RHI

AUGUST 2021

PROJECT ID: 1602-10-72

COUNTY: LANGLADE

ORDER OF SHEETS

TOTAL SHEETS = 126

N

DESIGN DESIGNATION 1602-10-02

A.A.D.T.	2023	=	4100
A.A.D.T.	2043	=	4800
D.H.V.		=	17.1
D.D.		=	61/39
T.		=	10.9
DESIGN SPEED		=	60
ESALS		=	1,410,000

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

ANTIGO - MONICO

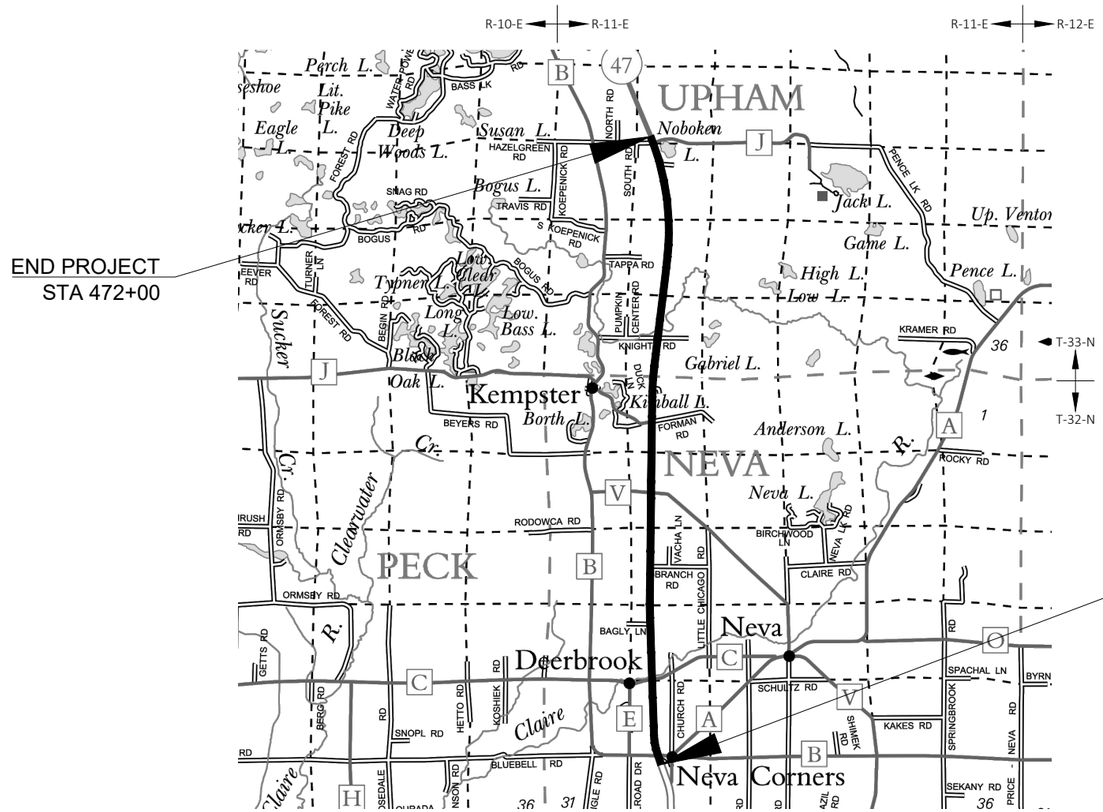
CTH B TO CTH J EAST

USH 45

LANGLADE COUNTY

STATE PROJECT NUMBER
1602-10-72

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1602-10-72	———	———



LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 8.32

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO NORTH AMERICA VERTICAL DATUM OF NAVD88(2012).

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	SURVEYOR
Designer	CHAD BLUMENSCHEIN
Project Manager	KAI KILEN
Regional Examiner	CHERYL SIMON
Regional Supervisor	DANIEL ERVA

APPROVED FOR THE DEPARTMENT

DATE: 4/26/2021 (Signature)

E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\010101_TI.DWG PLOT DATE : 4/23/2020 1:54 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME :

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.

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

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

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 = 44.373 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.108 ACRES

UTILITY CONTACTS

ASTREA - COMMUNICATION LINE
ANDY HEIGL
105 KENT ST
IRON MOUNTAIN, MI 49801
PHONE (DESK): 906-776-2609
PHONE (MOBILE): 906-221-7536
EMAIL: ANDY.HEIGL@ASTREACONNECT.COM

FRONTIER COMMUNICATIONS OF WI, LLC - COMMUNICATION LINE
CALVIN KLADE
1851 N. 14TH AVE
WAUSAU, WI 54401
PHONE: 715-847-1525
EMAIL: CALVIN.KLADE@FTR.COM

WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRICITY
DON LUTZOW
PO BOX 1166
WAUSAU, WI 54402
PHONE (DESK): 715-848-7487
PHONE (MOBILE): 507-848-4211
EMAIL: DONALD.LUTZOW@WISCONSINPUBLICSERVICE.COM

DNR CONTACT

DNR NORTHERN REGION HEADQUARTERS
WENDY HENNIGES
107 SUTLIFF AVENUE
RHINELANDER, WI 54501
PHONE: 715-365-8916
EMAIL: WENDY.HENNIGES@WISCONSIN.GOV

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

PROPOSED SUPER ELEVATION TABLE

Curve Number	Station	Description	Left Outside Shoulder	Left Outside Lane	Right Outside Lane	Right Outside Shoulder
	32+95.00'	Begin Alignment	-4.00%	-2.00%	-2.00%	-4.00%
1	40+06.80'	End Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
1	40+06.80'	End Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
1	40+60.31'	Level Crown	0.00%	0.00%	-2.00%	-4.00%
1	41+13.82'	Reverse Crown	2.00%	2.00%	-2.00%	-4.00%
1	41+59.31'	Begin Full Super	3.70%	3.70%	-3.70%	-4.00%
1	51+95.56'	End Full Super	3.70%	3.70%	-3.70%	-4.00%
1	52+41.04'	Reverse Crown	2.00%	2.00%	-2.00%	-4.00%
1	52+94.56'	Level Crown	0.00%	0.00%	-2.00%	-4.00%
1	53+48.07'	Begin Normal Crown	-4.00%	-2.00%	-2.00%	-4.00%
1	53+48.07'	Begin Normal Shoulder	-4.00%	-2.00%	-2.00%	-4.00%
	474+00.00'	End Alignment	-4.00%	-2.00%	-2.00%	-4.00%

2

END PROJECT LOCATION
STA 472+00

PROJECT START LOCATION
STA 32+95

N

INSTALL CULVERT ENDWALLS
34045001007
STA 69+44

CULVERT REPLACEMENT
34045001008
STA 110+89

CATTLE PASS REMOVAL,
REPLACE WITH CULVERT
34045004490
STA 137+07

CULVERT REPLACEMENT
34045001012
STA 253+70

CULVERT REPLACEMENT
34045001015
STA 282+66

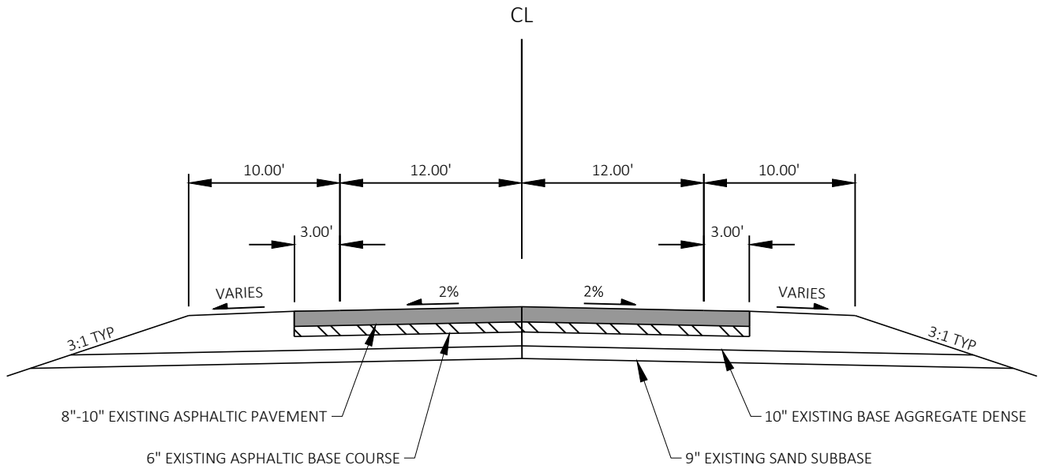
CULVERT REPLACEMENTS
34045004427 - STA 333+64(EXISTING)
34045001017 - STA 333+71(EXISTING), STA 333+83(PROPOSED)

INSTALL CULVERT ENDWALLS
34045001019
STA 409+20

CULVERT REPLACEMENT
34045001023
STA 468+19

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PROJECT OVERVIEW	SHEET 3	E

2

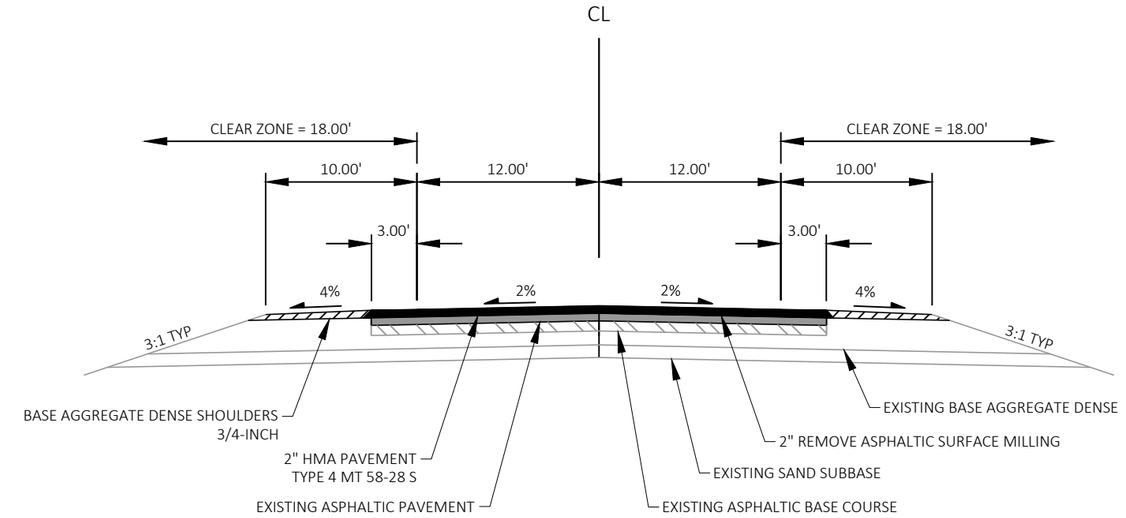


EXISTING TYPICAL SECTION
STA 32+95 - STA 472+00

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN: TYPICAL SECTIONS - EXISTING	SHEET 4	E

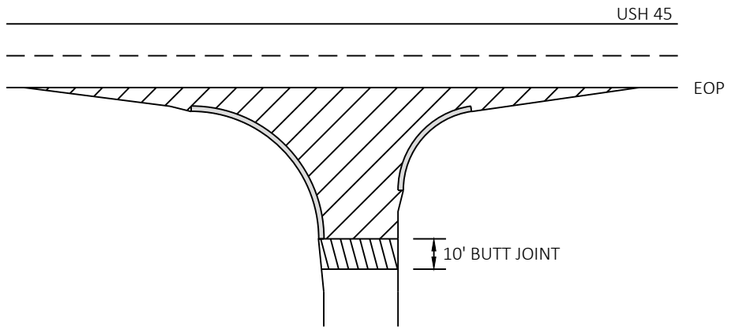
NOTES:

1. SAFETY EDGE REQUIRED.
2. CENTERLINE RUMBLE STRIPS REQUIRED.



PROPOSED TYPICAL SECTION
STA 32+95 - STA 472+00

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN: TYPICAL SECTIONS - PROPOSED	SHEET 5	E



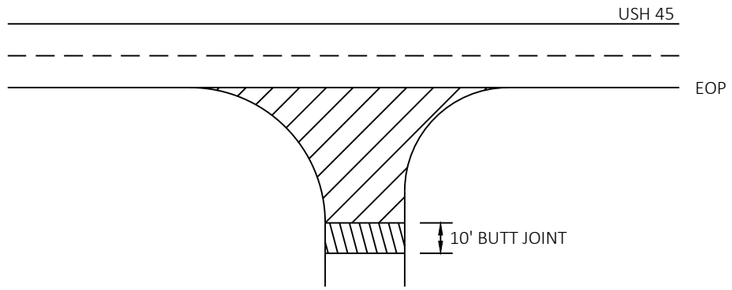
REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

NOTE: WHEN MATCHING TO AN UNPAVED SURFACE
BUTT JOINT IS NOT REQUIRED

SIDE ROADS

WITH CURB AND GUTTER



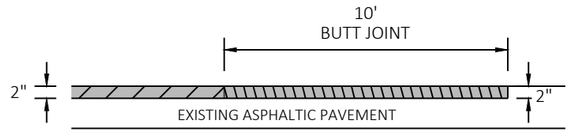
REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

NOTE: WHEN MATCHING TO AN UNPAVED SURFACE
BUTT JOINT IS NOT REQUIRED

SIDE ROADS

WITHOUT CURB AND GUTTER



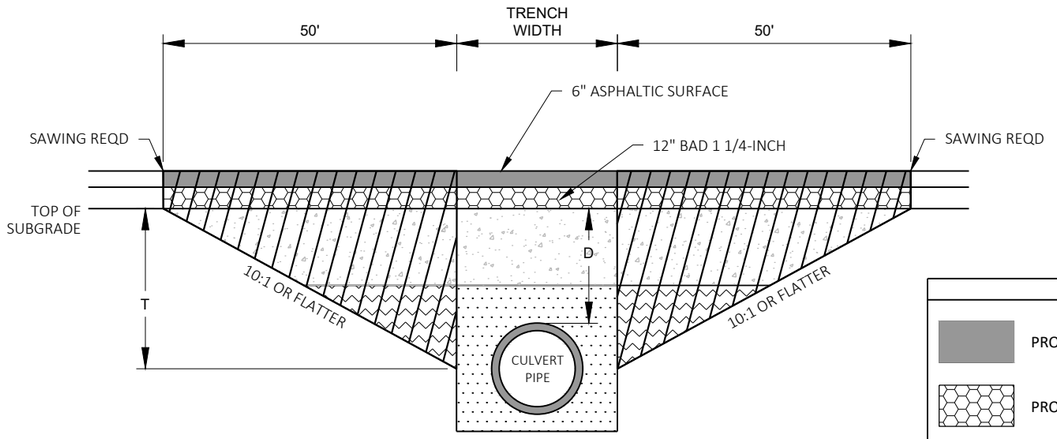
HMA PAVEMENT

REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINTS

BUTT JOINT

MAINLINE AND SIDE ROADS

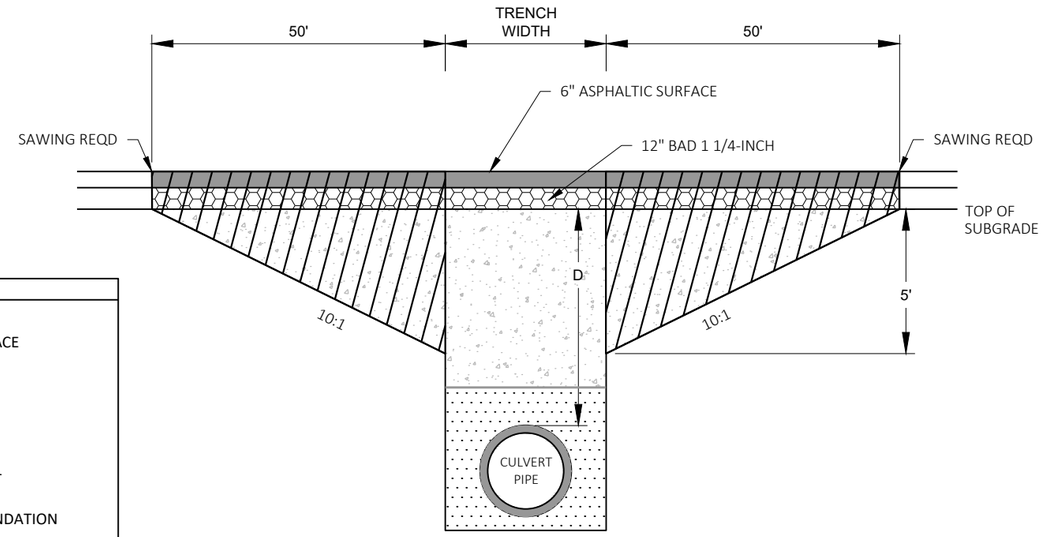


TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

DEPTH D < 6 FT

KEY

- PROPOSED SURFACE
- PROPOSED BASE
- TRENCH BACKFILL
- TRENCH OR FOUNDATION BACKFILL
- FOUNDATION BACKFILL
- TRANSITION CUT



DEPTH D ≥ 6 FT

NOTES

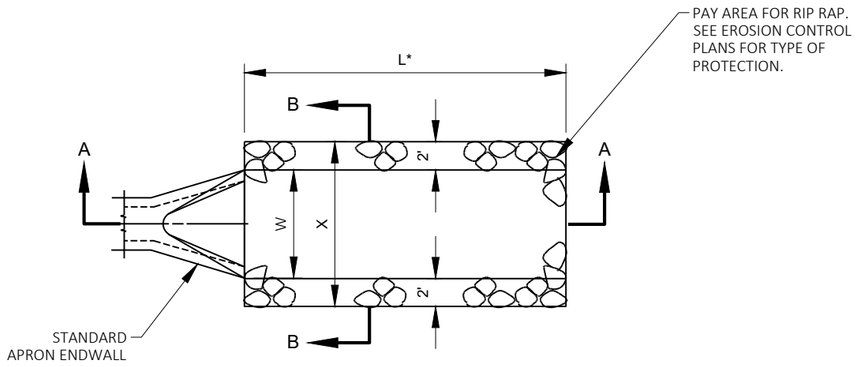
TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.
PERFORM CULVERT PIPE INSTALLATION BEFORE MILLING AND PAVING OPERATIONS.
PLACE ASPHALTIC SURFACE IN THREE LAYERS AFTER CULVERT PIPE INSTALLATION AND BEFORE ASPHALTIC SURFACE MILLING.

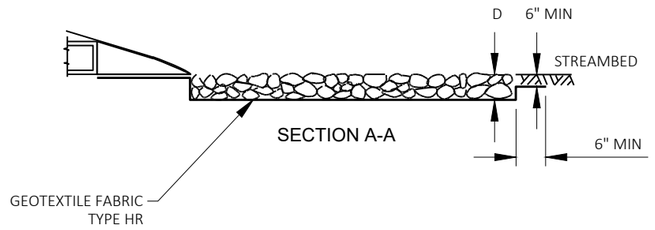
CULVERT PIPE TRANSITION

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
USH 45	110+89	1.3	38x60	34045001008
USH 45	137+07	4.1	30	34045004490
USH 45	253+70	9.4	24	34045001012
USH 45	282+66	4.0	24	34045001015
USH 45	333+83	9.1	84	34045001017
USH 45	468+19	1.9	24	34045001023

2

* LENGTH OF RIP RAP SHALL NOT EXTEND BEYOND EXISTING RIGHT OF WAY.





L = 30' OR AS DIRECTED BY ENGINEER

D = 18" FOR RIP RAP MEDIUM

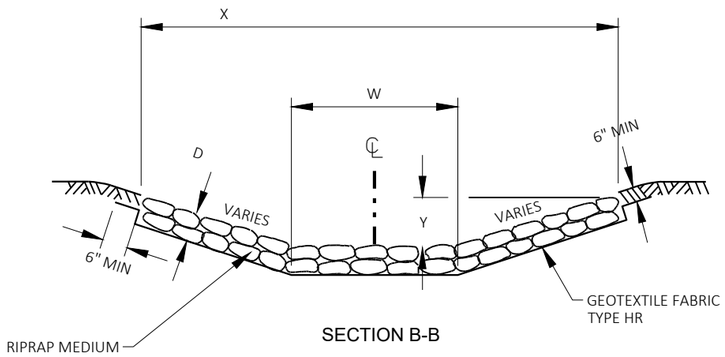
W = 10'

X = W + 4 OR AS DIRECTED BY ENGINEER

Y = 6" OR AS DIRECTED BY ENGINEER

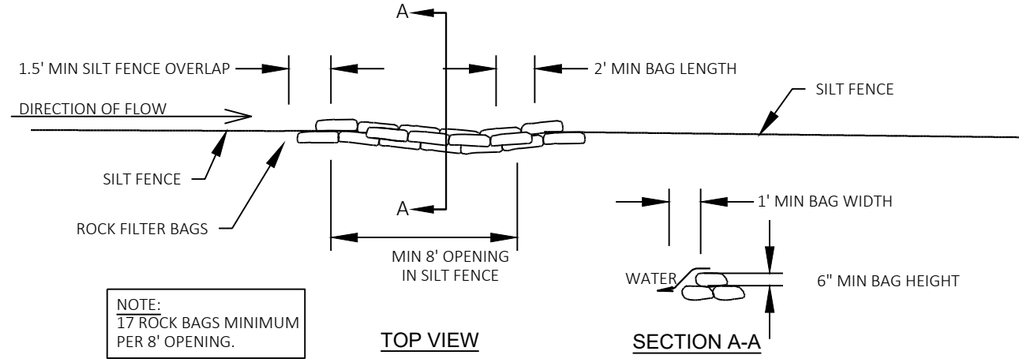
CONSTRUCTION NOTES:

1. GEOTEXTILE FABRIC SHALL EXTEND BENEATH THE ENTIRE LENGTH OF THE APRON ENDWALL SECTION. INSTALL ON PREPARED FOUNDATION. GRADE PRIOR TO ENDWALL INSTALLATION.
2. COMPLETE GEOTEXTILE FABRIC AND RIPRAP SECTION INSTALLATION PRIOR TO RESTORING WATER FLOW TO PROPOSED CULVERT.

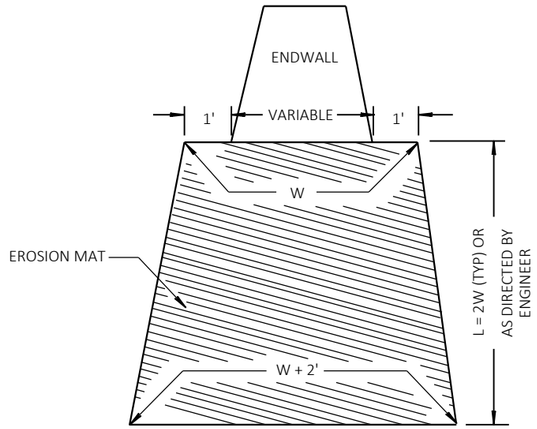


RIP RAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS

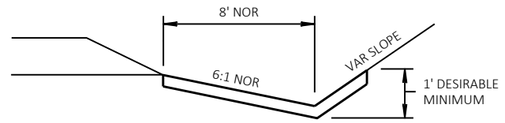
CULVERT 34045001017 STA 333+83



ROCK BAGS USED FOR SILT FENCE RELIEF



EROSION MAT TREATMENT AT CULVERTS



EROSION MAT DETAIL FOR DITCHES

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN: EROSION CONTROL DETAIL	SHEET 8	E

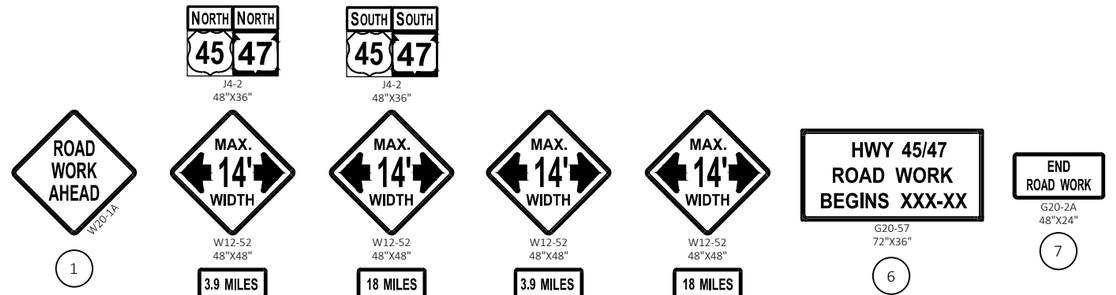
2

NOTES:

1. SIGNS #2, #3, #4, and #5 SHALL ONLY BE USED WHEN THERE ARE LANE CLOSURES PRESENT. COVER OR REMOVE WHEN NOT IN USE.

2. PLACE SIGN #6 SEVEN DAYS PRIOR TO THE EXPECTED START OF THE PROPOSED WORK. REMOVE WHEN CONSTRUCTION BEGINS.

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



PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN: TRAFFIC CONTROL DETAIL - ADVANCED WARNING SIGNS	SHEET 9	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\021101_CD.DWG
LAYOUT NAME - 06

PLOT DATE : 5/27/2021 12:10 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:10 FT

2

N

PERMITTED PERMANENT WETLAND IMPACT
0.005 ACRES TYPE RPE
WETLAND ID: 1008A

TEMPORARY WETLAND IMPACT
0.006 ACRES TYPE RPE

TEMPORARY WETLAND IMPACT
0.005 ACRES TYPE RPE

110

5' OFFSET

WETLAND BOUNDARY

TEMPORARY WETLAND IMPACT
0.0004 ACRES TYPE RPE

TEMPORARY WETLAND IMPACT
0.006 ACRES TYPE RPE

PERMITTED PERMANENT WETLAND IMPACT
0.001 ACRES TYPE RPE
WETLAND ID: 1008B

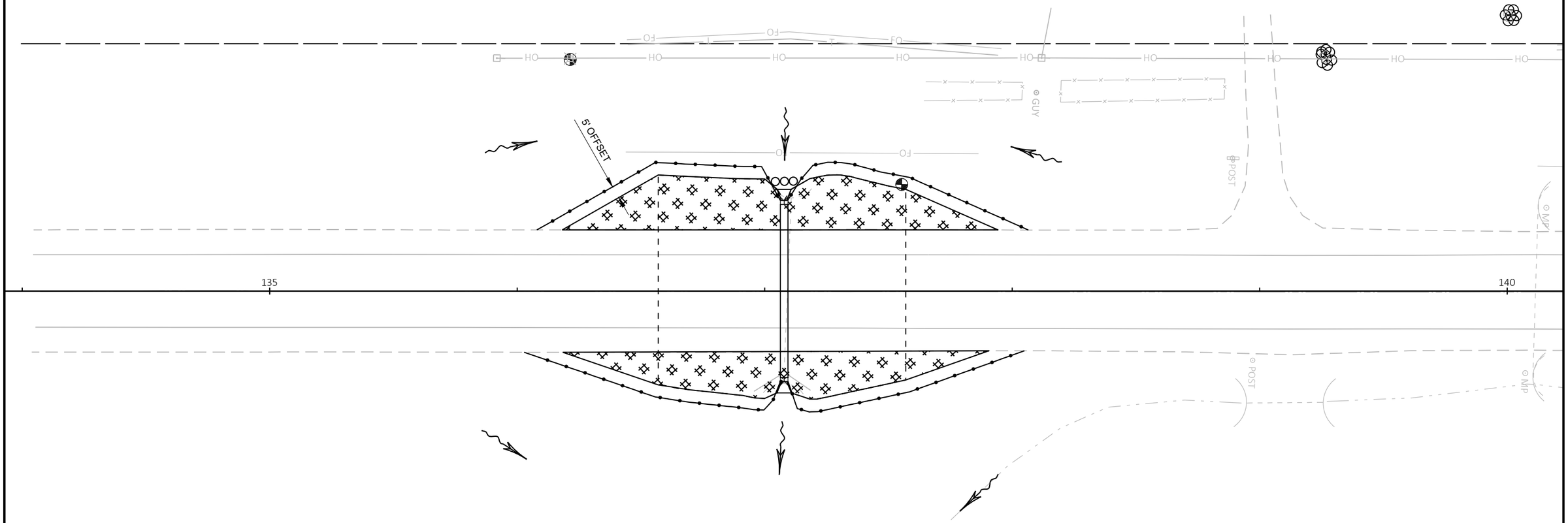
LEGEND

- EROSION MAT URBAN CLASS I, TYPE A
- SILT FENCE
- SLOPE INTERCEPT
- CULVERT PIPE CHECK
- SURFACE WATER FLOW
- TEMPORARY WETLAND IMPACT
- PERMANENT WETLAND IMPACT

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	EROSION CONTROL SHEETS - CULVERT 34045001008	SHEET 10	E

2

N



LEGEND

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

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	EROSION CONTROL SHEETS - CULVERT 34045004490	SHEET 11	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022003-ec
PLOT DATE : 4/22/2021 11:13 AM
PLOT BY : BLUMENSCHEIN, CHAD P
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

2

N

255

5' OFFSET

LEGEND

EROSION MAT URBAN CLASS I, TYPE A

SILT FENCE

SLOPE INTERCEPT

CULVERT PIPE CHECK

SURFACE WATER FLOW

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	EROSION CONTROL SHEETS - CULVERT 34045001012	SHEET 12	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022004-ec

PLOT DATE : 4/22/2021 11:13 AM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N

5' OFFSET

280

285

LEGEND

EROSION MAT URBAN CLASS I, TYPE A

SILT FENCE

SLOPE INTERCEPT

CULVERT PIPE CHECK

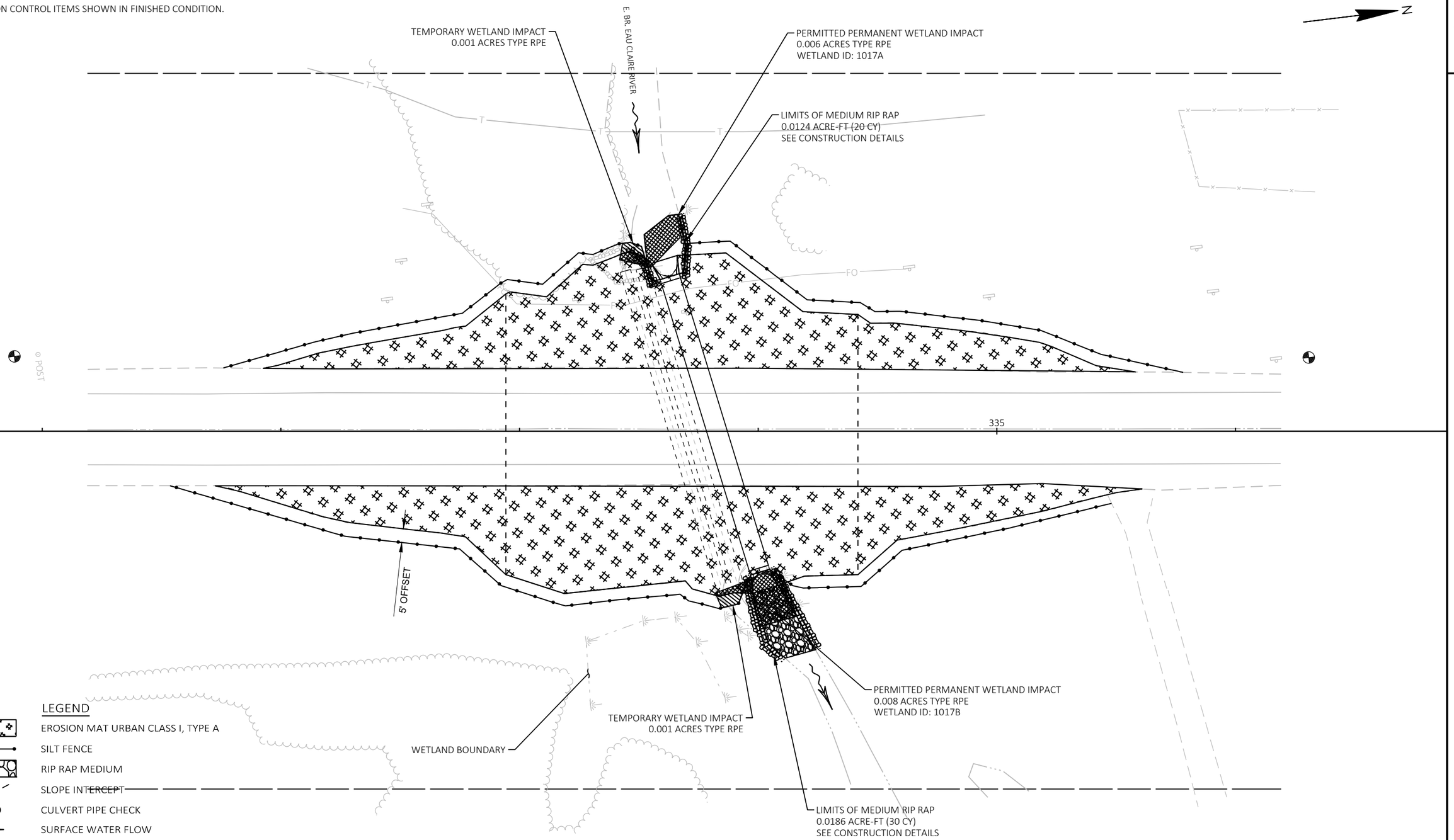
SURFACE WATER FLOW

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	EROSION CONTROL SHEETS - CULVERT 34045001015	SHEET 13	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022005-ec

PLOT DATE : 4/22/2021 11:13 AM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

NOTE:
EROSION CONTROL ITEMS SHOWN IN FINISHED CONDITION.



PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	EROSION CONTROL SHEETS - CULVERT 34045001017	SHEET 14	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022006-ec
PLOT DATE : 4/22/2021 11:13 AM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

KOEPENICK RD

CTH J

470

5' OFFSET

WETLAND BOUNDARY

LEGEND

EROSION MAT URBAN CLASS I, TYPE A

SILT FENCE

SLOPE INTERCEPT

CULVERT PIPE CHECK

SURFACE WATER FLOW

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	EROSION CONTROL SHEETS - CULVERT 34045001023	SHEET 15	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022007-ec

PLOT DATE : 4/22/2021 11:13 AM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

1602-10-72

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	6.000	6.000
0004	203.0200	Removing Old Structure (station) 01. STA 137+09	LS	1.000	1.000
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	440.000	440.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	155,100.000	155,100.000
0010	205.0100	Excavation Common	CY	4,430.000	4,430.000
0012	208.1500.S	Temporary Lane Shift During Culvert Work 01. Culvert General	EACH	8.000	8.000
0014	208.1500.S	Temporary Lane Shift During Culvert Work 02. Culvert 34045001017	EACH	2.000	2.000
0016	209.2500	Backfill Granular Grade 2	TON	100.000	100.000
0018	213.0100	Finishing Roadway (project) 01. 1602-10-72	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	3,990.000	3,990.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,630.000	2,630.000
0024	455.0605	Tack Coat	GAL	11,156.000	11,156.000
0026	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0028	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0030	460.2005	Incentive Density PWL HMA Pavement	DOL	13,120.000	13,120.000
0032	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	17,562.000	17,562.000
0034	460.2010	Incentive Air Voids HMA Pavement	DOL	16,680.000	16,680.000
0036	460.6224	HMA Pavement 4 MT 58-28 S	TON	17,660.000	17,660.000
0038	465.0105	Asphaltic Surface	TON	800.000	800.000
0040	465.0110	Asphaltic Surface Patching	TON	100.000	100.000
0042	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	39,510.000	39,510.000
0044	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	8.000	8.000
0046	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	2.000	2.000
0048	520.1042	Apron Endwalls for Culvert Pipe 42-Inch	EACH	2.000	2.000
0050	520.3424	Culvert Pipe Class III-A Non-metal 24-Inch	LF	310.000	310.000
0052	520.3430	Culvert Pipe Class III-A Non-metal 30-Inch	LF	70.000	70.000
0054	522.0184	Culvert Pipe Reinforced Concrete Class III 84-Inch	LF	126.000	126.000
0056	522.1084	Apron Endwalls for Culvert Pipe Reinforced Concrete 84-Inch	EACH	2.000	2.000
0058	522.2338	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 38x60-Inch	LF	56.000	56.000
0060	522.2638	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 38x60-Inch	EACH	2.000	2.000
0062	606.0200	Riprap Medium	CY	50.000	50.000
0064	614.0950	Replacing Guardrail Posts and Blocks	EACH	36.000	36.000
0066	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1602-10-72	EACH	1.000	1.000
0068	619.1000	Mobilization	EACH	1.000	1.000
0070	624.0100	Water	MGAL	99.000	99.000

1602-10-72

Line	Item	Item Description	Unit	Total	Qty
0072	625.0100	Topsoil	SY	5,480.000	5,480.000
0074	628.1504	Silt Fence	LF	3,050.000	3,050.000
0076	628.1520	Silt Fence Maintenance	LF	3,050.000	3,050.000
0078	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0080	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0082	628.2006	Erosion Mat Urban Class I Type A	SY	5,465.000	5,465.000
0084	628.7555	Culvert Pipe Checks	EACH	75.000	75.000
0086	628.7570	Rock Bags	EACH	20.000	20.000
0088	629.0210	Fertilizer Type B	CWT	10.000	10.000
0090	630.0130	Seeding Mixture No. 30	LB	101.000	101.000
0092	630.0500	Seed Water	MGAL	130.000	130.000
0094	633.5200	Markers Culvert End	EACH	12.000	12.000
0096	638.2102	Moving Signs Type II	EACH	10.000	10.000
0098	642.5001	Field Office Type B	EACH	1.000	1.000
0100	643.0300	Traffic Control Drums	DAY	225.000	225.000
0102	643.0900	Traffic Control Signs	DAY	1,672.000	1,672.000
0104	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0106	643.5000	Traffic Control	EACH	1.000	1.000
0108	645.0120	Geotextile Type HR	SY	160.000	160.000
0110	646.1020	Marking Line Epoxy 4-Inch	LF	16,565.000	16,565.000
0112	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	87,700.000	87,700.000
0114	646.3040	Marking Line Grooved Wet Ref Epoxy 8-Inch	LF	550.000	550.000
0116	646.5420	Marking Aerial Enforcement Bar Epoxy	EACH	10.000	10.000
0118	646.6120	Marking Stop Line Epoxy 18-Inch	LF	40.000	40.000
0120	648.0100	Locating No-Passing Zones	MI	8.320	8.320
0122	649.0105	Temporary Marking Line Paint 4-Inch	LF	9,310.000	9,310.000
0124	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	16,500.000	16,500.000
0126	650.6000	Construction Staking Pipe Culverts	EACH	6.000	6.000
0128	650.8000	Construction Staking Resurfacing Reference	LF	43,905.000	43,905.000
0130	650.9910	Construction Staking Supplemental Control (project) 01. 1602-10-72	LS	1.000	1.000
0132	690.0150	Sawing Asphalt	LF	396.000	396.000
0134	740.0440	Incentive IRI Ride	DOL	33,280.000	33,280.000
0136	SPV.0105	Special 01. Temporary Water Diversion (34045001017)	LS	1.000	1.000

3

STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS (EACH)
110+89	CULVERT: 34045001008	1
253+70	CULVERT: 34045001012	1
282+66	CULVERT: 34045001015	1
333+64	CULVERT: 34045004427	1
333+71	CULVERT: 34045001017	1
468+19	CULVERT: 34045001023	1
	TOTAL	6

STATION	LOCATION	203.0200 REMOVING OLD STRUCTURE - STA 137+09 (EACH)
137+07	CULVERT: 34045004490	1
	TOTAL	1

NOTE: REMOVAL OF MASONRY ENDWALLS INCIDENTAL TO ITEM.

3

STATION	LOCATION	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS (SY)
32+95 - 33+05	MAINLINE (PROJECT START)	40
471+90 - 472+00	MAINLINE (PROJECT END)	40
	SIDEROADS	360
	TOTAL	440

STATION	LOCATION	REMARKS	204.0120 REMOVING ASPHALTIC SURFACE MILLING (SY)
33+05 - 471+90	USH 45 (MAINLINE)	2.00-INCH DEPTH	146300
	SIDEROADS	2.00-INCH DEPTH	8800
		TOTAL	155100

3

CULVERT TRANSITION ITEMS

STATION	LOCATION	205.0100 EXCAVATION COMMON (CY)	209.2500 BACKFILL GRANULAR GRADE 2 (TON)
110+89	CULVERT: 34045001008	570	--
137+07	CULVERT: 34045004490	780	--
253+70	CULVERT: 34045001012	780	--
282+66	CULVERT: 34045001015	780	--
333+83	CULVERT: 34045001017*	900	--
468+19	CULVERT: 34045001023	620	--
	CULVERTS UNDISTRIBUTED**		100
	TOTAL	4430	100

*EXISTING TWIN CULVERTS WILL BE REPLACED WITH SINGLE CULVERT AT THIS LOCATION.

**USE ITEM AS DIRECTED BY ENGINEER AT CULVERTS WHERE EXISTING MATERIAL IS UNSATISFACTORY.

STATION	LOCATION	208.1500.S.01 TEMPORARY LANE SHIFT DURING CULVERT WORK - CULVERT GENERAL (EACH)
110+89	CULVERT: 34045001008	2
137+07	CULVERT: 34045004490	2
253+70	CULVERT: 34045001012	2
282+66	CULVERT: 34045001015	2
	TOTAL	8

STATION	LOCATION	208.1500.S.02 TEMPORARY LANE SHIFT DURING CULVERT WORK - CULVERT 34045001017 (EACH)
333+83	CULVERT: 34045001017	2
	TOTAL	2

BASE AGGREGATE ITEMS

STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)
32+95 - 472+00	SHOULDER (LT/RT)	3990	--
110+89	CULVERT: 34045001008	--	420
137+07	CULVERT: 34045004490	--	410
253+70	CULVERT: 34045001012	--	410
282+66	CULVERT: 34045001015	--	410
333+83	CULVERT: 34045001017	--	450
468+19	CULVERT: 34045001023	--	530
	TOTAL	3990	2630

3

HMA PAVEMENT ITEMS

STATION	LOCATION	455.0605 TACK COAT (GAL)	460.6224 HMA PAVEMENT 4 MT 58-28 S (TON)	465.0105 ASPHALTIC SURFACE (TON)	465.0110 ASPHALTIC SURFACE PATCHING (TON)
32+95 - 472+00	USH 45 (MAINLINE)	10308	16680	--	--
110+89	CULVERT: 34045001008	36	--	120	--
137+07	CULVERT: 34045004490	35	--	120	--
253+70	CULVERT: 34045001012	35	--	120	--
282+66	CULVERT: 34045001015	35	--	120	--
333+83	CULVERT: 34045001017	39	--	130	--
468+19	CULVERT: 34045001023	56	--	190	--
	SIDEROADS	612	980	--	--
	USH 45 (UNDISTRIBUTED)	--	--	--	100
	TOTAL	11156	17660	800	100

PWL ITEMS

LOCATION	460.0105.S HMA PWL TEST STRIP VOLUMETRICS (EACH)	460.0110.S HMA PWL TEST STRIP DENSITY (EACH)
PROJECT	1	1
TOTAL	1	1

STATION	LOCATION	465.0475 ASPHALTIC CENTER LINE RUMBLE STRIPS 2-LANE RURAL (LF)
32+95 - 472+00	USH 45 (MAINLINE)	39510
	TOTAL	39510

3

CULVERT PIPE ITEMS

STATION	LOCATION	520.1024 APRON ENDWALLS FOR CULVERT PIPE 24-INCH (EACH)	520.1030 APRON ENDWALLS FOR CULVERT PIPE 30-INCH (EACH)	520.1042 APRON ENDWALLS FOR CULVERT PIPE 42-INCH (EACH)	520.3424 CULVERT PIPE CLASS III-A NON-METAL 24-INCH (LF)	520.3430 CULVERT PIPE CLASS III-A NON-METAL 30-INCH (LF)	522.0184 CULVERT PIPE REINFORCED CONCRETE CLASS III 84-INCH (LF)	522.1084 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 84-INCH (EACH)	522.2338 CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 38x60-INCH (LF)	522.2638 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 38x60-INCH (EACH)
69+44	CULVERT: 34045001007	--	--	2	--	--	--	--	--	--
110+89	CULVERT: 34045001008	--	--	--	--	--	--	--	56	2
137+07	CULVERT: 34045004490	--	2	--	--	70	--	--	--	--
253+70	CULVERT: 34045001012	2	--	--	118	--	--	--	--	--
282+66	CULVERT: 34045001015	2	--	--	122	--	--	--	--	--
333+83	CULVERT: 34045001017	--	--	--	--	--	126	2	--	--
409+20	CULVERT: 34045001019	2	--	--	--	--	--	--	--	--
468+19	CULVERT: 34045001023	2	--	--	70	--	--	--	--	--
	TOTAL	8	2	2	310	70	126	2	56	2

NOTE: CULVERT LENGTHS WERE DESIGNED FOR CONCRETE CULVERT PIPE. IF ALTERNATIVE MATERIAL IS USED, LENGTHS MAY VARY.

STATION	LOCATION	614.0950.01 REPLACING GUARDRAIL POSTS AND BLOCKS (EACH)
92+00 LT - 94+00 LT	C-34-0003 EAT SYSTEMS	18
92+00 RT - 94+00 RT	C-34-0003 EAT SYSTEMS	18
	TOTAL	36

STATION	LOCATION	624.0100 WATER (MGAL)
32+95 - 472+00	BASE AGGREGATE PLACEMENT	99
	TOTAL	99

EROSION CONTROL ITEMS

STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)	628.2006 EROSION MAT URBAN CLASS I TYPE A (SY)	628.7555 CULVERT PIPE CHECKS (EACH)	628.7570 ROCK BAGS (EACH)
32+95 - 472+00	PROJECT	--	--	5	5	--	--	--
69+44	CULVERT: 34045001007	--	--	--	--	100	5	--
110+89	CULVERT: 34045001008	500	500	--	--	540	10	--
137+07	CULVERT: 34045004490	450	450	--	--	535	10	--
253+70	CULVERT: 34045001012	510	510	--	--	1095	10	--
282+66	CULVERT: 34045001015	400	400	--	--	460	10	--
333+83	CULVERT: 34045001017	875	875	--	--	1985	15	--
409+20	CULVERT: 34045001019	--	--	--	--	100	5	--
468+19	CULVERT: 34045001023	265	265	--	--	550	10	--
	CULVERTS UNDISTRIBUTED	50	50	--	--	100	--	20
	TOTAL	3050	3050	5	5	5465	75	20

3

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	MISCELLANEOUS QUANTITIES	SHEET 20	E

FILE NAME : C:\CIVIL 3D PROJECTS\16021072\030201-MQ.DWG
LAYOUT NAME - 03

PLOT DATE : 5/27/2021 11:34 AM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1" = 1'

WISDOT/CADDS SHEET 42

3

RESTORATION ITEMS

STATION	LOCATION	606.0200 RIPRAP MEDIUM (CY)	625.0100 TOPSOIL (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0130 SEEDING MIXTURE NO. 30 (LB)	630.0500 SEED WATER (MGAL)	645.0120 GEOTEXTILE TYPE HR (SY)
69+44	CULVERT: 34045001007		100	1	2		
110+89	CULVERT: 34045001008		540	1	10		
137+07	CULVERT: 34045004490		540	1	10		
253+70	CULVERT: 34045001012		1100	1	20		
282+66	CULVERT: 34045001015		460	1	9		
333+83	CULVERT: 34045001017	50	1990	2	36		160
409+20	CULVERT: 34045001019		100	1	2		
468+19	CULVERT: 34045001023		550	1	10		
	CULVERTS UNDISTRIBUTED		100	1	2	130	
	TOTAL	50	5480	10	101	130	160

STATION	LOCATION	633.5200 MARKERS CULVERT END (EACH)
110+89	CULVERT: 34045001008	2
137+07	CULVERT: 34045004490	2
253+70	CULVERT: 34045001012	2
282+66	CULVERT: 34045001015	2
333+83	CULVERT: 34045001017	2
468+19	CULVERT: 34045001023	2
	TOTAL	12

3

PERMANENT SIGNING ITEMS

LOCATION	REMARKS	638.2102 MOVING SIGNS TYPE II* (EACH)
PROJECT	NO PASSING ZONE SIGNS	10
	TOTAL	10

*USE ITEM AS DIRECTED BY ENGINEER FOR NO PASSING ZONE SIGNS THAT MUST BE MOVED.

TRAFFIC CONTROL ITEMS

STATION	LOCATION	643.0300 TRAFFIC CONTROL DRUMS (DAY)	643.0900 TRAFFIC CONTROL SIGNS (DAY)	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE (SF)	643.5000 TRAFFIC CONTROL (EACH)
32+95 - 472+00	PROJECT	--	1612	36	1
110+89	CULVERT: 34045001008	20	6	--	--
137+07	CULVERT: 34045004490	20	6	--	--
253+70	CULVERT: 34045001012	20	6	--	--
282+66	CULVERT: 34045001015	20	6	--	--
333+83	CULVERT: 34045001017	125	30	--	--
468+19	CULVERT: 34045001023	20	6	--	--
	TOTAL	225	1,672	36	1

3

PAVEMENT MARKING ITEMS

STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH DASHED WHITE (LF)	646.1020 MARKING LINE EPOXY 4-INCH CENTERLINE YELLOW (LF)	646.1040 MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH EDGELINE WHITE (LF)	646.3040 MARKING LINE GROOVED WET REFLECTIVE EPOXY 8-INCH CHANNELIZING WHITE (LF)	646.5420 MARKING AERIAL ENFORCEMENT BAR EPOXY WHITE (EACH)	646.6120 MARKING STOP LINE EPOXY 18-INCH WHITE (LF)	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH CENTERLINE YELLOW (LF)	649.0120 TEMPORARY MARKING LINE EPOXY 4-INCH CENTERLINE YELLOW (LF)
32+95 - 472+00	MAINLINE (MILLED SURFACE)	--	--	--	--	--	--	9310	--
32+95 - 472+00	MAINLINE (FINAL SURFACE)	--	16500	87700	--	--	--	--	16500
91+31	CTH B INTERSECTION	--	--	--	260	--	40	--	--
128+30 - 131+05	BAGLY LANE BYPASS LANE	65	--	--	--	--	--	--	--
181+90 - 208+80	LT/RT	--	--	--	--	10	--	--	--
468+12	CTH J INTERSECTION	--	--	--	290	--	--	--	--
	TOTALS	16565		87700	550	10	40	9310	16500

NOTE: AERIAL ENFORCEMENT BAR STATIONING IS APPROXIMATE. USE STANDARD SPEC 646 AND SDD IN COORDINATION WITH STATE PATROL TO DETERMINE EXACT LOCATIONS.

STATION	LOCATION	648.0100 LOCATING NO-PASSING ZONES (MI)
32+95 - 472+00	PROJECT	8.32
	TOTAL	8.32

3

CONSTRUCTION STAKING ITEMS

STATION	LOCATION	650.6000 CONSTRUCTION STAKING PIPE CULVERTS (EACH)	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE (LF)	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (LS)
32+95 - 472+00	PROJECT	--	43905	1
110+89	CULVERT: 34045001008	1	--	--
137+07	CULVERT: 34045004490	1	--	--
253+70	CULVERT: 34045001012	1	--	--
282+66	CULVERT: 34045001015	1	--	--
333+83	CULVERT: 34045001017	1	--	--
468+19	CULVERT: 34045001023	1	--	--
	TOTAL	6	43905	1

STATION	LOCATION	690.0150 SAWING ASPHALT (LF)
110+89	CULVERT: 34045001008	60
137+07	CULVERT: 34045004490	60
253+70	CULVERT: 34045001012	60
282+66	CULVERT: 34045001015	60
333+83	CULVERT: 34045001017	60
468+19	CULVERT: 34045001023	96
	TOTAL	396

3

PWL MIXTURE USE TABLE

THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT:

							QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12-foot Driving lane (SB)	32+95 to 472+00	Upper Layer	Milled Existing HMA Surface	4 MT 58-28 S	6556	2"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
12-foot Driving lane (NB)	32+95 to 472+00	Upper Layer	Milled Existing HMA Surface	4 MT 58-28 S	6556	2"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
3-foot Paved Shoulder (NB)	32+95 to 472+00	Upper Layer	Milled Existing HMA Surface	4 MT 58-28 S	1730	2"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive or disincentive
3-foot Paved Shoulder (SB)	32+95 to 472+00	Upper Layer	Milled Existing HMA Surface	4 MT 58-28 S	1730	2"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive or disincentive
Widened Shoulders	32+95 to 472+00	Upper Layer	Milled Existing HMA Surface	4 MT 58-28 S	101	2"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive or disincentive
Sideroads		Upper Layer	Milled Existing HMA Surface	4 MT 58-28 S	978	2"	QMP as per SS 460	Acceptance testing by the department; Not eligible for incentive or disincentive
Culvert Replacements		Lower Layer	Base Aggregate	Asphaltic Surface	800	6.25" Total	QMP as per SS 465	Acceptance by ordinary compaction; Not eligible for incentive or disincentive
Various		Upper Layer	Milled Existing HMA Surface	Asphaltic Surface Patch	100	2"	QMP as per SS 465	Acceptance by ordinary compaction; Not eligible for incentive or disincentive

5

5

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 24	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050439-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

PI: 46+81.29

SEE SUPER ELEVATION TABLE FOR DETAILS

N

C1

50

FE (RT)
BASE AGG
STA 47+24

CURVE TABLE						
CURVE	CHORD BEARING	CHORD DISTANCE	RADIUS	ARC LENGTH	PI NORTHING	PI EASTING
C1	N10° 06' 47"W	1098.42'	3819.72'	1102.24	370144.180	621033.744

5

5

N

PT: 52+28.55

N1° 50' 46"W

55

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 25	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050440-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

PE (LT)
ASPHALT
STA 61+95

PI: 63+57.73

60

5

5

T
FO

N

EXISTING CULVERT 34045001007
LINED 42-INCH CORRUGATED STEEL PIPE

BM #23

FO
CMP
FO

N1° 50' 41"W 65

70

STA 69+44
34045001007

INSTALL APRON ENDWALLS FOR
CULVERT PIPE 42-INCH

CMP

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
23	66+78.28	1533.525'	BM IP 1 1/4IN SET REI CAP
22	72+01.32	1533.525'	BM IP 1 1/4IN SET REI CAP

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 26	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050441-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

BM #22

75

5

5

N

80

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 27	E

N

85

5

5

N

CTH C
STA 91+40

STA 92+00 LT - STA 94+00 LT
C-34-0003

REPLACE GUARDRAIL POSTS &
BLOCKS FOR MGS GUARDRAIL
TERMINAL EAT SYSTEM

PE (LT)
BASE AGG
STA 95+21

90

95

CTH C
STA 91+44

STA 92+00 RT - STA 94+00 RT
C-34-0003

REPLACE GUARDRAIL POSTS &
BLOCKS FOR MGS GUARDRAIL
TERMINAL EATS

FE (RT)
BASE AGG
STA 94+94

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 28	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050443-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

100

5

5

N

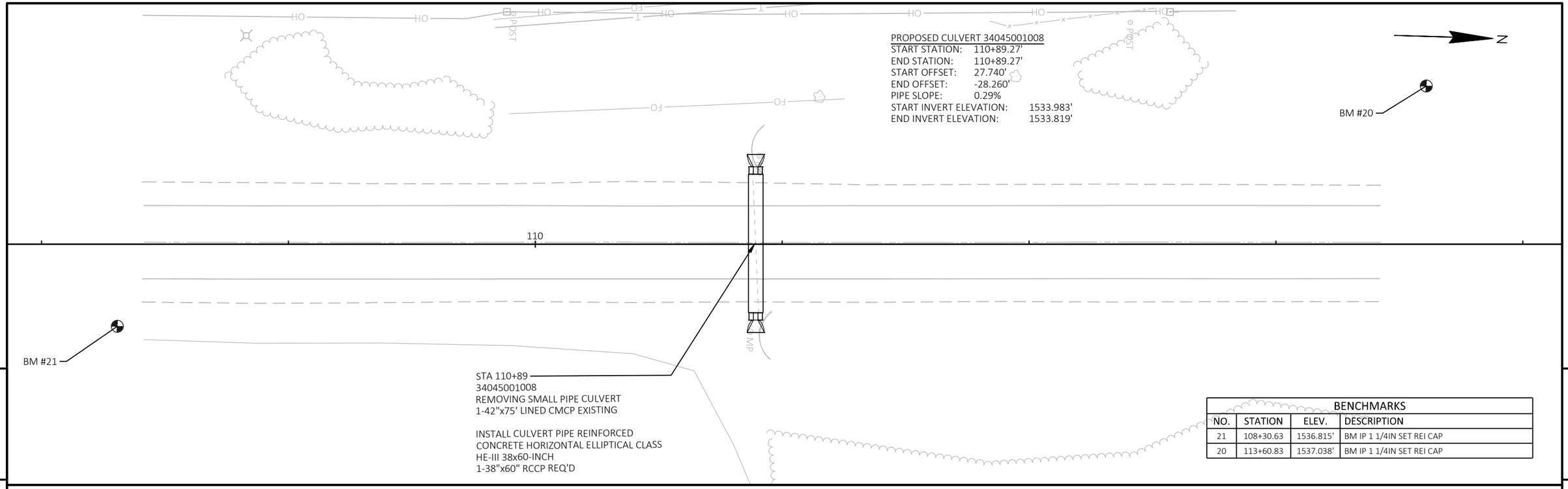
PE (LT)
BASE AGG
STA 106+18

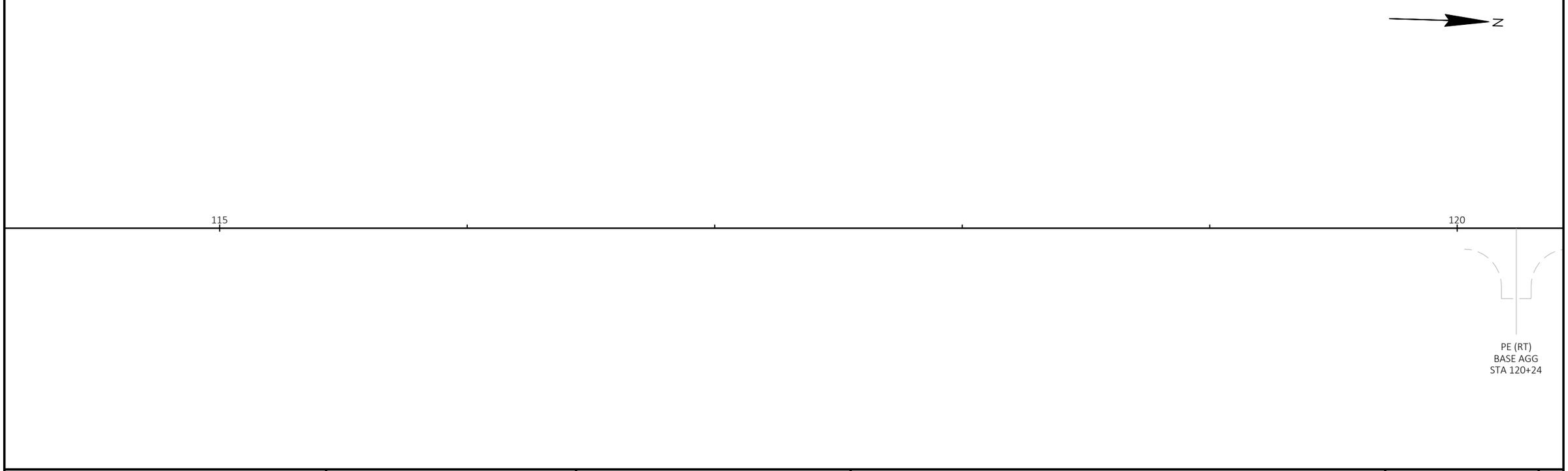
105

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 29	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050444-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT





PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 30	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050445-pn
PLOT DATE : 4/22/2021 3:00 PM
PLOT BY : BLUMENSCHEIN, CHAD P
PLOT NAME :
PLOT SCALE : 1 IN:40 FT

N

125

FE (RT)
BASE AGG
STA 122+14

5

5

N

BAGLY LANE

STA 129+92

130

EP: 622+00.00

FE (RT)
BASE AGG
STA 129+81

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 31	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050446-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

PROPOSED CULVERT 34045004490
START STATION: 137+07.82'
END STATION: 137+07.82'
START OFFSET: -35.011'
END OFFSET: 34.987'
PIPE SLOPE: 0.77%
START INVERT ELEVATION: 1540.928'
END INVERT ELEVATION: 1540.387'

BM #19

PE (LT)
BASE AGG
STA 139+00

135

STA 137+07
34045004490
REMOVE OLD STRUCTURE
1-48"X72"X75' CMCPHE EXISTING

INSTALL CULVERT PIPE CLASS III-A 30-INCH
1-30" CP REQ'D

STA 137+09 NB
34045004490
REMOVING MASONRY

FE (RT)
BASE AGG
STA 139+13

5

5

BM #18

PC: 140+44.68

PI: 143+01.33

140

L=513.200, R=11525.430

145

PE (RT)
ASPHALT
STA 144+34

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
19	137+55.27	1545.497'	BM IP 1 1/4IN SET REI CAP
18	142+95.83	1548.576'	BM IP 1 1/4IN SET REI CAP

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 32	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050447-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

PT: 145+57.88

N0° 42' 24"E

150

PE (RT)
BASE AGG
STA 145+95

5

5

N

PE (LT)
BASE AGG
STA 152+47

155

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 33	E

N

PE (LT)
BASE AGG
STA 162+13

160

5

5

N

165

170

BP: 630

BRANCH RD

STA 170+20

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 34	E

N

FE (LT)
BASE AGG
STA 175+06

175

30+00.00

5

5

N

180

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 35	E

N

185

5

5

N

190

195

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 36	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050451-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

200

5

5

N

205

PE (RT)
BASE AGG
STA 207+79

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 37	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050452-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

210

5

5

N

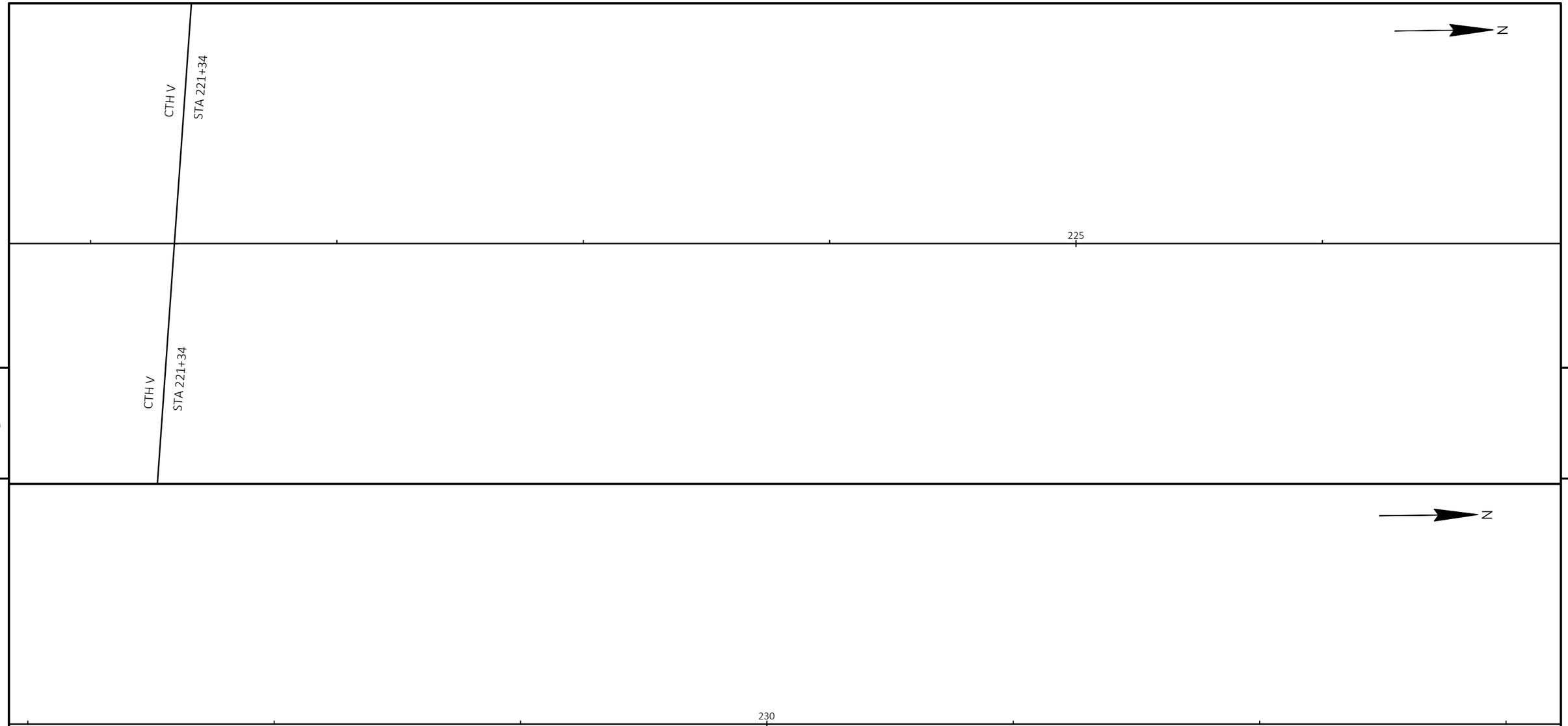
215

220

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 38	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050453-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT



PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 39	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050454-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

235

5

5

N

240

245

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 40	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050455-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

250

FE (RT)
BASE AGG
STA 248+36

BM #17

PROPOSED CULVERT 34045001012
START STATION: 253+70.79'
END STATION: 253+21.66'
START OFFSET: 40.584'
END OFFSET: -66.476'
PIPE SLOPE: 5.91%
START INVERT ELEVATION: 1610.490'
END INVERT ELEVATION: 1603.533'

N

PE (LT)
BASE AGG
STA 256+45

255

STA 253+70
34045001012
REMOVING SMALL PIPE CULVERT
1-24"X125' CMCP EXISTING

INSTALL CULVERT PIPE CLASS III-A 24-INCH
1-24" CP REQ'D

FE (RT)
BASE AGG
STA 255+08

BM #16

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
17	250+62.82	1614.981'	BM IP 1 1/4IN SET REI CAP
16	256+40.12	1618.380'	BM IP 1 1/4IN SET REI CAP

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 41	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050456-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

PE (LT)
BASE AGG
STA 261+25

260

5

5

N

CTH J

PE (LT)
ASPHALT
STA 265+75

265

270

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 42	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050457-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

CTH J
STA 270+85

N

275

CTH J
STA 270+85

5

5

N

PROPOSED CULVERT 34045001015
START STATION: 282+30.13'
END STATION: 283+18.30'
START OFFSET: -34.615'
END OFFSET: 49.609'
PIPE SLOPE: 3.46%
START INVERT ELEVATION: 1633.057'
END INVERT ELEVATION: 1628.843'

280

STA 282+66
34045001015
REMOVING SMALL PIPE CULVERT
1-24"X134' CMCP EXISTING

INSTALL CULVERT PIPE CLASS III-A 24-INCH
1-24" CP REQ'D

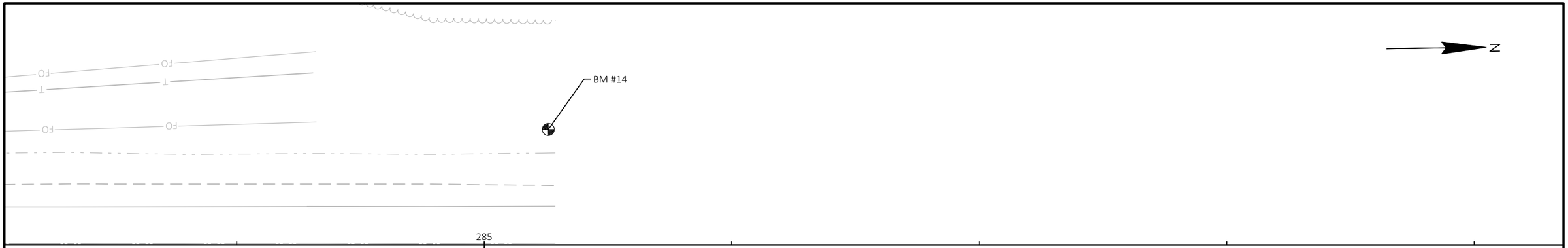
PE (RT)
BASE AGG
STA 282+37

BM #15

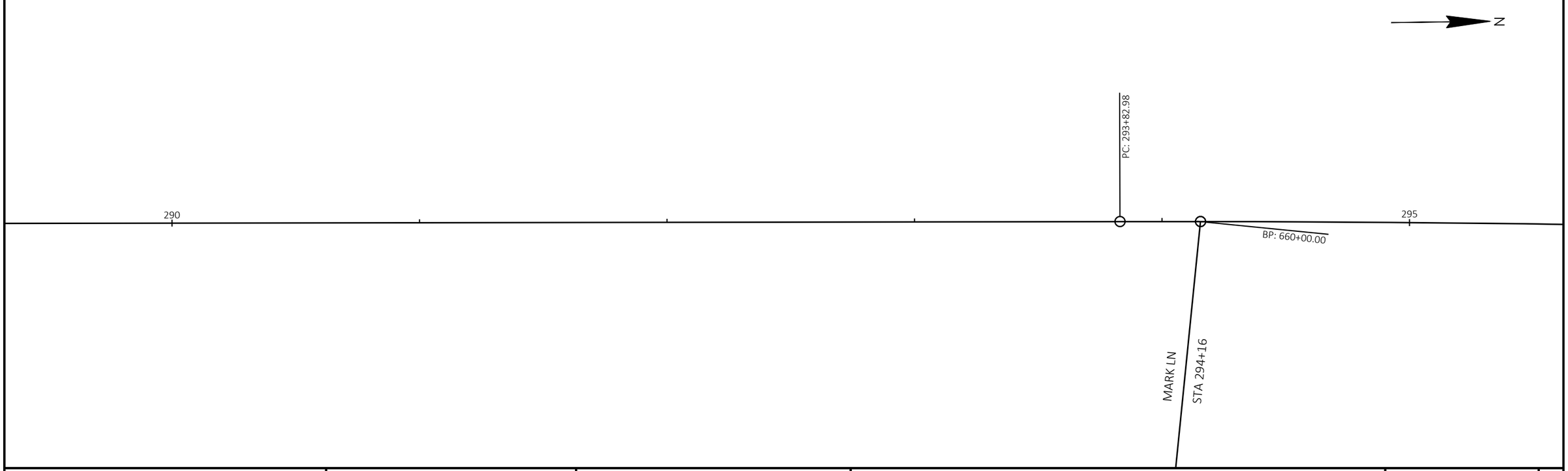
PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 43	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050458-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT



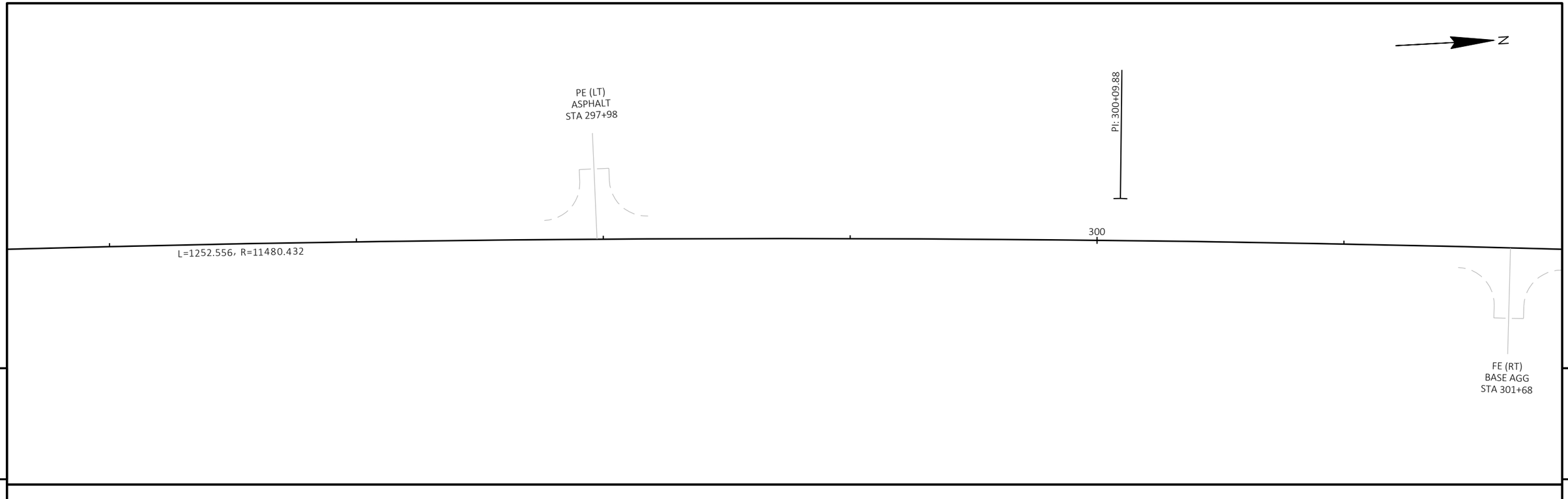
BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
15	279+70.04	1635.810'	BM IP 1 1/4IN SET REI CAP
14	285+25.89	1638.265'	BM IP 1 1/4IN SET REI CAP

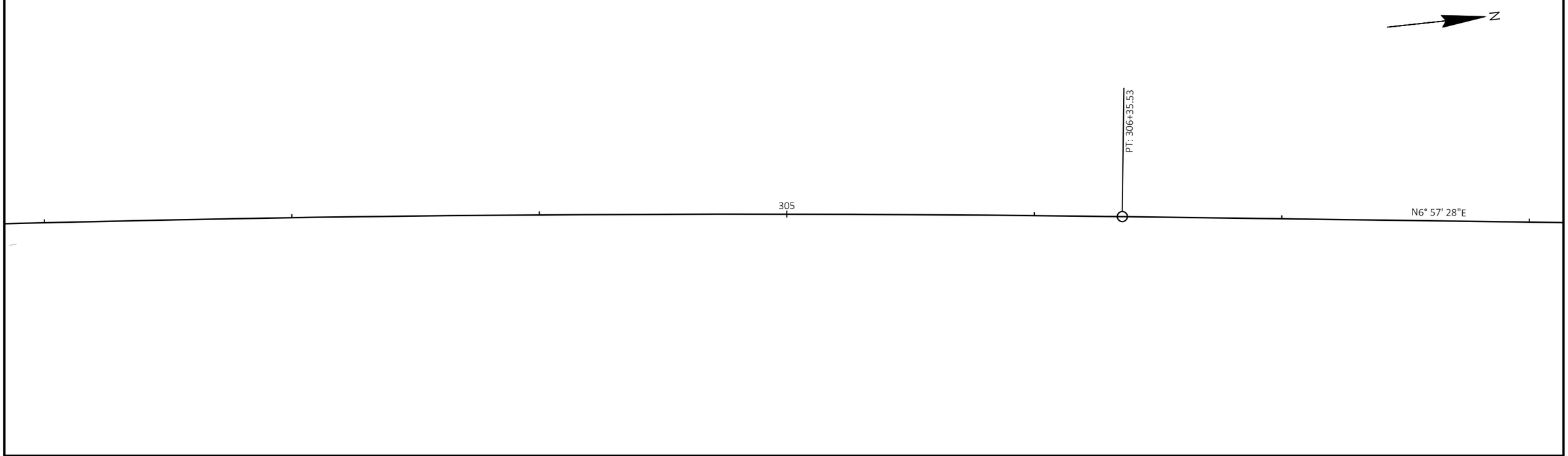


PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 44	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050459-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT





PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 45	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050460-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

310

5

5

N

315

320

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 46	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050461-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

325

5

5

N

KNIGHT RD

STA 329+20

BM #13

POST

330

KNIGHT RD

STA 329+23

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 47	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050462-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

PROPOSED CULVERT 34045001017
START STATION: 333+63.40'
END STATION: 334+00.28'
START OFFSET: -63.089'
END OFFSET: 57.386'
PIPE SLOPE: 1.08%
START INVERT ELEVATION: 1613.00'
END INVERT ELEVATION: 1611.70'

GEOTEXTILE FABRIC REQ'D
RIP RAP MEDIUM REQ'D

STA 333+71
34045001017
REMOVING SMALL PIPE CULVERT
1-60"X140' CMCP EXISTING

STA 333+83
34045001017
INSTALL CULVERT PIPE REINFORCED CONCRETE
CLASS III 84-INCH
1-84" RCCP REQ'D

TEMPORARY WATER DIVERSION REQ'D

ALLOW FOR NATURAL SILTATION IN BOTTOM
OF CULVERT

STA 333+64
34045004427
REMOVING SMALL PIPE CULVERT
1-54"X141' CMCP EXISTING

GEOTEXTILE FABRIC REQ'D
RIP RAP MEDIUM REQ'D

RIP RAP MEDIUM REQ'D AT CULVERT OUTFALL

FE (LT)
BASE AGG
STA 335+61

FE (RT)
BASE AGG
STA 335+58

BM #12

335

340

345

N

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
13	330+88.32	1629.812'	BM IP 1.25IN SET
12	336+30.71	1626.810'	BM IP 1.25IN SET

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 48	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050463-pn
PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

350

5

5

N

355

NGS MONUMENT
(DO NOT DISTURB)

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 49	E

N

360

5

5

N

365

370

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 50	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050465-pn

PLOT DATE : 4/22/2021 3:00 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

375

5

5

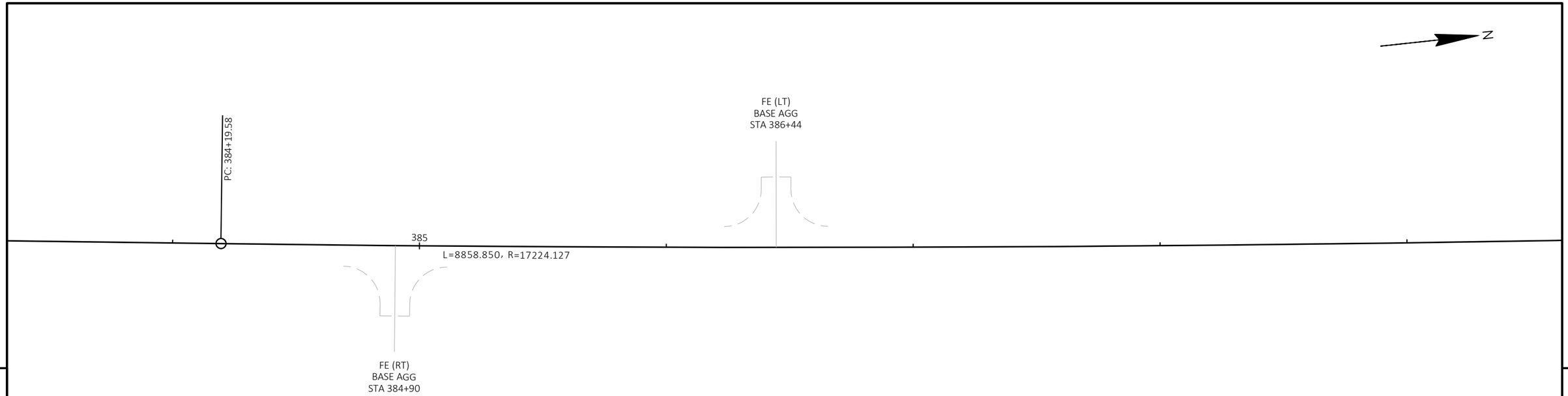
N

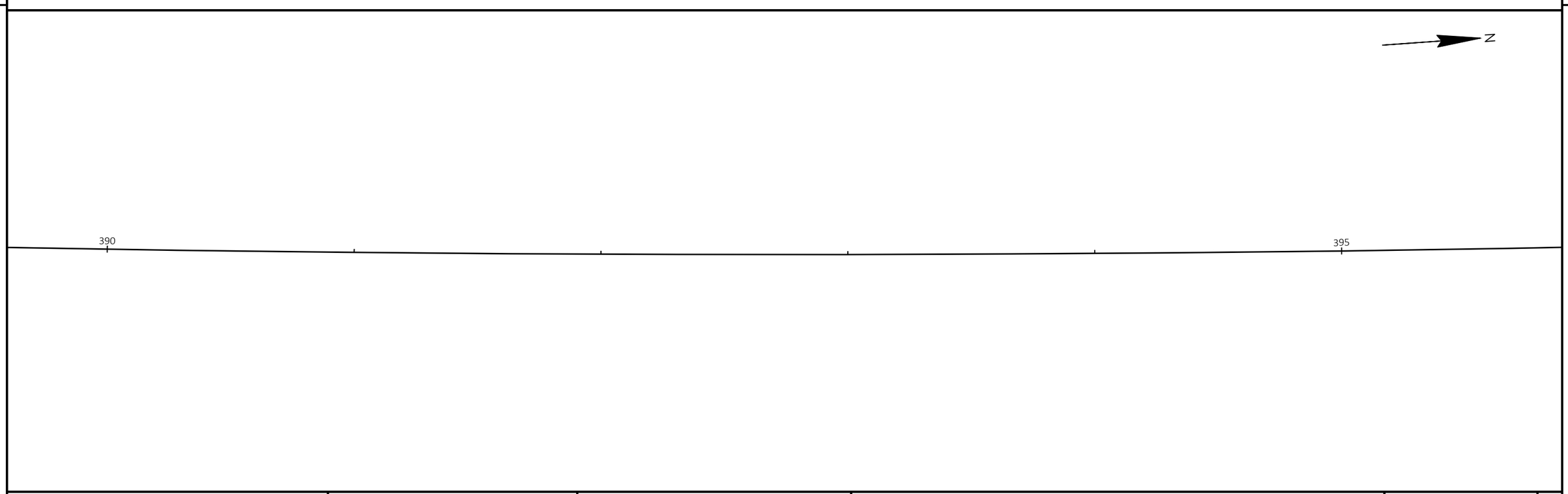
380

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 51	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050466-pn

PLOT DATE : 4/22/2021 3:01 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT





PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 52	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050467-pn
PLOT DATE : 4/22/2021 3:01 PM
PLOT BY : BLUMENSCHEIN, CHAD P
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

N

400

5

5

N

405

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 53	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050468-pn

PLOT DATE : 4/22/2021 3:01 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

EXISTING CULVERT 34045001019
LINED 24-INCH CORRUGATED STEEL PIPE

410

STA 409+20
34045001019

INSTALL APRON ENDWALLS FOR CULVERT
PIPE 24-INCH

BM #11

5

5

N

FO

415

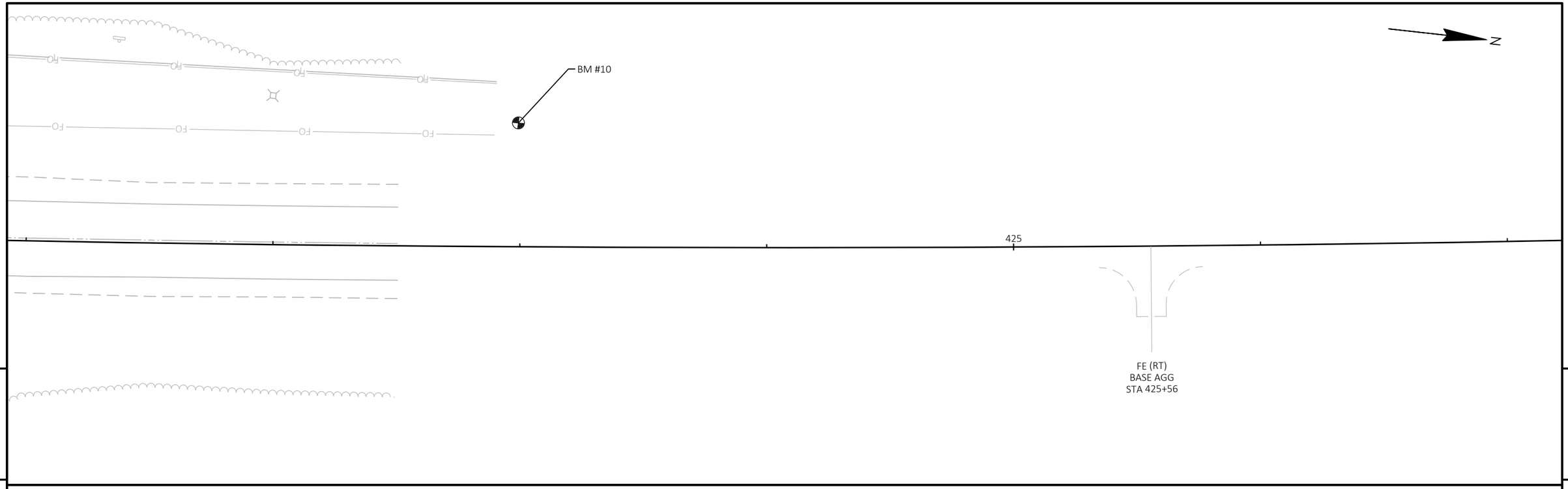
420

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
11	413+86.23	1641.910'	BM IP 1.25IN CAPPED SET
10	422+99.08	1636.618'	BM IP 1.25IN CAPPED SET

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 54	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050469-pn

PLOT DATE : 4/22/2021 3:01 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT



PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 55	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050470-pn

PLOT DATE : 4/22/2021 3:01 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

N

435

5

5

N

440

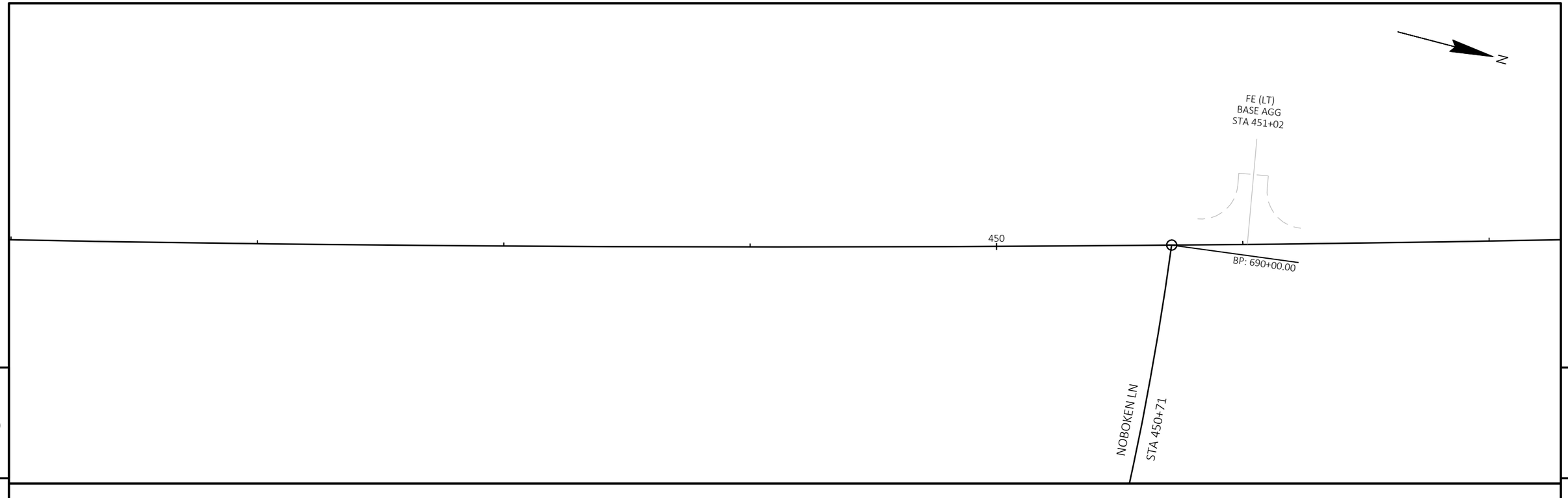
445

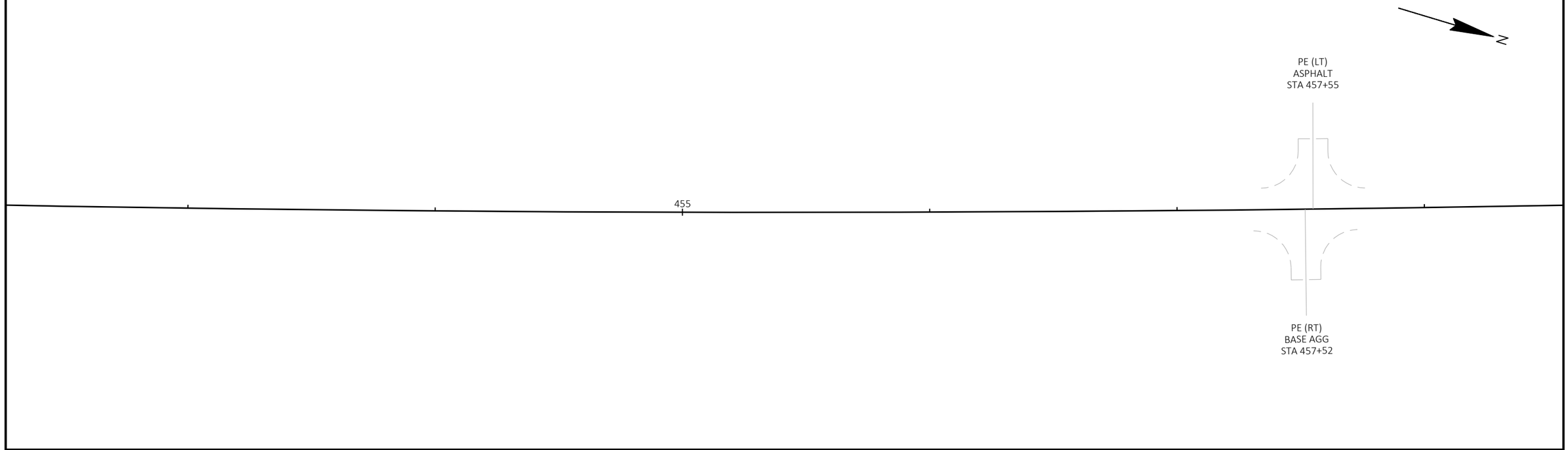
FE (RT)
BASE AGG
STA 443+00

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 56	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050471-pn

PLOT DATE : 4/22/2021 3:01 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

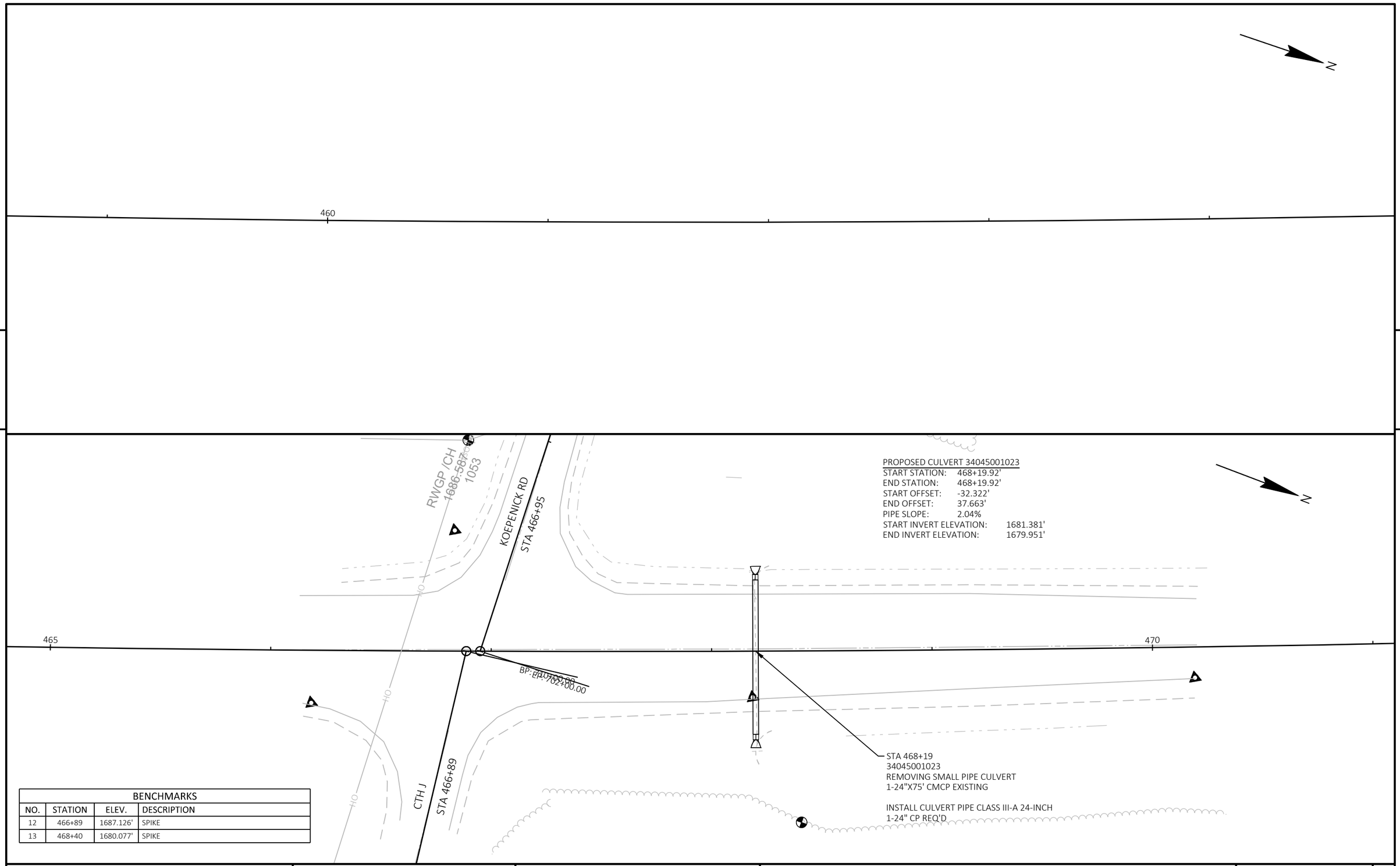




PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 57	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050472-pn

PLOT DATE : 4/22/2021 3:01 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT



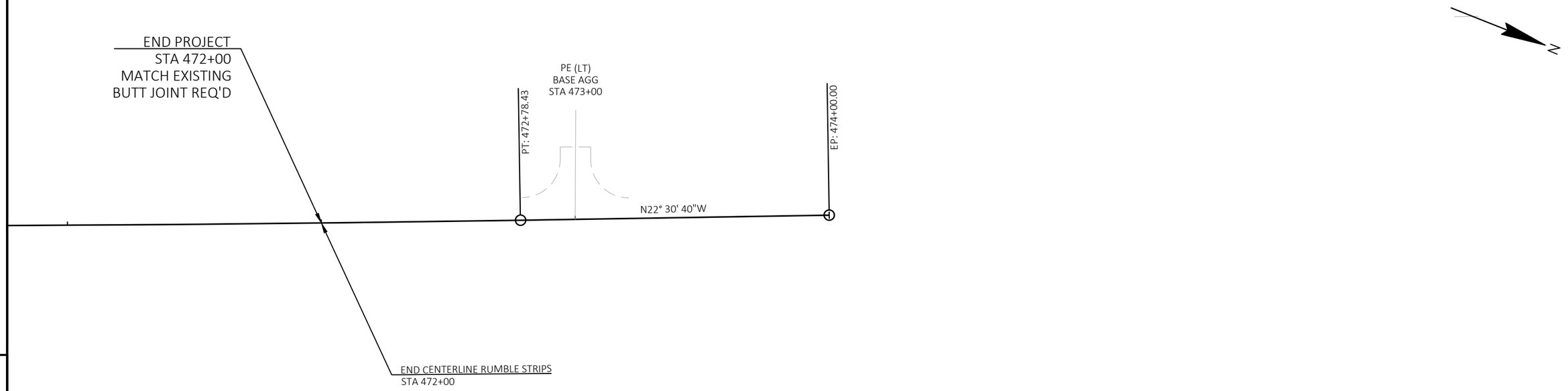
BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
12	466+89	1687.126'	SPIKE
13	468+40	1680.077'	SPIKE

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 58	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050473-pn

PLOT DATE : 4/22/2021 3:01 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44



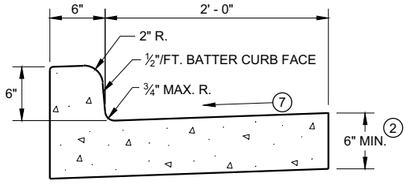
5

5

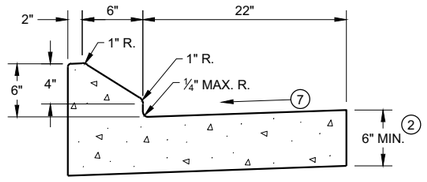
PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	PLAN SHEETS	SHEET 59	E

Standard Detail Drawing List

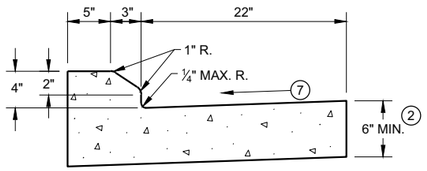
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION 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
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
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-08B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C14-04	AERIAL ENFORCEMENT BARS PAVEMENT MARKING DETAILS
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15C35-04B	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15C35-04C	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL
15D48-01	TRAFFIC CONTROL, TEMPORARY LANE SHIFT DURING CULVERT WORK



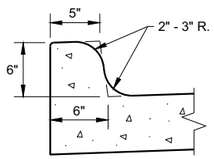
TYPES A[1] & D



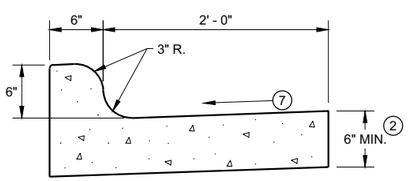
6" SLOPED CURB TYPES G[1] & J



4" SLOPED CURB TYPES G[1] & J

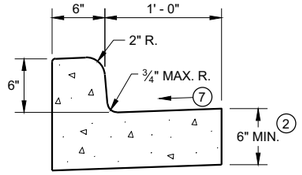


TYPES K[1] & L
(OPTIONAL CURB SHAPE)



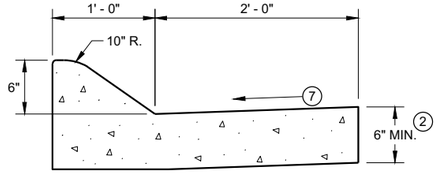
TYPES K[1] & L

CONCRETE CURB AND GUTTER 30"

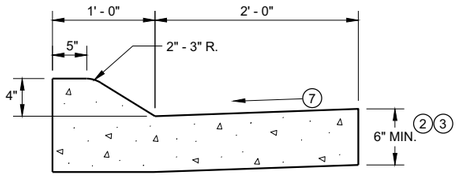


TYPES A[1] & D

CONCRETE CURB AND GUTTER 18"

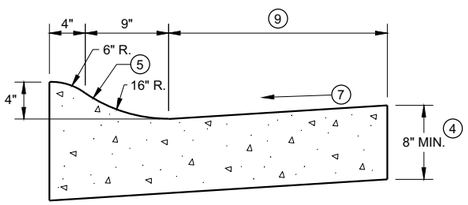


6" SLOPED CURB TYPES A[1] & D



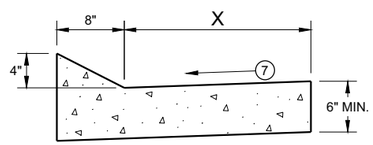
4" SLOPED CURB TYPES A[1] & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R[1] & T

TBT & TBTT	X
30"	22"
36"	28"

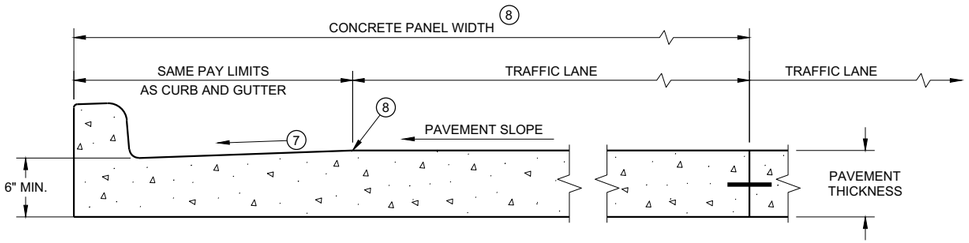


TYPES TBT & TBTT[1]

CONCRETE CURB AND GUTTER

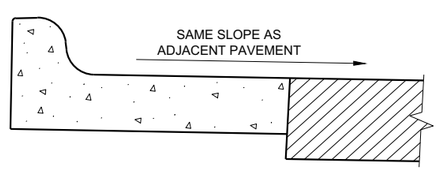
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER[6]
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

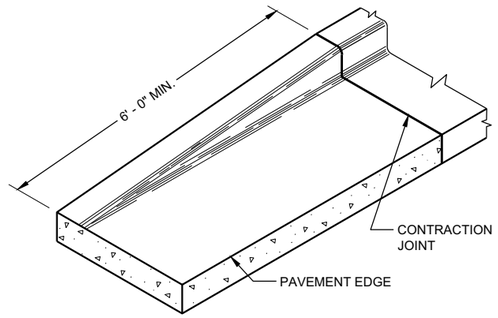
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

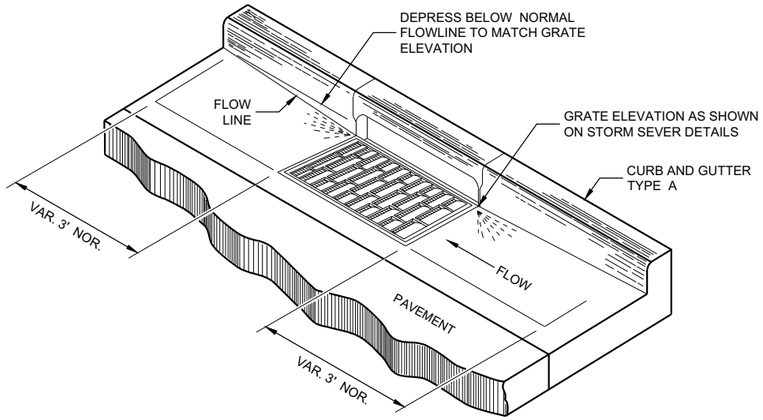
1. TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
2. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
3. USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
4. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
5. UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
6. WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
7. USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
8. INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
9. CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
   CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

SDD 08D01 - 22a
6



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

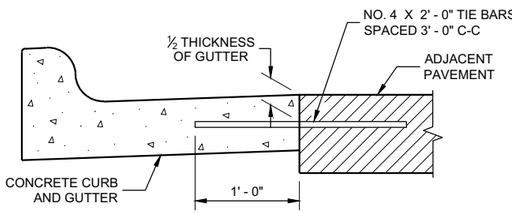
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

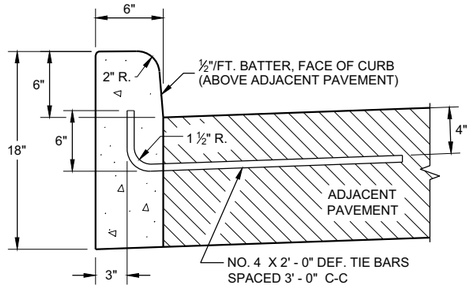
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

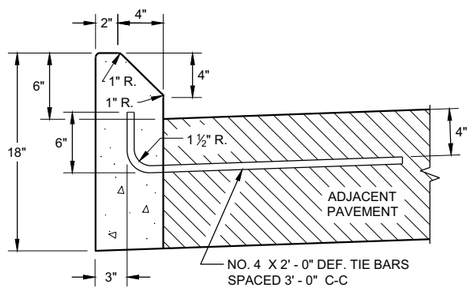
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

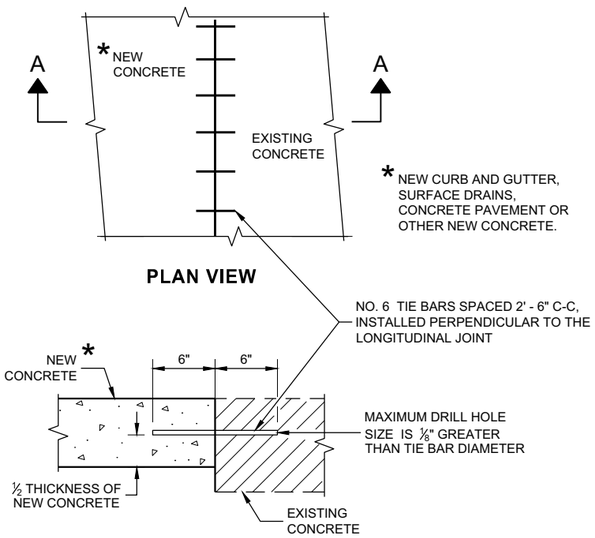


TYPES A (1) & D



TYPES G (1) & J

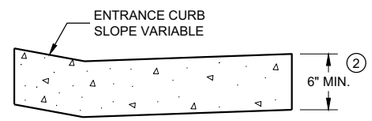
CONCRETE CURB



PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

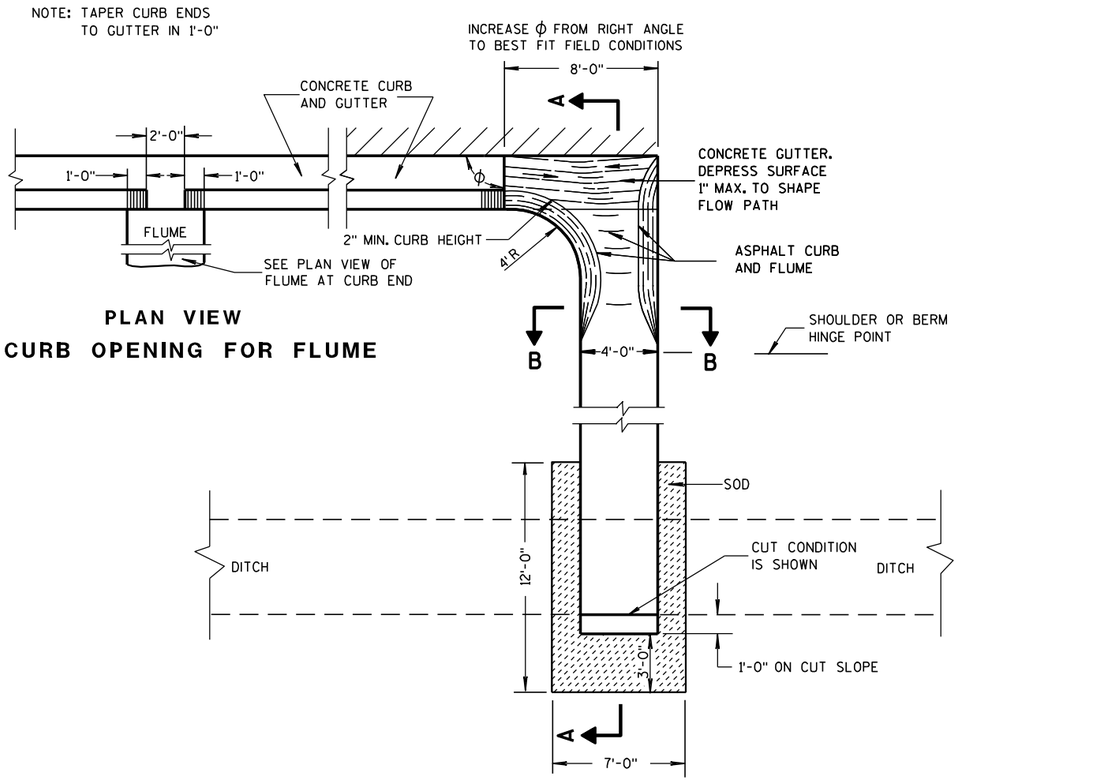
APPROVED
February 2021 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

6

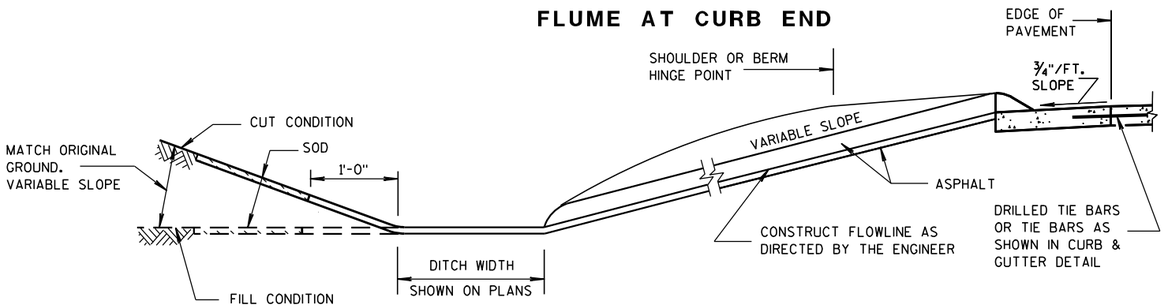
SDD08D01 - 22b

ASPHALTIC FLUME

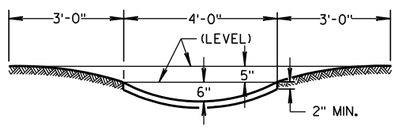


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

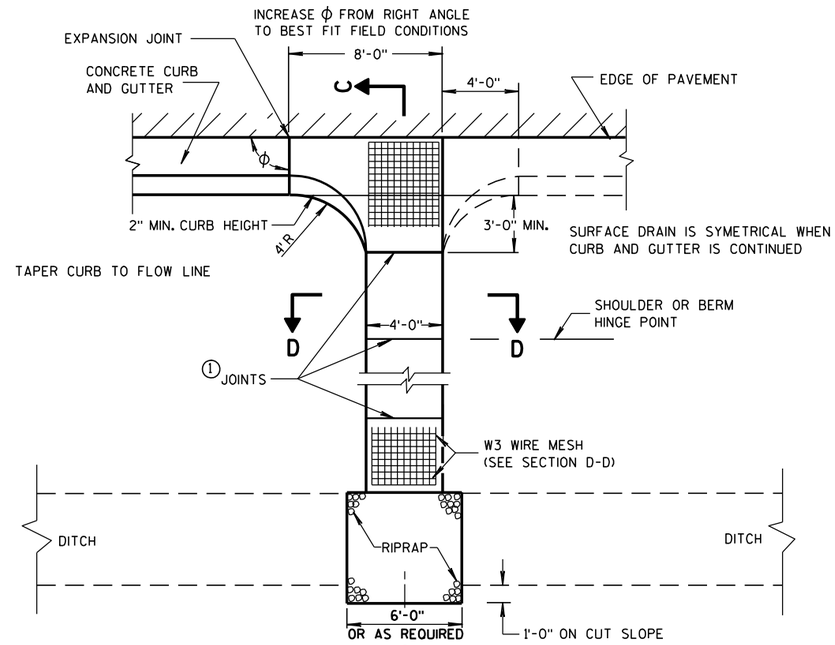
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

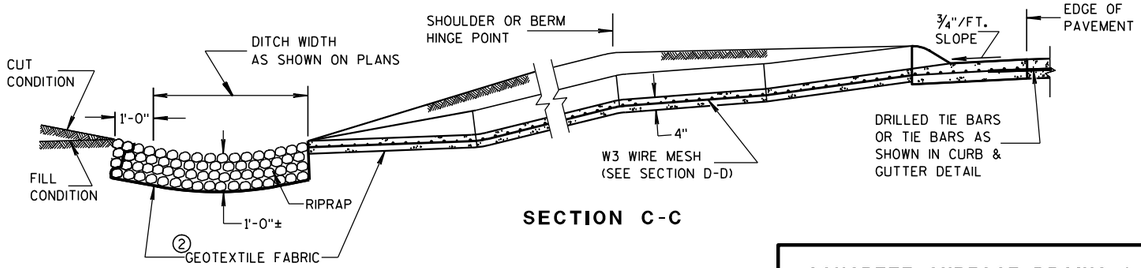
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

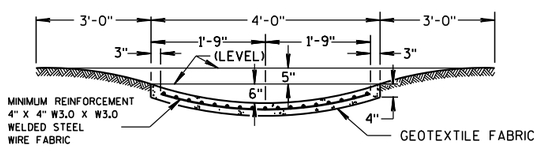
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 D 4-5

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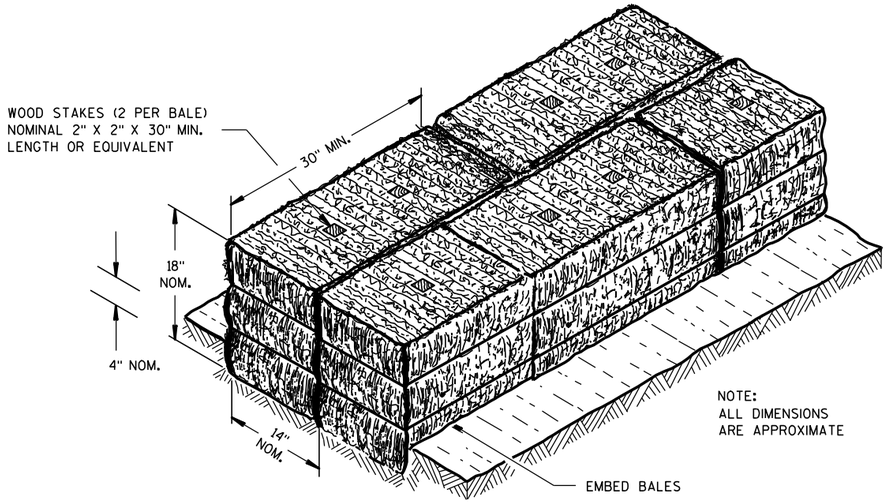
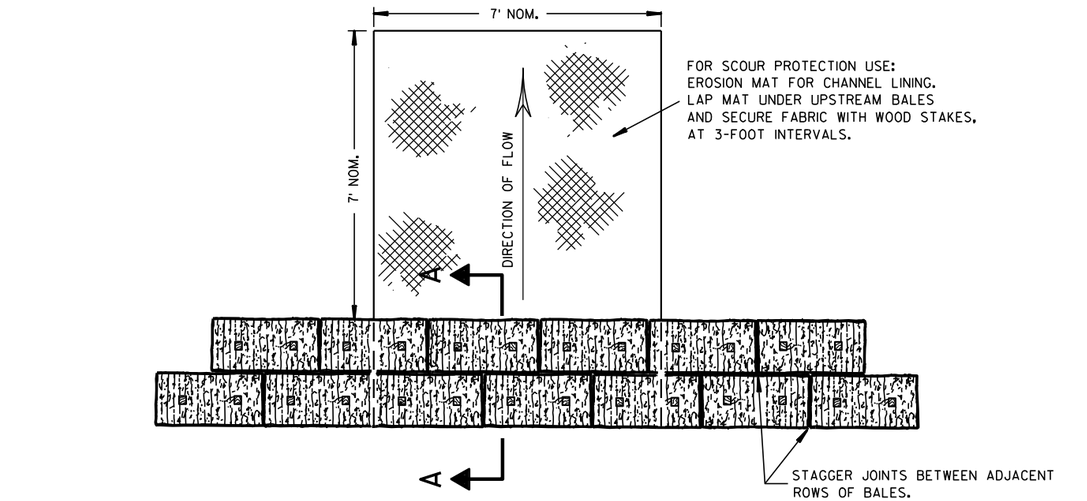
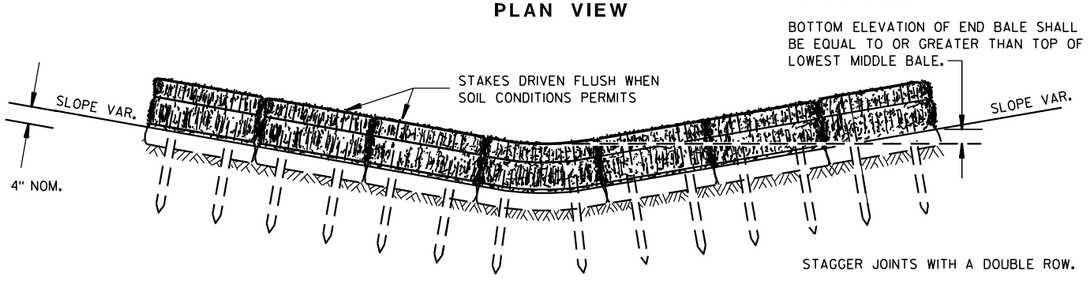
S.D.D. 8 D 4-5



SECTION A-A



PLAN VIEW



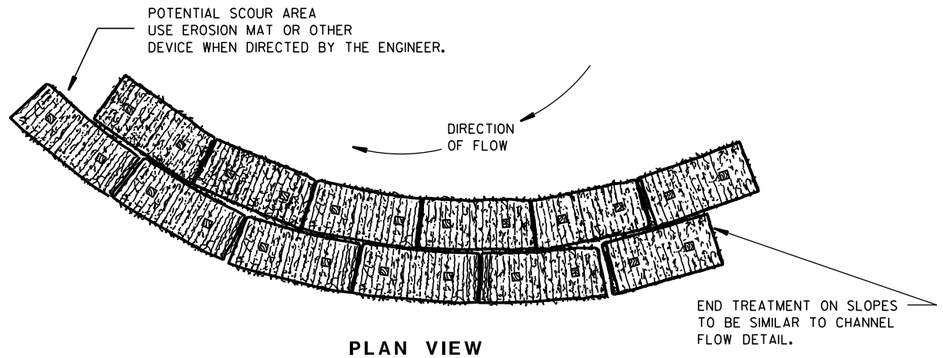
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

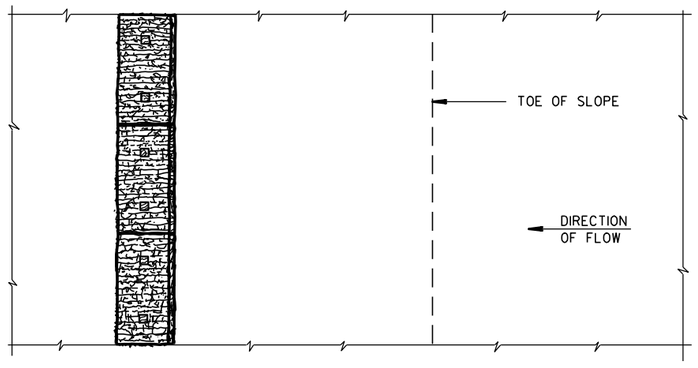
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

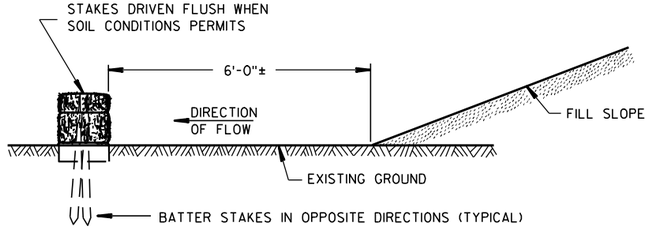


PLAN VIEW

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

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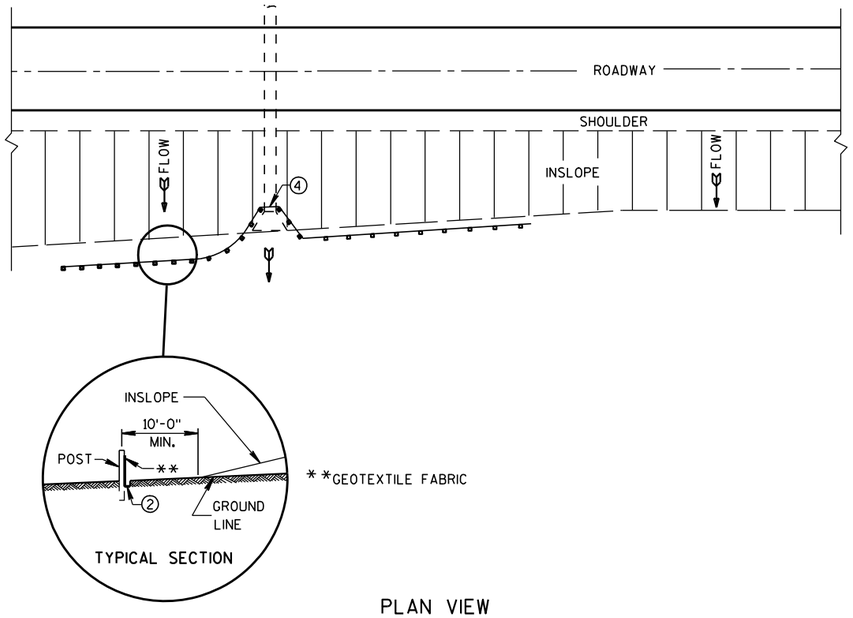
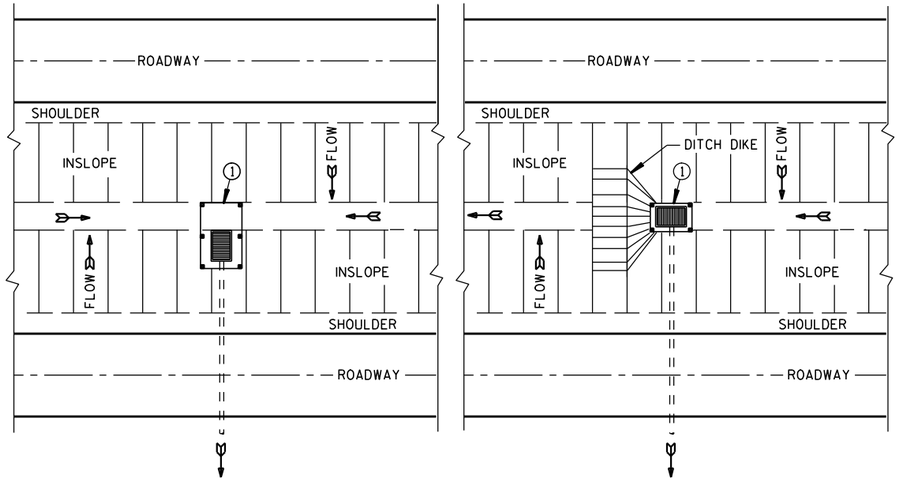
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



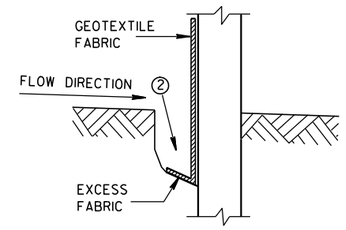
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

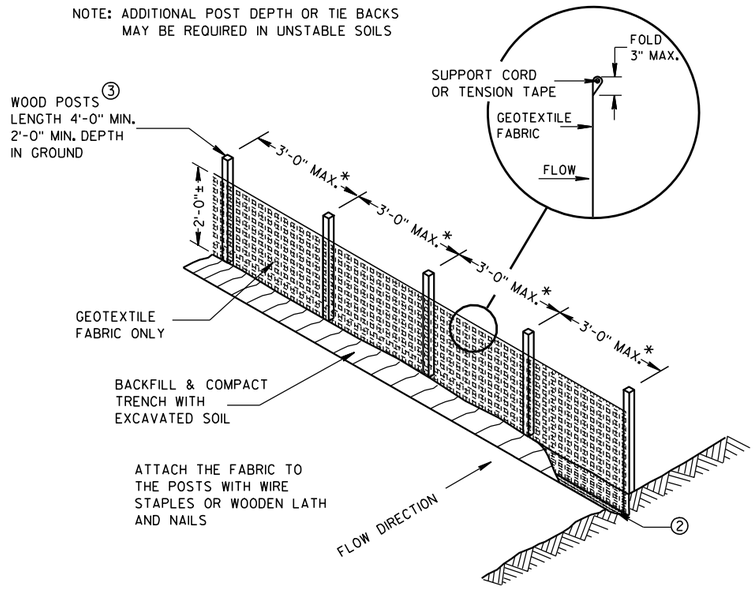
GENERAL NOTES

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

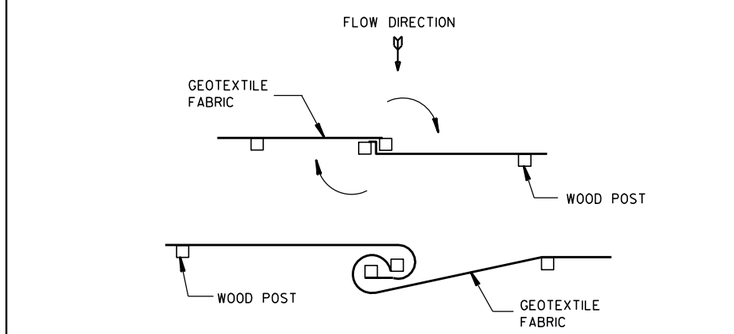
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



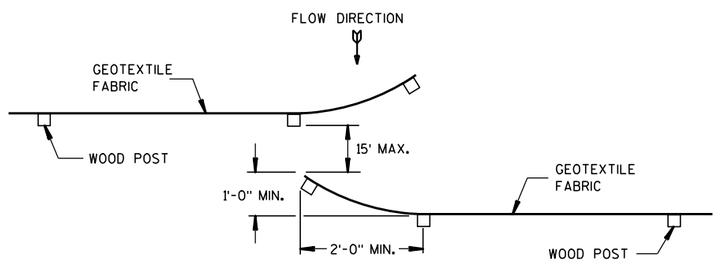
TRENCH DETAIL



SILT FENCE

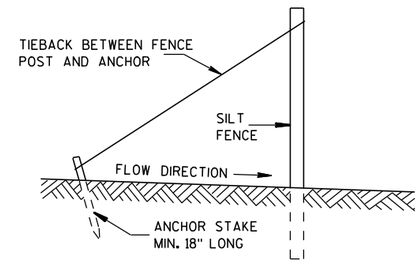


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5

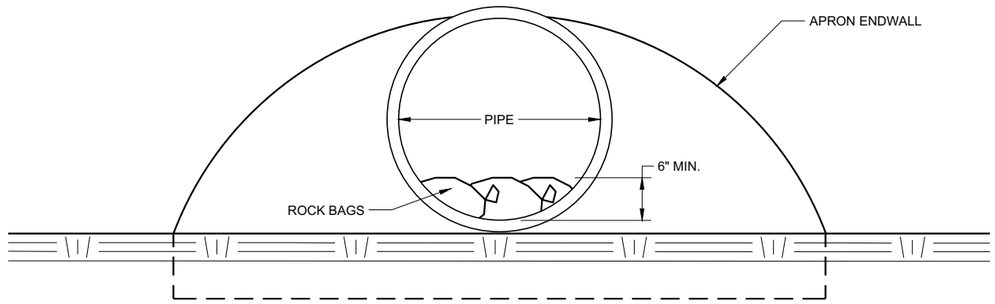


SILT FENCE TIE BACK

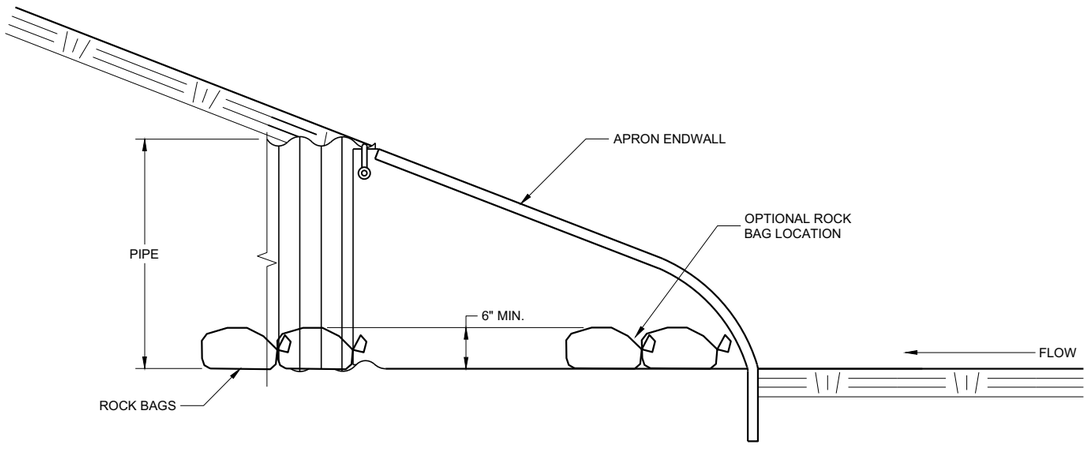
(WHEN REQUIRED BY THE ENGINEER)

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



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

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SDD 08E15 - 01

METAL APRON ENDWALLS

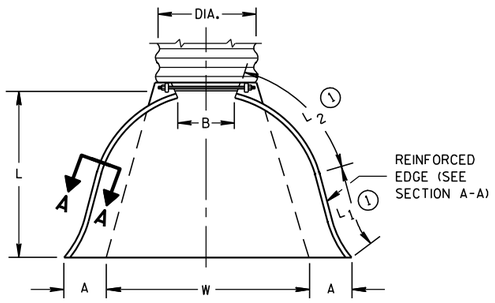
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	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

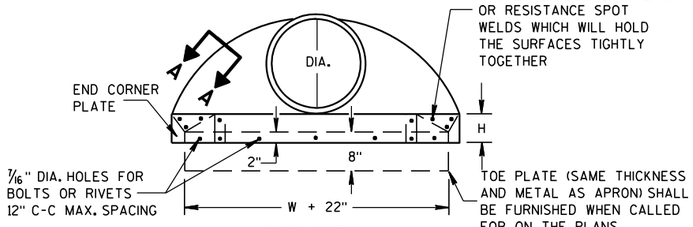
REINFORCED CONCRETE APRON ENDWALLS

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

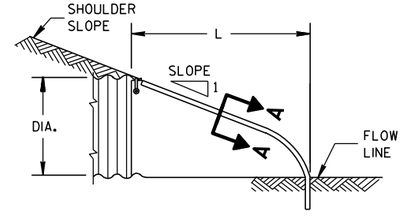
* MINIMUM
** MAXIMUM



PLAN VIEW

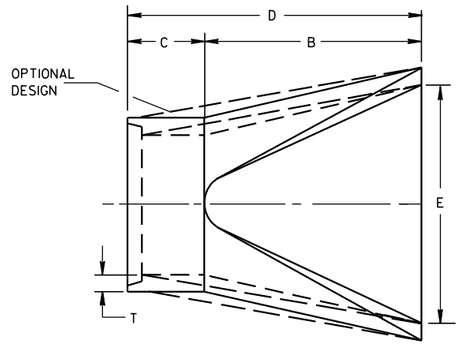


END VIEW

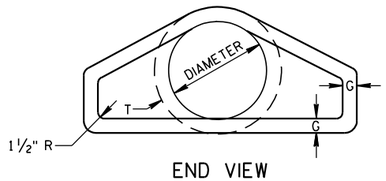


SIDE ELEVATION

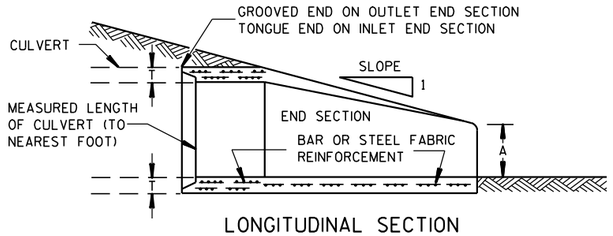
METAL ENDWALLS



PLAN

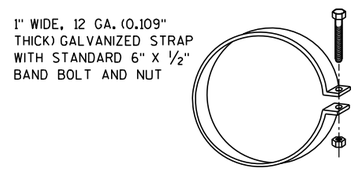


END VIEW



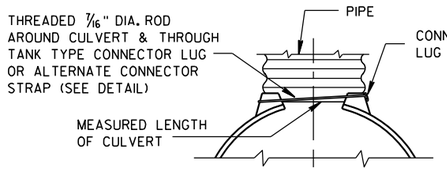
LONGITUDINAL SECTION

CONCRETE ENDWALLS

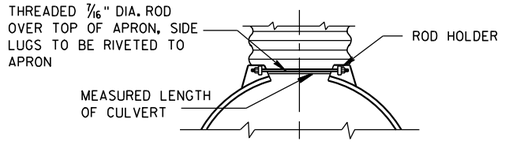


ALTERNATE FOR TYPE 1 CONNECTION

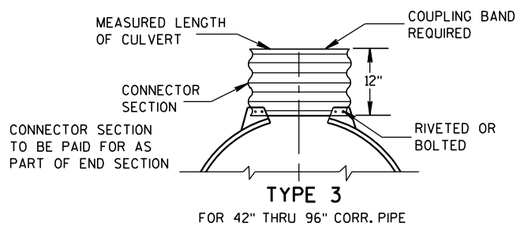
END SECTION CONNECTOR STRAP



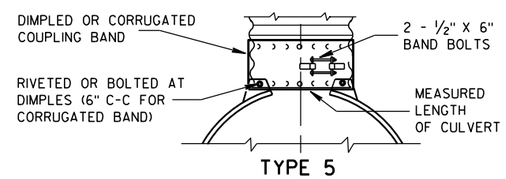
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

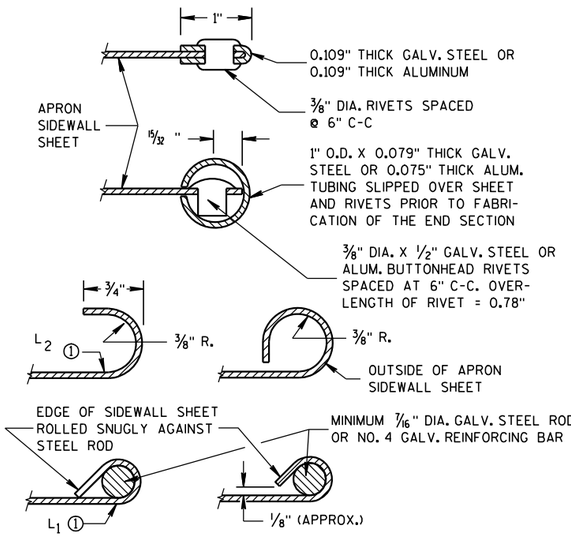
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

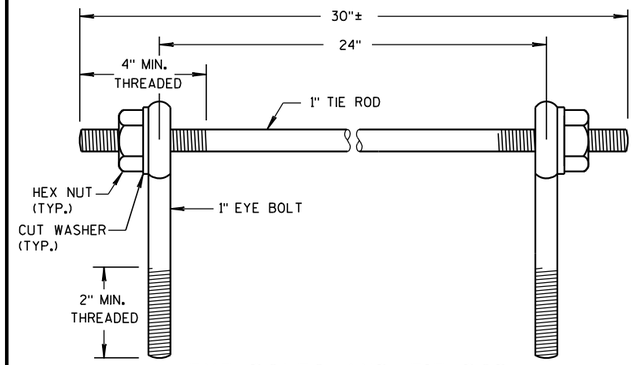
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

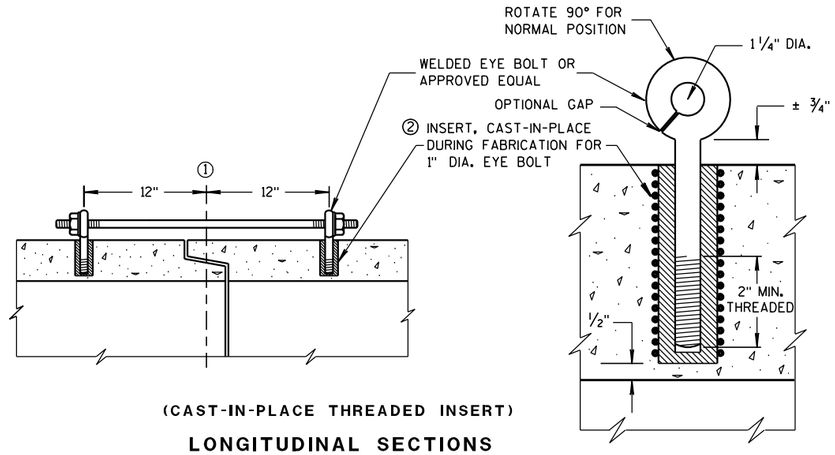
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOP 67 NEER
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.

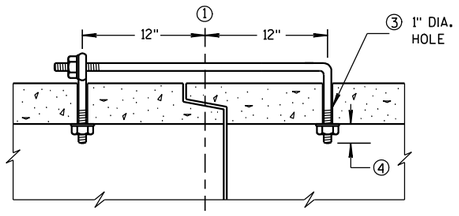
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

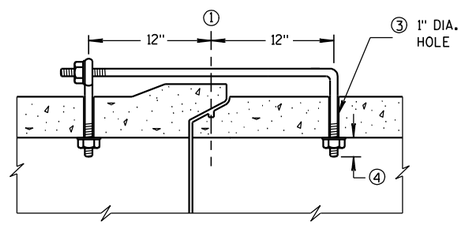
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

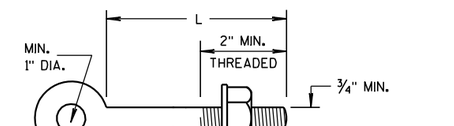


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

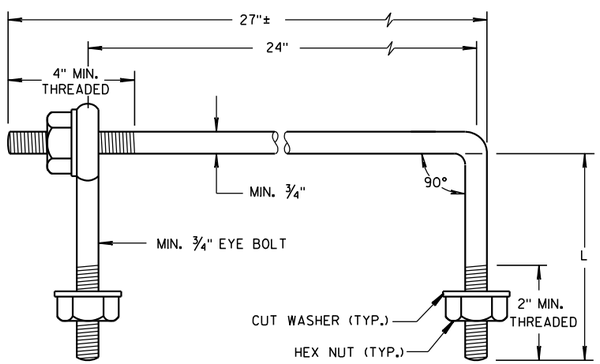
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

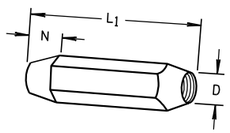
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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



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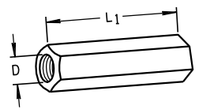
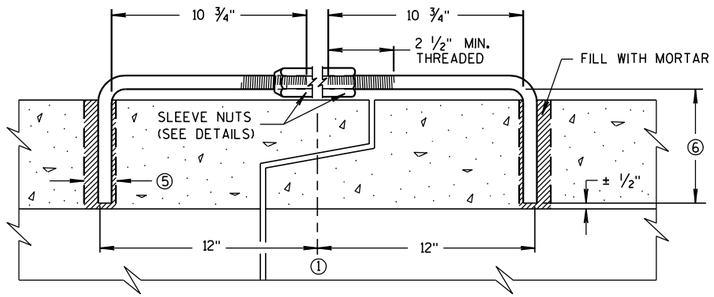


PLAIN

RIGHT AND LEFT THREADS

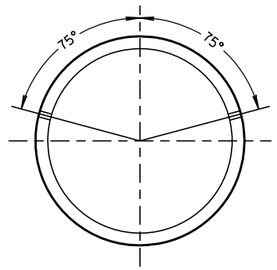
SLEEVE NUTS



LONGITUDINAL SECTION

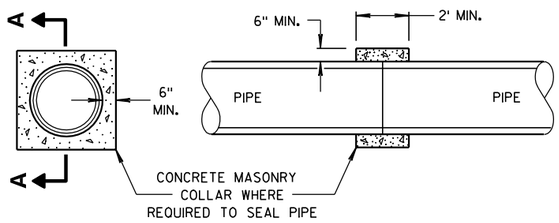
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
68
FHWA

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S.D.D. 8 F 4-7

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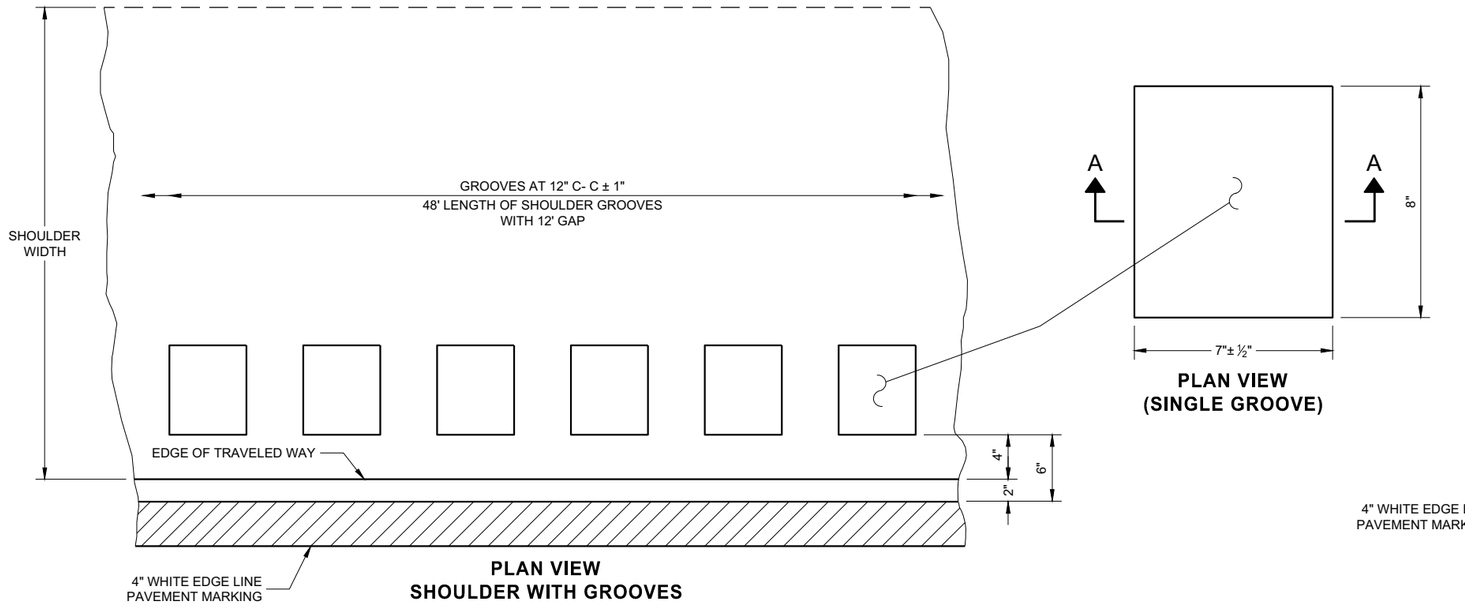
S.D.D. 8 F 4-7



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

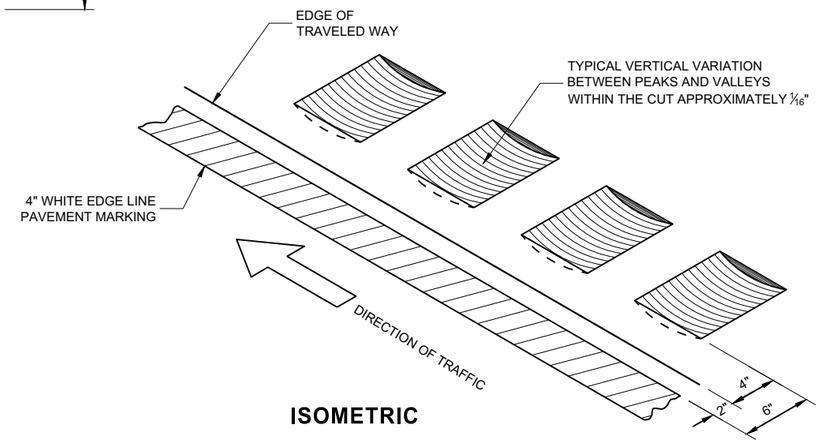
PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

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 SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

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



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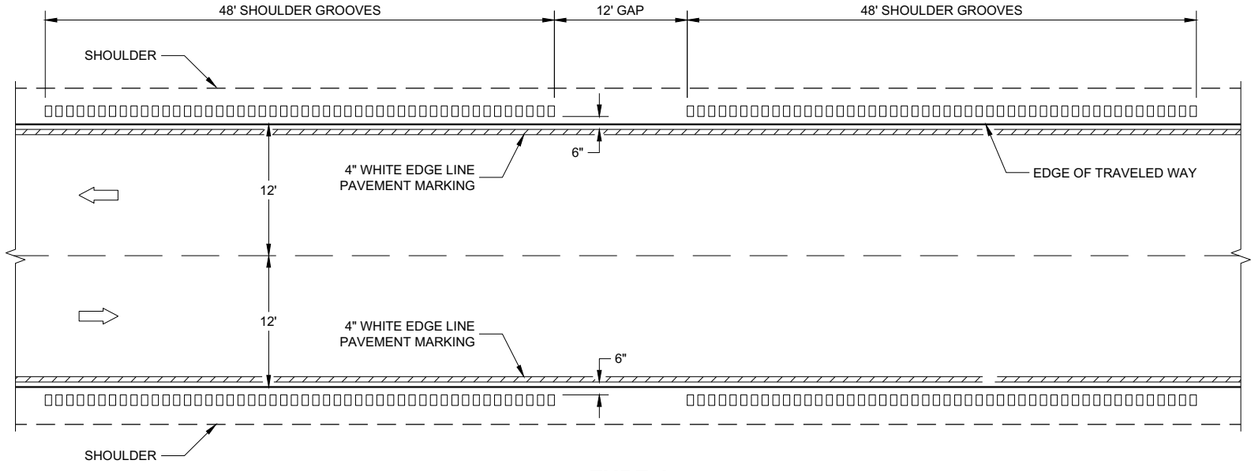
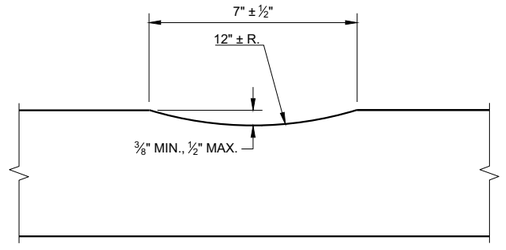


TYPE 1
2 - LANE SHOULDER RUMBLE STRIP



SECTION A - A

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 13A10 - 02a

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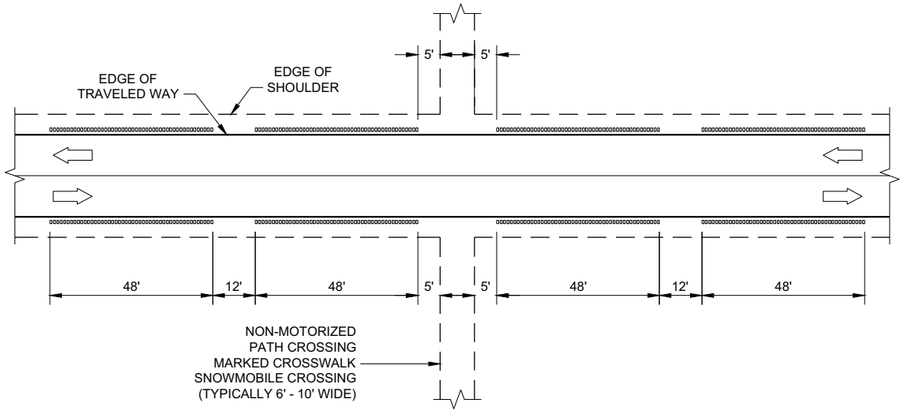
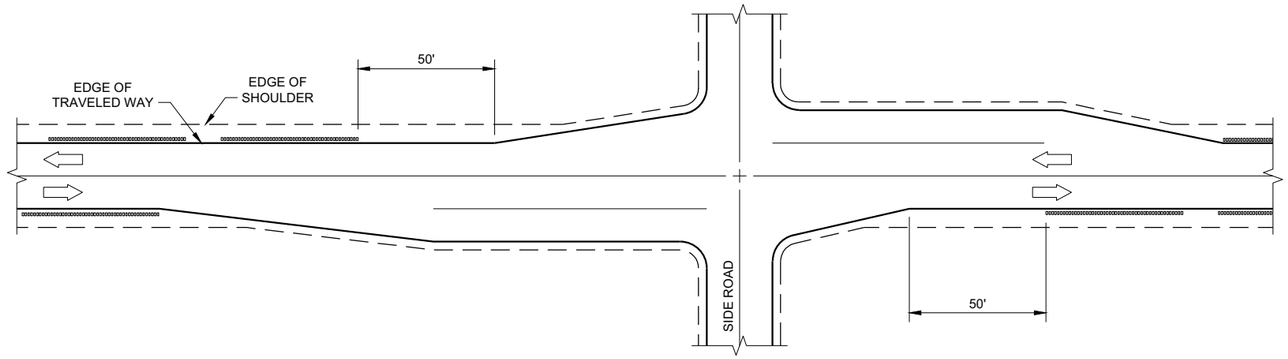
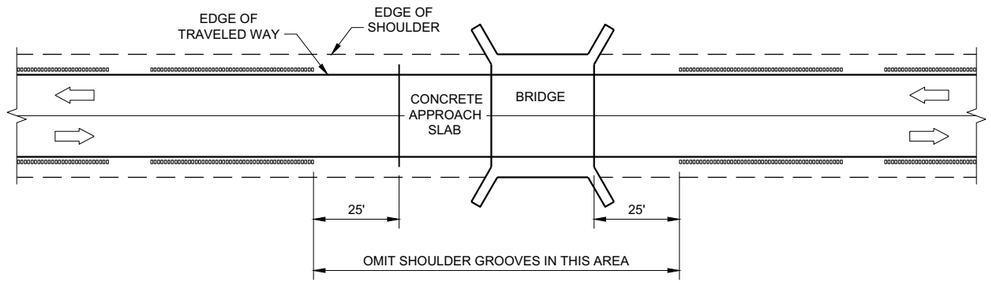
SDD 13A10 - 02a



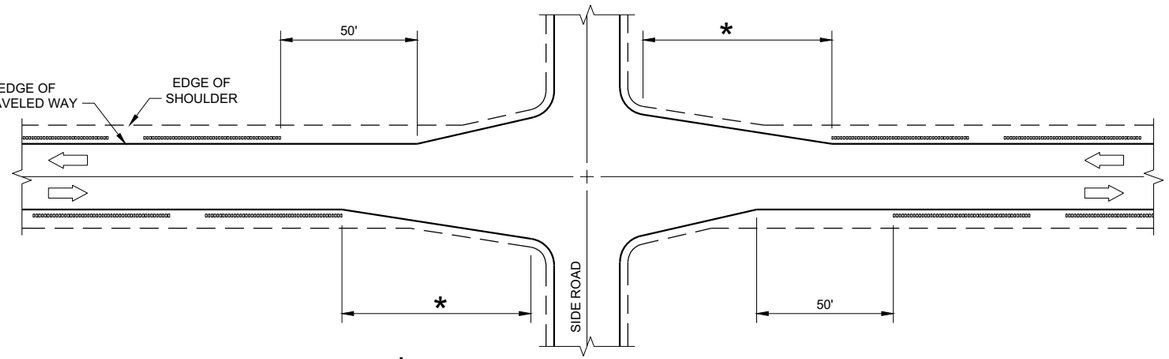
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



SHOULDER GROOVES AT RIGHT TURN LANE

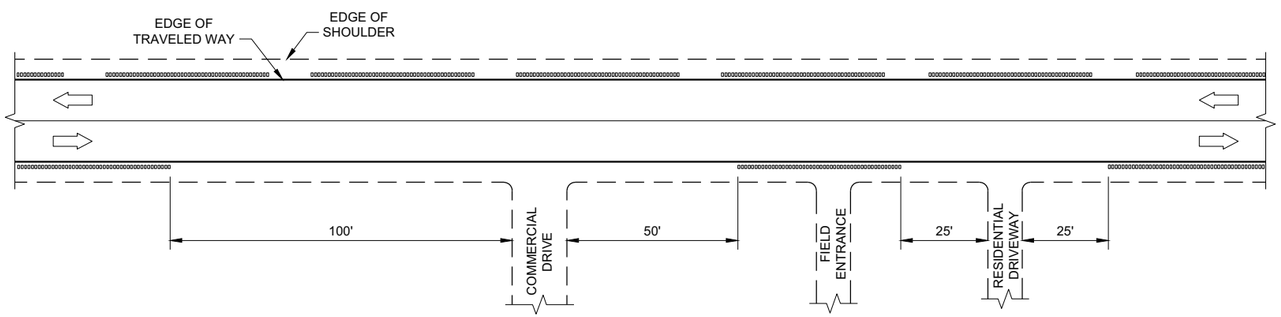


SHOULDER GROOVES AT BRIDGES



* GREATER OF 100' OR APPROACH TAPER LENGTH

SHOULDER GROOVES AT INTERSECTIONS WITH APPROACH TAPER



SHOULDER GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

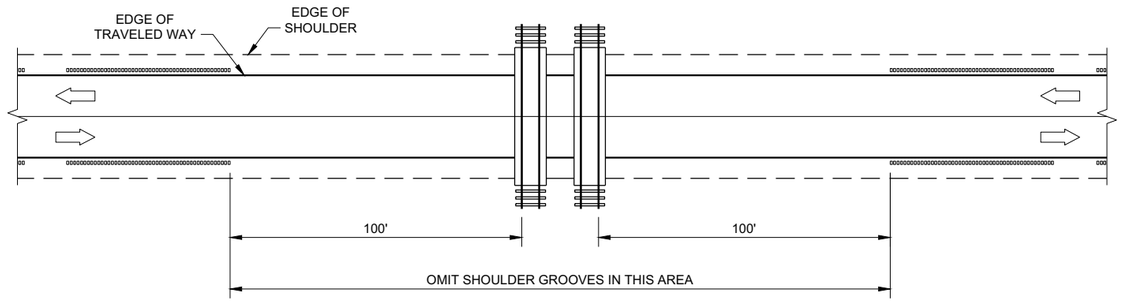
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

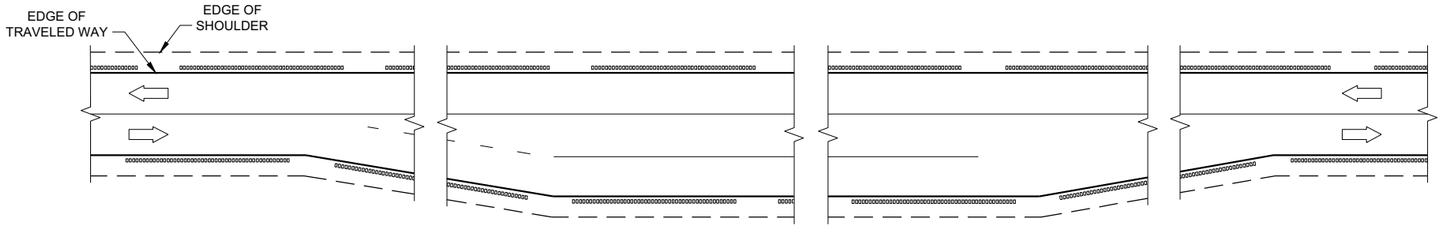
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

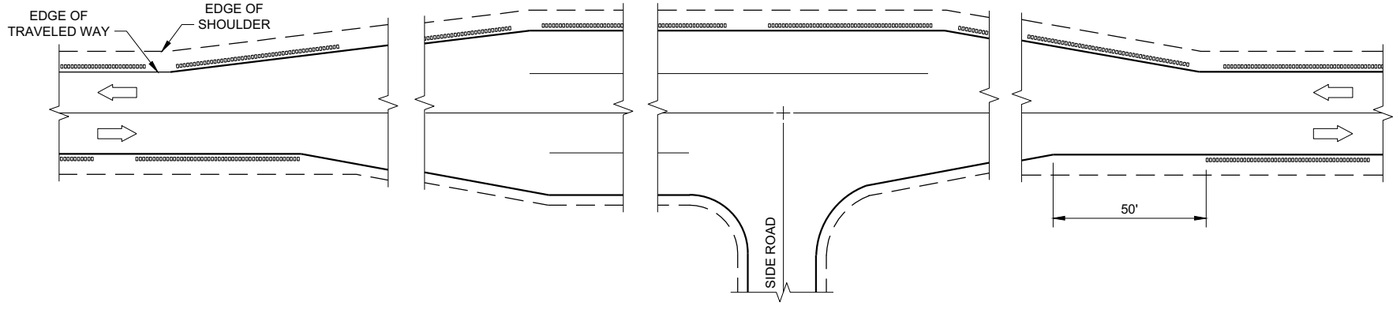
SDD 13A10 - 02c



SHOULDER GROOVES AT RAILROADS



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

6

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SDD 13A10 - 02d

SDD13A10 - 02d

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

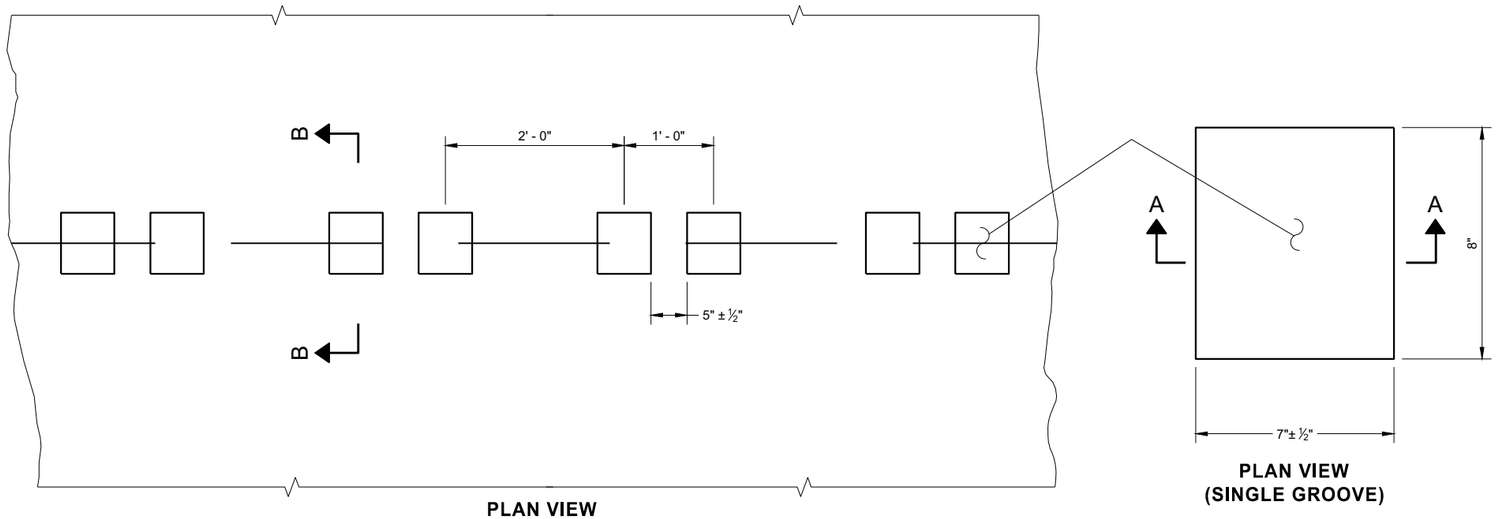
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

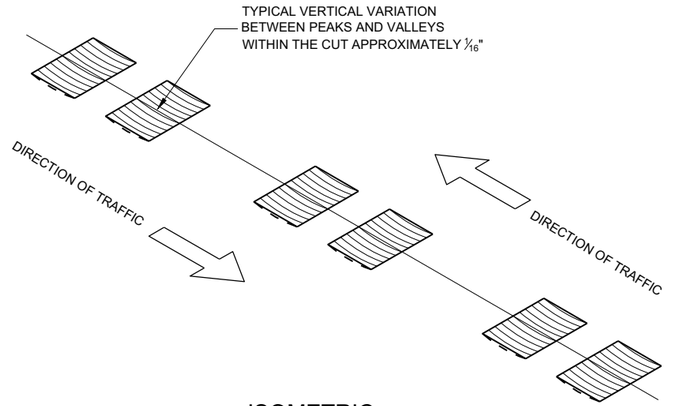
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

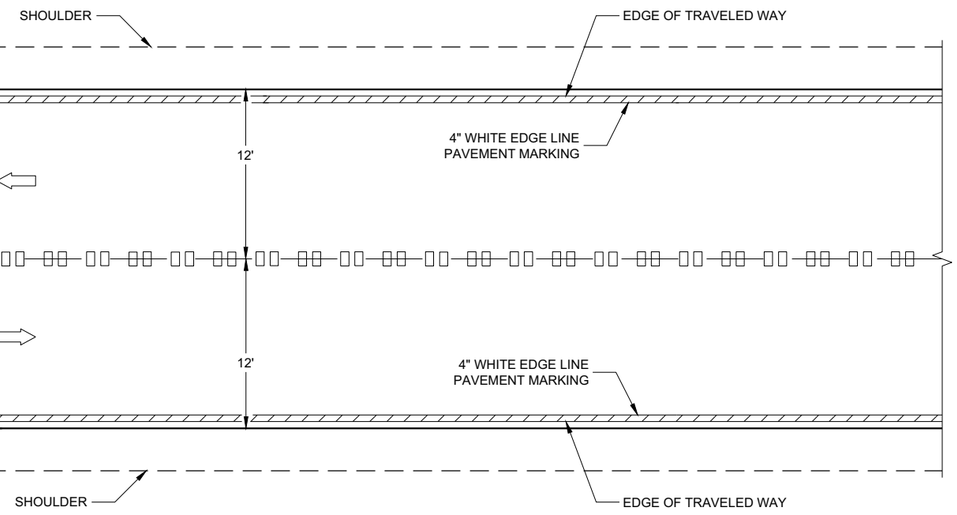
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

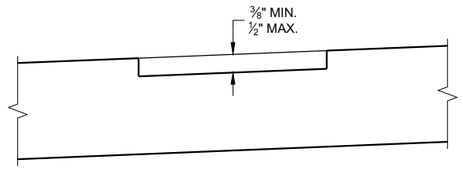
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



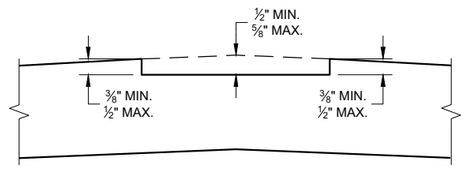
ISOMETRIC



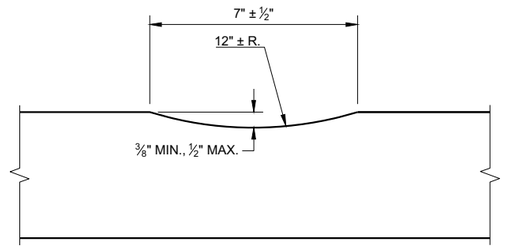
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



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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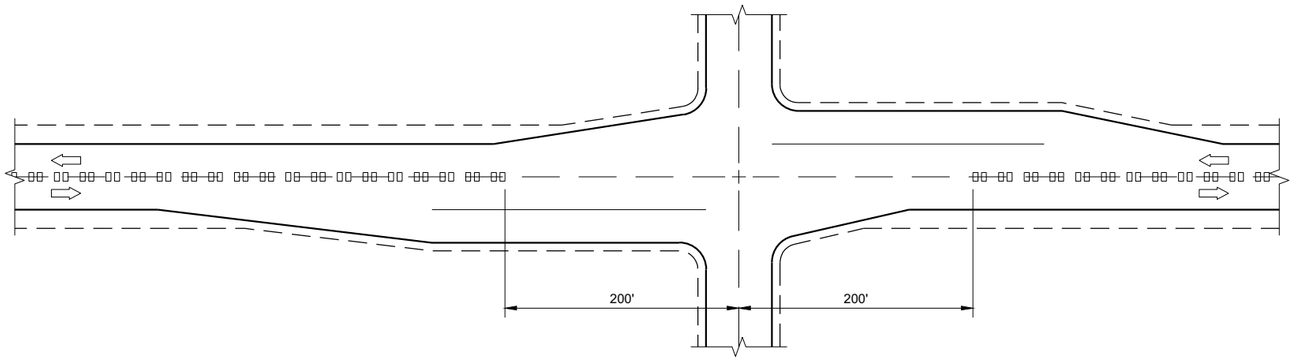
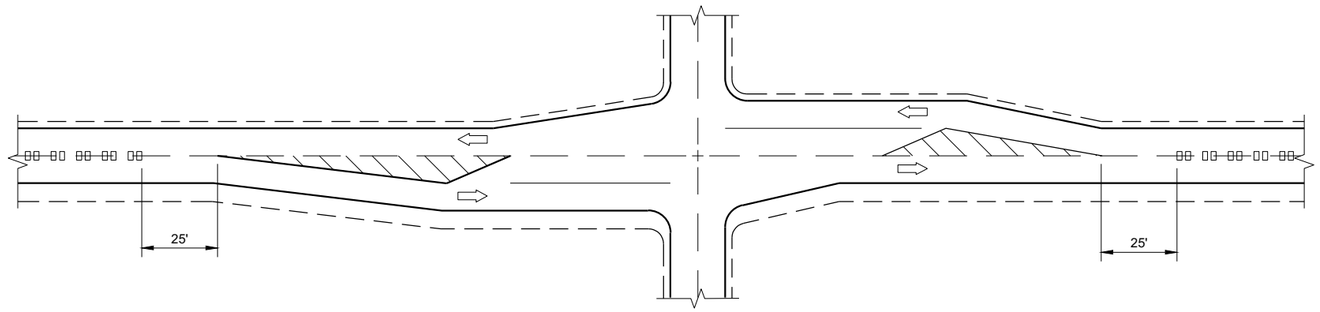
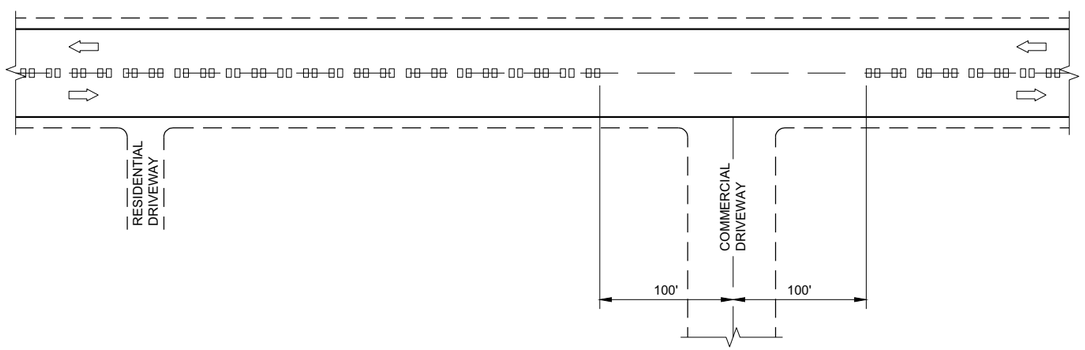
SDD 13A11 - 03a



CENTERLINE GROOVES AT INTERSECTIONS



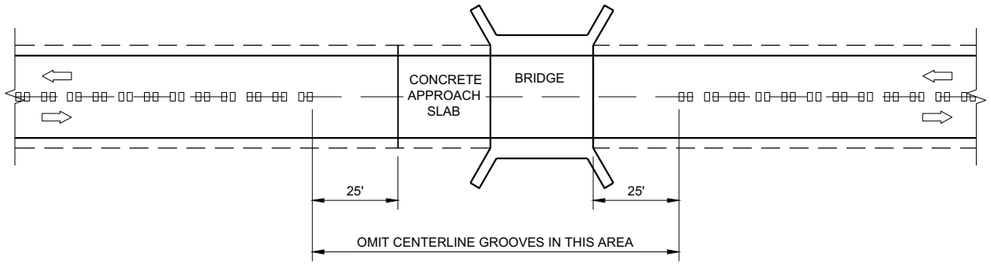
CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



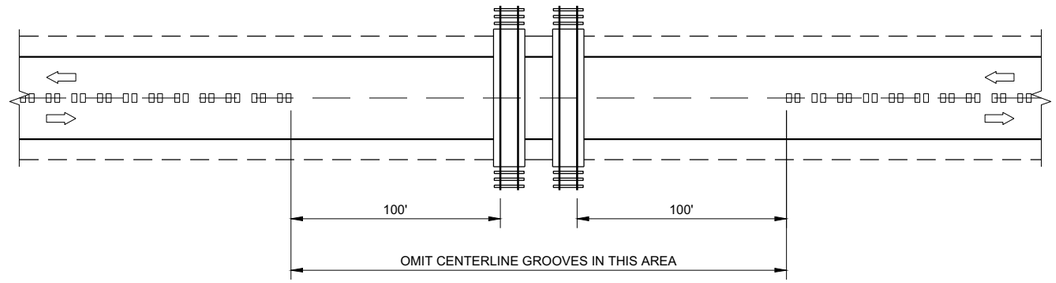
CENTERLINE GROOVES AT DRIVEWAYS (1)

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

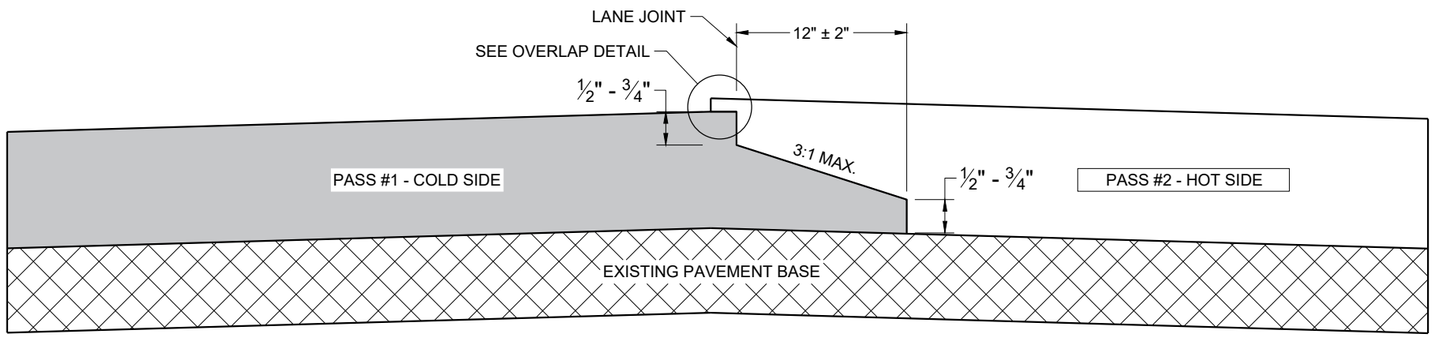
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

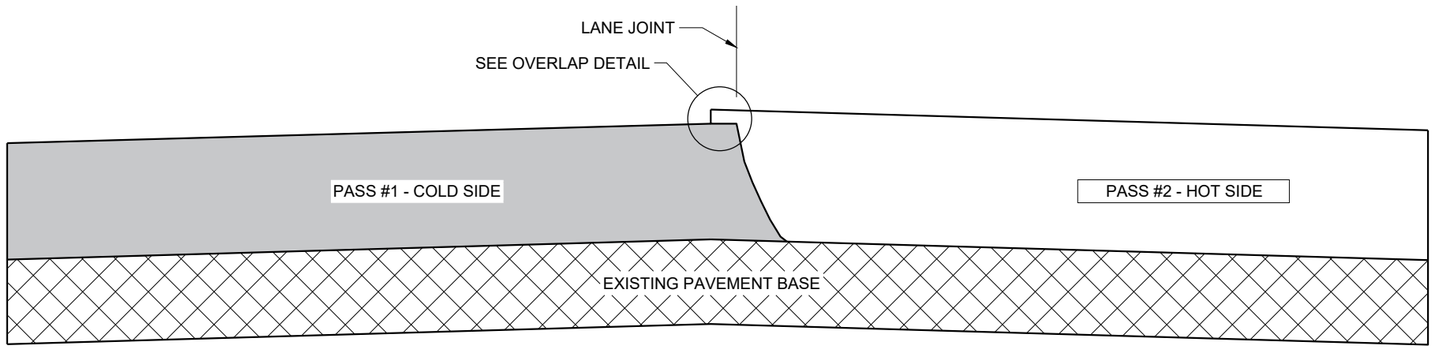
FHWA

6

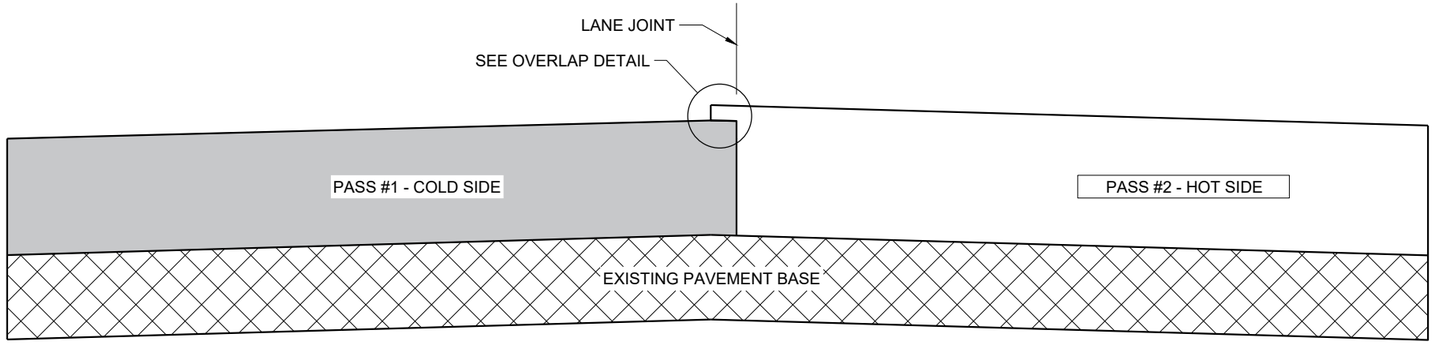
SDD 13A11 - 03b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

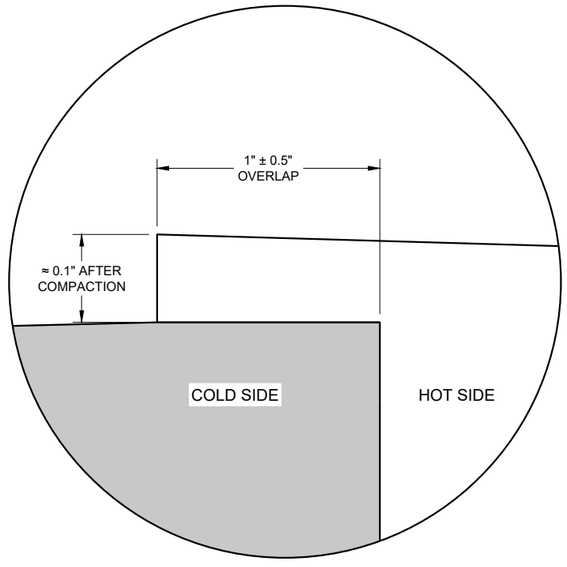
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

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

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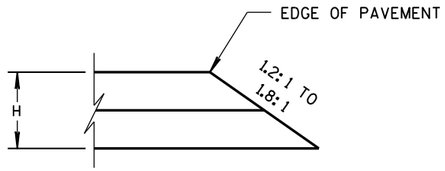
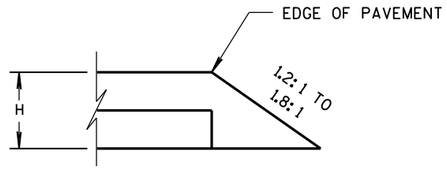
SDD 13C19 - 03



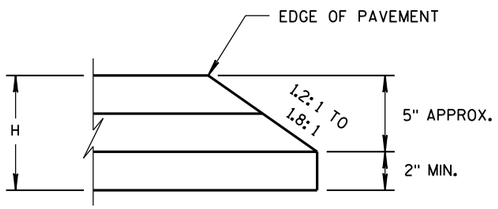
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



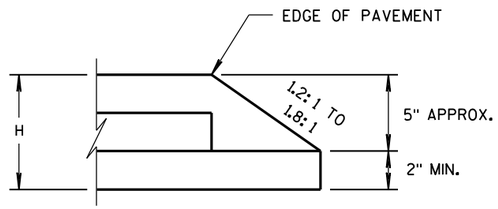
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

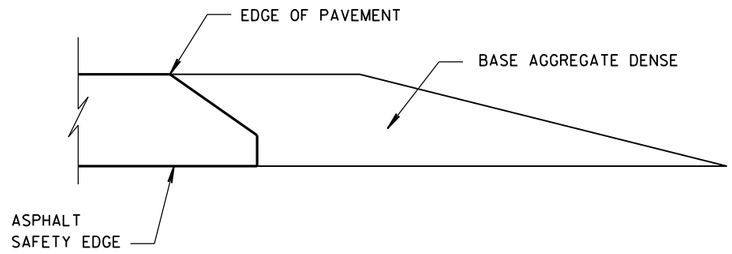
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

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S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

SAFETY EDGE SM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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

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

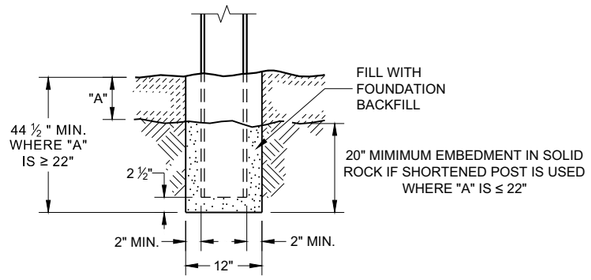
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

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

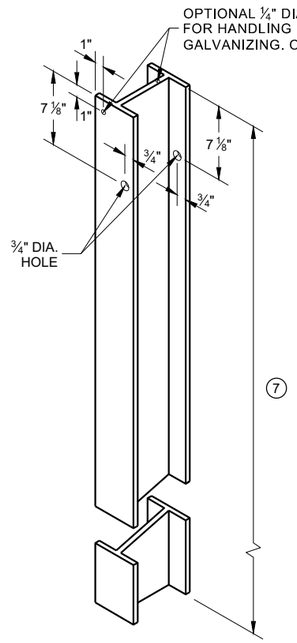
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

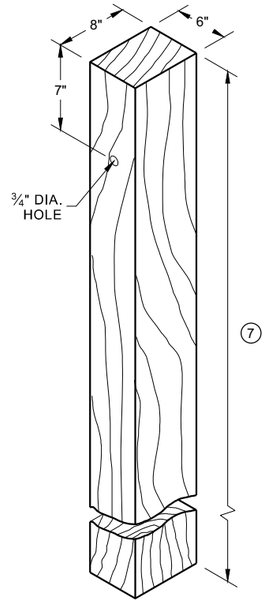
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



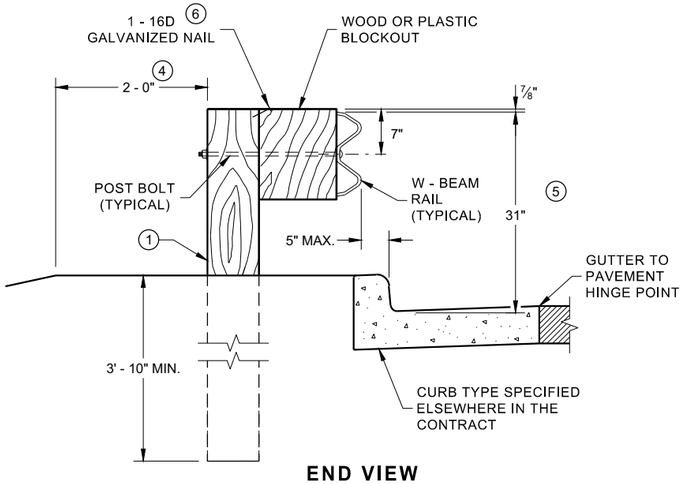
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



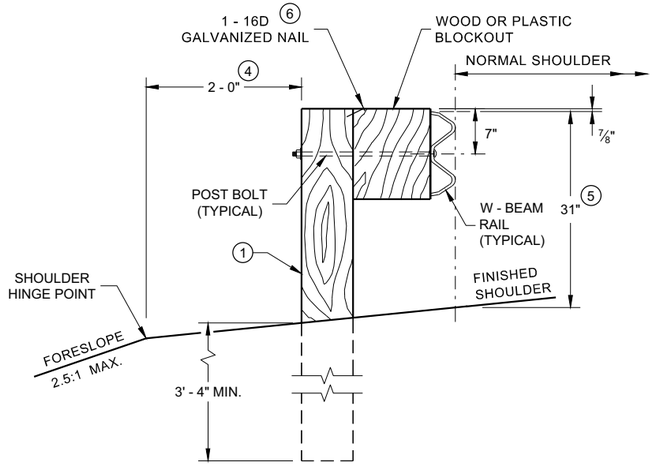
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



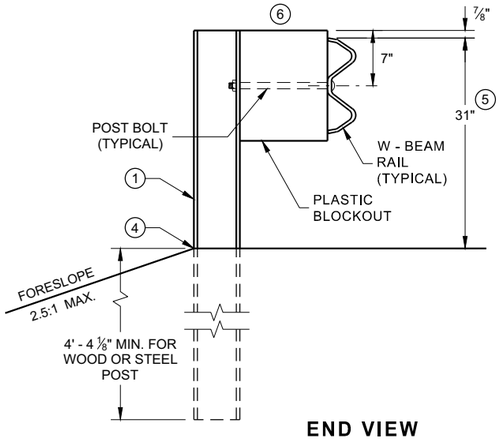
WOOD POST (6" X 8") NOMINAL (1)



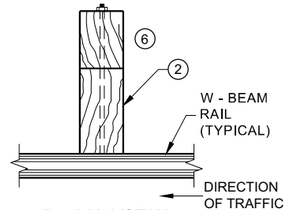
END VIEW
LOCATED ALONG A CURBED ROADWAY



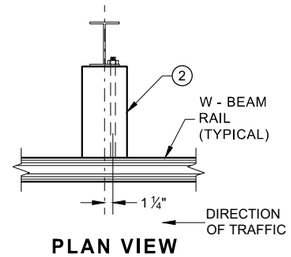
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



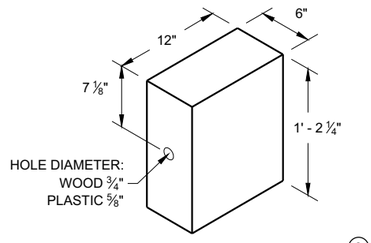
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM

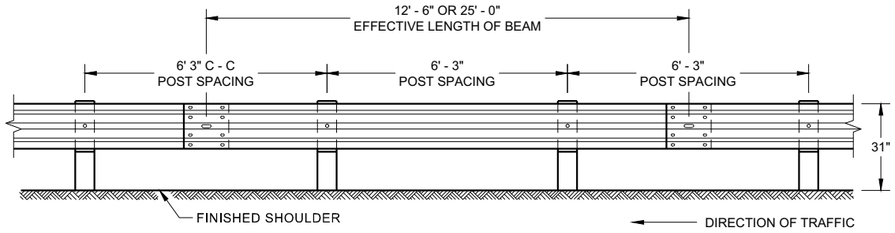


WOOD OR PLASTIC BLOCKOUT (2)

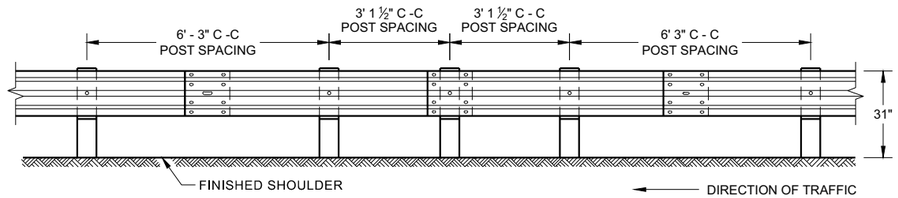
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

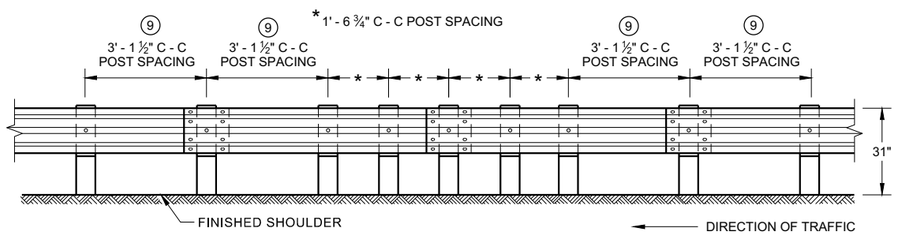
SDD 14B42 - 06a



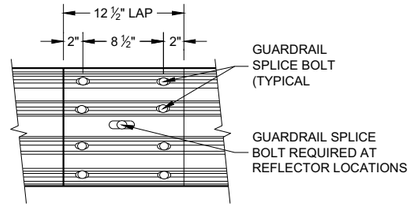
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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



FRONT VIEW
QUARTER POST SPACING (QS)



FRONT VIEW
MID-SPAN BEAM SPLICE

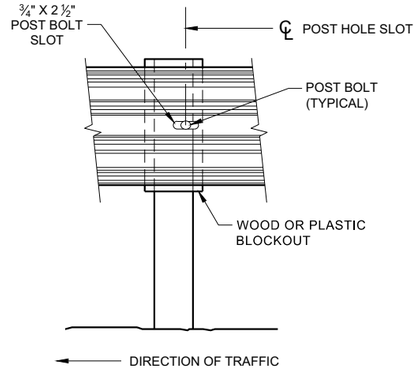
GENERAL NOTES

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

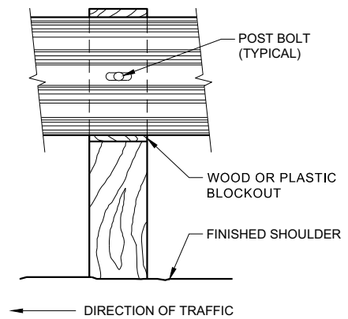
(9) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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

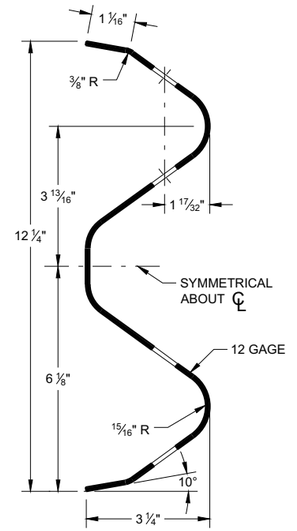
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



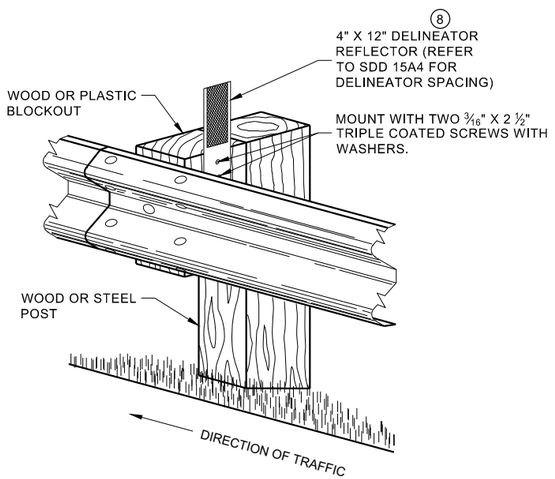
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



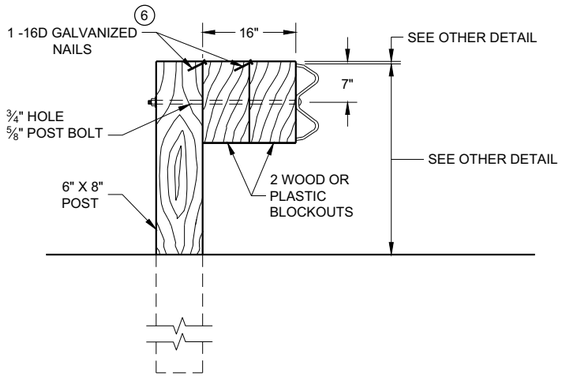
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 06b

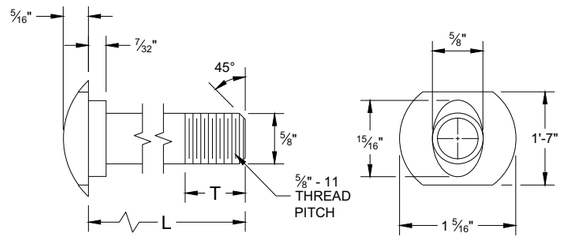


DETAIL FOR 16" BLOCKOUT DEPTH

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

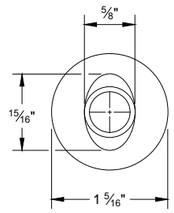
NOTE:

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

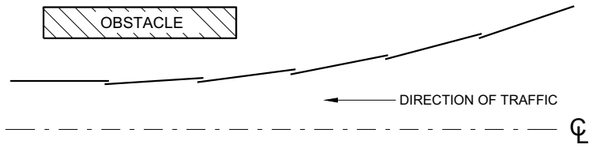


POST BOLT TABLE

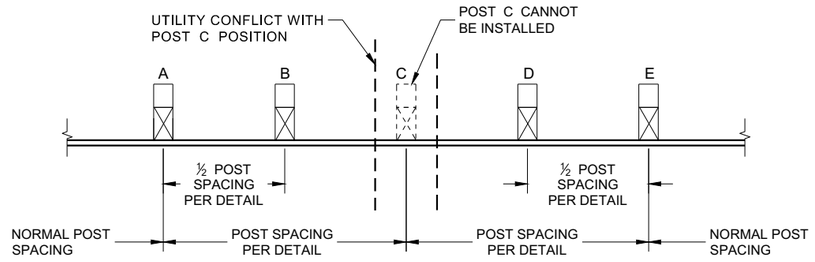
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



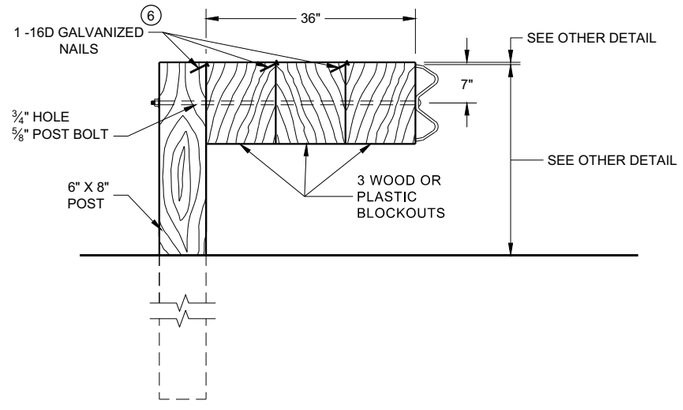
ALTERNATE BOLT HEAD



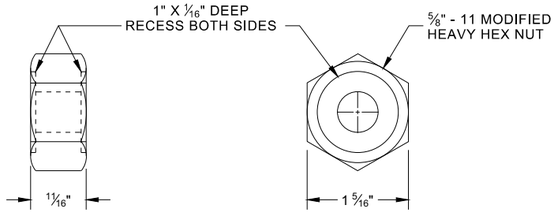
PLAN VIEW
BEAM LAPPING DETAIL



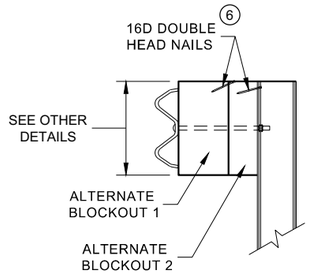
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



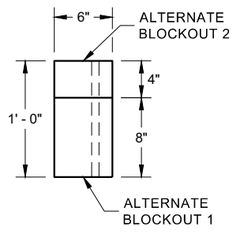
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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

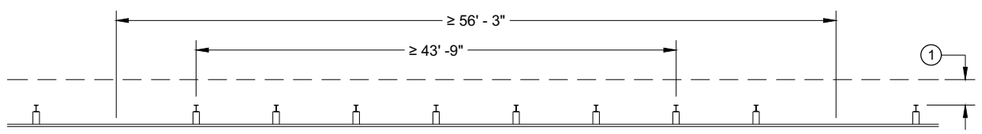
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

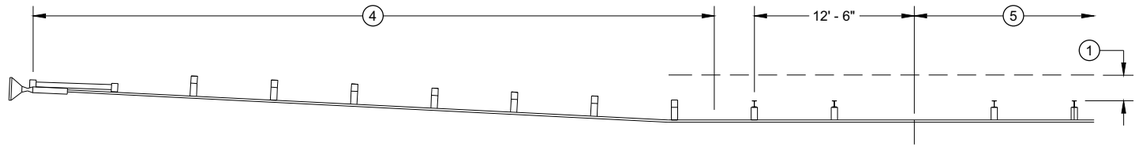
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

6

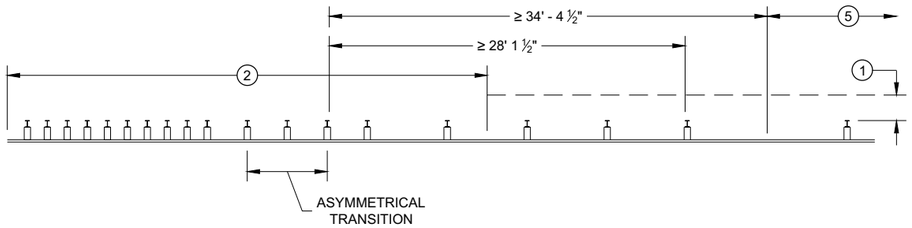
SDD 14B42 - 06c



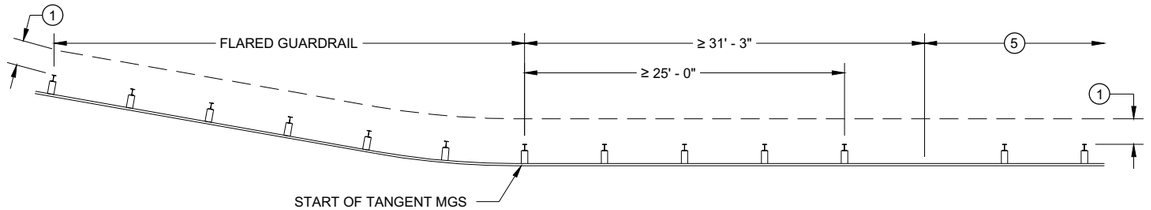
MISSING POST IN NORMAL BEAM GUARD RUN



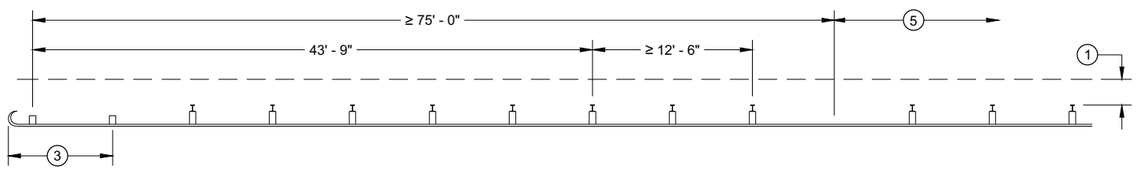
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



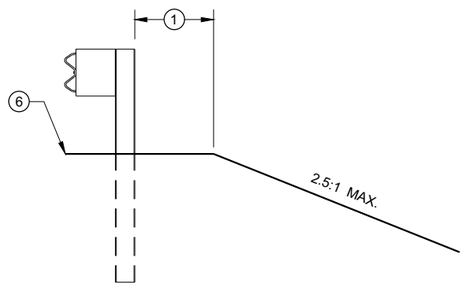
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

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

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 14B42 - 06d

GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

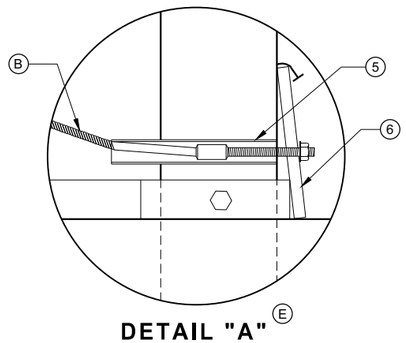
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

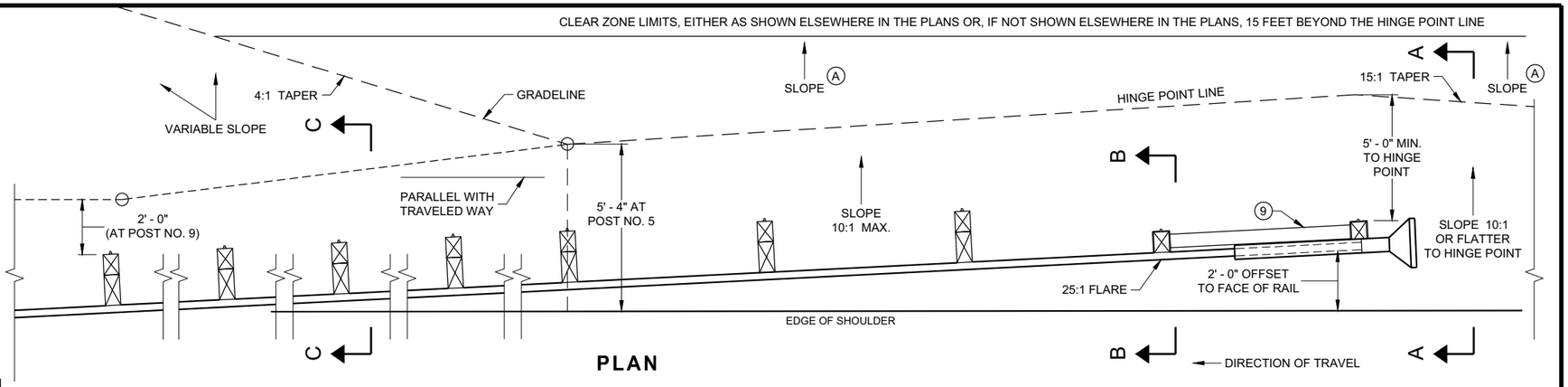
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

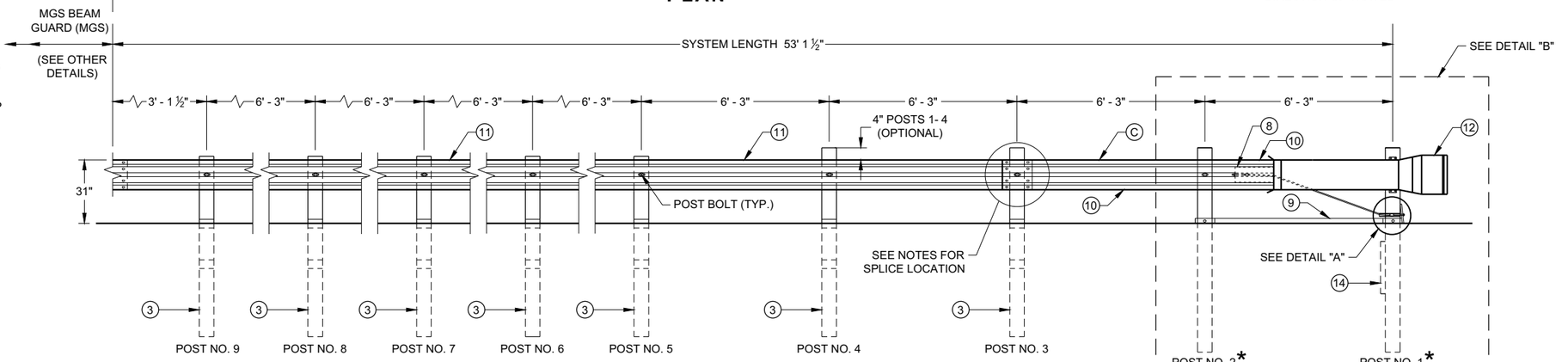
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



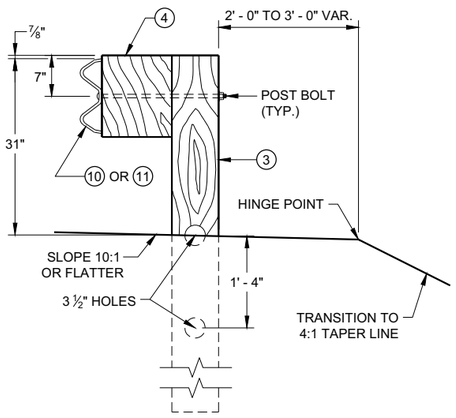
DETAIL "A" (E)



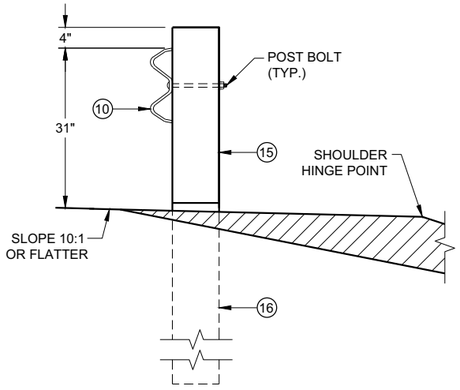
PLAN



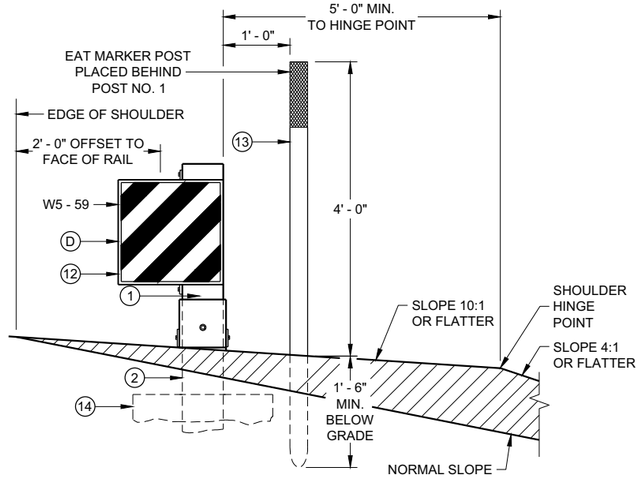
ELEVATION



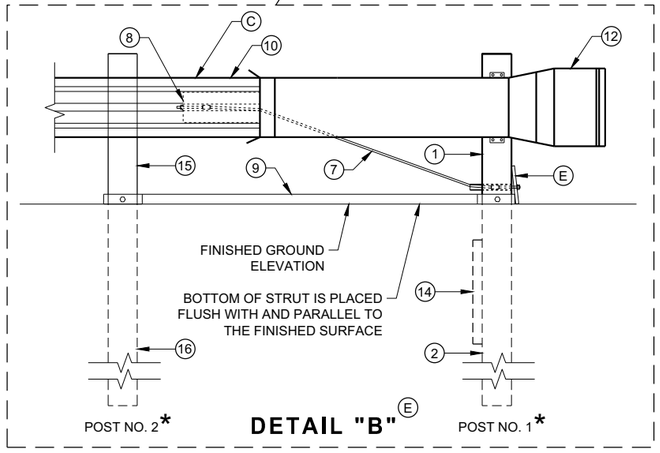
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



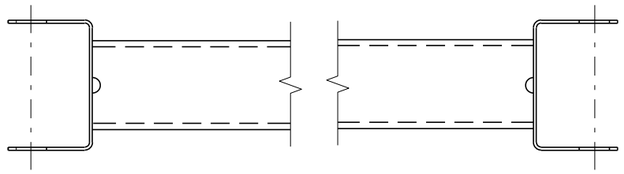
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

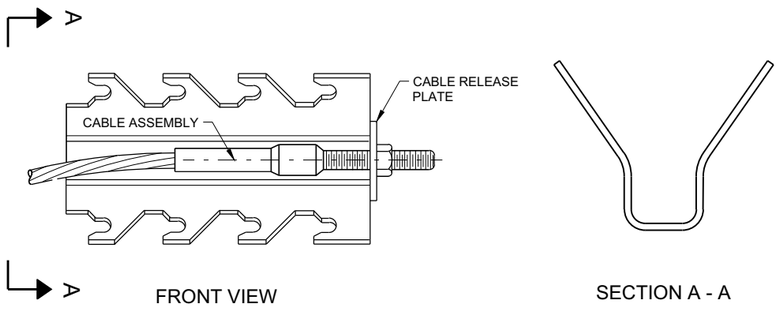
SDD 14B44 - 04a



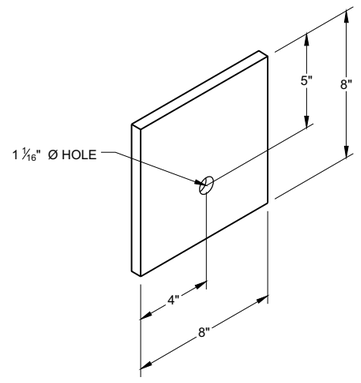
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

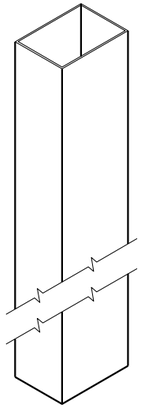
6

SDD 14B44 - 04b

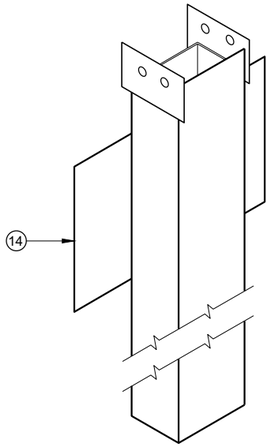
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

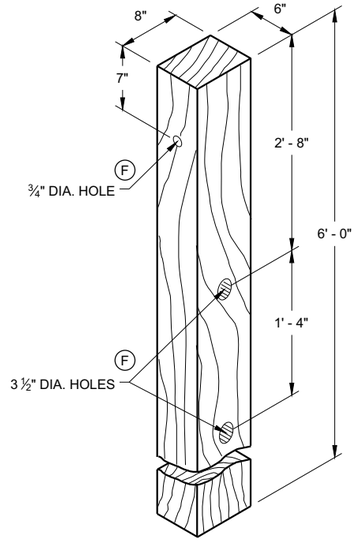
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



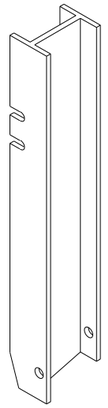
UPPER POST NO. 1 (1) (E)



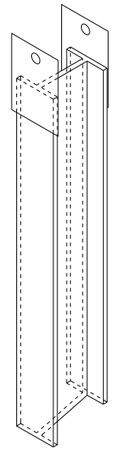
LOWER POST NO. 1 (2) (E)



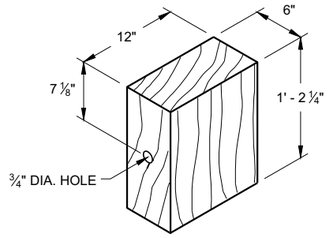
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



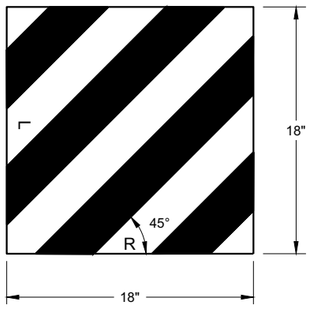
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

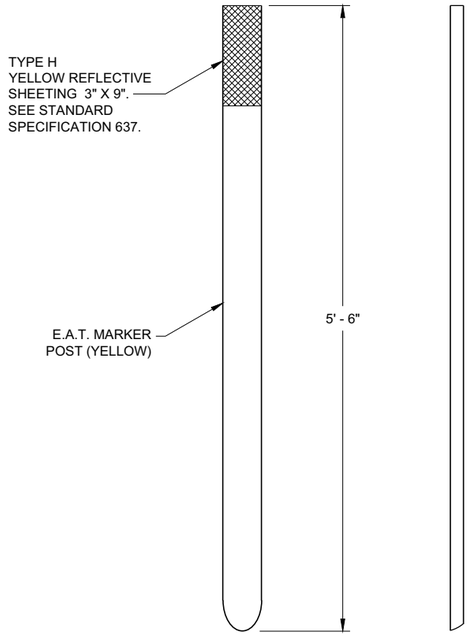


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



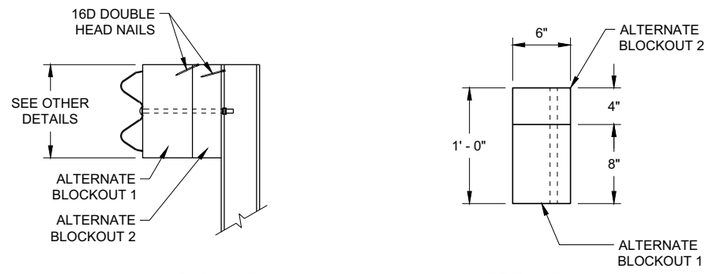
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

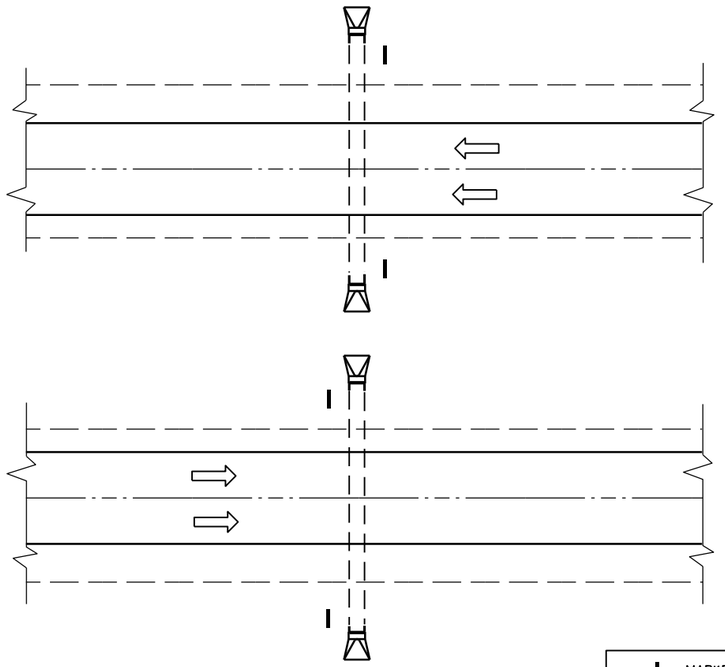
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

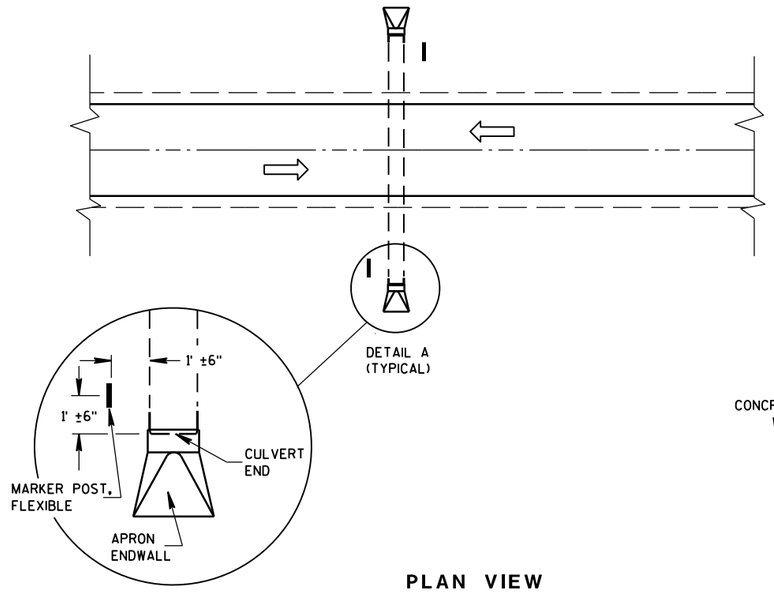
6

SDD 14B44 - 04c



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

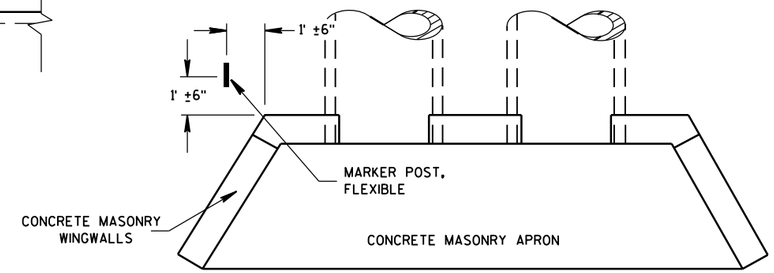
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

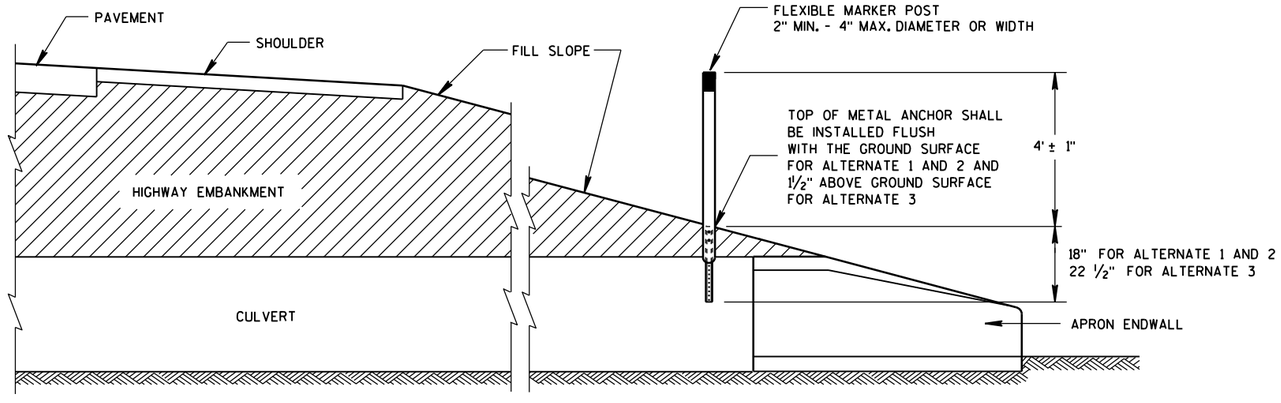
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



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

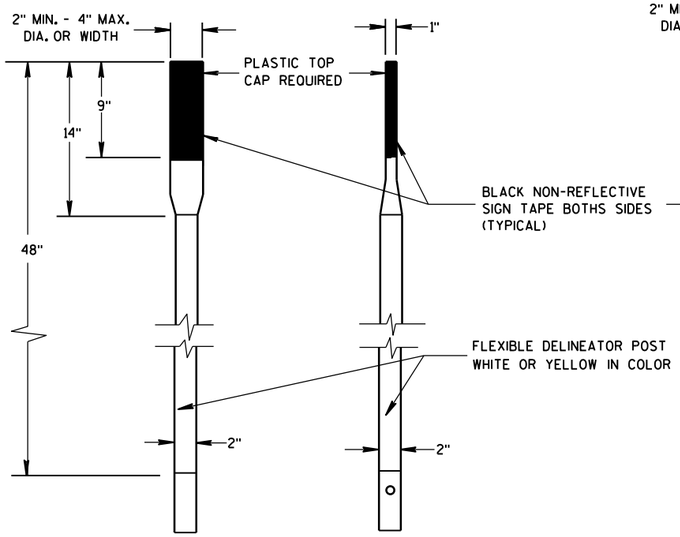
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

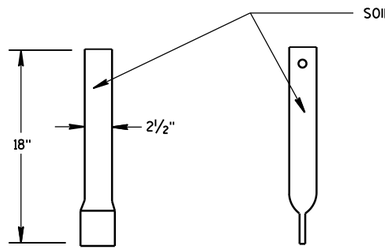
6

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

6

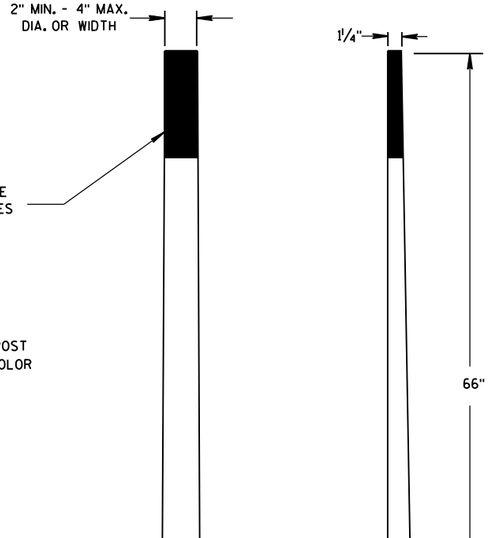
S.D.D. 15 A 3-2a





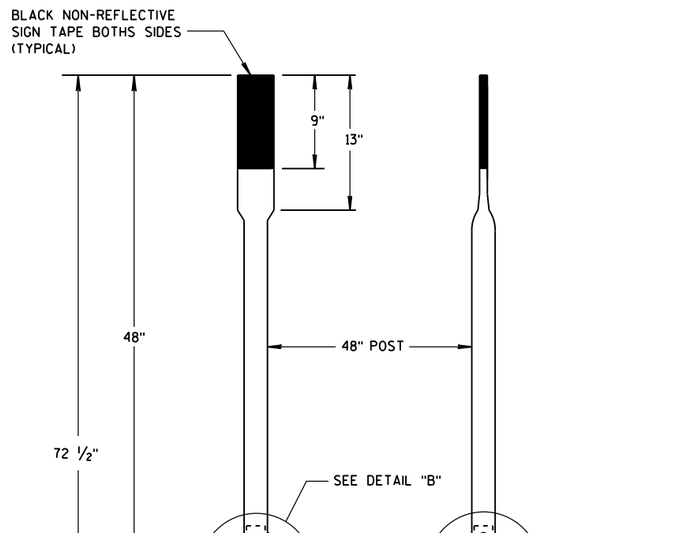
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

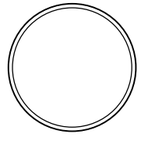
ALTERNATE 2



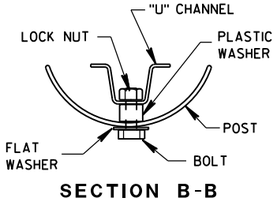
FRONT VIEW SIDE VIEW

ALTERNATE 3

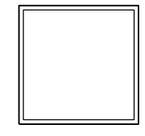
FLEXIBLE MARKER POSTS



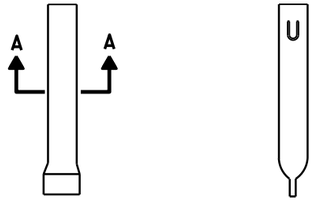
SECTION A-A



SECTION B-B

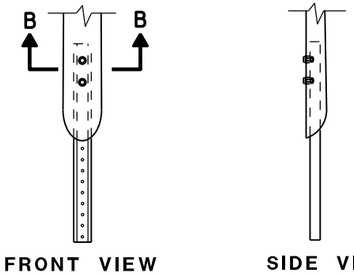


SECTION C-C



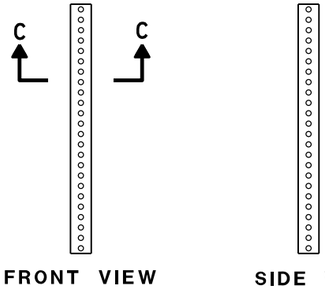
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

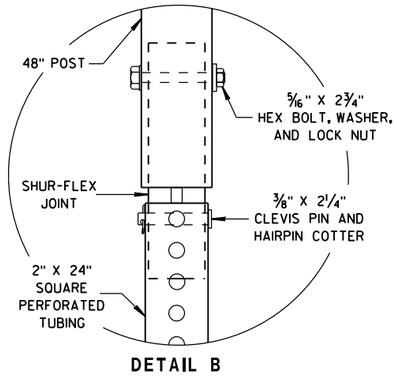
ALTERNATE 2



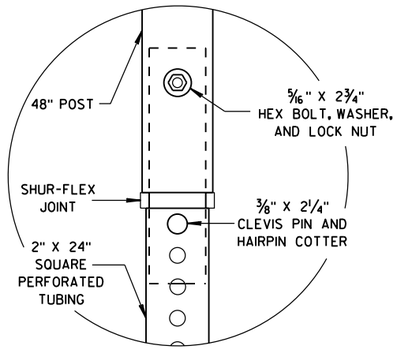
FRONT VIEW SIDE VIEW

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

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.

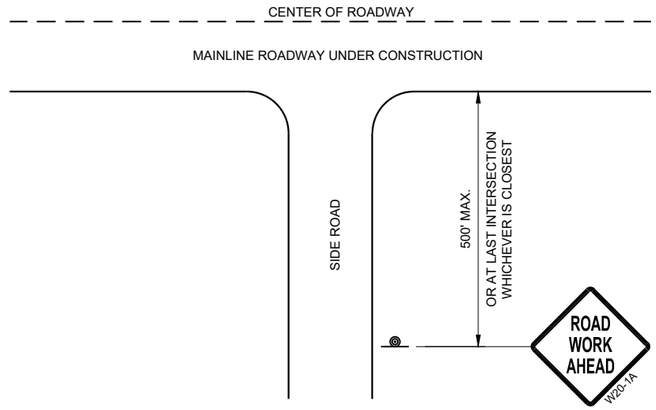
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

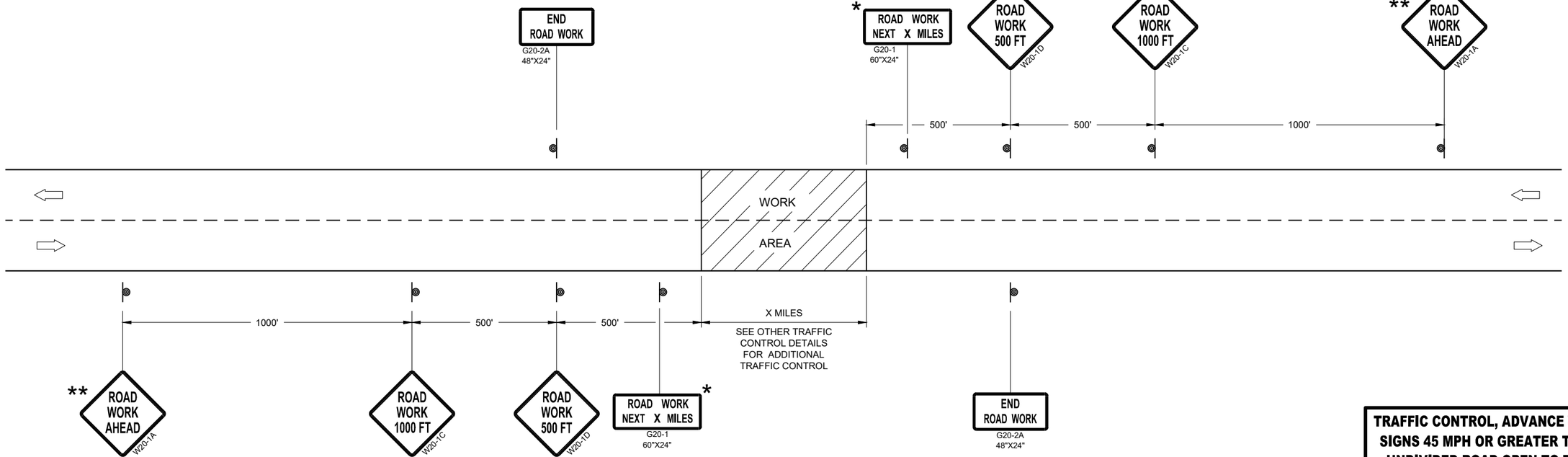
** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



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.

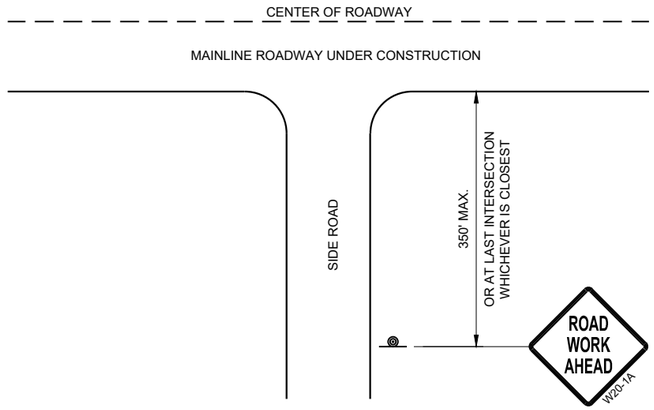
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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.



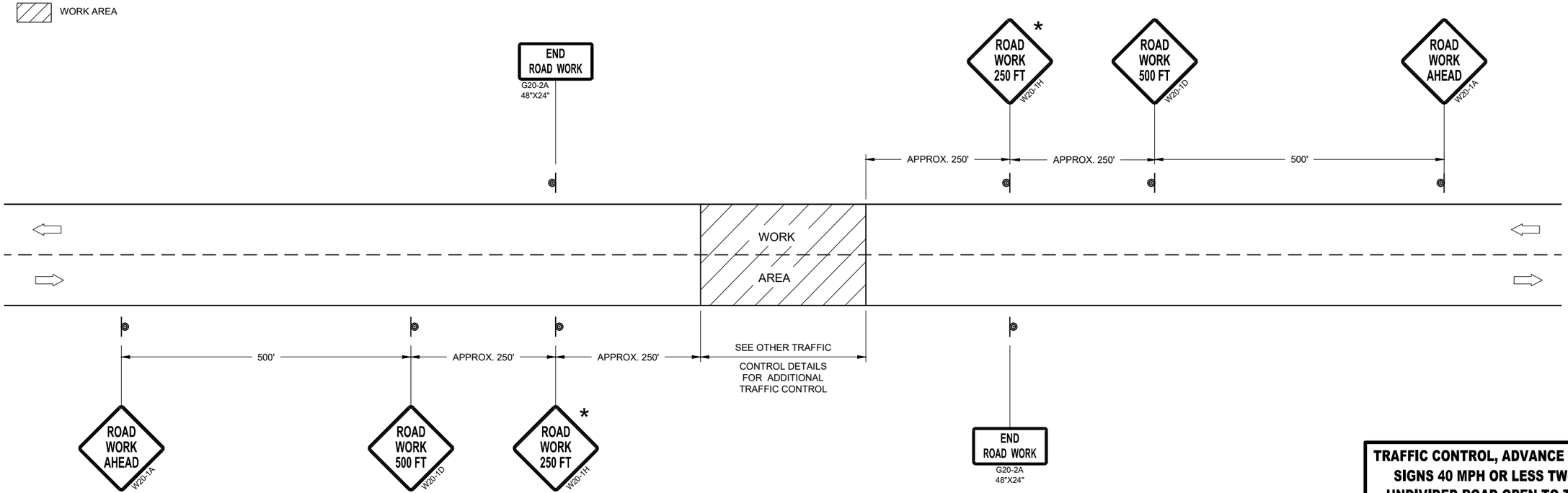
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

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

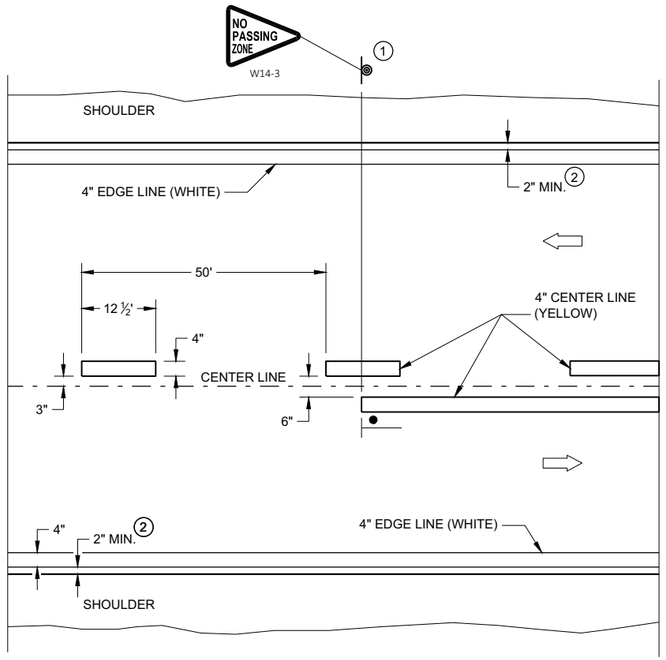
APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

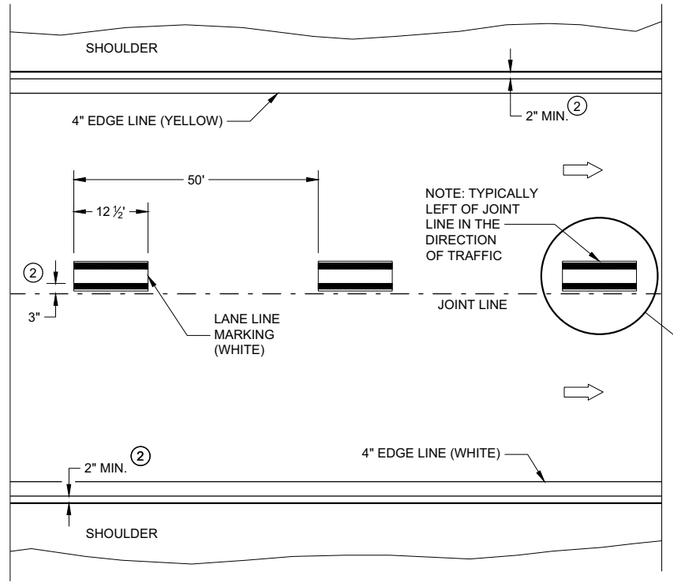
FHWA

6

SDD 15C05 - 05

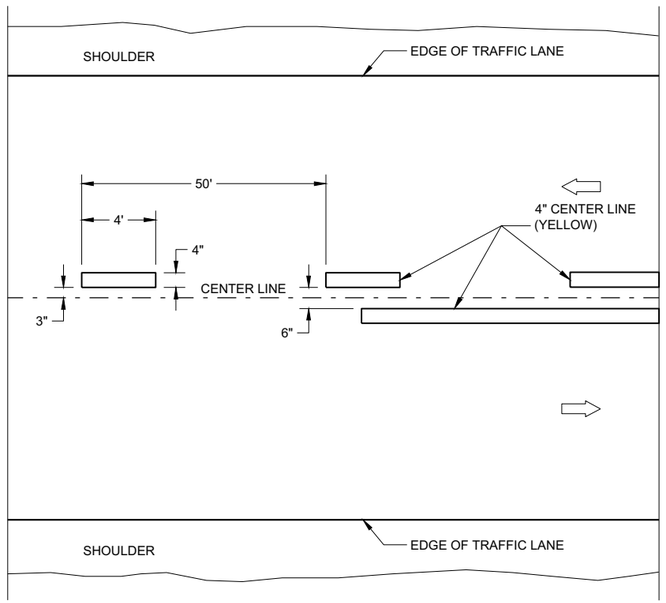


TWO WAY TRAFFIC

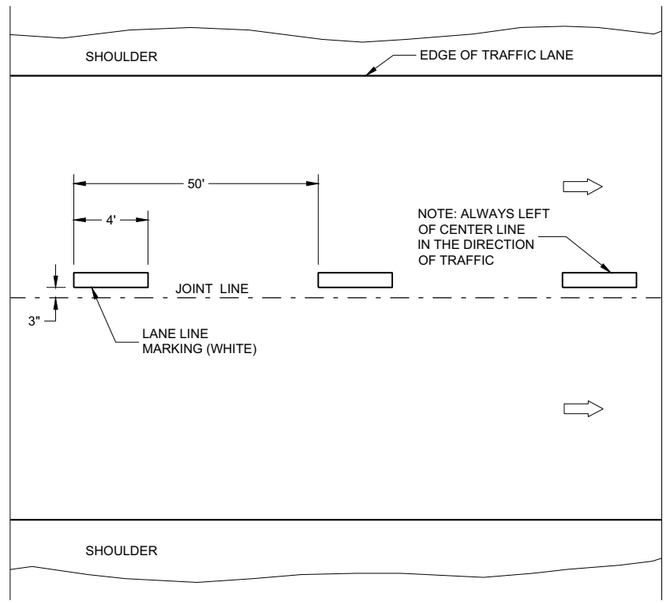


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

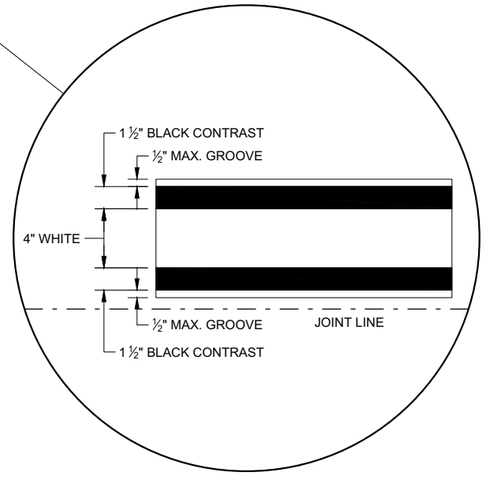
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

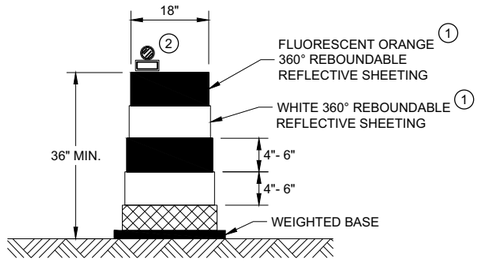
FHWA

SDD 15C08 - 20a

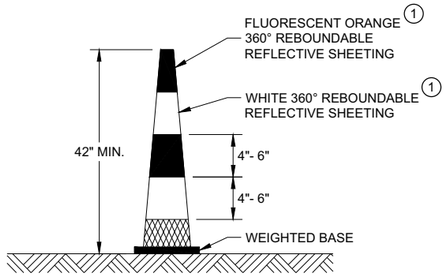
SDD 15C08 - 20a

GENERAL NOTES

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

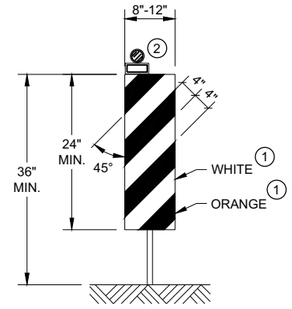


DRUM



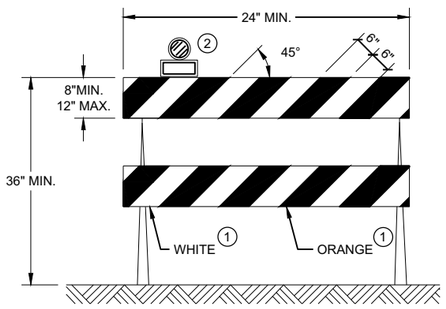
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



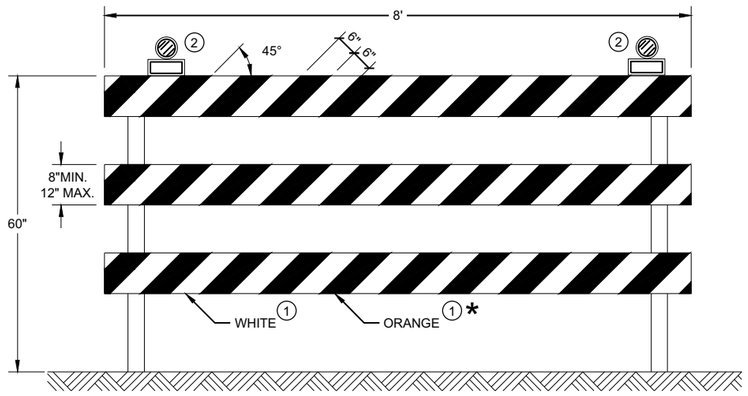
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C11 - 08b

6

SDD 15C11 - 08b

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

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

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

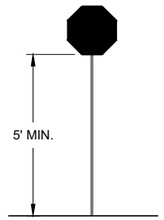
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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



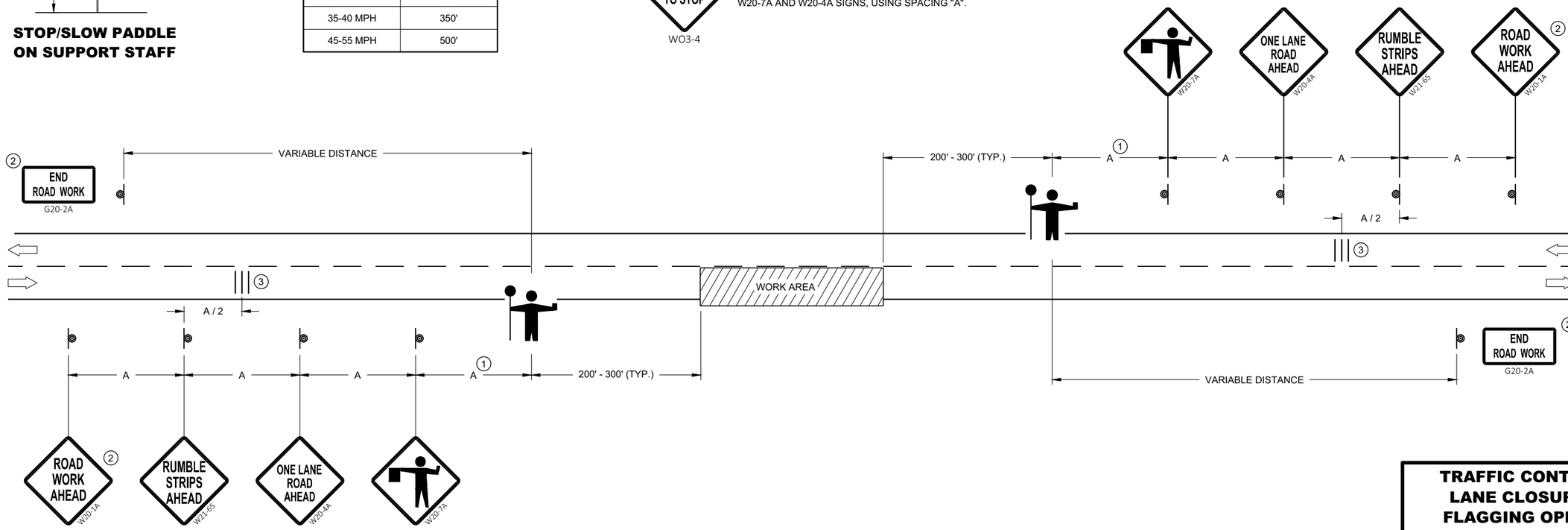
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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

WO3-4

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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6
SDD 15C12 - 07

LEGEND

V1 LEAD VEHICLE

V2 MARKING VEHICLE

V3 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

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

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

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

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

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

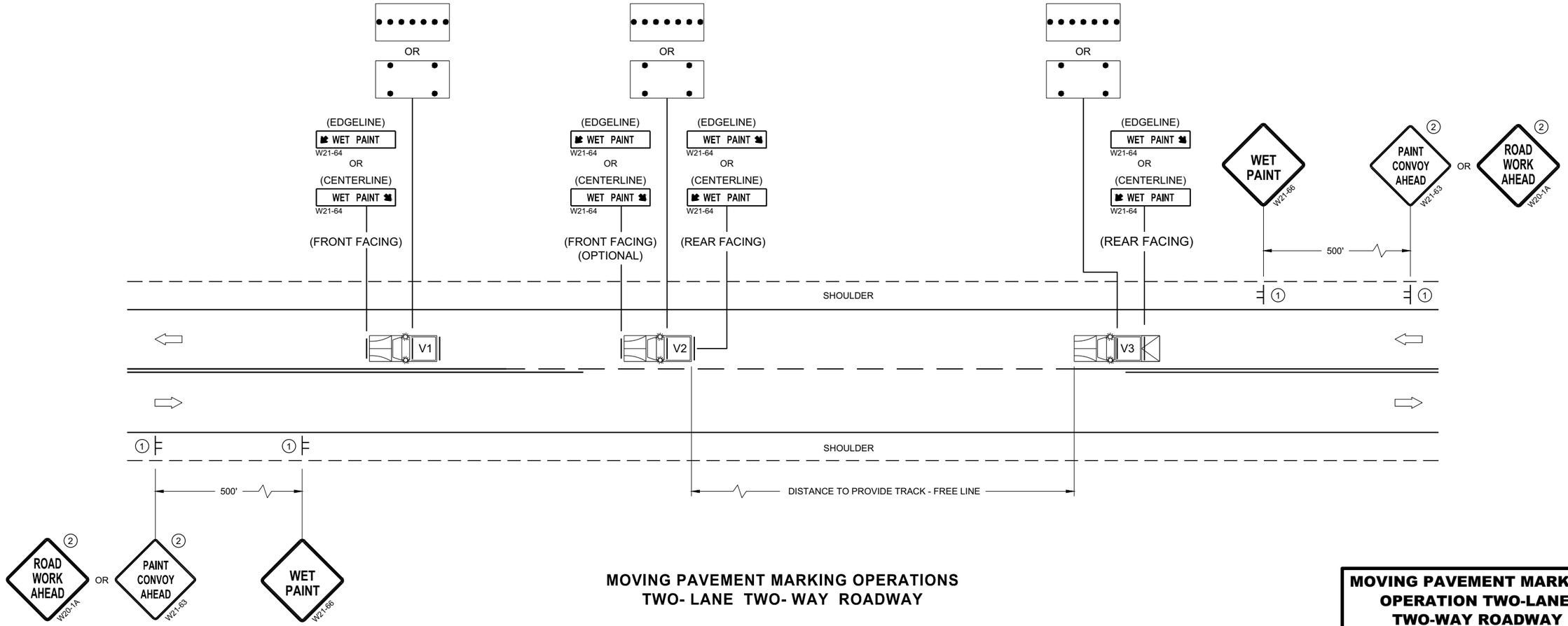
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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

CONES SHALL BE A MINIMUM OF 18" FOR WET PAVEMENT MARKING .

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

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



MOVING PAVEMENT MARKING OPERATIONS TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

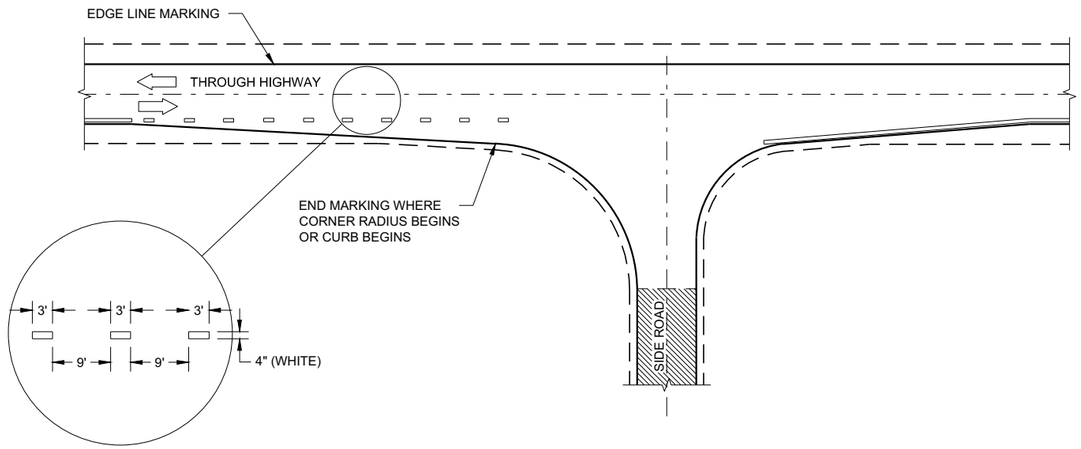
APPROVED
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

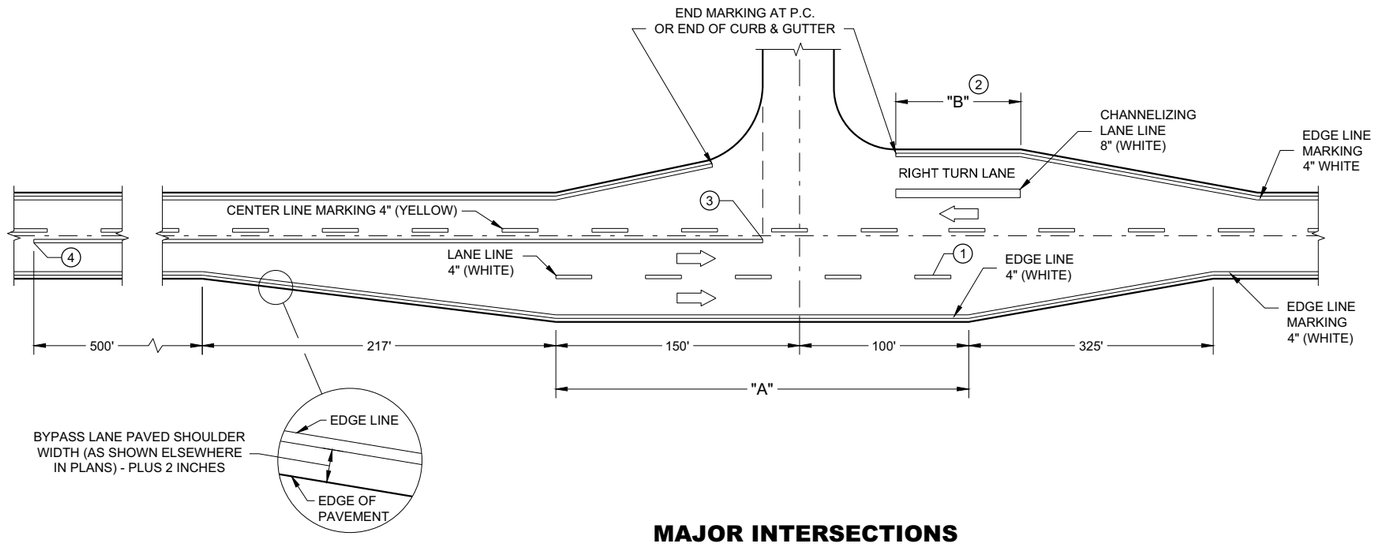
FHWA

SDD 15C19 - 06a

SDD 15C19 - 06a



MINOR INTERSECTION



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

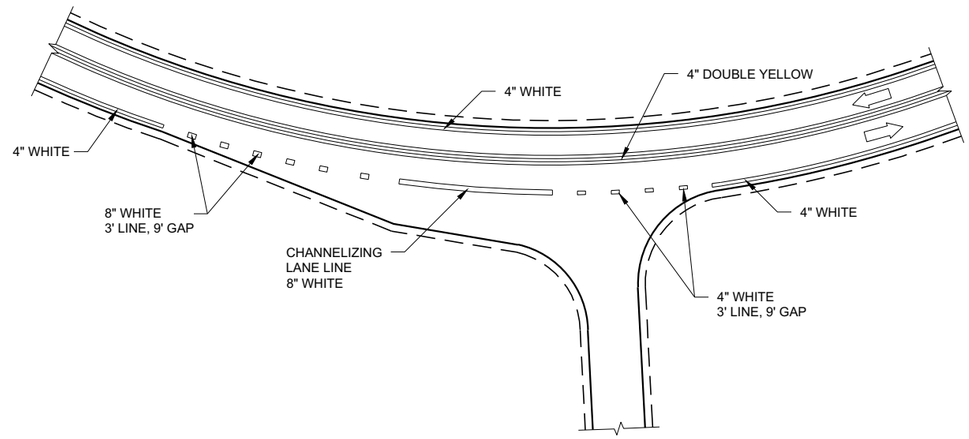
GENERAL NOTES

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

6

SDD 15C35 - 04a

LEGEND

SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL DRUM

DIRECTION OF TRAFFIC

WORK ZONE

GENERAL NOTES

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

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

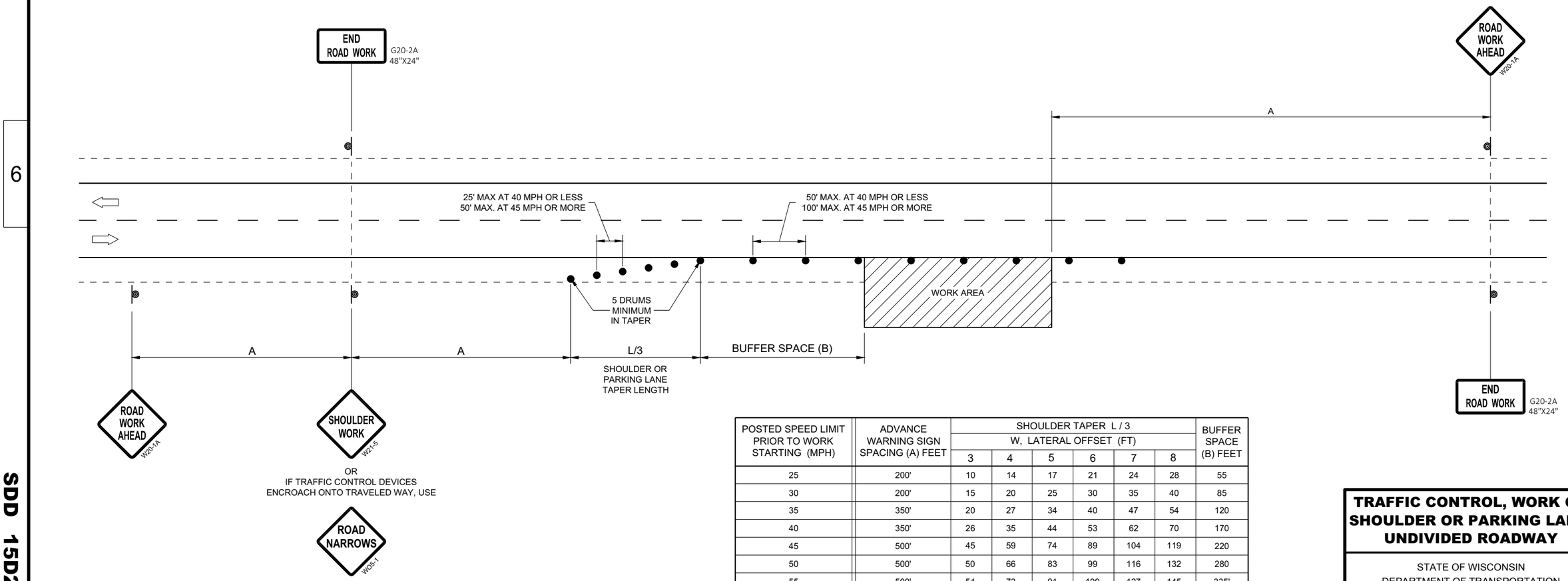
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

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



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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

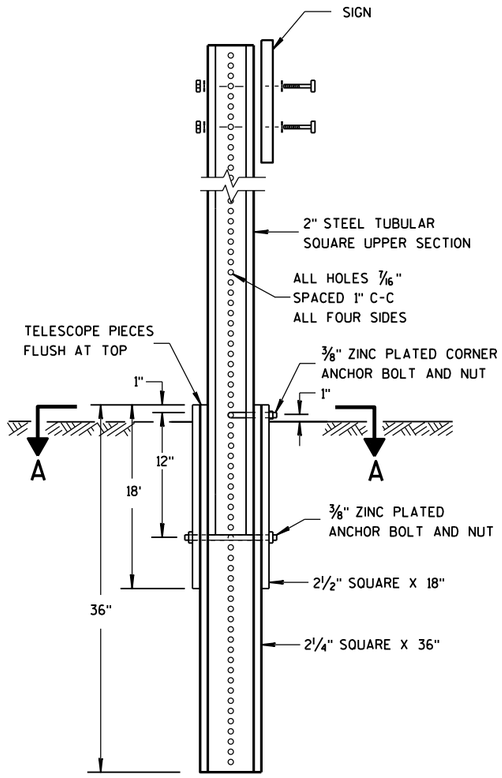
APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

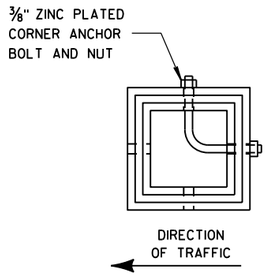
FHWA

SDD 15D28 - 04

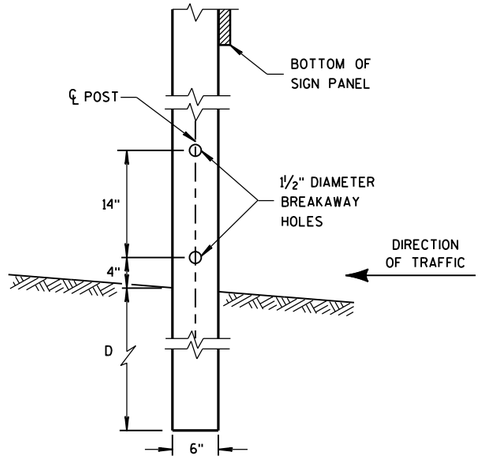
SDD 15D28 - 04



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



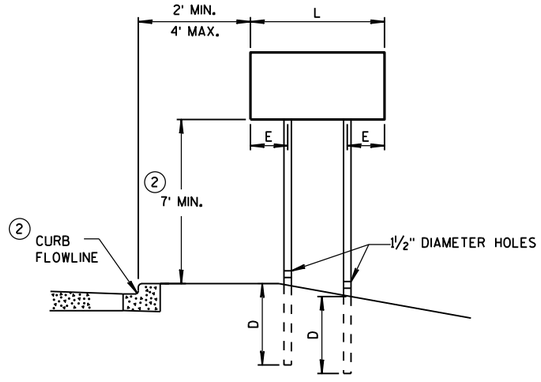
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

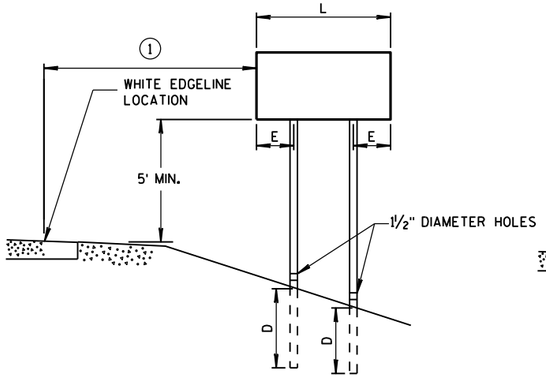
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

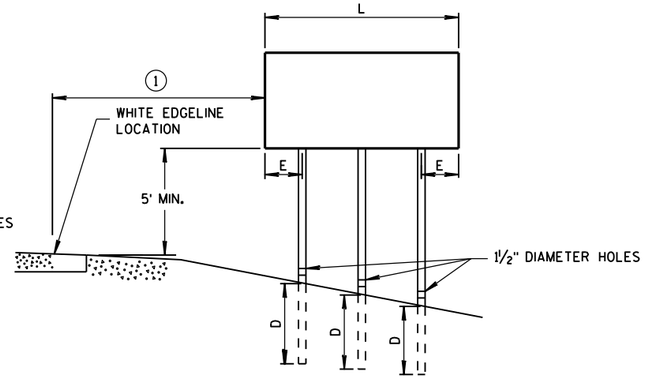
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

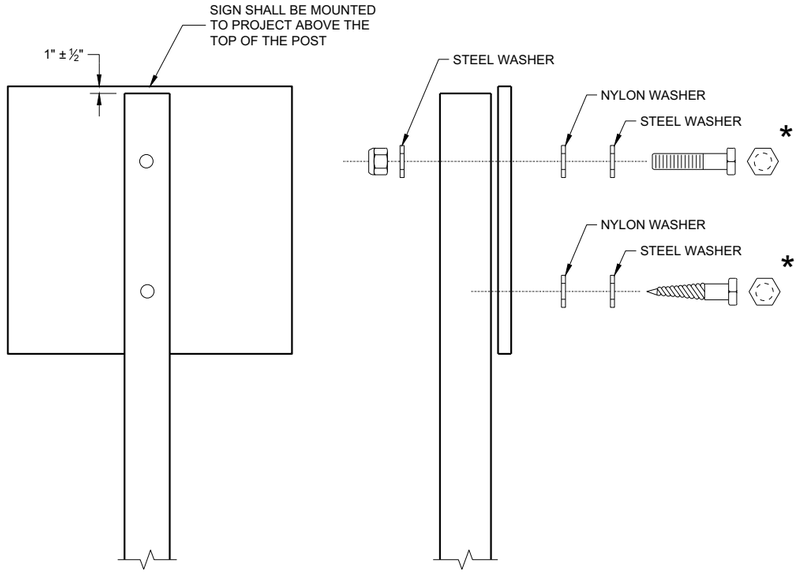
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



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

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

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

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

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

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x 1/16" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 NYLON

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

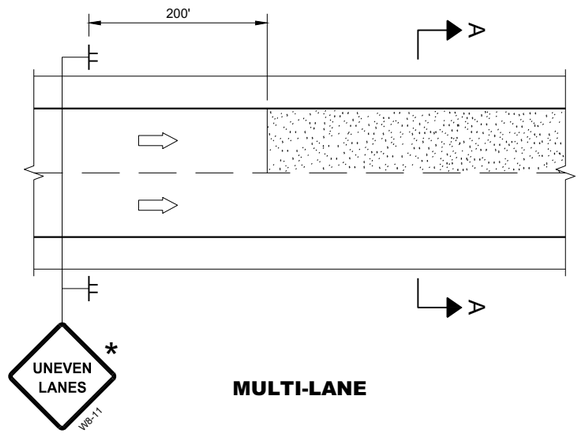
SDD 15D38 - 02b

SDD 15D38 - 02b

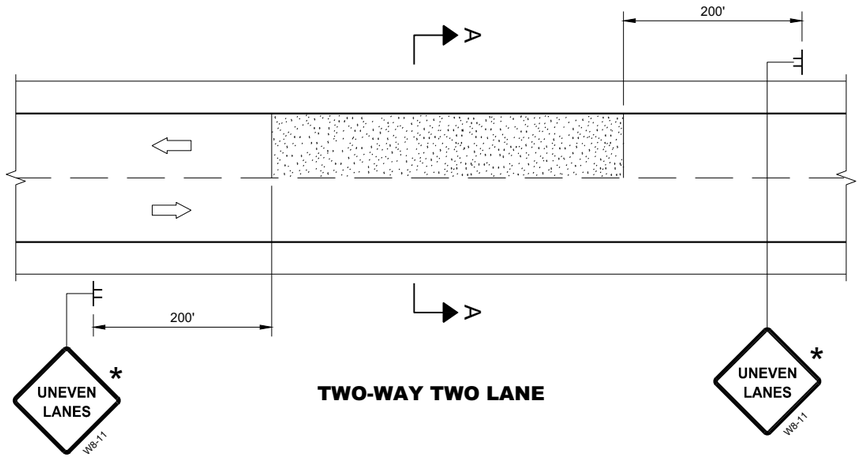
ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



MULTI-LANE



TWO-WAY TWO LANE

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.

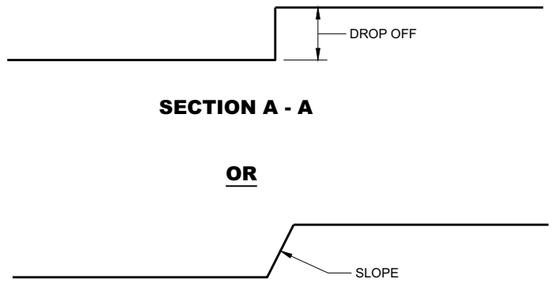
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* 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

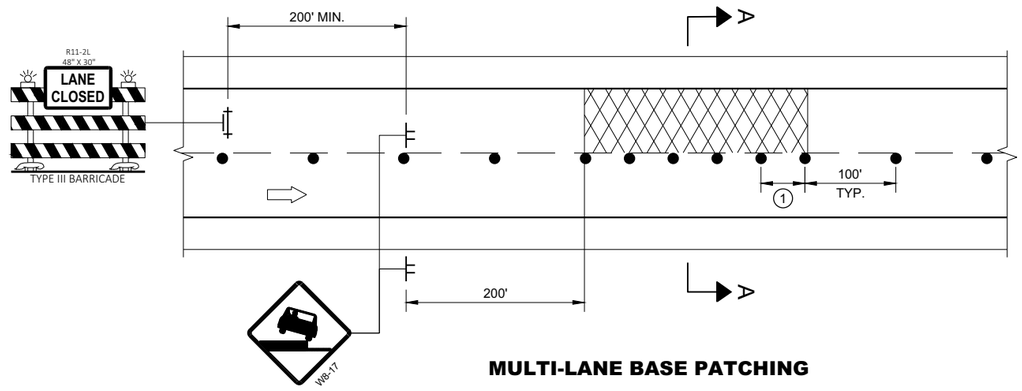
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE



SECTION A - A

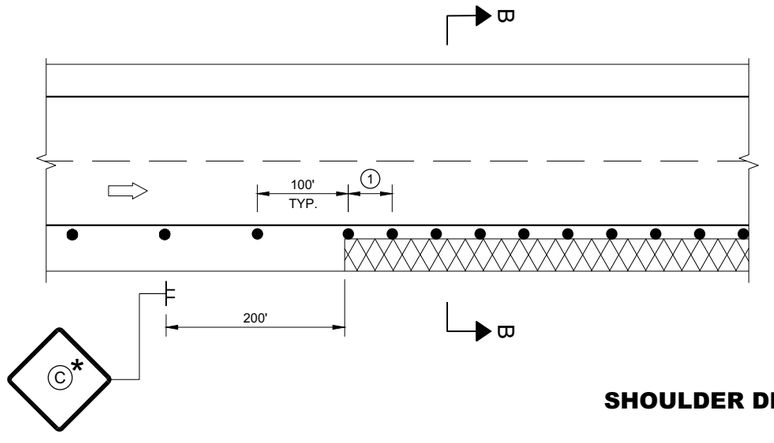
OR

SECTION A - A

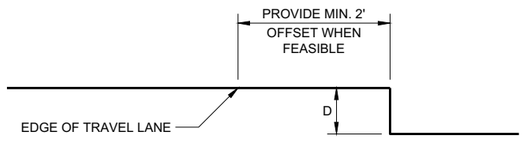


MULTI-LANE BASE PATCHING

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

SDD 15D39 - 02

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.

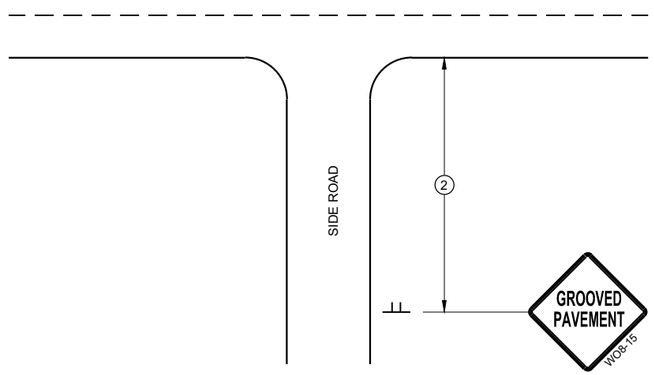
(1) PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

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

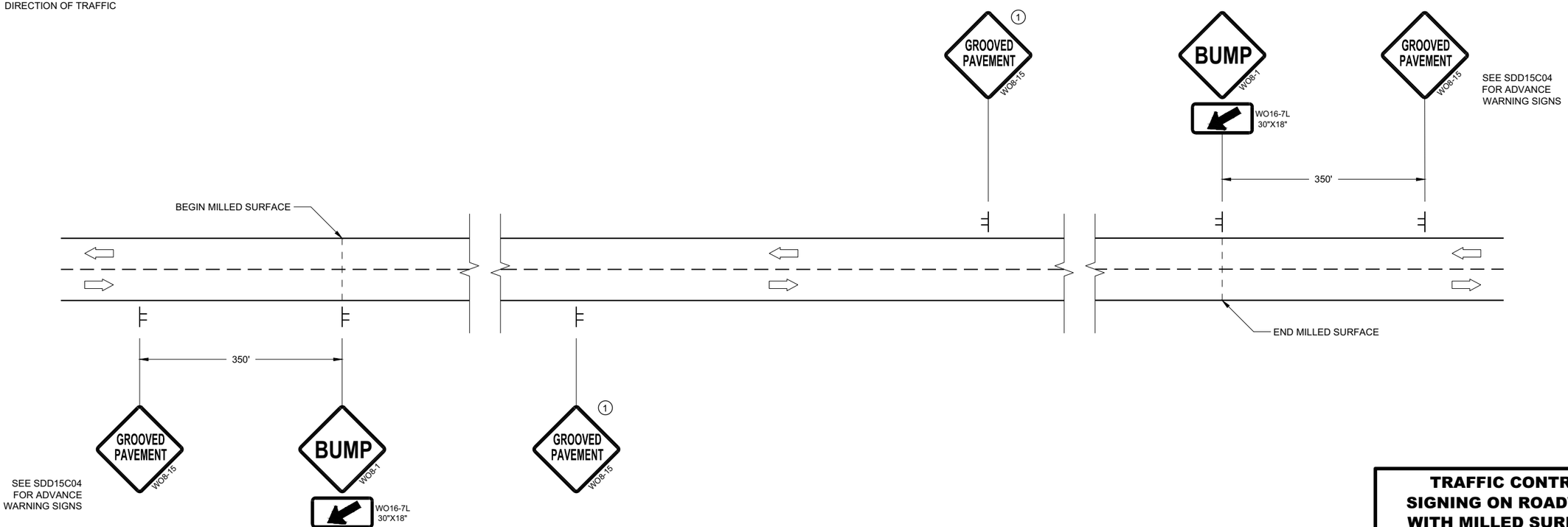
LEGEND

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.

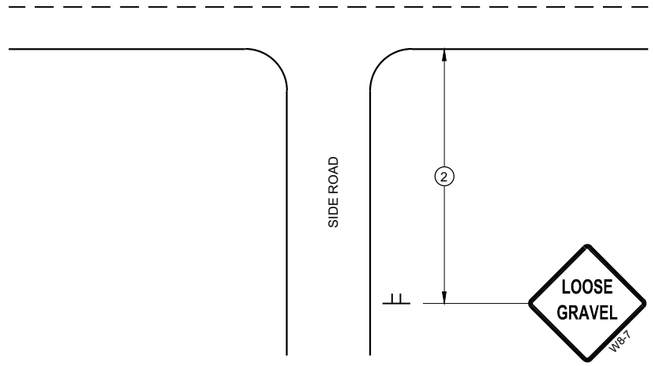
(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

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

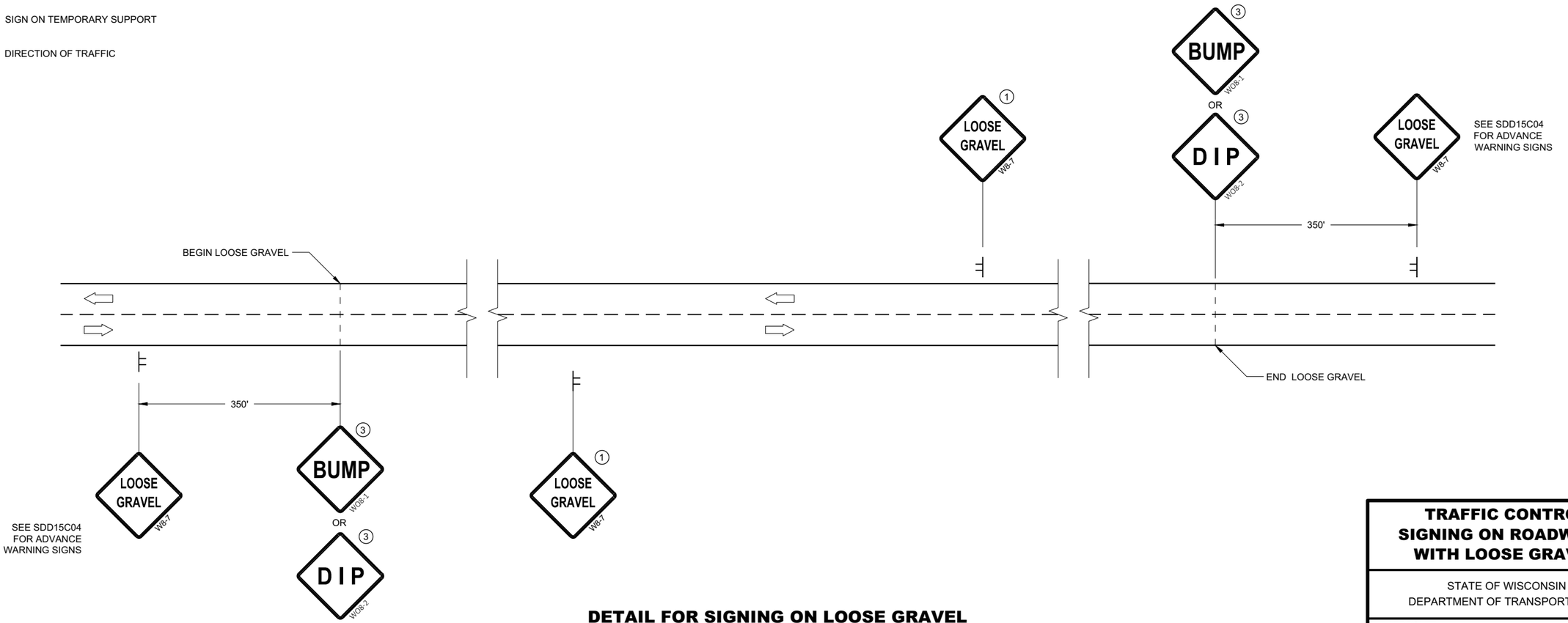
LEGEND

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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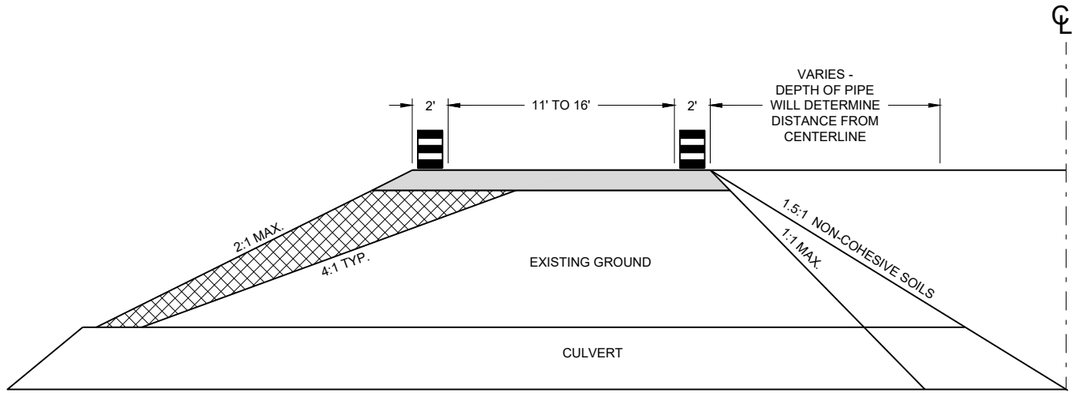
SDD 15D45 - 03



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.

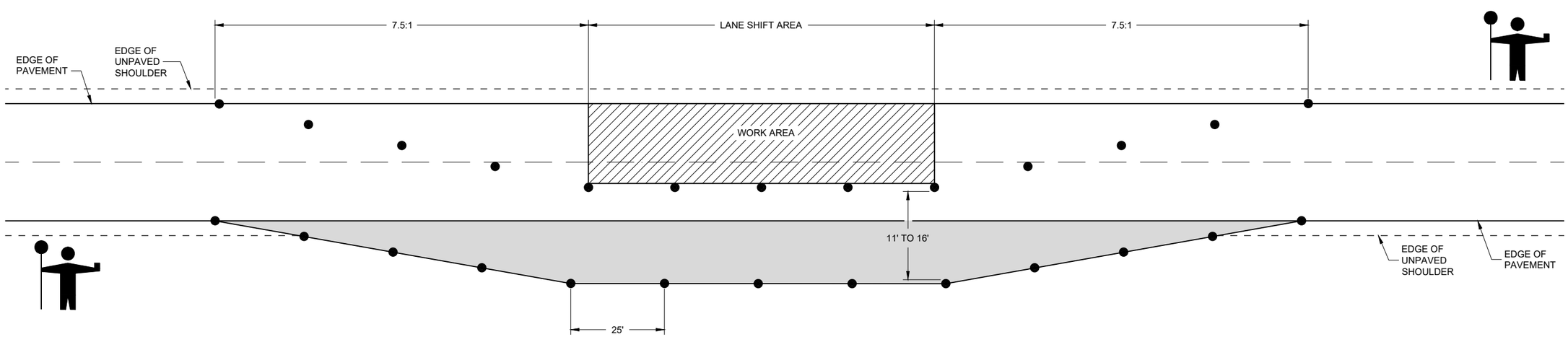
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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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.

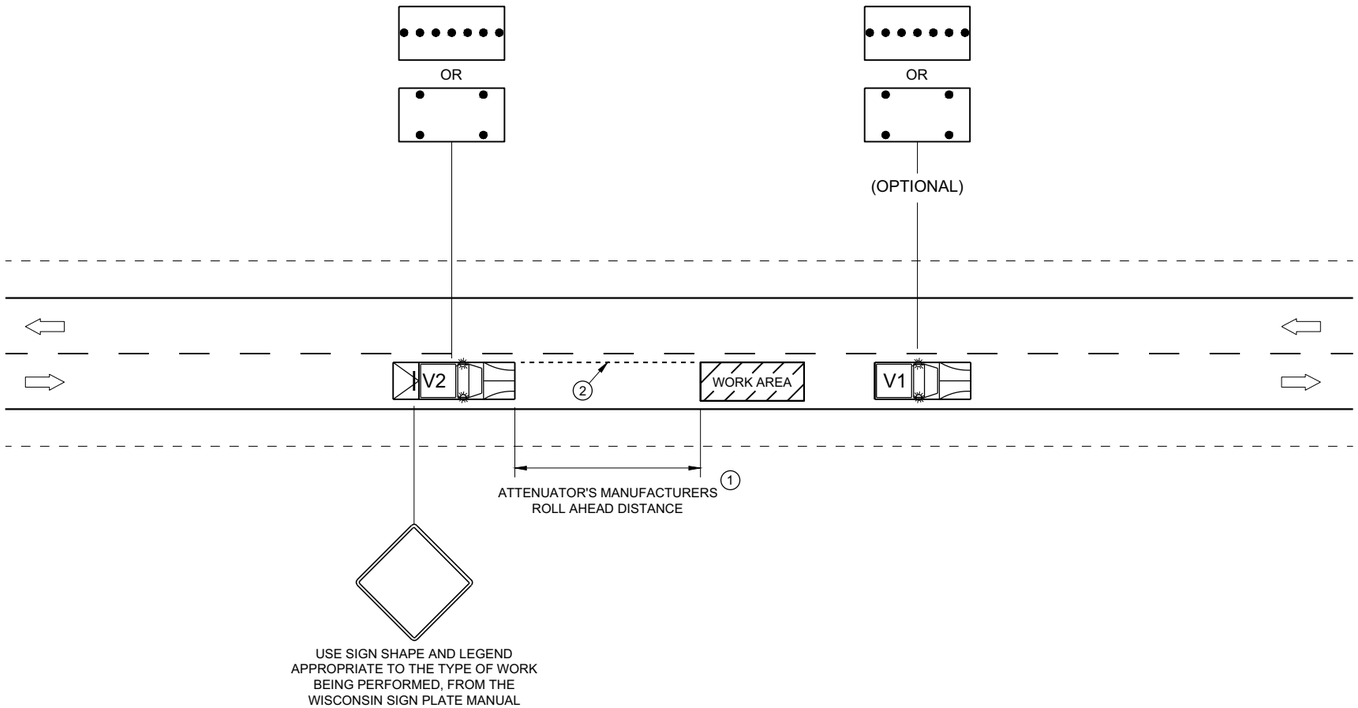
ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

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.



TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

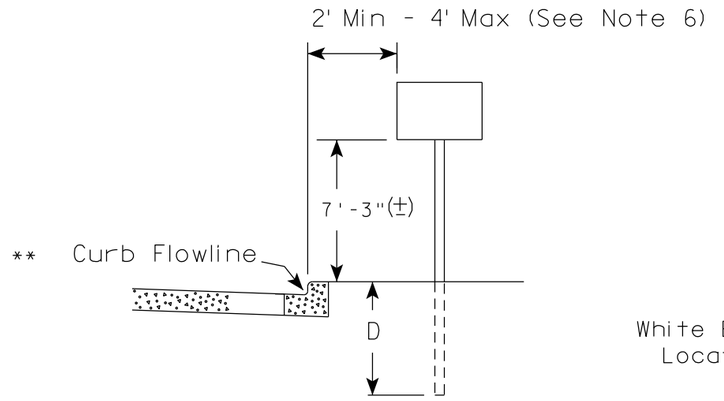
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Andrew Heidtke — STATEWIDE WORK ZONE T SAFETY ENGINEER
FHWA

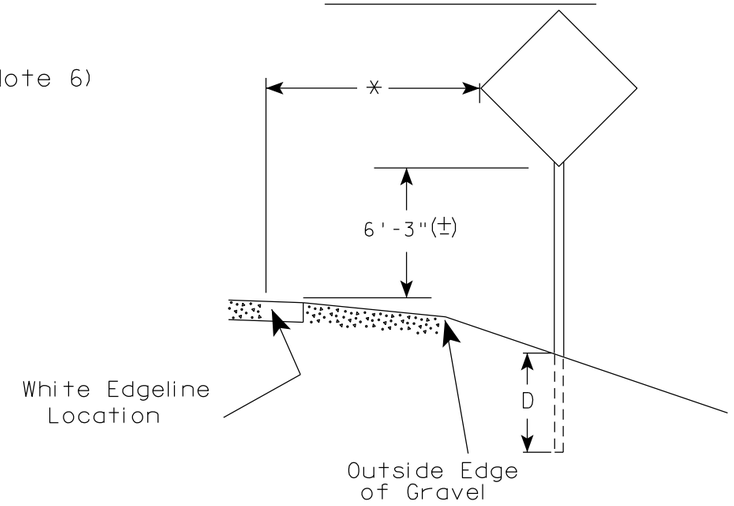
6

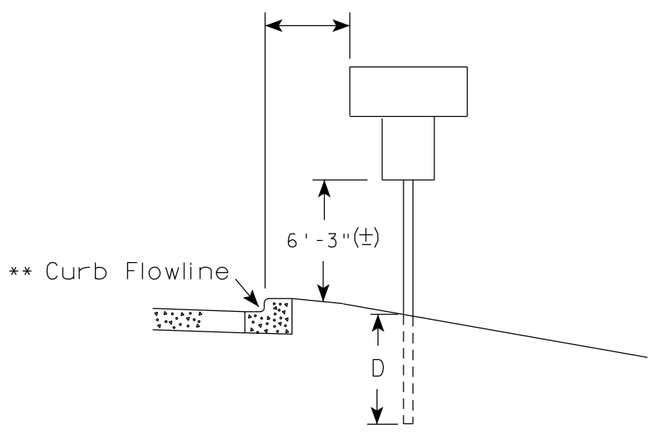
SDD 15D51 - 01

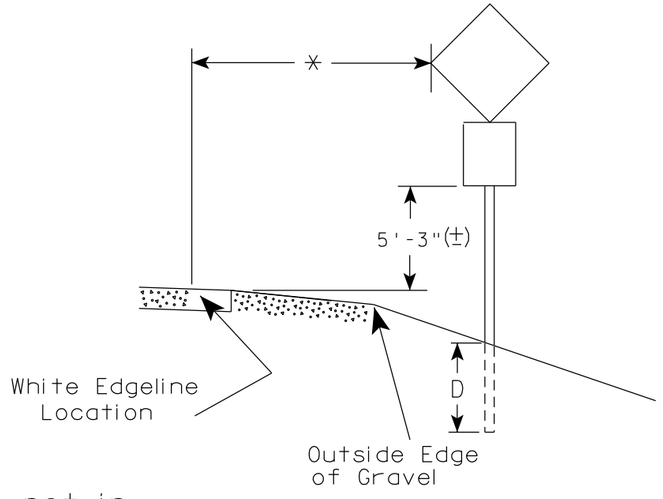
URBAN AREA



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.

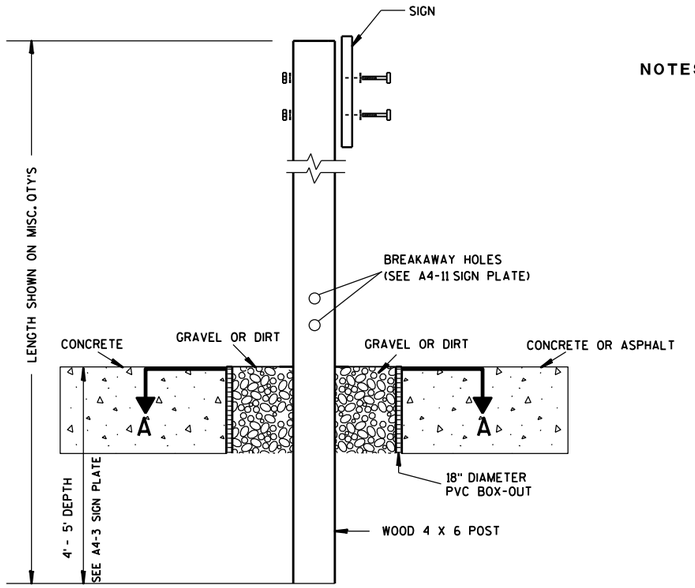
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

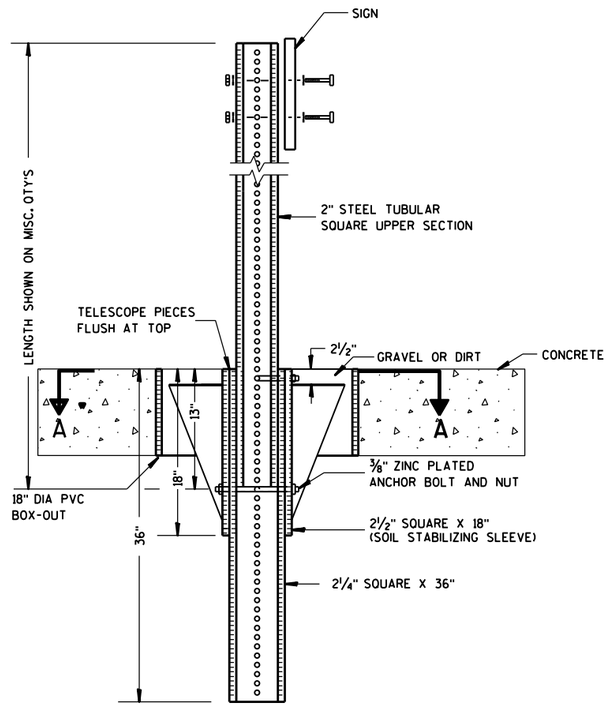
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 100	E



ELEVATION VIEW

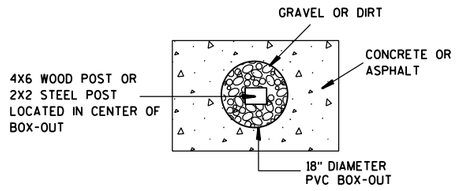
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

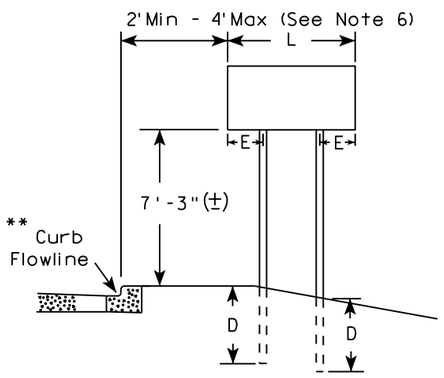
APPROVED Matthew R Rauch
for State Traffic Engineer

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

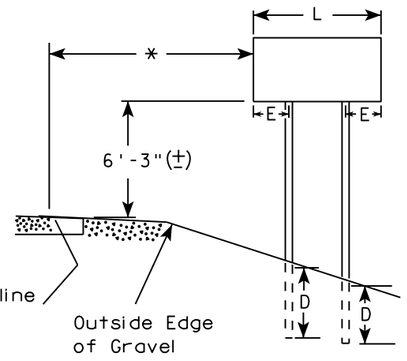
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

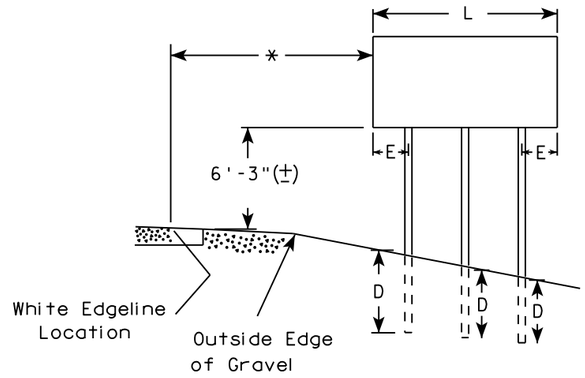
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

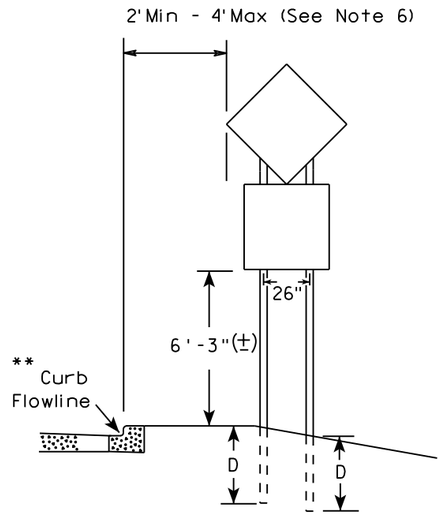
URBAN AREA



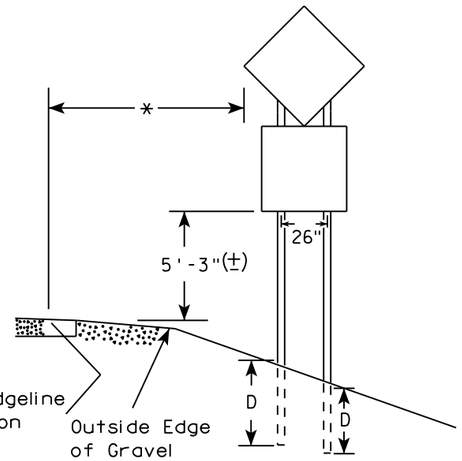
RURAL AREA (See Note 3)







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'

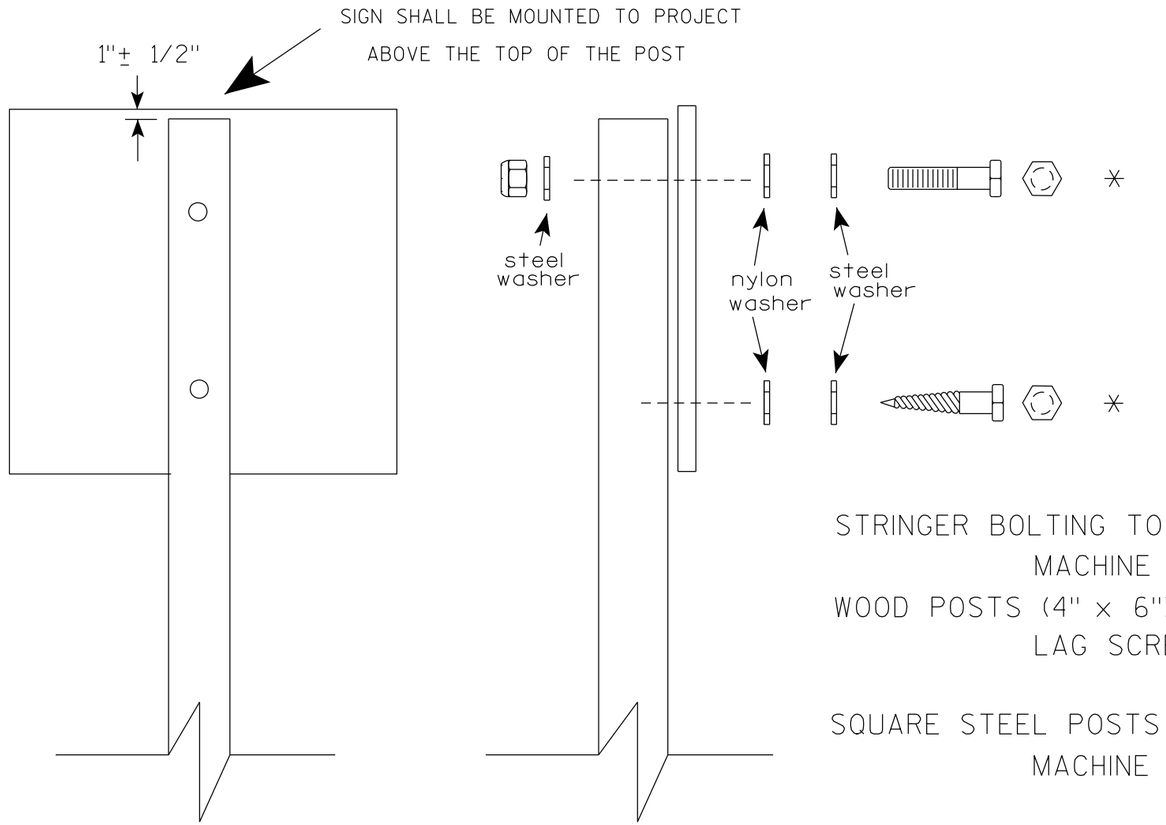
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

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: 102	E



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

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

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

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

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

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

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

ATTACHMENT OF SIGNS TO POSTS

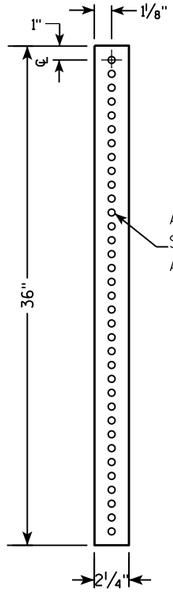
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

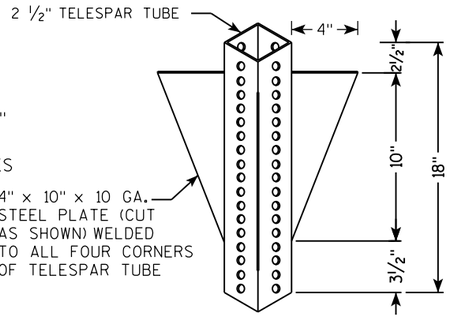
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

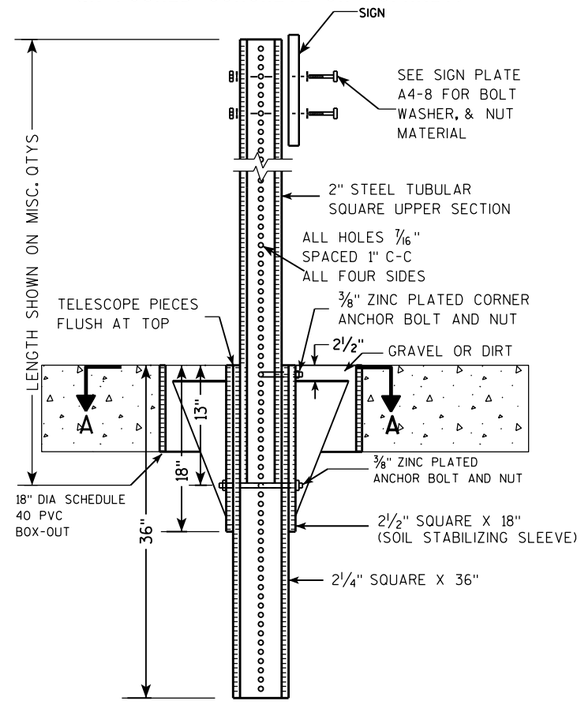
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



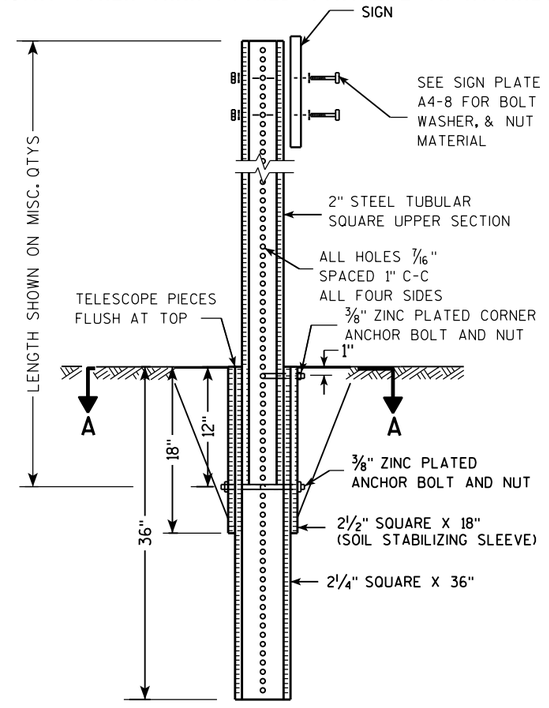
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

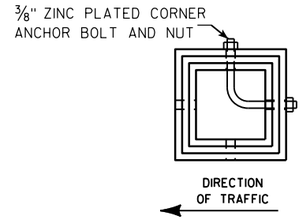


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

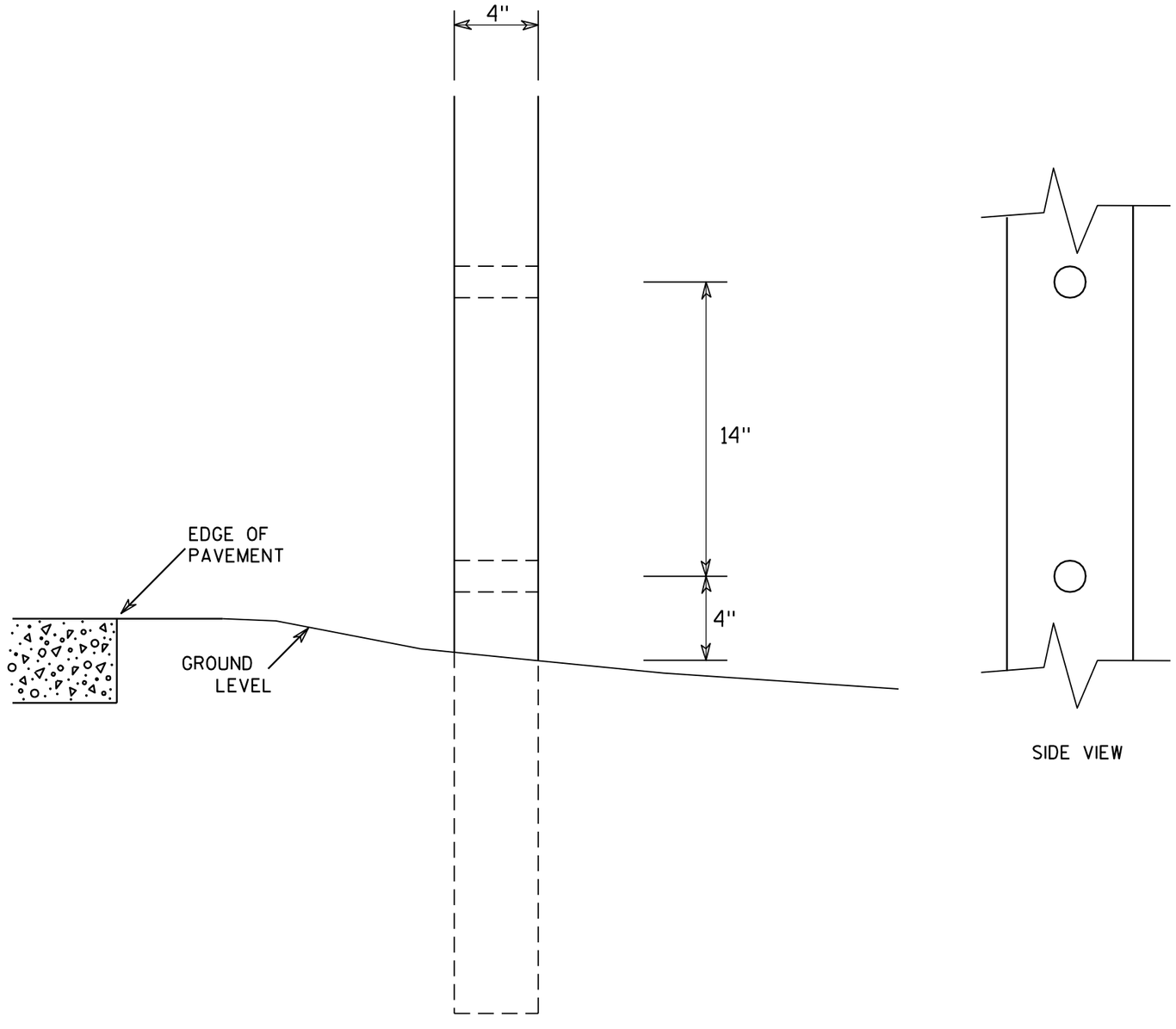
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

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



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

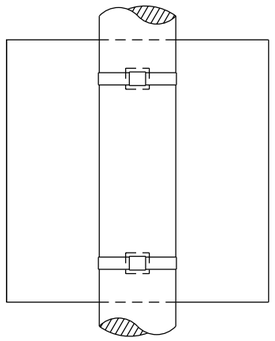
APPROVED Chester J Spang for State Traffic Engineer

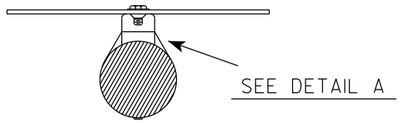
DATE 3/27/97 PLATE NO. A4-11.2

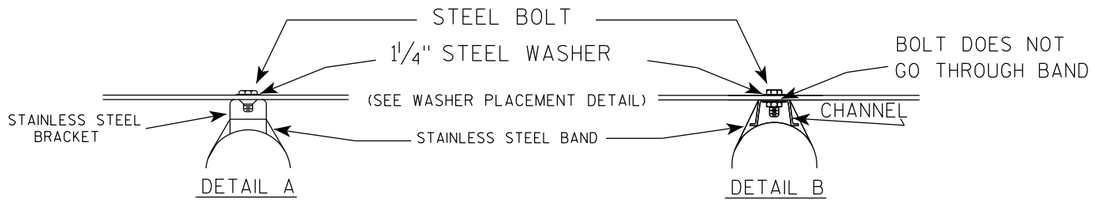
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 105	E

BANDING

SINGLE SIGN



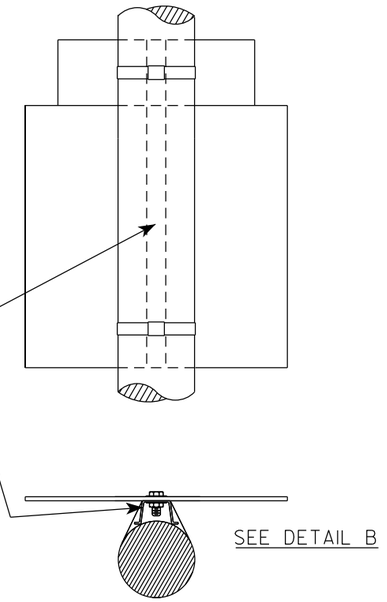




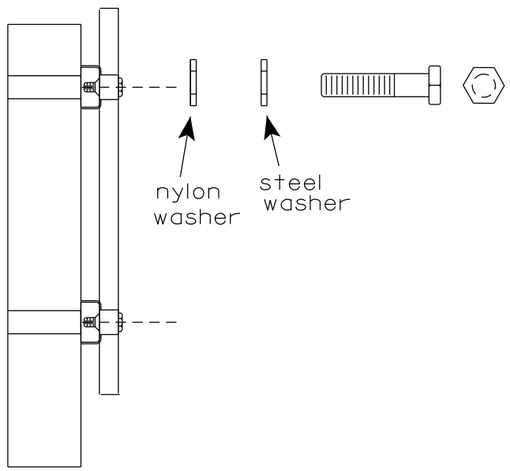
GENERAL NOTES

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

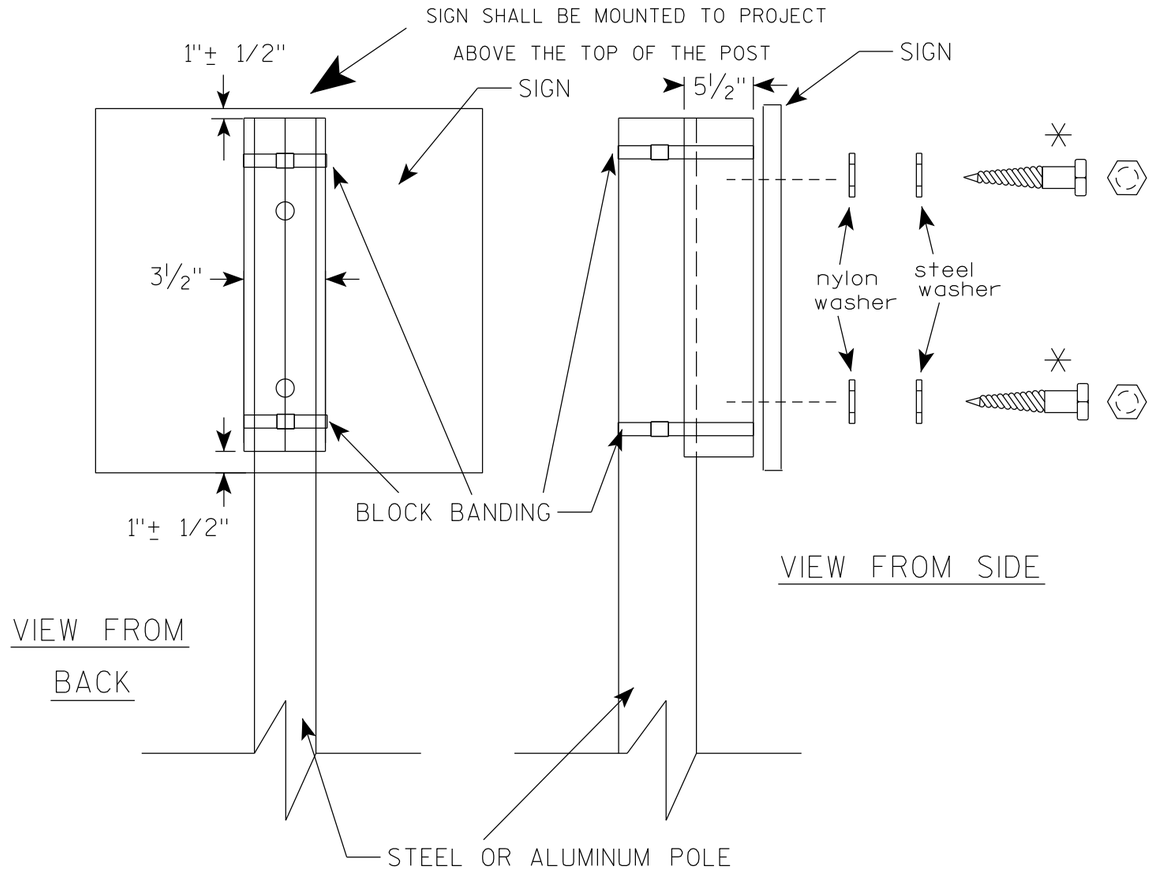
DATE 6/10/19 PLATE NO. A5-9.4

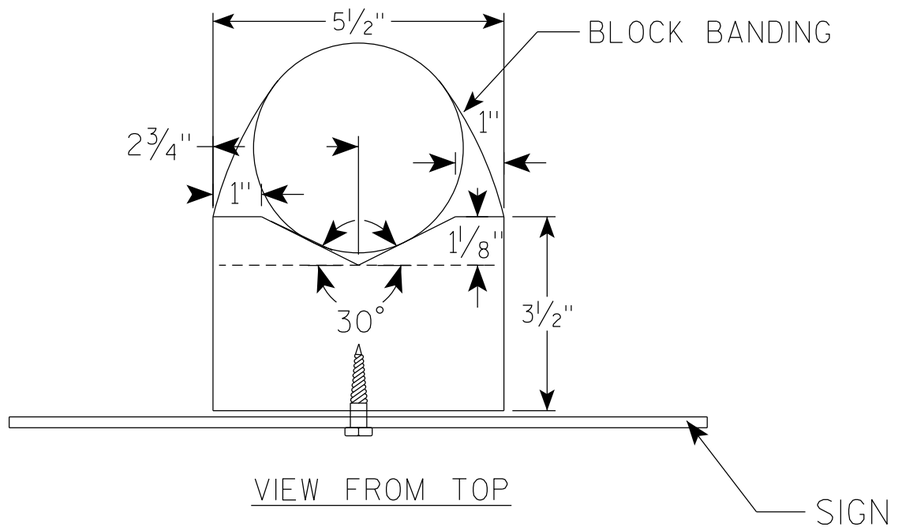
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 106	E

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"

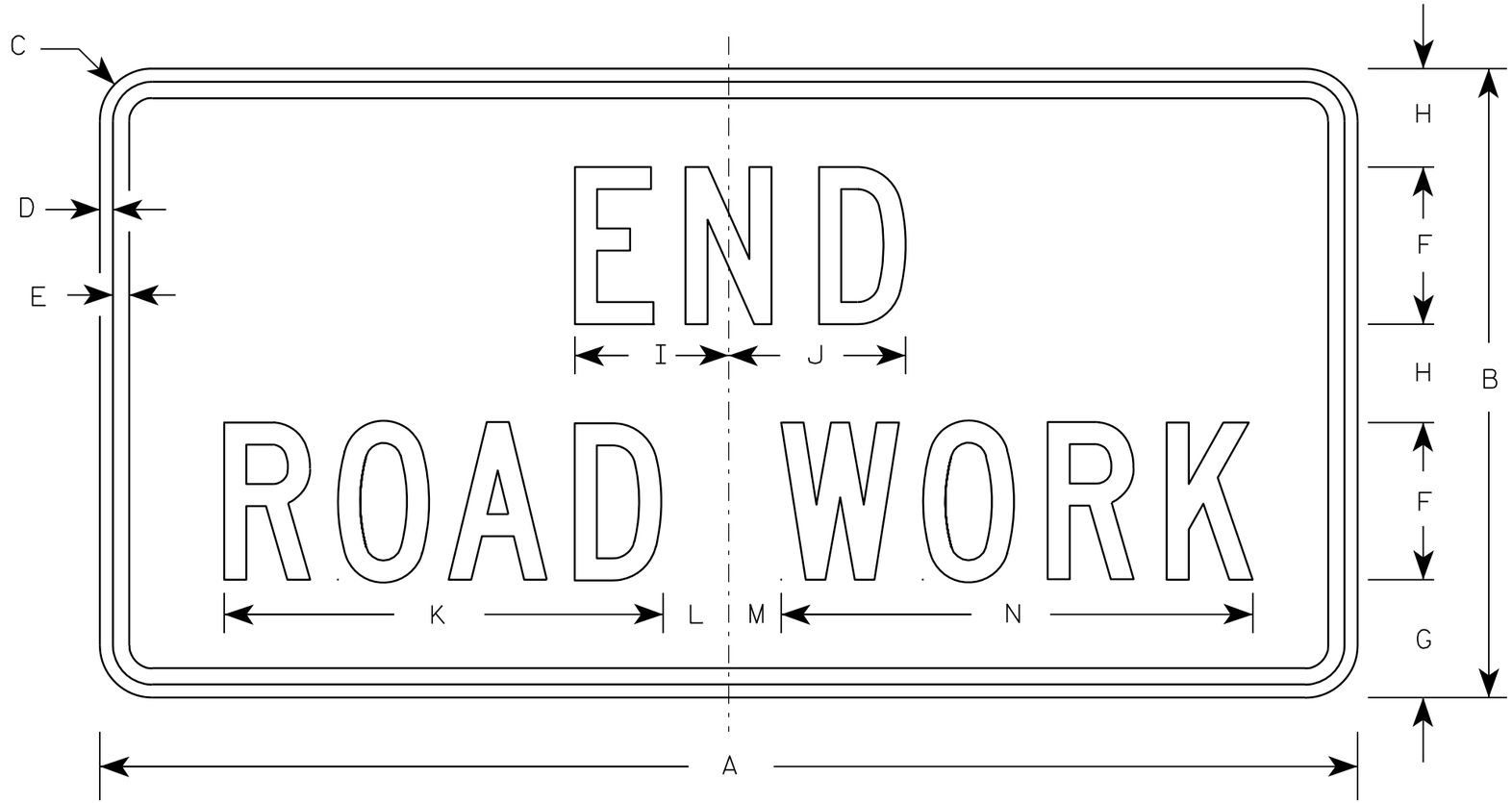
BLOCK BANDING DETAIL (V-BLOCK OPTION)

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: 107 | E



G20-2A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

Metric equivalent for this sign is:

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

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

STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

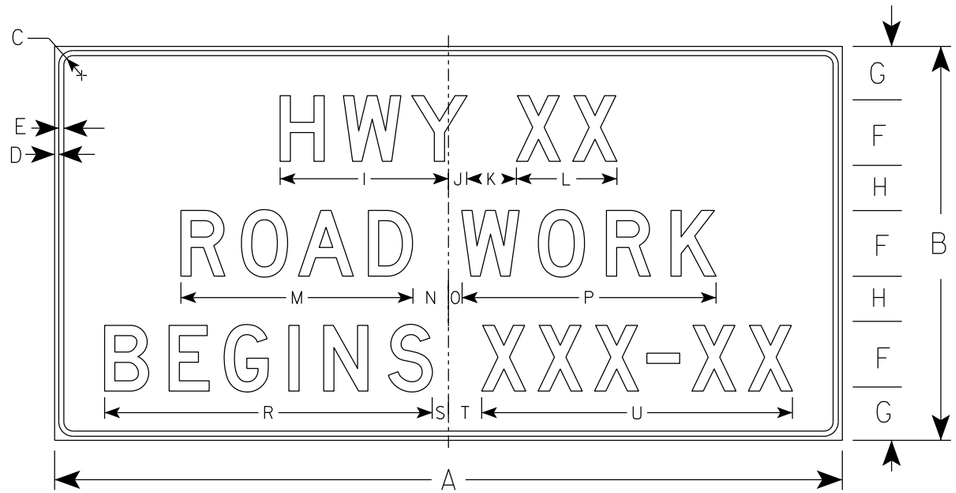
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 108	E

NOTES

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



G20-57

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	21 1/4	3 1/2	1 1/2	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2						18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	28 1/4	4 3/8	1 5/8	31		39 1/4	2	4	37 7/8						32.0
5																											

STANDARD SIGN
G20-57

WISCONSIN DEPT OF TRANSPORTATION

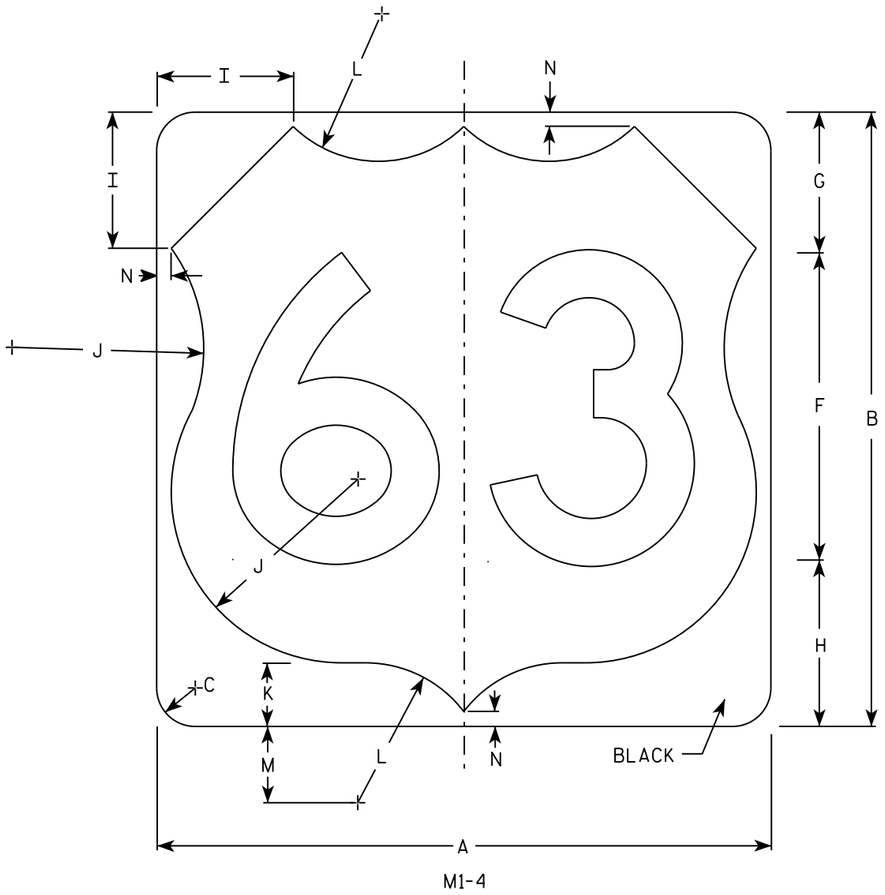
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57.3

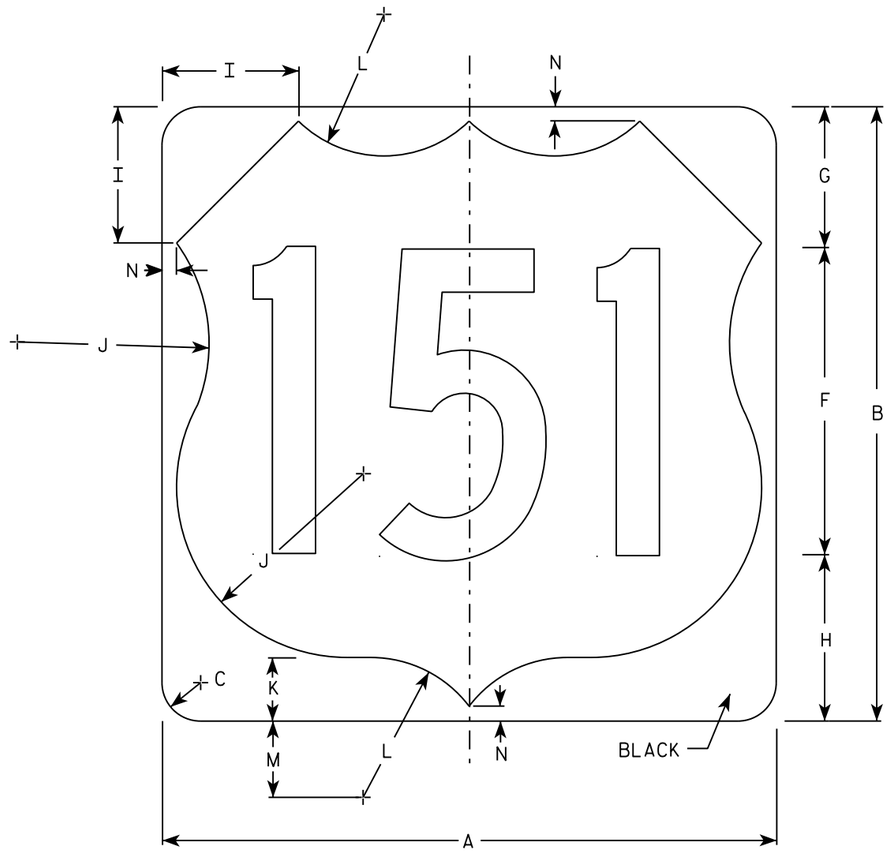
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 109	E

NOTES

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



M1-4



M1-4

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area Sq. ft.
1																											
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

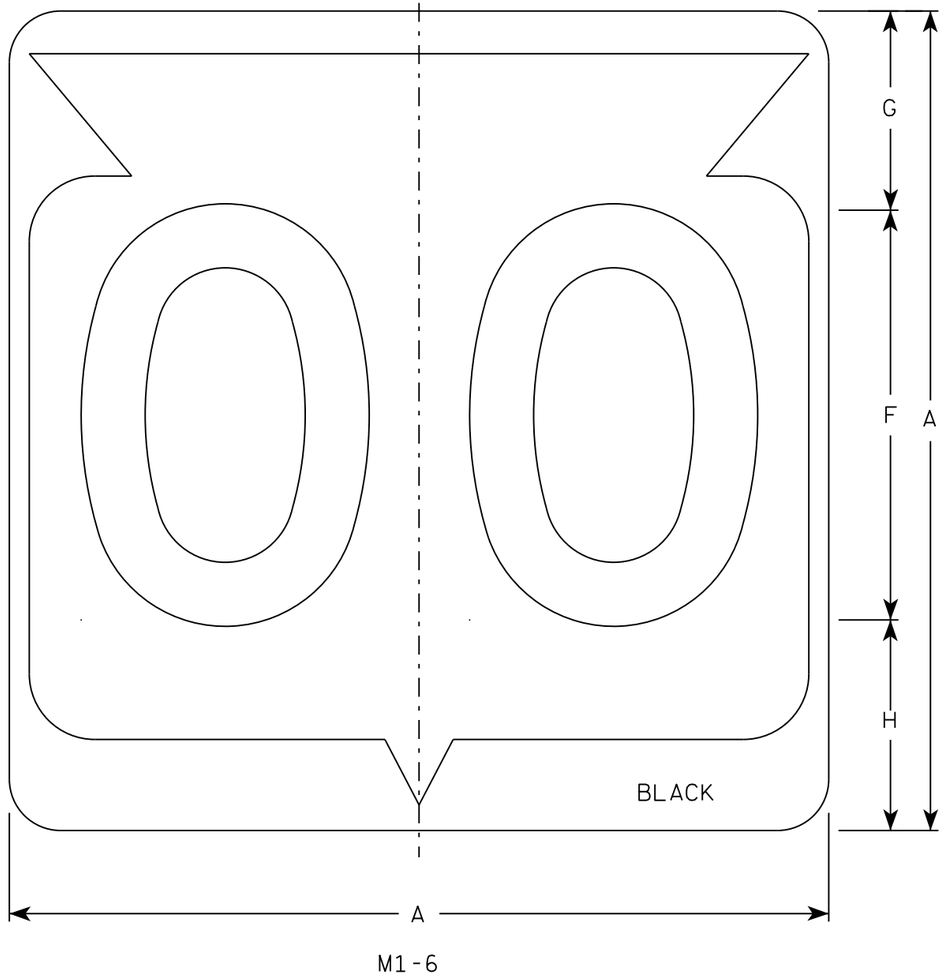
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-4.10

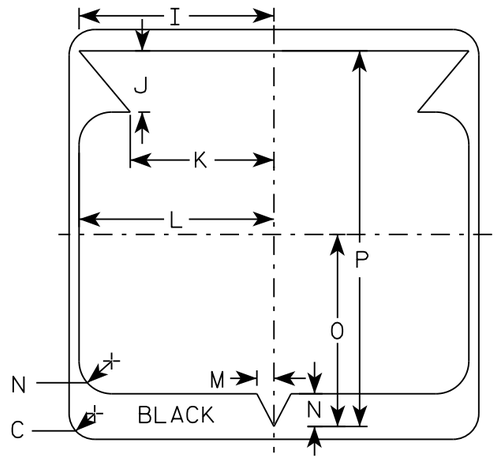
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 110	E



M1-6

NOTES

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



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

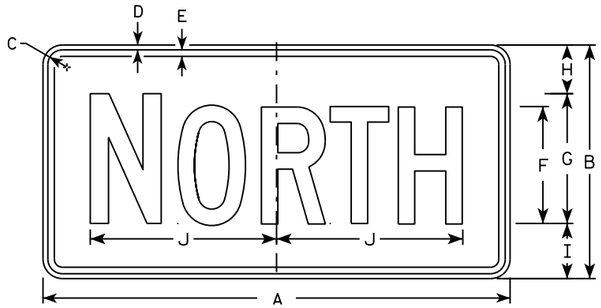
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

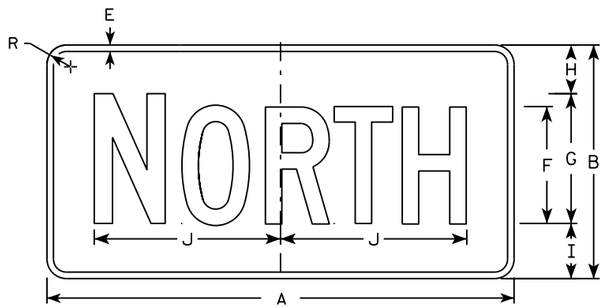
APPROVED Matthew R Rauch for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 111 | E



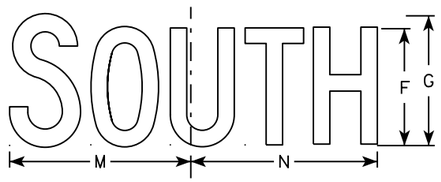
M3-1
MM3-1
MP3-1



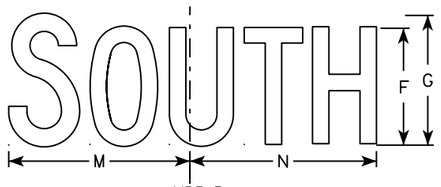
MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

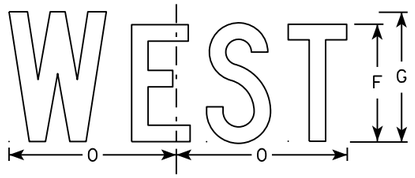
MB3-2
MK3-2
MN3-2



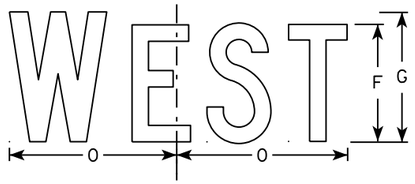
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thur M3-4
SERIES

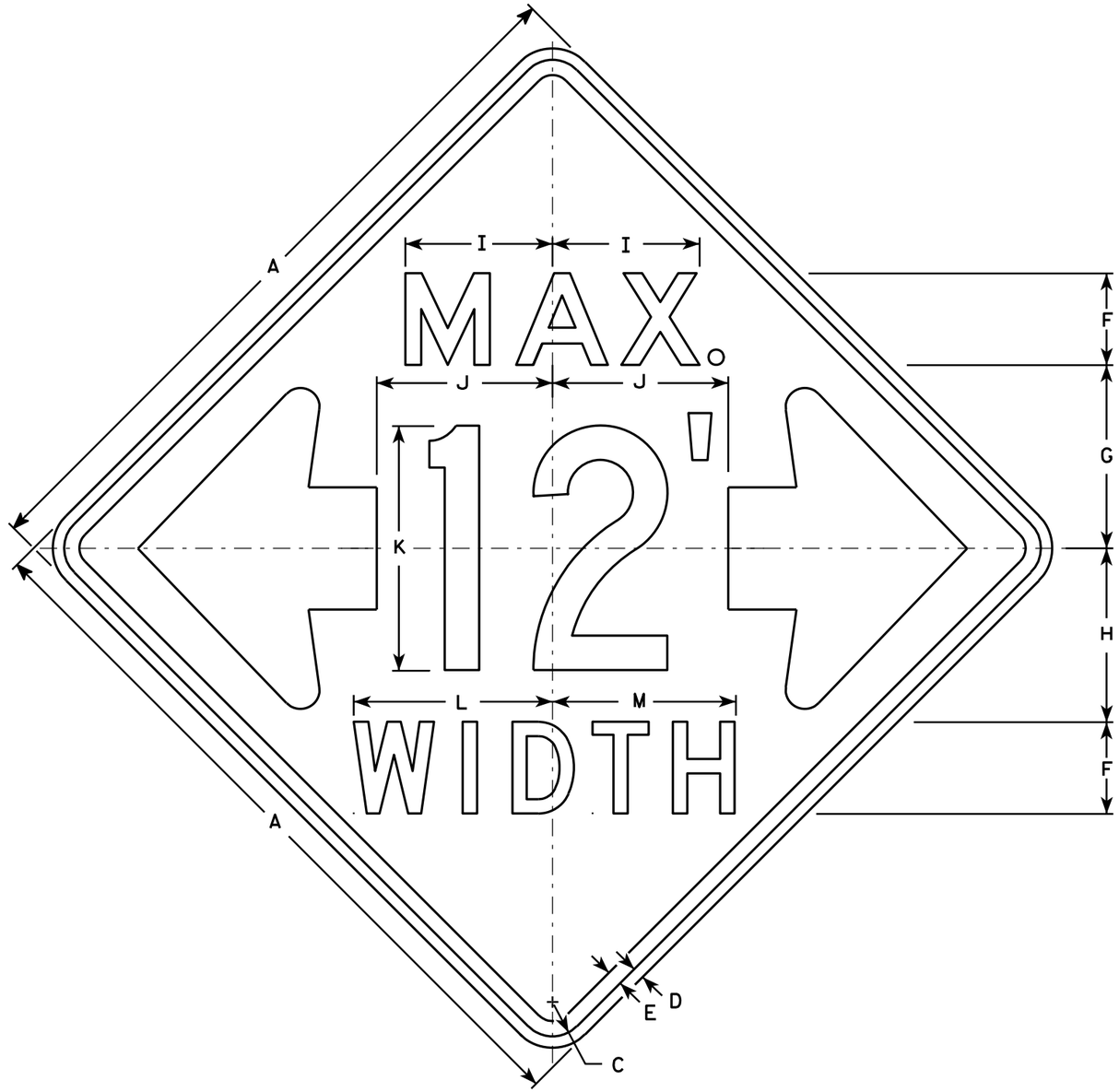
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14

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

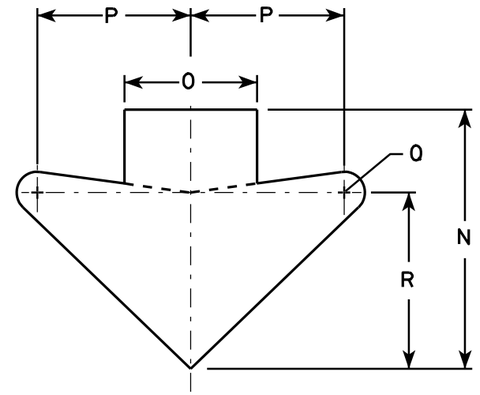
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



W12-52

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN
W12-52

WISCONSIN DEPT OF TRANSPORTATION

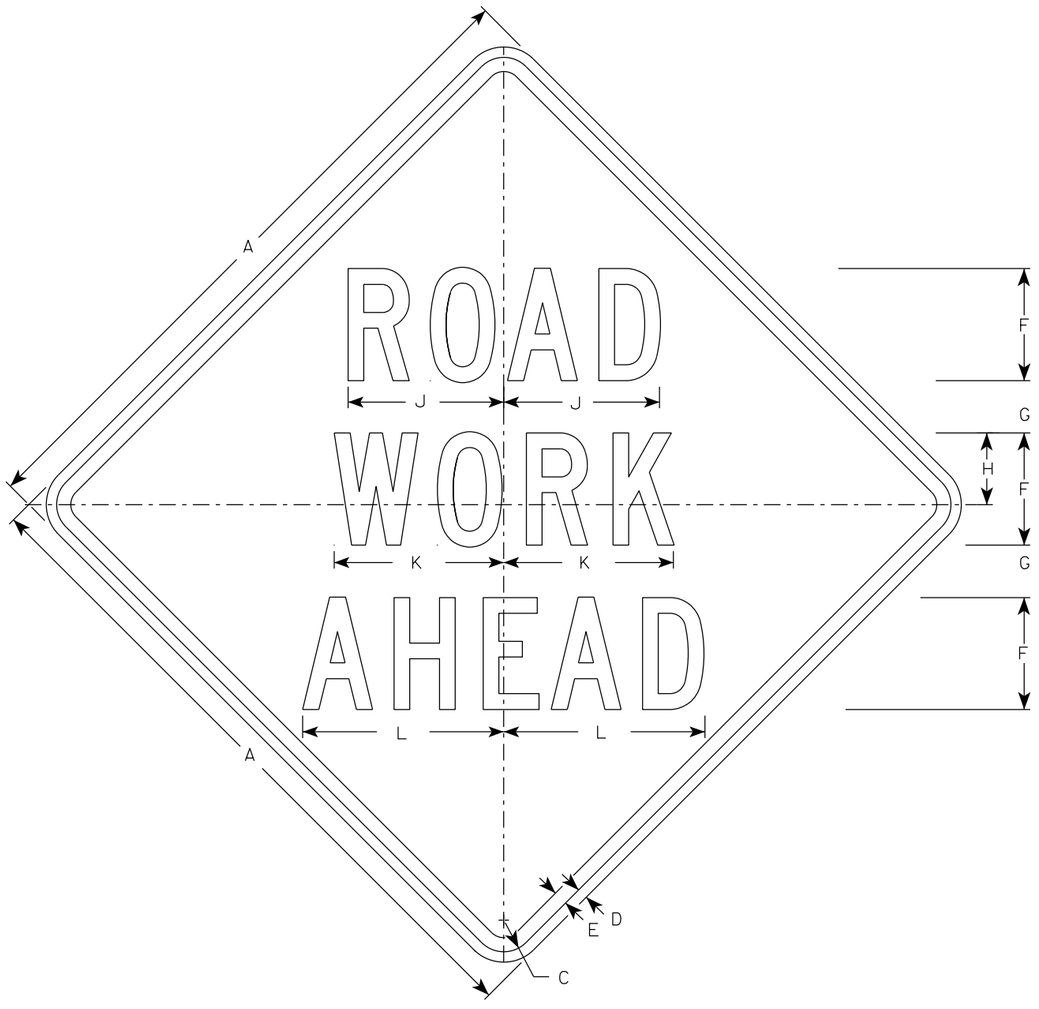
APPROVED Matthew R Rauch
for State Traffic Engineer

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

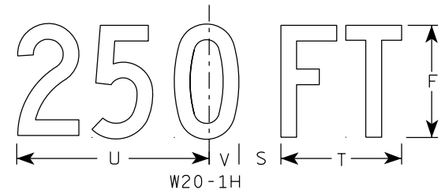
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 113 | E

7

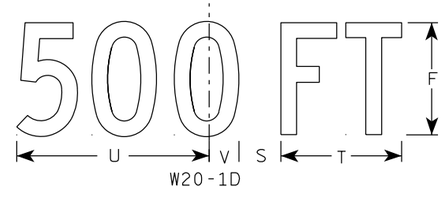
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W1252.DGN PLOT DATE : 16-MAR-2011 14:45 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.137199:1.000000
WISDOT/CADDS SHEET 42



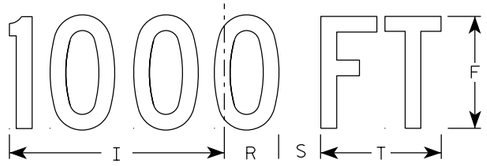
W20-1A



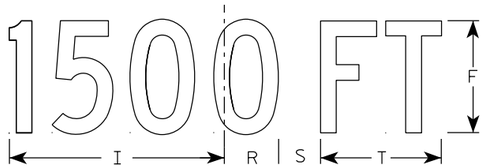
W20-1H



W20-1D



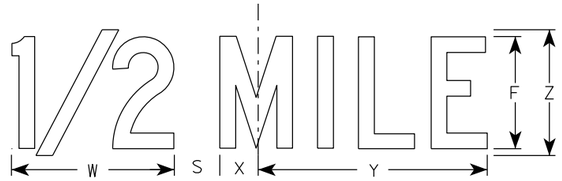
W20-1C



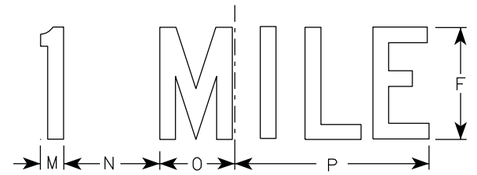
W20-1B

NOTES

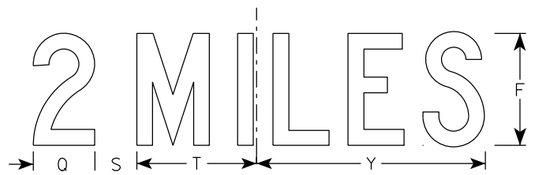
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



W20-1F



W20-1E

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:

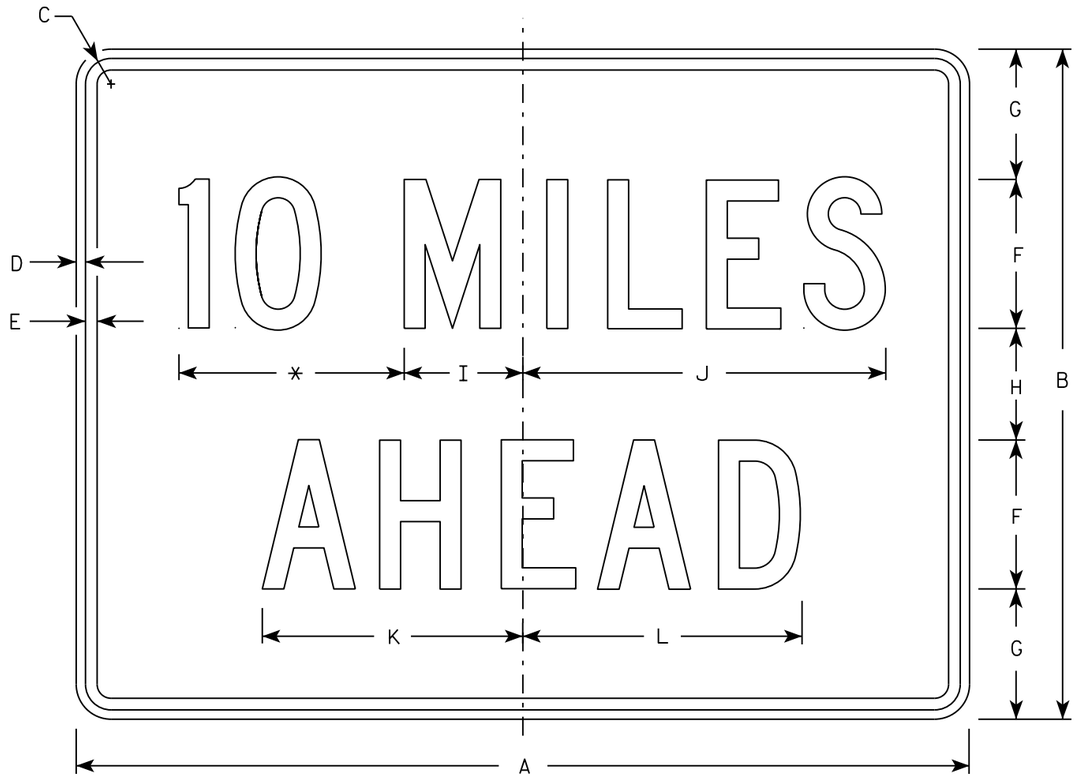
SHEET NO: E

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

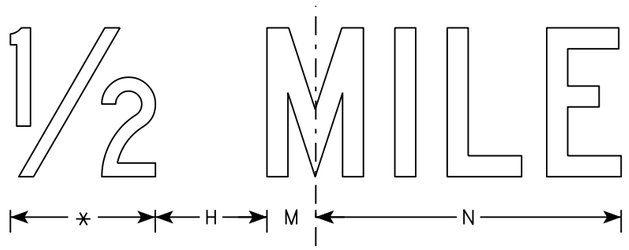
WISDOT/CADDS SHEET 42

7

7



W057-52



NOTES

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

* See note 5

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

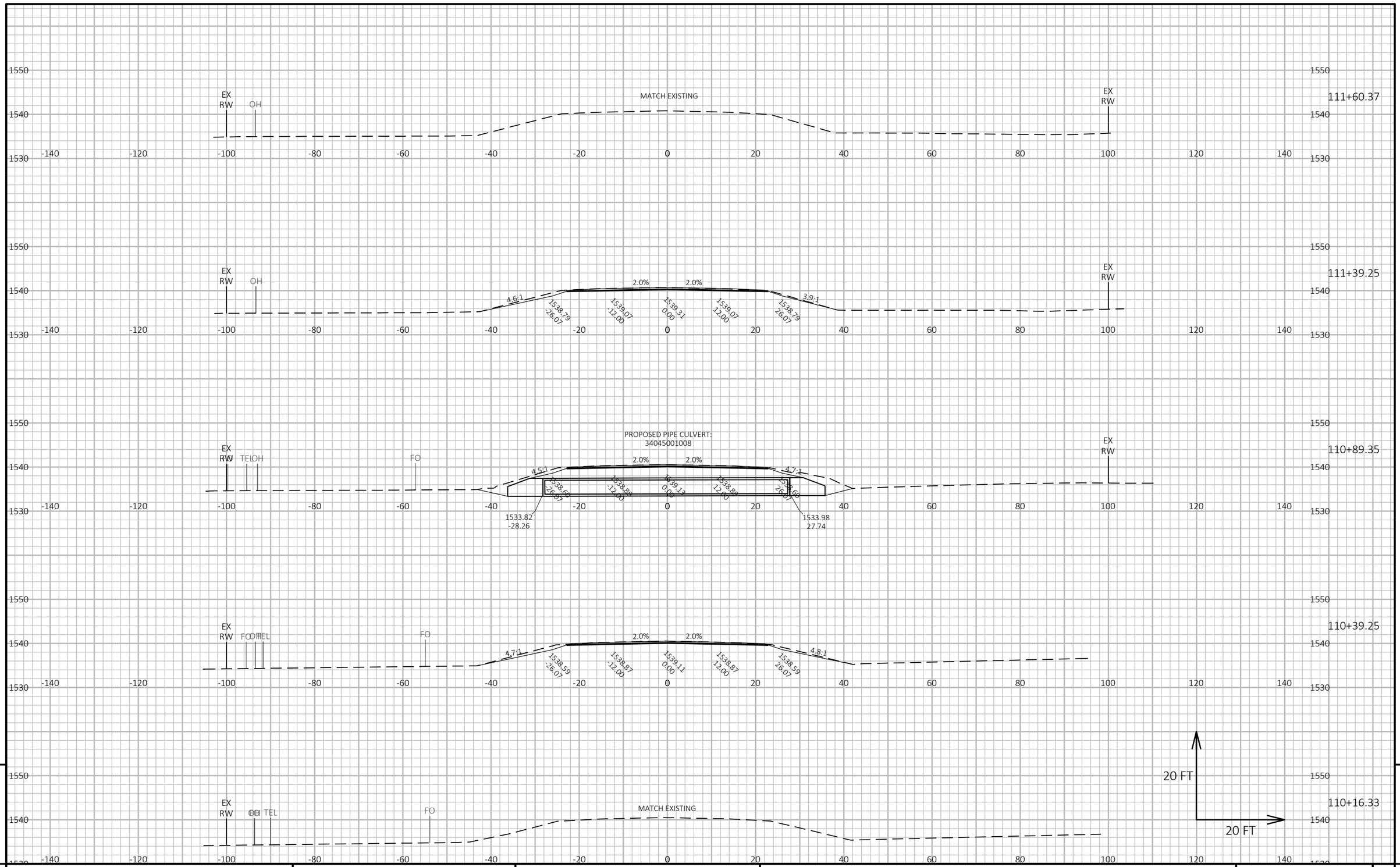
STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

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



9

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	CROSS SECTIONS: CULVERT REPLACEMENTS	SHEET 116	E

9

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 01

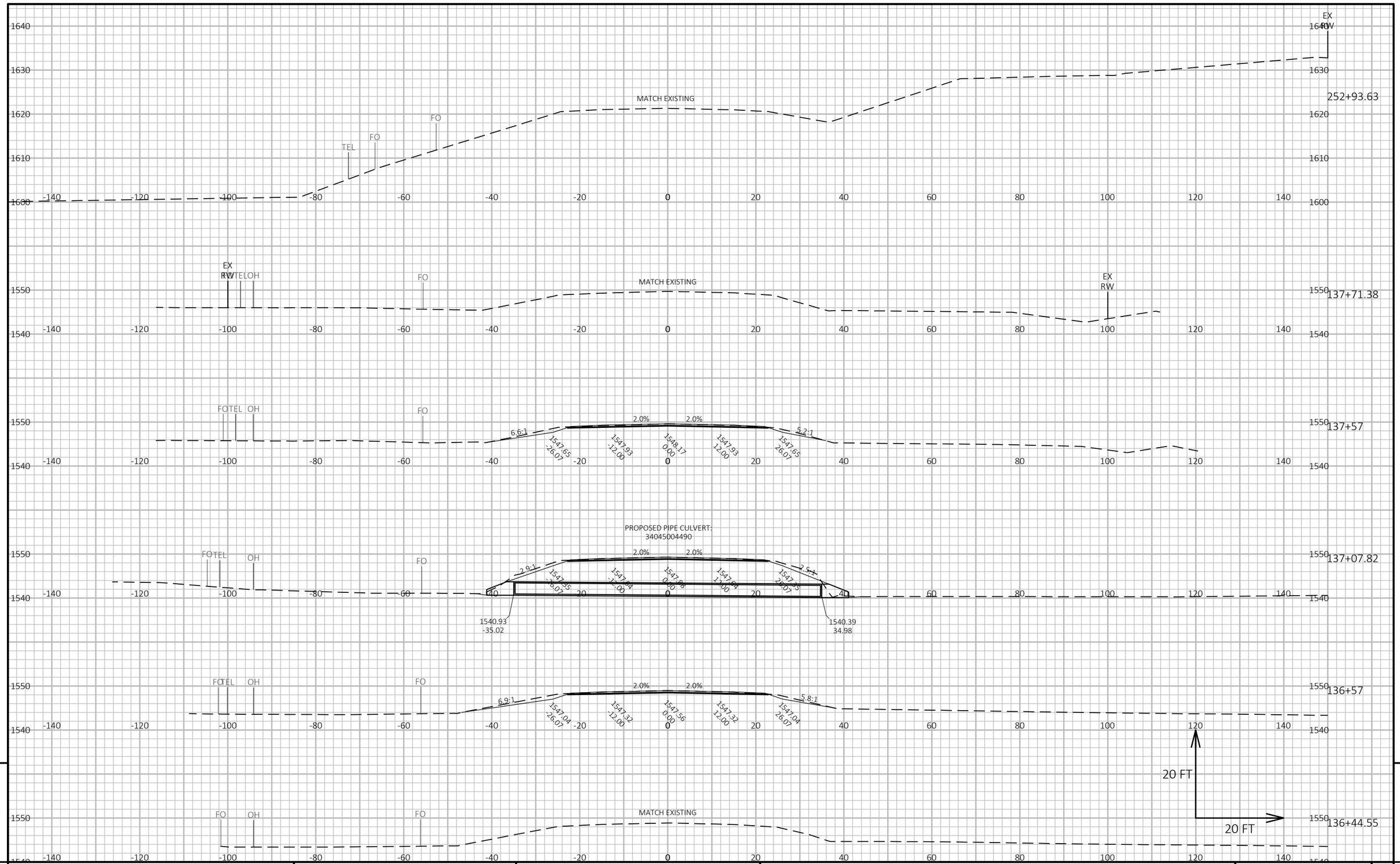
PLOT DATE : 3/1/2021 1:29 PM

PLOT BY : BLUMENSCHEIN, CHAD P

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

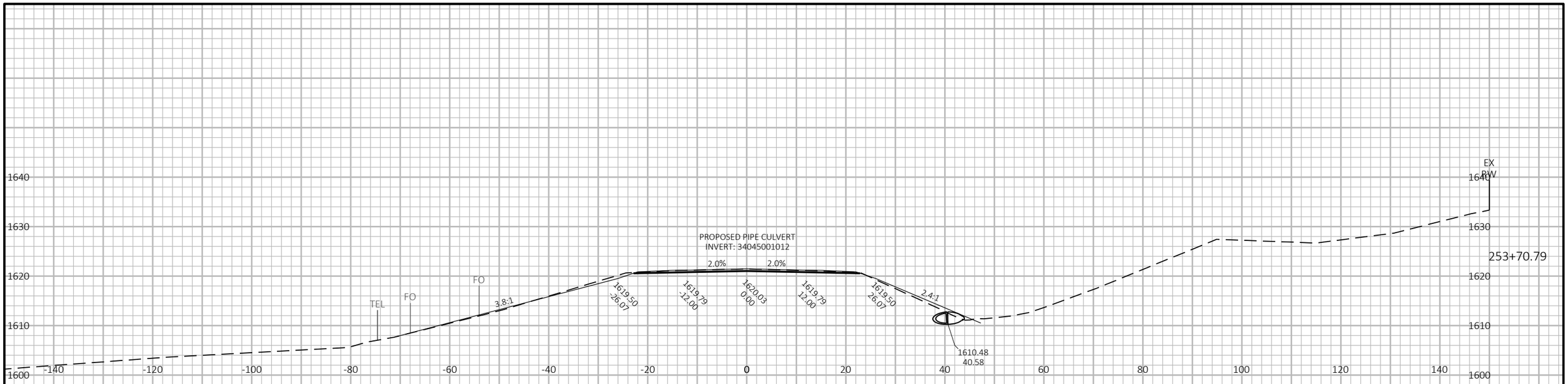


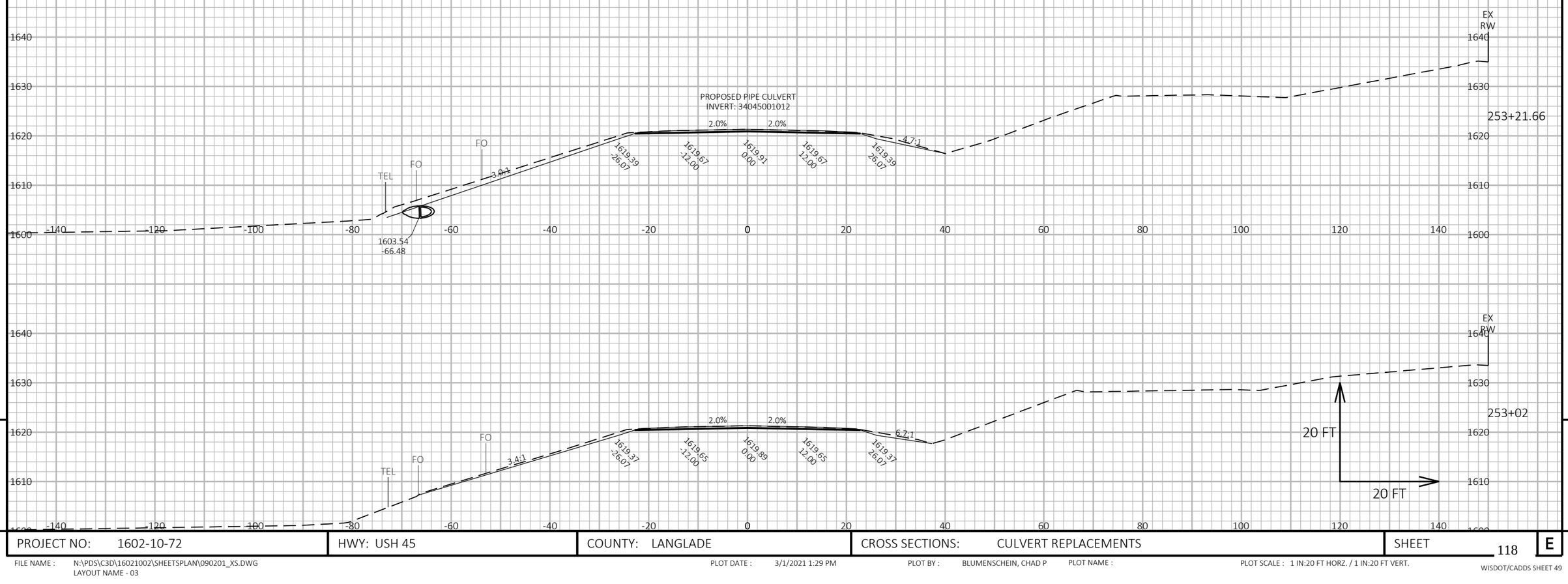
PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	CROSS SECTIONS: CULVERT REPLACEMENTS	SHEET 117	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 02

PLOT DATE : 3/1/2021 1:29 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49





9

9

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	CROSS SECTIONS: CULVERT REPLACEMENTS	SHEET 118	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 03

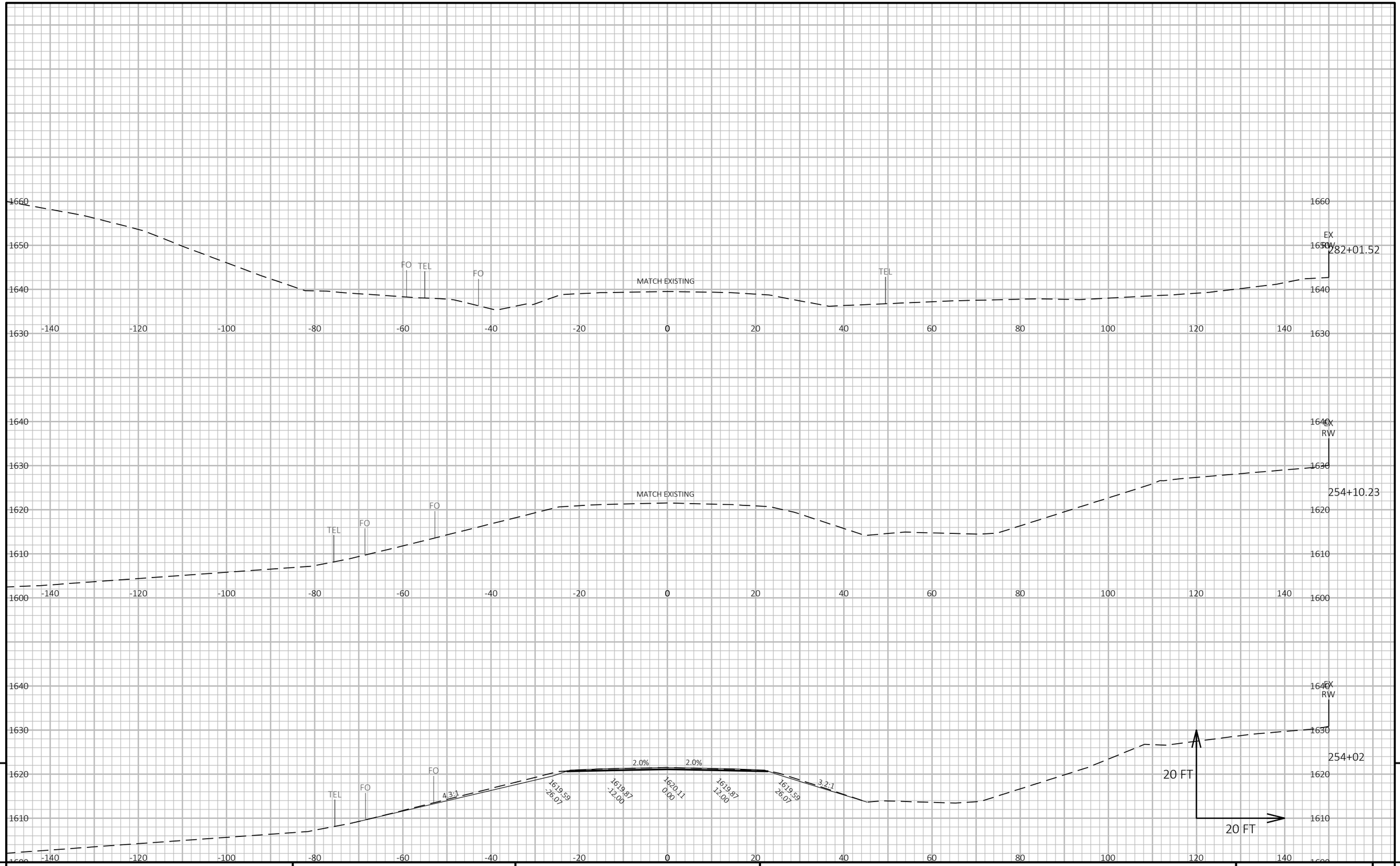
PLOT DATE : 3/1/2021 1:29 PM

PLOT BY : BLUMENSCHEIN, CHAD P

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	CROSS SECTIONS: CULVERT REPLACEMENTS	SHEET 119	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 04

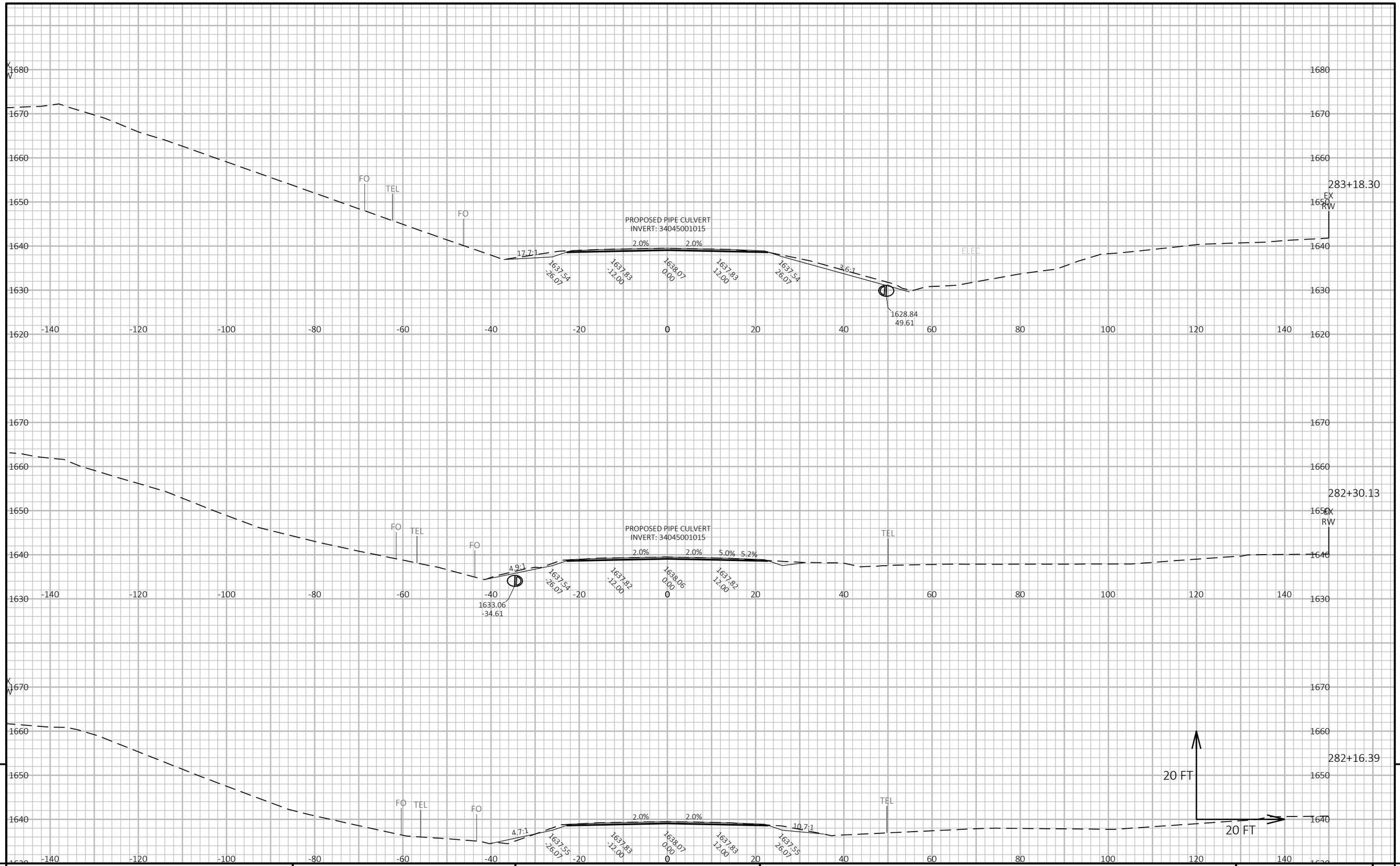
PLOT DATE : 3/1/2021 1:29 PM

PLOT BY : BLUMENSCHEIN, CHAD P

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	CROSS SECTIONS: CULVERT REPLACEMENTS	SHEET 120 E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 05

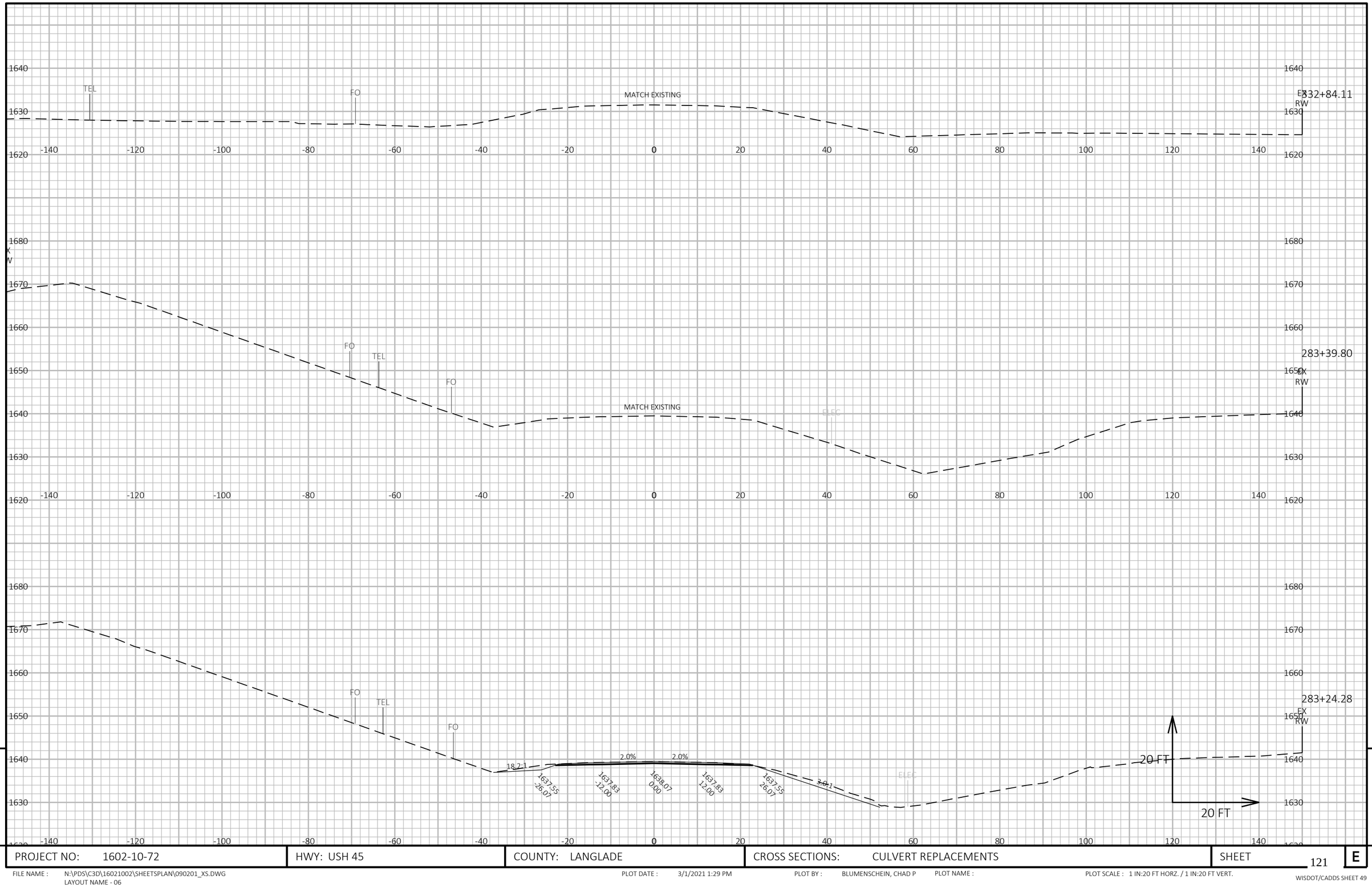
PLOT DATE : 3/1/2021 1:29 PM

PLOT BY : BLUMENSCHEIN, CHAD P

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



9

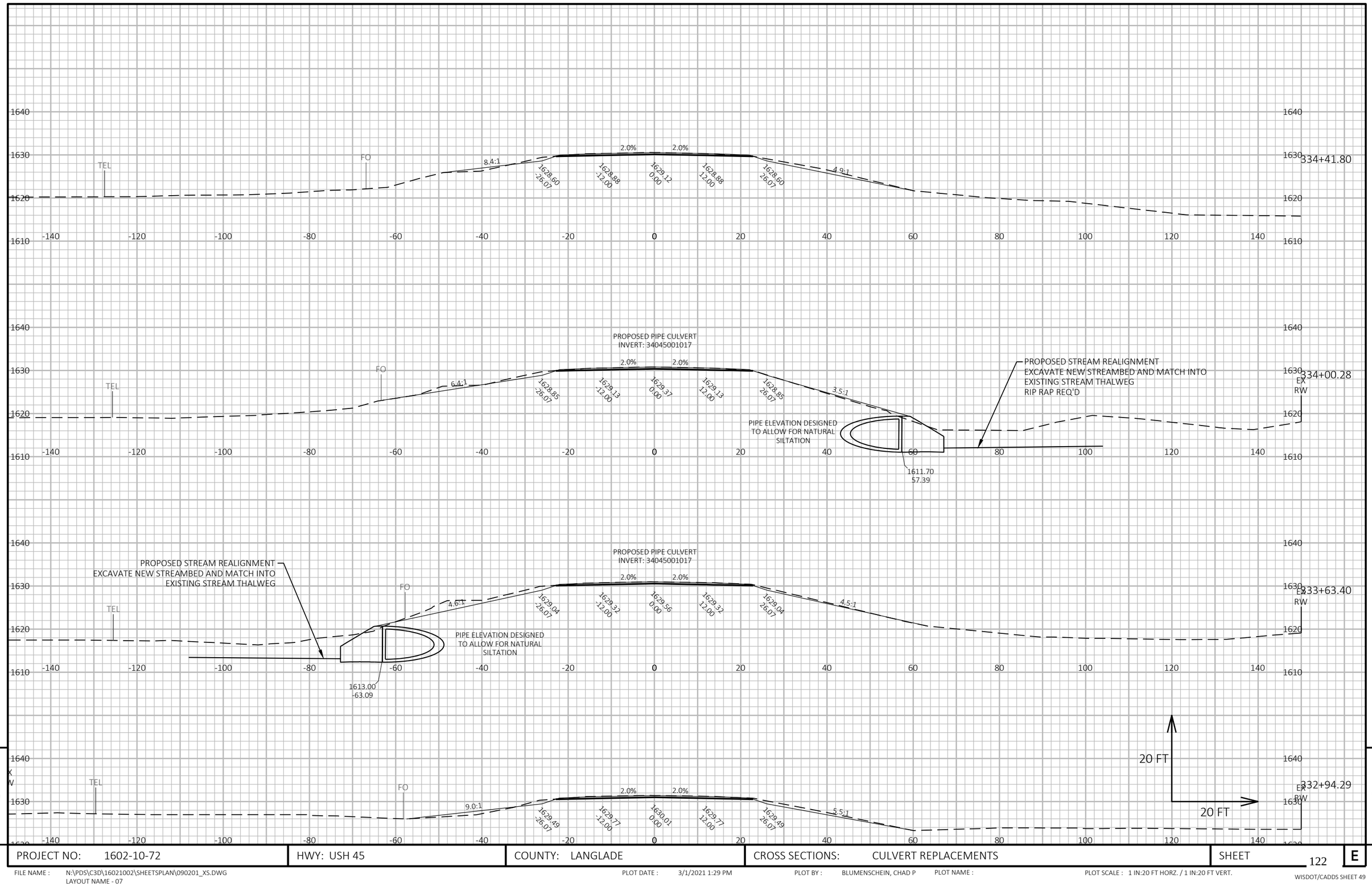
9

PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	CROSS SECTIONS: CULVERT REPLACEMENTS	SHEET 121	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 06

PLOT DATE : 3/1/2021 1:29 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

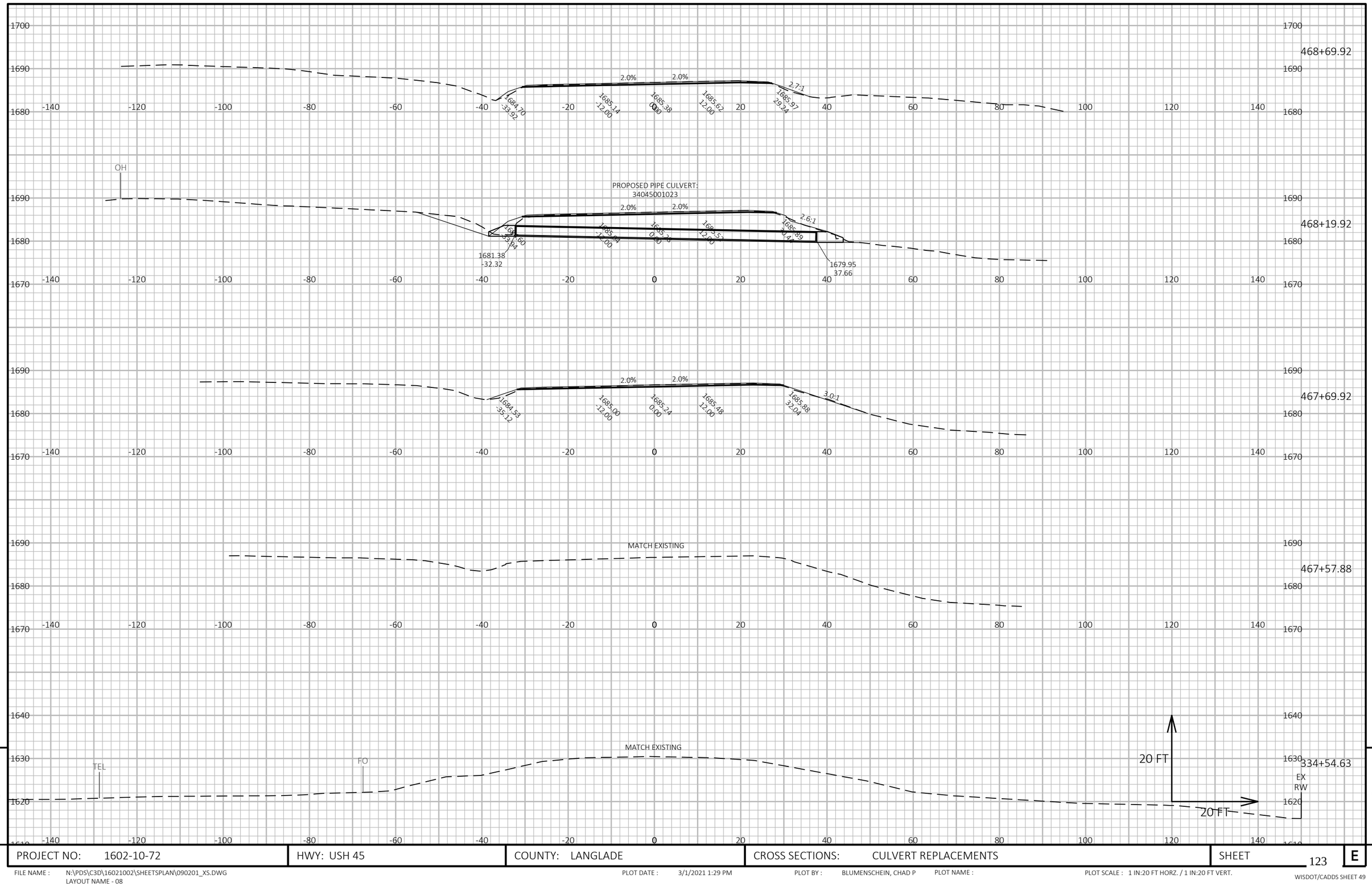


PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	CROSS SECTIONS: CULVERT REPLACEMENTS	SHEET 122	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 07

PLOT DATE : 3/1/2021 1:29 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

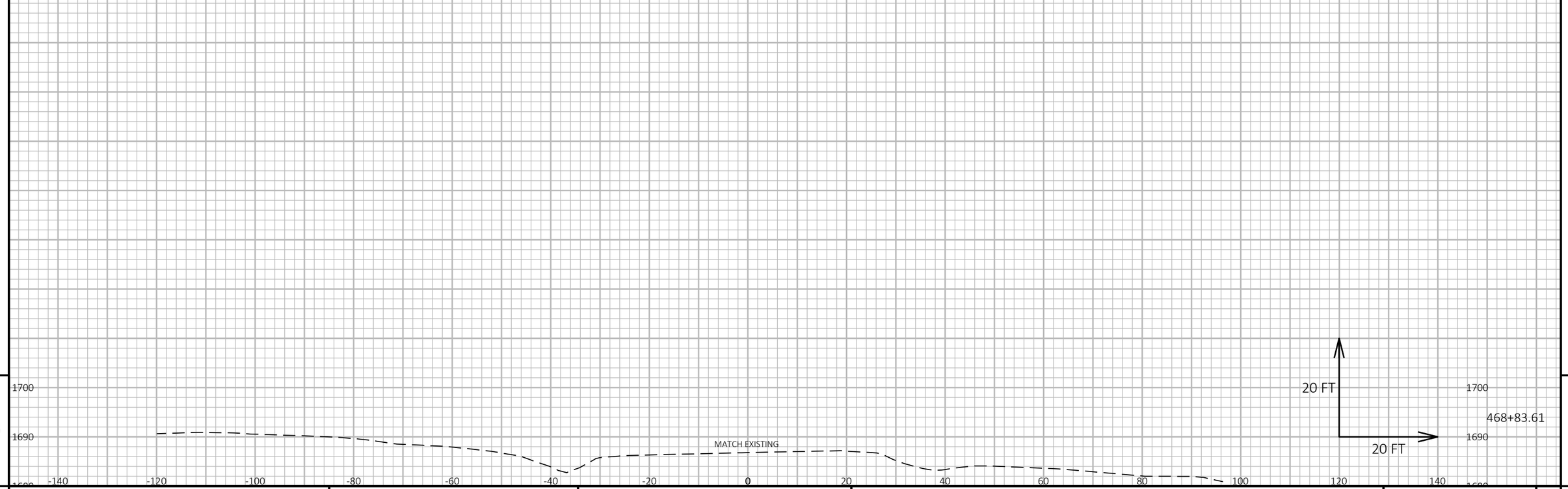


PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	CROSS SECTIONS: CULVERT REPLACEMENTS	SHEET 123 E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 08

PLOT DATE : 3/1/2021 1:29 PM PLOT BY : BLUMENSCHEIN, CHAD P PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 1602-10-72	HWY: USH 45	COUNTY: LANGLADE	CROSS SECTIONS: CULVERT REPLACEMENTS	SHEET 124	E

FILE NAME : N:\PDS\C3D\16021002\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 09
PLOT DATE : 3/1/2021 1:29 PM
PLOT BY : BLUMENSCHEIN, CHAD P
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.
WISDOT/CADDS SHEET 49

Notes

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