EAU

SEPTEMBER 2021

PROJECT ID: 1520-00-73, 1520-02-70

WITH: N/A

COUNTY: JACKSON

ORDER OF SHEETS

TOTAL SHEETS = 116

N

DESIGN DESIGNATION

A.A.D.T.	(2023)	=	3,300
A.A.D.T.	(2043)	=	3,700
D.H.V.		=	425
D.D.		=	60/40
T.		=	25.0%
DESIGN SPEED		=	55 MPH
ESALS		=	2,000,000

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

OSSEO - FAIRCHILD

WEST COUNTY LINE TO USH 12 WEST

USH 10

JACKSON COUNTY

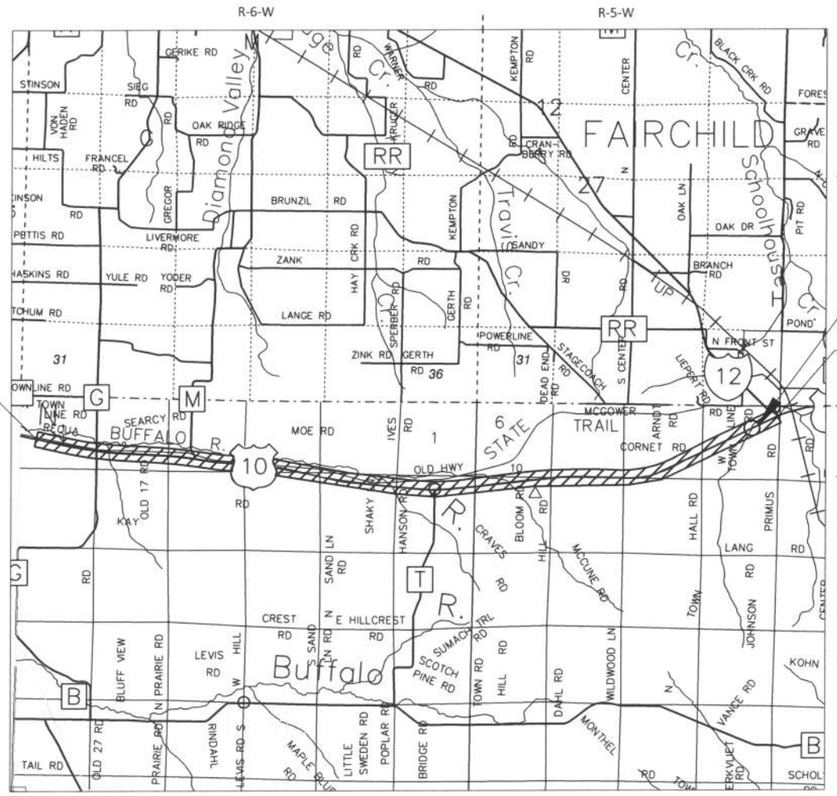
STATE PROJECT NUMBER	STATE PROJECT NUMBER
1520-00-73	1520-02-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1520-00-73	WISC 2021495	1
1520-02-70	WISC 2021496	1

BEGIN PROJECT 1520-00-73 & 1520-02-70
STA 162+95.00
Y=204659.549
X=4855.916

END PROJECT 1520-00-73 & 1520-02-70
STA 700+27.00
Y=206358.002
X=57325.542

NET EXCEPTION TO CL LENGTH
STA 682+58.50 TO STA 683+27.50
B-27-151



LAYOUT

SCALE 0 2.0 MI

TOTAL NET LENGTH OF CENTERLINE = 10.163 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), JACKSON COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE	300'EB'	ELECTRIC	E
EXISTING CULVERT		FIBER OPTIC	FO
PROPOSED CULVERT (Box or Pipe)		GAS	G
COMBUSTIBLE FLUIDS	CAUTION	SANITARY SEWER	SAN
		STORM SEWER	SS
		TELEPHONE	T
MARSH AREA		WATER	W
		UTILITY PEDESTAL	
		POWER POLE	
WOODED OR SHRUB AREA		TELEPHONE POLE	

ORIGINAL PLANS PREPARED BY

JT ENGINEERING, INC

WISCONSIN BRIAN E. SMITS E-27284 CHIPPEWA FALLS WI PROFESSIONAL ENGINEER

DATE: 7/21/20 Brian Smits
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	JT ENGINEERING, INC
Designer	JT ENGINEERING, INC
Project Manager	NATE ULNESS
Regional Examiner	TOU YANG
Regional Supervisor	JAMES KOENIG

APPROVED FOR THE DEPARTMENT

DATE: 07/22/2020 Nathan Ulness
(Signature)

E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\TTUSH10.DWG

PLOT DATE : 7/8/2020 9:38 AM

PLOT BY : ERIC BENSON

PLOT NAME :

RUNOFF COEFFICIENT TABLE

A	HYDROLOGIC SOIL GROUP											
	B		C						D			
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE: TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = 54.272 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.708 ACRES

GENERAL NOTES

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA.

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

THE LOCATION OF ALL DRIVEWAYS SHALL REMAIN AT THEIR EXISTING LOCATION UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENT AT FULL DEPTH REMOVAL LIMITS. A VERTICAL SAWCUT SHALL BE MADE TO THE DEPTH OF THE MILLING AT BUTT JOINT MILLING REMOVAL LIMITS.

MATCH EXISTING SUPERELEVATIONS ALONG HORIZONTAL CURVES. STAKING SUPERELEVATION TRANSITIONS IN THE FIELD SHALL BE INCIDENTAL TO THE PROJECT IF NEEDED.

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

CONDUCT CONSTRUCTION OPERATIONS SUCH THAT WATER IS NOT TRAPPED ON THE ROADWAY OR BASE AGGREGATE SURFACE.

THE LOCATION OF THE CONSTRUCTION MATCH POINTS ON THE SIDE ROADS SHALL BE AT THE FURTHEST OUT RADIUS RETURN POINT AS SHOWN IN THE DETAILS OR AS DETERMINED BY THE ENGINEER.

THE ALIGNMENTS ARE BASED ON BEST FITTING THE AERIAL AND AS-BUILT PLANS. ADJUSTMENTS MAY BE NEEDED TO FIT ACTUAL FIELD CONDITIONS WHEN DIRECTED BY THE ENGINEER. ADJUSTMENTS ARE INCIDENTAL TO THE ITEM "RESURFACING REFERENCE".

THE EXISTING RIGHT OF WAY IS BASED OFF OF JACKSON COUNTY GIS AND AS-BUILT PLANS AND IS SHOWN FOR GRAPHICAL PURPOSES ONLY.

RESHAPE, SEED, AND FERTILIZE ANY PREVIOUSLY GRASSED AREAS THAT ARE DISTURBED BY OPERATIONS OUTSIDE THE NORMAL CONSTRUCTION LIMITS.

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

EXISTING SIGNS SHALL REMAIN IN PLACE UNLESS DIRECTED BY THE ENGINEER.

ALL TRAFFIC CONTROL SIGNING AND DEVICES SHALL BE IN CONFORMANCE WITH THE "WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (WMUTCD), THE STANDARD DETAIL DRAWINGS (SDD), AND THE GENERAL NOTES LISTED IN THE SDD'S.

HMA PAVEMENT SHALL BE CONSTRUCTED WITH THE FOLLOWING LAYER THICKNESS:

PAVEMENT THICKNESS (INCH)	LOWER BASE LAYER (INCH)	LOWER LAYER (INCH)	UPPER LAYER (INCH)
2.75	-	1.5*	1.25
5.00	2.25	1.5*	1.25

*THE LOWER LAYER OF HMA PAVEMENT IS TO BE USED AS A LEVELING LAYER.

UTILITY CONTACTS

ROB MALY
DAIRYLAND POWER COOPERATIVE - ELECTRICITY
3200 EAST AVE S
LA CROSSE, WI 54601
(608) 788-4000 (O)
(608) 518-2633 (MOBILE)
ROB.MALY@DAIRYLANDPOWER.COM

JOSH VANINGAN
EAU CLAIRE ENERGY COOPERATIVE - ELECTRICITY
8214 HWY 12
FALL CREEK, WI 54742-0368
(715) 836-6473 (O)
(608) 387-6847 (MOBILE)
JVANINGAN@ECEC.COM

ERIC STEIEN
JACKSON ELECTRIC COOPERATIVE - ELECTRICITY
N6868 CO HWY F
BLACK RIVER FALLS, WI 54615
(715) 284-5385 (O)
(715) 299-5208 (MOBILE)
ESTEIEN@JACKELEC.COM

PAMELA DENZINE
XCEL ENERGY - ELECTRICITY
500 N 5TH ST
ABBOTSFORD, WI 54405
(715) 218-6637
PAMELA.DENZINE@XCELENERGY.COM

BRET CLARK
CENTURYLINK-COMMUNICATION LINE
311 S. COURT ST
SPARTA, WI 54656
(608) 269-0819 (O)
(608) 487-0637 (MOBILE)
BRET.CLARK@CENTURYLINK.COM

ERIC BECKER
WINDSTREAM NTI - COMMUNICATION LINE
314 N DANZ AVE
GREEN BAY, WI 54302
(920) 321-5007 (O)
(920) 461-9825 (MOBILE)
ERIC.BECKER@WINDSTREAM.COM

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

WISCONSIN DNR LIAISON

BRAD BETTHAUSER
DNR WISCONSIN RAPIDS SERVICE CENTER
473 GRIFFITH AVE
WISCONSIN RAPIDS, WI 54494
PHONE: 715-421-7851
E-MAIL: BRADLEY.BETTHAUSER@WISCONSIN.GOV

2

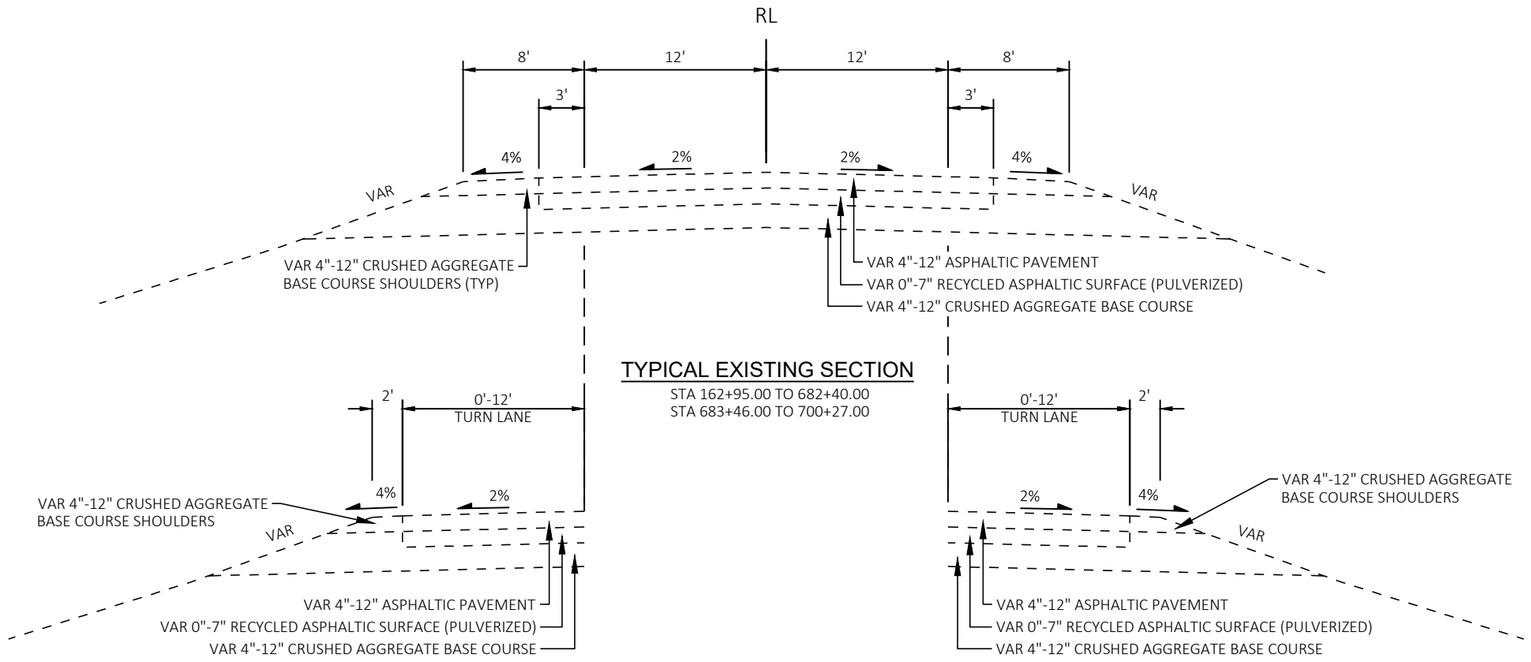
2

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\POUSH10.DWG
LAYOUT NAME - STH10 - (1)

PLOT DATE : 7/21/2020 11:05 AM PLOT BY : ERIC BENSON PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 44



TYPICAL EXISTING SECTION

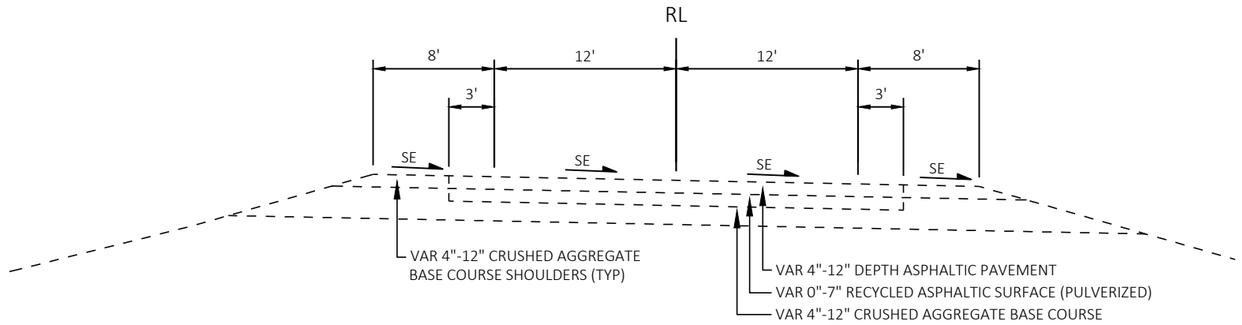
STA 162+95.00 TO 682+40.00
STA 683+46.00 TO 700+27.00

TYPICAL EXISTING SECTION

STA 175+70.92 TO STA 175+86.10
STA 196+93.50 TO STA 198+85.70
STA 216+10.82 TO STA 221+40.19
STA 284+23.73 TO STA 289+69.52
STA 351+42.10 TO STA 353+61.74
STA 387+69.62 TO STA 390+20.40
STA 426+56.50 TO STA 428+83.70
STA 453+41.19 TO STA 455+77.24
STA 507+98.70 TO STA 510+57.80
STA 522+77.70 TO STA 525+53.40
STA 614+53.70 TO STA 616+90.50
STA 644+33.94 TO STA 646+03.10
STA 673+76.30 TO STA 676+16.00

TYPICAL EXISTING SECTION

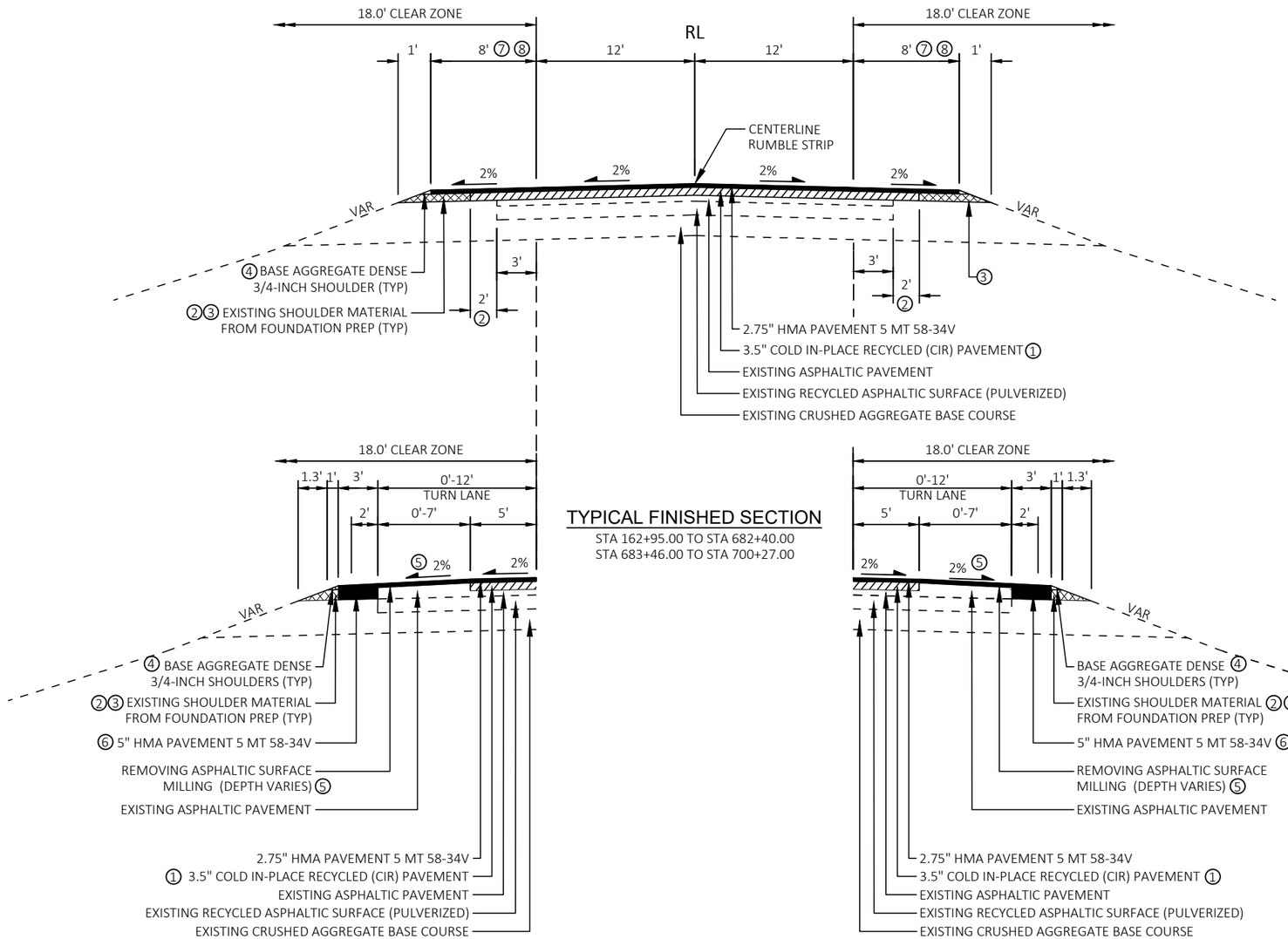
STA 214+18.66 TO STA 219+11.38
STA 256+36.60 TO STA 257+88.80
STA 347+63.57 TO STA 350.08.50
STA 426+40.60 TO STA 428+42.80
STA 413+78.30 TO STA 415+32.60
STA 450+60.30 TO STA 455+89.39
STA 507+63.00 TO STA 510+16.00
STA 534+78.60 TO STA 536+88.40
STA 608+02.65 TO STA 610+12.37
STA 614+44.50 TO STA 616+43.60
STA 643+69.31 TO STA 645+85.40



TYPICAL EXISTING SUPERELEVATED SECTION

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	TYPICAL SECTIONS	SHEET 4	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\TYPUSH10.DWG
LAYOUT NAME - 01
PLOT DATE : 2/23/2021 10:54 AM PLOT BY : ANGELA DOCKSEY PLOT NAME : PLOT SCALE : 1 IN:10 FT

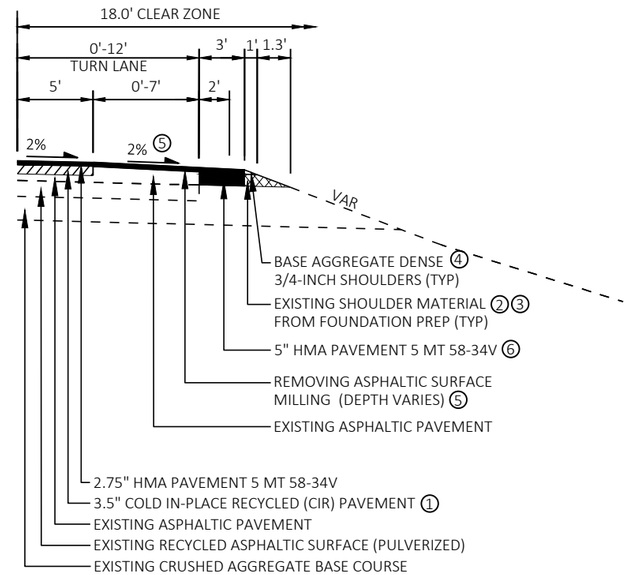


TYPICAL FINISHED SECTION

STA 162+95.00 TO STA 682+40.00
STA 683+46.00 TO STA 700+27.00

TYPICAL FINISHED SECTION - WB RIGHT TURN LANE

STA 175+86.10 TO STA 177+64.10
STA 197+07.20 TO STA 198+67.50
STA 216+27.32 TO STA 221+38.21
STA 284+24.30 TO STA 289+27.26
STA 351+63.70 TO STA 353+33.20
STA 387+95.50 TO STA 389+75.40
STA 426+78.40 TO STA 428+73.00
STA 453+64.30 TO STA 455+48.75
STA 508+23.30 TO STA 510+29.20
STA 523+08.40 TO STA 525+32.60
STA 614+95.60 TO STA 617+16.40
STA 644+47.00 TO STA 646+43.70
STA 673+90.80 TO STA 676+05.70



TYPICAL FINISHED SECTION - EB RIGHT TURN LANE

STA 213+76.63 TO STA 218+92.20
STA 256+55.50 TO STA 257+76.30
STA 347+94.20 TO STA 399+73.00
STA 413+78.30 TO STA 415+11.10
STA 426+78.40 TO STA 428+21.80
STA 450+81.10 TO STA 455+65.50
STA 508+14.90 TO STA 509+85.20
STA 534+78.60 TO STA 536+73.10
STA 608+17.30 TO STA 610+01.20
STA 614+61.75 TO STA 616+25.30
STA 644+12.80 TO STA 645+72.50

NOTES:

REFER TO SECTION A-A ON THE BEAM GUARD DETAIL SHEET FOR TYPICAL SECTIONS AT BEAM GUARD. REFER TO PLAN SHEETS FOR LOCATIONS OF BEAM GUARD.

① COLD IN-PLACE RECYCLED PAVEMENT WILL CONSIST OF MILLING 4" OF EXISTING ASPHALTIC MATERIAL AND RELAYING THE MATERIAL AT A COMPACTED DEPTH OF 3.5" AND WIDTH AS SHOWN ON THE PLAN.

② PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS. PAYMENT FOR THIS ITEM INCLUDES EXCAVATING EXISTING SHOULDER GRAVEL, SHAPING TO REQUIRED GRADE AND CROSS SLOPE AND COMPACTING AS NECESSARY ACCORDING TO THE STANDARD SPECIFICATIONS TO ACCOMMODATE THE WIDENING OF THE CIR PAVEMENT.

③ SHAPING SHOULDERS. PAYMENT FOR THIS ITEM INCLUDES BLADING, SHAPING AND COMPACTING THE EXISTING SHOULDER AGGREGATE ACCORDING TO THE STANDARD SPECIFICATION AFTER THE CIR PAVEMENT LAYER IS CONSTRUCTED.

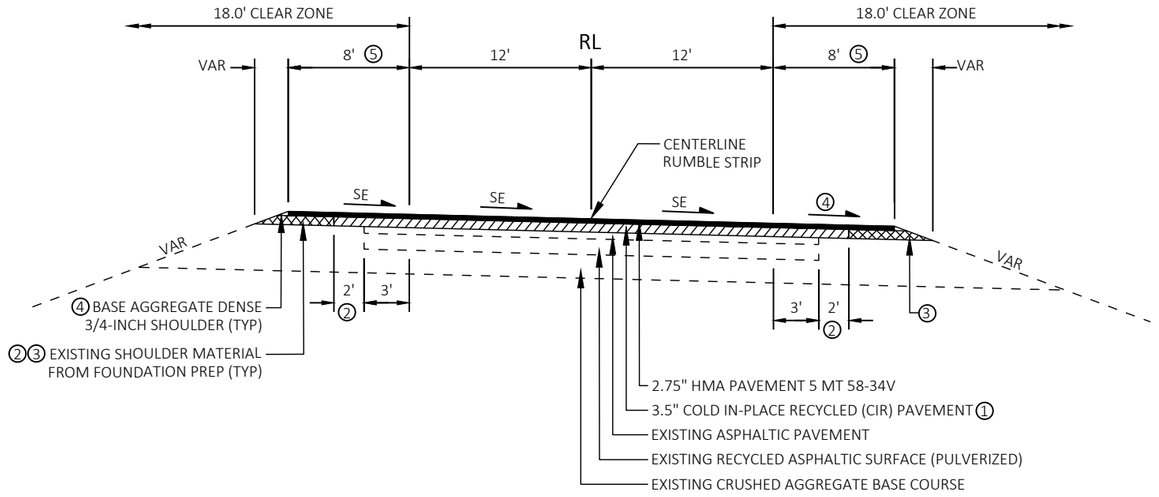
④ BASE AGGREGATE DENSE 3/4-INCH MATERIAL SHALL BE PLACED AFTER SHAPING SHOULDERS HAVE BEEN COMPLETED TO SUPPLEMENT ANY AREAS LACKING EXISTING SHOULDER GRAVEL. LOCATIONS SHALL BE DIRECTED BY ENGINEER.

⑤ VARY CROSS SLOPE FROM 2% TO 4.68% AND MILL DEPTH FROM 0.50" TO 2.75" AT INTERSECTIONS WITH CURB AND GUTTER AS SHOWN IN THE DETAILS.

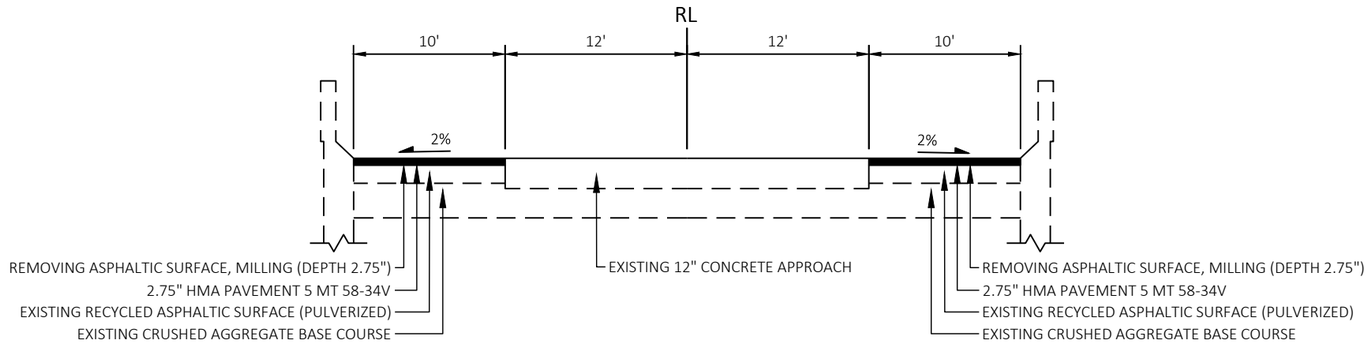
⑥ 2.25" BASE LAYER TO MATCH EXISTING ADJACENT PAVEMENT AND 2.75" OVERLAY.

⑦ THE OUTSIDE 5' OF THE PAVED SHOULDERS, EXCLUDING THE TURN LANES, ARE CONSTRUCTED UNDER ID 1520-02-70.

⑧ TAPER PAVED SHOULDERS AT A 10:1 TAPER TO MATCH EXISTING SHOULDER WIDTHS AT PROJECT BEGINNING AND END.



TYPICAL FINISHED SUPERELEVATED SECTION



TYPICAL BRIDGE APPROACH SHOULDER SECTION

STA 682+40.00 TO STA 682+58.50
STA 683+27.50 TO STA 683+46.00

NOTES:

REFER TO SECTION A-A FOR TYPICAL SECTIONS AT BEAM GUARD. REFER TO PLAN SHEETS FOR LOCATIONS OF BEAM GUARD.

① COLD IN-PLACE RECYCLED PAVEMENT WILL CONSIST OF MILLING 4" OF EXISTING ASPHALTIC MATERIAL AND RELAYING THE MATERIAL AT A COMPACTED DEPTH AND WIDTH AS SHOWN ON THE PLAN.

② PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS. PAYMENT FOR THIS ITEM INCLUDES EXCAVATING EXISTING SHOULDER GRAVEL, SHAPING TO REQUIRED GRADE AND CROSS SLOPE AND COMPACTING AS NECESSARY ACCORDING TO THE STANDARD SPECIFICATIONS TO ACCOMMODATE THE WIDENING OF THE CIR PAVEMENT.

③ SHAPING SHOULDERS. PAYMENT FOR THIS ITEM INCLUDES BLADING, SHAPING AND COMPACTING THE EXISTING SHOULDER AGGREGATE ACCORDING TO THE STANDARD SPECIFICATION AFTER THE CIR PAVEMENT LAYER IS CONSTRUCTED.

④ SHOULDER CROSS SLOPE ON INSIDE OF CURVE EQUALS 2% OR SE, WHICHEVER IS GREATER.

⑤ THE OUTSIDE 5' OF THE PAVED SHOULDERS ARE CONSTRUCTED UNDER ID 1520-02-70.

2

PAVEMENT CORE LOG

EASTBOUND			
BORING*	STATION	ASPHALT THICKNESS (INCHES)	BASE COURSE THICKNESS (INCHES)
B-1	163+05	5	9
B-2	176+25	10.5	6
B-3	189+45	9	8
B-4	202+65	6	8
B-5	215+85	5.5	6.5
B-6	229+05	5.5	6
B-7	242+25	5.5	6
B-8	255+45	6	6
B-9	268+65	12	6
B-10	281+85	11	4
B-11	295+05	12	5
B-12	308+25	12	7
B-13	321+45	12	8.5
B-14	334+65	12	7.5
B-15	347+85	12	5
B-16	361+05	9	8
B-17	374+25	10	7
B-18	387+45	10	6
B-19	400+65	10	6
B-20	413+85	5.5	8
B-21	427+05	5	8.5
B-22	440+25	5.75	9.25

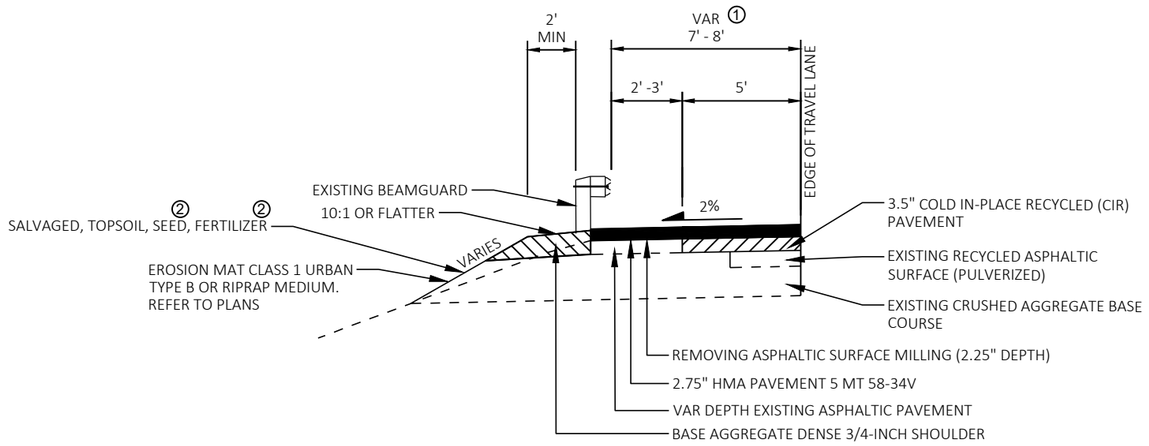
EASTBOUND			
BORING*	STATION	ASPHALT THICKNESS (INCHES)	BASE COURSE THICKNESS (INCHES)
B-23	453+45	5.5	9
B-24	466+65	5	8
B-25	479+85	5.5	7.75
B-26	493+05	5	7.5
B-27	506+25	6	7.75
B-28	519+45	4.5	7
B-29	532+65	4	8
B-30	545+85	4.5	7.75
B-31	559+05	6	7
B-32	572+25	5	8.5
B-33	585+45	5.5	8
B-34	598+65	5	7.5
B-35	611+85	5.5	8
B-36	625+05	5	9
B-37	638+25	5.5	9
B-38	651+45	5.5	9
B-39	664+65	5	8.5
B-40	677+85	6	6
B-41	691+05	4	9

*ALL BORINGS ARE LOCATED APPROXIMATELY 9 FEET FROM CENTERLINE

WESTBOUND			
BORING*	STATION	ASPHALT THICKNESS (INCHES)	BASE COURSE THICKNESS (INCHES)
B-1	163+05	6.5	8.5
B-2	176+25	12.5	12.5
B-3	189+45	9.5	7.5
B-4	202+65	5	8
B-5	215+85	4.75	7
B-6	229+05	5.5	5.5
B-7	242+25	5.25	6.75
B-8	255+45	5.75	6.25
B-9	268+65	5	8.5
B-10	281+85	4.5	8
B-11	295+05	5.5	8.5
B-12	308+25	5	8.5
B-13	321+45	5	9
B-14	334+65	4.75	9
B-15	347+85	5	9.5
B-16	361+05	5	8
B-17	374+25	5.25	7.5
B-18	387+45	5	7
B-19	400+65	4.75	7
B-20	413+85	5.5	8
B-21	427+05	5.5	8
B-22	440+25	5	8.5

WESTBOUND			
BORING*	STATION	ASPHALT THICKNESS (INCHES)	BASE COURSE THICKNESS (INCHES)
B-23	453+45	5	8
B-24	466+65	5	7.5
B-25	479+85	4.75	7.5
B-26	493+05	5.75	7
B-27	506+25	5.5	6.5
B-28	519+45	6	7
B-29	532+65	5	8.25
B-30	545+85	5.5	8.5
B-31	559+05	6	7
B-32	572+25	6	7
B-33	585+45	5	9
B-34	598+65	5.5	8
B-35	611+85	4.75	8.75
B-36	625+05	5.5	9
B-37	638+25	5.75	8
B-38	651+45	5.5	7
B-39	664+65	5.5	10
B-40	677+85	5	10
B-41	691+05	5	9

*ALL BORINGS ARE LOCATED APPROXIMATELY 9 FEET FROM CENTERLINE

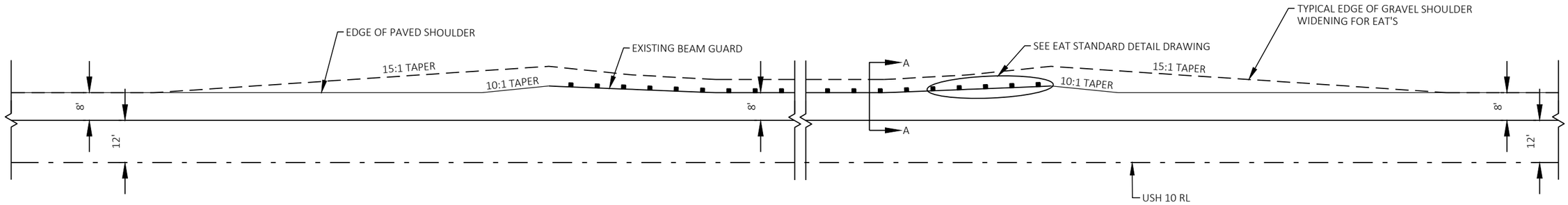


SECTION A-A

NOTES

① 8' TO FACE OF NEW RAIL ON NEW BEAM GUARD SYSTEM. 7' TO FACE OF EXISTING RAIL ON EXISTING BEAM GUARD SYSTEM.

② EXTEND SEED AND FERTILIZER APPLICATION 5' BEYOND SLOPE INTERCEPT OR AS DIRECTED BY ENGINEER.

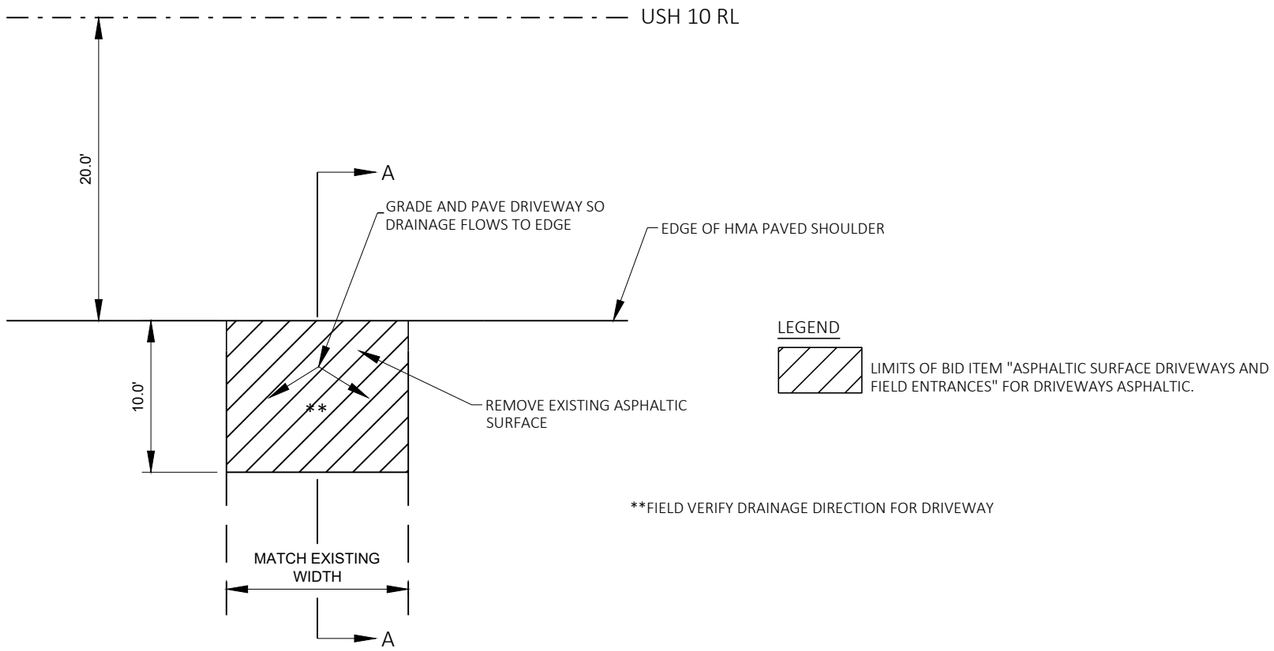


ASPHALTIC SHOULDER AT BEAM GUARD

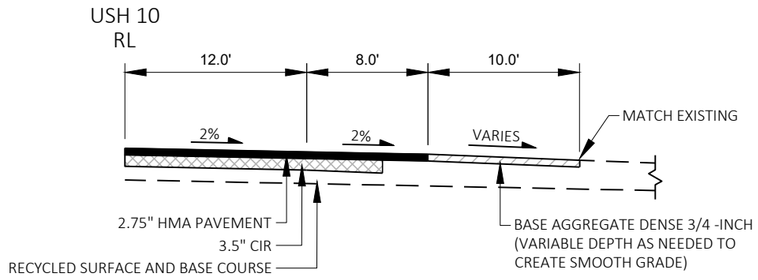
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	TYPICAL SECTIONS - BEAM GUARD	SHEET 8	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\TYPUSH10.DWG
LAYOUT NAME - 05

PLOT DATE : 4/14/2021 1:42 PM PLOT BY : DUSTIN SCHUH PLOT NAME : PLOT SCALE : 1 IN:10 FT

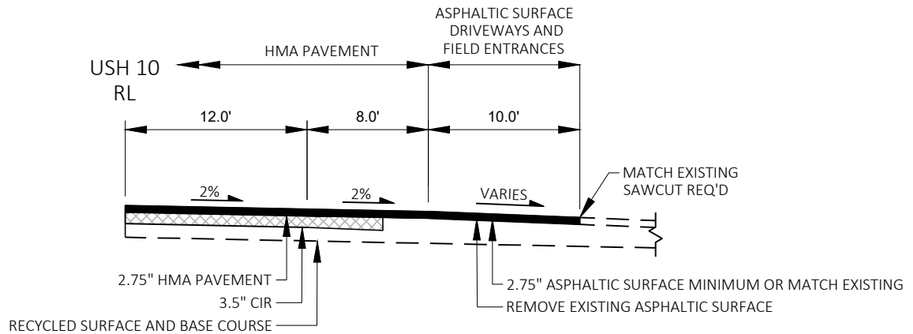


DRIVEWAY



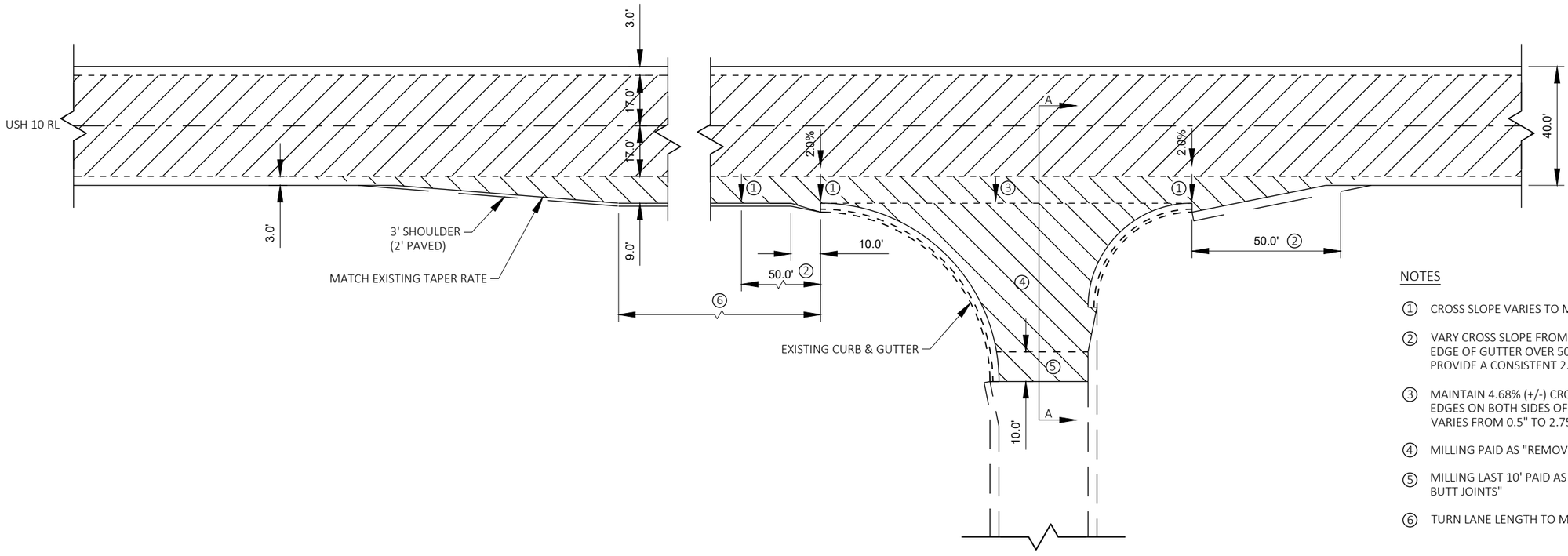
SECTIONS A-A DRIVEWAY PAVING - GRAVEL DRIVEWAY

STA 167+00	STA 316+49	STA 433+00
STA 176+80	STA 316+61	STA 467+16
STA 185+20	STA 324+00	STA 495+95
STA 190+06	STA 333+20	STA 524+00
STA 202+20	STA 338+58	STA 542+82
STA 209+78	STA 345+00	STA 557+22
STA 220+51	STA 345+20	STA 565+94
STA 224+47	STA 352+40	STA 567+96
STA 228+37	STA 358+93	STA 584+15
STA 259+42	STA 368+08	STA 586+54
STA 291+49	STA 380+59	STA 591+09
STA 301+00	STA 389+00	STA 593+20
STA 307+12	STA 402+15	STA 609+33
STA 307+23	STA 432+94	STA 633+64



SECTIONS A-A DRIVEWAY PAVING - ASPHALTIC DRIVEWAY

STA 275+42
STA 281+57
STA 328+41
STA 359+00
STA 362+73
STA 485+42
STA 486+95
STA 547+63
STA 678+61
STA 699+50

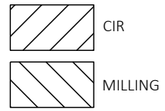


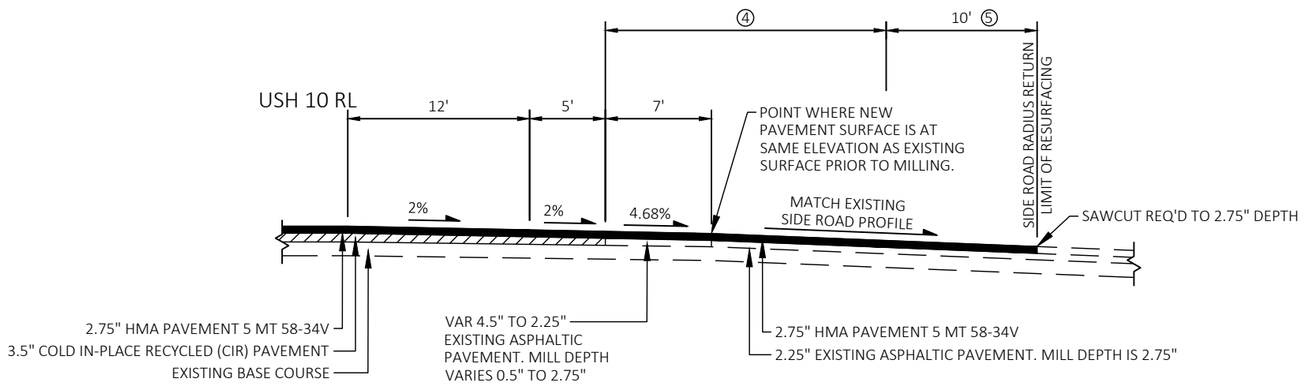
NOTES

1. CROSS SLOPE VARIES TO MATCH EXISTING EDGE OF GUTTER
2. VARY CROSS SLOPE FROM 2.0% TO 4.68% (+/-) TO MATCH EDGE OF GUTTER OVER 50'. VARY DEPTH OF MILLING TO PROVIDE A CONSISTENT 2.75" DEPTH OF HMA PAVEMENT
3. MAINTAIN 4.68% (+/-) CROSS SLOPE BETWEEN GUTTER EDGES ON BOTH SIDES OF INTERSECTION. MILLING DEPTH VARIES FROM 0.5" TO 2.75"
4. MILLING PAID AS "REMOVING ASPHALTIC SURFACE MILLING"
5. MILLING LAST 10' PAID AS "REMOVING ASPHALTIC SURFACE BUTT JOINTS"
6. TURN LANE LENGTH TO MATCH EXISTING

INTERSECTION MILLING AND PAVING
WITH CURB AND GUTTER AROUND RADII

LEGEND

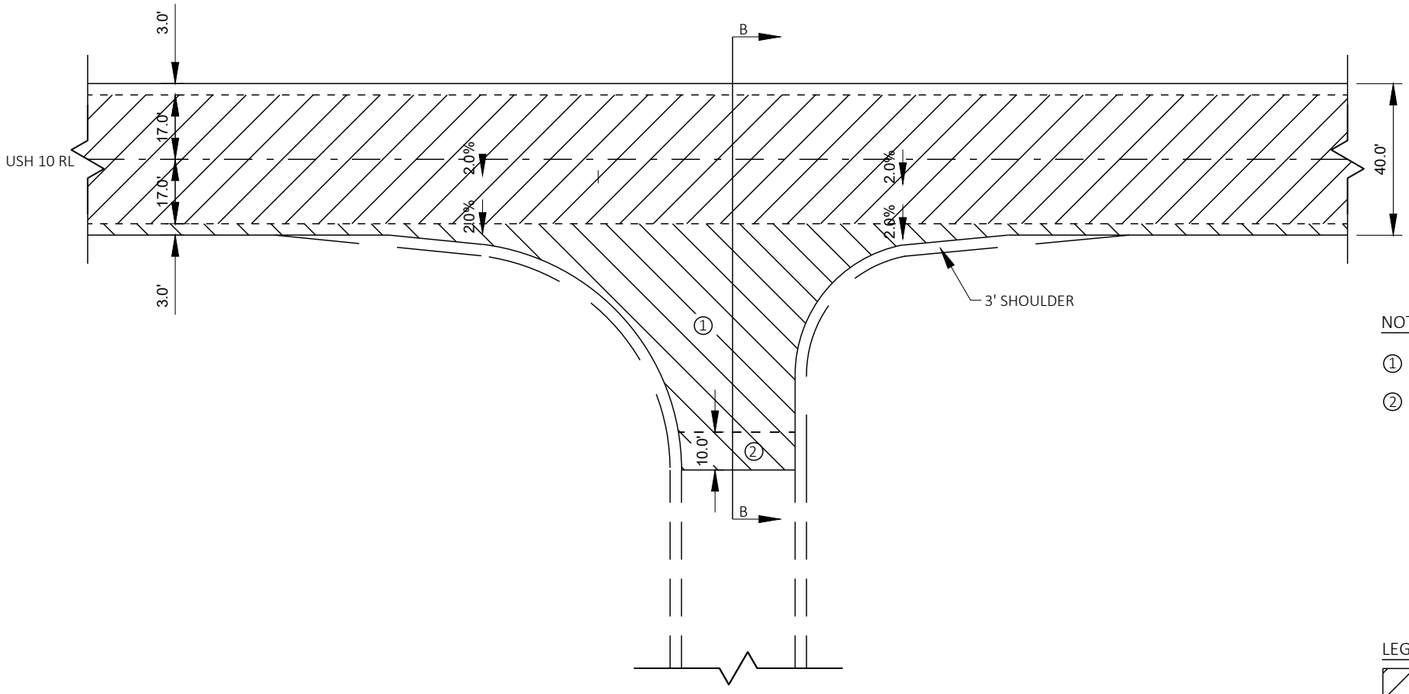




SECTION A-A

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CONSTRUCTION DETAILS	SHEET 10	E

2



INTERSECTION MILLING AND PAVING
WITH NO CURB AND GUTTER AROUND RADII

NOTES

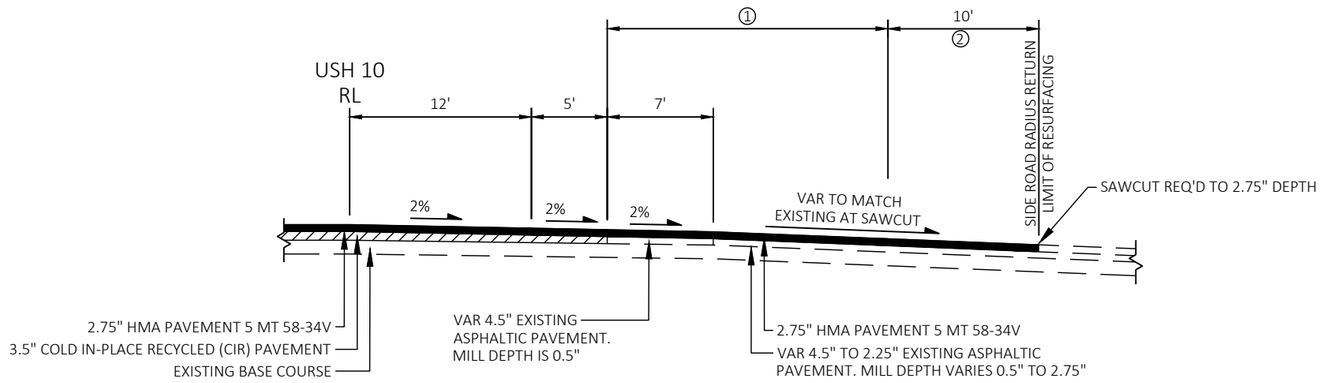
① MILLING PAID AS "REMOVING ASPHALTIC SURFACE MILLING"

② MILLING LAST 10' PAID AS "REMOVING ASPHALTIC SURFACE BUTT JOINTS"

LEGEND

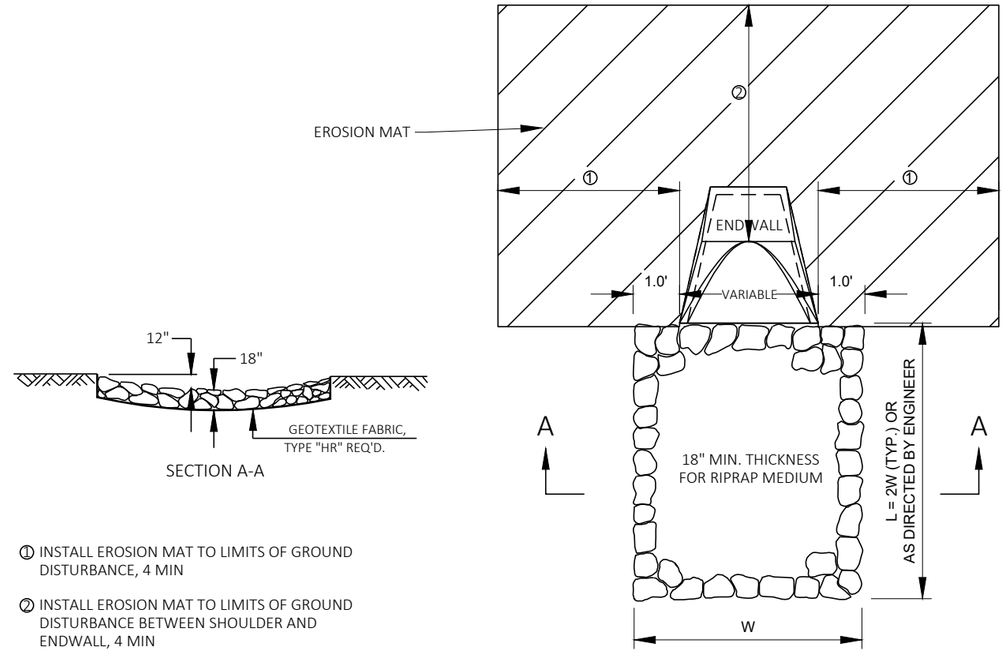
CIR

MILLING



SECTION B-B

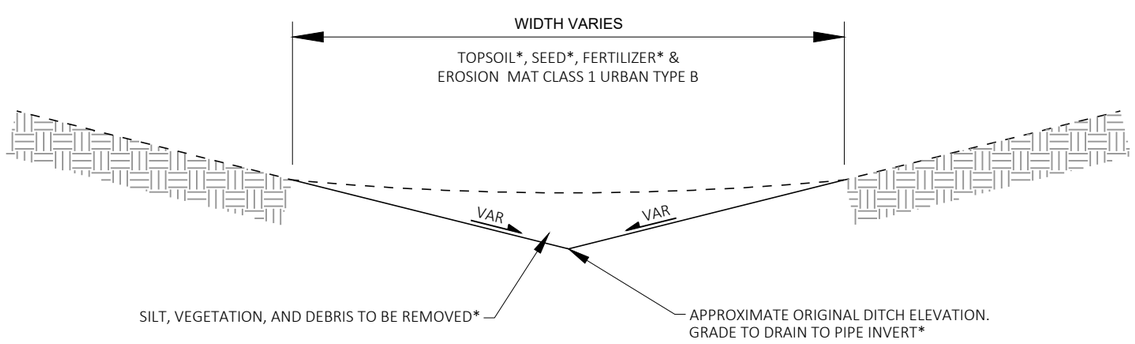
2



① INSTALL EROSION MAT TO LIMITS OF GROUND DISTURBANCE, 4 MIN

② INSTALL EROSION MAT TO LIMITS OF GROUND DISTURBANCE BETWEEN SHOULDER AND ENDWALL, 4 MIN

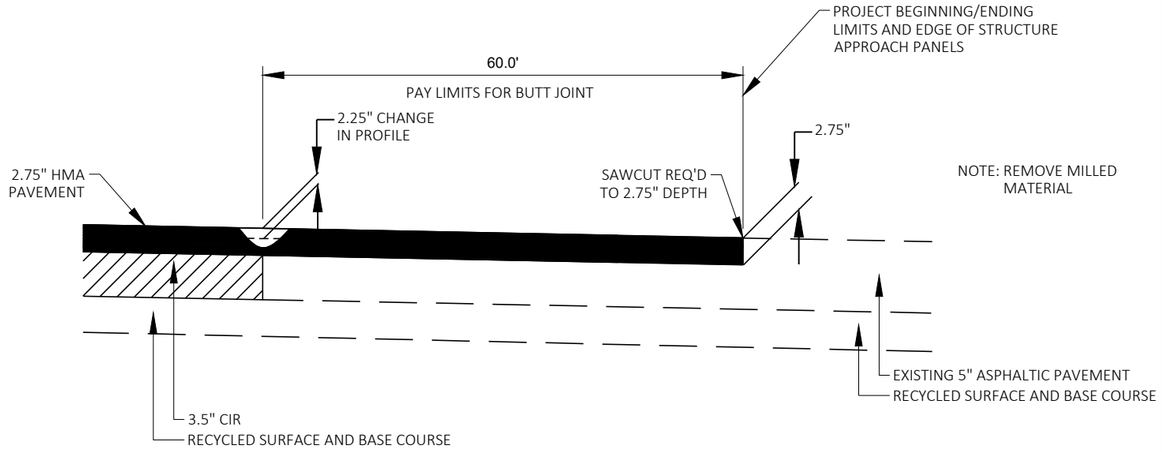
RIPRAP AND EROSION MAT TREATMENT AT CULVERT ENDWALLS



DITCH CLEANING

SEE PLAN VIEW SHEETS FOR LOCATIONS

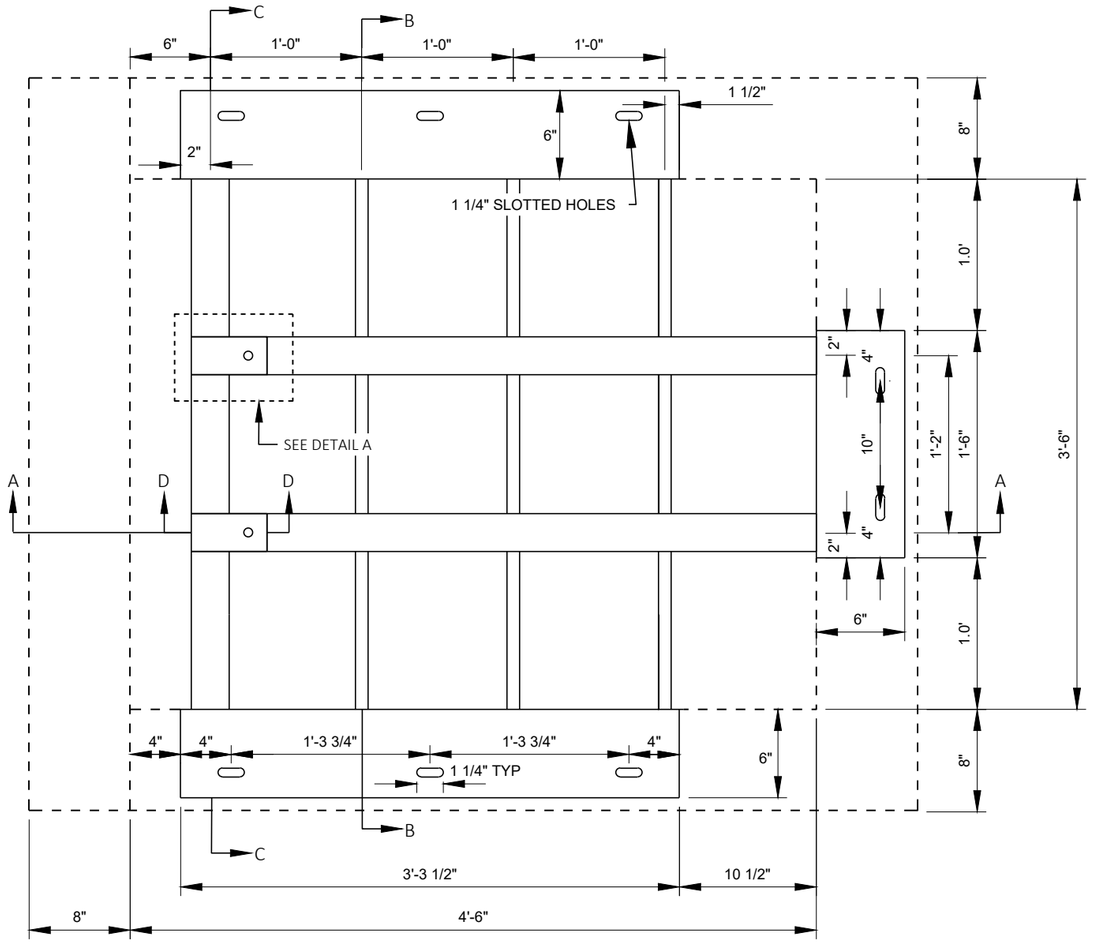
* ITEMS ARE INCIDENTAL TO DITCH CLEANING ITEM



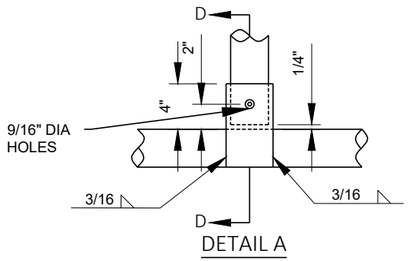
USH 10 BUTT JOINT

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CONSTRUCTION DETAILS	SHEET 12	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\DTUSH10.DWG
LAYOUT NAME - 04
PLOT DATE : 6/1/2021 4:56 PM
PLOT BY : DUSTIN SCHUH
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



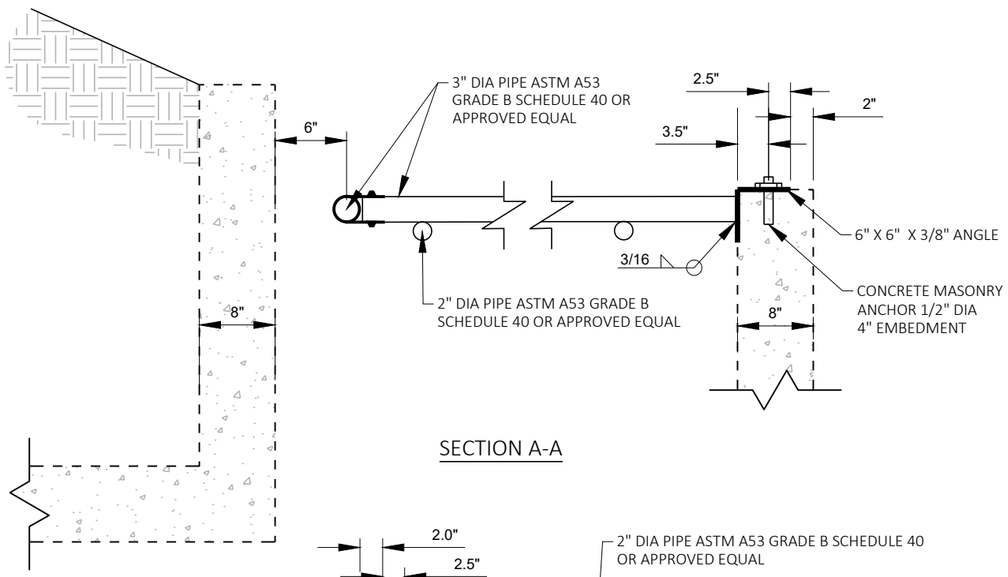
PLAN VIEW



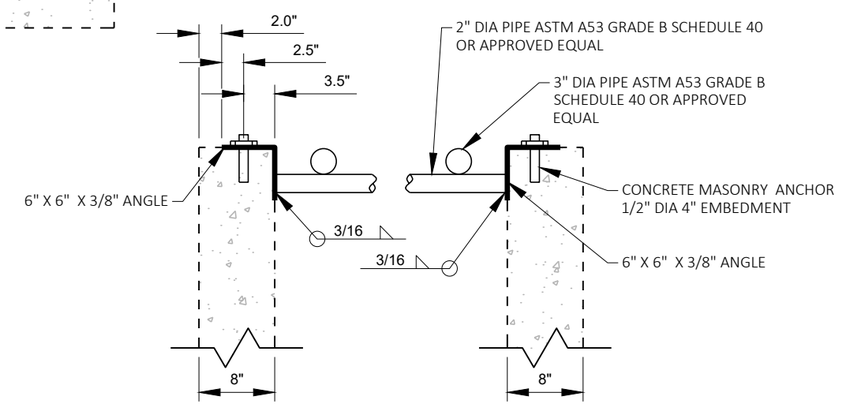
DETAIL A

NOTE:

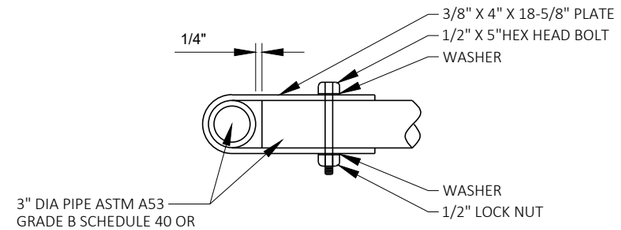
ALL STEEL AND HARDWARE SHALL BE GALVANIZED



SECTION A-A



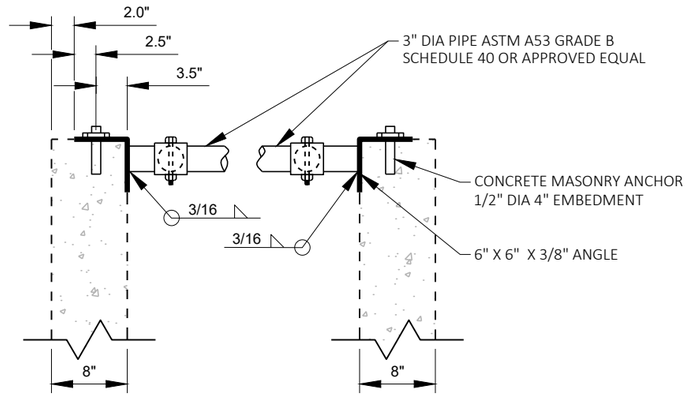
SECTION B-B



SECTION D-D

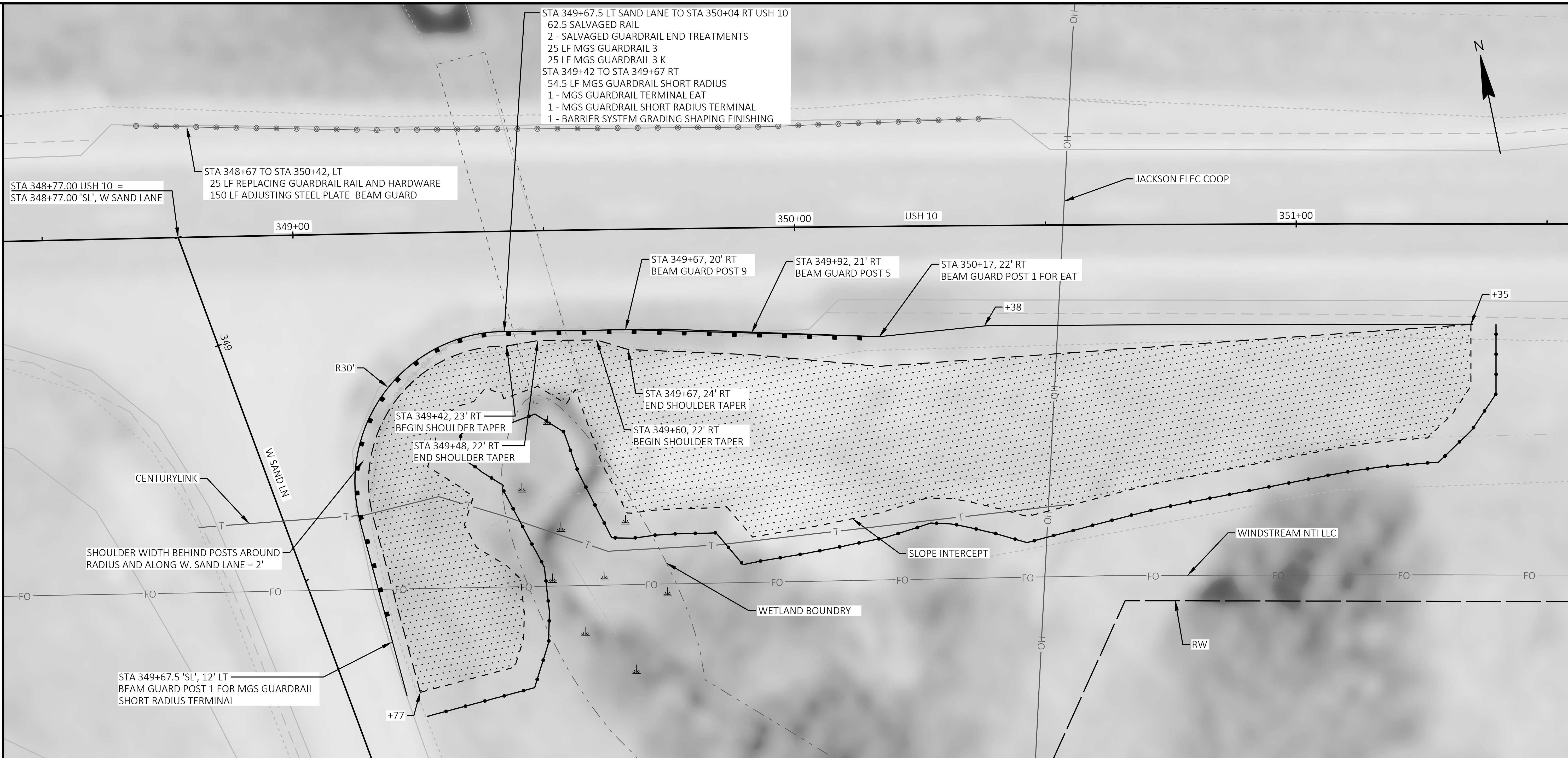
DROP INLET SAFETY GRATE

STA 581+62 LT



SECTION C-C

PROJECT NO: 1520-00-73	HWY: USH 10	COUNTY: JACKSON	CONSTRUCTION DETAILS	SHEET 13	E



LEGEND

SILT FENCE

RIPRAP MEDIUM

EROSION MAT CLASS 1 URBAN TYPE B

SLOPE INTERCEPT

NOTES

STATIONS, OFFSETS, AND RADIUS ARE TO FACE OF RAIL

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CONSTRUCTION DETAILS - GUARDRAIL	SHEET 14	E

2

JACKSON ELEC COOP

STA 578+97 TO STA 582+85, RT
362.5 LF ADJUSTING STEEL PLATE BEAM GUARD
58 - REPLACING GUARDRAIL POSTS AND BLOCKS
25 LF REPLACING GUARDRAIL RAIL AND HARDWARE
1 - BARRIER SYSTEM GRADING SHAPING FINISHING

CENTURYLINK

N

578+00 579+00 580+00 581+00 582+00 583+00 584+00

USH 10 USH 10

+93 +48 +34 +89

CENTURYLINK

SLOPE INTERCEPT

STA 580+29 TO STA 580+92, RT
131 CY RIPRAP MEDIUM

WINDSTREAM NTI LLC

WETLAND BOUNDARY

RW

JACKSON ELEC COOP

LEGEND
- SILT FENCE
- RIPRAP MEDIUM
- EROSION MAT CLASS 1 URBAN TYPE B
- SLOPE INTERCEPT

STA 601+98 TO STA 608+19, LT
300 LF SALVAGED GUARDRAIL
300 LF ADJUSTING STEEL PLATE BEAM GUARD
8 - REPLACING GUARDRAIL POSTS AND BLOCKS
25 LF REPLACING GUARDRAIL RAIL AND HARDWARE
300 LF GUARDRAIL STIFFENED LHW
STA 602+42 LT TO STA 603+42 LT
STA 604+85 LT TO STA 606+85 LT
1 - BARRIER SYSTEM GRADING SHAPING FINISHING

STA 605+77 TO STA 606+50, LT
195 CY RIPRAP MEDIUM

STA 602+54.5, 21' LT
END SHOULDER TAPER

WETLAND
BOUNDARY (TYPICAL)

STA 603+29.5, 21' LT
BEGIN SHOULDER TAPER

STA 603+42, 23' LT
END SHOULDER TAPER

STA 602+42, 23' LT
BEGIN SHOULDER TAPER

CENTURYLINK

RW

SLOPE INTERCEPT

+85 +23 +69

601+00 602+00 603+00 604+00 605+00 606+00 607+00 608+00 609+00

USH 10 USH 10

STA 605+10, 21' LT
END SHOULDER TAPER

STA 606+85, 23' LT
END SHOULDER TAPER

STA 604+85, 23' LT
BEGIN SHOULDER TAPER

STA 606+60, 21' LT
BEGIN SHOULDER TAPER

WINDSTREAM NTI LLC

STA 601+07 TO STA 607+41, RT
637.5 LF ADJUSTING STEEL PLATE BEAM GUARD
6 - REPLACING GUARDRAIL POSTS AND BLOCKS

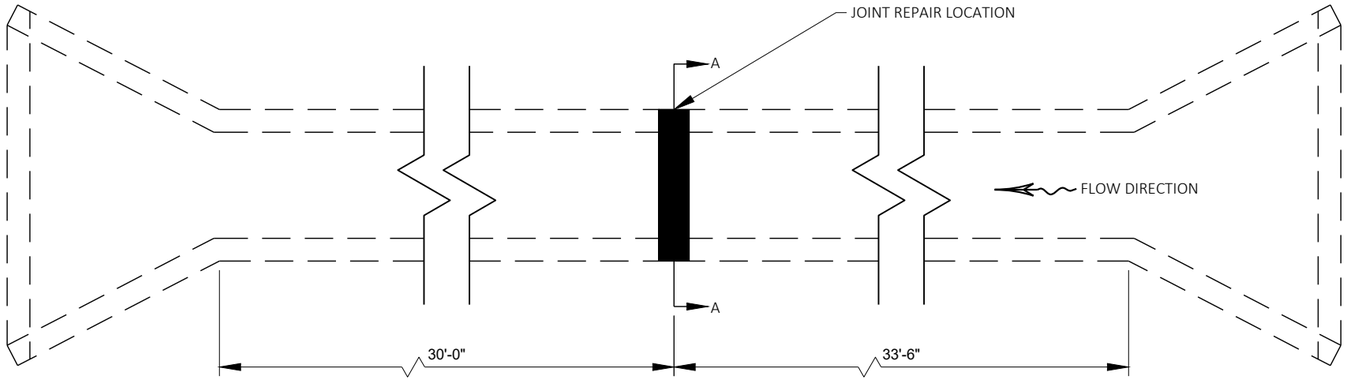
JACKSON ELEC COOP

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CONSTRUCTION DETAILS - GUARDRAIL	SHEET 15	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\DTUSH10_BEAMGUARD.DWG
LAYOUT NAME - STH10 - (2)

PLOT DATE : 4/19/2021 6:18 AM PLOT BY : DUSTIN SCHUH PLOT NAME : PLOT SCALE : ##########

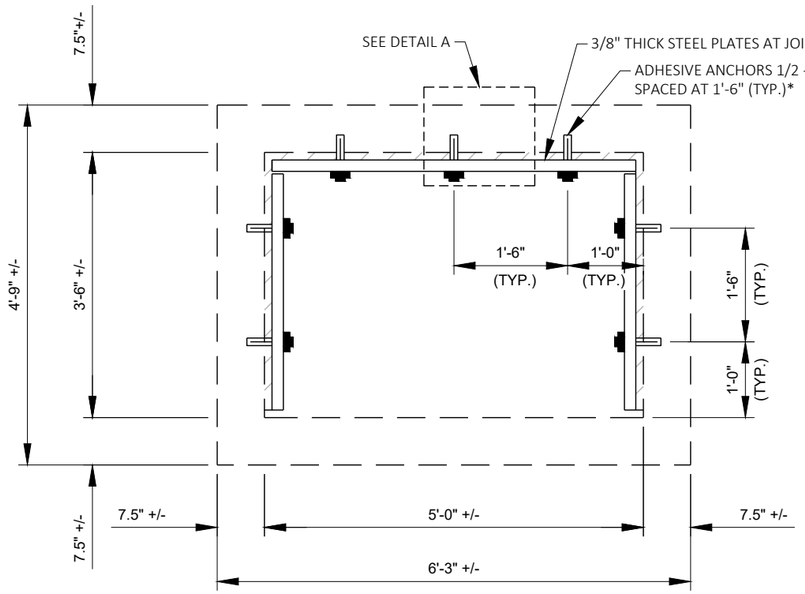
WISDOT/CADDS SHEET 42



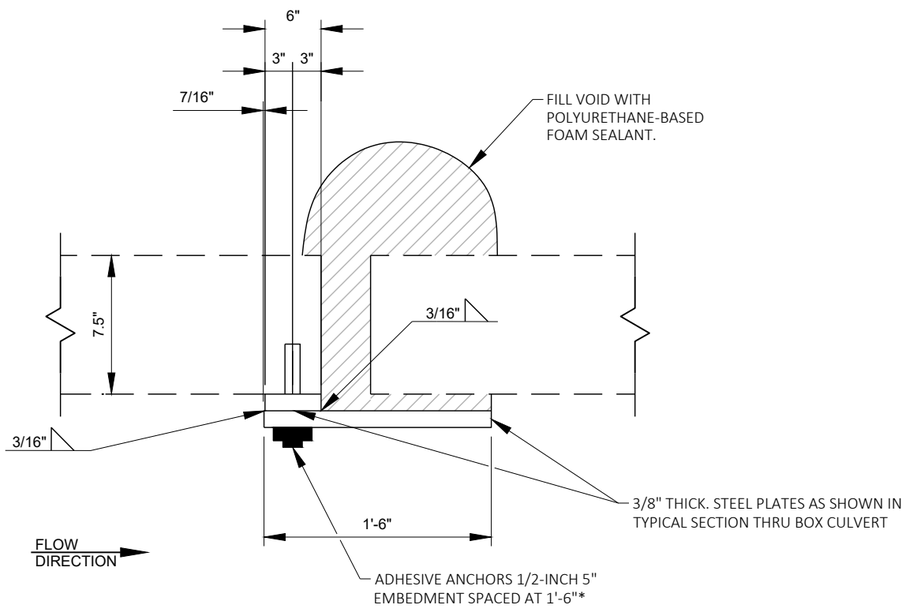
PLAN VIEW

NOTES

REPAIR TO BE PAID AS BOX CULVERT JOINT REPAIR C-27-0303



SECTION A-A



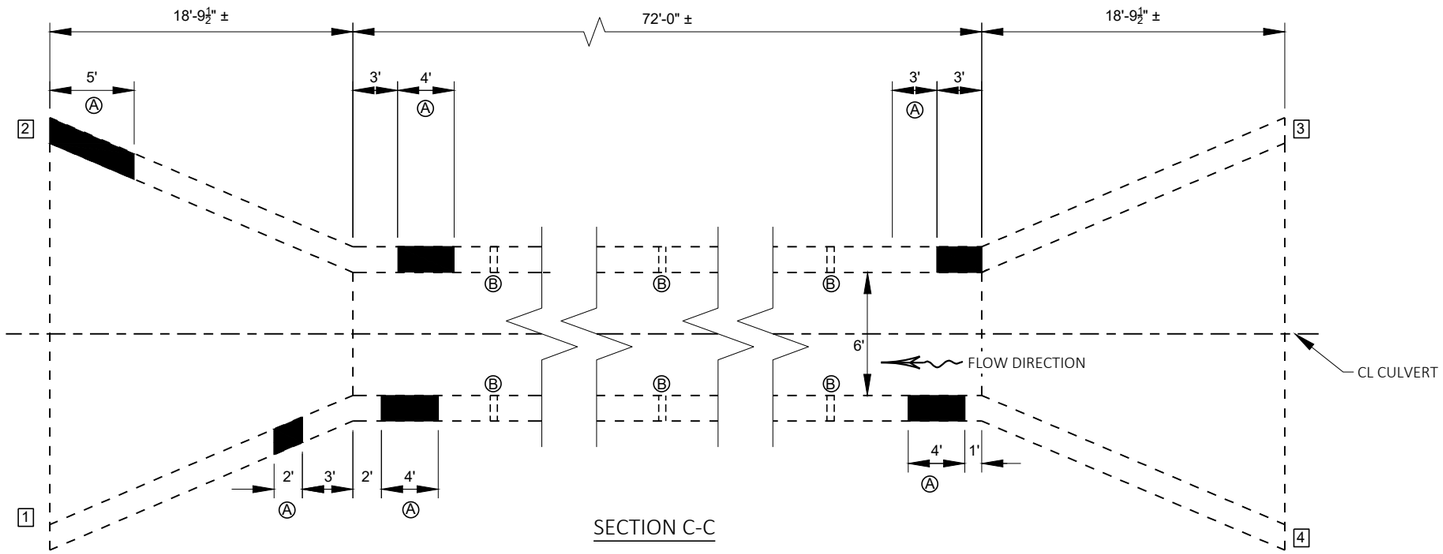
DETAIL A

*MECHANICAL ANCHORS WILL BE ALLOWED TO BE SUBSTITUTED FOR OVERHEAD INSTALLATION.

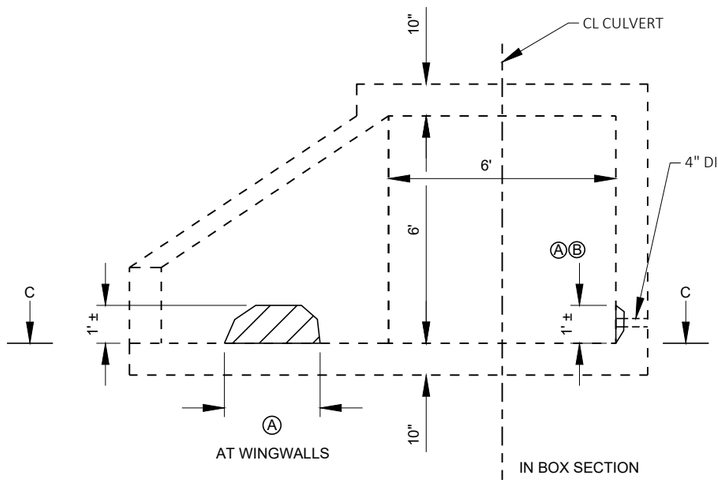
BOX CULVERT JOINT REPAIR C-27-0303

STA 625+18

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CONSTRUCTION DETAILS	SHEET 16	E

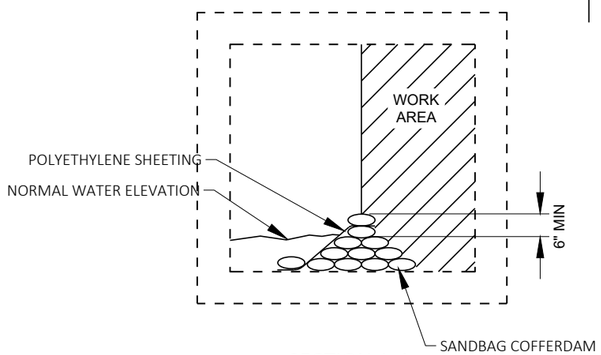


SECTION C-C



SECTION THRU CULVERT

(SHOWING REPAIR AREAS)



SECTION A-A

SHOWING FLOW DIVERSION

NOTES

TAKE CARE TO PREVENT SAWCUT SLURRY AND OTHER CONCRETE PARTICULATES FROM ENTERING THE WATERWAY.

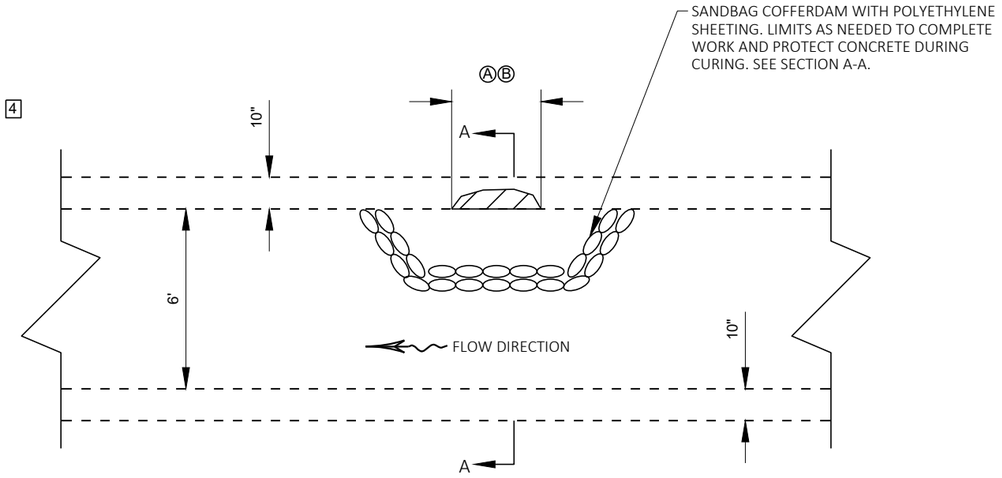
PLACING CONCRETE UNDERWATER IS NOT ALLOWED.

C-27-0012 IS A NO PLAN STRUCTURE. DIMENSIONS SHOWN ARE BASED ON FIELD MEASUREMENTS.

ALL ITEMS PERTAINING TO STREAM DIVERSION AND PROTECTION OF THE WORK AREA SHALL BE INCIDENTAL TO BID ITEM "MAINTAINING DRAINAGE DURING CONSTRUCTION". SEE SPECIAL PROVISIONS.

Ⓐ CONCRETE SURFACE REPAIR LIMITS. LOCATION AND LIMITS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

Ⓑ CONCRETE SURFACE REPAIR UNDER 4" DIAMETER WEEP HOLES. 16 LOCATIONS IN TOTAL, REPAIR AREA = 1' X 1' EA.



PARTIAL PLAN

SHOWING FLOW DIVERSION

BOX CULVERT C-27-0012 CONCRETE SURFACE REPAIR

STA 504+16

2

LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- DIRECTION OF LOCAL AND CONSTRUCTION EQUIPMENT TRAFFIC
- COMPLETED CIR AREA
- CURRENT CIR WORK AREA
- TYPE III BARRICADE WITH ATTACHED SIGN

NOTES

CLOSE THE SHOULDERS AND INSTALL TRAFFIC CONTROL CONES, BARRICADES, AND SIGNS AS SHOWN TO PROTECT THE SHOULDER'S CIR PAVEMENT FROM VEHICLE AND CONSTRUCTION EQUIPMENT TRAFFIC DURING WORK OPERATIONS.

THE TRAFFIC CONTROL CONES, BARRICADES, AND SIGNS SHALL BE IN PLACE AND SHOULDERS CLOSED DURING THE CIR OPERATIONS AND SHALL REMAIN IN PLACE ON BOTH SHOULDERS UNTIL AFTER THE FINAL HMA SURFACE IS PLACED ON THE SHOULDERS.

DURING THE CIR AND HMA PAVING OPERATIONS, USE FLAGGERS TO GUIDE THE LOCAL TRAFFIC AROUND THE MOVING OPERATIONS IN ACCORDANCE WITH SDD 15C12 "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION". TWO FLAGGERS SHALL BE USED AT EACH MOVING OPERATION.

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

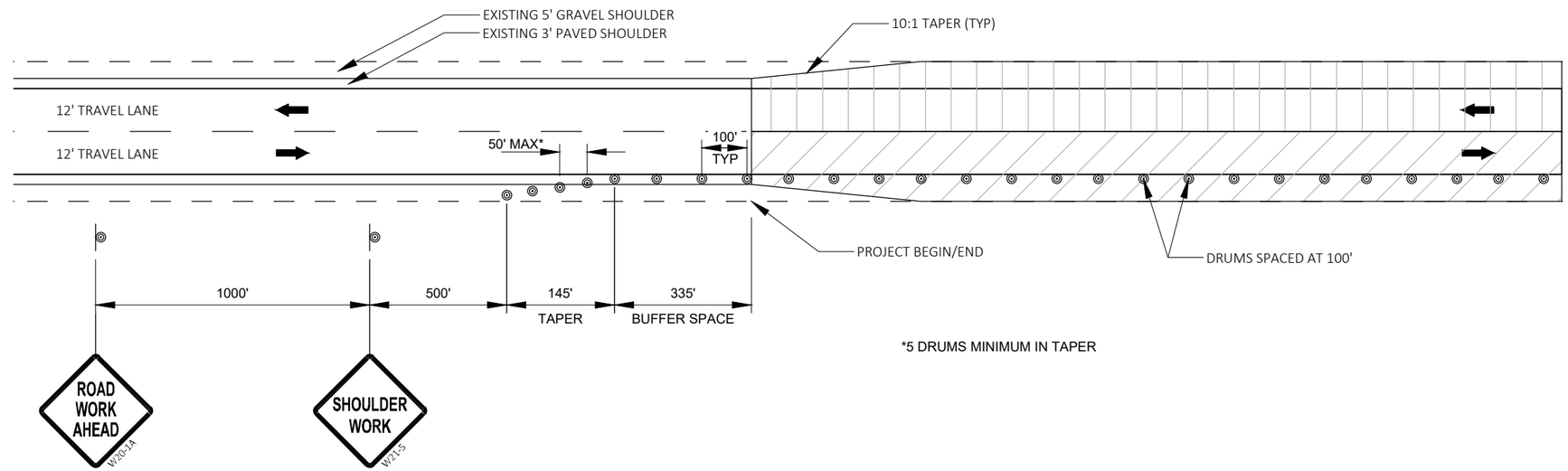
ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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

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

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



*5 DRUMS MINIMUM IN TAPER

TRAFFIC CONTROL, SHOULDER CLOSURE WHILE PAVING CIR AND HMA

SIGN SIZES FOR USE ON I94 | SIGN SIZES FOR USE ON ALL OTHER HIGHWAYS & RAMPS

① M4-8 36" X 18" DETOUR / M3-2 36" X 18" EAST / M1-4 36" X 36" 10
Ⓖ M06-1 30" X 30"
Ⓗ M06-2 30" X 30"
Ⓘ M05-2R 30" X 30"

② M3-2 36" X 18" EAST / M1-4 36" X 36" 10
Ⓕ DETOUR AHEAD W20-2A

③ M4-8 36" X 18" DETOUR / M3-4 36" X 18" WEST / M1-4 36" X 36" 10
Ⓗ M06-2 30" X 30"
Ⓘ M05-2R 30" X 30"

④ M4-8 24" X 12" DETOUR / M3-2 24" X 12" EAST / M1-4 24" X 24" 10
Ⓐ M05-1R 21" X 21"
Ⓑ M05-1L 21" X 21"
Ⓒ M06-1 21" X 21"
Ⓓ M06-1 21" X 21"
Ⓔ M06-1 21" X 21"

⑤ M4-8A 24" X 18" END DETOUR / M3-2 24" X 12" EAST / M1-4 24" X 24" 10

⑥ M3-2 24" X 12" EAST / M1-4 24" X 24" 10
Ⓕ DETOUR AHEAD W20-2A

⑦ M4-8 24" X 12" DETOUR / M3-4 24" X 12" WEST / M1-4 24" X 24" 10
Ⓐ M05-1R 21" X 21"
Ⓑ M05-1L 21" X 21"
Ⓒ M06-1 21" X 21"
Ⓓ M06-1 21" X 21"
Ⓔ M06-1 21" X 21"

⑧ M4-8A 24" X 18" END DETOUR / M3-4 24" X 12" WEST / M1-4 24" X 24" 10

⑨ M3-4 24" X 12" WEST / M1-4 24" X 24" 10
Ⓕ DETOUR AHEAD W20-2A

LEGEND:

- ⊛ PLACE SIGN ASSEMBLIES ON BOTH THE RIGHT AND MEDIAN SHOULDERS.
- WORK ZONE
- DETOUR ROUTE
- COVER EXISTING SIGN
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- TYPE III BARRICADE WITH/WITHOUT ATTACHED SIGN
- EXISTING SIGN ON ONE/TWO WOOD OR STEEL POST(S)
- TRAFFIC CONTROL DETOUR SIGN ON ONE/TWO WOOD OR STEEL POST(S)

NOTES:

DRAWING IS NOT TO SCALE.

THE TRAFFIC CONTROL AND DETOUR ROUTE SHOWN ON THIS SHEET SHALL BE IN PLACE WHEN USH 10 IS CLOSED TO TRAFFIC.

ALL TRAFFIC CONTROL SIGNS AND DEVICES AND THEIR LOCATIONS SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD), THE PLANS, STANDARD SPECIFICATIONS AND APPLICABLE STANDARD DETAIL DRAWINGS .

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

ALL W20 SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

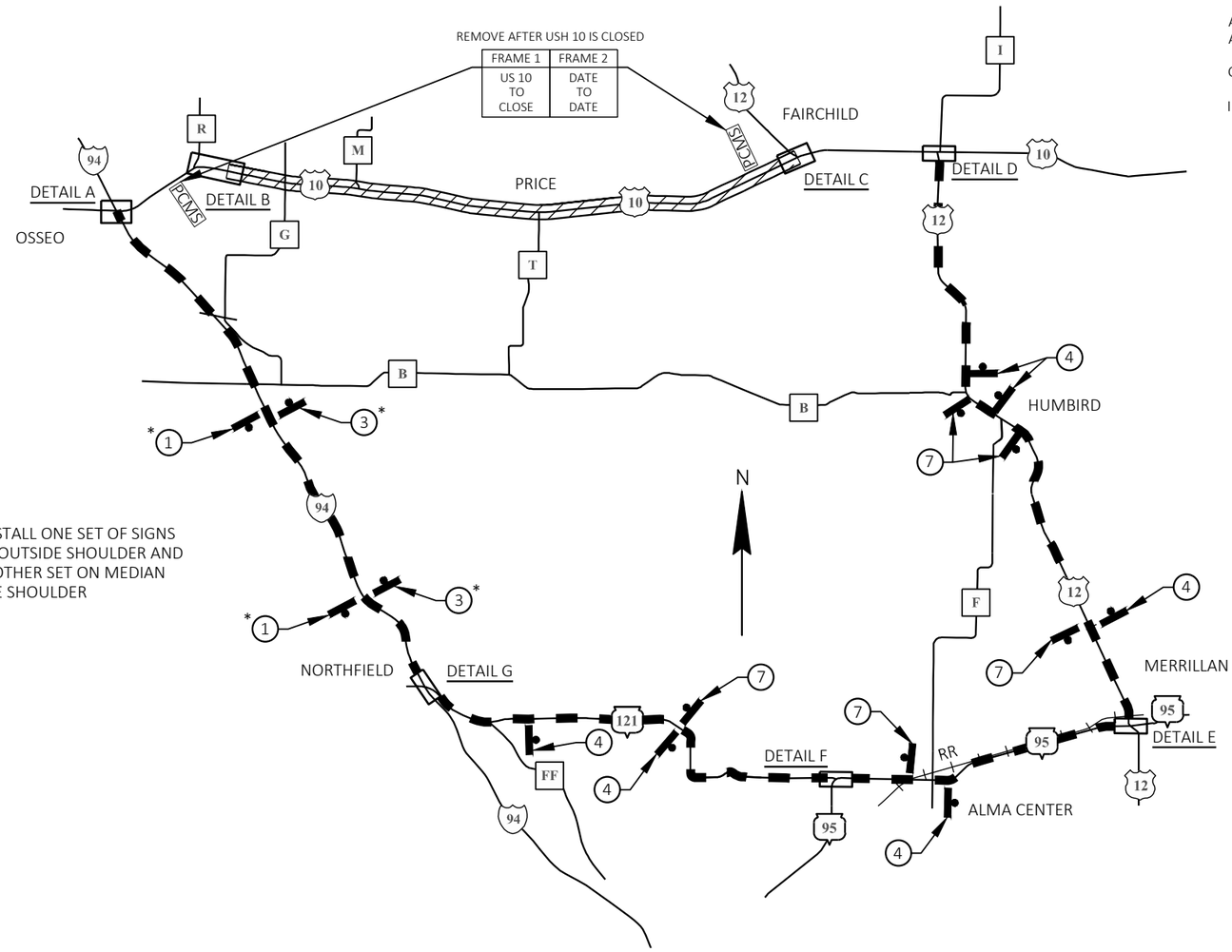
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACK GROUND IS ORANGE.

ALL SIGNS INAPPROPRIATE TO THE WORK ZONE, INCLUDING PRE-EXISTING SIGNS, SHALL BE COVERED, REMOVED, OR ALTERED AS SPECIFIED IN THE PLANS AND/OR SPECIALS PROVISIONS OR AS DIRECTED BY THE ENGINEER.

ALL SIDEROADS WITHIN PROJECT LIMITS SHALL BE BARRICADED AND SIGNED IN ACCORDANCE WITH DETAIL 4 OF THE SDD15C3.

COVER DIRECTIONAL ARROWS ON DESTINATION SIGNS IN PLANS PER SIGN PLATE A4-12.

INSTALL PCMS'S WHERE NOTED ON PLANS ONE WEEK PRIOR TO HIGHWAY CLOSURE.



DETAIL A

2

2

N

(WEST) 10 10 (EAST)

AUGUSTA 10 EAU CLAIRE 94

EXIT 88 10 OSSEO FAIRCHILD 1 MILE NEXT EXIT 10 MILES

EXIT 88 10 OSSEO FAIRCHILD 1 MILE

ROAD OPEN TO CTY R
R10-61
60"X30"

ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY
R11-3
60"X30"

PLACE ON RAISED CENTER MEDIAN

FAIRCHILD
D1-1
72"X15"

8

WEST 10 ALTERNATE 94 EAU CLAIRE

EXIT 88 10 OSSEO EAU CLAIRE 1 MILE

EXIT 88 10 OSSEO EAU CLAIRE 1 MILE NEXT EXIT 4 MILES

3H

3I

94 (NORTH)

94 (SOUTH)

2F

1G

1G

1

WEST 10 EAST 10 COUNTY R

OSSEO AUGUSTA FAIRCHILD

A4-12
9.5"X9.5"

EAST 10 WEST 10

M4-8
24" X 12"
DETOUR
ALT 94 EAU CLAIRE

M06-1
21"X21"

AUGUSTA FAIRCHILD OSSEO

A4-12
9.5"X9.5"

DETOUR
M4-9R
30"X24"

ROAD OPEN TO CTY R
R10-61
60"X30"

ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY
R11-3
60"X30"

PLACE ON RAISED CENTER MEDIAN

4C

A4-12
9.5"X9.5"

FAIRCHILD EAU CLAIRE MADISON

DETOUR
M4-8
24" X 12"
WEST 94 AUGUSTA EAST 10 EAST 94 AUGUSTA

M05-1R
21" X 21"

OSSEO

(WEST) 10 10 (EAST)

DETOUR AHEAD
W20-2A

LEGEND:

- PLACE SIGN ASSEMBLIES ON BOTH THE RIGHT AND MEDIAN SHOULDERS.
- WORK ZONE
- DETOUR ROUTE
- COVER EXISTING SIGN
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- TYPE III BARRICADE WITH/WITHOUT ATTACHED SIGN
- EXISTING SIGN ON ONE/TWO WOOD OR STEEL POST(S)
- TRAFFIC CONTROL DETOUR SIGN ON ONE/TWO WOOD OR STEEL POST(S)

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	TRAFFIC CONTROL & DETOUR ROUTE SIGNING	SHEET 20	E

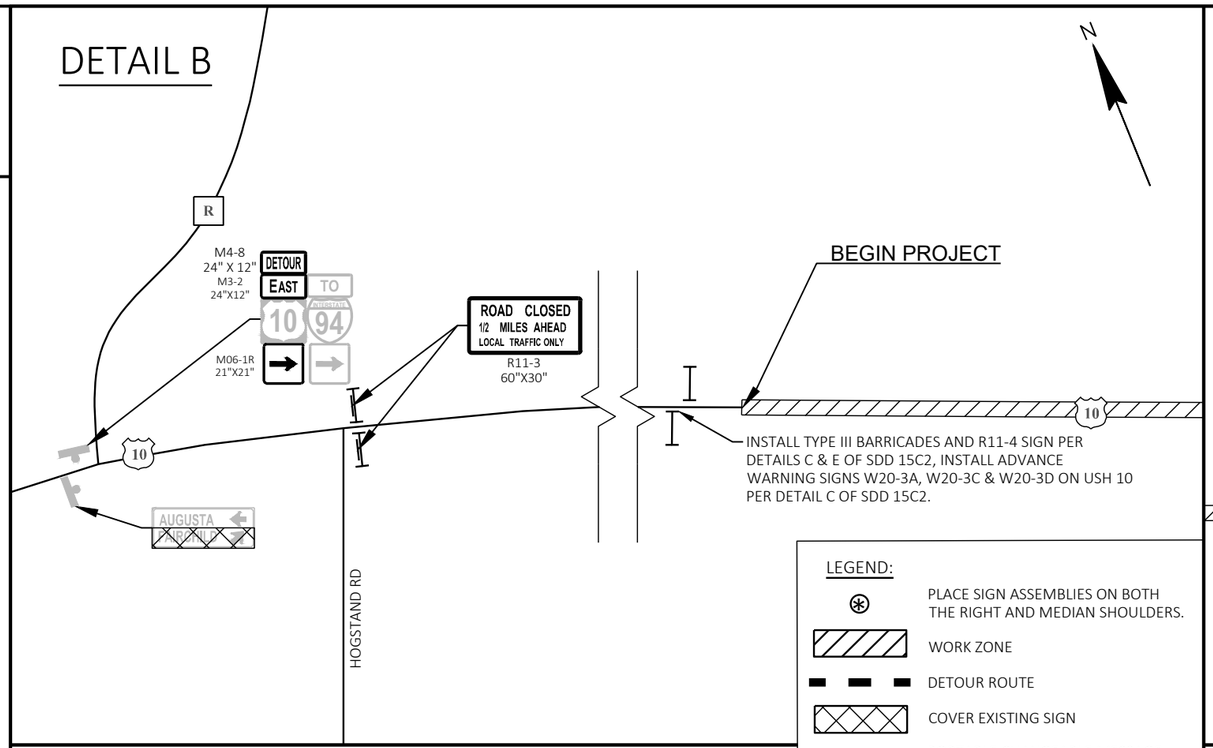
FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSOTHER\DETOUR MAP.DWG
LAYOUT NAME - USH10 - (2)

PLOT DATE : 4/21/2021 6:14 AM PLOT BY : DUSTIN SCHUH PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 44

2

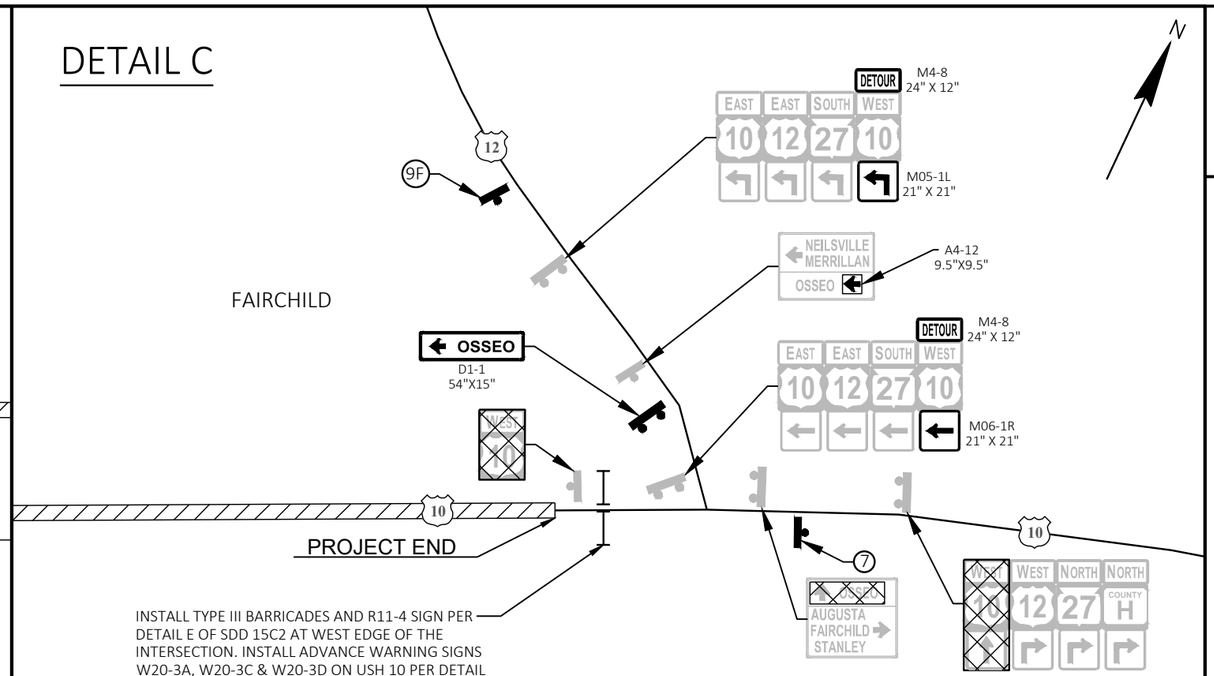
DETAIL B



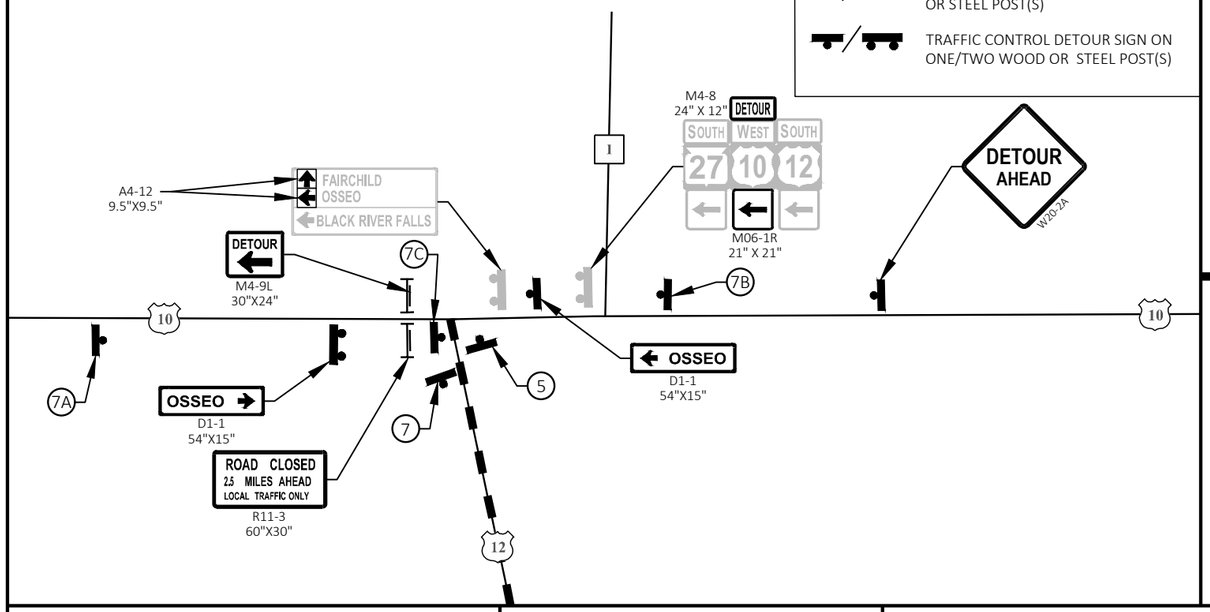
LEGEND:

- ⊛ PLACE SIGN ASSEMBLIES ON BOTH THE RIGHT AND MEDIAN SHOULDERS.
- WORK ZONE
- DETOUR ROUTE
- COVER EXISTING SIGN
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- TYPE III BARRICADE WITH/WITHOUT ATTACHED SIGN
- EXISTING SIGN ON ONE/TWO WOOD OR STEEL POST(S)
- TRAFFIC CONTROL DETOUR SIGN ON ONE/TWO WOOD OR STEEL POST(S)

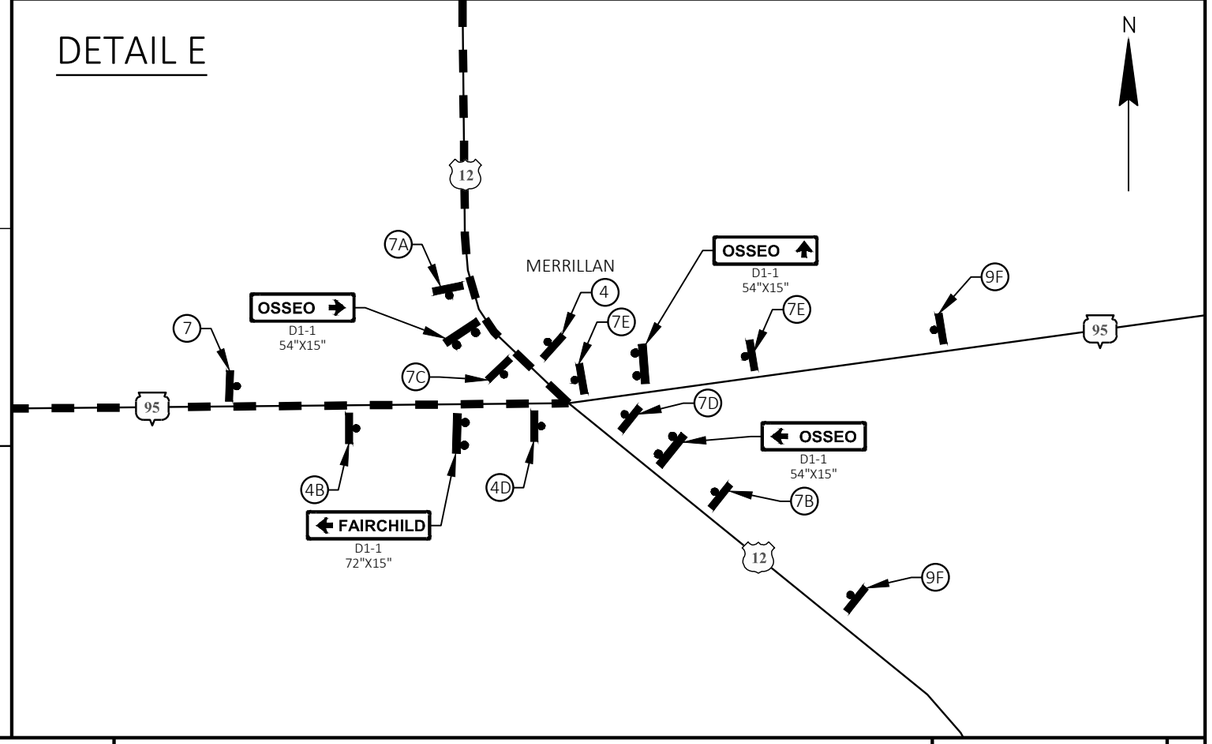
DETAIL C



DETAIL D



DETAIL E

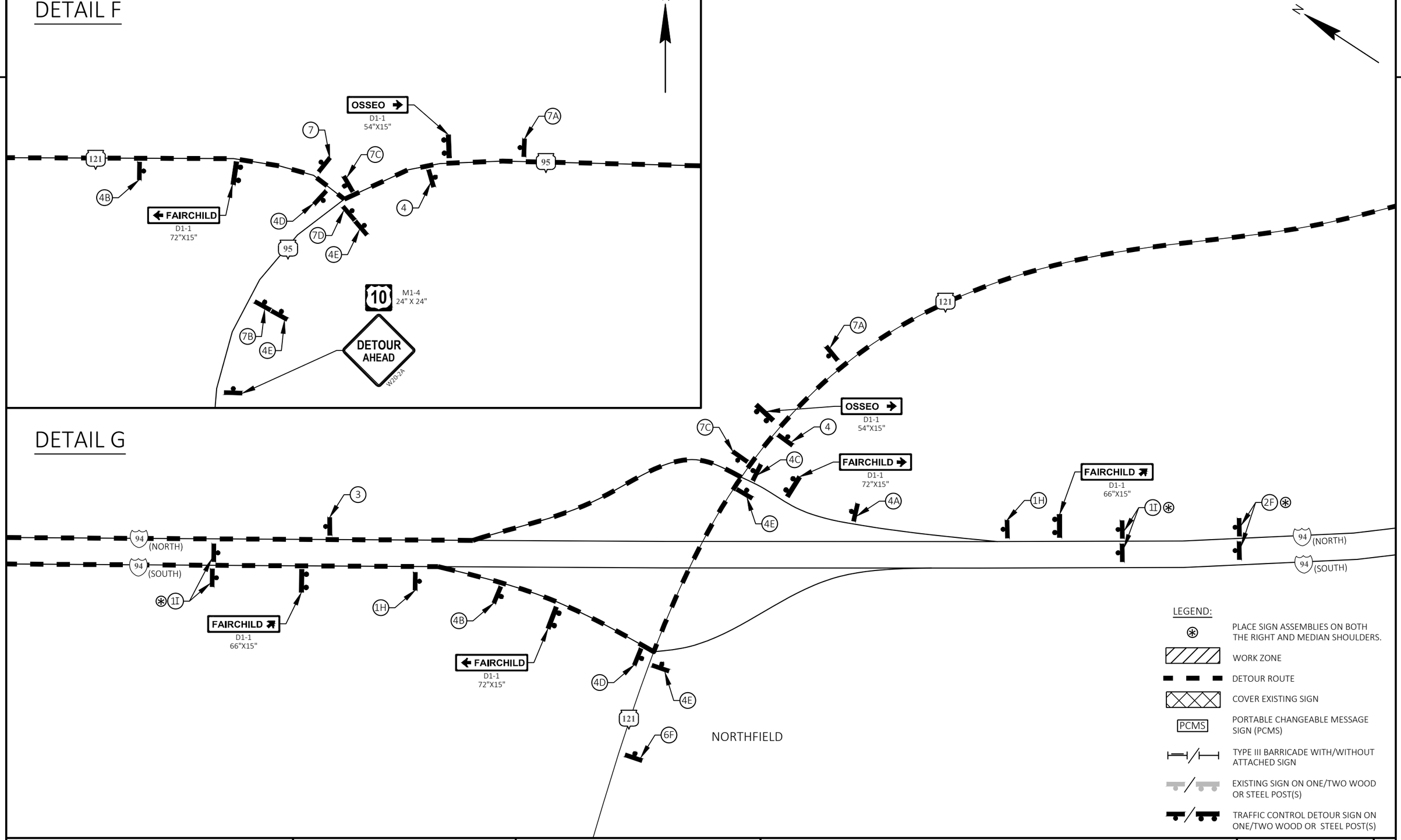


PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	TRAFFIC CONTROL & DETOUR ROUTE SIGNING	SHEET 21	E

2

DETAIL F

DETAIL G



PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	TRAFFIC CONTROL & DETOUR ROUTE SIGNING	SHEET 22	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSOTHER\DETOUR MAP.DWG
LAYOUT NAME - USH10 - (4)

PLOT DATE : 4/21/2021 6:15 AM PLOT BY : DUSTIN SCHUH PLOT NAME : PLOT SCALE : ##########

					1520-00-73	1520-02-70
Line	**Item**	**Item Description**	**Unit**	**Total**	**Qty**	**Qty**
0002	201.0120	Clearing	ID	96.000	96.000	
0004	201.0220	Grubbing	ID	96.000	96.000	
0006	203.0100	Removing Small Pipe Culverts	EACH	21.000	21.000	
0008	204.0110	Removing Asphaltic Surface	SY	630.000	630.000	
0010	204.0115	Removing Asphaltic Surface Butt Joints	SY	1,660.000	1,660.000	
0012	204.0120	Removing Asphaltic Surface Milling	SY	7,130.000	7,130.000	
0014	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	1,076.000	1,076.000	
0016	211.0700.S	Prepare Foundation for CIR Base Layer (project) 01. 1520-00-73	EACH	1.000	1.000	
0018	211.0700.S	Prepare Foundation for CIR Base Layer (project) 02. 1520-02-70	EACH	1.000		1.000
0020	211.0800.S	Base Repair for CIR Layer	CY	1,000.000	1,000.000	
0022	213.0100	Finishing Roadway (project) 01. 1520-00-73	EACH	1.000	1.000	
0024	213.0100	Finishing Roadway (project) 02. 1520-02-70	EACH	1.000		1.000
0026	305.0110	Base Aggregate Dense 3/4-Inch	TON	2,370.000	2,370.000	
0028	305.0500	Shaping Shoulders	STA	1,076.000	1,076.000	
0030	327.1000.S	CIR Asphaltic Base Layer	SY	202,595.000	202,595.000	
0032	455.0605	Tack Coat	GAL	32,010.000	26,160.000	5,850.000
0034	455.0770.S	Asphalt Stabilizing Agent	TON	1,195.000	1,195.000	
0036	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000	
0038	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	2.000	2.000	
0040	460.2005	Incentive Density PWL HMA Pavement	DOL	22,030.000	22,030.000	
0042	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	42,930.000	42,930.000	
0044	460.2010	Incentive Air Voids HMA Pavement	DOL	37,990.000	28,810.000	9,180.000
0046	460.6645	HMA Pavement 5 MT 58-34 V	TON	37,990.000	28,810.000	9,180.000
0048	465.0110	Asphaltic Surface Patching	TON	500.000	500.000	
0050	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	103.000	103.000	
0052	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	47,227.000	47,227.000	
0054	504.0900	Concrete Masonry Endwalls	CY	15.000	15.000	
0056	509.1500	Concrete Surface Repair	SF	45.000	45.000	
0058	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	18.000	18.000	
0060	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	13.000	13.000	
0062	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	12.000	12.000	
0064	520.1042	Apron Endwalls for Culvert Pipe 42-Inch	EACH	4.000	4.000	
0066	520.8000	Concrete Collars for Pipe	EACH	50.000	50.000	
0068	520.8700	Cleaning Culvert Pipes	EACH	42.000	42.000	
0070	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	36.000	36.000	
0072	522.0130	Culvert Pipe Reinforced Concrete Class III 30-Inch	LF	8.000	8.000	
0074	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	4.000	4.000	
0076	524.0124	Culvert Pipe Salvaged 24-Inch	LF	34.000	34.000	
0078	524.0130	Culvert Pipe Salvaged 30-Inch	LF	78.000	78.000	
0080	524.0136	Culvert Pipe Salvaged 36-Inch	LF	134.000	134.000	
0082	524.0142	Culvert Pipe Salvaged 42-Inch	LF	12.000	12.000	
0084	524.0160	Culvert Pipe Salvaged 60-Inch	LF	24.000	24.000	
0086	524.0660	Apron Endwalls for Culvert Pipe Salvaged 60-Inch	EACH	4.000	4.000	
0088	606.0200	Riprap Medium	CY	438.000	438.000	
0090	614.0010	Barrier System Grading Shaping Finishing	EACH	3.000	3.000	
0092	614.0400	Adjusting Steel Plate Beam Guard	LF	4,058.000	4,058.000	
0094	614.0515	Guardrail Stifened LHW	LF	300.000	300.000	
0096	614.0920	Salvaged Rail	LF	413.000	413.000	
0098	614.0925	Salvaged Guardrail End Treatments	EACH	2.000	2.000	
0100	614.0950	Replacing Guardrail Posts and Blocks	EACH	539.000	539.000	
0102	614.0951	Replacing Guardrail Rail and Hardware	LF	625.000	625.000	
0104	614.2300	MGS Guardrail 3	LF	25.000	25.000	
0106	614.2330	MGS Guardrail 3 K	LF	25.000	25.000	
0108	614.2350	MGS Guardrail Short Radius	LF	55.000	55.000	

Line	Item	Item Description	Unit	Total	1520-00-73 Qty	1520-02-70 Qty
0110	614.2610	MGS Guardrail Terminal EAT	EACH	1.000	1.000	
0112	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000	1.000	
0114	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1520-00-73	EACH	1.000	1.000	
0116	618.0100	Maintenance And Repair of Haul Roads (project) 02. 1520-02-70	EACH	1.000		1.000
0118	619.1000	Mobilization	EACH	1.000	0.850	0.150
0120	624.0100	Water	MGAL	48.000	48.000	
0122	625.0500	Salvaged Topsoil	SY	3,690.000	3,690.000	
0124	628.1504	Silt Fence	LF	10,700.000	10,700.000	
0126	628.1520	Silt Fence Maintenance	LF	10,700.000	10,700.000	
0128	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000	
0130	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000	
0132	628.2008	Erosion Mat Urban Class I Type B	SY	10,400.000	10,400.000	
0134	628.7555	Culvert Pipe Checks	EACH	240.000	240.000	
0136	629.0210	Fertilizer Type B	CWT	3.000	3.000	
0138	630.0120	Seeding Mixture No. 20	LB	120.000	120.000	
0140	630.0500	Seed Water	MGAL	90.000	90.000	
0142	633.5200	Markers Culvert End	EACH	90.000	90.000	
0144	642.5001	Field Office Type B	EACH	1.000	0.850	0.150
0146	643.0300	Traffic Control Drums	DAY	15,538.000	15,538.000	
0148	643.0420	Traffic Control Barricades Type III	DAY	5,712.000	5,712.000	
0150	643.0705	Traffic Control Warning Lights Type A	DAY	11,184.000	11,184.000	
0152	643.0900	Traffic Control Signs	DAY	14,778.000	14,778.000	
0154	643.0910	Traffic Control Covering Signs Type I	EACH	4.000	4.000	
0156	643.0920	Traffic Control Covering Signs Type II	EACH	11.000	11.000	
0158	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000	
0160	643.5000	Traffic Control	EACH	1.000	0.850	0.150
0162	645.0120	Geotextile Type HR	SY	840.000	840.000	
0164	646.1020	Marking Line Epoxy 4-Inch	LF	21,440.000	21,440.000	
0166	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	104,126.000	104,126.000	
0168	646.3020	Marking Line Epoxy 8-Inch	LF	770.000	770.000	
0170	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	21,440.000	21,440.000	
0172	649.0105	Temporary Marking Line Paint 4-Inch	LF	4,301.000	4,301.000	
0174	650.6000	Construction Staking Pipe Culverts	EACH	28.000	28.000	
0176	650.8000	Construction Staking Resurfacing Reference	LF	53,732.000	53,732.000	
0178	650.9910	Construction Staking Supplemental Control (project) 01. 1520-00-73	LS	1.000	1.000	
0180	650.9910	Construction Staking Supplemental Control (project) 02. 1520-02-70	LS	1.000		1.000
0182	690.0150	Sawing Asphalt	LF	1,045.000	1,045.000	
0184	740.0440	Incentive IRI Ride	DOL	40,650.000	40,650.000	
0186	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,500.000	1,500.000	
0188	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	990.000	990.000	
0190	SPV.0060	Special 01. Drop Inlet Safety Grate	EACH	1.000	1.000	
0192	SPV.0090	Special 01. Ditch Cleaning	LF	315.000	315.000	
0194	SPV.0105	Special 01. Prepare Foundation For HMA Layer 1520-00-73	LS	1.000	1.000	
0196	SPV.0105	Special 02. Prepare Foundation for HMA Layer 1520-02-70	LS	1.000		1.000
0198	SPV.0105	Special 03. Maintaining Drainage During Construction C-27-0012	LS	1.000	1.000	
0200	SPV.0105	Special 04. Box Culvert Joint Repair C-27-0303	LS	1.000	1.000	

3

CLEARING AND GRUBBING ITEMS

STATION	LOCATION	201.0120 CLEARING ID	201.0220 GRUBBING ID	REMARKS
574+68	RT	48	48	48 ID RT
690+89	LT & RT	48	48	16 ID LT & 32 ID RT
ITEM TOTAL		96	96	

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH	REMARKS
183+44	LT & RT	2	6 LF EACH PIPE LT & RT
206+65	LT & RT	2	8 LF EACH PIPE LT & RT
239+73	LT & RT	2	10 LF LT & 6 LF RT
258+86	LT	1	8 LF LT
329+81	LT & RT	2	6 LF LT & RT
363+01	LT	1	6 LF LT
369+04	LT	1	6 LF LT
387+01	LT & RT	2	12 LF LT & 4 LF RT
421+41	LT & RT	2	6 LF LT & 4 LF RT
454+00	LT	1	6 LF LT
535+84	LT	1	12 LF LT
553+17	LT	1	6 LF LT
574+26	LT & RT	2	6 LF LT & RT
585+48	RT	1	6 LF RT
627+95	LT	1	6 LF LT
643+56	LT & RT	2	6 LF LT & RT
648+05	LT & RT	2	6 LF LT & RT
660+67	RT	1	4 LF RT
674+82	RT	1	6 LF RT
ITEM TOTAL		21	

REMOVING ASPHALTIC SURFACE

STATION	LOCATION	204.0110 SY	204.0115 BUTT JOINTS SY	204.0120 MILLING SY	REMARKS
162+95	-	-	267	-	BEGIN PROJECT
176+61	LT	66			DRIVEWAY
197+68	LT	75	-	-	DRIVEWAY
217+55	LT	-	28	684	CTH G
217+60	RT	-	28	600	CTH G
257+21	RT	-	22	118	OLD 17
275+45	RT	28	-	-	DRIVEWAY
282+61	RT	21	-	-	DRIVEWAY
285+81	LT	-	32	735	CTH M
328+44	RT	34	-	-	DRIVEWAY
348+77	RT	-	28	289	W SAND LN
352+26	LT	-	25	162	MOE RD
359+02	RT	39	-	-	DRIVEWAY
362+69	RT	43	-	-	DRIVEWAY
388+75	LT		24	187	MOE RD
414+53	RT	-	20	111	SHAKY LN
427+62	RT	-	21	92	HANSON RD
427+62	LT	-	28	277	SPEEBER RD
454+56	LT		34	196	PRICE RD
454+56	RT	-	40	663	CTH T
485+44	RT	43	-	-	DRIVEWAY
486+90	RT	52	-	-	DRIVEWAY
509+14	LT	-	25	472	BLOOM RD
509+14	RT	-	20	207	BLOOM RD
524+23	LT	-	26	429	MC GROWER RD
535+85	RT	-	32	260	HILL RD
547+56	LT	51	-	-	DRIVEWAY
609+01	RT	-	27	302	DRIVEWAY
615+53	LT	-	26	382	ARNDT RD
615+53	RT	-	23	208	ARNDT RD
645+24	LT	-	29	20	TOWN HALL RD
645+24	RT		25	275	TOWN HALL RD
674+74	LT	-	29	369	TOWN LINE RD W
678+65	LT	102	-	-	DRIVEWAY
699+52	LT	86	-	-	DRIVEWAY
682+40			267	47	BRIDGE APPROACH
683+46	-	-	267	47	BRIDGE APPROACH
700+27	-	-	267	-	END PROJECT
ITEM TOTAL		630	1,660	7,130	

BASE AGGREGATE DENSE 3/4-INCH

STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	624.0100 WATER MGAL
162+95	-	215+00	LT & RT	168	3.4
215+00	-	268+00	LT & RT	213	4.3
268+00	-	320+00	LT & RT	199	4.0
320+00	-	373+00	LT & RT	232	4.6
373+00	-	426+00	LT & RT	194	3.9
426+00	-	479+00	LT & RT	239	4.8
479+00	-	532+00	LT & RT	172	3.4
532+00	-	585+00	LT & RT	231	4.6
585+00	-	637+00	LT & RT	240	5.0
637+00	-	682+40	LT & RT	217	4.5
682+40	-	683+46	LT & RT	-	
683+46	-	700+27	LT & RT	49	1.0
UNDISTRIBUTED QUANTITY				215	4.5
ITEM TOTAL				2370*	48.0

*GRAVEL DRIVEWAYS ARE INCLUDED IN THE TOTALS.

SHOULDER FOUNDATION PREPARATION ITEMS

STATION	TO	STATION	LOCATION	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	305.0500 SHAPING SHOULDERS STA
162+95		215+00	LT & RT	106	106
215+00	-	268+00	LT & RT	106	106
268+00	-	320+00	LT & RT	104	104
320+00	-	373+00	LT & RT	106	106
373+00	-	426+00	LT & RT	106	106
426+00	-	479+00	LT & RT	106	106
479+00	-	532+00	LT & RT	106	106
532+00	-	585+00	LT & RT	106	106
585+00		637+00	LT & RT	104	104
637+00	-	682+40	LT & RT	92	92
683+46	-	700+27	LT & RT	34	34
ITEM TOTAL				1,076	1,076

MISCELLANEOUS PROJECT ITEMS

STATION	TO	STATION	213.0100.01 FINISHING ROADWAY (1520-00-73) EACH	213.0100.02 FINISHING ROADWAY (1520-02-70) EACH	618.0100.01 MAINTENANCE AND REPAIR OF HAUL ROADS (1520-00-73) EACH	618.0100.02 MAINTENANCE AND REPAIR OF HAUL ROADS (1520-02-70) EACH
PROJECT 1520-00-73						
162+95	-	700+27	1	-	1	-
PROJECT 1520-00-73 SUBTOTAL			1	-	1	-
PROJECT 1520-02-70						
162+95	-	700+27	-	1	-	1
PROJECT 1520-02-70 SUBTOTAL			-	1	-	1
ITEM TOTAL			1	1	1	1

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR PROJECT ID 1520-00-73 UNLESS OTHERWISE NOTED

ASPHALTIC ITEMS

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	460.6645 HMA PAVEMENT 5 MT 58-34 V TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	REMARKS
PROJECT 1520-00-73							
162+95	-	215+00	-	2430	2672	-	-
215+00	-	268+00	-	2475	2732	-	-
268+00		320+00		2430	2675		
320+00	-	373+00	-	2475	2721	-	-
373+00	-	426+00	-	2475	2721	-	-
426+00	-	479+00	-	2475	2727	-	-
479+00	-	532+00	-	2475	2721	-	-
532+00	-	585+00	-	2475	2721	-	-
585+00	-	637+00	-	2430	2670	-	-
637+00	-	682+40	-	2120	2331	-	-
682+40	-	683+46	-	14	15	-	BRIDGE
683+46		700+27		785	863		
176+61	-	-	LT	-	-	11	DRIVEWAY
197+68	-	-	LT	-	-	12	DRIVEWAY
217+55	-	-	LT	100	113	-	SIDEROAD
217+60	-	-	RT	88	100	-	SIDEROAD
257+21	-	-	RT	20	22	-	SIDEROAD
275+45	-	-	RT	-	-	3	DRIVEWAY
282+61	-	-	RT	-	-	4	DRIVEWAY
285+81	-	-	LT	108	121	-	SIDEROAD
328+44			RT			6	DRIVEWAY
348+77	-	-	RT	45	50	-	SIDEROAD
352+26	-	-	LT	27	30	-	SIDEROAD
359+02	-	-	RT	-	-	7	DRIVEWAY
362+69	-	-	RT	-	-	7	DRIVEWAY
388+75	-	-	LT	30	34	-	SIDEROAD
414+53	-	-	RT	19	21	-	SIDEROAD
427+62	-	-	RT	16	18	-	SIDEROAD
427+62	-	-	LT	43	49	-	SIDEROAD
454+56			LT	33	37		SIDEROAD
454+56	-	-	RT	99	111	-	SIDEROAD
485+44	-	-	RT	-	-	7	DRIVEWAY
486+90	-	-	RT	-	-	8	DRIVEWAY
509+14			LT	70	79		SIDEROAD
509+14	-	-	RT	32	36	-	SIDEROAD
524+23	-	-	LT	64	72	-	SIDEROAD
535+85	-	-	RT	41	47	-	SIDEROAD
547+56	-	-	LT	-	-	8	DRIVEWAY
609+01			RT	46	52		SIDEROAD
615+53	-	-	LT	57	65	-	SIDEROAD
615+53	-	-	RT	33	37	-	SIDEROAD
645+24	-	-	LT	32	36	-	SIDEROAD
645+24			RT	42	48		SIDEROAD
674+74	-	-	LT	56	63	-	SIDEROAD
678+65	-	-	LT	-	-	16	DRIVEWAY
699+52	-	-	LT	-	-	14	DRIVEWAY
PROJECT 1520-00-73 SUBTOTAL				26,260	28,810	103	
PROJECT 1520-02-70							
162+95	-	215+00	-	567	891	-	-
215+00	-	268+00	-	578	907	-	-
268+00	-	320+00	-	567	891	-	-
320+00		373+00		578	907		
373+00	-	426+00	-	578	907	-	-
426+00	-	479+00	-	578	907	-	-
479+00	-	532+00	-	578	907	-	-
532+00	-	585+00	-	578	907	-	-
585+00	-	637+00	-	567	890	-	-
637+00	-	682+40	-	496	778	-	-
683+46	-	700+27	-	185	288	-	-
PROJECT 1520-02-70 SUBTOTAL				5,850	9,180	0	
ITEM TOTAL				32,010	37,990	103	

PWL MIXTURE USE TABLE

THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT:

LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEMS	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR: MIXTURE ACCEPTANCE	QUALITY MANAGEMENT PROGRAM TO BE USED FOR: DENSITY ACCEPTANCE
24' DRIVING LANES	162+95 TO 700+27	LOWER LAYER	CIR PAVEMENT	5 MT 58 34 V	12,020	1 ½"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
24' DRIVING LANES	162+95 TO 700+27	UPPER LAYER	5 MT 58-34 V	5 MT 58-34 V	10,010	1 ¼"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
INSIDE 5' SHOULDERS	162+95 TO 700+27	LOWER LAYER	CIR PAVEMENT	5 MT 58-34 V	5,011	1 ½"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
INSIDE 5' SHOULDERS	162+95 TO 700+27	UPPER LAYER	5 MT 58-34 V	5 MT 58-34 V	4,171	1 ¼"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
OUTSIDE 3' SHOULDERS	162+95 TO 700+27	LOWER LAYER	BASE AGGREGATE	5 MT 58 34 V	3,010	1 ½"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
OUTSIDE 3' SHOULDERS	162+95 TO 700+27	UPPER LAYER	5 MT 58-34 V	5 MT 58-34 V	2,510	1 ¼"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
TURN LANES WIDENING	162+95 TO 700+27	LOWER BINDER LAYER	BASE AGGREGATE	5 MT 58-34 V	22	2 ¼"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
TURN LANES AND SIDEROADS	162+95 TO 700+27	LOWER LAYER	MILLED EXISTING ASPHALTIC SURFACE	5 MT 58 34 V	674	1 ½"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
TURN LANES AND SIDEROADS	162+95 TO 700+27	UPPER LAYER	5 MT 58-34 V	5 MT 58-34 V	562	1 ¼"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE

ASPHALT CENTERLINE RUMBLE STRIPS 2-LANE RURAL

STATION	TO	STATION	465.0475 LF
162+95	-	215+00	5205
215+00	-	268+00	4500
268+00	-	320+00	4800
320+00	-	373+00	4551
373+00	-	426+00	4400
426+00	-	479+00	4600
479+00	-	532+00	4500
532+00	-	585+00	4900
585+00	-	637+00	4400
637+00	-	682+40	3690
683+46	-	700+27	1681
ITEM TOTAL			47,227

HMA PAVEMENT PWL, TEST STRIP

STATION TO STATION	460.0105.S VOLUMETRICS EACH	460.0110.S DENSITY EACH
162+95 TO 700+27	1	2
ITEM TOTALS	1	2

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR PROJECT ID 1520-00-73 UNLESS OTHERWISE NOTED

CULVERT PIPE ITEMS

STATION	LOCATION	504.0900 CONCRETE MASONRY ENDWALLS CY	520.1024 APRON ENDWALLS FOR CULVERT PIPE 24-INCH EACH	520.1030 APRON ENDWALLS FOR CULVERT PIPE 30-INCH EACH	520.1036 APRON ENDWALLS FOR CULVERT PIPE 36-INCH EACH	520.1042 APRON ENDWALLS FOR CULVERT PIPE 42-INCH EACH	520.8000 CONCRETE COLLARS FOR PIPE EACH	520.8700 CLEANING CULVERT PIPES EACH	522.0124 CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	522.0130 CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH LF	522.0136 CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH LF	524.0124 CULVERT PIPE SALVAGED 24-INCH LF	524.0130 CULVERT PIPE SALVAGED 30-INCH LF	524.0136 CULVERT PIPE SALVAGED 36-INCH LF	524.0142 CULVERT PIPE SALVAGED 42-INCH LF	524.0160 CULVERT PIPE SALVAGED 60-INCH LF	524.0660 APRON ENDWALLS FOR CULVERT PIPE SALVAGED 60-INCH EACH	633.5200 MARKERS CULVERT END EACH	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	JOINT TIES* EACH	REMARKS
163+36	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
183+44	LT & RT	-	-	-	4	-	4	2	-	-	-	-	-	24	-	-	-	2	1	8	4 TIES LT (2 EACH PIPE) 4 TIES RT (2 EACH PIPE)
196+34	LT & RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	4	2	1	16	8 TIES LT & 8 TIES RT
206+65	LT & RT	2.8	-	-	-	-	4	2	36	-	-	-	-	-	-	-	-	2	1	-	-
226+42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
239+73	LT & RT	-	-	-	-	2	2	1	-	-	-	-	-	-	-	-	-	2	1	-	-
258+86	LT & RT	4.8	-	-	-	-	1	3	-	8	-	-	-	-	-	-	-	2	1	-	-
270+57	RT	-	1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	2	1	-	-
284+60	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
302+83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
329+81	LT & RT	-	-	-	-	2	2	1	-	-	-	-	-	-	12	-	-	2	1	4	2 TIES LT & 2 TIES RT
349+44	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
363+01	LT & RT	-	-	2	-	-	2	-	-	-	-	-	-	-	-	-	-	2	1	-	-
369+04	LT & RT	-	2	-	-	-	2	1	-	-	-	6	-	-	-	-	-	2	1	2	2 TIES LT
375+64	LT & RT	4.0	-	-	-	-	-	2	-	-	-	-	-	48	-	-	-	2	1	8	4 TIES LT & 4 TIES RT
387+01	LT & RT	-	-	2	-	-	2	1	-	-	-	-	18	-	-	-	-	2	1	6	2 TIES LT & 4 TIES RT
399+67	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
400+49	LT & RT	-	-	-	2	-	2	-	-	-	-	-	-	10	-	-	-	2	1	4	2 TIES LT & 2 TIES RT
411+41	LT & RT	-	-	-	2	-	2	1	-	-	-	-	-	-	-	-	-	2	1	-	-
422+66	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
454+00	LT	-	1	-	-	-	1	1	-	-	-	6	-	-	-	-	-	2	1	2	2 TIES LT
456+69	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
468+92	LT & RT	3.5	-	-	-	-	-	2	-	-	-	-	36	-	-	-	-	2	1	8	4 TIES LT & 4 TIES RT
489+81	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
504+16	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
508+00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
510+66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
535+84	LT & RT	-	-	2	-	-	2	-	-	-	4	-	6	-	-	-	-	2	1	4	2 TIES LT & 2 TIES RT
553+17	LT & RT	-	-	2	-	-	2	1	-	-	-	-	6	-	-	-	-	2	1	2	2 TIES RT
574+26	LT & RT	-	-	-	2	-	2	1	-	-	-	-	-	22	-	-	-	2	1	8	4 TIES LT & 4 TIES RT
581+62	RT	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	-	2	1	-	-
585+48	LT & RT	-	2	-	-	-	2	1	-	-	-	6	-	-	-	-	-	2	1	2	2 TIES RT
606+97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
617+94	LT & RT	-	-	2	-	-	2	1	-	-	-	-	12	-	-	-	-	2	1	4	4 TIES LT
625+19	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
626+80	LT & RT	-	-	2	-	-	2	1	-	-	-	-	-	-	-	-	-	2	1	-	-
643+56	LT & RT	-	2	-	-	-	2	1	-	-	-	12	-	-	-	-	-	2	1	4	2 TIES LT & 2 TIES RT
646+37	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
648+05	LT & RT	-	2	-	-	-	2	1	-	-	-	-	-	-	-	-	-	2	1	-	-
650+01	LT & RT	-	2	-	-	-	2	1	-	-	-	-	-	-	-	-	-	2	1	-	-
660+67	LT & RT	-	2	-	-	-	2	1	-	-	-	4	-	-	-	-	-	2	1	2	2 TIES LT
674+81	LT & RT	-	-	-	2	-	2	1	-	-	-	-	-	30	-	-	-	2	1	10	4 TIES LT & 6 TIES RT
678+65	LT & RT	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
679+17	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-
690+30	LT & RT	-	2	-	-	-	2	1	-	-	-	-	-	-	-	-	-	2	1	-	-
ITEM TOTAL		15	18	13	12	4	50	42	36	8	4	34	78	134	12	24	4	90	28		

* JOINT TIES INCIDENTAL TO CULVERT PIPE ITEMS.

ASPHALTIC SURFACE PATCHING

STATION	TO	STATION	465.0110 TON
162+95	-	700+27	500
ITEM TOTAL			500

CONCRETE REPAIR ITEMS

STATION	509.1500 CONCRETE SURFACE REPAIR SF	SPV.0105.03 MAINTAINING DRAINAGE DURING CONSTRUCTION C-27-0012 LS	REMARKS
CATEGORY 0020			
504+16	45	1	BOX CULVERT C-27-0012
CATEGORY 0020 SUBTOTAL	45	1	
ITEM TOTAL	45	1	

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EROSION CONTROL ITEMS

STATION	TO	STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7555 CULVERT PIPE CHECKS EACH	645.0120 GEOTEXTILE TYPE HR SY	SPV.0090.01 DITCH CLEANING LF	REMARKS
163+28	-	163+98	RT	-	69	69	-	-	-	-	BEAM GUARD
183+44	-	-	LT & RT	-	200	200	250	10	-	-	PIPE CULVERT
196+34	-	-	LT & RT	26	300	300	350	14	57	25	PIPE CULVERT, RIP RAP & GEOTEXTILE RT
206+65	-	-	LT & RT	-	200	200	200	10	-	25	PIPE CULVERT
239+73	-	-	LT & RT	-	250	250	250	5	-	25	PIPE CULVERT
258+86	-	-	LT & RT	-	300	300	500	15	-	25	PIPE CULVERT
270+57	-	-	RT	5	75	75	150	5	-	25	PIPE CULVERT, RIP RAP & GEOTEXTILE RT
302+58	-	303+80	LT & RT	-	415	415	-	-	-	-	BEAM GUARD
329+81	-	-	LT & RT	-	250	250	250	5	-	25	PIPE CULVERT
348+67	-	350+42	LT & RT	-	284	284	930	-	-	-	BEAM GUARD
363+01	-	-	LT & RT	-	150	150	200	5	-	-	PIPE CULVERT
369+04	-	-	LT & RT	-	150	150	200	5	-	25	PIPE CULVERT
375+64	-	-	LT & RT	21	200	200	200	10	47	25	PIPE CULVERT, RIP RAP & GEOTEXTILE RT
387+01	-	-	LT & RT	-	150	150	200	5	-	-	PIPE CULVERT
400+49	-	-	LT & RT	-	150	150	200	5	-	-	PIPE CULVERT
412+41	-	-	LT & RT	-	150	150	200	5	-	-	PIPE CULVERT
454+00	-	-	LT	-	75	75	50	5	-	-	PIPE CULVERT
456+69	-	-	LT	-	-	-	200	10	-	25	PIPE CULVERT
468+92	-	-	LT & RT	-	200	200	250	10	-	25	PIPE CULVERT
535+84	-	-	LT & RT	-	200	200	250	10	-	-	PIPE CULVERT
553+17	-	-	LT & RT	-	150	150	200	5	-	25	PIPE CULVERT
574+26			LT & RT		150	150	200	5			PIPE CULVERT
578+97	-	582+85	RT	131	655	655	1070	-	265	-	BEAM GUARD
582+62	-	-	RT	-	75	75	50	5	-	-	PIPE CULVERT
585+48	-	-	LT & RT	-	150	150	200	10	-	-	PIPE CULVERT
601+07		608+19	LT & RT	195	1370	1370	2805		390		BEAM GUARD
606+97	-	-	LT	17	-	-	-	10	40	-	PIPE CULVERT, RIP RAP & GEOTEXTILE LT
617+95	-	-	LT & RT	-	150	150	200	10	-	-	PIPE CULVERT
624+69	-	630+26	LT & RT	-	1093	1093	-	-	-	-	BEAM GUARD
626+80			LT & RT		150	150	200	5			PIPE CULVERT
643+56	-	-	LT & RT	-	150	150	200	5	-	-	PIPE CULVERT
645+77	-	652+18	LT & RT	-	1084	1084	-	-	-	-	BEAM GUARD
648+05	-	-	LT & RT	-	150	150	200	5	-	-	PIPE CULVERT
650+01			LT & RT		150	150	200	5			PIPE CULVERT
660+67	-	-	LT & RT	-	150	150	200	5	-	10	PIPE CULVERT
674+81	-	-	LT & RT	9	150	150	200	5	15	-	PIPE CULVERT, RIP RAP & GEOTEXTILE LT
678+86	-	-	LT & RT	-	150	150	-	5	-	-	PIPE CULVERT
681+10		684+76	LT & RT		386	386					BEAM GUARD
690+30	-	-	LT & RT	10	150	150	200	5	26	-	PIPE CULVERT, RIP RAP & GEOTEXTILE LT & RT
ITEM SUBTOTAL				414	10231	10231	9455	219	840	285	
UNDISTRIBUTED QUANTITY				24	469	469	945	21		30	
ITEM TOTAL				438	10,700	10,700	10,400	240	840	315	

MOBILIZATION

STATION	TO	STATION	619.1000 MOBILIZATION EACH
PROJECT 1520-00-73			
162+95		700+27	0.85
PROJECT 1520-00-73 SUBTOTAL			0.85
PROJECT 1520-02-70			
162+95	-	700+27	0.15
PROJECT 1520-02-70 SUBTOTAL			0.15
ITEM TOTAL			1

EROSION MOBILIZATION ITEMS

STATION	TO	STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
162+95	-	700+27	5	3
ITEM TOTAL			5	3

BARRIER SYSTEM GRADING SHAPING FINISHING

STATION	TO	STATION	LOCATION	614.0010 EACH	SALVAGED TOPSOIL* SY	FERTILIZER TYPE B* CWT	SEEDING MIXTURE NO. 20* LB	SEED WATER* MGAL	FILL* CY
349+14	-	350+04	RT	1	740	0.6	26	22.4	220
578+97	-	582+85	RT	1	1465	0.9	38	33.7	150
601+98	-	608+19	LT	1	2180	1.8	76	67.4	540
ITEM SUBTOTAL				3	4385	3.2	140	123	910
UNDISTRIBUTED QUANTITY				-	219	0.3	3.5	1.2	91
ITEM TOTAL				3					

*ITEMS SHOWN FOR REFERENCE ONLY. ITEMS INCIDENTAL TO THE ITEM BARRIER SYSTEM GRADING SHAPING FINISHING.

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GUARDRAIL SYSTEM ITEMS

STATION	TO	STATION	LOCATION	614.0400 ADJUSTING STEEL PLATE BEAM GUARD (0"-3") LF	(3"-6") LF	(6"+) LF	614.0515 GUARDRAIL STIFFENED LHW LF	614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARDRAIL END TREATMENTS EACH	614.0950 REPLACING GUARDRAIL POSTS AND BLOCKS EACH	614.0951 REPLACING GUARDRAIL RAIL AND HARDWARE LF	614.2300 MGS GUARDRAIL 3 LF	614.2330 3 K LF	614.2350 SHORT RADIUS LF	614.2610 TERMINAL EAT EACH	614.2630 SHORT RADIUS TERMINAL EACH	REMARKS
163+28	-	163+98	RT	-	90	-	-	-	-	15	50	-	-	-	-	-	REPLACE (2) MISSING POST BOLTS, (1) DAMAGED POST
301+58	-	303+70	RT	-	162.5	-	-	-	-	26	50	-	-	-	-	-	REPLACE (6)-MISSING POST BOLTS. (1) DAMAGED POST
302+93		303+80	LT		137.5					22	50						REPLACE (6)-MISSING POST BOLTS
348+67	-	350+42	LT	-	150	-	-	-	-	24	25	-	-	-	-	-	REPLACE (2)-MISSING POST BOLTS
349+14	-	350+04	RT	-	-	-	-	112.5	2	-	-	25	25	55	1	1	REPLACE EXISTING BARRIER SYSTEM WITH MGS
578+97	-	582+85	RT	-	362.5	-	-	-	-	58	25	-	-	-	-	-	REPLACE (5)-MISSING POST BOLTS. (1)-DAMAGED POSTS
602+07	-	607+41	RT	637.5	25	-	-	300	-	6	-	-	-	-	-	-	REPLACE (3) MISSING POST BOLTS. (6) DAMAGED POSTS
607+98	-	608+79	LT	250	50	-	300	-	-	8	25	-	-	-	-	-	REPLACE (5)-MISSING POST BOLTS
624+69		629+94	RT		450					72	75						REPLACE (6)-MISSING BOLTS. (2)- DAMAGED BLOCKS
624+76	-	630+26	LT	-	450	-	-	-	-	72	100	-	-	-	-	-	REPLACE (5)-MISSING BOLTS. (3)-DAMAGED POSTS
645+77	-	650+39	RT	-	362.5	-	-	-	-	58	100	-	-	-	-	-	REPLACE (1) MISSING POST BOLT. (1) MISSING BLOCK
646+06	-	652+18	LT	-	562.5	-	-	-	-	90	50	-	-	-	-	-	REPLACE (2)-MISSING BOLTS. (2)-DAMAGED BLOCK. (6)-DAMAGED POSTS
681+10		682+39	RT		104.5					17	25						REPLACE (1)-MISSING POST BOLT
681+84	-	682+51	LT	-	67	-	-	-	-	11	-	-	-	-	-	-	REPLACE (1)-MISSING POST BOLT
683+35	-	684+02	RT	-	67	-	-	-	-	11	-	-	-	-	-	-	REPLACE (1)-MISSING BOLT. REPLACE (1)-DAMAGED POST
683+47	-	684+76	LT	129.5	-	-	-	-	-	49	-	-	-	-	-	-	REPLACE (1)-MISSING POST BOLT
UNDISTRIBUTED QUANTITY											50						
ITEM TOTAL					4,058		300	413	2	539	625	25	25	55	1	1	

TURF ESTABLISHMENT ITEMS

STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0500 SEED WATER MGAL	REMARKS
183+44	LT & RT	150	0.09	6	3.61	PIPE CULVERT
196+34	LT & RT	250	0.16	8	6.02	PIPE CULVERT
206+65	LT & RT	150	0.09	6	3.61	PIPE CULVERT
239+73	LT & RT	150	0.09	6	3.61	PIPE CULVERT
258+86	LT & RT	400	0.35	12	9.53	PIPE CULVERT
270+57	RT	50	0.03	2	1.20	PIPE CULVERT
329+81	LT & RT	150	0.09	5	3.61	PIPE CULVERT
363+01	LT & RT	100	0.06	3	2.41	PIPE CULVERT
369+04	LT & RT	100	0.06	3	2.41	PIPE CULVERT
375+64	LT & RT	150	0.09	6	3.61	PIPE CULVERT
387+01	LT & RT	100	0.06	3	2.41	PIPE CULVERT
400+49	LT & RT	100	0.06	3	2.41	PIPE CULVERT
411+41	LT & RT	100	0.06	3	2.41	PIPE CULVERT
454+00	LT	50	0.03	2	1.20	PIPE CULVERT
468+92	LT & RT	100	0.06	3	2.41	PIPE CULVERT
535+84	LT & RT	100	0.06	3	2.41	PIPE CULVERT
553+17	LT & RT	100	0.06	3	2.41	PIPE CULVERT
574+26	LT & RT	100	0.06	3	2.41	PIPE CULVERT
581+62	RT	50	0.03	2	1.20	PIPE CULVERT
585+48	LT & RT	100	0.06	3	2.41	PIPE CULVERT
617+95	LT & RT	100	0.06	3	2.41	PIPE CULVERT
626+80	LT & RT	100	0.06	3	2.41	PIPE CULVERT
643+56	LT & RT	100	0.06	3	2.41	PIPE CULVERT
648+05	LT & RT	100	0.06	3	2.41	PIPE CULVERT
650+01	LT & RT	100	0.06	3	2.41	PIPE CULVERT
660+67	LT & RT	100	0.06	3	2.41	PIPE CULVERT
674+81	LT & RT	100	0.06	3	2.41	PIPE CULVERT
690+30	LT & RT	100	0.06	3	2.41	PIPE CULVERT
ITEM SUBTOTAL		3350	2.2	109	80.5	
UNDISTRIBUTED QUANTITY		340	0.8	11	9.4	
ITEM TOTAL		3,690	3	120	90	

FIELD OFFICE TYPE B

STATION	TO	STATION	642.5001 EACH
PROJECT 1520-00-73			
162+95	-	700+27	0.85
PROJECT 1520-00-73 SUBTOTAL			0.85
PROJECT 1520-02-70			
162+95	-	700+27	0.15
PROJECT 1520-02-70 SUBTOTAL			0.15
ITEM TOTAL			1

TRAFFIC CONTROL

STATION	TO	STATION	LOCATION	643.5000 EACH
PROJECT 1520-00-73				
162+95	-	700+27		0.85
PROJECT 1520-00-73 SUBTOTAL				0.85
PROJECT 1520-02-70				
162+95	-	700+27		0.15
PROJECT 1520-02-70 SUBTOTAL				0.15
ITEM TOTAL				1

TRAFFIC CONTROL

STATION	TO	STATION	643.0300 DRUMS DAY	643.0420 BARRICADES TYPE III DAY	643.0705 WARNING LIGHTS TYPE A DAY	643.0900 SIGNS DAY	* 643.0910 COVERING SIGNS TYPE I EACH	* 643.0920 COVERING SIGNS TYPE II EACH	643.1050 SIGNS PCMS DAY
162+95	-	700+27	15,538	5,712	11,184	14,778	4	11	14
ITEM TOTAL			15,538	5,712	11,184	14,778	4	11	14

* NUMBER OF CYCLES = 1

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR PROJECT ID 1520-00-73 UNLESS OTHERWISE NOTED

3

PAVEMENT MARKING ITEMS

STATION	TO	STATION	LOCATION	646.1020* MARKING LINE EPOXY 4-INCH (YELLOW) LF	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE) LF	646.3020 MARKING LINE EPOXY 8-INCH (WHITE) LF	646.4520 MARKING LINE SAME DAY EPOXY 4-INCH (YELLOW) LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH LF
162+95	-	215+00	LT & RT	1302	10286	-	1302	417
215+00		268+00	LT & RT	1325	10217	377	1325	424
268+00	-	320+00	LT & RT	1300	10274	189	1300	416
320+00	-	373+00	LT & RT	1325	10296		1325	424
373+00	-	426+00	LT & RT	1325	10340	-	1325	424
426+00	-	479+00	LT & RT	1325	10058	204	1325	424
479+00	-	532+00	LT & RT	1325	10292	-	1325	424
532+00	-	585+00	LT & RT	2553	10406	-	2553	424
585+00	-	637+00	LT & RT	6683	9887	-	6683	416
637+00	-	682+40	LT & RT	1900	8603	-	1900	364
682+40	-	683+46	LT & RT	106	106		106	9
683+46	-	700+27	LT & RT	971	3362	-	971	135
ITEM TOTAL				21,440	104,126	770	21,440	4,301

*PLACED AFTER CENTERLINE RUMBLE STRIPS ARE INSTALLED.

CONSTRUCTION STAKING

STATION	TO	STATION	650.8000 RESURFACING REFERENCE LF	650.9910.01 SUPPLEMENTAL CONTROL (1520-00-73) LS	650.9910.02 SUPPLEMENTAL CONTROL (1520-02-70) LS
PROJECT 1520-00-73					
162+95	-	700+27	53,732	1	-
PROJECT 1520-00-73 SUBTOTAL			53,732	1	-
PROJECT 1520-02-70					
162+95	-	700+27	-	-	1
PROJECT 1520-02-70 SUBTOTAL			-	-	1
ITEM TOTAL			53,732	1	1

DROP INLET SAFETY GRATE

STATION	TO	STATION	SPV.0060.01 EACH
162+95	-	70+27	1
ITEM TOTAL			1

BOX CULVERT JOINT REPAIR C-27-0303

STATION	SPV.0105.04 LS
625+18	1
ITEM TOTAL	1

COLD-IN-PLACE RECYCLING ASPHALT ITEMS

STATION	TO	STATION	327.1000.S COLD-IN-PLACE RECYCLING (CIR) ASPHALT BASE LAYER SY	455.0770.S ASPHALT STABILIZING AGENT TON
162+95	-	215+00	19664	116
215+00	-	268+00	20023	118
268+00	-	320+00	19645	116
320+00	-	373+00	20023	118
373+00	-	426+00	20023	118
426+00	-	479+00	20023	118
479+00	-	532+00	20023	118
532+00	-	585+00	20023	118
585+00	-	637+00	19645	116
637+00	-	682+40	17152	101
683+46	-	700+27	6351	38
ITEM TOTAL			202,595	1,195

SAWING ASPHALT

STATION	LOCATION	690.0150 LF	REMARKS
162+95	LT & RT	40	BEGIN PROJECT
176+61	LT	41	DRIVEWAY
197+68	LT	45	DRIVEWAY
217+55	LT	25	SIDE ROAD
217+60	RT	25	SIDE ROAD
257+21	RT	19	SIDE ROAD
275+45	RT	11	DRIVEWAY
281+61	RT	18	DRIVEWAY
285+81	LT	28	SIDE ROAD
328+44	RT	22	DRIVEWAY
348+77	RT	24	SIDE ROAD
352+26	LT	22	SIDE ROAD
359+07	RT	28	DRIVEWAY
362+69	RT	32	DRIVEWAY
388+75	LT	18	SIDE ROAD
414+53	RT	18	SIDE ROAD
427+62	RT	18	SIDE ROAD
427+62	LT	23	SIDE ROAD
454+56	LT	30	SIDE ROAD
454+56	RT	36	SIDE ROAD
485+24	RT	32	DRIVEWAY
486+90	RT	39	DRIVEWAY
509+14	LT	22	SIDE ROAD
509+14	RT	17	SIDE ROAD
524+23	LT	22	SIDE ROAD
535+85	RT	29	SIDE ROAD
547+56	LT	34	DRIVEWAY
609+01	RT	24	SIDE ROAD
615+53	LT	24	SIDE ROAD
615+53	RT	18	SIDE ROAD
645+24	LT	22	SIDE ROAD
645+24	RT	23	SIDE ROAD
674+74	LT	25	SIDE ROAD
678+65	LT	12	DRIVEWAY
682+40	LT & RT	40	BEGIN BRIDGE
683+46	LT & RT	40	END BRIDGE
699+52	LT	59	DRIVEWAY
700+27	LT & RT	40	END PROJECT
ITEM TOTAL		1,045	

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR PROJECT ID 1520-00-73 UNLESS OTHERWISE NOTED

5

PAVEMENT MARKING NOTES:

REFER TO SDD 15C8 "LONGITUDINAL MARKING (MAINLINE)" FOR PLACEMENT OF LONGITUDINAL CENTERLINE (YELLOW) AND EDGELINE (WHITE) MARKINGS.

REPLACE THE PASSING AND NO-PASSING ZONES AT THEIR EXISTING LOCATIONS.

REFER TO SDD 15C35 "PAVEMENT MARKING (INTERSECTION)" FOR PLACEMENT OF MARKINGS AT INTERSECTIONS.

MAJOR INTERSECTIONS REQUIRING RIGHT TURN LANE MARKINGS INCLUDE THE FOLLOWING:
- CTH G (BOTH LEGS)
- CTH M
- CTH T (SOUTH LEG)

ALL OTHER INTERSECTIONS SHALL BE MARKED AS MINOR INTERSECTIONS.

5

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	PLAN	SHEET 31	E

MATCHLINE STA 222+50

PI STA = 222+30.13
Y = 203569.077
X = 10689.823
DELTA = 7°46'48"
D = 0°29'23"
T = 795.57'
L = 1588.69'
R = 11700.00'
PC STA = 214+34.56
Y = 203715.252
X = 9907.801
PT STA = 230+23.25
Y = 203530.108
X = 11484.435
SE = MATCH EXISTING

STA 226+42
1 - 8' X 10' X 74' EXISTING BOX CULVERT TO REMAIN

KAY CREEK

PT STA 230+23.25

R/W

WINDSTREAM NTI LLC

R/W

CENTURYLINK

CENTURYLINK

STA 239+73
1 - 42" X 80' EXISTING RCCP TO REMAIN
1 - REMOVE SMALL PIPE CULVERTS (10 LF LT AND 6 LF RT)
2 - CONCRETE COLLARS FOR PIPES
1 - CLEANING CULVERT PIPES
2 - 42" CPRC AEW'S REQ'D
25 LF CLEANING DITCH, LT (DEPTH 1')

225+00 230+00 235+00 240+00 S87° 11' 33"E 245+00 250+00

USH 10 USH 10

FO FO FO FO FO FO FO FO FO FO FO FO

MATCHLINE STA 253+00

N

5

5

MATCHLINE STA 253+00

STA 258+86
3 - 30" X 66' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERT (1-8' SECTION LT)
2.4 CY CONCRETE MASONRY ENDWALLS , LT
2.4 CY CONCRETE MASONRY ENDWALLS, RT
1 - CONCRETE COLLARS FOR PIPES
3 - CLEANING CULVERT PIPES
8 - LF CPRCC III 30-INCH, LT
25 LF CLEANING DITCH, LT (DEPTH 0.5')

CENTURYLINK

CENTURYLINK

PC STA 270+51.90

R/W

PT STA 282+66.09

255+00 260+00 S87° 11' 33"E 265+00 270+00 275+00 280+00

USH 10 USH 10

FO FO FO FO FO FO FO FO FO FO FO FO

OHP

OLD 17

R/W

CENTURYLINK

WINDSTREAM NTI LLC

CENTURYLINK

STA 270+57
1 - 24" X 90' EXISTING RCCP TO REMAIN
1 - CONCRETE COLLAR FOR PIPES
1 - CLEANING CULVERT PIPE
1 - 24" CPRC AEW REQ'D, RT
5.0 CY RIPRAP MEDIUM, RT
25 LF CLEANING DITCH, RT (DEPTH 0.5')

PI STA = 276+59.52
Y = 203303.012
X = 16115.138
DELTA = 5°47'50"
D = 0°28'39"
T = 607.61'
L = 1214.19'
R = 12000.00'
PC STA = 270+51.90
Y = 203332.775
X = 15508.253
PT STA = 282+66.09
Y = 203212.100
X = 16715.913
SE = MATCH EXISTING

EAU CLAIRE ENERGY COOP

MATCHLINE STA 283+50

N

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	PLAN	SHEET 32	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\PPUSH10.DWG
LAYOUT NAME - STH10 - (2)

PLOT DATE : 4/21/2021 6:33 AM PLOT BY : DUSTIN SCHUH PLOT NAME : PLOT SCALE : 1 IN:200 FT

MATCHLINE STA 283+50

EAU CLAIRE ENERGY COOP

CENTURYLINK

CTH M

S45° 28' 00"W

R/W

PC STA 294+25.11

285+00

S81° 23' 42"E

290+00

USH 10

295+00

300+00

CENTURYLINK

STA 301+93 TO STA 302+80, LT
137.5 LF ADJUSTING STEEL PLATE BEAM GUARD
22 - REPLACING GUARDRAIL POSTS AND BLOCKS
50 LF REPLACING GUARDRAIL RAIL AND HARDWARE

PT STA 303+62.91

305+00

S85° 36' 34"E

310+00

USH 10

MATCHLINE STA 314+00

FO

CENTURYLINK

STA 285+77.98 USH 10 =
STA 285+81.00 CTH M

STA 284+60
1 - 6' X 8' X 90' EXISTING BOX CULVERT TO REMAIN
1 - CLEAN CULVERT PIPE

WINDSTREAM NTI LLC

PI STA = 298+94.22
Y = 202968.499
X = 18325.714
DELTA = 4°12'51"
D = 0°26'58"
T = 469.11'
L = 937.80'
R = 12750.00'
PC STA = 294+25.11
Y = 203038.687
X = 17861.885
PT STA = 303+62.91
Y = 202932.585
X = 18793.448
SE = MATCH EXISTING

CENTURYLINK

STA 301+58 TO STA 303+70, RT
162.5 LF ADJUSTING STEEL PLATE BEAM GUARD
26 - REPLACING GUARDRAIL POSTS AND BLOCKS
50 LF REPLACING GUARDRAIL RAIL AND HARDWARE

STA 302+83
1 - 8' X 10' X 80' EXISTING BOX CULVERT TO REMAIN

R/W

MATCHLINE STA 314+00

NORTH FORK BUFFALO RIVER

R/W

315+00

320+00

S85° 36' 34"E

325+00

330+00

CENTURYLINK

PC STA 337+29.19

335+00

340+00

USH 10

MATCHLINE STA 344+50

USH 10

WINDSTREAM NTI LLC

R/W

CENTURYLINK

STA 329+81
1 - 42" X 102' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERTS (6 LF LT & RT)
2 - CONCRETE COLLARS FOR PIPES
1 - CLEANING CULVERT PIPE
12 LF CULVERT PIPE SALVAGED 42-INCH (6 LF LT & RT)
25 LF CLEANING DITCH, LT (DEPTH 0.5')

5

5

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	PLAN	SHEET 33	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\PPUSH10.DWG
LAYOUT NAME - STH10 - (3)

PLOT DATE : 4/21/2021 6:34 AM PLOT BY : DUSTIN SCHUH PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44

STA 348+67 TO STA 350+42, LT
SEE BEAM GUARD DETAILS

JACKSON ELEC COOP

MOE RD

R/W

PT STA 352+25.55

CENTURYLINK

STA 348+77.29 USH 10 =
STA 348+77.00 W. SAND LANE

MATCHLINE STA 344+50

345+00

350+00

355+00

360+00

365+00

370+00

375

USH 10

S77° 57' 16"E

PI STA = 344+78.48
Y = 202617.509
X = 22896.943
DELTA = 7°39'18"
D = 0°30'42"
T = 749.30'
L = 1496.36'
R = 11200.00'
PC STA = 337+29.19
Y = 202674.873
X = 22149.845
PT STA = 352+25.55
Y = 202461.137
X = 23629.742
SE = MATCH EXISTING

W SAND LN

STA 349+44
1 - 8' X 10' X 80' EXISTING BOX CULVERT TO REMAIN
1 - CLEANING CULVERT PIPE

STA 349+14 TO STA 350+04, RT
SEE GUARDRAIL DETAILS FOR IMPROVEMENTS

STA 363+01
1 - 30" X 70' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERTS (6 LF LT)
2 - CONCRETE COLLARS FOR PIPES
2 - 30" CPRC AEW'S REQ'D

WINDSTREAM NTI LLC

STA 369+04
1 - 24" X 76' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERTS (6 LF FT)
2 - CONCRETE COLLARS FOR PIPES
1 - CLEANING CULVERT PIPE
2 - 24" CPRC AEW'S REQ'D
6 LF CULVERT PIPE SALVAGED 24-INCH, LT
25 LF CLEANING DITCH, RT (DEPTH 0.5')

MATCHLINE STA 375+00

STA 375+64
2 - 36" X 80' EXISTING RCCP TO REMAIN
2.1 CY CONCRETE MASONRY ENDWALLS, LT
1.8 CY CONCRETE MASONRY ENDWALLS, RT
2 - CLEANING CULVERT PIPE
48 LF CULVERT PIPE SALVAGED 36-INCH (12 LF EACH PIPE LT & RT)
21 CY RIPRAP MEDIUM, RT
21 CY RIPRAP MEDIUM, LT
25 LF CLEANING DITCH, LT (DEPTH 1.5')

PC STA 382+13.65

STA 387+01
1 - 30" X 106' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERTS (12 LF LT & 4 LF RT)
2 - CONCRETE COLLARS FOR PIPES
1 - CLEANING CULVERT PIPE
2 - 30" CPRC AEW'S REQ'D
18 LF CULVERT PIPE SALVAGED 30-INCH (6 LF LT & 12 LF RT)

MOE RD

PT STA 397+33.11

MATCHLINE STA 405+50

380+00

385+00

390+00

395+00

400+00

405+00

S84° 55' 09"E

PI STA = 389+74.32
Y = 201678.804
X = 27295.969
DELTA = 6°57'53"
D = 0°27'30"
T = 760.67'
L = 1519.46'
R = 12500.00'
PC STA = 382+13.65
Y = 201837.549
X = 26552.050
PT STA = 397+33.11
Y = 201611.437
X = 28053.648
SE = MATCH EXISTING

STA 399+67
1 - 72" X 68' EXISTING RCCP TO REMAIN
1 - CLEANING CULVERT PIPE

STA 400+49
1 - 36" X 80' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERTS (4 LF LT & RT)
2 - CONCRETE COLLARS FOR PIPES
2 - 36" CPRC AEW'S REQ'D
10 LF CULVERT PIPE SALVAGED 36-INCH (6 LF LT & 4 LF RT)

5

MATCHLINE STA 405+50

NORTH FORK BUFFALO RIVER

STA 411+41
1 - 36" X 68' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERTS (6 LF LT & 4 LF RT)
2 - CONCRETE COLLARS FOR PIPES
1 - CLEANING CULVERT PIPE
2 - 36" CPRC AEW'S REQ'D

STA 422+66
1 - 8' X 10' X 78' EXISTING BOX CULVERT TO REMAIN
1 - CLEANING CULVERT PIPE

R/W
CENTURYLINK
CENTURYLINK
SPEEBER RD
JACKSON ELEC COOP
410+00
415+00
420+00
425+00
430+00
435+00
USH 10
S84° 55' 09"E
USH 10
WINDSTREAM NTI LLC
SHAKY LN
HANSON RD
R/W
OH
FO
T

MATCHLINE STA 436+00

R/W
PC STA 443+04.48
S84° 55' 09"E
440+00
445+00
450+00
USH 10
455+00
460+00
465+00
USH 10
MATCHLINE STA 466+50
WINDSTREAM NTI LLC
R/W

STA 454+00
1 - 24" X 104' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERTS (6 LF LT)
1 - CONCRETE COLLAR FOR PIPES
1 - CLEANING CULVERT PIPE
1 - 24" CPRC AEW REQ'D, LT
6 LF CULVERT PIPE SALVAGED 24-INCH, LT

JACKSON ELEC COOP
PRICE RD
STA 456+69
1 - 72" X 68' EXISTING RCCP TO REMAIN
1 - CLEANING CULVERT PIPE
25 LF CLEANING DITCH, LT (DEPTH 0.5')

STA 454+53.68 USH 10 =
STA 454+56.05 CTH T
CTH T
S00° 22' 21"W
455
CENTURYLINK
CENTURYLINK

PI STA = 454+86.24
Y = 201101.924
X = 33784.169
DELTA = 11°38'02"
D = 0°29'38"
T = 1181.76'
L = 2355.40'
R = 11600.00'
PC STA = 443+04.48
Y = 201206.584
X = 32607.051
PT STA = 466+59.88
Y = 201236.791
X = 34958.210
SE = MATCH EXISTING

5

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	PLAN	SHEET 35	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\PPUSH10.DWG
LAYOUT NAME - STH10 - (5)

PLOT DATE : 4/21/2021 6:34 AM PLOT BY : DUSTIN SCHUH PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44

MATCHLINE STA 466+50

PT STA 466+59.88

STA 468+92
2 - 30" X 66' EXISTING RCCP TO REMAIN
1.6 CY CONCRETE MASONRY ENDWALLS, LT
1.6 CY CONCRETE MASONRY ENDWALLS, RT
2 - CLEANING CULVERT PIPE
36 LF CULVERT PIPE SALVAGED 30 - INCH (12 LF EACH PIPE LT & 6 LF EACH PIPE RT)
25 LF CLEANING DITCH, RT (DEPTH 0.5')

CENTURYLINK

R/W

JACKSON ELEC COOP

CENTURYLINK

JACKSON ELEC COOP

470+00 475+00 480+00 N83° 26' 49"E 485+00 490+00 495+00

USH 10

MATCHLINE STA 497+00

WINDSTREAM NTI LLC

R/W

STA 489+81
1 - 72" X 90' EXISTING RCCP TO REMAIN
1 - CLEANING CULVERT PIPE

STA 504+16
1 - 10' X 10' X 68' EXISTING BOX CULVERT (C-27-0012) TO REMAIN
1 - CLEANING CULVERT PIPE
SURFACE REPAIR IS REQUIRED. SEE DETAILS.

STA 508+00
1 - 72" EXISTING RCCP TO REMAIN

BLOOM RD

STA 510+66
1 - 72" EXISTING RCCP TO REMAIN

R/W

MC GROWER RD

MATCHLINE STA 497+00

500+00 N83° 26' 49"E 505+00 510+00 USH 10 515+00 520+00 525+00

CENTURYLINK

WINDSTREAM NTI LLC

BLOOM RD

R/W

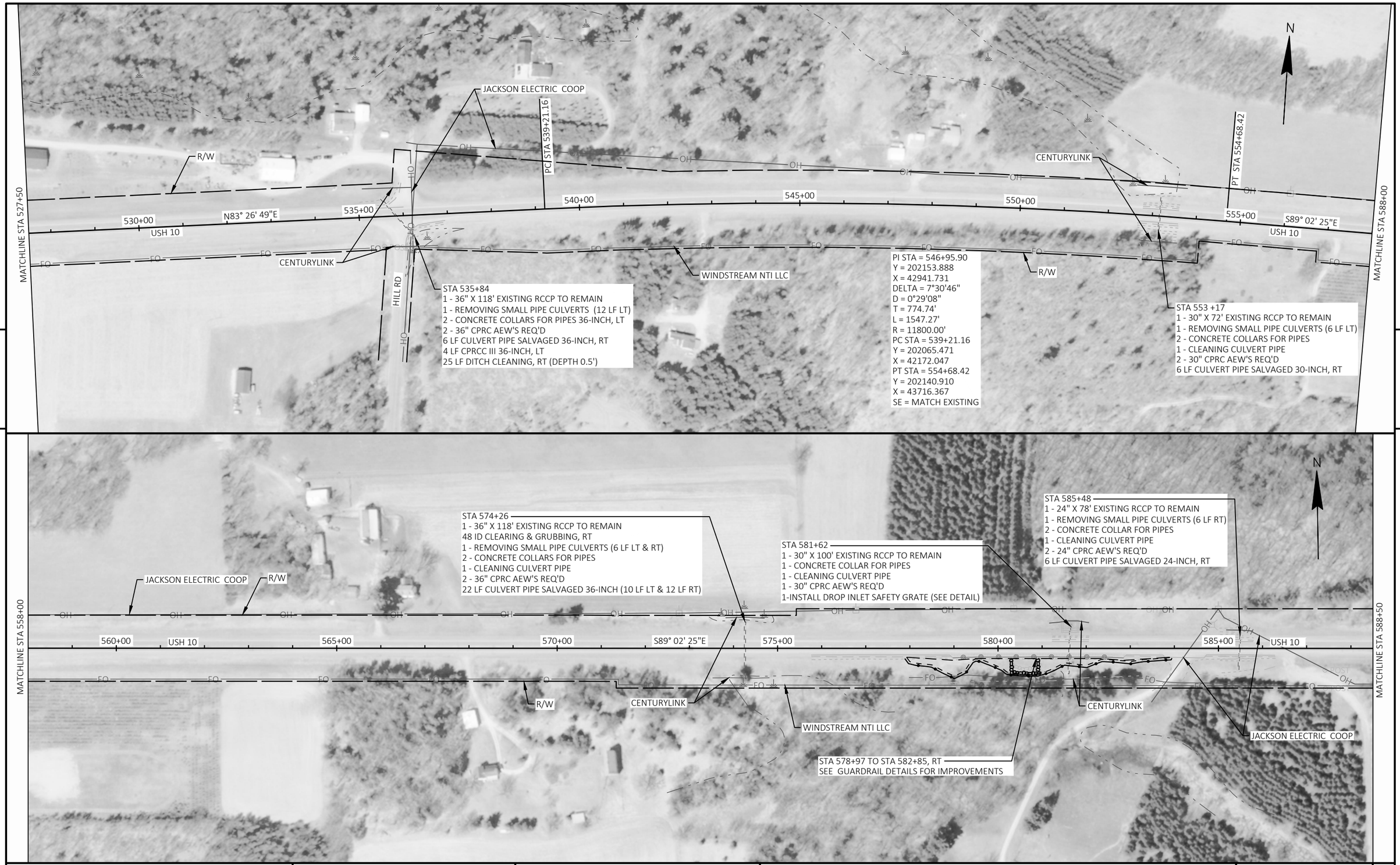
MATCHLINE STA 527+50

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	PLAN	SHEET 36	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\PPUSH10.DWG
LAYOUT NAME - STH10 - (6)

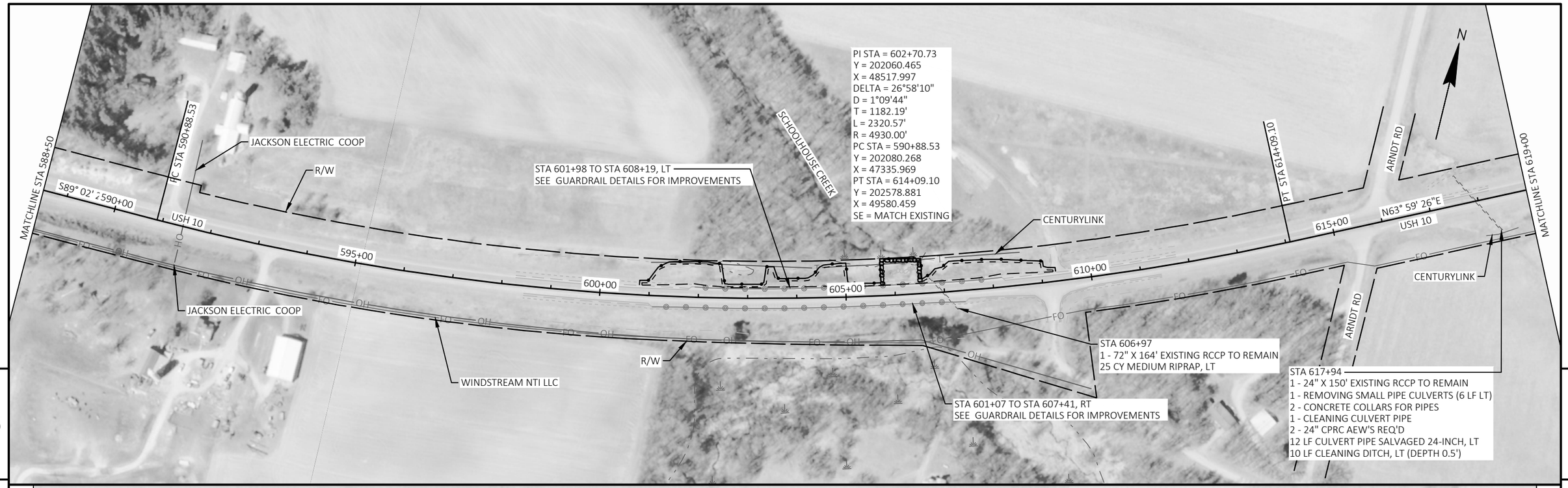
PLOT DATE : 4/21/2021 6:34 AM PLOT BY : DUSTIN SCHUH PLOT NAME : PLOT SCALE : 1 IN:200 FT

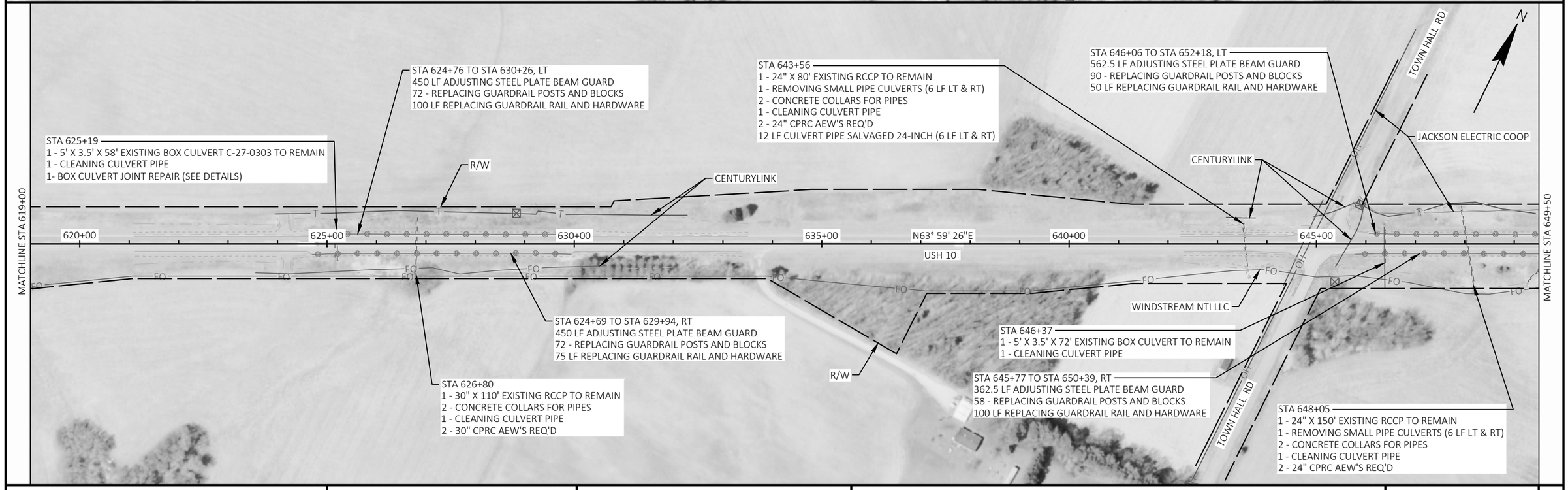
WISDOT/CADDS SHEET 44



PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	PLAN	SHEET 37	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\PPUSH10.DWG
LAYOUT NAME - STH10 - (7)
PLOT DATE : 4/21/2021 6:34 AM
PLOT BY : DUSTIN SCHUH
PLOT NAME :
PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 44





PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	PLAN	SHEET 38	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\PPUSH10.DWG
LAYOUT NAME - STH10 - (8)

PLOT DATE : 4/21/2021 6:34 AM PLOT BY : DUSTIN SCHUH PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44

MATCHLINE STA 649+50

STA 650+01
1 - 24" X 150' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERTS (6 LF LT & RT)
2 - CONCRETE COLLARS FOR PIPE
1 - CLEANING CULVERT PIPE
2 - 24" CPRC AEW'S REQ'D

JACKSON ELECTRIC COOP

R/W

CENTURYLINK

650+00 | 655+00 | N63° 59' 26"E | 660+00 | 665+00 | 670+00 | 675+00 | 680

USH 10

FO

CENTURYLINK

R/W

WINDSTREAM NTI LLC

STA 660+67
1 - 24" X 72' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERTS (4 LF RT)
2 - CONCRETE COLLARS FOR PIPE
1 - CLEANING CULVERT PIPE
2 - 24" CPRC AEW'S REQ'D
4 LF CULVERT PIPE SALVAGED 24-INCH, LT
10 LF CLEANING DITCH, LT (DEPTH 0.5 FT)

JACKSON ELECTRIC COOP

CENTURYLINK

HO

TOWN LINE RD W

STA 674+81
1 - 36" X 120' EXISTING RCCP TO REMAIN
1 - REMOVING SMALL PIPE CULVERTS (6 LF RT)
2 - CONCRETE COLLARS FOR PIPES
1 - CLEANING CULVERT PIPE
2 - 36" CPRC AEW'S REQ'D
30 LF CULVER PIPE SALVAGED 36-INCH (12 LF LT & 18 LF RT)
9 CY RIPRAP MEDIUM, LT

STA 678+65
1 - 24" X 110' EXISTING RCCP TO REMAIN
1 - CLEANING CULVERT PIPE
2 - 24" CPRC AEW'S REQ'D

STA 679+17
1 - 5' X 3.5' X 68' EXISTING BOX CULVERT TO REMAIN
1 - CLEANING CULVERT PIPE

MATCHLINE STA 680+00

MATCHLINE STA 680+00

STA 681+84 TO STA 682+51, LT
67 LF ADJUSTING STEEL PLATE BEAM GUARD
11 - REPLACING GUARDRAIL POSTS AND BLOCKS

NET EXCEPTION TO CL LENGTH
STA 682+58.50 - STA 683+27.50
B-27-151

STA 683+47 TO STA 684+76, LT
129.5 LF ADJUSTING STEEL PLATE BEAM GUARD

COON CREEK

R/W

US 12

+00 | USH 10 | 685+00 | 690+00 | N63° 59' 26"E | 695+00 | 700+00 | USH 10

FO

R/W

WINDSTREAM NTI LLC

STA 683+35 TO STA 684+02, RT
67 LF ADJUSTING STEEL PLATE BEAM GUARD
1 - REPLACING GUARDRAIL POSTS AND BLOCKS

STA 681+10 TO STA 682+39, RT
104.5 LF ADJUSTING STEEL PLATE BEAM GUARD
17 - REPLACING GUARDRAIL POSTS AND BLOCKS
25 LF REPLACING GUARDRAIL RAIL AND HARDWARE

STA 690+30
1 - 24" X 78' EXISTING RCCP TO REMAIN
16 ID CLEARING & GRUBBING, LT
32 ID CLEARING & GRUBBING, RT
2 - CONCRETE COLLARS FOR PIPES
1 - CLEANING CULVERT PIPE
2 - 24" CPRC AEW'S REQ'D
5 CY RIPRAP MEDIUM, LT
5 CY RIPRAP MEDIUM, RT

END PROJECT 1520-00-73 & 1520-02-70
STA 700+27.00
MATCH EXISTING
SAWCUT REQ'D
Y=206358.002
X=57325.542

5

5

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	PLAN	SHEET 39	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\PPUSH10.DWG
LAYOUT NAME - STH10 - (9)

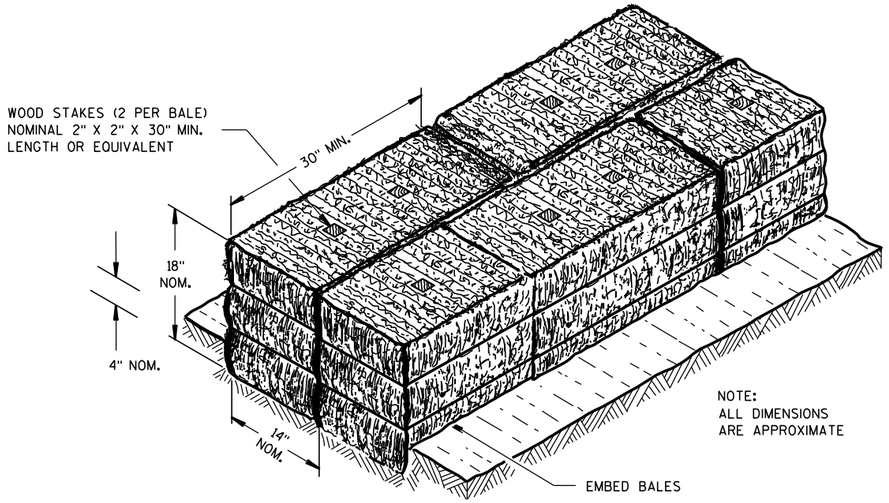
PLOT DATE : 4/21/2021 6:34 AM PLOT BY : DUSTIN SCHUH PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44

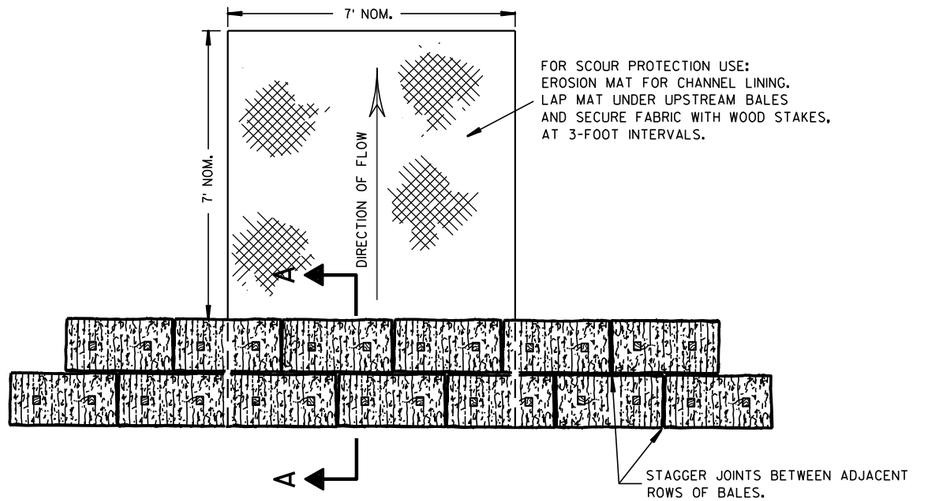
Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F10-01	CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	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)
14B53-01A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-08D	ON RAMP LANE CLOSURE
15C02-08E	OFF RAMP LANE CLOSURE
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C08-20B	PAVEMENT MARKING (TURN LANES)
15C08-20C	PAVEMENT MARKING (TURN LANES)
15C11-08B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

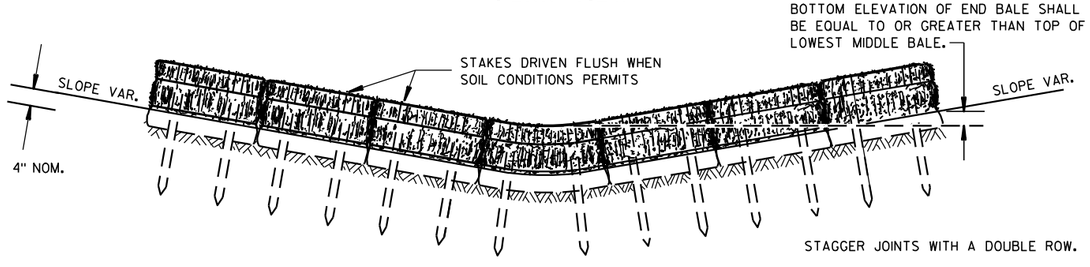
6



SECTION A-A



PLAN VIEW



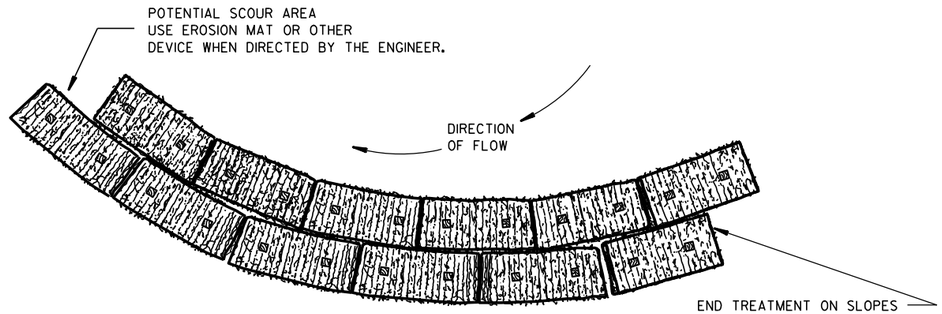
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

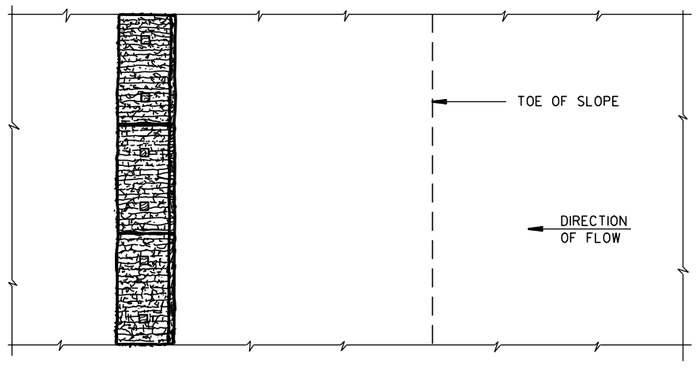
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

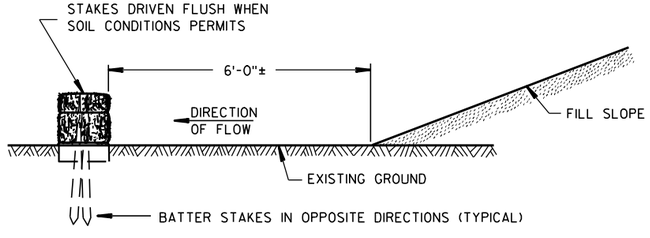


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

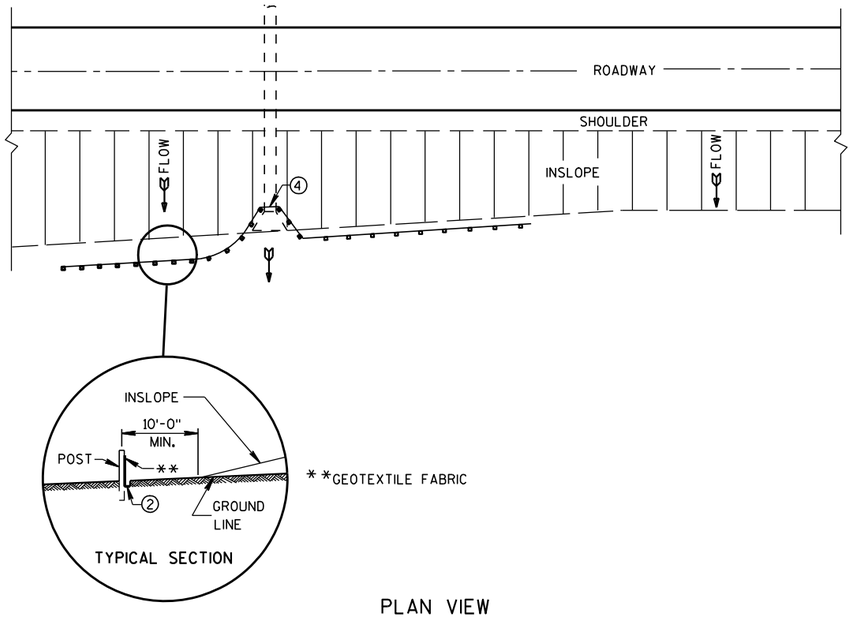
6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

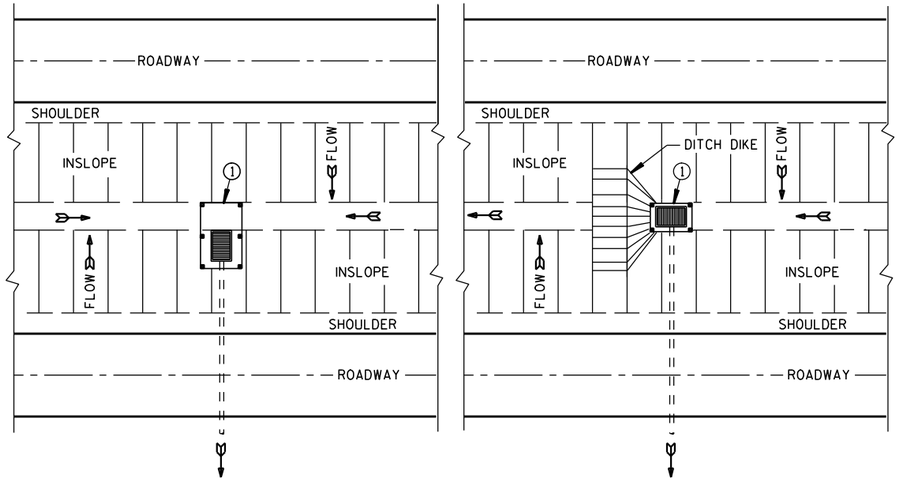
6

S.D.D. 8 E 8-3



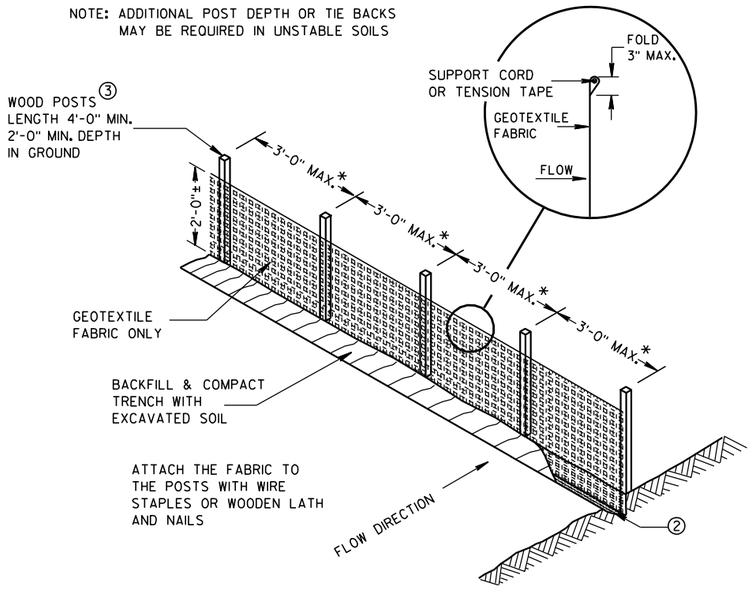
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



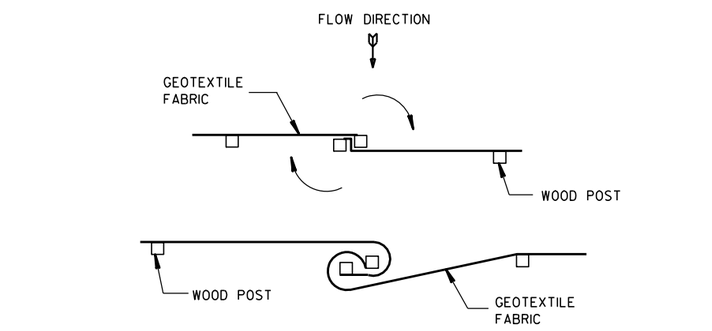
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

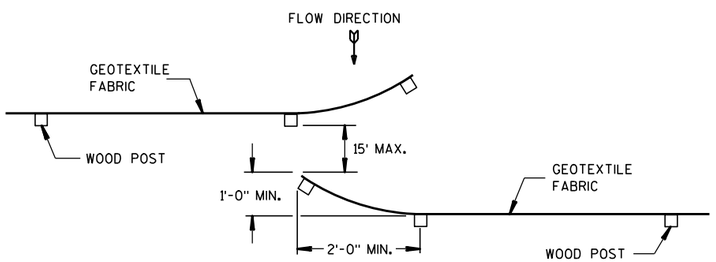


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE



TWIST METHOD



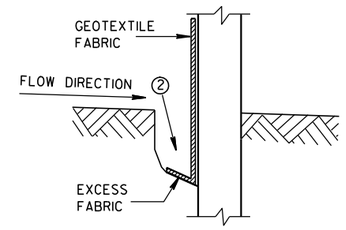
HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5

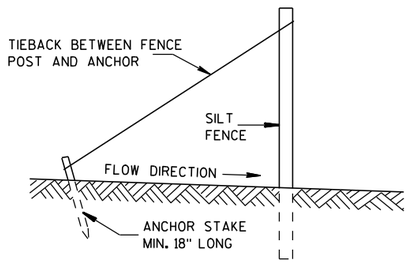
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

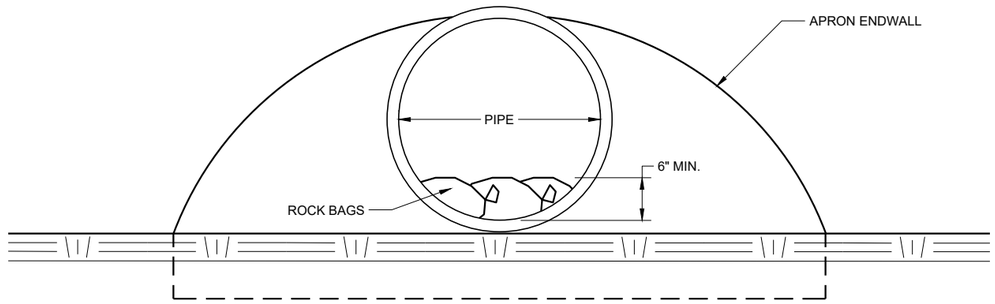
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

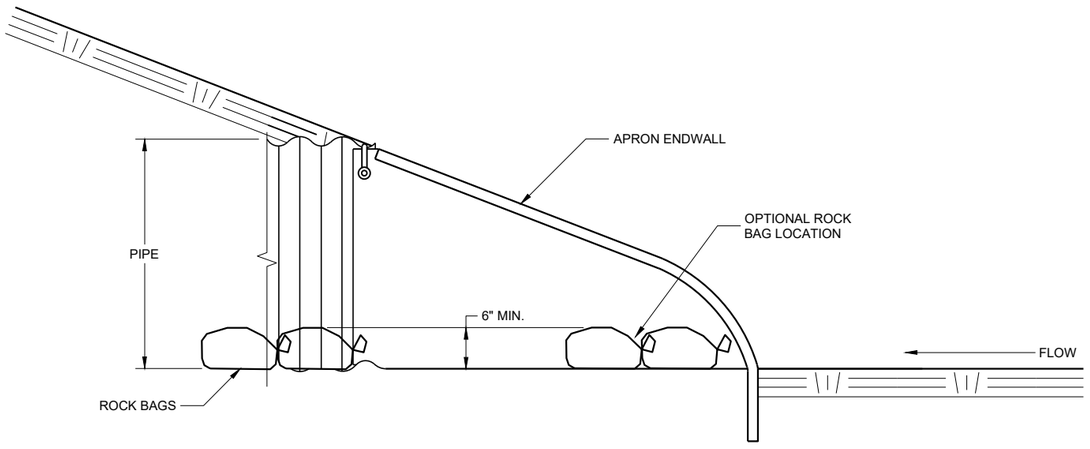
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



END VIEW



SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Daniel Schave
EROSION CONTROL ENGI

FHWA

6

SDD 08E15 - 01

6

SDD 08E15 - 01

METAL APRON ENDWALLS

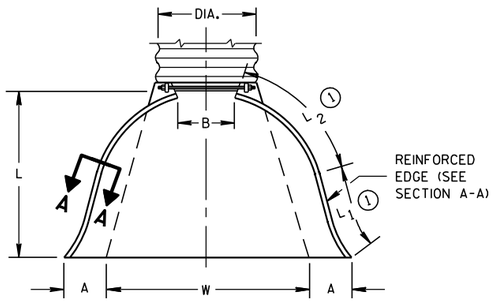
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

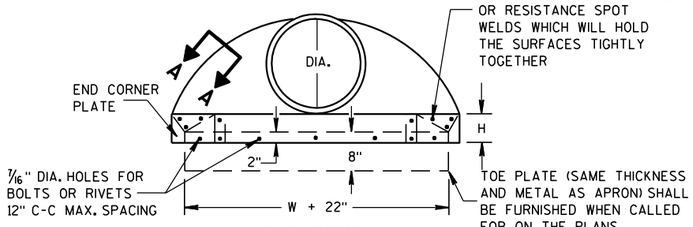
REINFORCED CONCRETE APRON ENDWALLS

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

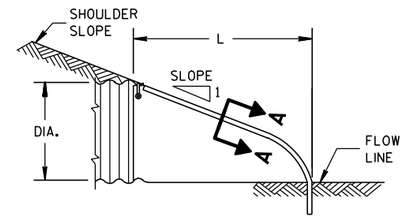
*MINIMUM
**MAXIMUM



PLAN VIEW

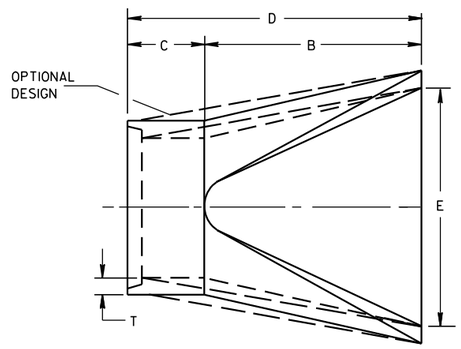


END VIEW

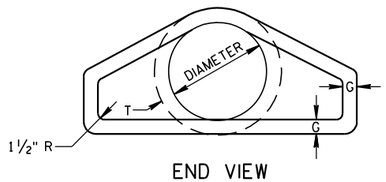


SIDE ELEVATION

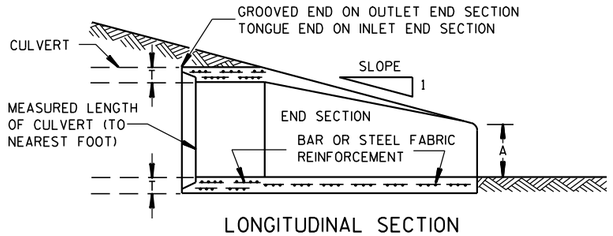
METAL ENDWALLS



PLAN

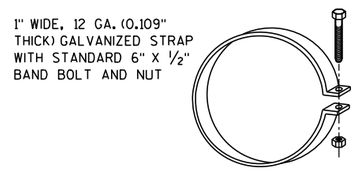


END VIEW



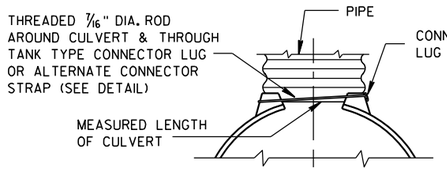
LONGITUDINAL SECTION

CONCRETE ENDWALLS

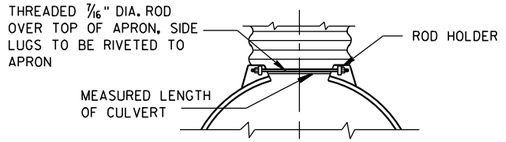


ALTERNATE FOR TYPE 1 CONNECTION

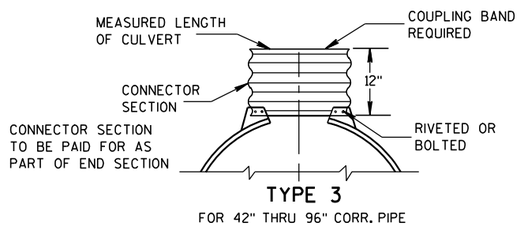
END SECTION CONNECTOR STRAP



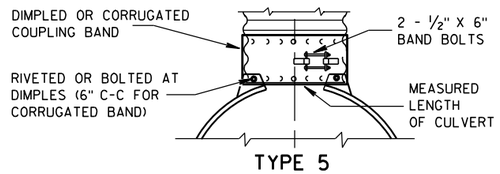
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

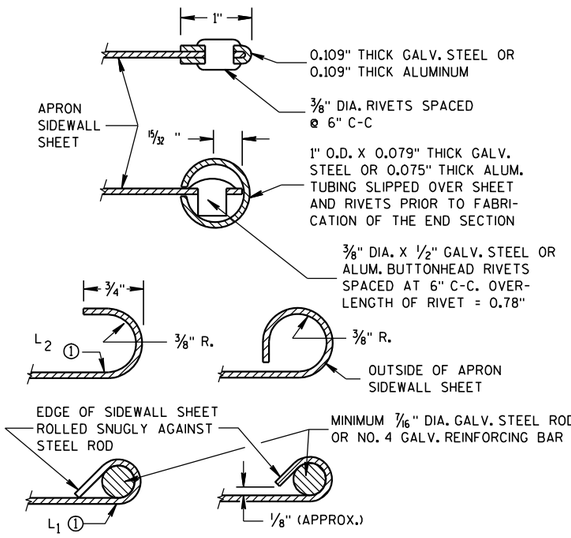
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

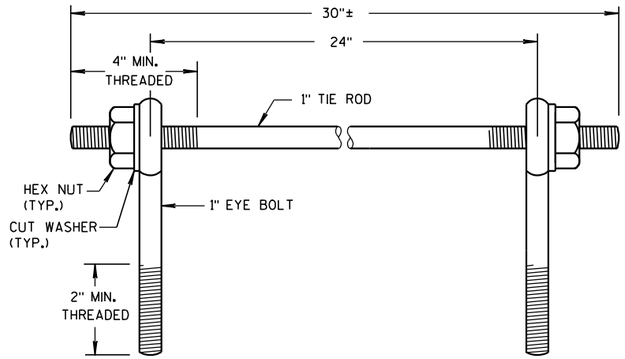
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

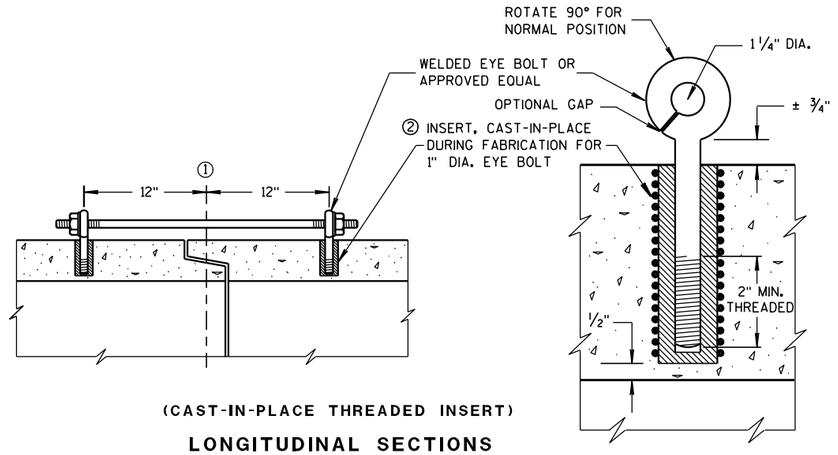
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

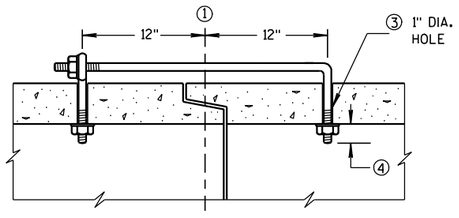
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

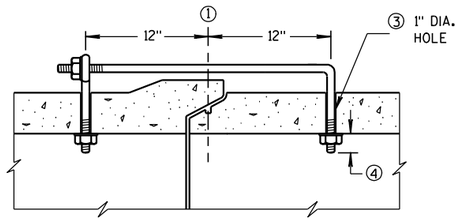
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

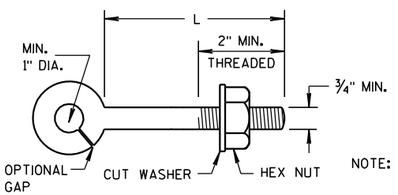


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

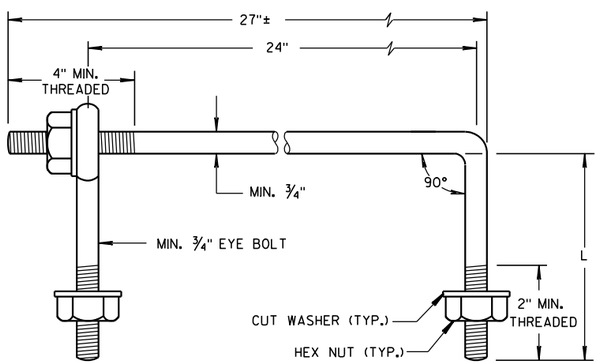
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

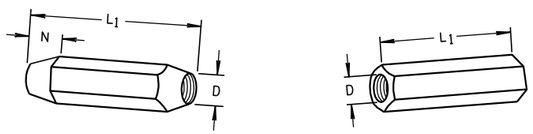
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

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

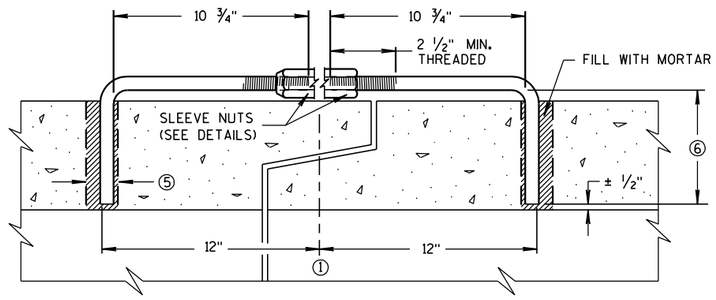
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

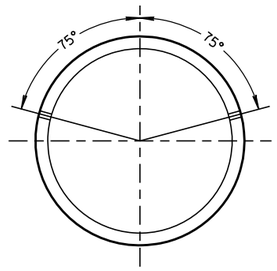
SLEEVE NUTS



LONGITUDINAL SECTION

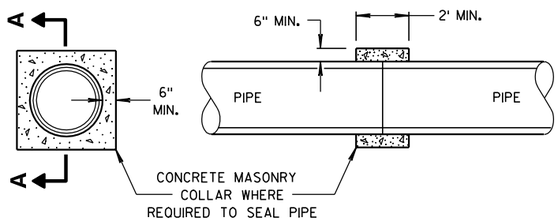
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

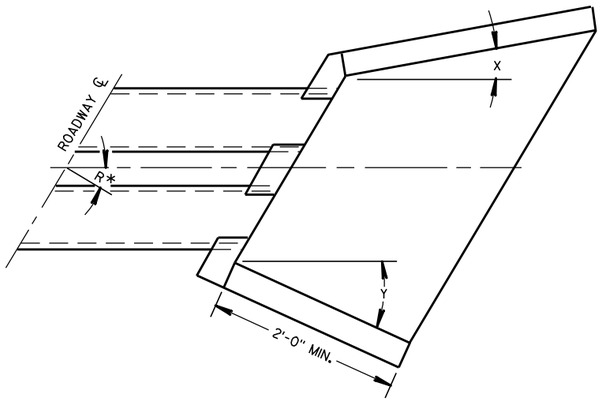
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
45
FHWA

6

S.D.D. 8 F 4-7



WINGWALL ANGLE DETAILS

INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	"	16 - 45°	10°	"
23 - 37°	20°	"	46 - 75°	5°	"
38 - 52°	15°	"	OVER 75°	0°	"
53 - 67°	10°	"			
68 - 82°	5°	"			
OVER 82°	0°	"			

*R = NUMBER OF DEGREES RIGHT OR LEFT HAND FORWARD

GENERAL NOTES

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

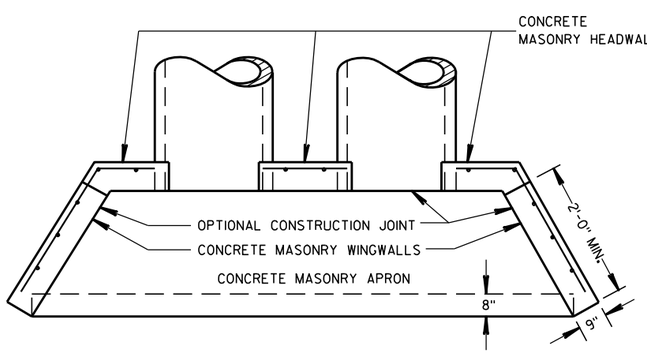
FILL SLOPES FLATTER THAN 2 ½:1 SHALL BE WARPED TO MEET THE TOP OF THE WINGWALLS.

ALL STEEL REINFORCEMENT AND WELDED STEEL WIRE FABRIC SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

(1) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS SPACED 12" C-C IN BOTH DIRECTIONS.

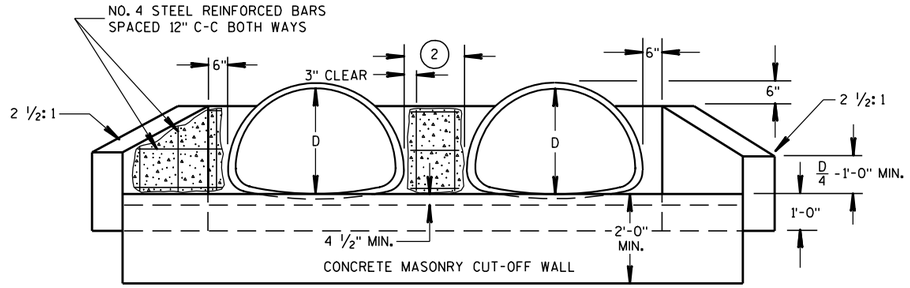
(2) THE SPACE BETWEEN PIPES SHALL BE AS FOLLOWS:

DIAMETER OR SPAN	SPACE
UP TO AND INCLUDING 48"	2'-0"
OVER 48" TO 72"	½ DIA. OR SPAN
OVER 72"	3'-0"



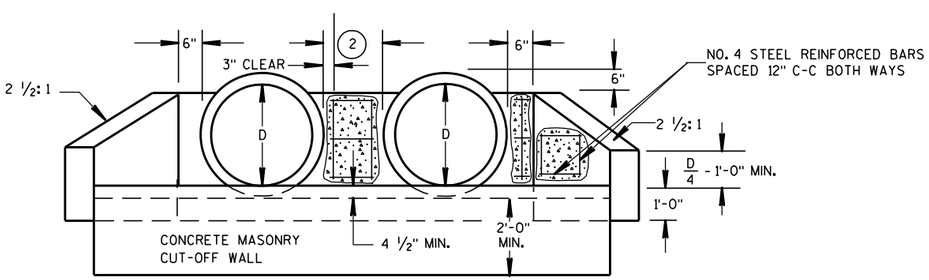
PLAN VIEW

CULVERT PIPE AND PIPE ARCH



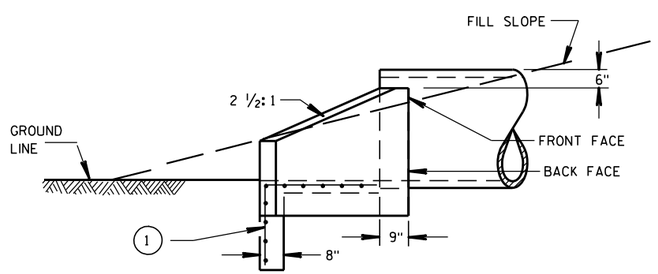
END ELEVATION

PIPE ARCH



END ELEVATION

CULVERT PIPE



SIDE ELEVATION

CULVERT PIPE AND PIPE ARCH

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

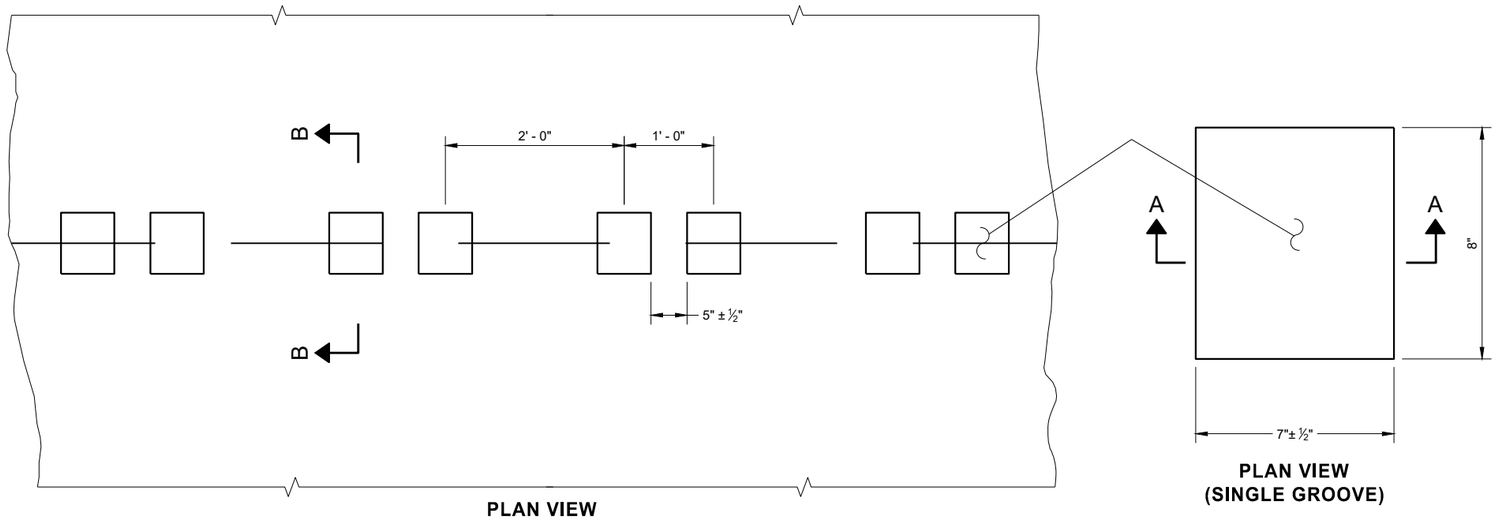
APPROVED
9/14/98 DATE
/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 F 10-1

6

S.D.D. 8 F 10-1



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

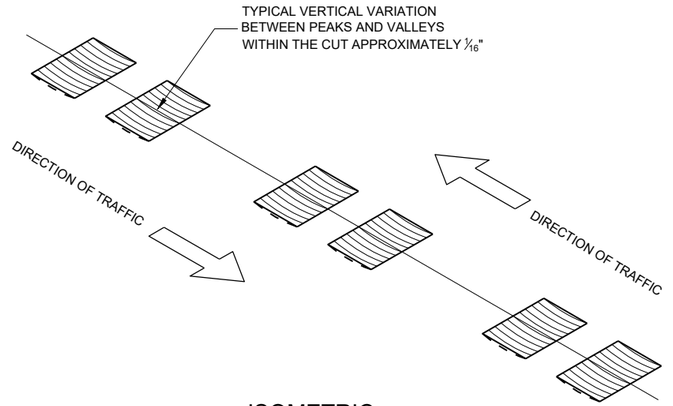
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTERLINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

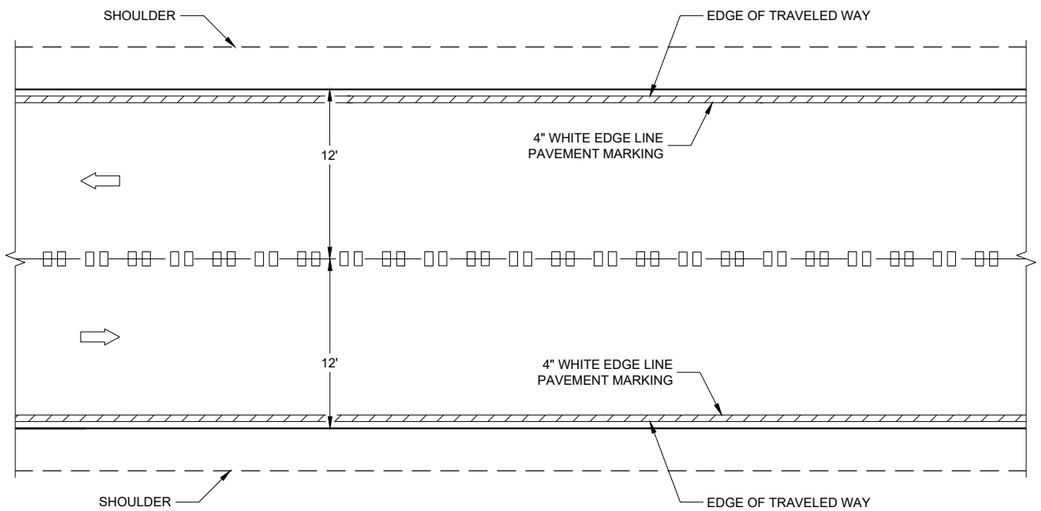
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

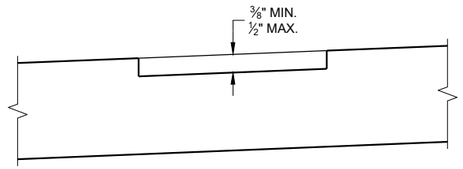
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



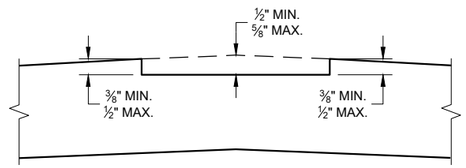
ISOMETRIC



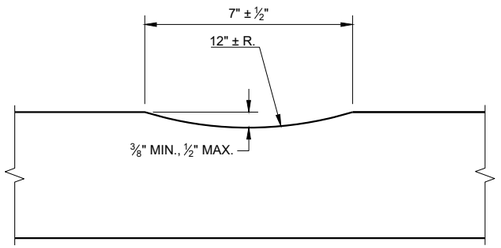
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



SECTION B - B
CROWNED ROADWAY



SECTION A - A

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

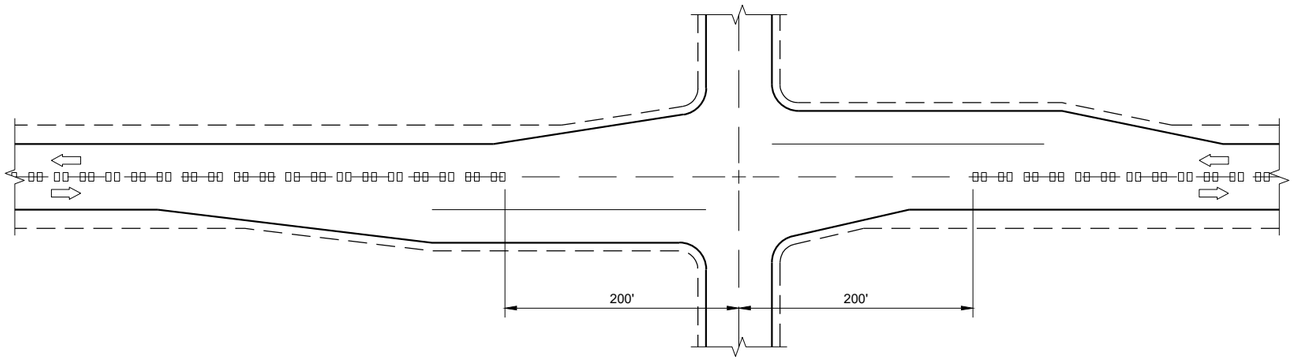
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

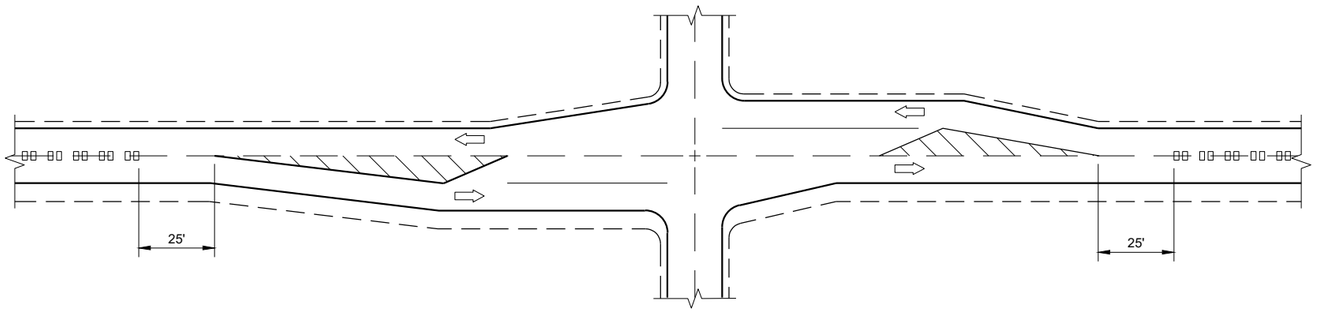
SDD 13A11 - 03a

6

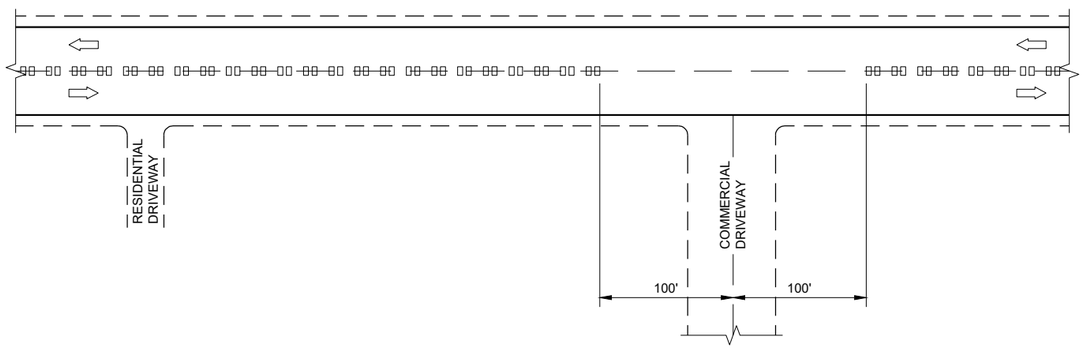
SDD 13A11 - 03a



CENTERLINE GROOVES AT INTERSECTIONS



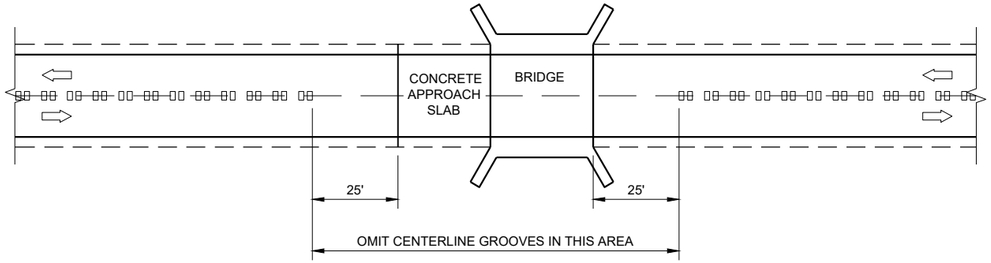
CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



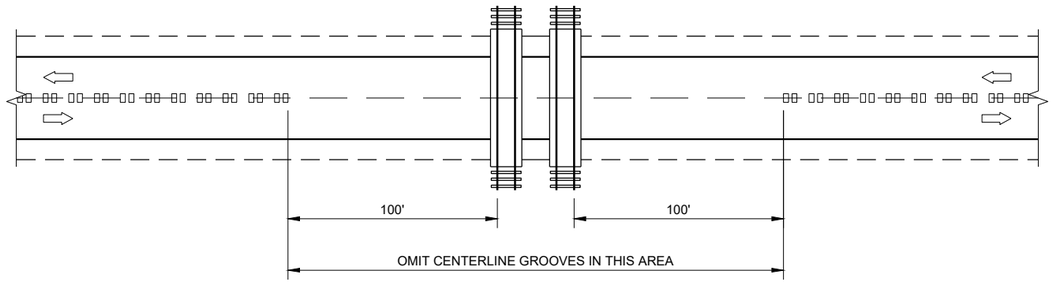
CENTERLINE GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

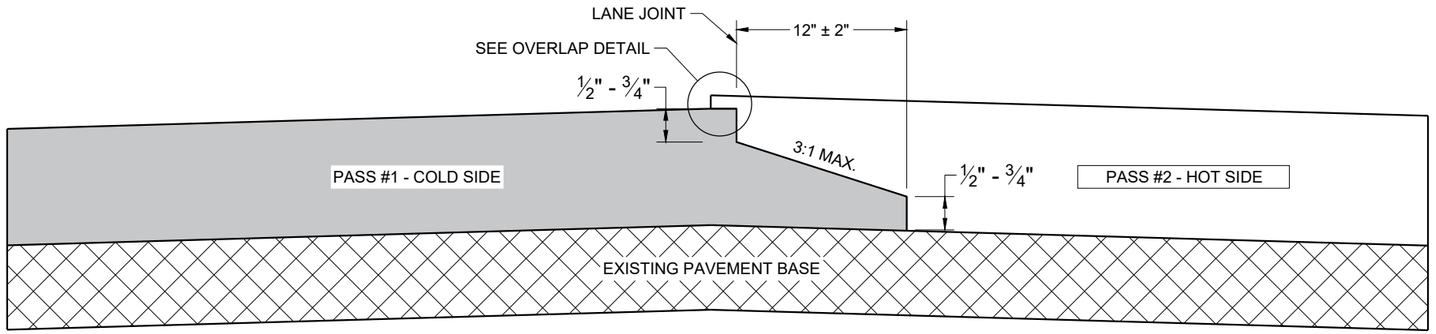
2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

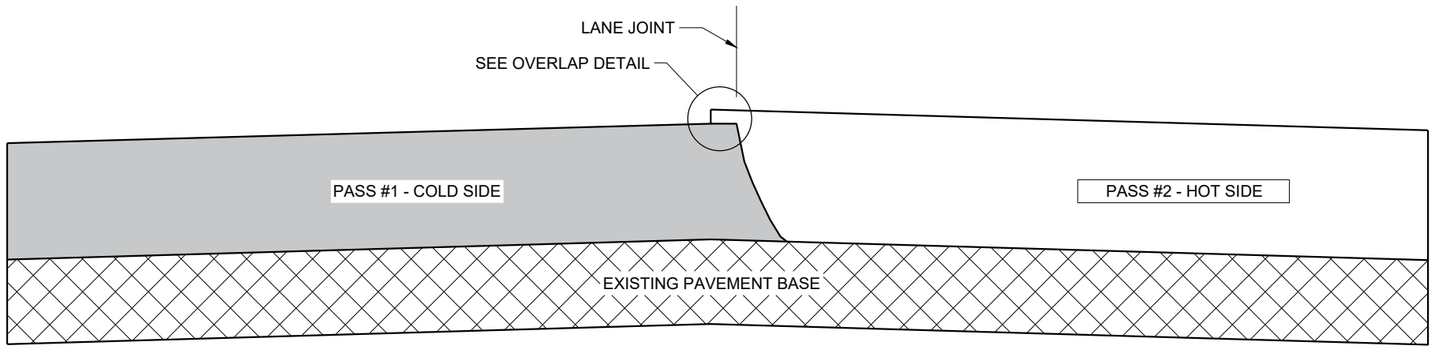
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

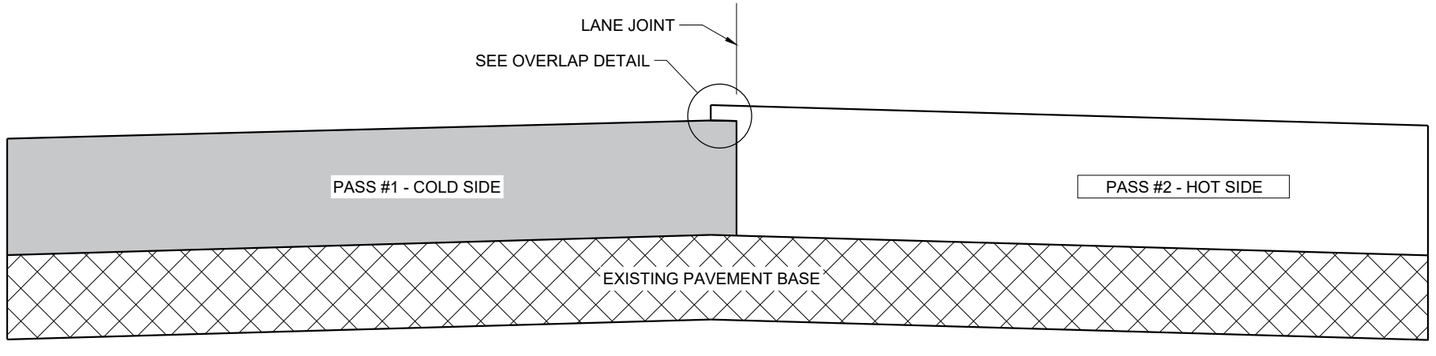
6
SDD 13A11 - 03b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

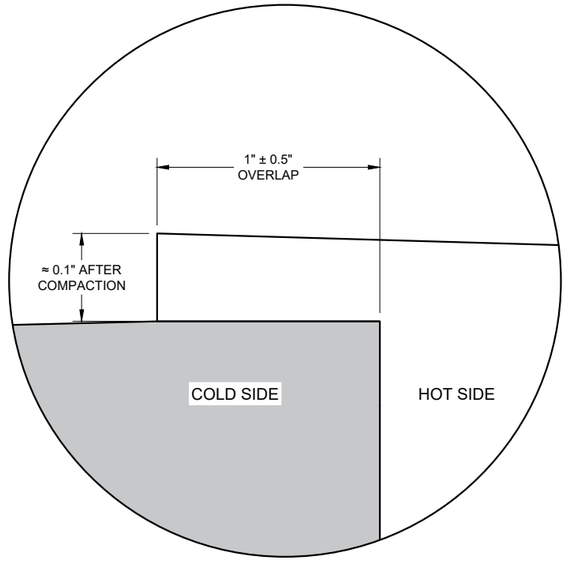
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

6

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

GENERAL NOTES

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

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

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

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

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

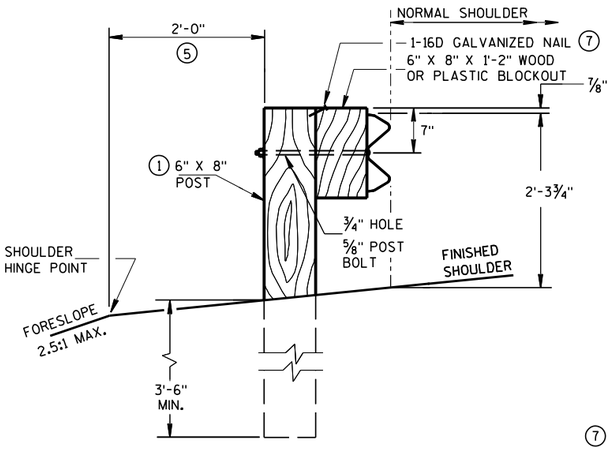
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

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

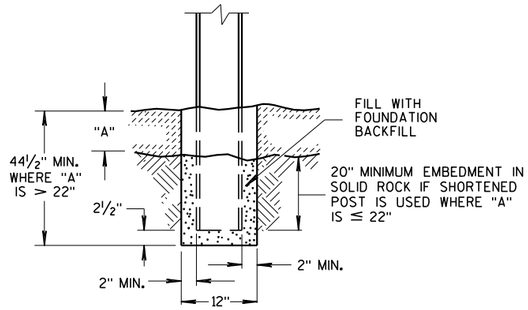
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

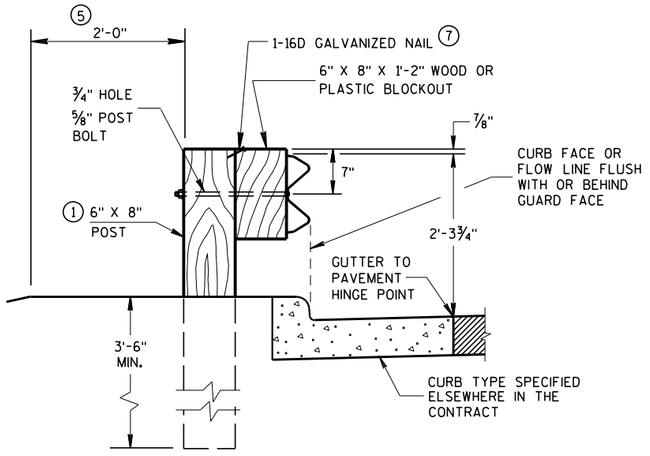
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



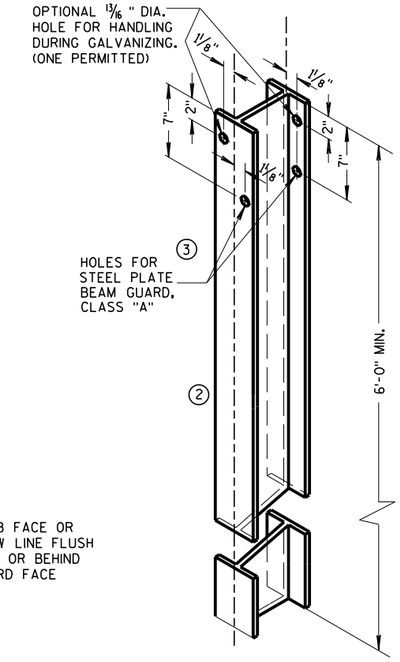
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



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

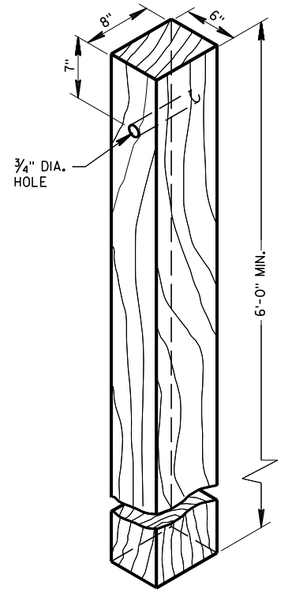


END VIEW
LOCATED ALONG A CURBED ROADWAY

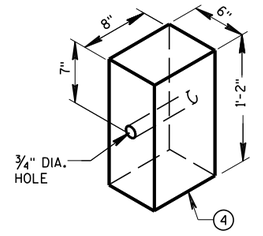


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

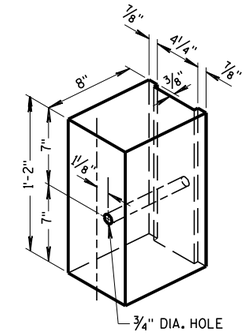
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



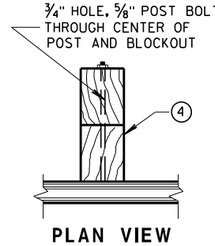
WOOD POST
(6"X8") NOMINAL



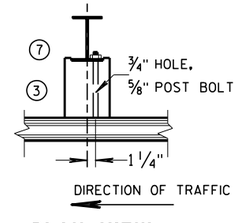
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



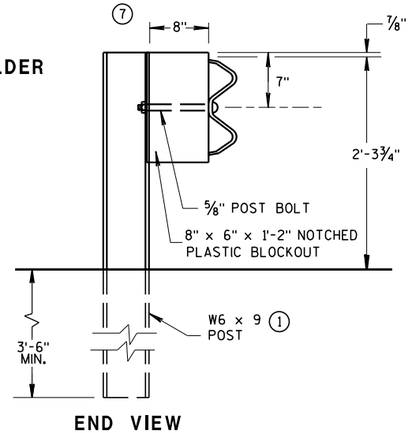
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



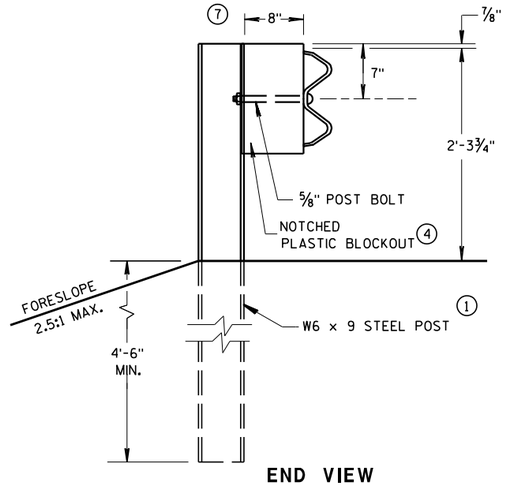
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



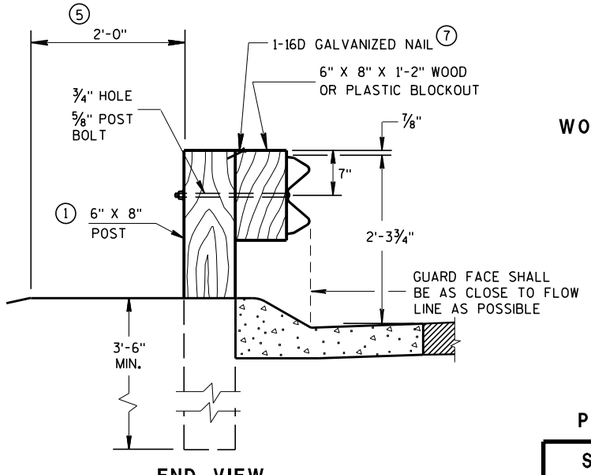
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



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



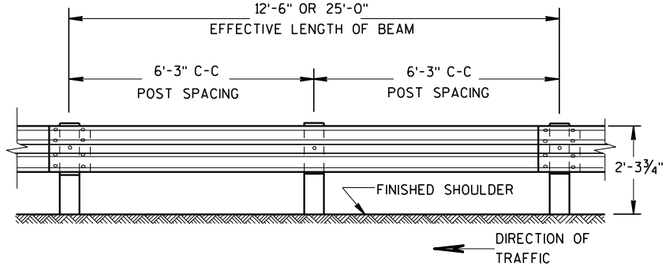
END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

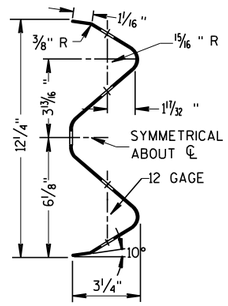
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 15-11a

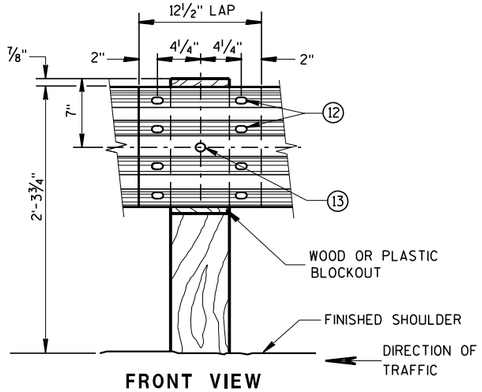


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

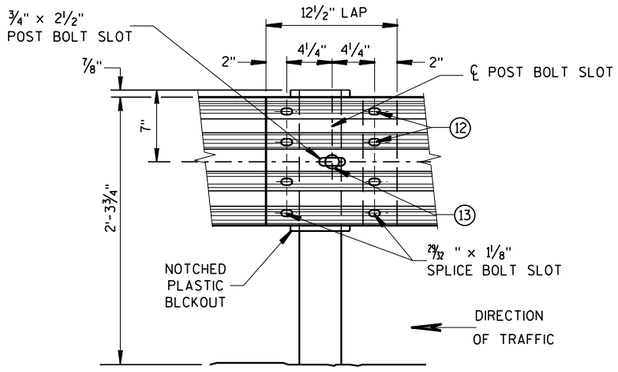
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

(12) 8 -5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.

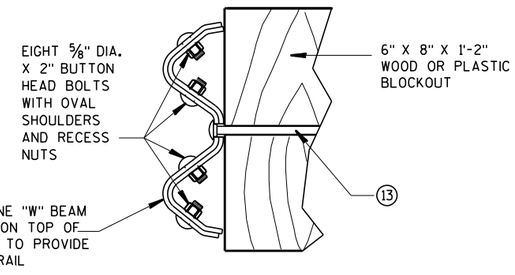
FRONT VIEW

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



FRONT VIEW

BEAM SPLICE AT STEEL POST

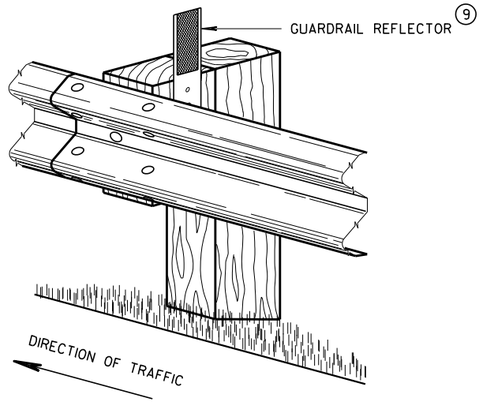


NESTED W BEAM (NW)

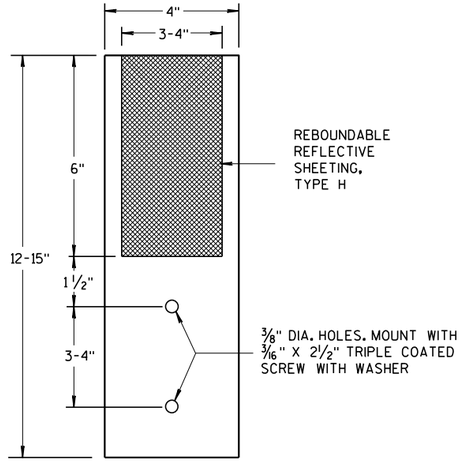
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



4" X 12" GUARDRAIL REFLECTOR DETAIL AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

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

STATE OF WISCO 51
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 15-11b

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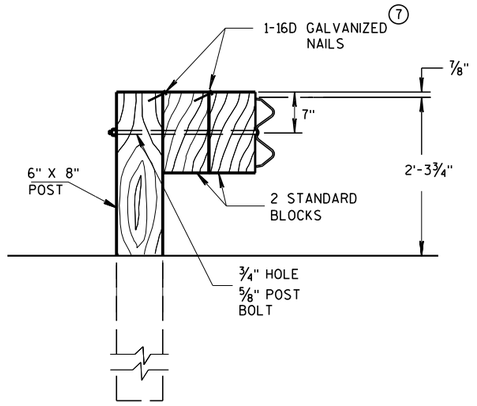
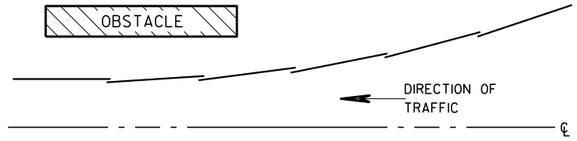
S.D.D. 14 B 15-11b

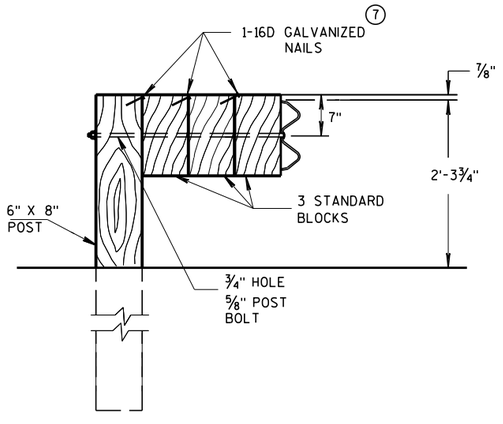


DETAIL FOR DOUBLE BLOCKS

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

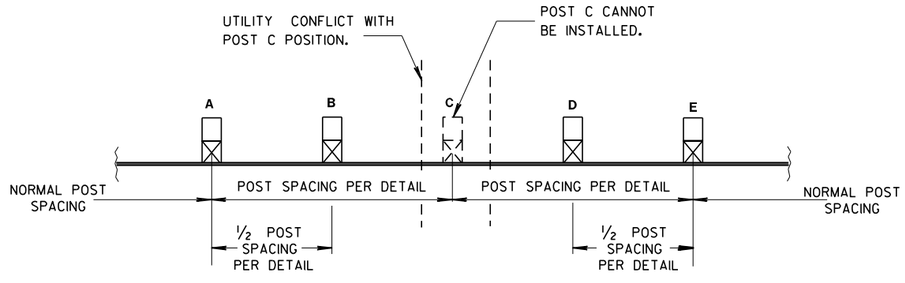


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

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



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

6

S.D.D. 14 B 15-11c

6

S.D.D. 14 B 15-11c

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6½"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

(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.

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

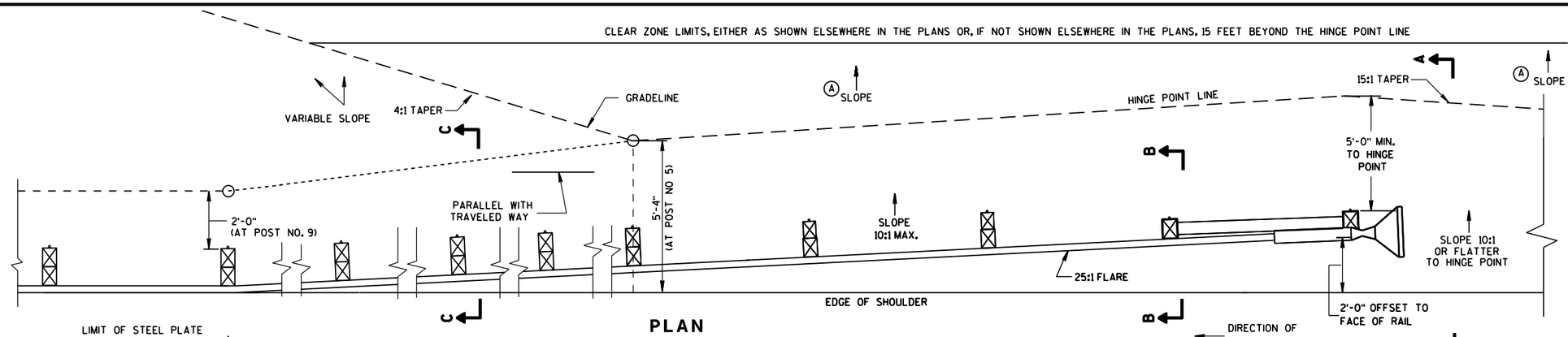
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

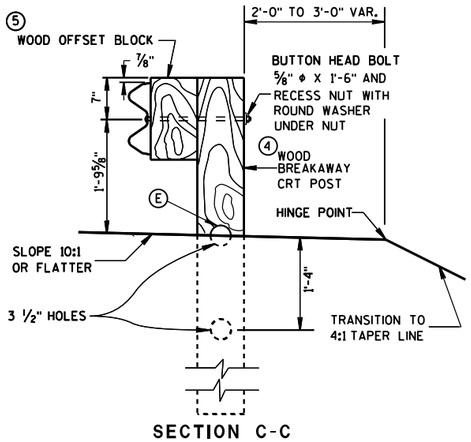
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

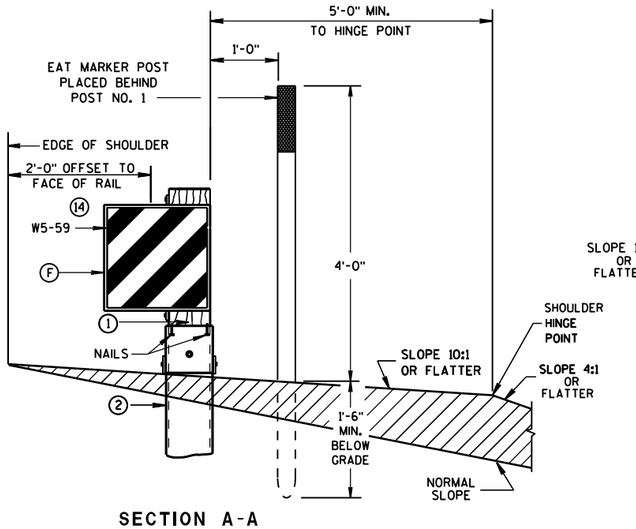
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

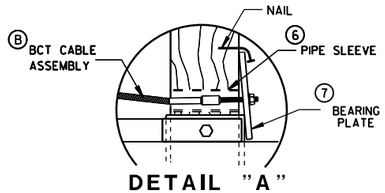
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

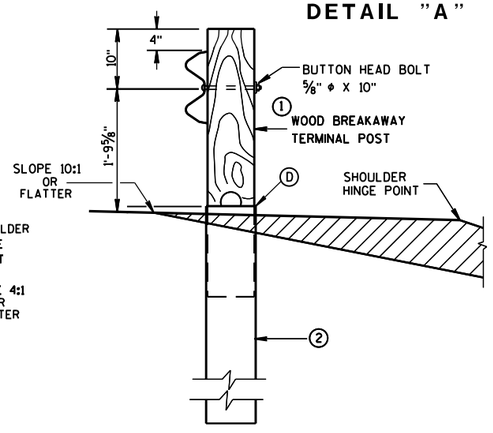
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

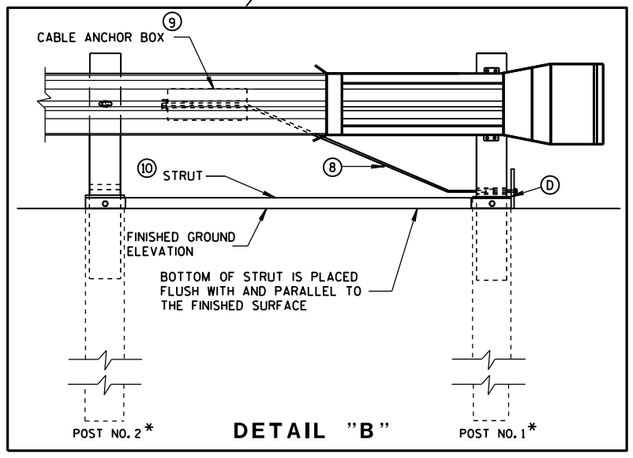










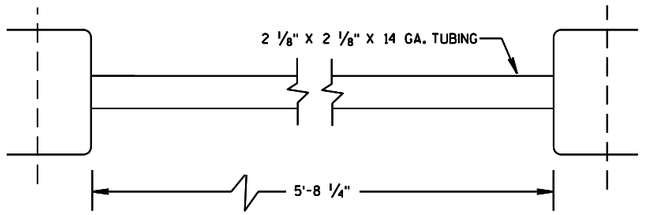


STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

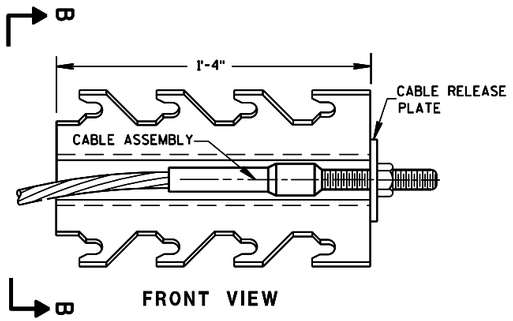
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

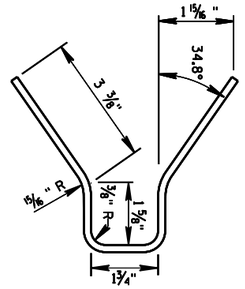
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL

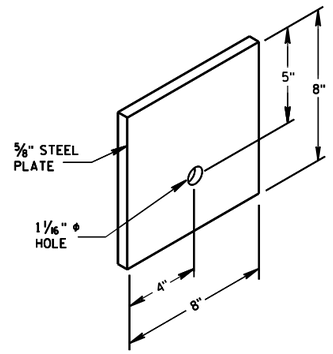


FRONT VIEW



SECTION B-B

⑨ CABLE ANCHOR BOX



⑦ STEEL BEARING PLATE

6

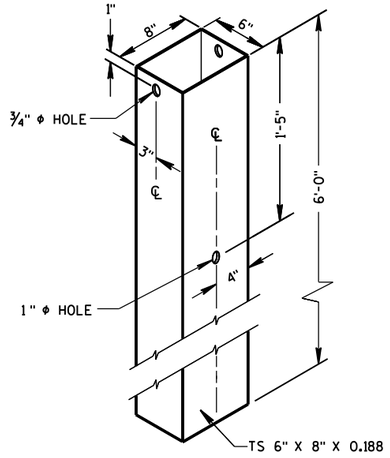
6

S.D.D. 14 B 24-9b

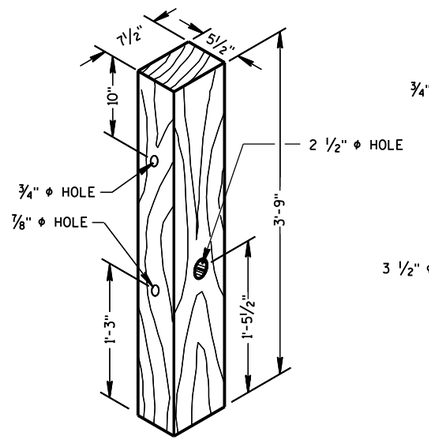
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

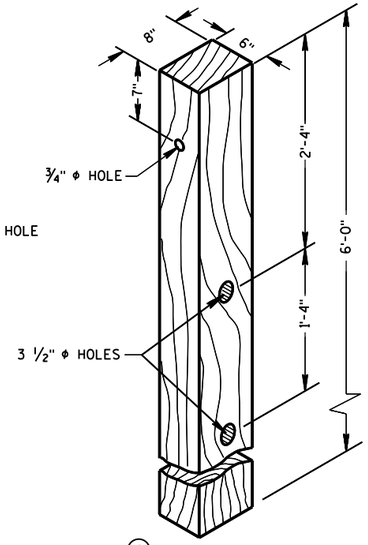
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



② 72" STEEL TUBE
(POSTS NO. 1-2



① TERMINAL POST

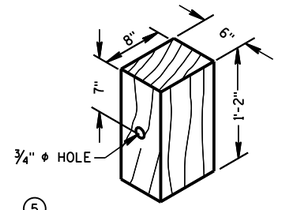


④ CRT POST
(POSTS NO'S 5-8

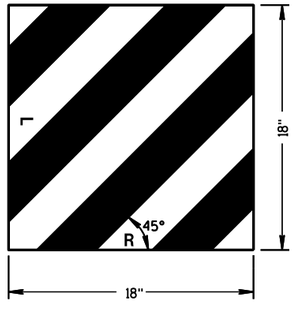
WOOD BREAKAWAY POSTS

GENERAL NOTES

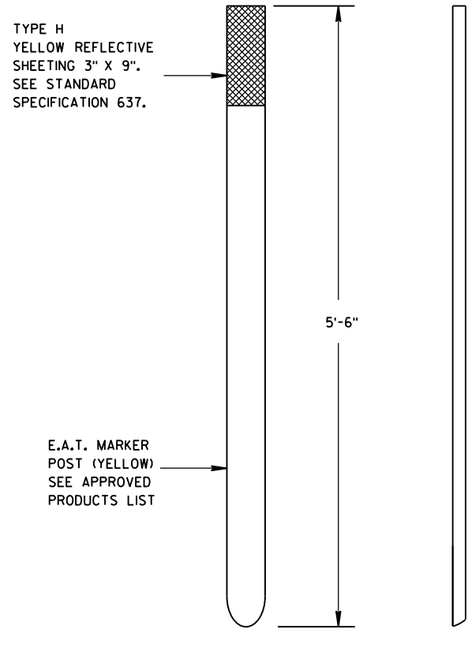
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



⑭ REFLECTIVE SHEETING DETAILS



E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS 55 ENT
UNIT SUPERV...

6

S.D.D. 14 B 24-9c

6

S.D.D. 14 B 24-9c

(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.

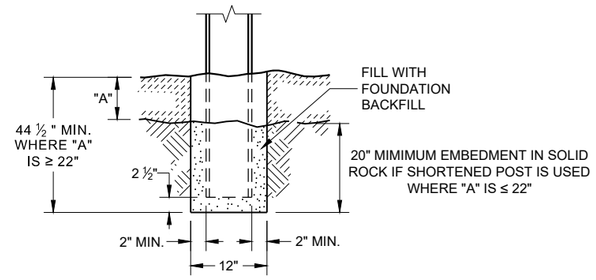
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

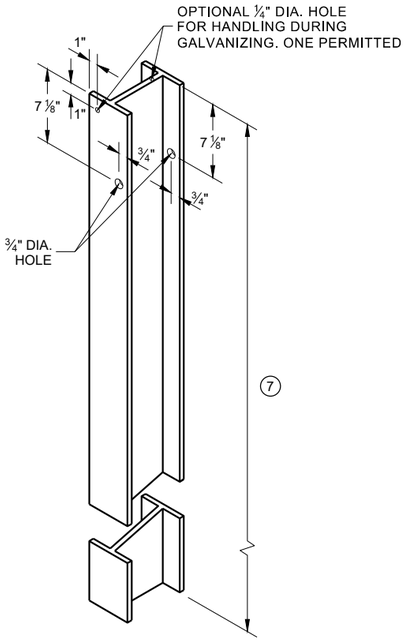
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

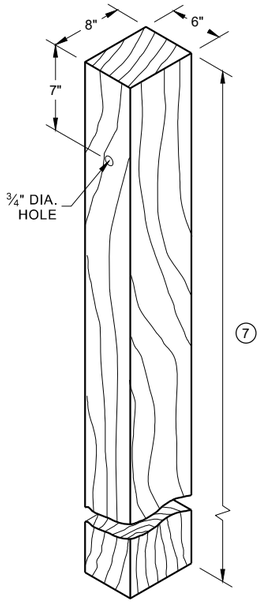
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



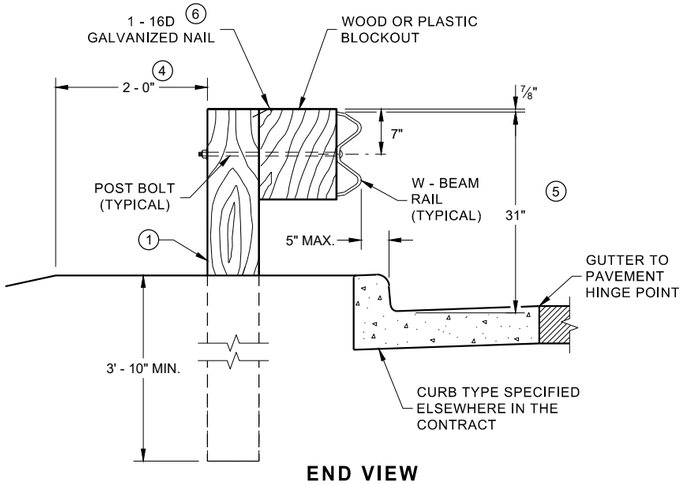
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



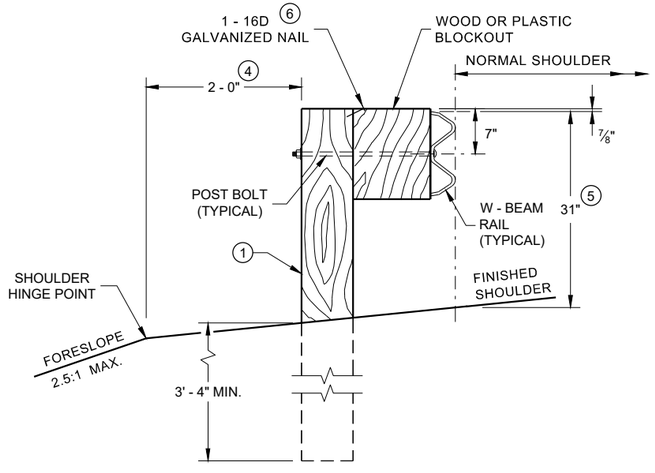
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



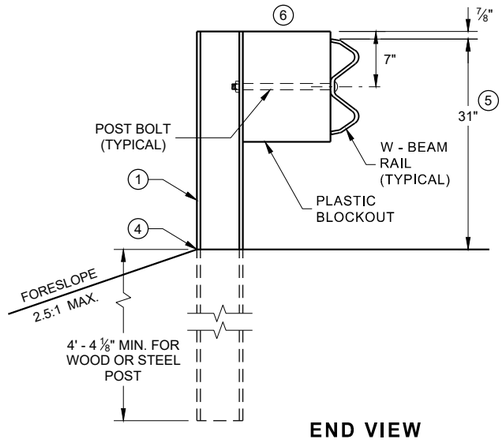
WOOD POST (6" X 8") NOMINAL (1)



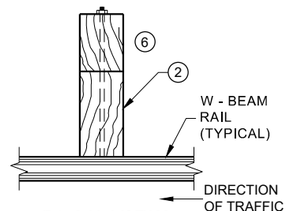
END VIEW
LOCATED ALONG A CURBED ROADWAY



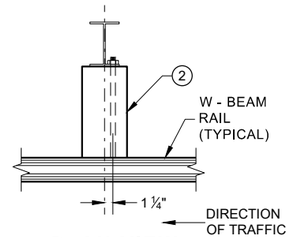
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



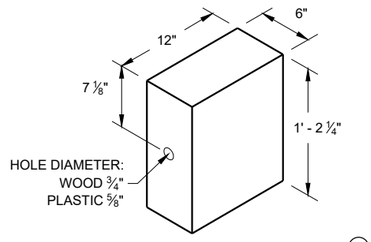
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



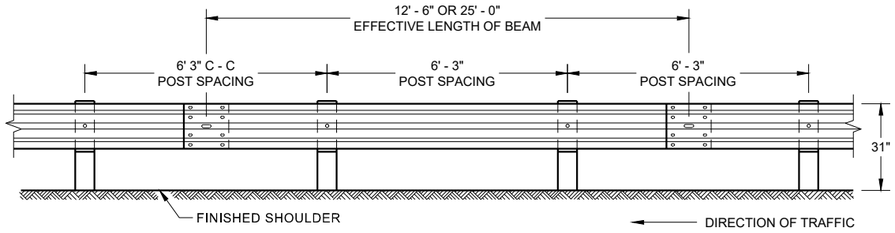
PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



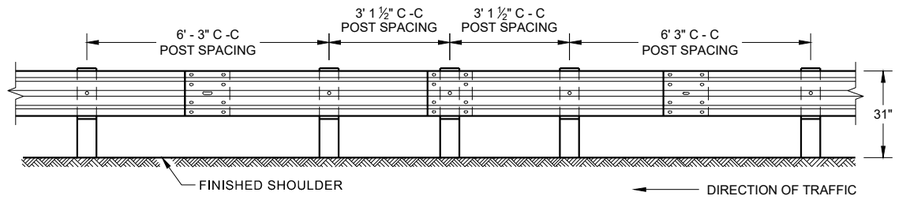
WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

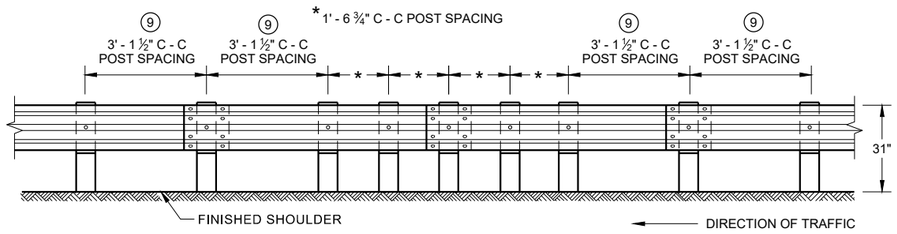
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



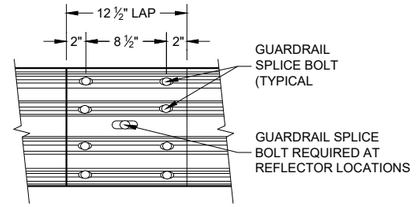
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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

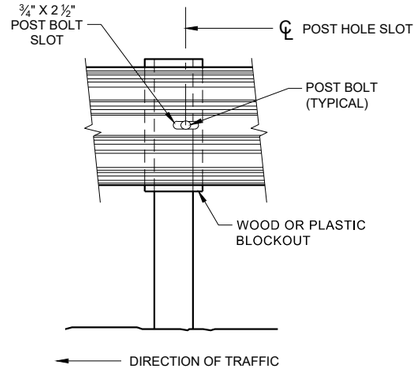
GENERAL NOTES

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

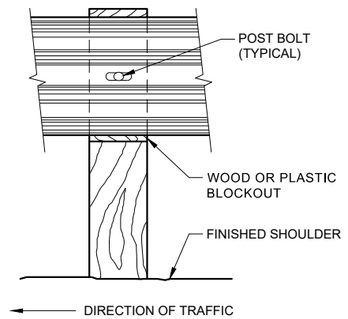
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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.

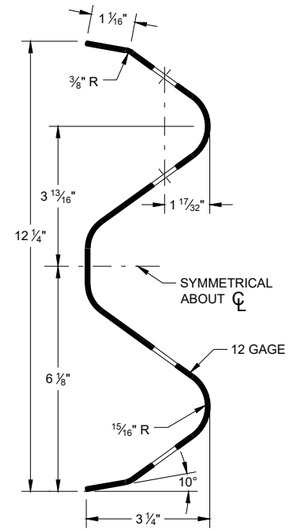
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



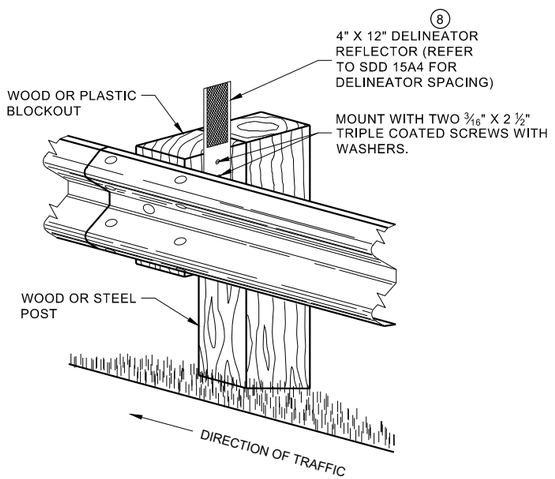
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



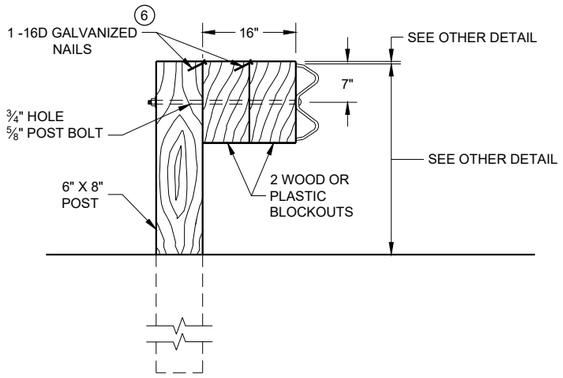
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 06b

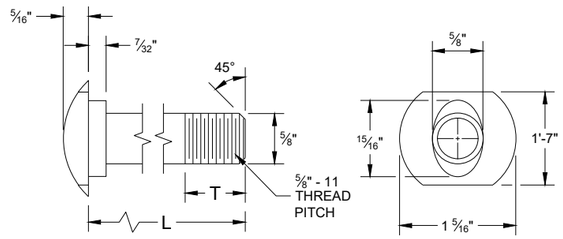


DETAIL FOR 16" BLOCKOUT DEPTH

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.

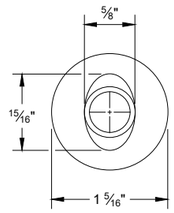
NOTE:

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.

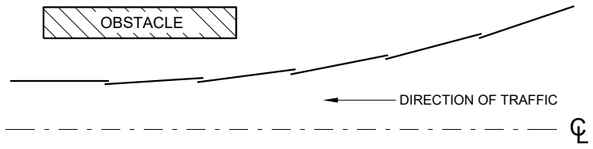


POST BOLT TABLE

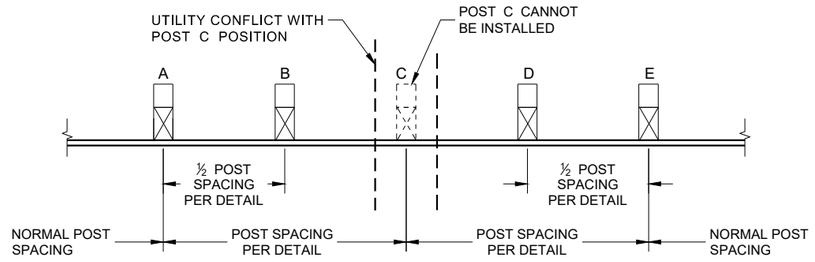
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



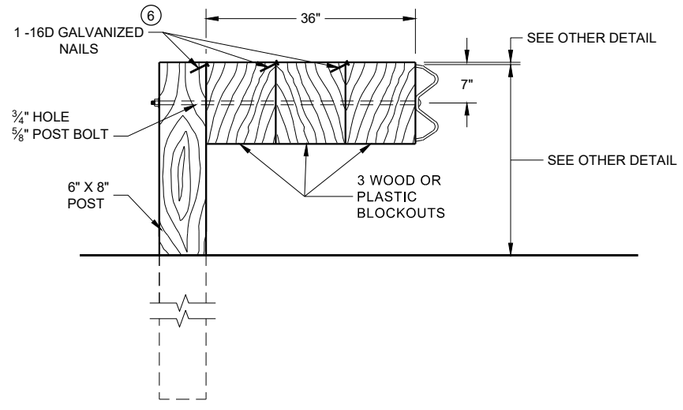
ALTERNATE BOLT HEAD



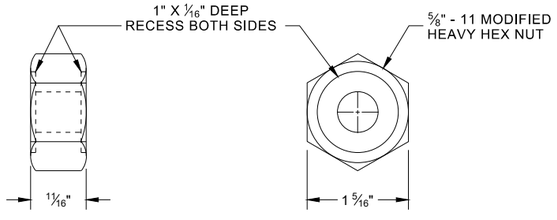
PLAN VIEW
BEAM LAPPING DETAIL



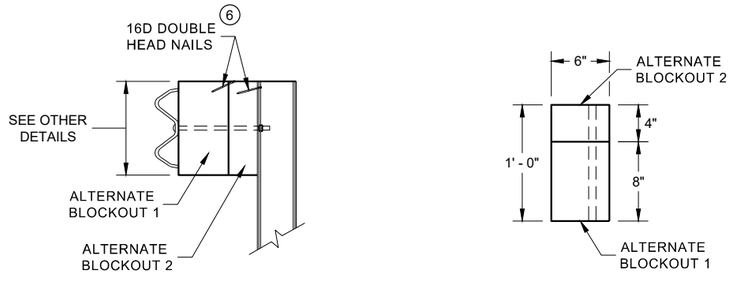
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

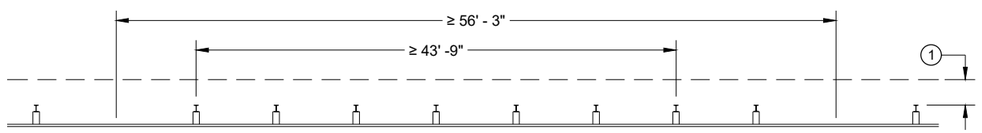
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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.

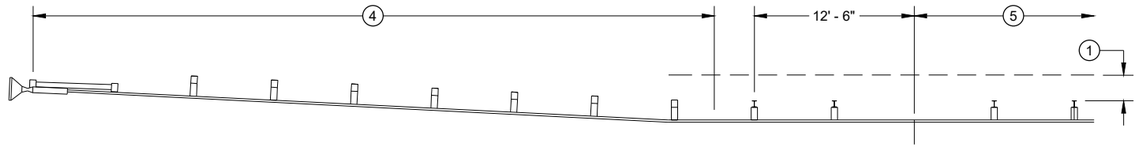
(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

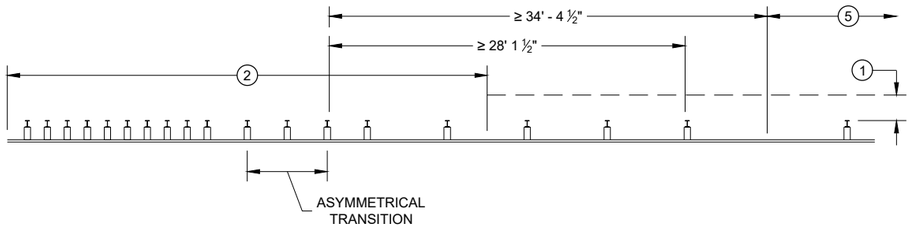
6
SDD 14B42 - 06c



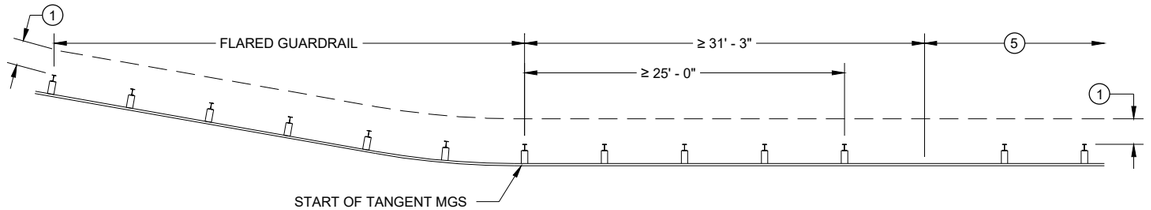
MISSING POST IN NORMAL BEAM GUARD RUN



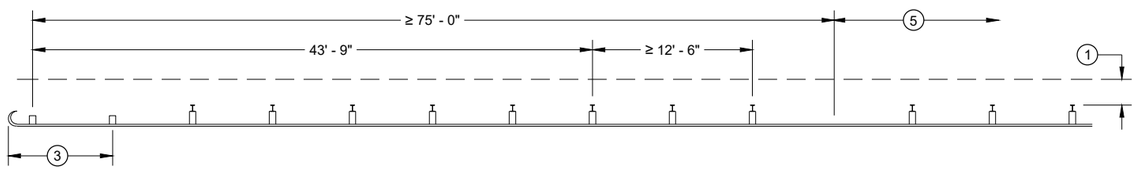
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



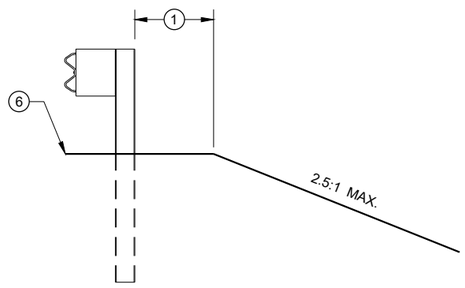
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

1. MINIMUM OF 2 FEET OF GRADING BEHIND POST.
2. SEE SDD 14B45 FOR MORE DETAILS.
3. SEE SDD 14B47 FOR MORE DETAILS.
4. SEE SDD 14B44 FOR MORE DETAILS.
5. SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
6. SEE PLAN FOR SHOULDER DESIGN.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 14B42 - 06d

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.

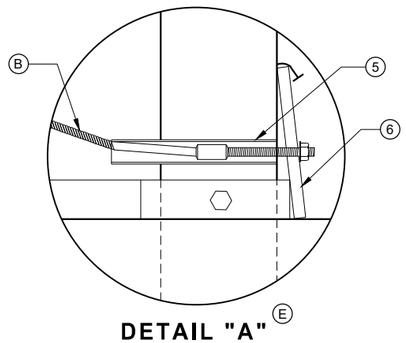
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

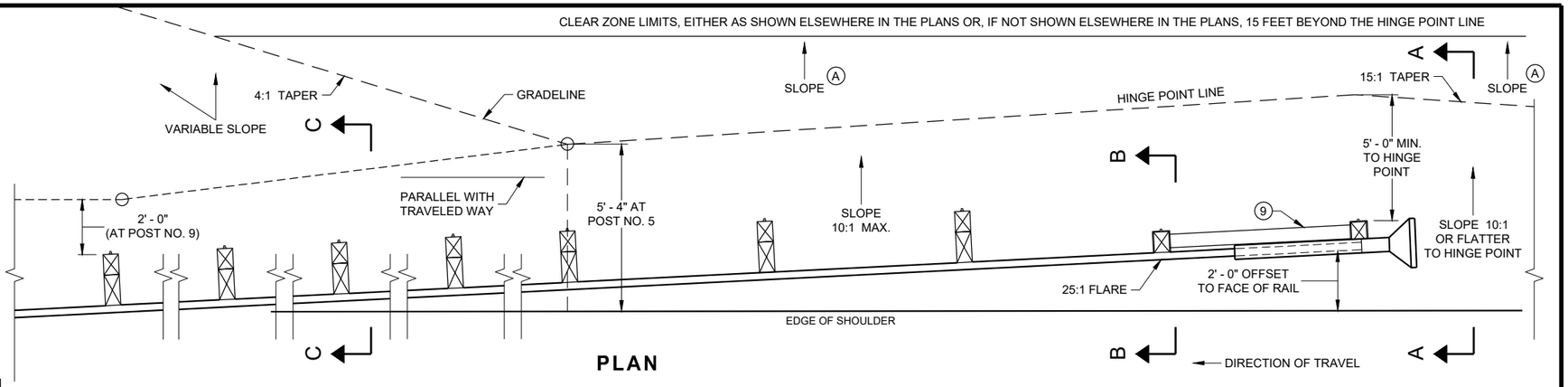
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

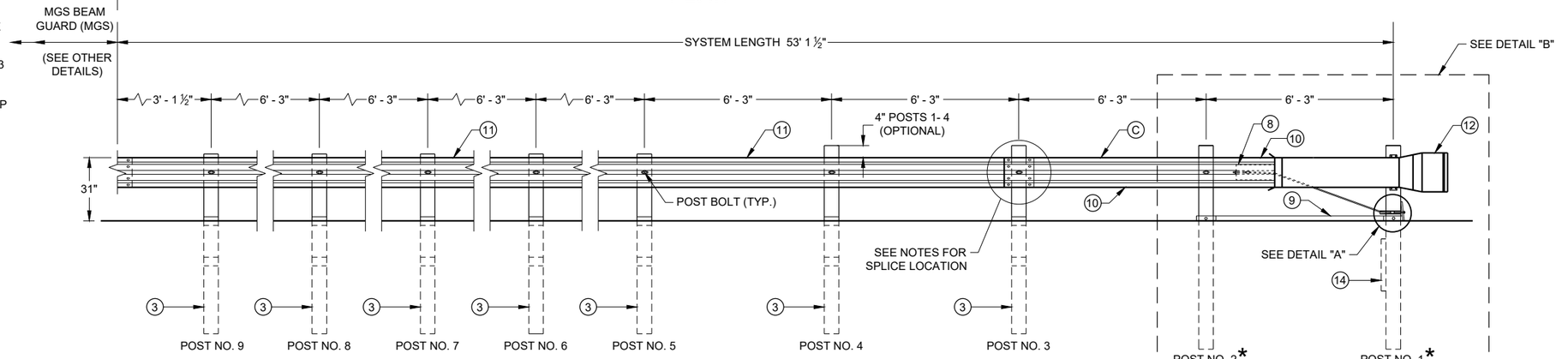
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



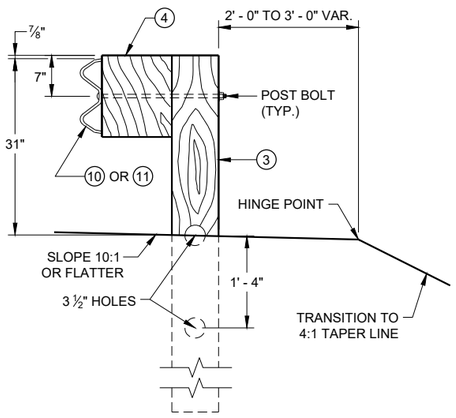
DETAIL "A" (E)



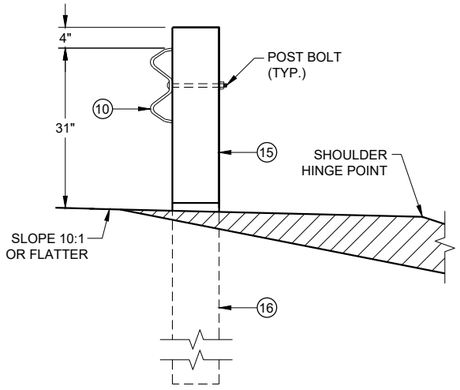
PLAN



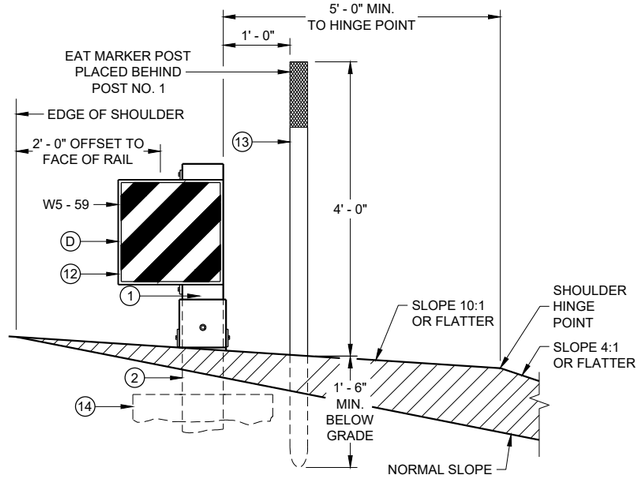
ELEVATION



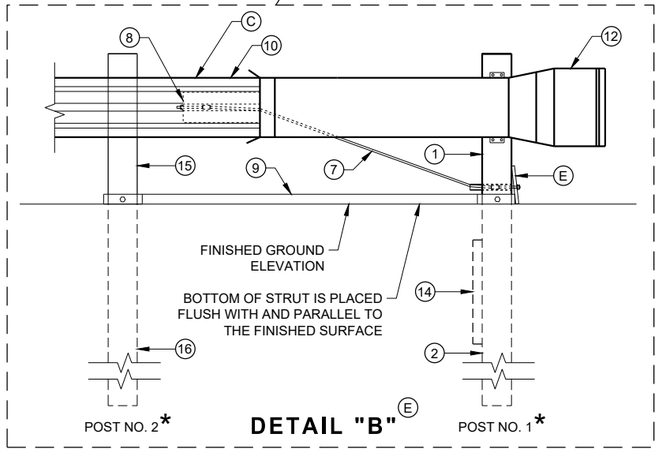
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



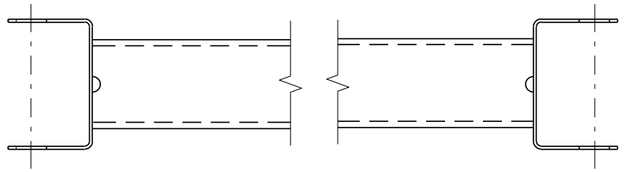
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

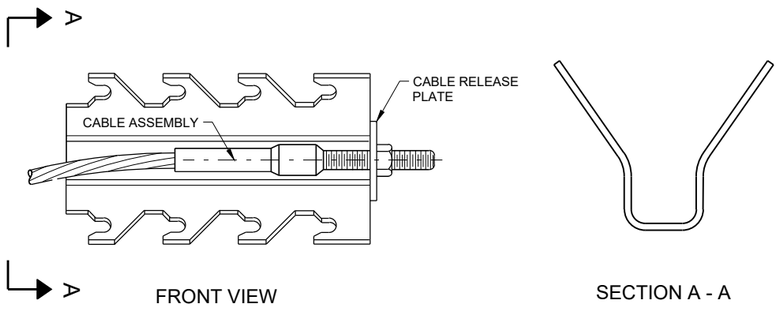
SDD 14B44 - 04a



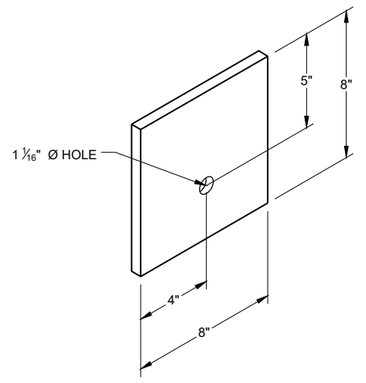
GENERIC GROUND STRUT ⑨ Ⓔ

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

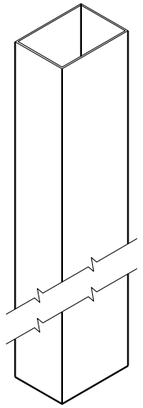
6

SDD 14B44 - 04b

SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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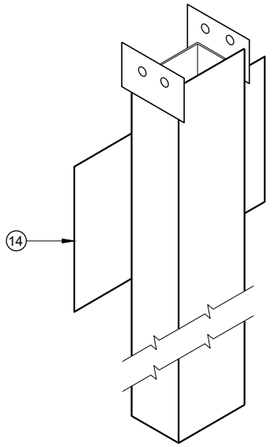
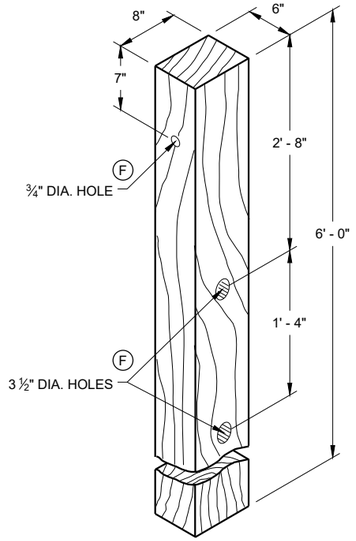
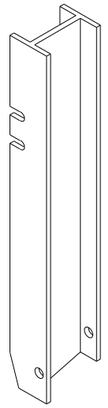


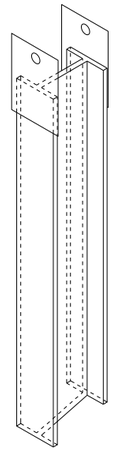
LOWER POST NO. 1 (2) (E)



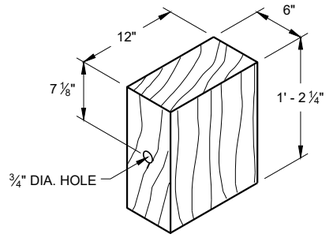
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



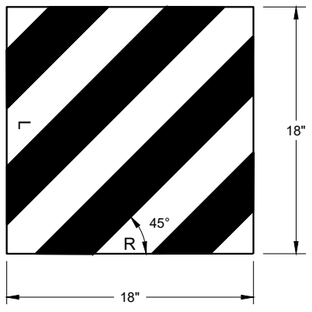
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)



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



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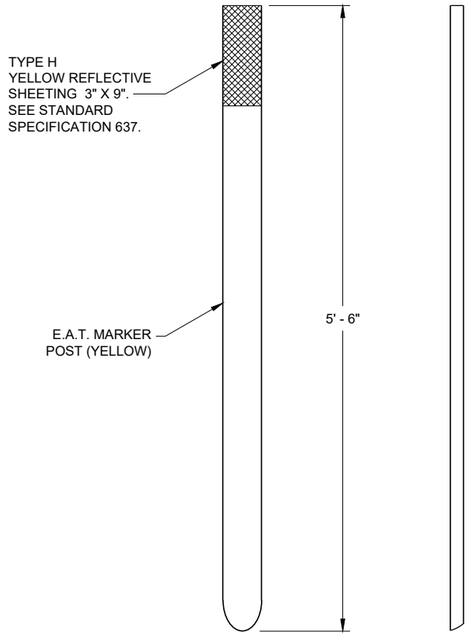
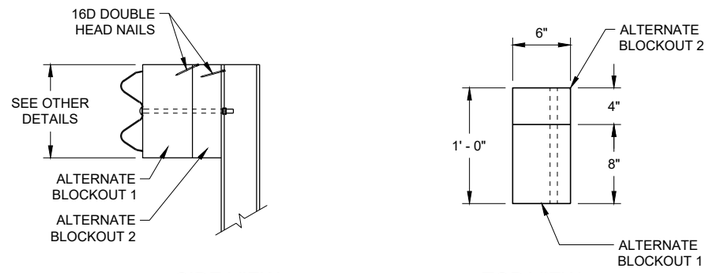
REFLECTIVE SHEETING DETAIL (E)



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)

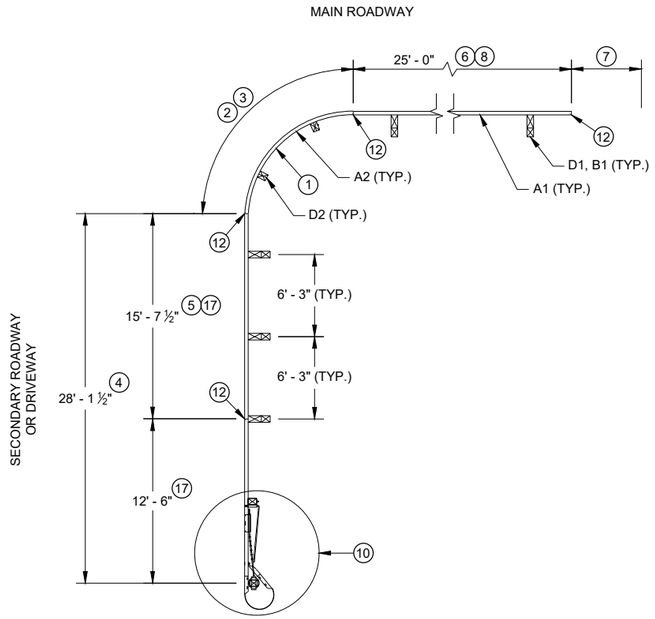
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

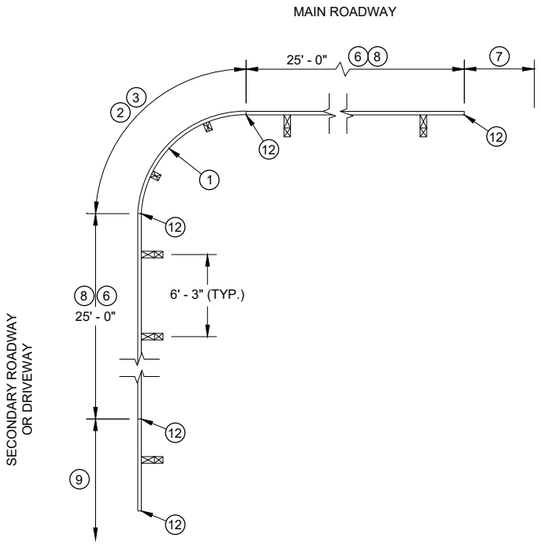
6

SDD 14B44 - 04c



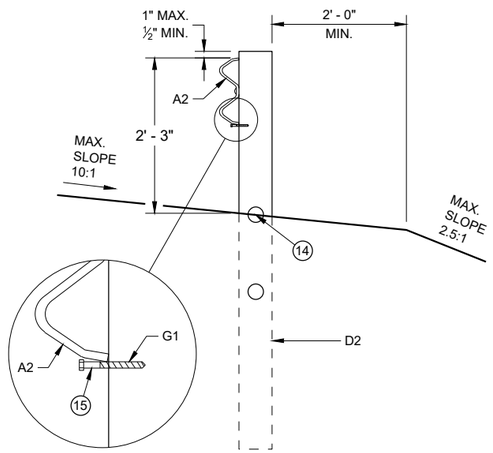
PLAN VIEW

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

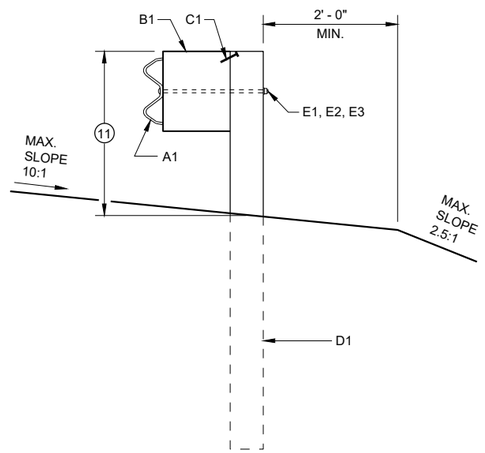


PLAN VIEW

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



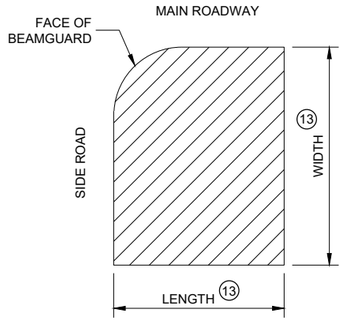
CONTROLLED RELEASE TERMINAL POST (CRT) IN RADIUS



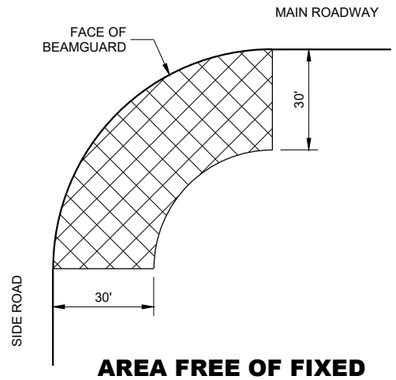
BEAM GUARD POSTS IN HEIGHT TRANSITION

TABLE FOR RADIUS OF 32' AND LESS

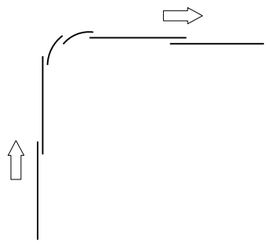
RADIUS (FT)	LENGTH (FT)	WIDTH (FT)
8	25	15
16	30	15
24	40	20
32	50	30



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



AREA FREE OF FIXED OBJECTS FOR RADIUS GREATER THAN 32'



LAP SPLICE DETAIL

GENERAL NOTES

SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.

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

GALVANIZE PARTS AFTER FABRICATION.

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

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

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

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

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

DRAWINGS ARE NOT TO SCALE.

(1) RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.

(2) CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6' - 3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE (CRT) POSTS.

(3) WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAIL IS RESTED ON TOP OF LAG SCREW.

(4) MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID WITH BEAM GUARD ITEM.

(5) ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.

(6) MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TO TRANSITION TO RIGID BARRIER. ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.

(7) BEAM GUARD, EAT, OR TRANSITION TO RIGID BARRIER. SEE PLAN.

(8) TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.

(9) ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.

(10) SHORT RADIUS TERMINAL (SEE OTHER DETAILS).

(11) HEIGHT VARIES. SEE NOTE (8) AND (8).

(12) BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRES PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.

(13) SEE TABLE FOR VALUES.

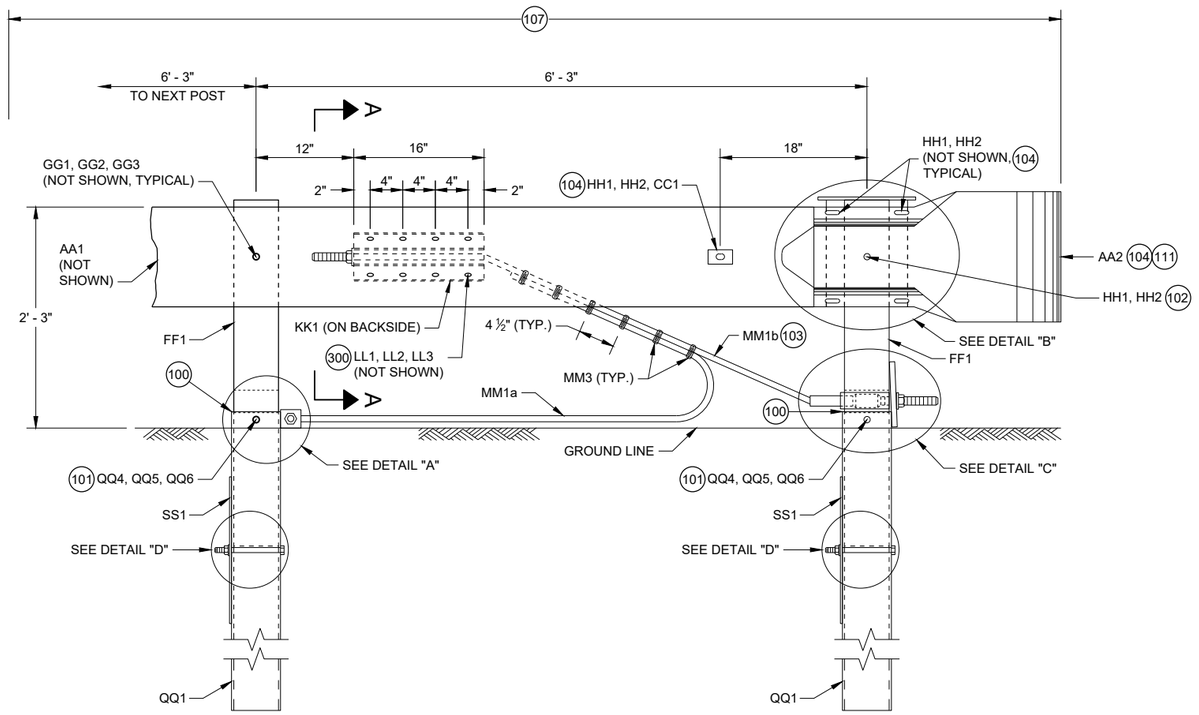
(14) MAXIMUM HEIGHT FOR CENTER OF HOLE IS ¾" ABOVE FINISHED GROUND ±1".

(15) DRILL POST $^{15}/_{64}$" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.

(16) SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.

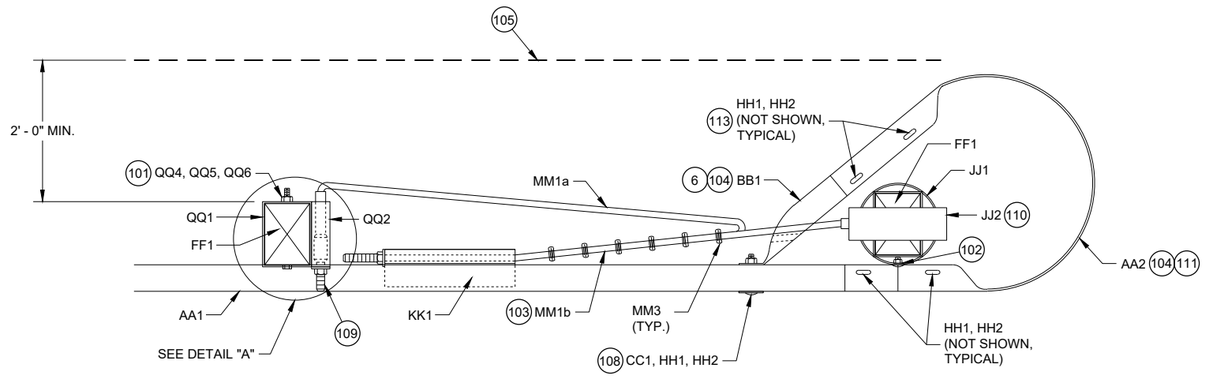
(17) TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL (CRT).

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



PROFILE VIEW

SHORT RADIUS TERMINAL



TOP VIEW

SHORT RADIUS TERMINAL

GENERAL NOTES

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

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

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

103 CABLE IS TAUT.

104 ADJUST AA2 AND BB1 TO FIT.

105 BREAK POINT OF SHOULDER.

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

107 PAY LIMIT FOR BEAM GUARD.

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

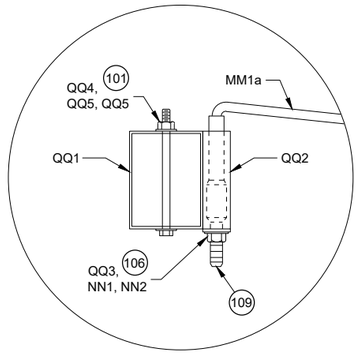
109 CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS ½" TOLERANCE). DEBURR AFTER CUTTING.

110 SEE STEEL PIPE ASSEMBLY DETAILS.

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

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

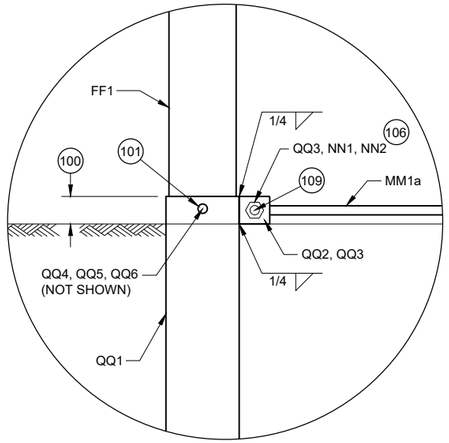
113 FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.



TOP VIEW

DETAIL "A"

(WOOD BREAKAWAY AND BEAM GUARD RAIL POSTS NOT SHOWN)



PROFILE VIEW

DETAIL "A"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

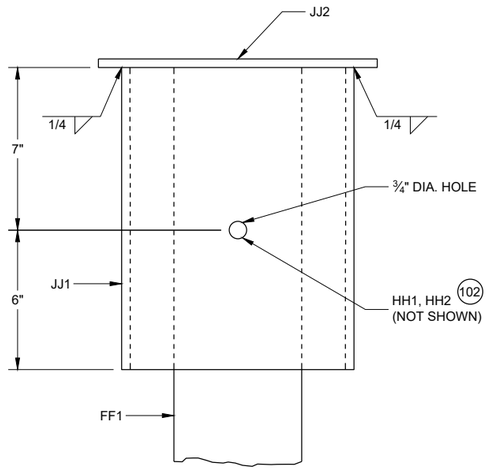
SDD 14B53 - 01b

6

SDD 14B53 - 01b

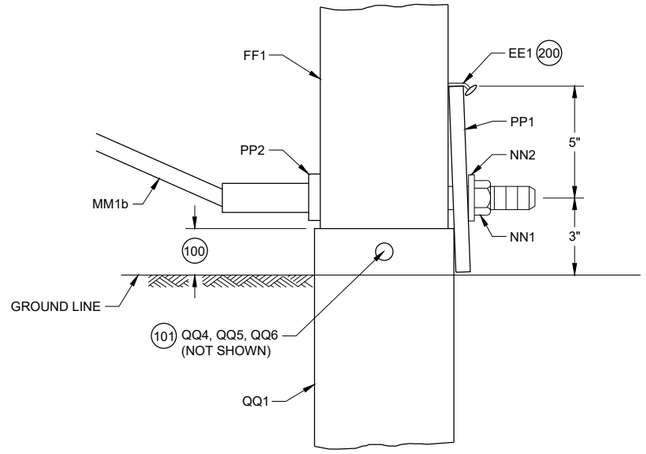
GENERAL NOTES

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



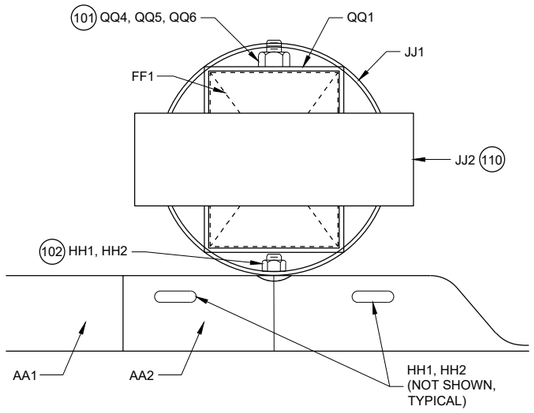
PROFILE VIEW

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



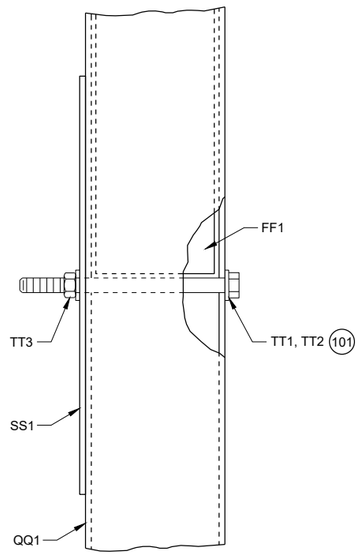
PROFILE VIEW

DETAIL "C"



PLAN VIEW

DETAIL "B"
STEEL PIPE ASSEMBLY



PROFILE VIEW

DETAIL "D"

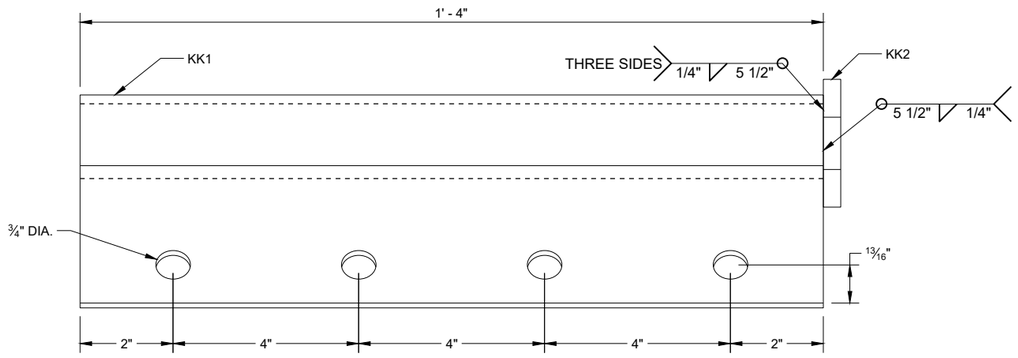
SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

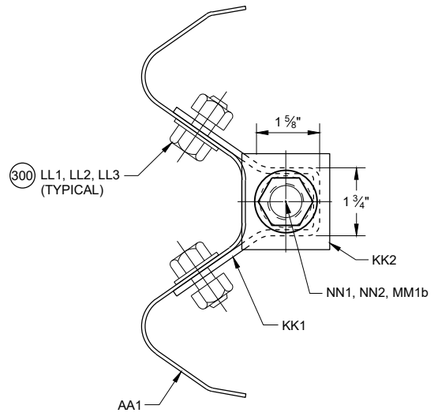
6

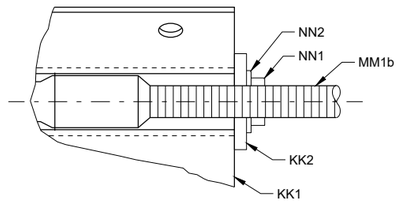
SDD 14B53 - 01c

GENERAL NOTES

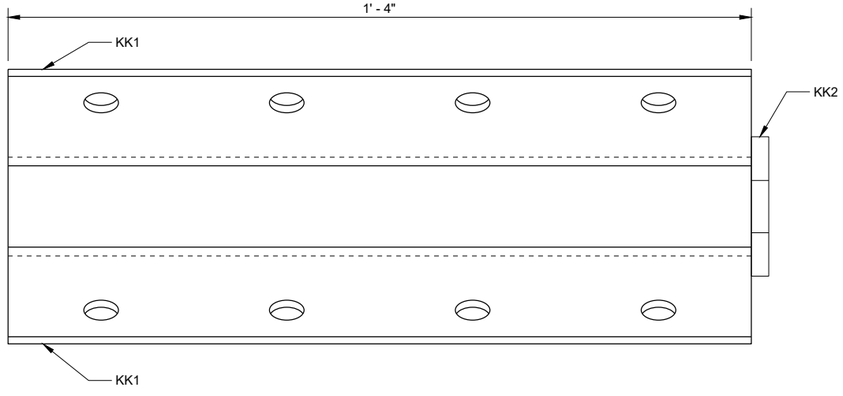
(300) WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT (8) LL1 AND LL3 REQUIRED. SIXTEEN (16) LL2 REQUIRED.

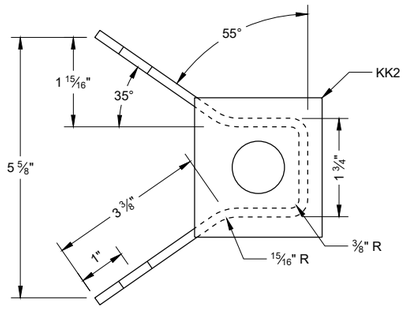




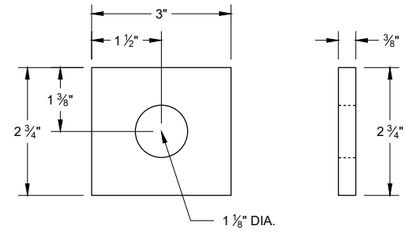


SECTION A - A





ANCHOR BRACKET (KK1, KK2)



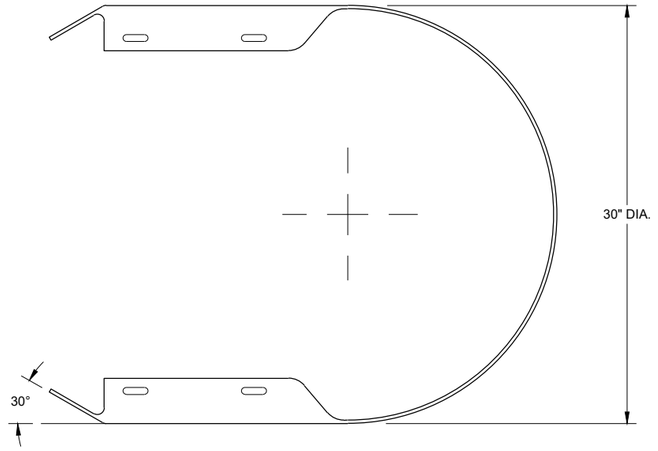
ANCHOR BRACKET BEARING PLATE (KK2)

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

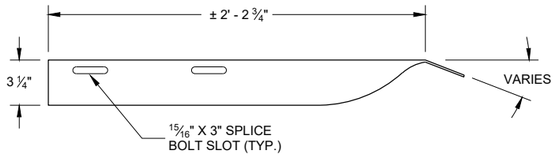
GENERAL NOTES

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

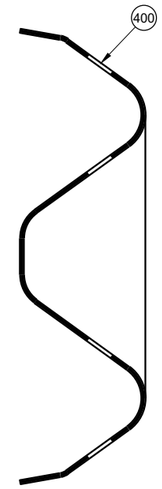
(401) CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1 .



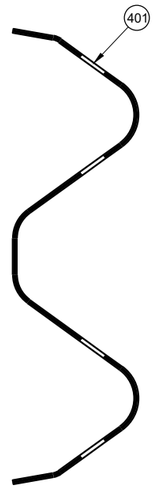
TOP VIEW



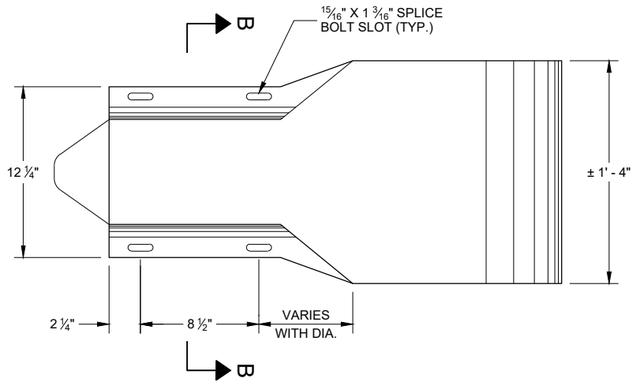
TOP VIEW



SECTION B -B

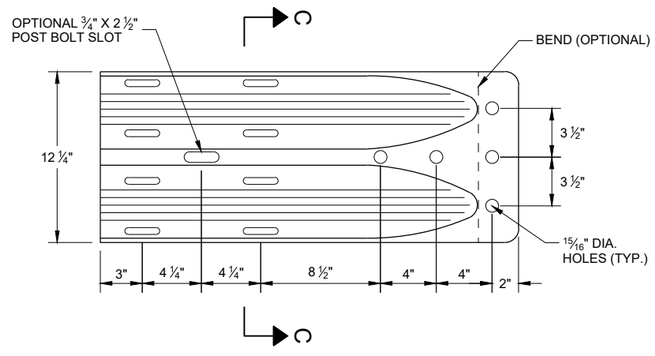


SECTION C -C



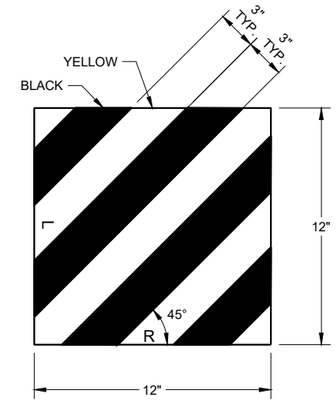
PROFILE VIEW

W BEAM
END SECTION BUFFER (AA2)



PROFILE VIEW

W BEAM
TERMINAL CONNECTOR (BB1)



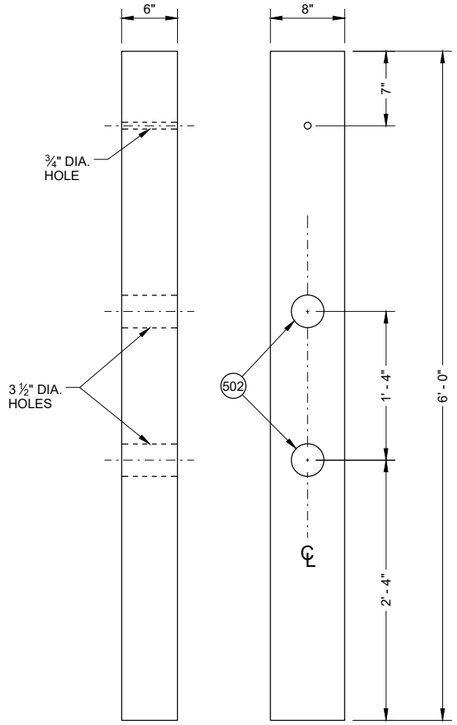
REFLECTIVE SHEETING (UU1, UU2)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

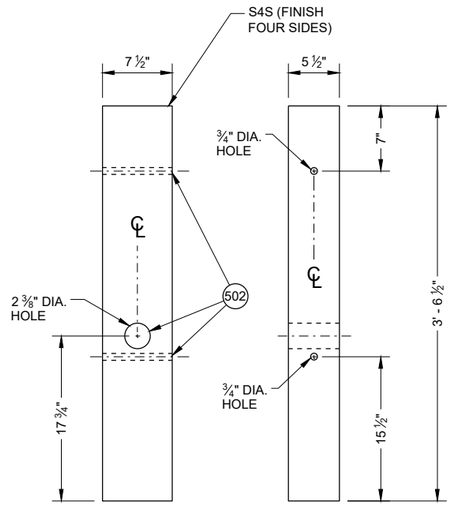
6

SDD 14B53 - 01e



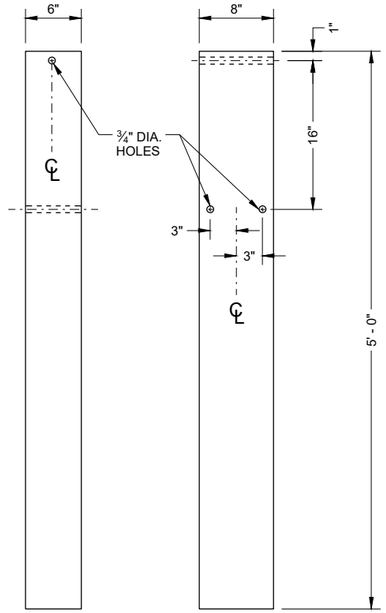
FRONT VIEW SIDE VIEW

CONTROLLED RELEASE POST (CRT) (DD2)



FRONT VIEW SIDE VIEW

WOOD BREAKAWAY POST (FF1)



FRONT VIEW SIDE VIEW

FOUNDATION TUBE (QQ1) (500)

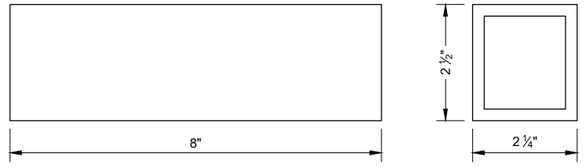
GENERAL NOTES

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

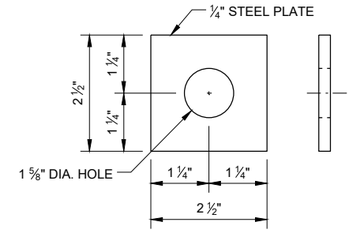
(501) FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.

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

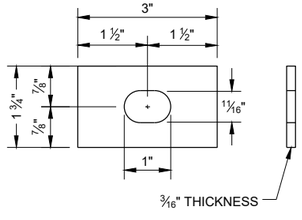
(503) MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE (109).



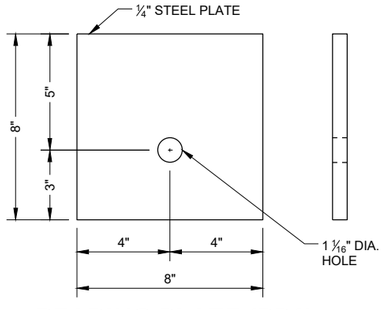
FOUNDATION TUBE - ANCHOR CABLE TUBE (QQ2)



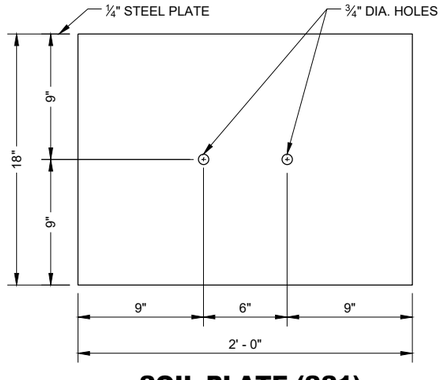
ANCHOR CABLE TUBE END PLATE (QQ3)



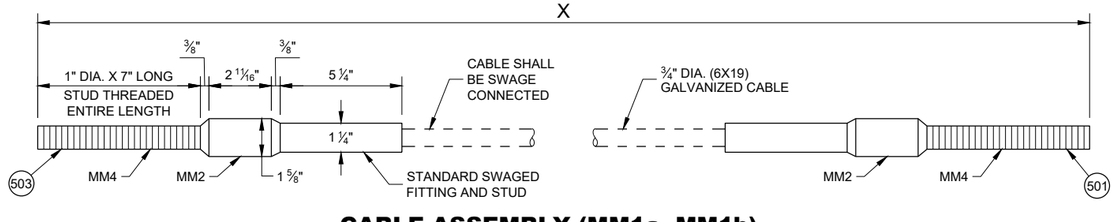
RECTANGULAR PLATE WASHER (CC1)



BEARING PLATE (PP1)



SOIL PLATE (SS1)



CABLE ASSEMBLY (MM1a, MM1b)

"X" LENGTH

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B53 - 01f

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

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

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

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

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SDD 14B53 - 01g

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

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

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

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

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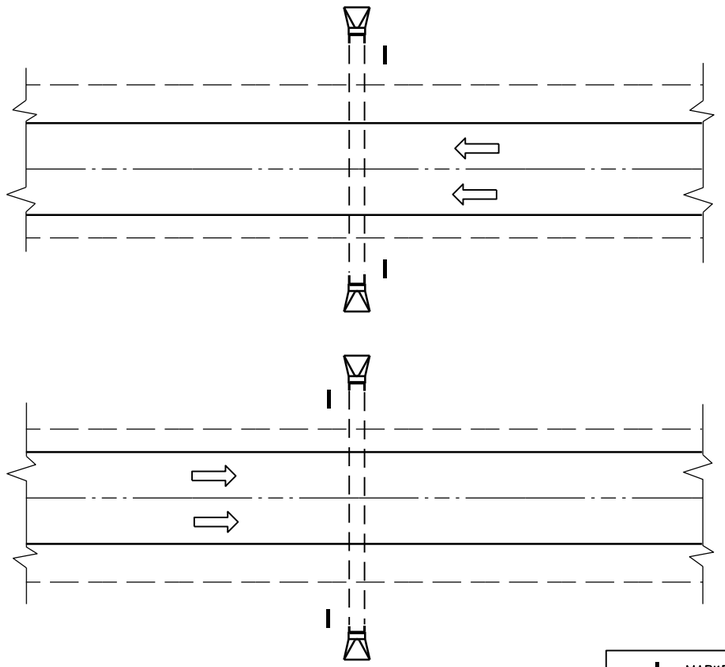
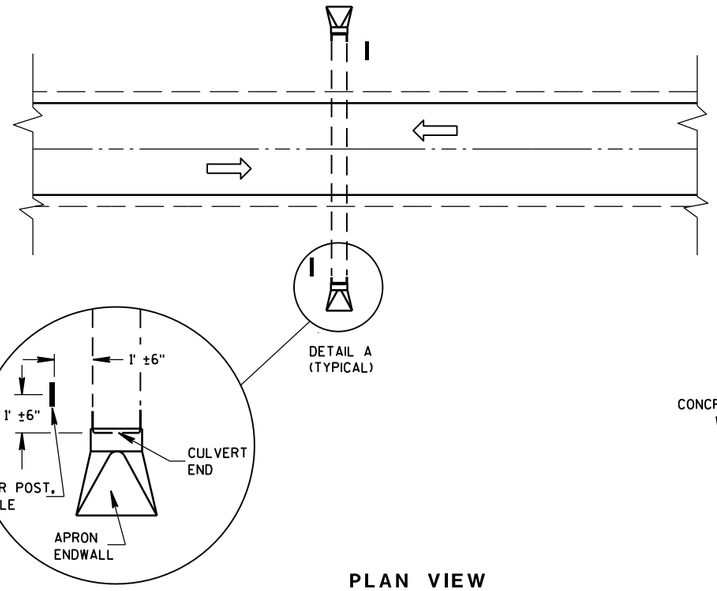
SDD 14B53 - 01i



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

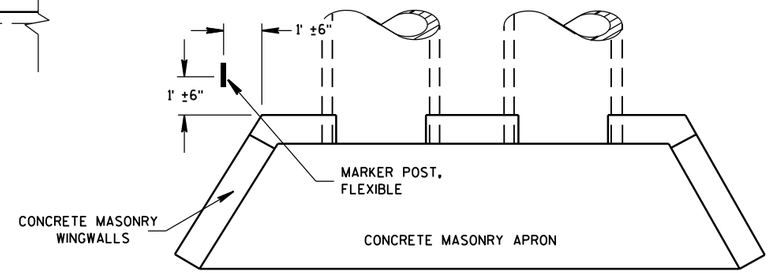
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

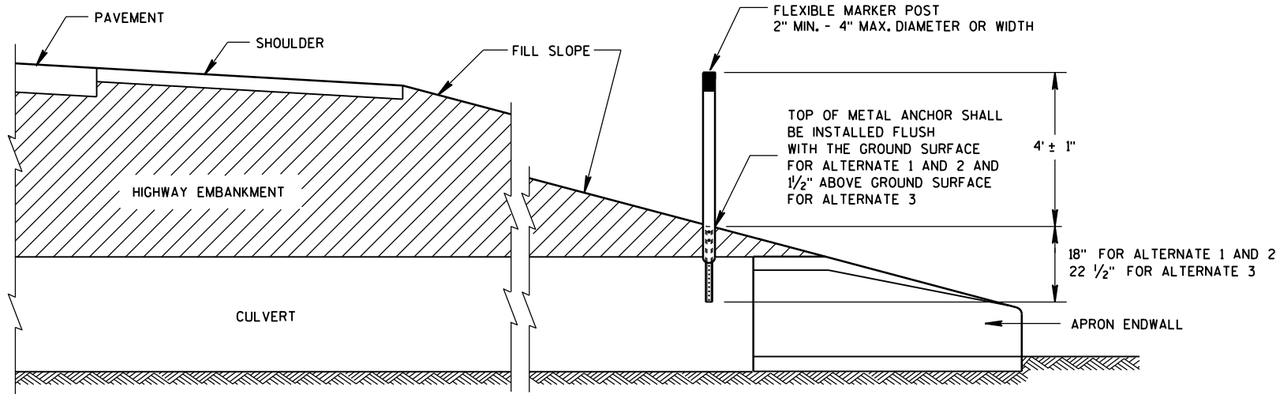
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 15 A 3-2a

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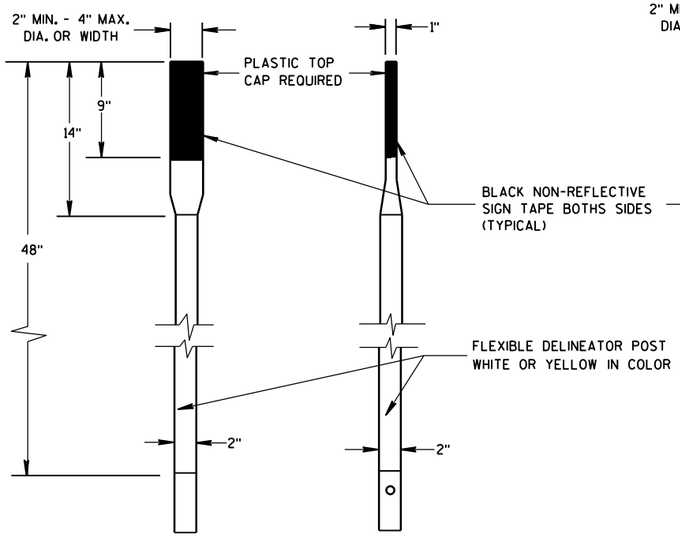
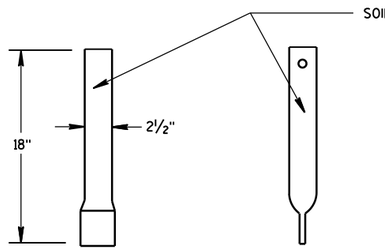
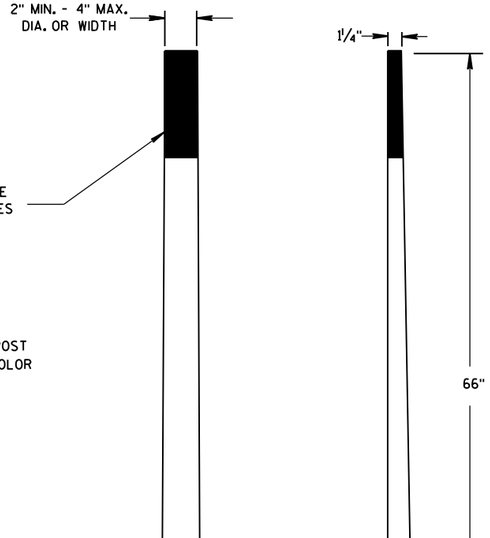
S.D.D. 15 A 3-2a





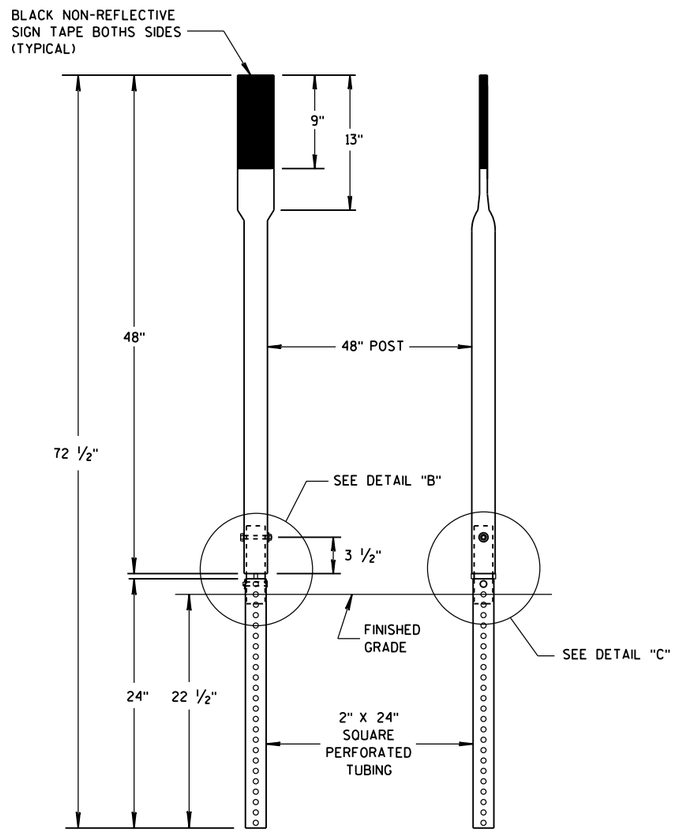
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

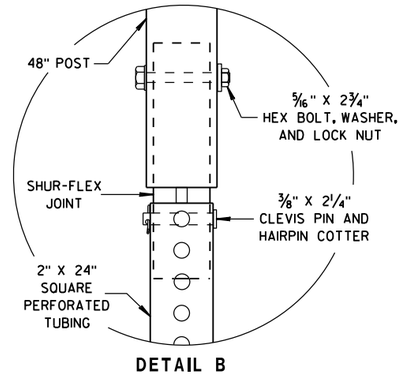
ALTERNATE 2



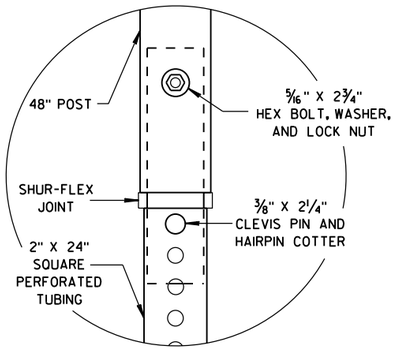
FRONT VIEW SIDE VIEW

ALTERNATE 3

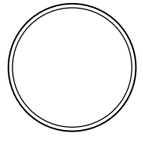
FLEXIBLE MARKER POSTS



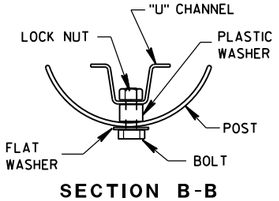
DETAIL B



DETAIL C



SECTION A-A



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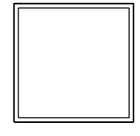

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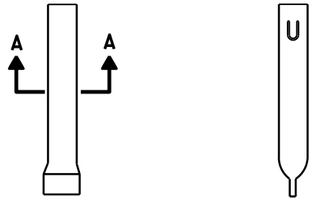
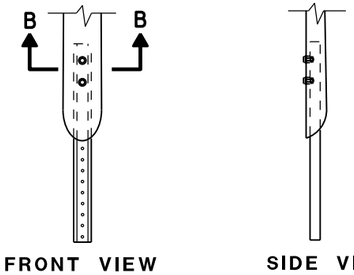


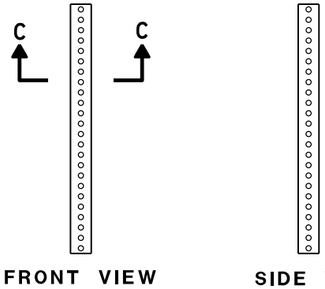
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2



FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER
FHWA	

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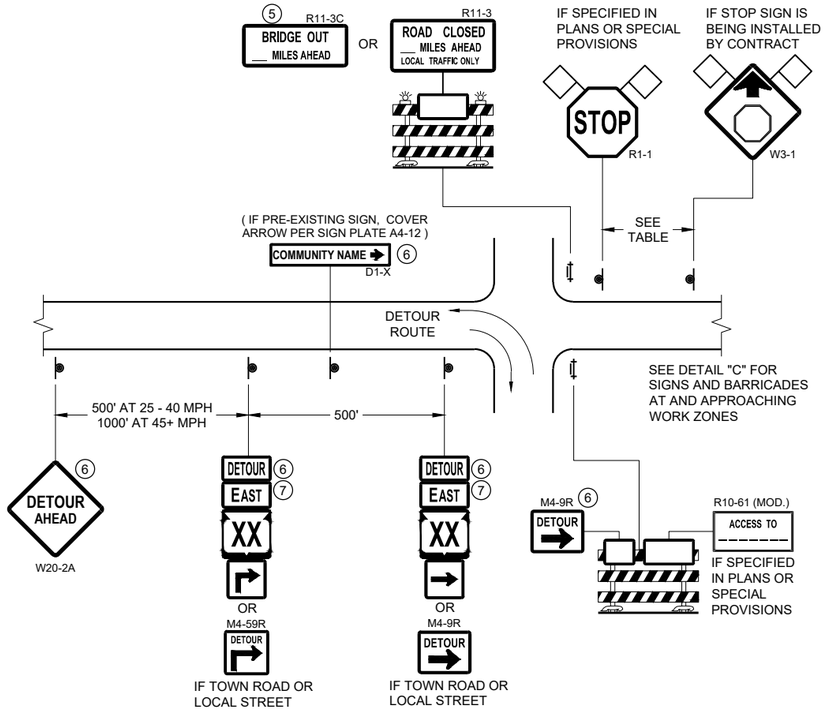
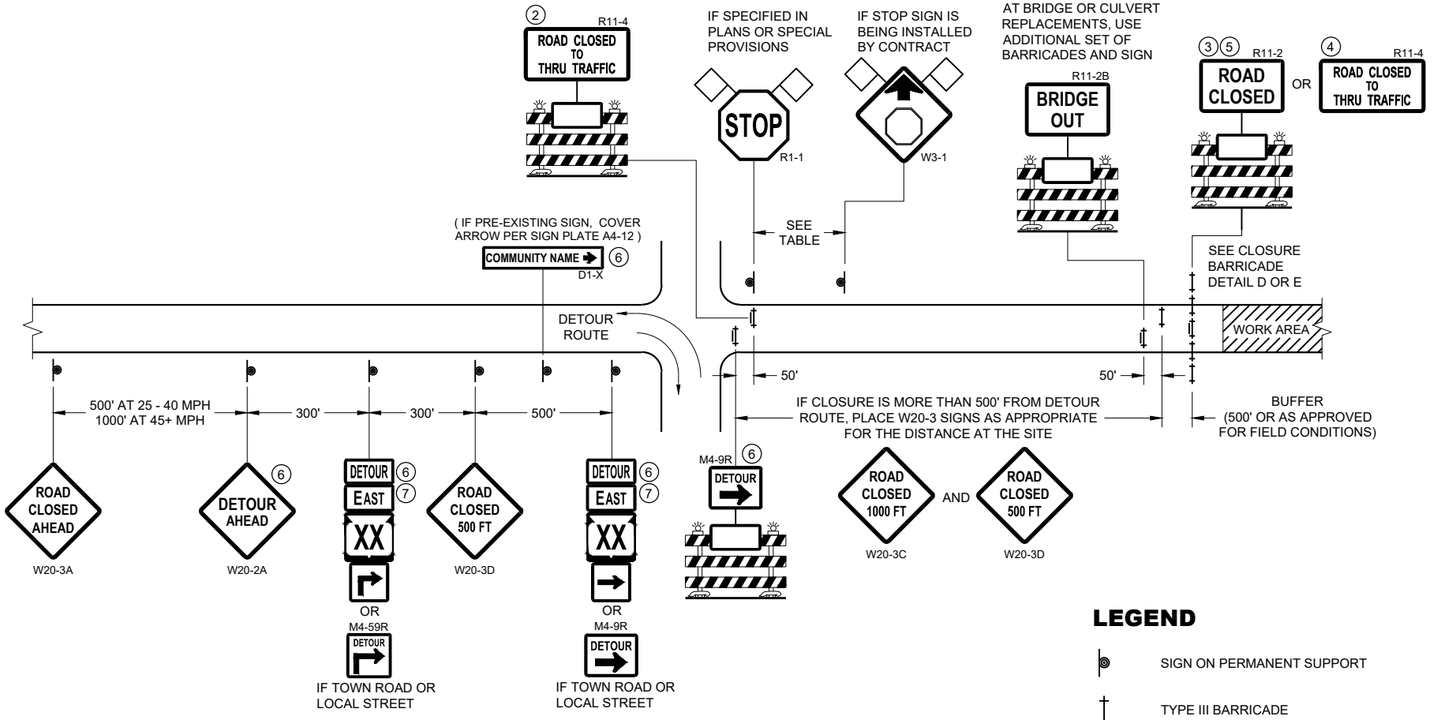
S.D.D. 15 A 3-2b



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



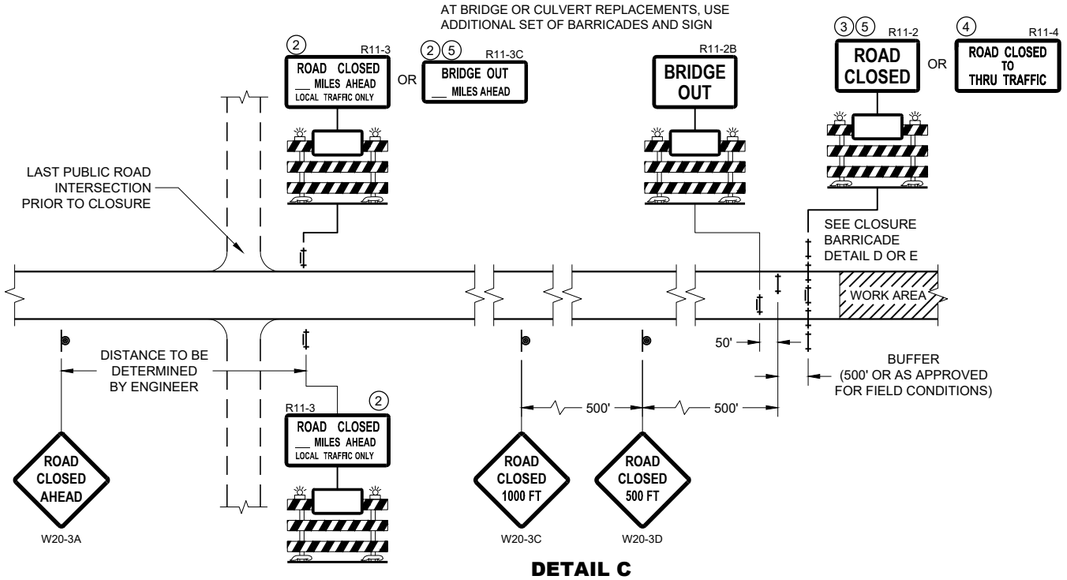
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

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

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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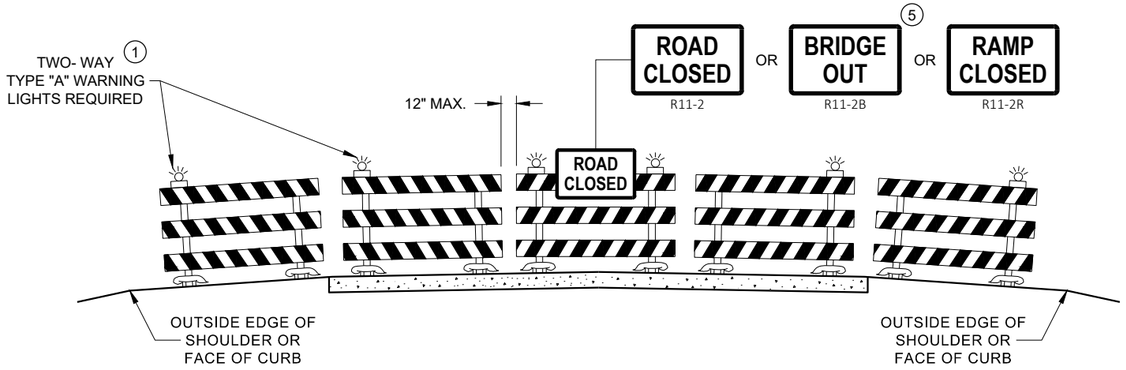
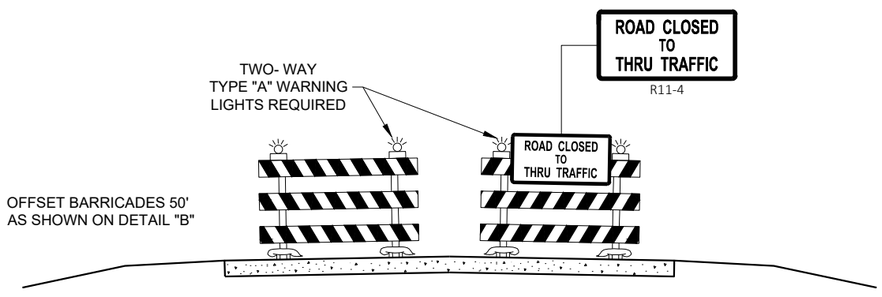
SDD 15C02 - 08a

SDD 15C02 - 08a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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SDD 15C02 - 08b

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

LEGEND

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

GENERAL NOTES

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

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

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

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

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

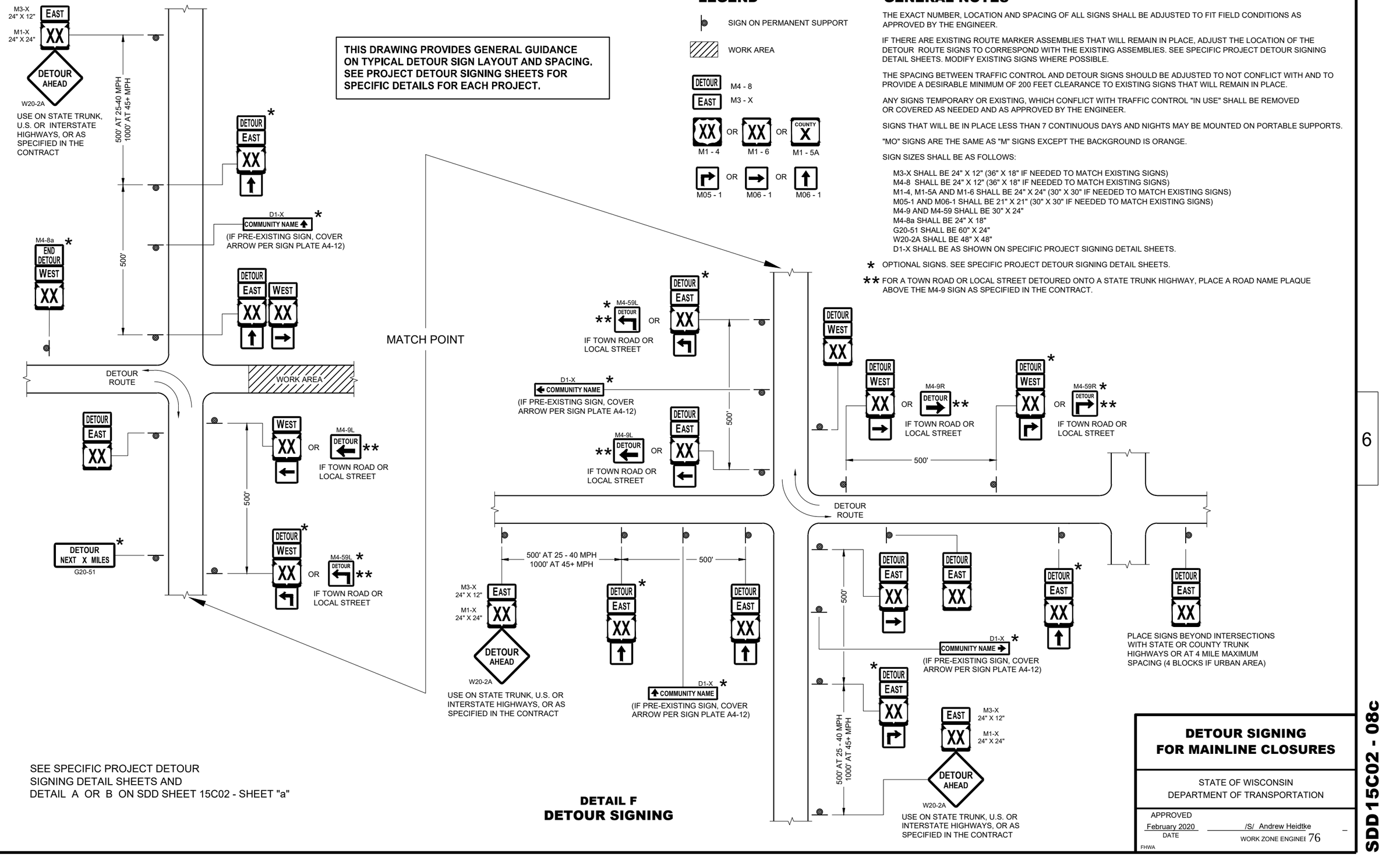
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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



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

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

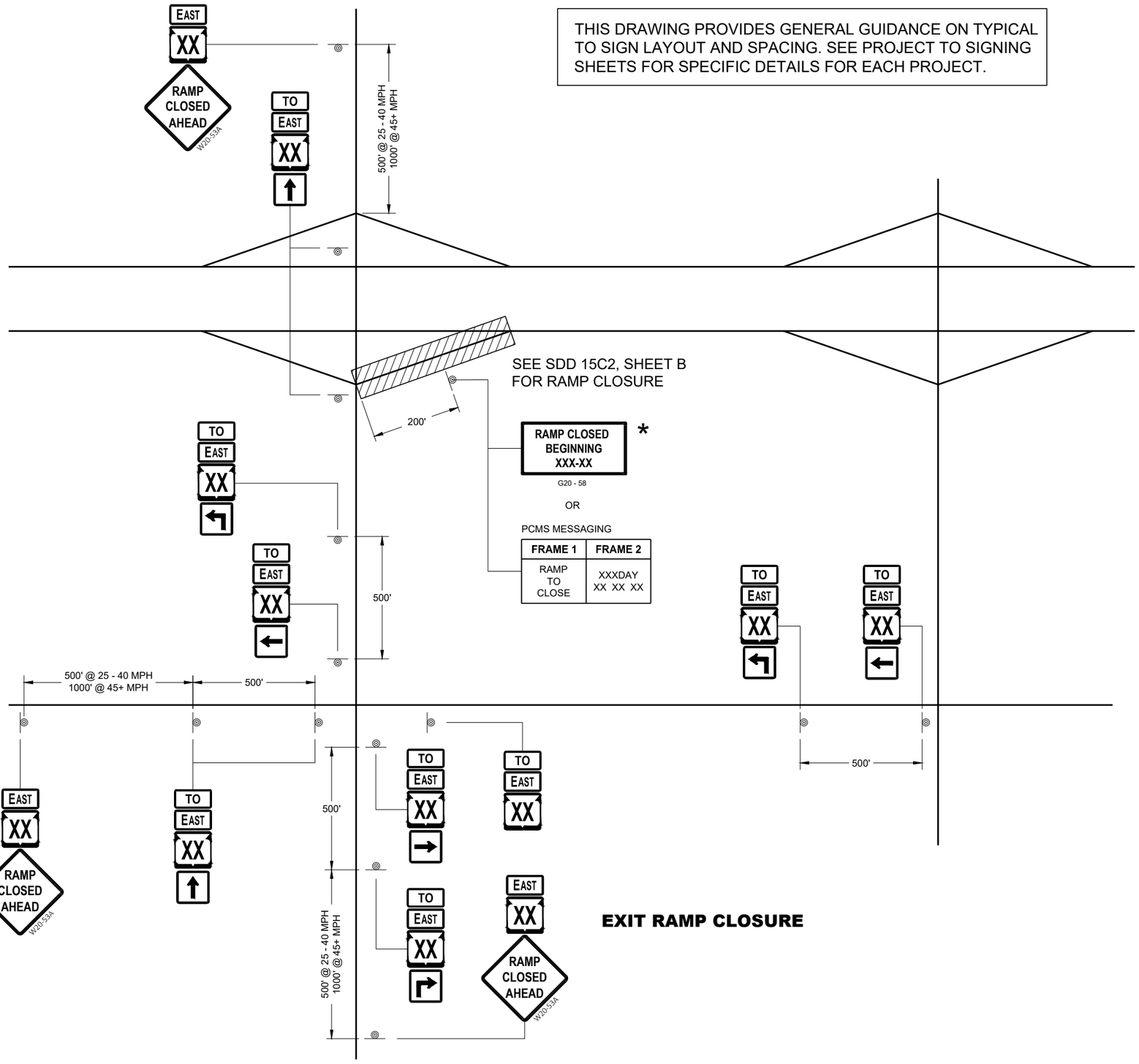
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15C02 - 08c



EXIT RAMP CLOSURE

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.

ON RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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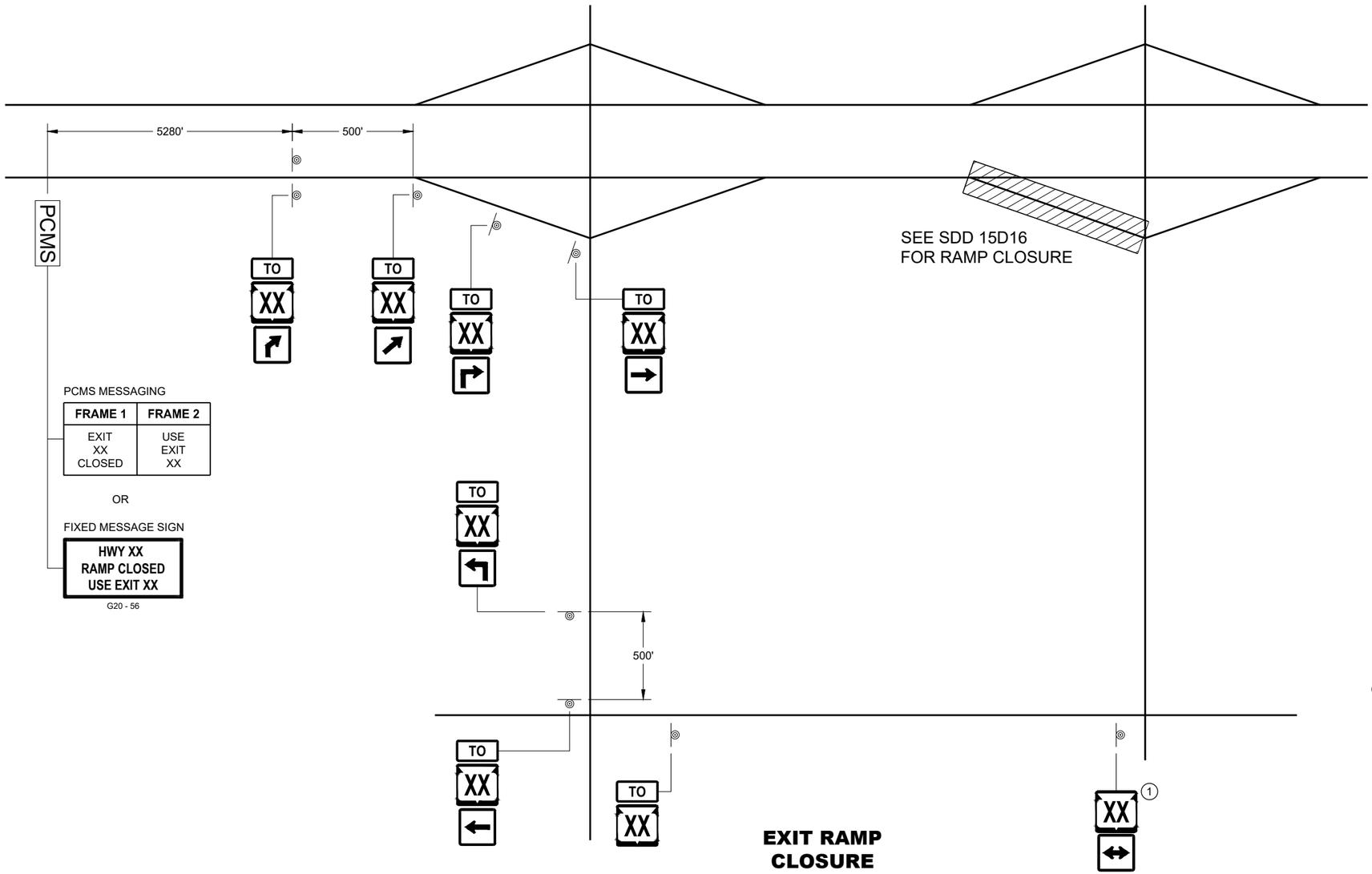
THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL "TO" MO-4 SIGN LAYOUT AND SPACING. SEE PROJECT TO SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.



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

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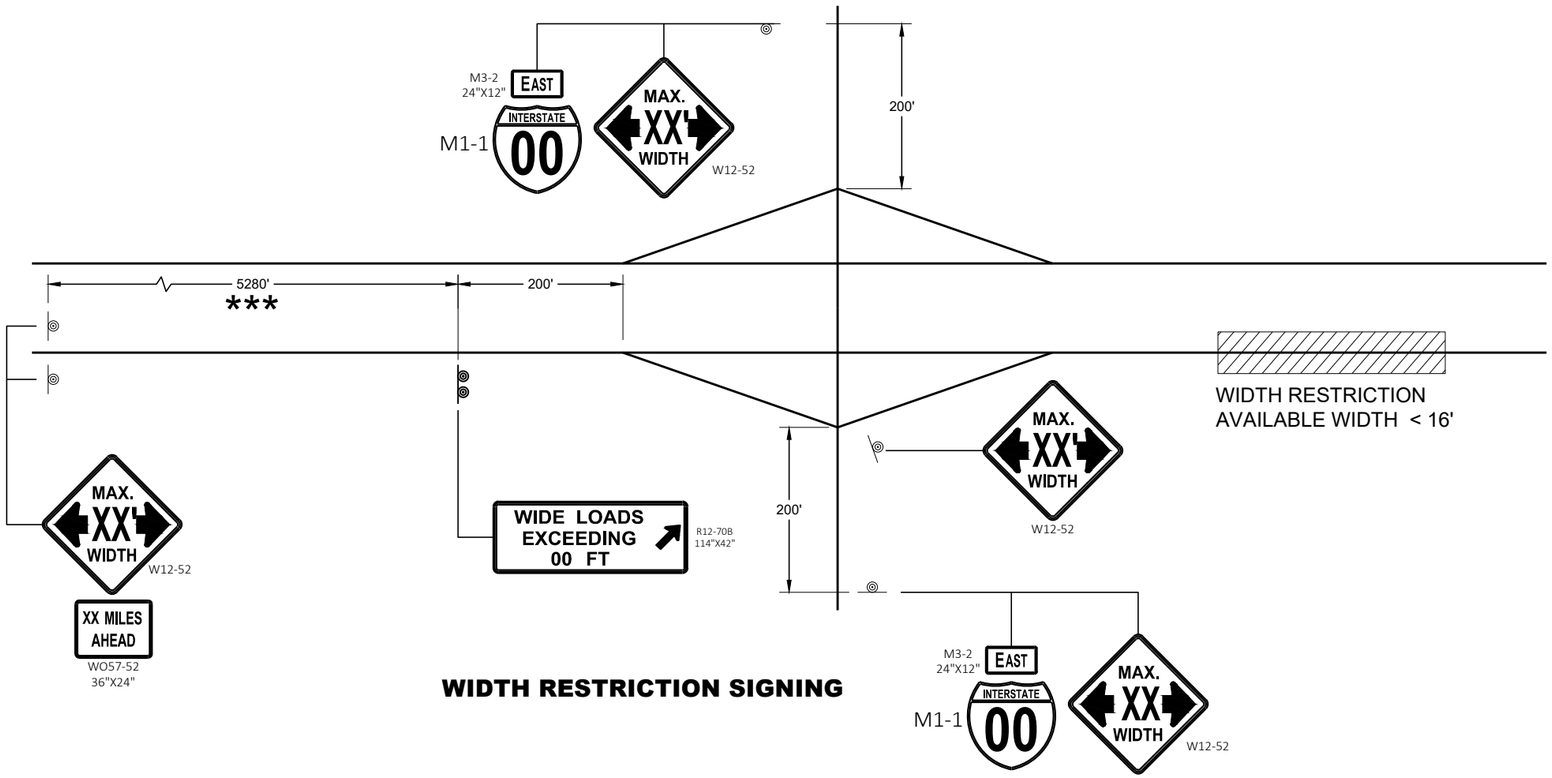


WIDTH RESTRICTION SIGNING

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.

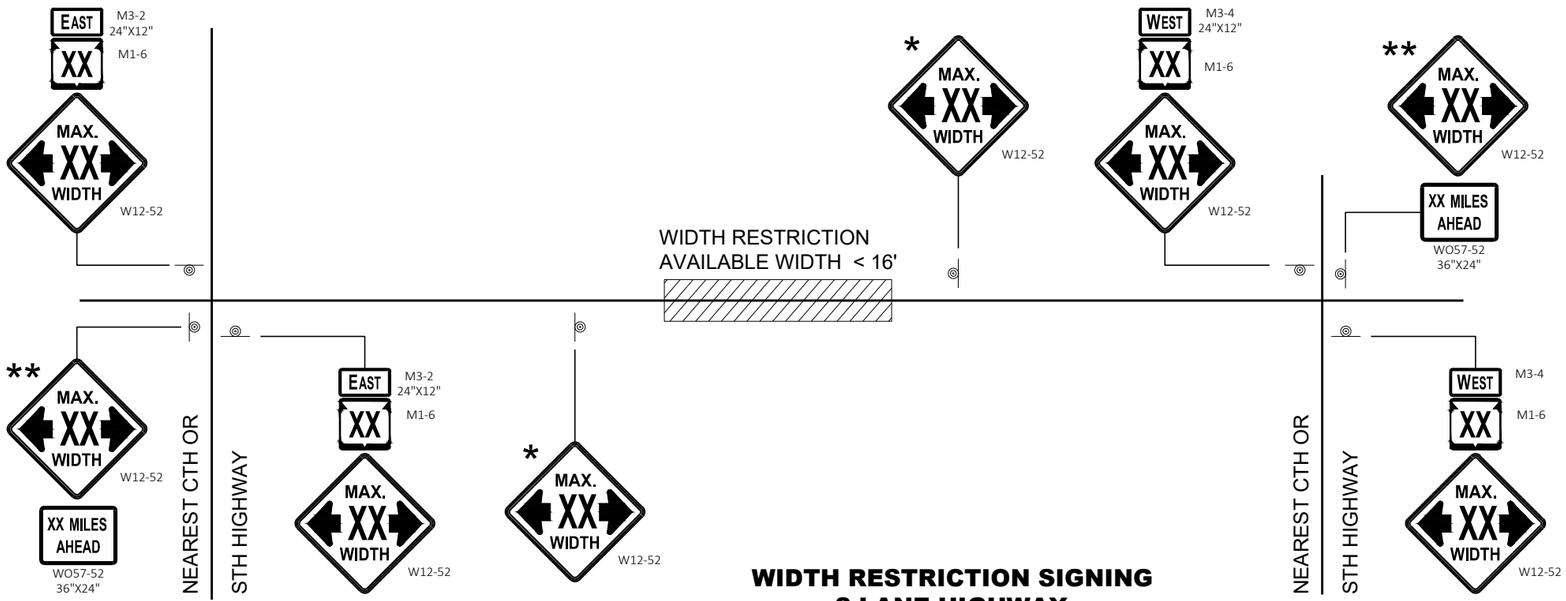
WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

* 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 ENGINEE

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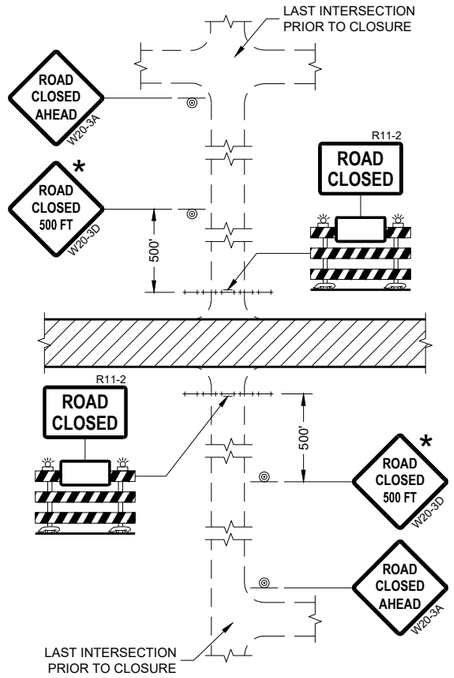
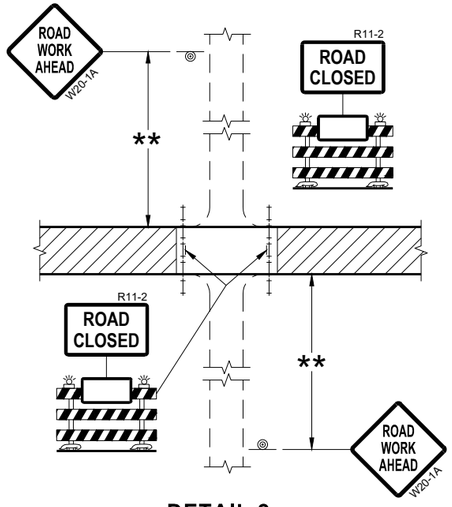
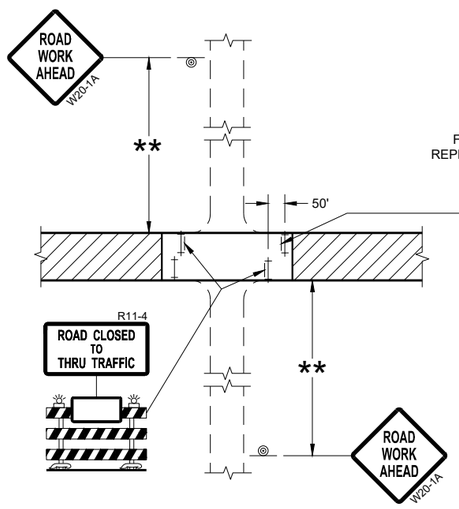


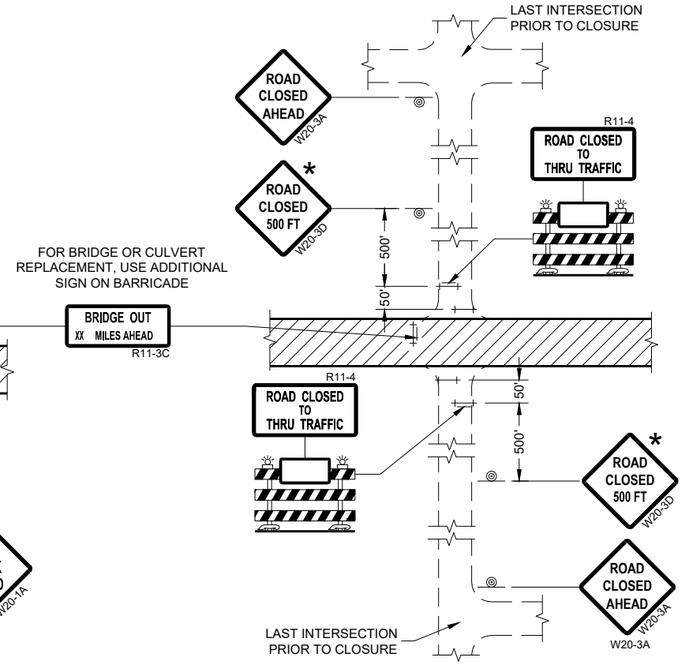
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6
SDD 15C03 - 05

GENERAL NOTES

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

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

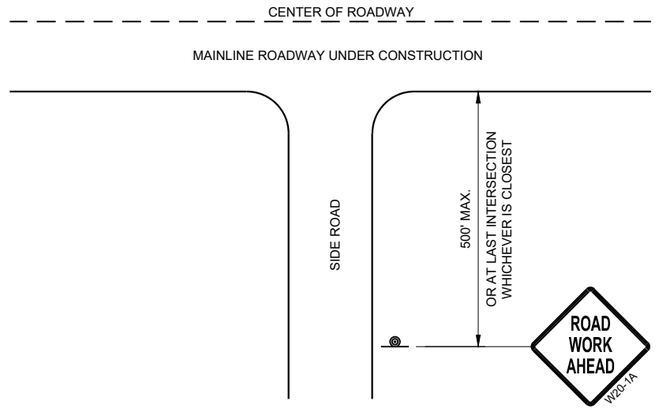
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS

** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



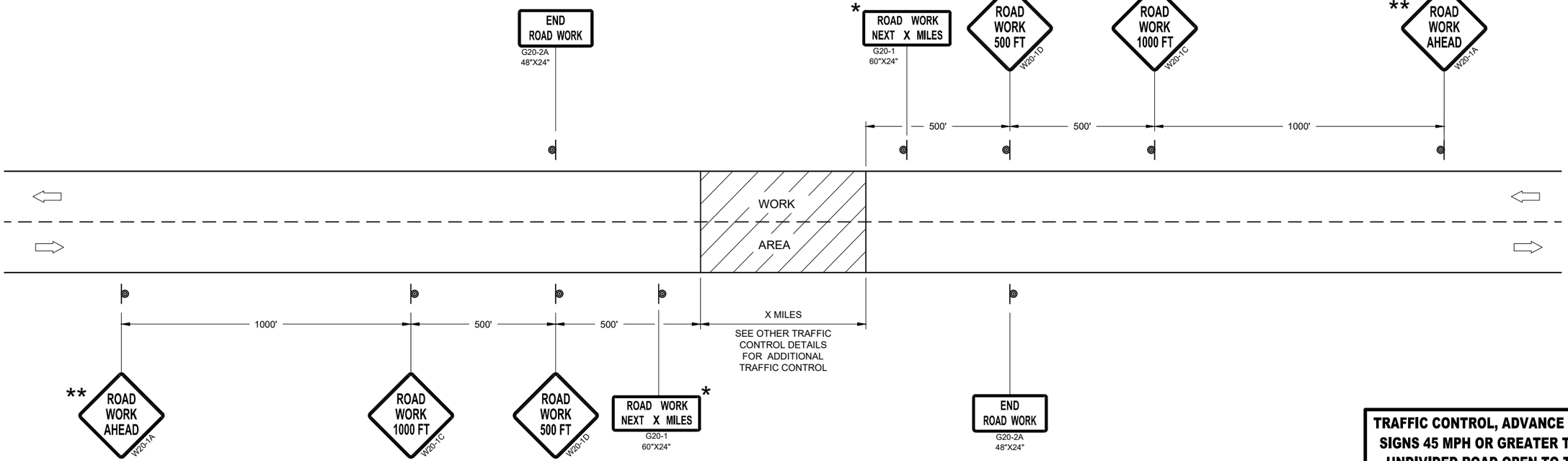
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

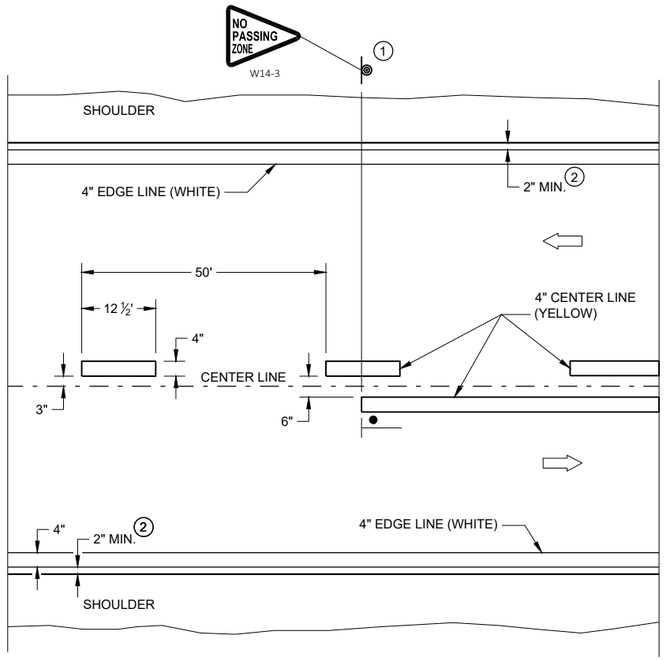
APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

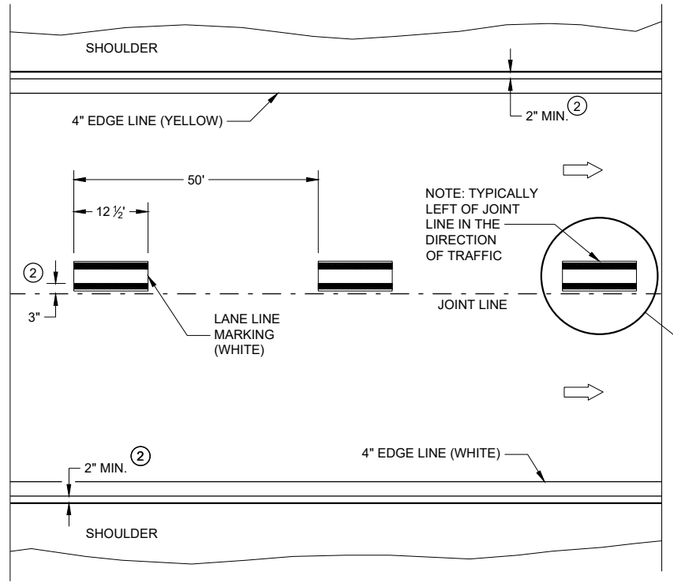
FHWA

6

SDD 15C04 - 05

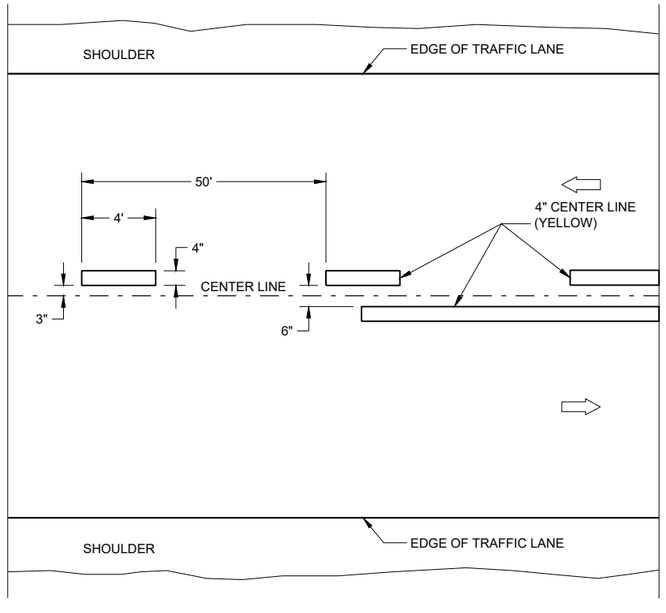


TWO WAY TRAFFIC

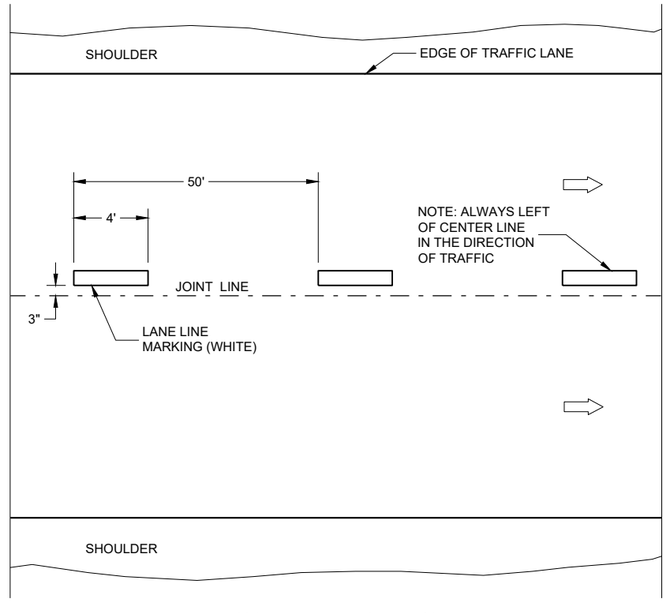


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

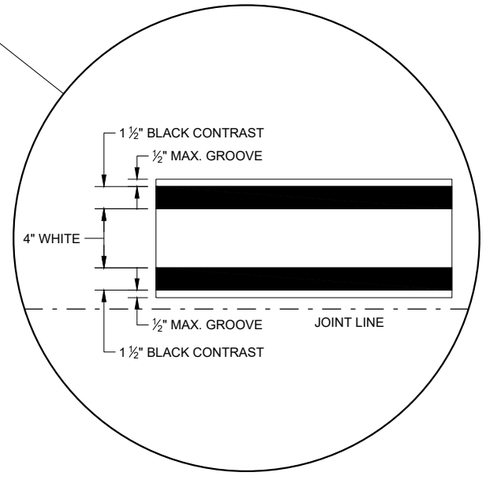
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

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

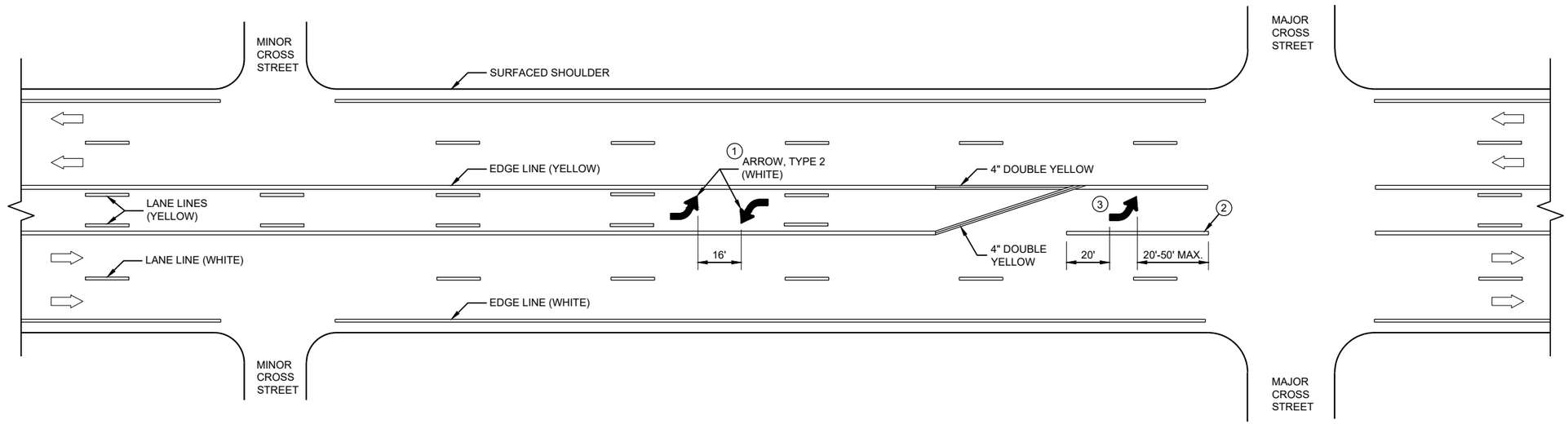
SDD 15C08 - 20a

SDD 15C08 - 20a

GENERAL NOTES

1. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
2. 8" WHITE
3. TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

6

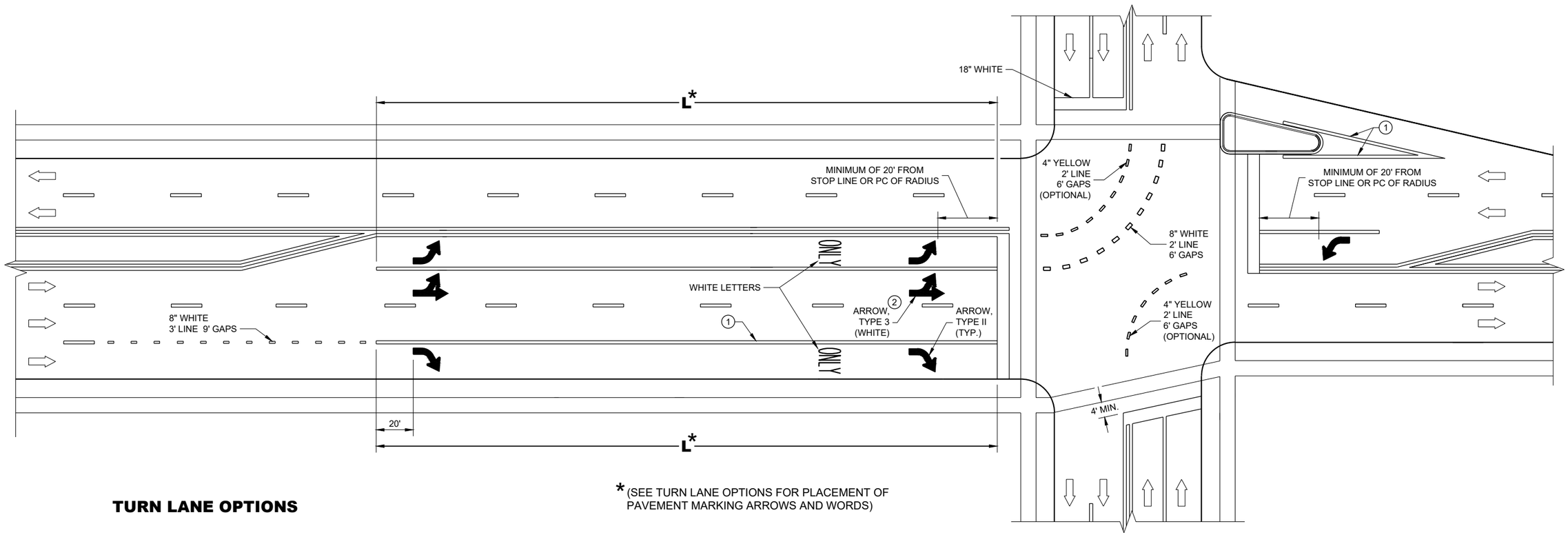
SDD 15C08 - 20b

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

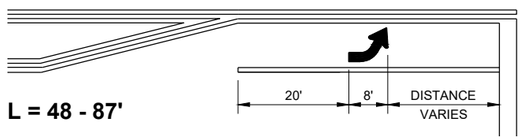
SDD 15C08 - 20b



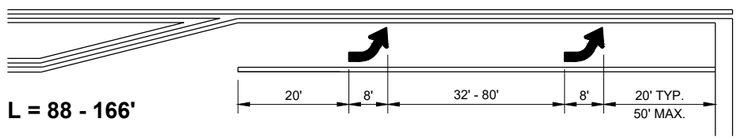
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

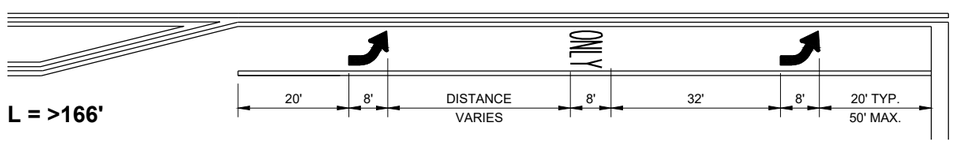
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

1. 8" WHITE
2. QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

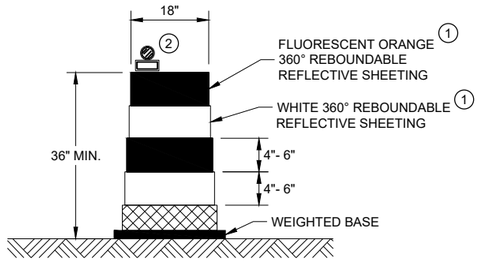
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

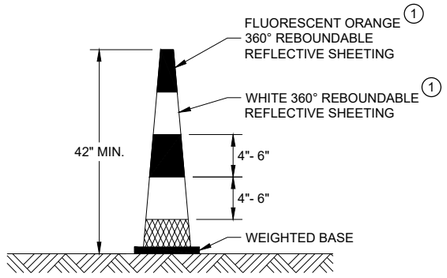
SDD 15C08 - 20c

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.

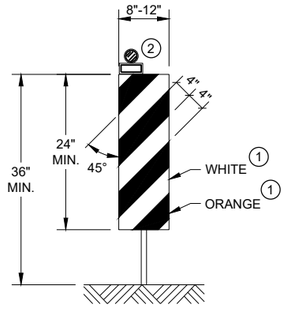


DRUM



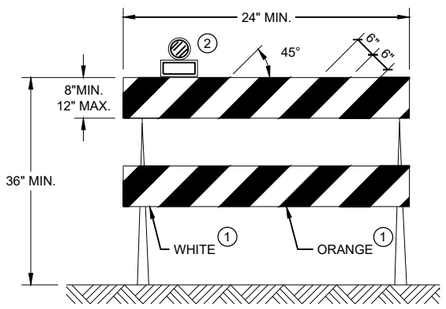
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



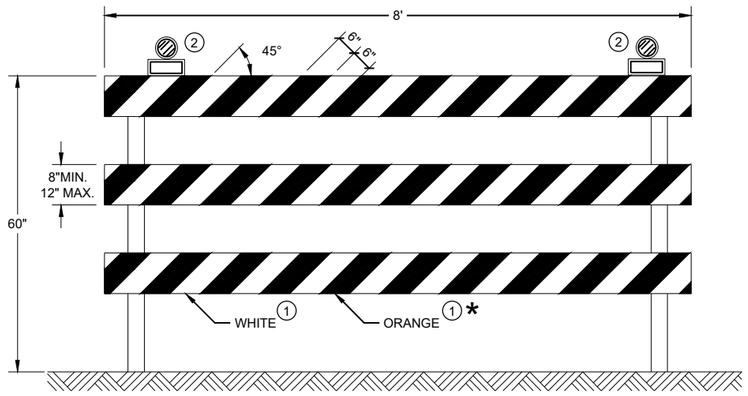
VERTICAL PANEL

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
November 2020 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

6

SDD 15C11 - 08b

6

SDD 15C11 - 08b

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.

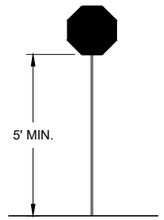
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR 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.



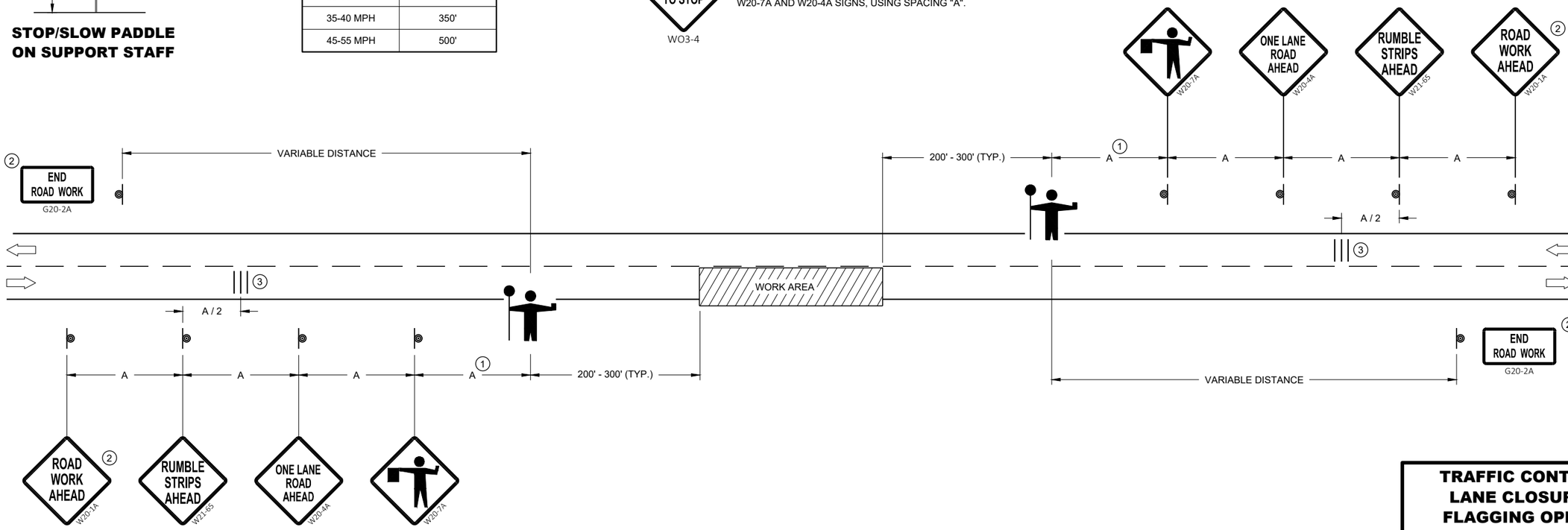
STOP/SLOW PADDLE ON SUPPORT STAFF

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

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C12 - 07

LEGEND

V1 LEAD VEHICLE

V2 MARKING VEHICLE

V3 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

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 OPERATING IN CAUTION MODE. 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.

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

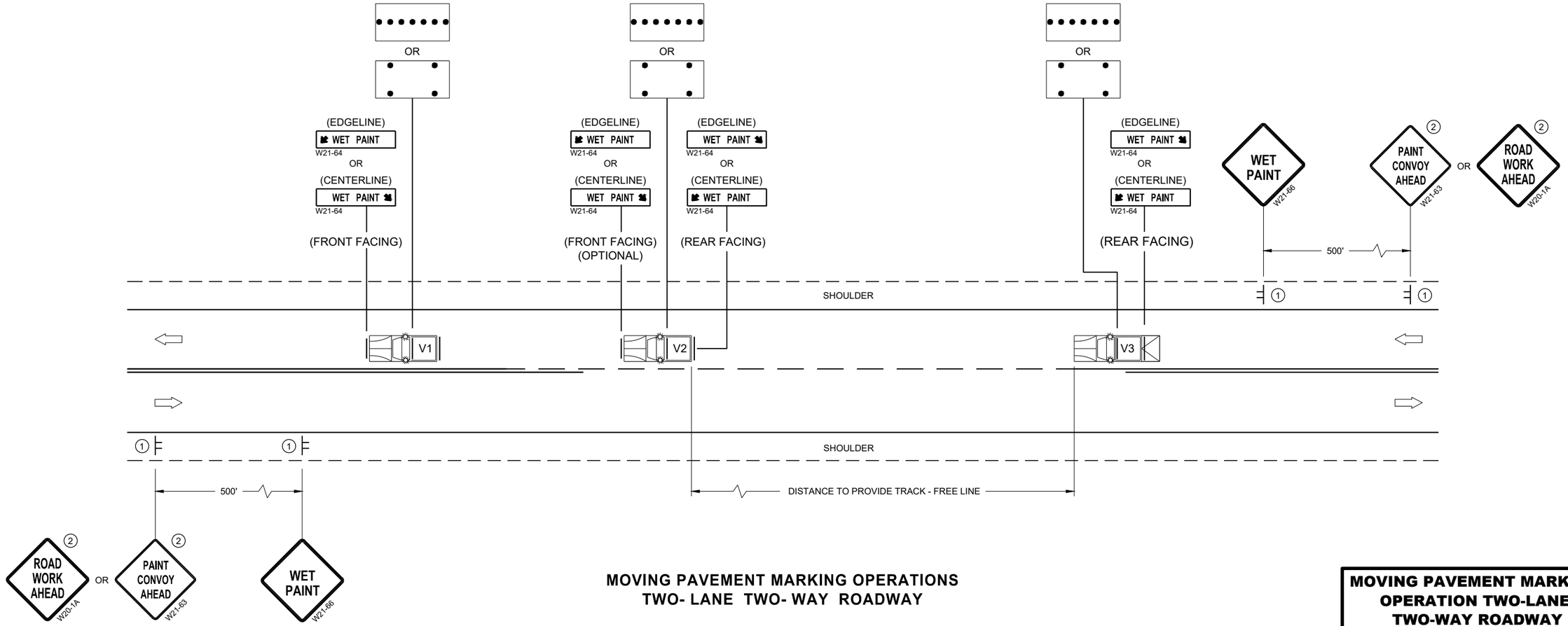
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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 OF 18" FOR WET PAVEMENT MARKING .

(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 TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15C19 - 06a

SDD 15C19 - 06a

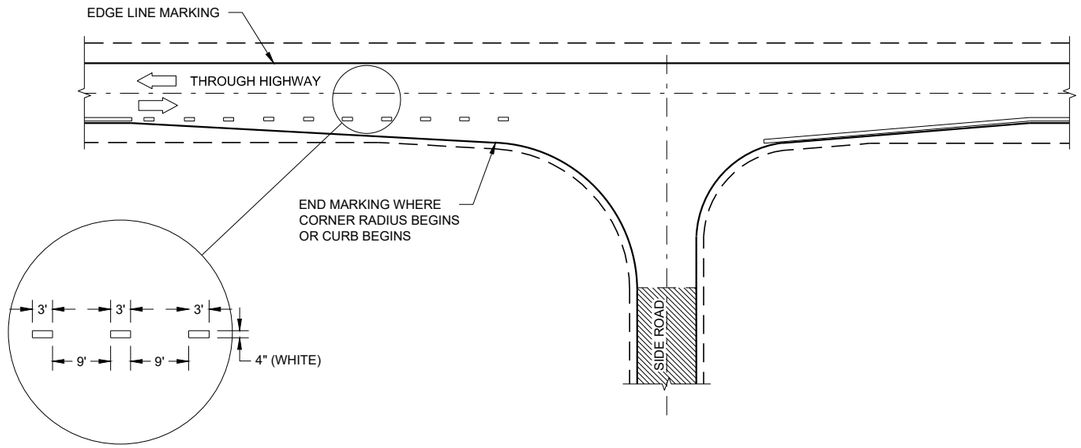
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

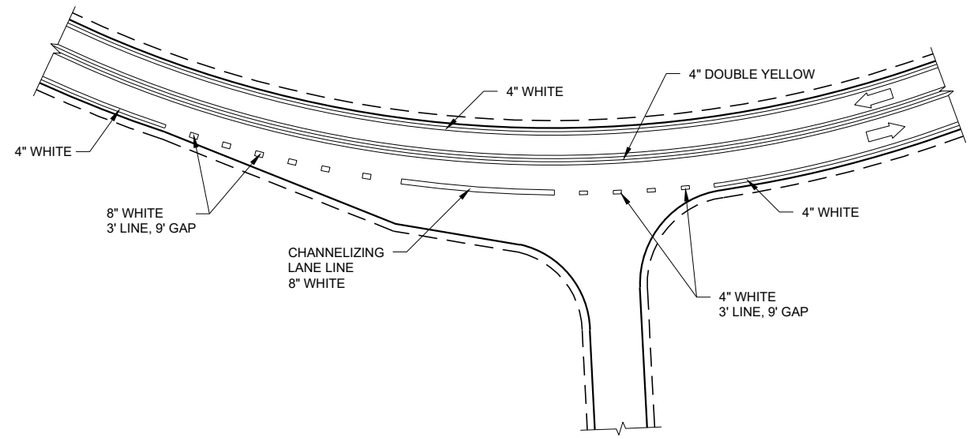
1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

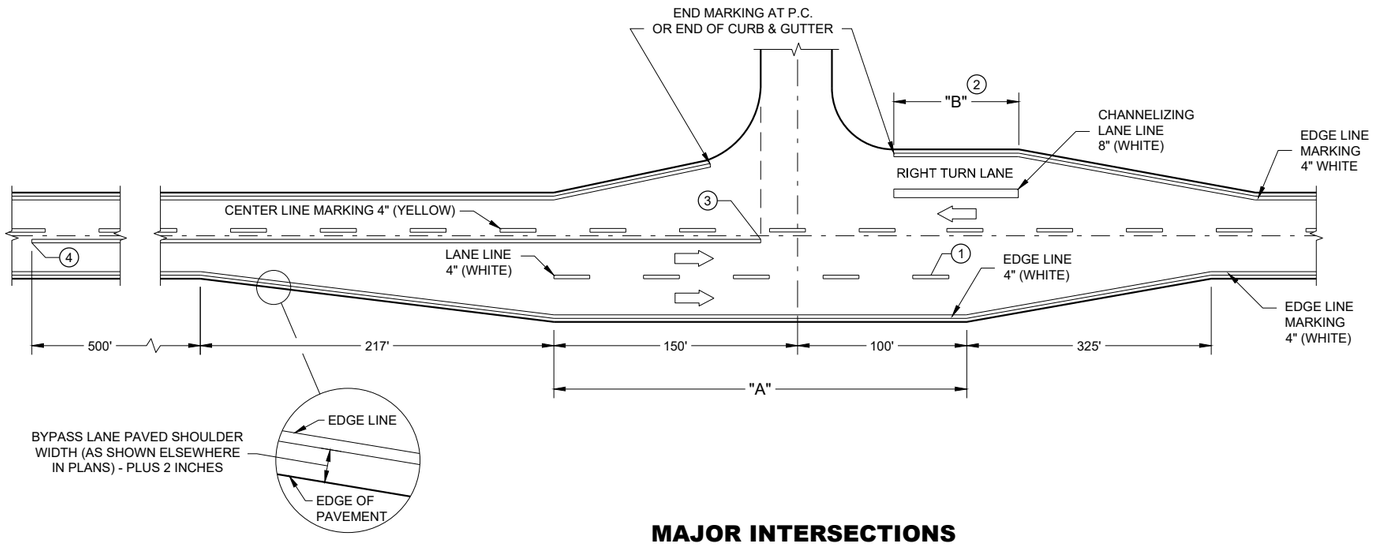
DIRECTION OF TRAVEL



MINOR INTERSECTION



INTERSECTION ON OUTSIDE OF CURVE



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

PAVEMENT MARKING (INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 15C35 - 04a

6

SDD 15C35 - 04a

LEGEND

SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL DRUM

DIRECTION OF TRAFFIC

WORK ZONE

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

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

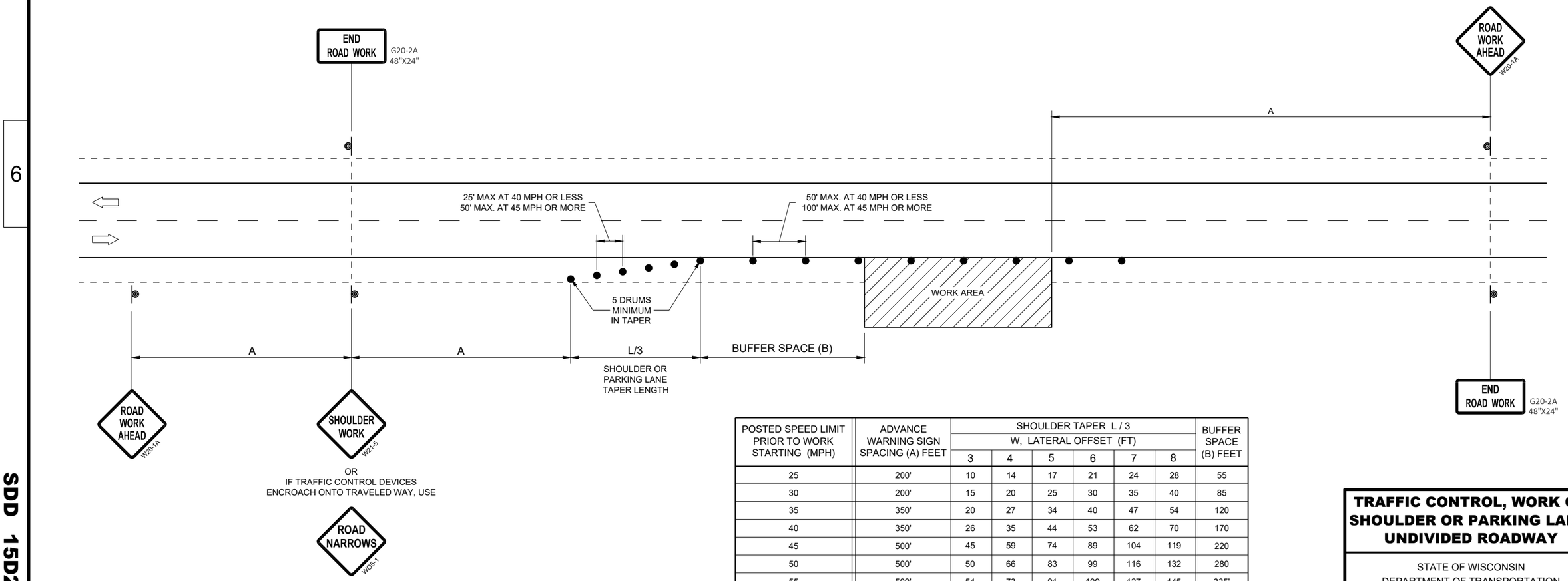
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

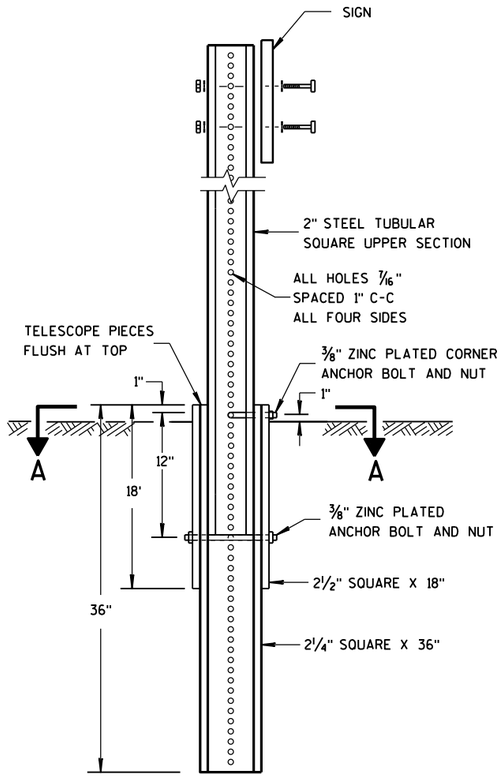
APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

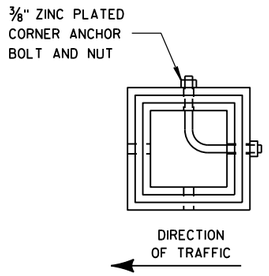
FHWA

SDD 15D28 - 04

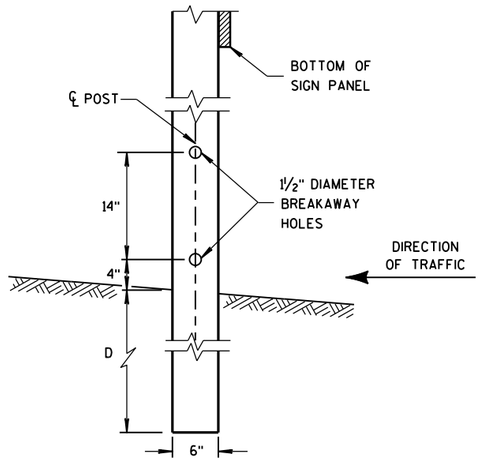
SDD 15D28 - 04



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



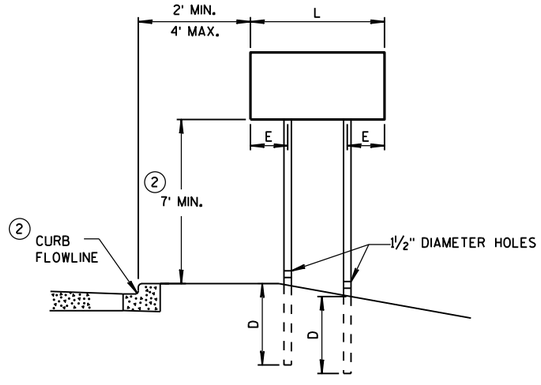
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

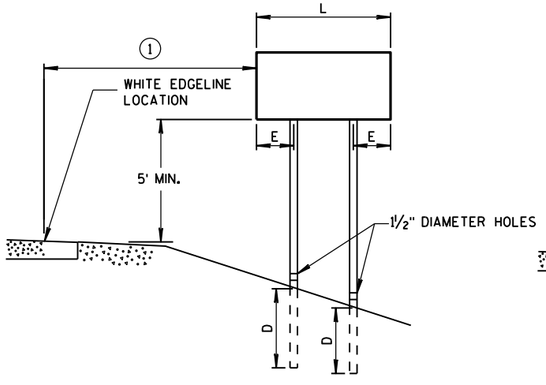
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

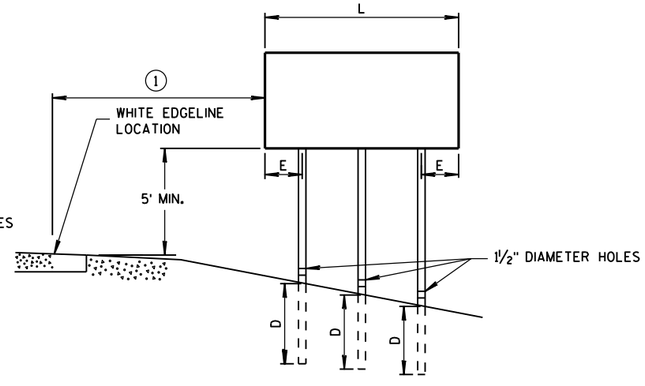
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL 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).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

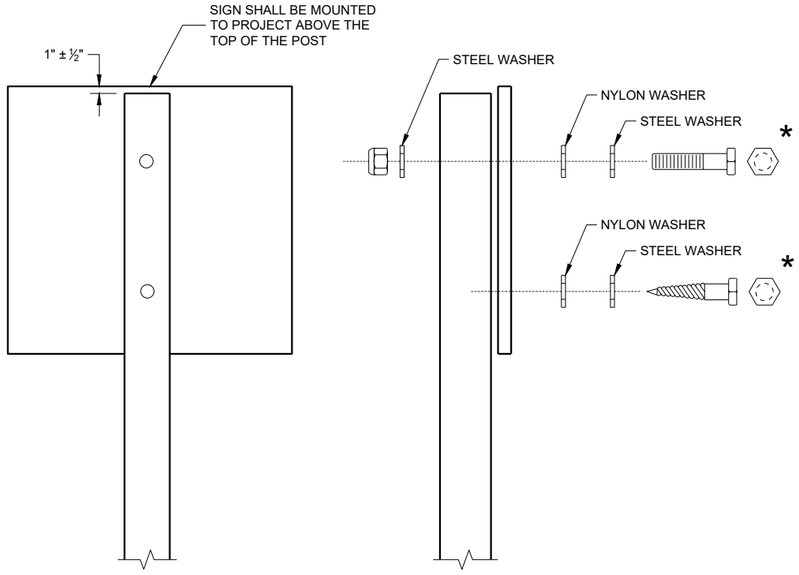
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 D 38-2a



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POST (4" x 6")
LAG SCREWS - ⅜" x 3"
MACHINE BOLTS - 5/16" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ⅜" x 3 ¼" LENGTH W/NUTS
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH, GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x 1/16" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

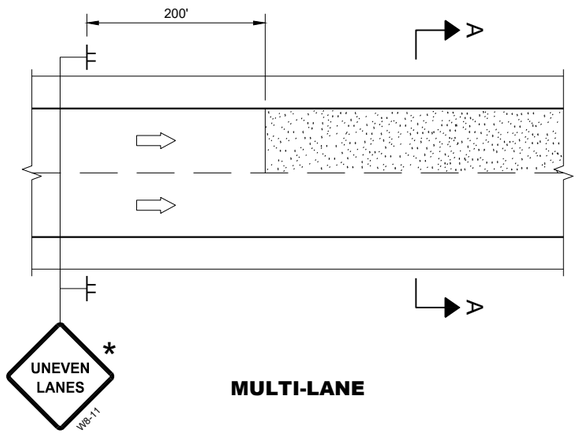
SDD 15D38 - 02b

SDD15D38 - 02b

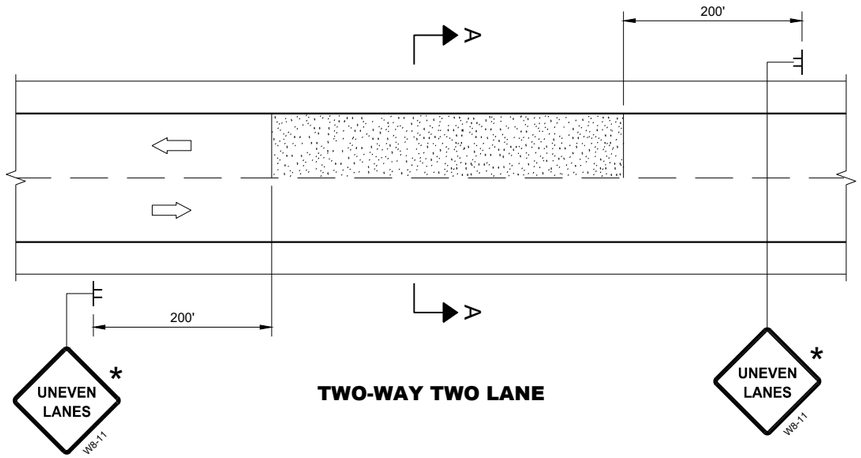
ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

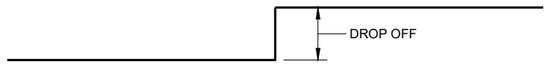
APPROVED
June 2017
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA



MULTI-LANE

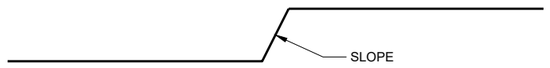


TWO-WAY TWO LANE

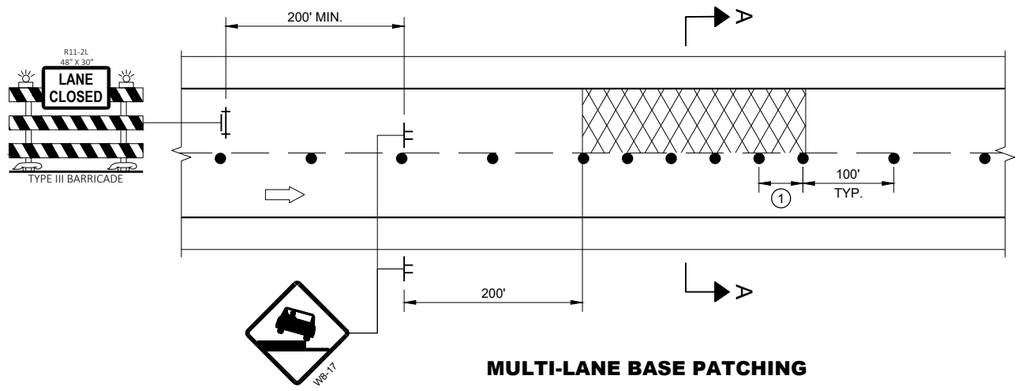


SECTION A - A

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.

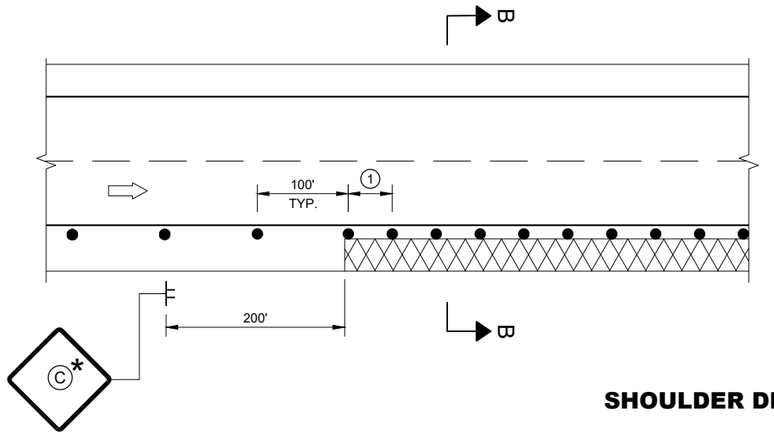
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

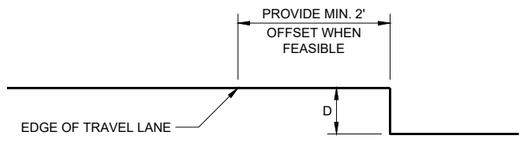
(1) USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

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

6

SDD 15D39 - 02

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

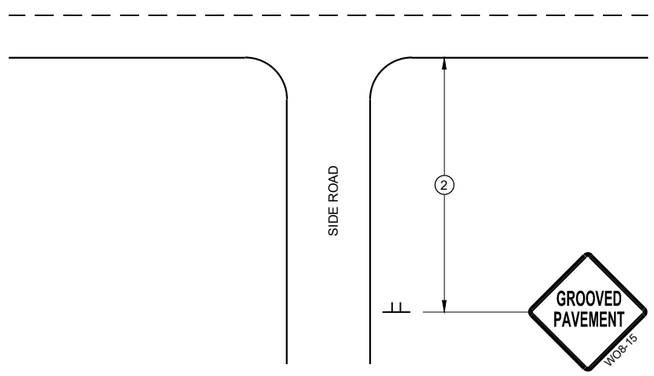
(1) PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

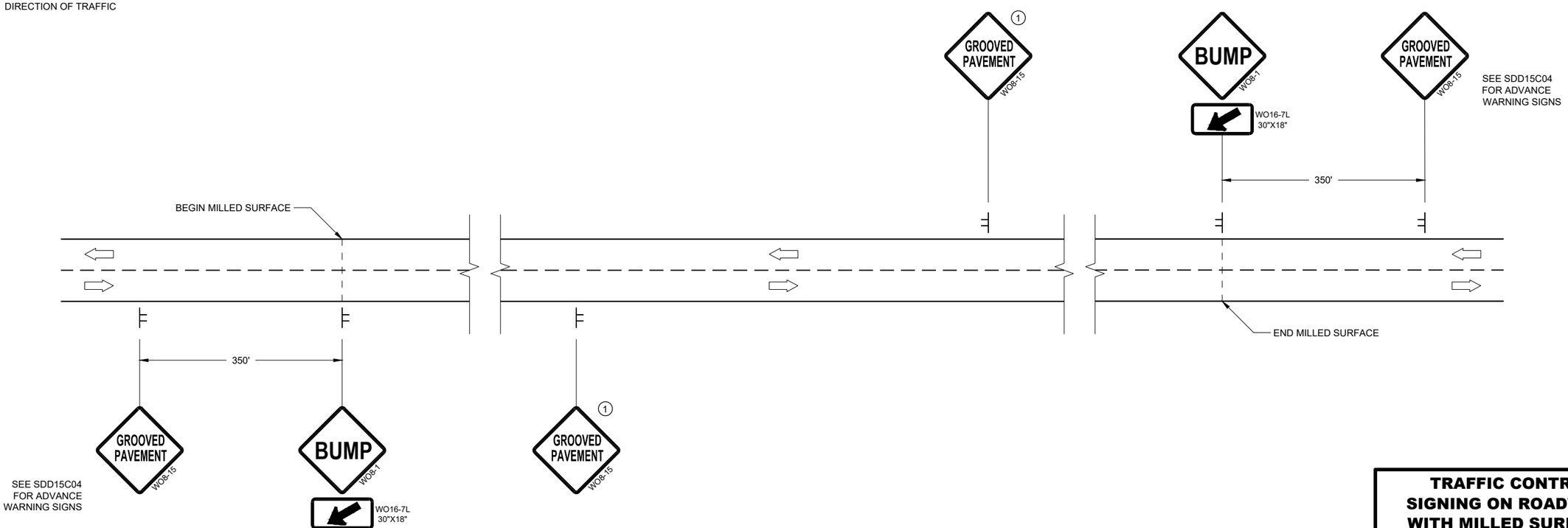
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

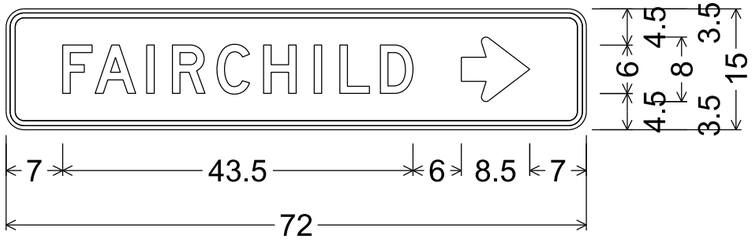
APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

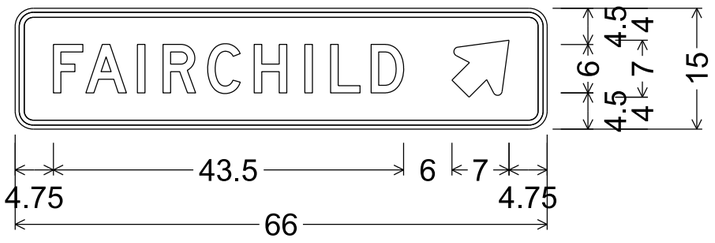
FHWA

6
SDD 15D44 - 02

D1-1; 2.250" Radius, 0.625" Border, 0.500" Indent



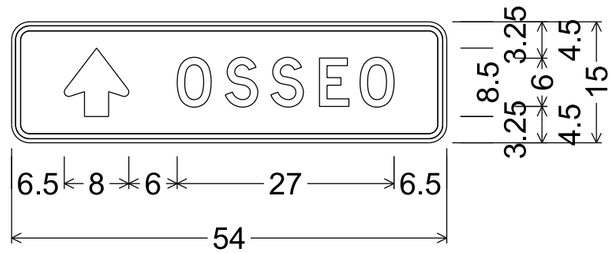
D1-1; 2.250" Radius, 0.625" Border, 0.500" Indent



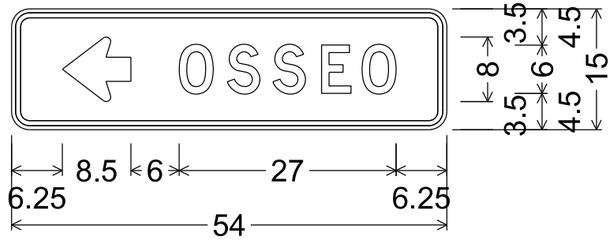
D1-1; 2.250" Radius, 0.625" Border, 0.500" Indent

NOTES

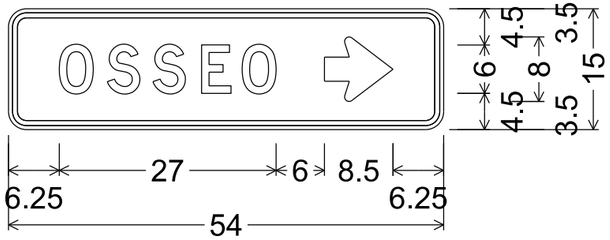
1. Fixed Message Type II Signs - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D



D1-1; 2.250" Radius, 0.625" Border, 0.500" Indent



D1-1; 2.250" Radius, 0.625" Border, 0.500" Indent

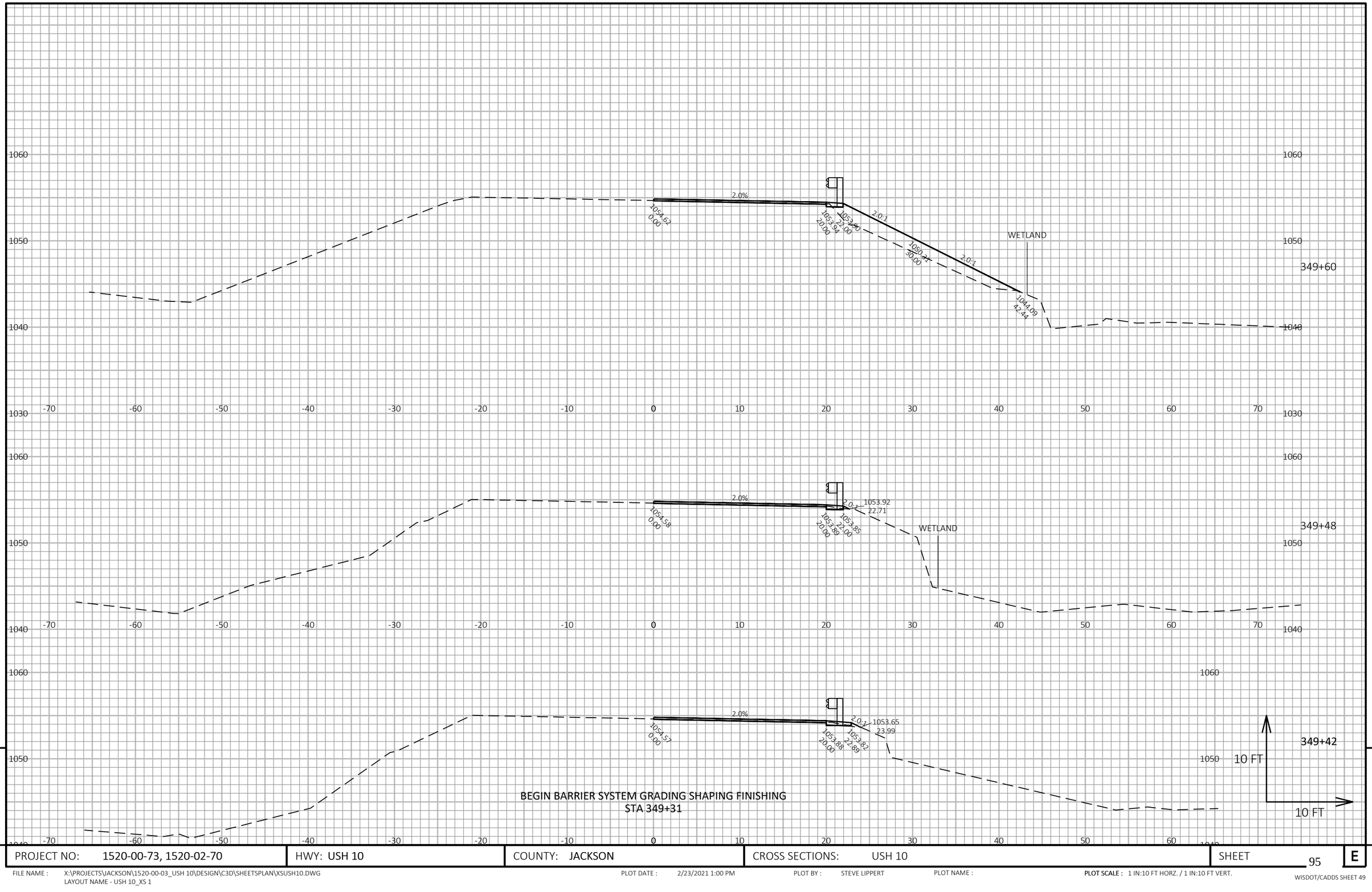


D1-1; 2.250" Radius, 0.625" Border, 0.500" Indent

7

7

PROJECT NO: 1520-00-73	HWY: USH 10	COUNTY: JACKSON	TEMPORARY SIGNING	SHEET NO: 94	E



9

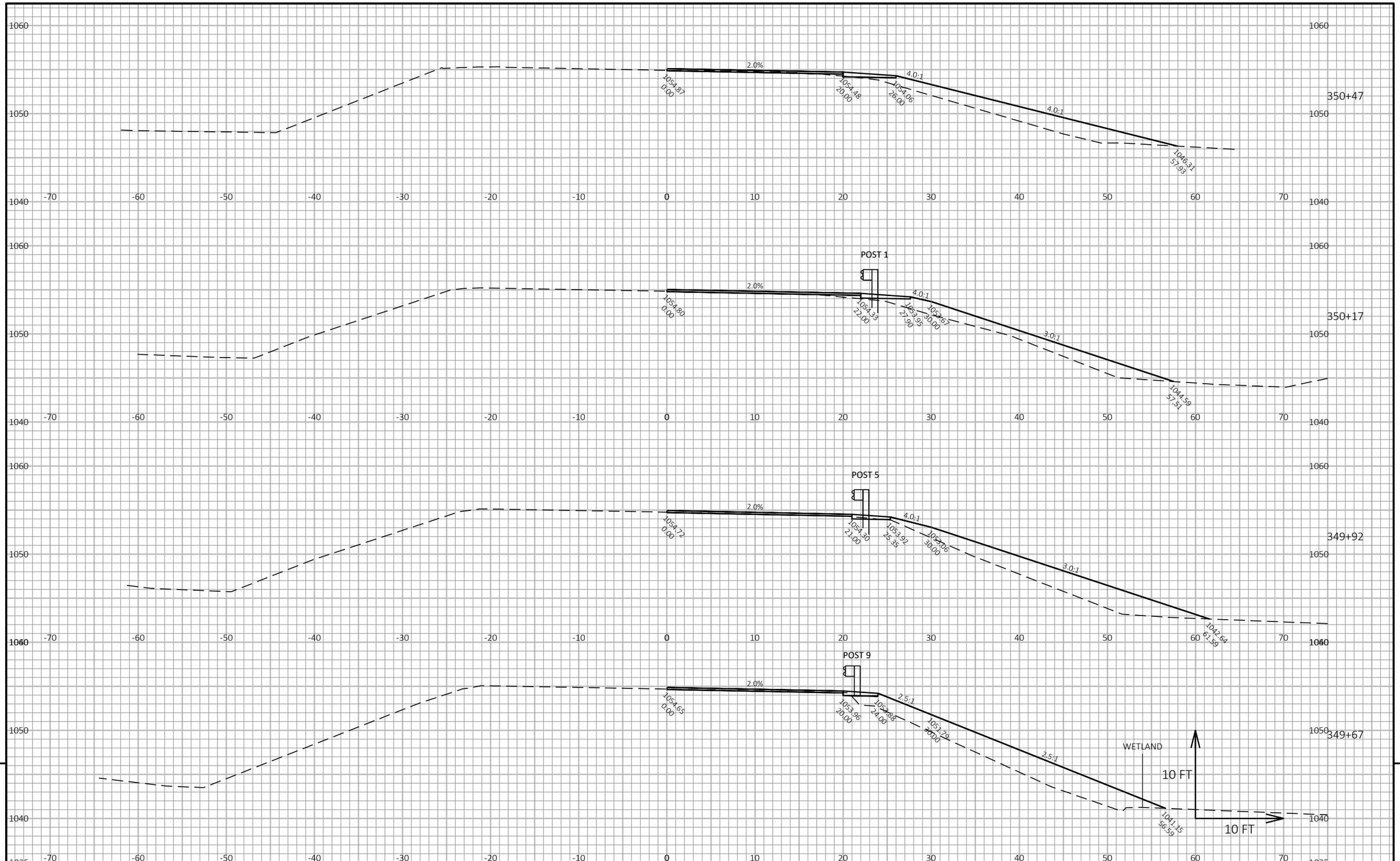
9

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 95	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 1

PLOT DATE : 2/23/2021 1:00 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



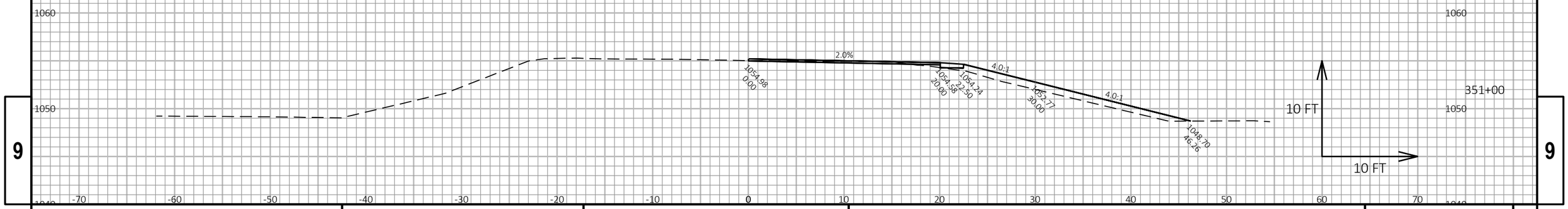
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 96	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 2

PLOT DATE : 4/14/2021 3:07 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

END BARRIER SYSTEM GRADING SHAPING FINISHING
STA 351+35



9

9

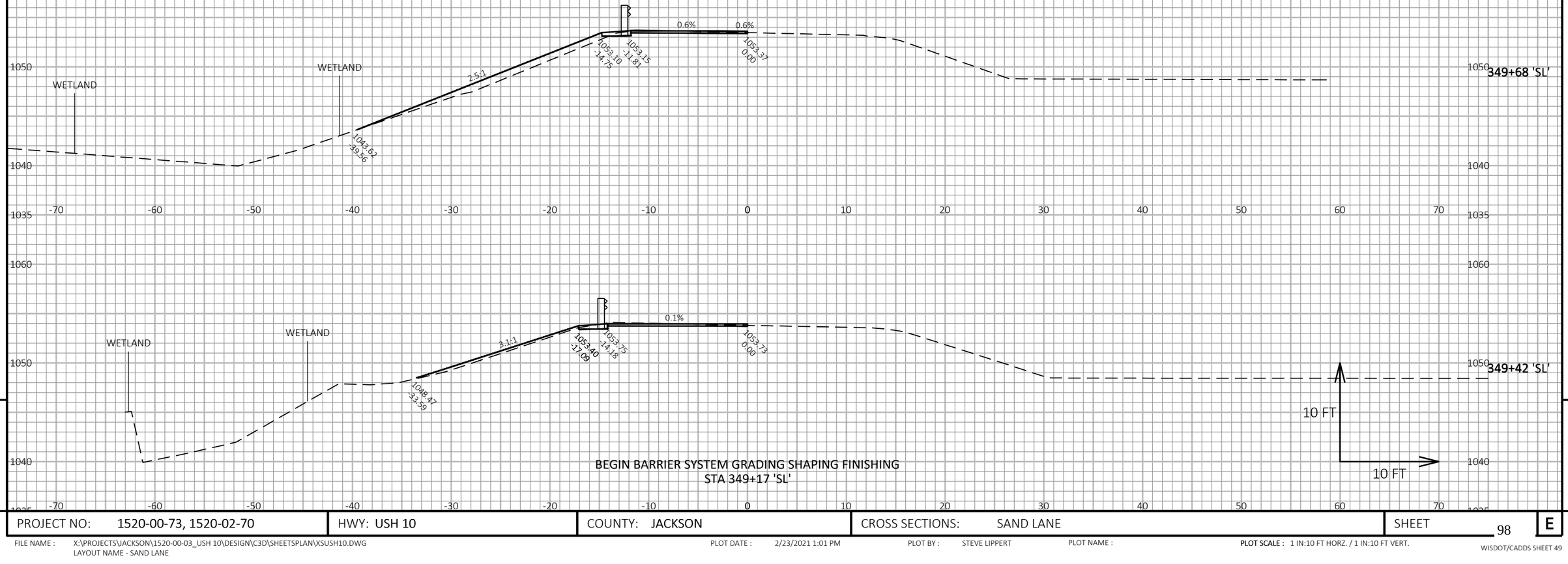
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 97	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 3

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

END BARRIER SYSTEM GRADING SHAPING FINISHING
STA 349+77 'SL'



BEGIN BARRIER SYSTEM GRADING SHAPING FINISHING
STA 349+17 'SL'

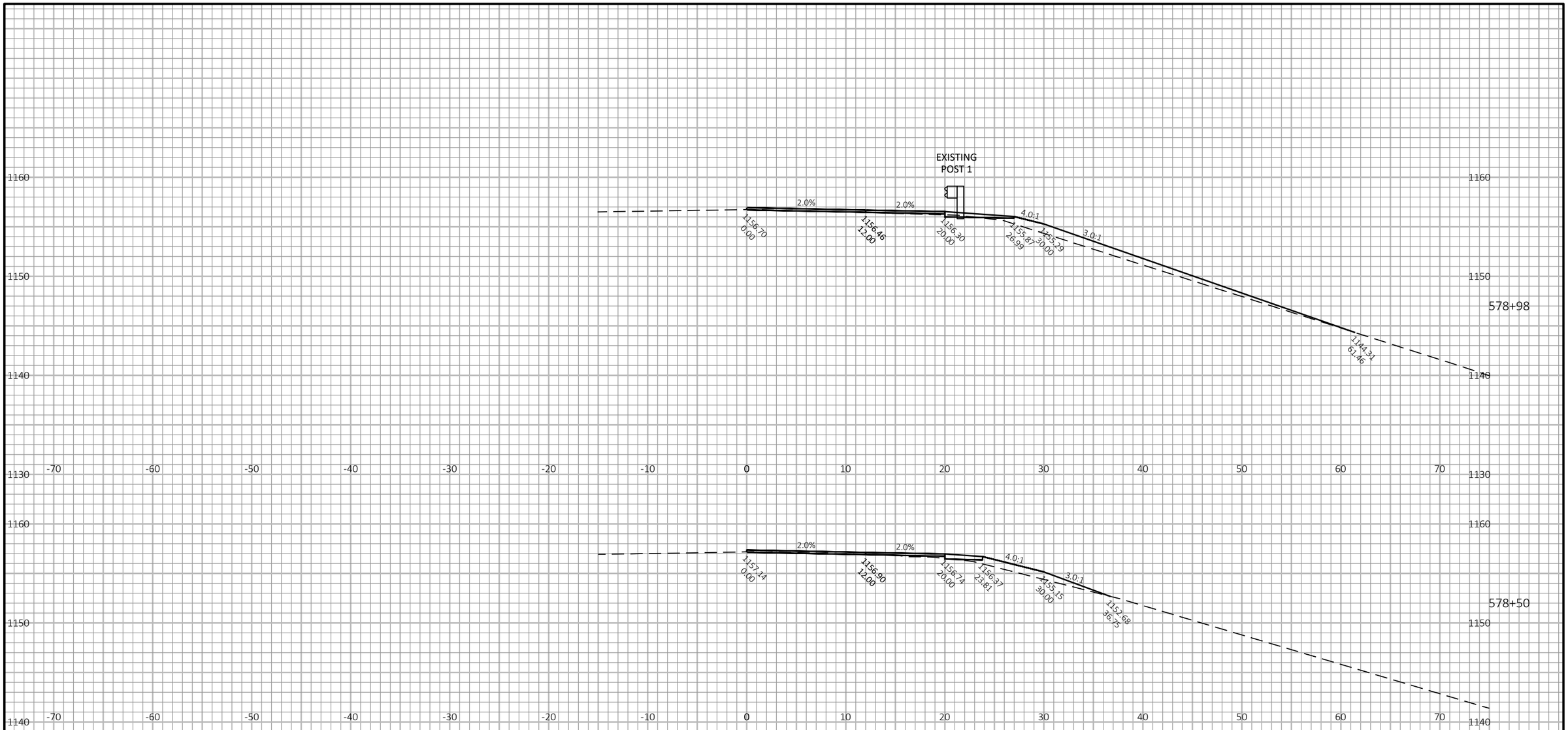
9

9

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: SAND LANE	SHEET 98	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - SAND LANE

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



BEGIN BARRIER SYSTEM GRADING SHAPING FINISHING
STA 577+93

10 FT
10 FT

9

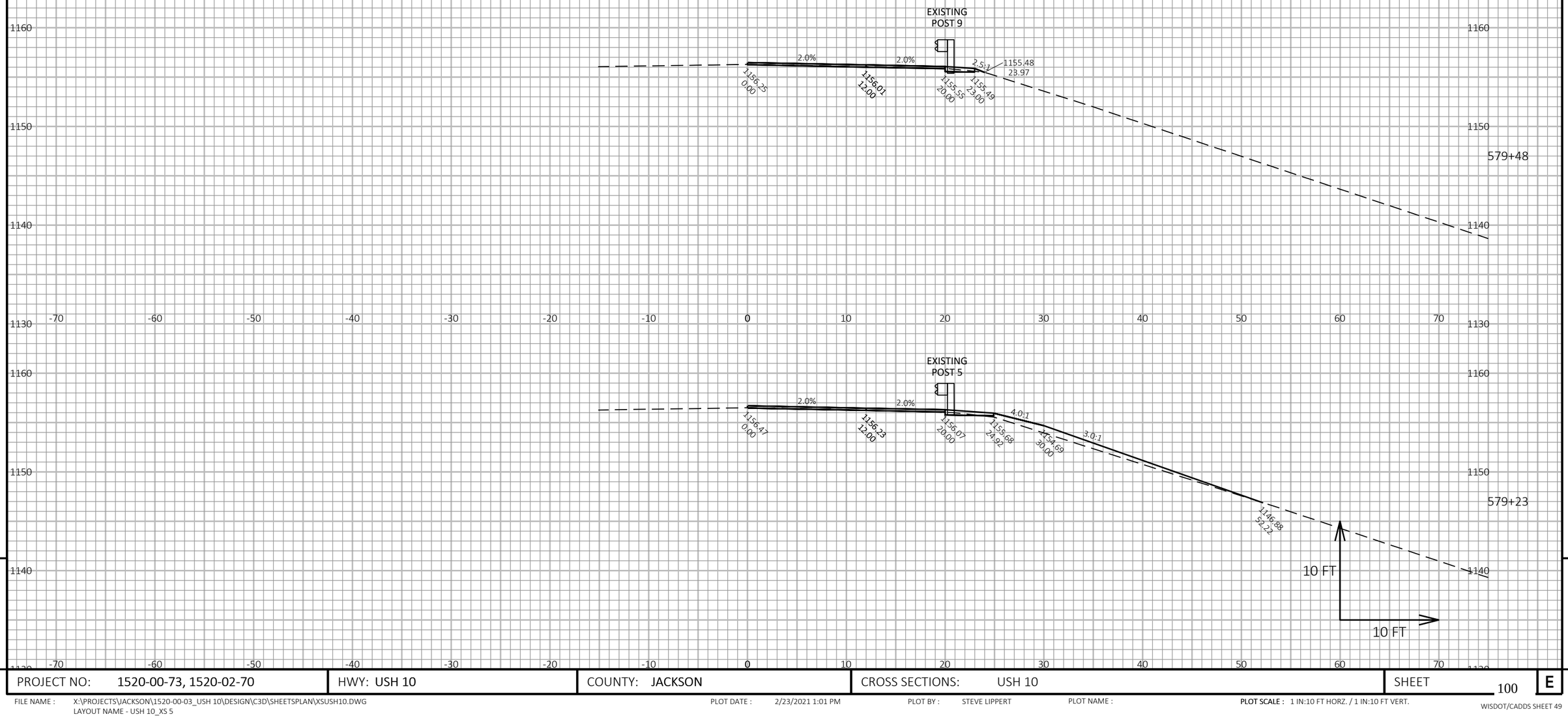
9

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 99	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 4

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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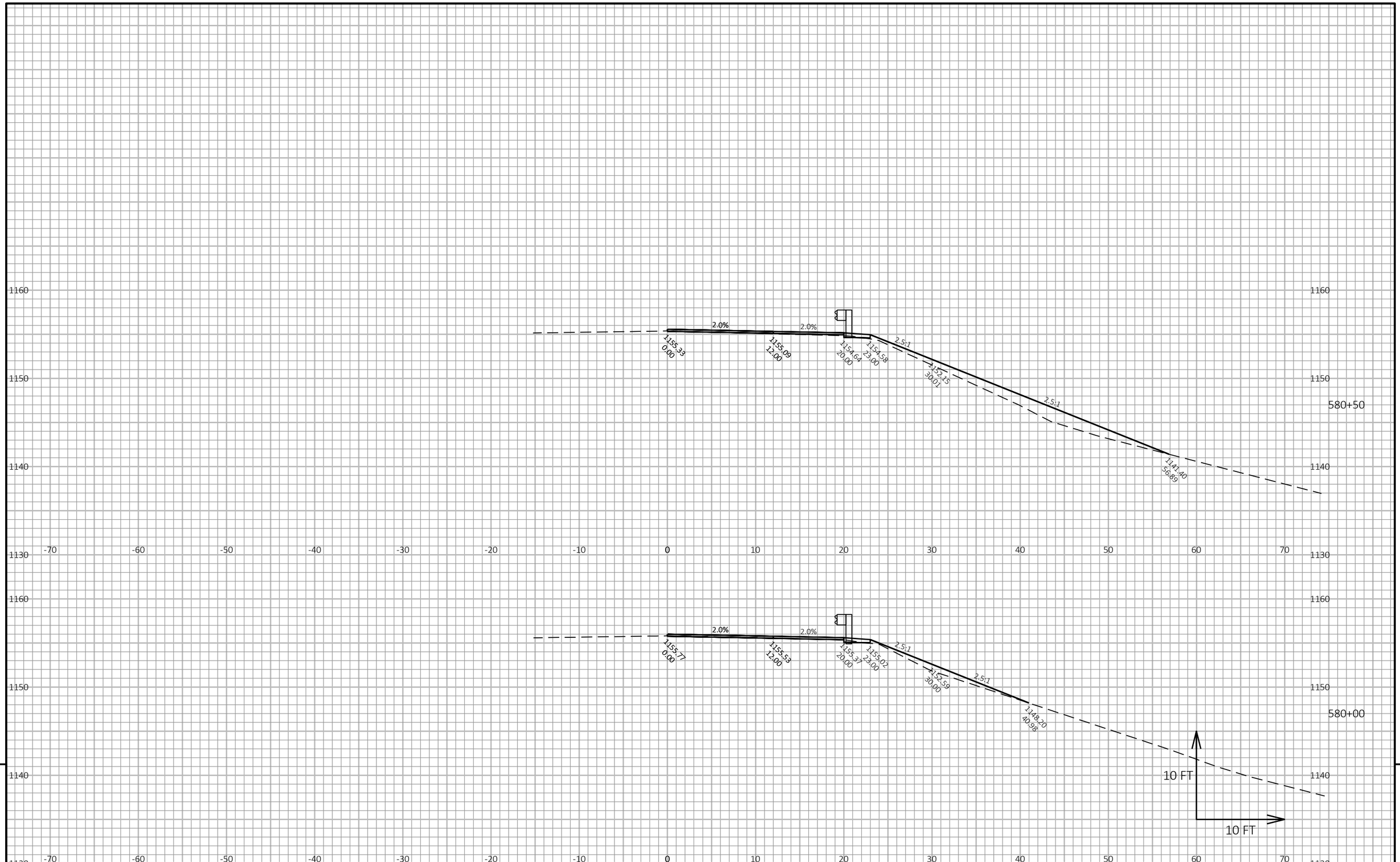
LAYOUT NAME - USH 10_XS 5

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

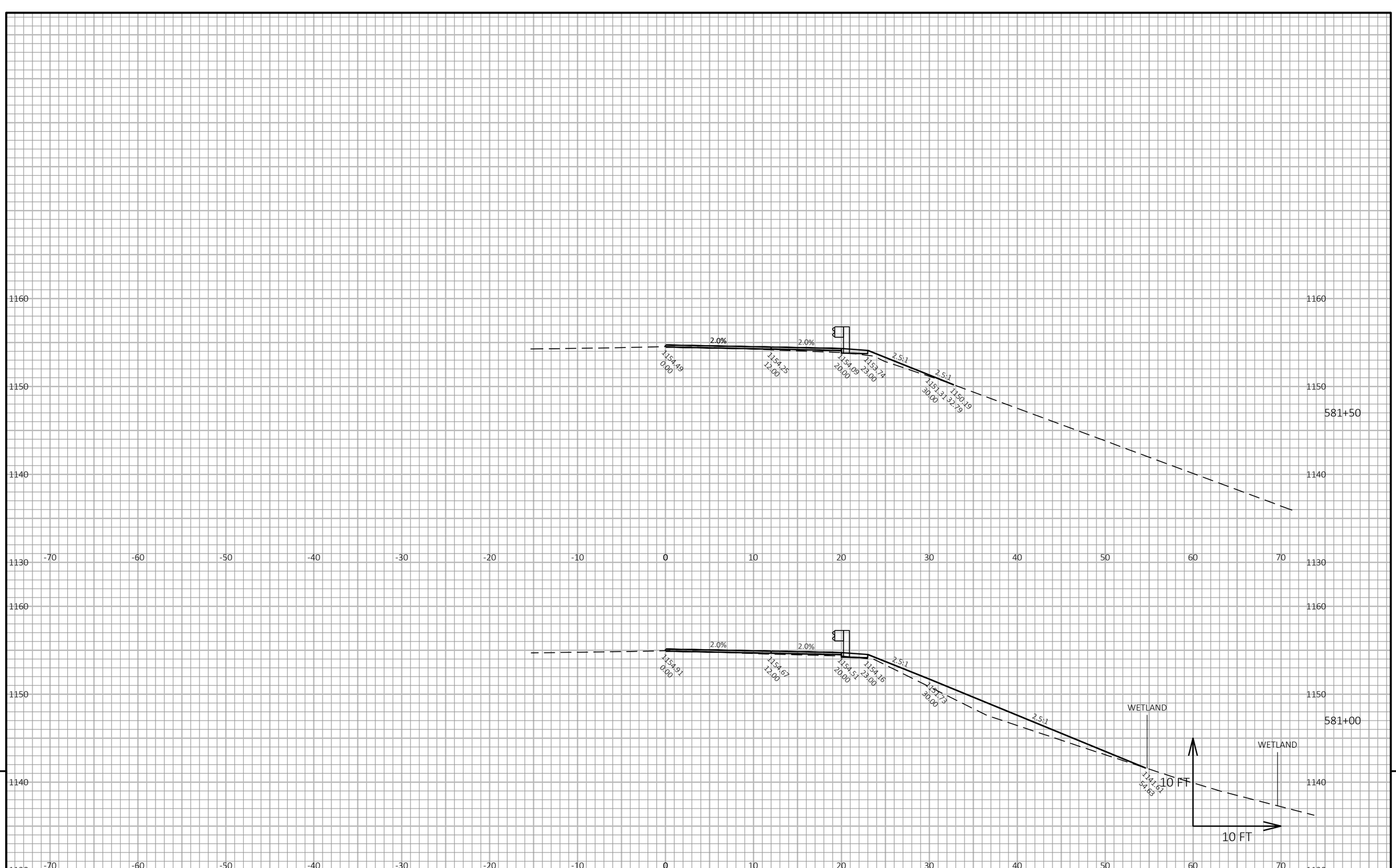
9

PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 101	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 6

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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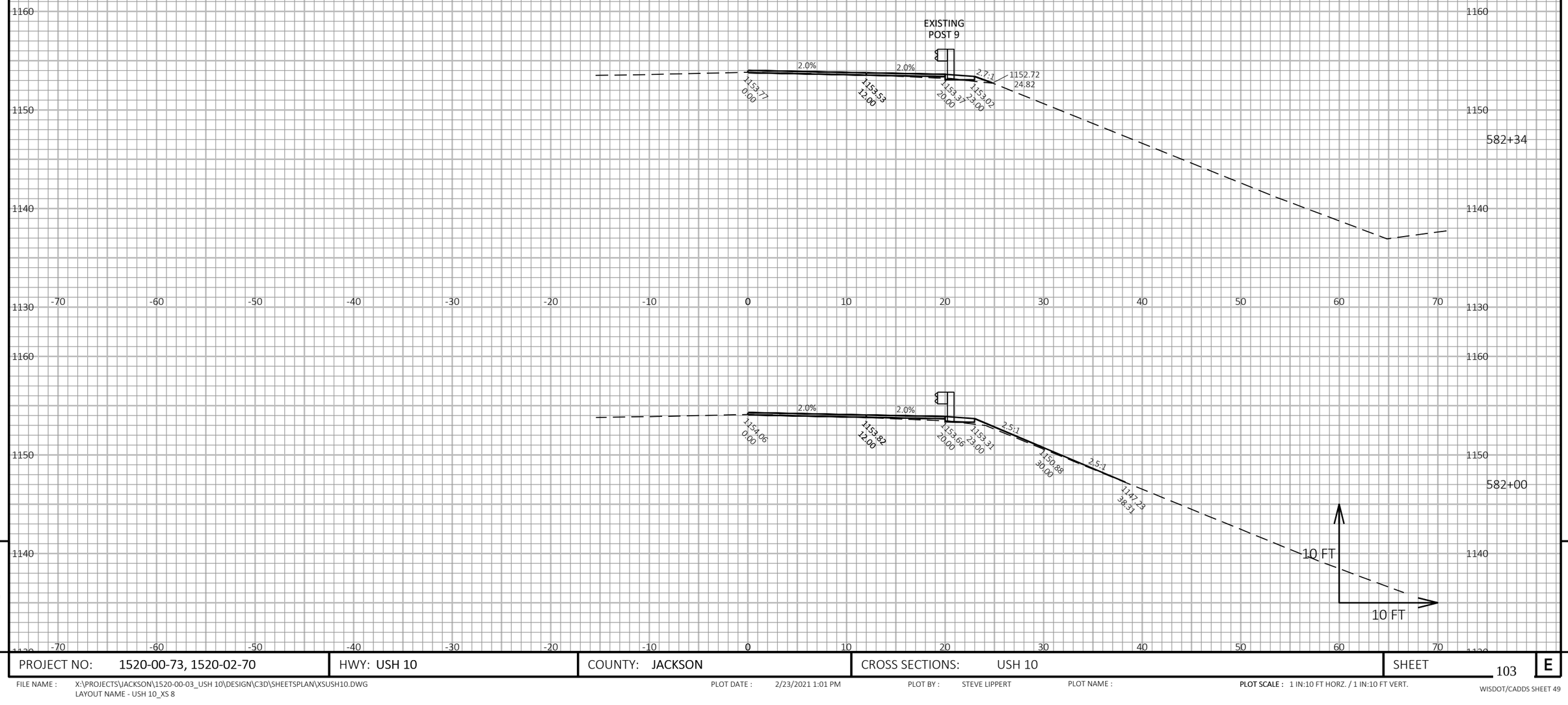
FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 7

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

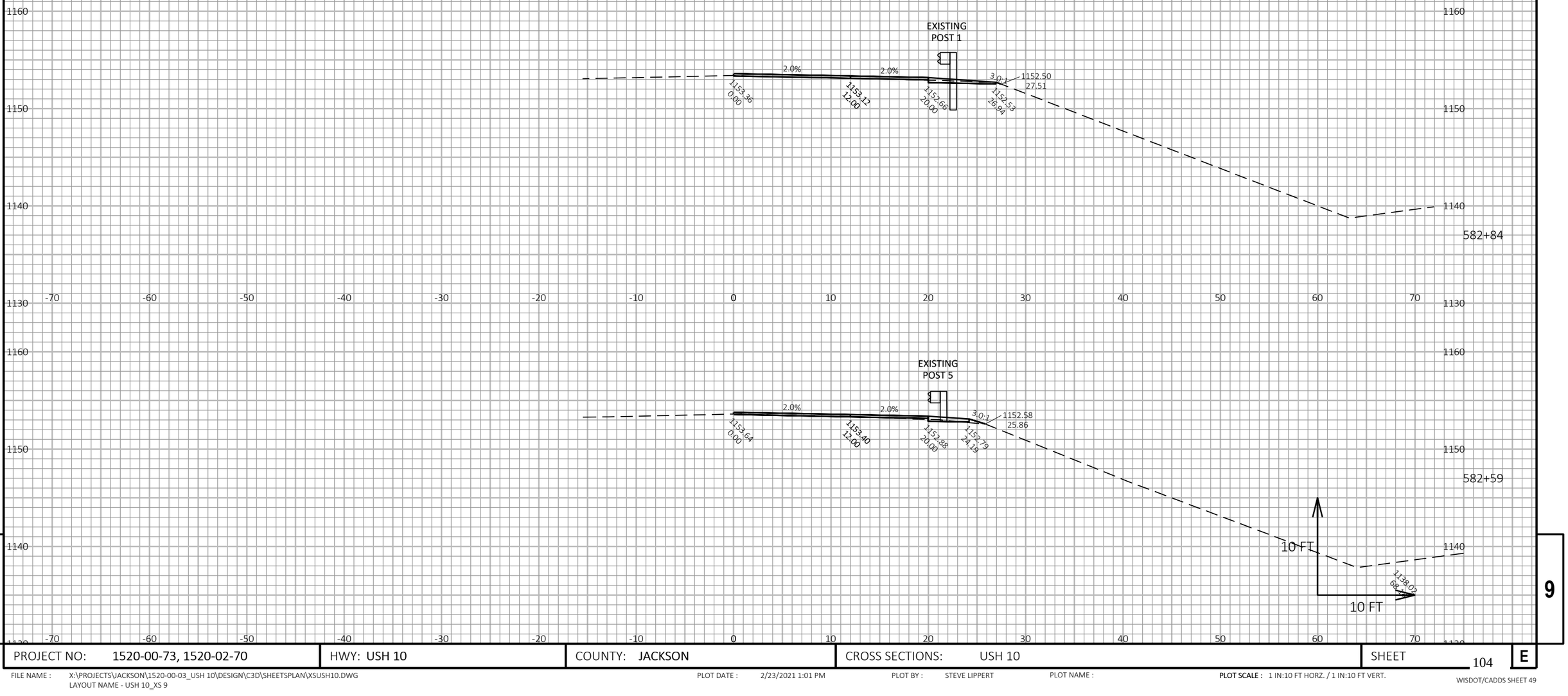


PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 103	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 8

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



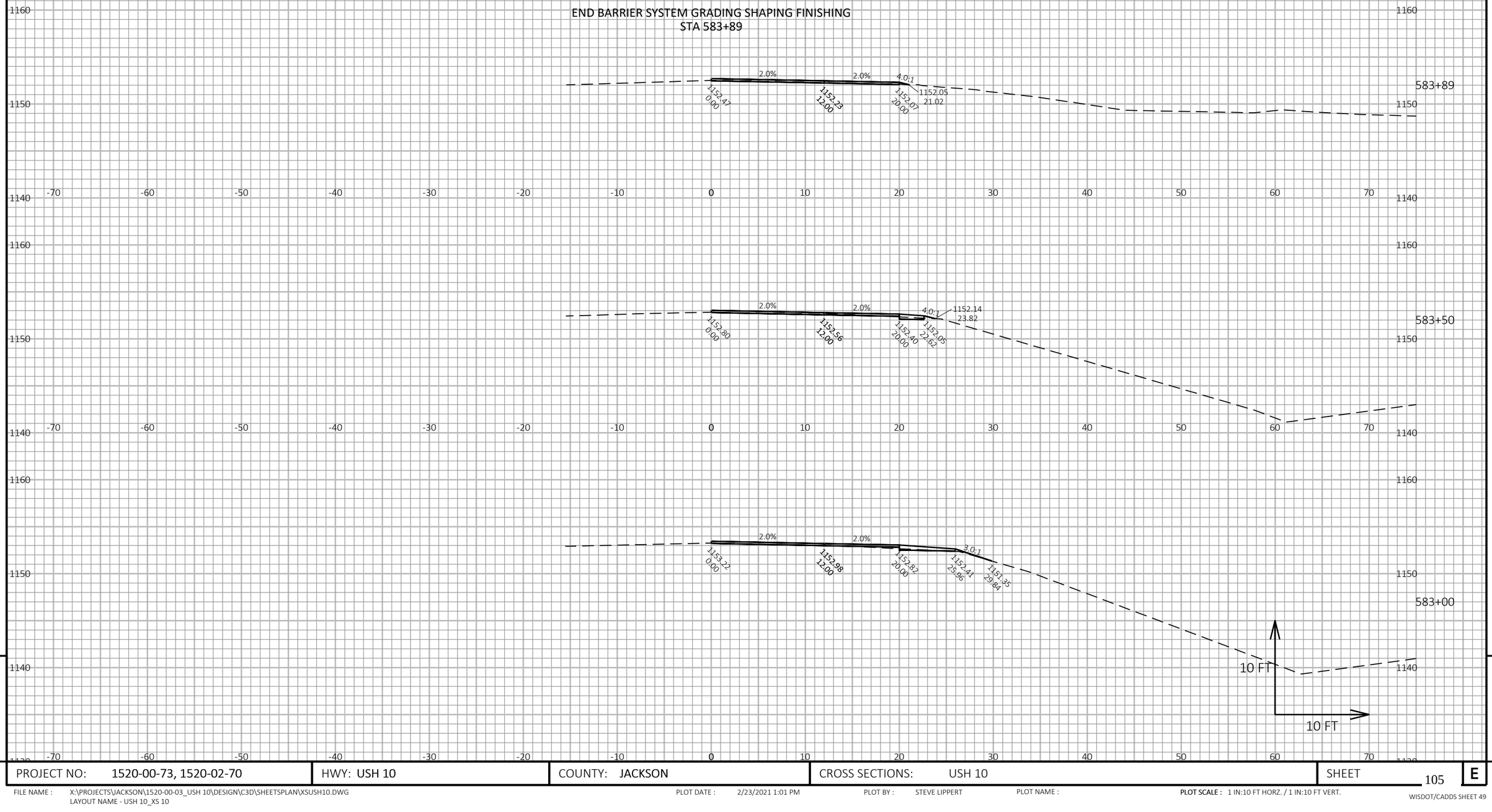
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 104 E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 9

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

END BARRIER SYSTEM GRADING SHAPING FINISHING
STA 583+89



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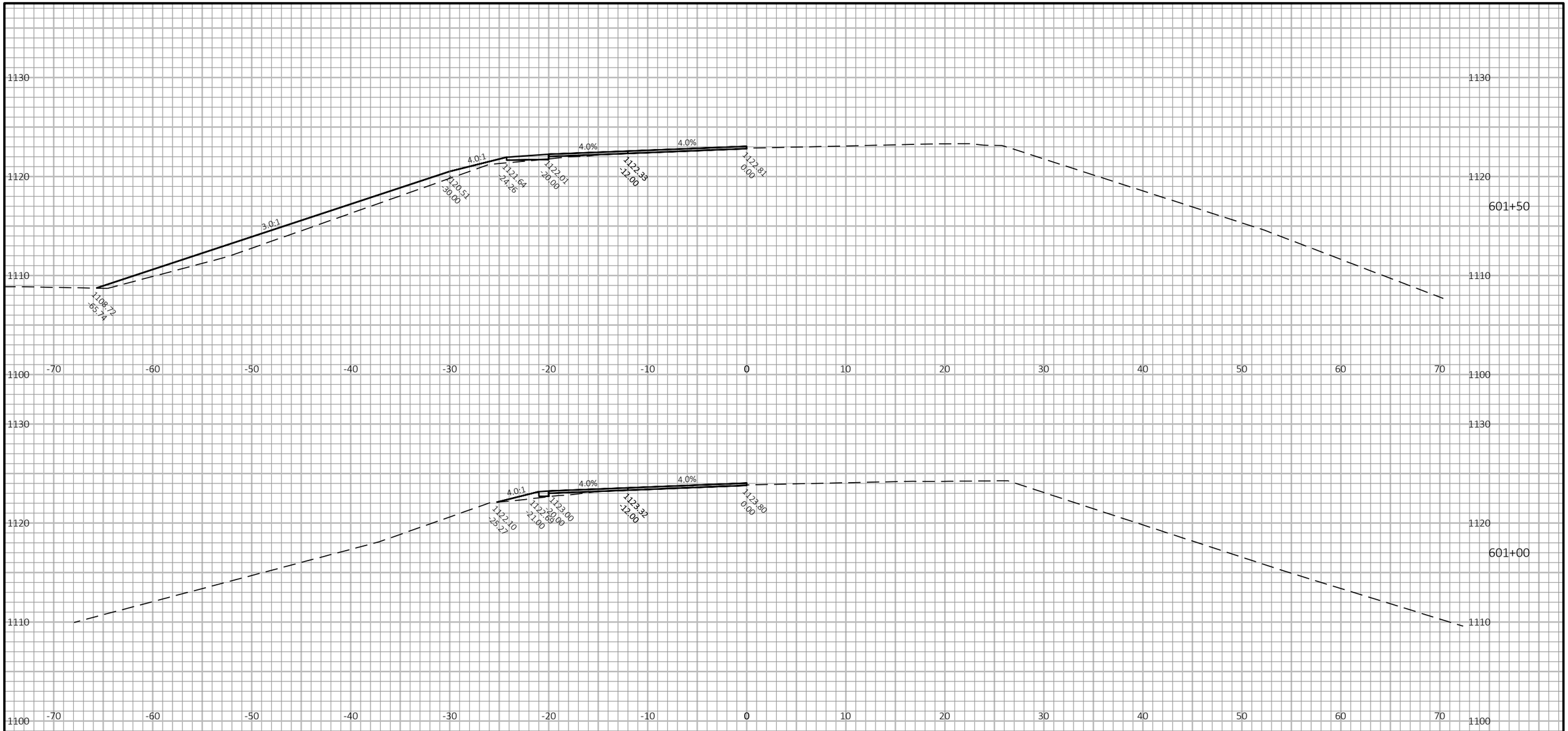
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 105	E

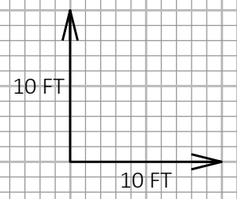
FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 10

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



BEGIN BARRIER SYSTEM GRADING SHAPING FINISHING
STA 600+85



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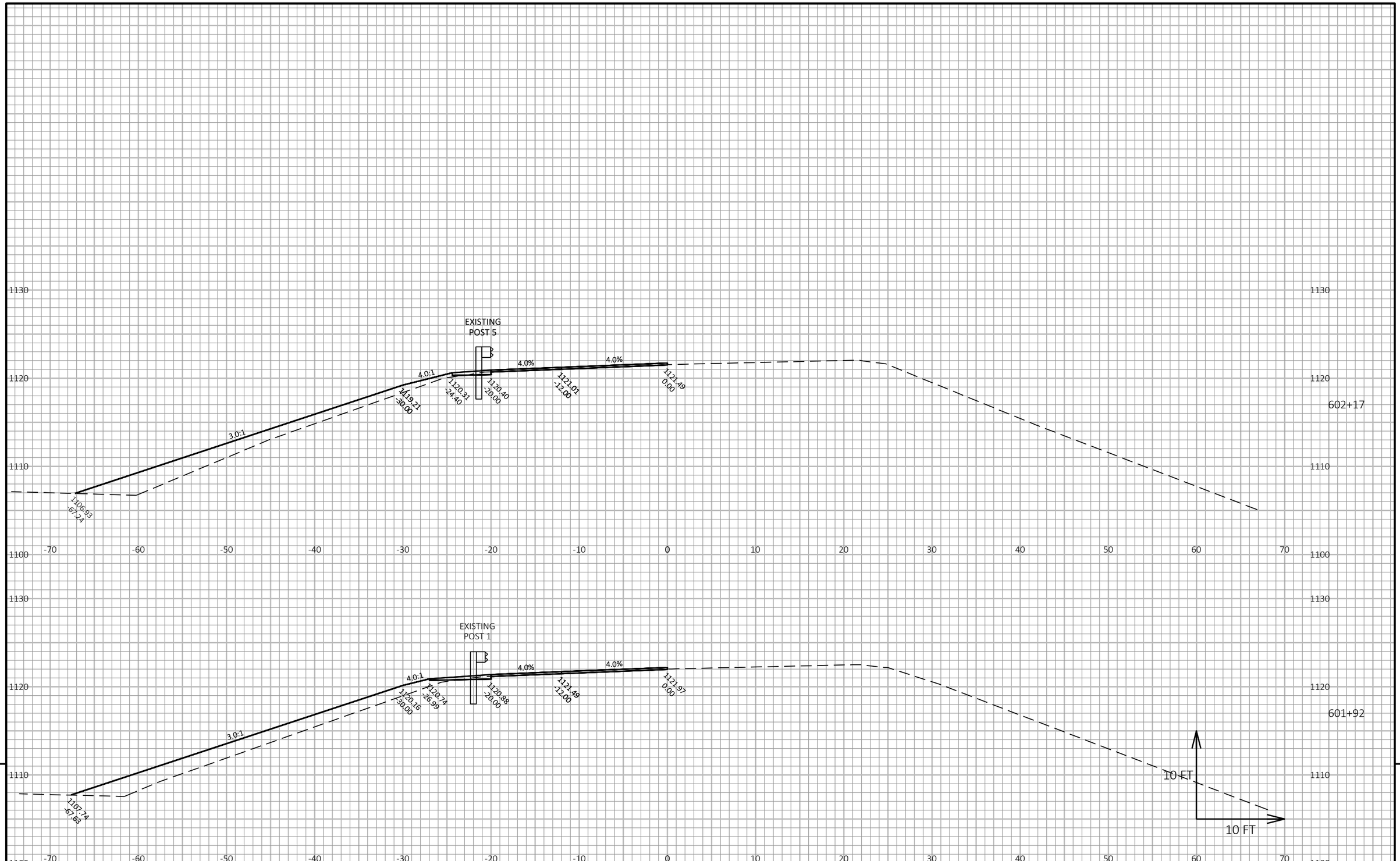
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 106	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 11

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 107	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 12

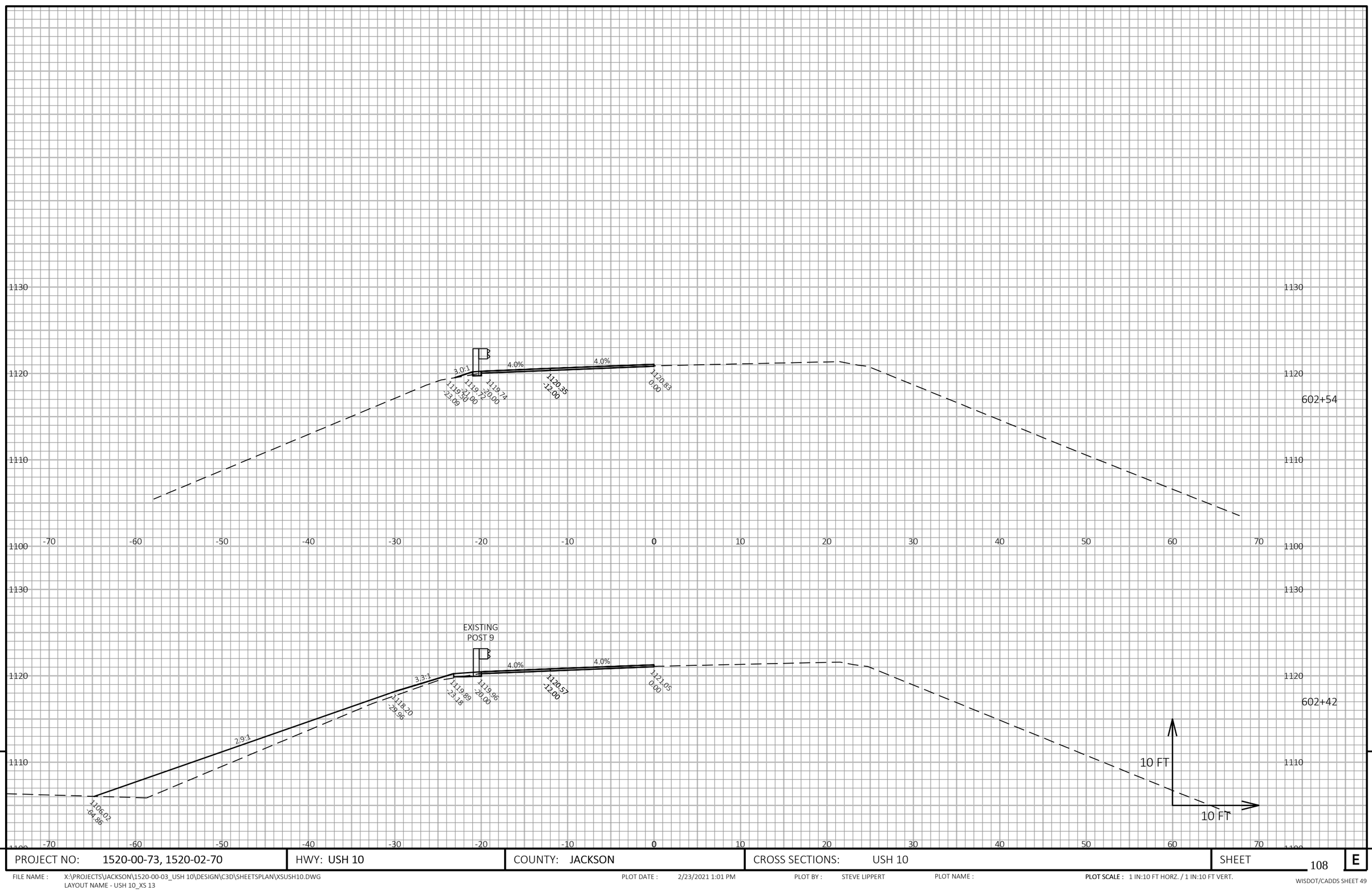
PLOT DATE : 2/23/2021 1:01 PM

PLOT BY : STEVE LIPPERT

PLOT NAME :

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

WISDOT/CADDS SHEET 49

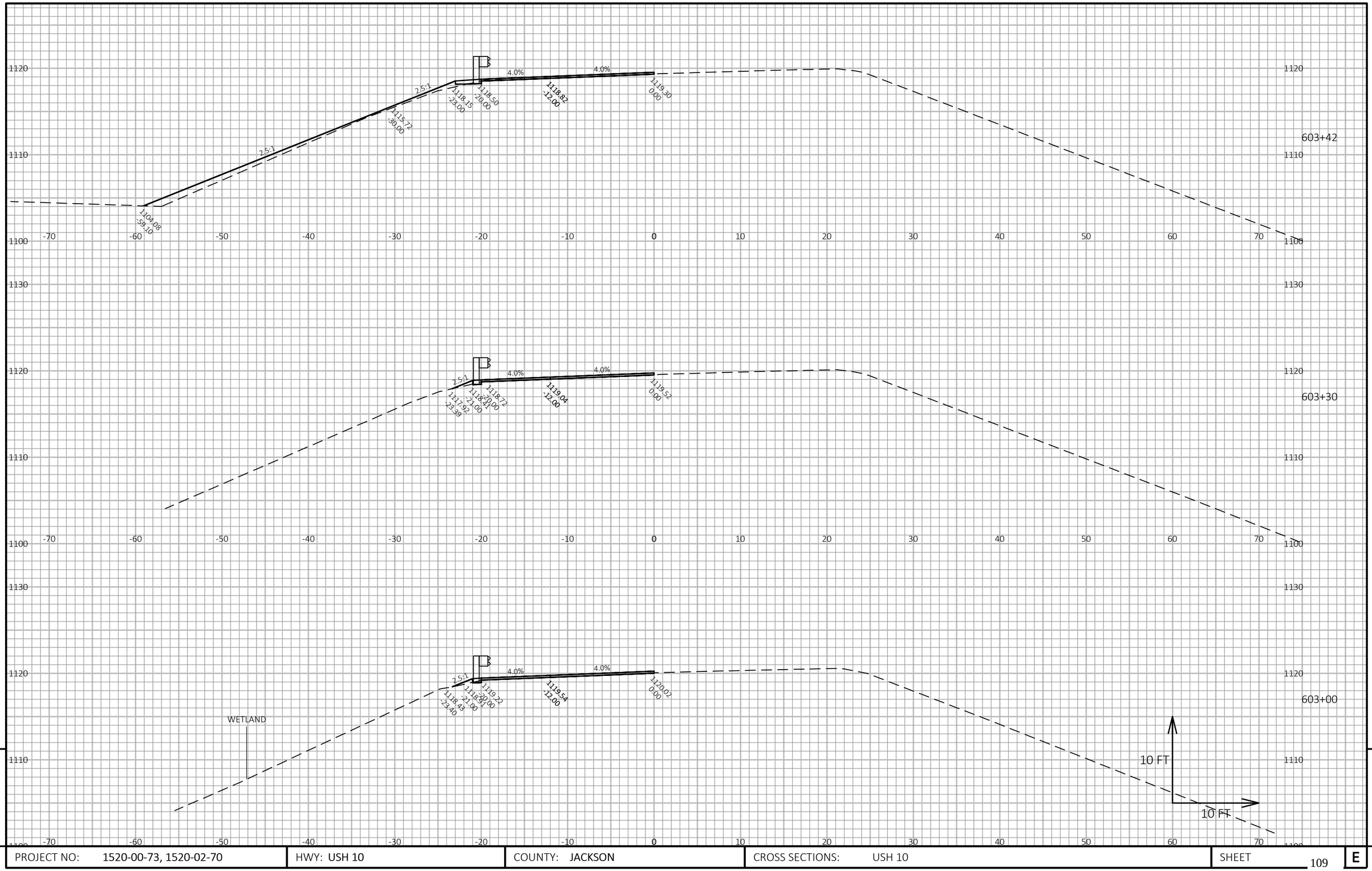


PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 108	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 13

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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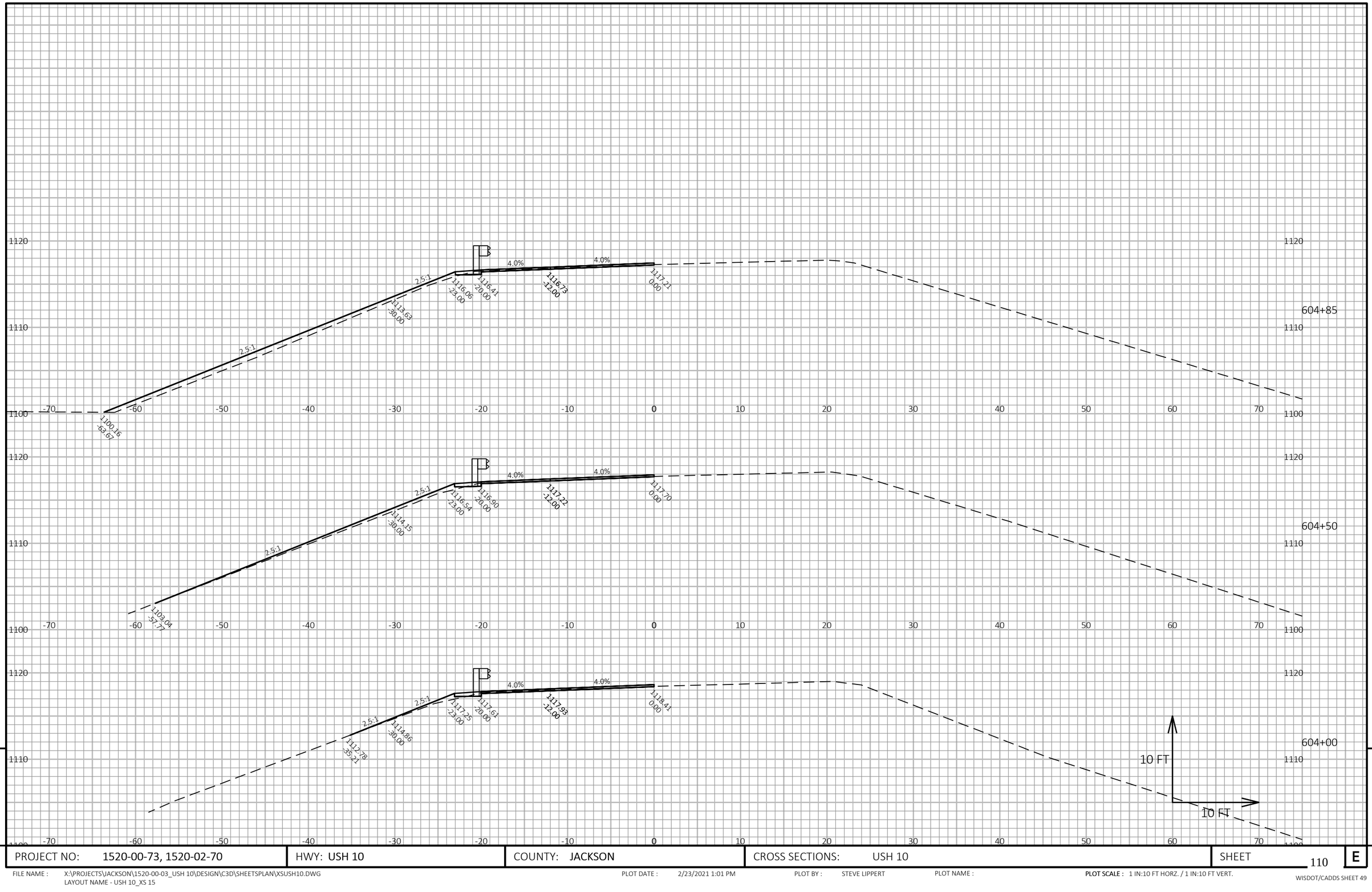
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 109	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 14

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

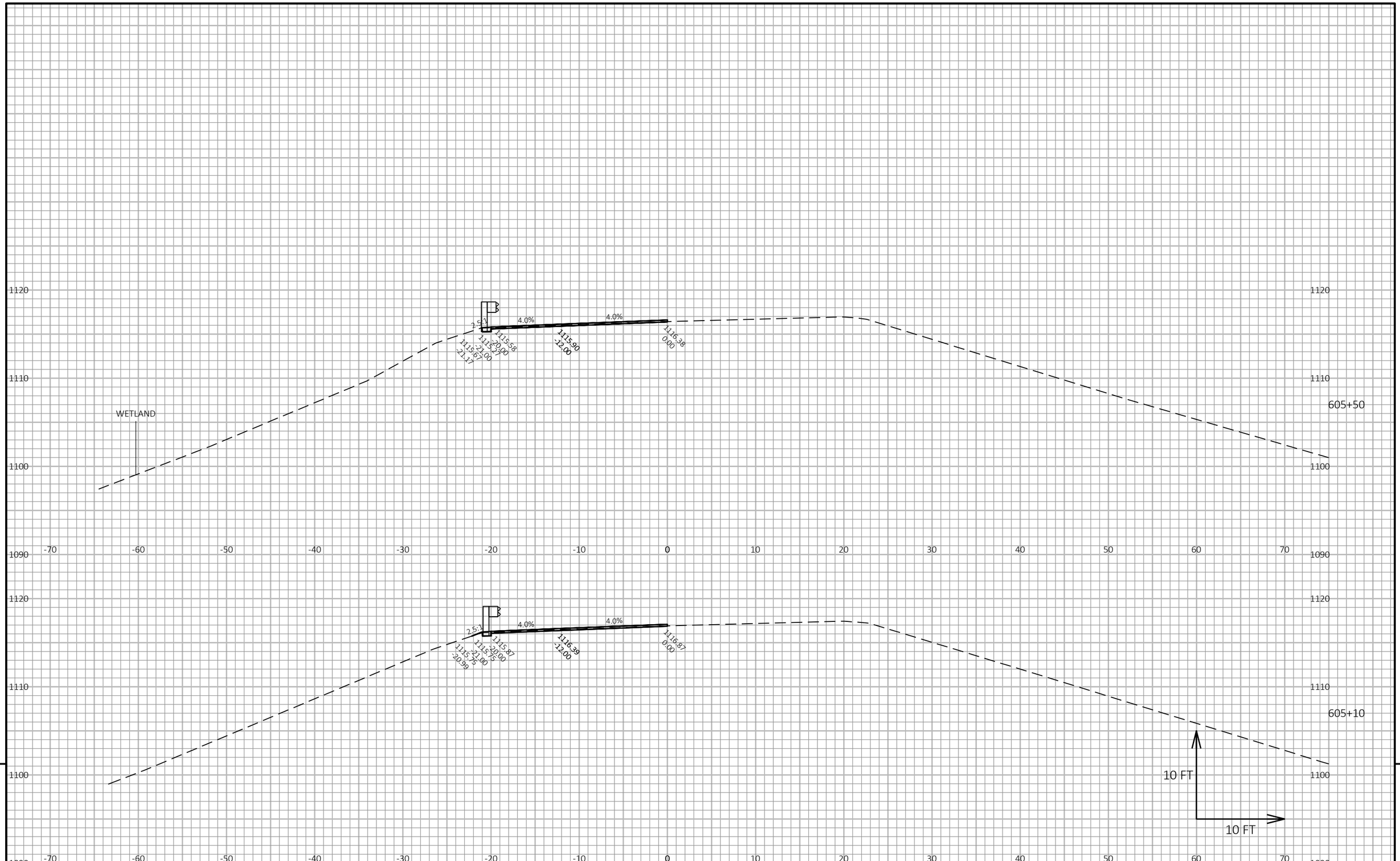


PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 110	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 15

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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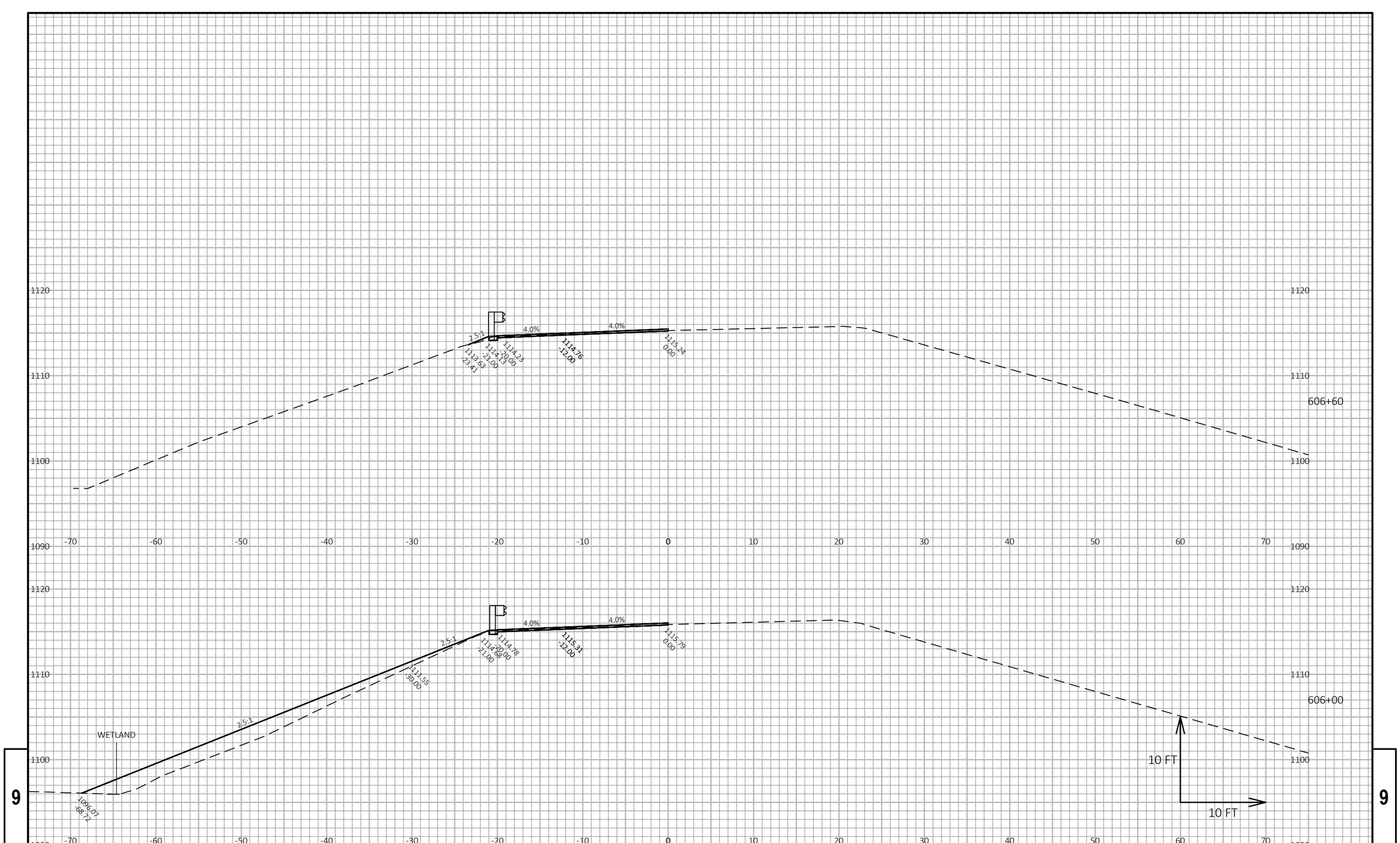
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 111	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 16

PLOT DATE : 2/23/2021 1:01 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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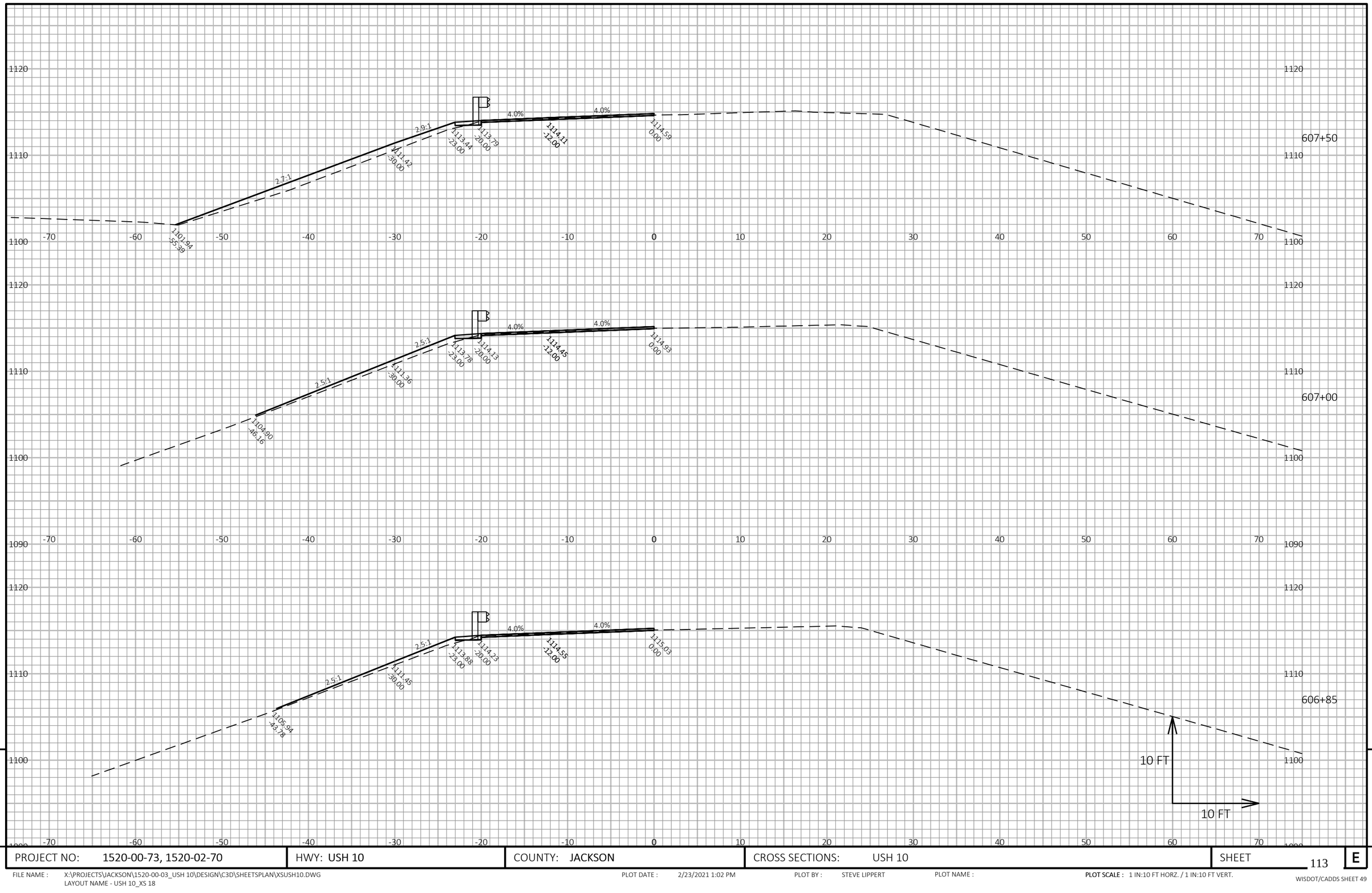
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 112	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 17

PLOT DATE : 2/23/2021 1:02 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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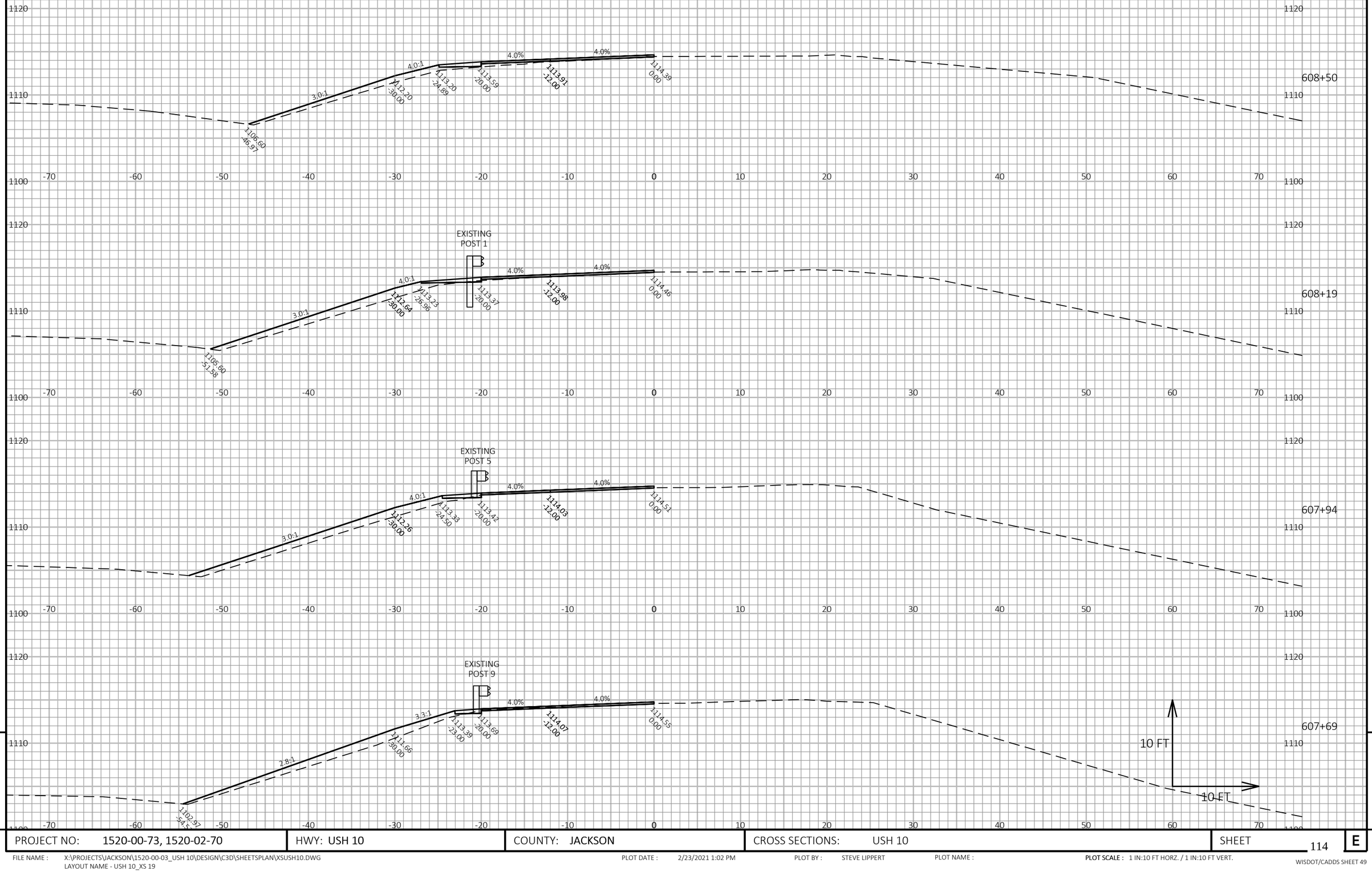
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 113	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 18

PLOT DATE : 2/23/2021 1:02 PM PLOT BY : STEVE LIPPERT PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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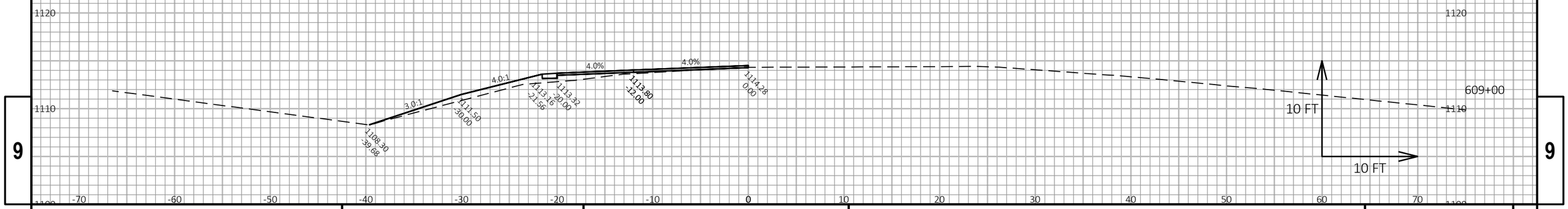
PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 114	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 19

PLOT DATE : 2/23/2021 1:02 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

END BARRIER SYSTEM GRADING SHAPING FINISHING
STA 609+23



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PROJECT NO: 1520-00-73, 1520-02-70	HWY: USH 10	COUNTY: JACKSON	CROSS SECTIONS: USH 10	SHEET 115	E

FILE NAME : X:\PROJECTS\JACKSON\1520-00-03_USH 10\DESIGN\C3D\SHEETSPLAN\XSUSH10.DWG
LAYOUT NAME - USH 10_XS 20

PLOT DATE : 2/23/2021 1:02 PM PLOT BY : STEVE LIPPERT PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

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