RHI FEBRUARY 2022

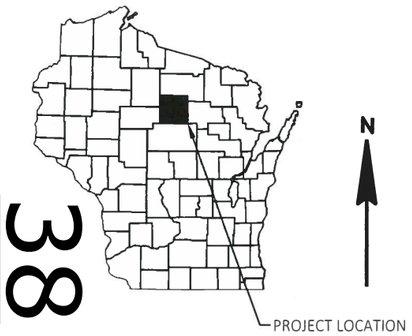
PROJECT ID: WITH- 9305-09-73

COUNTY: LINCOLN

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 = 80



DESIGN DESIGNATION

A.A.D.T.	(2023)	=	230
A.A.D.T.	(2043)	=	230
D.H.V.		=	6.8
D.D.		=	60/40
T.		=	8.1%
DESIGN SPEED		=	60 M.P.H.
ESALS		=	

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (300'EB')
- 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

MERRILL - TOMAHAWK

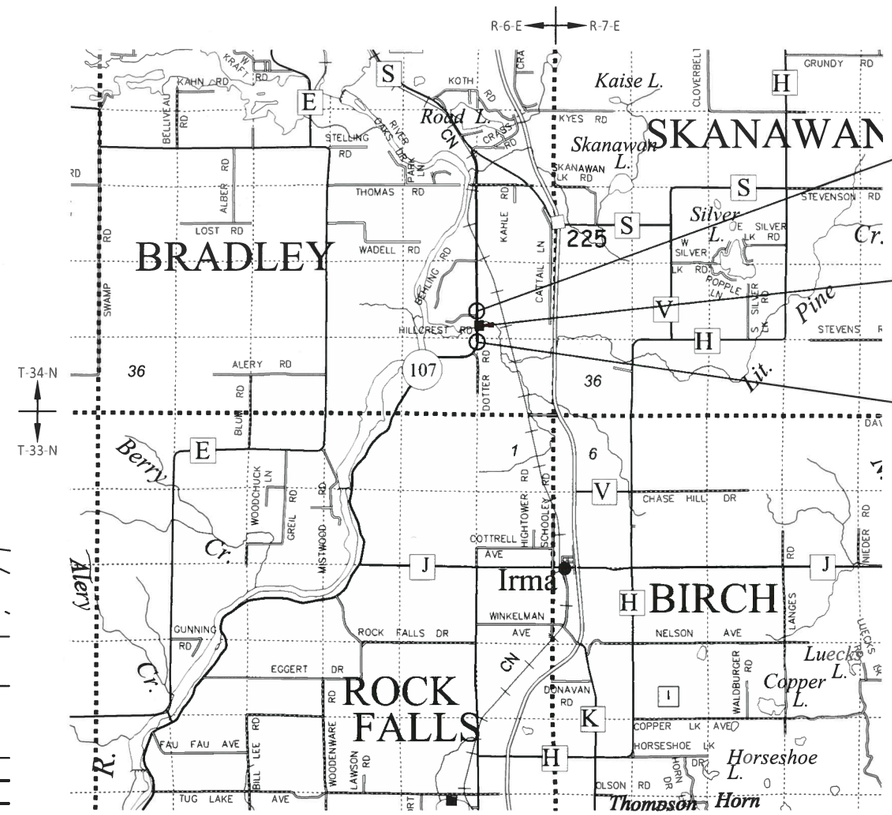
BRIDGE B-35-0053

STH 107

LINCOLN

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9305-09-73		

STATE PROJECT NUMBER
9305-09-73



LAYOUT
SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.061 MILES

END PROJECT 9305-09-73
STA 1112+35.56

STRUCTURE B-35-0053
STA 1110+78.50, SKEW 20° RHF

BEGIN PROJECT 9305-09-73
STA 1109+13.42
N = 201499.425
E = 391304.380

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), LINCOLN COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2011). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

ORIGINAL PLANS PREPARED BY
Westwood

WISCONSIN
KRISTOFER R OLSON
E-35236
APPLETON WI
PROFESSIONAL ENGINEER
10/19/21

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	WESTWOOD
Project Manager	STACEY HAGENBUCHER
Regional Examiner	
Regional Supervisor	DAN ERVA

APPROVED FOR THE DEPARTMENT
DATE: 10.19.21 (Signature)

E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-010101-TI.DWG
PLOT DATE : 10/18/2021 11:20 AM
PLOT BY : MATT TOMSOVIC
PLOT NAME :

GENERAL NOTES

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

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

EROSION CONTROL ITEMS SHOWN ON THE PLAN ARE AT SUGGESTED LOCATIONS. THE EXACT LOCATIONS AND DIMENSIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN PLACE UNTIL SUCH TIME AS THE ENGINEER DETERMINES THAT THEY ARE NO LONGER REQUIRED.

9305-09-73 STH 107:

UTILITIES

COMMUNICATIONS	FRONTIER COMMUNICATIONS OF WI LLC 521 4TH ST WAUSAU, WI 54403 ATTN: MICHAEL PEART TELEPHONE: 320-441-8788 EMAIL: MICHAEL.PEART@FTR.COM
ELECTRIC	WISCONSIN PUBLIC SERVICE CORPORATION PO BOX 1166 WAUSAU, WI 54402 ATTN: KEVIN TERMAAT TELEPHONE: 715-848-7353 EMAIL: KEVIN.TERMAAT@WISCONSINPUBLICSERVICE.COM

OTHER CONTACTS

DNR LIAISON	DEPARTMENT OF NATURAL RESOURCES NORTHERN REGION HEADQUARTERS 107 SUTLIFF AVE. RHINELANDER, WI 54501 ATTN: WENDY HENNIGES TELEPHONE: 715-365-8916 E-MAIL: WENDY.HENNIGES@WISCONSIN.GOV

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	0.08	0.16	0.22	0.12	0.20	0.27	0.15	0.24	0.33	0.19	0.28	0.38
	0.22	0.30	0.38	0.26	0.34	0.44	0.30	0.37	0.50	0.34	0.41	0.56
MEDIAN STRIP -	0.19	0.20	0.24	0.19	0.22	0.26	0.20	0.23	0.30	0.20	0.25	0.30
TURF	0.24	0.26	0.30	0.25	0.28	0.33	0.26	0.30	0.37	0.27	0.32	0.40
SIDE SLOPE -			0.25			0.27			0.28			0.30
TURF			0.32			0.34			0.36			0.38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

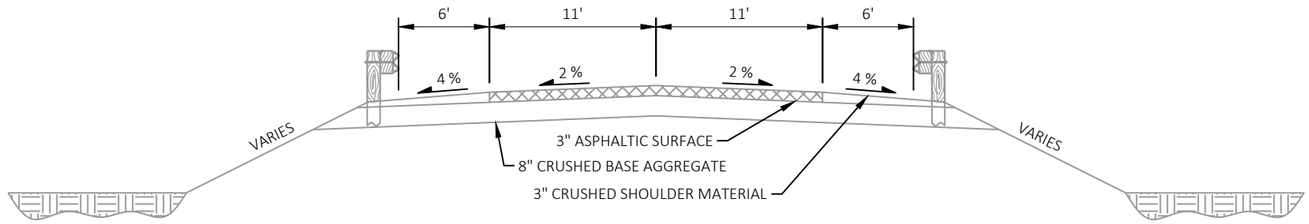
9305-09-73 TOTAL PROJECT AREA = 0.72 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.37 ACRES

ORDER OF "SECTION 2" SHEETS

SHEET TITLE

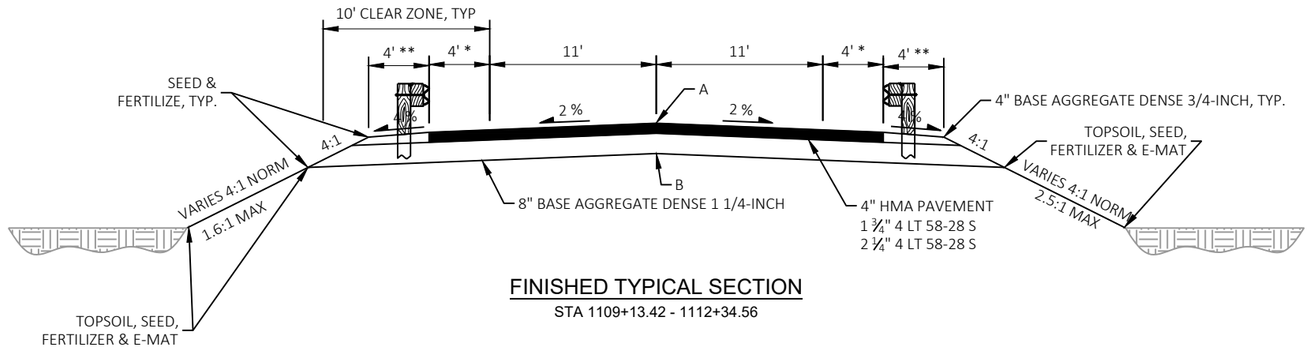
GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS
EROSION CONTROL
PAVEMENT MARKING & SIGNING
TRAFFIC CONTROL
DETOUR PLANS

2



EXISTING TYPICAL SECTION

STA 1109+13.42 - 1112+34.56



FINISHED TYPICAL SECTION

STA 1109+13.42 - 1112+34.56

NOTES:

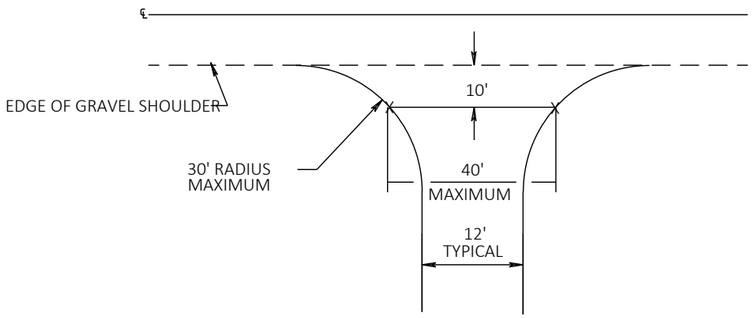
* VARIES TO 6' AT POST 1 OF ENERGY ABSORBING TERMINAL

** INCREASE TO 6' AT POST NO. 1 OF ENERGY ABSORBING TERMINAL

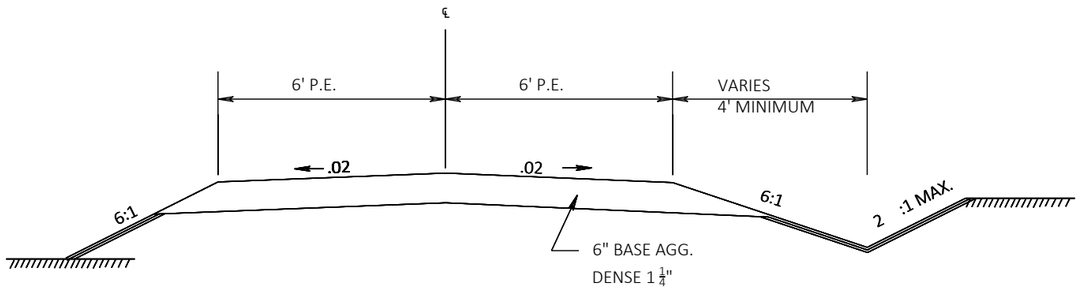
A POINT REFERENCED TO ON PLAN & PROFILE

B POINT REFERENCED TO ON CROSS SECTIONS

PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	TYPICAL SECTIONS	SHEET 3	E

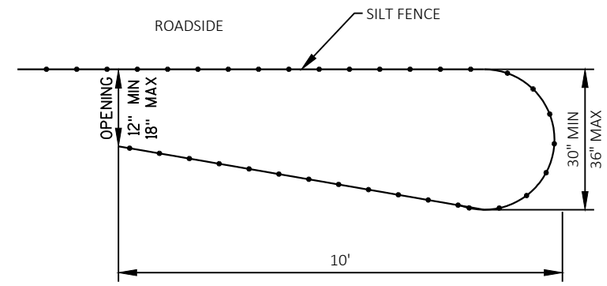


TYPICAL DRIVEWAY DETAIL
(NON-COMMERCIAL RURAL)



TYPICAL SECTION
FOR PRIVATE ENTRANCES

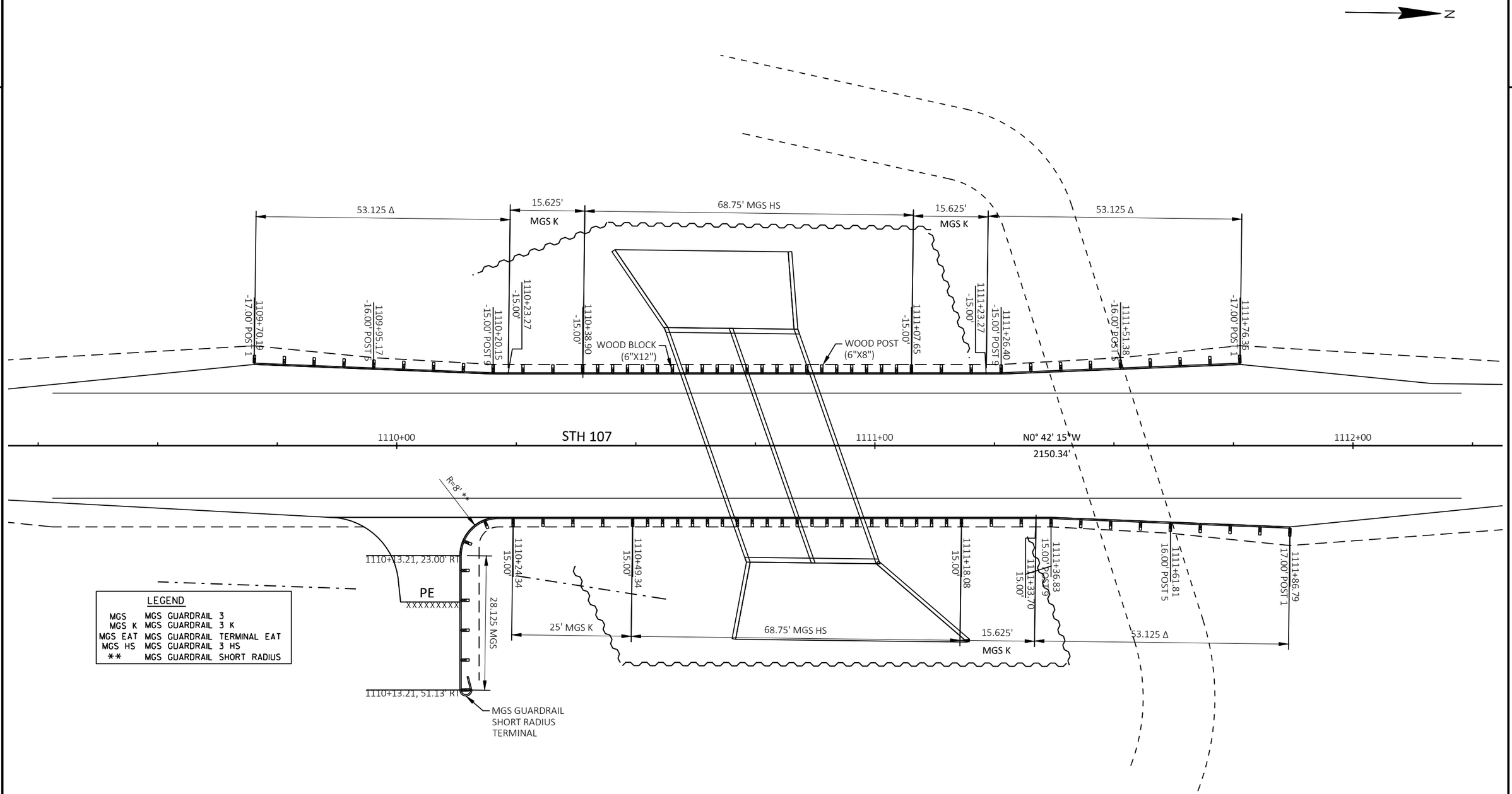
NOTE:
DRIVEWAY PROFILES NOT EXPECTED TO EXCEED 10%. PLACE LOW POINT OF DRIVEWAY PROFILE OVER DITCH FLOW LINE.



TEMPORARY SMALL ANIMAL BARRIER

NOTES:
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.

2

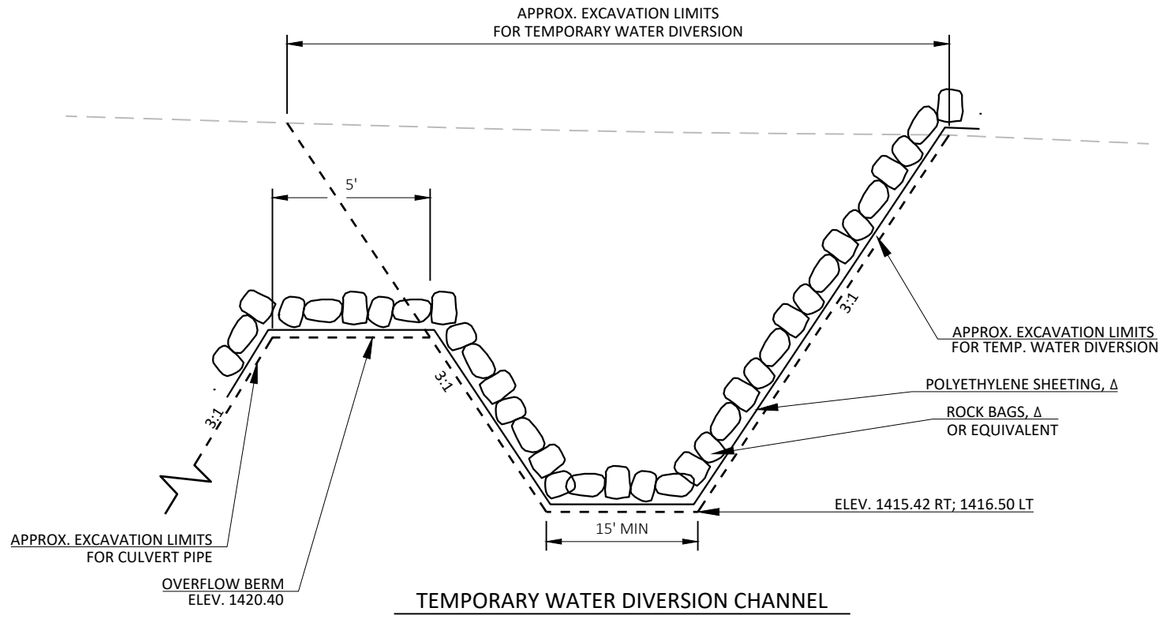


PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	CONSTRUCTION DETAIL - BEAM GUARD LAYOUT B-35-0053	SHEET 5	E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-021501-CD.DWG
LAYOUT NAME - 93050973-020501-cd

PLOT DATE : 12/8/2021 9:15 AM PLOT BY : MATT TOMSOVIC PLOT NAME : PLOT SCALE : 1 IN:20 FT

2



TEMPORARY WATER DIVERSION CHANNEL

STH 107 B-35-53

Δ INCIDENTAL TO TEMPORARY WATER DIVERSION

NOTE: EXCEPT FOR MARSH EXCAVATION AND REPLACEMENT, EXCAVATION AND BACKFILL FOR THE DIVERSION CHANNEL IS INCLUDED IN THE TEMPORARY WATER DIVERSION ITEM.

PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	CONSTRUCTION DETAIL - TEMPORARY WATER DIVERSION CHANNEL	SHEET 6	E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-021501-CD.DWG
LAYOUT NAME - 93050973-020502-cd
PLOT DATE : 10/29/2021 12:19 PM PLOT BY : CRAIG KNUTH PLOT NAME : PLOT SCALE : ##########
WISDOT/CADDS SHEET 42

2

2

N

EDGE WATER

TEMPORARY WATER DIVERSION CHANNEL

IMPACT B
TEMPORARY WETLAND IMPACT, 0.083 ACRES

IMPACT A
PERMANENT WETLAND IMPACT, 0.032 ACRES

TEMPORARY SMALL ANIMAL BARRIER END TREATMENT (TYP)

IMPACT C
PERMANENT WETLAND IMPACT, 0.006 ACRES

WETLAND BOUNDARY

EXISTING R/W

EXISTING R/W

1108+00 1109+00 1110+00 1111+00 STH 107 1112+00 1113+00

EXISTING R/W

PROPOSED R/W

PROPOSED R/W

PROPOSED R/W

WETLAND BOUNDARY

EXISTING R/W

IMPACT F
PERMANENT WETLAND IMPACT, 0.002 ACRES

IMPACT E
TEMPORARY WETLAND IMPACT, 0.028 ACRES

PE

IMPACT D
PERMANENT WETLAND IMPACT, .034 ACRES

LITTLE PINE CREEK

TLE

TLE

EDGE WATER

Q_2 = 203 CFS

WETLAND IMPACTS

TEMPORARY IMPACTS:
IMPACT B = 0.83 ACRES
IMPACT E = 0.028 ACRES
TOTAL = 0.111 ACRES

PERMANENT IMPACTS:
IMPACT A: 0.032 ACRES
IMPACT C: 0.006 ACRES
IMPACT D: 0.034 ACRES
IMPACT F: 0.002 ACRES
TOTAL = 0.074 ACRES

LEGEND

- EROSION MAT URBAN CLASS I, TYPE A
- SILT FENCE
- RIP RAP MEDIUM
- SLOPE INTERCEPT
- COFFERDAM
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	EROSION CONTROL	SHEET 7	E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-022001-EC.DWG
LAYOUT NAME - 93050973-022001-ec

PLOT DATE : 8/18/2021 9:33 AM PLOT BY : MATT TOMSOVIC PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N

W14-3
48"X36"

NO PASSING ZONE

NO PASSING ZONE

200

R100

95'

95'

11'

11'

1108+00

1109+00

1110+00

1111+00

1112+00

1113+00

STH 107

MARKING LINE EPOXY 4-INCH (WHITE)

MARKING LINE EPOXY 4-INCH (12.5' DASH 37.5' SKIP YELLOW)

MARKING LINE EPOXY 4-INCH (SOLID YELLOW)

LITTLE PINE CREEK

LEGEND

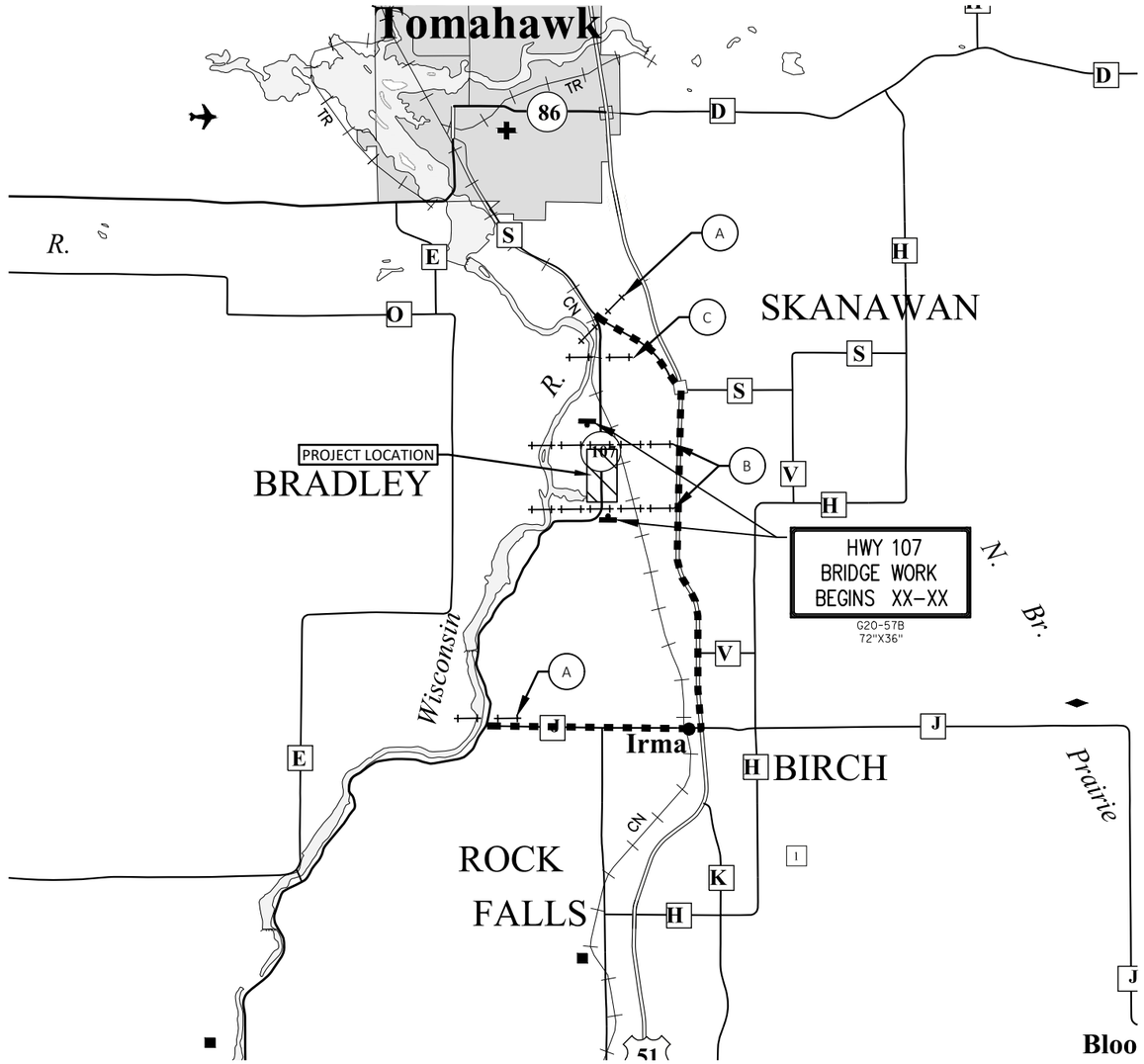
- PROPOSED SIGN MOUNTED ON POST
- EXISTING SIGN MOUNTED ON POST
- R100 — REMOVE EXISTING SIGN
- 100 — PROPOSED SIGN

PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	PAVEMENT MARKING & PERMANENT SIGNING	SHEET 8	E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-023201-PS.DWG
LAYOUT NAME - 93050973-023201-ps

93050973-023201-ps

PLOT DATE : 6/30/2021 3:23 PM PLOT BY : CRAIG KNUTH PLOT NAME : PLOT SCALE : 1 IN:40 FT



LEGEND

- DETOUR ROUTE
- POST MOUNTED SIGN
- TYPE III BARRICADE
- WORK AREA

(A) USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL A AND DETAIL E.

(B) USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL A,C, AND D.

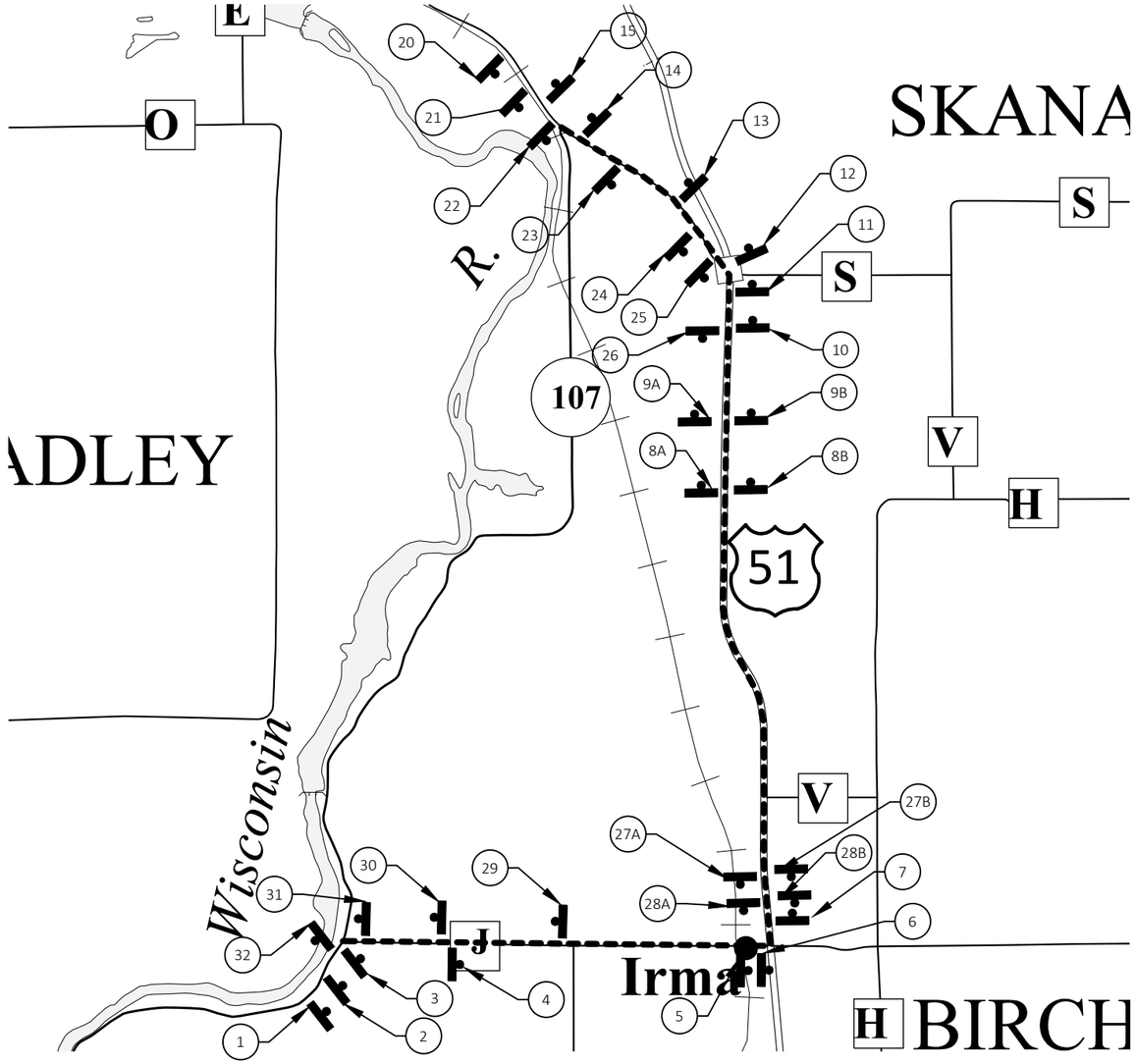
(C) USE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" DETAIL 3.

TRAFFIC CONTROL GENERAL NOTES

1. THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
2. THE SPACING BETWEEN PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.
3. ALL SIGNS SHALL BE 48" x 48" UNLESS OTHERWISE NOTED.
4. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
5. FIXED MESSAGE SIGNS SHALL BE PLACED ONE WEEK IN ADVANCE OF INITIAL ROAD CLOSURE.
6. SEE DETOUR DETAIL SHEETS AND STANDARD DETAIL DRAWINGS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.

PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	TRAFFIC CONTROL PLAN -STH 107	SHEET 9	E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-025001-TC.DWG
LAYOUT NAME - 93050973-025001-tc
PLOT DATE : 9/22/2021 10:08 AM PLOT BY : MATT TOMSOVIC PLOT NAME : PLOT SCALE : ##########



1 — DETOUR AHEAD W20-2A

2 — DETOUR MO4-8 24"X12" / NORTH M3-1 24"X12" / 107 M1-6 24"X24" / MO5-1R 21"X21"

3 — DETOUR MO4-8 24"X12" / NORTH M3-1 24"X12" / 107 M1-6 24"X24" / MO6-1 21"X21"

4 — DETOUR MO4-8 24"X12" / NORTH M3-1 24"X12" / 107 M1-6 24"X24"

13 — DETOUR MO4-8 24"X12" / NORTH M3-1 24"X12" / 107 M1-6 24"X24"

5 — DETOUR MO4-8 24"X12" / NORTH M3-1 24"X12" / 107 M1-6 24"X24" / MO5-1L 21"X21"

6 — DETOUR MO4-8 24"X12" / NORTH M3-1 24"X12" / 107 M1-6 24"X24" / MO6-1 21"X21"

12 — DETOUR MO4-8 24"X12" / NORTH M3-1 24"X12" / 107 M1-6 24"X24" / MO6-1 21"X21"

7 — DETOUR MO4-8 36"X18" / NORTH M3-1 36"X18" / 107 M1-6 36"X36"

10 — DETOUR MO4-8 36"X18" / NORTH 36"X18" 24"X12" / 107 M1-6 36"X36" / MO5-1L 30"X30"

11 — DETOUR MO4-8 36"X18" / NORTH M3-1 36"X18" / 107 M1-6 36"X36" / MO6-1 30"X30"

8A — DETOUR MO4-8 36"X18" / NORTH M3-1 36"X18" / 107 M1-6 36"X36" / MO5-2R 30"X30"

8B — DETOUR MO4-8 36"X18" / NORTH M3-1 36"X18" / 107 M1-6 36"X36" / MO5-2R 30"X30"

9A — DETOUR MO4-8 36"X18" / NORTH M3-1 36"X18" / 107 M1-6 36"X36" / MO6-2 30"X30"

9B — DETOUR MO4-8 36"X18" / NORTH M3-1 36"X18" / 107 M1-6 36"X36" / MO6-2 30"X30"

NOTE: SIGNS 9A & 9B TO BE PLACED NEXT TO EXISTING SIGNS

14 — COVER 107 JCT

15 — END DETOUR M4-8A 24"X18" / 107 COUNTY S

COVER

20 — DETOUR AHEAD W20-2A

21 — MODIFY FROM JCT 107 / MODIFY TO DETOUR MO4-8 24"X12" / SOUTH M3-3 24"X12" / 107 / MO6-1 21"X21"

22 — MODIFY FROM COUNTY S 107 / MODIFY TO COUNTY S 107 / MO6-1 21"X21"

23 — DETOUR MO4-8 24"X12" / SOUTH M3-3 24"X12" / 107 M1-6 24"X24"

29 — DETOUR MO4-8 24"X12" / SOUTH M3-3 24"X12" / 107 M1-6 24"X24"

26 — DETOUR MO4-8 36"X18" / SOUTH M3-3 36"X18" / 107 M1-6 36"X36"

24 — DETOUR MO4-8 24"X12" / SOUTH M3-3 24"X12" / 107 M1-6 24"X24" / MO5-1R 21"X21"

27A — DETOUR MO4-8 36"X18" / SOUTH M3-3 36"X18" / 107 M1-6 36"X36" / MO5-1R 30"X30"

27B — DETOUR MO4-8 36"X18" / SOUTH M3-3 36"X18" / 107 M1-6 36"X36" / MO5-1R 30"X30"

31 — DETOUR MO4-8 24"X12" / SOUTH M3-3 24"X12" / 107 M1-6 24"X24" / MO6-1 21"X21"

25 — DETOUR MO4-8 24"X12" / SOUTH M3-3 24"X12" / 107 M1-6 24"X24" / MO6-1 21"X21"

28A — DETOUR MO4-8 36"X18" / SOUTH M3-3 36"X18" / 107 M1-6 36"X36" / MO6-1 30"X30"

28B — DETOUR MO4-8 36"X18" / SOUTH M3-3 36"X18" / 107 M1-6 36"X36" / MO6-1 30"X30"

32 — END DETOUR M4-8A 24"X18" / SOUTH M3-3 24"X12" / 107 M1-6 24"X24"

30 — MODIFY FROM JCT END 107 COUNTY S / MODIFY TO DETOUR MO4-8 24"X12" / SOUTH M3-3 24"X12" END COUNTY S 107 / MO5-1L 21"X21"

LEGEND

- DETOUR ROUTE
- POST MOUNTED SIGN
- (1) SIGN NUMBER

PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	DETOUR PLAN -STH 107	SHEET 10	E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-027001-DT.DWG
LAYOUT NAME - 93050973-027001-dt

PLOT DATE : 9/22/2021 10:07 AM PLOT BY : MATT TOMSOVIC PLOT NAME : PLOT SCALE : #########

WISDOT/CADDS SHEET 42

9305-09-73

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0004	203.0220	Removing Structure (structure) 01. B-35-86	EACH	1.000	1.000
0006	204.0165	Removing Guardrail	LF	325.000	325.000
0008	205.0100	Excavation Common	CY	548.000	548.000
0010	206.2000	Excavation for Structures Culverts (structure) 01. B-35-53	LS	1.000	1.000
0012	206.5000	Cofferdams (structure) 01. B-35-53	LS	1.000	1.000
0014	210.2500	Backfill Structure Type B	TON	2,040.000	2,040.000
0016	213.0100	Finishing Roadway (project) 01. 9305-09-73	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	70.000	70.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	700.000	700.000
0022	455.0605	Tack Coat	GAL	70.000	70.000
0024	460.2000	Incentive Density HMA Pavement	DOL	160.000	160.000
0026	460.5224	HMA Pavement 4 LT 58-28 S	TON	240.000	240.000
0028	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	6.000	6.000
0030	504.0100	Concrete Masonry Culverts	CY	207.000	207.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	22,500.000	22,500.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	2,930.000	2,930.000
0036	516.0500	Rubberized Membrane Waterproofing	SY	40.000	40.000
0038	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	2.000	2.000
0040	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	35.000	35.000
0042	606.0200	Riprap Medium	CY	772.000	772.000
0044	614.2300	MGS Guardrail 3	LF	28.130	28.130
0046	614.2310	MGS Guardrail 3 HS	LF	137.500	137.500
0048	614.2330	MGS Guardrail 3 K	LF	71.880	71.880
0050	614.2350	MGS Guardrail Short Radius	LF	12.500	12.500
0052	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0054	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000	1.000
0056	614.8010	Anchor Post Assembly Top Mount	EACH	18.000	18.000
0058	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9305-09-73	EACH	1.000	1.000
0060	619.1000	Mobilization	EACH	1.000	1.000
0062	624.0100	Water	MGAL	5.000	5.000
0064	625.0100	Topsoil	SY	300.000	300.000
0066	628.1504	Silt Fence	LF	600.000	600.000
0068	628.1520	Silt Fence Maintenance	LF	600.000	600.000
0070	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0072	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0074	628.2006	Erosion Mat Urban Class I Type A	SY	300.000	300.000
0076	628.7555	Culvert Pipe Checks	EACH	5.000	5.000
0078	628.7570	Rock Bags	EACH	10.000	10.000
0080	629.0210	Fertilizer Type B	CWT	0.190	0.190
0082	630.0130	Seeding Mixture No. 30	LB	5.000	5.000
0084	630.0500	Seed Water	MGAL	2.000	2.000
0086	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	1.000	1.000
0088	637.2210	Signs Type II Reflective H	SF	5.560	5.560
0090	638.2602	Removing Signs Type II	EACH	1.000	1.000
0092	638.3000	Removing Small Sign Supports	EACH	1.000	1.000
0094	643.0420	Traffic Control Barricades Type III	DAY	1,180.000	1,180.000
0096	643.0705	Traffic Control Warning Lights Type A	DAY	1,416.000	1,416.000
0098	643.0900	Traffic Control Signs	DAY	7,080.000	7,080.000

9305-09-73

Line	Item	Item Description	Unit	Total	Qty
0100	643.0920	Traffic Control Covering Signs Type II	EACH	2.000	2.000
0102	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0104	643.5000	Traffic Control	EACH	1.000	1.000
0106	645.0105	Geotextile Type C	SY	344.000	344.000
0108	645.0120	Geotextile Type HR	SY	552.000	552.000
0110	646.1020	Marking Line Epoxy 4-Inch	LF	887.000	887.000
0112	650.4500	Construction Staking Subgrade	LF	322.000	322.000
0114	650.5000	Construction Staking Base	LF	322.000	322.000
0116	650.6500	Construction Staking Structure Layout (structure) 01. B-35-53	LS	1.000	1.000
0118	650.9910	Construction Staking Supplemental Control (project) 01. 9305-09-73	LS	1.000	1.000
0120	650.9920	Construction Staking Slope Stakes	LF	322.000	322.000
0122	690.0150	Sawing Asphalt	LF	56.000	56.000
0124	715.0502	Incentive Strength Concrete Structures	DOL	1,242.000	1,242.000
0126	SPV.0035	Special 01. Marsh Excavation Stockpile and Replacement	CY	220.000	220.000
0128	SPV.0060	Special 01. Temporary Water Diversion STH 107 B-35-53	EACH	1.000	1.000

EARTHWORK

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE
			CUT (2)	EBS EXCAVATION (3)			FACTOR 1.25		
DIVISION 1									
B-35-0053	1109+13.42-1112+34.56	STH 107	548	0	548	179	223	325	325
GRAND TOTAL			548	0	0	0	0	0	0
TOTAL COMMON EXC			548						

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

(14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

REMOVING GUARDRAIL

STATION	TO	STATION	DIR	LOCATION	204.0165 REMOVING GUARDRAIL LF
9305-09-73					
1109+80	-	1111+65	LT	STH 107	185
1110+25	-	1111+65	RT	STH 107	140
				PROJECT TOTAL	325

BASE COURSE

STATION TO STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
9305-09-73				
1109+13 - 1112+35	STH 107	70	700	5
	PROJECT TOTALS	70	700	5

RIPRAP

STATION	-	STATION	LOCATION	606.0200 MEDIUM RIPRAP TON	645.0120 GEOTEXTILE TYPE HR SY
9305-09-73					
1110+15	-	1112+35	STH 107	772	552
			PROJECT TOTAL	772	552

ASPHALTIC ITEMS

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	460.5224 HMA PAVEMENT 4 LT 58-28 S TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS & FIELD ENTERANCES TON
9305-09-73						
1109+13	-	1112+35	STH 107	70	240	6
			PROJECT TOTAL	70	240	6

CULVERT PIPE

STATION	203.0100 REMOVING SMALL PIPE CUVERTS EACH	521.1018 APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH EACH	521.3118 CULVERT PIPE CORRUGATED STEEL 18-INCH EACH	MIN. STEEL THICKNESS INCHES	INVERT ELEVATIONS	
					SOUTH	NORTH
9305-09-73						
1110+07.	1	2	35	0.064	1422.10	1421.85
PROJECT TOTALS	1	2	35			

3

BEAM GUARD

STATION	TO	STAION	LOCATION	614.2300 MGS GAURDRAIL 3 LF	614.2330 MGS GAURDRAIL 3 K LF	614.2310 MGS GAURDRAIL HS LF	614.2350 MGS GUARDRAIL SHORT RADIUS LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	614.2630 MGS GUARDRAIL SHORT RADIUS TERMINAL EACH	614.8010 ANCHOR POST ASSEMBLY TOP MOUNT EACH
9305-09-73										
1109+70	-	1111+77	STH 107	---	31.25	68.75	---	2	1	9
1110+13	-	1111+86	STH 107	28.125	40.625	68.75	12.5	1	---	9
			TOTAL	28.125	71.875	137.5	12.5	3	1	18

LANDSCAPING ITEMS

STATION TO STATION			DIR	LOCATION	625.0100 TOPSOIL SY	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIX NO. 30 LB	630.0500 SEED WATER MGAL
9305-09-73									
1109+13	-	1112+35	LT	STH 107	80	80	0.05	1	0.5
1109+13	-	1112+35	RT	STH 107	170	170	0.11	3	0.5
				UNDISTRIBUTED	50	50	0.03	1	1
				PROJECT TOTALS	300	300	0.19	5	2

EROSION CONTROL ITEMS

STATION TO STATION			LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINT LF	628.1905 MOB. EROSION CONTROL EA	628.1910 MOB. EROSION CONTROL EMERGENCY EA	628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH
9305-09-73									
1109+13	-	1112+35	STH 107	500	500	---	---	2	---
UNDISTRIBUTED				100	100	2	2	3	10
			PROJECT TOTALS	600	600	2	2	5	10

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

SIGN NO.	STATION	LOCATION	DESCRIPTION	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
9305-09-73					
R100	1110+71 LT	STH 107	NO PASSING ZONE	1	1
			TOTALS	1	1

PERMANENT SIGNS TYPE II AND SIGN SUPPORTS

SIGN NO.	STATION	REFERENCE LINE	FACE DIR.	SIGN CODE	SIGN SIZE	DESCRIPTION	SIGN DIMENSIONS W X H IN X IN	634.0616 POSTS WOOD 16 FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF
9305-09-73									
200	1110+71 LT	STH 107	NB	W14-3	2S	NO PASSING ZONE	48 X 36	1	5.56
						PROJECT TOTALS		1	5.56

COVERING SIGNS

LOCATION	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	NUMBER OF CYCLES	NUMBER OF SIGNS
9305-09-73			
STH 107 DETOUR	2	1	1
PROJECT TOTALS	2		

TRAFFIC CONTROL

LOCATION	EST. SERVICE PERIOD DAYS	643.0420 BARRICADES TYPE III NO	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO	643.0705 WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS NO	643.0900 SIGNS DAYS	643.1000 SIGNS FIXED MESSAGE SF	643.5000 TRAFFIC CONTROL EACH
CATEGORY 0010									
STH 107	59	20	1,180	24	1,416	29	1,711	36	---
DETOUR	59	--	--	--	--	91	5,369	--	---
UNDISTRIBUTED	--	--	--	--	--	--	--	--	1
PROJECT TOTALS			1,180		1,416		7,080	36	1

MARKING LINE

STATION - STATION			LOCATION	646.1020 EPOXY 4-INCH (WHITE) LF	646.1020 EPOXY 4-INCH (YELLOW) LF
9305-09-73					
1109+13	-	1112+36	STH 107	646	241
			PROJECT TOTALS	887	

SAW CUTTING

STATION	DIR	LOCATION	690.0150 SAWING ASHPALT LF
9305-09-61			
1109+13	R/L	STH 107	22
1110+07	RT	STH 107	12
1112+35	R/L	STH 107	22
PROJECT TOTALS			56

CONSTRUCTION STAKING

STATION TO STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
9305-09-73					
1109+13 - 1112+35	STH 107	322	322	---	322
9305-09-73	STH 107	---	---	1	---
PROJECT TOTALS		322	322	1	322

MARSH EXCAVATION STOCKPILE & REPLACEMENT

LOCATION	ROADWAY	SPV.0035.01 CY
9305-09-73		
TEMPORARY DIVERSION CHANNEL	STH 107	220
PROJECT TOTAL		220

TRANSPORTATION PROJECT PLAT NO: 9305-09-23 - 4.02

THAT PART OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER, SECTION 25, AND PART OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER SECTION 26, T34N, R6E, TOWN OF BRADLEY, LINCOLN COUNTY, WISCONSIN

RELOCATION ORDER STH 107 MERRILL TO TOMAHAWK BRIDGE B-35-0086 AND VARIOUS CULVERTS LINCOLN COUNTY

TO PROPERTY 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 NAMED PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SUBSECTIONS 84.02 (3), 84.09 AND 84.30, 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 NAMED 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 SUBSECTION 84.09 (1) OR (2). WISCONSIN STATUTES.

SCHEDULE OF LANDS AND INTERESTS REQUIRED

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

PARCEL NO.	OWNER	INTEREST REQUIRED	HE AREA	TLE AREA
4	GERALD TRITTEN	HE	165 SQ FT	-----
5	DAVID DOTTER & JEAN M. ZOELLNER	HE, TLE	1976 SQ FT	1147 SQ FT

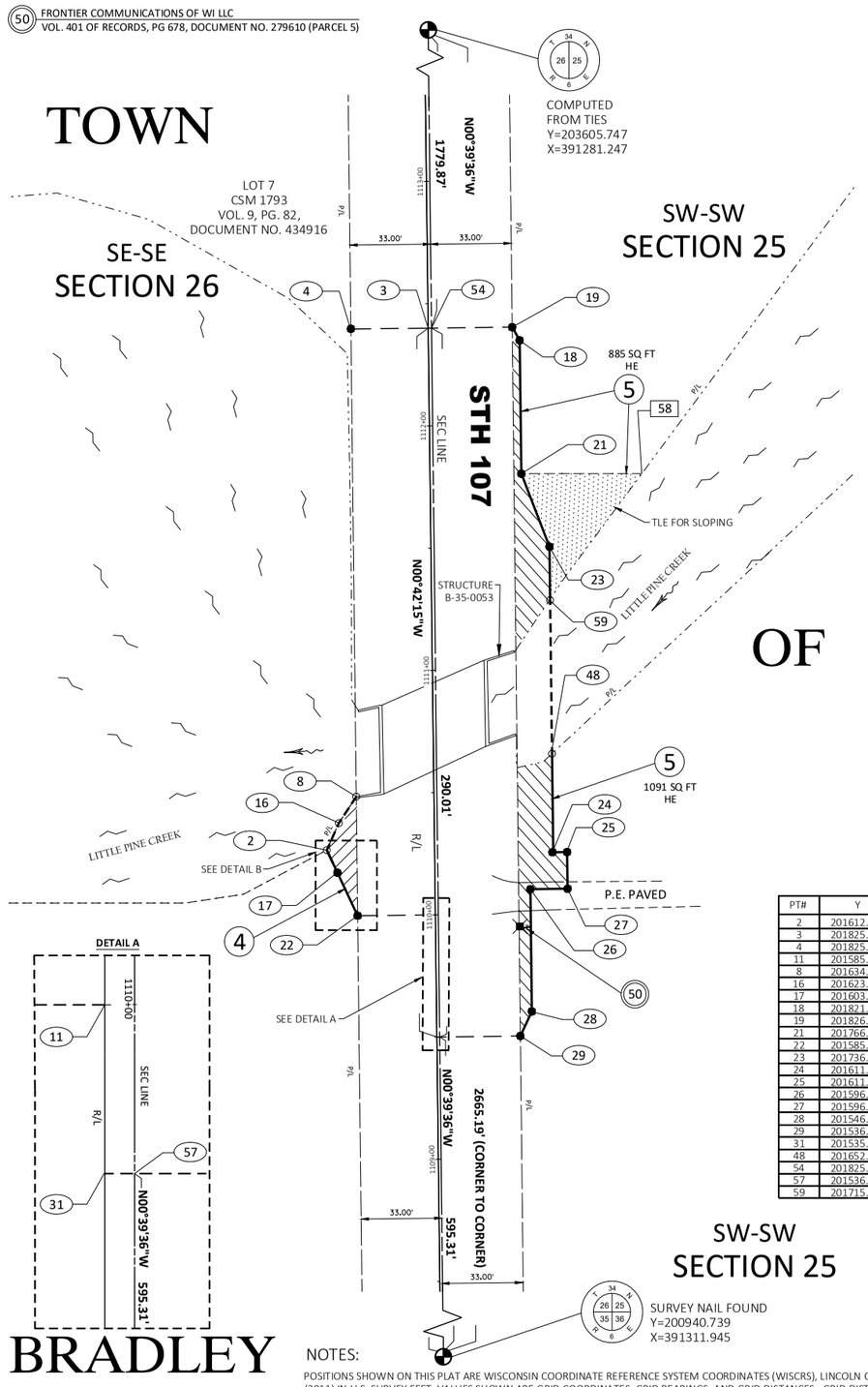
EXISTING HIGHWAY RIGHT-OF-WAY SHOWN IS BASED UPON THE FOLLOWING POINTS OF REFERENCE:

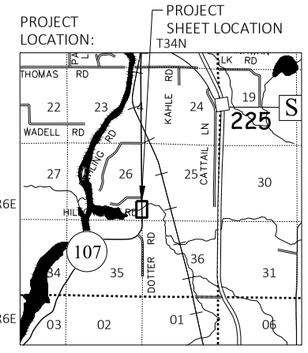
EXISTING RIGHT-OF-WAY OF STH 107 ESTABLISHED FROM:
CERTIFIED SURVEY MAP NO. 1793, RECORDED AUGUST 11, 2004, AND 66' R/W PER STATE STATUTE

UTILITY SCHEDULE OF INTEREST REQUIRED

UTILITY NO.	UTILITY OWNERS	INTEREST REQUIRED
50	FRONTIER COMMUNICATIONS OF WI	RELEASE OF RIGHTS

(50) FRONTIER COMMUNICATIONS OF WI LLC
VOL. 401 OF RECORDS, PG 678, DOCUMENT NO. 279610 (PARCEL 5)





NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), LINCOLN COUNTY, NAD 83 (2011) IN U.S. SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 1-INCH BY 24-INCH IRON PIPE) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

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

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

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISTION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN RHINELANDER.

PARCEL IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE SCHEDULE OF LANDS & INTERESTS REQUIRED.

AN EASEMENT FOR HIGHWAY PURPOSE (HE), AS LONG AS SO USED, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE.

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

GN

SCALE, FEET
0 30 60

549761
SARAH L. KOSS
LINCOLN COUNTY, WI
REGISTER OF DEEDS
03/08/2021 01:52:56PM
REC FEE: 25.00
PAGES: 1
Volume- 1
Page- 28
RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER: 9305-09-23 - 4.02
AMENDMENT NO:

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W OR HE LINE
PROPERTY LINE
LOT, TIE & OTHER MINOR LINES
SLOPE INTERCEPT
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)
TEMPORARY LIMITED EASEMENT AREA
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING TO BE REMOVED
BRIDGE

SECTION CORNER SYMBOL
SECTION CORNER MONUMENT
GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
SIGN
OFF-PREMISE SIGN
R/W MONUMENT (TO BE SET)
NON-MONUMENTED R/W POINT
FOUND IRON PIN (1-INCH UNLESS NOTED)

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE		
TELEPHONE POLE		
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)		

ACCESS RESTRICTED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)
PARCEL NUMBER 25 UTILITY NUMBER 40
PARALLEL OFFSETS
25 R/W POINT NUMBER 30 TLE POINT NUMBER

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF INTERSECTION	PI
ACRES	AC	PROPERTY LINE	PL
AHEAD	AH	RECORDED AS	(100')
ALUMINUM	ALUM	REEL / IMAGE	R/I
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RESTRICTIVE DEVELOPMENT EASEMENT	RDE
CENTERLINE	C/L	RIGHT	RT
CERTIFIED SURVEY MAP	CSM	RIGHT OF WAY	R/W
CONCRETE	CONC	SECTION	SEC
COUNTY	CO	SEPTIC VENT	SEPV
COUNTY TRUNK HIGHWAY	CTH	SQUARE FEET	SF
DISTANCE	DIST	STATE TRUNK HIGHWAY	STH
CORNER	COR	STATION	STA
DOCUMENT NUMBER	DOC	TELEPHONE PEDESTAL	TP
EASEMENT	EASE	TEMPORARY LIMITED EASEMENT	TLE
EXISTING	EX	TRANSPORTATION PROJECT PLAT	TPP
GAS VALVE	GV	UNITED STATES HIGHWAY	USH
GRID NORTH	GN	VOLUME	V
HIGHWAY EASEMENT	HE		
IDENTIFICATION	ID		
LAND CONTRACT	LC		
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY NUMBER	NGS NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED EASEMENT	PLE		
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		
POINT OF COMPOUND CURVE	PCC		

CONVENTIONAL UTILITY SYMBOLS

W WATER
G GAS
T TELEPHONE
OH OVERHEAD TRANSMISSION LINES
E ELECTRIC
TV CABLE TELEVISION
FO FIBER OPTIC
SAN SANITARY SEWER
SS STORM SEWER

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ/DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

HIGHWAY EASEMENT TABLE

PT#	Y	X	STA	OFFSET
2	201612.478	391258.890	1110+27.02	44.10'
3	201825.980	391300.366	1112+40.00	0.00'
4	201825.592	391268.750	1112+40.00	31.62'
11	201585.998	391303.316	1110+00.00	0.00'
8	201634.301	391270.954	1110+48.70	31.77'
16	201623.548	391263.831	1110+38.03	39.02'
17	201603.709	391263.010	1110+18.20	40.09'
18	201821.000	391337.808	1112+34.56	37.38'
19	201826.403	391334.745	1112+40.00	34.38'
21	201766.444	391338.478	1111+80.00	37.38'
22	201585.607	391271.515	1110+00.00	31.80'
23	201736.583	391350.003	1111+50.00	48.53'
24	201611.593	391351.539	1110+25.00	48.53'
25	201611.663	391357.220	1110+25.00	54.22'
26	201596.477	391342.191	1110+10.00	39.00'
27	201596.664	391357.405	1110+10.00	54.22'
28	201546.481	391342.806	1109+60.00	39.00'
29	201536.422	391338.086	1109+50.00	34.16'
31	201535.993	391303.931	1109+50.00	0.00'
48	201652.167	391351.040	1110+65.58	48.53'
54	201825.997	391301.748	1112+40.00	1.38'
57	201536.008	391305.088	1109+50.00	1.16'
59	201715.110	391350.267	1111+28.52	48.53'

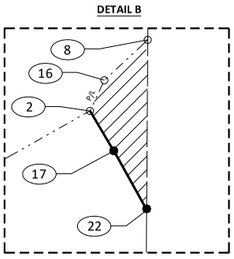
TLE STATION / OFFSET TABLE

PT#	STATION	OFFSET
58	1111+79.39	86.66'

LINE TABLE

LINE	BEARING	DISTANCE
57-31	S89°16'53"W	1.16'
31-11	N00°42'15"W	50.00'
11-22	S89°18'41"W	31.80'
22-17	N25°09'54"W	20.00'
17-2	N25°09'54"W	9.69'
2-16	N24°03'17"E	12.12'
16-8	N33°31'10"E	12.90'
8-4	N00°39'35"W	191.30'
4-3	N89°17'45"E	31.62'
3-54	N89°17'45"E	1.38'
54-19	N89°17'45"E	33.00'
19-18	S79°32'45"E	6.21'
18-21	S00°42'15"E	54.56'
21-23	S21°06'14"E	32.01'
23-59	S00°42'15"E	21.48'
59-48	S00°42'15"E	62.95'
48-24	S00°42'15"E	40.58'
24-25	N89°17'45"E	5.68'
25-27	S00°42'15"E	15.00'
27-26	S89°18'18"W	15.21'
26-28	S00°42'15"E	50.00'
28-29	S25°08'07"W	11.11'
29-57	S89°16'53"W	33.00'

DETAIL B



Westwood
Phone (920) 735-6900
Fax (920) 830-6100
Toll Free (800) 571-6677
One Systems Drive
Appleton, WI 54914-1654
westwoodps.com
Westwood Infrastructure, Inc.

I, DAVID A. YURK PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT. I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT 9305-09-23-4.02 AND SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

SIGNATURE: David A. Yurk DATE: 2-15-2021
PRINT NAME: DAVID A. YURK
REGISTRATION NUMBER: S-2648

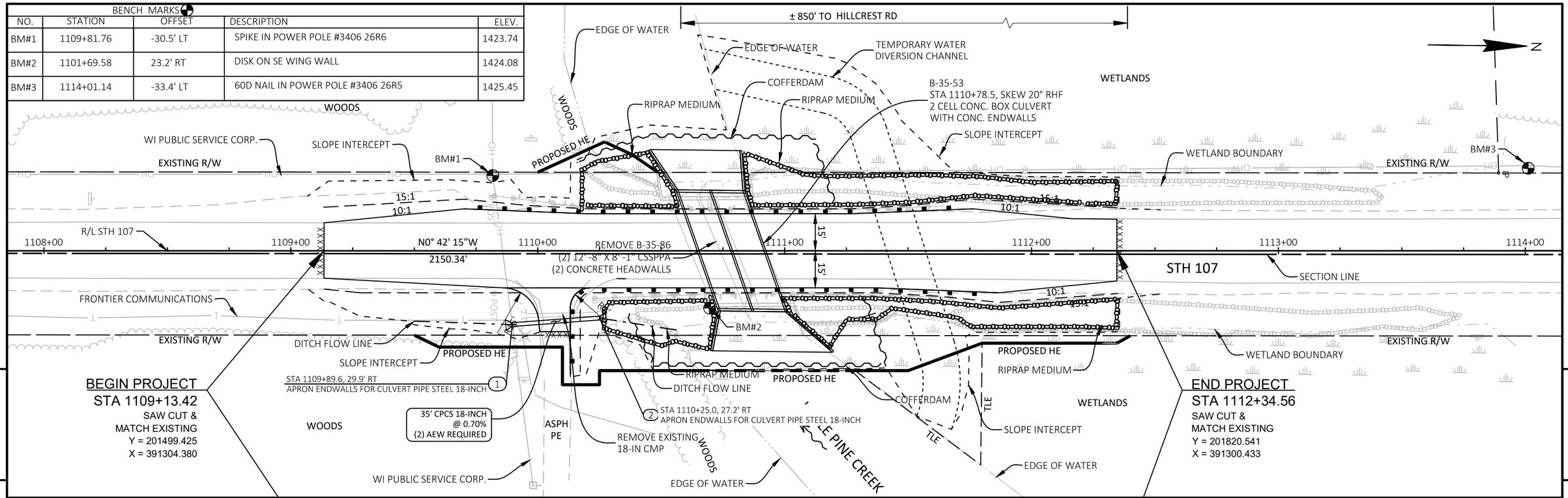
WISCONSIN DAVID A. YURK S-2648 OMSDSL, WI LAND SURVEYOR

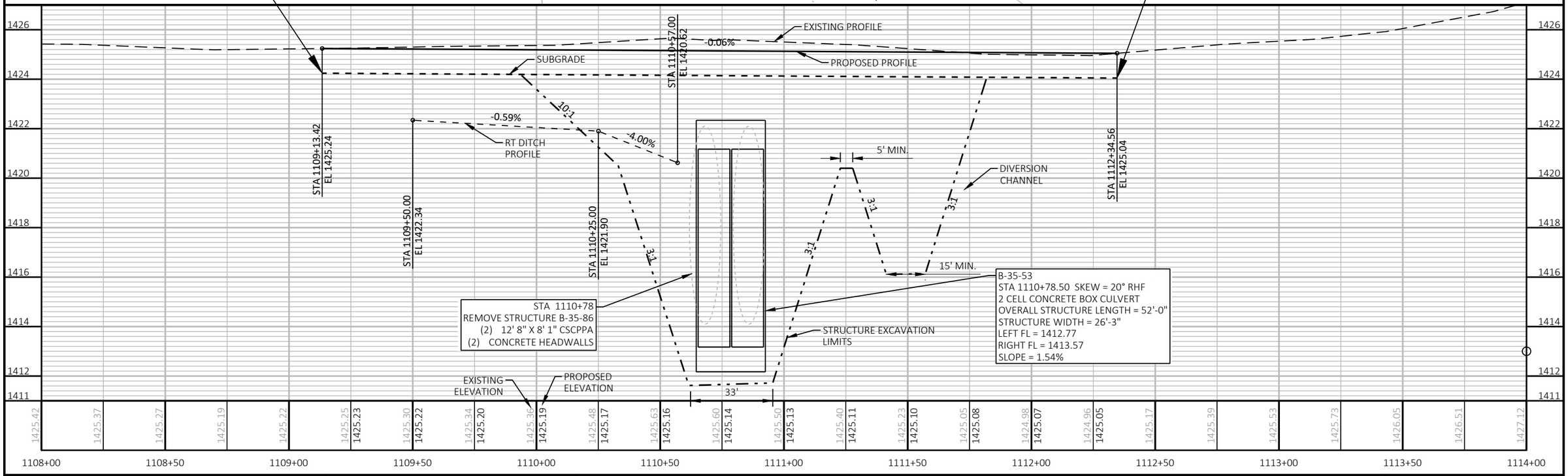
THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

SIGNATURE: Brent L Stella DATE: 3-4-21
PRINT NAME: Brent L Stella

9305-09-23-4.02
15
1 IN:30 FT
PLOT SCALE :
PLOT NAME :
Dave Yurk
PLOT BY :
3/3/2021 3:00 PM
PLOT DATE :
PLOT DATE :
FILE NAME : F:\TR\OBS\E2371A19\CIVIL 3D\RW\TPP_PRW_STH_107_93050973.DWG
APPRAISAL PLAT DATE : 2-15-2021

BENCH MARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
BM#1	1109+81.76	-30.5' LT	SPIKE IN POWER POLE #3406 26R6	1423.74
BM#2	1101+69.58	23.2' RT	DISK ON SE WING WALL	1424.08
BM#3	1114+01.14	-33.4' LT	60D NAIL IN POWER POLE #3406 26R5	1425.45

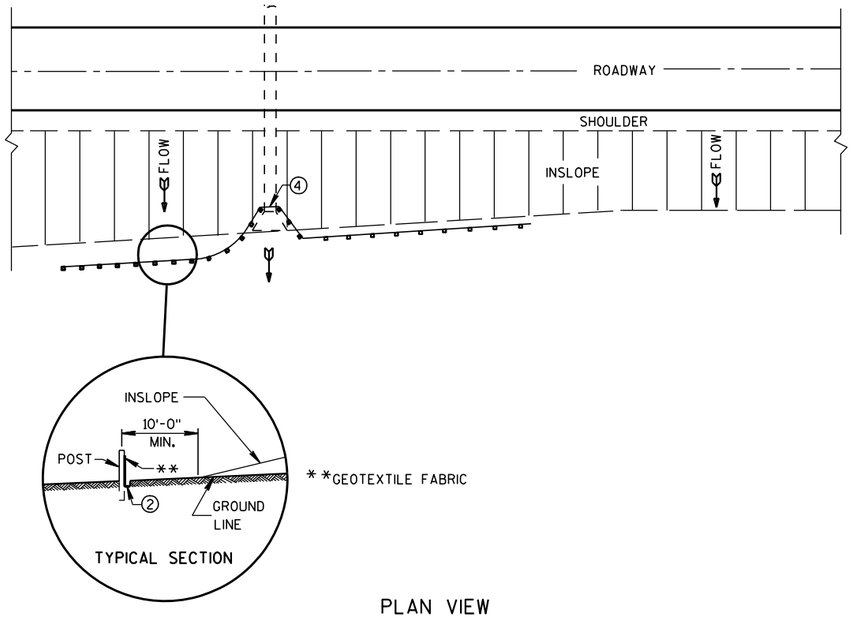




PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	PLAN AND PROFILE: STH 107 - B-35-0053	SHEET 16 E

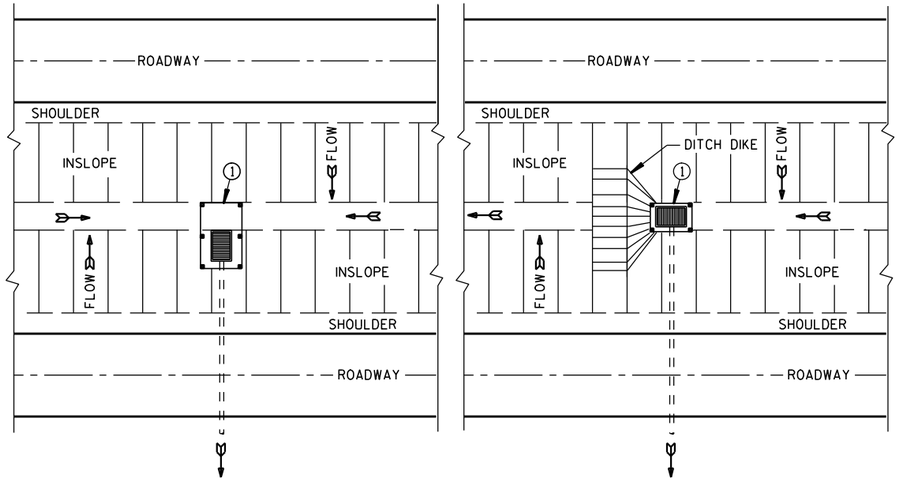
Standard Detail Drawing List

08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B47-03A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-03B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-03C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-03D	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-03E	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-03F	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-03G	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B53-01A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



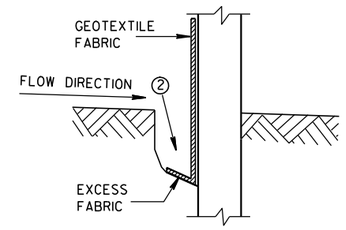
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

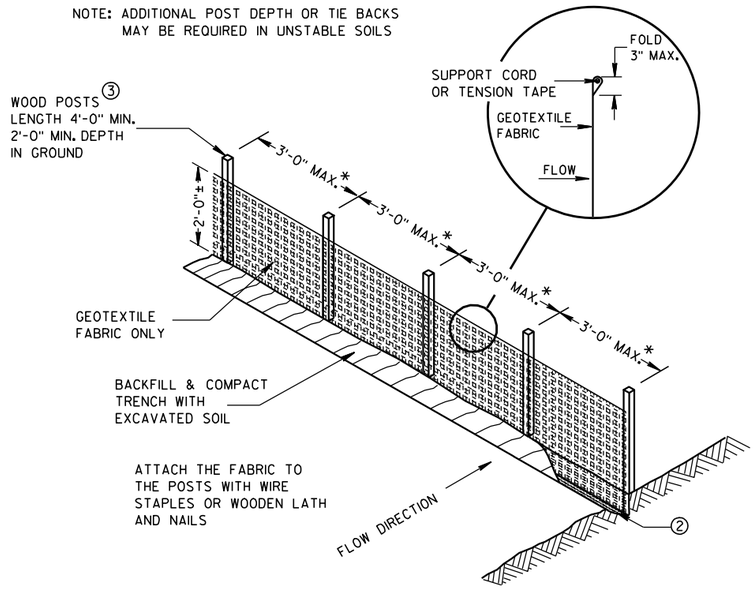
GENERAL NOTES

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

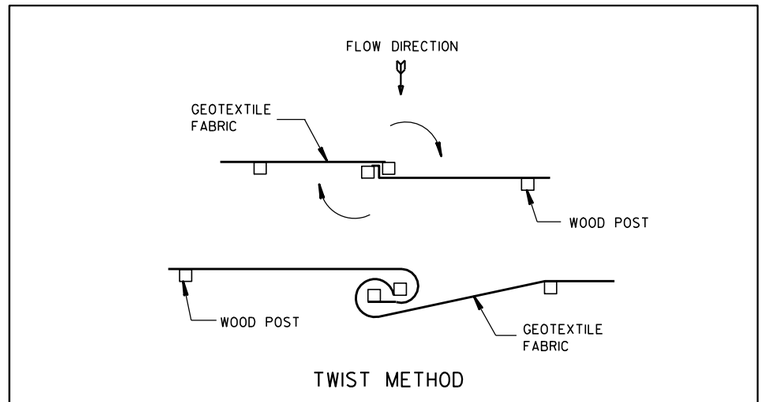
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



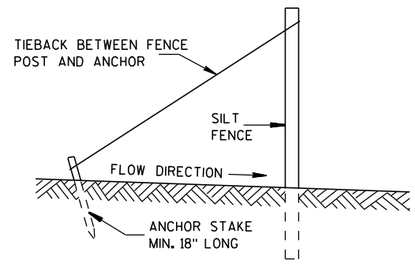
TRENCH DETAIL



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

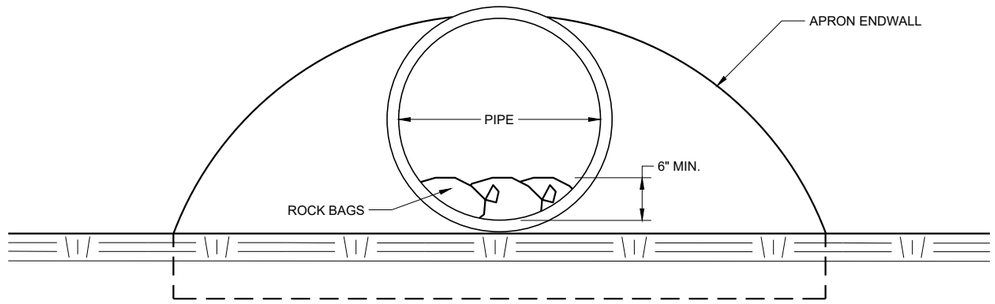
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

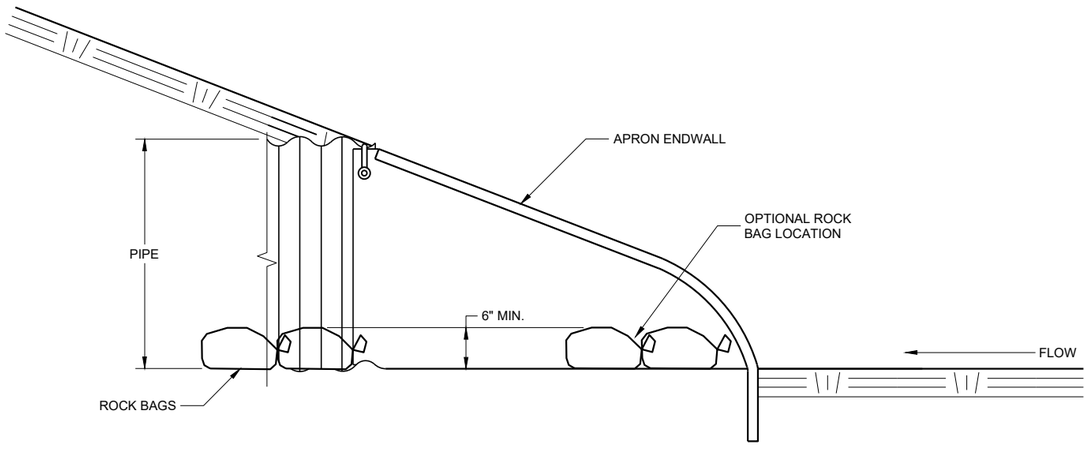
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



END VIEW



SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI
FHWA	

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SDD 08E15 - 01

METAL APRON ENDWALLS

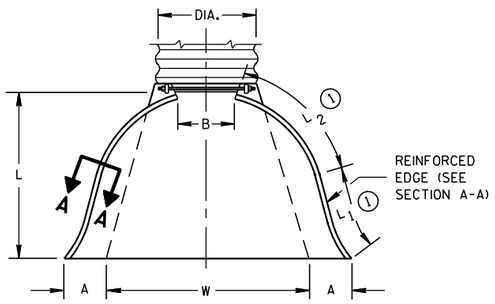
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

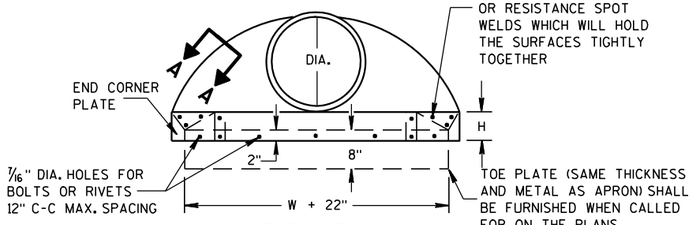
REINFORCED CONCRETE APRON ENDWALLS

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

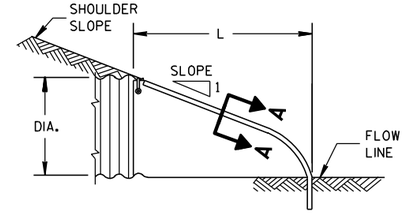
*MINIMUM
**MAXIMUM



PLAN VIEW

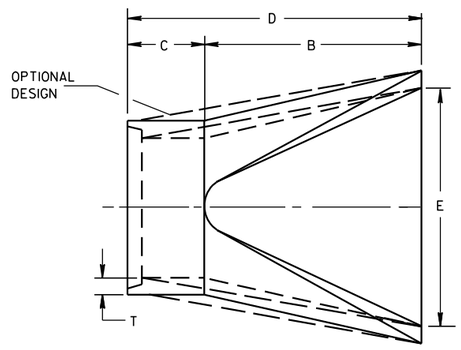


END VIEW

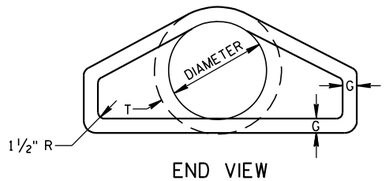


SIDE ELEVATION

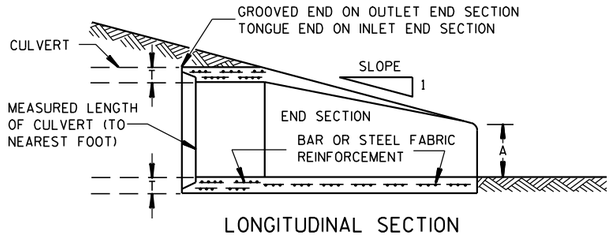
METAL ENDWALLS



PLAN

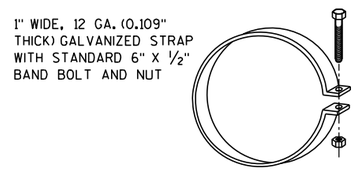


END VIEW



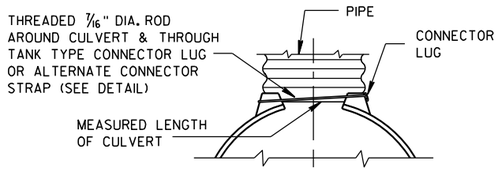
LONGITUDINAL SECTION

CONCRETE ENDWALLS

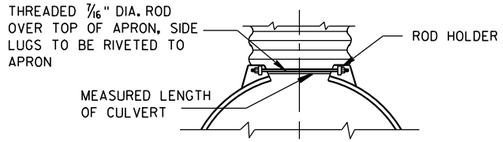


ALTERNATE FOR TYPE 1 CONNECTION

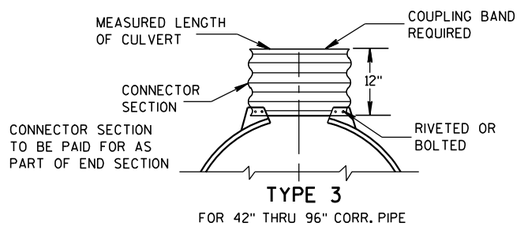
END SECTION CONNECTOR STRAP



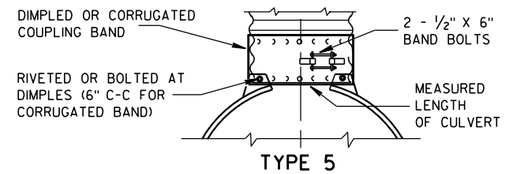
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

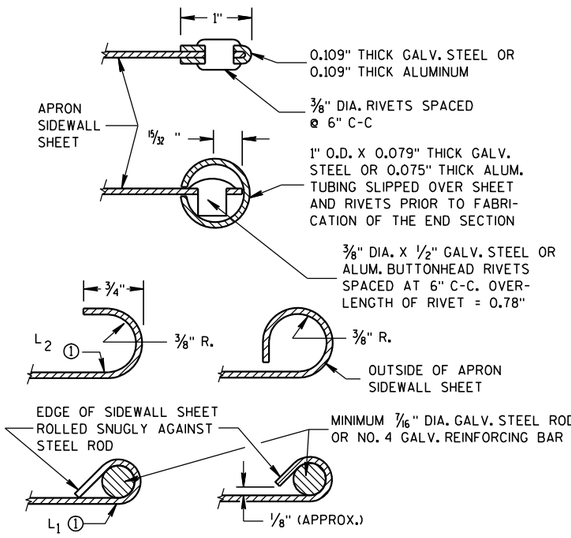
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

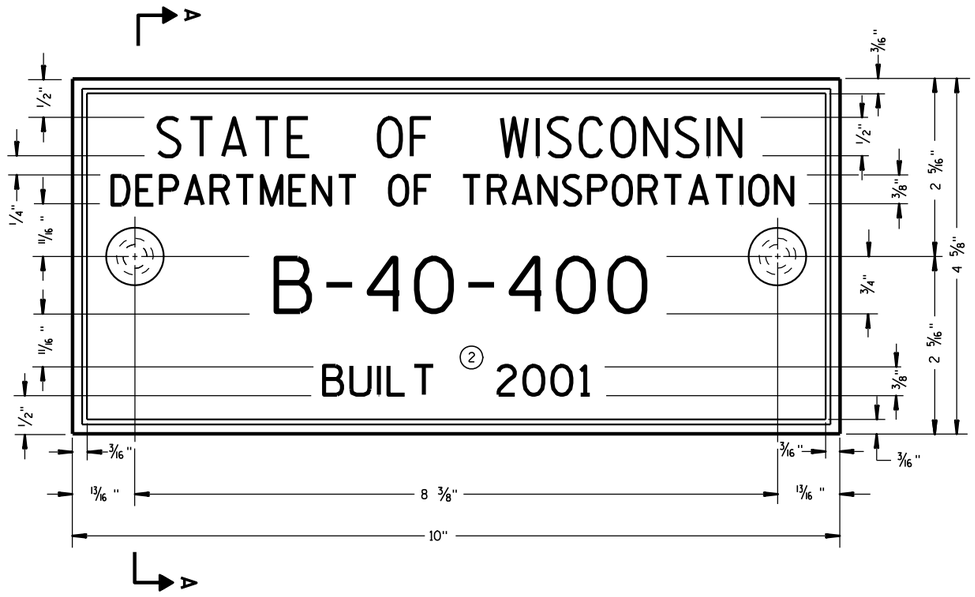
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



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

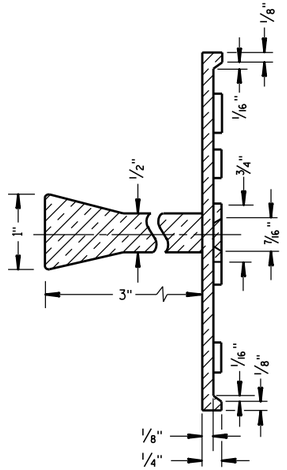
GENERAL NOTES

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.

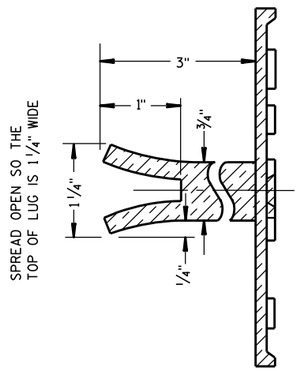
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

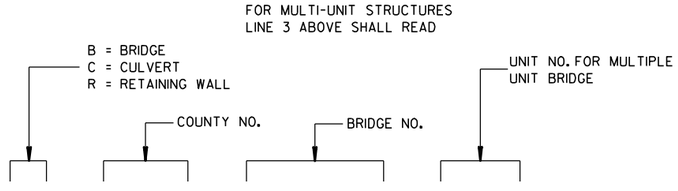
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



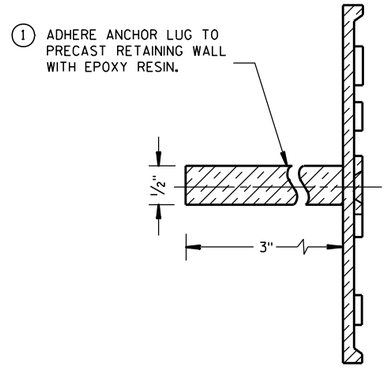
SECTION A-A



ALTERNATE LUG



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10

(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.

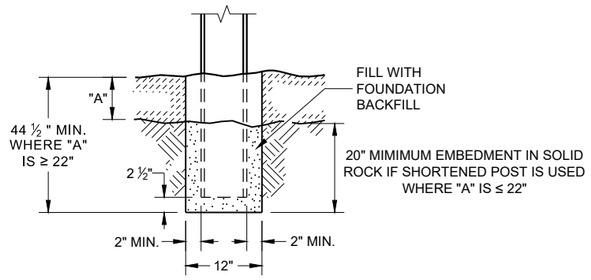
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL 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).

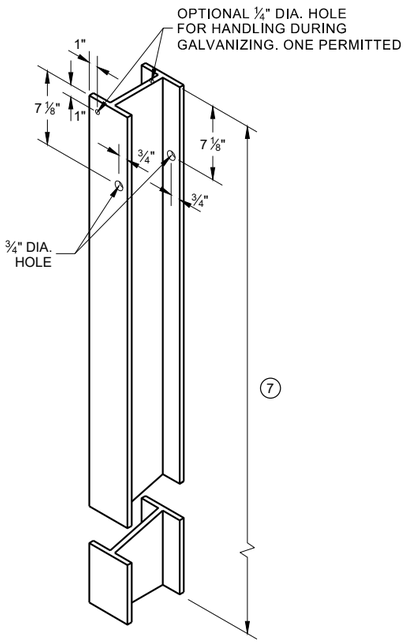
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(6) WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

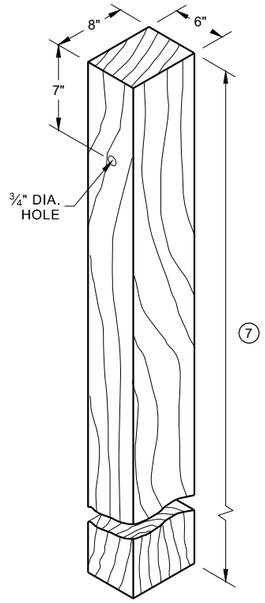
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



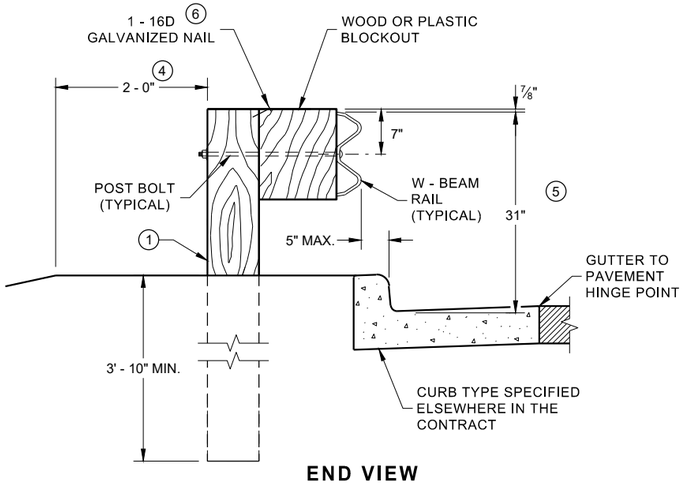
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



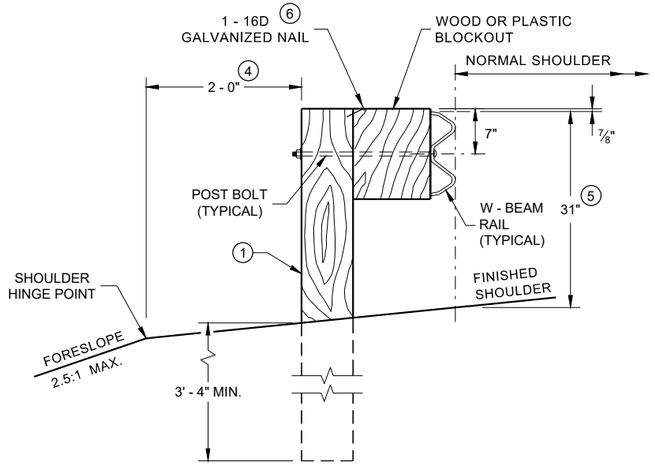
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



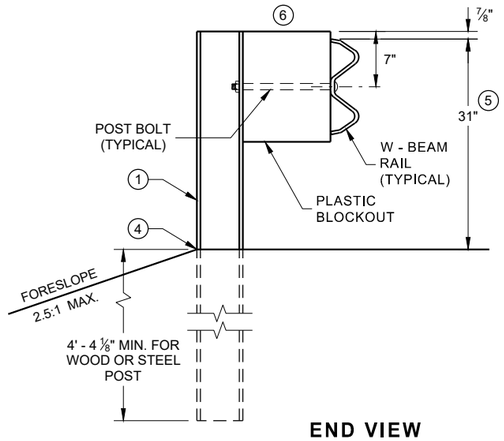
WOOD POST (6" X 8") NOMINAL (1)



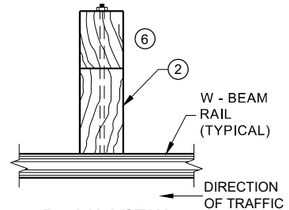
END VIEW
LOCATED ALONG A CURBED ROADWAY



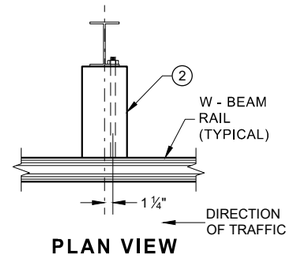
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



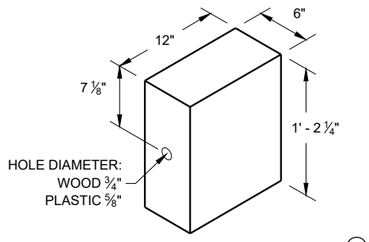
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
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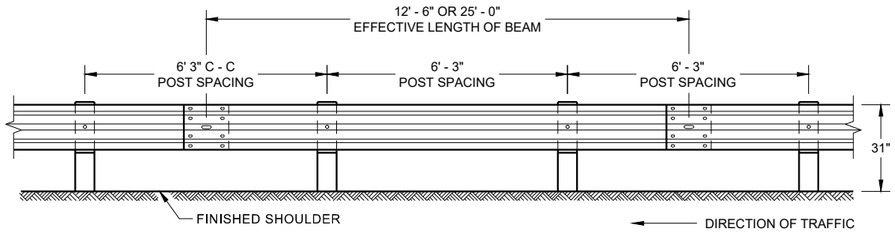
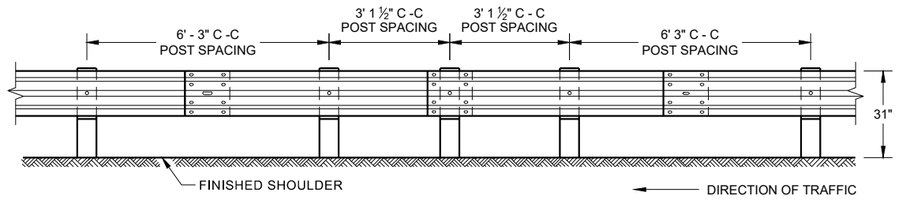
6

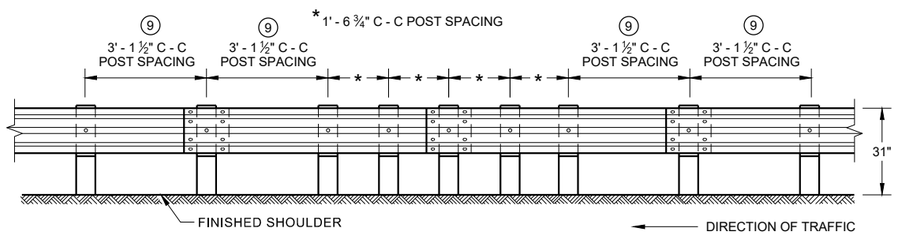
SDD 14B42 - 07a



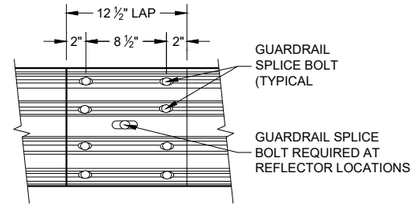
FRONT VIEW
POST SPACING STANDARD INSTALLATION



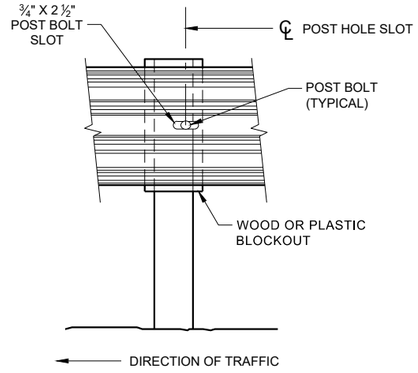
FRONT VIEW
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



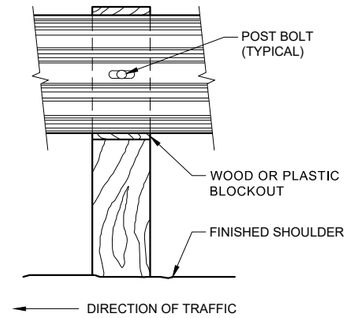
FRONT VIEW
QUARTER POST SPACING (QS)



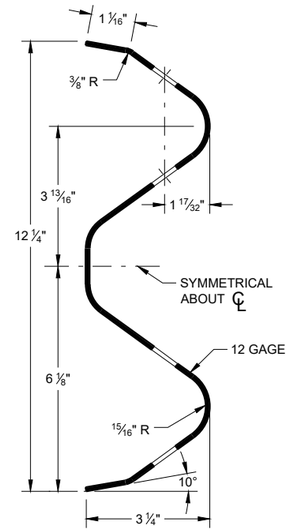
FRONT VIEW
MID-SPAN BEAM SPLICE



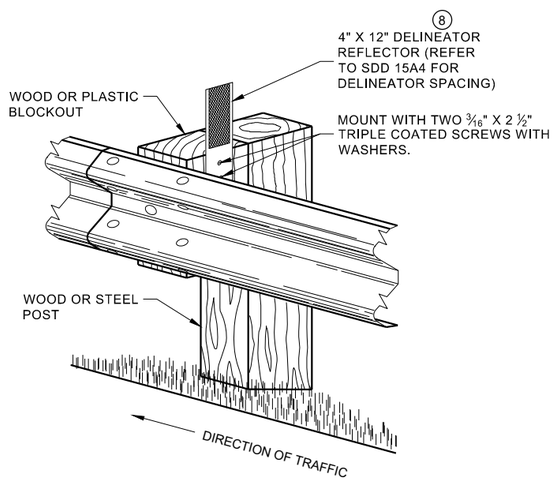
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

⑨ 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.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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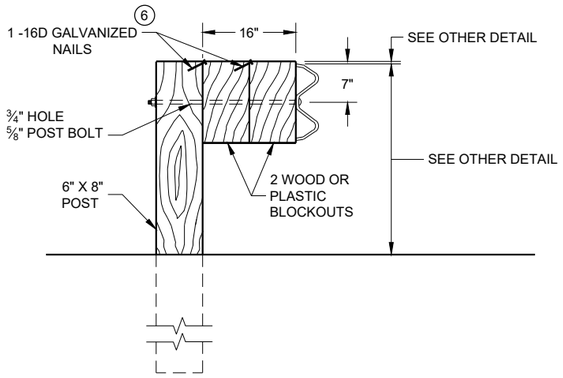
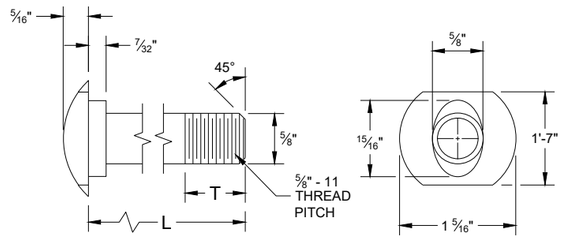


DETAIL FOR 16" BLOCKOUT DEPTH

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.

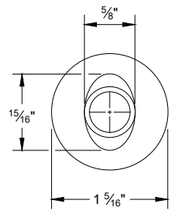
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

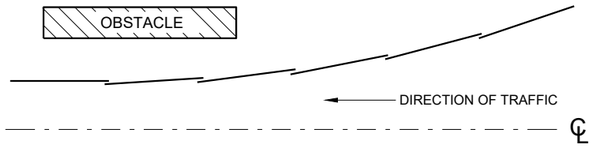


POST BOLT TABLE

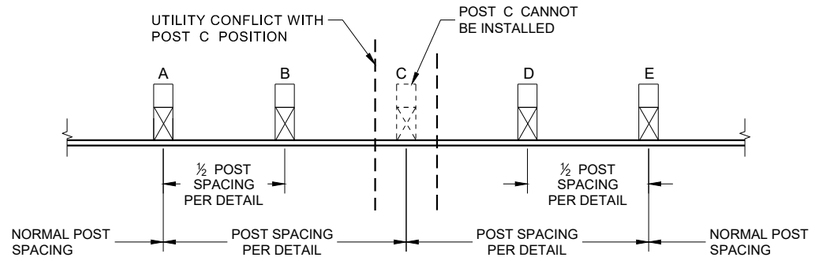
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



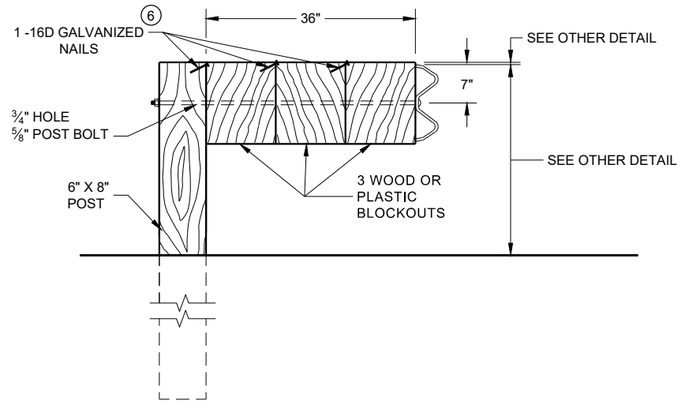
ALTERNATE BOLT HEAD



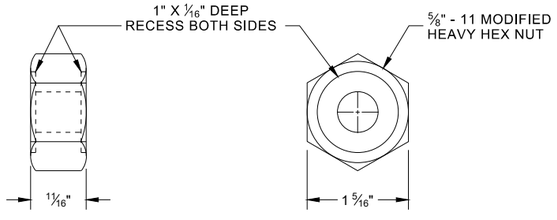
PLAN VIEW
BEAM LAPPING DETAIL



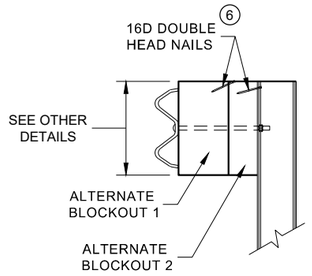
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



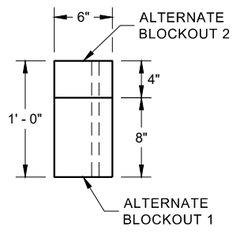
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

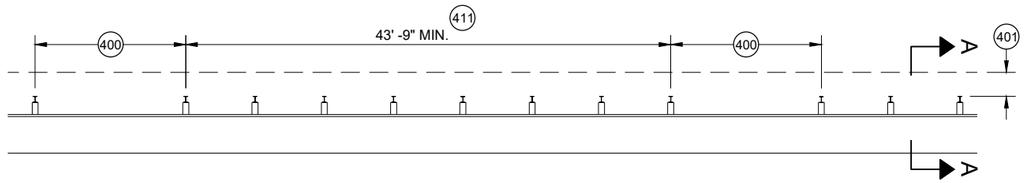
ALTERNATE WOOD BLOCKOUT DETAIL

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.

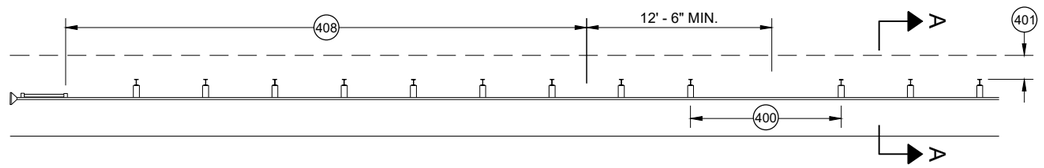
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

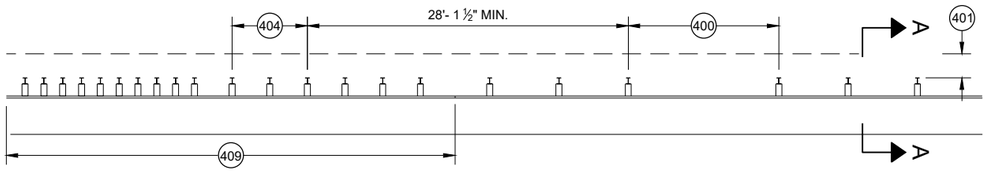
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



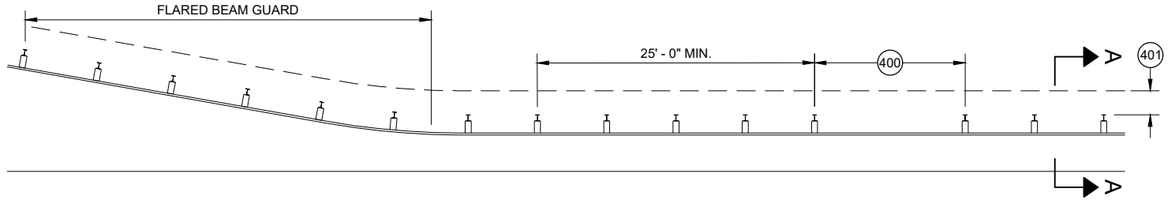
MISSING POST IN MGS GUARDRAIL



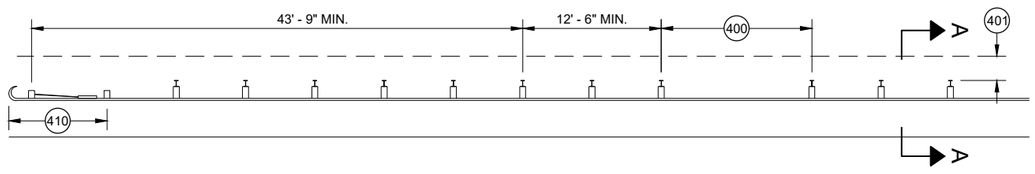
MISSING POST IN MGS GUARDRAIL NEAR EAT



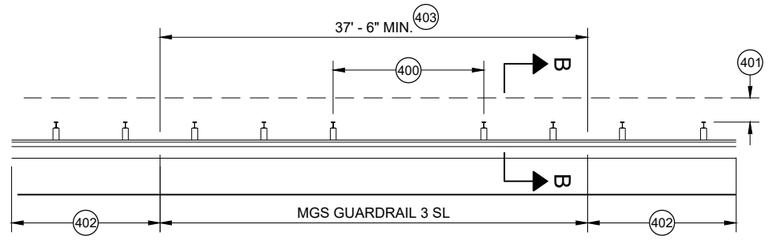
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

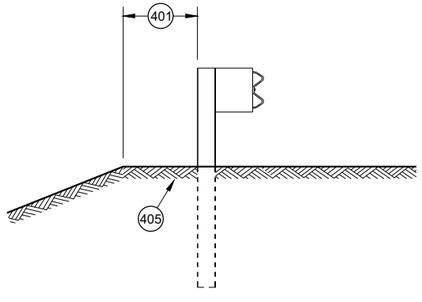


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

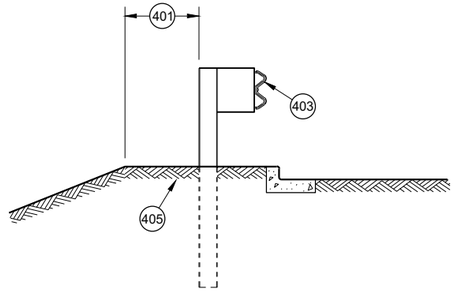


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(400) MAX SPAN 12' - 6"
(401) 2' MIN.
(402) MGS GUARDRAIL 3
(403) NESTING BEAM GUARD
(404) ASYMMETRIC TRANSITION
(405) SOIL WELL DRAINED AND COMPACTED
(406) SEE OTHER DRAWINGS IN THIS SDD
(407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
(408) SEE SDD 14B44
(409) SEE SDD 14B45
(410) SEE SDD 14B47
(411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

6

SDD 14B42 - 07d

6

SDD 14B42 - 07d

GENERAL NOTES

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

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

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

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

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

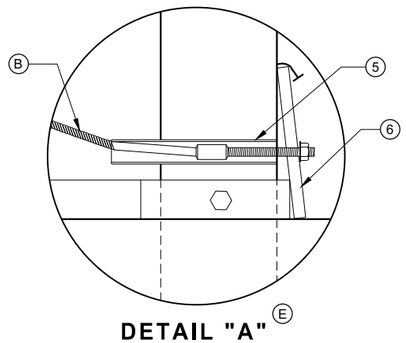
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

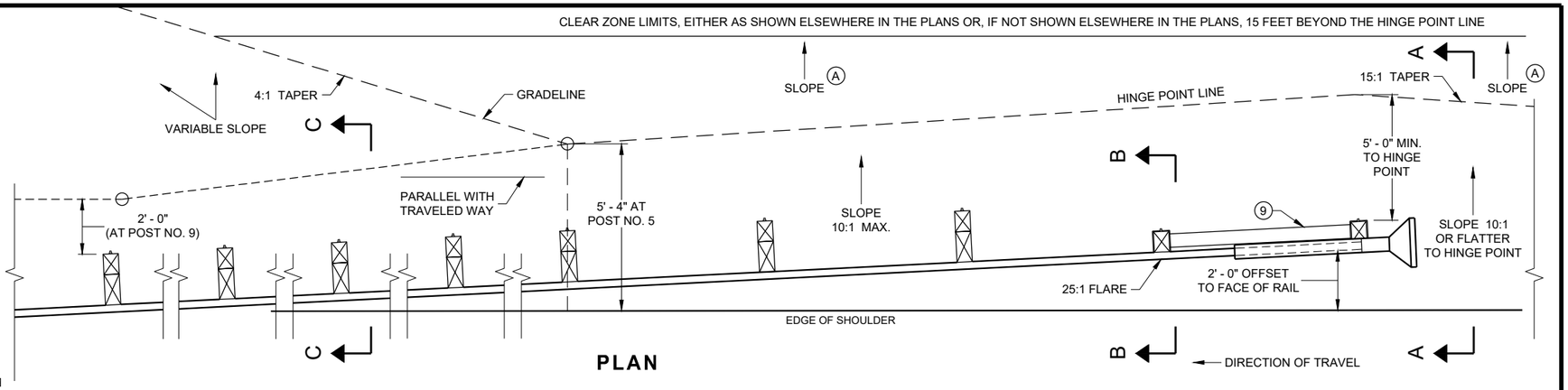
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

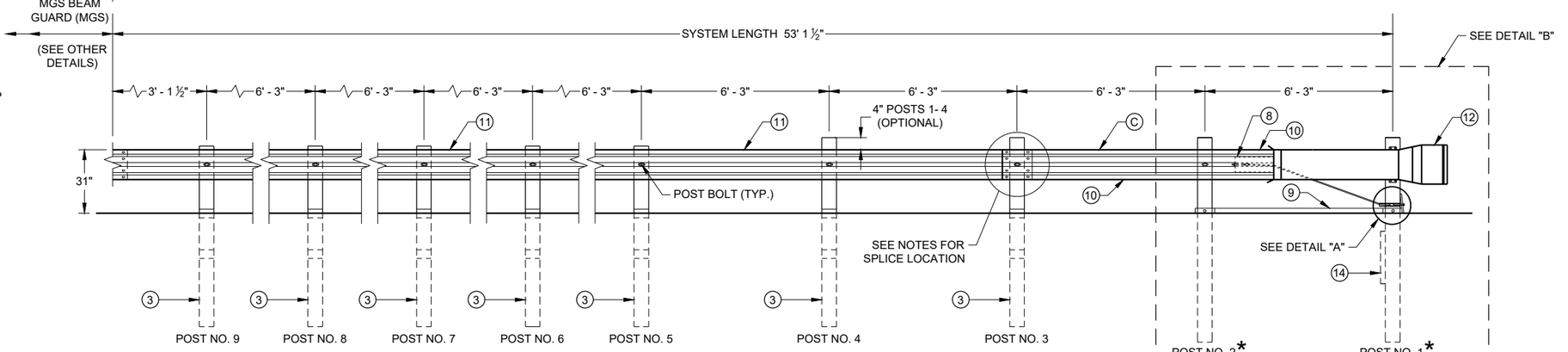
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



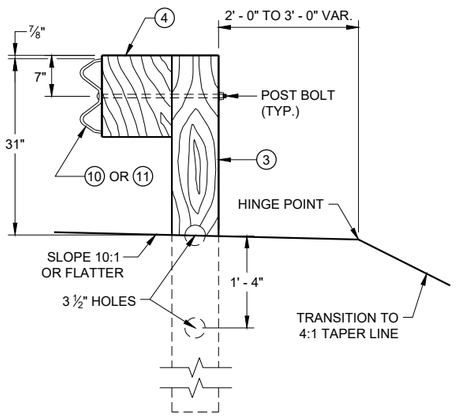
DETAIL "A" (E)



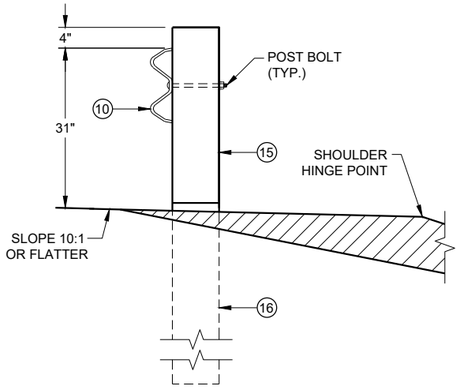
PLAN



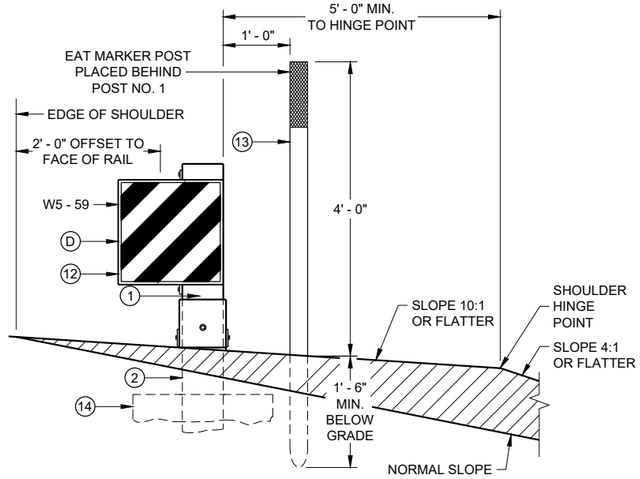
ELEVATION



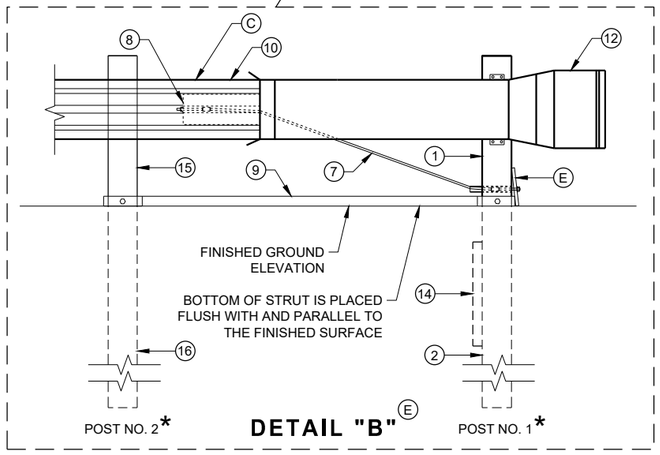
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



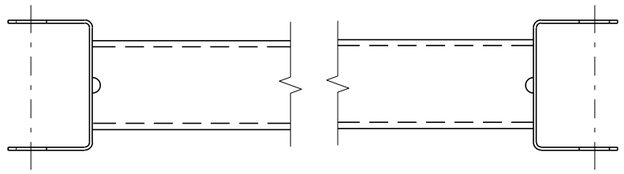
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

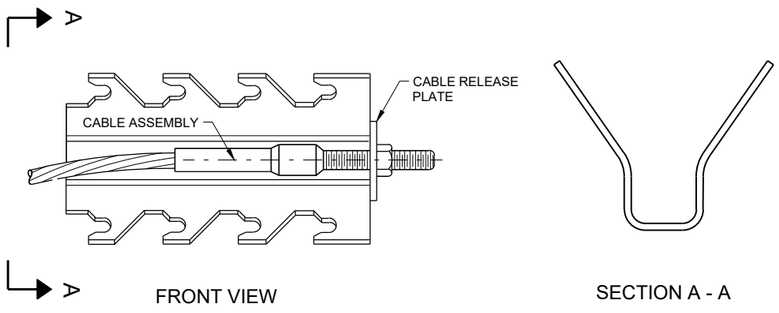
SDD 14B44 - 04a



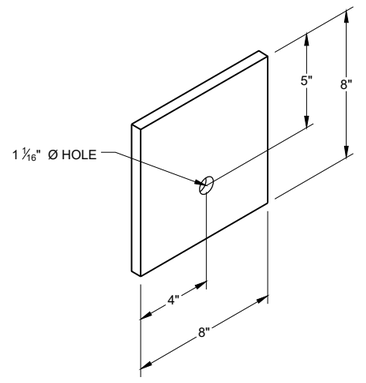
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUGACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
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	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

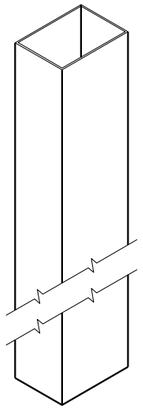
6

SDD 14B44 - 04b

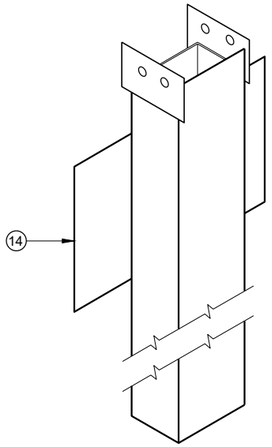
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

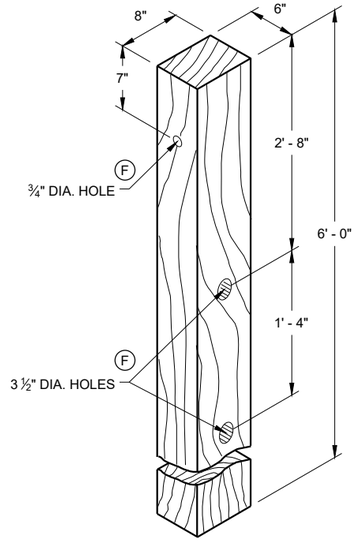
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



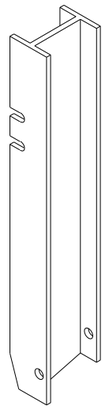
UPPER POST NO. 1 (1) (E)



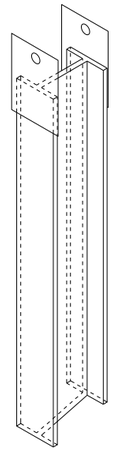
LOWER POST NO. 1 (2) (E)



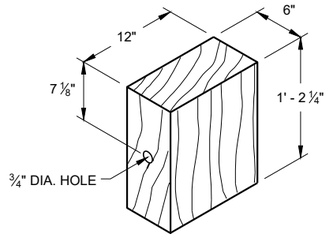
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



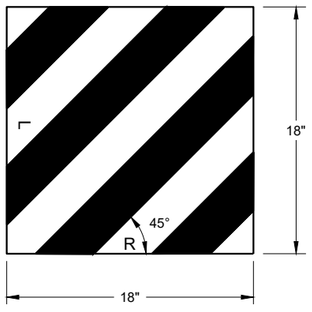
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

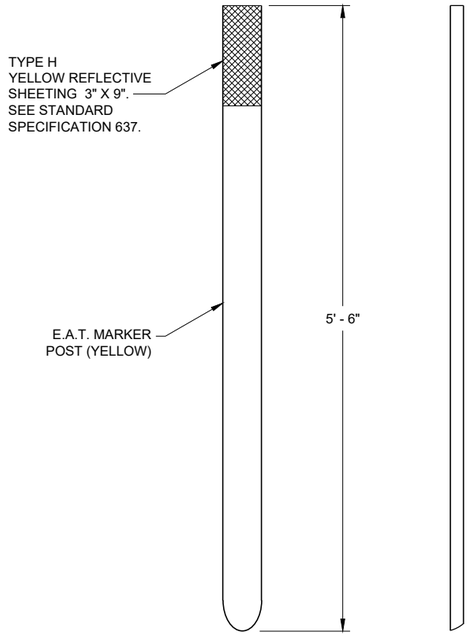


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



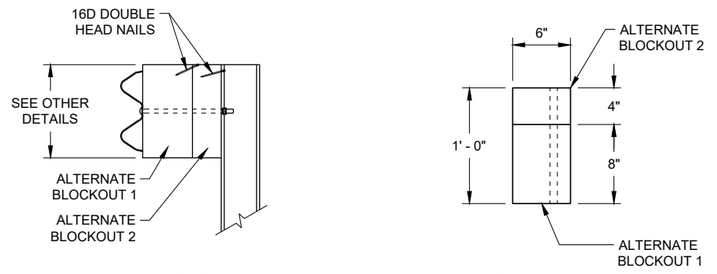
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

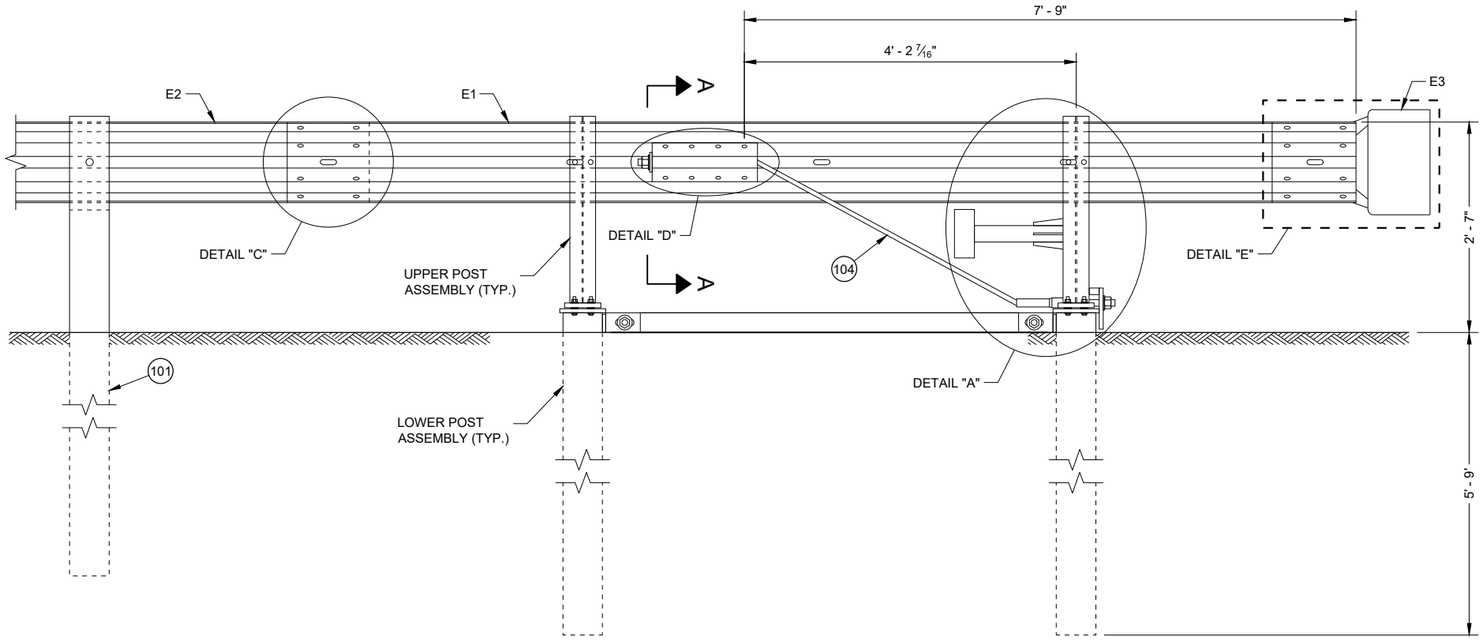
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR

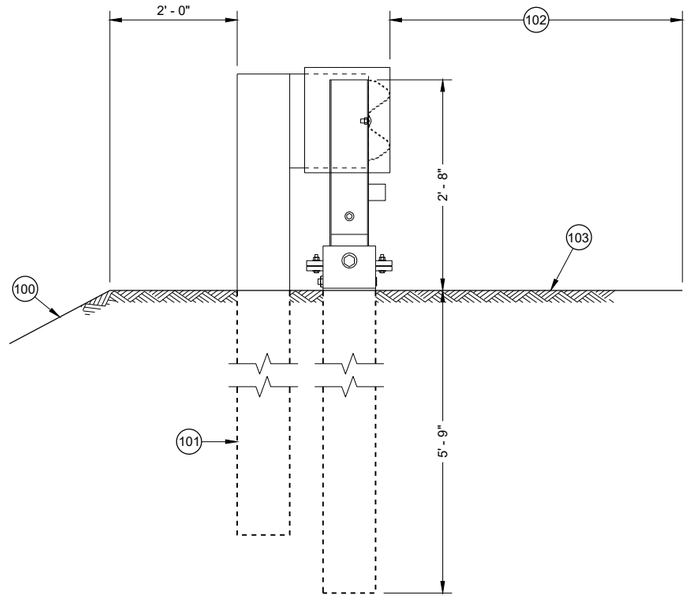
FHWA

6

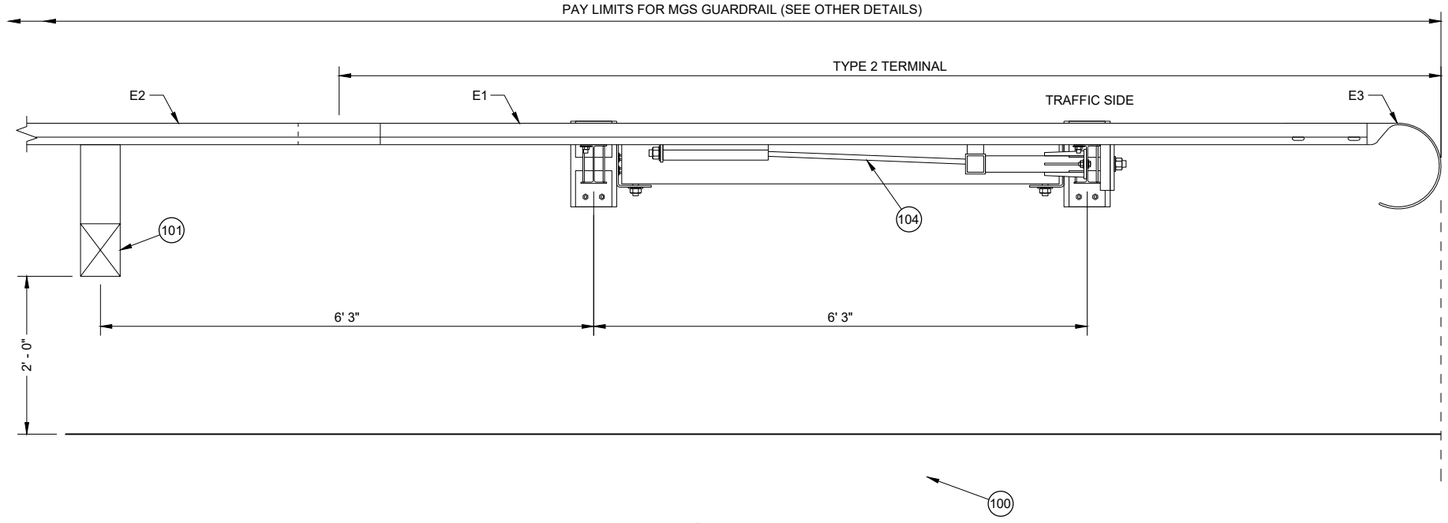
SDD 14B44 - 04c



BACK VIEW
TYPE 2 TERMINAL



SIDE VIEW
TYPE 2 TERMINAL



TOP VIEW
TYPE 2 TERMINAL

GENERAL NOTES

(100) MAXIMUM SLOPE IS 2.5:1.

(101) SEE SDD 14B42 FOR MORE INFORMATION.

(102) SHOULDER

(103) MAXIMUM SLOPE IS 10:1.

(104) AFTER ASSEMBLY, CABLE IS TO BE TIGHTENED WITHOUT TWISTING THE CABLE.

MIDWEST GUARDRAIL SYSTEM (MGS)
TYPE 2 TERMINAL

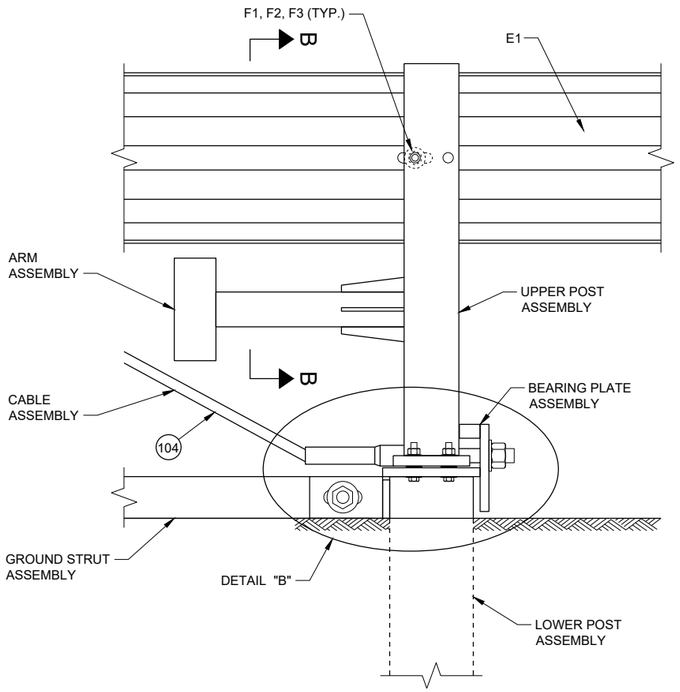
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

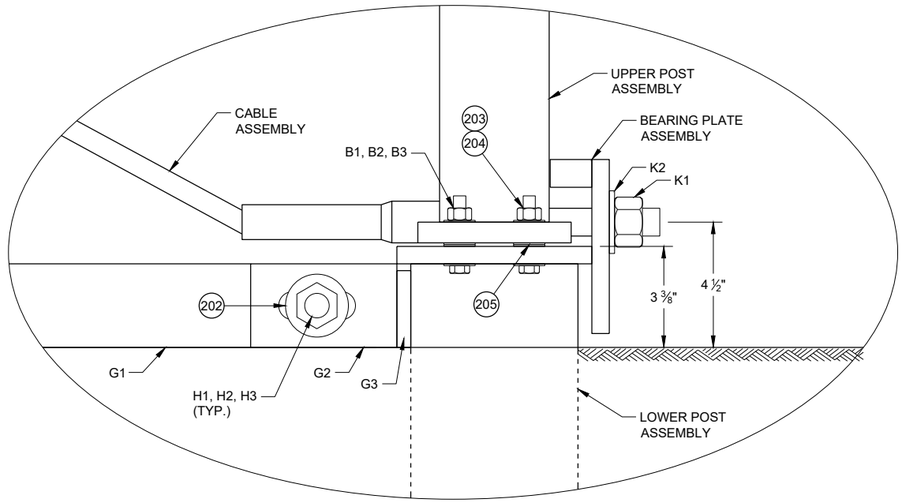
6

SDD 14B47 - 03a

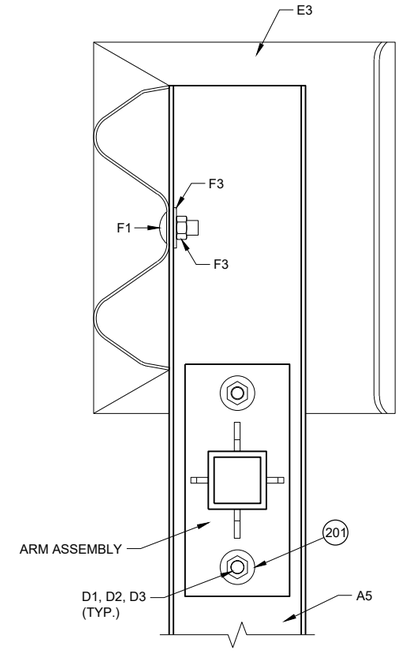
SDD 14B47 - 03a



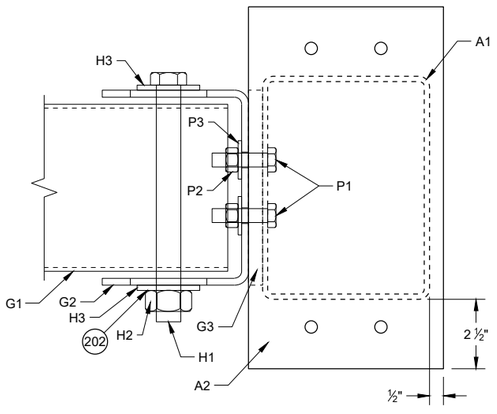
DETAIL "A"



DETAIL "B"

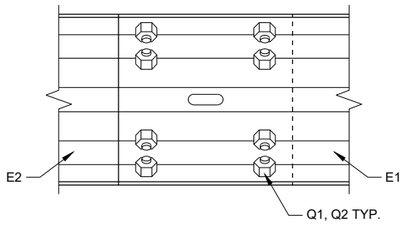


SECTION B - B



TOP VIEW

GROUND STRUT CONNECTION DETAIL



DETAIL "C"

GENERAL NOTES

200 INSTALL ONE WASHER UNDER BOLT HEAD AND RAIL AND ON WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.

201 INSTALL ONE WASHER UNDER BOLT HEAD AND UPPER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND ARM PLATE.

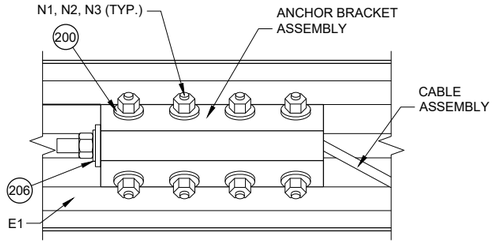
202 INSTALL ONE WASHER UNDER BOLT HEAD AND GROUND STRUT CONNECTOR AND ONE WASHER BETWEEN NUT AND GROUND STRUT CONNECTOR.

203 INSTALL ONE WASHER UNDER BOLT HEAD AND LOWER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND UPPER POST ASSEMBLY.

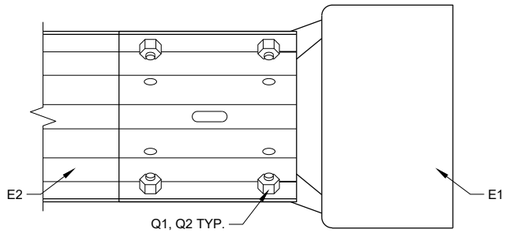
204 TORQUE VALUE IS BETWEEN 60 - 75 FT-LB.

205 TWO WASHERS BETWEEN UPPER AND LOWER POST ASSEMBLY.

206 INSTALL ONE WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.



DETAIL "D"



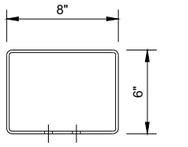
DETAIL "E"

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

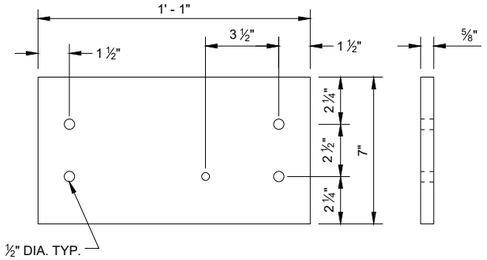
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

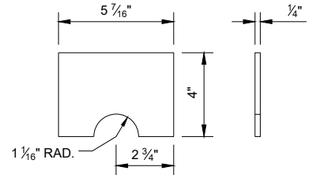
SDD 14B47 - 03b



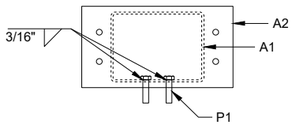
TOP VIEW



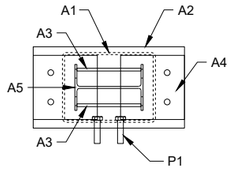
LOWER PLATE (A2)

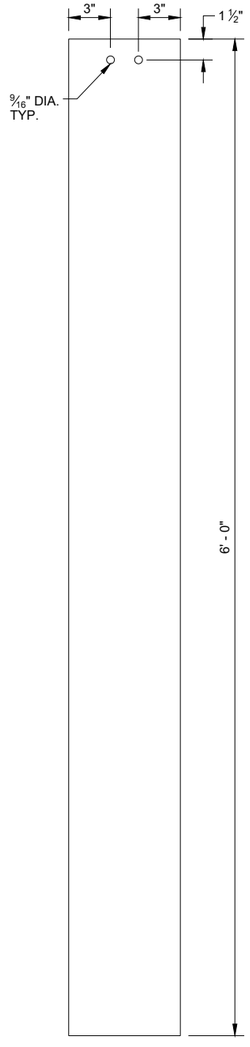


POST GUSSET (A3)



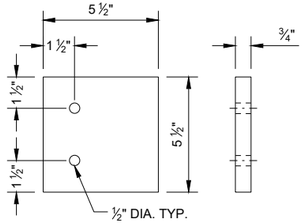
PLAN VIEW



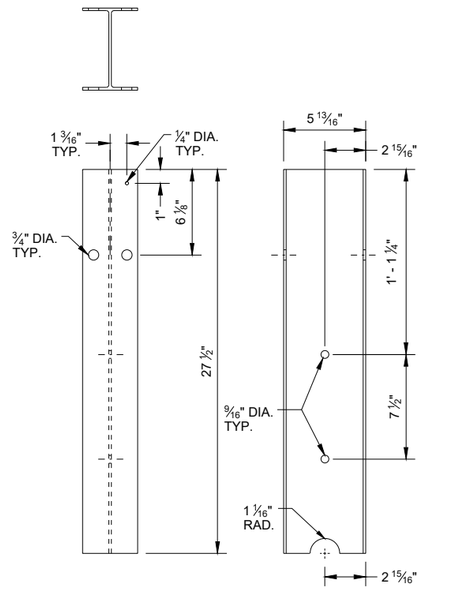


SIDE VIEW

FOUNDATION TUBE (A1)

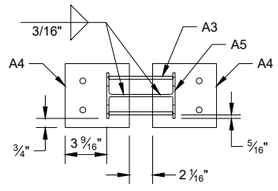


UPPER PLATE (A4)

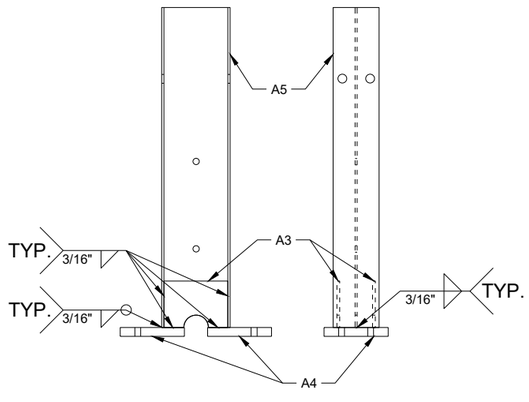


FRONT VIEW SIDE VIEW

TYPE 2 POST (A5)

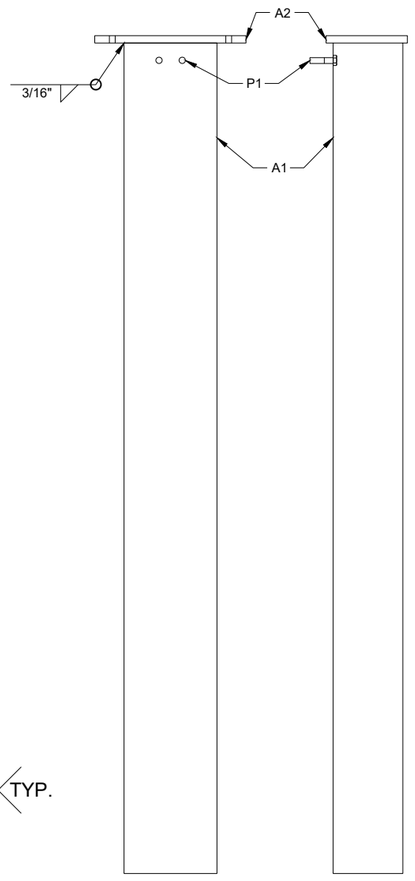


PLAN VIEW



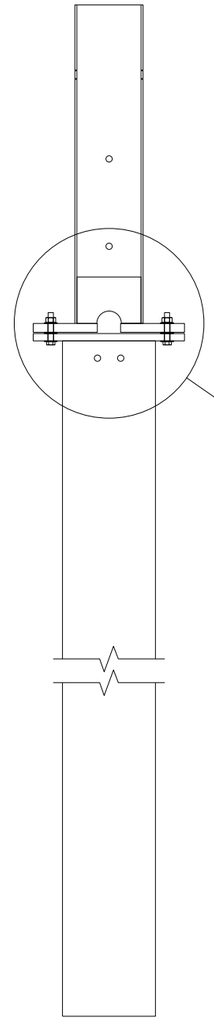
SIDE VIEW FRONT VIEW

UPPER POST ASSEMBLY

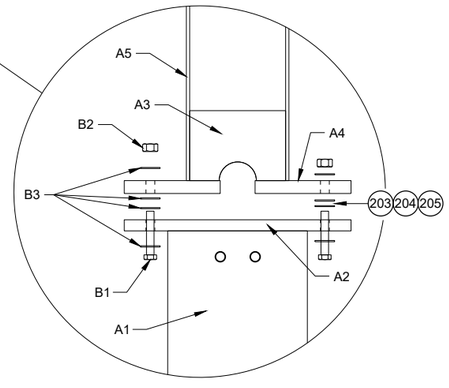


FRONT VIEW SIDE VIEW

LOWER POST ASSEMBLY



ASSEMBLED POST



POST CONNECTION DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

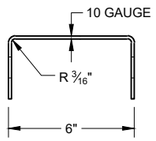
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

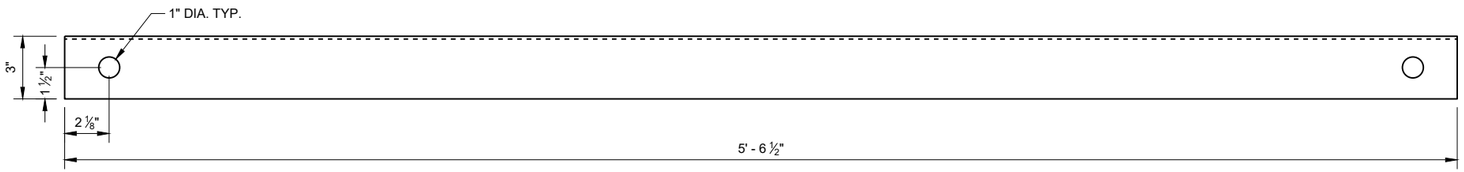
SDD14B47 - 03c

6

SDD14B47 - 03c

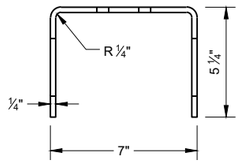


SIDE VIEW

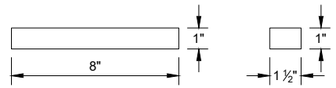


FRONT VIEW

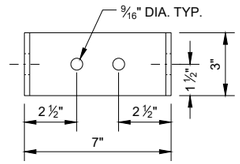
GROUND STRUT CHANNEL (G1)



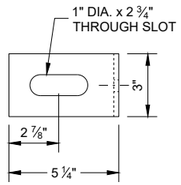
TOP VIEW



BEARING PLATE FLANGE (L2)

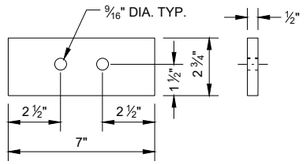


FRONT VIEW

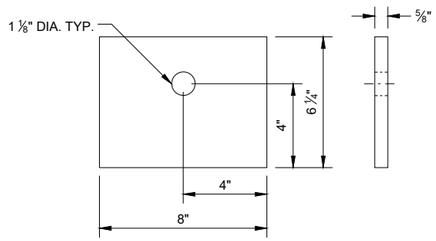


SIDE VIEW

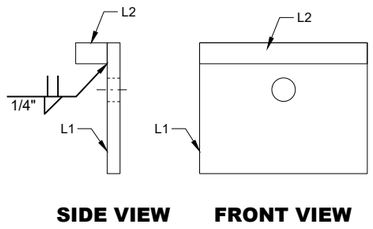
GROUND STRUT CONNECTOR (G2)



GROUND STRUT PLATE (G3)

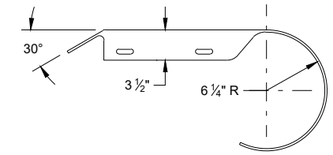


BEARING PLATE (L1)

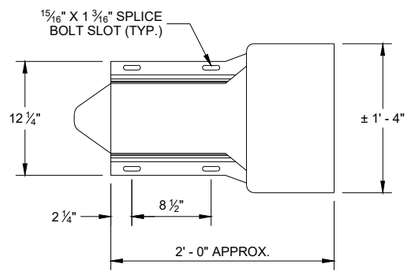


SIDE VIEW FRONT VIEW

BEARING PLATE ASSEMBLY

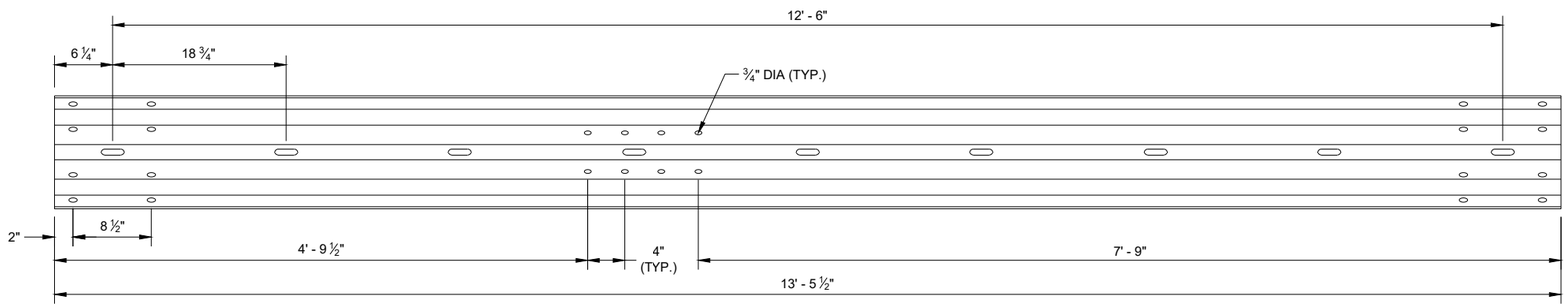


PLAN VIEW

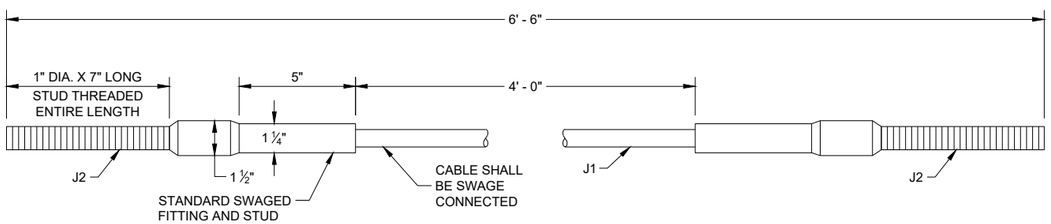


ELEVATION VIEW

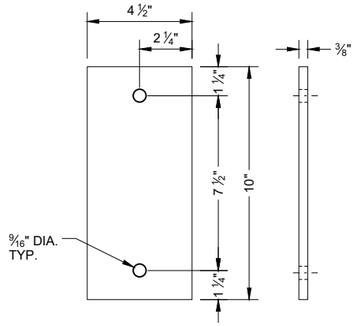
ROUNDED BUFFER END (E3)



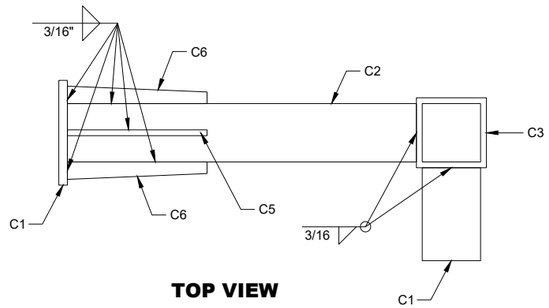
TYPE 2 GUARDRAIL (E1)



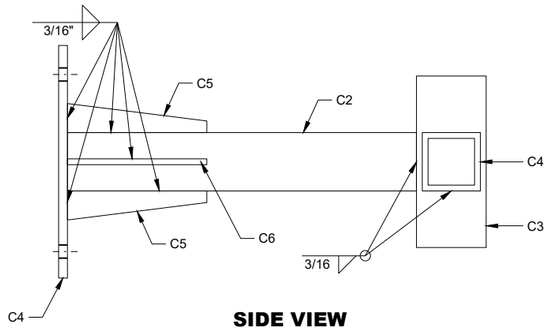
CABLE ASSEMBLY



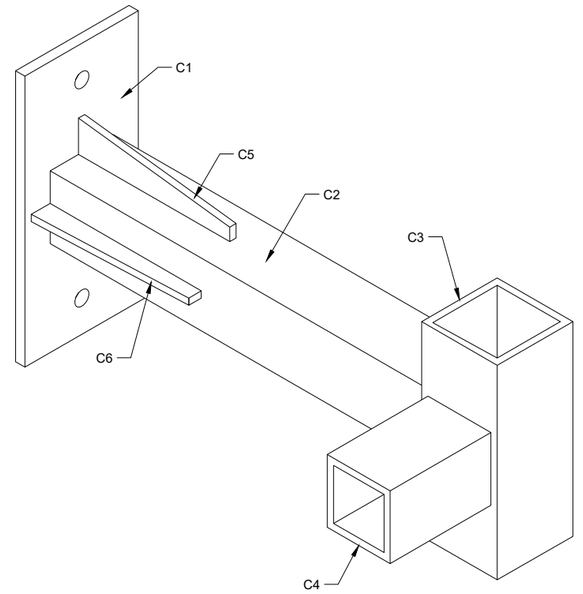
ARM PLATE (C1)



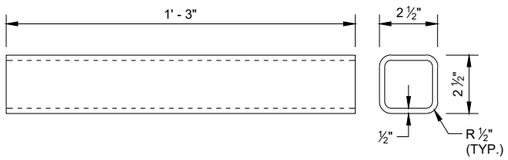
TOP VIEW
ARM ASSEMBLY



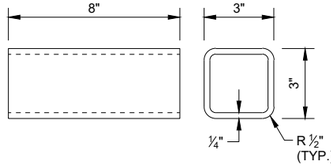
SIDE VIEW
ARM ASSEMBLY



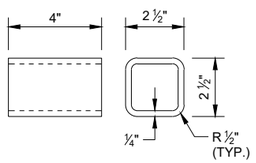
ISOMETRIC VIEW
ARM ASSEMBLY



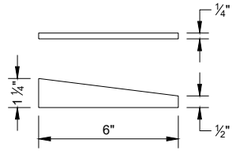
ARM TUBE 1 (C2)



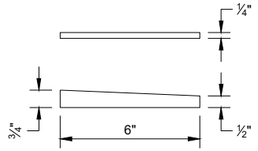
ARM TUBE 2 (C3)



ARM TUBE 3 (C4)



ARM GUSSET PLATE 1 (C5)



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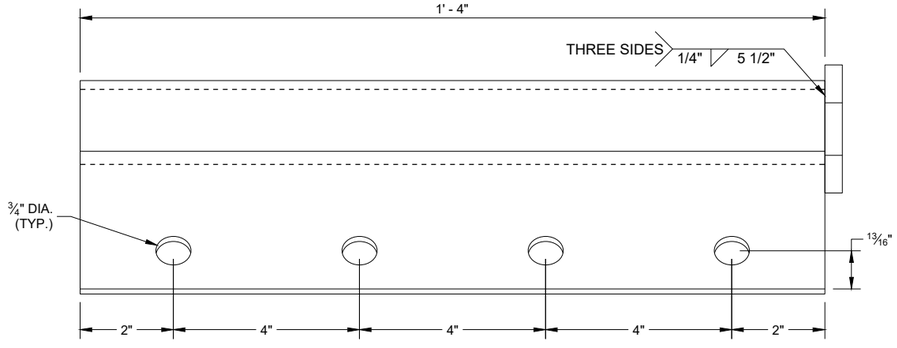
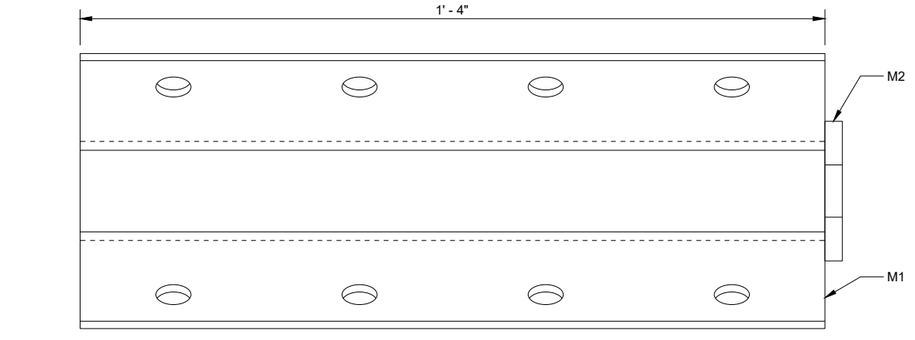
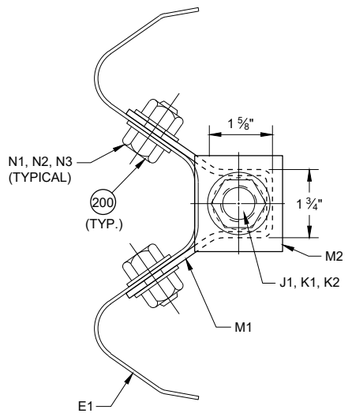
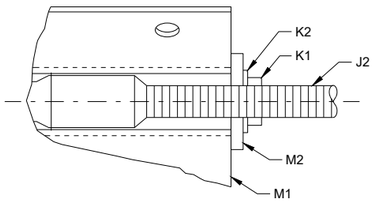


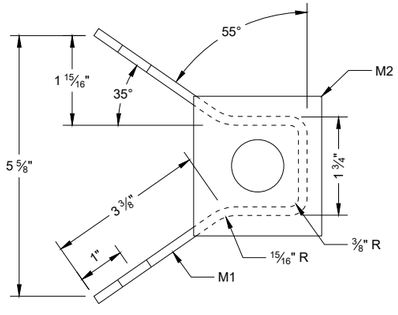


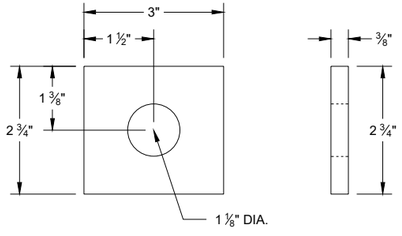
ANCHOR BRACKET (M1, M2)





SECTION A - A





ANCHOR BRACKET BEARING PLATE (M2)

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD14B47 - 03e

BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	TYPE 2 FOUNDATION TUBE	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 8" x 6" x 3/16"
A2	LOWER PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	5/8" THICKNESS
A3	POST GUSSET	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
A4	UPPER PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/4" THICKNESS
A5	TYPE 2 POST	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	
B1	BREAKAWAY BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED . PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	7/16" DIA.
B2	BREAKAWAY BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	7/16" DIA.
B3	BREAKAWAY BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
C1	ARM ASSEMBLY PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/8" THICKNESS
C2	ARM ASSEMBLY TUBE 1	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 8" x 6" x 3/16"
C3	ARM ASSEMBLY TUBE 2	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 3" x 3" x 1/4"
C4	ARM ASSEMBLY TUBE 3	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 2 1/2" x 2 1/2" X 1/4"
C5	ARM ASSEMBLY GUSSET PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
C6	ARM ASSEMBLY GUSSET PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
D1	ARM ASSEMBLY BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	1/2" DIA.
D2	ARM ASSEMBLY WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	1/2" DIA.
D3	ARM ASSEMBLY NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1/2" DIA.
E1	TYPE 2 GUARD RAIL	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
E2	BEAM GUARD RAIL	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
E3	BEAM GUARD ROUNDED BUFFER END	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
F1	POST BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	5/8" DIA.
F2	POST BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
F3	POST BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
G1	GROUND STRUT CHANNEL	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/2" x 11 3/4" x 10 GAUGE
G2	GROUND STRUT CONNECTOR	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/4" THICKNESS
G3	GROUND STRUT PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1/2" THICKNESS

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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
H1	GROUND STRUT BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	7/8" DIA.
H2	GROUND STRUT BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	7/8" DIA.
H3	GROUND STRUT BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD 5/8" ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	
J1	BCT CABLE	AASHTO M30 / ASTM A741 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS), 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS) TYPE II OR IIC, CLASS C ZINC COATED MIN. BREAKING STRENGTH OF 42.7 KIPS	**3/4" DIA.**
J2	BCT CABLE	UNC 1" ASTM A576 GRADE 1035 SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. MIN BREAKING STRENGTH OF 42.7 KIPS ASME B30.26 "FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING IN TO CONNECTION: NAME OF MANUFACTURE OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE FOR ALLOY EYEBOLTS."	
K1	CABLE ASSEMBLY NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1" DIA.
K2	CABLE ASSEMBLY WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1	1" DIA.
L1	BEARING PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	5/8" THICKNESS
L2	BEARING PLATE FLANGE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1" THICKNESS
M1	BEAM GUARD ANCHOR BRACKET	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	
M2	BEAM GUARD ANCHOR END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/8" THICKNESS
N1	ANCHOR BRACKET BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	5/8" DIA.
N2	ANCHOR BRACKET BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
N3	ANCHOR BRACKET BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 /ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
P1	FOUNDATION TUBE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 /ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1/2" DIA.
P2	FOUNDATION TUBE WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 7/8" ASTM F844 TYPE 1 (HARDENED WASHER ONLY)	1/2" DIA.
P3	FOUNDATION TUBE NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
Q1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	
Q2	SPLICE NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	5/8" DIA.

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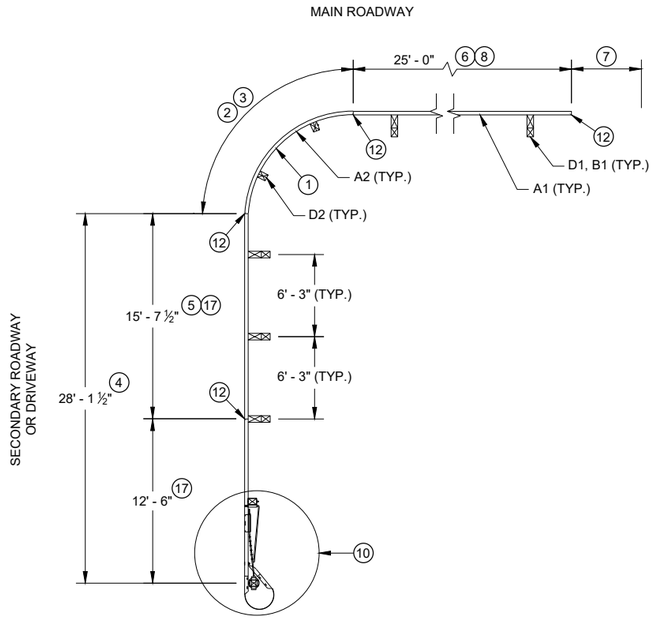
MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2021
DATE

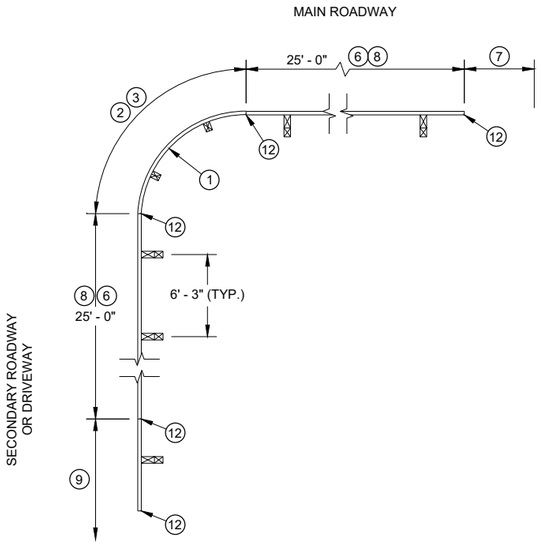
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA



PLAN VIEW

SHORT RADIUS BEAM GUARD WITH SHORT RADIUS TERMINAL ON SECONDARY ROAD OR DRIVEWAY

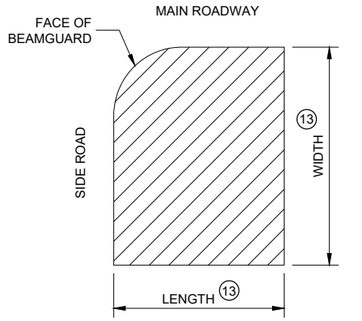


PLAN VIEW

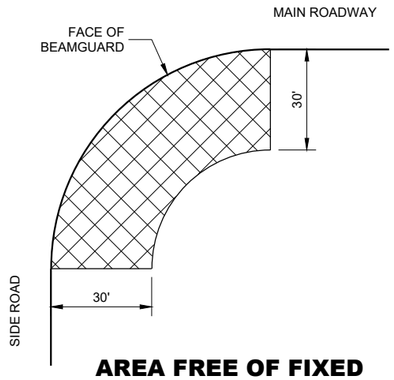
SHORT RADIUS BEAM GUARD WITH EAT, ADDITIONAL BEAM GUARD OR TRANSITION TO RIGID BARRIER ON SECONDARY ROAD OR DRIVEWAY

TABLE FOR RADIUS OF 32' AND LESS

RADIUS (FT)	LENGTH (FT)	WIDTH (FT)
8	25	15
16	30	15
24	40	20
32	50	30



AREA FREE OF FIXED OBJECTS FOR RADIUS 32' AND LESS 16



AREA FREE OF FIXED OBJECTS FOR RADIUS GREATER THAN 32'

GENERAL NOTES

SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.

SEE SDD 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.

GALVANIZE PARTS AFTER FABRICATION.

WELDING TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI / AWS D1.1.

UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.

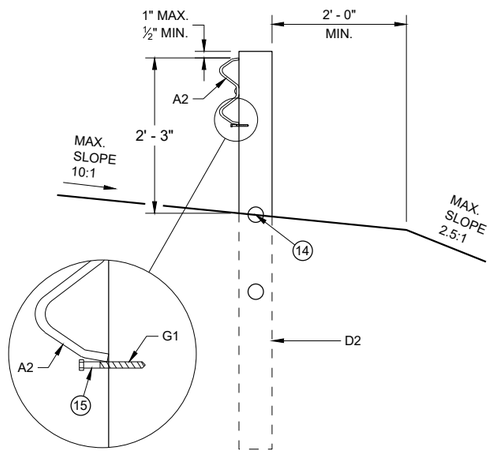
UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERTICAL.

ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUT.

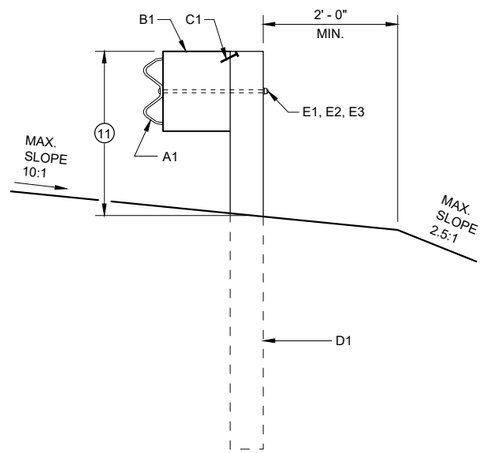
UNLESS NOTED OTHERWISE, CUT OR PROVIDE BOLTS THAT ARE ¼" TO ½" BEYOND THE NUT.

DRAWINGS ARE NOT TO SCALE.

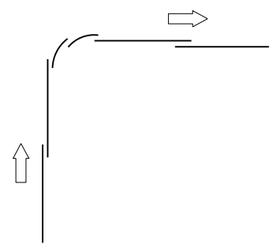
1. RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.
2. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6' - 3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE (CRT) POSTS.
3. WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAIL IS RESTED ON TOP OF LAG SCREW.
4. MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID WITH BEAM GUARD ITEM.
5. ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.
6. MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TO TRANSITION TO RIGID BARRIER. ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.
7. BEAM GUARD, EAT, OR TRANSITION TO RIGID BARRIER. SEE PLAN.
8. TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.
9. ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.
10. SHORT RADIUS TERMINAL (SEE OTHER DETAILS).
11. HEIGHT VARIES. SEE NOTE 8 AND 8 .
12. BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRES PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.
13. SEE TABLE FOR VALUES.
14. MAXIMUM HEIGHT FOR CENTER OF HOLE IS ¾" ABOVE FINISHED GROUND ±1".
15. DRILL POST $^{15}/_{64}$" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.
16. SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.
17. TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL (CRT).



CONTROLLED RELEASE TERMINAL POST (CRT) IN RADIUS



BEAM GUARD POSTS IN HEIGHT TRANSITION



LAP SPLICE DETAIL

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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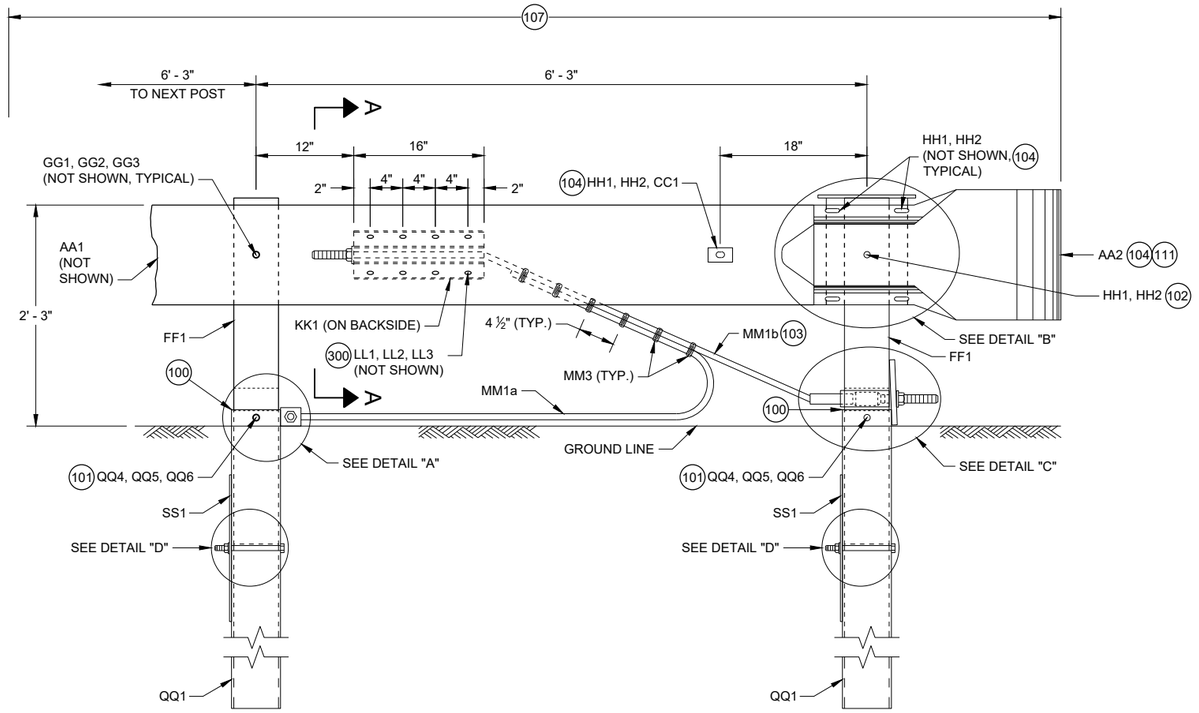
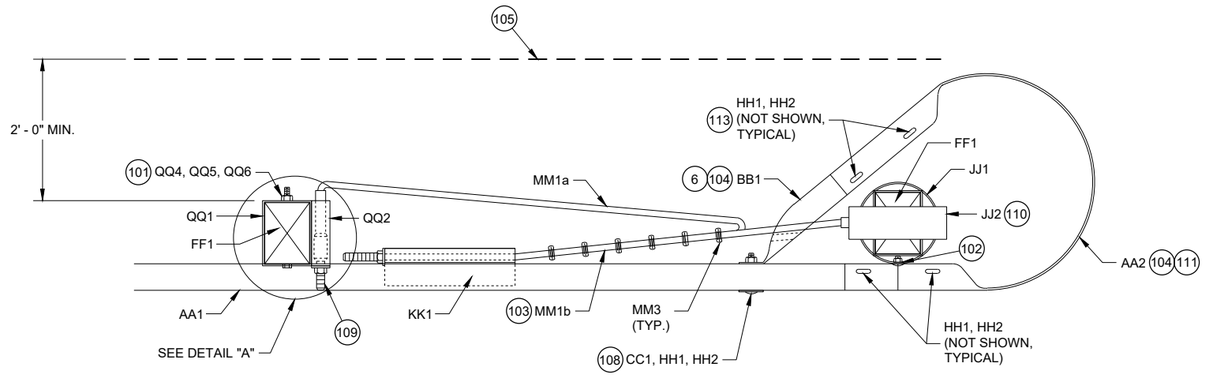


PROFILE VIEW

SHORT RADIUS TERMINAL



TOP VIEW

SHORT RADIUS TERMINAL

GENERAL NOTES

100 TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.

101 WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.

102 SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL "B".

103 CABLE IS TAUT.

104 ADJUST AA2 AND BB1 TO FIT.

105 BREAK POINT OF SHOULDER.

106 TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL "A" PROFILE VIEW.

107 PAY LIMIT FOR BEAM GUARD.

108 SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.

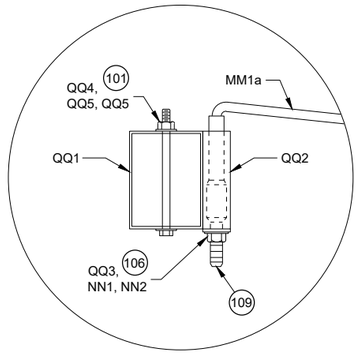
109 CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS ½" TOLERANCE). DEBURR AFTER CUTTING.

110 SEE STEEL PIPE ASSEMBLY DETAILS.

111 ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.

112 FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.

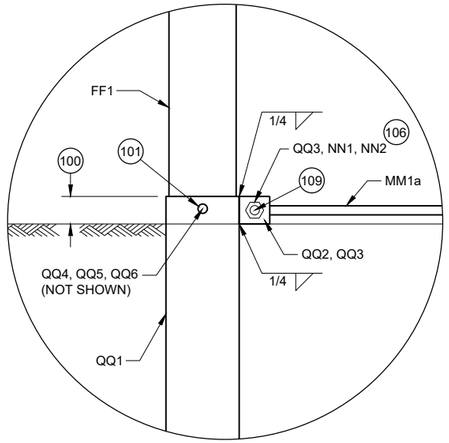
113 FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.



TOP VIEW

DETAIL "A"

(WOOD BREAKAWAY AND BEAM GUARD RAIL POSTS NOT SHOWN)



PROFILE VIEW

DETAIL "A"

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
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SDD 14B53 - 01b

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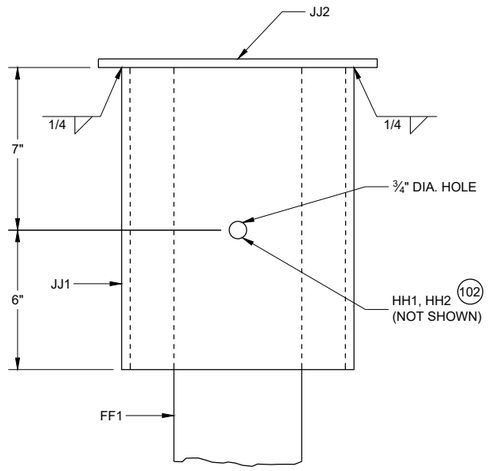
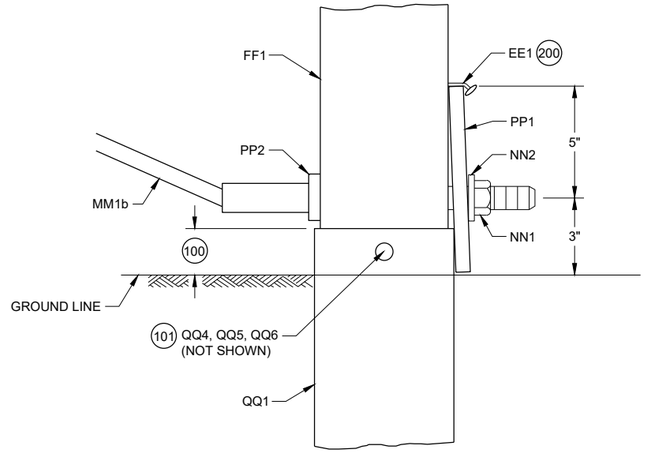
GENERAL NOTES

(200) TWO (2) NAILS SPACED 4 INCHES CENTER TO CENTER.



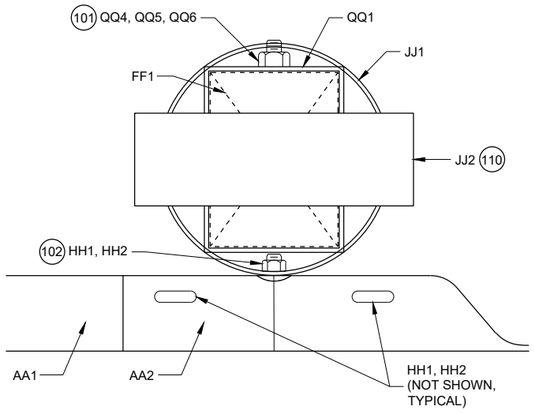
PROFILE VIEW

DETAIL "B"
STEEL PIPE ASSEMBLY
(BEAM GUARD AND W BEAM END SECTION NOT SHOWN)



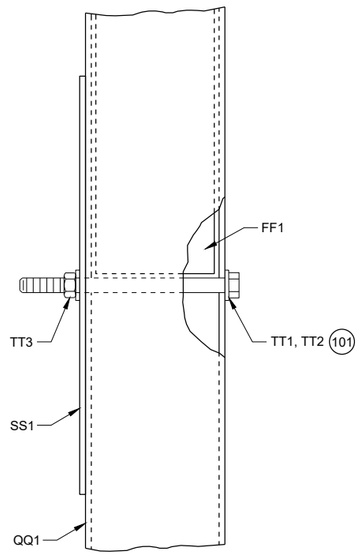
PROFILE VIEW

DETAIL "C"



PLAN VIEW

DETAIL "B"
STEEL PIPE ASSEMBLY



PROFILE VIEW

DETAIL "D"

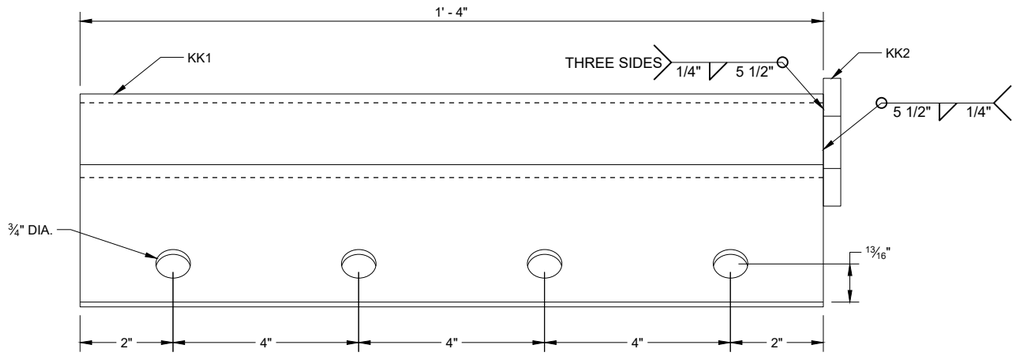
SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

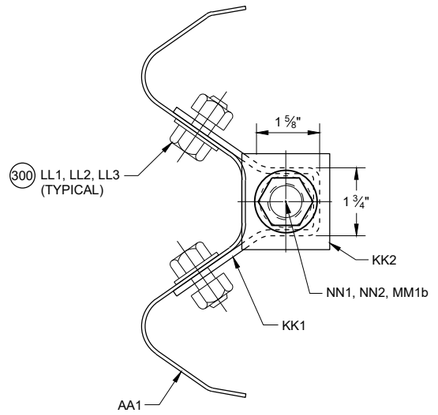
6

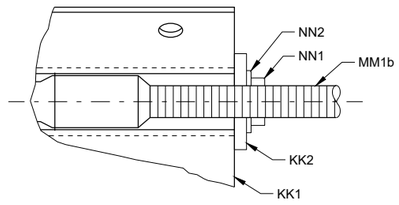
SDD 14B53 - 01c

GENERAL NOTES

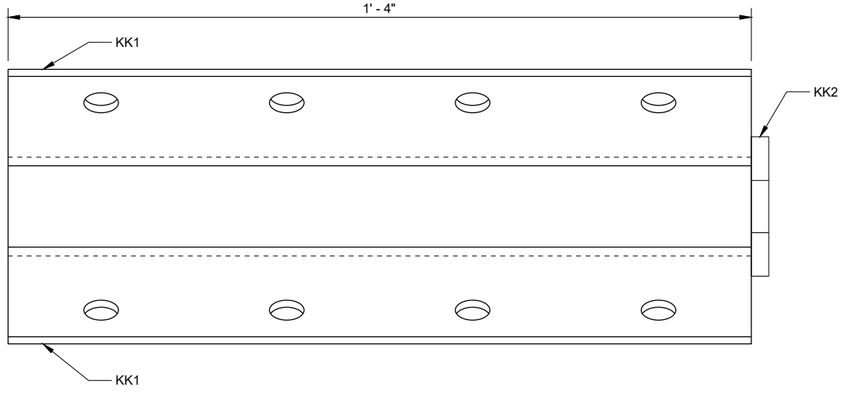
(300) WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT (8) LL1 AND LL3 REQUIRED. SIXTEEN (16) LL2 REQUIRED.

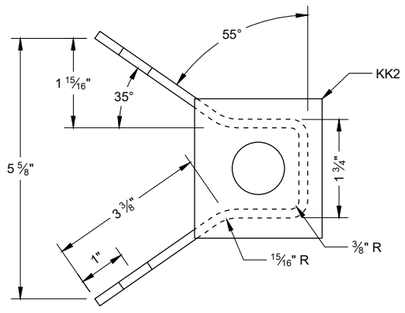




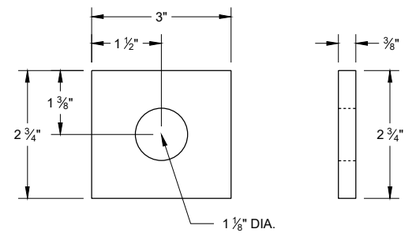


SECTION A - A





ANCHOR BRACKET (KK1, KK2)



ANCHOR BRACKET BEARING PLATE (KK2)

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
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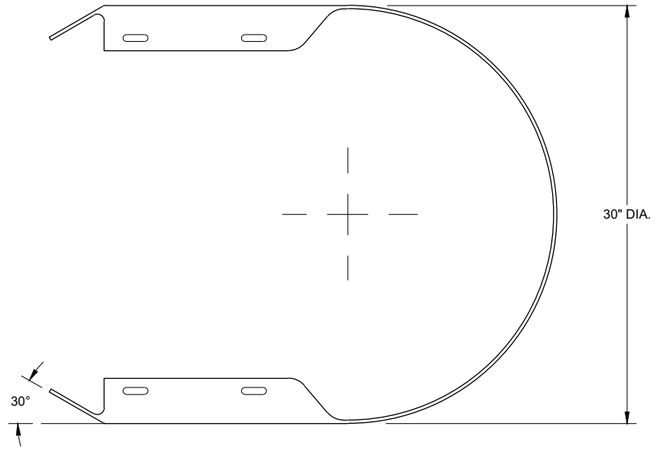
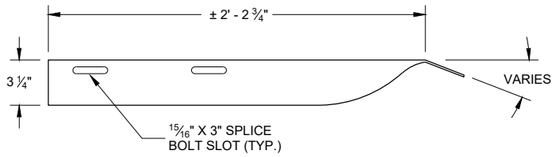
GENERAL NOTES

(400) CROSS SECTION OF PART IS TO FIT OVER AA1 .

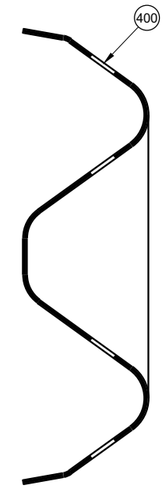
(401) CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1 .



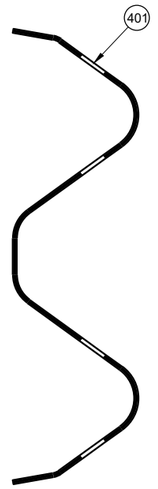
TOP VIEW



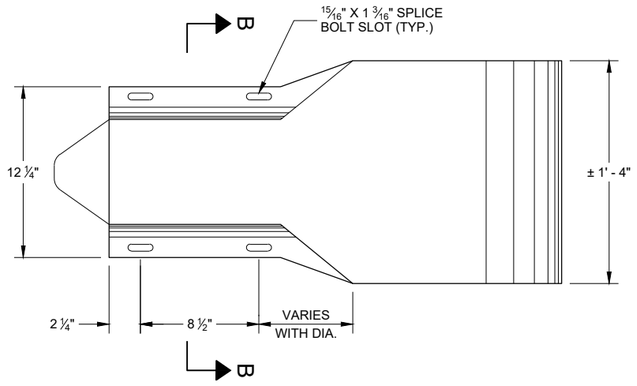
TOP VIEW



SECTION B -B

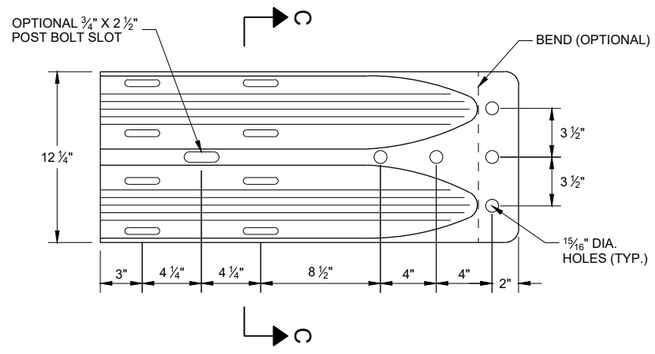


SECTION C -C



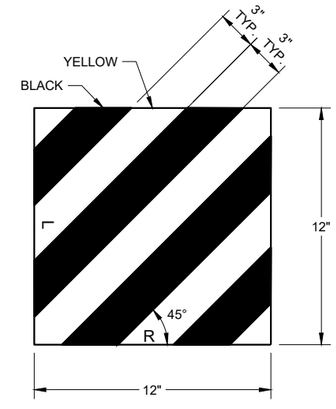
PROFILE VIEW

W BEAM
END SECTION BUFFER (AA2)



PROFILE VIEW

W BEAM
TERMINAL CONNECTOR (BB1)



REFLECTIVE SHEETING (UU1, UU2)

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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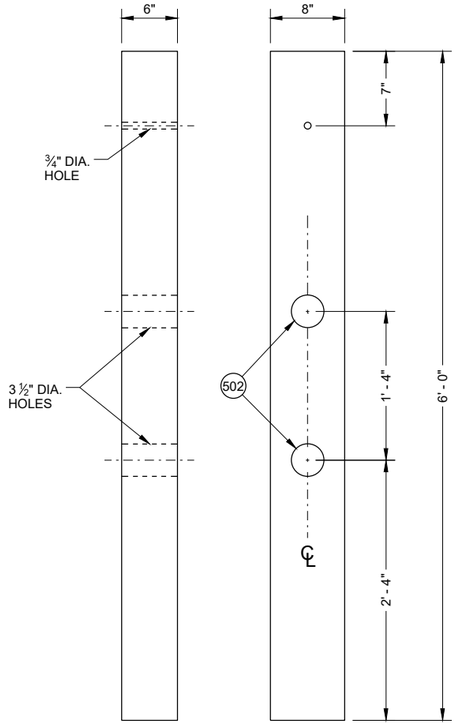
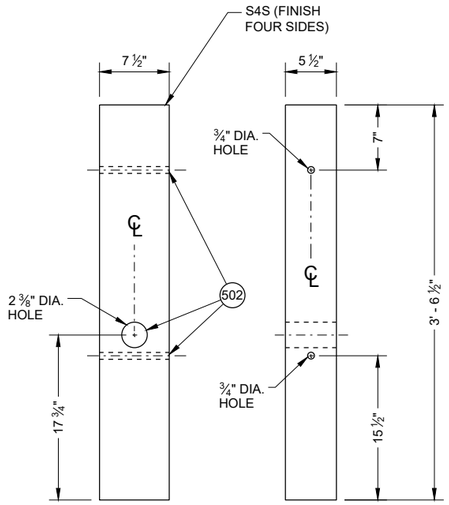


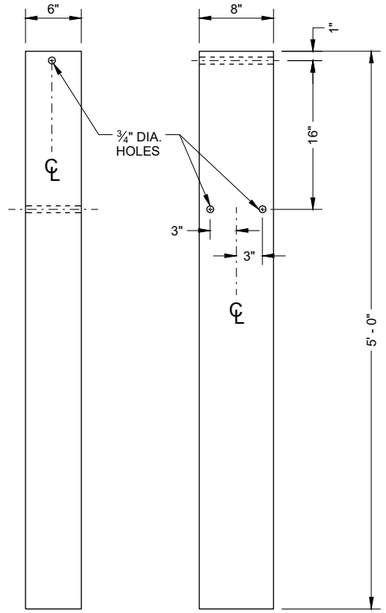
FRONT VIEW SIDE VIEW

CONTROLLED RELEASE POST (CRT) (DD2)



FRONT VIEW SIDE VIEW

WOOD BREAKAWAY POST (FF1)



FRONT VIEW SIDE VIEW

FOUNDATION TUBE (QQ1) 500

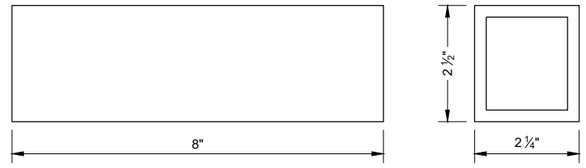
GENERAL NOTES

500 SEE DETAIL "D" FOR LOCATION AND ATTACHMENT OF SS1.

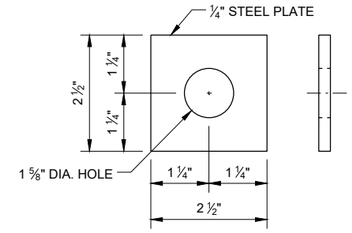
501 FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.

502 LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.

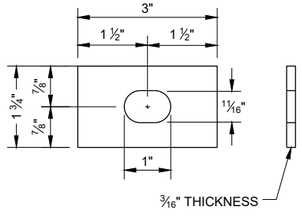
503 MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE 109.



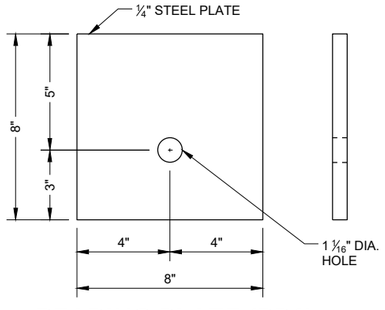
FOUNDATION TUBE - ANCHOR CABLE TUBE (QQ2)



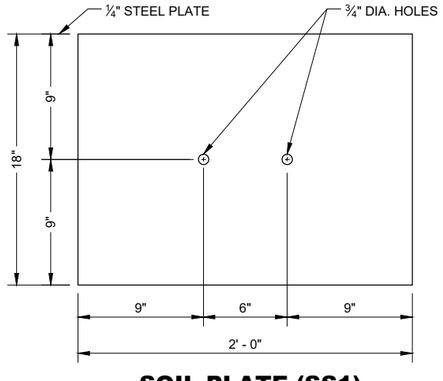
ANCHOR CABLE TUBE END PLATE (QQ3)



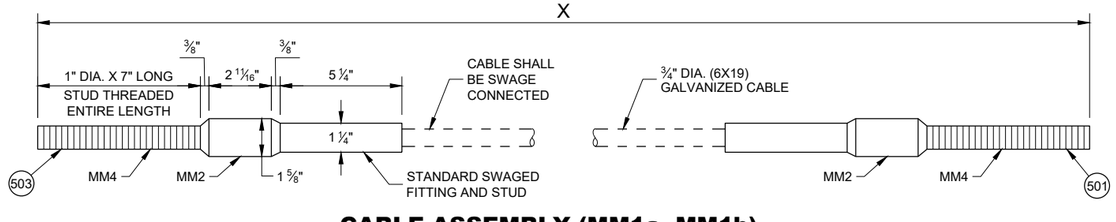
RECTANGULAR PLATE WASHER (CC1)



BEARING PLATE (PP1)



SOIL PLATE (SS1)



CABLE ASSEMBLY (MM1a, MM1b)

"X" LENGTH

MM1b	9' - 0"
MM1b	6' - 8"

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

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BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL THE RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
E3	POST BOLT - NUT	AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPLICE BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
G1	LAG SCREW	ASTM A308 GRADE A ASTM A153 CLASS D	1/2" DIA. 6" LONG
H1	DELINEATOR - BEAM GUARD		SEE SDD 14B42 FOR MORE INFORMATION
H2	DELINEATION - SHEETING	YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
		APPROVED PRODUCT LIST	
J1	FOUNDATION BACKFILL	STANDARD SPEC. 614	
AA1	BEAM GUARD RAIL - PUNCHED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180	
		GALV. AASHTO M111 / ASTM A123	
EE1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	3/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
GG2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	3/8" DIA.
		GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329	

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SDD 14B53 - 01g

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	⅜" DIA. SEE 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	⅜" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	⅜" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS ⅜" X 4" X 1' - 0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	⅝" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	⅝" DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	⅝" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
		ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	¾"
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
NN2	ANCHOR CABLE - NUT - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	1" DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

6

SDD 14B53 - 01h

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
PP1	BEARING PLATE AT POST	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X 3/16"
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 1/2" X 2 1/4" X 1/4" X 8"
		GALV. AASHTO M111 / ASTM A123	
QQ3	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2 1/2" X 2 1/2" X 1/4"
		GALV. AASHTO M111 / ASTM A123	
QQ4	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8 DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
QQ5	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8 DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
QQ6	GROUND STRUT AND YOKE - NUT	HEAVY HEX	5/8 DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
SS1	SOIL PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8 DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8 DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8 DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING. SHEETING TYPE FOR MARKER.
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

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SDD 14B53 - 01i

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

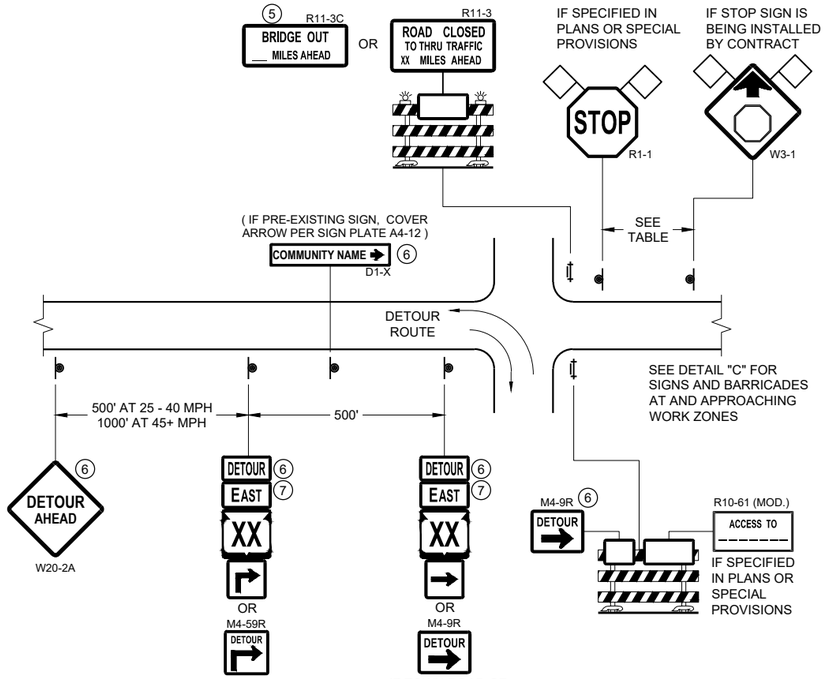
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

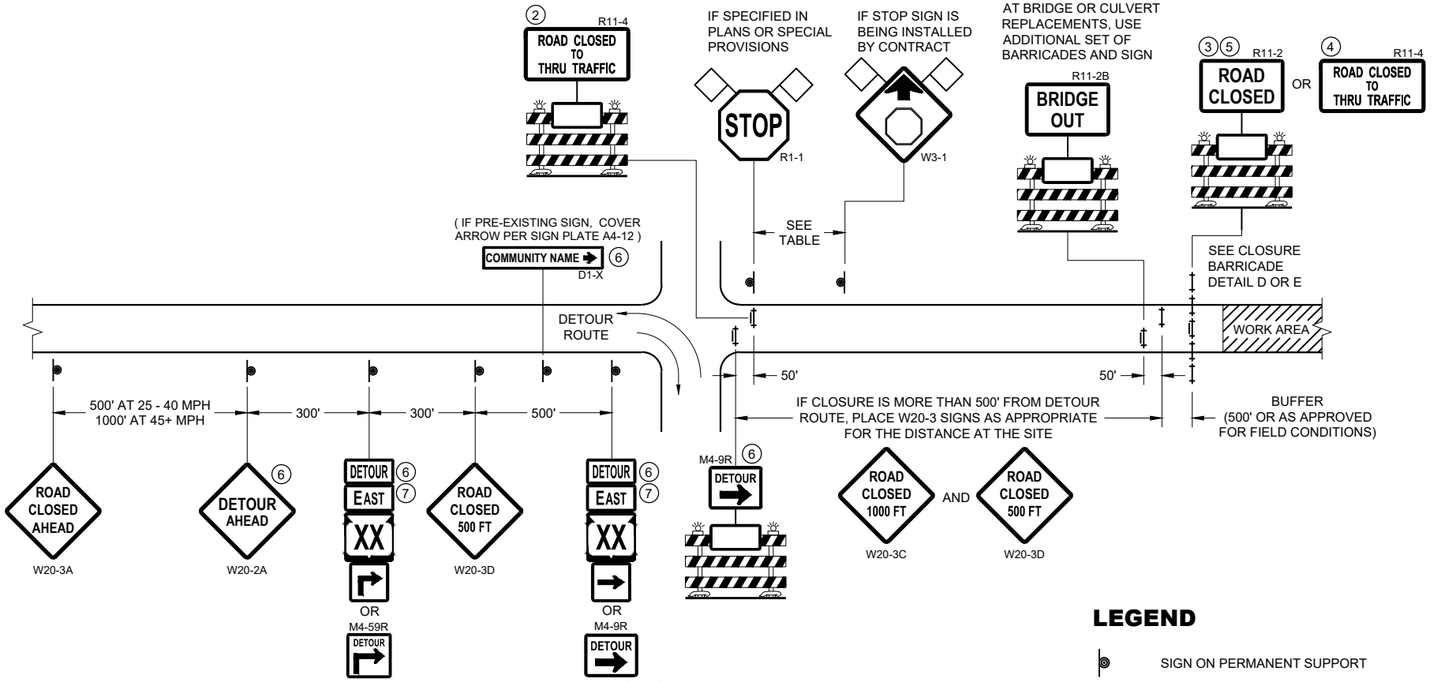
APPROVED
June 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

6

SDD 14B53 - 01i





DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

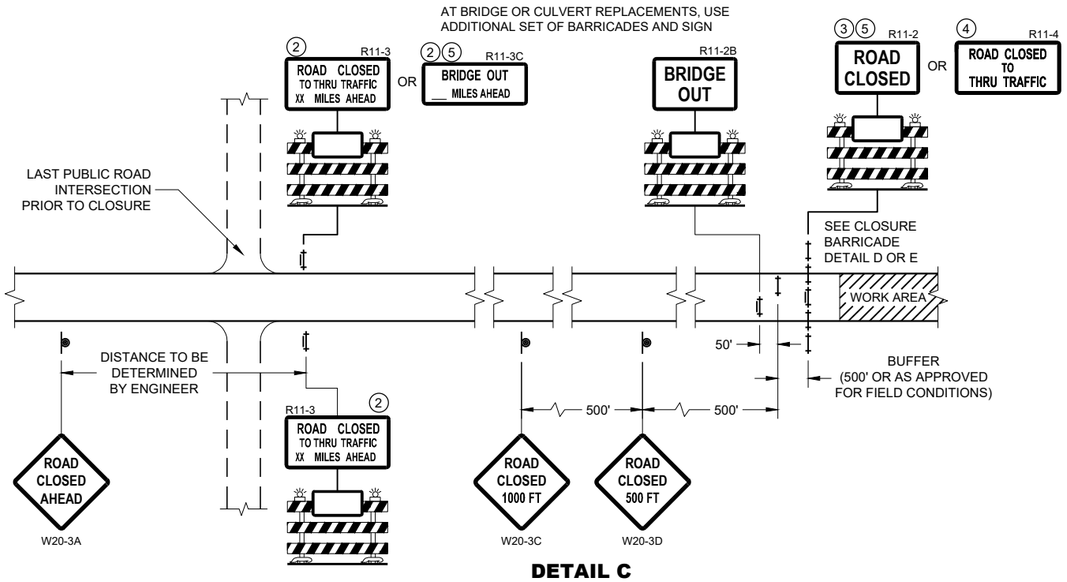
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

DETOUR M4 - 8
EAST M3 - X
XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
M05 - 1 OR M06 - 1



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

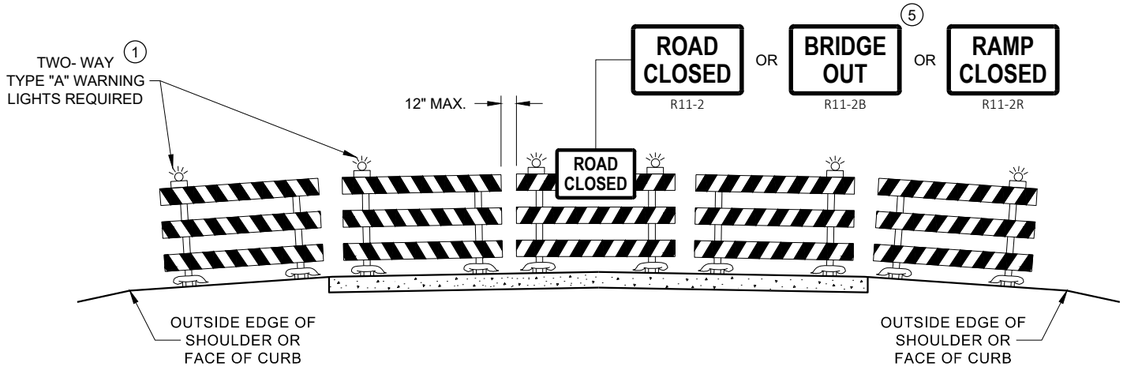
APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

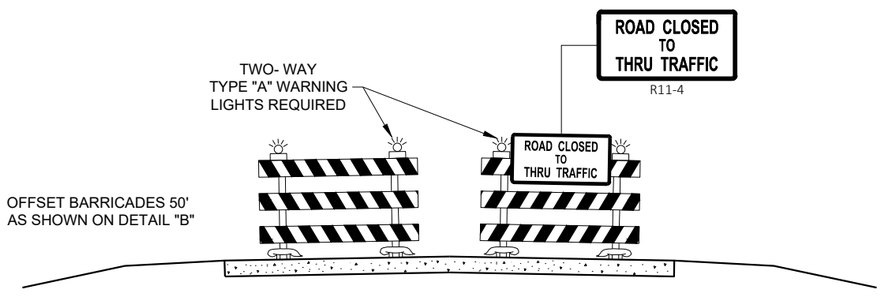
6

SDD 15C02 - 08a

SDD 15C02 - 08a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" 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)
- MO5 - 1 AND MO6 - 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 AN 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 ROAD 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 VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

6

SDD 15C02 - 08b

6

SDD 15C02 - 08b

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1 OR M06 - 1

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.

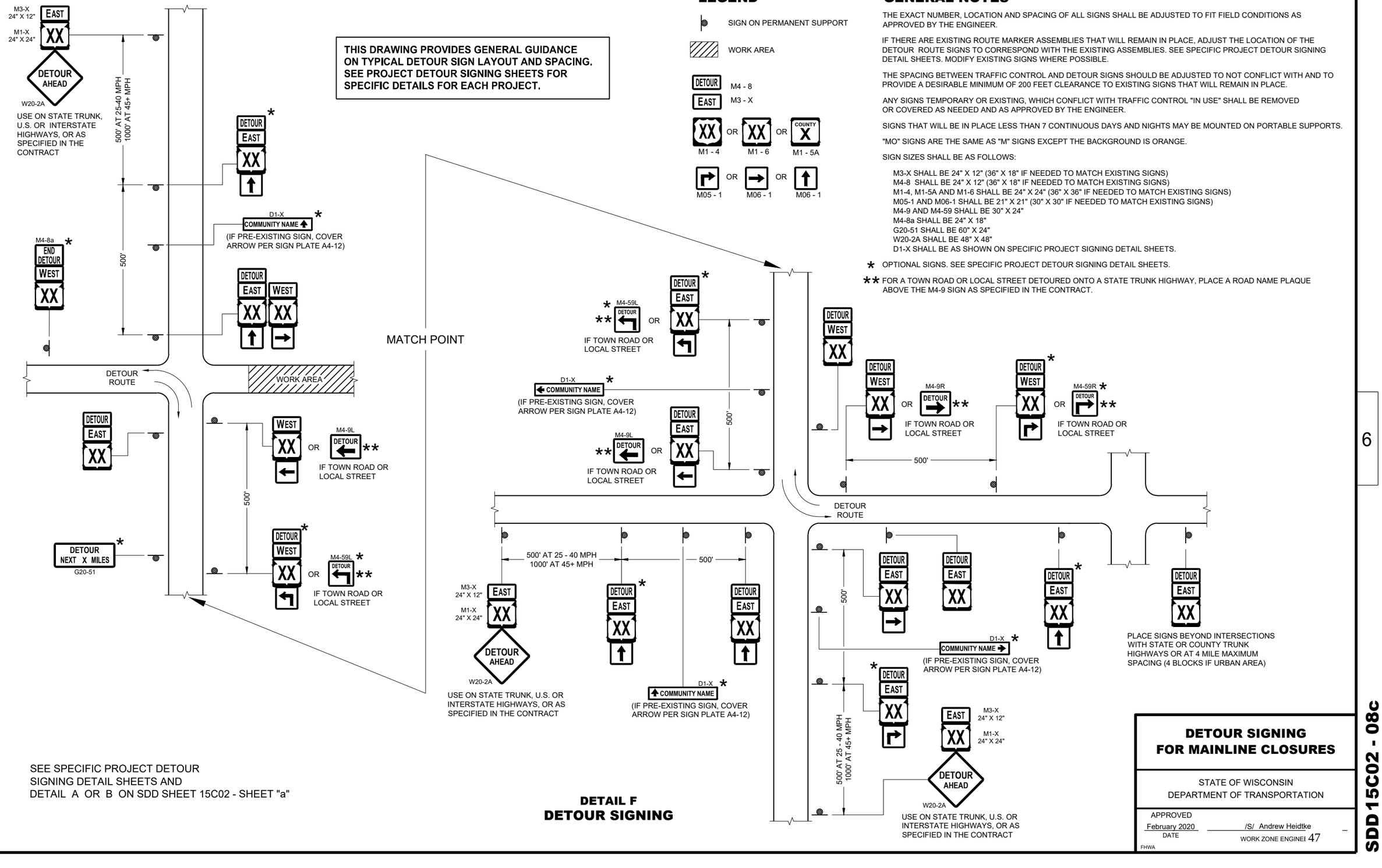
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" 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 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A 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.



SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

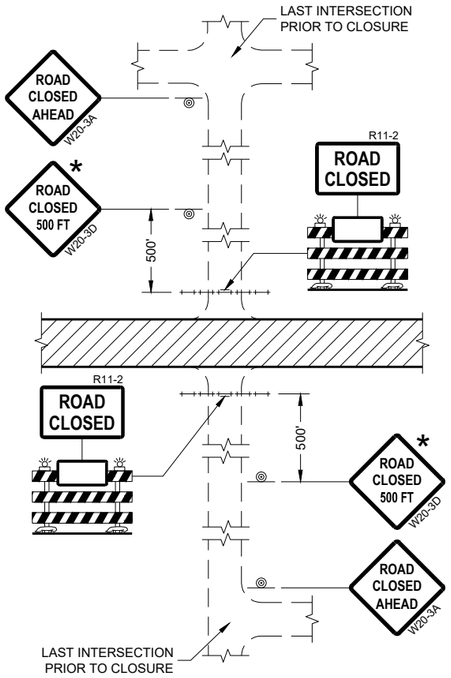
APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

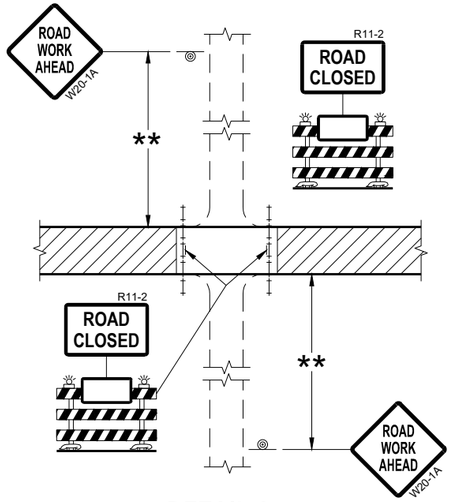
FHWA

SDD 15C02 - 08c

6



DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)

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 (500 FEET DESIRABLE) TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN 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.

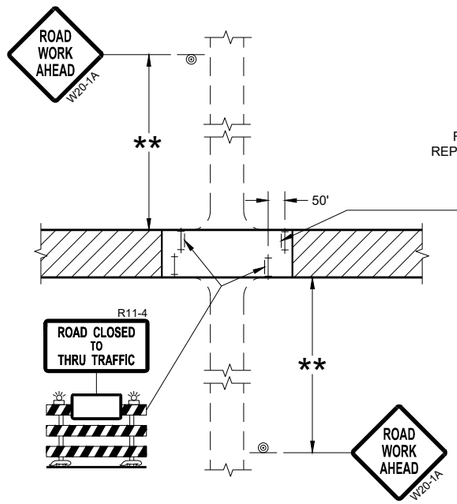
TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, AND R11-4 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.

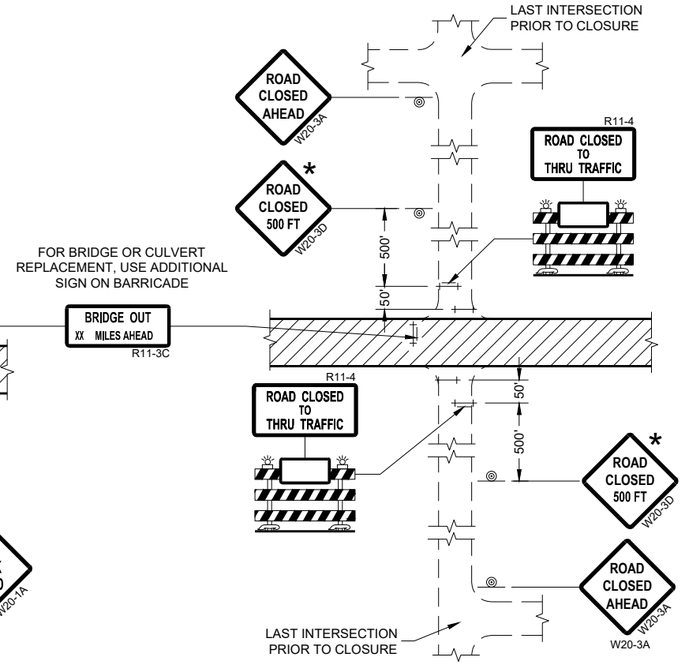
ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.

** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

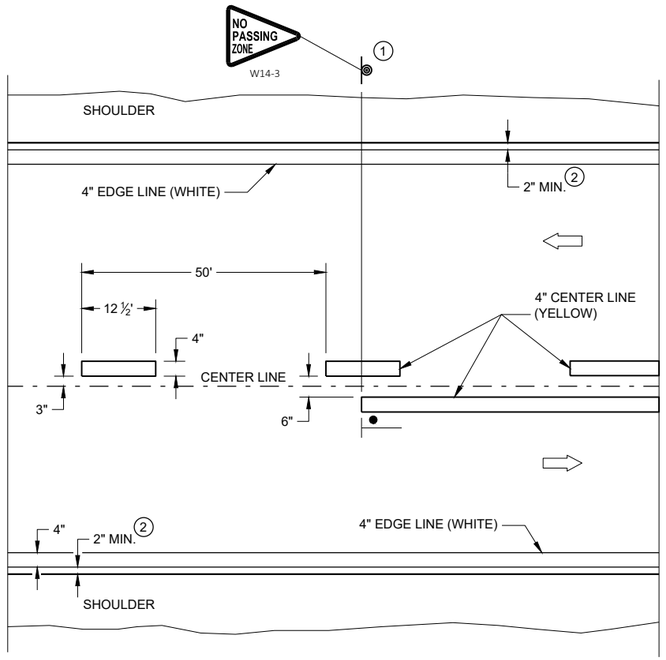
/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

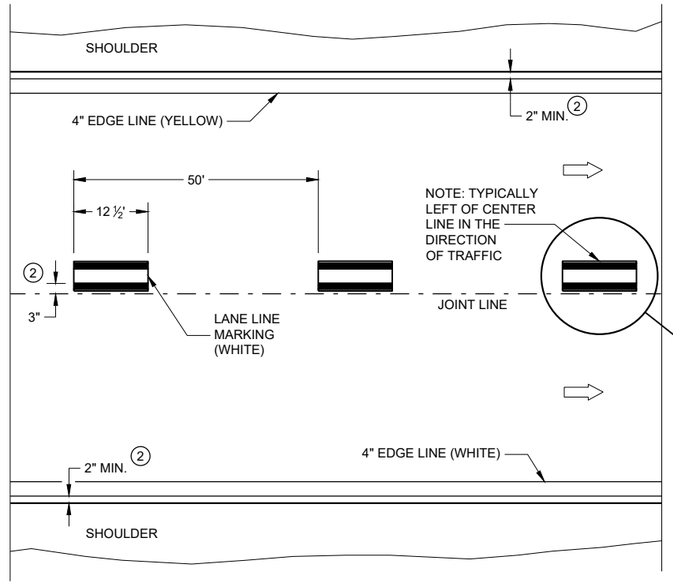
6

SDD 15C03 - 05

SDD 15C03 - 05

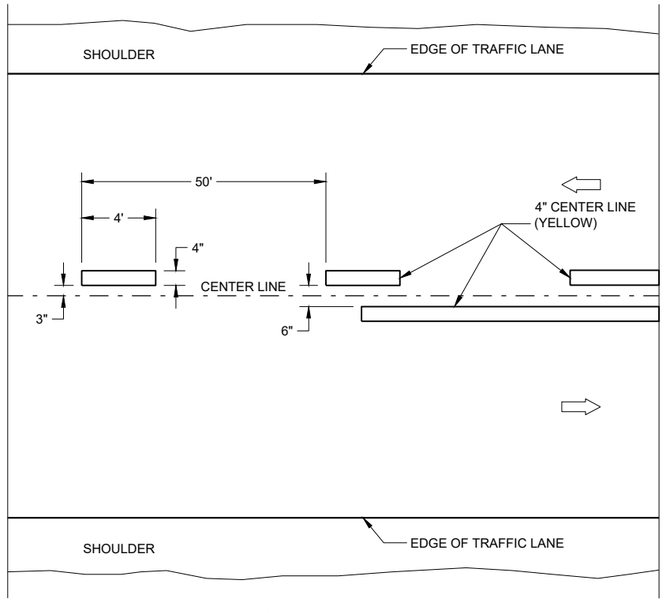


TWO WAY TRAFFIC

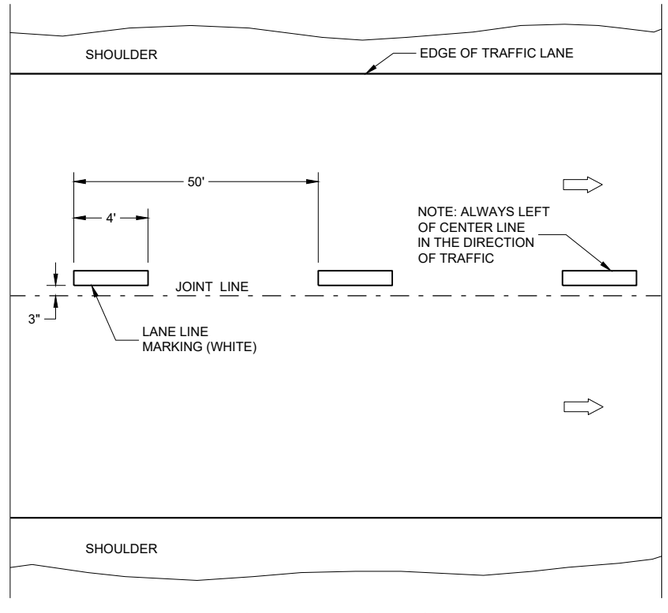


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

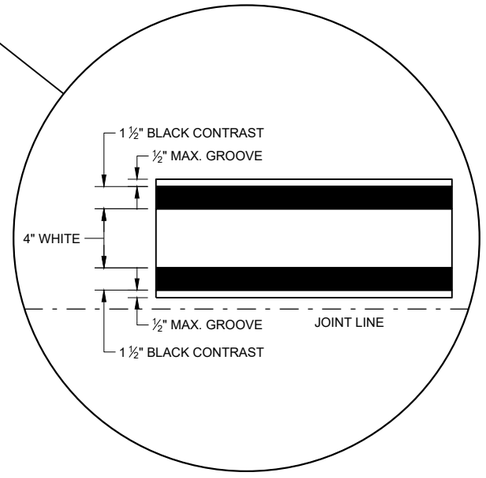
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 — DATE
/S/ Matthew Rauch — STATEWIDE SIGNING AND M ENGINEER

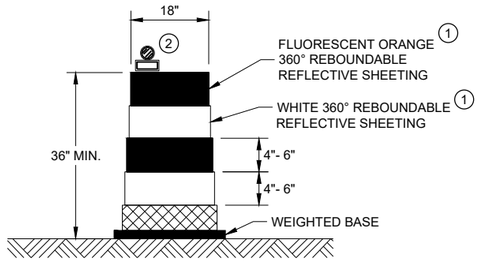
FHWA

SDD 15C08 - 20a

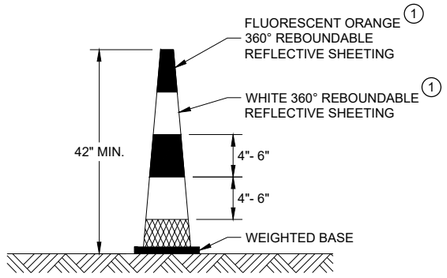
SDD 15C08 - 20a

GENERAL NOTES

1. REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
2. LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

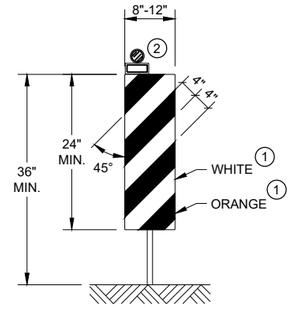


DRUM



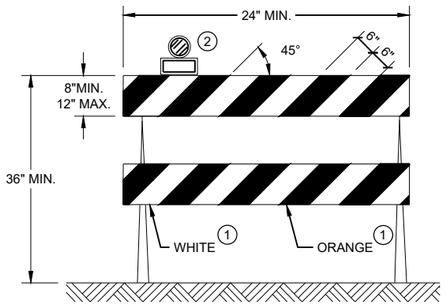
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



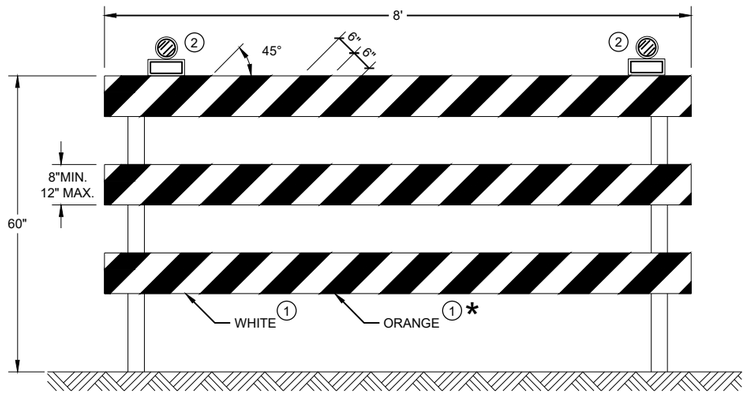
VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

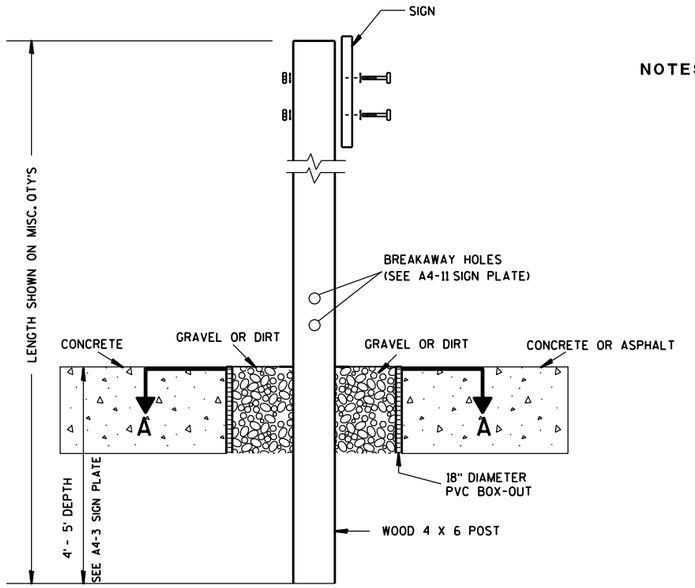
APPROVED
May 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

6

SDD15C11 - 09b

6

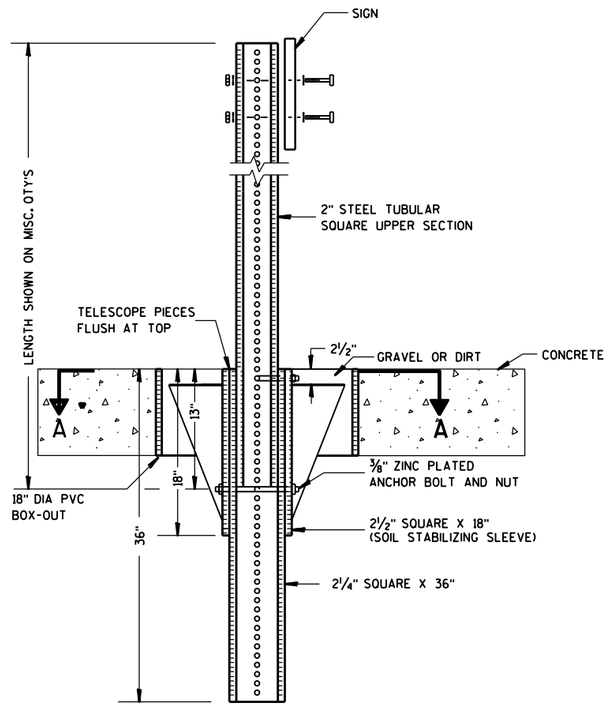
SDD15C11 - 09b



ELEVATION VIEW

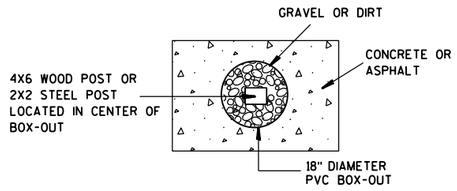
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

NOTES:
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

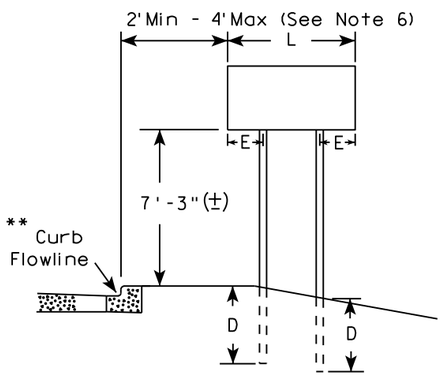
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

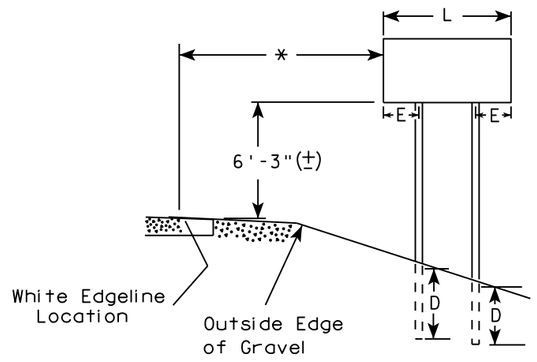
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

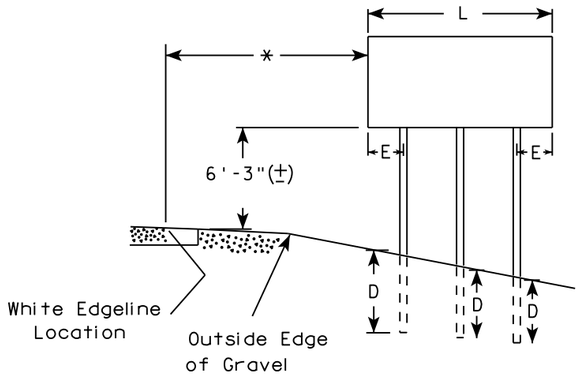
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

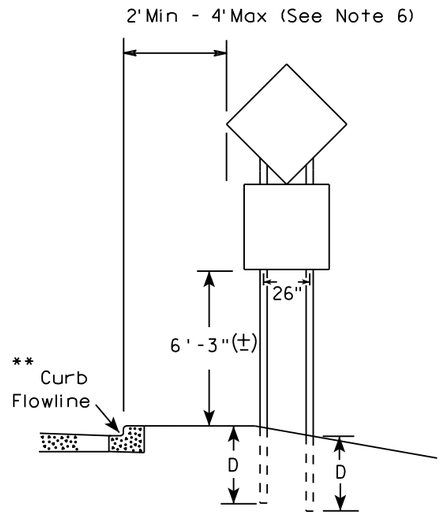
URBAN AREA



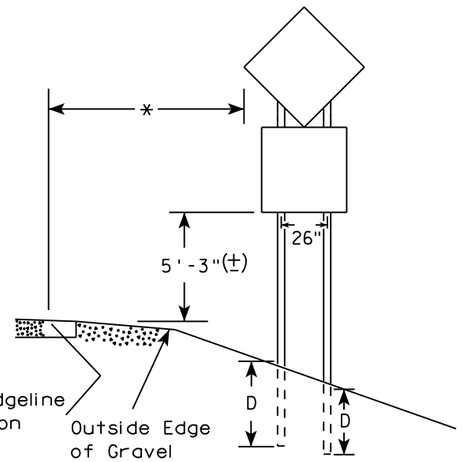
RURAL AREA (See Note 3)







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 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

GENERAL NOTES

1. For 3 or 4 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. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs 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), In Road Object Markers (W5-54) & End of Road Markers (W5-56) 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 and less than 20 S.F. in area.

POST EMBEDMENT DEPTH

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

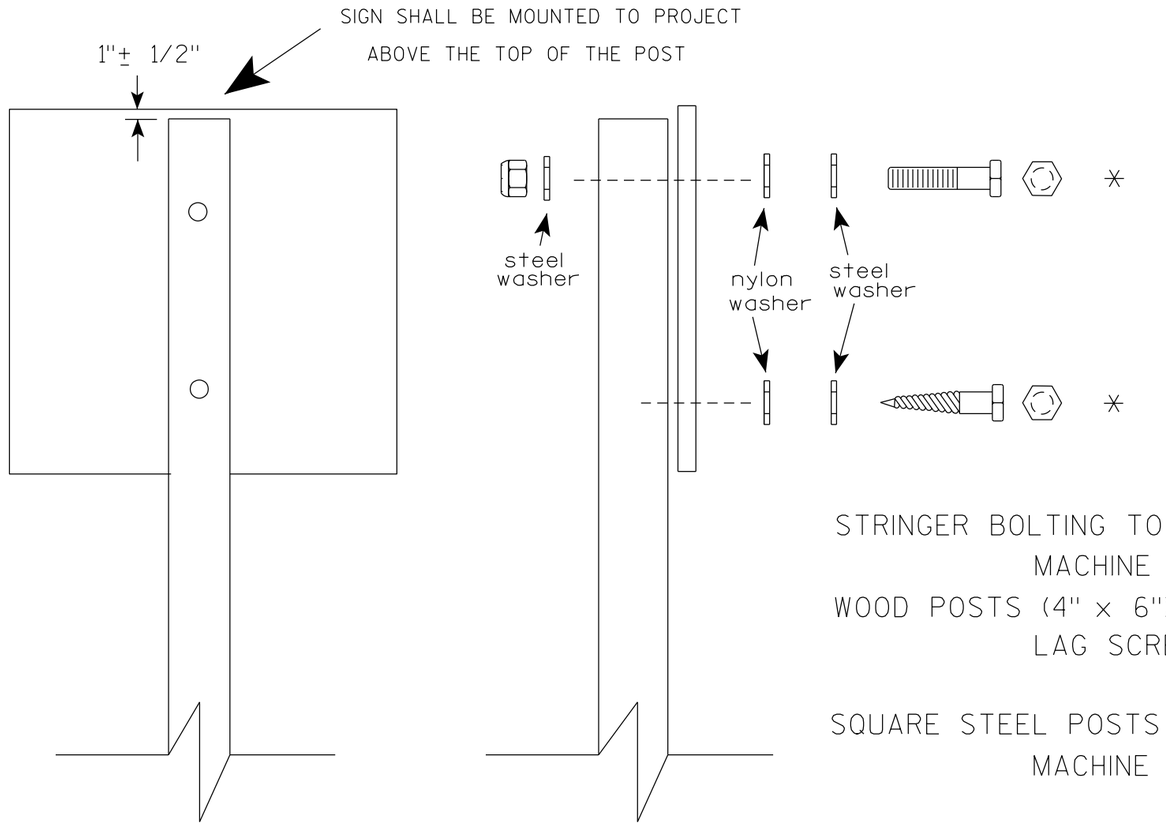
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 52	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.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

* 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

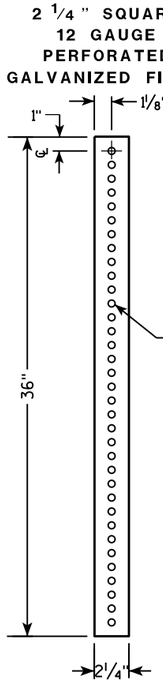
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

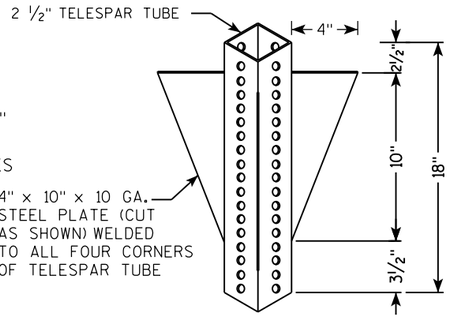
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

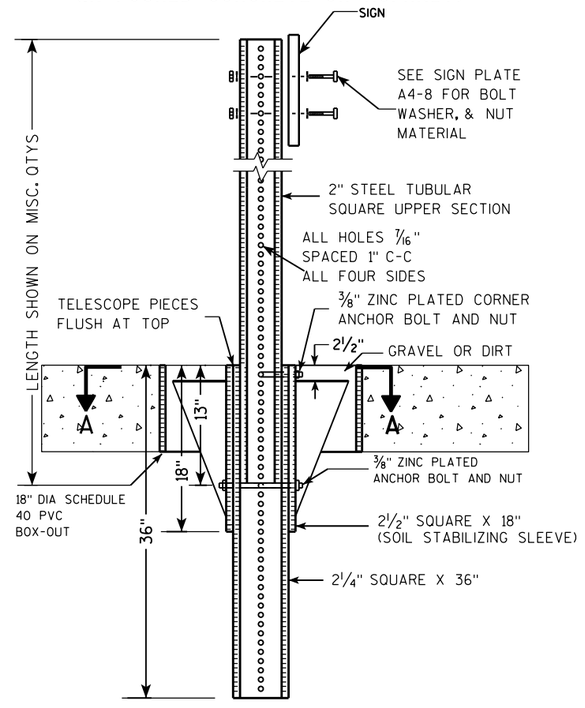
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



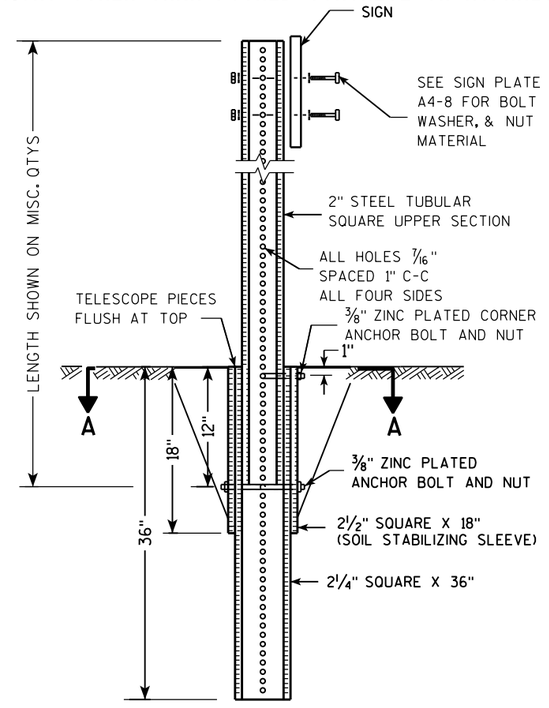
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

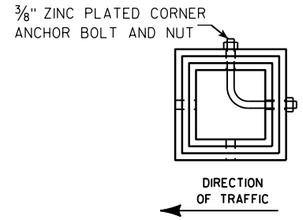


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)





SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

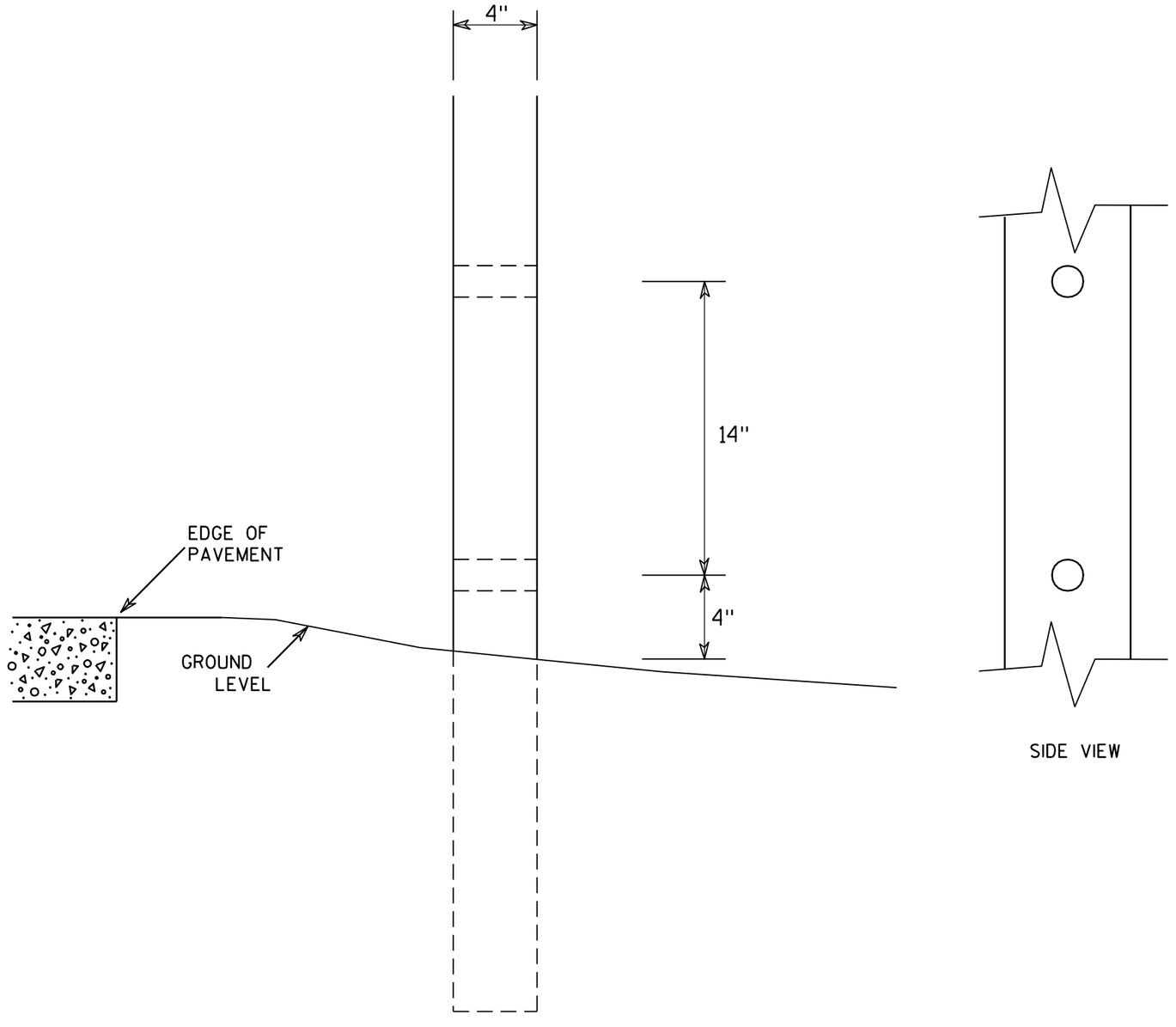
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 54 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	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

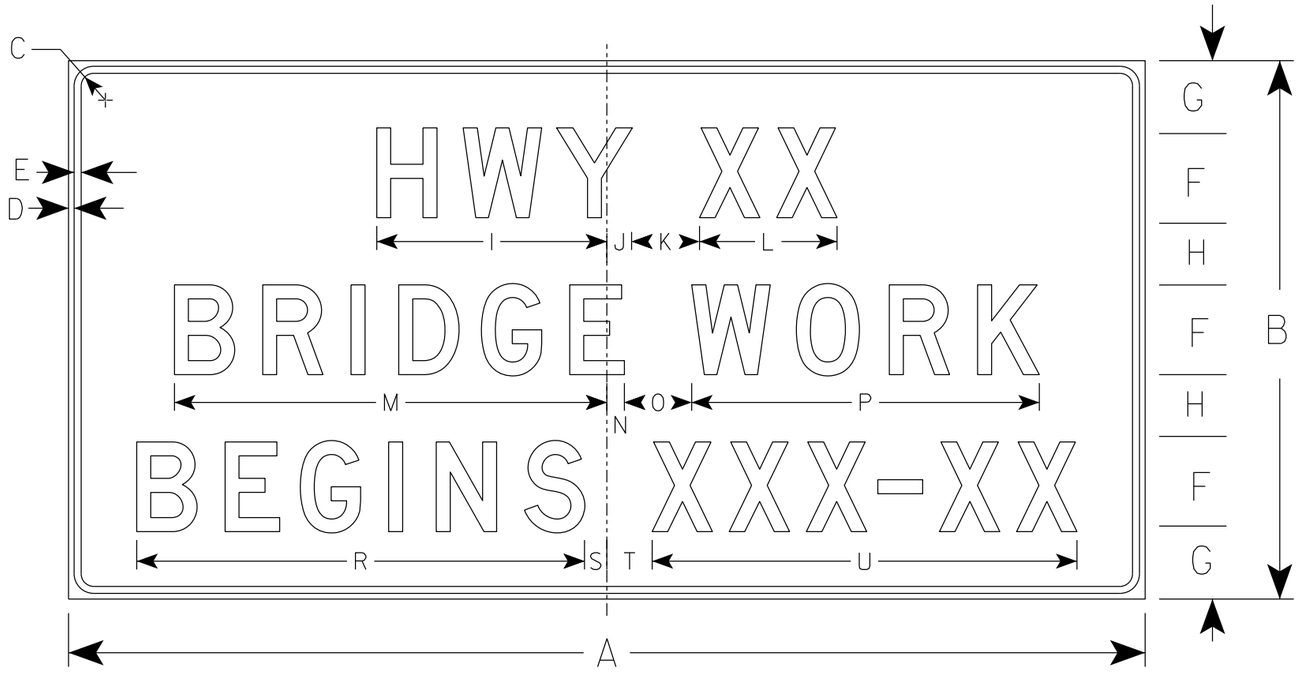
APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 55	E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



G20-57B

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																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	29 1/8	7/8	5	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2						18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	38 1/2	1 1/2	6	31		39 1/4	2	4	37 7/8						32.0
5																											

STANDARD SIGN

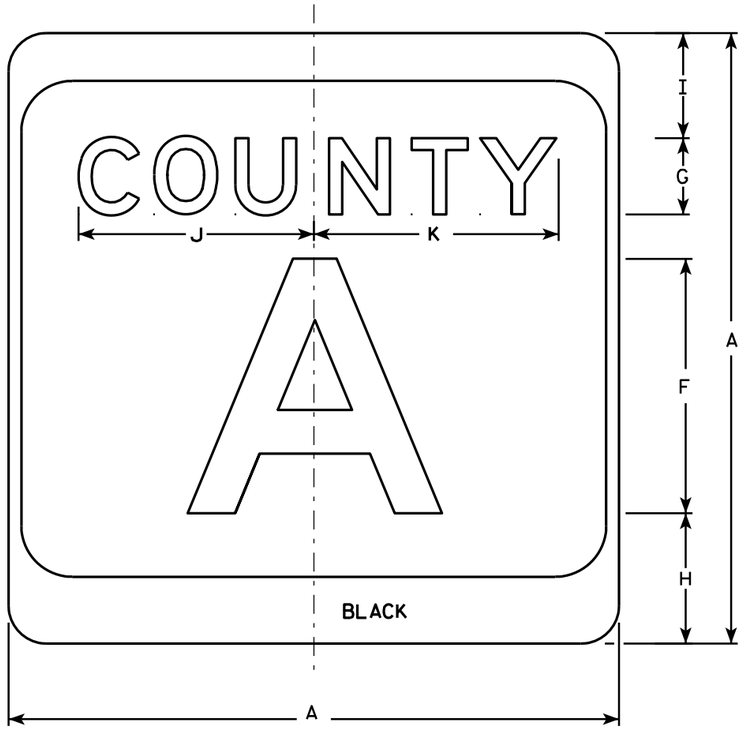
G20-57B

WISCONSIN DEPT OF TRANSPORTATION

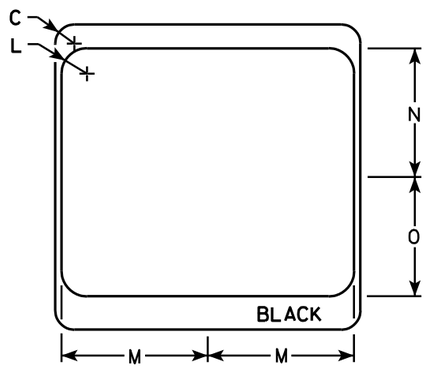
APPROVED Matthew R Rauch
for State Traffic Engineer

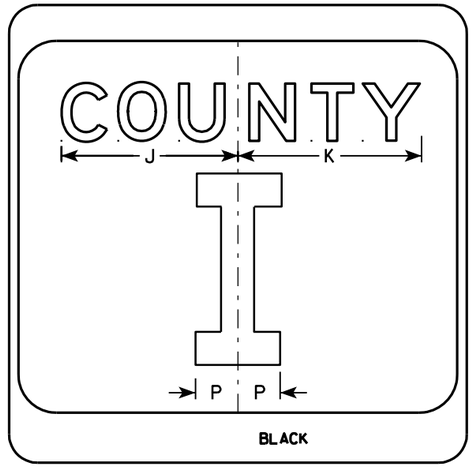
DATE 1/22/19 PLATE NO. G20-57B.1

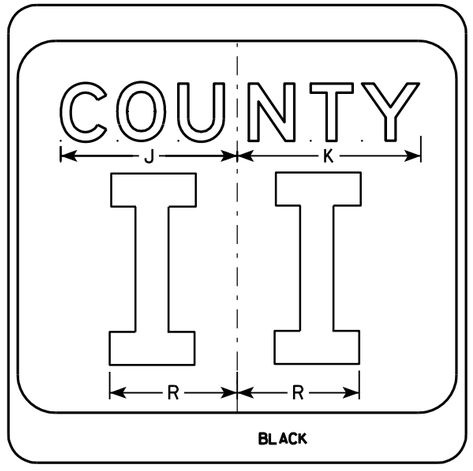
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 56	E



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

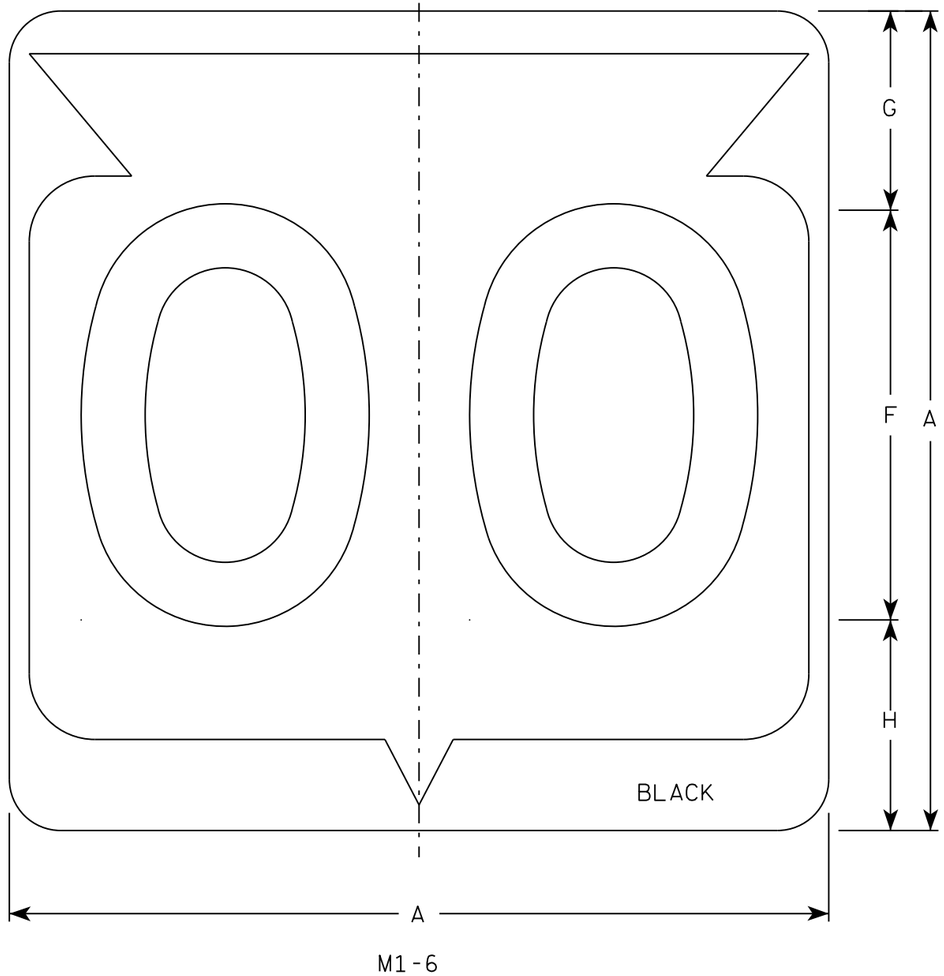
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

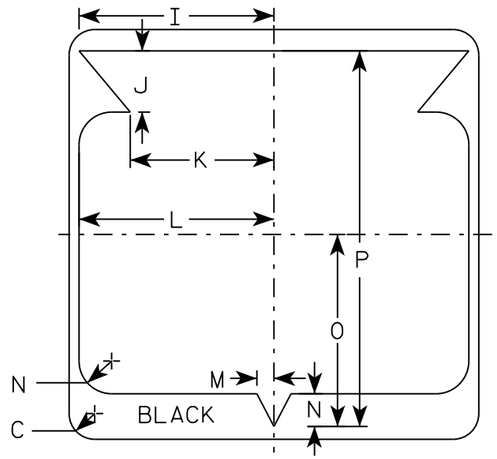
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 57	E



M1-6

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D except 3 number signs 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		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
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
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
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

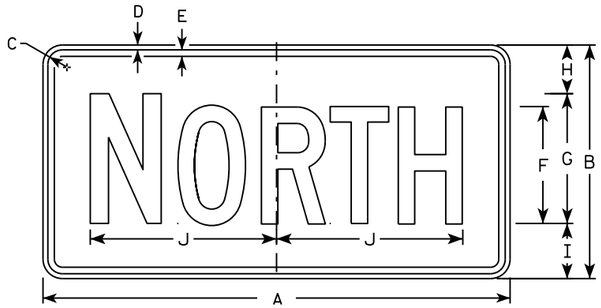
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

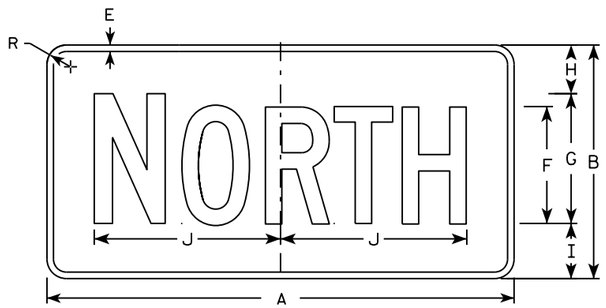
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 58	E



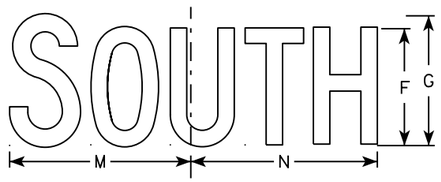
M3-1
MM3-1
MP3-1



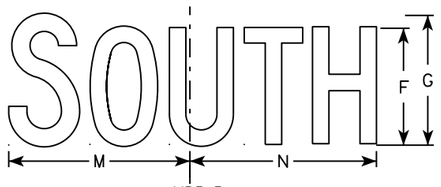
MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

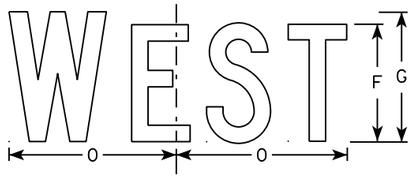
MB3-2
MK3-2
MN3-2



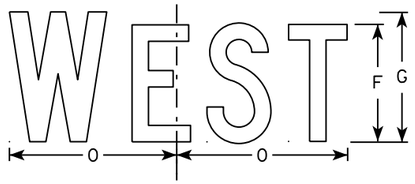
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
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
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
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

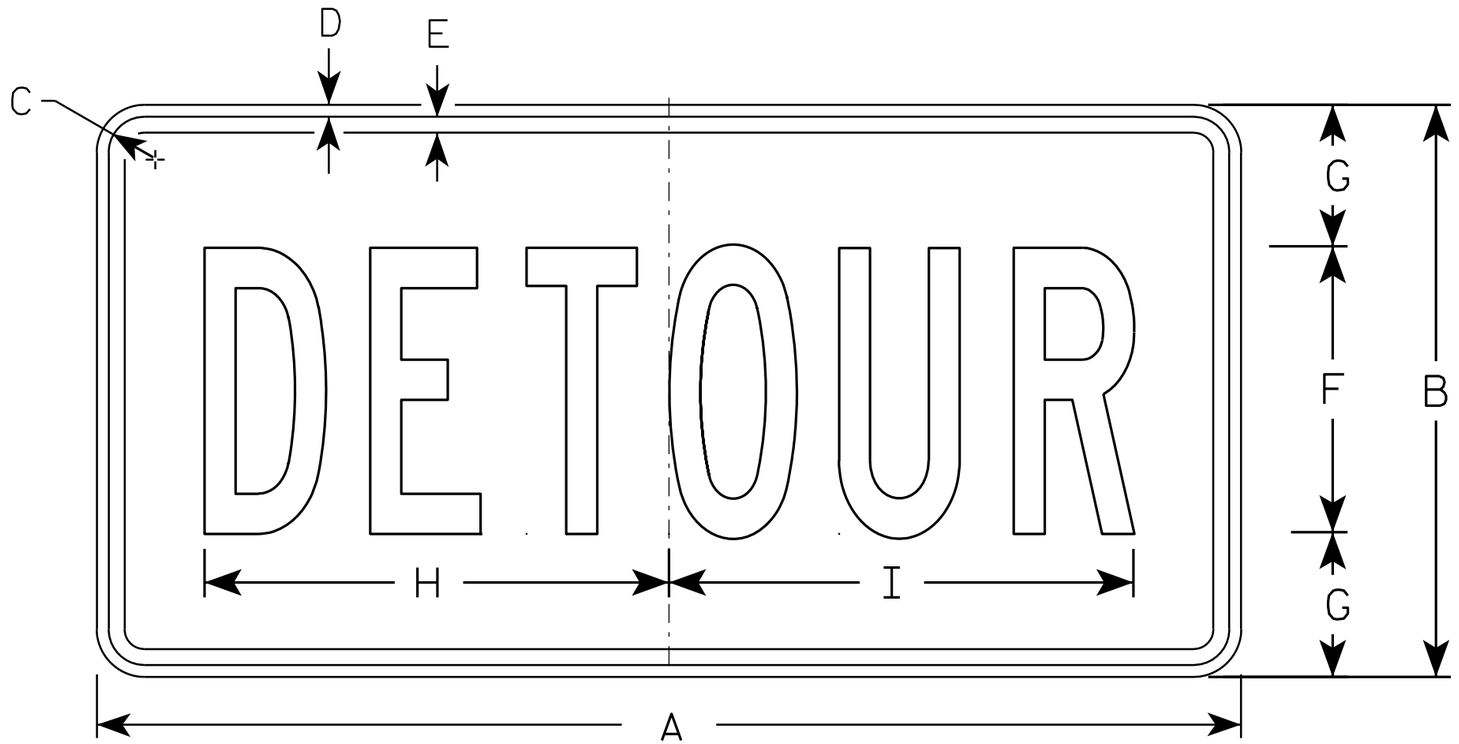
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14

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



M4-8

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 - B
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	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

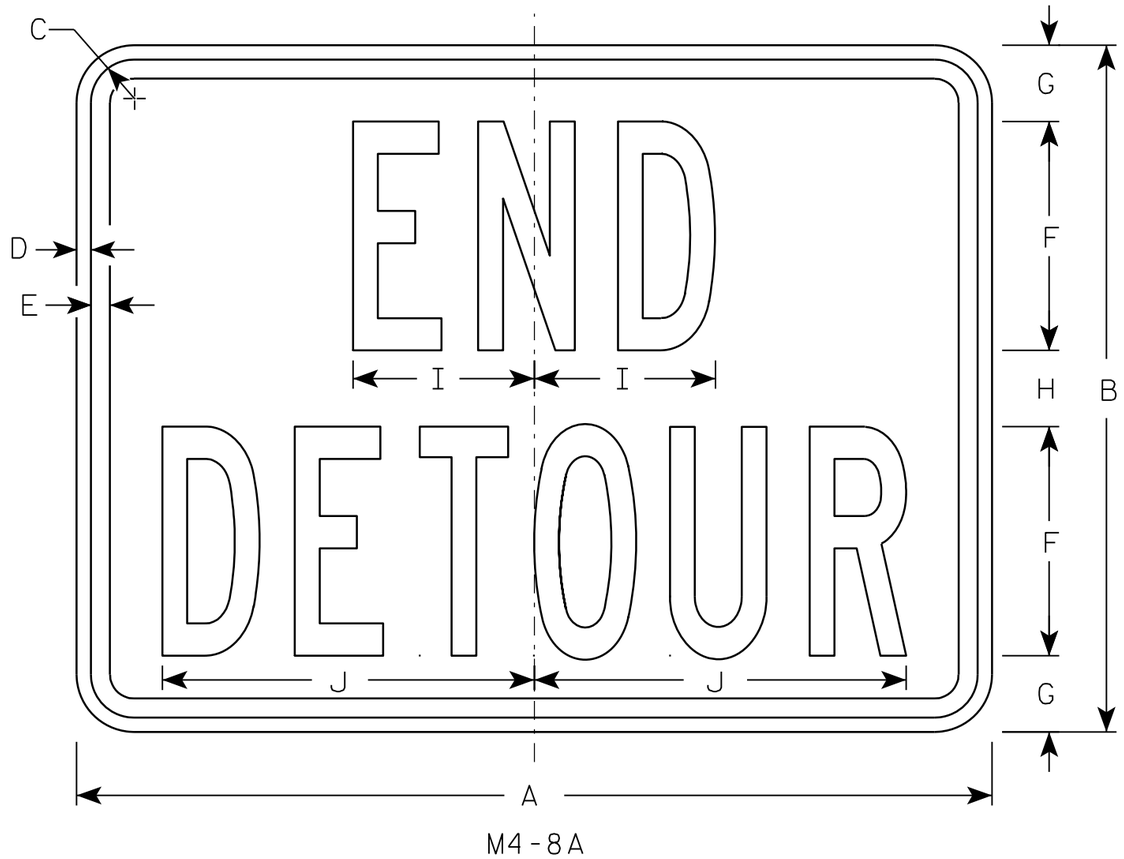
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 60	E



M4-8A

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 - B
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	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

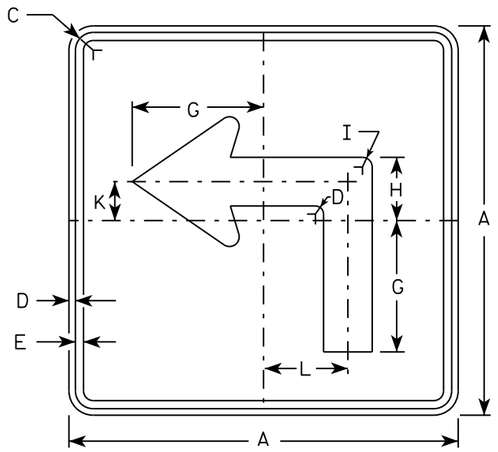
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

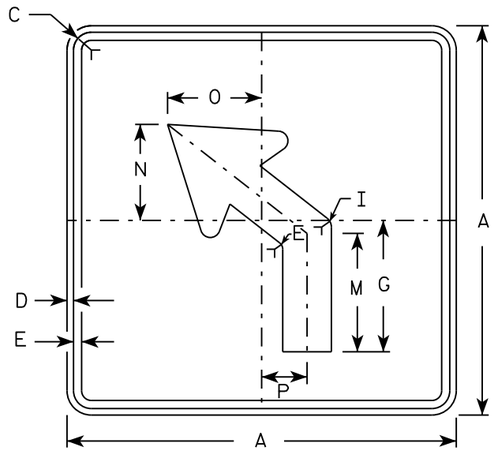
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

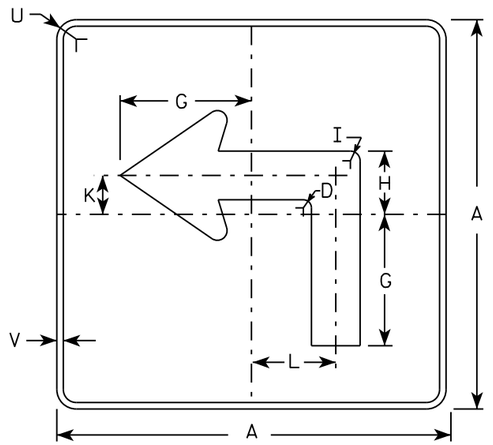
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 61	E



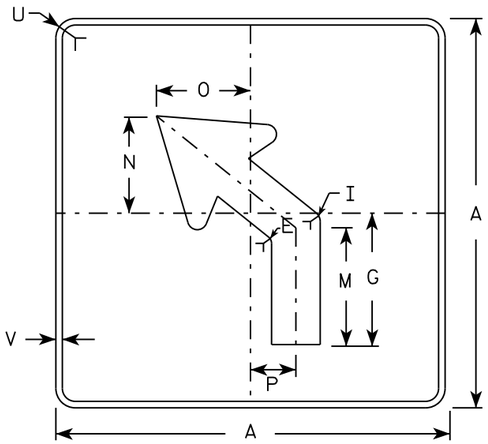
M5-1L
MM5-1L
MO5-1L
MP5-1L



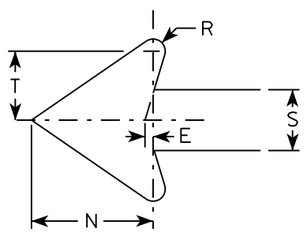
M5-2L
MM5-2L
MO5-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

1. Signs are Type II - Type H reflective except as shown
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
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

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	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
3	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
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
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

STANDARD SIGN
M5-1 & M5-2

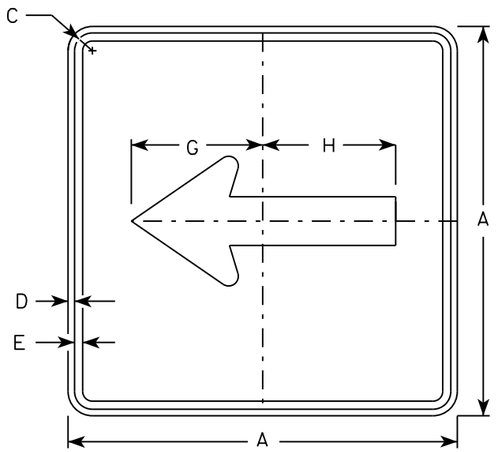
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

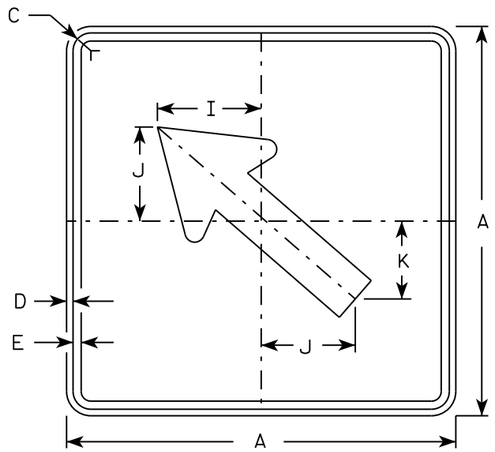
DATE 10/15/15 PLATE NO. M5-1.13

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



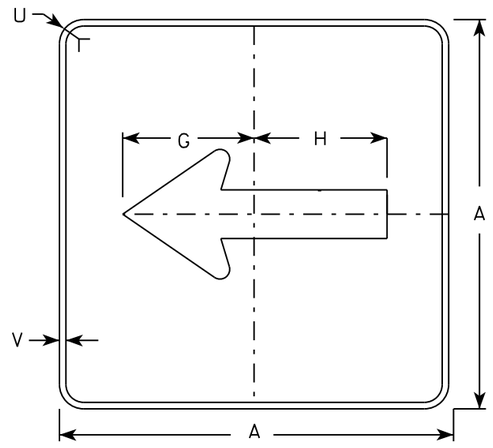
M6-1
MM6-1
MO6-1
MP6-1



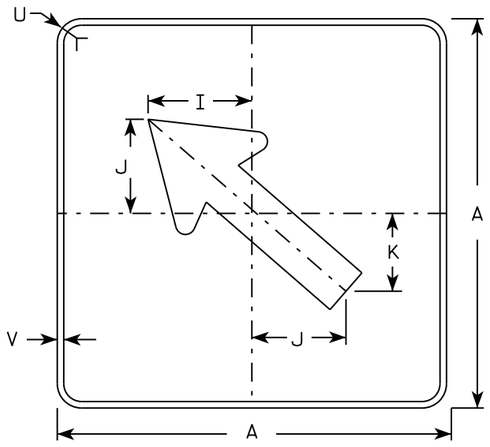
M6-2
MM6-2
MO6-2
MP6-2

NOTES

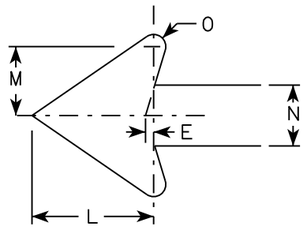
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



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	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
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
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
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

STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

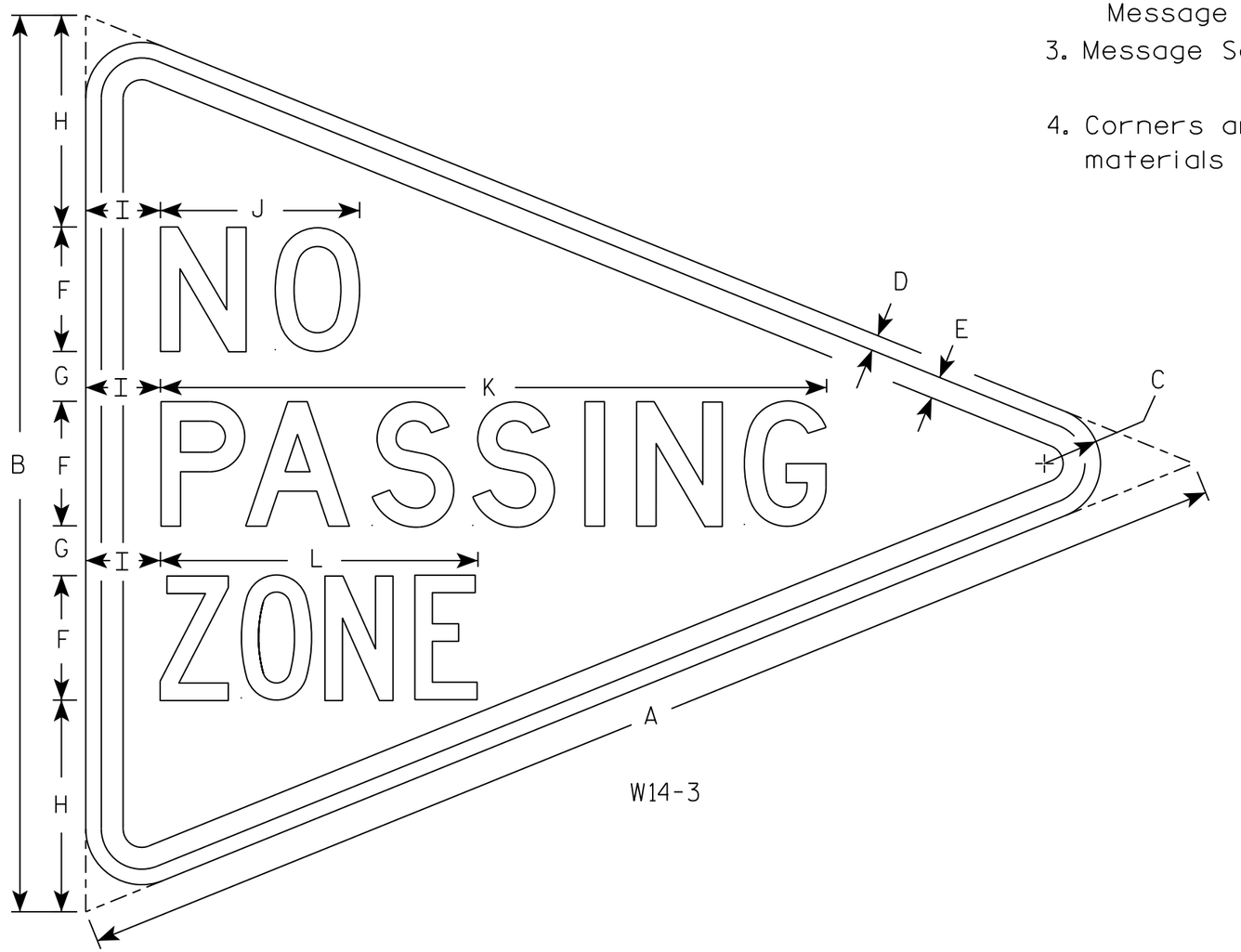
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 63 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - Lines 1 and 2 are Series D.
   Line 3 is series C.
4. Corners and borders shall be rounded on all base materials for this sign.



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															5.56
2M																											
3																											
4																											
5																											

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W14-3.10

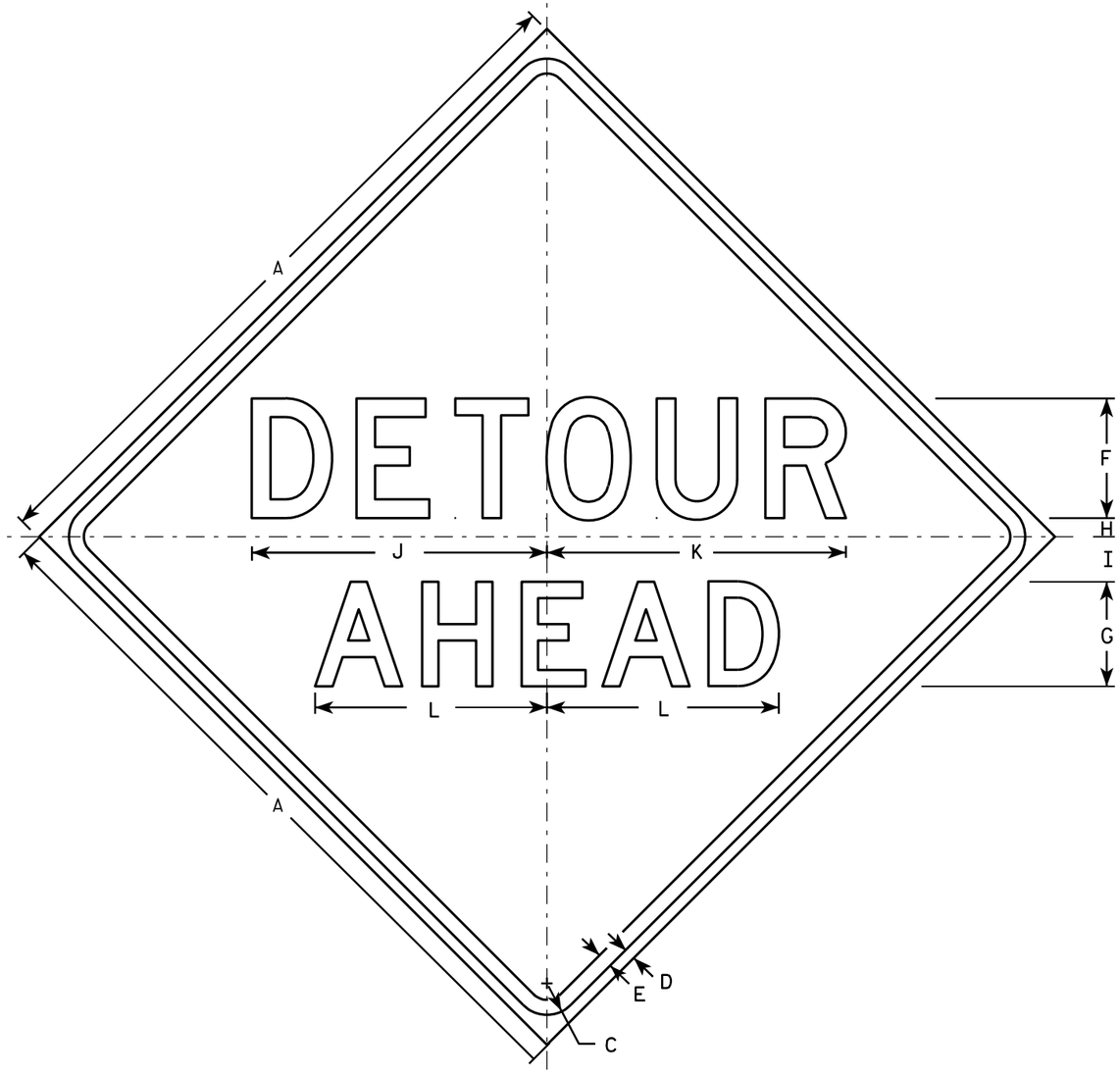
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 64 | E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W143.DGN PLOT DATE : 21-MAR-2017 08:48 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : 5.650195:1.000000

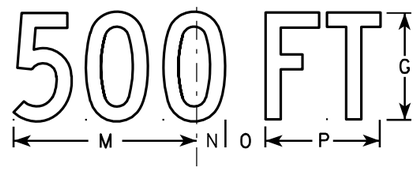
WISDOT/CADDS SHEET 42

7

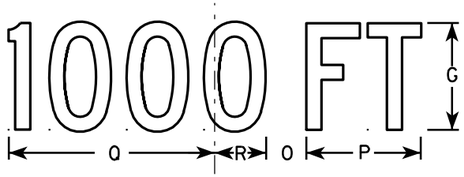
7



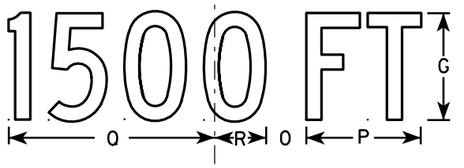
W20-2A



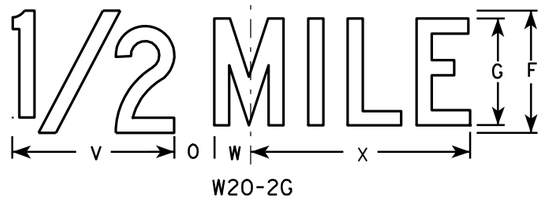
W20-2D



W20-2C



W20-2B



W20-2G

W20-2F

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 - 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. Line 1 is Series D.
   Line 2 is Series D for AHEAD and Series C for all other distances.

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	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A,B,C,D,F & G

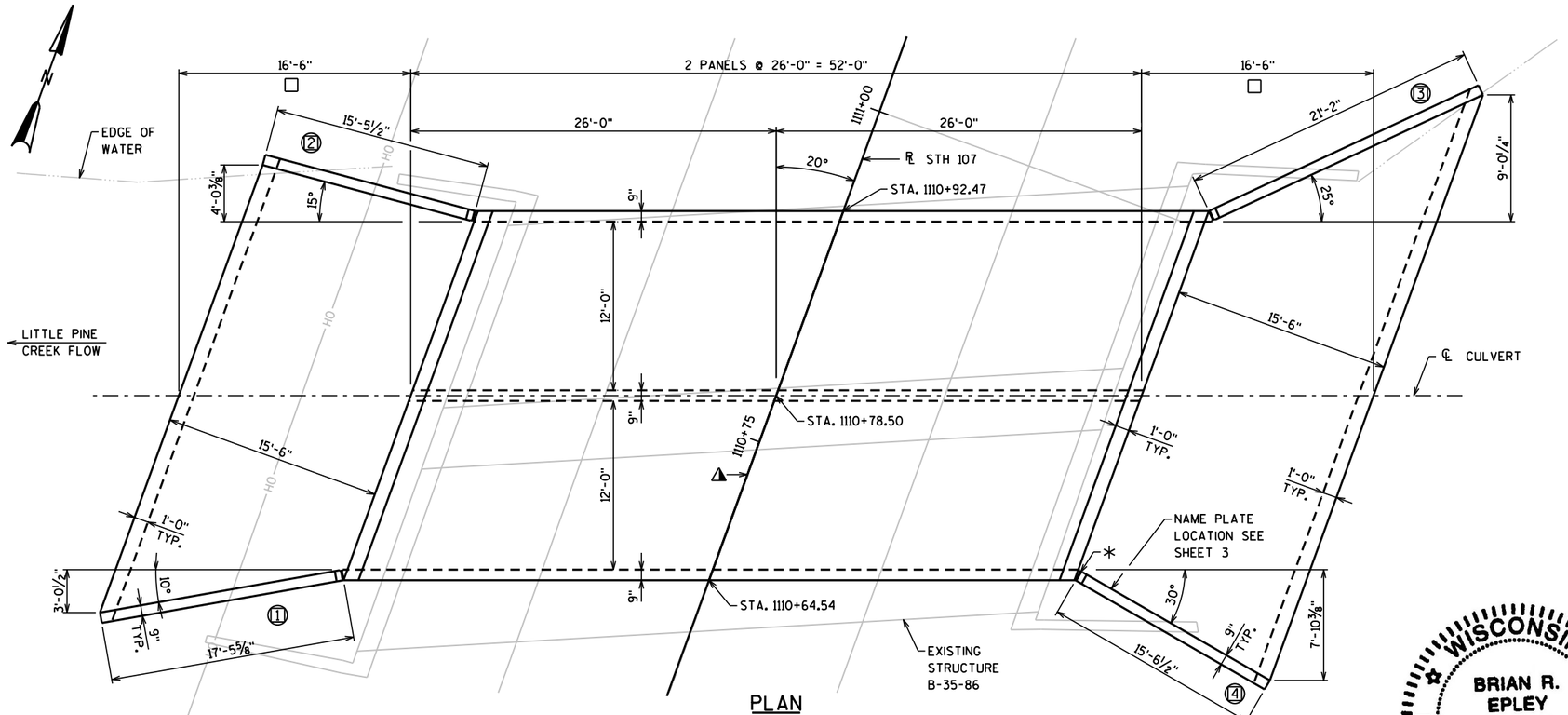
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

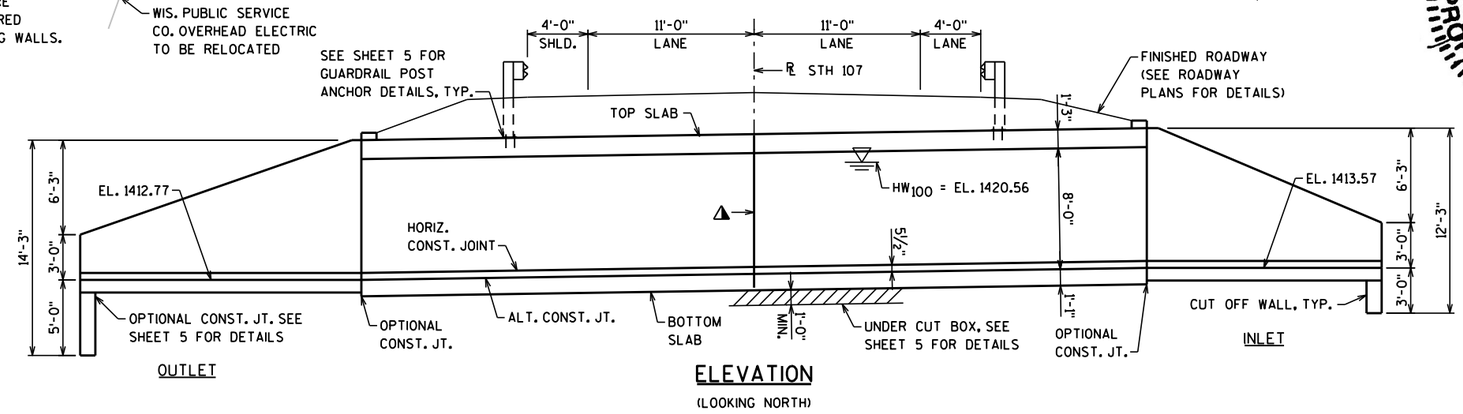
DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 65 | E

STATE PROJECT NUMBER
9305-09-73



PLAN



ELEVATION

(LOOKING NORTH)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE CONCRETE IN THE CUT OFF WALL MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

THE UPPER LIMITS OF THE "EXCAVATION FOR STRUCTURES CULVERTS B-35-53" SHALL BE THE EXISTING GROUND LINE.

WITHIN THE LENGTH OF THE BOX ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE B TO THE ELEVATION AND SECTION EXISTING PRIOR TO EXCAVATION WITHIN THE LENGTH OF THE CULVERT.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

DETAILS SHOWN FOR POSTS, PLATES, ANCHORAGE SYSTEM AND INSTALLATION, BLOCKS, AND GUARD RAIL ARE NOT PART OF THE STRUCTURE CONTRACT BUT ARE BID PER THE ROADWAY DESIGN PLANS.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS IN CHAPTER 36 STANDARDS OF THE CURRENT WISCONSIN DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

WISCONSIN
BRIAN R. EPLEY E-42388 APPLETON WI
PROFESSIONAL ENGINEER

8/31/2021

LEGEND

- ⓧ INDICATES WING NUMBER
- ✳ SEE CORNER DETAILS SHT. 5, TYP.
- ◭ VERTICAL CONSTRUCTION JOINT (TYP.); 18" RMW UP WALLS & ACROSS TOP SLAB
- ☐ BUILD APRON AND END OF BOX LEVEL

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
203.0220	REMOVING STRUCTURE B-35-86	EA	1
206.2000	EXCAVATION FOR STRUCTURES CULVERTS B-35-53	LS	1
206.5000	COFFERDAMS B-35-53	LS	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	2,040
504.0100	CONCRETE MASONRY CULVERTS	CY	207
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	22,500
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,930
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	40
645.0105	GEOTEXTILE TYPE C	SY	344
	NON-BID ITEMS		
	FILLER	SIZE	¾"

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} ——— 500 C.F.S.
VELOCITY ——— 3.68 F.P.S.
HIGH WATER ——— EL. 1420.56 (100 YEAR)
WATERWAY AREA ——— 136 S.F.
DRAINAGE AREA ——— 33.92 SQ. MILES
OVERTOPPING FREQUENCY = 100 YEAR
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q_2 ——— 203 C.F.S.
HIGH WATER ——— EL. 1419.14 (2 YEAR)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING ——— HL-93
INVENTORY RATING FACTOR ——— RF = 1.26
OPERATING RATING FACTOR ——— RF = 1.45
WISCONSIN STANDARD
PERMIT VEHICLE (Wis-SPV) ——— 255 KIPS

EARTH LOAD:

DESIGNED FOR 1.5 TO 3 FEET OF FILL.

MATERIAL PROPERTIES:

CONCRETE MASONRY GRADE A-FA ——— f'c = 4,000 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 ——— fy = 60,000 P.S.I.

TRAFFIC DATA

ADT = 230 (2023)
230 (2043)
RDS = 60 M.P.H.

LIST OF DRAWINGS

1. LAYOUT
2. BOX DETAILS
3. INLET APRON
4. OUTLET APRON
5. DETAILS
6. SUBSURFACE EXPLORATION

CONSULTANT CONTACT

BRIAN EPLEY
WESTWOOD
(920) 735-6900

BRIDGE OFFICE CONTACT

AARON BONK
(608) 261-0261

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

Westwood

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 11/22/21
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-35-53

STH 107 OVER LITTLE PINE CREEK

COUNTY	TOWN
LINCOLN	BRADLEY

DESIGN SPEC.	LOAD
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS	HL-93

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
BRE	KRO	BRE	KRO

LAYOUT

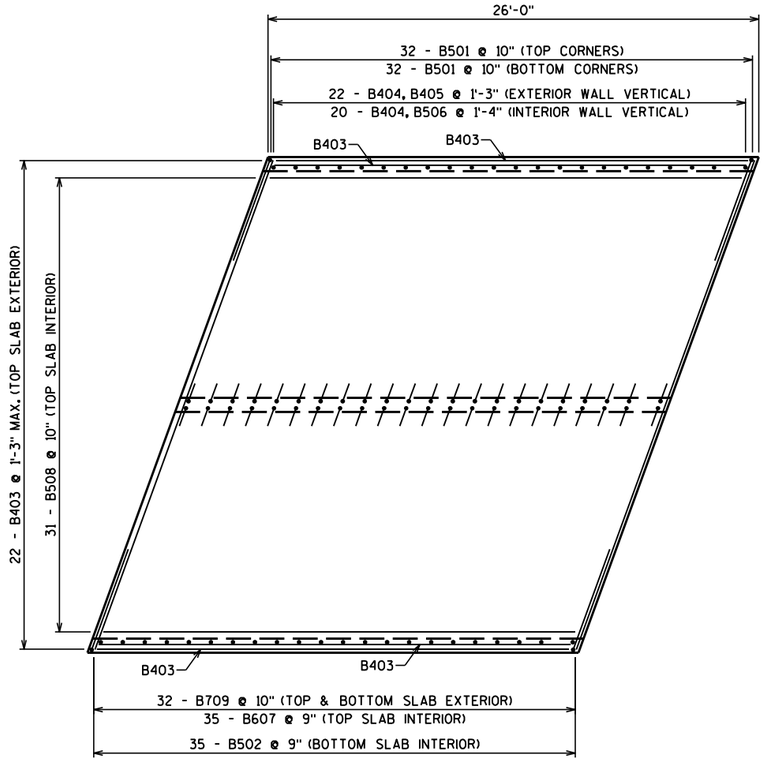
SHEET 1 OF 6

66

8

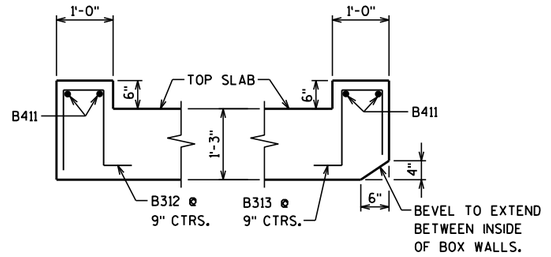
8

STATE PROJECT NUMBER
9305-09-73



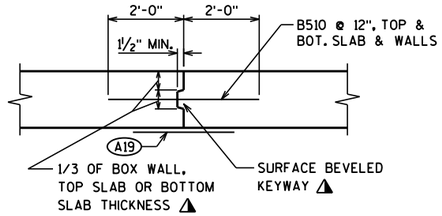
PLAN VIEW

USE IDENTICAL STEEL IN OTHER PANELS.
APRON AND HEADERS NOT SHOWN FOR CLARITY.

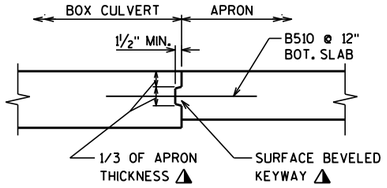


SECTION THRU HEADER AT OUTLET

SECTION THRU HEADER AT INLET



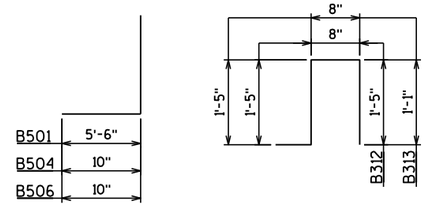
VERTICAL CONSTRUCTION JOINT



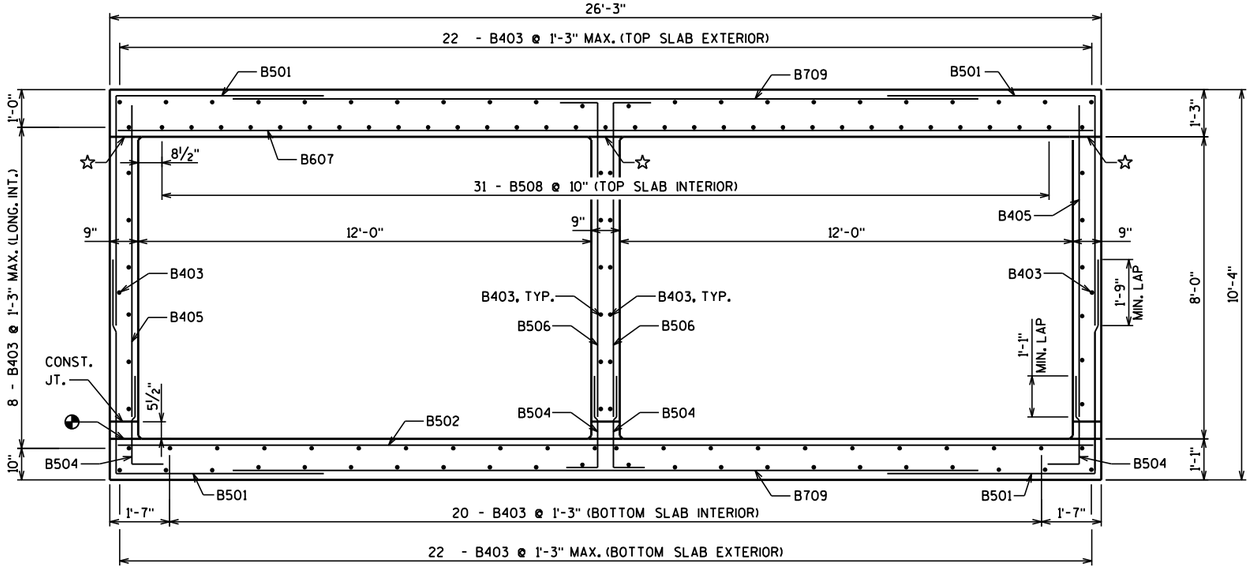
APRON CONNECTION DETAIL

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B501		256	11'-3"	X	CORNER BARS
B502		70	27'-7"		BOTTOM SLAB - TRANS. INT.
B403		188	25'-7"		LONGITUDINAL
B504		168	2'-6"	X	WALLS - VERTICAL DOWELS
B405		88	8'-3"		EXTERIOR WALLS - VERT.
B506		80	9'-0"	X	INTERIOR WALL - VERT.
B607		70	27'-7"		TOP SLAB - INT.
B508		62	25'-7"		TOP SLAB - LONG. INT.
B709		128	21'-6"		TOP & BOT. SLAB - EXT.
B510		136	4'-0"		VERT. & APRON CONST. JOINT
B411	X	4	27'-6"		HEADERS HORIZ.
B312	X	38	3'-9"	X	HEADER STIRRUPS VERT. OUTLET
B313	X	38	3'-5"	X	HEADER STIRRUPS VERT. INLET



BAR BENDING DIAGRAM



TYPICAL SECTION THROUGH BOX

NOTES

(A19) PLACE AN 18" (MIN.) WIDE SHEET OF "RUBBERIZED MEMBRANE WATERPROOFING" ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.

☆ OPTIONAL CONST. JOINT. OMIT 1" FILLET IF OPTIONAL CONST. JOINT IS USED.

⚠ IN LIEU OF CONSTRUCTION JOINTS IN THE BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAW CUTS WITHIN 12 HOURS AFTER POURING. #5 BARS 4'-0" AT 1'-0" CENTERS REQUIRED.

◕ ALTERNATE CONST. JOINT. OMIT 1" FILLET IF ALTERNATE CONST. JOINT IS USED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-35-53

DRAWN BY BRE | PLANS CK'D. KRO

BOX DETAILS

SHEET 2 OF 6

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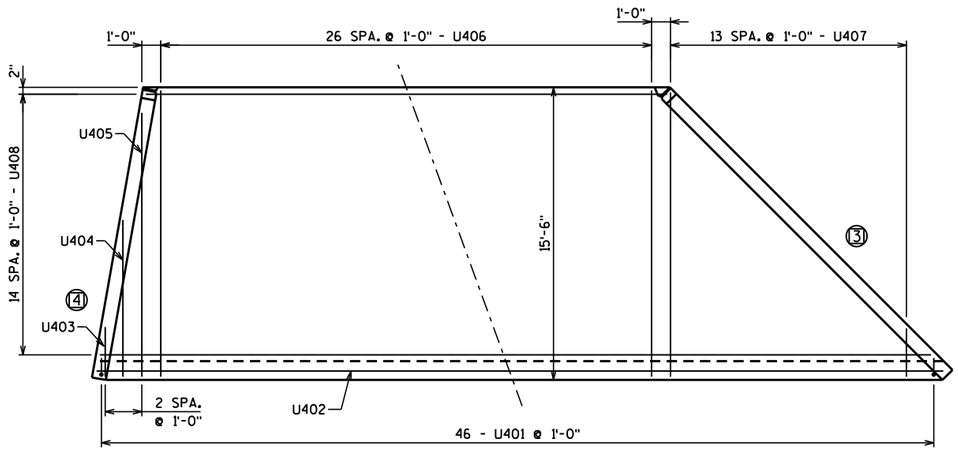
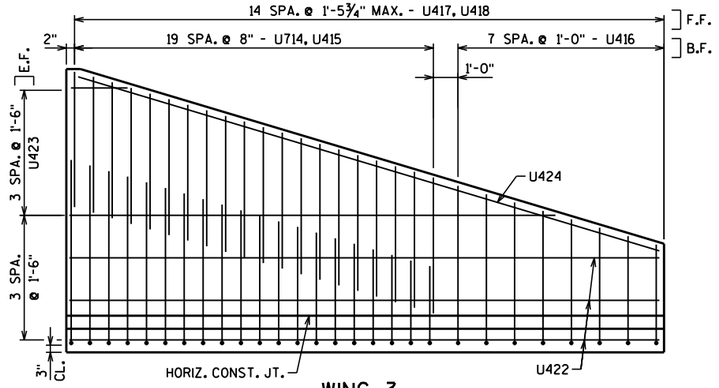
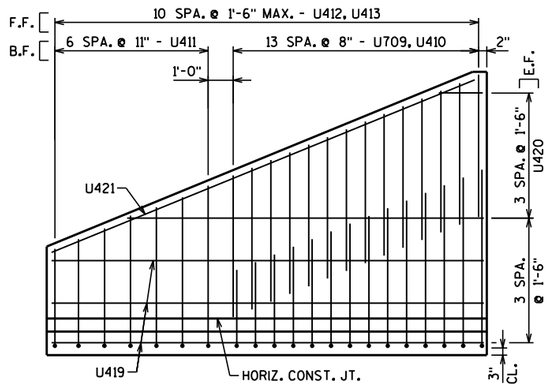


APRON REINFORCING



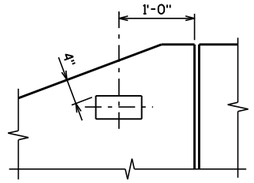
WING 3

SHOWING BACK FACE REINFORCEMENT

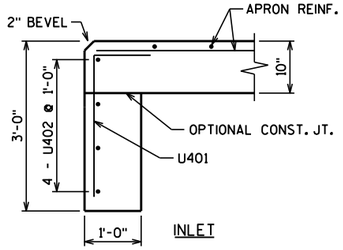


WING 4

SHOWING BACK FACE REINFORCEMENT

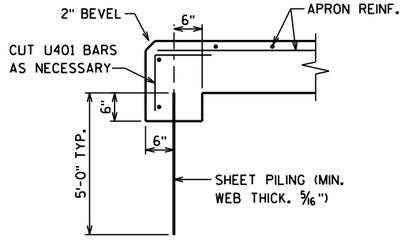


NAME PLATE LOCATION WING 4



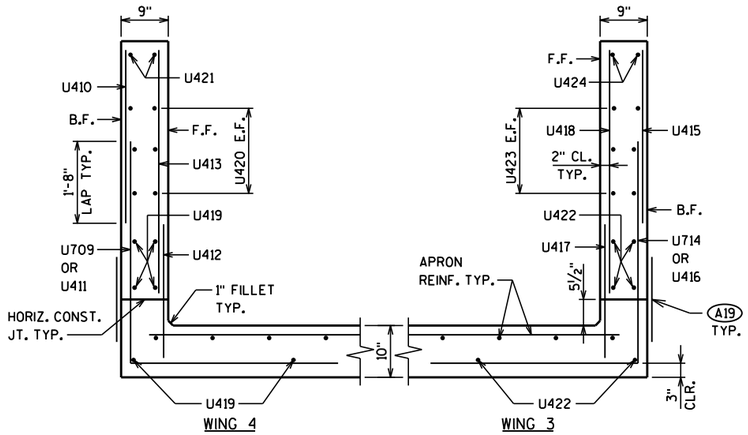
SECTION THRU CUT-OFF WALL

NORMAL TO WALL



ALTERNATE CUT-OFF WALLS

THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.



SECTION THRU WINGS

NORMAL TO WING WALLS

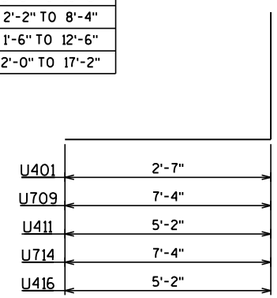
(A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH.

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	SERIES	BENT	LOCATION
U401		46	3'-6"		X	APRON & CUTOFF WALL VERT.
U402		4	44'-10"			APRON & CUTOFF WALL HORIZ.
U403		1	2'-7"			APRON SLAB HORIZ.
U404		1	8'-3"			APRON SLAB HORIZ.
U405		1	13'-11"			APRON SLAB HORIZ.
U406		27	15'-2"			APRON SLAB HORIZ.
U407		14	8'-6"	X		APRON SLAB HORIZ.
U408		15	35'-11"	X		APRON SLAB HORIZ.
U709	X	14	11'-8"	X	X	WING 4 VERT. BACK FACE
U410	X	14	5'-1"			WING 4 VERT. BACK FACE
U411	X	7	9'-9"	X	X	WING 4 VERT. BACK FACE
U412	X	11	2'-11"			WING 4 VERT. DOWEL
U413	X	11	5'-4"	X		WING 4 VERT. FRONT FACE
U714	X	20	11'-7"	X	X	WING 3 VERT. BACK FACE
U415	X	20	4'-9"			WING 3 VERT. BACK FACE
U416	X	8	9'-8"	X	X	WING 3 VERT. BACK FACE
U417	X	15	2'-11"			WING 3 VERT. DOWEL
U418	X	15	5'-3"	X		WING 3 VERT. FRONT FACE
U419	X	6	15'-1"			WING 4 HORIZ.
U420	X	8	7'-0"	X		WING 4 HORIZ.
U421	X	2	16'-4"			WING 4 HORIZ. TOP
U422	X	6	20'-9"			WING 3 HORIZ.
U423	X	8	9'-7"	X		WING 3 HORIZ.
U424	X	2	21'-6"			WING 3 HORIZ. TOP

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
U407	1 SERIES OF 14	2'-0" TO 15'-0"
U408	1 SERIES OF 15	27'-8" TO 44'-2"
U709	1 SERIES OF 14	9'-11" TO 13'-5"
U411	1 SERIES OF 7	8'-7" TO 10'-11"
U413	1 SERIES OF 11	2'-4" TO 8'-4"
U714	1 SERIES OF 20	9'-9" TO 13'-5"
U416	1 SERIES OF 8	8'-8" TO 10'-8"
U418	1 SERIES OF 15	2'-2" TO 8'-4"
U420	2 SERIES OF 4	1'-6" TO 12'-6"
U423	2 SERIES OF 4	2'-0" TO 17'-2"



BAR BENDS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STATE PROJECT NUMBER
9305-09-73

STRUCTURE B-35-53

DRAWN BY BRE | PLANS CK'D. KRO

INLET APRON

SHEET 3 OF 6

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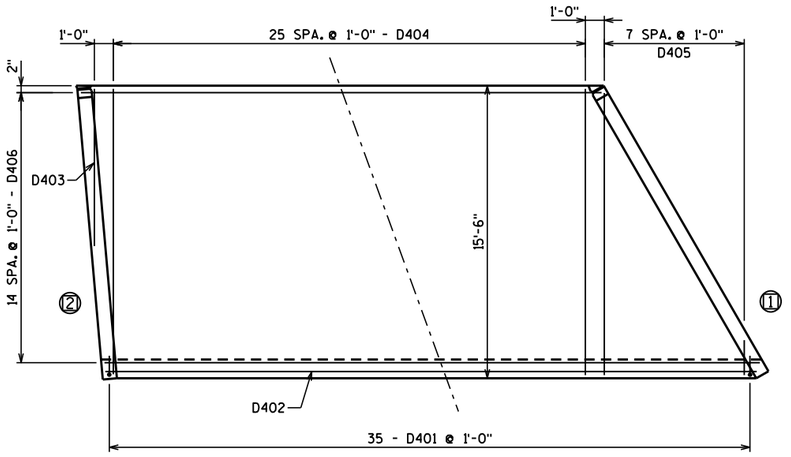
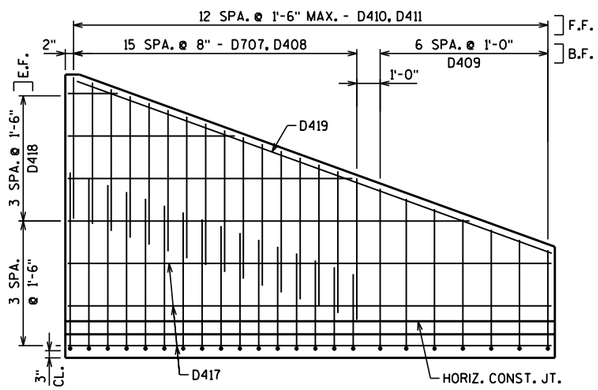
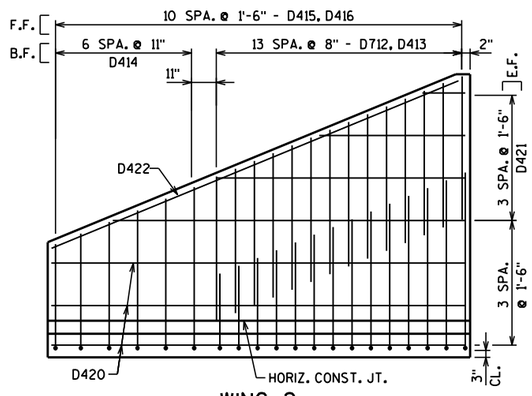


APRON REINFORCING



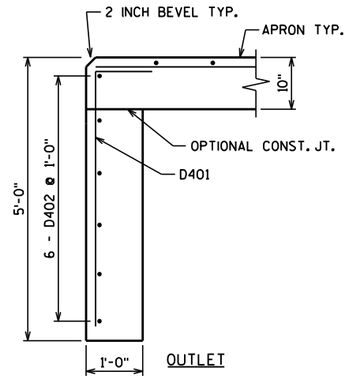
WING 1

SHOWING BACK FACE REINFORCEMENT



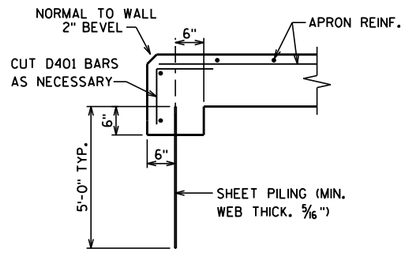
WING 2

SHOWING BACK FACE REINFORCEMENT



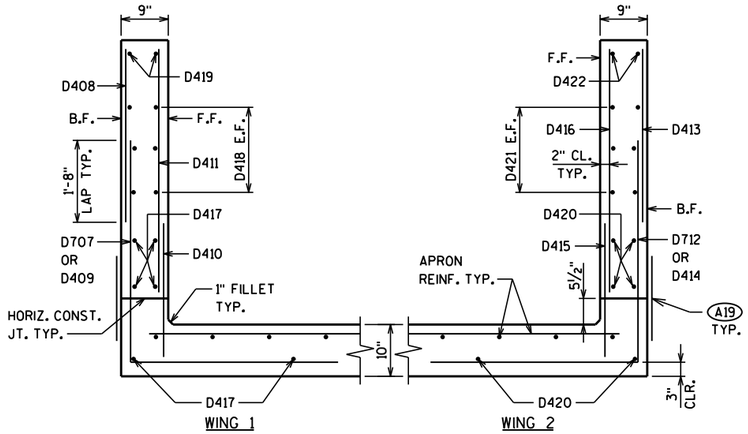
SECTION THRU CUT-OFF WALL

NORMAL TO WALL



ALTERNATE CUT-OFF WALLS

THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.



SECTION THRU WINGS

NORMAL TO WING WALLS

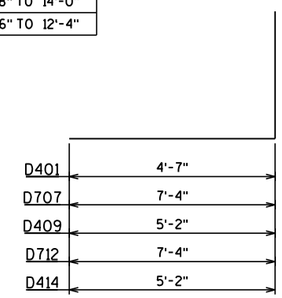
(A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH.

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	SERIES	BENT	LOCATION
D401		36	5'-6"		X	APRON & CUTOFF WALL VERT.
D402		6	34'-7"			APRON & CUTOFF WALL HORIZ.
D403		1	8'-4"			APRON SLAB HORIZ.
D404		26	15'-2"			APRON SLAB HORIZ.
D405		8	8'-10"	X		APRON SLAB HORIZ.
D406		15	31'-0"	X		APRON SLAB HORIZ.
D707	X	16	11'-8"	X	X	WING 1 VERT. BACK FACE
D408	X	16	5'-0"			WING 1 VERT. BACK FACE
D409	X	7	9'-8"	X	X	WING 1 VERT. BACK FACE
D410	X	21	2'-11"			WING 1 VERT. DOWEL
D411	X	13	5'-4"	X		WING 1 VERT. FRONT FACE
D712	X	14	11'-8"	X	X	WING 2 VERT. BACK FACE
D413	X	14	5'-1"			WING 2 VERT. BACK FACE
D414	X	7	9'-8"	X	X	WING 2 VERT. BACK FACE
D415	X	11	2'-11"			WING 2 VERT. DOWEL
D416	X	11	5'-4"	X		WING 2 VERT. FRONT FACE
D417	X	6	17'-1"			WING 1 HORIZ.
D418	X	8	7'-10"	X		WING 1 HORIZ.
D419	X	2	17'-11"			WING 1 HORIZ. TOP
D420	X	6	15'-0"			WING 2 HORIZ.
D421	X	8	6'-11"	X		WING 2 HORIZ.
D422	X	2	16'-0"			WING 2 HORIZ. TOP

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
D405	1 SERIES OF 8	2'-9" TO 14'-11"
D406	1 SERIES OF 15	27'-7" TO 34'-5"
D707	1 SERIES OF 16	9'-10" TO 13'-6"
D409	1 SERIES OF 7	8'-7" TO 10'-9"
D411	1 SERIES OF 13	2'-4" TO 8'-4"
D712	1 SERIES OF 14	9'-10" TO 13'-6"
D414	1 SERIES OF 7	8'-7" TO 10'-9"
D416	1 SERIES OF 11	2'-4" TO 8'-4"
D418	2 SERIES OF 4	1'-8" TO 14'-0"
D421	2 SERIES OF 4	1'-6" TO 12'-4"



BAR BENDS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STATE PROJECT NUMBER
9305-09-73

STRUCTURE B-35-53

DRAWN BY BRE | PLANS CK'D. KRO

OUTLET APRON

SHEET 4 OF 6

8

8

FILE NAME : F:±TR±JOBS±E2371A19±Sheets±B-35-53±B-35-53 04 outlet.dgn
PLOT BY : BREpley PLOT DATE: 8/30/2021 10:57:52 AM

STATE PROJECT NUMBER
9305-09-73

NOTES

DETAILS SHOWN FOR POSTS, PLATES, ANCHORAGE SYSTEM AND INSTALLATION, BLOCKS, AND GUARD RAIL ARE NOT PART OF THE STRUCTURE CONTRACT BUT ARE BID PER THE ROADWAY DESIGN PLANS.

POST BASE PLATES (AND BOTTOM PLATES IF USED) SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

CUT BOTTOM OF POST SO THAT POST WILL BE VERTICAL WHEN POST ASSEMBLY IS PLACED ON TOP OF THE CULVERT. ALONG THE ROADWAY THE POST WILL BE NORMAL TO GRADE LINE. HEX BOLTS AND THREADED RODS ARE TO BE PLACED PERPENDICULAR TO THE BASE PLATE.

POST, BASE PLATE (AND BOTTOM PLATE IF USED), AND SHIMS SHALL BE GALVANIZED AFTER FABRICATION.

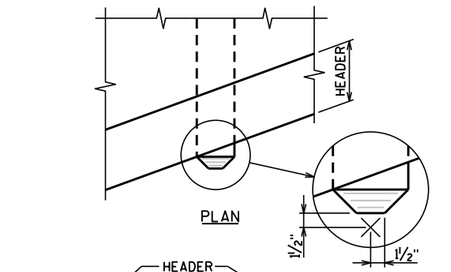
PRIOR TO GALVANIZING, ALL STEEL POSTS AND PLATES SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY SSPC SPECS.

ALL MATERIAL USED IN POSTS AND PLATES SHALL BE MADE FROM MATERIAL CONFORMING TO ASTM DESIGNATION A709 GRADE 50 OR 50S.

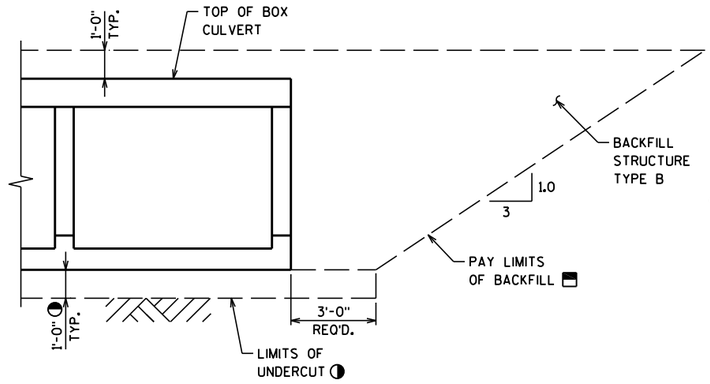
HEX BOLTS, THREADED RODS, HEX NUTS, AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1554 GRADE 36 AND SHALL BE GALVANIZED. RODS ARE TO BE FULLY THREADED AND BOLTS TO BE THREADED 3". CHAMFER TOP OF BOLTS AND RODS BEFORE THREADING.

ADHESIVE ANCHORS 1-INCH, EMBED IN CONCRETE AS DETAILED. CHARACTERISTIC BOND STRENGTH SHALL MEET OR EXCEED 1305 PSI FOR UNCRACKED CONCRETE.

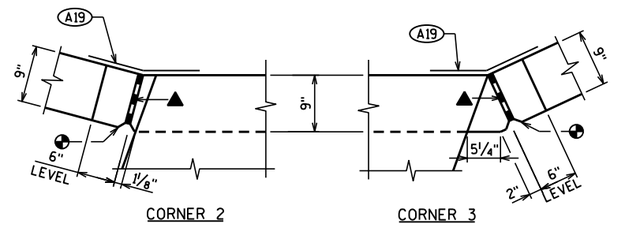
STEEL SHIMS MAY BE USED BETWEEN PLATES AND SLAB WHERE REQUIRED FOR ALIGNMENT.

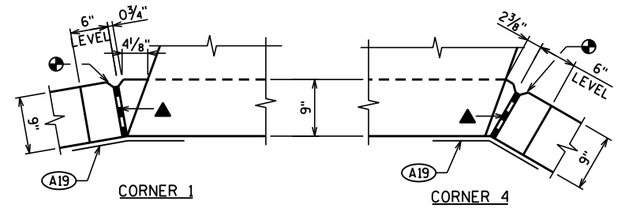


INLET NOSE DETAILS



PARTIAL SECTION THRU BOX CULVERT





CORNER DETAILS

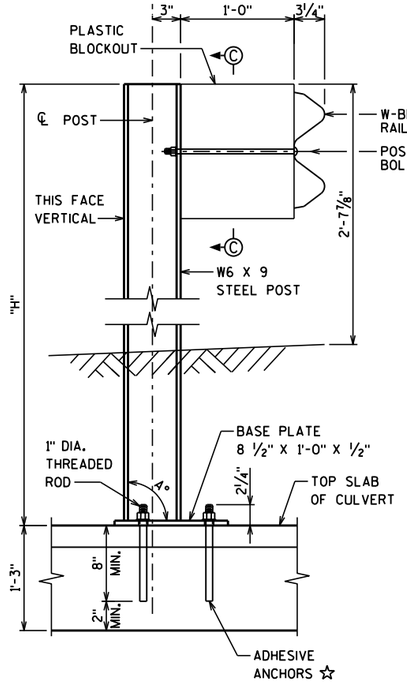
LEGEND

- ▲ ¾" FILLER TYPICAL. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.
- ⊕ 1" BEVEL TYPICAL
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. FROM HORIZ. CONST. JT. TO TOP OF WALL (FLUSH WITH FACE OF CONCRETE)
- ▬ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ◑ UNDER CUT BOX AND APRONS 1'-0" (INCLUDED IN EXCAVATION FOR STRUCTURES), PLACE GEOTEXTILE FABRIC TYPE 'C', AND BACKFILL WITH STRUCTURE BACKFILL TYPE B. EXTEND 3'-0" BEYOND THE FOOTPRINT OF THE CULVERT.
- ☆ ADHESIVE ANCHORS 1-INCH. EMBED IN CONCRETE AS DETAILED. CHARACTERISTIC BOND STRENGTH SHALL MEET OR EXCEED 1305 PSI FOR UNCRACKED CONCRETE.

GUARDRAIL POST LOCATIONS

STATION & OFFSET MEASURED TO CENTER OF POST

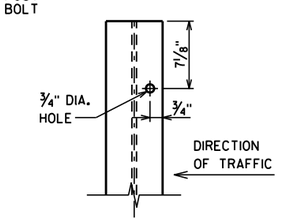
STATION	OFFSET	PLACEMENT	POST HEIGHT "H"	FINISHED GRADE	TOP OF POST	TOP OF SLAB
1110+68.10	16.52	DRIVEN	-----	-----	-----	-----
1110+71.23	16.52	ANCHORED	4.79	1424.84	1427.50	1422.67
1110+74.35	16.52	ANCHORED	4.79	1424.84	1427.50	1422.67
1110+77.48	16.52	ANCHORED	4.78	1424.84	1427.50	1422.67
1110+80.60	16.52	ANCHORED	4.78	1424.84	1427.49	1422.67
1110+83.73	16.52	ANCHORED	4.78	1424.84	1427.49	1422.67
1110+86.85	16.52	ANCHORED	4.78	1424.83	1427.49	1422.67
1110+89.98	16.52	ANCHORED	4.77	1424.83	1427.49	1422.67
1110+93.10	16.52	ANCHORED	4.77	1424.83	1427.48	1422.67
1110+96.23	16.52	ANCHORED	4.77	1424.83	1427.49	1422.67
1110+99.35	16.52	DRIVEN	-----	-----	-----	-----
1110+57.65	-16.52	DRIVEN	-----	-----	-----	-----
1110+60.78	-16.52	ANCHORED	5.29	1424.85	1427.51	1422.17
1110+63.90	-16.52	ANCHORED	5.29	1424.85	1427.50	1422.17
1110+67.03	-16.52	ANCHORED	5.29	1424.85	1427.50	1422.17
1110+70.15	-16.52	ANCHORED	5.29	1424.84	1427.50	1422.17
1110+73.28	-16.52	ANCHORED	5.29	1424.84	1427.50	1422.17
1110+76.40	-16.52	ANCHORED	5.29	1424.84	1427.50	1422.17
1110+79.53	-16.52	ANCHORED	5.28	1424.84	1427.50	1422.17
1110+82.65	-16.52	ANCHORED	5.28	1424.84	1427.49	1422.17
1110+85.78	-16.52	ANCHORED	5.28	1424.84	1427.49	1422.17
1110+88.90	-16.52	DRIVEN	-----	-----	-----	-----



ANCHOR POST ASSEMBLY TOP MOUNT

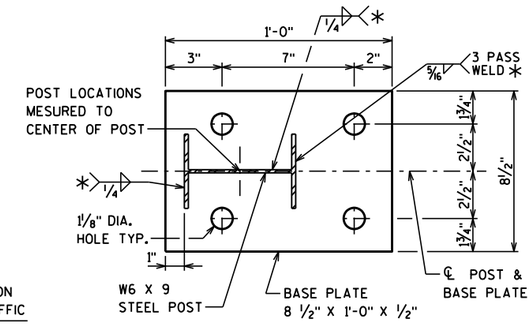
(SECTION THRU POST)

WEST POSTS A° = 89°07'
EAST POSTS A° = 90°53'



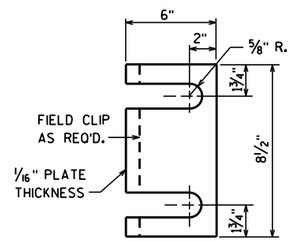
SECTION C-C

HOLE IN POST FLANGE ON APPROACHING TRAFFIC SIDE



POST & BASE PLATE

✱ WELDING IS TO BE COMPLETED USING THE GAS-METAL ARC WELDING (GMAW) PROCESS WITH ER70S-3 WELDING WIRE AND ARGON-OXYGEN OR CO2 COVER GAS.



STEEL SHIM DETAIL

(4 PER POST)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-35-53

DRAWN BY BRE | PLANS CK'D. KRO

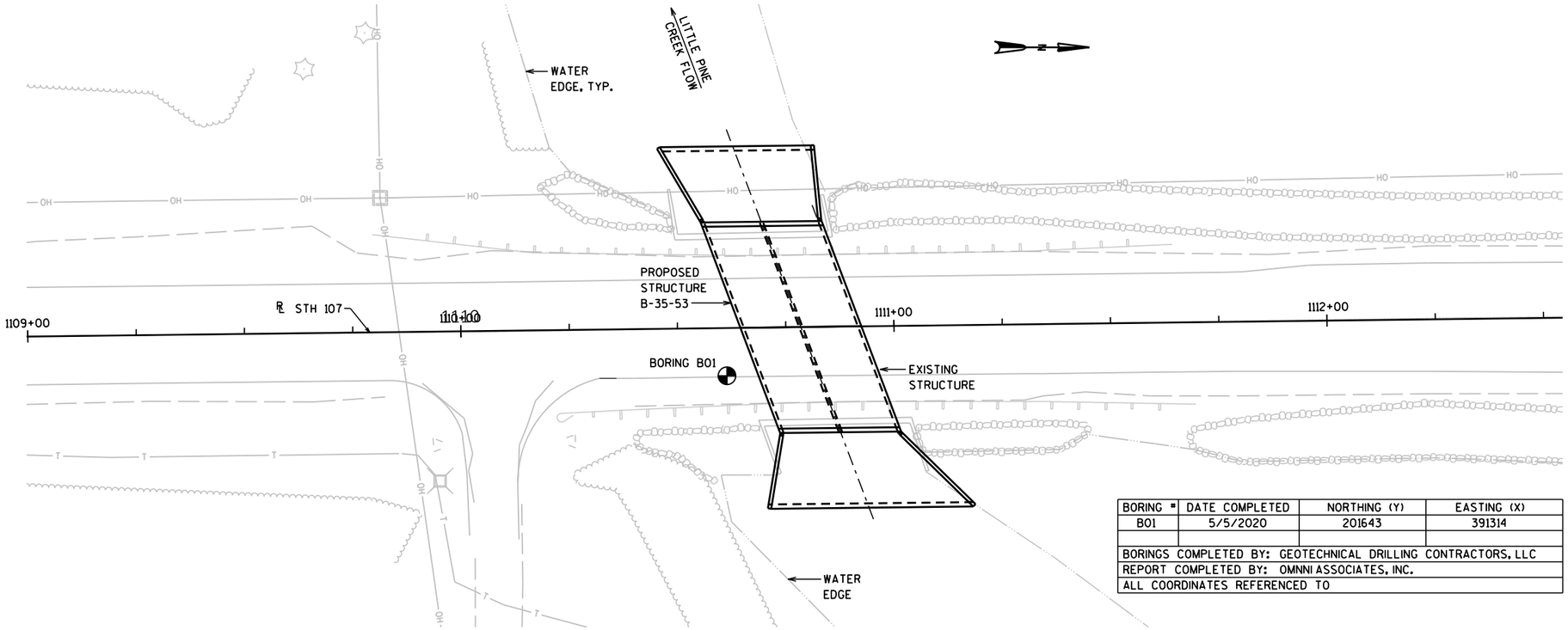
DETAILS

SHEET 5 OF 6

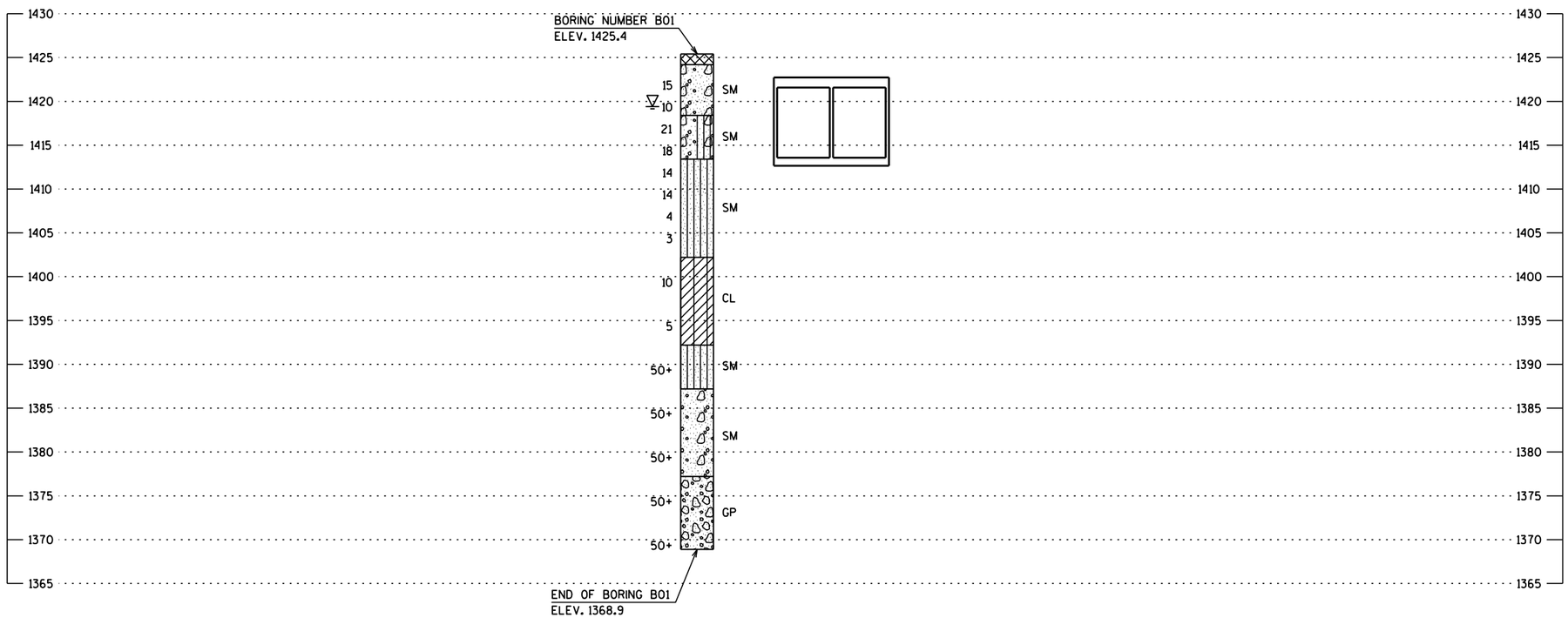
8

8

FILE NAME : F:±TR±JOBS±E2371A19±Sheets±B-35-53±B-35-53 05 details.dgn PLOT BY : KROlson PLOT DATE: 8/30/2021 3:32:09 PM



BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B01	5/5/2020	201643	391314
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC			
REPORT COMPLETED BY: OMNNI ASSOCIATES, INC.			
ALL COORDINATES REFERENCED TO			



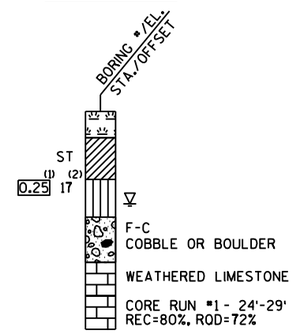
STATE PROJECT NUMBER

9305-09-73

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

STRUCTURE B-35-53

DRAWN BY BRE | PLANS CK'D. KRO

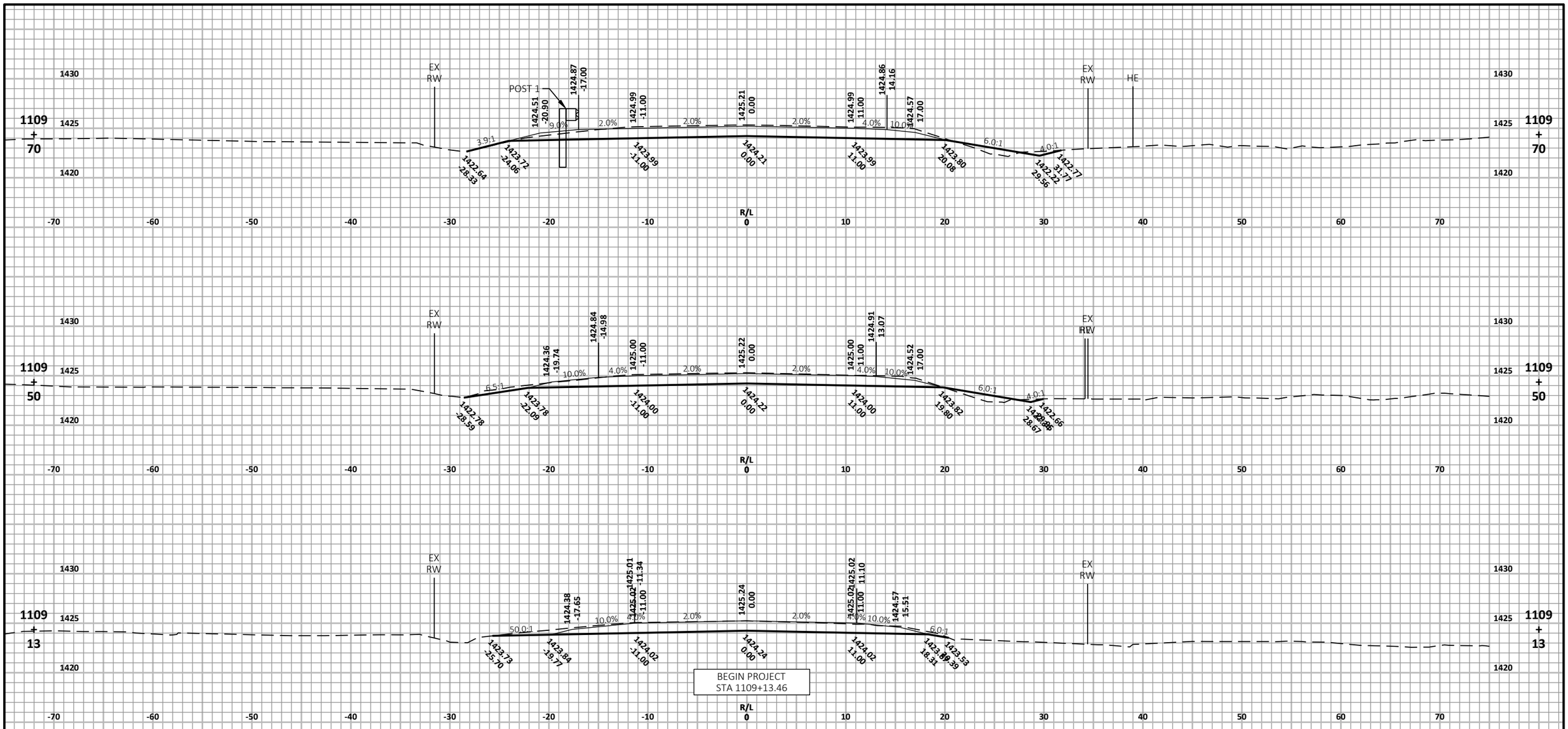
SUBSURFACE EXPLORATION

SHEET 6 OF 6

FILE NAME : F:±TR±JOBS±E2371A19±Sheets±B-35-53±B-35-53 06 sub explr.dgn PLOT BY : BREpley PLOT DATE: 8/19/2021 8:02:24 AM

EARTHWORK - STH 107 B-35-0053

STATION	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
	CUT	FILL	CUT NOTE 1	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.00	MASS ORDINATE NOTE 8
1109+00	0.00	0.00	0	0	0	0	0
1109+13.42	35.84	0.00	9	0	9	0	9
1109+50	41.54	2.79	52	2	61	2	59
1109+70.19	43.88	2.52	32	2	93	4	89
1109+95.17	47.47	2.90	42	3	136	6	129
1110+07.17	50.87	0.00	22	1	157	7	150
1110+20.15	56.01	0.00	26	0	183	7	176
1110+50	53.44	51.42	61	28	244	35	208
1110+78.5	56.82	34.51	58	45	302	81	221
1111+00	52.35	21.79	43	22	345	103	242
1111+26.4	49.62	2.60	50	12	395	115	280
1111+37.94	47.43	1.41	21	1	416	116	300
1111+51.38	38.29	6.87	21	2	437	118	319
1111+61.83	34.81	14.36	14	4	451	122	329
1111+76.36	31.78	21.61	18	10	469	132	337
1111+86.81	30.86	27.49	12	10	481	141	340
1112+00	31.16	23.02	15	12	496	154	343
1112+34.56	34.49	11.12	42	22	539	176	363
1112+50	0.00	0.00	10	3	548	179	370



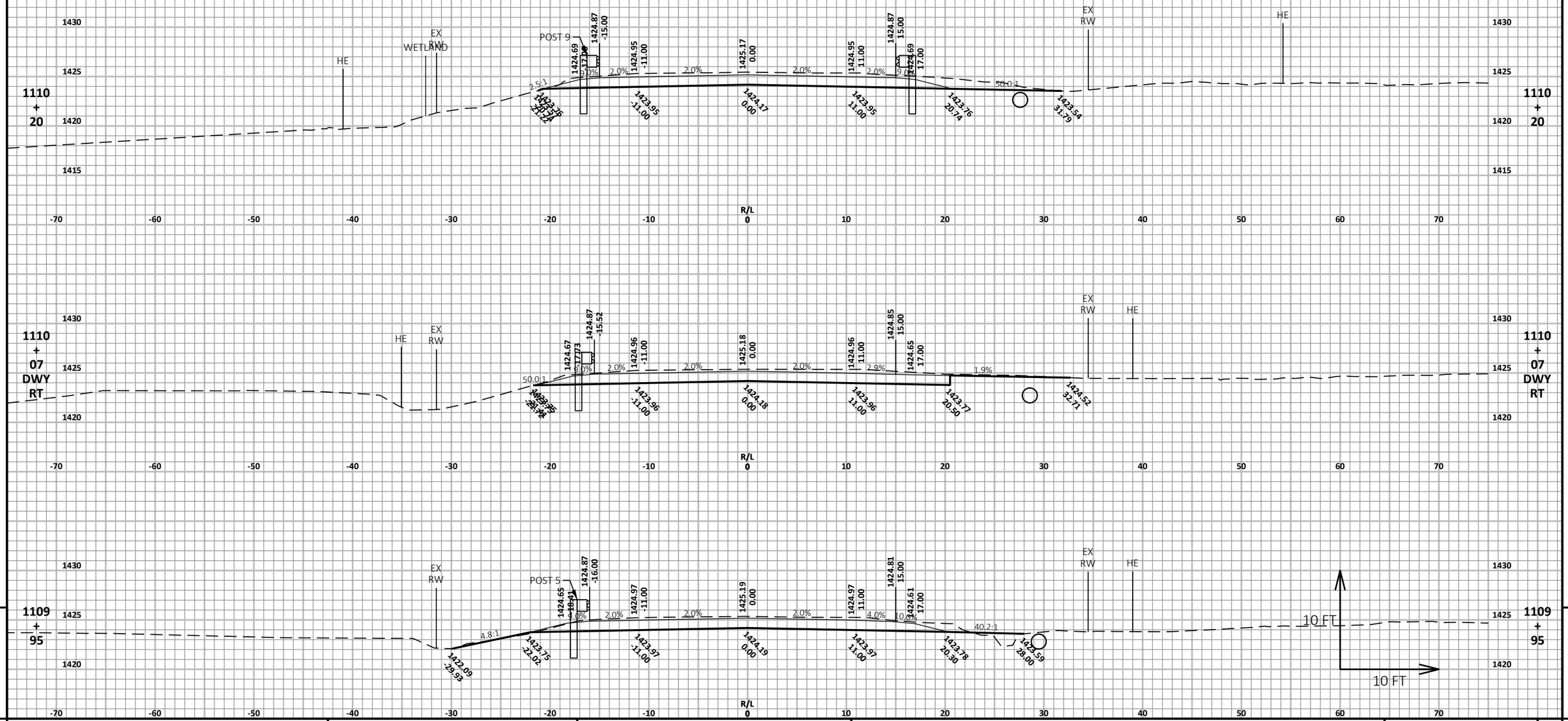
9

PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	CROSS SECTIONS: STH 107 - B-35-0053	SHEET 73	E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-090201-XS.DWG
LAYOUT NAME - 93050973-090201-xs

PLOT DATE : 8/30/2021 8:33 AM PLOT BY : MATT TOMSOVIC PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

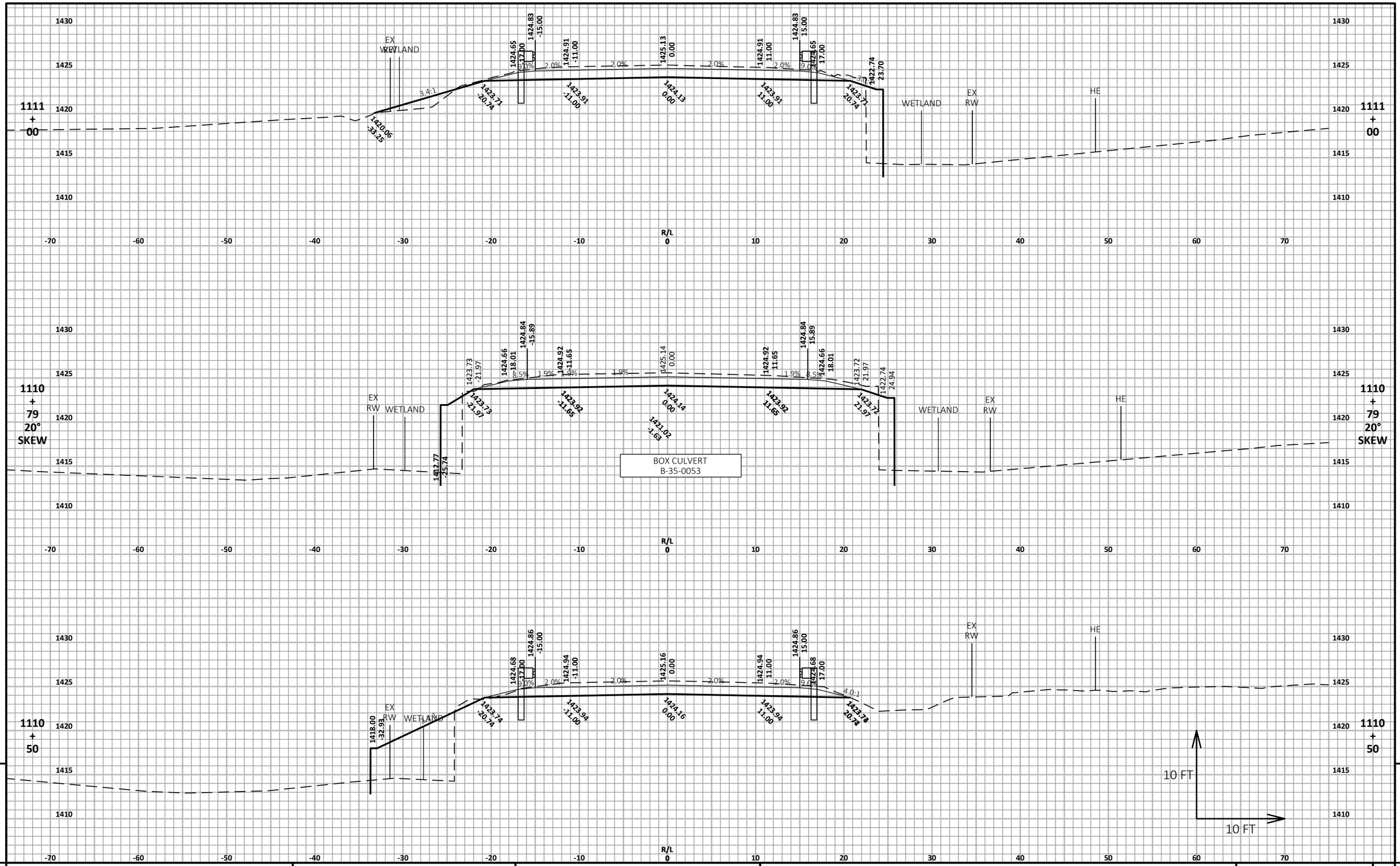
9

PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	CROSS SECTIONS: STH 107 - B-35-0053	SHEET 74	E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-090201-XS.DWG
LAYOUT NAME - 93050973-090202-xs

PLOT DATE : 8/30/2021 8:33 AM PLOT BY : MATT TOMSOVIC PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



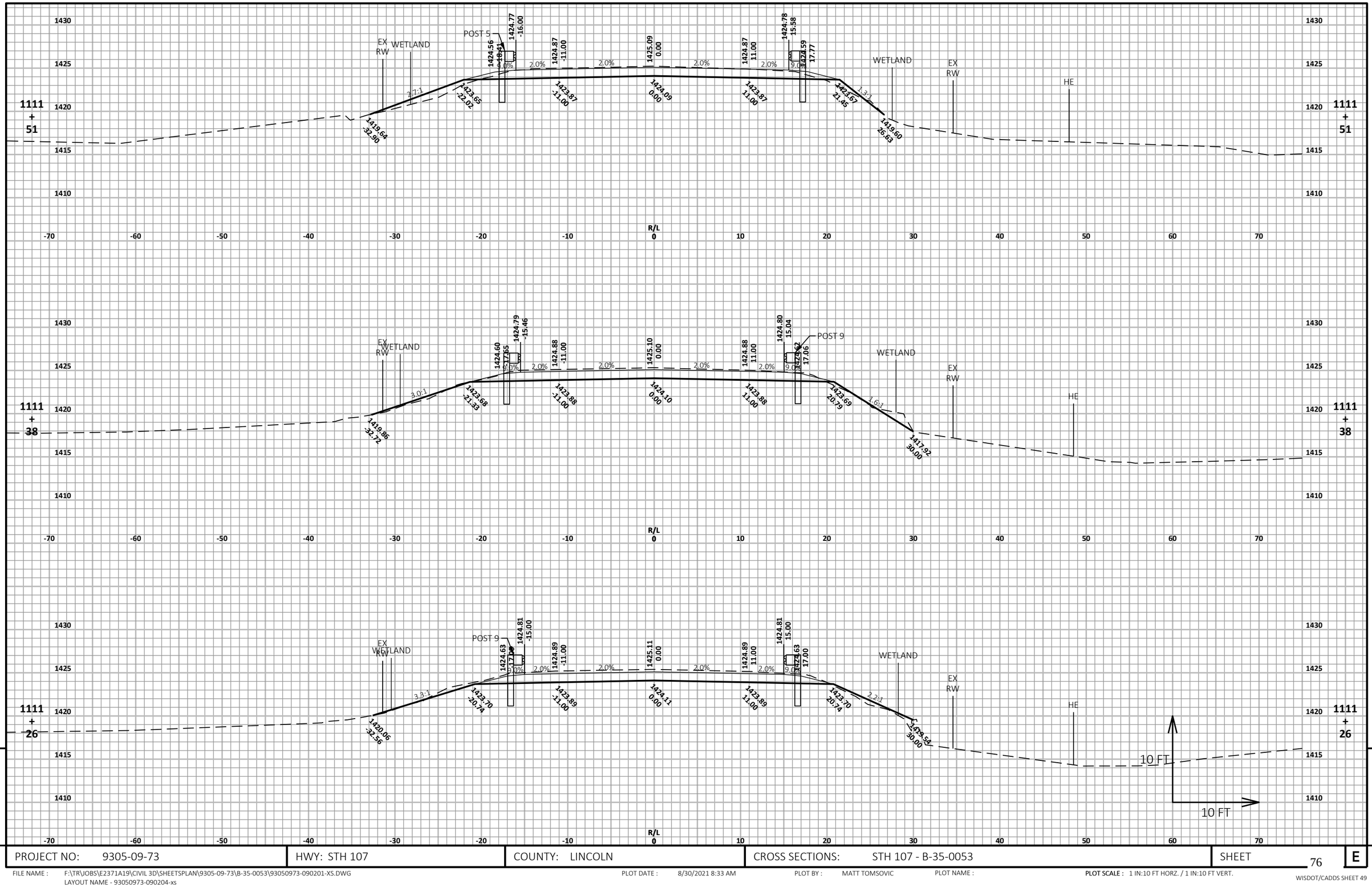
PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	CROSS SECTIONS: STH 107 - B-35-0053	SHEET 75 E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-090201-XS.DWG
LAYOUT NAME - 93050973-090203-xs

PLOT DATE : 8/30/2021 8:33 AM PLOT BY : MATT TOMSOVIC PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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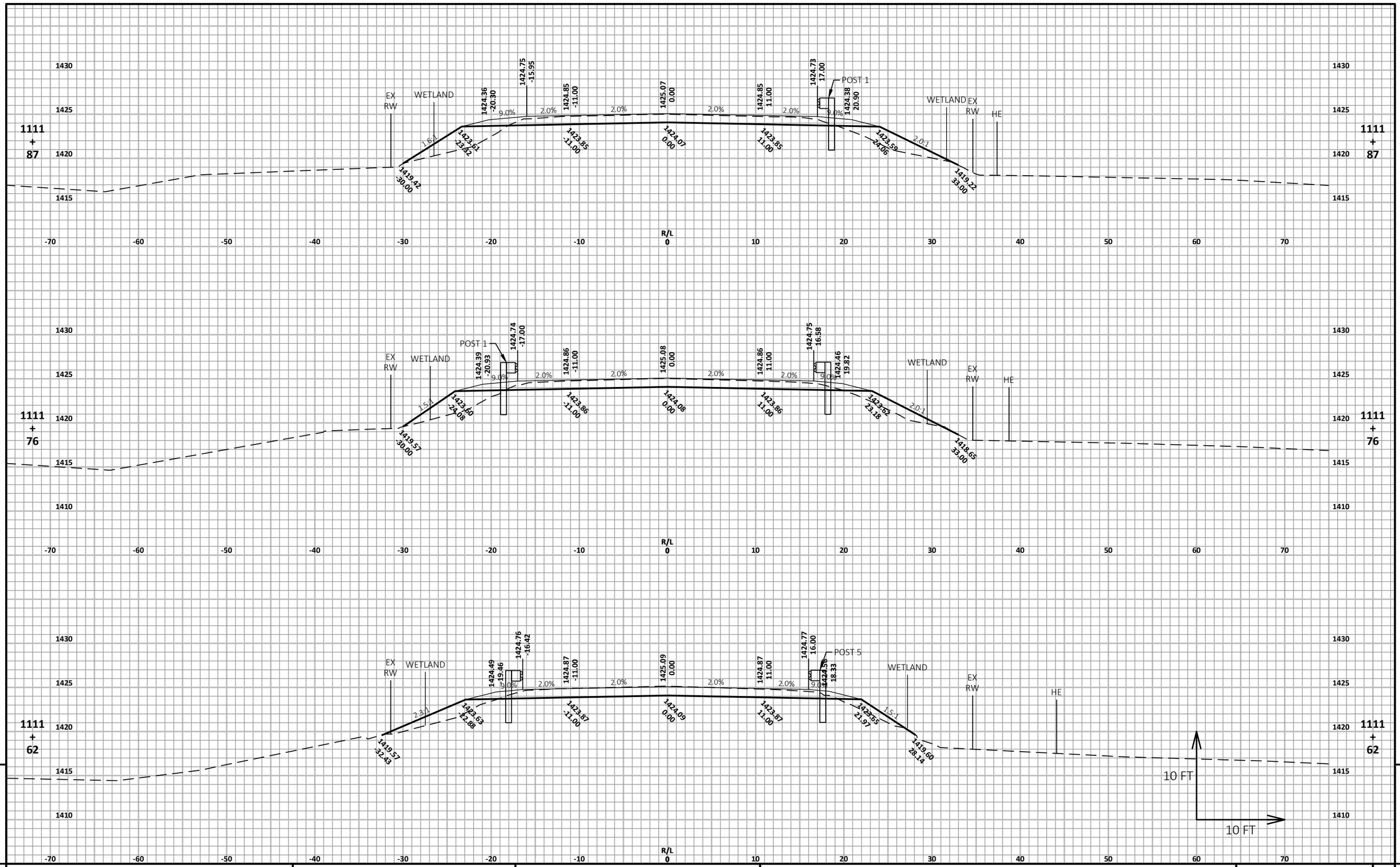
PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	CROSS SECTIONS: STH 107 - B-35-0053	SHEET 76	E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-090201-XS.DWG
LAYOUT NAME - 93050973-090204-xs

PLOT DATE : 8/30/2021 8:33 AM PLOT BY : MATT TOMSOVIC PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	CROSS SECTIONS: STH 107 - B-35-0053	SHEET 77 E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-090201-XS.DWG
LAYOUT NAME - 93050973-090205-xs

PLOT DATE : 8/30/2021 8:33 AM PLOT BY : MATT TOMSOVIC PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

END CONSTRUCTION
STA 1112+50.00

1112 + 50

EX RW
WETLAND
WETLAND
EX RW

1430 / 1425 / 1420 / 1415

-70 -60 -50 -40 -30 -20 -10 R/L 0 10 20 30 40 50 60 70

END PROJECT
STA 1112+34.56

1112 + 35

EX RW
WETLAND
1424.29 -17.43
1424.75 -12.78
1424.82 -11.00
1425.04 0.00
1424.82 11.00
1424.78 12.23
1424.26 17.34
WETLAND
EX RW
HE
1423.64 -20.00
1423.82 -11.00
1424.04 0.00
1423.82 11.00
1423.65 19.80
1419.22 -30.00
1419.15 33.00
10.0% 4.0% 2.0% 2.0% 4.0% 10.0%
2.3:1
2.9:1

1112 + 00

EX RW
WETLAND
1424.21 -19.50
1424.70 -14.64
1424.85 -11.00
1425.07 0.00
1424.85 11.00
1424.66 15.68
1424.23 19.91
WETLAND
EX RW
HE
1423.63 -21.84
1423.85 -11.00
1424.07 0.00
1423.85 11.00
1423.62 22.36
1419.03 -30.00
1419.10 33.00
10.0% 4.0% 2.0% 2.0% 4.0% 10.0%
1.8:1
2.4:1

10 FT
10 FT

9 9

PROJECT NO: 9305-09-73	HWY: STH 107	COUNTY: LINCOLN	CROSS SECTIONS: STH 107 - B-35-0053	SHEET 78	E

FILE NAME : F:\TR\JOBS\E2371A19\CIVIL 3D\SHEETSPLAN\9305-09-73\B-35-0053\93050973-090201-XS.DWG
LAYOUT NAME - 93050973-090206-xs

PLOT DATE : 8/30/2021 8:33 AM PLOT BY : MATT TOMSOVIC PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov