LAX

Jan 11, 2022

PROJECT ID: 1640-03-72

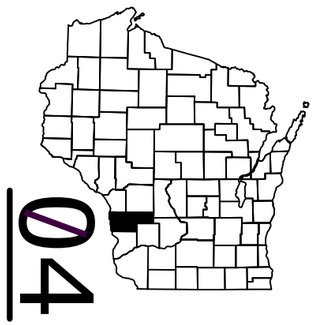
WITH: N/A

COUNTY: VERNON

ORDER OF SHEETS

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

TOTAL SHEETS = 108



N

DESIGN DESIGNATION

A.A.D.T.	2022	=	5,050
A.A.D.T.	2042	=	6,000
D.H.V.	2042	=	228
D.D.		=	57/33
T.		=	9.3%
DESIGN SPEED		=	55 MPH
ESALS		=	2,200,000

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (300'EB')
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

LA CROSSE - WESTBY

.17M E MATHISON LN TO HIGH ECHO LN

USH 14

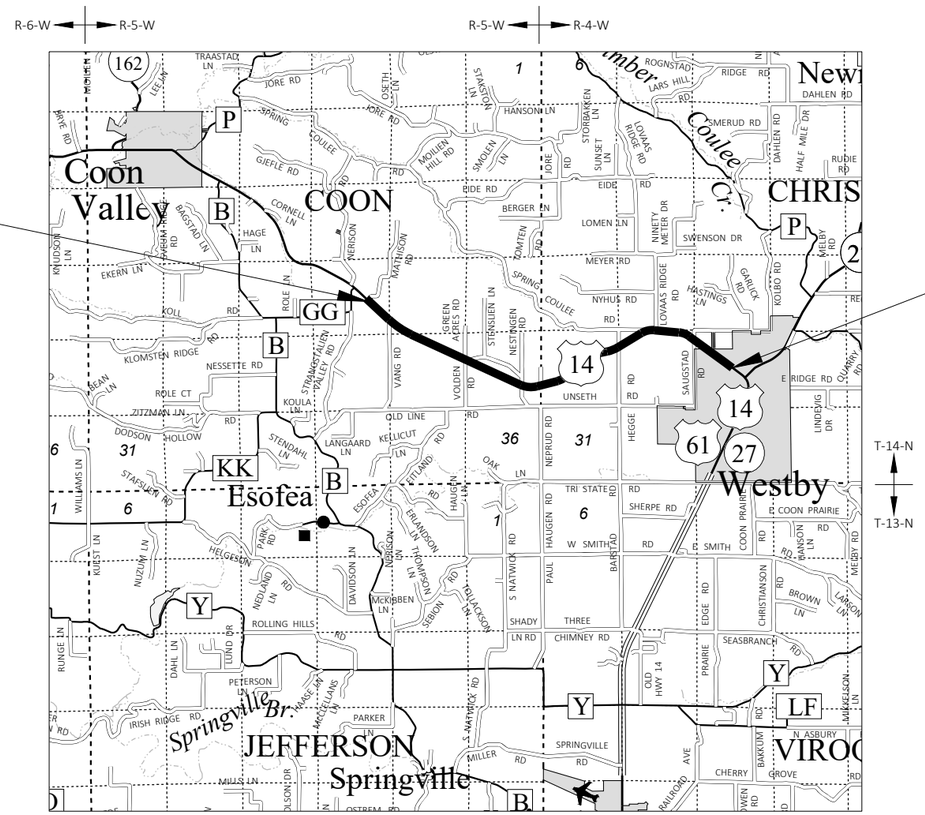
VERNON COUNTY

STATE PROJECT NUMBER
1640-03-72

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1640-03-72	WISC 2022109	1

BEGIN PROJECT
STA 430+00.00
Y= 191,332.729
X= 684,993.881

END PROJECT
STA 707+87.00
Y= 187,381.652
X= 709,539.718



LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 5.263 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), VERNON 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.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NER
Designer	G. WILLIAMS
Project Manager	K. TREML
Regional Examiner	SW and NE Regions
Regional Supervisor	R. WAGNER

APPROVED FOR THE DEPARTMENT

DATE: 7/23/2021 (Signature)

E

FILE NAME : C:\USERS\DITJ3R\DESKTOP\C3D\16400302\SHEETSPLAN\010101-TI.DWG PLOT DATE : 5/6/2021 8:31 AM PLOT BY : ROHE, JUSTIN LAURENC PLOT NAME :

2

GENERAL NOTES

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

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

• RIGHT OF WAY LINES SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE.

• PRIOR TO THE PLACEMENT OF MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.

• THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE OR PARKING LANE.

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

• DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED, AND MULCHED OR SODDED AS DIRECTED BY THE ENGINEER.

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES

PROJECT OVERVIEW

TYPICAL SECTIONS

CONSTRUCTION DETAILS

PLAN DETAILS

TRAFFIC CONTROL

DNR LIAISON

KAREN KALVELAGE
(NORTHWEST-CRAWFORD, JUNEAU, LA CROSSE, MONROE, VERNON)
3550 MORMON COULEE RD
LA CROSSE, WI 54601
(608) 785-9115
karen.kalvelage@wisconsin.gov

COUNTY HIGHWAY COMMISSIONER

PHIL HEWITT
602 N MAIN ST
PO BOX 232
VIROQUA, WI 54665-0232
(608) 637-5451
phil.hewitt@vernoncounty.org

NE REGION SURVEY COORDINATOR

CORMAC MCINNIS, RLS
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920) 492-5638
cormac.mcinnis@dot.wi.gov

NE REGION DESIGN PROJECT MANAGER

KYLE TREML, PE
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920) 492-5638
kyle.treml@dot.wi.gov

UTILITIES CONTACTS

RICK SCHERMERHORN (PRIMARY CONTACT)
MIDWEST NATURAL GAS, INC. - GAS/PETROLEUM
3600 STATE HIGHWAY 157
PO BOX 429
LA CROSSE, WI 54602-0429
(608) 781-1011
ricks@midwestnaturalgas.com

SCOTT FREDERICK (PRIMARY CONTACT)
VERNON COMMUNICATIONS COOPERATIVE - COMMUNICATION LINE
103 N MAIN ST
WESTBY, WI 54667
(608) 634-3136
sfrederick@vernoncom.coop

RON JANZEN (PRIMARY CONTACT)
WESTBY CITY OF MUN ELEC & WTR UTY - WATER
200 N MAIN ST
WESTBY, WI 54667
(608) 634-3416
rjanzen@cityofwestby.org

CRAIG EGGERT (PRIMARY CONTACT)
MEDIACOM WISCONSIN LLC - COMMUNICATION LINE
1240 HIGHWAY 52
CHATFIELD, MN 55923
(563) 419-5160
ceggert@mediacomcc.com

RON JANZEN (PRIMARY CONTACT)
WESTBY CITY OF MUN ELEC & WTR UTY - ELECTRICITY
200 N MAIN ST
WESTBY, WI 54667
(608) 634-3416
rjanzen@cityofwestby.org

JOE MOEN (PRIMARY CONTACT)
XCEL ENERGY - OVERHEAD ELECTRICITY
3215 COMMERCE ST
LA CROSSE, WI 54603
(608) 789-3698
joe.j.moen@xcelenergy.com

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

EMERGENCY CONTACT NUMBERS FOR WISCONSIN POWER AND LIGHT COMPANY

ELECTRIC 24 HOUR EMERGENCY SERVICE: 1-800-862-6261

GAS 24 HOUR EMERGENCY SERVICE: 1-800-862-6263

EMERGENCY CONTACT NUMBERS FOR WISCONSIN PUBLIC SERVICE

ELECTRIC 24 HOUR EMERGENCY SERVICE: 1-800-450-7240

GAS 24 HOUR EMERGENCY SERVICE: 1-800-450-7280

EMERGENCY CONTACT NUMBERS FOR WE ENERGIES

ELECTRIC 24 HOUR EMERGENCY SERVICE: 1-800-662-4797

GAS 24 HOUR EMERGENCY SERVICE: 1-800-261-5325

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.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 = 1.5 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.5 ACRES

2

N

BEGIN PROJECT
STA 430+00.00
Y=191,332.729
X=684,993.881

MB

ROADWORK STARTING X/XX/XX

END PROJECT
STA 707+87.00
Y=187,381.652
X=709,539.718

MB

ROADWORK STARTING X/XX/XX

R/L USH 14

NERISON ROAD

MATHISON LANE

VANG ROAD

TOWN HALL LANE

VOLDEN ROAD

GREEN ACRES LANE

STENSLIEN LANE

RAINBOW DRIVE

NESTINGEN ROAD

CUT-A-CROSS ROAD

UNSETH ROAD

SPRING COULEE ROAD

LOVAAS RIDGE ROAD

USH 14/USH 61

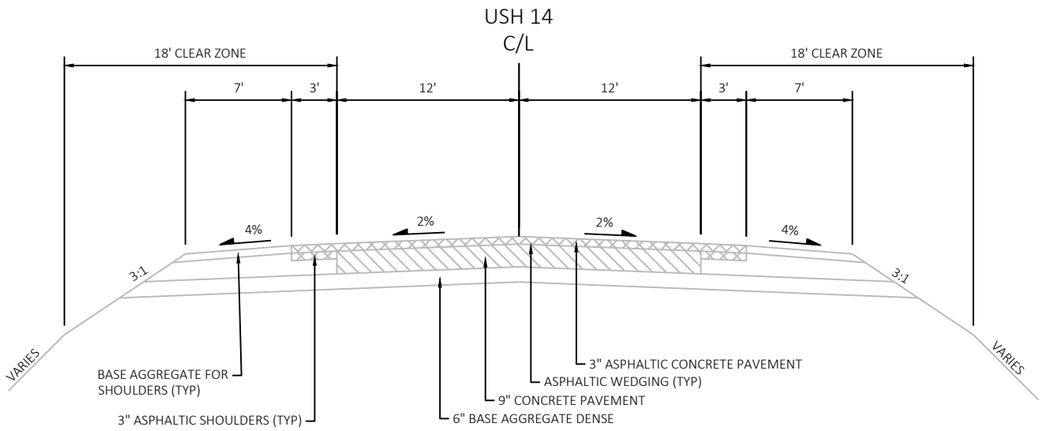
HEGGE ROAD

SAUGSTAD ROAD

USH 14

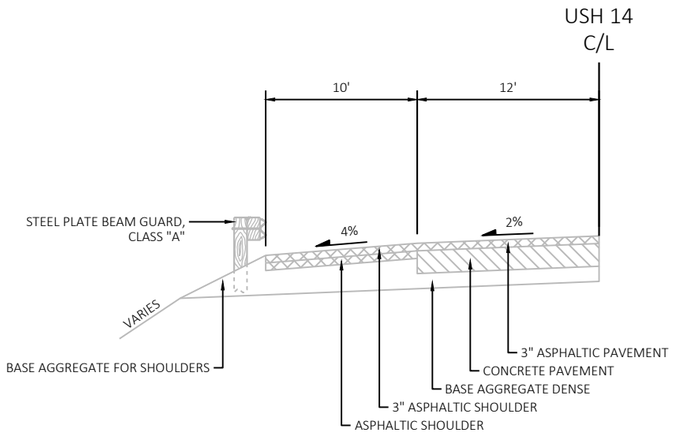
WESTBY

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PROJECT OVERVIEW	SHEET 3	E



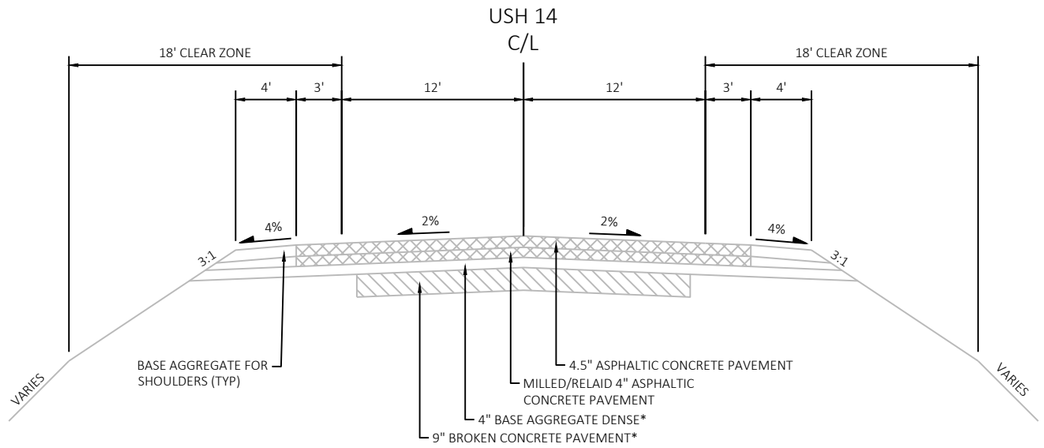
EXISTING TYPICAL SECTION FOR USH 14

STA 430+00 TO STA 541+46



EXISTING TYPICAL BEAM GUARD SECTION

STA 451+14 LT TO STA 456+07.75 LT
STA 522+98 LT TO STA 533+54.25 LT
STA 450+55.50 RT TO STA 455+24.25 RT
STA 509+01.50 RT TO STA 513+57.75 RT
STA 522+44.50 RT TO STA 531+25.75 RT



EXISTING TYPICAL SECTION FOR USH 14

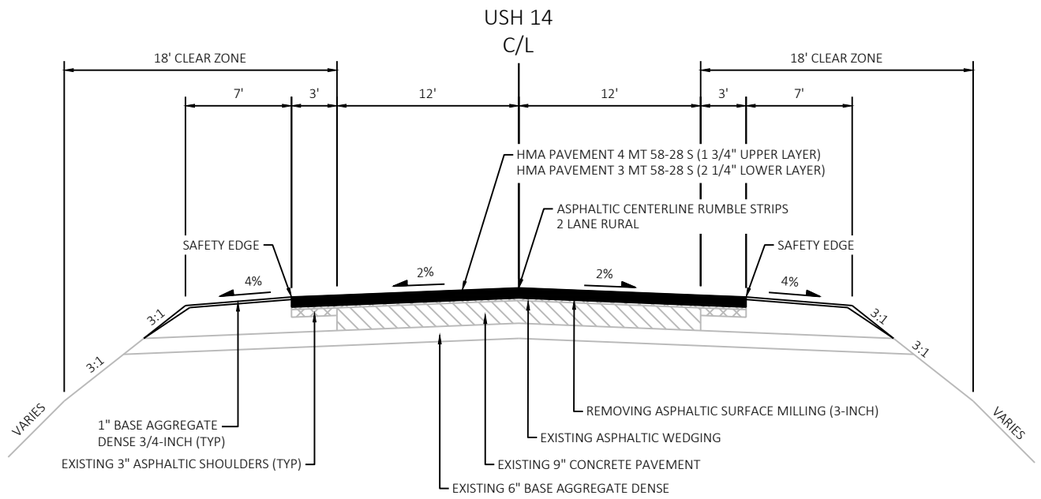
STA 541+46 TO STA 707+87

*STA 541+46 TO STA 558+46 HAS 9" BASE AGGREGATE DENSE WITH NO UNDERLYING CONCRETE

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	TYPICAL SECTIONS	SHEET 4	E

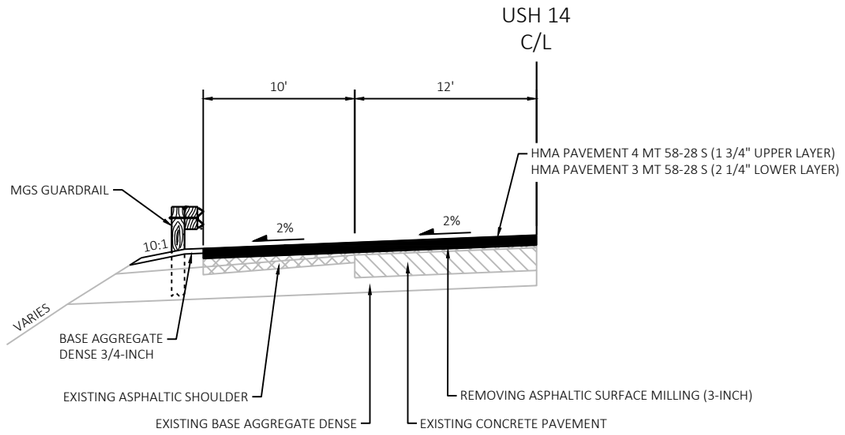
FILE NAME : C:\USERS\DITJ3R\DESKTOP\C3D\16400302\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020301-ts

PLOT DATE : 5/28/2021 2:44 PM PLOT BY : ROHE, JUSTIN LAURENC PLOT NAME : PLOT SCALE : 1IN:10 FT



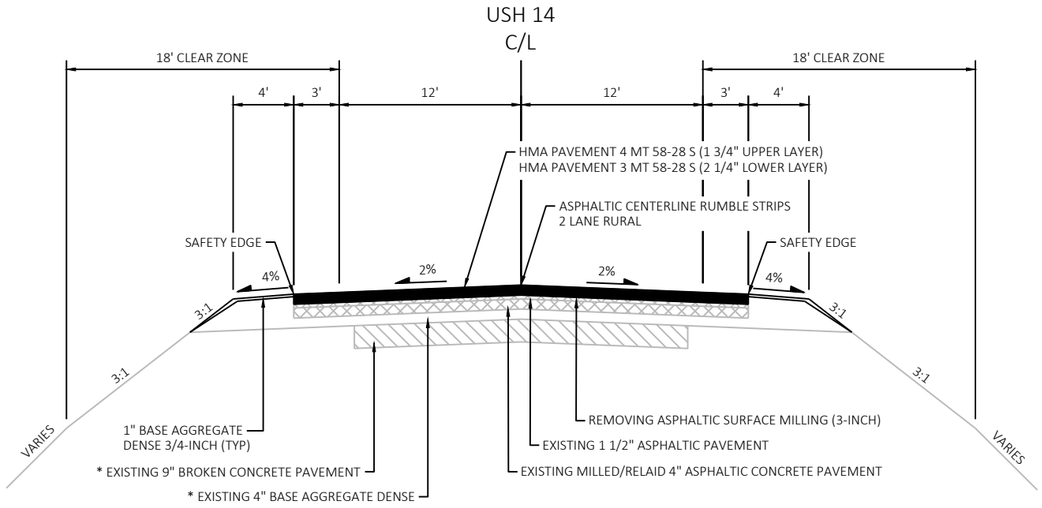
FINISHED TYPICAL SECTION FOR USH 14

STA 430+00 TO STA 541+46
SEE PLAN SHEETS AND MQ TABLES FOR BASE PATCHING LOCATIONS



FINISHED TYPICAL BEAM GUARD SECTION

STA 451+14 LT TO STA 456+07.75 LT
STA 522+98 LT TO STA 533+54.25 LT
STA 450+55.50 RT TO STA 455+24.25 RT
STA 509+01.50 RT TO STA 513+57.75 RT
STA 522+44.50 RT TO STA 531+25.75 RT



FINISHED TYPICAL SECTION FOR USH 14

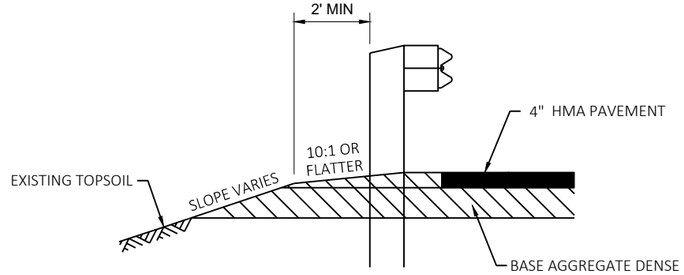
STA 541+46 TO STA 707+87

* STA 541+46 TO STA 558+46 HAS 9" BASE AGGREGATE
DENSE WITH NO UNDERLYING CONCRETE

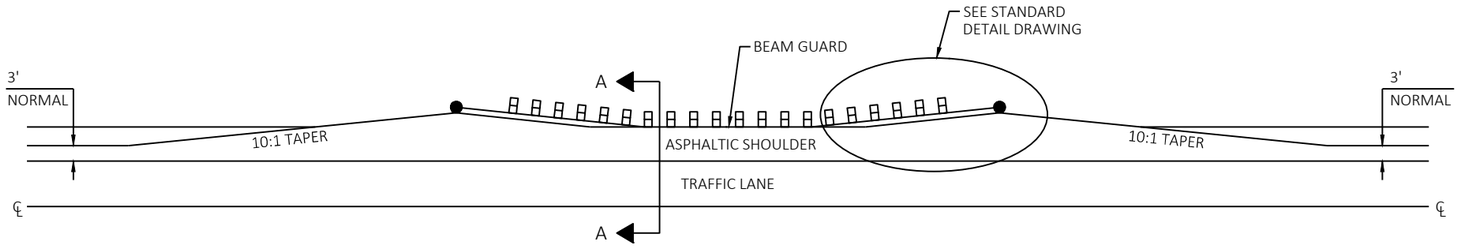
SEE CROSS DRAIN INSTALLATION CONSTRUCTION DETAIL FOR
PAVEMENT STRUCTURE REPLACEMENT AT STA 542+26 & STA 631+34

SEE PLAN SHEETS AND MQ TABLES FOR BASE PATCHING LOCATIONS

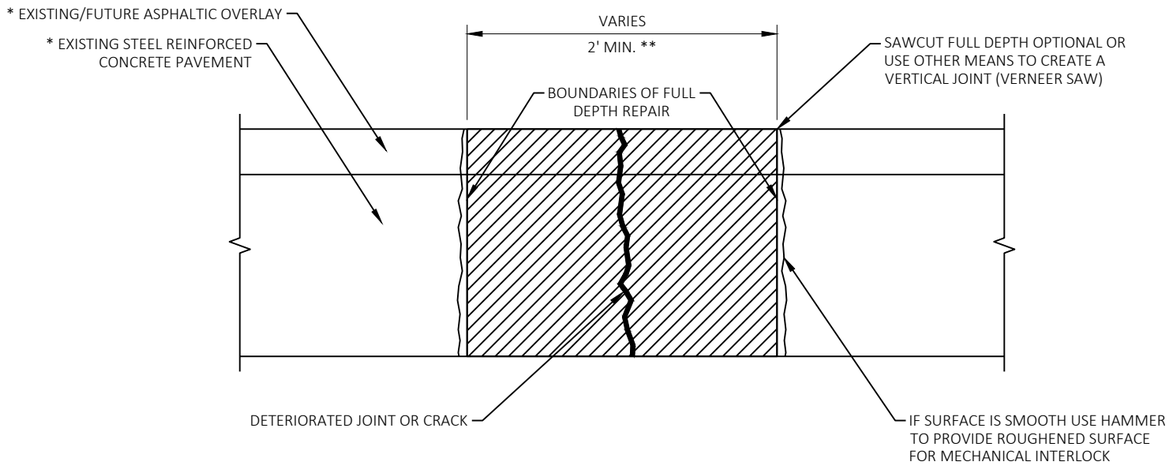
2



SECTION A-A



DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD

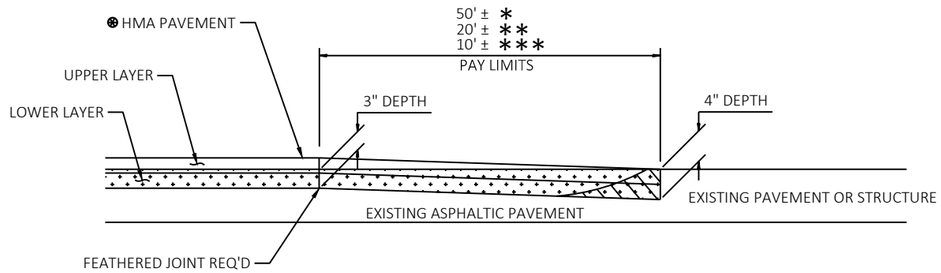


* SEE TYPICAL SECTIONS FOR PAVEMENT TYPES AND THICKNESSES.

** 2' MINIMUM WIDTH AND 5' MINIMUM LENGTH OR AS DETERMINED IN THE FIELD TO COMPLETELY REMOVE DETERIORATED JOINT

BASE PATCHING CONCRETE

SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS



⊛ SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

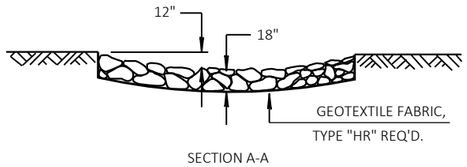
BUTT JOINT DETAIL FOR MILLED ASPHALTIC PAVEMENTS (PROFILE CHANGE)

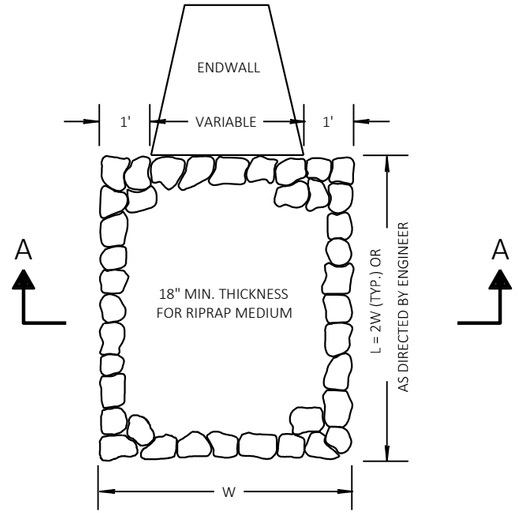
∗ MAINLINE
∗∗ SIDEROADS
∗∗∗ PRIVATE ENTRANCES

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CONSTRUCTION DETIALS	SHEET 6	E

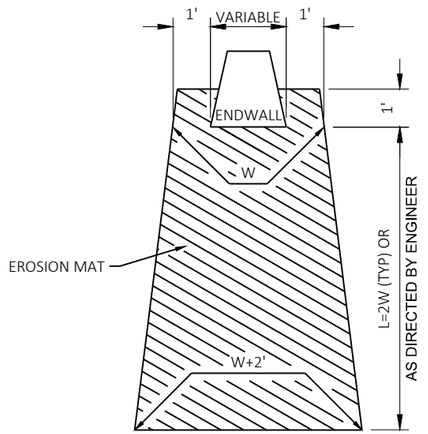
FILE NAME : C:\USERS\DITJ3R\DESKTOP\C3D\16400302\SHEETSPLAN\021001-CD.DWG
LAYOUT NAME - 021001-cd
PLOT DATE : 5/28/2021 2:41 PM
PLOT BY : ROHE, JUSTIN LAURENC
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2

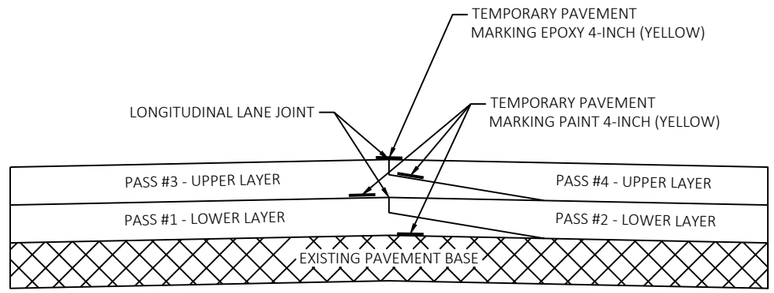




RIPRAP MEDIUM TREATMENT AT CULVERTS



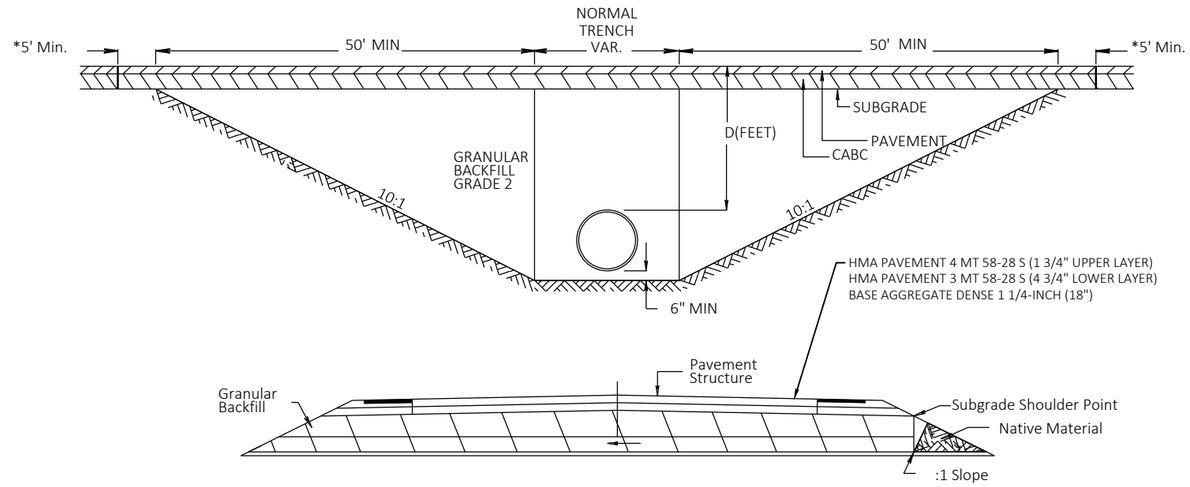
EROSION MAT TREATMENT AT CULVERTS



PAVEMENT MARKING DETAIL FOR TAPERED OVERLAPPING JOINTS IN HMA PAVEMENTS

SEE SDD 15C08-a FOR DIMENSIONS

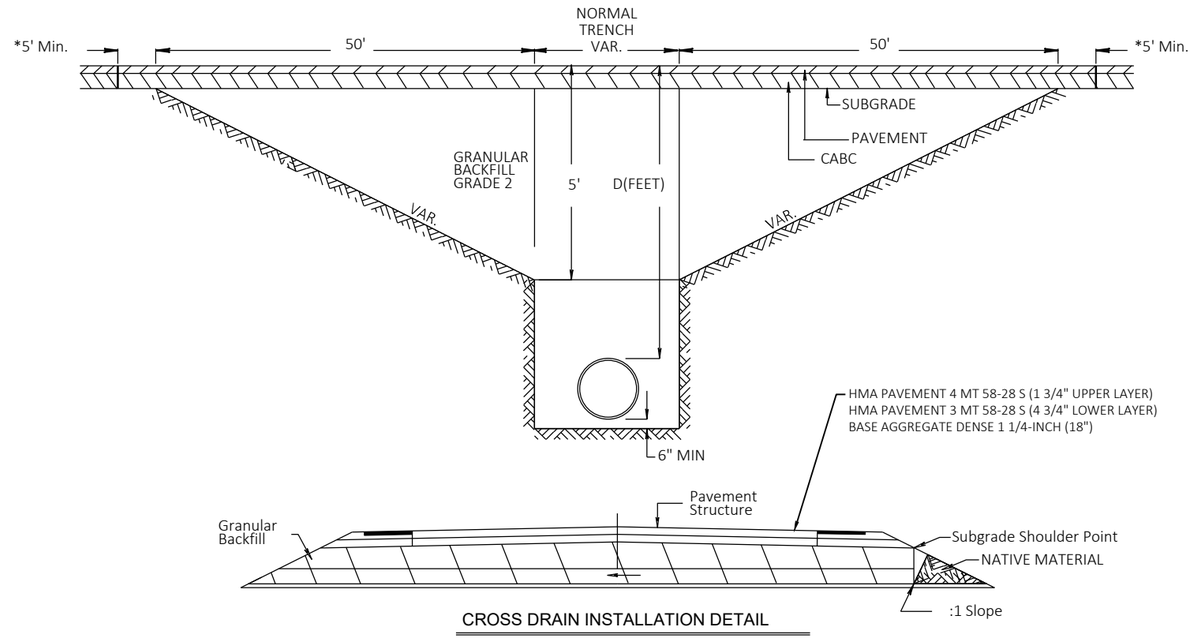
2



CROSS DRAIN INSTALLATION DETAIL

FOR D ≤ 5'

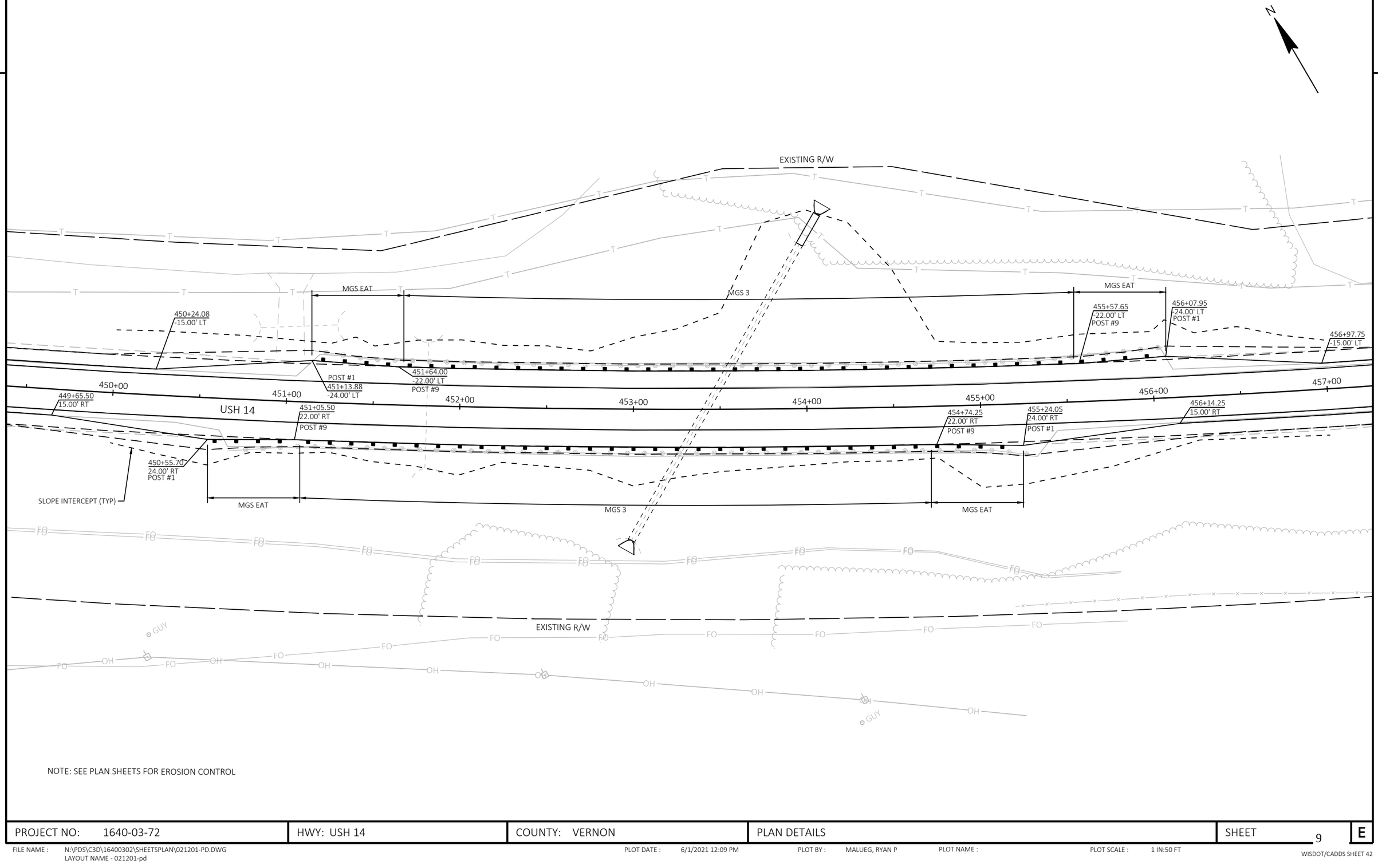
* Pavement Removal Limits (Typical)



CROSS DRAIN INSTALLATION DETAIL

FOR D ≥ 5'

2



NOTE: SEE PLAN SHEETS FOR EROSION CONTROL

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN DETAILS	SHEET 9	E

2

2

N

SIGN

EXISTING R/W

508+00 509+00 510+00 511+00 512+00 513+00 514+00 515+00

508+11.50
15.00' RT

509+01.50
24.00' RT
POST #1

509+51.50
22.00' RT
POST #9

USH 14

513+07.75
22.00' RT
POST #9

513+57.75
24.00' RT
POST #1

514+47.75
15.00' RT

SLOPE INTERCEPT (TYP)

MGS EAT

MGS 3

MGS EAT

EXISTING R/W

NOTE: SEE PLAN SHEETS FOR EROSION CONTROL

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN DETAILS	SHEET 10	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021202-pd

PLOT DATE : 6/1/2021 12:09 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:50 FT

2

2

N

SIGN

EXISTING R/W

SLOPE INTERCEPT (TYP)

522+97.00
24.00' LT
POST #1

MGS EAT

MGS 3

POST #9
523+47.00
-22.00' LT

521+00 | 522+00 | 523+00 | 524+00 | 525+00 | 526+00 | 527+00 | 528

522+07.00
-15.00' LT

POST #1

521+54.50
15.00' RT

522+44.50
24.00' RT

522+94.50
22.00' RT
POST #9

USH 14

MATCH LINE 528+00

PROPOSED FIELD ENTRANCE

MGS EAT

MGS 3

EXISTING R/W

NOTE: SEE PLAN SHEETS FOR EROSION CONTROL

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN DETAILS	SHEET 11	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021203-pd

PLOT DATE : 6/1/2021 12:09 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:50 FT

2

2

N

EXISTING R/W

SLOPE INTERCEPT (TYP)

MGS 3

MGS EAT

533+53.25
-24.00' LT
POST #1

533+03.25
-22.00' LT
POST #9

534+43.25
-15.00' LT

MATCH LINE 528+00

+00 529+00 530+00 531+00 532+00 533+00 534+00 535+00

POST #1

530+75.75
22.00' RT
POST #9

531+25.75
24.00' RT

532+16.53
15.00' RT

USH 14

MGS 3

MGS EAT

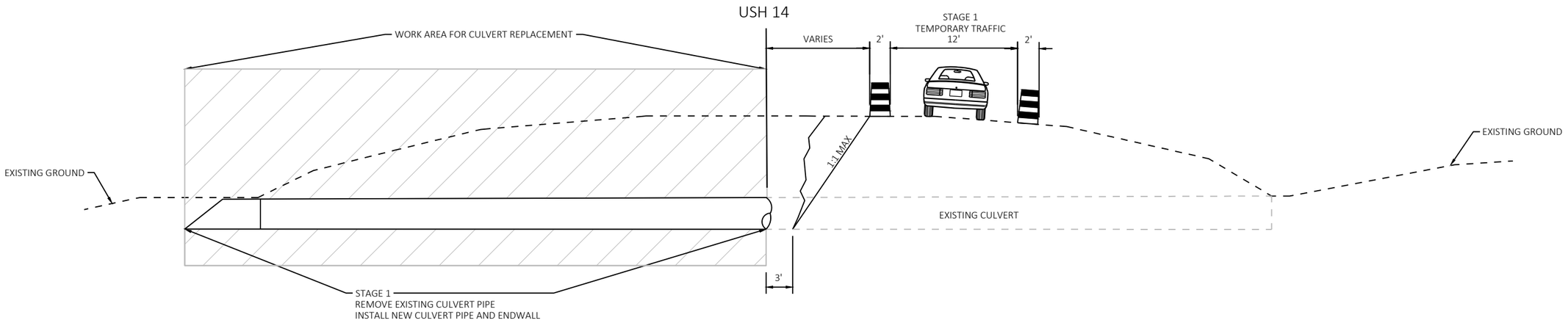
EXISTING R/W

NOTE: SEE PLAN SHEETS FOR EROSION CONTROL

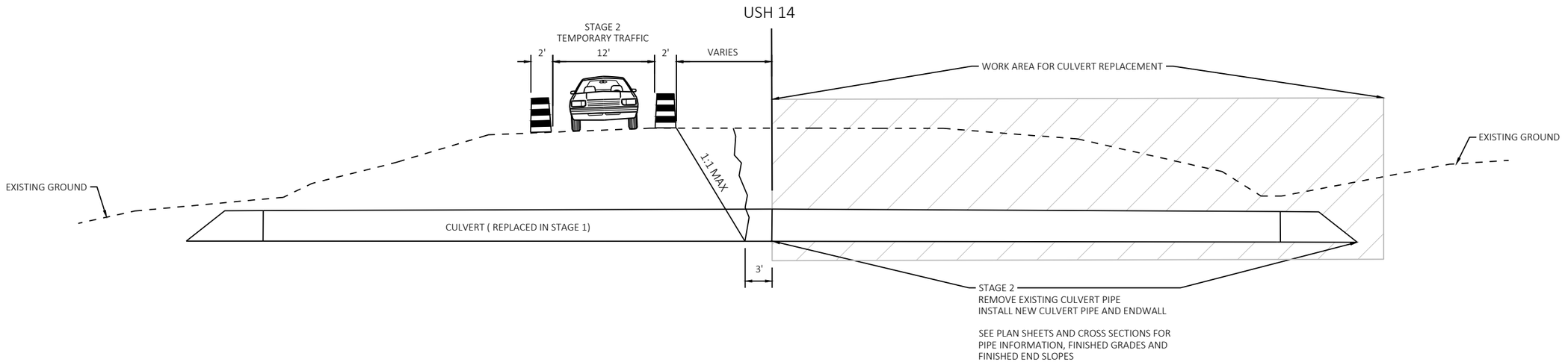
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN DETAILS	SHEET 12	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 021204-pd

PLOT DATE : 6/1/2021 12:10 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:50 FT



STAGE 1
STA 542+25



STAGE 2
STA 542+25

CULVERT PIPE REPLACEMENT HALF AT A TIME

WITH FLAGGING OPERATIONS
SEE SDD'S FOR TRAFFIC CONTROL DEVICES AND ADVANCE SIGNING

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	TRAFFIC CONTROL - FLAGGING TEMPORARY LANE SHIFT DETAIL	SHEET 13	E

1640-03-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0120	Clearing	ID	72.000	72.000
0004	201.0220	Grubbing	ID	72.000	72.000
0006	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0008	203.0220	Removing Structure (structure) 01. 526+46	EACH	1.000	1.000
0010	203.0220	Removing Structure (structure) 02. 631+34	EACH	1.000	1.000
0012	204.0110	Removing Asphaltic Surface	SY	1,300.000	1,300.000
0014	204.0115	Removing Asphaltic Surface Butt Joints	SY	1,303.000	1,303.000
0016	204.0120	Removing Asphaltic Surface Milling	SY	98,140.000	98,140.000
0018	204.0165	Removing Guardrail	LF	3,225.000	3,225.000
0020	204.0185	Removing Masonry	CY	6.900	6.900
0022	204.9060.S	Removing (item description) 01. Apron Endwalls	EACH	20.000	20.000
0024	205.0100	Excavation Common	CY	1,258.000	1,258.000
0026	208.0100	Borrow	CY	1,450.000	1,450.000
0028	208.1500.S	Temporary Lane Shift During Culvert Work	EACH	2.000	2.000
0030	209.2100	Backfill Granular Grade 2	CY	430.000	430.000
0032	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 1640-03-72	LS	1.000	1.000
0034	213.0100	Finishing Roadway (project) 01. 1640-03-72	EACH	1.000	1.000
0036	305.0110	Base Aggregate Dense 3/4-Inch	TON	4,270.000	4,270.000
0038	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,051.000	1,051.000
0040	390.0203	Base Patching Asphaltic	SY	46.300	46.300
0042	390.0403	Base Patching Concrete Shes	SY	99.400	99.400
0044	455.0605	Tack Coat	GAL	12,282.000	12,282.000
0046	460.2000	Incentive Density HMA Pavement	DOL	15,400.000	15,400.000
0048	460.6223	HMA Pavement 3 MT 58-28 S	TON	14,076.000	14,076.000
0050	460.6224	HMA Pavement 4 MT 58-28 S	TON	9,886.000	9,886.000
0052	465.0110	Asphaltic Surface Patching	TON	100.000	100.000
0054	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	97.000	97.000
0056	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	23,136.000	23,136.000
0058	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	4.000	4.000
0060	520.3424	Culvert Pipe Class III-A Non-metal 24-Inch	LF	174.000	174.000
0062	520.8000	Concrete Collars for Pipe	EACH	7.000	7.000
0064	520.8700	Cleaning Culvert Pipes	EACH	2.000	2.000
0066	520.9700.S	Culvert Pipe Liners (size) 01. 24-Inch	LF	222.000	222.000
0068	520.9700.S	Culvert Pipe Liners (size) 02. 36-Inch	LF	128.000	128.000
0070	520.9700.S	Culvert Pipe Liners (size) 03. 48-Inch	LF	288.000	288.000
0072	520.9750.S	Cleaning Culvert Pipes for Liner Verification	EACH	5.000	5.000
0074	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	8.000	8.000
0076	521.1036	Apron Endwalls for Culvert Pipe Steel 36-Inch	EACH	6.000	6.000
0078	521.1048	Apron Endwalls for Culvert Pipe Steel 48-Inch	EACH	5.000	5.000
0080	521.1060	Apron Endwalls for Culvert Pipe Steel 60-Inch	EACH	1.000	1.000
0082	521.3124	Culvert Pipe Corrugated Steel 24-Inch	LF	20.000	20.000
0084	521.3136	Culvert Pipe Corrugated Steel 36-Inch	LF	40.000	40.000
0086	521.3148	Culvert Pipe Corrugated Steel 48-Inch	LF	20.000	20.000
0088	521.3160	Culvert Pipe Corrugated Steel 60-Inch	LF	30.000	30.000
0090	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	1.000	1.000
0092	524.0124	Culvert Pipe Salvaged 24-Inch	LF	32.000	32.000
0094	524.0624	Apron Endwalls for Culvert Pipe Salvaged 24-Inch	EACH	2.000	2.000
0096	606.0200	Riprap Medium	CY	24.000	24.000
0098	614.2300	MGS Guardrail 3	LF	2,825.000	2,825.000

1640-03-72

Line	Item	Item Description	Unit	Total	Qty
0100	614.2610	MGS Guardrail Terminal EAT	EACH	10.000	10.000
0102	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1640-03-72	EACH	1.000	1.000
0104	619.1000	Mobilization	EACH	1.000	1.000
0106	624.0100	Water	MGAL	74.600	74.600
0108	625.0100	Topsoil	SY	322.000	322.000
0110	625.0500	Salvaged Topsoil	SY	6,200.000	6,200.000
0112	627.0200	Mulching	SY	1,000.000	1,000.000
0114	628.1504	Silt Fence	LF	5,700.000	5,700.000
0116	628.1520	Silt Fence Maintenance	LF	5,700.000	5,700.000
0118	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0120	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0122	628.2004	Erosion Mat Class I Type B	SY	7,600.000	7,600.000
0124	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0126	628.7555	Culvert Pipe Checks	EACH	100.000	100.000
0128	629.0210	Fertilizer Type B	CWT	4.110	4.110
0130	630.0140	Seeding Mixture No. 40	LB	117.400	117.400
0132	630.0500	Seed Water	MGAL	180.000	180.000
0134	633.5200	Markers Culvert End	EACH	44.000	44.000
0136	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	2.000	2.000
0138	638.2102	Moving Signs Type II	EACH	2.000	2.000
0140	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0142	642.5001	Field Office Type B	EACH	1.000	1.000
0144	643.0300	Traffic Control Drums	DAY	546.000	546.000
0146	643.0900	Traffic Control Signs	DAY	2,916.000	2,916.000
0148	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0150	643.5000	Traffic Control	EACH	1.000	1.000
0152	645.0120	Geotextile Type HR	SY	77.000	77.000
0154	646.1020	Marking Line Epoxy 4-Inch	LF	27,660.000	27,660.000
0156	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	53,660.000	53,660.000
0158	646.3040	Marking Line Grooved Wet Ref Epoxy 8-Inch	LF	110.000	110.000
0160	649.0105	Temporary Marking Line Paint 4-Inch	LF	72,150.000	72,150.000
0162	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	24,050.000	24,050.000
0164	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0166	650.8000	Construction Staking Resurfacing Reference	LF	27,787.000	27,787.000
0168	650.9910	Construction Staking Supplemental Control (project) 01. 1640-03-72	LS	1.000	1.000
0170	650.9920	Construction Staking Slope Stakes	LF	3,900.000	3,900.000
0172	690.0150	Sawing Asphalt	LF	2,067.000	2,067.000
0174	690.0250	Sawing Concrete	LF	789.000	789.000
0176	740.0440	Incentive IRI Ride	DOL	42,000.000	42,000.000
0178	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	2,000.000	2,000.000
0180	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	1,320.000	1,320.000
0182	SPV.0060	Special 01. Grading, Shaping and Finishing Culvert Pipes and Apron Endwalls	EACH	23.000	23.000
0184	SPV.0060	Special 02. Verify Landmark Reference Monuments	EACH	1.000	1.000

CLEARING

STATION	LOCATION	201.0120 CLEARING ID	201.0220 GRUBBING ID	REMARKS
454+00	LT	24	24	CULVERT EXTENSION
468+70	LT	24	24	CULVERT EXTENSION
499+25	LT	24	24	CULVERT EXTENSION
	TOTAL 0010	72	72	

GUARDRAIL SUMMARY

STATION	TO	STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	REMARKS
451+14	-	456+08	LT	387.5	2	
450+56	-	455+24	RT	362.5	2	
509+02	-	513+58	RT	350.0	2	
522+97	-	533+53	LT	950.0	2	
522+45	-	531+26	RT	775.0	2	
			TOTAL 0010	2,825.0	10	

EARTHWORK

STATION	TO	STATION	LOCATION	205.0100 EXCAVATION COMMON CY	208.0100 BORROW CY	209.2100 BACKFILL GRANULAR GRADE 2 CY	REMARKS
450+67	-	456+06		30	300		INCLUDES CULVERT EXTENSION
468+97	-		LT		150		CULVERT EXTENSION
499+50	-		LT		150		CULVERT EXTENSION
509+15	-	513+18	RT	5	150		
522+98	-	533+49		10	1,000		
526+46	-		LT	200			CULVERT REPAIR
542+26	-			570		190	CULVERT REPLACEMENT
631+34	-			440		240	CULVERT REPLACEMENT
648+34	-		LT	33			CULVERT REPAIR
			TOTAL 0010	1,258	1,450	430	

REMOVING ASPHALT

STATION	TO	STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	* 690.0150 SAWING ASPHALT LF	REMARKS
430+00	-	441+73			167	3,740	30	PROJECT BEGIN TO VANG RD
441+73	-	471+68				9,980		VANG RD TO TOWN HALL RD
471+68	-	500+51				9,610		TOWN HALL RD TO VOLDEN RD / GREEN ACRES RD
500+51	-	503+02				840		VOLDEN RD / GREEN ACRES RD TO RAINBOW DR
503+02	-	543+93				13,640		RAINBOW DR TO CUT-A-CROSS RD / NESTINGEN RD
543+93	-	551+02				2,360		CUT-A-CROSS RD / NESTINGEN RD TO PAULSON LN
551+02	-	557+75				2,240		PAULSON LN TO ALLEN DR
557+75	-	619+32				20,520		ALLEN DR TO HEGGE RD
619+32	-	642+84				7,840		HEGGE RD TO SPRING COULEE RD
642+84	-	648+55				1,900		SPRING COULEE RD TO LOVAAS RIDGE RD
648+55	-	676+62				9,360		LOVAS RIDGE RD TO SAUGSTAD RD
676+62	-	707+87			167	10,250	30	SAUGSTAD RD TO HIGH ECHO LN / PROJECT END
VANG RD	-		RT		56	680	25	
TOWN HALL LN	-		RT		44	180	20	
VOLDEN RD	-		RT		56	350	25	
GREEN ACRES RD	-		LT		44	520	20	INCLUDES FULL SHOULDER 500+75 - 502+75
RAINBOW DR	-		LT		56	380	25	
CUT-A-CROSS RD	-		RT		56	590	25	
NESTINGEN RD	-		LT		56	370	25	
PAULSON LN	-		LT			380		MILL TO END OF ASPHALT
ALLEN DR	-		LT		56	320	25	
HEGGE RD	-		LT/RT		111	480	50	
SPRING COULEE RD	-		LT		56	320	25	
LOVAAS RIDGE RD	-		LT		56	370	25	
SAUGSTAD RD	-		LT/RT		111	700	50	
HIGH ECHO LN	-		LT		89	220	40	
	-		DRIVEWAYS	660	122		110	
	-		BUMPOUT REMOVAL	430				REMOVE AT ALL UNPAVED DRIVEWAYS
450+67	-	456+06	SHOULDER	210			950	ALONG BEAMGUARD AT 10-FOOT SHOULDER
			TOTAL 0010	1,300	1,303	98,140	1,500	

*ADDITIONAL QUANTITY LISTED ELSEWHERE

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BASE PATCHING

STATION	TO	STATION	LOCATION	390.0203 BASE PATCHING ASPHALTIC SY	390.0403 BASE PATCHING CONCRETE SHES SY	* 690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	REMARKS
434+10	-		EB		2.7		28	2’ x 12’
434+25	-		EB		2.7		28	2’ x 12’
434+75	-		WB		3.3		29	2.5’ x 12’
460+50	-		WB		5.3		56	2' x 12', 2’ x 12’
461+70	-		EB		2.7		28	2’ x 12’
461+80	-		WB		3.3		29	2.5’ x 12’
463+85	-		EB		8.0		60	4’ x 12’, 2’ x 12 ’
463+85	-		WB		2.7		28	2’ x 12 ’
471+40	-		EB/WB		10.7		56	4’ x 24’
477+85	-		EB		2.7		28	2’ x 12’
490+25	-		WB		2.7		28	2’ x 12’
494+35	-		EB		6.0		33	4.5’ x 12’
521+25	-		EB/WB		5.3		52	2’ x 24’
524+30	-		WB		10.7		40	8’ x 12’
527+75	-		EB		4.0		30	3’ x 12’
530+15	-		WB		8.0		36	6’ x 12’
541+46	-		EB/WB		5.3		60	2’ x 28’
607+50	-		CENTERLINE	1.7		16		5’ x 3’
615+15	-		EB/WB	5.3		54		2’ x 24’
643+15	-		EB/WB	5.3		54		2’ x 24’
647+75	-		EB	4.7		31		3.5’ x 12’
692+25	-		EB/WB	8.0		57		3’ x 24’
693+85	-		EB/WB	5.3		54		2’ x 24’
700+20	-		EB	2.7		28		2’ x 12’
430+00	-	541+46			13.3		140	5 ADDITIONAL LOCATIONS
541+46	-	707+87		13.3		140		5 ADDITIONAL LOCATIONS
			TOTAL 0010	46.3	99.4	434	789	

*ADDITIONAL QUANTITY LISTED ELSEWHERE

SIGNING

STATION	LOCATION	634.0616 POSTS WOOD 4X6-INCH X 16-FT EACH	638.2102 MOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
526+00	LT	1	1	1	NO PASSING ZONE
648+50	LT	1	1	1	STOP SIGN (LOVAAS RIDGE RD)
	TOTAL 0010	2	2	2	

STAKING

STATION	TO	STATION	LOCATION	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 1640-03-72) LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	SPV.0060.02 SPECIAL (02. VERIFY LANDMARK REFERENCE MONUMENTS) EACH	REMARKS
430+00	-	707+87			27,787	1			
542+26	-			1					
631+34	-			1					
450+67	-	456+06					1,100		
509+15	-	513+18					600		
522+98	-	533+49					2,200		
648+65	-							1	
			TOTAL 0010	2	27,787	1	3,900	1	

ASPHALTIC PAVEMENT

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	* 460.6223 HMA PAVEMENT 3 MT 58-28 S TON	* 460.6224 HMA PAVEMENT 4 MT 58-28 S TON	465.0110 ASPHALTIC SURFACE PATCHING TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	465.0475 ASPHALT CENTERLINE RUMBLE STRIPS 2-LANE RURAL LF	REMARKS
430+00	-	441+73		469	537	379			973	
441+73	-	471+68		1,198	1,372	969			2,595	
471+68	-	500+51		1,153	1,321	933			2,483	
500+51	-	503+02		100	115	81			0	
503+02	-	543+93		1,636	1,923	1,323			3,691	INCLUDES FULL DEPTH AT CULVERT (LOWER)
543+93	-	551+02		284	325	229			309	
551+02	-	557+75		269	308	218			273	
557+75	-	619+32		2,463	2,821	1,992			5,757	
619+32	-	642+84		941	1,126	761			1,952	INCLUDES FULL DEPTH AT CULVERT (LOWER)
642+84	-	648+55		228	262	185			171	
648+55	-	676+62		1,123	1,286	908			2,407	
676+62	-	707+87		1,250	1,432	1,011			2,525	
	-		VANG RD	89	99	71				
	-		TOWN HALL LN	27	30	22				
	-		VOLDEN RD	49	54	39				
	-		GREEN ACRES RD	68	76	54				INCLUDES FULL SHOULDER 500+75 - 502+75
	-		RAINBOW DR	53	59	42				
	-		CUT-A-CROSS RD	78	87	62				
	-		NESTINGEN RD	51	57	41				
	-		PAULSON LN	45	50	36				
	-		ALLEN DR	45	50	36				
	-		HEGGE RD	71	80	57				
	-		SPRING COULEE RD	45	50	36				
	-		LOVAAS RIDGE RD	52	57	41				
	-		SAUGSTAD RD	98	109	79				
	-		HIGH ECHO LN	37	41	30				
	-		DRIVEWAYS	47				97		
	-		BEAMGUARD SHOULDER	313	349	251				ASPHALT SHOULDER ALONG BEAMGUARD
	-		UNDISTRIBUTED				100			
			TOTAL 0010	12,282	14,076	9,886	100	97	23,136	

*TONNAGE IS ELIGIBLE FOR QMP DENSITY INCENTIVE 460.2000. WEDGING & LEVELING LAYERS ARE EXCLUDED FROM DENSITY TESTING AND DENSITY INCENTIVE

REMOVALS

STATION	TO	STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH	203.0220.01 REMOVING STRUCTURE (STRUCTURE) (01. 526+46) EACH	203.0220.02 REMOVING STRUCTURE (STRUCTURE) (02. 631+34) EACH	204.0165 REMOVING GUARDRAIL LF	204.0185 REMOVING MASONRY CY	* 690.0150 SAWING ASPHALT LF	REMARKS
450+67	-	455+31	RT				464			
451+14	-	456+06	LT				492			
509+15	-	513+18	RT				403			
522+98	-	533+49	LT				1,051			
523+06	-	531+21	RT				815			
526+46	-		LT		1			6.9		DAMAGED SECTION AND MASONRY ENDWALL ONLY
542+26	-			1					73	CULVERT REPLACEMENT
631+34	-					1			60	CULVERT REPLACEMENT
648+35	-		LT	1						DAMAGED SECTION ONLY
			TOTAL 0010	2	1	1	3,225	6.9	133	

*ADDITIONAL QUANTITY LISTED ELSEWHERE

CULVERT SUMMARY

STATION	LOCATION	520.3424 CULVERT PIPE CLASS III-A NON-METAL 24-INCH LF	520.8000 CONCRETE COLLARS FOR PIPE EACH	520.8700 CLEANING CULVERT PIPES EACH	520.9700.S.01 CULVERT PIPE LINERS (SIZE) (01. 24-INCH) LF	520.9700.S.02 CULVERT PIPE LINERS (SIZE) (02. 36-INCH) LF	520.9700.S.03 CULVERT PIPE LINERS (SIZE) (03. 48-INCH) LF	520.9750.S CLEANING CULVERT PIPES FOR LINER VERIFICATION EACH	521.3124 CULVERT PIPE CORRUGATED STEEL 24-INCH LF	521.3136 CULVERT PIPE CORRUGATED STEEL 36-INCH LF	521.3148 CULVERT PIPE CORRUGATED STEEL 48-INCH LF	521.3160 CULVERT PIPE CORRUGATED STEEL 60-INCH LF	524.0124 CULVERT PIPE SALVAGED 24-INCH LF	REMARKS
436+50					142			1						
445+51					80			1						
453+42	LT		1								20			
463+17						128		1						
468+97	LT		1							20				
495+49							168	1						
499+50	LT		1							20				
511+97							120	1						
526+46	LT		1									30		REPLACE DAMAGED SECTION
542+26		92	1											
558+60				1										24" x 54'
631+34		82	1											
648+34	LT		1						20					REPLACE DAMAGED SECTION
689+59	LT			1									32	RESET AND RE-TIE
	TOTAL 0010	174	7	2	222	128	288	5	20	40	20	30	32	

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CULVERT ENDWALL SUMMARY

STATION	LOCATION	204.9060.S.01 REMOVING (ITEM DESCRIPTION) (01. APRON ENDWALLS) EACH	520.1024 APRON ENDWALLS FOR CULVERT PIPE 24-INCH EACH	521.1024 APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH EACH	521.1036 APRON ENDWALLS FOR CULVERT PIPE STEEL 36-INCH EACH	521.1048 APRON ENDWALLS FOR CULVERT PIPE STEEL 48-INCH EACH	521.1060 APRON ENDWALLS FOR CULVERT PIPE STEEL 60-INCH EACH	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	524.0624 APRON ENDWALLS FOR CULVERT PIPE SALVAGED 24-INCH EACH	633.5200 MARKERS CULVERT END EACH	SPV.0060.01 SPECIAL (01. GRADING, SHAPING AND FINISHING CULVERT PIPES AND APRON ENDWALLS) EACH	REMARKS
436+50	LT/RT	2		2						2	2	
445+51	LT/RT	2		2						2	2	
451+50	LT										1	FIELD ENTRANCE, NORTH END
453+42	LT	1				1				2		
463+17	LT/RT	2			2					2	2	
468+97	LT/RT	2			2					2	1	SPV ITEM ON RT ENDWALL ONLY
495+49	LT/RT	2				2				2	2	
499+50	LT/RT	2			2					2	1	SPV ITEM ON RT ENDWALL ONLY
511+97	LT/RT	2				2				2	2	
526+46	LT						1			2		
542+26	LT/RT		2							2	2	
558+60	LT/RT									2		
631+34	LT/RT		2							2	2	
639+60	LT	1						1		2	1	
648+34	LT/RT	2		2						2	1	SPV ITEM ON RT ENDWALL ONLY
675+75	LT/RT	2		2						2	2	
689+60	LT								2	2	2	RESET AND RE-TIE
	VARIOUS									12		UNMARKED CULVERTS (NON-CATTLE PASSES)
	TOTAL 0010	20	4	8	6	5	1	1	2	44	23	

MARKING LINE

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	646.3040 MARKING LINE GROOVED WET REF EPOXY 8-INCH WHITE LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH YELLOW LF	649.0120 TEMPORARY MARKING LINE EPOXY 4-INCH YELLOW LF	REMARKS
430+00	-	441+73	PROJECT BEGIN TO VANG RD	290	2,290		270	90	
441+73	-	471+68	VANG RD TO TOWN HALL RD	750	5,880		720	240	
471+68	-	500+51	TOWN HALL RD TO VOLDEN RD / GREEN ACRES RD	720	5,640		690	230	
500+51	-	503+02	VOLDEN RD / GREEN ACRES RD TO RAINBOW DR	60	360		60	20	
503+02	-	543+93	RAINBOW DR TO CUT-A-CROSS RD / NESTINGEN RD	3,210	7,940	110	7,800	2,600	
543+93	-	551+02	CUT-A-CROSS RD / NESTINGEN RD TO PAULSON LN	1,420	1,200		4,260	1,420	
551+02	-	557+75	PAULSON LN TO ALLEN DR	1,350	1,220		4,050	1,350	
557+75	-	619+32	ALLEN DR TO HEGGE RD	10,610	12,170		30,660	10,220	
619+32	-	642+84	HEGGE RD TO SPRING COULEE RD	3,080	4,530		8,130	2,710	INCLUDES SKIPS ACROSS SPRING COULEE RD
642+84	-	648+55	SPRING COULEE RD TO LOVAAS RIDGE RD	840	980		2,310	770	
648+55	-	676+62	LOVAAS RIDGE RD TO SAUGSTAD RD	3,860	5,420		10,380	3,460	
676+62	-	707+87	SAUGSTAD RD TO HIGH ECHO LN / PROJECT END	1,470	6,030		2,820	940	
			TOTAL 0010	27,660	53,660	110	72,150	24,050	

3

BASE AGGREGATE ITEMS

STATION	TO	STATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL	REMARKS
430+00	-	441+73	203		2.8	
441+73	-	471+68	518		7.3	
471+68	-	500+51	498		7.0	
500+51	-	503+02	43		0.6	
503+02	-	541+46	664		9.3	
541+46	-	543+93	24	587	8.6	BAD 1-1/4-INCH AT CULVERT REPLACEMENT
543+93	-	551+02	70		1.0	
551+02	-	557+75	66		0.9	
557+75	-	619+32	608		8.5	
619+32	-	642+84	232	464	9.7	BAD 1-1/4-INCH AT CULVERT REPLACEMENT
642+84	-	648+55	56		0.8	
648+55	-	676+62	277		3.9	
676+62	-	707+87	309		4.3	
SIDEROADS			119		1.7	
FIELD ENTRANCES			83		1.2	
DRIVEWAYS			500		7.0	
TOTAL 0010			4,270	1,051	74.6	

TRAFFIC CONTROL

LOCATION	APPROX. SERVICE PERIOD DAYS	208.1500.S TEMPORARY LANE SHIFT DURING CULVERT WORK EACH	643.0300 TRAFFIC CONTROL DRUMS DAY	NO. IN SERVICE	643.0900 TRAFFIC CONTROL SIGNS DAY	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	REMARKS
USH 14 (BEGIN PROJECT)	66			5	330	7	SEE SDD 15C04
VANG RD	66			2	132		SEE SDD 15C04, INCLUDE "END ROAD WORK"
TOWN HALL LN	66			2	132		SEE SDD 15C04, INCLUDE "END ROAD WORK"
GREEN ACRES RD/VOLDEN RD	66			4	264		SEE SDD 15C04, INCLUDE "END ROAD WORK"
RAINBOW DR	66			2	132		SEE SDD 15C04, INCLUDE "END ROAD WORK"
NESTINGEN RD/CUT-A-CROSS RD	66			4	264		SEE SDD 15C04, INCLUDE "END ROAD WORK"
PAULSON LN	66			2	132		SEE SDD 15C04, INCLUDE "END ROAD WORK"
ALLEN DR	66			2	132		SEE SDD 15C04, INCLUDE "END ROAD WORK"
HEGGE RD	66			4	264		SEE SDD 15C04, INCLUDE "END ROAD WORK"
SPRING COULEE RD	66			2	132		SEE SDD 15C04, INCLUDE "END ROAD WORK"
LOVAAS RIDGE RD	66			2	132		SEE SDD 15C04, INCLUDE "END ROAD WORK"
SAUGSTAD RD	66			4	264		SEE SDD 15C04, INCLUDE "END ROAD WORK"
HIGH ECHO LN	66			2	132		SEE SDD 15C04, INCLUDE "END ROAD WORK"
USH 14 (END PROJECT)	66			5	330	7	SEE SDD 15C04, 15C05
CULVERT REPLACEMENT 542+26			52		32		SEE SDD 15C02-F, SDD 15D45, SDD 15D48
CULVERT REPLACEMENT 631+34		2	52		32		SEE SDD 15C02-F, SDD 15D45, SDD 15D48
BEAMGUARD (SHOULDERS)			252		20		SEE SDD 15D28
CULVERTS (SHOULDERS)			190		4		SEE SDD 15D28
MILLED SURFACE					56		SEE SDD 15D44
TOTAL 0010		2	546		2,916	14	

EROSION CONTROL ITEMS

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH	645.0120 GEOTEXTILE TYPE HR SY	REMARKS
436+50								3		
445+51								3		
453+42	LT	10	1,100	1,100				10	31	
463+17								7		
468+97	LT	7	200	200				7	23	
495+49								10		
499+50	LT	7						7	23	
511+97			600	600				10		
526+46			2,200	2,200				13		
542+26			200	200			20	3		
631+34			200	200				3		
648+34			100	100			20	3		
675+80								3		
689+59								3		
	PROJECTWIDE				4	4				
	UNDISTRIBUTED		1,100	1,100			10	15		
	TOTAL 0010	24	5,700	5,700	4	4	50	100	77	

FINISHING

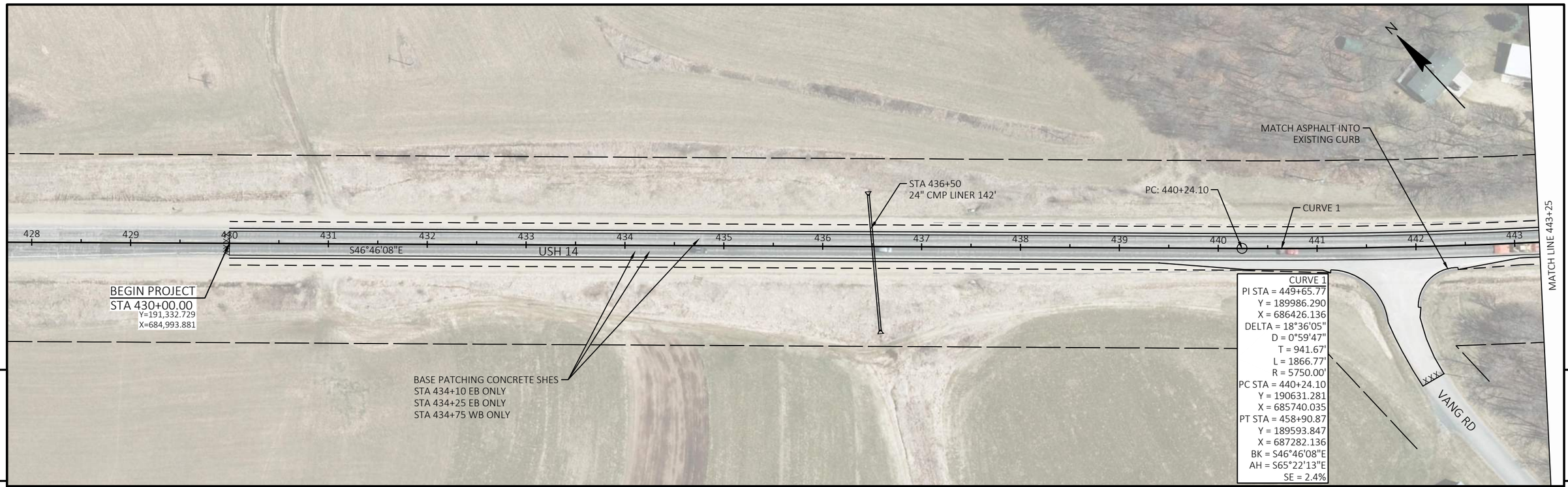
STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	628.2004 EROSION MAT CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0140 SEEDING MIXTURE NO. 40 LB	630.0500 SEED WATER MGAL	REMARKS
450+67	-	456+06	LT/RT		1,800		1,800	1.13	32.4	40.3	GUARDRAIL AND PIPE EXTENSION
468+97	-		LT	89			89	0.06	1.6	2.0	PIPE EXTENSION
499+50	-		LT	89			89	0.06	1.6	2.0	PIPE EXTENSION
509+15	-	513+18	LT		700		700	0.44	12.6	15.7	GUARDRAIL
522+98	-	533+49	LT/RT		3,700		3,700	2.33	66.6	82.9	GUARDRAIL
526+46	-		LT	100			100	0.06	1.8	2.2	PIPE REPAIR
648+34	-		LT	44			44	0.03	0.8	1.0	PIPE REPAIR
			UNDISTRIBUTED			1,000	1,078			33.9	
			TOTAL 0010	322	6,200	1,000	7,600	4.11	117.4	180.0	

FOR INFORMATION TABLE - GRADING, SHAPING AND FINISHING CULVERT PIPES AND APRON ENDWALLS

* 208.0100	* 625.0100	* 625.0500	* 627.0200	* 628.2004	* 629.0210	* 630.0140	* 630.0500

STATION	LOCATION	BORROW CY	TOPSOIL SY	SALVAGED TOPSOIL SY	MULCHING SY	EROSION MAT CLASS I TYPE B SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 40 LB	SEED WATER MGAL	REMARKS
436+50	LT/RT			40	40		0.03	0.7	0.9	
445+51	LT/RT			40	40		0.03	0.7	0.9	
451+50	LT	25		64	64		0.04	1.2	1.4	FILL IN DITCH WASHOUT
463+17	LT/RT			40	40		0.03	0.7	0.9	
468+97	RT			16	16		0.01	0.3	0.4	SPV ITEM ON RT ENDWALL ONLY
495+49	LT/RT			40	40		0.03	0.7	0.9	
499+50	RT			16	16		0.01	0.3	0.4	SPV ITEM ON RT ENDWALL ONLY
511+97	LT/RT			40	40		0.03	0.7	0.9	
542+26	LT/RT			50	50		0.03	0.9	1.1	
631+34	LT/RT			50	50		0.03	0.9	1.1	
639+60	LT			25	25		0.02	0.5	0.6	
648+34	RT			25	25		0.02	0.5	0.6	SPV ITEM ON RT ENDWALL ONLY
675+75	LT/RT			50	50		0.03	0.9	1.1	
689+60	LT/RT			50	50		0.03	0.9	1.1	
	TOTAL 0010	25	0	546	546	0	0.34	9.8	12.2	

*NON-BID ITEM: FOR INFORMATION ONLY



PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN SHEETS	SHEET 23	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050201-pn

PLOT DATE : 5/28/2021 12:02 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

5

5

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN SHEETS	SHEET 24	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050202-pn

PLOT DATE : 5/28/2021 12:03 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

MATCH LINE 489+00

MATCH LINE 504+25

5

5

BASE PATCHING CONCRETE SHES
STA 490+25 WB ONLY

STA 495+49
48" CMP LINER 168'

STA 499+50
1-36" CMP EXTEND 20'
WITH CONCRETE COLLAR
NOTE: MATCH EXISTING INVERT ELEVATION
AND SLOPE OR AS DIRECTED BY ENGINEER

GREEN ACRES RD

PAVED FULL
SHOULDER WIDTH

RAINBOW DR

N

489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504

S65°22'13"E

USH 14

ASPHALTIC SURFACE DRIVEWAY

BASE PATCHING CONCRETE SHES
STA 494+35 EB ONLY

SLUDGE POND

VOLDEN RD

MATCH LINE 504+25

MATCH LINE 519+50

N

STA 511+97
48" CMP LINER 120'

505 506 507 508 509 510 511 512 513 514 515 516 517 518 519

S65°22'13"E

USH 14

904

903

SLOPE INTERCEPT (TYP)

ACP

REPLACE BEAM GUARD

LEGEND

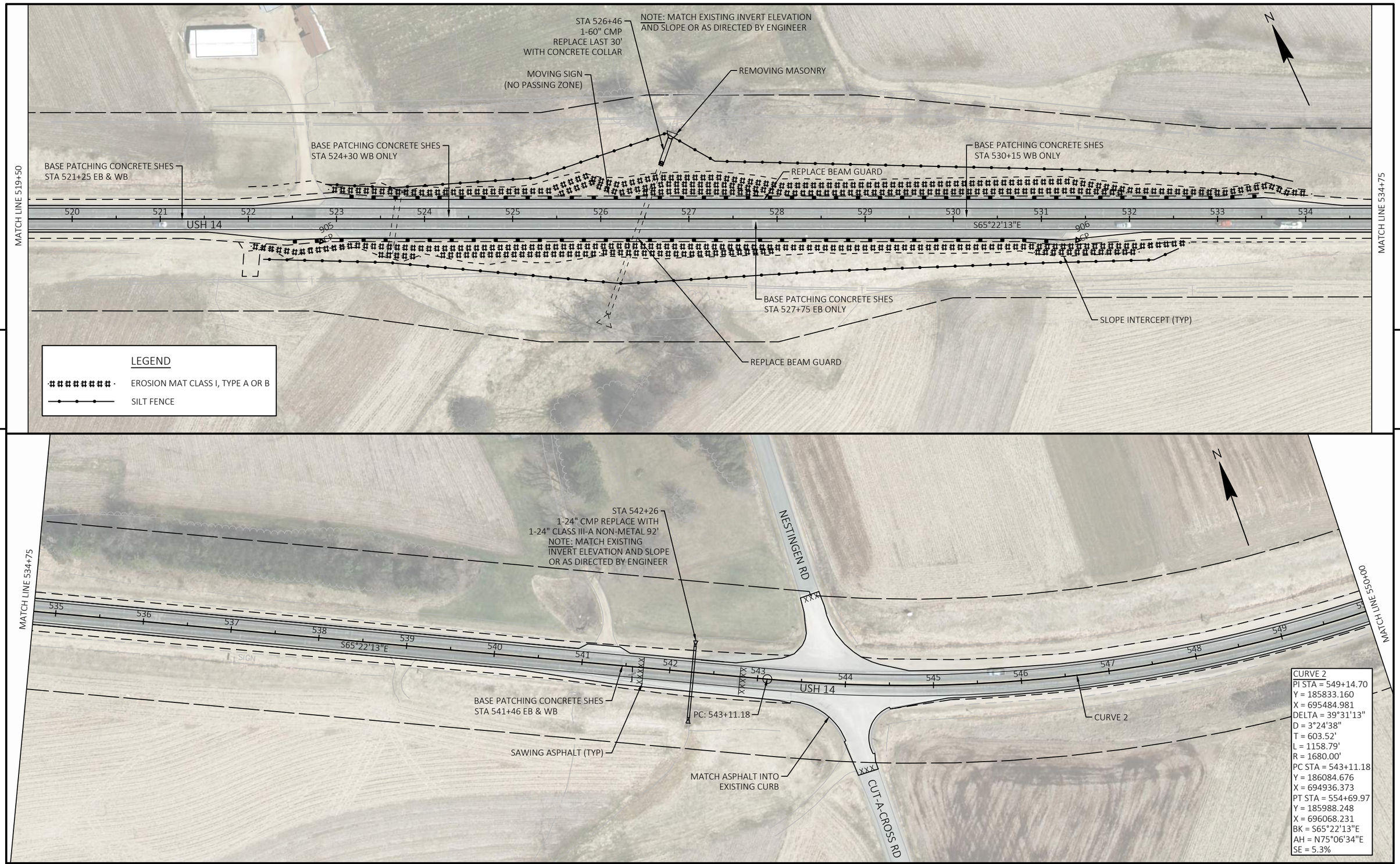
EROSION MAT CLASS I, TYPE A OR B

SILT FENCE

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN SHEETS	SHEET 25	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050203-pn

PLOT DATE : 6/1/2021 12:24 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

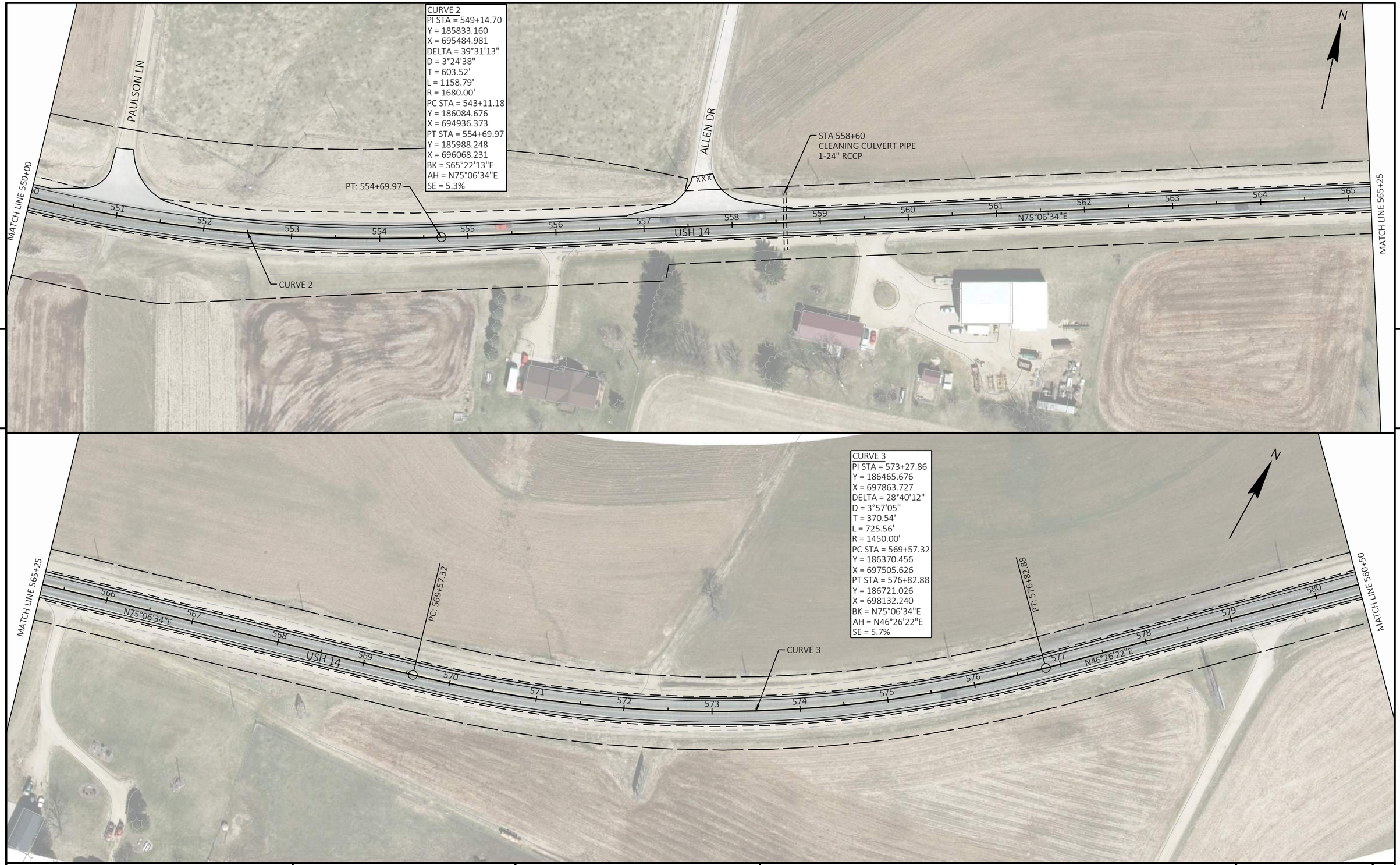


PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN SHEETS	SHEET 26	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050204-pn

PLOT DATE : 6/1/2021 12:21 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN SHEETS	SHEET 27	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050205-pn

PLOT DATE : 5/28/2021 12:04 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

5

5

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN SHEETS	SHEET 28	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050206-pn

PLOT DATE : 5/28/2021 12:04 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

MATCH LINE 611+00

CURVE 5

BASE PATCHING ASPHALTIC
STA 615+15 EB & WB

PT: 618+68.00

611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626

N58°58'52"E

USH 14

HEGGE RD

MATCH LINE 626+25

CURVE 5
PI STA = 614+70.43
Y = 188498.267
X = 701337.702
DELTA = 19°09'47"
D = 2°23'14"
T = 405.13'
L = 802.70'
R = 2400.00'
PC STA = 610+65.29
Y = 188415.032
X = 700941.210
PT STA = 618+68.00
Y = 188707.042
X = 701684.901
BK = N78°08'39"E
AH = N58°58'52"E
SE = 4.4%

5

MATCH LINE 626+25

STA 631+34
42"X60" CONCRETE BOX REPLACE
WITH 24" CLASS III-A NON-METAL 82'
NOTE: MATCH EXISTING INVERT ELEVATION
AND SLOPE OR AS DIRECTED BY ENGINEER

PC: 638+08.16

STA 639+60
ENDWALL REPLACEMENT

CURVE 6

627 628 629 630 631 632 633 634 635 636 637 638 639 640 641

N58°58'52"E

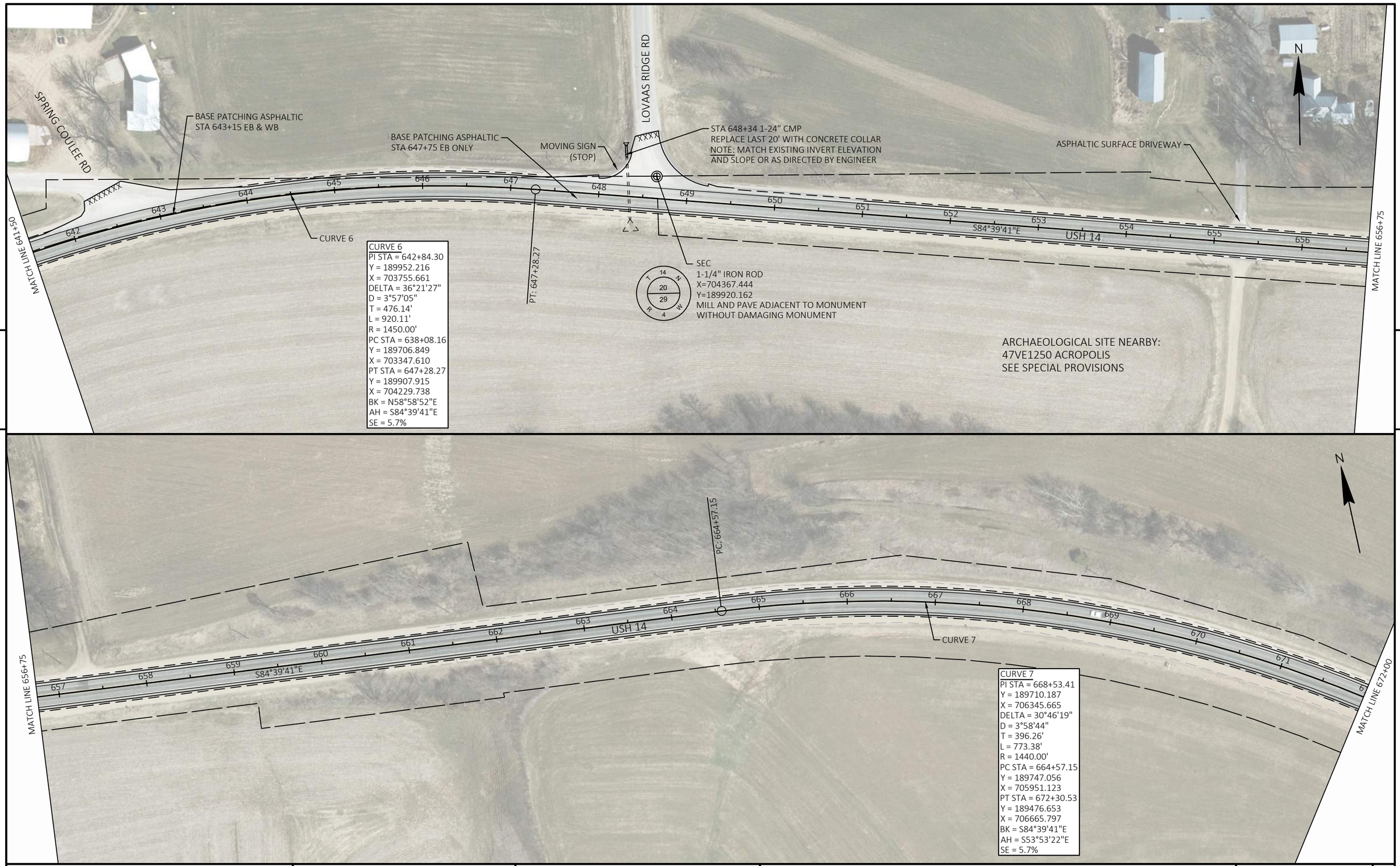
USH 14

SAWING ASPHALT (TYP)

MATCH LINE 641+50

CURVE 6
PI STA = 642+84.30
Y = 189952.216
X = 703755.661
DELTA = 36°21'27"
D = 3°57'05"
T = 476.14'
L = 920.11'
R = 1450.00'
PC STA = 638+08.16
Y = 189706.849
X = 703347.610
PT STA = 647+28.27
Y = 189907.915
X = 704229.738
BK = N58°58'52"E
AH = S84°39'41"E
SE = 5.7%

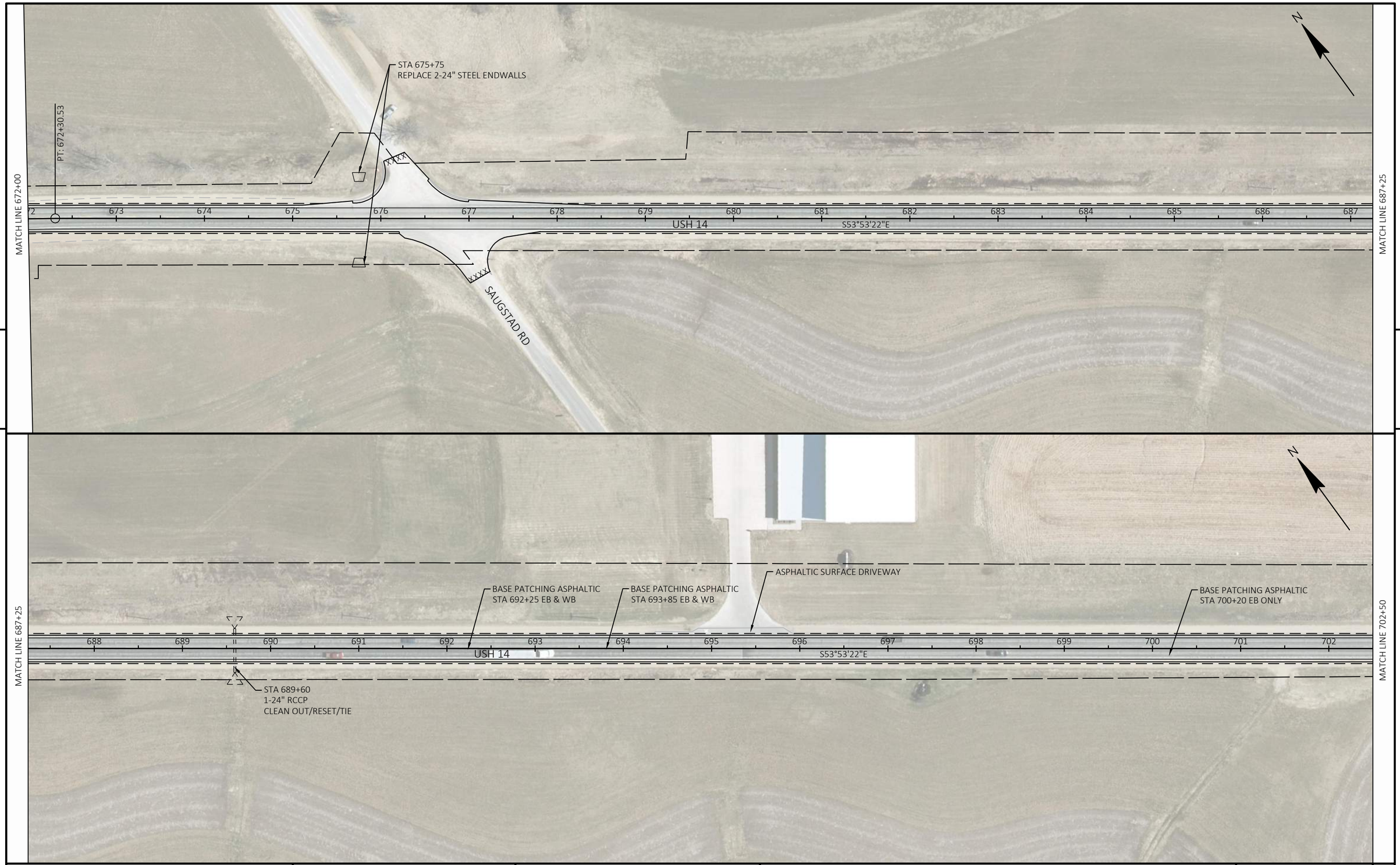
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN SHEETS	SHEET 29	E



PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN SHEETS	SHEET 30	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050208-pn

PLOT DATE : 5/28/2021 12:05 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT



5

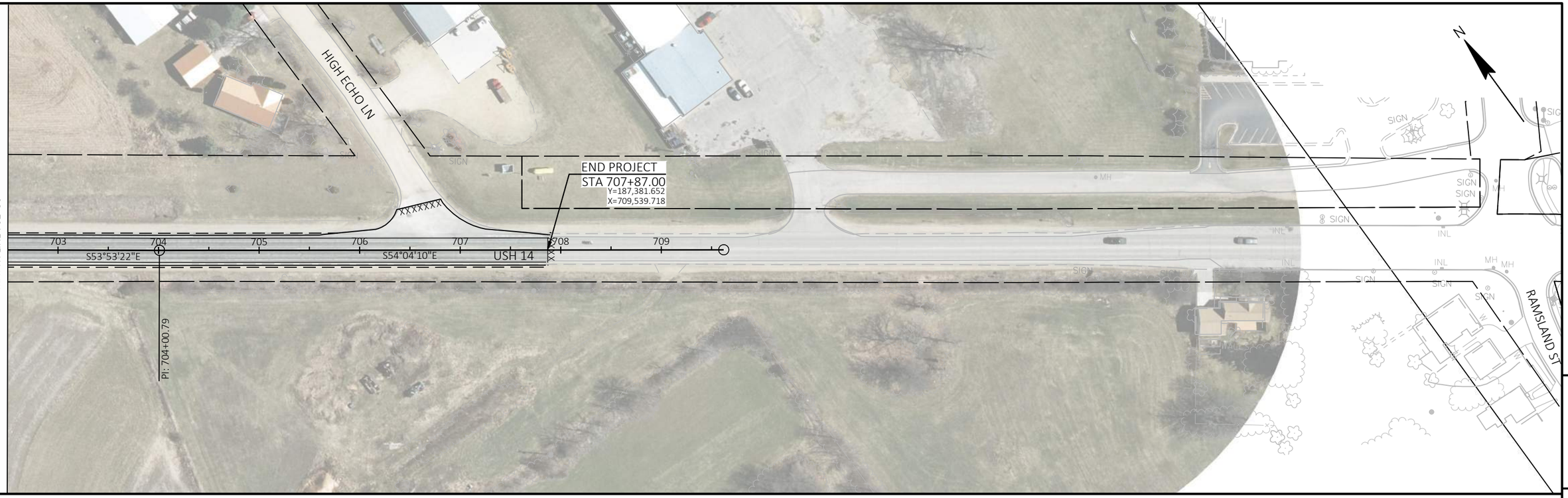
5

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN SHEETS	SHEET 31	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050209-pn

PLOT DATE : 5/28/2021 12:06 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



5

5

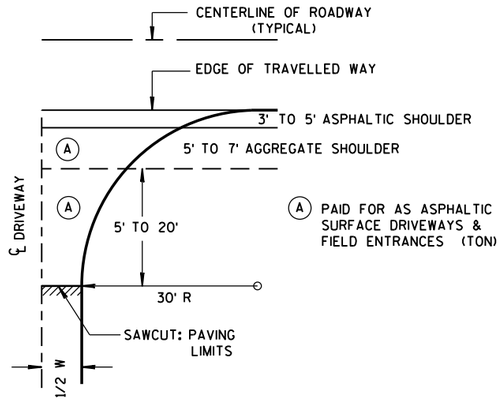
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	PLAN SHEETS	SHEET 32	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050210-pn

PLOT DATE : 5/28/2021 12:06 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

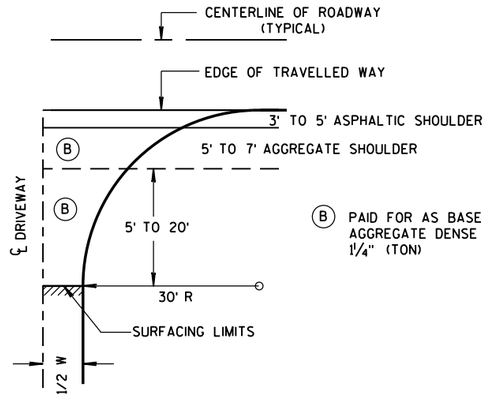
Standard Detail Drawing List

08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
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
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
09A01-13B	AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"
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
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C08-20B	PAVEMENT MARKING (TURN LANES)
15C08-20C	PAVEMENT MARKING (TURN LANES)
15C11-09B	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
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL
15D48-01	TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS



W MIN. = 16'
W MAX. = 24'

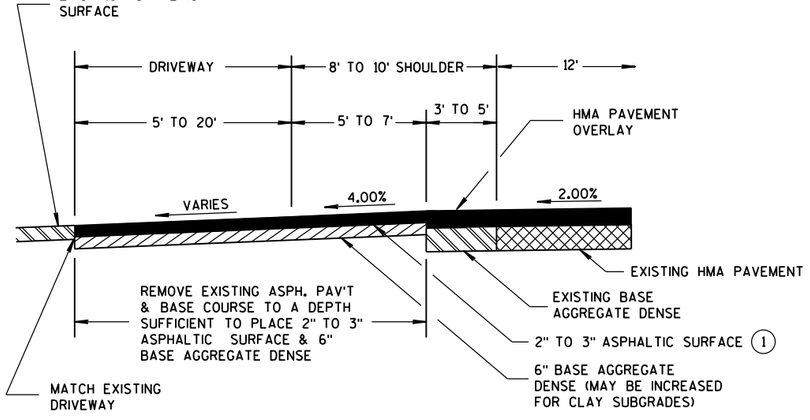
PLAN VIEW
HALF SECTION



PLAN VIEW
HALF SECTION

GENERAL NOTES

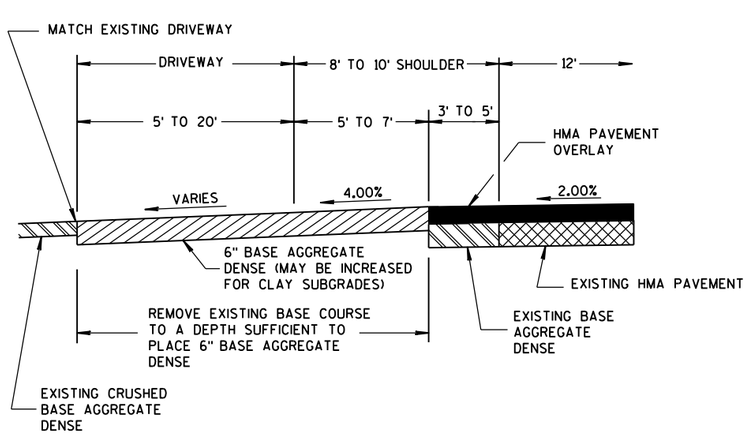
(1) DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.



PROFILE VIEW

RURAL ENTRANCE WITH ASPHALTIC SURFACE

RESURFACING PROJECTS



PROFILE VIEW

RURAL ENTRANCE WITH AGGREGATE SURFACE

6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

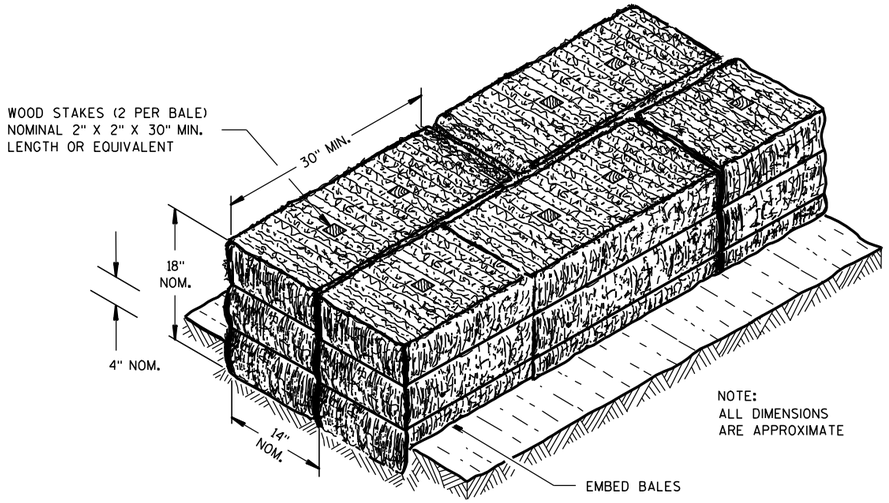
DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

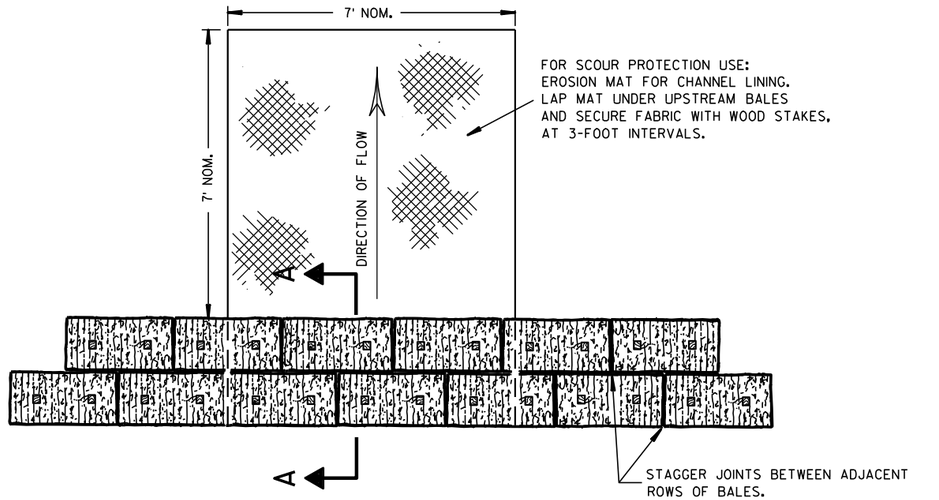
APPROVED
December, 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERV
ENT
FHWA

6

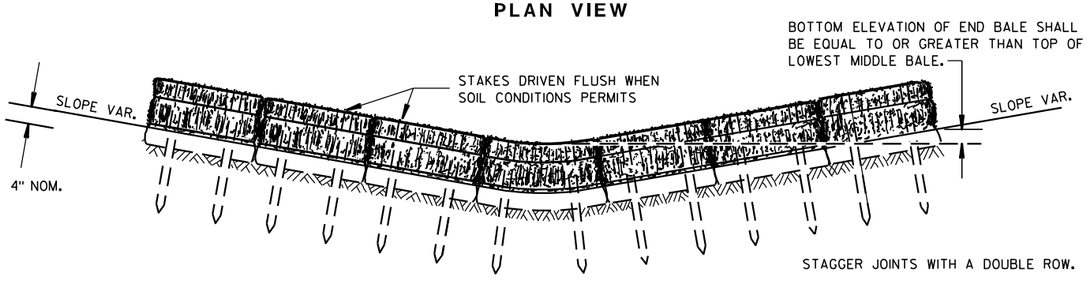
S.D.D. 8 D 22-1



SECTION A-A



PLAN VIEW



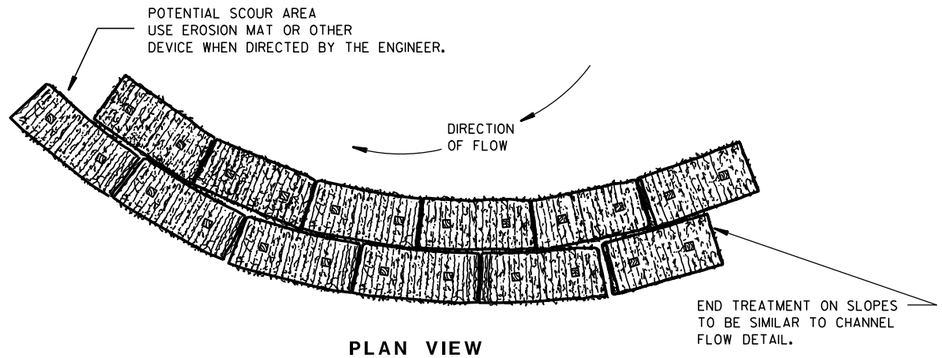
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

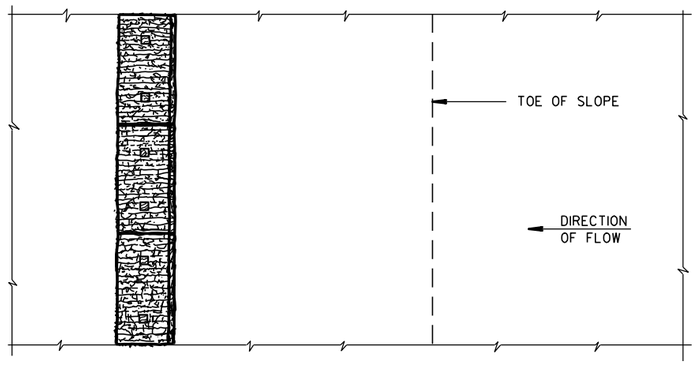
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

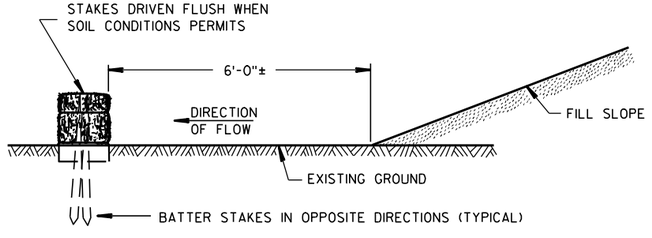


PLAN VIEW

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

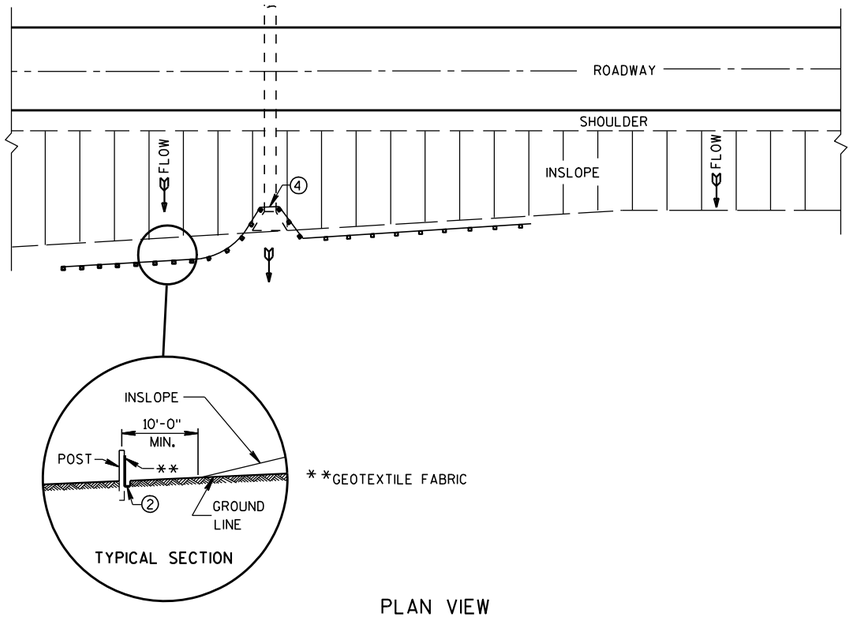
APPROVED

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

FHWA

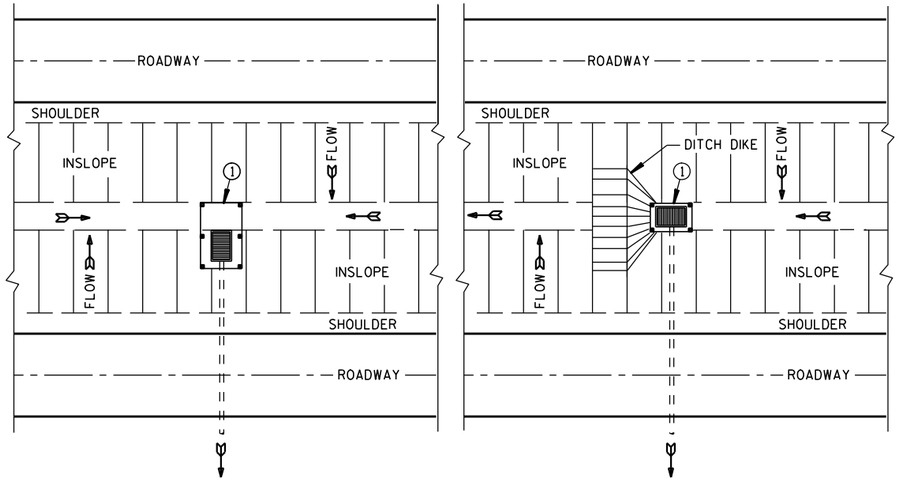
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



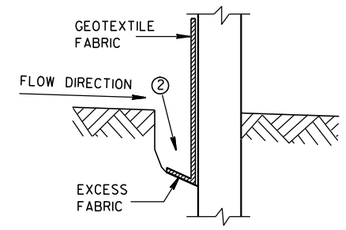
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

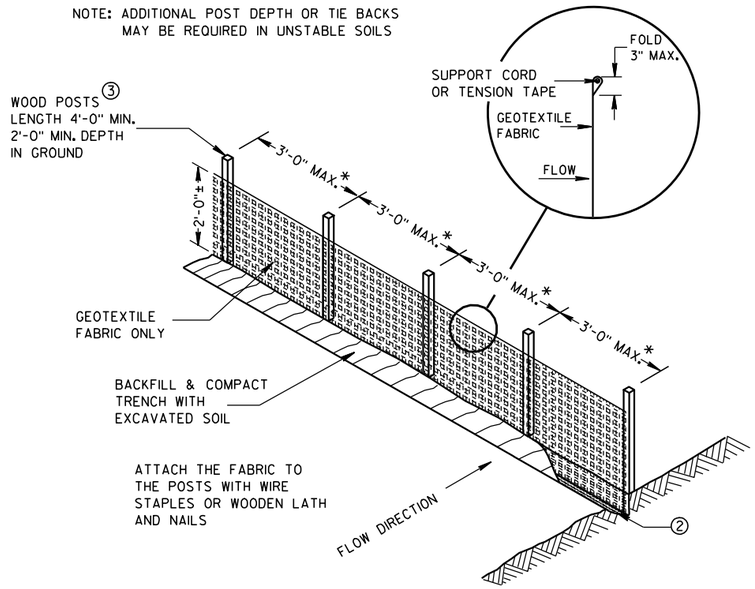
GENERAL NOTES

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

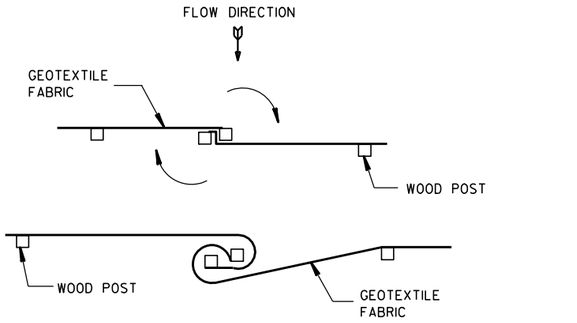
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



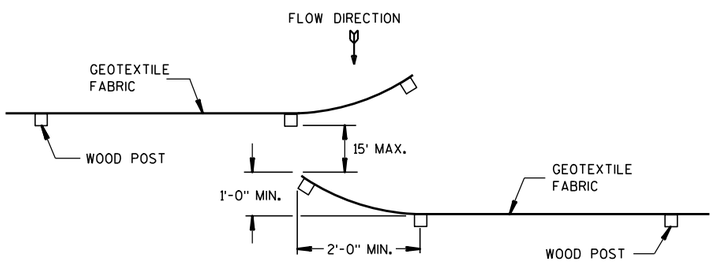
TRENCH DETAIL



SILT FENCE

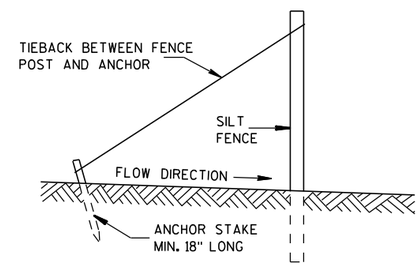


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

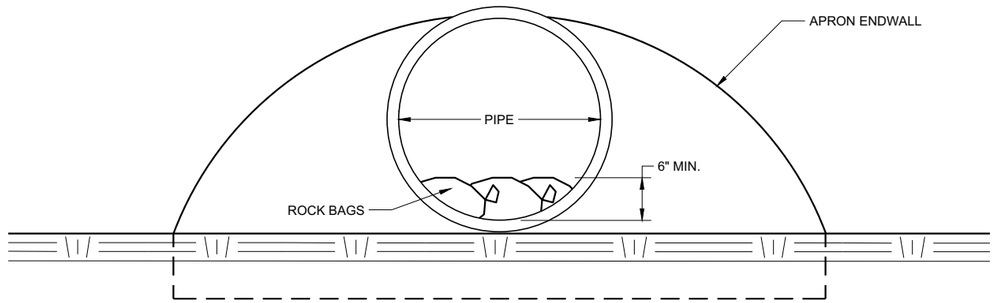
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

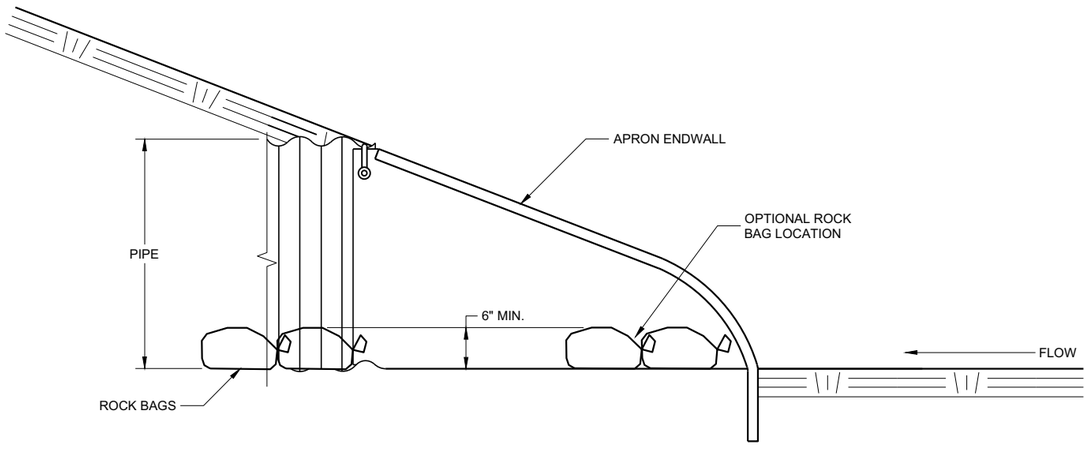
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



END VIEW



SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

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

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SDD 08E15 - 01

METAL APRON ENDWALLS

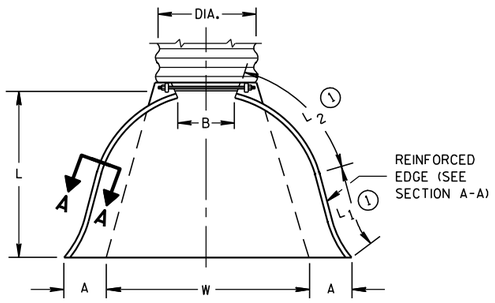
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

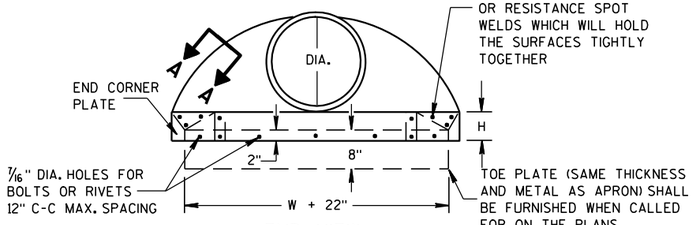
REINFORCED CONCRETE APRON ENDWALLS

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

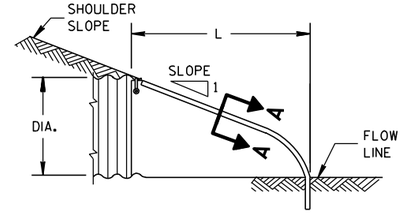
* MINIMUM
** MAXIMUM



PLAN VIEW

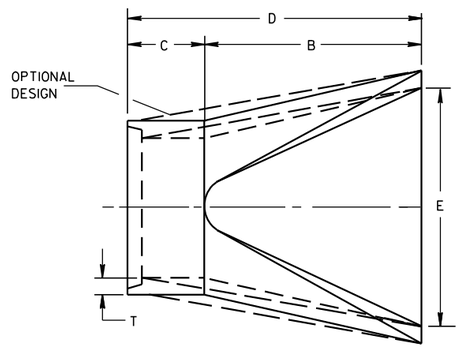


END VIEW

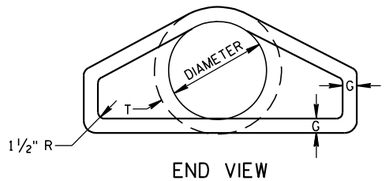


SIDE ELEVATION

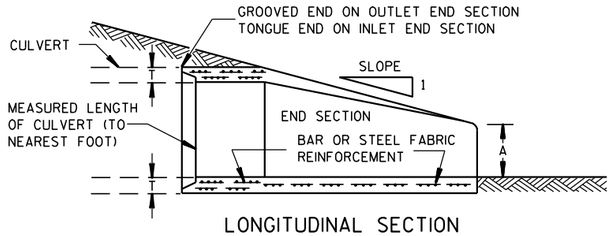
METAL ENDWALLS



PLAN

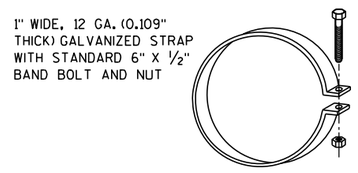


END VIEW



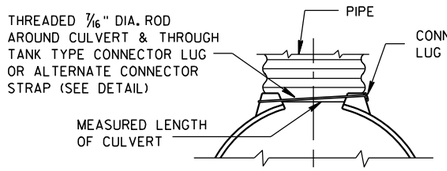
LONGITUDINAL SECTION

CONCRETE ENDWALLS

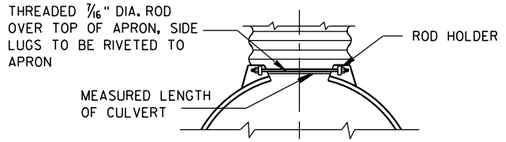


ALTERNATE FOR TYPE 1 CONNECTION

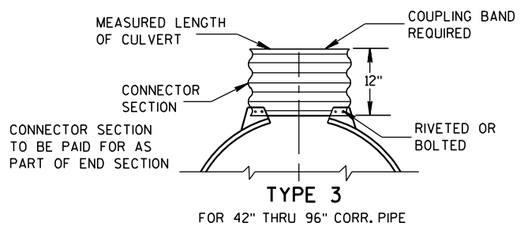
END SECTION CONNECTOR STRAP



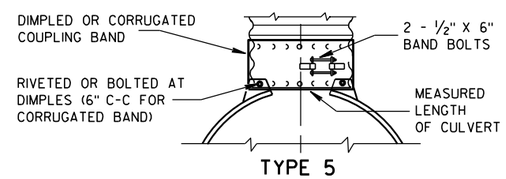
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

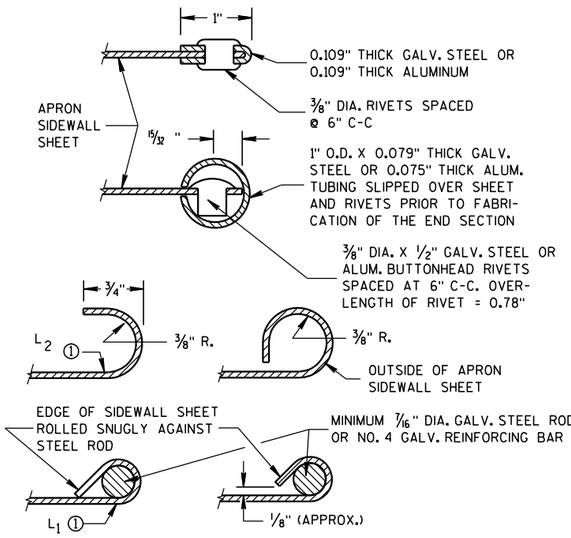
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

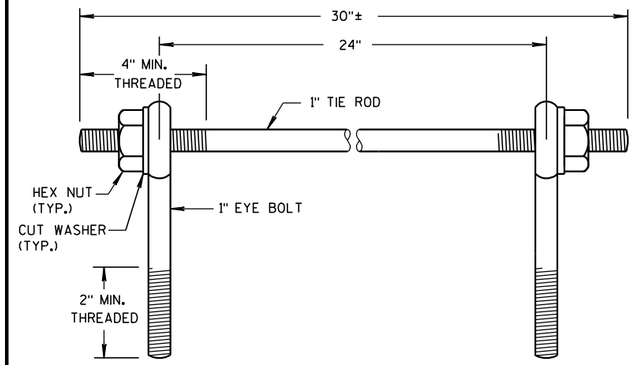
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

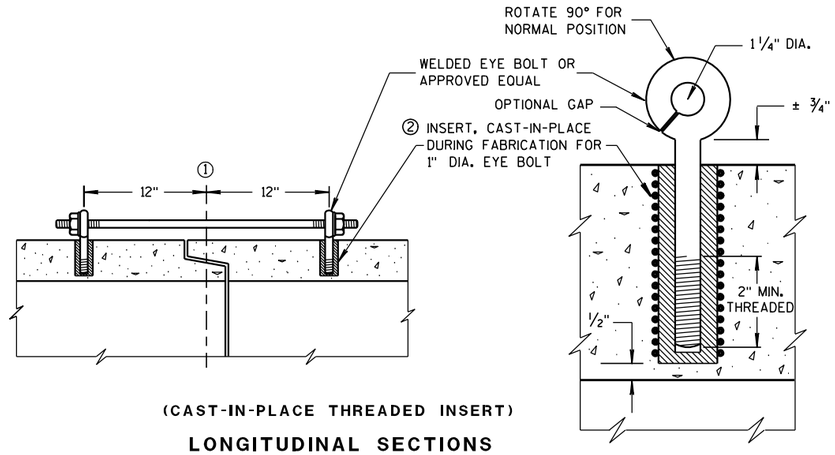
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENGINEER
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.

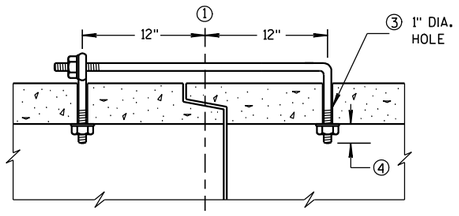
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

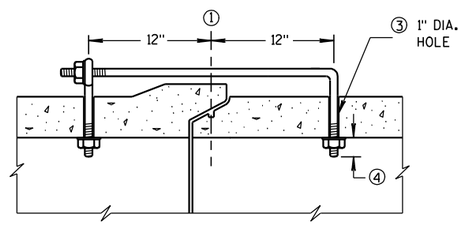
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

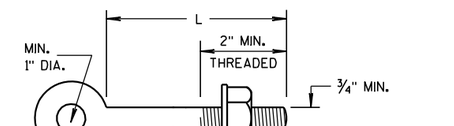


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

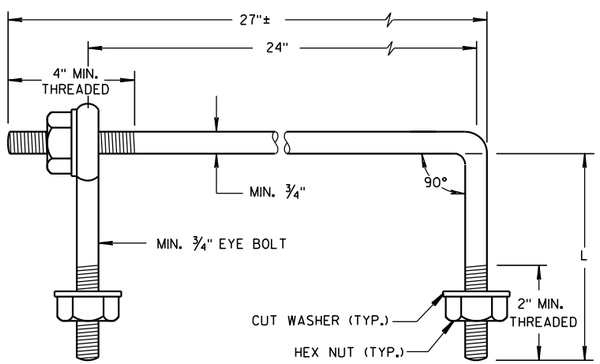
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

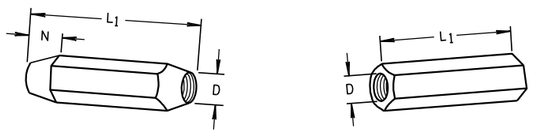
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

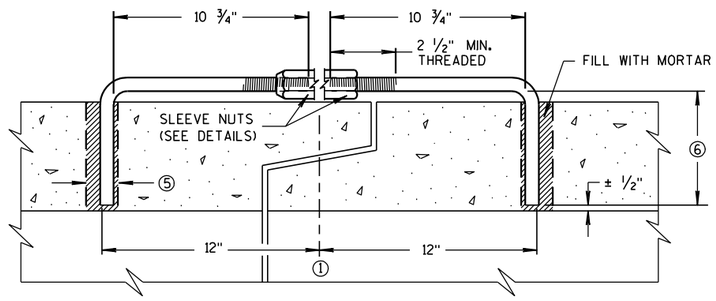
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

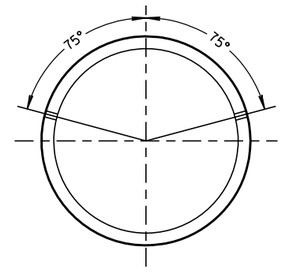
SLEEVE NUTS



LONGITUDINAL SECTION

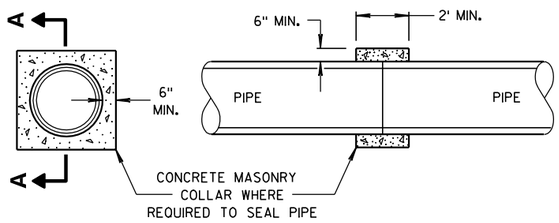
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

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6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
39
FHWA

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S.D.D. 8 F 4-7

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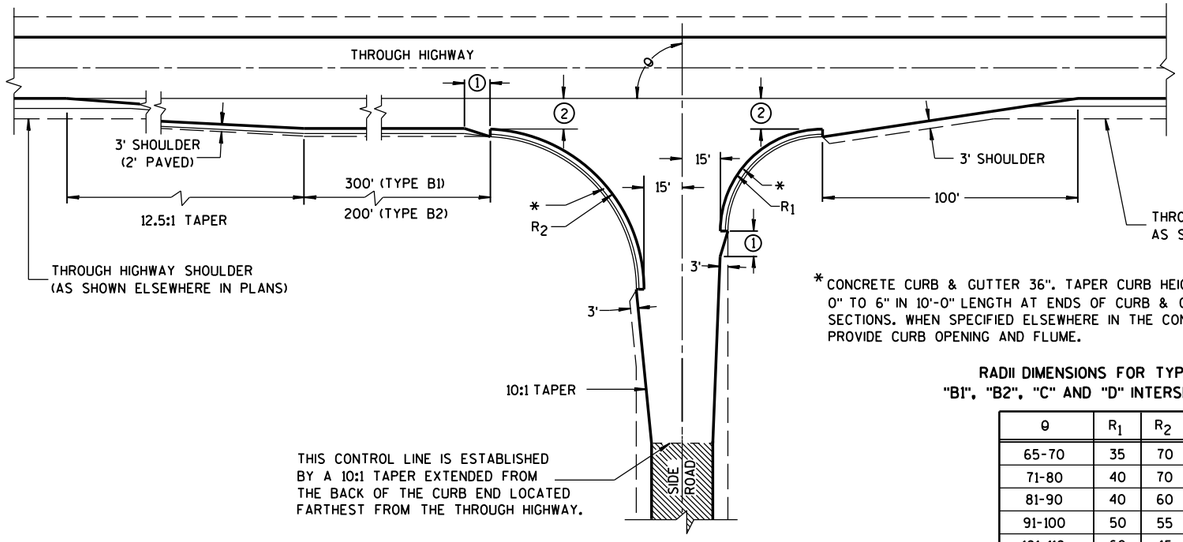
S.D.D. 8 F 4-7

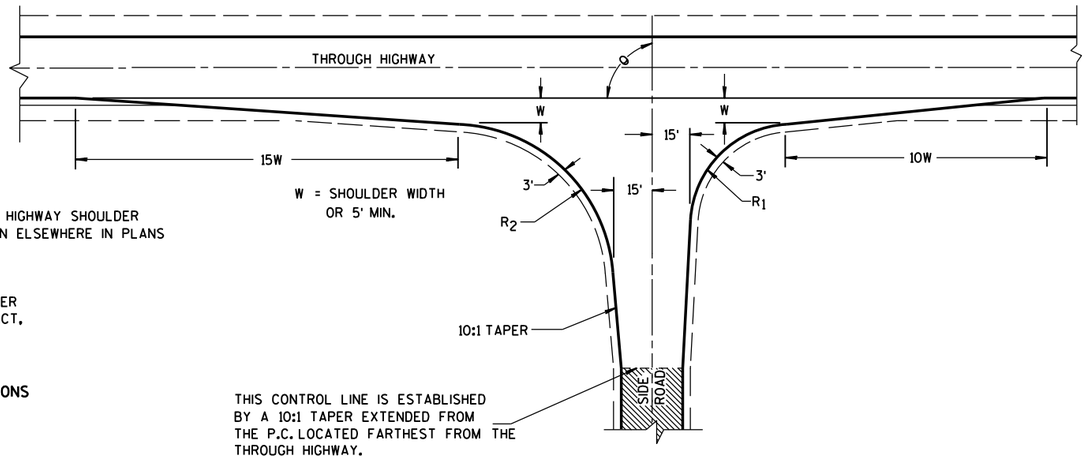


TYPE "B1" AND "B2"

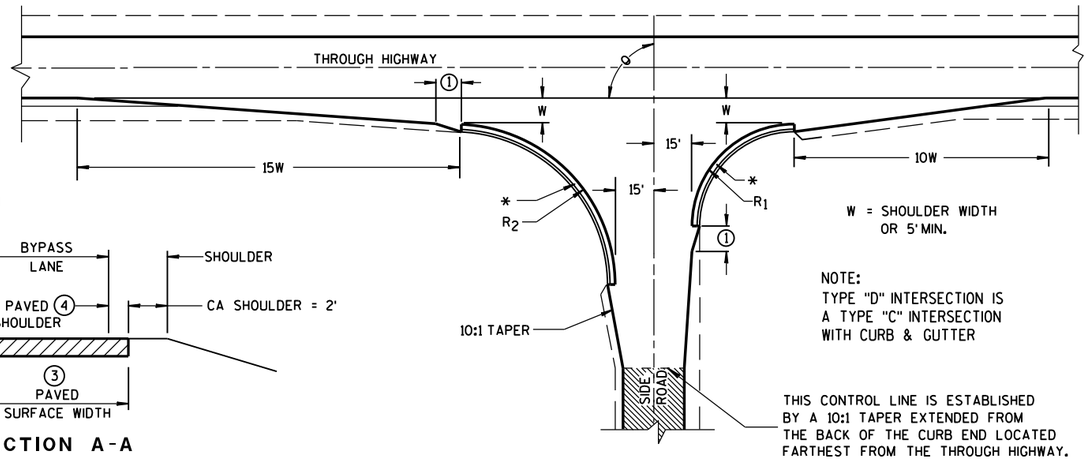
*CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



TYPE "C"



TYPE "D"

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

(1) 10-FT TYPICAL.

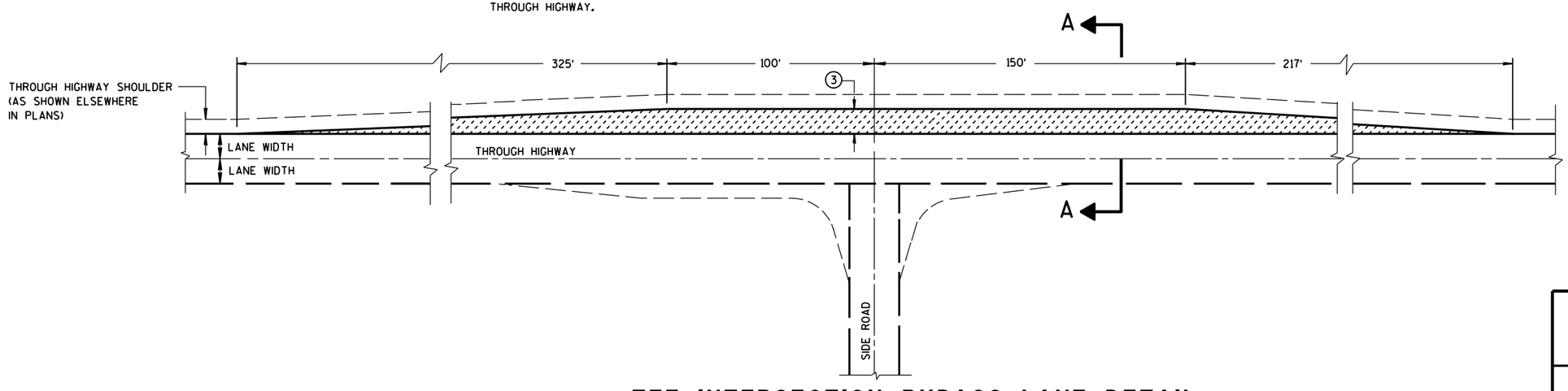
(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.

(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.

SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)

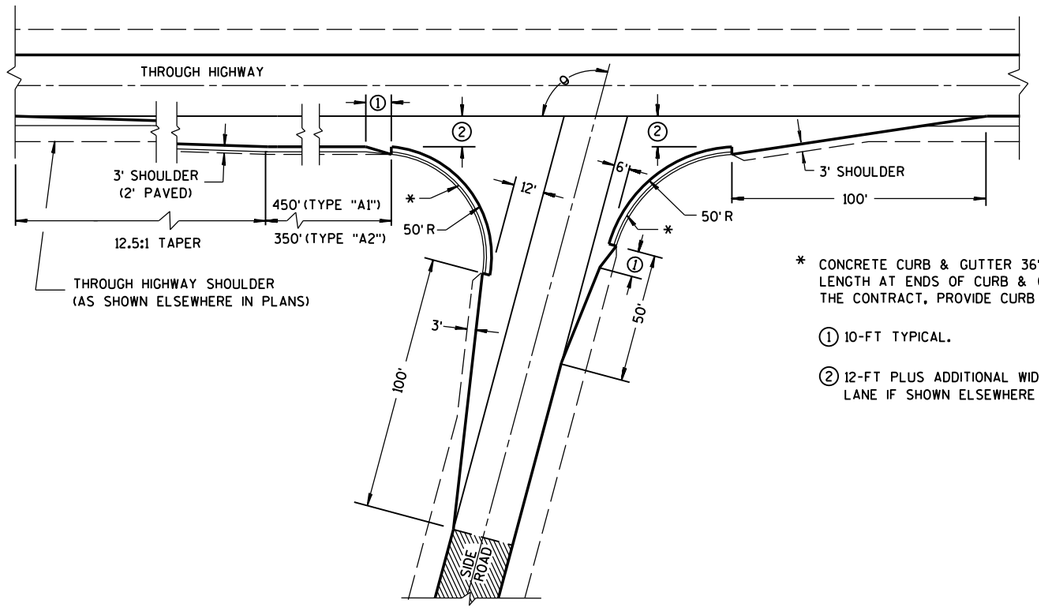


TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 9 A 1-13a

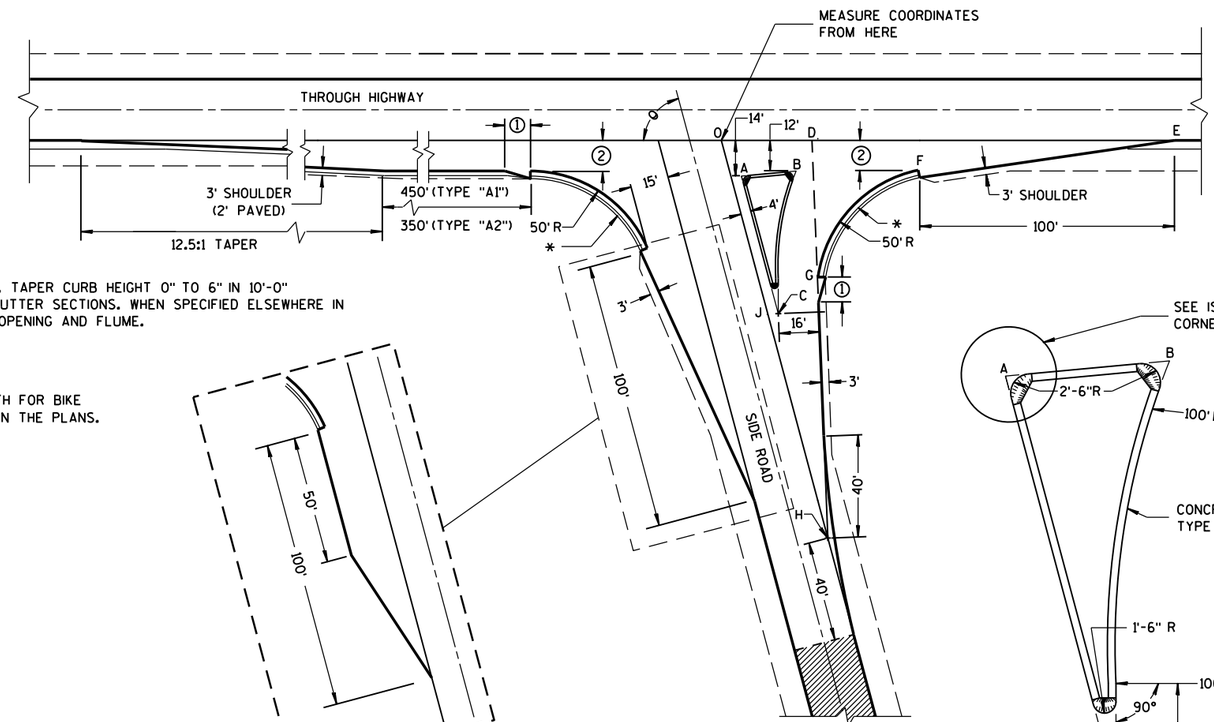


θ = MORE THAN 80°

* CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

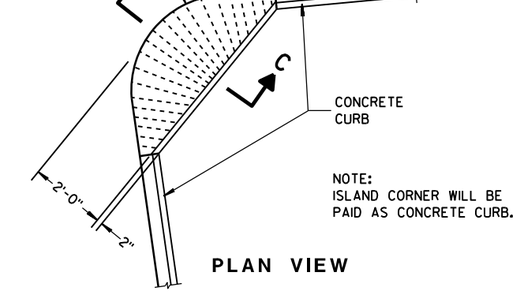
① 10-FT TYPICAL.

② 12-FT PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLANS.



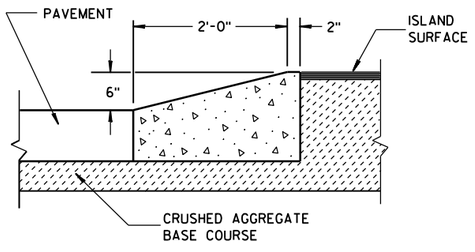
θ = ACUTE ANGLES 80° OR LESS

SIDE ROAD WIDENING AND TAPER REQUIRED WHERE THE THROUGH HIGHWAY CARRIES TWO-WAY TRAFFIC
θ = ACUTE ANGLES 70° OR LESS



NOTE:
ISLAND CORNER WILL BE PAID AS CONCRETE CURB.

PLAN VIEW



SECTION C-C

ISLAND CORNER DETAIL

(TO BE CONSTRUCTED AT ALL ISLAND CORNERS)

TABLE OF DIMENSIONS FOR
VARIABLE SIDE ROAD INTERSECTION ANGLES
(INTERPOLATE VALUES FOR ANGLES NOT SHOWN)

ANGLE θ DEGREES	COORDINATES IN FEET (MEASURED FROM POINT "O") X / Y								LENGTH IN FEET				
	A	B	C	D	E	F	G	H	AB	AC	T	OJ	OH
60	12.7 / -14.0	44.9 / -12.0	46.4 / -72.4	41.9 / 0.0	205.0 / 0.0	104.6 / -12.0	64.0 / -75.5	85.0 / -147.1	32.3	67.4	4.9	85.9	169.9
65	10.9 / -14.0	39.0 / -12.0	37.8 / -71.6	39.4 / 0.0	196.1 / 0.0	95.7 / -12.0	54.1 / -71.5	70.5 / -151.3	28.2	63.6	8.5	80.9	166.9
70	9.4 / -14.0	33.9 / -12.0	29.8 / -70.1	37.4 / 0.0	188.3 / 0.0	87.8 / -12.0	45.6 / -67.5	56.1 / -154.2	24.6	59.7	11.5	76.1	164.1
75	7.9 / -14.0	29.3 / -12.0	22.3 / -67.9	35.7 / 0.0	181.2 / 0.0	80.7 / -12.0	38.2 / -63.4	41.8 / -155.9	21.5	55.8	13.8	71.4	161.4
80	6.5 / -14.0	25.4 / -12.0	15.6 / -65.2	34.4 / 0.0	174.8 / 0.0	74.4 / -12.0	31.8 / -59.3	27.6 / -156.5	18.9	52.0	15.6	66.9	158.9

TYPE "A1" & "A2" SIDE ROAD INTERSECTION DETAILS

AT-GRADE SIDE ROAD
INTERSECTION, TYPE "A1" & "A2"

STATE OF WISCONSIN
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12/18/12 — DATE
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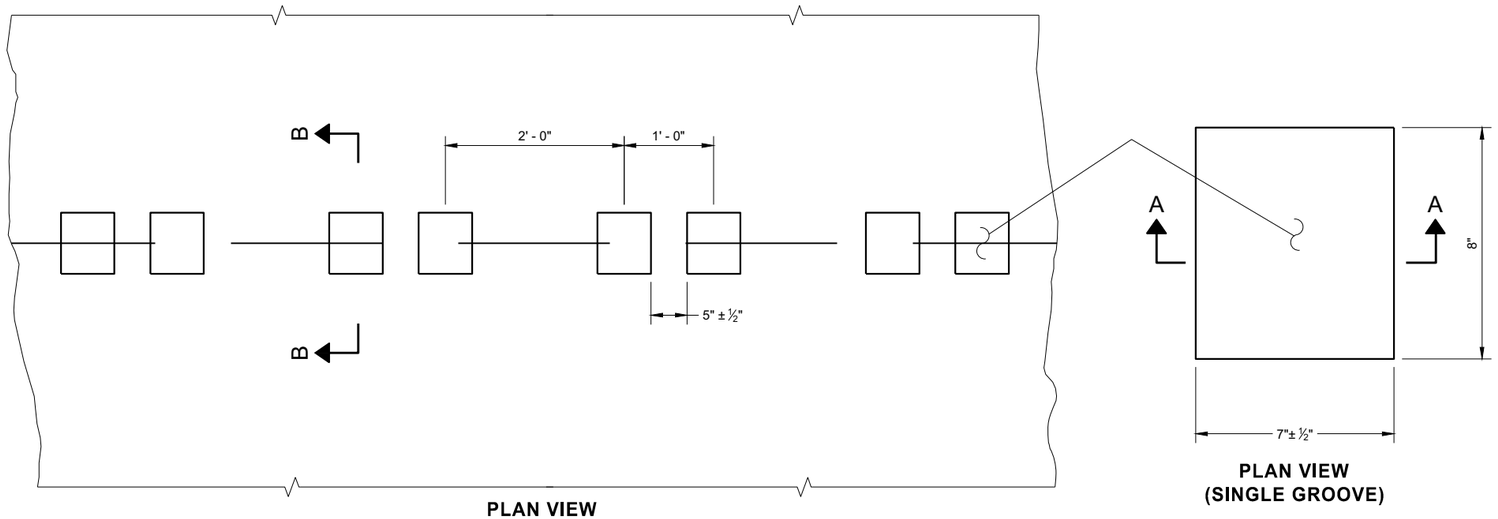


PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

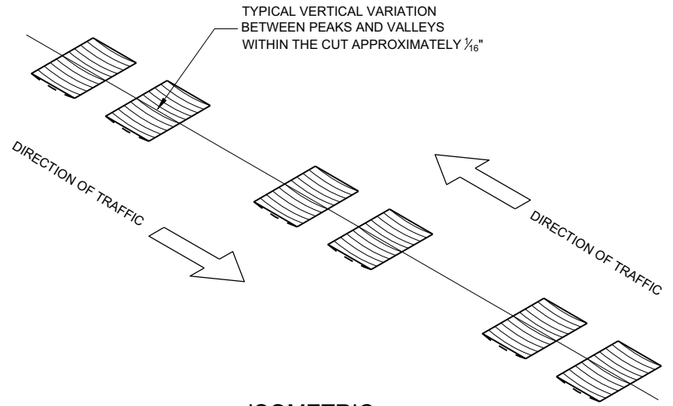
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

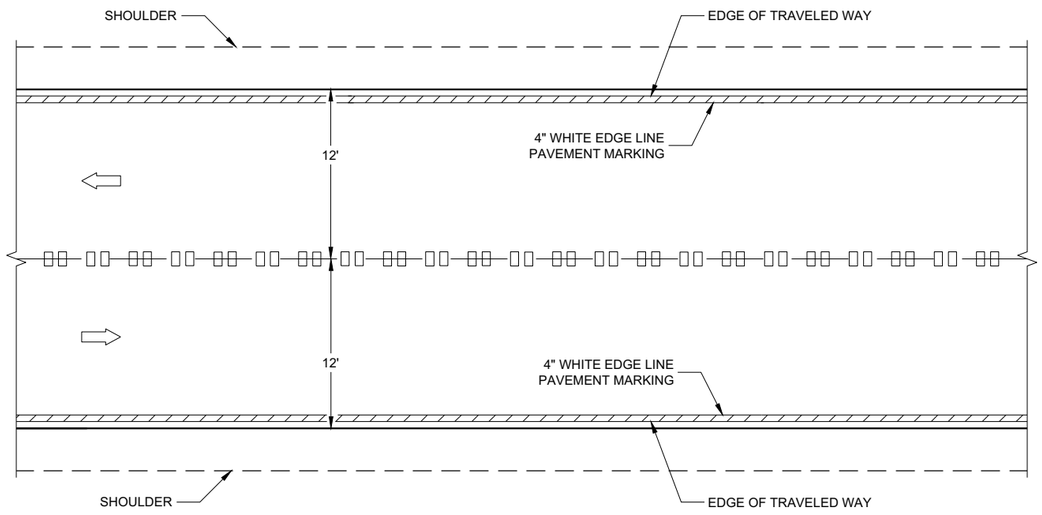
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

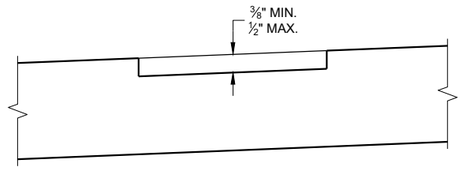
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



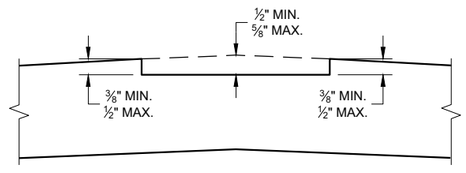
ISOMETRIC



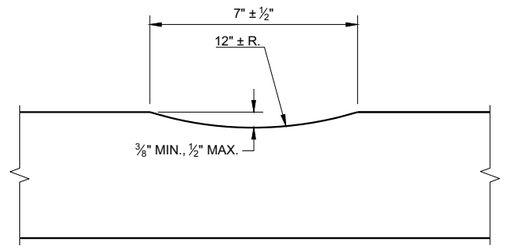
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



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

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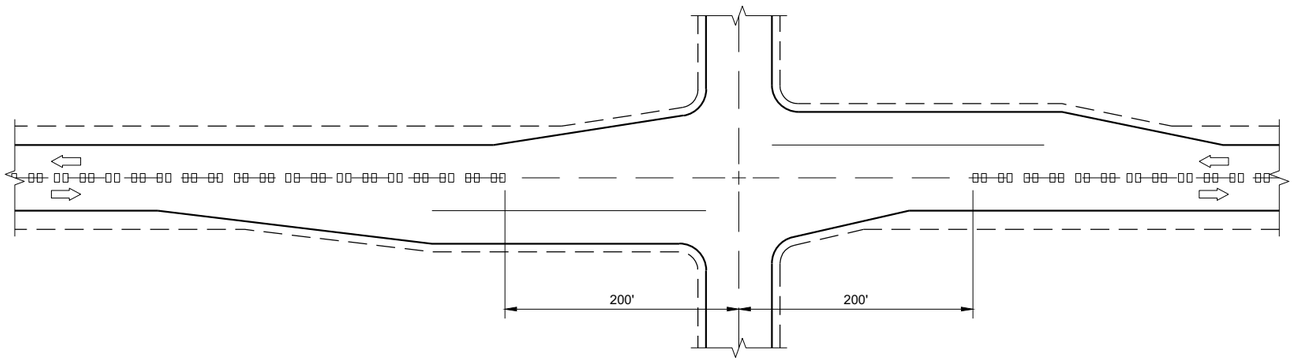
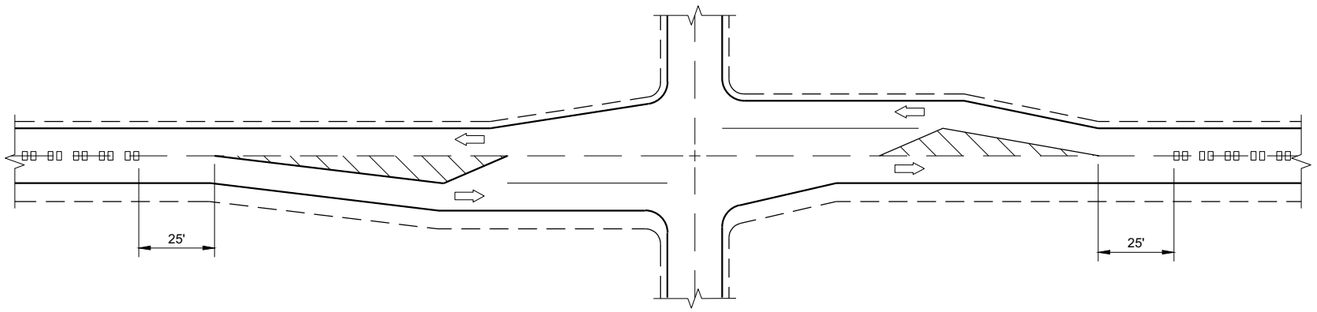
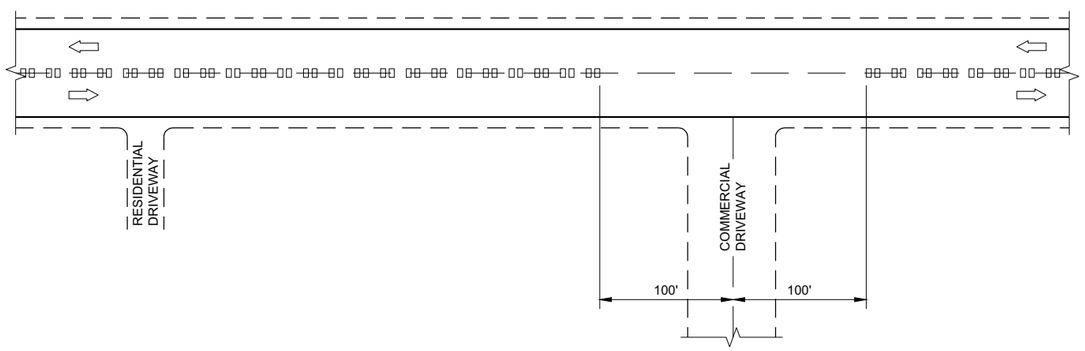
SDD 13A11 - 03a



CENTERLINE GROOVES AT INTERSECTIONS



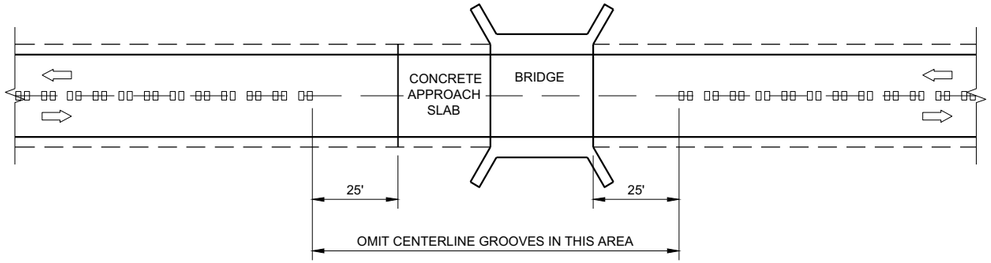
CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



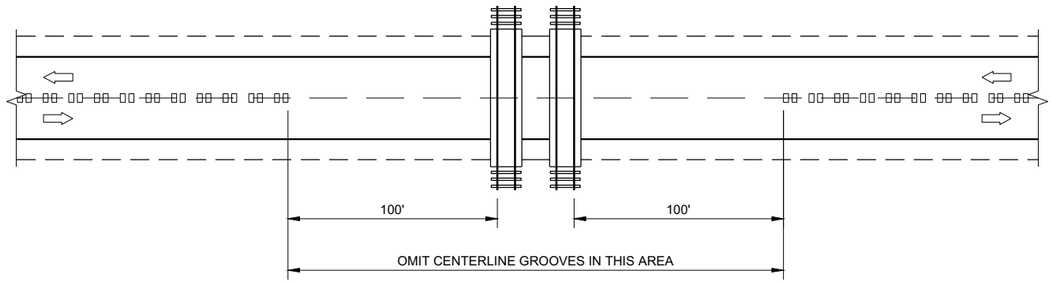
CENTERLINE GROOVES AT DRIVEWAYS (1)

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

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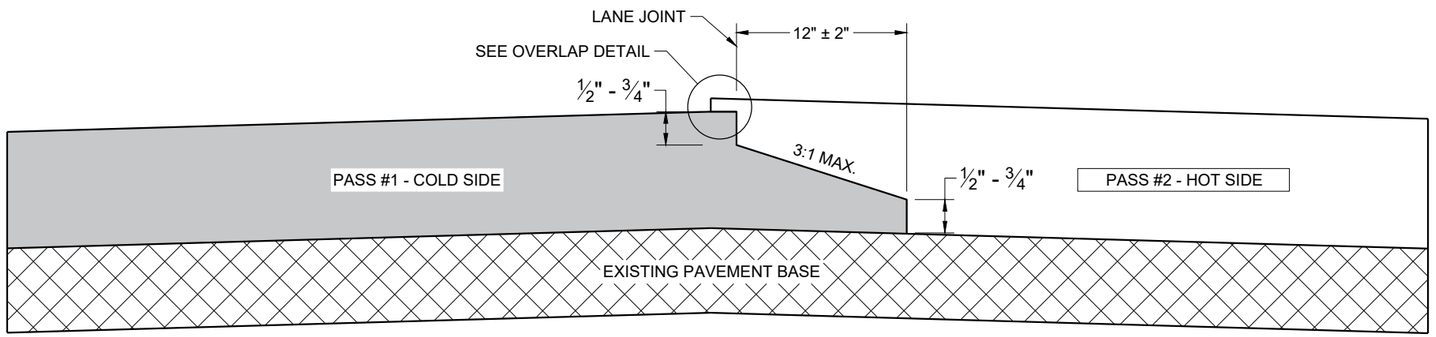
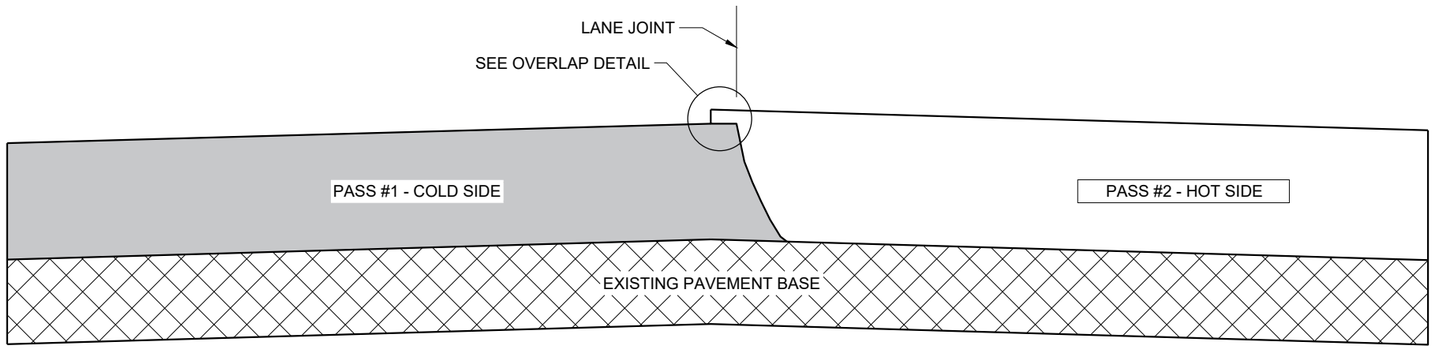
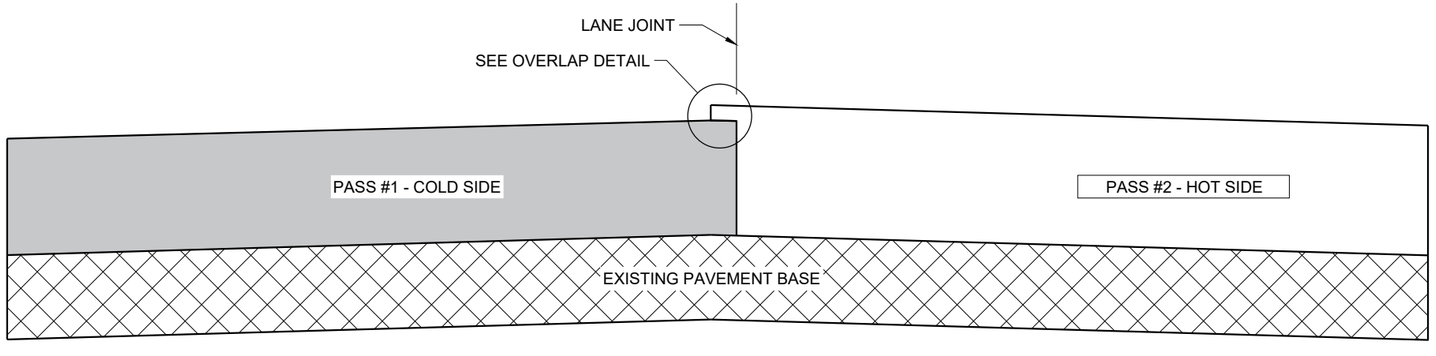
SDD 13A11 - 03b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

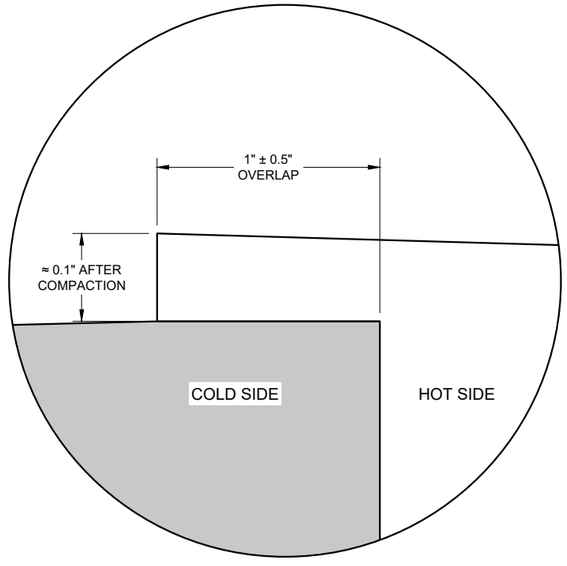
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

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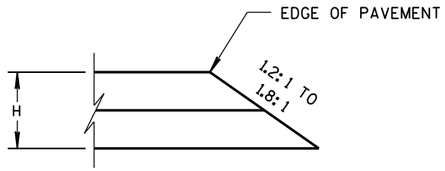
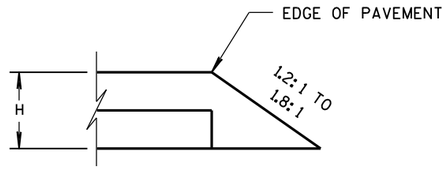
SDD 13C19 - 03



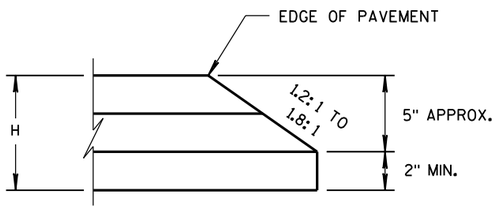
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



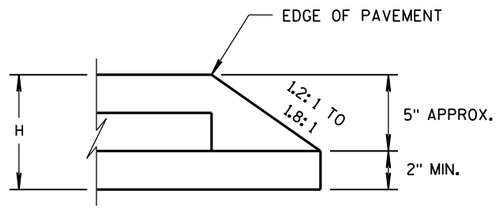
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

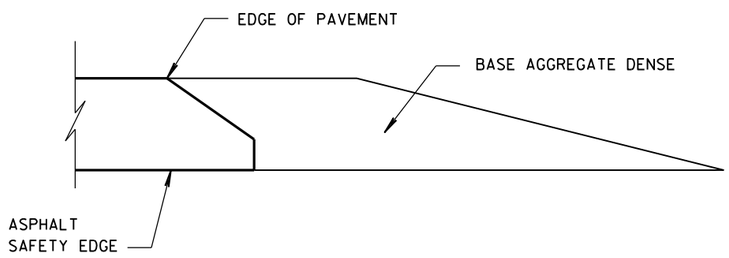
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

SAFETY EDGE SM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/2012
DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

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

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

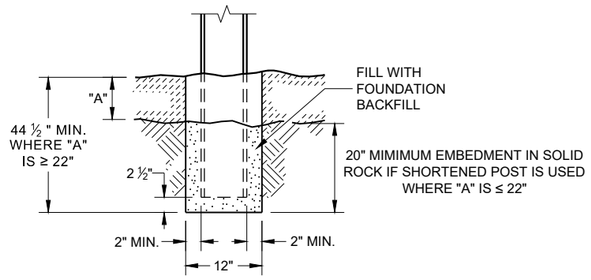
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

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

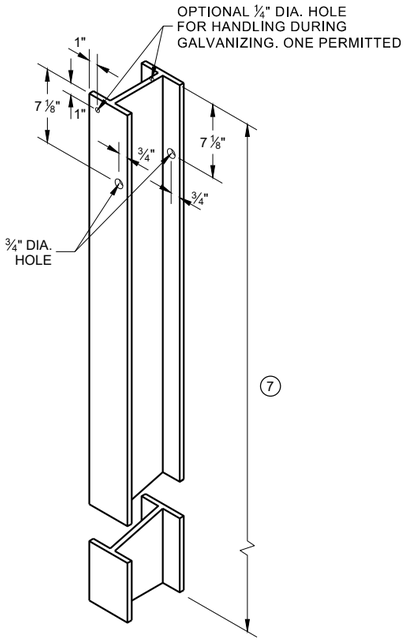
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

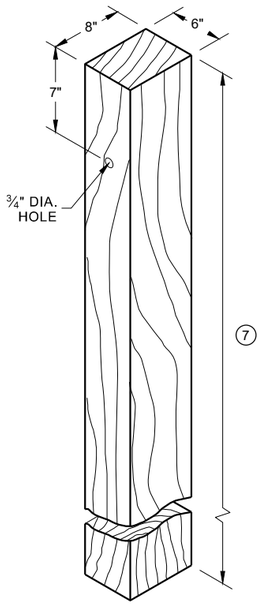
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



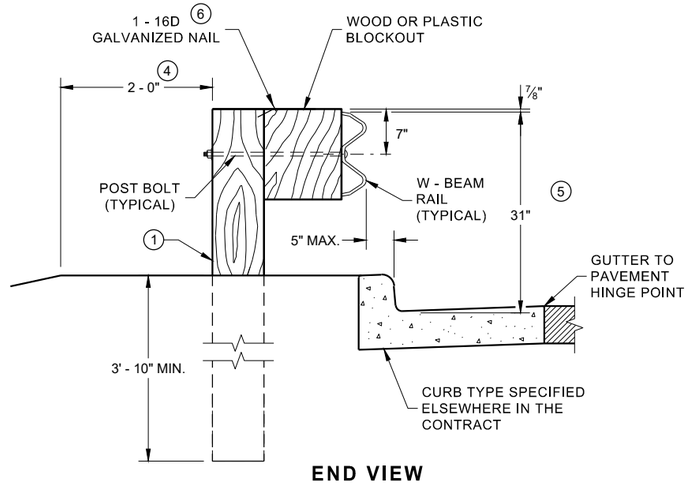
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



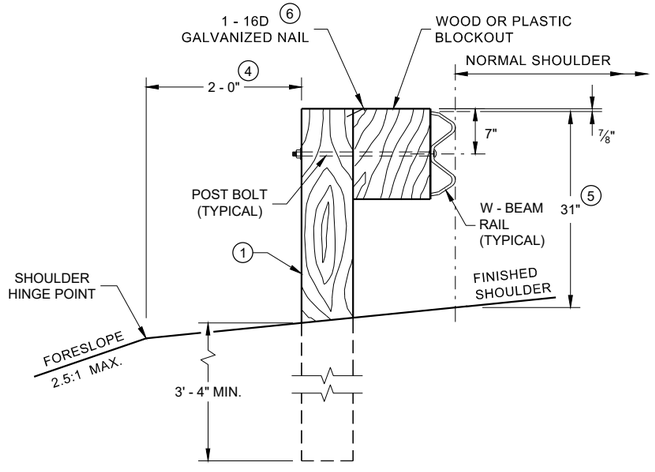
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



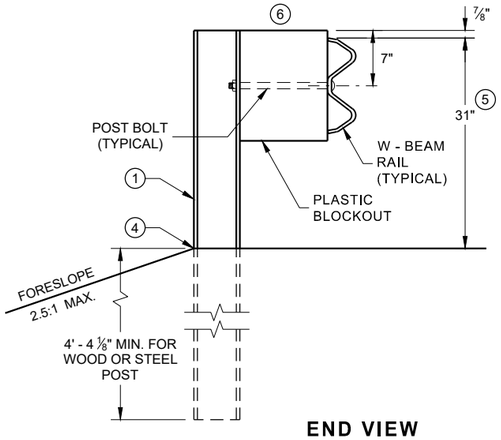
WOOD POST (6" X 8") NOMINAL (1)



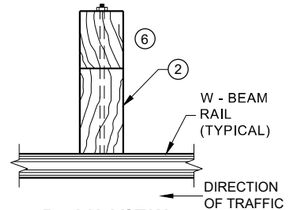
END VIEW
LOCATED ALONG A CURBED ROADWAY



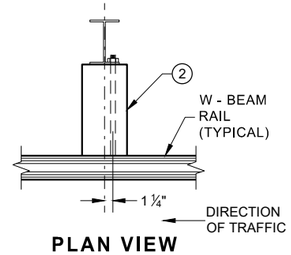
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



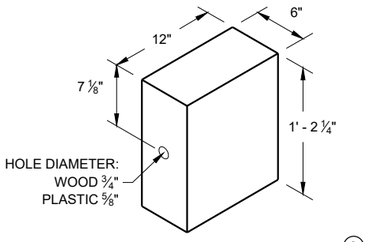
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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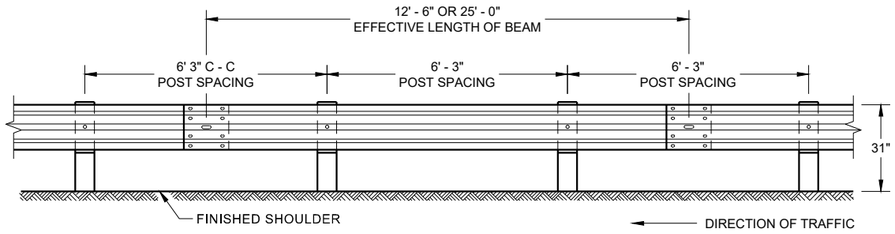
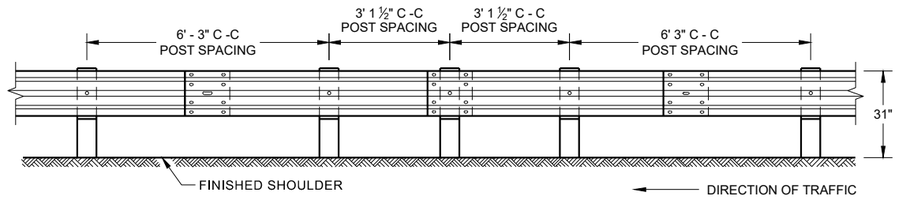
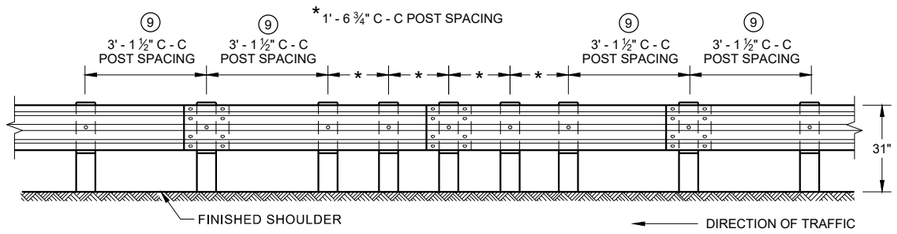


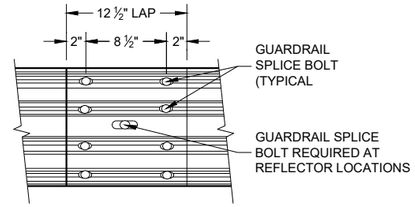
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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

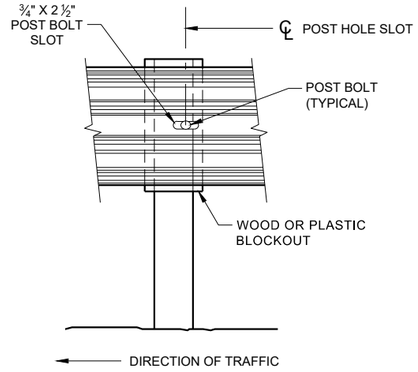
GENERAL NOTES

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

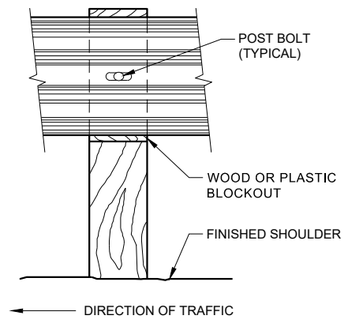
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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.

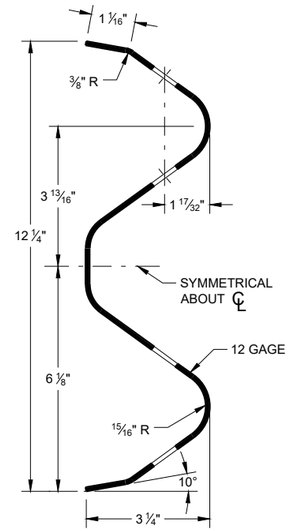
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



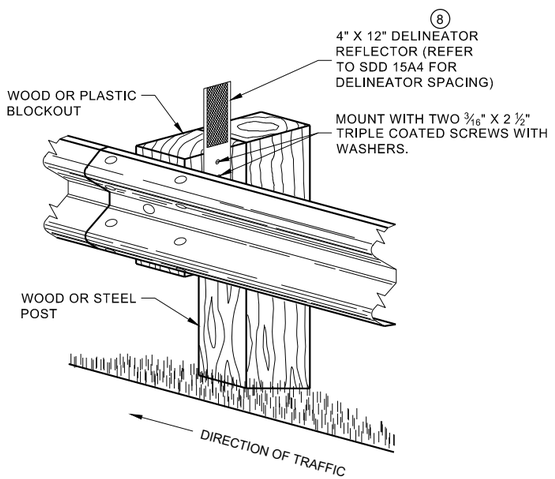
FRONT VIEW AT STEEL POST



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

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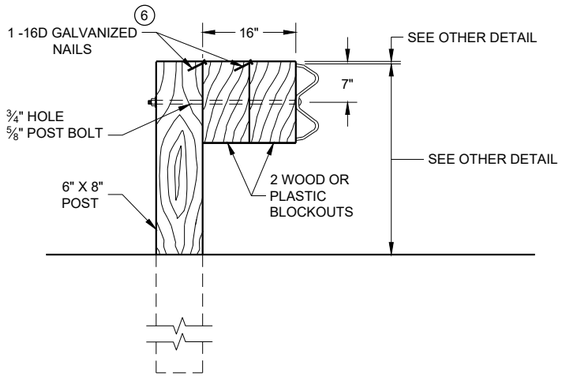
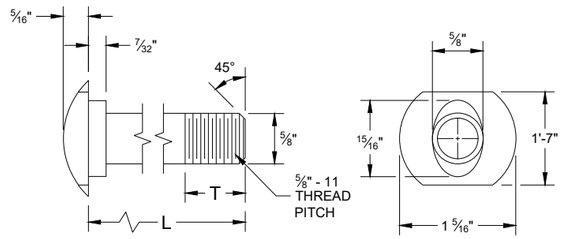


DETAIL FOR 16" BLOCKOUT DEPTH

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

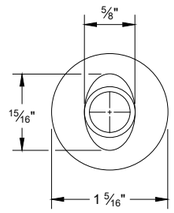
NOTE:

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

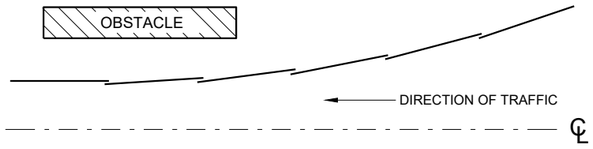


POST BOLT TABLE

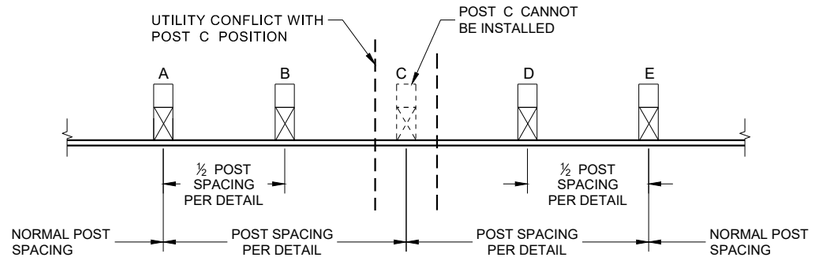
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



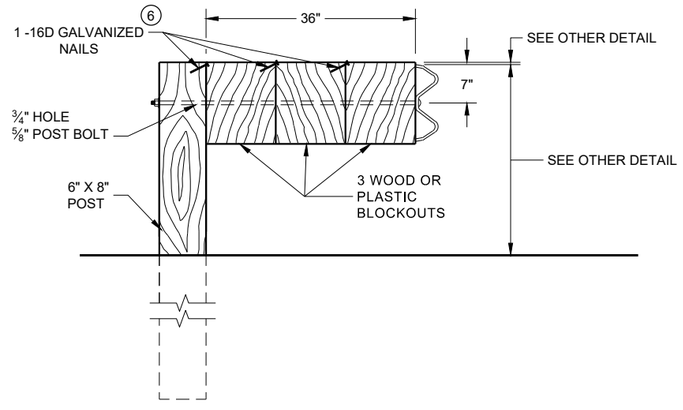
ALTERNATE BOLT HEAD



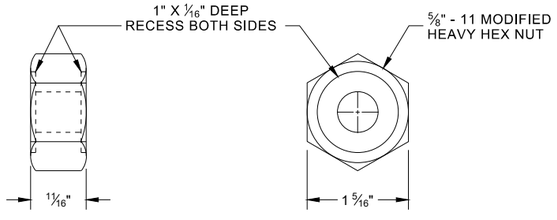
PLAN VIEW
BEAM LAPPING DETAIL



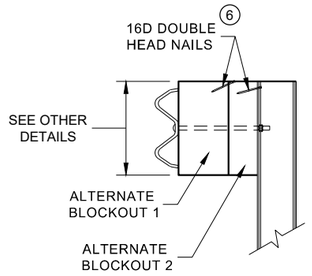
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



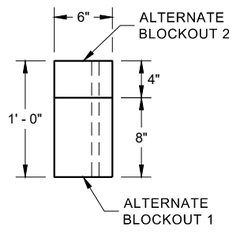
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

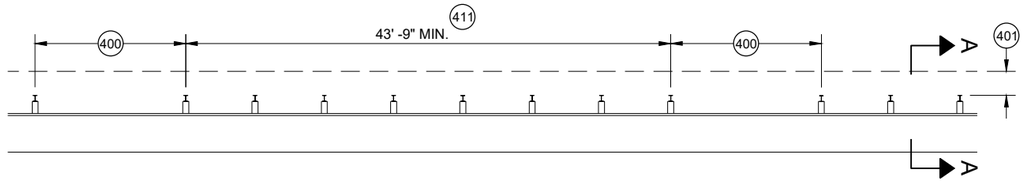
ALTERNATE WOOD BLOCKOUT DETAIL

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

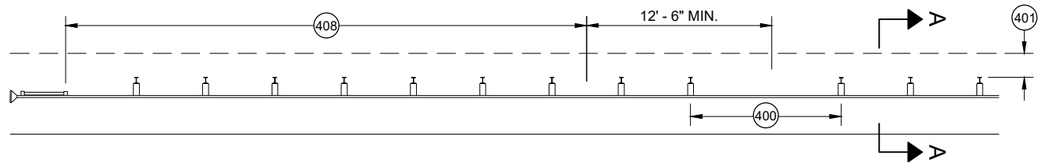
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

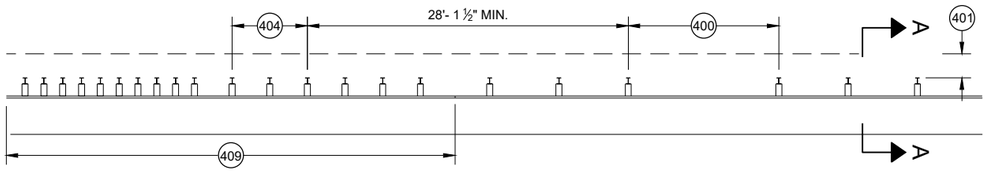
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



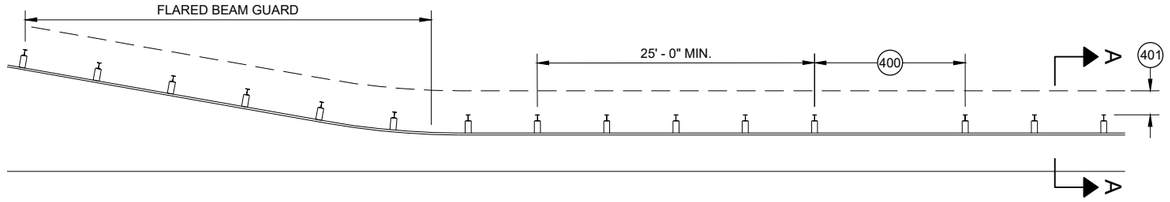
MISSING POST IN MGS GUARDRAIL



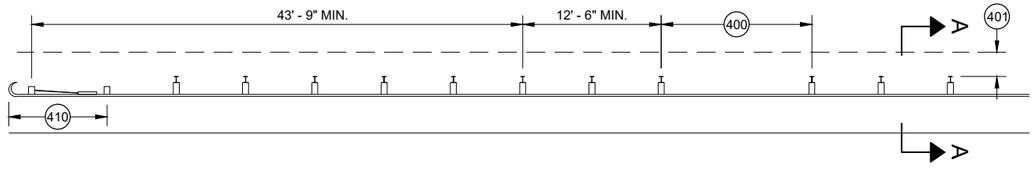
MISSING POST IN MGS GUARDRAIL NEAR EAT



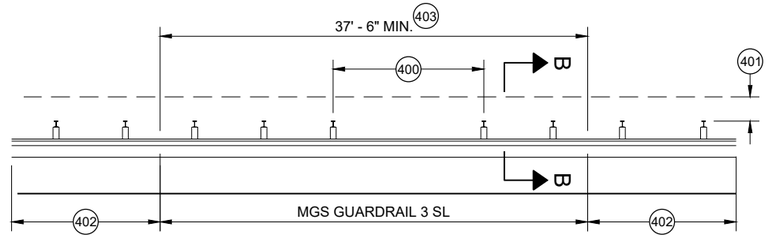
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

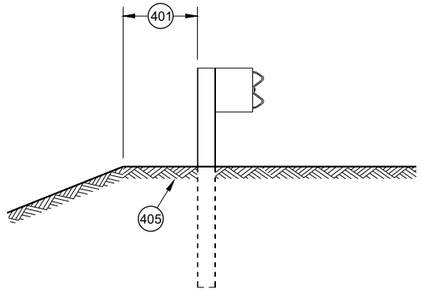


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

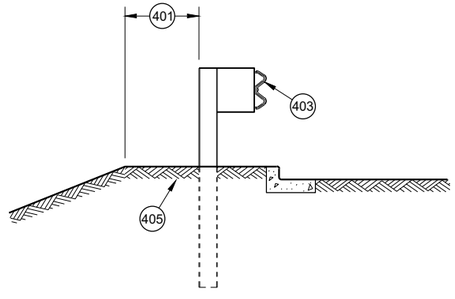


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

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



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

SDD 14B42 - 07d

GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

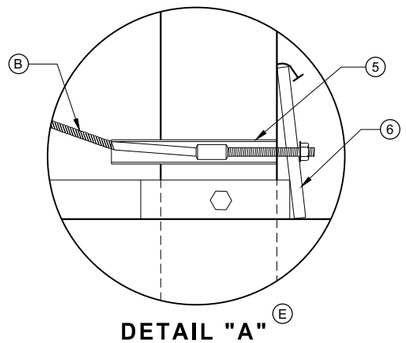
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

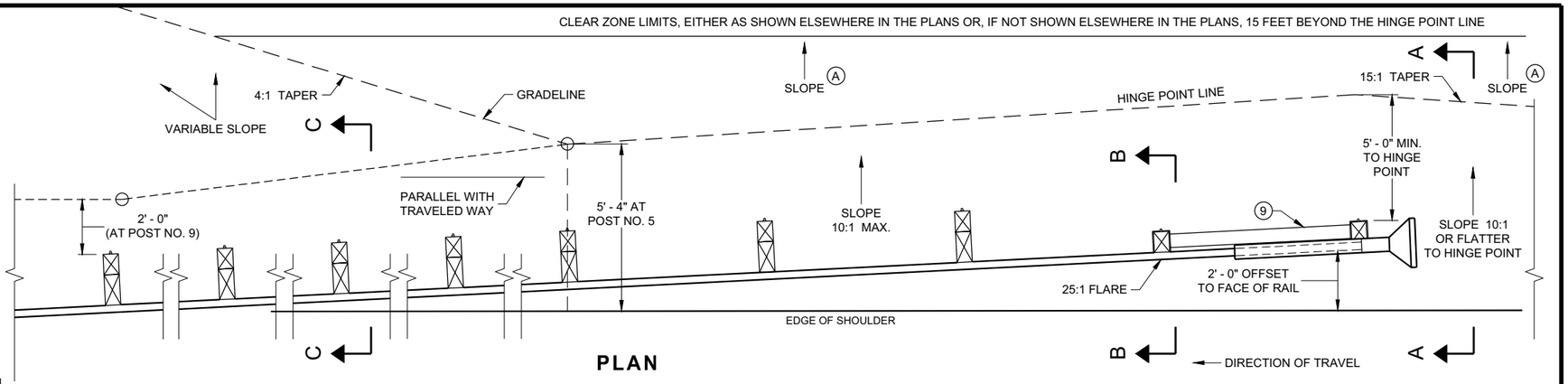
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

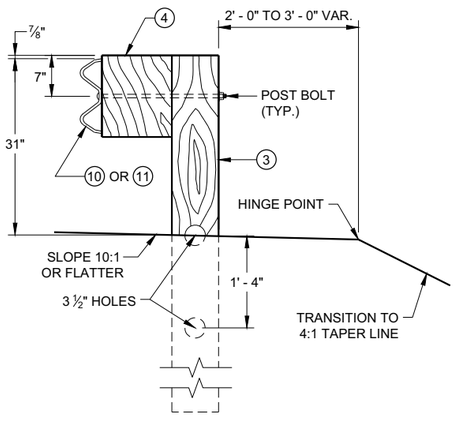
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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

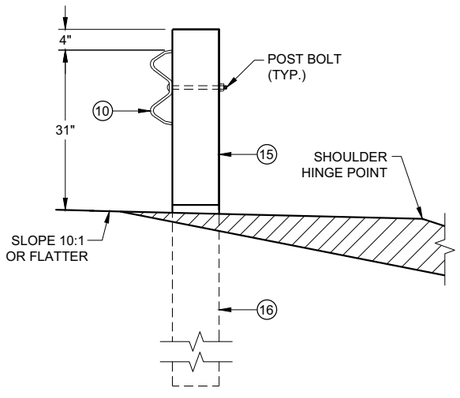


DETAIL "A" (E)

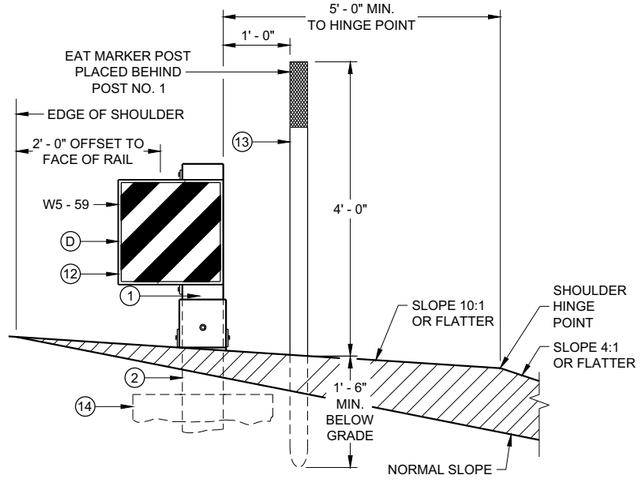




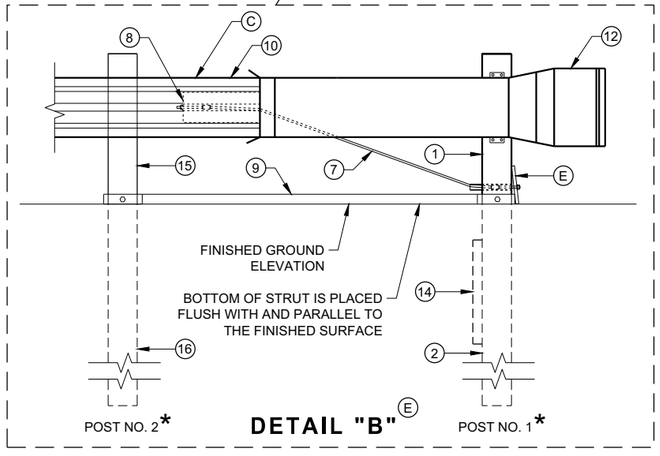
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



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

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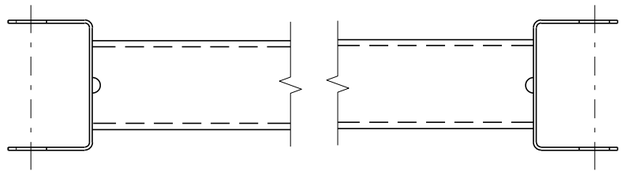
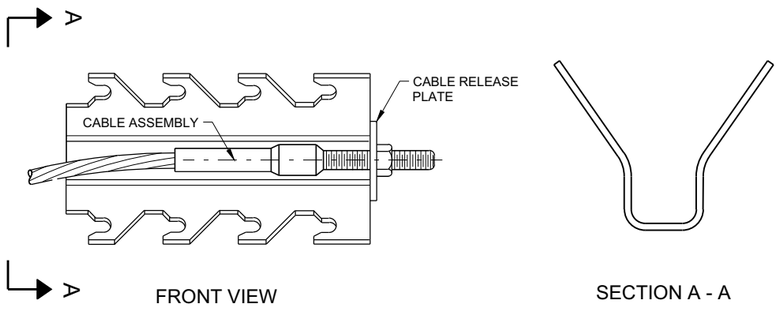
SDD 14B44 - 04a



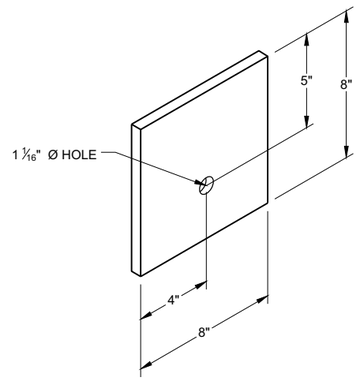
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUGACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

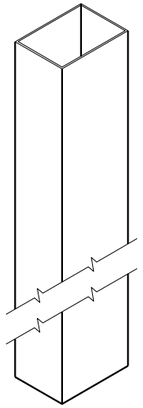
6

SDD 14B44 - 04b

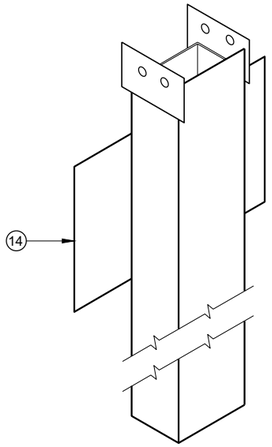
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

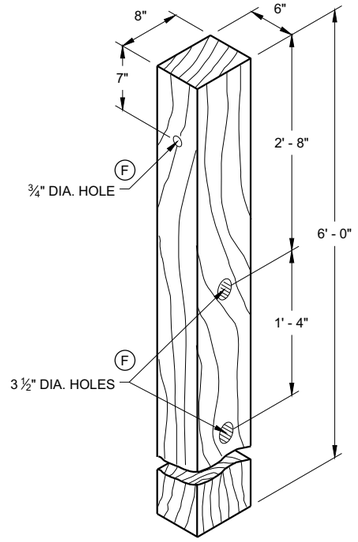
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



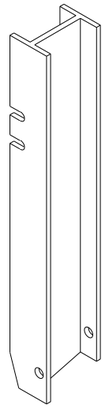
UPPER POST NO. 1 (1) (E)



LOWER POST NO. 1 (2) (E)



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



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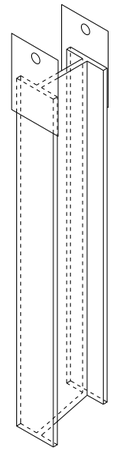

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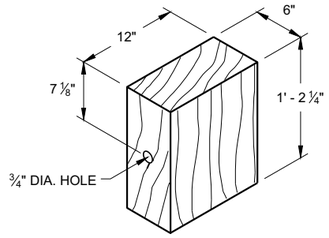
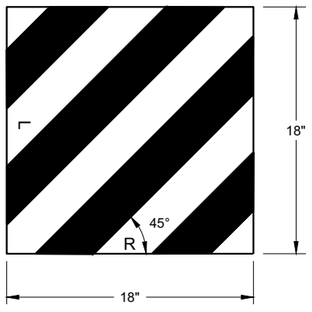
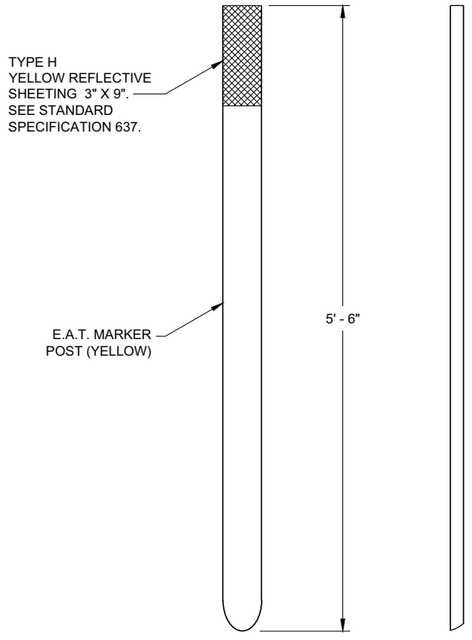


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



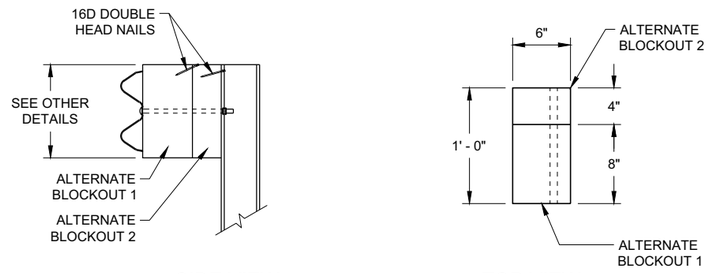
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

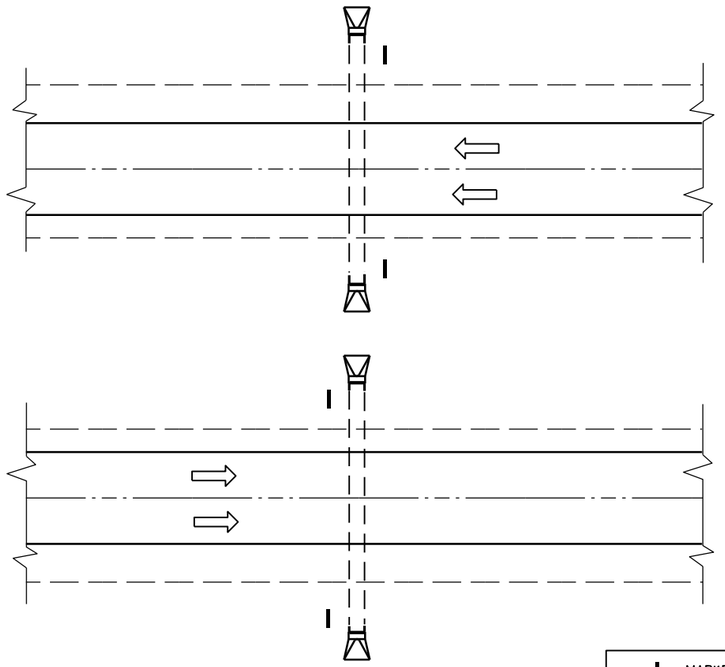
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

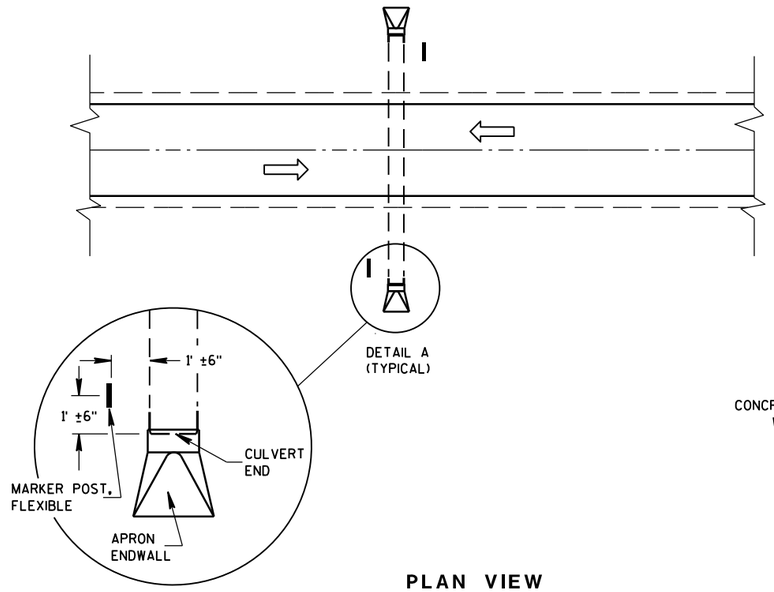
6

SDD 14B44 - 04c



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

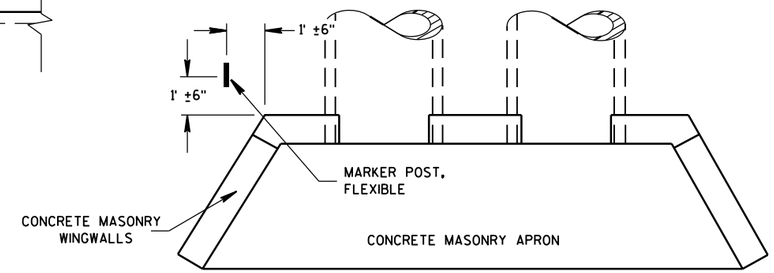
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

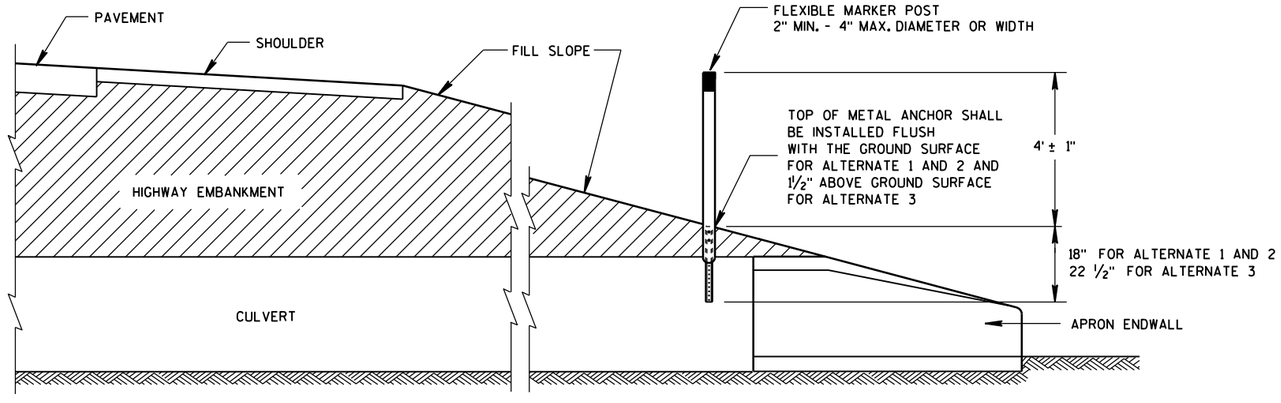
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



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

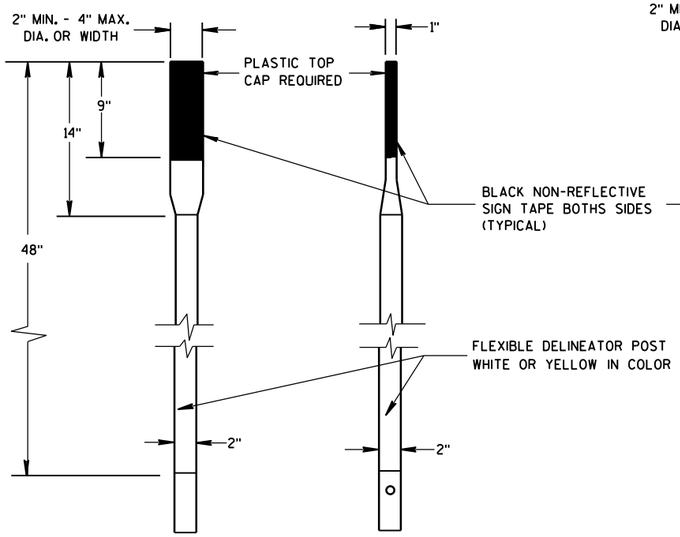
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

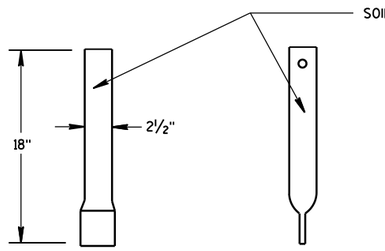
6

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

6

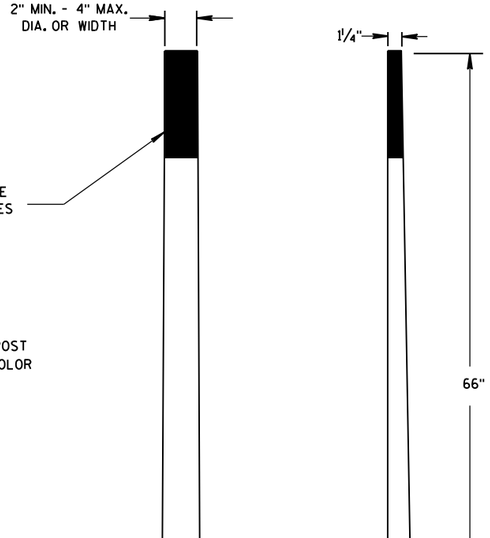
S.D.D. 15 A 3-2a





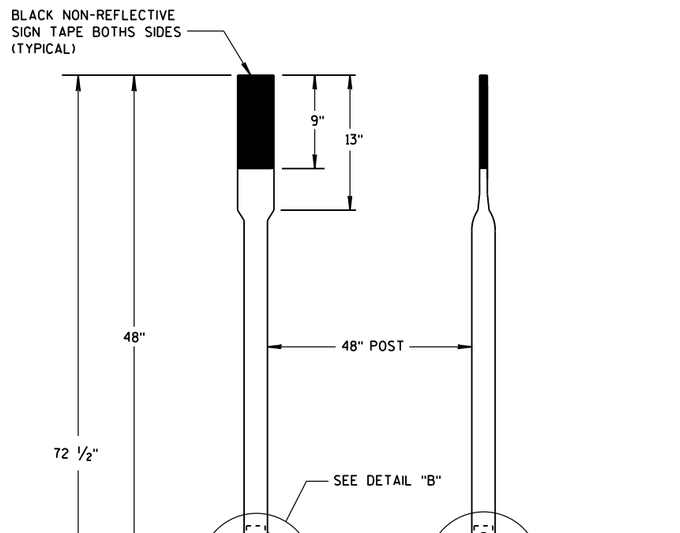
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

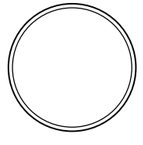
ALTERNATE 2



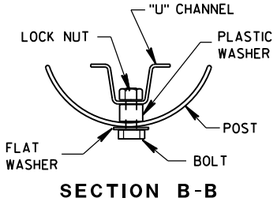
FRONT VIEW SIDE VIEW

ALTERNATE 3

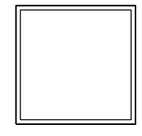
FLEXIBLE MARKER POSTS



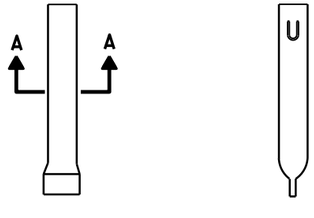
SECTION A-A



SECTION B-B

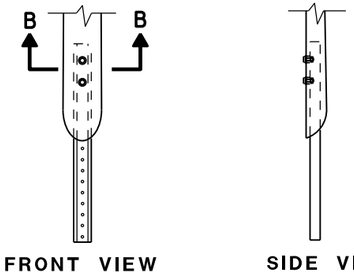


SECTION C-C



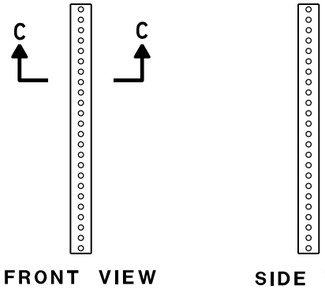
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

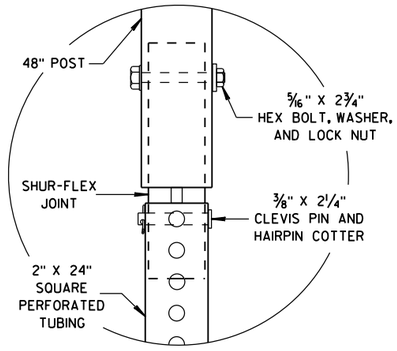
ALTERNATE 2



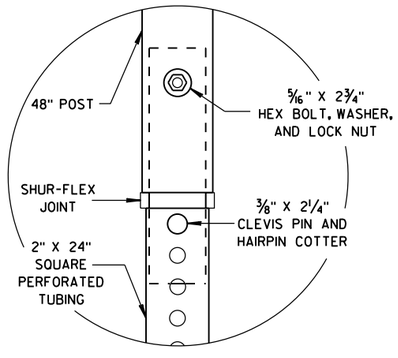
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

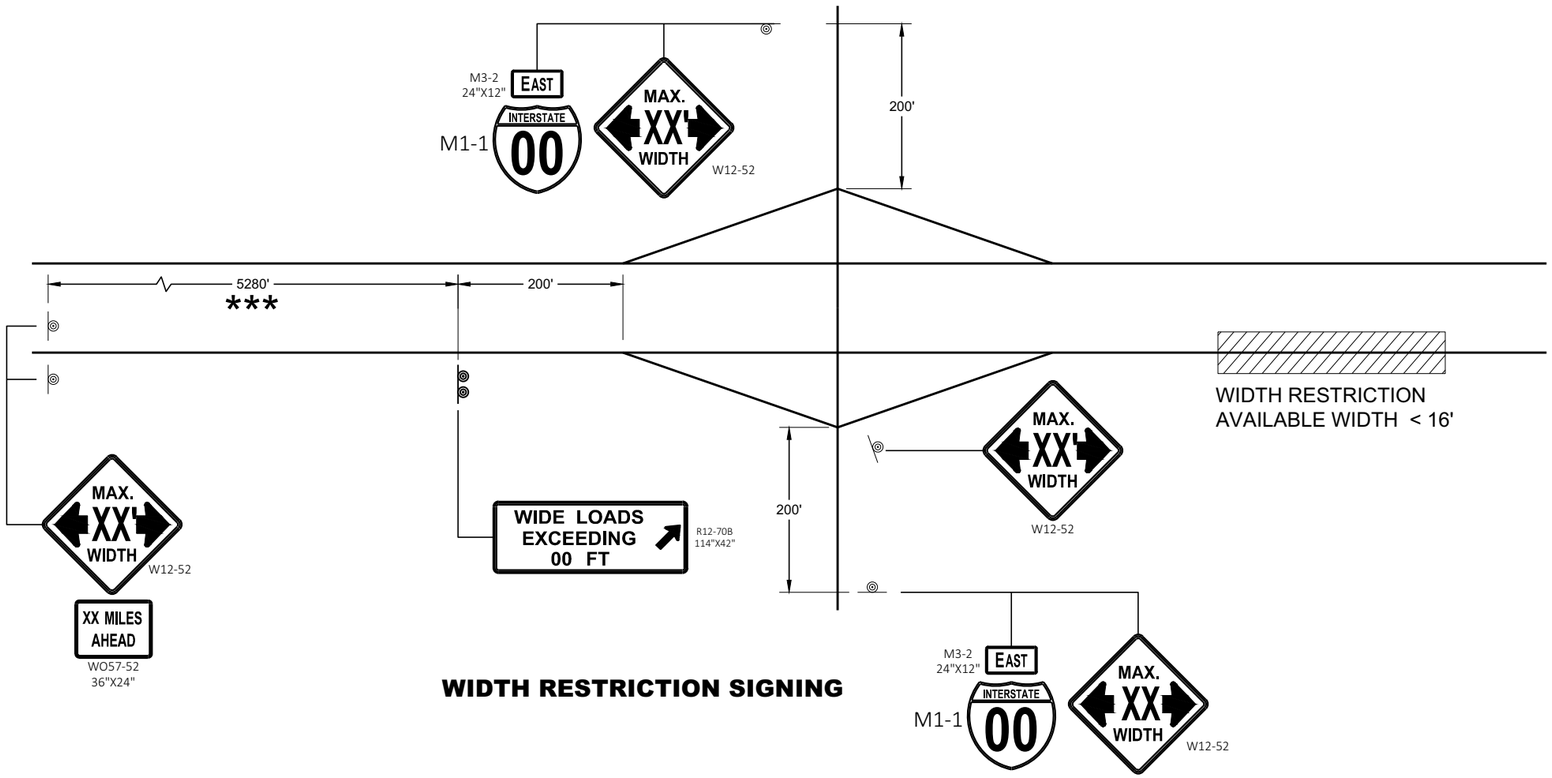
APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

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

6

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



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.

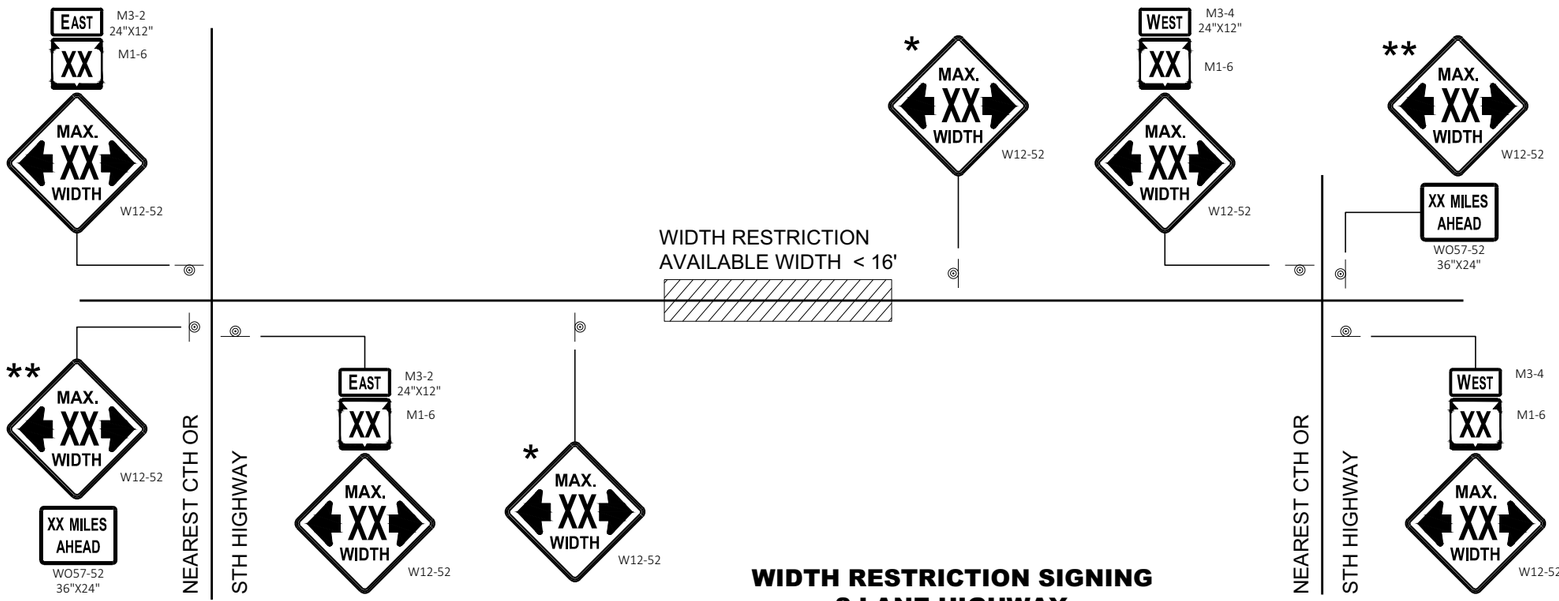
WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

* 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 55

FHWA

6

SDD 15C02 - 08f

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.

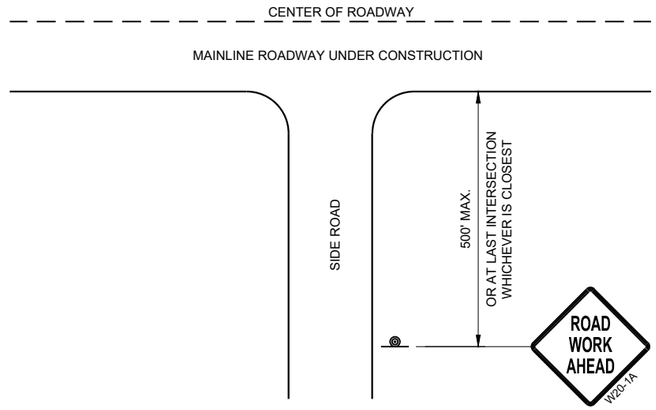
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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.



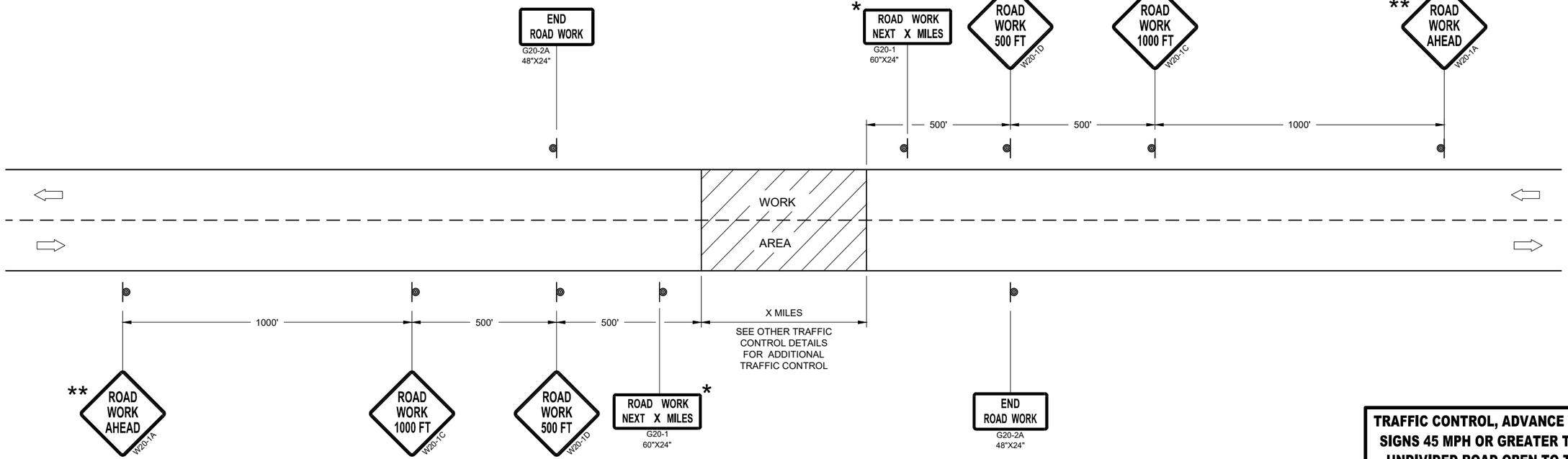
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

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

GENERAL NOTES

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

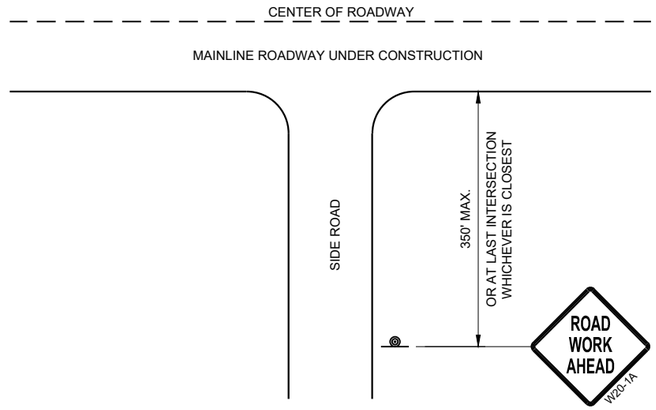
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

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.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



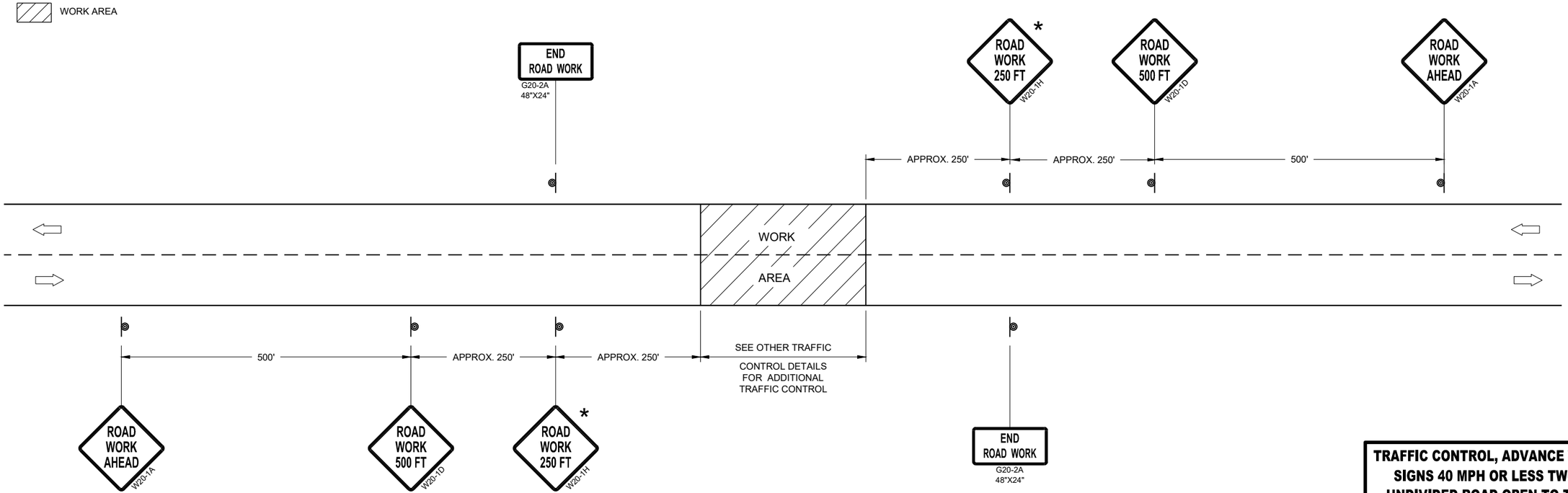
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 MPH OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

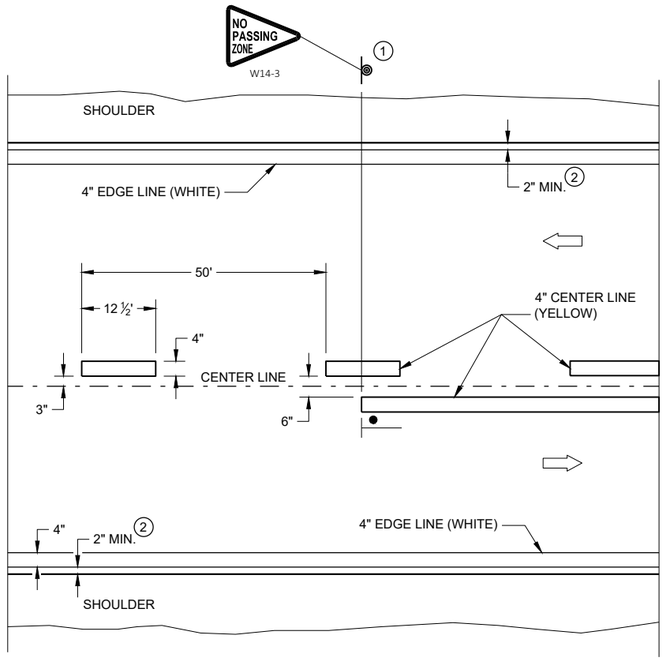
APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

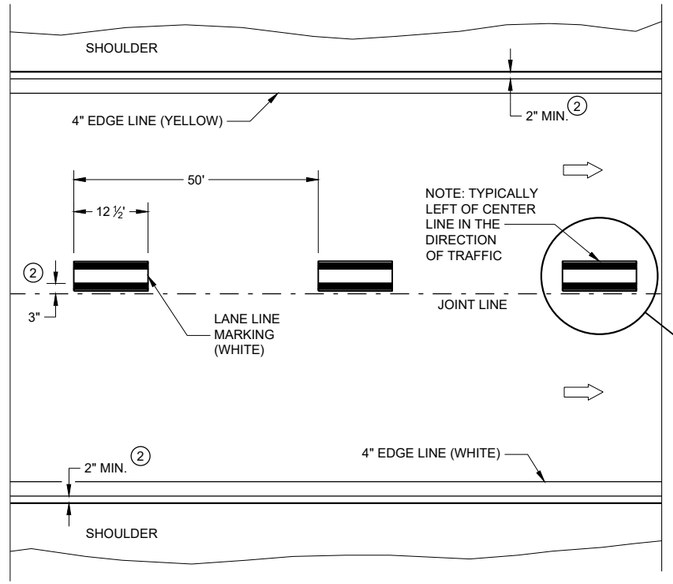
FHWA

6

SDD 15C05 - 05

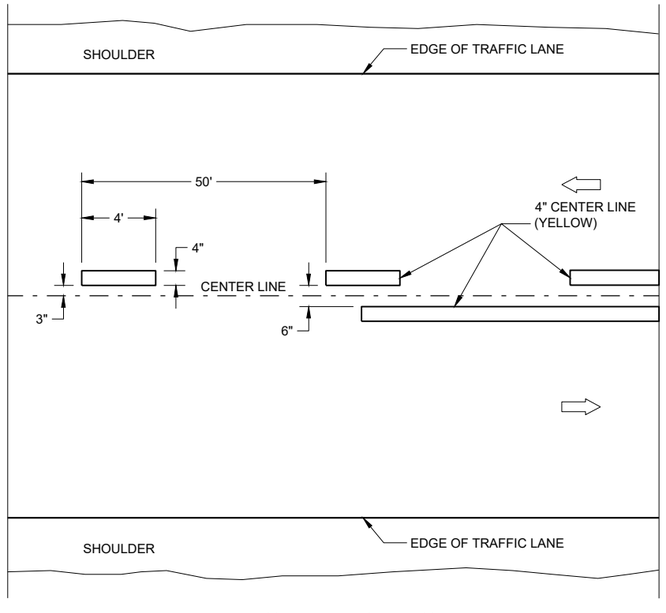


TWO WAY TRAFFIC

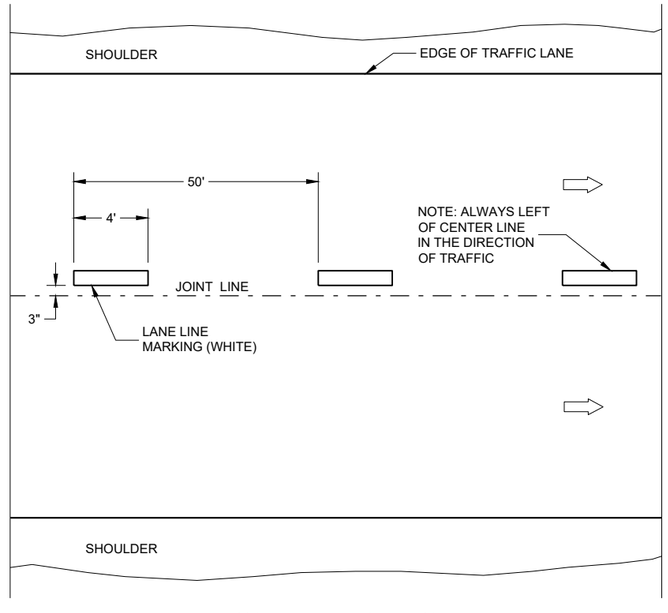


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

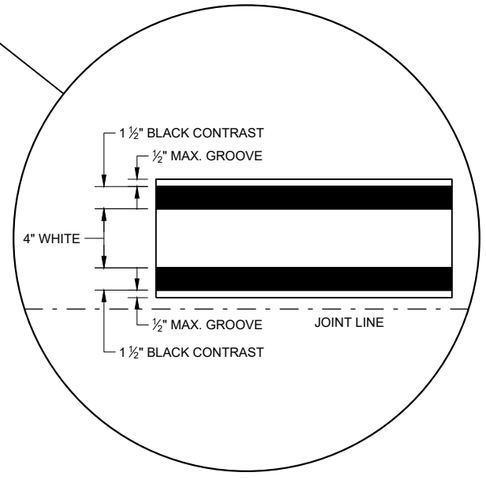
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

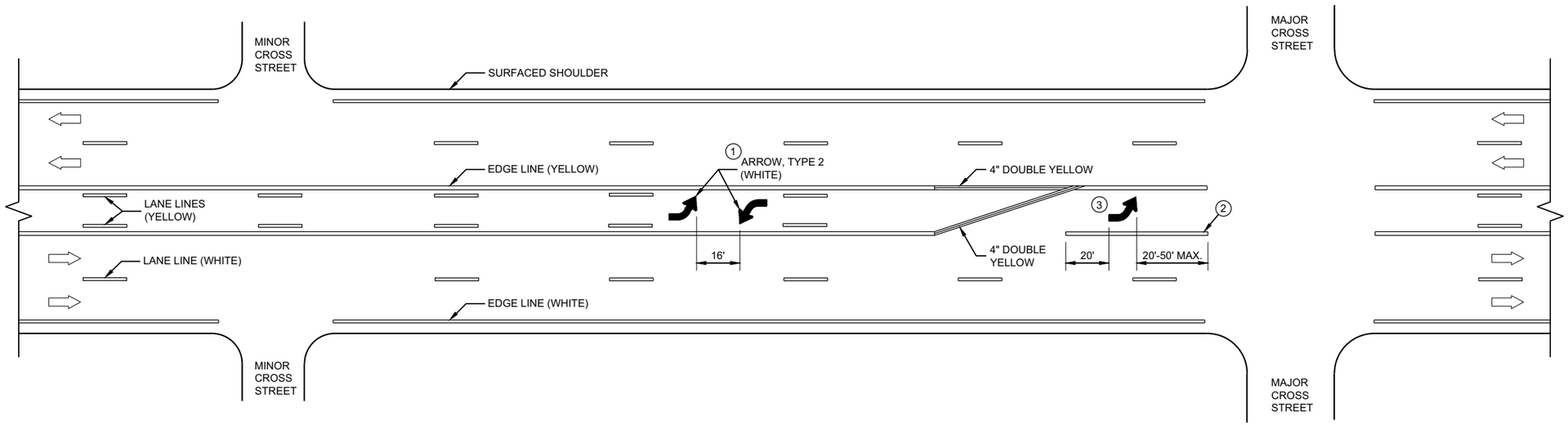
SDD 15C08 - 20a

SDD 15C08 - 20a

GENERAL NOTES

1. 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

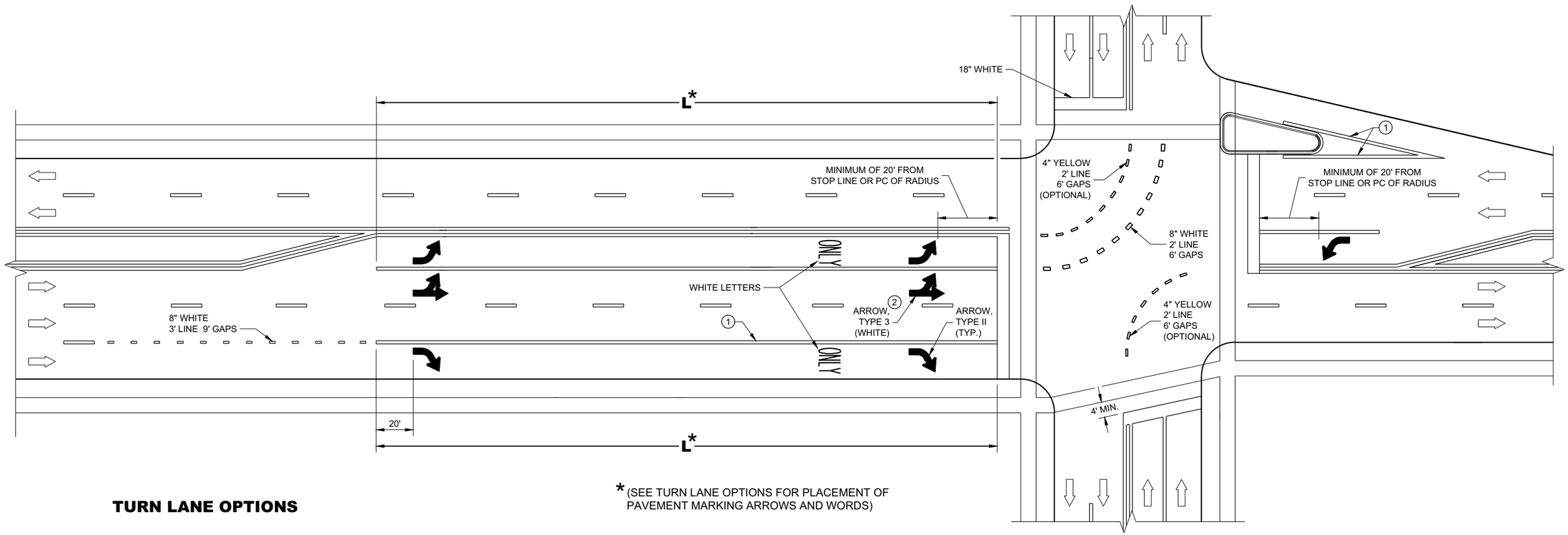
SDD 15C08 - 20b

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

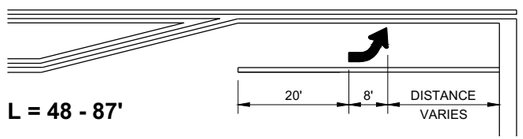
SDD 15C08 - 20b



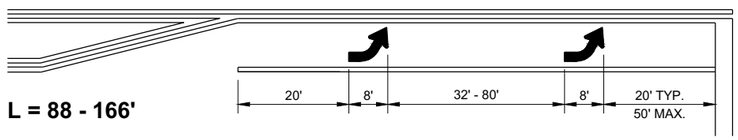
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

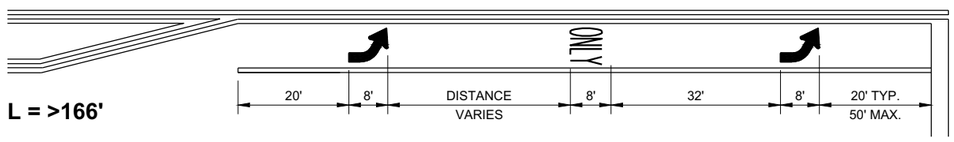
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



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)

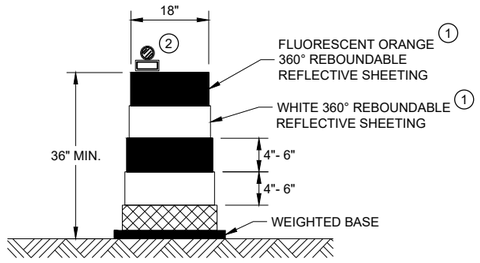
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

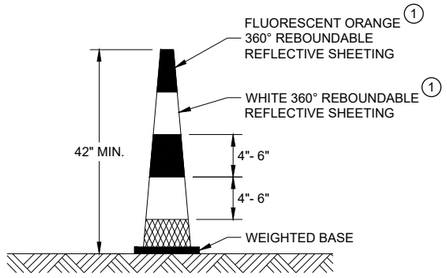
SDD 15C08 - 20c

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.

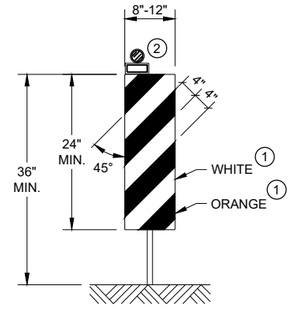


DRUM



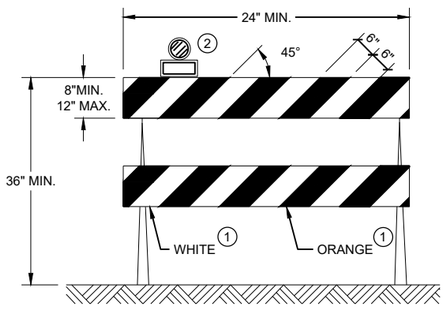
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



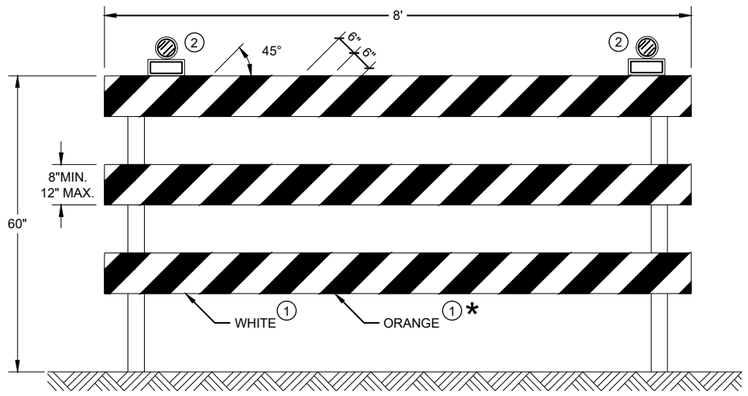
VERTICAL PANEL

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
May 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD15C11 - 09b

6

SDD15C11 - 09b

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

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

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

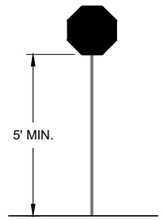
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

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.



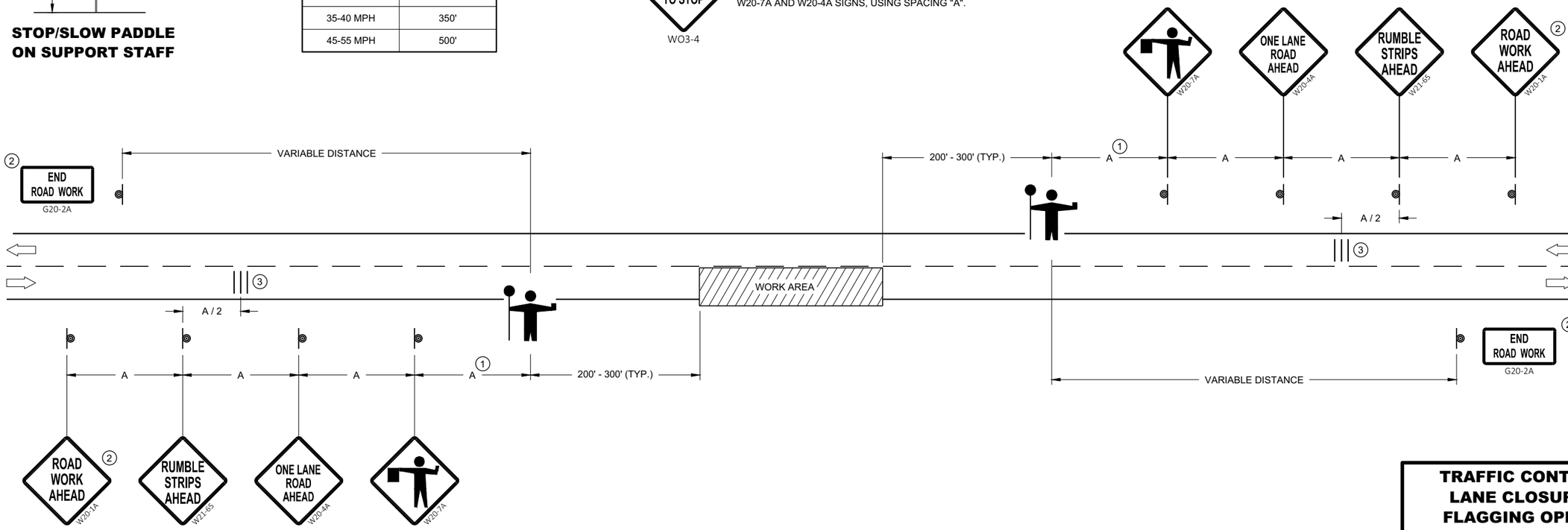
STOP/SLOW PADDLE ON SUPPORT STAFF

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.

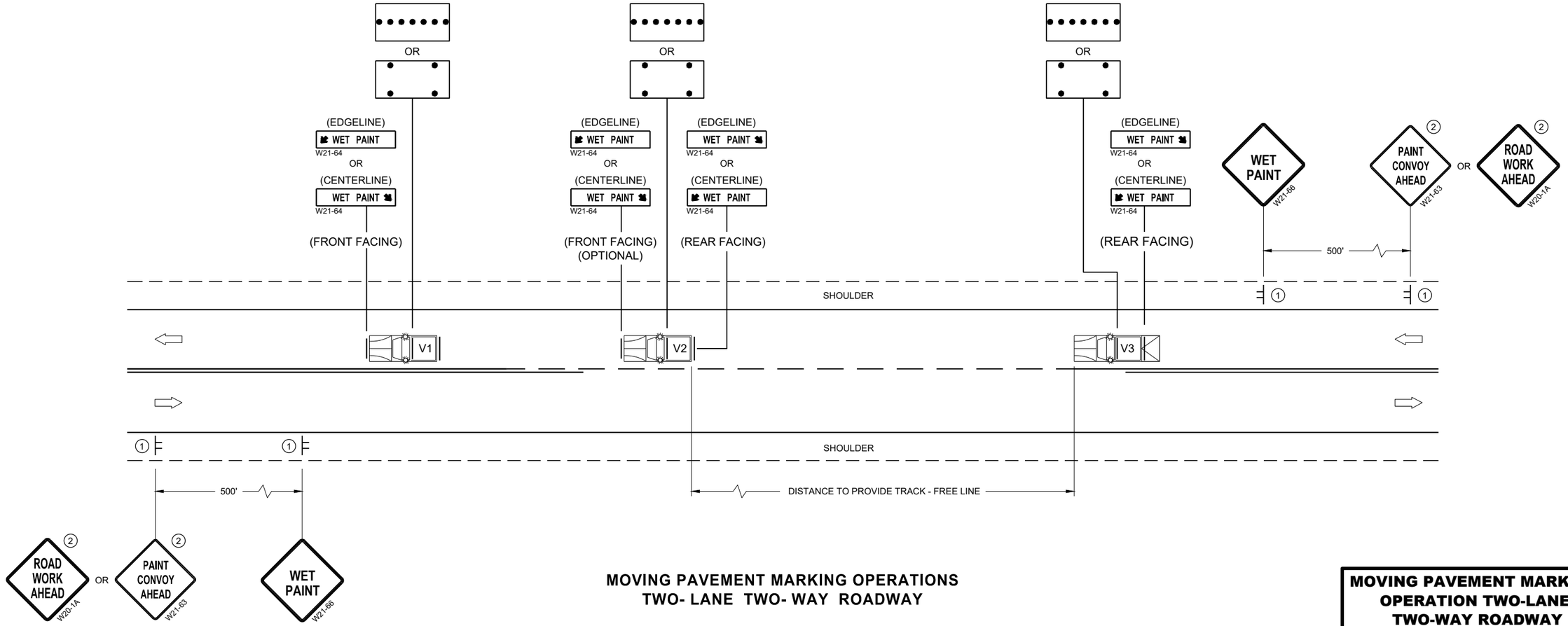
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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 28" 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 ENGINEE

FHWA

6

SDD 15C19 - 06a

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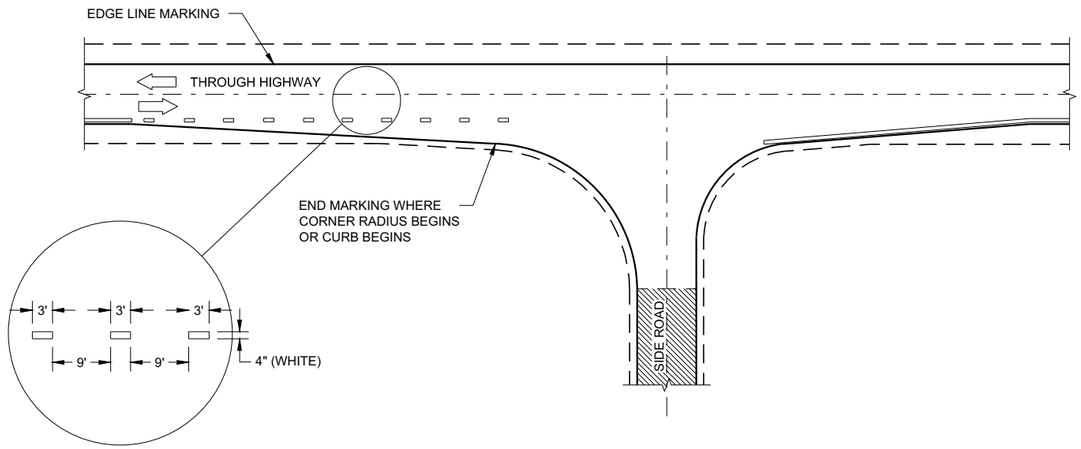
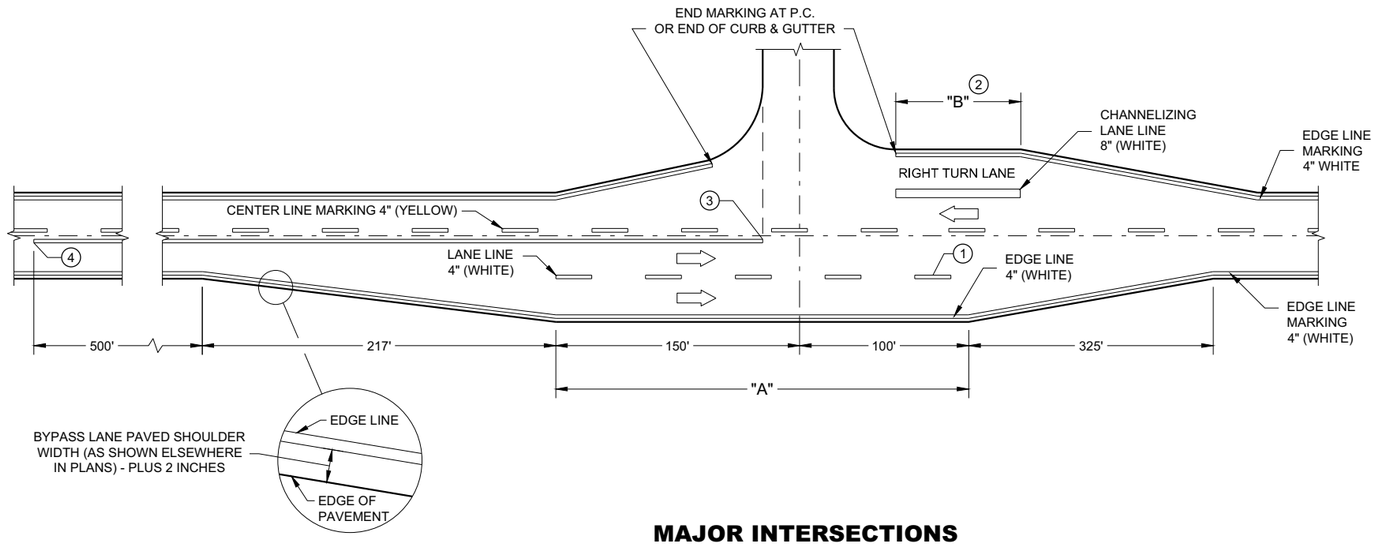
SDD 15C19 - 06a



MINOR INTERSECTION



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

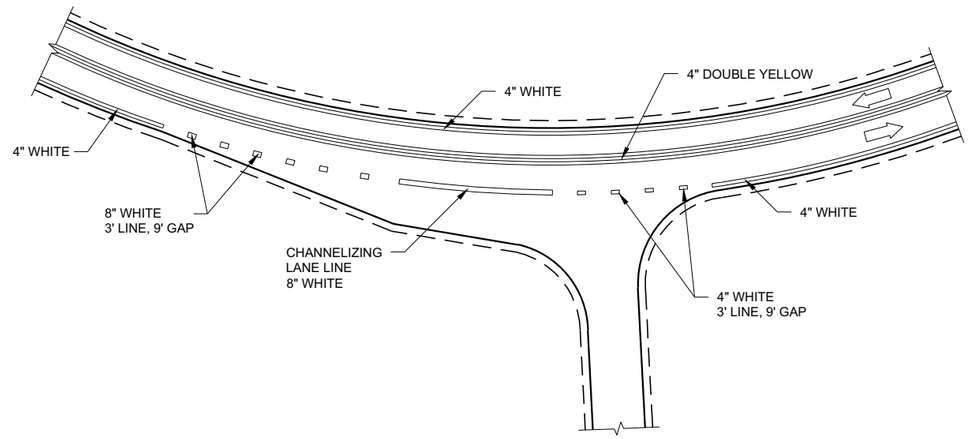
GENERAL NOTES

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



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING (INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

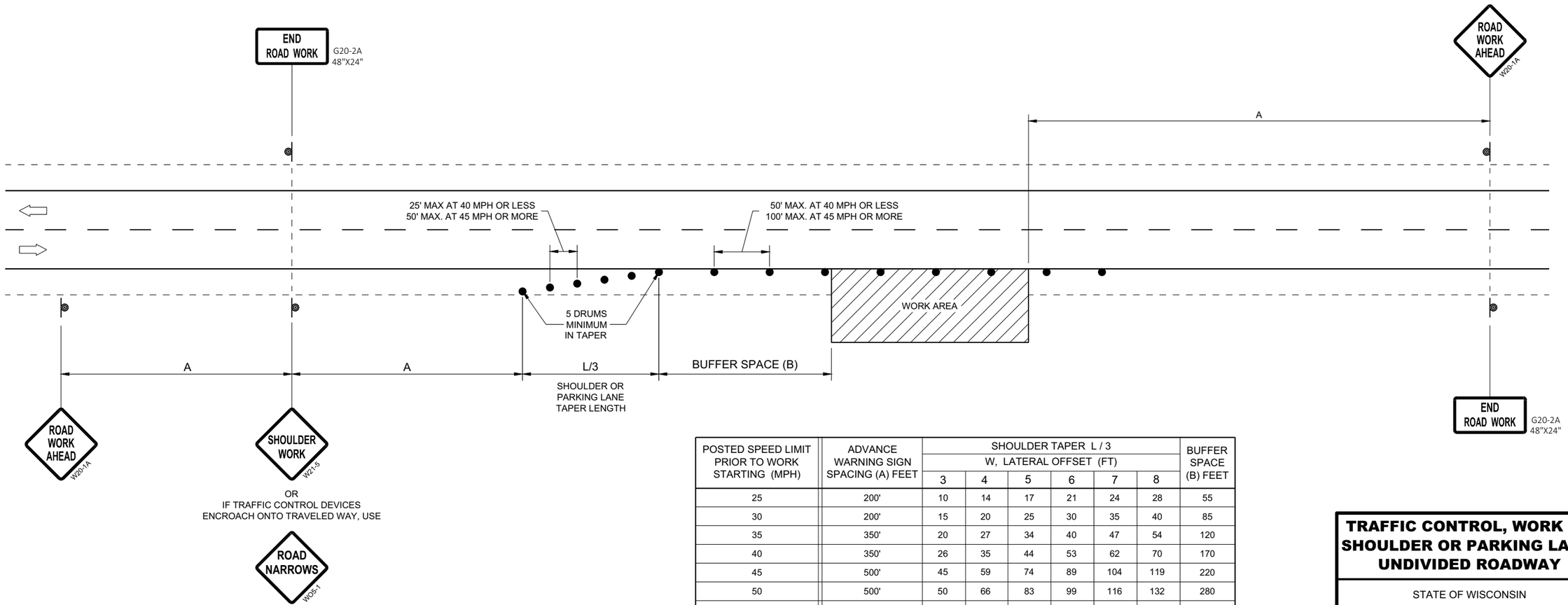
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

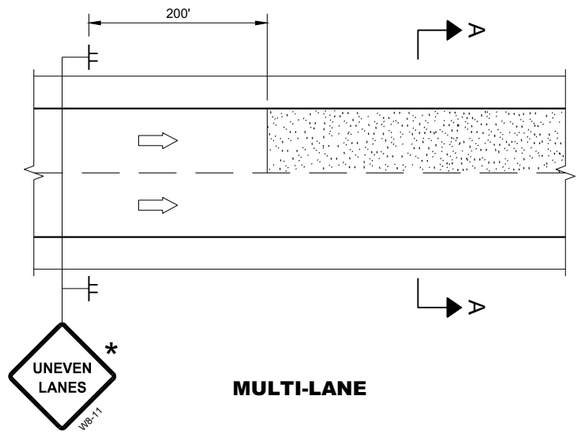
APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

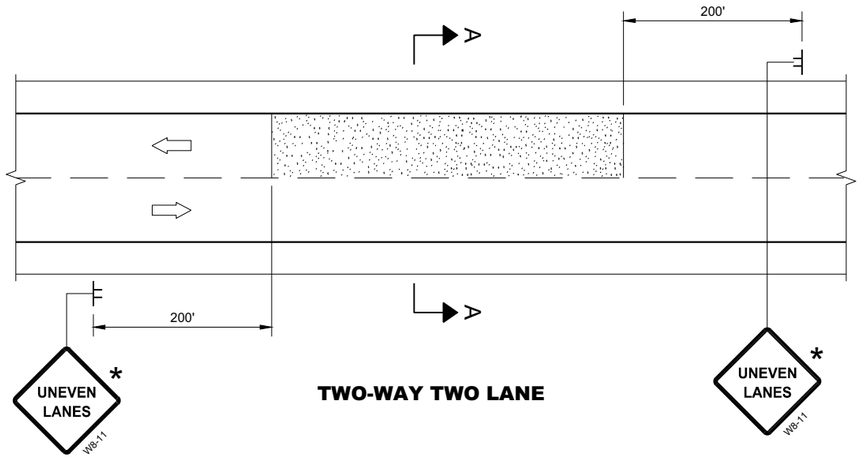
FHWA

SDD 15D28 - 04

SDD 15D28 - 04



MULTI-LANE



TWO-WAY TWO LANE

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.

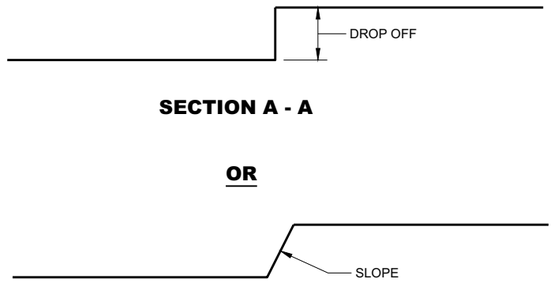
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* 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

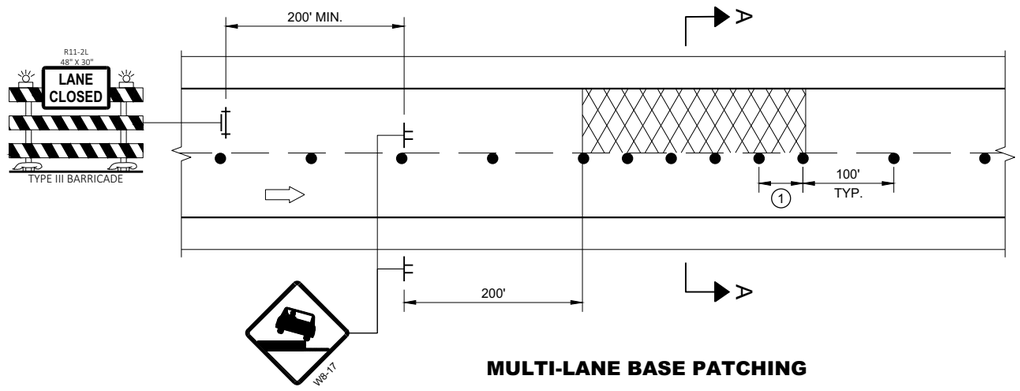
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE



SECTION A - A

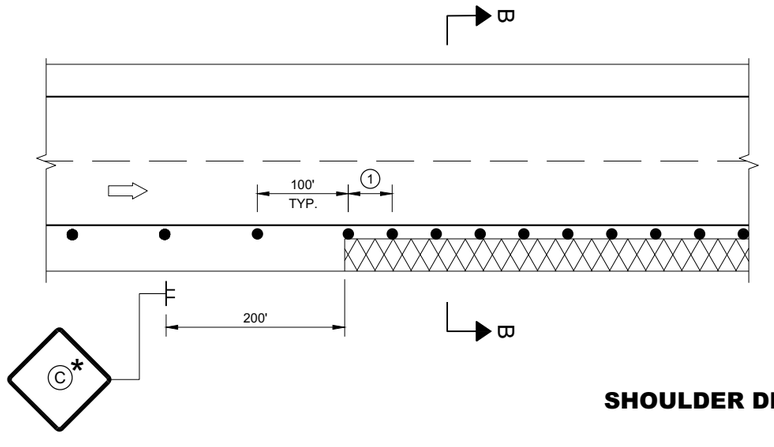
OR

SECTION A - A

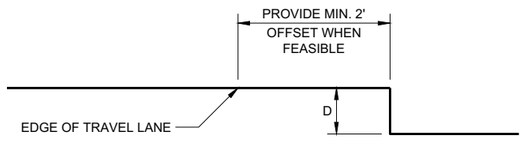


MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS



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.

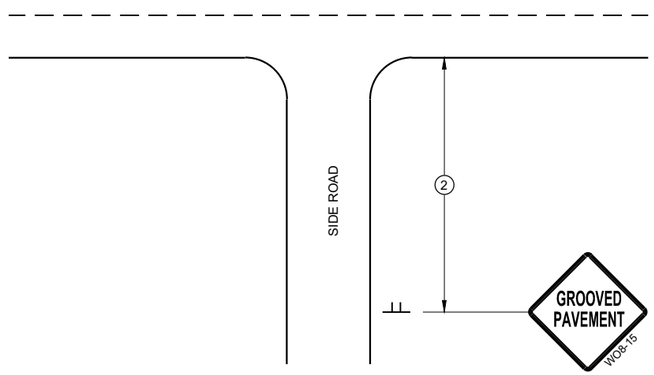
(1) PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

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

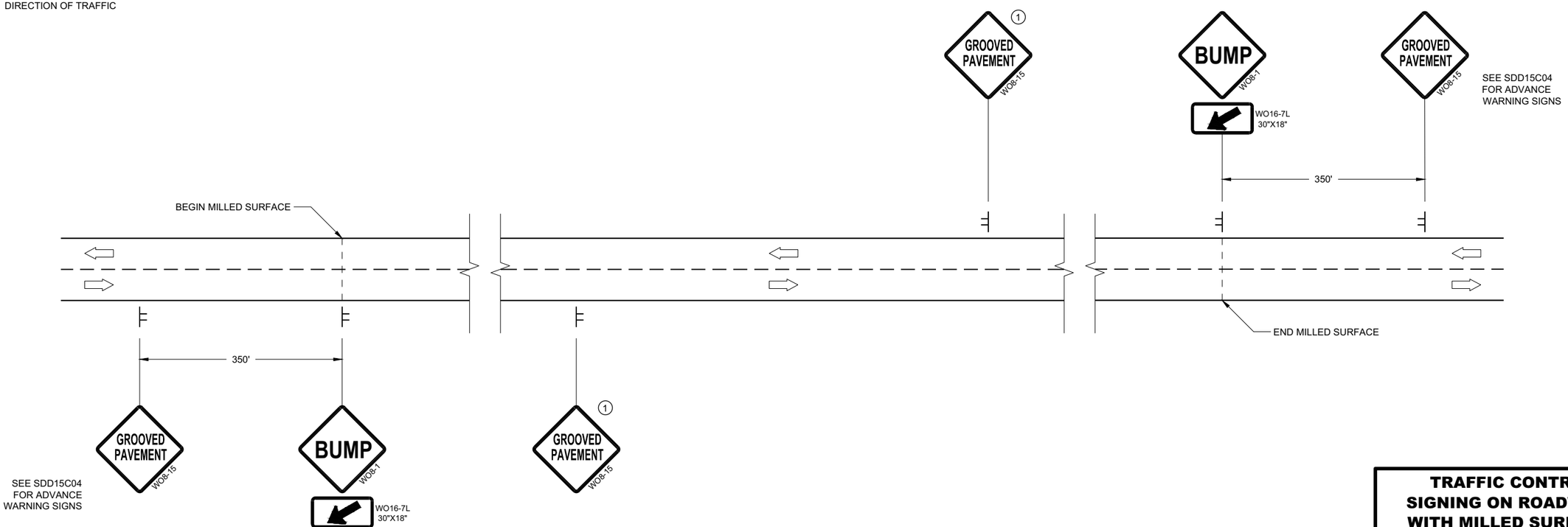
LEGEND

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

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 CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

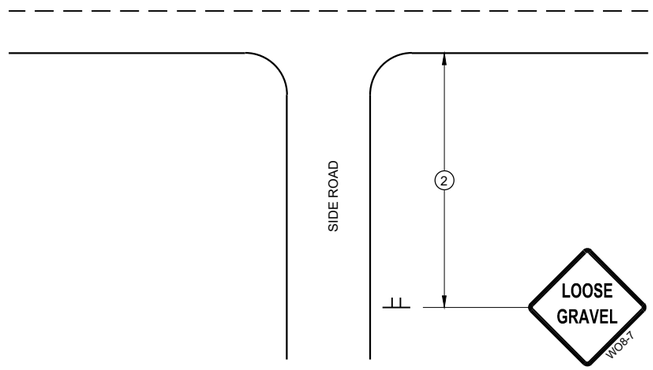
(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

(3) ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

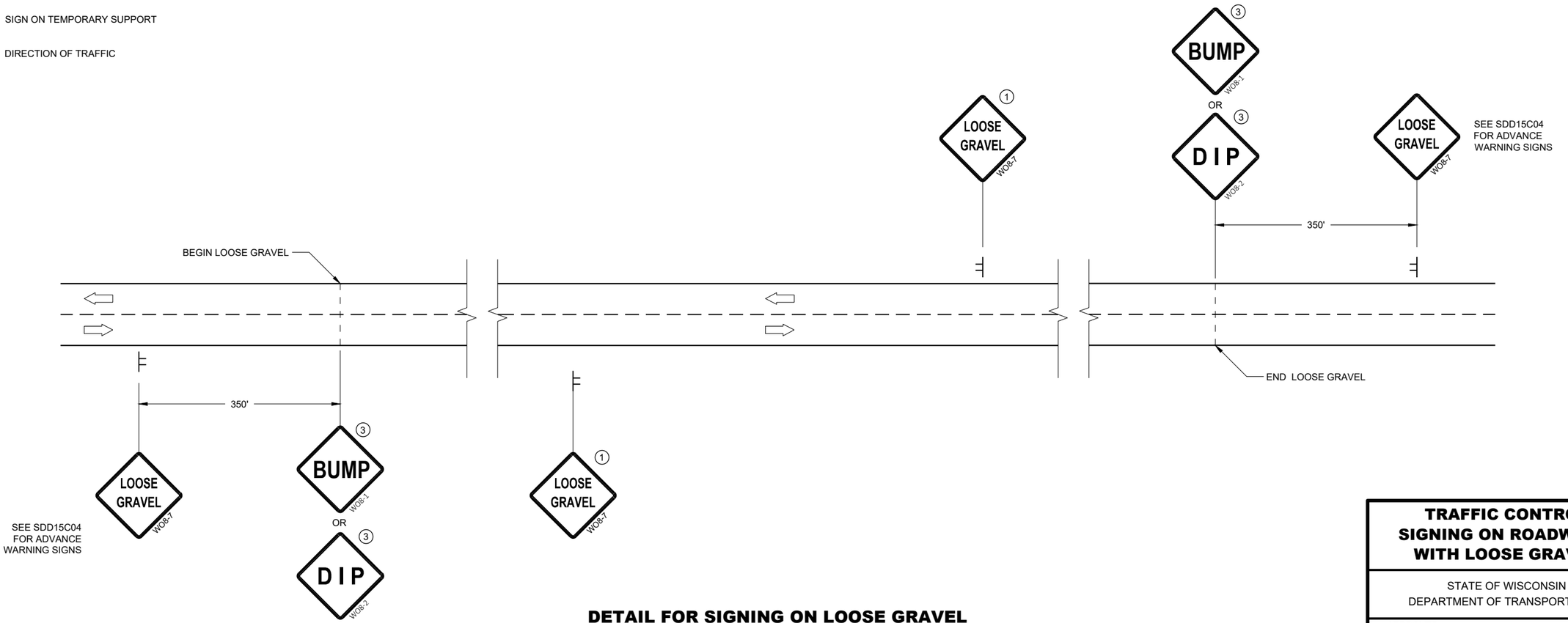
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON LOOSE GRAVEL OR CHIP SEALED SURFACES

TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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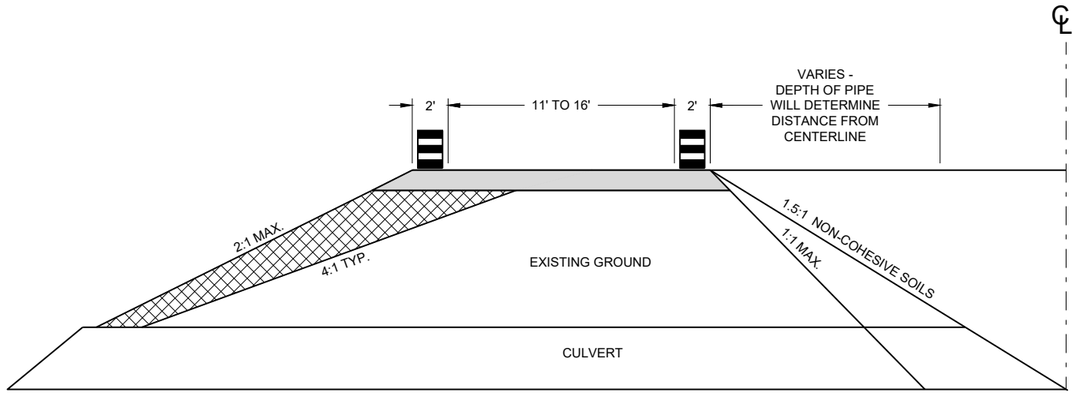
SDD 15D45 - 03



CROSS SECTION

GENERAL NOTES

USE 1:1 FOR COHESIVE CLAYS AND SILTS, LOAMS, SANDY CLAYS AND ANGULAR GRAVEL SOILS.
USE 1.5:1 FOR NON-COHESIVE SOILS.

THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.

ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

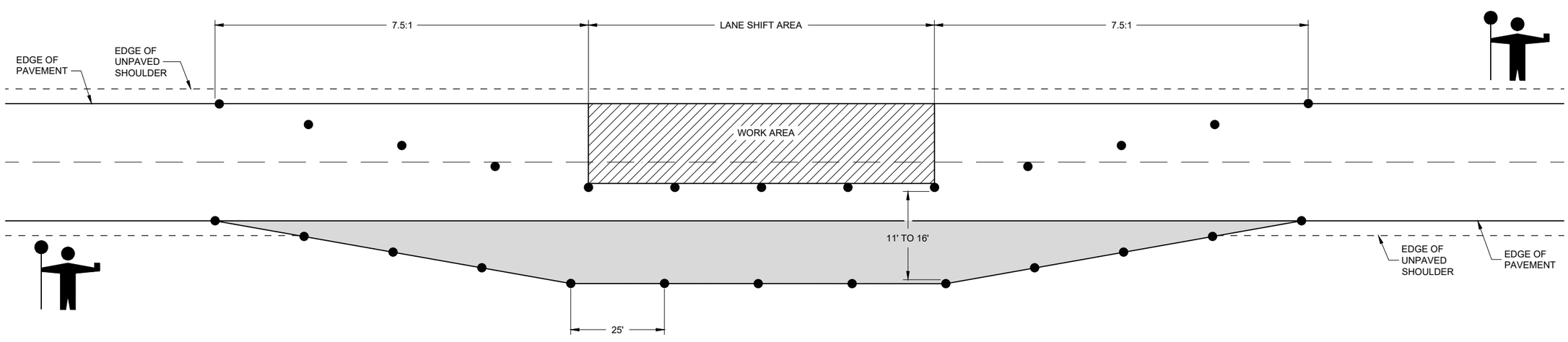
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

USE WITH SDD 15C12 "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATIONS"

USE WITH SDD 15D45 "SIGNING ON ROADWAYS WITH LOOSE GRAVEL"

LEGEND

- DRUM WITHOUT WARNING LIGHT
- 6" BASE AGGREGATE DENSE 1 ¼" -INCIDENTAL TO LANE SHIFT ITEM
- FILL - INCIDENTAL TO LANE SHIFT ITEM
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



LANE SHIFT IN FLAGGING OPERATION

TRAFFIC CONTROL, TEMPORARY LANE SHIFT DURING CULVERT WORK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15D48 - 01

6

SDD 15D48 - 01

LEGEND

V1 WORK VEHICLE

V2 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

FLASHING ARROW PANEL (CAUTION)

WORK AREA

DIRECTION OF TRAFFIC

POSTED SPEED PRIOR TO WORK STARTING (MPH)	DECISION SIGHT DISTANCE (D)
0 - 25	550'
30	550'
35	700'
40	700'
45	900'
50	900'
55	1200'

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.

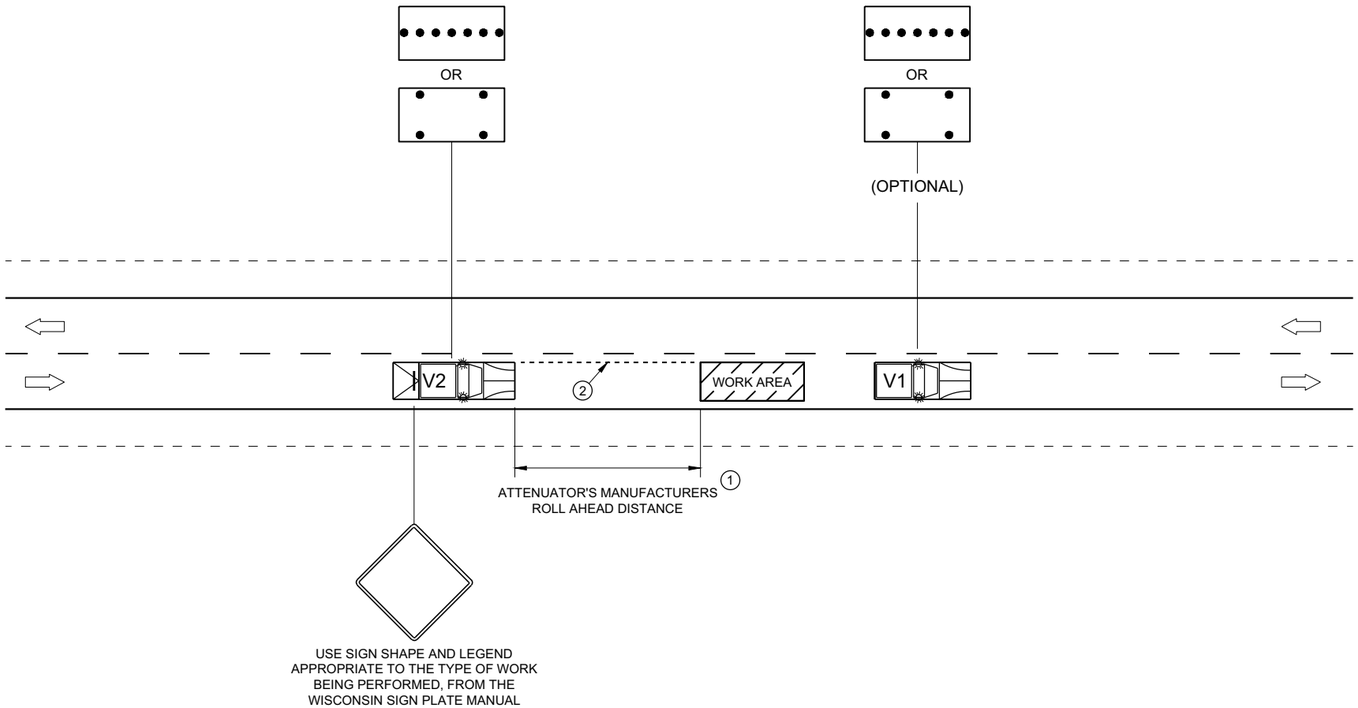
ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

(1) DISTANCE BETWEEN VEHICLES MAY INCREASE FROM THE ATTENUATOR'S ROLL AHEAD BASED ON TERRAIN, SIGHT DISTANCE, 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 OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

(2) ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.



6

SDD 15D51 - 01

TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

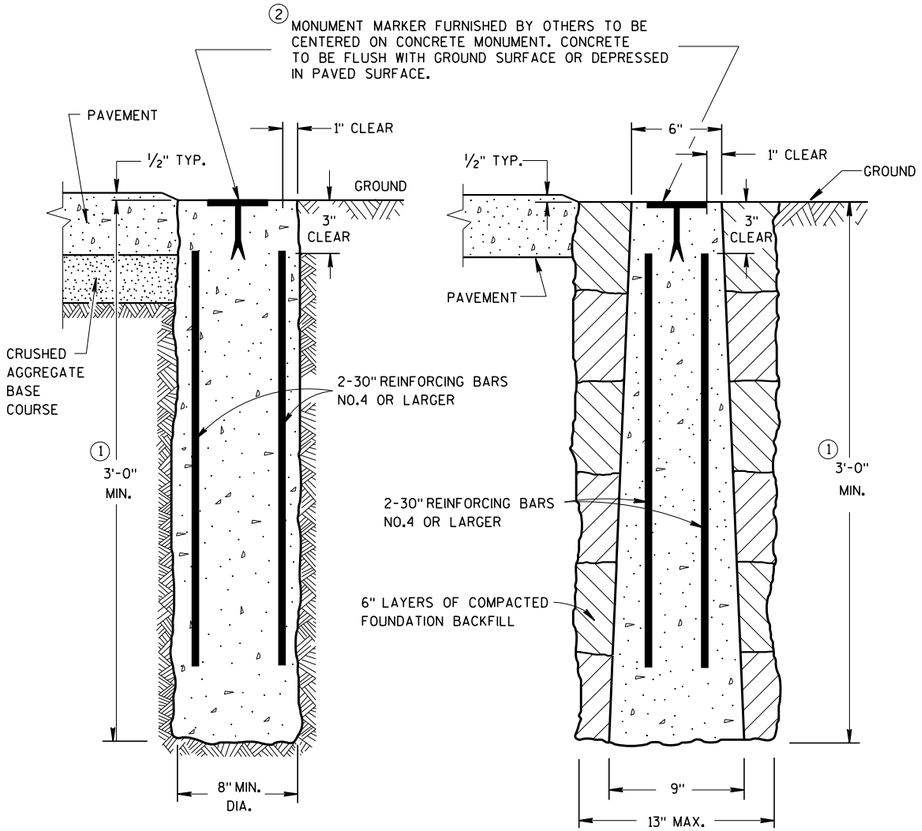
February 2021
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

FHWA

6

SDD 15D51 - 01

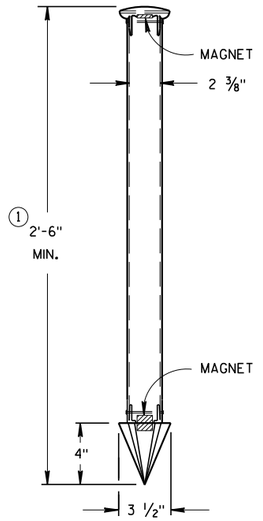


CAST-IN-PLACE

PRECAST

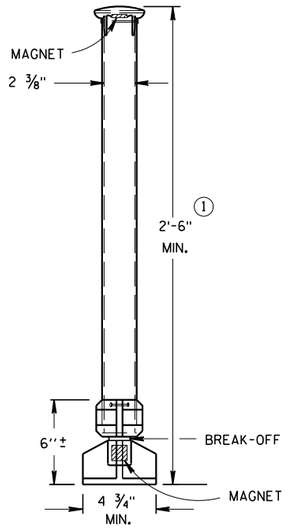
CONCRETE MONUMENTS

TYPE A



TYPE C

DRIVE-IN MONUMENT



TYPE D
NON-DRIVEN
BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

GENERAL NOTES

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

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

PERMANENT MAGNETS SHALL BE INSERTED NEAR THE TOP AND BOTTOM OF ALL ALUMINUM MONUMENTS SO THE MONUMENT CAN EASILY BE DETECTED BY A METAL DETECTOR.

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

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

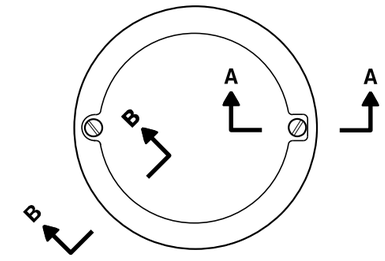
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

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

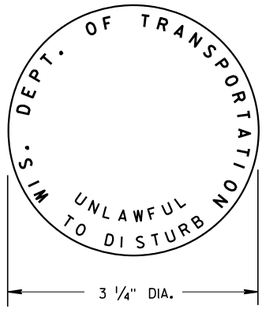
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER

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

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

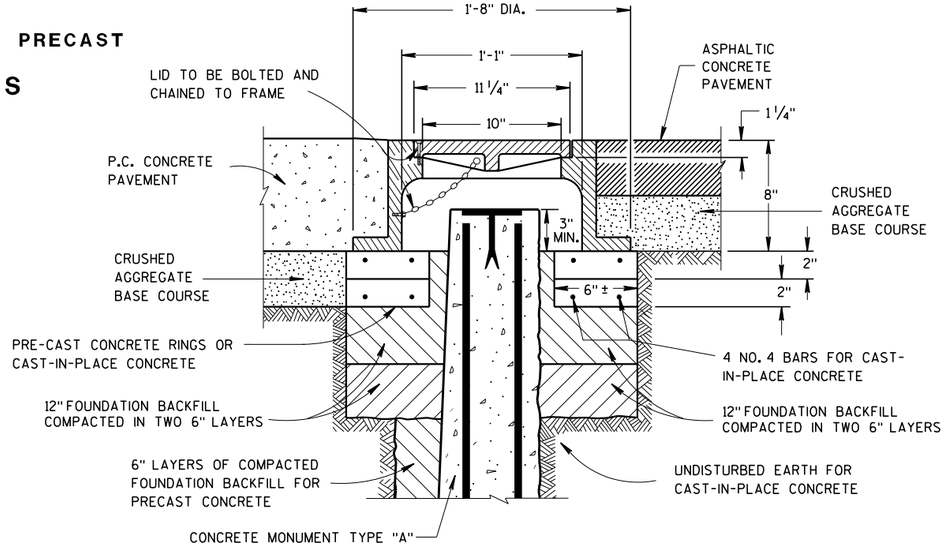


TOP VIEW



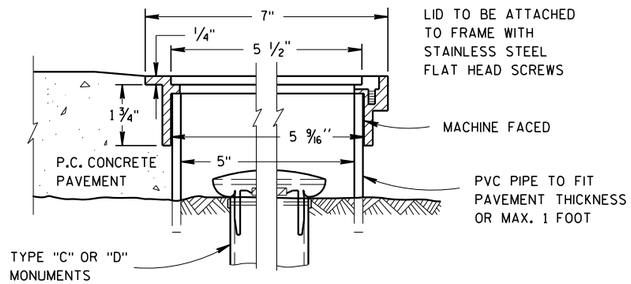
② WIS DOT MONUMENT MARKER LOGO

FOR TYPES "A", "C", & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT 95 LBS)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MONUMENTS AND COVERS

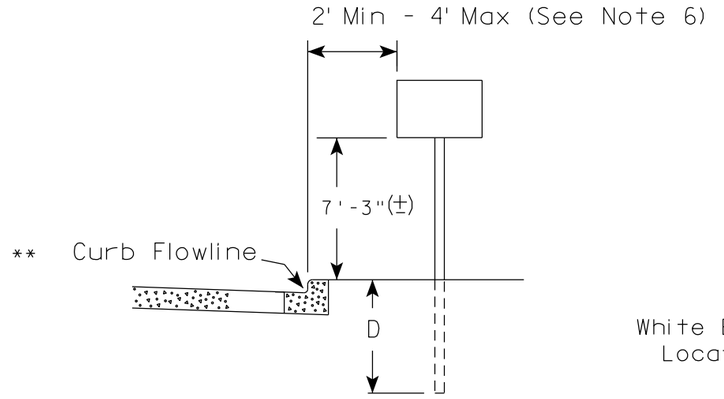
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Raymond A. [illegible] — CHIEF SURVEYING AND M[illegible]GINEER
FHWA

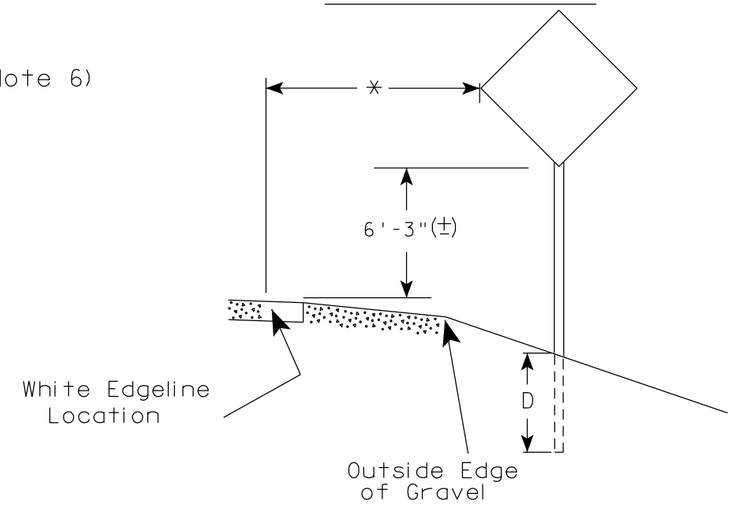
6

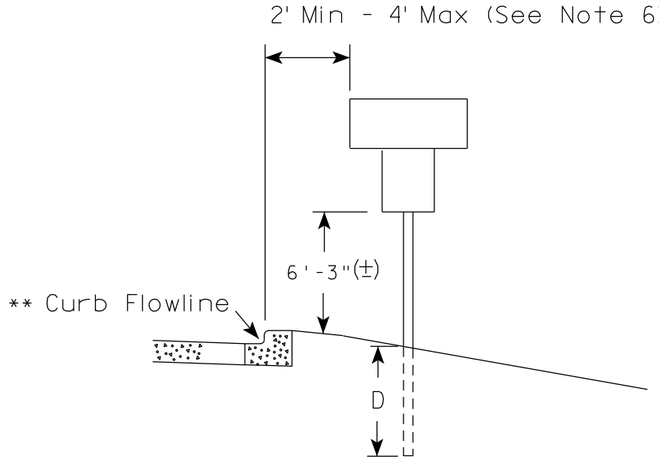
S.D.D. 16 A 1-7

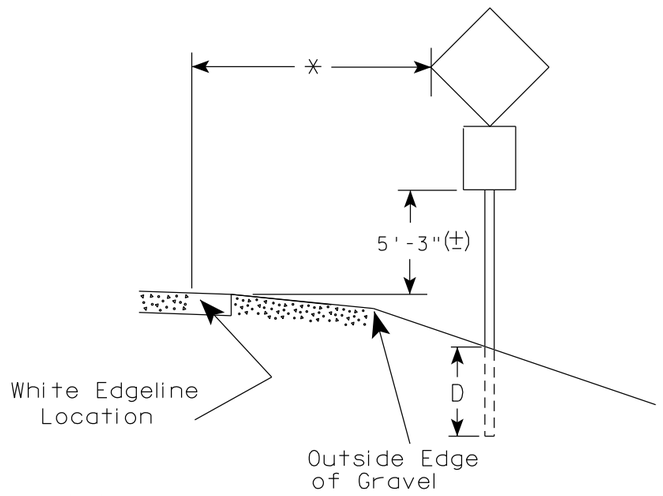
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
   The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.

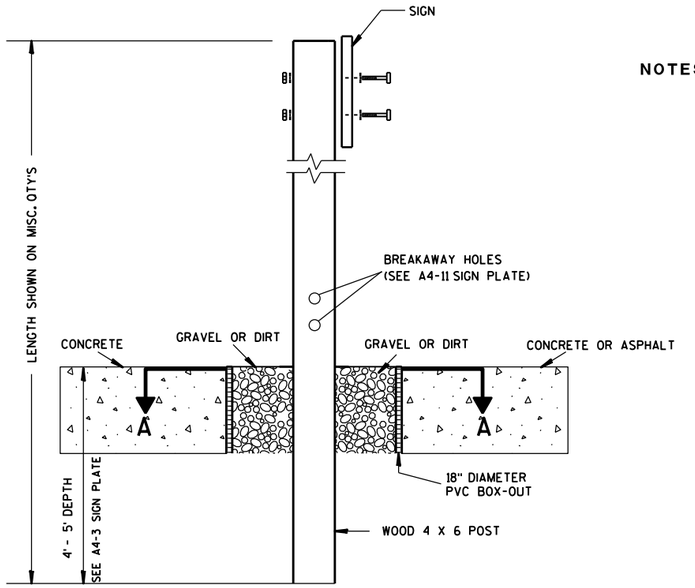
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

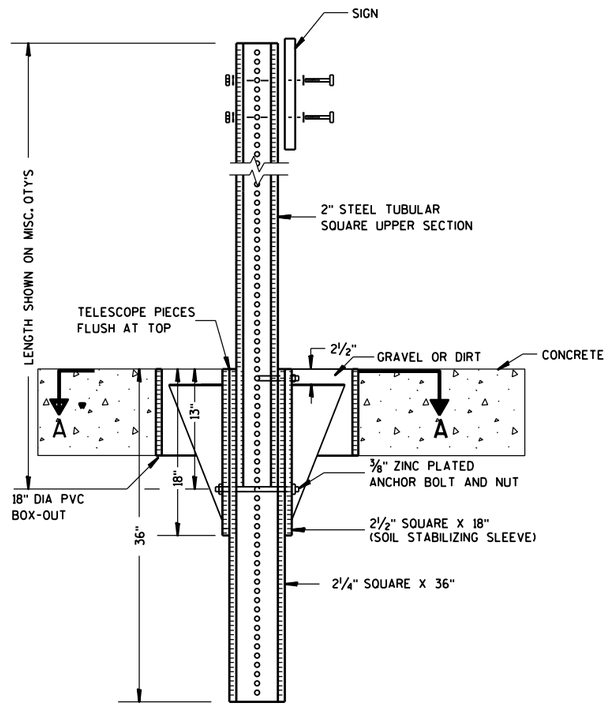
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 72	E



ELEVATION VIEW

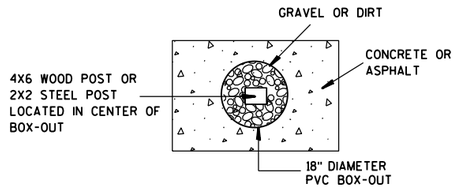
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

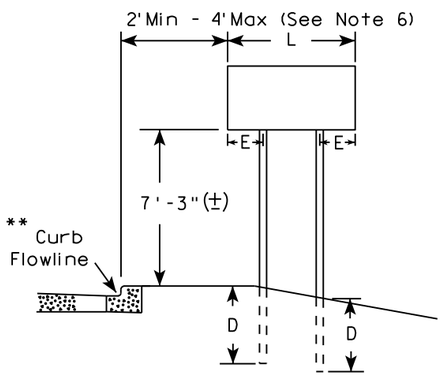
APPROVED Matthew R Rauch
for State Traffic Engineer

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

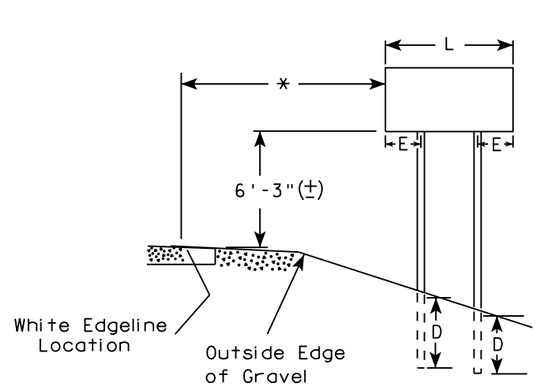
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

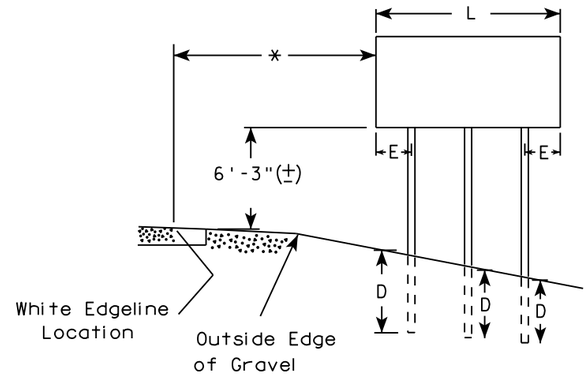
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

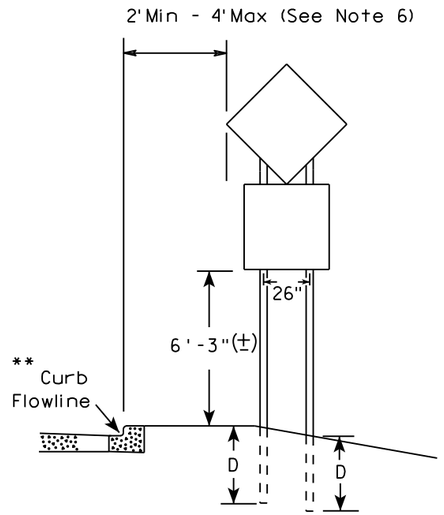
URBAN AREA



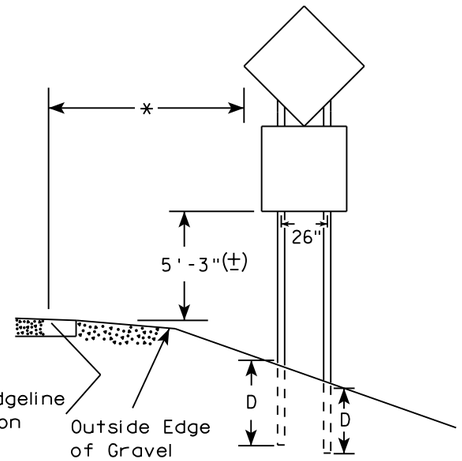
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

***

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

GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

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

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

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

POST EMBEDMENT DEPTH

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

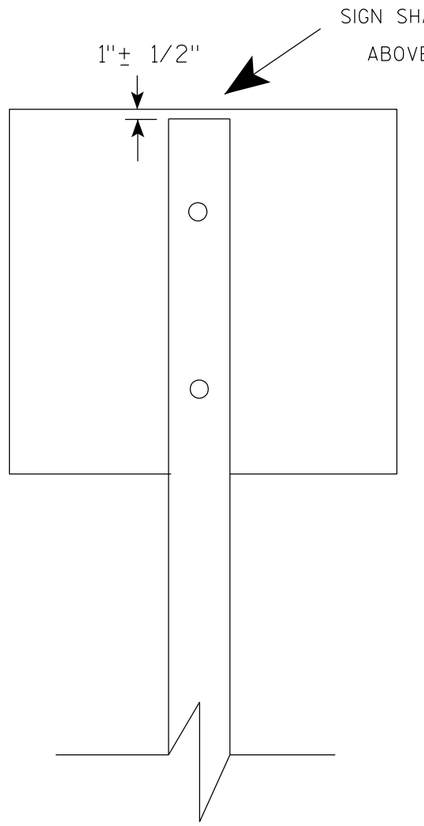
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

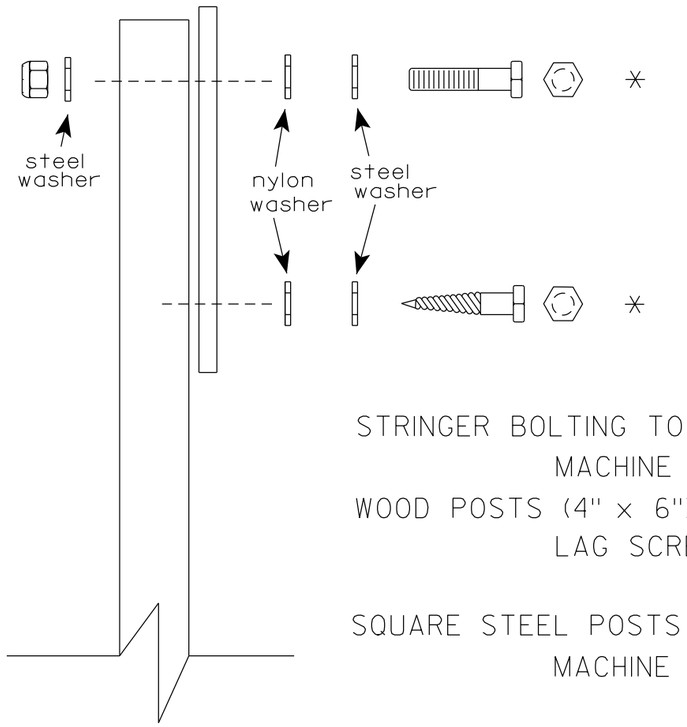
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

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





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

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

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

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

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

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

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

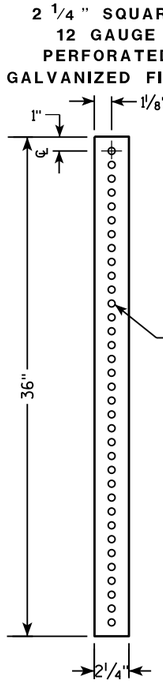
SHEET NO: 75 E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 01-APRIL-2020 PLOT BY : dotc4c

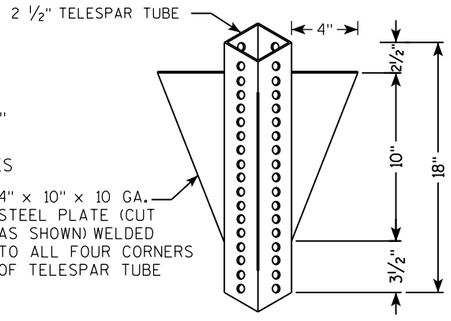
WISDOT/CADDS SHEET 42

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

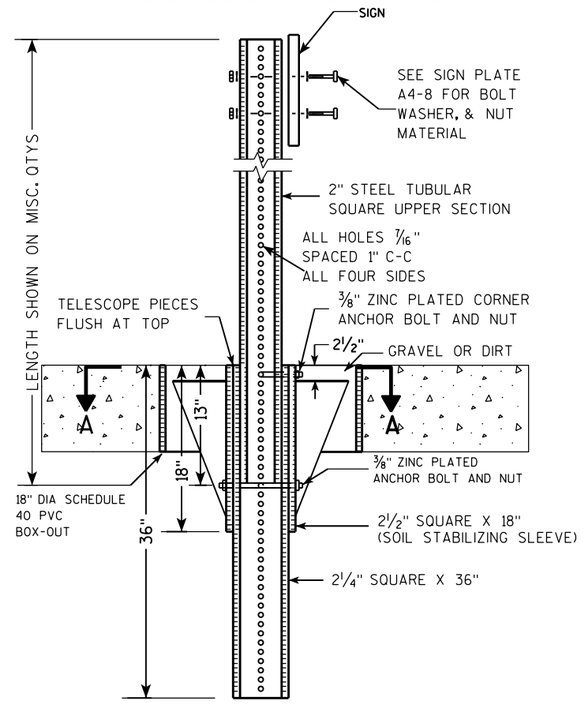
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



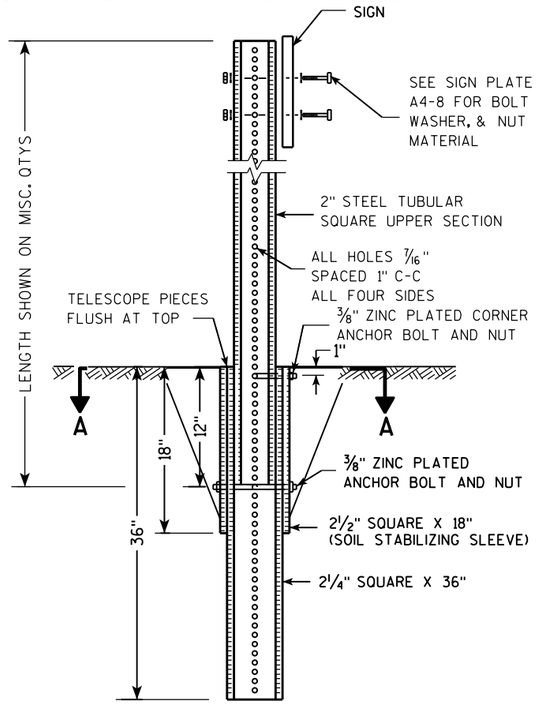
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

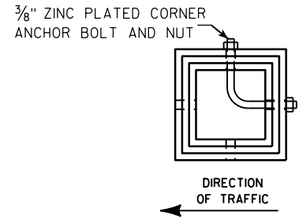


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

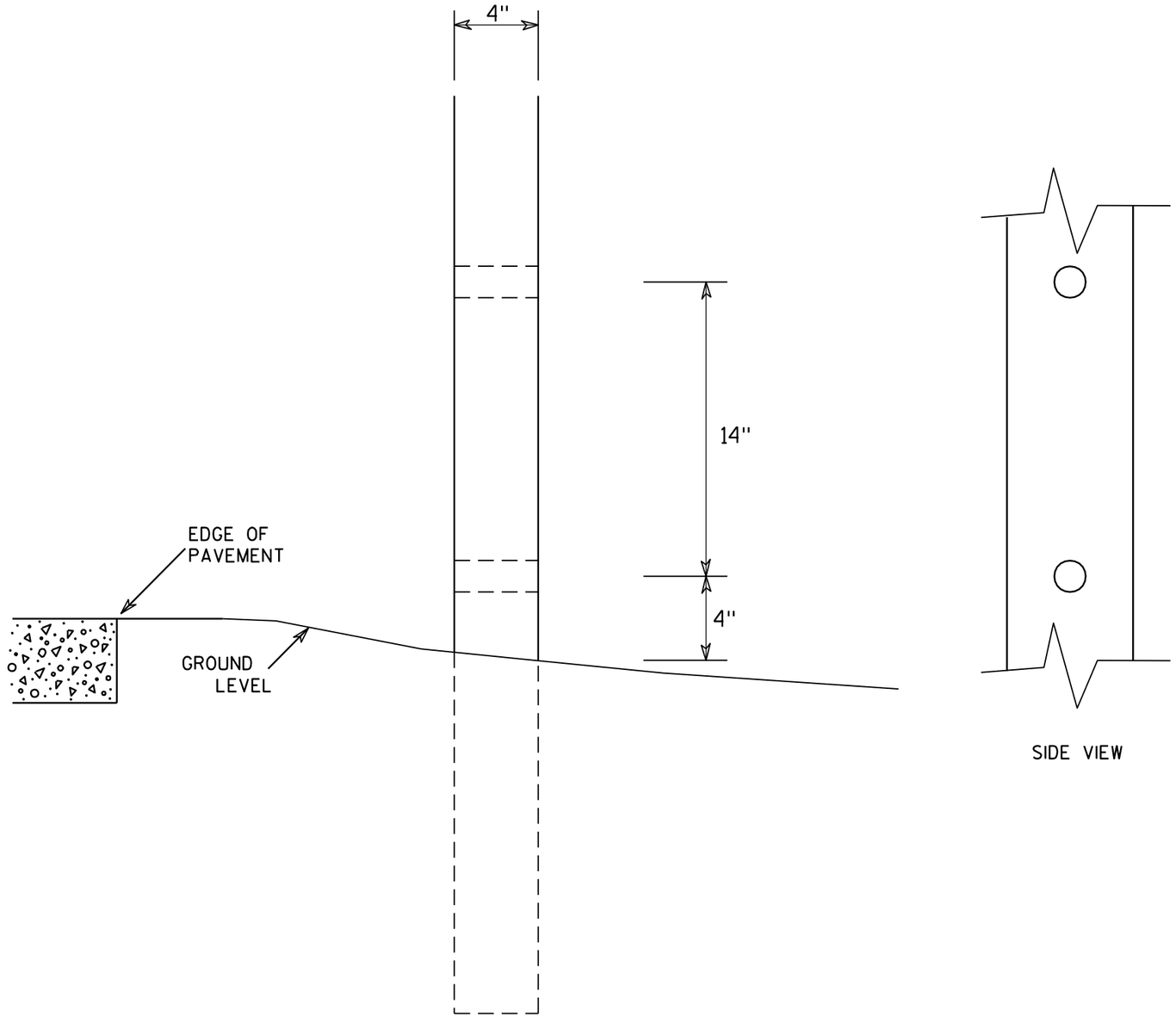
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 76 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

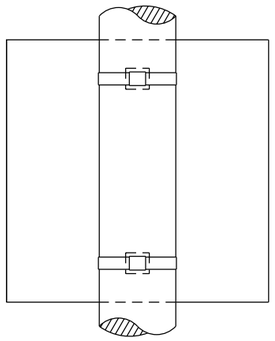
APPROVED Chester J Spang for State Traffic Engineer

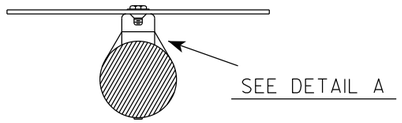
DATE 3/27/97 PLATE NO. A4-11.2

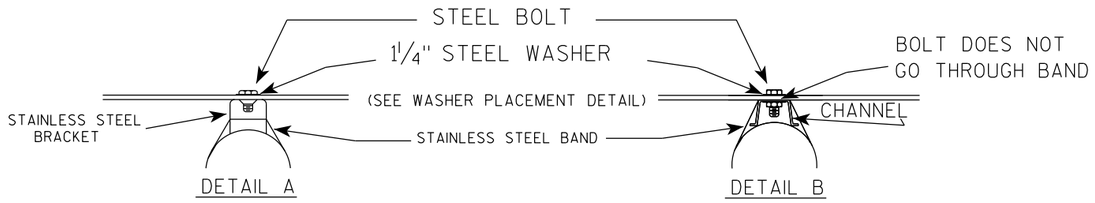
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 77	E

BANDING

SINGLE SIGN



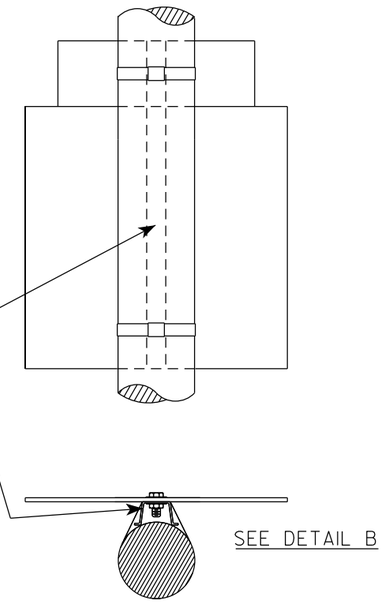




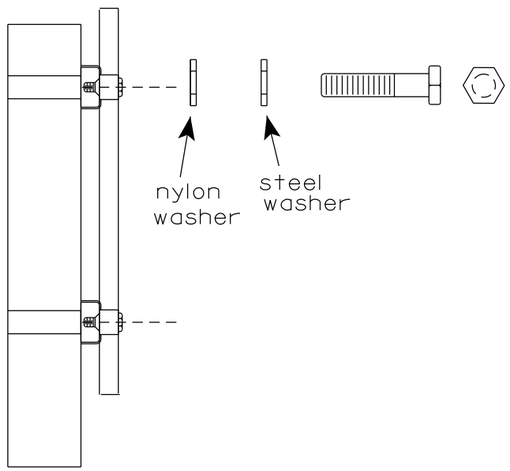
GENERAL NOTES

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

"J" ASSEMBLY



WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X ⅜" I.D. X 1/16" STEEL
1-1/4" O.D. X ⅜" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

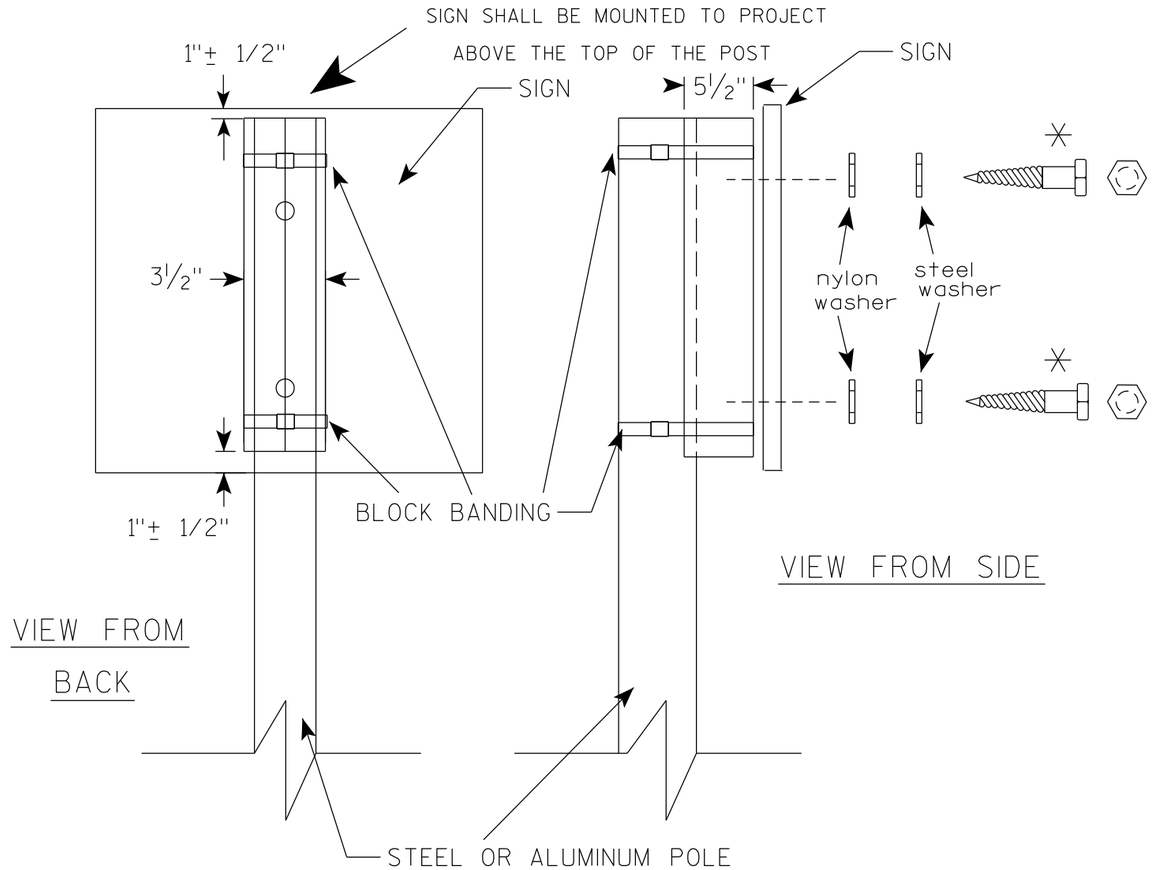
DATE 6/10/19 PLATE NO. A5-9.4

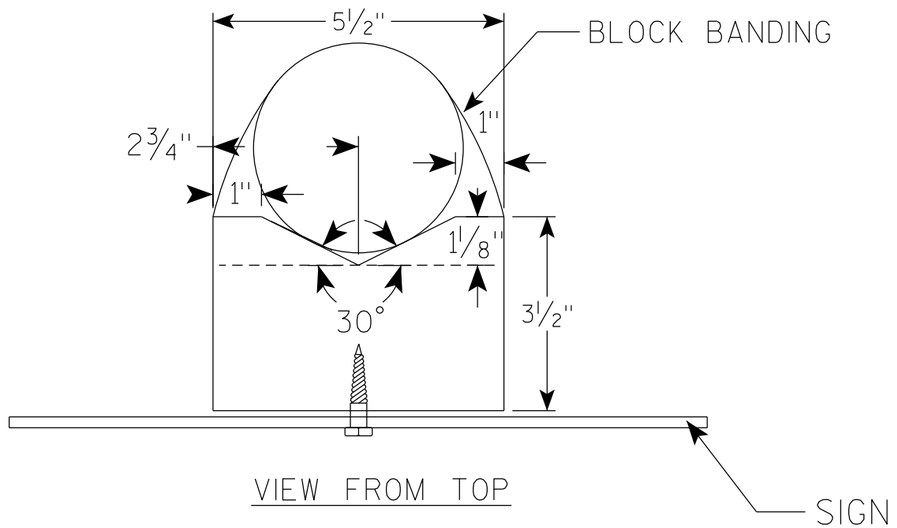
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 78	E

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

7

7





GENERAL NOTES

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

✳ LAG BOLTS SHALL BE ⅜" X 2½"

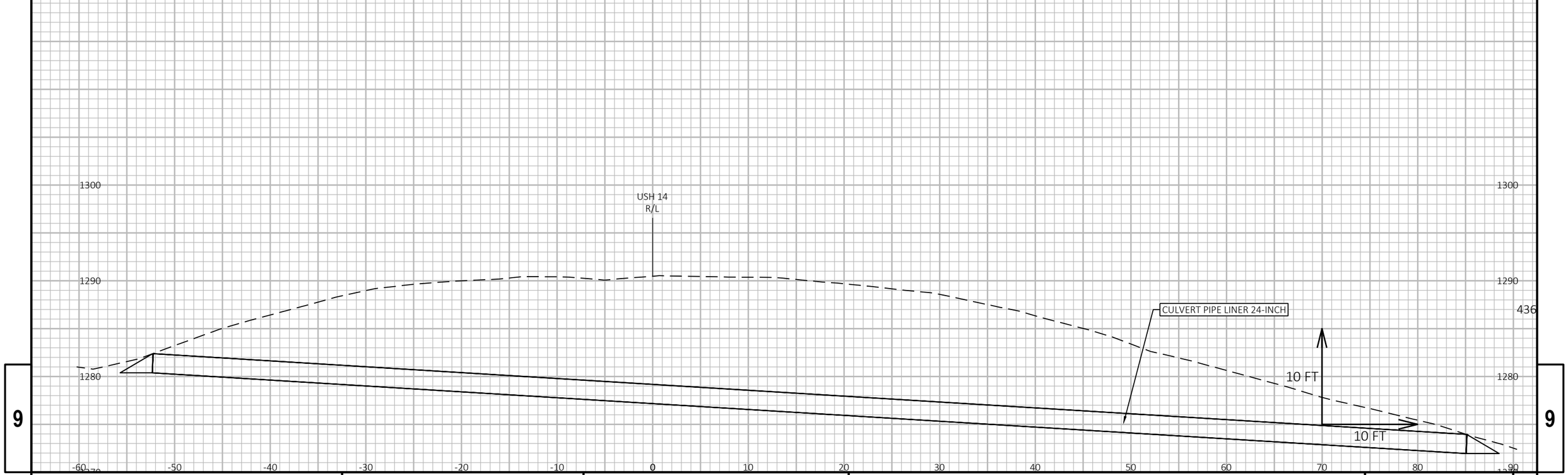
BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:				SHEET NO: 79	E



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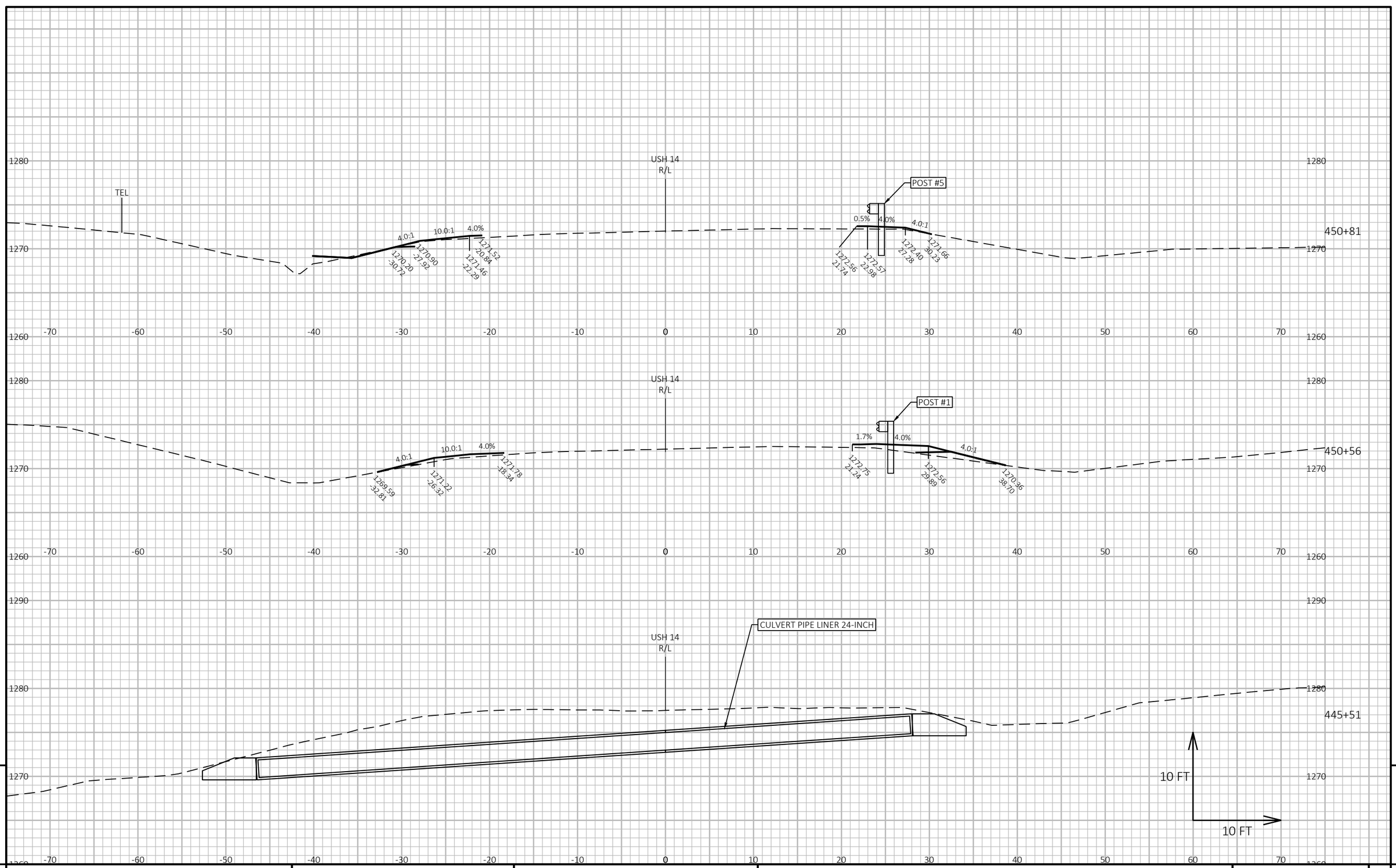
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 80	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090201-xs

PLOT DATE : 5/28/2021 12:27 PM PLOT BY : MALUEG, RYAN P PLOT NAME :

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

WISDOT/CADDS SHEET 49



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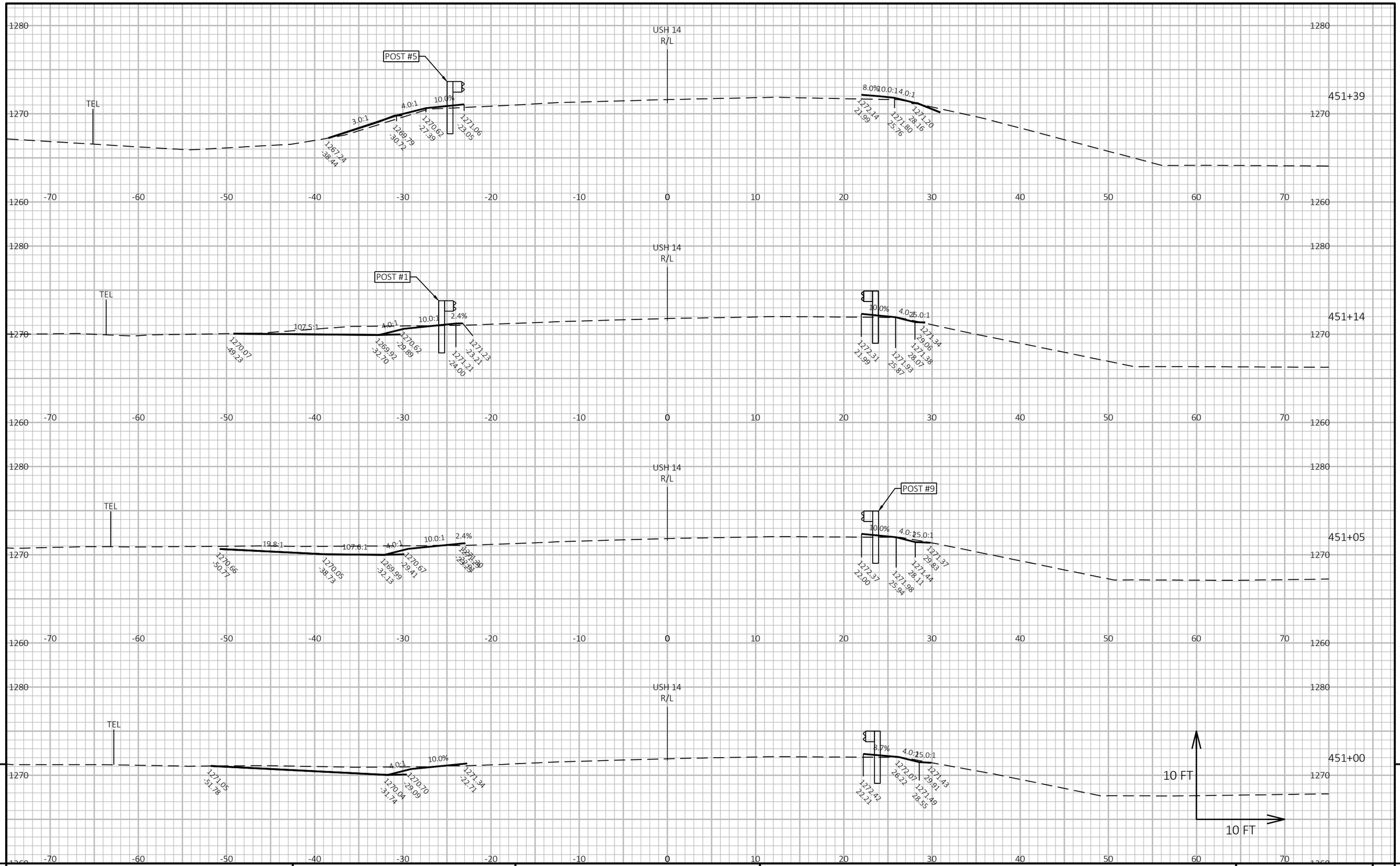
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 81	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090202-xs

PLOT DATE : 5/28/2021 12:27 PM PLOT BY : MALUEG, RYAN P PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 82	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090203-xs

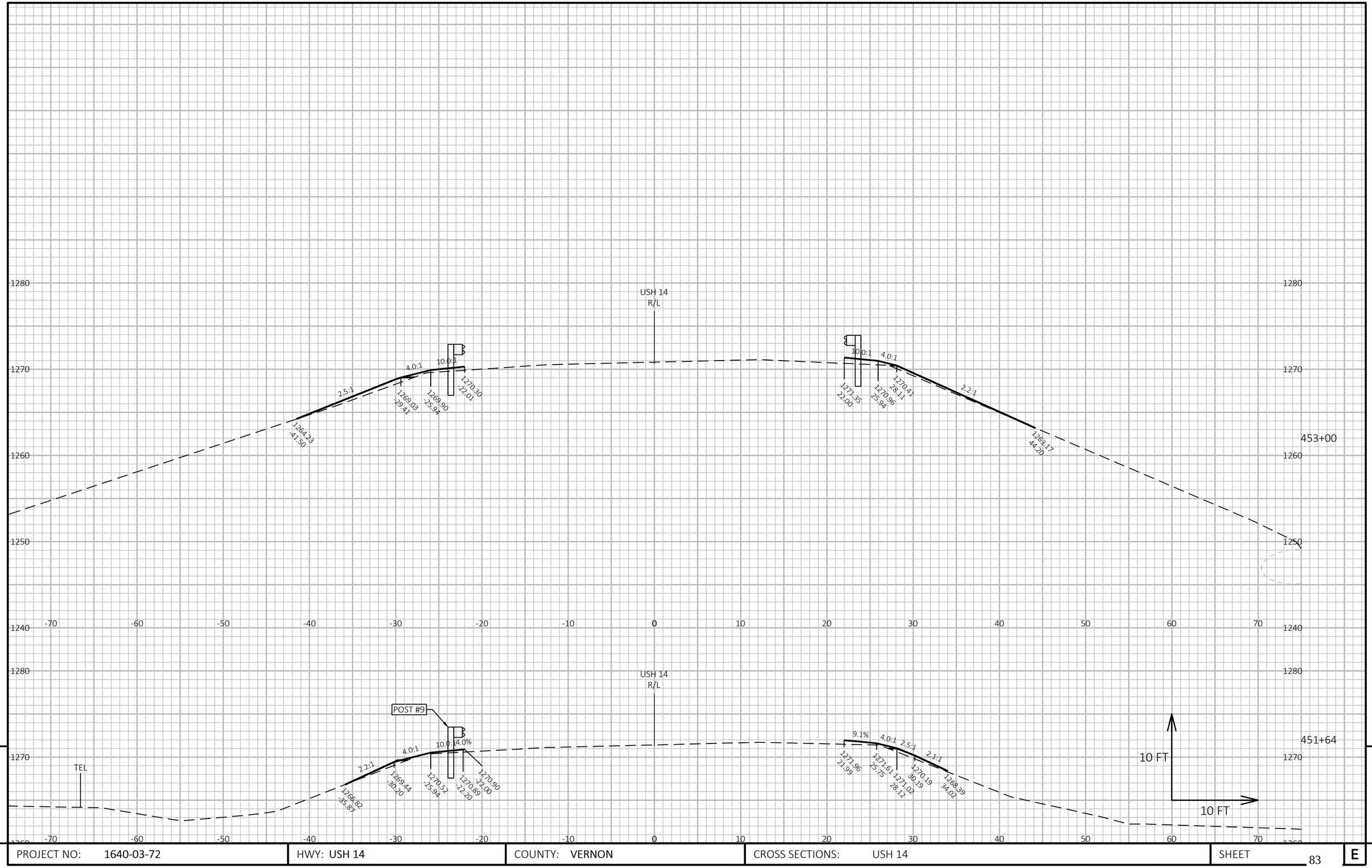
PLOT DATE : 5/28/2021 12:27 PM

PLOT BY : MALUEG, RYAN P

PLOT NAME :

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

WISDOT/CADDS SHEET 49

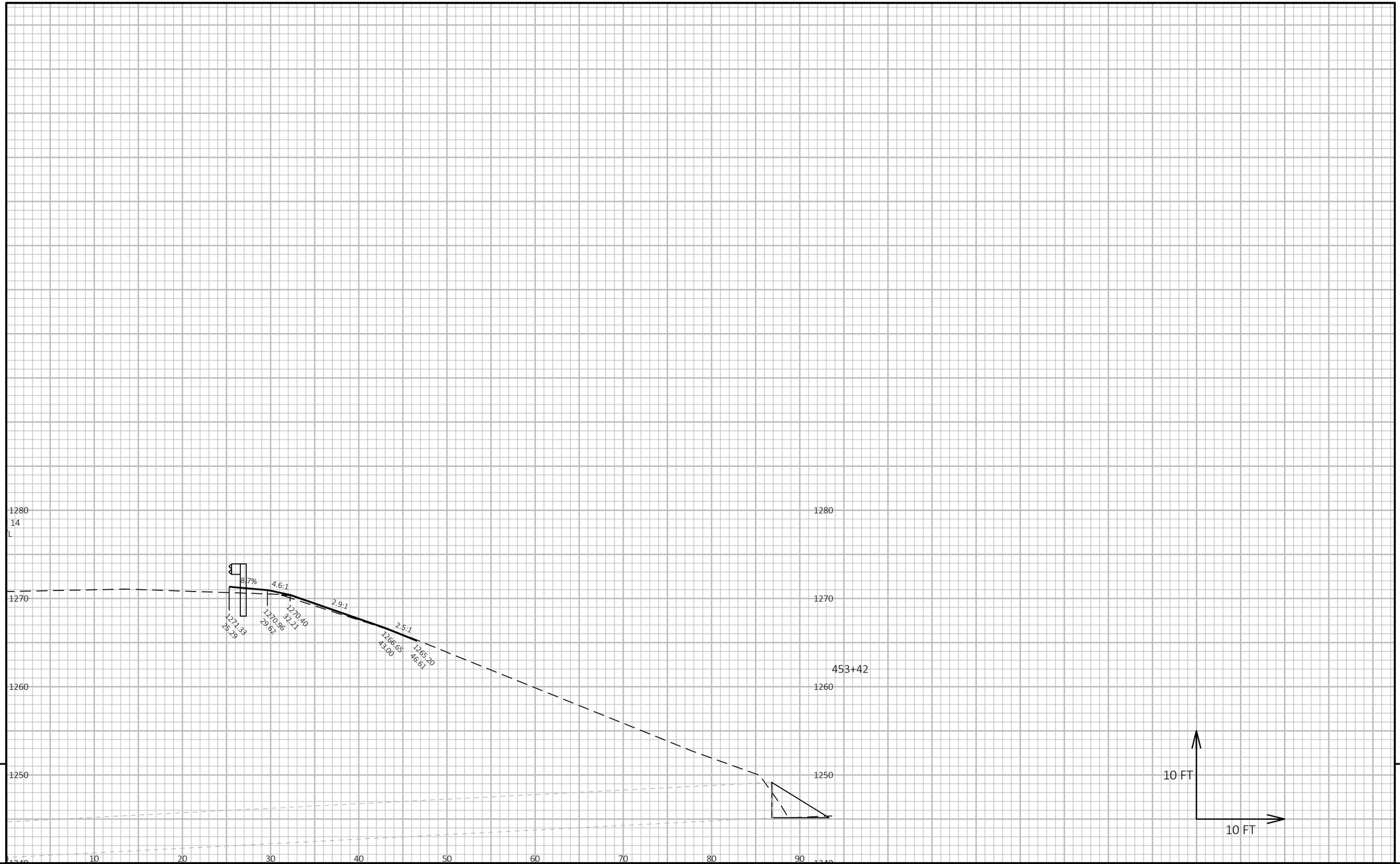


PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 83	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090204-xs

PLOT DATE : 5/28/2021 12:27 PM PLOT BY : MALUEG, RYAN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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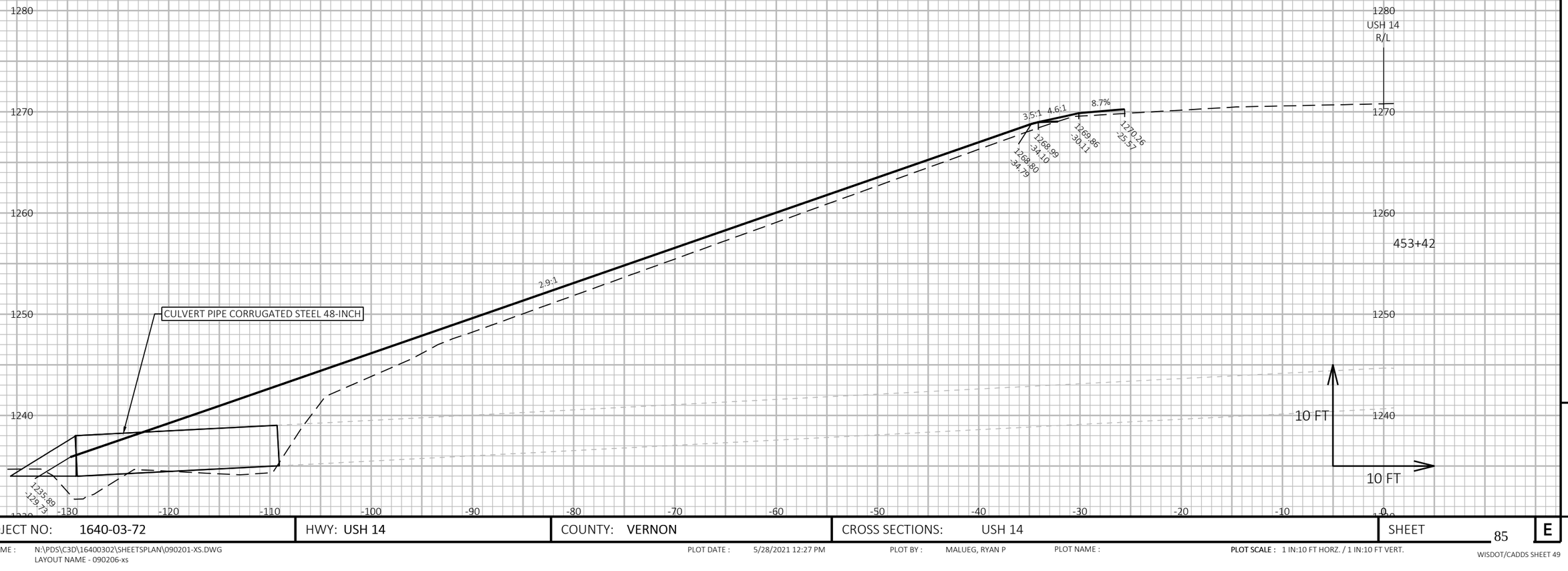
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 84	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090205-xs

PLOT DATE : 5/28/2021 12:27 PM PLOT BY : MALUEG, RYAN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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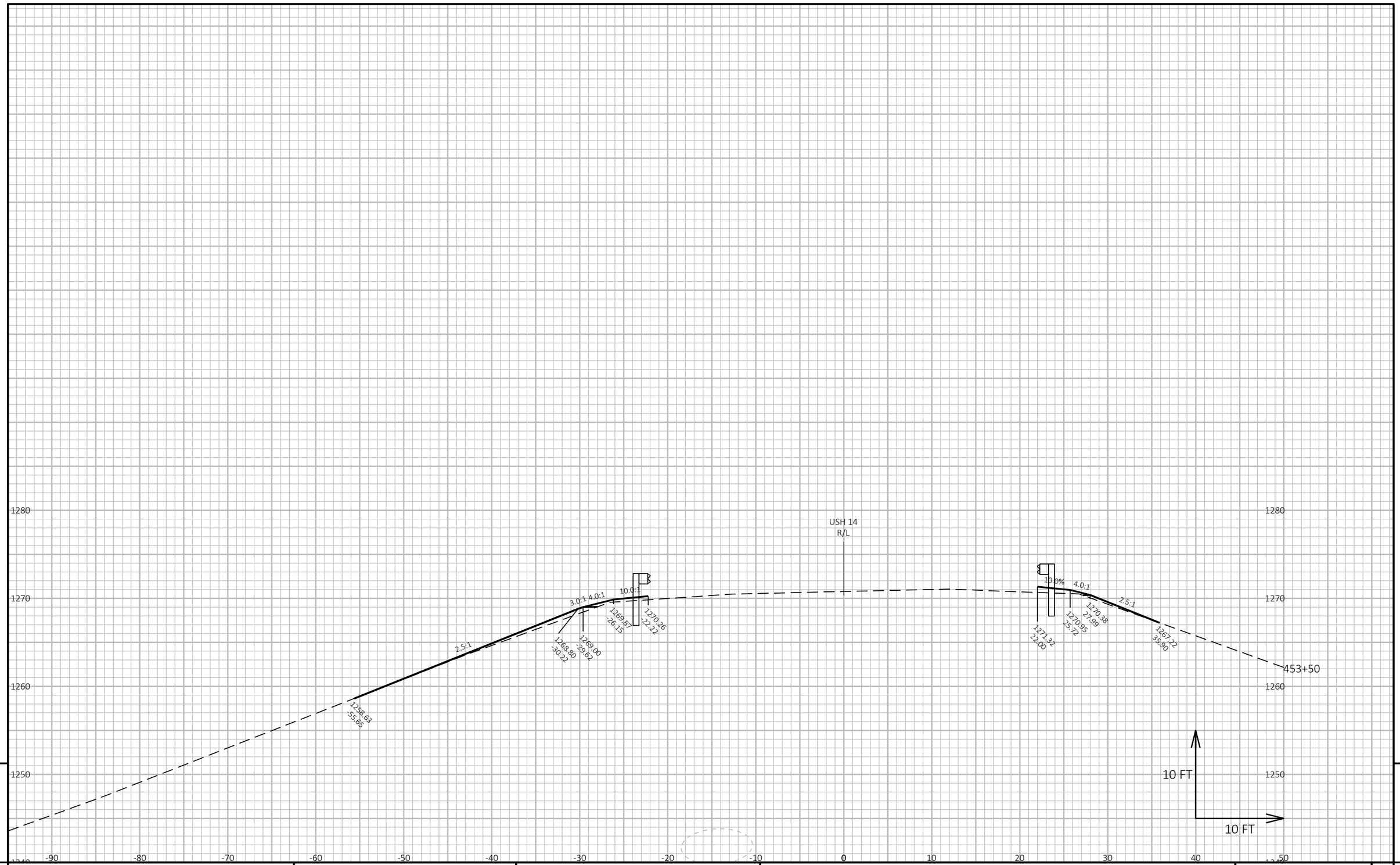
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 85	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090206-xs

PLOT DATE : 5/28/2021 12:27 PM PLOT BY : MALUEG, RYAN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 86	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090207-xs

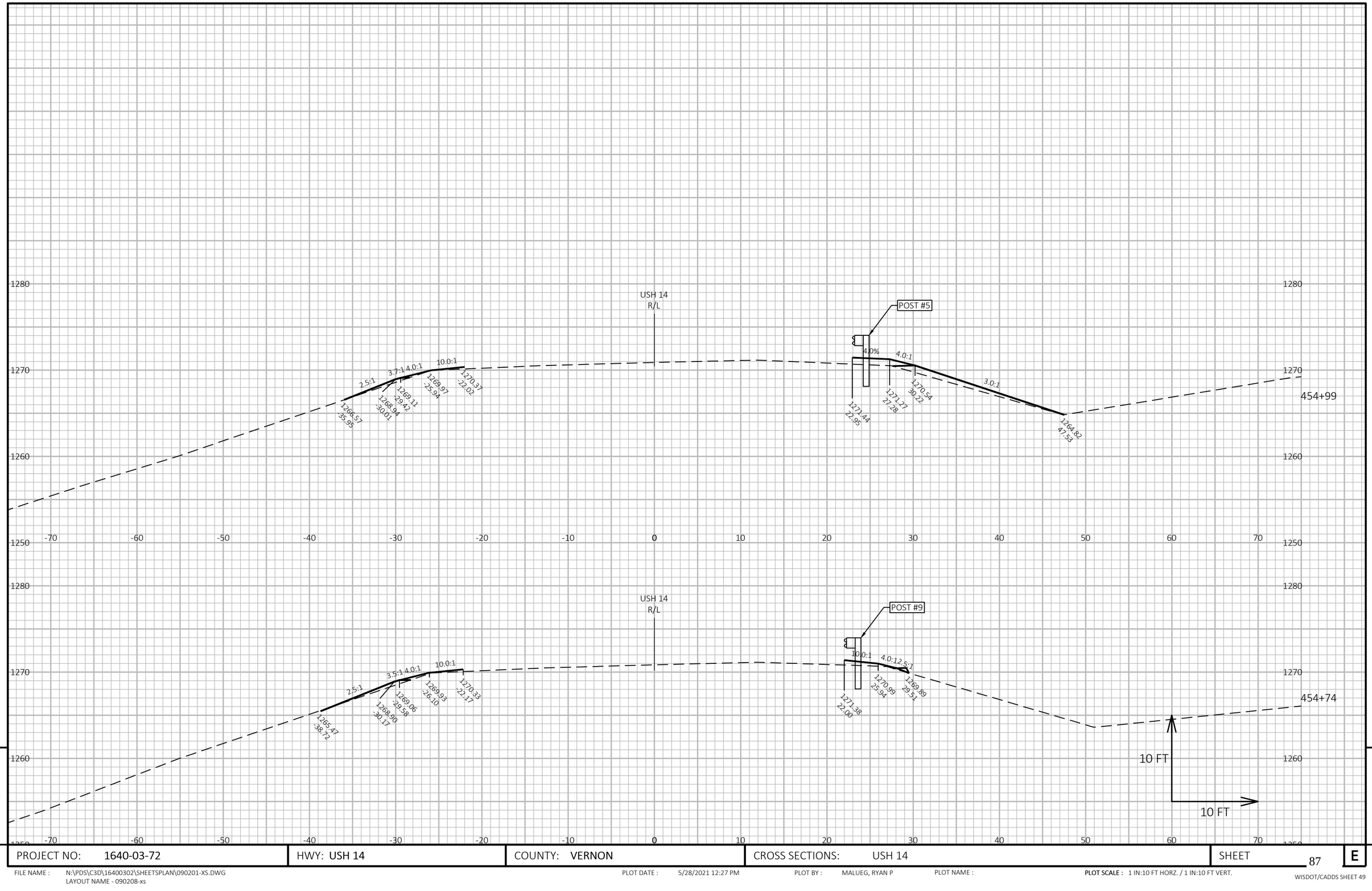
PLOT DATE : 5/28/2021 12:27 PM

PLOT BY : MALUEG, RYAN P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



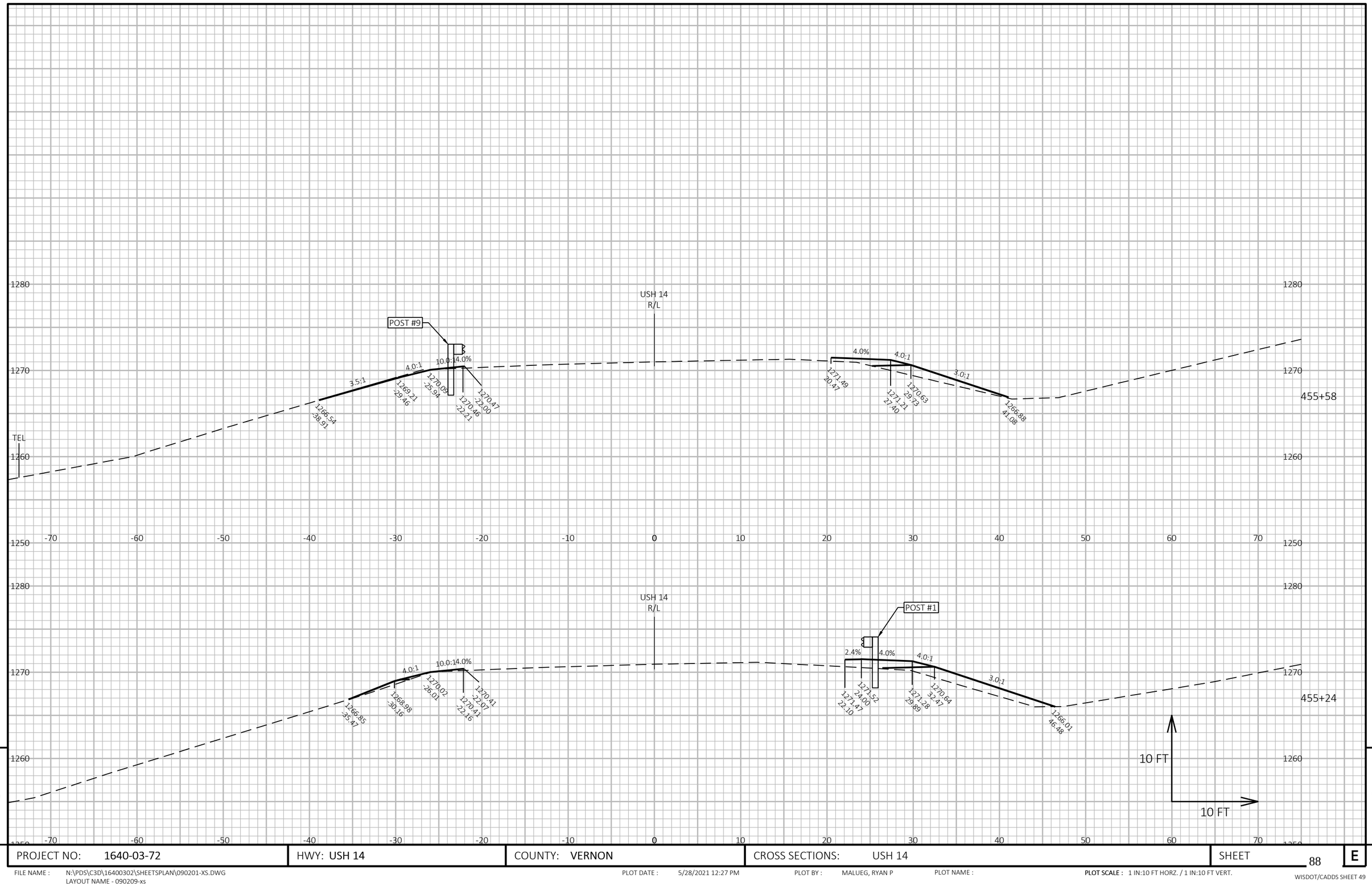
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 87	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090208-xs

PLOT DATE : 5/28/2021 12:27 PM PLOT BY : MALUEG, RYAN P PLOT NAME :

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

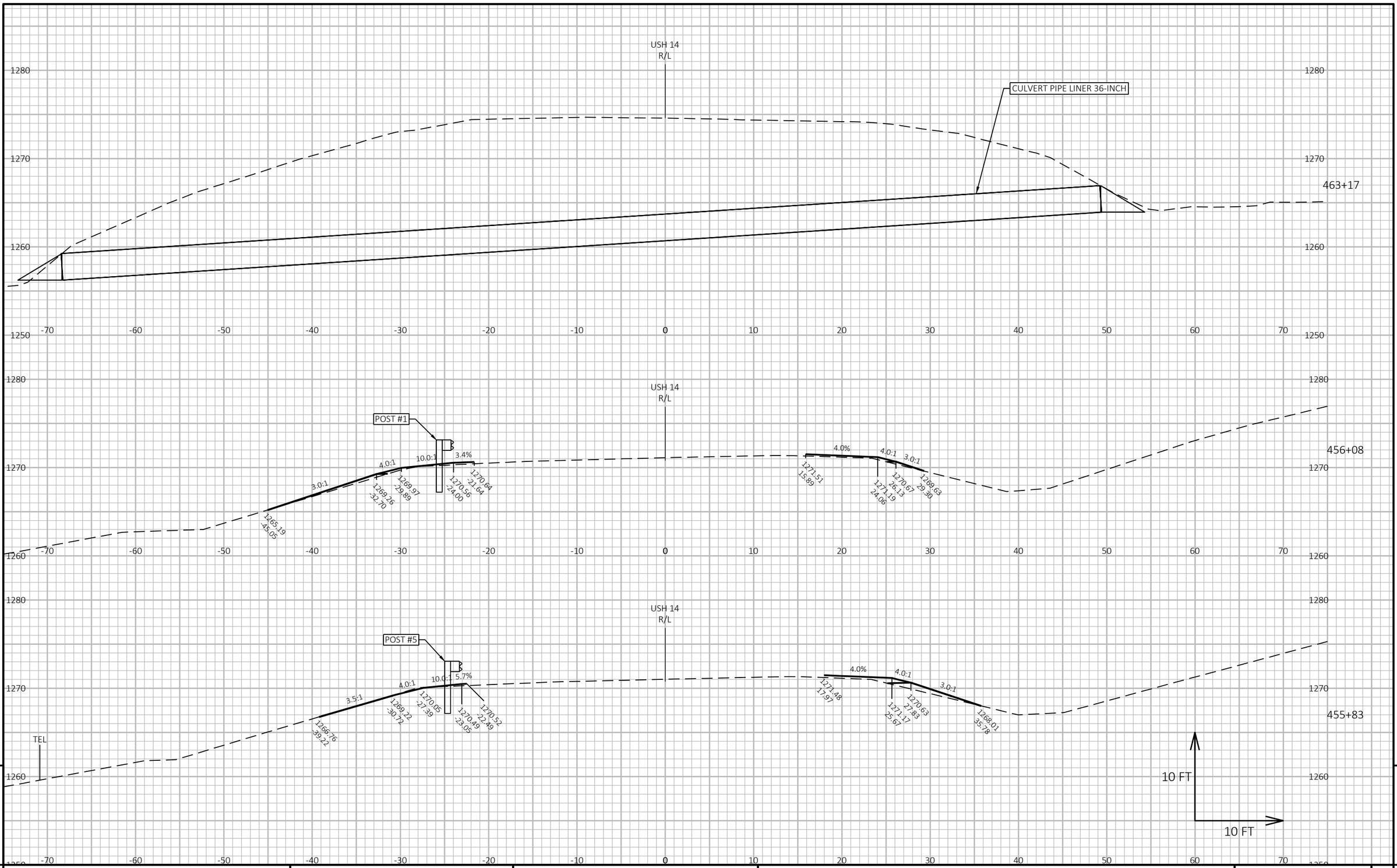
WISDOT/CADDS SHEET 49



PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 88	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090209-xs

PLOT DATE : 5/28/2021 12:27 PM PLOT BY : MALUEG, RYAN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 89	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090210-xs

PLOT DATE : 5/28/2021 12:27 PM

PLOT BY : MALUEG, RYAN P

PLOT NAME :

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

WISDOT/CADDS SHEET 49

1290

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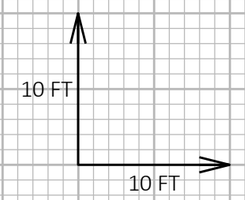

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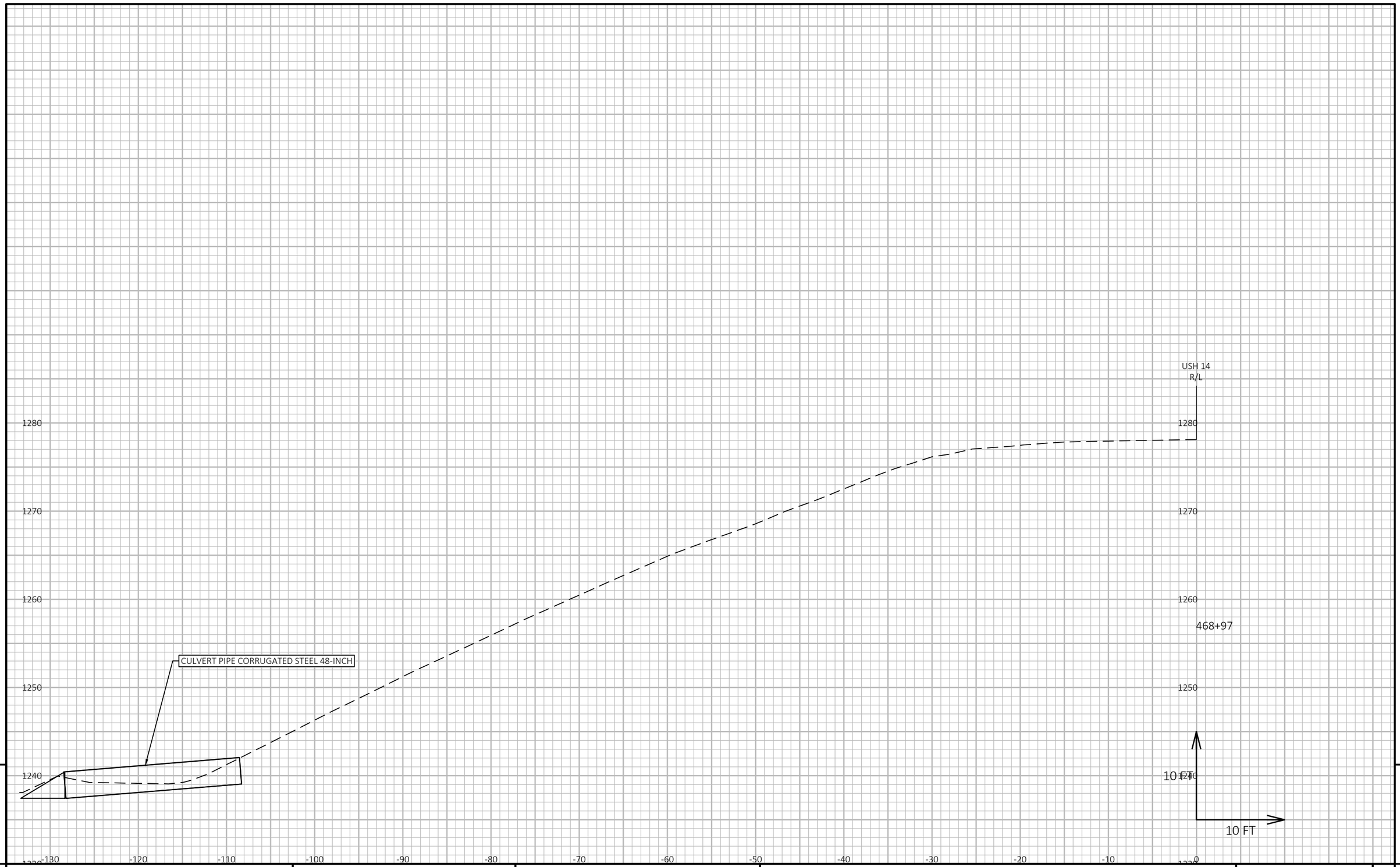
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 90	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090211-xs

PLOT DATE : 5/28/2021 12:28 PM PLOT BY : MALUEG, RYAN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 91	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090212-xs

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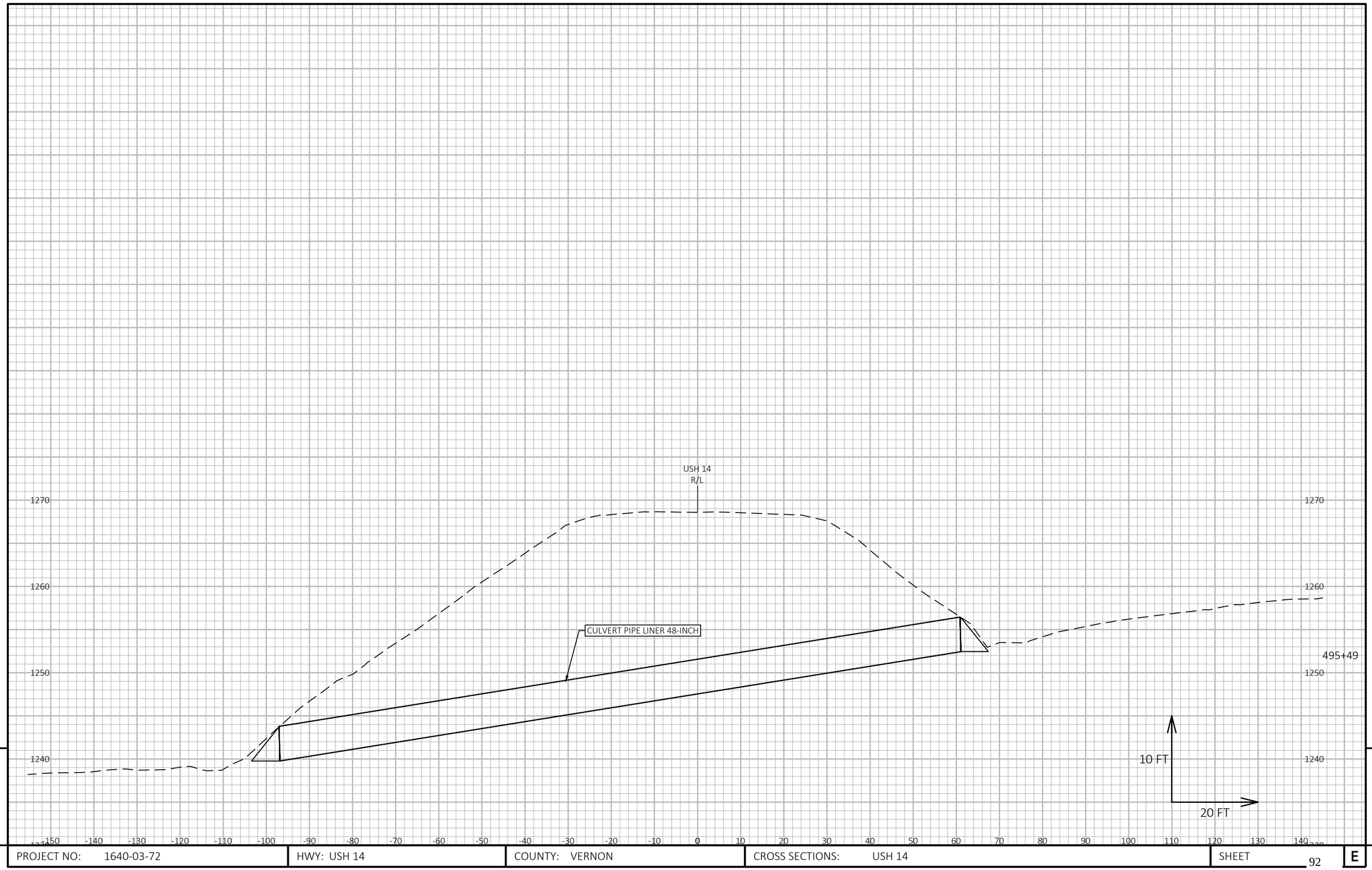

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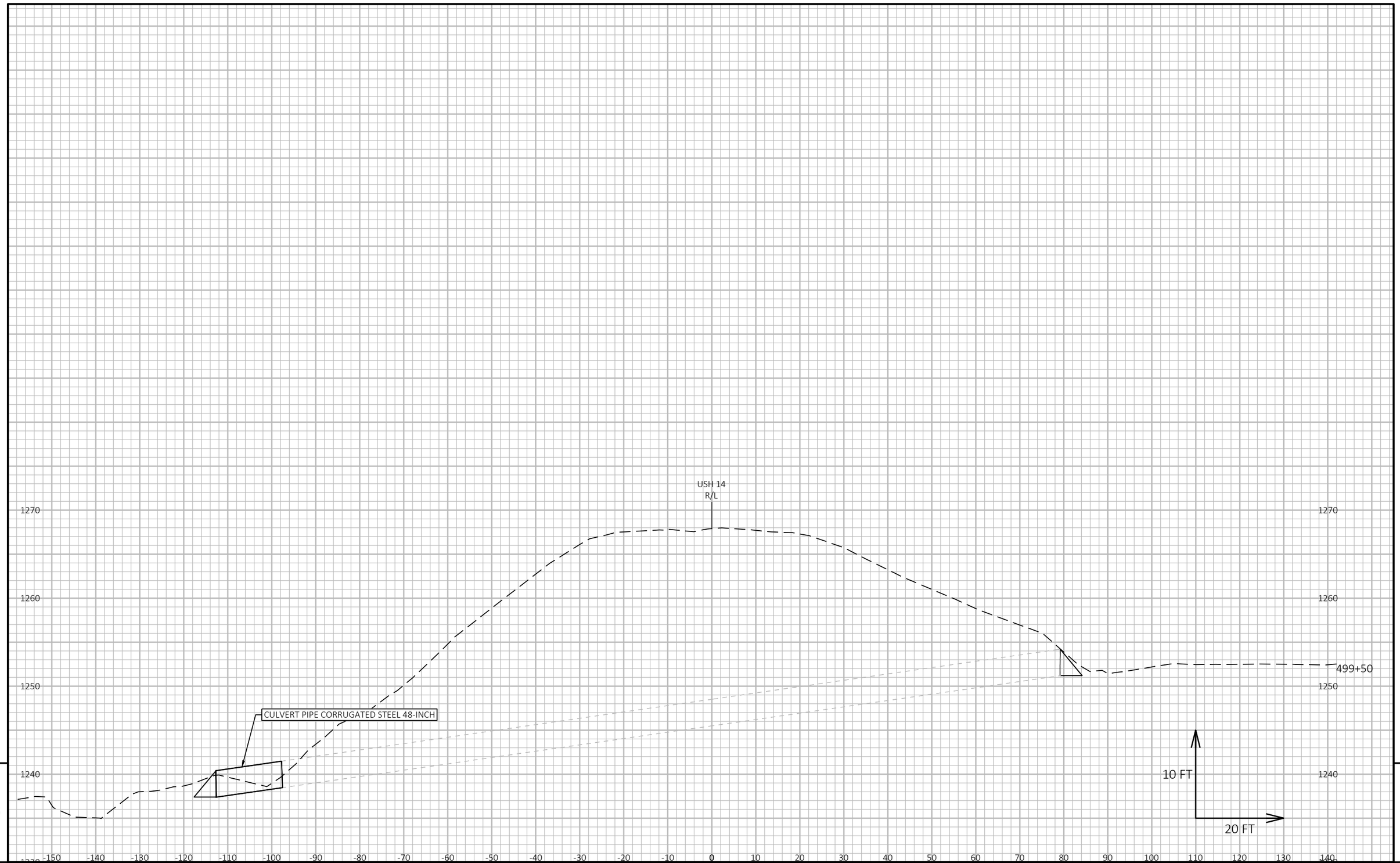
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 92	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090214-xs

PLOT DATE : 5/28/2021 12:33 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 93	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090215-xs

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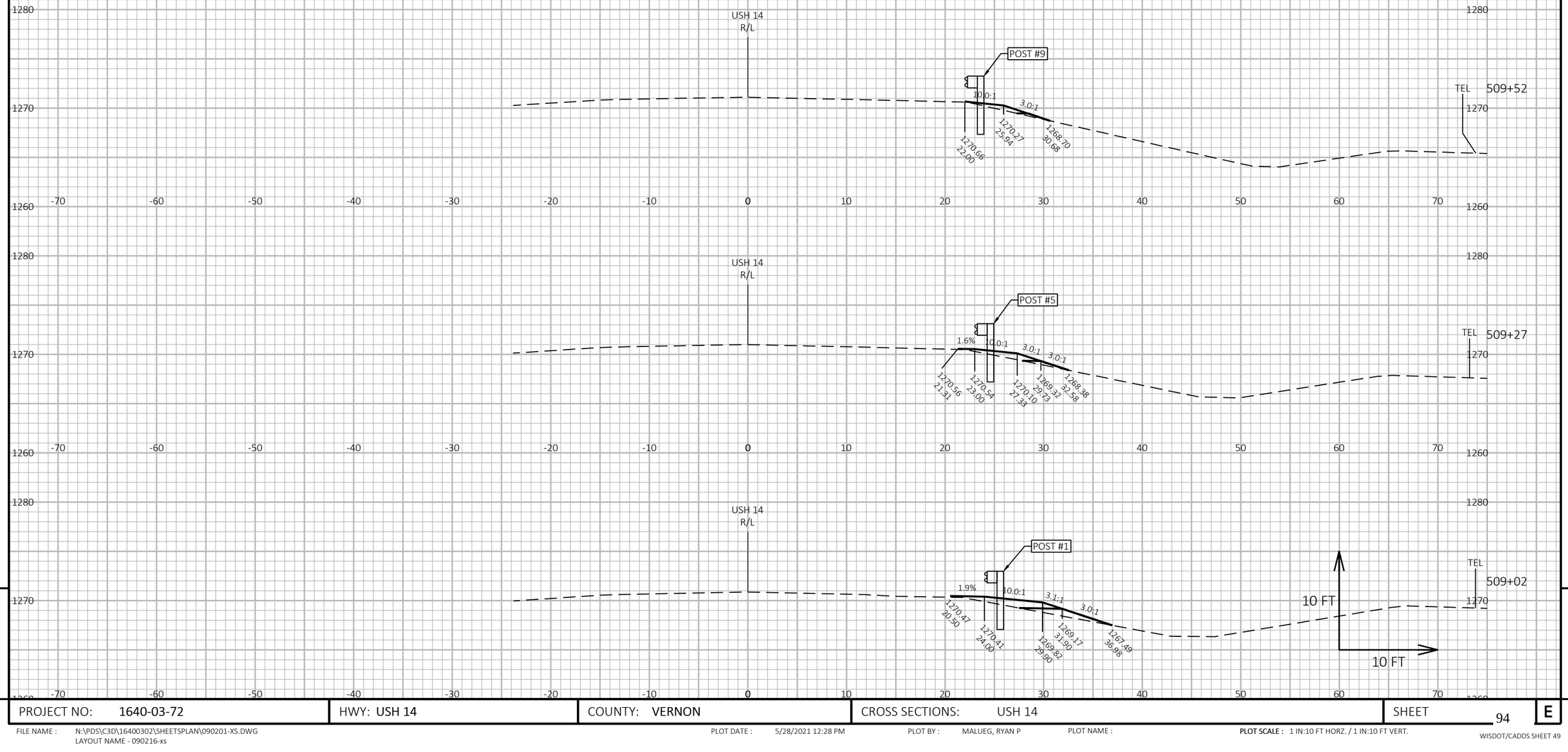


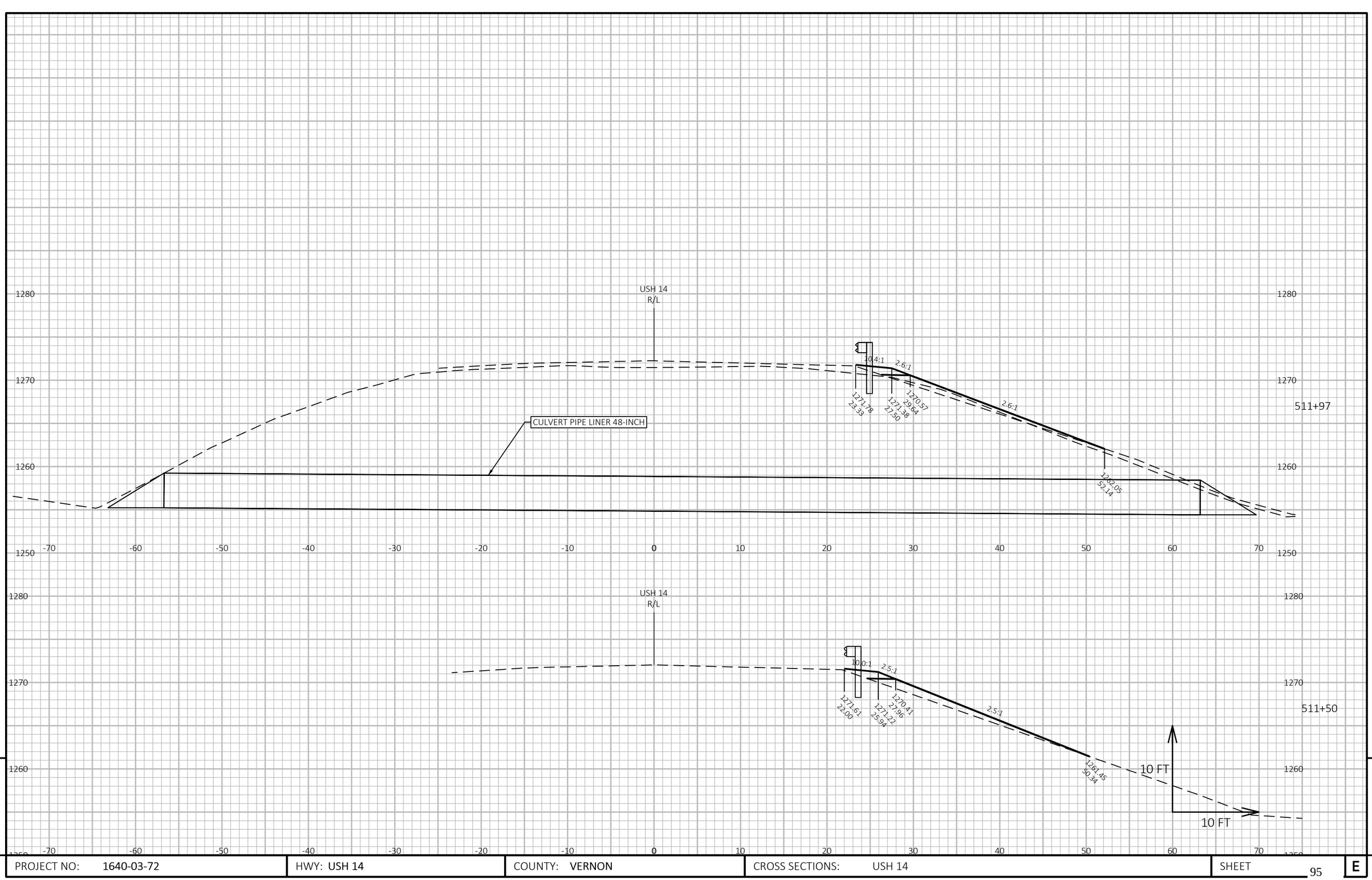
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 94	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090216-xs

PLOT DATE : 5/28/2021 12:28 PM PLOT BY : MALUEG, RYAN P PLOT NAME :

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

WISDOT/CADDS SHEET 49



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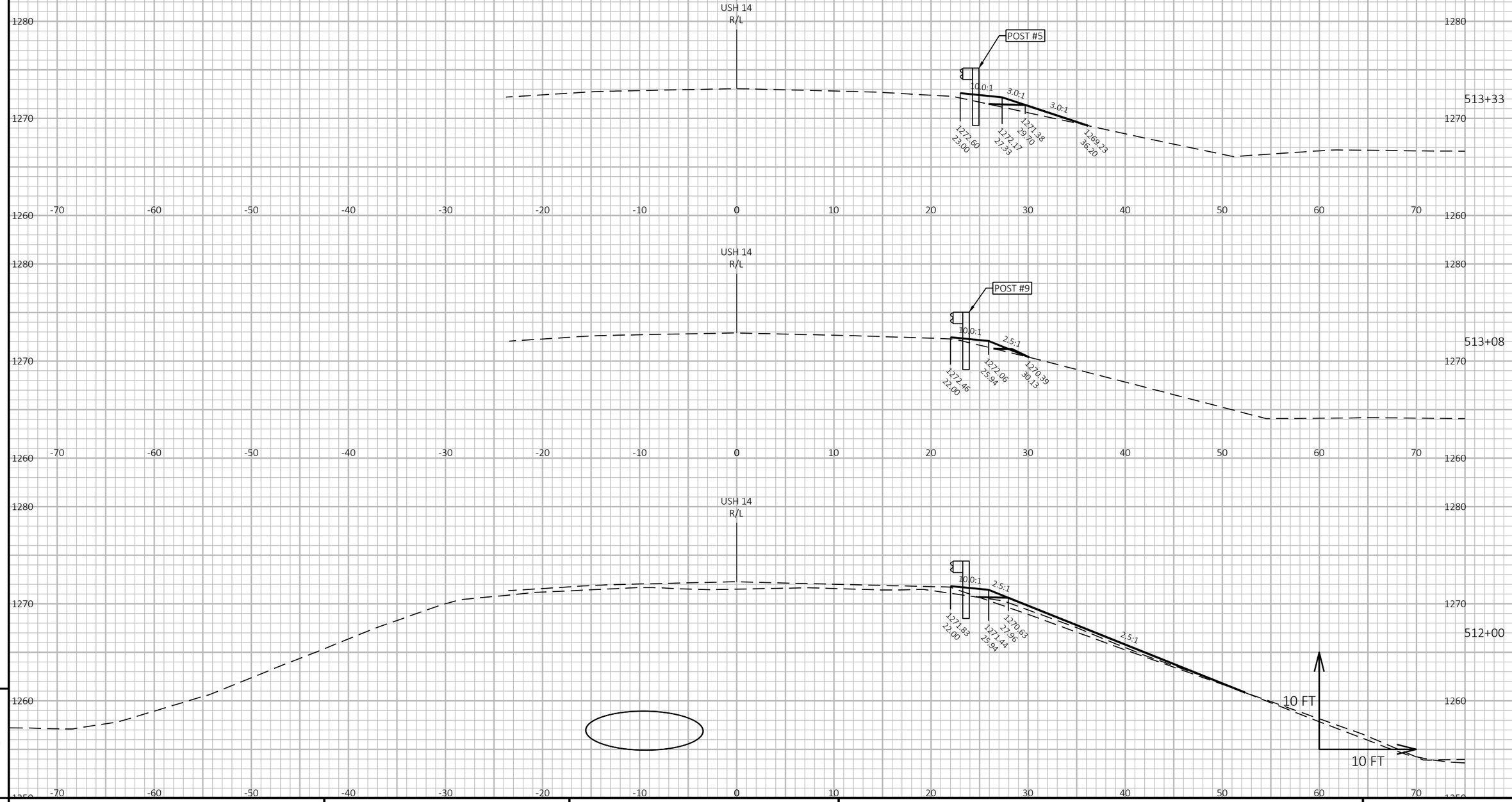
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 95	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090217-xs

PLOT DATE : 5/28/2021 12:28 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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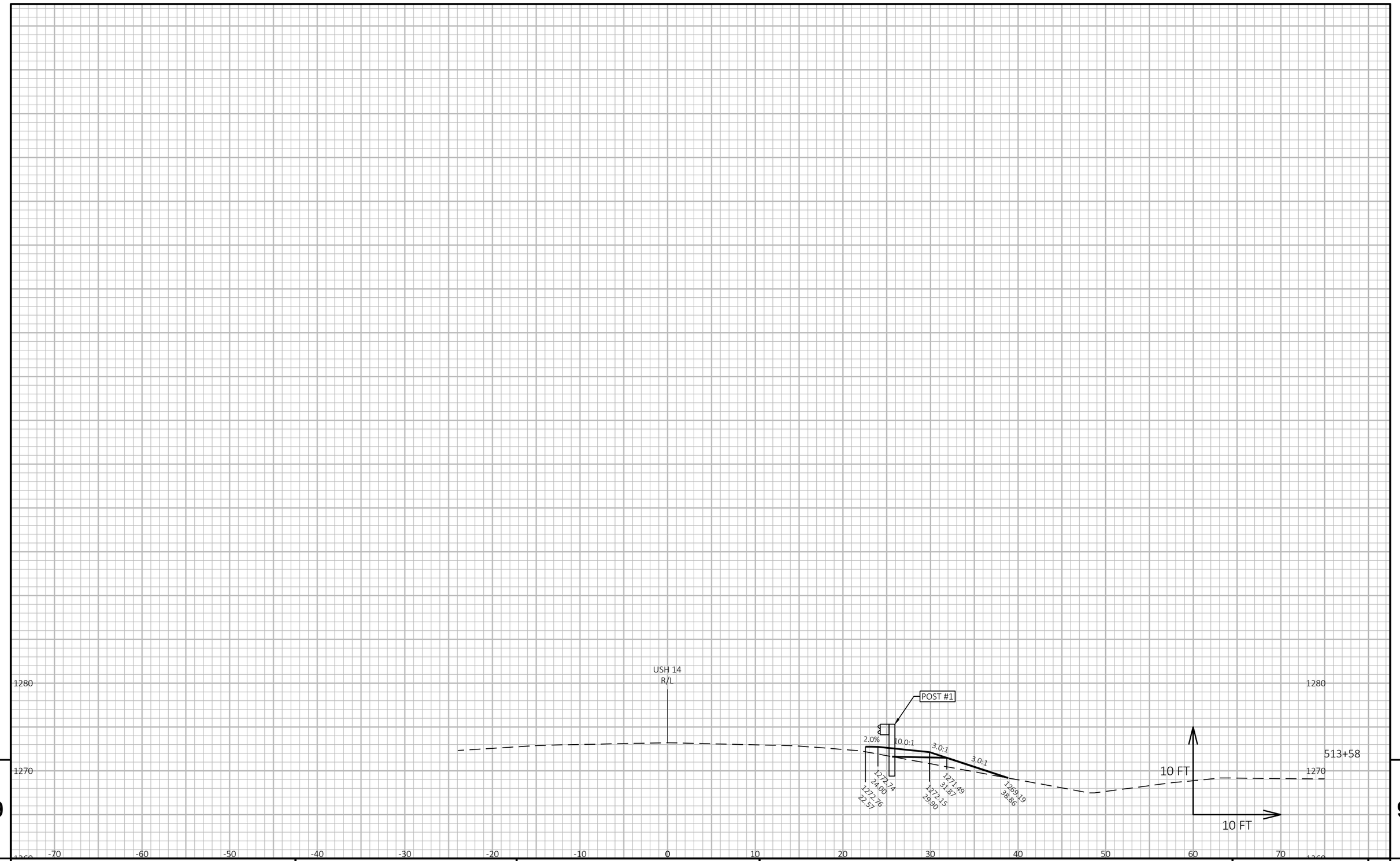
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 96	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090218-xs

PLOT DATE : 5/28/2021 12:28 PM PLOT BY : MALUEG, RYAN P PLOT NAME :

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

WISDOT/CADDS SHEET 49



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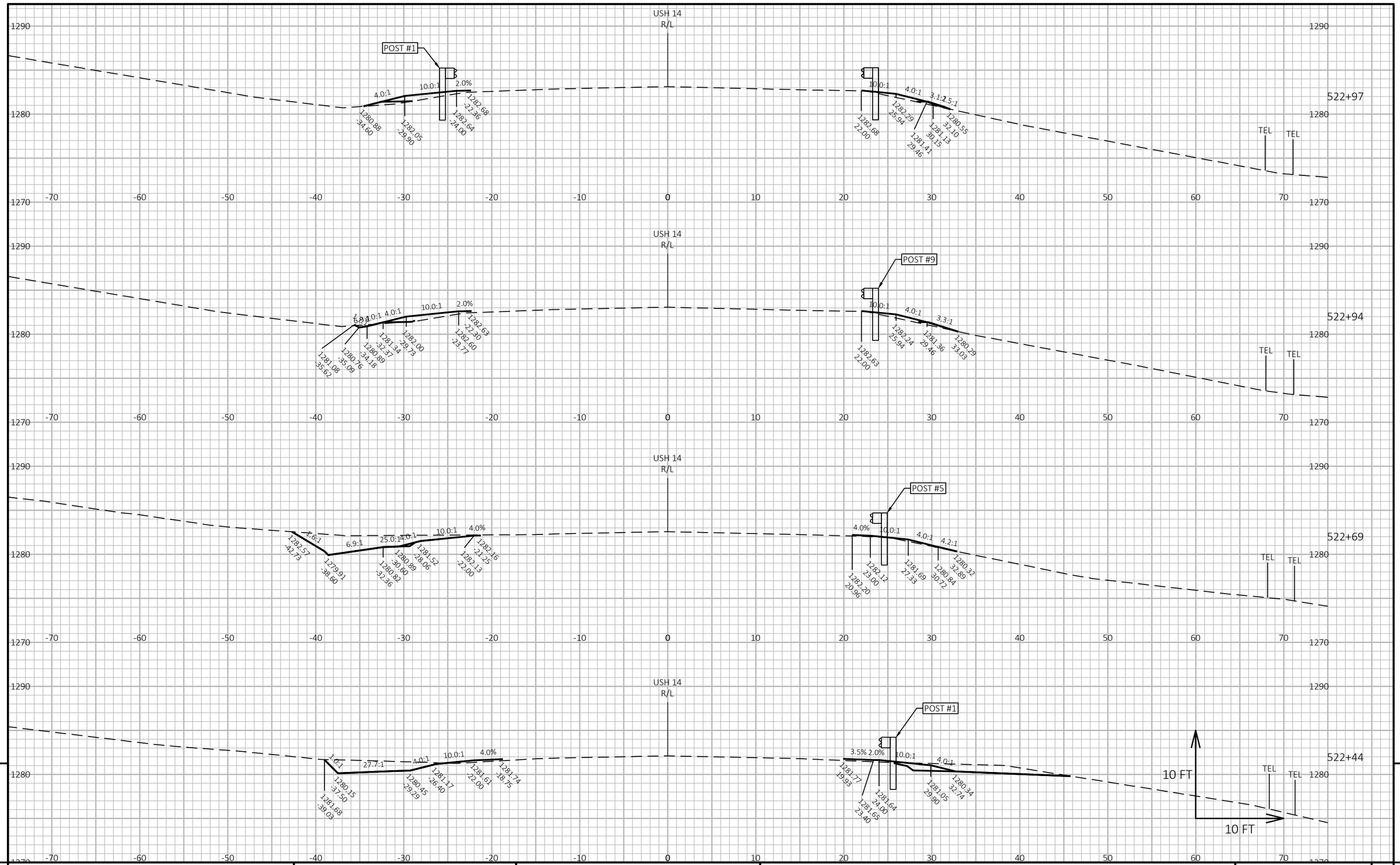
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 97	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090219-xs

PLOT DATE : 5/28/2021 12:28 PM PLOT BY : MALUEG, RYAN P PLOT NAME :

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



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PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 98	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090220-xs

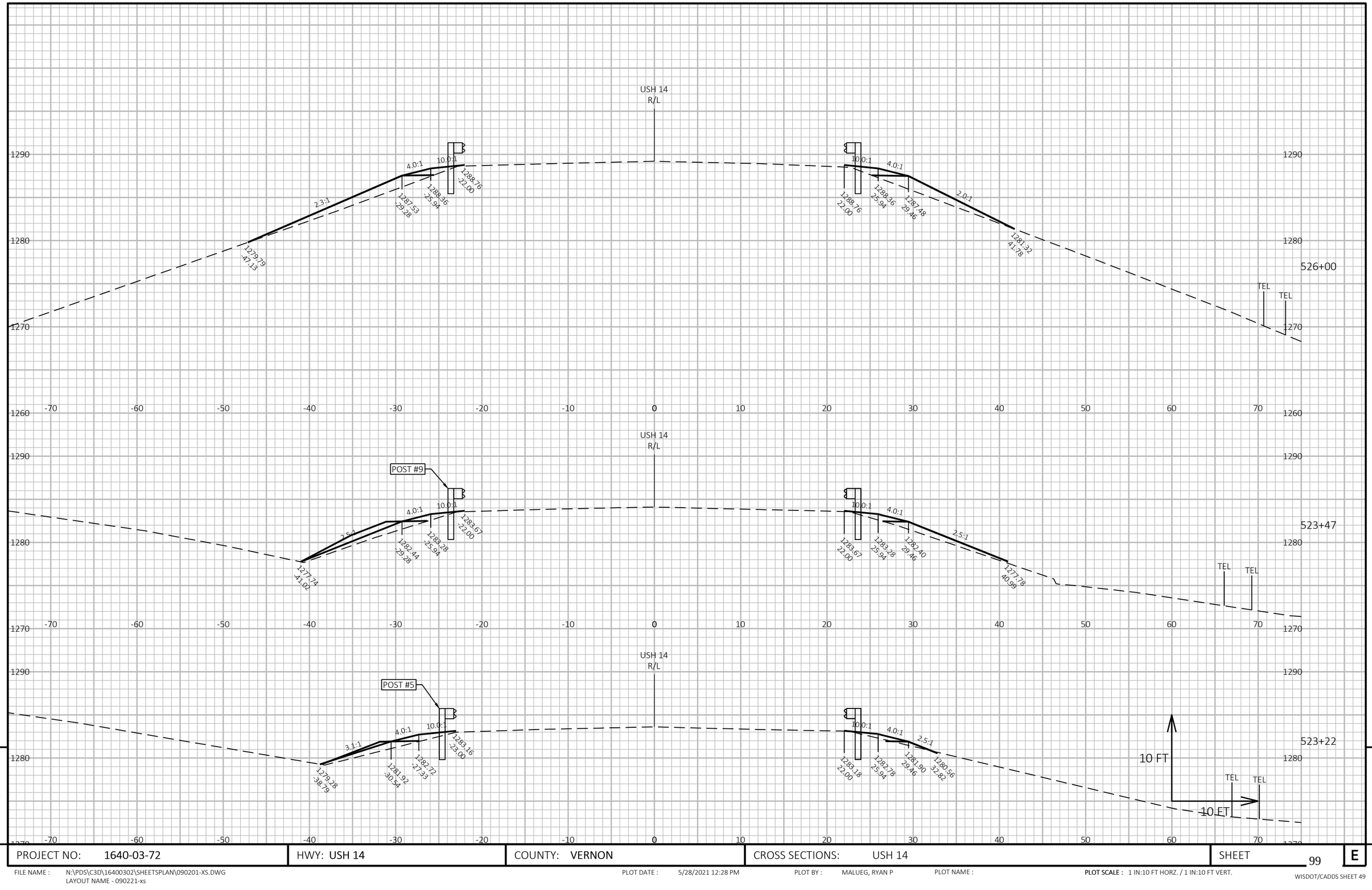
PLOT DATE : 5/28/2021 12:28 PM

PLOT BY : MALUEG, RYAN P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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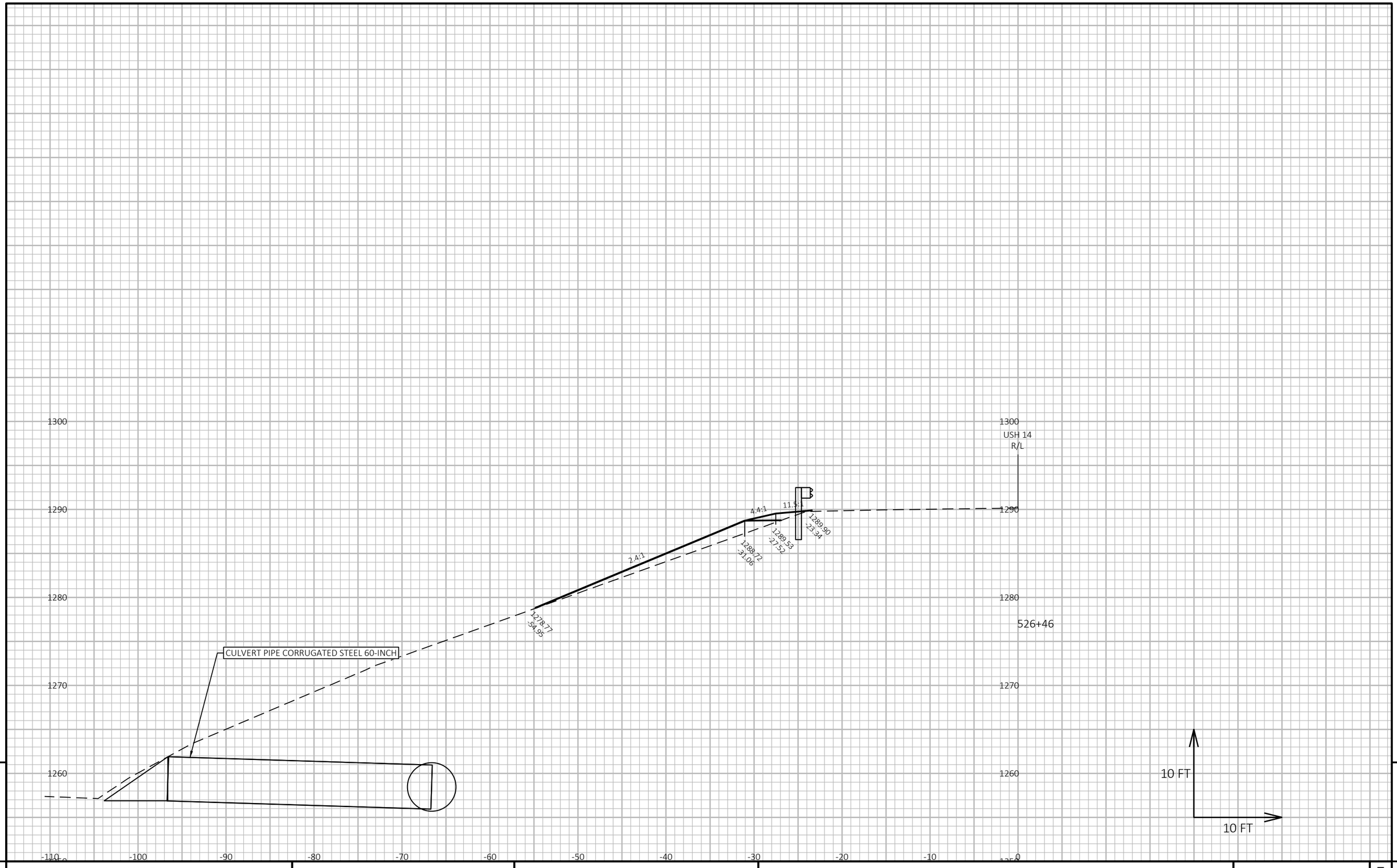
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 99	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090221-xs

PLOT DATE : 5/28/2021 12:28 PM PLOT BY : MALUEG, RYAN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 100 E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090222-xs

PLOT DATE : 5/28/2021 12:28 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

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10 20 30 40 50 60 70 80 90 100 110 120

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9.9:1
4.1:1
2.1:1
1289.56
23.34
1289.14
27.52
1288.23
31.26
1281.20
46.16

10 FT
10 FT

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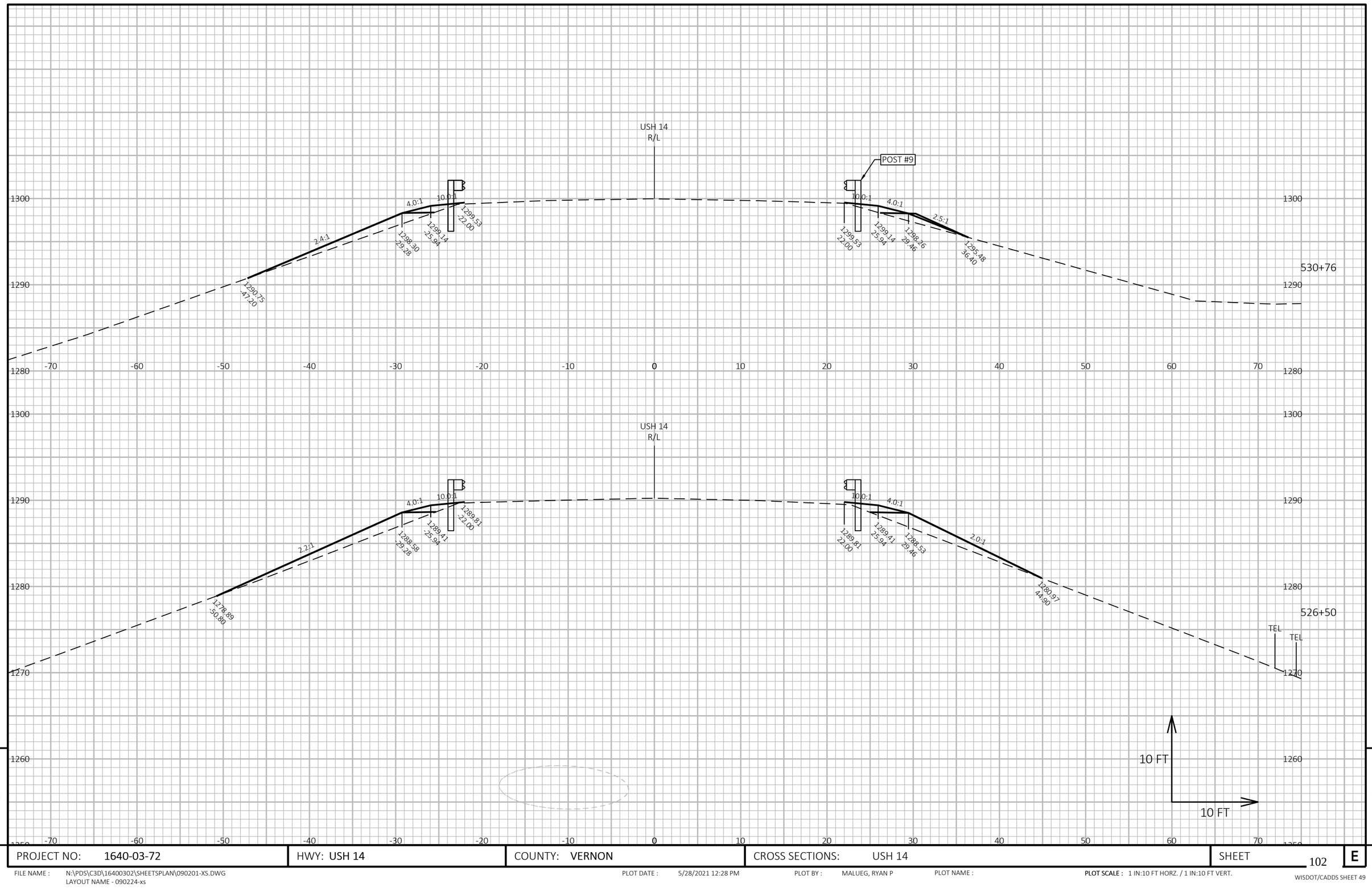
9

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 101	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090223-xs

PLOT DATE : 5/28/2021 12:28 PM PLOT BY : MALUEG, RYAN P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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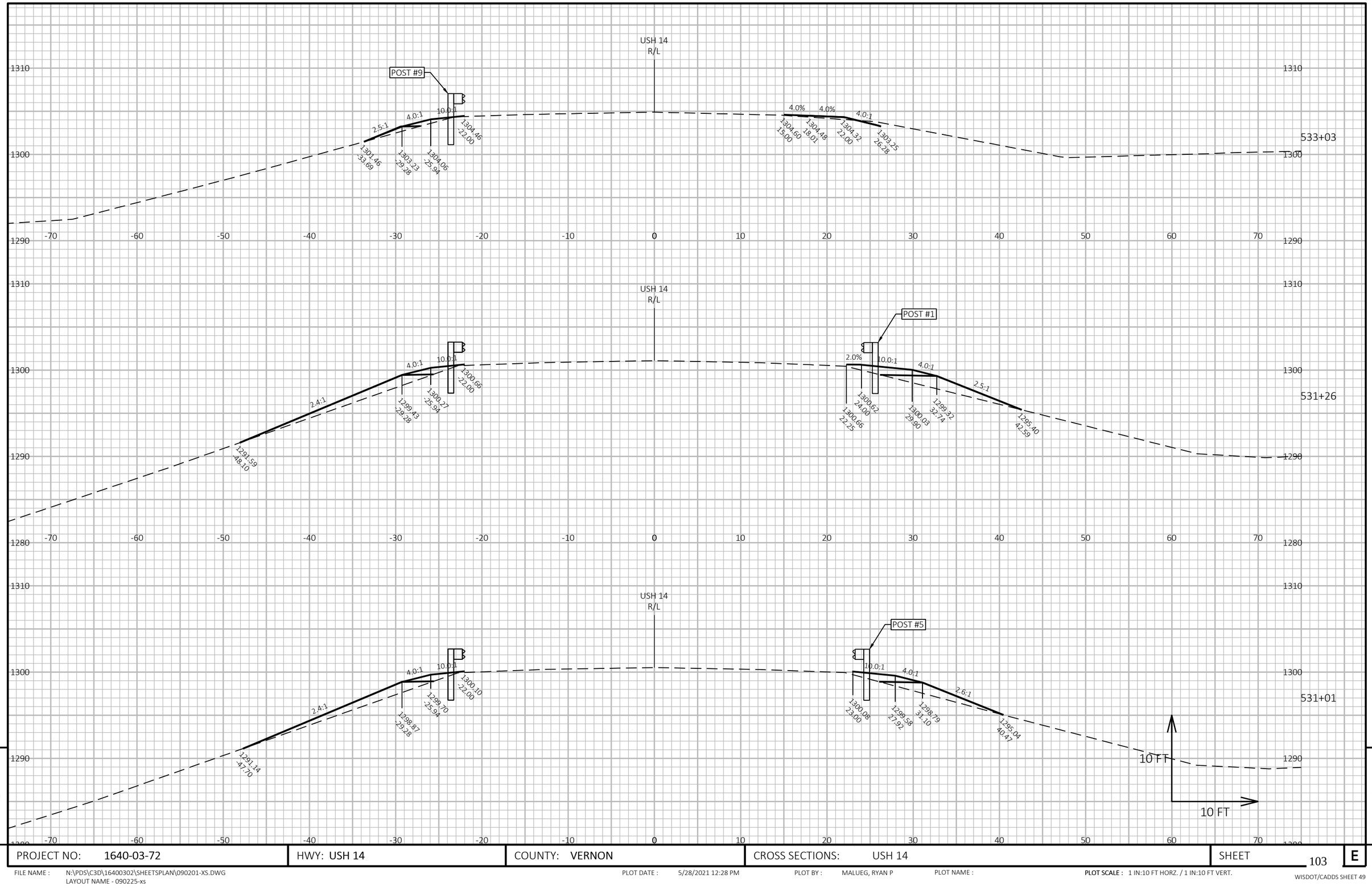
9

PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 102	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090224-xs

PLOT DATE : 5/28/2021 12:28 PM PLOT BY : MALUEG, RYAN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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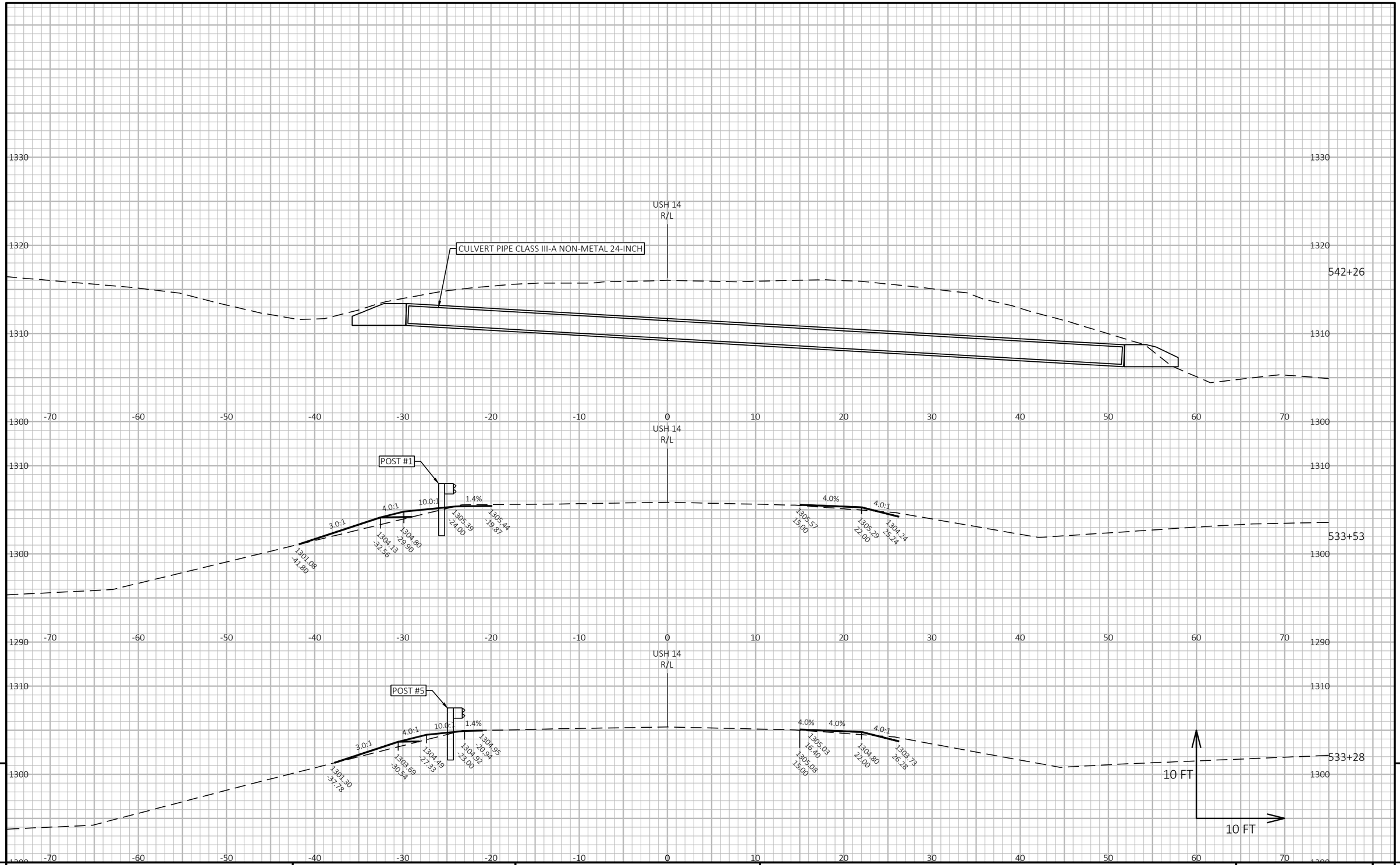
PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 103	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090225-xs

PLOT DATE : 5/28/2021 12:28 PM PLOT BY : MALUEG, RYAN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 104	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090226-xs

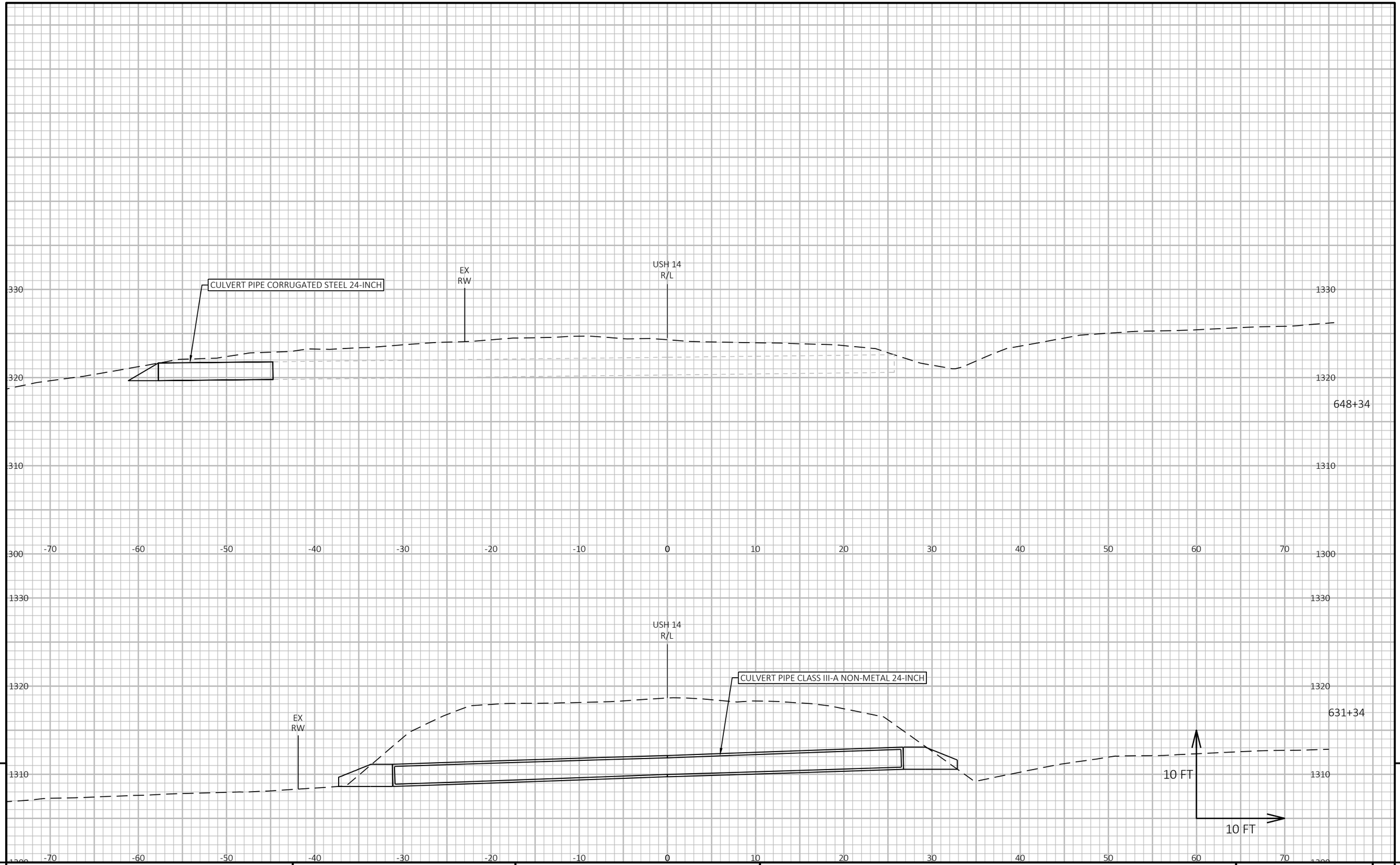
PLOT DATE : 6/1/2021 12:50 PM

PLOT BY : MALUEG, RYAN P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 105	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090227-xs

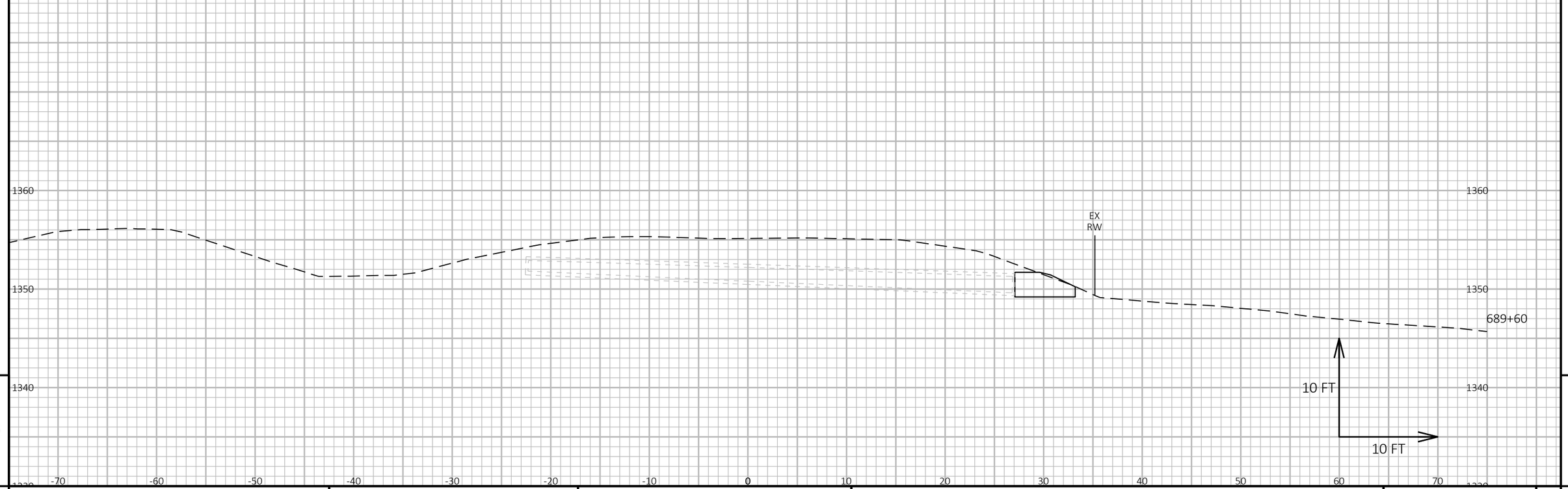
PLOT DATE : 6/1/2021 12:51 PM

PLOT BY : MALUEG, RYAN P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 1640-03-72	HWY: USH 14	COUNTY: VERNON	CROSS SECTIONS: USH 14	SHEET 106	E

FILE NAME : N:\PDS\C3D\16400302\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090228-xs

PLOT DATE : 5/28/2021 12:29 PM PLOT BY : MALUEG, RYAN P PLOT NAME :

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

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

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