WIS

PROJECT ID: 1166-07-77
WITH:

COUNTY: PORTAGE

MAY 2022

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 = 152

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

PLAINFIELD - STEVENS POINT

WAUSHARA CO LINE TO BIRCH DRIVE, SB

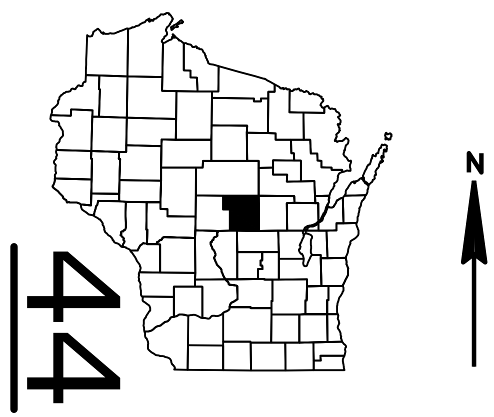
IH 39

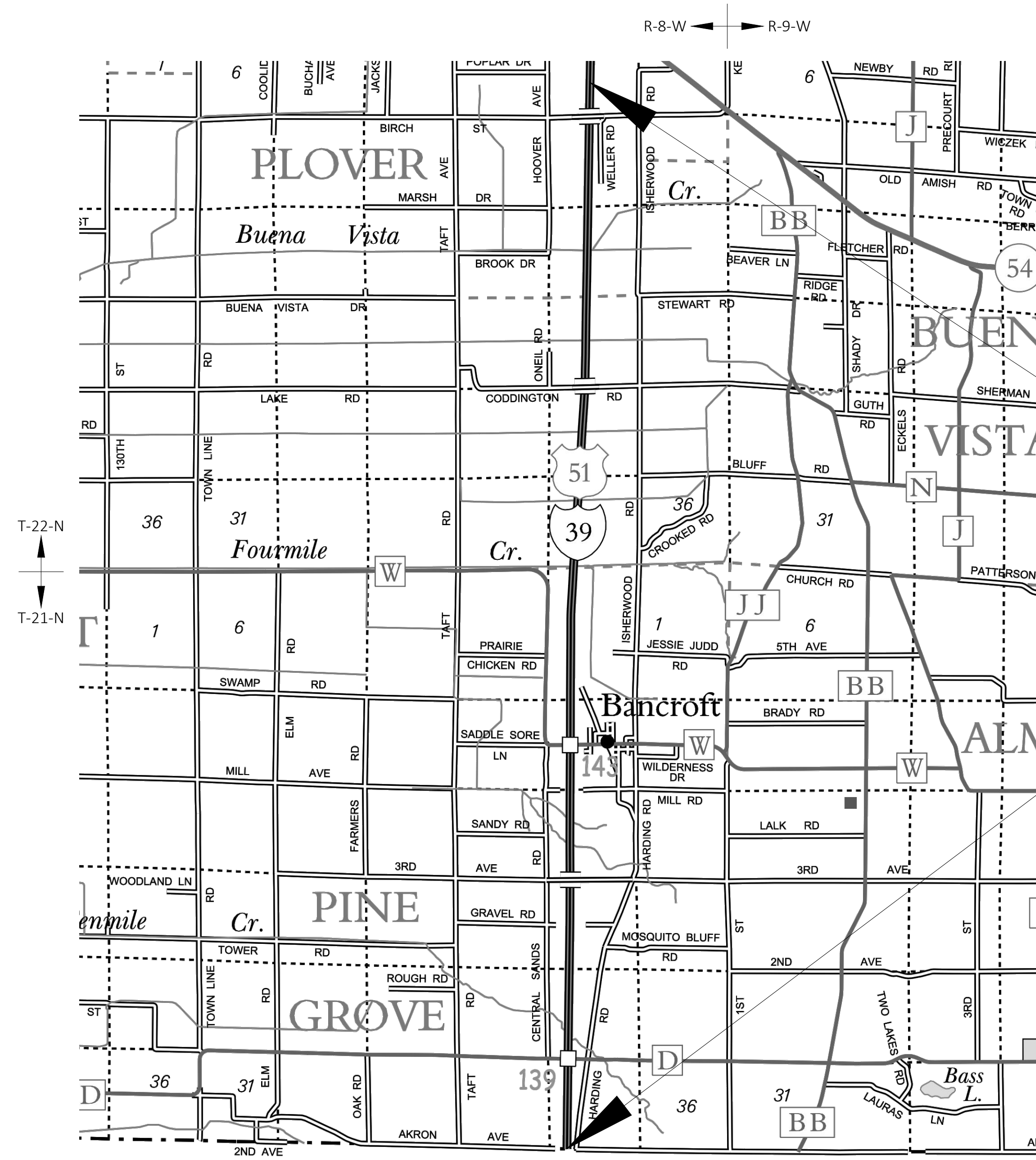
PORTAGE

STATE PROJECT NUMBER
1166-07-77

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1166-07-77	WISC 2022125	1

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, PORTAGE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.





END PROJECT
STA 639+00 SB

NET EXCEPTIONS TO CENTERLINE
STA 179+65 - STA 179+82 (C-49-12)
STA 342+17 - STA 342+42 (B-49-45)
STA 421+55 - STA 421+87 (B-49-46)
STA 474+37 - STA 474+62 (B-49-48)
STA 527+34 - STA 527+58 (B-49-49)

BEGIN PROJECT
STA 1+00 SB
X = 178,647.0903
Y = 101,255.7825

LAYOUT
SCALE 0 — 2 MI

TOTAL NET LENGTH OF CENTERLINE = 12.06

DESIGN DESIGNATION 1166-07-07

A.A.D.T.	2025	=	15,750
A.A.D.T.	2035	=	17,950
D.H.V.		=	2,016
D.D.		=	58/42
T.		=	20.0%
DESIGN SPEED		=	70
ESALS		=	10,100,000

CONVENTIONAL SYMBOLS

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT-NCR
Designer	ANDREW CASPER
Project Manager	MARK STEIDL
Regional Examiner	CHERYL SIMON
Regional Supervisor	MICHAEL KRETSCHMER

APPROVED FOR THE DEPARTMENT

DATE: 07/28/2021 (Signature)

E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\010101-TI.DWG PLOT DATE : 3/11/2021 9:18 AM PLOT BY : CASPER, ANDREW P PLOT NAME :

Runoff Coefficient Table												
	Hydrologic Soil Group											
	A			B			C			D		
	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-Turf	0.19	0.20	0.24	0.19	0.22	0.26	0.20	0.23	0.30	0.20	0.25	0.30
	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 Turf			0.25			0.27			0.28			0.30
			0.32			0.34			0.36			0.38
Pavement												
Asphalt	0.70 - 0.95											
Concrete	0.80 - 0.95											
Brick	0.70 - 0.80											
Drives, Sidewalks	0.75 - 0.85											
Roofs	0.75 - 0.95											
Gravel Roads, Shoulders	0.40 - 0.60											

Total Project Area = 59 Acres

Total Area Expected To Be Disturbed By Construction Activities = 0.50 Acres

UTILITIES

(A) AT&T WISCONSIN - COMMUNICATION LINE
CHUCK BARTELT
70 E DIVISION ST
FOND DU LAC, WI 54935
PHONE: (920) 410-5104
EMAIL: cb1461@att.com

(B) FLINT HILLS RESOURCES PINE BEND, LLC - GAS/PEROLEUM
STEVE DOUCETTE
2267 COUNTY ROAD HH
JUNCTION CITY, WI 54443
PHONE: (715) 316-1494
EMAIL: steve.doucette@fhr.com

(C) SOLARUS - COMMUNICATION LINE
DENNIS PIERCE
440 E GRAND AVE.
WISCONSIN RAPIDS, WI 54494
PHONE: (715) 421-8172
PHONE: (715) 572-0152
EMAIL: pierce@solarus.net

(D) UNION TELEPHONE COMPANY - COMMUNICATION LINE
RON BOWDEN
100 W NORTH ST
PLAINFIELD, WI 54966
PHONE: (715) 335-6301
PHONE: (715)572-9648
EMAIL: rbowden@uniontel.net

(E) WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRICITY
DON LUTZOW
P.O. BOX 1166
WAUSAU, WI 54402
PHONE: (715) 848-7487
PHONE: (507) 848-4211
EMAIL: donald.lutzow@wisconsinpublicservice.com

(F) WISCONSIN PUBLIC SERVICE CORPORATION - GAS/PEROLEUM
STEVE JAECKS
2740 S ASHLAND AVE.
GREEN BAY, WI 54302
PHONE: (920) 433-1175
EMAIL: Steven.Jaecks@wisconsinpublicservice.com

(X) UTILITY LABEL ON PLAN SHEETS

GENERAL NOTES

CURVE DATA IS BASED ON THE ARC DEFINITION.

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

TOPSOIL SHALL BE PLACED 1" BELOW THE TOP OF ADJACENT CONCRETE CURBS OR SIDEWALKS.

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

PURSUANT TO CHAPTER 59 OF THE WISCONSIN STATUTES, THE CONTRACTOR SHALL CAREFULLY MAKE A SEARCH FOR EVIDENCE OF A LANDMARK IN ALL AREAS WHERE SUCH A LANDMARK MAY EXIST.

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

PROJECT IS LOCATED WITHIN THE PORTAGE DRAINAGE DISTRICT. NO MODIFICATIONS TO DRAINAGE STRUCTURE SIZE OR FLOW LINE ELEVATIONS ARE PERMITTED.

STATIONING IS GIVEN TO SOUTHBOUND ALIGNMENT UNLESS NOTED OTHERWISE.

TACK COAT SHALL BE PLACED ON ALL MILLED PAVEMENTS OR NEW PAVEMENTS RECEIVING ADDITIONAL LAYERS OF ASPHALT.

WISCONSIN DEPART. OF NATURAL RESOURCES
CASEY JONES
WDNR EA LIAISON
473 GRIFFITH AVENUE
WISCONSIN RAPIDS, WI 54494
PHONE: (715) 213-6571 MOBILE
E-MAIL: casey.jones@wisconsin.gov

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

BEGIN PROJECT
STA 1+00 SB

AKRON AVE.

CTH D

STRUCTURE C-49-12 (STA 179+72)
EXCEPTION TO NET CENTERLINE
STA 179+65 - STA 179+82

3RD AVE.

DITCH NO 5

CTH W

N

PINE GROVE

50 IH 39 100 150 200 250 IH 39 SB IH 39 NB 300

STRUCTURE B-49-42 (STA 52+95)

STRUCTURE B-49-43 (STA 157+75)

STRUCTURE C-49-05 (STA 179+72)

STRUCTURE B-49-44 (STA 237+00)

DITCH NO 4

STRUCTURE B-49-45 (STA 341+30)
EXCEPTION TO NET CENTERLINE
STA 342+17 - STA 342+42

STRUCTURE B-49-46 (STA 420+70)
EXCEPTION TO NET CENTERLINE
STA 421+55 - STA 421+87

DITCH NO 3

CODDINGTON RD.

STRUCTURE B-49-47 (STA 446+85)

DITCH NO 8

STRUCTURE B-49-48 (STA 473+40)
EXCEPTION TO NET CENTERLINE
STA 474+37 - STA 474+62

BUENA VISTA CREEK

STRUCTURE B-49-49 (STA 526+45)
NET EXCEPTION TO CENTERLINE
STA 527+34 - STA 527+58

BIRCH STREET

END PROJECT
STA 639+00 SB

N

STH 54

IH 39 SB
IH 39 NB

350 400 450 500 550 600 650 700

TOWN OF PLOVER

BUENA VISTA

VILLAGE OF PLOVER

STRUCTURE B-49-07 (STA 341+30)

STRUCTURE B-49-08 (STA 420+70)

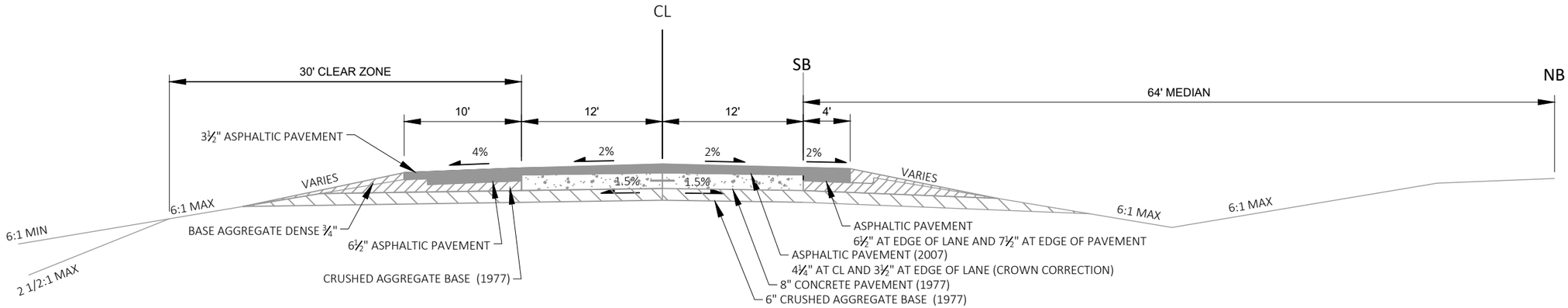
STRUCTURE B-49-09 (STA 473+40)

STRUCTURE B-49-10 (STA 526+45)

STRUCTURE B-49-050 (STA 605+64)

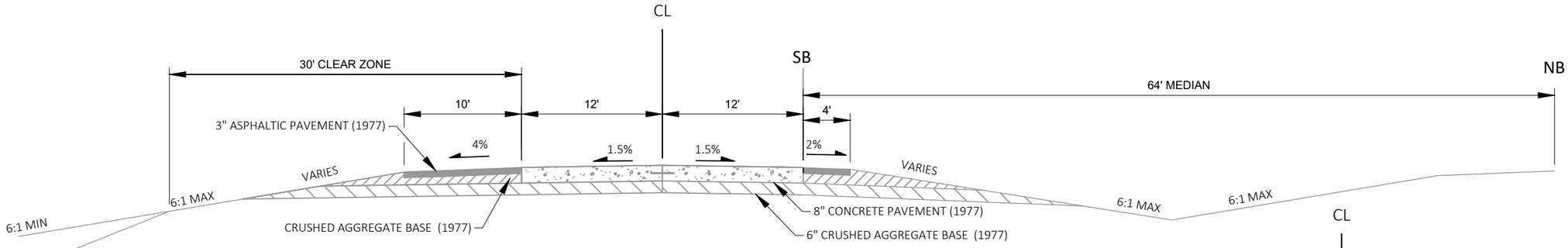
STRUCTURE B-49-13 (STA 679+40)

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PROJECT OVERVIEW	SHEET 3	E



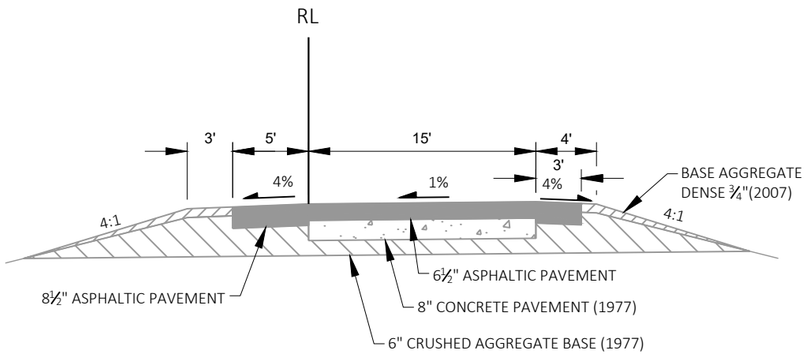
EXISTING TYPICAL SECTION

STA 1+00 - STA 639+00



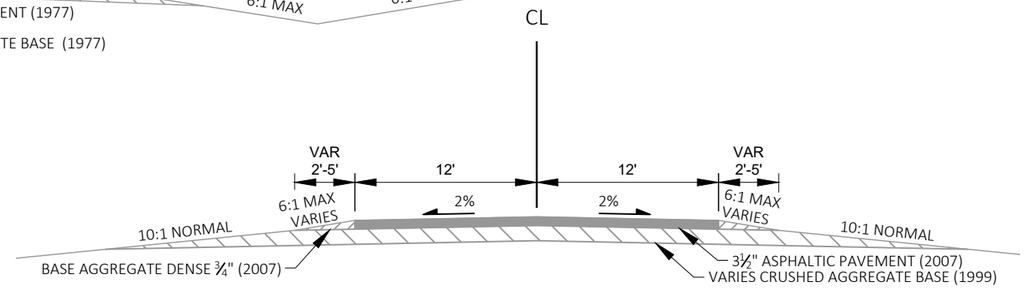
EXISTING TYPICAL SECTION

STA 51+95 - STA 53+95
STA 156+75 - STA 158+75
STA 236+00 - STA 238+00
STA 445+85 - STA 447+85
STA 604+64 - STA 606+64
STA 678+40 - STA 680+40



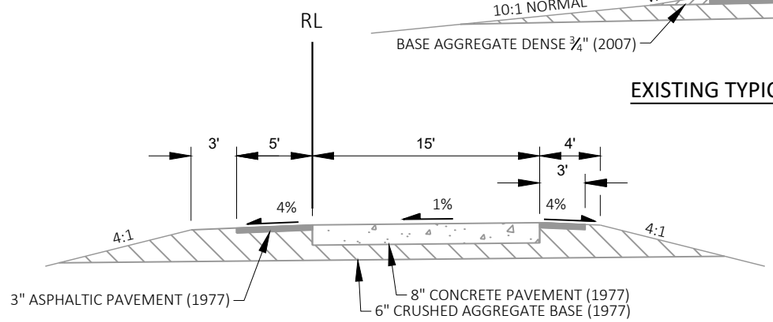
EXISTING TYPICAL RAMP SECTION

STA 108+00 DC - STA 118+08 DC
STA 120+73 DD - STA 128+60 DD
STA 91+00 WC - STA 97+40 WC
STA 112+21 WD - STA 113+04 WD



EXISTING TYPICAL MAINTENANCE CROSSOVER SECTION

STA 1+00
STA 205+60
STA 268+05
STA 407+30
STA 488+50
STA 508+35
STA 564+90

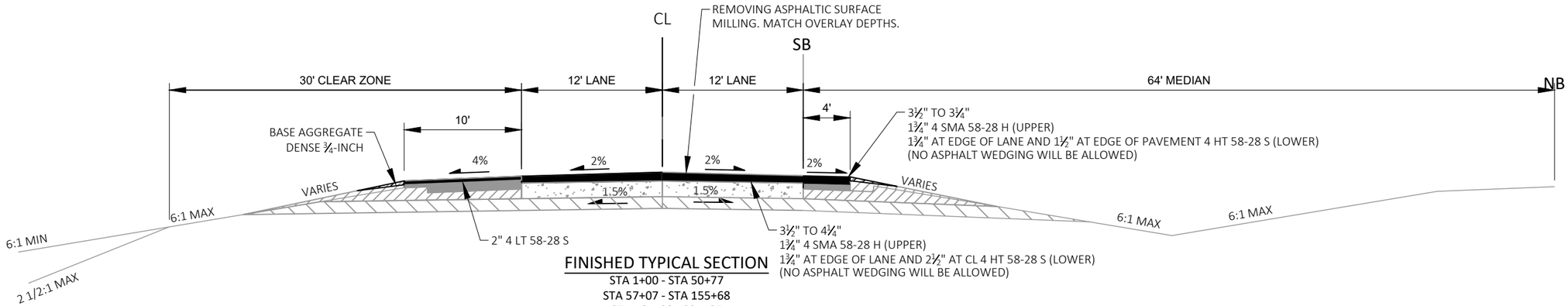


EXISTING TYPICAL RAMP SECTION

STA 97+40 WC - STA 103+51 WC
STA 102+82 WD - 112+21 WD

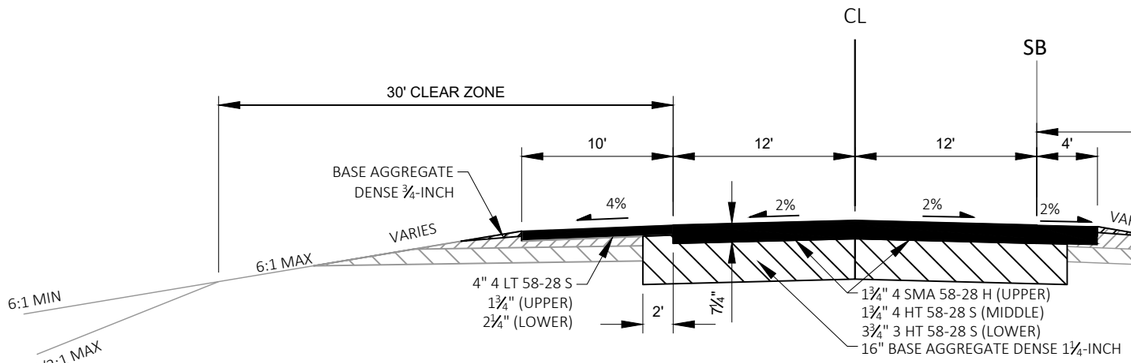
PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	TYPICAL SECTIONS	SHEET 4	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 01-ts
PLOT DATE : 2/16/2022 2:14 PM
PLOT BY : CASPER, ANDREW P
PLOT NAME :
PLOT SCALE : 1 IN:10 FT



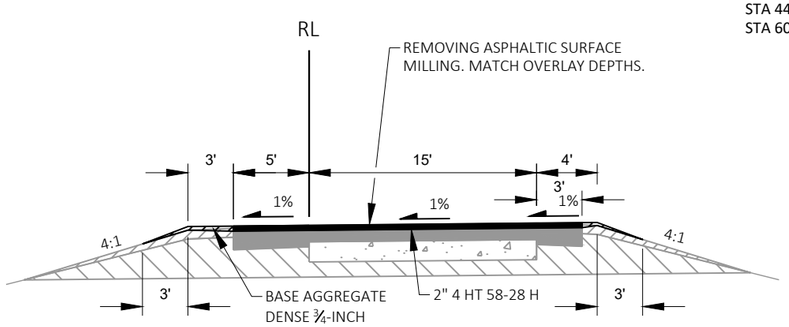
FINISHED TYPICAL SECTION

STA 1+00 - STA 50+77
STA 57+07 - STA 155+68
STA 161+98 - 234+87
STA 241+17 - STA 444+80
STA 451+10 - STA 603+48
STA 609+78 - STA 639+00



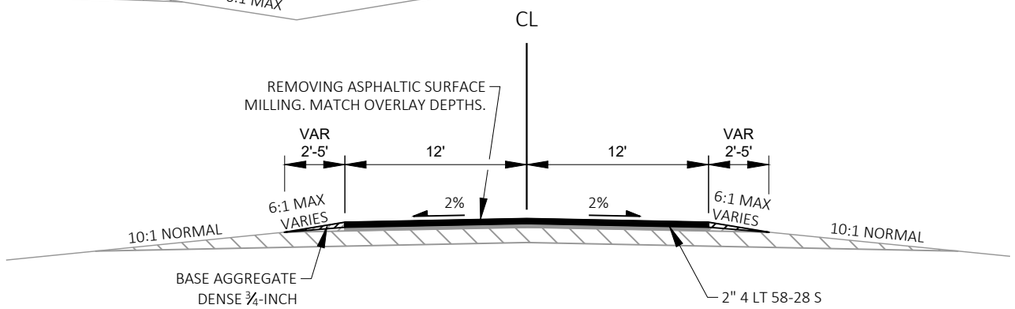
FINISHED TYPICAL SECTION

STA 50+77 - STA 57+07
STA 155+68 - STA 161+98
STA 234+87 - STA 241+17
STA 444+80 - STA 451+10
STA 603+48 - STA 609+78



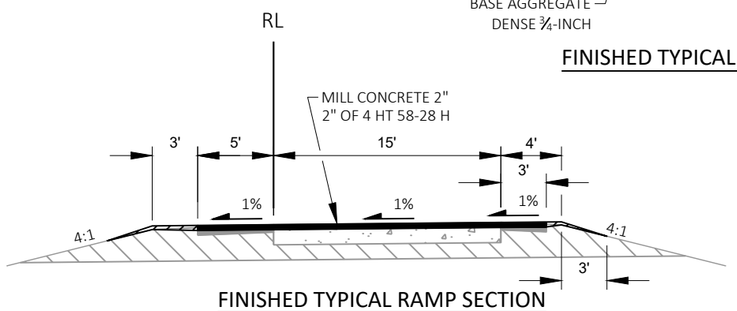
FINISHED TYPICAL RAMP SECTION

STA 108+00 DC - STA 118+08 DC
STA 120+73 DD - STA 128+60 DD
STA 91+00 WC - STA 97+40 WC
STA 112+21 WD - STA 113+04 WD
(RAMP MIX ABUTS MAINLINE DRIVING LANE MIX)



FINISHED TYPICAL MAINTENANCE CROSSOVER SECTION

STA 1+00



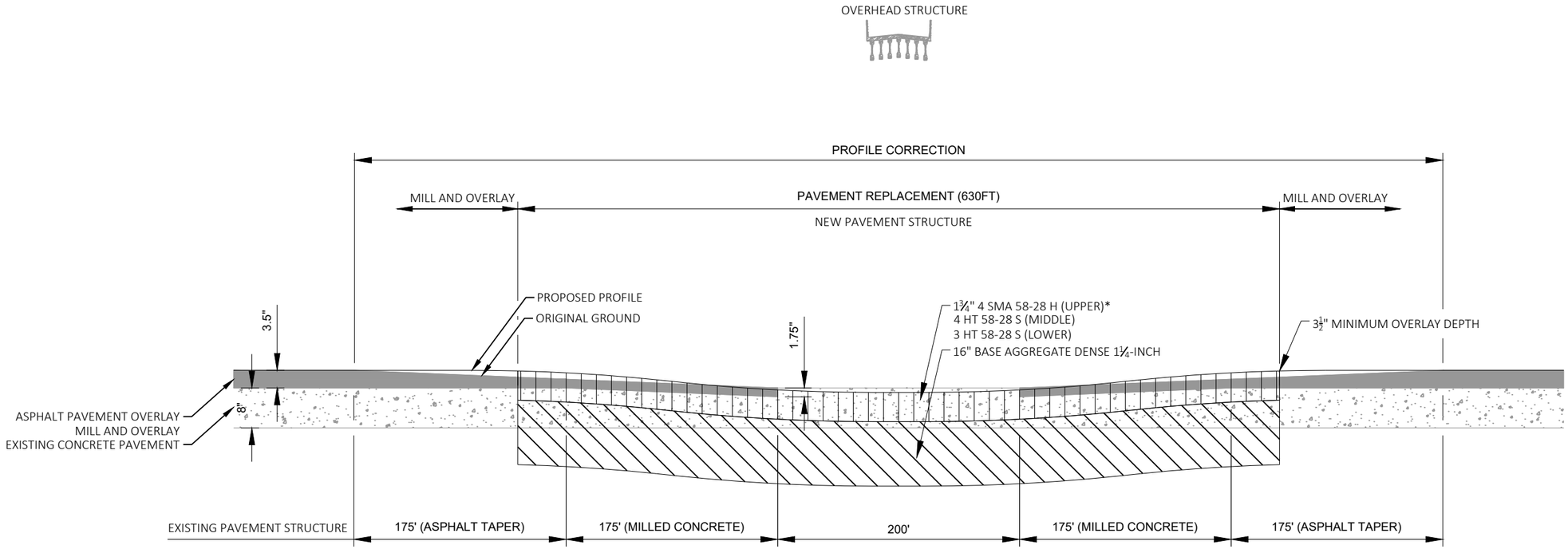
FINISHED TYPICAL RAMP SECTION

STA 97+40 WC - STA 103+51 WC
STA 102+82 WD - 112+21 WD

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	TYPICAL SECTIONS	SHEET 5	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 02-ts
PLOT DATE : 2/16/2022 2:14 PM
PLOT BY : CASPER, ANDREW P
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

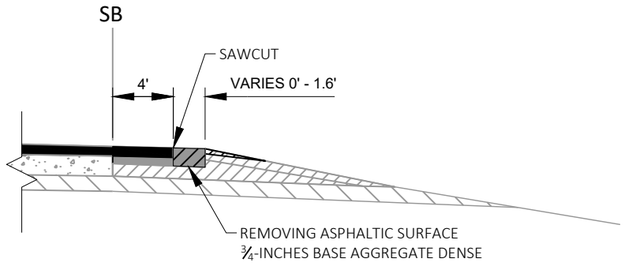
2



PROFILE CORRECTION AT PAVEMENT REPLACEMENT

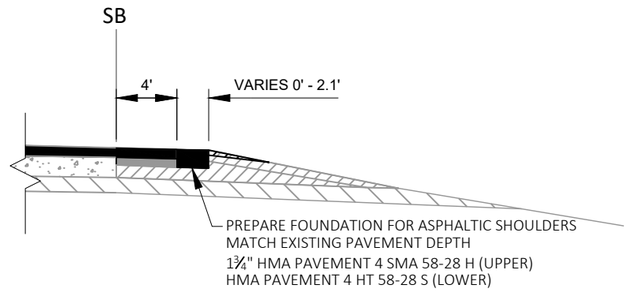
(SEE PLAN AND PROFILE SHEETS FOR SPECIFIC LOCATIONS DETAILS)

*UPPER LAYER TO BE CONTINUOUS WITH MILL AND OVERLAY SEGMENTS



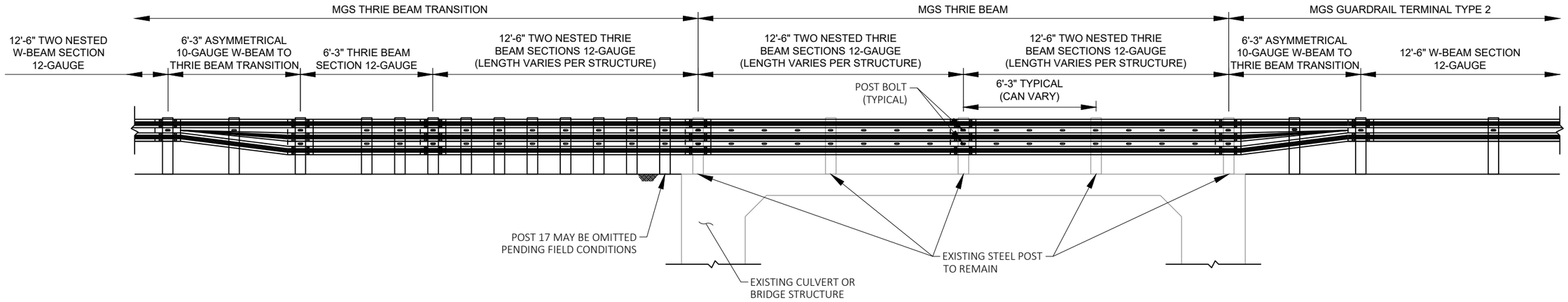
SHOULDER MATCHING

STA 57+07 - STA 57+45
STA 161+99 - STA 162+30
STA 241+17 - STA 241+59
STA 451+10 - STA 451+51
STA 609+78 - STA 610+26



ASPHALT SHOULDER WIDENING

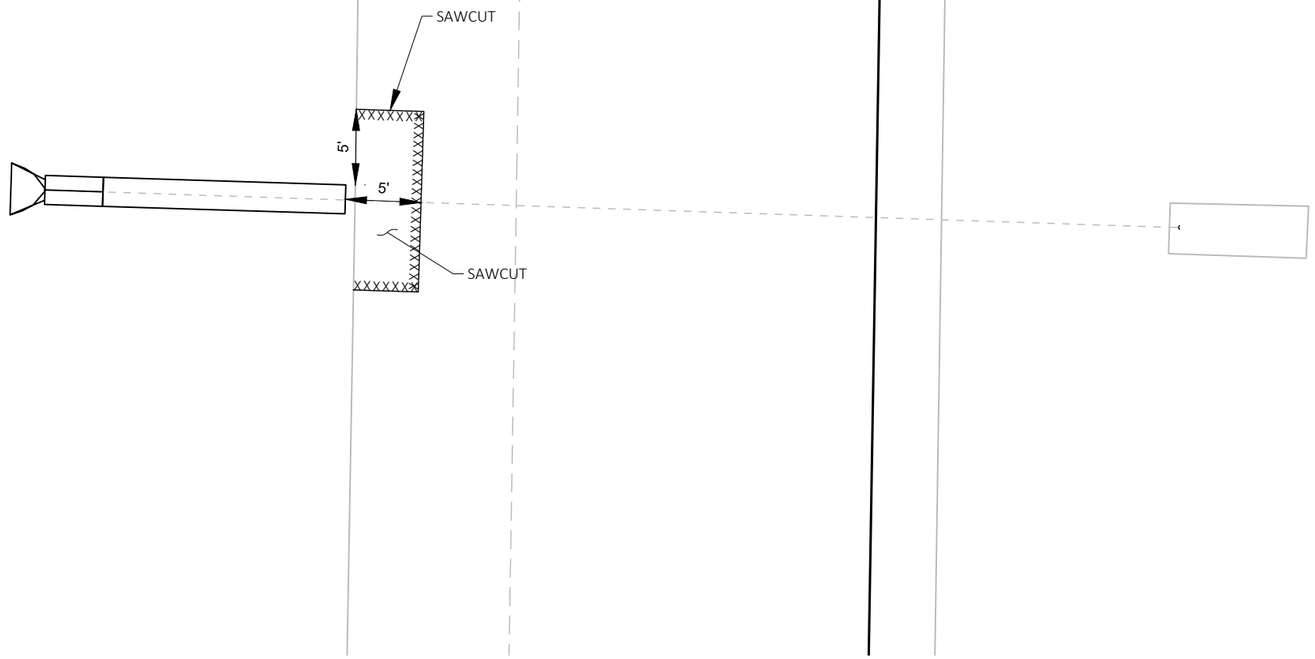
STA 182+80 - STA 183+90



GUARDRAIL DETAIL

STA 179+64 - STA 179+82
STA 342+15 - STA 342+42
STA 421+52 - STA 421+87
STA 474+35 - STA 474+62
STA 527+32 - STA 527+58

2



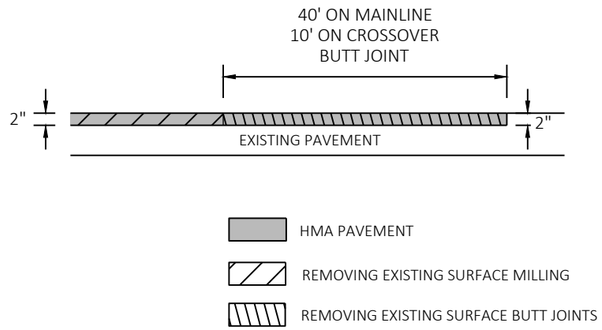
RESET APRON AND OUTSIDE TWO SECTIONS OF PIPE. TIE ALL JOINTS

STA 95+85
STA 375+08
STA 485+31
STA 516+82
STA 551+81

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CONSTRUCTION DETAILS	SHEET 8	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\021001-CD.DWG
LAYOUT NAME - 03
PLOT DATE : 2/16/2022 2:20 PM
PLOT BY : CASPER, ANDREW P
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2



BUTT JOINT

MAINLINE AND CROSSOVERS
(REMOVING PAVEMENT BUTT JOINT AND
REMOVING ASPHALTIC SURFACE BUTT JOINTS)

2

2

CTH W "W"

REMOVING PAVEMENT
2" HMA PAVEMENT 4 HT 58-28 H (UPPER)
2" ASPHALTIC SURFACE (MIDDLE)
2¼" ASPHALTIC SURFACE (LOWER)
1¾" OF 1¼-INCH BASE AGGREGATE DENSE

REMOVING PAVEMENT BUTT JOINT

MILL ASPHALT
2" OF HMA PAVEMENT 4 HT 58-28 H

REMOVING PAVEMENT BUTT JOINT

MILL CONCRETE 2"
2" OF HMA PAVEMENT 4 HT 58-28 H

FULL DEPTH SAW CUT ON ALL
PAVEMENT REMOVAL EDGES

MILL CONCRETE 2"
2" OF HMA PAVEMENT 4 HT 58-28 H

MILL ASPHALT
2" OF HMA PAVEMENT 4 HT 58-28 H

IH 39 SB ENTRANCE RAMP "WC"

IH 39 SB EXIT RAMP "WD"

CTH W "W"

100WC
101WC
102WC
103WC
103WD
104WD
105WD
106WD
105W
106W
107W
108W

N

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	INTERSECTION DETAILS: CTH W RAMP TERMINALS	SHEET 10	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\021101-ID.DWG
LAYOUT NAME - 01

PLOT DATE : 2/18/2022 10:29 AM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:50 FT

2

2

COUNTY D

N

PI 50+85.28

IH 39/USH 51 SB

55

STRUCTURE B-49-42
STA 52+95

150

155

IH 39/USH 51 NB

110

LEGEND

- MULCH
- SLOPE INTERCEPT
- INLET PROTECTION
- SURFACE WATER FLOW
- SILT FENCE
- ROCK BAGS

N

IH 39/USH 51 SB

95

195

IH 39/USH 51 NB

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	EROSION CONTROL PLAN	SHEET 11	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 1

PLOT DATE : 10/25/2021 7:41 AM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

3RD

FO

FO

G

G

N

IH 39/USH 51 SB

160

STRUCTURE B-49-43
STA 157+75

255

260

IH 39/USH 51 NB

LEGEND

MULCH

SLOPE INTERCEPT

INLET PROTECTION

SURFACE WATER FLOW

SILT FENCE

ROCK BAGS

DITCH NO 5

WETLANDS

N

IH 39/USH 51 SB

180

STRUCTURE C-49-12
STA 179+72

280

IH 39/USH 51 NB

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	EROSION CONTROL PLAN	SHEET 12	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 2

PLOT DATE : 10/25/2021 7:41 AM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

CTH W

N

IH 39/USH 51 SB

235

240

STRUCTURE B-49-44
STA 337+00

335

340

IH 39/USH 51 NB

110

LEGEND

- MULCH
- SLOPE INTERCEPT
- INLET PROTECTION
- SURFACE WATER FLOW
- SILT FENCE
- ROCK BAGS

DITCH NO 4

IH 39/USH 51 SB

345

STRUCTURE B-49-45
STA 342+32

445

IH 39/USH 51 NB

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	EROSION CONTROL PLAN	SHEET 13	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 3

PLOT DATE : 10/25/2021 7:41 AM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

LEGEND

MULCH

SLOPE INTERCEPT

INLET PROTECTION

SURFACE WATER FLOW

SILT FENCE

ROCK BAGS

N

IH 39/USH 51 SB

375

475

IH 39/USH 51 NB

DITCH NO 3

N

IH 39/USH 51 SB

425

STRUCTURE B-49-46
STA 421+74

520

525

IH 39/USH 51 NB

2

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	EROSION CONTROL PLAN	SHEET 14	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 4

PLOT DATE : 10/25/2021 7:41 AM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

LEGEND

- MULCH
- SLOPE INTERCEPT
- INLET PROTECTION
- SURFACE WATER FLOW
- SILT FENCE
- ROCK BAGS

DITCH NO 8

N

IH 39/USH 51 SB

475

STRUCTURE B-49-48
STA 474+47

575

IH 39/USH 51 NB

N

IH 39/USH 51 SB

485

585

IH 39/USH 51 NB

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	EROSION CONTROL PLAN	SHEET 15	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 5

PLOT DATE : 10/25/2021 7:41 AM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 42

2

LEGEND

MULCH

SLOPE INTERCEPT

INLET PROTECTION

SURFACE WATER FLOW

SILT FENCE

ROCK BAGS

N

IH 39/USH 51 SB

515

615

IH 39/USH 51 NB

BUENA VISTA CREEK

STRUCTURE B-49-49
STA 527+46

PI: 527+12.31

PI: 626+11.82

POST

POST

POST

N

IH 39/USH 51 SB

530

630

IH 39/USH 51 NB

2

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	EROSION CONTROL PLAN	SHEET 16	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 6

PLOT DATE : 10/25/2021 7:41 AM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ##########

2

LEGEND

MULCH

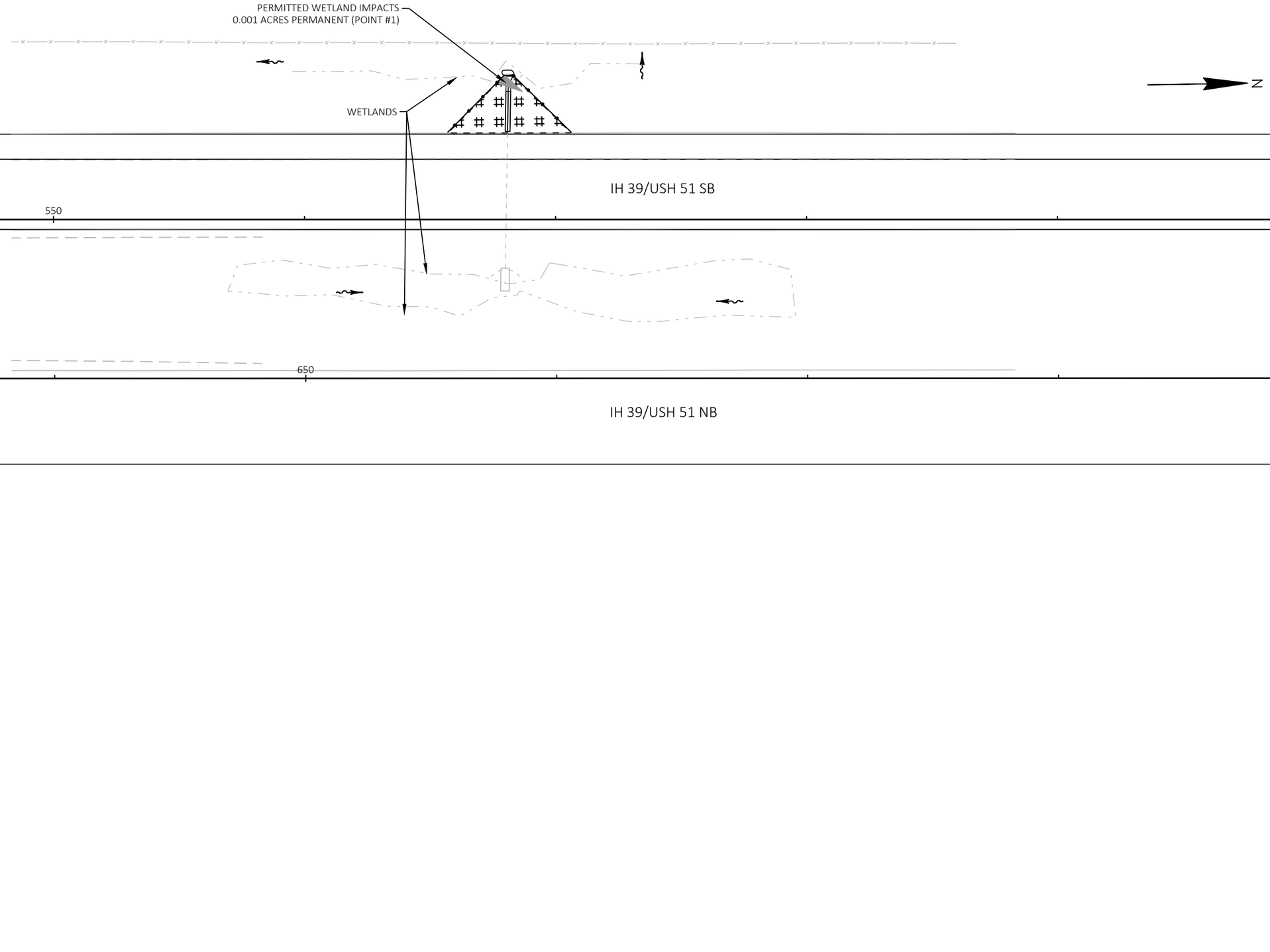
SLOPE INTERCEPT

INLET PROTECTION

SURFACE WATER FLOW

SILT FENCE

ROCK BAGS



2

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	EROSION CONTROL PLAN	SHEET 17	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 7

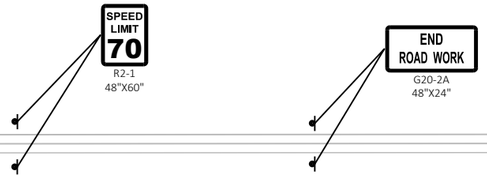
PLOT DATE : 10/25/2021 7:41 AM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ##########

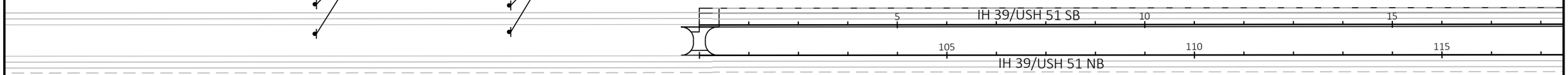
WISDOT/CADDS SHEET 42

NOTES:
SIGN SIZE 48" X 48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD's
-TRAFFIC CONTROL, ADVANCED WIDTH RESTRICTION SIGNING
-TRAFFIC CONTROL, OFF RAMP LANE CLOSURE
-TRAFFIC CONTROL, ON RAMP LANE CLOSURE

N





LEGEND

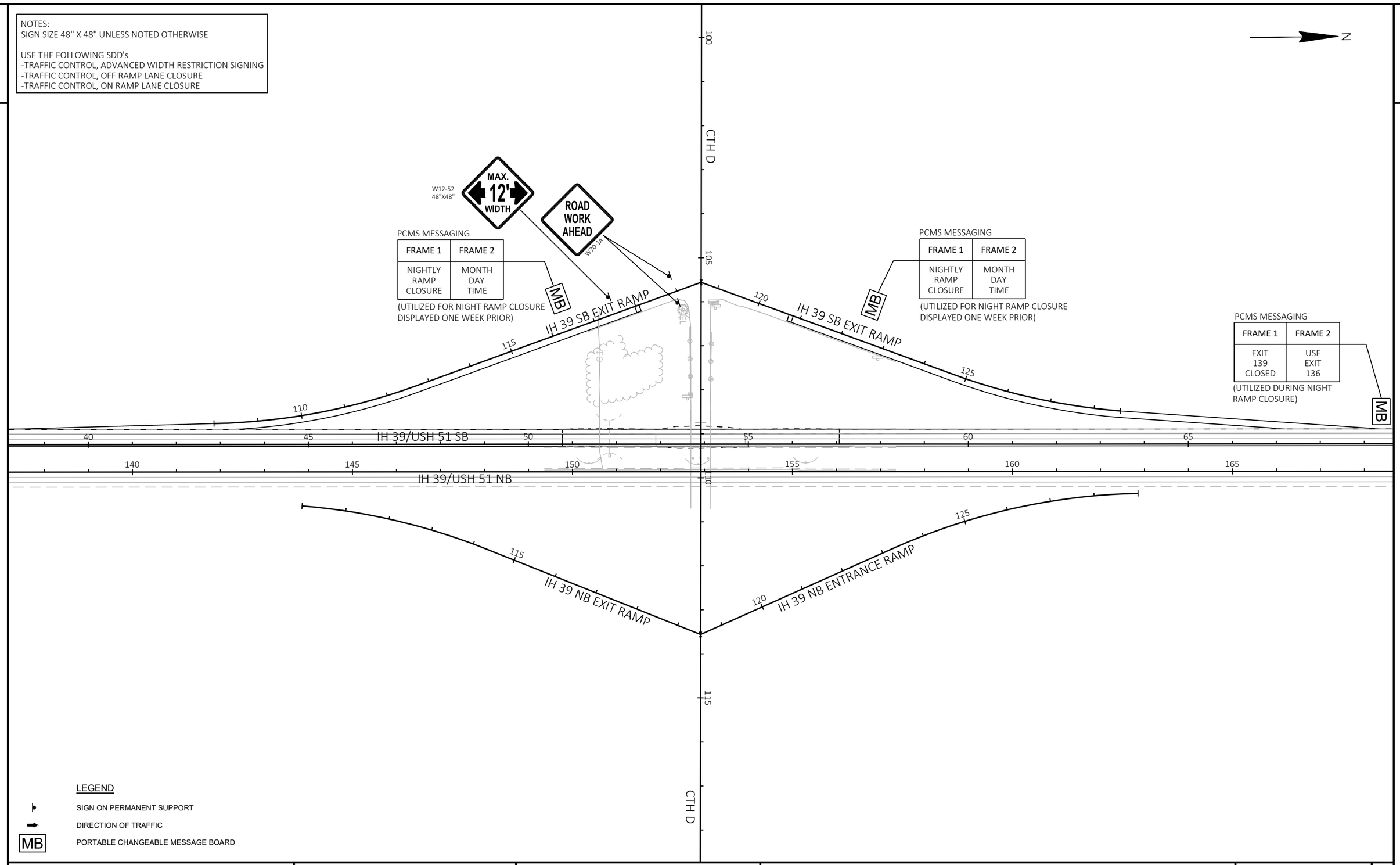
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	ADVANCED WARNING / WIDTH RESTRICTIONS / RAMP CLOSURE	SHEET 18	E

2

NOTES:
SIGN SIZE 48" X 48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD's
-TRAFFIC CONTROL, ADVANCED WIDTH RESTRICTION SIGNING
-TRAFFIC CONTROL, OFF RAMP LANE CLOSURE
-TRAFFIC CONTROL, ON RAMP LANE CLOSURE



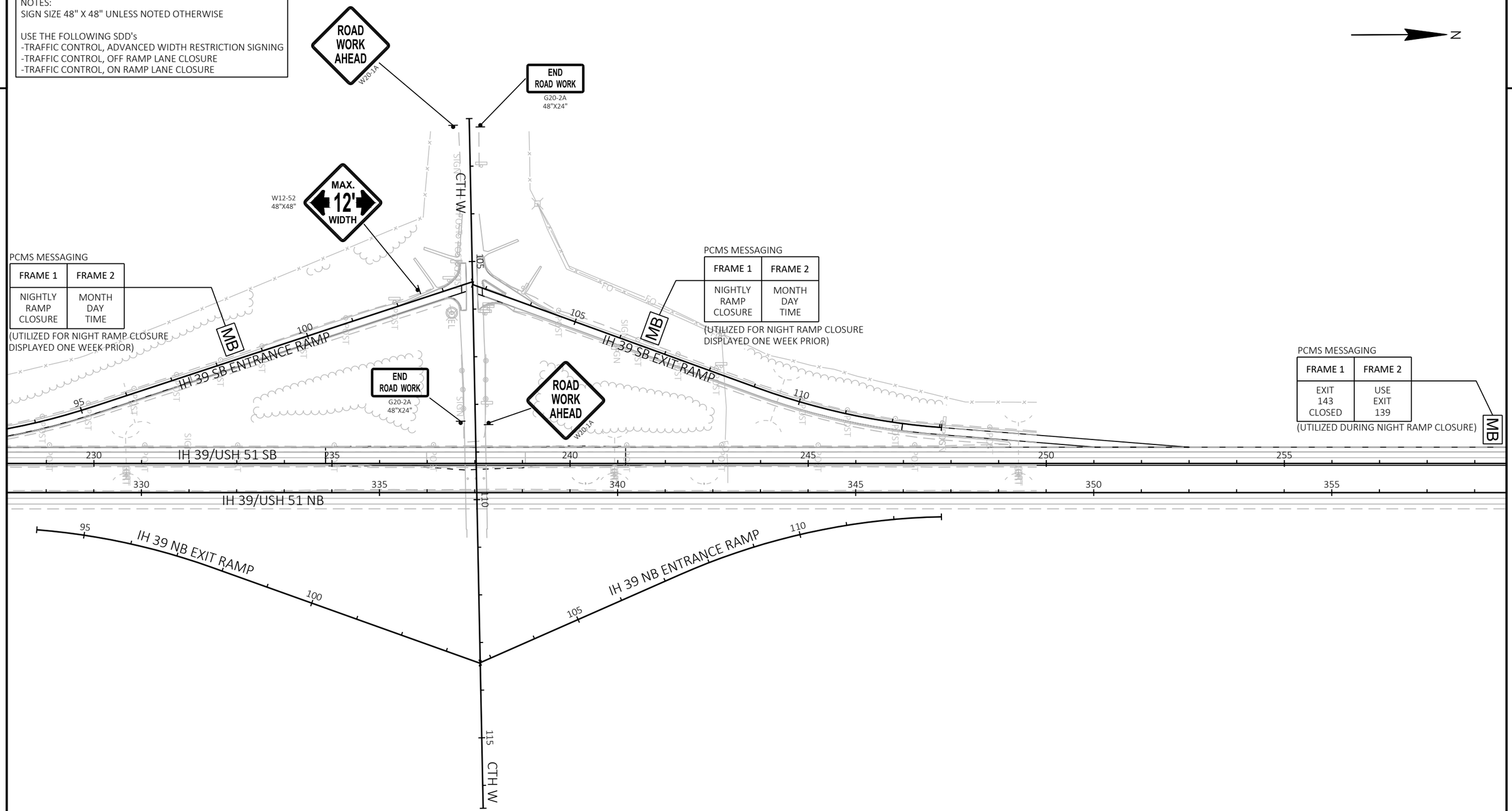
LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	ADVANCED WARNING / WIDTH RESTRICTIONS	SHEET 19	E

NOTES:
SIGN SIZE 48" X 48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD's
-TRAFFIC CONTROL, ADVANCED WIDTH RESTRICTION SIGNING
-TRAFFIC CONTROL, OFF RAMP LANE CLOSURE
-TRAFFIC CONTROL, ON RAMP LANE CLOSURE



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD

PROJECT NO: 1166-00-77	HWY: IH 39	COUNTY: PORTAGE	ADVANCED WARNING / WIDTH RESTRICTIONS	SHEET 20	E

NOTES:
SIGN SIZE 48" X 48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD's
-TRAFFIC CONTROL, ADVANCED WIDTH RESTRICTION SIGNING
-TRAFFIC CONTROL, OFF RAMP LANE CLOSURE
-TRAFFIC CONTROL, ON RAMP LANE CLOSURE

PCMS MESSAGING

FRAME 1	FRAME 2	TIMEFRAME
I-39 ROAD WORK	BEGINS MONTH DAY	ONE WEEK PRIOR TO CONSTRUCTION
STRADDLE RUMBLE STRIPS	NEXT 13 MILES	STAGE 1 AND 2
EXIT 143 CLOSED	USE EXIT 139	NIGHT RAMP CLOSURE

ROAD WORK AHEAD
W20-1A

MAX. 12' WIDTH
W12-52
48"X48"

ROAD WORK 1 MILE
W20-1F

WIDE LOADS EXCEEDING 12 FT
R12-70B
114"X42"

SPEED LIMIT 55
R2-1
48"X60"

SPEED LIMIT 55
W3-5

MB

STH 54/POST RD

STH 54

IH 39 SB ENTRANCE RAMP

IH 39 SB EXIT RAMP

IH 39/USH 51 SB

675 680 685 690 695 700

770 775 780 785 790 795 800

(STAGE 2)

IH 39/USH 51 NB

IH 39 NB EXIT RAMP

IH 39 NB ENTRANCE RAMP

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

MB PORTABLE CHANGEABLE MESSAGE BOARD

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	ADVANCED WARNING / WIDTH RESTRICTIONS	SHEET 21	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\025000-AW.DWG
LAYOUT NAME - 04

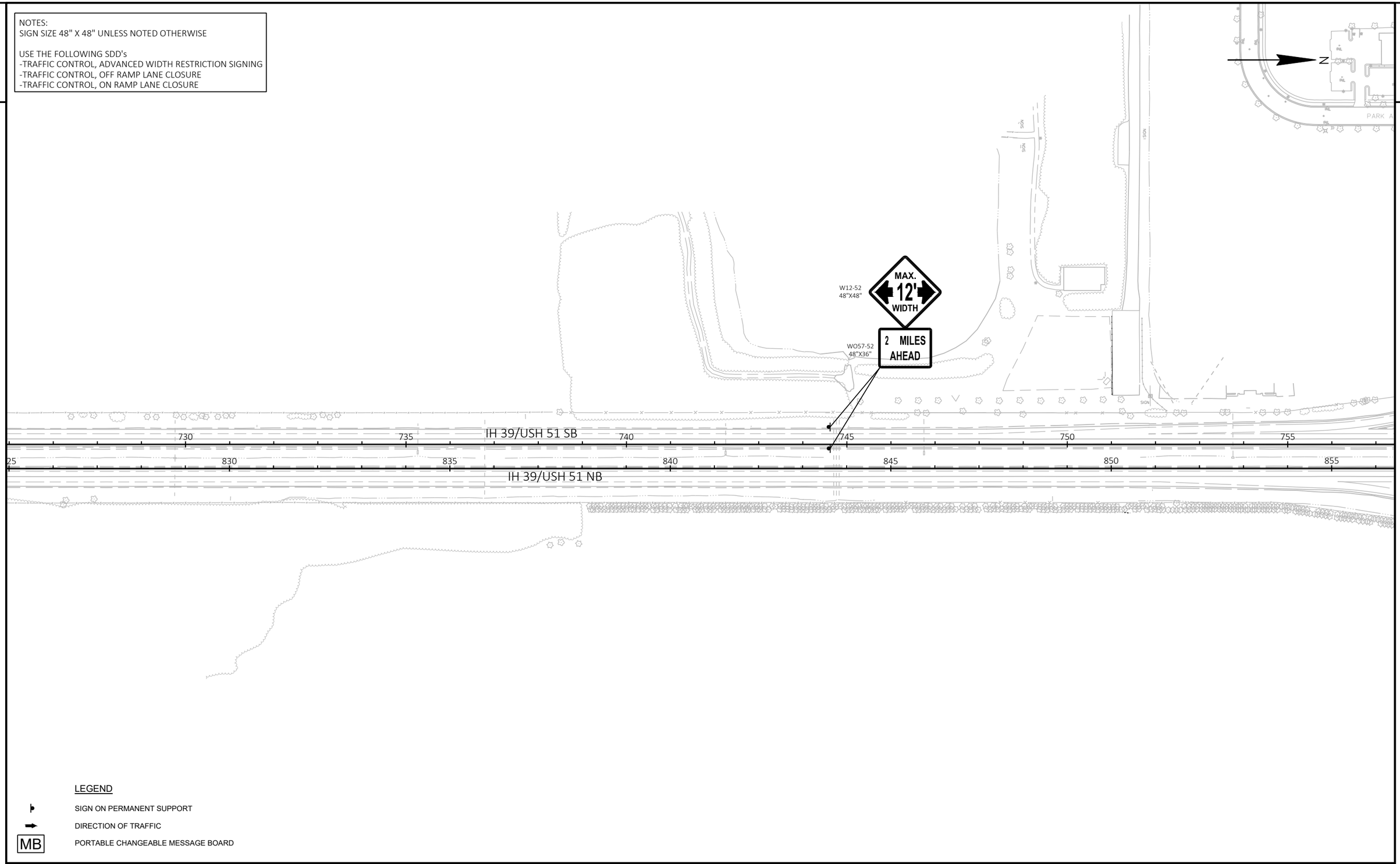
PLOT DATE : 2/16/2022 1:37 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44

2

NOTES:
SIGN SIZE 48" X 48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD's
-TRAFFIC CONTROL, ADVANCED WIDTH RESTRICTION SIGNING
-TRAFFIC CONTROL, OFF RAMP LANE CLOSURE
-TRAFFIC CONTROL, ON RAMP LANE CLOSURE



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- MB — PORTABLE CHANGEABLE MESSAGE BOARD

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	ADVANCED WARNING / WIDTH RESTRICTIONS	SHEET 22	E

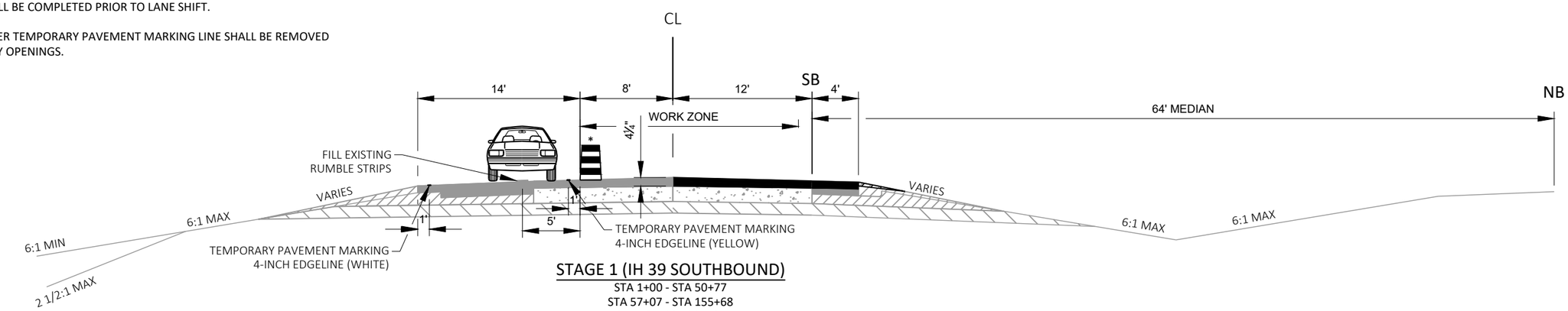
FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\025000-AW.DWG
LAYOUT NAME - 05
PLOT DATE : 2/16/2022 1:38 PM
PLOT BY : CASPER, ANDREW P
PLOT NAME :
PLOT SCALE : ##########

TRAFFIC CONTROL NOTES

*MOVE BARRELS TO 13FT OFFSET FROM EDGELINE (YELLOW TEMPORARY PAVEMENT MARKING) DURING SUNDAYS OPENINGS TO ALLOW FOR TWO LANES OF TRAFFIC.

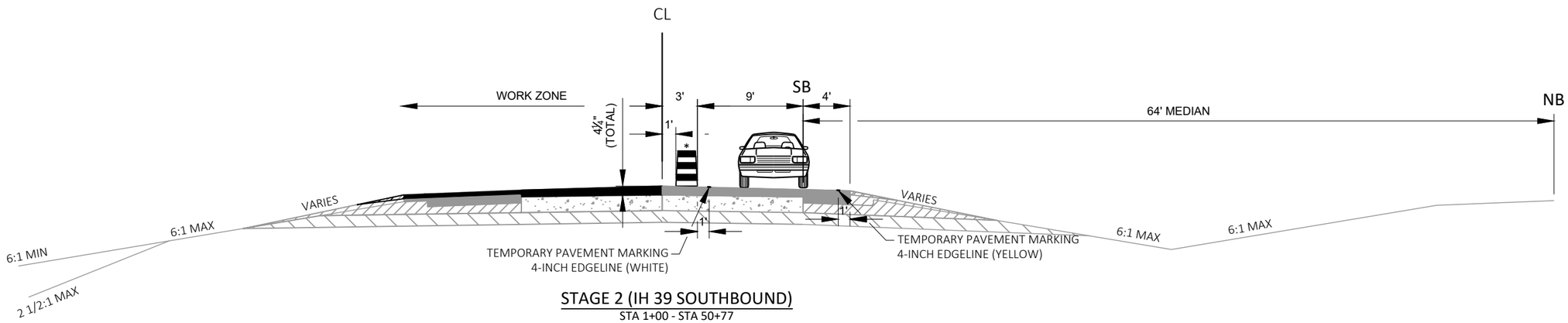
LANE DROP SHALL BE COMPLETED PRIOR TO LANE SHIFT.

LANE DROP TAPER TEMPORARY PAVEMENT MARKING LINE SHALL BE REMOVED DURING SUNDAY OPENINGS.



STAGE 1 (IH 39 SOUTHBOUND)

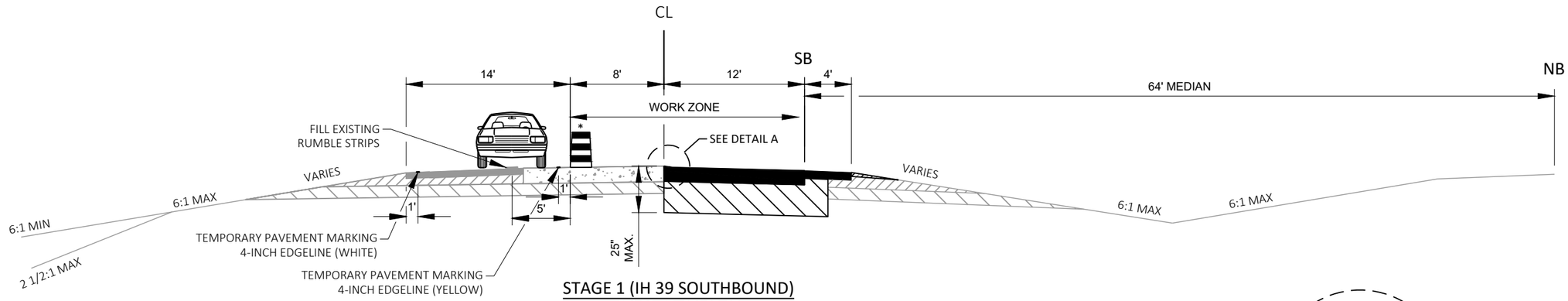
STA 1+00 - STA 50+77
STA 57+07 - STA 155+68
STA 161+98 - 234+87
STA 241+17 - STA 444+80
STA 451+10 - STA 603+48
STA 609+78 - STA 639+00



STAGE 2 (IH 39 SOUTHBOUND)

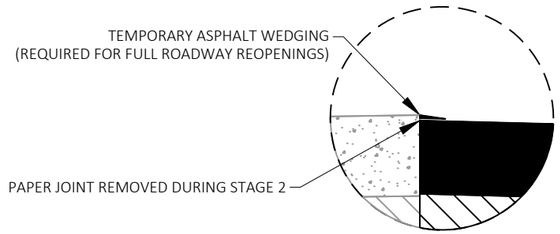
STA 1+00 - STA 50+77
STA 57+07 - STA 155+68
STA 161+98 - 234+87
STA 241+17 - STA 444+80
STA 451+10 - STA 603+48
STA 609+78 - STA 639+00

2

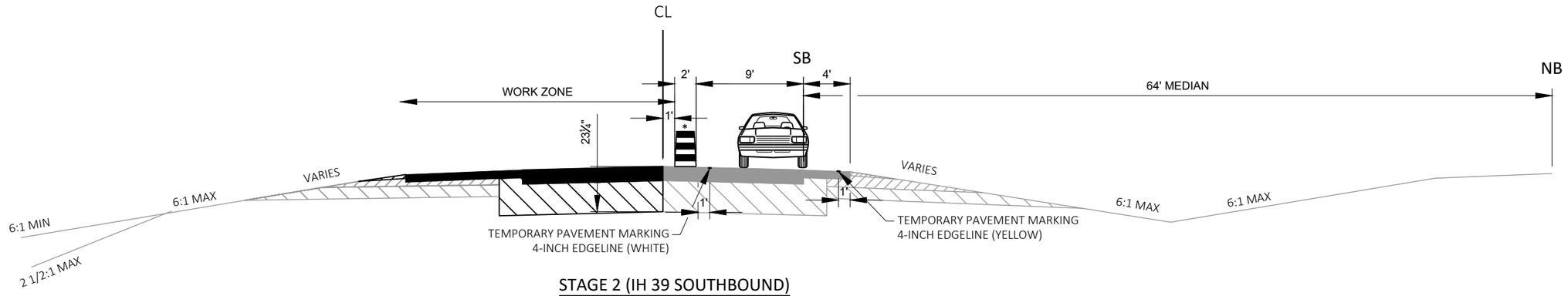


STAGE 1 (IH 39 SOUTHBOUND)

STA 50+77 - STA 57+07
STA 155+68 - STA 161+98
STA 234+87 - STA 241+17
STA 444+80 - STA 451+10
STA 603+48 - STA 609+78



DETAIL A
ASPHALT WEDGING



STAGE 2 (IH 39 SOUTHBOUND)

STA 50+77 - STA 57+07
STA 155+68 - STA 161+98
STA 234+87 - STA 241+17
STA 444+80 - STA 451+10
STA 603+48 - STA 609+78

1166-07-77

Line	Item	Item Description	Unit	Total	Qty
0002	204.0100	Removing Concrete Pavement	SY	9,041.000	9,041.000
0004	204.0105	Removing Pavement Butt Joints	SY	35.000	35.000
0006	204.0109.S	Removing Concrete Surface Partial Depth	SF	23,215.000	23,215.000
0008	204.0110	Removing Asphaltic Surface	SY	33.000	33.000
0010	204.0115	Removing Asphaltic Surface Butt Joints	SY	2,464.000	2,464.000
0012	204.0120	Removing Asphaltic Surface Milling	SY	267,753.000	267,753.000
0014	204.0165	Removing Guardrail	LF	2,710.000	2,710.000
0016	205.0100	Excavation Common	CY	6,559.000	6,559.000
0018	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	2.000	2.000
0020	213.0100	Finishing Roadway (project) 01. 1166-07-77	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	2,839.000	2,839.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	8,834.000	8,834.000
0026	455.0605	Tack Coat	GAL	33,728.000	33,728.000
0028	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	2.000	2.000
0030	460.0115.S	HMA Pavement Test Strips Volumetrics	EACH	1.000	1.000
0032	460.0120.S	HMA Pavement Test Strips Density	EACH	3.000	3.000
0034	460.2000	Incentive Density HMA Pavement	DOL	34,939.000	34,939.000
0036	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	24,211.000	24,211.000
0038	460.2010	Incentive Air Voids HMA Pavement	DOL	17,263.000	17,263.000
0040	460.5224	HMA Pavement 4 LT 58-28 S	TON	7,934.000	7,934.000
0042	460.7223	HMA Pavement 3 HT 58-28 S	TON	1,859.000	1,859.000
0044	460.7224	HMA Pavement 4 HT 58-28 S	TON	22,687.000	22,687.000
0046	460.7424	HMA Pavement 4 HT 58-28 H	TON	2,040.000	2,040.000
0048	460.8424	HMA Pavement 4 SMA 58-28 H	TON	19,169.000	19,169.000
0050	460.9000.S	Material Transfer Vehicle (project) 01. 1166-07-77	EACH	1.000	1.000
0052	465.0105	Asphaltic Surface	TON	192.000	192.000
0054	465.0400	Asphaltic Shoulder Rumble Strips	LF	128,280.000	128,280.000
0056	524.0118	Culvert Pipe Salvaged 18-Inch	LF	80.000	80.000
0058	524.0618	Apron Endwalls for Culvert Pipe Salvaged 18-Inch	EACH	5.000	5.000
0060	614.2300	MGS Guardrail 3	LF	2,625.000	2,625.000
0062	614.2500	MGS Thrie Beam Transition	LF	443.000	443.000
0064	614.2610	MGS Guardrail Terminal EAT	EACH	10.000	10.000
0066	614.2620	MGS Guardrail Terminal Type 2	EACH	10.000	10.000
0068	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1166-07-77	EACH	1.000	1.000
0070	619.1000	Mobilization	EACH	1.000	1.000
0072	624.0100	Water	MGAL	175.000	175.000
0074	625.0100	Topsoil	SY	2,331.000	2,331.000
0076	627.0200	Mulching	SY	2,331.000	2,331.000
0078	628.1504	Silt Fence	LF	2,574.000	2,574.000
0080	628.1520	Silt Fence Maintenance	LF	2,574.000	2,574.000
0082	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0084	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0086	628.7005	Inlet Protection Type A	EACH	5.000	5.000
0088	628.7570	Rock Bags	EACH	15.000	15.000
0090	629.0210	Fertilizer Type B	CWT	1.500	1.500
0092	630.0130	Seeding Mixture No. 30	LB	42.000	42.000
0094	630.0500	Seed Water	MGAL	70.000	70.000
0096	642.5001	Field Office Type B	EACH	1.000	1.000
0098	643.0300	Traffic Control Drums	DAY	67,768.000	67,768.000

1166-07-77

Line	Item	Item Description	Unit	Total	Qty
0100	643.0420	Traffic Control Barricades Type III	DAY	3,304.000	3,304.000
0102	643.0705	Traffic Control Warning Lights Type A	DAY	6,608.000	6,608.000
0104	643.0715	Traffic Control Warning Lights Type C	DAY	1,428.000	1,428.000
0106	643.0800	Traffic Control Arrow Boards	DAY	210.000	210.000
0108	643.0900	Traffic Control Signs	DAY	5,724.000	5,724.000
0110	643.0920	Traffic Control Covering Signs Type II	EACH	40.000	40.000
0112	643.1051	Traffic Control Signs PCMS with Cellular Communications	DAY	128.000	128.000
0114	643.5000	Traffic Control	EACH	1.000	1.000
0116	646.1020	Marking Line Epoxy 4-Inch	LF	148,204.000	148,204.000
0118	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	17,000.000	17,000.000
0120	646.3040	Marking Line Grooved Wet Ref Epoxy 8-Inch	LF	1,515.000	1,515.000
0122	646.6120	Marking Stop Line Epoxy 18-Inch	LF	50.000	50.000
0124	646.7220	Marking Chevron Epoxy 24-Inch	LF	408.000	408.000
0126	646.9000	Marking Removal Line 4-Inch	LF	88,000.000	88,000.000
0128	649.0105	Temporary Marking Line Paint 4-Inch	LF	272,000.000	272,000.000
0130	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	7,560.000	7,560.000
0132	649.0205	Temporary Marking Line Paint 8-Inch	LF	6,400.000	6,400.000
0134	650.4500	Construction Staking Subgrade	LF	3,150.000	3,150.000
0136	650.5000	Construction Staking Base	LF	3,150.000	3,150.000
0138	650.8000	Construction Staking Resurfacing Reference	LF	69,939.000	69,939.000
0140	650.9910	Construction Staking Supplemental Control (project) 01. Project 1166-07-77	LS	1.000	1.000
0142	650.9920	Construction Staking Slope Stakes	LF	4,355.000	4,355.000
0144	690.0150	Sawing Asphalt	LF	415.000	415.000
0146	690.0250	Sawing Concrete	LF	1,368.000	1,368.000
0148	740.0440	Incentive IRI Ride	DOL	25,471.000	25,471.000
0150	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	2,000.000	2,000.000
0152	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	1,260.000	1,260.000
0154	SPV.0090	Special 01. MGS Thrie Beam	LF	252.000	252.000
0156	SPV.0090	Special 02. Fill Existing Rumble Strips	LF	1,680.000	1,680.000

REMOVING CONCRETE PAVEMENT

STATION - STATION	LOCATION	204.0100 SY	REMARKS
50+77 - 57+07	LT	1,680	
155+68 - 161+98	LT	1,680	
234+87 - 241+17	LT	1,680	
444+80 - 451+10	LT	1,680	
603+48 - 609+78	LT	1,680	
102+03 - 103+64	CTH W ON RAMP	177	
103+06 - 103+46	CTH W ON RAMP	79	
102+88 - 103+44	CTH W OFF RAMP	72	
102+82 - 104+57	CTH W OFF RAMP	314	
		9,041	

REMOVING SURFACE

STATION - STATION	LOCATION	204.0105 REMOVING PAVEMENT BUTT JOINT SY	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH SF	REMARKS
1+00	CROSSOVER	---	---	77	213	---	
83+04	CROSSOVER	---	---	40	176	---	
206+61	CROSSOVER	---	---	40	174	---	
269+04	CROSSOVER	---	---	40	174	---	
408+25	CROSSOVER	---	---	40	267	---	
489+48	CROSSOVER	---	---	40	177	---	
565+90	CROSSOVER	---	---	40	178	---	
1+00 - 179+65	SHLDRS & MNLN	---	6	338	68,711	---	
179+81 - 342+17	SHLDRS & MNLN	---	4	356	64,113	---	
342+42 - 421+55	SHLDRS & MNLN	---	---	356	33,488	---	
421+87 - 474+37	SHLDRS & MNLN	---	4	359	19,571	---	
474+62 - 527+34	SHLDRS & MNLN	---	---	356	22,339	---	
527+58 - 639+00	SHLDRS & MNLN	---	4	347	44,539	---	
91+00 - 97+40	CTH W ON RAMP	---	---	---	3,537	---	
97+40 - 103+51	CTH W ON RAMP	18	---	---	631	9,135	
102+82 - 112+22	CTH W OFF RAMP	18	---	---	864	14,080	
112+22 - 113+04	CTH W OFF RAMP	---	---	---	181	---	
108+00 - 118+08	CTH D ON RAMP	---	---	17	4,602	---	
120+73 - 128+60	CTH D OFF RAMP	---	---	17	3,819	---	
95+85	LT	---	3	---	---	---	AT CULVERT
375+08	LT	---	3	---	---	---	AT CULVERT
485+31	LT	---	3	---	---	---	AT CULVERT
516+82	LT	---	3	---	---	---	AT CULVERT
551+81	LT	---	3	---	---	---	AT CULVERT
	TOTAL	**35**	**33**	**2,464**	**267,753**	**23,215**	

3

3

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 LF	REMARKS
179+64 - 183+15	RT	351	SEE CONSTRUCTION DETAIL FOR POSTS TO REMAIN
179+64 - 181+40	LT	176	SEE CONSTRUCTION DETAIL FOR POSTS TO REMAIN
342+17 - 345+75	RT	358	SEE CONSTRUCTION DETAIL FOR POSTS TO REMAIN
342+15 - 343+96	LT	181	SEE CONSTRUCTION DETAIL FOR POSTS TO REMAIN
421+54 - 425+20	RT	366	SEE CONSTRUCTION DETAIL FOR POSTS TO REMAIN
421+52 - 423+43	LT	191	SEE CONSTRUCTION DETAIL FOR POSTS TO REMAIN
474+38 - 477+95	RT	357	SEE CONSTRUCTION DETAIL FOR POSTS TO REMAIN
474+35 - 476+25	LT	190	SEE CONSTRUCTION DETAIL FOR POSTS TO REMAIN
527+34 - 530+91	RT	357	SEE CONSTRUCTION DETAIL FOR POSTS TO REMAIN
527+32 - 529+15	LT	183	SEE CONSTRUCTION DETAIL FOR POSTS TO REMAIN
	TOTAL	2,710	

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1) CUT (2)	205.0100 COMMON EXCAVATION (1) EBS EXCAVATION (3)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13) FACTOR 1.00	MASS ORDINATE +/- (14)	WASTE	COMMENT
DIVISION 1											
SOUTHBOUND	50+50/610+50		6,559	0	2,273	4,286	1,571	1,571	2,715	2,715	
DIVISION 1 SUBTOTAL			6,559	0	2,273	4,286	1,571	1,571	2,715	2,715	
GRAND TOTAL			6,559	0	2,273	4,286	1,571	1,571	2,715	2,715	
TOTAL COMMON EXC			6,559								

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.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
(13) EXPANDED FILL FACTOR = X.6X
DEPENDING ON SELECTIONS: **EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) * FILL FACTOR**
OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) * FILL FACTOR
OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) * FILL FACTOR
OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) * FILL FACTOR
(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.

3

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

STATION - STATION	LOCATION	211.0400 STA	REMARKS
182+80 - 183+90	RT	2	ASPHALT WIDENING
	TOTAL	2	

FINISHING ROADWAY (PROJECT) 1166-07-77

STATION - STATION	LOCATION	213.0100 EACH	REMARKS
1+00 - 628+50	LT/RT	1	
	TOTAL	1	

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	REMARKS
50+77 - 57+07	LT	---	1,767	PVMNT RPLCMNT
57+07-57+45	RT	3	---	SHOULDER MATCHING
155+68 - 161+98	LT	---	1,767	PVMNT RPLCMNT
161+99 - 162+30	RT	2	---	SHOULDER MATCHING
234+87 - 241+17	LT	---	1,767	PVMNT RPLCMNT
241+17 - 241+59	RT	3	---	SHOULDER MATCHING
444+80 - 451+10	LT	---	1,767	PVMNT RPLCMNT
451+10 - 451+51	RT	3	---	SHOULDER MATCHING
603+48 - 609+78	LT	---	1,767	PVMNT RPLCMNT
609+78 - 610+26	RT	3	---	SHOULDER MATCHING
1+00 - 639+00	LT/RT	2,382	---	SHLDRS
102+71 WD - 113+04 WD	LT/RT	96	---	RAMP
91+00 WC - 103+65 WC	LT/RT	128	---	RAMP
120+75 DD - 128+60 DD	LT/RT	107	---	RAMP
108+00 DC - 118+08 DC	LT/RT	112	---	RAMP
	TOTALS	2,839	8,834	

TACK COAT

STATION - STATION	LOCATION	455.0605 GALLONS	REMARKS
1+00	CROSSOVER	15	
83+04	CROSSOVER	12	
206+61	CROSSOVER	12	
269+04	CROSSOVER	12	
408+25	CROSSOVER	19	
489+48	CROSSOVER	12	
565+90	CROSSOVER	12	
1+00 - 50+77	RT SHLDR & MNLN	2,168	
1+00 - 50+77	LT SHLDR	387	
50+77 - 57+07	LT SHLDR	49	
50+77 - 57+07	MNLN	276	
57+07 - 155+68	RT SHLDR & MNLN	4,359	
57+07 - 155+68	LT SHLDR	767	
155+68 - 161+98	LT/RT SHLDR	49	
155+68 - 161+98	MNLN	276	
161+98 - 179+65	RT SHLDR & MNLN	770	
161+98 - 179+65	LT SHLDR	137	
179+82 - 234+87	RT SHLDR & MNLN	2,386	
179+82 - 234+87	LT SHLDR	428	
234+87 - 241+17	LT/RT SHLDR	49	
234+87 - 241+17	MNLN	274	
241+17 - 342+17	RT SHLDR & MNLN	4,401	
241+17 - 342+17	LT SHLDR	786	
342+42 - 421+55	RT SHLDR & MNLN	3,466	
342+42 - 421+55	LT SHLDR	616	
421+87 - 444+80	RT SHLDR & MNLN	1,017	
421+87 - 444+80	LT SHLDR	178	
444+80 - 451+10	LT/RT SHLDR	49	
444+80 - 451+10	MNLN	274	
451+10 - 474+37	RT SHLDR & MNLN	1,015	
451+10 - 474+37	LT SHLDR	181	
474+62 - 527+34	RT SHLDR & MNLN	2,319	
474+62 - 527+34	LT SHLDR	410	
527+58 - 603+48	RT SHLDR & MNLN	3,325	
527+58 - 603+48	LT SHLDR	590	
603+48 - 609+78	LT/RT SHLDR	49	
603+48 - 609+78	MNLN	274	
609+78 - 639+00	RT SHLDR & MNLN	1,283	
609+78 - 639+00	LT SHLDR	227	
91+00 - 97+40	CTH W ON RAMP	112	
97+40 - 103+51	CTH W ON RAMP	78	
102+82 - 112+22	CTH W OFF RAMP	120	
112+22 - 113+04	CTH W OFF RAMP	66	
108+00 - 118+08	CTH D ON RAMP	157	
120+73 - 128+60	CTH D OFF RAMP	164	
102+03 - 103+64	CTH W ON RAMP	27	
103+06 - 103+46	CTH W ON RAMP	12	
102+88 - 103+44	CTH W OFF RAMP	11	
102+82 - 104+57	CTH W OFF RAMP	48	
	TOTAL	33,728	

3

HMA PAVEMENT

STATION - STATION	LOCATION	460.5224 4 LT 58-28 S TON	460.7223 3 HT 58-28 S TON	460.7224 4 HT 58-28 S TON	460.7424 4 HT 58-28 H TON	460.8424 4 SMA 58-28 H TON	REMARKS
1+00 - 50+77	RT SHLDR & MNLN	---	---	1,765	---	1,490	
1+00 - 50+77	LT SHLDR	466	---	---	---	---	GAP FOR RAMP MIX
50+77 - 57+07	LT/RT SHLDR	154	60	25	---	27	
50+77 - 57+07	MNLN	---	312	196	---	162	
57+07 - 155+68	RT SHLDR & MNLN	---	---	3,549	---	2,997	
57+07 - 155+68	LT SHLDR	1,147	---	---	---	---	GAP FOR RAMP MIX
155+68 - 161+98	LT/RT SHLDR	154	60	25	---	27	
155+68 - 161+98	MNLN	---	314	198	---	163	
161+98 - 179+65	RT SHLDR & MNLN	---	---	627	---	529	
161+98 - 179+65	LT SHLDR	216	---	---	---	---	
179+82 - 234+87	RT SHLDR & MNLN	---	---	1,942	---	1,640	
179+82 - 234+87	LT SHLDR	541	---	---	---	---	GAP FOR RAMP MIX
234+87 - 241+17	LT/RT SHLDR	154	60	25	---	27	
234+87 - 241+17	MNLN	---	312	196	---	162	
241+17 - 342+17	RT SHLDR & MNLN	---	---	3,583	---	3,026	
241+17 - 342+17	LT SHLDR	1,184	---	---	---	---	GAP FOR RAMP MIX
342+42 - 421+55	RT SHLDR & MNLN	---	---	2,822	---	2,383	
342+42 - 421+55	LT SHLDR	967	---	---	---	---	
421+87 - 444+80	RT SHLDR & MNLN	---	---	828	---	699	
421+87 - 444+80	LT SHLDR	280	---	---	---	---	
444+80 - 451+10	LT/RT SHLDR	154	60	25	---	27	
444+80 - 451+10	MNLN	---	312	196	---	162	
451+10 - 474+37	RT SHLDR & MNLN	---	---	826	---	698	
451+10 - 474+37	LT SHLDR	284	---	---	---	---	
474+62 - 527+34	RT SHLDR & MNLN	---	---	1,888	---	1,594	
474+62 - 527+34	LT SHLDR	644	---	---	---	---	
527+58 - 603+48	RT SHLDR & MNLN	---	---	2,706	---	2,286	
527+58 - 603+48	LT SHLDR	928	---	---	---	---	
603+48 - 609+78	LT/RT SHLDR	154	60	25	---	27	
603+48 - 609+78	MNLN	---	312	196	---	162	
609+78 - 639+00	RT SHLDR & MNLN	---	---	1,044	---	882	
609+78 - 639+00	LT SHLDR	357	---	---	---	---	
91+00 - 97+40	CTH W ON RAMP	---	---	---	389	---	
97+40 - 103+51	CTH W ON RAMP	---	---	---	181	---	
102+82 - 112+22	CTH W OFF RAMP	---	---	---	267	---	
112+22 - 113+04	CTH W OFF RAMP	---	---	---	206	---	
108+00 - 118+08	CTH D ON RAMP	---	---	---	506	---	
120+73 - 128+60	CTH D OFF RAMP	---	---	---	420	---	
102+03 - 103+64	CTH W ON RAMP	---	---	---	20	---	
103+06 - 103+46	CTH W ON RAMP	---	---	---	9	---	
102+88 - 103+44	CTH W OFF RAMP	---	---	---	8	---	
102+82 - 104+57	CTH W OFF RAMP	---	---	---	34	---	
1+00	CROSSOVER	23	---	---	---	---	UPPER LAYER
83+04	CROSSOVER	19	---	---	---	---	UPPER LAYER
206+61	CROSSOVER	19	---	---	---	---	UPPER LAYER
269+04	CROSSOVER	19	---	---	---	---	UPPER LAYER
408+25	CROSSOVER	29	---	---	---	---	UPPER LAYER
489+48	CROSSOVER	19	---	---	---	---	UPPER LAYER
565+90	CROSSOVER	20	---	---	---	---	UPPER LAYER
	TOTALS	**7,934**	**1,859**	**22,687**	**2,040**	**19,169**	

ASPHALTIC SURFACE

STATION - STATION	LOCATION	465.0105 TON	REMARKS
102+03 - 103+64	CTH W ON RAMP	41	LOWER LAYER
103+06 - 103+46	CTH W ON RAMP	18	LOWER LAYER
102+88 - 103+44	CTH W OFF RAMP	17	LOWER LAYER
102+82 - 104+57	CTH W OFF RAMP	73	LOWER LAYER
95+85	LT SHLDR	0	LOWER LAYER
375+08	LT SHLDR	0	LOWER LAYER
485+31	LT SHLDR	0	LOWER LAYER
516+82	LT SHLDR	0	LOWER LAYER
551+81	LT SHLDR	0	LOWER LAYER
PROJECT 1166-07-77	C/L	40	ASPHALT WEDGE
	TOTAL	**192**	

HMA TEST STRIPS

MIX TYPE	LOCATION	460.0105.S PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS EACH	460.0115.S PAVEMENT TEST STRIPS VOLUMETRICS EACH	460.0120.S PAVEMENT TEST STRIPS DENSITY EACH	REMARKS
4 HT 58-28 S	MAINLINE BINDER	1	---	1	OVER CONCRETE PAVEMENT
4 HT 58-28 S	MAINLINE BINDER	1	---	1	OVER ASPHALT PAVEMENT
4 SMA 58-28 H	MAINLINE SURFACE	---	1	1	OVER HMA PAVEMENT
	TOTAL	**2**	**1**	**3**	

ASPHALTIC SHOULDER RUMBLE STRIPS

STATION - STATION	LOCATION	465.0400 LF	REMARKS
1+00 - 639+00	LT	62,800	
1+00 - 639+00	RT	63,800	
BEGINNING OF PROJECT	LT	420	
END OF PROJECT	LT	420	
BEGINNING OF PROJECT	RT	420	
END OF PROJECT	RT	420	
	TOTAL	**128,280**	

PWL MIXTURE USE TABLE

THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT:

LOCATION	STATION	MIXTURE USE	UDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
LT SHOULDER	1+00 - 639+00	UPPER LAYER	MILLED EXISTING HMA SURFACE	HMA PAVEMENT 4 LT 58-28 S	7,250	2-INCH	QMP AS PER SS 460.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
LT SHOULDER (PAVEMENT REPLACEMENT)	50+77 - 57+07, 155+68 - 161+98, 234+87 - 241+17, 444+80 - 451+10, 603+48 - 609+78	LOWER LAYER	BAD	HMA PAVEMENT 4 LT 58-28 S	385	2-INCH	QMP AS PER SS 460.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
MAINLINE	1+00 - 639+00	UPPER LAYER	HMA SURFACE	HMA PAVEMENT 4 SMA 58-28 H	16,440	1.75-INCH	QMP AS PER SS 460.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
RT SHLDR	1+00-639+00	UPPER LAYER	HMA SURFACE	HMA PAVEMENT 4 SMA 58-28 H	2,729	1.75-INCH	QMP AS PER SS 460.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
PAVEMENT REPLACEMENT MAINLINE	50+77 - 57+07, 155+68 - 161+98, 234+87 - 241+17, 444+80 - 451+10, 603+48 - 609+78	MIDDLE LAYER	HMA SURFACE	HMA PAVEMENT 4 HT 58-28 S	983	VARIES (1.75-INCH - 2.5-INCH)	INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
RT SHLDR (PAVEMENT REPLACEMENT)	50+77 - 57+07, 155+68 - 161+98, 234+87 - 241+17, 444+80 - 451+10, 603+48 - 609+78	MIDDLE LAYER	HMA SURFACE	HMA PAVEMENT 4 HT 58-28 S	125	VARIES (1.75-INCH - 1.5-INCH)	QMP AS PER SS 460.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
PAVEMENT REPLACEMENT MAINLINE & RT SHLDR	50+77 - 57+07, 155+68 - 161+98, 234+87 - 241+17, 444+80 - 451+10, 603+48 - 609+78	LOWER LAYER	BAD	HMA PAVEMENT 3 HT 58-28 S	1,484	VARIES (3.75INCH - 3-INCH)	QMP AS PER SS 460.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
RT SHLDR (PAVEMENT REPLACEMENT)	50+77 - 57+07, 155+68 - 161+98, 234+87 - 241+17, 444+80 - 451+10, 603+48 - 609+78	LOWER LAYER	HMA SURFACE	HMA PAVEMENT 3 HT 58-28 S	375	VARIES (3.75-INCH - 4-INCH)	QMP AS PER SS 460.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
MILL AND OVERLAY	1+00 - 50+77, 57+07 - 155+68, 161+98 - 234+87, 241+17 - 444+80, 451+10 - 603+48, 609+78, 639+00	LOWER LAYER	MILLED EXISTING	HMA PAVEMENT 4 HT 58-28 S	19,170	VARIES (1.75INCH - 2.5INCH)	INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
RT SHLDR (MILL AND OVERLAY)	1+00 - 50+77, 57+07 - 155+68, 161+98 - 234+87, 241+17 - 444+80, 451+10 - 603+48, 609+78, 639+00	LOWER LAYER	MILLED EXISTING	HMA PAVEMENT 4 HT 58-28 S	2,409	VARIES (1.75-INCH - 1.5-INCH)	QMP AS PER SS 460.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
RAMPS	91+103+46, 102+82 - 113+04, 108+00 - 118+00, 120+73 - 128+60	UPPER LAYER	MILLED EXISTING	HMA PAVEMENT 4 HT 58-28 H	2,024	2-INCH	QMP AS PER SS 460.	INCENTIVE DENSITY HMA PAVEMENT 460.2000
CROSSOVERS	1+00 - 565+90	UPPER LAYER	MILLED EXISTING HMA SURFACE	HMA PAVEMENT 4 LT 58-28 S	149	2-INCH	QMP AS PER SS 465.	ACCEPTANCE TESTING BY THE CONTRACTOR; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
RAMPS PAVEMENT REPLACEMENTS	102+03 - 103+64 AND 102+82 - 104+57	LOWER LAYER	BAD	ASPHALTIC SURFACE	150	4.25-INCH	QMP AS PER SS 465.	ACCEPTANCE TESTING BY THE CONTRACTOR; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE

CULVERT PIPE

STATION - STATION	LOCATION	524.0118 SALVAGED 18-INCH LF	524.0618 APRON ENDWALLS SALVAGED 18-INCH EACH	REMARKS
95+85	LT	16	1	APRON ENDWALL AND TWO PIPE SECTIONS
375+08	LT	16	1	APRON ENDWALL AND TWO PIPE SECTIONS
485+31	LT	16	1	APRON ENDWALL AND TWO PIPE SECTIONS
516+82	LT	16	1	APRON ENDWALL AND TWO PIPE SECTIONS
551+81	LT	16	1	APRON ENDWALL AND TWO PIPE SECTIONS
	TOTAL	80	5	

GUARDRAIL

STATION - STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	614.2620 MGS GUARDRAIL TERMINAL TYPE 2 EACH	SPV.0090.01 MGS THRIE BEAM LF	REMARKS
179+19 - 179+64	RT	38	7	---	1	---	OMIT THRIE BEAM TERMINAL CONNECTOR
179+19 - 179+64	LT	38	7	---	1	---	OMIT THRIE BEAM TERMINAL CONNECTOR
179+64 - 179+82	RT	---	---	---	---	18	C-49-12 (4 EXISTING POSTS)
179+64 - 179+82	LT	---	---	---	---	18	C-49-12 (4 EXISTING POSTS)
179+82 - 183+60	RT	288	38	1	---	---	OMIT THRIE BEAM TERMINAL CONNECTOR
179+82 - 182+59	LT	188	38	1	---	---	OMIT THRIE BEAM TERMINAL CONNECTOR
341+70 - 342+15	LT	38	7	---	1	---	OMIT THRIE BEAM TERMINAL CONNECTOR
341+72 - 342+17	RT	38	7	---	1	---	OMIT THRIE BEAM TERMINAL CONNECTOR
342+15 - 342+42	LT	---	---	---	---	25	B-49-45 (5 EXISTING POSTS)
342+17 - 342+42	RT	---	---	---	---	25	B-49-45 (5 EXISTING POSTS)
342+42 - 345+70	RT	238	38	1	---	---	OMIT THRIE BEAM TERMINAL CONNECTOR
342+42 - 345+17	LT	188	38	1	---	---	OMIT THRIE BEAM TERMINAL CONNECTOR
421+07 - 421+52	LT	38	7	---	1	---	OMIT THRIE BEAM TERMINAL CONNECTOR
421+09 - 421+54	RT	38	7	---	1	---	OMIT THRIE BEAM TERMINAL CONNECTOR
421+52 - 421+87	LT	---	---	---	---	33	B-49-46 (6 EXISTING POSTS)
421+54 - 421+87	RT	---	---	---	---	33	B-49-46 (6 EXISTING POSTS)
421+87 - 425+15	RT	238	38	1	---	---	OMIT THRIE BEAM TERMINAL CONNECTOR
421+87 - 424+64	LT	188	38	1	---	---	OMIT THRIE BEAM TERMINAL CONNECTOR
473+90 - 474+35	LT	38	7	---	1	---	OMIT THRIE BEAM TERMINAL CONNECTOR
473+92 - 474+38	RT	38	7	---	1	---	OMIT THRIE BEAM TERMINAL CONNECTOR
474+35 - 474+62	LT	---	---	---	---	25	B-49-48 (5 EXISTING POSTS)
474+38 - 474+62	RT	---	---	---	---	25	B-49-48 (5 EXISTING POSTS)
474+62 - 478+65	RT	313	38	1	---	---	OMIT THRIE BEAM TERMINAL CONNECTOR
474+62 - 477+38	LT	188	38	1	---	---	OMIT THRIE BEAM TERMINAL CONNECTOR
526+87 - 527+32	LT	38	7	---	1	---	OMIT THRIE BEAM TERMINAL CONNECTOR
526+87 - 527+34	RT	38	7	---	1	---	OMIT THRIE BEAM TERMINAL CONNECTOR
527+32 - 527+58	LT	---	---	---	---	25	B-49-49 (5 EXISTING POSTS)
527+34 - 527+58	RT	---	---	---	---	25	B-49-49 (5 EXISTING POSTS)
527+58 - 530+86	RT	238	38	1	---	---	OMIT THRIE BEAM TERMINAL CONNECTOR
527+58 - 530+35	LT	188	38	1	---	---	OMIT THRIE BEAM TERMINAL CONNECTOR
	TOTALS	2,625	443	10	10	252	

WATER

STATION - STATION	LOCATION	624.0100 MGAL	REMARKS
1+00-639+00	LT/RT	175	VARIOUS BAD PLACEMENTS
	TOTALS	**175**	

TOPSOIL, MULCHING, FERTILIZER, AND SEEDING

STATION - STATION	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0500 SEED WATER MGAL	REMARKS
95+85	LT	45	45	0.0	1	1	CULVERT WORK
181+79 - 184+55	RT	262	262	0.2	5	8	BEAMGUARD WORK
181+76 - 184+19	LT	166	166	0.1	3	5	BEAMGUARD WORK
343+89 - 346+46	RT	158	158	0.1	3	5	BEAMGUARD WORK
344+36 - 346+38	LT	253	253	0.2	5	8	BEAMGUARD WORK
375+08	LT	62	62	0.0	1	2	CULVERT WORK
424+00 - 426+00	RT	182	182	0.1	3	5	BEAMGUARD WORK
423+97 - 425+80	LT	299	299	0.2	5	9	BEAMGUARD WORK
476+67 - 479+58	RT	243	243	0.2	4	7	BEAMGUARD WORK
476+33 - 478+58	LT	164	164	0.1	3	5	BEAMGUARD WORK
485+31	LT	45	45	0.0	1	1	CULVERT WORK
516+82	LT	67	67	0.0	1	2	CULVERT WORK
529+67 - 531+60	RT	169	169	0.1	3	5	BEAMGUARD WORK
529+69 - 531+55	LT	146	146	0.1	3	4	BEAMGUARD WORK
551+81	LT	66	66	0.0	1	2	CULVERT WORK
	TOTALS	**2,331**	**2,331**	**1.5**	**42**	**70**	

SILT FENCE

STATION	LOCATION	628.1504 LF	628.1520 MAINTENANCE LF	REMARKS
181+79 - 184+55	RT	282	282	BEAMGUARD WORK
181+76 - 184+19	LT	243	243	BEAMGUARD WORK
343+89 - 346+46	RT	259	259	BEAMGUARD WORK
344+36 - 346+38	LT	207	207	BEAMGUARD WORK
424+00 - 426+00	RT	203	203	BEAMGUARD WORK
423+97 - 425+80	LT	194	194	BEAMGUARD WORK
476+67 - 479+58	RT	293	293	BEAMGUARD WORK
476+33 - 478+58	LT	227	227	BEAMGUARD WORK
529+67 - 531+60	RT	197	197	BEAMGUARD WORK
529+69 - 531+55	LT	189	189	BEAMGUARD WORK
95+85	LT	56	56	CULVERT WORK
375+08	LT	56	56	CULVERT WORK
485+31	LT	56	56	CULVERT WORK
516+82	LT	56	56	CULVERT WORK
551+81	LT	56	56	CULVERT WORK
	TOTALS	**2,574**	**2,574**	

MOBILIZATIONS EROSION CONTROL

STATION - STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
STAGE 1	1	1	
STAGE 2	1	1	
TOTALS	**2**	**2**	

INLET PROTECTION

STATION	LOCATION	628.7005 TYPE A EACH
51+85	RT	1
156+28	RT	1
183+02	RT	1
240+93	RT	1
346+87	RT	1
	TOTALS	**5**

ROCK BAGS

STATION	LOCATION	628.7570 EACH	REMARKS
181+79 - 184+55	RT	1	SILT FENCE SUPPORT AT LOW POINT
181+76 - 184+19	LT	1	SILT FENCE SUPPORT AT LOW POINT
343+89 - 346+46	RT	1	SILT FENCE SUPPORT AT LOW POINT
344+36 - 346+38	LT	1	SILT FENCE SUPPORT AT LOW POINT
424+00 - 426+00	RT	1	SILT FENCE SUPPORT AT LOW POINT
423+97 - 425+80	LT	1	SILT FENCE SUPPORT AT LOW POINT
476+67 - 479+58	RT	1	SILT FENCE SUPPORT AT LOW POINT
476+33 - 478+58	LT	1	SILT FENCE SUPPORT AT LOW POINT
529+67 - 531+60	RT	1	SILT FENCE SUPPORT AT LOW POINT
529+69 - 531+55	LT	1	SILT FENCE SUPPORT AT LOW POINT
95+85	LT	1	SILT FENCE SUPPORT AT LOW POINT
375+08	LT	1	SILT FENCE SUPPORT AT LOW POINT
485+31	LT	1	SILT FENCE SUPPORT AT LOW POINT
516+82	LT	1	SILT FENCE SUPPORT AT LOW POINT
551+81	LT	1	SILT FENCE SUPPORT AT LOW POINT
	TOTALS	**15**	

TRAFFIC CONTROL - DEVICES

CONSTRUCTION STAGE	643.0300 DRUMS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.0715 WARNING LIGHTS TYPE C DAYS	643.0800 ARROW BOARDS DAYS	643.0900 SIGNS DAYS	643.0920 COVERING SIGNS TYPE II EACH			643.1051 SIGNS PCMS WITH CELLULAR COMMUNICATIONS DAYS
							NUMBER OF CYCLES	NUMBER OF SIGNS	EACH	
ADVANCED WARNING	---	---	---	---	---	2016	4	8	32	96
STAGE 1	33,200	1,600	3200	700	100	1800	---	---	---	---
STAGE 2	34,528	1,664	3328	728	104	1872	---	---	---	---
STAGE 3	---	---	---	---	6	20	---	---	---	---
RAMP CLOSURES	40	40	80	---	---	16	---	---	8	32
TOTALS	**67,768**	**3,304**	**6,608**	**1,428**	**210**	**5,724**		**40**		**128**

TRAFFIC CONTROL

STATION	LOCATION	643.5000 TOTAL EACH
1+00 - 639+00	LT/RT	1
	TOTALS	**1**

3

3

PAVEMENT MARKING EPOXY

STATION - STATION	LOCATION	646.1020 4-INCH WHITE LF	646.1020 4-INCH YELLOW LF	646.1040 GROOVED WET REF 4-INCH WHITE LF	646.3040 GROOVED WET REF 8-INCH WHITE LF	646.6120 STOPLINE 18-INCH WHITE LF	646.7220 CHEVRON EPOXY 24-INCH LF
1+00 - 639+00	SHLDRS & MNLN	68,000	68,000	17,000	1440	---	408
91+00 - 103+51	CTH W ON RAMP	1,877	1,877	---	---	---	---
102+82 - 113+04	CTH W OFF RAMP	1,533	1,533	---	75	50	---
108+00 - 118+08	CTH D ON RAMP	1,512	1,512	---	---	---	---
120+73 - 128+60	CTH D OFF RAMP	1,181	1,181	---	---	---	---
	SUB TOTALS	74,102	74,102				
	PROJECT TOTAL	**148,204**		**17,000**	**1,515**	**50**	**408**

TEMPORARY MARKING LINE

STATION - STATION	LOCATION	646.9000 MARKING REMOVAL LINE 4-INCH LF	649.0105 PAINT 4-INCH WHITE LF	649.0105 PAINT 4-INCH YELLOW LF	649.0150 TAPE 4-INCH WHITE LF	649.0150 TAPE 4-INCH YELLOW LF	649.0205 PAINT 8-INCH WHITE LF	REMARKS
0+00 - 640+00	SHLDRS & MNLN	84,000	68,000	68,000		4,200	1,600	STAGE 1
0+00 - 640+00	SHLDRS & MNLN	4,000	68,000	68,000	3,360		1,600	STAGE 2
	SUB TOTALS	88,000	136,000	136,000	3,360	4,200	3,200	
	PROJECT TOTAL	**88,000**	**272,000**		**7,560**		**6,400**	

3

CONSTRUCTION STAKING

STATION - STATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.8000 RESURFACING REFERENCE LF	650.9910 SUPPLEMENTAL CONTROL (1166-07-77) LS	650.9920 SLOPE STAKES LF	REMARKS
PROJECT	---	---	---	1	---	
1+00 - 50+77	---	---	5,190	---	---	
50+77 - 57+07	630	630	630	---	630	
57+07 - 155+68	---	---	10,291	---	---	
155+68 - 161+98	630	630	630	---	630	
161+98 - 234+87	---	---	7,711	---	305	
234+87 - 241+17	630	630	630	---	630	
241+17 - 444+80	---	---	20,784	---	400	
444+80 - 451+10	630	630	630	---	630	
451+10 - 603+48	---	---	15,665	---	500	
603+48 - 609+78	630	630	630	---	630	
609+78 - 639+00	---	---	3,080	---	---	
91+00 - 103+51	---	---	1,251	---	---	
102+82 - 113+04	---	---	1,022	---	---	
108+00 - 118+08	---	---	1,008	---	---	
120+73 - 128+60	---	---	787	---	---	
TOTALS	**3,150**	**3,150**	**69,939**	**1**	**4,355**	

SAWING CONCRETE

STATION - STATION	LOCATION	690.0250 LF	REMARKS
50+77 - 57+07	LT	48	
155+68 - 161+98	LT	48	
234+87 - 241+17	LT	48	
444+80 - 451+10	LT	48	
603+48 - 609+78	LT	48	
102+03 - 103+64	CTH W ON RAMP	369	
103+03 - 103+46	CTH W ON RAMP	139	
102+70 - 104+56	CTH W OFF RAMP	479	
102+88 - 103+41	CTH W OFF RAMP	141	
	TOTAL	**1,368**	

SAWING ASPHALT

STATION - STATION	LOCATION	690.0150 LF	REMARKS
50+77 - 57+07	LT/RT	28	ASPHALT SHOULDER
57+07 - 57+45	RT	38	SHOULDER MATCHING
155+68 - 161+98	LT/RT	28	ASPHALT SHOULDER
161+99 - 162+30	RT	31	SHOULDER MATCHING
234+87 - 241+17	LT/RT	28	ASPHALT SHOULDER
241+17 - 241+59	RT	42	SHOULDER MATCHING
444+80 - 451+10	LT/RT	28	ASPHALT SHOULDER
451+10 - 451+51	RT	41	SHOULDER MATCHING
603+48 - 609+78	LT/RT	28	ASPHALT SHOULDER
609+78 - 610+26	RT	48	SHOULDER MATCHING
95+85	LT SHLDR	15	AT CULVERT
375+08	LT SHLDR	15	AT CULVERT
485+31	LT SHLDR	15	AT CULVERT
516+82	LT SHLDR	15	AT CULVERT
551+81	LT SHLDR	15	AT CULVERT
	TOTAL	**415**	

FILL EXISTING RUMBLE STRIPS

STATION - STATION	LOCATION	SPV.0090.02 LF	REMARKS
BEGINNING OF PROJECT	LT	420	STAGE 1 IN LANE SHIFT
END OF PROJECT	LT	420	STAGE 1 IN LANE SHIFT
BEGINNING OF PROJECT	RT	420	STAGE 2 IN LANE SHIFT
END OF PROJECT	RT	420	STAGE 2 IN LANE SHIFT
	TOTAL	**1,680**	

AKRON AVE.

N

BEGIN PROJECT
STA 1+00 SB

BUTT JOINT

5SB 10SB 15SB 20SB 25SB 30SB

IH 39/USH 51 SB

105NB 110NB 115NB 120NB 125NB 130NB

IH 39/USH 51 NB

CROSSOVER AT 1+00
2-INCH MILL AND OVERLAY

BUTT JOINT

AKRON AVE.

5

5

BUTT JOINT

N

IH 39 SB ENTRANCE RAMP "DC"

IH 39 SB EXIT RAMP "DD"

115DC

120DD

125DD

110DC

E

COMMUNICATION LINE
(UNKNOWN OWNERSHIP)

CTH D

32+06SB
LT SHOULDER MIX HT RAMP MIX

43+70SB
HT RAMP MIX

LT SHOULDER MIX

PAVEMENT REPLACEMENT
(SEE PLAN AND PROFILE SHEETS)

SHOULDER MATCHING
(SEE CONSTRUCTION DETAIL)

35SB 40SB 45SB 50SB 55SB 60SB

IH 39/USH 51 SB

130NB 135NB 140NB 145NB 150NB 155NB 160NB

IH 39/USH 51 NB

STRUCTURE B-49-42
STA 52+95

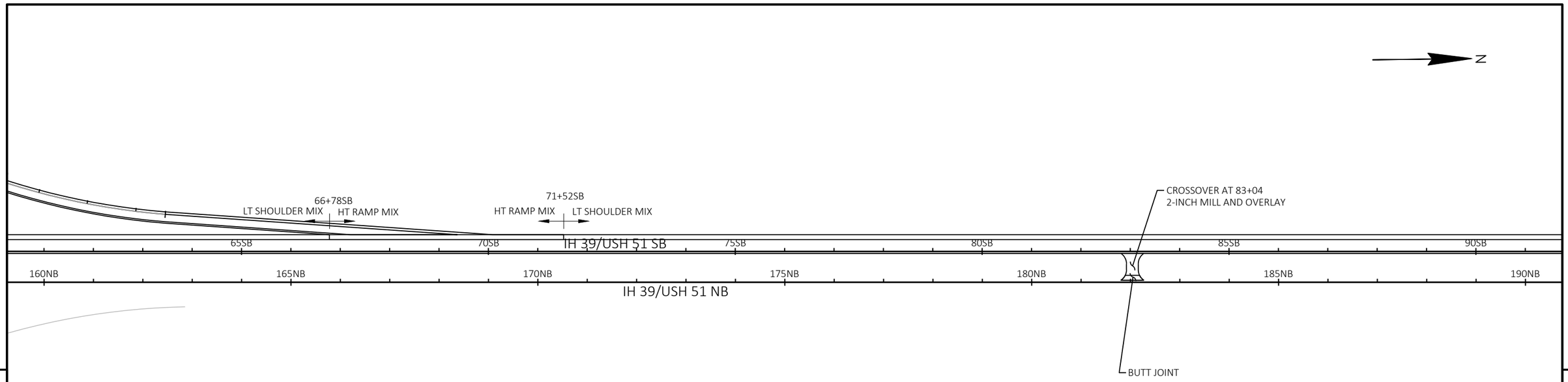
CTH D

IH 39 NB EXIT RAMP

IH 39 NB ENTRANCE RAMP

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 38	E



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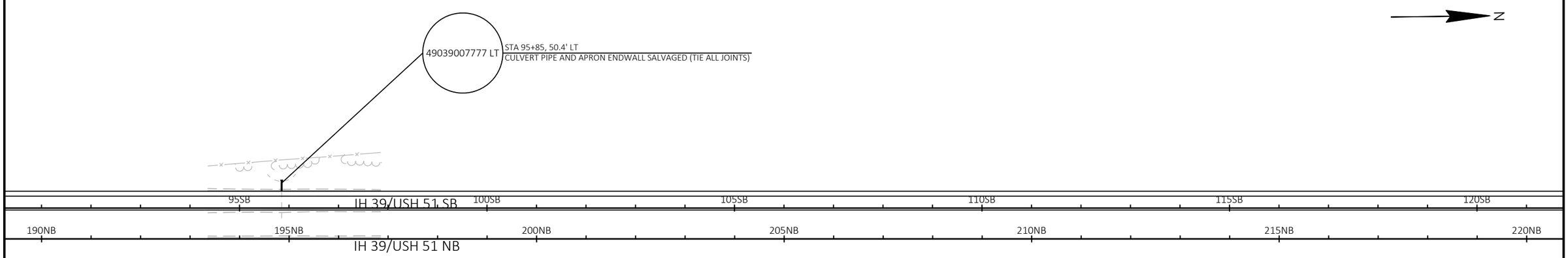


(X) SEE GENERAL NOTES FOR UTILITY OWNERSHIP

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 39	E

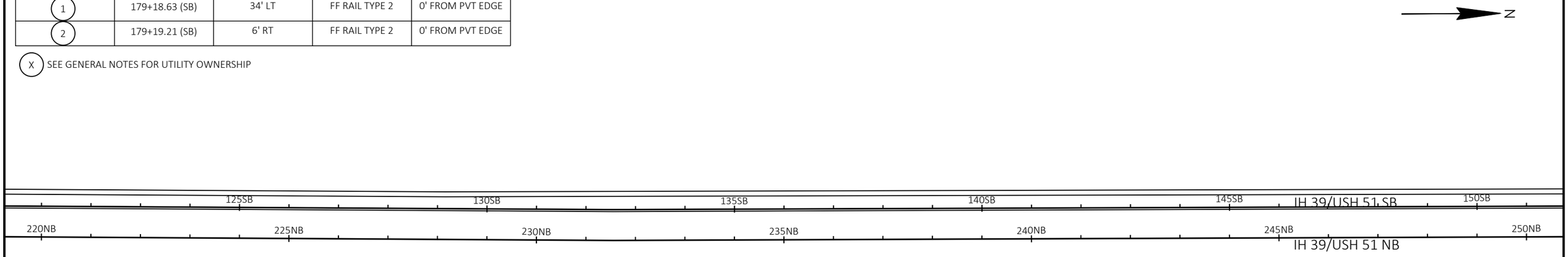
FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050201-PN-IH-39.DWG
LAYOUT NAME - 2

PLOT DATE : 2/18/2022 2:25 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ############

WISDOT/CADDS SHEET 44

POINT LABEL	STATION	OFFSET	DESCRIPTION	REMARKS
(1)	179+18.63 (SB)	34' LT	FF RAIL TYPE 2	0' FROM PVT EDGE
(2)	179+19.21 (SB)	6' RT	FF RAIL TYPE 2	0' FROM PVT EDGE

(X) SEE GENERAL NOTES FOR UTILITY OWNERSHIP



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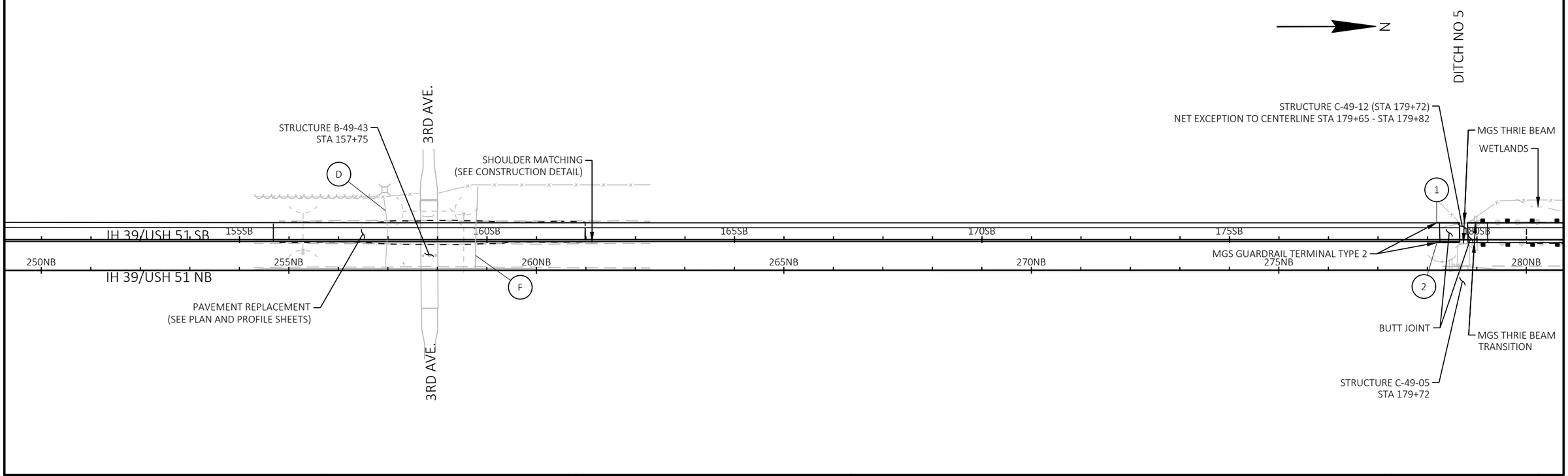


PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 40	E

POINT LABEL	STATION	OFFSET	DESCRIPTION	REMARKS
3	182+09.11 (SB)	34' LT	FF RAIL POST 9	0' FROM PVT EDGE
4	182+59.11 (SB)	36' LT	FF RAIL POST 1	2' FROM PVT EDGE
5	183+10.01 (SB)	6' RT	FF RAIL POST 9	0' FROM PVT EDGE
6	183+60.02 (SB)	8' RT	FF RAIL POST 1	2' FROM PVT EDGE
7	183+90.01 (SB)	4' RT	ASPHLT SHLDR WIDENING	0' FROM PVT EDGE

(X) SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

WETLANDS

MGS GUARDRAIL TERMINAL EAT

ASPHALT SHOULDER WIDENING
(SEE CONSTRUCTION DETAIL)

MGS GUARDRAIL 3

CROSSOVER AT 206+61
2-INCH MILL AND OVERLAY

BUTT JOINT

IH 39/USH 51 SB

IH 39/USH 51 NB

185SB 190SB 195SB 200SB 205SB 210SB

280NB 285NB 290NB 295NB 300NB 305NB 310NB

5

5

N

BUTT JOINT

105WD

IH 39 SB EXIT
RAMP "WD"

IH 39 SB ENTRANCE RAMP

100WC

95WC

CTH W

MILL RD

215+75SB
LT SHOULDER MIX | HT RAMP MIX

226+60SB
HT RAMP MIX | LT SHOULDER MIX

PAVEMENT REPLACEMENT
(SEE PLAN AND PROFILE SHEETS)

SHOULDER MATCHING
(SEE CONSTRUCTION DETAIL)

215SB 220SB 225SB 230SB 235SB 240SB

310NB 315NB 320NB 325NB 330NB 335NB 340NB

IH 39/USH 51 SB

IH 39/USH 51 NB

STRUCTURE B-49-44
STA 237+00

IH 39 NB EXIT RAMP

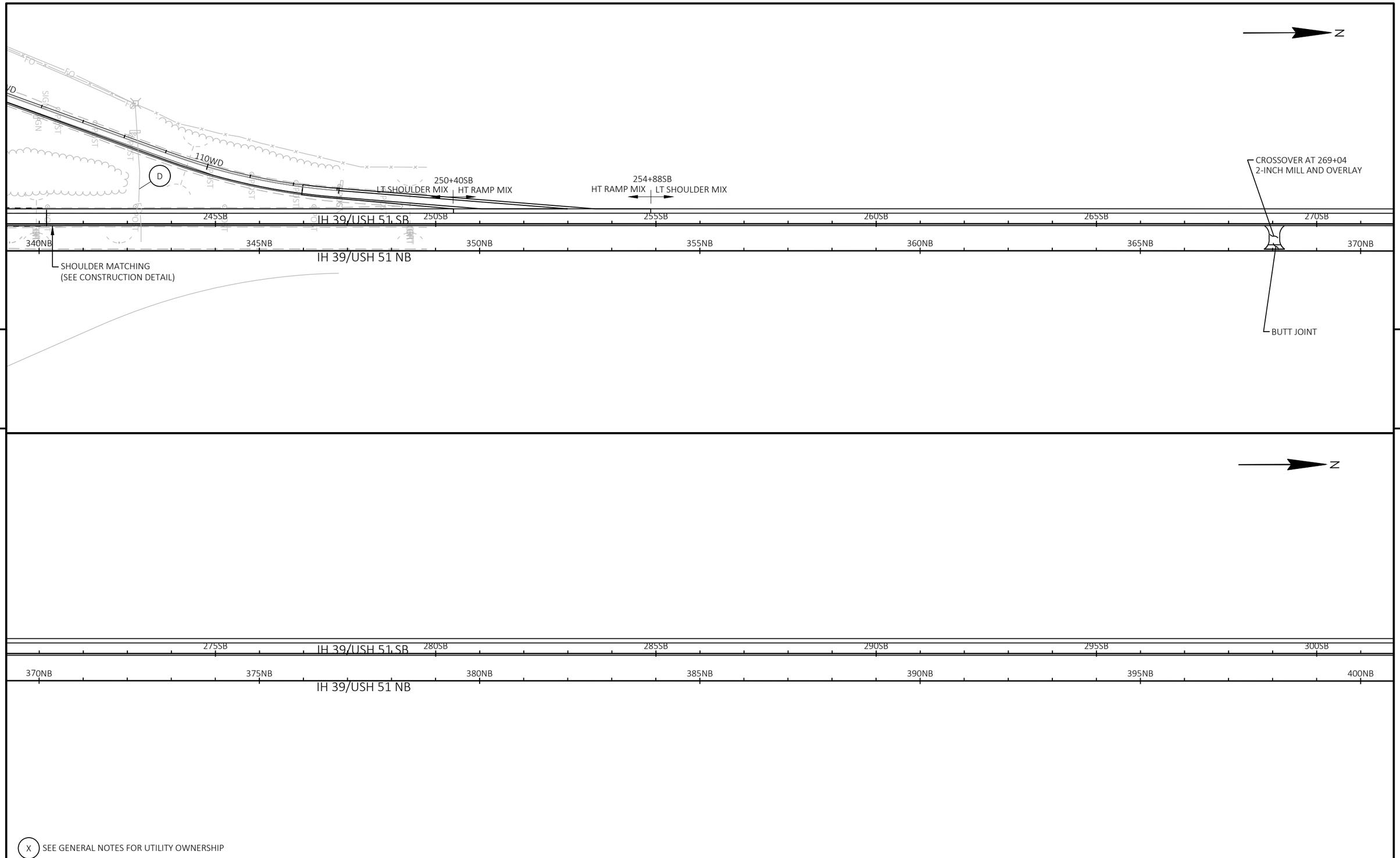
IH 39 NB ENTRANCE RAMP

MILL RD

CTH W

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 41	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050201-PN-IH-39.DWG
LAYOUT NAME - 4
PLOT DATE : 2/18/2022 2:25 PM
PLOT BY : CASPER, ANDREW P
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 44



5

5

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

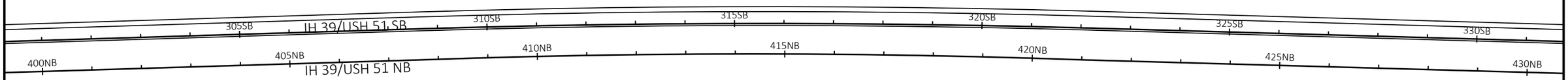
PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 42	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050201-PN-IH-39.DWG
LAYOUT NAME - 5

PLOT DATE : 2/18/2022 2:25 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ##########

POINT LABEL	STATION	OFFSET	DESCRIPTION	REMARKS
(8)	341+69.6 (SB)	34' LT	FF RAIL TYPE 2	0' FROM PVT EDGE
(9)	344+67.43 (SB)	34' LT	FF RAIL POST 9	0' FROM PVT EDGE
(10)	345+17.43 (SB)	36' RT	FF RAIL POST 1	2' FROM PVT EDGE
(11)	341+71.94 (SB)	6' RT	FF RAIL TYPE 2	0' FROM PVT EDGE
(12)	345+20.01 (SB)	6' RT	FF RAIL POST 9	0' FROM PVT EDGE
(13)	345+70.01 (SB)	8' RT	FF RAIL POST 1	2' FROM PVT EDGE

(X) SEE GENERAL NOTES FOR UTILITY OWNERSHIP



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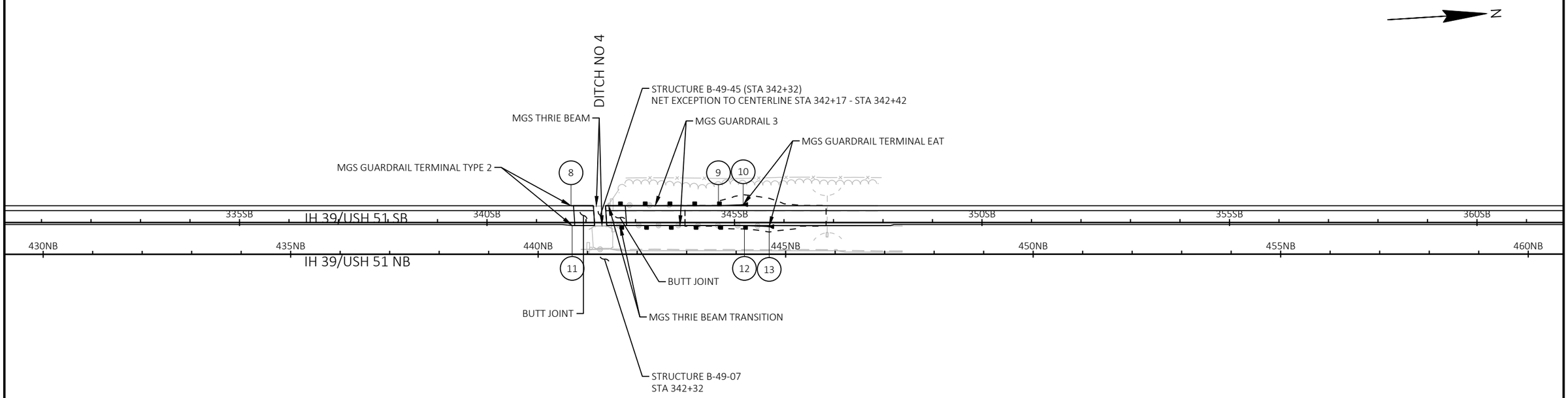
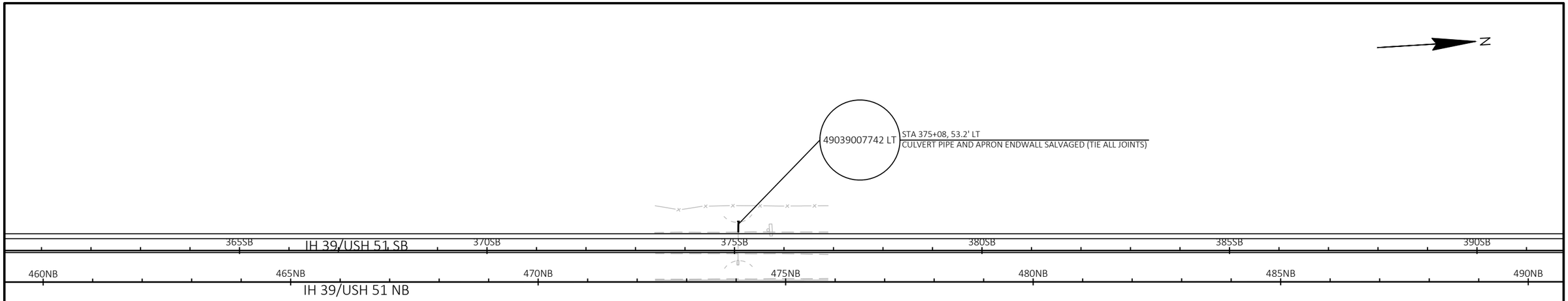
5

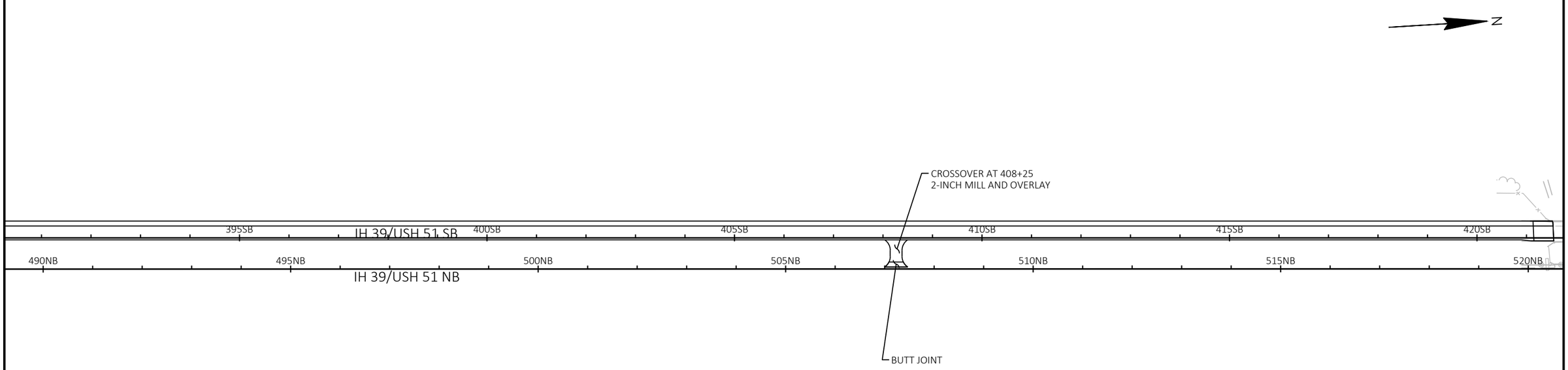


PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 43	E



5

5



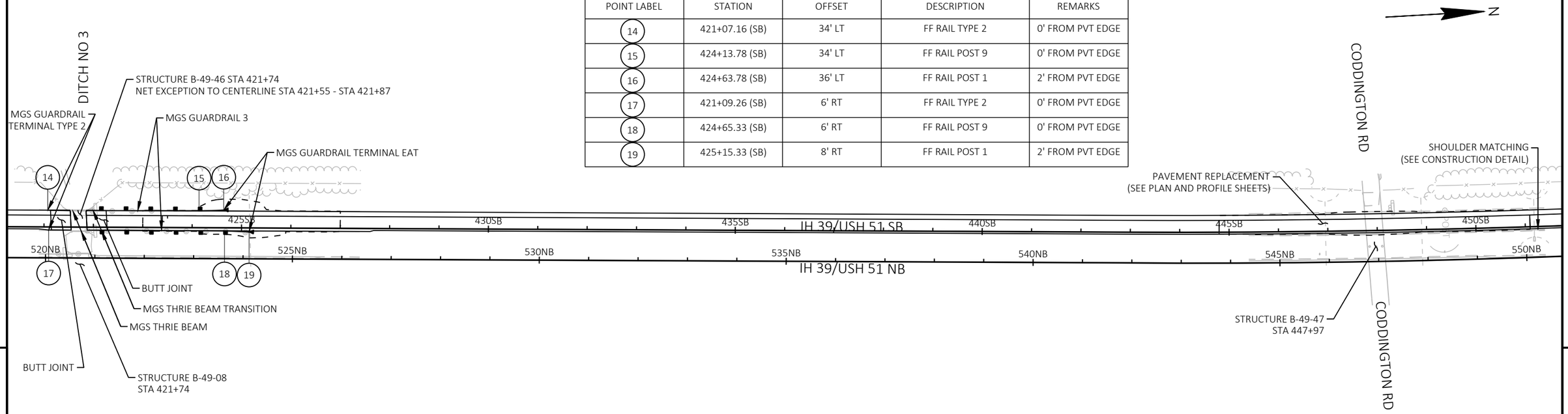
(X) SEE GENERAL NOTES FOR UTILITY OWNERSHIP

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 44	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050201-PN-IH-39.DWG
LAYOUT NAME - 7

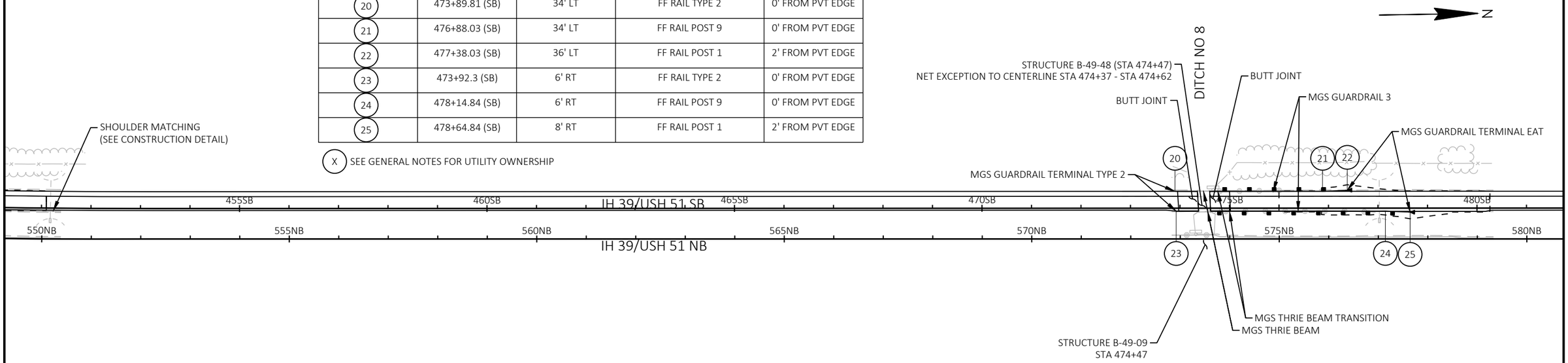
PLOT DATE : 2/18/2022 2:25 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ##########

POINT LABEL	STATION	OFFSET	DESCRIPTION	REMARKS
14	421+07.16 (SB)	34' LT	FF RAIL TYPE 2	0' FROM PVT EDGE
15	424+13.78 (SB)	34' LT	FF RAIL POST 9	0' FROM PVT EDGE
16	424+63.78 (SB)	36' LT	FF RAIL POST 1	2' FROM PVT EDGE
17	421+09.26 (SB)	6' RT	FF RAIL TYPE 2	0' FROM PVT EDGE
18	424+65.33 (SB)	6' RT	FF RAIL POST 9	0' FROM PVT EDGE
19	425+15.33 (SB)	8' RT	FF RAIL POST 1	2' FROM PVT EDGE



POINT LABEL	STATION	OFFSET	DESCRIPTION	REMARKS
20	473+89.81 (SB)	34' LT	FF RAIL TYPE 2	0' FROM PVT EDGE
21	476+88.03 (SB)	34' LT	FF RAIL POST 9	0' FROM PVT EDGE
22	477+38.03 (SB)	36' LT	FF RAIL POST 1	2' FROM PVT EDGE
23	473+92.3 (SB)	6' RT	FF RAIL TYPE 2	0' FROM PVT EDGE
24	478+14.84 (SB)	6' RT	FF RAIL POST 9	0' FROM PVT EDGE
25	478+64.84 (SB)	8' RT	FF RAIL POST 1	2' FROM PVT EDGE

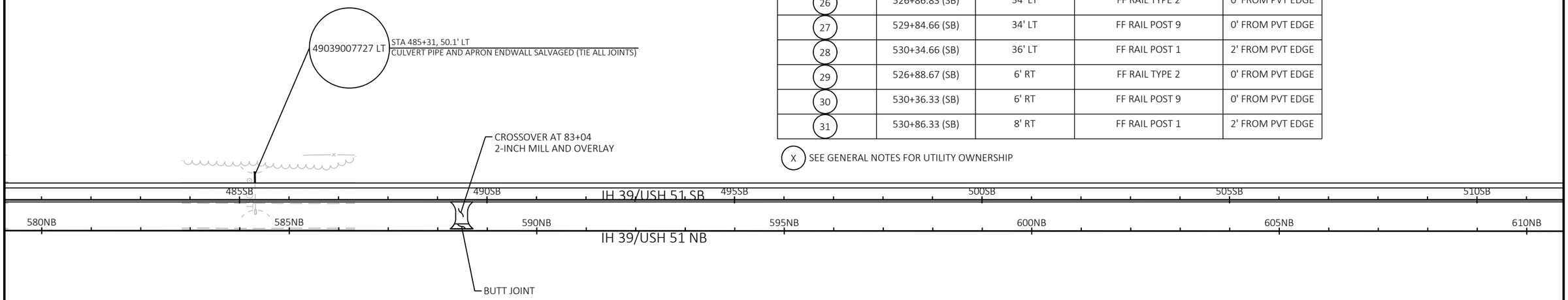
(X) SEE GENERAL NOTES FOR UTILITY OWNERSHIP

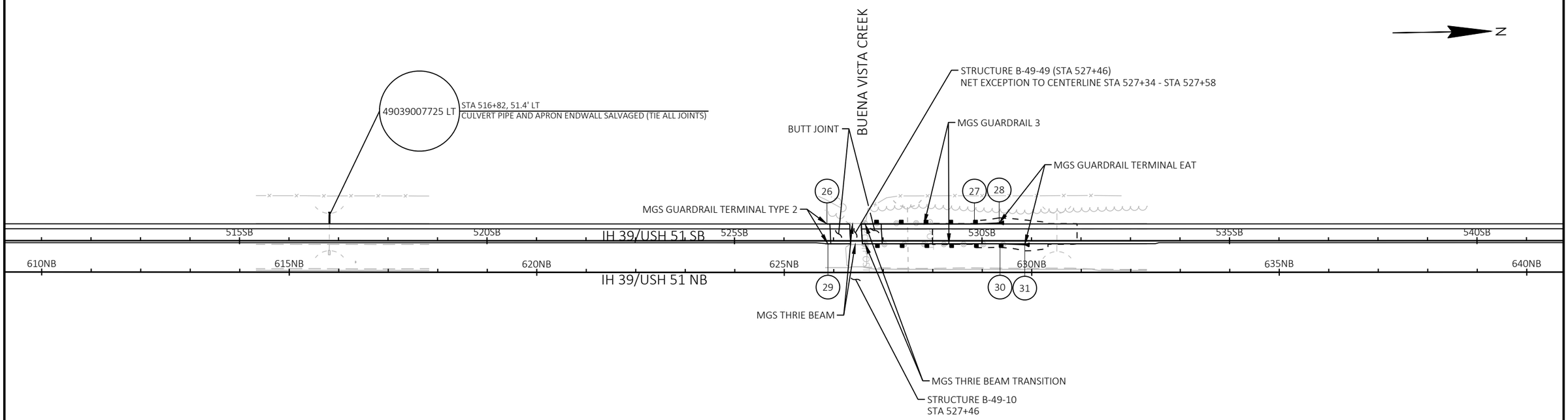


PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 45	E

POINT LABEL	STATION	OFFSET	DESCRIPTION	REMARKS
26	526+86.83 (SB)	34' LT	FF RAIL TYPE 2	0' FROM PVT EDGE
27	529+84.66 (SB)	34' LT	FF RAIL POST 9	0' FROM PVT EDGE
28	530+34.66 (SB)	36' LT	FF RAIL POST 1	2' FROM PVT EDGE
29	526+88.67 (SB)	6' RT	FF RAIL TYPE 2	0' FROM PVT EDGE
30	530+36.33 (SB)	6' RT	FF RAIL POST 9	0' FROM PVT EDGE
31	530+86.33 (SB)	8' RT	FF RAIL POST 1	2' FROM PVT EDGE

(X) SEE GENERAL NOTES FOR UTILITY OWNERSHIP

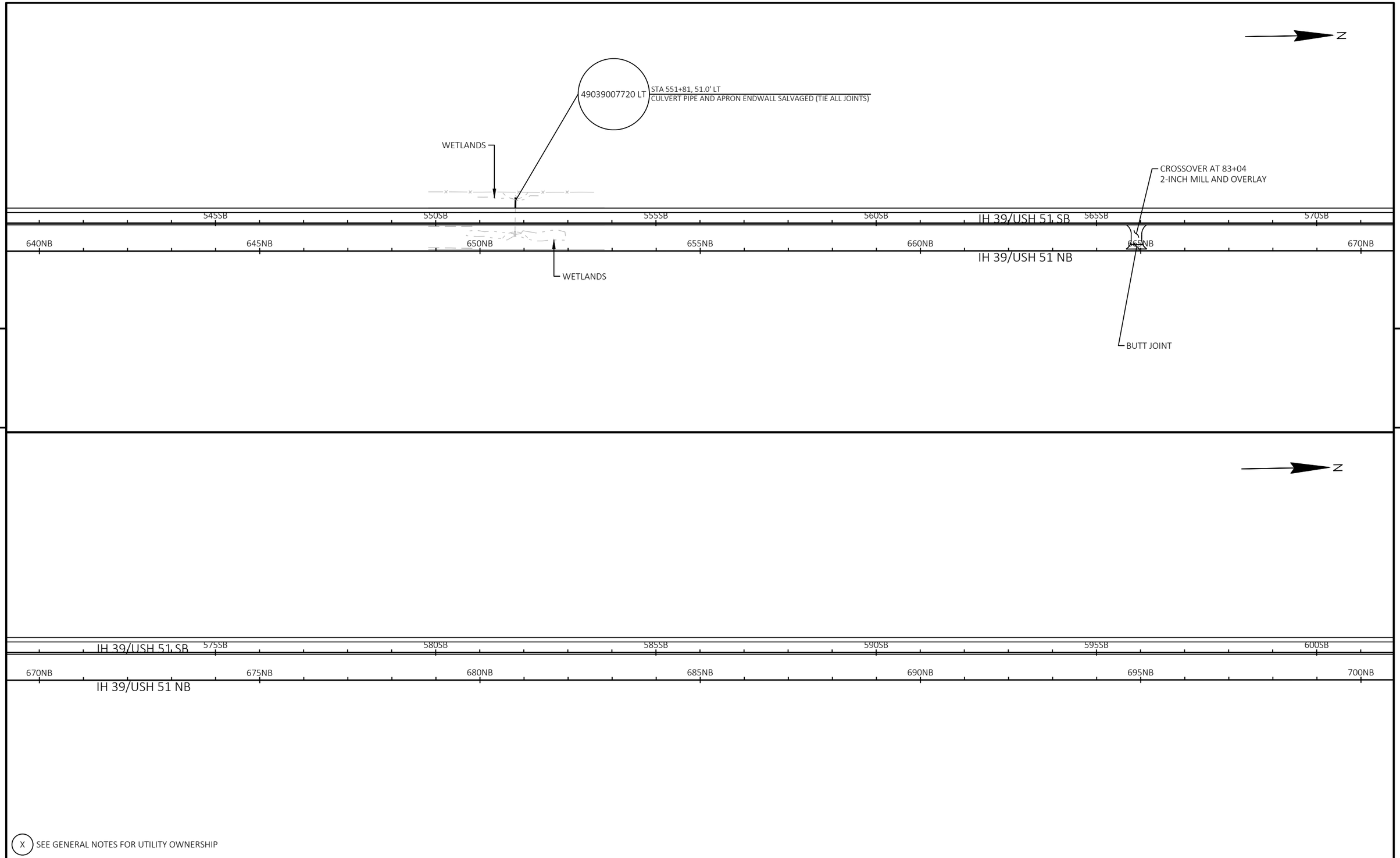




PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 46	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050201-PN-IH-39.DWG
LAYOUT NAME - 9

PLOT DATE : 2/18/2022 2:25 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ##########



5

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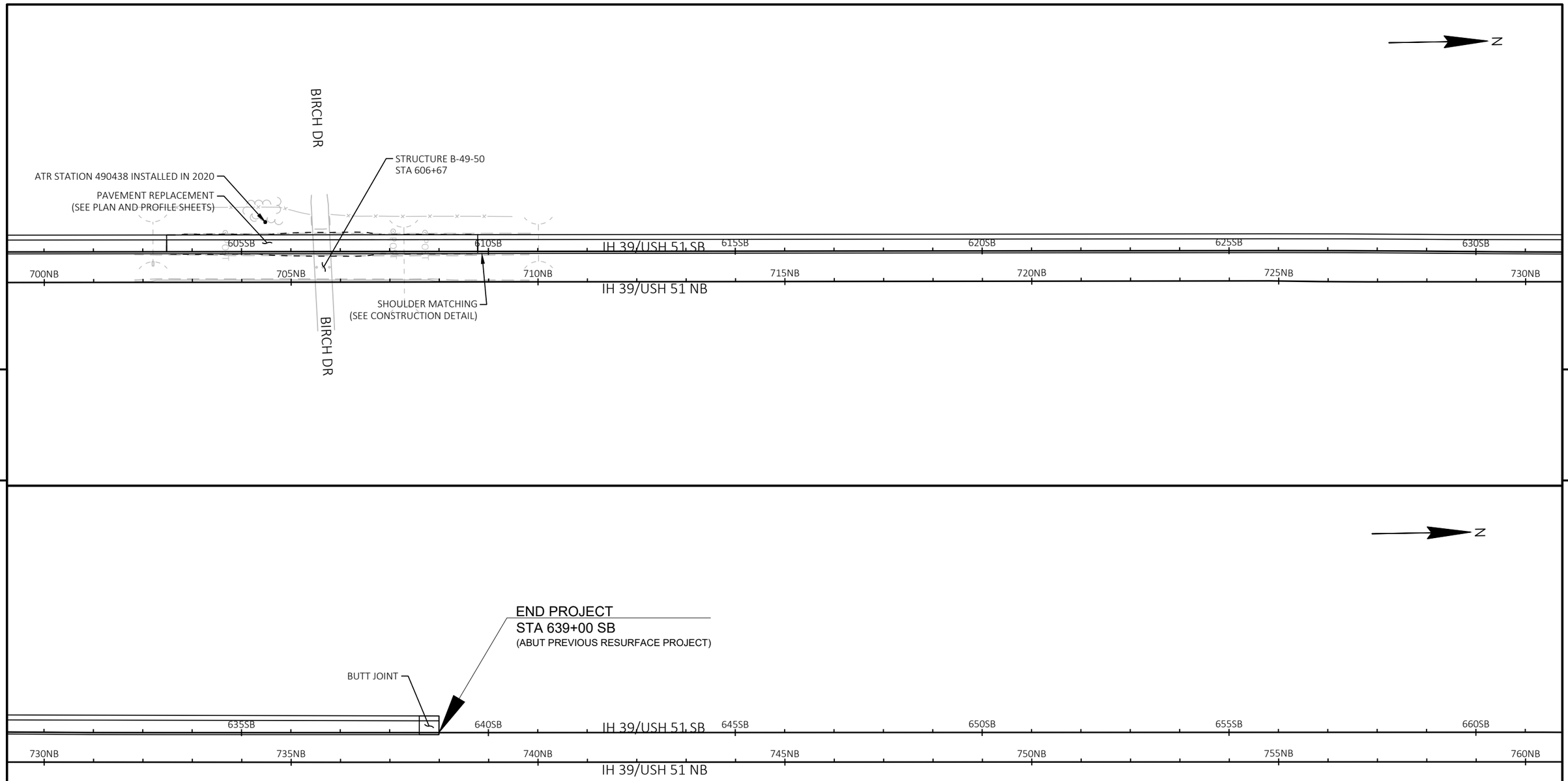
X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 47	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050201-PN-IH-39.DWG
LAYOUT NAME - 10

PLOT DATE : 2/18/2022 2:25 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ##########



5

5

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND	SHEET 48	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050201-PN-IH-39.DWG
LAYOUT NAME - 11

PLOT DATE : 2/18/2022 2:25 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ###########

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

IH 39/USH 51 SB ON RAMP

IH 39/USH 51 SB

IH 39/USH 51 NB

51+00.00

PI 50+85.28

BEGIN PAVEMENT REPLACEMENT
STA 50+77.18SB
SAW CUT REQ'D

BEGIN PROFILE CORRECTION
MATCH EXISTING

VCL = 135.00
K = 1398.72

VCL = 210.00
K = 655.22

VPC STA 49+42.18
VPC EL 1095.39

VPI STA 50+09.68
VPI EL 1095.34

VPT STA 50+77.18
VPT EL 1095.23

ORIGINAL GROUND

PROPOSED PROFILE

45 50 145 150

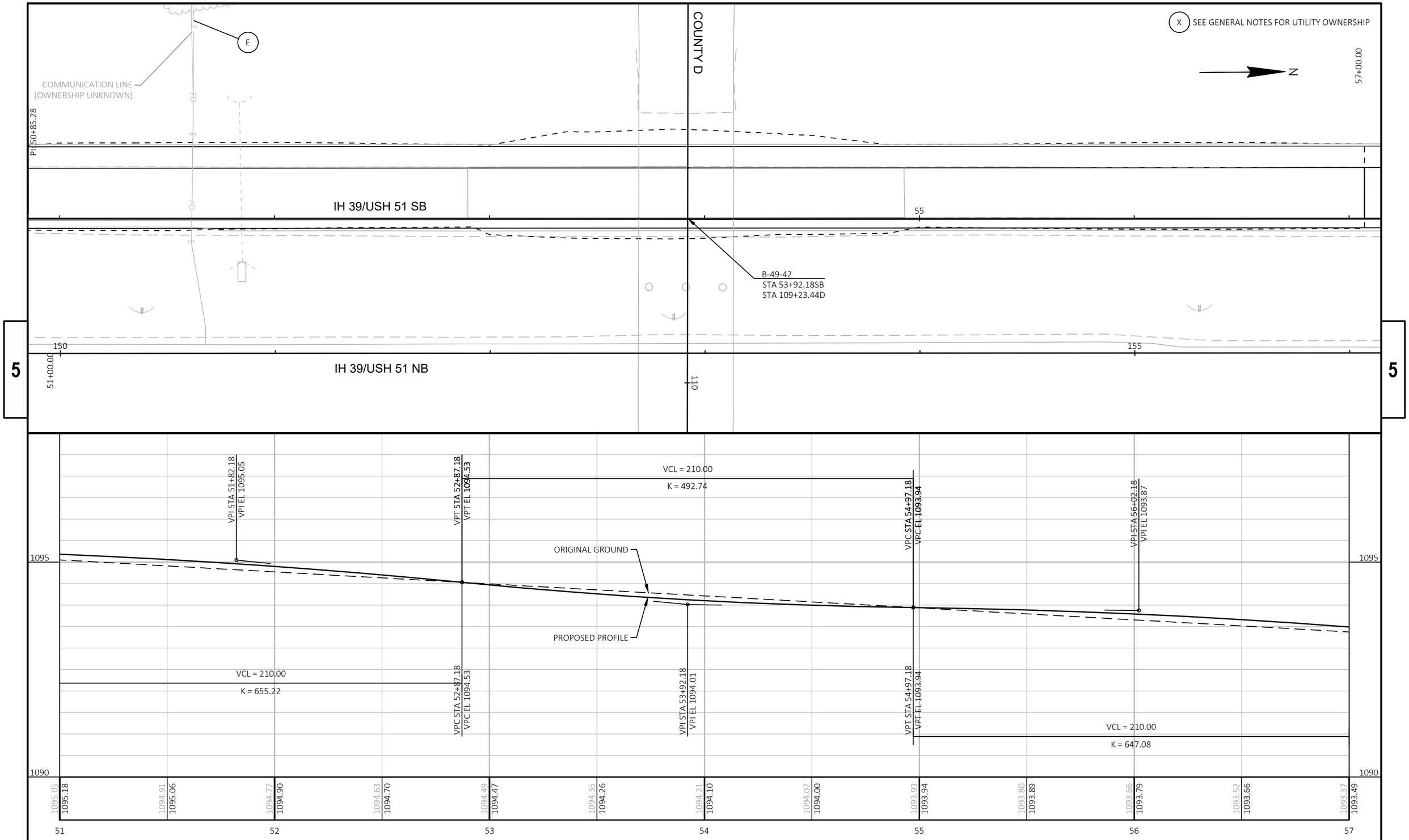
1100 1095

1096.05 1095.98 1095.90 1095.83 1095.75 1095.68 1095.60 1095.53 1095.45 1095.38 1095.39 1095.29 1095.34 1095.18 1095.27 1095.05 1095.18

45 46 47 48 49 50 51

5 5

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (CTH D)	SHEET 49	E



PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (CTH D)	SHEET 50 E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050202-PP-IH-39.DWG
LAYOUT NAME - 2

PLOT DATE : 3/11/2021 12:36 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:40 FT

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

IH 39/USH 51 SB OFF RAMP

N

PI: 58+36.61

PI: 61+68.49

IH 39/USH 51 SB

60

PI: 160+68.49

END PAVEMENT REPLACEMENT
STA 57+07.18SB
SAW CUT REQ'D

IH 39/USH 51 NB

160

57+00.00

VPC STA 57+07.18
VPC EL 1093.46

VPI STA 57+74.68
VPI EL 1093.20

VPT STA 58+42.18
VPT EL 1092.87

PROPOSED PROFILE

END PROFILE CORRECTION
MATCH EXISTING

VPT STA 57+07.18
VPT EL 1093.46

ORIGINAL GROUND

VCL = 210.00
K = 647.08

VCL = 135.00
K = 1458.81

1095

1090

1093.52 1093.66 1093.37 1093.49 1093.21 1093.29 1093.04 1093.07 1092.84 1092.64 1092.44 1092.24 1092.04 1091.84 1091.64 1091.44 1091.24

56 57 58 59 60 61 62 62

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (CTH D)	SHEET 51	E

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

IH 39/USH 51 SB

IH 39/USH 51 NB

150 250 155 255

BEGIN PAVEMENT REPLACEMENT
STA 155+68.33SB
SAW CUT REQ'D

STA 154+33.33
EL 1089.29

BEGIN PROFILE CORRECTION
MATCH EXISTING

PROPOSED
PROFILE

VPC STA 155+68.33
VPC EL 1088.95

-0.25%

ORIGINAL GROUND

VCL = 210.00

K = 719.31

1090

1085

1089.70 1089.55 1089.40 1089.24 1089.25 1089.07 1089.13 1088.90 1089.00 1088.74 1088.87

150 151 152 153 154 155 156

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (3RD)	SHEET 52	E

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

D

F

3RD

FO

G

IH 39/USH 51 SB

160

END PAVEMENT REPLACEMENT
STA 161+98.33SB
SAW CUT REQ'D

255

260

158+00.00

IH 39/USH 51 NB

5

5

VPI STA 156+73.33
VPI EL 1088.69

VPT STA 157+78.33
VPT EL 1088.12

VCL = 210.00
K = 384.98

VPC STA 159+88.33
VPC EL 1087.55

VPI STA 160+93.33
VPI EL 1087.55

VPT STA 161+98.33
VPT EL 1087.20

1090

ORIGINAL GROUND

PROPOSED
PROFILE

VCL = 210.00
K = 719.31

VPC STA 157+78.33
VPC EL 1088.12

VPI STA 158+83.33
VPI EL 1087.55

VPT STA 159+88.33
VPT EL 1087.55

VCL = 210.00
K = 621.57

1085

1084

1088.74	1088.87	1088.57	1088.70	1088.40	1088.50	1088.23	1088.27	1088.09	1088.01	1087.97	1087.80	1087.84	1087.65	1087.72	1087.57	1087.59	1087.55	1087.47	1087.52	1087.34	1087.45	1087.21	1087.34	1087.08	1087.19
156				157				158				159				160				161				162	

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (3RD)	SHEET 53 E

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

IH 39/USH 51 SB

IH 39/USH 51 NB

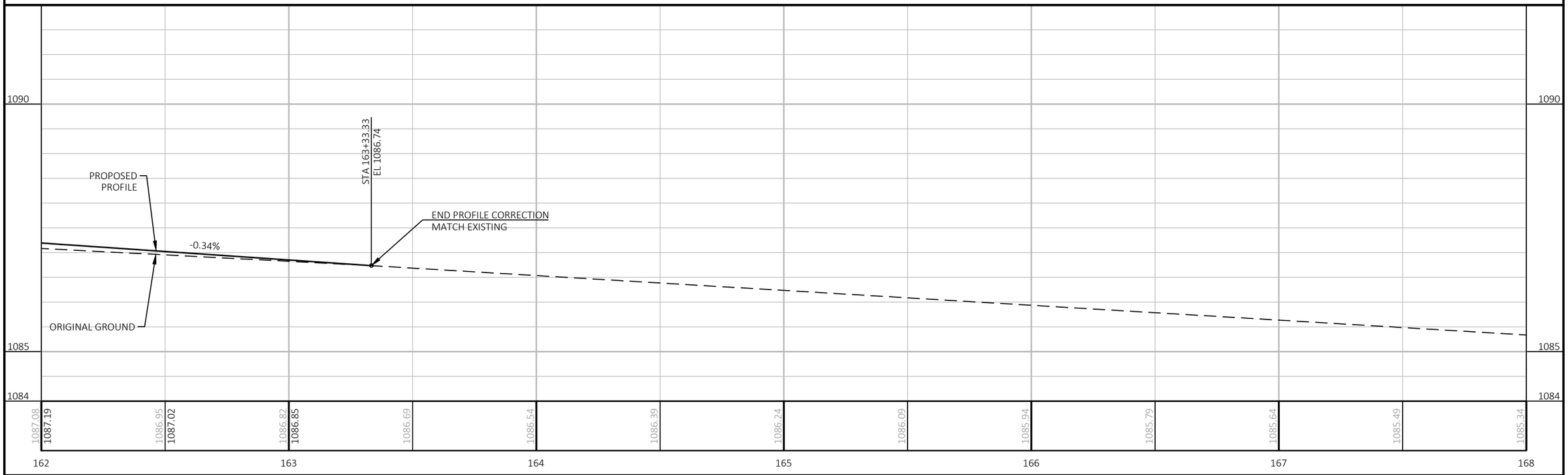
165

265

164+00.00

5

5



PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (3RD)	SHEET 54	E

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

236+00.00

IH 39/USH 51 SB

IH 39/USH 51 NB

230 235 330 335

BEGIN PAVEMENT REPLACEMENT
STA 234+86.50SB
SAW CUT REQ'D

BEGIN PROFILE CORRECTION
MATCH EXISTING

VPC STA 233+51.50
VPC EL 1085.78
VPI STA 233+62.46
VPI EL 1085.78
VPT STA 233+73.42
VPT EL 1085.76

VPC STA 234+86.50
VPC EL 1085.66

VPI STA 235+91.50
VPI EL 1085.55

PROPOSED PROFILE

ORIGINAL GROUND

-0.10%

VCL = 21.92
K = 769.95

VCL = 210.00
K = 849.58

1085
1082

1085.57 1085.62 1085.66 1085.70 1085.75 1085.79 1085.80 1085.78 1085.73 1085.74 1085.65 1085.69 1085.54 1085.64 1085.44 1085.57 1085.37 1085.47

230 231 232 233 234 235 236

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (CTH W)	SHEET 55	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050202-PP-IH-39.DWG
LAYOUT NAME - 7

PLOT DATE : 3/11/2021 12:36 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ##########

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

CTH W

IH 39/USH 51 SB

IH 39/USH 51 NB

B-49-43
STA 238+02.70SB
STA 109+23.98W

END PAVEMENT REPLACEMENT
STA 241+16.50SB
SAW CUT REQ'D

VCL = 210.00
K = 370.11

VCL = 210.00
K = 849.58

VCL = 210.00
K = 777.04

ORIGINAL GROUND

PROPOSED PROFILE

VPC STA 236+96.50
VPC EL 1085.19

VPI STA 238+01.50
VPI EL 1084.83

VPT STA 239+06.50
VPT EL 1085.06

VPI STA 240+11.50
VPI EL 1085.30

VPT STA 241+16.50
VPT EL 1085.25

-0.05%

1085.37	1085.31	1085.26	1085.22	1085.18	1085.14	1085.10	1085.08	1085.10	1085.11	1085.13	1085.15	1085.16
1085.47	1085.34	1085.18	1085.05	1084.98	1084.98	1085.05	1085.15	1085.22	1085.25	1085.26	1085.23	1085.21

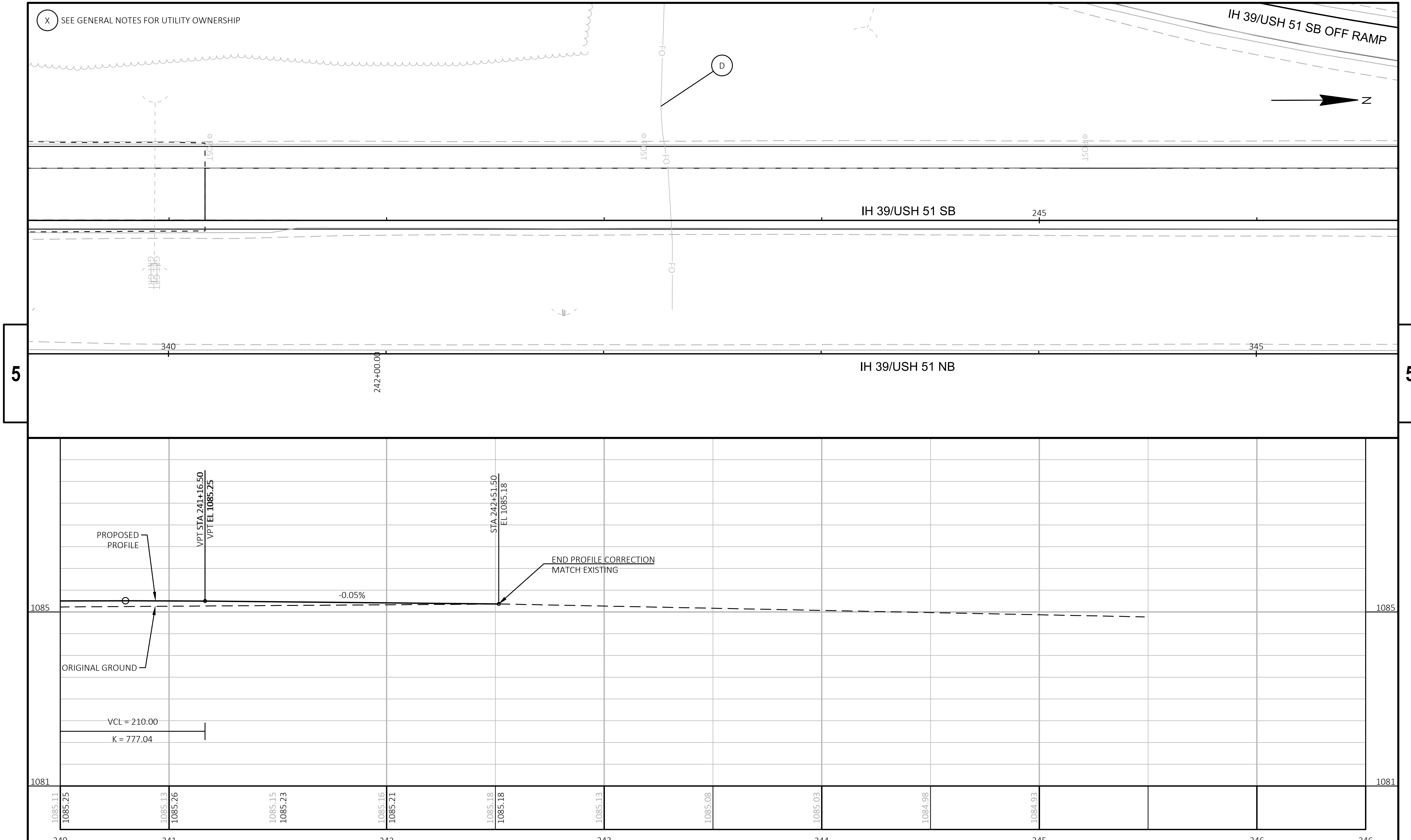
236 237 238 239 240 241 242

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (CTH W)	SHEET 56 E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050202-PP-IH-39.DWG
LAYOUT NAME - 8

PLOT DATE : 3/11/2021 12:36 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 44



PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (CTH W)	SHEET 57	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050202-PP-IH-39.DWG
LAYOUT NAME - 9
PLOT DATE : 3/11/2021 12:36 PM
PLOT BY : CASPER, ANDREW P
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 44

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

PC: 442+83.18

440 IH 39/USH 51 SB 445

PC: 541+79.72

BEGIN PAVEMENT REPLACEMENT
STA 444+79.76SB
SAW CUT REQ'D

540 IH 39/USH 51 NB

5 5

STA 443+44.76
EL 1075.40

PROPOSED PROFILE

VPC STA 444+79.76
VPC EL 1075.41

BEGIN PROFILE CORRECTION
MATCH EXISTING

0.00%

ORIGINAL GROUND

VCL = 210.00
K = 824.43

1075 1075

1072 1072

1075.38 1075.38 1075.38 1075.38 1075.39 1075.39 1075.39 1075.40 1075.40 1075.40 1075.40 1075.36 1075.40 1075.32 1075.41 1075.28 1075.41

439 440 441 442 443 444 445

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (CODDINGTON)	SHEET 58	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050202-PP-IH-39.DWG
LAYOUT NAME - 10

PLOT DATE : 3/11/2021 12:36 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

CODDINGTON

IH 39/USH 51 SB

IH 39/USH 51 NB

445 450 545 550

446+00.00

5 5

VPI STA 445+84.76
VPI EL 1075.41

VCL = 210.00
K = 393.05

VPI STA 450+04.76
VPI EL 1075.48

ORIGINAL GROUND

PROPOSED PROFILE

VPC STA 446+89.76
VPC EL 1075.15

VPI STA 447+94.76
VPI EL 1074.89

VPT STA 448+99.76
VPT EL 1075.18

VCL = 210.00
K = 824.43

VCL = 210.00
K = 778.82

1075 1071

1075.28 1075.41 | 1075.24 1075.38 | 1075.20 1075.32 | 1075.16 1075.24 | 1075.13 1075.12 | 1075.14 1075.04 | 1075.15 1075.03 | 1075.16 1075.07 | 1075.18 1075.18 | 1075.23 1075.31 | 1075.28 1075.40 | 1075.33 1075.46 | 1075.37 1075.49

445 446 447 448 449 450 451

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (CODDINGTON)	SHEET 59	E

N

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

PT: 453+29.62

IH 39/USH 51 SB

455

PT: 552+29.14

END PAVEMENT REPLACEMENT
STA 451+09.76SB
SAW CUT REQ'D

550

555

452+00.00

IH 39/USH 51 NB

5

5

VPT STA 451+09.76
VPT EL 1075.50

STA 452+44.76
EL 1075.51

PROPOSED PROFILE

END PROFILE CORRECTION
MATCH EXISTING

0.01%

1075

1075

ORIGINAL GROUND

VCL = 210.00

K = 778.82

1072

1072

1075.37	1075.42	1075.47	1075.51	1075.52	1075.52	1075.52	1075.53	1075.53	1075.53	1075.53	1075.54	1075.54
1075.49	1075.50	1075.51										

451 452 453 454 455 456 457

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (CODDINGTON)	SHEET 60	E

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

IH 39/USH 51 SB

600

BEGIN PAVEMENT REPLACEMENT
STA 603+48.34SB
SAW CUT REQ'D

700

IH 39/USH 51 NB

5

5

1090

1085

1083

STA 602+13.34
EL 1087.06

BEGIN PROFILE CORRECTION
MATCH EXISTING

0.09%

PROPOSED
PROFILE

VPC STA 603+48.34
VPC EL 1087.18

ORIGINAL GROUND

VCL = 210.00

K = 766.96

1086.64	1086.69	1086.74	1086.79	1086.84	1086.89	1086.94	1086.99	1087.04	1087.06	1087.09	1087.06	1087.14	1087.07	1087.18	1087.07	1087.21

598 599 600 601 602 603 604

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (BIRCH)	SHEET 61	E

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

BIRCH

IH 39/USH 51 SB

IH 39/USH 51 NB

605

610

705

605+00.00

END PAVEMENT REPLACEMENT
STA 609+78.34SB
SAW CUT REQ'D

5

5

1090

1085

1083

VPI STA 604+53.34
VPI EL 1087.28

VPT STA 605+58.34
VPT EL 1087.09

VCL = 210.00
K = 380.44

VPC STA 607+68.34
VPC EL 1087.29

VPI STA 608+73.34
VPI EL 1087.67

VPT STA 609+78.34
VPT EL 1087.82

ORIGINAL GROUND

PROPOSED
PROFILE

VPC STA 605+58.34
VPC EL 1087.09

VPI STA 606+63.34
VPI EL 1086.90

VPT STA 607+68.34
VPT EL 1087.29

VCL = 210.00
K = 903.81

VCL = 210.00
K = 766.96

1087.07 1087.21
1087.08 1087.21
1087.08 1087.17
1087.09 1087.10
1087.12 1087.03
1087.18 1087.03
1087.23 1087.09
1087.28 1087.22
1087.34 1087.40
1087.42 1087.55
1087.53 1087.68
1087.64 1087.78
1087.76 1087.85

604 605 606 607 608 609 610

PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (BIRCH)	SHEET 62	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050202-PP-IH-39.DWG
LAYOUT NAME - 14

PLOT DATE : 3/11/2021 12:37 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

X SEE GENERAL NOTES FOR UTILITY OWNERSHIP

N

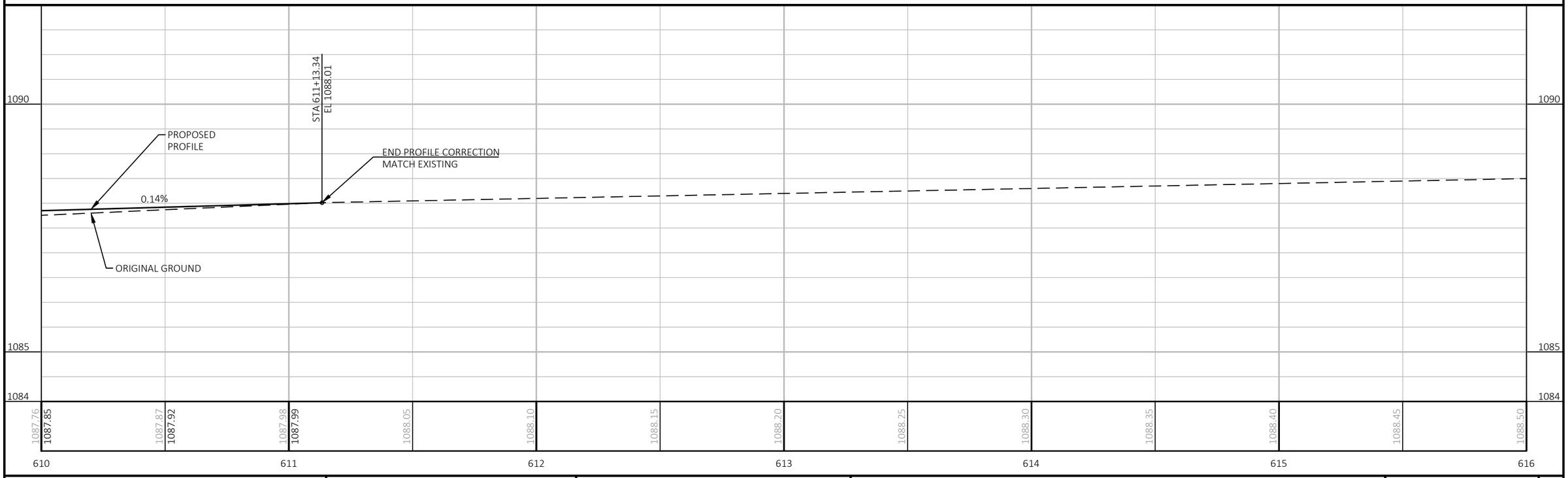
610 IH 39/USH 51 SB 615

710 715

611+00.00

IH 39/USH 51 NB

5 5



PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	PLAN AND PROFILE: IH 39 SOUTHBOUND (BIRCH)	SHEET 63	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\050202-PP-IH-39.DWG
LAYOUT NAME - 15

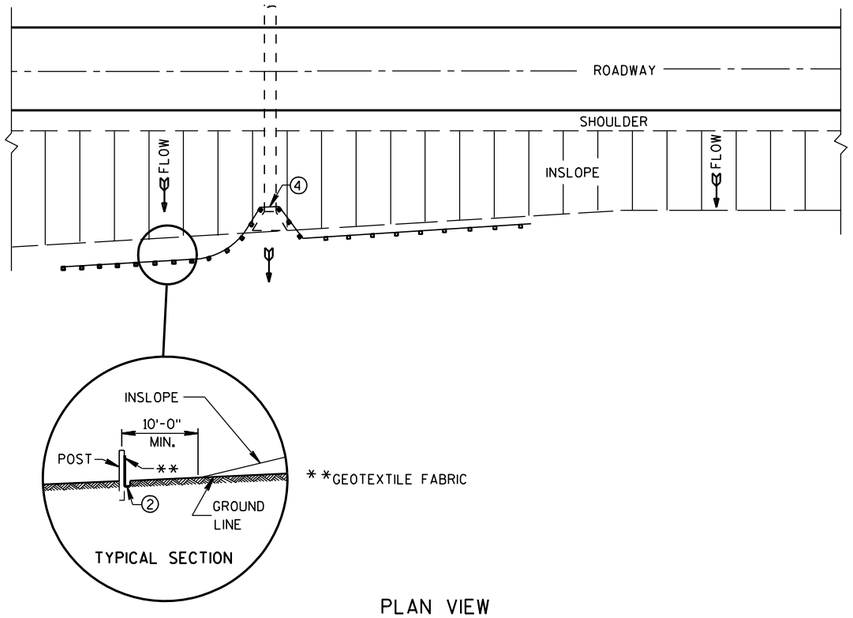
PLOT DATE : 3/11/2021 12:37 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

Standard Detail Drawing List

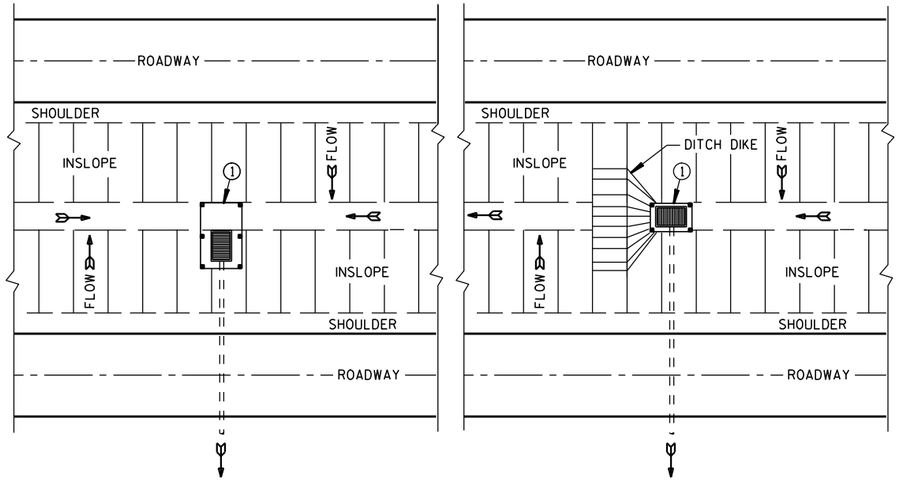
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	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)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (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
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08D	ON RAMP LANE CLOSURE
15C02-08E	OFF RAMP LANE CLOSURE
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-08	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C19-06C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D12-09B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D15-05A	TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-05D	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-04	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D40-02C	TRAFFIC CONTROL, PARTIAL LANE SHIFT NON-FREEWAY OR MULTILANE DIVIDED 45 MPH AND UNDER
15D40-02D	TRAFFIC CONTROL, PARTIAL LANE SHIFT MULTILANE DIVIDED 50 MPH AND GREATER

6



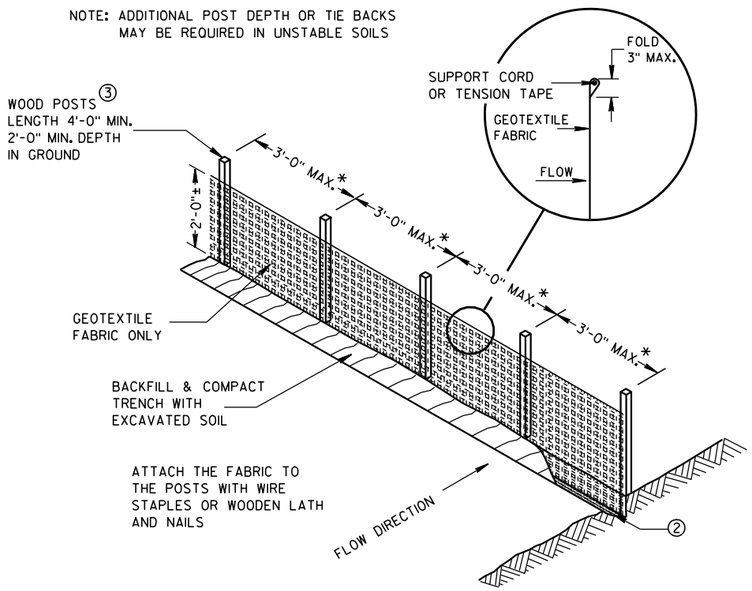
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



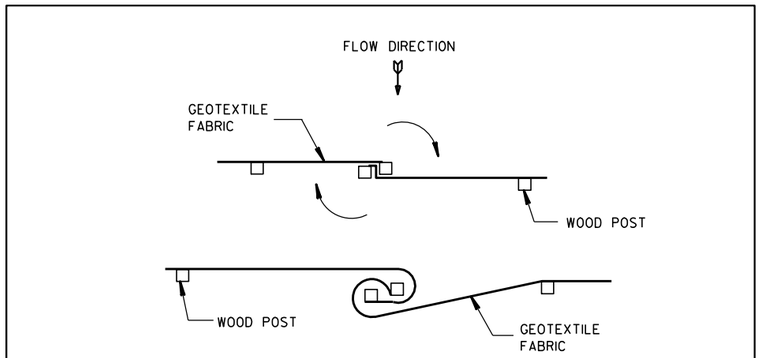
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



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

SILT FENCE

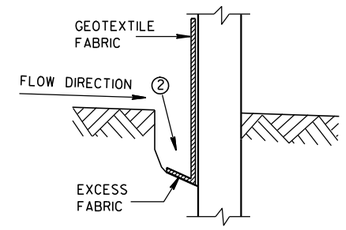


JOINING TWO LENGTHS OF SILT FENCE 5

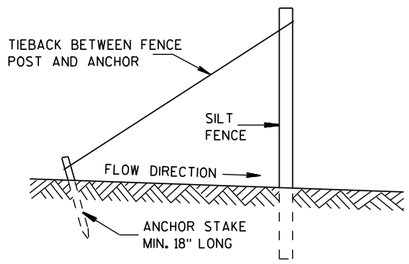
GENERAL NOTES

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

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



TRENCH DETAIL



SILT FENCE TIE BACK

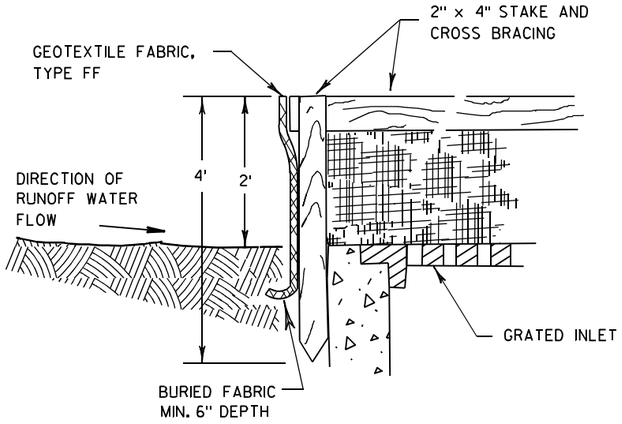
(WHEN REQUIRED BY THE ENGINEER)

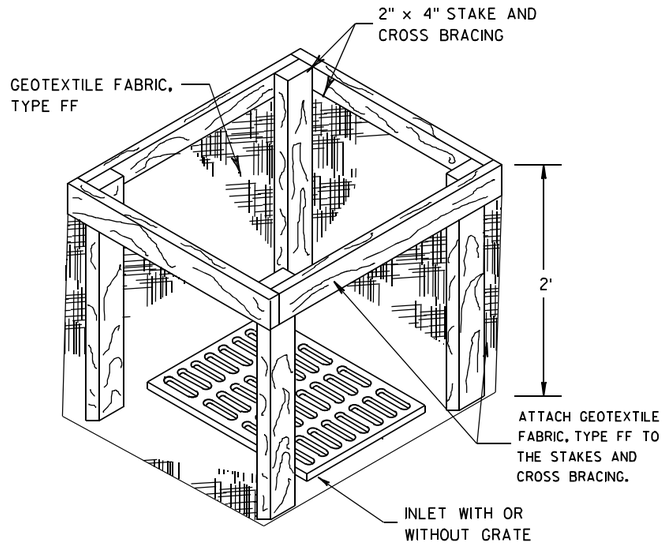
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

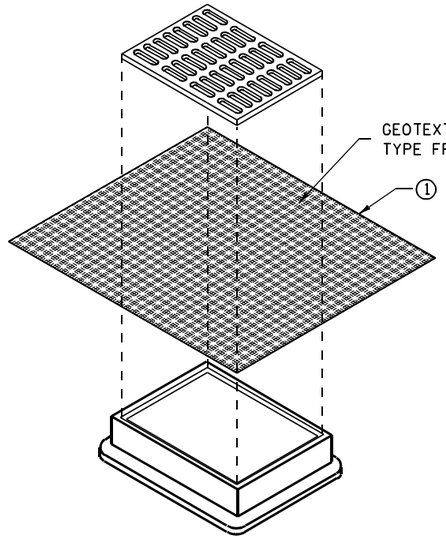
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 E 9-6



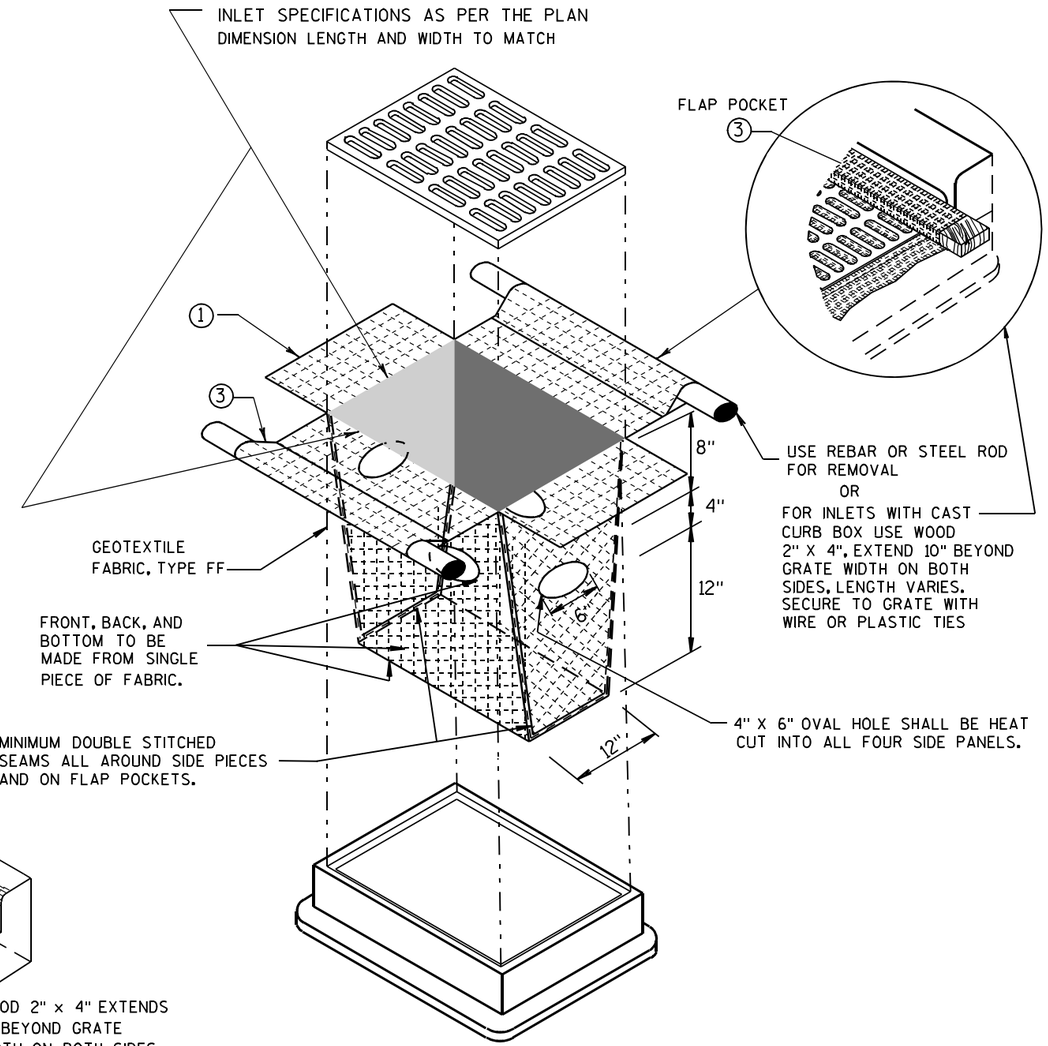


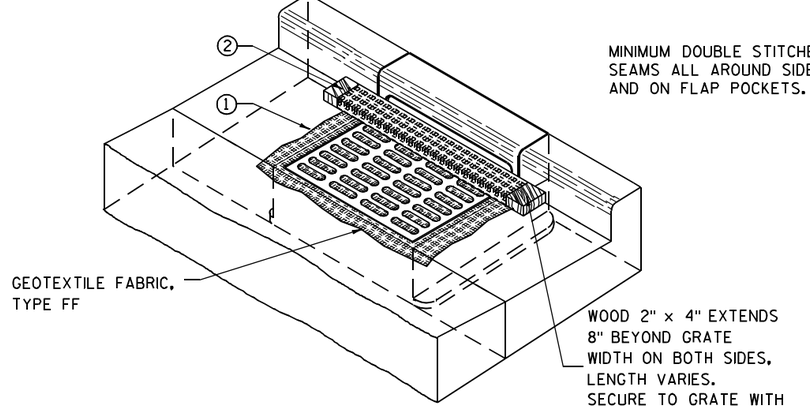
INLET PROTECTION, TYPE A



INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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





INLET PROTECTION, TYPE C (WITH CURB BOX)

INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

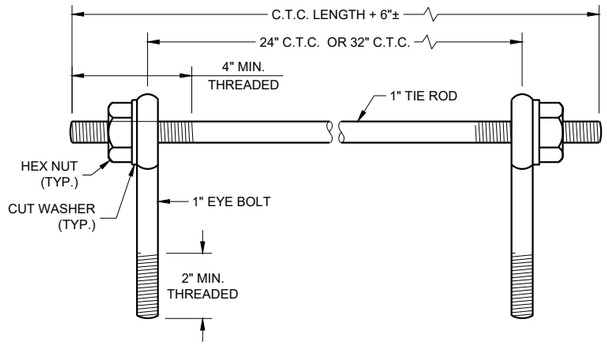
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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

INLET PROTECTION
TYPE A, B, C, AND D

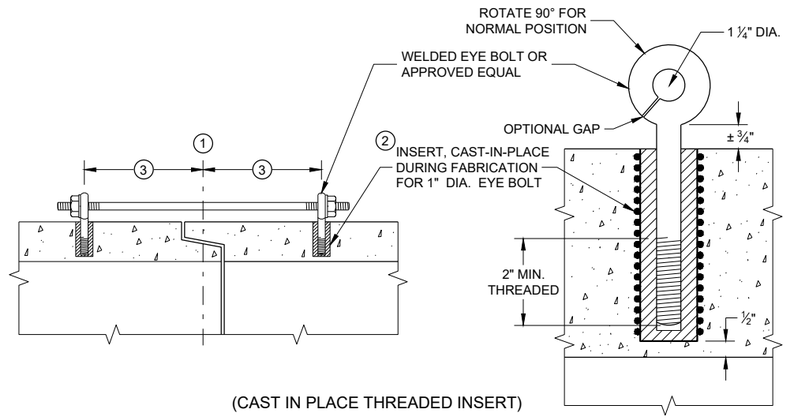
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



EYE BOLTS AND TIE ROD



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

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

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

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

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

(1) CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

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

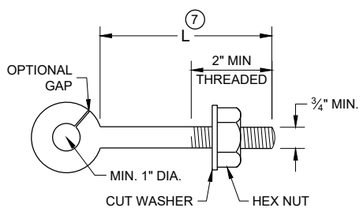
(3) HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.

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

(5) OPENING TO BE ROD DIAMETER PLUS 1 INCH.

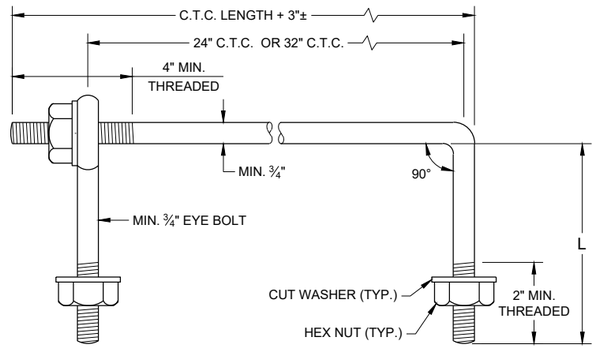
(6) LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.

(7) EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

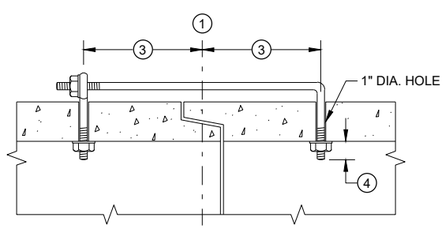


EYE BOLT (7)

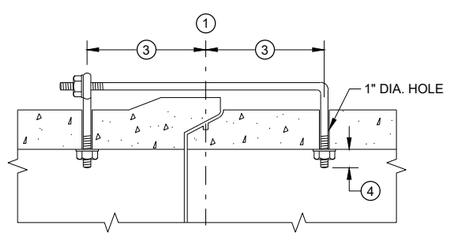
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

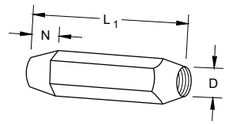
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12 - 60	⅝	⅝	5	½
66 - 84	¾	¾	5	½
90 - 144	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES



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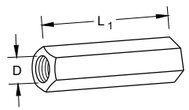
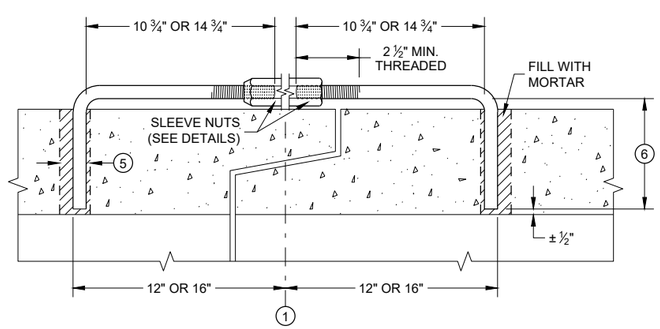


PLAIN

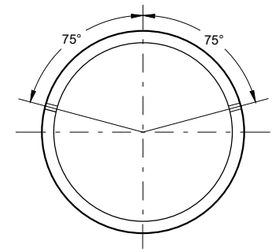
RIGHT AND LEFT THREADS

SLEEVE NUTS



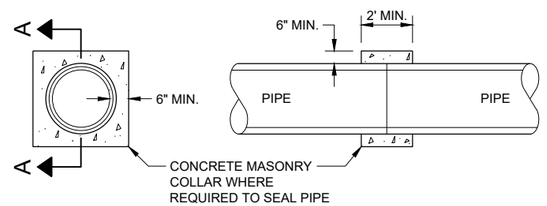
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

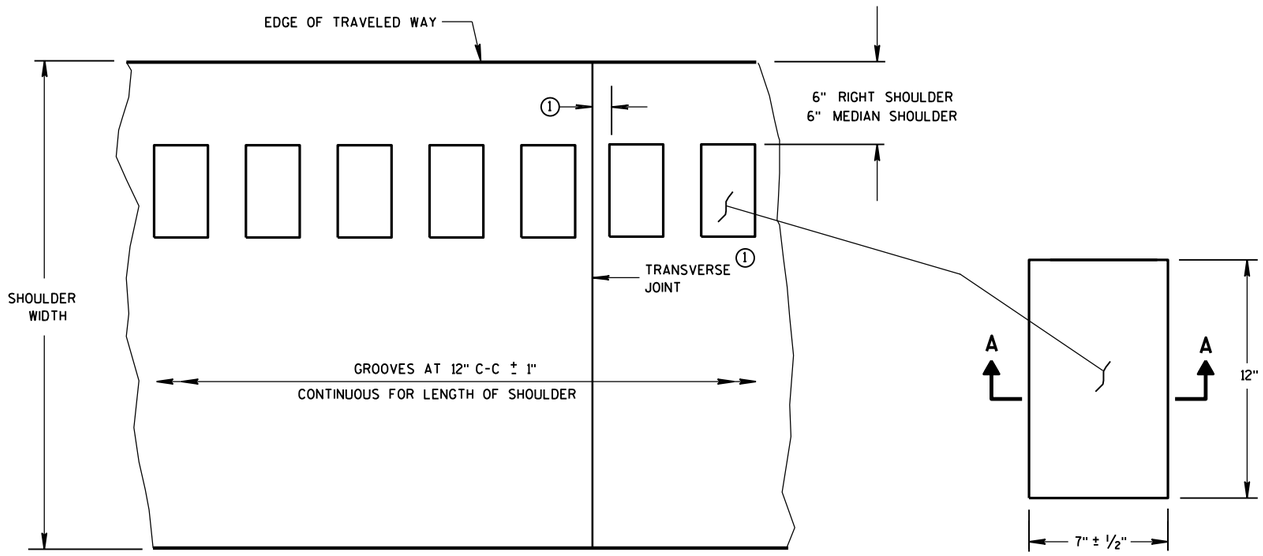
JOINT TIES FO CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

SDD 08F04 - 08

SDD 08F04 - 08



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

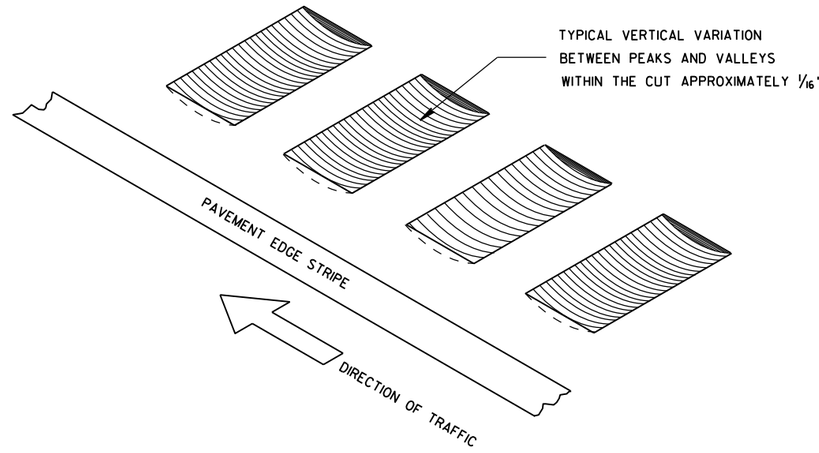
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

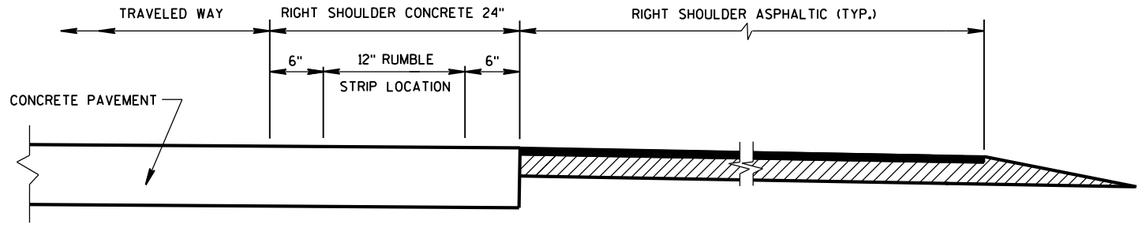
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

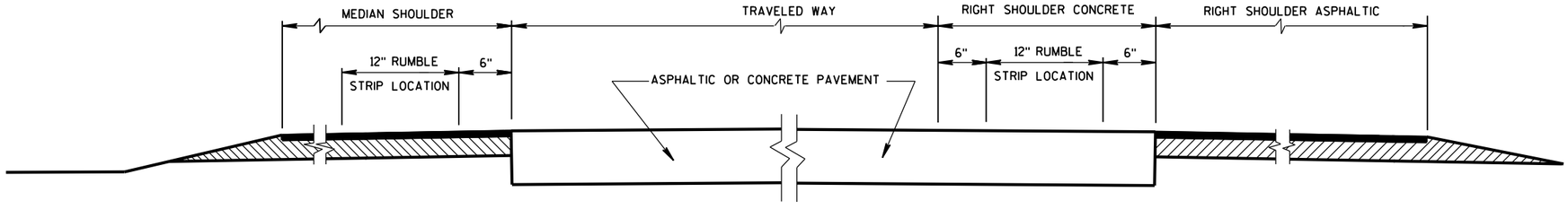
(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



ISOMETRIC



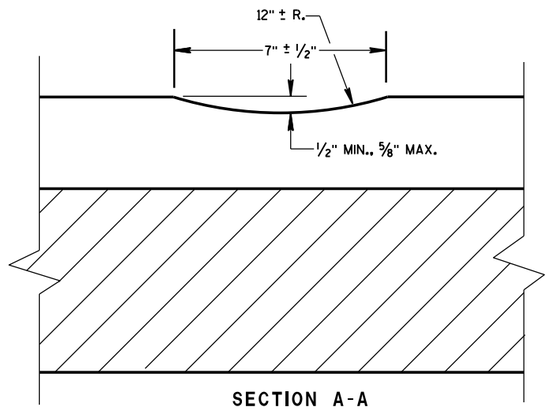
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 13 A 5-5a

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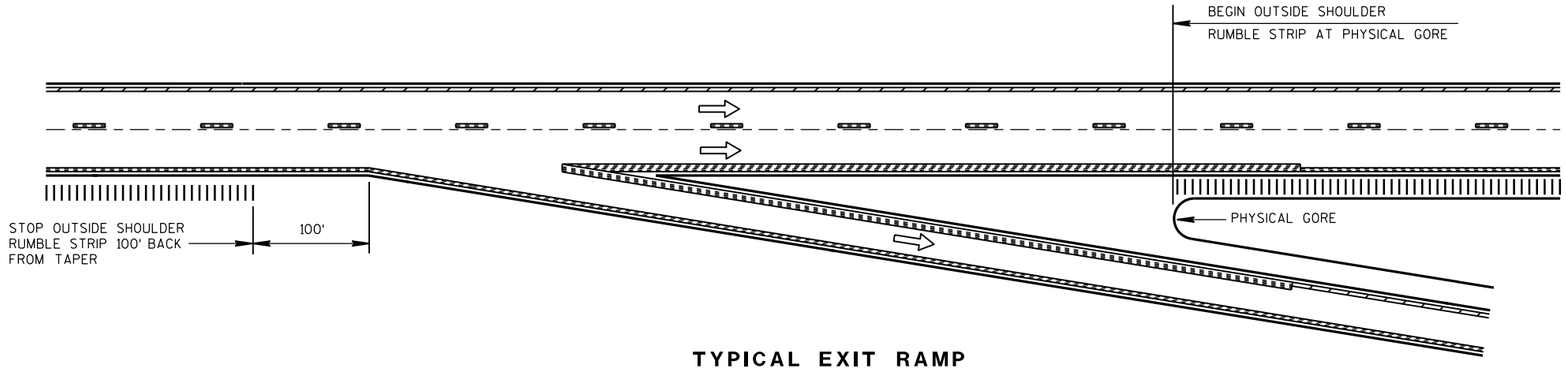
S.D.D. 13 A 5-5a



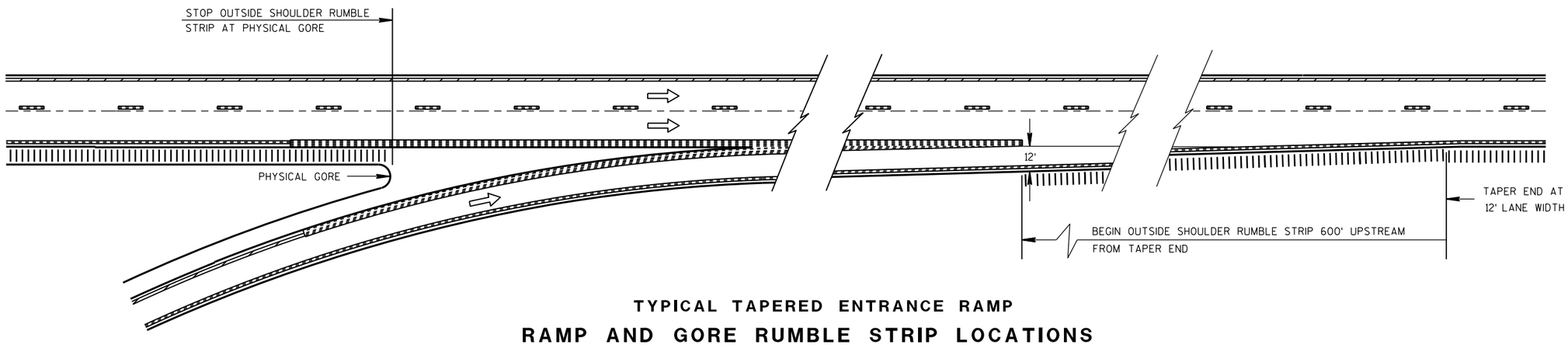
TYPICAL EXIT RAMP

NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

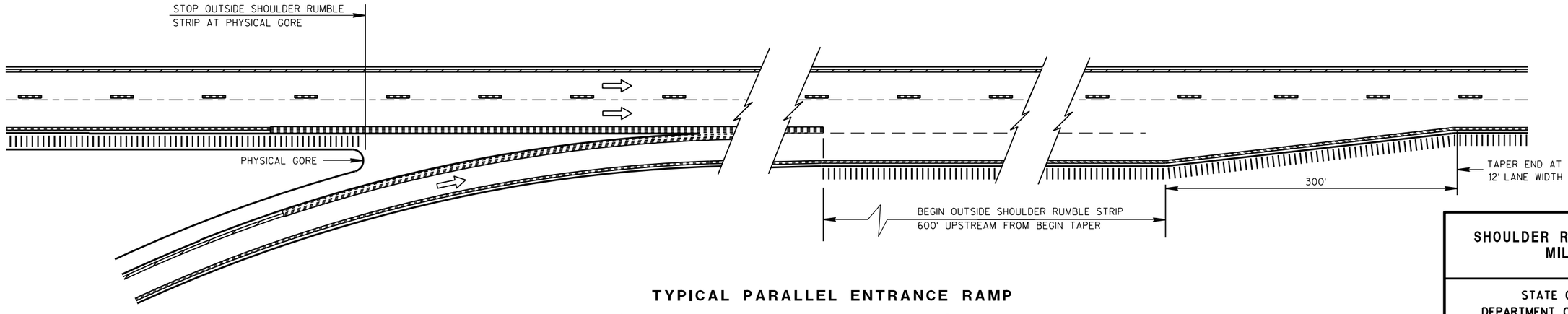
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

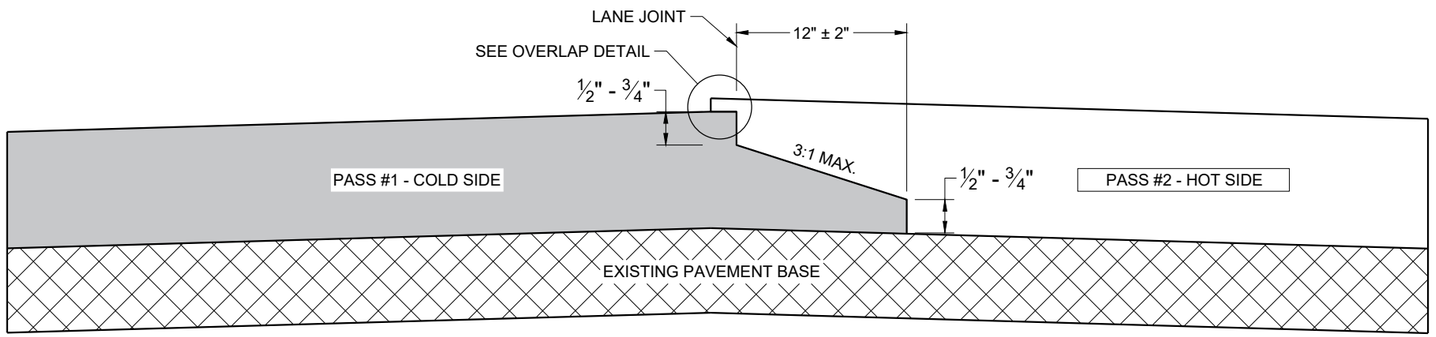
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

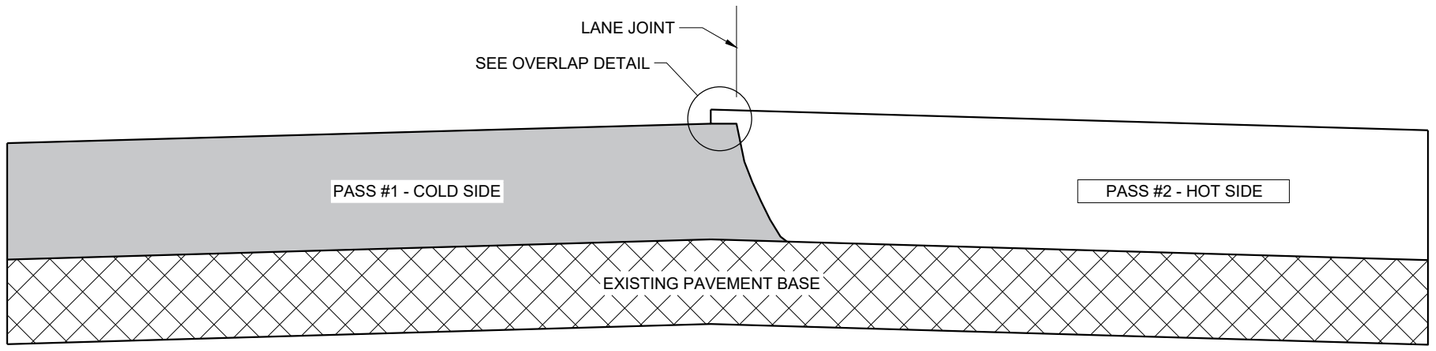
APPROVED
12/17/2012 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS ENGINEER
FHWA

6

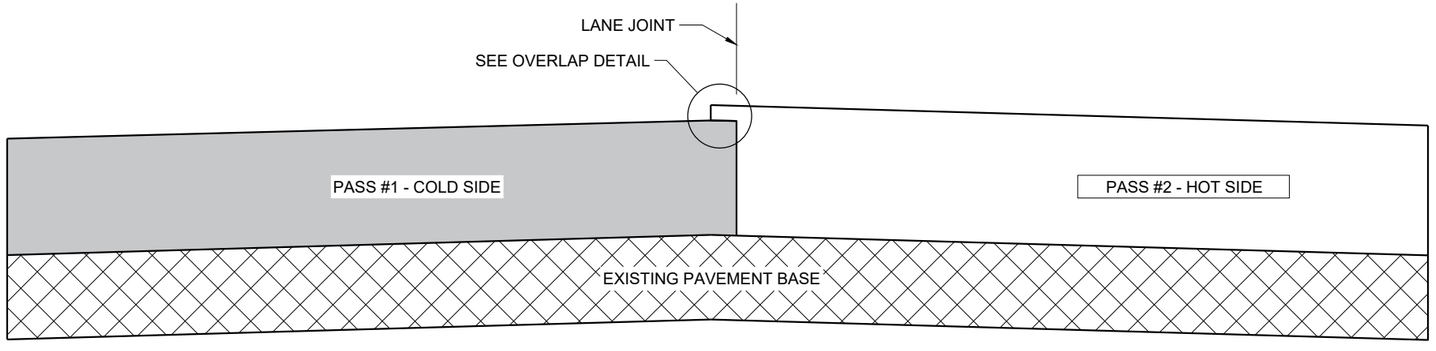
S.D.D. 13 A 5-5b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

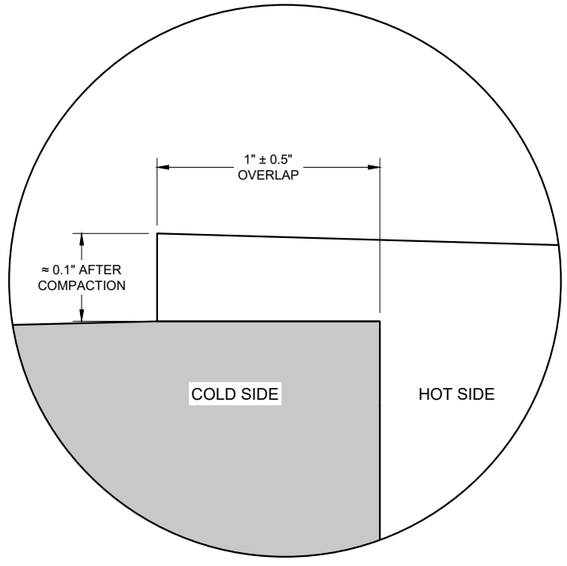
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY 1" ± 0.5" AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO 2" FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



OVERLAP DETAIL (TYPICAL)

6

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SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

(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.

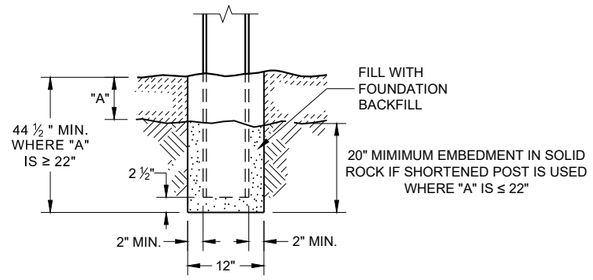
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

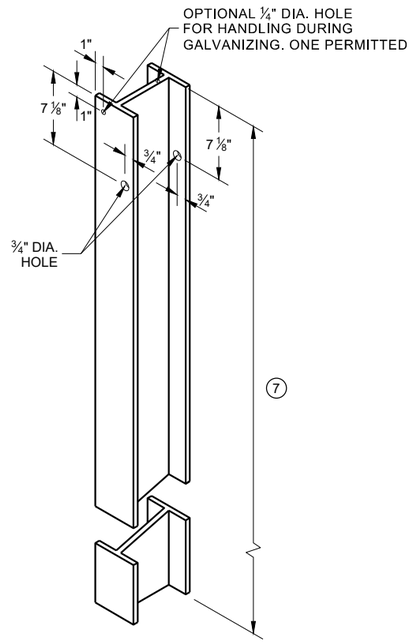
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

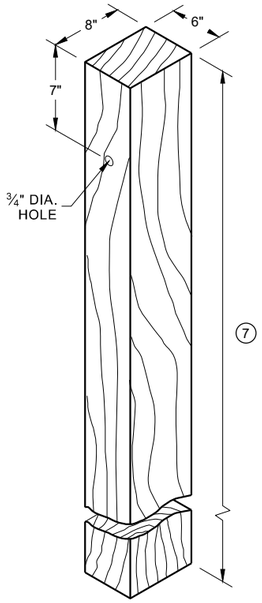
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



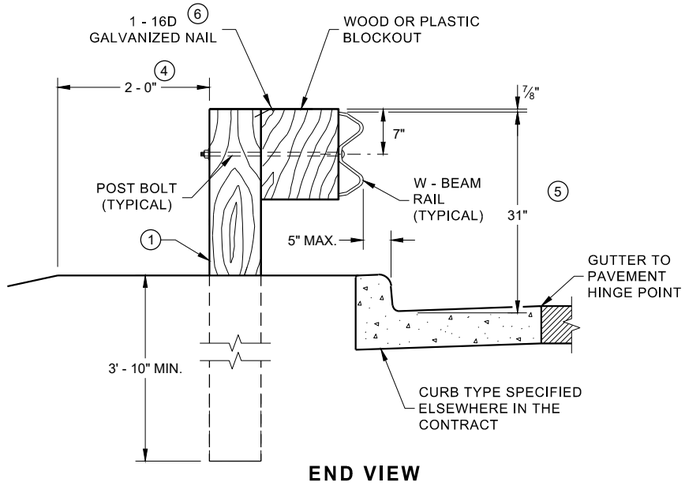
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



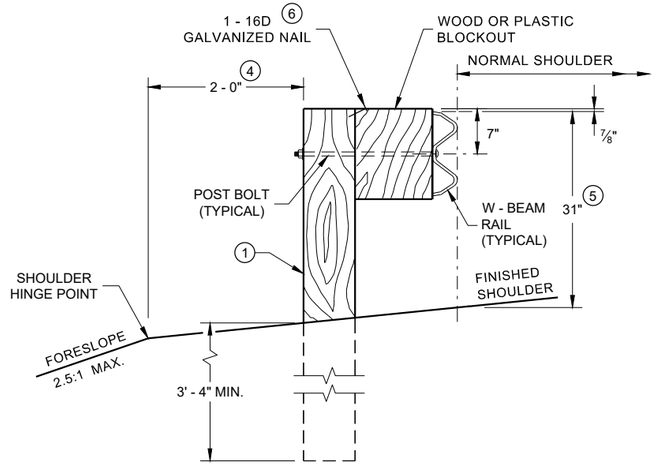
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



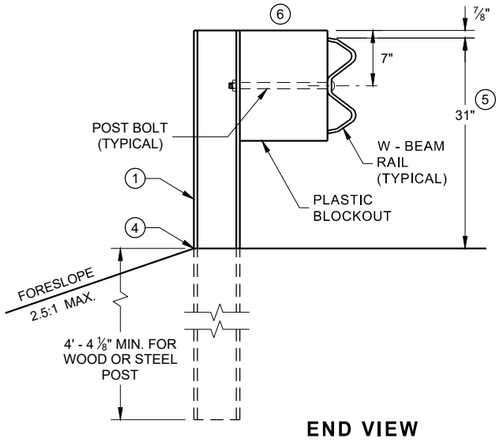
WOOD POST (6" X 8") NOMINAL (1)



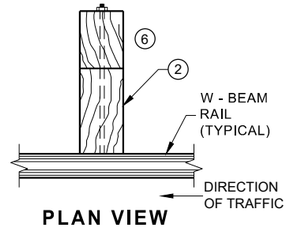
END VIEW
LOCATED ALONG A CURBED ROADWAY



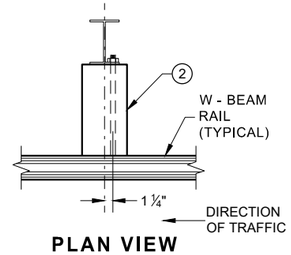
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



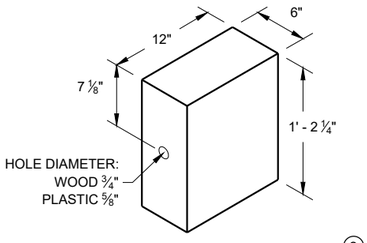
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



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
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 07a

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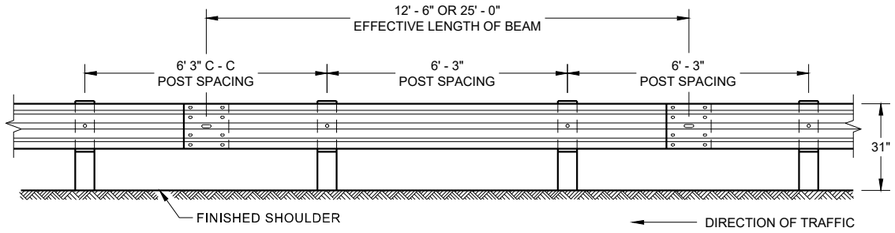
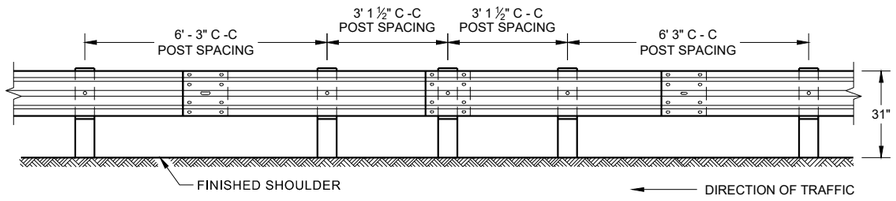
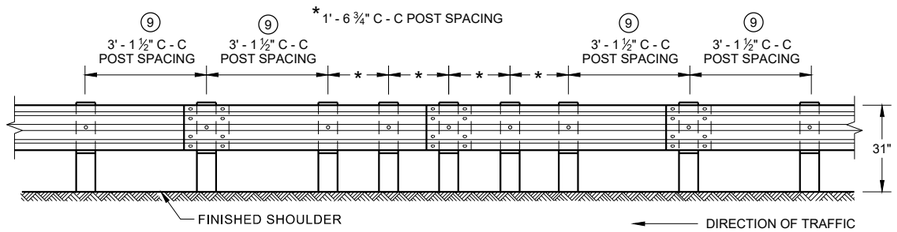
SDD 14B42 - 07a



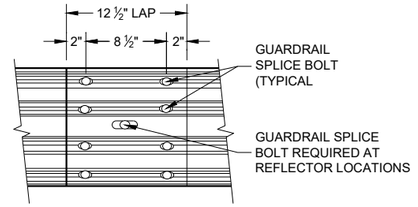
FRONT VIEW
POST SPACING STANDARD INSTALLATION



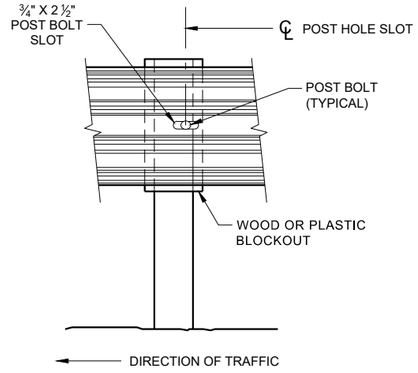
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



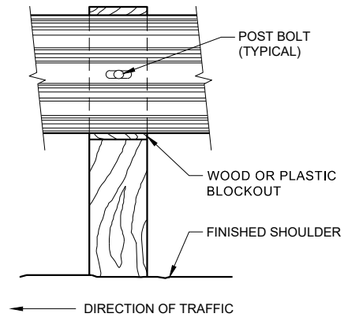
FRONT VIEW
QUARTER POST SPACING (QS)



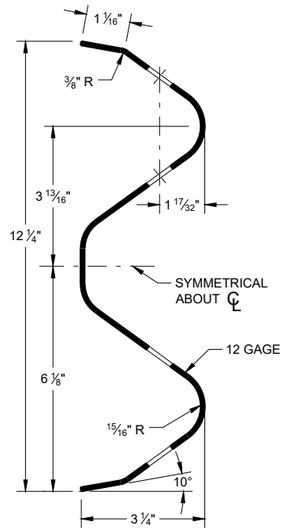
FRONT VIEW
MID-SPAN BEAM SPLICE



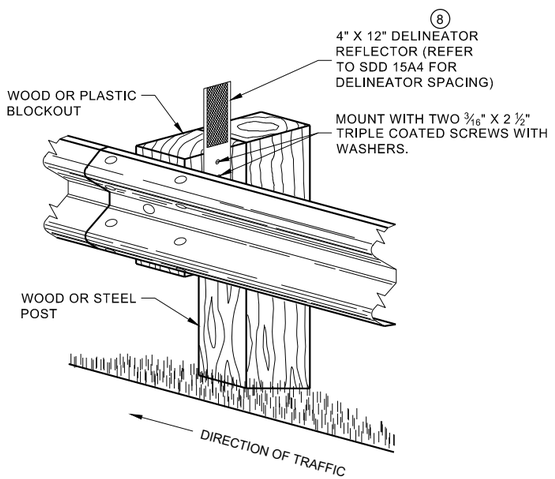
FRONT VIEW AT STEEL POST



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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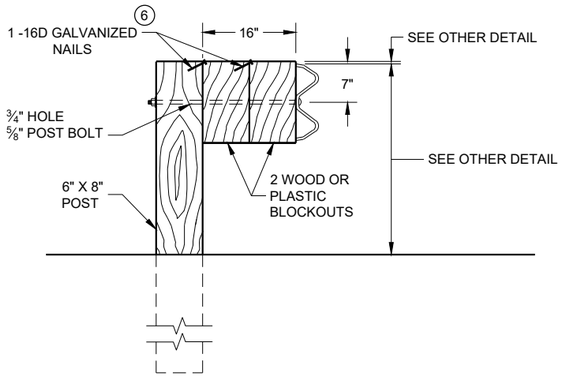
SDD 14B42 - 07b

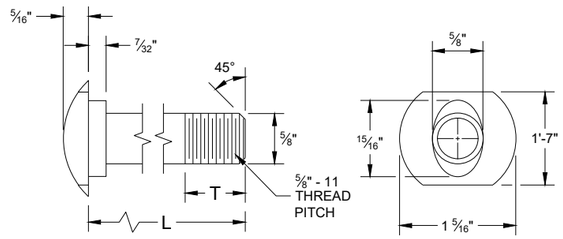


DETAIL FOR 16" BLOCKOUT DEPTH

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.

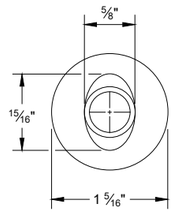
NOTE:

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.

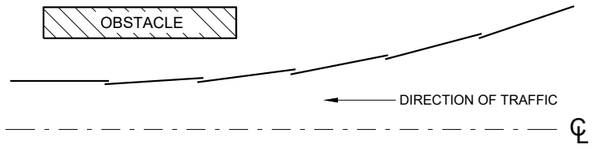


POST BOLT TABLE

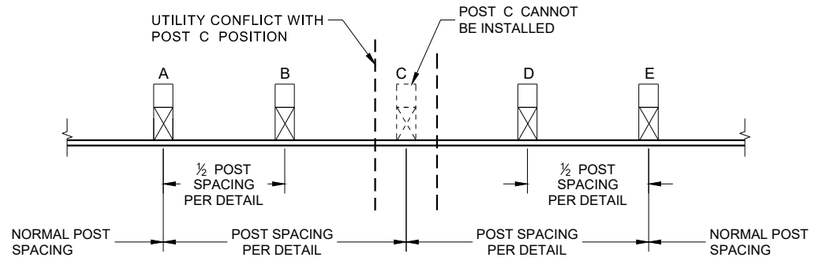
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



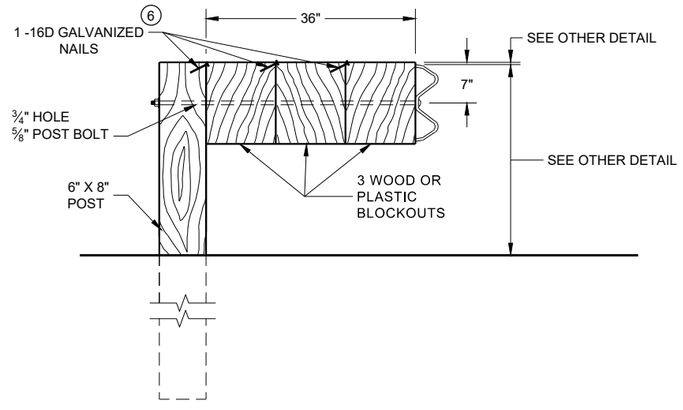
ALTERNATE BOLT HEAD



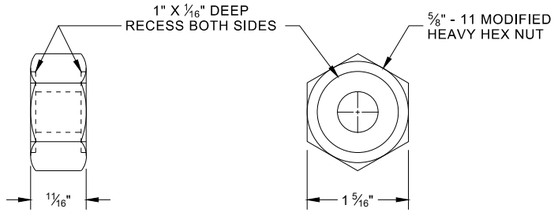
PLAN VIEW
BEAM LAPPING DETAIL



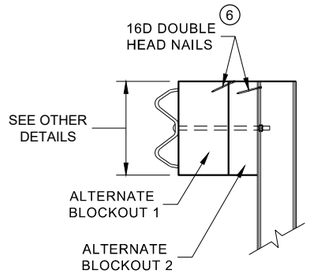
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



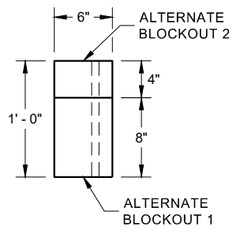
DETAIL FOR 36" BLOCKOUT DEPTH



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.

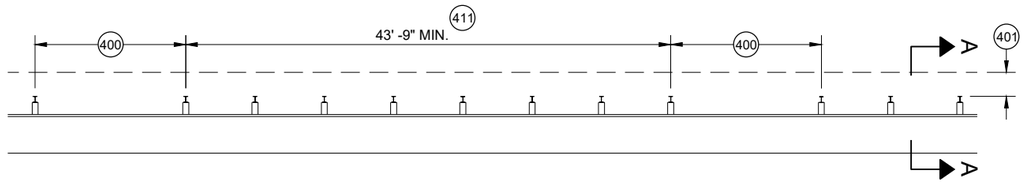
(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

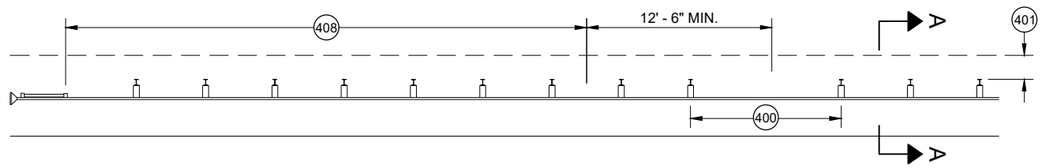
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

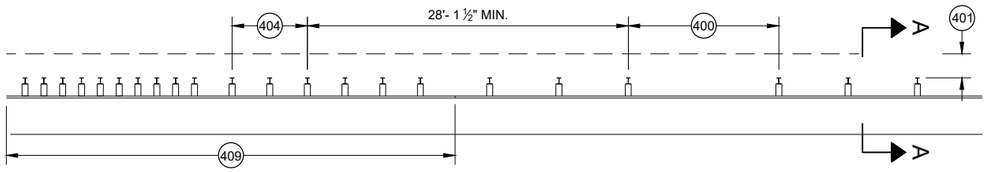
SDD 14B42 - 07c



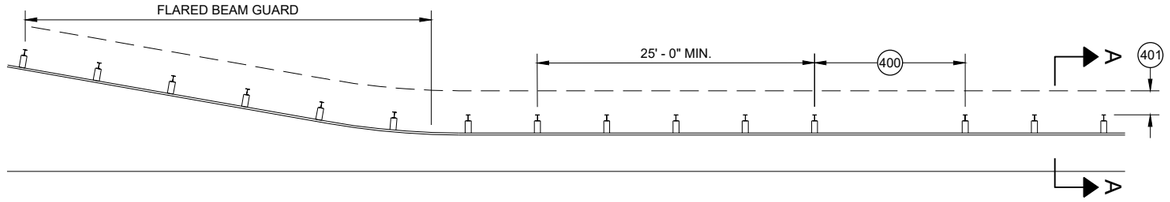
MISSING POST IN MGS GUARDRAIL



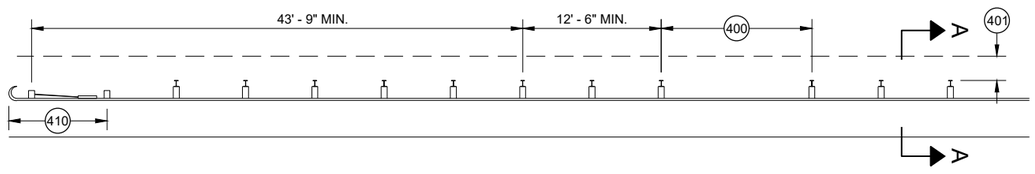
MISSING POST IN MGS GUARDRAIL NEAR EAT



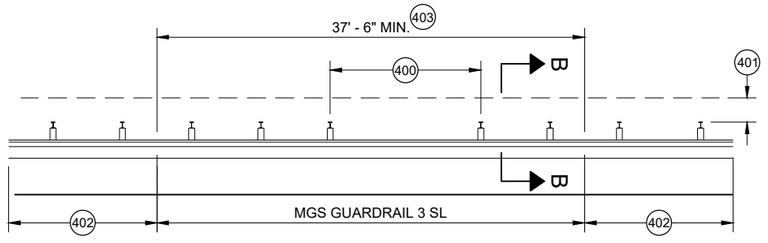
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

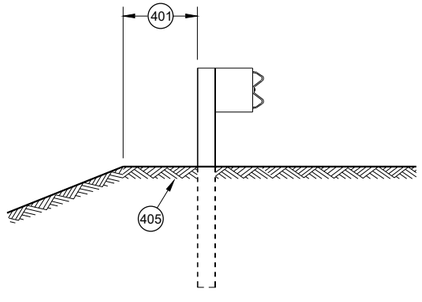


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

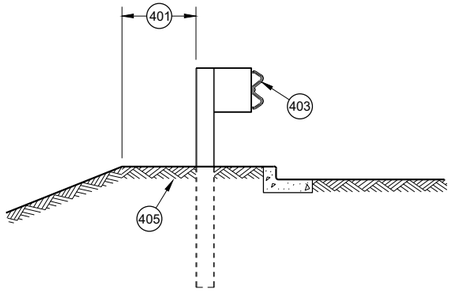


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(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

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.

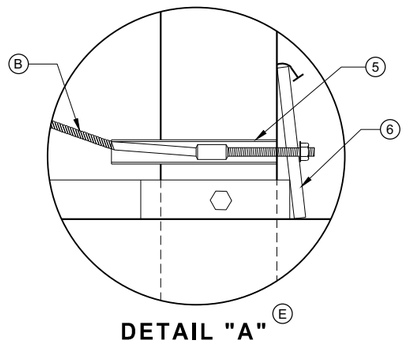
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

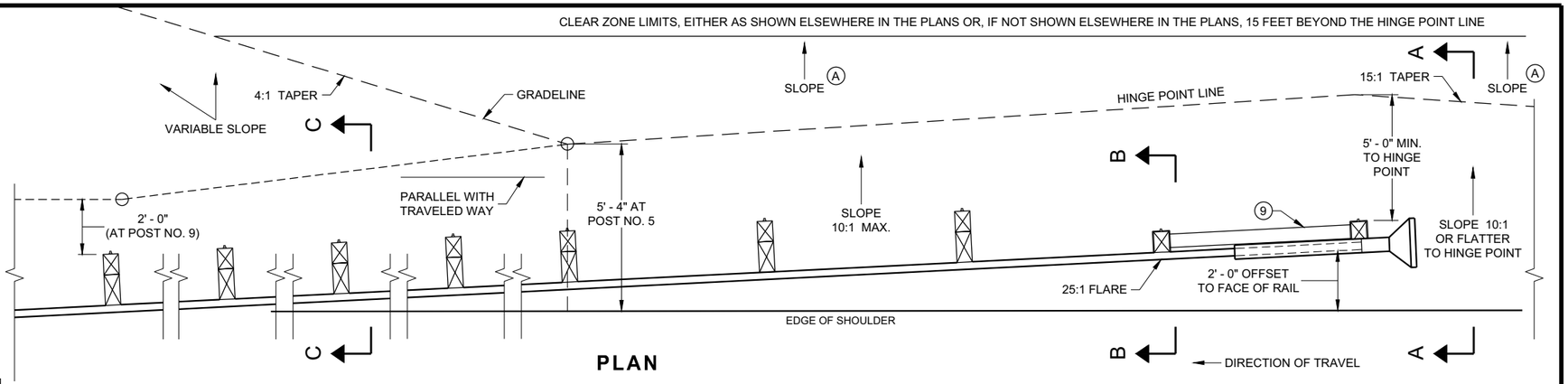
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

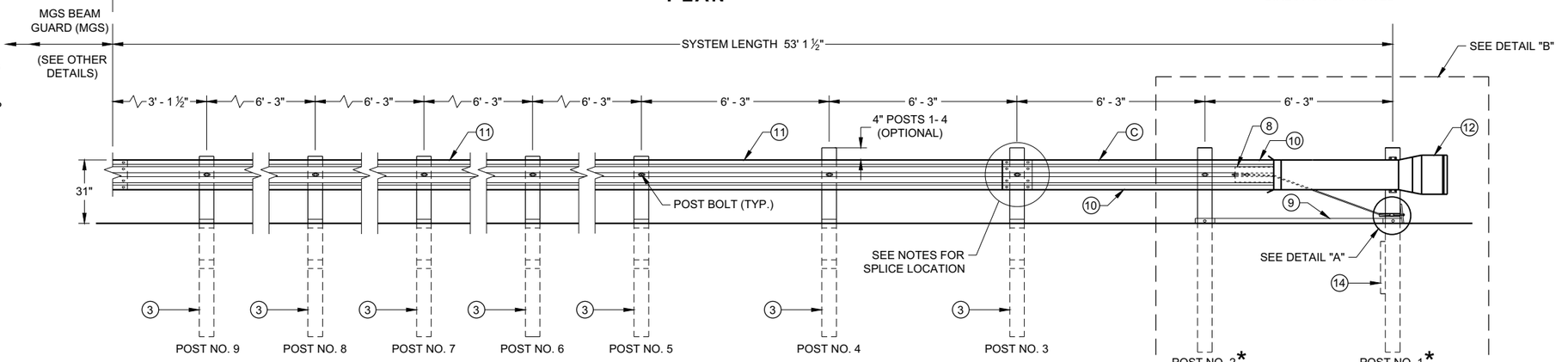
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



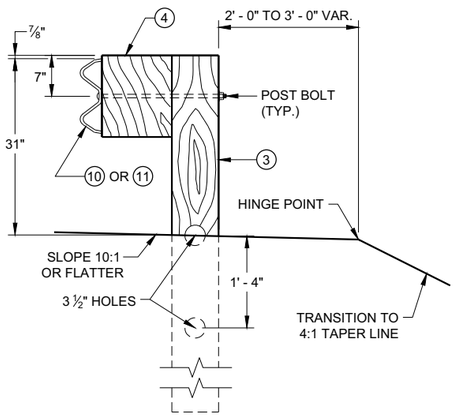
DETAIL "A" (E)



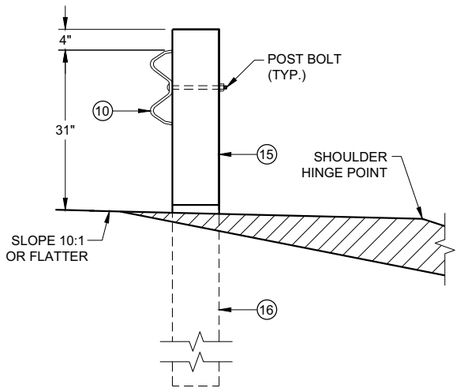
PLAN



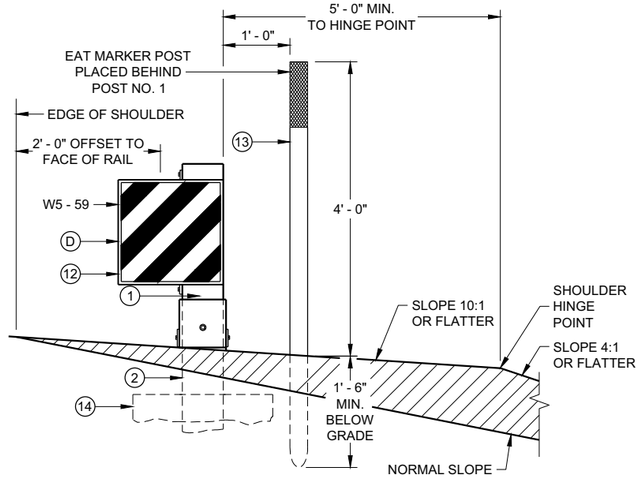
ELEVATION



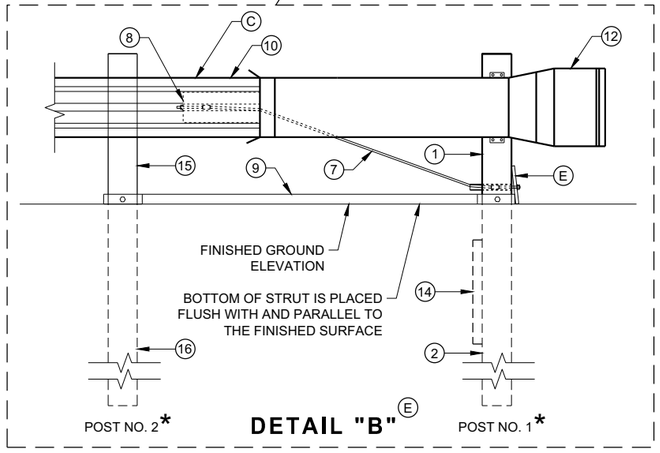
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



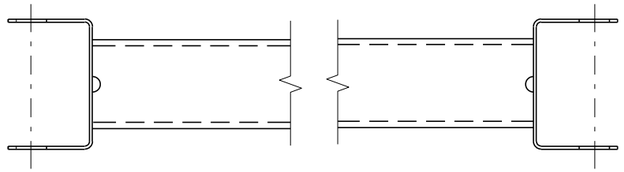
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

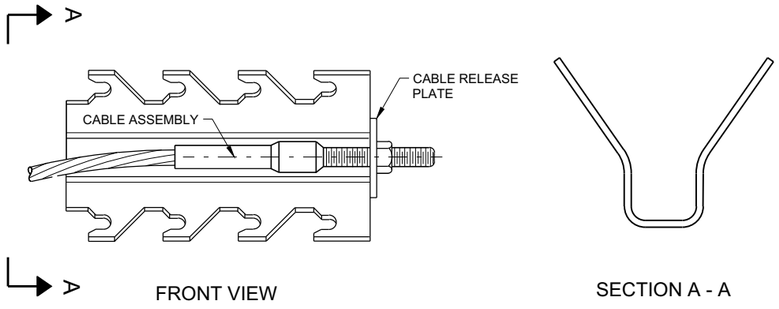
SDD 14B44 - 04a



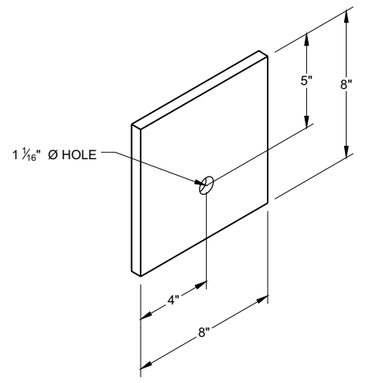
GENERIC GROUND STRUT ⑨ Ⓔ

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 ⑨ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

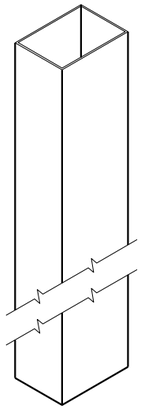
6

SDD 14B44 - 04b

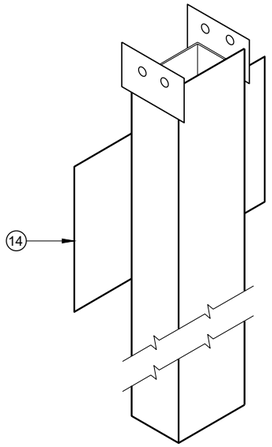
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

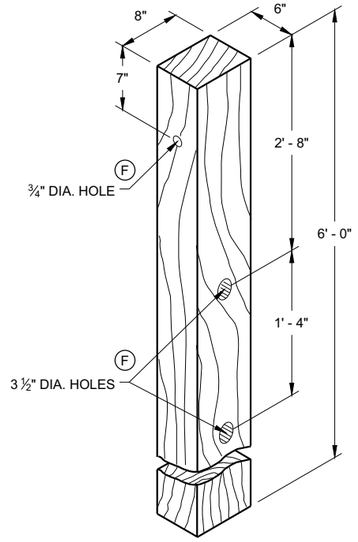
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



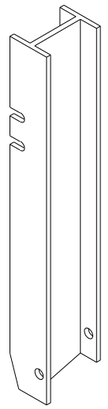
UPPER POST NO. 1 (1) (E)



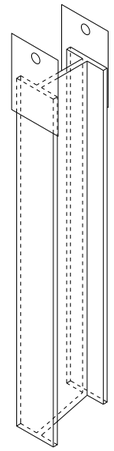
LOWER POST NO. 1 (2) (E)



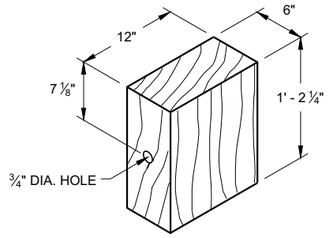
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



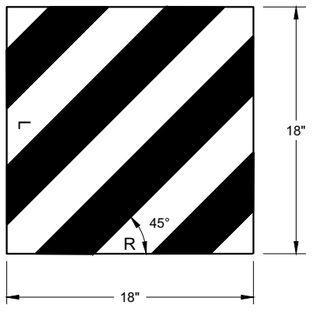
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)



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



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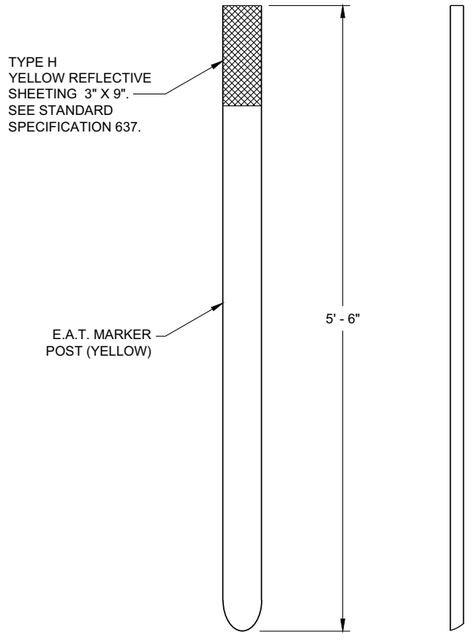
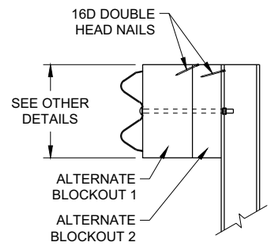
REFLECTIVE SHEETING DETAIL (E)

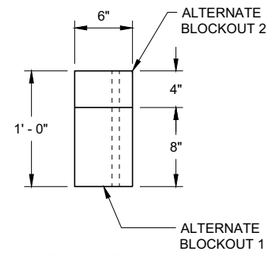


FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

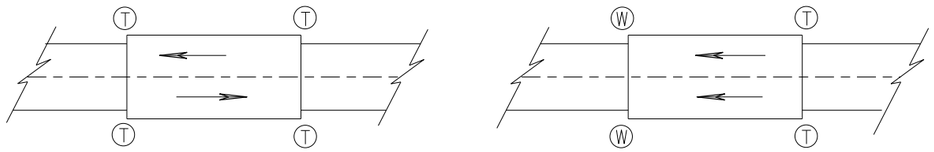
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c
SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

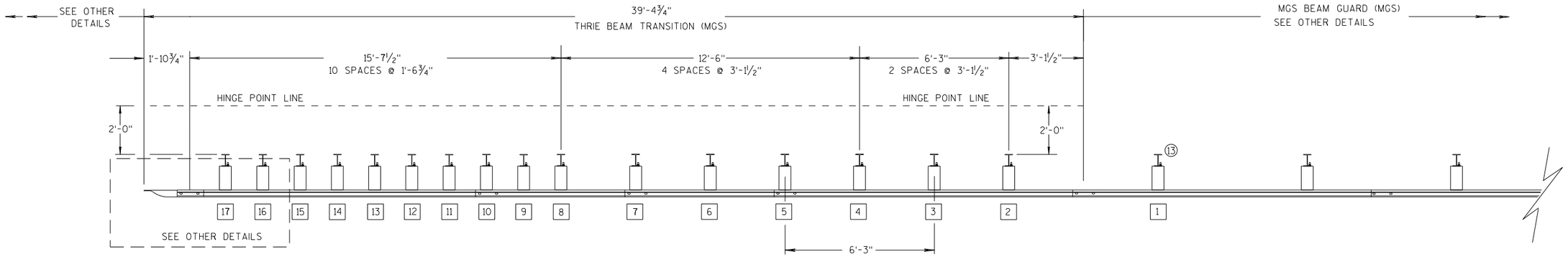
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

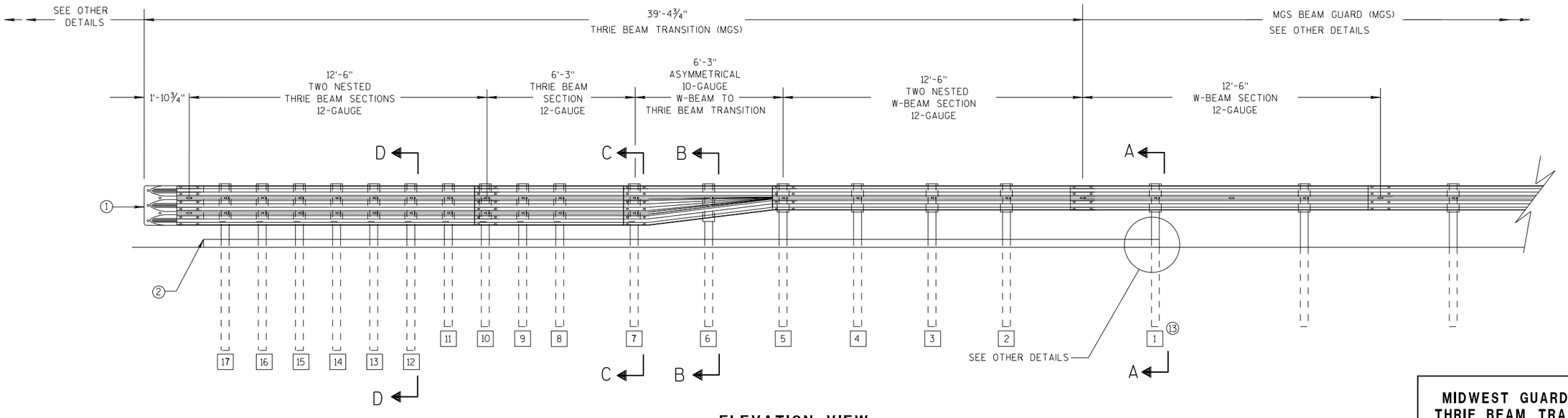
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 45-5a

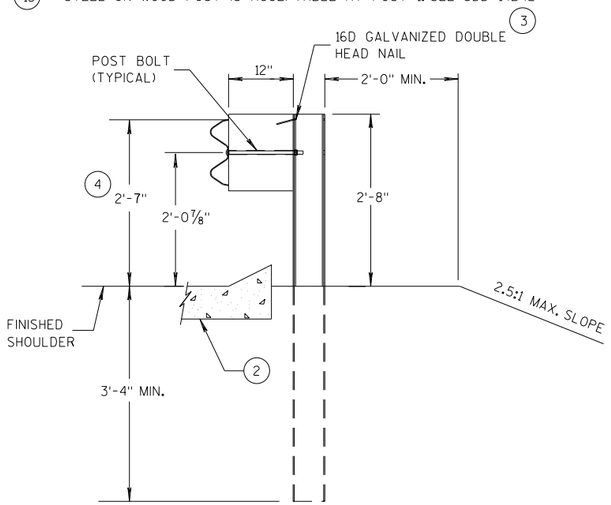
GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

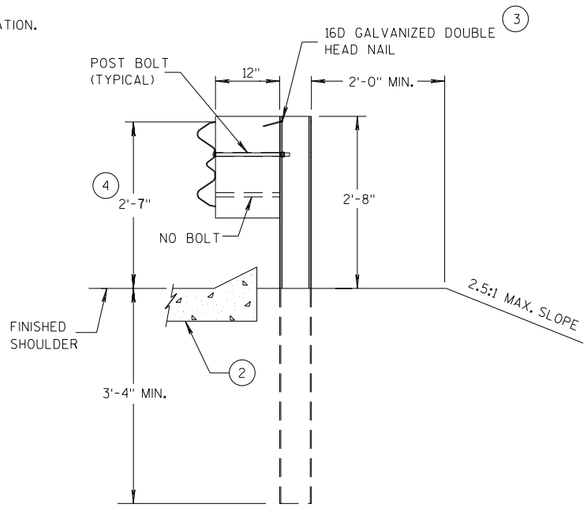
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



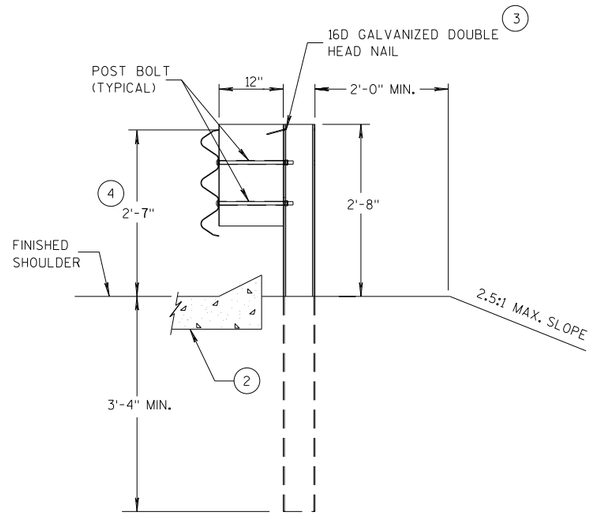
SECTION A-A (13)

POSTS 1-5



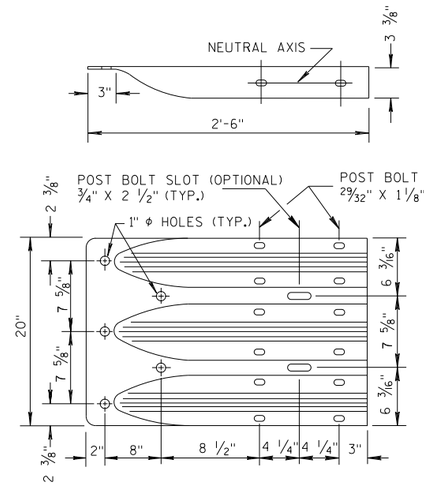
SECTION B-B

POST 6

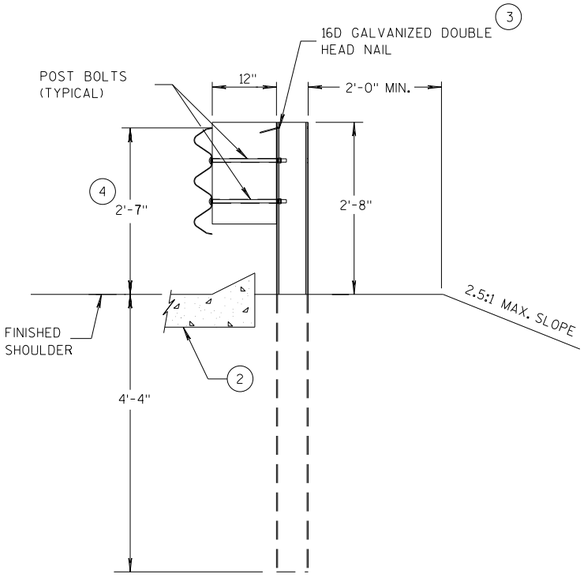


SECTION C-C

POSTS 7-11

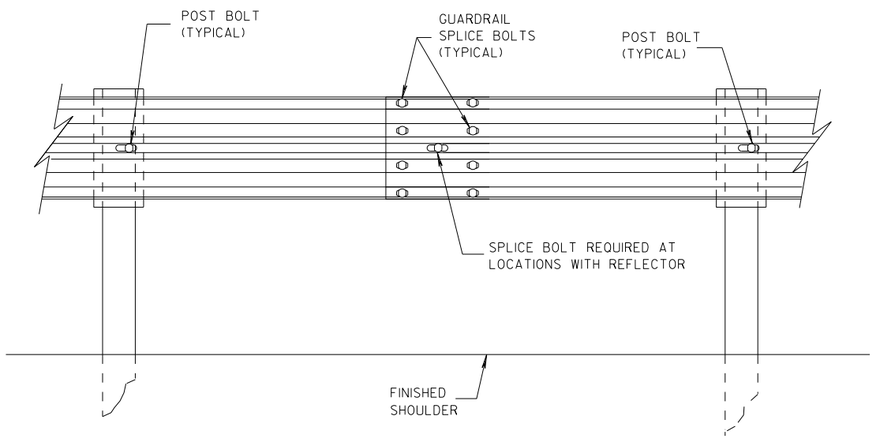


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

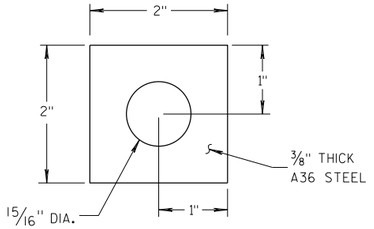
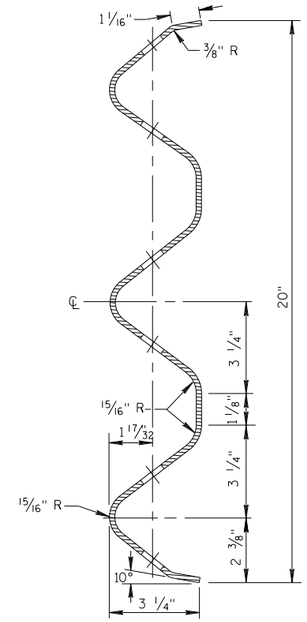


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

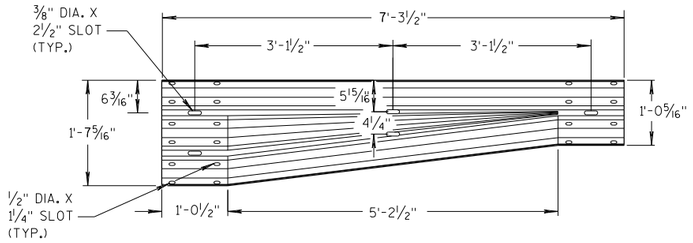
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 79

6

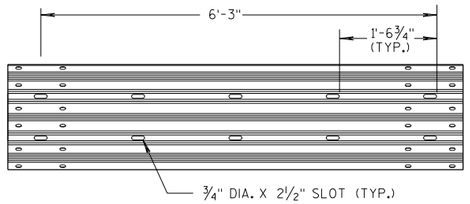
S.D.D. 14 B 45-5b

6

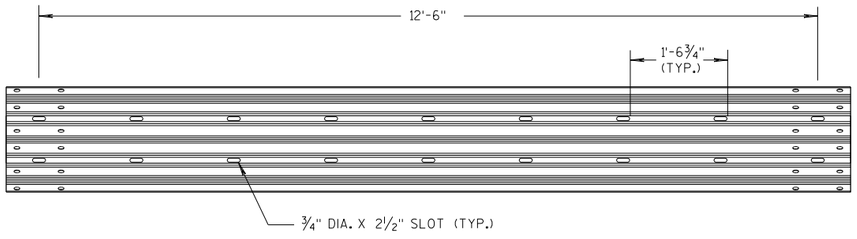
S.D.D. 14 B 45-5b



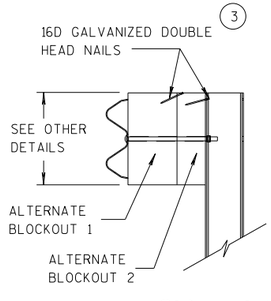
W-BEAM TO THRIE BEAM TRANSITION SECTION



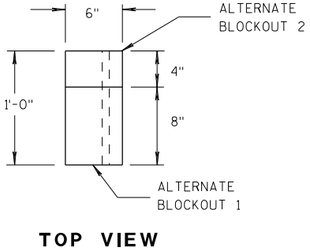
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

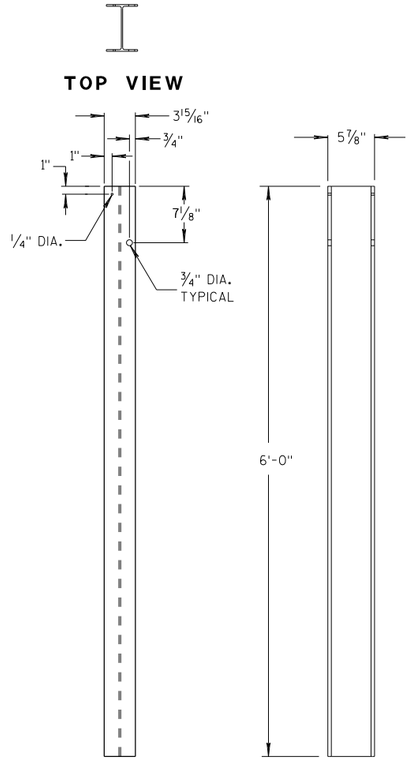


SIDE VIEW



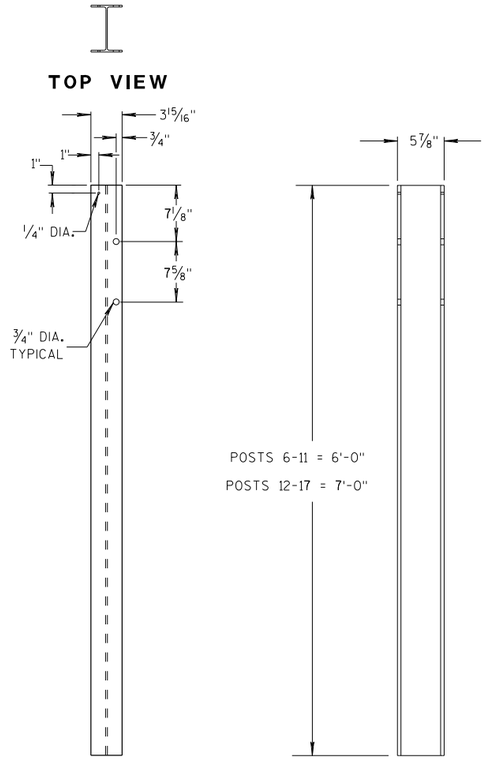
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



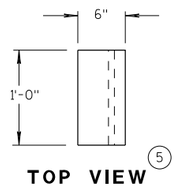
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

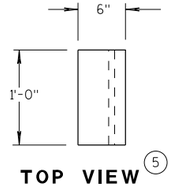


FRONT VIEW SIDE VIEW

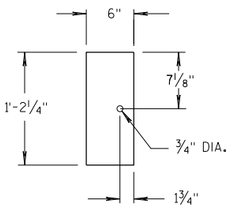
STEEL POSTS 6-17



TOP VIEW (5)

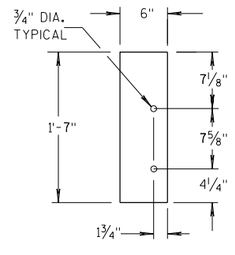


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) WHEN USING STEEL POSTS 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.

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

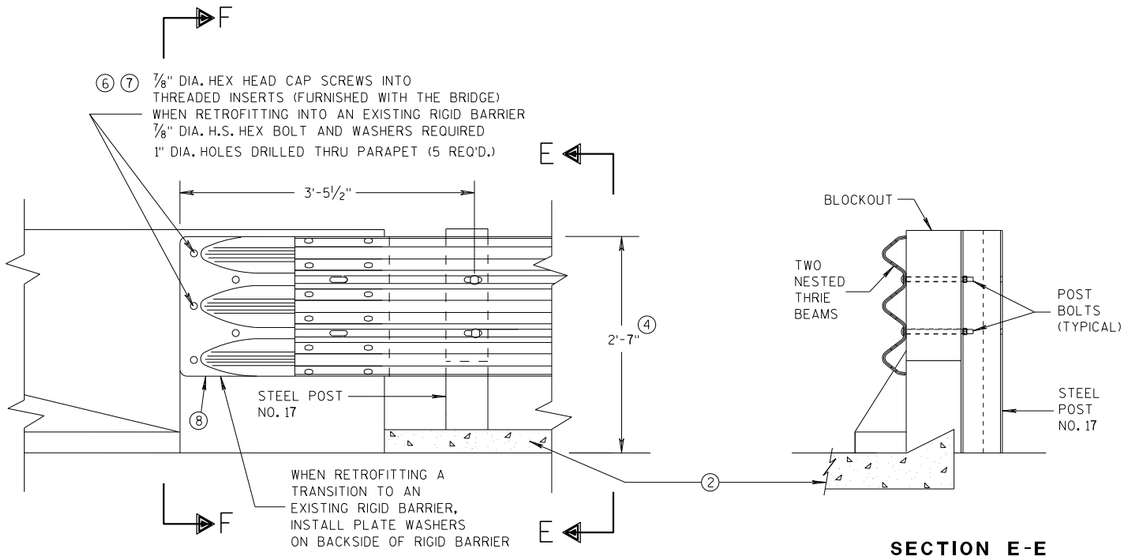
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 45-5c



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

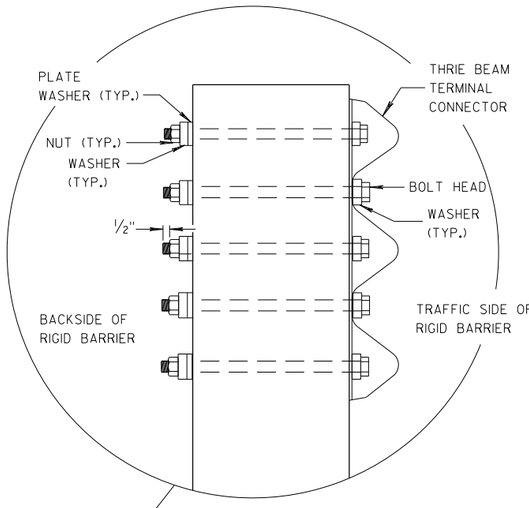
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

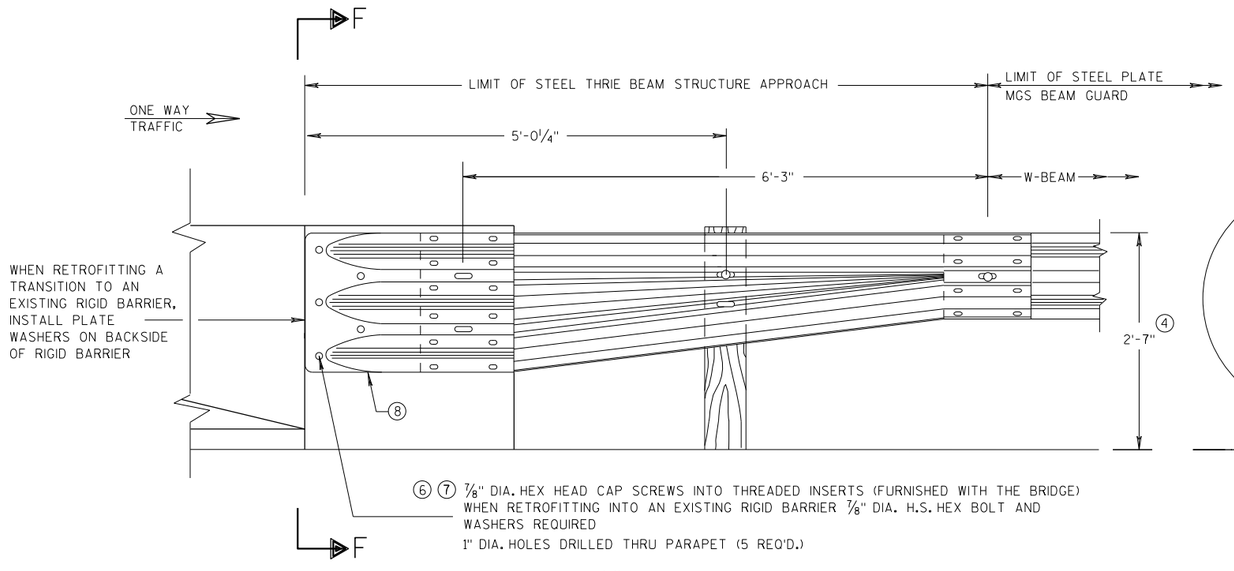
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

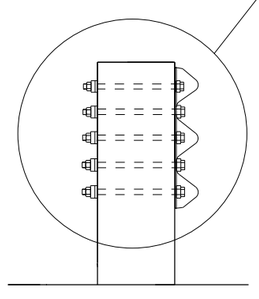
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

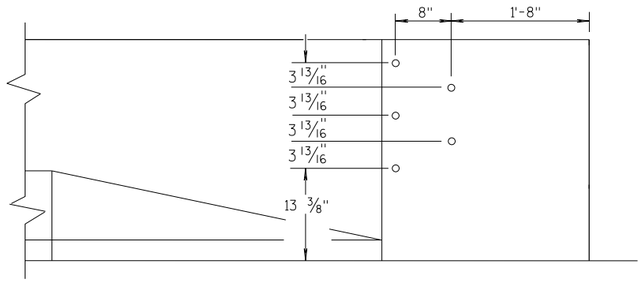




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVIS
NT
FHWA

6

S.D.D. 14 B 45-5d

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S.D.D. 14 B 45-5d

GENERAL NOTES

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

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

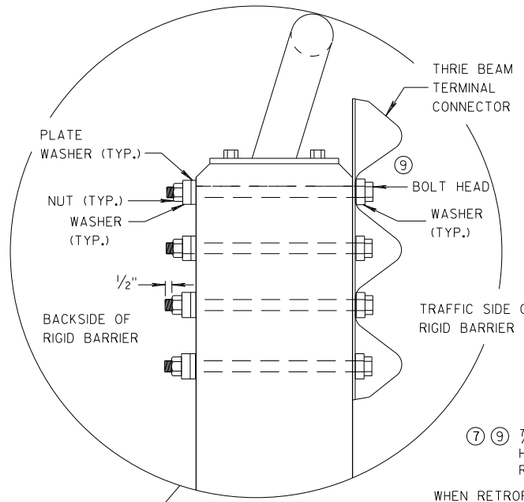
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

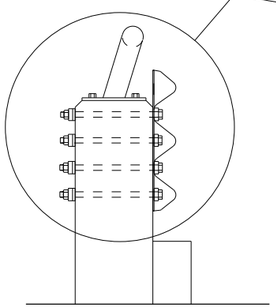
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

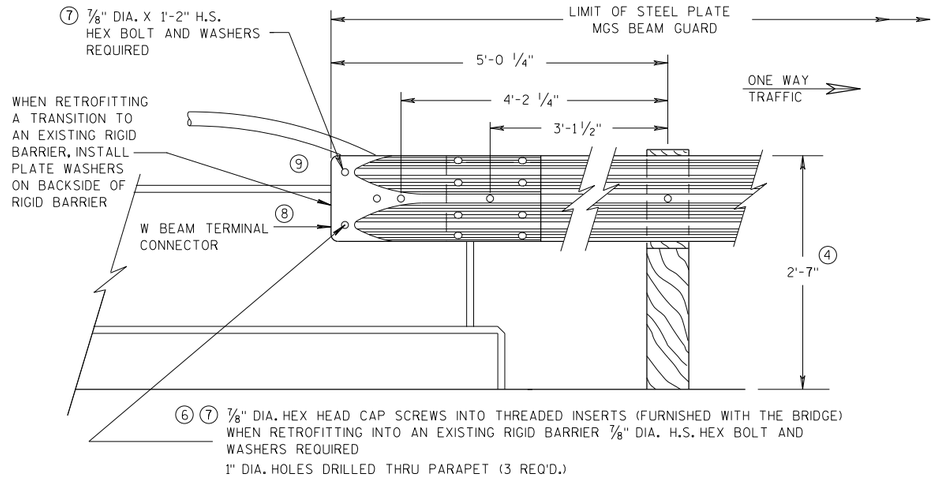
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

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





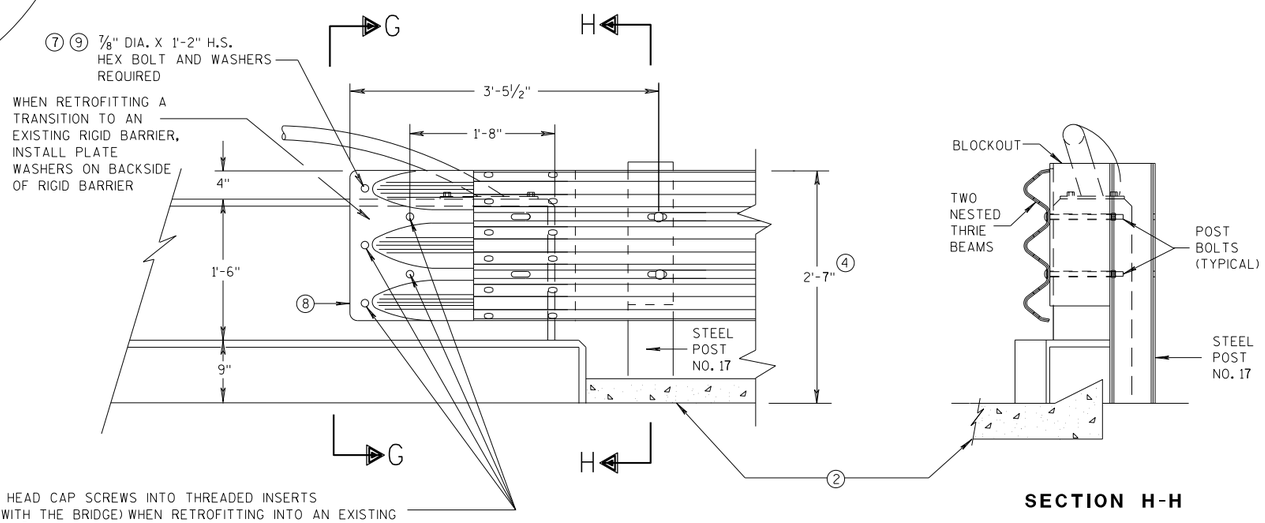
SECTION G-G



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D[illegible] UNIT SUPERVIS[illegible]
FHWA

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S.D.D. 14 B 45-5e

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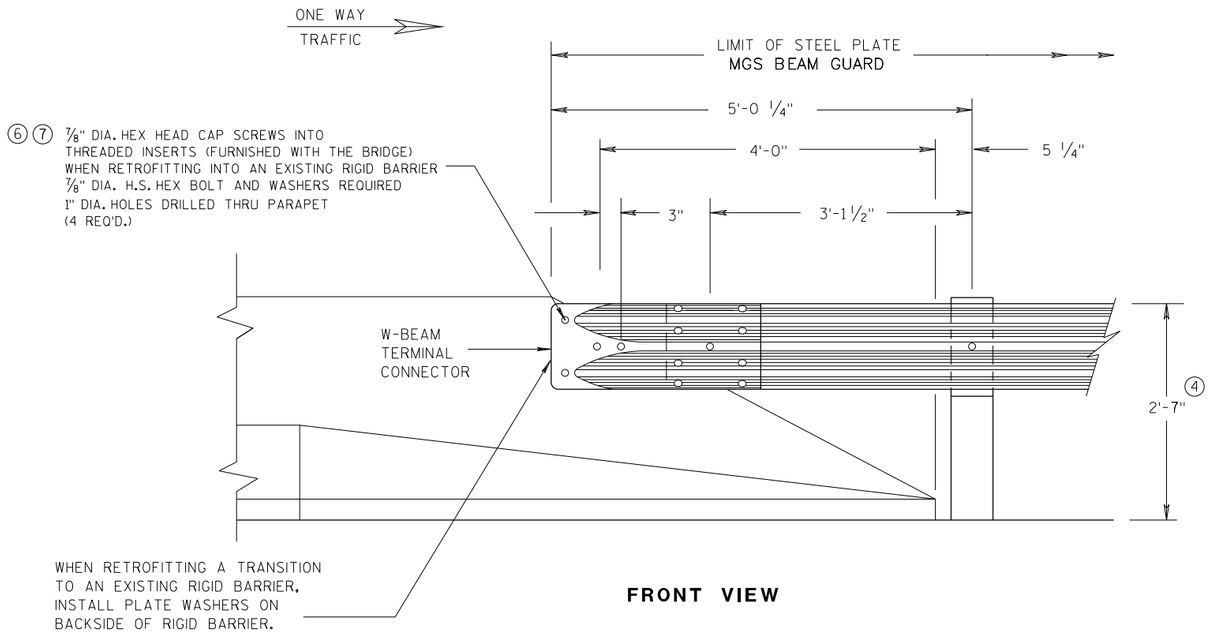
S.D.D. 14 B 45-5e



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

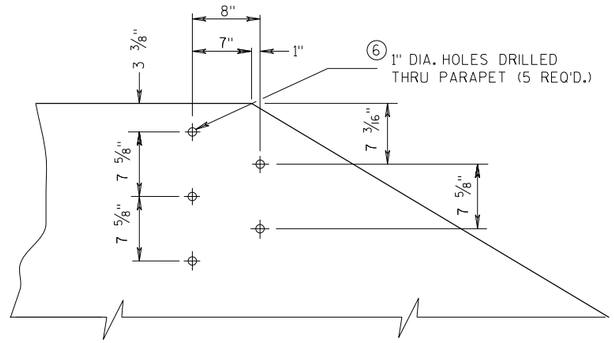
GENERAL NOTES

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

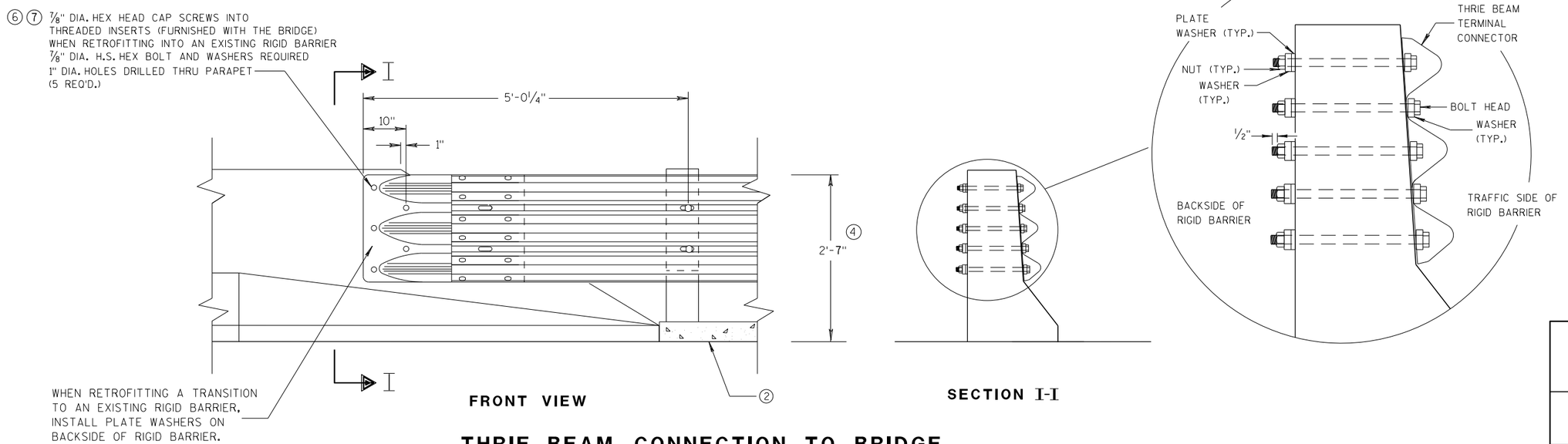
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW

SECTION I-I

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

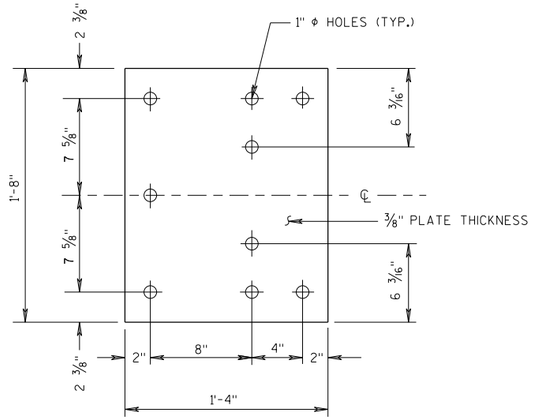
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

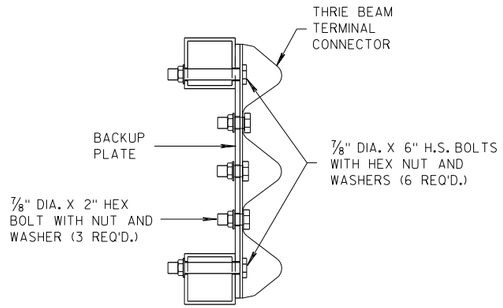
APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS [illegible] UNIT SUPERVI[illegible]ENT
FHWA

6

S.D.D. 14 B 45-5f



BACK-UP PLATE DETAIL

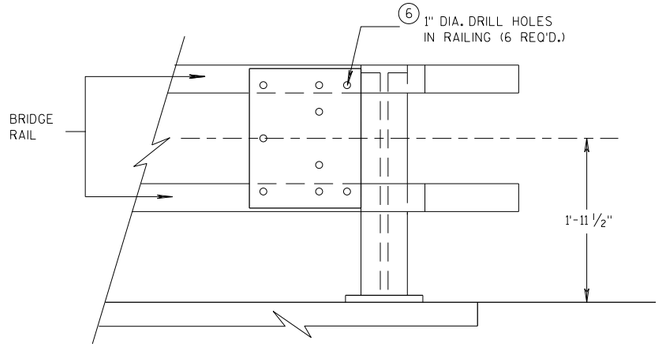


SECTION J-J

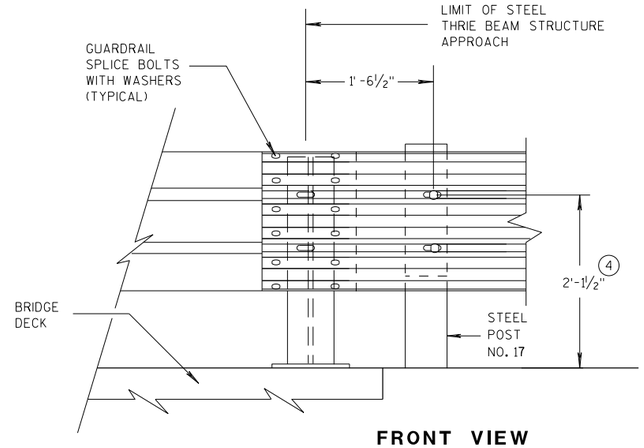
GENERAL NOTES

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

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

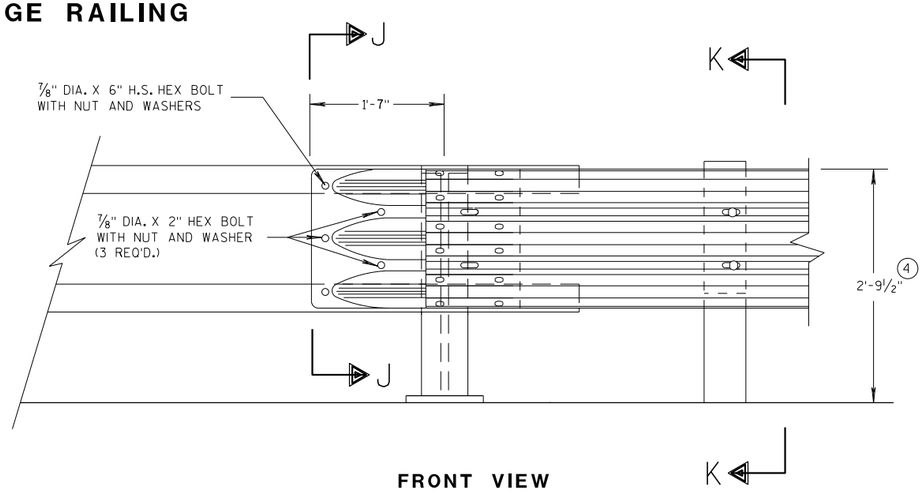


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

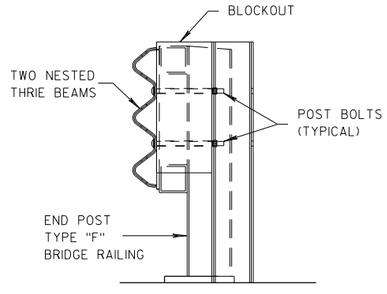


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 07/2018 — DATE
FHWA

/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

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S.D.D. 14 B 45-5g

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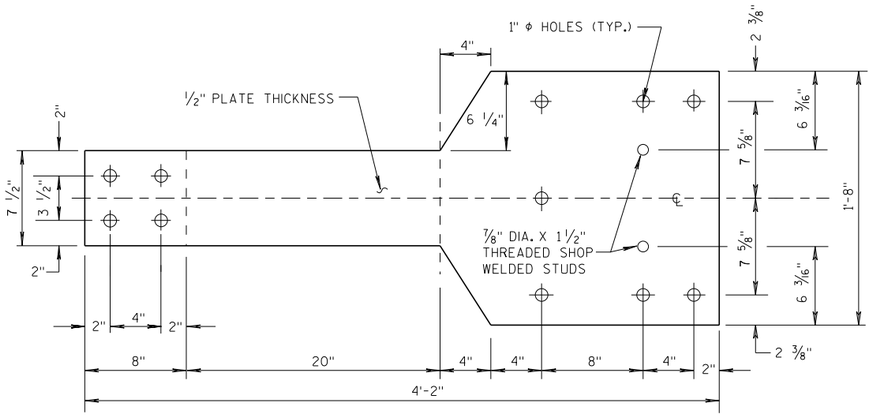
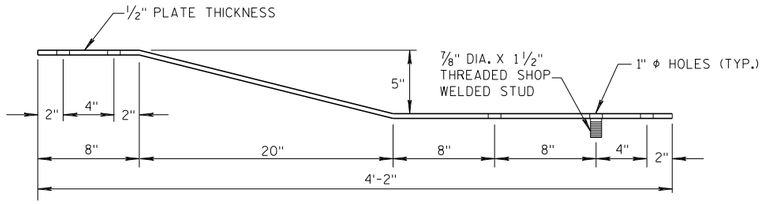
S.D.D. 14 B 45-5g

GENERAL NOTES

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

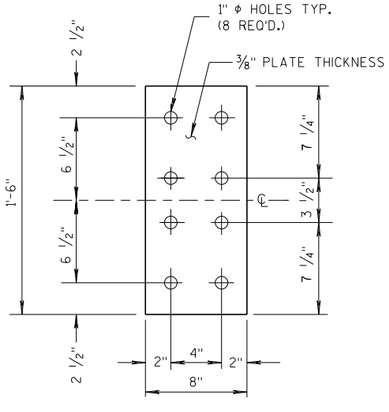


FRONT VIEW



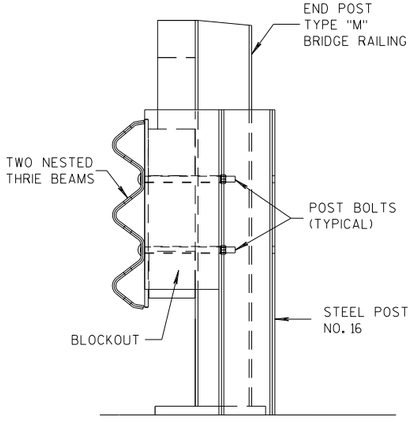
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

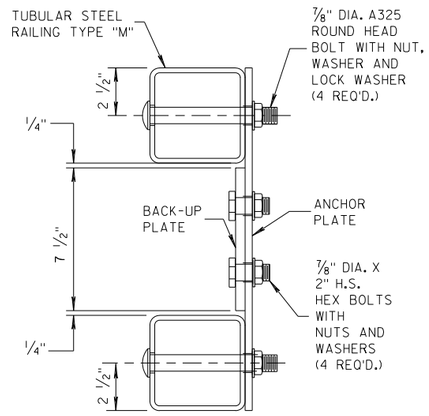


FRONT VIEW

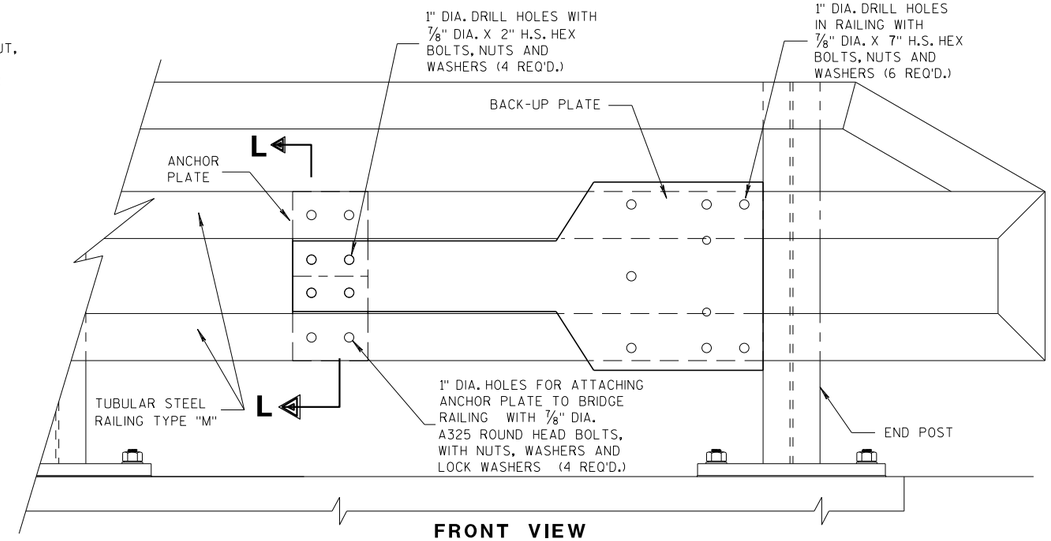
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

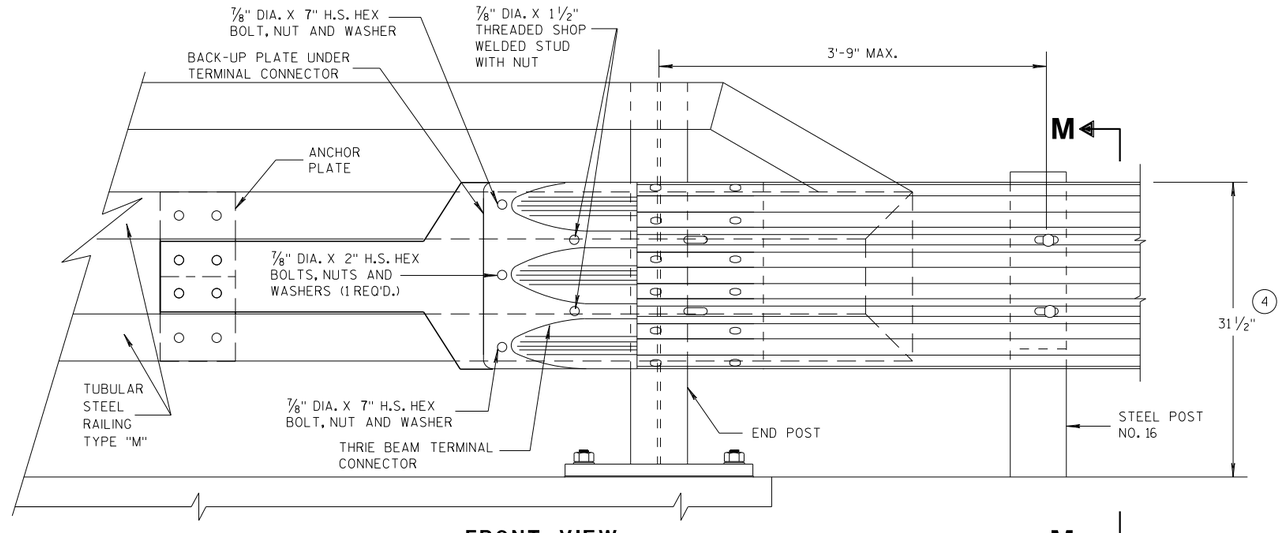


SECTION L-L

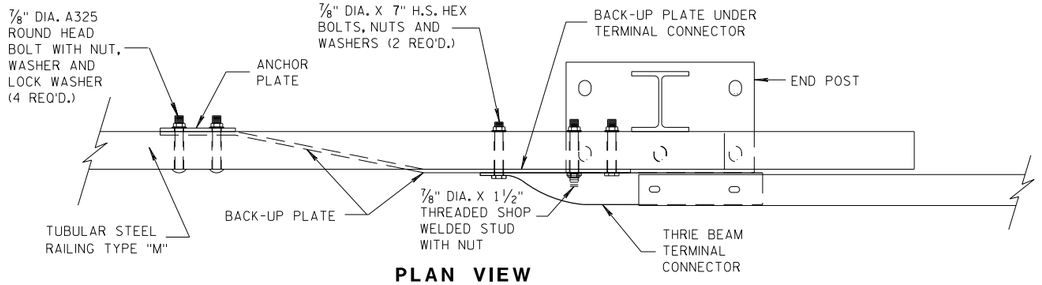


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA

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S.D.D. 14 B 45-5h

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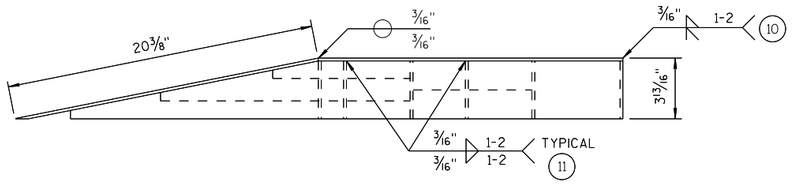

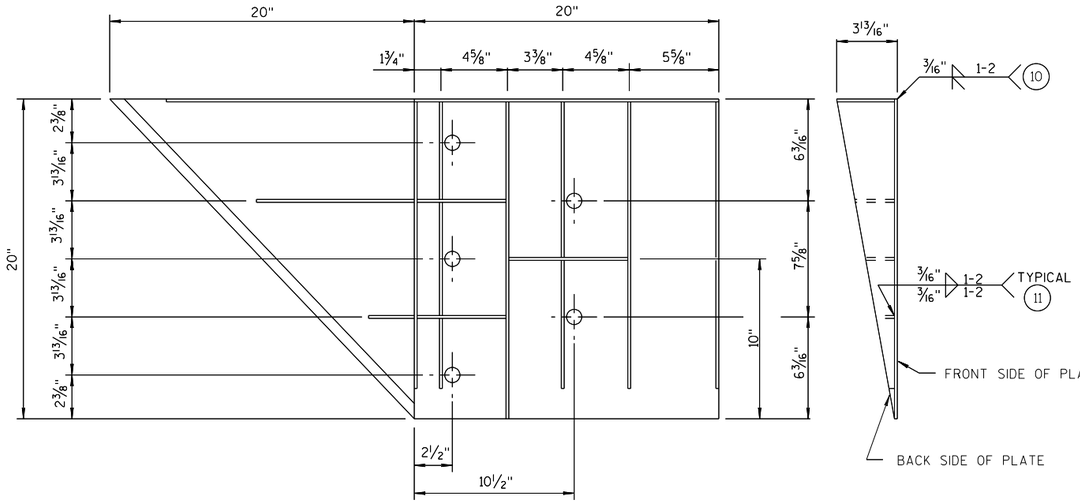

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

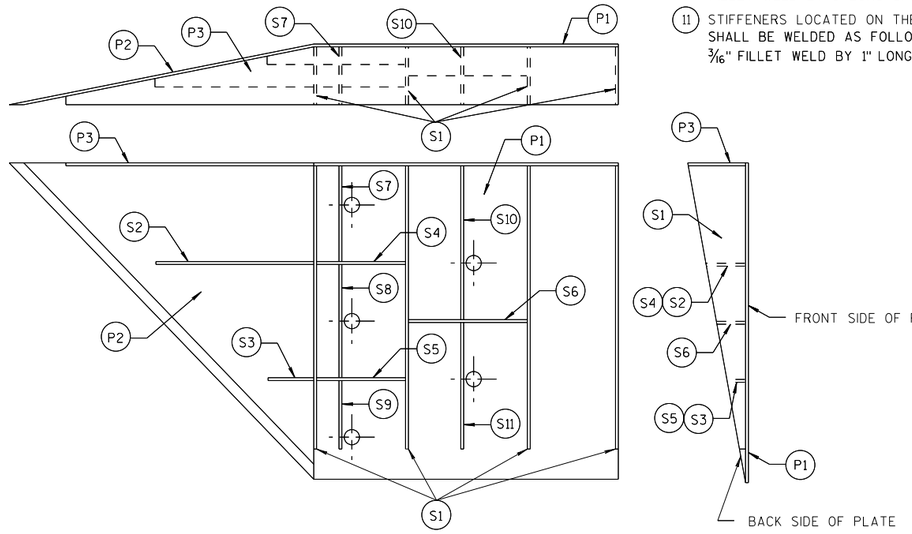

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

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

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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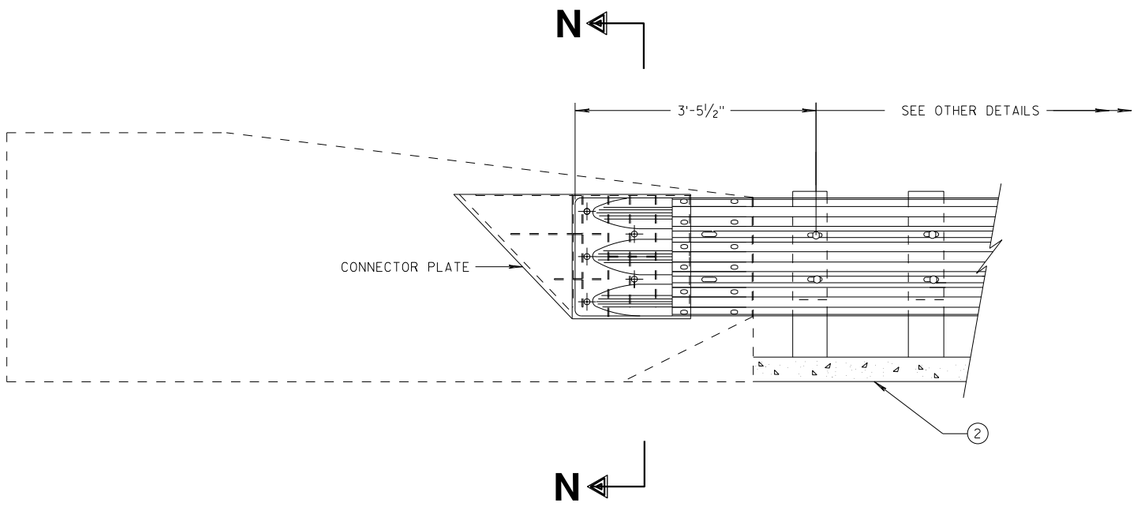
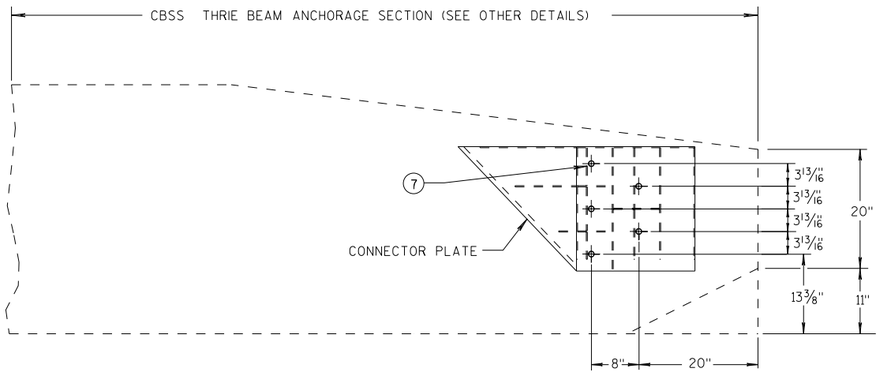


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



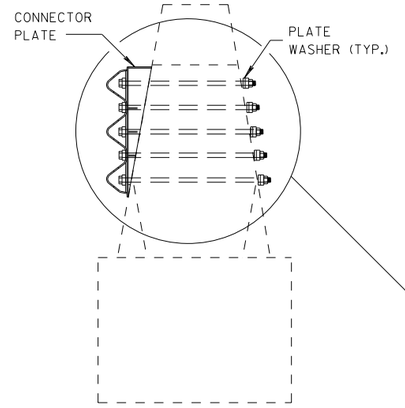
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

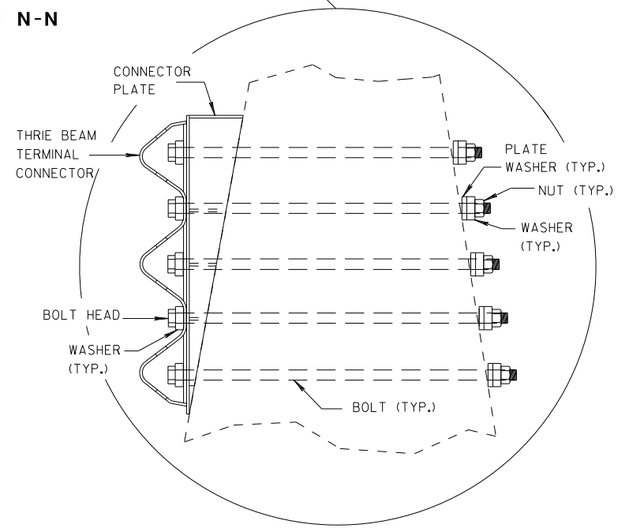
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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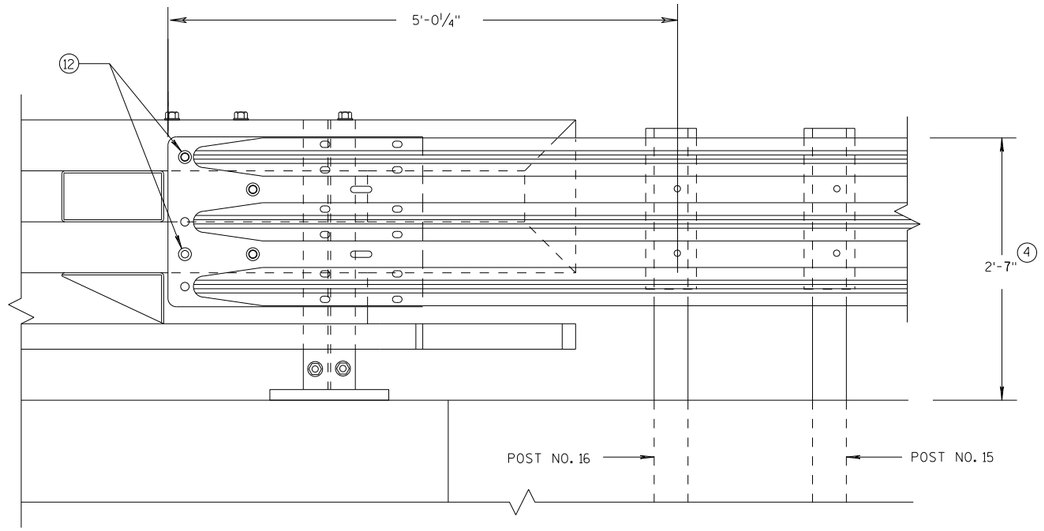
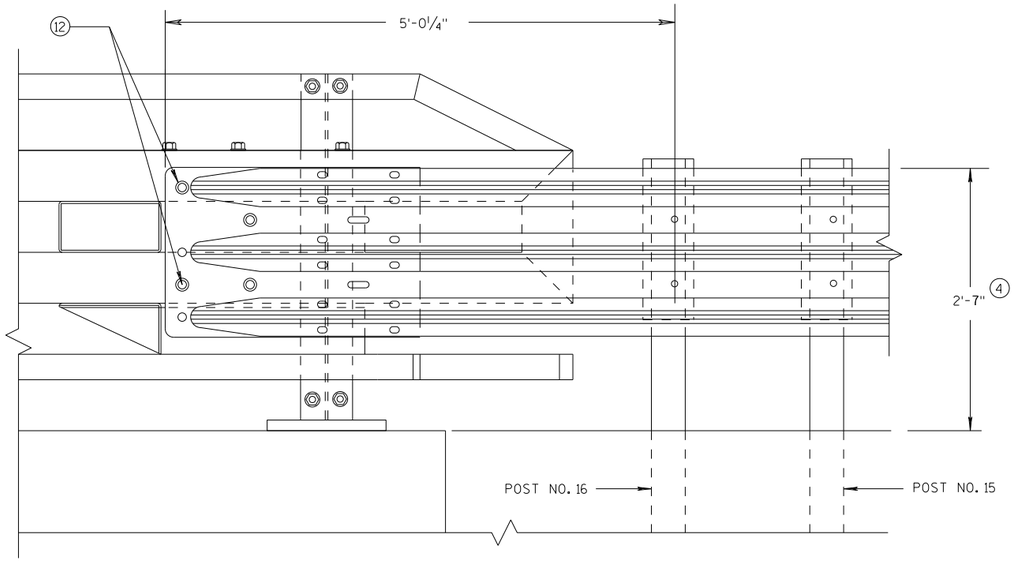


ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

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

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND 1/2-INCH BEYOND NUT.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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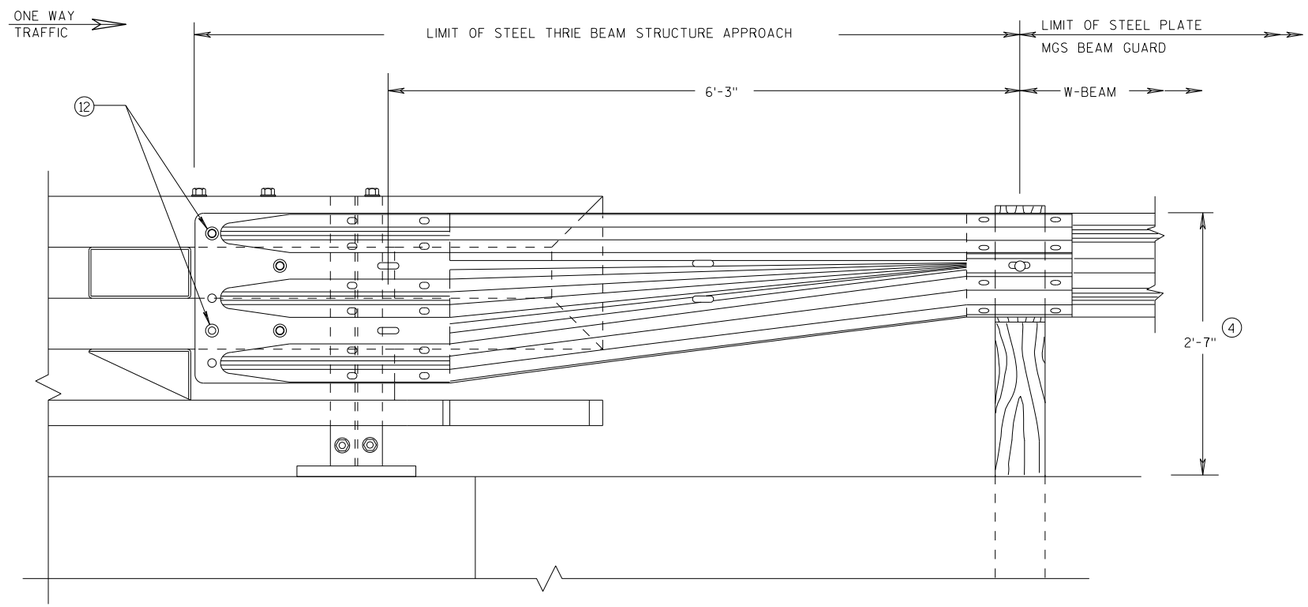


FRONT VIEW

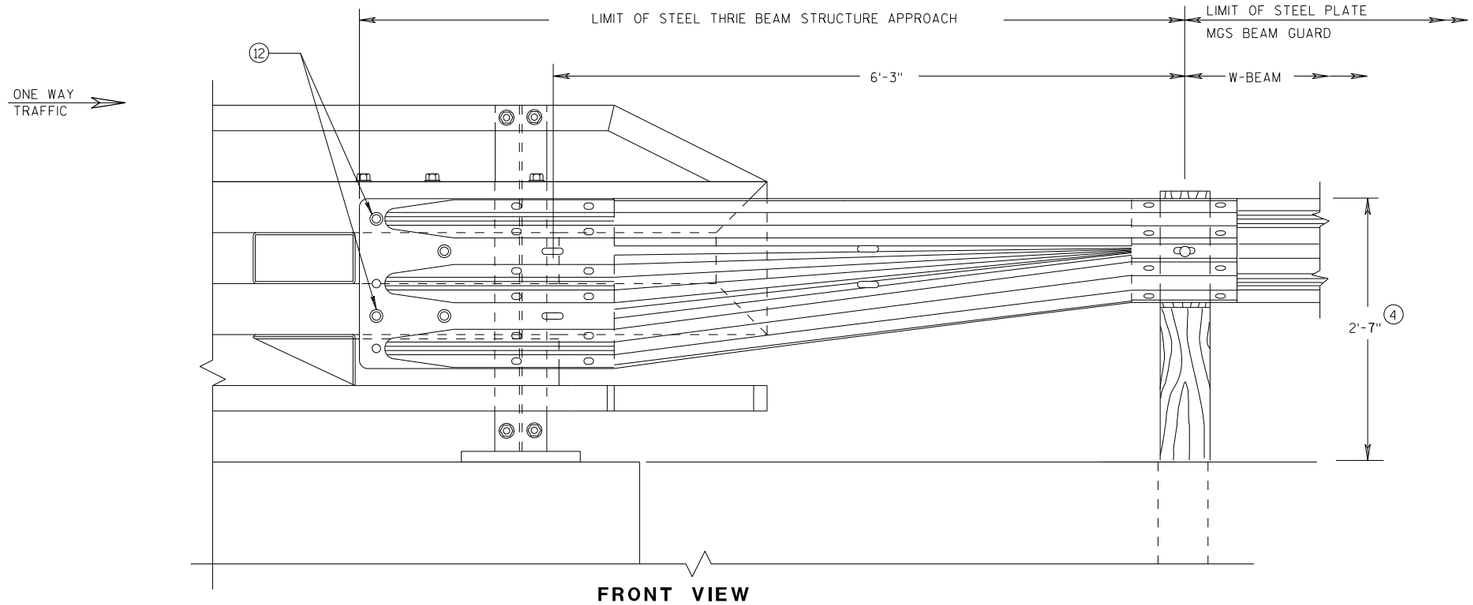
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

GENERAL NOTES

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

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$-INCH BEYOND NUT.



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4"

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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7/2018 DATE
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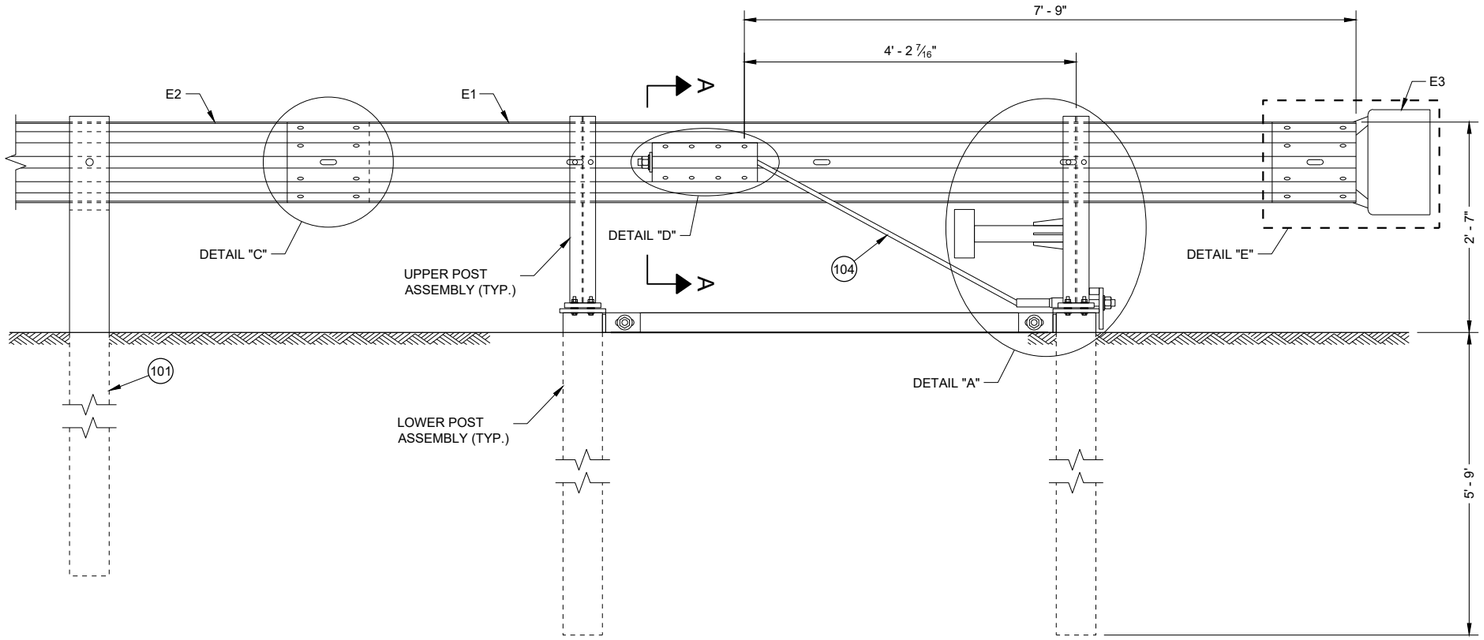
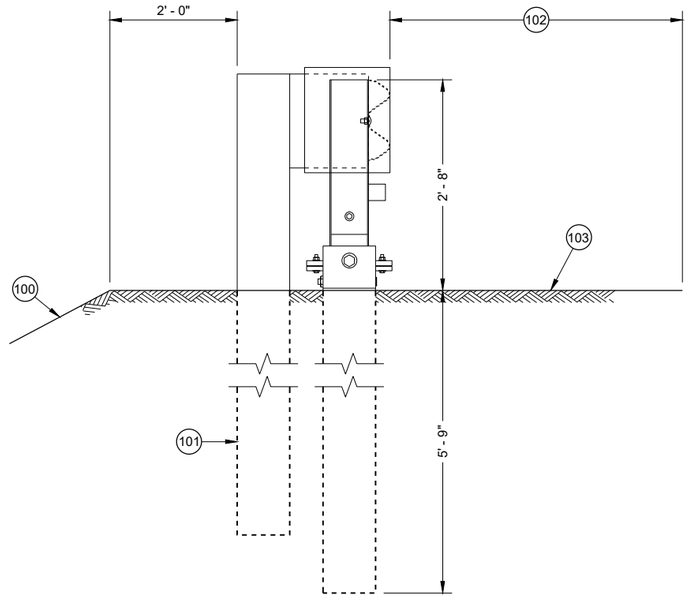
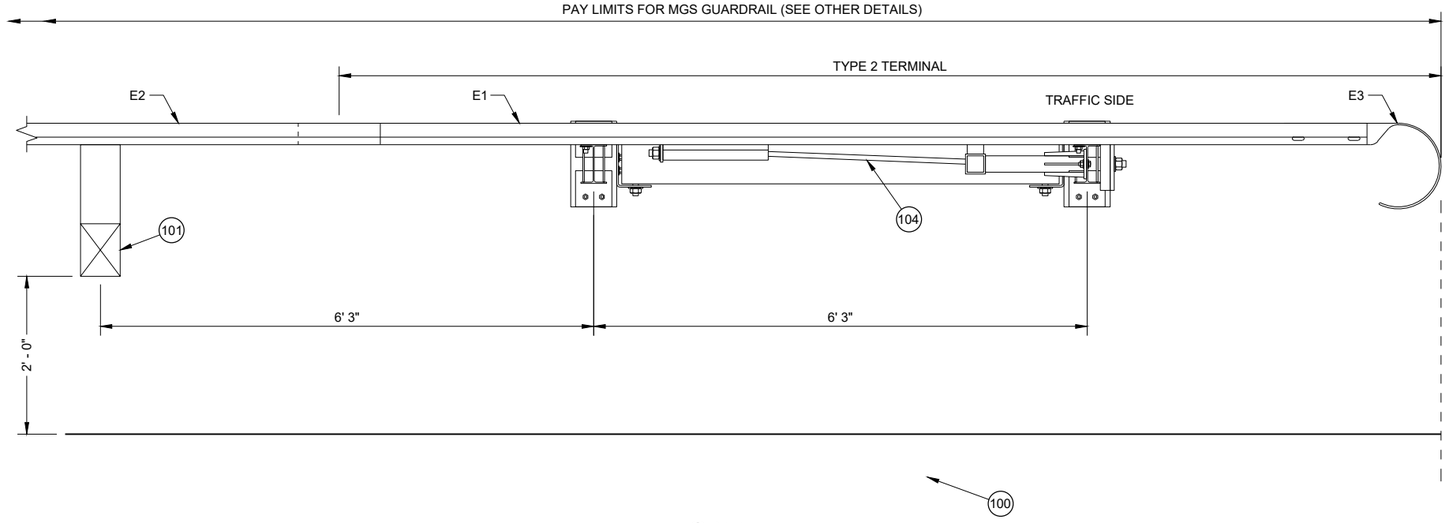


BACK VIEW
TYPE 2 TERMINAL



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.

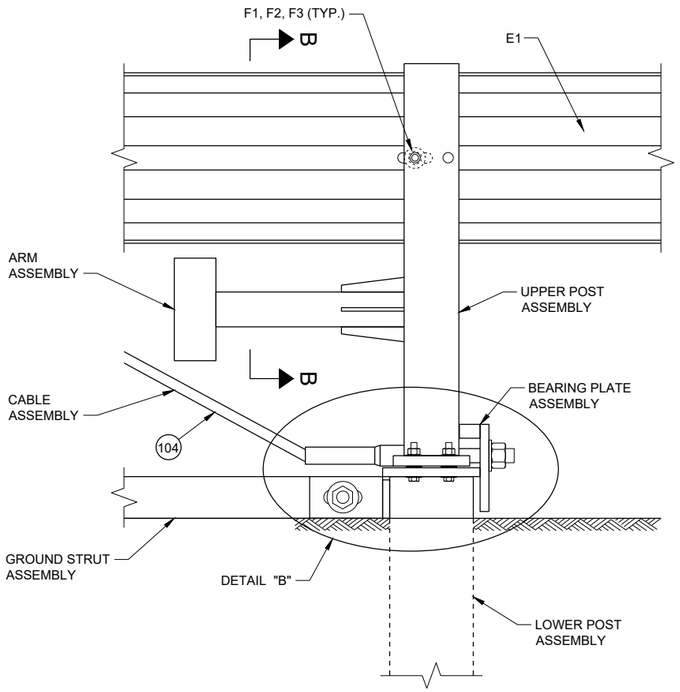
(104) AFTER ASSEMBLY, CABLE IS TO BE TIGHTENED WITHOUT TWISTING THE CABLE.

MIDWEST GUARDRAIL SYSTEM (MGS)
TYPE 2 TERMINAL

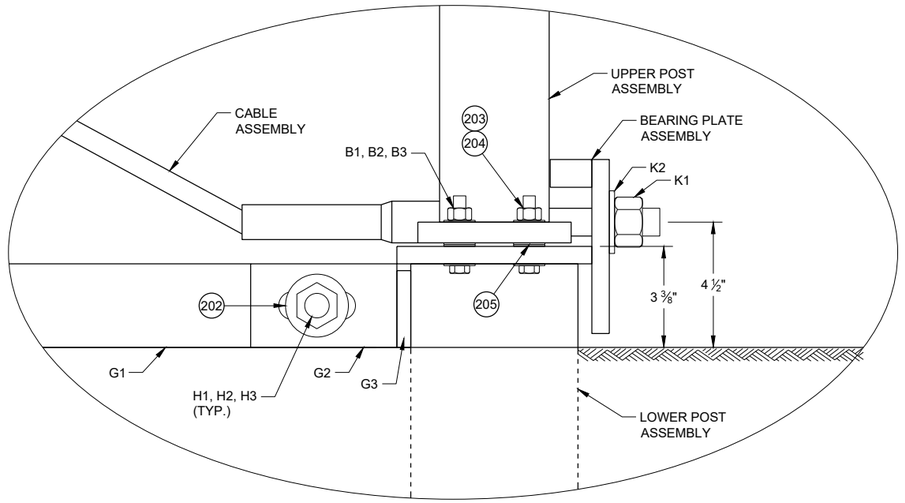
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

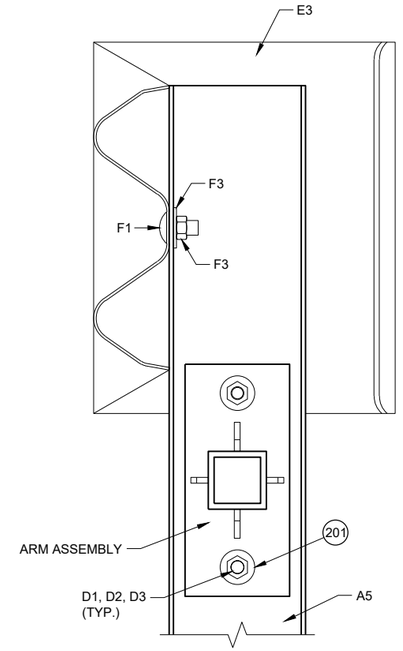
SDD 14B47 - 03a



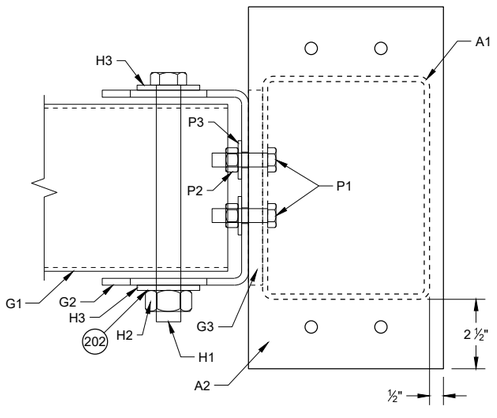
DETAIL "A"



DETAIL "B"

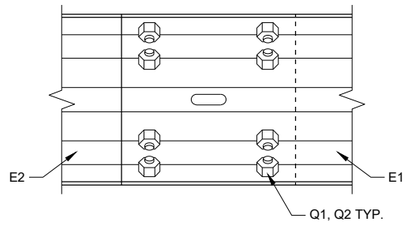


SECTION B - B

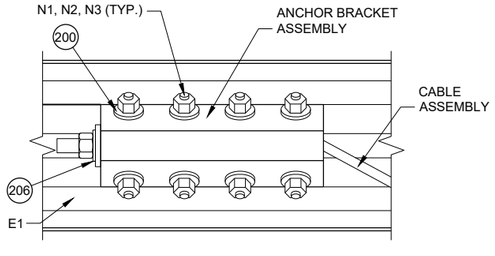


TOP VIEW

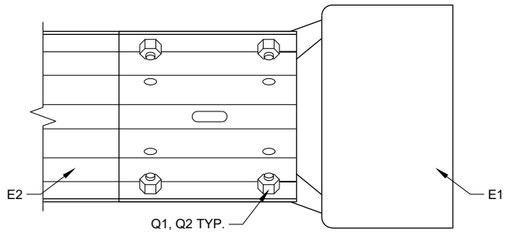
GROUND STRUT CONNECTION DETAIL



DETAIL "C"



DETAIL "D"



DETAIL "E"

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.

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

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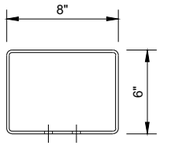
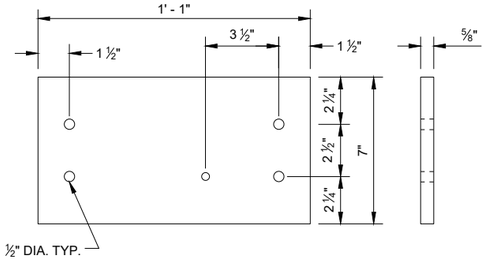
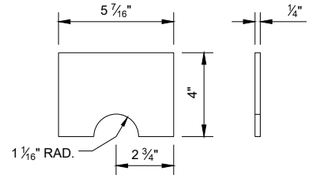
SDD 14B47 - 03b



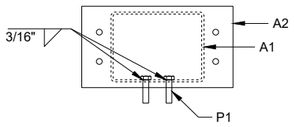
TOP VIEW



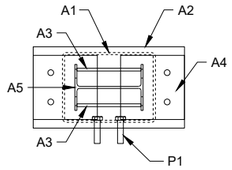
LOWER PLATE (A2)

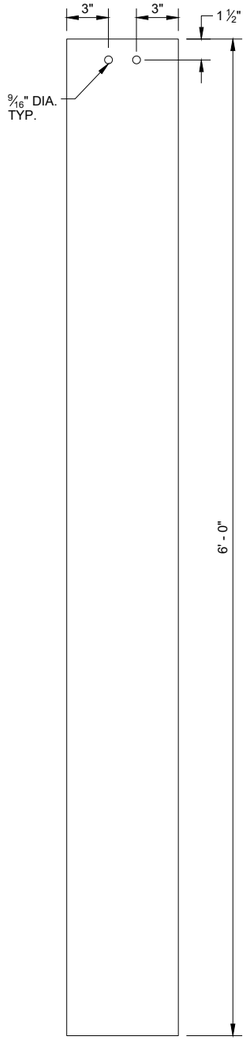


POST GUSSET (A3)



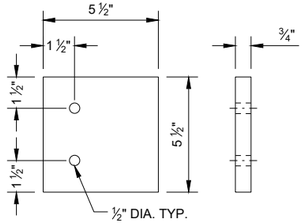
PLAN VIEW



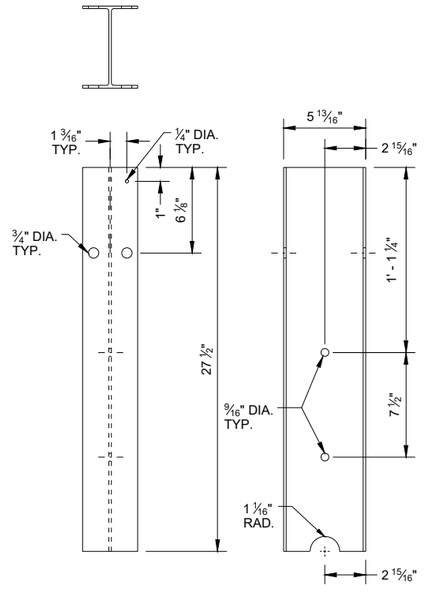


SIDE VIEW

FOUNDATION TUBE (A1)

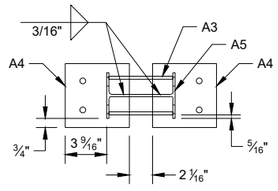


UPPER PLATE (A4)

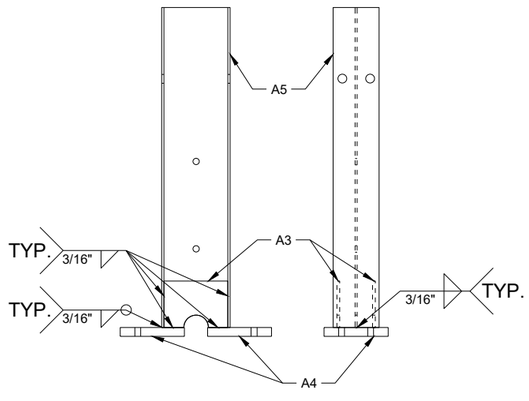


FRONT VIEW **SIDE VIEW**

TYPE 2 POST (A5)

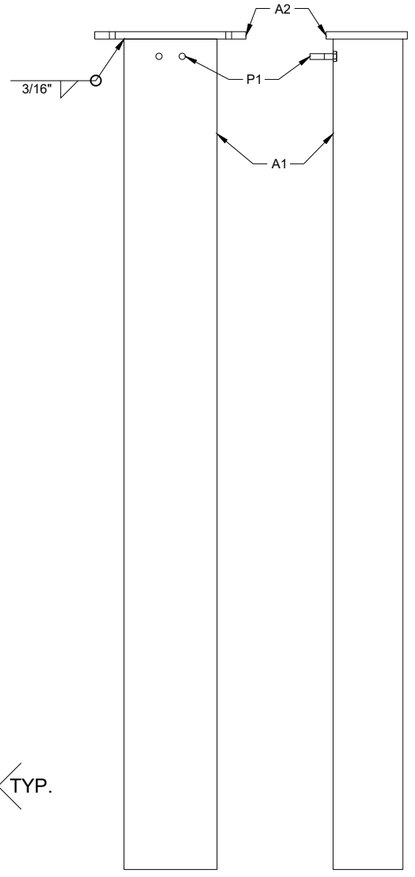


PLAN VIEW



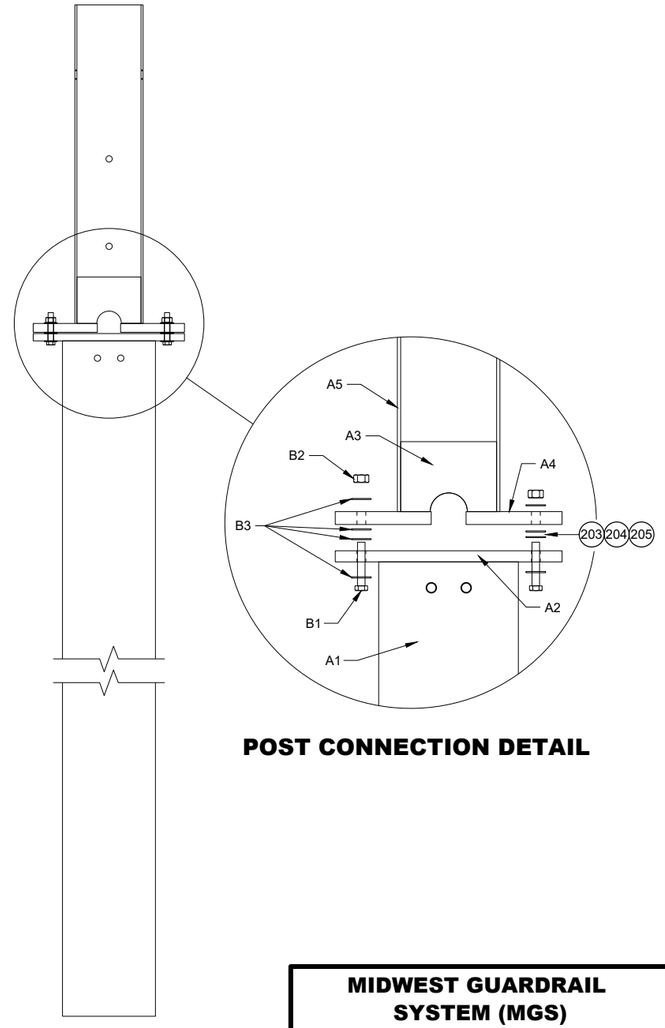
SIDE VIEW **FRONT VIEW**

UPPER POST ASSEMBLY



FRONT VIEW **SIDE VIEW**

LOWER POST ASSEMBLY



POST CONNECTION DETAIL

ASSEMBLED POST

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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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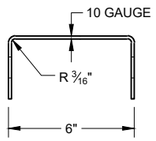
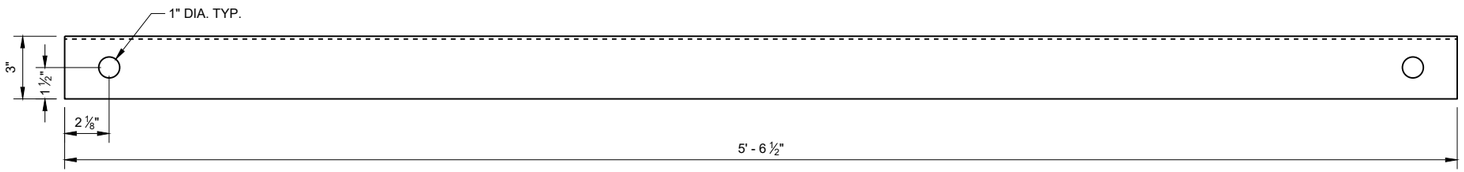
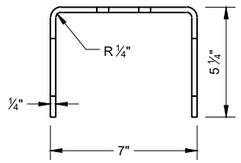


SIDE VIEW

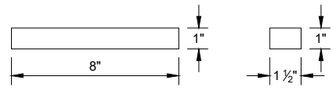


FRONT VIEW

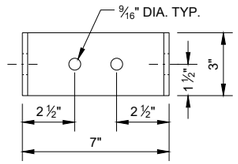
GROUND STRUT CHANNEL (G1)



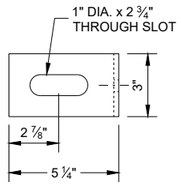
TOP VIEW



BEARING PLATE FLANGE (L2)

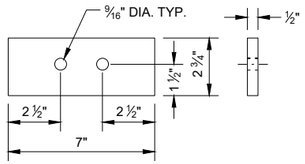


FRONT VIEW

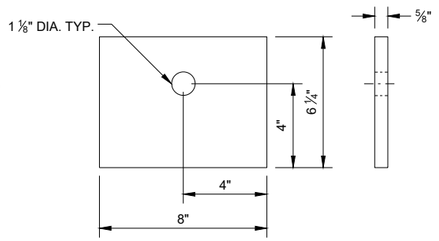


SIDE VIEW

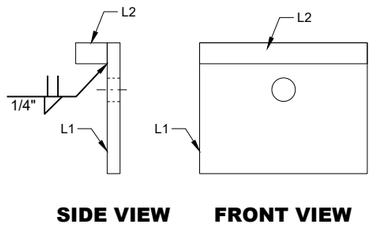
GROUND STRUT CONNECTOR (G2)



GROUND STRUT PLATE (G3)



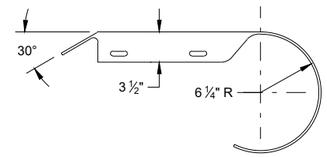
BEARING PLATE (L1)



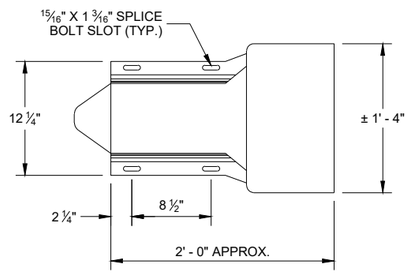
SIDE VIEW

FRONT VIEW

BEARING PLATE ASSEMBLY

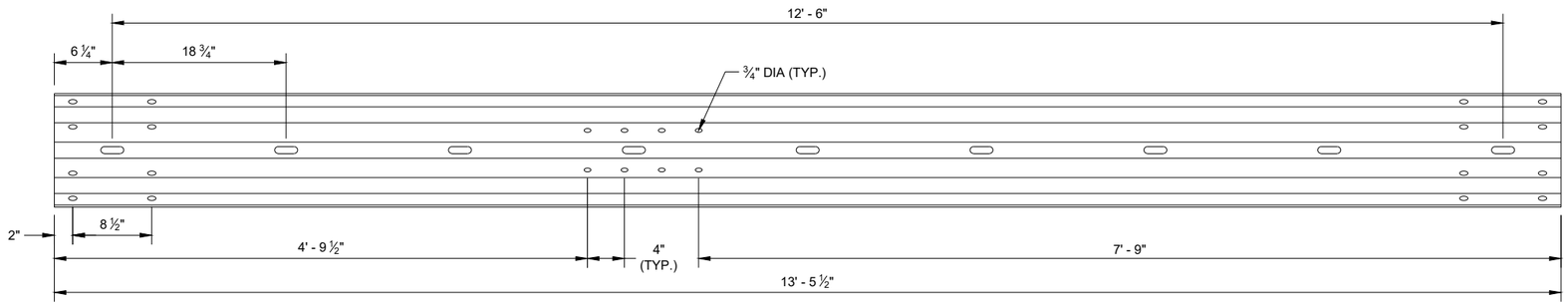


PLAN VIEW

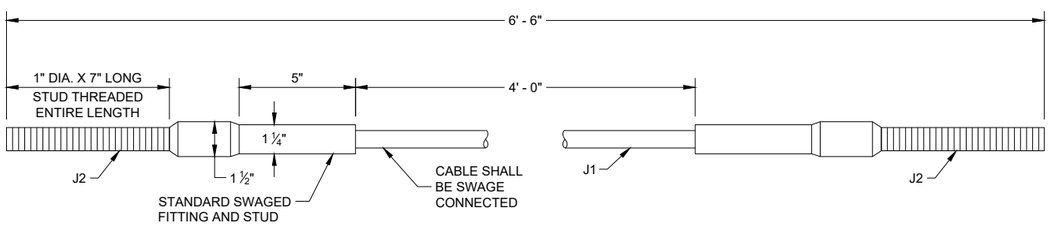


ELEVATION VIEW

ROUNDED BUFFER END (E3)



TYPE 2 GUARDRAIL (E1)



CABLE ASSEMBLY

MIDWEST GUARDRAIL SYSTEM (MGS)
TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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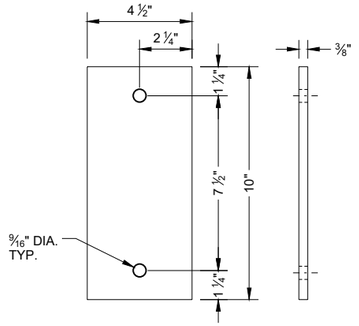
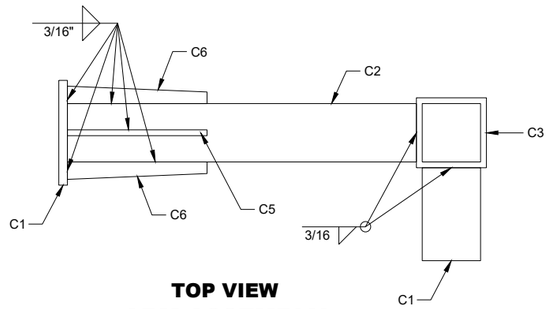
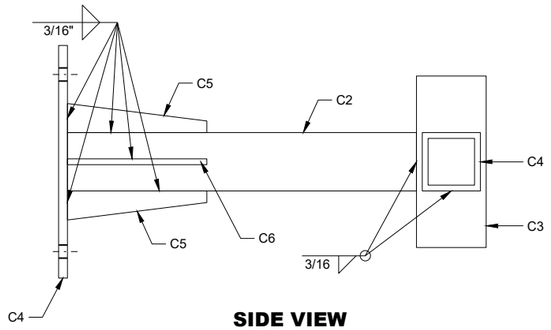


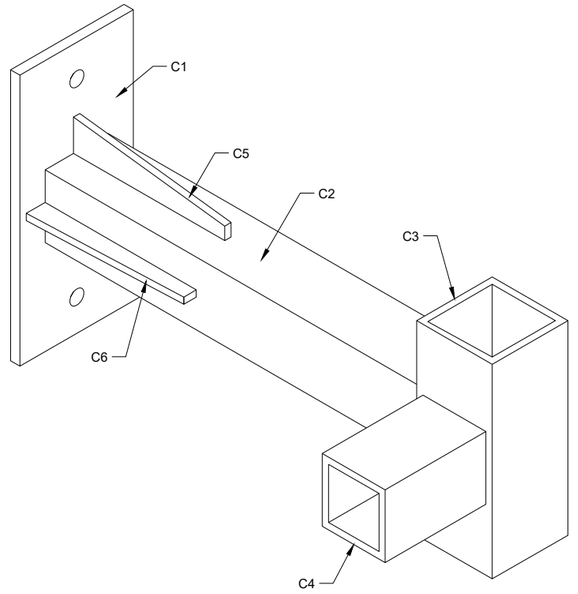
ARM PLATE (C1)



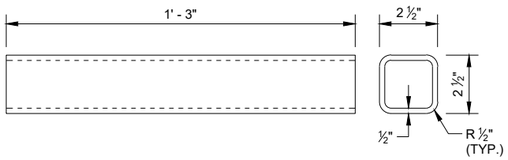
TOP VIEW
ARM ASSEMBLY



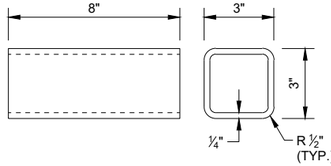
SIDE VIEW
ARM ASSEMBLY



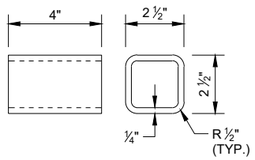
ISOMETRIC VIEW
ARM ASSEMBLY



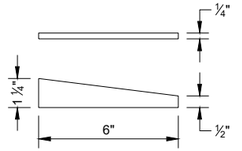
ARM TUBE 1 (C2)



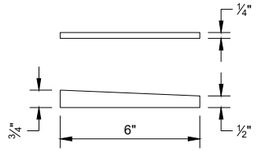
ARM TUBE 2 (C3)



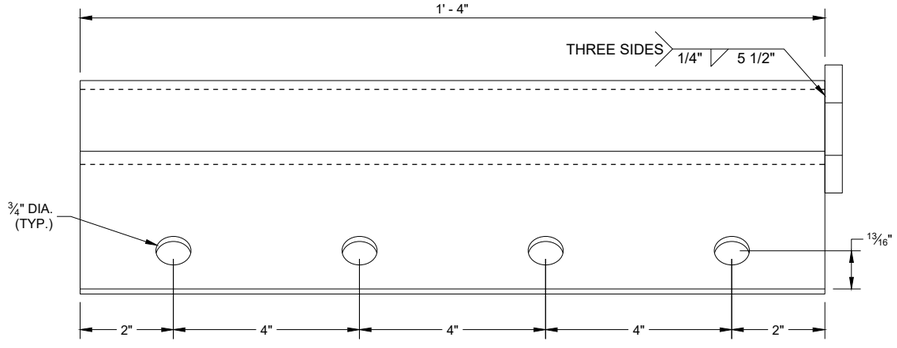
ARM TUBE 3 (C4)

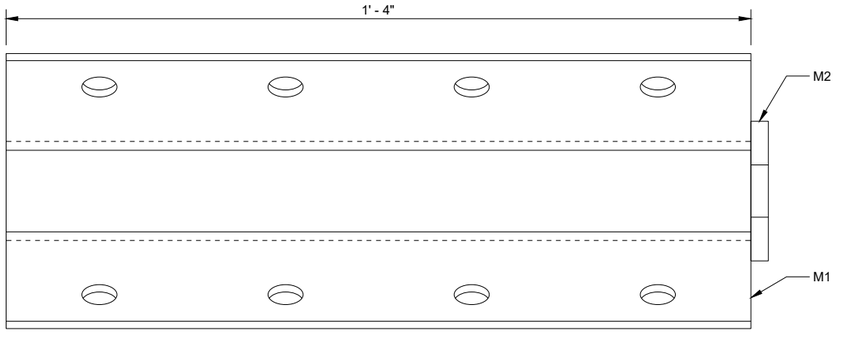


ARM GUSSET PLATE 1 (C5)

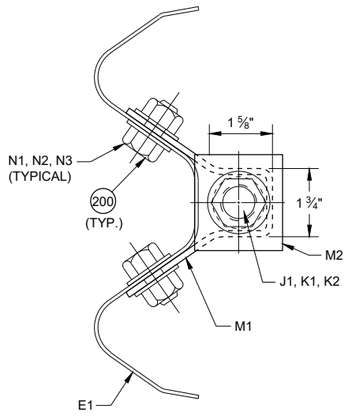


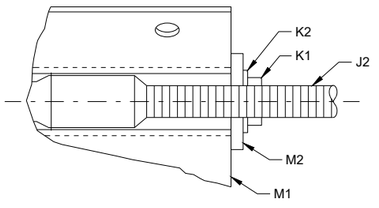
ARM GUSSET PLATE 2 (C6)



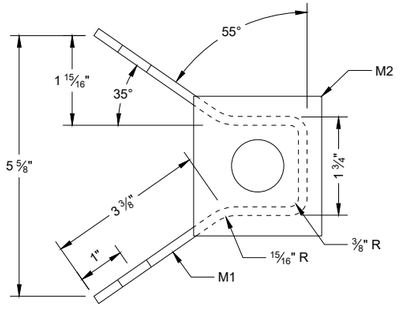


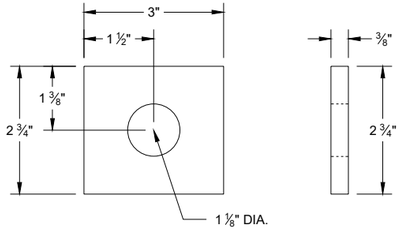
ANCHOR BRACKET (M1, M2)





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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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

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.

6

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SDD 14B47 - 03g

SDD 14B47 - 03g

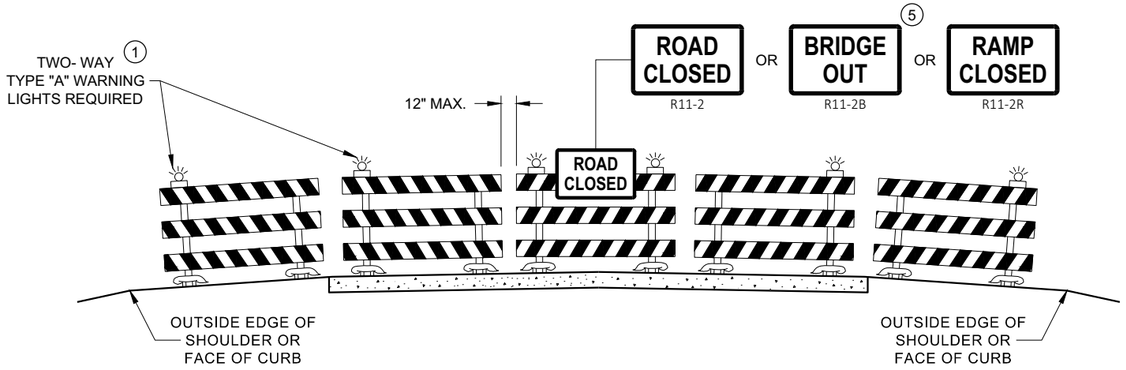
MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

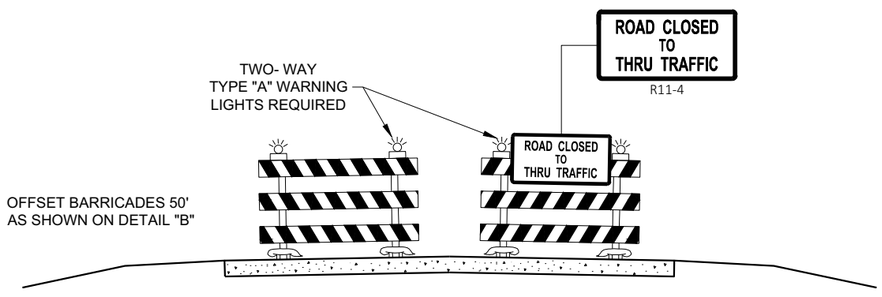
APPROVED
August 2021
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA



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 ENGINEER
FHWA

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SDD 15C02 - 08b

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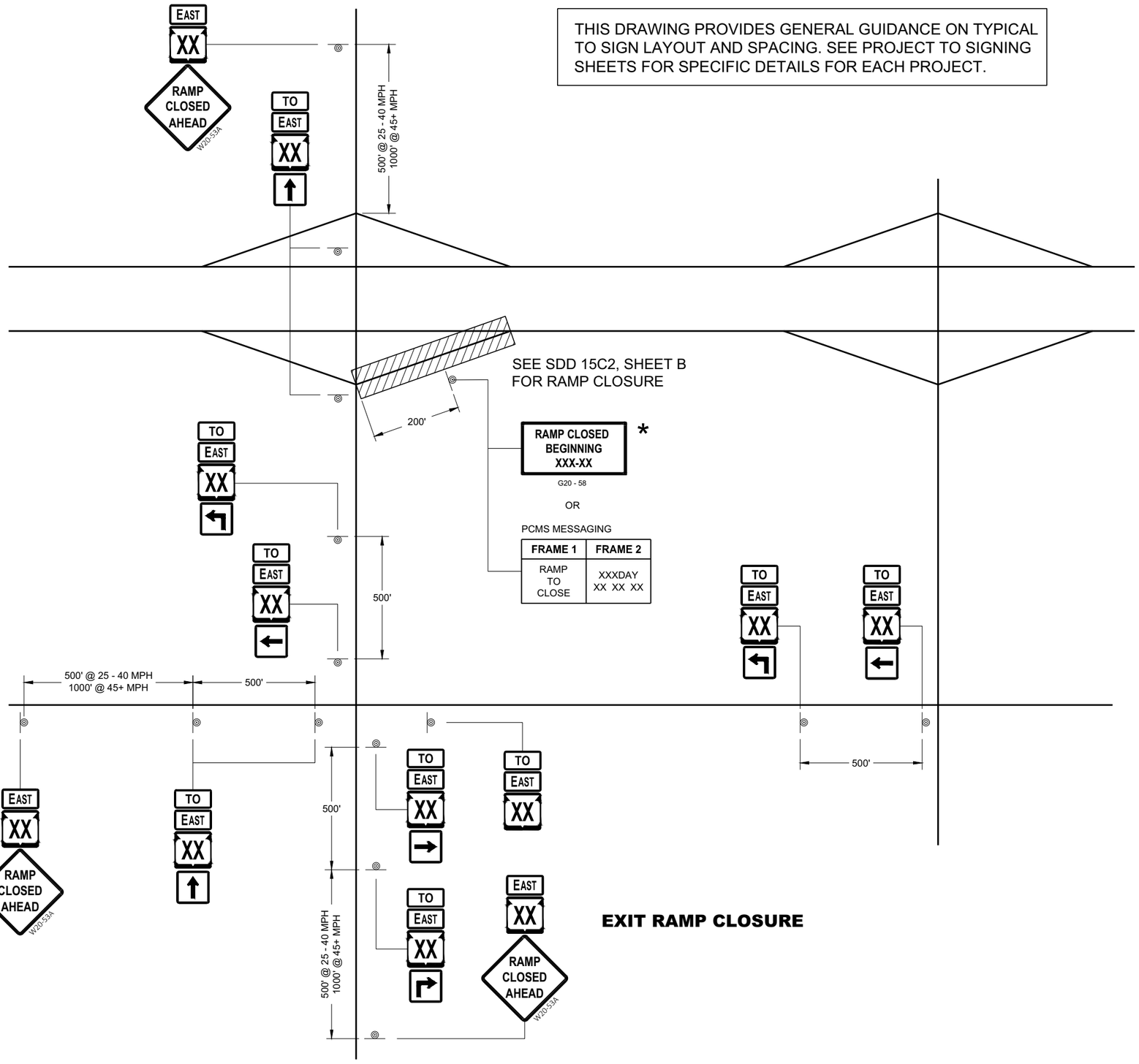
SDD 15C02 - 08b



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

LEGEND

SIGN ON PERMANENT SUPPORT

TO EAST — MO4 - 5, M3 - X

XX M1 - 6 OR XX M1 - 4 OR INTERSTATE XX M1 - 1

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 ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE TO ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND TO 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 SHALL 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 FOLLOW:
- M3 - X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
- MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
- M1 - 1, M1 - 4, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
- MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).
- W20 - 53A SHALL BE 48" X 48"

* PLACE "RAMP CLOSED BEGINNING" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR LAYOUT.

EXIT RAMP CLOSURE

ON RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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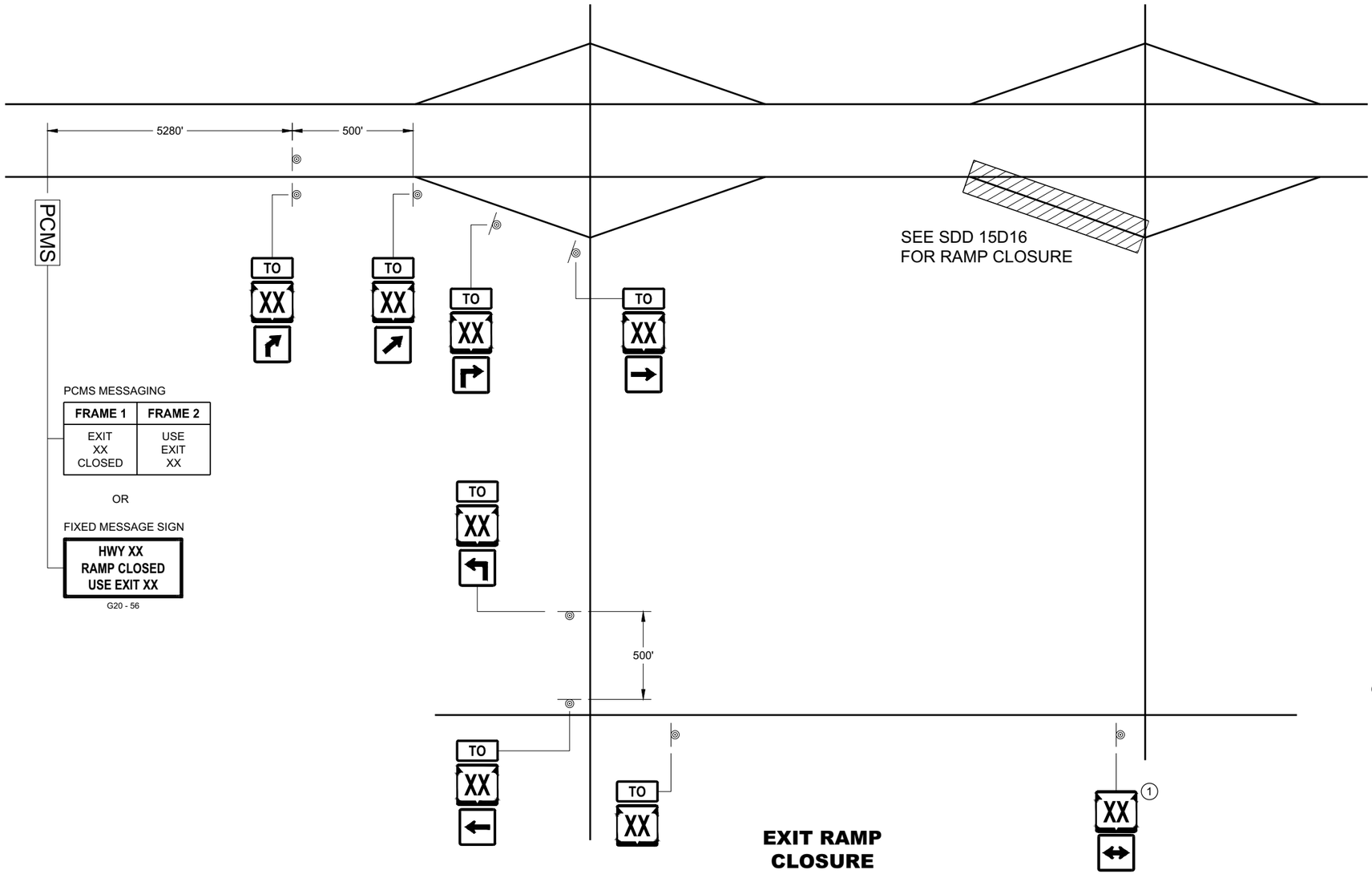
SDD 15C02 - 08d

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL "TO" MO-4 SIGN LAYOUT AND SPACING. SEE PROJECT TO SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.



PCMS MESSAGING

FRAME 1	FRAME 2
EXIT XX CLOSED	USE EXIT XX

OR

FIXED MESSAGE SIGN

HWY XX
RAMP CLOSED
USE EXIT XX

G20 - 56

EXIT RAMP CLOSURE

LEGEND

SIGN ON PERMANENT SUPPORT

PCMS PORTABLE CHANGEABLE MESSAGE SIGN

TO MO4 - 5

XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A

M05 - 1 OR M05 - 2 OR M06 - 1 OR M06 - 2 OR M06 - 4

GENERAL NOTES

SEE SDD 15D16 "TRAFFIC CONTROL, EXIT RAMP CLOSURE" DETAIL FOR TRAFFIC CONTROL AT EXIT RAMP CLOSURE.

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

IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE "TO" MO-4 ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND "TO" MO-4 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 SHALL 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 FOLLOW:
- MO4 - 5 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, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).

(1) ONLY ADD IF THERE ARE NO EXISTING ROUTE MARKERS FOR THE INTERSECTING ROADWAY.

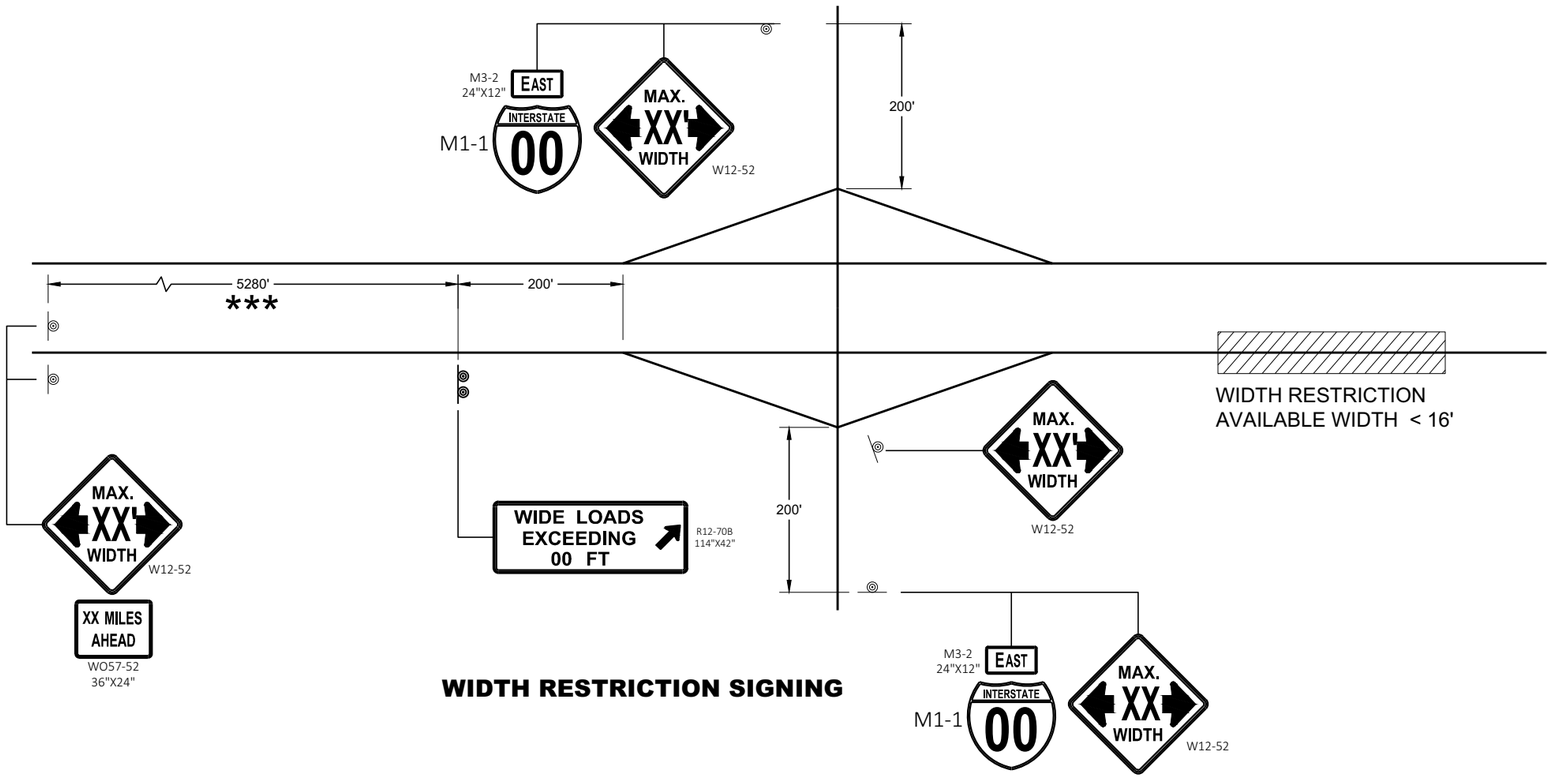
OFF RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

SDD 15C02 - 08e

SDD 15C02 - 08e



WIDTH RESTRICTION SIGNING

LEGEND

SIGN ON PERMANENT SUPPORT

GENERAL NOTES

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

THE SPACING BETWEEN 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.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

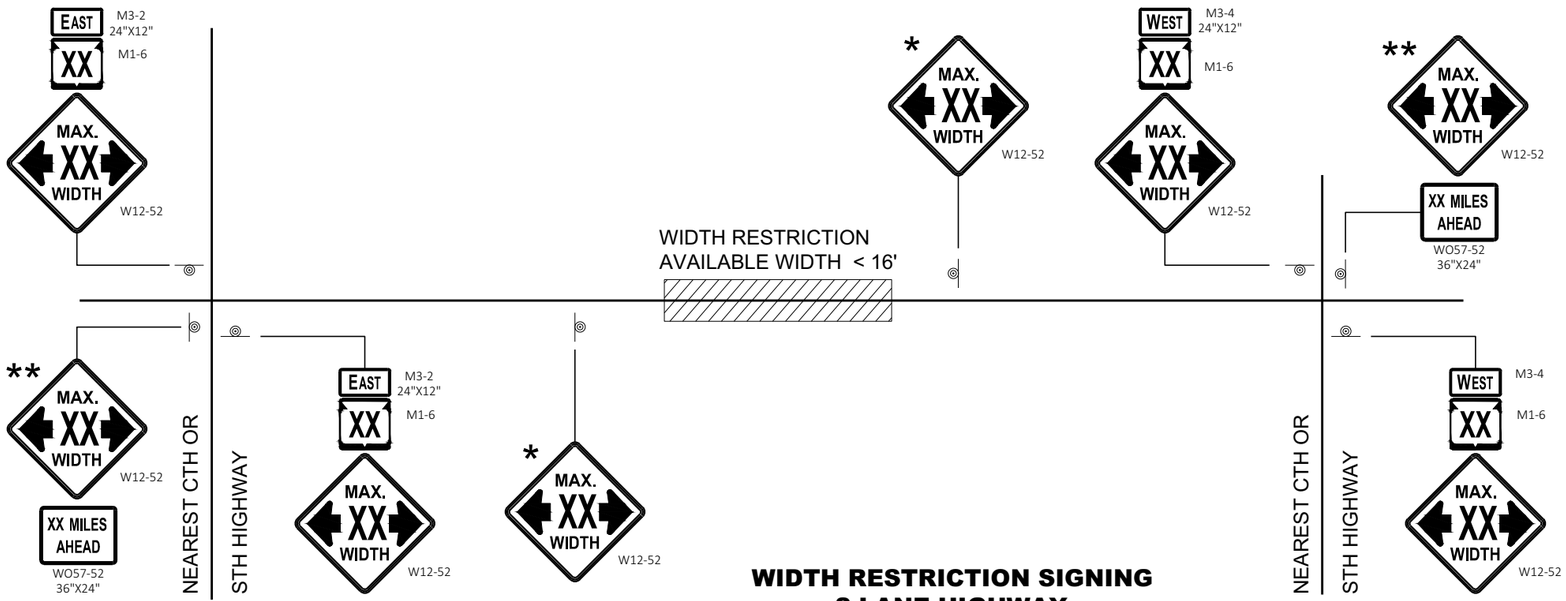
WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

* PLACE 500 FEET AFTER THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.

** SIGN SHALL BE VISIBLE FROM ROADWAY.

*** ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.

WIDTH ON SIGN TO BE APPROX. 1 - FOOT LESS THAN AVAILABLE WIDTH



WIDTH RESTRICTION SIGNING
2 LANE HIGHWAY

ADVANCED WIDTH RESTRICTION SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

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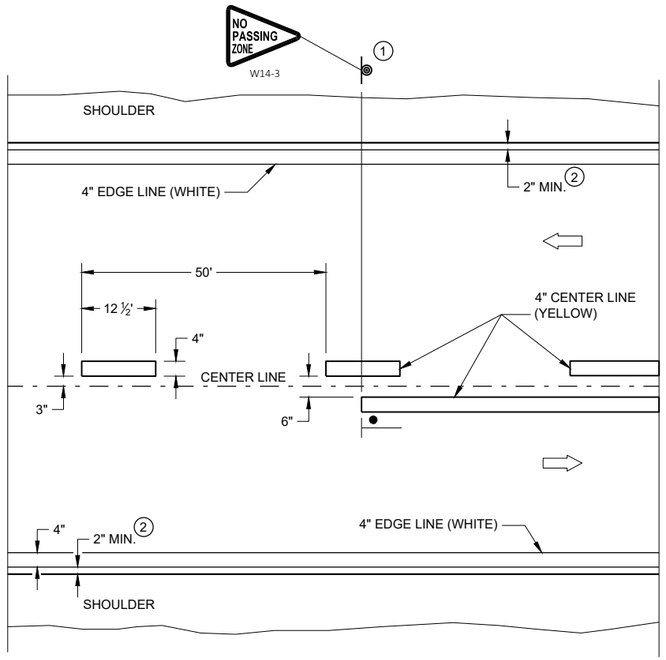
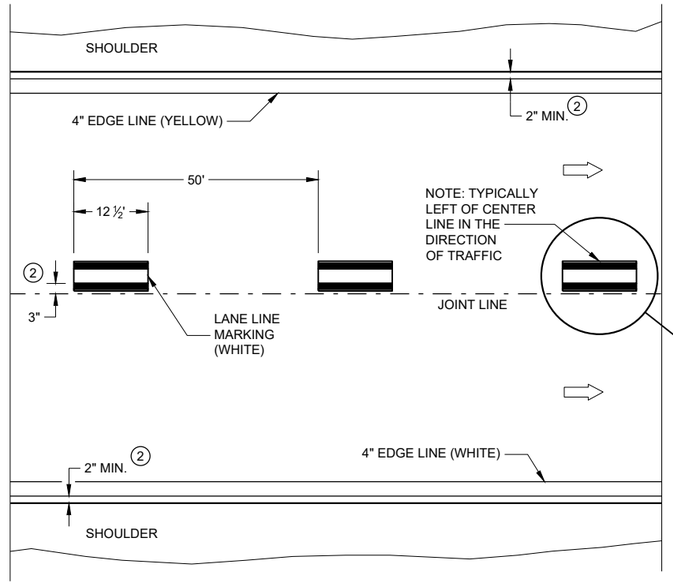
SDD 15C02 - 08f

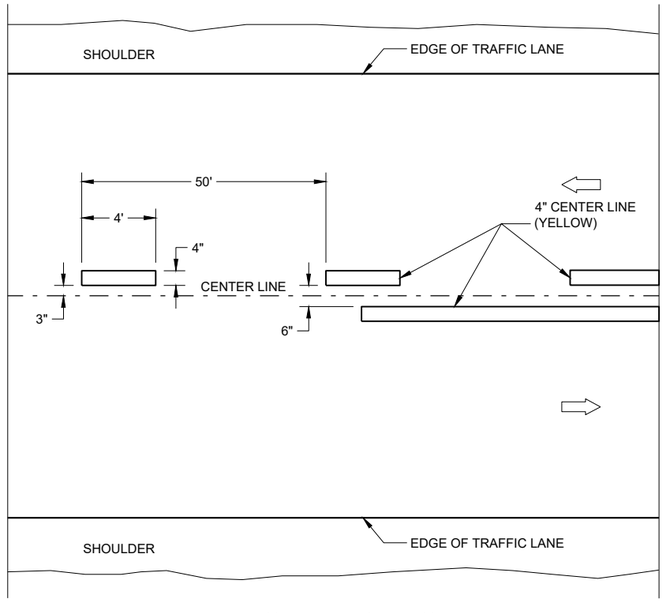


TWO WAY TRAFFIC

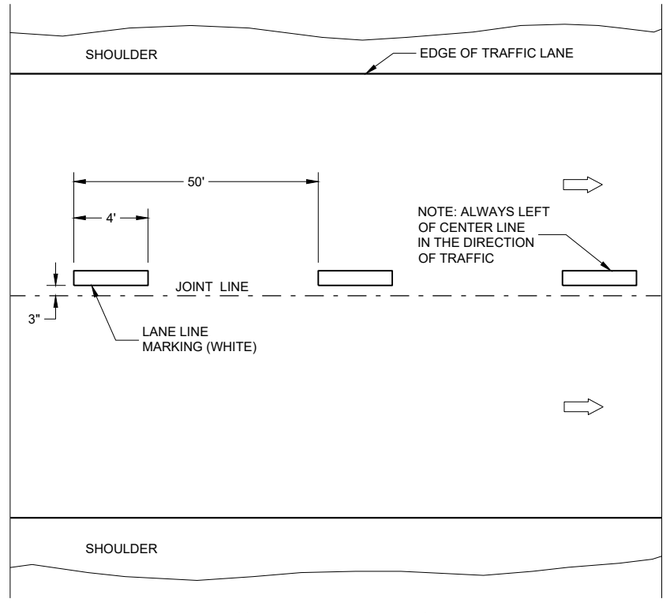


ONE WAY TRAFFIC

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.

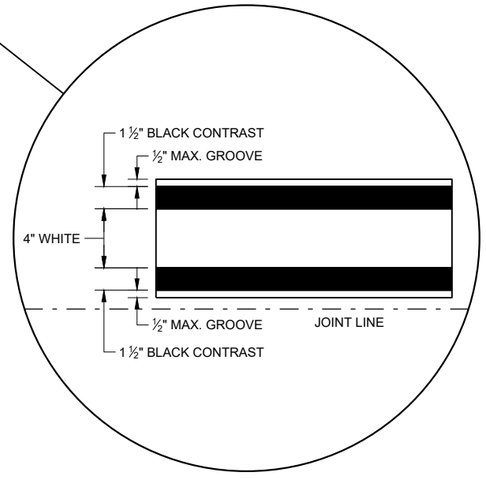
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

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

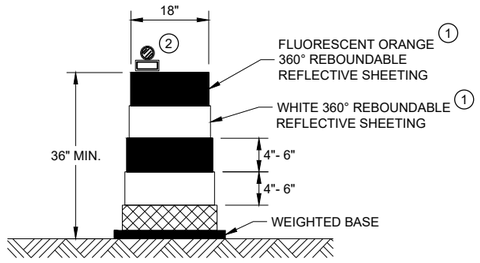
FHWA

SDD 15C08 - 20a

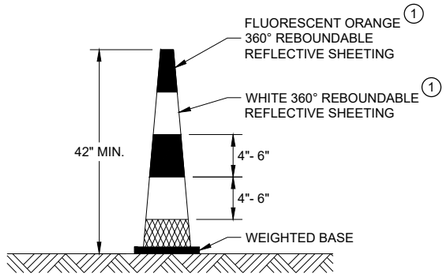
SDD 15C08 - 20a

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.

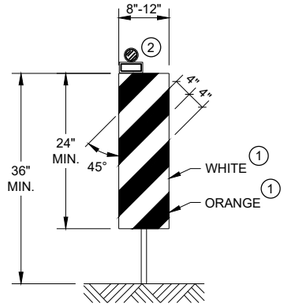


DRUM



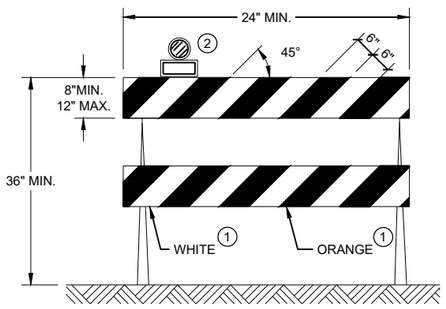
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



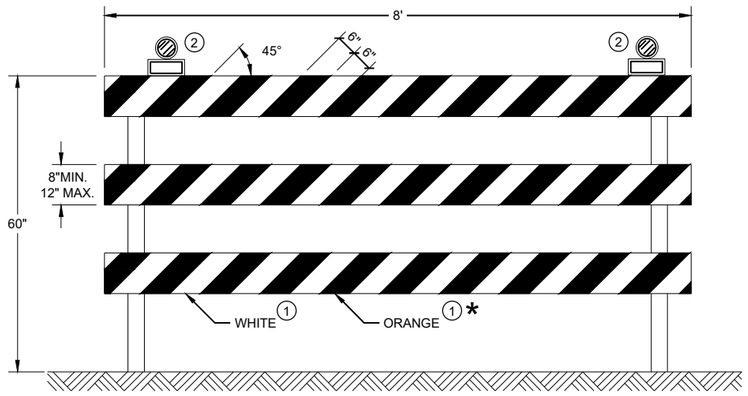
VERTICAL PANEL

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

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

(1) FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

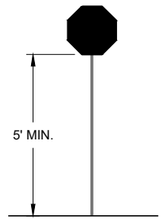
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.



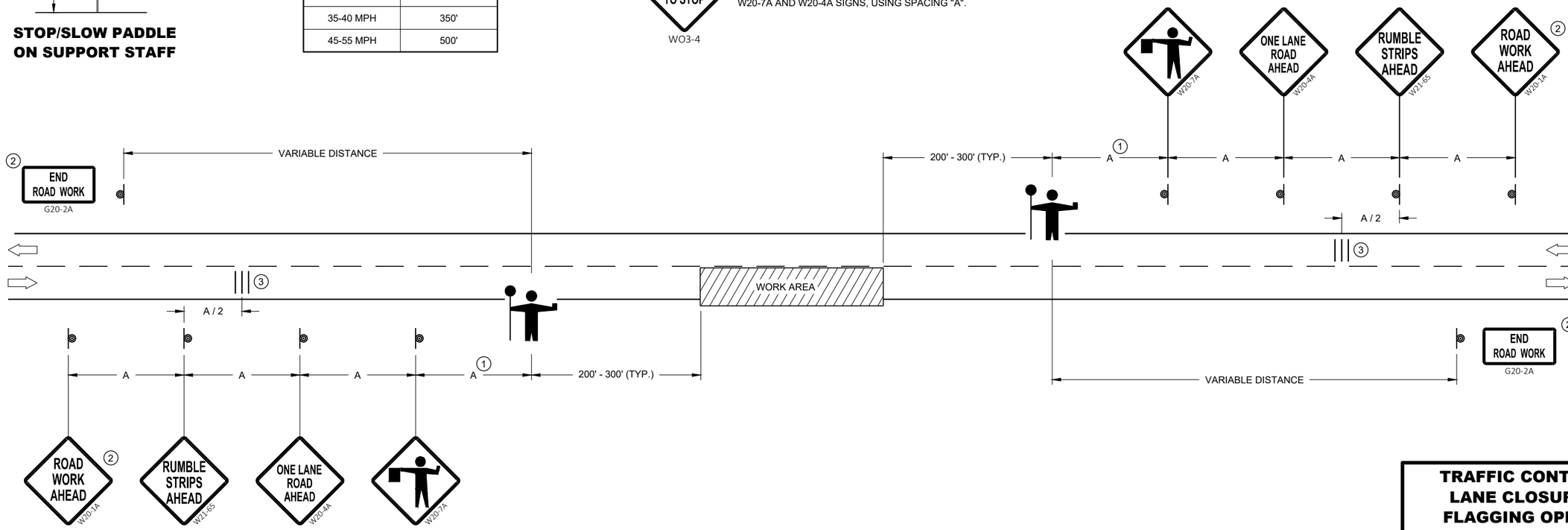
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

WO3-4

USE OF WO3-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA

SDD 15C12 - 08

SDD 15C12 - 08

LEGEND

V1 LEAD VEHICLE

V2 MARKING VEHICLE

V3 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

FLASHING ARROW PANEL (MERGE)

FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

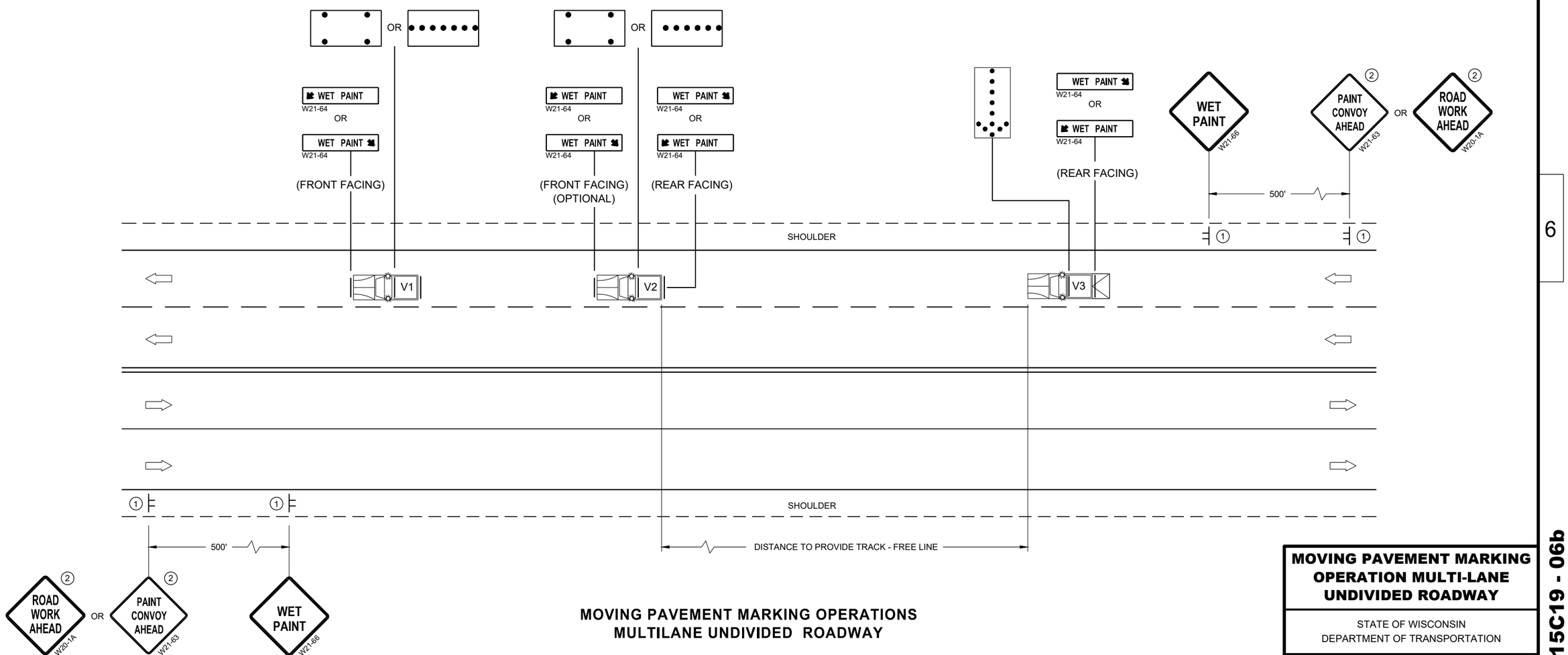
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLES AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL HAVE A MINIMUM HEIGHT OF 28" FOR WET PAVEMENT MARKINGS.

(1) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

(2) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.



MOVING PAVEMENT MARKING OPERATIONS MULTILANE UNDIVIDED ROADWAY

MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

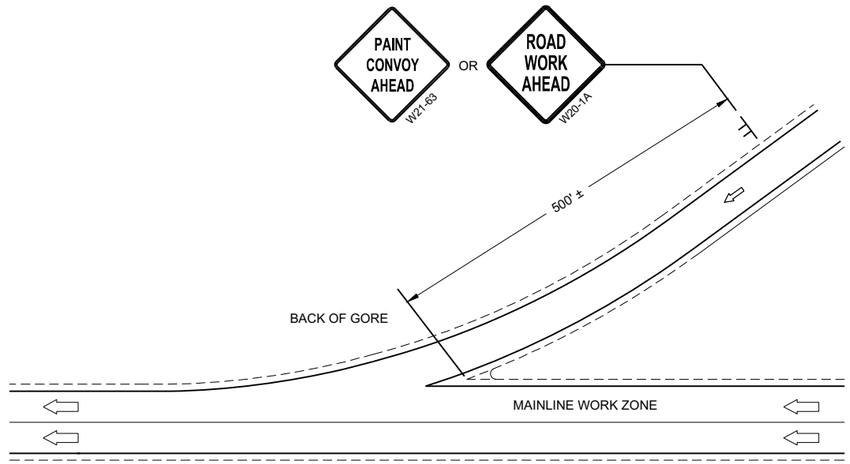
FHWA

6

SDD 15C19 - 06b

LEGEND

- V1 MARKING VEHICLE
- V2 SHADOW VEHICLE
- V3 TRAIL VEHICLE
- TRUCK MOUNTED ATTENUATOR (TMA)
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL (MERGE)
- FLASHING ARROW PANEL (CAUTION)



GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

IF THE SHOULDER IS TOO NARROW TO ACCOMMODATE THE LAST TRAILING VEHICLE, THE VEHICLE SHOULD STRADDLE THE EDGE LINE.

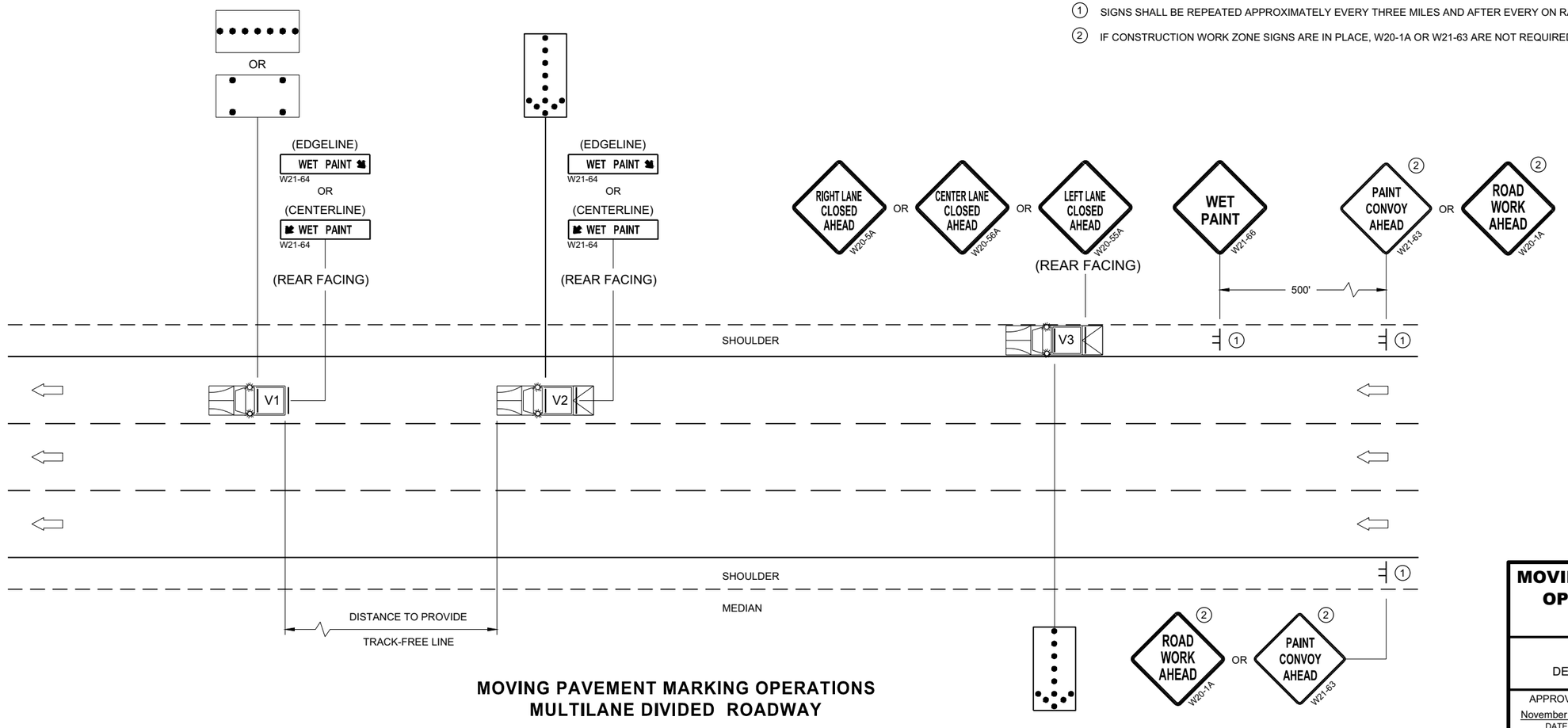
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC

CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL BE A MINIMUM HEIGHT OF 18" FOR WET PAVEMENT MARKINGS

(1) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY ON RAMP.

(2) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.



MOVING PAVEMENT MARKING OPERATIONS
MULTILANE DIVIDED ROADWAY

MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C19 - 06c

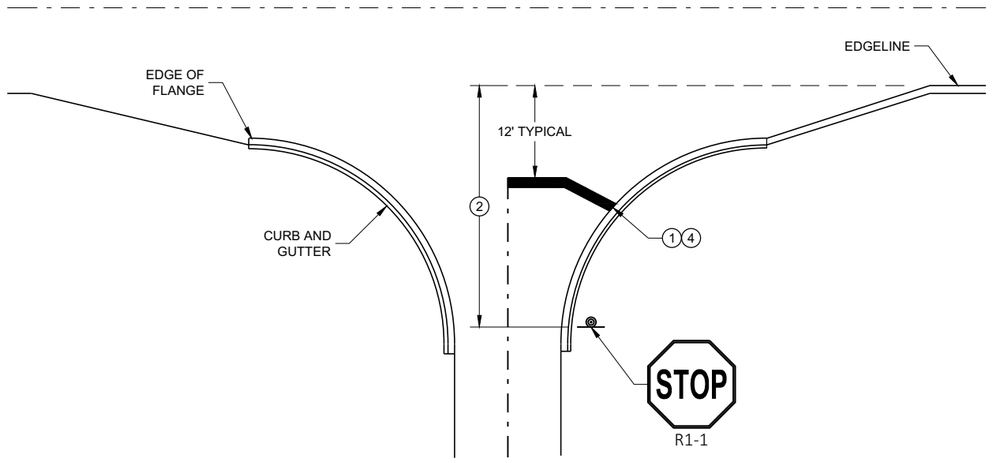
6

SDD 15C19 - 06c

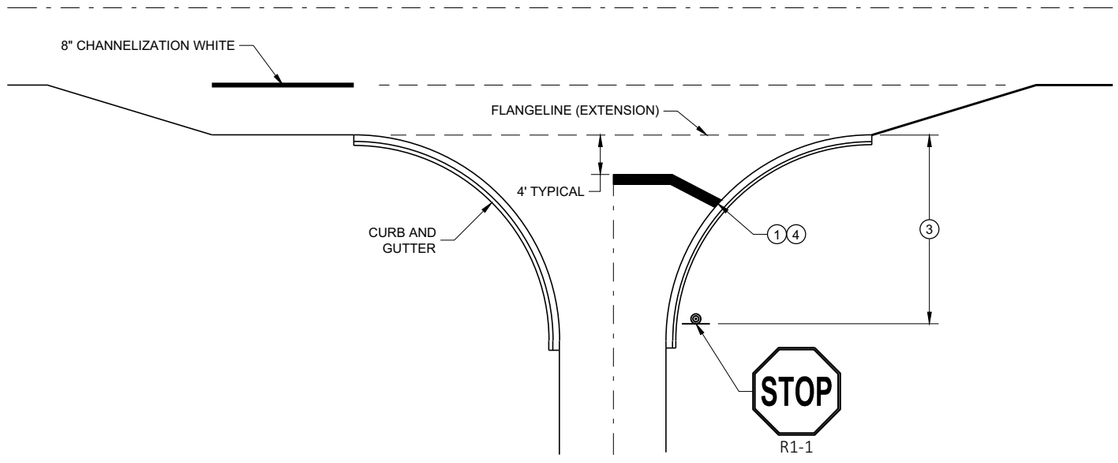
GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

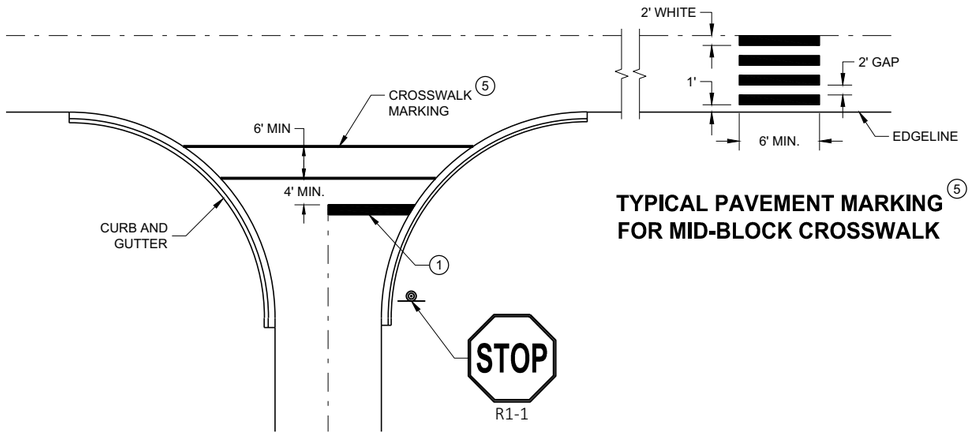
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
4. MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
5. LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

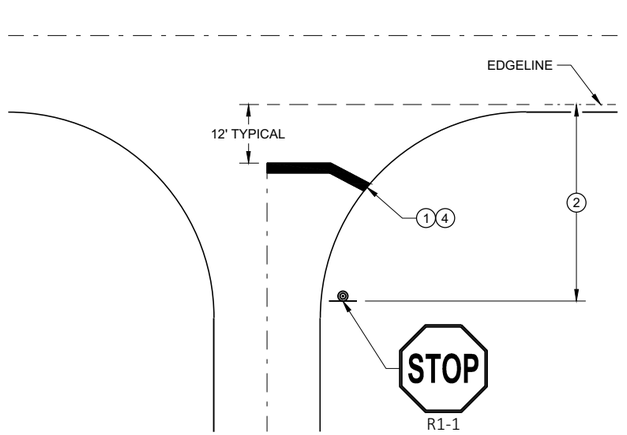


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING

TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK 5



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

FHWA

6

SDD 15C33 - 04

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

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

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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

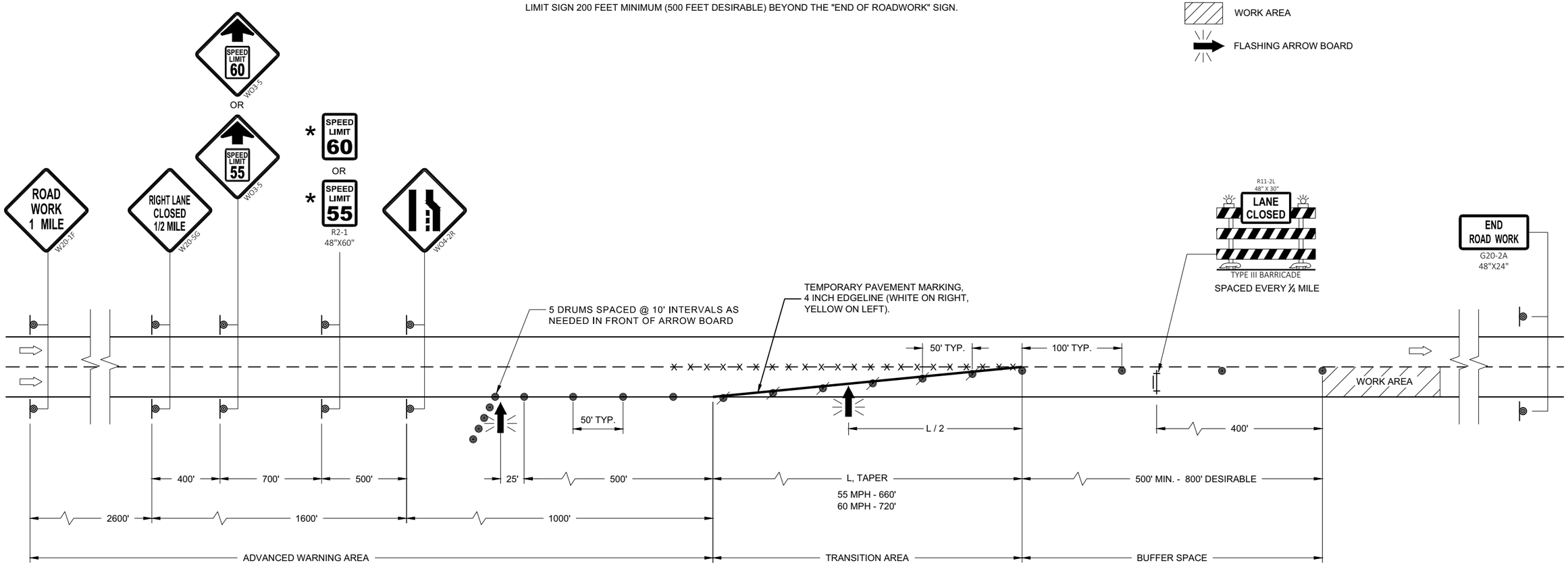
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIRABLE) BEYOND THE "END OF ROADWORK" SIGN.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- FLASHING ARROW BOARD



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

SDD 15D12 - 09b

6
SDD 15D12 - 09b

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

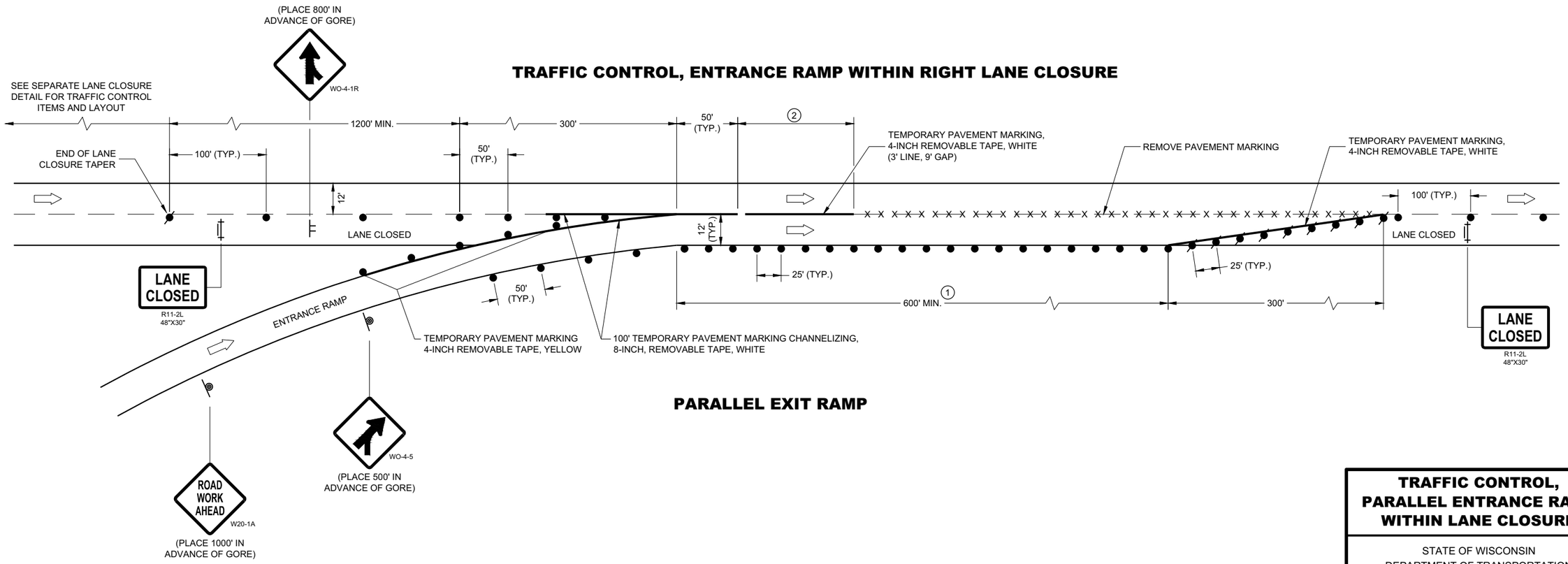
REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

(1) EXTEND THE LENGTH OF THE MERGE ARE IF THE ENTERING (DESIGN) SPEED IS LESS THAN 50MPH OR IF THE MAINLINE GRADE EXCEEDS ±2.2%.

(2) END TEMPORARY MARKING AT ½ THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.

TRAFFIC CONTROL, ENTRANCE RAMP WITHIN RIGHT LANE CLOSURE



PARALLEL EXIT RAMP

TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15D15 - 05a

6

SDD 15D15 - 05a

LEGEND

SIGN ON PERMANENT SUPPORT

SIGN ON TEMPORARY SUPPORT

TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

TYPE III BARRICADE WITH ATTACHED SIGN

FLAGS, 16" X 16" MIN., ORANGE

DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

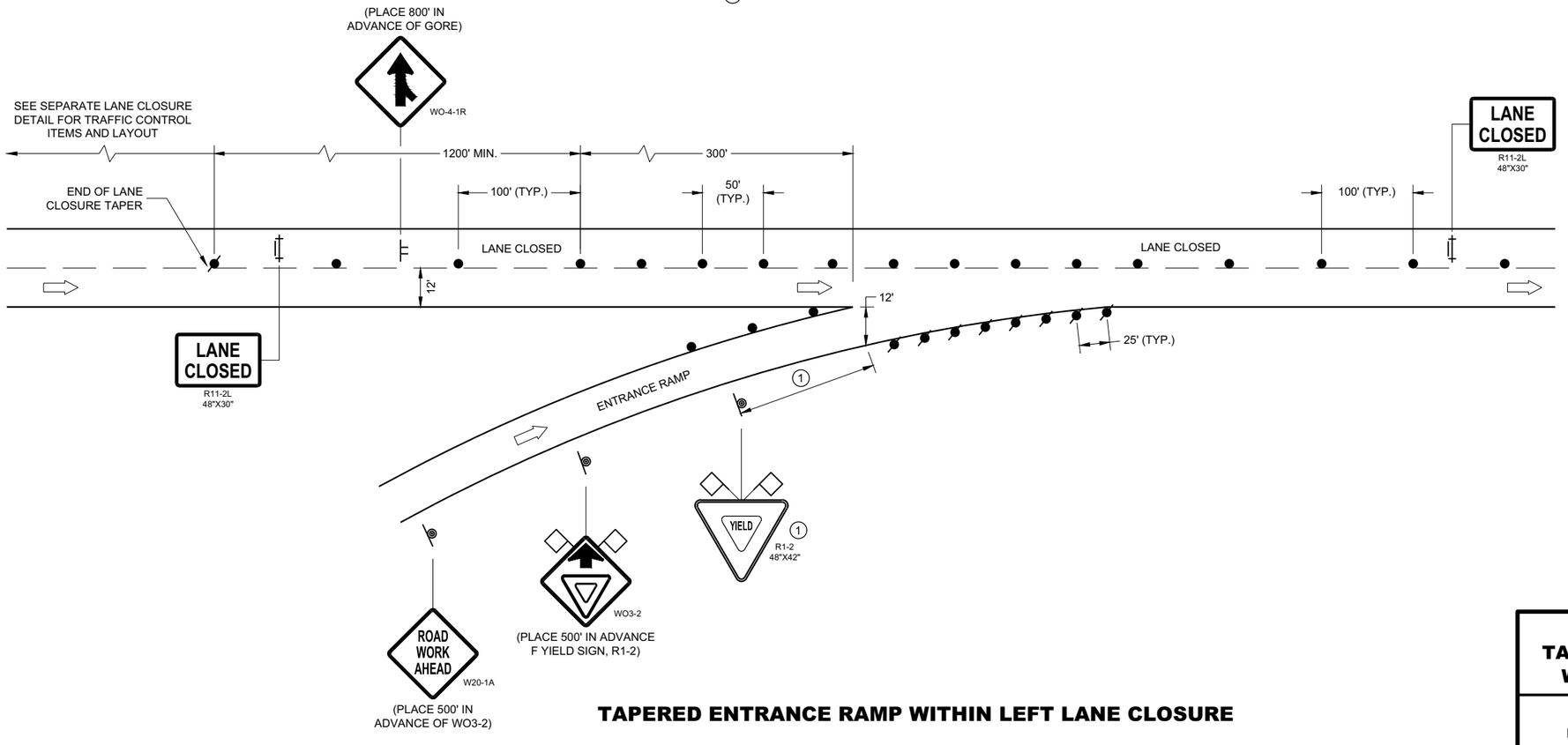
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

(1) PLACE YIELD SIGN TO PROVIDE ADEQUATE SIGHT DISTANCE AND ACCELERATION DISTANCE.



TAPERED ENTRANCE RAMP WITHIN LEFT LANE CLOSURE

TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15D15 - 05d

6

SDD15D15 - 05d

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC

GENERAL NOTES

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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.

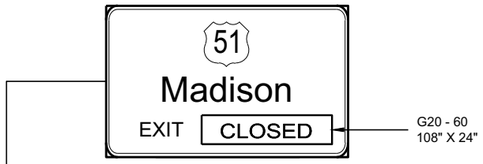
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROP OFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN WORK IS NOT IN PROGRESS.

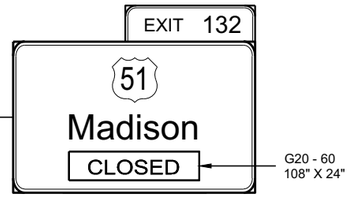
WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12 - HOUR DURATION.

* W20 - 1A AND G20 - 2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

** PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



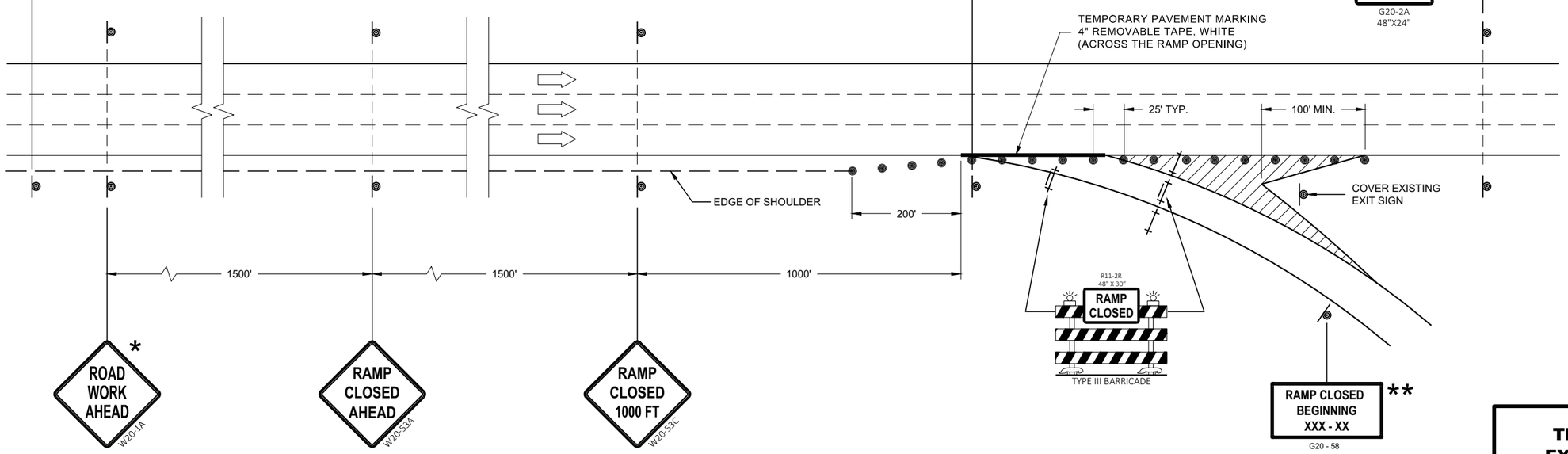
OR



PLACE SIGN G20 - 60 OVER MILEAGE ON EXISTING E1 - 1A SIGN

COVER ARROW ON EXISTING E4 - 1 SIGN (COVERING SIGNS TYPE I)

G20 - 61
120 ' X 30"



OR

PCMS MESSAGING

FRAME 1	FRAME 2
RAMP TO CLOSE	XXXDAY XX XX XX

TRAFFIC CONTROL, EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Andrew Heidtke
ROADWAY STANDARDS DEVE ENGINEER

FHWA

SDD 15D16 - 04

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

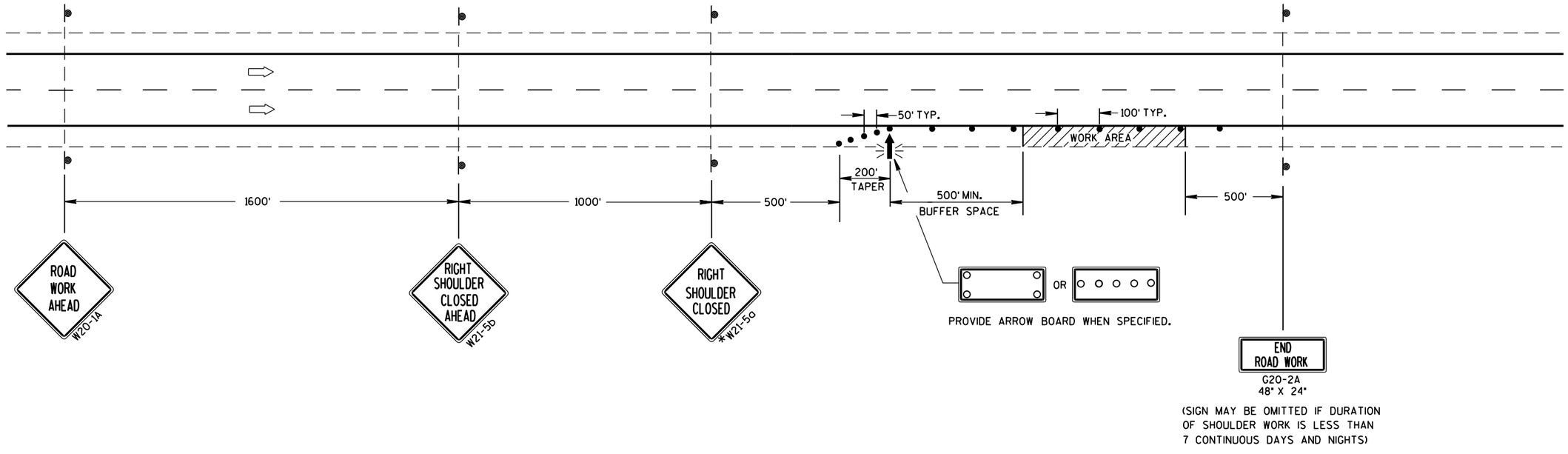
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible] SAFETY ENGI[illegible]

FHWA

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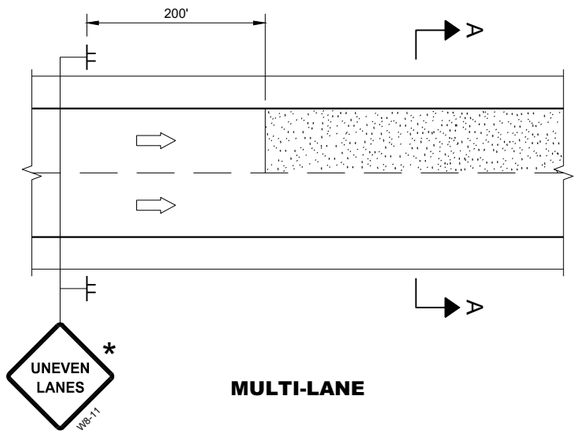
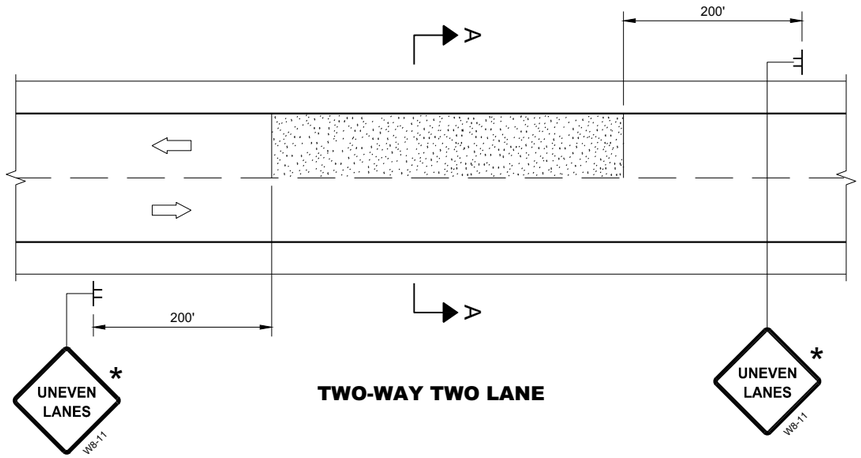
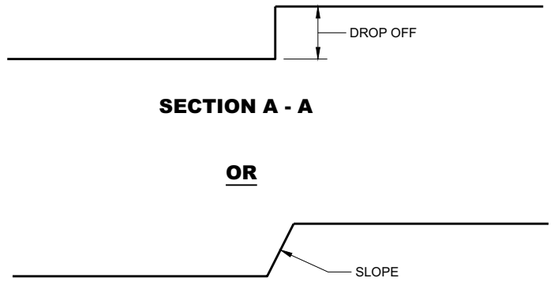
S.D.D. 15 D 27-3



MULTI-LANE

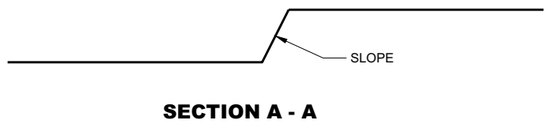


TWO-WAY TWO LANE

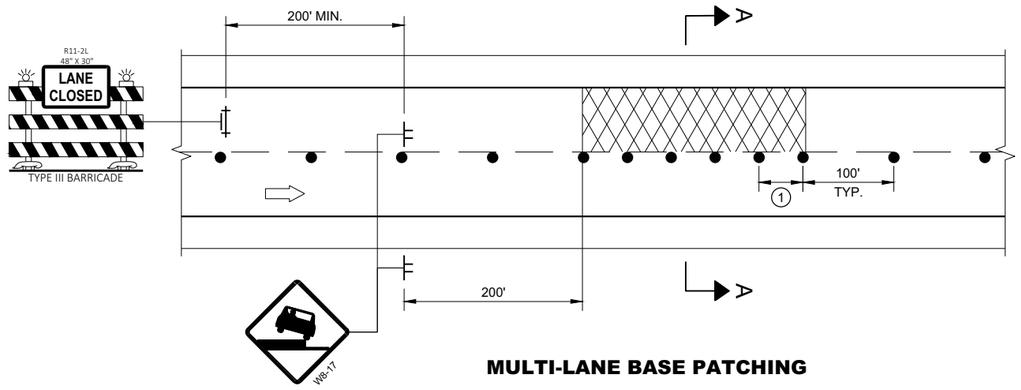


SECTION A - A

OR



SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

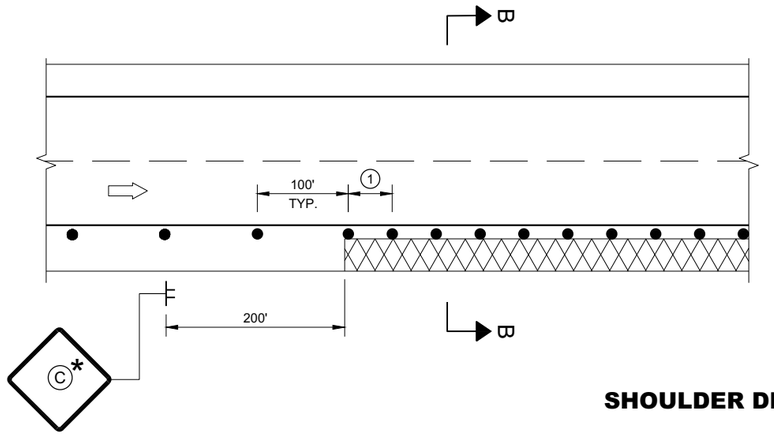
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.

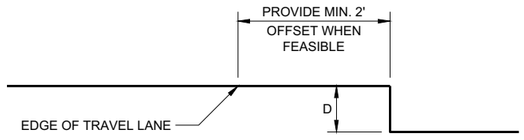
(1) USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE



SHOULDER DROP-OFFS



SECTION B - B

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP - OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

SDD 15D39 - 02

6

SDD 15D39 - 02

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA
- REMOVE PAVEMENT MARKING

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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. NO WARNING LIGHTS SHALL BE WORKING ON ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

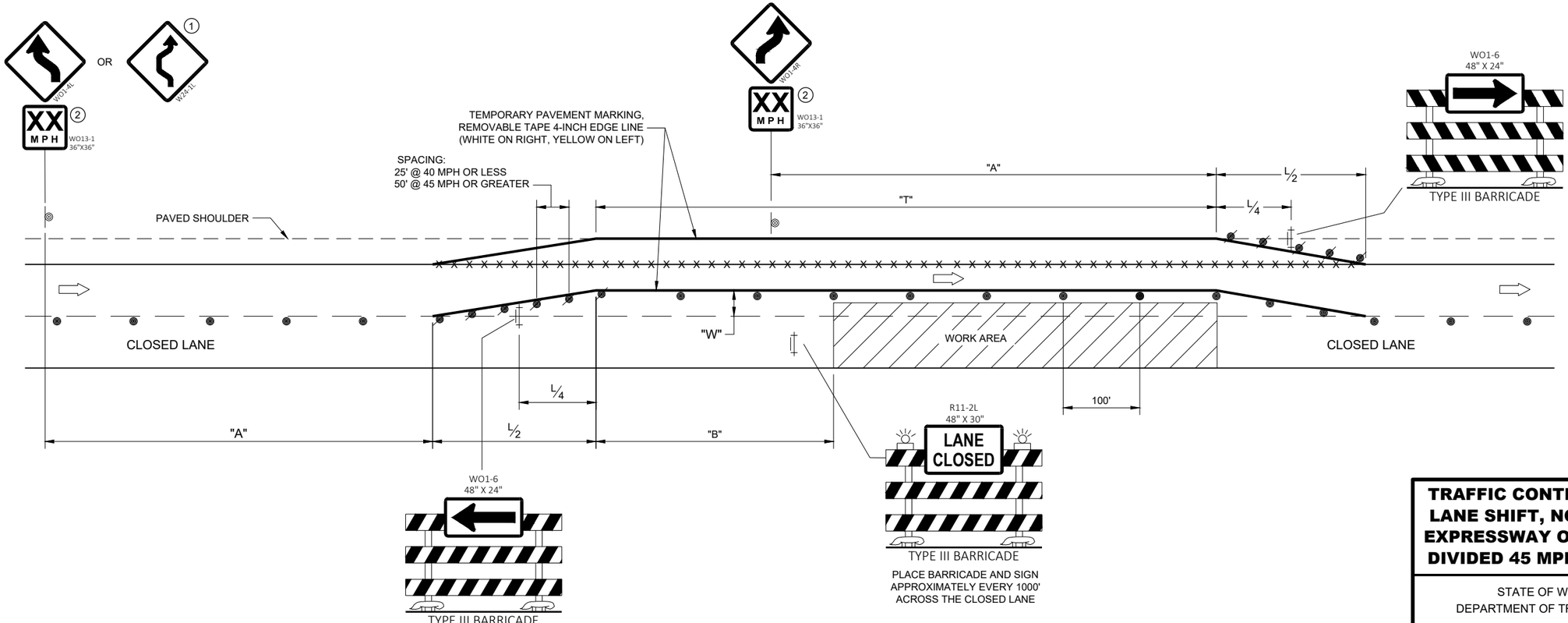
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

(1) USE ONLY WHEN T<600', OMIT WO1-4R.

(2) IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHIFTING TAPER L/2 W, LATERAL OFFSET (FT)									BUFFER SPACE (B) FEET
		1	2	3	4	5	6	7	8	9	
25	200	5	10	16	21	26	31	36	42	47	55
30	200	8	15	23	30	38	45	53	60	68	85
35	350	10	20	31	41	51	61	71	82	92	120
40	350	13	27	40	53	67	80	93	107	120	170
45	500	23	45	68	90	113	135	158	180	203	220



TRAFFIC CONTROL, PARTIAL LANE SHIFT, NON-FREEWAY/ EXPRESSWAY OR MULTILANE DIVIDED 45 MPH AND UNDER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
ROADWAY STANDARDS DEVE ENGINEER

FHWA

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA
- REMOVE PAVEMENT MARKING

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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. NO WARNING LIGHTS SHALL BE WORKING ON ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

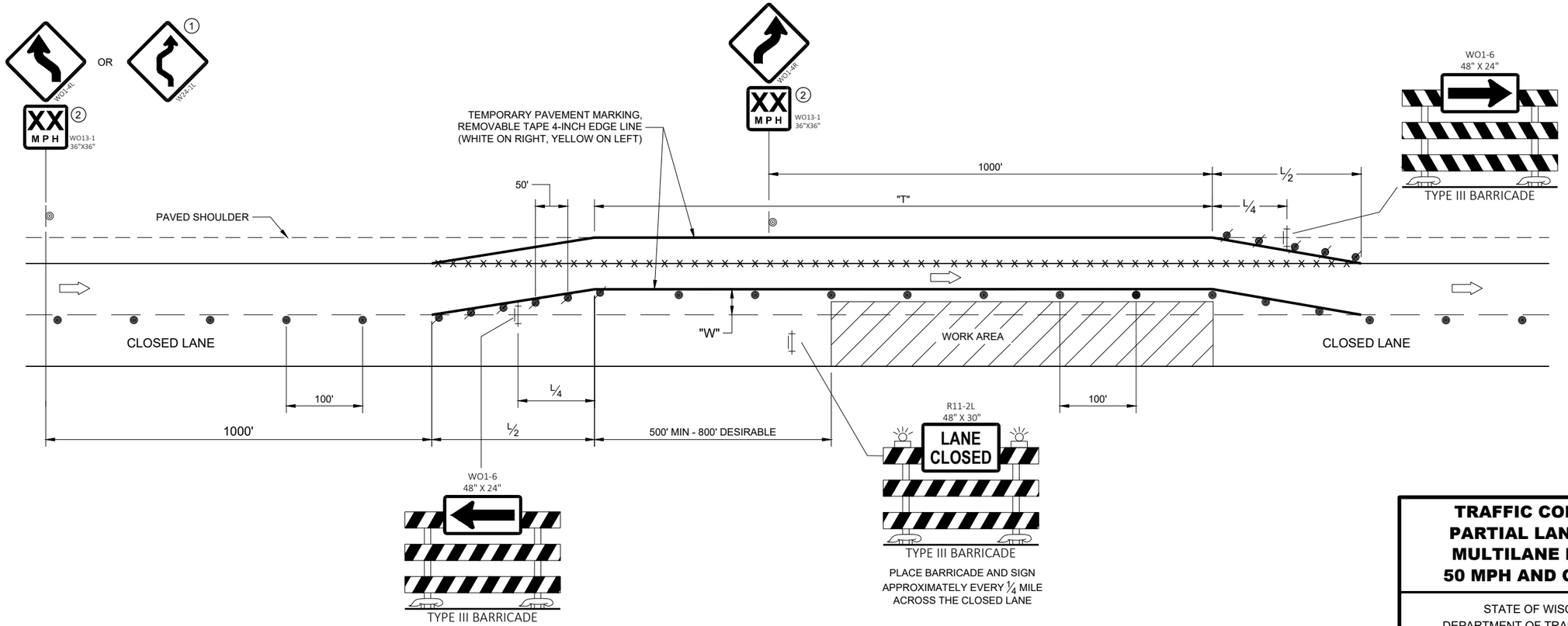
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

(1) USE ONLY WHEN T<600', OMIT WO1-4R.

(2) IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	SHIFTING TAPER L/2 W, LATERAL OFFSET (FT)								
	1	2	3	4	5	6	7	8	9
50	25	50	75	100	125	150	175	200	225
55	28	55	83	110	138	165	193	220	248
60	30	60	90	120	150	180	210	240	270
65	33	65	98	130	163	195	228	260	293
70	35	70	105	140	175	210	245	280	315



PLACE BARRICADE AND SIGN APPROXIMATELY EVERY 1/4 MILE ACROSS THE CLOSED LANE

TRAFFIC CONTROL, PARTIAL LANE SHIFT MULTILANE DIVIDED 50 MPH AND GREATER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Andrew Heidtke — ROADWAY STANDARDS DEVE ENGINEER

FHWA

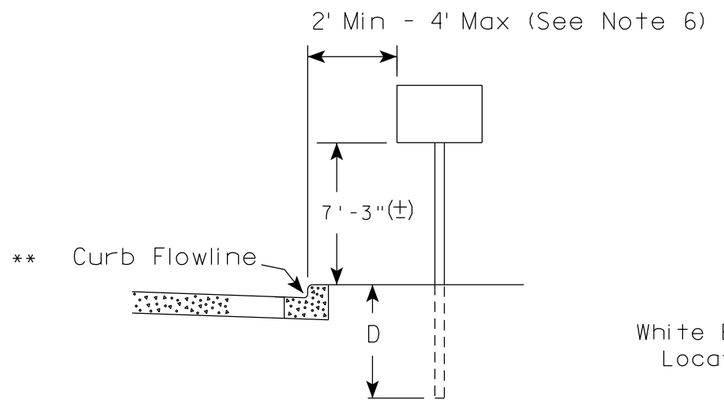
6

SDD 15D40 - 02d

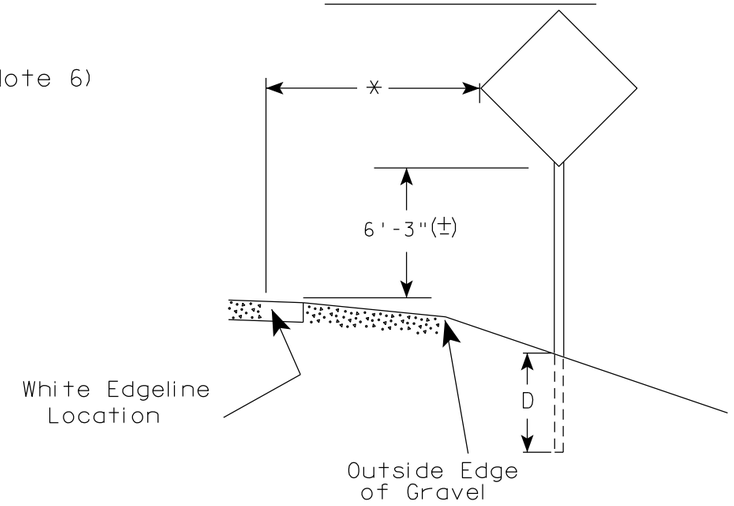
6

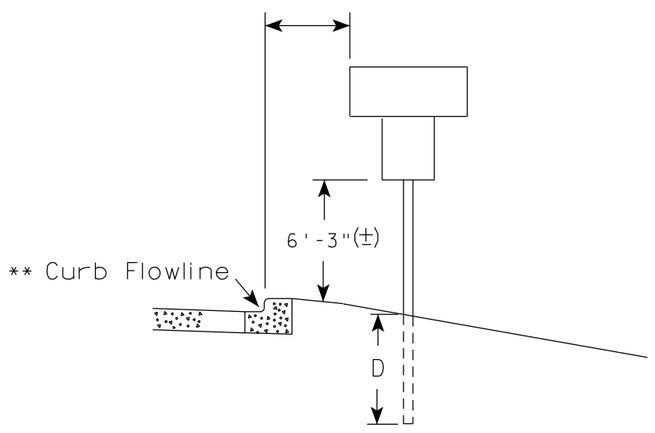
SDD 15D40 - 02d

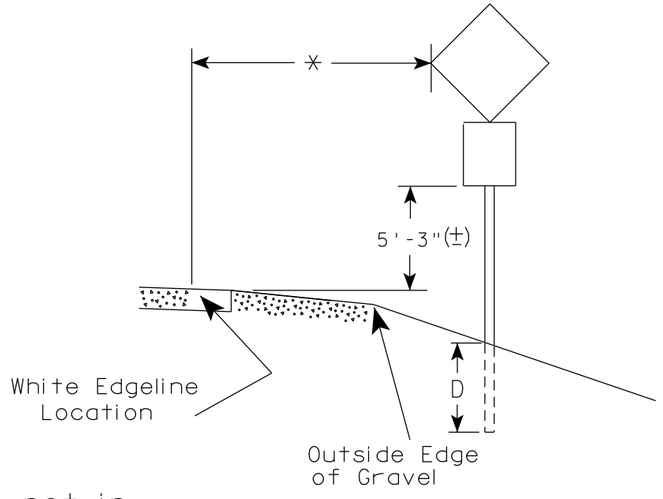
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
   The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, 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" (±).
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.

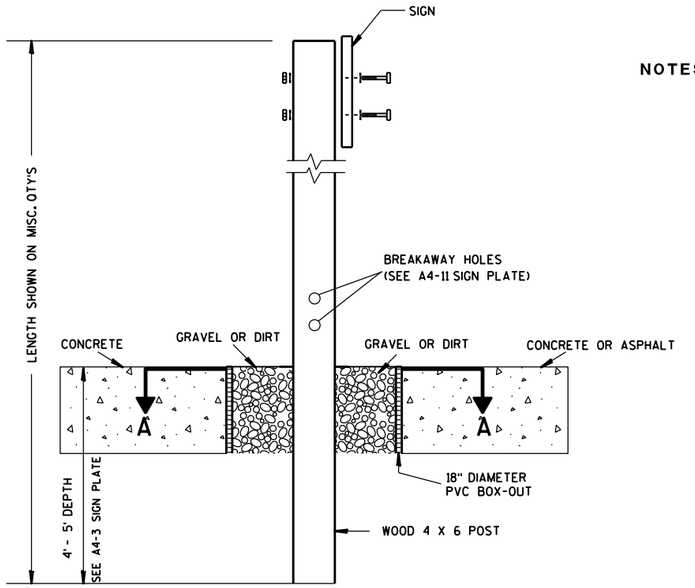
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

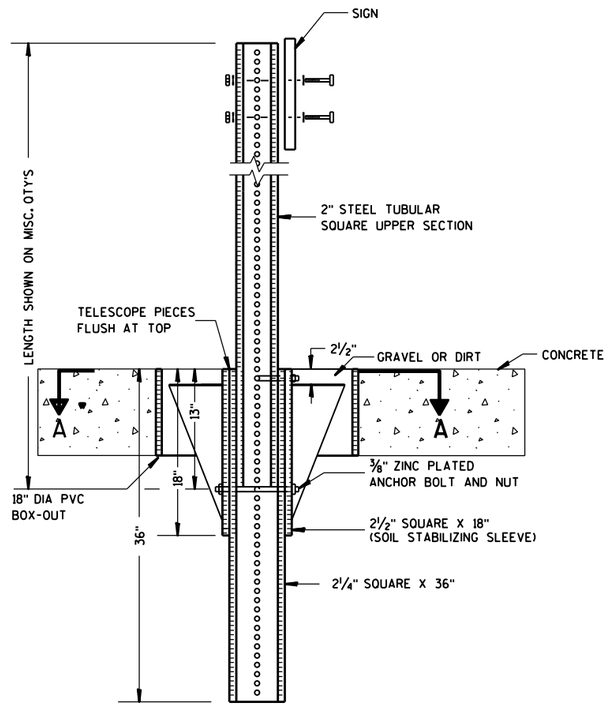
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 115	E



ELEVATION VIEW

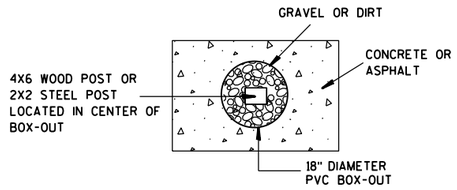
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

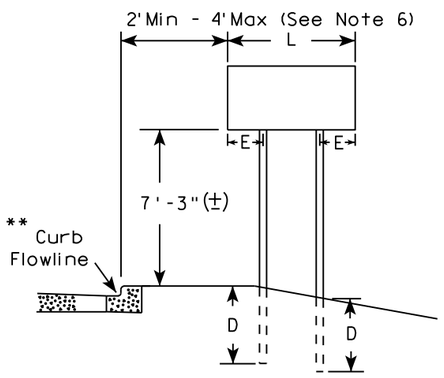
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

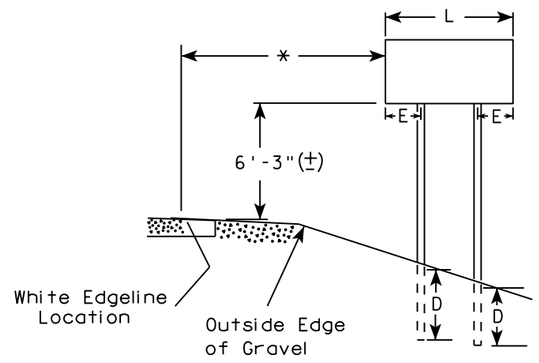
DATE 1/27/14 PLATE NO. A4-3B.1

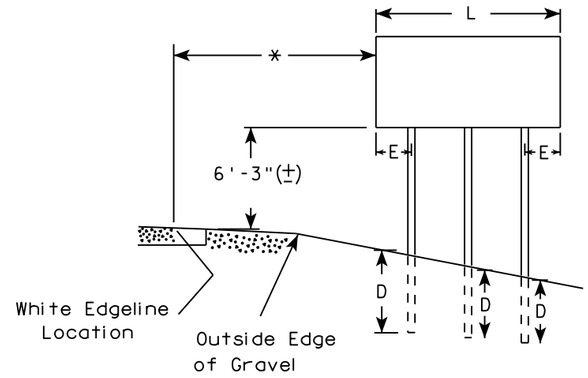
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

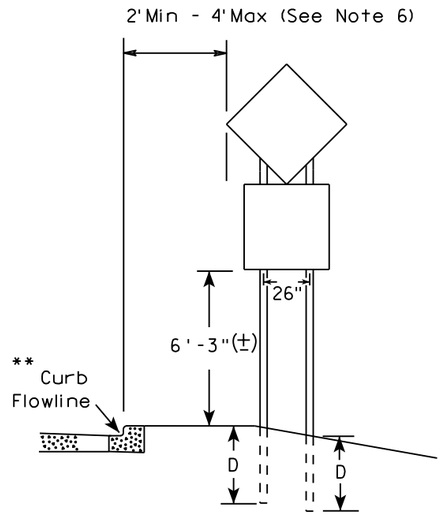
URBAN AREA



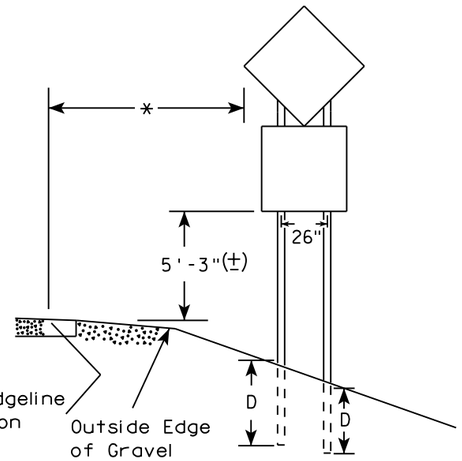
RURAL AREA (See Note 3)







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'

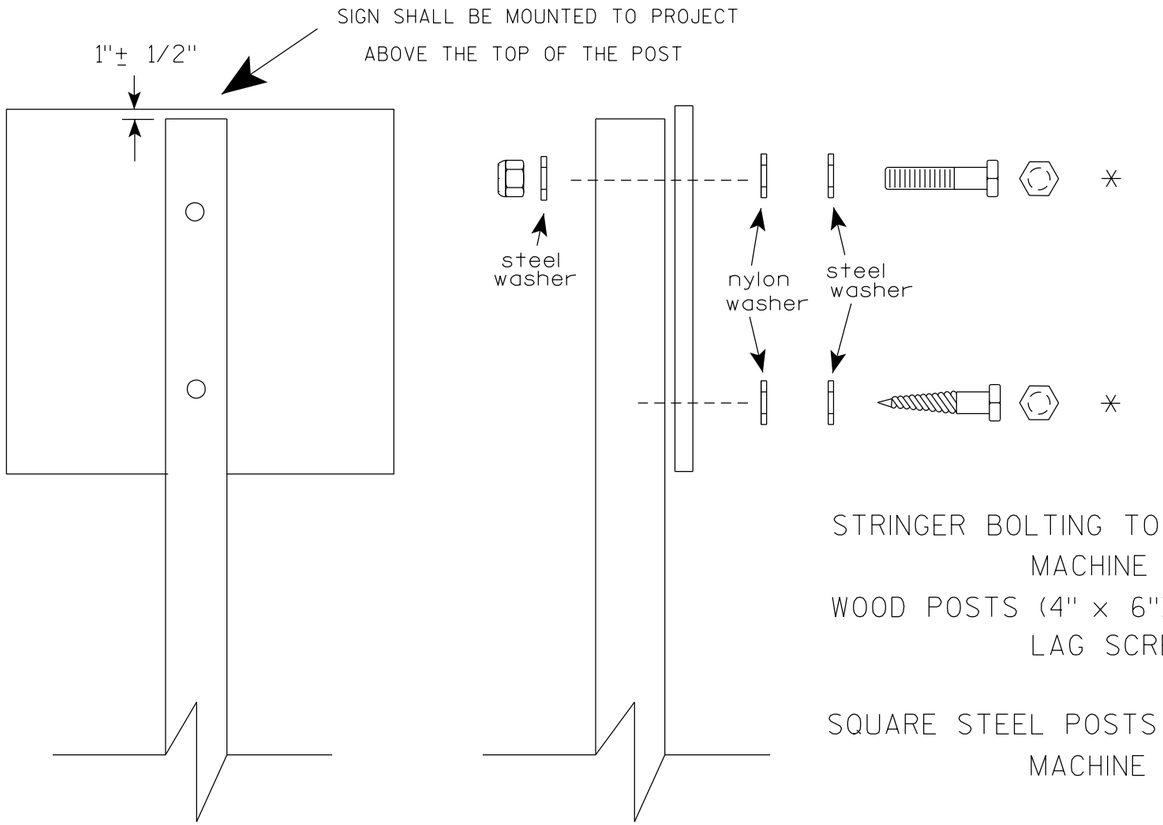
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

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: 117	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

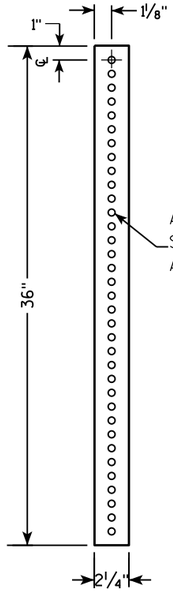
DATE 4/1/2020 PLATE NO. A4-8.9

PROJECT NO:

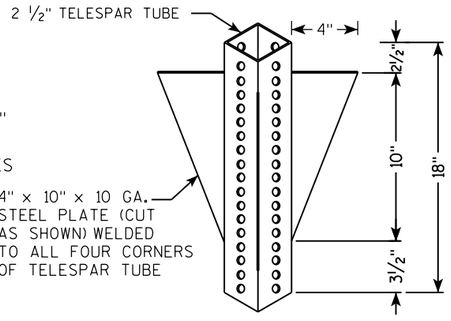
SHEET NO: 118 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

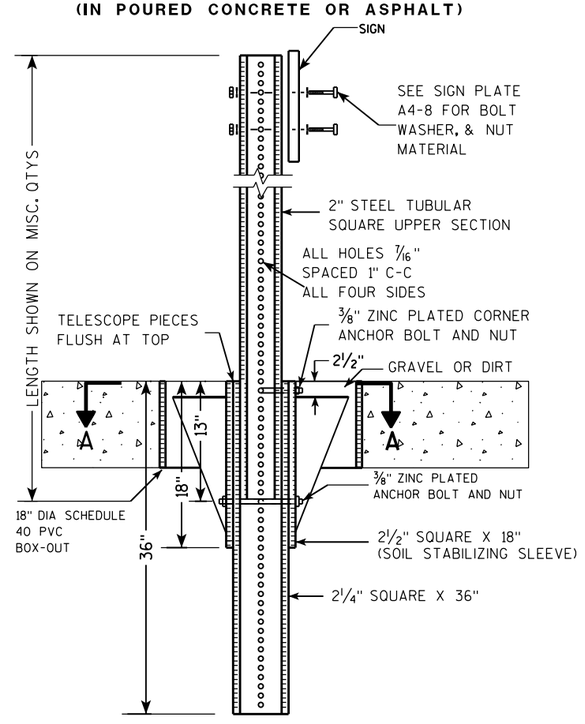
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



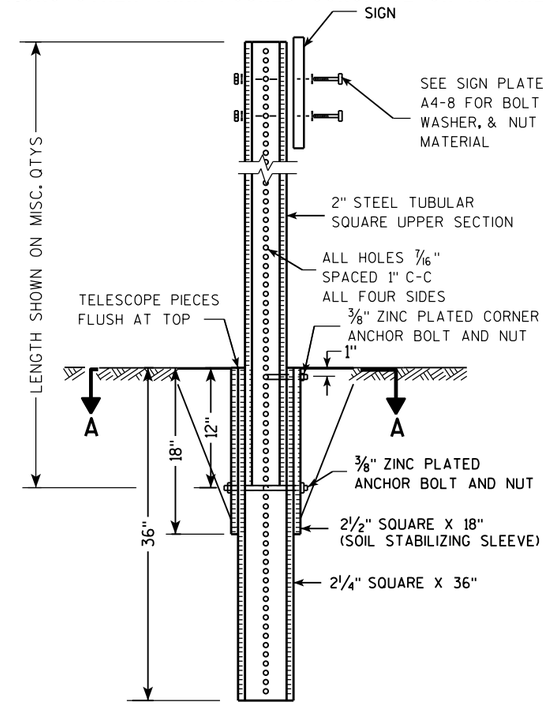
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

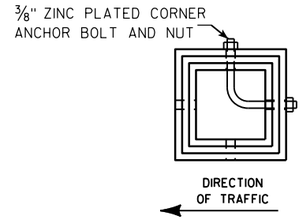


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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

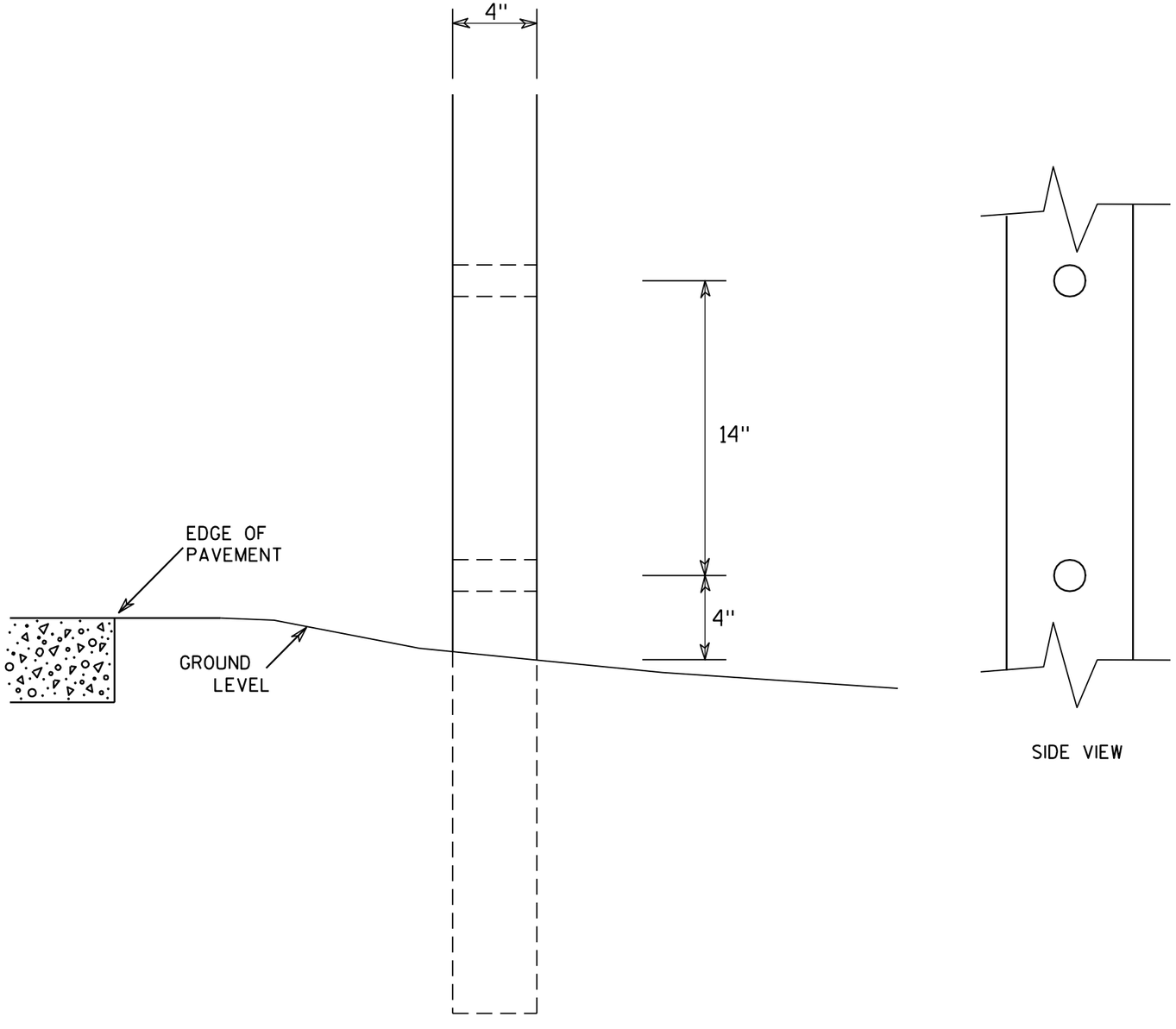
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42



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

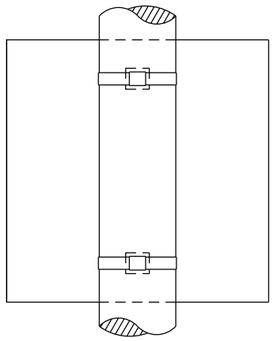
APPROVED Chester J Spang
for State Traffic Engineer

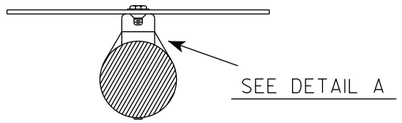
DATE 3/27/97 PLATE NO. A4-11.2

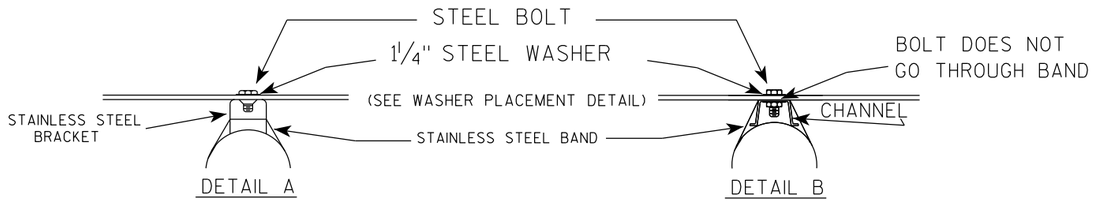
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 120	E

BANDING

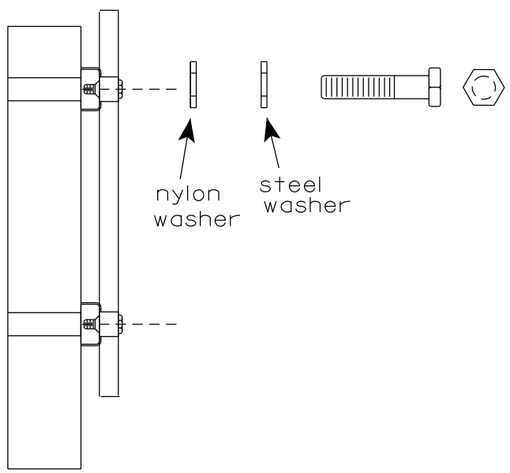
SINGLE SIGN







WASHER PLACEMENT

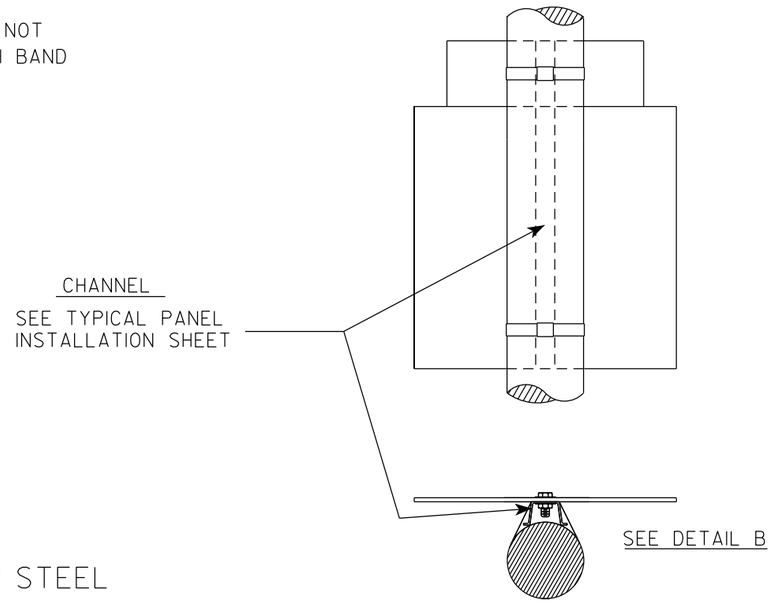


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

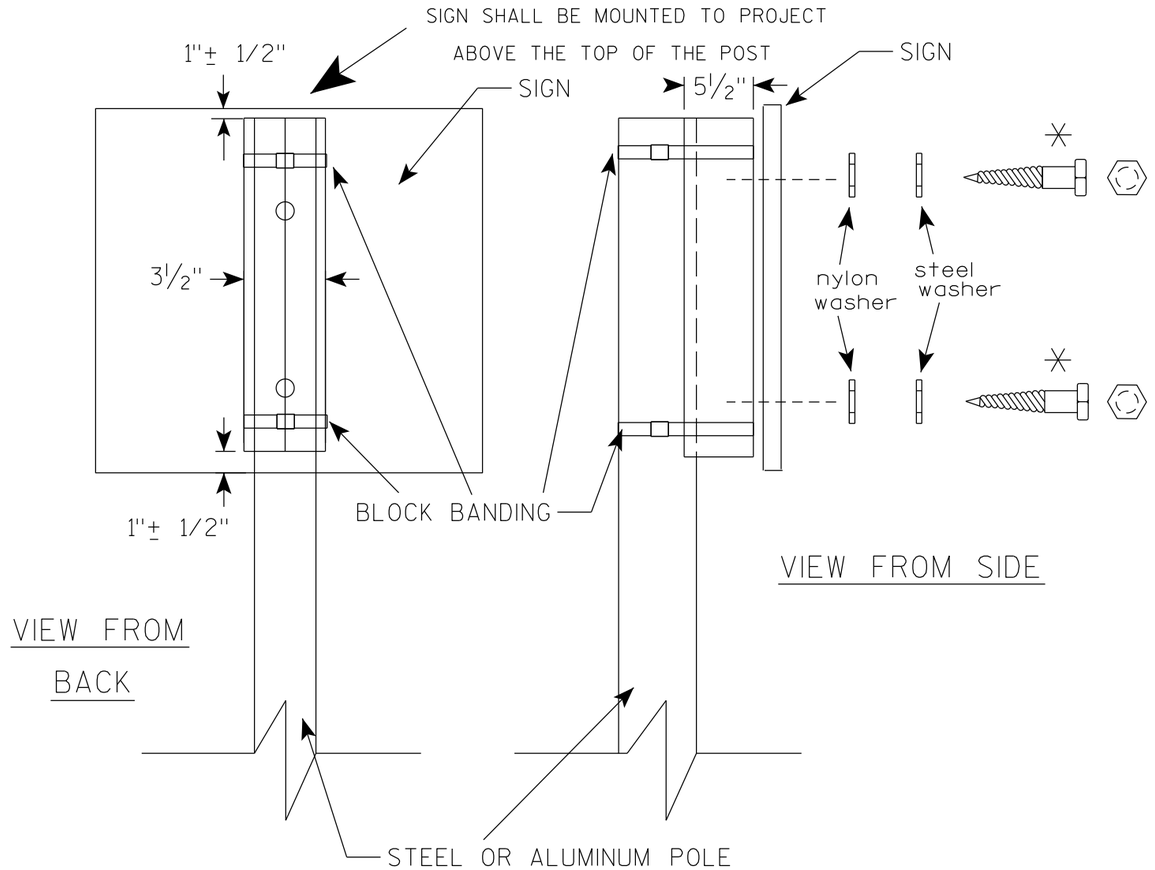
DATE 6/10/19 PLATE NO. A5-9.4

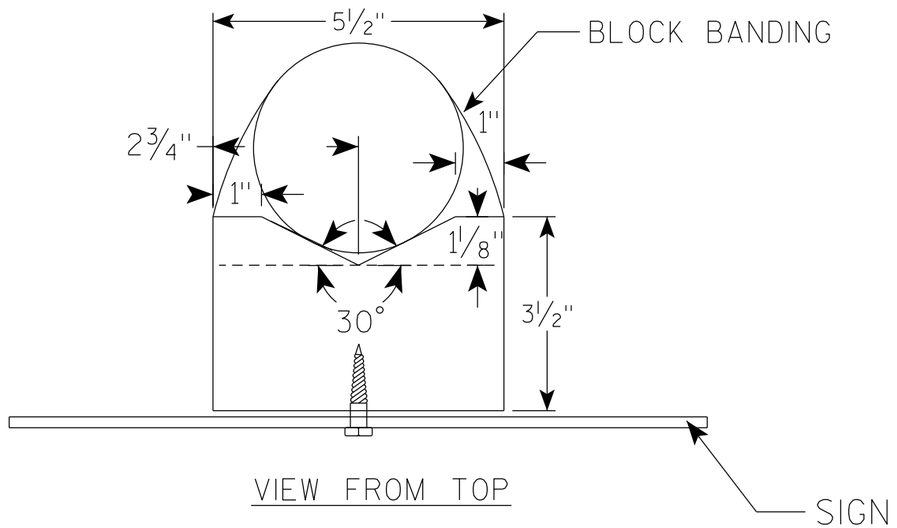
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 121	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

7





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

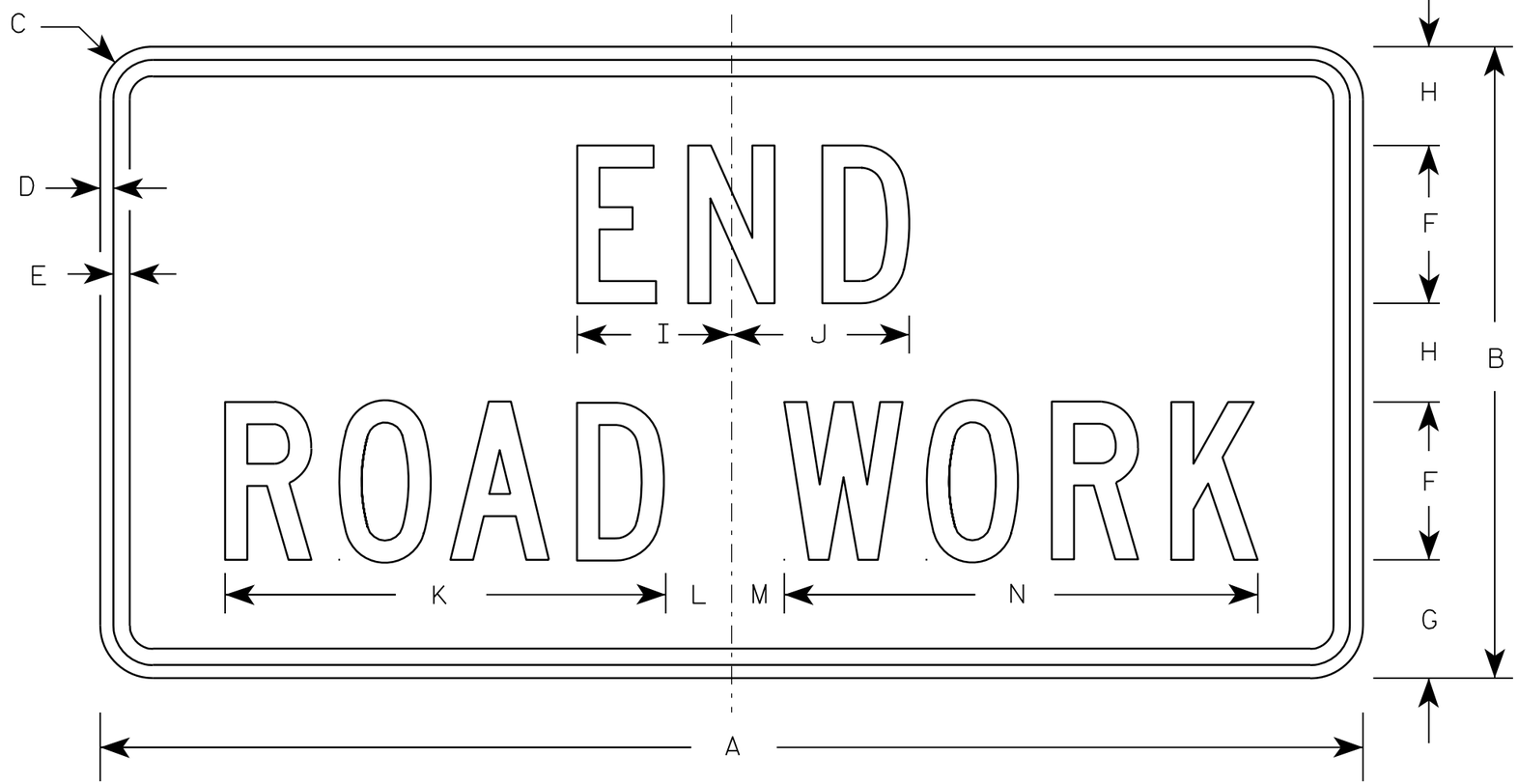
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

SHEET NO: 122 E



G20-2A

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 - 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.

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

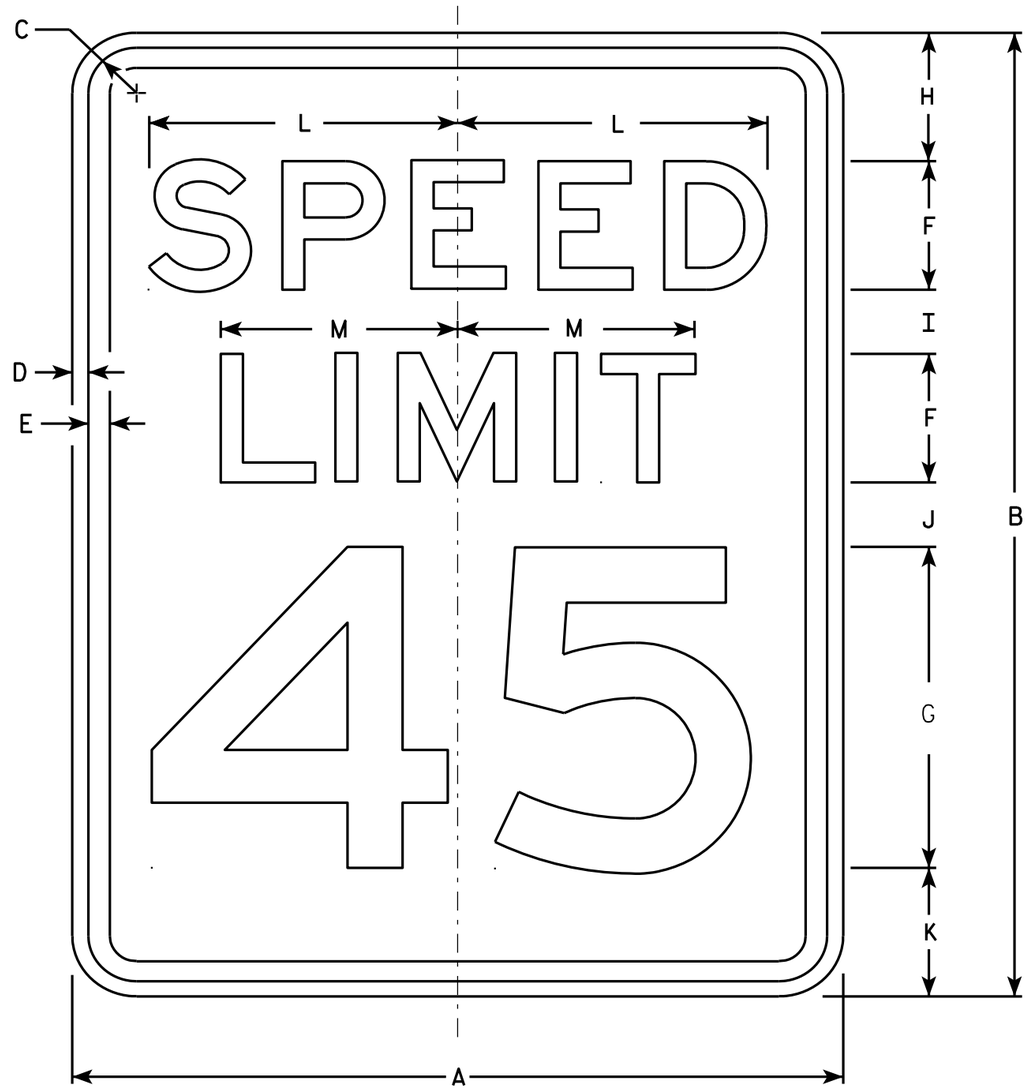
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 123	E



R2-1

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

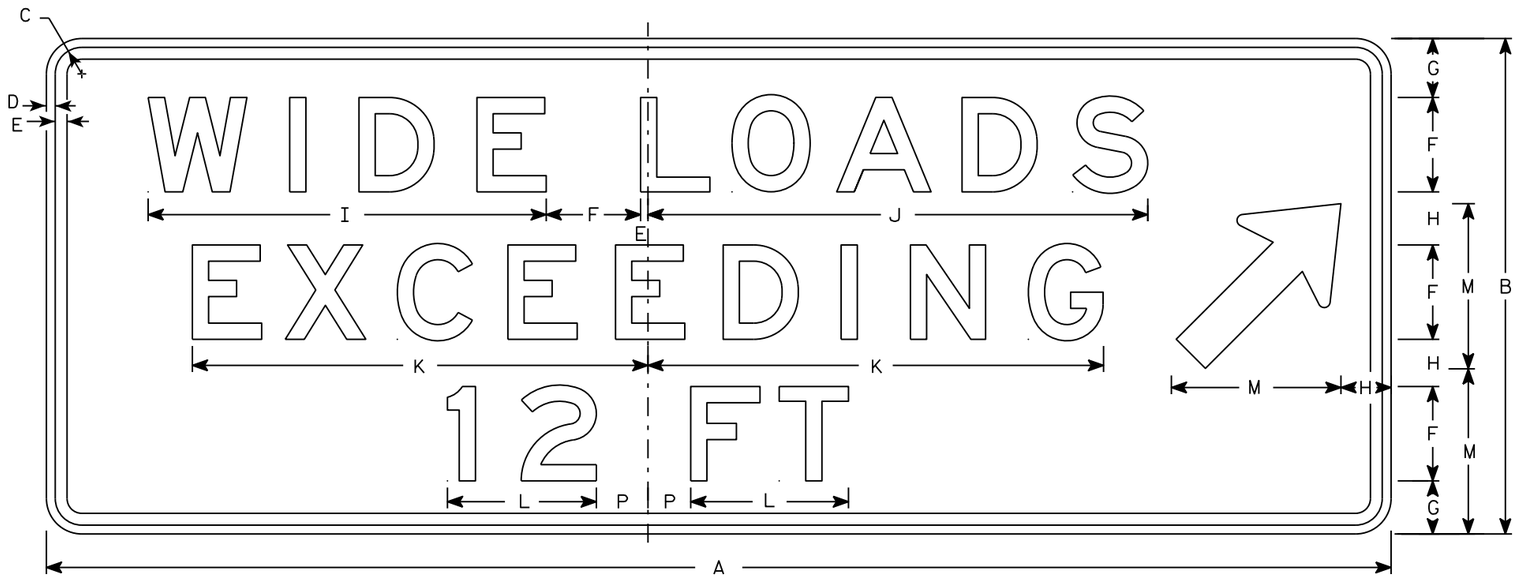
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 124 | E

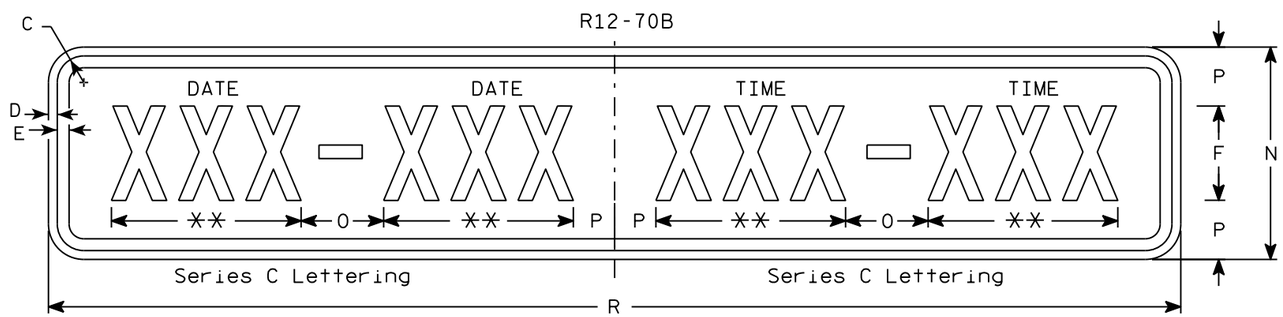
FILE NAME : C:\Users\PROJECTS\tr_stdplate\R21.DGN PLOT DATE : 28-MAY-2010 08:32 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 4.717577:1.000000
WISDOT/CADDS SHEET 42

NOTES

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

** Substitute appropriate message, optically center message





R12-70C

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	R12-70 Area sq. ft.	R12-70C Area sq. ft.
1																												
2S	90	36	2 1/4	1/2	5/8	6	4	5	20 7/8	28 3/8	24 5/8	8 1/8	12	12	6	3		66									22.5	5.5
2M	90	36	2 1/4	1/2	5/8	6	4	5	20 7/8	28 3/8	24 5/8	8 1/8	12	12	6	3		66									22.5	5.5
3																												
4	114	42	2 1/4	3/4	1	8	5	4	34	42	39	13	14	18	7	3 1/2		96									36.75	12.0
5	114	42	2 1/4	3/4	1	8	5	4	34	42	39	13	14	18	7	3 1/2		96									36.75	12.0

TYPICAL SIGN
R12-70B

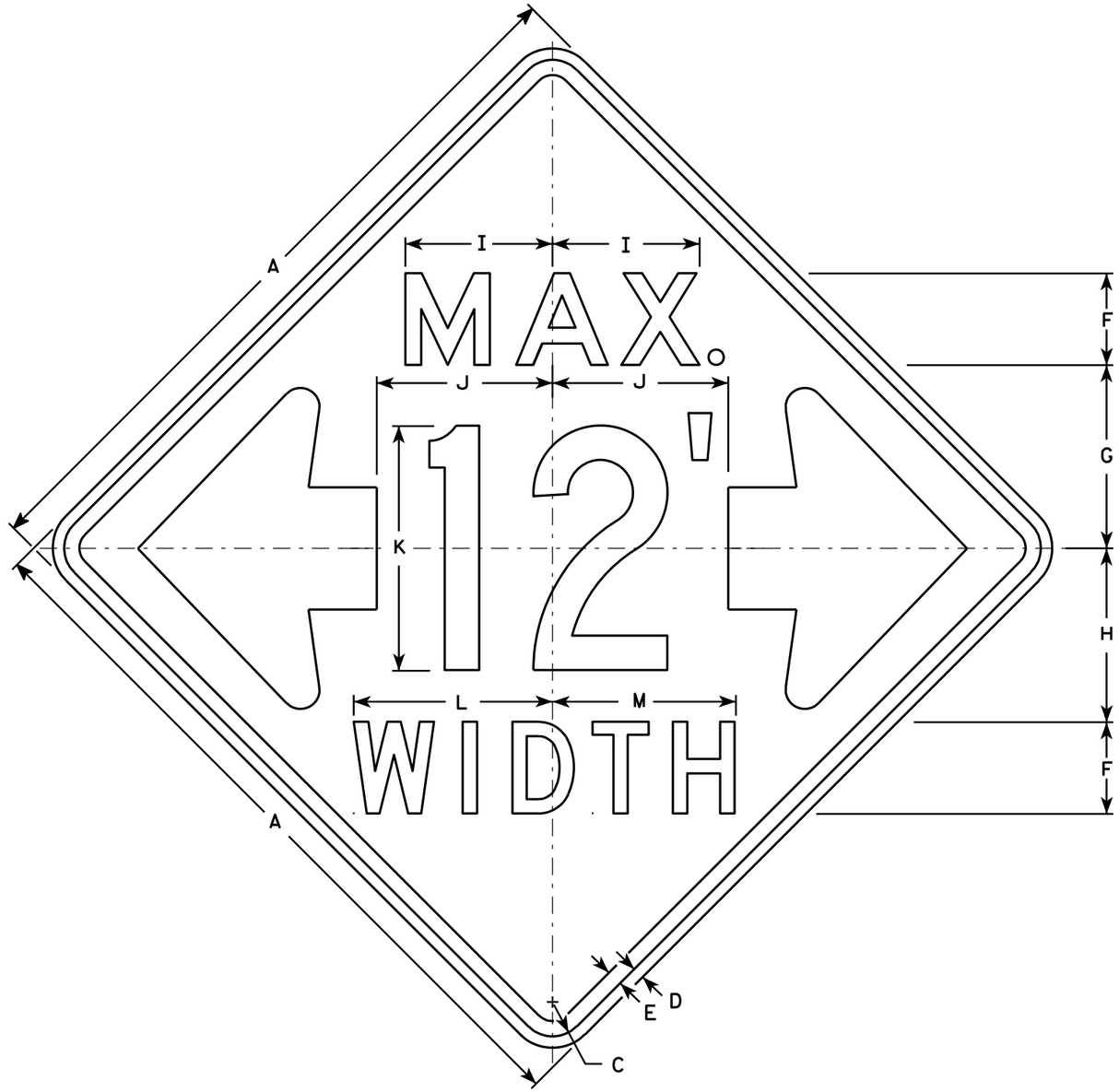
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/15 PLATE NO R12-70B.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

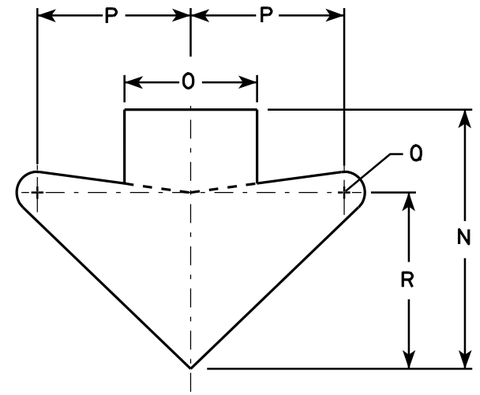
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\R1270B.DGN PLOT DATE : 01-DEC-2015 18:10 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 12.842555:1.000000



W12-52

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. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

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		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN
W12-52

WISCONSIN DEPT OF TRANSPORTATION

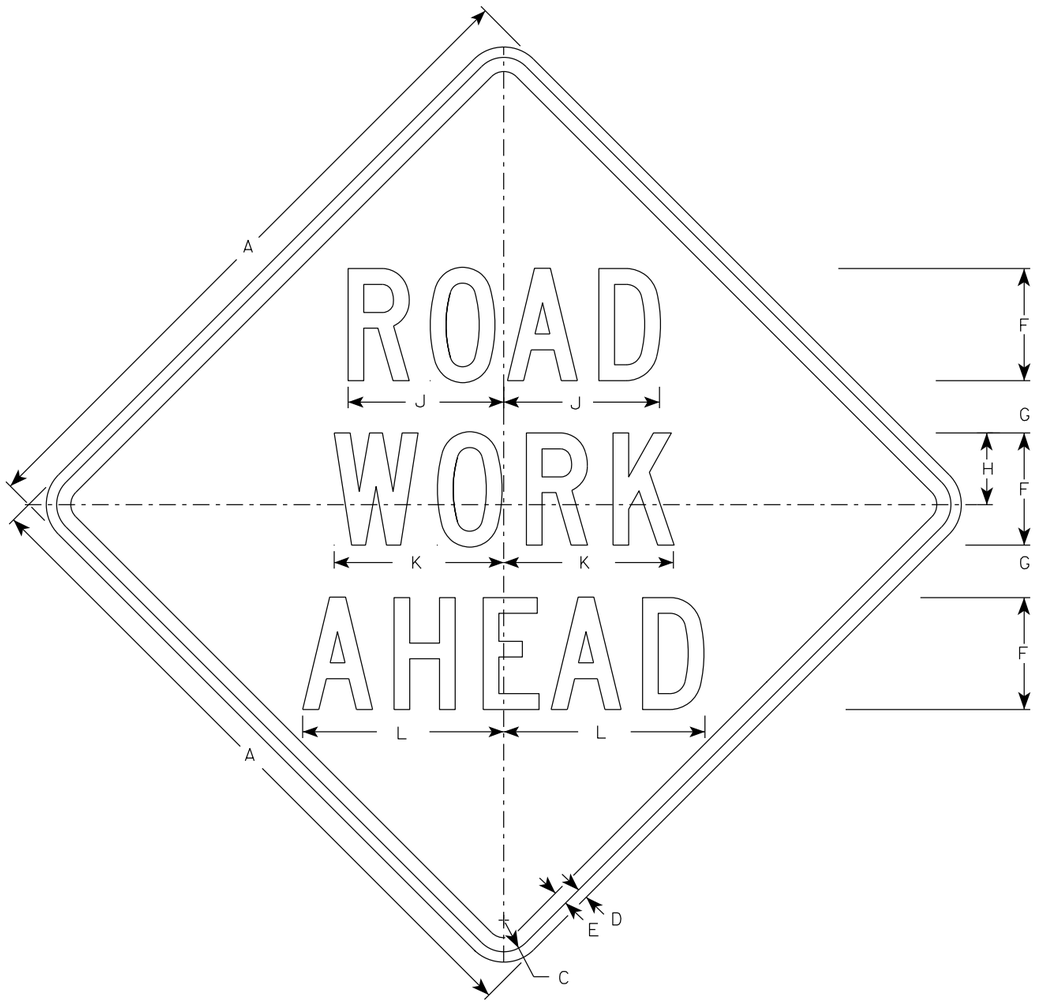
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

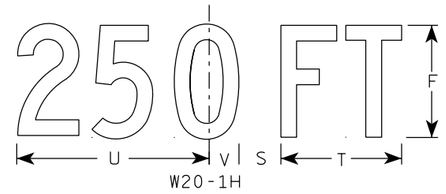
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 126	E

NOTES

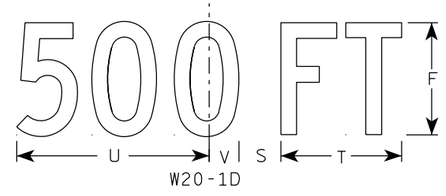
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1A

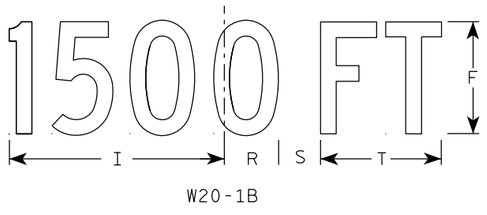


W20-1H

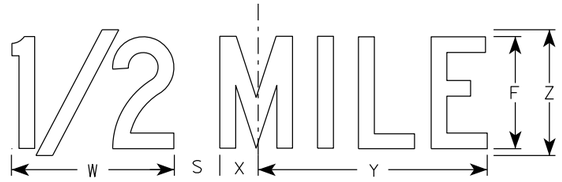


W20-1D

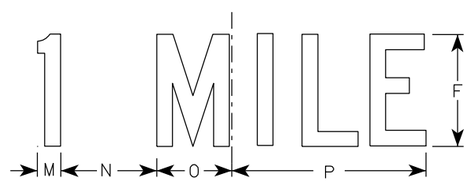
W20-1C



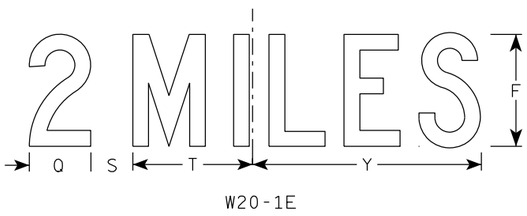
W20-1B



W20-1G



W20-1F



W20-1E

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	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2020 PLATE NO. W20-1.11

PROJECT NO:

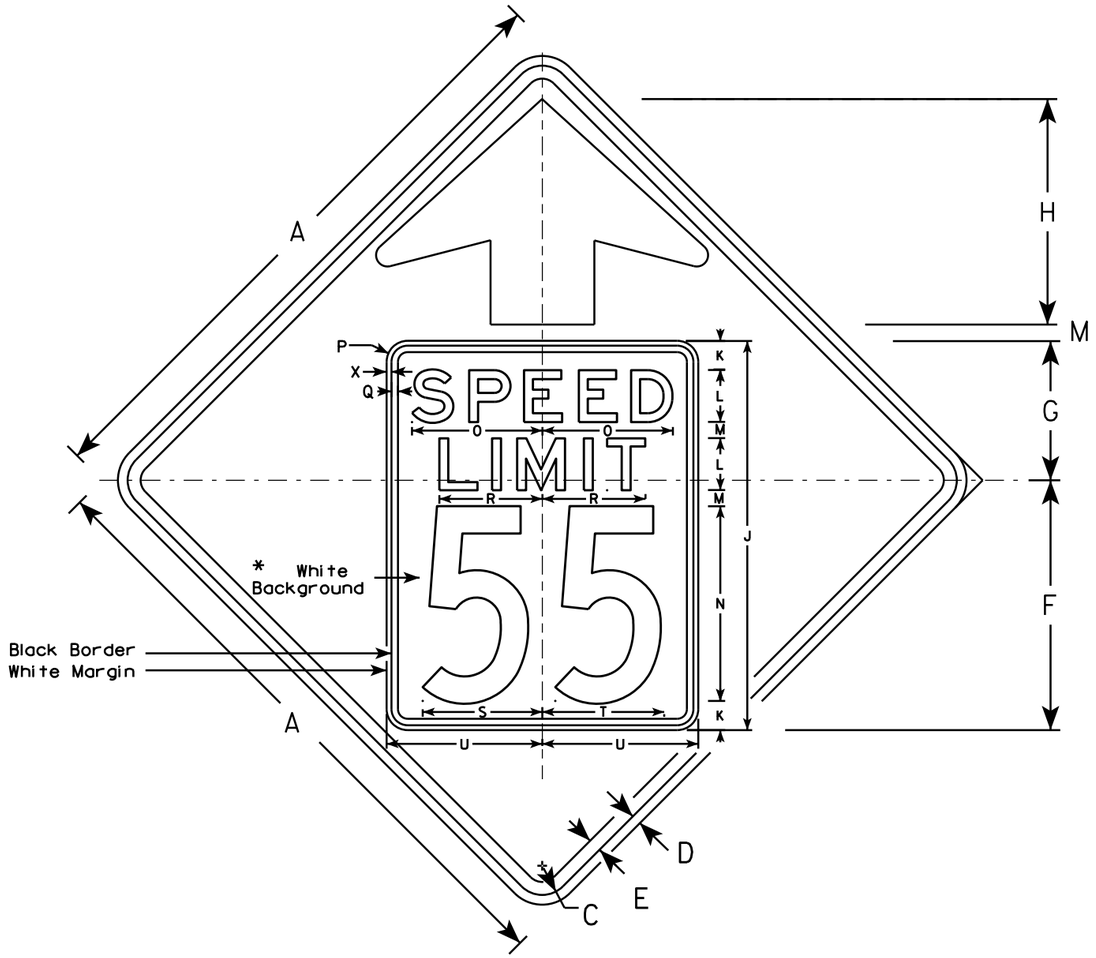
SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 25-MARCH-2020 PLOT BY : dotc4c

WISDOT/CADDS SHEET 42

7

7

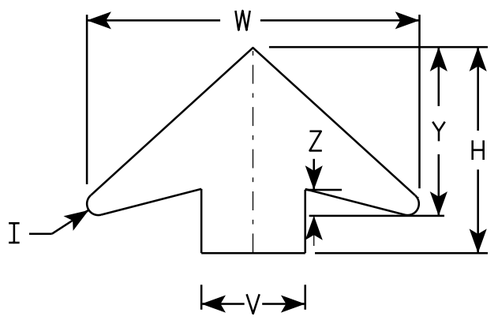


W03-5

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 - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



ARROW DETAIL

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	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2S	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
2M	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
3	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
4	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

STANDARD SIGN
W03-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

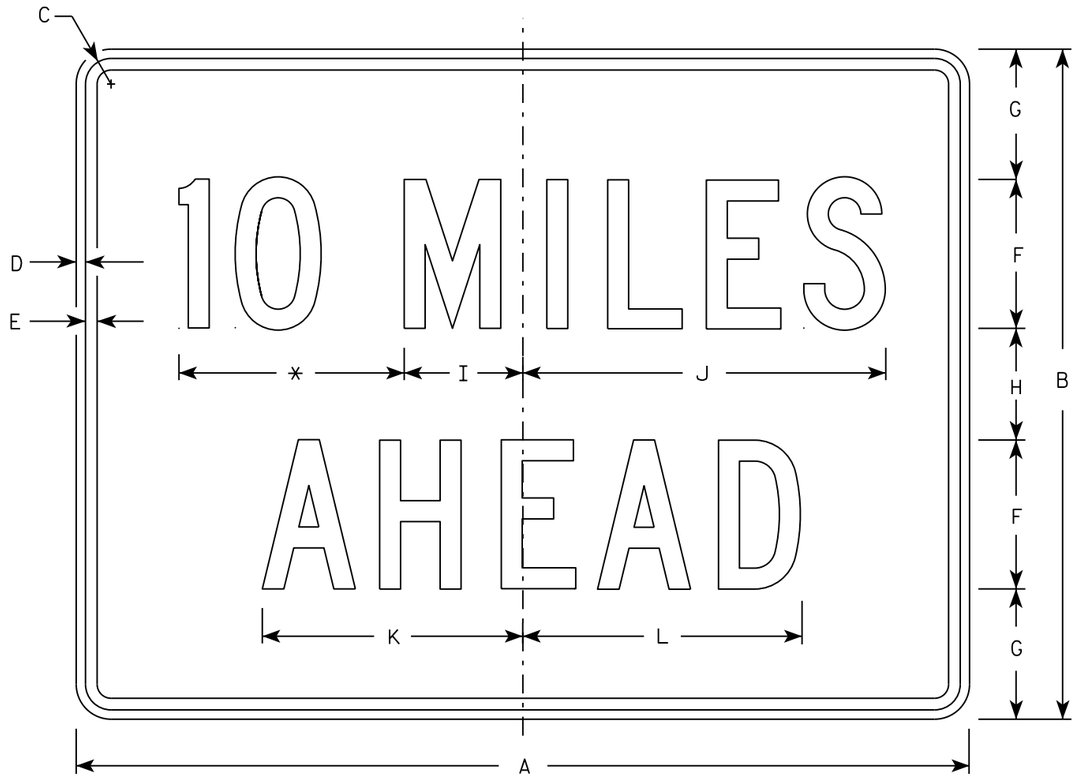
DATE 11/20/13 PLATE W03-5.1

PROJECT NO: SHEET NO: E

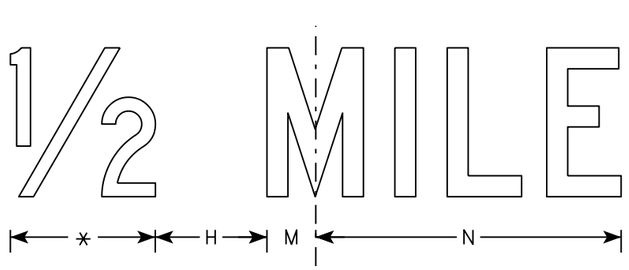
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W035.DGN PLOT DATE : 20-NOV-2013 11:32 PLOT BY : mscsja

WISDOT/CADDS SHEET 42

7 7



W057-52



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to the nearest quarter mile and optically adjust spacing to achieve proper balance.

* See note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W057-52.2

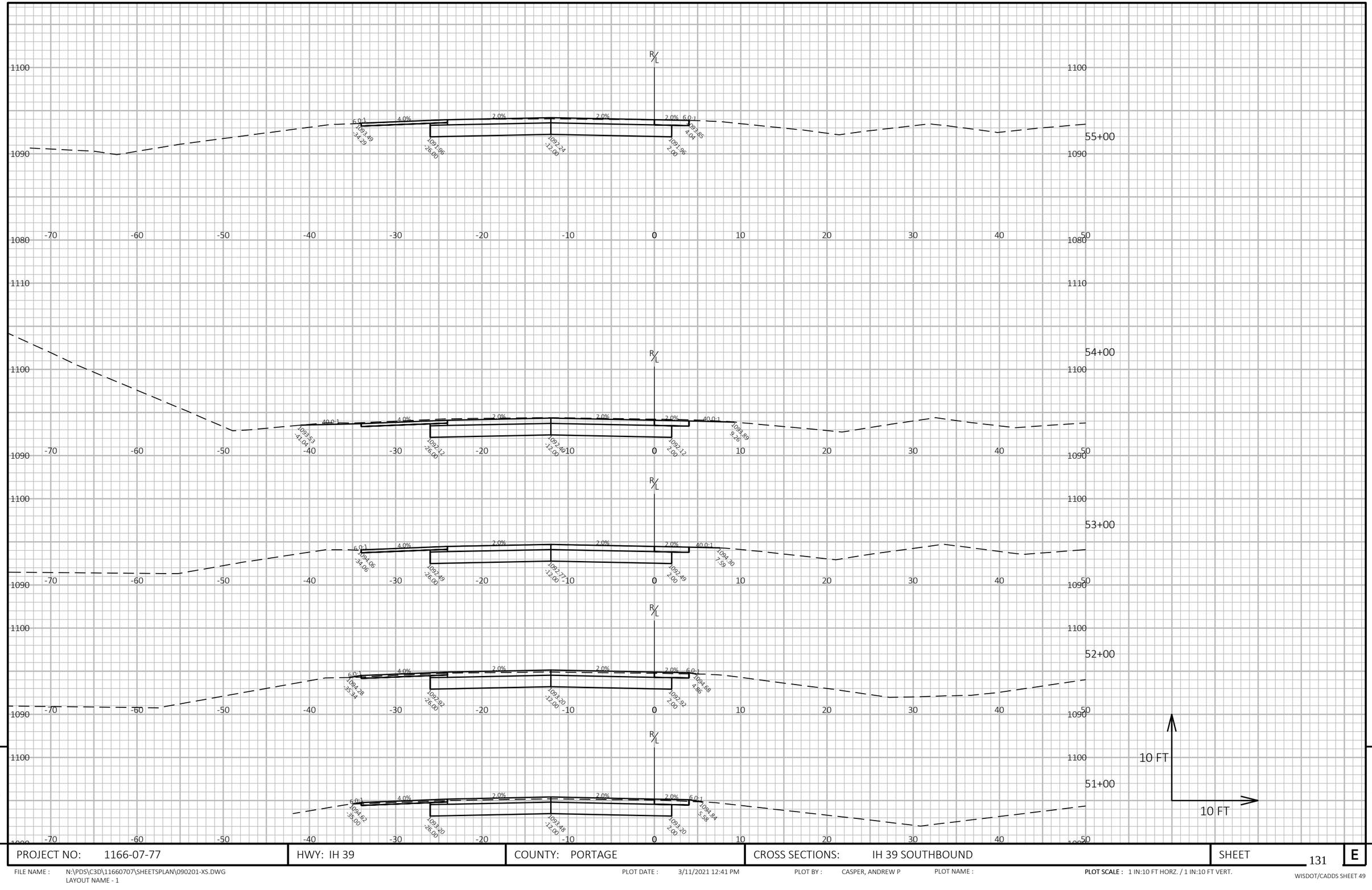
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 129	E

DIVISION 1 - 39SB

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.00	MASS ORDINATE NOTE 8
50+50	0.00	0.00	0.00	0	0	0	0	0	0
51+00	51.53	19.50	0.22	48	18	0	48	0	30
52+00	51.88	19.50	0.17	191	72	1	239	1	148
53+00	58.09	19.50	0.00	204	72	0	443	1	280
54+00	63.87	19.50	0.00	226	72	0	669	1	434
55+00	56.52	19.50	0.01	223	72	0	892	1	585
56+00	51.84	19.50	0.18	201	72	0	1,093	1	714
57+00	54.41	19.50	0.07	197	72	0	1,290	1	839
57+15	0.00	0.00	0.00	15	5	0	1,305	1	849
155+50	0.00	0.00	0.00	0	0	0	1,305	1	849
156+00	52.07	19.50	0.22	48	18	0	1,353	1	879
157+00	54.97	19.50	0.05	198	72	0	1,551	1	1,005
158+00	62.54	19.50	0.00	218	72	0	1,769	1	1,151
159+00	67.05	19.50	0.00	240	72	0	2,009	1	1,319
160+00	61.79	19.50	0.00	239	72	0	2,248	1	1,486
161+00	52.35	19.50	0.17	211	72	0	2,459	1	1,625
161+50	51.72	19.50	0.24	96	36	0	2,555	1	1,685
162+50	0.00	0.00	0.00	96	36	0	2,651	1	1,745
181+75	0.00	0.00	0.00	0	0	0	2,651	1	1,745
182+09	0.00	0.00	0.07	0	0	0	2,651	1	1,745
182+34	0.00	0.00	3.14	0	0	1	2,651	2	1,744
182+59	0.00	0.00	6.32	0	0	4	2,651	6	1,740
182+80	0.00	0.00	4.08	0	0	4	2,651	10	1,736
183+10	0.00	0.00	3.20	0	0	4	2,651	14	1,732
183+35	0.00	0.00	5.74	0	0	4	2,651	18	1,728
183+60	0.00	0.00	9.07	0	0	7	2,651	25	1,721
184+00	0.00	0.00	3.61	0	0	9	2,651	34	1,712
184+80	0.00	0.00	0.00	0	0	5	2,651	39	1,707
234+75	0.00	0.00	0.00	0	0	0	2,651	39	1,707
235+00	52.14	19.50	0.16	24	9	0	2,675	39	1,722
236+00	51.13	19.50	0.26	191	72	1	2,866	40	1,840
237+00	56.89	19.50	0.06	200	72	1	3,066	41	1,967
238+00	63.97	19.50	0.00	224	72	0	3,290	41	2,119
239+00	57.64	19.50	0.04	225	72	0	3,515	41	2,272
240+00	50.30	19.50	0.43	200	72	1	3,715	42	2,399
241+00	51.44	19.50	0.27	188	72	1	3,903	43	2,514
241+50	0.00	0.00	0.00	48	18	0	3,951	43	2,544
344+50	0.00	0.00	0.00	0	0	0	3,951	43	2,544
344+67	0.00	0.00	2.57	0	0	1	3,951	44	2,543
344+92	0.00	0.00	7.37	0	0	5	3,951	49	2,538
345+17	0.00	0.00	15.24	0	0	10	3,951	59	2,528
345+20	0.00	0.00	14.96	0	0	2	3,951	61	2,526
345+45	0.00	0.00	12.25	0	0	13	3,951	74	2,513
345+70	0.00	0.00	11.35	0	0	11	3,951	85	2,502
346+00	0.00	0.00	6.07	0	0	10	3,951	95	2,492
346+50	0.00	0.00	2.69	0	0	8	3,951	103	2,484

DIVISION 1 - 39SB

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.00	MASS ORDINATE NOTE 8
424+00	0.00	0.00	2.18	0	0	698	3,951	801	1,786
424+14	0.00	0.00	4.97	0	0	2	3,951	803	1,784
424+39	0.00	0.00	14.53	0	0	9	3,951	812	1,775
424+64	0.00	0.00	23.54	0	0	18	3,951	830	1,757
424+65	0.00	0.00	23.29	0	0	1	3,951	831	1,756
424+90	0.00	0.00	17.57	0	0	19	3,951	850	1,737
425+15	0.00	0.00	14.36	0	0	15	3,951	865	1,722
425+50	0.00	0.00	7.12	0	0	14	3,951	879	1,708
426+00	0.00	0.00	0.00	0	0	7	3,951	886	1,701
444+50	0.00	0.00	0.00	0	0	0	3,951	886	1,701
445+00	41.66	19.50	0.00	39	18	0	3,990	886	1,722
446+00	53.15	19.50	0.08	176	72	0	4,166	886	1,826
447+00	59.13	19.50	0.00	208	72	0	4,374	886	1,962
448+00	65.06	19.50	0.00	230	72	0	4,604	886	2,120
449+00	56.00	19.50	0.01	224	72	0	4,828	886	2,272
450+00	50.21	19.50	0.28	197	72	1	5,025	887	2,396
451+00	52.81	19.50	0.09	191	72	1	5,216	888	2,514
451+25	0.00	0.00	0.00	24	9	0	5,240	888	2,529
476+50	0.00	0.00	0.00	0	0	0	5,240	888	2,529
476+88	0.00	0.00	4.98	0	0	4	5,240	892	2,525
477+13	0.00	0.00	5.39	0	0	5	5,240	897	2,520
477+38	0.00	0.00	6.90	0	0	6	5,240	903	2,514
477+82	0.00	0.00	3.60	0	0	9	5,240	912	2,505
478+15	0.00	0.00	2.94	0	0	4	5,240	916	2,501
478+40	0.00	0.00	4.30	0	0	3	5,240	919	2,498
478+65	0.00	0.00	7.56	0	0	5	5,240	924	2,493
479+00	0.00	0.00	4.55	0	0	8	5,240	932	2,485
479+50	0.00	0.00	2.15	0	0	6	5,240	938	2,479
529+50	0.00	0.00	3.16	0	0	585	5,240	1,523	1,894
529+85	0.00	0.00	6.09	0	0	6	5,240	1,529	1,888
530+10	0.00	0.00	6.75	0	0	6	5,240	1,535	1,882
530+35	0.00	0.00	8.37	0	0	7	5,240	1,542	1,875
530+36	0.00	0.00	8.34	0	0	0	5,240	1,542	1,875
530+61	0.00	0.00	7.93	0	0	8	5,240	1,550	1,867
530+86	0.00	0.00	8.99	0	0	8	5,240	1,558	1,859
531+00	0.00	0.00	8.30	0	0	4	5,240	1,562	1,855
531+50	0.00	0.00	0.00	0	0	8	5,240	1,570	1,847
603+00	0.00	0.00	0.00	0	0	0	5,240	1,570	1,847
604+00	51.56	19.50	0.19	95	36	0	5,335	1,570	1,906
605+00	55.11	19.50	0.10	198	72	1	5,533	1,571	2,031
606+00	61.55	19.50	0.00	216	72	0	5,749	1,571	2,175
607+00	66.51	19.50	0.00	237	72	0	5,986	1,571	2,340
608+00	54.95	19.50	0.02	225	72	0	6,211	1,571	2,493
609+00	53.28	19.50	0.07	200	72	0	6,411	1,571	2,621
610+50	0.00	0.00	0.00	148	54	0	6,559	1,571	2,715

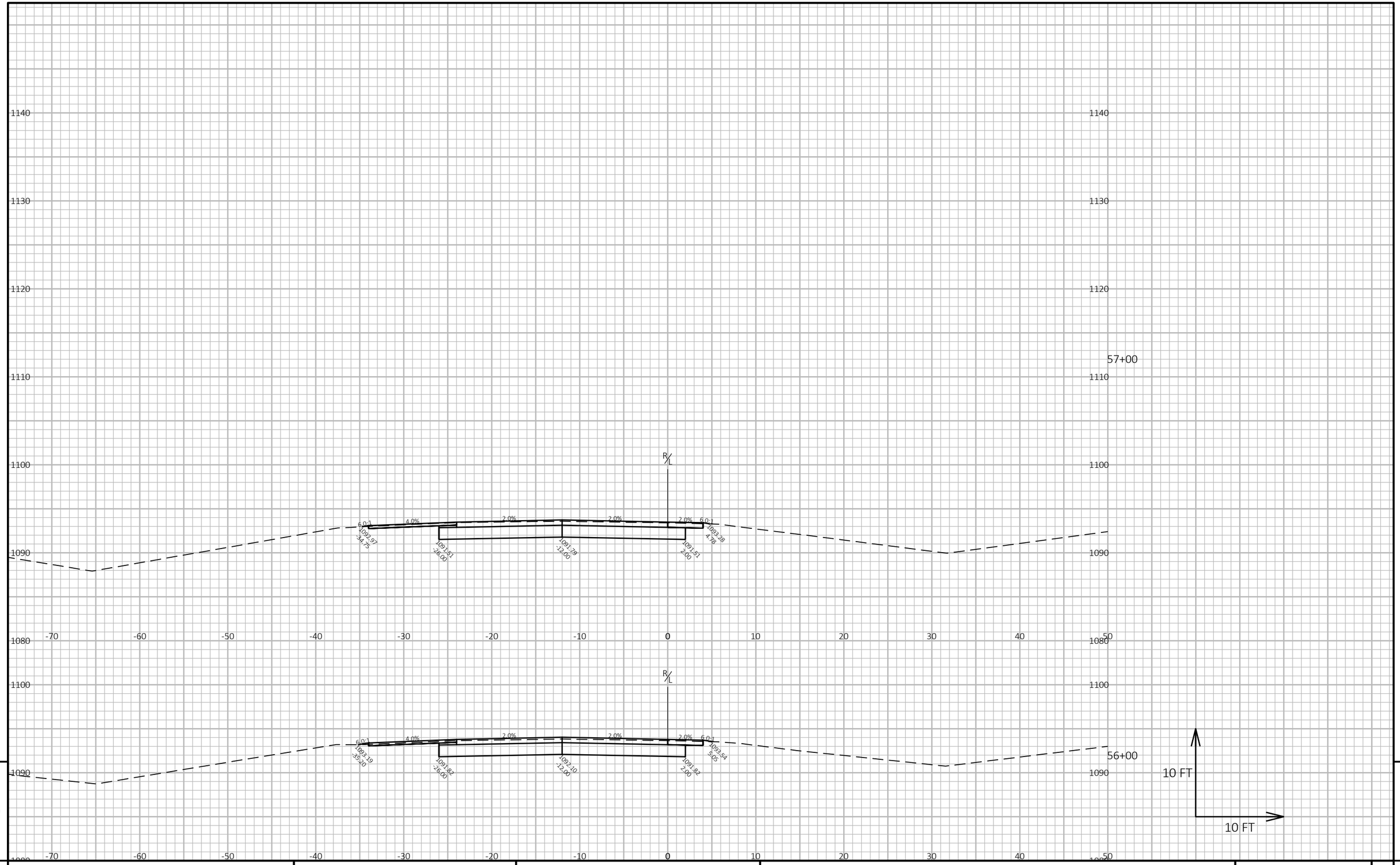


PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 131	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 1

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 132	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 2

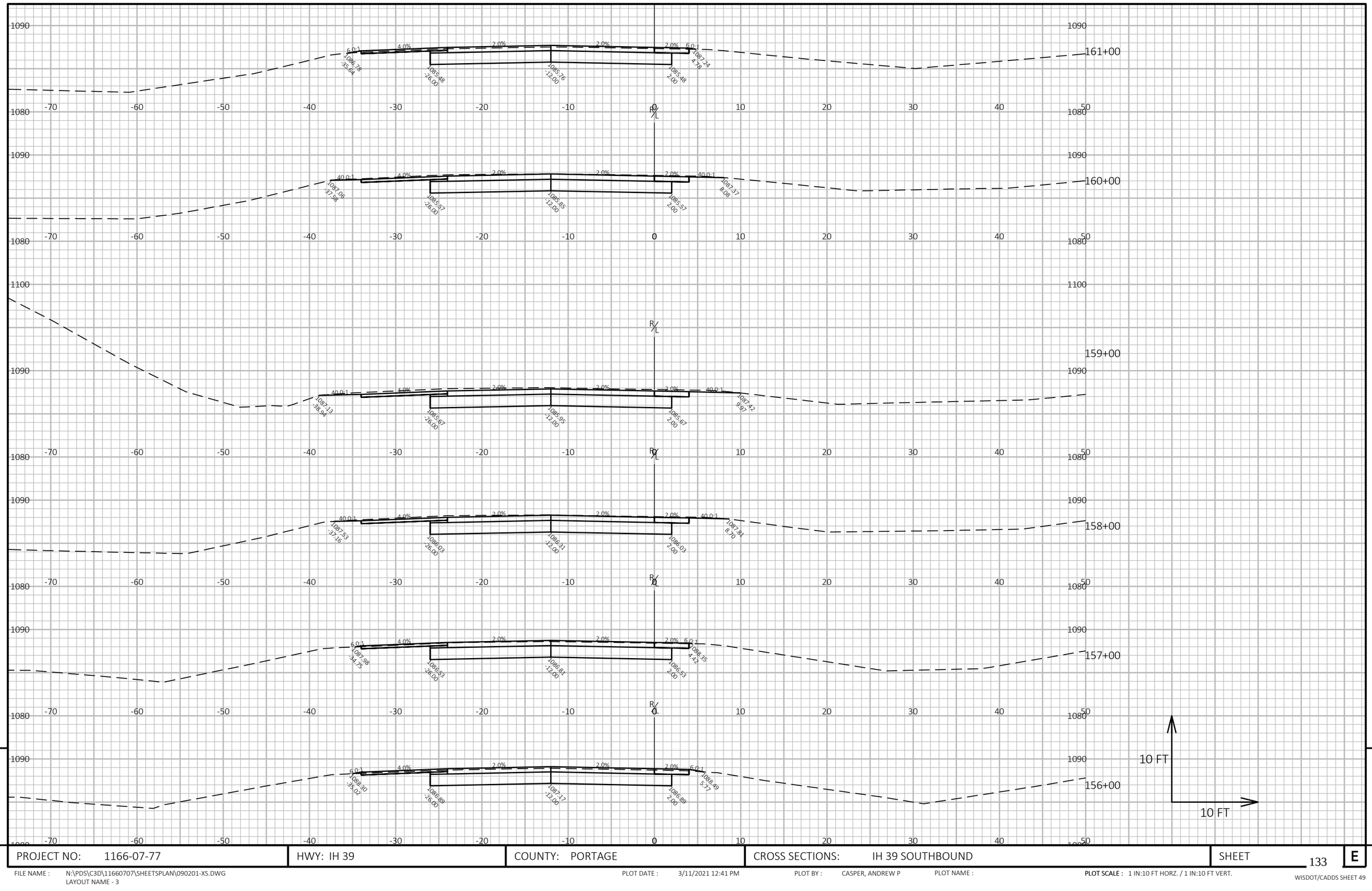
PLOT DATE : 3/11/2021 12:41 PM

PLOT BY : CASPER, ANDREW P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 133	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 3

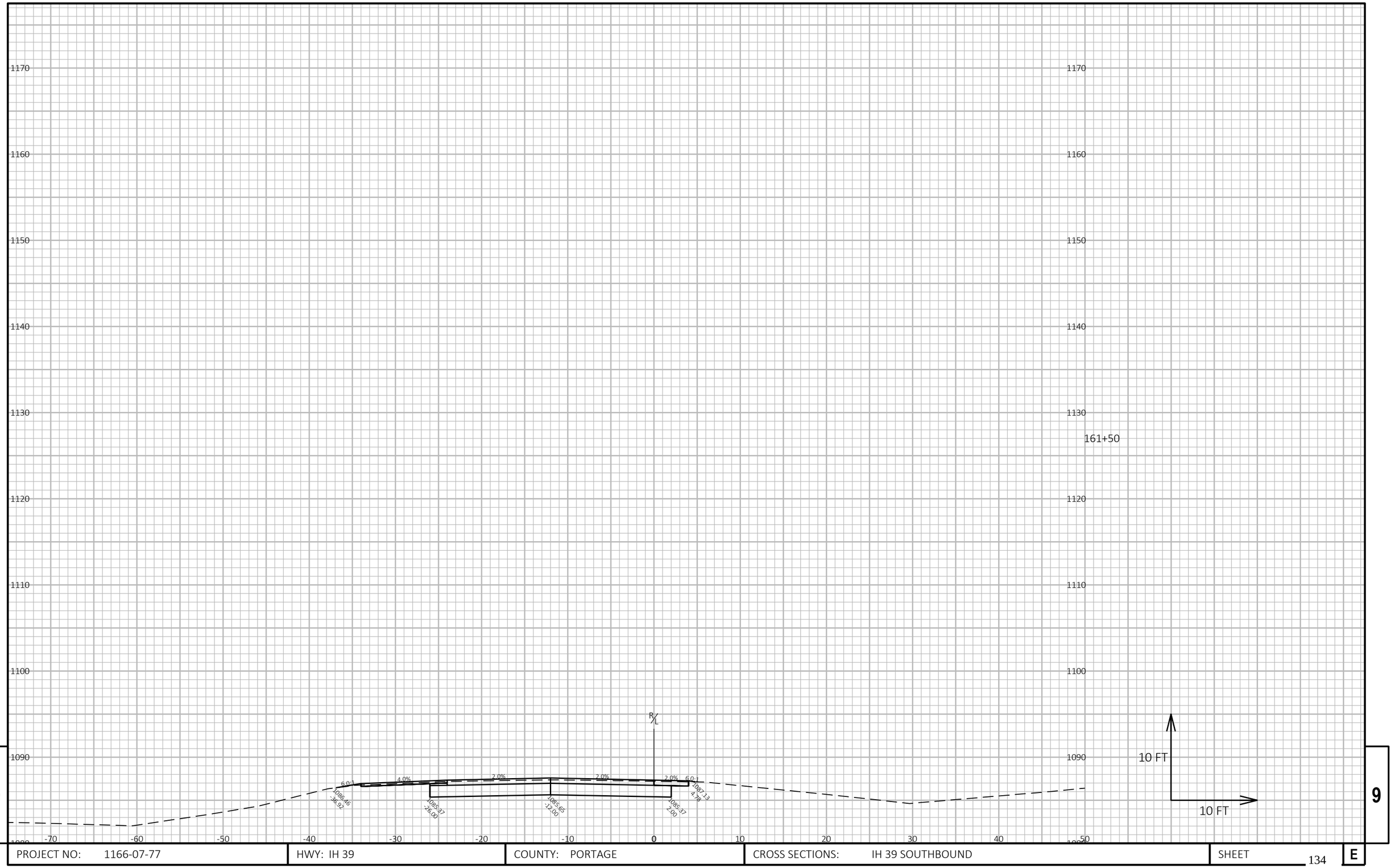
PLOT DATE : 3/11/2021 12:41 PM

PLOT BY : CASPER, ANDREW P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 134	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 4

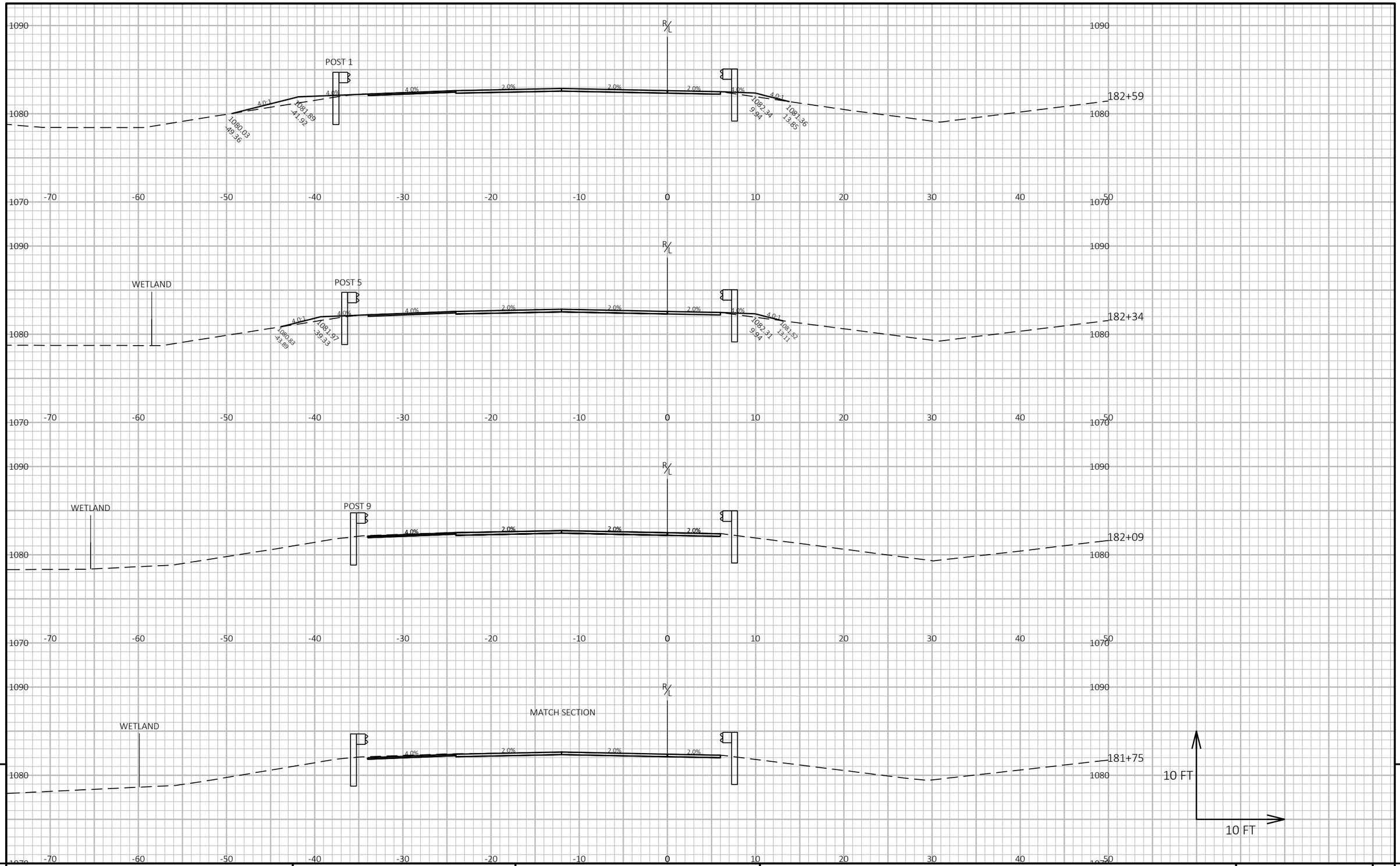
PLOT DATE : 3/11/2021 12:41 PM

PLOT BY : CASPER, ANDREW P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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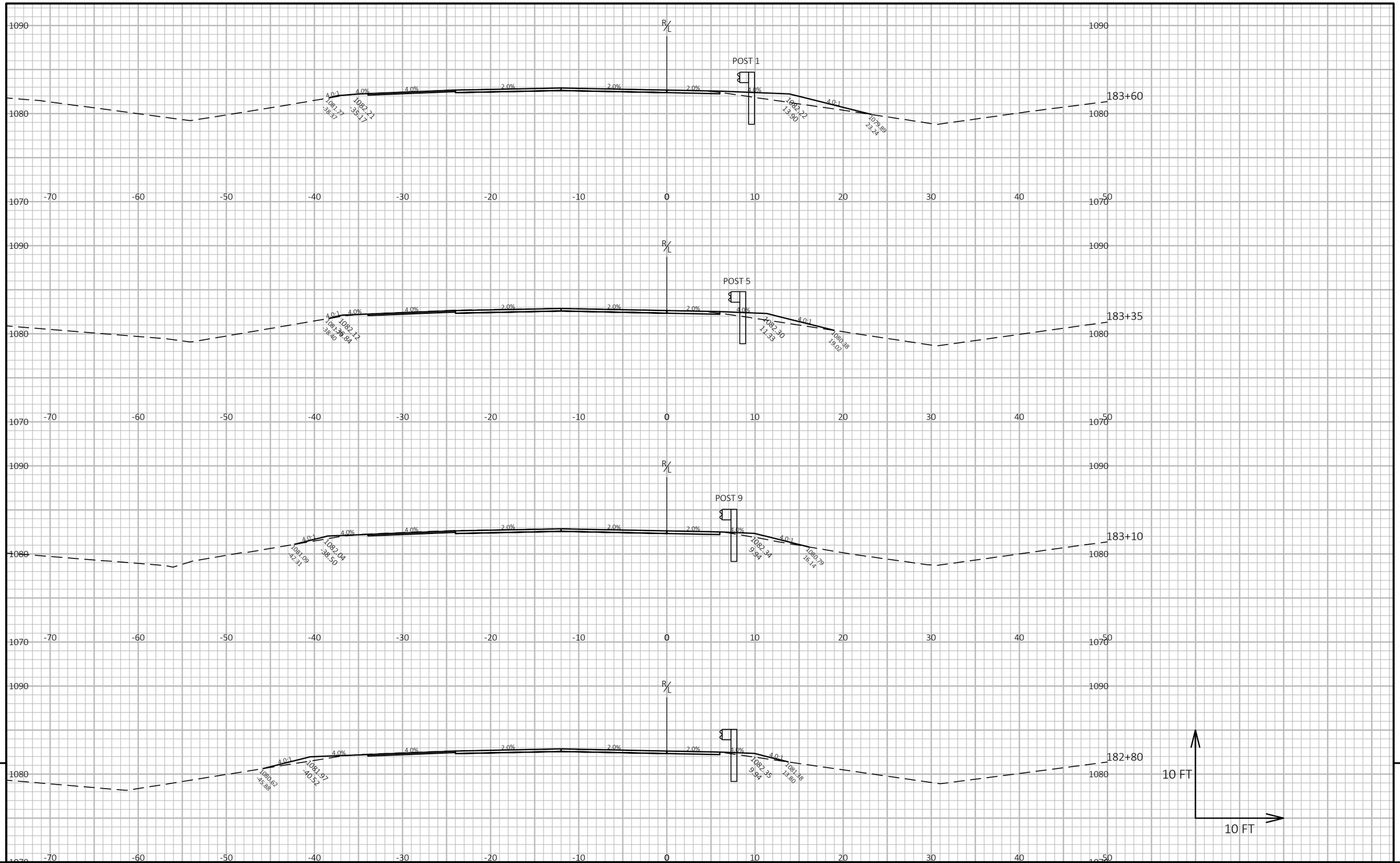
PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 135	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 5

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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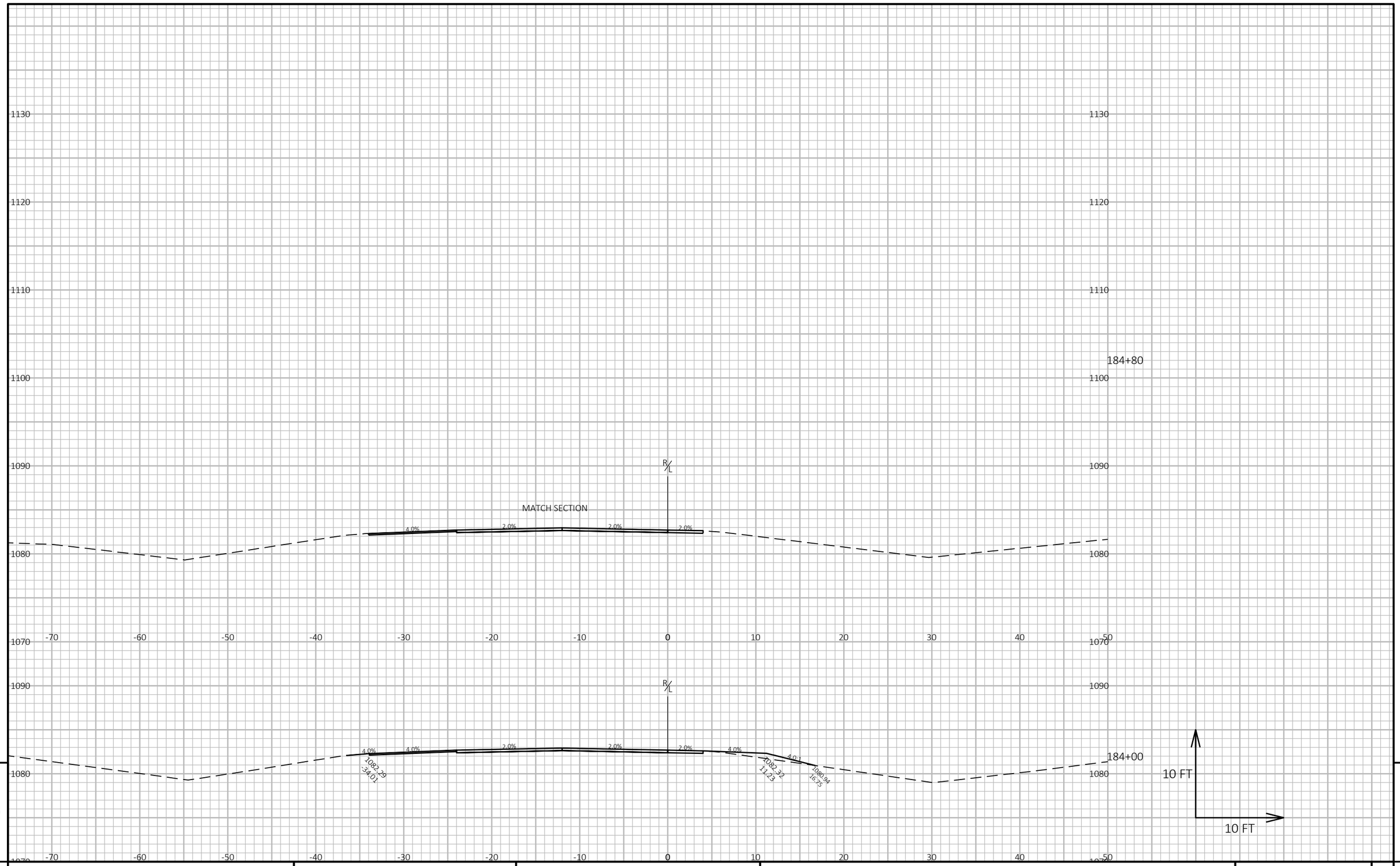
PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 136	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 6

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

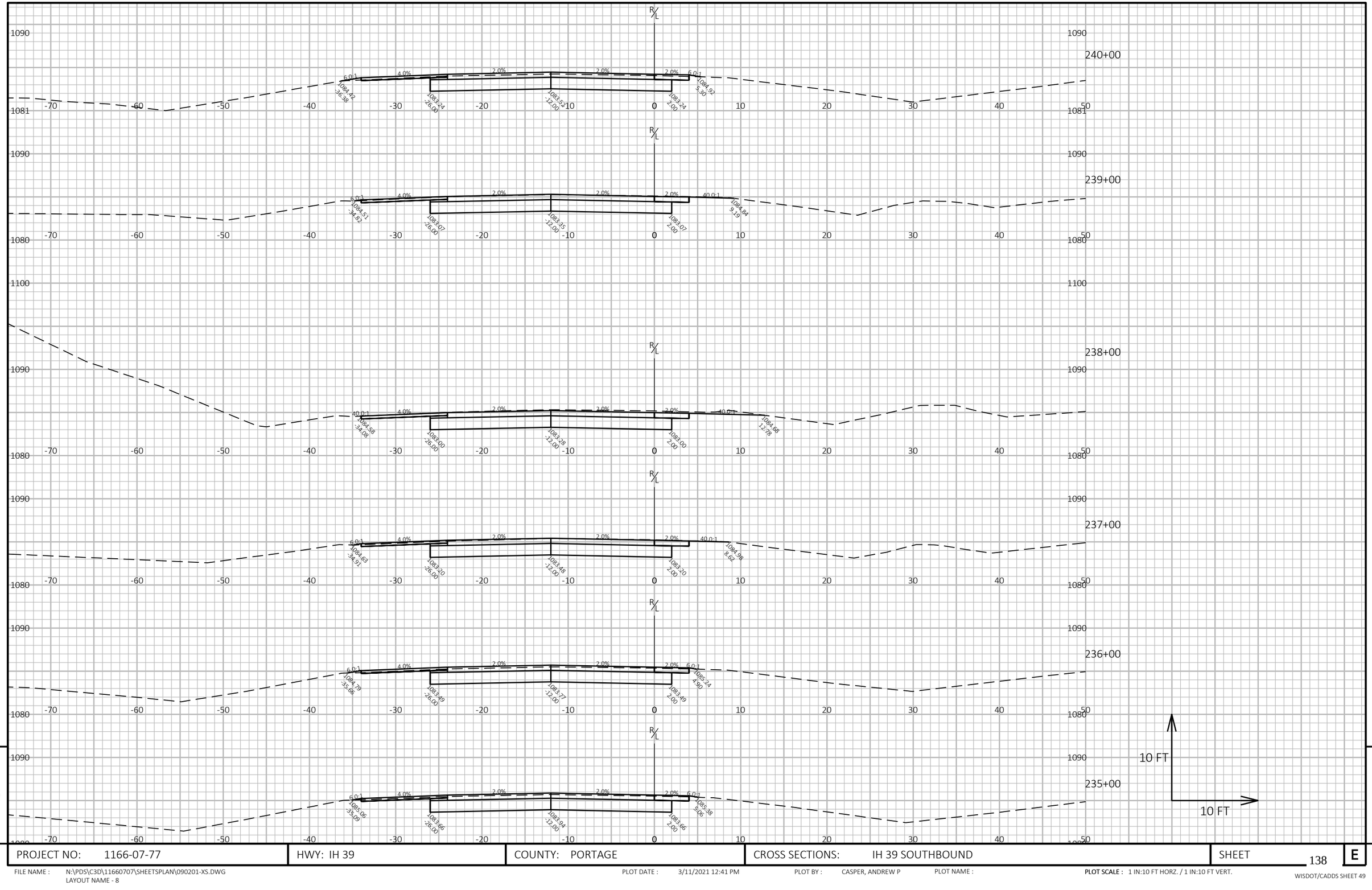


PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 137	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 7

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

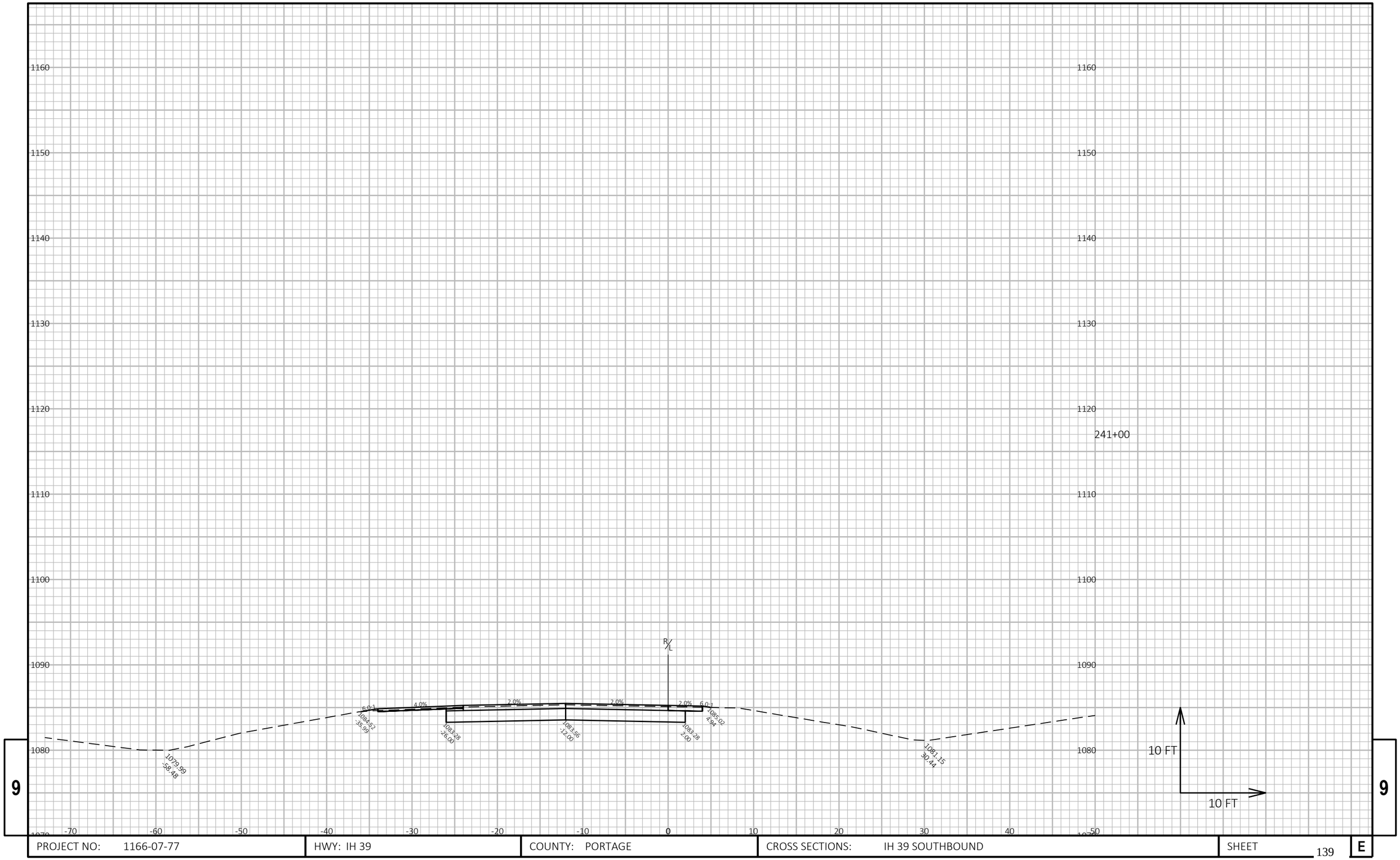


PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 138	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 8

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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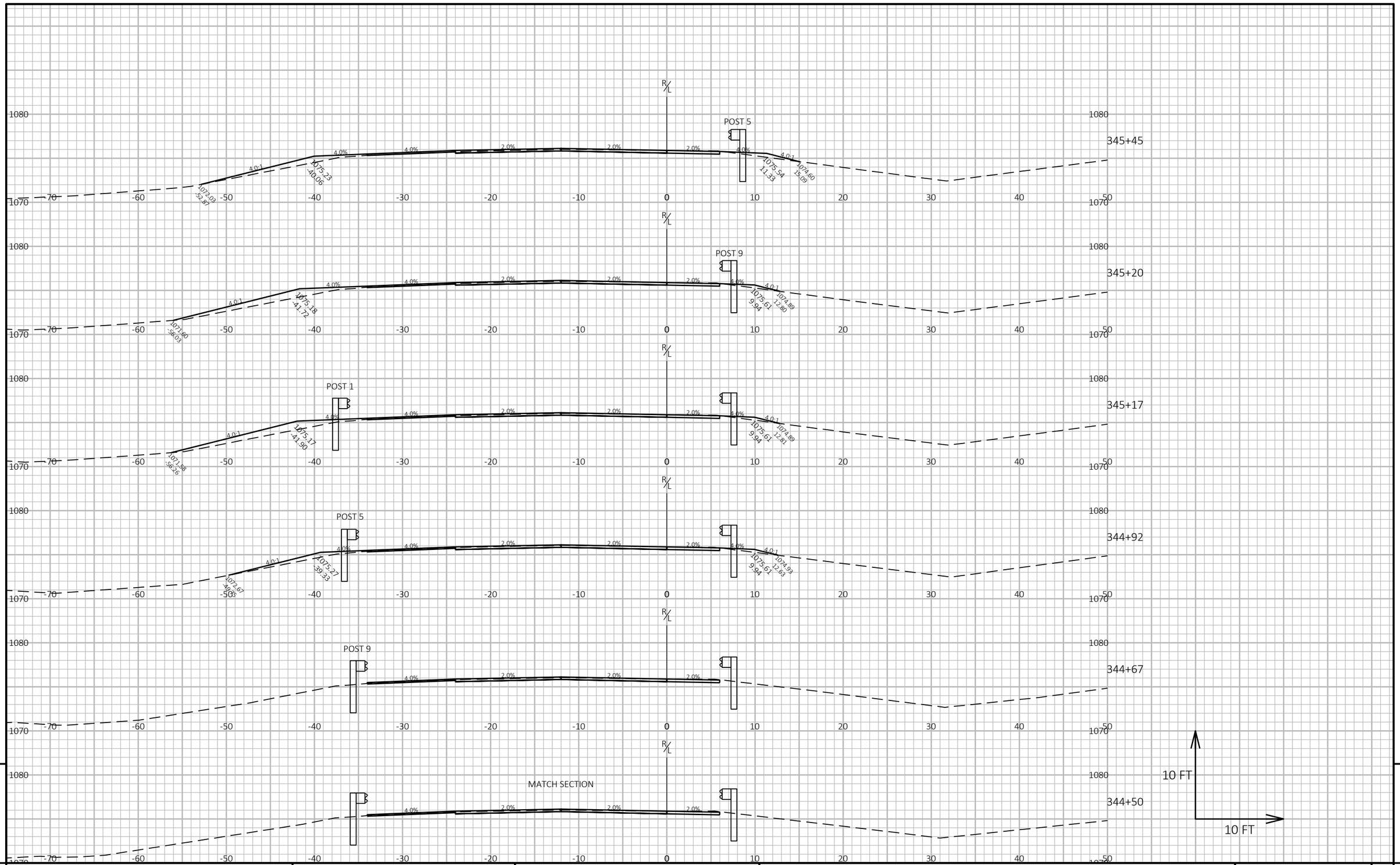
PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 139	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 9

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

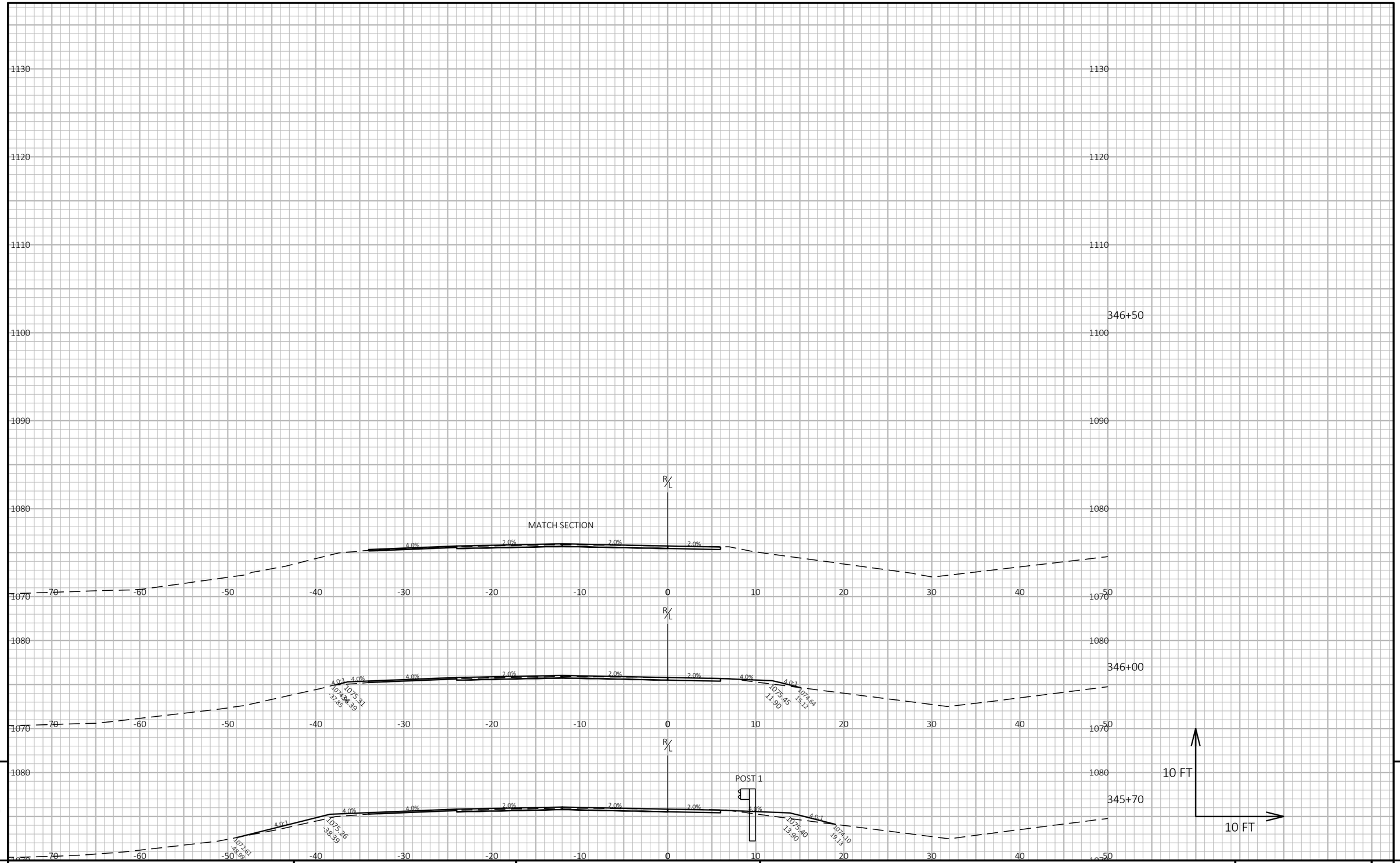


PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 140 E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 10

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 141	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 11

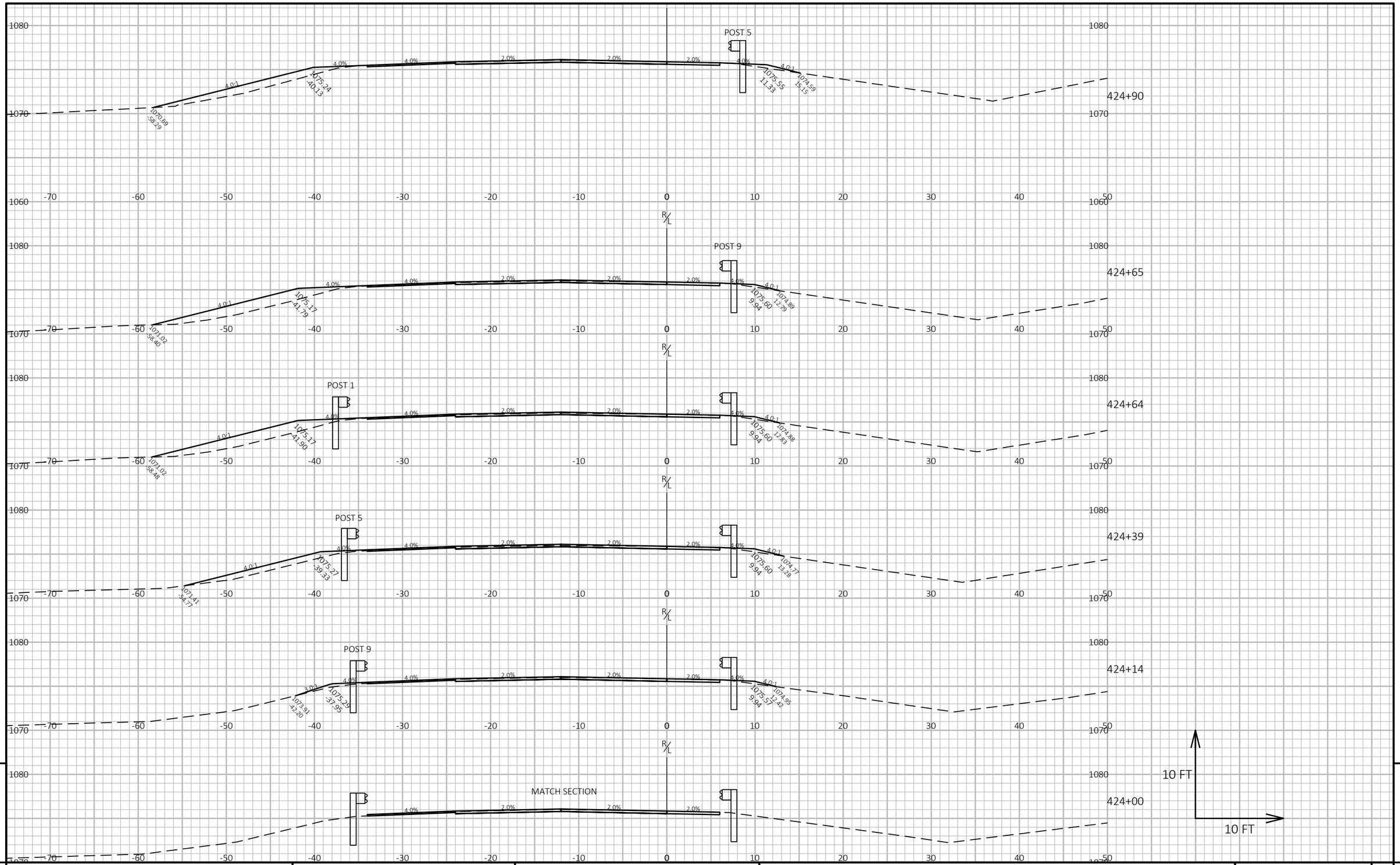
PLOT DATE : 3/11/2021 12:41 PM

PLOT BY : CASPER, ANDREW P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 142	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 12

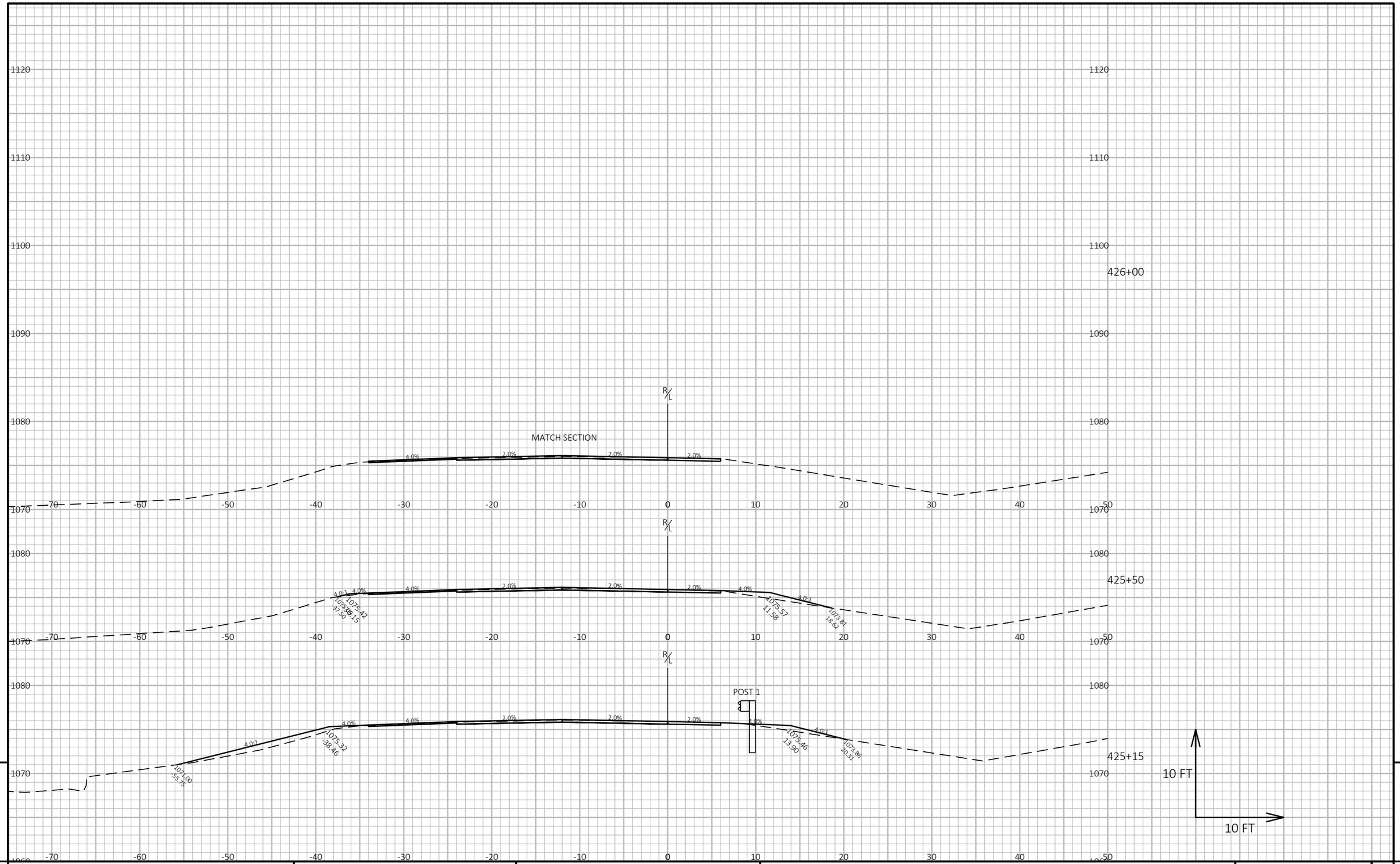
PLOT DATE : 3/11/2021 12:41 PM

PLOT BY : CASPER, ANDREW P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 143	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 13

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

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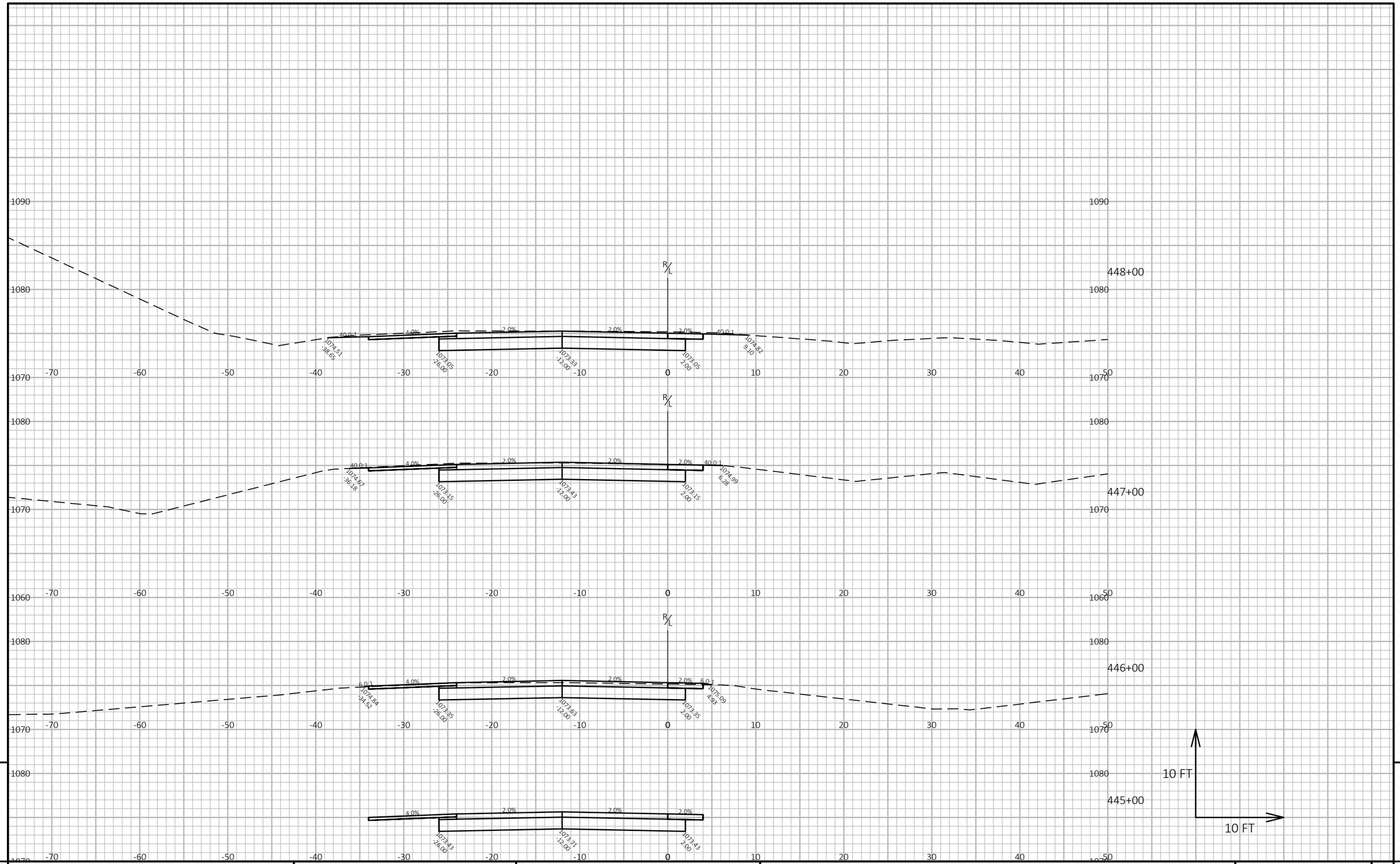

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PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 144	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 14

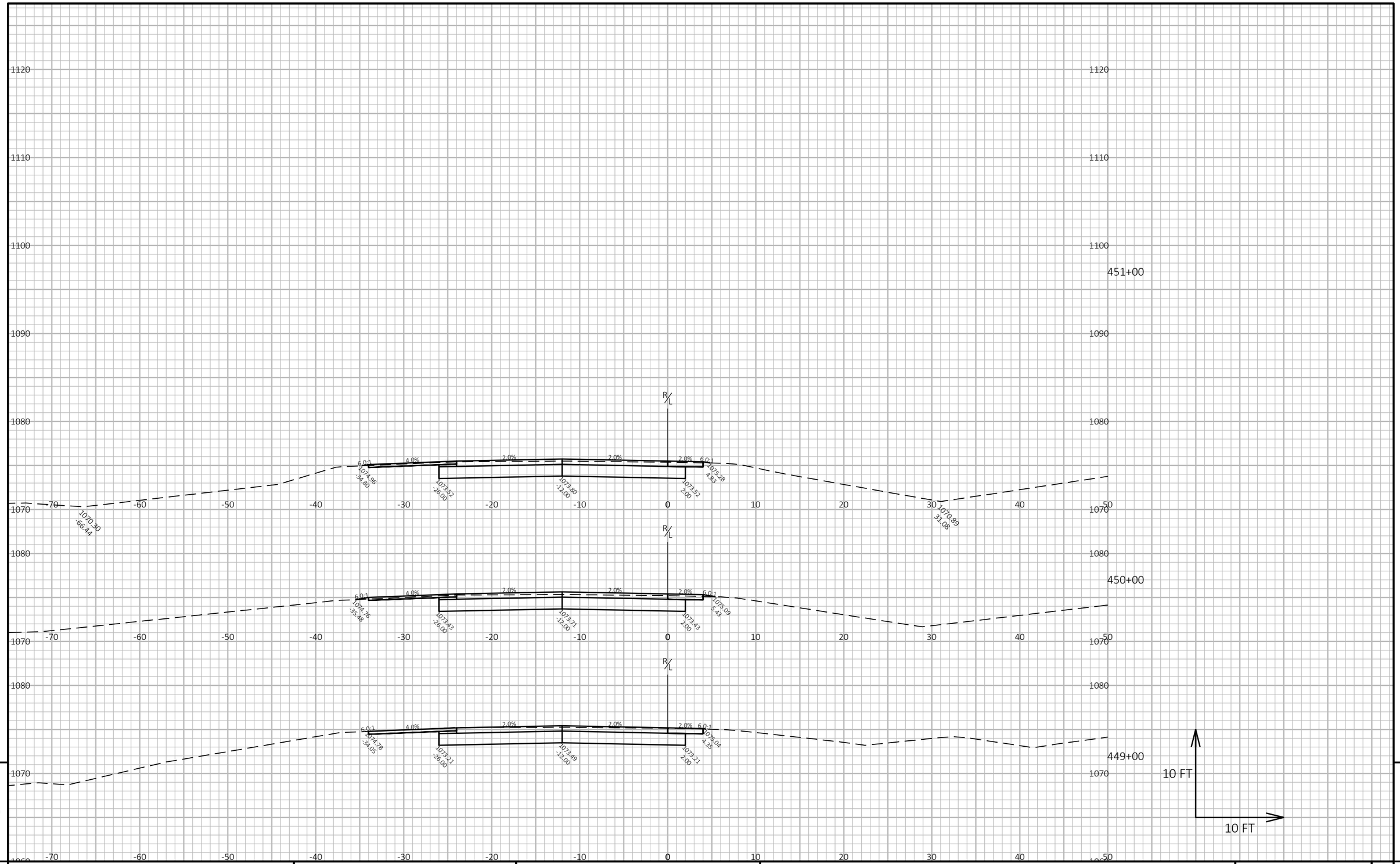
PLOT DATE : 3/11/2021 12:41 PM

PLOT BY : CASPER, ANDREW P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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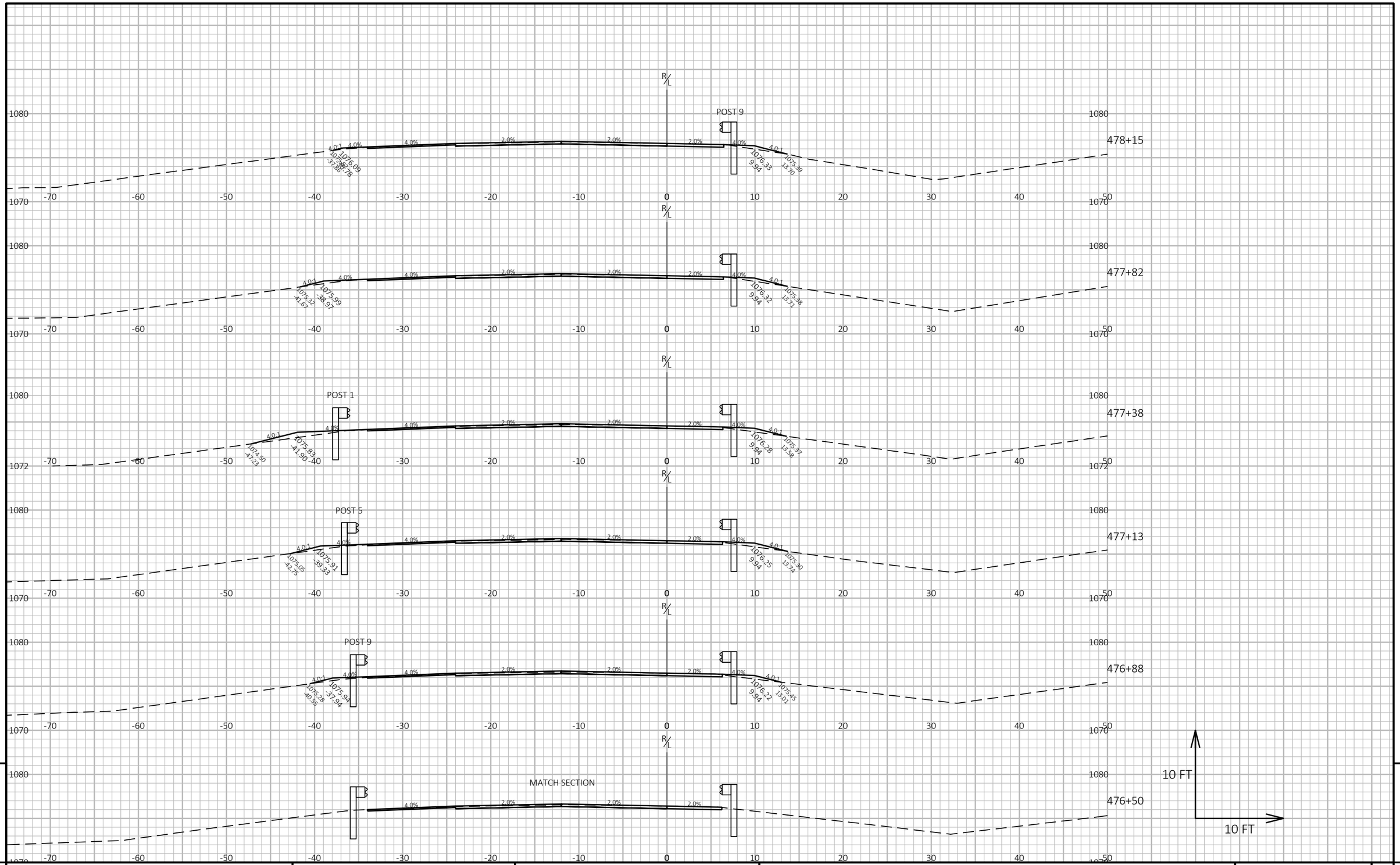
PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 145	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 15

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

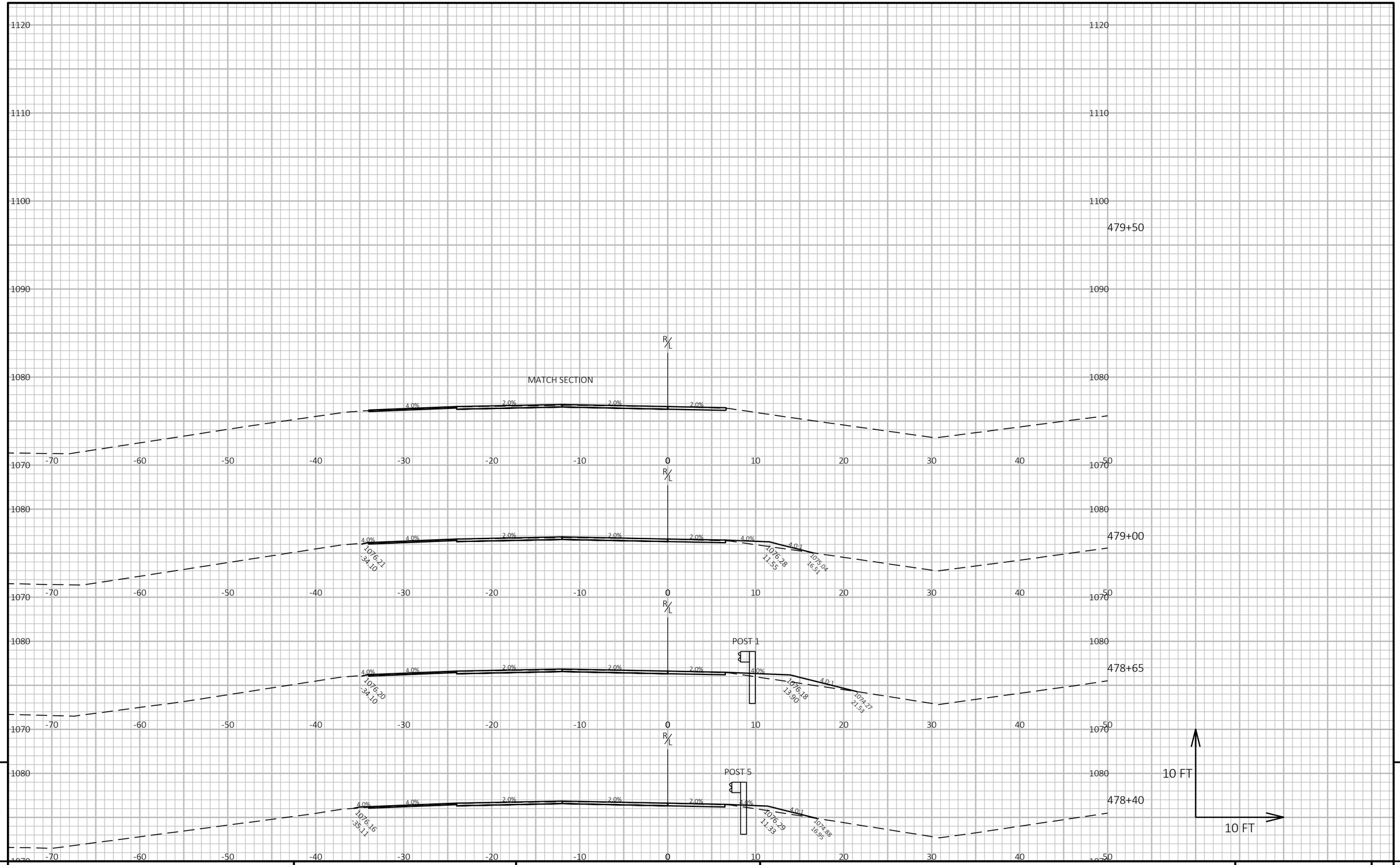


PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 146	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 16

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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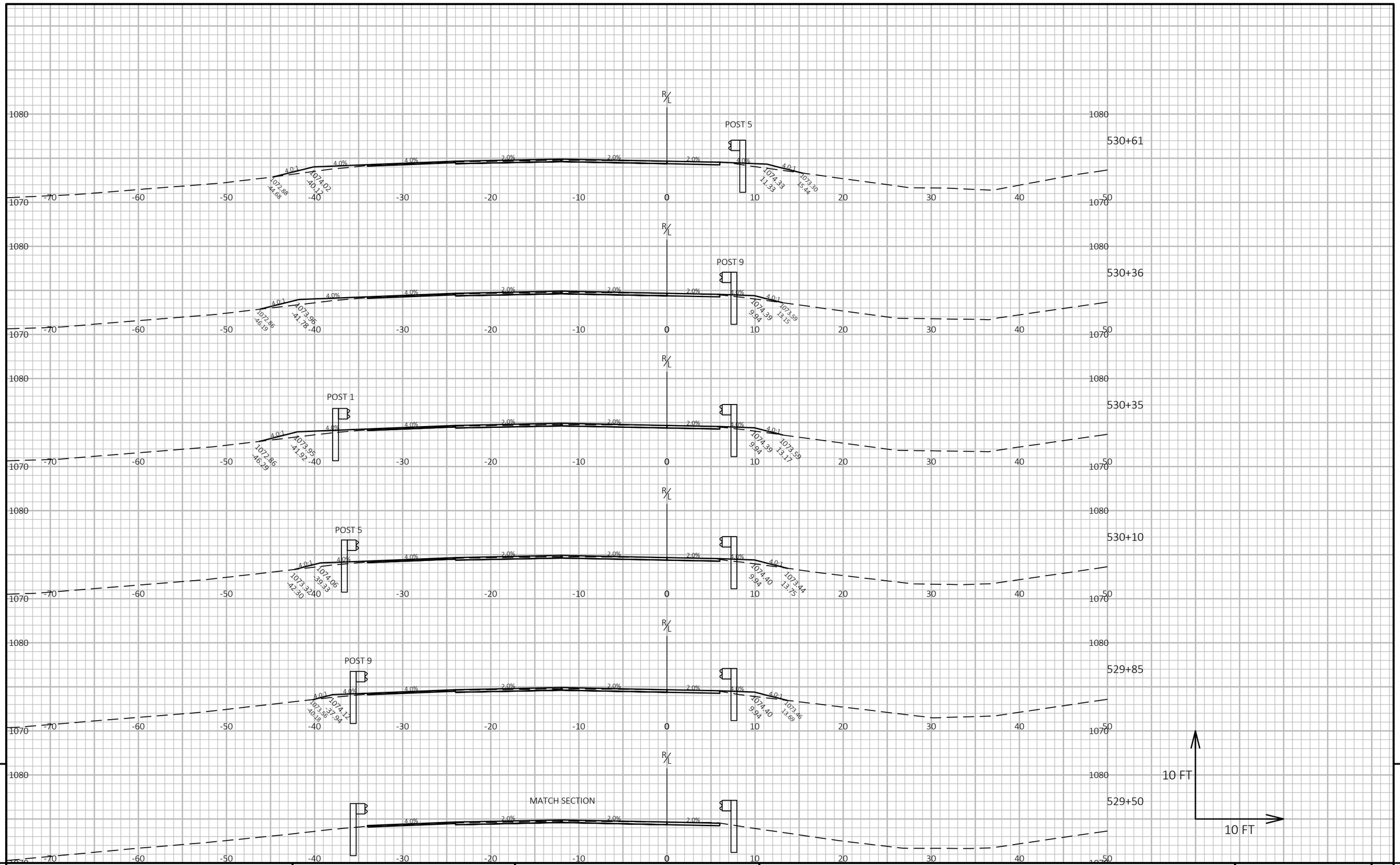
PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 147	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 17

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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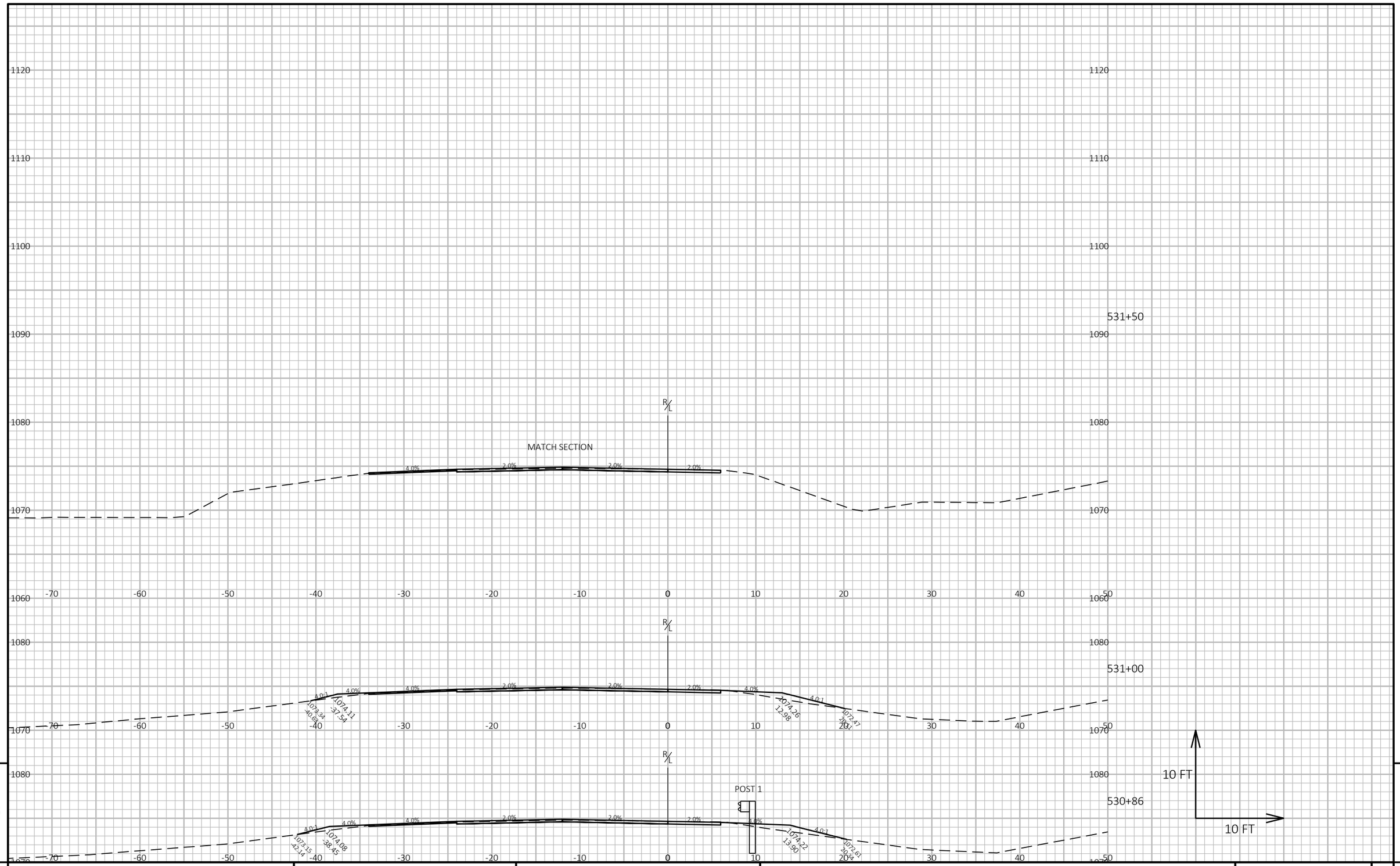
PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 148	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 18

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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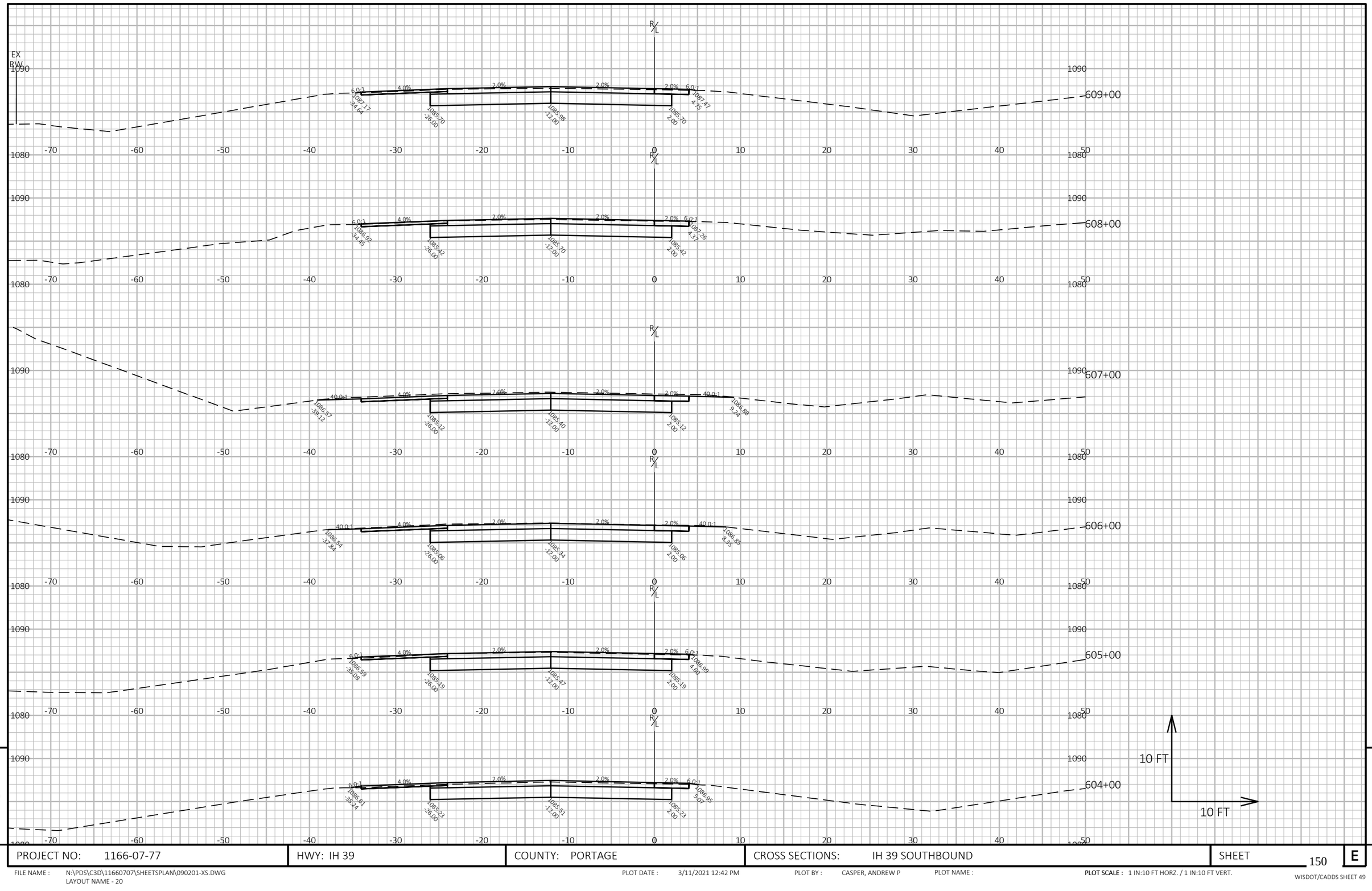
PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 149	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 19

PLOT DATE : 3/11/2021 12:41 PM PLOT BY : CASPER, ANDREW P PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 1166-07-77	HWY: IH 39	COUNTY: PORTAGE	CROSS SECTIONS: IH 39 SOUTHBOUND	SHEET 150	E

FILE NAME : N:\PDS\C3D\11660707\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 20

PLOT DATE : 3/11/2021 12:42 PM PLOT BY : CASPER, ANDREW P PLOT NAME :

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

Notes

Wisconsin Department of Transportation

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