULVERT PIPE REINFORCED CONCRETE CLASS III 54-INCH	LF	14.000	14.000
0600	524.0654	APRON ENDWALLS FOR CULVERT PIPE SALVAGED 54-INCH	EACH	1.000	1.000
0610	550.0500	PILE POINTS	EACH	9.000	9.000
0630	550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	360.000	360.000
0640	606.0200	RIPRAP MEDIUM	CY	12.000	12.000

3

DATE 16JAN13 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	1620-02-71 QUANTITY
0650	606.0300	RIPRAP HEAVY	CY	480.000	480.000
0660	611.0654	INLET COVERS TYPE V	EACH	2.000	2.000
0670	611.3220	INLETS 2X2-FT	EACH	2.000	2.000
0680	612.0212	PIPE UNDERDRAIN UNPERFORATED 12-INCH	LF	113.000	113.000
0690	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	146.000	146.000
0700	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4.000	4.000
0710	614.0200	STEEL THRIE BEAM STRUCTURE APPROACH	LF	20.600	20.600
0720	614.0305	STEEL PLATE BEAM GUARD CLASS A	LF	75.000	75.000
0730	614.0345	STEEL PLATE BEAM GUARD SHORT RADIUS	LF	43.800	43.800
0740	614.0390	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	EACH	1.000	1.000
0750	614.0920	SALVAGED RAIL	LF	325.000	325.000
0760	614.0925	SALVAGED GUARDRAIL END TREATMENTS	EACH	4.000	4.000
0770	614.2300	MGS GUARDRAIL 3	LF	62.500	62.500
0780	614.2500	MGS THRIE BEAM TRANSITION	LF	118.200	118.200
0790	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	5.000	5.000
0810	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 02. 1620-02-71	EACH	1.000	1.000
0840	619.1000	MOBILIZATION	EACH	0.350	0.350
0850	621.0100	LANDMARK REFERENCE MONUMENTS	EACH	4.000	4.000
0860	624.0100	WATER	MGAL	40.000	40.000
0870	625.0500	SALVAGED TOPSOIL	SY	4,458.000	4,458.000
0880	627.0200	MULCHING	SY	4,458.000	4,458.000
0890	628.1504	SILT FENCE	LF	1,047.000	1,047.000
0900	628.1520	SILT FENCE MAINTENANCE	LF	1,047.000	1,047.000
0910	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	4.000	4.000
0920	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	3.000	3.000
0940	628.2027	EROSION MAT CLASS II TYPE C	SY	732.000	732.000
0950	628.6005	TURBIDITY BARRIERS	SY	463.000	463.000
0960	628.7555	CULVERT PIPE CHECKS	EACH	22.000	22.000
0970	628.7570	ROCK BAGS	EACH	174.000	174.000
0980	629.0210	FERTILIZER TYPE B	CWT	2.800	2.800
0990	630.0110	SEEDING MIXTURE NO. 10	LB	60.100	60.100
1010	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	3.000	3.000
1030	637.0202	SIGNS REFLECTIVE TYPE II	SF	19.180	19.180
1040	638.2602	REMOVING SIGNS TYPE II	EACH	9.000	9.000
1050	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	9.000	9.000
1060	642.5201	FIELD OFFICE TYPE C	EACH	0.500	0.500
1080	643.0100	TRAFFIC CONTROL (PROJECT) 02. 1620-02-71	EACH	1.000	1.000
1110	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	2,254.000	2,254.000
1120	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	3,600.000	3,600.000
1130	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,007.000	1,007.000
1140	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	18.000	18.000
1150	643.1000	TRAFFIC CONTROL SIGNS FIXED MESSAGE	SF	72.000	72.000
1160	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. 1620-02-71	EACH	1.000	1.000
1180	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	13,770.000	13,770.000
1190	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	844.000	844.000
1200	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	2,590.000	2,590.000
1220	648.0100	LOCATING NO-PASSING ZONES	MI	0.230	0.230
1230	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	978.000	978.000
1240	650.5000	CONSTRUCTION STAKING BASE	LF	1,956.000	1,956.000
1250	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	3.000	3.000

3

DATE 16JAN13 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	1620-02-71 QUANTITY
1270	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 02. B-71-179	LS	1.000	1.000
1310	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 02. 1620-02-71	LS	1.000	1.000
1340	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	978.000	978.000
1350	690.0150	SAWING ASPHALT	LF	84.000	84.000
1360	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	500.000	500.000
1370	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	4,014.000	4,014.000
1380	SPV.0060	SPECIAL 01. REESTABLISH SECTION CORNER MONUMENTS	EACH	1.000	1.000
1390	SPV.0070	SPECIAL 01. SPRAYED ASPHALTIC SHOULDER TREATMENT	GAL	522.000	522.000

3

CLEARING & GRUBBING

STATION - STATION	201.0105 CLEARING STATIONS	201.0205 GRUBBING STATIONS
556+00 - 561+00	5	5
563+00 - 566+00	3	3
TOTALS	8	8

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH	REMARKS
556+54	27' RT	1	PE
564+85	32' LT	1	PE
565+28.5	30' RT	1	RIVER LOOP LN
	TOTAL	3	

REMOVING PAVEMENT

STATION - STATION	WIDTH FT	204.0100 SY	REMARKS
556+00 - 561+48.5	20	1219	UNDERLYING EXIST CONC PAVT
563+13 - 568+00	20	1082	UNDERLYING EXIST CONC PAVT
	TOTAL	2301	

3

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	REMARKS
556+00 - 561+20	RT & LT	---	1694	MAINLINE
563+42 - 568+00	RT & LT	---	1518	MAINLINE
556+00 - 561+09	RT	131	---	SHOULDER
556+00 - 561+01	LT	129	---	SHOULDER
563+61 - 568+00	RT	72	--	SHOULDER
563+53 - 568+00	LT	118	---	SHOULDER
DRIVEWAYS	LT	53	---	PE'S
565+28.5	RT	36	219	RIVER LOOP LANE
	TOTALS	539	3431	

SELECT CRUSHED MATERIAL

STATION - STATION	LOCATION	312.0110 TON	REMARKS
556+00 - 561+20	RT & LT	2318	MAINLINE
563+42 - 568+00	RT & LT	2010	MAINLINE
565+28.5	RT	381	RIVER LOOP LN
	TOTAL	4709	

SHAPING SHOULDERS

LOCATION	305.0500 STATION	REMARKS
CTH 'N'	211	PREP FOR DETOUR
TOTAL	211	

EARTHWORK SUMMARY

Station - Station	Location	ITEM # 205.0100 Common Excavation (1)	Salvaged/Unusable Pavement Material (2)	Available Material (3)	Unexpanded Fill	Expanded Fill Factor (4) 1.25	Mass Ordinate +/- (5)	ITEM # 208.0100 Borrow
556+00 - 561+00	Rt & Lt	2925	758 (543 Asph Pav't and 215 Conc Pav't)	2167	1118	1398	770	0
563+61 - 568+00 and River Loop Ln	Rt & Lt	1854	676 (489 Asph Pav't and 187 Conc Pav't)	1178	1003	1254	-76	-76
Project Total		4779	1434	3345	2121	2651	694	-76

1) Common Excavation is the sum of the Cut
2) Salvaged/Unusable Pavement Material is included in the Cut.
3) Available Material = Cut - Salvaged/Unusable Pavement Material
4) Expanded Fill Factor = 1.25
5) The Mass Ordinate is the + or - quantity calculated. A plus quantity indicates an excess of material and a minus indicates a shortage of material.

3

CONCRETE PAVEMENT 7-INCH

STATION - STATION	LOCATION	415.0070 SY
561+02 - 561+22	RT	15.0
561+02 - 561+17	LT	11.0
563+45 - 563+60	RT	11.0
563+40 - 563+60	LT	15.0
	TOTAL	52.0

CONCRETE PAVEMENT APPROCH SLAB

STATION - STATION	415.0410 SY	REMARKS
561+02 - 561+20	47.4	WEST APPROACH
563+42 - 563+60	47.4	EAST APPROACH
TOTAL	94.8	

ASPHALTIC FLUMES

STATION	LOCATION	465.0315 SY
561+04	RT	11
560+96	LT	27
	TOTAL	38

NOTE: BETWEEN MGS POSTS 13 & 14

CULVERT PIPES AND APRON ENDWALLS

STATION	LOCATION	521.0118 CORRUGATED STEEL 18-INCH LF	521.0121 CORRUGATED STEEL 21-INCH LF	521.1021 APRON ENDWALLS STEEL 21-INCH EACH	521.1518 APRON ENDWALLS SLOPED STEEL 18-INCH EACH	521.1521 SIDE DRAINS STEEL 21-INCH EACH	522.0154 * REINFORCED CONCRETE CLASS III 54-INCH LF	524.0654 * APRON ENDWALLS SALVAGED 54-INCH EACH	REMARKS
556+54	30.5 RT	54	---	---	2	---	---	---	PE PIPE
557+07	43' LT	---	---	---	---	---	14	1	CROSSDRAIN
564+85	43' LT	---	38	2	---	---	---	---	PE PIPE
565+35	43' RT	---	64	---	---	2	---	---	RIVER LOOP LN
	TOTALS	54	102	2	2	2	14	1	

MINIMUM STEEL THICKNESS FOR STEEL CULVERT PIPES IS 0.064 INCH

* 4 JOINT TIES NEEDED - INCIDENTAL TO ITEM 522.0154

CONCRETE SURFACE DRAINS

STATION - STATION	LOCATION	416.0610 DRILLED TIE BARS EACH	416.1010 CONCRETE SURFACE DRAINS CY	611.3320 INLETS 2X2-FT EACH	611.0654 INLET COVERS TYPE V EACH	612.0212 PIPE UNDERDRAIN UNPERFORATED 12-INCH LF	521.1012 AEW FOR CP STEEL 12-INCH EACH
563+46 - 563+73	RT	21	2.0	---	---	---	---
563+39 - 563+65	LT	21	2.0	---	---	---	---
563+68	RT	---	---	1	1	72	1
563+60	LT	---	---	1	1	41	1
	TOTALS	42	4.0	2	2	113	2

HMA PAVEMENT TYPE E-3

STATION - STATION	LOCATION	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL	460.1103 HMA PAVEMENT TYPE E-3 TON	REMARKS
556+00 - 561+02	RT & LT	42.1	99.4	766	WEST APPROACH
563+60 - 568+00	RT & LT	40.0	94.4	727	EAST APPROACH
565+28.5	RT	7.0	16.6	128	RIVER LOOP LN
	TOTALS	89.1	210.4	1621	

RIPRAP AND GEOTEXTILE FABRIC

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY	REMARKS
563+68	RT	1.5	3	SURFACE DRAIN APRON ENDWALL
563+60	LT	1.5	3	SURFACE DRAIN APRON ENDWALL
557+80 - 558+00	RT	9	18	DITCH
	TOTALS	12	24	

3

SALVAGED RAIL

STATION-STATION	LOCATION	614.0920 LF
560+86 - 561+49	RT	63
560+74 - 561+49	LT	75
563+13 - 564+00	RT	87
563+13 - 564+12	LT	100
	TOTAL	325

SALVAGED GUARDRAIL END TREATMENTS

STATION	LOCATION	614.0925 EACH
560+36	RT	1
560+24	LT	1
564+50	RT	1
564+62	LT	1
	TOTAL	4

SECTION CORNER MONUMENTS

STATION	LOCATION	621.0100 LANDMARK REFERENCE MONUMENTS EACH	SPV.0060.01 REESTABLISH SECTION CORNER MONUMENTS EACH
560+25.02	2.11' LT	4	1
	TOTALS	4	1

SPRAYED ASPHALTIC SHOULDER TREATMENT

STATION - STATION	LOCATION	SPV.0070.01 GALS
559+69 - 561+09	RT	119
560+11 - 561+01	LT	85
563+61 - 564+51	RT	85
563+53 - 564+77	LT	117
565+10 - 566+29	LT	116
	TOTALS	522

STEEL PLATE BEAM GUARD

STATION - STATION	LOCATION	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS LF	614.0390 STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL EACH
563+50 - 563+71	LT	20.6	---	---	---
563+71 - 564+46	LT	---	75.0	---	---
564+46 - 564+76	LT	---	---	43.8	---
564+76	LT	---	---	---	1
	TOTALS	20.6	75.0	43.8	1

MIDWEST GUARDRAIL SYSTEM

STATION - STATION	LOCATION	614.2300 MSG GUARDRAIL 3 LF	614.2500 MSG THRIE BEAM TRANSITION LF	614.2610 MSG GUARDRAIL TERMINAL EAT EACH
559+69 - 560+22	RT	---	---	1
560+22 - 560+72	RT	50.0	---	---
560+72 - 561+11	RT	---	39.4	---
560+11 - 560+64	LT	---	---	1
560+64 - 561+03	LT	---	39.4	---
563+58 - 563+98	RT	---	39.4	---
563+98 - 564+51	RT	---	---	1
565+10 - 565+63	LT	---	---	1
565+63 - 565+75	LT	12.5	---	---
565+75 - 566+29	LT	---	---	1
	TOTALS	62.5	118.2	5.0

WATER

STATION - STATION	LOCATION	624.0100 MGAL	REMARKS
556+00 - 568+00	RT & LT	40	BASE COMPACTION
	TOTAL	40	

SILT FENCE

STATION - STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
558+35 - 561+82	RT	400	400
560+45 - 561+44	LT	126	126
562+89 - 565+08	RT	260	260
562+83 - 564+75	LT	261	261
	TOTAL	1047	1047

TURBIDITY BARRIERS

LOCATION	628.6005 SY
WEST ABUTMENT	266
EAST ABUTMENT	197
TOTAL	463

MOBILIZATIONS EROSION CONTROL

STATION - STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
556+00 - 568+00	4	3
TOTALS	4	3

ROCK BAGS

STATION	LOCATION	628.7570 EACH	REMARKS
557+50	38' RT	13	TEMPORARY DITCH CHECK
559+50	46' LT	17	TEMPORARY DITCH CHECK
566+50	38' RT	13	TEMPORARY DITCH CHECK
566+50	41' LT	13	TEMPORARY DITCH CHECK
558+16	50' RT	15	TEMPORARY DITCH CHECK
561+56	46' RT	17	SILT FENCE RELIEF
561+50	63' RT	17	SILT FENCE RELIEF
563+16	55' RT	17	SILT FENCE RELIEF
563+00	50' LT	17	SILT FENCE RELIEF
UNDISTRIBUTED	---	35	PROJECT
	TOTAL	174	

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
556+27	28' RT	3
557+14	40' LT	9
565+04	43' LT	5
565+67	42.5' RT	5
	TOTAL	22

EROSION MAT

STATION - STATION	LOCATION	628.2027 CLASS II TYPE C SY	REMARKS
556+13 - 556+23	RT	4	DITCH
556+84 - 557+85	RT	45	DITCH
556+38 - 557+52	LT	101	8' DITCH BOTTOM
558+00 - 560+31	LT	103	DITCH
564+55 - 565+00	RT	20	DITCH
565+71 - 567+69	RT	176	4' DITCH BOTTOM
564+55 - 564+62	LT	3	DITCH
565+08 - 567+75	LT	237	4' DITCH BOTTOM
CULVERT PIPE ENDS	RT & LT	43	AROUND AEW'S
	TOTAL	732	

SALVAGED TOPSOIL, MULCHING, FERTILIZER, AND SEEDING

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0110 SEEDING MIXTURE NO. 10 LB
556+00 - 556+44	RT	36	36	0.02	0.5
556+65 - 561+07	RT	1056	1056	0.67	14.3
556+00 - 557+71	LT	822	822	0.52	11.1
557+91 - 561+47	LT	1711	1711	1.07	23.0
563+18 - 565+23	RT	633	633	0.40	8.6
565+49 - 568+00	RT	603	603	0.38	8.1
563+03 - 564+78	LT	689	689	0.43	9.3
564+91 - 568+00	LT	952	952	0.60	12.8
	TOTALS	4458	4458	2.80	60.1

3

TRAFFIC CONTROL

PROJECT	643.0100 EACH
1620-02-71	1
TOTAL	1

TRAFFIC CONTROL SIGNS FIXED MESSAGE

MESSAGE	643.1000 SF	REMARKS
BRIDGE WORK BEGINS XX XX XXXX ROAD CLOSED USE DETOUR	72.0	2 SIGNS
	72.0	

TRAFFIC CONTROL DETOUR

PROJECT	643.2000 EACH
1620-02-71	1
TOTAL	1

TRAFFIC CONTROL WARNING LIGHTS TYPE A

LOCATION	NUMBER REQUIRED	DAYS	643.0705 DAYS	REMARKS
STH 73/80 AT CTH A	4	81	324	
STH 73/80	20	81	1620	B-71-179
STH 73/80 AT CTH X	6	81	486	FOR B-71-179 CLOSURE
STH 73/80 AT CTH X	6	29	174	FOR B-71-184 CLOSURE
STH 73/80	12	29	348	B-71-184
STH 80/CTH N	4	81	324	
CTH X AT CTH B	2	81	162	
CTH X AT STH 54	2	81	162	
		TOTAL	3600	

TRAFFIC CONTROL BARRICADES TYPE III

LOCATION	NUMBER REQUIRED	DAYS	643.0420 DAYS	REMARKS
STH 73/80 AT CTH A	2	81	162	
STH 73/80	14	81	1134	B-71-179
STH 73/80 AT CTH X	3	81	243	FOR B-71-179 CLOSURE
STH 73/80 AT CTH X	3	29	87	FOR B-71-184 CLOSURE
STH 73/80	10	29	290	B-71-184
STH 80 AT CTH N	2	81	162	
STH 73/80	2	7	14	FIXED MESSAGE SIGN AT BRIDGE
CTH X AT CTH B	1	81	81	
CTH X AT STH 54	1	81	81	
		TOTAL	2254	

TRAFFIC CONTROL SIGNS

MESSAGE	SIGN NUMBER	EACH	DAYS	643.0900 DAYS
ROAD CLOSED AHEAD	W20-3	1	81	81
BRIDGE OUT	R11-2B	5	81	405
BRIDGE OUT	R11-2B	3	29	87
BRIDGE OUT 1 MILE AHEAD	R11-3C	1	81	81
ROAD CLOSED TO THRU TRAFFIC	R11-4	1	81	81
ROAD CLOSED TO THRU TRAFFIC	R11-4	1	29	29
ROAD CLOSED 5 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3C	1	81	81
ROAD CLOSED 1 MILE AHEAD LOCAL TRAFFIC ONLY	R11-3C	1	81	81
BRIDGE OUT 7 MILES AHEAD	R11-3C	1	81	81
			TOTAL	1007

TRAFFIC CONTROL DETOUR SIGNS

MESSAGE	SIGN NUMBER	EACH	643.3000 DAYS
DETOUR	M4-8	48	3888
AHEAD ARROW	M6-1	4	324
NORTH	M3-1	18	1458
80	M1-6	17	1377
73	M1-6	21	1701
DETOUR ARROW	M4-9R	2	162
DETOUR AHEAD	W20-2	4	324
ARROW LEFT	M6-1	11	891
ADVANCED ARROW LEFT	M5-1L	4	324
ARROW RIGHT	M6-1	7	567
ADVANCED ARROW RIGHT	M5-1R	6	486
SOUTH	M3-3	23	1863
END DETOUR	M4-8A	4	324
DETOUR NEXT 14 MILES	G20-51	1	81
	TOTAL		13770

TRAFFIC CONTROL COVERING SIGNS TYPE II

SIGN	SIGNS	643.0920 EACH
MARSHFIELD/NEILLSVILLE	2	2
NORTH 80 ARROW	2	2
NORTH 73 ARROW	1	2
SOUTH 80 ARROW	1	1
SOUTH 73 ARROW	2	2
NORTH 73/80	2	2
73/80 ARROWS	2	2
MARSHFIELD/NEILLSVILLE/PITTSVILLE	1	1
DESTINATION ARROWS	4	4
TOTAL		18

3

SIGN LISTING

SIGN NO	LOCATION	SIGN CODE	MESSAGE	634.0616 POSTS WOOD 4X6-INCH 16-FT EACH	637.0202 SIGNS REFLECTIVE TYPE II SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
1-1	RT	---	NARROW BRIDGE	---	---	1	1
1-2	RT	13-1	YELLOW RIVER	1	7.00	1	1
1-3	LT	---	NARROW BRIDGE MARKER	---	---	1	1
1-4	RT	---	NARROW BRIDGE MARKER	---	---	1	1
1-5	LT	---	NARROW BRIDGE MARKER	---	---	1	1
1-6	LT	---	NARROW BRIDGE MARKER	---	---	1	1
1-7	RT	13-1	YELLOW RIVER	1	7.00	1	1
1-8	RT	R1-1	STOP	1	5.18	1	1
1-9	LT	---	NARROW BRIDGE	---	---	1	1
			TOTALS	3	19.18	9	9

LOCATING NO-PASSING ZONES

STATION - STATION	648.0100 MILES
556+00 - 568+00	0.23
TOTAL	0.23

FIELD OFFICE

LOCATION	642.5201 TYPE C EACH
PROJECT	0.5
TOTAL	0.5

3

PAVEMENT MARKING EPOXY

STATION - STATION	LOCATION	646.0106 4-INCH EDGE LINE MARKING (WHITE) LF	646.0106 4-INCH CENTER LINE MARKING (YELLOW) LF
556+00 - 564+75	RT	875	---
565+85 - 568+00	RT	215	---
556+00 - 568+00	LT	1200	---
556+00 - 568+00	CL	---	300
	TOTALS	2290	300
	TOTAL	2590	

CONSTRUCTION STAKING

STATION - STATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6000 PIPE CULVERTS EACH	650.6500.02 STRUCTURE LAYOUT LS	650.9910.02 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
556+00 - 561+19.7	520	1040	---	---	---	520
563+42.3 - 568+00	458	916	---	---	---	458
556+00 - 568+00	---	---	3	---	1	---
B-71-179	---	---	---	1	---	---
TOTALS	978	1956	3	1	1	978

NOTE: CONSTRUCTION STAKING BASE INCLUDES THE SELECT CRUSHED MATERIAL AND BASE AGGREGATE DENSE

SAWING ASPHALT

STATION	LOCATION	690.0150 LF	REMARKS
556+00	CL	32	BEGIN PROJECT
RIVERLOOP LANE	CL	20	MATCH LINE
568+00	CL	32	END PROJECT
	TOTAL	84	

TRANSPORTATION PROJECT PLAT NO: 1620-02-21 - 4.01

WISCONSIN RAPIDS - MARSHFIELD, (YELLOW RIVER BRIDGE B-71-0755)

PART OF LOT 4 OF CSM 463 LOCATED IN THE NORTHWEST OF THE NORTHEAST OF SECTION 28, AND PART OF THE SOUTHWEST OF THE SOUTHEAST OF SECTION 21, ALL IN TOWN 23 NORTH, RANGE 3 EAST, TOWN OF WOOD, WOOD COUNTY, WISCONSIN

RELOCATION ORDER STH 13/73 WOOD COUNTY

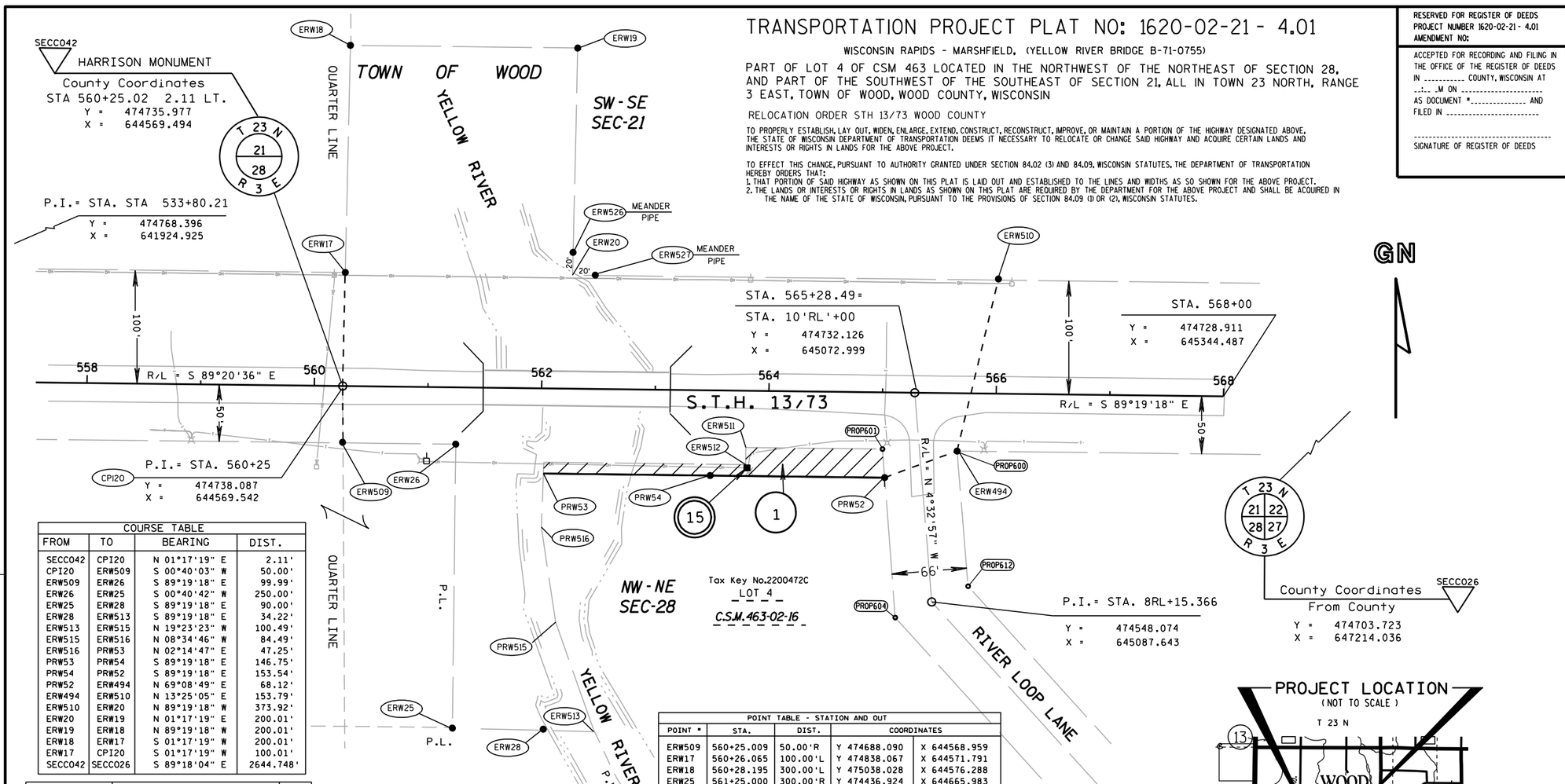
TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 1620-02-21 - 4.01
AMENDMENT NO:

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN ---------- COUNTY, WISCONSIN AT --:-- .M ON ---------- AS DOCUMENT #---------- AND FILED IN ----------

---
SIGNATURE OF REGISTER OF DEEDS



COURSE TABLE			
FROM	TO	BEARING	DIST.
SECC042	CPI20	N 01°17'19" E	2.11'
CPI20	ERW509	S 00°40'03" W	50.00'
ERW509	ERW26	S 89°19'18" E	99.99'
ERW26	ERW25	S 00°40'42" W	250.00'
ERW25	ERW28	S 89°19'18" E	90.00'
ERW28	ERW513	S 89°19'18" E	34.22'
ERW513	ERW515	N 19°23'23" W	100.49'
ERW515	ERW516	N 08°34'46" W	84.49'
ERW516	PRW53	N 02°14'47" E	47.25'
PRW53	PRW54	S 89°19'18" E	146.75'
PRW54	PRW52	S 89°19'18" E	153.54'
PRW52	ERW494	N 69°08'49" E	68.12'
ERW494	ERW510	N 13°25'05" E	153.79'
ERW510	ERW20	N 89°19'18" W	373.92'
ERW20	ERW19	N 01°17'19" E	200.01'
ERW19	ERW18	N 89°19'18" W	200.01'
ERW18	ERW17	S 01°17'19" W	200.01'
ERW17	CPI20	S 01°17'19" W	100.01'
SECC042	SECC026	S 89°18'04" E	2644.748'

ROAD NAME	BASIS OF EXISTING R/W	YEAR
STH 13/73	DIVISION JOB 4700	1939
RIVER LOOP LANE	CSM 463	1970

UTILITY INTERESTS REQUIRED		
UTILITY NUMBER	OWNER(S)	INTEREST REQUIRED
15	TDS	RELEASE OF RIGHTS

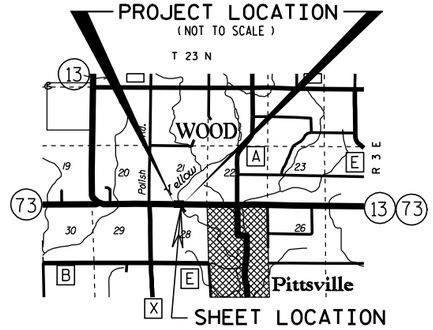
POINT NUMBER	EXISTING MONUMENTS DESCRIPTION	(Y)	(X)
PROP600	1" IRON PIPE	474680.790	645110.071
PROP601	1" IRON PIPE	474681.720	645043.905
PROP604	1" IRON PIPE	474534.231	645055.640
PROP612	1" IRON PIPE	474561.327	645118.986

POINT TABLE - STATION AND OUT				
POINT #	STA.	DIST.	COORDINATES	
ERW509	560+25.009	50.00'R	Y 474688.090	X 644568.959
ERW17	560+26.065	100.00'L	Y 474838.067	X 644571.791
ERW18	560+28.195	300.00'L	Y 475038.028	X 644576.288
ERW25	561+25.000	300.00'R	Y 474436.924	X 644665.983
ERW26	561+25.000	50.00'R	Y 474686.906	X 644668.943
ERW516	562+01.148	122.23'R	Y 474613.782	X 644744.230
PRW53	562+02.441	75.00'R	Y 474660.991	X 644746.082
ERW515	562+14.740	205.61'R	Y 474530.240	X 644756.834
ERW28	562+15.000	300.00'R	Y 474435.858	X 644755.977
ERW20	562+26.076	100.00'L	Y 474835.699	X 644771.788
ERW19	562+28.207	300.00'L	Y 475035.660	X 644776.286
ERW513	562+49.221	300.00'R	Y 474435.453	X 644790.195
PRW54	563+49.186	75.00'R	Y 474659.254	X 644892.817
ERW511	563+80.216	50.00'R	Y 474683.885	X 644924.141
ERW512	563+80.216	65.00'R	Y 474668.886	X 644923.963
PRW52	565+02.722	75.00'R	Y 474657.436	X 645046.342
ERW494	565+66.087	50.00'R	Y 474681.684	X 645109.998
ERW510	566+00.000	100.00'L	Y 474831.272	X 645145.685
ERW526	562+26.290	120.00'L	Y 474855.694	X 644772.238
ERW527	562+46.076	100.00'L	Y 474835.462	X 644791.786

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER	INTEREST REQUIRED	FEE R/W ACRES OR (S.F.) REQUIRED NEW	EXISTING	TOTAL	TLE AREA
1	MARGARET & DAVID RADEMAN	FEE	0.11	------	0.11	------

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LANDS TO THE DEPARTMENT OF TRANSPORTATION.



NOTES:

COORDINATES AND BEARINGS SHOWN ON THIS PLAT ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, WOOD COUNTY ZONE, NAD83 (2007) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID OR GROUND VALUES ON THIS PLAT.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT. (TYPICALLY ¾"X24" RE-BAR.)

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

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

CONVENTIONAL SIGNS AND ABBREVIATIONS

ACCESS POINT A.P.
ACCESS RIGHTS A.R.
ACRES AC.
DOCUMENT DOC.
MONUMENT MON.
OUTLOT O.L.
PERMANENT PERM.
PROPERTY LINE P.L.
QUIT CLAIM DEED Q.C.D.
REFERENCE LINE R/L
REMAINING REM.
RIGHT OF WAY R/W
SECTION SEC.
SEVERED SEV.
STATION STA.
TEMPORARY LIMITED EASEMENT TLE
SIGN NUMBER (OFF PREMISE) (##)

IRON PIPE (FOUND)
FOUND EXISTING MONUMENT
R/W MONUMENT (SET)
PROPOSED R/W POINT (PRW20)
PARALLEL TO LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
PROPOSED OR NEW R/W LINE
EASEMENT LINE
UTILITIES
CORPORATE LIMITS

PARCEL NUMBER (5)
PROPERTY LINE
LOT, TIE AND OTHER MINOR
DASHED LINES
NO ACCESS (By Previous Acquisition/control)
NO ACCESS (By Acquisition)
NO ACCESS (By Statutory Authority)
LIMITED EASEMENT (Temporary or Permanent)
FEE (HATCH VARIES)
EXISTING R/W (HATCH VARIES)

LONG CHORD LC
LONG CHORD BEARING LCB
RADIUS R
DEGREE OF CURVE D
CENTRAL ANGLE OR DELTA Δ
LENGTH OF CURVE L
TANGENT TAN

	NON COMPENSABLE	COMPENSABLE
SERVICE PEDESTAL		
POWER POLE		
TELEPHONE POLE		
SIGN		

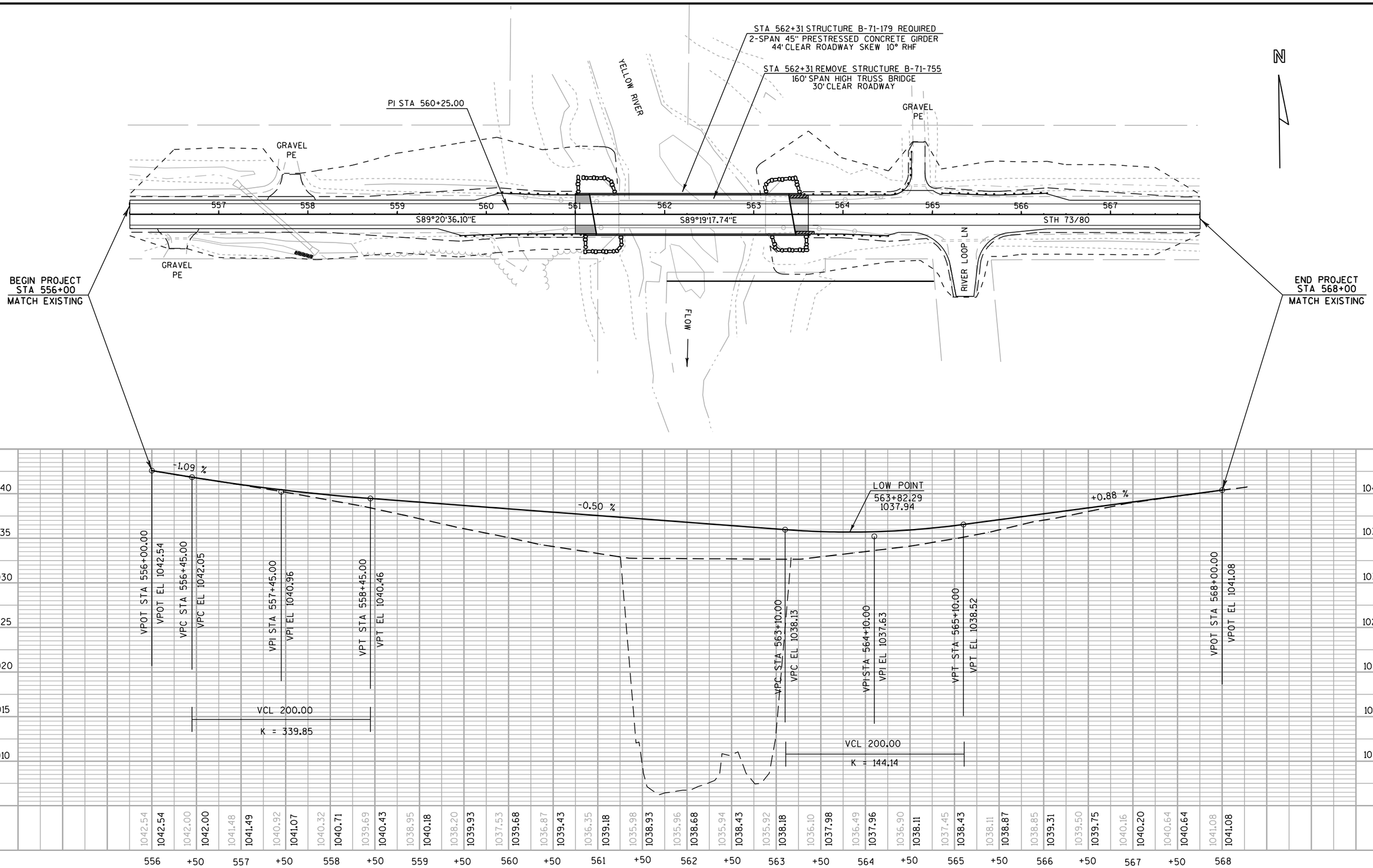
SCALE, FEET
0 50' 100'

I HEREBY CERTIFY THAT THIS PLAT MEETS ALL REQUIREMENTS OF SECTION 84.095, WISCONSIN STATUTES. THIS PLAT AND RELOCATION ORDER APPROVED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

DATE:---------- ----------
BRENT L. STELLA
REAL ESTATE SUPERVISOR

THIS PLAT WAS PREPARED BY OR UNDER THE DIRECTION OF:

DATE:---------- ----------
JOHN S. KEDROWSKI

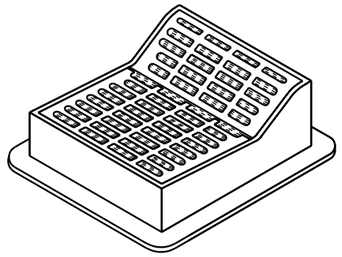


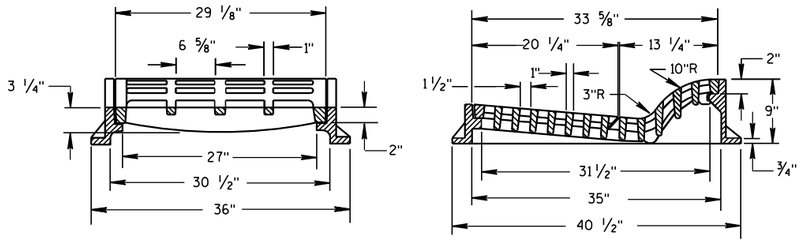
PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	PLAN AND PROFILE	SHEET E

Standard Detail Drawing List

08A05-17C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D03-06	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE
08F07-03	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SIDE DRAINS SLOPED SECTION
12A03-10	NAME PLATE (STRUCTURES)
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
14B15-07A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-10A	STEEL THRIE BEAM STRUCTURE APPROACH
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-02A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-15A	PAVEMENT MARKING (MAINLINE)
15C08-15B	PAVEMENT MARKING (INTERSECTIONS)
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

6



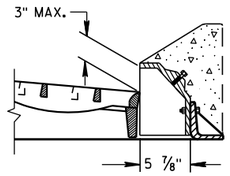


TYPE "F"

(APPROXIMATE WEIGHT 645 LBS.)

FRAME.....300 LBS.
GRATE..... 165 LBS.
GRATE..... 180 LBS.

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

(APPROXIMATE WEIGHT 79 LBS.)
CURB BOX.....79 LBS.

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

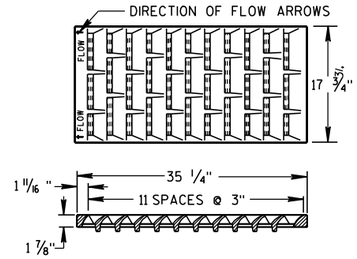
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

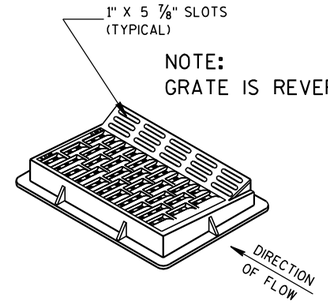
GENERAL NOTES

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

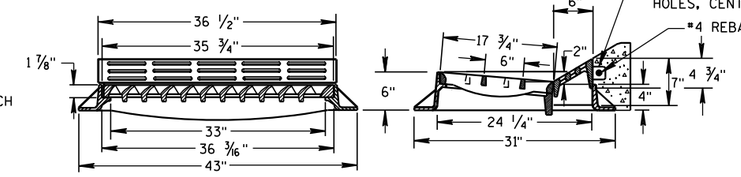
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





NOTE:
GRATE IS REVERSIBLE.

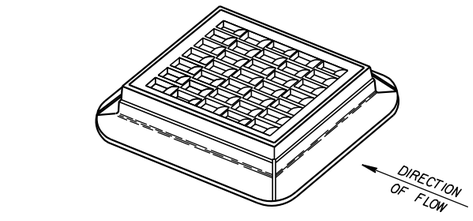


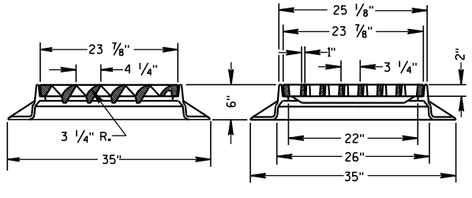
TYPE "HM"

(APPROXIMATE WEIGHT 375 LBS.)
FRAME.....175 LBS.
GRATE..... 138 LBS.
CURB BOX..... 62 LBS.

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE

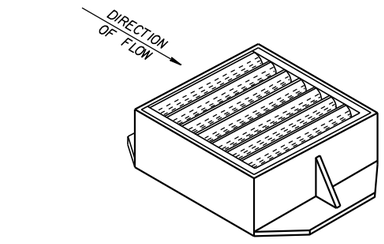


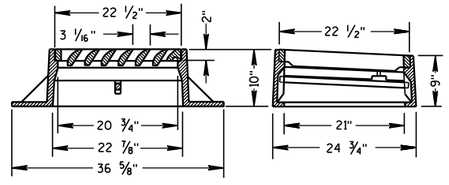


TYPE "S"

(APPROXIMATE WEIGHT 334 LBS.)

FRAME.....165 LBS.
GRATE..... 169 LBS.

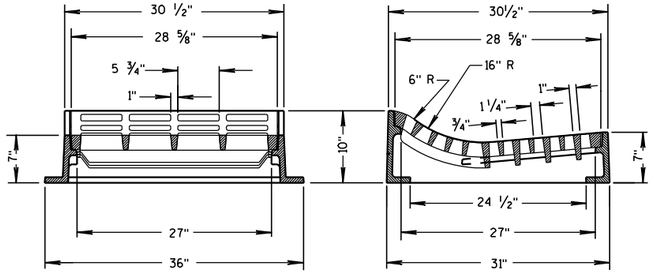




TYPE "V"

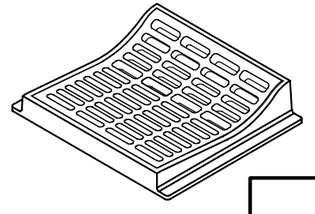
(APPROXIMATE WEIGHT 405 LBS.)

FRAME..... 270 LBS.
GRATE..... 130 LBS.
SAFETY BAR..... 5 LBS.



TYPE "T"

(APPROXIMATE WEIGHT 530 LBS.)
FRAME.....270 LBS.
GRATE.....260 LBS.
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



INLET COVERS
TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

1/7/08 — DATE

/S/ Jerry H. [illegible] — ROADWAY STANDARDS DEVELOPMENT ENGINEER

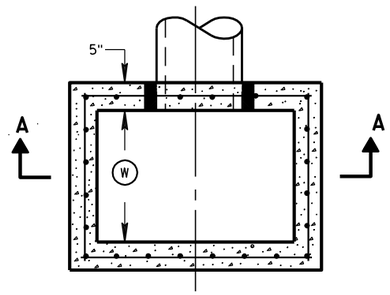
FHWA

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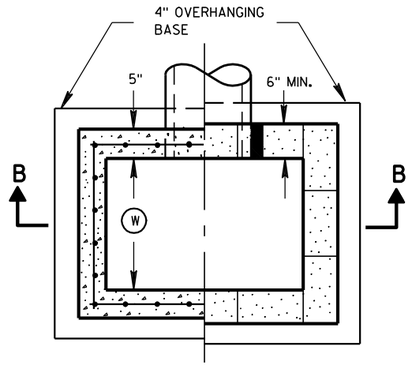
S.D.D. 8 A 5-17c

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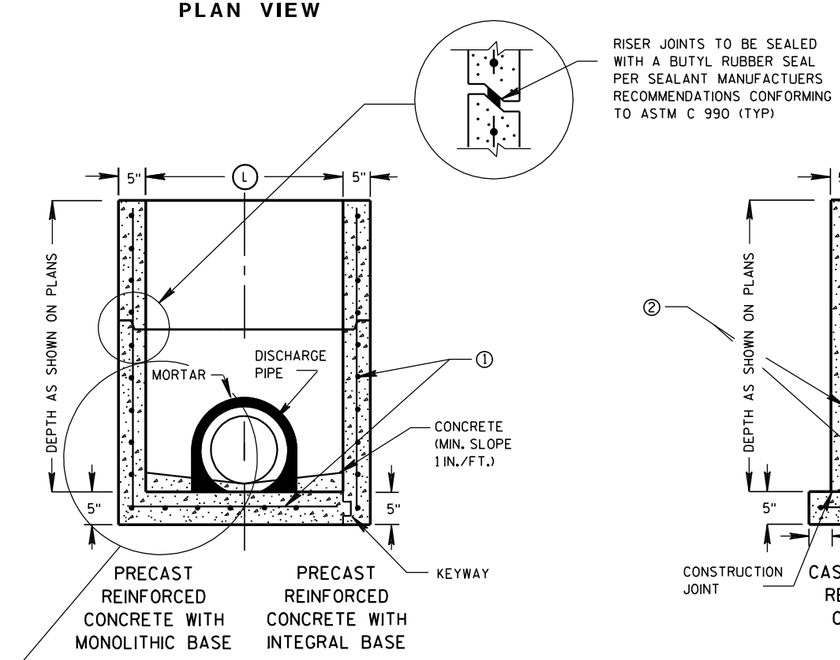
S.D.D. 8 A 5-17c



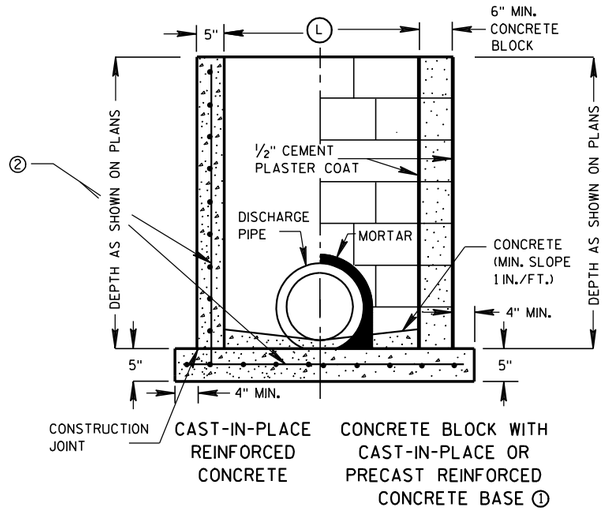
PLAN VIEW



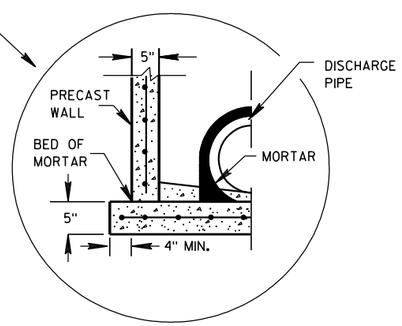
PLAN VIEW



SECTION A-A



SECTION B-B



SEPERATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

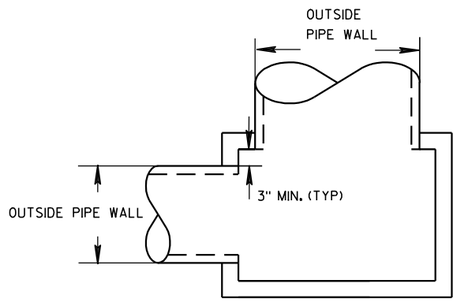
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

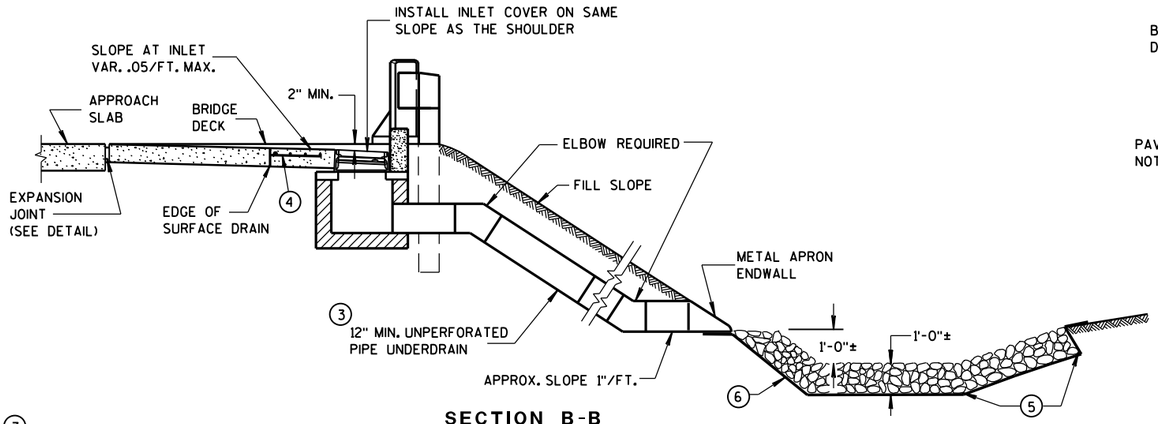
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

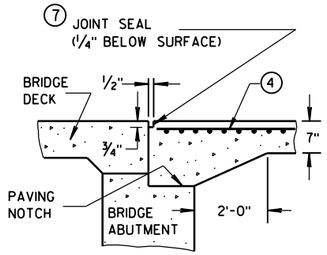
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS D ENGINEER
FHWA

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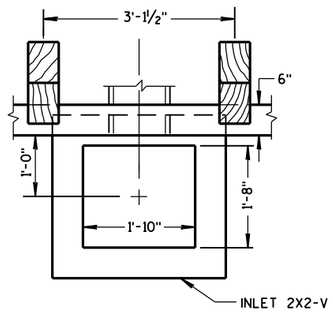
S.D.D. 8 C 7-1



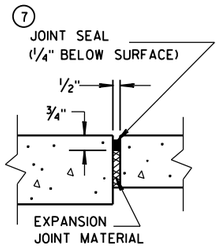
SECTION B-B



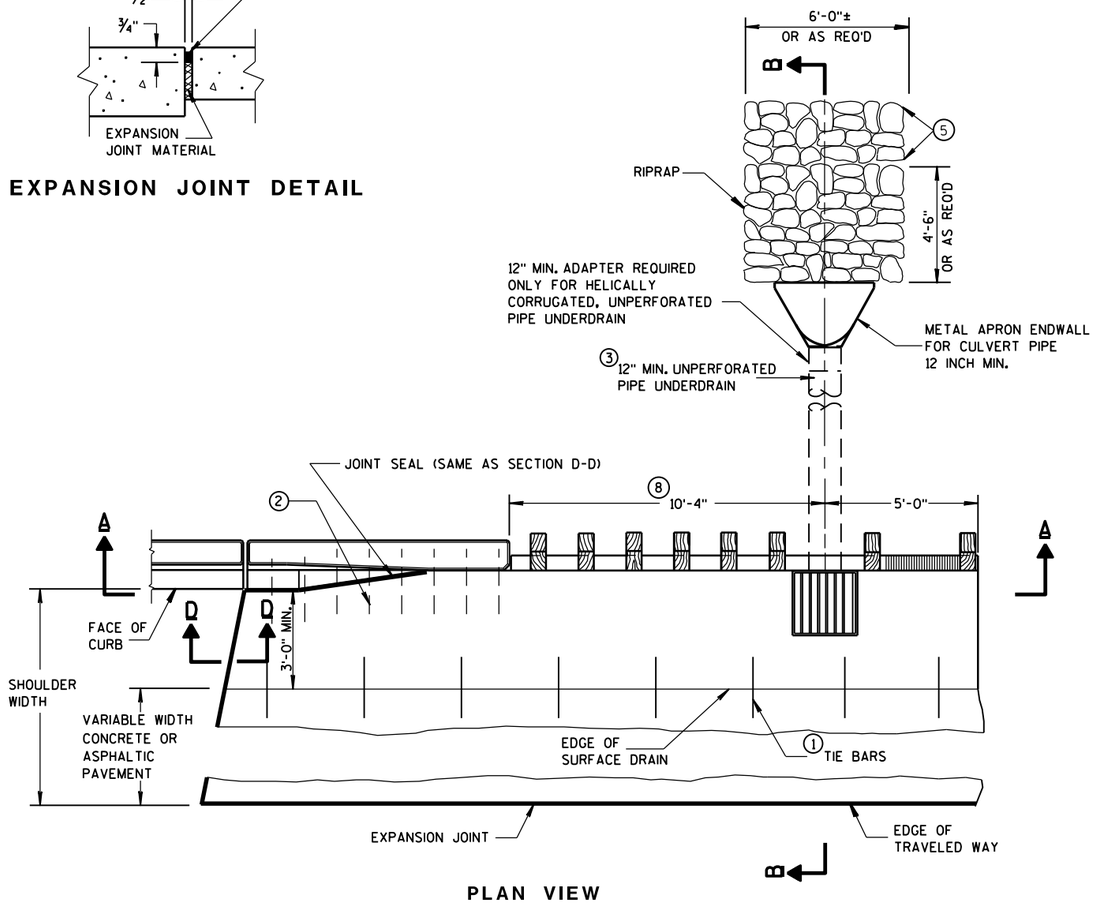
SECTION D-D



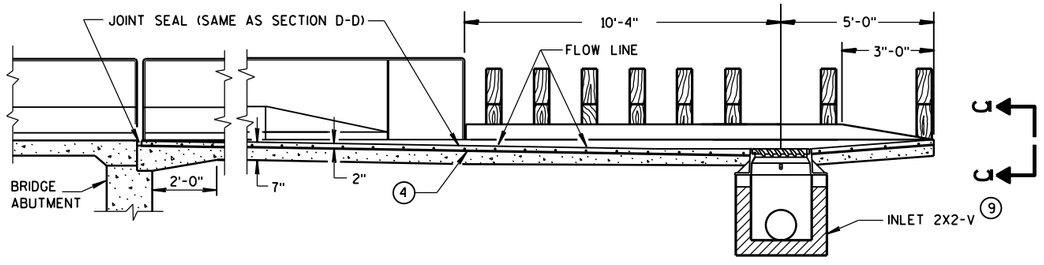
PLAN VIEW



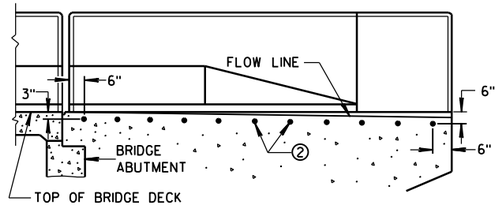
EXPANSION JOINT DETAIL



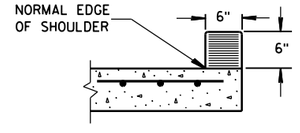
PLAN VIEW



SECTION A-A



LOCATION OF TIE BARS IN WINGWALL



SECTION C-C

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.

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

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.

(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

(6) GEOTEXTILE FABRIC, TYPE 'R'

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".

(9) SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.

CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/4/08 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

FHWA

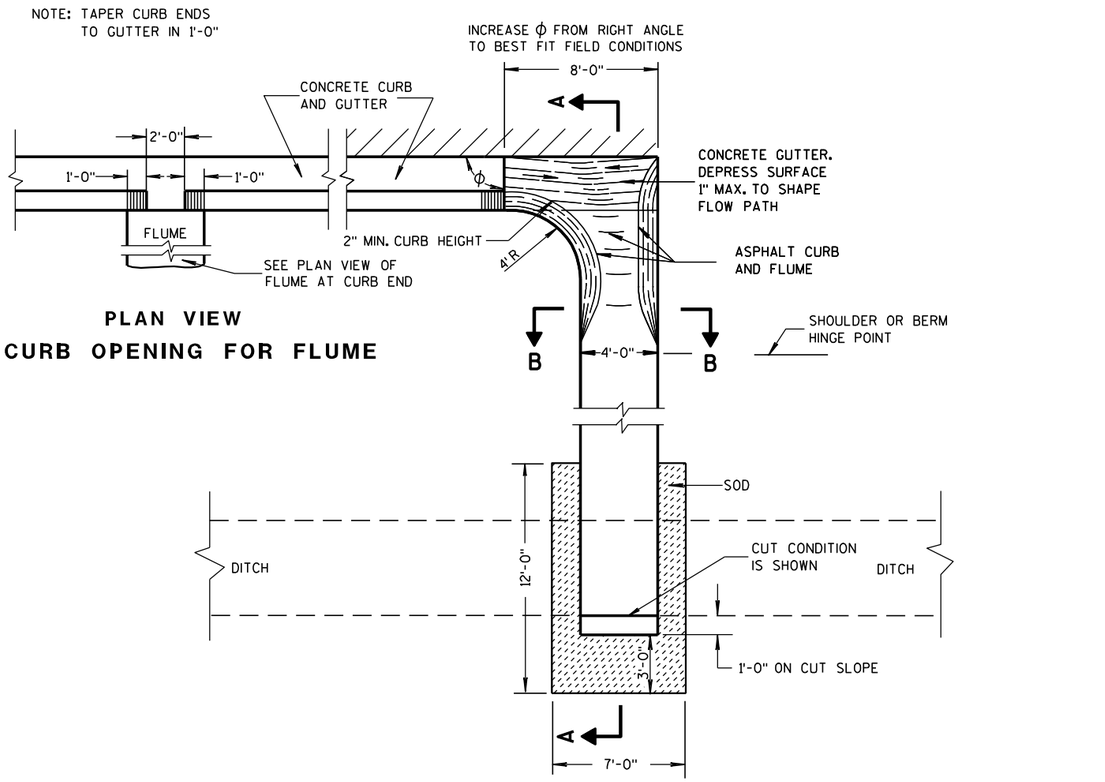
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S.D.D. 8 D 3-6

6

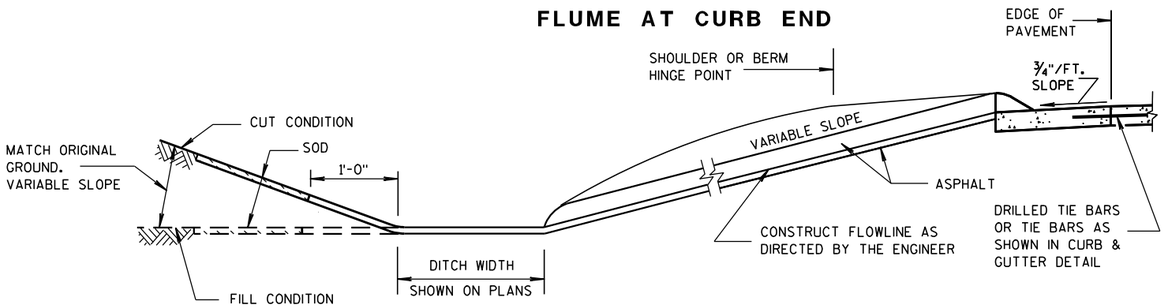
S.D.D. 8 D 3-6

ASPHALTIC FLUME

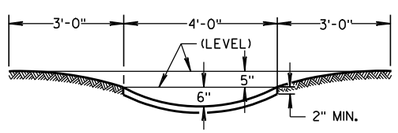


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

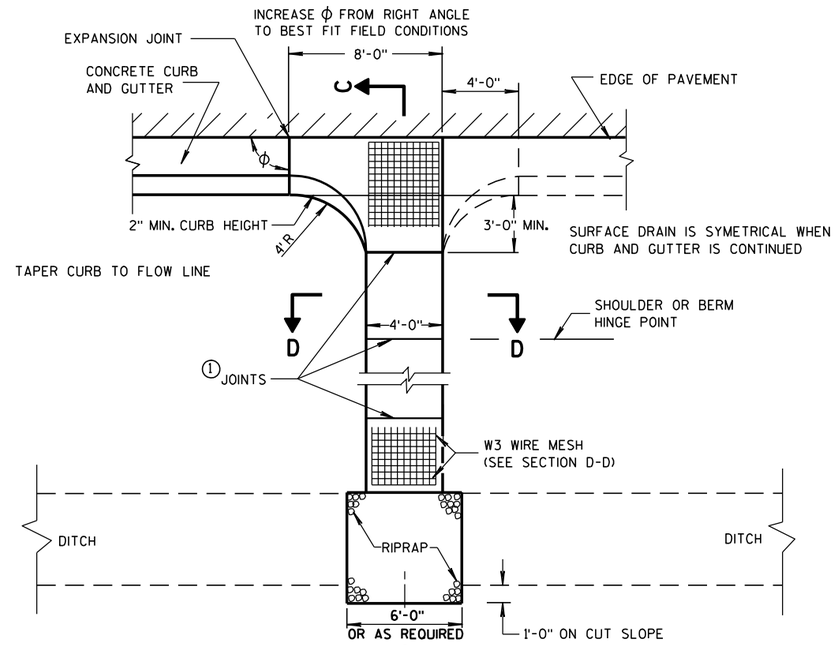
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

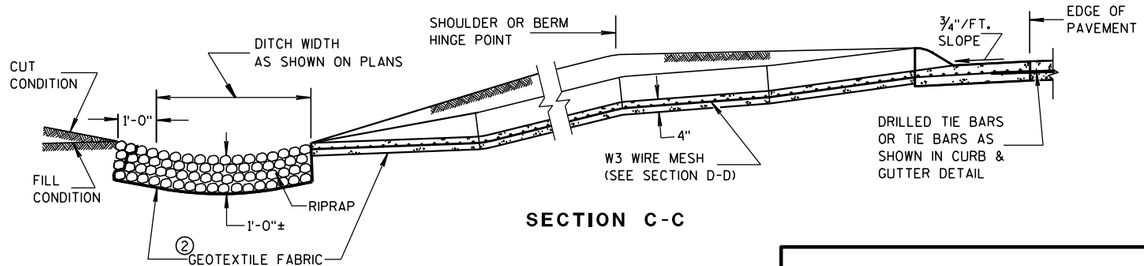
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

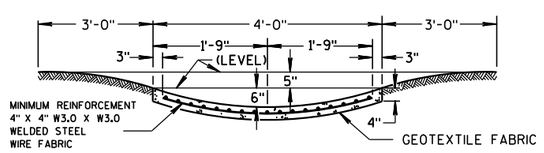
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

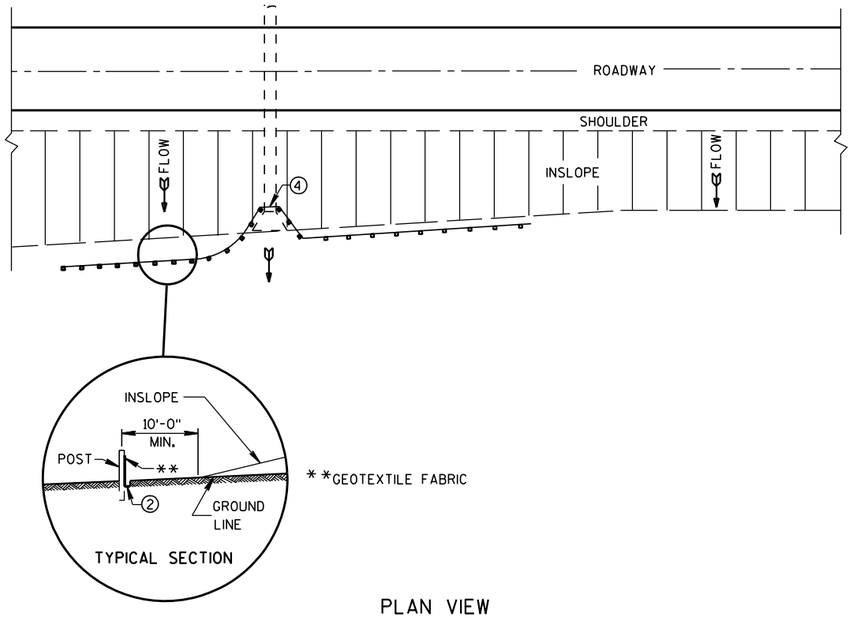
APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
33
MENT
FHWA

6

S.D.D. 8 D 4-5

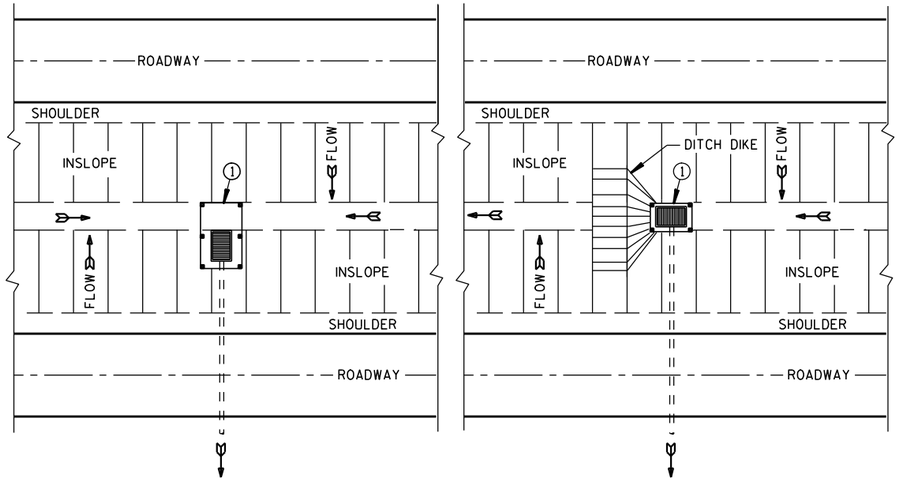
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S.D.D. 8 D 4-5



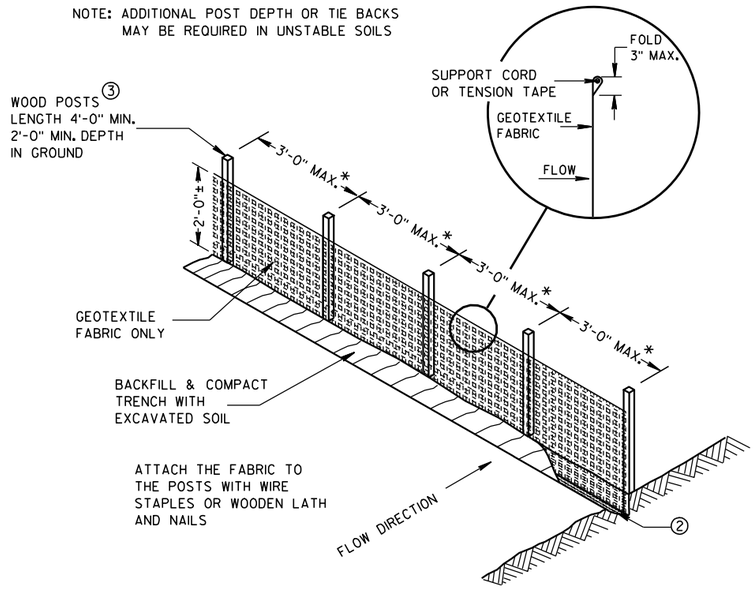
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



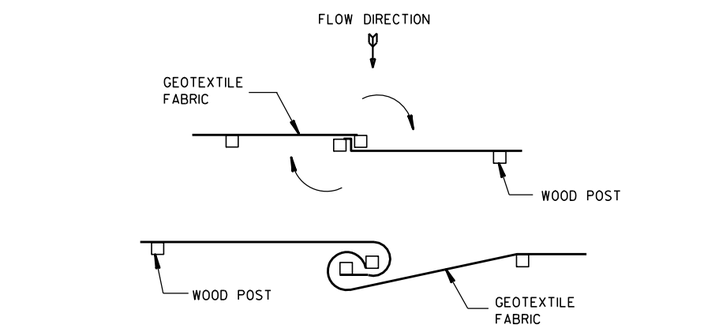
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

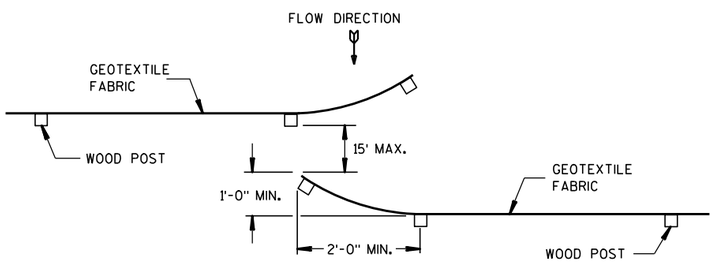


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE



TWIST METHOD



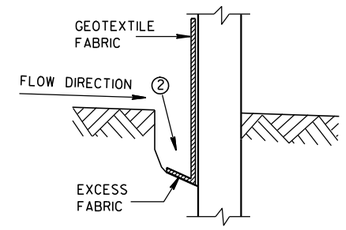
HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5

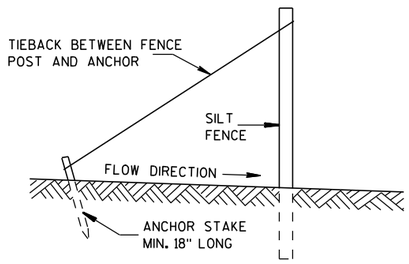
GENERAL NOTES

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 TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

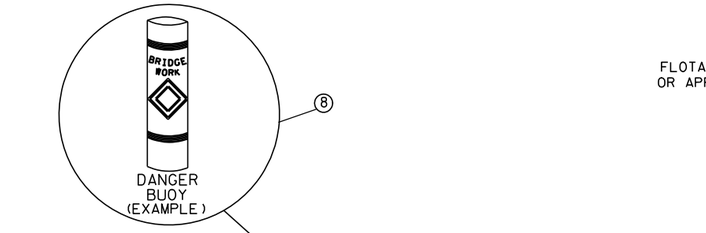
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

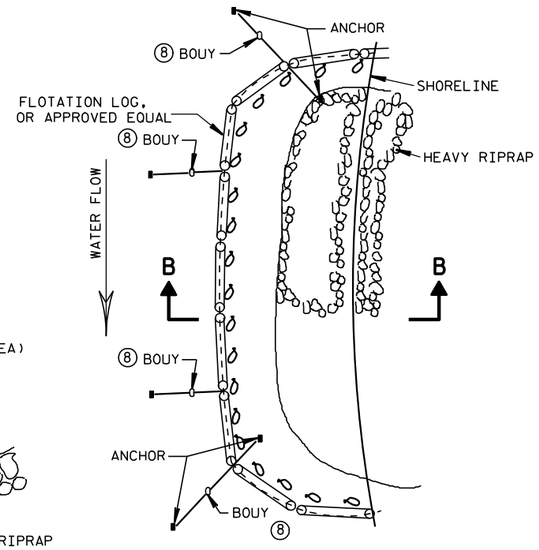
S.D.D. 8 E 9-6

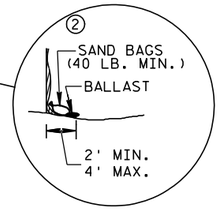
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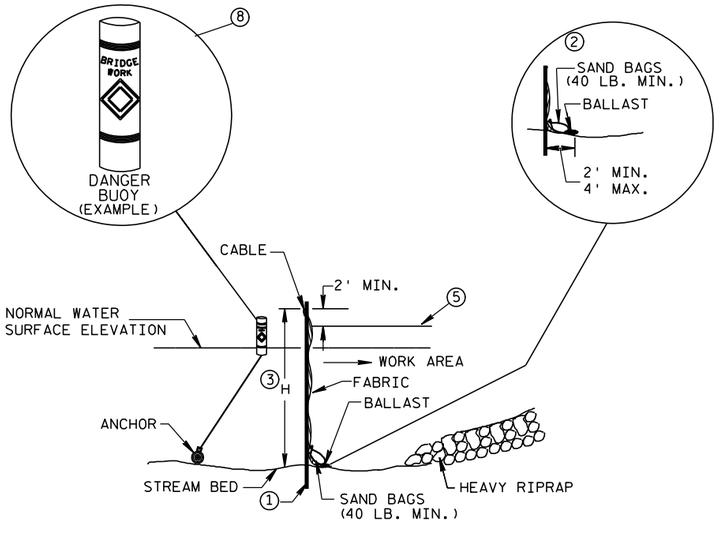


SECTION B-B

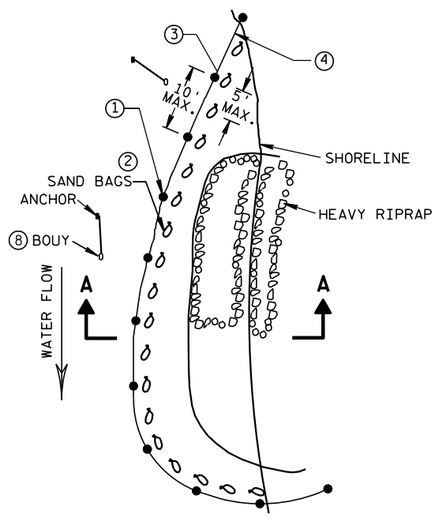




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

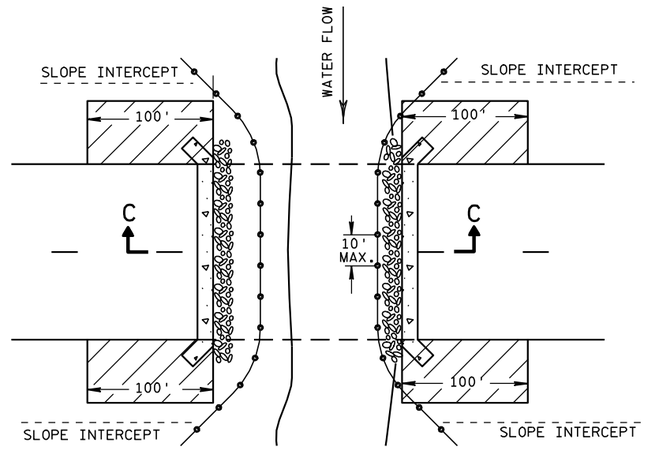
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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.

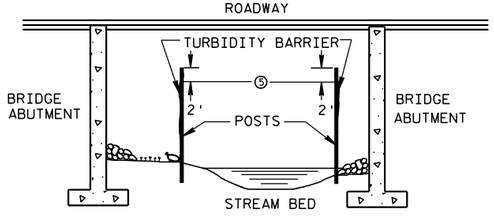
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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	

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S.D.D. 8 E 11-2

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S.D.D. 8 E 11-2

METAL APRON ENDWALLS

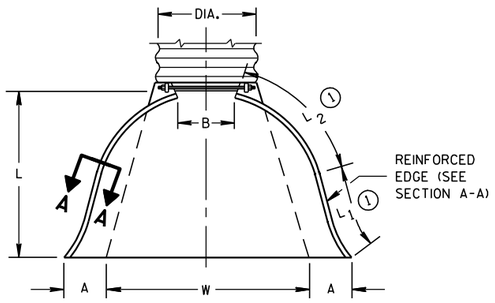
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

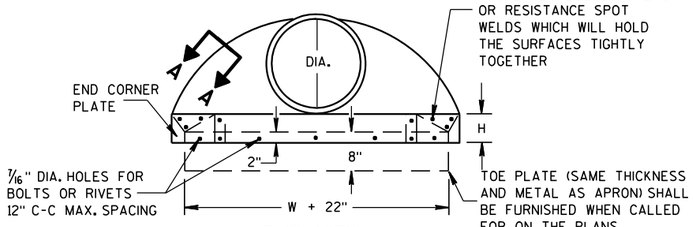
REINFORCED CONCRETE APRON ENDWALLS

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

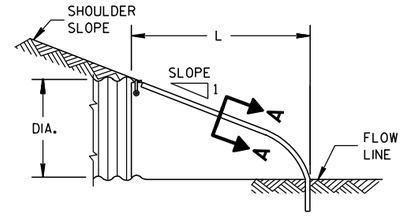
*MINIMUM
**MAXIMUM



PLAN VIEW

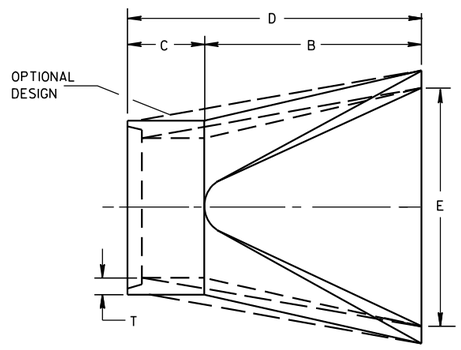


END VIEW

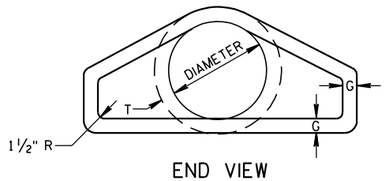


SIDE ELEVATION

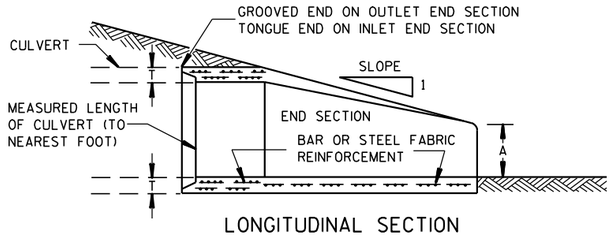
METAL ENDWALLS



PLAN

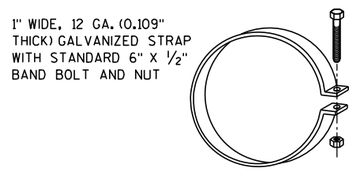


END VIEW



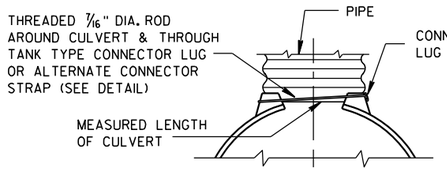
LONGITUDINAL SECTION

CONCRETE ENDWALLS

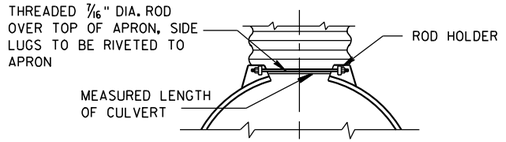


ALTERNATE FOR TYPE 1 CONNECTION

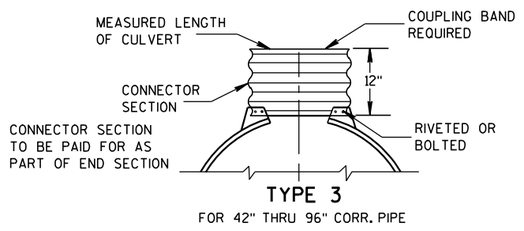
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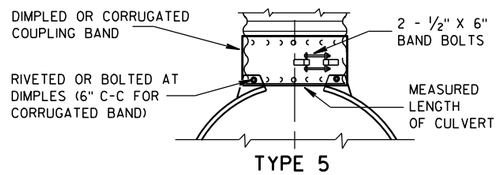
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

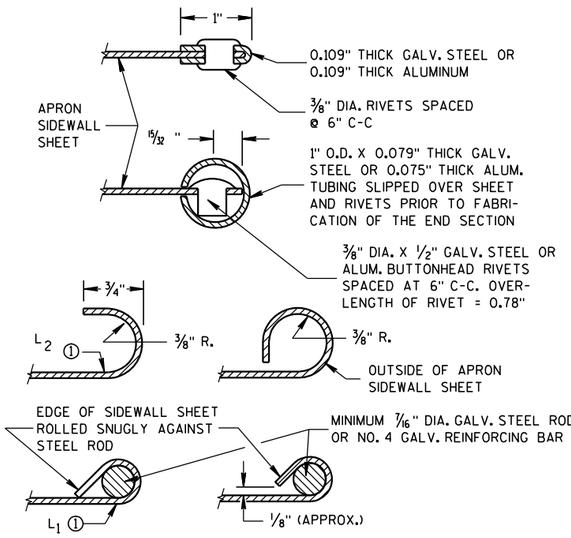
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

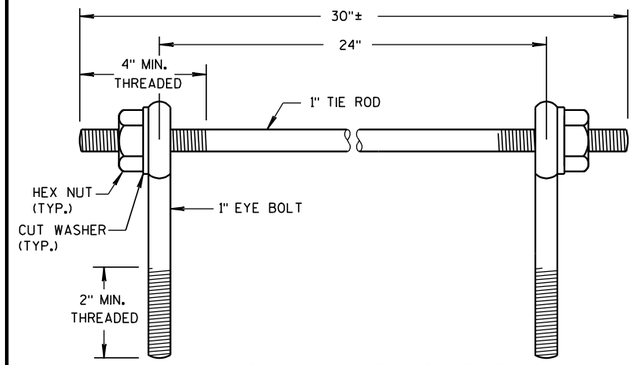
APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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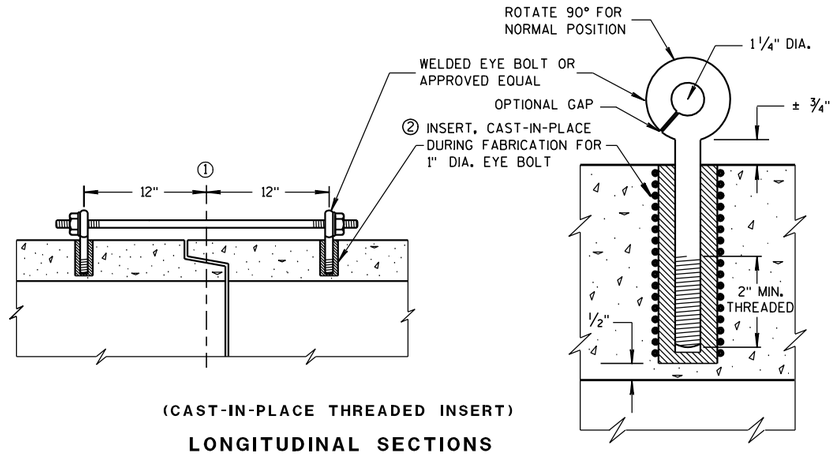
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S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 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 APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

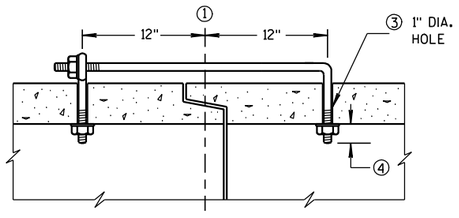
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

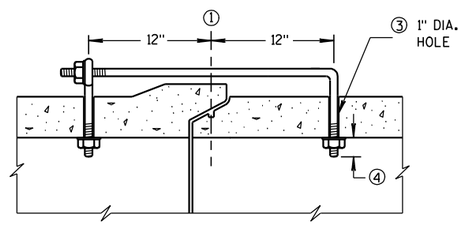
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

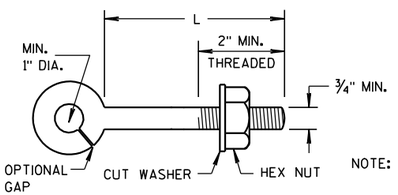


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

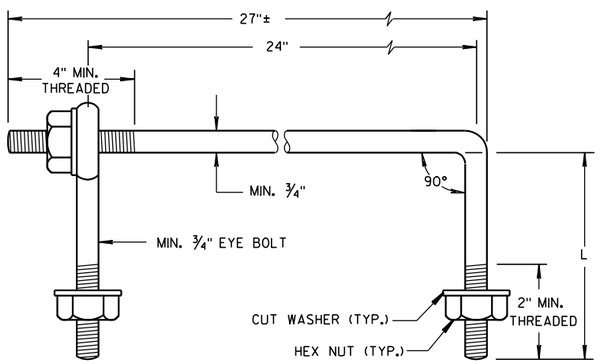
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

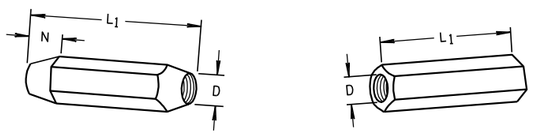
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

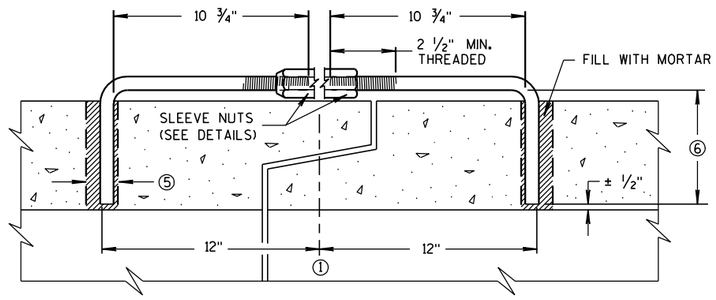
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

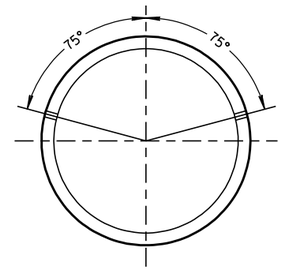
SLEEVE NUTS



LONGITUDINAL SECTION

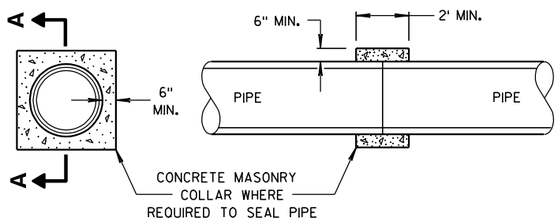
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

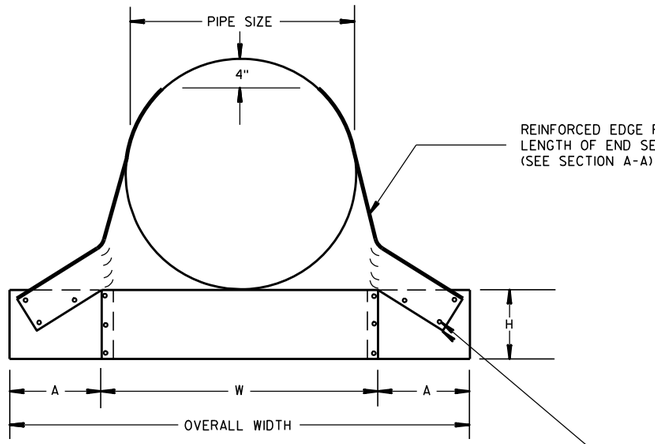
APPROVED
6/5/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
37
FHWA

6

S.D.D. 8 F 4-7

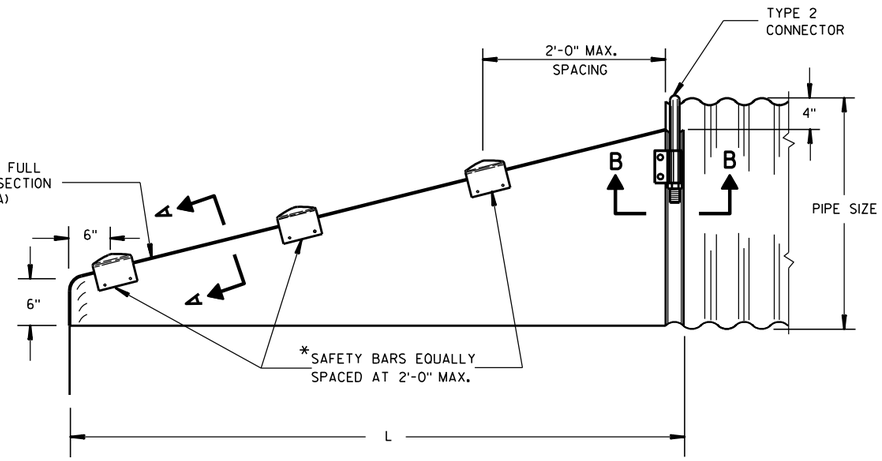
6

S.D.D. 8 F 4-7



FRONT VIEW

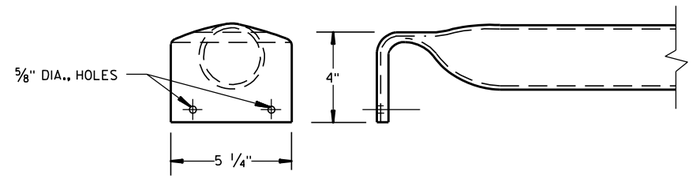
BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



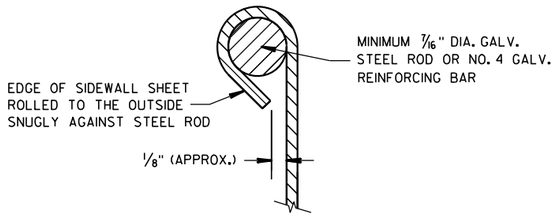
SIDE VIEW

*NOTE:
THREE SAFETY BARS ARE SHOWN. ACTUAL NUMBER OF BARS REQUIRED AT A 2'-0" C-C MAX. SPACING WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

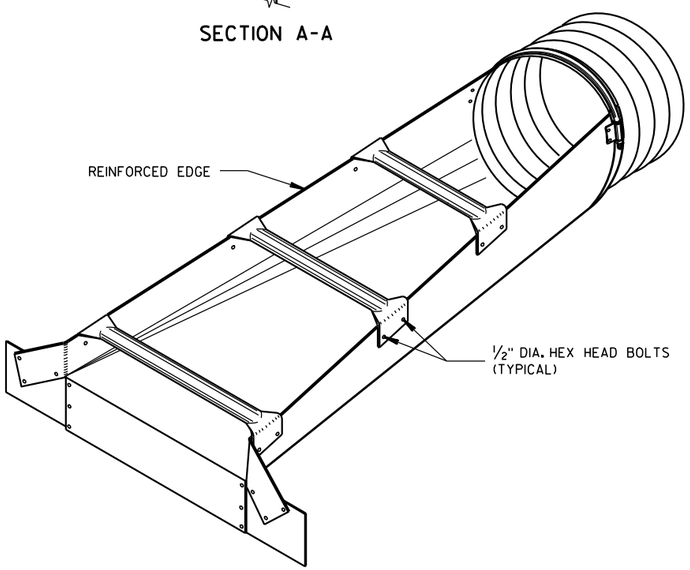
3" GALVANIZED PIPE. FLATTEN ENDS, THEN BEND OUTSIDE 4" TO MATCH END SECTION SIDES.



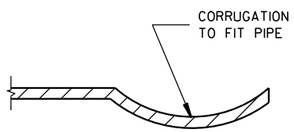
DETAIL OF SAFETY BAR



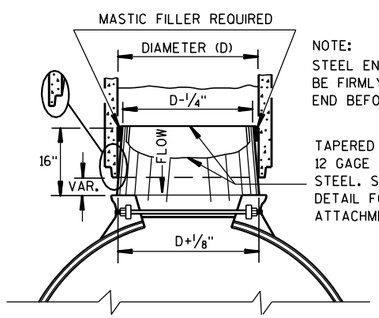
SECTION A-A



ISOMETRIC VIEW



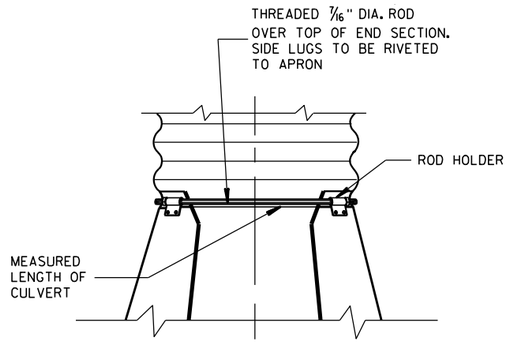
SECTION B-B



NOTE:
STEEL END SECTION SHALL BE FIRMLY WEDGED INTO PIPE END BEFORE BACKFILLING

TAPERED SLEEVE TO BE 12 GAGE SMOOTH GALVANIZED STEEL. SEE SECTION B-B DETAIL FOR END SECTION ATTACHMENT.

STEEL ADAPTER SLEEVE FOR CONCRETE PIPE



TYPE 2
CONNECTION DETAIL

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.

SLOPED END SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SECTION 521 FOR STEEL APRON ENDWALLS.

SAFETY BARS SHALL BE FABRICATED FROM GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL.

STEEL APRON ENDWALLS FOR CULVERT PIPE

PIPE DIA. (IN.)	MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS	
		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES
15	.064	8	6	21	37	6:1	30
18	.064	8	6	24	40	6:1	48
21	.064	8	6	27	43	6:1	66
24	.064	8	6	30	46	6:1	84
30	.109	12	9	36	60	6:1	120
36	.109	12	9	42	66	6:1	156
42	.109	16	12	48	80	5.63 TO 1	180
48	.109	16	12	54	86	4.74 TO 1	180
54	.109	16	12	60	92	——	——

STEEL APRON ENDWALLS FOR PIPE ARCH

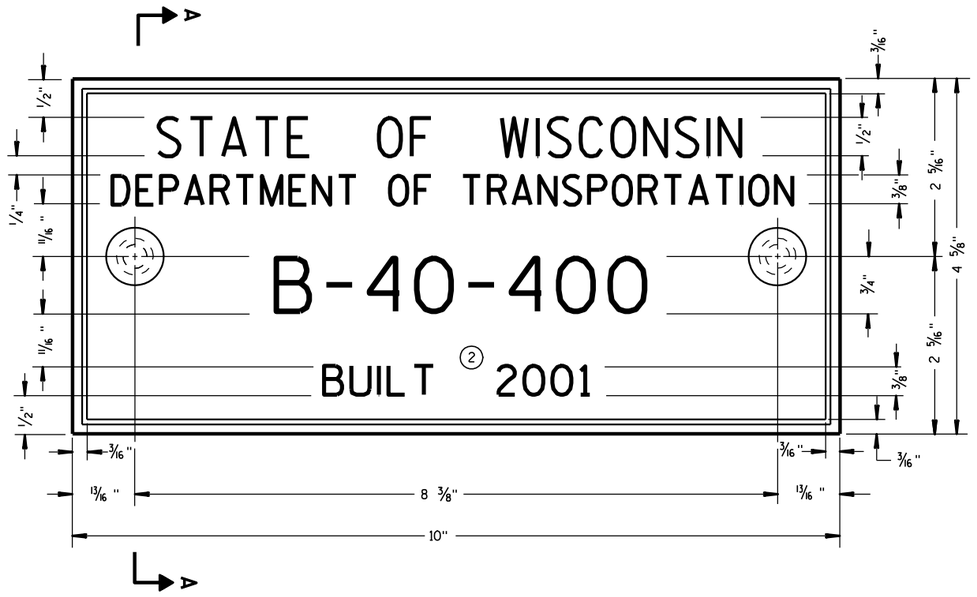
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS	
	SPAN	RISE		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES
15	17	13	.064	8	6	23	39	6:1	18
18	21	15	.064	8	6	27	43	6:1	30
21	24	18	.064	8	6	30	46	6:1	48
24	28	20	.064	8	6	34	50	6:1	60
30	35	24	.079	12	9	41	65	6:1	84
36	42	29	.109	12	9	48	72	6:1	114
42	49	33	.109	16	12	55	87	6:1	138
48	57	38	.109	16	12	63	95	6:1	168
54	64	43	.109	16	12	70	102	5.45 TO 1	180

STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SIDE DRAINS SLOPED SECTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

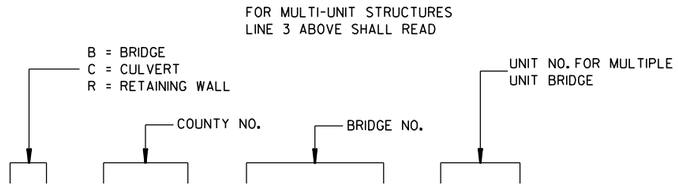
APPROVED
4/17/95 — DATE
/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 F 7-3



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION MULTI-UNIT STRUCTURES

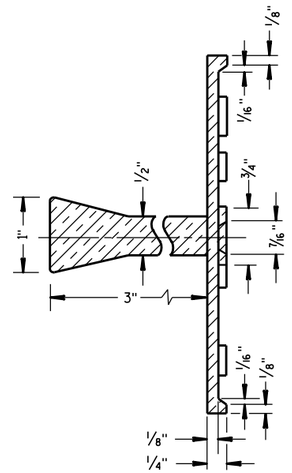
GENERAL NOTES

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

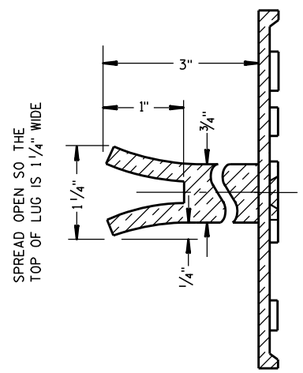
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

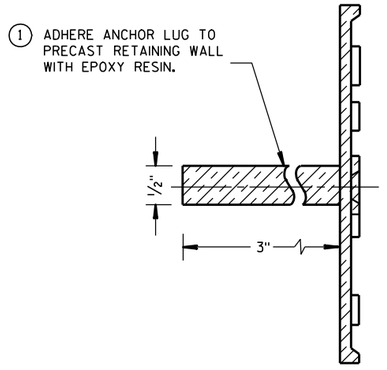
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

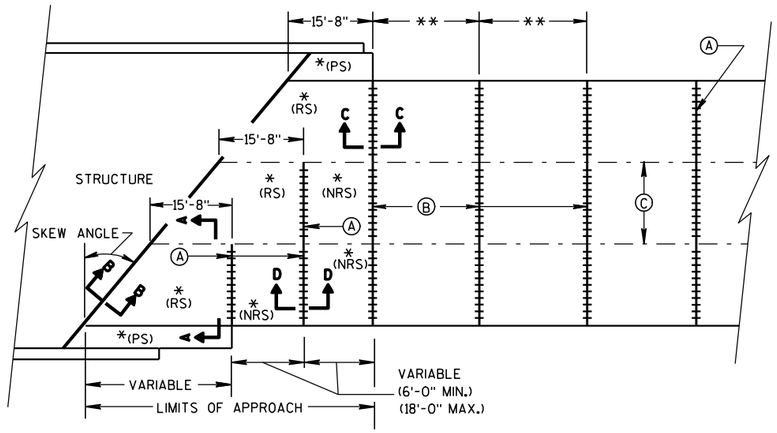
APPROVED

3/26/10 DATE — /S/ Scot Beck — CHIEF STRUCTURAL DEVELOPMENT ENGINEER

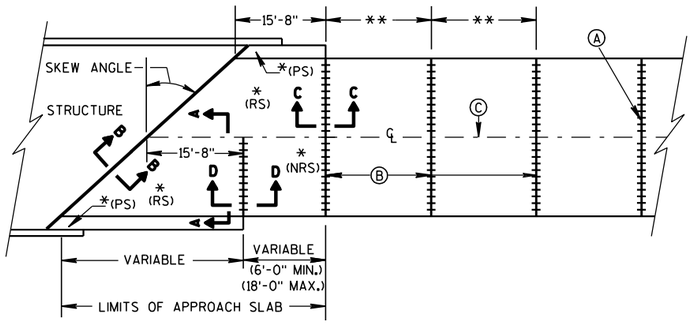
FHWA

6

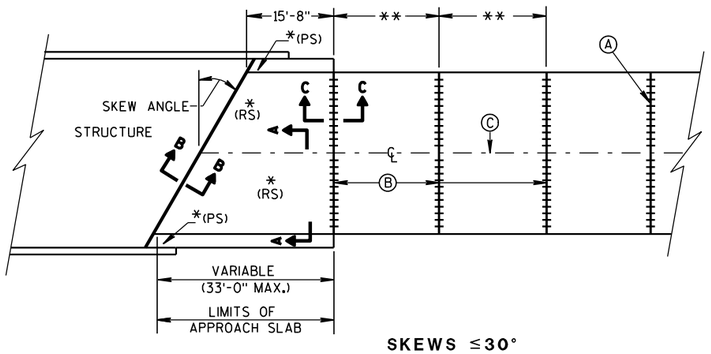
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



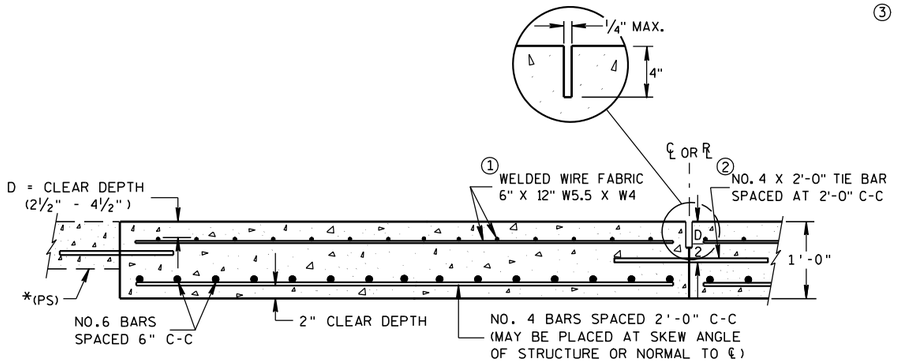
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

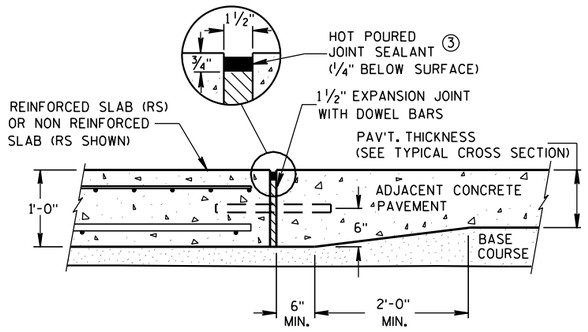
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

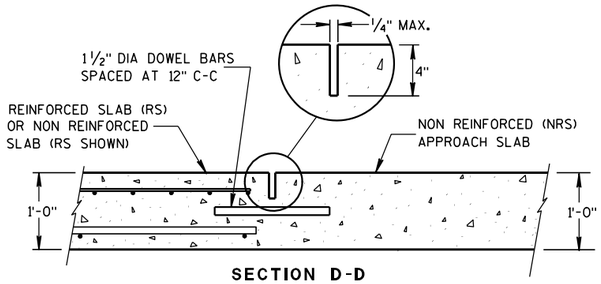
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

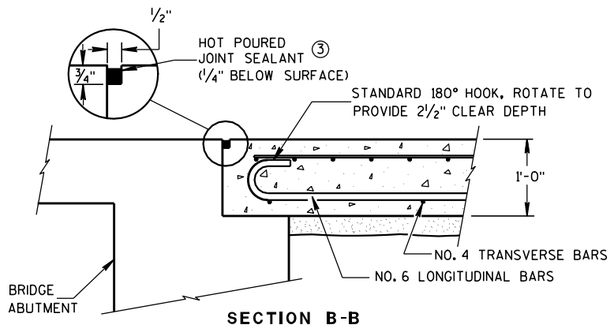
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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

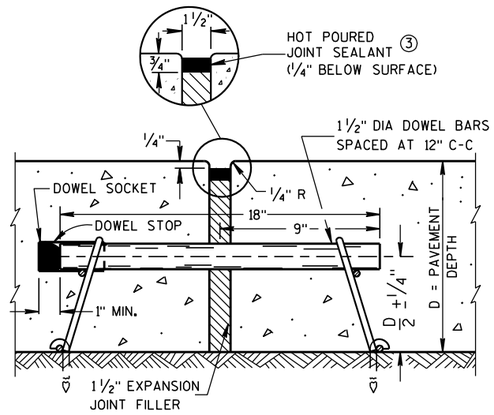
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

③ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE... ENGINEER
FHWA

6
S.D.D. 13 B 2-6

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) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

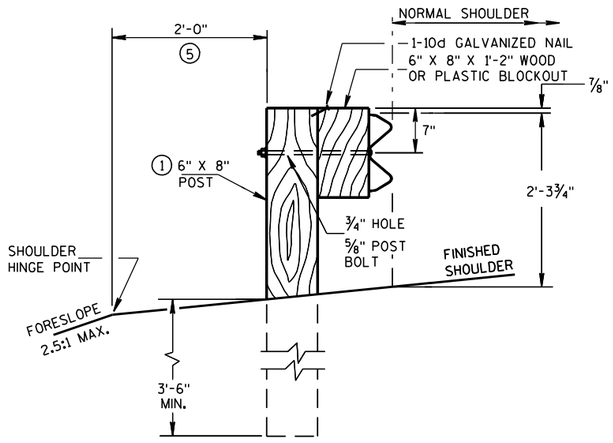
(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

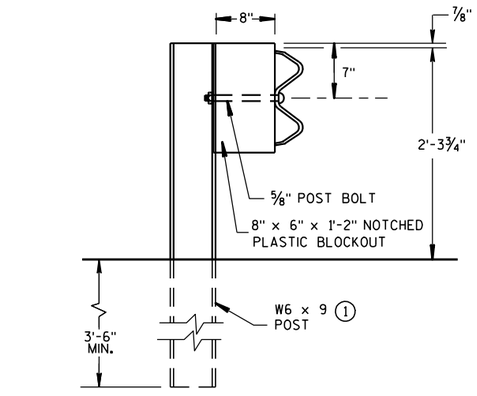
(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

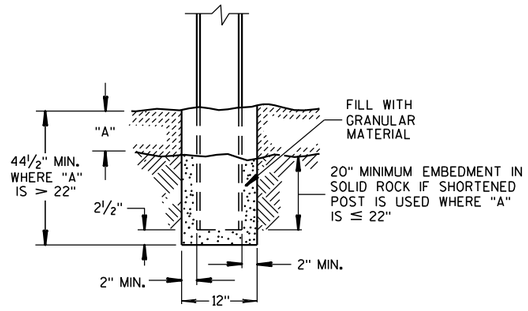
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



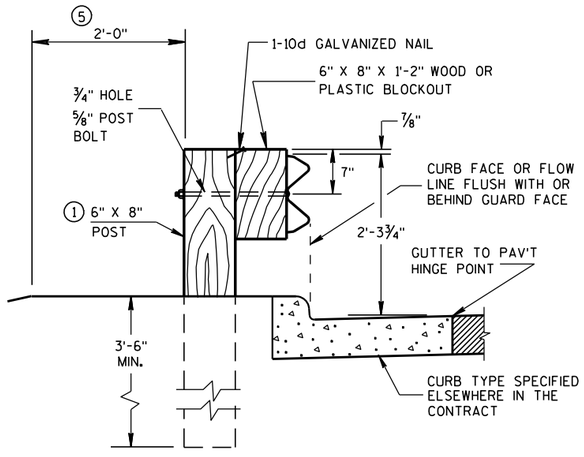
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



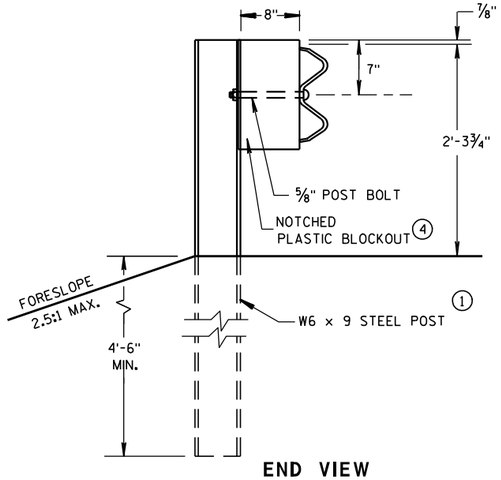
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



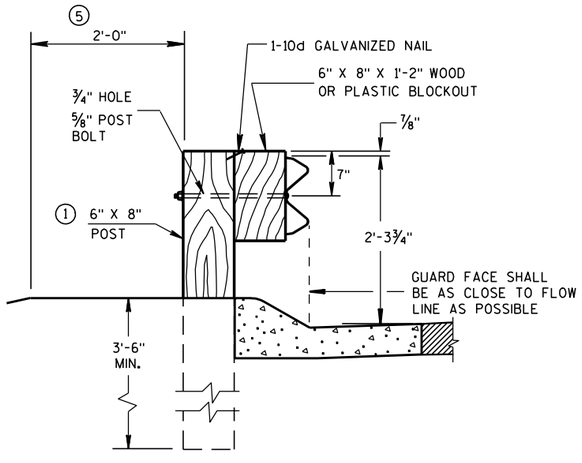
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



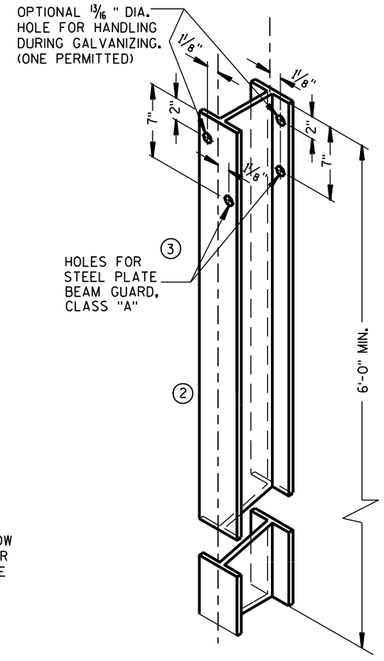
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

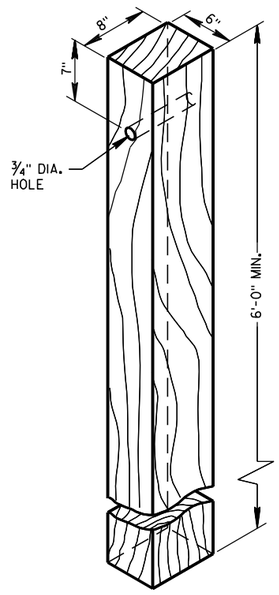


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

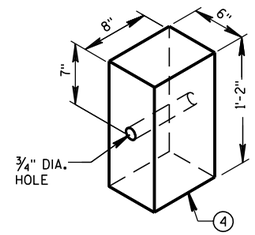


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

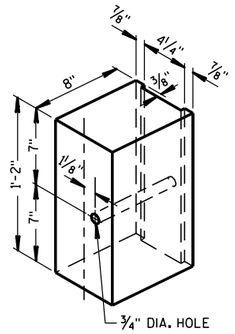
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



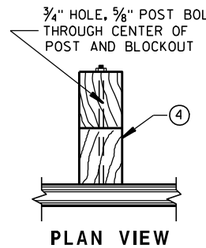
WOOD POST
(6"X8") NOMINAL



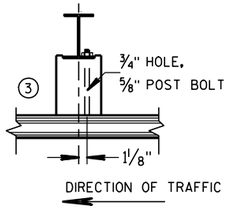
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



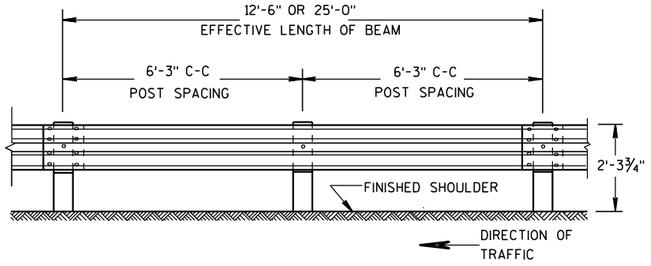
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

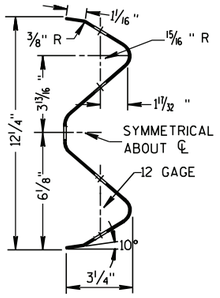
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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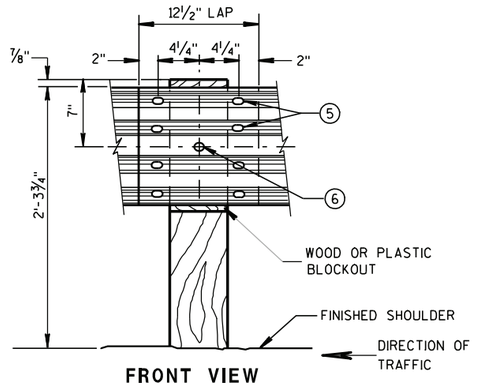


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM

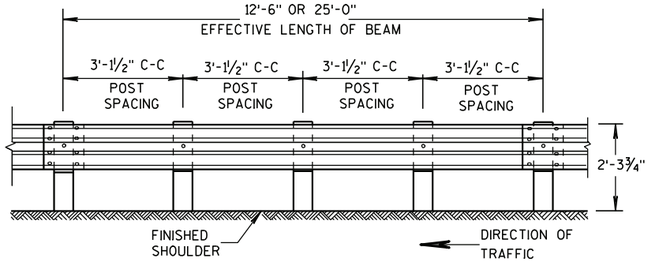


FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

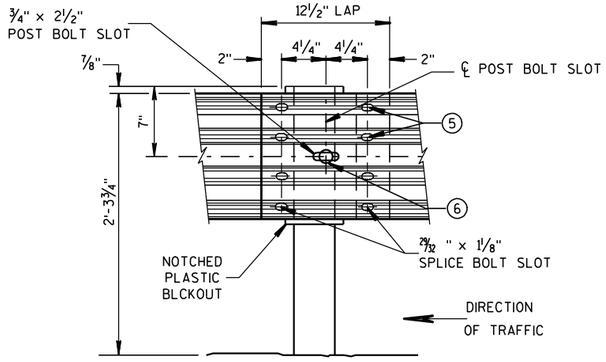
GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 8 - 5/8" ϕ X 2 " BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
6. 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.



FRONT VIEW

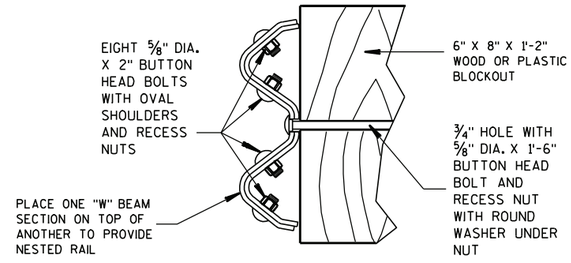
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

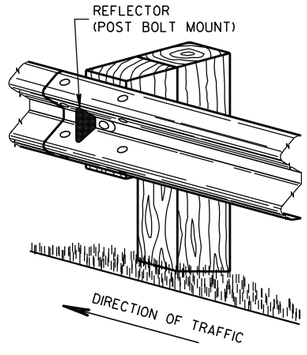


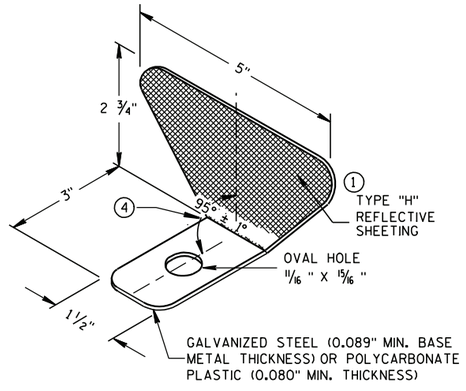
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING (2)

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (3)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 (4)	



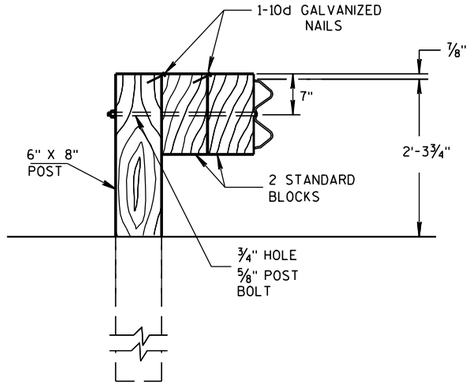


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (1)

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

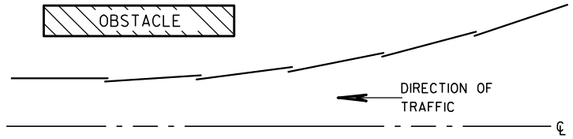
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

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S.D.D. 14 B 15-7b

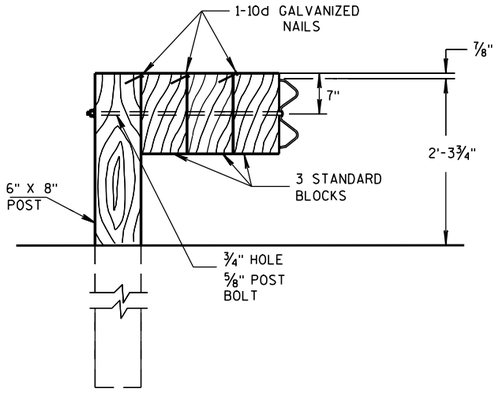


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

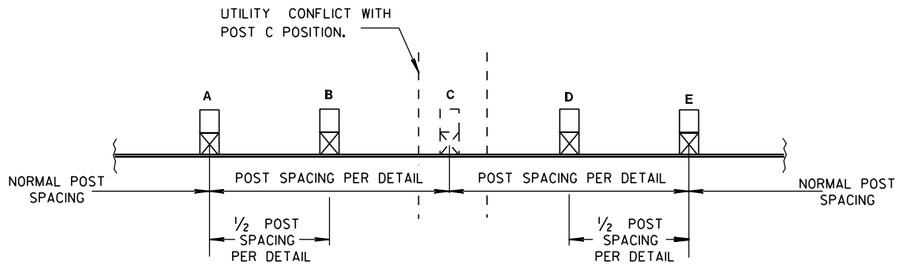


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

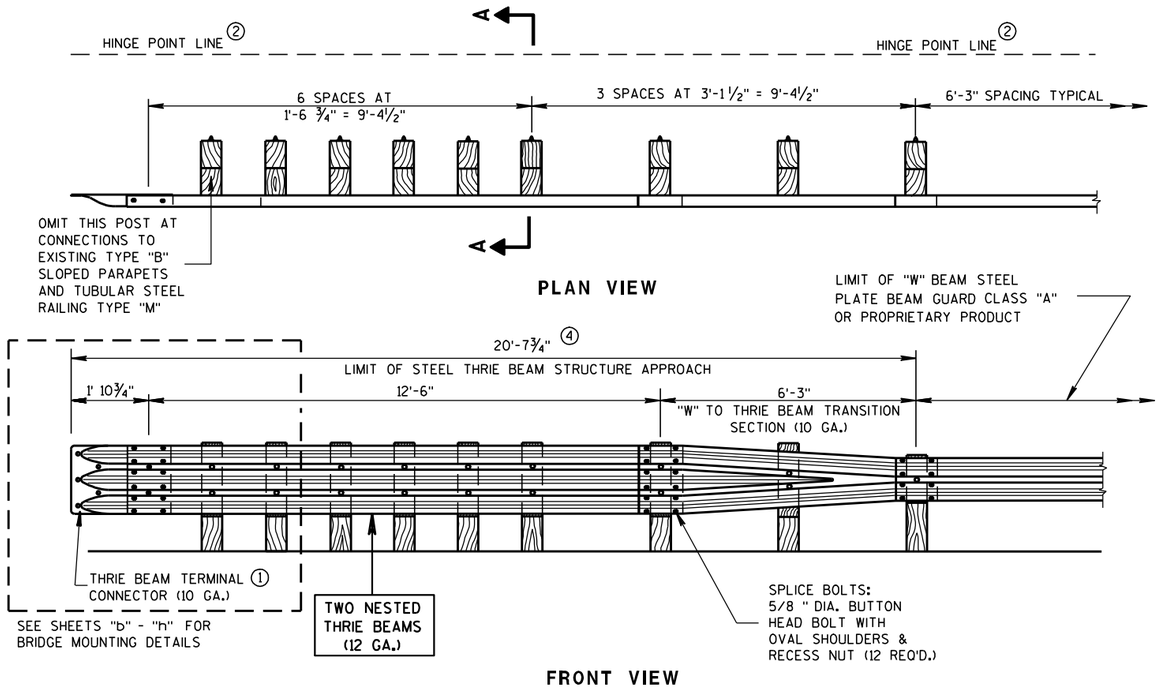
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/23/11	/S/ Jerry H. Zogg	
DATE	ROADWAY STANDARDS ENGINEER	ENT

FHWA

6
S.D.D. 14 B 15-7c



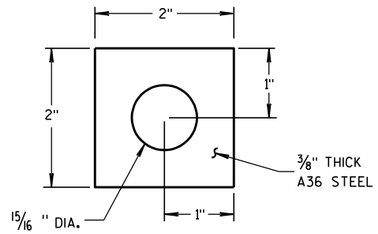


PLATE WASHER DETAIL

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".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

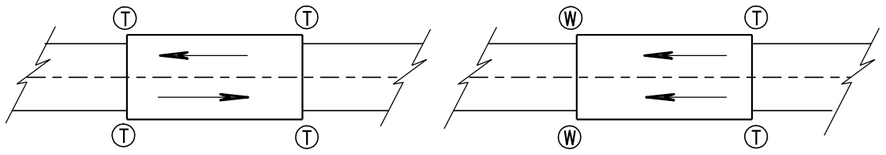
IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY, (SEE SDD 14 B 15 - a).

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



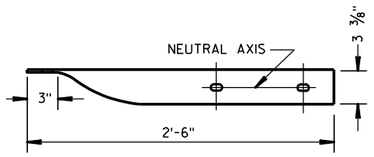
TWO WAY TRAFFIC

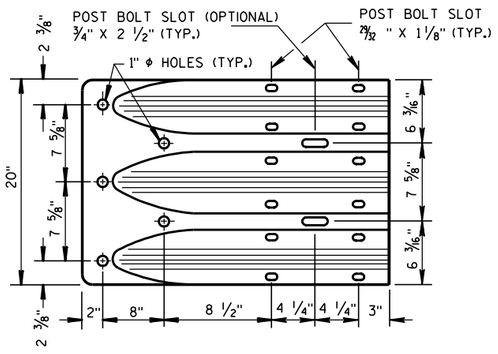
ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

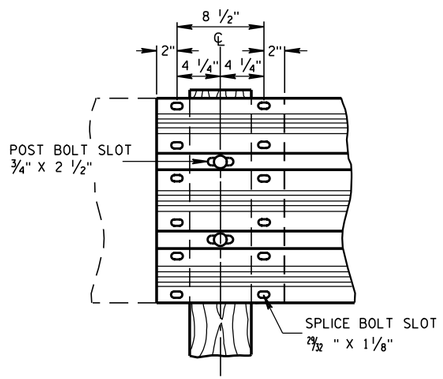
(W) W-BEAM CONNECTION WHEN REQUIRED

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

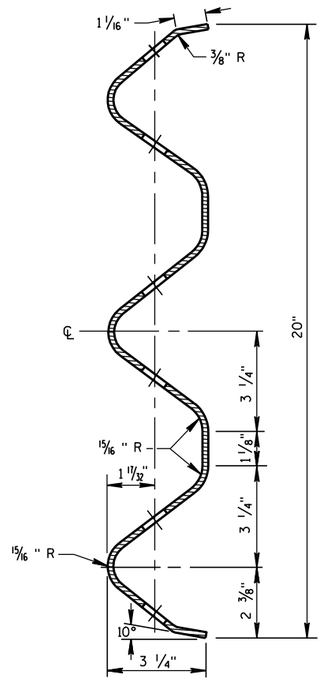




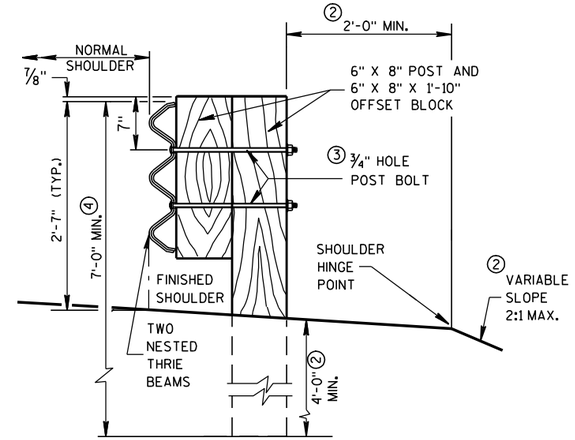
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION A-A

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS [illegible]44
ENGINEER

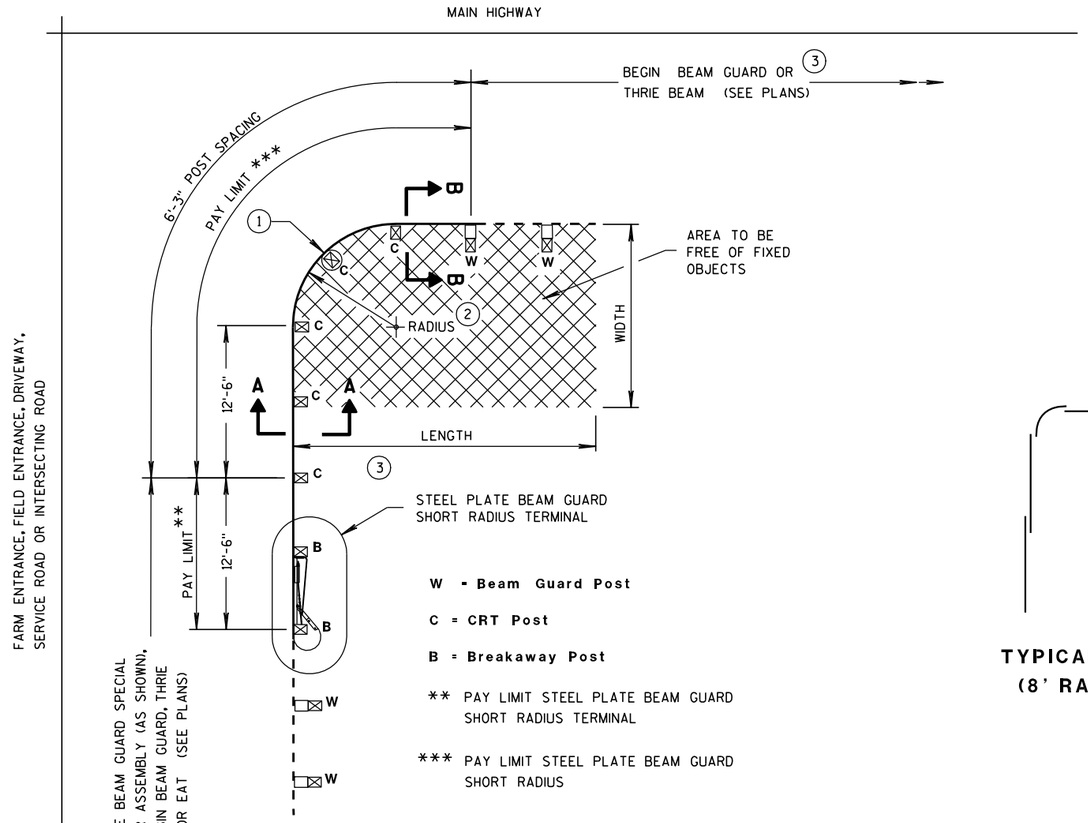
FHWA

6

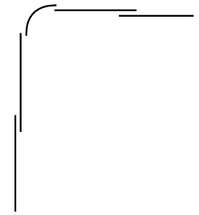
S.D.D. 14 B 20-10a

6

S.D.D. 14 B 20-10a



TYPICAL LAYOUT
(8' RADIUS SHOWN)



TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2. UNLESS NOTED OTHERWISE.

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

(1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.

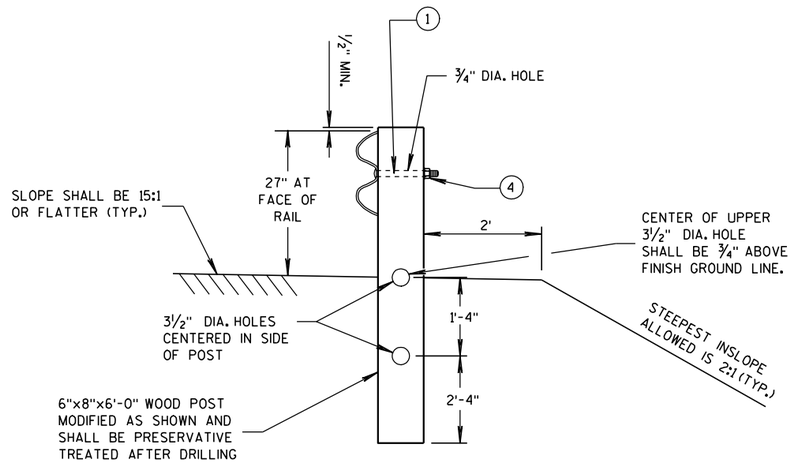
(2) RADIUS FROM 8' - 36'. SEE PLAN.

(3) HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.

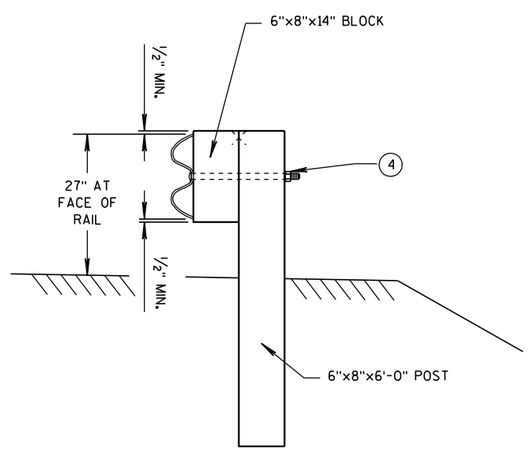
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION A-A
(CRT POST)

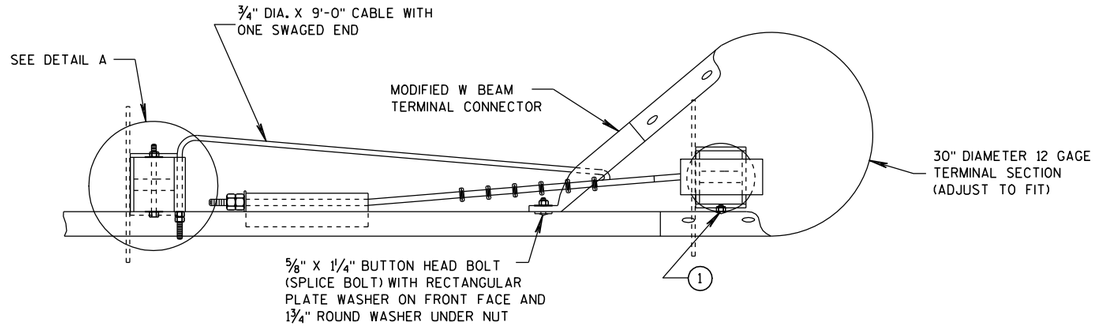


SECTION B-B
(BEAM GUARD POST)

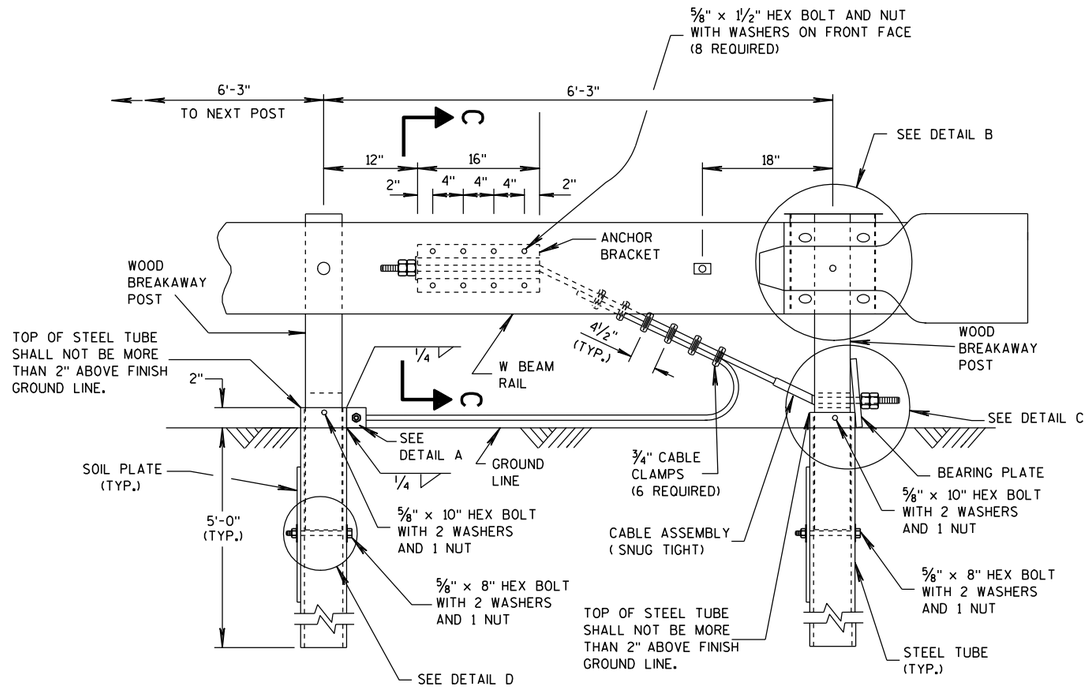
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 27-1a



PLAN VIEW



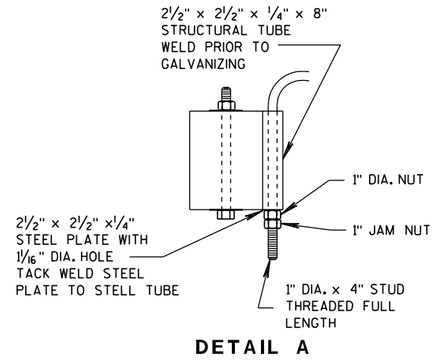
ELEVATION VIEW

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

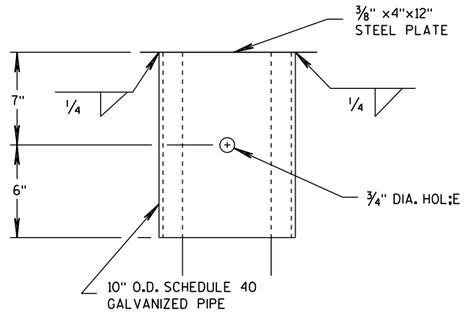
GENERAL NOTES

(1) ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A ⅝" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED ¾" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A



DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

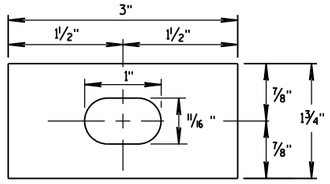
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

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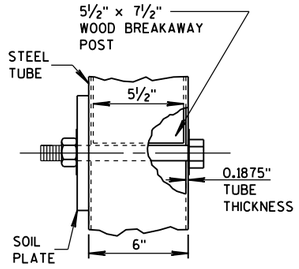
S.D.D. 14 B 27-1b

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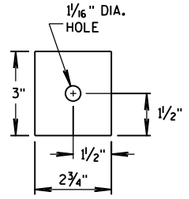
S.D.D. 14 B 27-1b



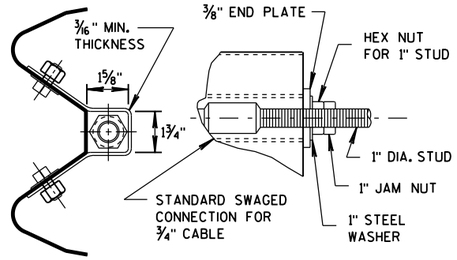
RECTANGULAR PLATE WASHER



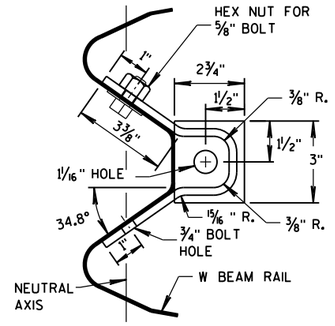
DETAIL D



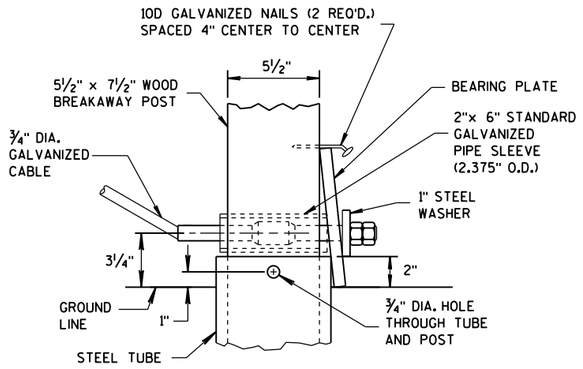
END PLATE



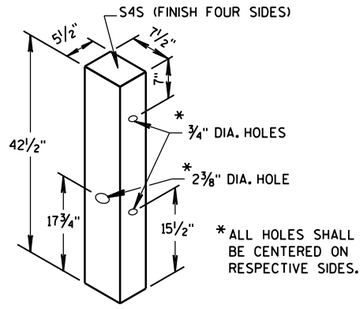
SECTION C-C
(END PLATE REMOVED)



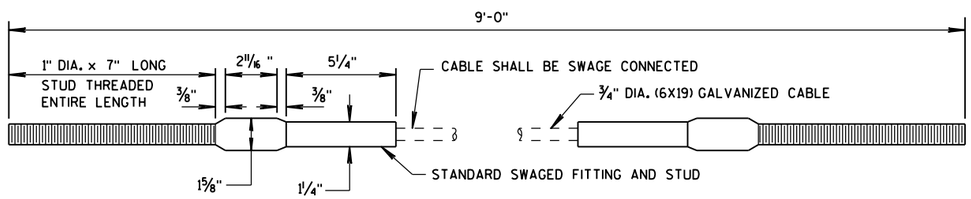
ANCHOR BRACKET



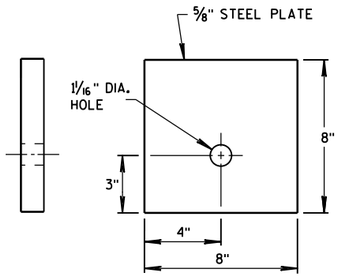
DETAIL C



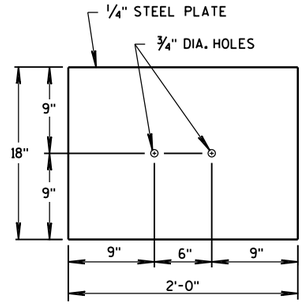
WOOD BREAKAWAY POST



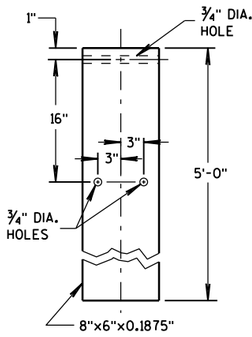
CABLE ASSEMBLY



BEARING PLATE



SOIL PLATE



STEEL TUBE

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 27-1c

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S.D.D. 14 B 27-1c

GENERAL NOTES

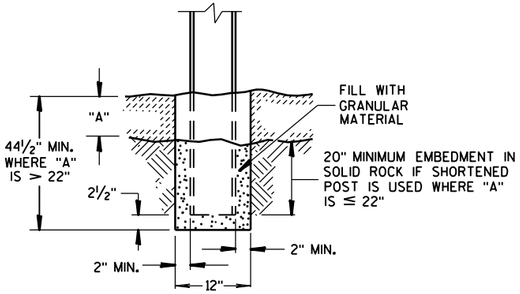
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

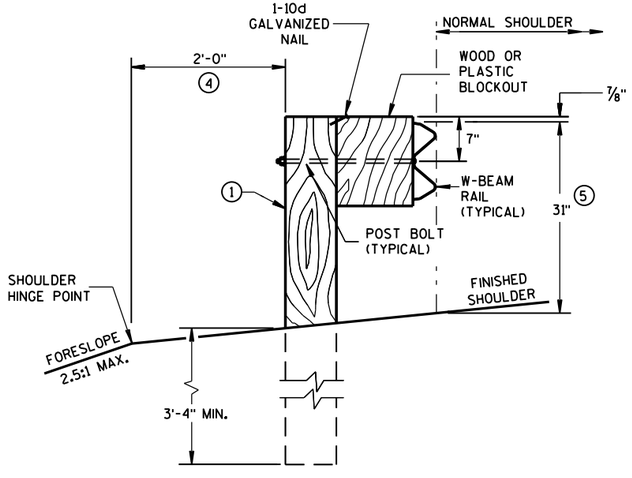
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

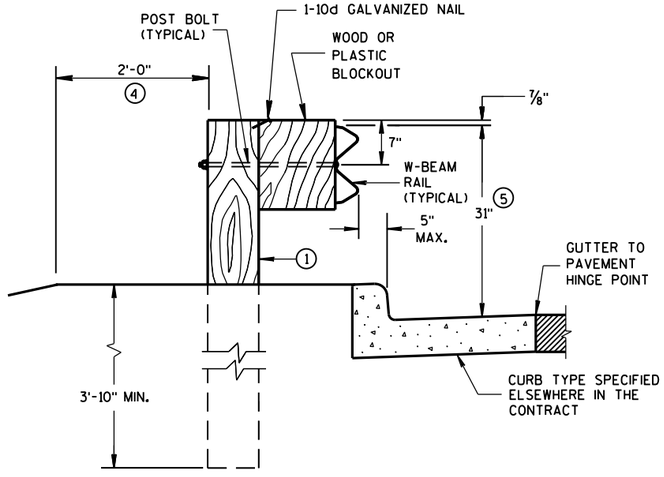


END VIEW
SETTING STEEL OR WOOD POST IN ROCK ③



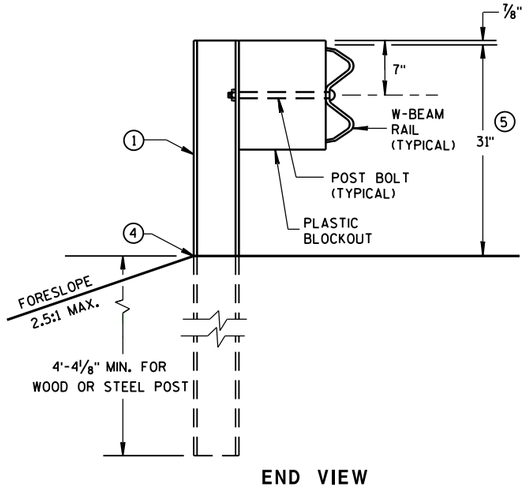
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



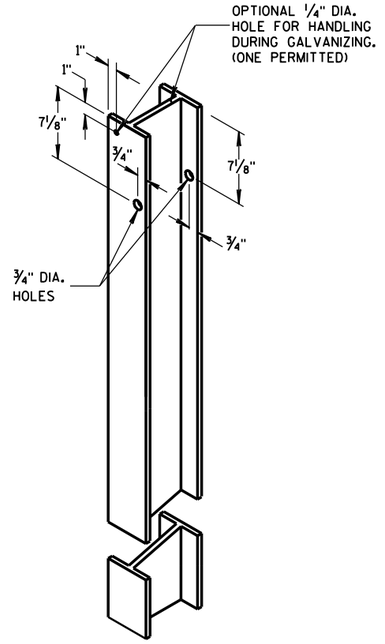
END VIEW

LOCATED ALONG A CURBED ROADWAY

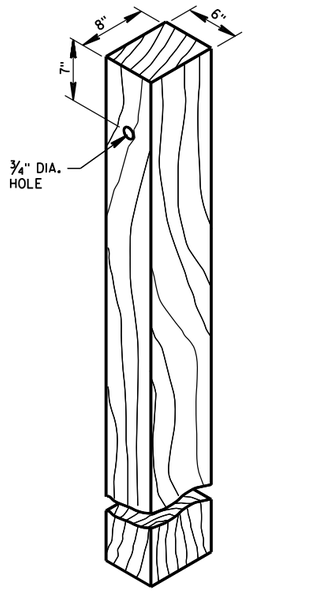


END VIEW

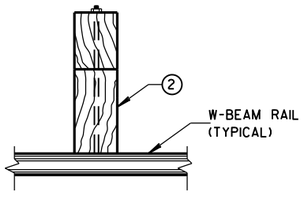
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



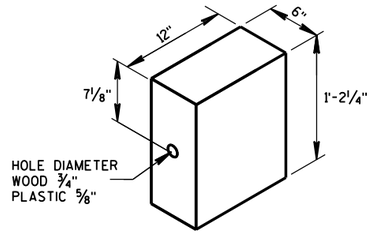
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



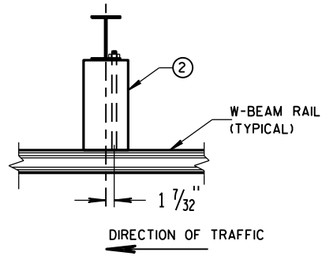
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

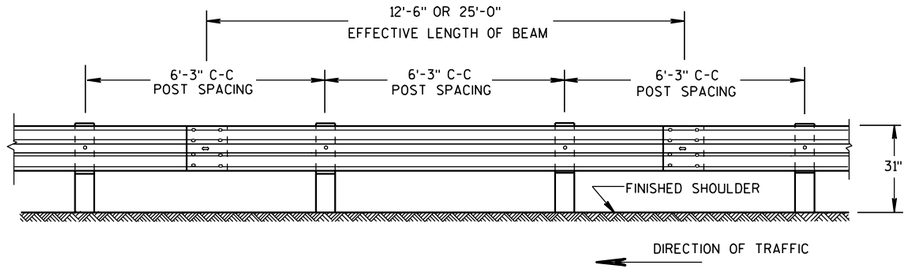


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

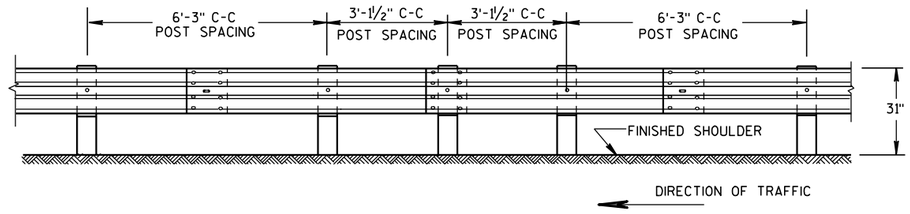
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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S.D.D. 14 B 42-2a



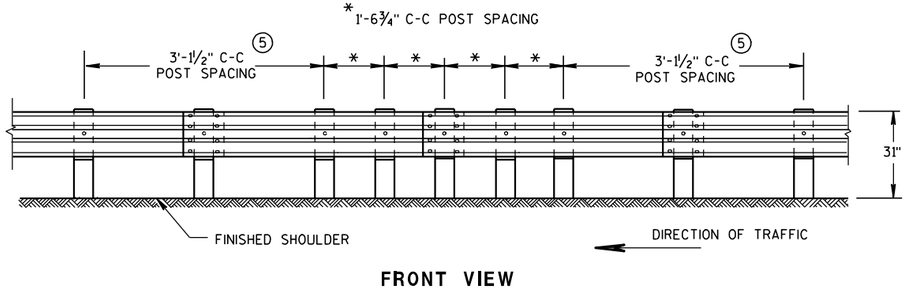
FRONT VIEW

POST SPACING STANDARD INSTALLATION



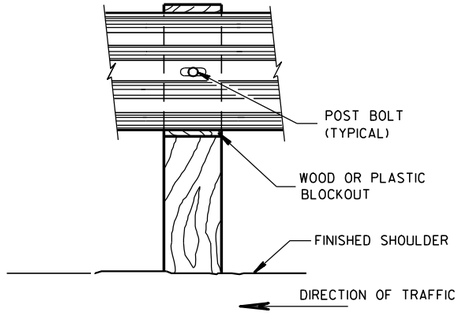
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

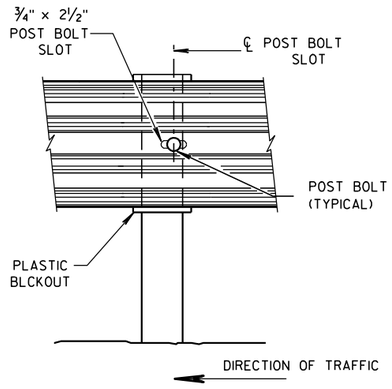


FRONT VIEW

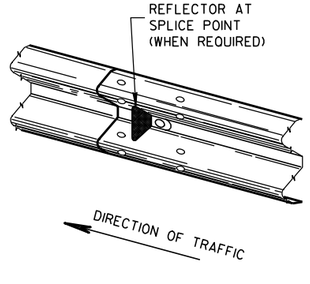
QUARTER POST SPACING (QS)

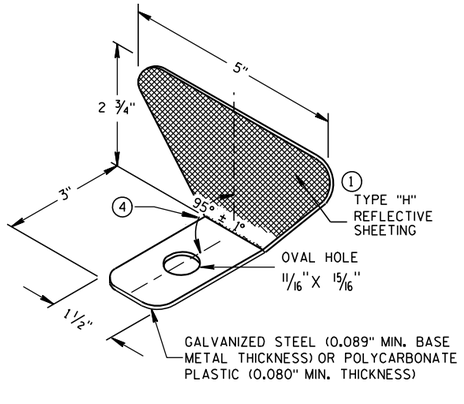


FRONT VIEW AT WOOD POST

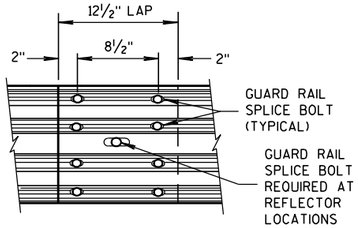


FRONT VIEW AT STEEL POST



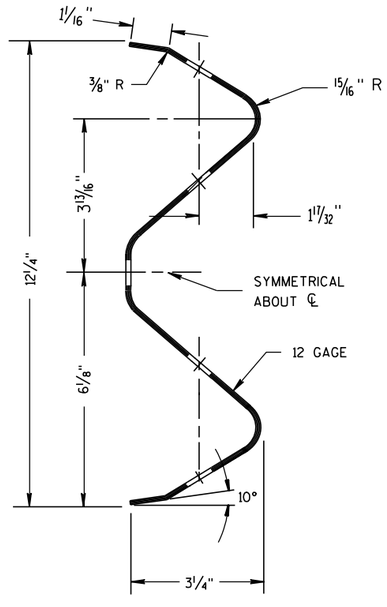


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①



FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL

GENERAL NOTES

① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.

② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

④ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

⑤ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING ②

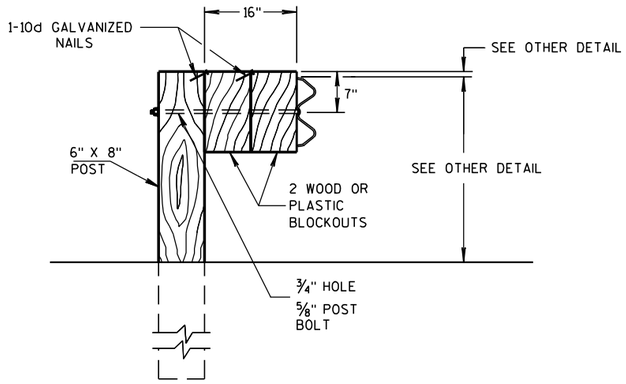
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ③ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ④ 2	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

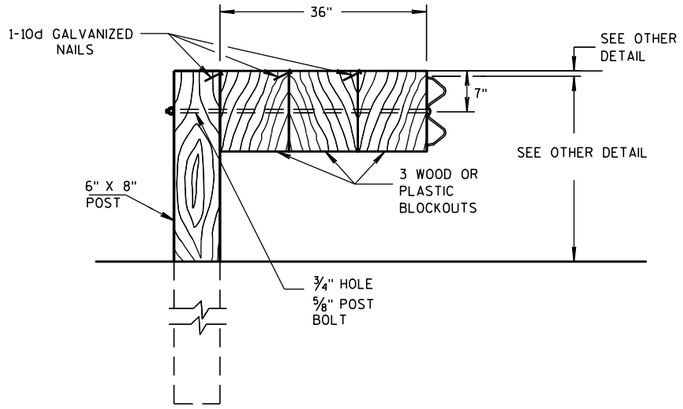
S.D.D. 14 B 42-2b

S.D.D. 14 B 42-2b



DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

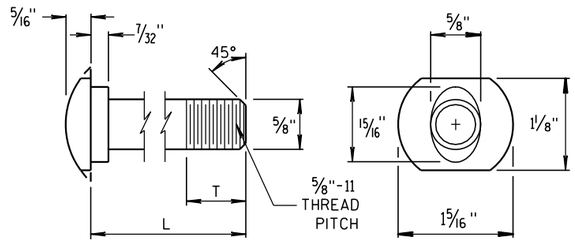


DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

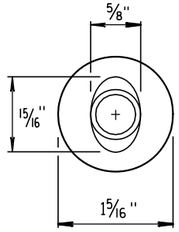
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

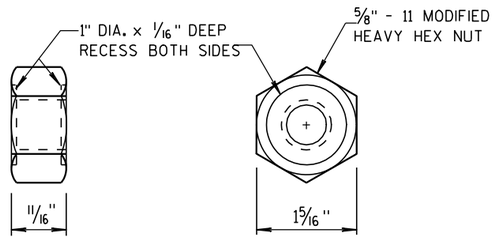


POST BOLT TABLE

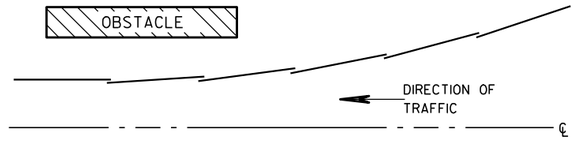
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

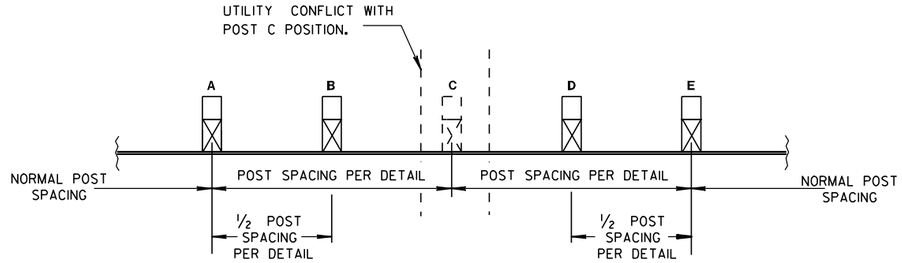


POST BOLT AND RECESS NUT

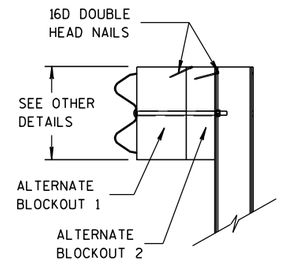


PLAN VIEW

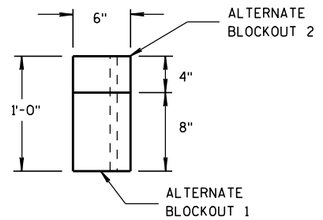
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

ENT

6

S.D.D. 14 B 42-2c

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), 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) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(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.

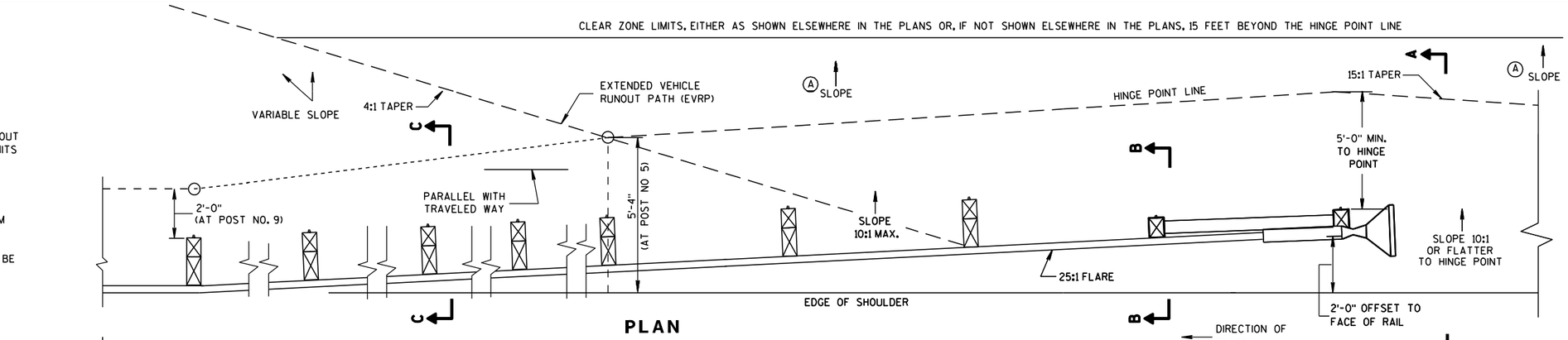
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

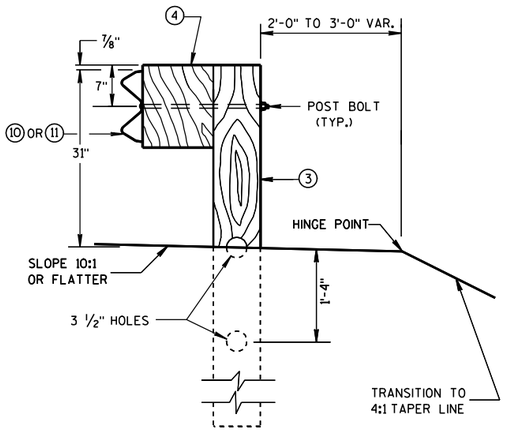
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

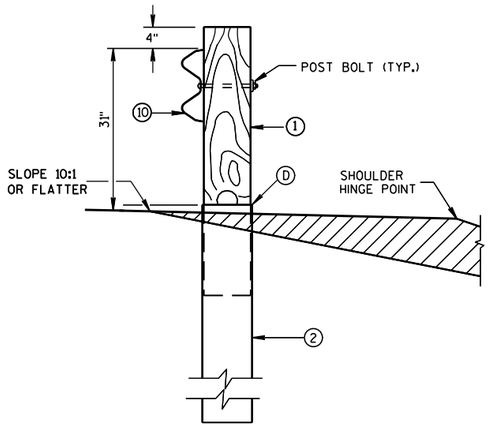
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

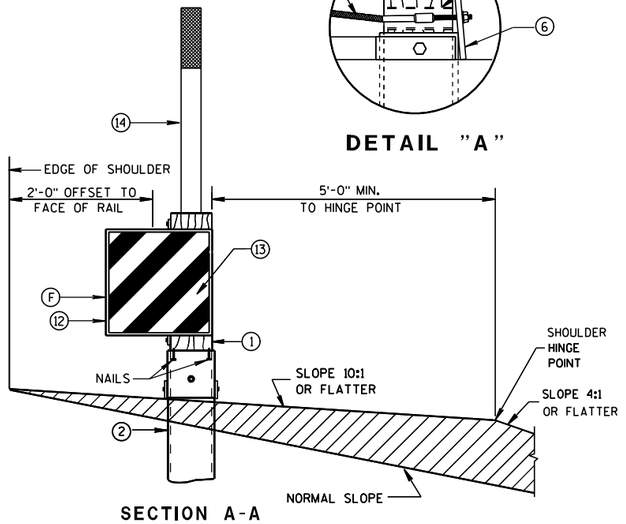




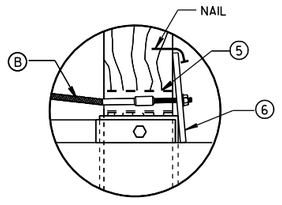
SECTION C-C
TYPICAL AT POST NOS. 3-9



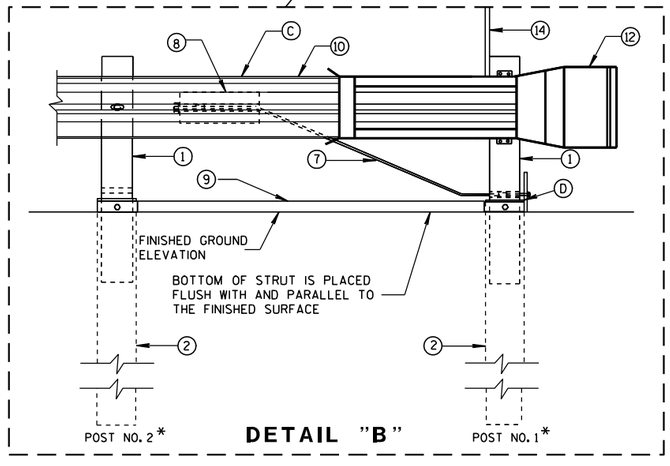
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



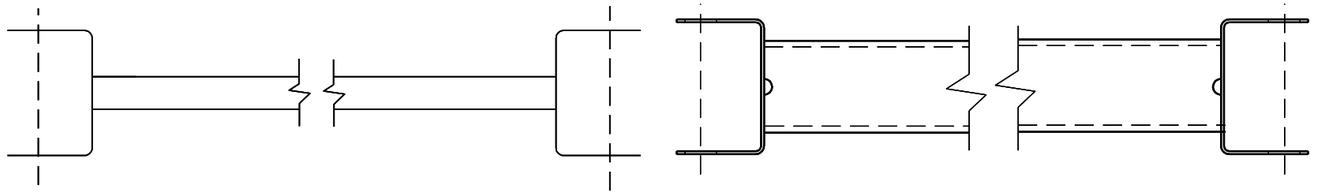
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 44-1a

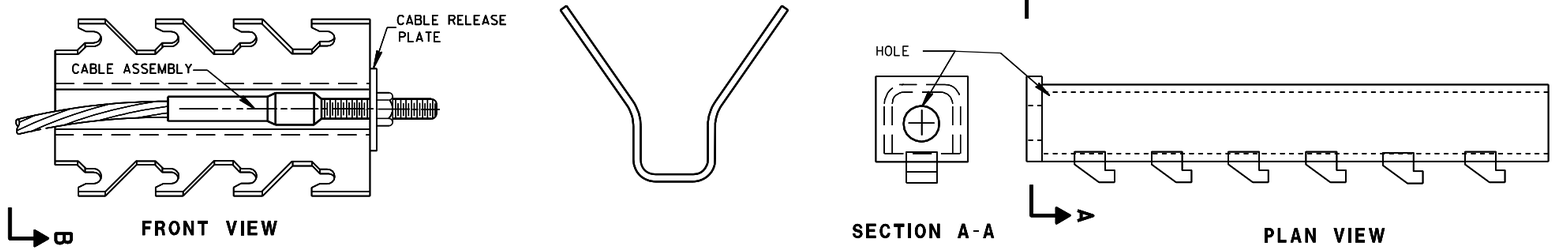
6



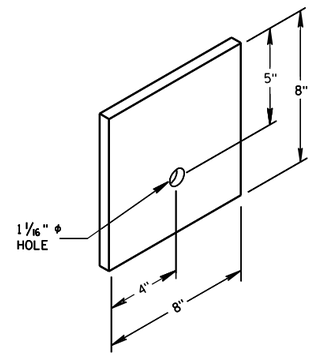
GENERIC GROUND STRUT (9) (H)

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 H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)



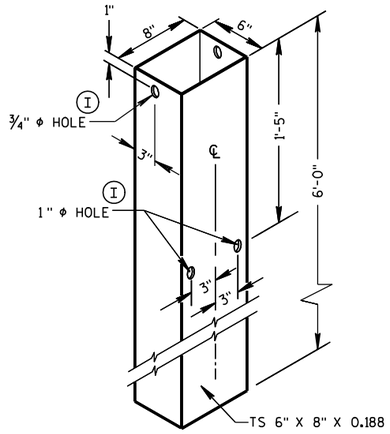
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

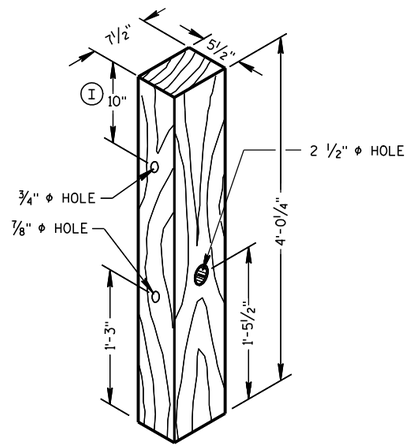
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

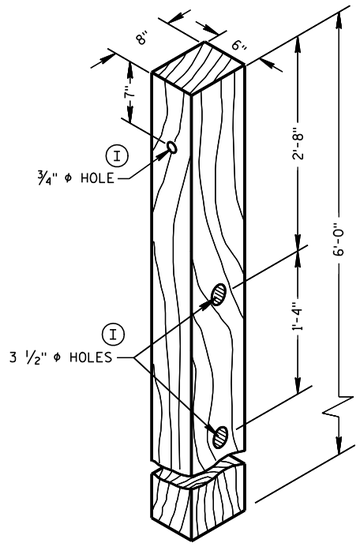


FOUNDATION TUBE (2)



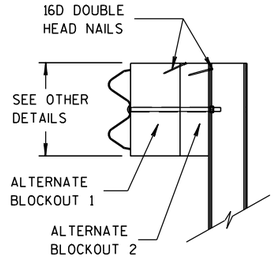
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

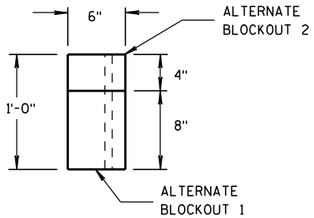


POSTS NUMBER 3-9

WOOD CRT POST (3)

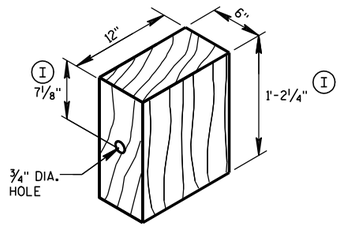


SIDE VIEW



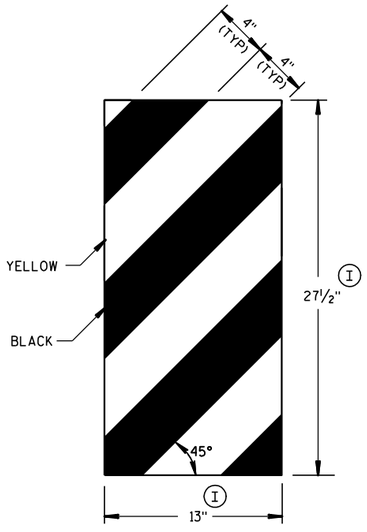
TOP VIEW

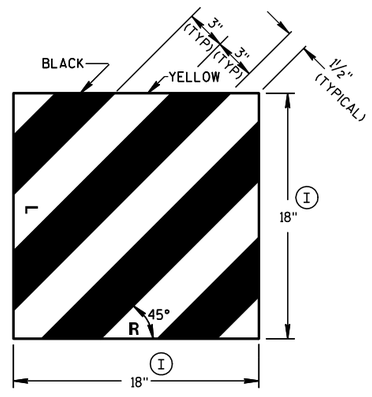
ALTERNATE WOOD BLOCKOUT DETAIL



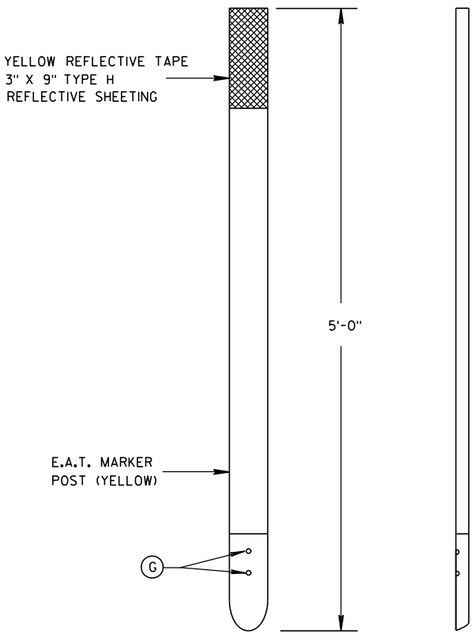
WOOD BLOCKOUT (4)

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



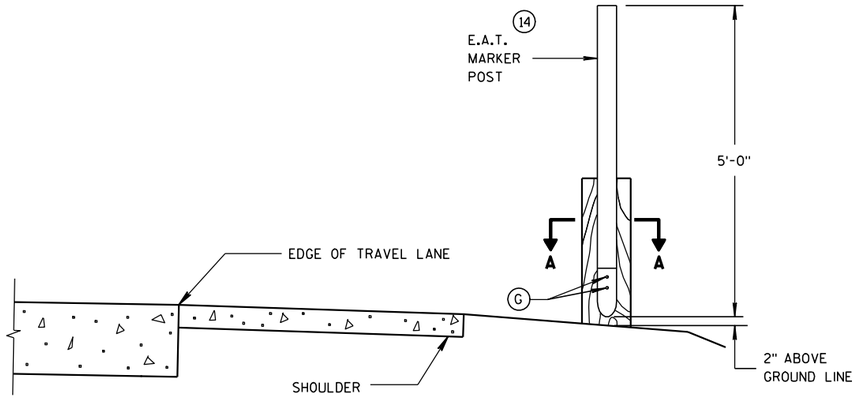


GENERIC REFLECTIVE SHEETING (13) (H)



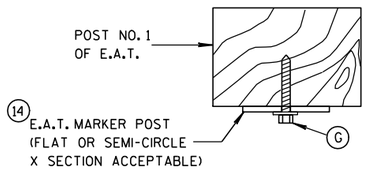
FRONT VIEW **SIDE VIEW**

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

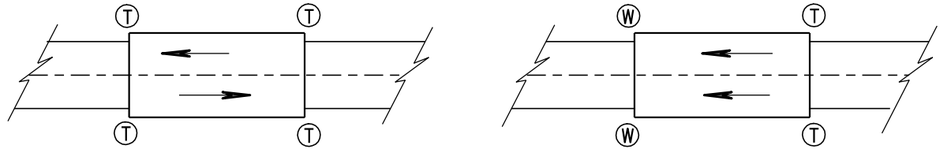
APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS 53 ENGINEER
[illegible]TENT
FHWA

6

S.D.D. 14 B 44-1c

6

S.D.D. 14 B 44-1c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

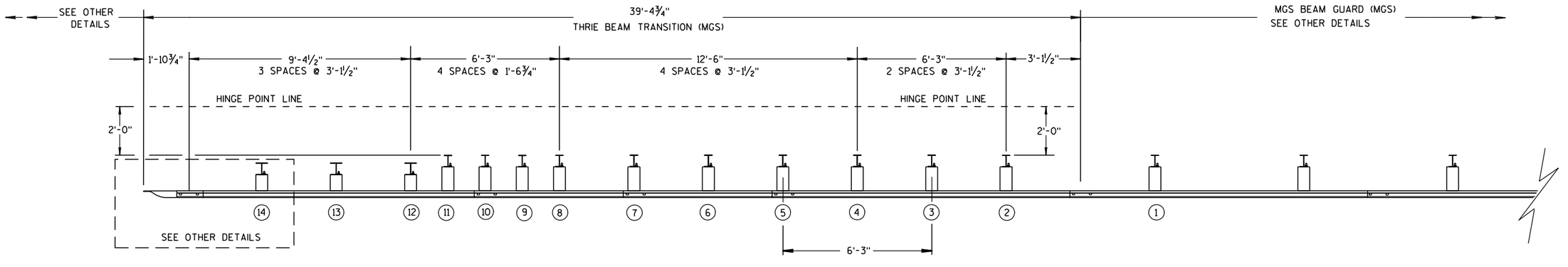
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED DURING EXCAVATION, SEE STANDARD DETAIL DRAWING 14 B 42.

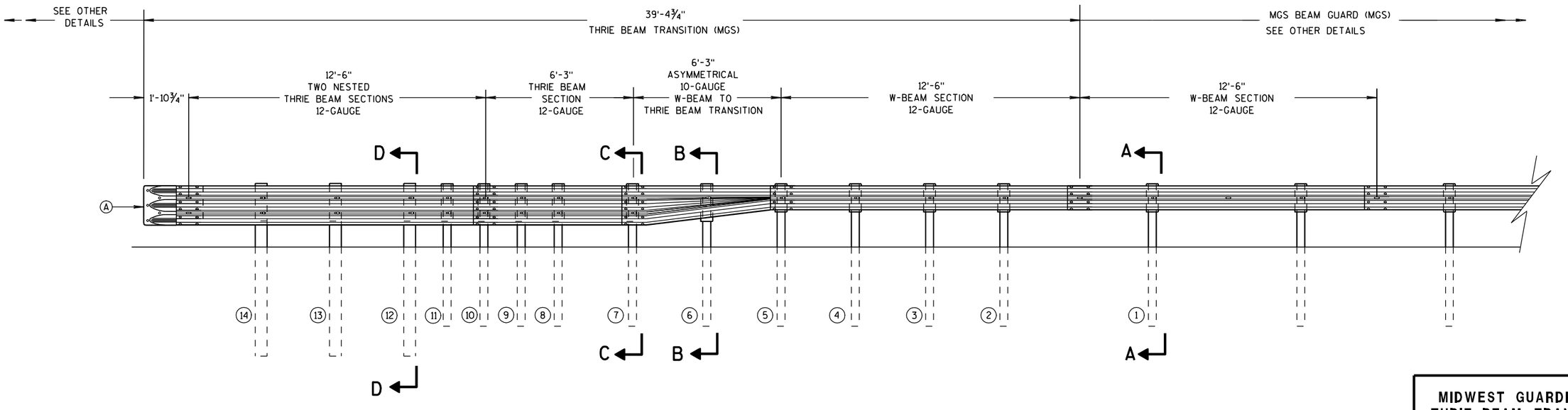
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

(A) 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)

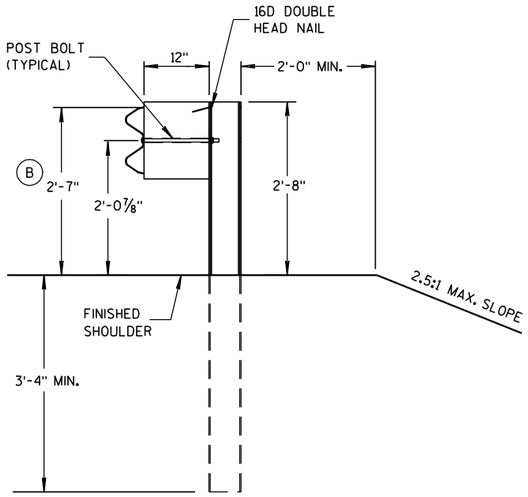
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 45-2a

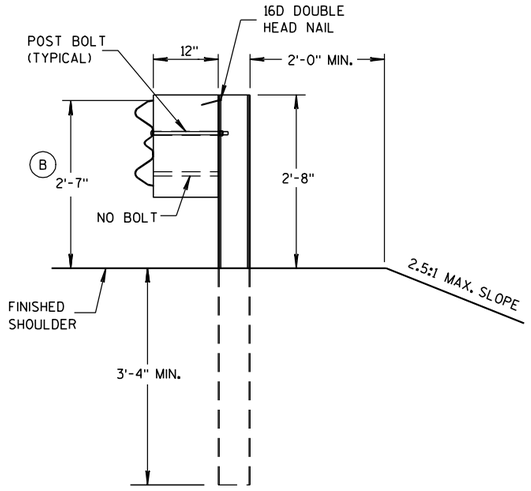
GENERAL NOTES

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



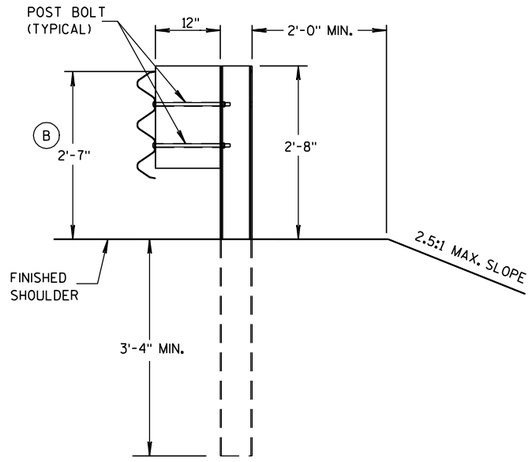
SECTION A-A

POSTS 1-5



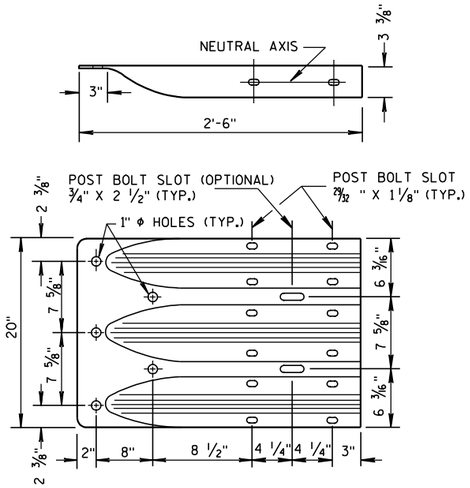
SECTION B-B

POST 6

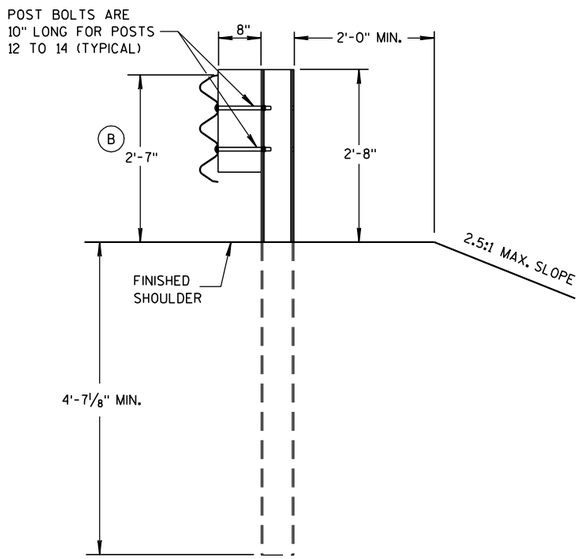


SECTION C-C

POSTS 7-11

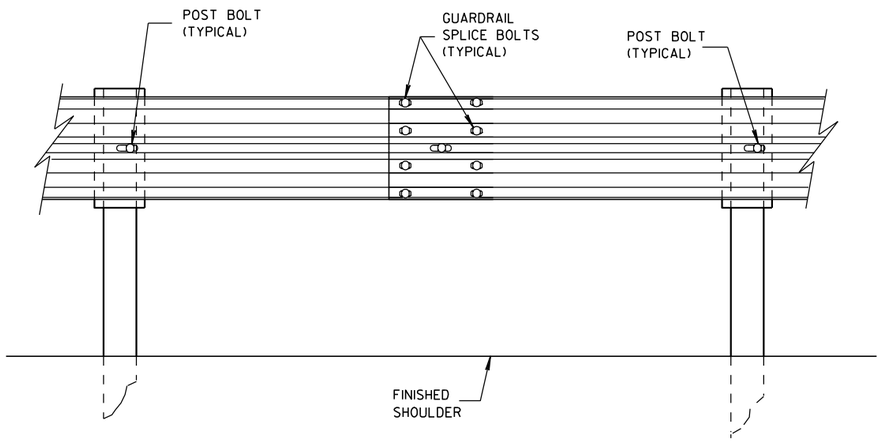


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14



SPLICE DETAIL

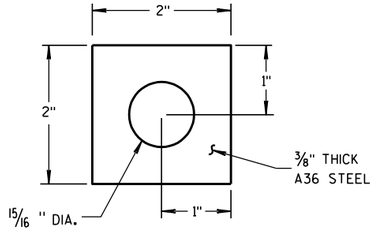
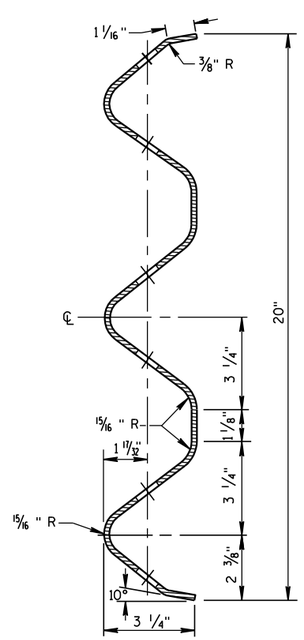


PLATE WASHER DETAIL



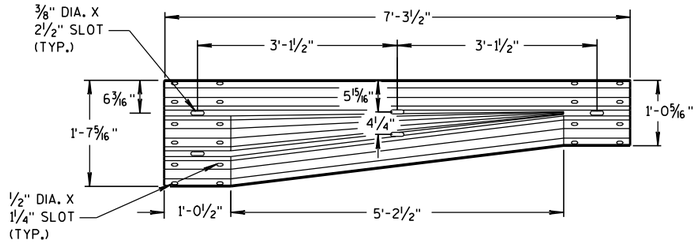
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

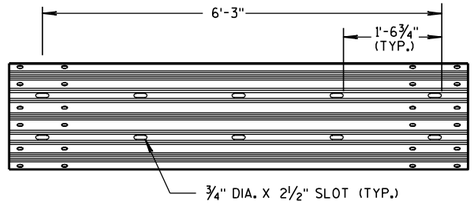
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

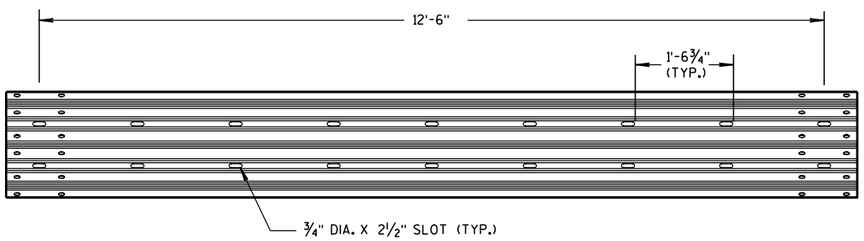
S.D.D. 14 B 45-2b



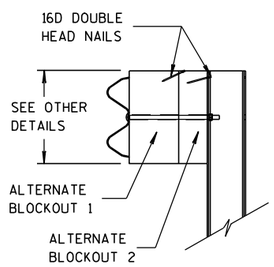
W-BEAM TO THRIE BEAM TRANSITION SECTION



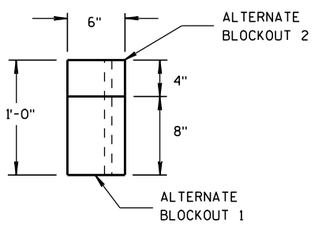
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

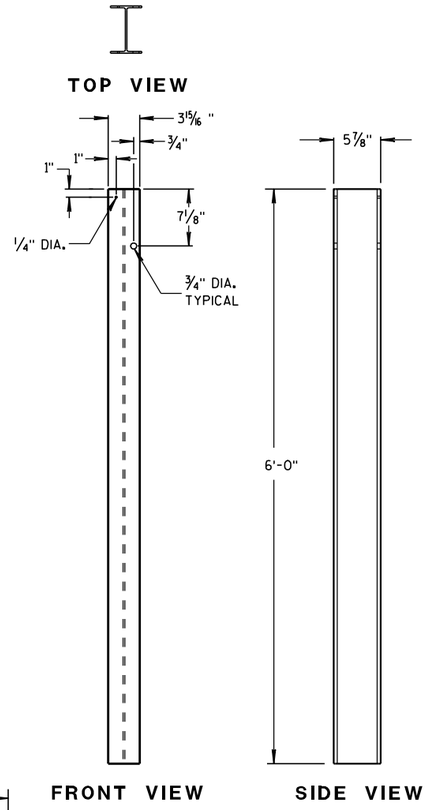


SIDE VIEW

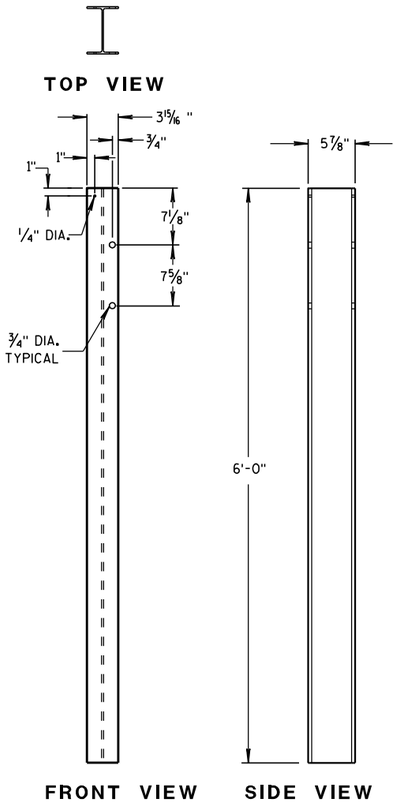


TOP VIEW

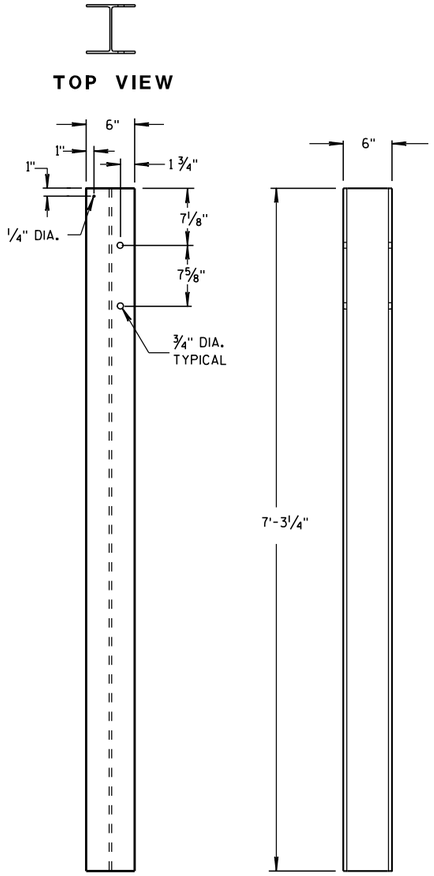
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

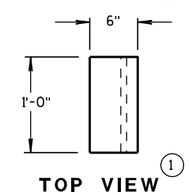


STEEL POSTS 6-11

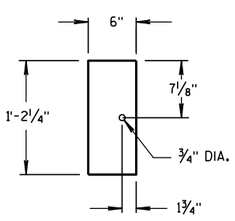


STEEL POSTS 12-14

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

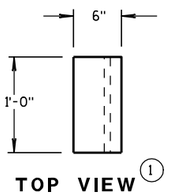


TOP VIEW (1)

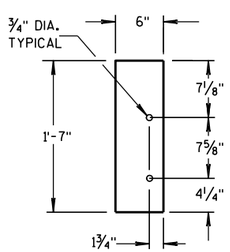


FRONT VIEW

BLOCKOUT POSTS 1-5

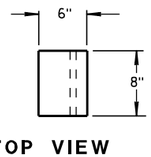


TOP VIEW (1)

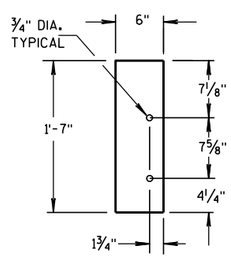


FRONT VIEW

BLOCKOUT POSTS 6-11



TOP VIEW



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)

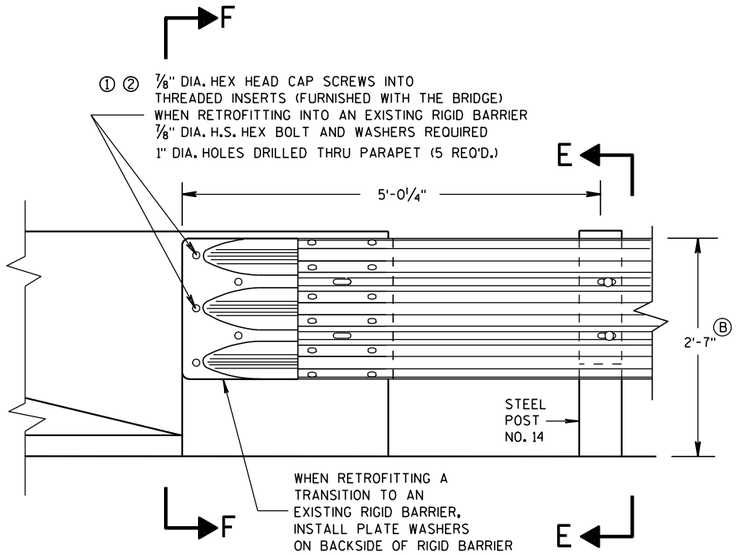
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

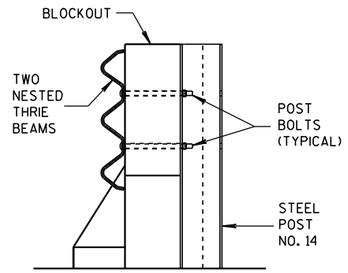
S.D.D. 14 B 45-2c

6

S.D.D. 14 B 45-2c



FRONT VIEW



SECTION E-E

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

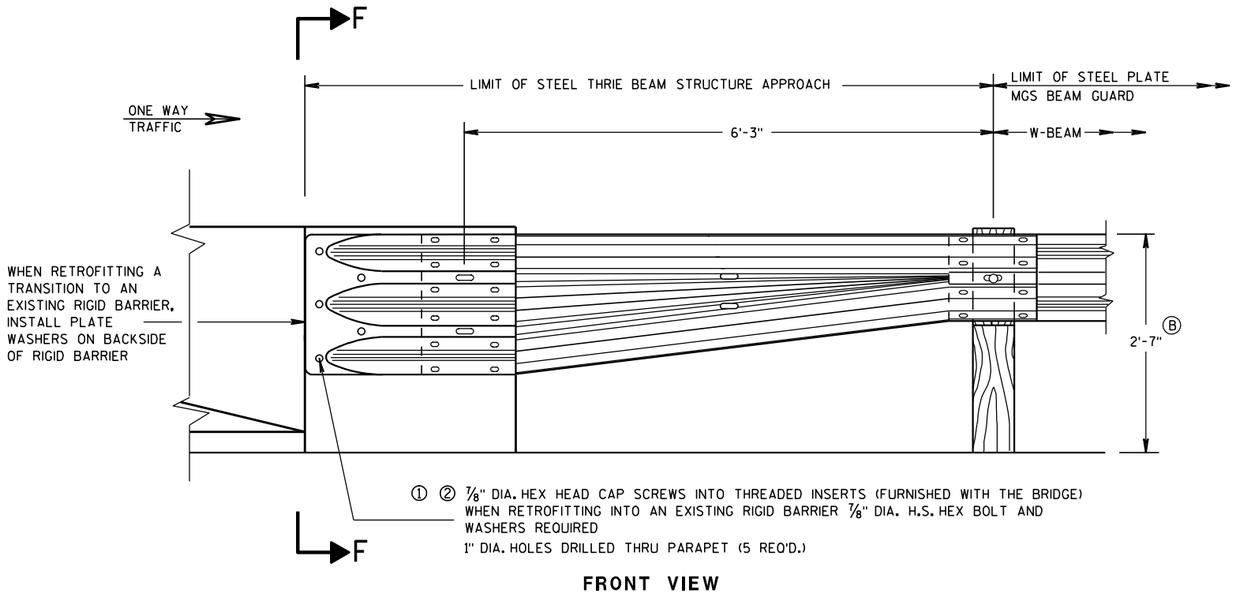
① INCLUDE THE PAYMENT FOR DRILLING BOLT HOLES THROUGH THE PARAPET, AND ALL BOLTS, NUTS AND WASHERS IN THE ITEM "STEEL THRIE BEAMSTRUCTURAL APPROACH".

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

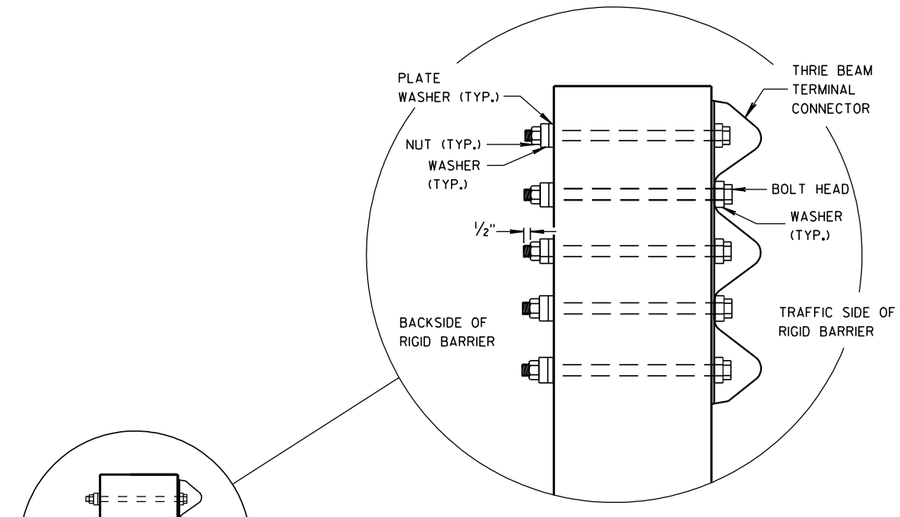
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

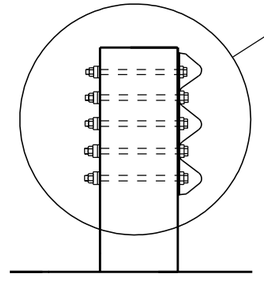
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW





SECTION F-F

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2/8/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS 157 — ENGINEER

FHWA

6

S.D.D. 14 B 45-2d

6

S.D.D. 14 B 45-2d

GENERAL NOTES

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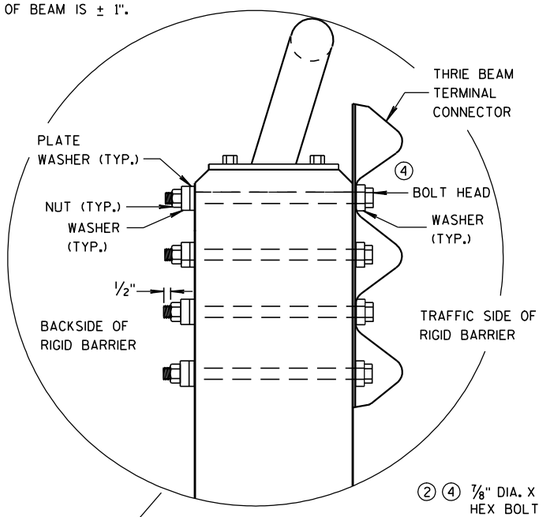
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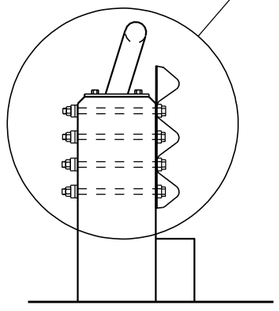
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③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

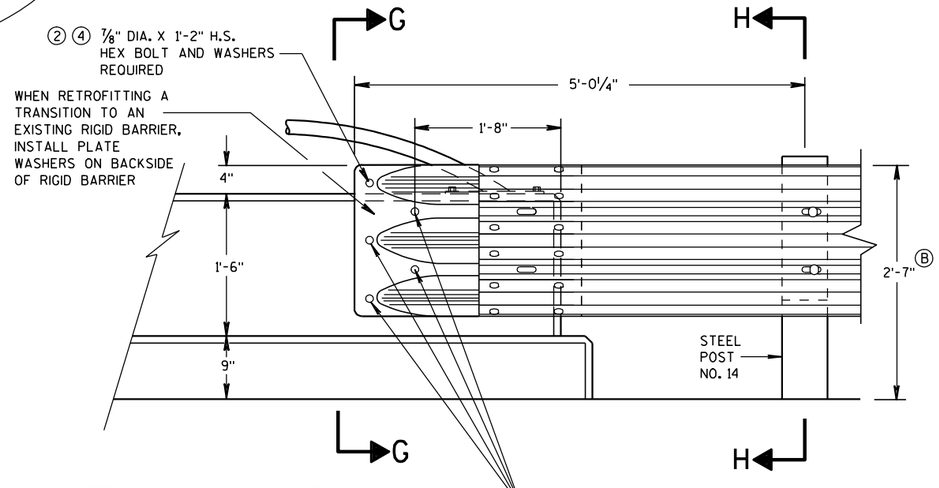
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

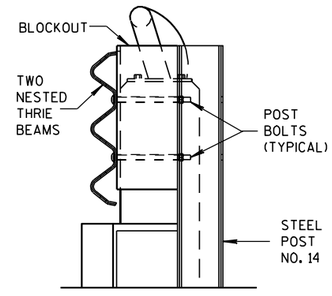




SECTION G-G

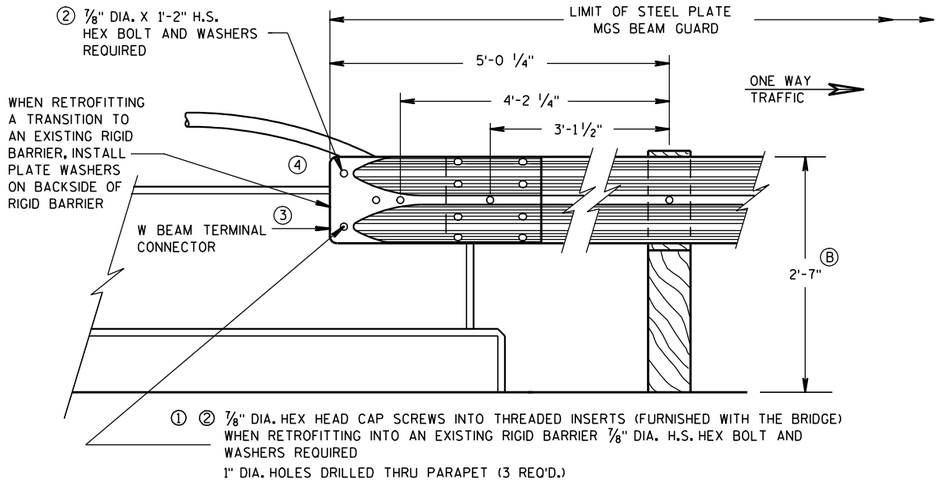


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS DEVELOPMENT ENGINEER

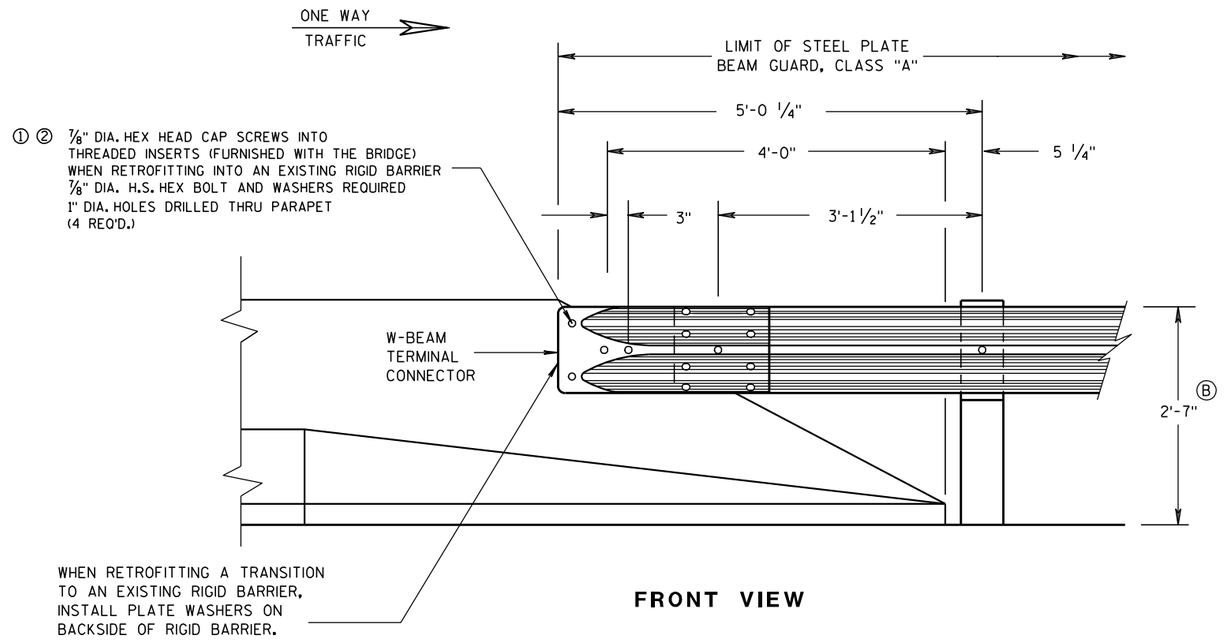
FHWA

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S.D.D. 14 B 45-2e

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S.D.D. 14 B 45-2e



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

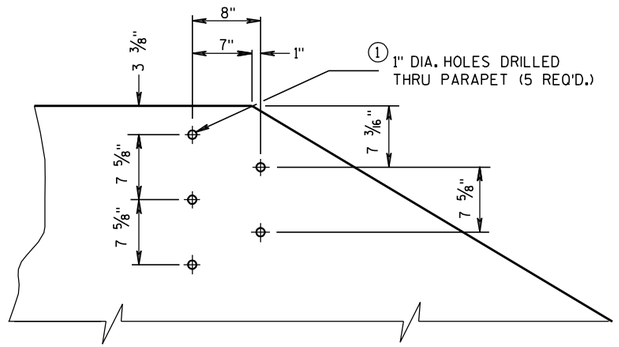
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

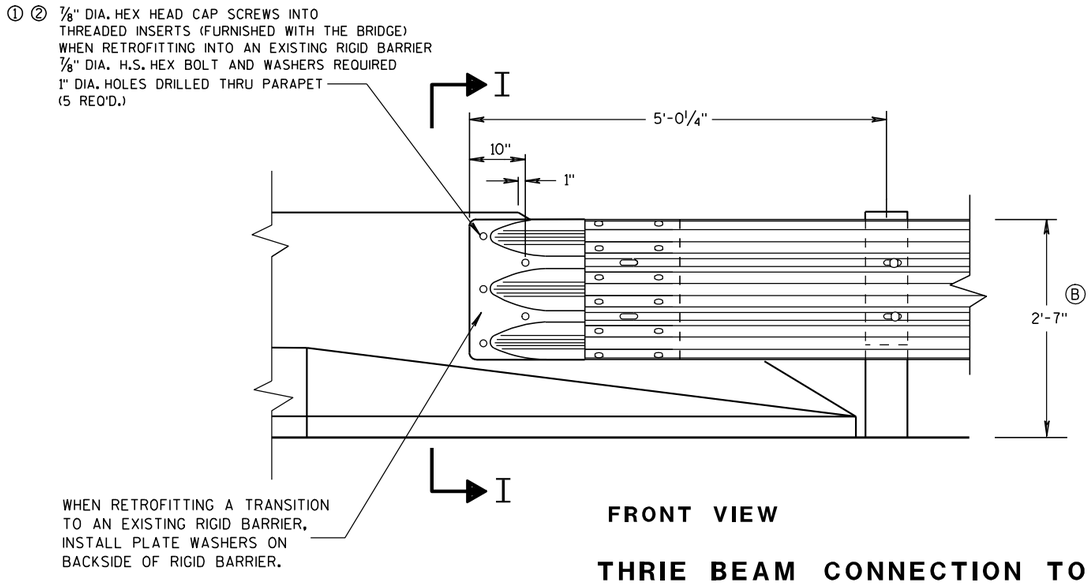
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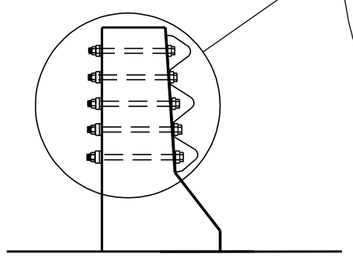
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



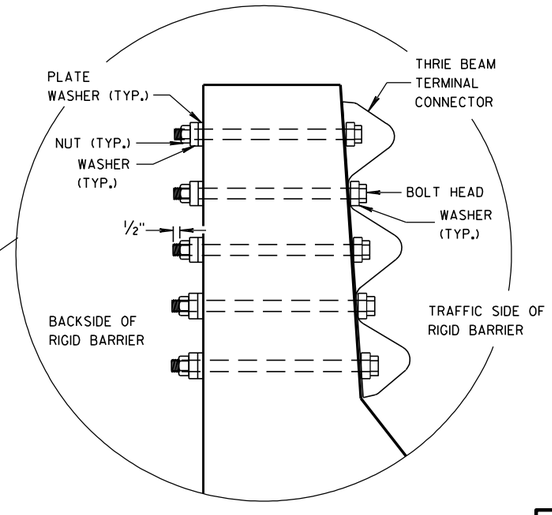
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

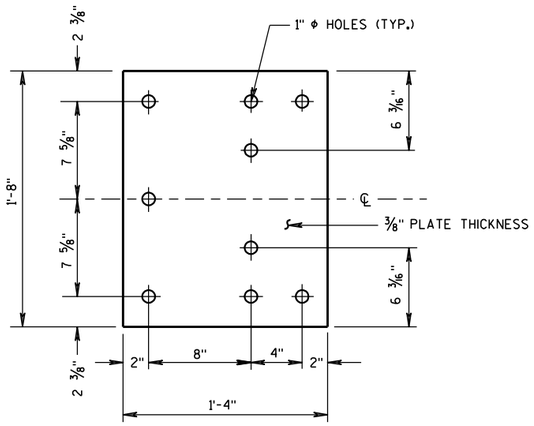
FHWA

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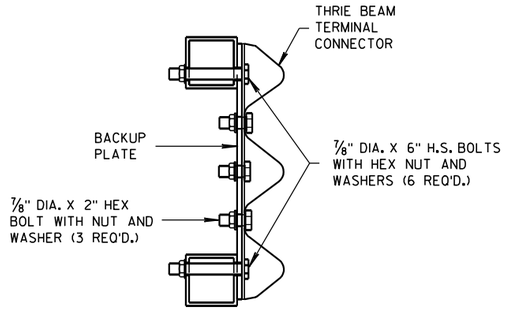
S.D.D. 14 B 45-2f

6

S.D.D. 14 B 45-2f



BACK-UP PLATE DETAIL

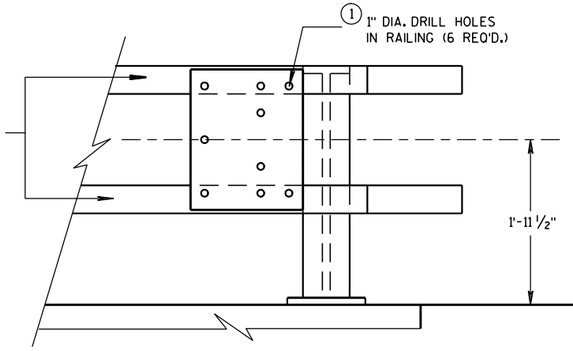


SECTION J-J

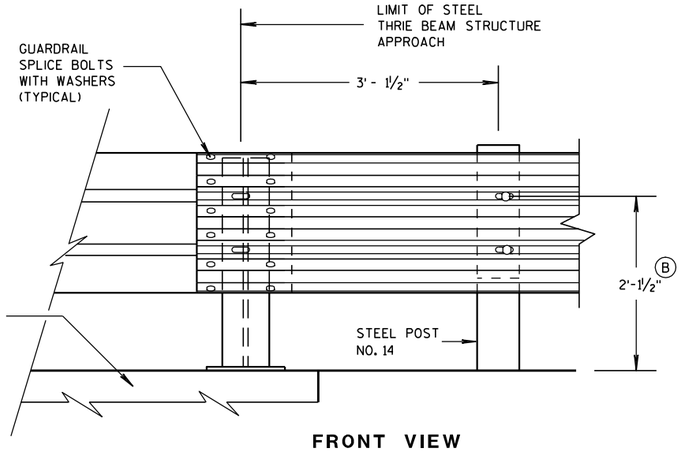
GENERAL NOTES

(1) INCLUDE THE PAYMENT FOR DRILLING HOLES IN RAILING IN THE ITEM "STEEL THRIE BEAM STRUCTURE APPROACH".

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

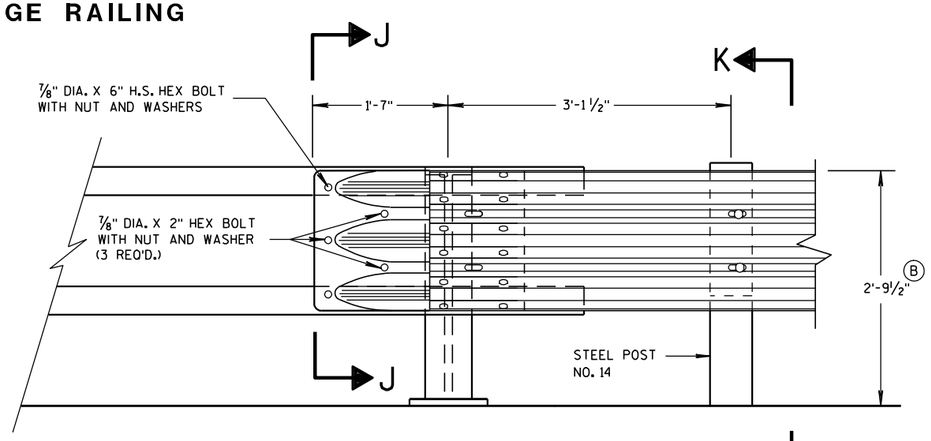


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

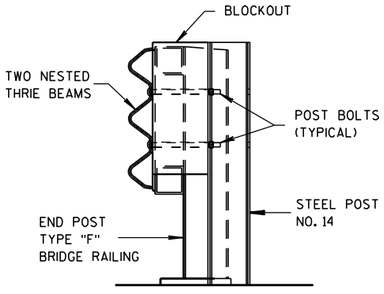


FRONT VIEW

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

2-8-2012 DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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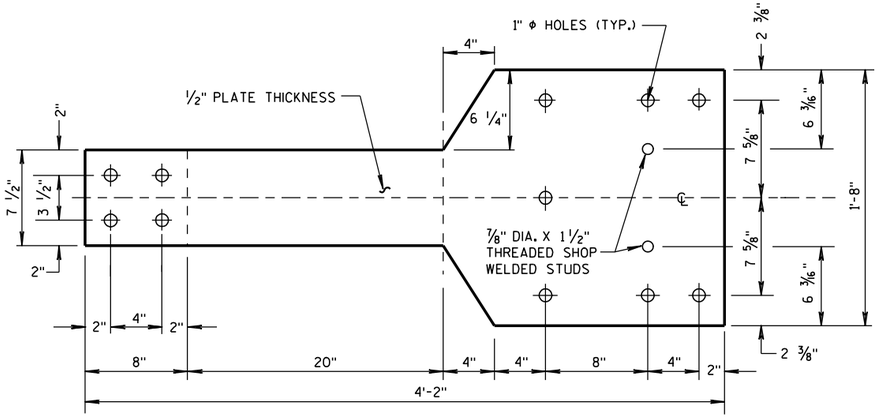
S.D.D. 14 B 45-2g

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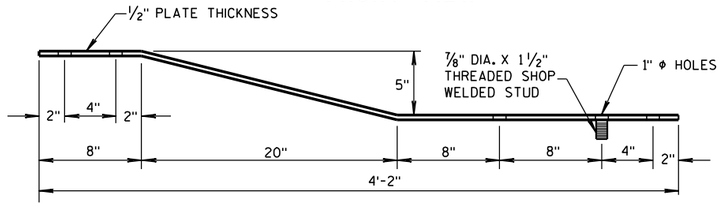
S.D.D. 14 B 45-2g

GENERAL NOTES

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

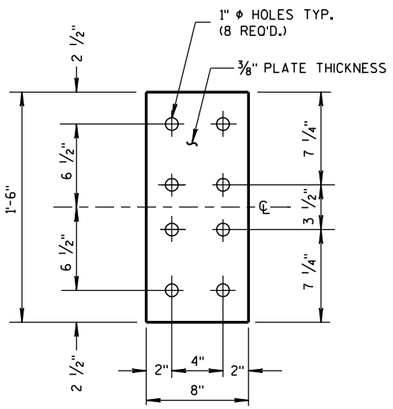


FRONT VIEW



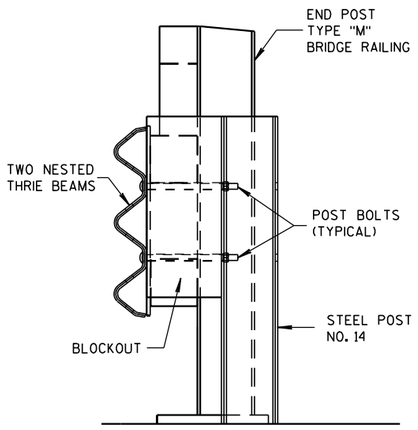
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

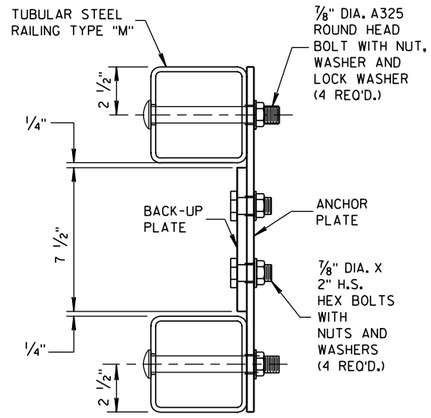


FRONT VIEW

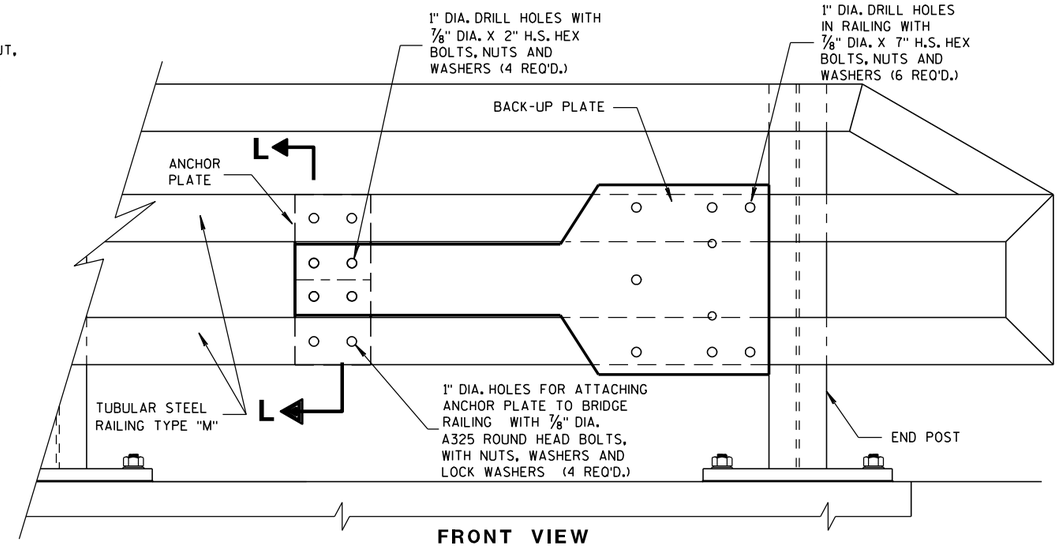
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

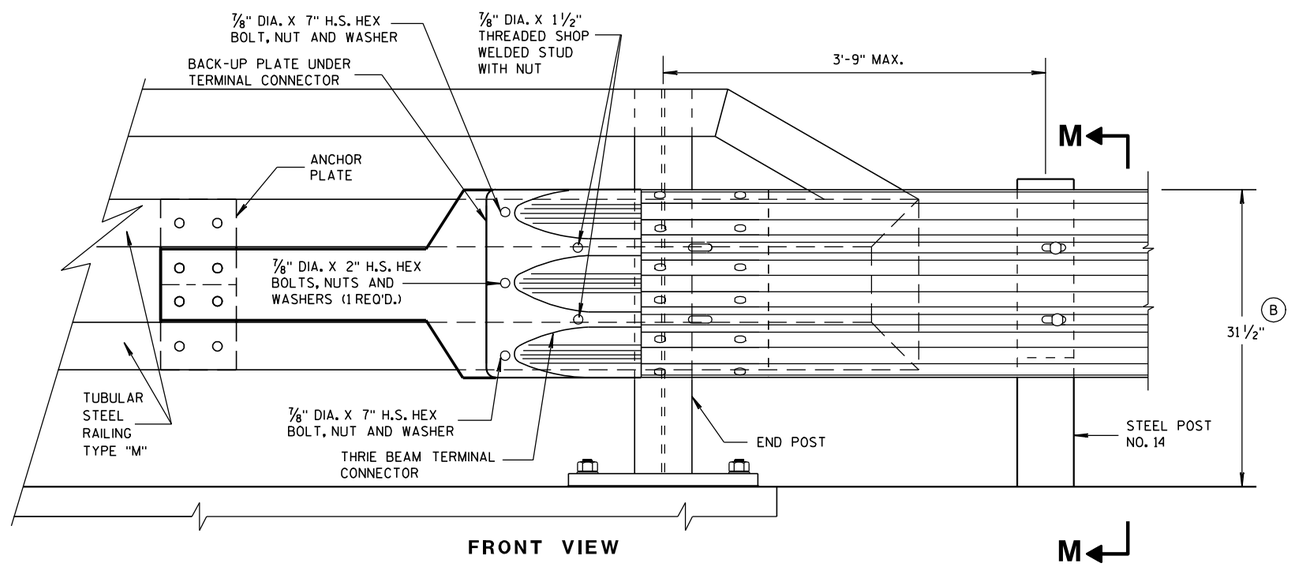


SECTION L-L

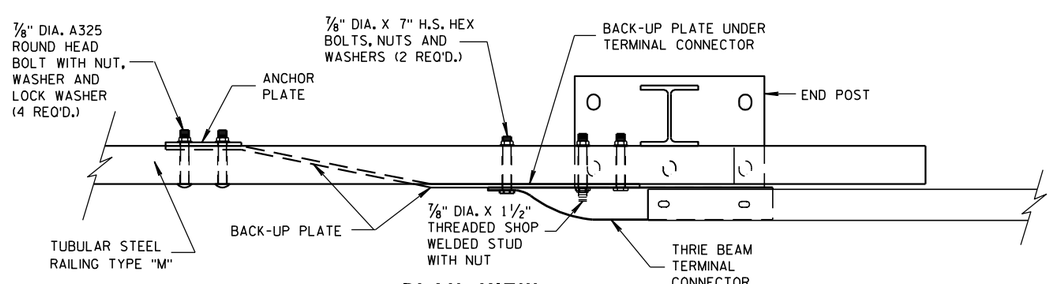


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012 DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

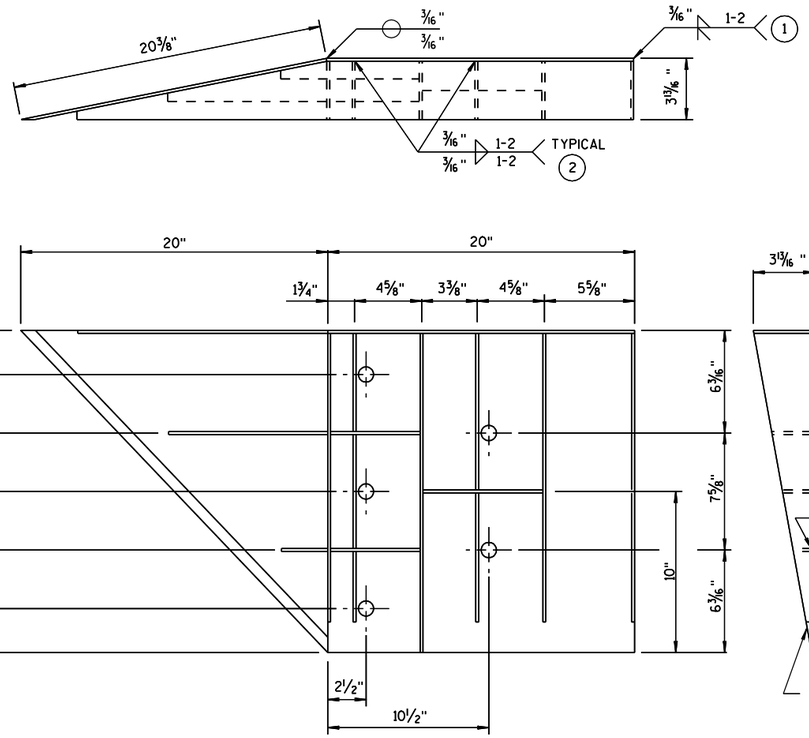
FHWA

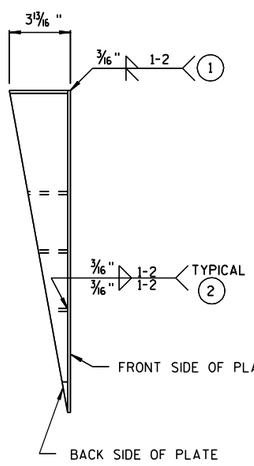
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S.D.D. 14 B 45-2h

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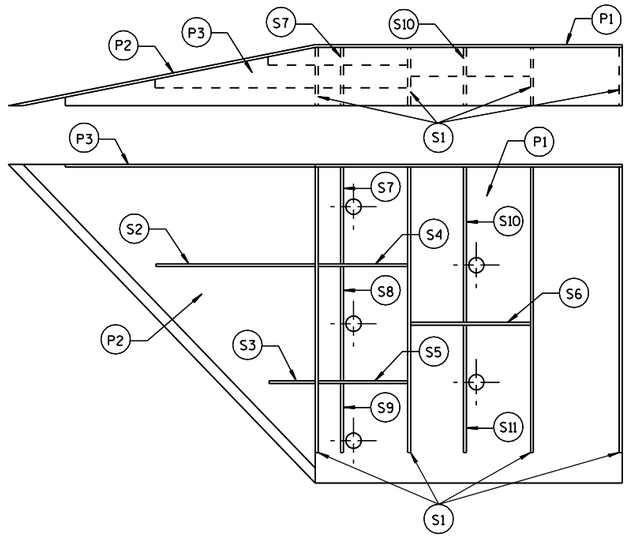
S.D.D. 14 B 45-2h





WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)



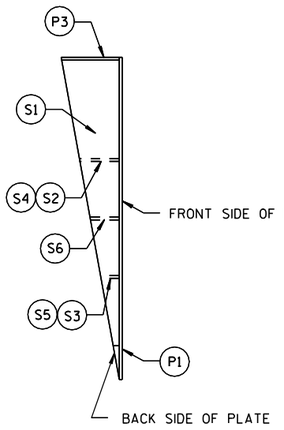


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE ⅜" THICK.

ALL STIFFENERS ARE ¼" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND ⅜" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
⅜" FILLET WELD BY 1" LONG SPACED AT 2".

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	⅜"
P2	1		20" x 20" x 28⅜"	⅜"
P3	1		39" x 3⅝" x 20" x 19⅝"	⅜"
S1	4		18⅞" x 3⅜" x 18¾"	¼"
S2	1		10¼" x 2⅜" x 10⅜" x ½"	¼"
S3	1		3" x 1⅛" x 3⅛" x ½"	¼"
S4	1		6⅛" x 2⅜"	¼"
S5	1		6⅛" x 1⅛"	¼"
S6	1		7¾" x 1¾"	¼"
S7	1		2⅜" x 6" x 3⅝" x 5⅞"	¼"
S8	1		1⅝" x 7½" x 2½" x 7⅜"	¼"
S9	1		6⅛" x 6⅜" x 1⅝"	¼"
S10	1		1⅞" x 9⅞" x 3⅝" x 9⅛"	¼"
S11	1		8½" x 8¾" x 1⅜"	¼"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

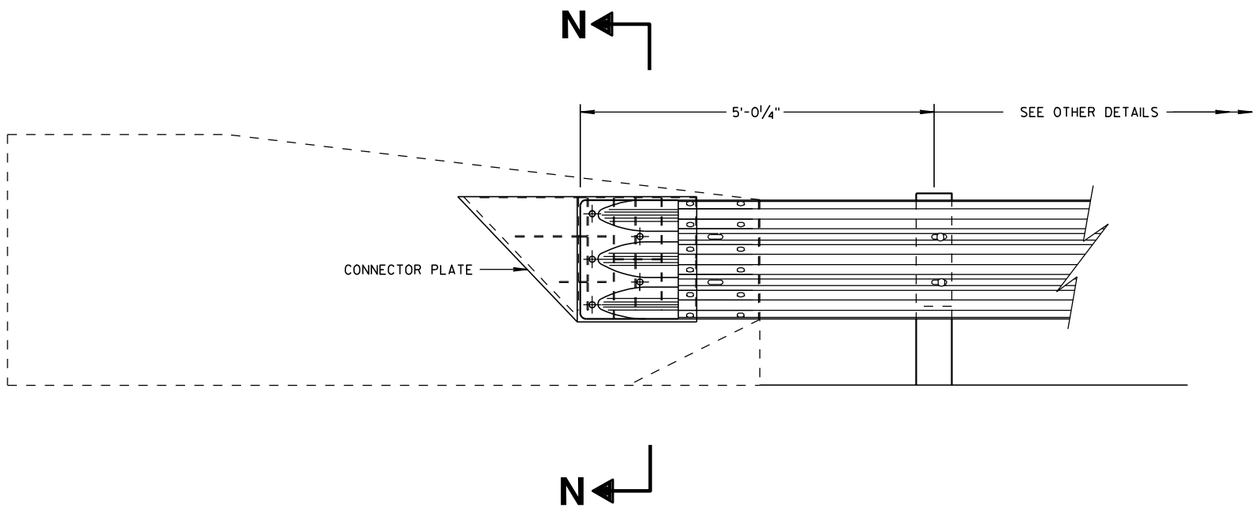
APPROVED
2-8-2012 DATE
/S/ Jerry H. Zaas
ROADWAY STANDARDS ENGINEER
62
FHWA

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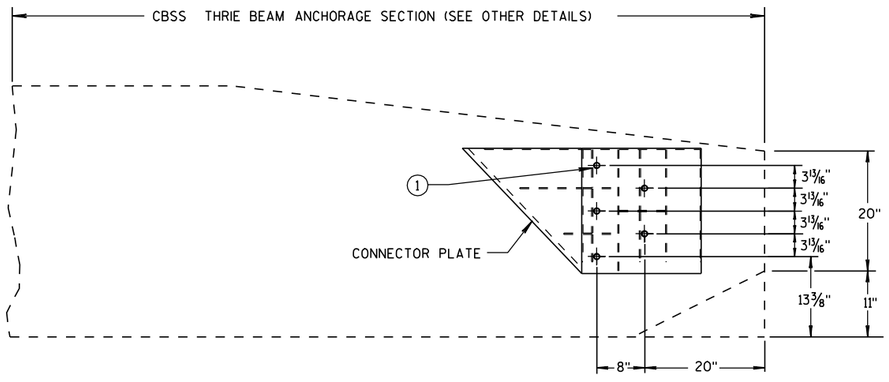
S.D.D. 14 B 45-2i

6

S.D.D. 14 B 45-2i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

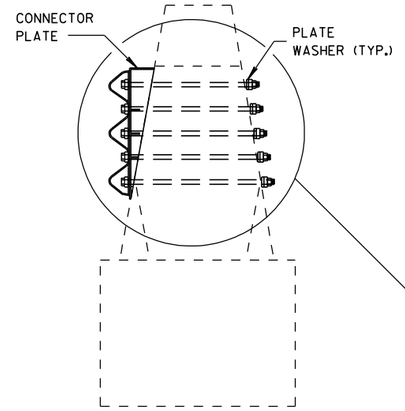


SINGLE SLOPE CONNECTION PLATE PLACEMENT

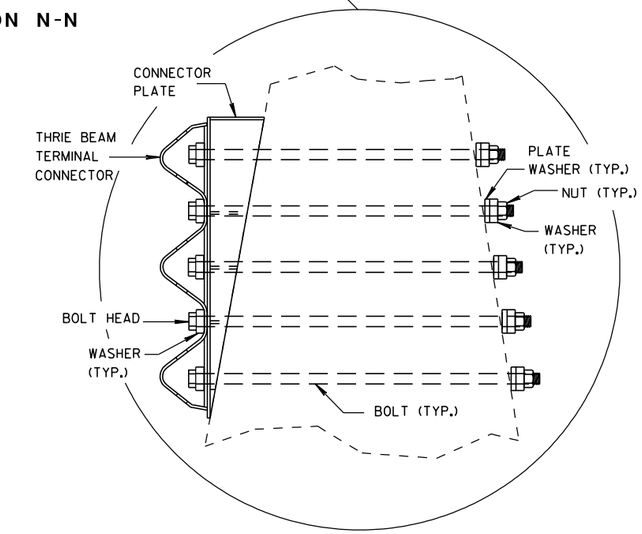
GENERAL NOTES

CONNECTION PLATE INCIDENTAL TO STEEL THRIE BEAM TRANSITION.

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

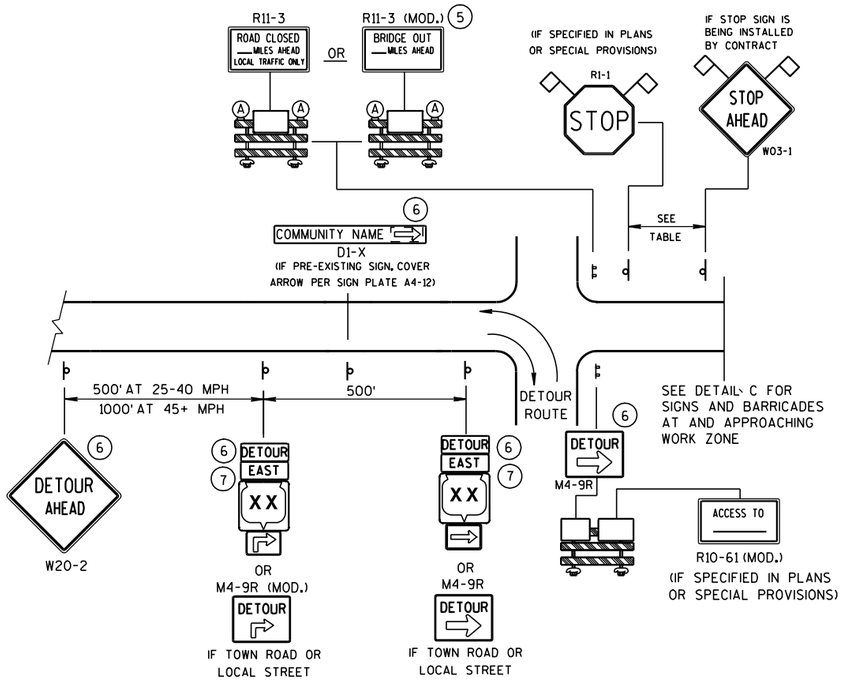
2-8-2012
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

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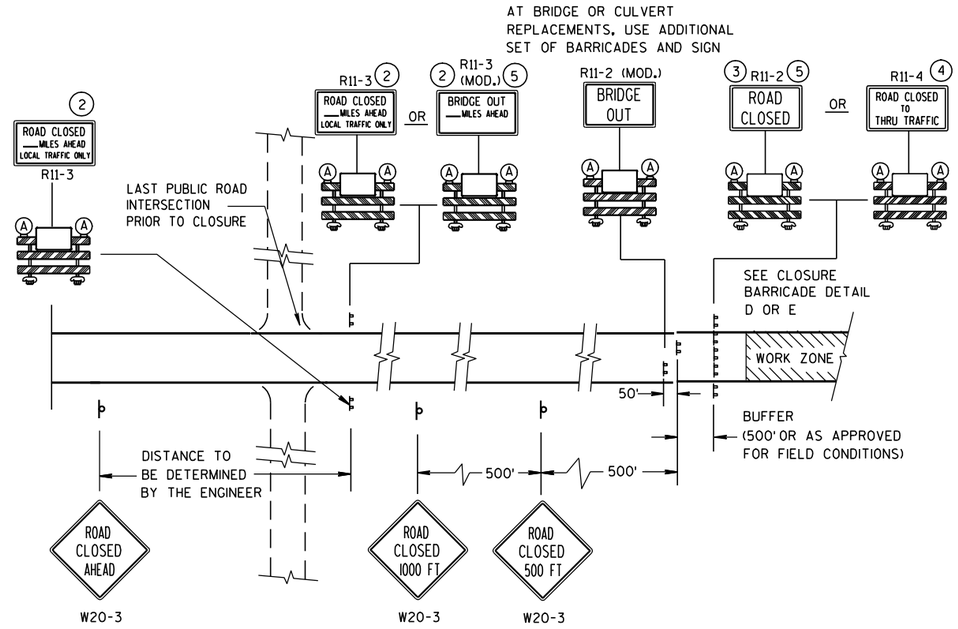
S.D.D. 14 B 45-2j



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

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

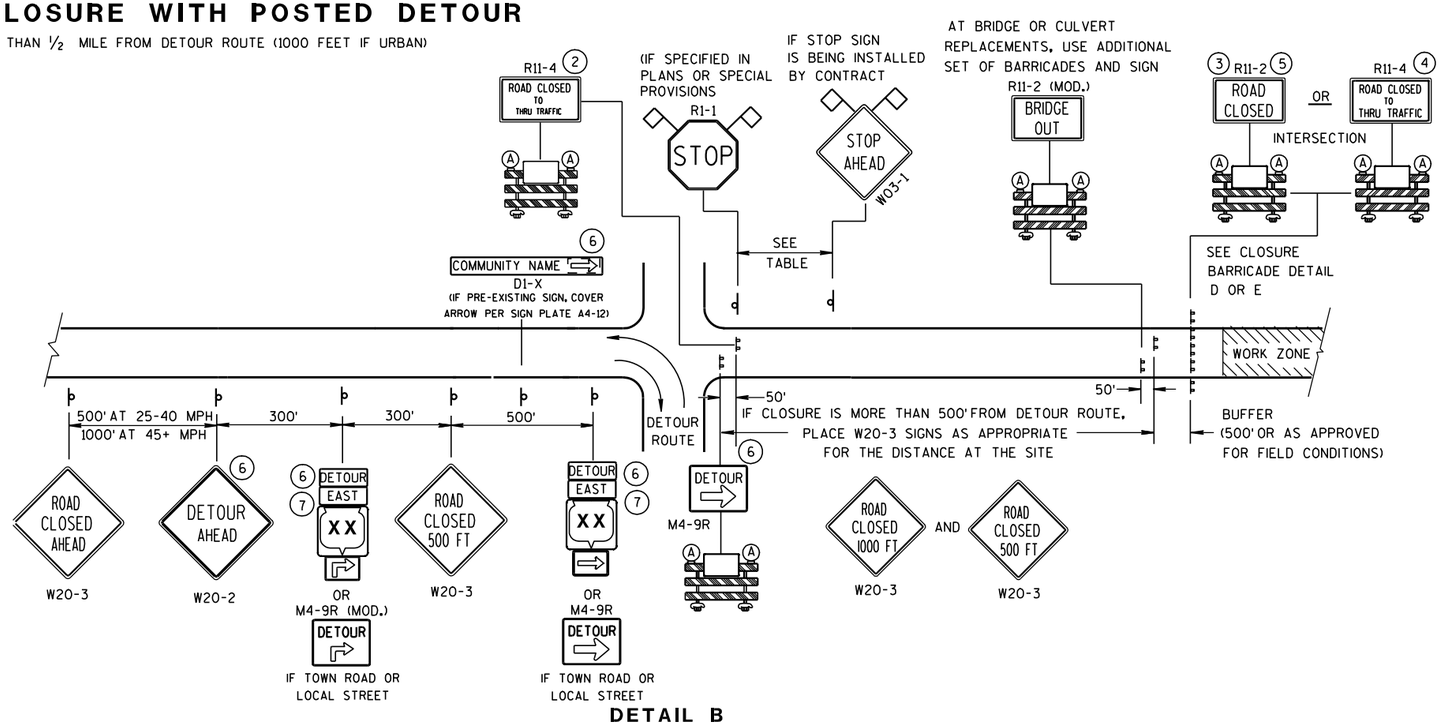


DETAIL C

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 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES (1) THROUGH (7)



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

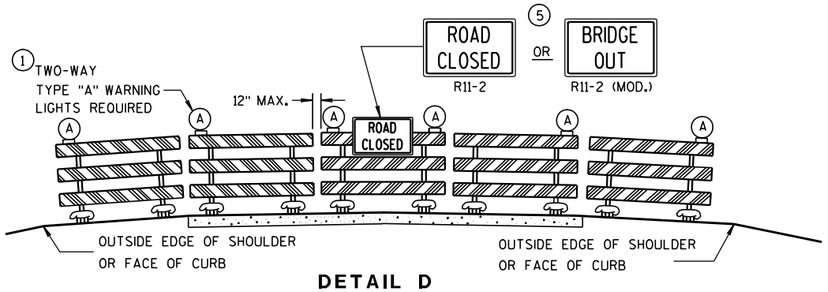
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

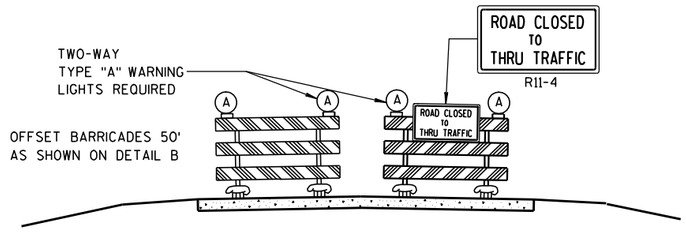
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a 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.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

"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 AND 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

APPROVED

9/16/03
DATE

/S/ Thomas N. N[illegible]
CHIEF SIGNS AND MAR[illegible]INEER

FHWA

6

S.D.D. 15 C 2-4b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

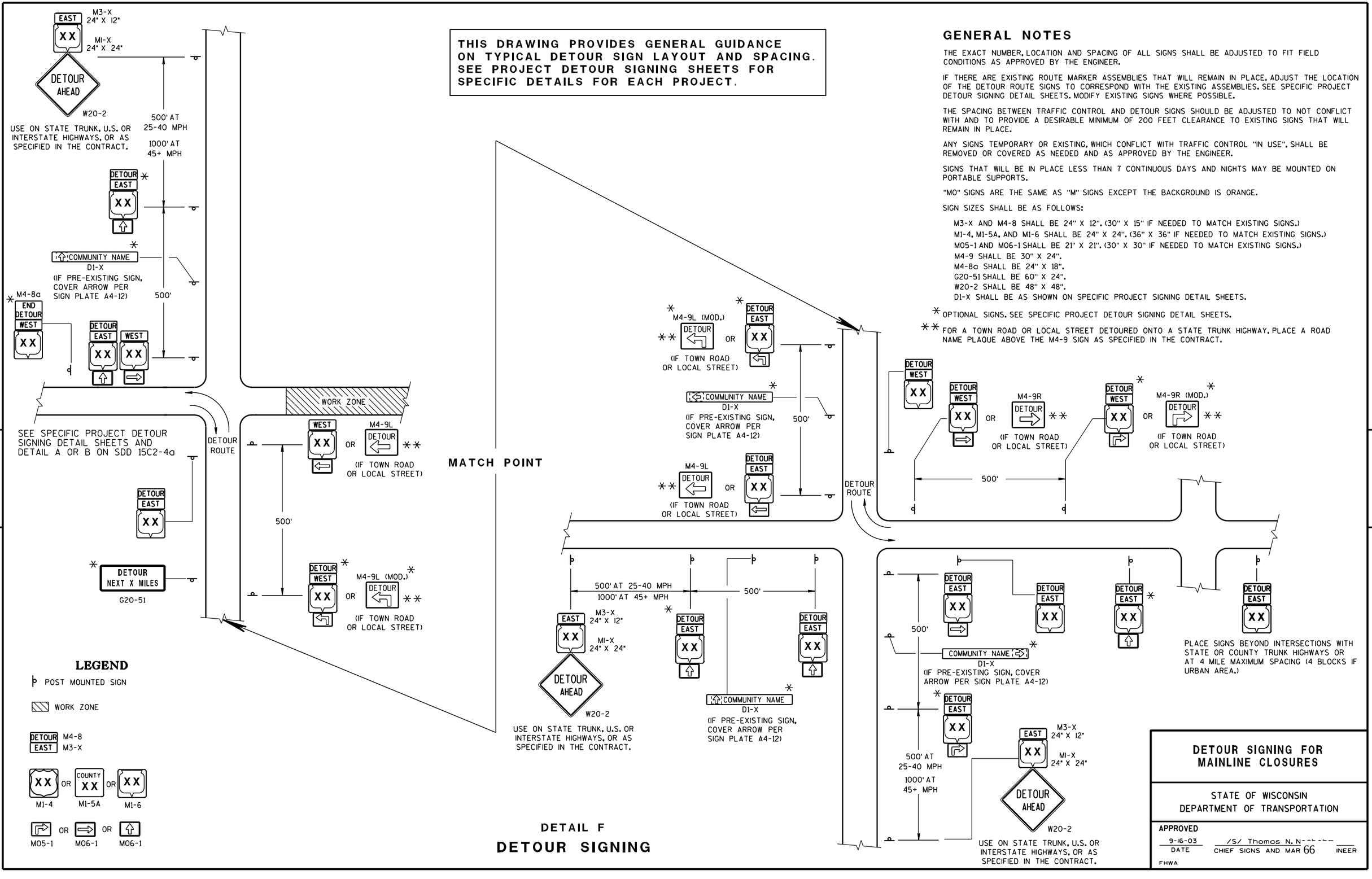
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

M3-X AND 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.)
M4-9 SHALL BE 30" X 24".
M4-8a SHALL BE 24" X 18".
G20-51 SHALL BE 60" X 24".
W20-2 SHALL BE 48" X 48".
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



DETAIL F

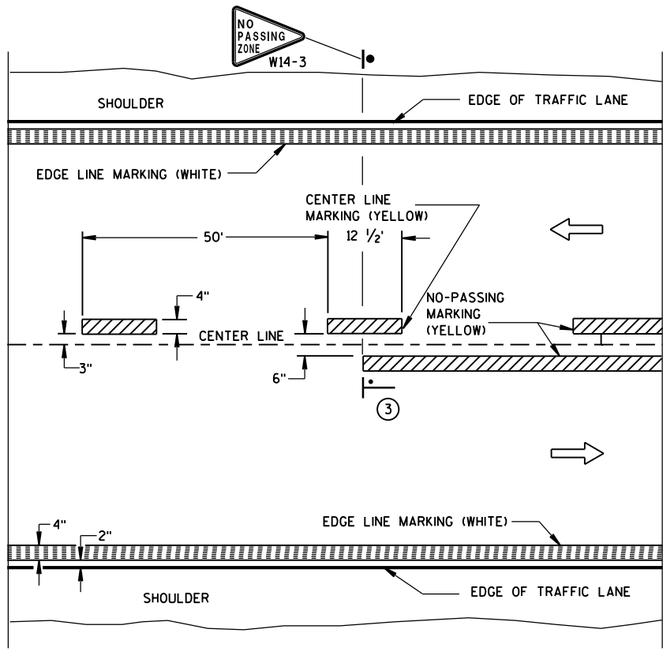
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

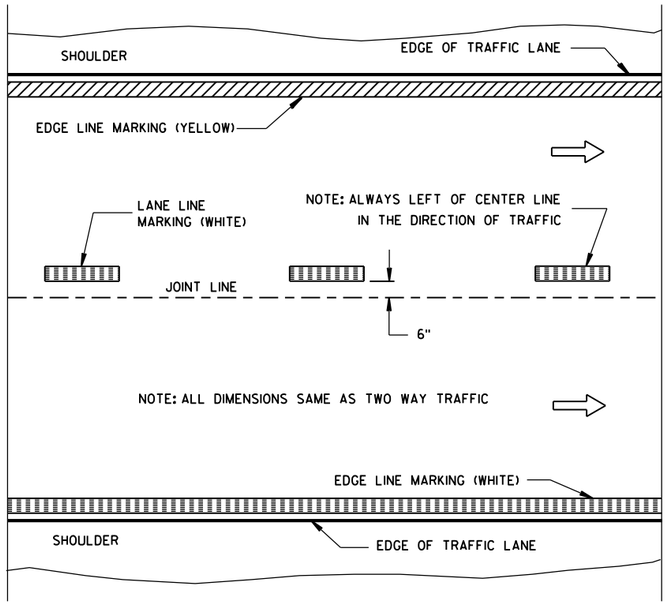
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-16-03 DATE
/S/ Thomas N. [illegible] CHIEF SIGNS AND MAR [illegible] INEER
FHWA

6 S.D.D. 15 C 2-4c

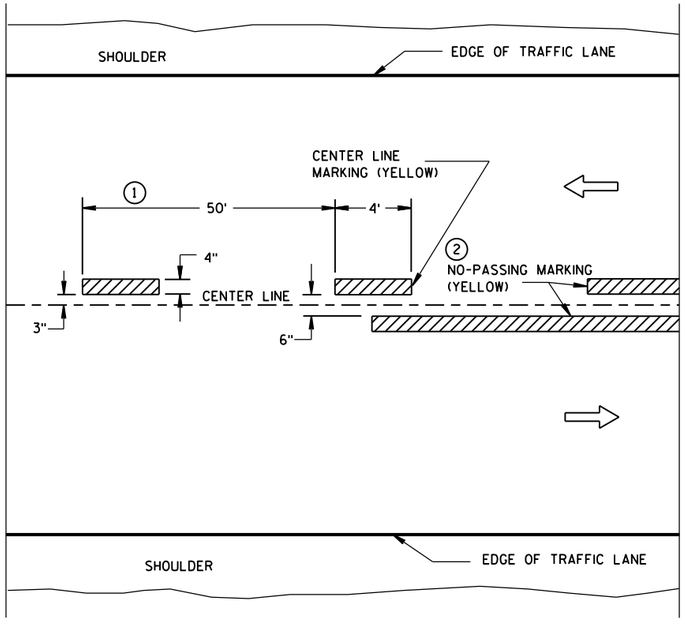


TWO WAY TRAFFIC

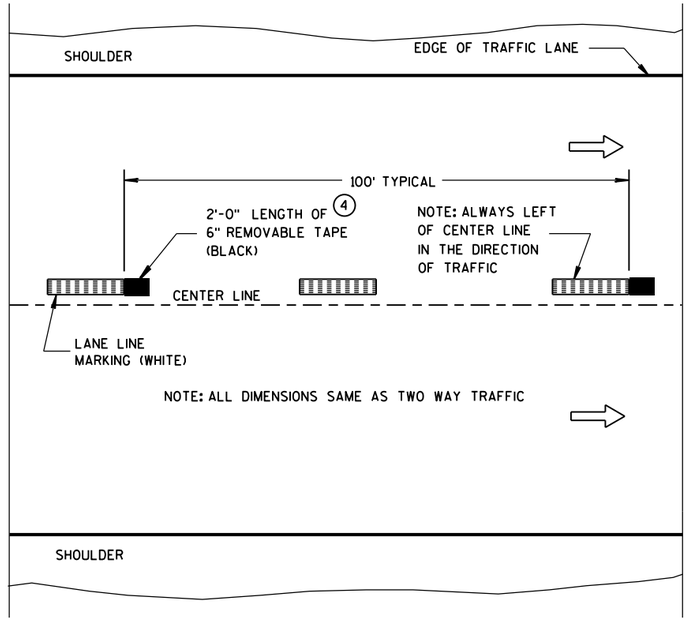


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

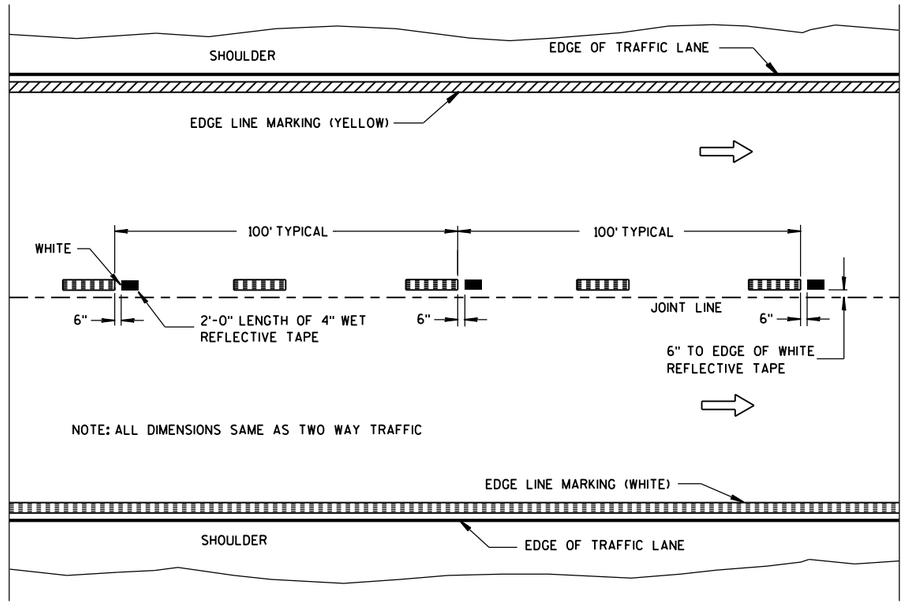
GENERAL NOTES

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

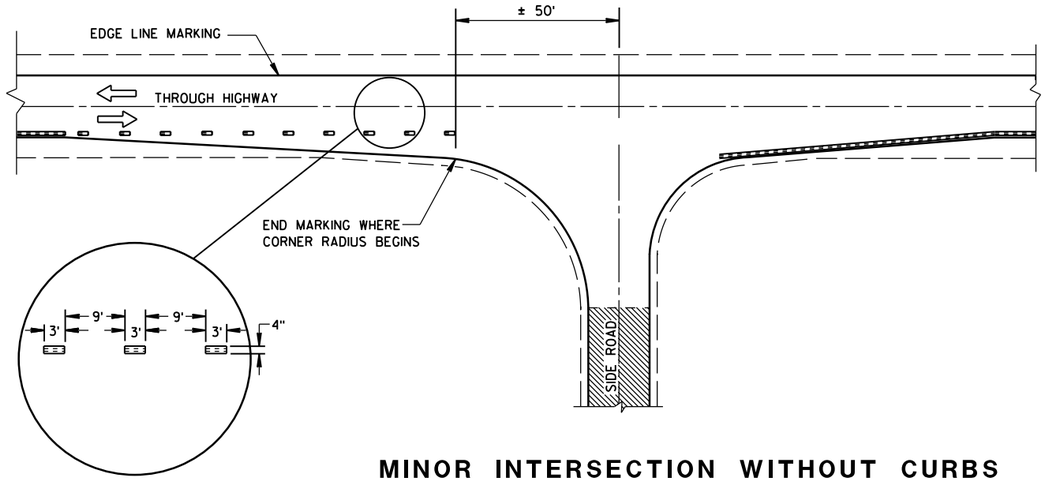
APPROVED
10-1-2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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

6

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



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

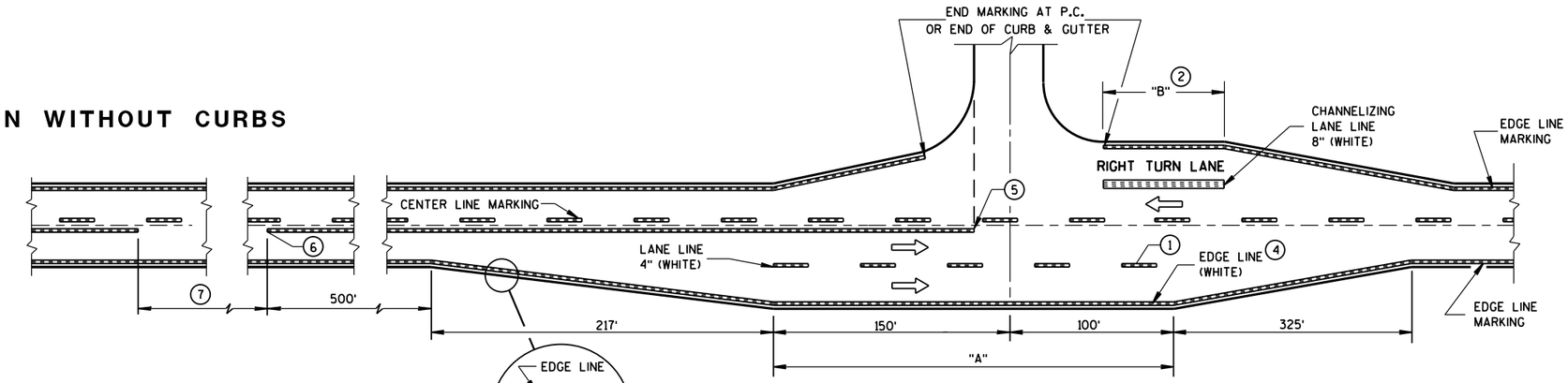
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

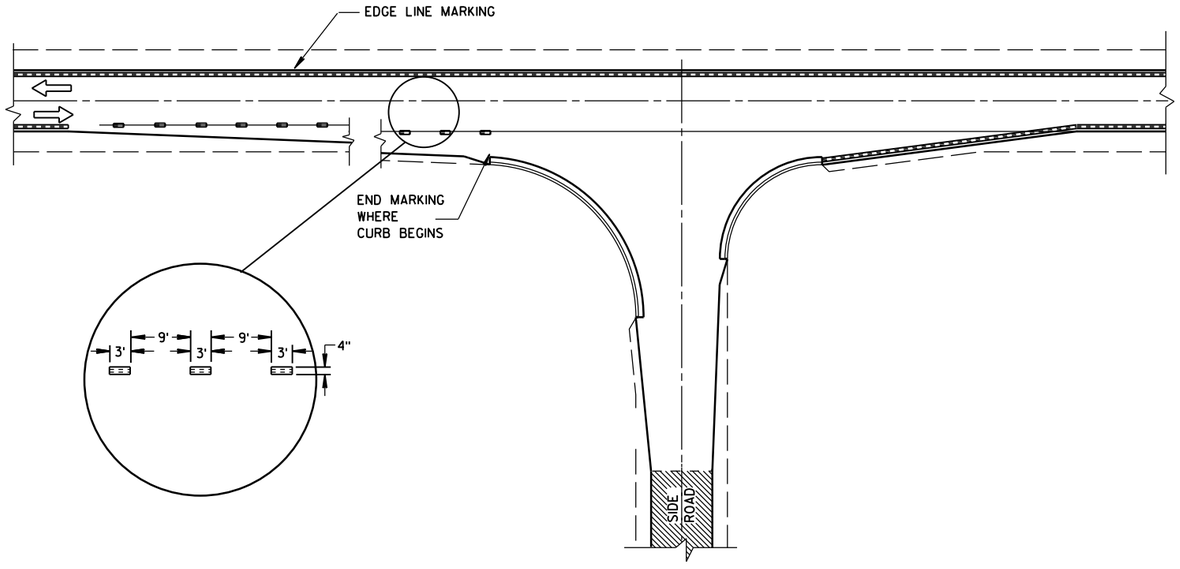
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



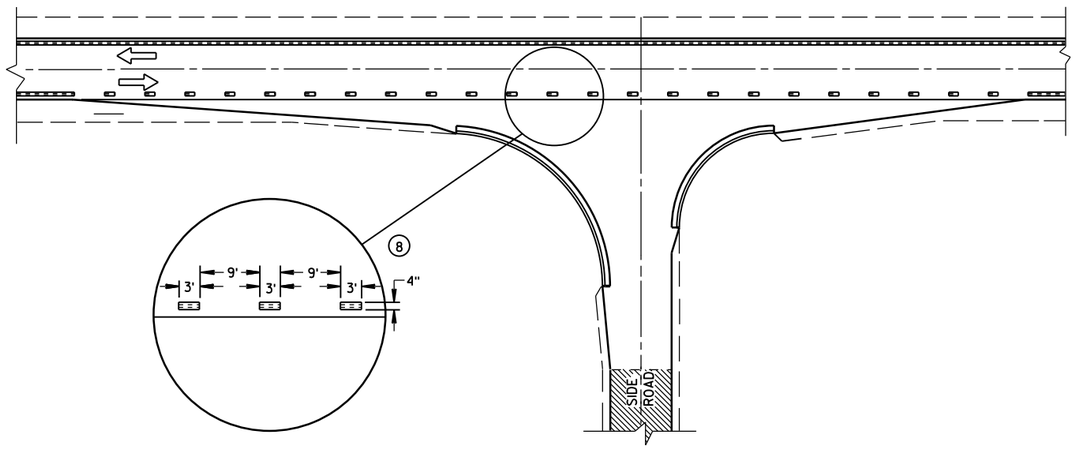
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

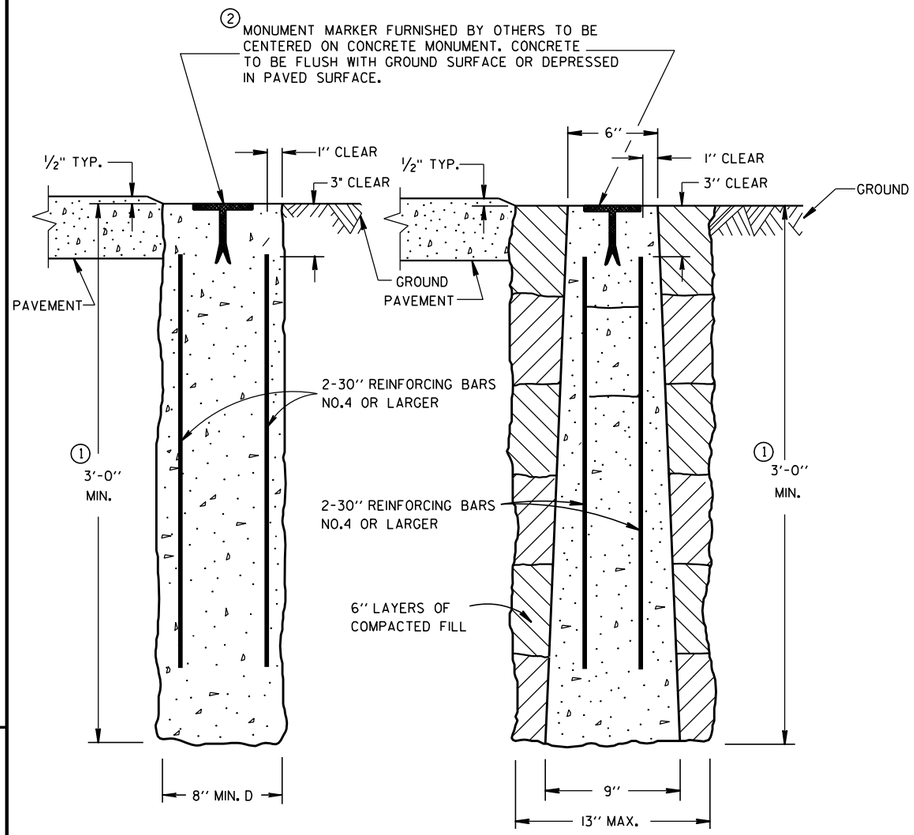
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 C 8-15b

6

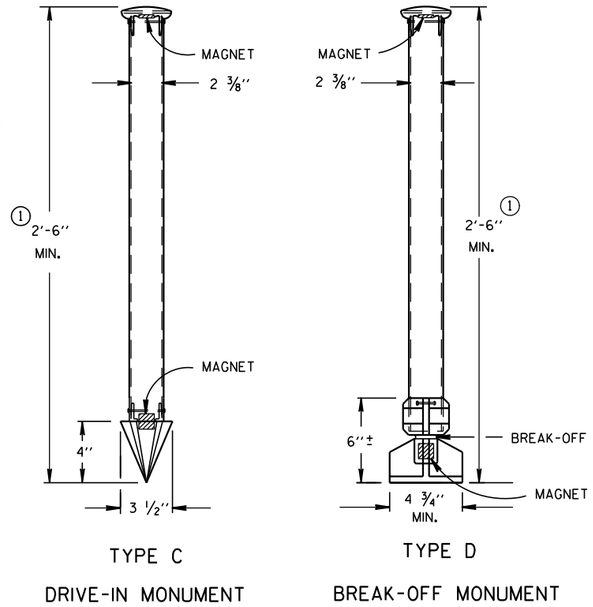
S.D.D. 15 C 8-15b



CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C DRIVE-IN MONUMENT

TYPE D BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

GENERAL NOTES

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

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

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

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

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

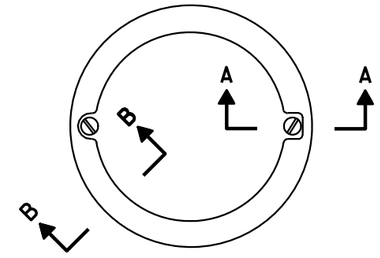
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

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

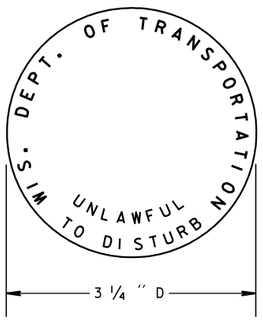
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

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

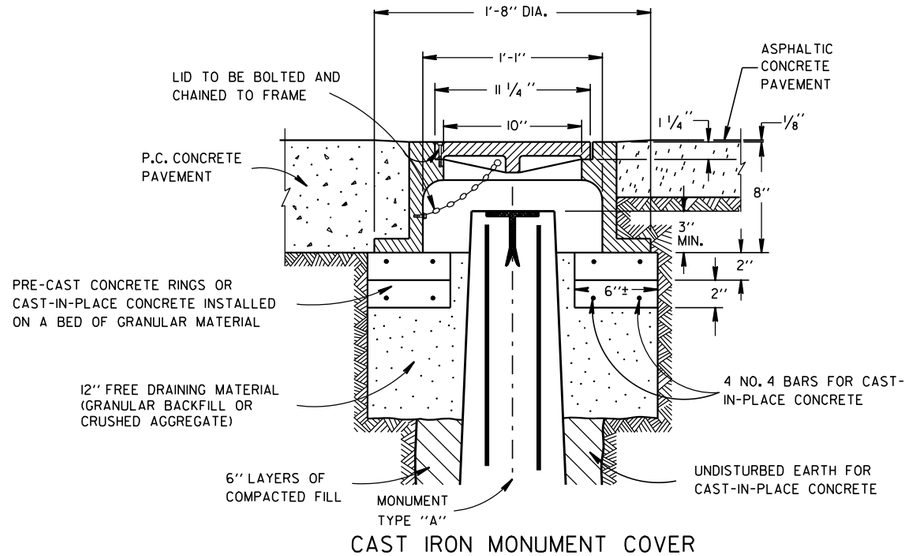
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

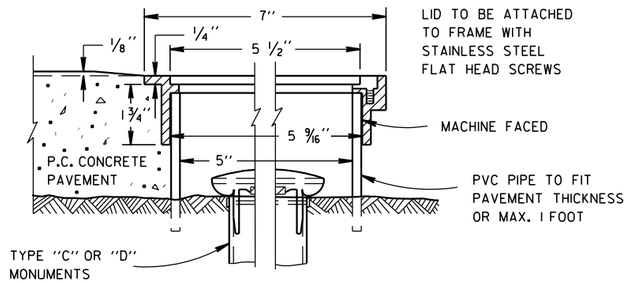


② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MOUNMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/22/1999 DATE

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6

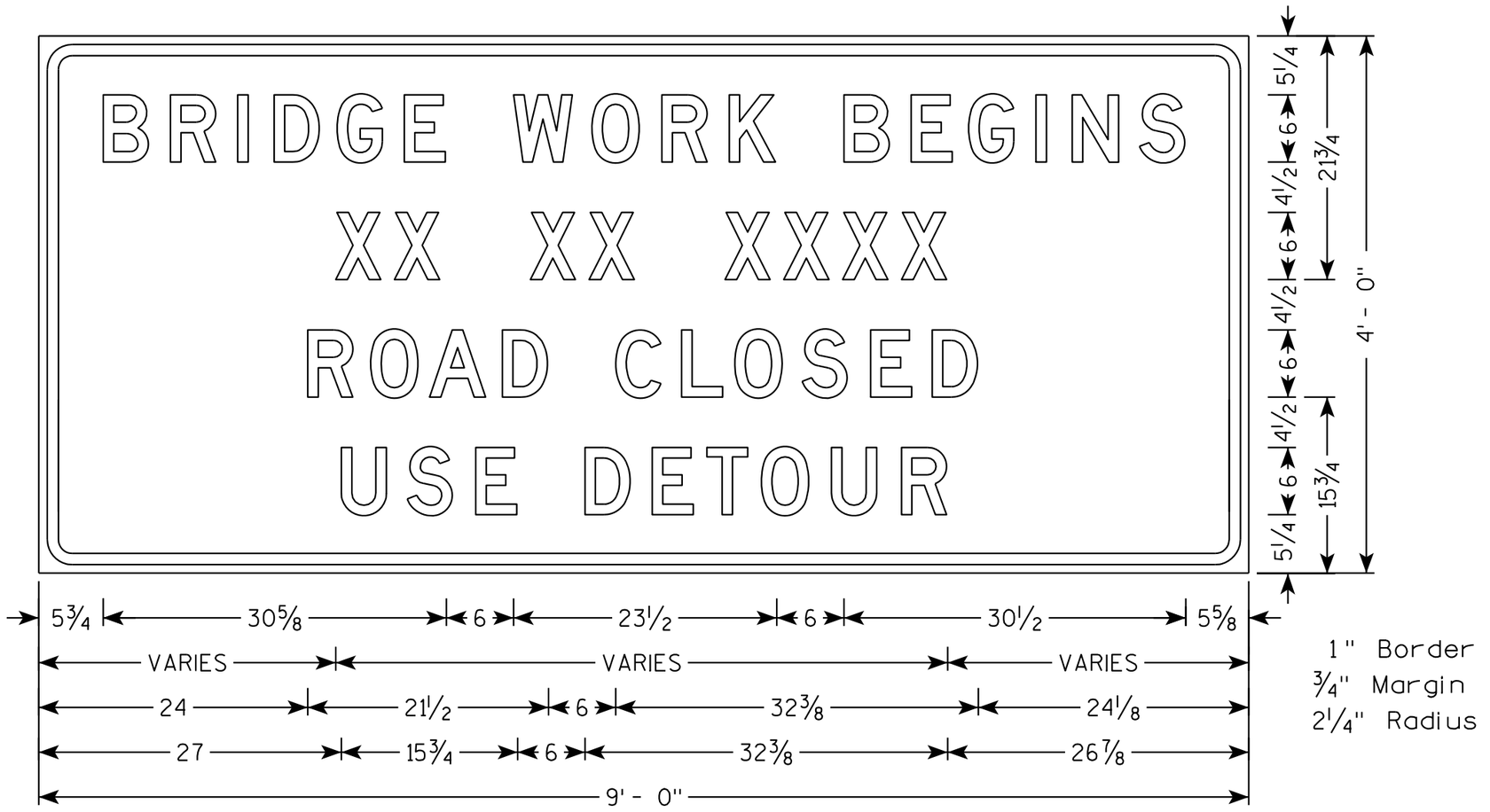
S.D.D. 16 A 1-6

6

S.D.D. 16 A 1-6

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - ORANGE
   Message - BLACK
3. Message Series - D



7

7

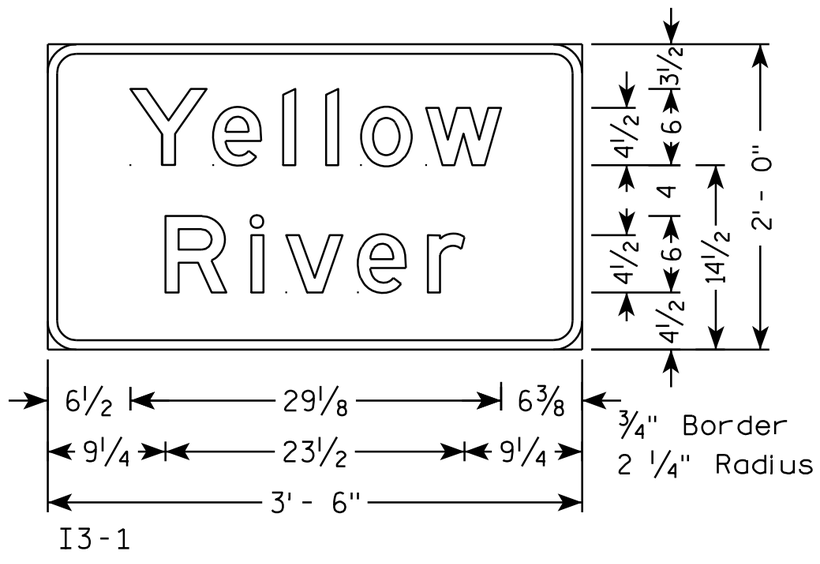
PROJECT NO: 1620-02-64/71	HWY: STH 80	COUNTY: WOOD	PERMANENT SIGNING	SHEET NO: 70	E

FILE NAME : C:\Documents and Settings\dotejg\Local Settings\Temporary Internet Files\Content.Outlook\QZ3BF9JX\4715A912 (2).DGN PLOT DATE : 30-OCT-2012 10:06 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 11.9925:1

WISDOT/CADDS SHEET 42

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E

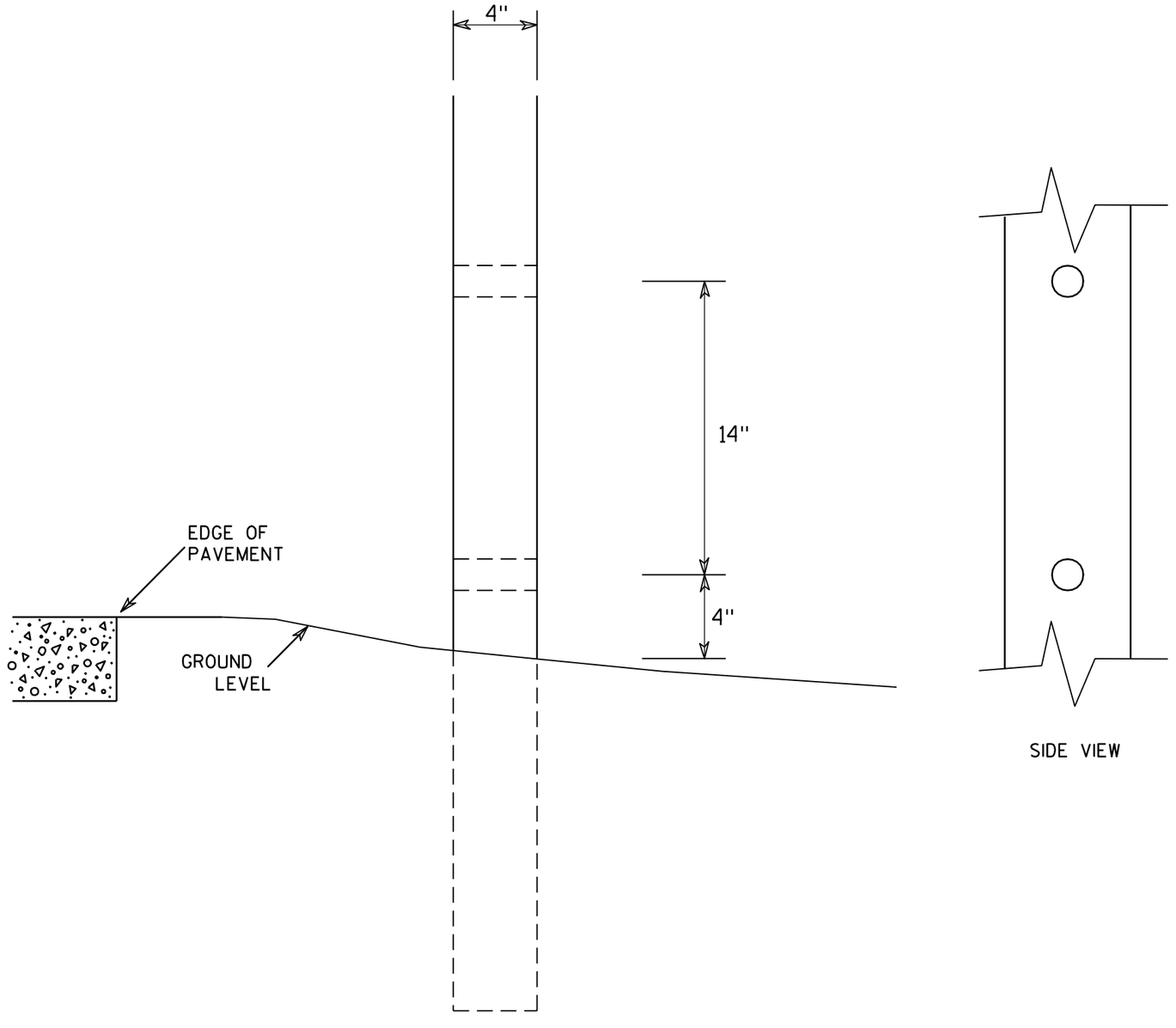


I3-1

7

7

PROJECT NO: 1620-02-71	HWY: STH 73/80	COUNTY: WOOD	PERMANENT SIGNING	SHEET NO: 71	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

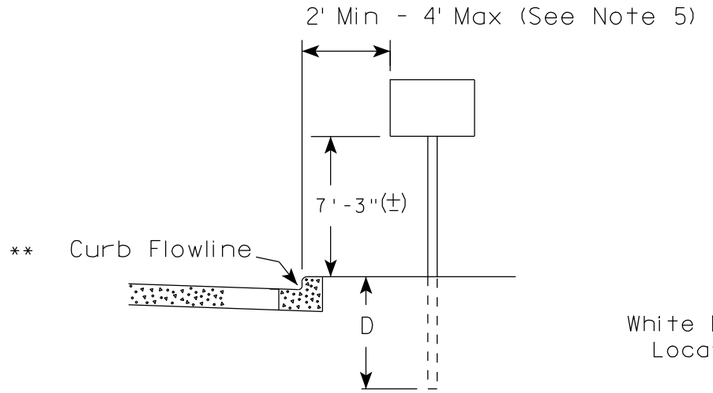
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

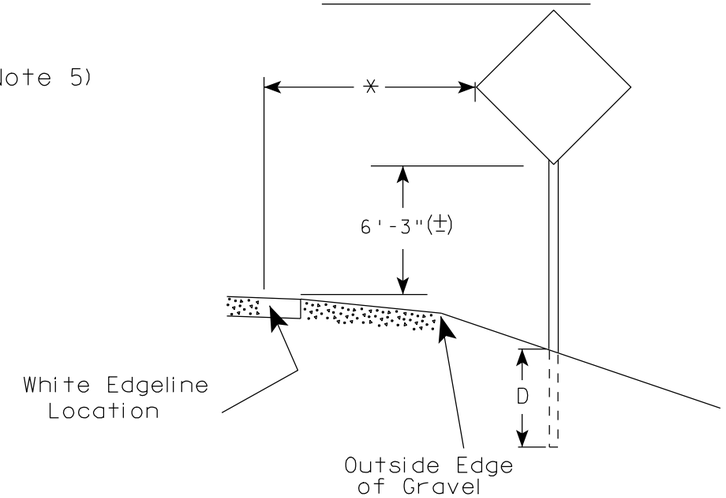
DATE 3/27/97 PLATE NO. A4-11.2

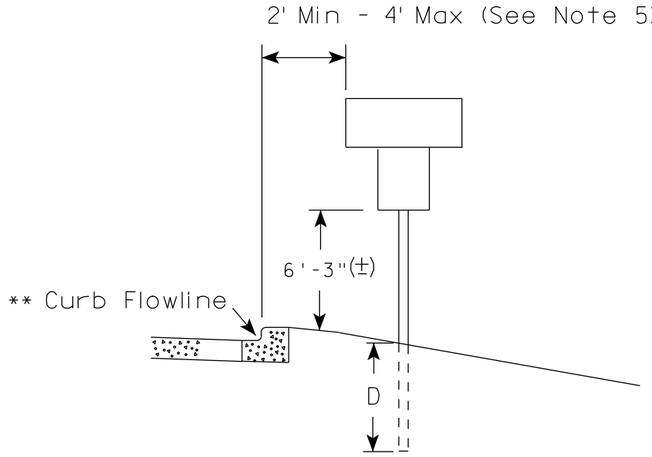
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 72	E

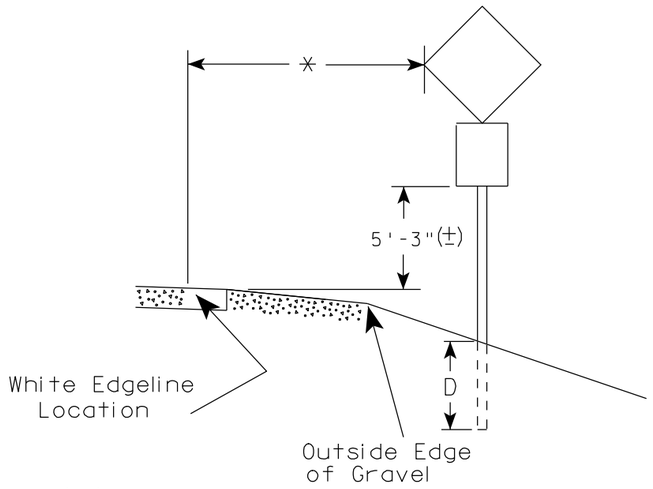
URBAN AREA



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

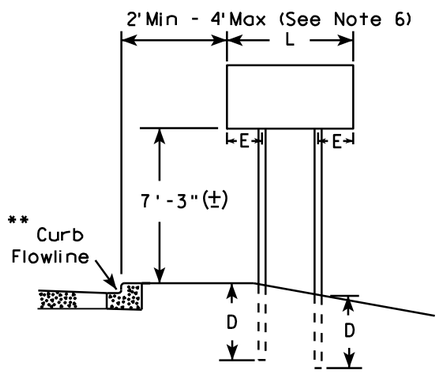
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

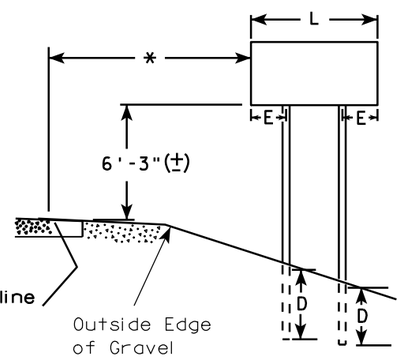
DATE 9/21/2011 PLATE NO. A4-3.16

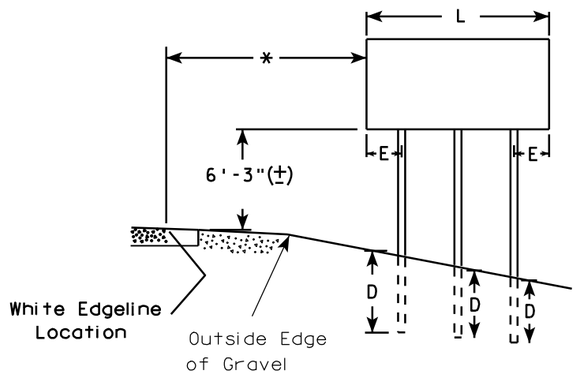
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 73	E

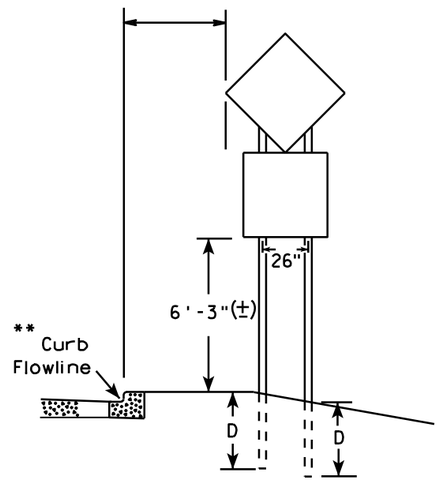
URBAN AREA



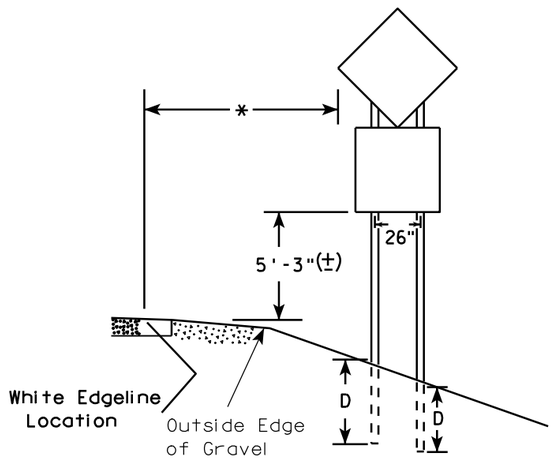
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

***

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. 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" (±).

* 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.

** 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.

*** See A4-3 sign plate for signs 4' or less in width or 20 S.F. or less in area.

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

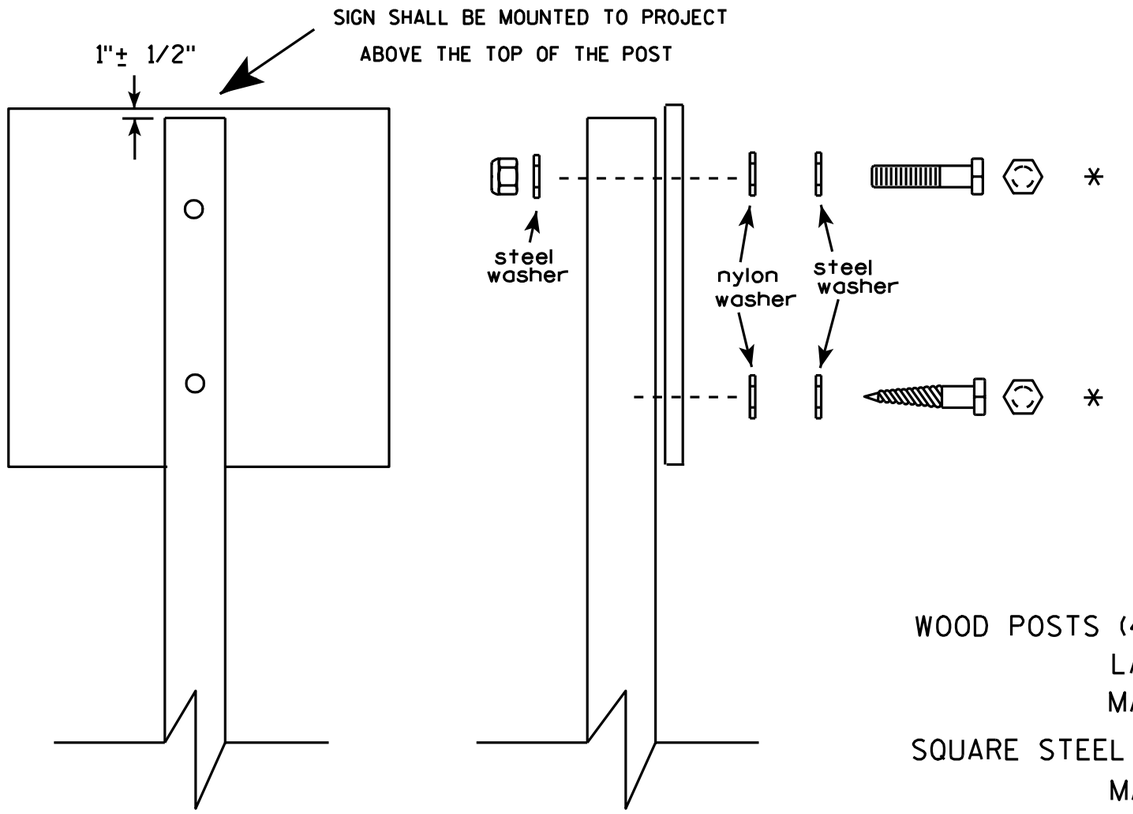
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 74	E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\A44.DGN PLOT DATE : 21-SEP-2011 13:36 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 109.249131:1.000000
WISDOT/CADDS SHEET 42



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

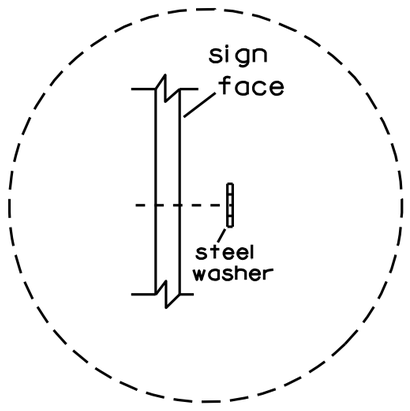
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

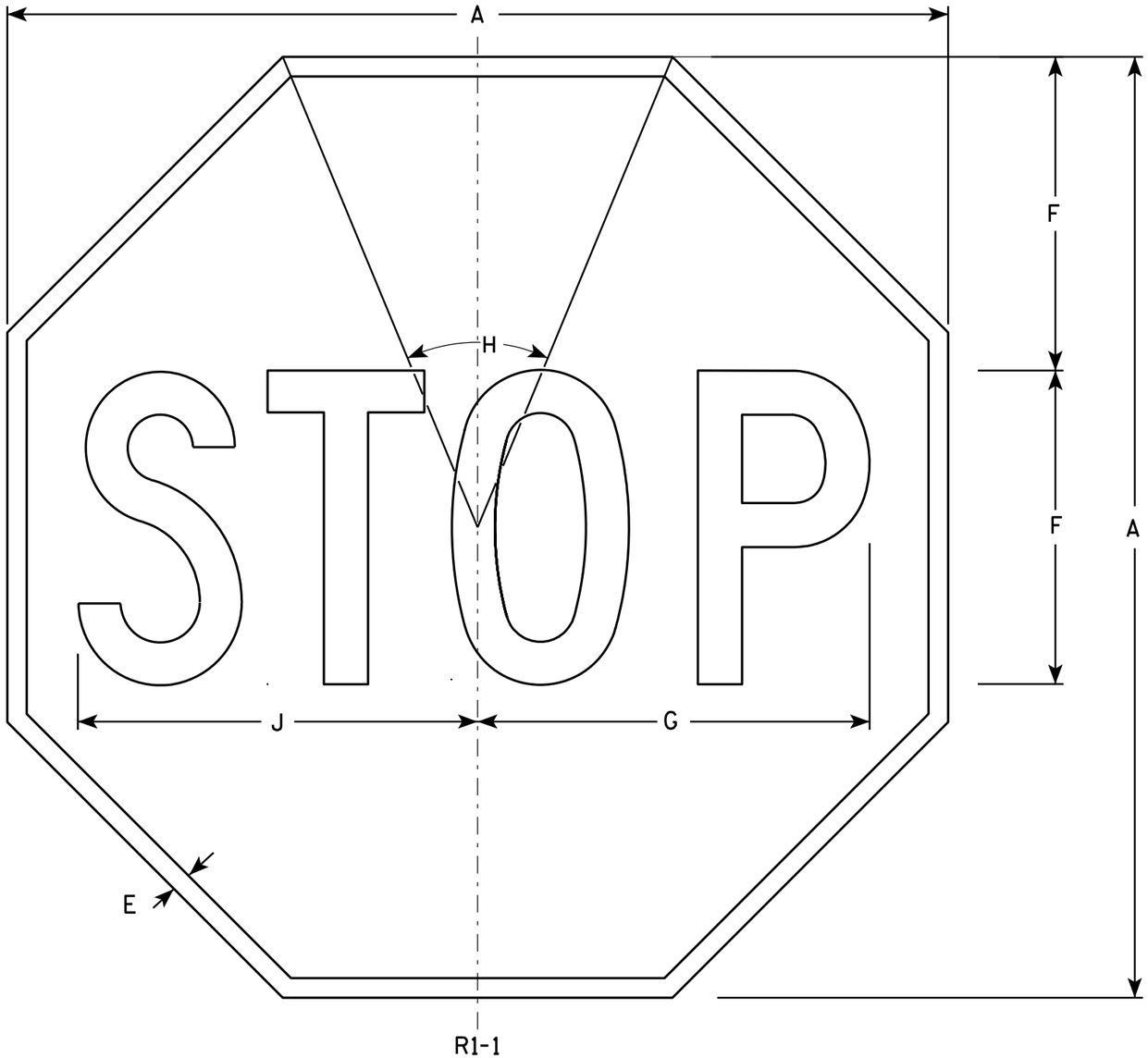
DATE 3/23/10 PLATE NO. A4-8.7

7

7

PROJECT NO:

SHEET NO: 75 E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

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				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 76	E

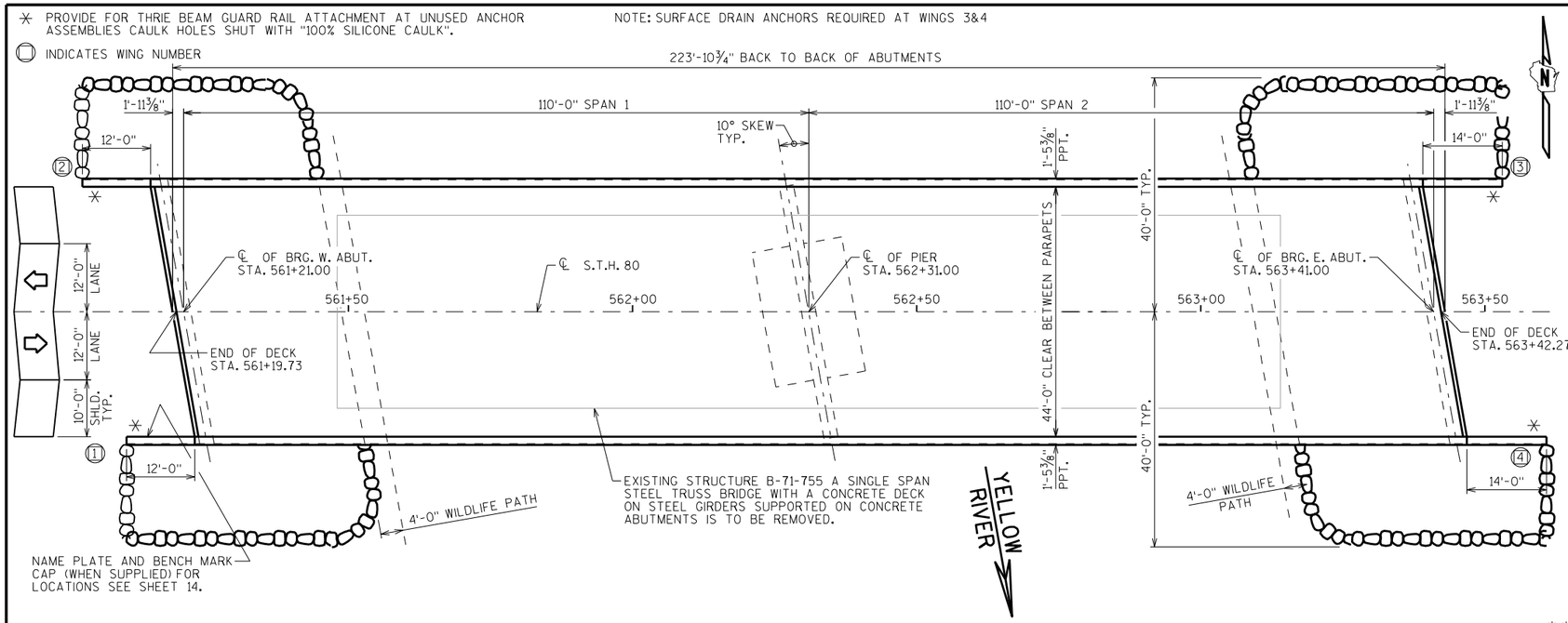
STATE PROJECT NUMBER

1620-02-71

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

NOTE: SURFACE DRAIN ANCHORS REQUIRED AT WINGS 3&4

INDICATES WING NUMBER



NAME PLATE AND BENCH MARK CAP (WHEN SUPPLIED) FOR LOCATIONS SEE SHEET 14.

PLAN

2-SPAN - 45W" PRESTRESSED CONCRETE GIRDERS

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.10
OPERATING RATING FACTOR: RF=1.42
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY DECK — f'c = 4,000 P.S.I. ALL OTHER — f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.
45W" PRESTRESSED GIRDERS, CONCRETE MASONRY — f'c = 8,000 P.S.I.
STRANDS- 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

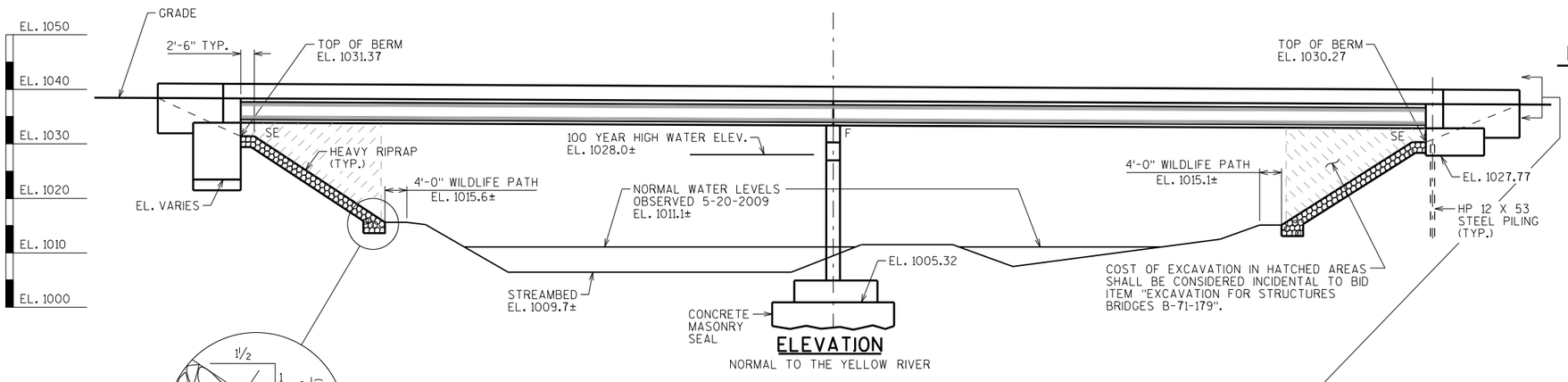
WEST ABUTMENT WITH SPREAD FOOTING TO BE SUPPORTED ON SOUND ROCK WITH A REQUIRED FACTORED BEARING RESISTANCE OF 20,000 PSF ✳✳✳. A GEOTECHNICAL ENGINEER WILL DETERMINE THE FACTORED BEARING RESISTANCE BY VISUAL INSPECTION PRIOR TO CONSTRUCTION OF THE ABUTMENT FOOTING.

PIER WITH SPREAD FOOTING TO BE SUPPORTED ON SOUND ROCK WITH A REQUIRED FACTORED BEARING RESISTANCE OF 20,000 PSF ✳✳✳. A GEOTECHNICAL ENGINEER WILL DETERMINE THE FACTORED BEARING RESISTANCE BY VISUAL INSPECTION PRIOR TO CONSTRUCTION OF THE PIER FOOTING.

EAST ABUTMENT TO BE SUPPORTED ON HP 12 X 53 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS ✳✳ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 40'-0" LONG. PILE POINTS REQUIRED.

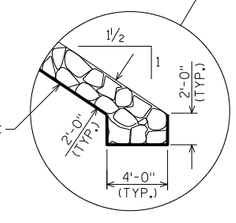
✳✳ THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

✳✳✳ THE FACTORED BEARING RESISTANCE IS THE VALUE USED FOR DESIGN.

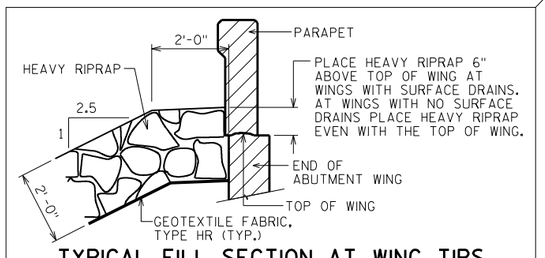


ELEVATION

NORMAL TO THE YELLOW RIVER



GEOTEXTILE FABRIC TYPE HR (TYP.)



TYPICAL FILL SECTION AT WING TIPS

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} =11900 C.F.S.
VEL. =4.10 F.P.S.
HW.= EL. 1028.0
WATERWAY AREA= 2900 SQ. FT.
DRAINAGE AREA= 180 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q_2 =4700 C.F.S.
$HW._2$ = EL. 1020.1

TRAFFIC VOLUME

S.T.H. 80
A.D.T.=2032 (5500)
R.D.S.=60 M.P.H.

STRUCTURE DESIGN CONTACT:
ANDREW SMITH (608) 266-0989
DAVE KIEKBUSCH (608) 266-5084

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. PIER
9. 45W" PRESTRESSED GIRDER DETAILS
10. 45W" PRESTRESSED GIRDER DETAILS
11. STEEL DIAPHRAGM
12. SUPERSTRUCTURE
13. SUPERSTRUCTURE DETAILS
14. SLOPED FACE PARAPET LF

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher DIR 11/1/12
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-71-179

S.T.H. 80 OVER THE YELLOW RIVER

COUNTY	TOWN ~~CITY/VILLAGE~~
WOOD	WOOD

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ADS	NAR	DDS	JPH

GENERAL PLAN

SHEET 1 OF 14

77

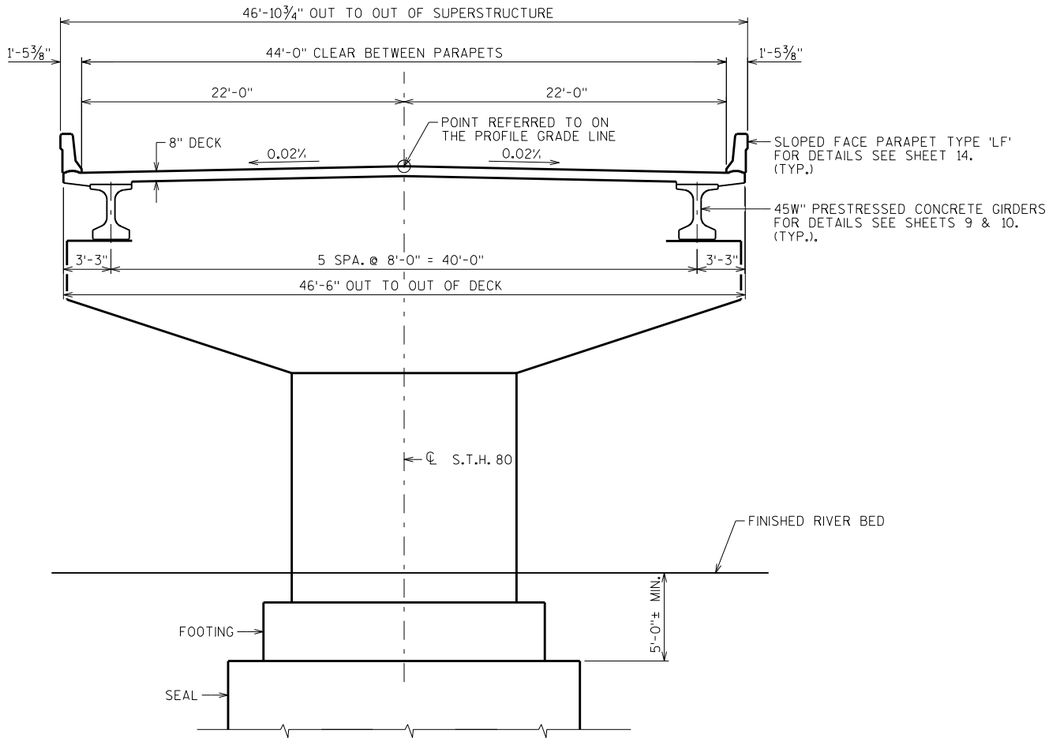
I.D. 1620-02-01

DATE: OCT. 2012

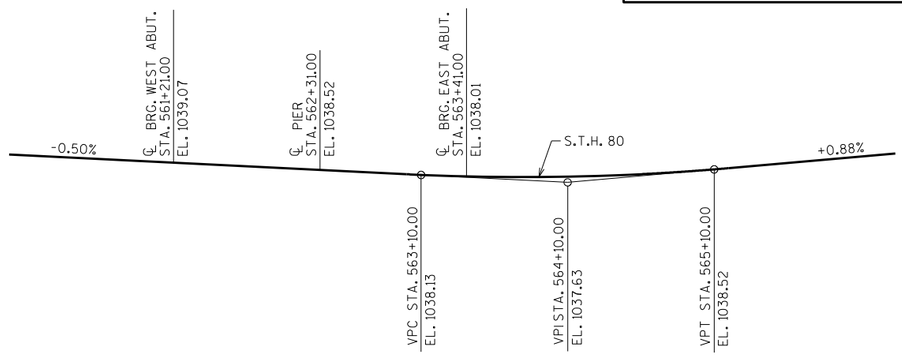
SCALE = 12.0

8

8



CROSS SECTION THRU ROADWAY - LOOKING EAST



S.T.H. 80 - PROFILE GRADE LINE

VERTICAL CURVE LENGTH = 200.00'

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	PIER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 562+31.00	LS	——	——	——	——	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-71-179	LS	——	——	——	——	1
206.5000	COFFERDAMS B-71-179	LS	——	——	——	——	1
210.0100	BACKFILL STRUCTURE	CY	——	500	185	——	685
502.0100	CONCRETE MASONRY BRIDGES	CY	400	115	48	106	669
502.1100	CONCRETE MASONRY SEAL	CY	——	——	——	84	84
502.3200	PROTECTIVE SURFACE TREATMENT	SY	1290	——	——	——	1290
503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	1325	——	——	——	1325
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	——	4900	2640	18390	25930
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	96350	2040	2240	55	100685
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	——	6	6	12	24
506.4000	STEEL DIAPHRAGMS B-71-179	EACH	20	——	——	——	20
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	——	12	12	——	24
550.0500	PILE POINTS	EACH	——	——	9	——	9
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	——	——	360	——	360
606.0300	RIPRAP HEAVY	CY	——	240	240	——	480
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	——	71	75	——	146
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	——	2	2	——	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	——	410	410	——	820
				——	——	——	
	NON-BID ITEMS			——	——	——	
	FILLER	SIZE	——	——	——	——	½" & ¾"
	FILLER	SIZE	——	——	——	——	1"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE AND THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

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

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

AT ABUTMENTS AND PIER(S), CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

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

THE CONCRETE SEAL SHALL BE KEYED IN/EMBEDDED A MINIMUM OF 6" INTO GRANITE. THIS SHALL BE CONSIDERED INCIDENTAL TO BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-71-179".

STATE PROJECT NUMBER

1620-02-71

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-179

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CROSS SECTION & QUANTITIES

SHEET 2

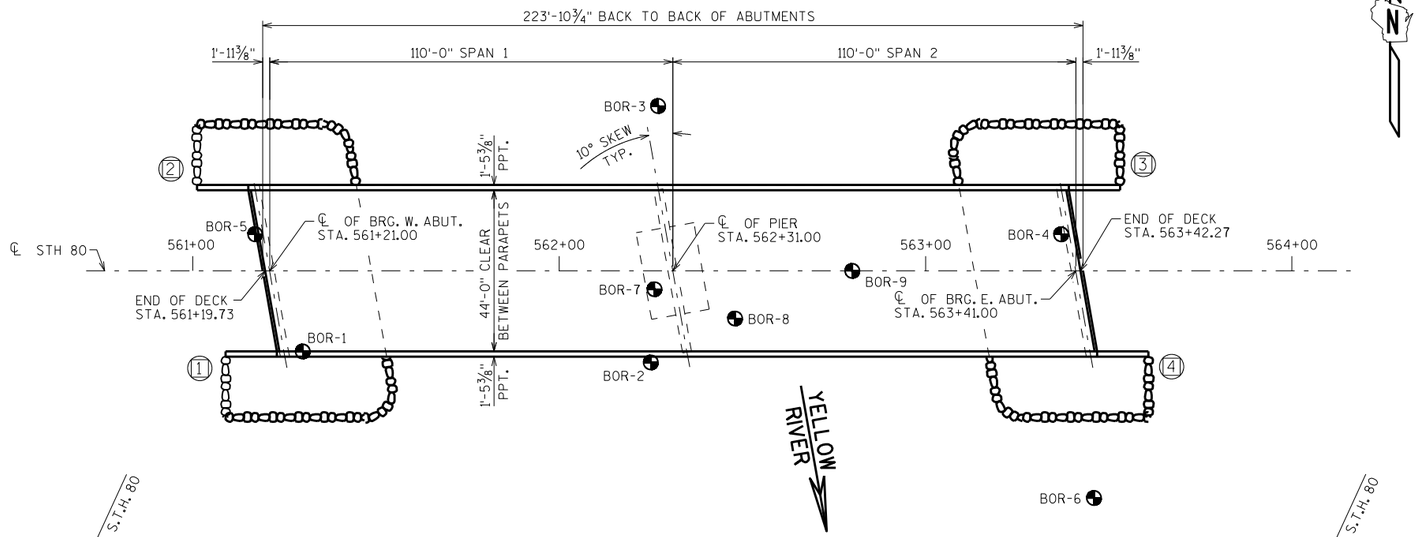
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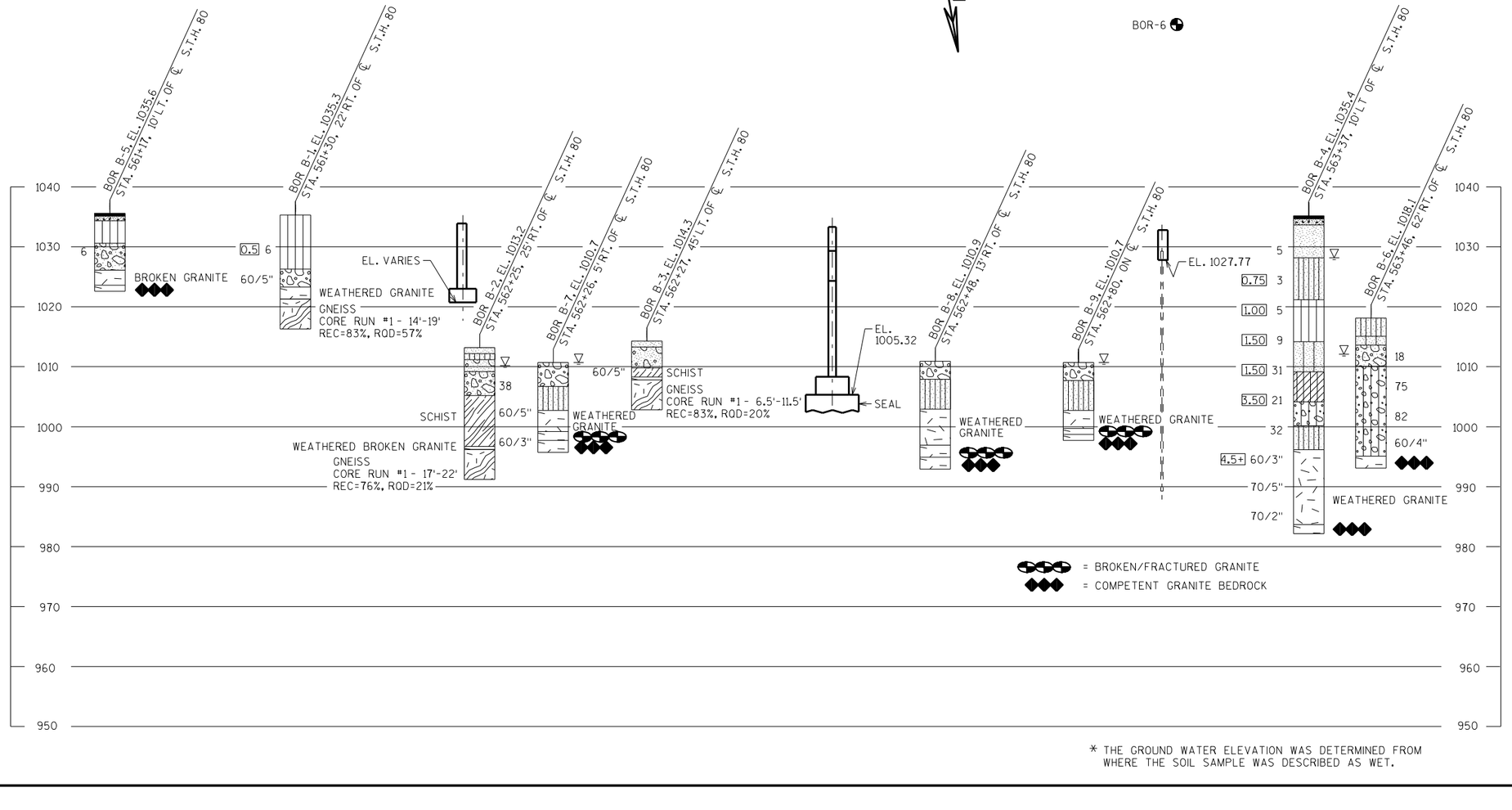
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WISCONSIN RAPIDS - MARSHFIELD
YELLOW RIVER BRIDGE





* THE GROUND WATER ELEVATION WAS DETERMINED FROM WHERE THE SOIL SAMPLE WAS DESCRIBED AS WET.

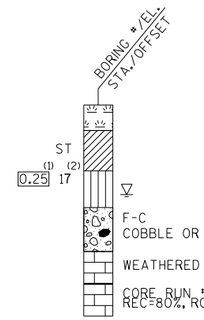
STATE PROJECT NUMBER

1620-02-01

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-179

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SUBSURFACE EXPLORATION

SHEET 3

79

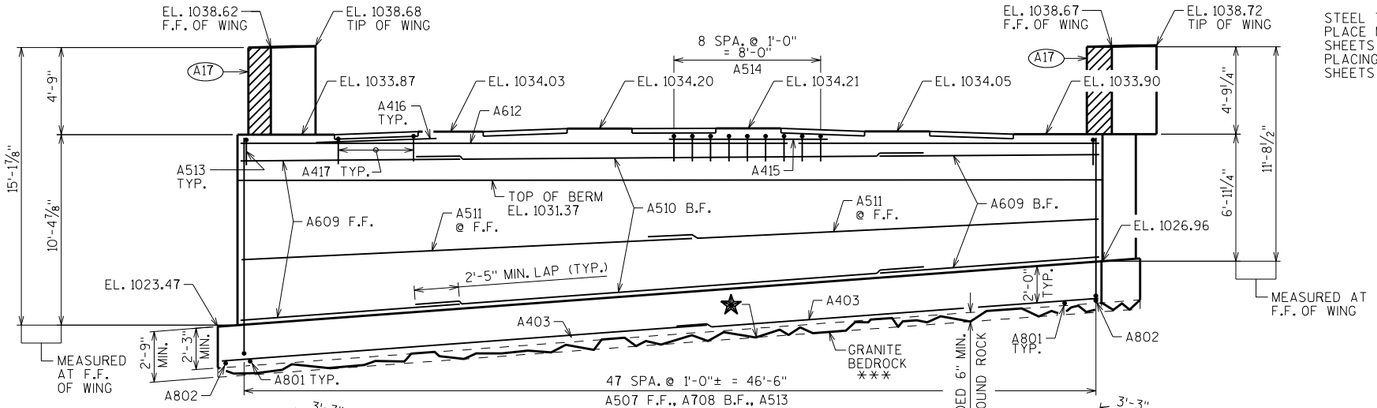
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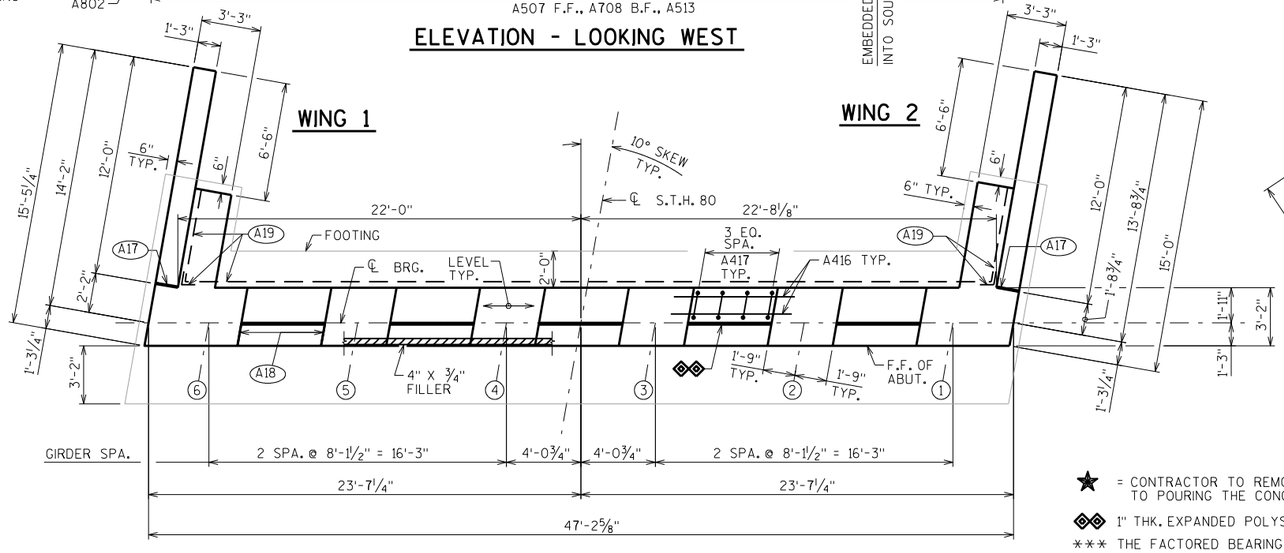
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STATE PROJECT NUMBER

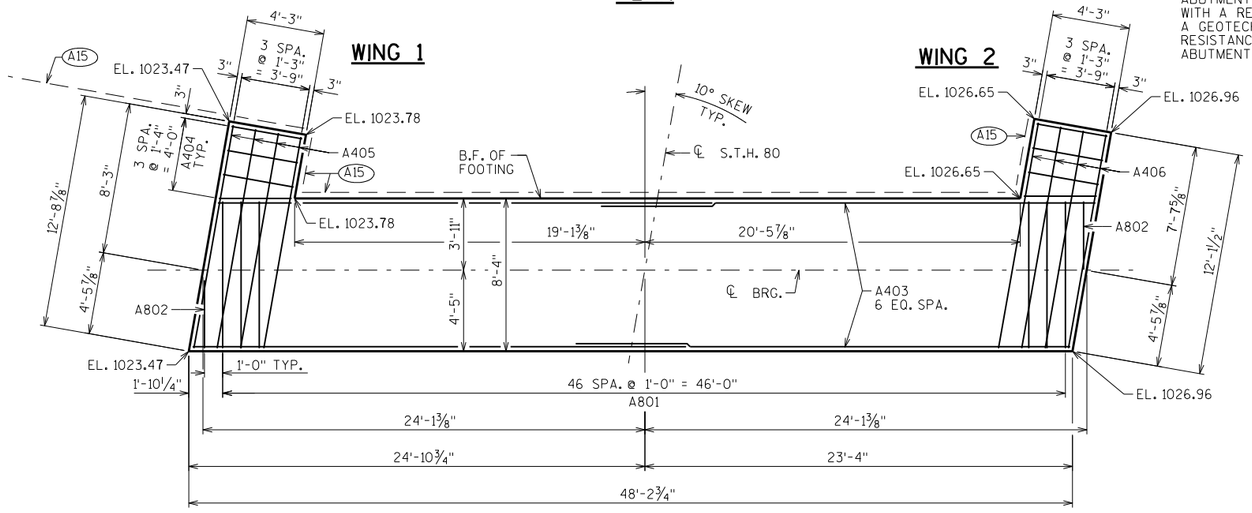
1620-02-71



ELEVATION - LOOKING WEST

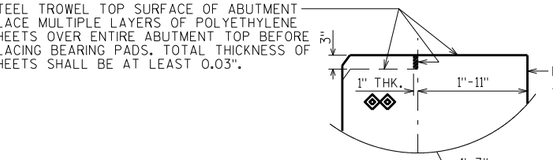


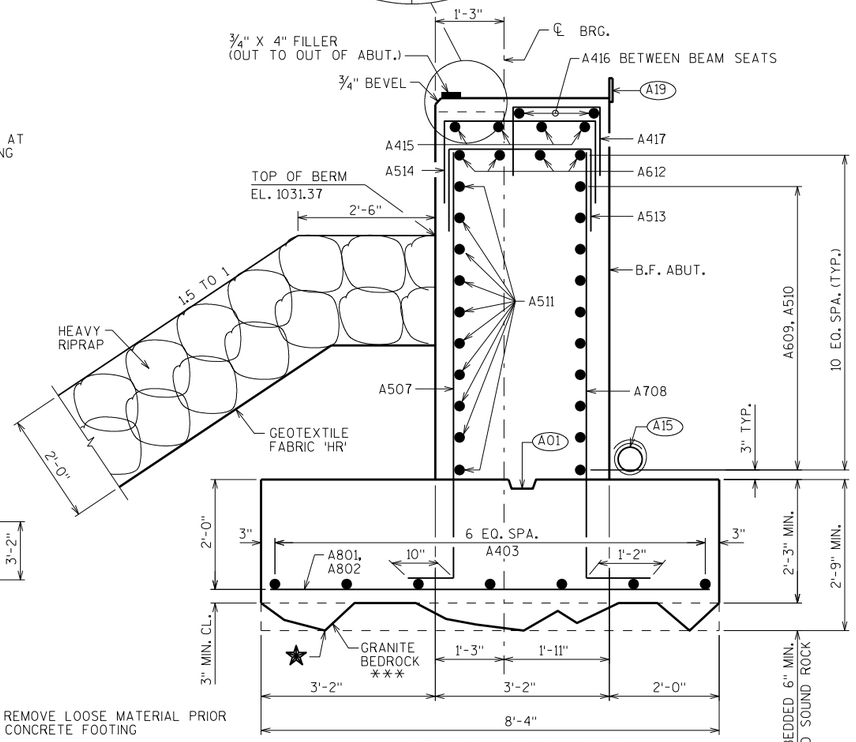
PLAN



FOOTING PLAN

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





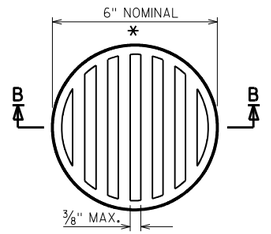
SECTION THRU BODY

★ = CONTRACTOR TO REMOVE LOOSE MATERIAL PRIOR TO POURING THE CONCRETE FOOTING

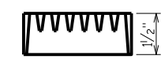
◈◈ 1" THK. EXPANDED POLYSTYRENE AT VERTICAL FACE OF 3" LIP

*** THE FACTORED BEARING RESISTANCE IS THE VALUE USED FOR DESIGN.

ABUTMENT WITH SPREAD FOOTING IS TO BE SUPPORTED ON SOUND ROCK WITH A REQUIRED FACTORED BEARING RESISTANCE OF 20,000 PSF ***. A GEOTECHNICAL ENGINEER WILL DETERMINE THE FACTORED BEARING RESISTANCE BY VISUAL INSPECTION PRIOR TO CONSTRUCTION OF THE ABUTMENT FOOTING.



RODENT SCREEN DETAIL



SECTION B-B

✳ DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 X 6.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-71-179

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WEST ABUTMENT

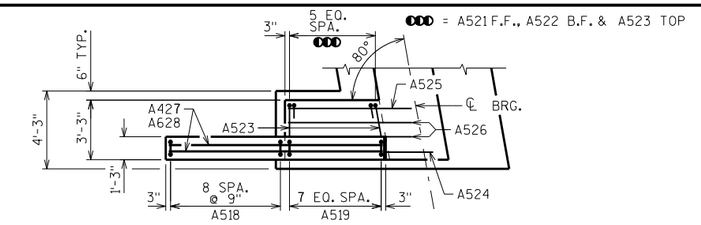
SHEET 4

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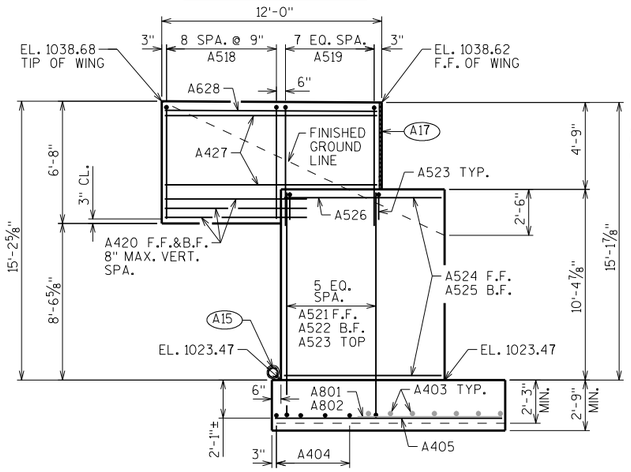
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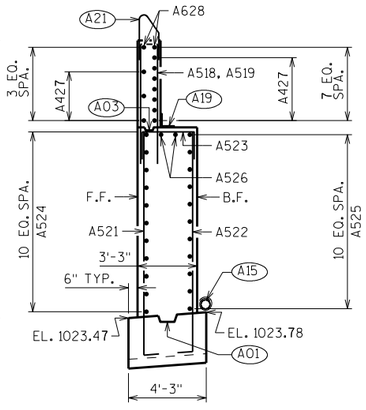
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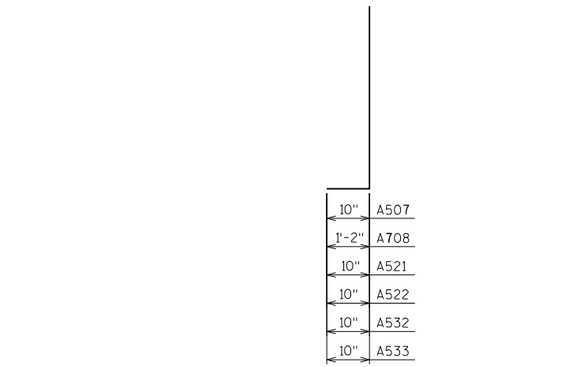
PLAN - WING 1



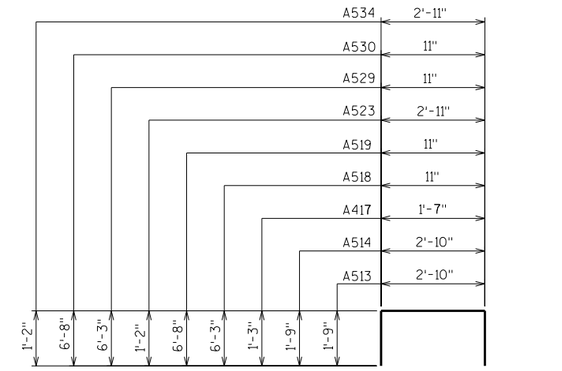
ELEVATION - WING 1



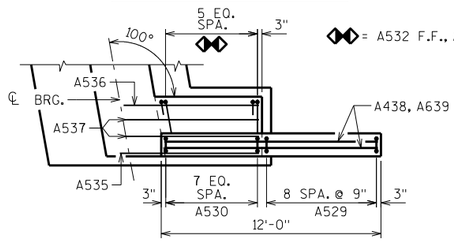
SECTION THRU WING 1



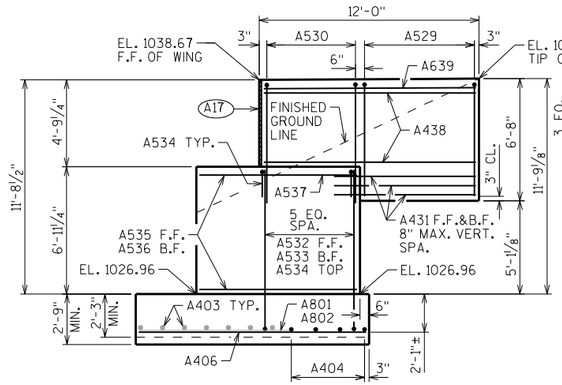
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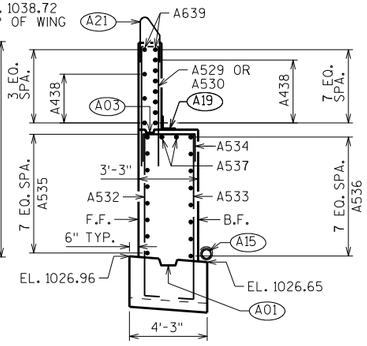
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PLAN - WING 2



ELEVATION - WING 2



SECTION THRU WING 2

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 X 6.

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

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHEET 14.

BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
A405	1 SERIES OF 4	11'-8" TO 12'-4"
A406	1 SERIES OF 4	11'-10" TO 12'-6"
A507	1 SERIES OF 48	9'-0" TO 12'-6"
A708	1 SERIES OF 48	9'-8" TO 12'-10"

BUNDLE AND TAG EACH SERIES SEPARATELY.

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BILL OF BARS

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

	BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
	A801		47	8'-0"			FOOTING - HORIZ.
	A802		2	3'-8"			FOOTING - HORIZ.
	A403		14	24'-11"			FOOTING - HORIZ.
	A404		8	3'-11"			FOOTING - HORIZ.
⚠	A405		4	12'-0"		⚠	FOOTING - HORIZ.
⚠	A406		4	12'-2"		⚠	FOOTING - HORIZ.
⚠	A507		48	10'-9"	X	⚠	FOOTING/BODY - VERT. - F.F.
⚠	A708		48	11'-1"	X	⚠	FOOTING/BODY - VERT. - B.F.
	A609		20	12'-0"			BODY - HORIZ. - B.F.
	A510		10	27'-11"			BODY - HORIZ. - B.F.
	A511		20	24'-9"			BODY - HORIZ. - F.F.
	A612		4	46'-10"			BODY - HORIZ. - TOP
	A513		48	6'-1"	X		BODY - VERT. - TOP
	A514		9	6'-1"	X		BODY - VERT. - TOP
	A415		4	8'-3"			BODY - HORIZ. - TOP
	A416		10	6'-7"			BODY - HORIZ. - BETWEEN BEAM SEATS
	A417		20	3'-11"	X		BODY - VERT. - BETWEEN BEAM SEATS
	A518	X	9	13'-2"	X		WING 1 - VERT.
	A519	X	8	14'-0"	X		WING 1 - VERT.
	A420	X	6	7'-9"			WING 1 - HORIZ.
	A521	X	6	12'-10"	X		FOOTING/WING 1 - VERT.
	A522	X	6	12'-6"	X		FOOTING/WING 1 - VERT.
	A523	X	6	5'-0"	X		WING 1 - VERT.
	A524	X	11	8'-5"			WING 1 - HORIZ. - F.F.
	A525	X	11	6'-10"			WING 1 - HORIZ. - B.F.
	A526	X	2	7'-2"			WING 1 - HORIZ. - TOP
	A427	X	10	11'-8"			WING 1 - HORIZ. - F.F. & B.F.
	A628	X	2	11'-8"			WING 1 - HORIZ. - TOP
	A529	X	9	13'-2"	X		WING 2 - VERT.
	A530	X	8	14'-0"	X		WING 2 - VERT.
	A431	X	6	7'-9"			WING 2 - HORIZ.
	A532	X	6	9'-6"	X		FOOTING/WING 2 - VERT. - F.F.
	A533	X	6	9'-9"	X		FOOTING/WING 2 - VERT. - B.F.
	A534	X	6	5'-0"	X		WING 2 - VERT. - TOP
	A535	X	8	8'-1"			WING 2 - HORIZ. - F.F.
	A536	X	8	7'-5"			WING 2 - HORIZ. - B.F.
	A537	X	2	7'-3"			WING 2 - HORIZ. - TOP
	A438	X	10	11'-8"			WING 2 - HORIZ.
	A639	X	2	11'-8"			WING 2 - HORIZ. - TOP

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-179

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WEST ABUTMENT DETAILS

SHEET 5

81

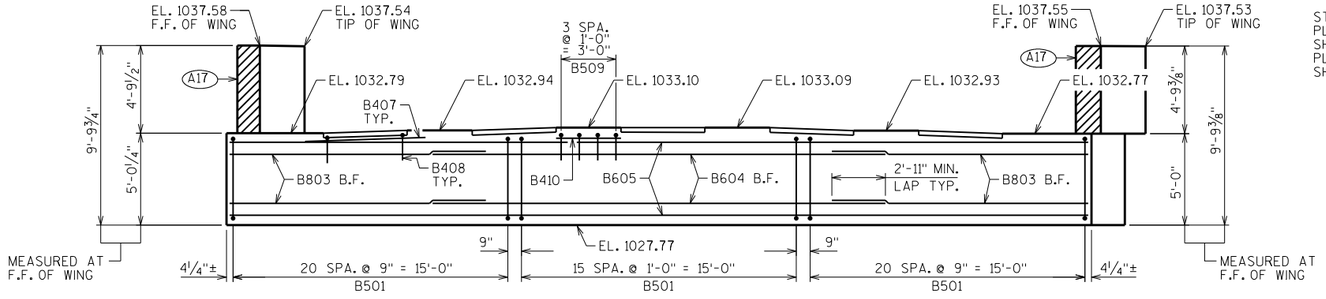
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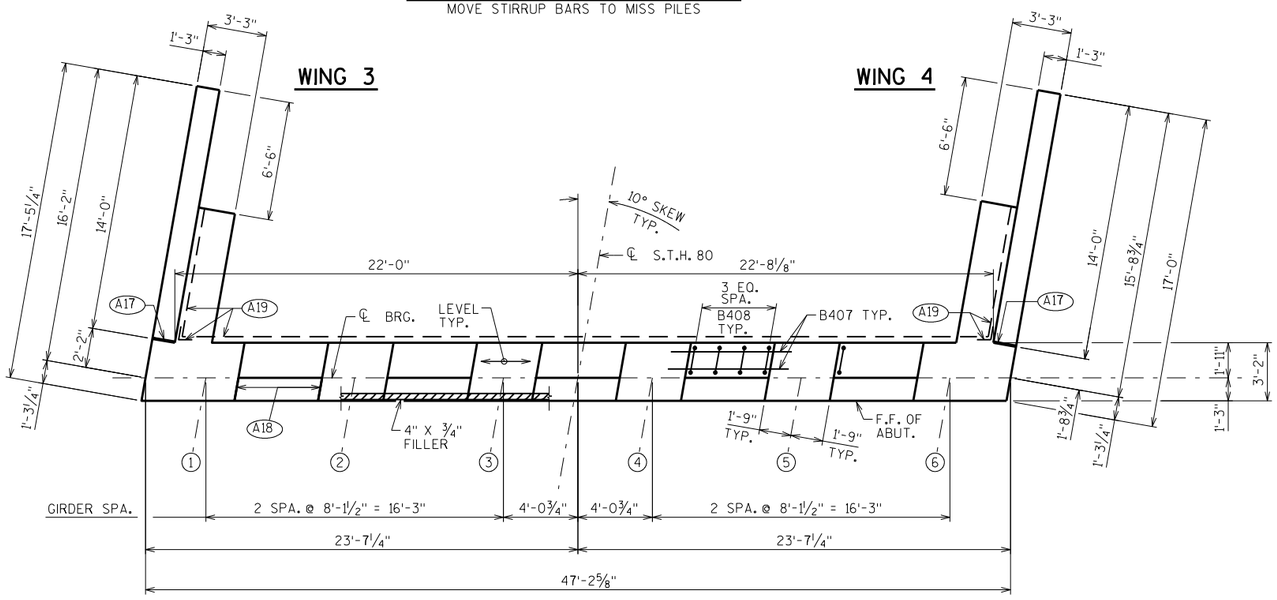
STATE PROJECT NUMBER

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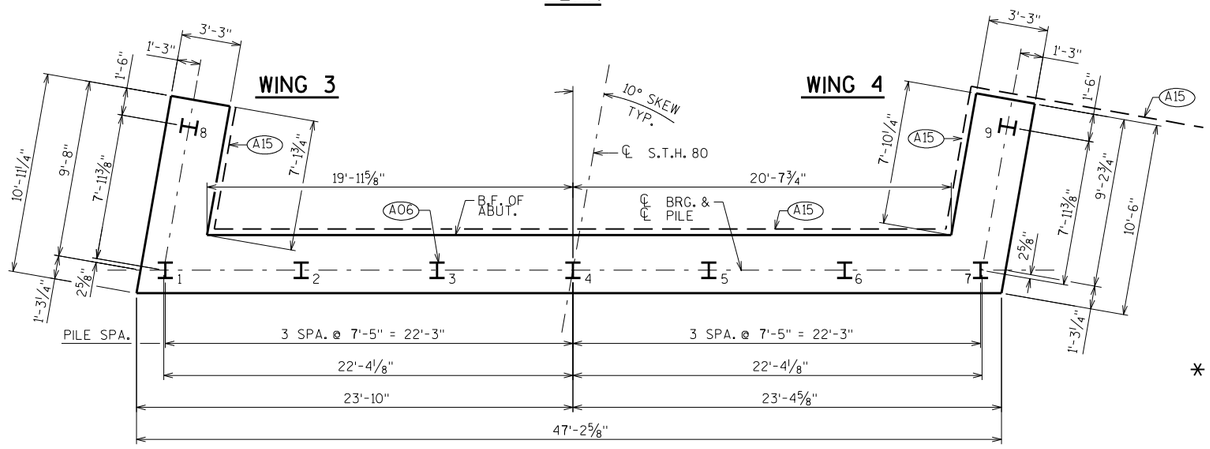


ELEVATION - LOOKING EAST

MOVE STIRRUP BARS TO MISS PILES

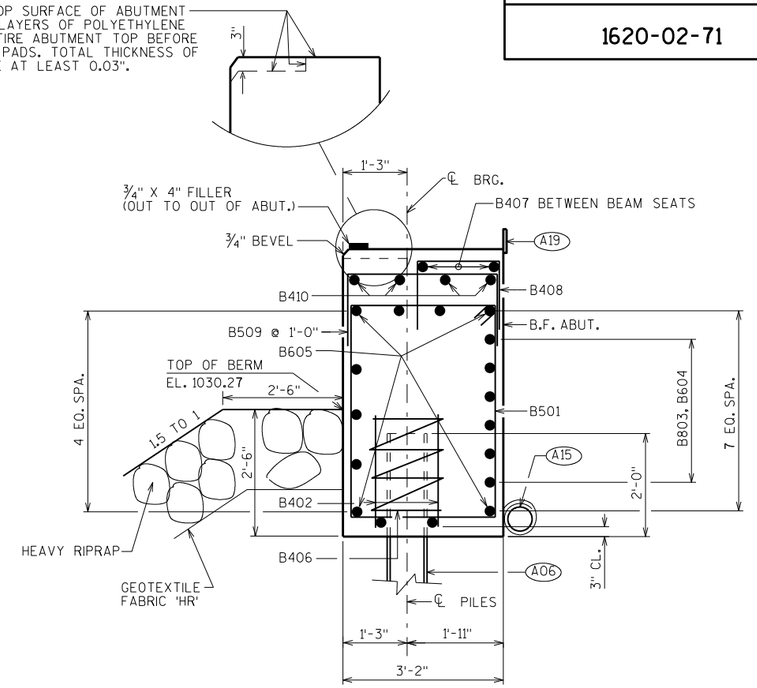


PLAN

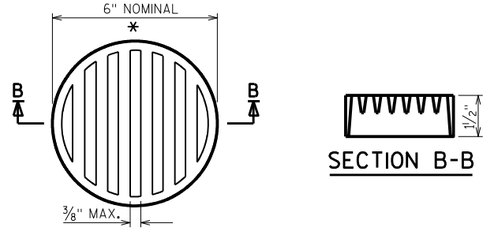


PILE PLAN

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



SECTION THRU BODY



RODENT SCREEN DETAIL

SECTION B-B

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

(A06) SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING, ESTIMATED 40'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. PILE POINTS REQUIRED.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

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STRUCTURES DESIGN SECTION

STRUCTURE B-71-179

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EAST ABUTMENT

SHEET 6

82

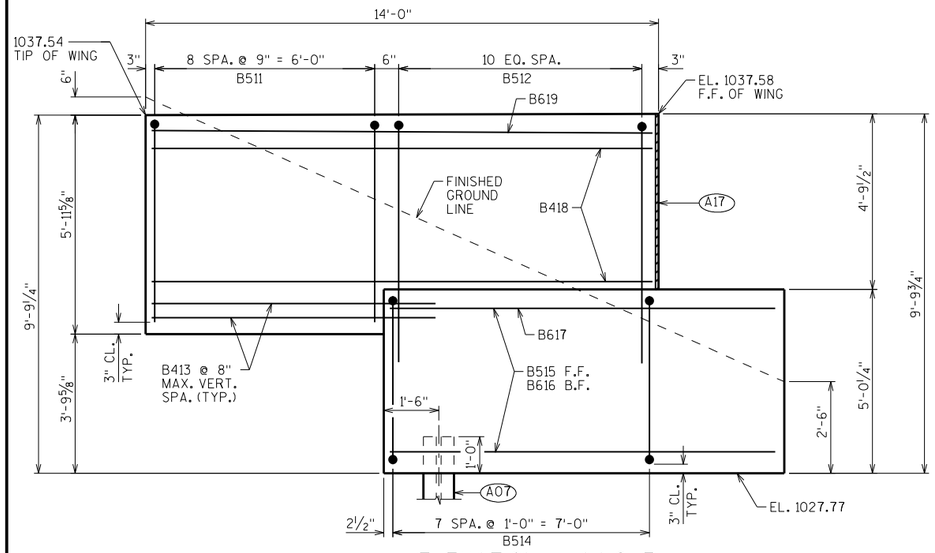
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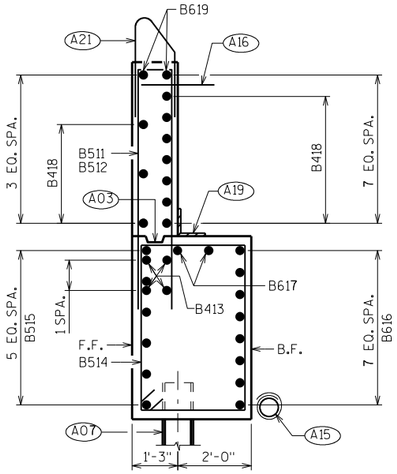
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STATE PROJECT NUMBER

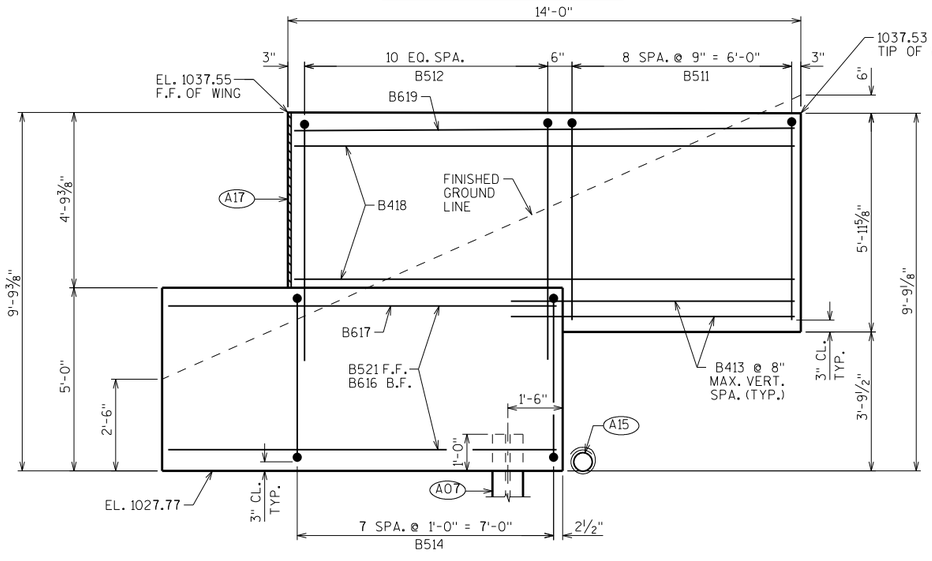
1620-02-71



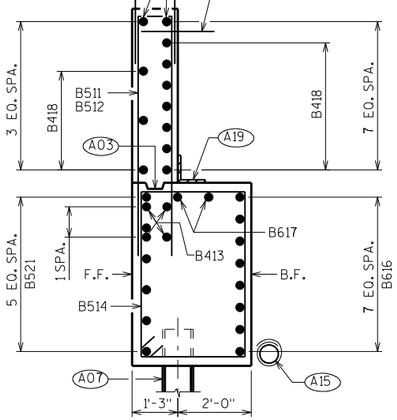
ELEVATION - WING 3



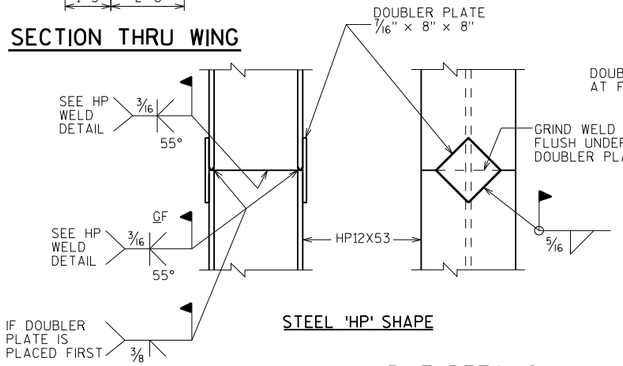
SECTION THRU WING



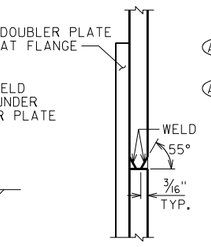
ELEVATION - WING 4



SECTION THRU WING



STEEL 'HP' SHAPE



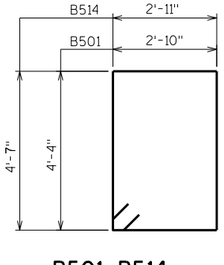
HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE DETAILS

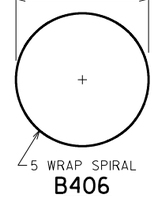
BILL OF BARS

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

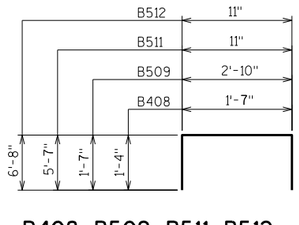
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		58	15'-0"	X		BODY - STIRRUP
B402		14	2'-3"			BODY - VERTICAL - @ BODY PILE
B803		12	14'-0"			BODY - HORIZONTAL - B.F.
B604		6	24'-9"			BODY - HORIZONTAL - B.F.
B605		11	46'-10			BODY - HORIZONTAL
B406		7	28'-0"	X		BODY - VERTICAL - SPIRAL - @ BODY PILE
B407		10	6'-8"			BODY - HORIZONTAL
B408		20	4'-1"	X		BODY - VERTICAL
B509		4	5'-9"	X		BODY - VERTICAL
B410		4	3'-7"			BODY - HORIZONTAL
B511	X	18	11'-10"	X		WINGS 3&4 - VERTICAL
B512	X	22	14'-0"	X		WINGS 3&4 - VERTICAL
B413	X	8	7'-9"			WINGS 3&4 - HORIZONTAL
B514	X	16	15'-8"	X		WINGS 3&4 - STIRRUPS
B515	X	6	10'-6"			WING 3 - HORIZONTAL - F.F.
B616	X	16	9'-9"			WINGS 3&4 - HORIZONTAL - B.F.
B617	X	4	9'-7"			WINGS 3&4 - HORIZONTAL
B418	X	20	13'-8"			WINGS 3&4 - HORIZONTAL - F.F. & B.F.
B619	X	4	13'-8"			WINGS 3&4 - HORIZONTAL - TOP
B420	X	28	2'-0"			WINGS 3&4 - DOWEL BARS
B521	X	6	10'-1"			WING 4 - HORIZONTAL - F.F.



B501, B514



B406



B408, B509, B511, B512

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

(A07) SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING. ESTIMATED 40'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. PILE POINTS REQ'D.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A16) B420 BARS SPACED @ 1'-0" CTRS. EMBED 1'-0" INTO WING CONC. LOCATE 3" DOWN FROM TOP OF WING @ BACKFACE TO 6" DOWN @ WING TIP. (DRILLED IN EPOXY ANCHORED #4 BARS 2'-0" LONG MAY BE USED.) COST INCIDENTAL TO BID ITEM "BAR STEEL REINFORCEMENT HS COATED BRIDGES".

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHEET 14.

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EAST ABUTMENT DETAILS

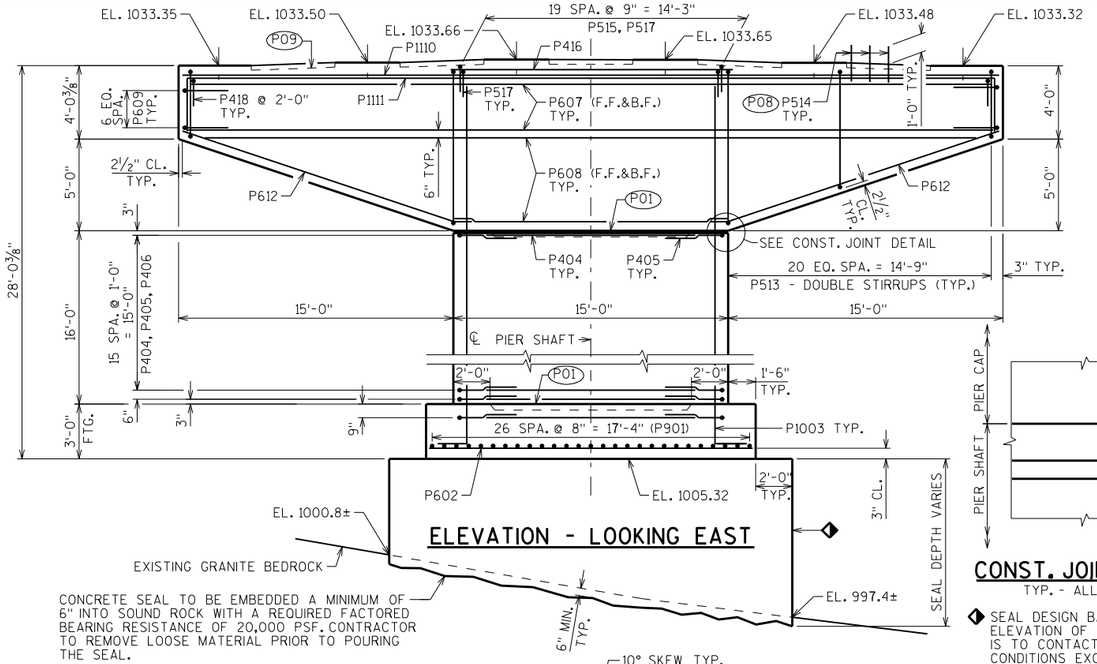
SHEET 7

83

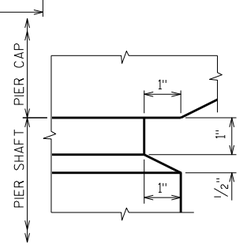
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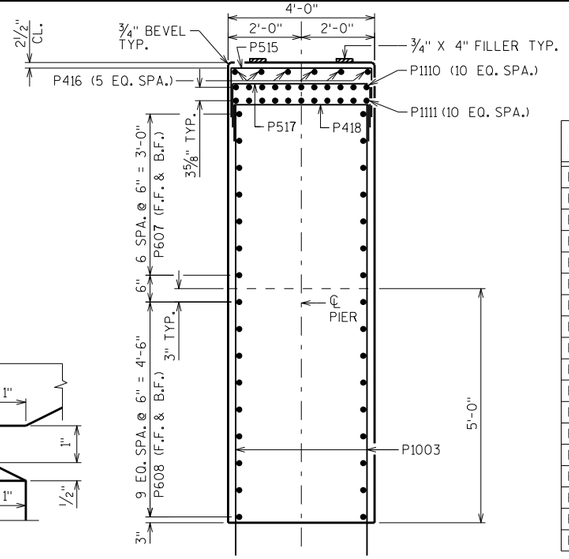
ELEVATION - LOOKING EAST



CONST. JOINT DETAIL

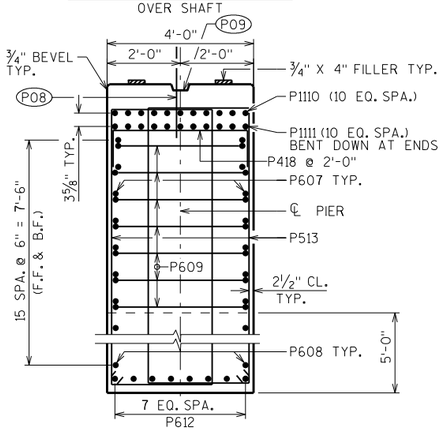
TYP. - ALL AROUND

◆ SEAL DESIGN BASED ON A WATER ELEVATION OF 1016.0. CONTRACTOR IS TO CONTACT ENGINEER FOR CONDITIONS EXCEEDING THIS WATER ELEVATION.



SECTION THRU CAP

OVER SHAFT



SECTION THRU CAP

AT ENDS

BILL OF BARS

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

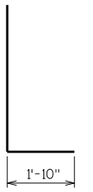
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P901		27	10'-8"			FOOTING - HORIZ.
P602		11	17'-8"			FOOTING - HORIZ.
P1003		54	28'-3"	X		FOOTING/SHAFT/CAP - VERT.
P404		36	11'-0"			FOOTING/SHAFT - HORIZ. - F.F. & B.F.
P405		36	8'-6"	X		FOOTING/SHAFT - HORIZ. - ENDS
P406		72	4'-5"	X		FOOTING/SHAFT - HORIZ. - TIE BARS
P607		14	44'-3"			CAP - HORIZ. - F.F. & B.F.
P608		20	28'-0"		◭	CAP - HORIZ. - F.F. & B.F.
P609		14	6'-10"	X		CAP - HORIZ. - ENDS
P1110		11	44'-7"			CAP - HORIZ.
P1111		11	50'-4"	X		CAP - HORIZ. - TOP
P612		16	16'-9"			CAP - VERT.
P513		84	18'-1"	X	◭	CAP - STIRRUP
P514	X	25	2'-0"			DOWEL BARS
P515		20	6'-4"	X		CAP - VERT.
P416		6	14'-9"			CAP - HORIZ.
P517		20	6'-10"	X		CAP - VERT.
P418		23	5'-11"	X		CAP - VERT.

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

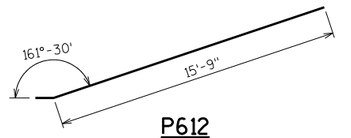
BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
P608	2 SERIES OF 10	14'-6" TO 41'-6"
P513	4 SERIES OF 21	13'-2" TO 23'-0"

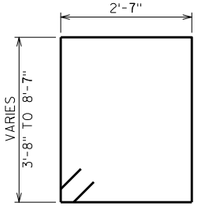
BUNDLE AND TAG EACH SERIES SEPARATELY.



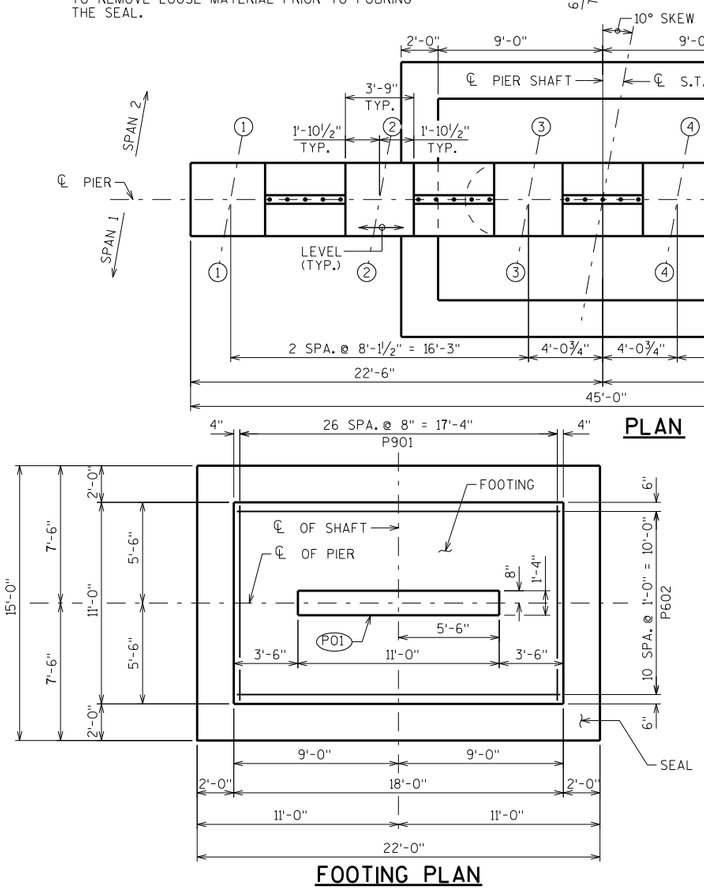
P1003



P612

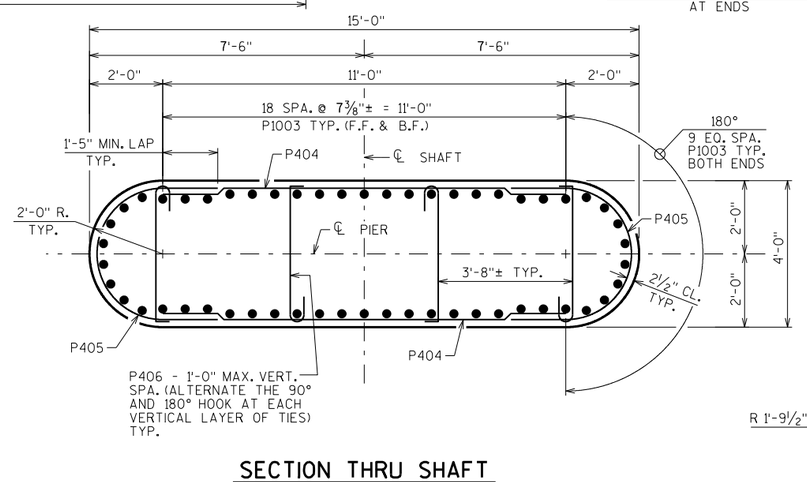


P513

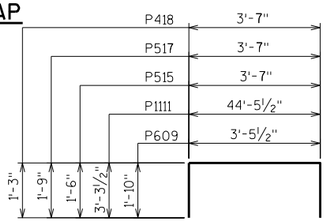


PLAN

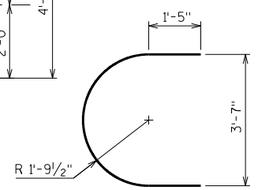
FOOTING PLAN



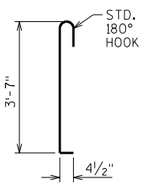
SECTION THRU SHAFT



P609, P1111, P515, P517, P418



P405



P406

(P01) 1'-4" X 11'-0" X 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.

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

(P09) KEYED CONSTRUCTION JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

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PIER

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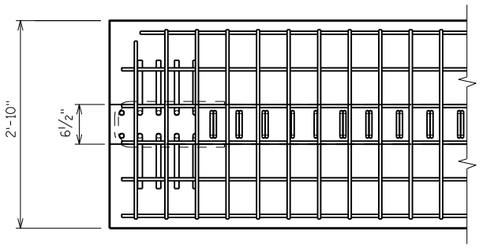
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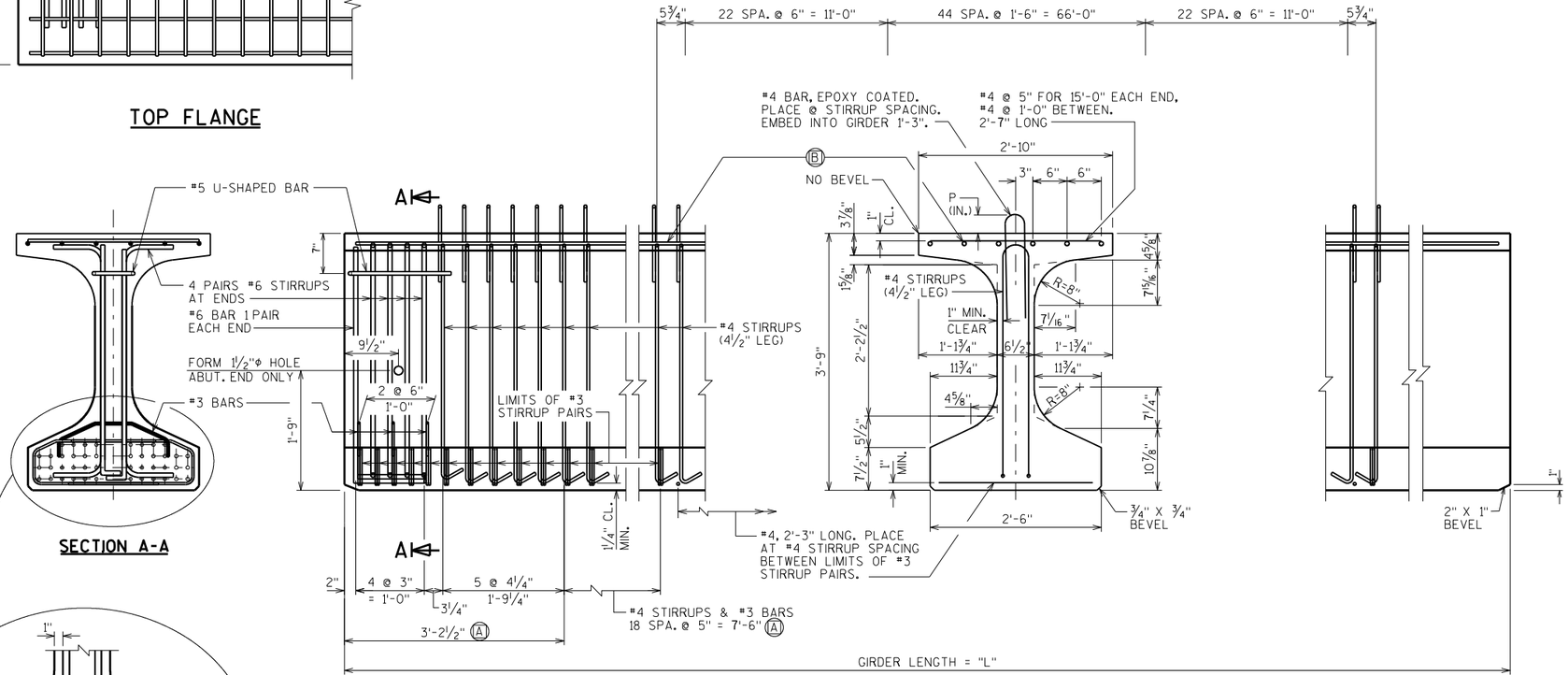
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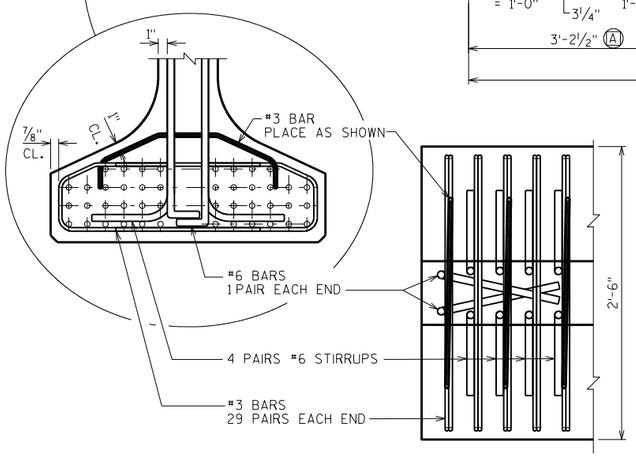
1620-02-71



TOP FLANGE



SECTION A-A



BOTTOM FLANGE

SIDE VIEW & TYP. SECTION IN SPAN

(A) DETAIL TYP. AT EACH END

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

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE DECK, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

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

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

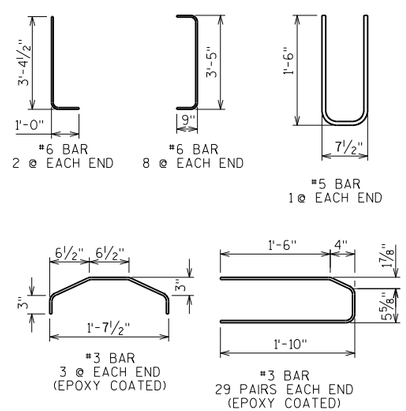
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, ONE OPTION IS AVAILABLE:

USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

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

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET 11.



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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)									CONC. STRGTH. f'c (p.s.i.)	"P" 1ST ⅓ OF GIRDER	"P" MID ⅓ OF GIRDER	"P" END ⅓ OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN						UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10						TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳
1&2	1-6	110.38	0.9	1.6	2.2	2.6	2.7	2.6	2.2	1.6	0.9	8000	7"	7"	7"	0.6	38	6400	40.0	13.75	16.75	5.0		

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45W" PRESTRESSED GIRDER DETAILS

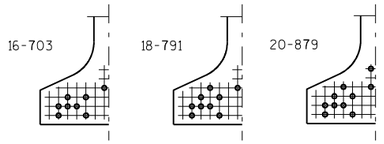
SHEET 9

85

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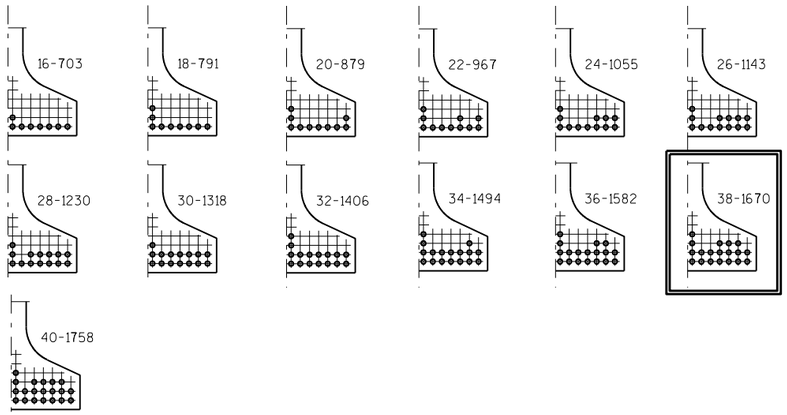
STATE PROJECT NUMBER

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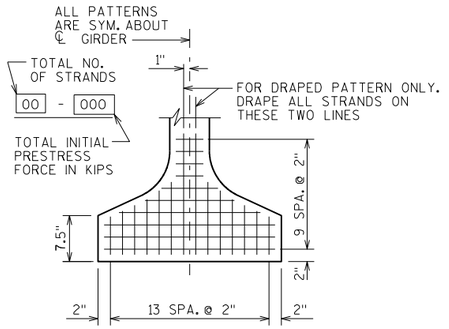
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6"Φ STRANDS

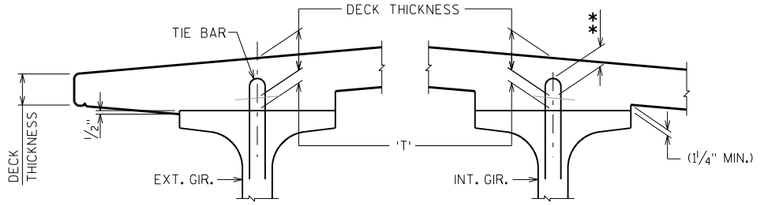


ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"Φ STRANDS



TYP. STRAND PATTERN



DECK HAUNCH DETAIL

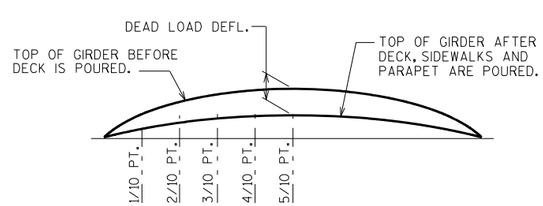
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECKTHICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

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

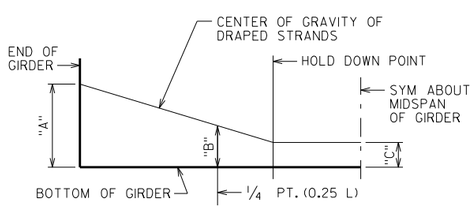
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

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



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

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

SPAN	CAMBER (IN.) *
1&2	4.40

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

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45W" PRESTRESSED GIRDER DETAILS

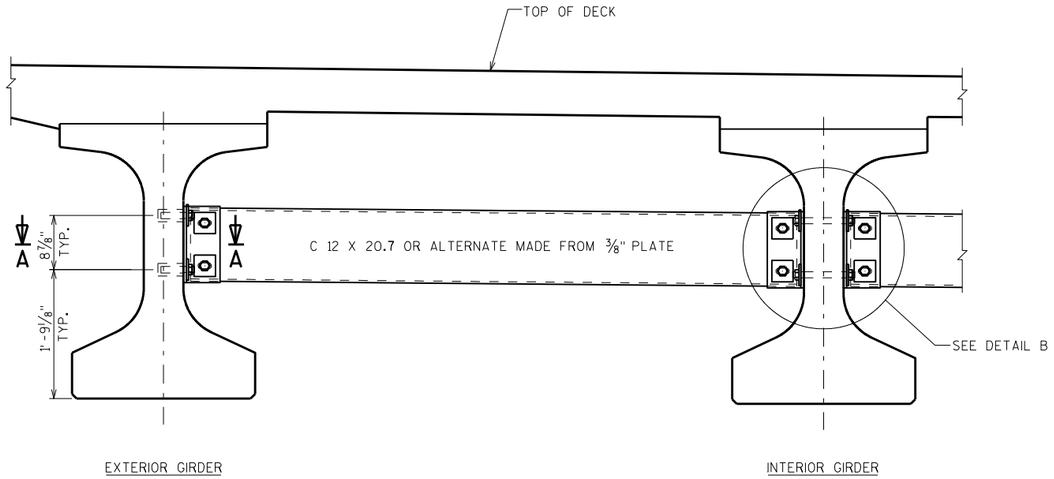
SHEET 10

86

SCALE =

STATE PROJECT NUMBER

1620-02-71



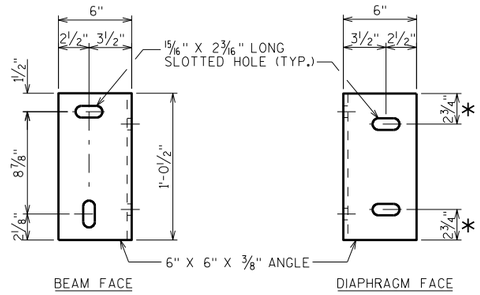
PART TRANSVERSE SECTION AT DIAPHRAGM

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-71-179", EACH.

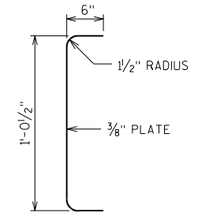
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT. ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.



DIAPHRAGM SUPPORT

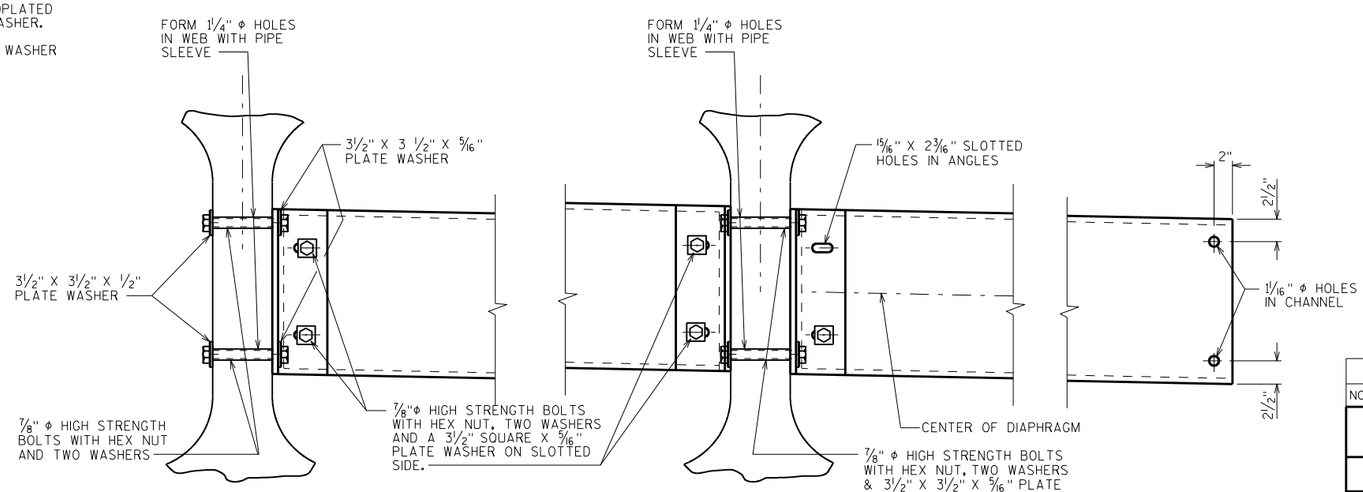
* 2½" FOR ALTERNATE PLATE DIAPHRAGM



SECTION THRU ALTERNATE DIAPHRAGM

SECTION A-A

(FOR EXTERIOR ATTACHMENT)



(FOR STAGGERED DIAPHRAGM)

(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-179

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STEEL DIAPHRAGM

SHEET 11

87

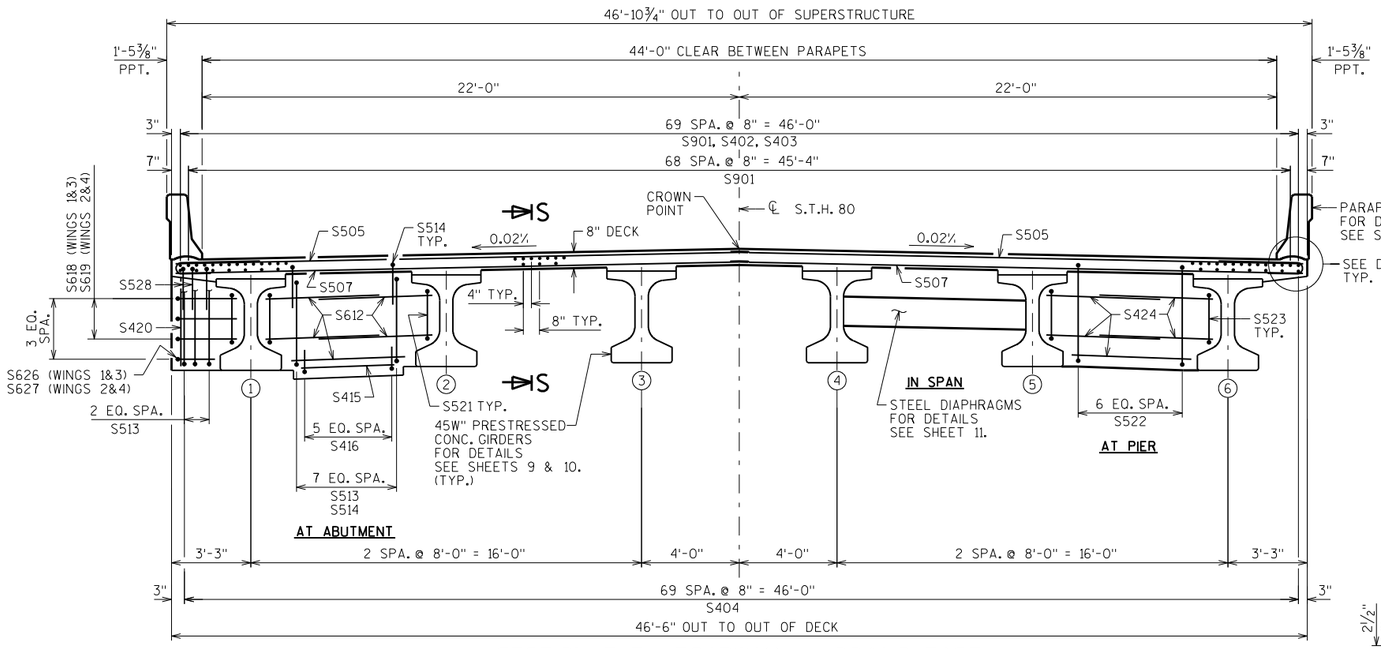
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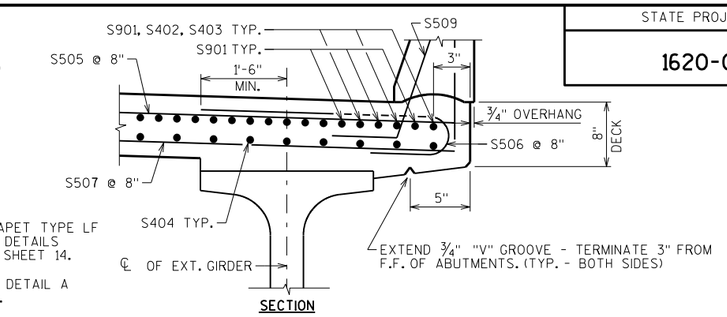
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STATE PROJECT NUMBER

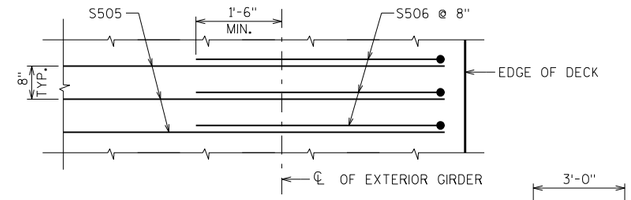
1620-02-71



SECTION THRU ROADWAY - LOOKING EAST

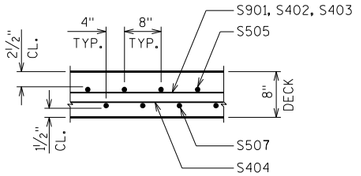


SECTION

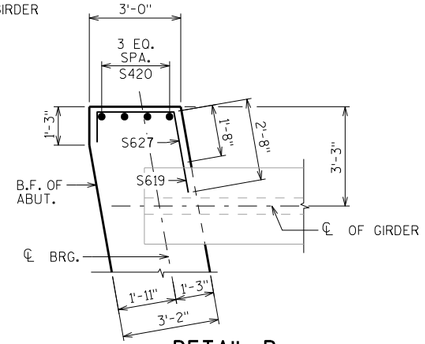


PLAN

DETAIL A

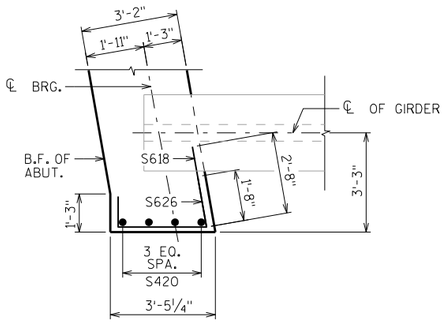


SECTION S



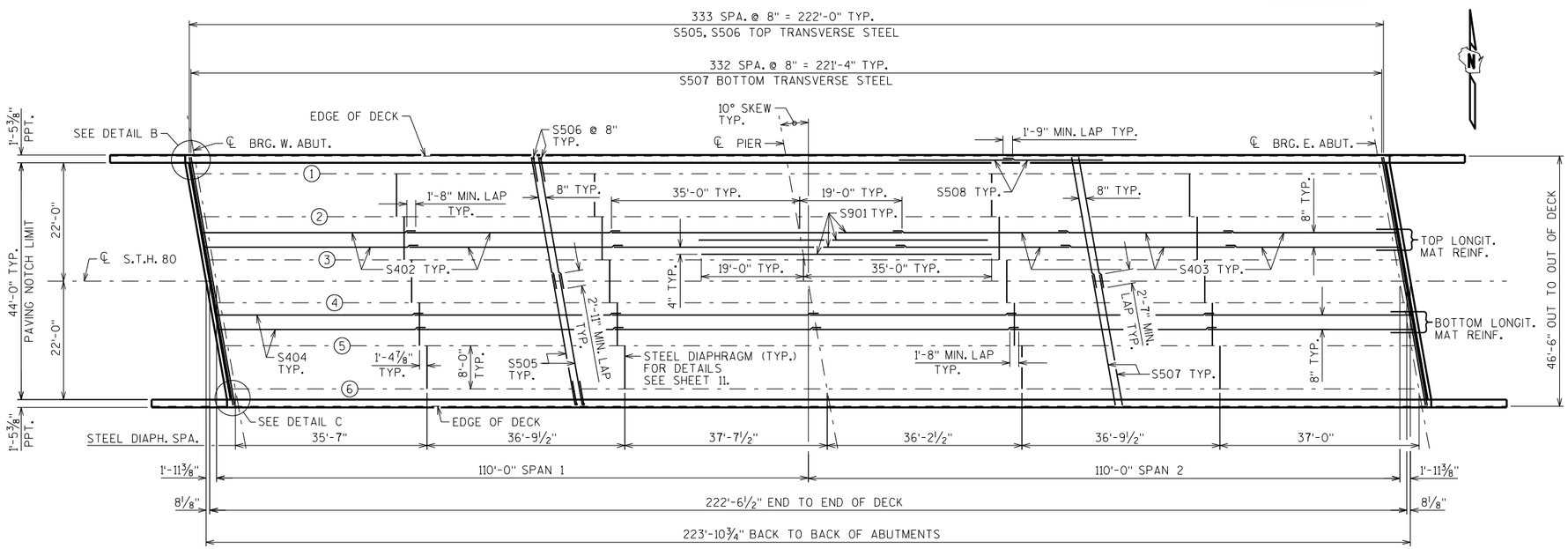
DETAIL B

WINGS 2 & 4



DETAIL C

WINGS 1 & 3



PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-179

DRAWN BY DDS | PLANS CK'D. JPH

SUPERSTRUCTURE

SHEET 12

88

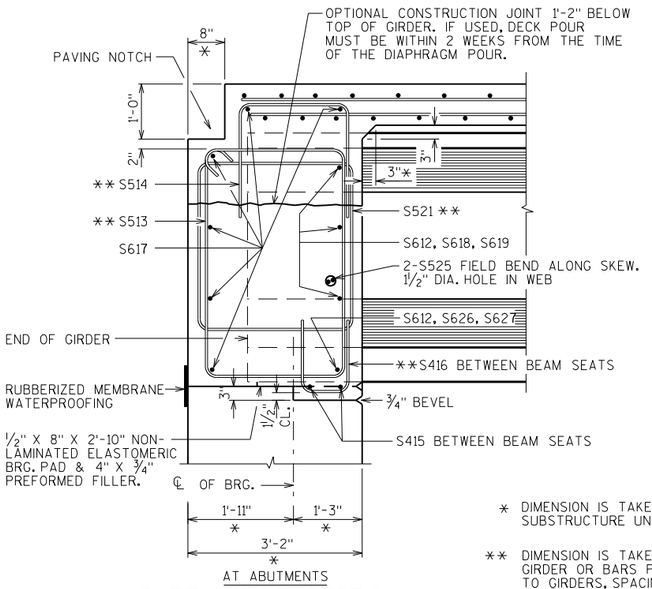
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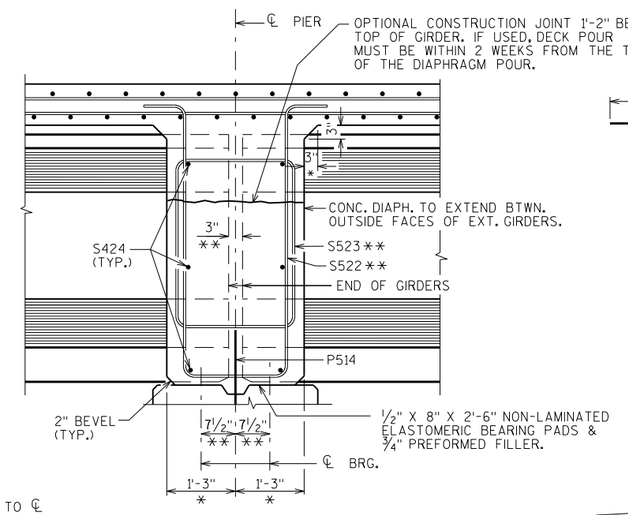
STATE PROJECT NUMBER

1620-02-71



AT ABUTMENTS

PART LONGIT. SECTION



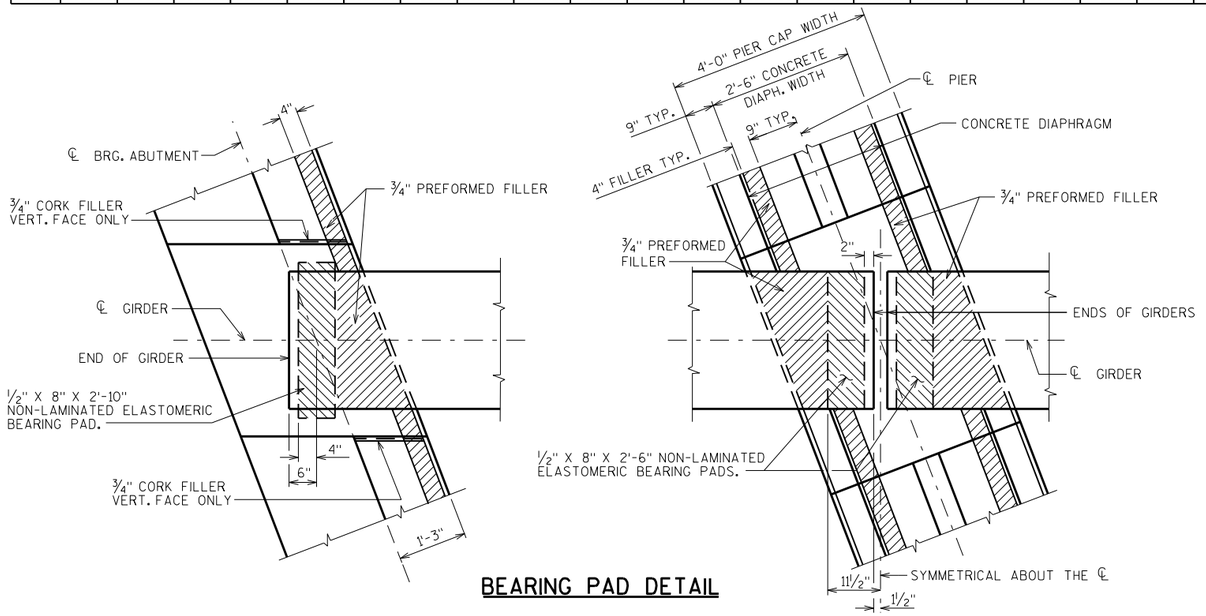
AT PIER DIAPHRAGM

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER OR BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO ℄ GIRDERS.

TOP OF DECK ELEVATIONS

	C/L BRG W ABUT	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	C/L PIER	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	C/L BRG E ABUT
N. EOD	1038.66	1038.60	1038.55	1038.49	1038.44	1038.38	1038.33	1038.27	1038.22	1038.16	1038.11	1038.05	1038.00	1037.94	1037.89	1037.83	1037.78	1037.72	1037.67	1037.62	1037.58
G1	1038.69	1038.64	1038.58	1038.53	1038.47	1038.42	1038.36	1038.31	1038.25	1038.20	1038.14	1038.09	1038.03	1037.98	1037.92	1037.87	1037.81	1037.76	1037.70	1037.66	1037.62
G2	1038.85	1038.79	1038.74	1038.68	1038.63	1038.57	1038.52	1038.46	1038.41	1038.35	1038.30	1038.24	1038.19	1038.13	1038.08	1038.02	1037.97	1037.91	1037.86	1037.81	1037.77
G3	1039.00	1038.94	1038.89	1038.83	1038.78	1038.72	1038.67	1038.61	1038.56	1038.50	1038.45	1038.39	1038.34	1038.28	1038.23	1038.17	1038.12	1038.06	1038.01	1037.97	1037.93
R/L	1039.08	1039.02	1038.97	1038.91	1038.86	1038.80	1038.75	1038.69	1038.64	1038.58	1038.53	1038.47	1038.42	1038.36	1038.31	1038.25	1038.20	1038.14	1038.09	1038.04	1038.01
G4	1038.99	1038.94	1038.88	1038.83	1038.77	1038.72	1038.66	1038.61	1038.55	1038.50	1038.44	1038.39	1038.33	1038.28	1038.22	1038.17	1038.11	1038.06	1038.01	1037.96	1037.93
G5	1038.82	1038.77	1038.71	1038.66	1038.60	1038.55	1038.49	1038.44	1038.38	1038.33	1038.27	1038.22	1038.16	1038.11	1038.05	1038.00	1037.94	1037.89	1037.84	1037.80	1037.76
G6	1038.66	1038.60	1038.55	1038.49	1038.44	1038.38	1038.33	1038.27	1038.22	1038.16	1038.11	1038.05	1038.00	1037.94	1037.89	1037.83	1037.78	1037.72	1037.67	1037.63	1037.60
S. EOD	1038.62	1038.56	1038.51	1038.45	1038.40	1038.34	1038.29	1038.23	1038.18	1038.12	1038.07	1038.01	1037.96	1037.90	1037.85	1037.79	1037.74	1037.68	1037.63	1037.59	1037.56

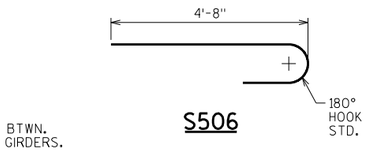


BEARING PAD DETAIL

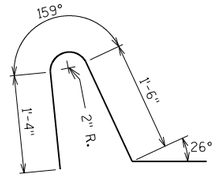
BILL OF BARS

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

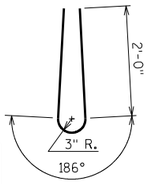
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S901	X	139	54'-0"			DECK - CONTINUITY STEEL
S402	X	140	39'-9"			DECK - LONGITUDINAL - TOP
S403	X	210	32'-5"			DECK - LONGITUDINAL - TOP
S404	X	420	38'-6"			DECK - LONGITUDINAL - BOTTOM
S505	X	668	24'-11"			DECK - TRANSVERSE - TOP
S506	X	668	5'-3"	X		DECK - TRANSVERSE - TOP AT EDGES OF DECK
S507	X	666	24'-9"			DECK - TRANSVERSE - BOTTOM
S508	X	40	57'-4"			PARAPET - HORIZONTAL
S509	X	668	4'-2"	X		PARAPET - VERTICAL
S510	X	672	4'-10"	X		PARAPET - VERTICAL
S511	X	4	4'-7"	X		PARAPET - VERTICAL - AT PAVING NOTCHES
S612	X	70	5'-3"			ABUT. DIAPH. - HORIZONTAL
S513	X	92	13'-4"	X		ABUT. DIAPH. - STIRRUP
S514	X	84	6'-5"	X		ABUT. DIAPH. - VERTICAL
S415	X	20	4'-3'			ABUT. DIAPH. - HORIZONTAL
S416	X	60	3'-3"	X		ABUT. DIAPH. - VERTICAL
S617	X	24	25'-3"			ABUT. DIAPH. - HORIZONTAL - B.F.
S618	X	6	6'-5"	X		ABUT. DIAPH. - HORIZONTAL - ENDS
S619	X	6	6'-0"	X		ABUT. DIAPH. - HORIZONTAL - ENDS
S420	X	16	4'-4"			ABUT. DIAPH. - VERTICAL - ENDS
S521	X	24	10'-4"	X		ABUT.DIAPH. - STIRRUPS AT GIRDERS
S522	X	35	11'-10"	X		PIER DIAPH. - VERTICAL
S523	X	10	9'-0"	X		PIER DIAPH. - STIRRUPS AT GIRDERS
S424	X	50	5'-3"			PIER DIAPH. - HORIZONTAL
S525	X	24	6'-0"			ABUT. DIAPH. - HORIZONTAL - THRU GIRDER WEB
S626	X	2	5'-5"	X		ABUT. DIAPH. - HORIZONTAL - ENDS
S627	X	2	5'-0"	X		ABUT. DIAPH. - HORIZONTAL - ENDS
S528	X	8	7'-1"	X		ABUT. DIAPH. - VERT. - ENDS



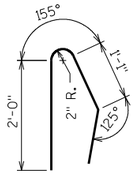
S506



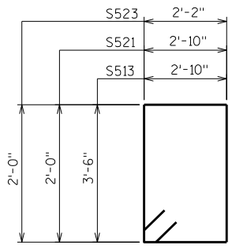
S509



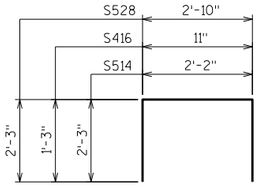
S510



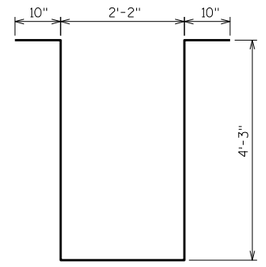
S511



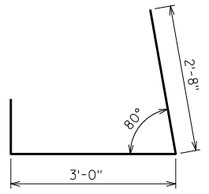
S513, S521, S523



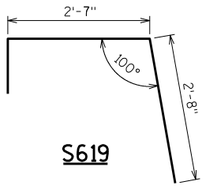
S514, S416, S528



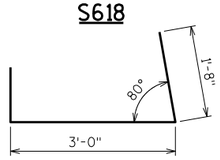
S522



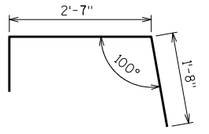
S618



S619



S626



S627

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-179

DRAWN BY DDS | PLANS CK'D. JPH

SUPERSTRUCTURE DETAILS

SHEET 13

89

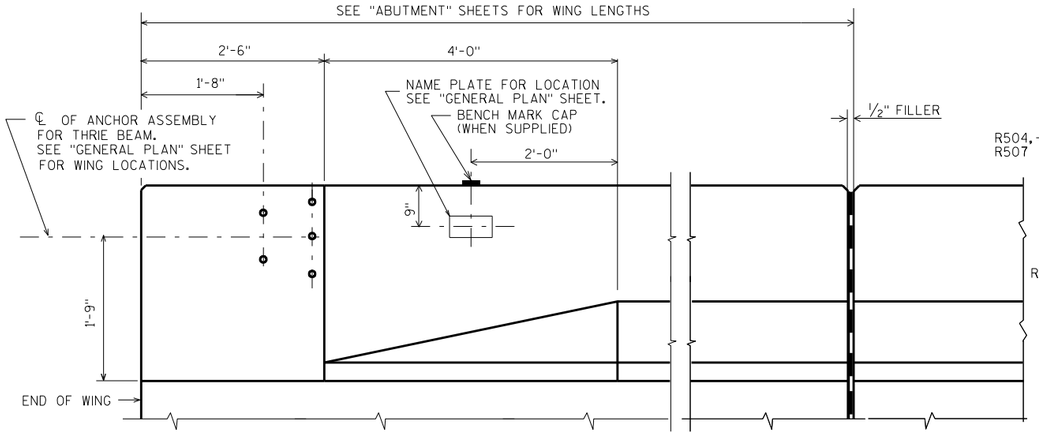
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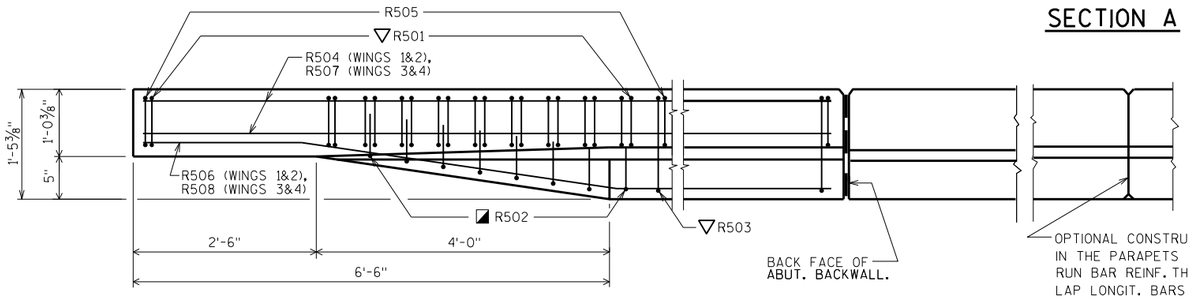
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STATE PROJECT NUMBER

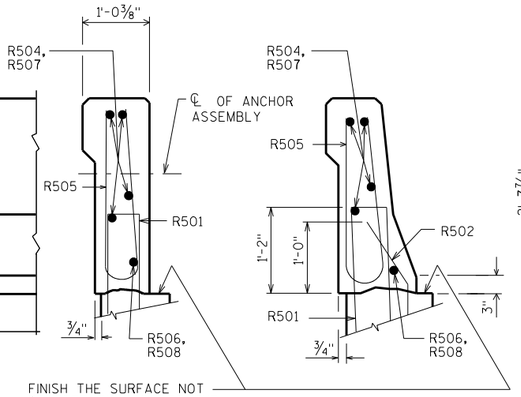
1620-02-71



INSIDE ELEVATION

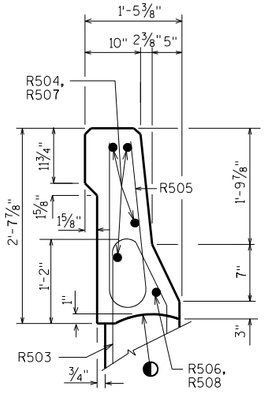


PLAN

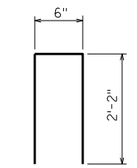


SECTION A

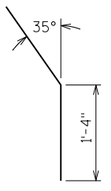
SECTION B



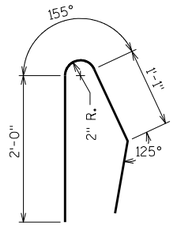
SECTION C



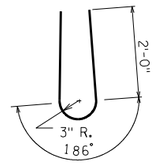
R501



R502



R503

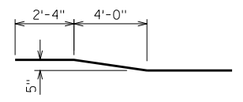


R505

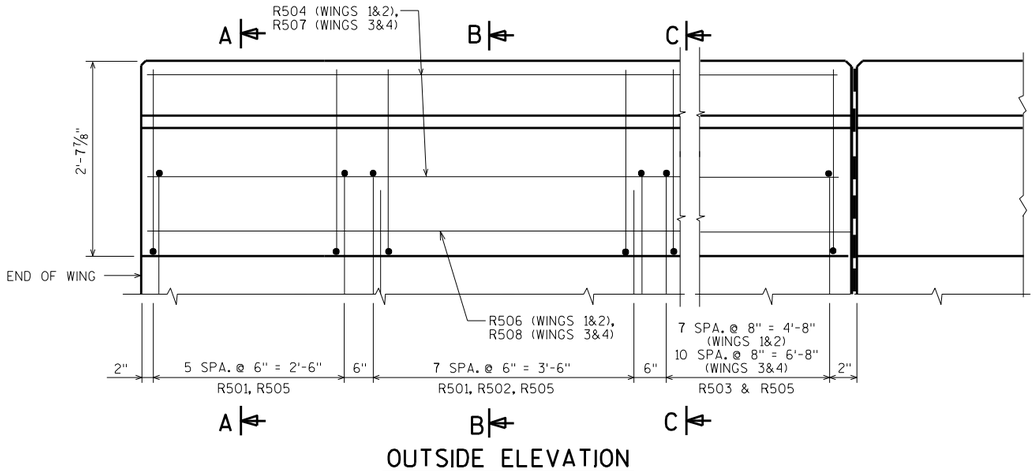
BILL OF BARS

FOR ABUTMENT PARAPETS

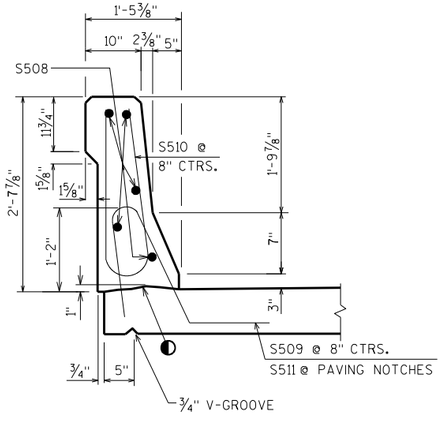
BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	28	28	4-7	X		PARAPET VERT.
R502	X	16	16	2-4	X		PARAPET VERT.
R503	X	16	22	4-7	X		PARAPET VERT.
R504	X	8	—	11-8			PARAPET HORIZ.
R505	X	44	50	4-10	X		PARAPET VERT.
R506	X	2	—	11-8	X		PARAPET HORIZ.
R507	X	—	8	13-8			PARAPET HORIZ.
R508	X	—	2	13-8	X		PARAPET HORIZ.



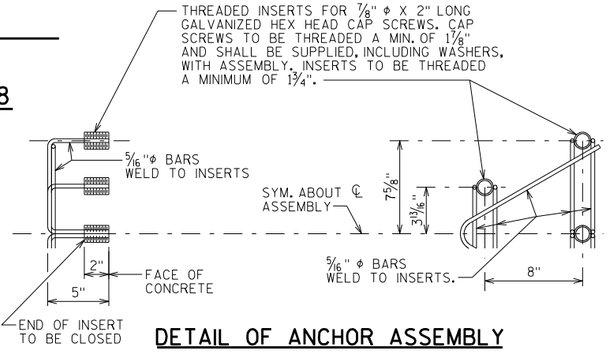
R506, R508



OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

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

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

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ R502 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R502 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R503 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-179

DRAWN BY DDS | PLANS CK'D. JPH

SLOPED FACE PARAPET LF

SHEET 14

90

SCALE = 1.00

8

8

WEST APPROACH

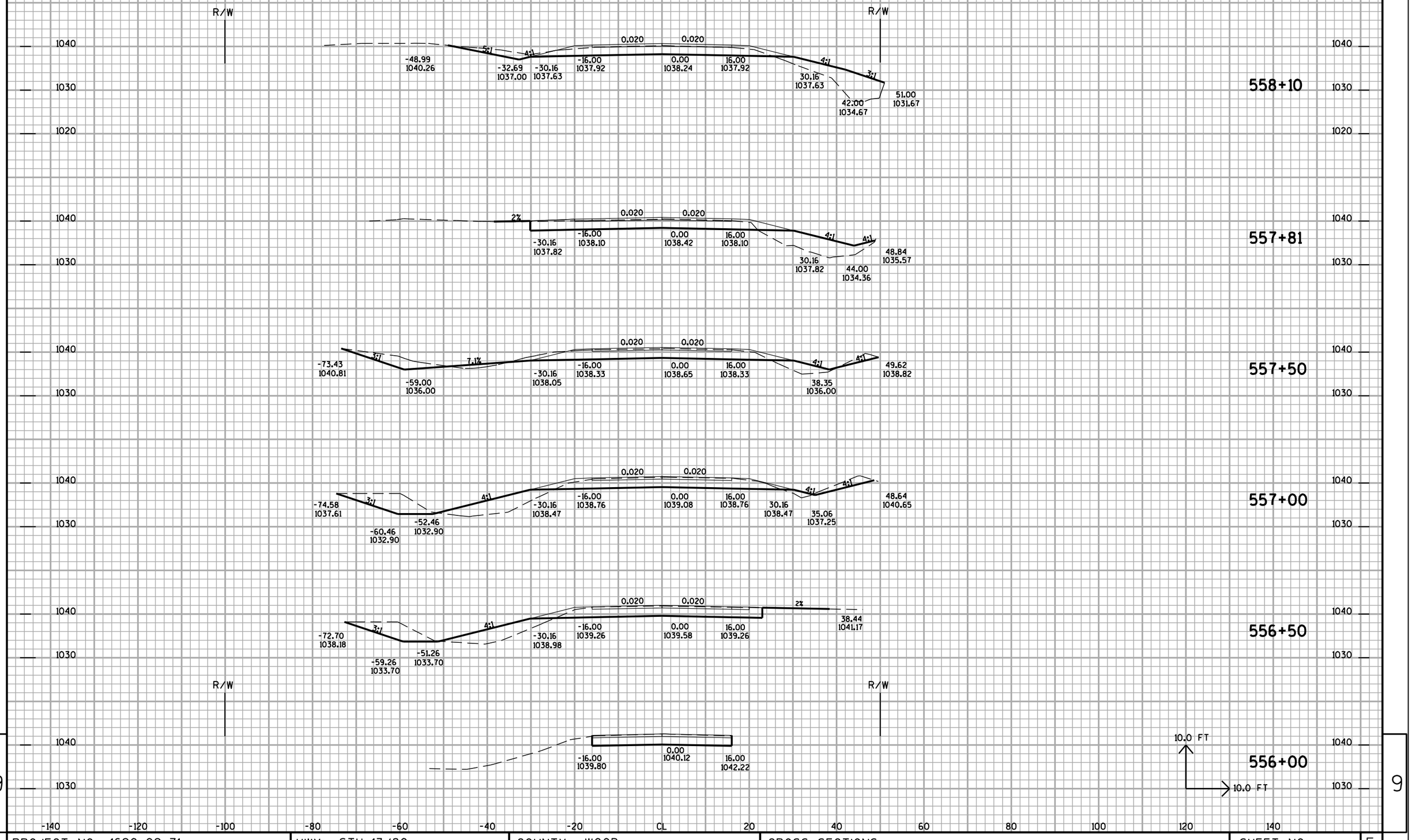
Station	Distance	Area(SF) Cut	Salvaged/Unusable Pavement Material	Area(SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) Salvaged/Unusable Pavement Material	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut 1.00	Expanded Fill 1.25	Mass Ordinate
556+00		76	41	0						
556+50	50	147	41	55	206	76	51	206	63	67
557+00	50	172	41	67	295	76	113	501	205	145
557+50	50	151	41	28	299	76	89	800	315	257
557+81	31	104	41	74	146	47	59	946	389	282
558+10	29	108	41	81	114	44	83	1,060	493	248
558+50	40	129	41	19	176	61	74	1,235	586	270
559+00	50	187	41	20	292	76	36	1,528	631	441
559+69	69	272	41	34	586	105	68	2,113	716	837
560+11	42	288	41	21	435	64	42	2,549	769	1,156
560+64	53	41	41	198	323	80	215	2,872	1,038	1,129
561+00	36	39	39	233	53	53	287	2,925	1,397	770
				TOTALS	2,925	758	1,118	2,925	1,397	770

NOTE: UNUSABLE PAVEMENT MATERIAL INCLUDES THE EXISTING UNDERLYING CONCRETE PAVEMENT

EAST APPROACH

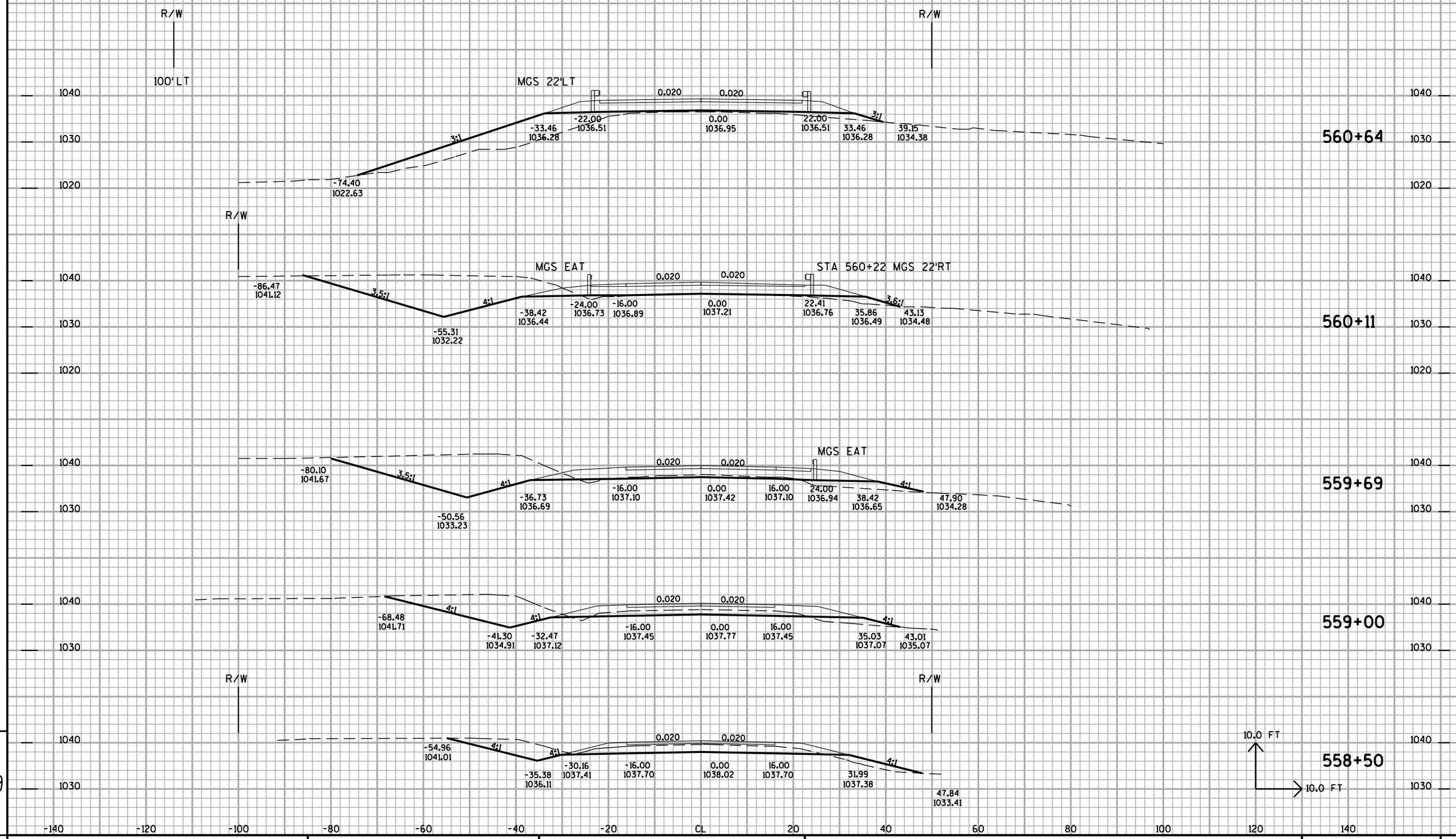
Station	Distance	Area(SF) Cut	Salvaged/Unusable Pavement Material	Area (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) Salvaged/Unusable Pavement Material	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut 1.00	Expanded Fill 1.25	Mass Ordinate
563+61		16	39	330						
563+98	37	27	39	270	29	53	412	29	514	-539
564+51	53	48	40	89	73	78	353	103	956	-984
564+85	34	68	41	68	73	51	99	176	1,079	-1,085
565+10	25	70	41	7	64	38	35	240	1,122	-1,103
565+63	53	111	41	3	177	80	10	417	1,135	-1,019
565+75	12	131	41	7	54	18	2	471	1,138	-986
566+00	25	138	41	7	125	38	7	596	1,146	-907
566+29	29	145	41	7	152	44	8	748	1,156	-809
566+50	21	141	41	6	111	32	5	859	1,162	-735
567+00	50	147	41	6	267	76	11	1,126	1,176	-558
567+50	50	143	41	5	268	76	10	1,395	1,188	-378
568+00	50	74	41	0	201	76	4	1,596	1,194	-258
RIVER LOOP LN					258	16	48	1,854	1,254	-334
				TOTALS	1,854	676	1,003	1,854	1,254	-76

NOTE: UNUSABLE PAVEMENT MATERIAL INCLUDES THE EXISTING UNDERLYING CONCRETE PAVEMENT



9

PROJECT NO: 1620-02-71	HWY: STH 13/80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

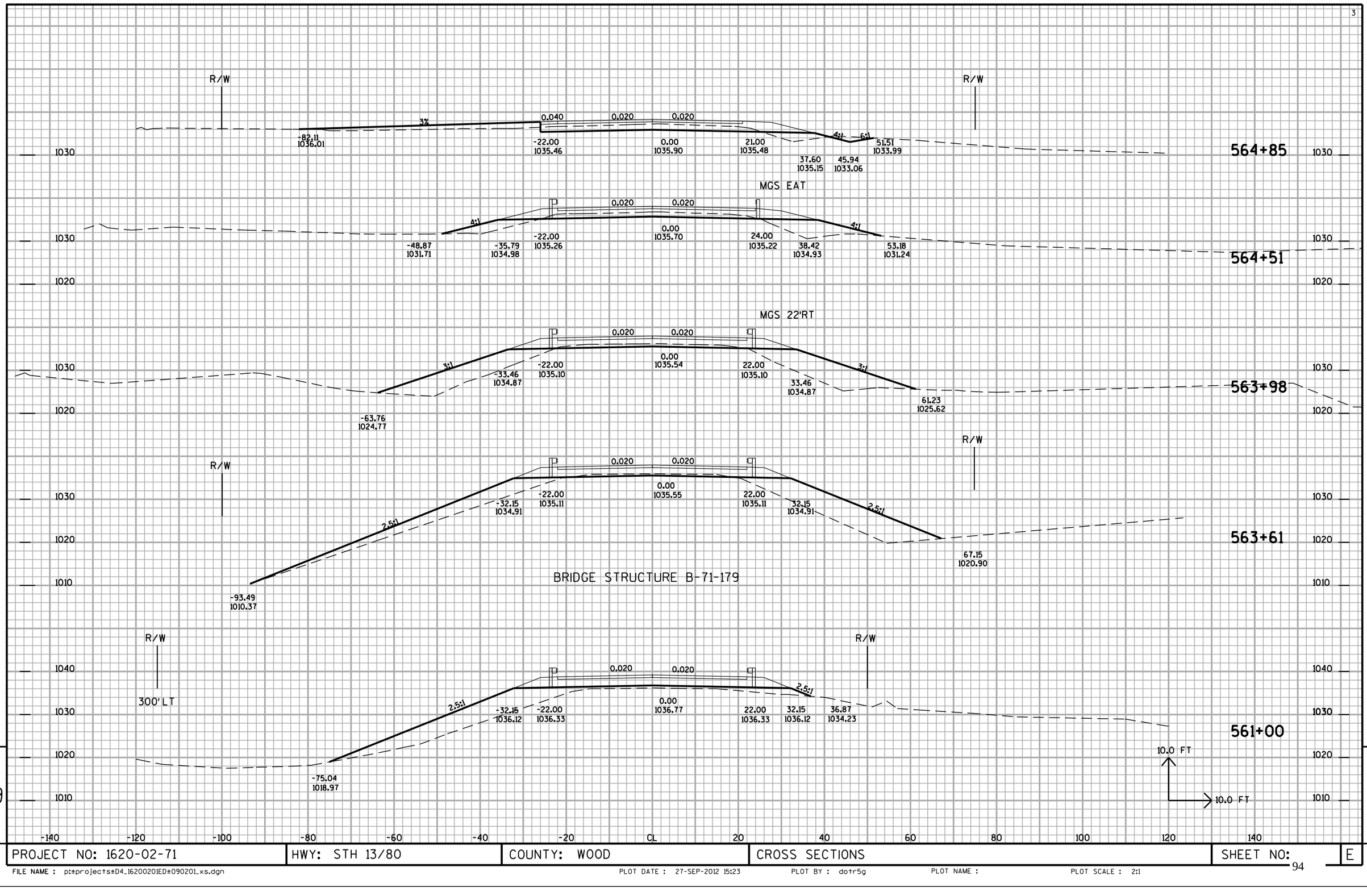


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9

PROJECT NO: 1620-02-71	HWY: STH 13/80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

FILE NAME : p:\projects\D4_16200201ED\090201_xs.dgn PLOT DATE : 27-SEP-2012 15:23 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 2:1

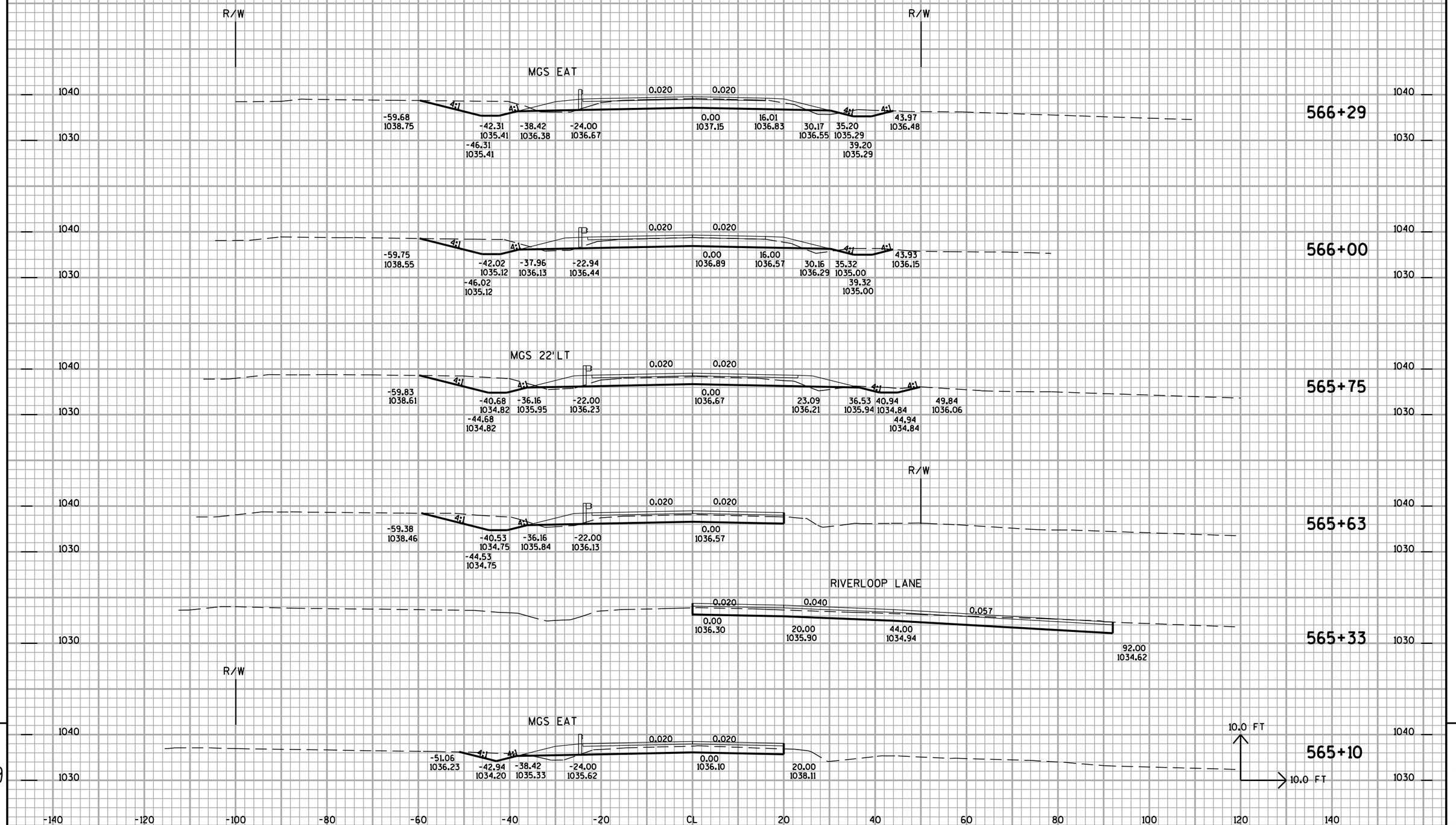


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9

PROJECT NO: 1620-02-71	HWY: STH 13/80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

FILE NAME : p:\projects\D4_16200201ED\090201_xs.dgn PLOT DATE : 27-SEP-2012 15:23 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 2:1

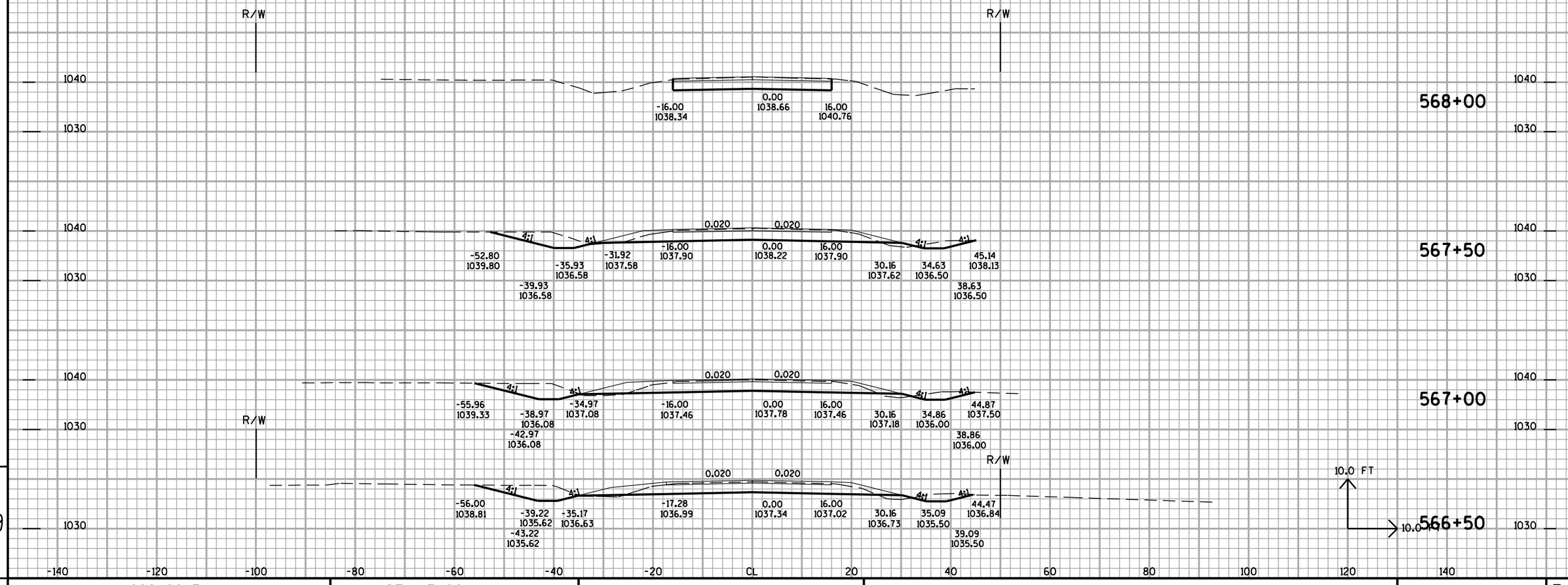


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9

PROJECT NO: 1620-02-71	HWY: STH 13/80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

FILE NAME : p:\projects\D4_16200201ED\090201_xs.dgn PLOT DATE : 27-SEP-2012 15:23 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 2:1



PROJECT NO: 1620-02-71	HWY: STH 13/80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

FILE NAME : p:\projects\D4_16200201ED\090201_xs.dgn PLOT DATE : 27-SEP-2012 15:23 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 2:1

Notes

Wisconsin Department of Transportation

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WIS | MAR 13

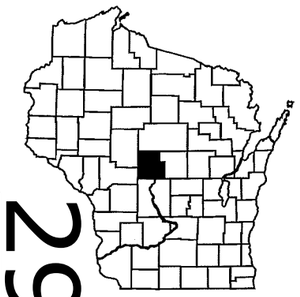
PROJECT ID: 1620-02-73
WITH: 1620-02-64, 71, 74

COUNTY: WOOD

ORDER OF SHEETS

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

TOTAL SHEETS = 144



29

DESIGN DESIGNATION

A.A.D.T.	(2013)	=	4200
A.A.D.T.	(2033)	=	5200
D.H.V.		=	8.2
D.D.		=	62/38
T.		=	10.3%
DESIGN SPEED		=	60 MPH
ESALS		=	1,270,200

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

PITTSVILLE - MARSHFIELD

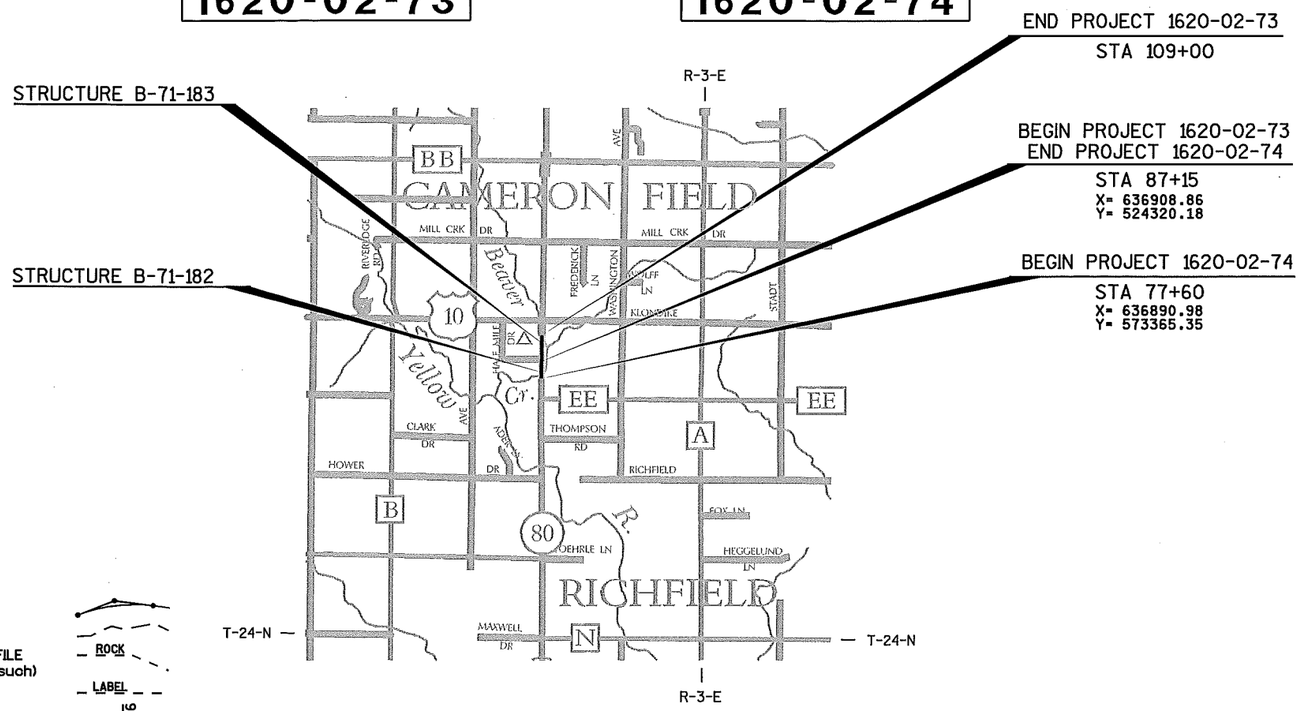
BEAVER CREEK BRIDGE B-71-183
STH 80
WOOD COUNTY

STATE PROJECT NUMBER
1620-02-73

BEAVER CREEK BRIDGE B-71-182
STH 80
WOOD COUNTY

STATE PROJECT NUMBER
1620-02-74

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1620-02-73		
1620-02-74		



LAYOUT
SCALE 0 ML.

TOTAL NET LENGTH OF CENTERLINE = 0.5947 MI.

Elevations shown on this plan are referenced to the North American Vertical Datum of NAVD 88 (91)

Coordinates on this plan are referenced to the Wisconsin County Coordinate System (WCCS), Wood County, NAD 1983 (1991)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	QUEST Civil Engineers, LLC
Designer	Elizabeth Collins
Project Manager	Kevin Garrigan
Regional Examiner	Cheryl Simon
Regional Supervisor	Michael Kretschmer
C.O. Examiner	WISDOT BPD

APPROVED FOR THE DEPARTMENT
DATE: 11/7/12 (Signature)

E

GENERAL NOTES

NO TREES OR SHRUBS OUTSIDE THE GRADING LIMITS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

SECTIONS AS SHOWN ON THE CROSS SECTION SHEETS INCLUDE THE THICKNESS OF TOPSOIL.

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

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

UTILITIES

MARSHFIELD ELECTRIC AND WATER DEPT - ELECTRICITY
ATTN: DERREK CAFLISCH
2000 S CENTRAL AVENUE
MARSHFIELD WI 54449
caflisch@marshfieldutilities.org

TDS TELECOM - COMMUNICATION LINE
ATTN: STEVE JAKUBIEC
SUITE 218A
10 COLLEGE AVENUE
APPLETON WI 54911
(920)882-4166
steve.jakubiec@tdstelecom.com

DNR

MARC HERSHFIELD
473 GRIFFITH DR
WISCONSIN RAPIDS WI 54494
715-421-7867
marc.hershfield@wi.gov

DIGGERS HOTLINE

Call 811 3 Work Days Before You Dig
Or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

PROJECT OVERVIEW

N

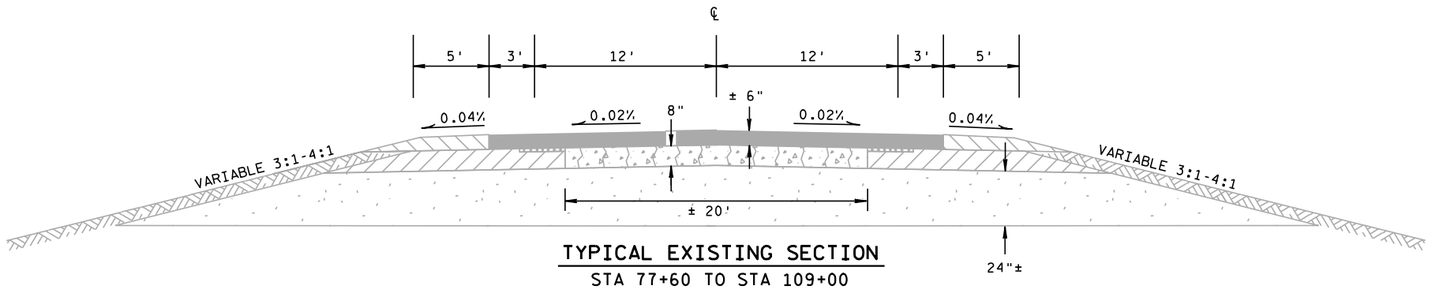


PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	PROJECT OVERVIEW	SHEET	E

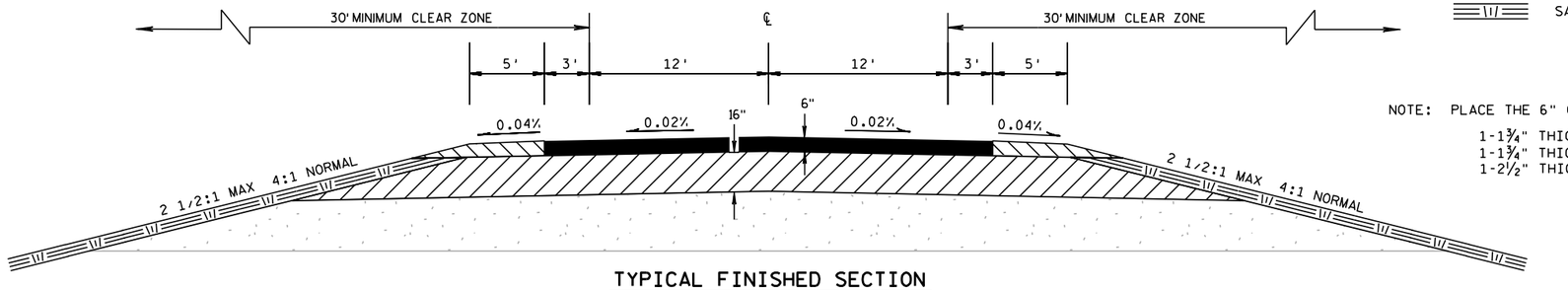
2

LEGEND

- EXISTING GRANULAR SUBBASE
- EXISTING ASPHALT PAVEMENT
- EXISTING ASPHALTIC SHOULDER MATERIAL
- EXISTING CRACKED AND SEATED PCC PAVEMENT
- EXISTING CRUSHED AGGREGATE BASE COURSE
- BASE AGGREGATE DENSE 1¼- INCH
- BASE AGGREGATE DENSE 3/4-INCH
- ORIGINAL GROUND
- HMA PAVEMENT E-3
- CONC PAVT APPROACH SLAB & CONC PAVT
- SALVAGED TOPSOIL, SEED, FERTILIZER AND MULCH



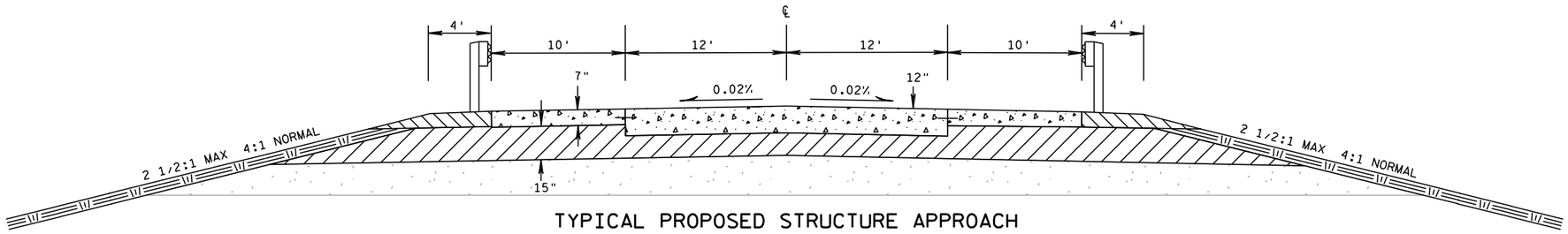
TYPICAL EXISTING SECTION
STA 77+60 TO STA 109+00



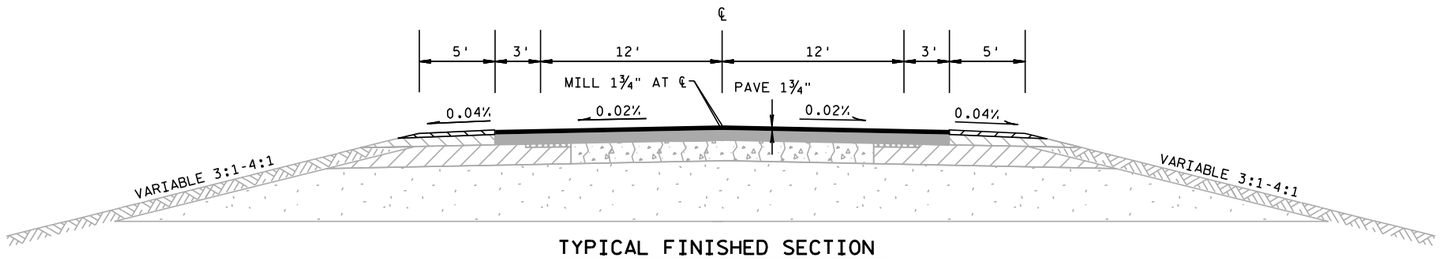
TYPICAL FINISHED SECTION
STA 77+60 TO STA 87+15
STA 101+00 TO STA 109+00

NOTE: PLACE THE 6" OF HMA PAVEMENT TYPE E-3 IN THREE LAYERS

1-1¾" THICK UPPER LAYER
1-1¾" THICK LOWER LAYER
1-2½" THICK LOWER LAYER

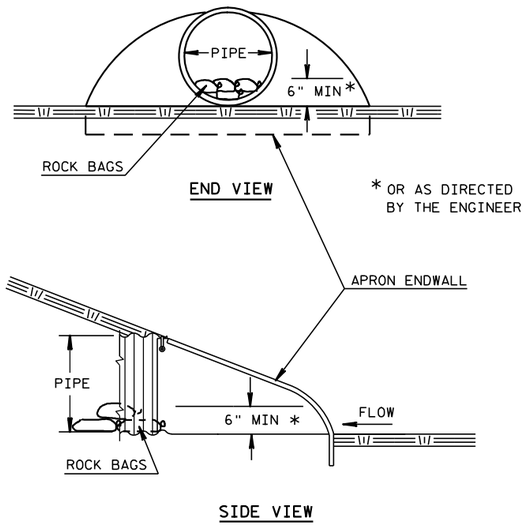


TYPICAL PROPOSED STRUCTURE APPROACH

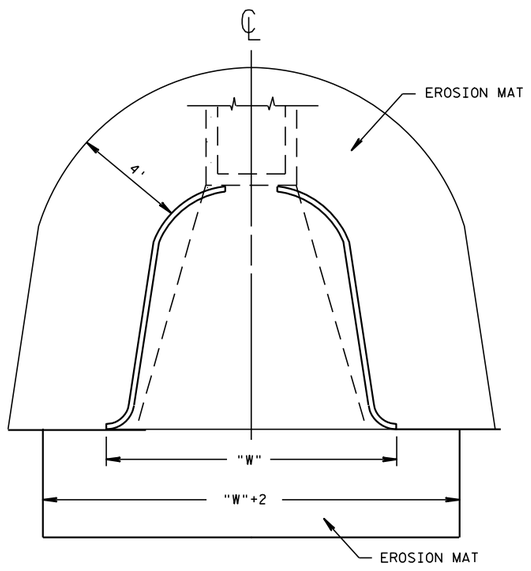


TYPICAL FINISHED SECTION
STA 87+15 TO STA 101+00

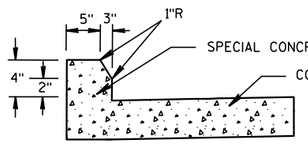
PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	TYPICAL SECTIONS	SHEET	E



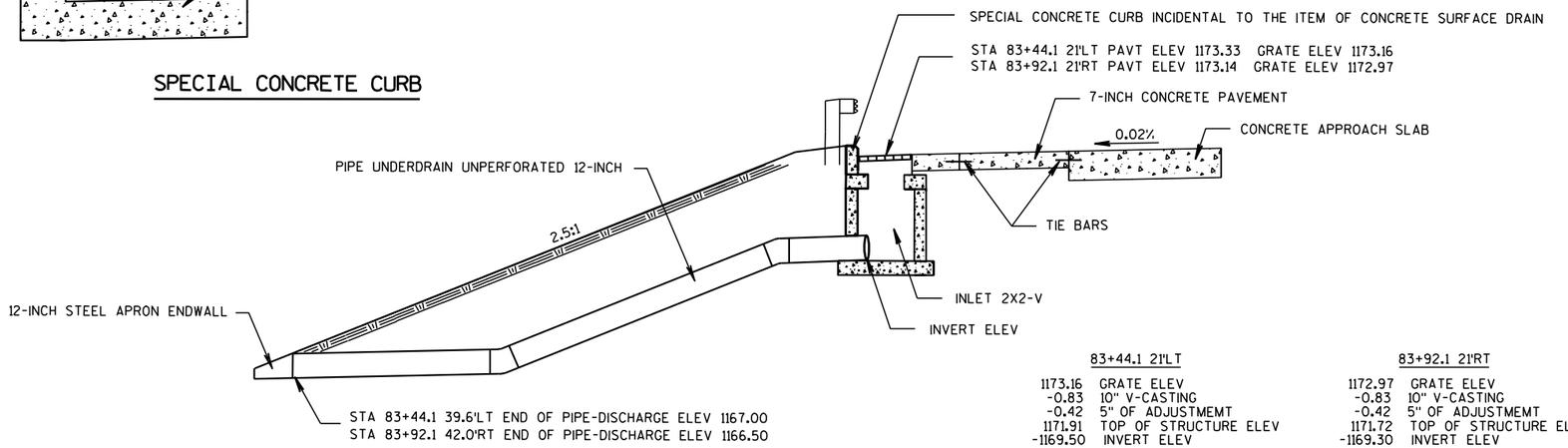
CULVERT PIPE CHECKS



EROSION MAT AT PIPE ENDS

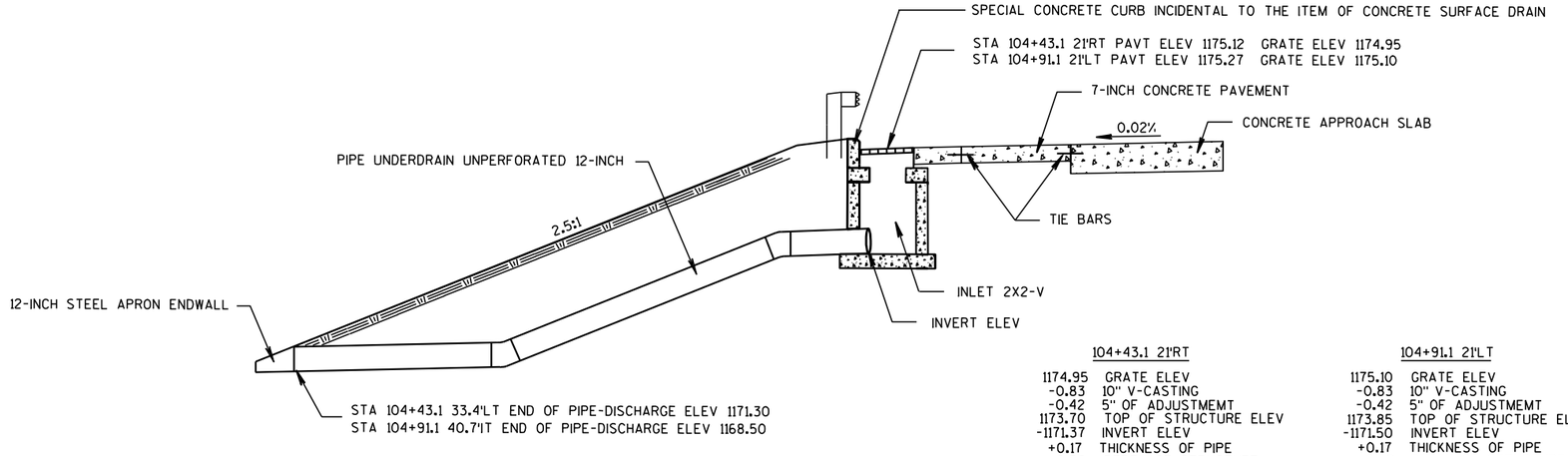


SPECIAL CONCRETE CURB



83+44.1 21'LT		83+92.1 21'RT	
1173.16	GRATE ELEV	1172.97	GRATE ELEV
-0.83	10" V-CASTING	-0.83	10" V-CASTING
-0.42	5" OF ADJUSTMEMT	-0.42	5" OF ADJUSTMEMT
1171.91	TOP OF STRUCTURE ELEV	1171.72	TOP OF STRUCTURE ELEV
-1169.50	INVERT ELEV	-1169.30	INVERT ELEV
+0.17	THICKNESS OF PIPE	+0.17	THICKNESS OF PIPE
= 2.58	DEPTH OF STRUCTURE	= 2.59	DEPTH OF STRUCTURE

CONCRETE SURFACE DRAIN DROP INLETS B-71-182
STA 83+44.1 LT AND 83+92.1 RT
BETWEEN MGS POSTS (12) AND (13)

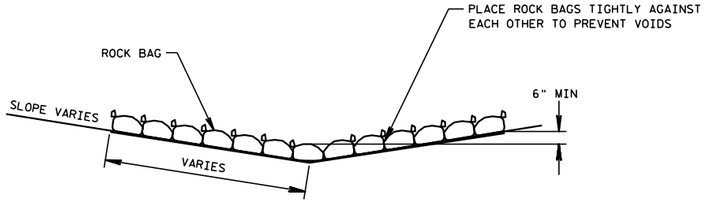


104+43.1 21'RT		104+91.1 21'LT	
1174.95	GRATE ELEV	1175.10	GRATE ELEV
-0.83	10" V-CASTING	-0.83	10" V-CASTING
-0.42	5" OF ADJUSTMEMT	-0.42	5" OF ADJUSTMEMT
1173.70	TOP OF STRUCTURE ELEV	1173.85	TOP OF STRUCTURE ELEV
-1171.37	INVERT ELEV	-1171.50	INVERT ELEV
+0.17	THICKNESS OF PIPE	+0.17	THICKNESS OF PIPE
= 2.50	DEPTH OF STRUCTURE	= 2.52	DEPTH OF STRUCTURE

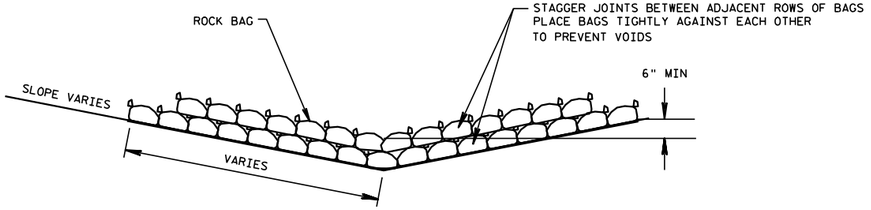
NOTE: 12-INCH PIPE UNDERDRAIN FOR STA 104+43.1 IS WITHOUT BENDS.

CONCRETE SURFACE DRAIN DROP INLETS B-71-183
STA 104+43.1 RT AND 104+91.1 LT
BETWEEN MGS POSTS (12) AND (13)

NOTE: SEE STANDARD DETAIL DRAWINGS "CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES", AND "CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES" FOR ADDITIONAL INFORMATION

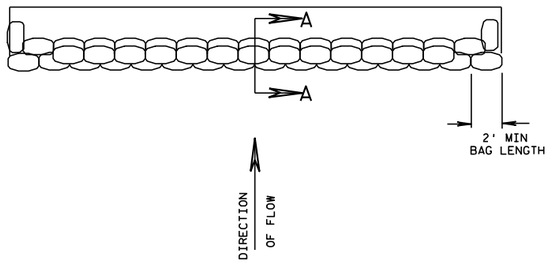


SIDE VIEW (SINGLE LAYER)

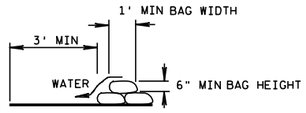


* LENGTH AND NUMBER OF BAGS MAY VARY
DEPENDING ON DESIRED DEPTH OF WATER POOL

SIDE VIEW (MULTIPLE LAYER)

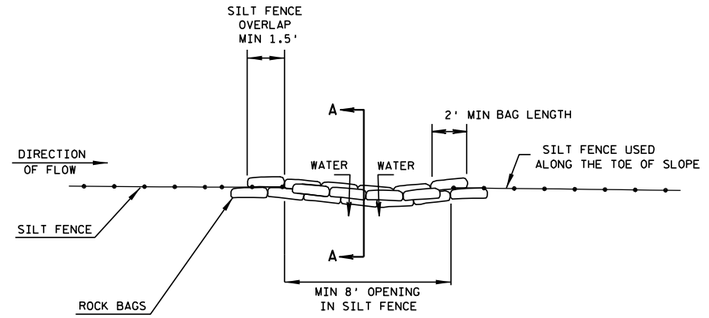


TOP VIEW (MULTIPLE LAYER)

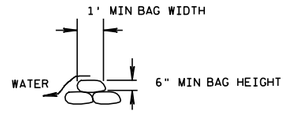


SECTION A-A

ROCK BAGS USED FOR DITCH CHECKS DETAIL

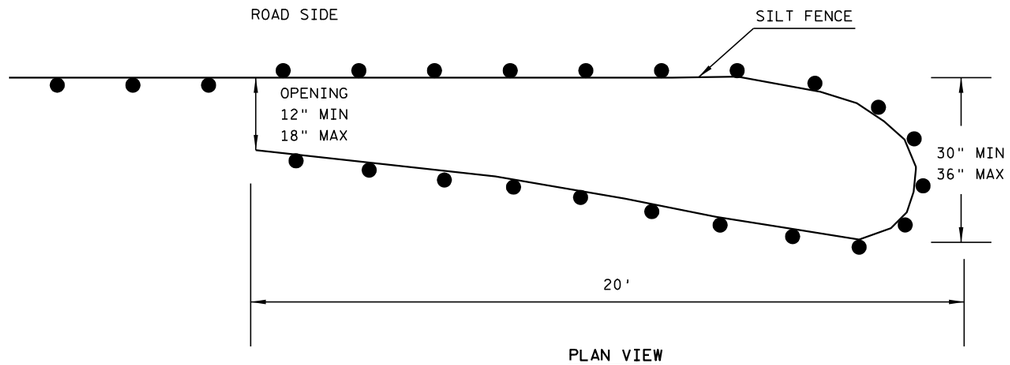


TOP VIEW



SECTION A-A

ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL



PLAN VIEW

GENERAL NOTES:

THE PURPOSE OF THE TURTLE TURN-AROUNDS ARE TO REDIRECT THE TURTLES AWAY FROM THE CONSTRUCTION ZONE. DESIGN SHOULD ALSO INCLUDE TRENCHED-IN SEDIMENT FENCING AND FENCING SUPPORTS ON UPSLOPE SIDE OF FENCE. SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND.

TEMPORARY TURTLE TURN-AROUND DETAIL

2

LEGEND

- * ASPHALTIC FLUME
- CONCRETE PAVEMENT 7-INCH
- CONCRETE SURFACE DRAIN DROP INLET TYPE

BEGIN PROJECT 1620-02-74
BEGIN RECONSTRUCT STA 77+60
SAW CUT REQUIRED
MATCH EXISTING

EXISTING STRUCTURE B-71-749 TO BE REMOVED

STRUCTURE B-71-182 REQUIRED

N

SALVAGE EXISITNG RAIL
SALVAGE EXISTING GUARDRAIL
END TREATMENTS

60'

EXISTING R/W

SLOPE INTERCEPT

150'

15:1 TAPER

3'
5'
12'
12'
5'
3'

78+00 79+00 80+00 81+00 82+00 83+00

MGS THRIE BEAM TRANSITION REQD

MGS GUARDRAIL TERMINAL EAT REQD

FLOW

10'
12'

CONC PAVT APPROACH SLAB

25' TYPICAL

12'
10'

MGS GUARDRAIL 3 REQD

BM1

CONC PAVT APPROACH SLAB

15:1 TAPER

INV 1171.42

INV 1170.84

SLOPE INTERCEPT

EXISTING 24"X40' CMCP TO BE REMOVED

GRAVEL FE +15

MGS GUARDRAIL TERMINAL EAT REQD

EXISTING 36"X30' CMCP TO BE REMOVED

INV 1168.20

INV 1168.6

STEEL THRIE BEAM STRUCTURE APPROACH REQD

BEAVER CREEK

STEEL PLATE BEAM GUARD 8FT SHORT RADIUS REQD

STA 80+15 34' RT
1-24"X40' RCCP REQD
2-AEW'S FOR CP SLOPED SECTION
STEEL 24-INCH REQD

STA 82+00 49.5' RT
1-36"X30' RCCP REQD
2-AEW'S FOR RCCP 36-INCH REQD

GRAVEL PE +00

SHORT RADIUS TERMINAL REQD

EXISTING R/W

60'

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM1	82+41.6 14.9RT	DISK IN CONCRETE	1173.072

END PROJECT 1620-02-74
END RECONSTRUCT STA 87+15
BEGIN PROJECT 1620-02-73
BEGIN MILL AND OVERLAY
SAW CUT REQUIRED

60'

SLOPE INTERCEPT

EXISTING R/W

MGS THRIE BEAM TRANSITION REQD

MGS GUARDRAIL 3 REQD

MGS GUARDRAIL TERMINAL EAT REQD

15:1 TAPER

3'
5'
12'
12'
5'
3'

84+00 85+00 86+00 87+00 88+00

10'
12'

25' TYPICAL

12'
10'

15:1 TAPER

150'

MGS GUARDRAIL TERMINAL EAT REQD

MGS THRIE BEAM TRANSITION REQD

SLOPE INTERCEPT

EXISTING R/W

SALVAGE EXISITNG RAIL
SALVAGE EXISTING GUARDRAIL
END TREATMENTS

60'

PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	PLAN DETAIL 1	SHEET 7	E

2

2

HALF MILE RD

MATCH EXISTING
SAW CUT REOD

SIGN

N

EXISTING 36" CURB AND GUTTER TO REMAIN IN PLACE

EXISTING R/W

60'

70'

100'

10'

200'

+14
GRAVEL
PE

3'
5'
12'

91+00
92+00
93+00
94+00
95+00
96+00

GRAVEL
PE
+98

50'

60'

EXISTING R/W

70'

EXISTING R/W

N

+75
GRAVEL
PE

150'

96+00
97+00
98+00
99+00
100+00
101+00

GRAVEL
PE
+98

GRAVEL
PE
+84

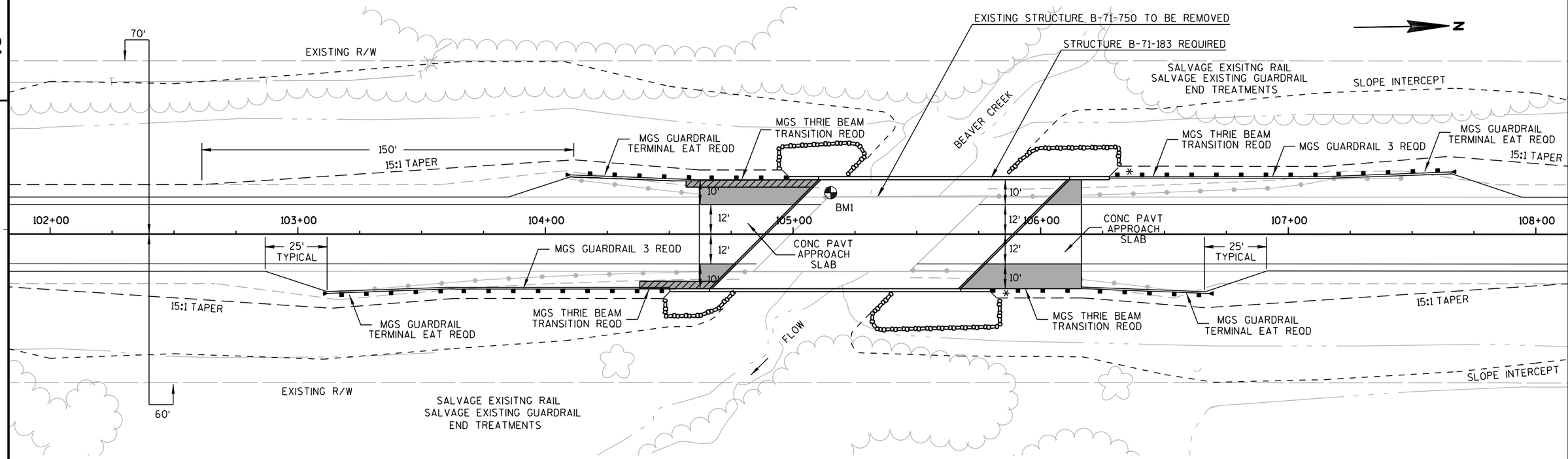
EXISTING R/W

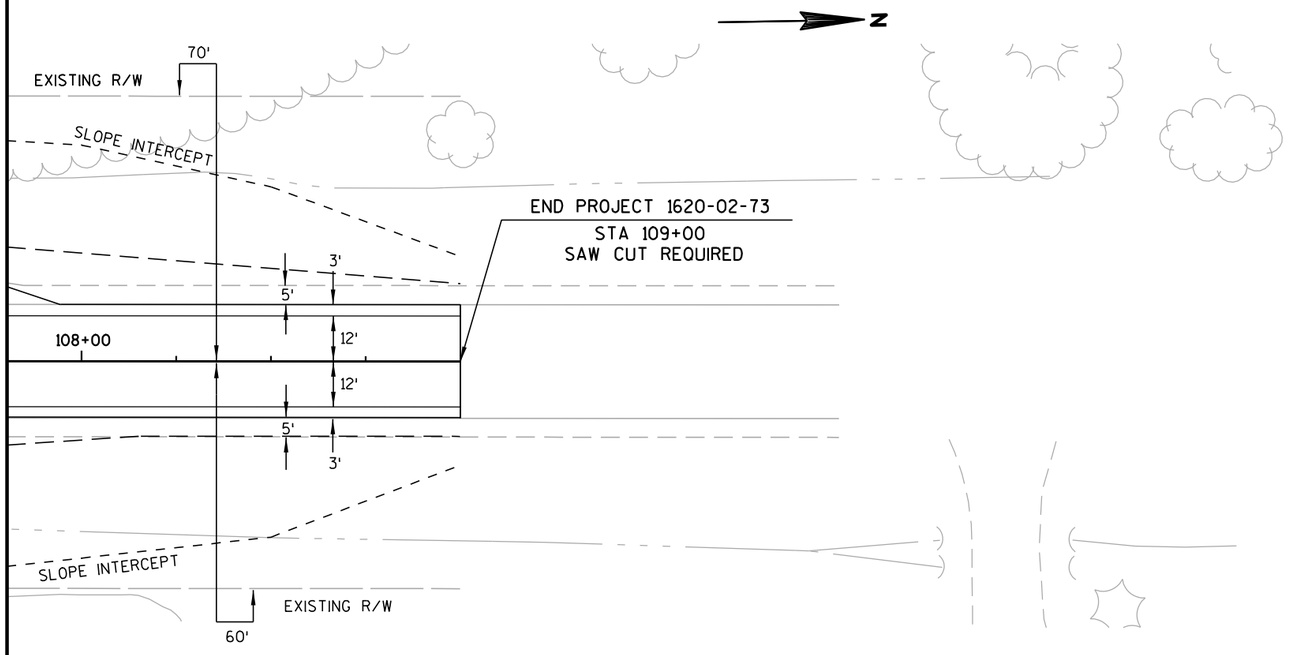
50'

60'

END MILL AND OVERLAY
BEGIN RECONSTRUCT
STA 101+00
SAW CUT REQUIRED

PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	PLAN DETAIL 2	SHEET 8	E





BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM1	105+15.2 16.7 LT	BLUE SQUARE ON SW WINGWALL	1175.172

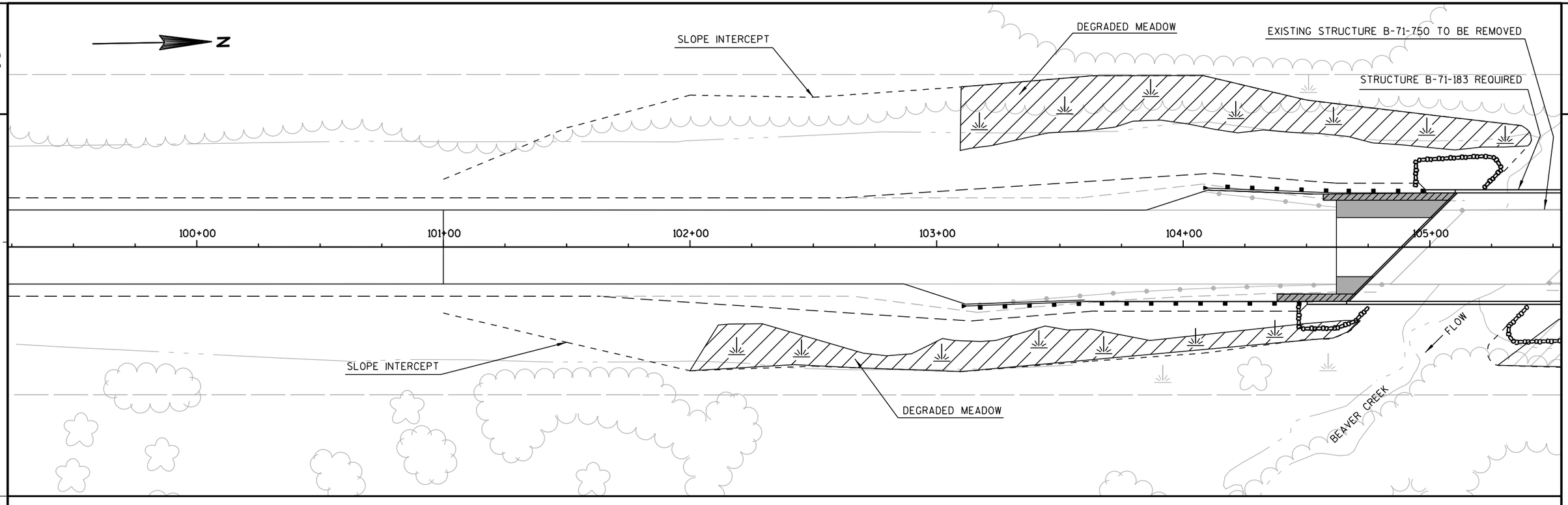
LEGEND

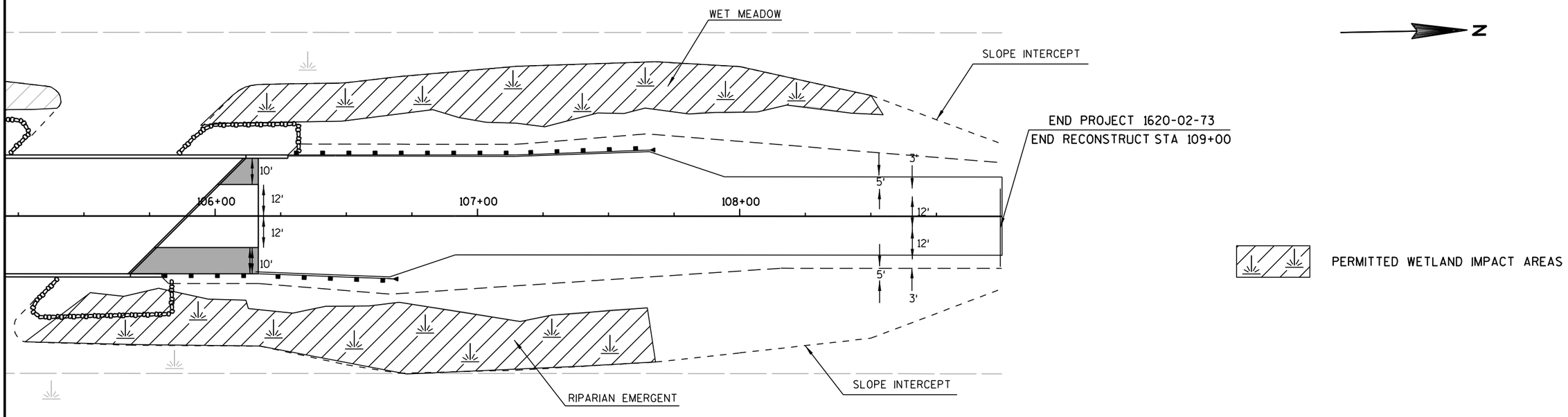
* ASPHALTIC FLUME

CONCRETE PAVEMENT 7-INCH

CONCRETE SURFACE DRAIN DROP INLET TYPE

PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	PLAN DETAIL 3	SHEET 9	E





PROJECT NO: 1620-02-73	HWY: STH 80	COUNTY: WOOD	PERMITTED WETLAND IMPACT AREAS	SHEET	E

FILE NAME : p:\projects\D4_16200204EC\022003_ec.dgn PLOT DATE : 17-OCT-2012 12:43 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 40:1

BEGIN PROJECT 1620-02-74
BEGIN RECONSTRUCT STA 77+60

N

EXISTING STRUCTURE B-71-749 TO BE REMOVED

STRUCTURE B-71-182 REQUIRED

BEAVER CREEK

SLOPE INTERCEPT

WET MEADOW

10'

12'

78+00 79+00 80+00 81+00 82+00

12'

10'

SLOPE INTERCEPT

WET MEADOW

SEPTIC

PERMITTED WETLAND IMPACT AREAS

END PROJECT 1620-02-74
END RECONSTRUCT STA 87+15
BEGIN PROJECT 1620-02-73

N

SLOPE INTERCEPT

WET MEADOW

83+00 84+00 85+00 86+00 87+00 88+00 89+00

WET MEADOW

SLOPE INTERCEPT

BEAVER CREEK

PROJECT NO: 1620-02-74	HWY: STH 80	COUNTY: WOOD	PERMITTED WETLAND IMPACT AREAS	SHEET E

FILE NAME : p:\projects\D4_16200204EC\022004_ec.dgn PLOT DATE : 17-OCT-2012 12:43 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

EXISTING STRUCTURE B-71-0750 TO BE REMOVED
PROPOSED STRUCTURE B-71-0183

N

BEAVER CREEK

102+00 103+00 STH 80 104+00 105+00 106+00 107+00

FLOW

END PROJECT 1620-02-73
STA 109+00

108+00 STH 80

N

LEGEND

- SILT FENCE
- SILT FENCE RELIEF
- TURBIDITY BARRIER
- RIPRAP
- CULVERT PIPE DITCH CHECKS
- MULCH AND SEEDING
- EROSION MAT CLASS II, TYPE C
- ROCK BAGS USED FOR TEMPORARY DITCH CHECKS

PROJECT NO: 1620-02-73	HWY: STH 80	COUNTY: WOOD	EROSION CONTROL	SHEET 12	E

FILE NAME : P:\projects\D4_16200204EC\022002_ec.dgn PLOT DATE : 15-JAN-2013 08:53 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 40:1

LEGEND

- SILT FENCE
- SILT FENCE RELIEF
- TURBIDITY BARRIER
- RIPRAP
- CULVERT PIPE DITCH CHECKS
- MULCH AND SEEDING
- EROSION MAT CLASS II, TYPE C
- ROCK BAGS USED FOR TEMPORARY DITCH CHECKS

BEAVER CREEK BRIDGE
EXISTING STRUCTURE B-71-0749 TO BE REMOVED
PROPOSED STRUCTURE B-71-0182

N

BEGIN PROJECT 1620-02-74
STA 77+60

78+00 STH 80 79+00 80+00 81+00 82+00 83+00

FLOW

BEAVER CREEK

84+00 85+00 86+00 STH 80 87+00 88+00 89+00

STA 87+15
END PROJECT 1620-02-74
BEGIN PROJECT 1620-02-73

PROJECT NO: 1620-02-74	HWY: STH 80	COUNTY: WOOD	EROSION CONTROL	SHEET 13	E

FILE NAME : P:\projects\D4_16200204EC\022001_ec.dgn PLOT DATE : 15-JAN-2013 08:51 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 40:1

BEGIN PROJECT
1620-02-74
STA 77+60

1-01

JCT
COUNTY
EE

JCT
M2-1
21" X 15"

COUNTY
EE
M1-5A
24" X 24"

PROPOSED STRUCTURE
B-71-182

1-03
(REMOVE)

1-05
(REMOVE)

1-09
BEAVER CREEK
I3-1
42" X 24"

END PROJECT
1620-02-74
BEGIN PROJECT
1620-02-73
STA 87+15

2-02
(REMOVE)

NARROW BRIDGE

2-03
END SCHOOL ZONE
S5-2
24" X 30"

78 STH 80 80 82 84 86 88 90

SEPTIC

1-02
NO PASSING ZONE
NO PASSING ZONE
W14-3
48" X 36"

1-08
BEAVER CREEK
I3-1
42" X 24"

1-04
(REMOVE)

1-06
(REMOVE)

1-07
WAYSIDE
1/2 MILE
HISTORICAL MARKER
WAYSIDE
1/2 MILE
D5-61
48" X 24"
HISTORICAL MARKER
DB5-69E
48" X 9"

AHEAD

2-01
S1-1
36" X 36"
AHEAD
WF16-9P
30" X 18"
FINES HIGHER
R2-6P
24" X 18"

HALF MILE RD

SEPTIC

2-04
STOP
R1-1
30" X 30"

2-06
S1-1
36" X 36"
AHEAD
WF16-9P
30" X 18"
FINES HIGHER
R2-6P
24" X 18"

2-09
PITTSVILLE 13
WIS RAPIDS 29
PITTSVILLE 13
WIS RAPIDS 29
D2-2
84" X 24"

PROPOSED STRUCTURE
B-71-182

2-16
NO PASSING ZONE
NO PASSING ZONE
W14-3
48" X 36"

2-17
SPEED LIMIT
55
SPEED LIMIT
55
R2-1
24" X 30"

2-19
BEAVER CREEK
I3-1
42" X 24"

2-11
(REMOVE)

2-13
(REMOVE)

END PROJECT
1620-02-73
STA 109+00

94 96 98 100 102 104 106

2-05
(REMOVE)
NARROW BRIDGE

2-07
END SCHOOL ZONE
S5-2
24" X 30"

JCT
10

2-08
JCT
M2-1
21" X 15"
10
M1-6
24" X 24"

BEAVER CREEK
I3-1
42" X 24"

2-18

2-10
(REMOVE)

2-12
(REMOVE)

2-14
(REMOVE)
END
80

2-15
WEST
10
EAST
10
WEST
M3-4
24" X 12"
EAST
M3-2
24" X 12"
10
M1-6
24" X 24"
10
M1-6
24" X 24"
M5-1L
21" X 21"
M6-1
21" X 21"

PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	PERMANENT SIGNING	SHEET	E

FILE NAME : p:\projects\D4_16200204EC\023201_ps.dgn PLOT DATE : 17-OCT-2012 07:54 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 100:1

2

N

BEGIN PROJECT 1620-02-74
BEGIN RECONSTRUCT STA 77+60
SAW CUT REQUIRED
MATCH EXISTING

BEAVER CREEK BRIDGE
PROPOSED STRUCTURE B-71-0182

PAVEMENT MARKING, EPOXY 4-INCH
(SOLID YELLOW)

PAVEMENT MARKING, EPOXY 4-INCH
(WHITE EDGELINE)

PAVEMENT MARKING, EPOXY 4-INCH

FLOW

78+00 79+00 80+00 STH 80 81+00 82+00 83+00

BEAVER CREEK

N

PAVEMENT MARKING, EPOXY 4-INCH

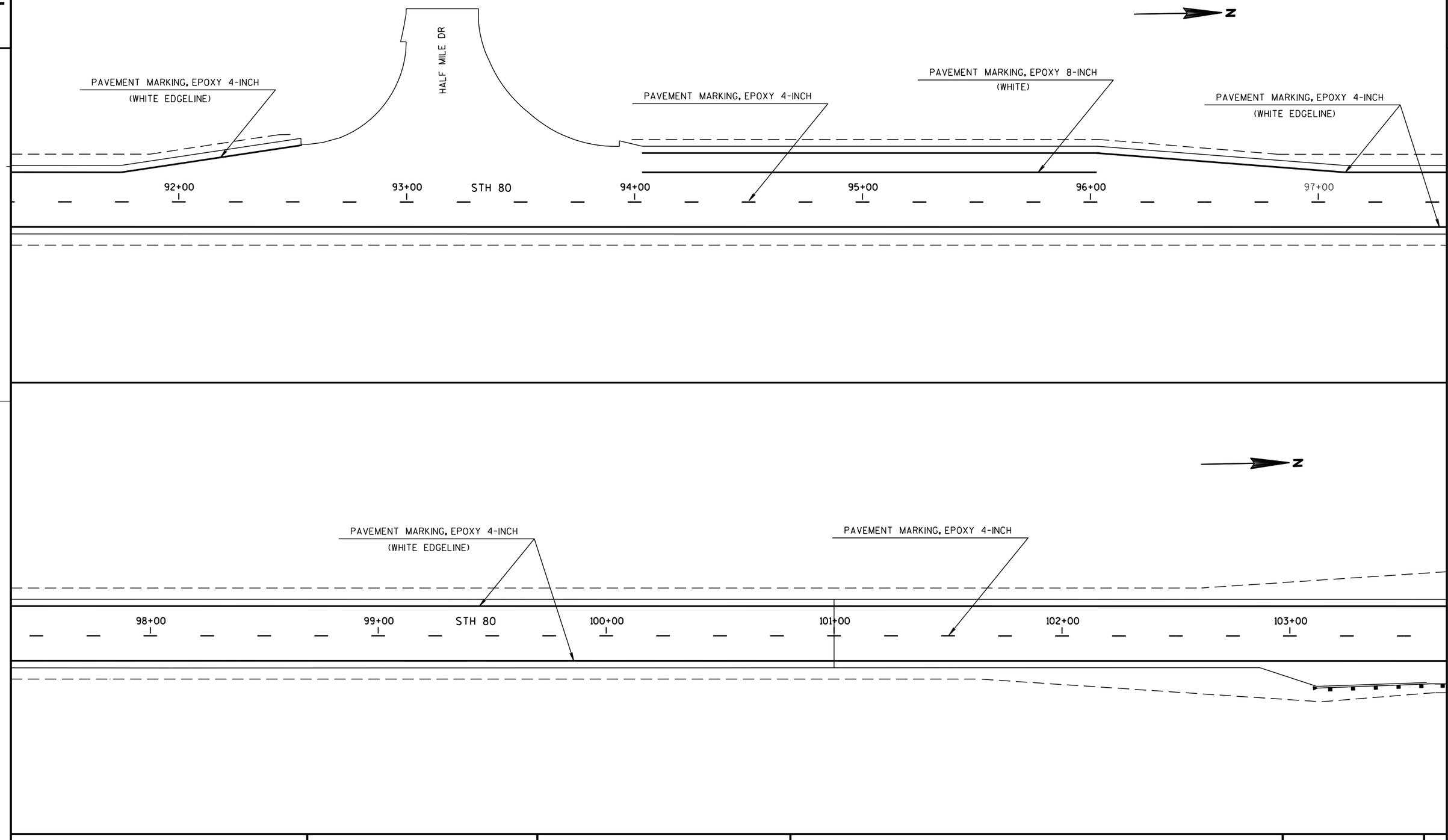
PAVEMENT MARKING, EPOXY 4-INCH
(WHITE EDGELINE)

84+00 85+00 STH 80 86+00 87+00 88+00 89+00

END PROJECT 1620-02-74
END RECONSTRUCT STA 87+15
BEGIN PROJECT 1620-02-73
BEGIN MILL AND OVERLAY
SAW CUT REQUIRED

PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	PAVEMENT MARKING	SHEET 15	E

2

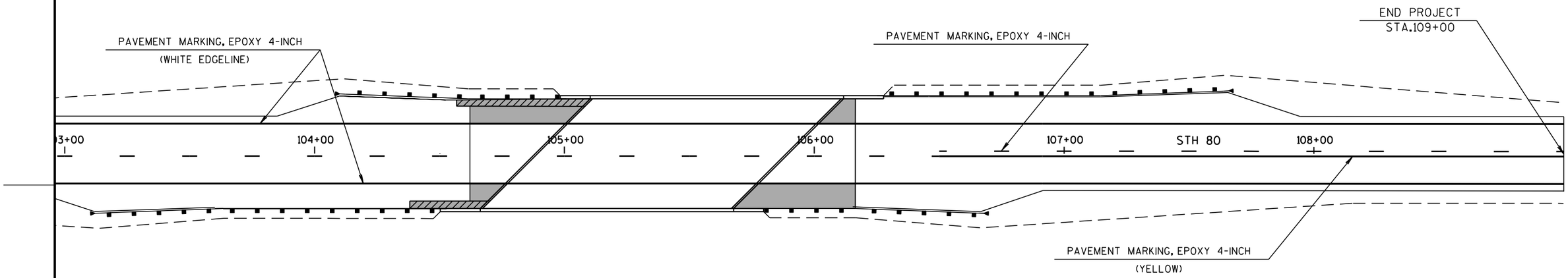


2

PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	PAVEMENT MARKING	SHEET 16	E

2

N



PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	PAVEMENT MARKING	SHEET 17	E

= WORK ZONE

= STH 80 DETOUR ROUTE
CTH A - USH 10

DETOUR

N

1620-02-74
B-71-0182

1620-02-73
B-71-0183

Marshfield

Pittsville

Arpin

Hewitt

PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	DETOUR PLAN	SHEET E

2

2

SOUTH 80

(Cover) Marshfield 14

ADOPT-A-HIGHWAY SPONSOR

SOUTH 80 | SOUTH 73 | NORTH 73

NORTH 80

SOUTH 73 | NORTH 73

DETOUR NORTH 80

SOUTH 73

BRIDGE OUT 8 MILES AHEAD

Neillsville Marshfield 14

(Cover)

(Cover) Marshfield 76 Neillsville 29

NORTH 73 | NORTH 80

(Cover)

NORTH 80 | 73

(Cover)

NORTH 80 | 73

(Cover)

COUNTY E | 73 | SOUTH 80 | NORTH 80

END COUNTY A

DETOUR SOUTH 80

DETOUR NORTH 80

C

A

DETOUR SOUTH

JCT 73 | JCT 80

DETOUR NEXT 14 MILES

COUNTY A BRIDGE WEIGHT LIMIT 1.95 MILES AHEAD 45 TONS

DETOUR NORTH 80

SOUTH 80 | SOUTH COUNTY E 73 | NORTH COUNTY A 80 | DETOUR NORTH 80

Cover existing destination arrow per Sign Plate A4-12

Marshfield Neillsville

Pittsville

DETOUR

DETOUR NORTH | NORTH 80 | 73

JCT 80 | JCT COUNTY A

DETOUR AHEAD

73 | 80

JCT 80

DETOUR NORTH 80

DETOUR AHEAD

Marshfield Wis Rapids

Cover existing destination arrow per Standard Detail A4-12

DETOUR NORTH 80 | SOUTH 80 | SOUTH 73

X

73 | DETOUR NORTH 80

Marshfield Neillsville

Pittsville

SOUTH 80 | DETOUR NORTH 80

SOUTH 80 | 73 | DETOUR NORTH 80

END DETOUR SOUTH 80

BRIDGE OUT 12 MILES AHEAD

B

E

COUNTY A | COUNTY E

SOUTH 80 | DETOUR NORTH 80

80

NORTH 80

DETOUR AHEAD

SOUTH COUNTY 73 E

Marshfield Neillsville

Wis Rapids

North Wood County Park

Cover existing destination arrow per Sign Plate A4-12

COUNTY A

DETOUR NORTH 80 | 73

DETOUR NORTH | JCT 80 | 73

LEGEND

- PROJECT WORK ZONE
- DETOUR ROUTE
  - STH 80 DETOUR ROUTE: CTH A - CTH N
  - STH 73 DETOUR ROUTE: CTH A - CTH N - STH 80
- SIGN SUPPORT
- EXISTING SIGN SUPPORT
- BARRICADE TYPE III
- BARRICADE TYPE III WITH SIGN (WITH TYPE A WARNING LIGHTS)

DETOUR M4-9R 30" X 24"

BRIDGE OUT 12 MILES AHEAD R11-3C 60" X 24"

DETOUR NEXT 14 MILES G20-51 60" X 24"

DETOUR AHEAD W20-2

END DETOUR M4-8A 24" X 18" | DETOUR M4-8 24" X 12" | SOUTH M3-3 24" X 12" | NORTH M 3-1 24" X 12" | 73 M1-6 24" X 24"

M6-1 21" X 21" | M6-1 21" X 21" | M6-1 21" X 21" | M5-1R 21" X 21" | M5-1L 21" X 21" | 80 M1-6 24" X 24"

PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	TRAFFIC CONTROL/DETOUR SIGNING PLAN	SHEET 19	E

FILE NAME : P:\projects\D4_16200204EC\027002_dt.dgn PLOT DATE : 30-OCT-2012 08:44 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 2400:1

2

2

N

DETOUR NORTH 80

DETOUR SOUTH 80

SOUTH 80

NORTH 80

SOUTH 80

NORTH 80

80

N

A

CC

LEGEND

DETOUR ROUTE

STH 80 DETOUR ROUTE: CTH A - CTH N

STH 73 DETOUR ROUTE: CTH A - CTH N - STH 80

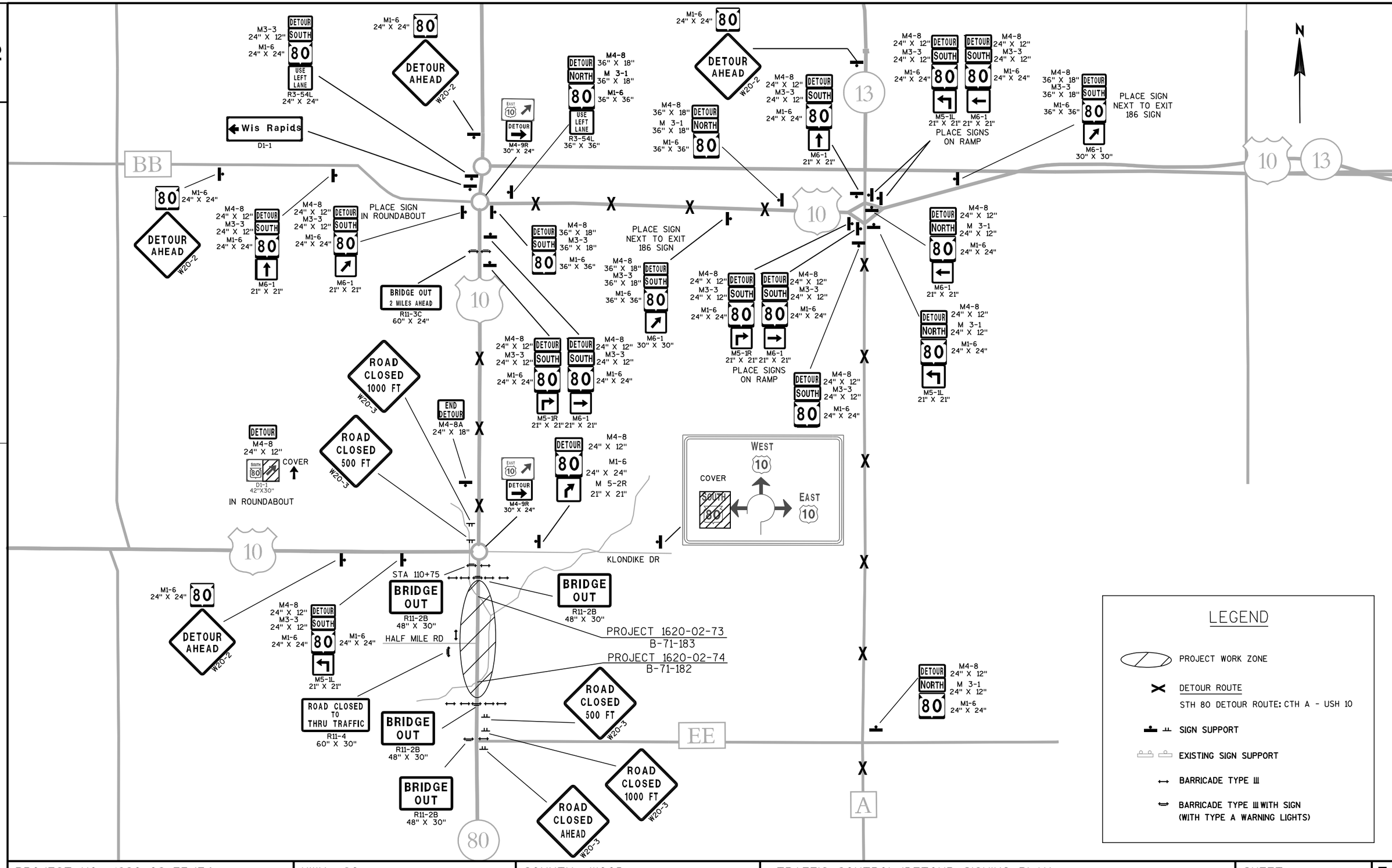
SIGN SUPPORT

EXISTING SIGN SUPPORT

DETOUR	SOUTH	NORTH	80
M4-8	M3-3	M 3-1	M1-6
24" X 12"	24" X 12"	24" X 12"	24" X 24"

PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	DETOUR SIGNING PLAN	SHEET 20	E

FILE NAME : P:\projects\D4_16200204EC\027003_dt.dgn PLOT DATE : 27-SEP-2012 12:29 PLOT BY : dotr5g PLOT NAME : PLOT SCALE : 2400:1



PROJECT NO: 1620-02-73/74	HWY: 80	COUNTY: WOOD	TRAFFIC CONTROL/DETOUR SIGNING PLAN	SHEET 21	E

FILE NAME : P:\projects\D4_16200204EC\027004_dt.dgn PLOT DATE : 31-OCT-2012 08:45 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 2400:1

DATE 16JAN13 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	1620-02-73 QUANTITY	1620-02-74 QUANTITY
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	2.000		2.000
0060	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 03. STA 105+39	LS	1.000	1.000	
0070	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 04. STA 82+78	LS	1.000		1.000
0080	204.0100	REMOVING PAVEMENT	SY	3,538.000	1,638.000	1,900.000
0090	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	5,392.000	5,392.000	
0100	205.0100	EXCAVATION COMMON	CY	4,446.000	2,175.000	2,271.000
0130	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 03. B-71-183	LS	1.000	1.000	
0140	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 04. B-71-182	LS	1.000		1.000
0170	210.0100	BACKFILL STRUCTURE	CY	770.000	390.000	380.000
0200	213.0100	FINISHING ROADWAY (PROJECT) 03. 1620-02-73	EACH	1.000	1.000	
0210	213.0100	FINISHING ROADWAY (PROJECT) 04. 1620-02-74	EACH	1.000		1.000
0220	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	1,120.000	567.000	553.000
0230	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	7,927.000	3,776.000	4,151.000
0280	415.1410	CONCRETE PAVEMENT APPROACH SLAB HES	SY	295.200	147.600	147.600
0290	416.0610	DRILLED TIE BARS	EACH	76.000	38.000	38.000
0310	416.1015	CONCRETE SURFACE DRAINS HES	CY	9.500	4.900	4.600
0320	455.0105	ASPHALTIC MATERIAL PG58-28	TON	129.900	74.800	55.100
0330	455.0605	TACK COAT	GAL	414.500	262.500	152.000
0340	460.1103	HMA PAVEMENT TYPE E-3	TON	2,362.000	1,360.000	1,002.000
0350	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	1,520.000	870.000	650.000
0360	465.0315	ASPHALTIC FLUMES	SY	56.000	28.000	28.000
0370	502.0100	CONCRETE MASONRY BRIDGES	CY	839.000	401.000	438.000
0390	502.3200	PROTECTIVE SURFACE TREATMENT	SY	1,310.000	590.000	720.000
0400	503.0128	PRESTRESSED GIRDER TYPE I 28-INCH	LF	1,434.000	484.000	950.000
0420	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	21,485.000	10,320.000	11,165.000
0430	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	93,600.000	43,850.000	49,750.000
0440	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	52.000	20.000	32.000
0460	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 02. B-71-183	EACH	16.000	16.000	
0470	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 03. B-71-182	EACH	28.000		28.000
0480	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	64.000	32.000	32.000
0510	521.1012	APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH	EACH	4.000	2.000	2.000
0550	521.1524	APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS STEEL 24-INCH 6 TO 1	EACH	2.000		2.000
0560	522.0124	CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH	LF	40.000		40.000
0570	522.0136	CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH	LF	30.000		30.000
0590	522.1036	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	EACH	2.000		2.000
0620	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	1,910.000	1,060.000	850.000
0640	606.0200	RIPRAP MEDIUM	CY	6.000	3.000	3.000
0650	606.0300	RIPRAP HEAVY	CY	670.000	330.000	340.000
0660	611.0654	INLET COVERS TYPE V	EACH	4.000	2.000	2.000
0670	611.3220	INLETS 2X2-FT	EACH	4.000	2.000	2.000

3

DATE 16JAN13 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	1620-02-73 QUANTITY	1620-02-74 QUANTITY
0680	612.0212	PIPE UNDERDRAIN UNPERFORATED 12-INCH	LF	69.000	31.000	38.000
0690	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	385.000	190.000	195.000
0700	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	8.000	4.000	4.000
0710	614.0200	STEEL THRIE BEAM STRUCTURE APPROACH	LF	20.600		20.600
0730	614.0345	STEEL PLATE BEAM GUARD SHORT RADIUS	LF	31.300		31.300
0740	614.0390	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	EACH	1.000		1.000
0750	614.0920	SALVAGED RAIL	LF	667.000	361.000	306.000
0760	614.0925	SALVAGED GUARDRAIL END TREATMENTS	EACH	10.000	4.000	6.000
0770	614.2300	MGS GUARDRAIL 3	LF	175.000	100.000	75.000
0780	614.2500	MGS THRIE BEAM TRANSITION	LF	275.800	157.600	118.200
0790	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	9.000	4.000	5.000
0820	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 03. 1620-02-73	EACH	1.000	1.000	
0830	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 04. 1620-02-74	EACH	1.000		1.000
0840	619.1000	MOBILIZATION	EACH	0.600	0.300	0.300
0860	624.0100	WATER	MGAL	93.000	42.000	51.000
0870	625.0500	SALVAGED TOPSOIL	SY	73,763.000	37,962.000	35,801.000
0880	627.0200	MULCHING	SY	73,763.000	37,962.000	35,801.000
0890	628.1504	SILT FENCE	LF	3,172.000	1,612.000	1,560.000
0900	628.1520	SILT FENCE MAINTENANCE	LF	3,172.000	1,612.000	1,560.000
0910	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	4.000	2.000	2.000
0920	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	1.000	1.000
0930	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	159.000		159.000
0940	628.2027	EROSION MAT CLASS II TYPE C	SY	924.000	766.000	158.000
0950	628.6005	TURBIDITY BARRIERS	SY	864.000	361.000	503.000
0960	628.7555	CULVERT PIPE CHECKS	EACH	8.000		8.000
0970	628.7570	ROCK BAGS	EACH	323.000	219.000	104.000
0980	629.0210	FERTILIZER TYPE B	CWT	5.200	2.700	2.500
0990	630.0110	SEEDING MIXTURE NO. 10	LB	112.000	57.000	55.000
1000	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	3.000	2.000	1.000
1010	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	16.000	11.000	5.000
1020	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	5.000	3.000	2.000
1030	637.0202	SIGNS REFLECTIVE TYPE II	SF	142.700	105.500	37.200
1040	638.2602	REMOVING SIGNS TYPE II	EACH	33.000	24.000	9.000
1050	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	23.000	16.000	7.000
1060	642.5201	FIELD OFFICE TYPE C	EACH	0.500	0.500	
1090	643.0100	TRAFFIC CONTROL (PROJECT) 03. 1620-02-73	EACH	1.000	1.000	
1100	643.0100	TRAFFIC CONTROL (PROJECT) 04. 1620-02-74	EACH	1.000		1.000
1110	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,796.000	1,796.000	
1120	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	2,916.000	2,916.000	
1130	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,053.000	1,053.000	
1140	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	16.000	16.000	
1150	643.1000	TRAFFIC CONTROL SIGNS FIXED MESSAGE	SF	80.130	80.130	
1170	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 02. 1620-02-73	EACH	1.000	1.000	
1180	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	11,502.000	11,502.000	
1190	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	1,107.000	561.000	546.000
1200	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	7,931.000	5,018.000	2,913.000
1210	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	200.000	200.000	
1220	648.0100	LOCATING NO-PASSING ZONES	MI	0.590	0.410	0.180
1230	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	1,533.000	700.000	833.000
1240	650.5000	CONSTRUCTION STAKING BASE	LF	1,533.000	700.000	833.000

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DATE 16JAN13 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	1620-02-73 QUANTITY	1620-02-74 QUANTITY
1250	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	2.000		2.000
1280	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 03. B-71-183	LS	1.000	1.000	
1290	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 04. B-71-182	LS	1.000		1.000
1320	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 03. 1620-02-73	LS	1.000	1.000	
1330	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 04. 1620-02-74	LS	1.000		1.000
1340	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	1,533.000	700.000	833.000
1350	690.0150	SAWING ASPHALT	LF	120.000	60.000	60.000
1370	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	5,034.000	2,406.000	2,628.000
1390	SPV.0070	SPECIAL 01. SPRAYED ASPHALTIC SHOULDER TREATMENT	GAL	900.000	450.000	450.000
1400	SPV.0180	SPECIAL 01. CONCRETE PAVEMENT 7-INCH HES	SY	210.000	104.000	106.000
1410	SPV.0195	SPECIAL 01. SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	80.000	41.000	39.000

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REMOVING SMALL CULVERT PIPES

STATION	LOCATION	203.0100 EACH	REMARKS
PROJECT 1620-02-74			
80+15	34' RT	1	CMCP, FE
81+97	38' RT	1	CMCP, PE
	PROJECT TOTAL	2	

REMOVING ASPHALTIC SURFACE MILLING

STATION - STATION	LOCATION	204.0120 SY
PROJECT 1620-02-73		
87+15 - 101+00	RT & LT	5052
HALF MILE DR	RT & LT	340
	PROJECT TOTAL	5392

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EARTHWORK SUMMARY

Project	Station - Station	Location	ITEM # 205.0100 Common Excavation (1)	Salvaged/Unusable Pavement Material (2)	Available Material (3)	Unexpanded Fill	Expanded Fill Factor (4) 1.25	Mass Ordinate +/- (5)
1620-02-73	101+00 - 104+89	Rt & Lt	1344	403 (210 Asph Pav't and 193 Conc Pav't)	941	423	529	412
	105+89 - 109+00	Rt & Lt	831	323 (169 Asph Pav't and 154 Conc Pav't)	508	575	718	-210
	Project Totals		2175	726	1449	998	1247	202

Project	Station - Station	Location	ITEM # 205.0100 Common Excavation (1)	Salvaged/Unusable Pavement Material (2)	Available Material (3)	Unexpanded Fill	Expanded Fill Factor (4) 1.25	Mass Ordinate +/- (5)
1620-02-74	77+60 - 82+24	Rt & Lt	852	481 (251 Asph Pav't and 230 Conc Pav't)	371	463	579	-208
	83+46 - 87+15	Rt & Lt	1419	383 (200 Asph Pav't and 183 Conc Pav't)	1036	331	414	622
	Project Totals		2271	864	1407	794	993	414

1) Common Excavation is the sum of the Cut
2) Salvaged/Unusable Pavement Material is included in the Cut.
3) Available Material = Cut - Salvaged/Unusable Pavement Material
4) Expanded Fill Factor = 1.25
5) The Mass Ordinate is the + or - quantity calculated. A plus quantity indicates an excess of material and a minus indicates a shortage of material.

FILE NAME : N:\pds\design_id\1620-02-03,73 and 1620-02-04,74 Beaver Creek Bridges\Quantities PLOT DATE : 17-Aug-12 PLOT BY : dotr5g PLOT NAME : 16200273_mq PLOT SCALE : 1:1

REMOVING PAVEMENT

STATION - STATION	LOCATION	204.0100 SY	REMARKS
PROJECT 1620-02-73			
101+00 - 105+00	RT & LT	889	UNDERLYING EXIST CONC PAVT
105+63 - 109+00	RT & LT	749	UNDERLYING EXIST CONC PAVT
	PROJECT TOTAL	1638	
PROJECT 1620-02-74			
77+60 - 82+28	RT & LT	1040	UNDERLYING EXIST CONC PAVT
83+28 - 87+15	RT & LT	860	UNDERLYING EXIST CONC PAVT
	PROJECT TOTAL	1900	
	CUMULATIVE TOTAL	3538	

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON
PROJECT 1620-02-73			
87+15 - 101+00	RT & LT	169	---
101+00 - 109+00	RT & LT	398	---
101+00 - 104+89	RT & LT	---	2082
105+89 - 109+00	RT & LT	---	1694
	PROJECT TOTAL	567	3776
PROJECT 1620-02-74			
77+60 - 87+15	RT & LT	553	---
77+60 - 82+24	RT & LT	---	2204
83+45 - 87+15	RT & LT	---	1947
	PROJECT TOTAL	553	4151
	CUMULATIVE TOTALS	1120	7927

CONCRETE PAVEMENT 7-INCH HES

STATION - STATION	LOCATION	SPV.0180.01 SY
PROJECT 1620-02-73		
104+62.16 - 105+07.29	LT	33
106+00.77 - 106+16.44	LT	12
104+62.16 - 104+77.23	RT	9
105+66.77 - 106+16.44	RT	50
	PROJECT TOTAL	104
PROJECT 1620-02-74		
81+96.73 - 82+12.40	LT	12
83+23.94 - 83+73.61	LT	34
81+96.73 - 82+46.40	RT	51
83+57.94 - 83+73.61	RT	9
	PROJECT TOTAL	106
	CUMULATIVE TOTALS	210

CONCRETE PAVEMENT APPROACH SLAB HES

STATION - STATION	415.1410 SY	REMARKS
PROJECT 1620-02-73		
104+63.16 - 104+88.29	73.8	SOUTH APPROACH
105+88.77 - 106+44.02	73.8	NORTH APPROACH
PROJECT TOTAL	147.6	
PROJECT 1620-02-74		
81+96.73 - 82+24.40	73.8	SOUTH APPROACH
83+45.94 - 83+73.61	73.8	NORTH APPROACH
PROJECT TOTAL	147.6	
CUMULATIVE TOTAL	295.2	

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CONCRETE SURFACE DRAINS

STATION - STATION	LOCATION	416.0610 DRILLED TIE BARS EACH	416.1015 CONCRETE SURFACE DRAINS HES CY	611.3220 INLETS 2X2-FT EACH	611.065 INLET COVERS TYPE V EACH	612.0212 PIPE UNDERDRAIN UNPERFORATED 12-INCH LF	521.1012 AEW FOR CP STEEL 12-INCH EACH
PROJECT 1620-02-73							
104+38 - 104+70	RT	19	2.0	---	---	---	---
104+43	RT	---	---	1	1	12	1
104+57 - 105+11	LT	19	2.9	---	---	---	---
104+91	LT	---	---	1	1	19	1
	PROJECT TOTALS	38	4.9	2	2	31	2
PROJECT 1620-02-74							
83+65 - 83+97	RT	19	1.4	---	---	---	---
83+92	RT	---	---	1	1	20	1
83+24 - 83+73	LT	19	3.2	---	---	---	---
83+44	LT	---	---	1	1	18	1
	PROJECT TOTALS	38	4.6	2	2	38	2
	CUMULATIVE TOTALS	76	9.5	4	4	69	4

HMA PAVEMENT TYPE E-3

STATION - STATION	LOCATION	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL	460.1103 HMA PAVEMENT TYPE E-3 TON	REMARKS
PROJECT 1620-02-73					
87+15 - 101+00	LT & RT	28.8	135.7	523	MAINLINE & HALF MILE RD
101+00 - 104+62	LT & RT	25.1	69.1	456	RECONSTRUCT
106+16 - 109+00	LT & RT	20.9	57.7	381	RECONSTRUCT
	PROJECT TOTALS	74.8	262.5	1360	
PROJECT 1620-02-74					
77+60 - 81+97	LT & RT	31.0	85.7	564	RECONSTRUCT
83+ 73 - 87+15	LT & RT	24.1	66.3	438	RECONSTRUCT
	PROJECT TOTALS	55.1	152.0	1002	
	CUMULATIVE TOTALS	129.9	414.5	2362	

ASPHALTIC FLUMES

STATION	LOCATION	465.0315 SY	REMARKS
PROJECT 1620-02-73			
104+46	RT	14	BETWEEN MGS POSTS 13 AND 14
104+94	LT	14	BETWEEN MGS POSTS 13 AND 14
	PROJECT TOTAL	28	
PROJECT 1620-02-74			
82+46	RT	14	BETWEEN THRIE BEAM POSTS SPACED 3'-1½"
81+81	LT	14	BETWEEN MGS POSTS 13 AND 14
	PROJECT TOTAL	28	
	CUMULATIVE TOTALS	56	

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CULVERT PIPES AND APRON ENDWALLS

STATION	LOCATION	522.1036 APRON ENDWALLS REINFORCED CONCRETE 36-INCH EACH	521.1524 APRON ENDWALLS SLOPED SIDE DRAINS 24-INCH EACH	522.0124 REINFORCED CONCRETE CLASS III 24-INCH LF	522.0136 REINFORCED CONCRETE CLASS III 36-INCH LF
PROJECT 1620-02-74					
80+15	34' RT	---	2	40	---
82+00	49.5' RT	2	---	---	30
	PROJECT TOTALS	2	2	40	30

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RIPRAP AND GEOTEXTILE FABRIC

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 FABRIC TYPE HR SY	REMARKS
PROJECT 1620-02-73				
104+43	RT	1.5	3	SURFACE DRAIN
104+91	LT	1.5	3	SURFACE DRAIN
	PROJECT TOTALS	3.0	6	
PROJECT 1620-02-74				
83+92	RT	1.5	3	SURFACE DRAIN
83+44	LT	1.5	3	SURFACE DRAIN
	PROJECT TOTALS	3.0	6	
	CUMULATIVE TOTALS	6.0	24	

MAINTENANCE AND REPAIR OF HAUL ROADS

PROJECT		618.0100 EACH
1620-02-73		1
	PROJECT TOTAL	1
1620-02-74		1
	PROJECT TOTAL	1
	CUMULATIVE TOTAL	2

FILE NAME : N:\pds\design_id\1620-02-03,73 and 1620-02-04,74 Beaver Creek Bridges\Quantities PLOT DATE : 17-Aug-12 PLOT BY : dotr5g PLOT NAME : 16200273_mq PLOT SCALE : 1:1

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STEEL PLATE BEAM GUARD

STATION - STATION	LOCATION	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS LF	614.0390 STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL EACH
PROJECT 1620-02-74				
82+05	55' RT	---	---	1
82+05 - 82+20	22' RT	---	31.3	---
82+19 - 82+40	22' RT	20.6	---	---
	PROJECT TOTALS	20.6	31.3	1

SALVAGED RAIL

STATION - STATION	LOCATION	614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARDRAIL END TREATMENTS EACH
PROJECT 1620-02-73			
103+16 - 104+87	RT	121	1
104+07 - 105+17	LT	60	1
105+44 - 106+53	RT	59	1
105+76 - 107+47	LT	121	1
	PROJECT TOTAL	361	4
PROJECT 1620-02-74			
80+82 - 82+44	RT	38	3
80+93 - 82+16	LT	73	1
83+39 - 84+61	RT	72	1
83+09 - 84+82	LT	123	1
	PROJECT TOTAL	306	6
	CUMULATIVE TOTALS	667	10

MIDWEST GUARDRAIL SYSTEM

STATION - STATION	LOCATION	614.2300 MSG GUARDRAIL 3 LF	614.2500 MSG THRIE BEAM TRANSITION LF	614.2610 MSG GUARDRAIL TERMINAL EAT EACH
PROJECT 1620-02-03				
103+10 - 103+63	RT	---	---	1
103+63 - 104+13	RT	50	---	---
104+13 - 104+52	RT	---	39.4	---
104+08 - 104+61	LT	---	---	1
104+61 - 105+00	LT	---	39.4	---
105+78 - 106+17	RT	---	39.4	---
106+17 - 106+70	RT	---	---	1
106+26 - 106+65	LT	---	39.4	---
106+65 - 107+15	LT	50	---	---
107+15 - 107+68	LT	---	---	1
	PROJECT TOTALS	100	157.6	4
PROJECT 1620-02-04				
80+50 - 81+03	RT	---	---	1
81+03 - 81+28	RT	25	---	---
81+28 - 81+81	RT	---	---	1
80+96 - 81+49	LT	---	---	1
81+49 - 81+88	LT	---	39.4	---
83+82 - 84+21	RT	---	39.4	---
84+21 - 84+74	RT	---	---	1
83+34 - 83+73	LT	---	39.4	---
83+73 - 84+23	LT	50	---	---
84+23 - 84+76	LT	---	---	1
	PROJECT TOTAL S	75	118.2	5
	CUMULATIVE TOTALS	175	275.8	9

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WATER

STATION - STATION	LOCATION	624.0100 MGAL	REMARKS
PROJECT 1620-02-73			
87+15 - 109+00	RT & LT	42	BASE COMPACTION
	PROJECT TOTAL	42	
PROJECT 1620-02-74			
77+60 - 87+15	RT & LT	51	BASE COMPACTION
	PROJECT TOTAL	51	
	CUMULATIVE TOTAL	93	

MOBILIZATIONS EROSION CONTROL

STATION - STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT 1620-02-73		
87+15 - 109+00	2	1
PROJECT TOTAL	2	1
PROJECT 1620-02-74		
77+60 - 87+15	2	1
PROJECT TOTAL	2	1
CUMULATIVE TOTALS	4	2

SALVAGED TOPSOIL, MULCHING, FERTILIZER, AND SEEDING

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0110 SEEDING MIXTURE NO. 10 LB
PROJECT 1620-02-73					
101+00 - 104+71	RT	6910	6910	0.5	10.4
101+00 - 105+40	LT	14823	14823	1.0	22.2
105+24 - 109+00	RT	9307	9307	0.7	14.0
106+04 - 109+00	RT	6922	6922	0.5	10.4
	PROJECT TOTALS	37962	37962	2.7	57.0
PROJECT 1620-02-74					
77+60 - 80+02	RT	4218	4218	0.3	6.3
80+28 - 81+94	RT	4861	4861	0.3	8.7
82+08 - 82+65	RT	1291	1291	0.1	1.9
77+60 - 82+05	LT	5584	5584	0.4	8.4
83+56 - 87+11	RT	9486	9486	0.7	14.2
82+80 - 87+08	LT	10361	10361	0.7	15.5
	PROJECT TOTALS	35801	35801	2.5	55.0
	CUMULATIVE TOTALS	73763	73763	5.2	112.0

SILT FENCE

STATION - STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
PROJECT 1620-02-73			
100+93 - 104+89	RT	402	402
100+91 - 105+45	LT	467	467
105+25 - 109+08	RT	412	412
105+86 - 109+08	LT	331	331
	PROJECT TOTALS	1612	1612
PROJECT 1620-02-74			
77+60 - 82+30	LT	483	483
77+60 - 79+93	RT	242	242
82+10 - 82+70	RT	70	70
82+74 - 87+00	LT	435	435
83+71 - 87+00	RT	330	330
	PROJECT TOTALS	1560	1560
	CUMULATIVE TOTALS	3172	3172

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EROSION MAT

STATION - STATION	LOCATION	628.2006 URBAN CLASS I TYPE A SY	628.2027 CLASS II TYPE C SY
PROJECT 1620-02-73			
101+51 - 104+95	LT	---	344
105+70 - 108+09	RT	---	240
106+26 - 108+08	LT	---	182
	PROJECT TOTALS	0	766
PROJECT 1620-02-74			
78+41 - 79+87	RT	---	146
80+38 - 81+81	RT	143	---
AROUND CP AEW'S	RT & LT	16	12
	PROJECT TOTALS	159	158
	CUMULATIVE TOTALS	159	924

ROCK BAGS

STATION	LOCATION	628.7570 EACH	REMARKS
PROJECT 1620-02-73			
102+50	46' LT	15	TEMPORARY DITCH CHECK
104+00	56' LT	15	TEMPORARY DITCH CHECK
107+00	53' RT	15	TEMPORARY DITCH CHECK
107+00	53' LT	15	TEMPORARY DITCH CHECK
107+50	50' RT	15	TEMPORARY DITCH CHECK
107+50	54' LT	15	TEMPORARY DITCH CHECK
103+10	54' RT	17	SILT FENCE RELIEF
104+72	38' RT	17	SILT FENCE RELIEF
105+43	48' LT	17	SILT FENCE RELIEF
105+20	46' RT	17	SILT FENCE RELIEF
105+95	48' LT	17	SILT FENCE RELIEF
UNDISTRIBUTED	---	44	PROJECT
	PROJECT TOTAL	219	
PROJECT 1620-02-74			
79+00	34' RT	15	TEMPORARY DITCH CHECK
82+17	42' LT	17	SILT FENCE RELIEF
82+67	38' RT	17	SILT FENCE RELIEF
82+77	42' LT	17	SILT FENCE RELIEF
83+67	50' RT	17	SILT FENCE RELIEF
UNDISTRIBUTED	---	21	PROJECT
	PROJECT TOTAL	104	
	CUMULATIVE TOTAL	323	

TURBIDITY BARRIERS

LOCATION	628.6005 SY
PROJECT 1620-02-73	
SOUTH ABUTMENT	102
NORTH ABUTMENT	101
PIER	158
PROJECT TOTAL	361
PROJECT 1620-02-74	
SOUTH ABUTMENT	96
NORTH ABUTMENT	184
PIER	223
PROJECT TOTAL	503
CUMULATIVE TOTALS	864

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CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
PROJECT 1620-02-74		
79+91	34' RT	3
81+78	49' RT	5
	PROJECT TOTAL	8

TRAFFIC CONTROL

LOCATION	643.0100 EACH
PROJECT 1620-02-73	1
PROJECT1620-02-74	1
CUMMULATIVE TOTAL	2

TRAFFIC CONTROL DETOUR

LOCATION	643.2000 EACH
PROJECT 1620-02-73	1
PROJECT TOTAL	1

FIELD OFFICE TYPE C

LOCATION	642.5201 EACH
PROJECT 1620-02-73	0.5
PROJECT TOTAL	0.5

SIGN LISTING

PROJECT 1620-02-73 SIGN NO.	STATION	LOCATION	SIGN CODE	MESSAGE	SIZE	634.0614 POSTS WOOD 4X6 INCH 14-FT EACH	634.0616 POSTS WOOD 4X6 INCH 16-FT EACH	634.0618 POSTS WOOD 4X6 INCH 18-FT EACH	637.0202 SIGNS REFLECTIVE TYPE II SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
2-01	90+50	24' RT	S1-1	SCHOOL ZONE	36"X36"	---	1	---	6.75	1	1
2-01	90+50	24' RT	WF16-9P	AHEAD	30"X18"	---	---	---	3.75	1	---
2-01	90+50	24'RT	R2-6P	FINES HIGHER	24"X18"	---	---	---	3.00	---	---
2-02	89+80	LT	---	NARROW BRIDGE	---	---	---	---	---	1	1
2-03	91+50	24' LT	S5-2	END SCHOOL ZONE	24"X30"	---	1	---	5.00	---	---
2-04	92+90	83' LT	R1-1	STOP	30"X30"	---	1	---	5.18	1	1
2-05	97+40	RT	---	NARROW BRIDGE	---	---	---	---	---	1	1
2-06	101+00	24' LT	S1-1	SCHOOL ZONE	36"X36"	---	1	---	6.75	1	1
2-06	101+00	24' LT	WF16-9P	AHEAD	30"X18"	---	---	---	3.75	1	---
2-06	101+00	24' LT	R2-6P	FINES HIGHER	24"x18"	---	---	---	3.00	---	---
2-07	101+05	24' RT	S5-2	END SCHOOL ZONE	24"X30"	---	1	---	5.00	---	---
2-08	100+05	24' RT	M2-1	JCT	21"X15"	---	1	---	2.20	1	1
2-08	100+05	24' RT	M1-6	STH 10	24"X24"	---	---	---	4.00	1	---
2-09	102+34	24' LT	D2-2	PITTSVILLE 13	84"X24"	2	---	---	14.00	1	1
---	---	---	---	WIS RAPIDS 29	---	---	---	---	---	---	---
2-10	104+78	RT	---	NARROW BRIDGE MARKER	---	---	---	---	---	1	1
2-11	105+10	LT	---	NARROW BRIDGE MARKER	---	---	---	---	---	1	1
2-12	105+56	RT	---	NARROW BRIDGE MARKER	---	---	---	---	---	1	1
2-13	105+84	LT	---	NARROW BRIDGE MARKER	---	---	---	---	---	1	1
2-14	106+75	RT	---	END 80	---	---	---	---	---	2	1
2-15	107+00	24' RT	M3-4	WEST	24"X12"	---	---	2	2.00	1	2
2-15	107+00	24' RT	M1-6	STH 10	24"X24"	---	---	---	4.00	1	---
2-15	107+00	24' RT	M5-1L	AHEAD ARROW LEFT	21"X21"	---	---	---	3.06	1	---
2-15	107+00	24' RT	M3-2	EAST	24"X12"	---	---	---	2.00	1	---
2-15	107+00	24' RT	M1-6	STH 10	24"X24"	---	---	---	4.00	1	---
2-15	107+00	24' RT	M6-1	AHEAD ARROW	21"X21"	---	---	---	3.06	1	---
2-16	107+00	24' LT	W14-3	NO PASSING ZONE	48"X36"	---	---	1	6.00	1	1
2-17	107+00	24' LT	R2-1	SPEED LIMIT 55	24"X30"	---	1	---	5.00	1	1
2-18	104+34	24' RT	I3-1	BEAVER CREEK	42"X24"	---	2	---	7.00	---	---
2-19	106+40	24' LT	I3-1	BEAVER CREEK	42"X24"	---	2	---	7.00	---	---
					PROJECT TOTALS	2	11	3	105.50	24	16

SIGN LISTING

PROJECT 1620-02-74 SIGN NO.	STATION	LOCATION	SIGN CODE	MESSAGE	SIZE	634.0614 POSTS WOOD 4X6 INCH 14-FT EACH	634.0616 POSTS WOOD 4X6 INCH 16-FT EACH	634.0618 POSTS WOOD 4X6 INCH 18-FT EACH	637.0202 SIGNS REFLECTIVE TYPE II SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
1-01	77+60	24' LT	M2-1	JCT	21"X15"	1	---	---	2.20	1	1
1-01	77+60	24' LT	M1-5A	COUNTY EE	24"X24"	---	---	---	4.00	1	---
1-02	79+68	24'RT	W14-3	NO PASSING ZONE	48"X36"	---	1	---	6.00	1	1
1-03	82+30	LT	---	---	---	---	---	---	---	1	1
1-04	82+38	RT	---	---	---	---	---	---	---	1	1
1-05	83+38	LT	---	---	---	---	---	---	---	1	1
1-06	83+73	RT	---	---	---	---	---	---	---	1	1
1-07	86+90	24' RT	E5-51A	WAYSIDE 1/2 MILE	48"X24"	---	--	1	8.00	1	1
1-07	86+90	24' RT	DB5-69E	HISTORICAL MARKER	48"X9"	---	---	1	3.00	1	---
1-08	82+25	24' RT	13-1	BEAVER CREEK	42"X24"	---	2	---	7.00	---	---
1-09	83+50	24' LT	13-1	BEAVER CREEK	42"X24"	---	2	---	7.00	---	---
					PROJECT TOTALS	1	5	2	37.20	9	7

3

PAVEMENT MARKING EPOXY 4-INCH

STATION - STATION	LOCATION	646.0106 4-INCH YELLOW LF	646.0106 4-INCH WHITE LF	646.0126 8-INCH WHITE LF
PROJECT 1620-02-73				---
87+15 - 92+54	LT, RT, CL	135	1079	---
92+54 - 94+03	RT, CL	37	149	---
94+03 - 109+00	LT, RT, CL	374	2994	200
106+50 - 109+00	CL	250	---	---
	PROJECT TOTALS	796	4222	200
PROJECT 1620-02-74				
77+60 - 79+50	LT, RT, CL	238	380	---
79+50 - 87+15	LT, RT, CL	765	1530	---
	PROJECT TOTALS	1003	1910	0
	CUMULATIVE TOTALS	7931		200

CONSTRUCTION STAKING

STATION - STATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6000 PIPE CULVERTS EACH	650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
PROJECT 1620-02-73						
87+15 - 109+00	---	---	---	---	1	---
101+00 - 104+89	389	389	---	---	---	389
105+89 - 109+00	311	311	---	---	---	311
B-71-183	---	---	---	1	---	---
PRJECT TOTALS	700	700	0	1	1	700
PROJECT 1620-02-74						
77+60 - 87+15	---	---	---	---	1	---
77+60 - 82+24	464	464	2	---	---	464
83+46 - 87+15	369	369	---	---	---	369
B-71-182	---	---	---	1	---	---
PROJECT TOTALS	833	833	2	1	1	833
CUMULATIVE TOTALS	1533	1533	2	2	2	1533

3

LOCATING NO-PASSING ZONES

STATION - STATION	648.0100 MILES
PROJECT 1620-02-73	
87+15 - 109+00	0.41
PROJECT TOTAL	0.41
PROJECT 1620-02-74	
77+60 - 87+15	0.18
PROJECT TOTAL	0.18
CUMULATIVE TOTAL	0.59

SAWING ASPHALT

STATION	LOCATION	690.0150 LF	REMARKS
PROJECT 1620-02-73			
101+00	CL	30	BEGIN RECONSTRUCT
109+00	CL	30	END PROJECT
	PROJECT TOTAL	60	
PROJECT 1620-02-74			
77+60	CL	30	BEGIN PROJECT
87+15	CL	30	END PROJECT
	PROJECT TOTAL	60	
	CUMULATIVE TOTAL	120	

SPRAYED ASPHALTIC SHOULDER TREATMENT

STATION - STATION	LOCATION	SPV.0070.01 GALS
PROJECT 1620-02-73		
103+10 - 104+50	RT	120
104+08 - 104+98	LT	95
105+80 - 106+65	RT	95
106+28 - 107+68	LT	140
	PROJECT TOTAL	450
PROJECT 1620-02-74		
80+50 - 81+88	RT	130
82+05 - 82+38	RT	30
80+96 - 81+86	LT	90
83+84 - 84+74	RT	80
83+39 - 84+76	LT	120
	PROJECT TOTAL	450
	CUMULATIVE TOTAL	900

FILE NAME : N:\pds\design_id\1620-02-03,73 and 1620-02-04,74 Beaver Creek Bridges\Quantities PLOT DATE : 17-Aug-12 PLOT BY : dotr5g PLOT NAME : 16200273_mq PLOT SCALE : 1:1

TRAFFIC CONTROL

LOCATION	643.0100 EACH
PROJECT 1620-02-73	1
PROJECT1620-02-74	1
CUMMULATIVE TOTAL	2

TRAFFIC CONTROL DETOUR

LOCATION	643.2000 EACH
PROJECT 1620-02-73	1
PROJECT TOTAL	1

TRAFFIC CONTROL SIGNS

MESSAGE	SIGN NUMBER	EACH	643.0900 DAYS
PROJECT 1620-02-73			
BRIDGE OUT 2 MILES AHEAD	R11-3C	1	81
BRIDGE OUT 8 MILES AHEAD	R11-3C	1	81
BRIDGE OUT 12 MILES AHEAD	R11-3C	1	81
ROAD CLOSED 500 FT	W20-3	2	162
ROAD CLOSED 1000 FT	W20-3	2	162
ROAD CLOSED AHEAD	W20-3	1	81
ROAD CLOSED TO THRU TRAFFIC	R11-4	1	81
BRIDGE OUT	R11-2B	4	324
PROJECT TOTAL			1053

TRAFFIC CONTROL COVERING SIGNS

SIGN	CYCLES	SIGNS	643.0920 EACH	REMARKS
PROJECT 1620-02-73				
MARSHFIELD	1	3	3	
NORTH 80 ARROW	1	2	2	
80	1	2	2	
DESTINATION ARROWS	1	8	8	TYPE D1 SIGNS
SOUTH 80	1	1	1	ON KLONDIKE DR
PROJECT TOTAL			16	

TRAFFIC CONTROL WARNING LIGHTS TYPE A

LOCATION	NUMBER REQUIRED	DAYS	643.0705 DAYS	REMARKS
PROJECT 1620-02-73				
STH 73/80 AT CTH A	4	81	324	
STH 80 AT STH 73	4	81	324	
STH 80 AT CTH EE	4	81	324	
STH 80	6	81	486	SOUTH WORK ZONE
STH 80	6	81	486	NORTH WORK ZONE
STH 80	4	81	324	SOUTH OF USH 10
USH 10	4	81	324	SOUTH OF ROUNDABOUT
HALF MILE RD	4	81	324	
PROJECT TOTAL			2916	

TRAFFIC CONTROL BARRICADES TYPE III

LOCATION	NUMBER REQUIRED	DAYS	643.0420 DAYS	REMARKS
PROJECT 1620-02-73				
STH 80	2	7	14	FIXED MESSAGE SIGN AT BRIDGE
STH 73/80 AT CTH A	2	81	162	
STH 80 AT STH 73	2	81	162	
STH 80 AT CTH EE	2	81	162	
STH 80	5	81	405	SOUTH WORK ZONE
STH 80	5	81	405	NORTH WORK ZONE
STH 80	2	81	162	SOUTH OF USH 10
USH 10	2	81	162	SOUTH OF ROUNDABOUT
HALF MILE RD	2	81	162	
PROJECT TOTAL			1796	

TRAFFIC CONTROL SIGNS FIXED MESSAGE

MESSAGE	SIGN NUMBER	643.1000 SF	REMARKS
PROJECT 1620-02-73			
WIS RAPIDS	D1-1	8.13	1 SIGN
BRIDGE WORK BEGINS	---	72.00	2 SIGNS
XX XX XXXX			
ROAD CLOSED			
USE DETOUR			
PROJECT TOTAL		80.13	

TRAFFIC CONTROL DETOUR SIGNS

MESSAGE	SIGN NUMBER	EACH	643.3000 DAYS
PROJECT 1620-02-73			
DETOUR	M4-8	39	3159
AHEAD ARROW	M6-1	4	324
NORTH	M3-1	15	1215
80	M1-6	36	2916
DETOUR AHEAD	W20-2	7	567
ARROW LEFT	M6-1	3	243
ADVANCED ARROW LEFT	M5-1L	4	324
ARROW RIGHT	M6-1	6	486
ADVANCED ARROW RIGHT	M5-1R	3	243
SOUTH	M3-3	19	1539
END DETOUR	M4-8A	2	162
DETOUR NEXT 14 MILES	G20-51	1	81
DETOUR RIGHT ARROW	M4-9R	3	243
PROJECT TOTAL			11502

STA 82+79 REMOVE STRUCTURE B-71-749
SINGLE SPAN CONCRETE DECK STEEL GIRDER BRIDGE
103' OVERALL LENGTH AND 30' OVERALL WIDTH

STA 821+85 STRUCTURE B-71-182 REQUIRED
2-SPAN 28-INCH PRESTRESSED CONCRETE GIRDER BRIDGE
SKEW 45° RHF 44' CLEAR ROADWAY WIDTH

N

HALF MILE DR

SLOPE INTERCEPT

FLOW

STH 80

80 85 N 1° 04' 21.32" E 90 95

STH 80

EXISTING R/W

BEAVER CREEK

BEGIN PROJECT
1620-02-74
STA 77+60

END PROJECT
1620-02-74
STA 87+15

1200 1190 1180 1170 1160 1150 1140 1130

VCL 140.00
K = 188.06

84+42.03
173.50

-1.68 %

VCL 280.00
K = 237.29

-0.50 %

+0.24 %

VPOT STA 77+60.00
VPC STA 77+90.00
VPC EL 1178.18
VPOT EL178.68

VPI STA 79+30.00
VPI EL 1175.82

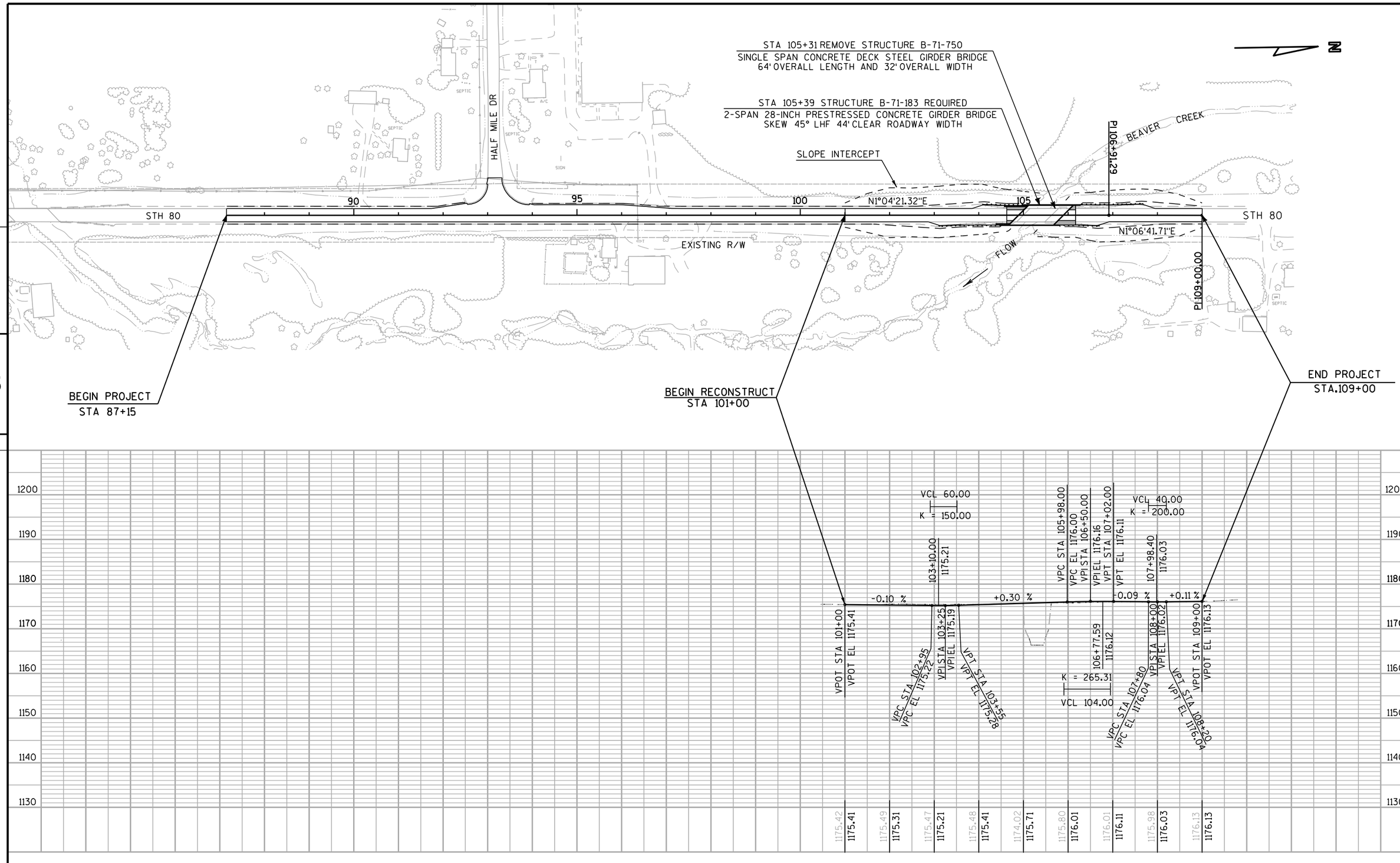
VPT STA 80+70.00
VPT EL 1175.12

VPC STA 83+48.00
VPC EL 1173.73
VPI STA 84+18.00
VPI EL 1173.38
VPT STA 84+88.00
VPT EL 1173.56

VPOT STA 87+15.00
VPOT EL 1174.11

1179.71	1177.85	1178.01	1176.08	1176.58	1174.80	1175.58	1173.81	1174.97	1173.66	1174.47	1162.16	1173.97	1173.86	1173.55	1174.06	1173.58	1174.03	1173.83	1174.09	1174.07	1174.26
77+00	78+00		79+00		80+00		81+00		82+00		83+00		84+00		85+00		86+00		87+00		88+00

PROJECT NO: 1620-02-74	HWY: STH 80	COUNTY: WOOD	PLAN AND PROFILE	SHEET 36	E



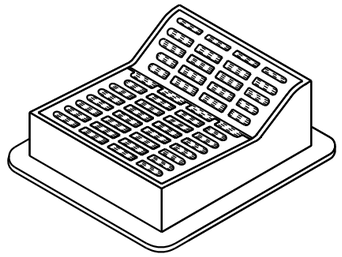
PROJECT NO: 1620-02-73	HWY: STH 80	COUNTY: WOOD	PLAN AND PROFILE	SHEET 37	E

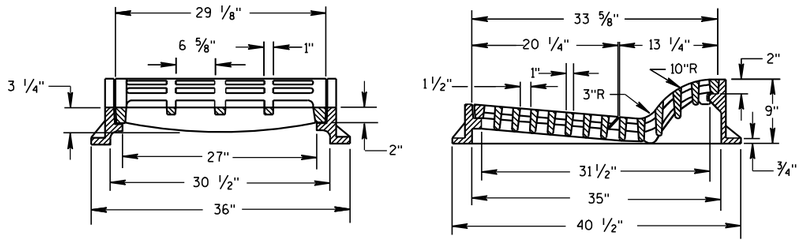
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WISDOT/CADDS SHEET 40

Standard Detail Drawing List

08A05-17C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D03-06	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE
08F07-03	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SIDE DRAINS SLOPED SECTION
12A03-10	NAME PLATE (STRUCTURES)
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
14B15-07A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-10A	STEEL THRIE BEAM STRUCTURE APPROACH
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-02A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-15A	PAVEMENT MARKING (MAINLINE)
15C08-15B	PAVEMENT MARKING (INTERSECTIONS)
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS



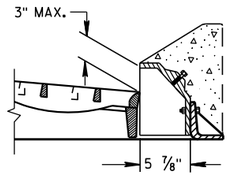


TYPE "F"

(APPROXIMATE WEIGHT 645 LBS.)

FRAME.....300 LBS.
GRATE..... 165 LBS.
GRATE..... 180 LBS.

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

(APPROXIMATE WEIGHT 79 LBS.)
CURB BOX.....79 LBS.

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

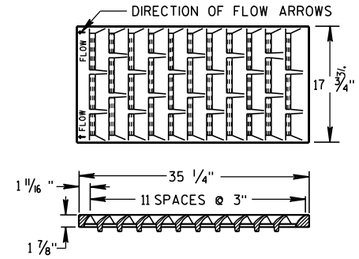
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

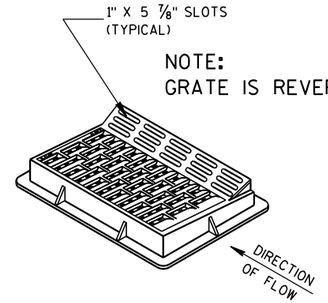
GENERAL NOTES

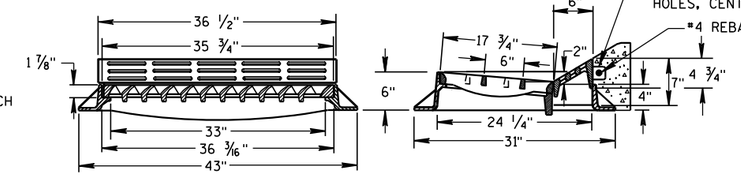
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





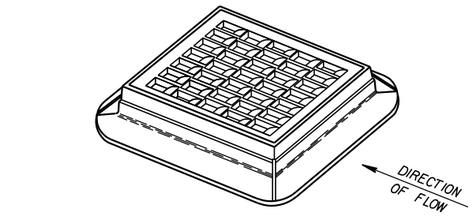


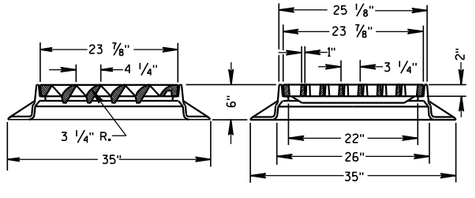
TYPE "HM"

(APPROXIMATE WEIGHT 375 LBS.)
FRAME.....175 LBS.
GRATE..... 138 LBS.
CURB BOX..... 62 LBS.

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE

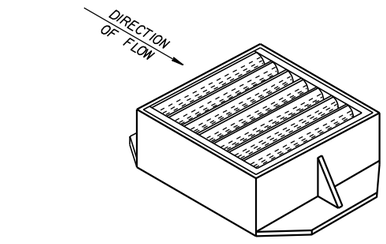


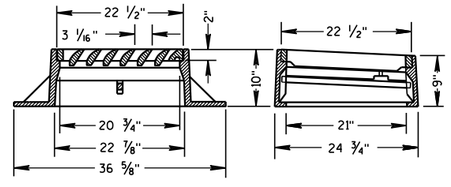


TYPE "S"

(APPROXIMATE WEIGHT 334 LBS.)

FRAME.....165 LBS.
GRATE..... 169 LBS.

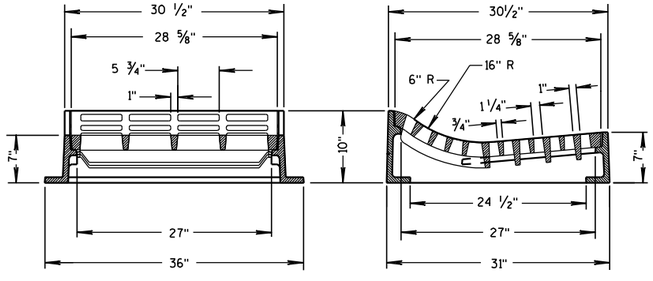




TYPE "V"

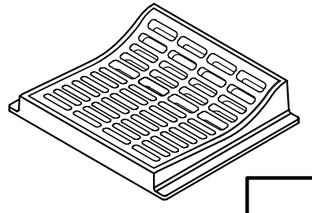
(APPROXIMATE WEIGHT 405 LBS.)

FRAME..... 270 LBS.
GRATE..... 130 LBS.
SAFETY BAR..... 5 LBS.



TYPE "T"

(APPROXIMATE WEIGHT 530 LBS.)
FRAME.....270 LBS.
GRATE.....260 LBS.
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



INLET COVERS
TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

1/7/08 — DATE

/S/ Jerry H. [illegible] — ROADWAY STANDARDS DEVELOPMENT ENGINEER

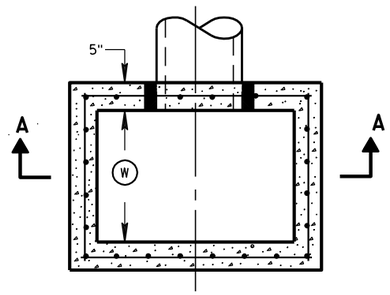
FHWA

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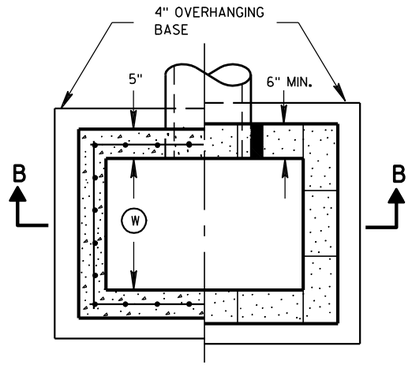
S.D.D. 8 A 5-17c

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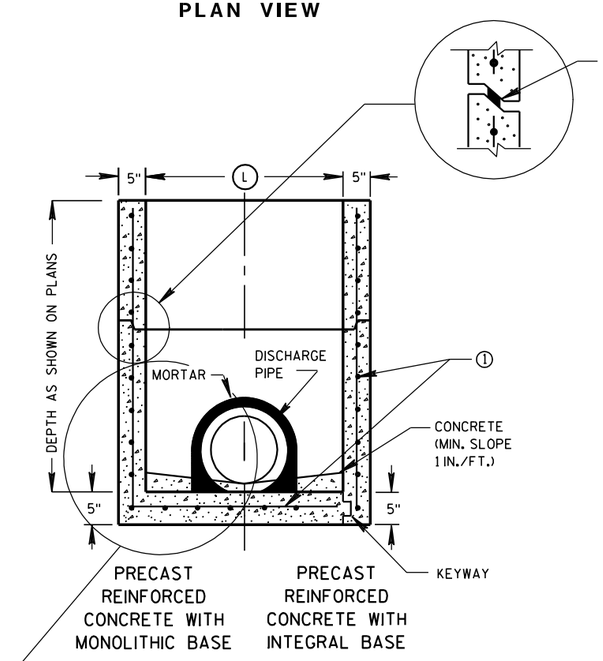
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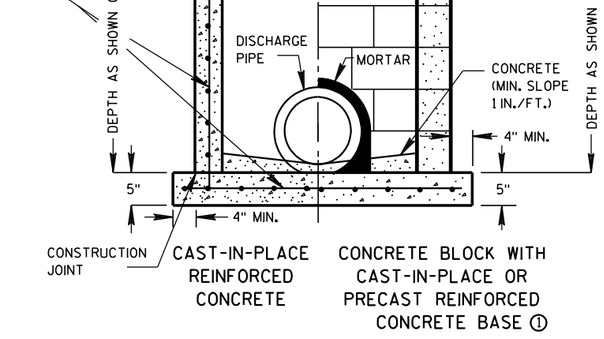
PLAN VIEW



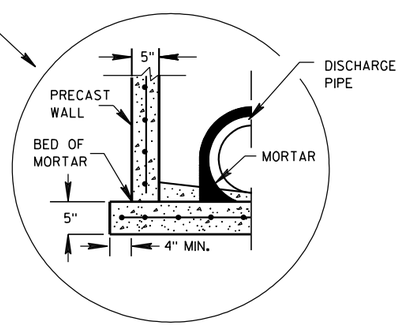
PLAN VIEW



SECTION A-A



SECTION B-B



SEPERATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

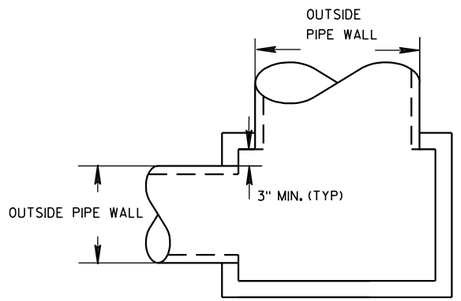
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

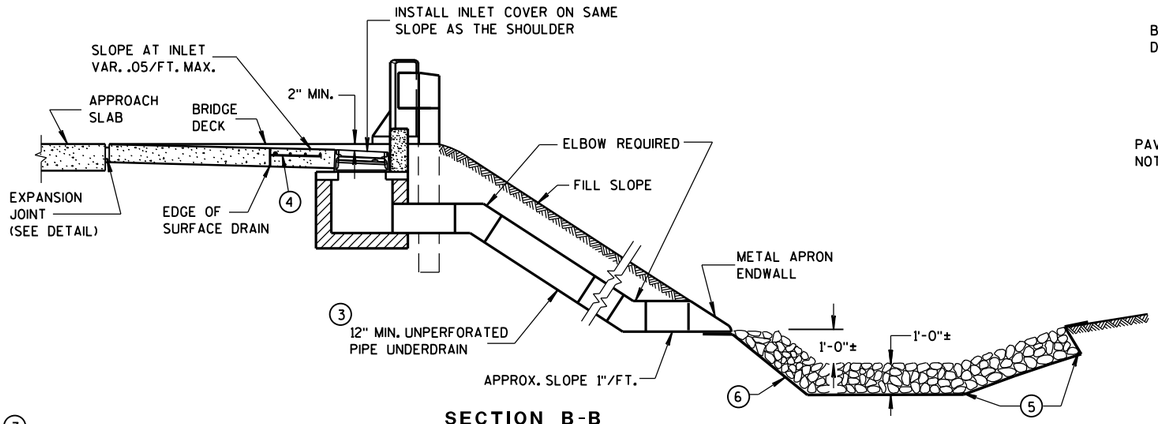
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS D ENGINEER
FHWA

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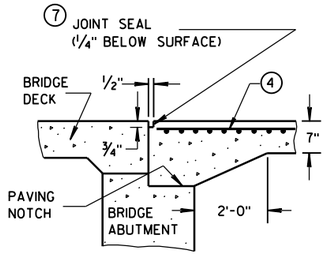
S.D.D. 8 C 7-1

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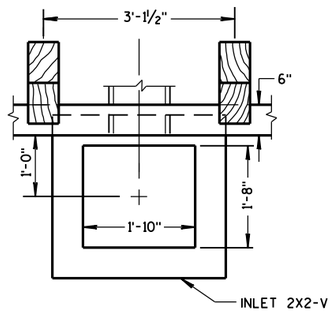
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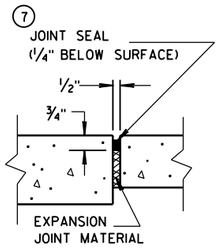
SECTION B-B



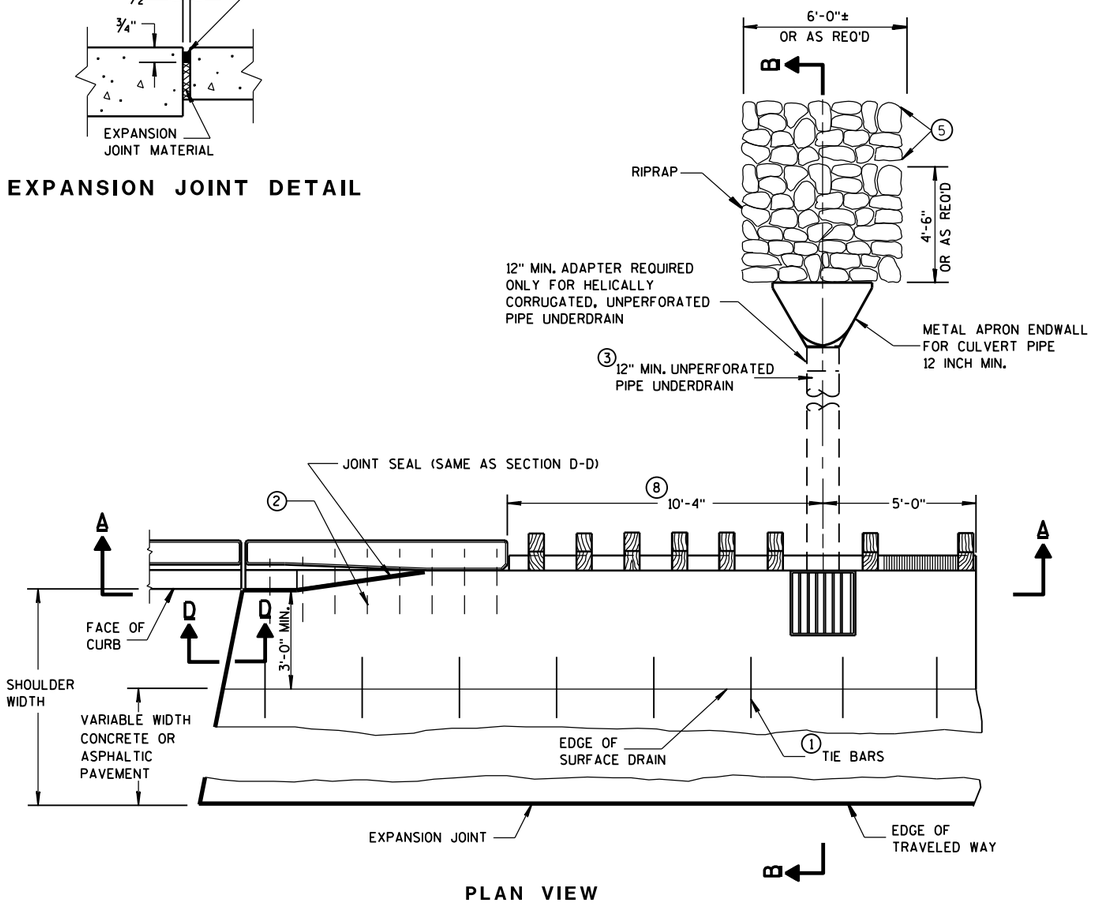
SECTION D-D



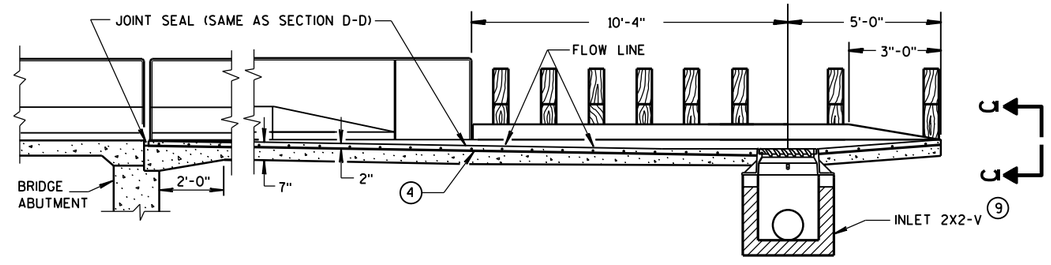
PLAN VIEW



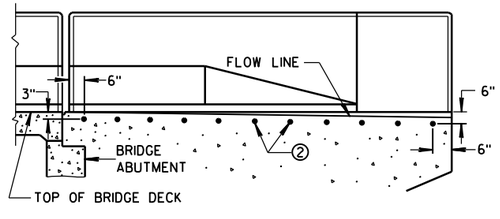
EXPANSION JOINT DETAIL



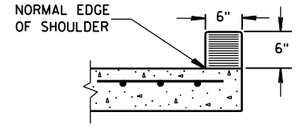
PLAN VIEW



SECTION A-A



LOCATION OF TIE BARS IN WINGWALL



SECTION C-C

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.

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

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.

(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

(6) GEOTEXTILE FABRIC, TYPE 'R'

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".

(9) SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.

CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES

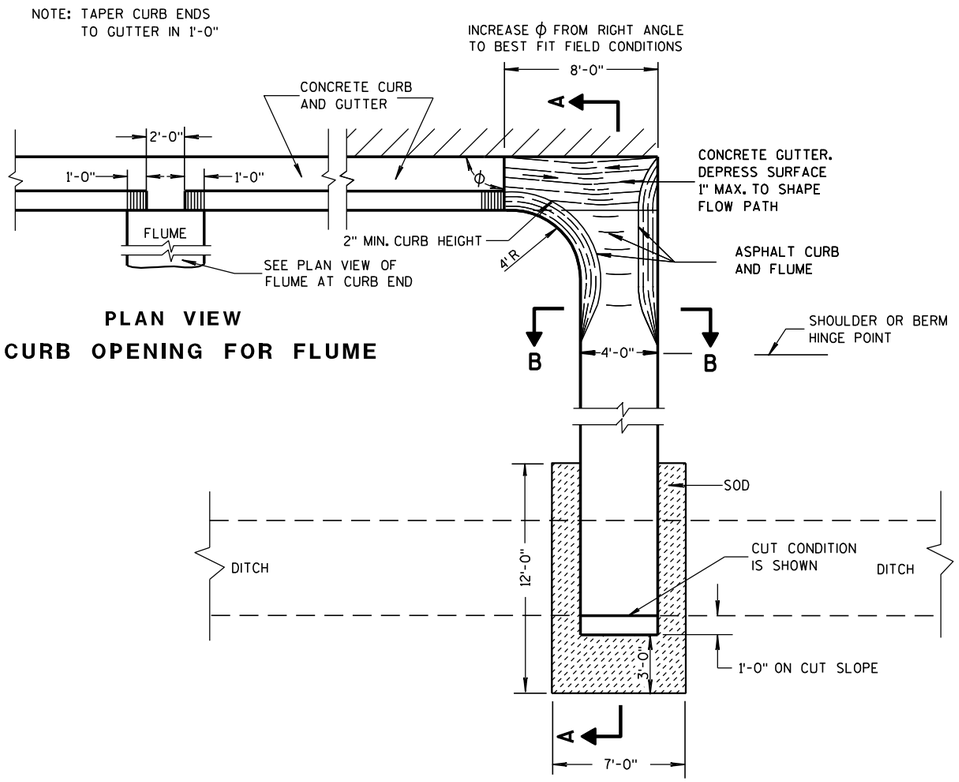
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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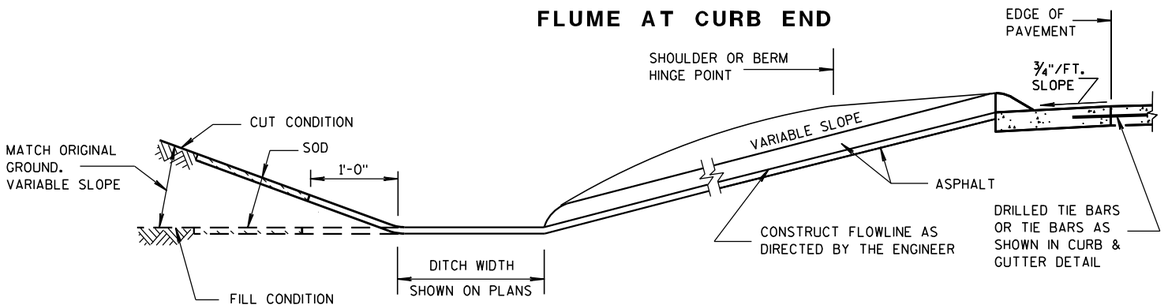
S.D.D. 8 D 3-6

ASPHALTIC FLUME

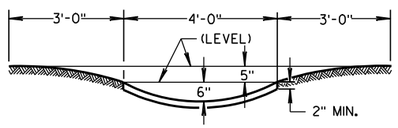


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

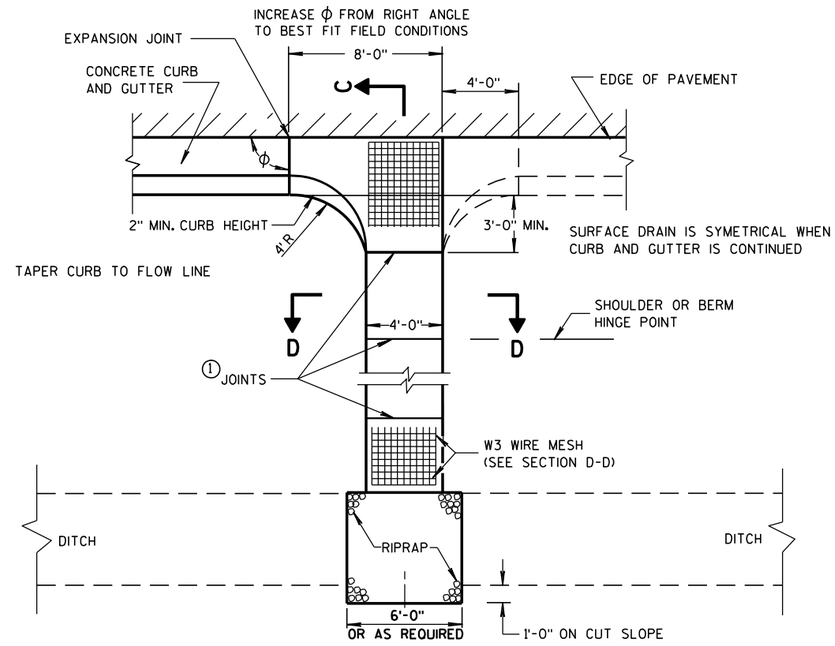
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

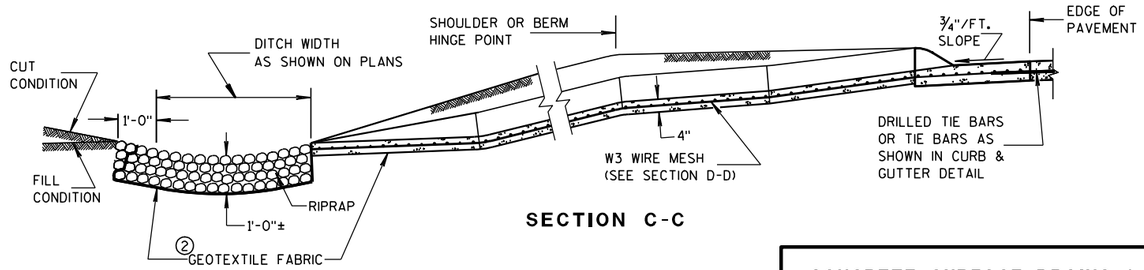
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

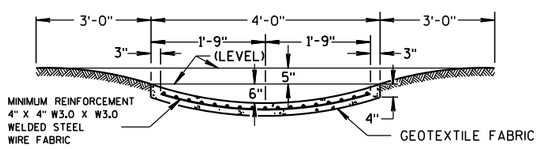
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

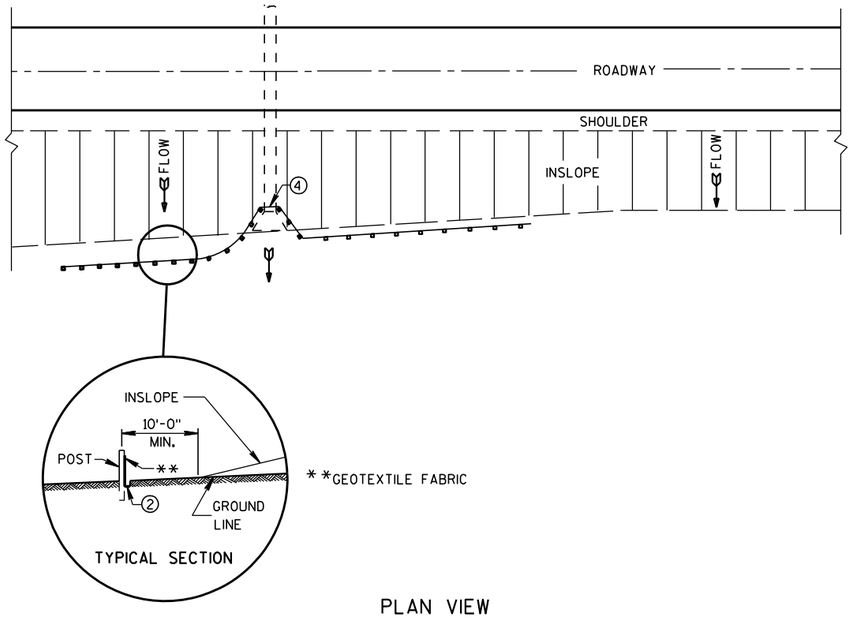
CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

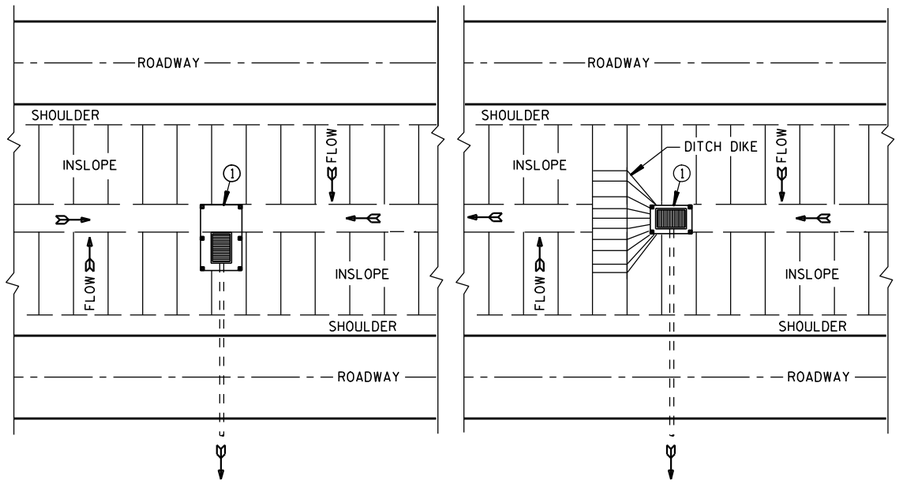
9-4-08 DATE — /S/ Jerry H. ... ROADWAY STANDARDS ENGINEER — MENT

FHWA



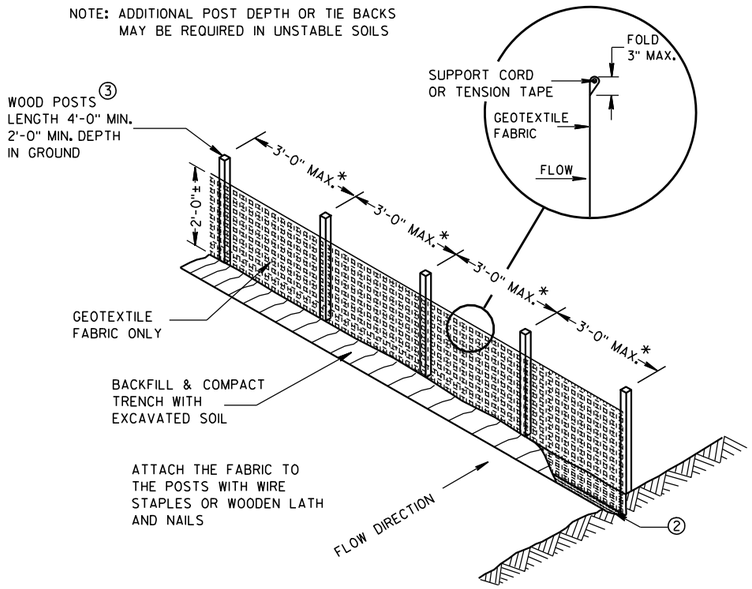
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE

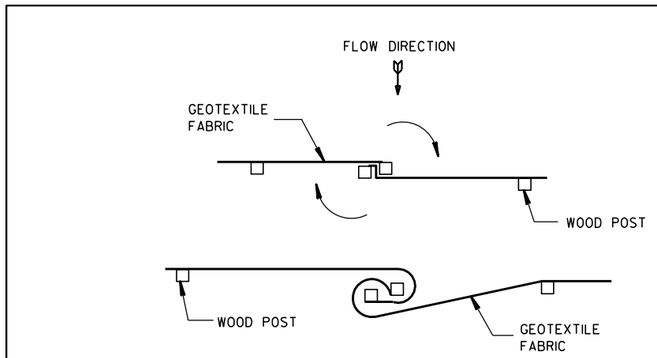


PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



SILT FENCE

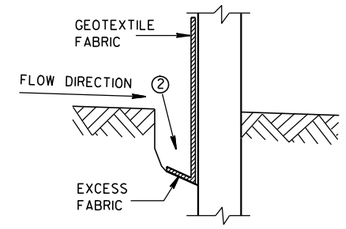


JOINING TWO LENGTHS OF SILT FENCE 5

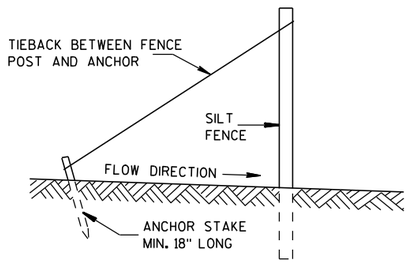
GENERAL NOTES

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 TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

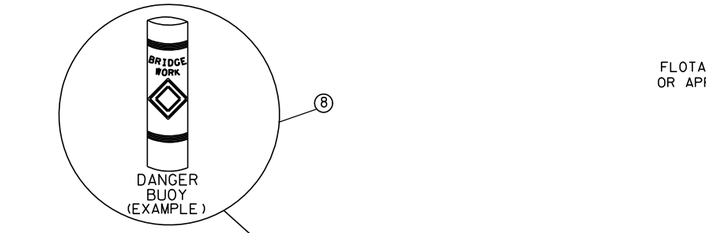
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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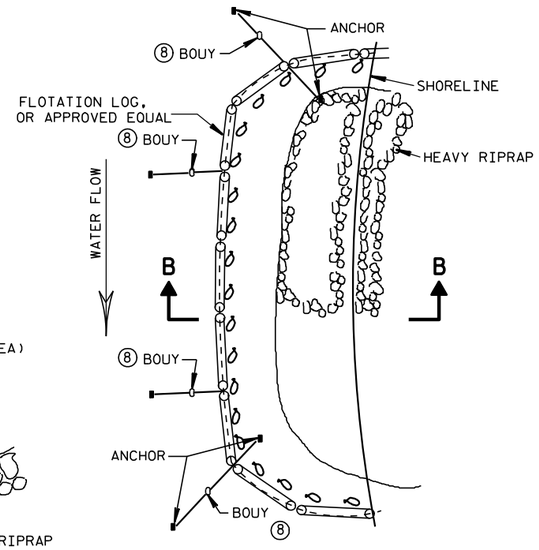
S.D.D. 8 E 9-6

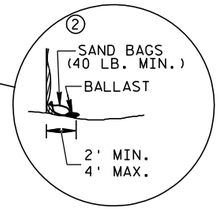
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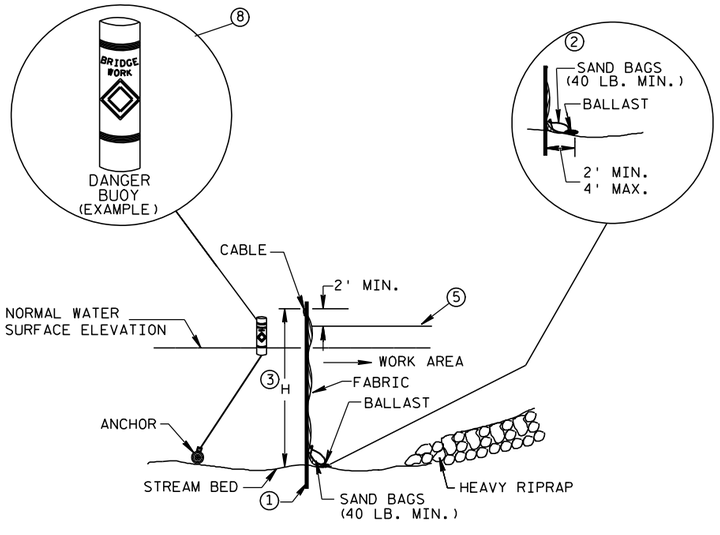


SECTION B-B

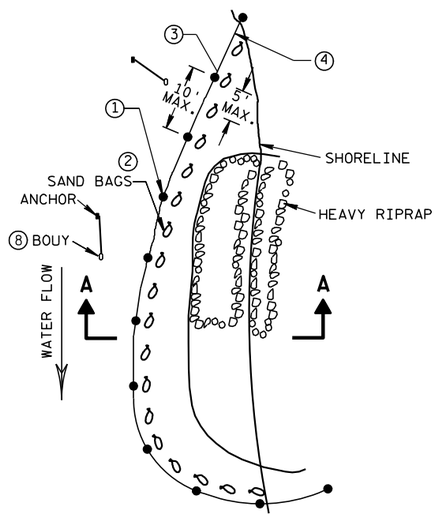




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

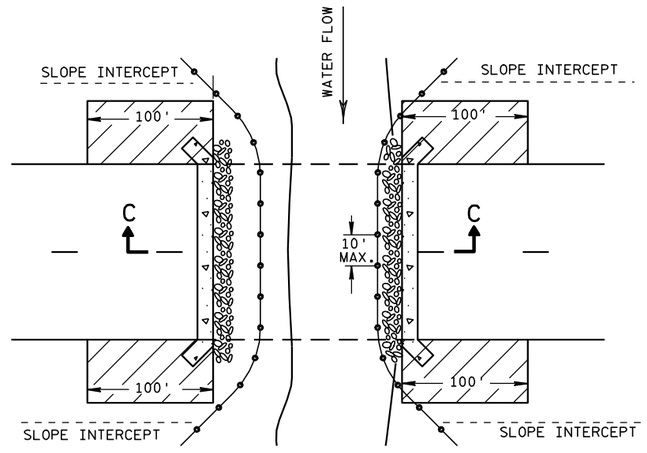
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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.

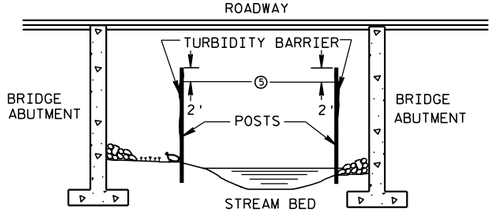
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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	

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S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2

METAL APRON ENDWALLS

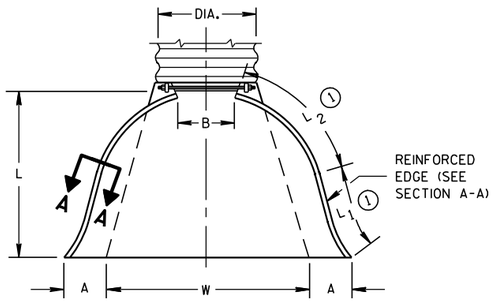
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

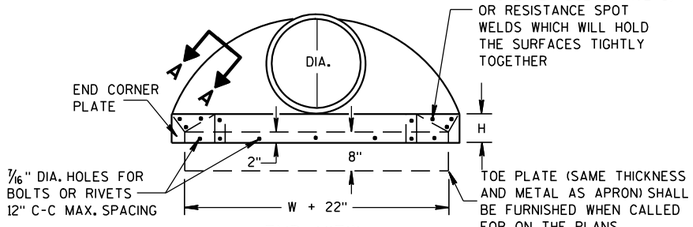
REINFORCED CONCRETE APRON ENDWALLS

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

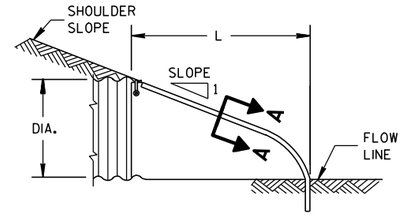
*MINIMUM
**MAXIMUM



PLAN VIEW

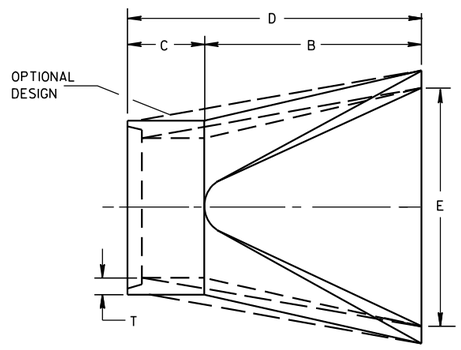


END VIEW

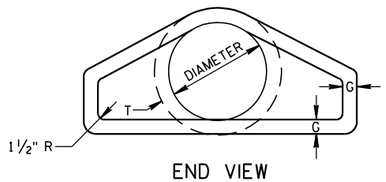


SIDE ELEVATION

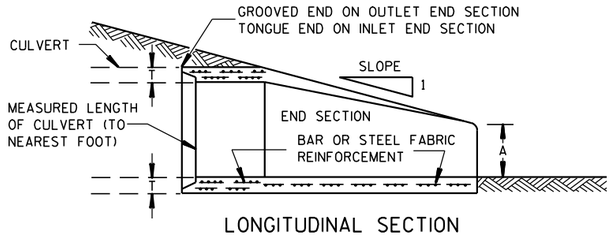
METAL ENDWALLS



PLAN

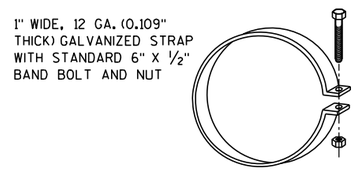


END VIEW



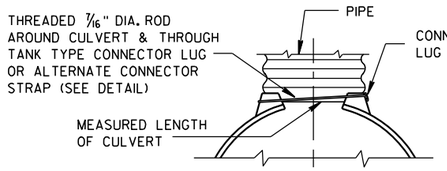
LONGITUDINAL SECTION

CONCRETE ENDWALLS

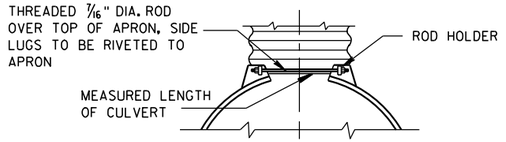


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

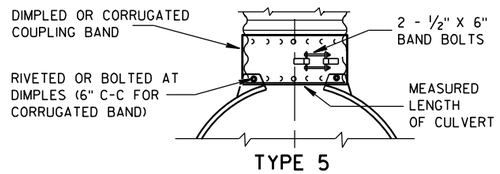


TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE

TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

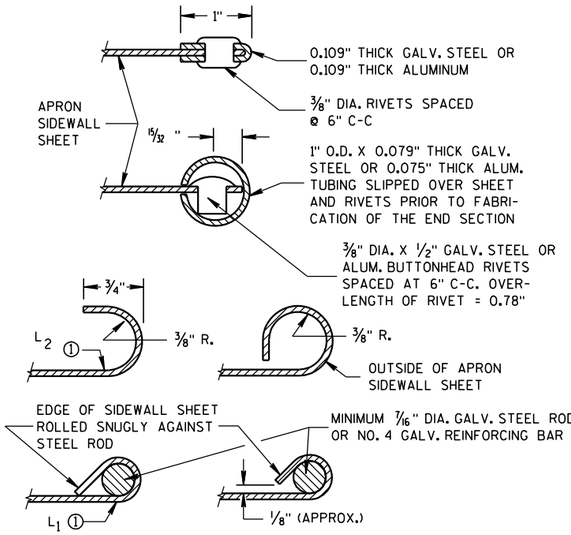
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

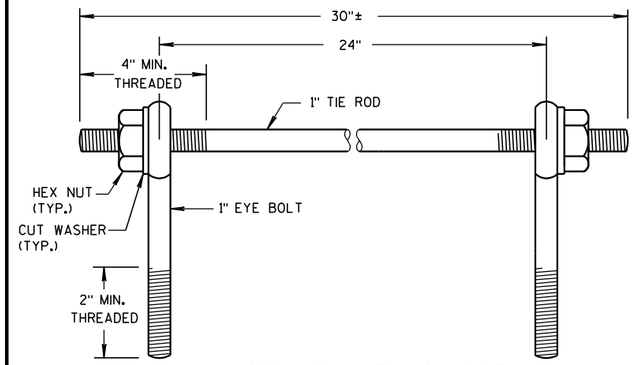
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

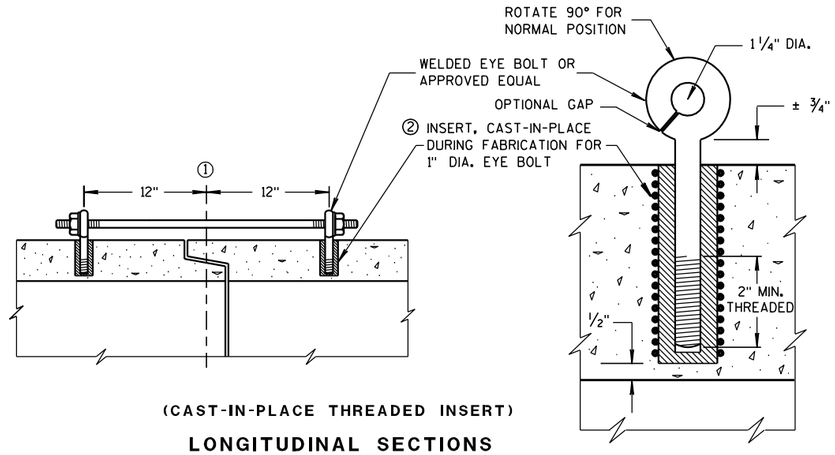
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 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 APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

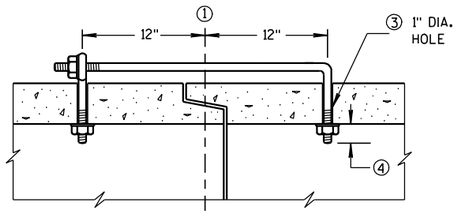
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

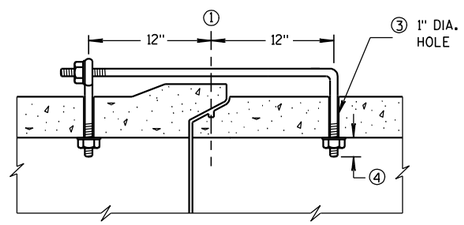
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

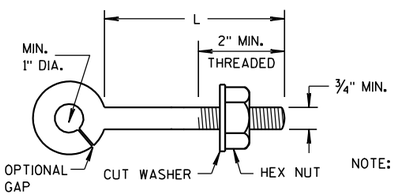


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

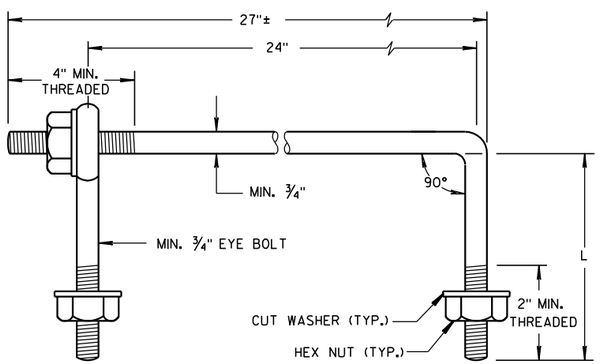
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

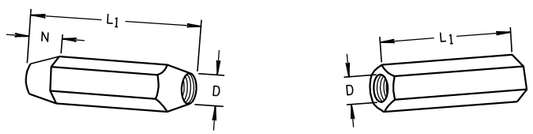
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

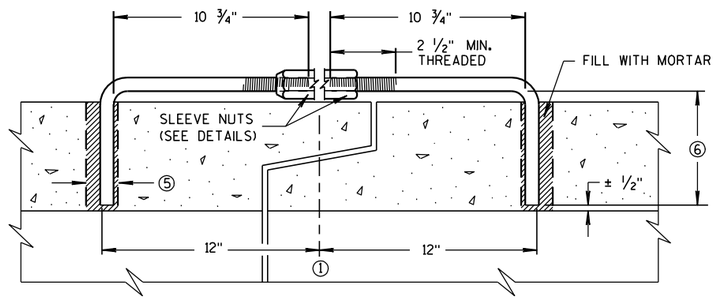
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

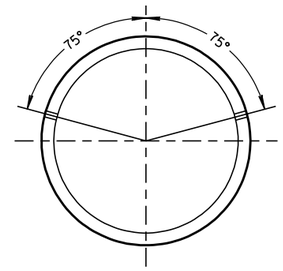
SLEEVE NUTS



LONGITUDINAL SECTION

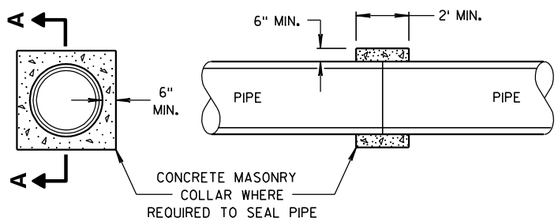
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

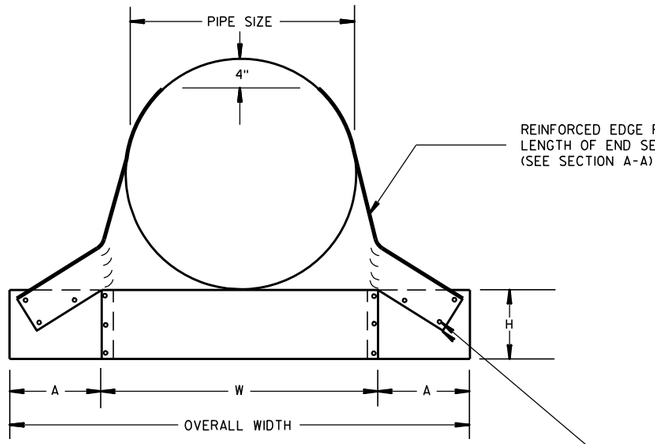
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 8 F 4-7

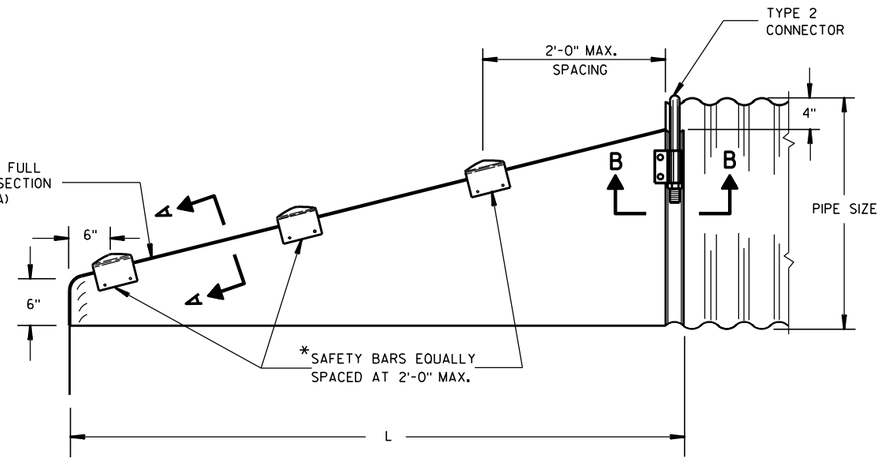
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S.D.D. 8 F 4-7



FRONT VIEW

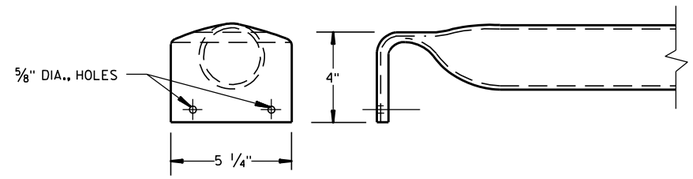
BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



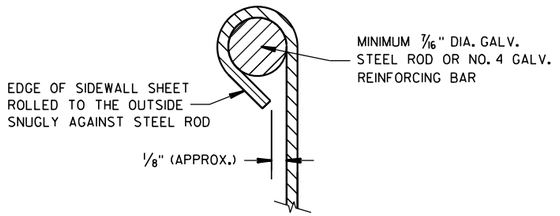
SIDE VIEW

*NOTE:
THREE SAFETY BARS ARE SHOWN. ACTUAL NUMBER OF BARS REQUIRED AT A 2'-0" C-C MAX. SPACING WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

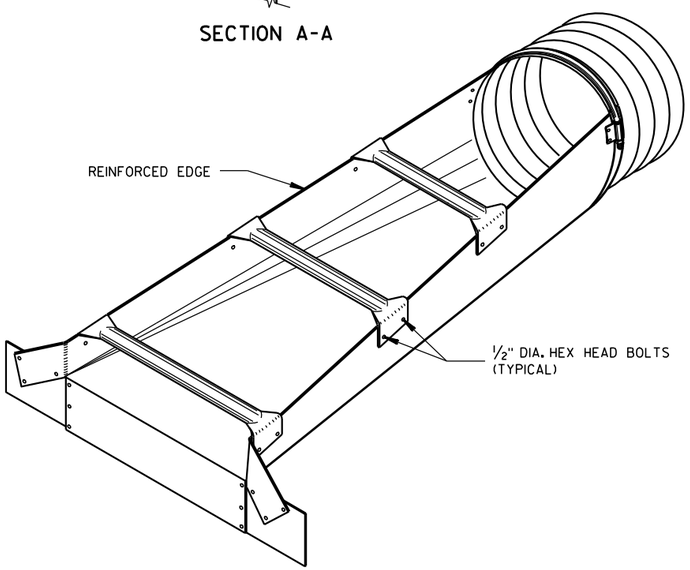
3" GALVANIZED PIPE. FLATTEN ENDS, THEN BEND OUTSIDE 4" TO MATCH END SECTION SIDES.



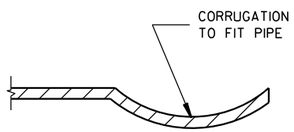
DETAIL OF SAFETY BAR



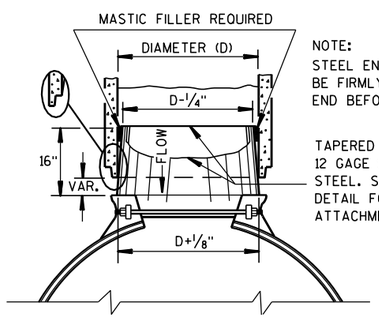
SECTION A-A



ISOMETRIC VIEW



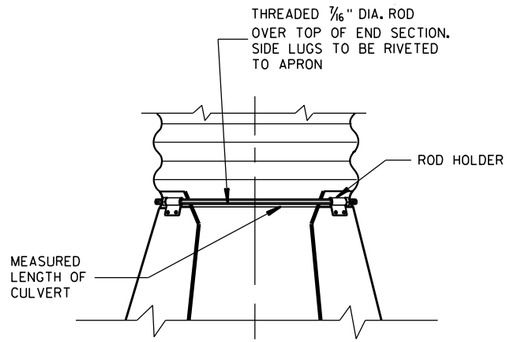
SECTION B-B



NOTE:
STEEL END SECTION SHALL BE FIRMLY WEDGED INTO PIPE END BEFORE BACKFILLING

TAPERED SLEEVE TO BE 12 GAGE SMOOTH GALVANIZED STEEL. SEE SECTION B-B DETAIL FOR END SECTION ATTACHMENT.

STEEL ADAPTER SLEEVE FOR CONCRETE PIPE



TYPE 2
CONNECTION DETAIL

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.

SLOPED END SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SECTION 521 FOR STEEL APRON ENDWALLS.

SAFETY BARS SHALL BE FABRICATED FROM GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL.

STEEL APRON ENDWALLS FOR CULVERT PIPE

PIPE DIA. (IN.)	MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS	
		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES
15	.064	8	6	21	37	6:1	30
18	.064	8	6	24	40	6:1	48
21	.064	8	6	27	43	6:1	66
24	.064	8	6	30	46	6:1	84
30	.109	12	9	36	60	6:1	120
36	.109	12	9	42	66	6:1	156
42	.109	16	12	48	80	5.63 TO 1	180
48	.109	16	12	54	86	4.74 TO 1	180
54	.109	16	12	60	92	——	——

STEEL APRON ENDWALLS FOR PIPE ARCH

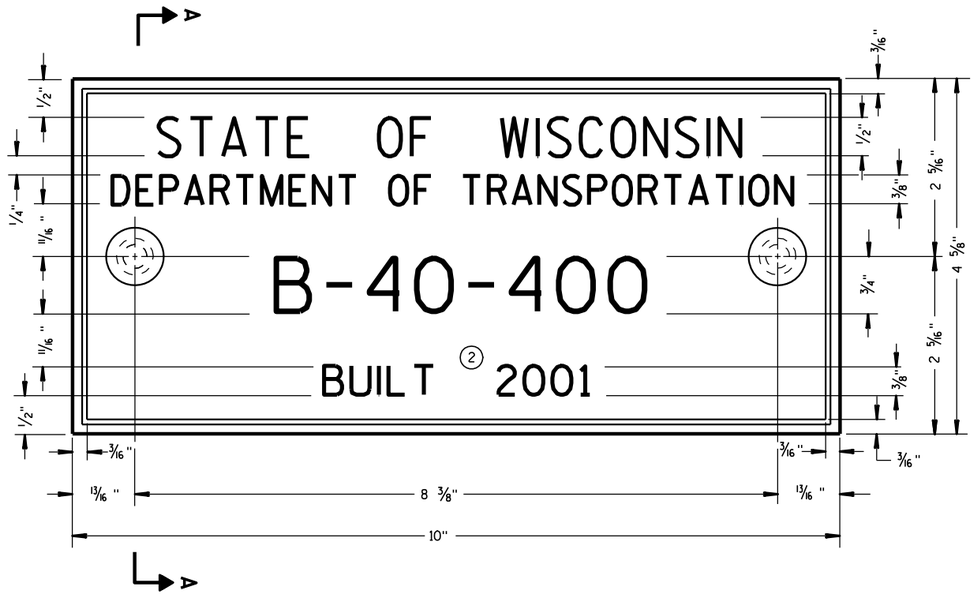
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS	
	SPAN	RISE		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES
15	17	13	.064	8	6	23	39	6:1	18
18	21	15	.064	8	6	27	43	6:1	30
21	24	18	.064	8	6	30	46	6:1	48
24	28	20	.064	8	6	34	50	6:1	60
30	35	24	.079	12	9	41	65	6:1	84
36	42	29	.109	12	9	48	72	6:1	114
42	49	33	.109	16	12	55	87	6:1	138
48	57	38	.109	16	12	63	95	6:1	168
54	64	43	.109	16	12	70	102	5.45 TO 1	180

STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SIDE DRAINS SLOPED SECTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

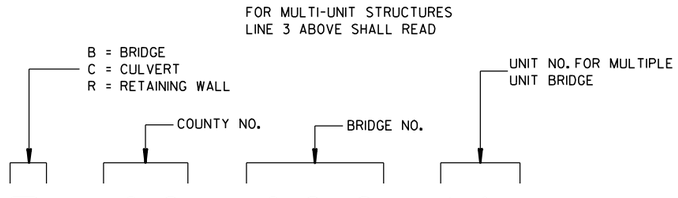
APPROVED
4/17/95 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOP ENGINEER
FHWA

6
S.D.D. 8 F 7-3



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

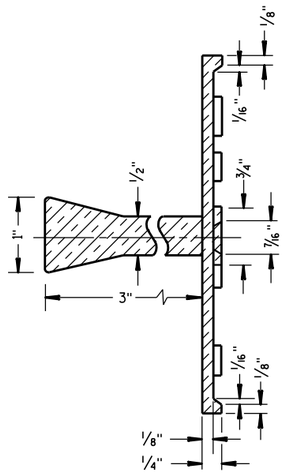
GENERAL NOTES

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.

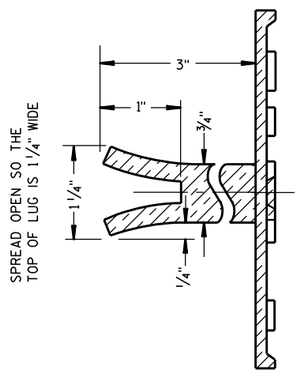
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

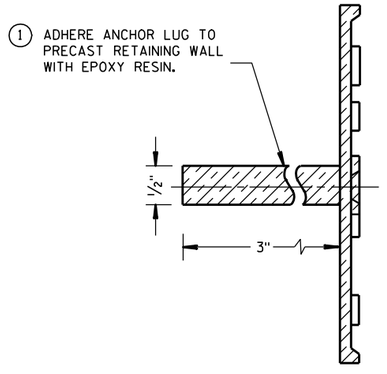
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

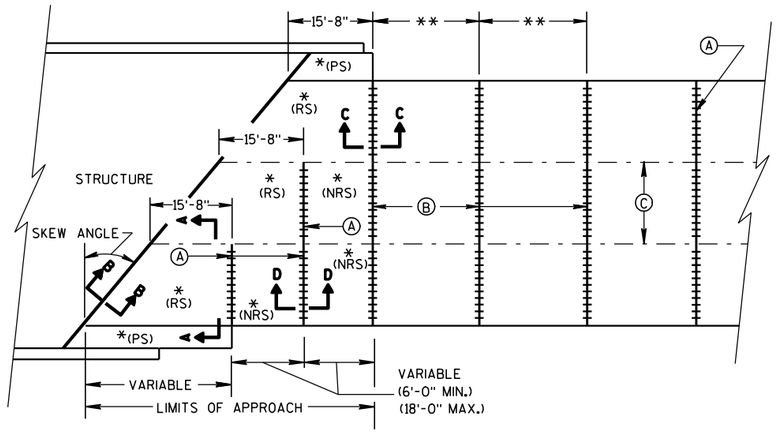
3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

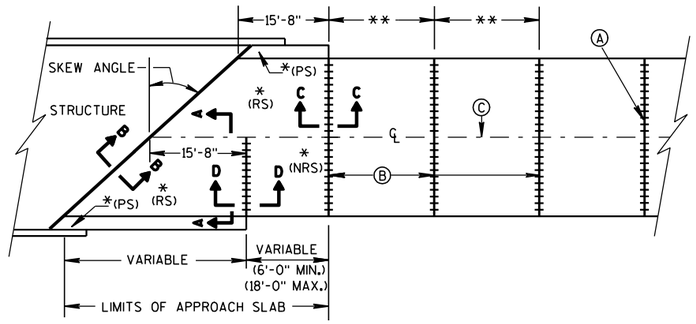
FHWA

6

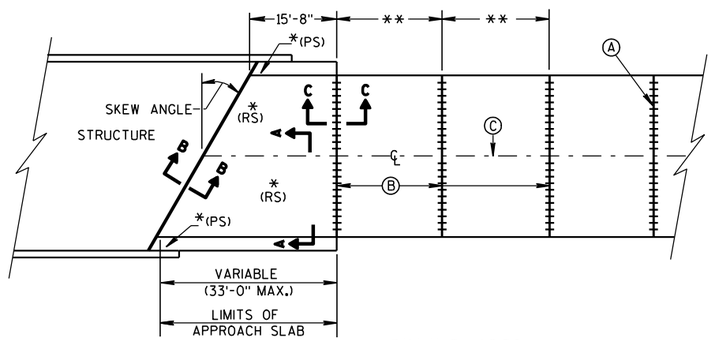
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



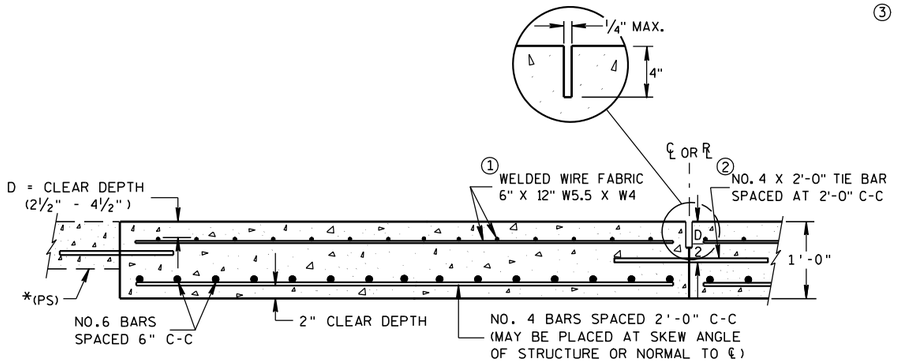
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

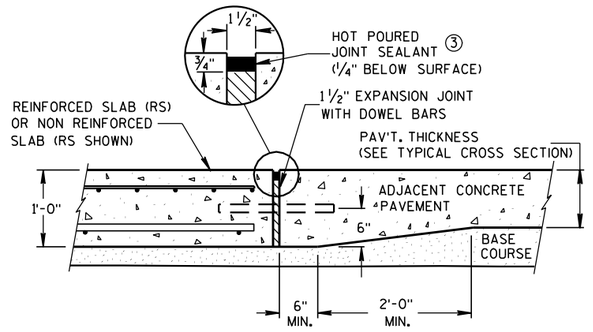
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

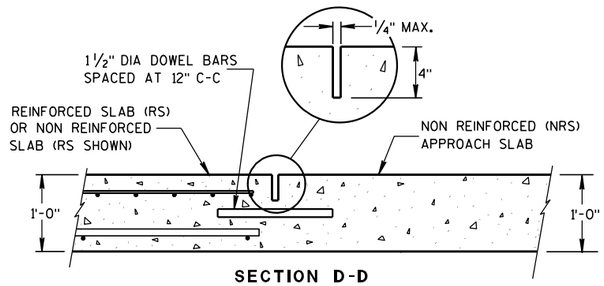
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



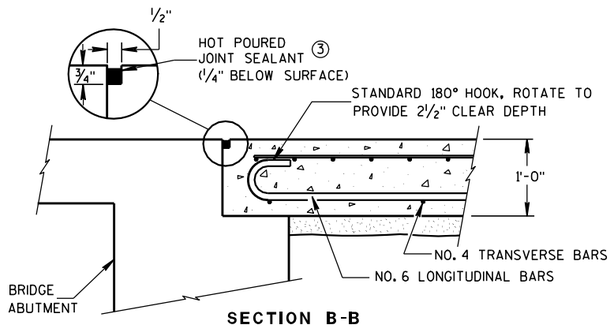
SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

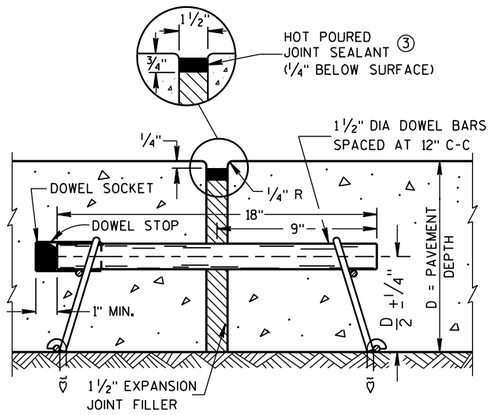
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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

1. THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
2. THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
3. USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE — NEER
FHWA

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) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

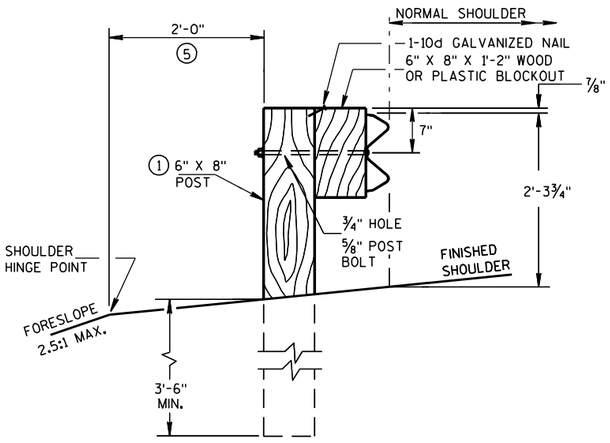
(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

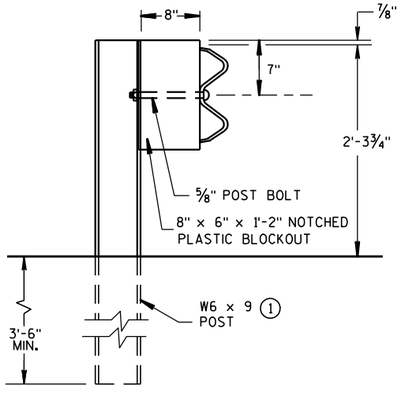
(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

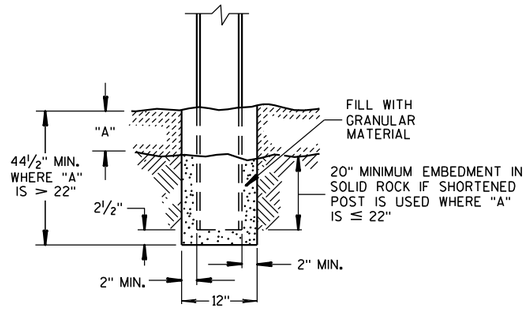
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



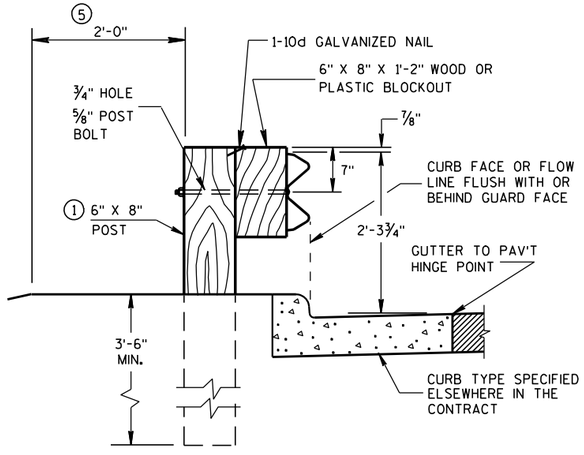
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



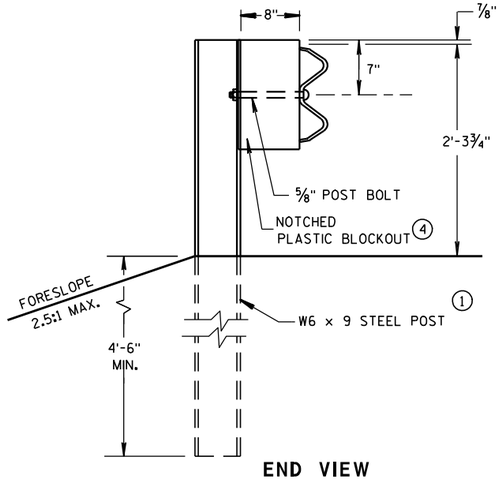
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



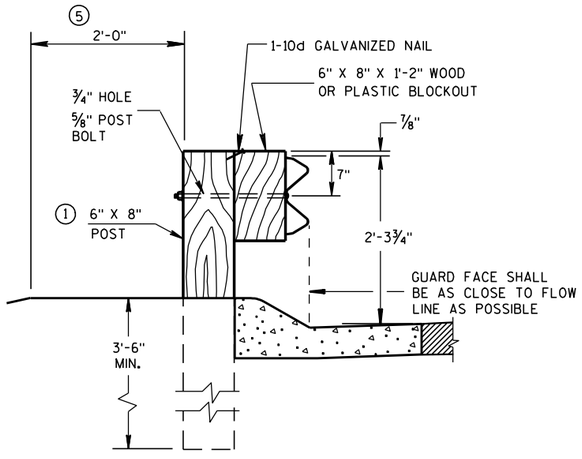
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



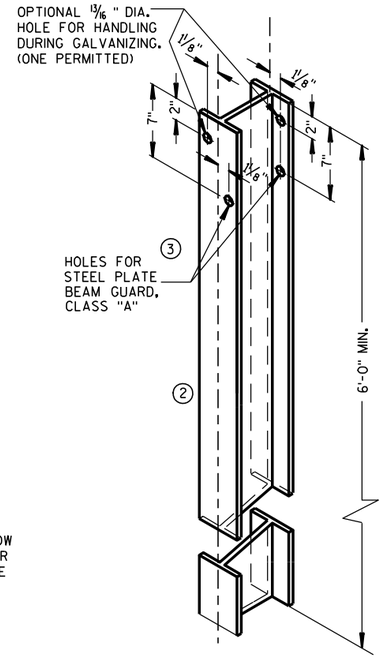
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

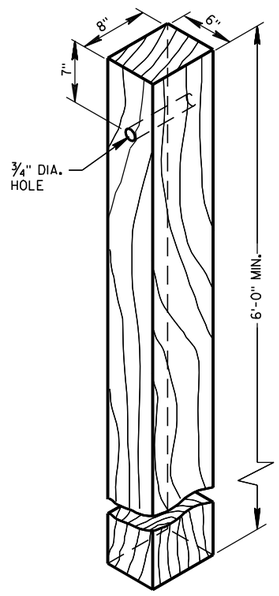


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

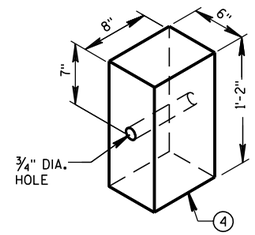


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

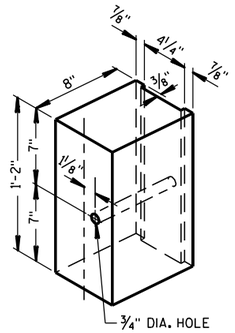
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



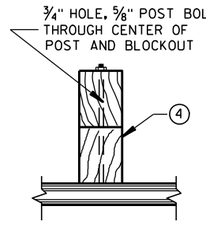
WOOD POST
(6"X8") NOMINAL



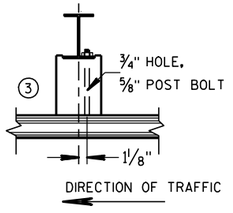
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



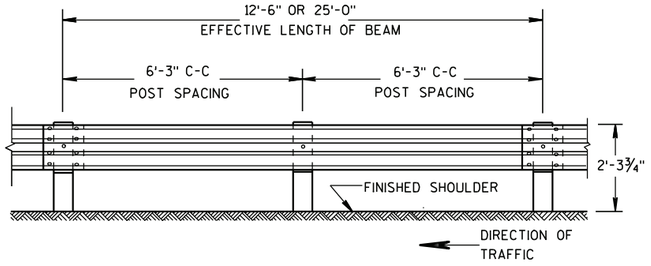
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

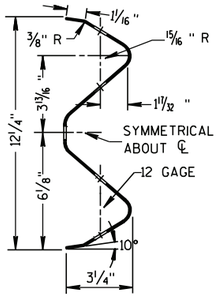
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

6
S.D.D. 14 B 15-7a

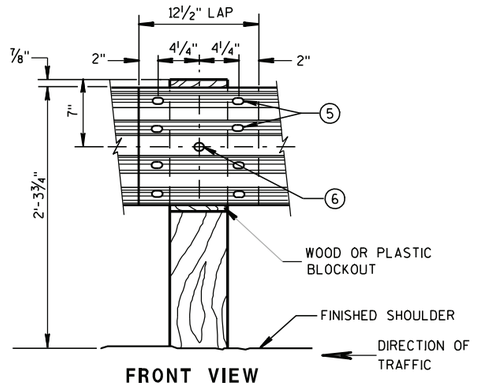


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM

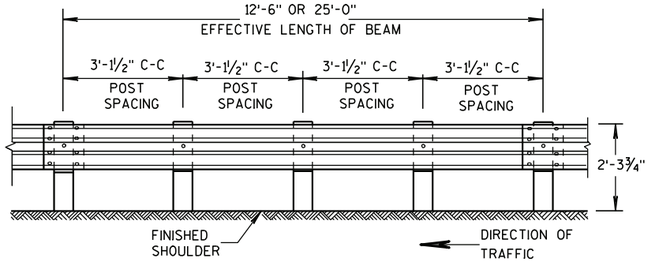


FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

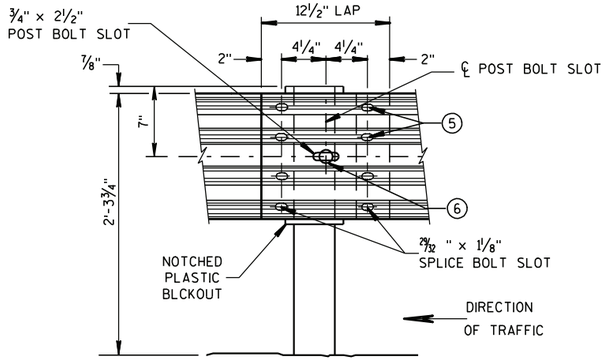
GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 8 - 5/8" ϕ X 2 " BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
6. 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.



FRONT VIEW

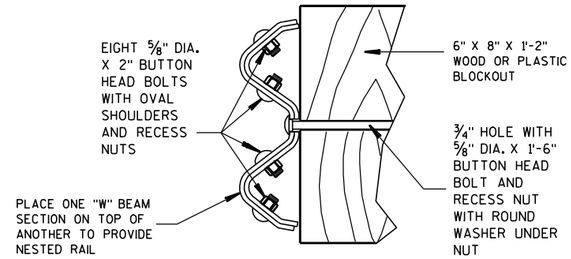
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

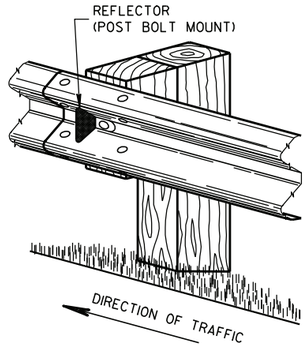


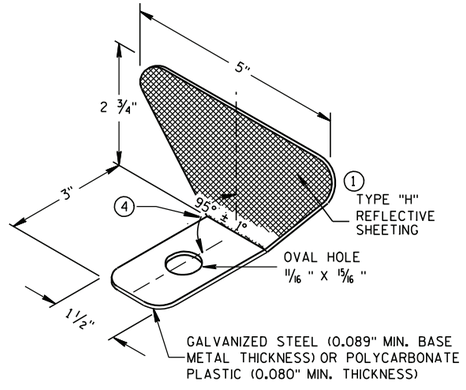
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING (2)

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (3)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 (4)	



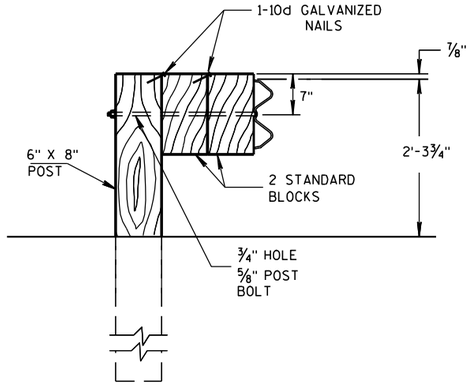


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (1)

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

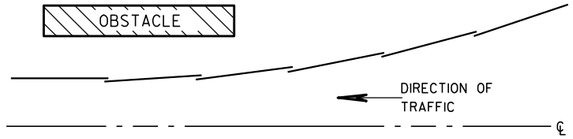
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 15-7b

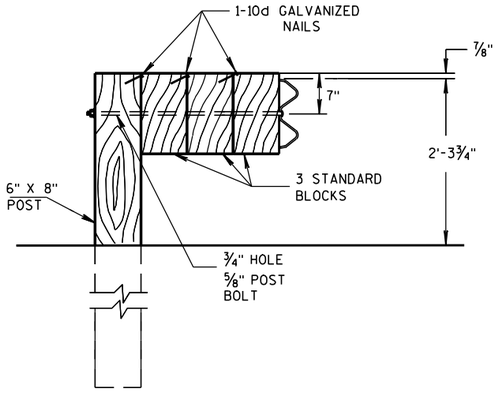


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

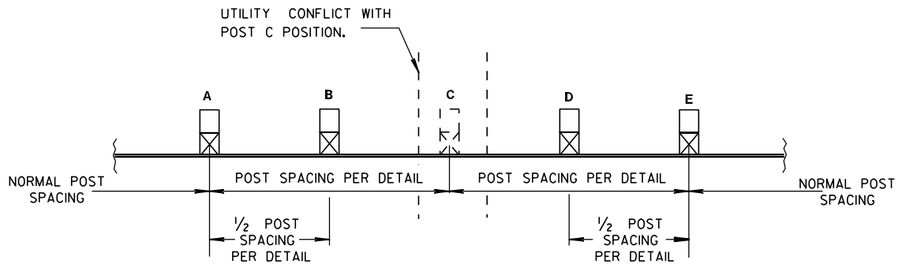


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/23/11
DATE

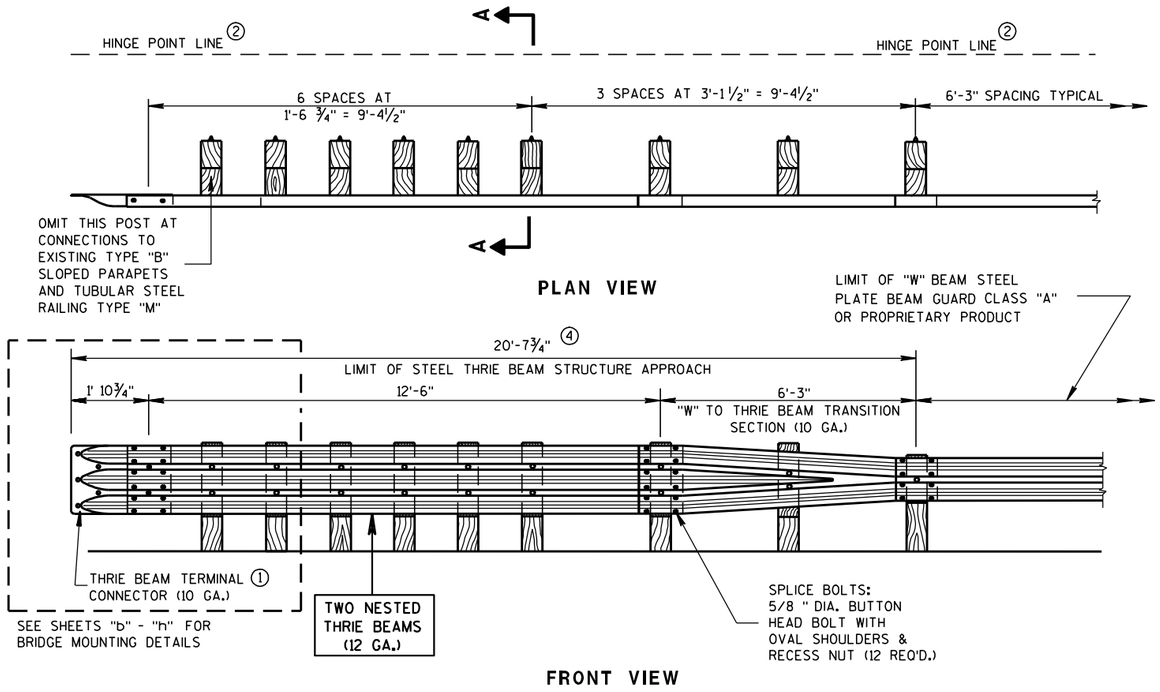
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

52

ENT

FHWA

6
S.D.D. 14 B 15-7c



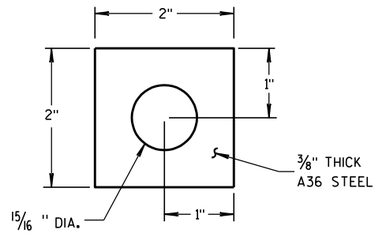


PLATE WASHER DETAIL

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".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

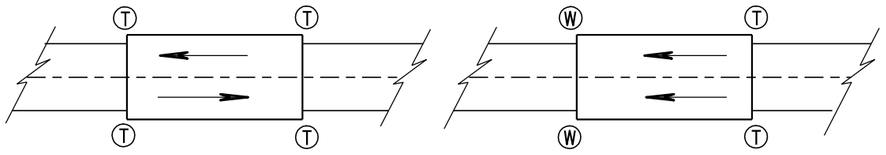
IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY, (SEE SDD 14 B 15 - a).

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



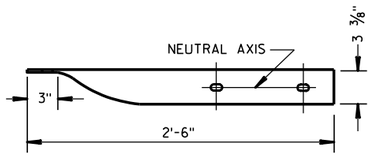
TWO WAY TRAFFIC

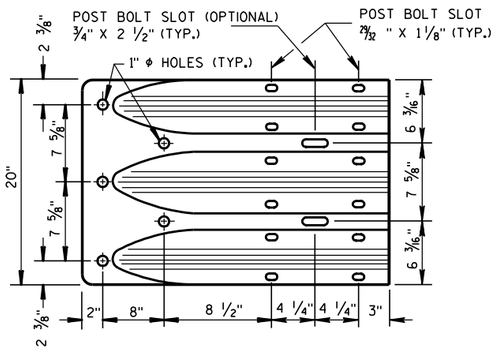
ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

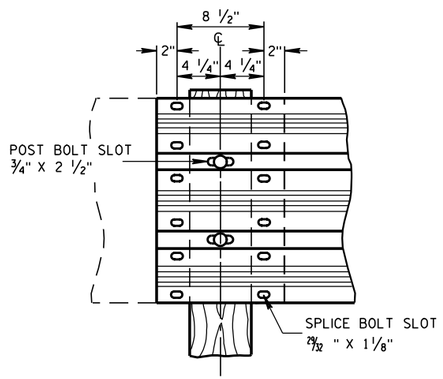
(W) W-BEAM CONNECTION WHEN REQUIRED

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

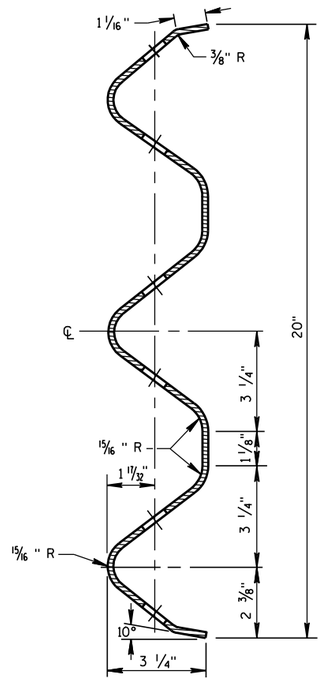




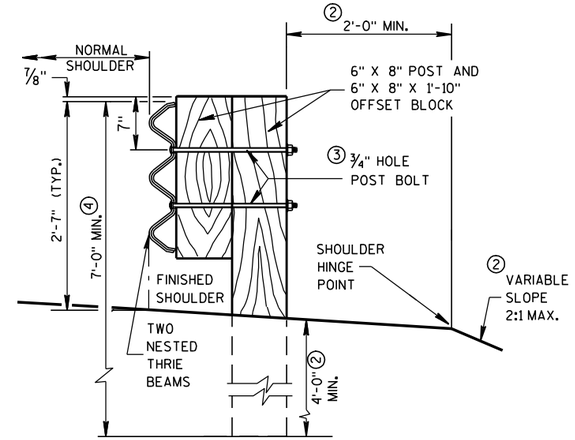
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION A-A

STEEL THRIE BEAM STRUCTURE APPROACH

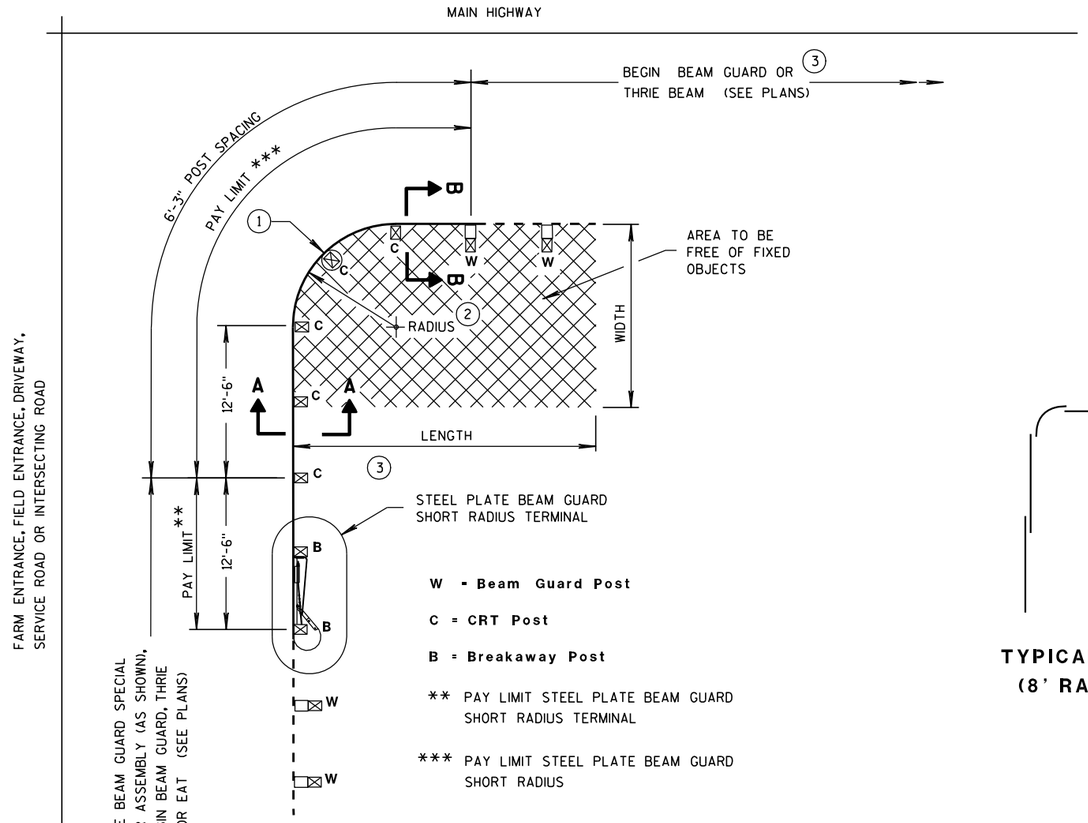
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

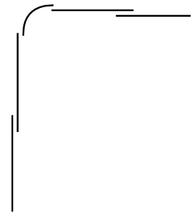
2-8-2012
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



TYPICAL LAYOUT
(8' RADIUS SHOWN)



TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2. UNLESS NOTED OTHERWISE.

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

(1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.

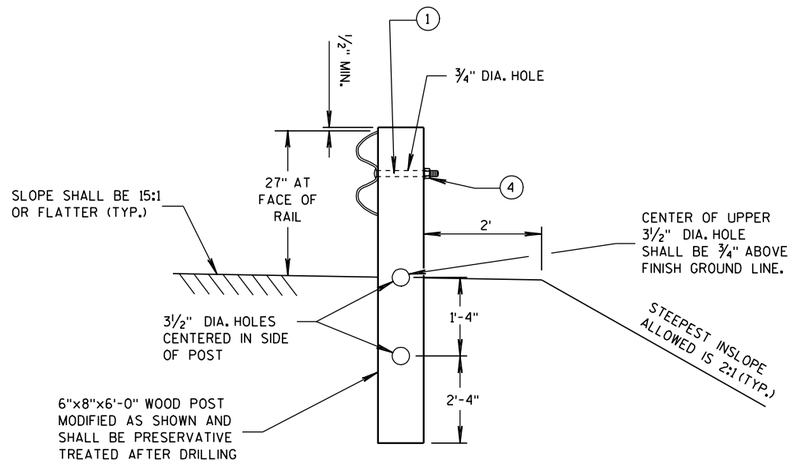
(2) RADIUS FROM 8' - 36'. SEE PLAN.

(3) HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.

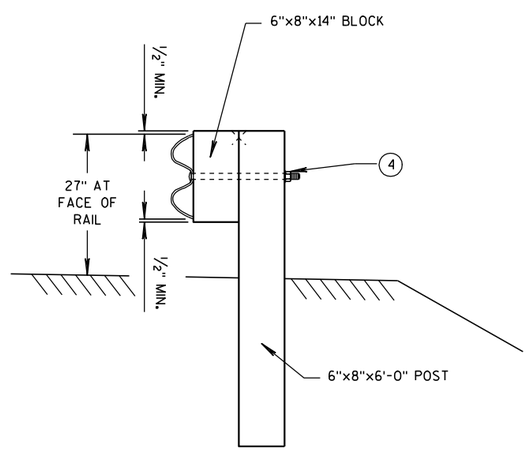
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION A-A
(CRT POST)

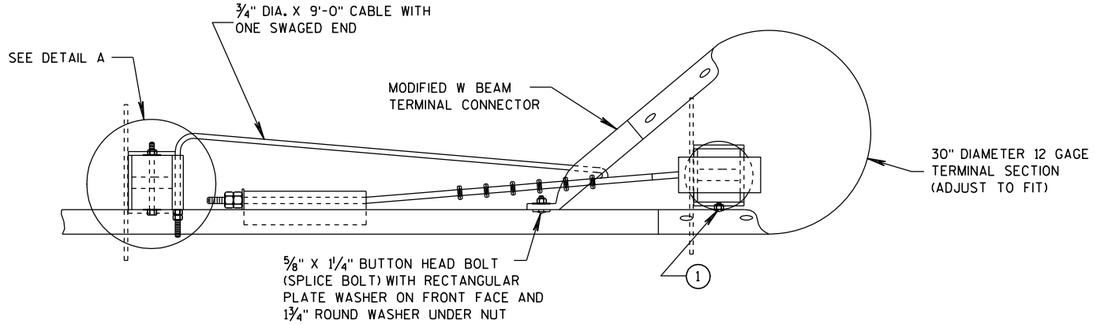


SECTION B-B
(BEAM GUARD POST)

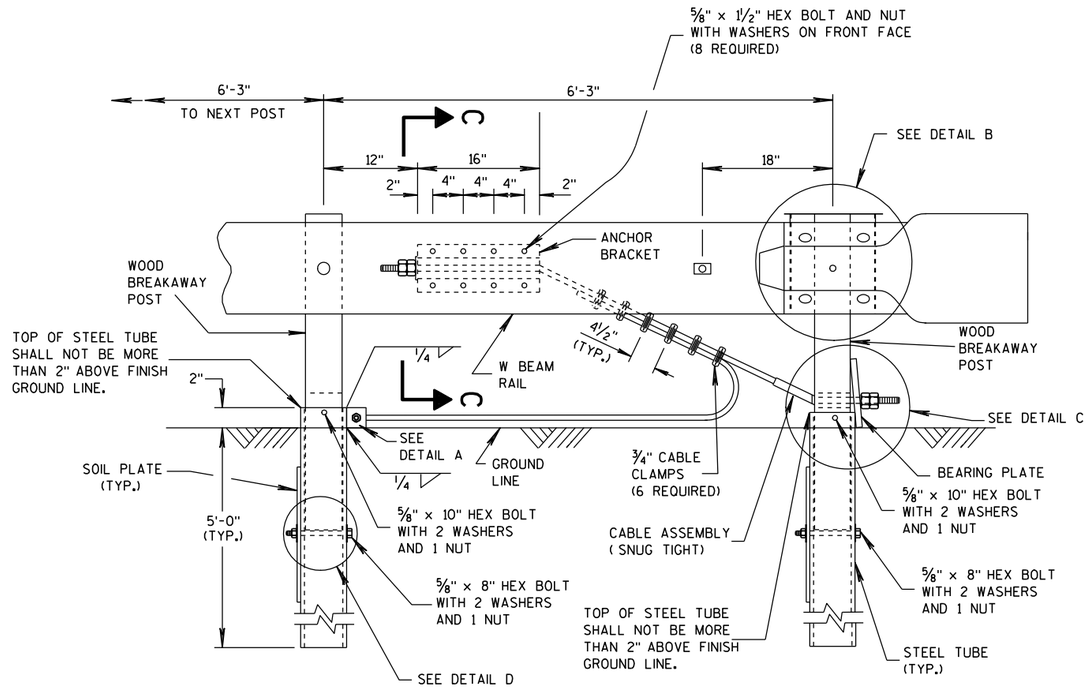
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 27-1a



PLAN VIEW



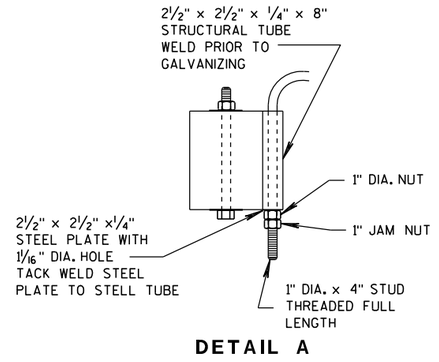
ELEVATION VIEW

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

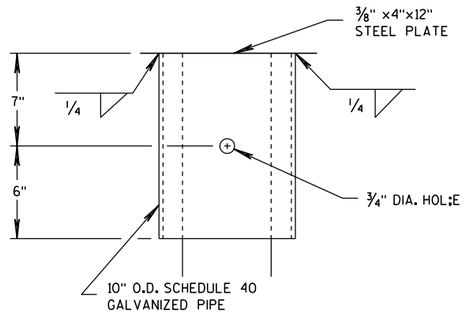
GENERAL NOTES

(1) ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A ⅝" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED ¾" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A



DETAIL B

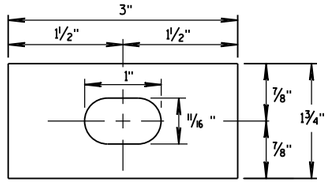
(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

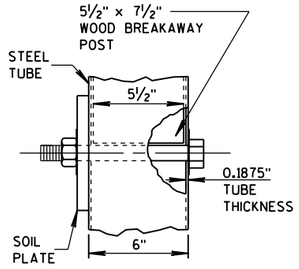
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

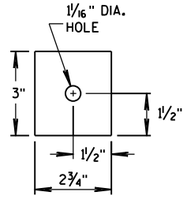
S.D.D. 14 B 27-1b



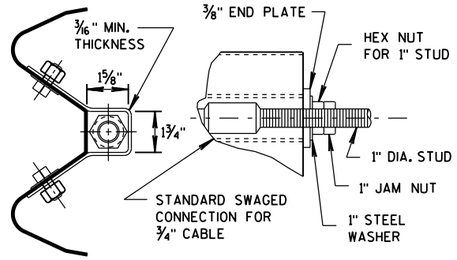
RECTANGULAR PLATE WASHER



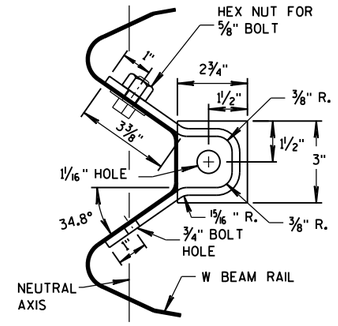
DETAIL D



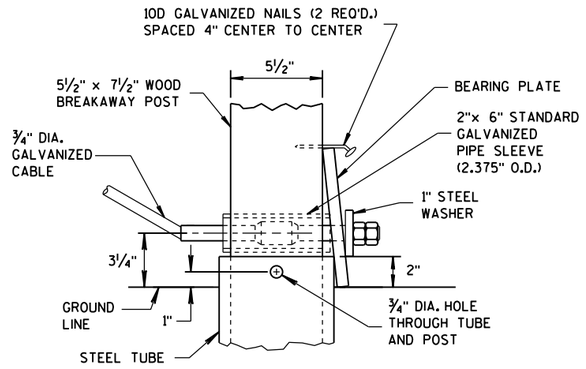
END PLATE



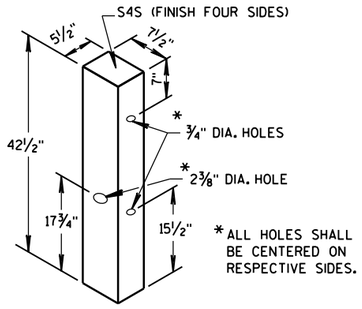
SECTION C-C
(END PLATE REMOVED)



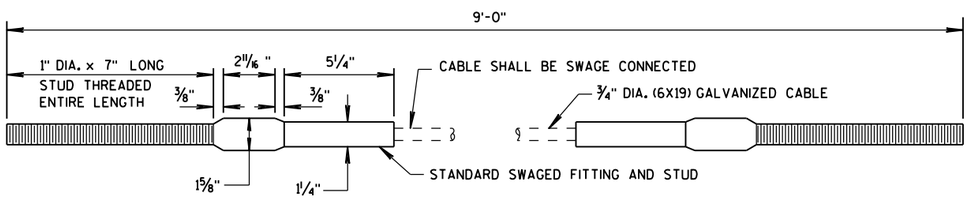
ANCHOR BRACKET



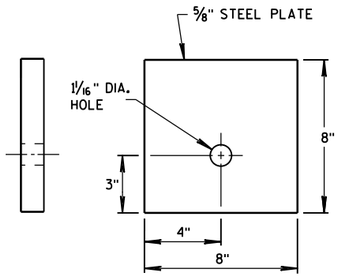
DETAIL C



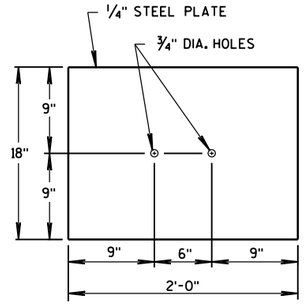
WOOD BREAKAWAY POST



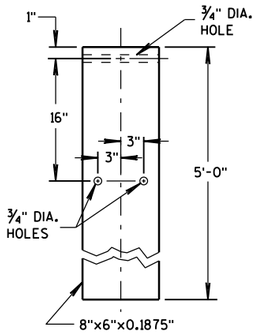
CABLE ASSEMBLY



BEARING PLATE



SOIL PLATE



STEEL TUBE

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 27-1c

6

S.D.D. 14 B 27-1c

GENERAL NOTES

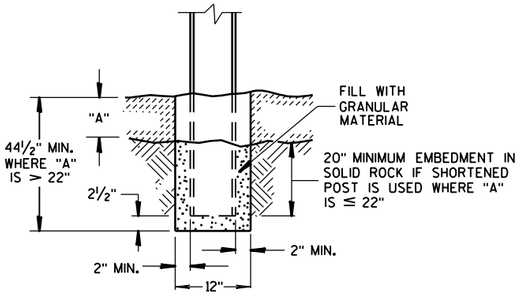
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

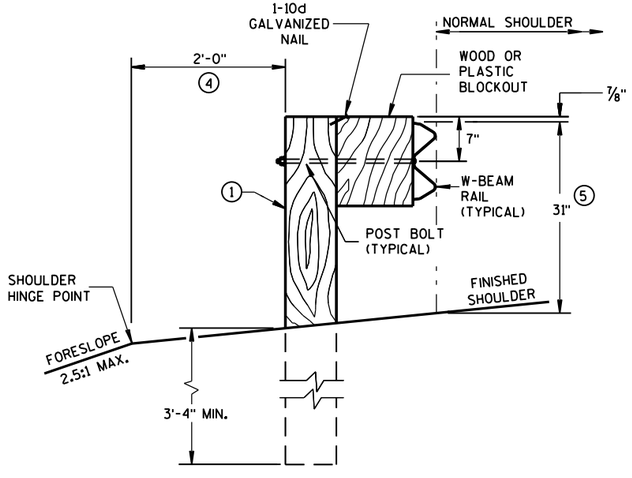
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

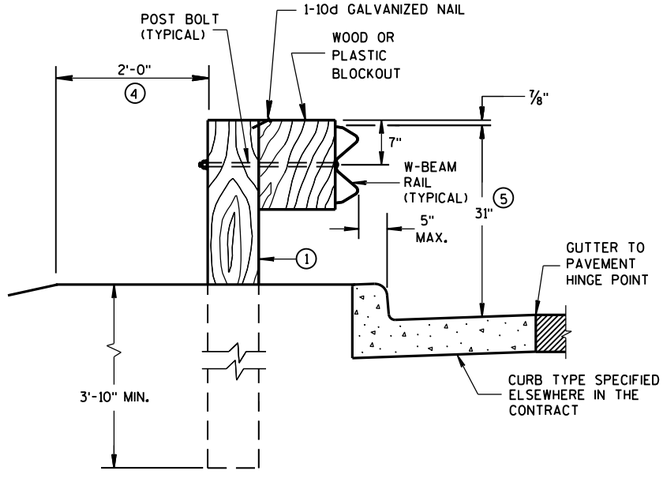
5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".



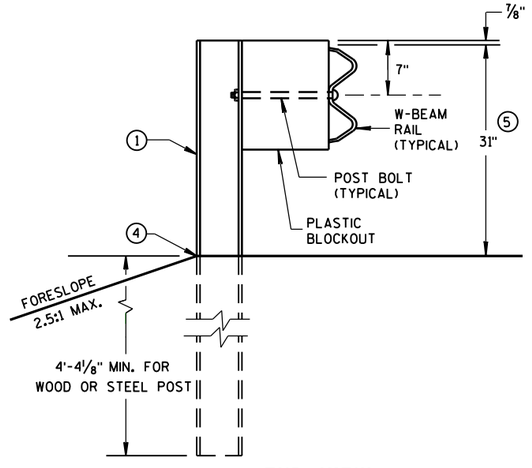
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



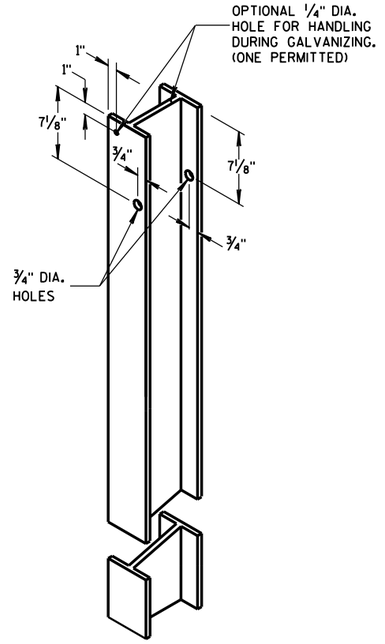
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



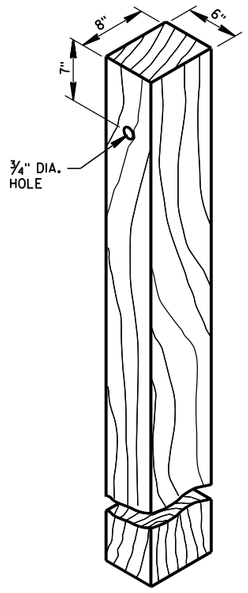
END VIEW
LOCATED ALONG A CURBED ROADWAY



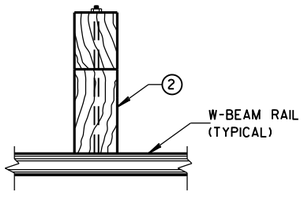
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



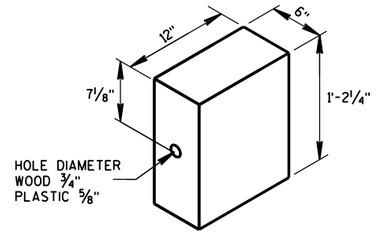
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



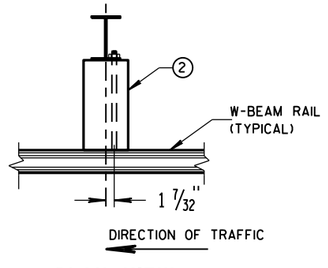
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)

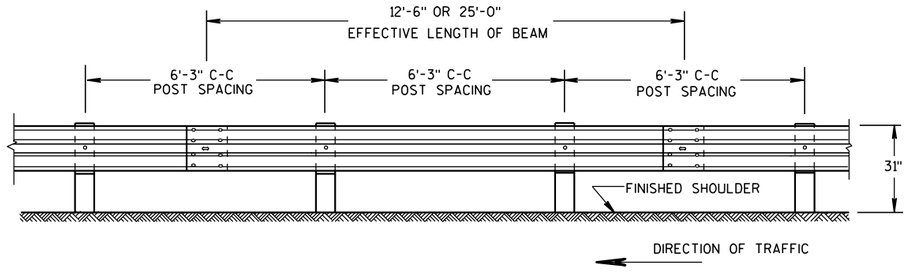


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

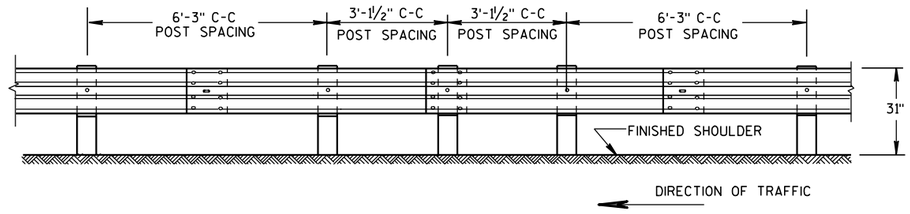
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 14 B 42-2a



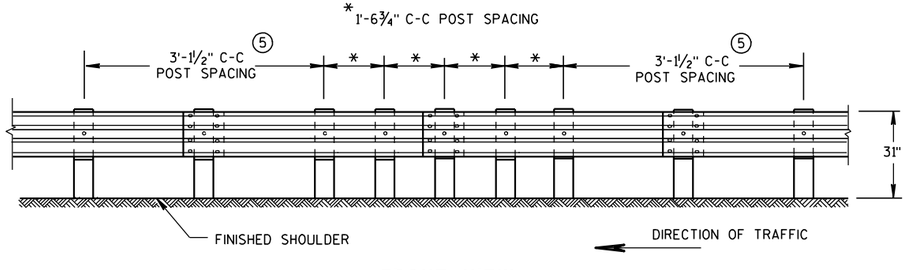
FRONT VIEW

POST SPACING STANDARD INSTALLATION



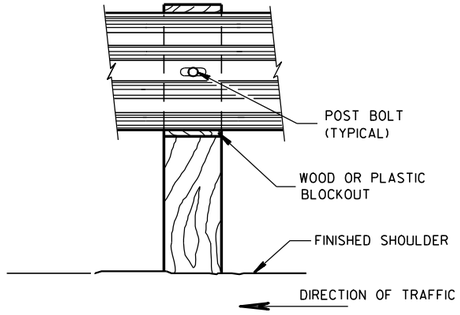
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

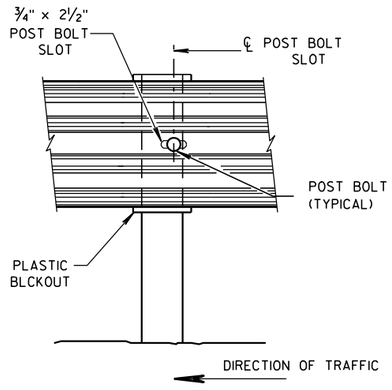


FRONT VIEW

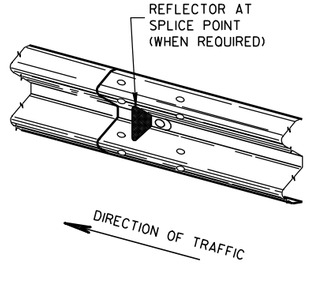
QUARTER POST SPACING (QS)

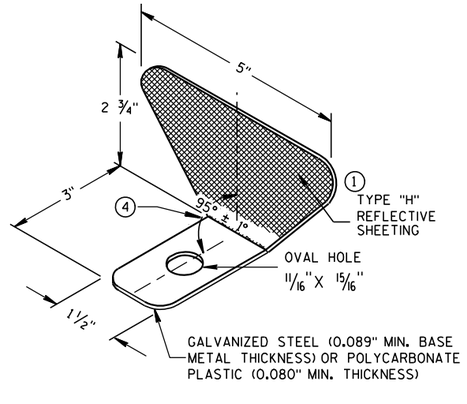


FRONT VIEW AT WOOD POST

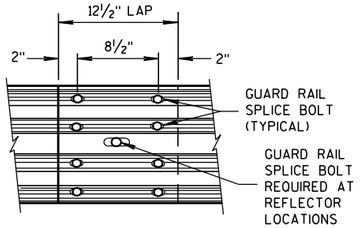


FRONT VIEW AT STEEL POST



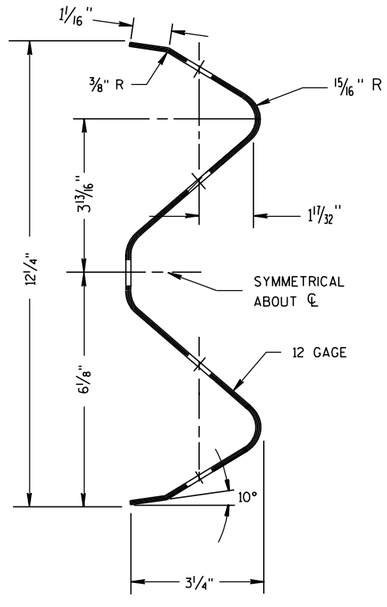


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①



FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL

GENERAL NOTES

① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.

② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

④ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

⑤ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING ②

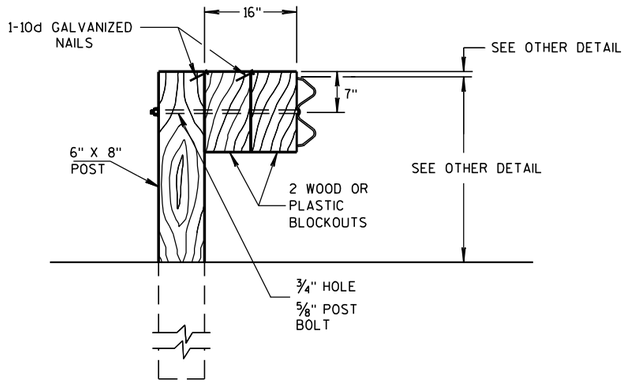
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ③ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ④ 2	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

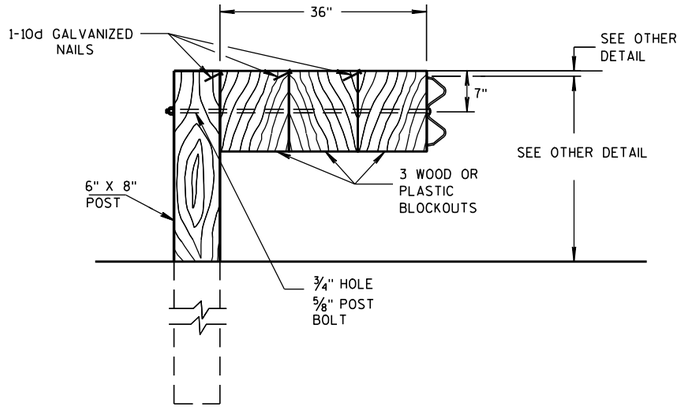
S.D.D. 14 B 42-2b

S.D.D. 14 B 42-2b



DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

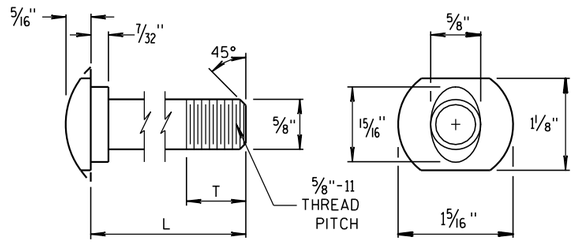


DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

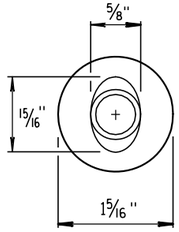
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

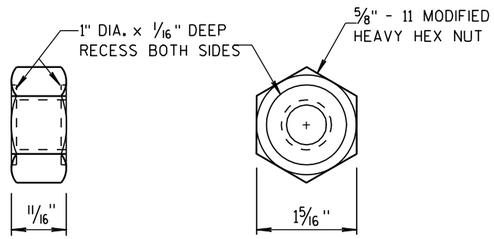


POST BOLT TABLE

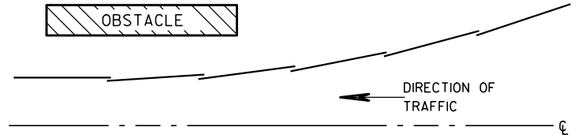
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

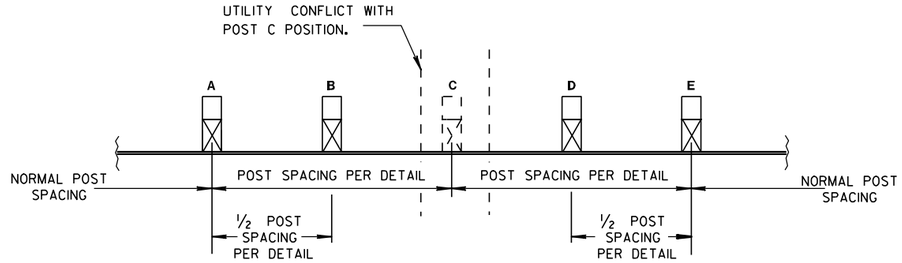


POST BOLT AND RECESS NUT

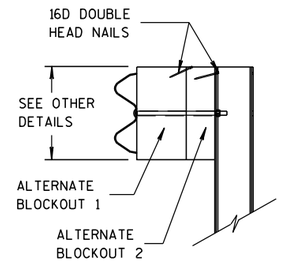


PLAN VIEW

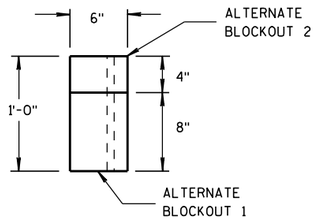
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

ENT

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), 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) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(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.

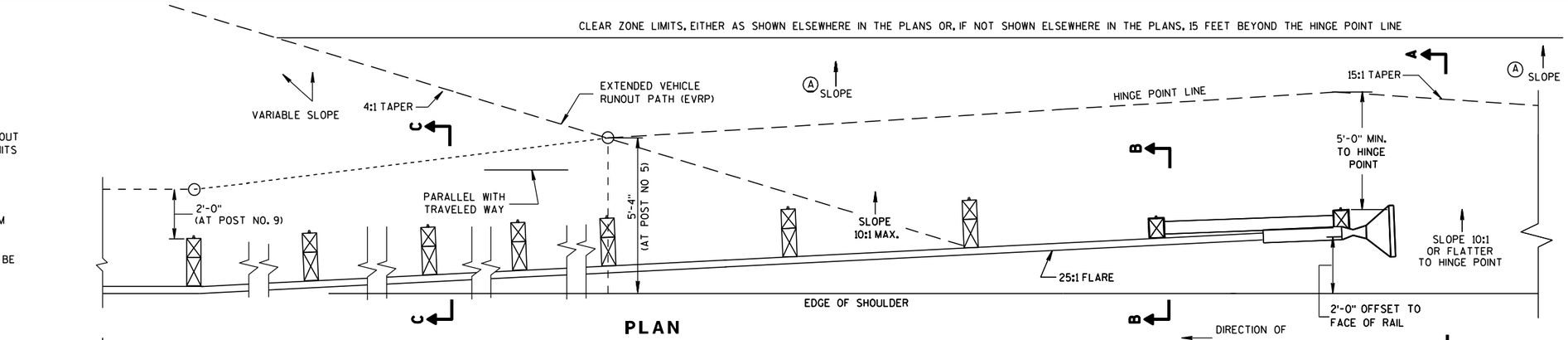
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

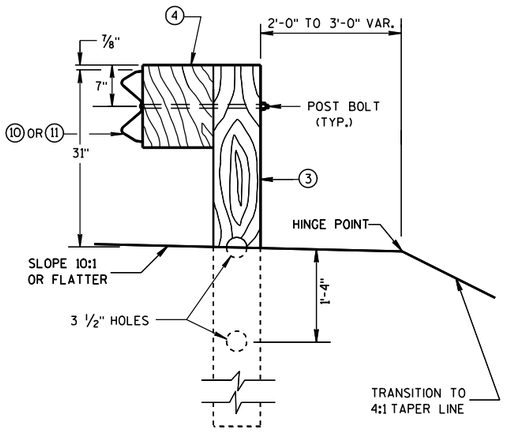
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

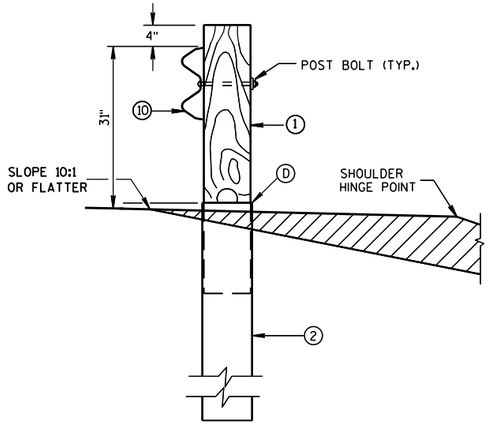
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

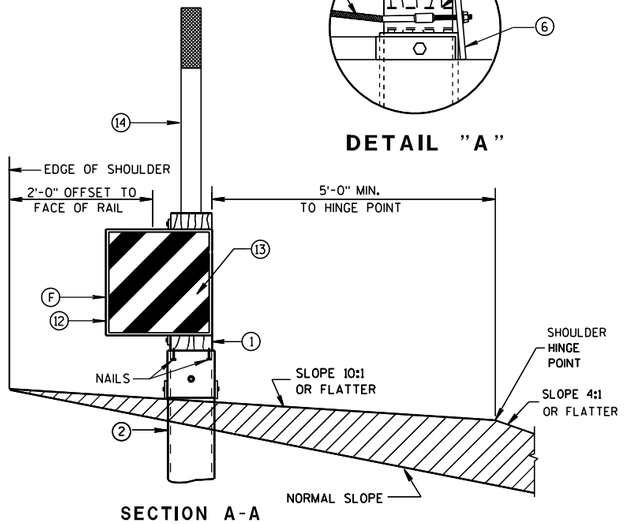




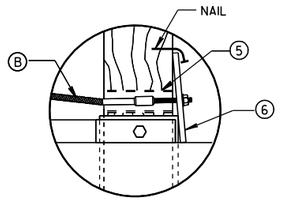
SECTION C-C
TYPICAL AT POST NOS. 3-9



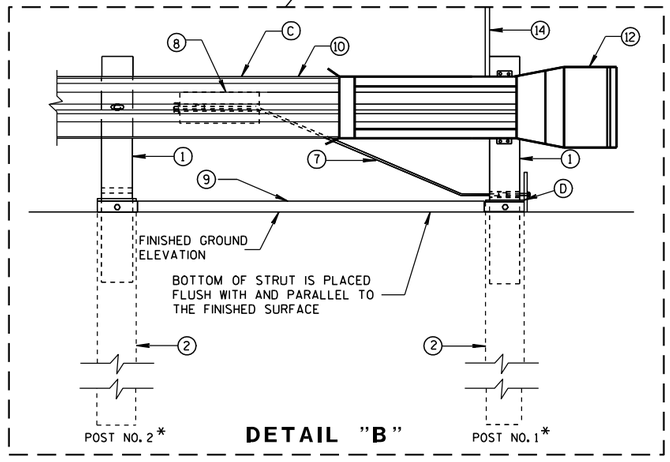
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

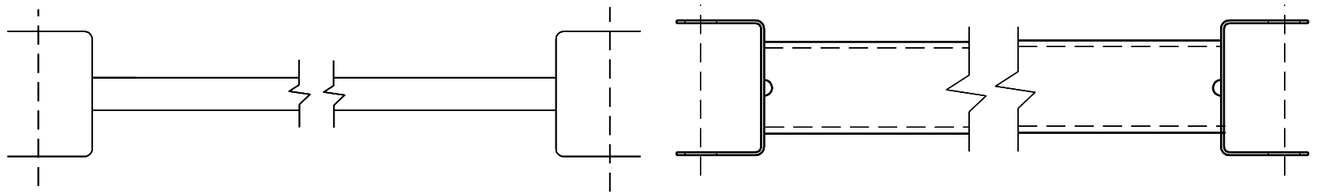


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 44-1a

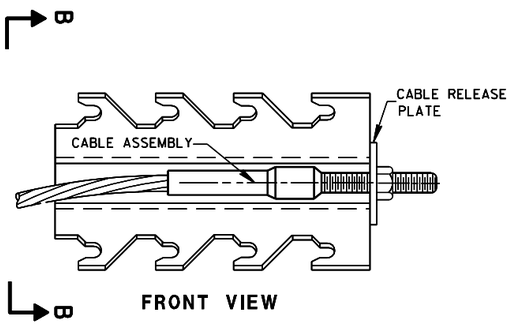


(9) (H)

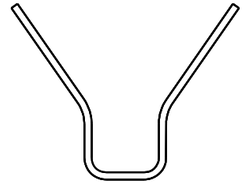
GENERIC GROUND STRUT

BILL OF MATERIALS

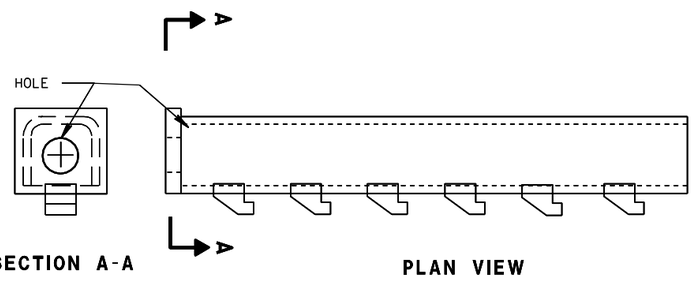
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR 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 H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



FRONT VIEW



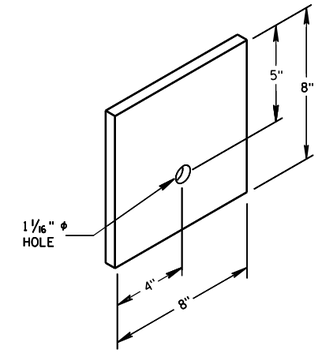
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



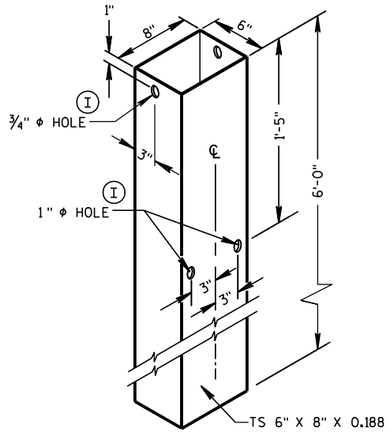
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

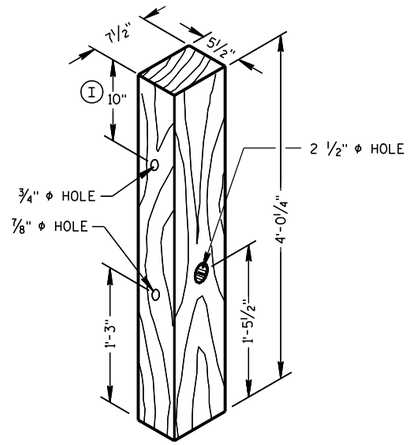
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 44-1b

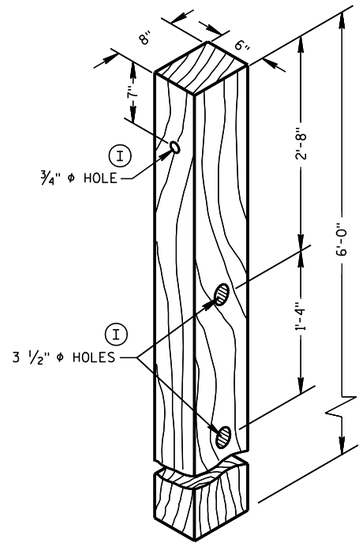


FOUNDATION TUBE (2)



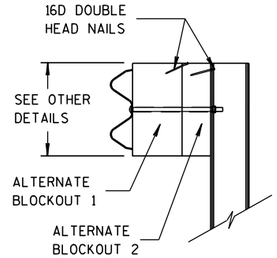
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

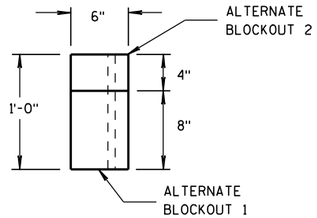


POSTS NUMBER 3-9

WOOD CRT POST (3)

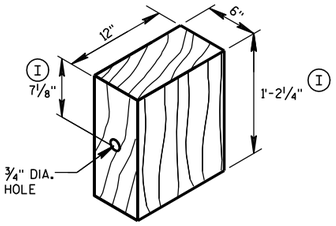


SIDE VIEW



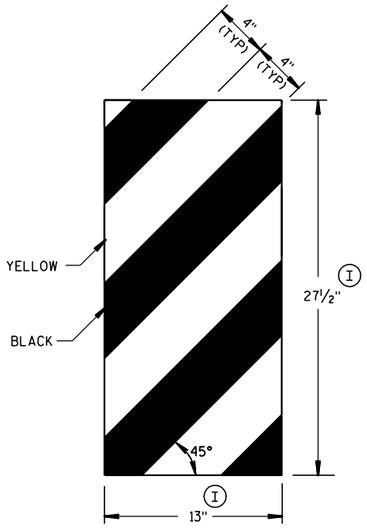
TOP VIEW

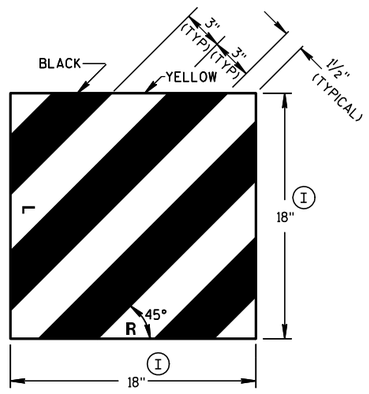
ALTERNATE WOOD BLOCKOUT DETAIL



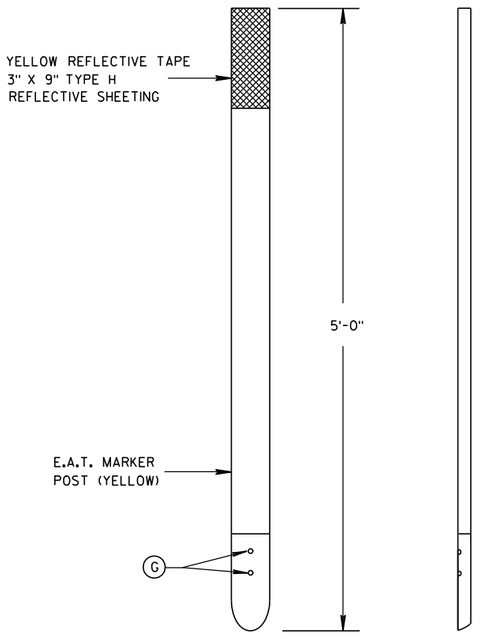
WOOD BLOCKOUT (4)

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





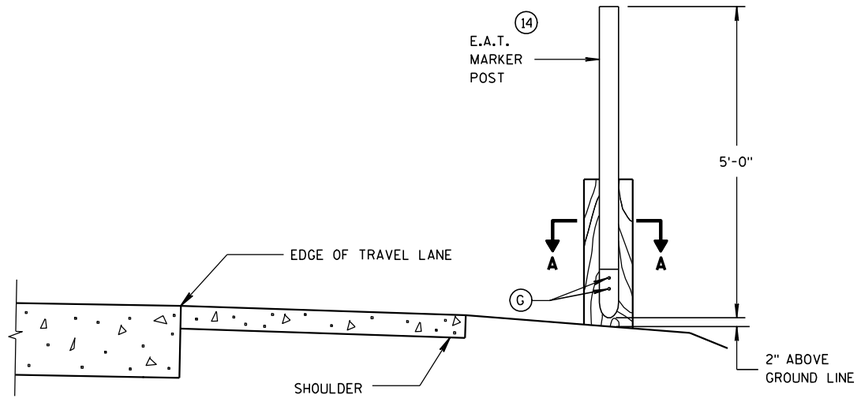
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

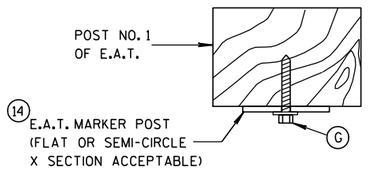
SIDE VIEW

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)

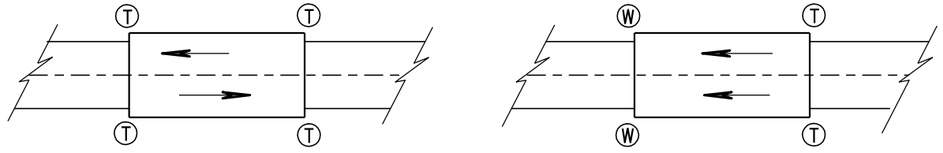


SECTION A-A

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
62
FHWA



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

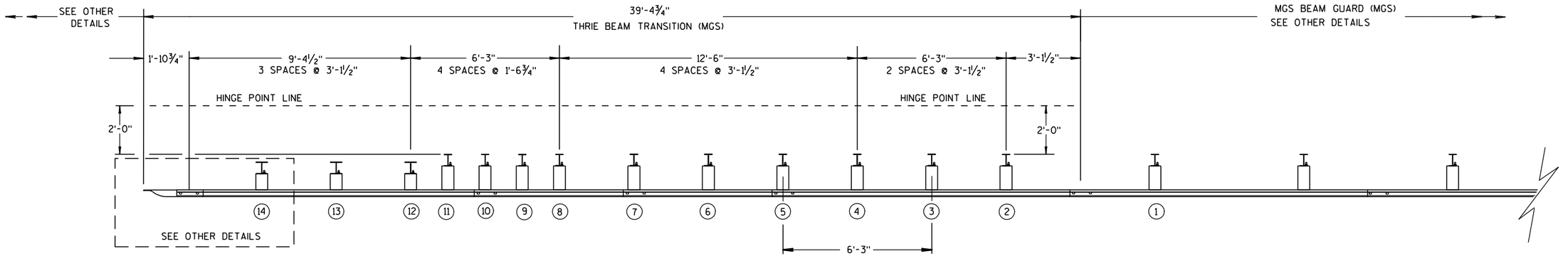
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED DURING EXCAVATION, SEE STANDARD DETAIL DRAWING 14 B 42.

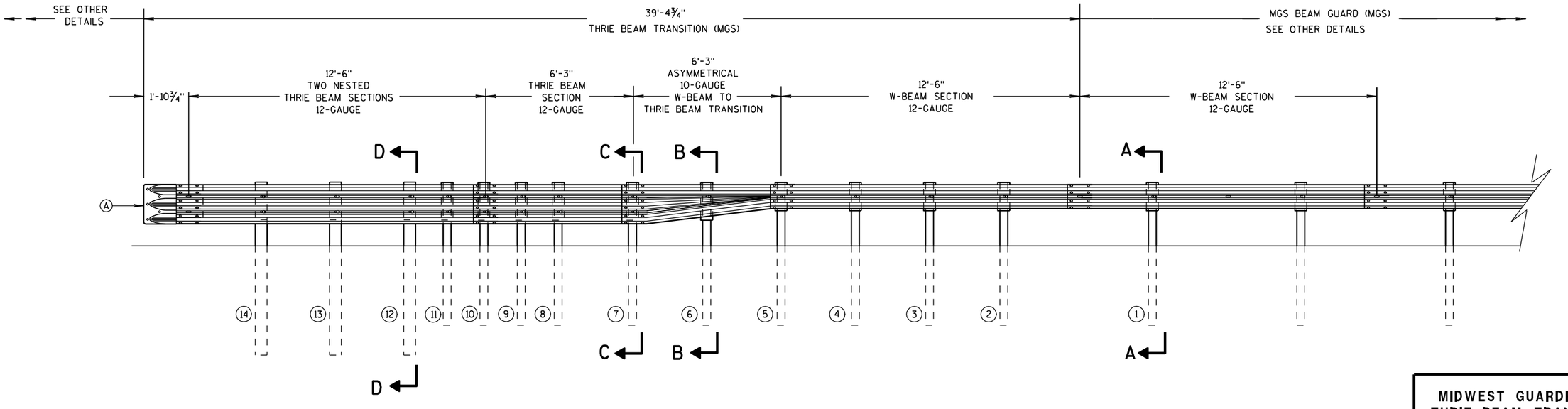
TRANSITION USES STEEL POSTS ONLY.

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)

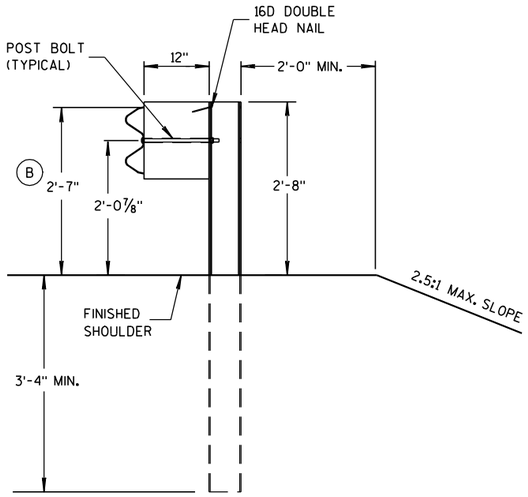
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 45-2a

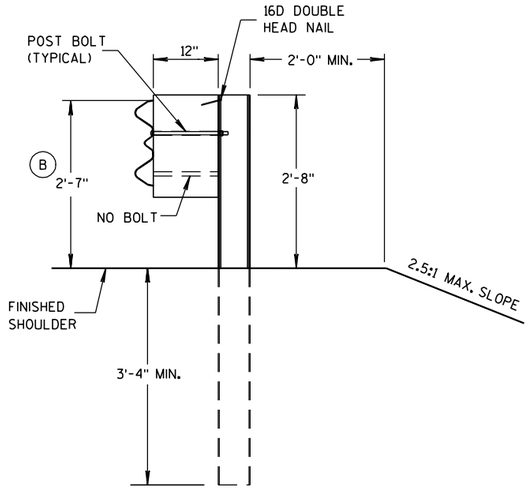
GENERAL NOTES

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



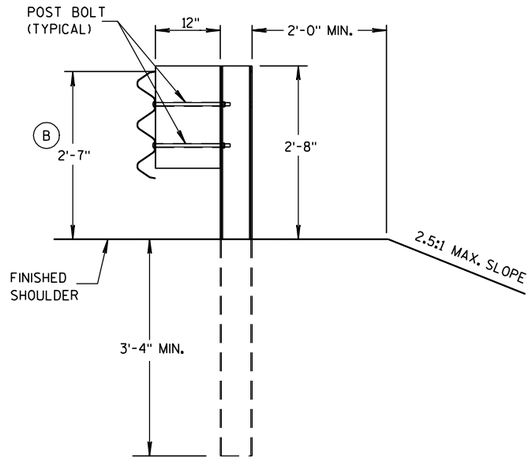
SECTION A-A

POSTS 1-5



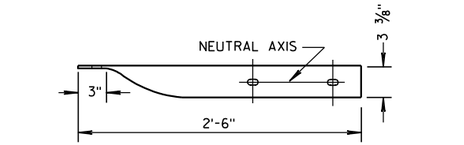
SECTION B-B

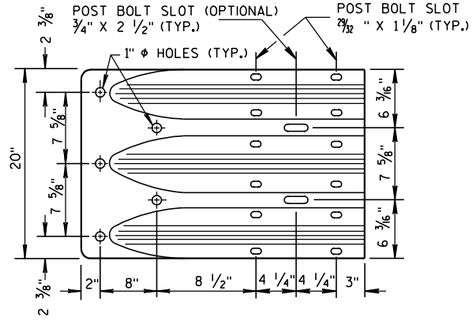
POST 6



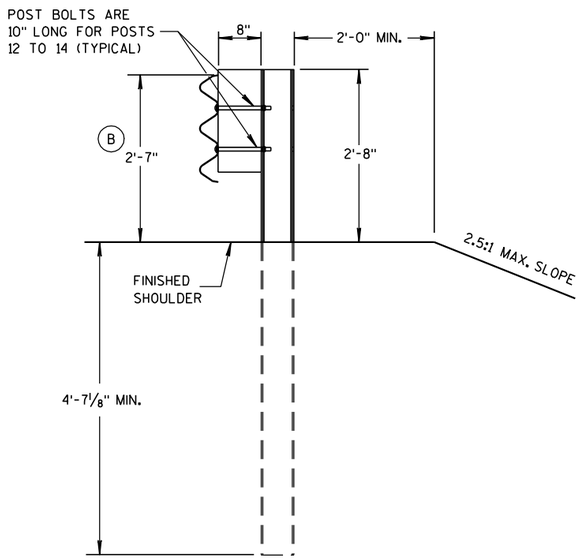
SECTION C-C

POSTS 7-11



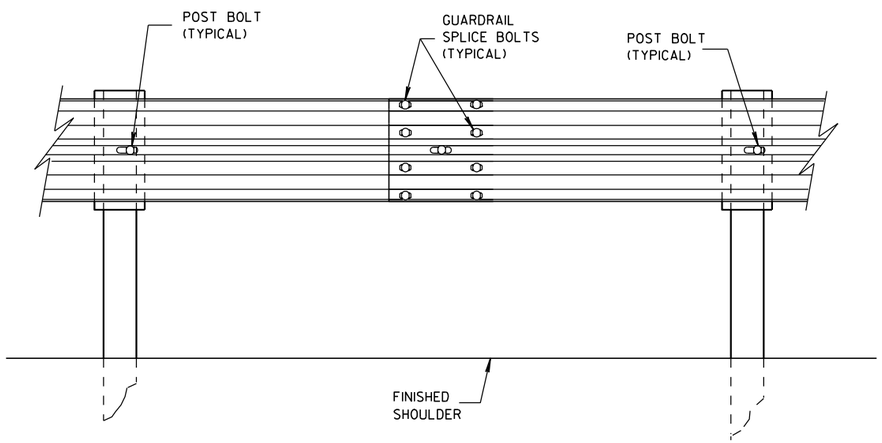


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14



SPLICE DETAIL

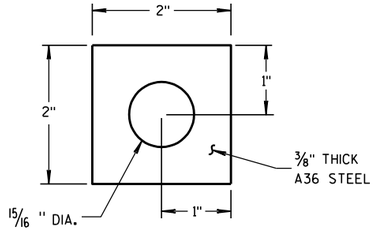
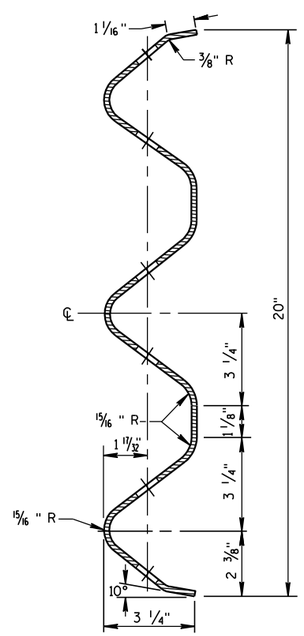


PLATE WASHER DETAIL



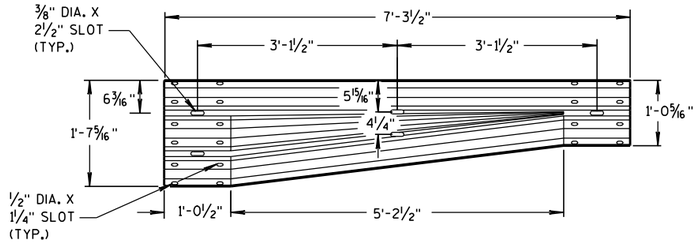
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

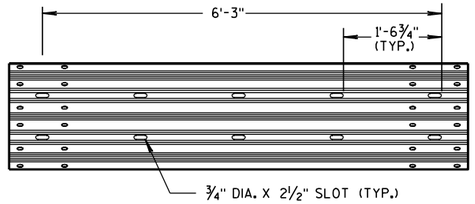
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

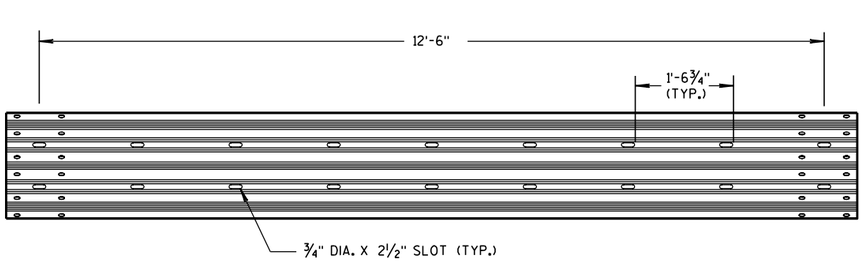
S.D.D. 14 B 45-2b



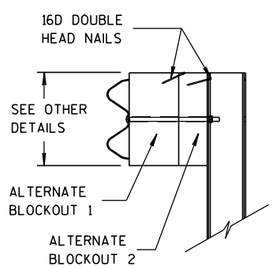
W-BEAM TO THRIE BEAM TRANSITION SECTION



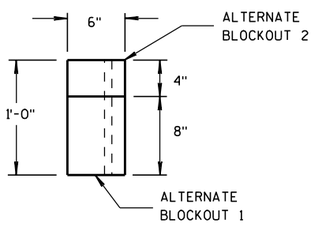
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

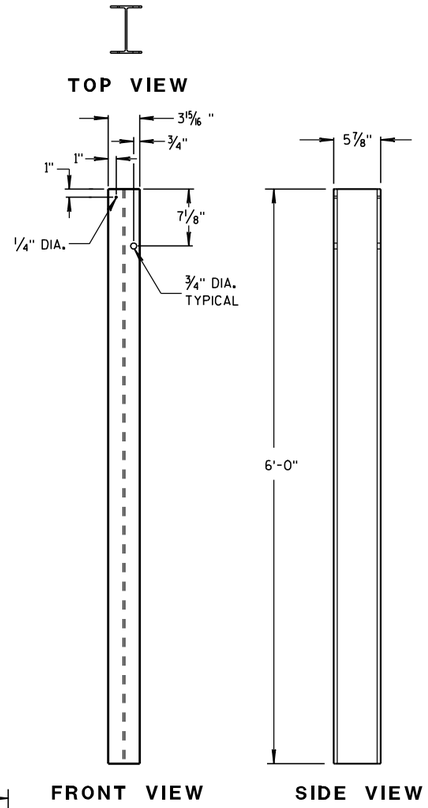


SIDE VIEW

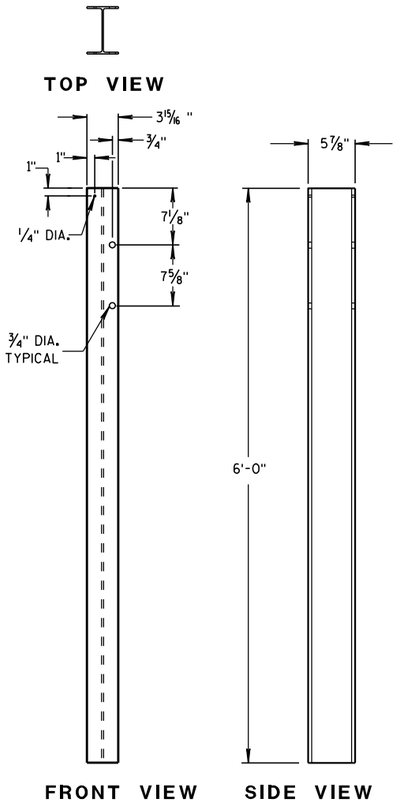


TOP VIEW

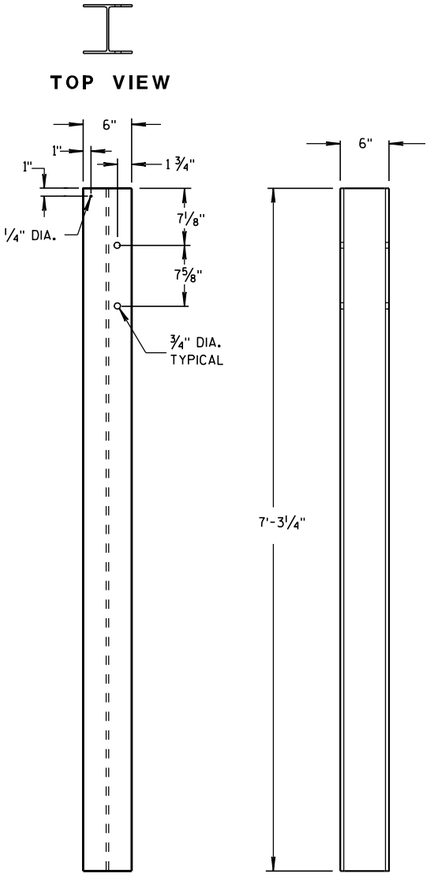
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

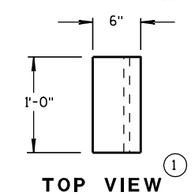


STEEL POSTS 6-11

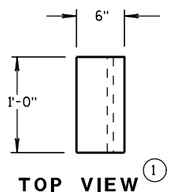


STEEL POSTS 12-14

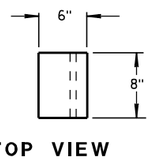
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



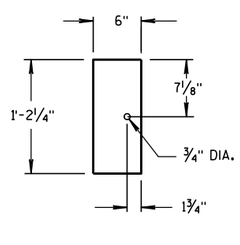
TOP VIEW (1)



TOP VIEW (1)

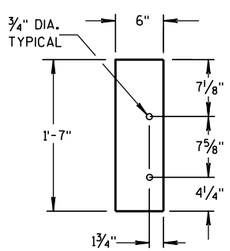


TOP VIEW



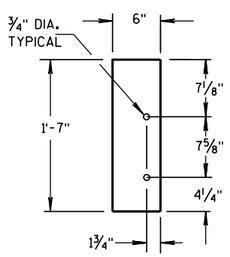
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

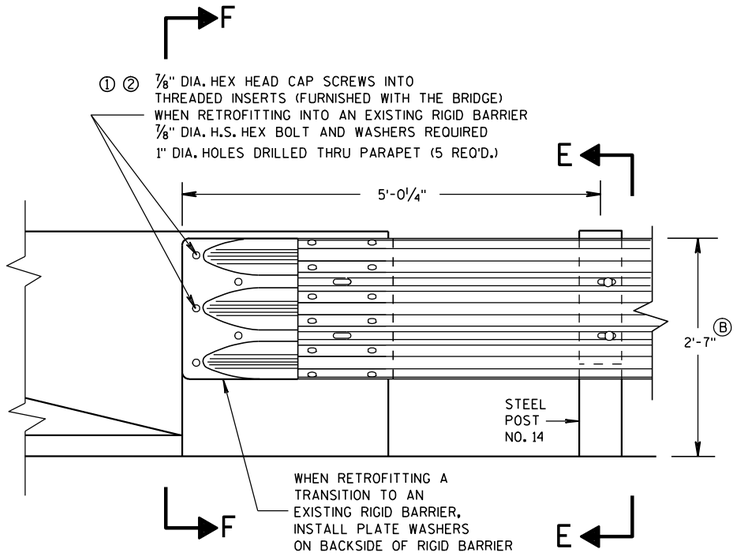
POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

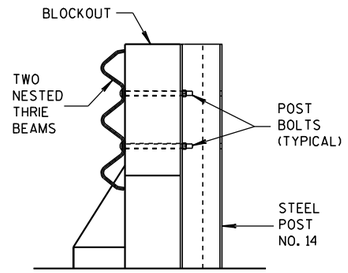
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 45-2c



FRONT VIEW



SECTION E-E

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

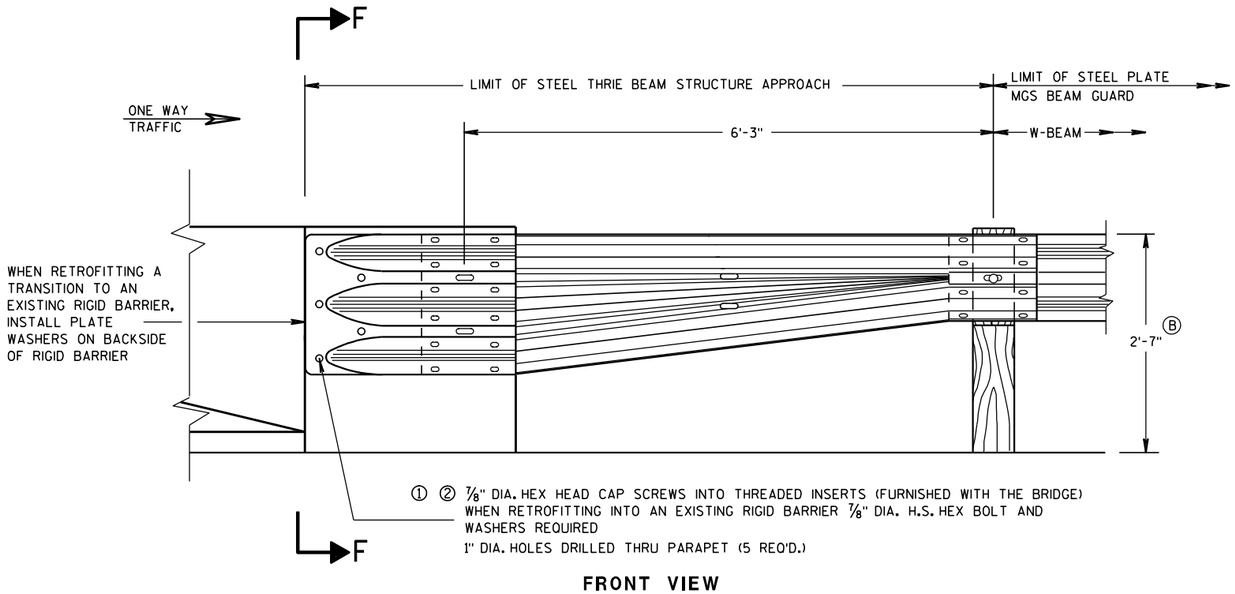
① INCLUDE THE PAYMENT FOR DRILLING BOLT HOLES THROUGH THE PARAPET, AND ALL BOLTS, NUTS AND WASHERS IN THE ITEM "STEEL THRIE BEAMSTRUCTURAL APPROACH".

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

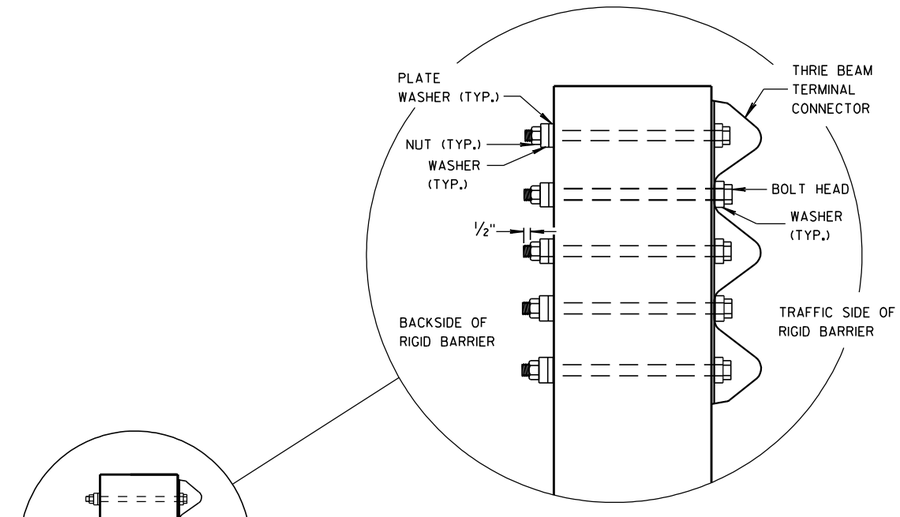
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW



SECTION F-F

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2/8/2012 DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

6

S.D.D. 14 B 45-2d

6

S.D.D. 14 B 45-2d

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

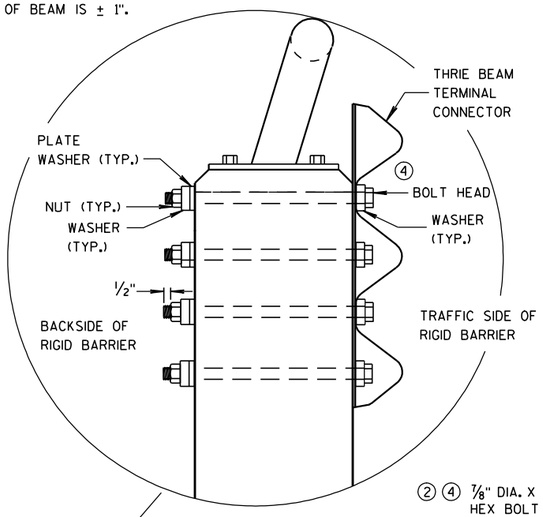
① INCLUDE THE PAYMENT FOR DRILLING BOLT HOLES THROUGH THE PARAPET, AND ALL BOLTS, NUTS AND WASHERS IN THE ITEM "STEEL THRIE BEAMSTRUCTURAL APPROACH".

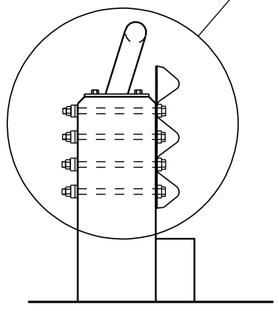
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

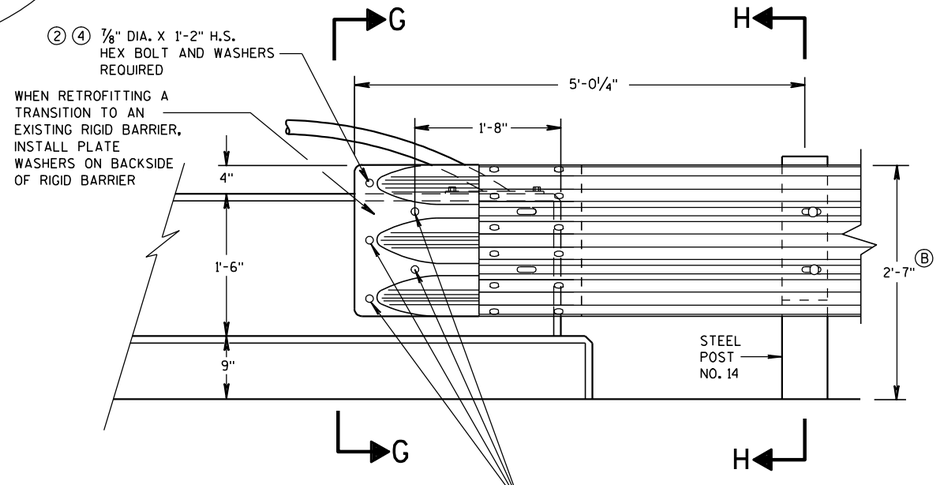
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

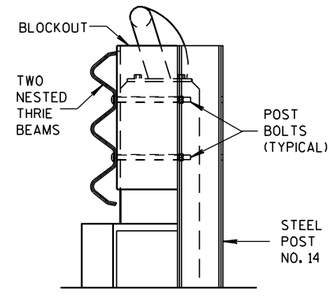




SECTION G-G

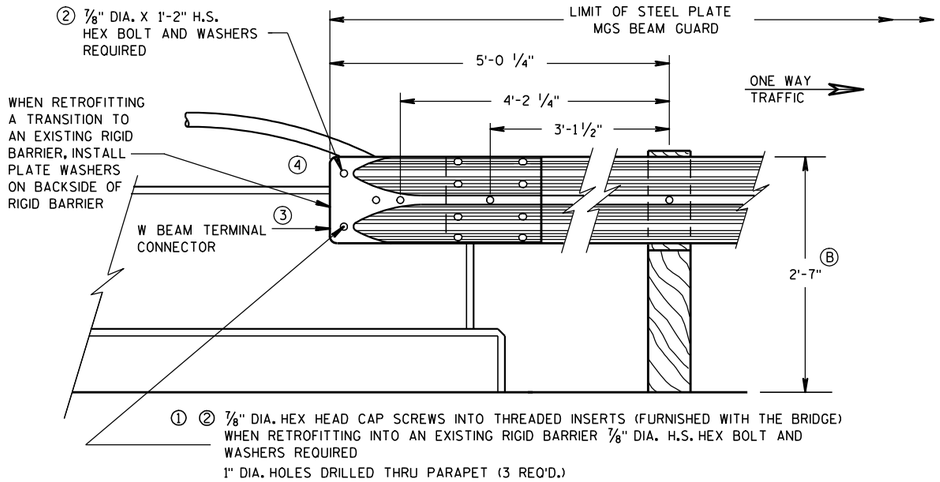


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

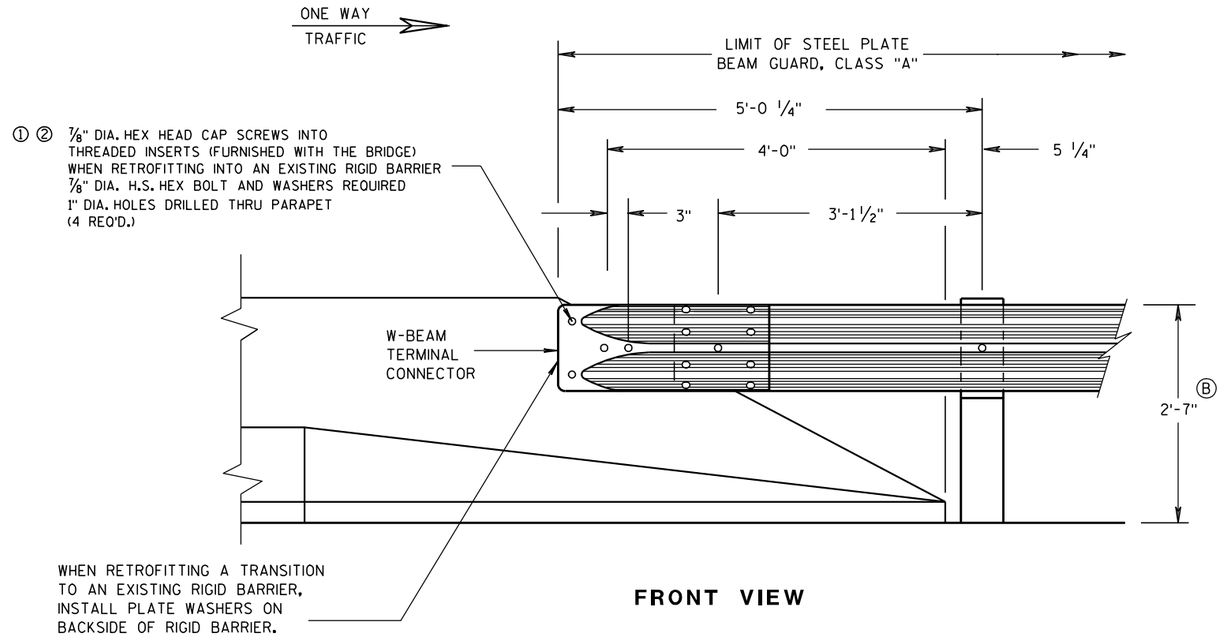
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012 DATE

/S/ Jerry H. [illegible] ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

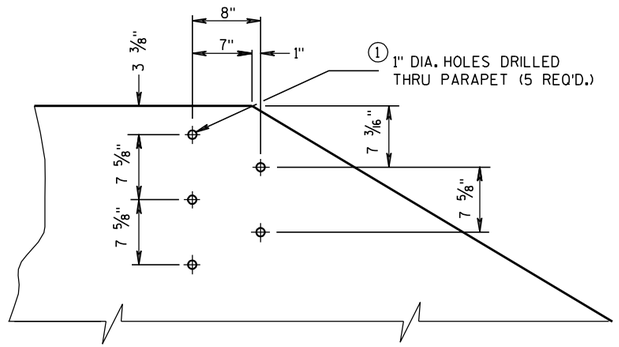
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

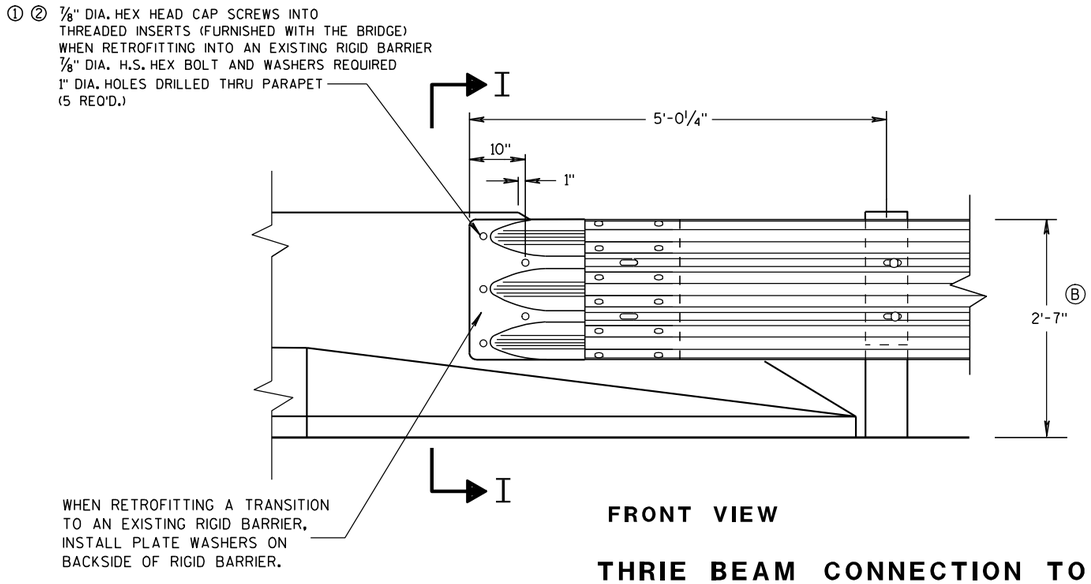
① INCLUDE THE PAYMENT FOR DRILLING BOLT HOLES THROUGH THE PARAPET, AND ALL BOLTS, NUTS AND WASHERS IN THE ITEM "STEEL THRIE BEAM STRUCTURAL APPROACH".

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

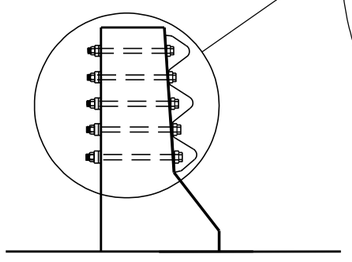
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



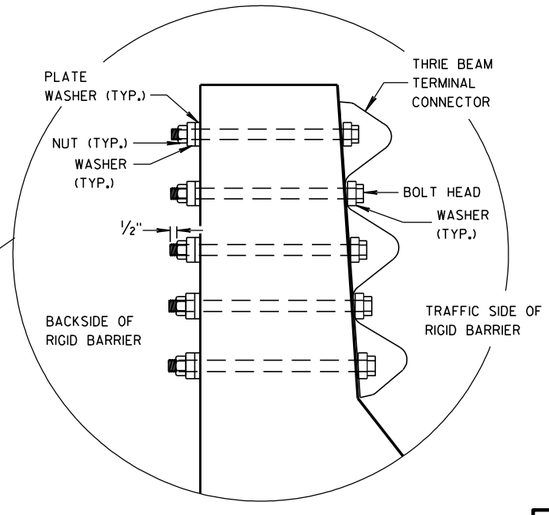
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

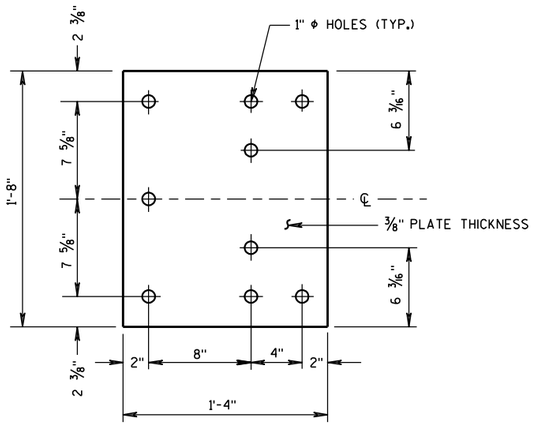
FHWA

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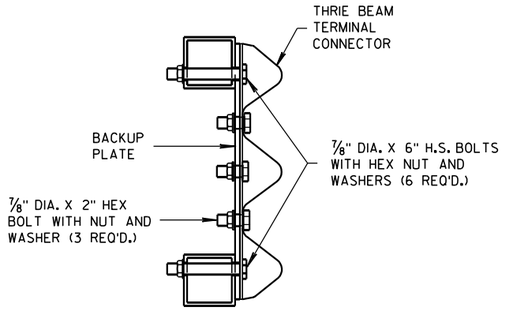
S.D.D. 14 B 45-2f

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S.D.D. 14 B 45-2f



BACK-UP PLATE DETAIL

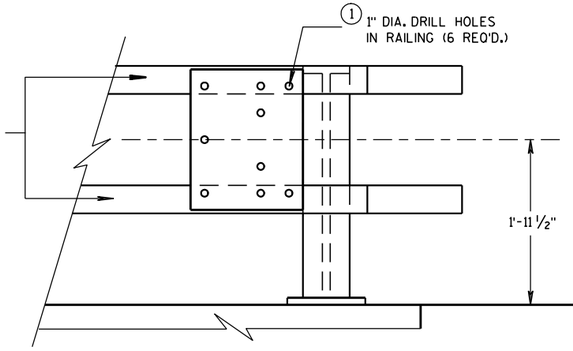


SECTION J-J

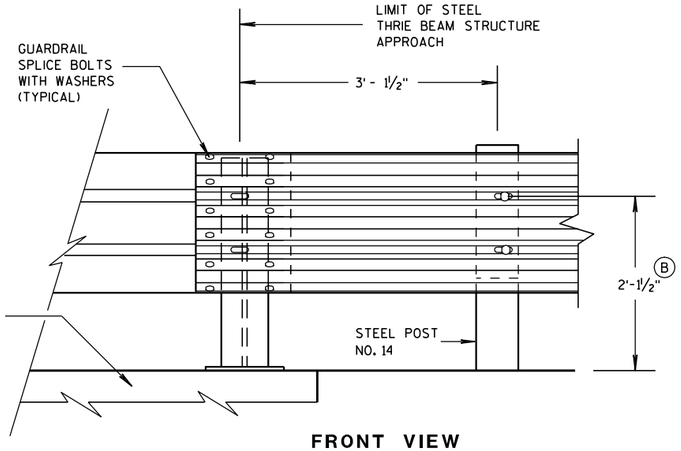
GENERAL NOTES

(1) INCLUDE THE PAYMENT FOR DRILLING HOLES IN RAILING IN THE ITEM "STEEL THRIE BEAM STRUCTURE APPROACH".

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

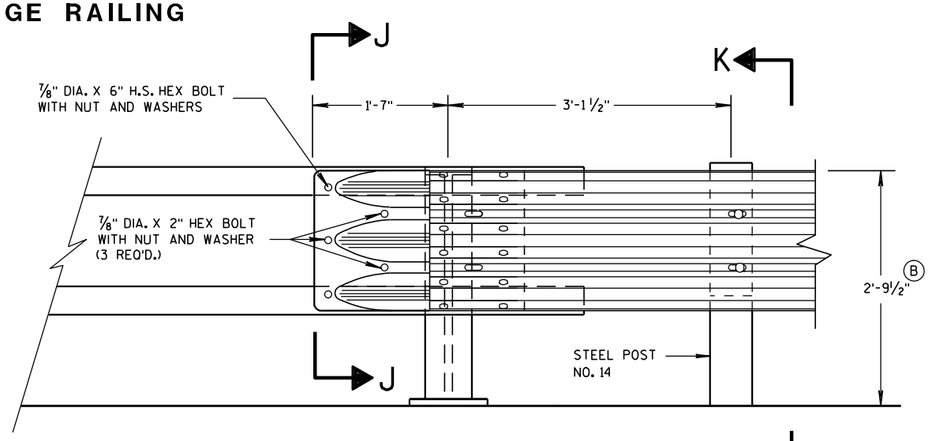


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

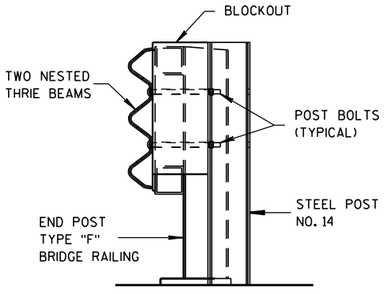


FRONT VIEW

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

2-8-2012
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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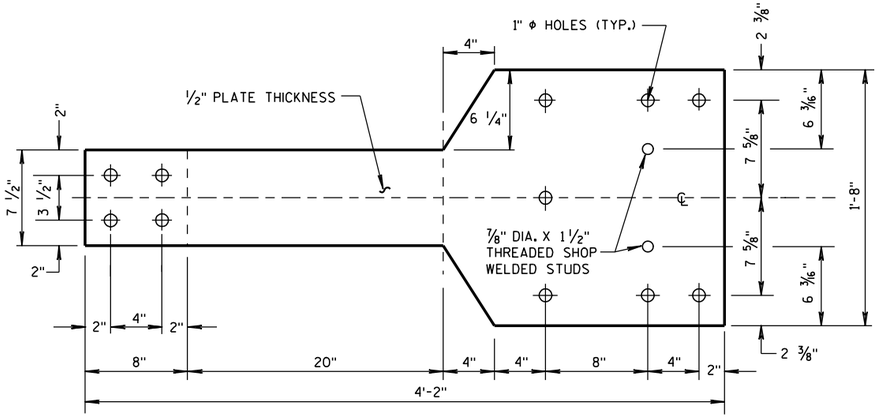
S.D.D. 14 B 45-2g

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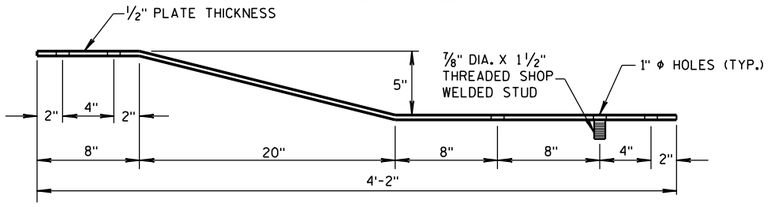
S.D.D. 14 B 45-2g

GENERAL NOTES

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

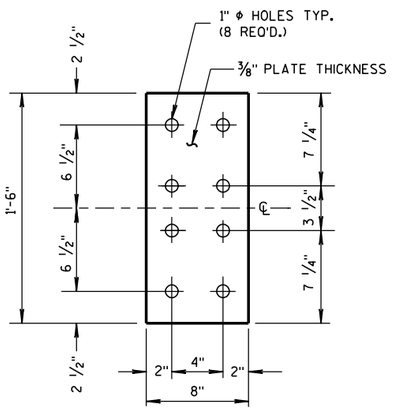


FRONT VIEW



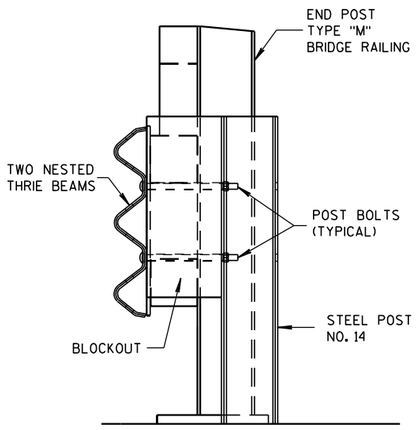
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

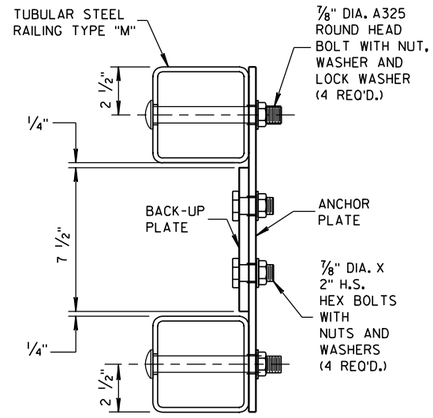


FRONT VIEW

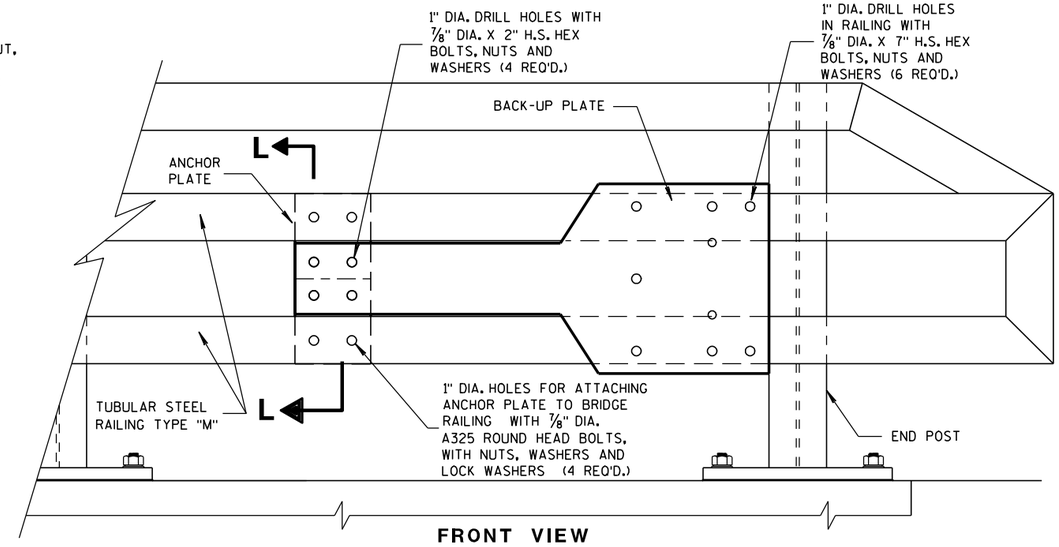
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

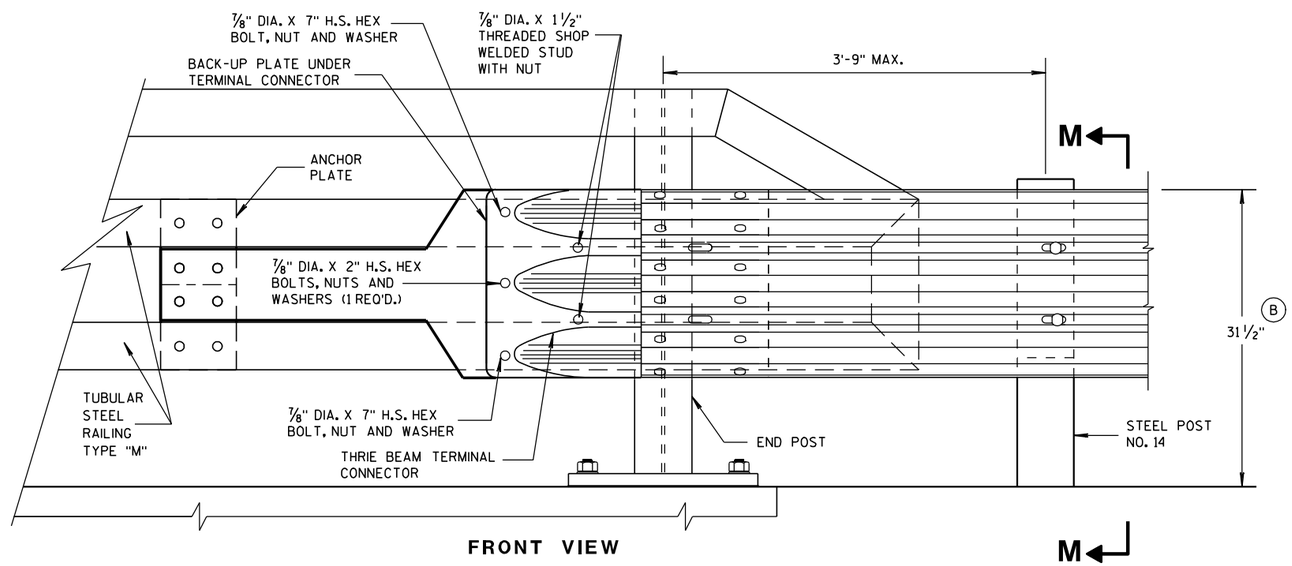


SECTION L-L

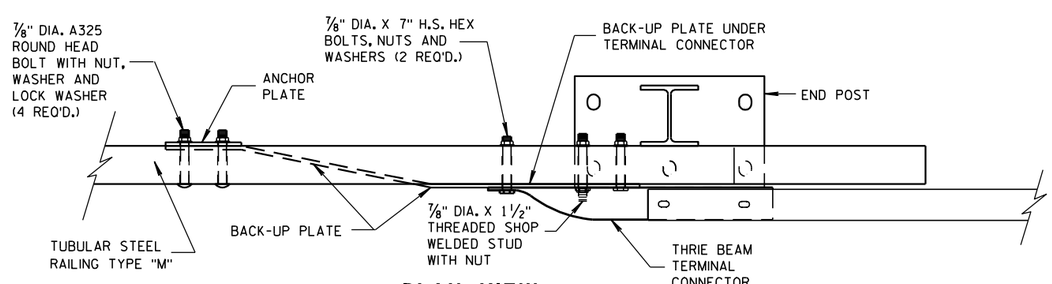


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012 DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

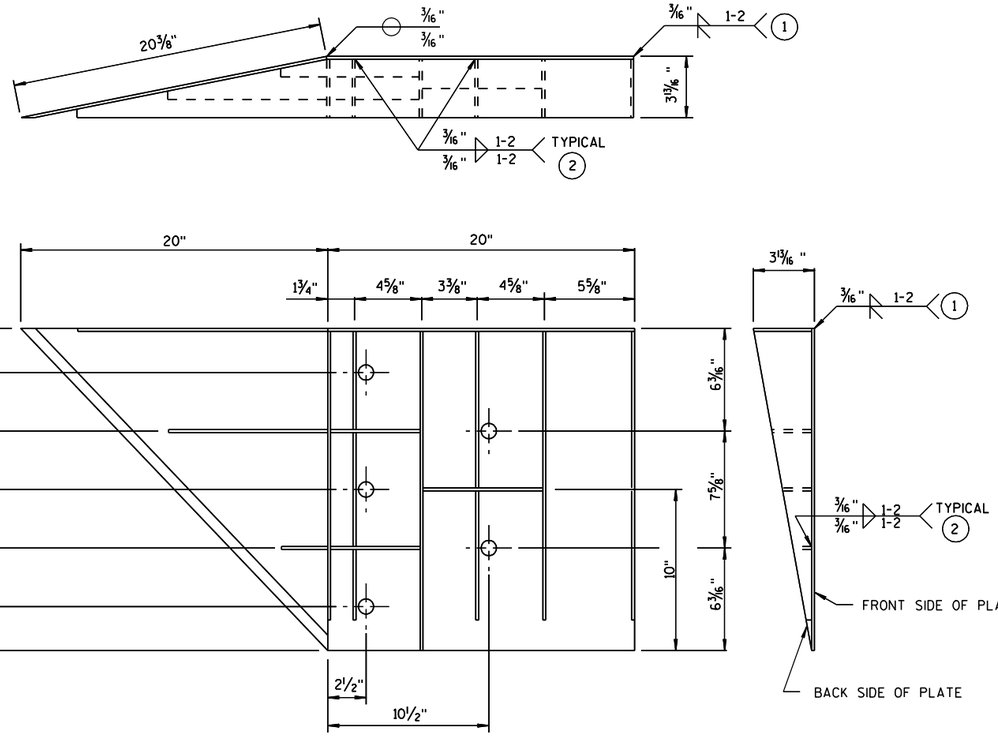
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FHWA

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S.D.D. 14 B 45-2h



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3⁄16" THICK.

ALL STIFFENERS ARE 1⁄4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3⁄16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3⁄16" FILLET WELD BY 1" LONG SPACED AT 2".

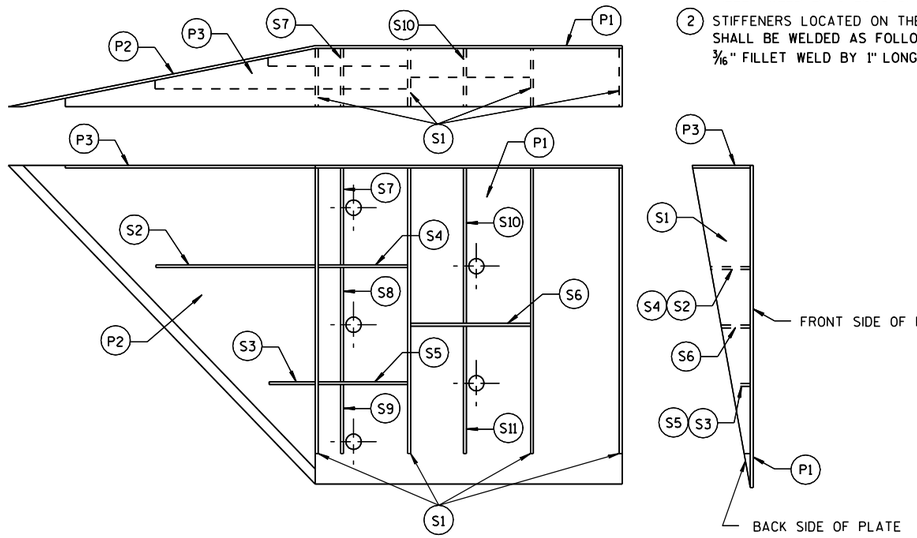


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1	B A	20" x 20"	3⁄16"
P2	1	B A C	20" x 20" x 28⁹⁄₁₆"	3⁄16"
P3	1	B A C D	39" x 3⅝" x 20" x 19⁵⁄₁₆"	3⁄16"
S1	4	B A C	18⁷⁄₁₆" x 3⅜" x 18¾"	1⁄4"
S2	1	B A C D	10¼" x 2⁷⁄₁₆" x 10⅜" x ½"	1⁄4"
S3	1	B A C D	3" x 1¹⁄₁₆" x 3⅛" x ½"	1⁄4"
S4	1	B A	6⅛" x 2⁷⁄₁₆"	1⁄4"
S5	1	B A	6⅛" x 1¹⁄₁₆"	1⁄4"
S6	1	B A	7¾" x 1¾"	1⁄4"
S7	1	A D B C	2⁹⁄₁₆" x 6" x 3⅝" x 5⅞"	1⁄4"
S8	1	A D B C	1⁵⁄₃₂" x 7½" x 2½" x 7⅜"	1⁄4"
S9	1	C A B	6¹⁄₁₆" x 6³⁄₁₆" x 1³⁄₃₂"	1⁄4"
S10	1	A D B C	1⅞" x 9⅞" x 3⅝" x 9¹¹⁄₁₆"	1⁄4"
S11	1	C A B	8½" x 8¾" x 1¹³⁄₁₆"	1⁄4"

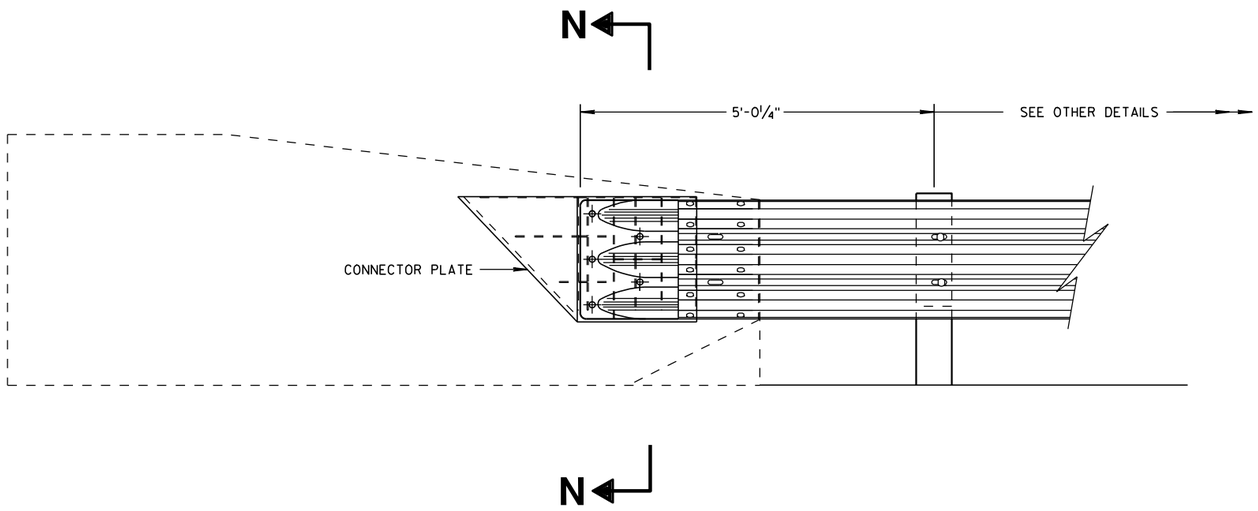
SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

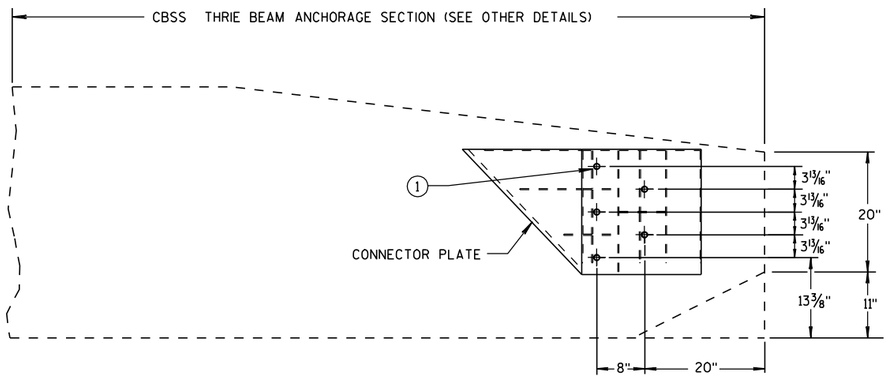
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2-8-2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 14 B 45-2i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

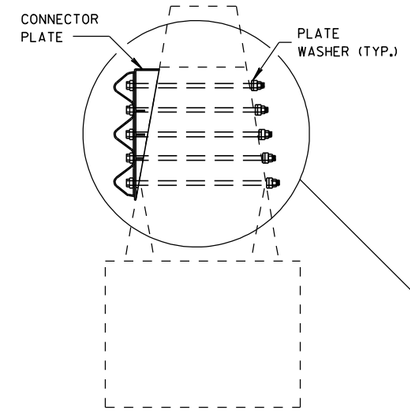


SINGLE SLOPE CONNECTION PLATE PLACEMENT

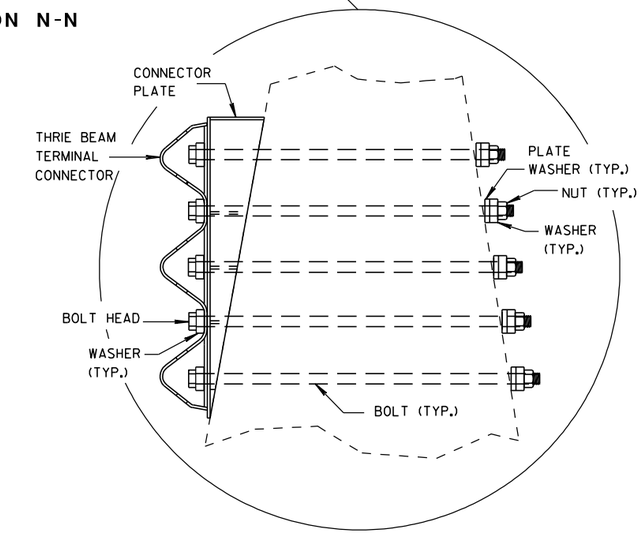
GENERAL NOTES

CONNECTION PLATE INCIDENTAL TO STEEL THRIE BEAM TRANSITION.

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

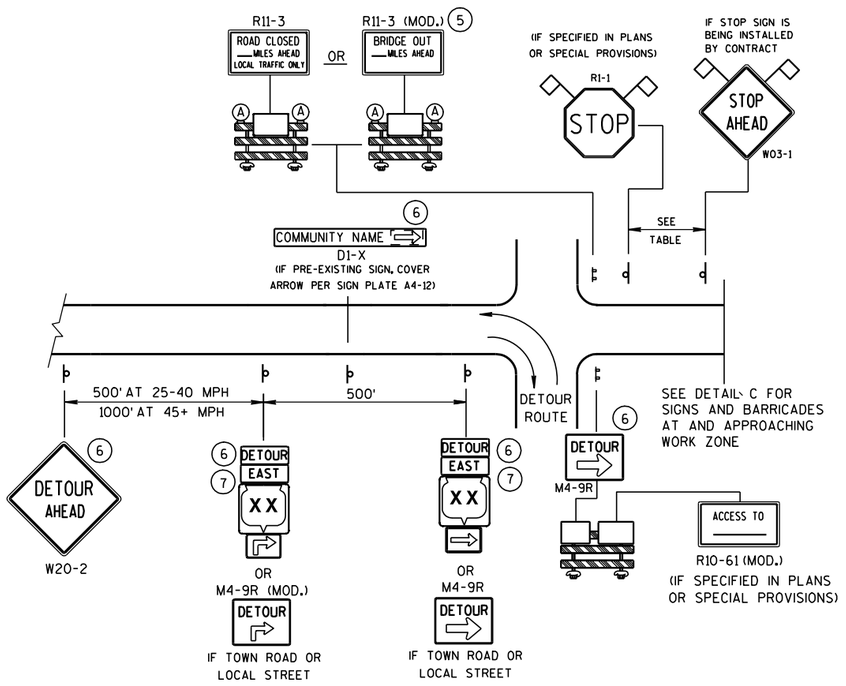
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S.D.D. 14 B 45-2j

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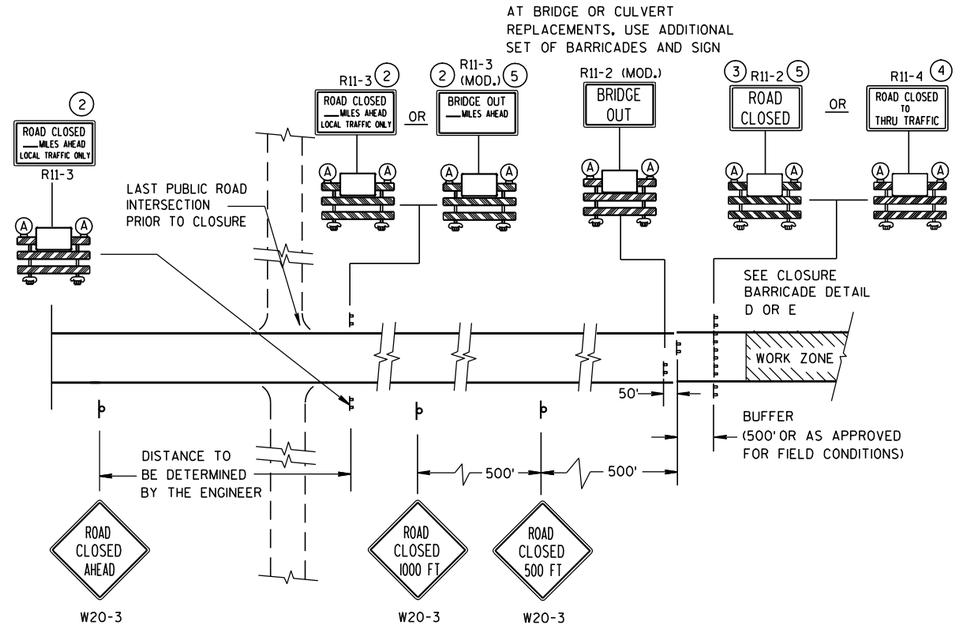
S.D.D. 14 B 45-2j



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

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

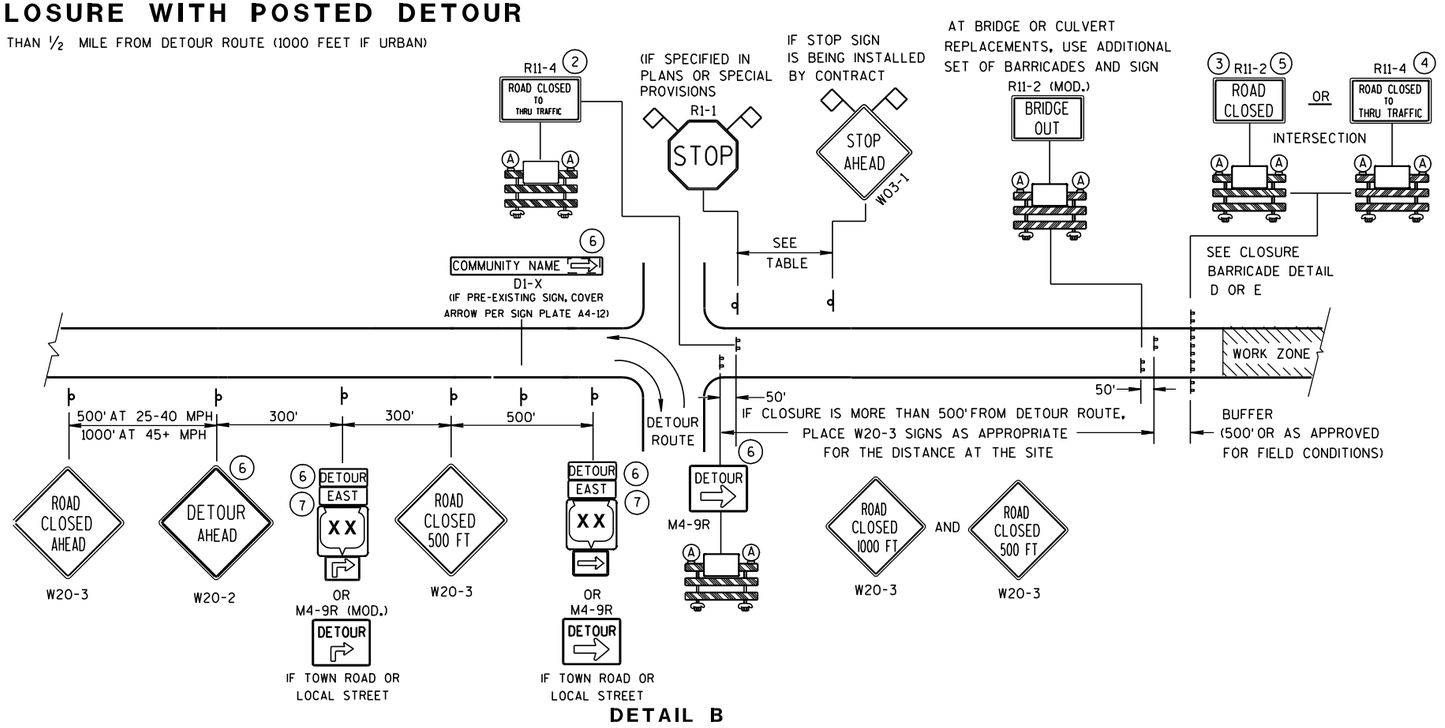


DETAIL C

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 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

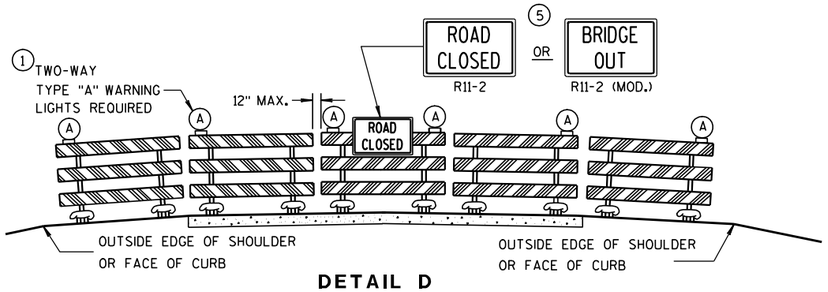
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

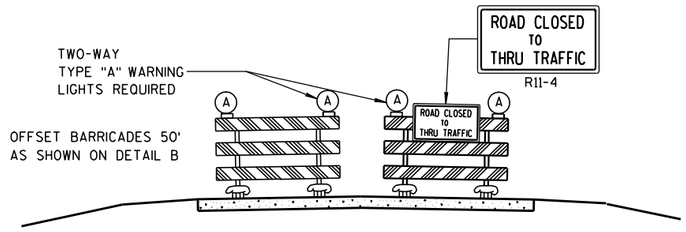
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a 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.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

"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 AND 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

APPROVED

9/16/03
DATE

/S/ Thomas N. N[illegible]
CHIEF SIGNS AND MARKINGS ENGINEER

FHWA

6

S.D.D. 15 C 2-4b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

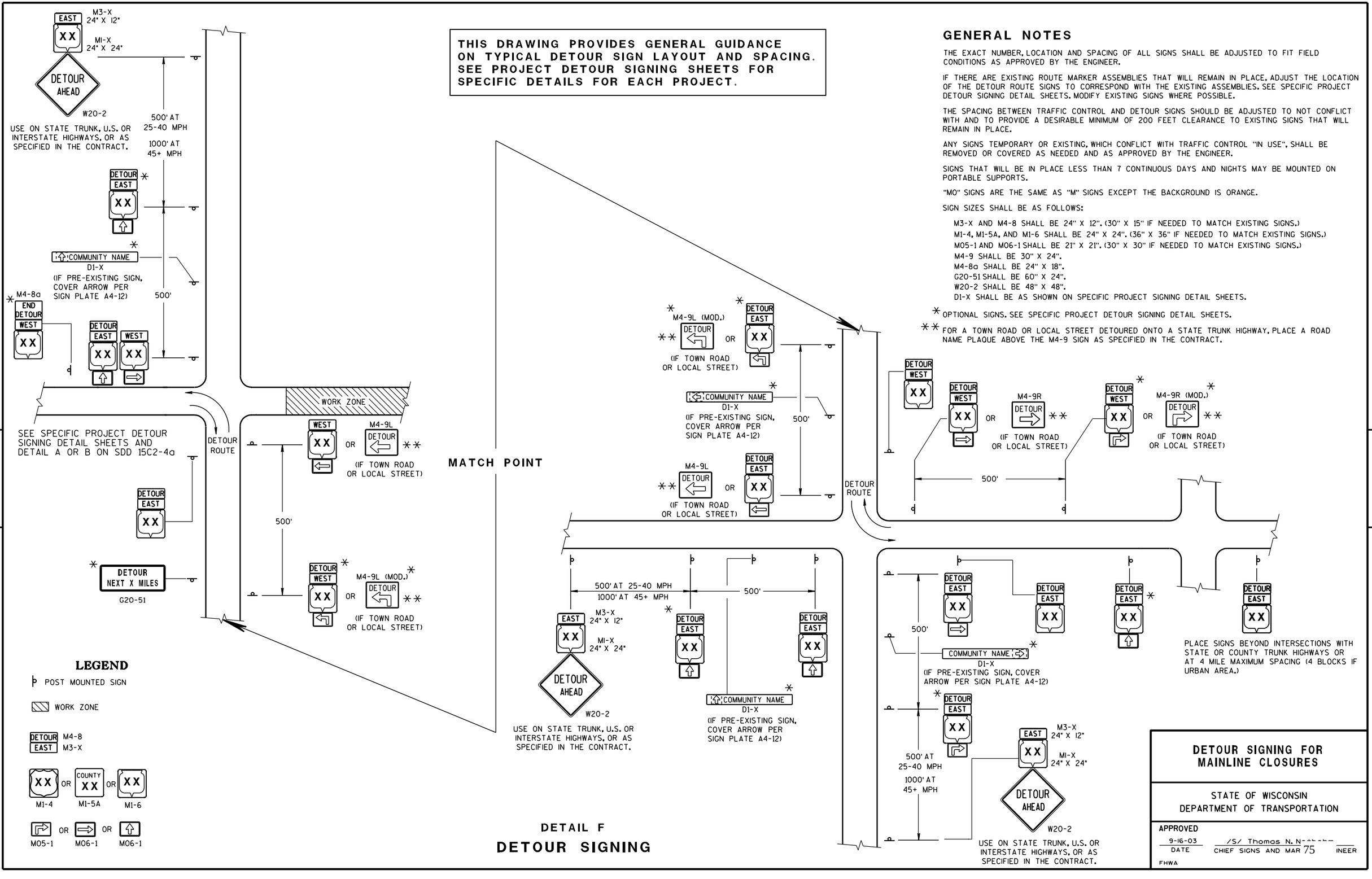
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

M3-X AND 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.)
M4-9 SHALL BE 30" X 24".
M4-8a SHALL BE 24" X 18".
G20-51 SHALL BE 60" X 24".
W20-2 SHALL BE 48" X 48".
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



DETAIL F

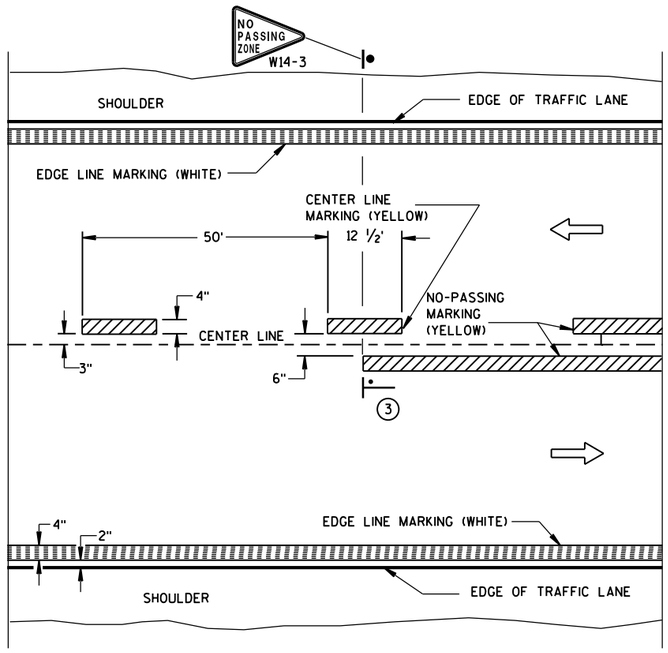
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

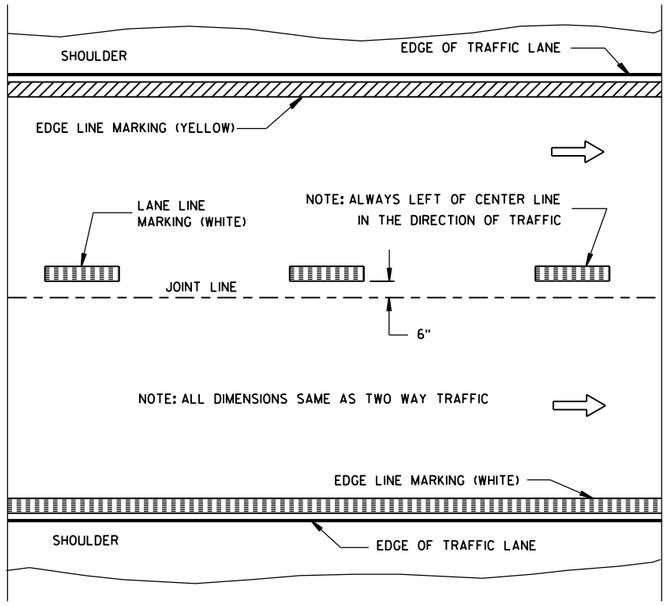
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-16-03 DATE
/S/ Thomas N. [illegible] CHIEF SIGNS AND MAR 75 INEER
FHWA

6
S.D.D. 15 C 2-4c

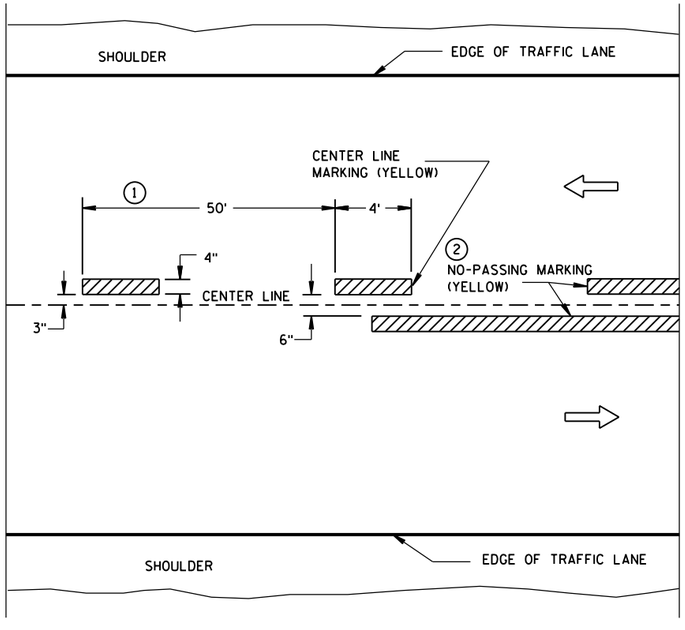


TWO WAY TRAFFIC

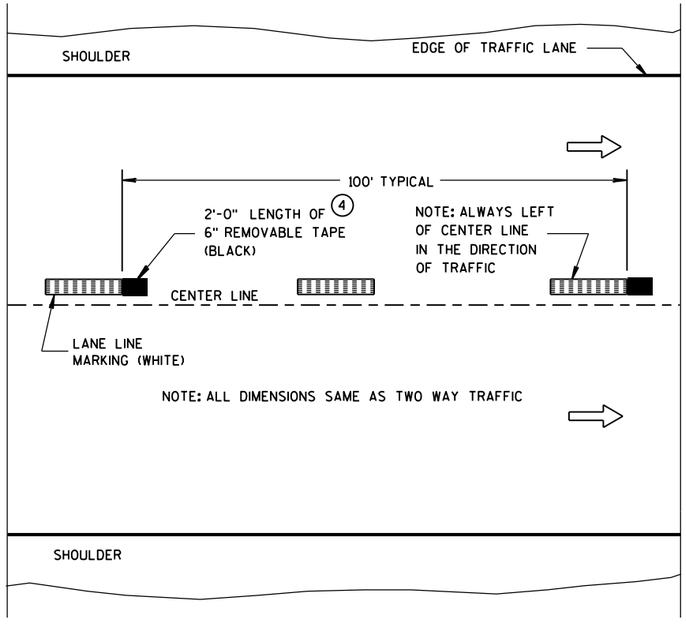


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

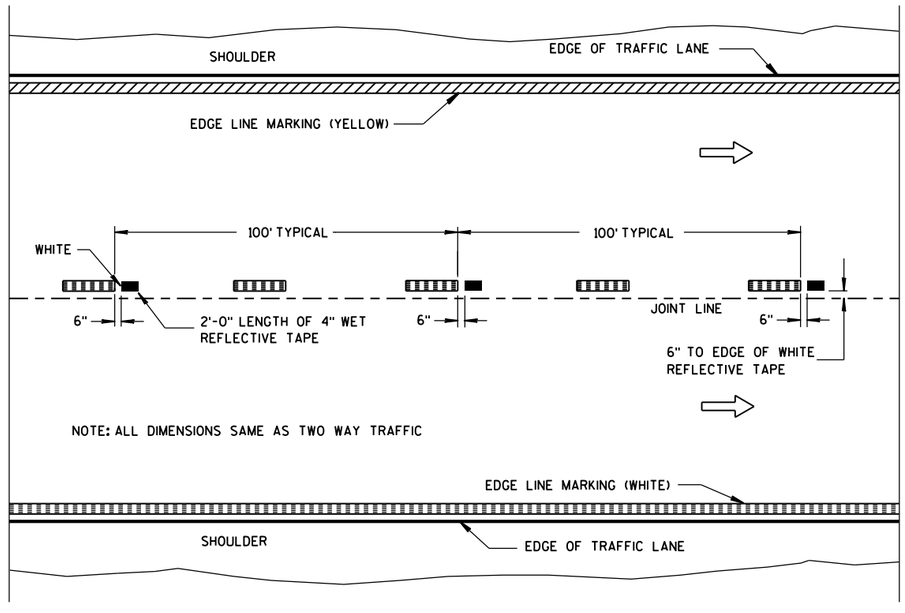
GENERAL NOTES

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

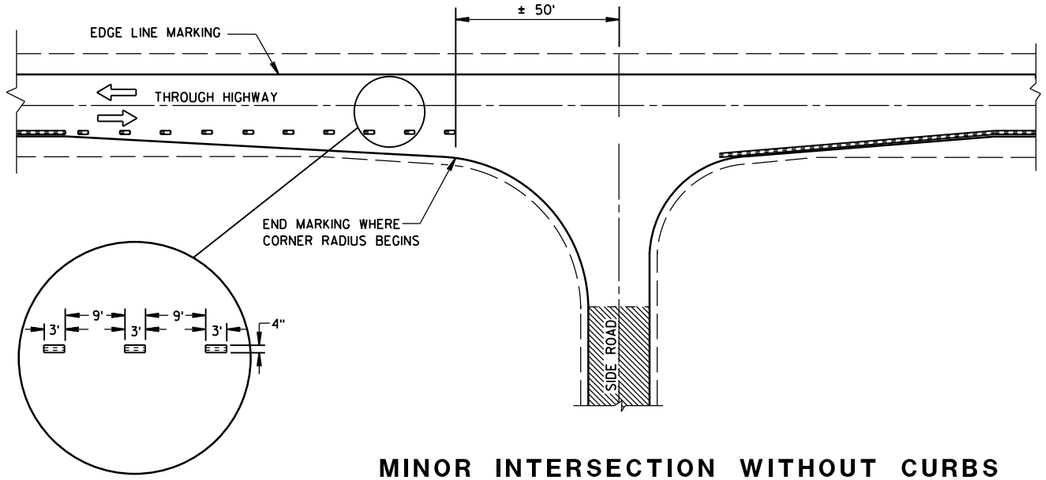
APPROVED
10-1-2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

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

6

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



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

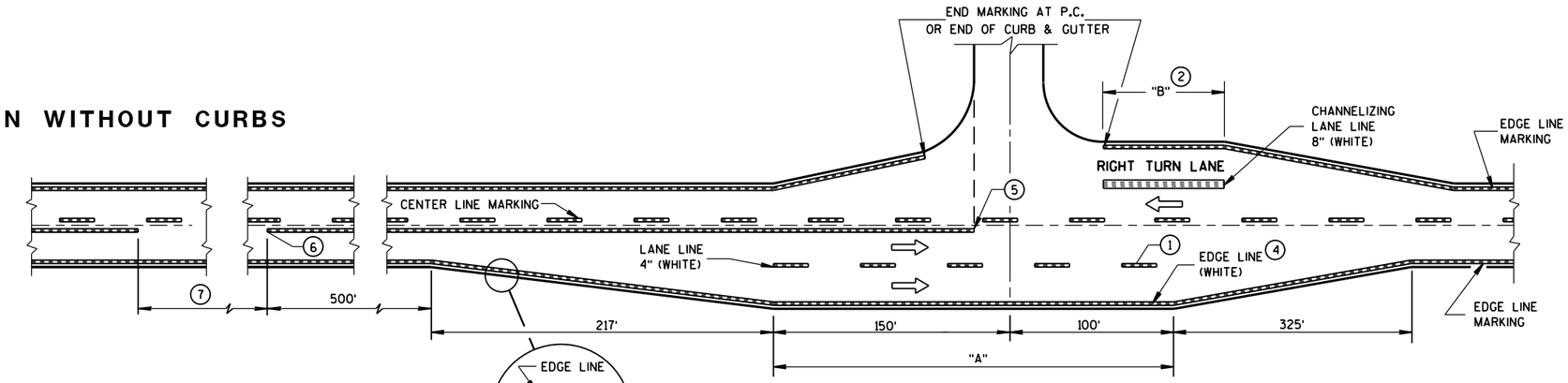
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

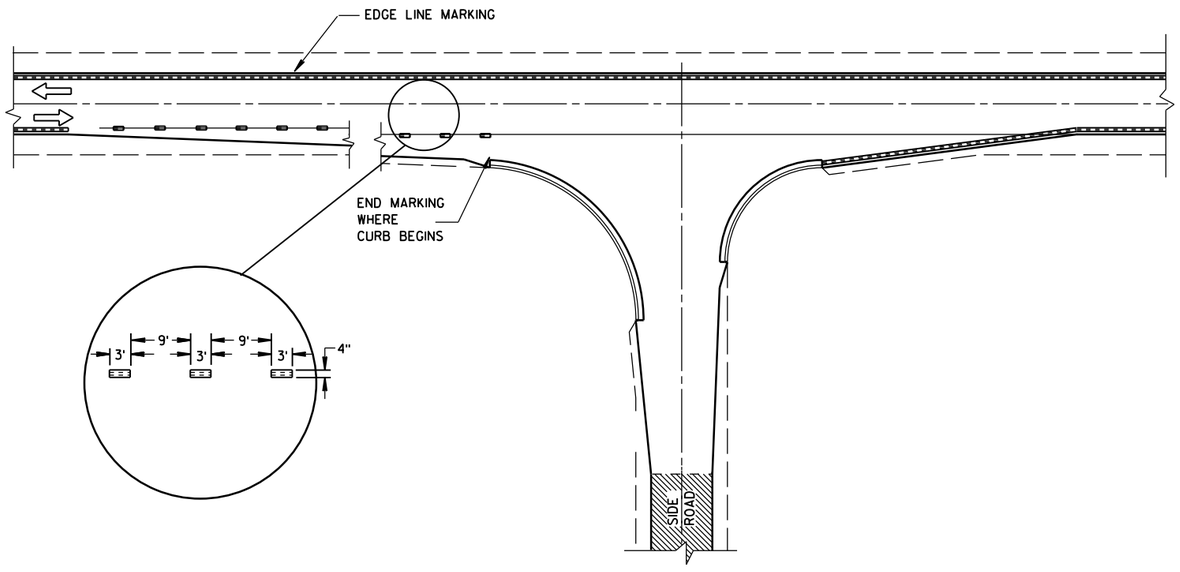
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



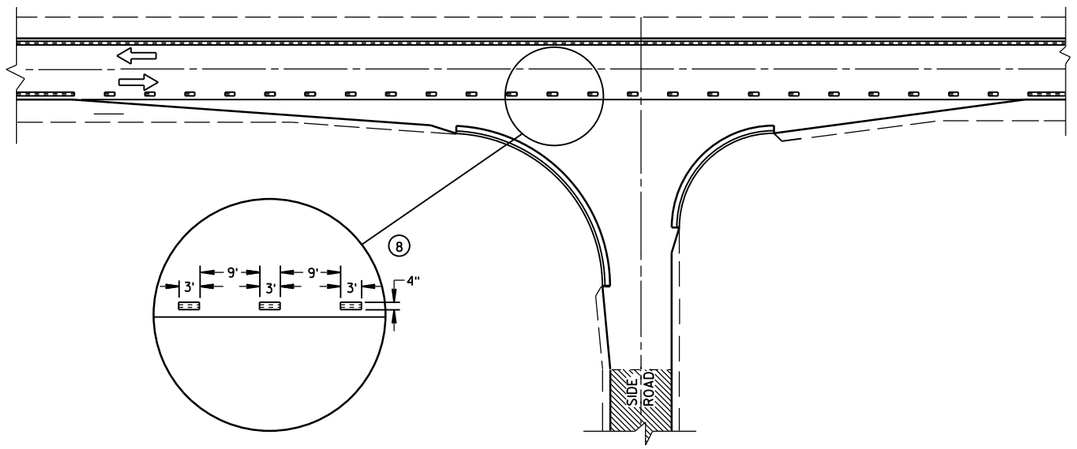
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

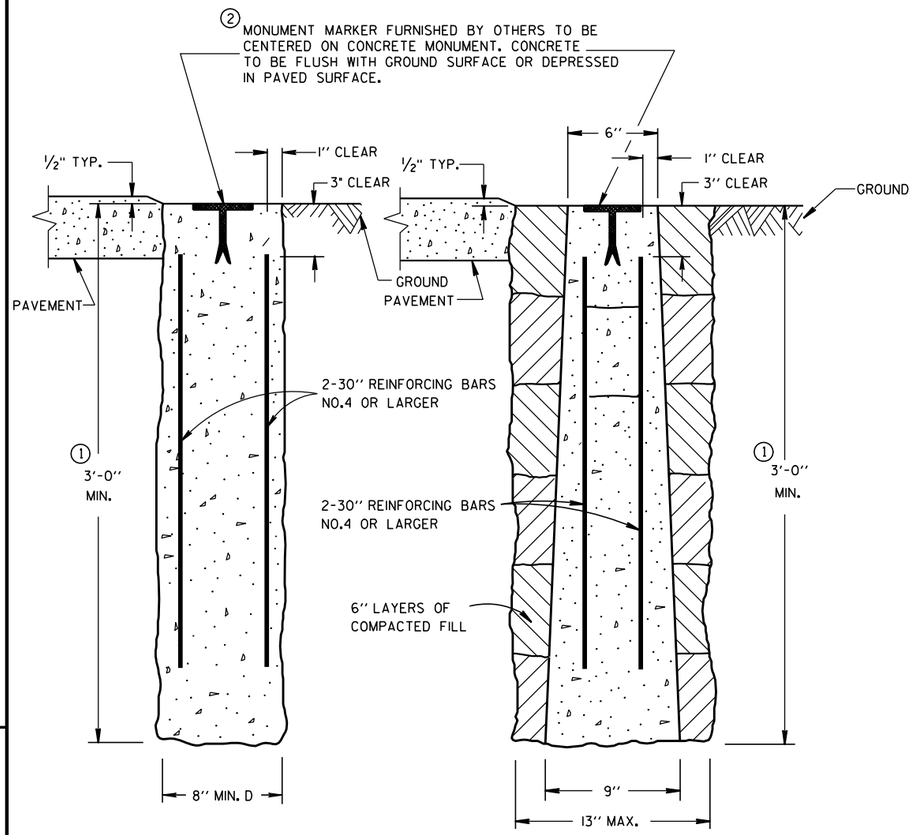
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 C 8-15b

6

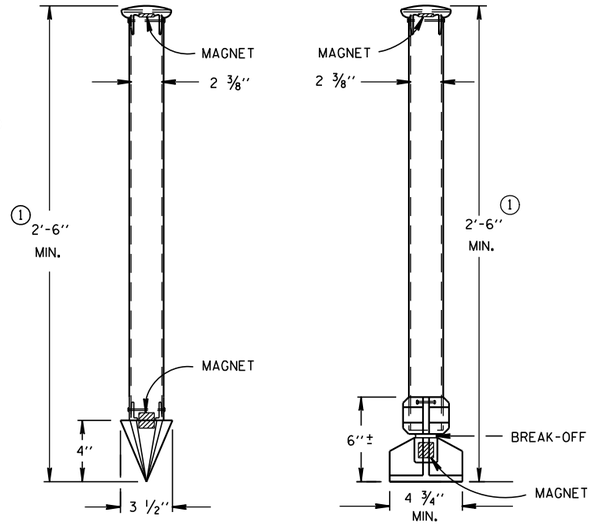
S.D.D. 15 C 8-15b



CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C DRIVE-IN MONUMENT

TYPE D BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

GENERAL NOTES

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

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

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

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

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

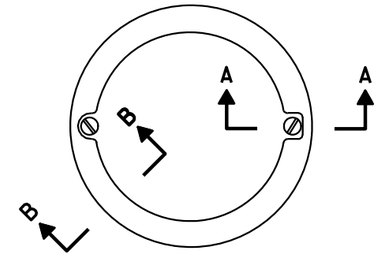
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

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

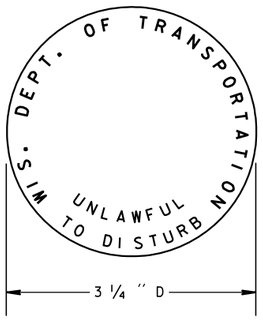
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

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

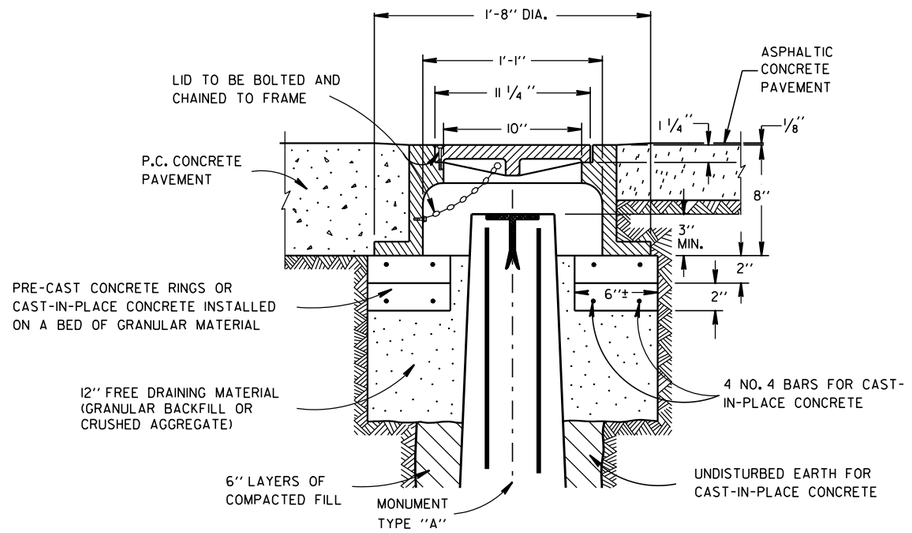
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

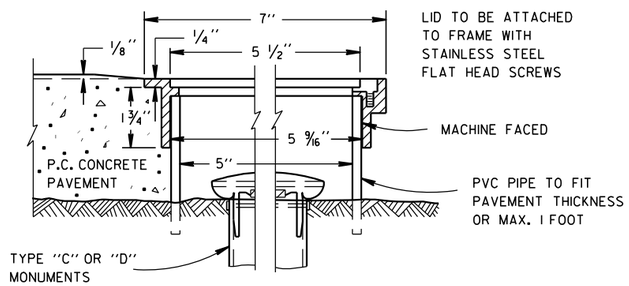


② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MOUNMENTS AND COVERS

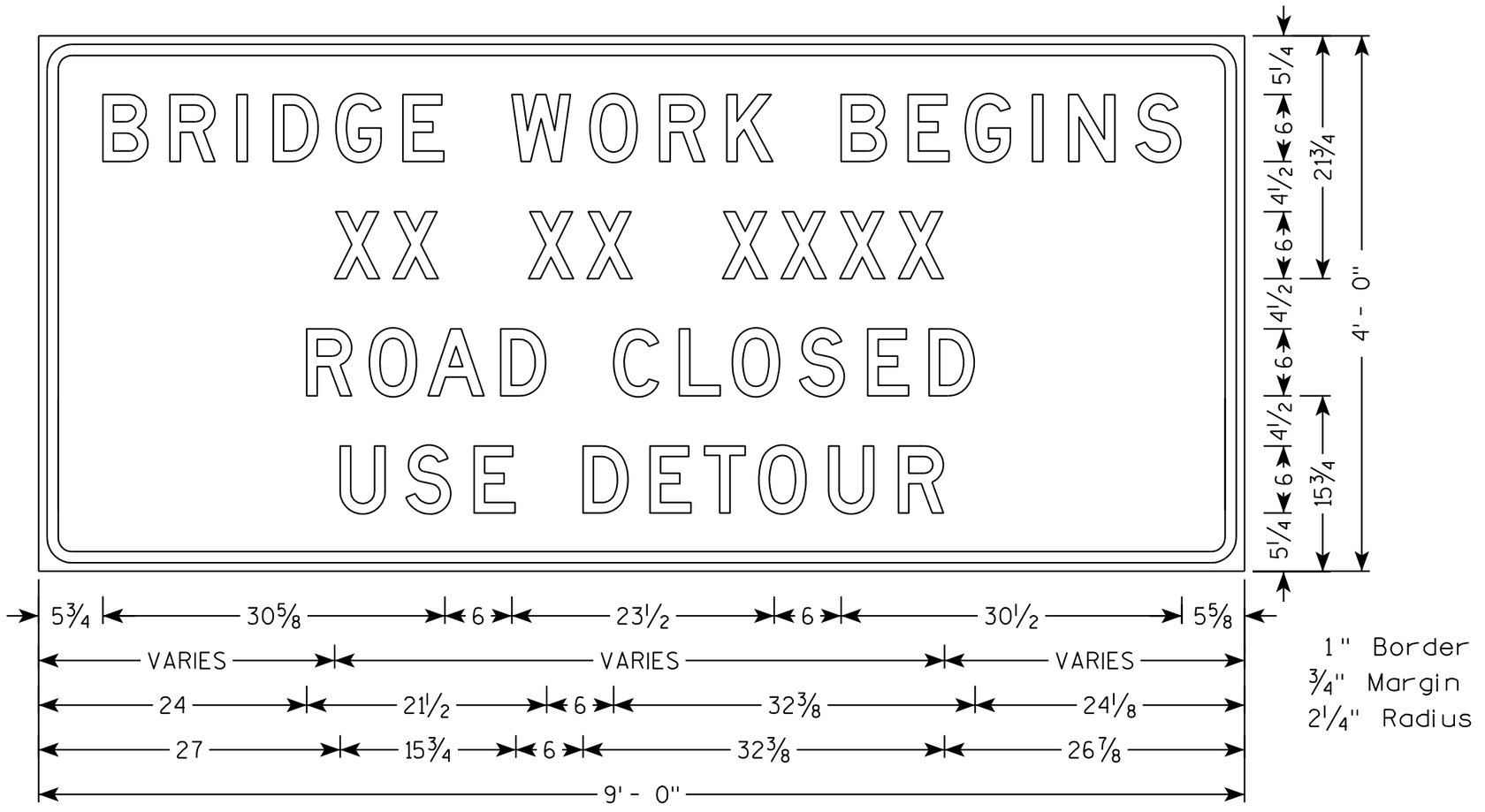
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/22/1999 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6 S.D.D. 16 A 1-6

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - ORANGE
   Message - BLACK
3. Message Series - D



7

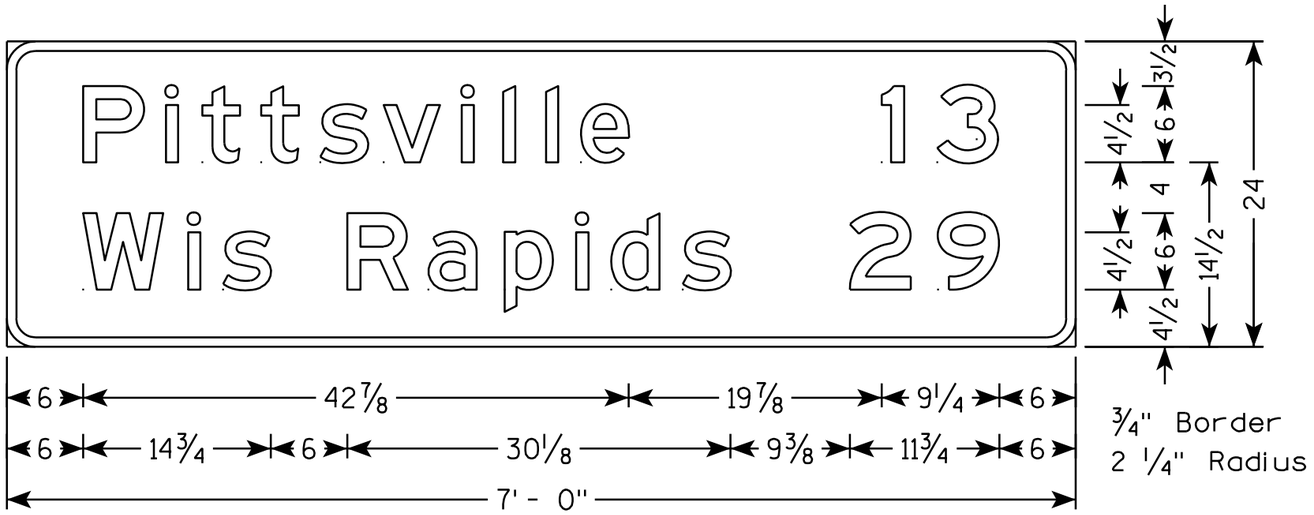
7

PROJECT NO: 1620-02-73/74	HWY: STH 80	COUNTY: WOOD	PERMANENT SIGNING	SHEET NO: 79	E

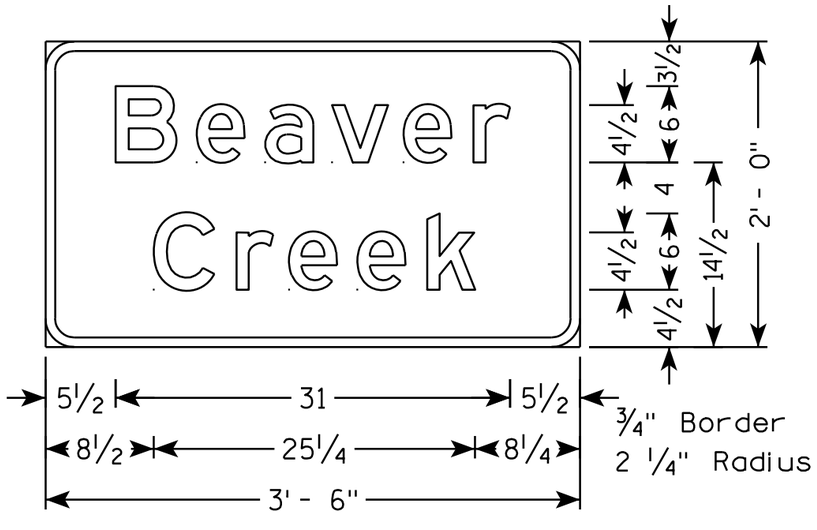
FILE NAME : C:\Documents and Settings\dotejg\Local Settings\Temporary Internet Files\Content.Outlook\QZ3BF9JX\4715A912 (2).DGN PLOT DATE : 30-OCT-2012 09:59 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 11.9925:1
WISDOT/CADDS SHEET 42

NOTES

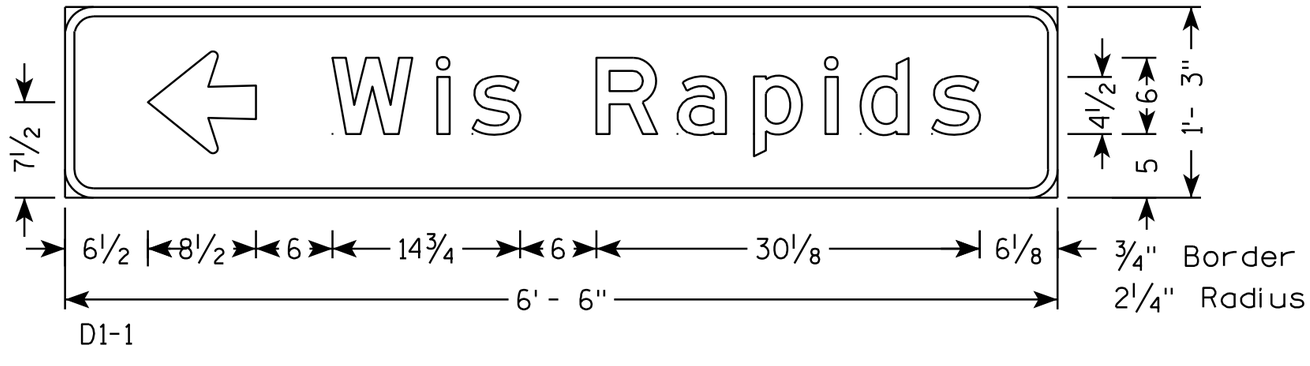
1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E



D2-2



I3-1

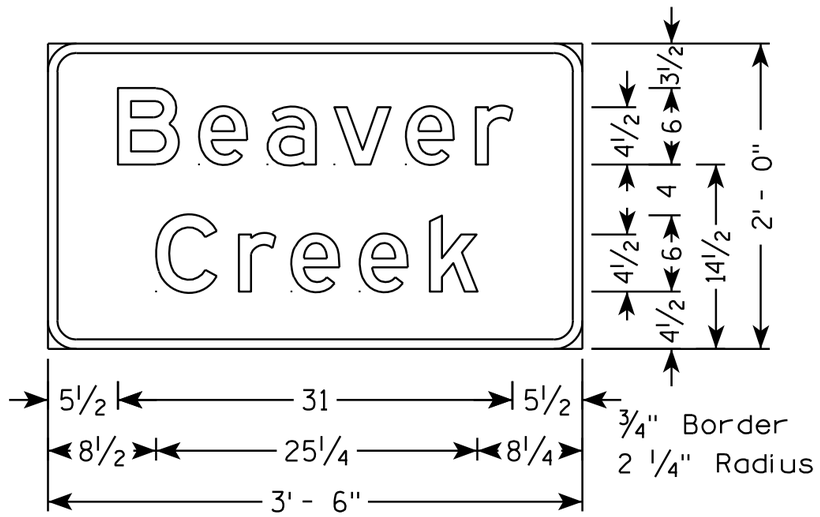


D1-1

PROJECT NO: 1620-02-73	HWY: STH 80	COUNTY: WOOD	PERMANENT SIGNING	SHEET NO: 80	E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E

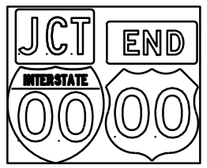


I3-1

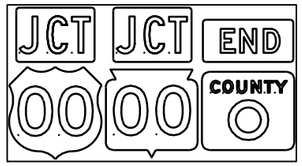
TYPICAL ASSEMBLIES



J1-1



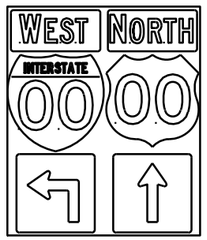
J1-2



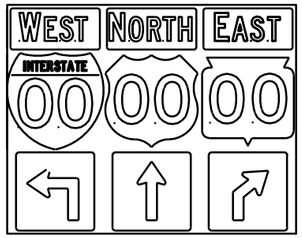
J1-3



J2-1



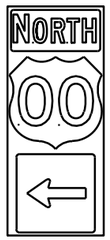
J2-2



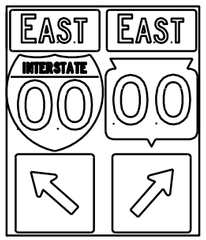
J2-3



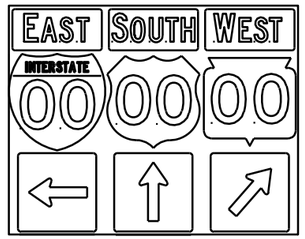
JV



J3-1



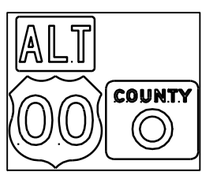
J3-2



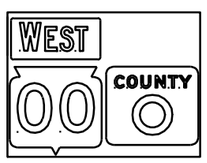
J3-3



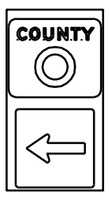
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



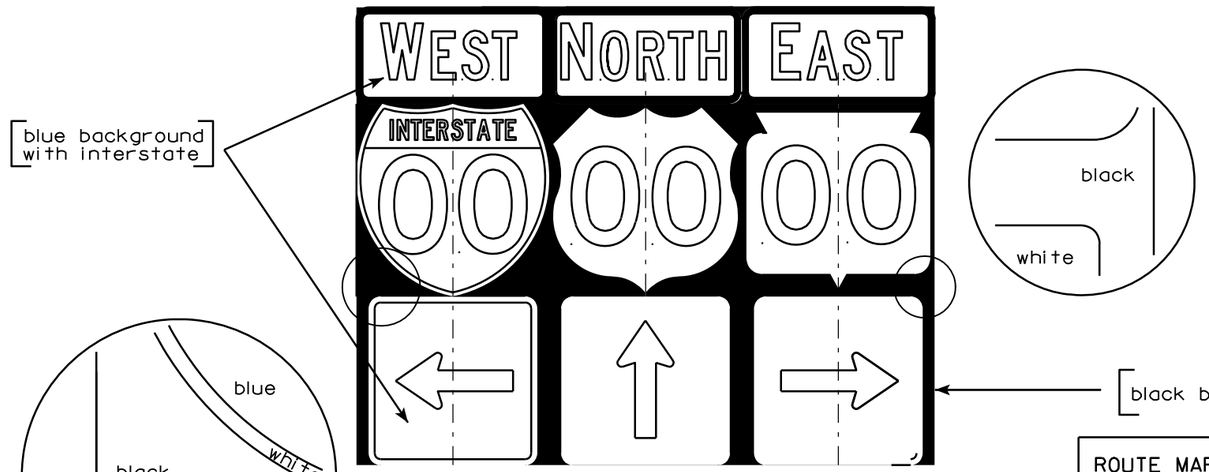
J23-1



J22-1

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square since base material is plywood.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.



ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

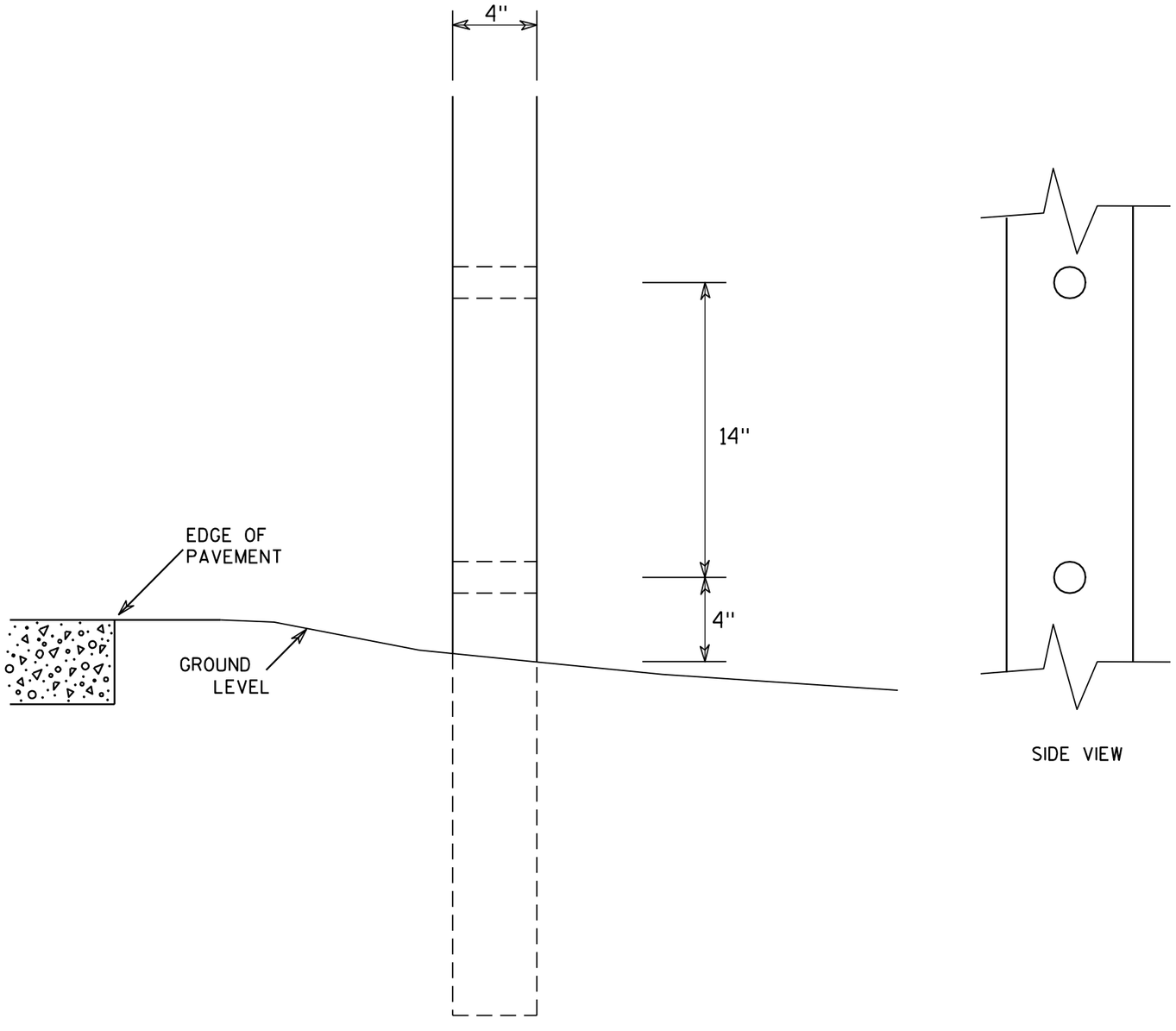
DATE 10/21/09 PLATE NO. A2-1S.6

7

7

PROJECT NO:

SHEET NO: 82 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

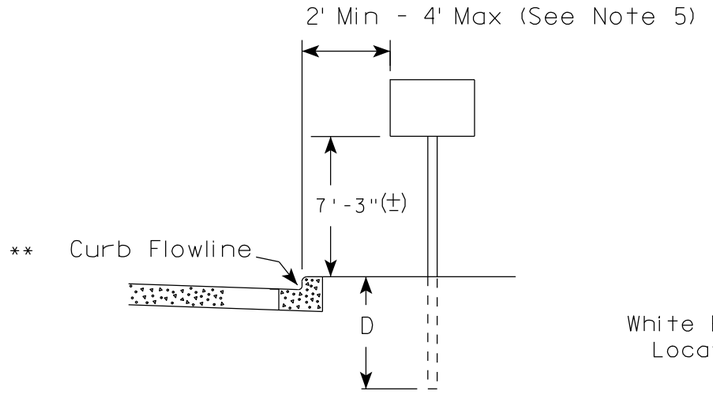
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

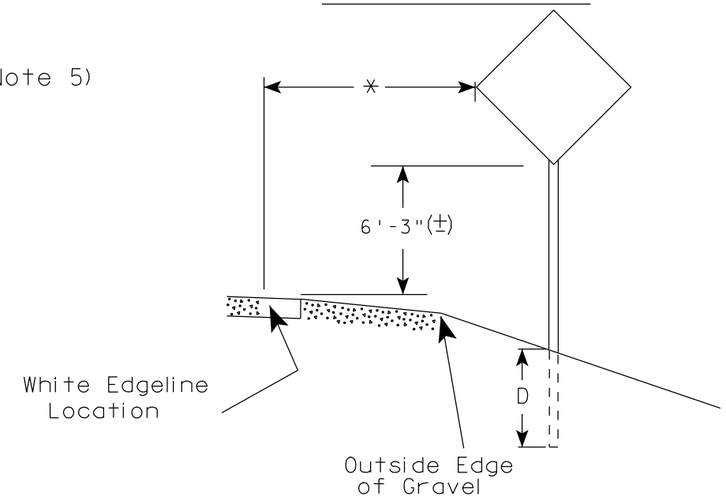
DATE 3/27/97 PLATE NO. A4-11.2

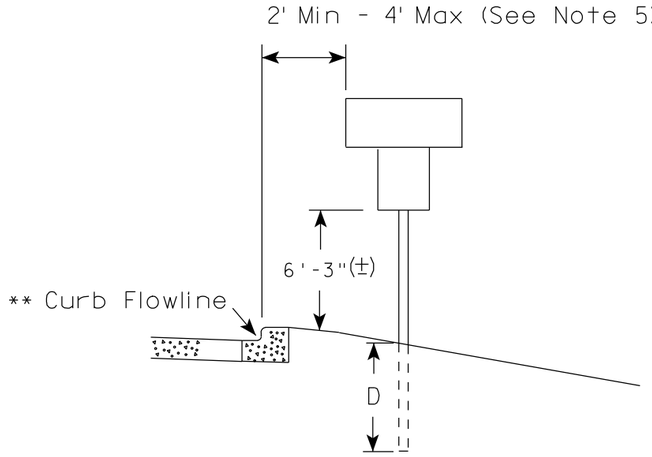
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 83	E

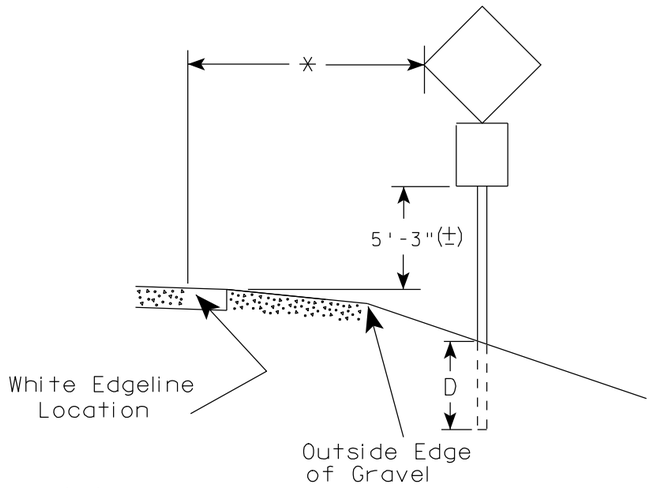
URBAN AREA



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

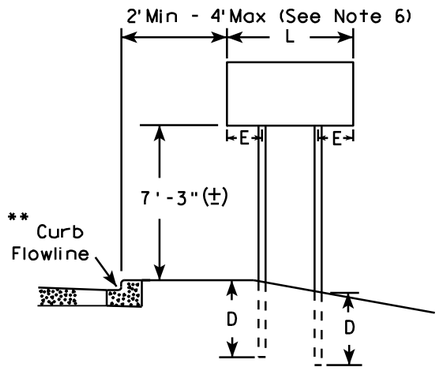
DATE 9/21/2011 PLATE NO. A4-3.16

7

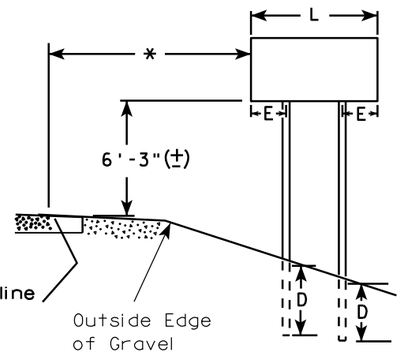
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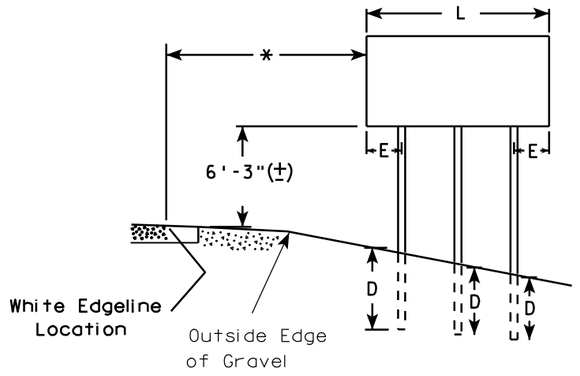
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 84	E

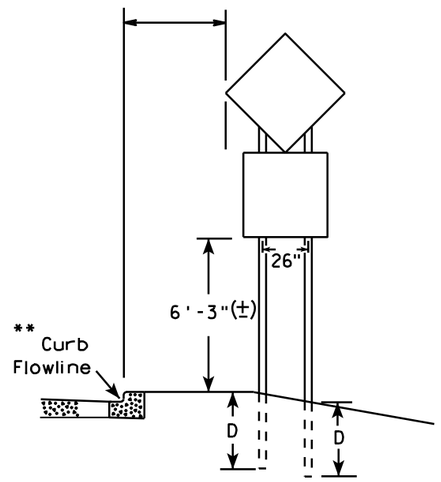
URBAN AREA



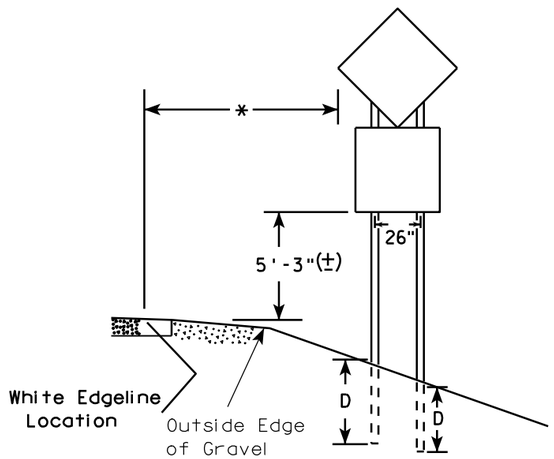
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

***	SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
	L	E
	Greater than 48" Less than 60"	12"
	60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. 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" (±).

* 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.

** 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.

*** See A4-3 sign plate for signs 4' or less in width or 20 S.F. or less in area.

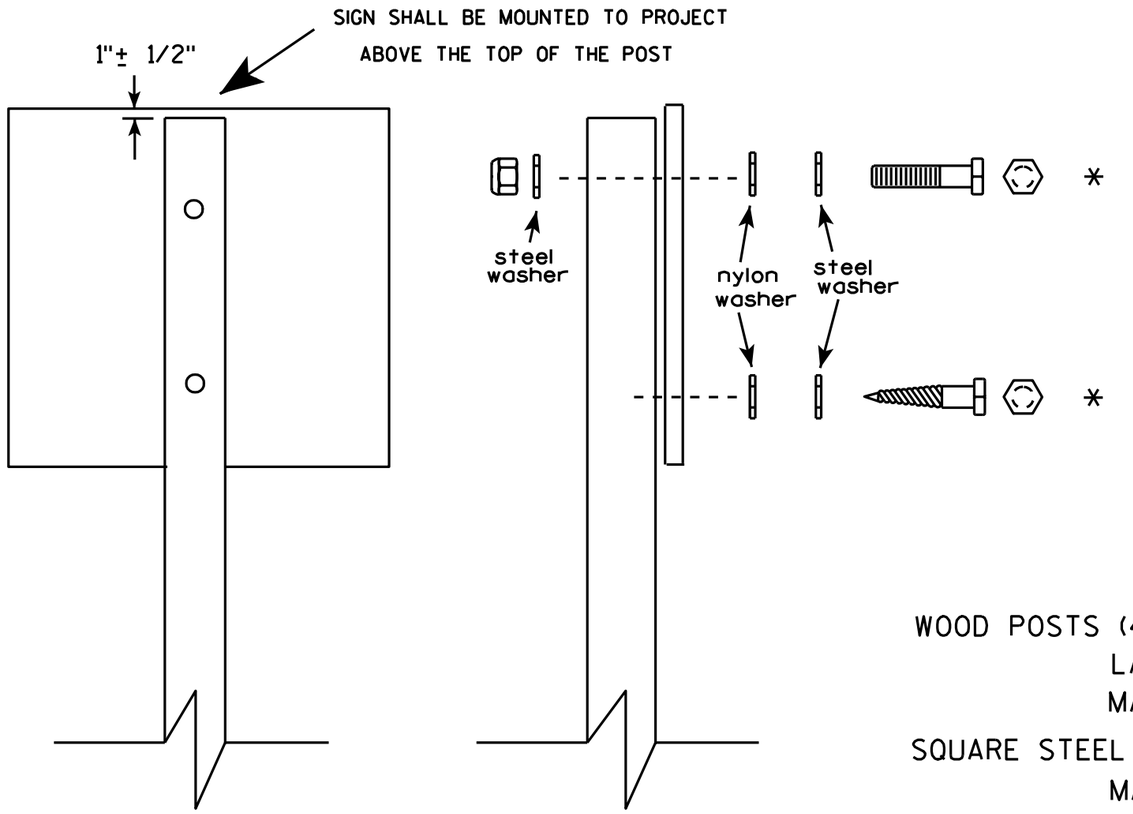
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 85	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

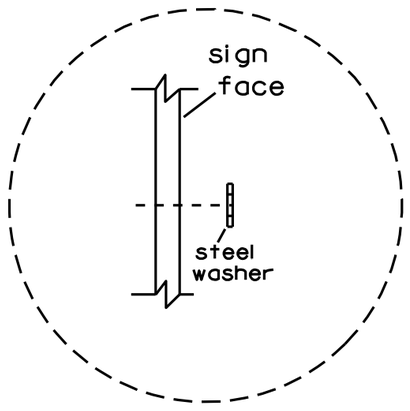
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

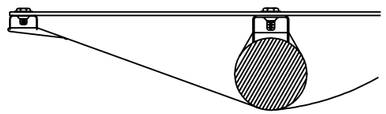
7

7

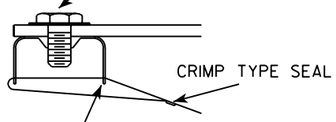
PROJECT NO:

SHEET NO: 86 E

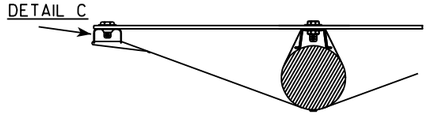
BRACE BANDING

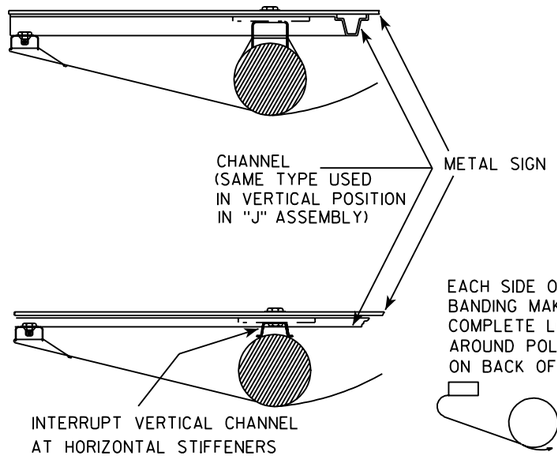


DETAIL C
CADMIUM PLATED STEEL BOLT
THROUGH BLACK BORDER



DETAIL C

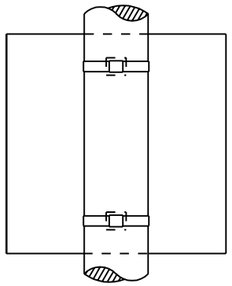


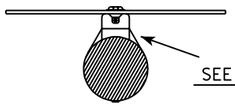


EACH SIDE OF BRACE
BANDING MAKES ONE
COMPLETE LOOP
AROUND POLE-SEAL
ON BACK OF POLE

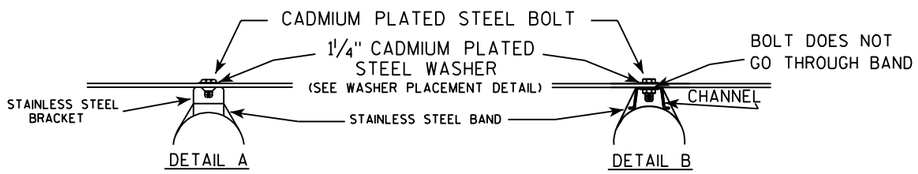
BRACKET BANDING

SINGLE SIGN

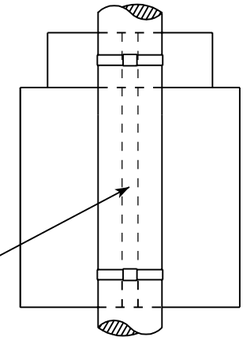




SEE DETAIL A



"J" ASSEMBLY

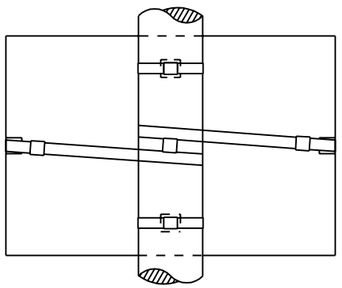


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

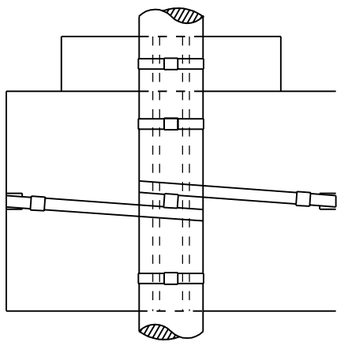
GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.

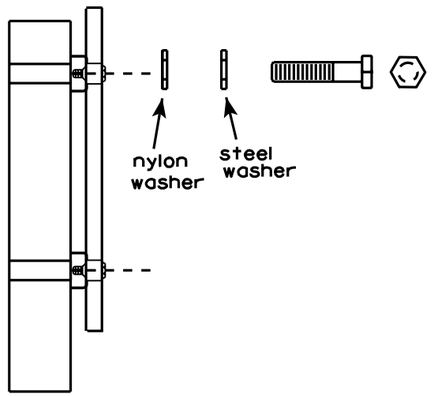


BRACE BANDING

BRACE BANDING SHALL BE TIGHTENED FIRMLY BUT NOT SO TIGHT AS TO APPRECIABLY CURVE FACE OF SIGN.



WASHER PLACEMENT



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

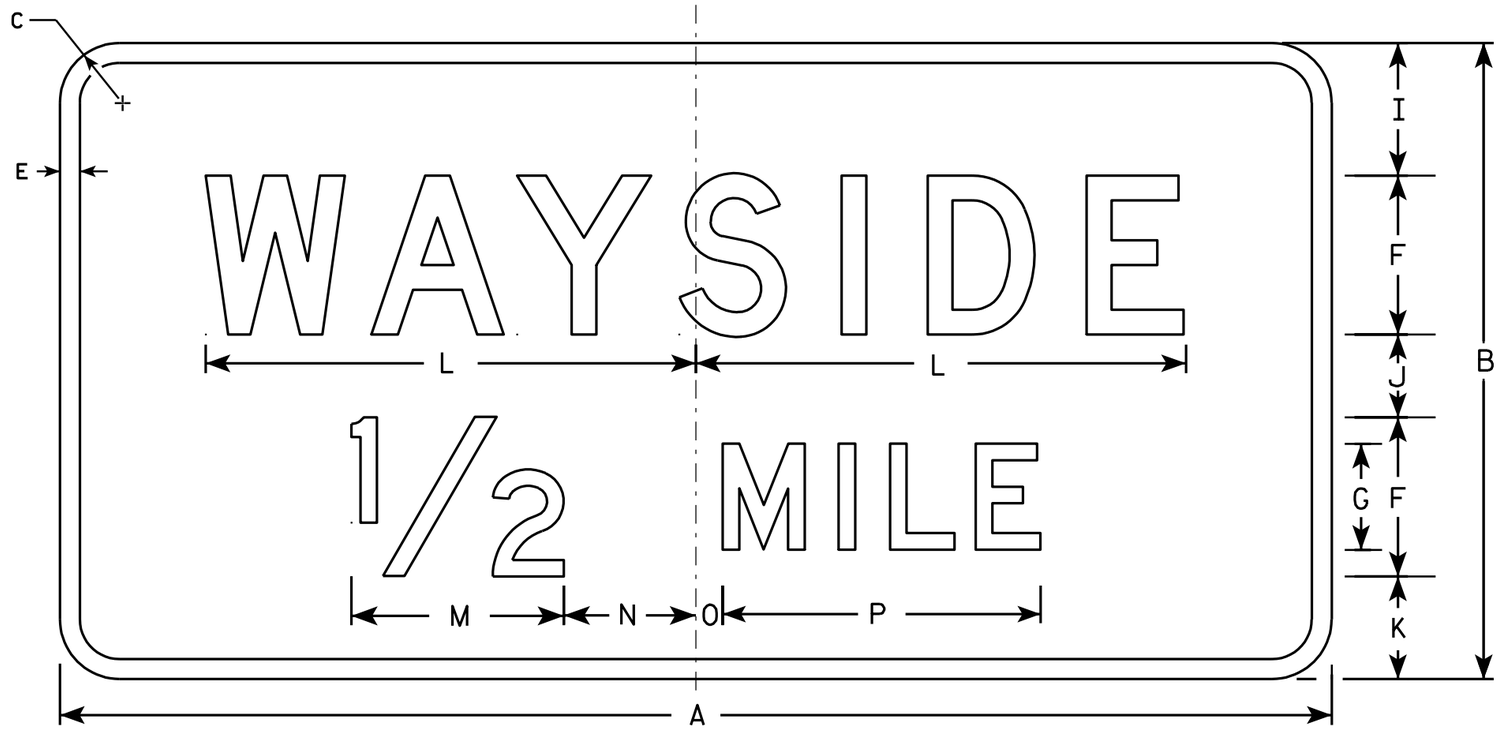
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/08/05 PLATE NO. A5-9.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 87	E



D5-61

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Blue
   Message - White
3. Message Series - D
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.

Metric equivalent for this sign is:

SIZE	
1	
2	1200 mm X 600 mm
3	
4	1950 mm X 1050 mm
5	

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		
1																												
2	48	24	2 1/4		3/4	6	4	6	5	3 1/8	3 7/8	18 1/2	8	5	1	12											8.0	0.72
3																												
4	78	42	3		1	10	7	10 1/2	8 3/4	5 3/4	7	30 1/8	14	8 3/4	1 3/4	21											22.8	2.05
5																												

STANDARD SIGN
D5-61

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 1/09/02 PLATE NO. D5-61.9

STATE PROJECT NUMBER:

SHEET NO: 88 E



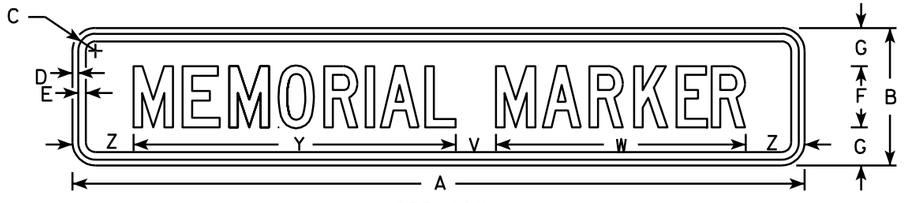
DB5-69B
DG5-69B
DN5-69B



DB5-69E



DB5-69G
DG5-69G
DN5-69G



DB5-69F

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - White - Type H Reflective
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.

DB5-69B, DB5-69E, DB5-69F, DB5-69G	Background BLUE
DG5-69B, DG5-69G	Background GREEN
DN5-69B, DN5-69G	Background BROWN

6. All signs are series D except for DB5-69E & DB5-69F which are Series C.

Metric equivalent for this sign is:

SIZE	
1	1200 mm X 225 mm
2	1200 mm X 225 mm
3	
4	
5	

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.	Area m2
1	48	9	1 1/8	3/8	1/2	4	2 1/2	12	24	5 3/4	12 1/4	2 3/4	22	5 1/4	3			4 1/2	19 1/2	4 1/4	23 1/4	2 5/8	16 3/8	2 7/8	21	2	3.0	.27
2	48	9	1 1/8	3/8	1/2	4	2 1/2	12	24	5 3/4	12 1/4	2 3/4	22	5 1/4	3			4 1/2	19 1/2	4 1/4	23 1/4	2 5/8	16 3/8	2 7/8	21	2	3.0	.27
3																												
4																												
5																												

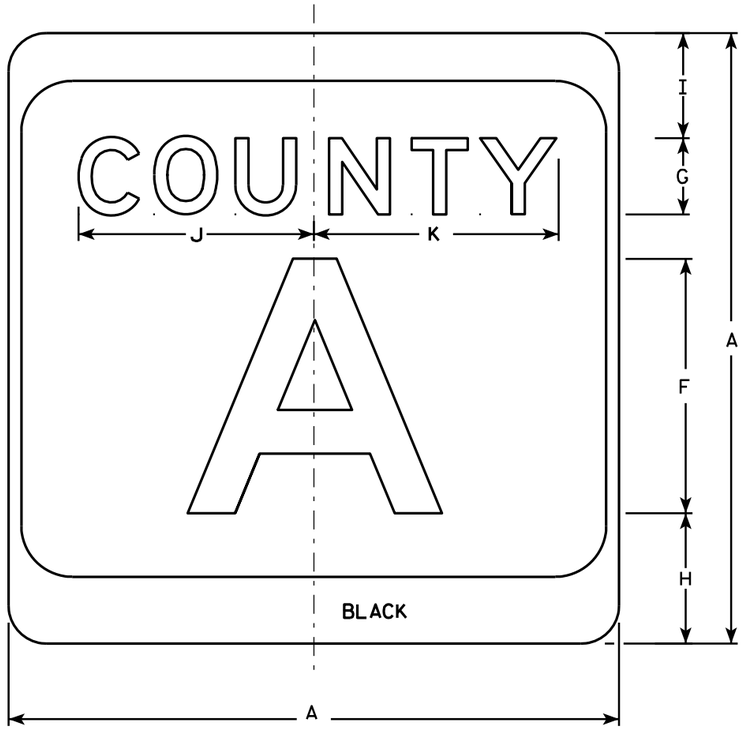
STANDARD SIGN
DB5-69 & DG5-69
& DN5-69 Series

WISCONSIN DEPT OF TRANSPORTATION

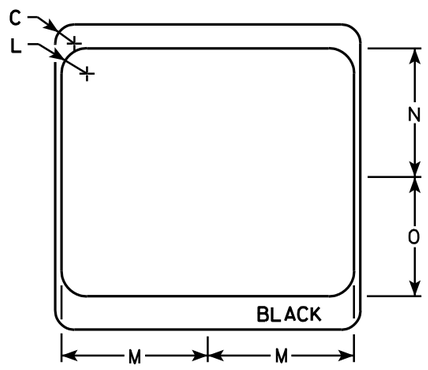
APPROVED Matthew R Rauch
for State Traffic Engineer

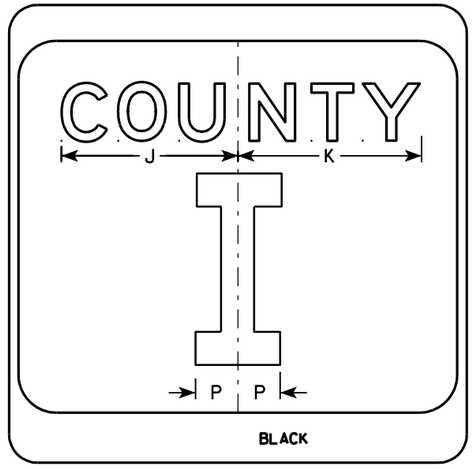
DATE 10/15/04 PLATE NO. DB5-69.5

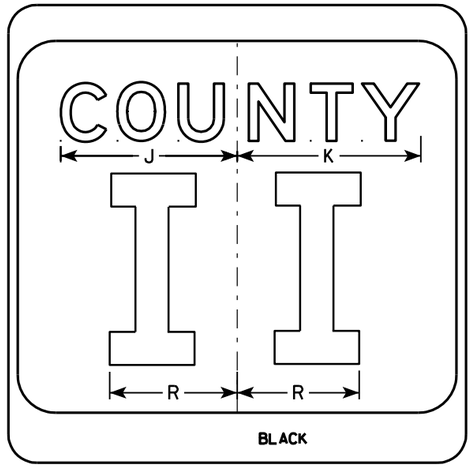
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 89	E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
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. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

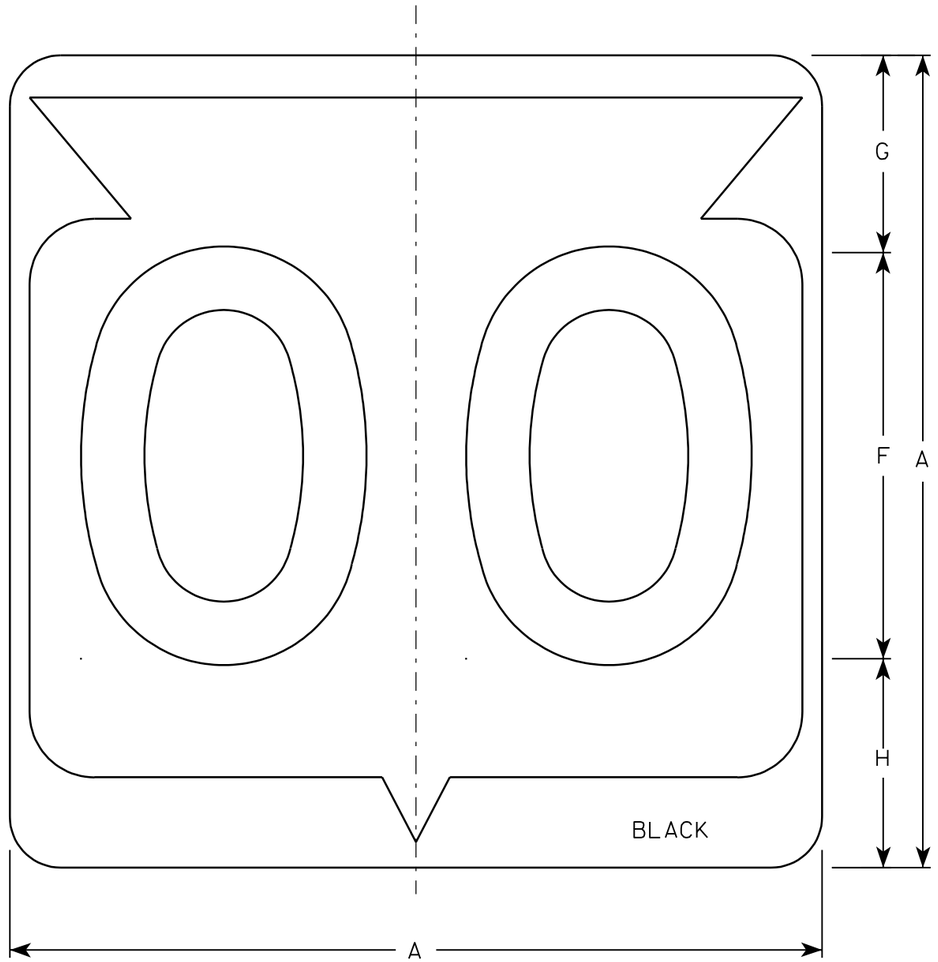
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 90 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\M15A.DGN PLOT DATE : 29-SEP-2011 11:25 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.959043:1.000000

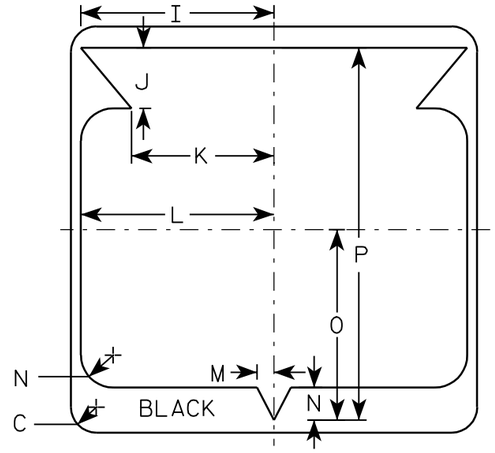
WISDOT/CADDS SHEET 42



M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
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 Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

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.	Area m2
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

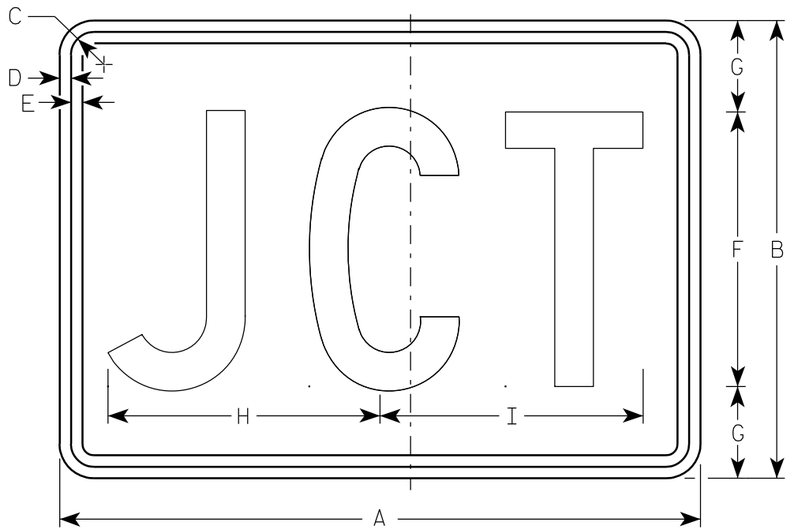
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

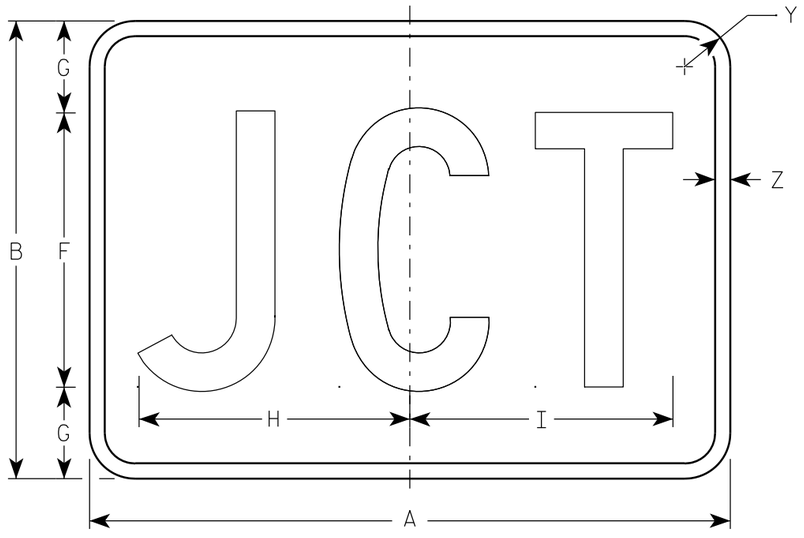
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 91	E



M2-1
MK2-1
MM2-1
MR2-1



MB2-1
MG2-1
MN2-1

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
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. M2-1 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB2-1 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG2-1 Background - Green
   Message - White - Type H Reflective
   MK2-1 Background - Green
   Message - White - Type H Reflective
   MM2-1 Background - White - Type H Reflective
   Message - Green
   MN2-1 Background - Brown
   Message - White - Type H Reflective
   MR2-1 Background - Brown
   Message - Yellow - Type H Reflective

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 mm

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.	Area m2
1																												
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20

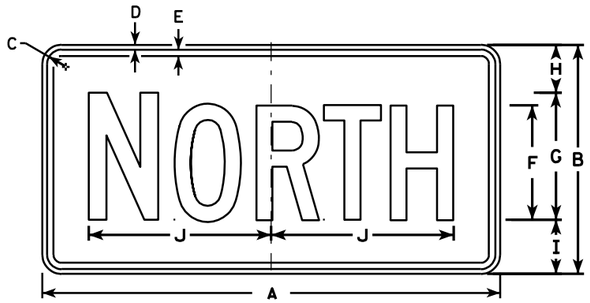
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

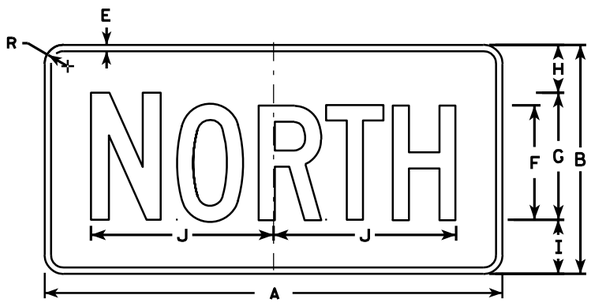
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M2-1.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 92	E



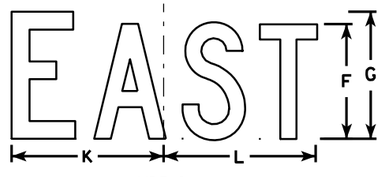
M3-1
MK3-1
MO3-1



MB3-1
MG3-1
MM3-1
MN3-1



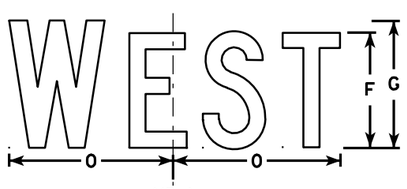
M3-2
MK3-2
MO3-2



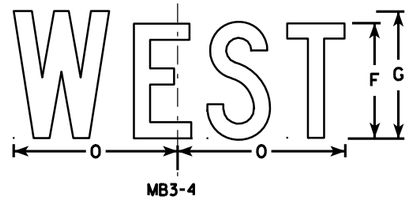
MB3-2
MG3-2
MM3-2
MN3-2

M3-3
MK3-3
MO3-3

MB3-3
MG3-3
MM3-3
MN3-3



M3-4
MK3-4
MO3-4



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
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. M3-1 thru M3-4 Background - White - Type H Reflective (Detour or temporary signs - Reflective) Message - Black
   MB3-1 thru MB3-4 Background - Blue Message - White - Type H Reflective (Detour or temporary signs - Reflective)
   MG3-1 thru MG3-4 Background - Green Message - White - Type H Reflective
   MK3-1 thru MK3-4 Background - Green Message - White - Type H Reflective
   MM3-1 thru MM3-4 Background - White - Type H Reflective Message - Green
   MN3-1 thru MN3-4 Background - Brown Message - White - Type H Reflective
   M03-1 thru M03-4 Background - Orange - Reflective Message - Black
6. Note the first letter of each direction is larger than the remainder of the message.

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																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

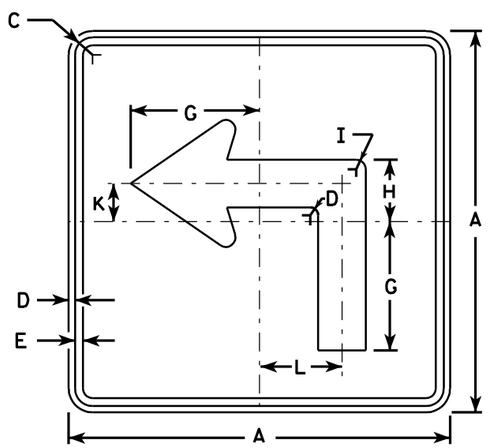
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

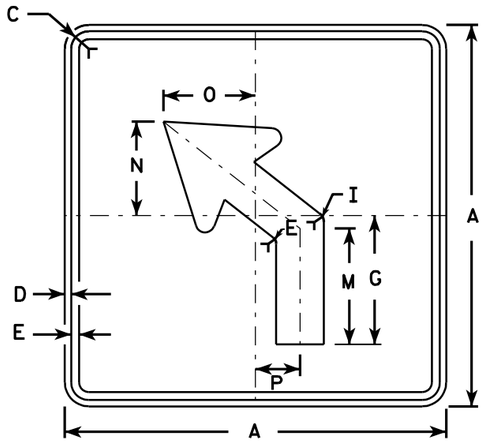
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

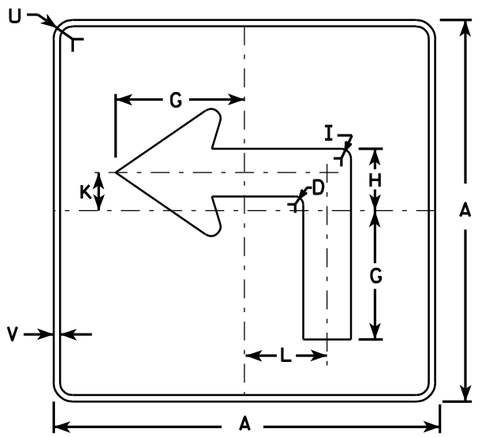
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 93	E



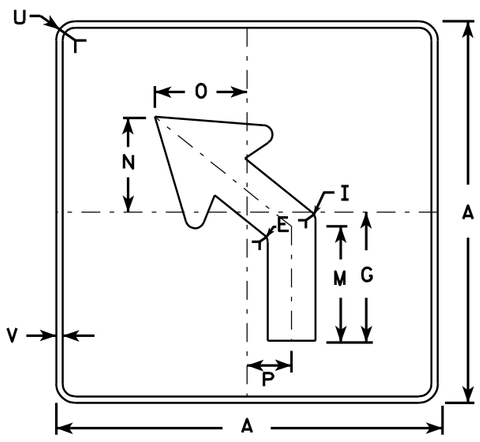
M5-1L
MK5-1L
MM5-1L
MO5-1L
MR5-1L



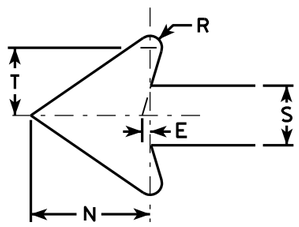
M5-2L
MK5-2L
MM5-2L
MO5-2L
MR5-2L



MB5-1L
MG5-1L
MN5-1L



MB5-2L
MG5-2L
MN5-2L



NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
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. M5-1 and M5-2 Background - White - Type H Reflective (Detour or temporary Signs - Reflective) Message - Black
   MB5-1 and MB5-2 Background - Blue Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG5-1 and MG5-2 Background - Green Message - White - Type H Reflective
   MK5-1 and MK5-2 Background - Green Message - White Type H Reflective
   MM5-1 and MM5-2 Background - White - Type H Reflective Message - Green
   MN5-1 and MN5-2 Background - Brown Message - White - Type H Reflective
   MO5-1 and MO5-2 Background - Orange - Reflective Message - Black
   MR5-1 and MR5-2 Background - Brown Message - Yellow - Type H Reflective
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

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.	Area m²
1																												
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25	0.56

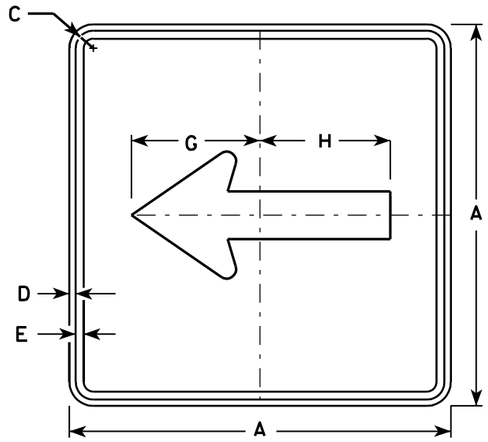
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

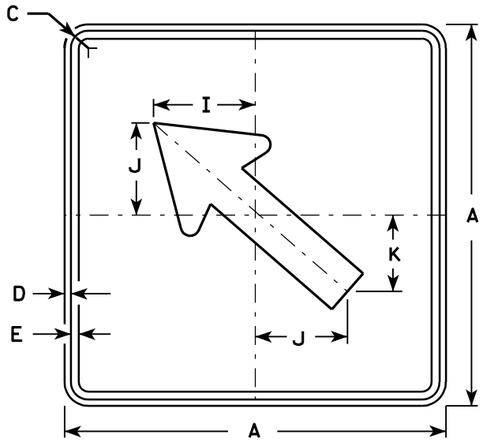
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M5-1.11

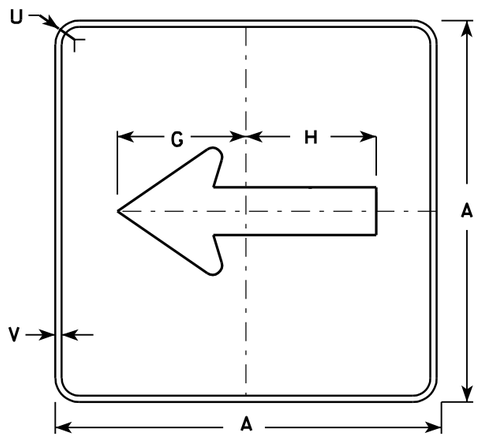
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 94	E



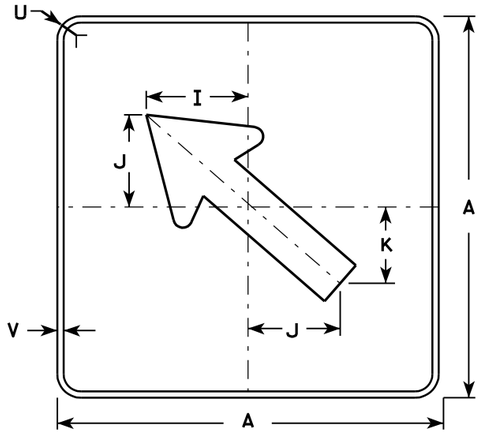
M6-1
MK6-1
MM6-1
MO6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MR6-2



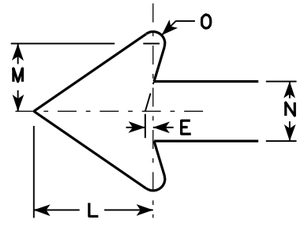
MB6-1
MG6-1
MN6-1



MB6-2
MG6-2
MN6-2

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
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. M6-1 and M6-2 Background - White - Type H Reflective (Detour or temporary Signs - Reflective) Message - Black
   MB6-1 and MB6-2 Background - Blue Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG6-1 and MG6-2 Background - Green Message - White - Type H Reflective
   MK6-1 and MK6-2 Background - Green Message - White - Type H Reflective
   MM6-1 and MM6-2 Background - White - Type H Reflective Message - Green
   MN6-1 and MN6-2 Background - Brown Message - White - Type H Reflective
   MO6-1 and MO6-2 Background - Orange - Reflective Message - Black
   MR6-1 and MR6-2 Background - Brown Message - Yellow - Type H Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

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.	Area m2
1																												
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56

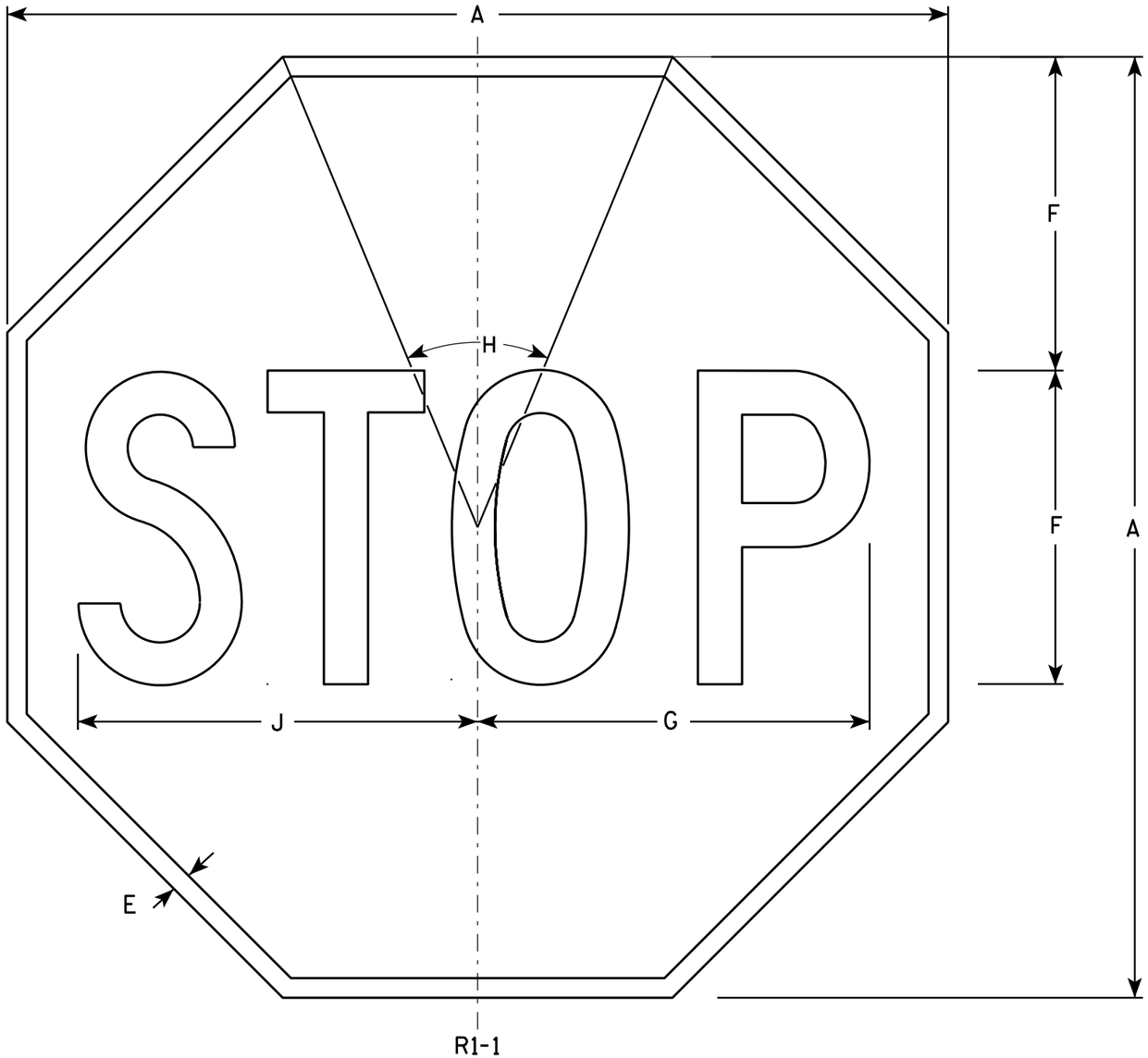
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 95	E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

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				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

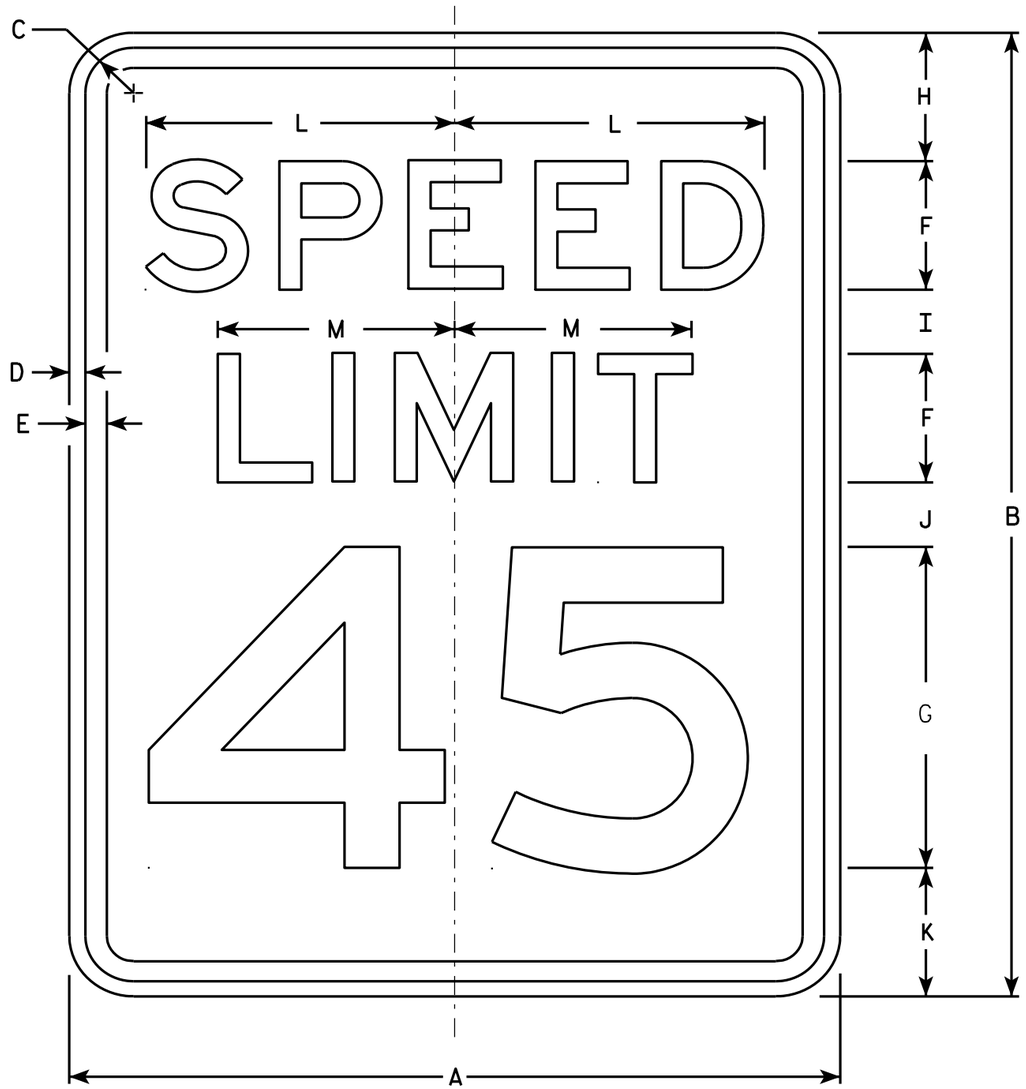
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 96	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
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 adjust spacing to achieve proper balance.

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	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

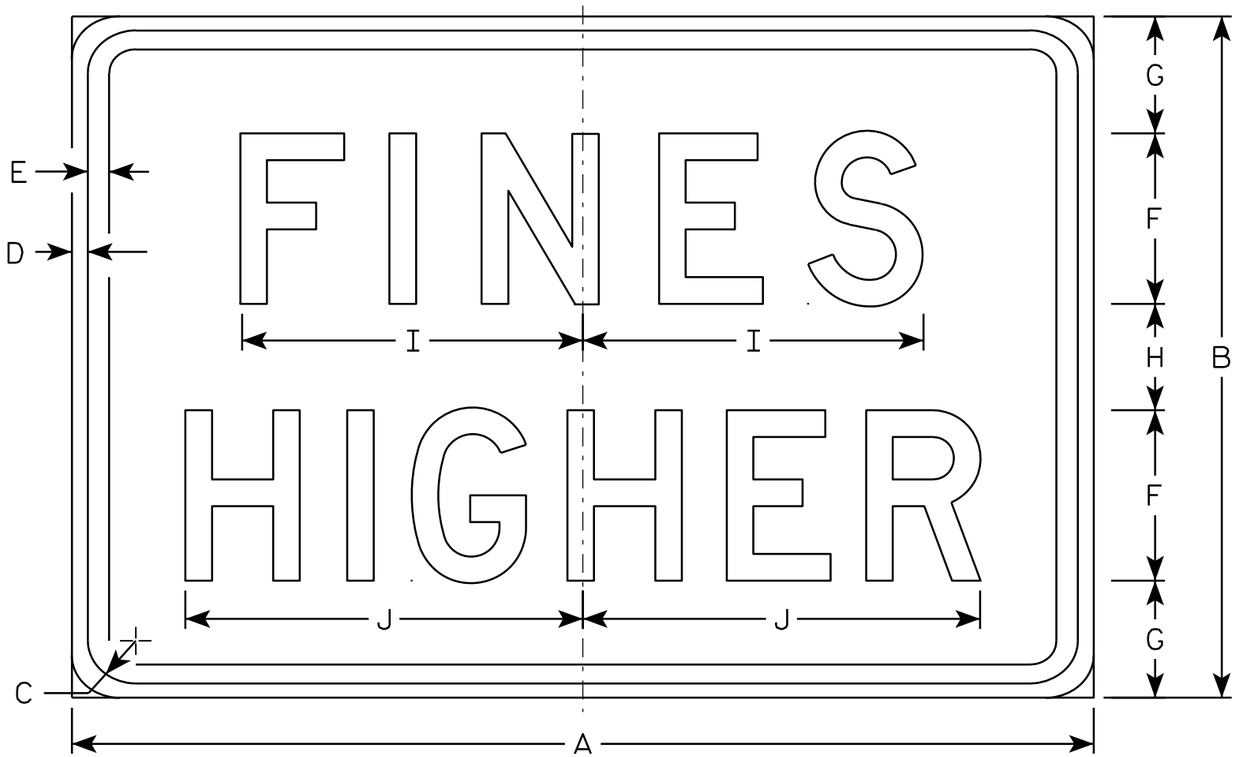
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 97 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R21.DGN PLOT DATE : 28-MAY-2010 08:32 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 4.717577:1.000000

WISDOT/CADDS SHEET 42



R2-6P

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
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.

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	24	18	1 1/8	3/8	3/8	4	3 1/2	3	7 5/8	9 1/4																	3.0
2M	24	18	1 1/8	3/8	3/8	4	3 1/2	3	7 5/8	9 1/4																	3.0
3	36	24	1 1/8	3/8	1/2	6	4 1/8	3 3/4	12	14																	6.0
4	36	24	1 1/8	3/8	1/2	6	4 1/8	3 3/4	12	14																	6.0
5	48	36	1 3/8	1/2	5/8	8	7	6	15 1/8	19																	12.0

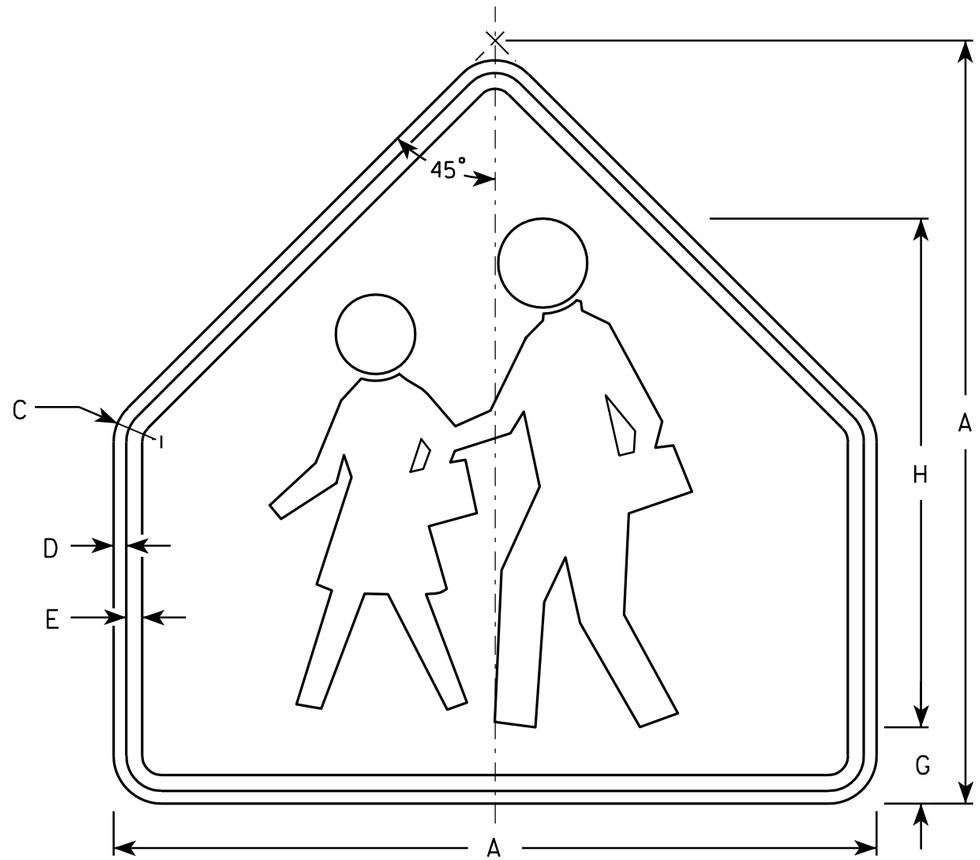
STANDARD SIGN
R2-6P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/20/10 PLATE NO. R2-6P.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 98 | E



S1-1

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-Green
   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.

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	30		1 3/8	1/2	5/8		3	20																			4.69
2	36		1 5/8	5/8	3/4		3 1/2	24																			6.75
3	36		1 5/8	5/8	3/4		3 1/2	24																			6.75
4	48		2 1/4	3/4	1		4 3/4	32																			12
5																											

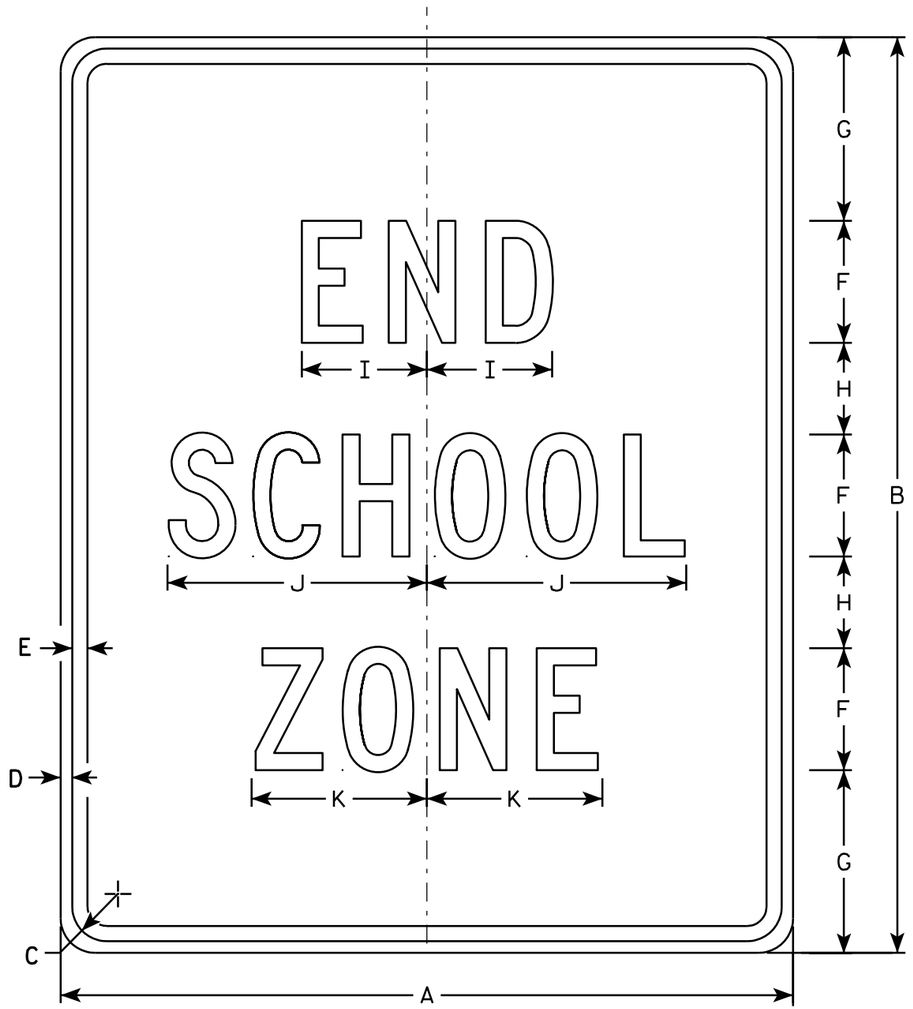
STANDARD SIGN
S1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/30/05 PLATE NO. S1-1.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 99	E



S5-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - C
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.

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																											
2	24	30	1 1/8	3/8	1/2	4	6	3	4 1/8	8 1/2	5 3/4																5.0
3	36	42	1 5/8	5/8	3/4	6	7	5	6 1/8	12 5/8	8 5/8																10.5
4																											
5																											

STANDARD SIGN
S5-2

WISCONSIN DEPT OF TRANSPORTATION

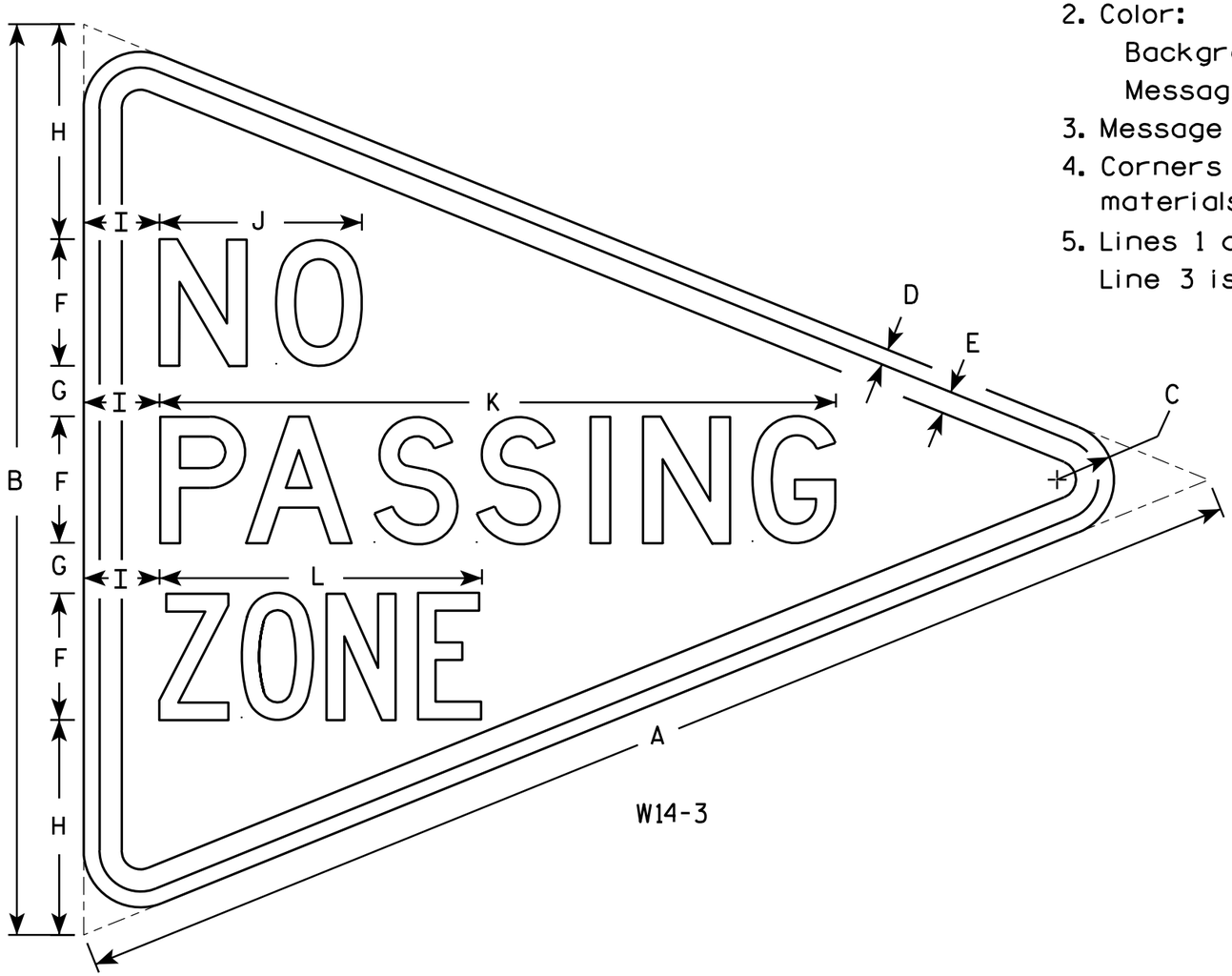
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/8/11 PLATE NO. S5-2.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 100 | E

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 5
4. Corners and borders shall be rounded on all base materials for this sign.
5. Lines 1 and 2 are Series D.
   Line 3 is series C.



W14-3

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	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7
4																											
5																											

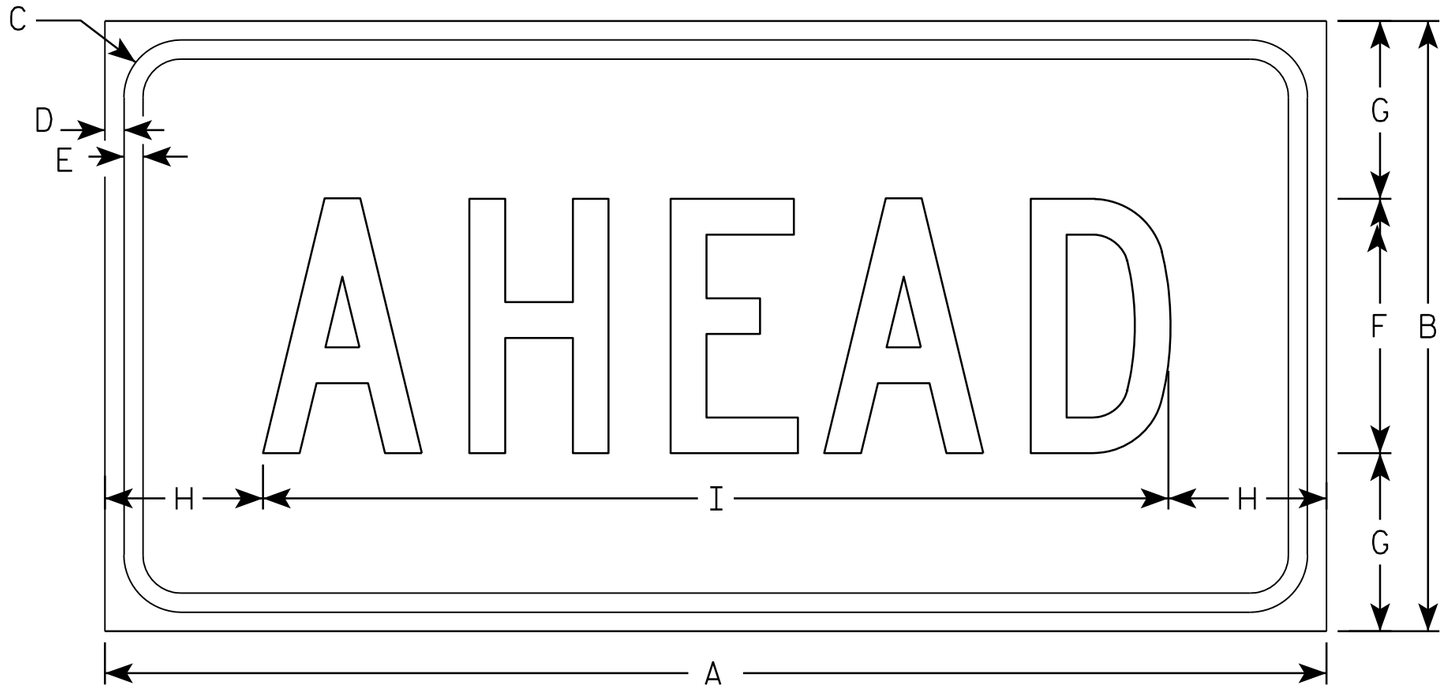
STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W14-3.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 101	E



WF16-9P

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-Green
   Message - Black
3. Message Series - C
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.

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	12	1 1/8	3/8	3/8	5	3 1/2	3 1/8	17 3/4																		2.0
2S	30	18	1 1/8	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
2M	30	18	1 1/8	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
3	30	18	1 1/8	3/8	1/2	7	3 1/2	2 3/4	24 1/2																		3.75
4	48	24	1 3/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
5																											

STANDARD SIGN
WF16-9P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/29/2012 PLATE NO. WF16-9P.4

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 102 | E

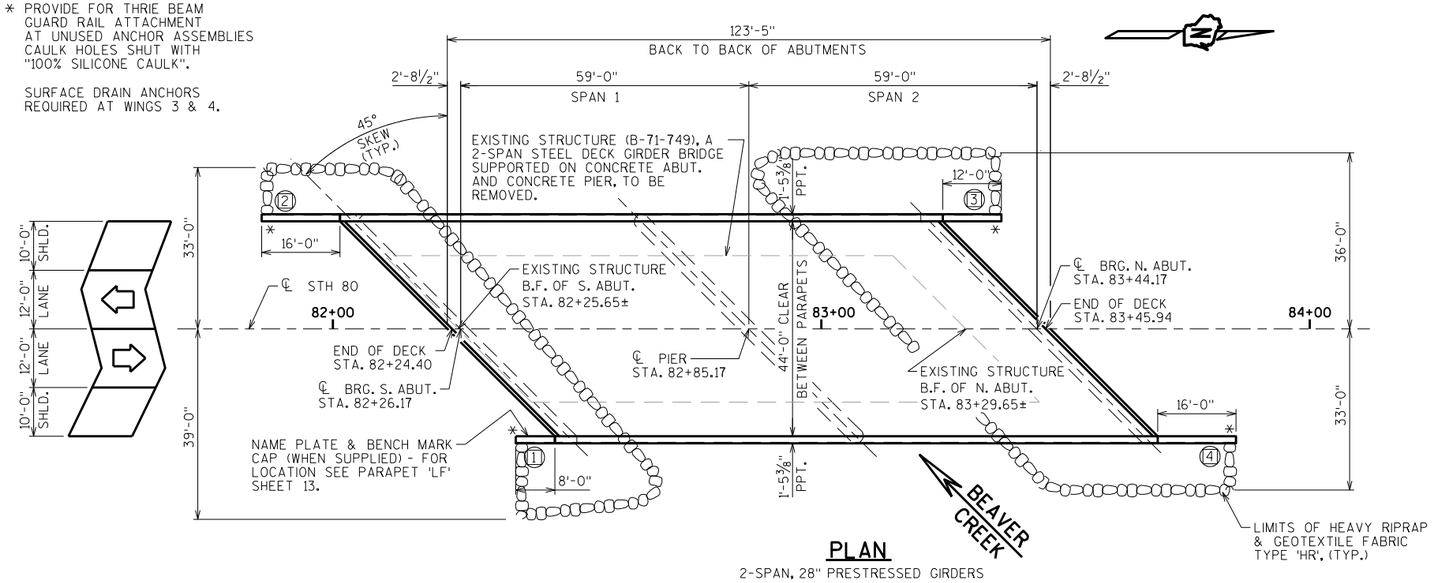
STATE PROJECT NUMBER

1620-02-74

INDICATES WING NUMBER

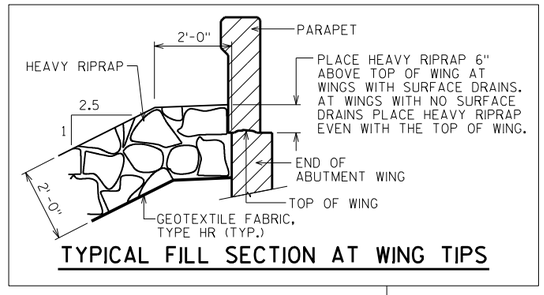
* PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

SURFACE DRAIN ANCHORS REQUIRED AT WINGS 3 & 4.

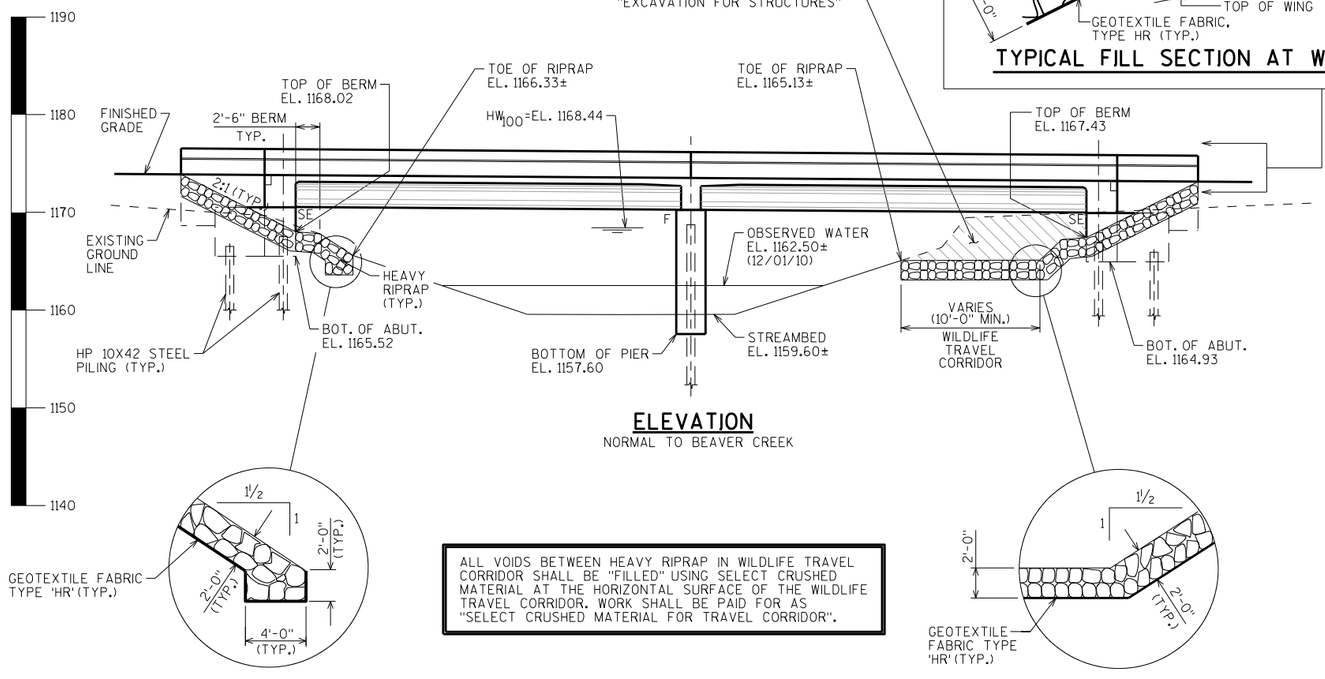


PLAN

2-SPAN, 28" PRESTRESSED GIRDERS



TYPICAL FILL SECTION AT WING TIPS



ELEVATION

NORMAL TO BEAVER CREEK

ALL VOIDS BETWEEN HEAVY RIPRAP IN WILDLIFE TRAVEL CORRIDOR SHALL BE "FILLED" USING SELECT CRUSHED MATERIAL AT THE HORIZONTAL SURFACE OF THE WILDLIFE TRAVEL CORRIDOR. WORK SHALL BE PAID FOR AS "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR".

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.07
OPERATING RATING FACTOR: RF=1.39
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB — f'c = 4,000 P.S.I. ALL OTHER — f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.
28" PRESTRESSED GIRDERS, CONCRETE MASONRY — f'c = 8,000 P.S.I.
STRANDS- 0.5" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS **PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 25'-0" LONG.

PIER TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS **PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 25'-0" LONG.

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

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 2260 C.F.S.
VEL. = 7.5 F.P.S.
HW.= EL. 1168.44
WATERWAY AREA= 569 SQ. FT.
DRAINAGE AREA= 10.5 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q_2 =510 C.F.S.
$HW._2$= EL. 1165.80

TRAFFIC VOLUME

STH 80

A.D.T.=5200 (2033)
R.D.S.=60 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. PILE ENCASED PIER
9. 28" PRESTRESSED GIRDER DETAILS
10. STEEL DIAPHRAGM
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE DETAILS
13. SLOPED FACE PARAPET LF
14. ALTERNATE CONSTRUCTION JOINT

STRUCTURE DESIGN CONTACT:
NICK RICE (608) 266-5092

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 9/20/12
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-71-182

S.T.H. 80 OVER BEAVER CREEK

COUNTY	TOWN/~~CITY/VILLAGE~~
WOOD	RICHFIELD

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
NAR	EMK	NAR/DDS	JPH

GENERAL PLAN

SHEET 1 OF 14

103

I.D. 1620-02-04

DATE: JULY 2012

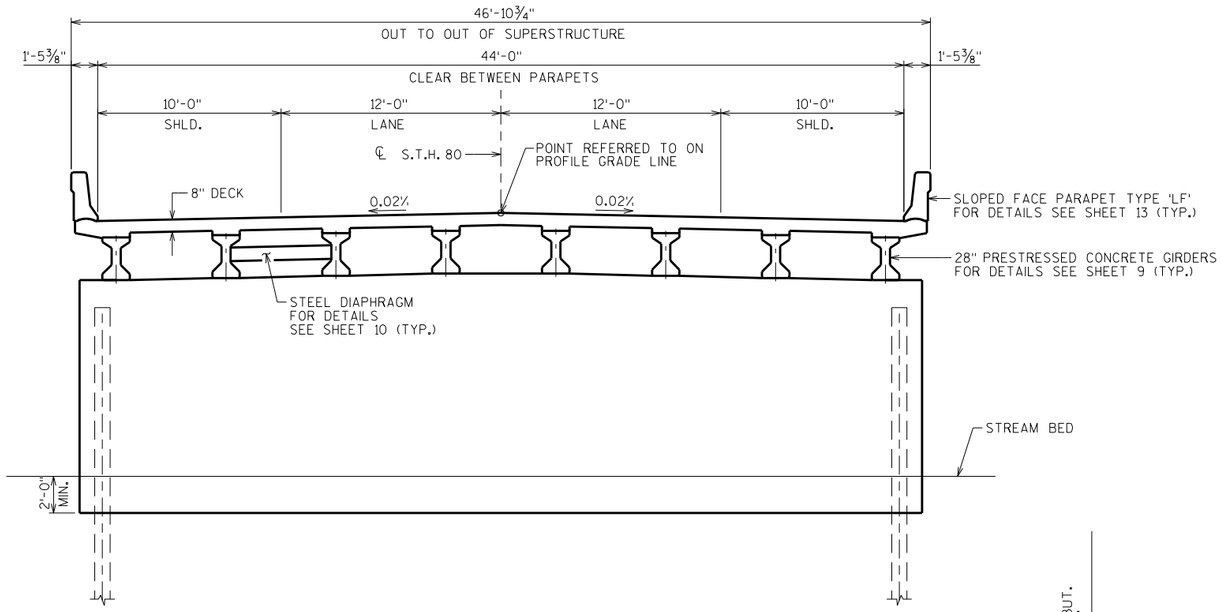
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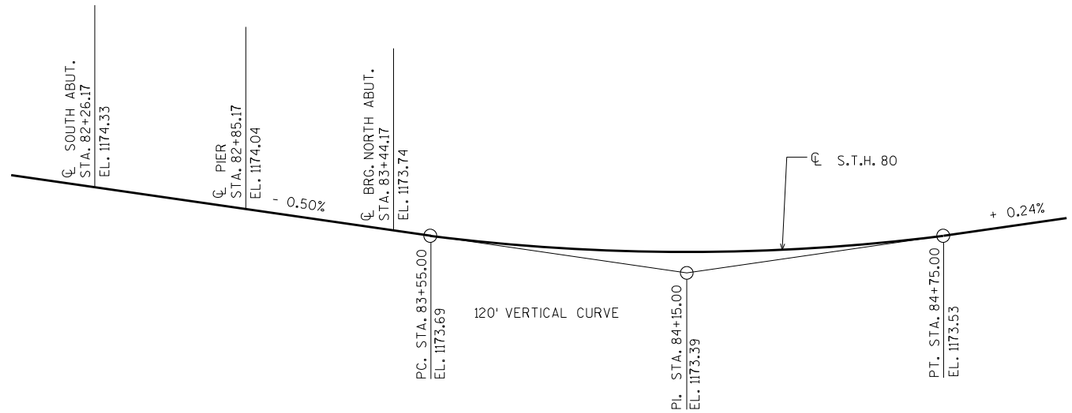
STATE PROJECT NUMBER

1620-02-74



CROSS SECTION THRU ROADWAY

(LOOKING NORTH)



PROFILE GRADE LINE S.T.H. 80

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	NORTH ABUT.	PIER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 82+78	LS	———	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-71-182	LS	———	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	———	190	190		380
502.0100	CONCRETE MASONRY BRIDGES	CY	226	58	62	92	438
502.3200	PROTECTIVE SURFACE TREATMENT	SY	720	———	———	———	720
503.0128	PRESTRESSED GIRDER TYPE I 28-INCH	LF	950	———	———	———	950
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	———	3705	3770	3690	11165
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	45590	1930	2230	———	49750
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	———	8	8	16	32
506.4000	STEEL DIAPHRAGMS B-71-182	EACH	28	———	———	———	28
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	16	16	———	32
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	———	275	275	300	850
606.0300	RIPRAP HEAVY	CY	———	140	200	———	340
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	95	100	———	195
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	———	2	2	———	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	———	245	295	———	540
SPV.0195	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TONS	———	———	39	———	39
	NON-BID ITEMS						
	FILLER	SIZE	———	———	———	———	½" & ¾"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE AND THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

AT ABUTMENTS AND PIER(S), CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

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

ALL VOIDS BETWEEN HEAVY RIP RAP IN WILDLIFE TRAVEL CORRIDOR SHALL BE "FILLED" USING SELECT CRUSHED MATERIAL AT THE HORIZONTAL SURFACE OF THE WILDLIFE TRAVEL CORRIDOR. WORK SHALL BE PAID FOR AS "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR".

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

DRAWN BY NAR/DDS | PLANS CK'D. JPH

CROSS SECTION & QUANTITIES

SHEET 2

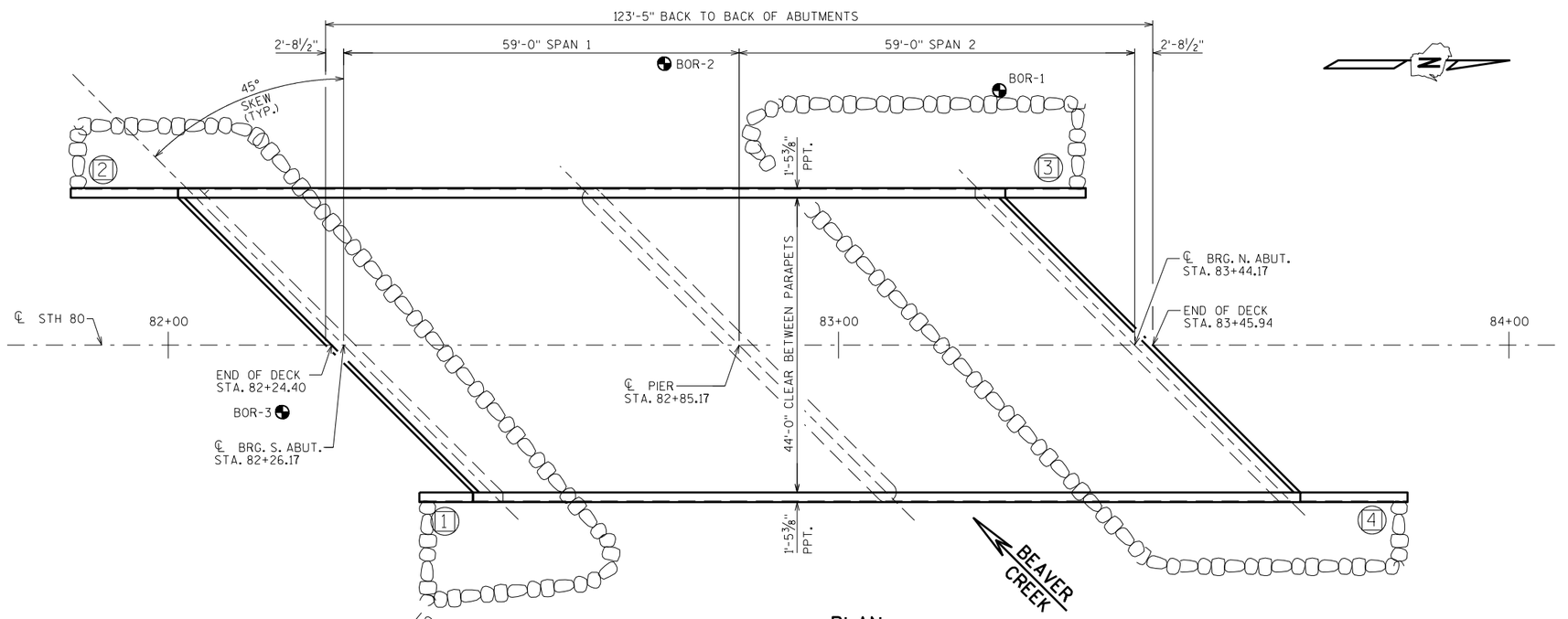
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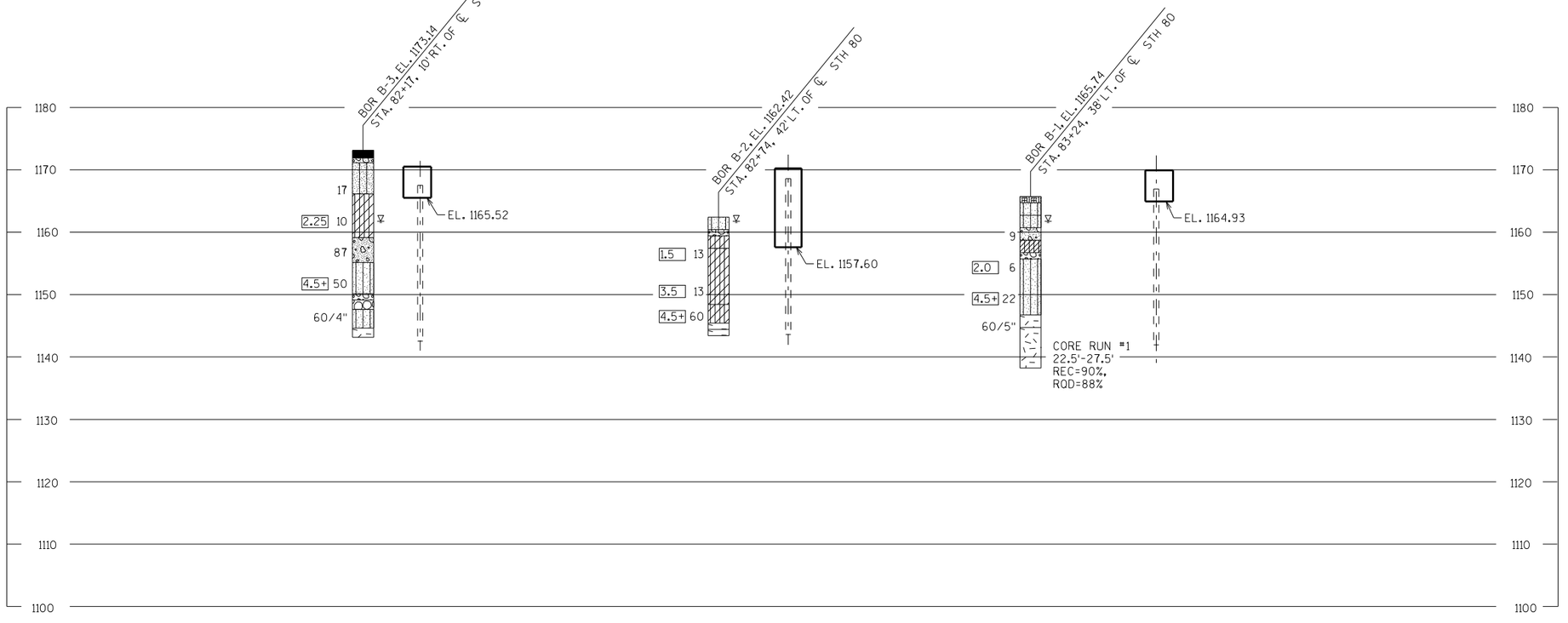
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SCALE = 4

PITTSVILLE - MARSHFIELD
BEAVER CREEK BRIDGE



PLAN



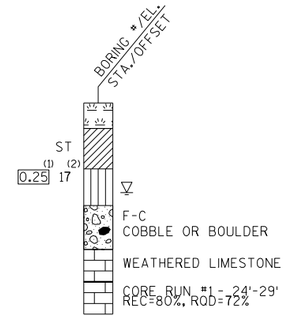
STATE PROJECT NUMBER

1620-02-74

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

DRAWN BY PR/DDS | PLANS CK'D. JPH

SUBSURFACE EXPLORATION

SHEET 3

105

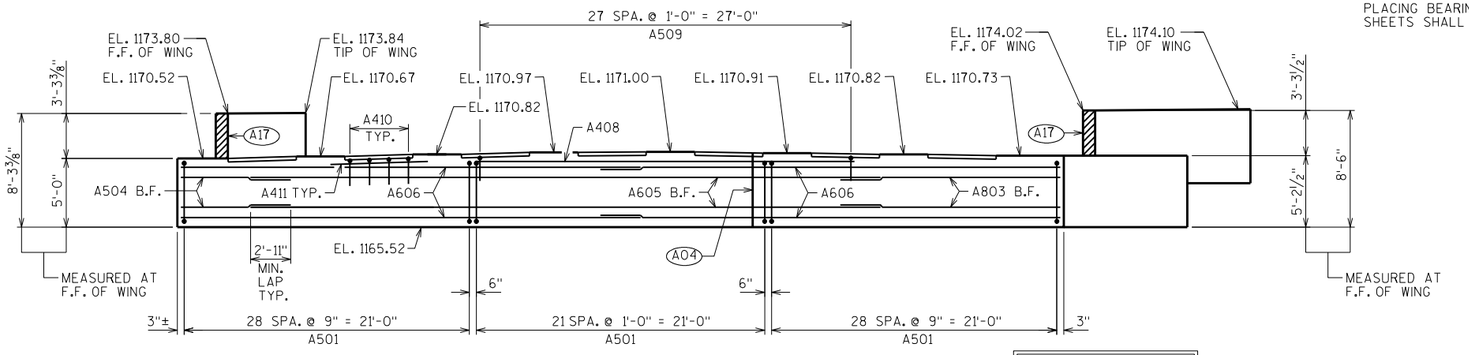
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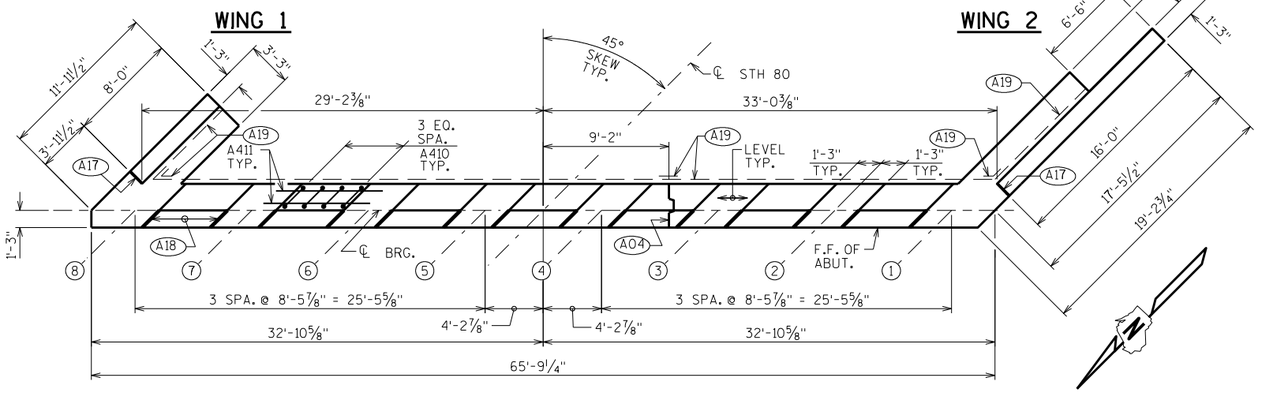
STATE PROJECT NUMBER

1620-02-74

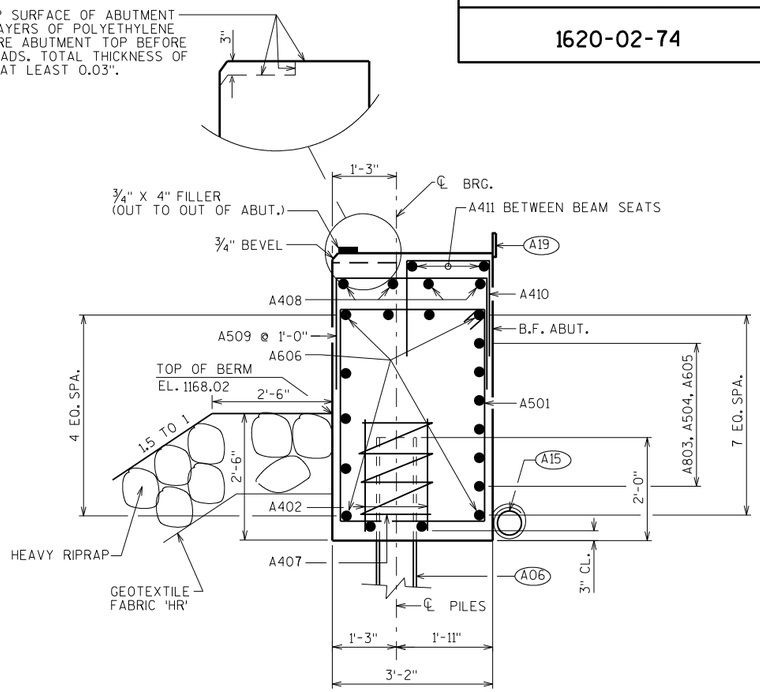


ELEVATION LOOKING SOUTH

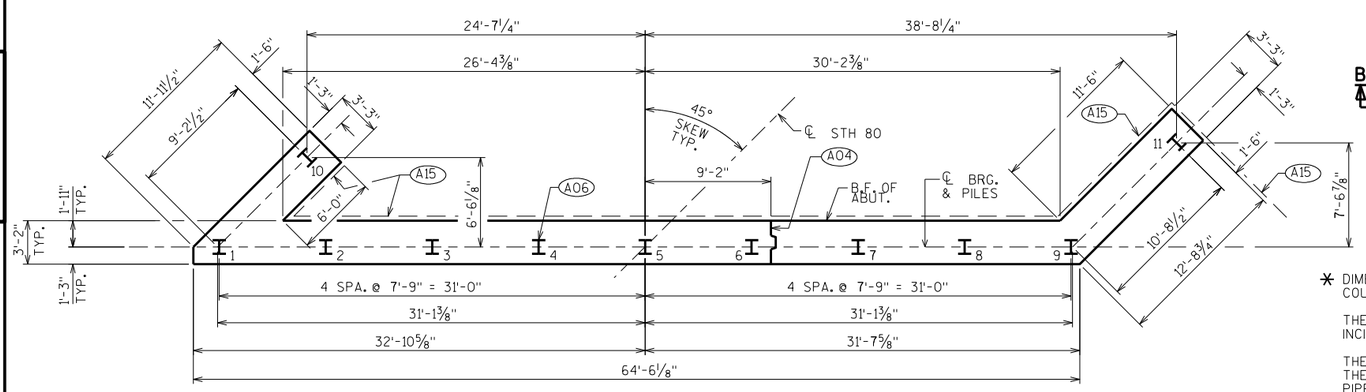
NOTE:
MOVE STIRRUP BARS
TO MISS PILES



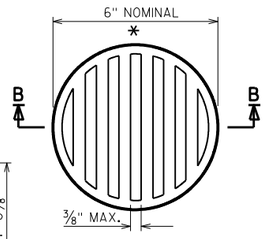
PLAN



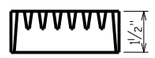
SECTION THRU BODY



PILE PLAN



RODENT SCREEN DETAIL



SECTION B-B

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

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

(A06) SUPPORT ABUTMENT ON HP 10 × 42 STEEL PILING, ESTIMATED 25'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

DRAWN BY DDS | PLANS CK'D. JPH

SOUTH ABUTMENT

SHEET 4

106

SCALE = 5.3333

8

8

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

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 25'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

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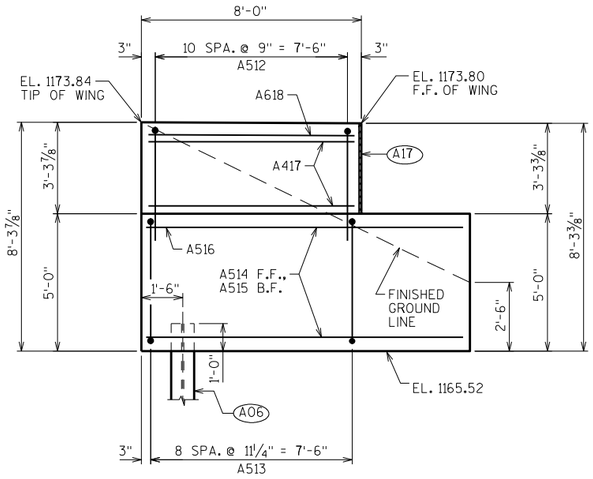
(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT.

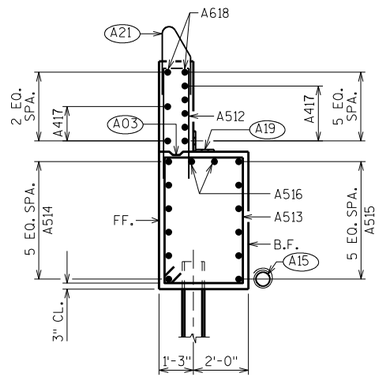
BILL OF BARS

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

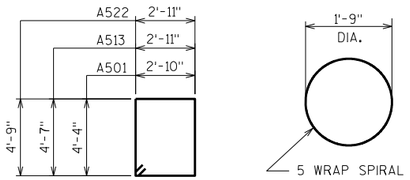
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		80	15'-0"	X		BODY-STIRRUPS
A402		18	2'-3"			PILES-2 PER BODY PILE
A803		6	16'-0"			BODY-HORIZONTAL-B.F.
A504		6	8'-0"			BODY-HORIZONTAL-B.F.
A605		6	47'-3"			BODY-HORIZONTAL-B.F.
A606		22	34'-2"			BODY-HORIZONTAL
A407		9	28'-0"	X		PILES-1 PER BODY PILE
A408		4	27'-6"			BODY-HORIZONTAL-OVER GIRDERS 3-5
A509		28	5'-11"	X		BODY-VERTICAL-TOP-OVER GIRDERS 3-5
A410		28	4'-7"	X		BODY-VERTICAL-BETWEEN BEAM SEATS
A411		14	7'-0"			BODY-HORIZONTAL
A512	X	11	11'-0"	X		WING 1-VERTICAL
A513	X	9	15'-8"	X		WING 1-STIRRUP
A514	X	6	11'-9"			WING 1-HORIZONTAL-F.F.
A515	X	6	7'-10""			WING 1-HORIZONTAL-B.F
A516	X	2	9'-10"			WING 1-HORIZONTAL
A417	X	7	7'-8"			WING 1-HORIZONTAL-F.F.&B.F.
A618	X	2	7'-8"			WING 1-HORIZONTAL-TOP
A519	X	9	10'-11"	X		WING 2-VERTICAL
A420	X	6	7'-9"			WING 2-HORIZONTAL
A521	X	13	11'-0"	X		WING 2-VERTICAL
A522	X	11	16'-0"	X		WING 2-STIRRUP
A523	X	6	12'-4"			WING 2-HORIZONTAL-F.F.
A624	X	8	13'-3"			WING 2-HORIZONTAL-B.F.
A625	X	2	12'-3"			WING 2-HORIZONTAL
A426	X	7	15'-8"			WING 2-HORIZONTAL-F.F.&B.F.
A627	X	2	15'-8"			WING 2-HORIZONTAL-TOP



WING 1 ELEVATION

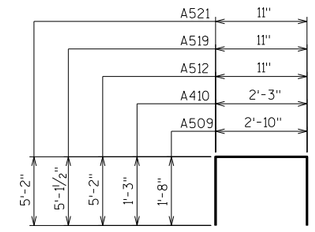


WING 1 SECTION

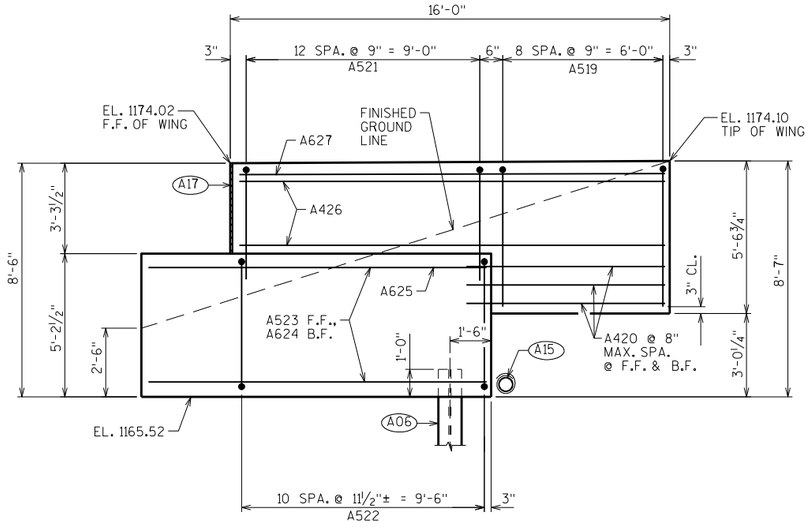


A501, A513, A522

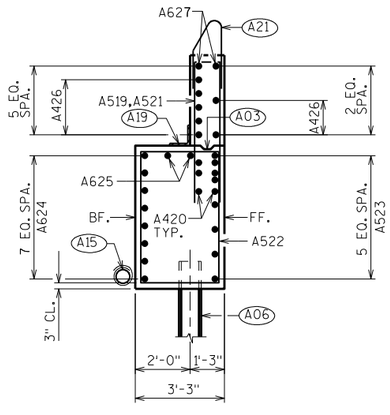
A407



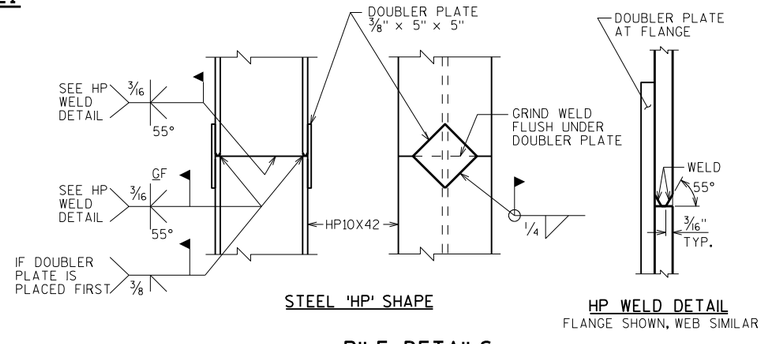
A509, A410, A512, A519, A521



WING 2 ELEVATION



WING 2 SECTION



STEEL 'HP' SHAPE

HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

DRAWN BY DDS | PLANS CK'D. JPH

SOUTH ABUTMENT DETAILS

SHEET 5

107

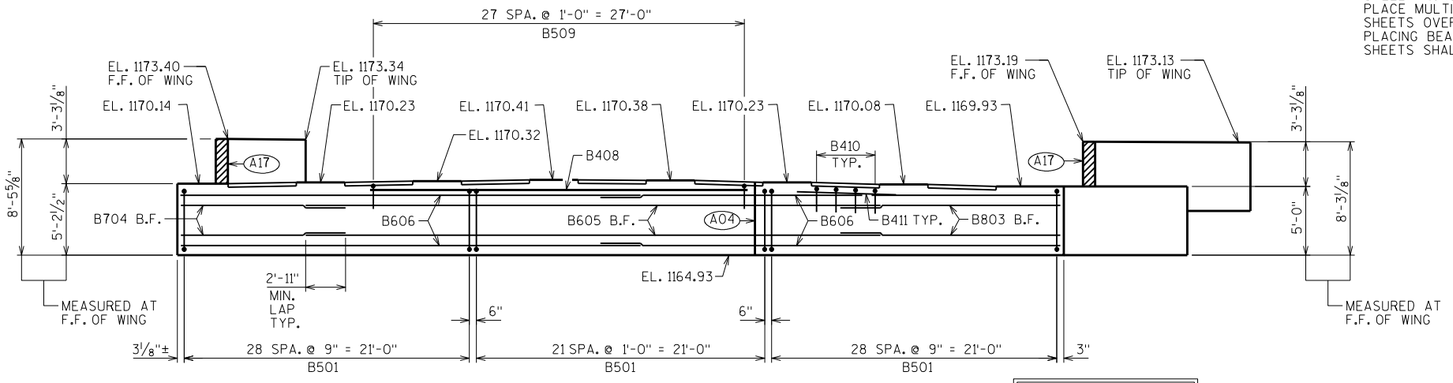
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STATE PROJECT NUMBER

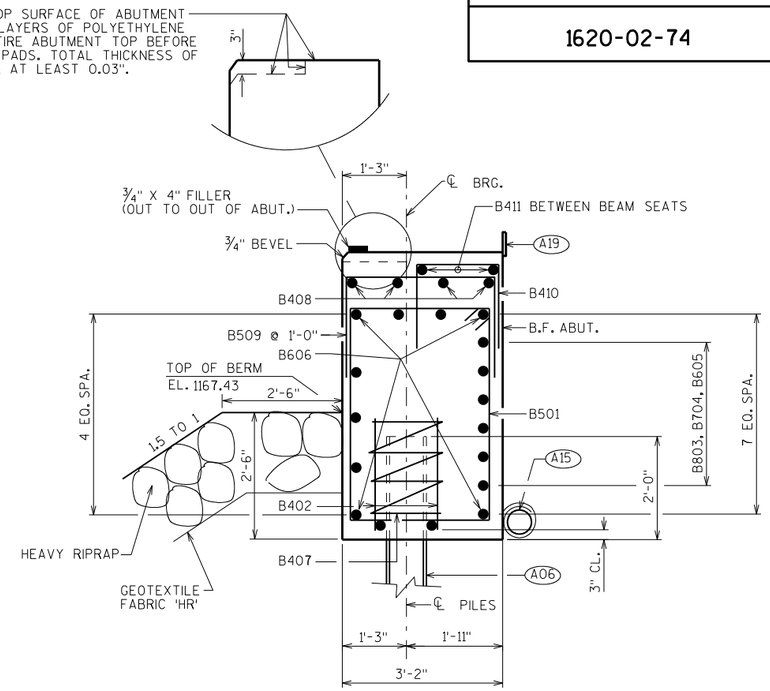
1620-02-74



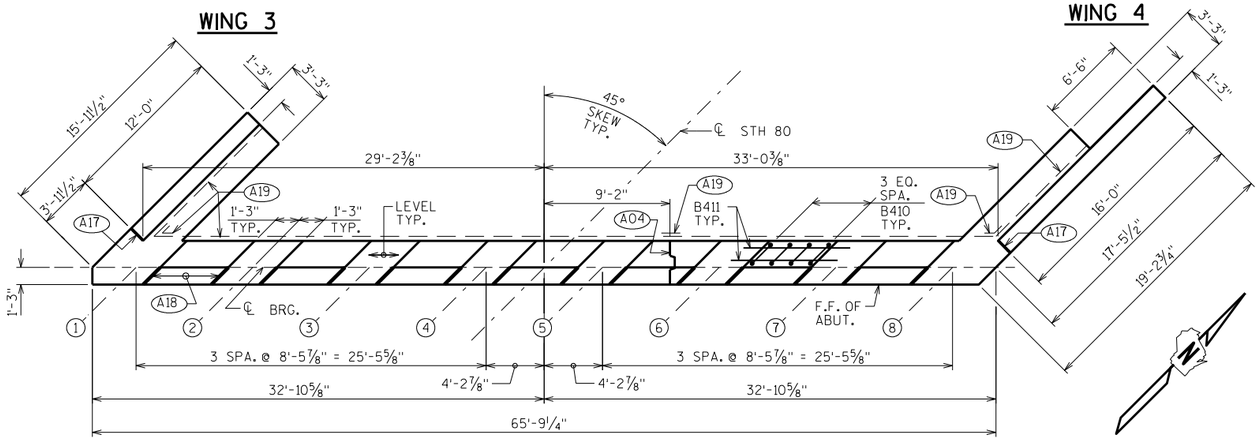
ELEVATION LOOKING NORTH

NOTE:
MOVE STIRRUP BARS TO MISS PILES

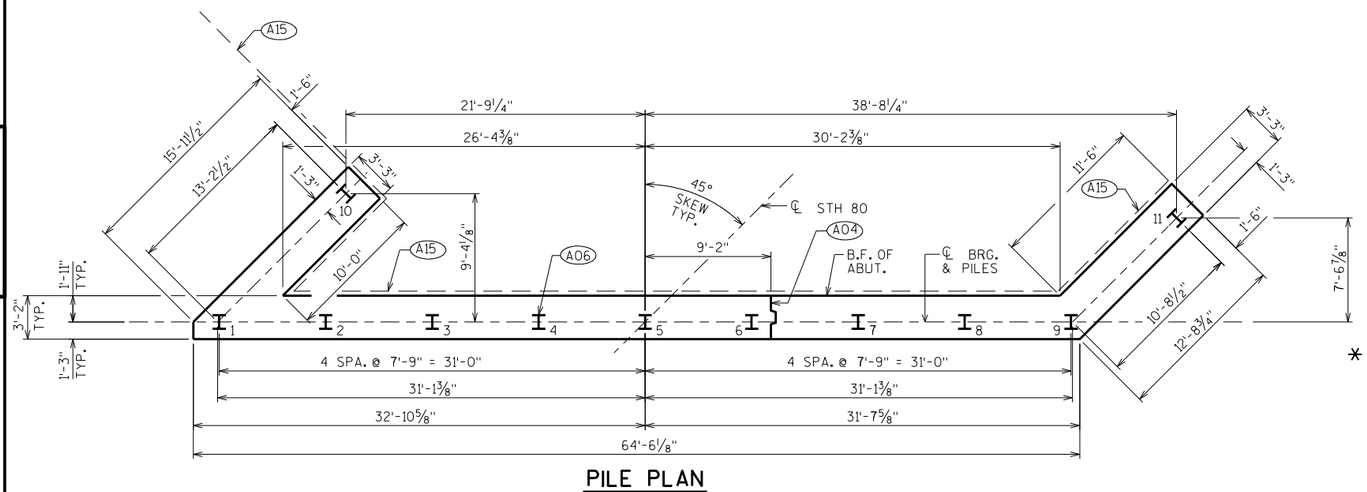
STEEL TROWEL TOP SURFACE OF ABUTMENT PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".



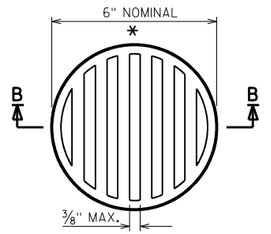
SECTION THRU BODY



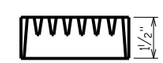
PLAN



PILE PLAN



RODENT SCREEN DETAIL



SECTION B-B

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

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(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

DRAWN BY DDS | PLANS CK'D. JPH

NORTH ABUTMENT

SHEET 6

108

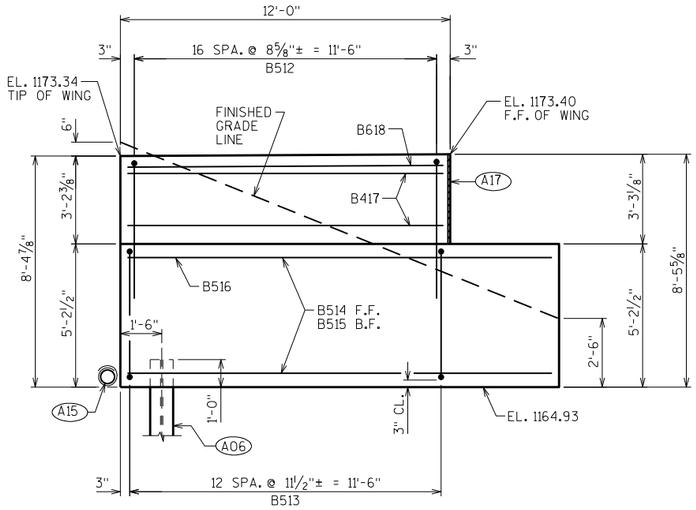
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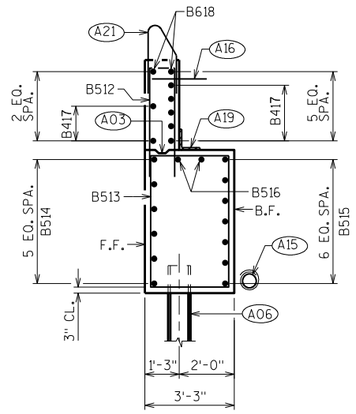
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STATE PROJECT NUMBER

1620-02-74



WING 3 ELEVATION



WING 3 SECTION

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

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 25'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.

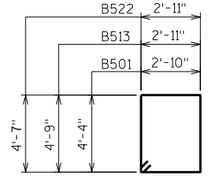
(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A16) B428 BARS SPACED @ 1'-0" CTRS. EMBED 1'-0" INTO WING CONC. LOCATE 3" DOWN FROM TOP OF WING @ BACKFACE TO 6" DOWN @ WING TIP. (DRILLED IN EPOXY ANCHORED #4 BARS 2'-0" LONG MAY BE USED.) COST INCIDENTAL TO BID ITEM "BAR STEEL REINFORCEMENT HS COATED BRIDGES".

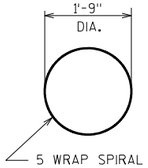
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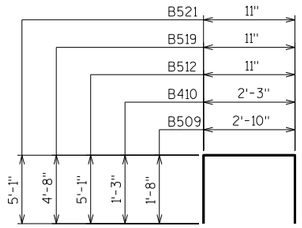
(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT.



B501, B513, B522



B407

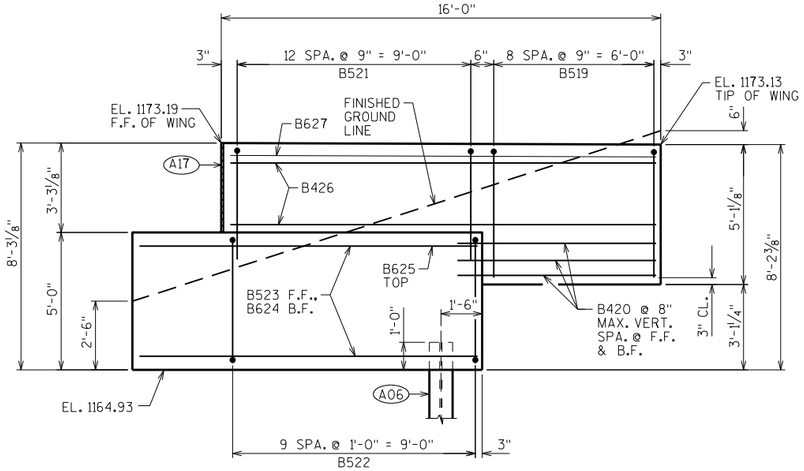


B509, B410, B512, B519, B521

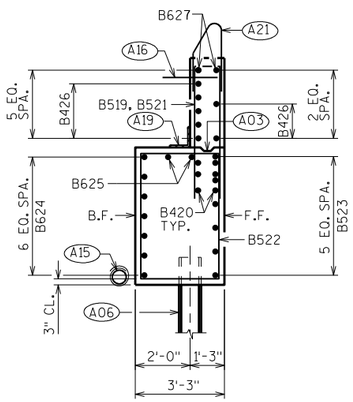
BILL OF BARS

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

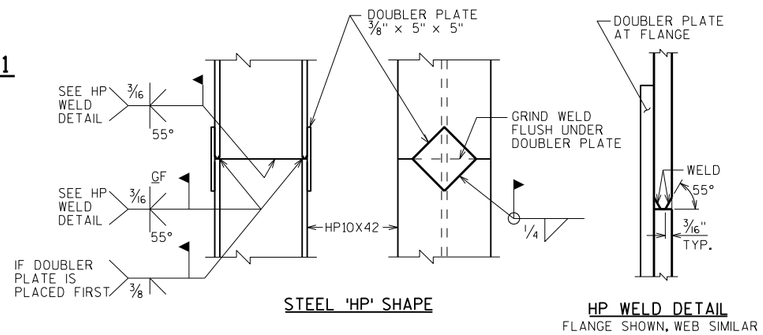
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		80	15'-0"	X		BODY-STIRRUPS
B402		18	2'-3"			PILES-2 PER BODY PILE
B803		6	16'-0"			BODY-HORIZONTAL
B704		6	12'-0"			BODY-HORIZONTAL
B605		6	43'-2"			BODY-HORIZONTAL
B606		22	34'-2"			BODY-HORIZONTAL
B407		9	28'-0"	X		PILES-1 PER BODY PILE
B408		4	28'-0"			BODY-HORIZONTAL-OVER GIRS. 3-5
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B410		28	4'-7"	X		BODY-BETWEEN BEAM SEATS
B411		14	7'-0"			BODY-HORIZONTAL
B512	X	17	10'-10"	X		WING 3-VERTICAL
B513	X	13	16'-0"	X		WING 3-STIRRUP
B514	X	6	15'-9"			WING 3-HORIZONTAL-F.F.
B515	X	7	11'-10"			WING 3-HORIZONTAL-B.F.
B516	X	2	13'-8"			WING 3-HORIZONTAL
B417	X	7	11'-8"			WING 3-HORIZONTAL-F.F.&B.F.
B618	X	2	11'-8"			WING 3-HORIZONTAL-TOP
B519	X	9	10'-0"	X		WING 4-VERTICAL
B420	X	6	7'-9"			WING 4-HORIZONTAL
B521	X	13	10'-10"	X		WING 4-VERTICAL
B522	X	10	15'-8"	X		WING 4-STIRRUP
B523	X	6	12'-4"			WING 4-HORIZONTAL-F.F.
B624	X	7	13'-3"			WING 4-HORIZONTAL-B.F.
B625	X	2	12'-3"			WING 4-HORIZONTAL
B426	X	7	15'-8"			WING 4-HORIZONTAL-F.F.&B.F.
B627	X	2	15'-8"			WING 4-HORIZONTAL-TOP
B428	X	28	2'-0"			WING 3&4-SURFACE DRAIN ANCHORS



WING 4 ELEVATION



WING 4 SECTION



STEEL 'HP' SHAPE

HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

DRAWN BY DDS | PLANS CK'D. JPH

NORTH ABUTMENT DETAILS

SHEET 7

109

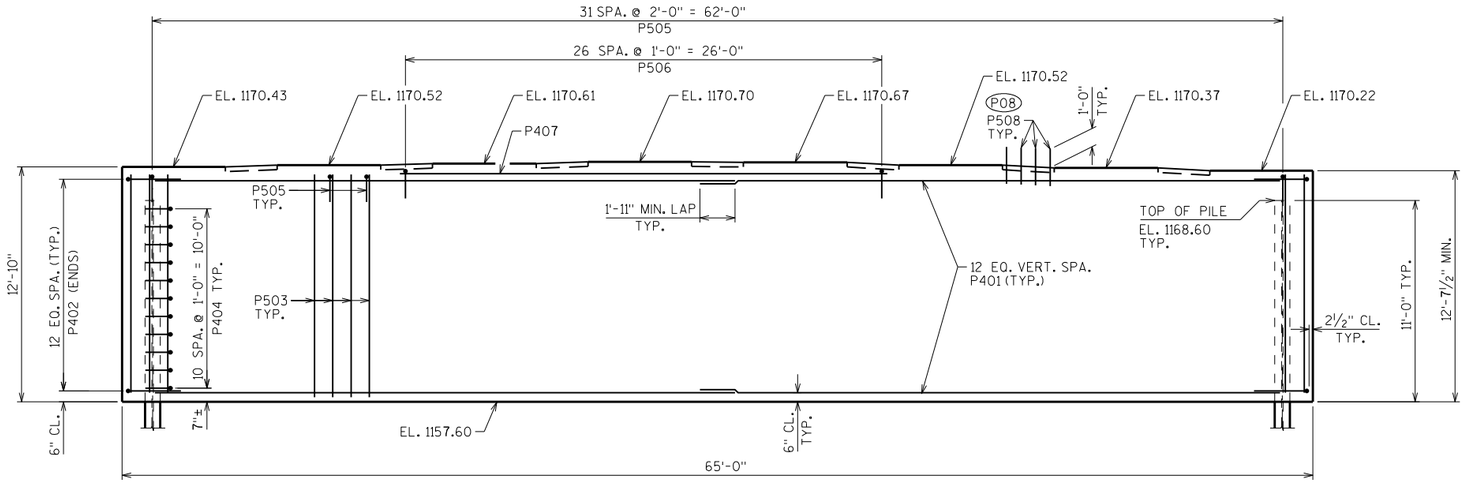
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STATE PROJECT NUMBER

1620-02-74

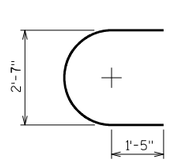


ELEVATION - LOOKING NORTH

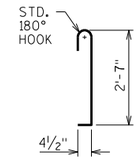
BILL OF BARS

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

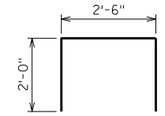
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P401		52	32'-0"			PIER - HORIZ. - F.F. & B.F.
P402		26	6'-11"	X		PIER - HORIZ. - ENDS
P503		132	11'-11"			PIER - VERT.
P404		132	3'-5"	X		PIER - HORIZ. - TIE BARS
P505		32	6'-3"	X		PIER - VERT. - TOP
P506		27	6'-3"	X		PIER - VERT. - TOP
P407		4	26'-8"			PIER - HORIZ. - TOP - UNDER BEAM SEATS 3-5
P508		28	2'-0"			DOWEL BARS



P402



P404

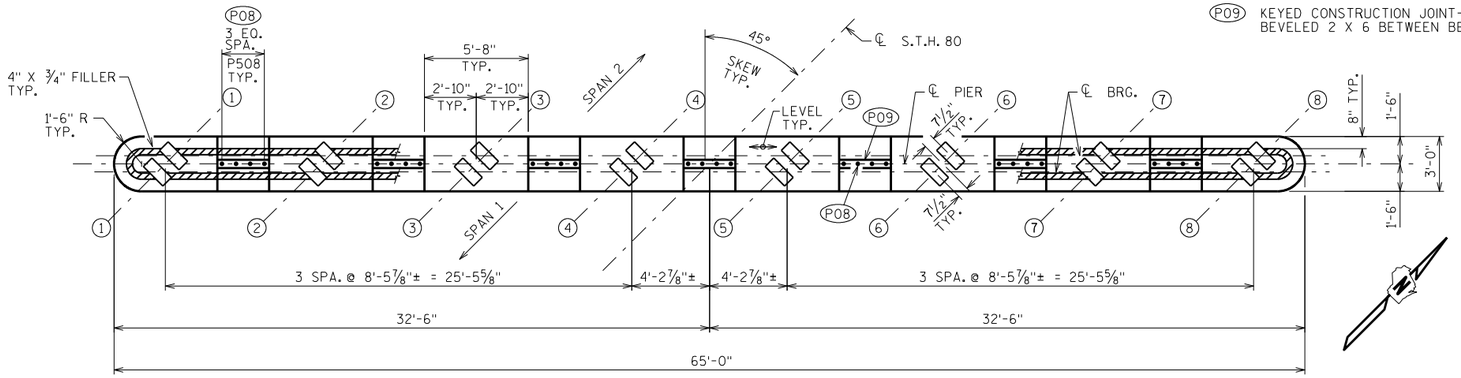


P505, P506

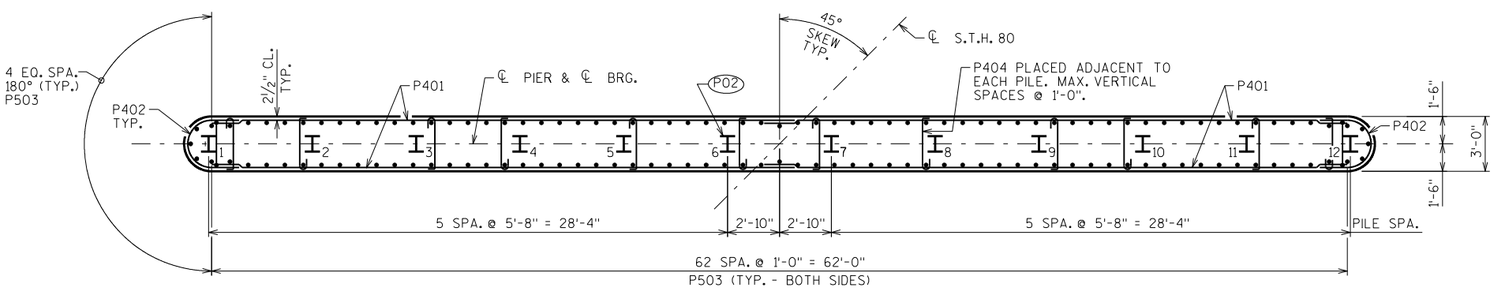
(P02) SUPPORT PIER ON HP 10 X 42 STEEL PILING, ESTIMATED 25'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.

(P08) P508 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

(P09) KEYED CONSTRUCTION JOINT-FORMED BY BEVELED 2 X 6 BETWEEN BEAM SEATS.

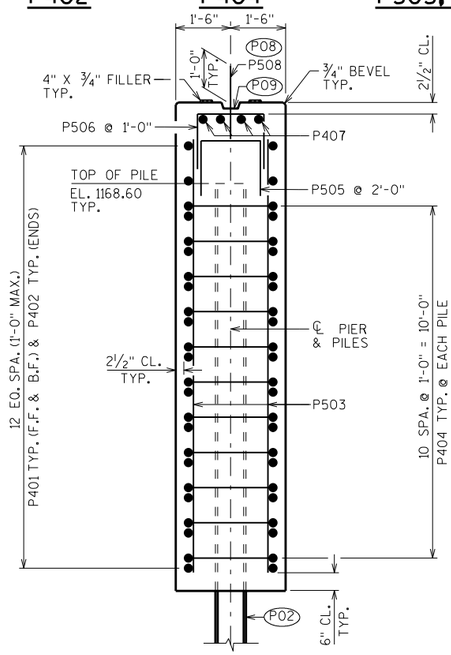


PLAN



PLAN AND PILE LAYOUT

SHOWING REINFORCEMENT



END VIEW - SECTION THRU PIER SHAFT

NOTE:
FOR PILE SPLICE DETAILS, SEE SHEET 5.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

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PILE ENCASED PIER

SHEET 8

110

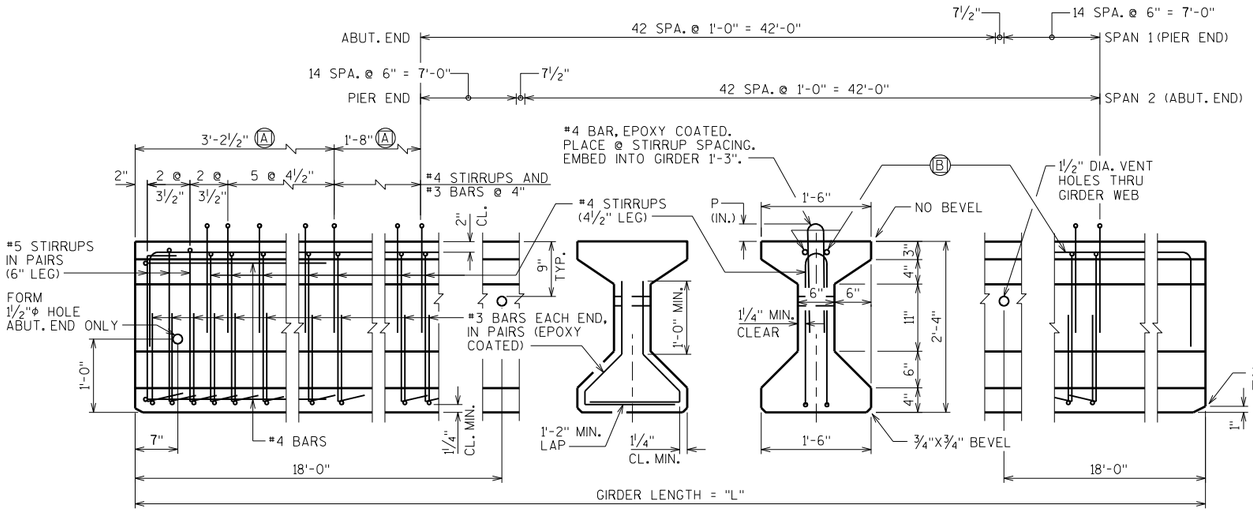
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STATE PROJECT NUMBER

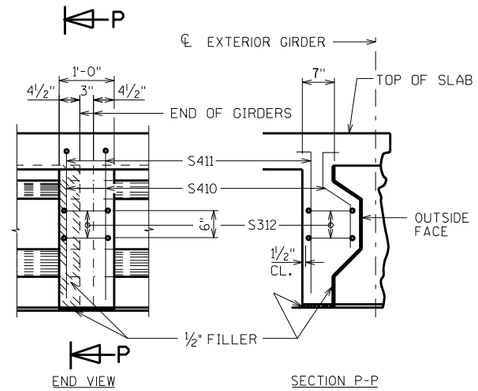
1620-02-74



SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS
(SPAN 1) 2 #4, 1'-8" MIN. LAP
(SPAN 2) 2 #4, 1'-8" MIN. LAP



PILASTER DETAILS AT PIERS

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

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

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, ONE OPTION IS AVAILABLE:

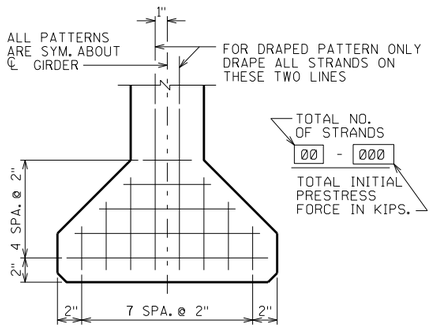
USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT CHIEF, (608)266-5161.

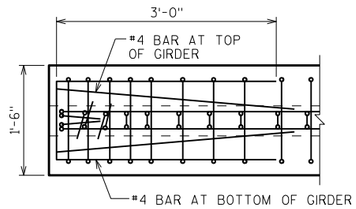
PRESTRESSING STRANDS SHALL BE 0.5" DIA.-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

BEND EACH END OF #4 STIRRUPS 4½" AND #5 STIRRUPS 6".

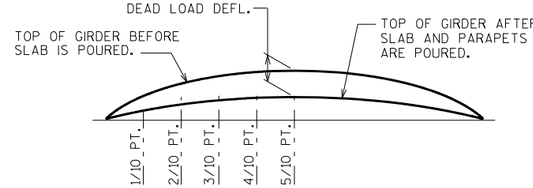
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



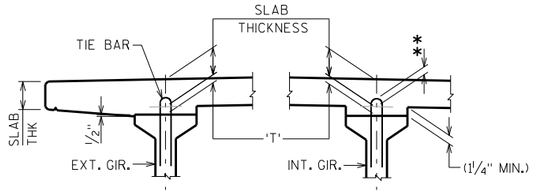
TYP. STRAND PATTERN



TOP VIEW OF GIRDER ENDS



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCH DETAIL

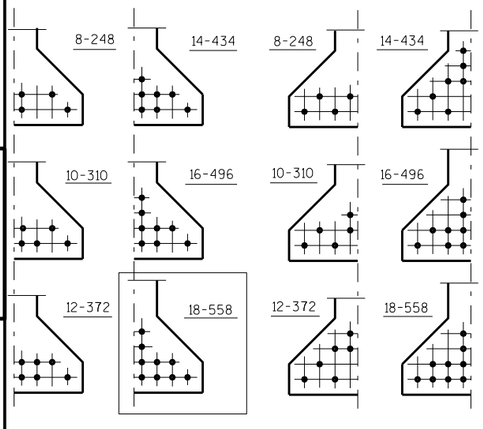
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

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

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF SLAB ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2.6" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

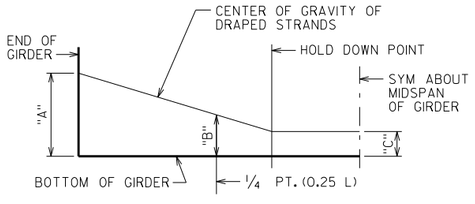


DRAPED PATTERN

0.5"Φ STRANDS

UNDRAPED PATTERN

0.5"Φ STRANDS



DRAPED STRAND PROFILE

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

SPAN	CAMBER (IN.) *
1	1.85
2	1.85

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" IST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.)	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.)
1	1-8	59.375	0.3	0.6	0.8	0.9	1.0	0.9	0.8	0.6	0.3	8000	7"	7"	7"	0.50	18	6400	23.0	9.5	11.75	5.0		
2	1-8	59.375	0.3	0.6	0.8	0.9	1.0	0.9	0.8	0.6	0.3	8000	7"	7"	7"	0.50	18	6400	23.0	9.5	11.75	5.0		

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

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28" PRESTRESSED GIRDER DETAILS

SHEET 9

111

SCALE = 1.00

8

8

STATE PROJECT NUMBER

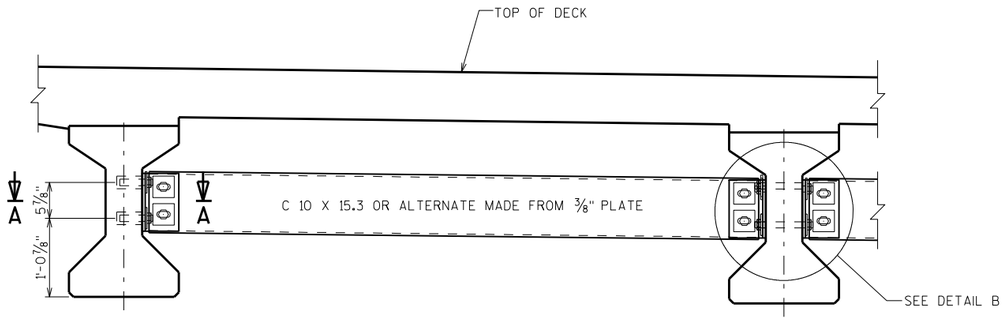
1620-02-74

NOTES

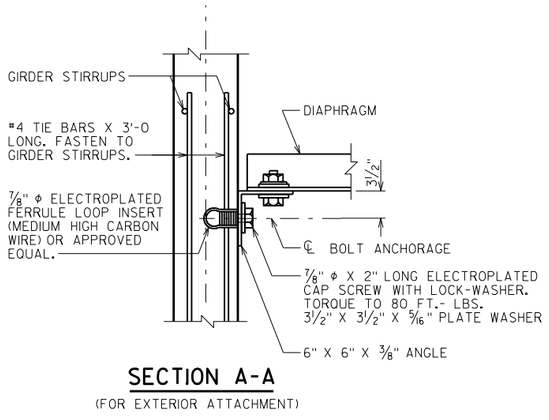
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-71-182", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT. ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

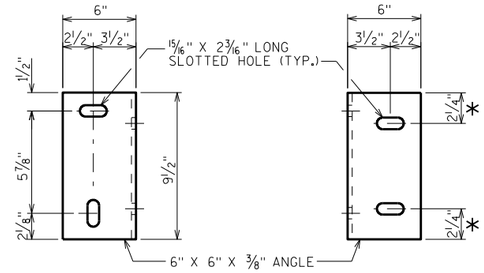


PART TRANSVERSE SECTION AT DIAPHRAGM



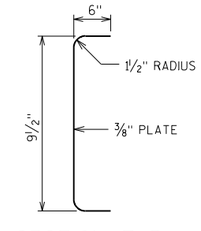
SECTION A-A

(FOR EXTERIOR ATTACHMENT)

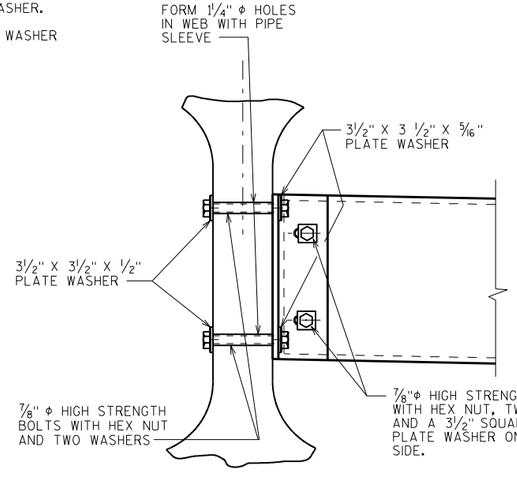


DIAPHRAGM SUPPORT

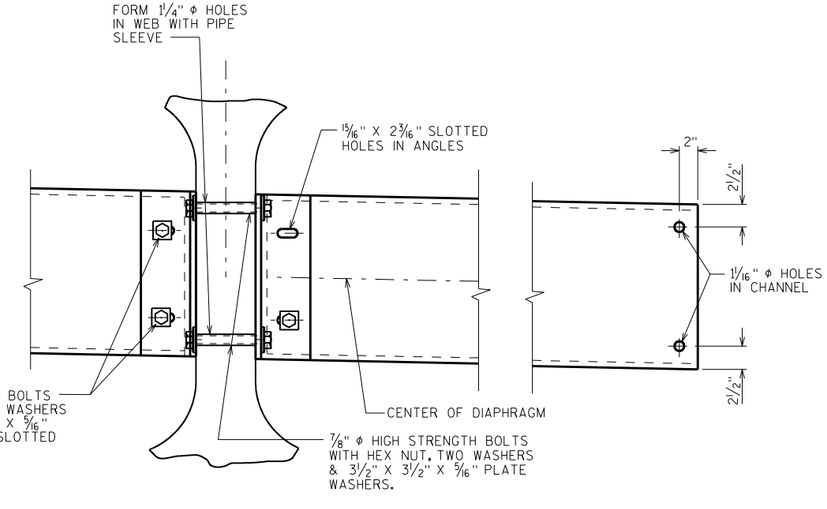
* 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM



SECTION THRU ALTERNATE DIAPHRAGM



(FOR STAGGERED DIAPHRAGM)



(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

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STEEL DIAPHRAGM

SHEET 10

112

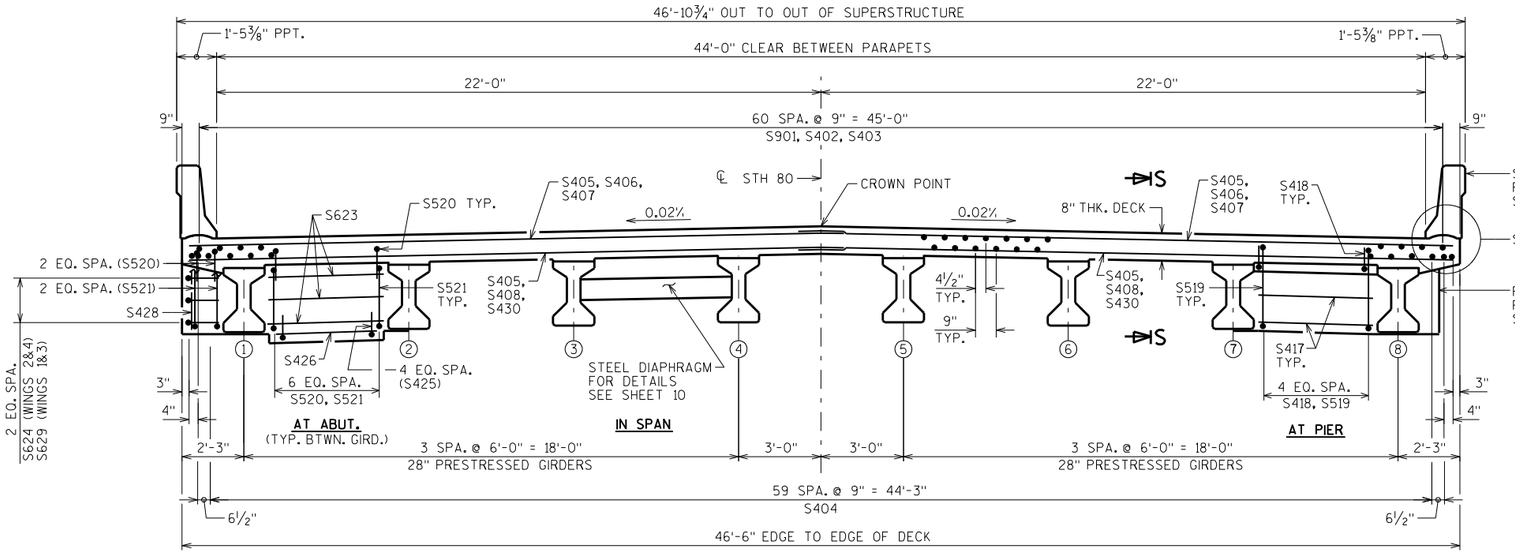
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8

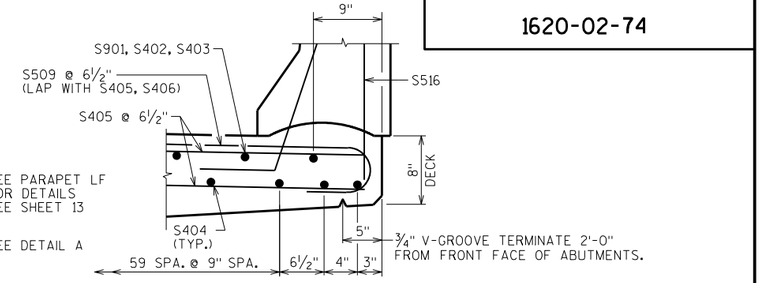
STATE PROJECT NUMBER

1620-02-74



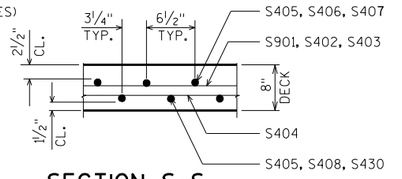
CROSS SECTION THRU ROADWAY

(LOOKING NORTH)

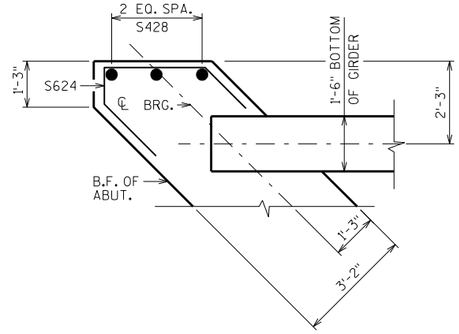


DETAIL A

(TYP. @ BOTH SIDES)

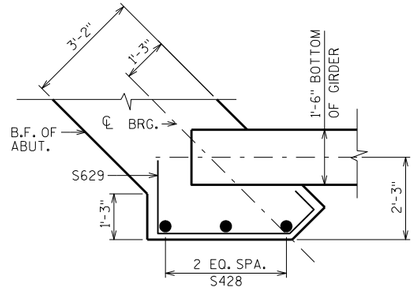


SECTION S-S



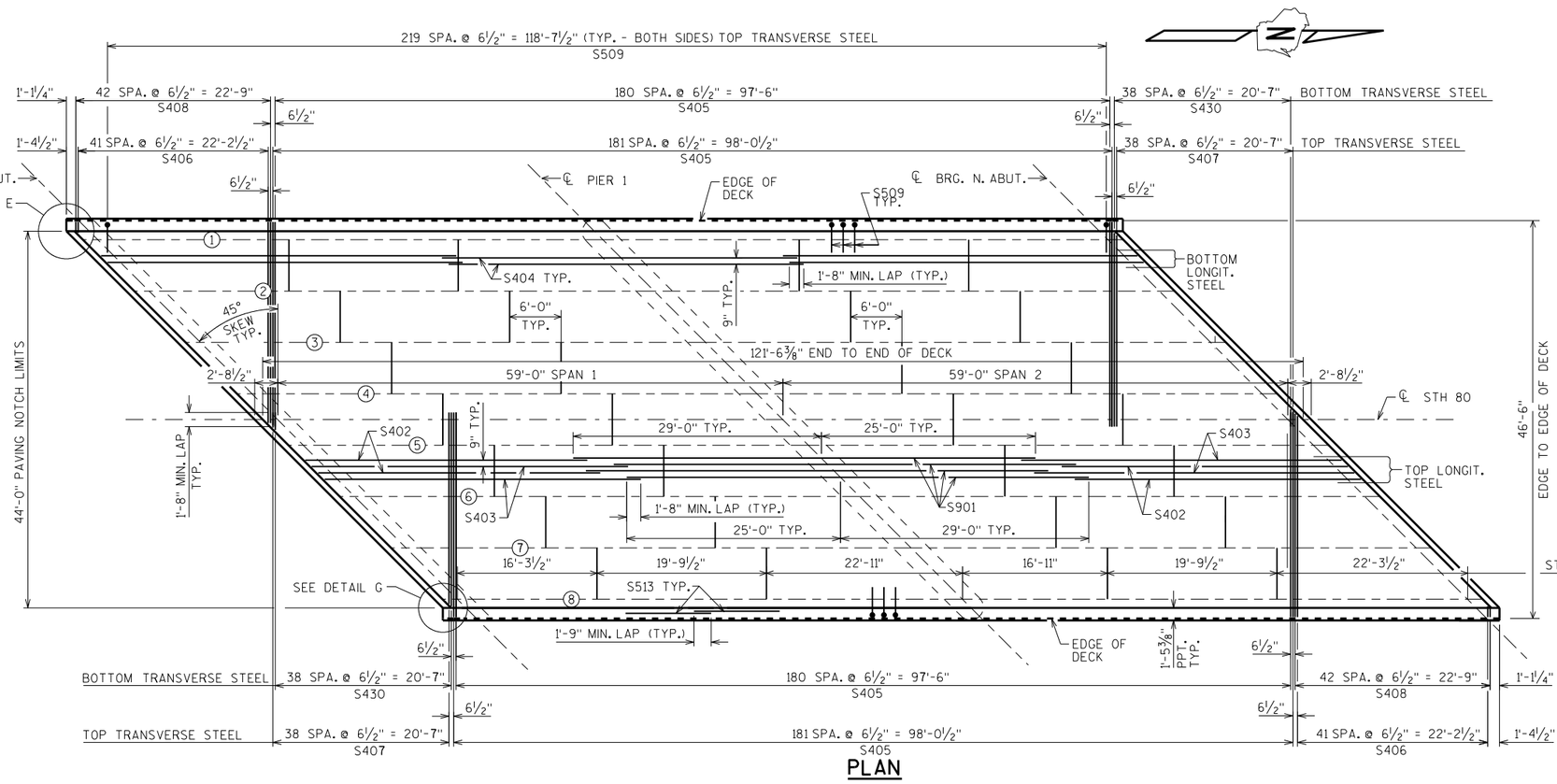
DETAIL E

WING 2 SHOWN - WING 4 SIMILAR



DETAIL G

WING 1 SHOWN - WING 3 SIMILAR



PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

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SUPERSTRUCTURE

SHEET 11

113

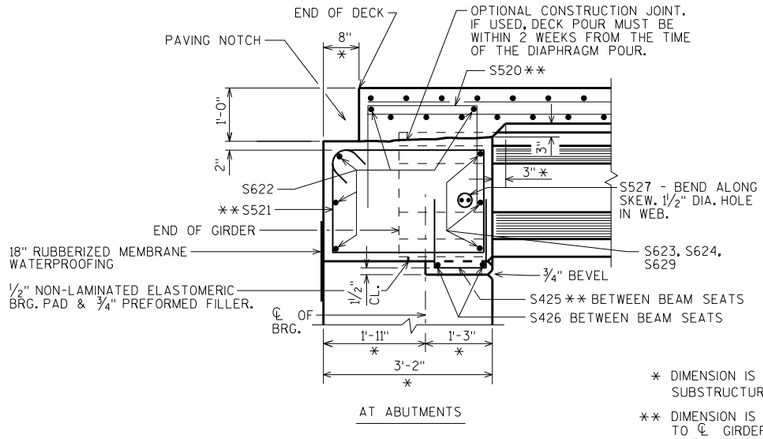
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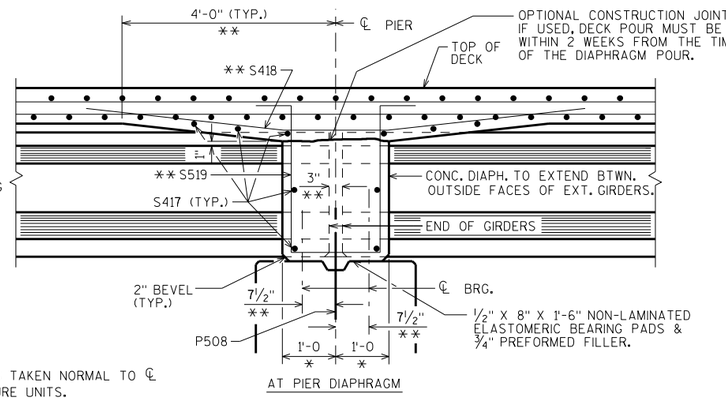
8

STATE PROJECT NUMBER

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AT ABUTMENTS



AT PIER DIAPHRAGM

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

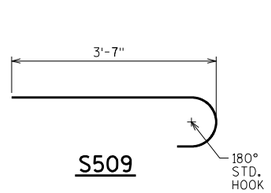
** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER OR REINFORCEMENT IS PLACED PARALLEL TO ℄ GIRDERS.

PART LONGIT. SECTION

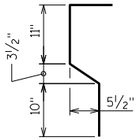
TOP OF DECK ELEVATIONS

	S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER
EOD	1174.00	1173.97	1173.94	1173.92	1173.89	1173.86	1173.83	1173.80	1173.77	1173.74	1173.71
GIR. 1	1174.02	1173.99	1173.96	1173.93	1173.90	1173.87	1173.84	1173.81	1173.78	1173.75	1173.72
GIR. 2	1174.11	1174.08	1174.05	1174.02	1173.99	1173.96	1173.93	1173.90	1173.87	1173.84	1173.81
GIR. 3	1174.20	1174.17	1174.14	1174.11	1174.08	1174.05	1174.02	1173.99	1173.96	1173.93	1173.90
GIR. 4	1174.29	1174.26	1174.23	1174.20	1174.17	1174.14	1174.11	1174.08	1174.05	1174.02	1173.99
GIR. 5	1174.26	1174.23	1174.20	1174.17	1174.14	1174.11	1174.08	1174.05	1174.02	1173.99	1173.96
GIR. 6	1174.11	1174.08	1174.05	1174.02	1173.99	1173.96	1173.93	1173.90	1173.87	1173.84	1173.81
GIR. 7	1173.96	1173.93	1173.90	1173.87	1173.84	1173.81	1173.78	1173.75	1173.72	1173.69	1173.66
GIR. 8	1173.81	1173.78	1173.75	1173.72	1173.69	1173.66	1173.63	1173.60	1173.57	1173.54	1173.51
EOD	1173.78	1173.75	1173.73	1173.70	1173.67	1173.64	1173.61	1173.58	1173.55	1173.52	1173.49

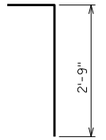
	PIER	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N. ABUT.
EOD	1173.71	1173.68	1173.65	1173.62	1173.59	1173.56	1173.53	1173.50	1173.47	1173.44	1173.41
GIR. 1	1173.72	1173.69	1173.66	1173.63	1173.60	1173.57	1173.54	1173.52	1173.49	1173.46	1173.43
GIR. 2	1173.81	1173.78	1173.75	1173.72	1173.69	1173.66	1173.63	1173.61	1173.58	1173.55	1173.52
GIR. 3	1173.90	1173.87	1173.84	1173.81	1173.78	1173.75	1173.72	1173.70	1173.67	1173.64	1173.61
GIR. 4	1173.99	1173.96	1173.93	1173.90	1173.87	1173.84	1173.81	1173.79	1173.76	1173.73	1173.70
GIR. 5	1173.96	1173.93	1173.90	1173.87	1173.84	1173.81	1173.78	1173.76	1173.73	1173.70	1173.67
GIR. 6	1173.81	1173.78	1173.75	1173.72	1173.69	1173.66	1173.63	1173.61	1173.58	1173.55	1173.52
GIR. 7	1173.66	1173.63	1173.60	1173.57	1173.54	1173.51	1173.48	1173.46	1173.43	1173.40	1173.37
GIR. 8	1173.51	1173.48	1173.45	1173.42	1173.39	1173.36	1173.33	1173.31	1173.28	1173.25	1173.22
EOD	1173.49	1173.46	1173.43	1173.40	1173.37	1173.34	1173.31	1173.28	1173.25	1173.22	1173.20



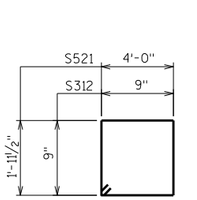
S509



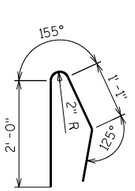
S410



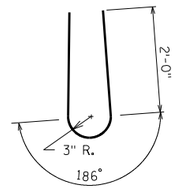
S411



S312, S521



S514



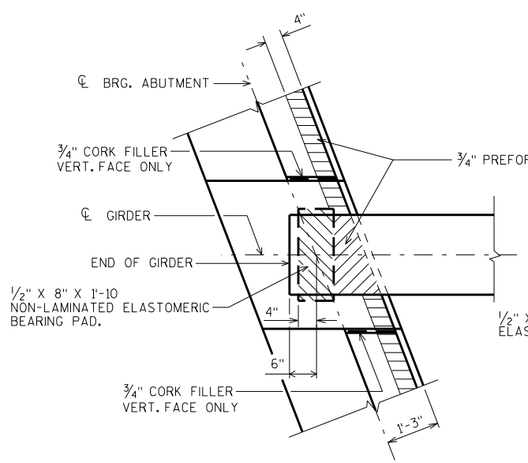
S515

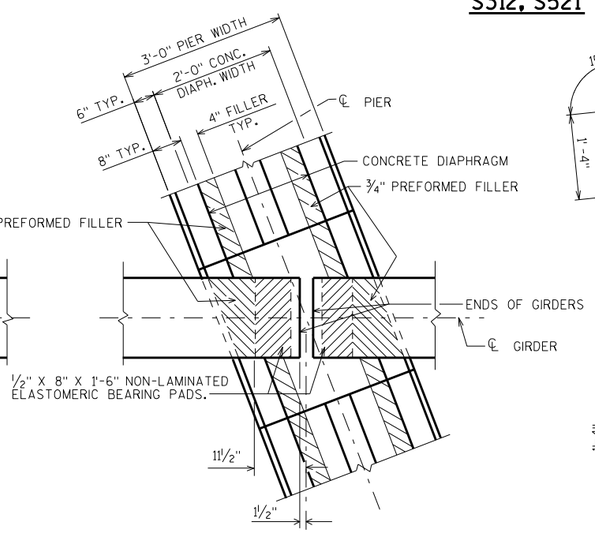
BILL OF BARS

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

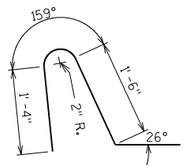
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S901	X	61	54'-0"			LONGITUDINAL - CONTINUITY STEEL
S402	X	61	33'-3"			LONGITUDINAL - TOP
S403	X	61	37'-3"			LONGITUDINAL - TOP
S404	X	192	41'-6"			LONGITUDINAL - BOTTOM
S405	X	726	23'-11"			TRANSVERSE - TOP & BOTTOM
S406	X	84	12'-5"		⚠	TRANSVERSE - TOP
S407	X	78	12'-2"		⚠	TRANSVERSE - TOP
S408	X	86	12'-5"		⚠	TRANSVERSE - BOTTOM
S509	X	440	4'-2"	X		TRANSVERSE - TOP - EDGES OF DECK
S410	X	4	2'-10"	X		PIER PILASTER - VERT.
S411	X	4	3'-4"	X		PIER PILASTER - VERT.
S312	X	4	3'-5"	X		PIER PILASTER - STIRRUP - HORIZ.
S513	X	30	42'-3"			PARAPET LF - HORIZ.
S514	X	10	4'-7"	X		PARAPET LF - VERT. - AT PAVING NOTCHES
S515	X	372	4'-10"	X		PARAPET LF - VERT.
S516	X	362	4'-2"	X		PARAPET LF - VERT.
S417	X	70	5'-11"			PIER DIAPHRAGM - HORIZ.
S418	X	35	10'-5"	X		PIER DIAPHRAGM - VERT. - HAUNCH
S519	X	35	9'-0"	X		PIER DIAPHRAGM - VERT.
S520	X	110	7'-4"	X		ABUT. DIAPHRAGM - VERT.
S521	X	110	12'-7"	X		ABUT. DIAPHRAGM - STIRRUPS
S622	X	20	34'-5"			ABUT. DIAPHRAGM - HORIZ. - B.F. OF DIAPH.
S623	X	42	5'-11"			ABUT. DIAPHRAGM - HORIZ. - BETWEEN GIRDERS
S624	X	6	7'-4"	X		ABUT. DIAPHRAGM - HORIZ. - ENDS
S425	X	70	3'-9"	X		ABUT. DIAPHRAGM - VERT. - BETWEEN GIRDERS
S426	X	28	4'-6"			ABUT. DIAPHRAGM - HORIZ. - BETWEEN GIRDERS
S527	X	32	6'-0"			ABUT. DIAPHRAGM - HORIZ. - THRU GIRDERS
S428	X	12	2'-10"			ABUT. DIAPHRAGM - VERT. - ENDS
S629	X	6	6'-11"	X		ABUT. DIAPHRAGM - HORIZ. - ENDS
S430	X	78	12'-5"		⚠	TRANSVERSE - BOTTOM

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

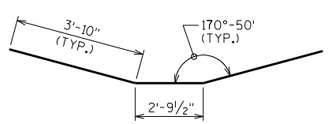




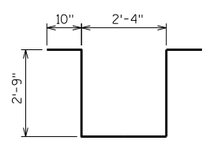
BEARING PAD DETAIL



S516



S418

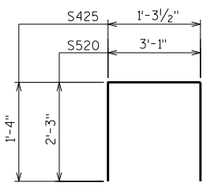


S519

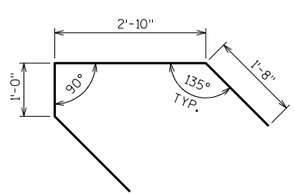
BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
S406	2 SERIES OF 42	1'-3" TO 23'-6"
S407	2 SERIES OF 39	1'-10" TO 22'-5"
S408	2 SERIES OF 43	1'-0" TO 23'-9"
S430	2 SERIES OF 39	2'-1" TO 22'-8"

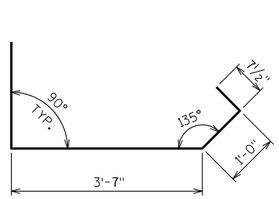
BUNDLE AND TAG EACH SERIES SEPARATELY.



S520, S425



S624



S629

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

DRAWN BY DDS | PLANS CK'D. JPH

SUPERSTRUCTURE DETAILS

SHEET 12

114

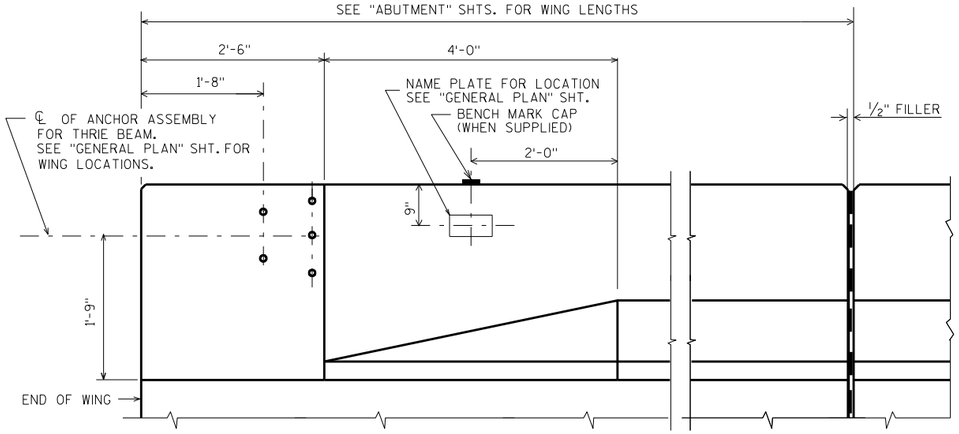
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8

8

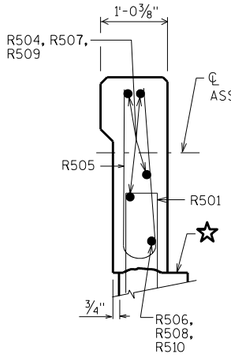
STATE PROJECT NUMBER

1620-02-74

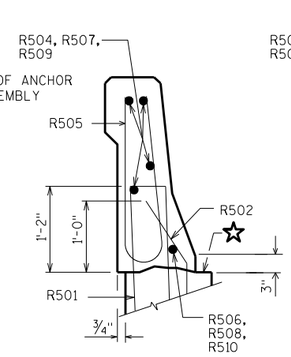


INSIDE ELEVATION

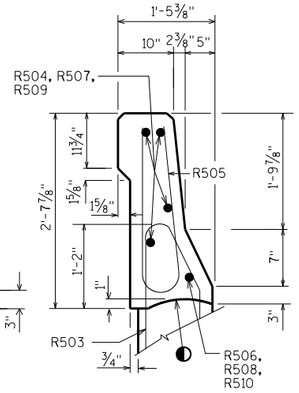
☆ FINISH SURFACE NOT COVERED BY PARAPET SAME AS ROADWAY.



SECTION A



SECTION B

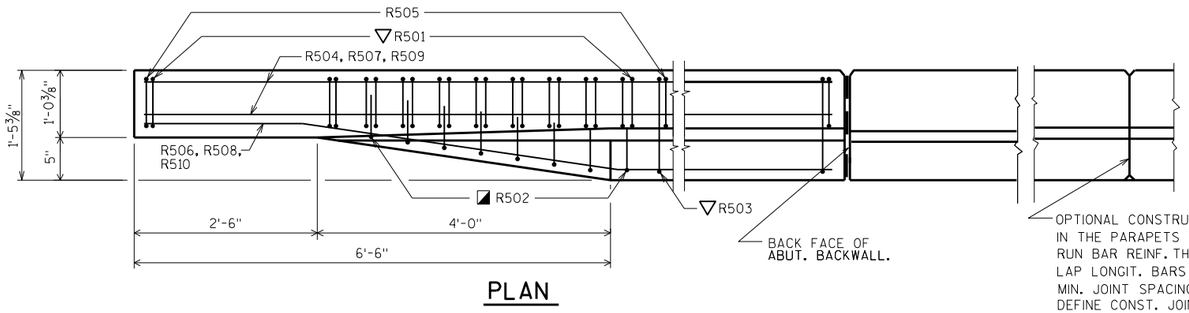


SECTION C

BILL OF BARS

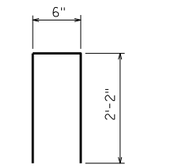
FOR ABUTMENT PARAPETS

BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	28	28	4-7	X		PARAPET VERT.
R502	X	16	16	2-4	X		PARAPET VERT.
R503	X	16	22	4-7	X		PARAPET VERT.
R504	X	4	—	7-7			PARAPET HORIZ.
R505	X	44	50	4-10	X		PARAPET VERT.
R506	X	1	—	7-7	X		PARAPET HORIZ.
R507	X	4	4	15-7			PARAPET HORIZ.
R508	X	1	1	15-7	X		PARAPET HORIZ.
R509	X	—	4	11-8			PARAPET HORIZ.
R510	X	—	1	11-8	X		PARAPET HORIZ.

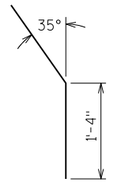


PLAN

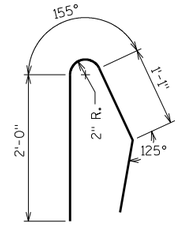
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" 'V' GROOVE.



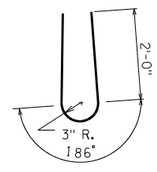
R501



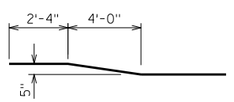
R502



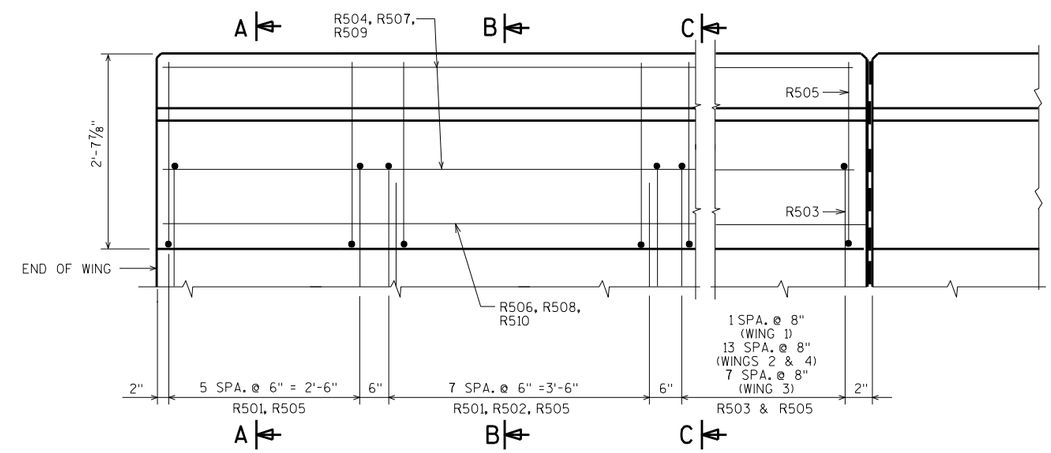
R503



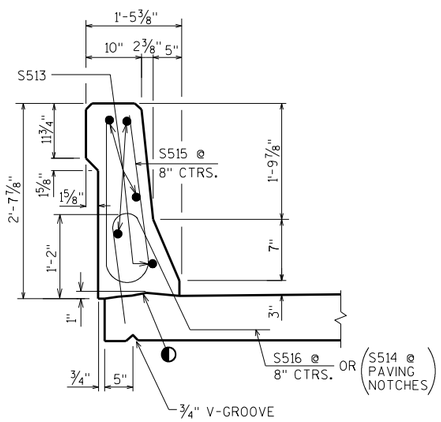
R505



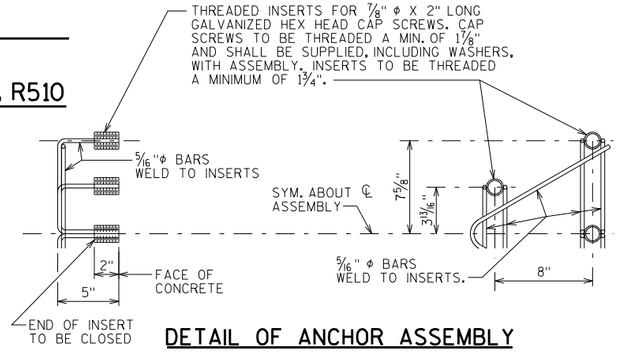
R506, R508, R510



OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

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

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

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ R502 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R502 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R503 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

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SLOPED FACE PARAPET LF

SHEET 13

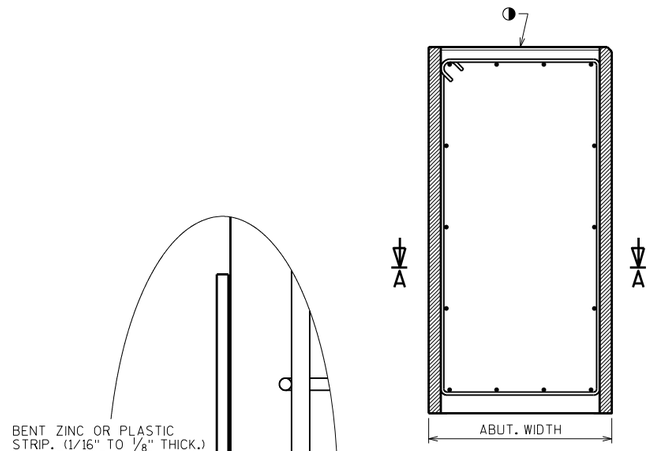
115

8

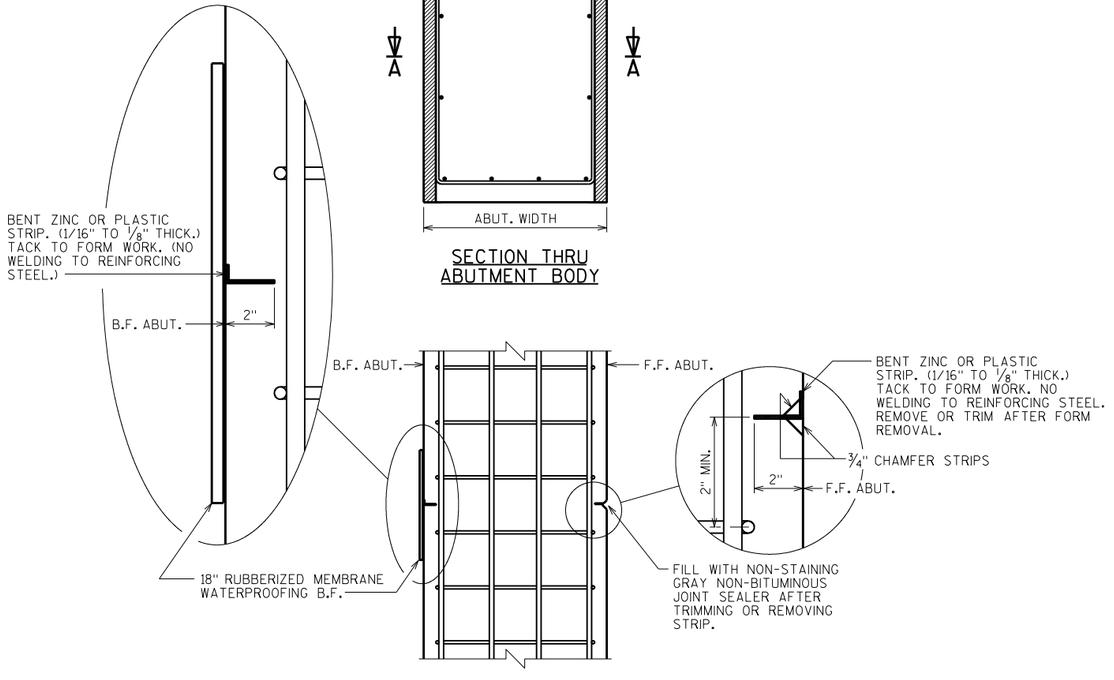
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SCALE = 1.00

STATE PROJECT NUMBER
1620-02-74



SECTION THRU ABUTMENT BODY



SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

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

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

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

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-182

DRAWN BY DDS | PLANS CK'D. JPH

ALTERNATE CONSTRUCTION JOINT

SHEET 14

116

SCALE = 1.00

ALTJOINT
10-08

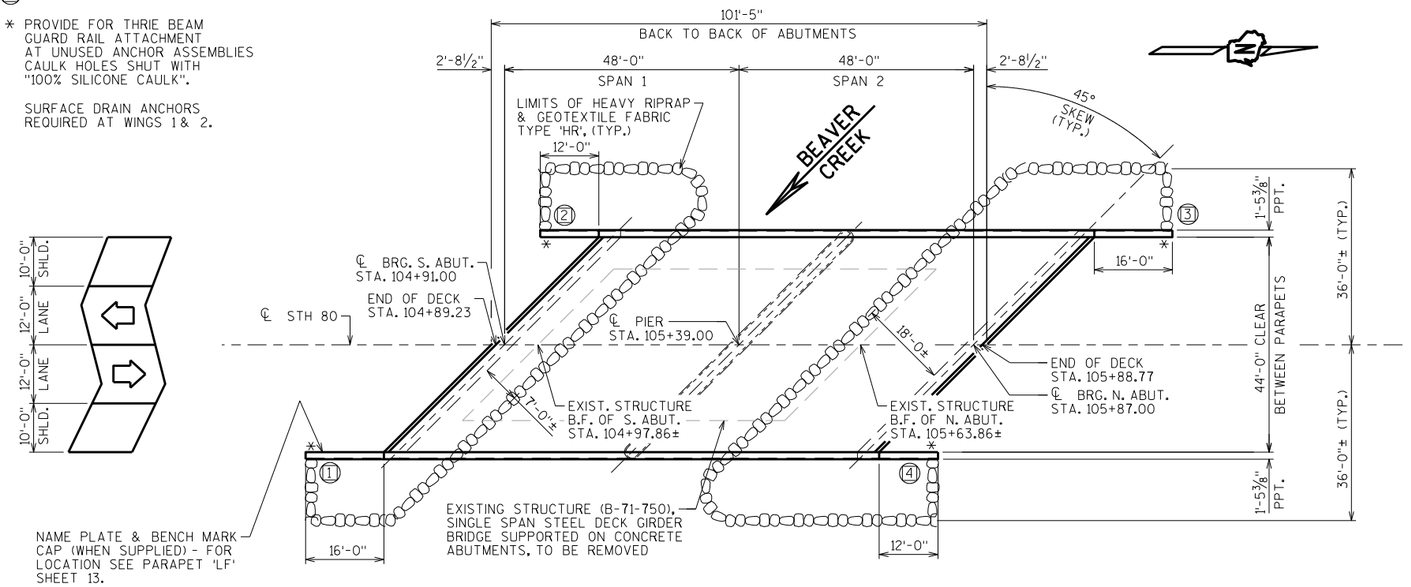
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8

INDICATES WING NUMBER

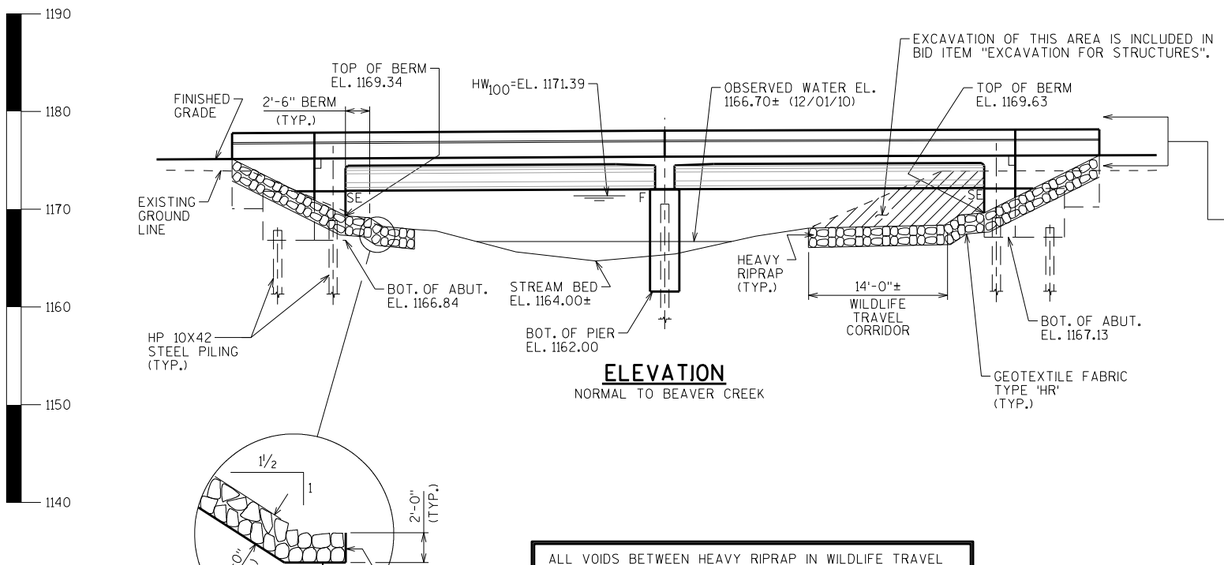
* PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

SURFACE DRAIN ANCHORS REQUIRED AT WINGS 1 & 2.



PLAN

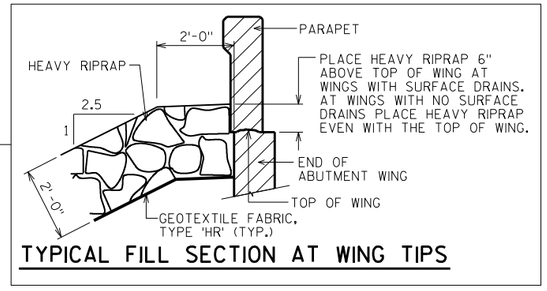
2-SPAN, 28" PRESTRESSED GIRDERS



ELEVATION

NORMAL TO BEAVER CREEK

ALL VOIDS BETWEEN HEAVY RIPRAP IN WILDLIFE TRAVEL CORRIDOR SHALL BE "FILLED" USING SELECT CRUSHED MATERIAL AT THE HORIZONTAL SURFACE OF THE WILDLIFE TRAVEL CORRIDOR. WORK SHALL BE PAID FOR AS "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR".



TYPICAL FILL SECTION AT WING TIPS

DESIGN DATA

LIVE LOAD:

DESIGN LOADING; HL-93
INVENTORY RATING FACTOR: RF=1.07
OPERATING RATING FACTOR: RF=1.40
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 245 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB — f'c = 4,000 P.S.I. ALL OTHER — f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.
28" PRESTRESSED GIRDERS, CONCRETE MASONRY — f'c = 8,000 P.S.I.
STRANDS- 0.5" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 30'-0" LONG.

PIER TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 30'-0" LONG.

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

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 1050 C.F.S.
VEL. = 4.3 F.P.S.
HW.= EL. 1171.39
WATERWAY AREA= 302 SQ. FT.
DRAINAGE AREA= 4.4 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q_2 =250 C.F.S.
$HW._2$= EL. 1169.21

TRAFFIC VOLUME

STH 80
A.D.T.=5200 (2033)
R.D.S.=60 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. PILE ENCASED PIER
9. 28" PRESTRESSED GIRDER DETAILS
10. STEEL DIAPHRAGM
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE DETAILS
13. SLOPED FACE PARAPET LF
14. ALTERNATE CONSTRUCTION JOINT

STATE PROJECT NUMBER

1620-02-73

STRUCTURE DESIGN CONTACTS:
NICK RICE (608) 266-5092

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES
William C. Dreher 10/31/12
ACCEPTED CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-71-183

STH 80 OVER BEAVER CREEK

COUNTY WOOD
TOWN/~~CITY/VILLAGE~~ RICHFIELD

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
NAR	EMK	NAR/DDS	EMK

GENERAL PLAN

SHEET 1 OF 14

117

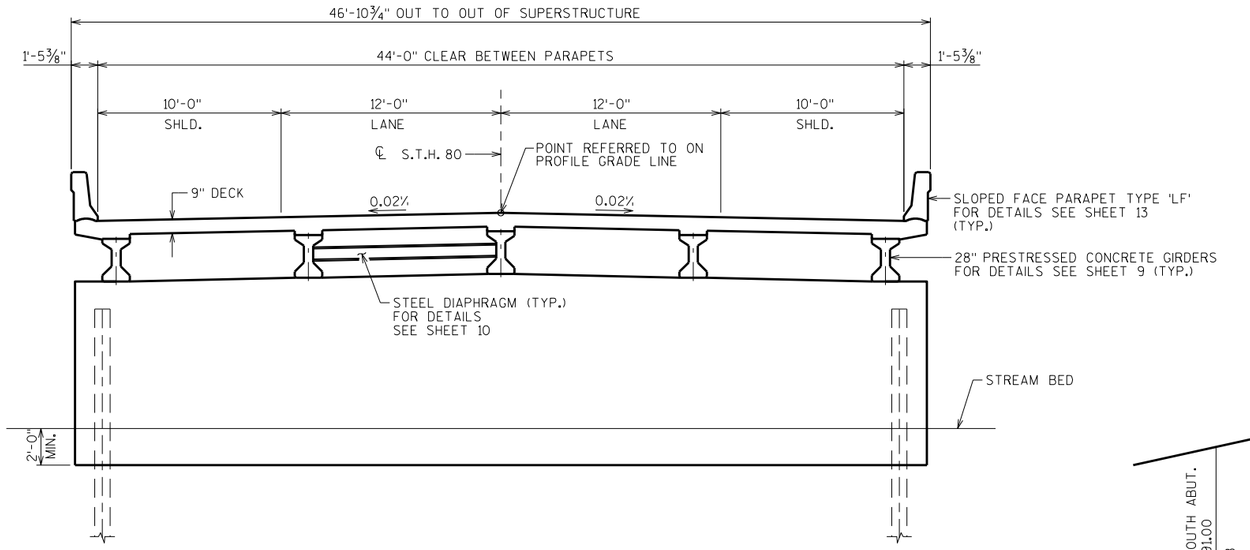
I.D. 1620-02-04

DATE: JULY 2012

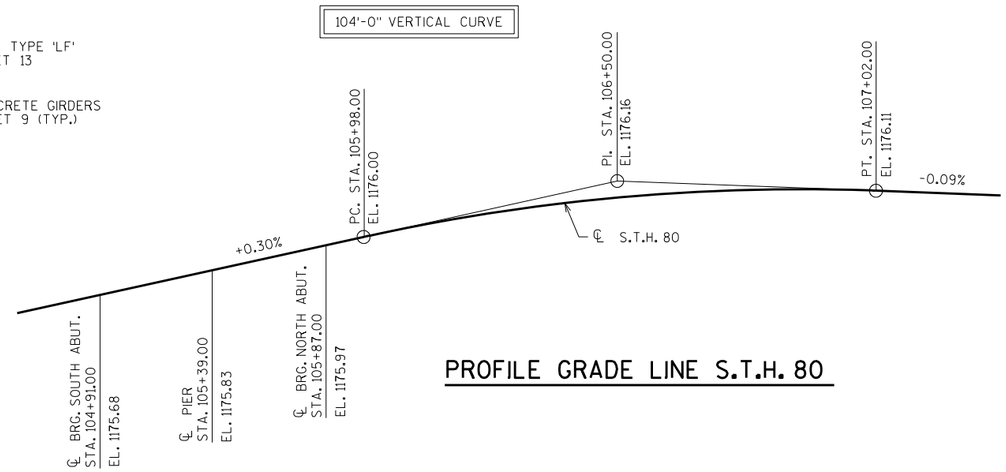
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8



CROSS SECTION THRU ROADWAY
(LOOKING NORTH)



PROFILE GRADE LINE S.T.H. 80

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	NORTH ABUT.	PIER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 105+39.00	LS	———	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-71-183	LS	———	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	———	195	195		390
502.0100	CONCRETE MASONRY BRIDGES	CY	203	62	62	74	401
502.3200	PROTECTIVE SURFACE TREATMENT	SY	590	———	———	———	590
503.0128	PRESTRESSED GIRDER TYPE I 28-INCH	LF	484	———	———	———	484
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	———	3690	3700	2930	10320
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	39170	2350	2330	———	43850
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	———	5	5	10	20
506.4000	STEEL DIAPHRAGMS B-71-183	EACH	16	———	———	———	16
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	16	16	———	32
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	———	330	330	400	1060
606.0300	RIPRAP HEAVY	CY	———	130	200	———	330
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	95	95	———	190
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	———	2	2	———	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	———	220	335	———	555
SPV.0195	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TONS	———	———	41	———	41
	NON-BID ITEMS						
	FILLER	SIZE	———	———	———	———	½" & ¾"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE AND THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

AT ABUTMENTS AND PIER(S), CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

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

ALL VOIDS BETWEEN HEAVY RIP RAP IN WILDLIFE TRAVEL CORRIDOR SHALL BE "FILLED" USING SELECT CRUSHED MATERIAL AT THE HORIZONTAL SURFACE OF THE WILDLIFE TRAVEL CORRIDOR. WORK SHALL BE PAID FOR AS "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

DRAWN BY NAR | PLANS CK'D. EMK

CROSS SECTION & QUANTITIES

SHEET 2

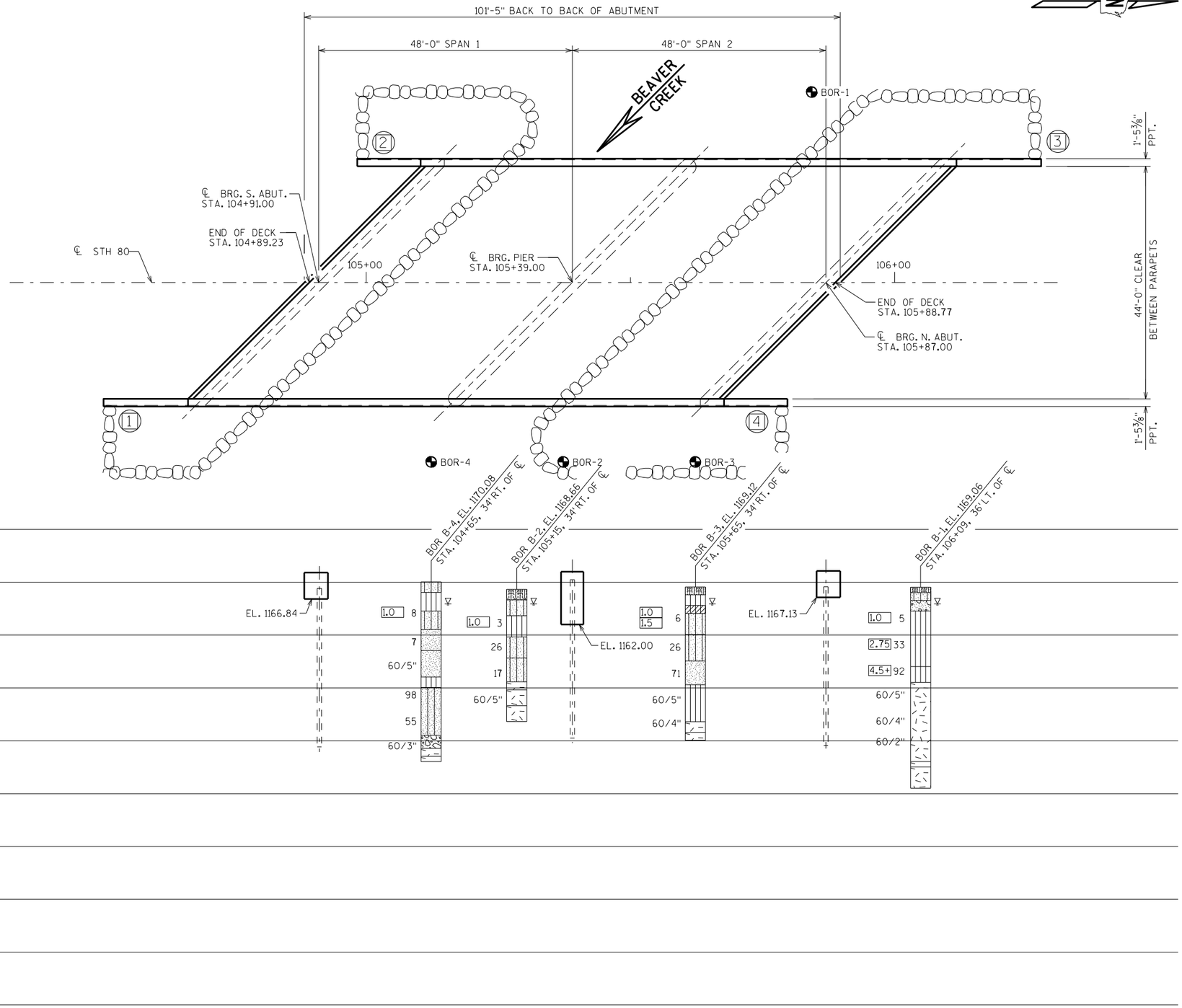
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SCALE = 4

PITTSVILLE - MARSHFIELD
BEAVER CREEK BRIDGE



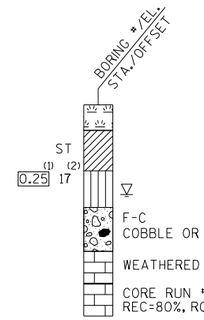
STATE PROJECT NUMBER

1620-02-73

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

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

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

DRAWN BY PR/DDS | PLANS CK'D. EMK

SUBSURFACE EXPLORATION

SHEET 3

119

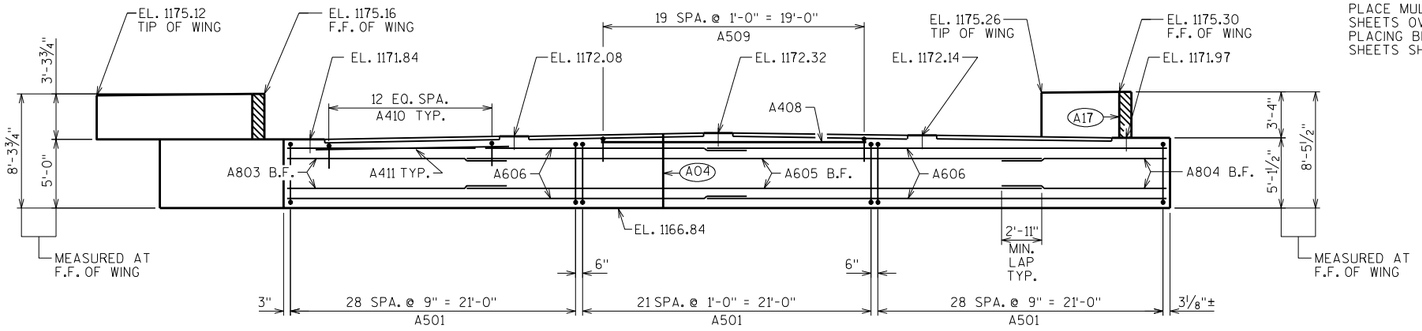
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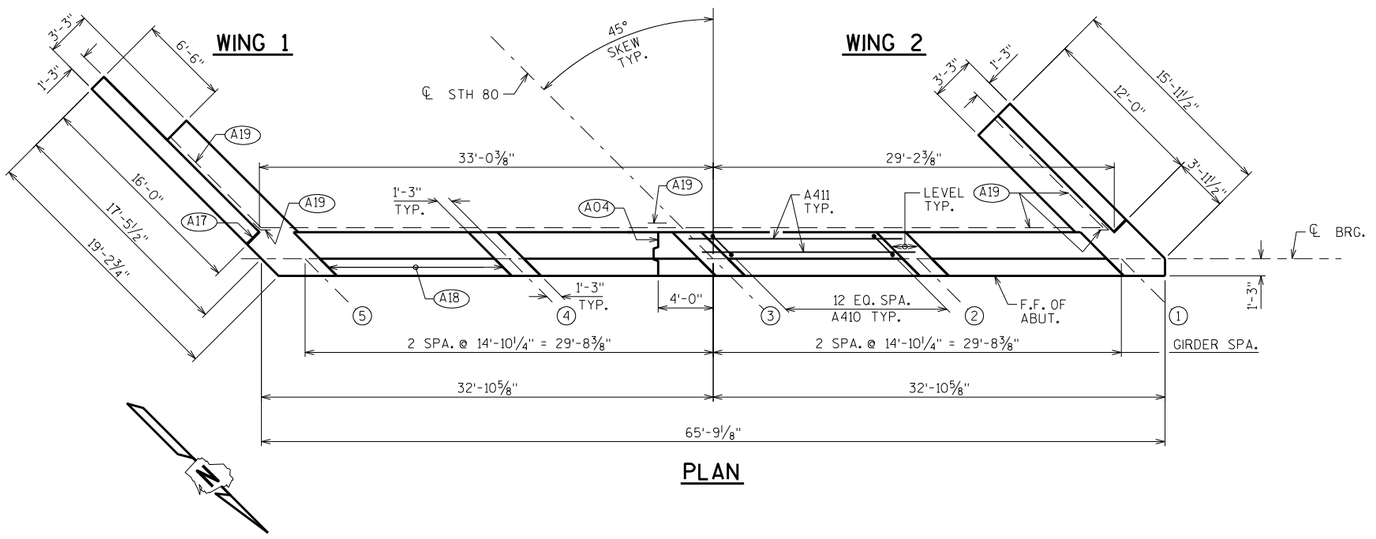
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STATE PROJECT NUMBER

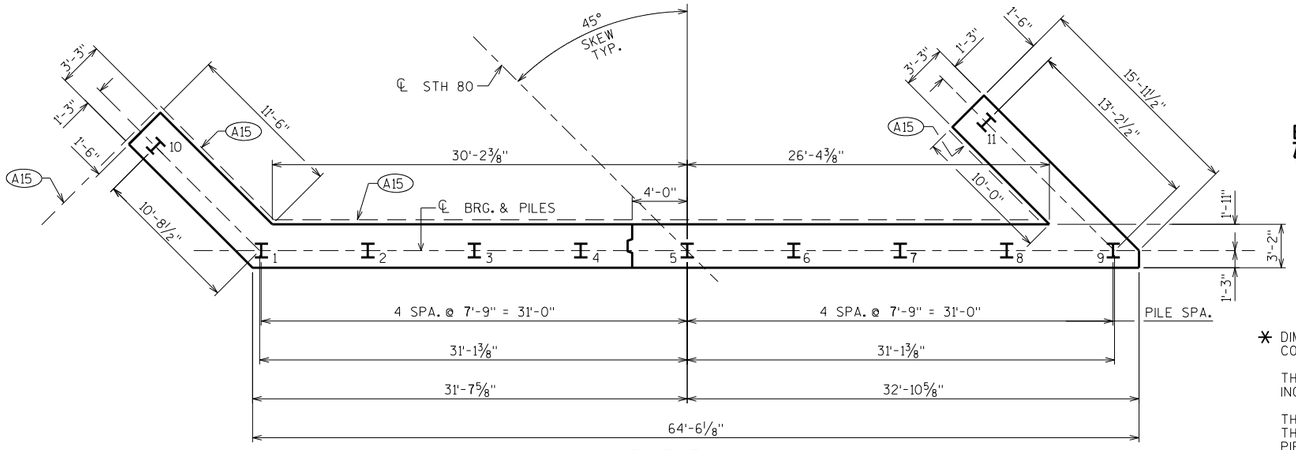
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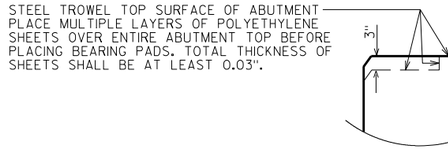
ELEVATION LOOKING SOUTH



PLAN



PILE PLAN



RODENT SCREEN DETAIL



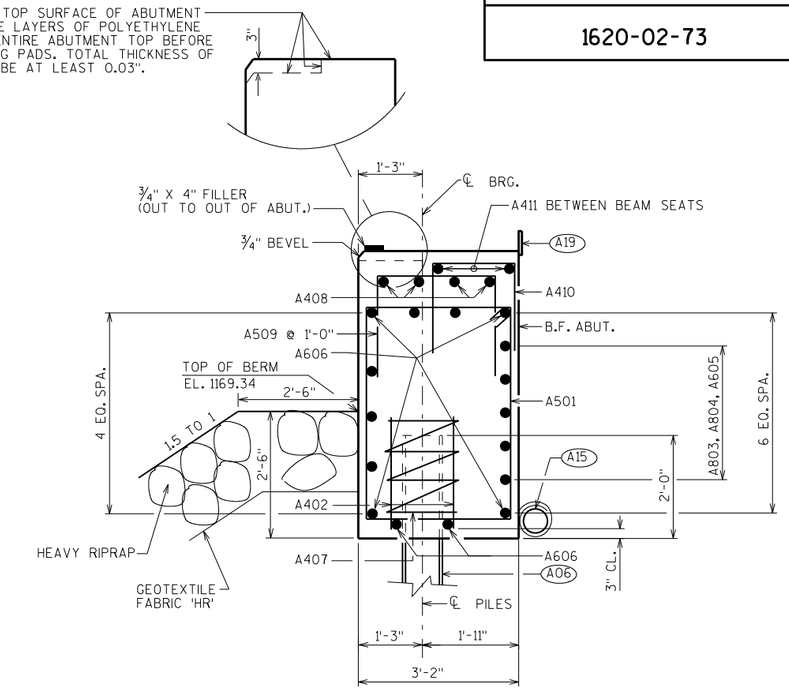
SECTION B-B

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

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



SECTION THRU BODY

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

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 30'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

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SOUTH ABUTMENT

SHEET 4

120

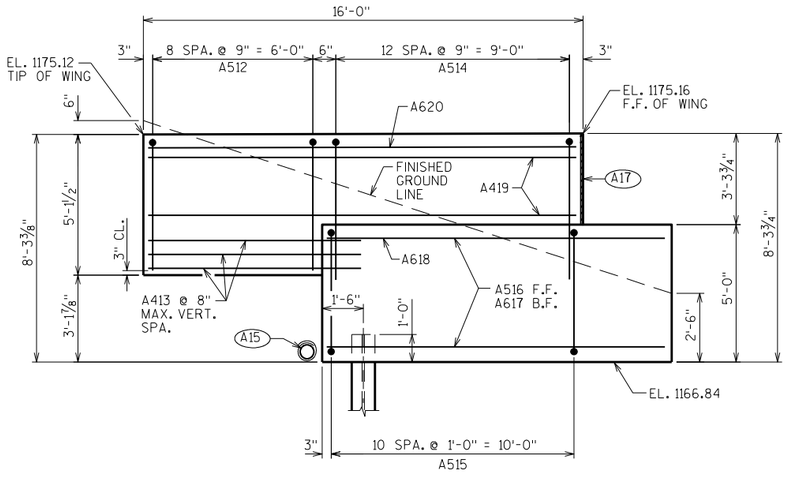
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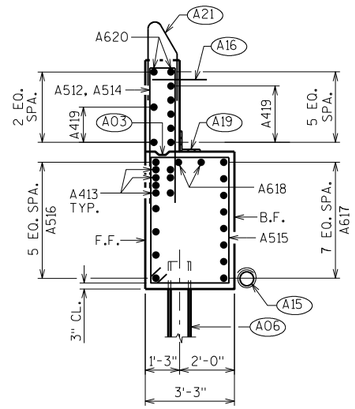
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STATE PROJECT NUMBER

1620-02-73



WING 1 ELEVATION



WING 1 SECTION

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

A06 SUPPORT ABUTMENT ON HP 10 × 42 STEEL PILING, ESTIMATED 30'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.

A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

A16 A428 BARS SPACED @ 1'-0" CTRS. EMBED 1'-0" INTO WING CONC. LOCATE 3" DOWN FROM TOP OF WING @ BACKFACE TO 6" DOWN @ WING TIP. (DRILLED IN EPOXY ANCHORED #4 BARS 2'-0" LONG MAY BE USED.) COST INCIDENTAL TO BID ITEM "BAR STEEL REINFORCEMENT HS COATED BRIDGES".

A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

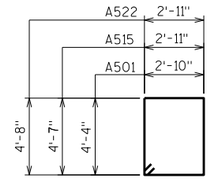
A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

A21 FOR PPT. BARS & DIMENSION SEE PARAPET SHT.

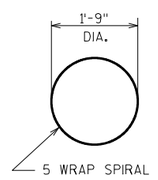
BILL OF BARS

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

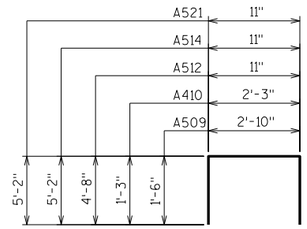
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		80	15'-0"	X		BODY-STIRRUPS
A402		18	2'-3"			PILES- 2 PER BODY PILE
A803		5	16'-0"			BODY-HORIZONTAL-B.F.
A804		5	12'-0"			BODY-HORIZONTAL-B.F.
A605		5	43'-4"			BODY-HORIZONTAL-B.F.
A606		22	34'-3"			BODY-HORIZONTAL
A407		9	28'-0"	X		PILES-1 PER BODY PILE
A408		4	19'-6"			BODY-HORIZONTAL-TOP-OVER GIRDER 3
A509		20	5'-7"	X		BODY-VERTICAL-TOP-OVER GIRDER 3
A410		52	4'-7"	X		BODY-VERTICAL-BETWEEN BEAM SEATS
A411		8	15'-6"			BODY-HORIZONTAL-BETWEEN BEAM SEATS
A512	X	9	10'-0"	X		WING 1-VERTICAL
A413	X	6	7'-9"			WING 1-HORIZONTAL
A514	X	13	11'-0"	X		WING 1-VERTICAL
A515	X	11	15'-8"	X		WING 1-STIRRUP
A516	X	6	12'-9"			WING 1-HORIZONTAL-F.F.
A617	X	8	14'-4"			WING 1-HORIZONTAL-B.F.
A618	X	2	12'-9"			WING 1-HORIZONTAL
A419	X	7	15'-8"			WING 1-HORIZONTAL
A620	X	2	15'-8"			WING 1-HORIZONTAL-TOP
A521	X	17	11'-0"	X		WING 2-VERTICAL
A522	X	13	15'-10"	X		WING 2-STIRRUP
A523	X	6	15'-9"			WING 2-HORIZONTAL-F.F.
A624	X	7	13'-0"			WING 2-HORIZONTAL-B.F.
A625	X	2	14'-6"			WING 2-HORIZONTAL
A426	X	6	11'-8"			WING 2-HORIZONTAL
A627	X	2	11'-8"			WING 2-HORIZONTAL-TOP
A428	X	28	2'-0"			WINGS 1&2 - SURFACE DRAIN ANCHORS



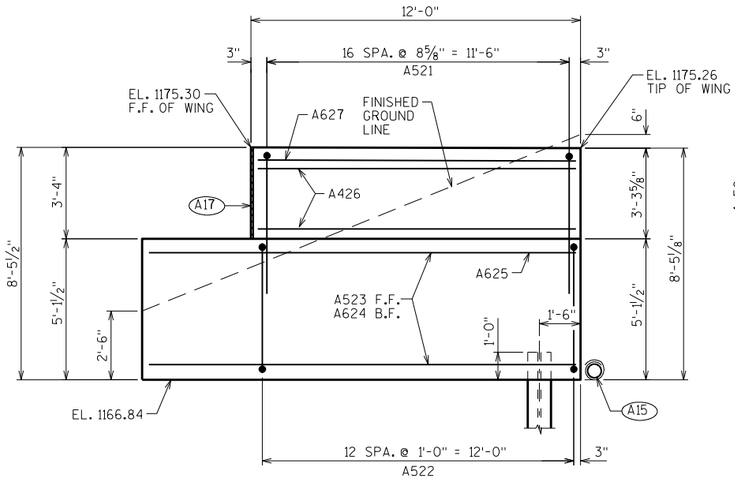
A501, A515, A522



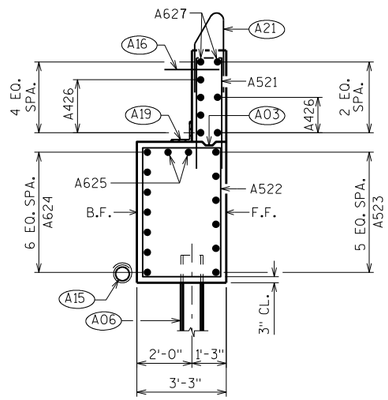
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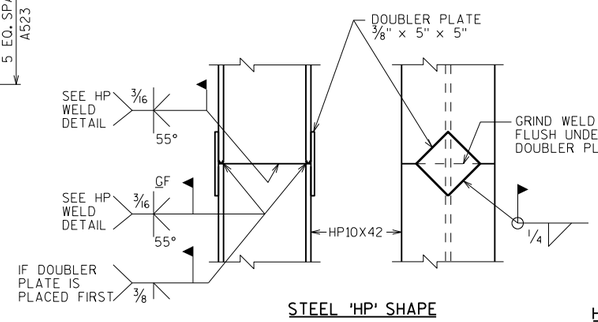
A509, A410, A512, A514, A521



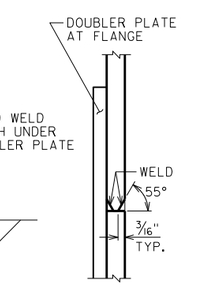
WING 2 ELEVATION



WING 2 SECTION



STEEL 'HP' SHAPE



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

DRAWN BY DDS | PLANS CK'D. EMK

SOUTH ABUTMENT DETAILS

SHEET 5

121

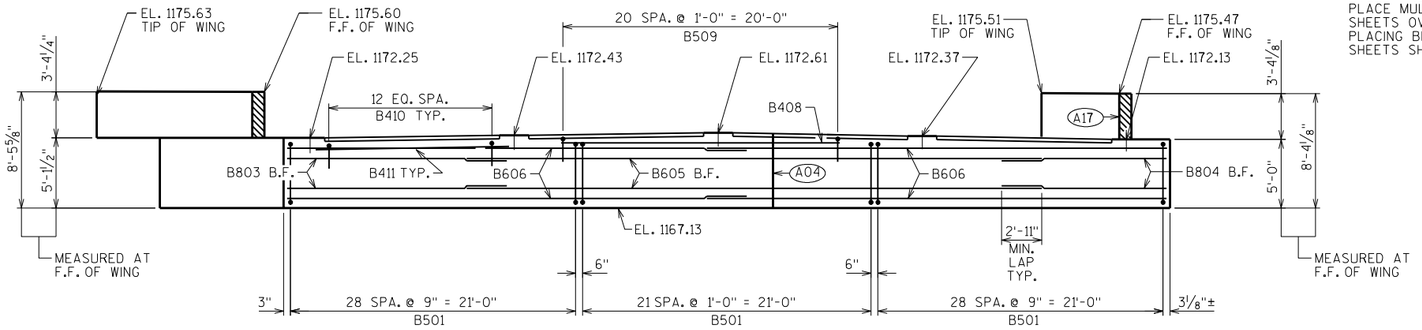
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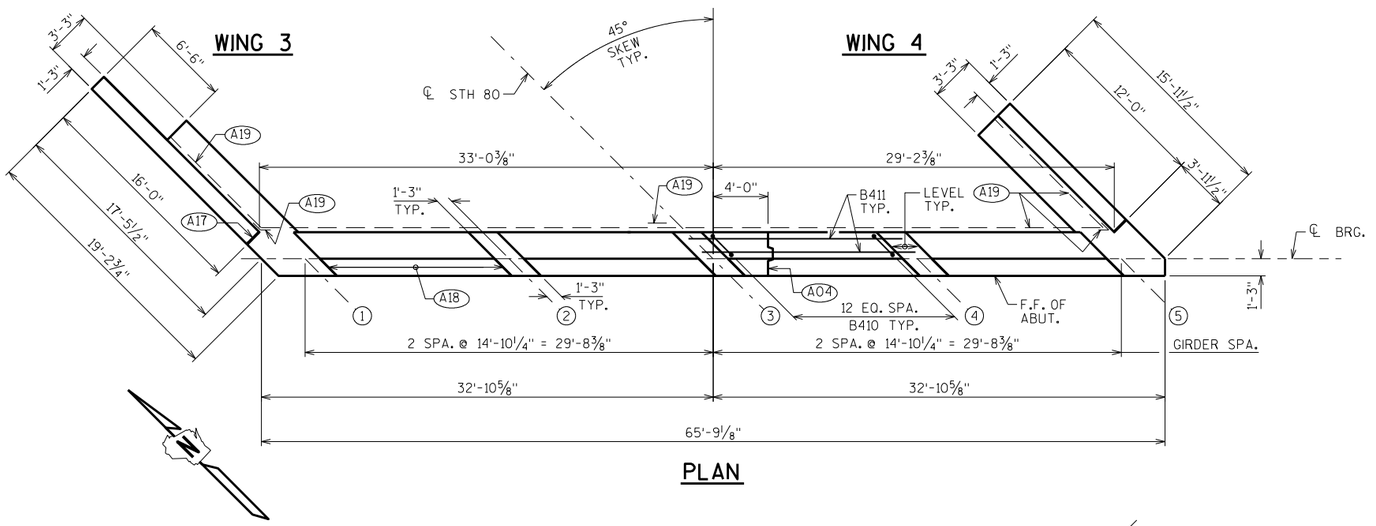
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STATE PROJECT NUMBER

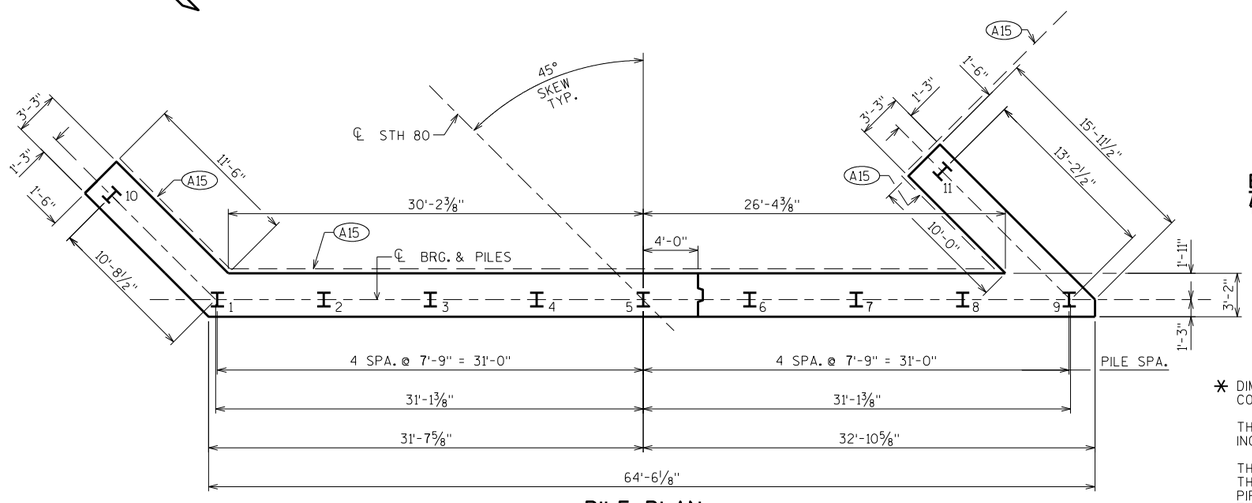
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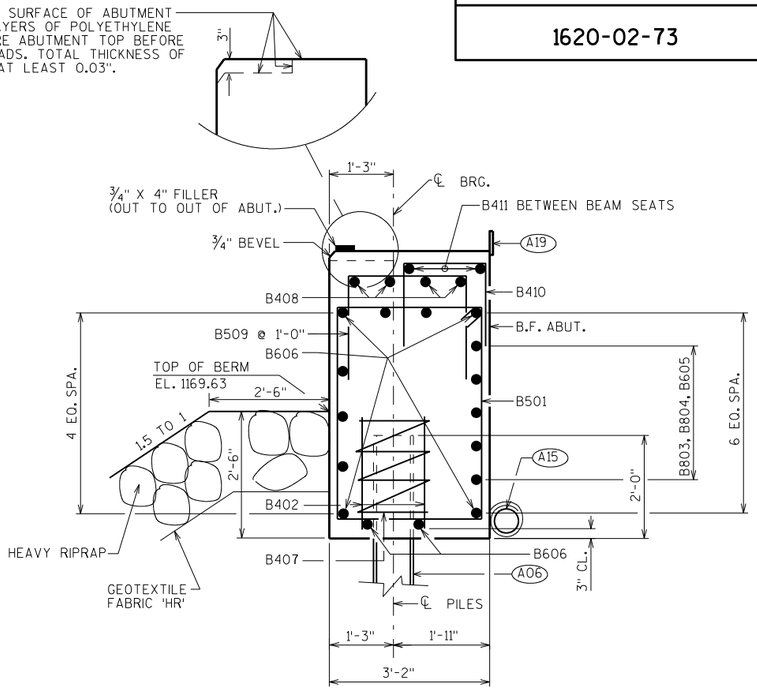
ELEVATION LOOKING NORTH



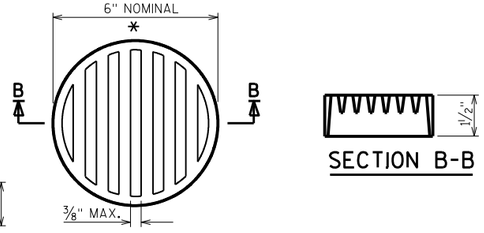
PLAN



PILE PLAN



SECTION THRU BODY



RODENT SCREEN DETAIL

SECTION B-B

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

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

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 30'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

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NORTH ABUTMENT

SHEET 6

122

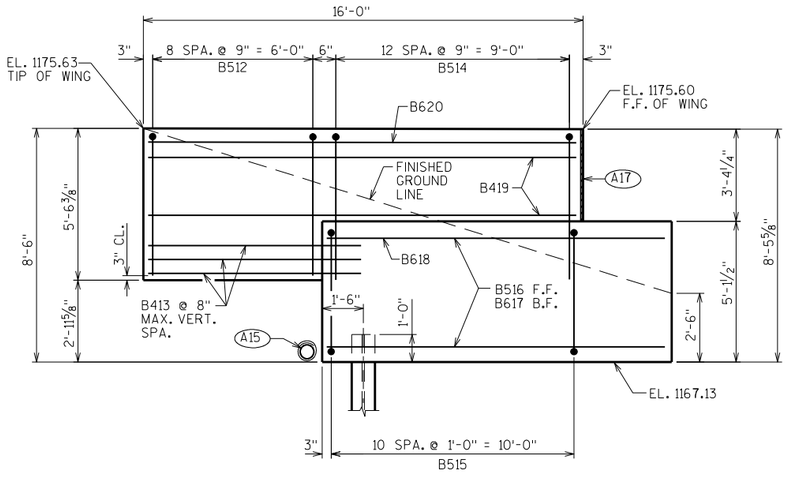
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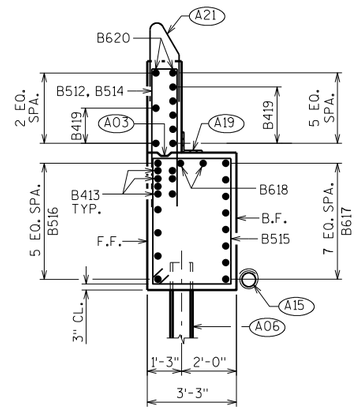
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STATE PROJECT NUMBER

1620-02-73



WING 3 ELEVATION



WING 3 SECTION

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

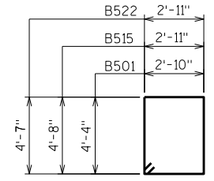
A06 SUPPORT ABUTMENT ON HP 10 × 42 STEEL PILING, ESTIMATED 30'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.

A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

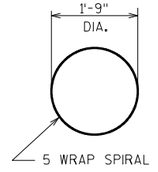
A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

A21 FOR PPT. BARS & DIMENSION SEE PARAPET SHT.



B501, B515, B522

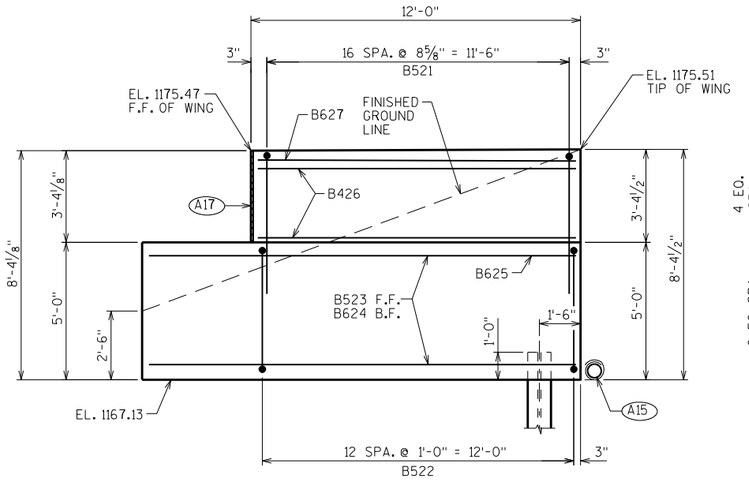


B407

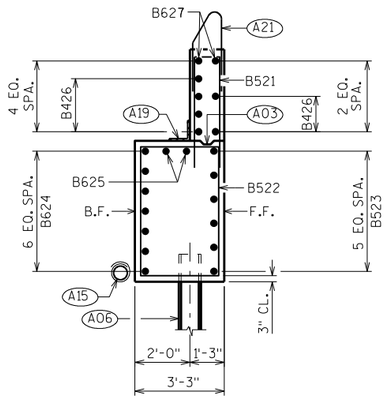
BILL OF BARS

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

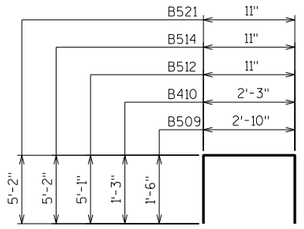
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		80	15'-0"	X		BODY-STIRRUPS
B402		18	2'-3"			PILES- 2 PER BODY PILE
B803		5	16'-0"			BODY-HORIZONTAL-B.F.
B804		5	12'-0"			BODY-HORIZONTAL-B.F.
B605		5	43'-4"			BODY-HORIZONTAL-B.F.
B606		22	34'-3"			BODY-HORIZONTAL
B407		9	28'-0"	X		PILES-1 PER BODY PILE
B408		4	20'-6"			BODY-HORIZONTAL-TOP-OVER GIRDER 3
B509		21	5'-7"	X		BODY-VERTICAL-TOP-OVER GIRDER 3
B410		52	4'-7"	X		BODY-VERTICAL-BETWEEN BEAM SEATS
B411		8	15'-6"			BODY-HORIZONTAL-BETWEEN BEAM SEATS
B512	X	9	10'-10"	X		WING 3-VERTICAL
B413	X	6	7'-9"			WING 3-HORIZONTAL
B514	X	13	11'-0"	X		WING 3-VERTICAL
B515	X	11	15'-10"	X		WING 3-STIRRUP
B516	X	6	12'-9"			WING 3-HORIZONTAL-F.F.
B617	X	8	14'-4"			WING 3-HORIZONTAL-B.F.
B618	X	2	12'-9"			WING 3-HORIZONTAL
B419	X	7	15'-8"			WING 3-HORIZONTAL
B620	X	2	15'-8"			WING 3-HORIZONTAL-TOP
B521	X	17	11'-0"	X		WING 4-VERTICAL
B522	X	13	15'-8"	X		WING 4-STIRRUP
B523	X	6	15'-9"			WING 4-HORIZONTAL-F.F.
B624	X	7	13'-0"			WING 4-HORIZONTAL-B.F.
B625	X	2	14'-6"			WING 4-HORIZONTAL
B426	X	6	11'-8"			WING 4-HORIZONTAL
B627	X	2	11'-8"			WING 4-HORIZONTAL-TOP



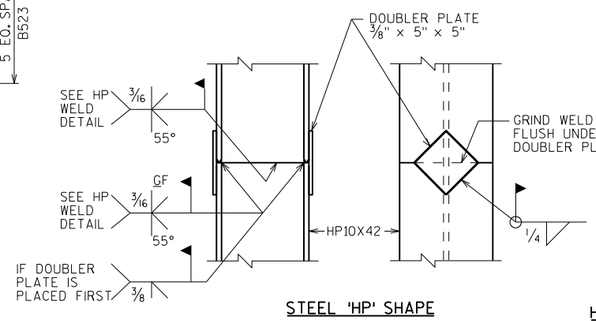
WING 4 ELEVATION



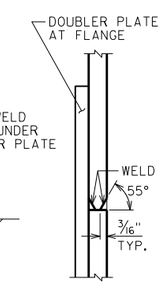
WING 4 SECTION



B509, B410, B512, B514, B521



STEEL 'HP' SHAPE



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE DETAILS

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STATE OF WISCONSIN
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STRUCTURE B-71-183

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NORTH ABUTMENT DETAILS

SHEET 7

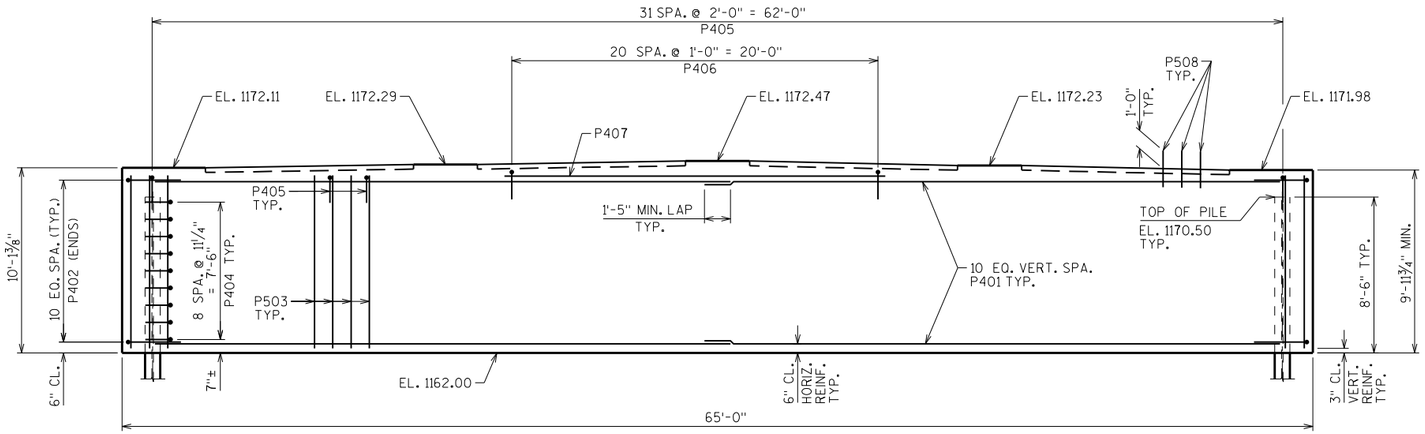
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STATE PROJECT NUMBER
1620-02-73

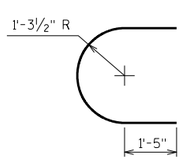


ELEVATION - LOOKING NORTH

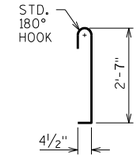
BILL OF BARS

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

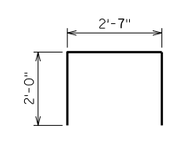
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P401		44	31'-9"			PIER - HORIZ. - F.F. & B.F.
P402		22	6'-11"	X		PIER - HORIZ. - ENDS
P503		132	9'-6"			PIER - VERT.
P404		90	3'-5"	X		PIER - HORIZ. - TIE BARS AT GIRDERS
P405		32	6'-5"	X		PIER - VERT. - TOP
P406		21	6'-5"	X		PIER - VERT. - TOP
P407		4	19'-6"			PIER - HORIZ. - TOP
P508		48	2'-0"			DOWEL BARS



P402



P404

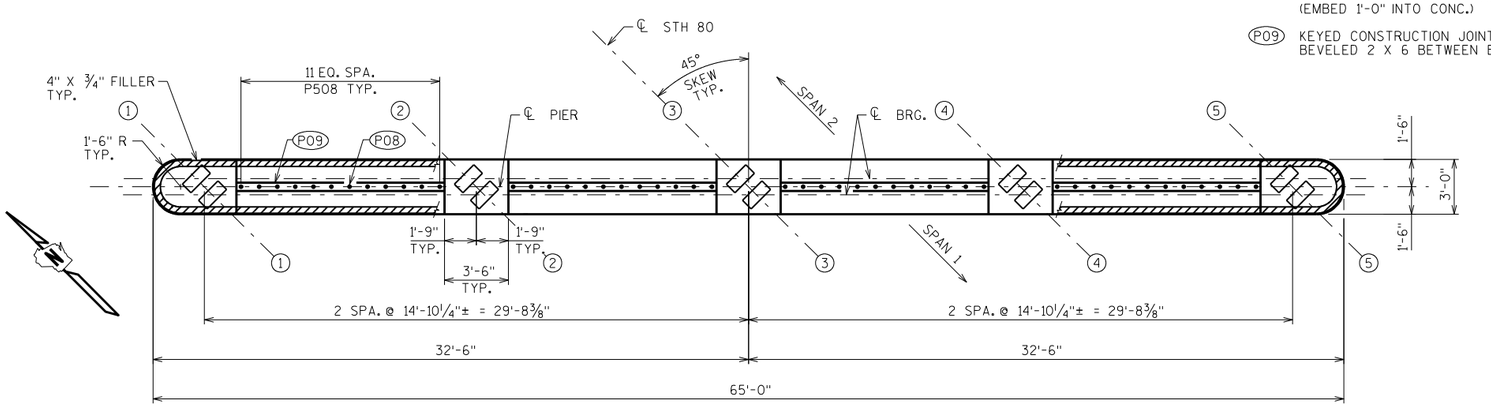


P405, P406

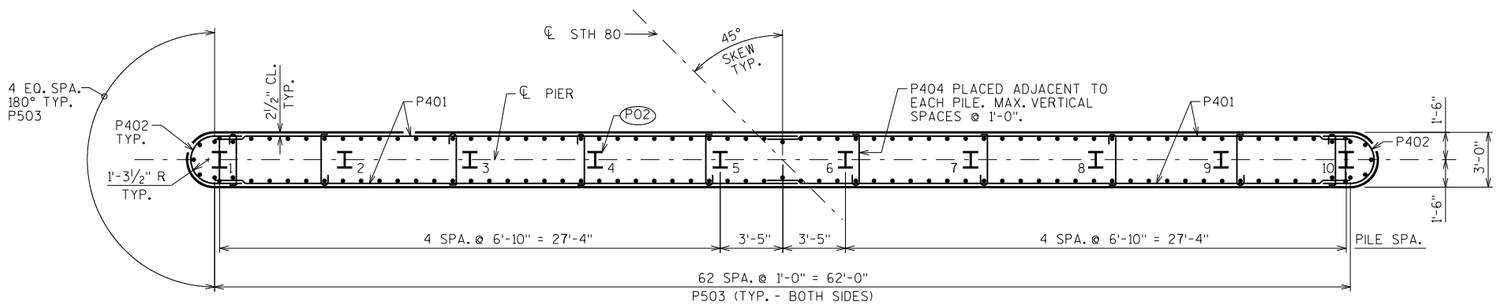
(P02) SUPPORT PIER ON HP 10 X 42 STEEL PILING, ESTIMATED 30'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.

(P08) P508 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

(P09) KEYED CONSTRUCTION JOINT-FORMED BY BEVELED 2 X 6 BETWEEN BEAM SEATS.

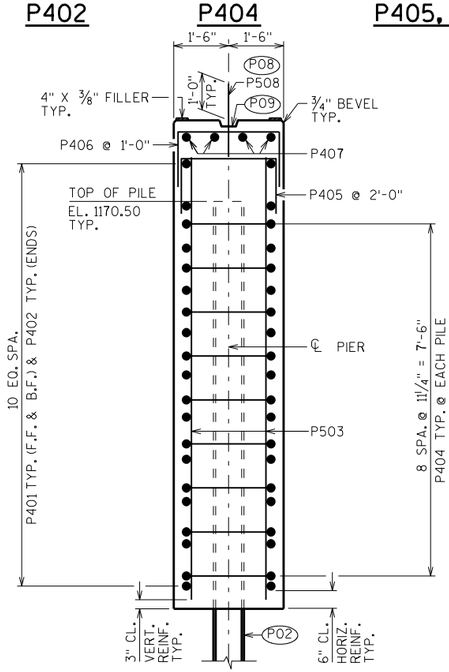


PLAN



PLAN AND PILE LAYOUT

SHOWING REINFORCEMENT



END VIEW - SECTION THRU PIER SHAFT

NOTE:
FOR PILE SPLICE DETAILS, SEE SHEET 5.

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PILE ENCASED PIER

SHEET 8

124

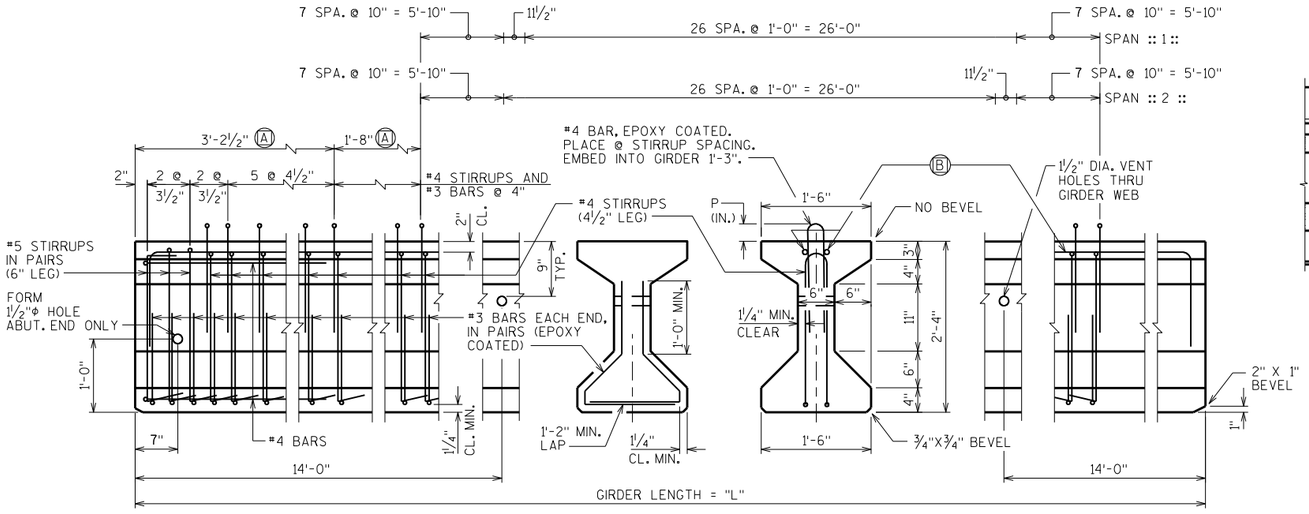
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STATE PROJECT NUMBER

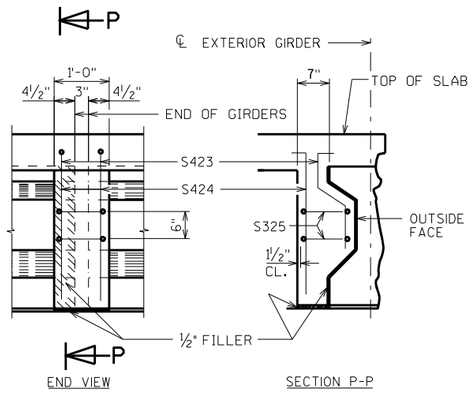
1620-02-73



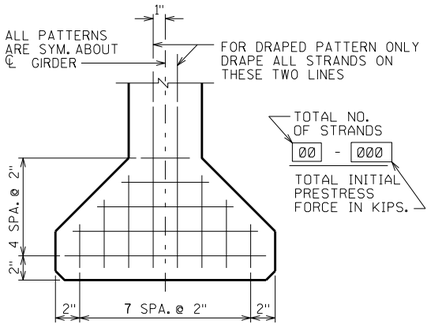
SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

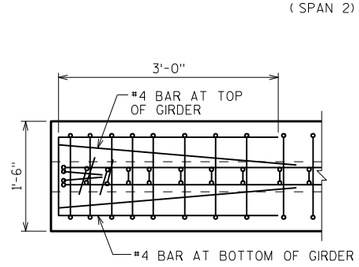
Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS
(SPAN 1) 2 #4, 1'-8" MIN. LAP
(SPAN 2) 2 #4, 1'-8" MIN. LAP



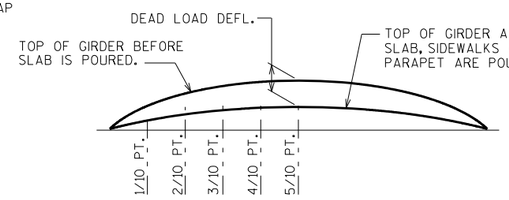
PILASTER DETAILS AT PIERS



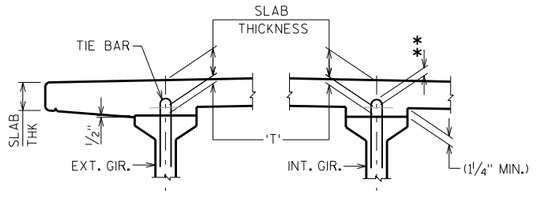
TYP. STRAND PATTERN



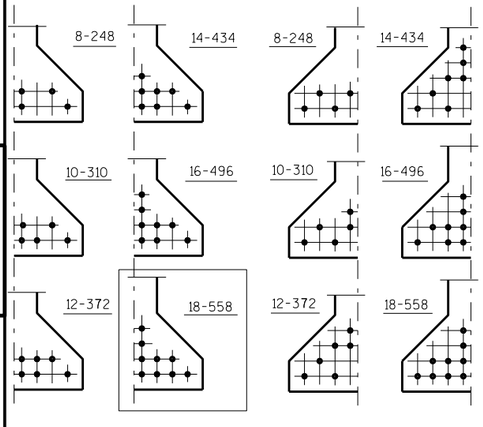
TOP VIEW OF GIRDER ENDS



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCH DETAIL

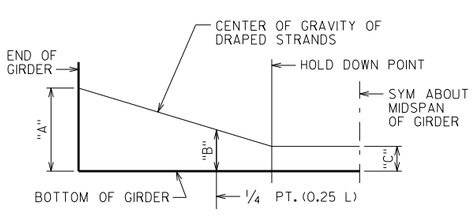


DRAPED PATTERN

0.5"Φ STRANDS

UNDRAPED PATTERN

0.5"Φ STRANDS



DRAPED STRAND PROFILE

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

SPAN	CAMBER (IN.) *
1	1.43
2	1.43

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

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

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINUOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, ONE OPTION IS AVAILABLE:

USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT CHIEF, (608)266-5161.

PRESTRESSING STRANDS SHALL BE 0.5" DIA.-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

BEND EACH END OF #4 STIRRUPS 4½" AND #5 STIRRUPS 6".

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

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

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

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
\- TOP OF GIRDER ELEVATION
\+ DEAD LOAD DEFLECTION
\- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2.50" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" IST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	DRAPED PATTERN f'ci (P.S.I.)	DRAPED PATTERN (IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	UNDRAPED PATTERN f'ci (P.S.I.)
1	1-5	48.375	0.3	0.5	0.7	0.8	0.8	0.8	0.7	0.5	0.3	8000	7	7	7	0.50	18	6400	23.0	9.5	11.75	5.0		
2	1-5	48.375	0.3	0.5	0.7	0.8	0.8	0.8	0.7	0.5	0.3	8000	7	7	7	0.50	18	6400	23.0	9.5	11.75	5.0		

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

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28" PRESTRESSED GIRDER DETAILS

SHEET 9

125

LV = 1 2 3 5 7 8

SCALE = 1.00

MON MAR 05 11:33:47 2012* 7-11 G28

STATE PROJECT NUMBER

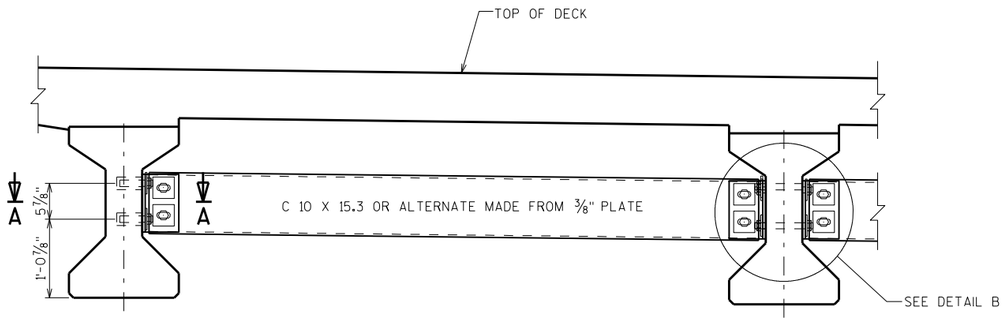
1620-02-73

NOTES

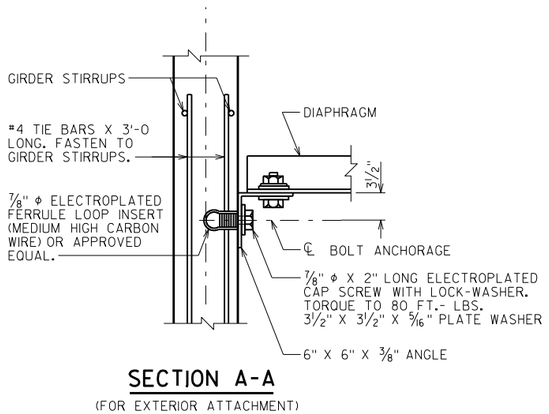
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-71-183", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT. ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563. LUBRICANT AND TEST FOR COATED NUTS.

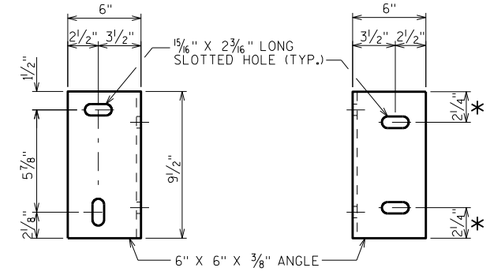


PART TRANSVERSE SECTION AT DIAPHRAGM



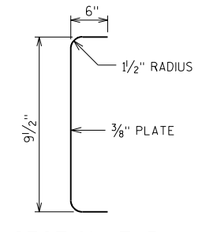
SECTION A-A

(FOR EXTERIOR ATTACHMENT)

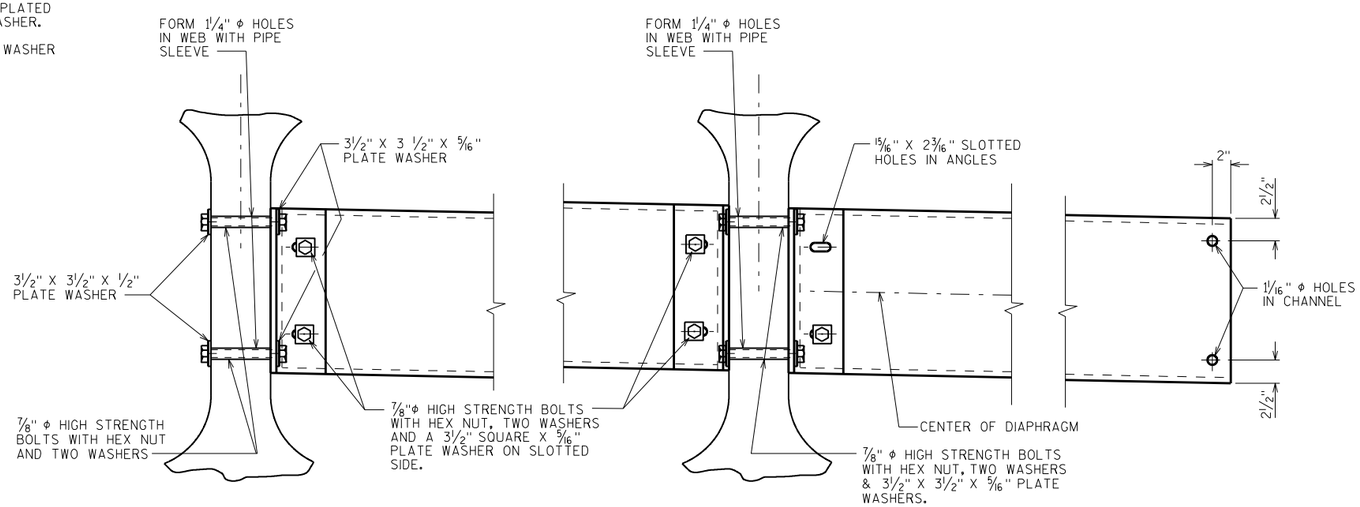


DIAPHRAGM SUPPORT

* 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM



SECTION THRU ALTERNATE DIAPHRAGM



(FOR STAGGERED DIAPHRAGM)

(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

DRAWN BY DDS | PLANS CK'D. EMK

STEEL DIAPHRAGM

SHEET 10

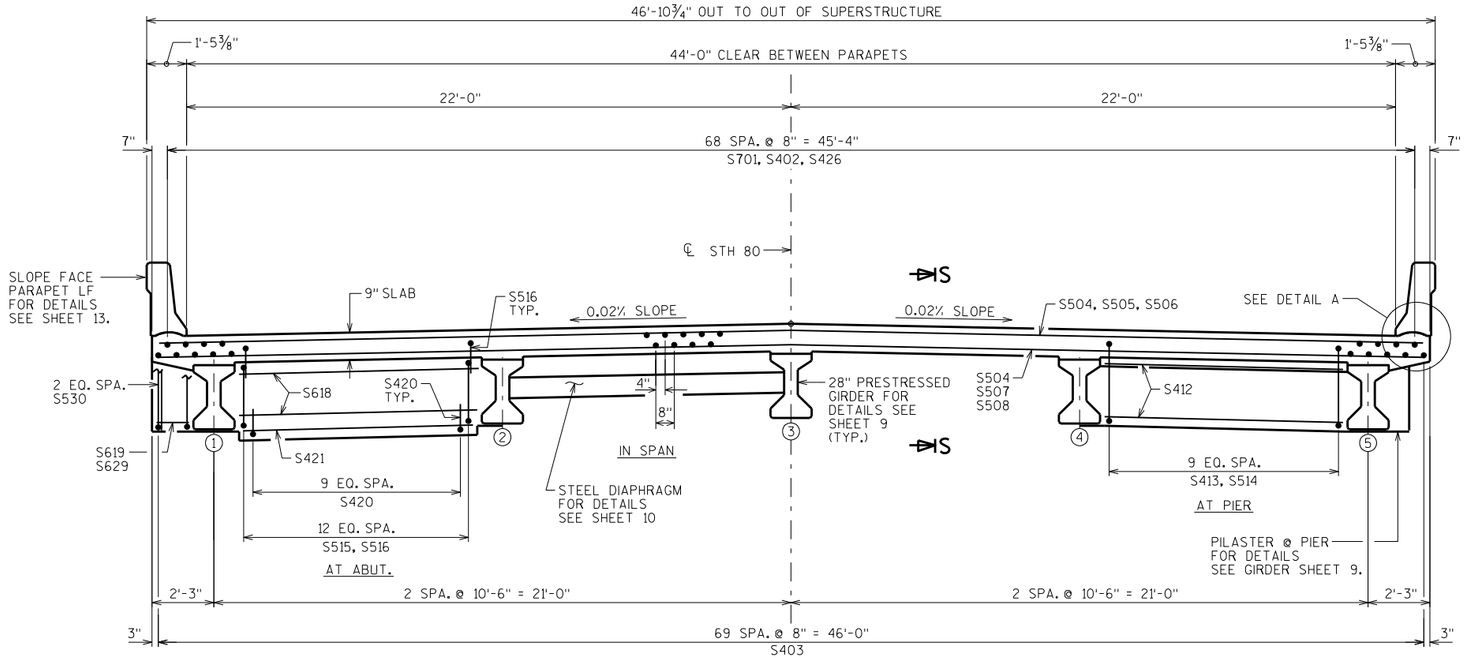
126

SCALE = 1.00

ON LEVEL 3 - 28" GIRDERS

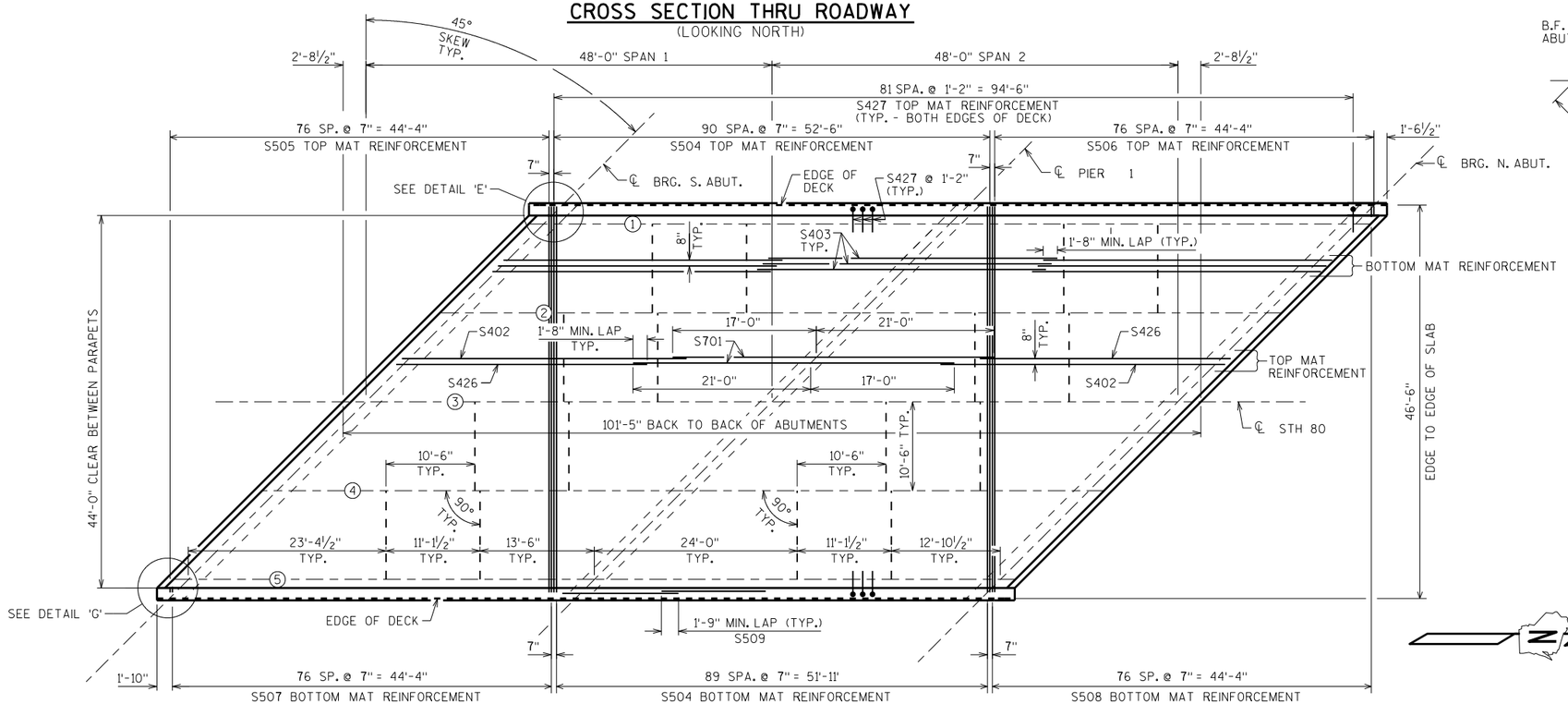
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STATE PROJECT NUMBER
1620-02-73

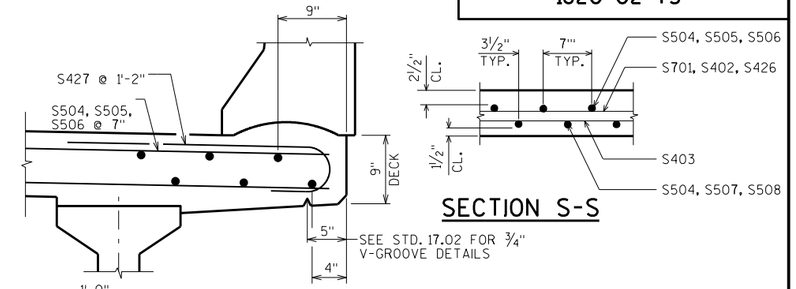


CROSS SECTION THRU ROADWAY

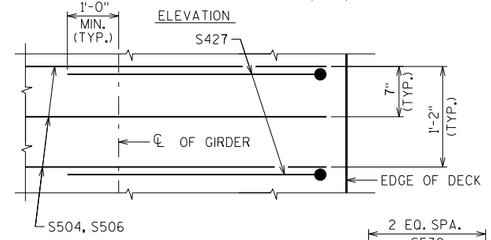
(LOOKING NORTH)



PLAN

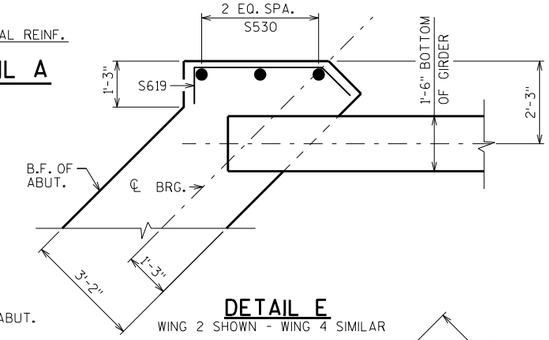


SECTION S-S



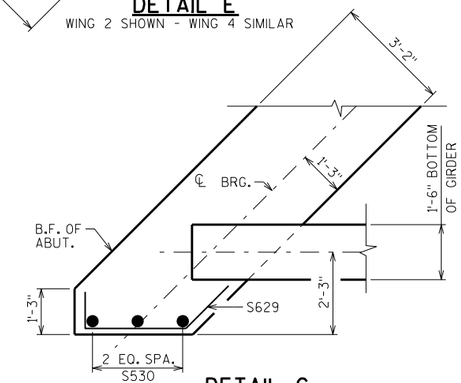
ADDITIONAL REINF.

DETAIL A



DETAIL E

WING 2 SHOWN - WING 4 SIMILAR



DETAIL G

WING 1 SHOWN - WING 3 SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

DRAWN BY DDS | PLANS CK'D. EMK

SUPERSTRUCTURE

SHEET 11

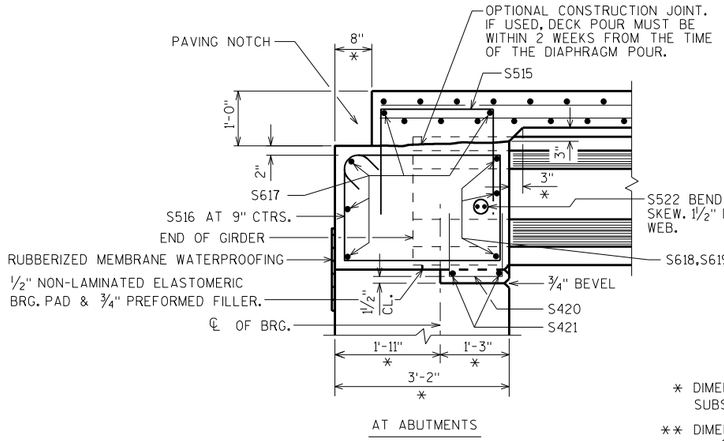
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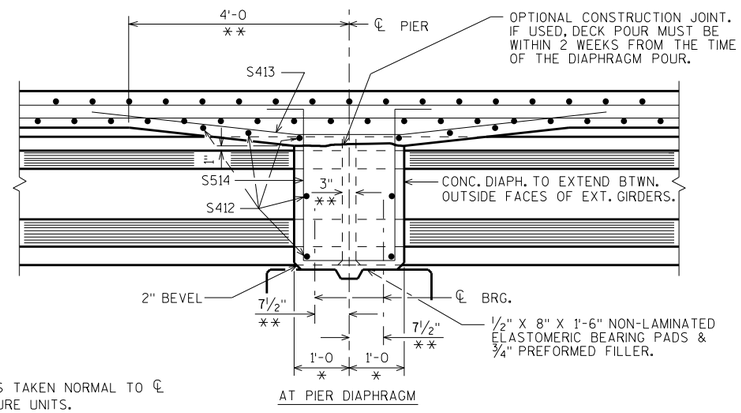
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SCALE = 8.00

TUE MAR 06 09:54:39 2012*





* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

TOP OF DECK ELEVATIONS

	S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1
EOD	1175.31	1175.32	1175.34	1175.35	1175.37	1175.38	1175.40	1175.41	1175.42	1175.44	1175.45
GIR. 1	1175.33	1175.34	1175.35	1175.37	1175.38	1175.40	1175.41	1175.43	1175.44	1175.46	1175.47
GIR. 2	1175.50	1175.52	1175.53	1175.55	1175.56	1175.58	1175.59	1175.61	1175.62	1175.63	1175.65
GIR. 3	1175.68	1175.70	1175.71	1175.73	1175.74	1175.76	1175.77	1175.78	1175.80	1175.81	1175.83
GIR. 4	1175.44	1175.46	1175.47	1175.48	1175.50	1175.51	1175.53	1175.54	1175.56	1175.57	1175.59
GIR. 5	1175.20	1175.21	1175.23	1175.24	1175.26	1175.27	1175.29	1175.30	1175.32	1175.33	1175.34
EOD	1175.18	1175.19	1175.21	1175.22	1175.24	1175.25	1175.26	1175.28	1175.29	1175.31	1175.32

	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N. ABUT.
EOD	1175.45	1175.47	1175.48	1175.50	1175.51	1175.53	1175.54	1175.55	1175.57	1175.58	1175.60
GIR. 1	1175.47	1175.48	1175.50	1175.51	1175.53	1175.54	1175.56	1175.57	1175.59	1175.60	1175.61
GIR. 2	1175.65	1175.66	1175.68	1175.69	1175.71	1175.72	1175.73	1175.75	1175.76	1175.78	1175.79
GIR. 3	1175.83	1175.84	1175.86	1175.87	1175.88	1175.90	1175.91	1175.93	1175.94	1175.96	1175.97
GIR. 4	1175.59	1175.60	1175.61	1175.63	1175.64	1175.66	1175.67	1175.69	1175.70	1175.72	1175.73
GIR. 5	1175.34	1175.36	1175.37	1175.39	1175.40	1175.42	1175.43	1175.44	1175.46	1175.47	1175.49
EOD	1175.32	1175.34	1175.35	1175.36	1175.38	1175.39	1175.41	1175.42	1175.44	1175.45	1175.47

BAR SERIES TABLE

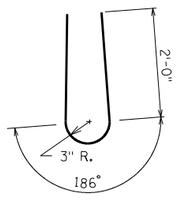
MARK	NO. REQD.	LENGTH
S505	1 SERIES OF 77	1'-5" TO 45'-9"
S506	1 SERIES OF 77	1'-5" TO 45'-9"
S507	1 SERIES OF 77	1'-9" TO 46'-1"
S508	1 SERIES OF 77	1'-9" TO 46'-1"

BUNDLE AND TAG EACH SERIES SEPERATELY

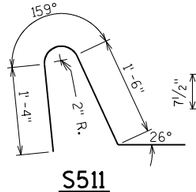
BILL OF BARS

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

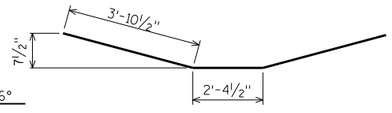
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S701	X	69	38'-0"			LONGITUDINAL CONTINUITY
S402	X	69	34'-3"			LONGITUDINAL - TOP
S403	X	210	34'-2"			LONGITUDINAL - BOTTOM
S504	X	181	46'-2"			TRANSVERSE - TOP AND BOTTOM
S505	X	77	23'-7"		▲	TRANSVERSE - TOP - SOUTH
S506	X	77	23'-7"		▲	TRANSVERSE - TOP - NORTH
S507	X	77	23'-11"		▲	TRANSVERSE - BOTTOM - SOUTH
S508	X	77	23'-11"		▲	TRANSVERSE - BOTTOM - NORTH
S509	X	30	34'-11"			PARAPET LF - HORIZONTAL
S510	X	304	4'-10"	X		PARAPET LF - VERTICAL
S511	X	296	4'-2"	X		PARAPET LF - VERTICAL
S412	X	40	12'-3"			PIER DIAPHRAGM - HORIZONTAL
S413	X	40	10'-1"	X		PIER DIAPHRAGM - VERTICAL
S514	X	40	8'-10"	X		PIER DIAPHRAGM - VERTICAL
S515	X	116	6'-8"	X		ABUT. DIAPHRAGM - VERTICAL
S516	X	116	12'-8"	X		ABUT. DIAPHRAGM - STIRRUP
S617	X	20	34'-2"			ABUT. DIAPHRAGM - HORIZONTAL - B.F.
S618	X	24	12'-3"			ABUT. DIAPHRAGM - HORIZONTAL - BETWEEN GIRDERS
S619	X	6	5'-5"	X		ABUT. DIAPHRAGM - HORIZONTAL - ENDS (AT WINGS 2&4)
S420	X	80	3'-8"	X		ABUT. DIAPHRAGM - VERTICAL - BETWEEN GIRDERS
S421	X	16	11'-0"			ABUT. DIAPHRAGM - HORIZONTAL - BETWEEN GIRDERS
S522	X	20	6'-0"			ABUT. DIAPHRAGM - HORIZONTAL - THRU GIRDERS
S423	X	4	2'-10"	X		PIER PILASTER - VERTICAL
S424	X	4	3'-5"	X		PIER PILASTER - VERTICAL
S325	X	4	3'-6"	X		PIER PILASTER - HORIZONTAL - STIRRUP
S426	X	69	30'-3"			LONGITUDINAL - TOP
S427	X	164	3'-7"	X		TRANSVERSE - TOP - EDGE OF DECK
S528	X	8	4'-2"	X		PARAPET LF - HORIZONTAL (AT PAVING NOTCHES)
S629	X	6	5'-1"	X		ABUT. DIAPHRAGM - HORIZONTAL - ENDS (AT WINGS 1&3)
S530	X	12	2'-6"			ABUT. DIAPHRAGM - VERTICAL - ENDS



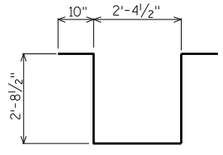
S510



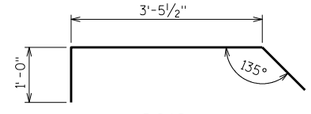
S511



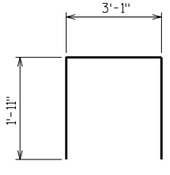
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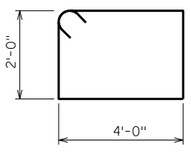
S514



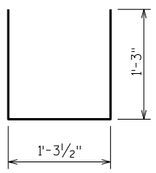
S619



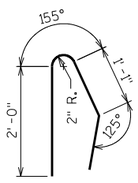
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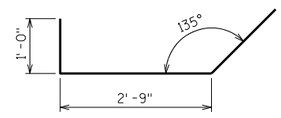
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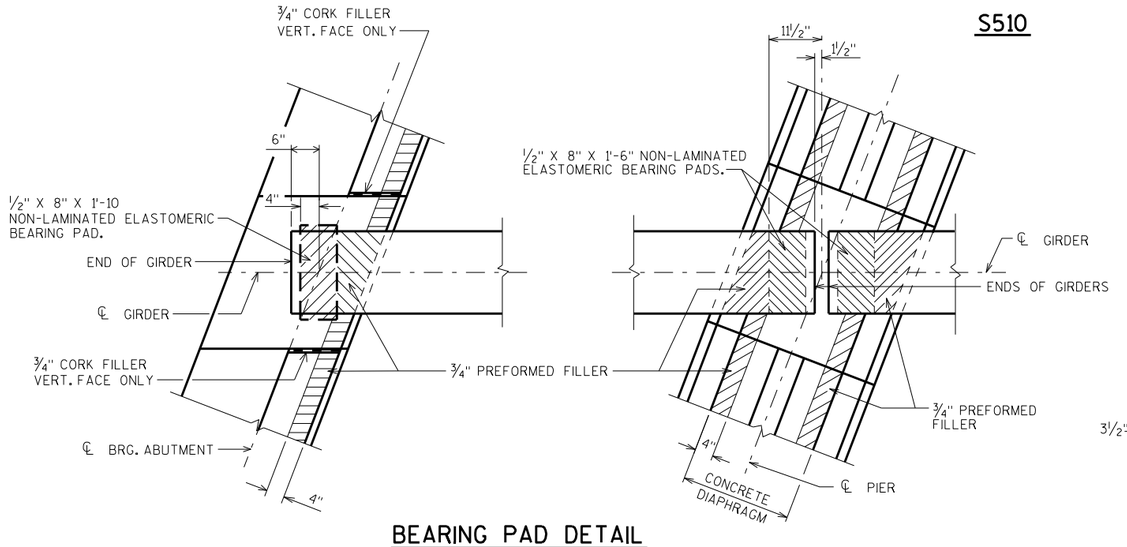
S420



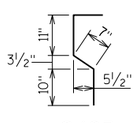
S528



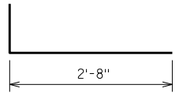
S629



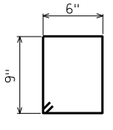
BEARING PAD DETAIL



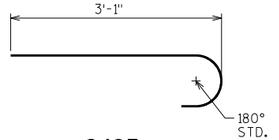
S423



S424



S325



S427

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

DRAWN BY DDS | PLANS CK'D. EMK

SUPERSTRUCTURE DETAILS

SHEET 12

128

STATE PROJECT NUMBER

1620-02-73

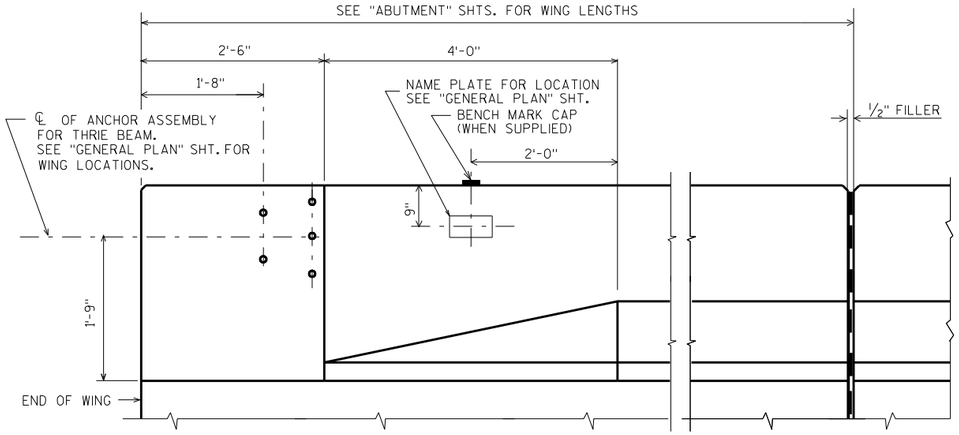
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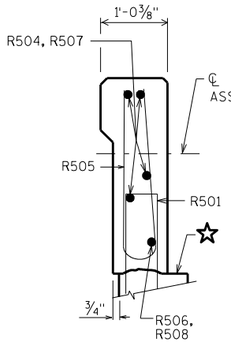
STATE PROJECT NUMBER

1620-02-73

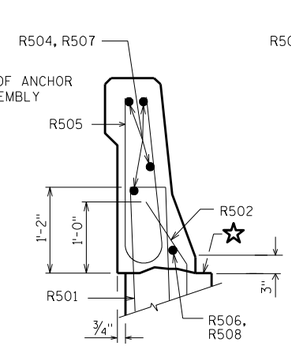


INSIDE ELEVATION

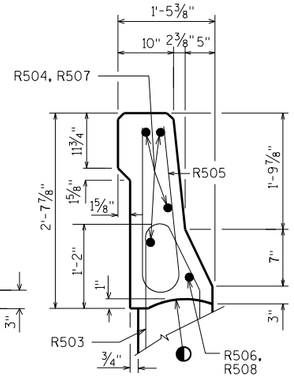
☆ FINISH THE SURFACE NOT COVERED BY PARAPET THE SAME AS THE RDWY.



SECTION A



SECTION B

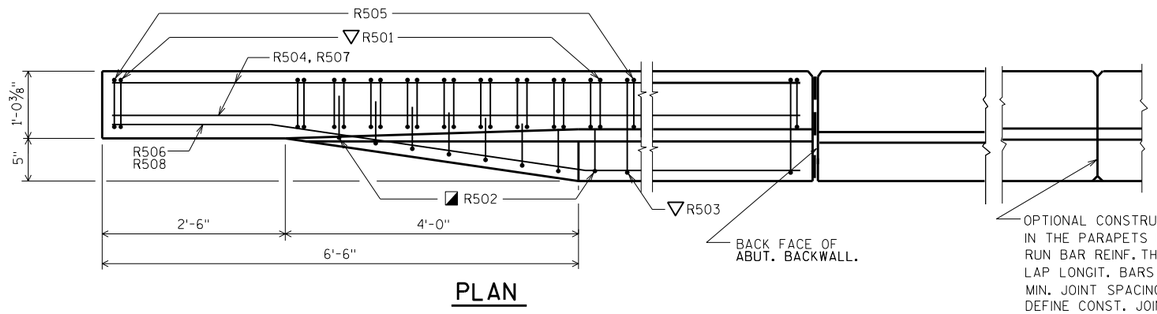


SECTION C

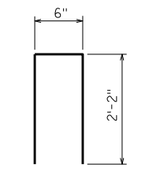
BILL OF BARS

FOR ABUTMENT PARAPETS

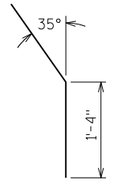
BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	28	28	4-7	X		PARAPET VERT.
R502	X	16	16	2-4	X		PARAPET VERT.
R503	X	22	22	4-7	X		PARAPET VERT.
R504	X	4	4	11-8			PARAPET HORIZ.
R505	X	50	50	4-10	X		PARAPET VERT.
R506	X	1	1	11-8	X		PARAPET HORIZ.
R507	X	4	4	15-8			PARAPET HORIZ.
R508	X	1	1	15-8	X		PARAPET HORIZ.



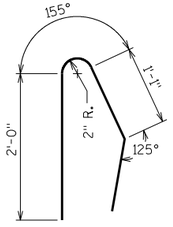
PLAN



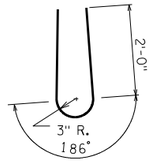
R501



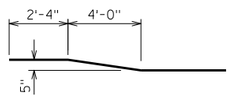
R502



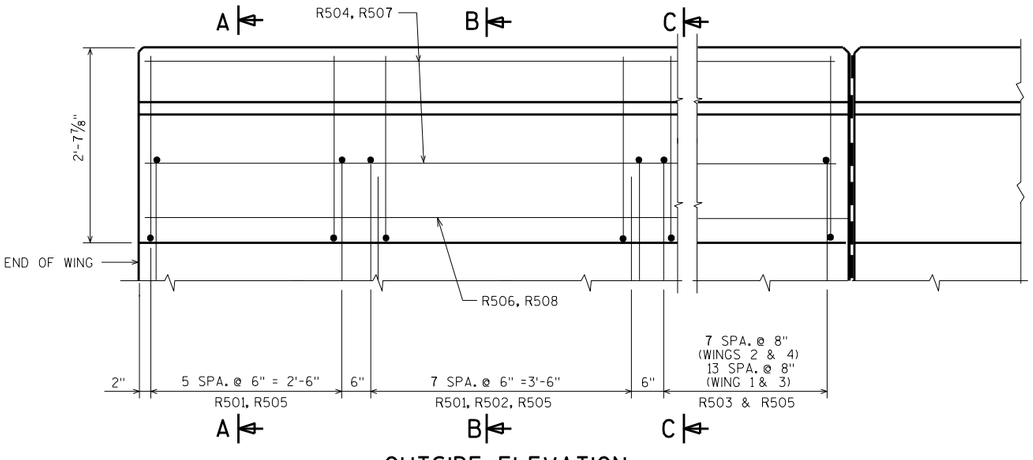
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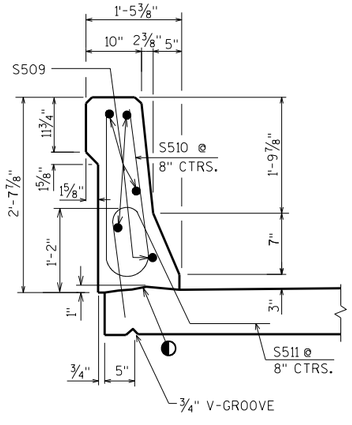
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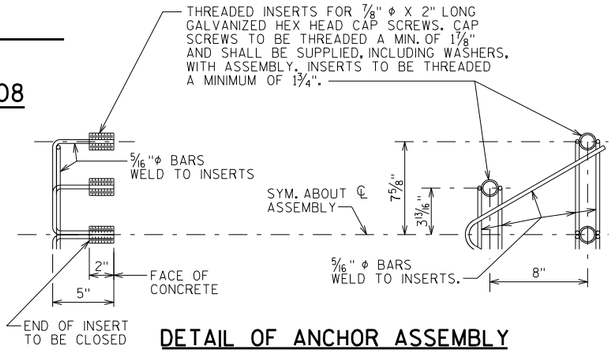
R506, R508



OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

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

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

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ R502 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R502 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R503 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

DRAWN BY: DDS | PLANS CK'D.: EMK

SLOPED FACE PARAPET LF

SHEET 13

129

SCALE = 1.00

MON MAR 05 11:33:39 2012 * LFWIN 7-11

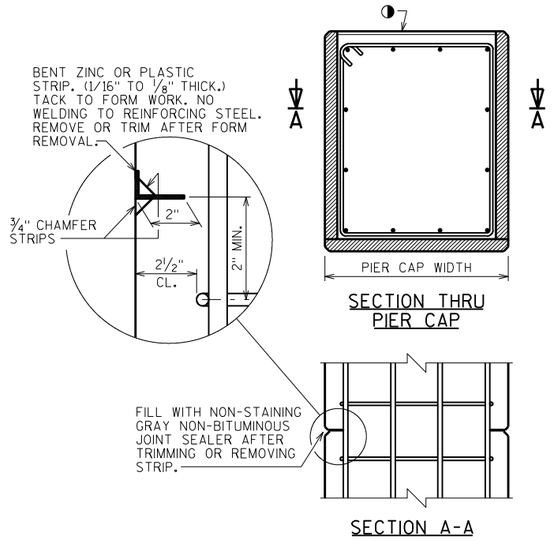
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12 7 9 12

STATE PROJECT NUMBER

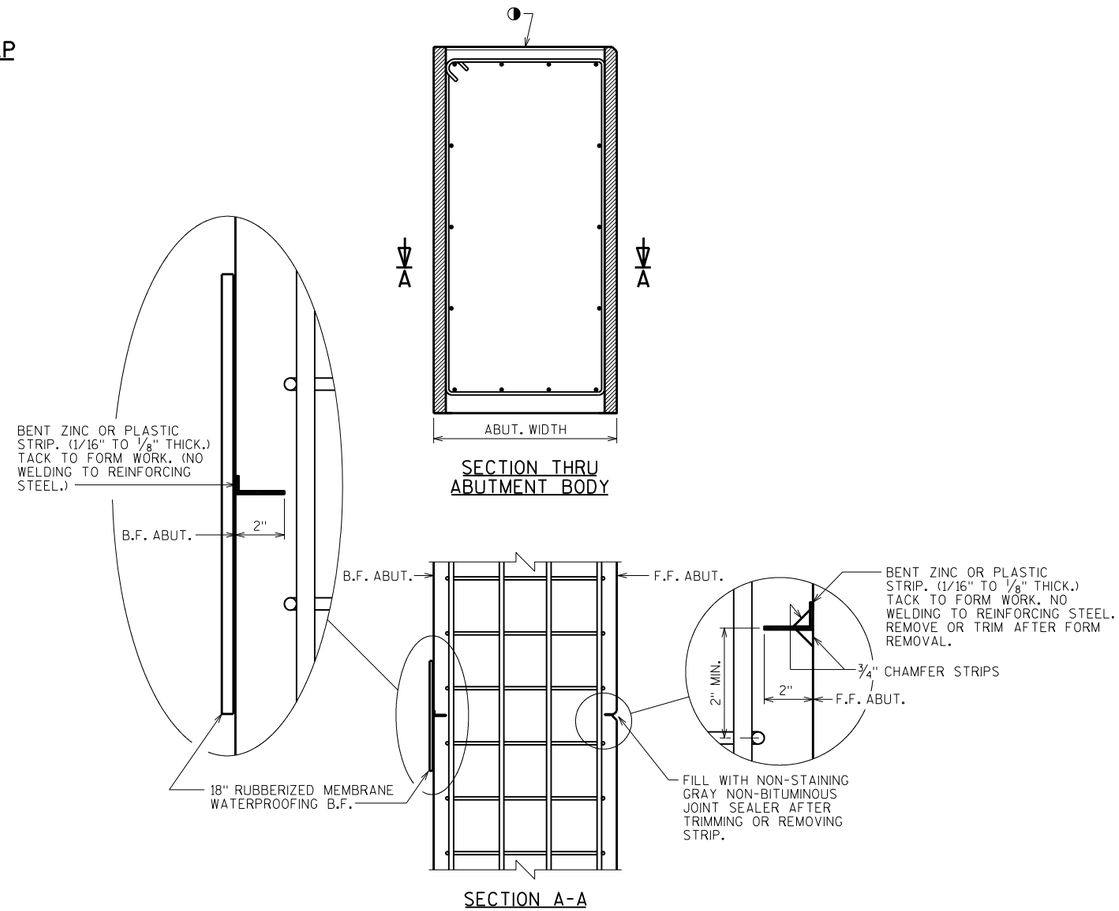
1620-02-73



SECTION THRU PIER CAP

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT PIER CAP



SECTION THRU ABUTMENT BODY

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

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

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

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

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-71-183

DRAWN BY DDS | PLANS CK'D. EMK

ALTERNATE CONSTRUCTION JOINT

SHEET 14

130

8

8

1 2 3 6

SCALE = 1.00

ALTJOINT
10-08

PROJECT 1620-02-73
SOUTH APPROACH

Station	Distance	Area(SF) Cut	Salvaged/Unusable Pavement Material	Area (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) Salvaged/Unusable Pavement Material	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut 1.00	Expanded Fill 1.25	Mass Ordinate
101+00		58	28	0						
101+50	50	83	28	15	131	52	14	131	18	61
102+00	50	92	28	19	162	52	32	293	58	132
102+50	50	103	28	11	180	52	28	473	93	225
103+10	60	113	28	29	240	62	45	713	149	347
103+63	53	122	28	34	231	55	62	944	227	445
104+08	45	108	28	47	191	47	68	1,136	312	505
104+50	42	79	28	72	146	44	93	1,281	428	490
104+61	11	40	28	59	24	11	27	1,305	461	470
104+89	28	35	28	46	39	29	54	1,344	529	412
				TOTALS	1,344	403	423	1,344	529	412

NOTE: UNUSABLE PAVEMENT MATERIAL INCLUDES THE EXISTING UNDERLYING CONCRETE PAVEMENT

PROJECT 1620-02-73
NORTH APPROACH

Station	Distance	Area(SF) Cut	Salvaged/Unusable Pavement Material	Area(SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) Salvaged/Unusable Pavement Material	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut 1.00	Expanded Fill 1.25	Mass Ordinate
105+89		33	28	26						
106+17	28	30	28	27	33	29	28	33	35	-31
106+50	33	76	28	76	65	34	63	98	113	-79
106+70	20	77	28	89	57	21	61	155	189	-119
107+15	45	84	28	82	135	47	142	289	367	-209
107+68	53	85	28	60	167	55	140	456	542	-271
108+00	32	82	28	43	99	33	61	555	618	-281
108+50	50	81	28	22	151	52	60	706	693	-258
109+00	50	55	28	0	126	52	20	831	718	-210
				TOTALS	831	323	575	831	718	-210

NOTE: UNUSABLE PAVEMENT MATERIAL INCLUDES THE EXISTING UNDERLYING CONCRETE PAVEMENT

PROJECT 1620-02-74
SOUTH APPROACH

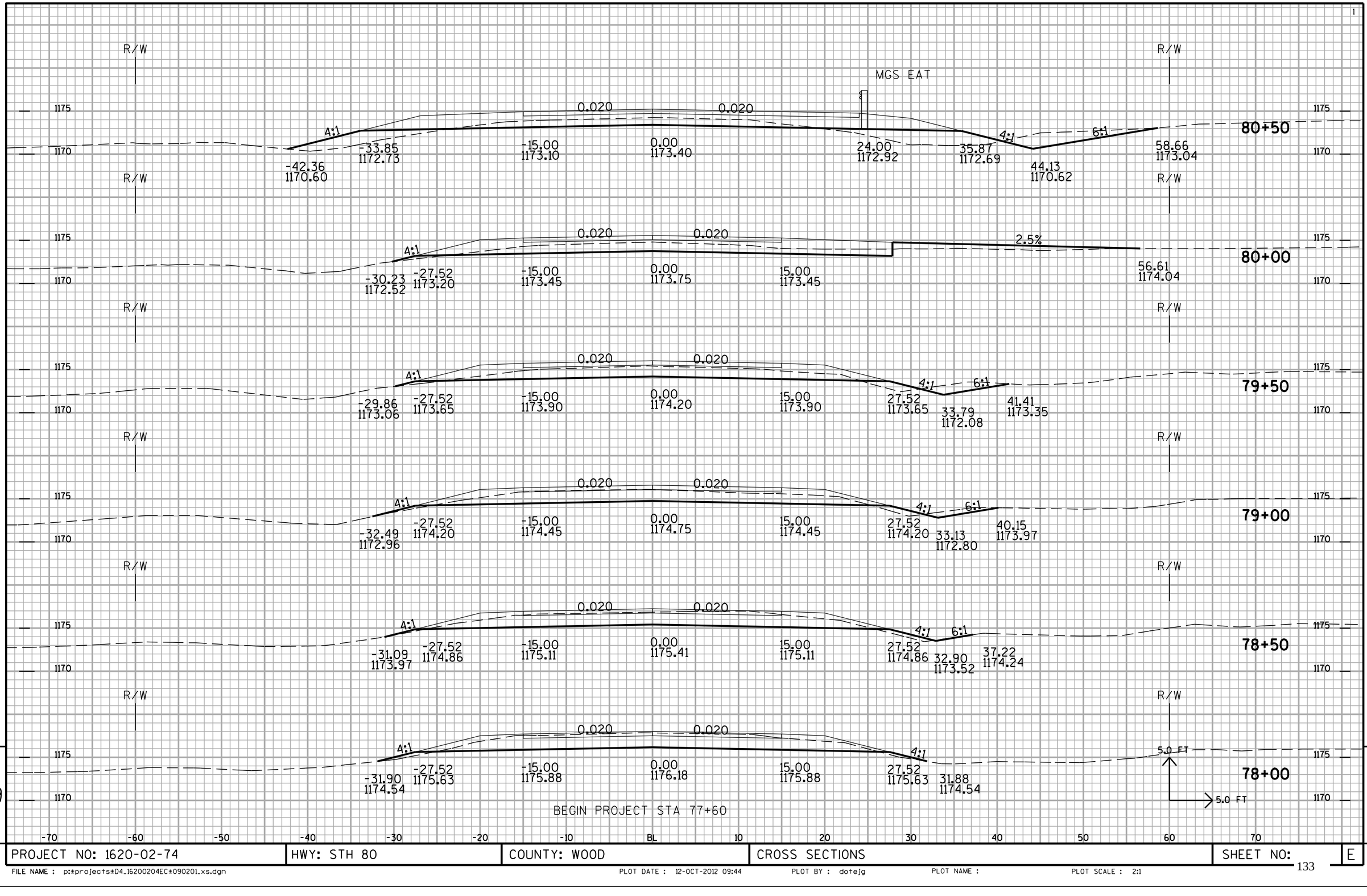
Station	Distance	Area(SF) Cut	Salvaged/Unusable Pavement Material	Area (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) Salvaged/Unusable Pavement Material	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut 1.00	Expanded Fill 1.25	Mass Ordinate
77+60		55	28	0						
78+00	40	70	28	3	93	41	2	93	2	49
78+50	50	66	28	3	126	52	5	218	9	116
79+00	50	59	28	3	116	52	6	334	16	173
79+50	50	53	28	5	104	52	8	438	26	215
80+00	50	41	28	14	87	52	17	524	47	229
80+50	50	44	28	39	79	52	48	604	107	196
81+00	50	42	28	54	80	52	86	683	214	117
81+28	28	39	28	82	42	29	70	725	302	42
81+50	22	39	28	87	32	23	69	757	388	-35
81+81	31	50	28	75	51	32	93	808	504	-133
82+00	19	23	28	18	26	20	33	834	545	-168
82+24	24	17	28	43	18	25	27	852	579	-208
				TOTALS	852	481	463	852	579	-208

NOTE: UNUSABLE PAVEMENT MATERIAL INCLUDES THE EXISTING UNDERLYING CONCRETE PAVEMENT

PROJECT 1620-02-74
NORTH APPROACH

Station	Distance	Area(SF) Cut	Salvaged/Unusable Pavement Material	Area (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) Salvaged/Unusable Pavement Material	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut 1.00	Expanded Fill 1.25	Mass Ordinate
83+46		34	28	41						
83+50	4	36	28	35	5	4	6	5	7	-6
84+00	50	96	28	33	122	52	64	128	87	-15
84+22	22	112	28	15	85	23	20	212	111	22
84+50	28	123	28	24	122	29	20	334	136	90
84+75	25	122	28	35	113	26	27	447	170	143
85+00	25	128	28	13	116	26	22	563	197	205
85+50	50	116	28	15	225	52	26	788	230	347
86+00	50	111	28	25	209	52	37	997	276	458
86+50	50	101	28	29	196	52	50	1,193	338	540
87+00	50	97	28	28	183	52	53	1,376	404	605
87+15	15	55	28	0	42	16	8	1,419	414	622
				TOTALS	1,419	383	331	1,419	414	622

NOTE: UNUSABLE PAVEMENT MATERIAL INCLUDES THE EXISTING UNDERLYING CONCRETE PAVEMENT

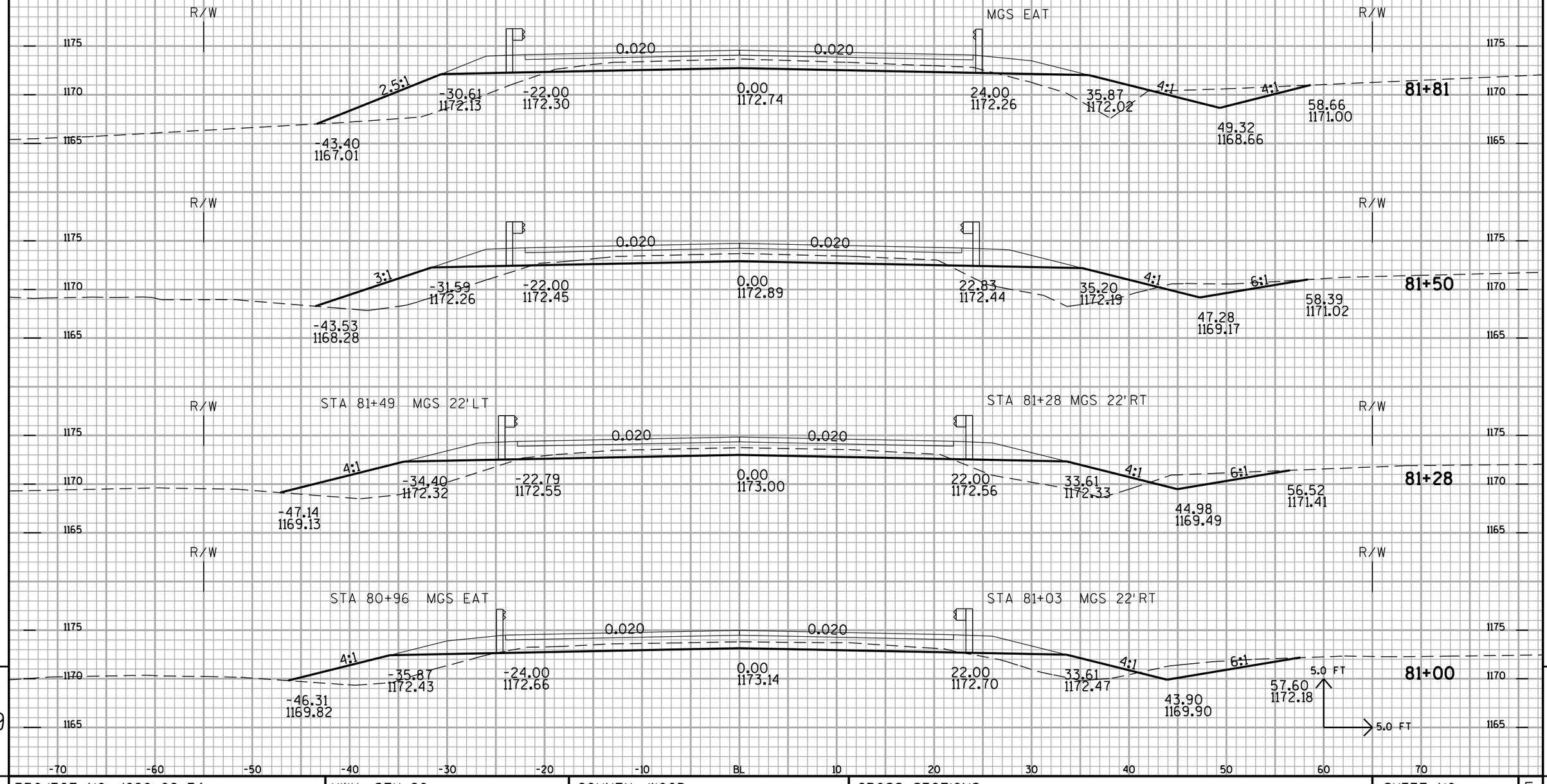


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PROJECT NO: 1620-02-74	HWY: STH 80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

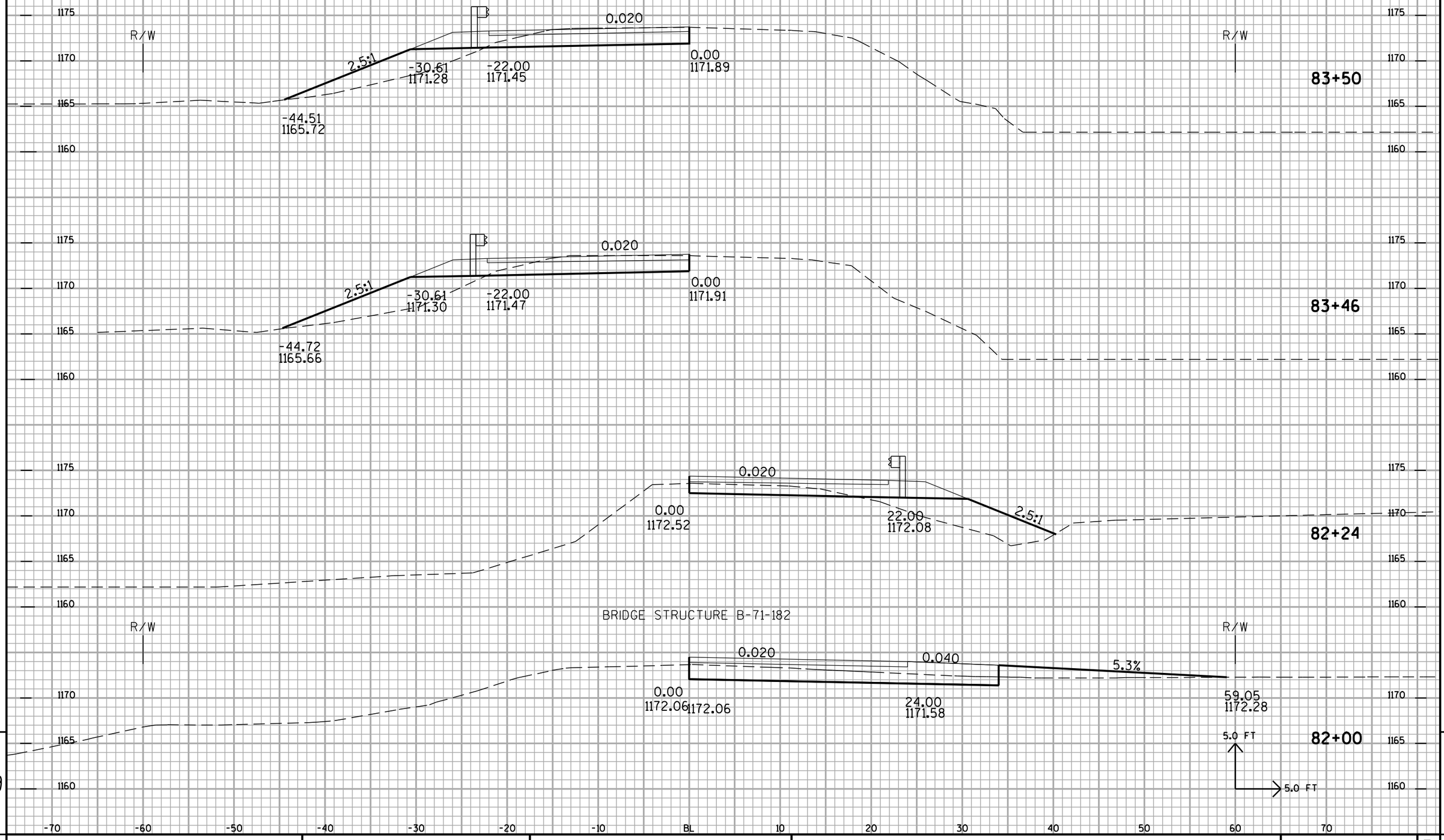
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PROJECT NO: 1620-02-74	HWY: STH 80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E



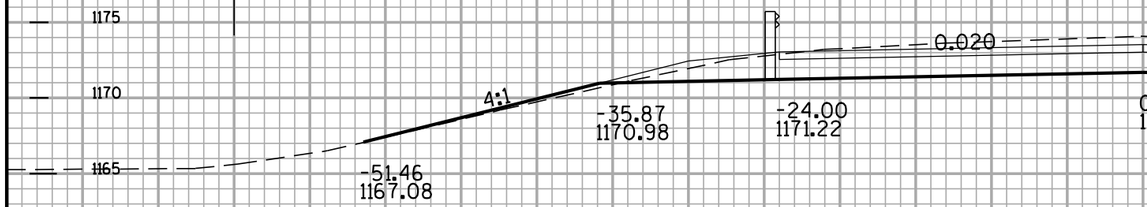
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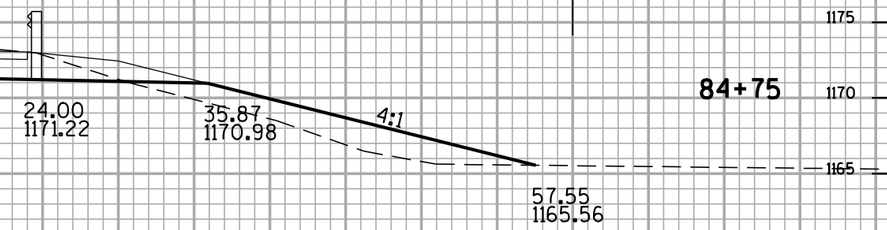
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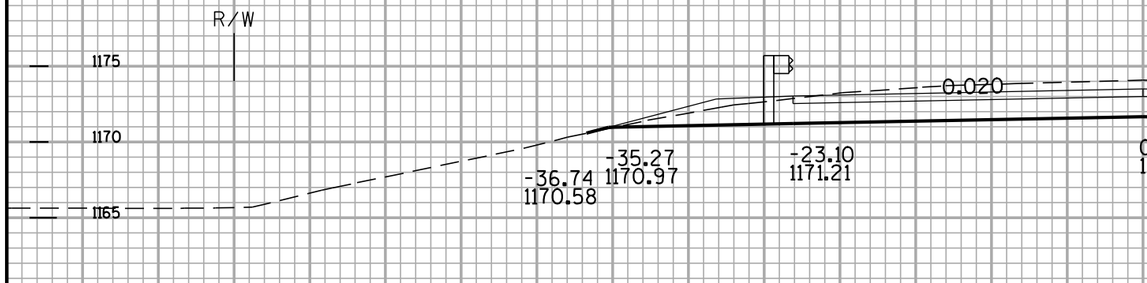
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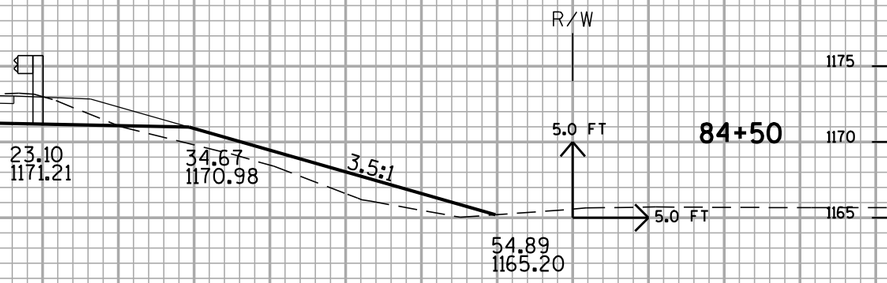
STA 84+76 MGS EAT



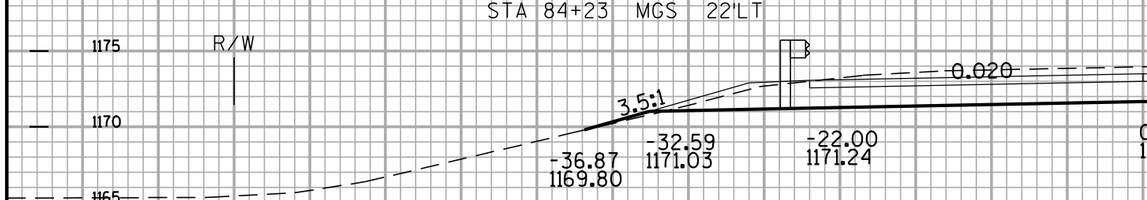
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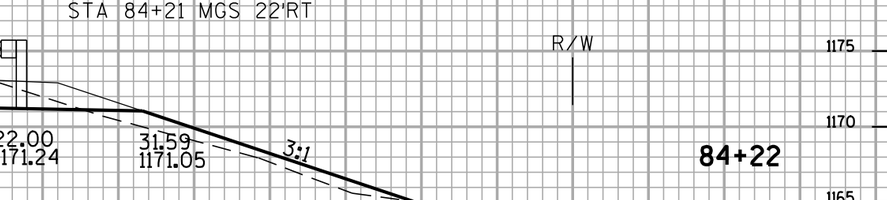


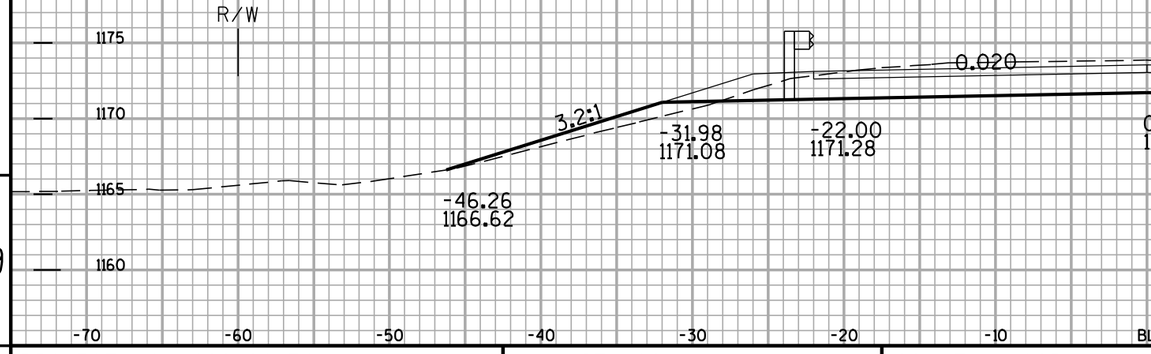


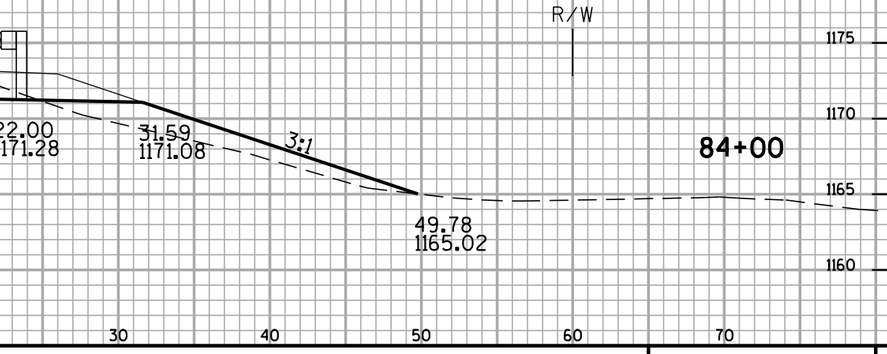
STA 84+23 MGS 22'LT



STA 84+21 MGS 22'RT







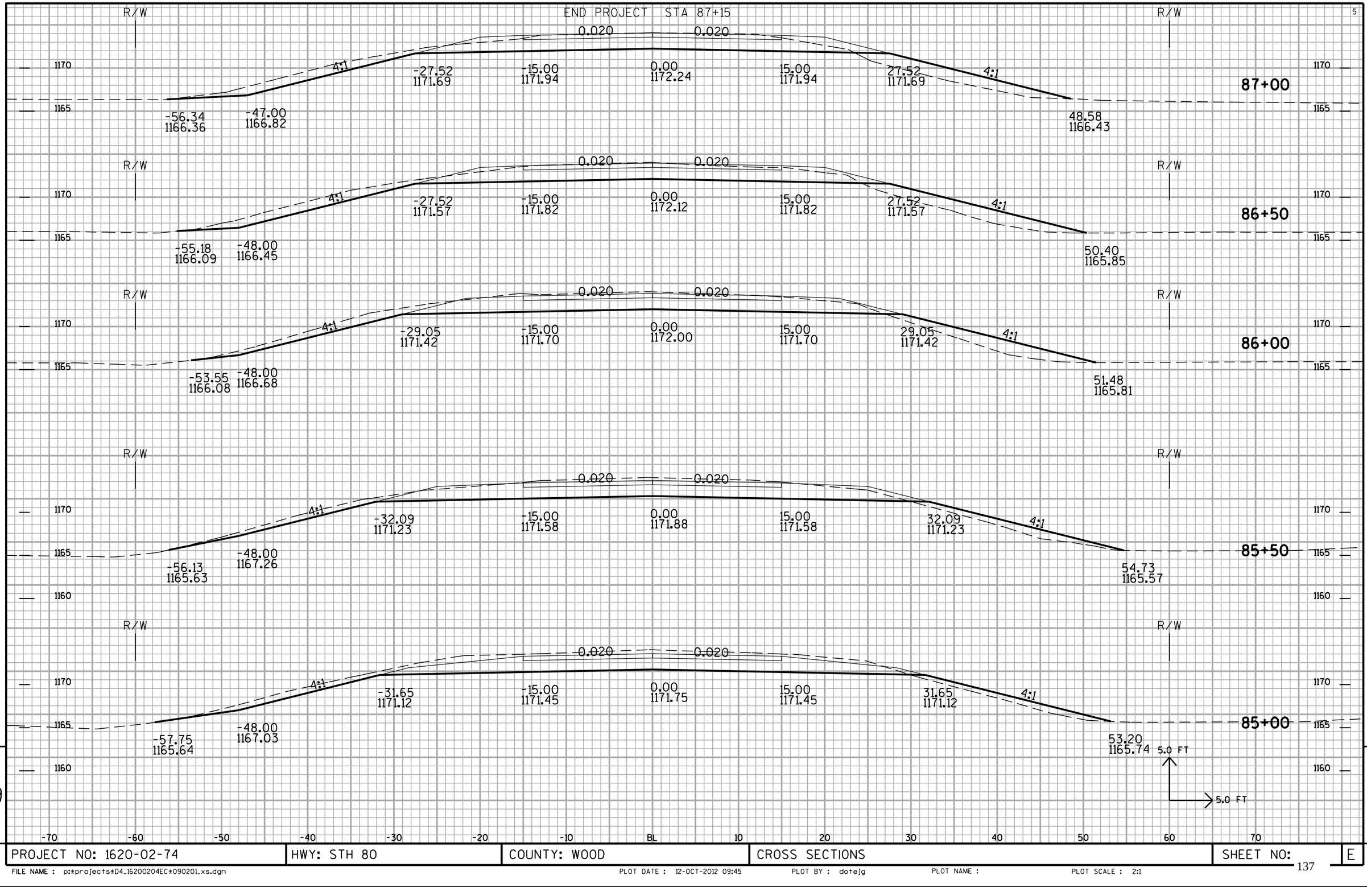
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PROJECT NO: 1620-02-74	HWY: STH 80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

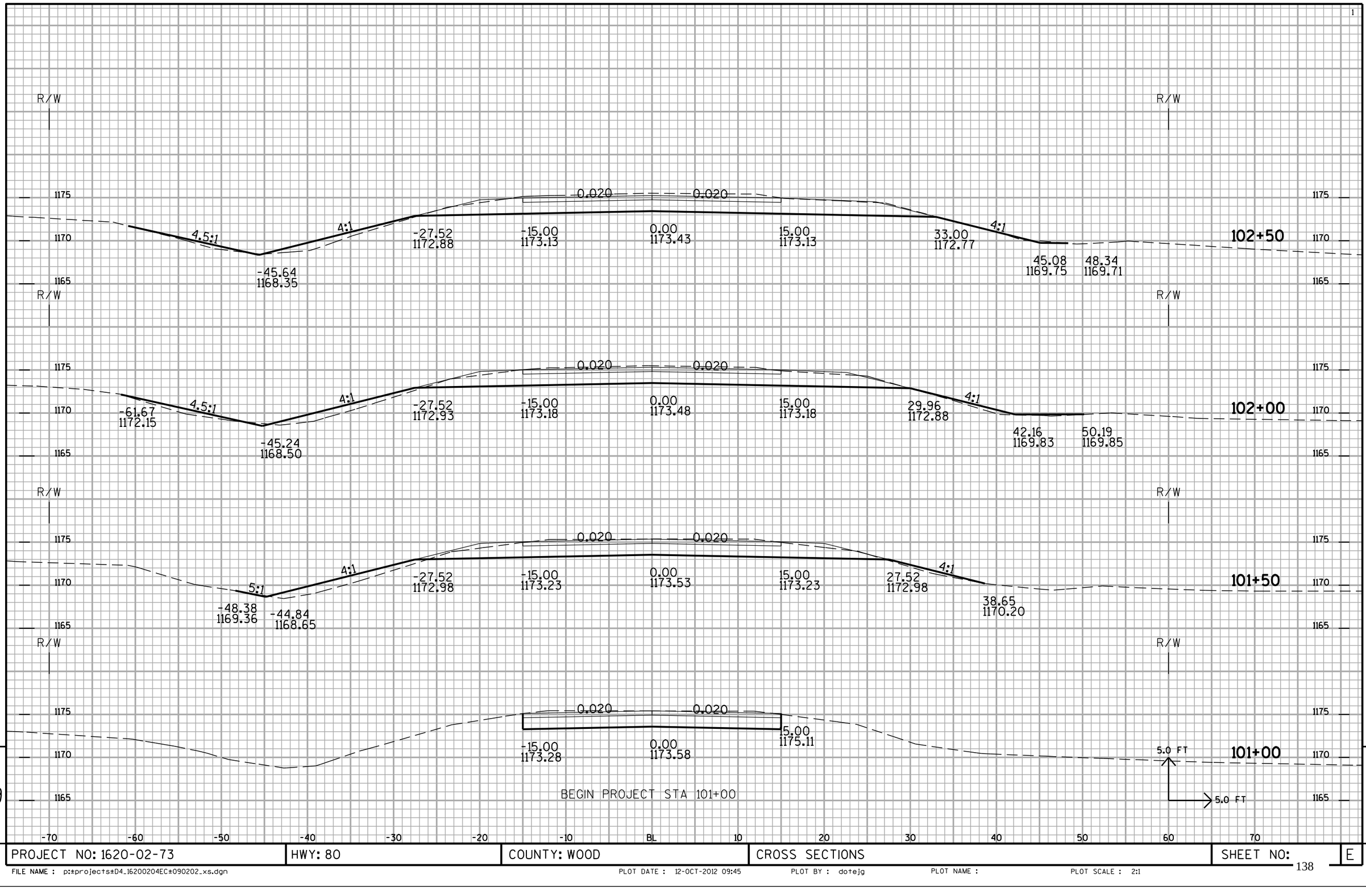
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END PROJECT STA 87+15



PROJECT NO: 1620-02-74	HWY: STH 80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

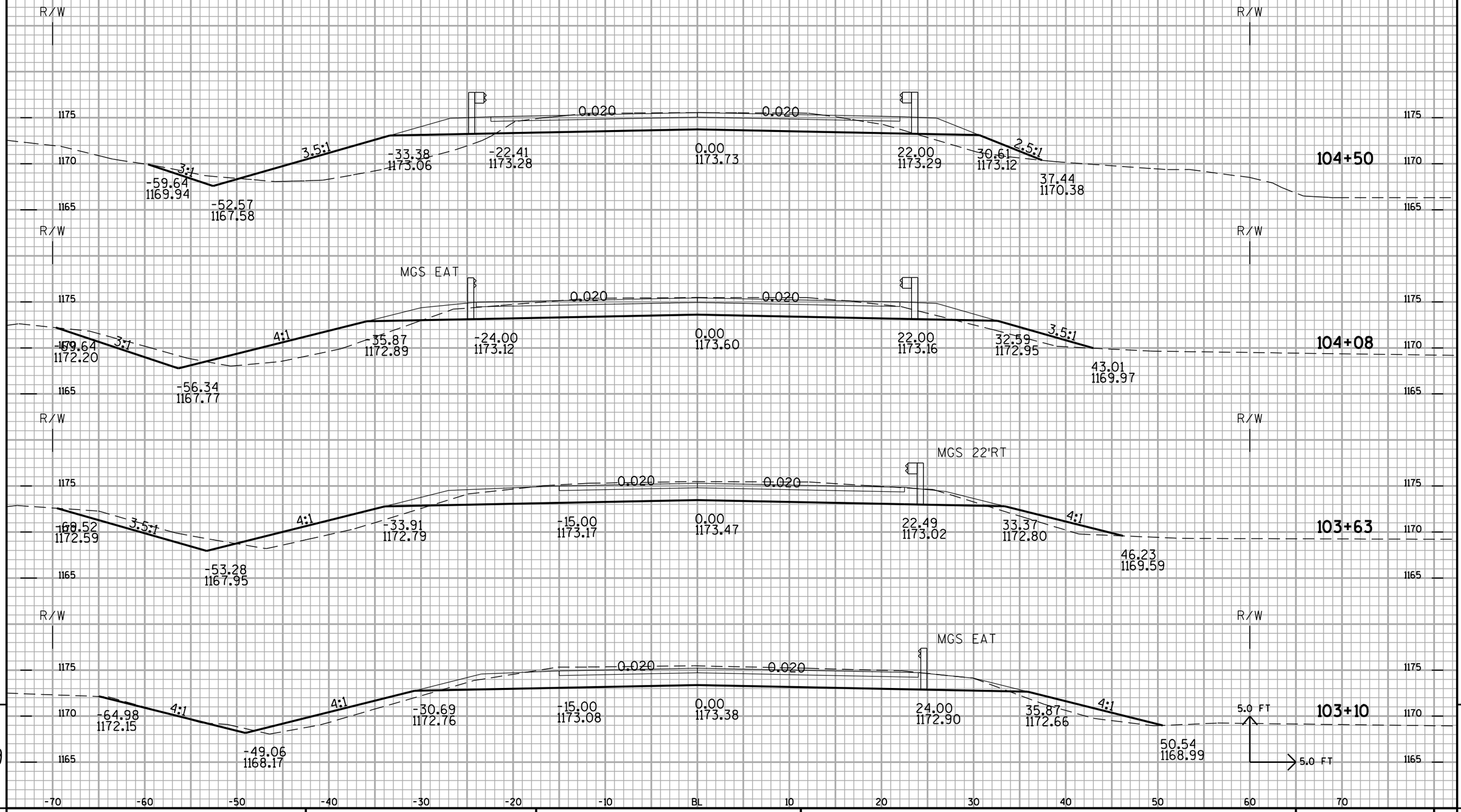
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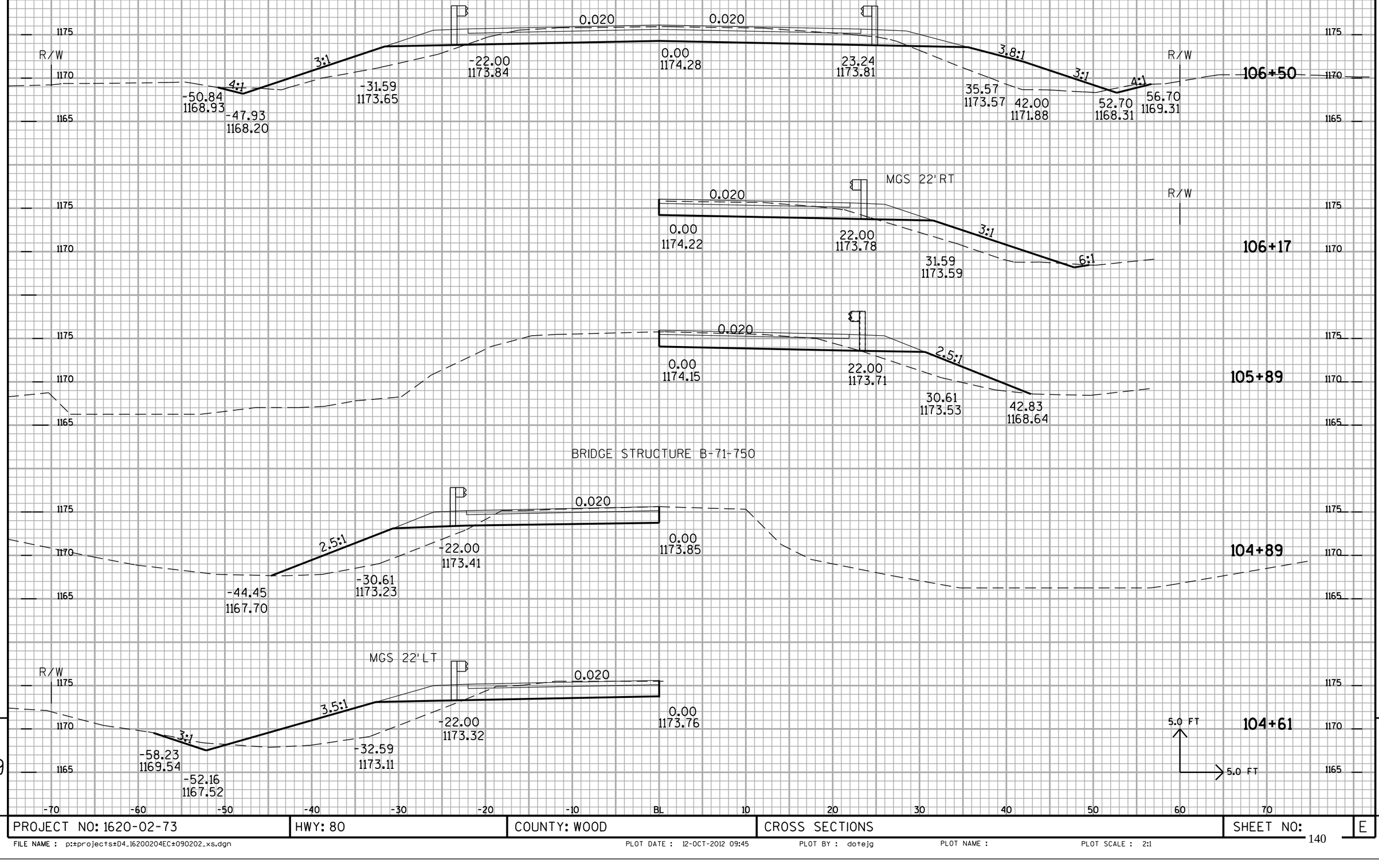
PROJECT NO: 1620-02-73	HWY: 80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

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PROJECT NO: 1620-02-73	HWY: 80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

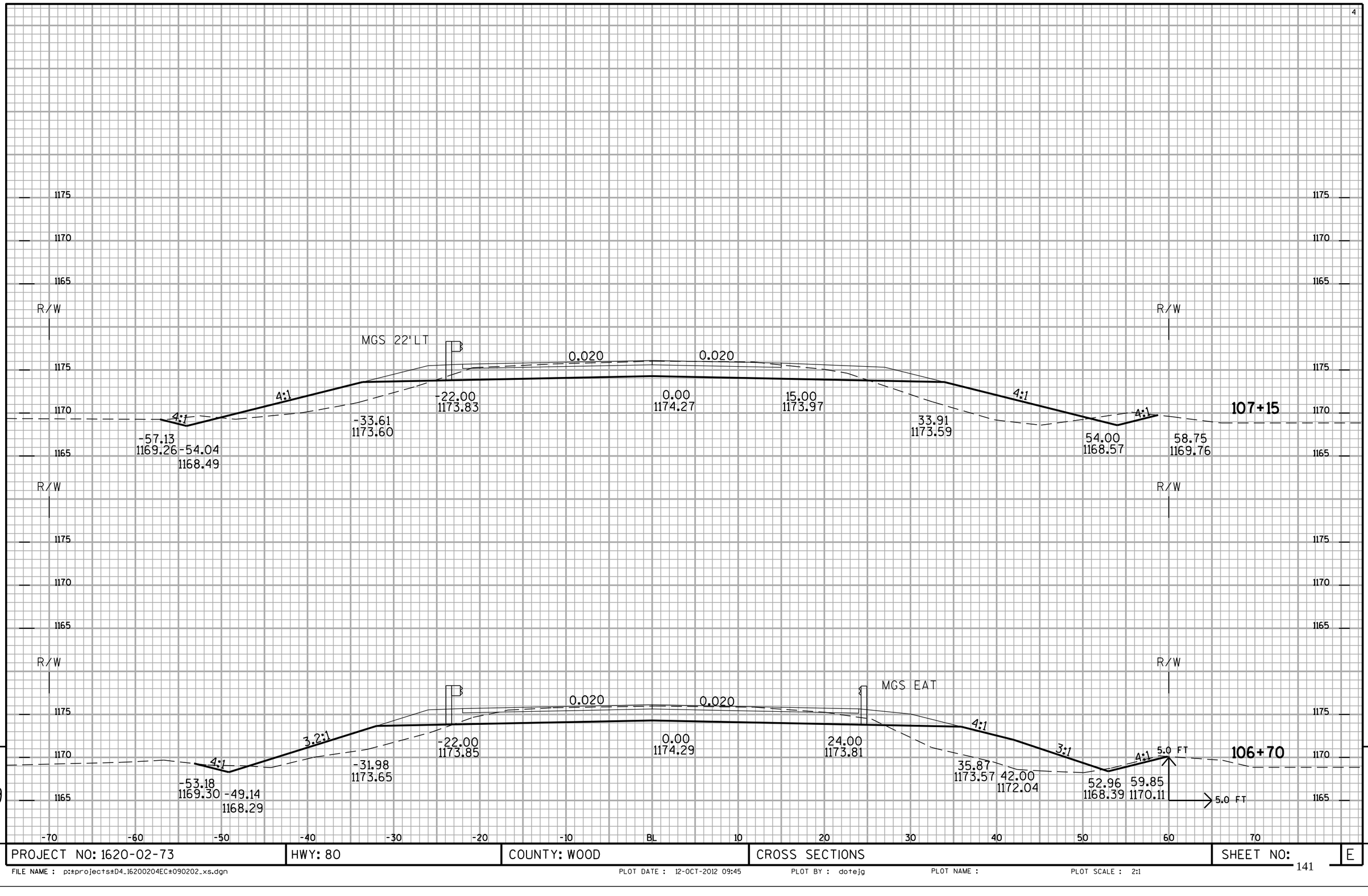
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PROJECT NO: 1620-02-73	HWY: 80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

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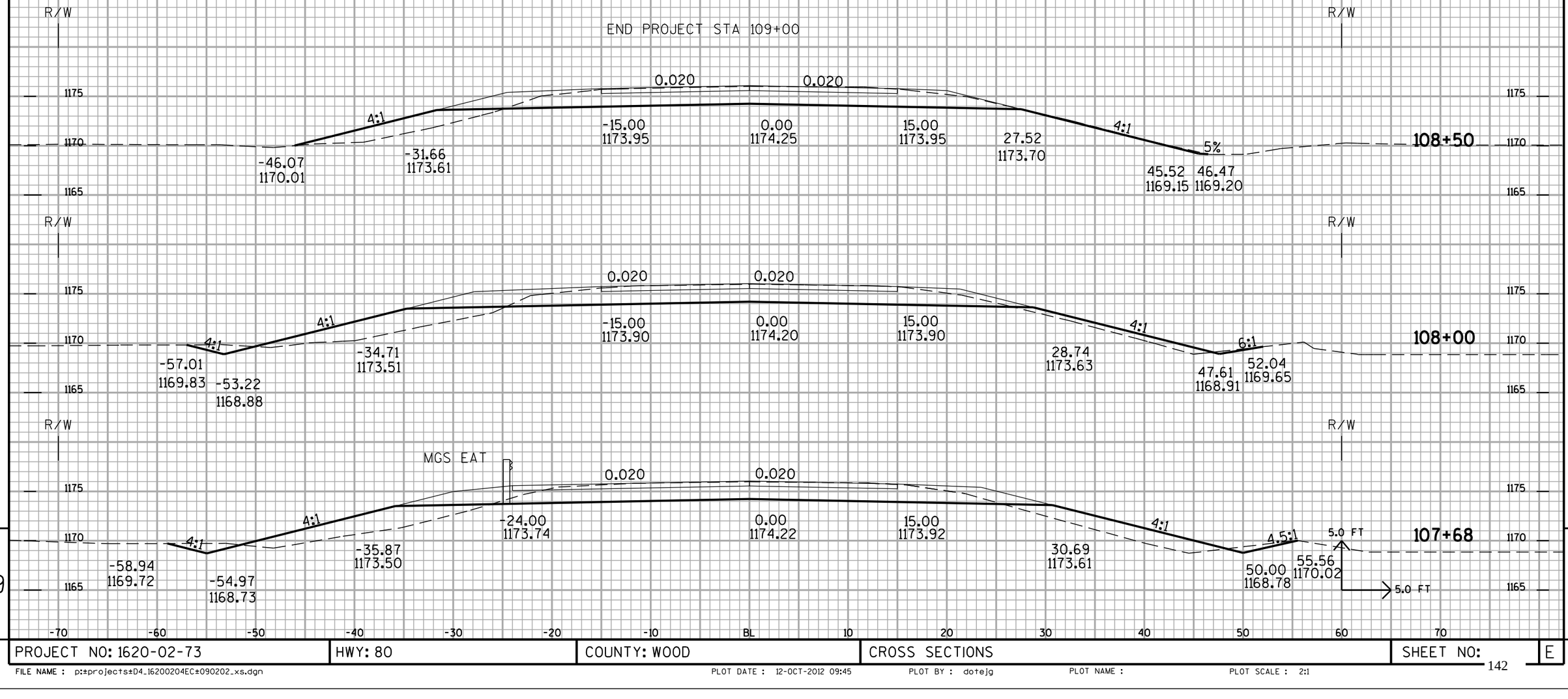


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PROJECT NO: 1620-02-73	HWY: 80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

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PROJECT NO: 1620-02-73	HWY: 80	COUNTY: WOOD	CROSS SECTIONS	SHEET NO:	E

FILE NAME : p:±projects±D4_16200204EC±090202_xs.dgn PLOT DATE : 12-OCT-2012 09:45 PLOT BY : dotejg PLOT NAME : PLOT SCALE : 2:1

Notes

Wisconsin Department of Transportation

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