RHI

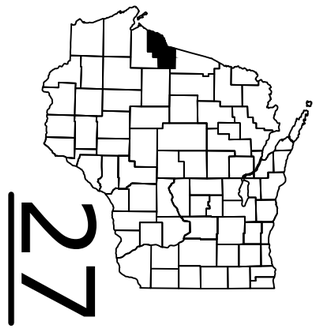
JANUARY 2022

PROJECT ID: **1175-19-62**

COUNTY: **IRON**

ORDER OF SHEETS

TOTAL SHEETS = 106



27

N

DESIGN DESIGNATION

A.A.D.T.	2022	=	2,900
A.A.D.T.	2042	=	3,300
D.H.V.		=	10.3
D.D.		=	62/38
T.		=	27.2%
DESIGN SPEED		=	55 & 35 MPH
ESALS		=	1,007,400

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

MANITOWISH - HURLEY

CTH C TO IRON STREET

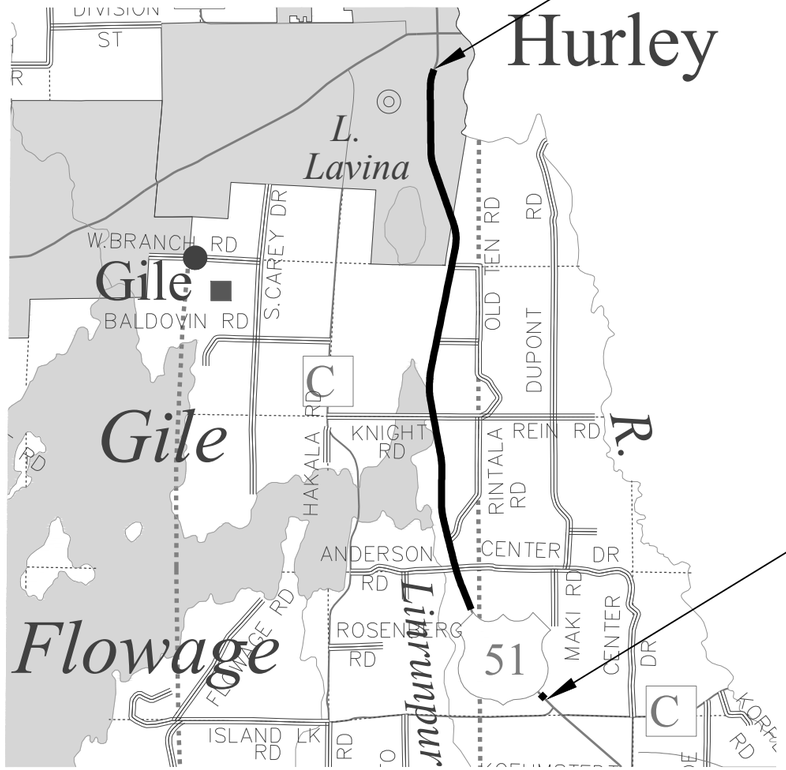
USH 51

IRON COUNTY

STATE PROJECT NUMBER
1175-19-62

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1175-19-62	WISC 2022214	1

END PROJECT
STA 1188+00



BEGIN PROJECT
STA 974+15
X = 745,717.271
Y = 349,345.032

LAYOUT

SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 4.034 MI

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	COLEMAN ENGINEERING
Designer	EVAN MAVES
Project Manager	KAI KILEN
Regional Examiner	CHERYL L. SIMON
Regional Supervisor	DANIEL R. ERVA

APPROVED FOR THE DEPARTMENT

DATE: 1/20/2021 (Signature)

E

GENERAL NOTES

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

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

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

UTILITIES

CENTURYLINK - COMMUNICATION LINE
BEN BAKER
425 ELLINGSON AVENUE
HAWKINS, WI 54530
PHONE: (715) 567-0725 WORK/MOBILE
E-MAIL: BEN.BAKER@LUMEN.COM

CHARTER COMMUNICATION - COMMUNICATION LINE
SCOTT BEASTER
385 WOODWARD AVENUE
KINGSFORD, MI 49802
PHONE: (906) 630-7895 WORK
PHONE: (906) 630-7795 MOBILE
E-MAIL: SCOTT.BEASTER@CHARTER.COM

CITY OF HURLEY - SEWER
SCOTT SANTINI
405 5TH AVENUE NORTH
HURLEY, WI 54534
PHONE: (715) 561-2160 WORK
PHONE: (715) 862-0125 MOBILE
E-MAIL: HRLYDPW@HURLEYWI.ORG

CITY OF HURLEY - WATER
SCOTT SANTINI
405 5TH AVENUE NORTH
HURLEY, WI 54534
PHONE: (715) 561-2160 WORK
PHONE: (715) 862-0125 MOBILE
E-MAIL: HRLYDPW@HURLEYWI.ORG

XCEL ENERGY - ELECTRICITY
BRENNAN HENRY
1751 LIBERTY STREET
IRONWOOD, MI 49938
PHONE: (715) 737-3317 WORK
PHONE: (715) 614-2410 MOBILE
E-MAIL: BRENNAN.J.HENRY@XCELENERGY.COM

XCEL ENERGY - ELECTRICITY-TRANSMISSION
MITCHELL DIENGER
414 NICOLLET MALL
5TH FLOOR
MINNEAPOLIS, MN 55401
PHONE: (612) 321-3109 WORK
PHONE: (608) 386-2233 MOBILE
E-MAIL: MITCHELL.A.DIENGER@XCELENERGY.COM

XCEL ENERGY - GAS & PETROLEUM
BRENNAN HENRY
1751 LIBERTY STREET
IRONWOOD, MI 49938
PHONE: (715) 737-3317 WORK
PHONE: (715) 614-2410 MOBILE
E-MAIL: BRENNAN.J.HENRY@XCELENERGY.COM

ORDER OF CONSTRUCTION PLAN DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
EROSION CONTROL DETAILS

AS-BUILTS

1175-15-70

WISCONSIN DEPARTMENT OF NATURAL RESOURCE

JON SIMONSEN
1007 SUTLIFF AVENUE
RHINELANDER, WI 54501
PHONE: (715) 367-1936 WORK
PHONE: (715) 365-8932 FAX
E-MAIL: JONATHON.SIMONSEN@WISCONSIN.GOV

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

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											

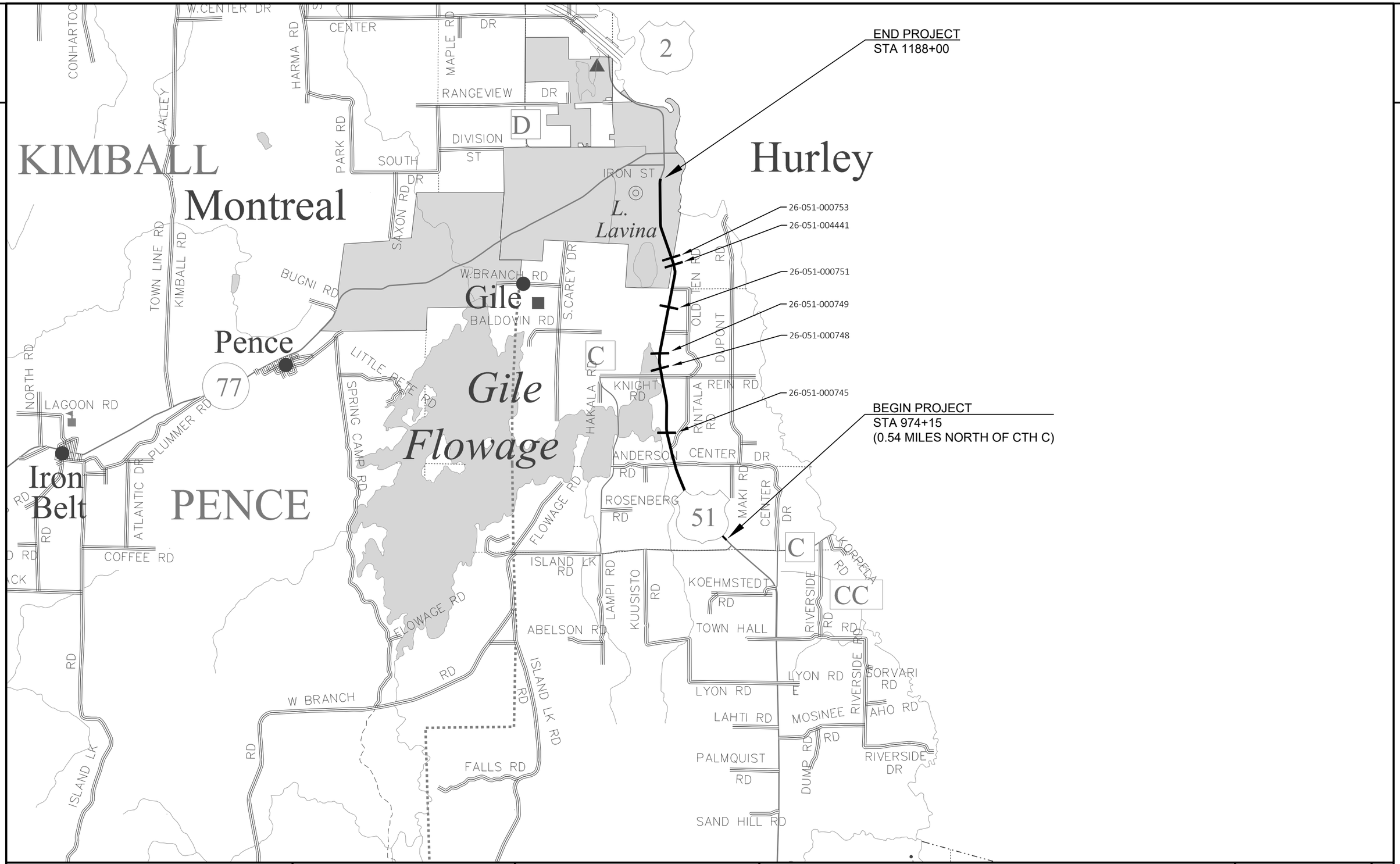
TOTAL PROJECT AREA = 20.35 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.03 ACRES

2

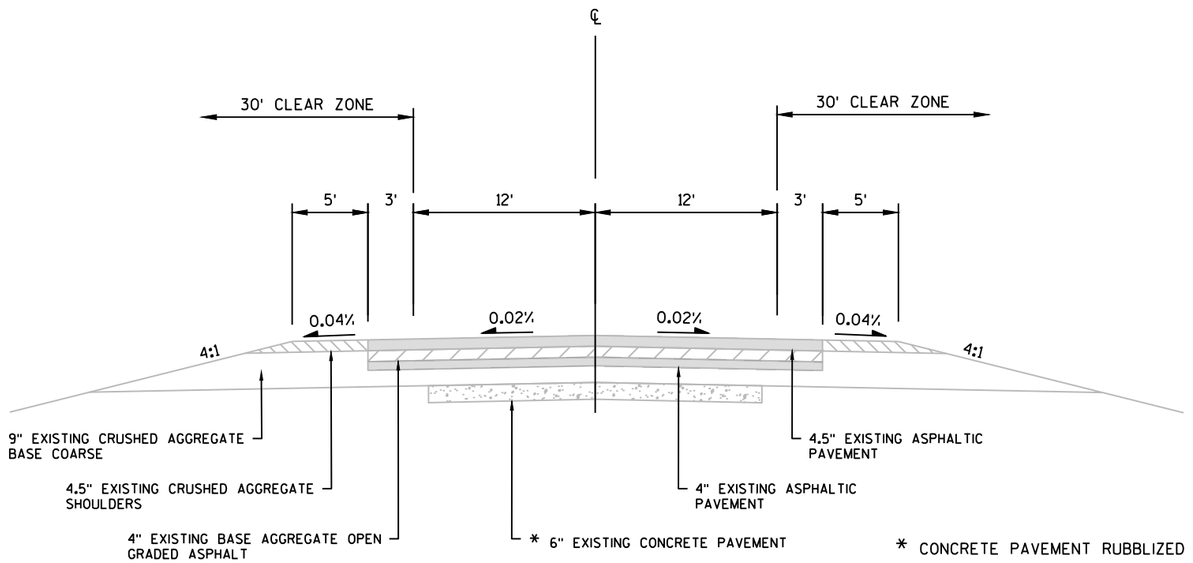
CONTROL POINT TABLE

NO	STATION	OFFSET	EASTING	NORTHING	ELEVATION	DESCRIPTION
13	1022+13.11	-21.55' LT	743851.535	353702.773	1498.87	3/4-INCH REBAR WITH PLASTIC CAP
12	1026+12.22	23.61' RT	743828.335	354103.279	1494.25	3/4-INCH REBAR WITH PLASTIC CAP
11	1063+33.64	22.76' RT	743433.066	357790.394	1493.62	3/4-INCH REBAR WITH PLASTIC CAP
10	1067+45.33	-18,78' LT	743333.199	358191.735	1494.78	3/4-INCH REBAR WITH PLASTIC CAP
9	1070+24.24	24.58' RT	743369.702	358471.227	1493.85	3/4-INCH REBAR WITH PLASTIC CAP
8	1074+01.43	-20.27' LT	743358.936	358850.376	1496.59	3/4-INCH REBAR WITH PLASTIC CAP
7	1099+67.43	22.59' RT	743893.475	361361.173	1513.78	3/4-INCH REBAR WITH PLASTIC CAP
6	1103+75.55	-21.31' LT	743929.020	361770.108	1505.92	3/4-INCH REBAR WITH PLASTIC CAP
5	1126+83.34	-23.25' LT	744184.859	364033.412	1495.37	3/4-INCH REBAR WITH PLASTIC CAP
4	1131+08.08	21.13' RT	744092.000	364448.730	1495.53	3/4-INCH REBAR WITH PLASTIC CAP

2



PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: PROJECT OVERVIEW	SHEET 4	E



* CONCRETE PAVEMENT RUBBLIZED

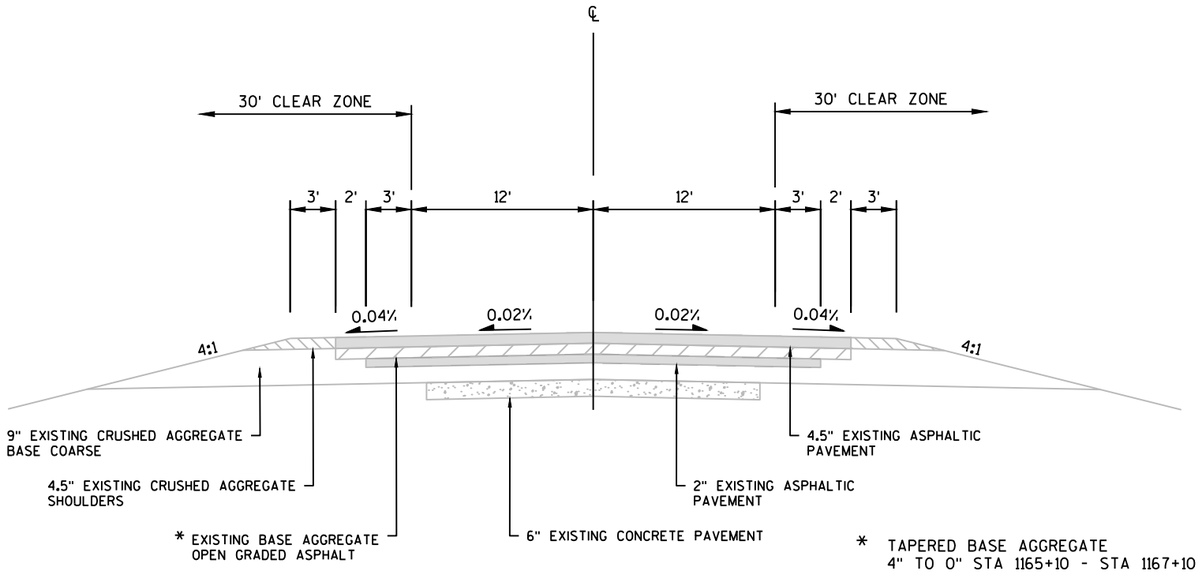
STA 1015+80 - STA 1017+30
STA 1043+80 - STA 1044+10
STA 1045+45 - STA 1048+40
STA 1138+24 - STA 1139+75
STA 1146+60 - STA 1147+50

EXISTING TYPICAL SECTION

STA 974+15 - STA 1164+60

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 5	E

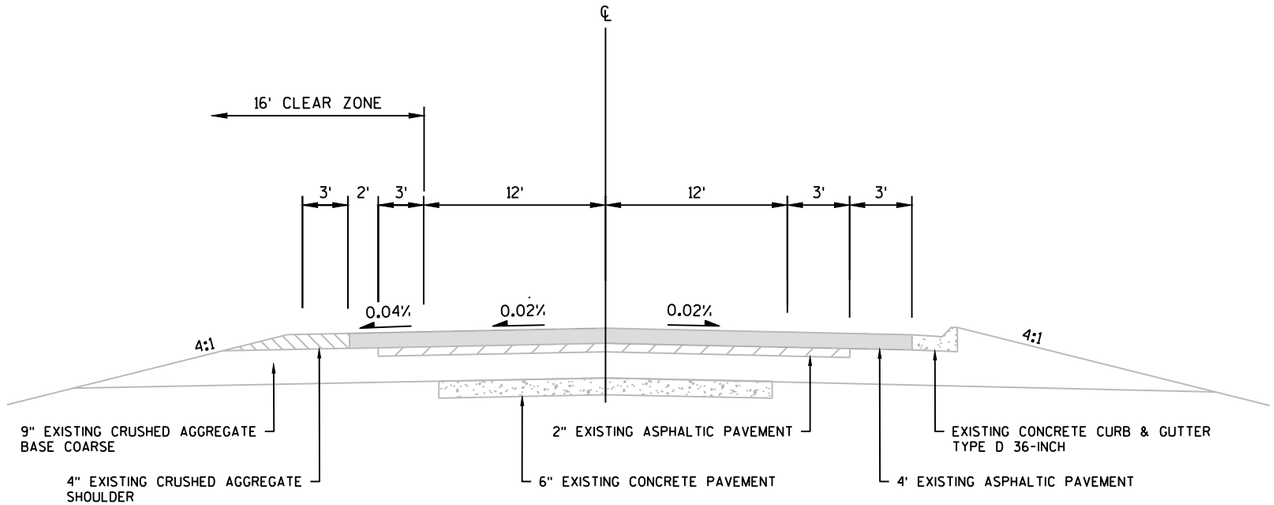
2



EXISTING TYPICAL SECTION

STA 1164+60 - STA 1166+25

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 6	E



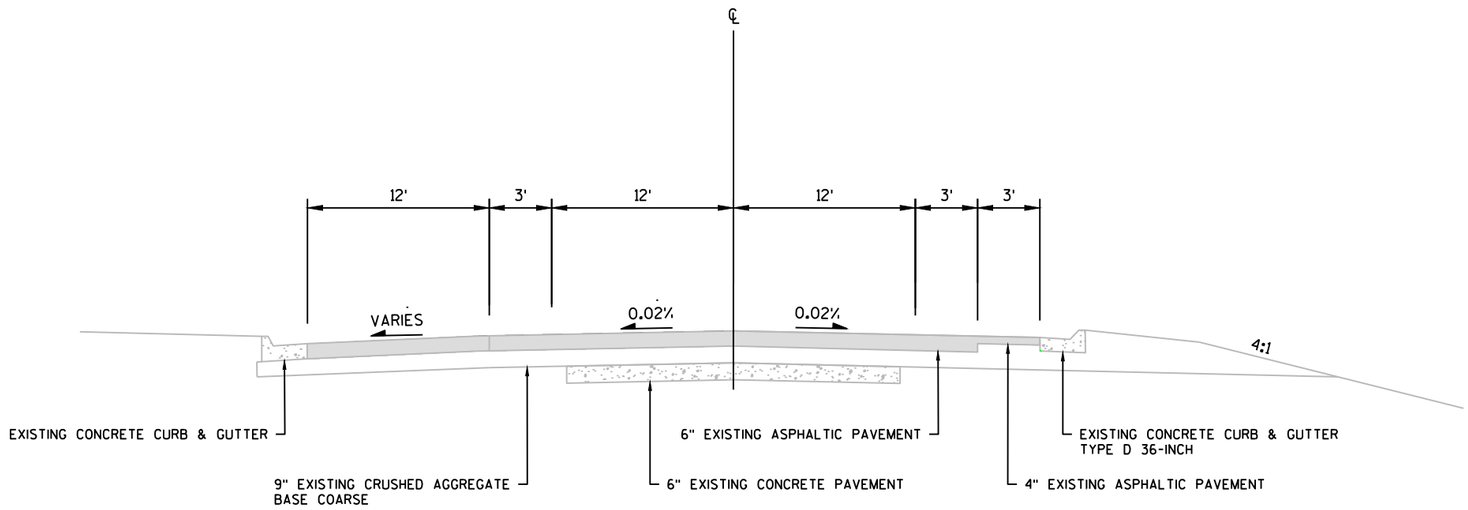
EXISTING TYPICAL SECTION
CURB RIGHT SIDE

USH 51

STA 1166+25 - STA 1173+20

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 7	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\020301_TS.DWG PLOT DATE : 9/26/2019 6:56 AM PLOT BY : MAVES, EVAN A PLOT NAME : PLOT SCALE : 1 IN:10 FT



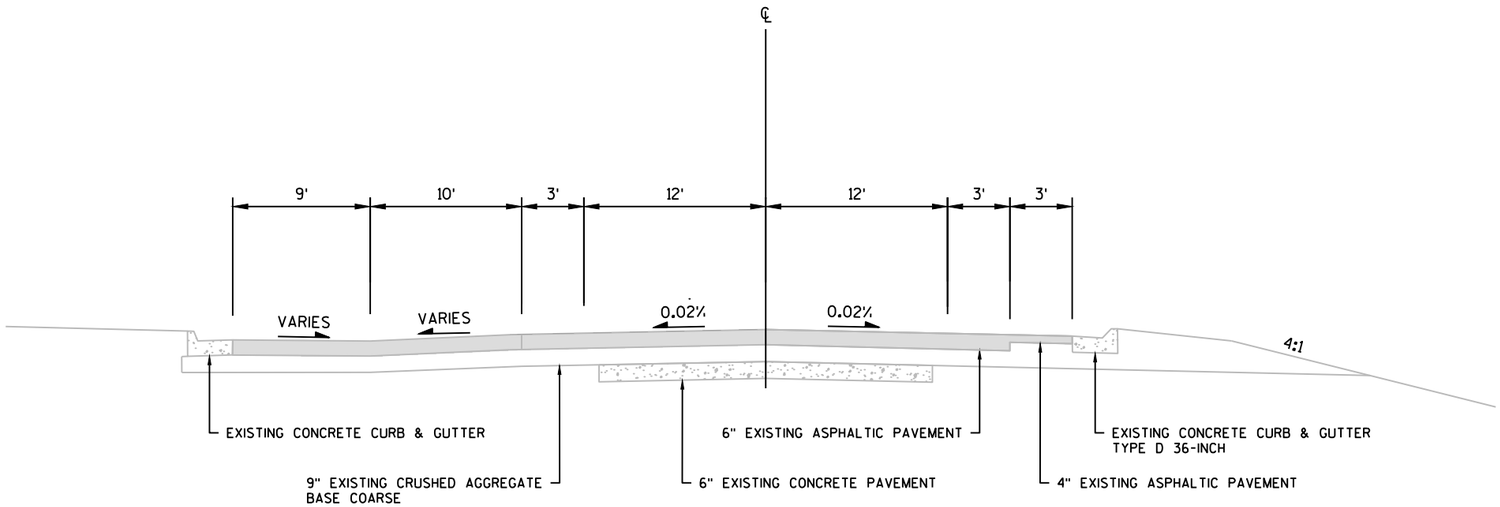
EXISTING TYPICAL SECTION
CURB AND GUTTER

USH 51

STA 1173+20 - STA 1176+25

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\020301_TS.DWG PLOT DATE : 9/26/2019 6:56 AM PLOT BY : MAVES, EVAN A PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



EXISTING TYPICAL SECTION
CURB AND GUTTER

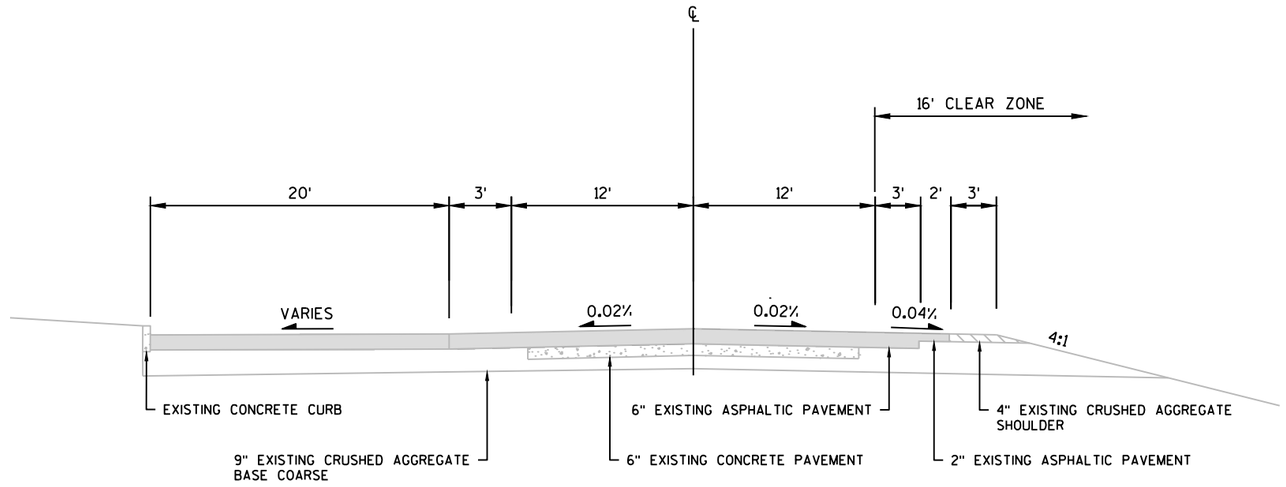
USH 51

STA 1176+25 - STA 1178+80

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 9	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\020301_TS.DWG PLOT DATE : 9/26/2019 6:56 AM PLOT BY : MAVES, EVAN A PLOT NAME : PLOT SCALE : 1 IN:10 FT

2

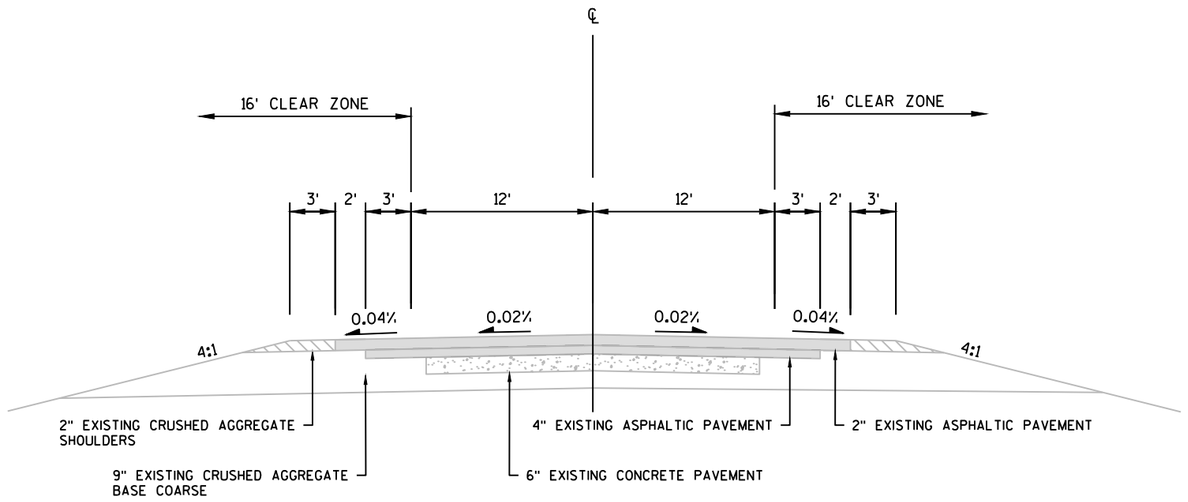


EXISTING TYPICAL SECTION
CURB LEFT

USH 51

STA 1178+80 - STA 1180+50

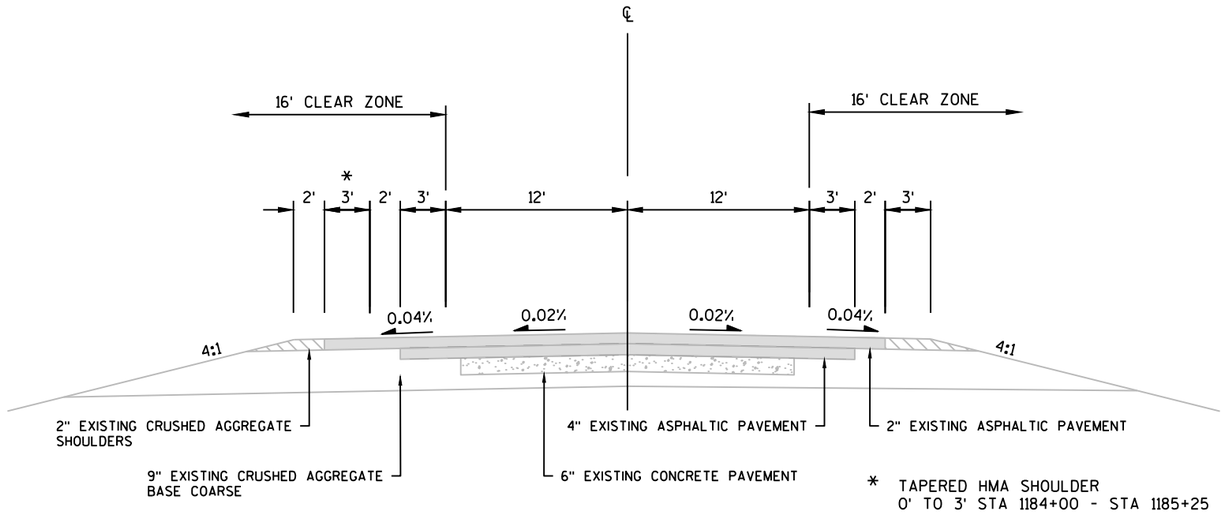
PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 10	E



EXISTING TYPICAL SECTION

STA 1180+50 - STA 1184+00

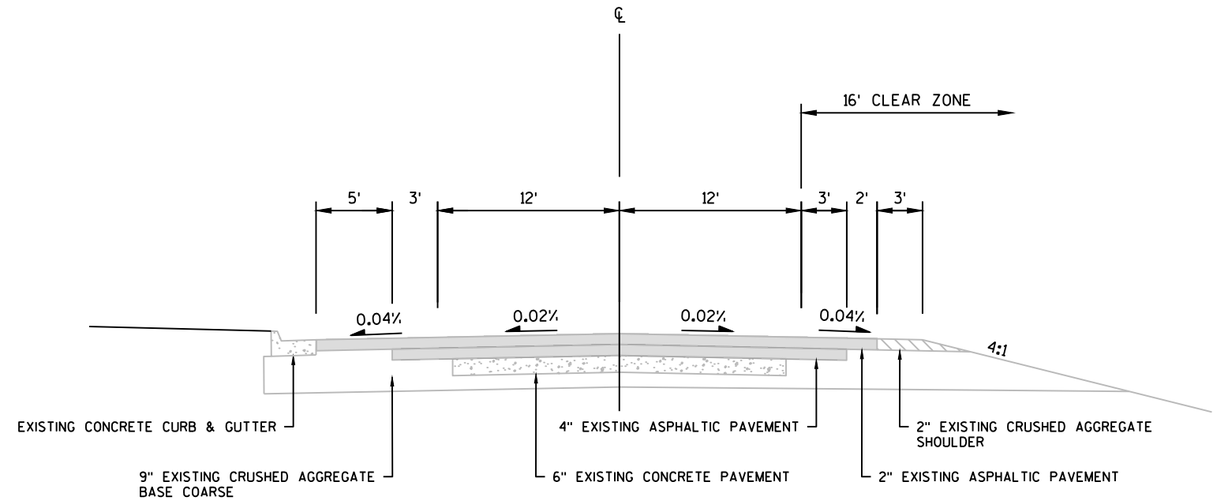
PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 11	E



EXISTING TYPICAL SECTION

STA 1184+00 - STA 1185+25

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 12	E



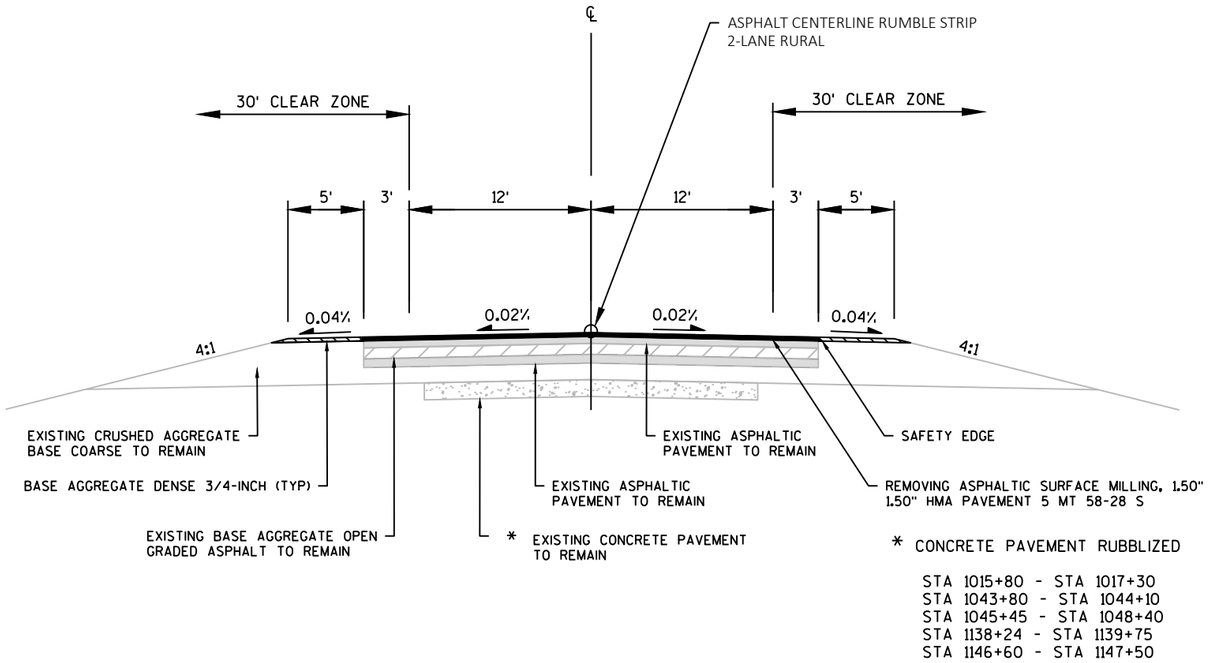
EXISTING TYPICAL SECTION

STA 1185+25 - STA 1188+00

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\020301_TS.DWG PLOT DATE : 9/26/2019 6:56 AM PLOT BY : MAVES, EVAN A PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2



* CONCRETE PAVEMENT RUBBLIZED

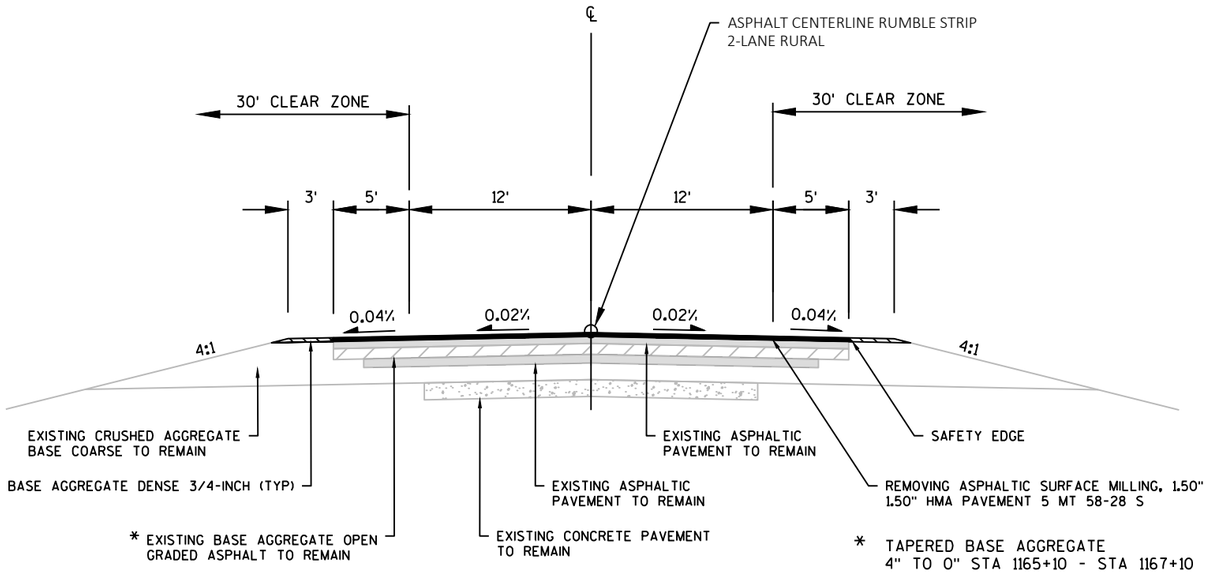
STA 1015+80 - STA 1017+30
STA 1043+80 - STA 1044+10
STA 1045+45 - STA 1048+40
STA 1138+24 - STA 1139+75
STA 1146+60 - STA 1147+50

FINISHED TYPICAL SECTION

STA 974+15 - STA 1164+60

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 14	E

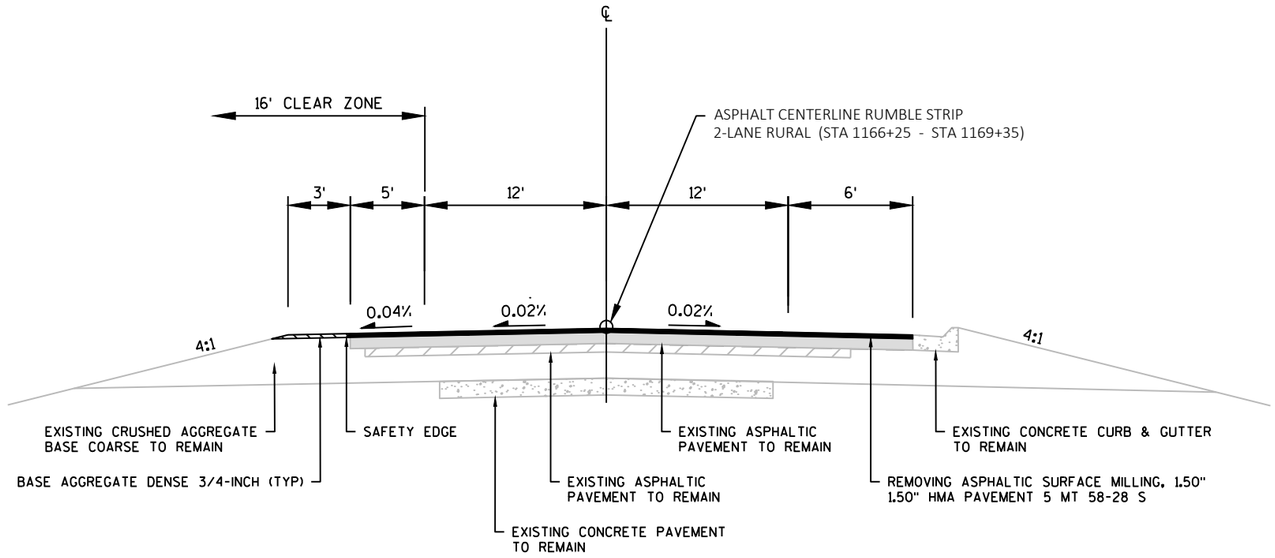
2



FINISHED TYPICAL SECTION

STA 1164+60 - STA 1166+25

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 15	E



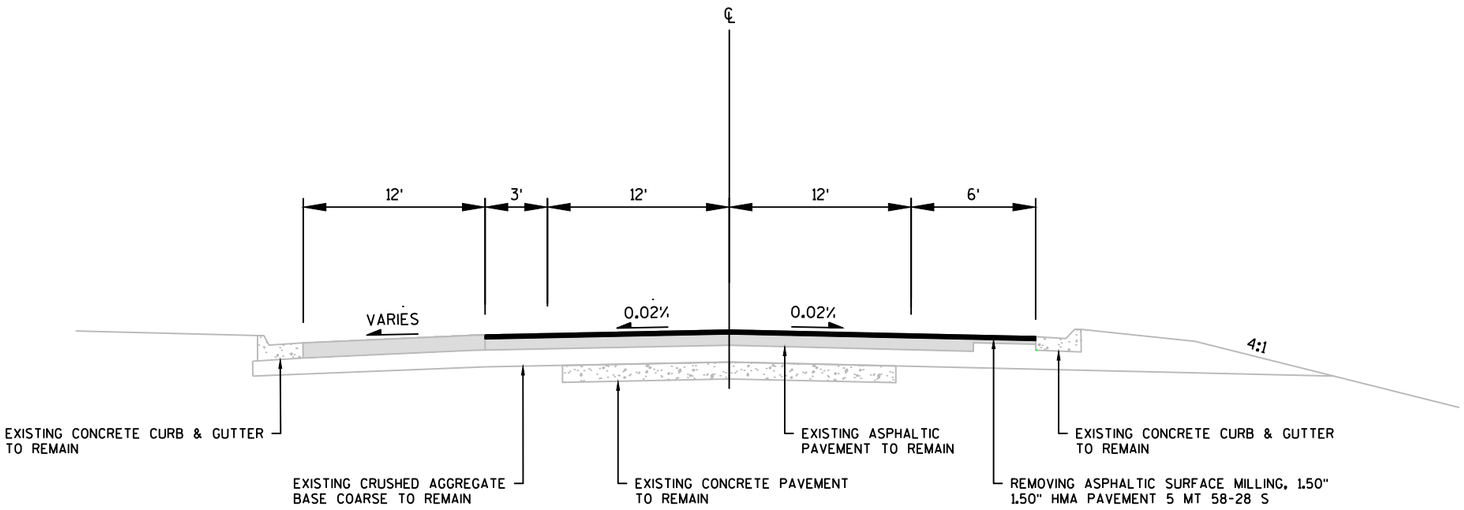
FINISHED TYPICAL SECTION
CURB RIGHT SIDE

USH 51

STA 1166+25 - STA 1173+20

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 16	E

2



FINISHED TYPICAL SECTION
CURB AND GUTTER

USH 51

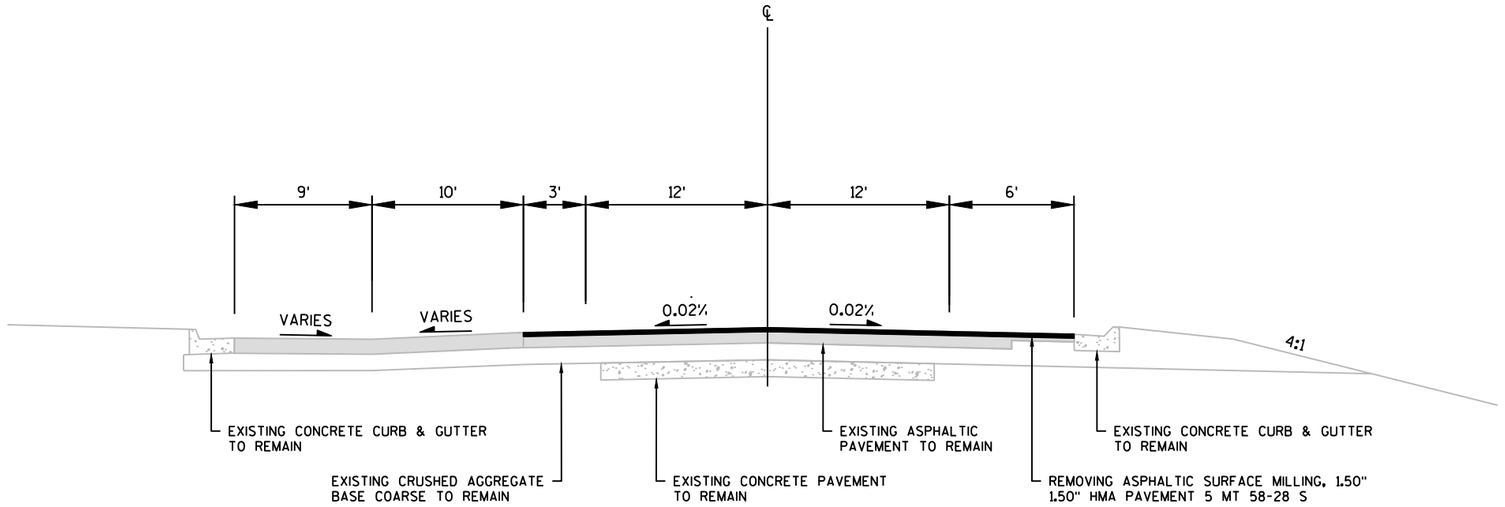
STA 1173+20 - STA 1176+25

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 17	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\020302_TS.DWG PLOT DATE : 3/19/2020 6:39 AM PLOT BY : MAVES, EVAN A PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 42

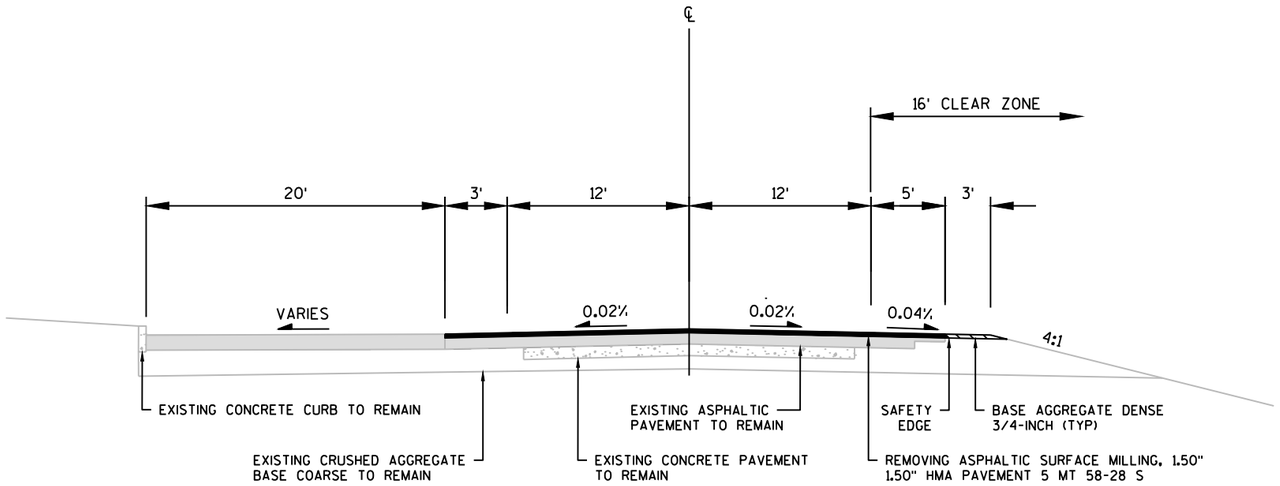
2



FINISHED TYPICAL SECTION
CURB AND GUTTER

USH 51

STA 1176+25 - STA 1178+80

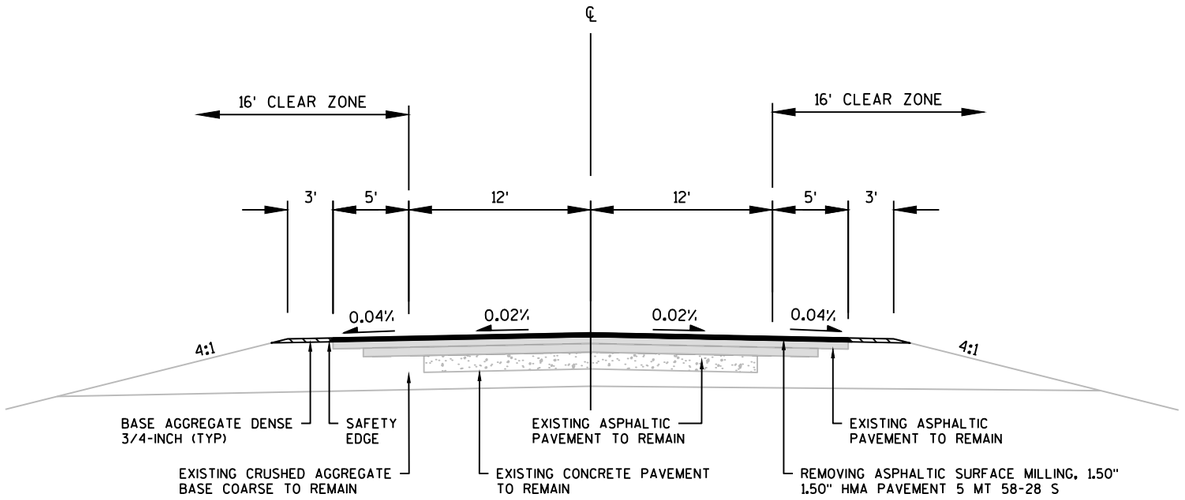


FINISHED TYPICAL SECTION
CURB LEFT

USH 51

STA 1178+80 - STA 1180+50

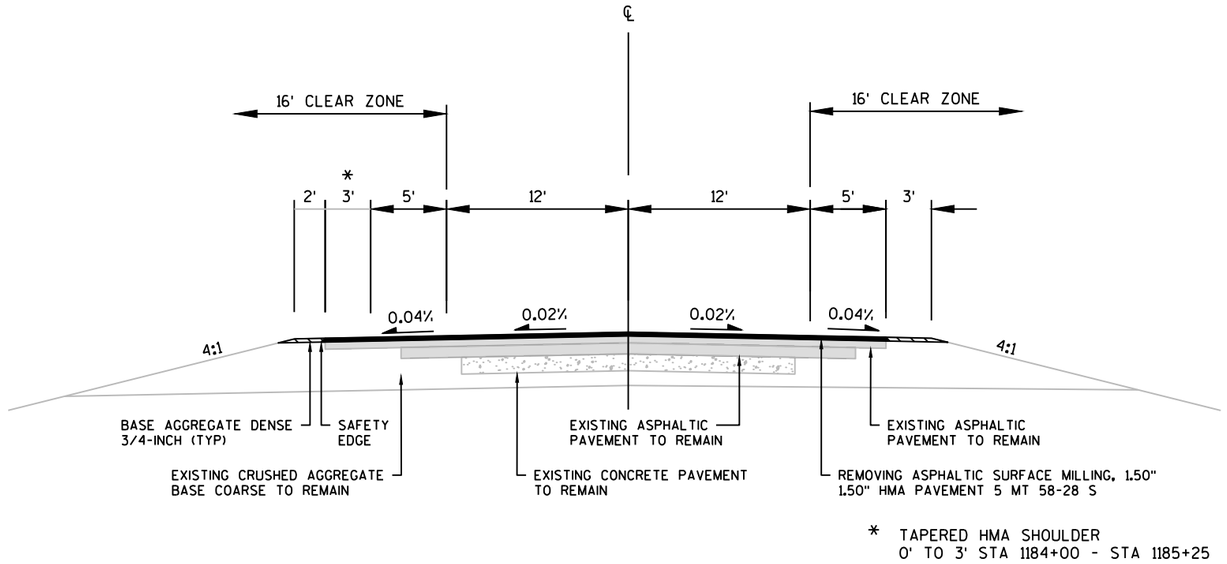
PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 19	E



FINISHED TYPICAL SECTION

STA 1180+50 - STA 1184+00

2

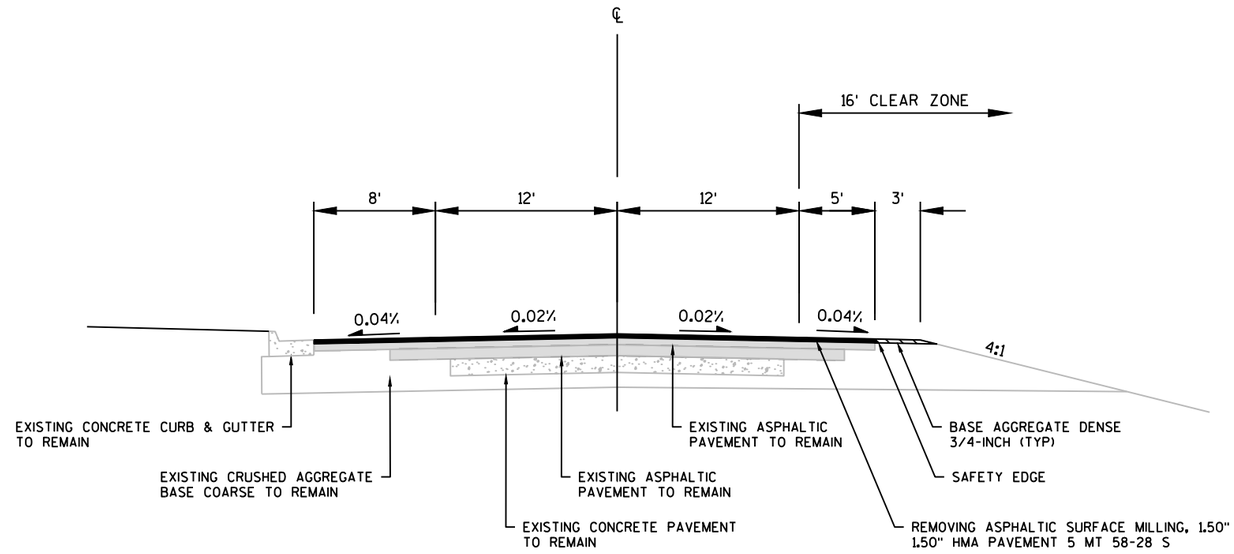


* TAPERED HMA SHOULDER
0' TO 3' STA 1184+00 - STA 1185+25

FINISHED TYPICAL SECTION

STA 1184+00 - STA 1185+25

2



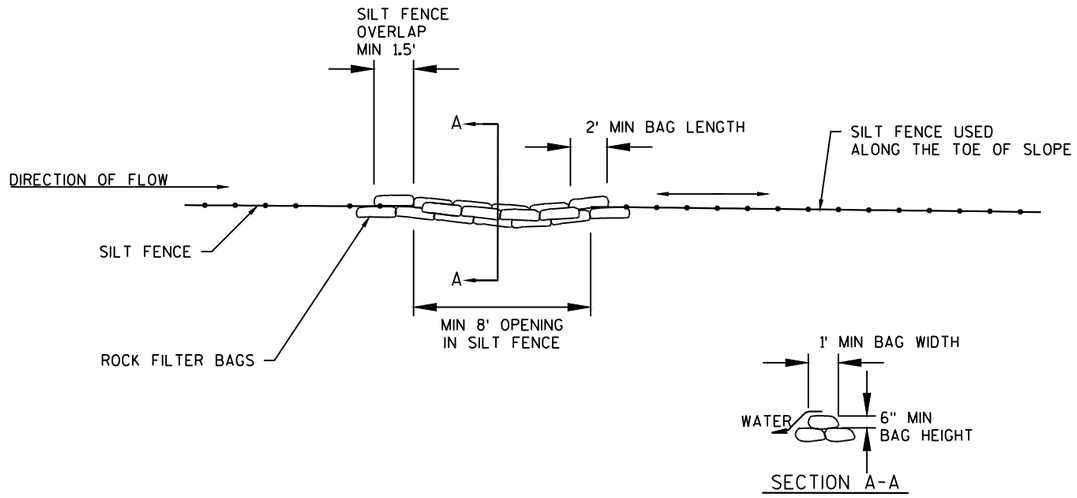
FINISHED TYPICAL SECTION

STA 1185+25 - STA 1188+00

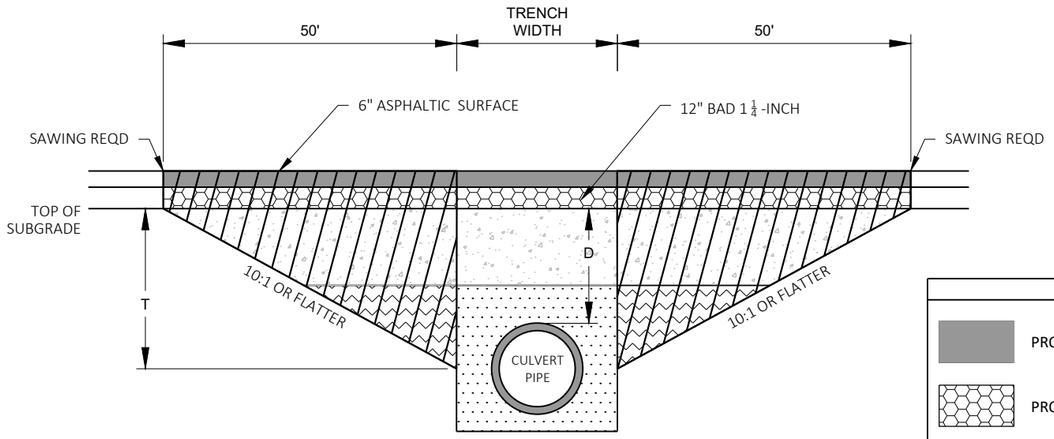
PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR TYPICAL SECTIONS	SHEET 22	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\020302_TS.DWG PLOT DATE : 3/19/2020 6:40 AM PLOT BY : MAVES, EVAN A PLOT NAME : PLOT SCALE : 1 IN:10 FT

2



ROCK BAGS USED FOR SILT FENCE RELIEF

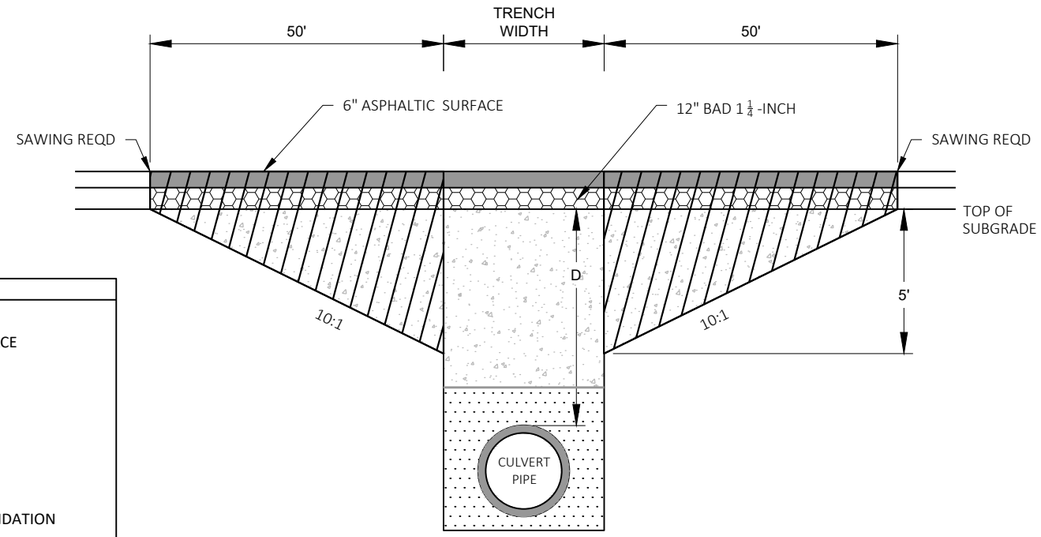


TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

DEPTH D < 6 FT

KEY

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



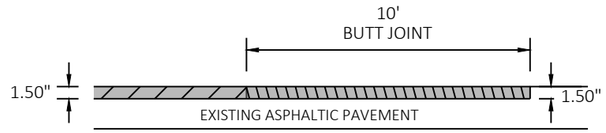
DEPTH D ≥ 6 FT

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 ASPHALT MILLING AND PAVING OPERATIONS.

CULVERT PIPE TRANSITION

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
USH 51	1024+14	6.0	30	C-26-051-000745 REPLACEMENT
USH 51	1065+32	4.0	24	C-26-051-000748 REPLACEMENT
USH 51	1072+23	5.0	24	C-26-051-000749 REPLACEMENT
USH 51	1101+70	6.5	24	C-26-051-000751 REPLACEMENT
USH 51	1128+79	5.0	30	C-26-051-004441 & 000753 REPLACEMENT



MAINLINE BUTT JOINT DETAIL

STA 974+15 - STA 974+25
STA 1187+90 - STA 1188+00

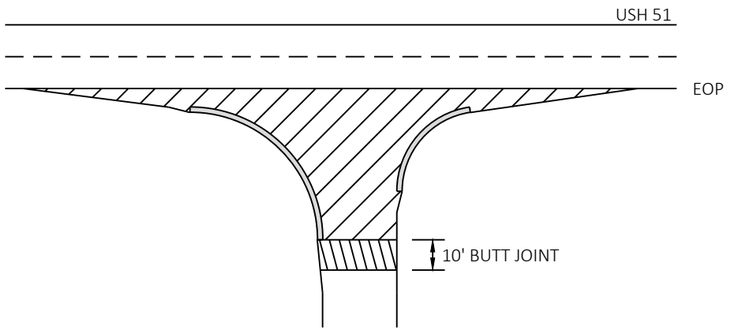
HMA PAVEMENT

REMOVING ASPHALTIC SURFACE MILLING

REMOVING ASPHALTIC SURFACE BUTT JOINTS

BUTT JOINT

MAINLINE AND SIDE ROADS



REMOVING ASPHALTIC SURFACE MILLING

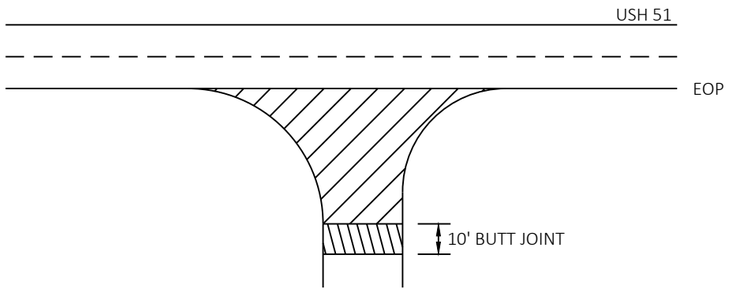
REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

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

SIDE ROADS

WITH CURB AND GUTTER

3RD AVENUE
VETERANS DRIVE



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

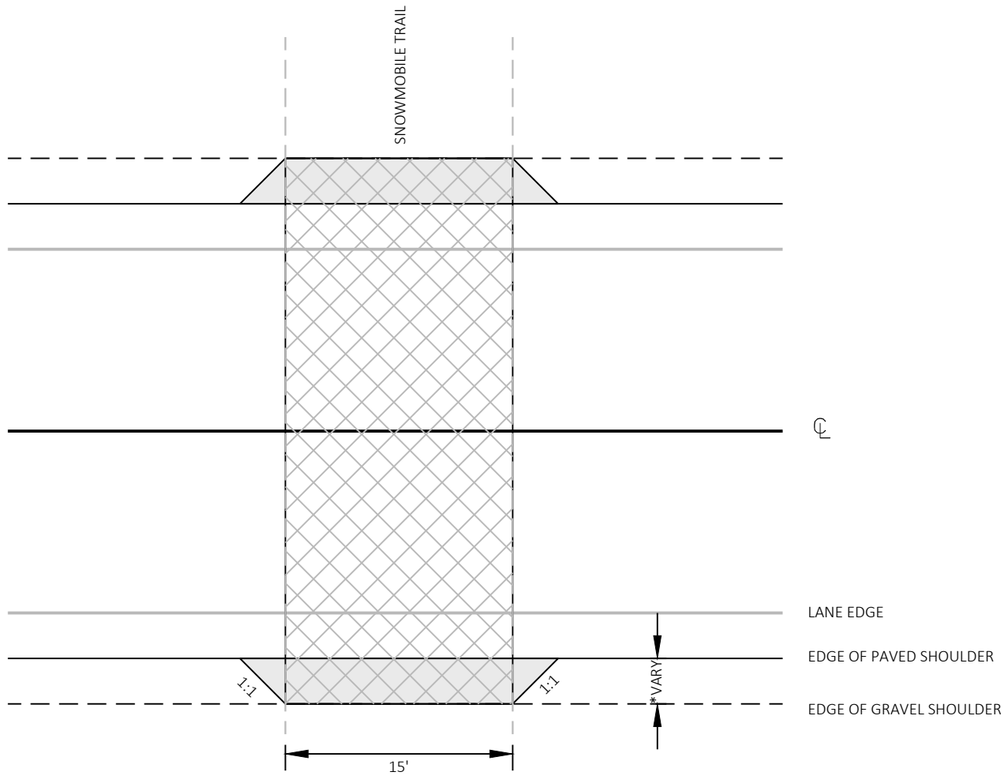
SIDE ROADS

WITHOUT CURB AND GUTTER

ANDERSON ROAD
CENTER ROAD
SPRUCE ROAD

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	PLAN: NCR CONSTRUCTION DETAIL	SHEET 25	E

2



* STA 1007+70 5 FT
STA 1163+95 3 FT

PROTECTIVE THERMOPLASTIC COATING AT SNOWMOBILE TRAIL CROSSING

HMA PAVEMENT MILL AND OVERLAY 1.50-INCHES

SNOWMOBILE TRAIL CROSSING
WITH FULL WIDTH SHOULDERS AND PROTECTIVE COATING

STA 1007+70
STA 1163+95

2

2

LEGEND

- EMAT URBAN CLASS I TYPE B
- SILT FENCE
- SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)
- CULVERT PIPE CHECKS

GILE FLOWAGE

N

30-INCH CPRC CLASS III
STA 1024+17.7, -38.62 LT
INV ELEV = 1488.00
SLOPE = 0.61%

PERMITTED WETLAND IMPACT
0.008 ACRES TYPE SS

WETLAND BOUNDARY

SIGN

1023+00

1024+00

1025+00

WETLAND BOUNDARY

30-INCH CPRC CLASS III
STA 1024+10.4, 37.03 RT
INV ELEV = 1488.50
SLOPE = 0.61%

PERMITTED WETLAND IMPACT
0.018 ACRES TYPE RPF

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	EROSION CONTROL DETAILS - CULVERT 26-051-000745 REPLACEMENT	SHEET 27	E

2

2

LEGEND

- EMAT URBAN CLASS I TYPE B
- SILT FENCE
- SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)
- CULVERT PIPE CHECKS

GILE FLOWAGE

N

24-INCH CPRC CLASS III
STA 1065+31.9, -39.72 LT
INV ELEV = 1486.92
SLOPE = 0.95%

PERMITTED WETLAND IMPACT
0.011 ACRES TYPE M

WETLAND BOUNDARY

PC: 1063+92.50

1064+00

1065+00

1066+00

WETLAND BOUNDARY

PERMITTED WETLAND IMPACT
0.015 ACRES TYPE RPF

24-INCH CPRC CLASS III
STA 1065+32.3, 32.27 RT
INV ELEV = 1487.60
SLOPE = 0.95%

EXISTING ROW

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	EROSION CONTROL DETAILS - CULVERT 26-051-000748 REPLACEMENT	SHEET 28	E

2

2

LEGEND

- EMAT URBAN CLASS I TYPE B
- SILT FENCE
- SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)
- CULVERT PIPE CHECKS

GILE FLOWAGE

N

24-INCH CPRC CLASS III
STA 1072+23.0, -41.00 LT
INV ELEV = 1488.40
SLOPE = 1.22%

PERMITTED WETLAND IMPACT
0.004 ACRES TYPE M

WETLAND BOUNDARY

1071+00

1072+00

1073+00

WETLAND BOUNDARY

PERMITTED WETLAND IMPACT
0.011 ACRES TYPE RPF

24-INCH CPRC CLASS III
STA 1072+23.2, 32.99 RT
INV ELEV = 1489.30
SLOPE = 1.22%

EXISTING ROW

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	EROSION CONTROL DETAILS - CULVERT 26-051-000749 REPLACEMENT	SHEET 29	E

EXISTING ROW

2

2

LEGEND

EMAT URBAN CLASS I TYPE B

SILT FENCE

SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)

CULVERT PIPE CHECKS

N

24-INCH CP CLASS III NON-METAL
STA 1101+67.9, -46.20 LT
INV ELEV = 1499.50
SLOPE = 2.26%

PERMITTED WETLAND IMPACT
0.004 ACRES TYPE M

WETLAND BOUNDARY

1101+00

1102+00

1103+00

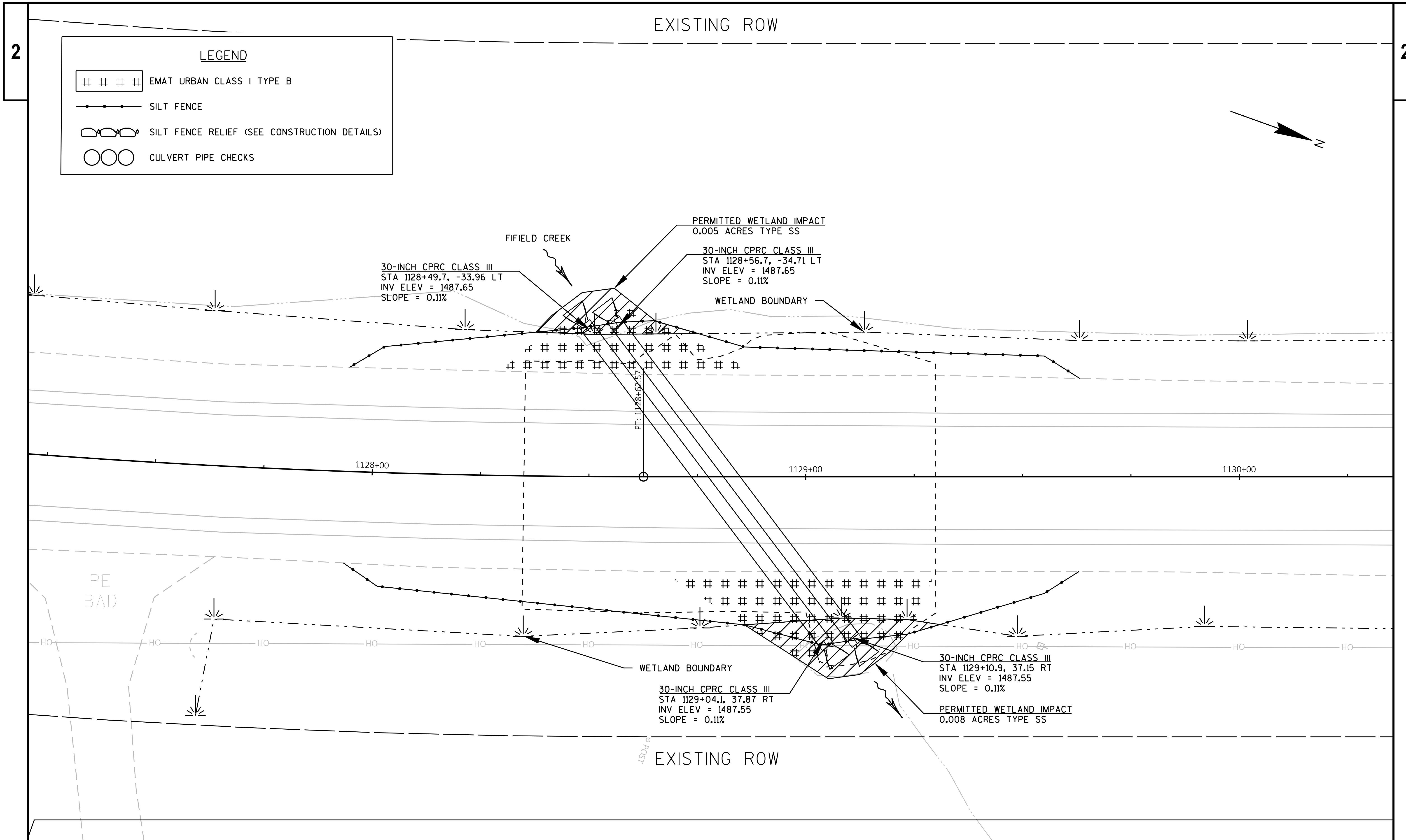
WETLAND BOUNDARY

PERMITTED WETLAND IMPACT
0.018 ACRES TYPE RPF

24-INCH CP CLASS III NON-METAL
STA 1101+70.9, 35.72 RT
INV ELEV = 1501.35
SLOPE = 2.26%

EXISTING ROW

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	EROSION CONTROL DETAILS - CULVERT 26-051-000751 REPLACEMENT	SHEET 30	E


2
EXISTING ROW
LEGEND
EMAT URBAN CLASS I TYPE B
SILT FENCE
SILT FENCE RELIEF (SEE CONSTRUCTION DETAILS)
CULVERT PIPE CHECKS
N
FIFIELD CREEK
PERMITTED WETLAND IMPACT
0.005 ACRES TYPE SS
30-INCH CPRC CLASS III
STA 1128+49.7, -33.96 LT
INV ELEV = 1487.65
SLOPE = 0.11%
30-INCH CPRC CLASS III
STA 1128+56.7, -34.71 LT
INV ELEV = 1487.65
SLOPE = 0.11%
WETLAND BOUNDARY
PT: 1128+62.57
1128+00
1129+00
1130+00
PE
BAD
HO
WETLAND BOUNDARY
30-INCH CPRC CLASS III
STA 1129+10.9, 37.15 RT
INV ELEV = 1487.55
SLOPE = 0.11%
30-INCH CPRC CLASS III
STA 1129+04.1, 37.87 RT
INV ELEV = 1487.55
SLOPE = 0.11%
PERMITTED WETLAND IMPACT
0.008 ACRES TYPE SS
EXISTING ROW
2

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	EROSION CONTROL DETAILS - CULVERT 26-051-004441 & 26-051-000753 REPLACEMENT	SHEET 31	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - C-4441 & C-753
PLOT DATE : 3/16/2021 12:38 PM
PLOT BY : MAVES, EVAN A
PLOT NAME :
PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

Estimate Of Quantities

1175-19-62

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	6.000	6.000
0004	204.0115	Removing Asphaltic Surface Butt Joints	SY	226.000	226.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	74,140.000	74,140.000
0008	204.9090.S	Removing (item description) 01. Pipe Underdrain	LF	515.000	515.000
0010	205.0100	Excavation Common	CY	2,775.000	2,775.000
0012	206.5000	Cofferdams (structure) 01. C-26-051-000745	LS	1.000	1.000
0014	206.5000	Cofferdams (structure) 02. C-26-051-000748	LS	1.000	1.000
0016	206.5000	Cofferdams (structure) 03. C-26-051-000749	LS	1.000	1.000
0018	206.5000	Cofferdams (structure) 04. Fifield Creek	LS	1.000	1.000
0020	208.1500.S	Temporary Lane Shift During Culvert Work	EACH	5.000	5.000
0022	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 1175-19-62	LS	1.000	1.000
0024	213.0100	Finishing Roadway (project) 01. 1175-19-62	EACH	1.000	1.000
0026	305.0110	Base Aggregate Dense 3/4-Inch	TON	2,850.000	2,850.000
0028	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,770.000	1,770.000
0030	310.0110	Base Aggregate Open-Graded	TON	9.000	9.000
0032	450.4000	HMA Cold Weather Paving	TON	1,570.000	1,570.000
0034	455.0605	Tack Coat	GAL	5,557.000	5,557.000
0036	460.2000	Incentive Density HMA Pavement	DOL	4,020.000	4,020.000
0038	460.6225	HMA Pavement 5 MT 58-28 S	TON	6,277.000	6,277.000
0040	465.0105	Asphaltic Surface	TON	680.000	680.000
0042	465.0110	Asphaltic Surface Patching	TON	50.000	50.000
0044	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	17,520.000	17,520.000
0046	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	2.000	2.000
0048	520.3424	Culvert Pipe Class III-A Non-metal 24-Inch	LF	82.000	82.000
0050	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	146.000	146.000
0052	522.0130	Culvert Pipe Reinforced Concrete Class III 30-Inch	LF	256.000	256.000
0054	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	4.000	4.000
0056	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	6.000	6.000
0058	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	21.000	21.000
0060	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	490.000	490.000
0062	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1175-19-62	EACH	1.000	1.000
0064	619.1000	Mobilization	EACH	1.000	1.000
0066	624.0100	Water	MGAL	6.500	6.500
0068	625.0100	Topsoil	SY	1,130.000	1,130.000
0070	628.1504	Silt Fence	LF	1,630.000	1,630.000
0072	628.1520	Silt Fence Maintenance	LF	420.000	420.000
0074	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0076	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0078	628.2008	Erosion Mat Urban Class I Type B	SY	1,130.000	1,130.000
0080	628.7015	Inlet Protection Type C	EACH	6.000	6.000
0082	628.7555	Culvert Pipe Checks	EACH	20.000	20.000
0084	628.7570	Rock Bags	EACH	180.000	180.000
0086	629.0210	Fertilizer Type B	CWT	1.200	1.200
0088	630.0110	Seeding Mixture No. 10	LB	50.000	50.000
0090	630.0500	Seed Water	MGAL	1.800	1.800
0092	633.5200	Markers Culvert End	EACH	12.000	12.000
0094	638.2102	Moving Signs Type II	EACH	3.000	3.000
0096	642.5001	Field Office Type B	EACH	1.000	1.000
0098	643.0300	Traffic Control Drums	DAY	320.000	320.000

Estimate Of Quantities

1175-19-62

Line	Item	Item Description	Unit	Total	Qty
0100	643.0420	Traffic Control Barricades Type III	DAY	6.000	6.000
0102	643.0900	Traffic Control Signs	DAY	609.000	609.000
0104	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0106	643.5000	Traffic Control	EACH	1.000	1.000
0108	646.1020	Marking Line Epoxy 4-Inch	LF	32,824.000	32,824.000
0110	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	38,550.000	38,550.000
0112	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	3,290.000	3,290.000
0114	646.6464	Cold Weather Marking Epoxy 4-Inch	LF	8,210.000	8,210.000
0116	648.0100	Locating No-Passing Zones	MI	4.050	4.050
0118	649.0105	Temporary Marking Line Paint 4-Inch	LF	30,802.000	30,802.000
0120	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	29,534.000	29,534.000
0122	650.6000	Construction Staking Pipe Culverts	EACH	6.000	6.000
0124	650.8000	Construction Staking Resurfacing Reference	LF	21,285.000	21,285.000
0126	650.9910	Construction Staking Supplemental Control (project) 01. 1175-19-62	LS	1.000	1.000
0128	690.0150	Sawing Asphalt	LF	300.000	300.000
0130	690.0250	Sawing Concrete	LF	200.000	200.000
0132	740.0440	Incentive IRI Ride	DOL	16,210.000	16,210.000
0134	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,200.000	1,200.000
0136	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	600.000
0138	SPV.0180	Special 01. Protective Thermoplastic Coating at Snowmobile Crossing	SY	140.000	140.000

3

REMOVING SMALL PIPE CULVERTS

STATION	TO	STATION	LOCATION	203.0100 (EACH)	CULVERT NUMBER, SIZE, LENGTH & MATERIAL
1024+10	-	1024+18	RT & LT	1	C-000745; 30-IN 83 FT REINFORCED CONCRETE
1065+32	-	1065+32	LT & RT	1	C-000748; 24-IN 80 FT REINFORCED CONCRETE
1072+23	-	1072+23	LT & RT	1	C-000749; 24-IN 86 FT REINFORCED CONCRETE
1101+68	-	1101+71	LT & RT	1	C-000751; 24-IN 91 FT REINFORCED CONCRETE
1128+50	-	1129+03	LT & RT	1	C-004441; 30-IN 89 FT REINFORCED CONCRETE
1128+56	-	1129+09	LT & RT	1	C-000753; 30-IN 89 FT REINFORCED CONCRETE
			TOTALS =	**6**	

REMOVING ASPHALTIC SURFACE BUTT JOINTS

STATIONING	LOCATION		204.0115 (SY)
974+15 - 974+25	BEGIN PROJECT	CL	34
1187+90 - 1188+00	END PROJECT	CL	45
1005+60	ANDERSON ROAD	LT	24
1005+60	CENTER ROAD	RT	27
1085+86	SPRUCE ROAD	RT	23
1180+49	3RD AVENUE	LT	37
1187+00	VETERANS DRIVE	LT	36
	TOTAL =		**226**

REMOVING ASPHALTIC SURFACE MILLING

STATIONING		LOCATION	204.0120 (SY)
974+25 - 1164+60	MAINLINE	CL	63,450
1164+60 - 1166+25	MAINLINE	CL	625
1166+25 - 1173+20	MAINLINE	CL	2,705
1173+20 - 1178+80	MAINLINE	CL	2,055
1178+80 - 1180+50	MAINLINE	CL	605
1180+50 - 1184+85	MAINLINE	CL	1,645
1184+85 - 1187+90	MAINLINE	CL	1,255
1005+60	ANDERSON ROAD	LT	130
1005+60	CENTER ROAD	RT	120
1015+71	RINTALA ROAD	RT	280
1059+20	KNIGHT ROAD	LT	230
1059+20	REIN ROAD	RT	100
1085+86	SPRUCE ROAD	RT	130
1112+40	OLD 10 ROAD	RT	240
1180+49	3RD AVENUE	LT	370
1187+00	VETERANS DRIVE	LT	200
	TOTAL =		**74,140**

REMOVING PIPE UNDERDRAIN

STATION	TO	STATION	LOCATION	204.9090.S (LF)	REMARKS
1023+57	-	1024+71	USH 51 RT	115	C-26-051-000745
1064+78	-	1065+87	USH 51 RT	125	C-26-051-000748
1071+69	-	1072+78	USH 51 RT	120	C-26-051-000749
1128+03	-	1129+55	USH 51 LT	155	C-26-051-004441 & 000753
			TOTAL =	**515**	

EXCAVATION COMMON

STATION	TO	STATION	LOCATION	205.0100 (CY)	REMARKS
1023+57	-	1024+71	CL	490	C-000745 REPLACEMENT
1064+78	-	1065+87	CL	475	C-000748 REPLACEMENT
1071+69	-	1072+78	CL	540	C-000749 REPLACEMENT
1101+15	-	1102+25	CL	475	C-000751 REPLACEMENT
1128+03	-	1129+55	CL	795	C-004441 & 000753 REPLACEMENT
			TOTALS =	**2,775**	

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

3

3

PREPARE FOUNDATION FOR ASPHALTIC PAVING

LOCATION	211.0100 (LS)
PROJECT 01. 1175-19-62	1
TOTAL =	**1**

3/4-INCH BASE AGGREGATE DENSE

STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	624.0100 WATER (MGAL)
974+15	-	1164+60	LT	1,240	---
974+15	-	1164+60	RT	1,240	---
1164+60	-	1166+25	LT	10	---
1164+60	-	1166+25	RT	10	---
1166+25	-	1173+20	LT	30	---
1178+80	-	1180+50	RT	10	---
1180+50	-	1185+25	LT	20	---
1180+50	-	1185+25	RT	20	---
1185+25	-	1187+25	RT	10	---
UNDISTRIBUTED				260	5.0
			TOTALS =	**2,850**	**5.0** (*)

(*) NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

1 1/4-INCH BASE AGGREGATE DENSE

STATION	TO	STATION	LOCATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)	624.0100 WATER (MGAL)	REMARKS
1023+57	-	1024+71	CL	310	---	C-26-051-000745
1064+78	-	1065+87	CL	300	---	C-26-051-000748
1071+69	-	1072+78	CL	300	---	C-26-051-000749
1101+15	-	1102+25	CL	300	---	C-26-051-000751
1128+03	-	1129+55	CL	410	---	C-26-051-004441 & 000753
UNDISTRIBUTED			---	150	1.5	
			TOTALS =	**1,770**	**1.5** (*)	

(*) NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

COLD WEATHER OPERATIONS

STATION	TO	STATION	LOCATION	450.4000 HMA PAVING (TON)	646.6464 MARKING EPOXY 4-INCH (LF)
974+15	-	1188+00	CL	1,570	8,210
			TOTAL =	**1,570**	**8,210**

HMA PAVEMENT

STATION			LOCATION	455.0605* TACK COAT (GAL)	460.6225 HMA PAVEMENT 5 MT 58-28 S (TON)
974+15	-	1164+60	CL	4,445	5,335
1164+60	-	1166+25	CL	45	55
1166+25	-	1173+20	CL	190	230
1173+20	-	1178+80	CL	145	175
1178+80	-	1180+50	CL	45	55
1180+50	-	1184+85	CL	120	140
1184+85	-	1188+00	CL	95	110
1005+60	ANDERSON ROAD		LT	11	14
1005+60	CENTER ROAD		RT	11	14
1015+71	RINTALA ROAD		RT	20	24
1059+20	KNIGHT ROAD		LT	17	20
1059+20	REIN ROAD		RT	7	10
1085+86	SPRUCE ROAD		RT	11	14
1112+40	OLD 10 ROAD		RT	17	22
1180+49	3RD AVENUE		LT	29	36
1187+00	VETERANS DRIVE		LT	17	20
1007+70	SNOWMOBILE CROSSING		LT & RT	1	2
1163+95	SNOWMOBILE CROSSING		RT	1	1
			TOTALS =	**5,227**	**6,277**

*NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

ASPHALTIC SURFACE

STATION	TO	STATION	LOCATION	455.0605* TACK COAT (GAL)	465.0105 ASPHALTIC SURFACE (TON)	465.0110 ASPHALTIC SURFACE PATCHING (TON)	REMARKS
1023+57	-	1024+71	CL	55	130	---	C-26-051-000745
1064+78	-	1065+87	CL	55	125	---	C-26-051-000748
1071+69	-	1072+78	CL	55	125	---	C-26-051-000749
1101+15	-	1102+25	CL	55	125	---	C-26-051-000751
1128+03	-	1129+55	CL	75	175	---	C-26-051-004441 & 000753
UNDISTRIBUTED			LT/RT	35	---	50	MILLED SURFACE REPAIR
			TOTAL =	**330**	**680**	**50**	

*NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ASPHALTIC CENTERLINE RUMBLE STRIPS
2 LANE RURAL

STATION	TO	STATION	LOCATION	465.0475 (LF)
974+15	-	1003+60	CL	2,945
1007+60	-	1014+10	CL	650
1018+10	-	1057+20	CL	3,910
1061+20	-	1083+96	CL	2,276
1087+96	-	1110+70	CL	2,274
1114+70	-	1169+35	CL	5,465
			TOTAL =	**17,520**

3

CULVERT REPLACEMENT COFFERDAMS

STATION	LOCATION	CULVERT NO.	**206.5000.01** C-000745 (LS)	**206.5000.02** C-000748 (LS)	**206.5000.03** C-000749 (LS)	**206.5000.04** FIFIELD CREEK (LS)
1024+14	LT	26-051-000745	1	---	---	---
1065+32	LT	26-051-000748	---	1	---	---
1072+23	LT	26-051-000749	---	---	1	---
1128+79	LT & RT	26-051-004441 & 000753	---	---	---	1
		TOTALS =	**1**	**1**	**1**	**1**

PIPE UNDERDRAIN REPAIR

STATION	TO	STATION	STATION	**310.0110** BASE AGGREGATE OPEN-GRADED (TON)	**612.0206** PIPE UNDERDRAIN UNPERFORATED 6-INCH (LF)	**612.0406** PIPE UNDERDRAIN WRAPPED 6-INCH (LF)	REMARKS
1023+57	-	1024+71	USH 51 RT	2	---	115	C-26-051-000745
1064+78	-	1065+87	USH 51 RT	2	14	110	C-26-051-000748
1071+69	-	1072+78	USH 51 RT	2	7	110	C-26-051-000749
1128+03	-	1129+55	USH 51 LT	3	---	155	C-26-051-004441 & 000753
			TOTALS =	**9**	**21**	**490**	

3

CROSS DRAIN CULVERTS

STATION	LOCATION	CULVERT NO.	**520.1024** APRON ENDWALLS FOR CULVERT PIPE 24-INCH (EACH)	**520.3424*** CULVERT PIPE CLASS III-A NON-METAL 24-INCH (LF)	**522.0124** CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH (LF)	**522.0130** CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH (LF)	**522.1024** APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH (EACH)	**522.103** APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH (EACH)	**633.5200** MARKERS CULVERT END (EACH)
1024+14	CL	26-051-000745	---	---	---	76	---	2	2
1065+32	CL	26-051-000748	---	---	72	---	2	---	2
1072+23	CL	26-051-000749	---	---	74	---	2	---	2
1101+70	CL	26-051-000751	2	82	---	---	---	---	2
1128+76	CL	26-051-004441	---	---	---	90	---	2	2
1128+83	CL	26-051-000753	---	---	---	90	---	2	2
		TOTALS =	**2**	**82**	**146**	**256**	**4**	**6**	**12**

*NOTE: LENGTH BASED ON CONCRETE PIPE WITH CONCRETE ENDWALLS. ADJUST ACCORDINGLY IF PIPE MATERIAL OTHER THAN CONCRETE IS USED.

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

EROSION CONTROL

STATION	TO	STATION	LOCATION	625.0100 TOPSOIL (SY)	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)	628.2008 EROSION MAT URBAN CLASS I TYPE B (SY)	628.7015 INLET PROTECTION TYPE C	628.7555 CULVERT PIPE CHECKS (EACH)	628.7570 ROCK BAGS (EACH)	629.0210 FERTILIZER TYPE B (CWT)	630.0110 SEEDING MIXTURE NO. 10 (LB)	631.0500 SEED WATER (MGAL)	REMARKS
1023+57	-	1024+71	LT & RT	230	290	75	---	---	230	---	5	80	0.23	9.7	0.4	C-000745 REPLACEMENT
1064+78	-	1065+87	LT & RT	170	280	70	---	---	170	---	5	---	0.18	7.8	0.3	C-000748 REPLACEMENT
1071+69	-	1072+78	LT & RT	190	270	70	---	---	190	---	5	---	0.20	8.4	0.3	C-000749 REPLACEMENT
1101+15	-	1102+25	LT & RT	270	290	75	---	---	270	---	5	80	0.25	10.5	0.4	C-000751 REPLACEMENT
1128+03	-	1129+55	LT & RT	160	350	90	---	---	160	---	---	0	0.21	8.9	0.3	C-004441 & 000753 REPLACEMENT
1167+22	-	1172+38	RT	---	---	---	---	---	---	2	---	---	---	---	---	CURB AND GUTTER INLETS
1172+72	-	1187+63	LT	---	---	---	---	---	---	4	---	---	---	---	---	CURB AND GUTTER AND FIELD INLETS
UNDISTRIBUTED			---	110	150	40	3	2	110	---	---	20	0.11	4.5	0.2	
			TOTALS =	**1,130**	**1,630**	**420**	**3**	**2**	**1,130**	**6**	**20**	**180**	**1.16**	**49.9**	**1.8**	

MOVING NO-PASSING ZONE SIGNS

STATIONING	LOCATION	638.2102 MOVING SIGNS TYPE II (EACH)
UNDISTRIBUTED	LT/RT	3
	TOTALS =	**3**

TRAFFIC CONTROL

STATIONING	OPERATIONS	DURATION (DAYS)	643.0300 DRUMS (EACH)	643.0300 DRUMS (DAYS)	643.0420 BARRICADES TYPE III (EACH)	643.0420 BARRICADES TYPE III (DAYS)	643.0900 SIGNS (EACH)	643.0900 SIGNS (DAYS)	643.1000* SIGNS FIXED MESSAGE (SF)	643.5000 TRAFFIC CONTROL (EACH)	208.1500.S TEMPORARY LANE SHIFT DURING CULVERT WORK (EACH)
1024+14	C-26-051-000745 REPLACEMENT	1	50	50	1	1	8	8	---	---	1
1065+32	C-26-051-000748 REPLACEMENT	1	50	50	1	1	8	8	---	---	1
1072+23	C-26-051-000749 REPLACEMENT	1	50	50	1	1	8	8	---	---	1
1101+70	C-26-051-000751 REPLACEMENT	1	50	50	1	1	8	8	---	---	1
1128+76	C-26-051-004441 & 000753 REPLACEMENT	2	60	120	1	2	8	16	---	---	1
MAINLINE MILLING AND PAVING		5	---	---	---	---	12	50	---	---	---
RUMBLE STRIPS / PAVEMENT MARKINGS		3	---	---	---	---	12	36	---	---	---
PROJECT 1175-19-62 **		25	---	---	---	---	19	475	36	1	---
	TOTALS =		**320**		**6**		**609**		**36**	**1**	**5**

*NOTES: HWY ROAD WORK AHEAD (G20-57) SIGNS PLACED AT THE PROJECT TERMINI.
SIGNS PLACED SEVEN (7) DAYS PRIOR TO CONSTRUCTION.
REMOVE WHEN CONSTRUCTION BEGINS.

** TYPICAL SIDE ROADS

1005+60	LT	ANDERSON ROAD
1005+60	RT	CENTER ROAD
1015+71	RT	RINTALA ROAD
1059+20	LT	KNIGHT ROAD
1059+20	RT	REIN ROAD
1085+86	RT	SPRUCE ROAD
1112+40	RT	OLD 10 ROAD
1180+49	LT	3RD AVENUE
1187+00	LT	VETERANS DRIVE

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

3

3

PAVEMENT MARKING LINE

				FINAL PAVEMENT MARKINGS				FINAL SURFACE PAVEMENT MARKINGS			MILLED SURFACE		
					646.1020 EPOXY 4-INCH		646.1040	646.4520	649.0120 TEMPORARY EPOXY 4-INCH		649.0105 TEMPORARY PAINT 4-INCH		648.0100
STATION	TO	STATION	LOCATION	YELLOW SOLID (LF)	YELLOW DASH (LF)	WHITE EDGELINE (LF)	GROOVED WET REF EPOXY 4-INCH WHITE EDGELINE (LF)	SAME DAY EPOXY 4-INCH YELLOW SOLID (LF)	YELLOW SOLID (LF)	YELLOW DASH (LF)	YELLOW SOLID (LF)	YELLOW DASH (LF)	LOCATING NO-PASSING ZONES (MI)
974+15	-	982+45	MAINLINE	830	208	---	1,660	---	830	208	830	66	---
982+45	-	991+40	MAINLINE	895	224	---	1,790	---	895	224	895	72	---
991+40	-	996+00	MAINLINE	920	---	---	920	---	920	---	920	---	---
996+00	-	999+30	MAINLINE	330	83	---	660	---	330	83	330	26	---
999+30	-	1004+55	MAINLINE	---	131	---	1,050	---	---	131	---	42	---
1004+55	-	1013+00	MAINLINE	845	211	---	1,550	---	845	211	845	68	---
1013+00	-	1026+60	MAINLINE	1,360	340	---	2,640	---	1,360	340	1,360	109	---
1026+60	-	1041+00	MAINLINE	2,880	---	---	2,880	---	2,880	---	2,880	---	---
1041+00	-	1054+60	MAINLINE	1,360	340	---	2,720	---	1,360	340	1,360	109	---
1054+60	-	1068+25	MAINLINE	1,365	341	---	2,590	---	1,365	341	1,365	109	---
1068+25	-	1070+85	MAINLINE	520	---	---	520	---	520	---	520	---	---
1070+85	-	1078+65	MAINLINE	780	195	---	1,560	---	780	195	780	62	---
1078+65	-	1084+50	MAINLINE	1,170	---	---	1,170	---	1,170	---	1,170	---	---
1084+50	-	1092+40	MAINLINE	790	198	---	1,525	---	790	198	790	63	---
1092+40	-	1093+80	MAINLINE	280	---	---	280	---	280	---	280	---	---
1093+80	-	1107+45	MAINLINE	1,365	341	---	2,730	---	1,365	341	1,365	109	---
1107+45	-	1108+05	MAINLINE	---	15	---	120	---	---	15	---	5	---
1108+05	-	1121+95	MAINLINE	1,390	348	---	2,705	---	1,390	348	1,390	111	---
1121+95	-	1169+35	MAINLINE	9,480	---	---	9,480	---	9,480	---	9,480	---	---
1169+35	-	1188+00	MAINLINE	---	---	3,290	---	3,290	---	---	3,290	---	---
974+15	-	1188+00	MAINLINE	---	---	---	---	---	---	---	---	---	4.05
			SUBTOTALS =	26,560	2,974	3,290	38,550	3,290	26,560	2,974	29,850	952	4.05
			TOTALS =		**32,824**		**38,550**	**3,290**	**29,534**		**30,802**		**4.05**

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

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3

CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	**650.6000** PIPE CULVERTS (EACH)	**650.8000** RESURFACING REFERENCE (LF)	**650.9910** SUPPLEMENTAL CONTROL (LS)	REMARKS
1023+57	-	1024+71	LT & RT	1	---	---	C-26-051-000745
1064+78	-	1065+87	LT & RT	1	---	---	C-26-051-000748
1071+69	-	1072+78	LT & RT	1	---	---	C-26-051-000749
1101+15	-	1102+25	LT & RT	1	---	---	C-26-051-000751
1128+03	-	1129+55	LT & RT	2	---	---	C-26-051-004441 & 000753
975+15	-	1188+00	USH 51	---	21,285	1	PROJECT 1175-19-62
			TOTALS =	**6**	**21,285**	**1**	

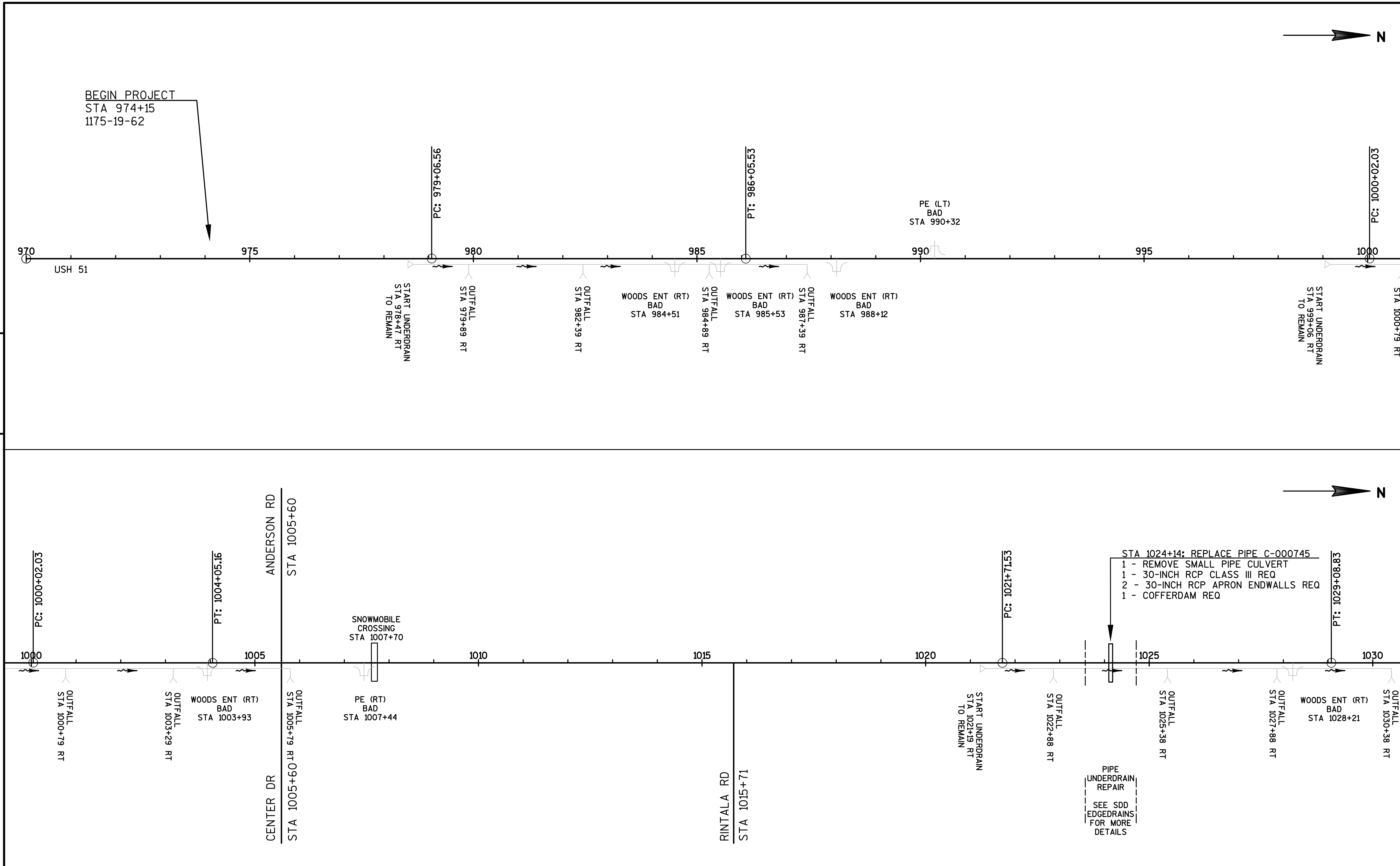
SAWING

STATION	TO	STATION	LOCATION	**690.0150 ASPHALT** (LF)	**690.0250 CONCRETE** (LF)	REMARKS
1023+57	-	1024+71	CL	60	40	26-051-000745 CULVERT REPLACEMENT
1064+78	-	1065+87	CL	60	40	26-051-000748 CULVERT REPLACEMENT
1071+69	-	1072+78	CL	60	40	26-051-000749 CULVERT REPLACEMENT
1101+15	-	1102+25	CL	60	40	26-051-000751 CULVERT REPLACEMENT
1128+03	-	1129+55	CL	60	40	26-051-004441 & 000753 CULVERT REPLACEMENT
			TOTALS =	**300**	**200**	

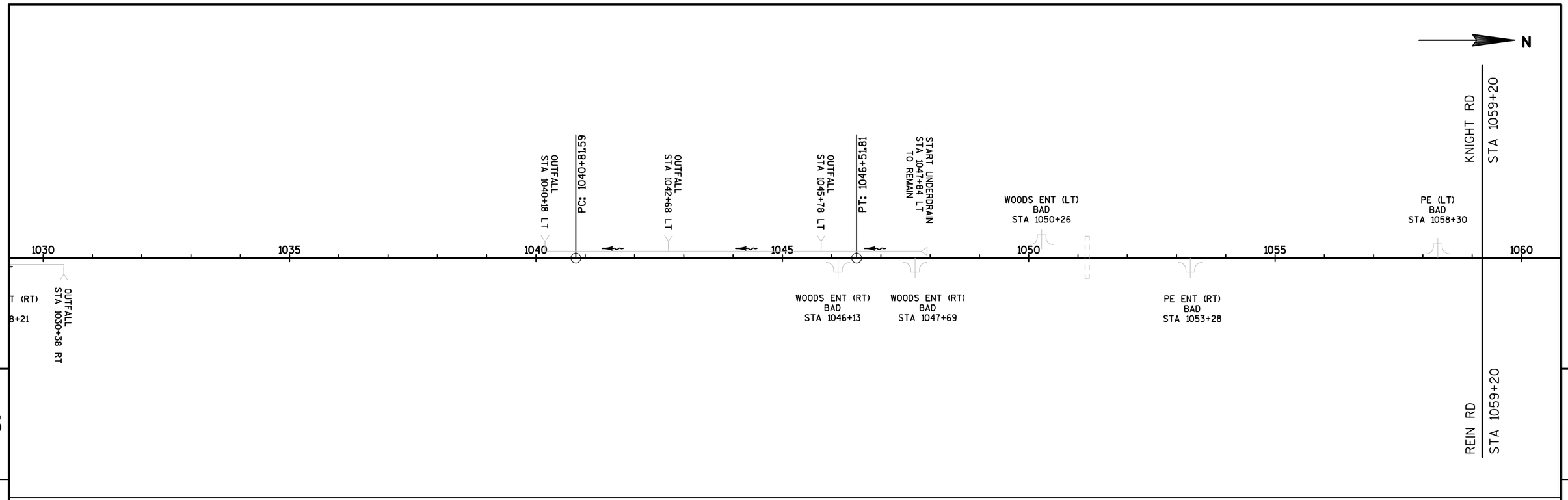
SNOWMOBILE TRAIL CROSSING

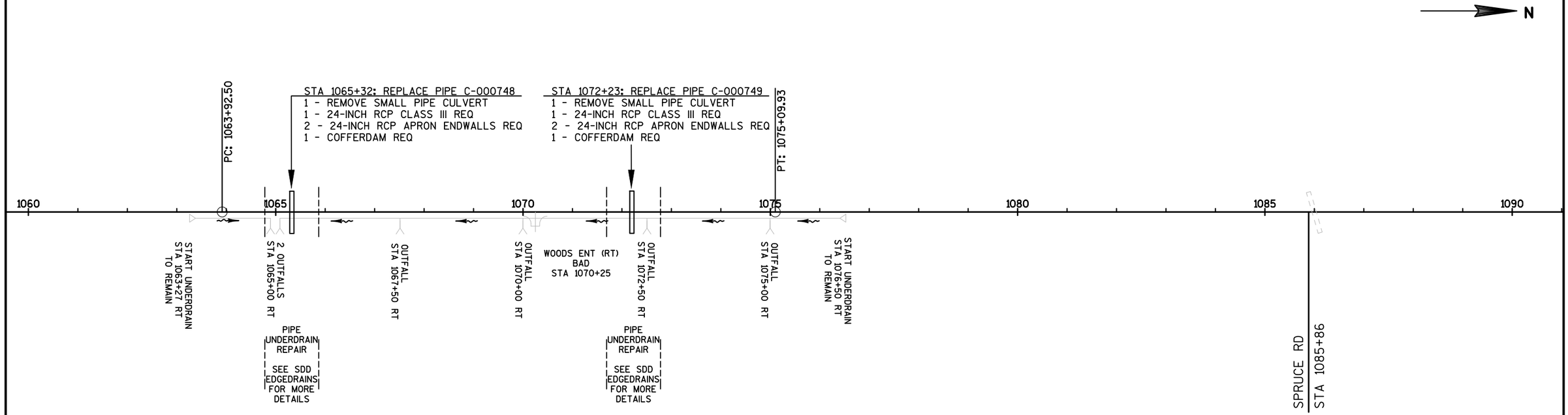
STATION	**SPV.0180.01** PROTECTIVE THERMOPLASTIC COATING AT SNOWMOBILE TRAIL CROSSING (SY)
1007+70	70
1163+95	70
TOTAL =	**140**

ALL ITEMS AND QUANTITIES ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

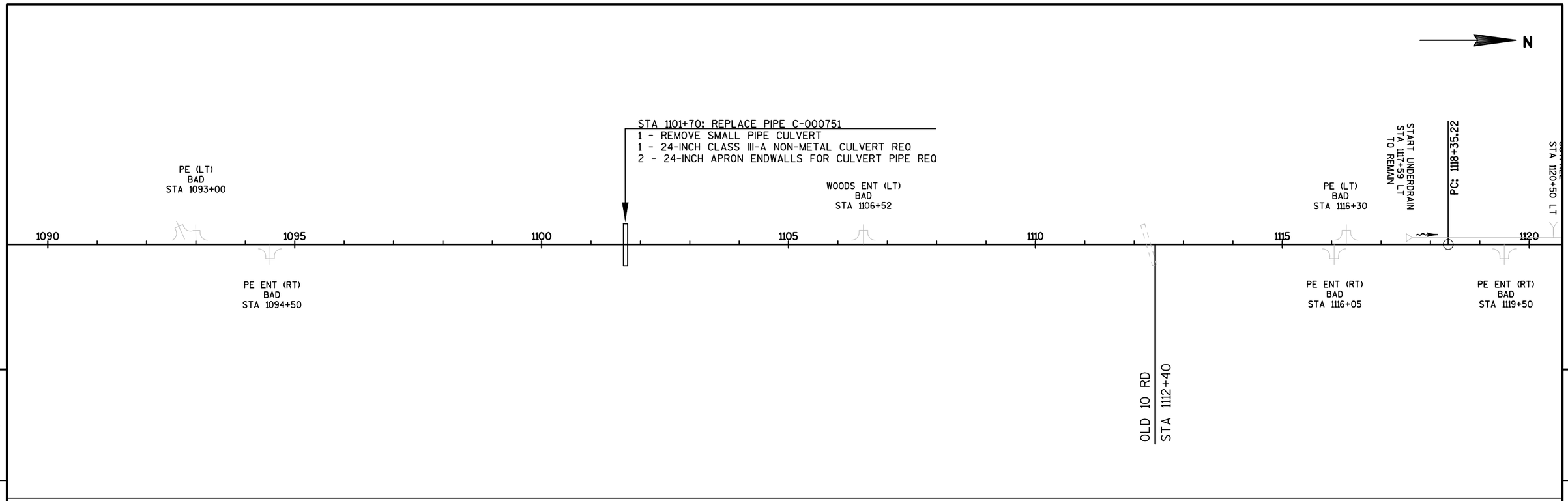


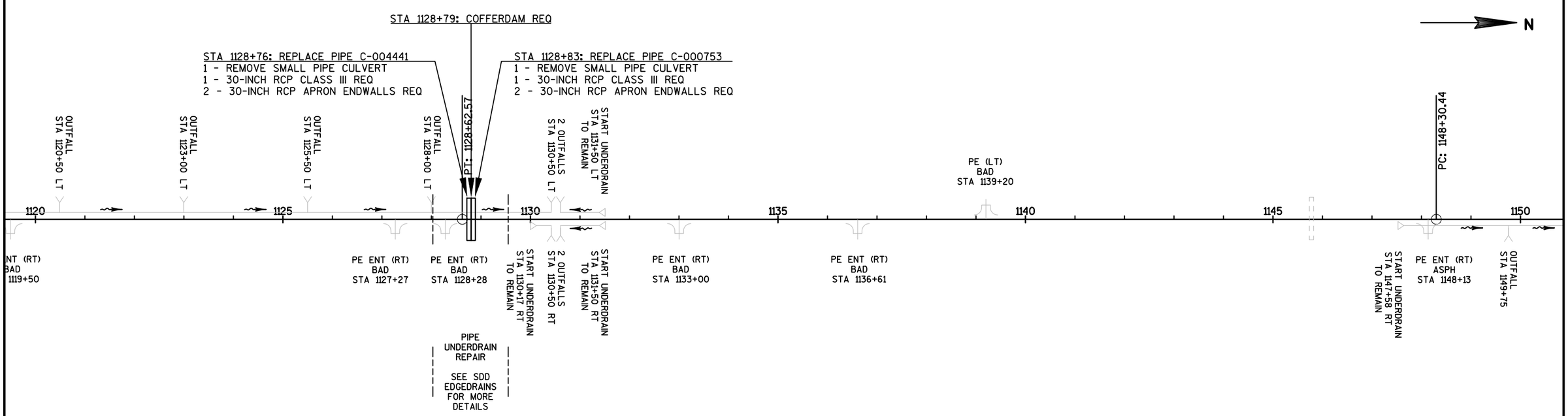
PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	LINE DIAGRAM	SHEET 41	E



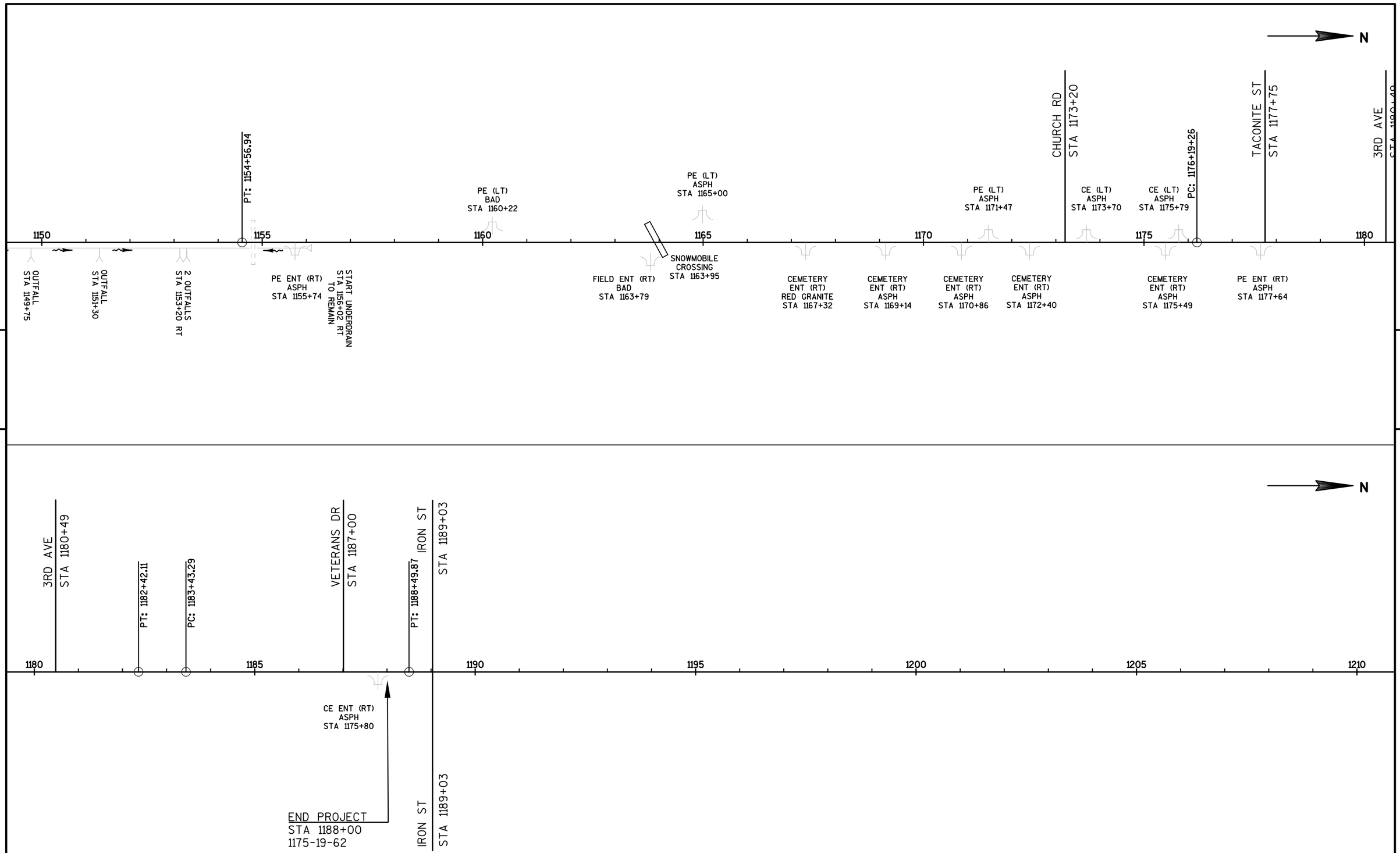


PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	LINE DIAGRAM	SHEET 42	E





PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	LINE DIAGRAM	SHEET 43	E



PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	LINE DIAGRAM	SHEET 44	E

Standard Detail Drawing List

08D15-05A	EDGEDRAIN OUTLET AND OUTFALL MARKERS
08D15-05B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D15-05C	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
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
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
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
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
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL
15D48-01	TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION

6

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) UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

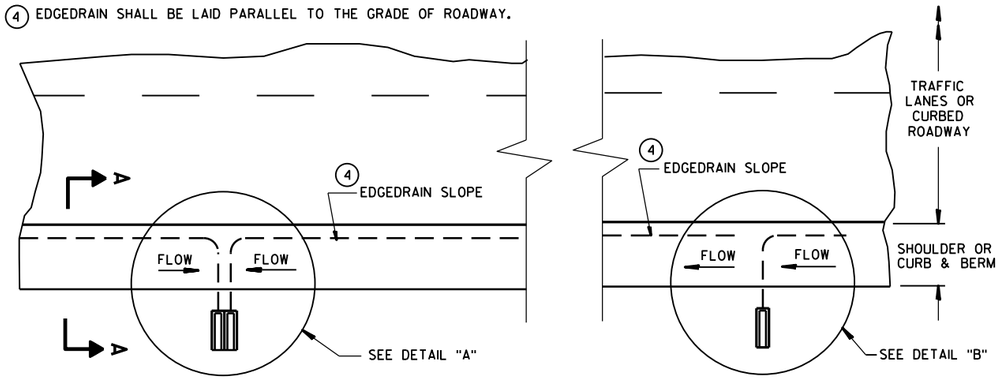
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.

(2) MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.

(3) EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.

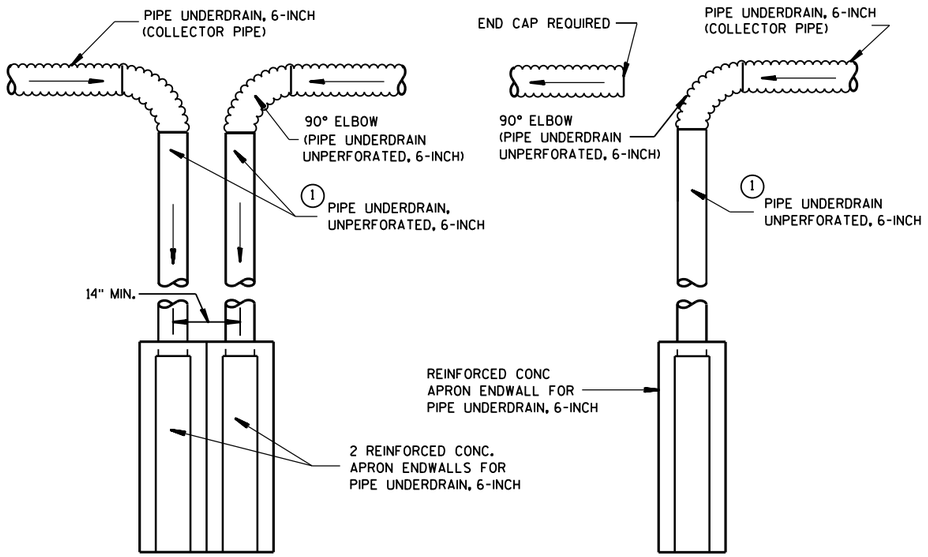
(4) EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



PLAN VIEW

ROADWAY WITH SHOULDERS OR CURBS

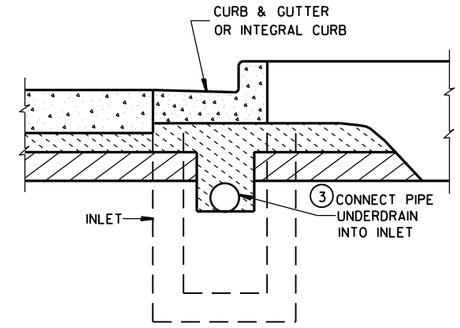
(EDGEDRAIN OUTLETS TO ROADSIDE) (2)



DETAIL "A"
TO BE USED AT LOW POINT LOCATIONS

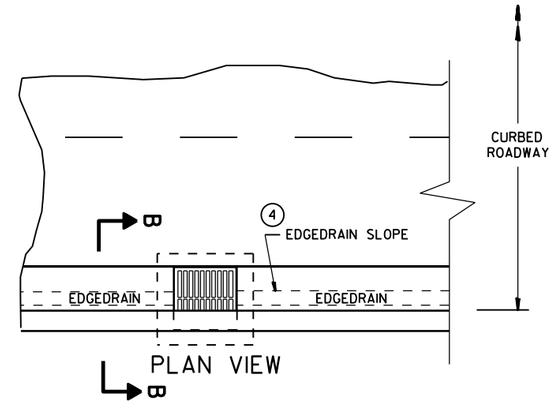
DETAIL "B"
TO BE USED AT INTERMEDIATE LOCATIONS

TYPICAL DRAIN OUT DETAILS



SECTION B-B

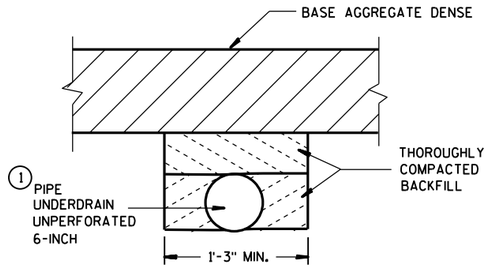
URBAN CROSS SECTION



PLAN VIEW

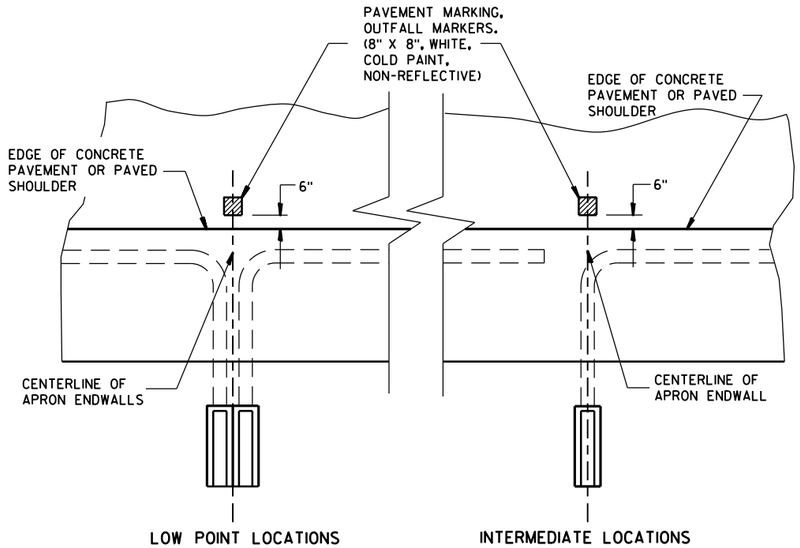
ROADWAY WITH CURBS

(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)



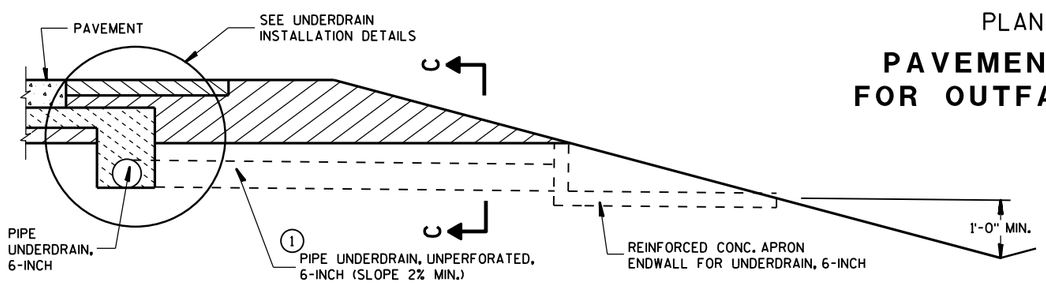
SECTION C-C

(TRENCH FOR OUTFALL PIPE)



PLAN VIEW

PAVEMENT MARKING FOR OUTFALL MARKERS



SECTION A-A

RURAL CROSS SECTION

EDGEDRAIN OUTLET AND OUTFALL MARKERS

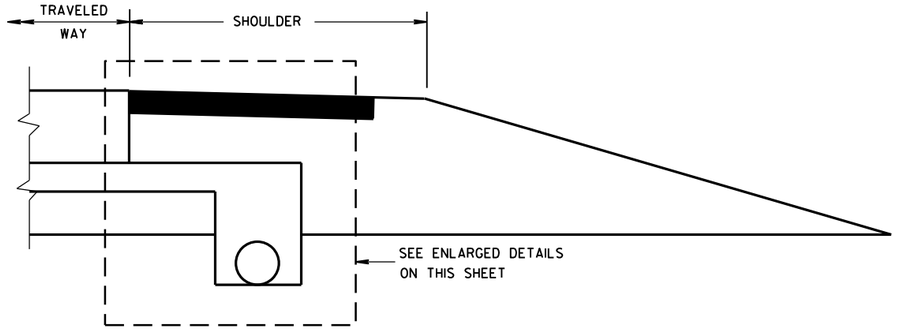
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 15-5a

6

S.D.D. 8 D 15-5a



RURAL CROSS SECTION

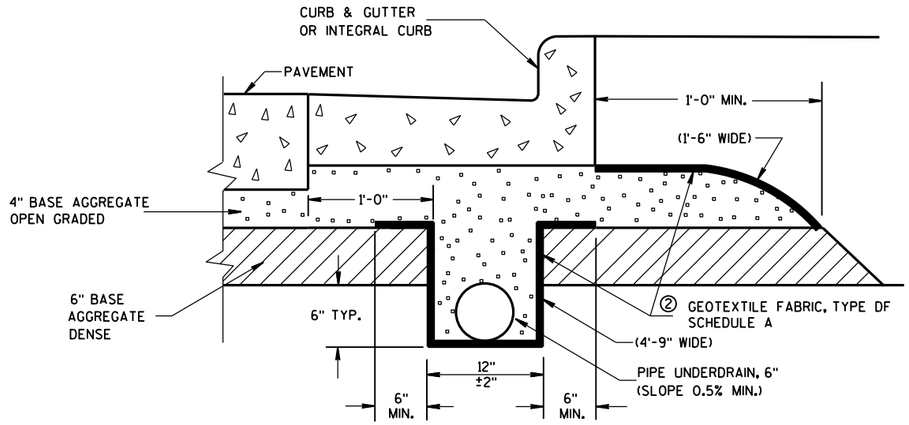
GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

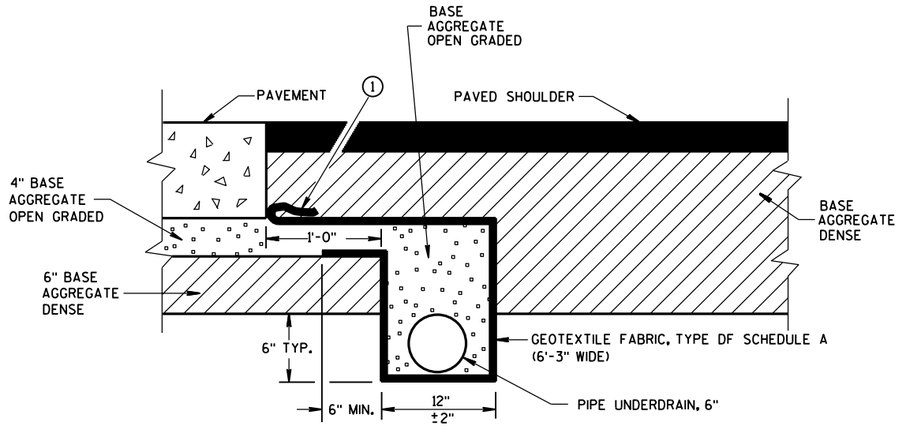
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

① FOLD OVER EXCESS GEOTEXTILE FABRIC AT THIS LOCATION.

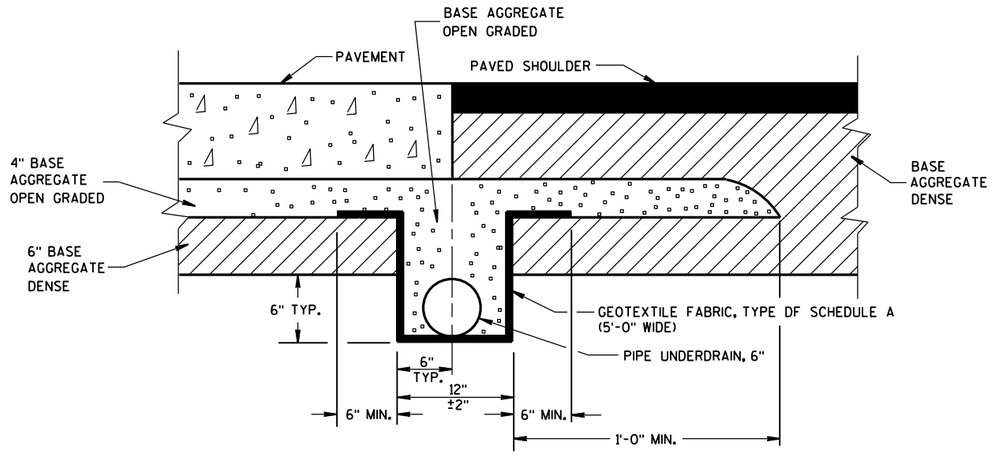
② TOTAL FABRIC WIDTH IS 6'-3" FOR PAYMENT.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATE

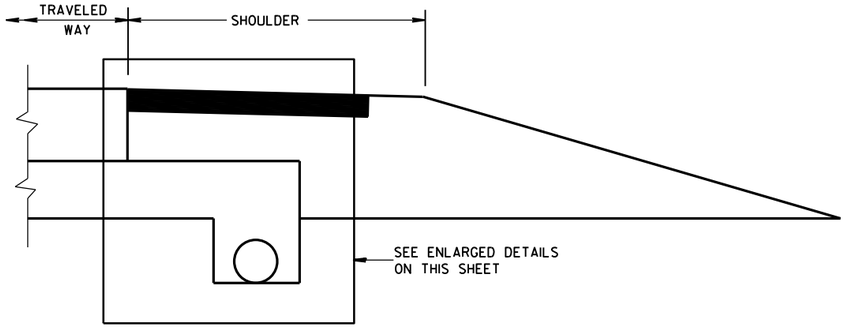
EDGEDRAIN IN RURAL ROADWAY

EDGEDRAIN AND BASE AGGREGATE OPEN GRADED

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPE
FHWA

6
S.D.D. 8 D 15-5b

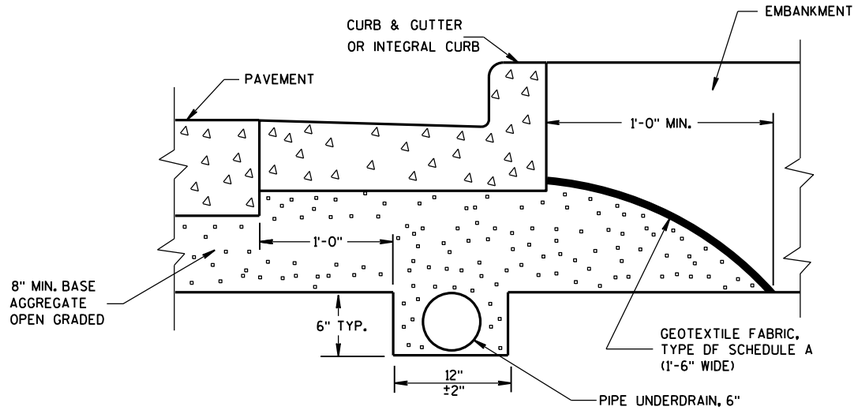


RURAL CROSS SECTION

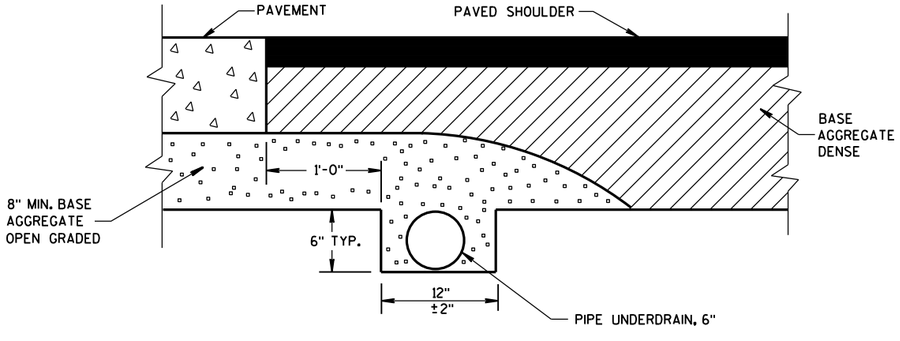
GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

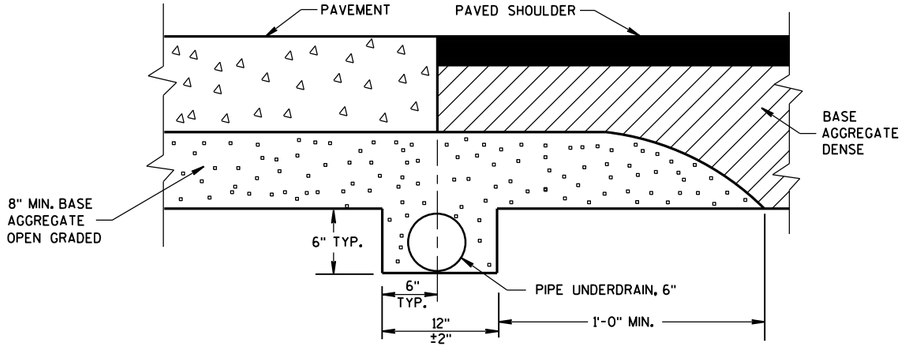
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



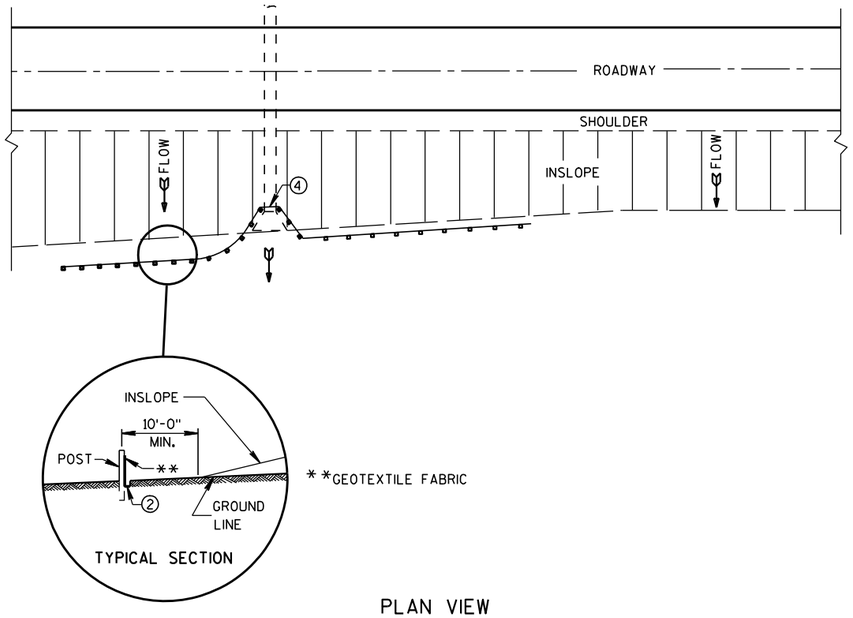
PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

6

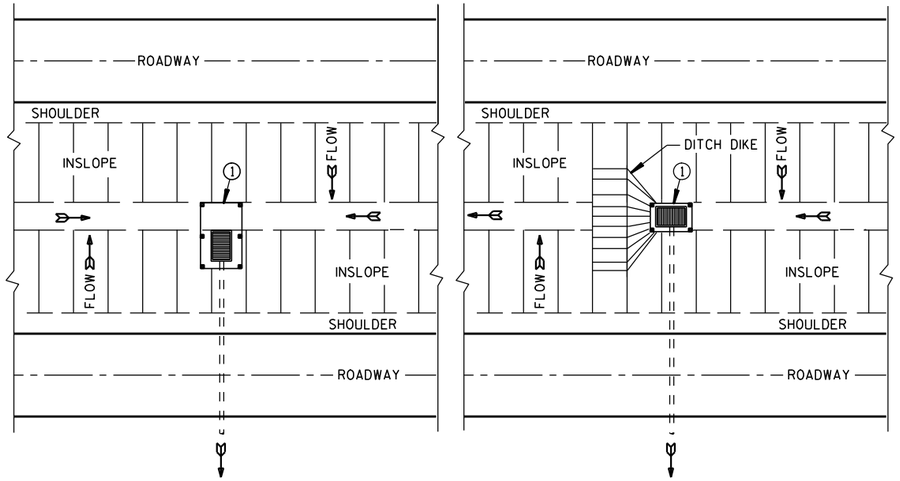
EDGEDRAIN AND BASE AGGREGATE OPEN GRADED	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
Sept. 2015	/S/ Peter Kemp, P.E.
DATE	PAVEMENT SUPE
FHWA	

S.D.D. 8 D 15-5c



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



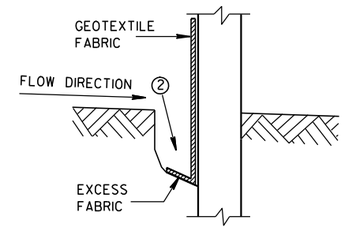
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

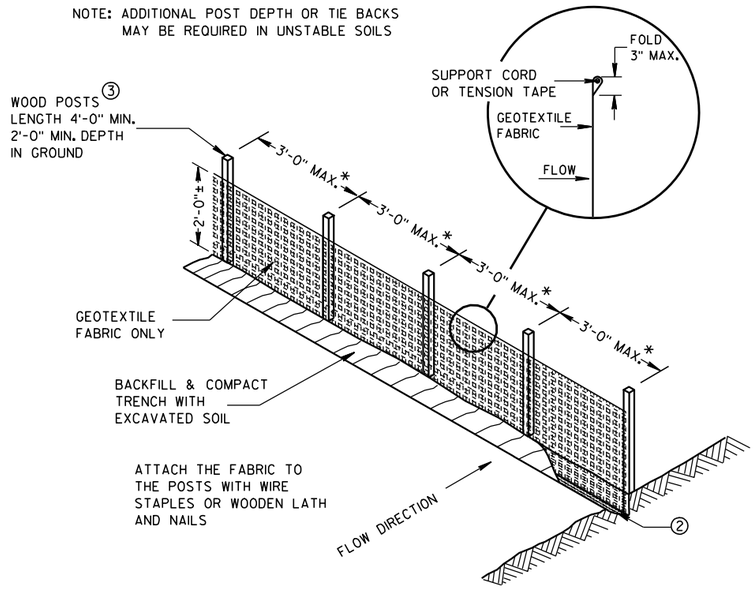
GENERAL NOTES

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.

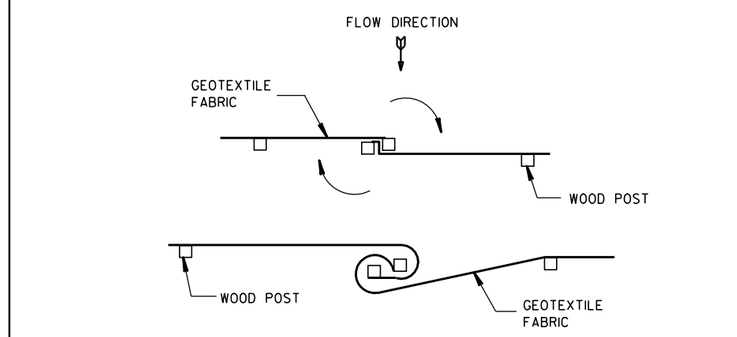


TRENCH DETAIL

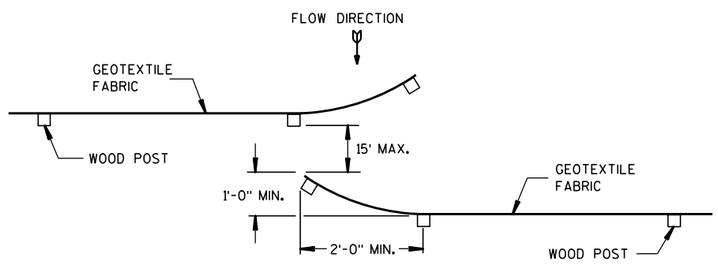


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

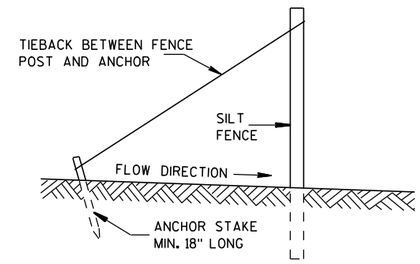


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

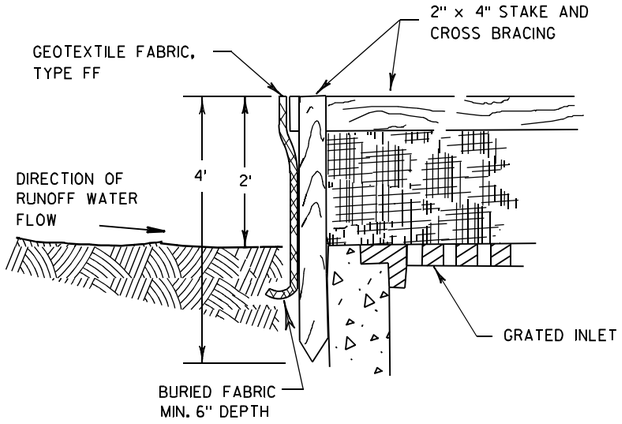
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

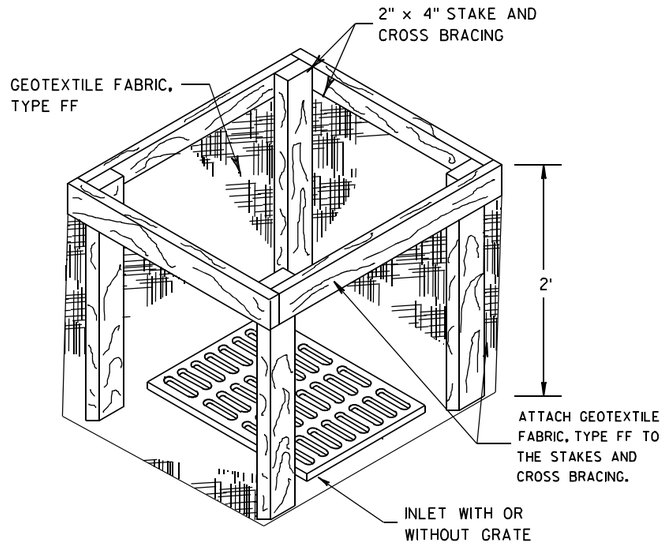
6

S.D.D. 8 E 9-6

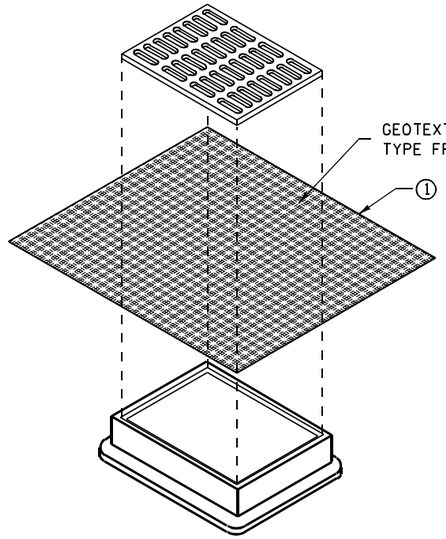
6

S.D.D. 8 E 9-6



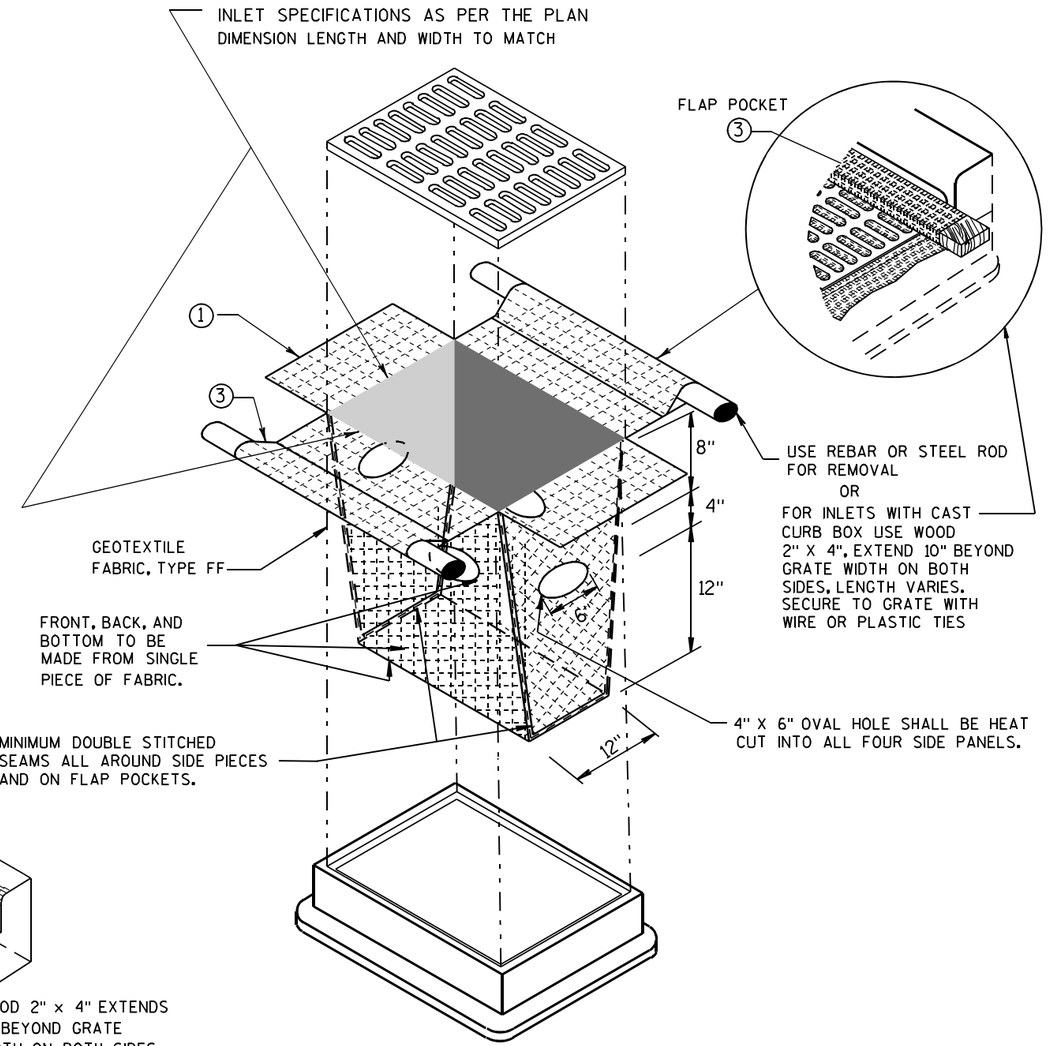


INLET PROTECTION, TYPE A



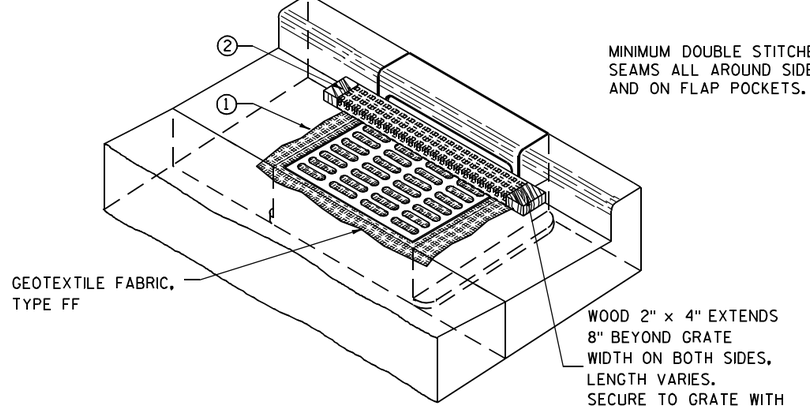
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE D

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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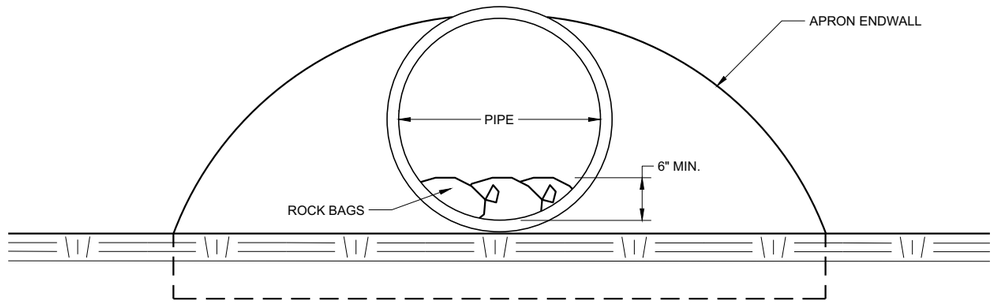
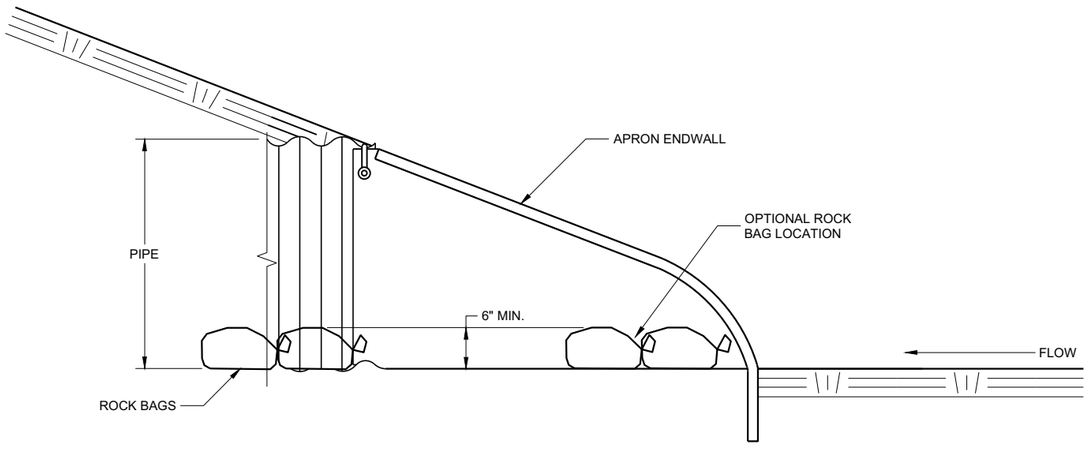
S.D.D. 8 E 10-2



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

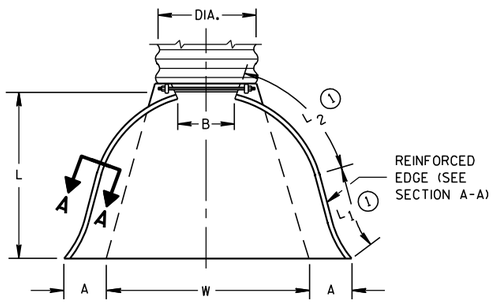
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

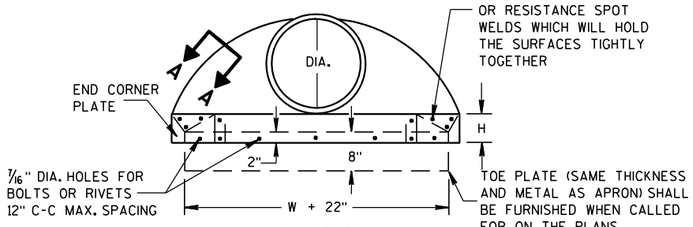
REINFORCED CONCRETE APRON ENDWALLS

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

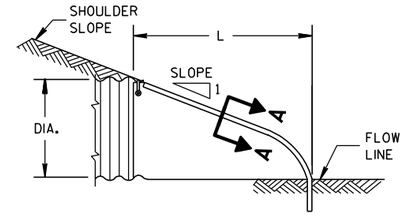
*MINIMUM
**MAXIMUM



PLAN VIEW

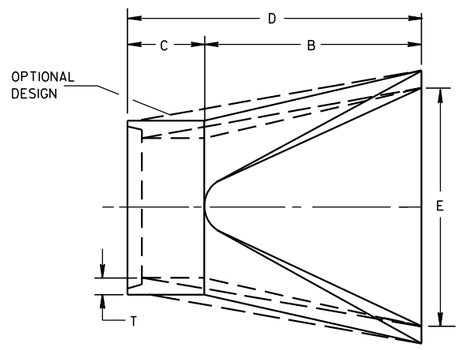


END VIEW

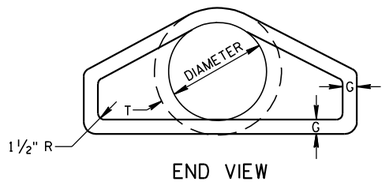


SIDE ELEVATION

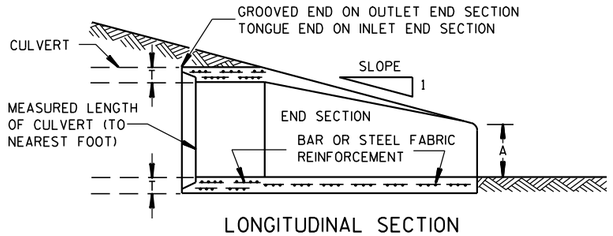
METAL ENDWALLS



PLAN

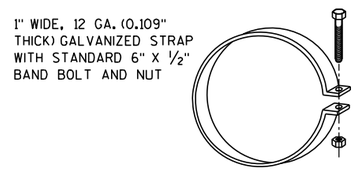


END VIEW



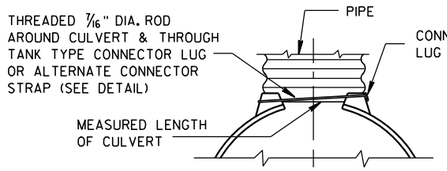
LONGITUDINAL SECTION

CONCRETE ENDWALLS

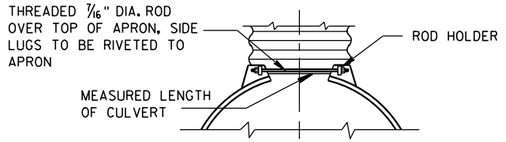


ALTERNATE FOR TYPE 1 CONNECTION

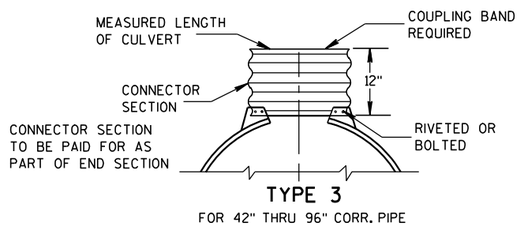
END SECTION CONNECTOR STRAP



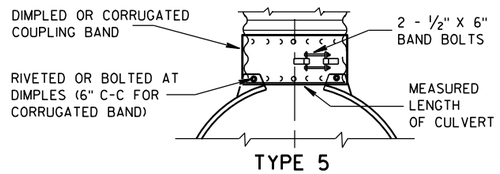
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

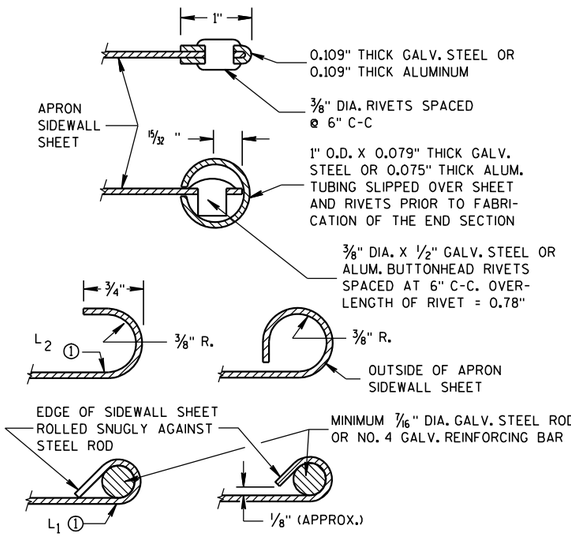
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

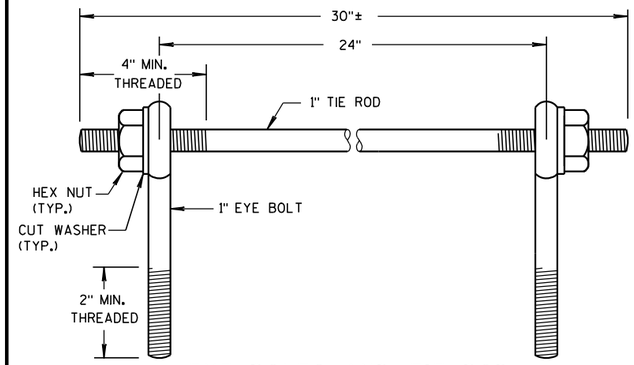
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

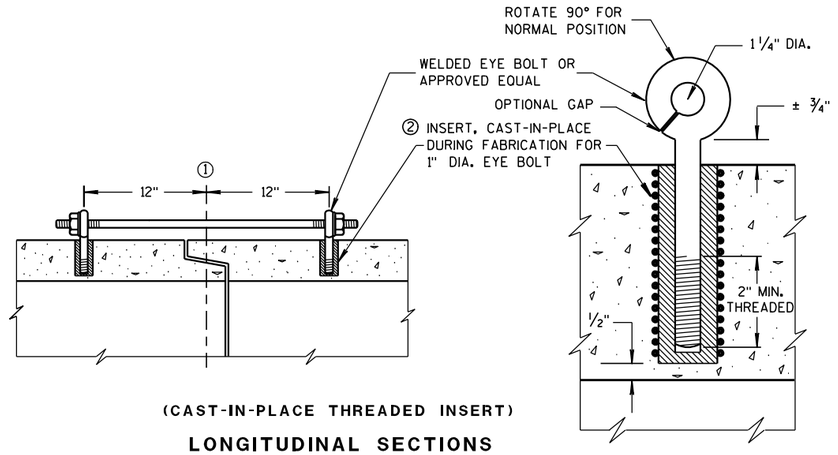
APPROVED
11/30/94 — DATE
/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

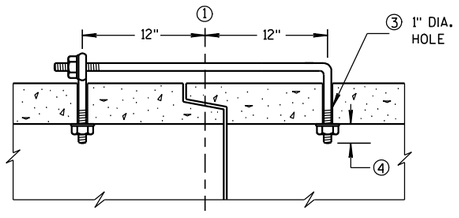
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

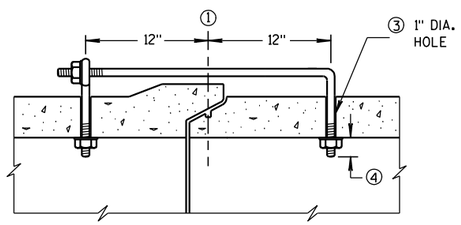
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

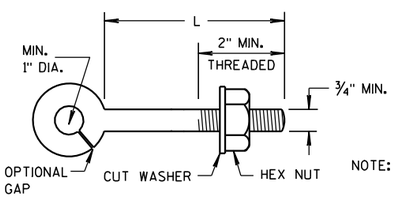


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

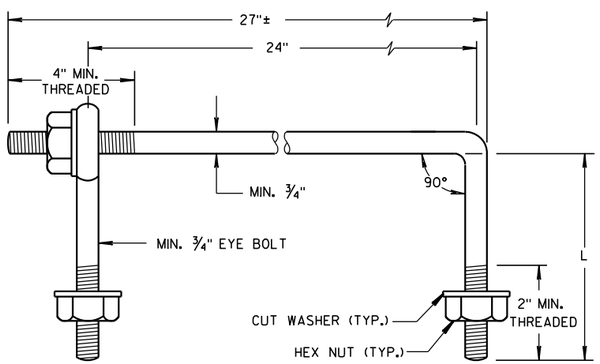
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

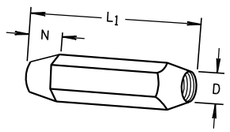
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

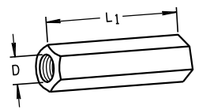
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES



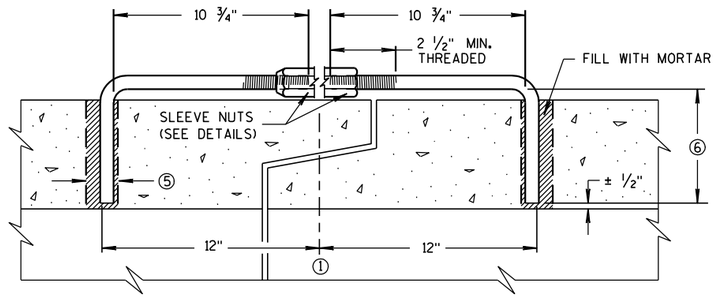
TAPERED



PLAIN

RIGHT AND LEFT THREADS

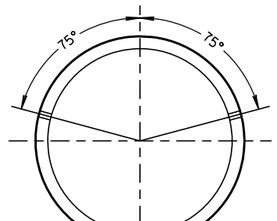
SLEEVE NUTS



LONGITUDINAL SECTION

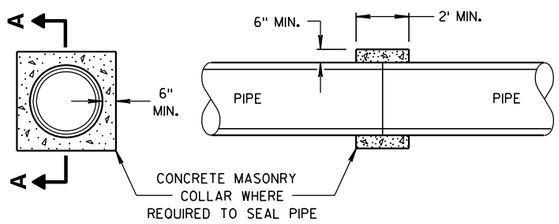
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 F 4-7

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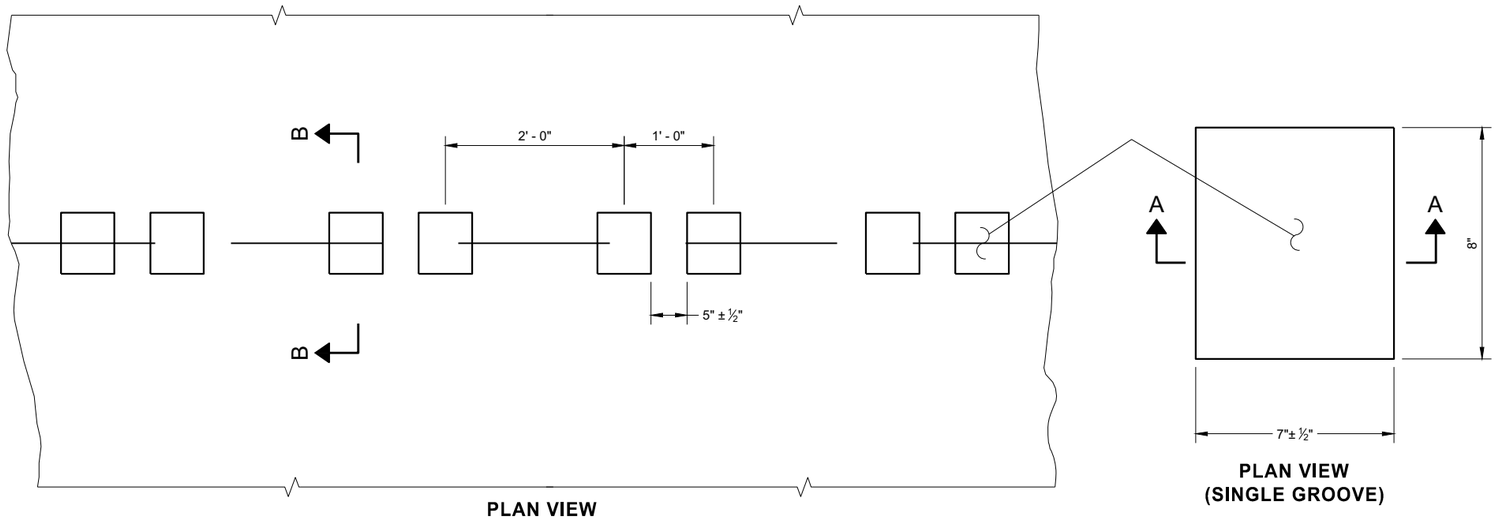
S.D.D. 8 F 4-7



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

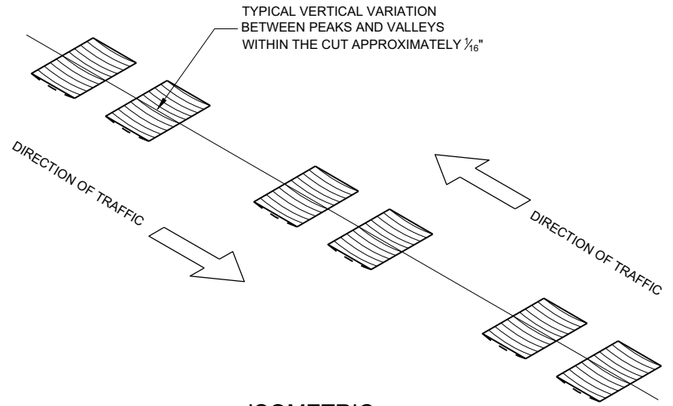
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

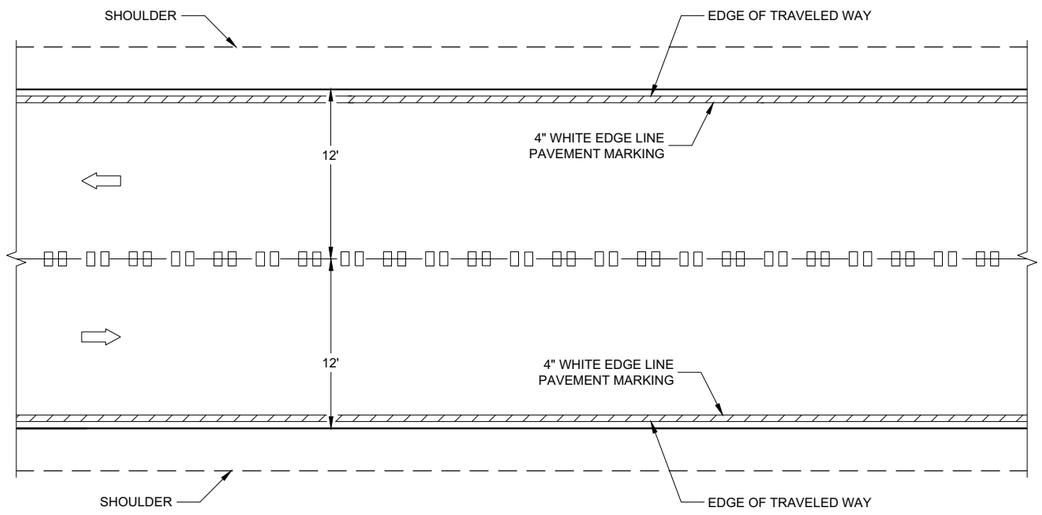
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

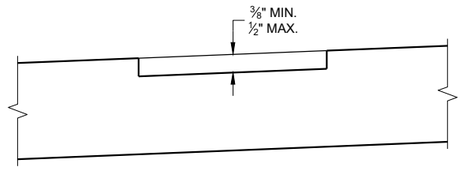
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



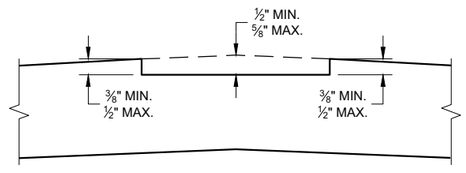
ISOMETRIC



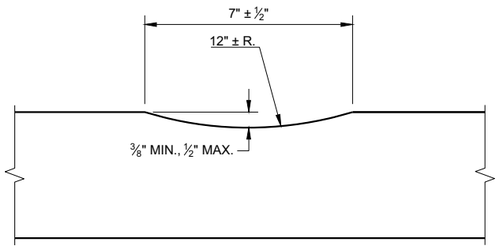
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



SECTION B - B
CROWNED ROADWAY



SECTION A - A

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SDD 13A11 - 03a

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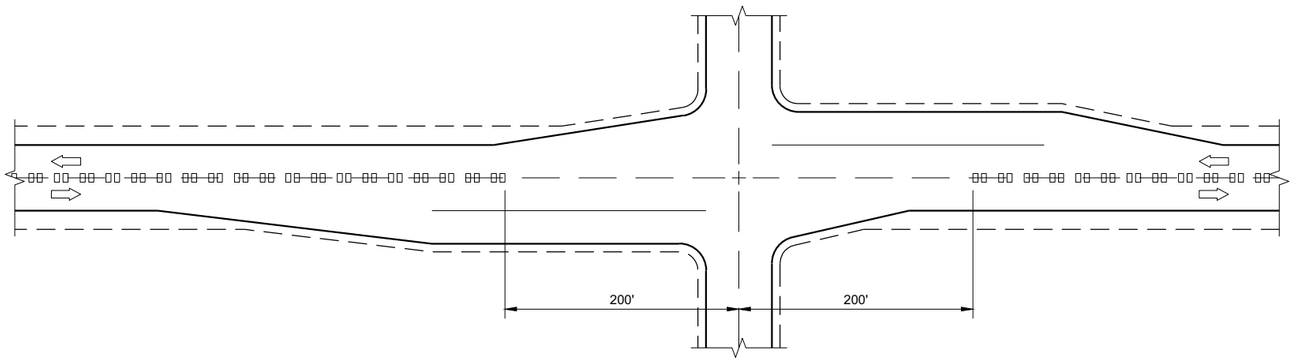
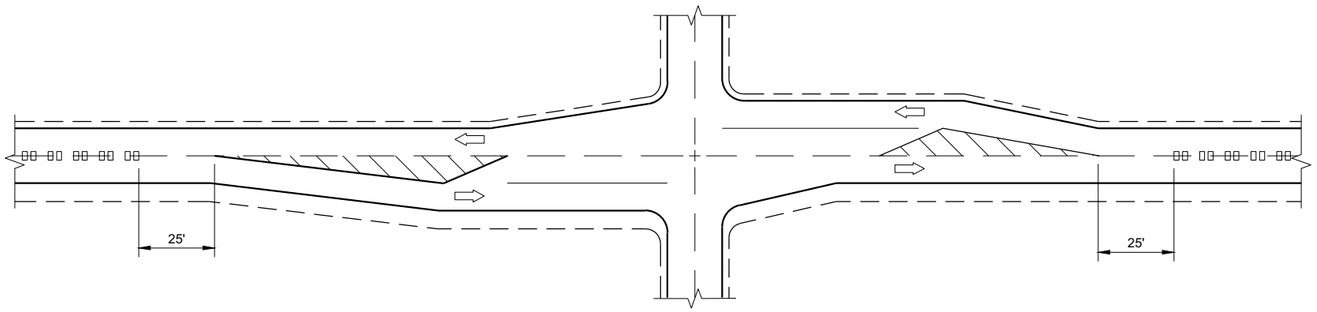
SDD 13A11 - 03a

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

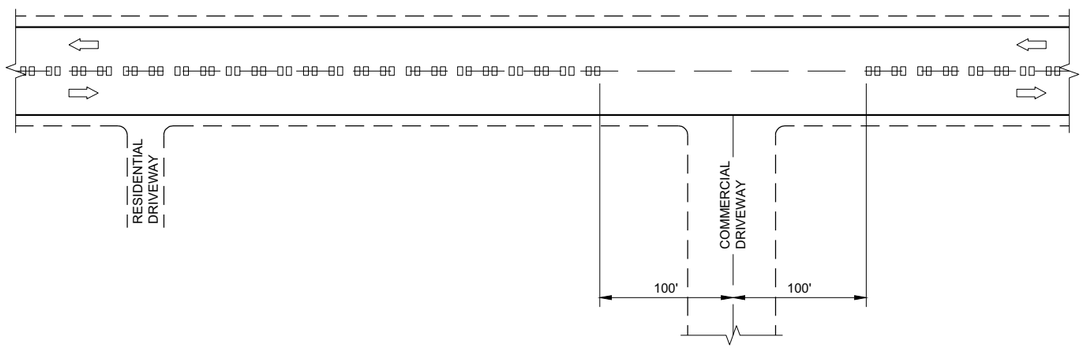
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



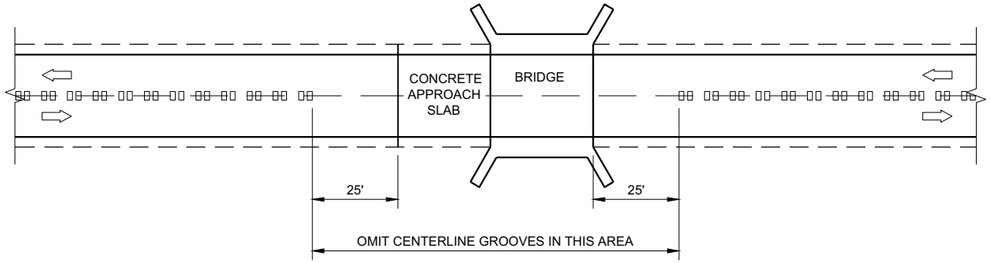
CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



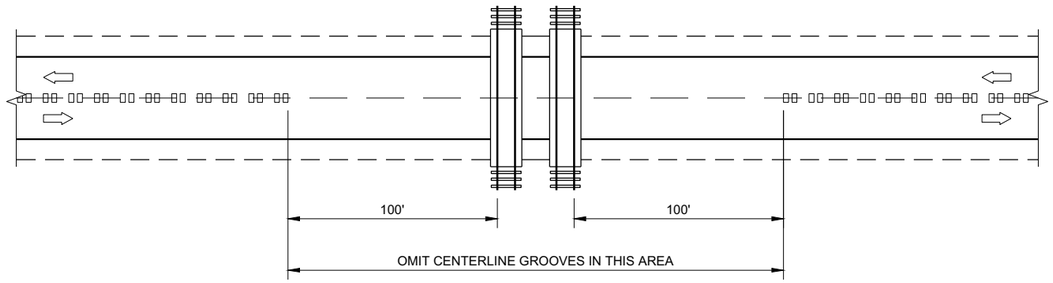
CENTERLINE GROOVES AT DRIVEWAYS (1)

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

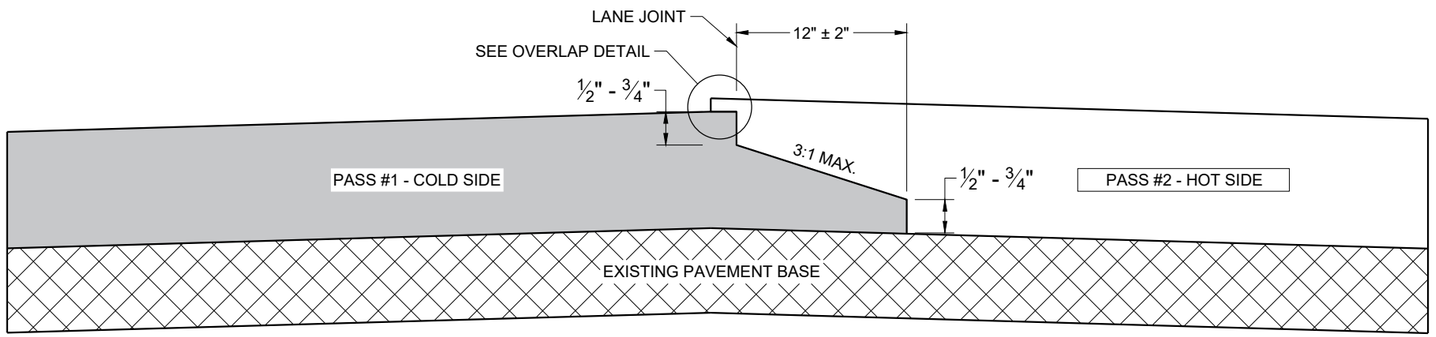
2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

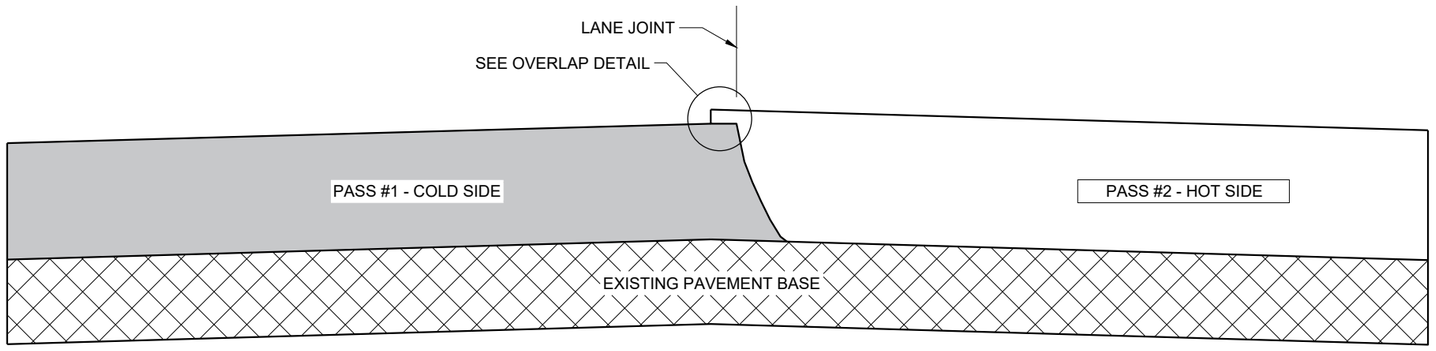
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

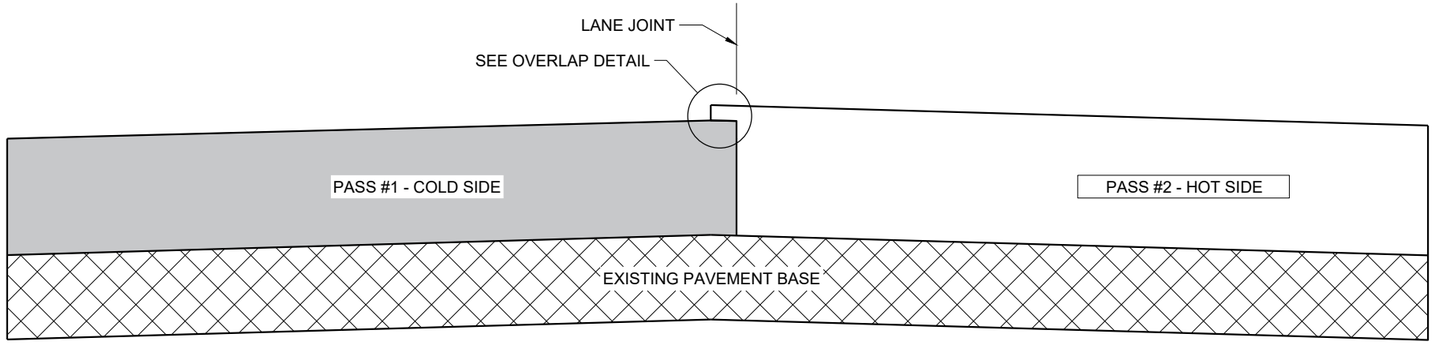
6
SDD 13A11 - 03b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

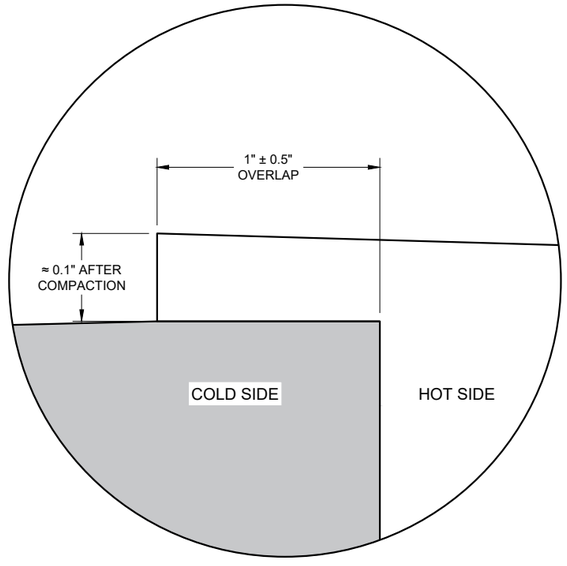
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)

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SDD 13C19 - 03

SDD 13C19 - 03

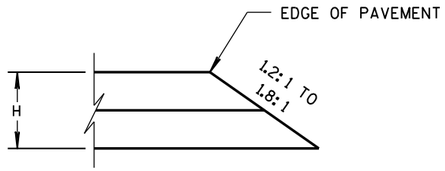
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

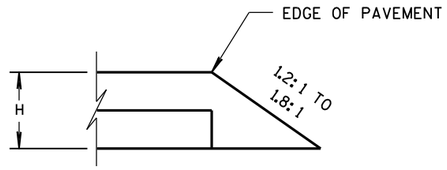
/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA



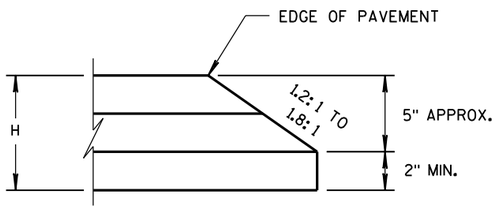
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



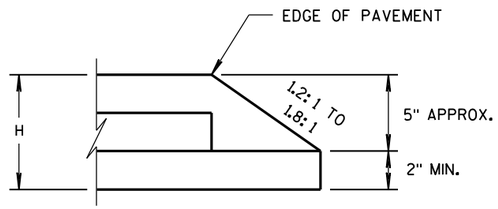
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

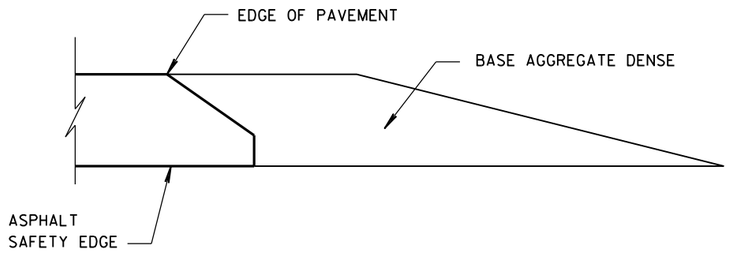
FOR H GREATER THAN 5"



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

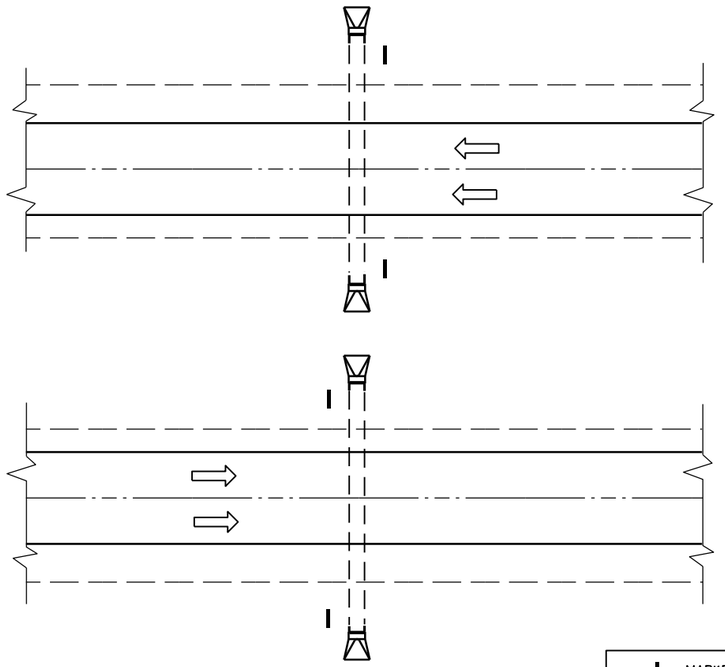
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

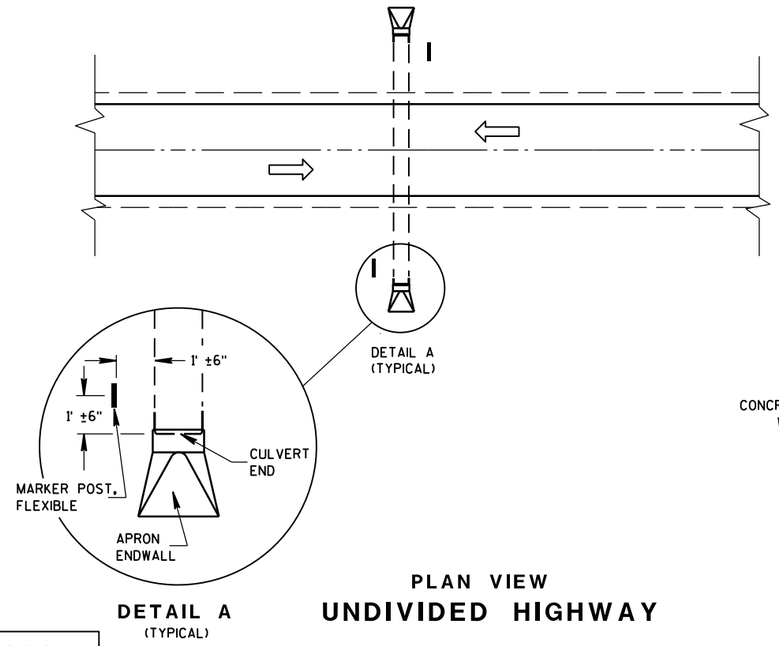
/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

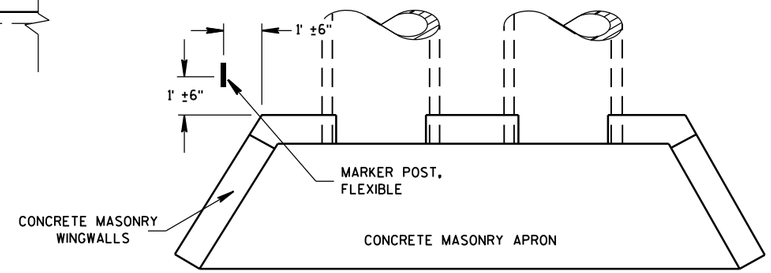
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

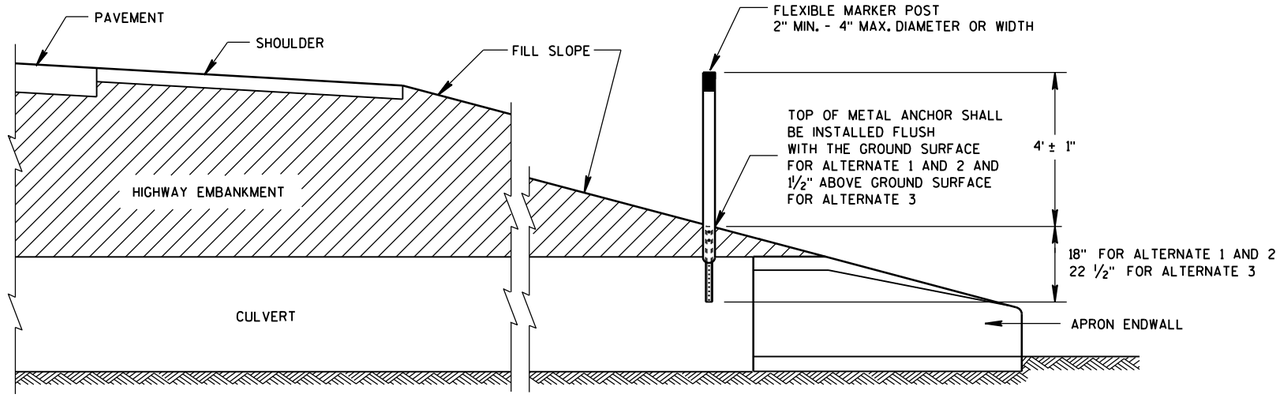
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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

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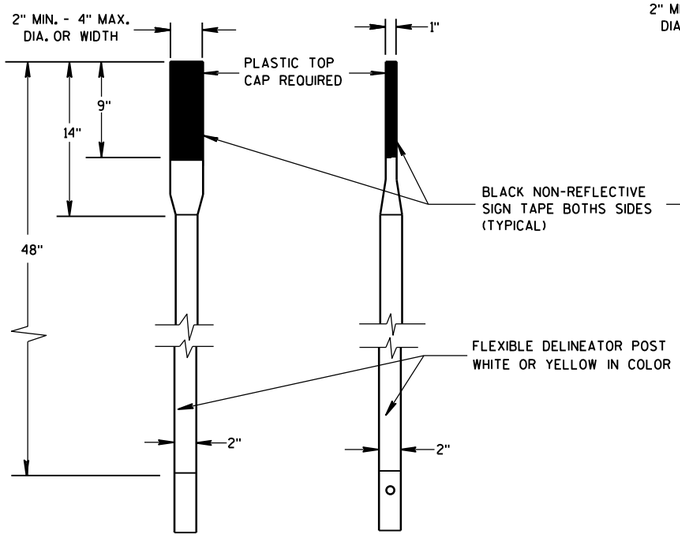
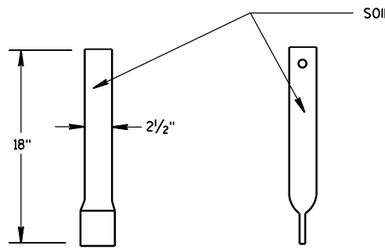
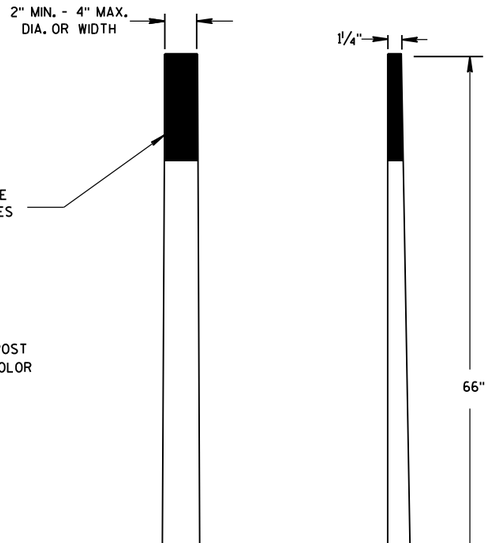
S.D.D. 15 A 3-2a





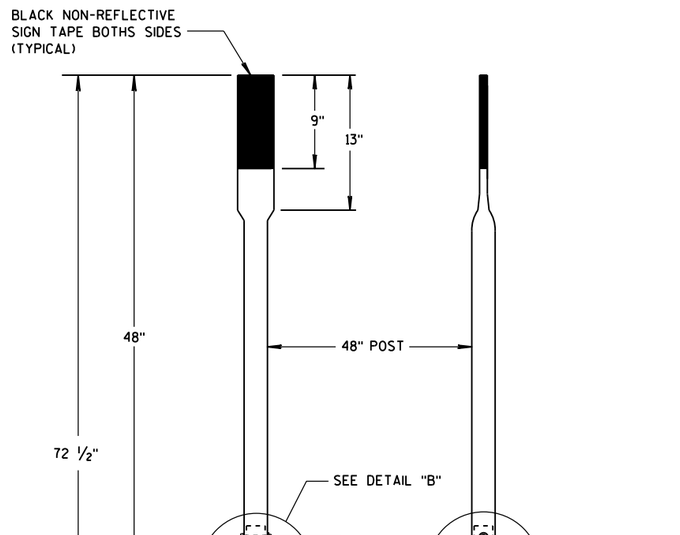
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

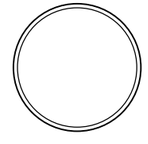
ALTERNATE 2



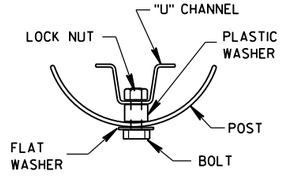
FRONT VIEW SIDE VIEW

ALTERNATE 3

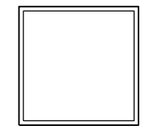
FLEXIBLE MARKER POSTS



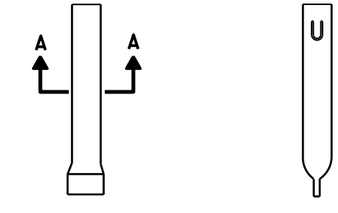
SECTION A-A



SECTION B-B

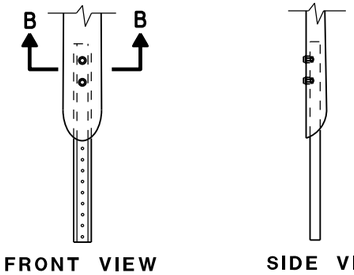


SECTION C-C



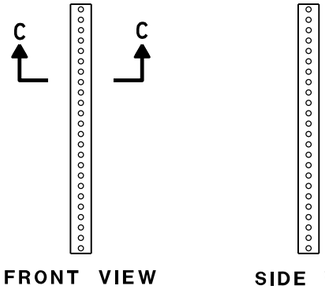
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

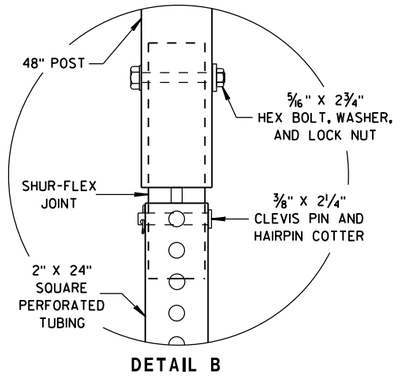
ALTERNATE 2



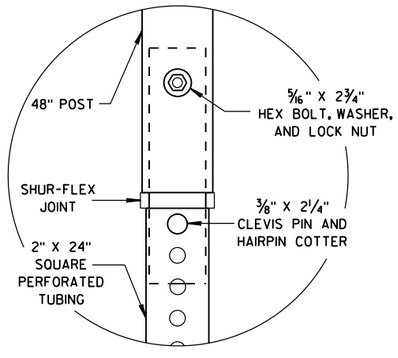
FRONT VIEW SIDE VIEW

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
IGN
FHWA

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.

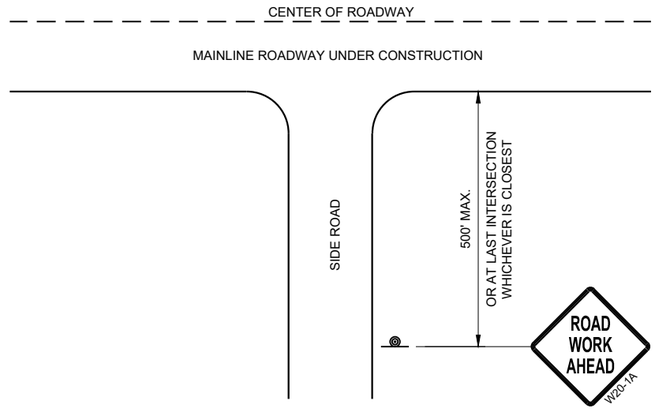
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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.



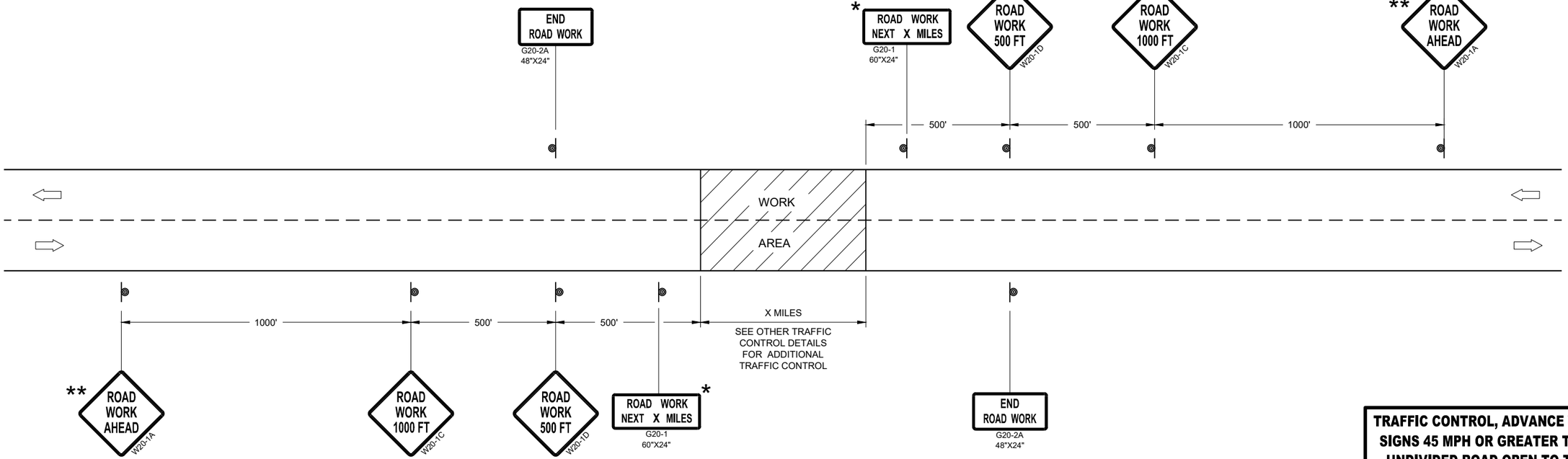
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

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.

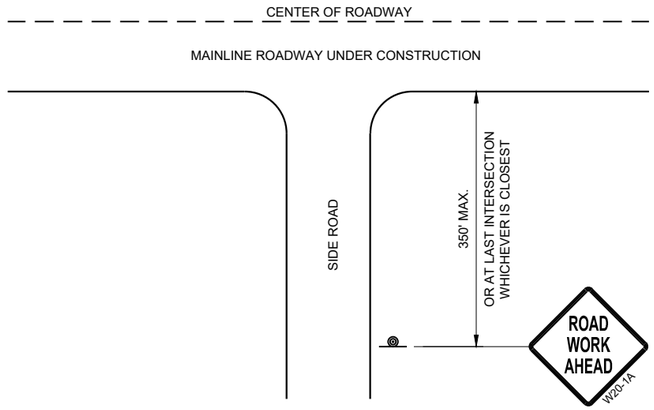
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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.



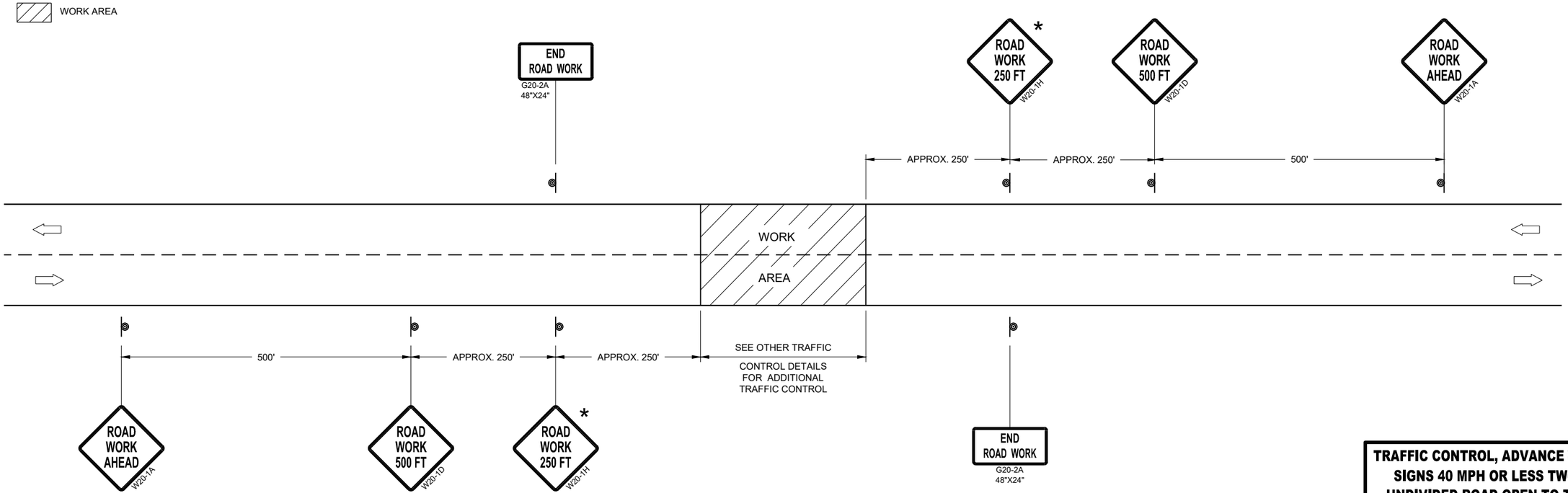
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

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

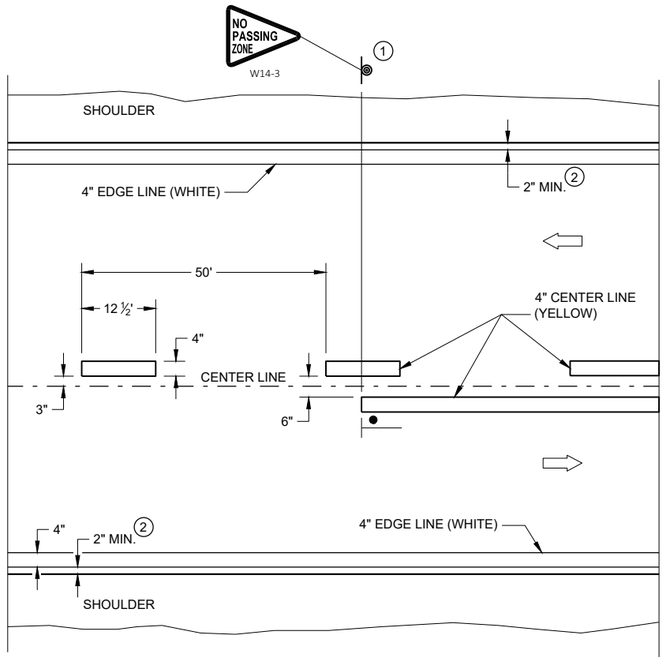
FHWA

6

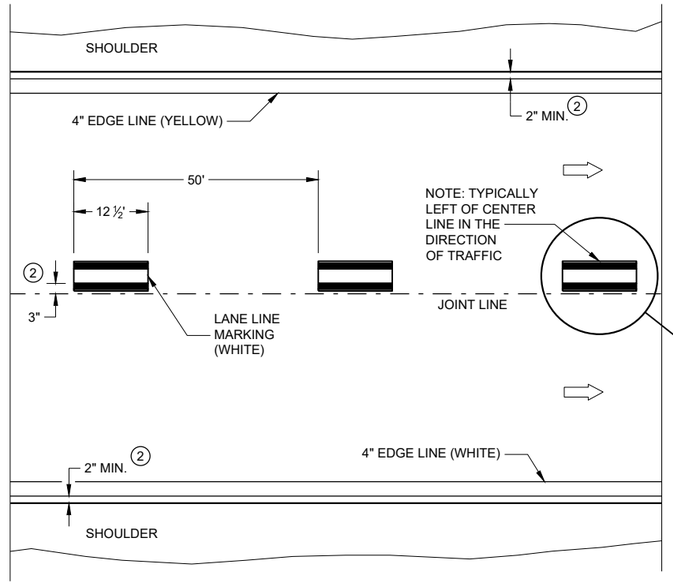
SDD 15C05 - 05

6

SDD 15C05 - 05

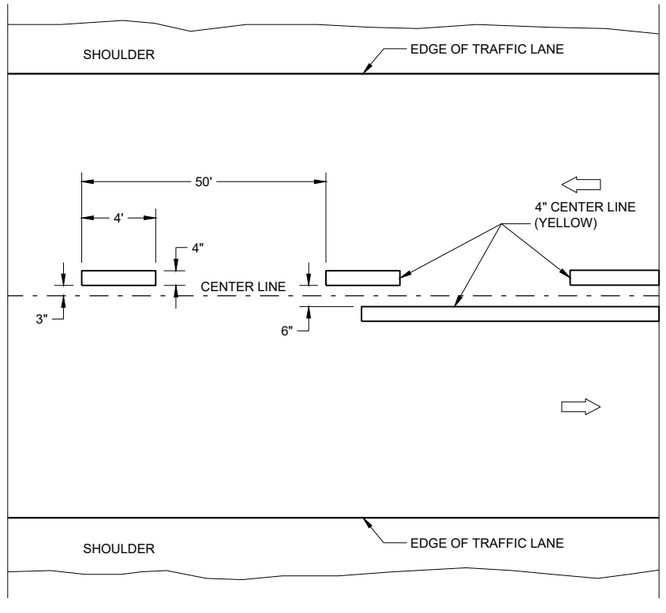


TWO WAY TRAFFIC

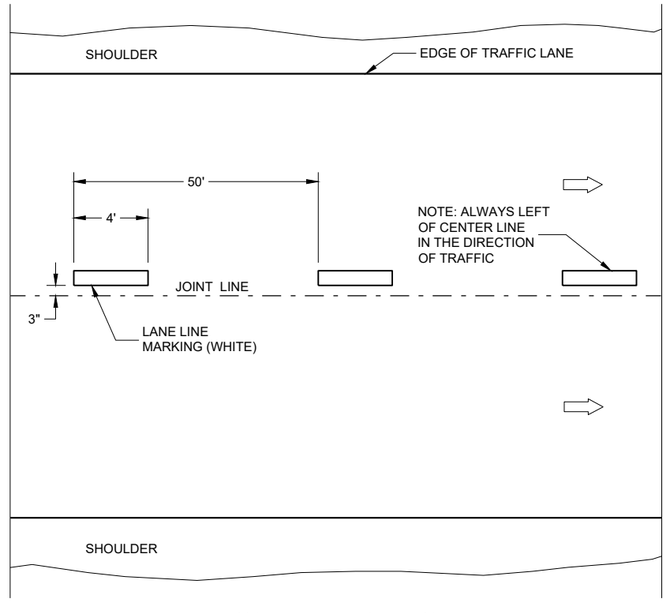


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

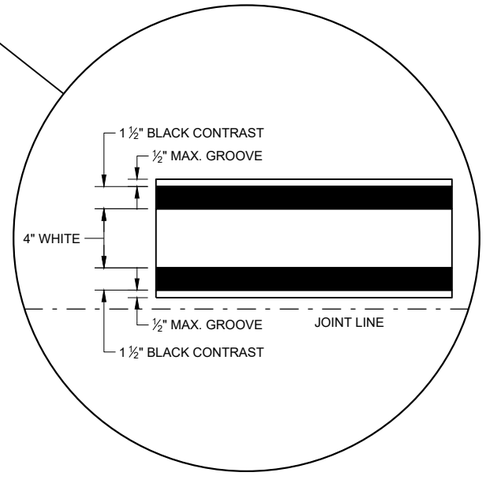
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

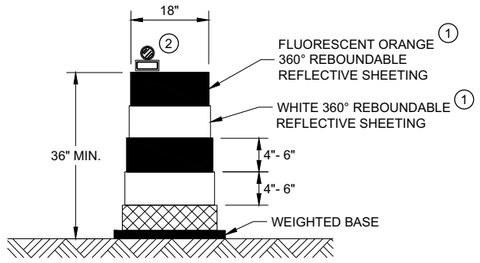
FHWA

SDD 15C08 - 20a

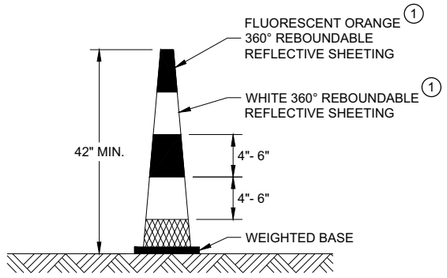
SDD 15C08 - 20a

GENERAL NOTES

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

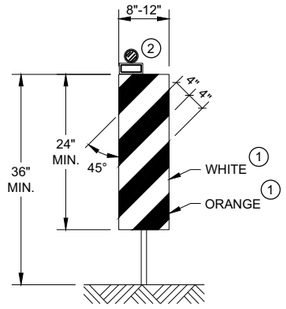


DRUM



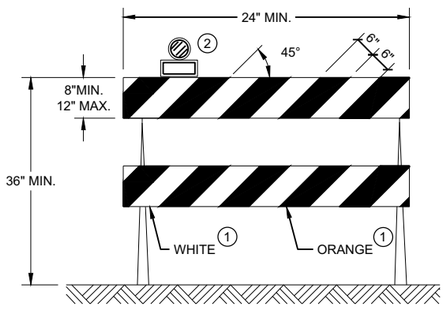
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



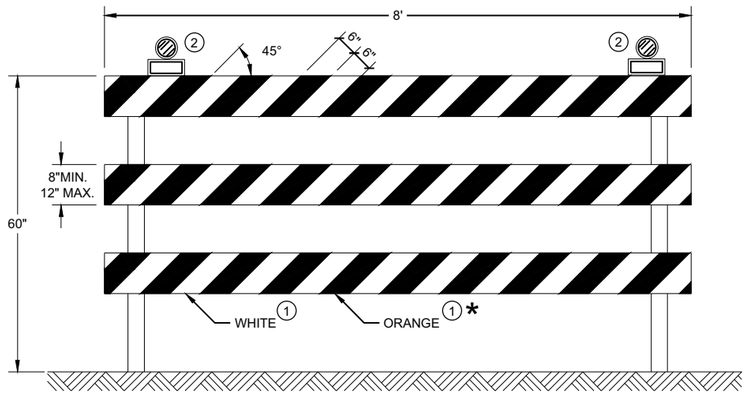
VERTICAL PANEL

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

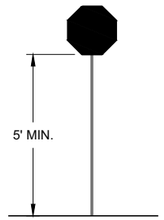
SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

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



STOP/SLOW PADDLE 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.

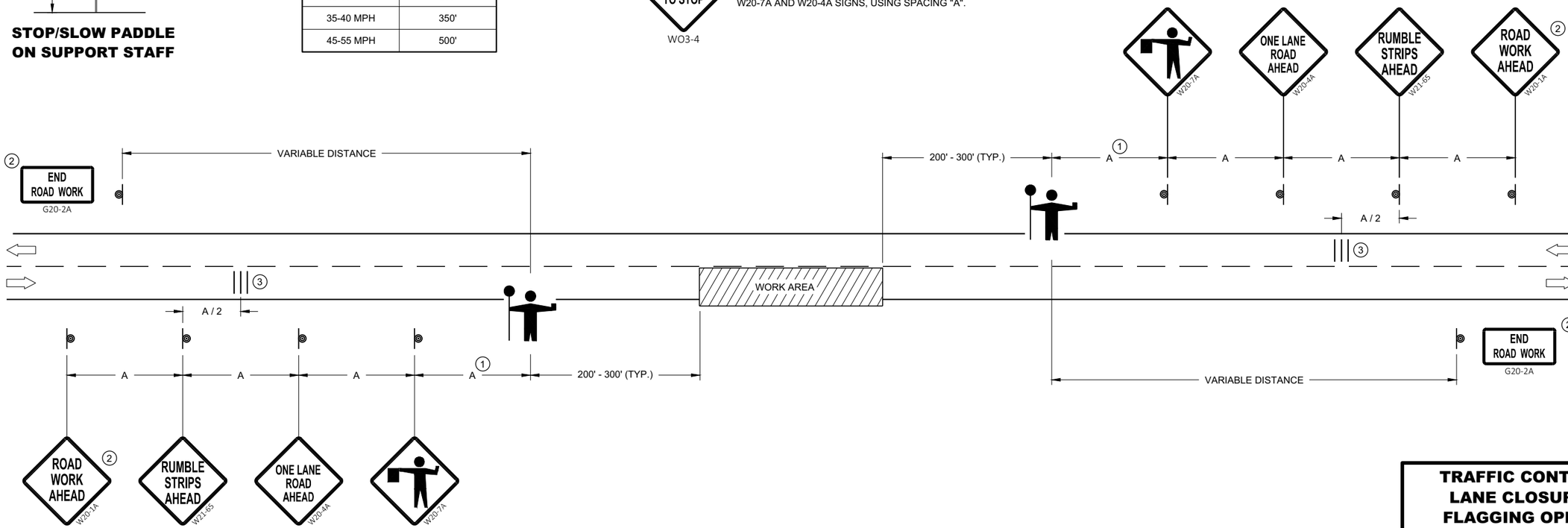
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

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

SDD 15C12 - 07

LEGEND

V1 LEAD VEHICLE

V2 MARKING VEHICLE

V3 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

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

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

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

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

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

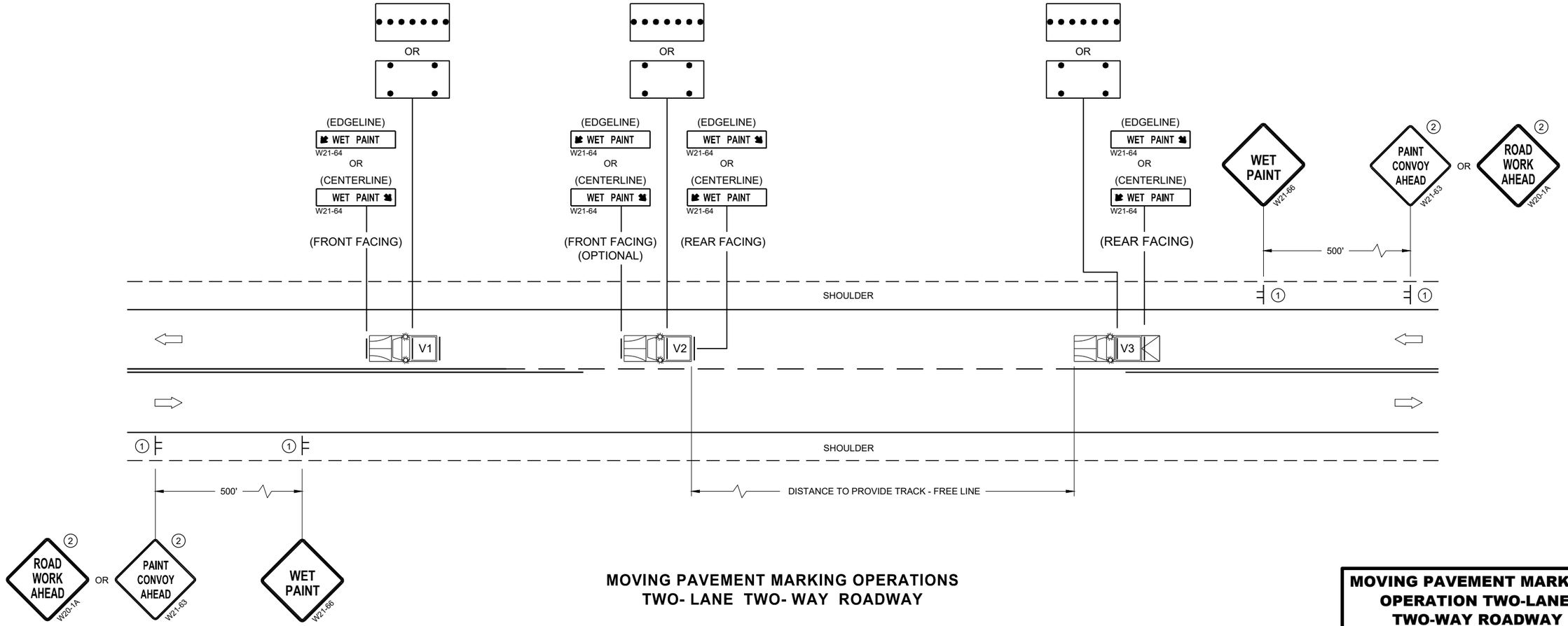
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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

CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING .

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

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



MOVING PAVEMENT MARKING OPERATIONS TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

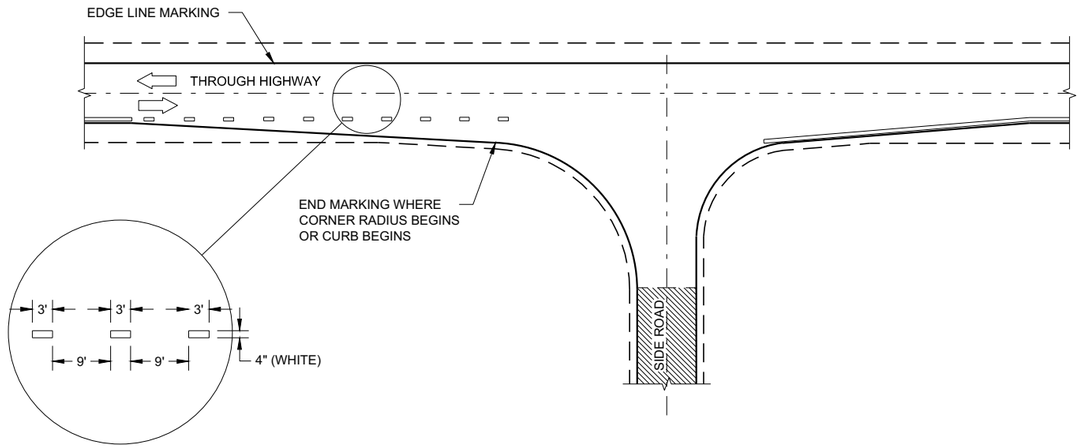
APPROVED
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

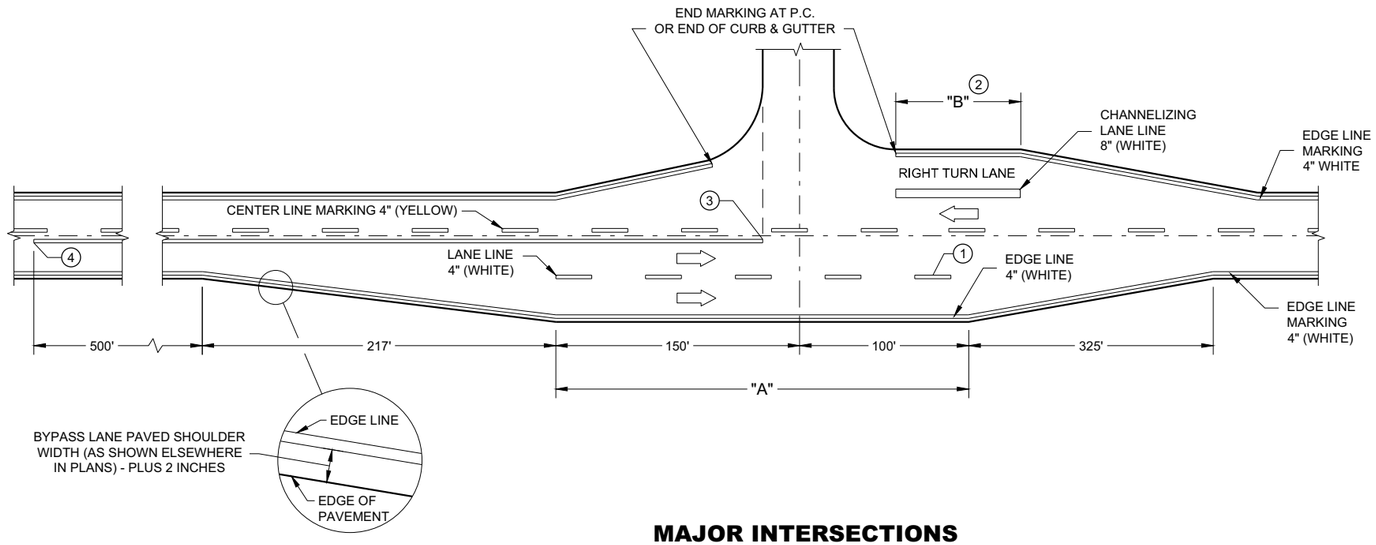
FHWA

SDD 15C19 - 06a

SDD 15C19 - 06a



MINOR INTERSECTION



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

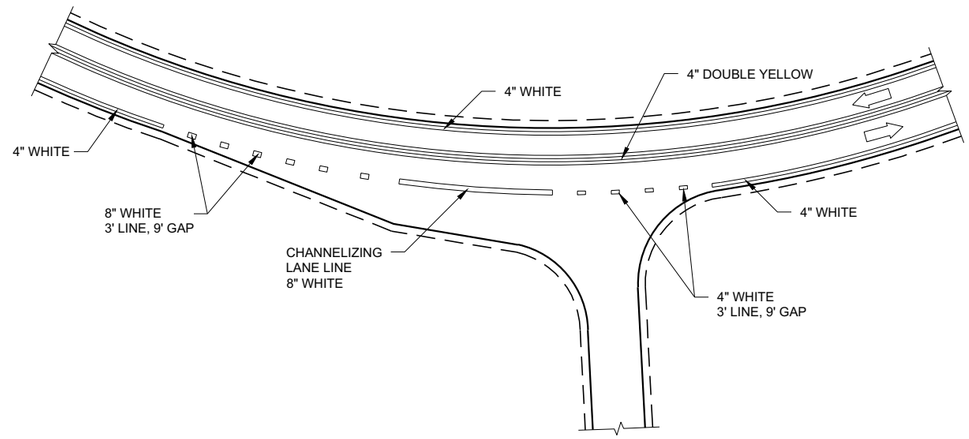
GENERAL NOTES

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

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.

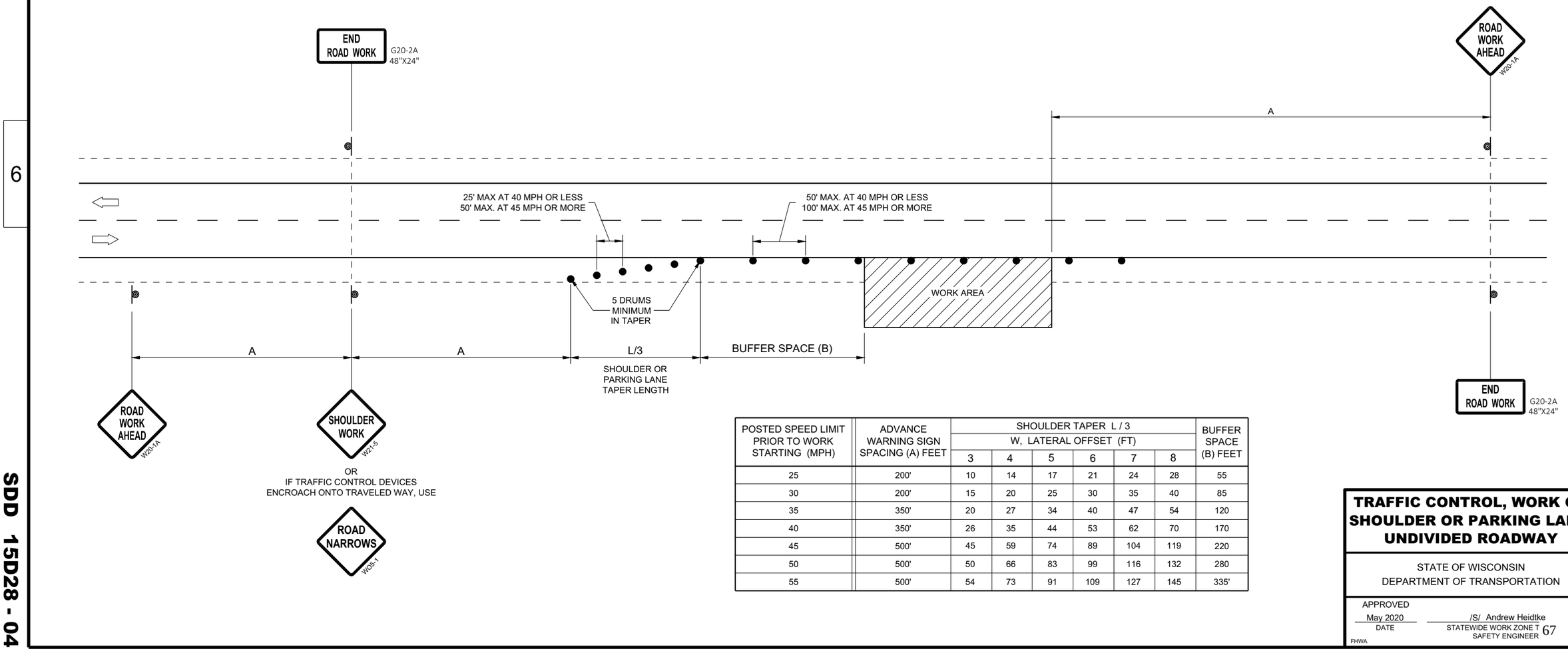
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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.

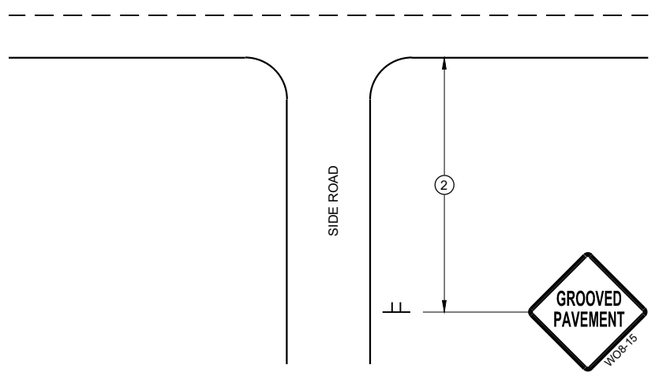
(1) PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

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

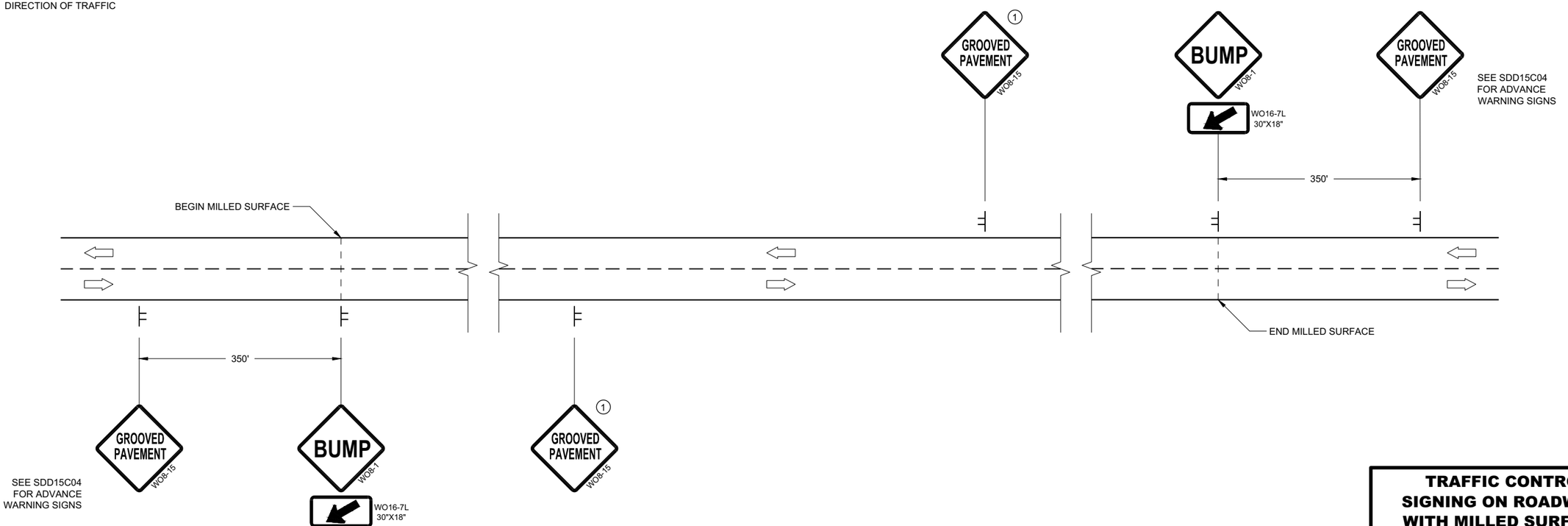
LEGEND

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.

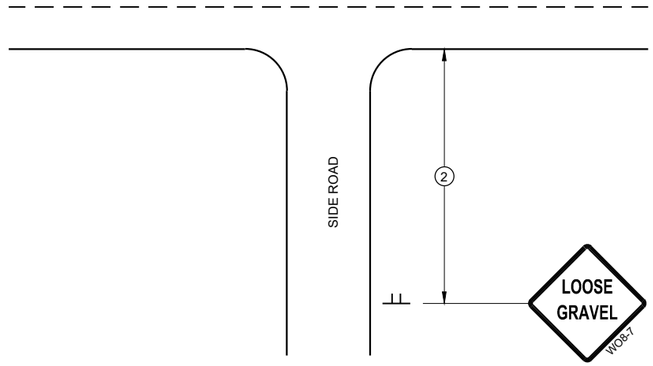
(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

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

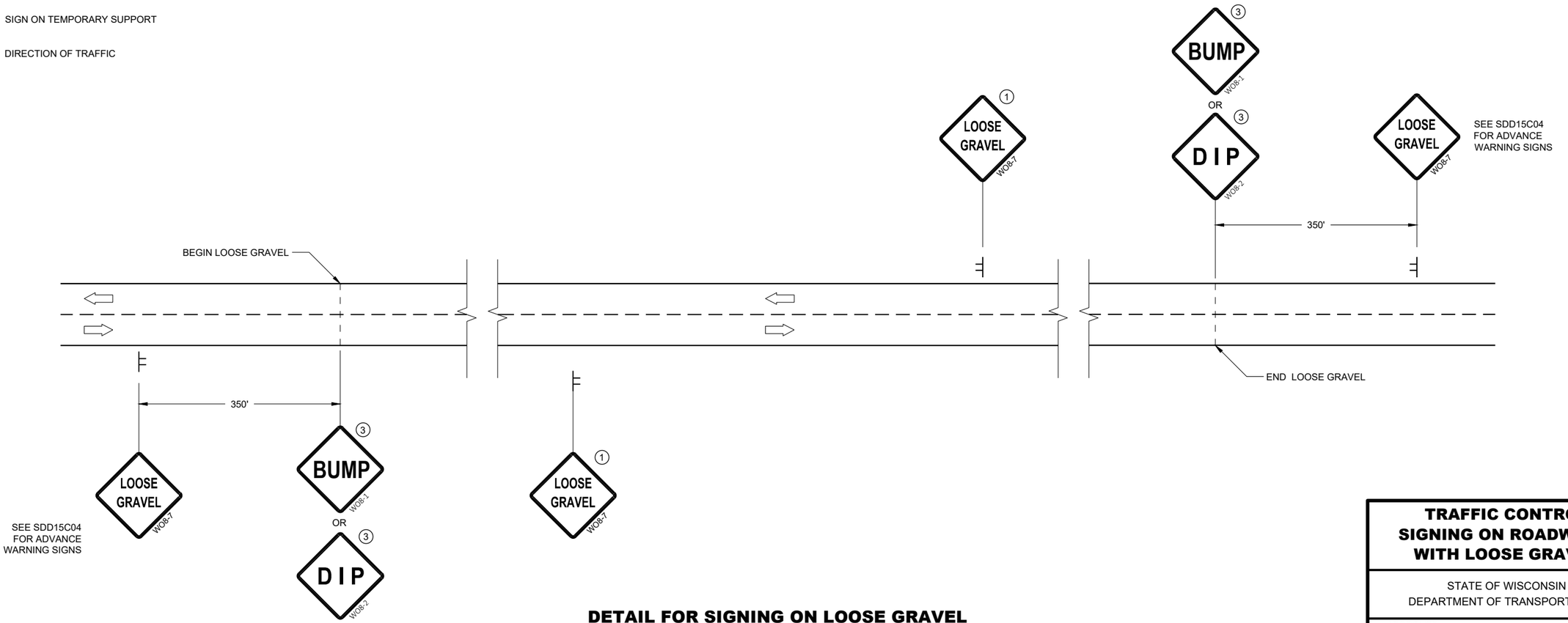
LEGEND

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

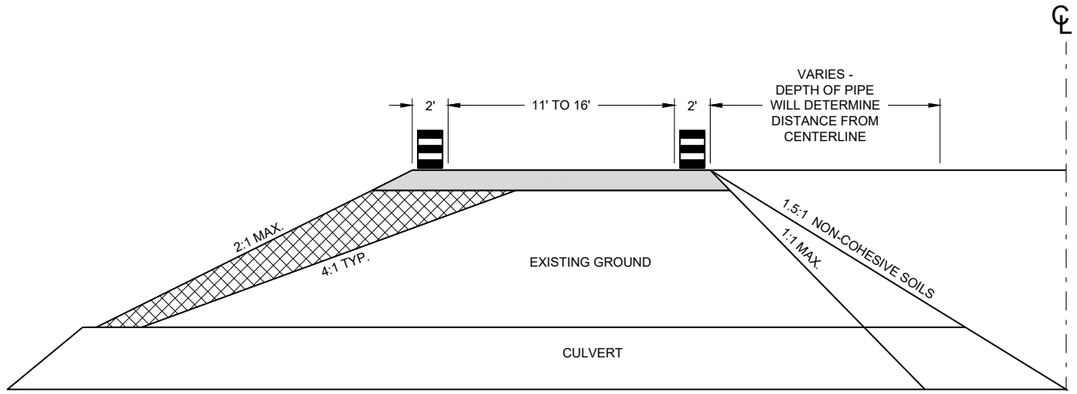
APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15D45 - 03



CROSS SECTION

GENERAL NOTES

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

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

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

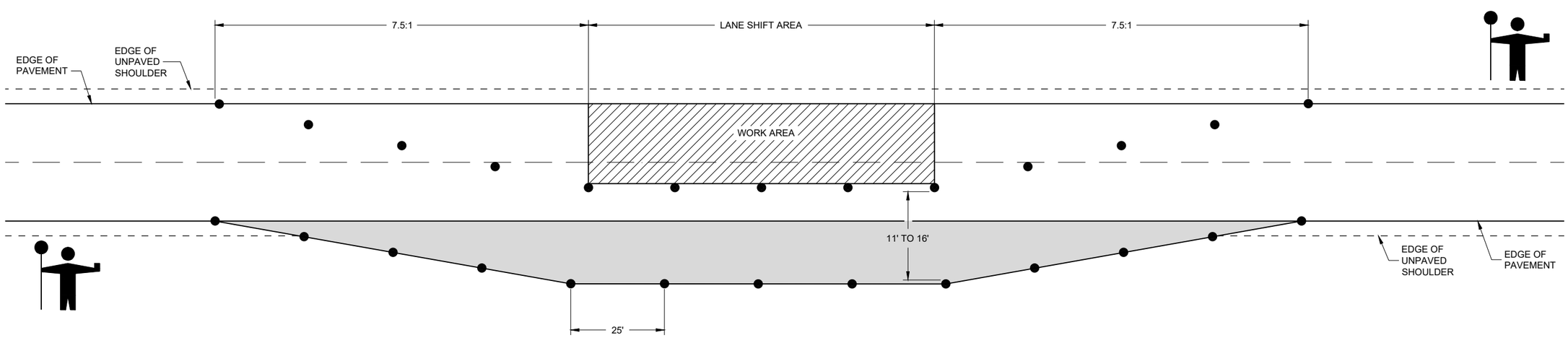
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

LEGEND

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



LANE SHIFT IN FLAGGING OPERATION

TRAFFIC CONTROL, TEMPORARY LANE SHIFT DURING CULVERT WORK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

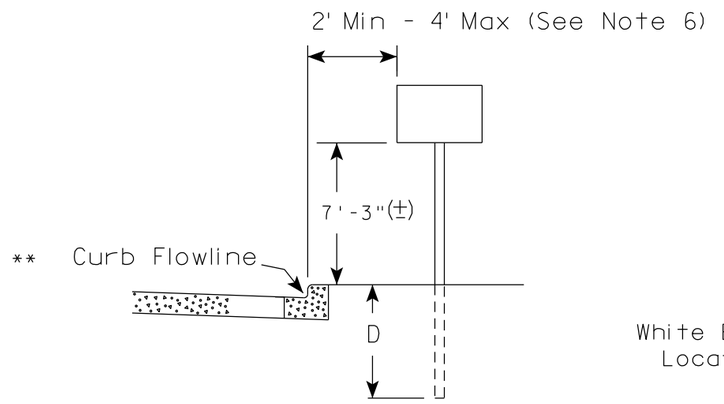
6

SDD 15D48 - 01

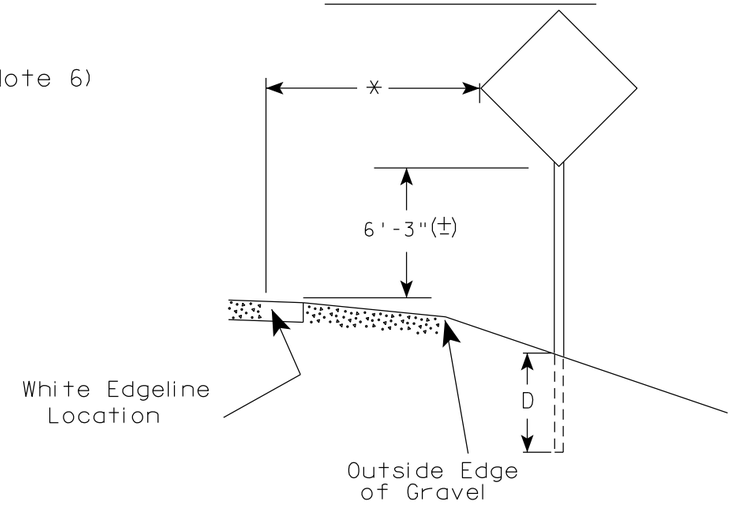
6

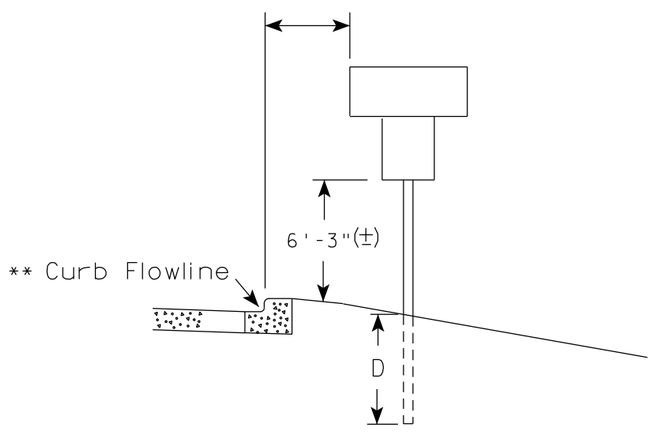
SDD 15D48 - 01

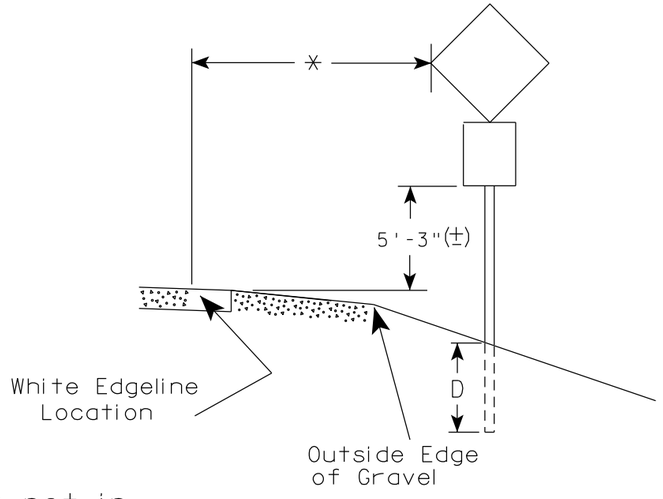
URBAN AREA



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.

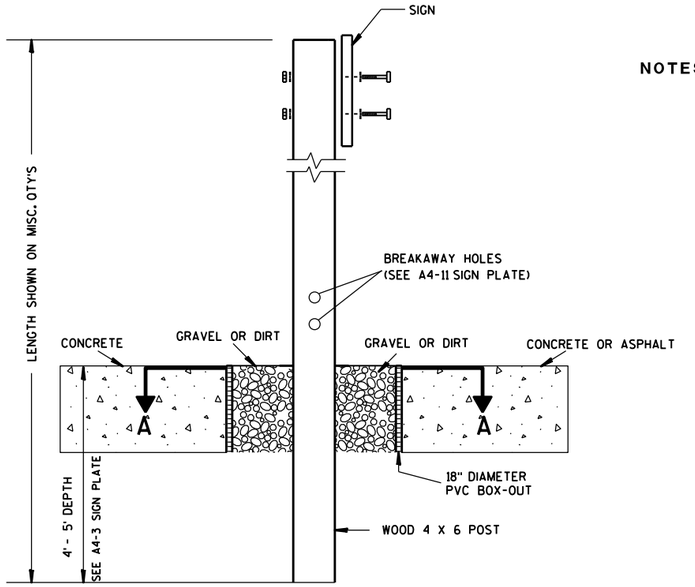
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

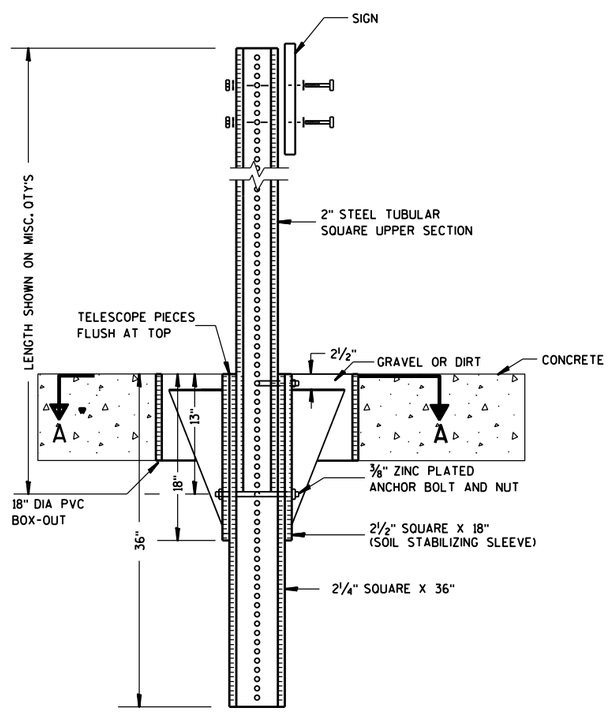
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 71	E



ELEVATION VIEW

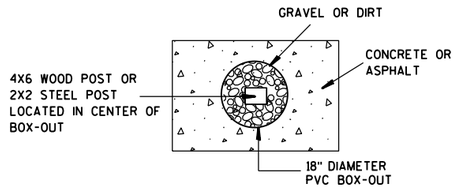
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

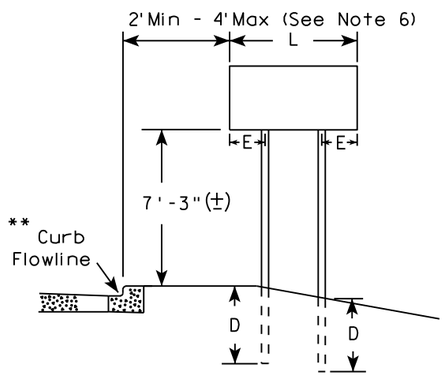
APPROVED Matthew R Rauch
for State Traffic Engineer

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

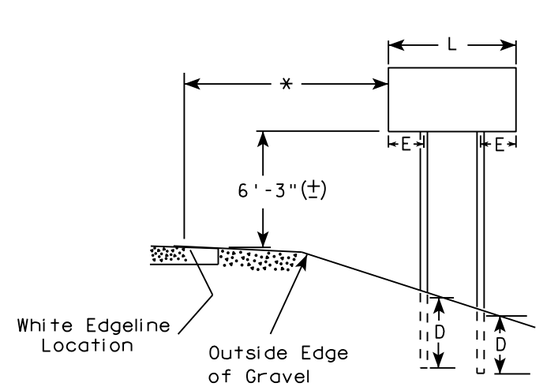
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

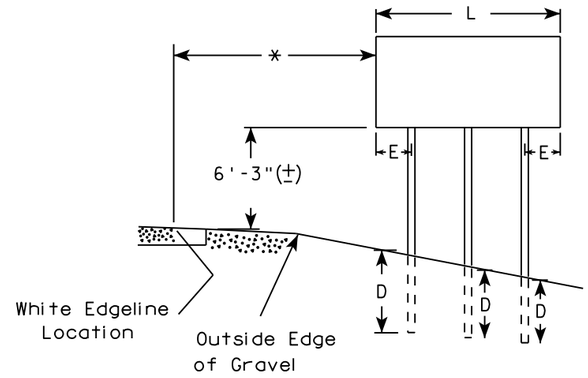
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

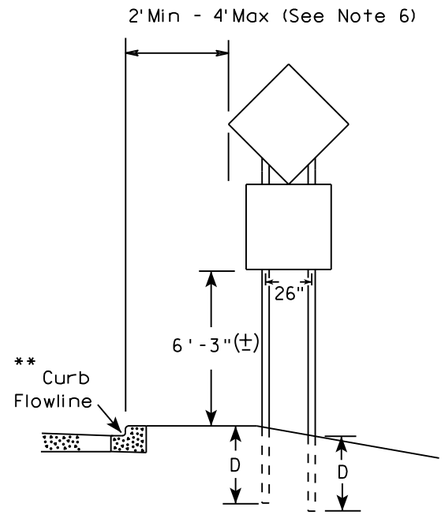
URBAN AREA



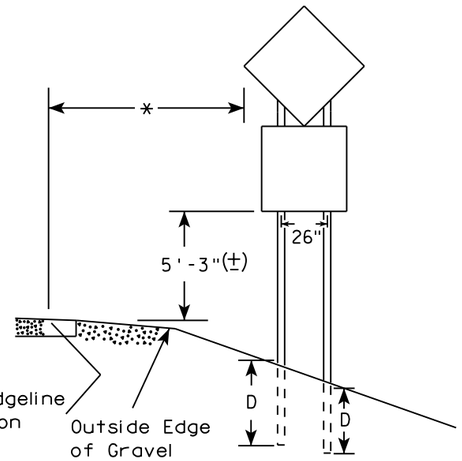
RURAL AREA (See Note 3)







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'

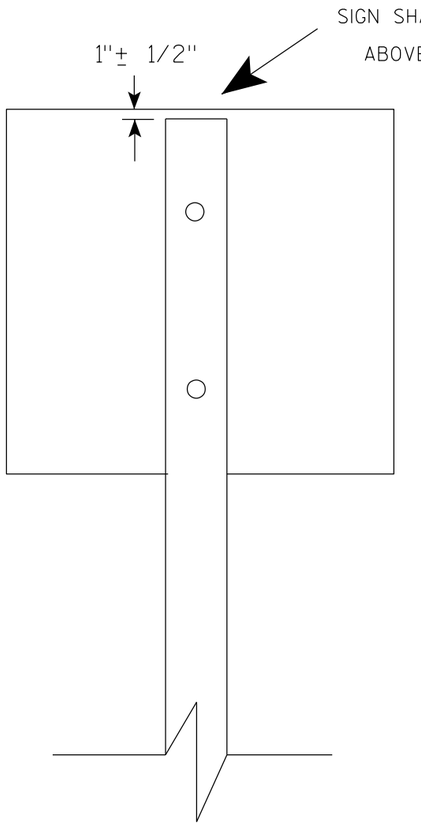
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

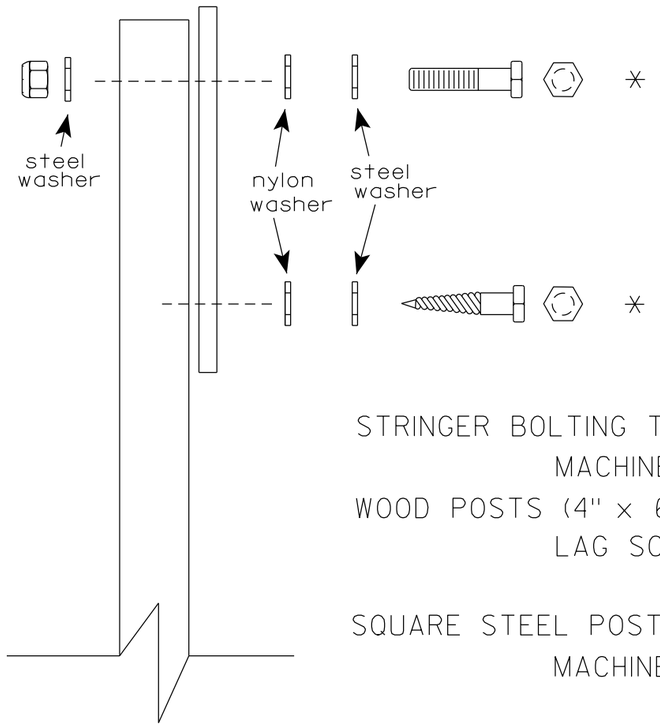
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 73	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

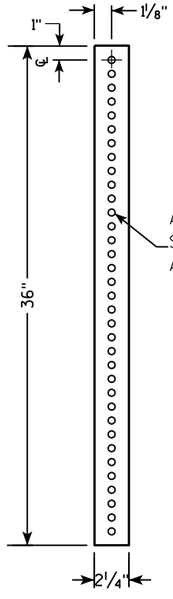
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

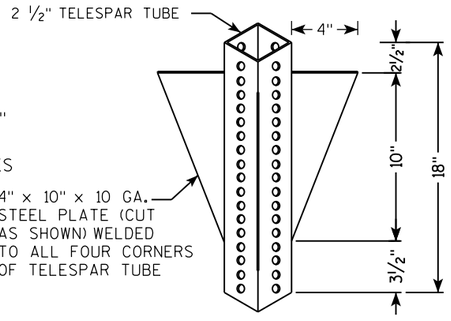
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

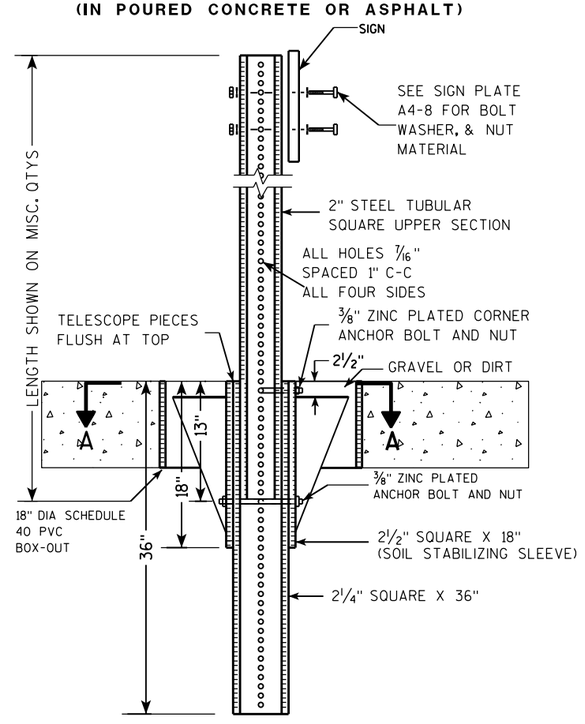
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



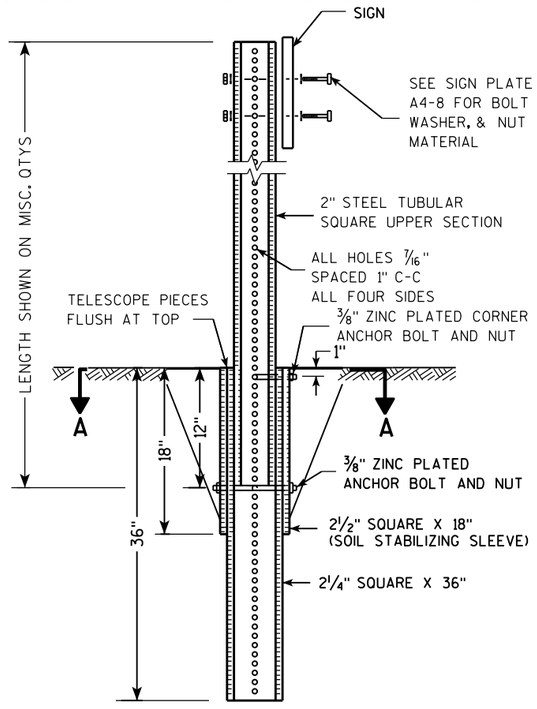
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

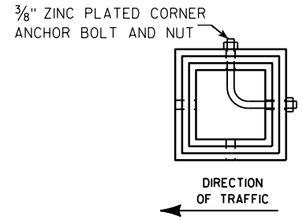


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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

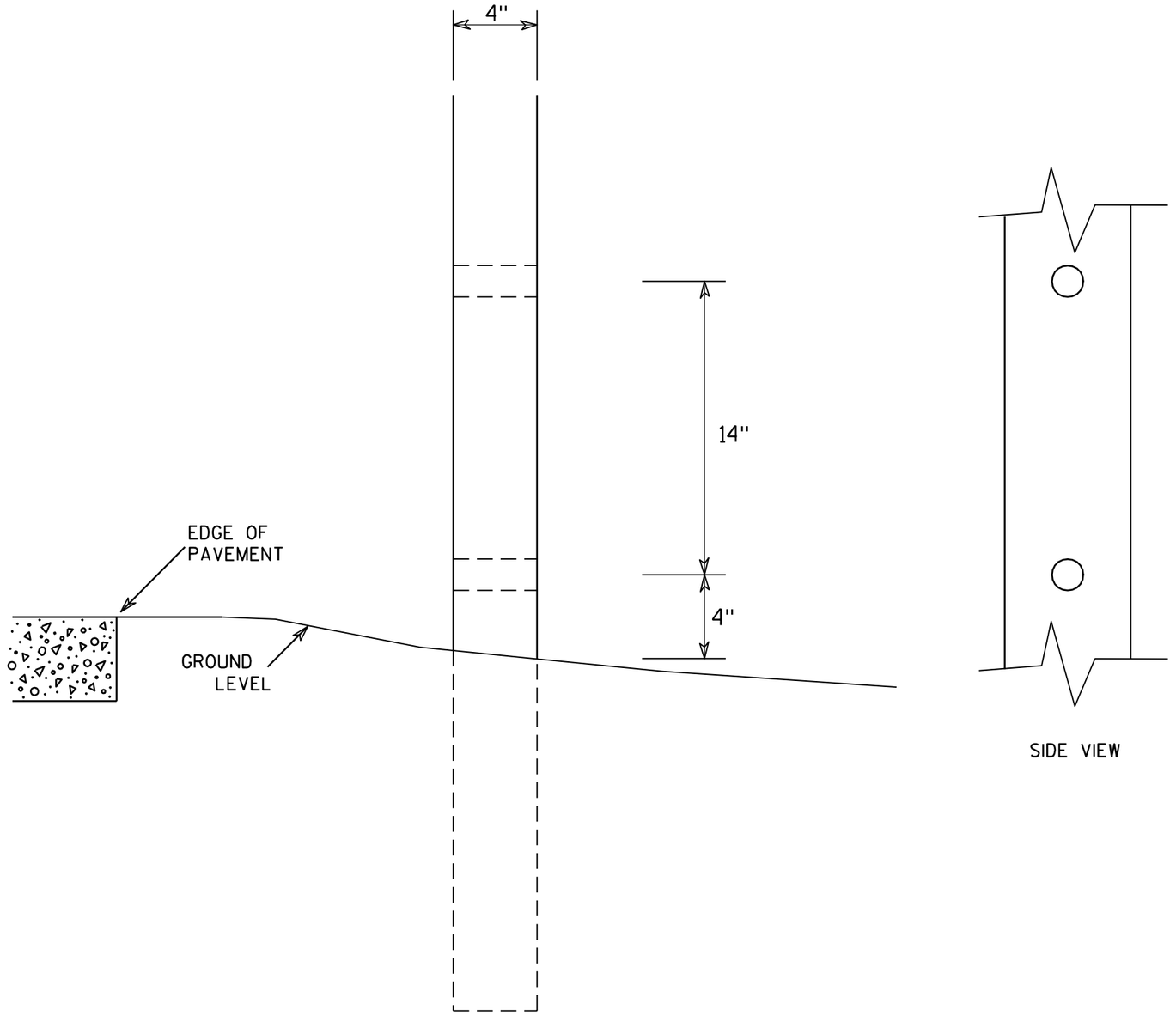
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 75 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

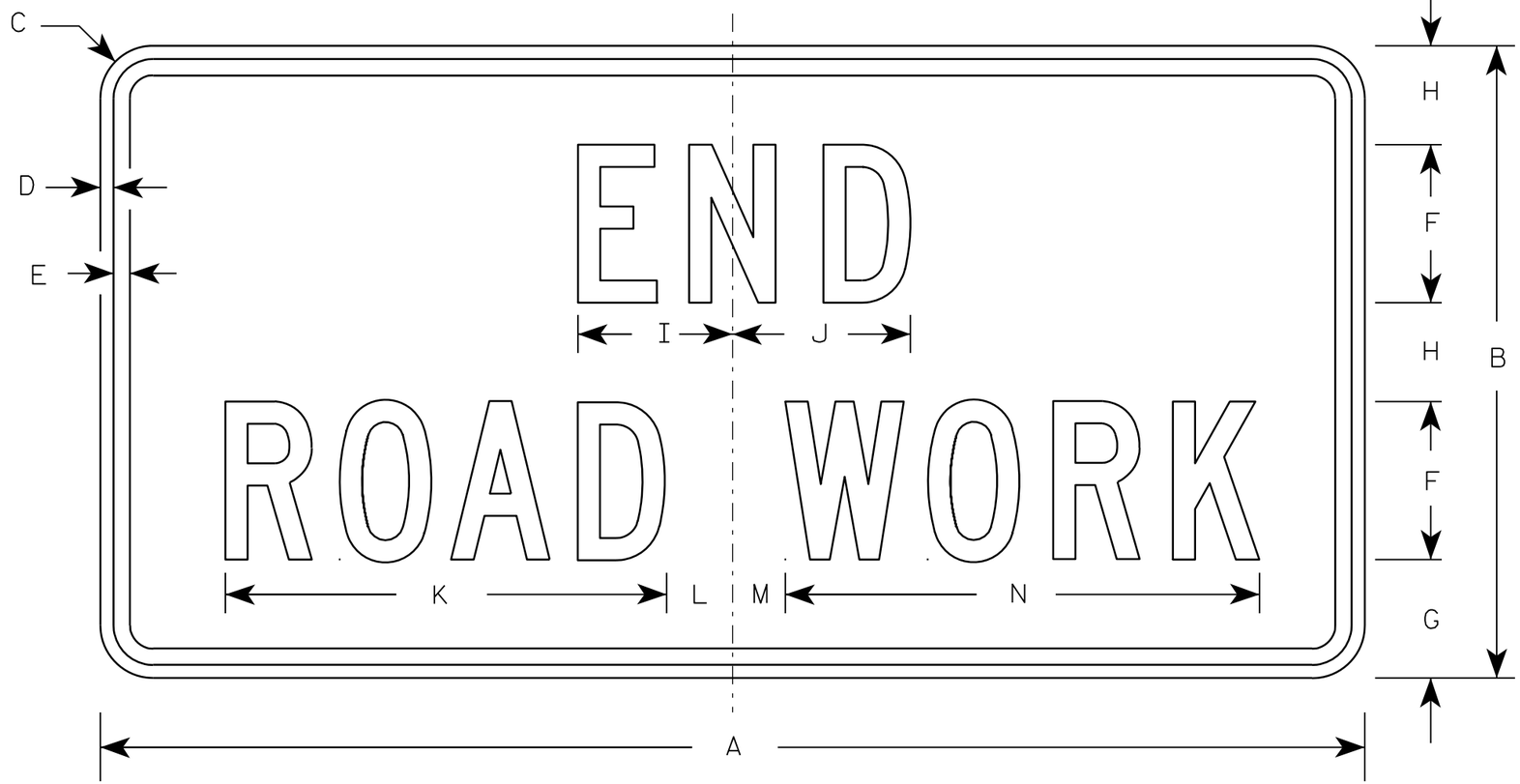
4 X 6 WOOD POST MODIFICATIONS

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: 76	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: 77	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\G202A.DGN PLOT DATE : 30-SEP-2009 09:31 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 5.561773:1.000000

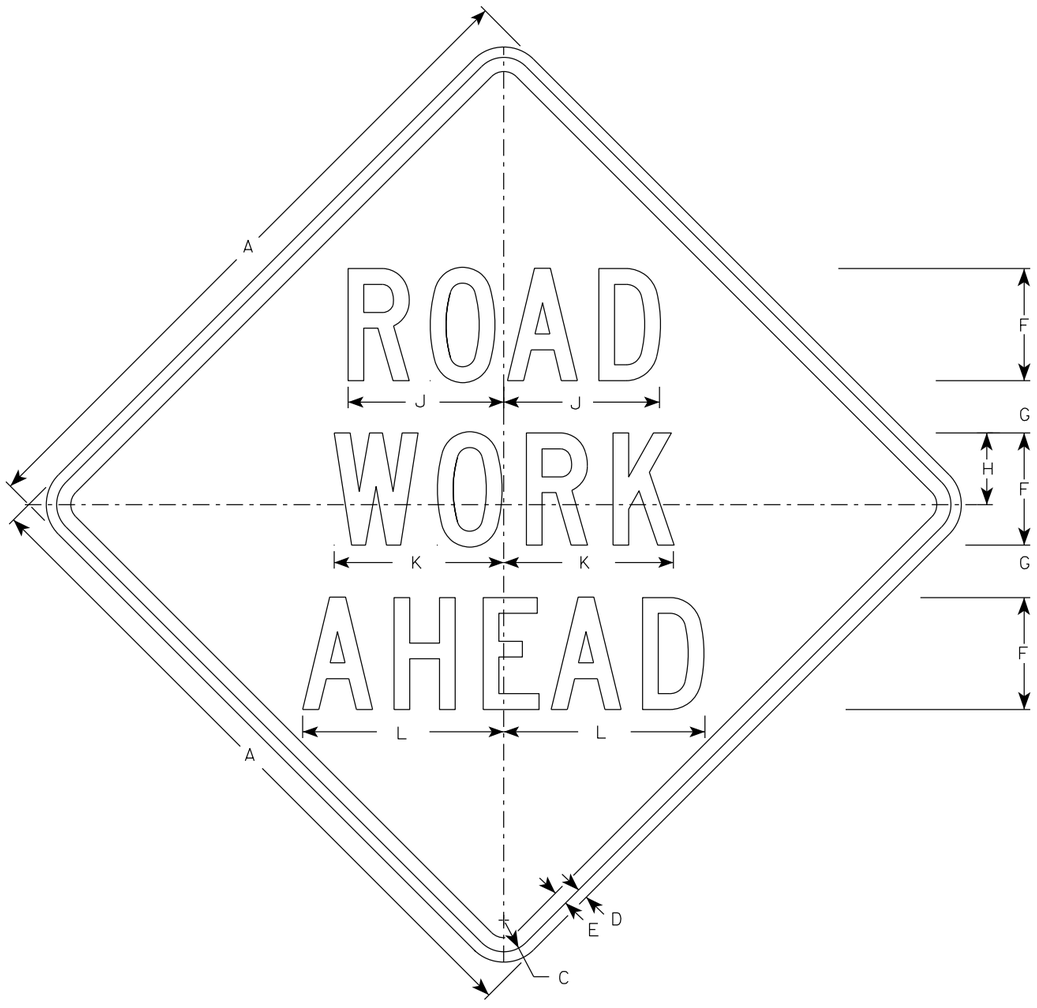
WISDOT/CADDS SHEET 42

7

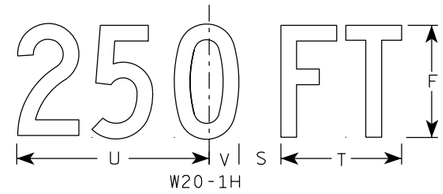
7

NOTES

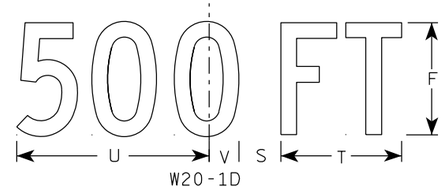
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1A

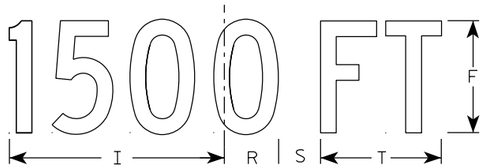


W20-1H

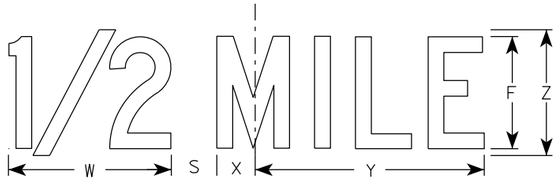


W20-1D

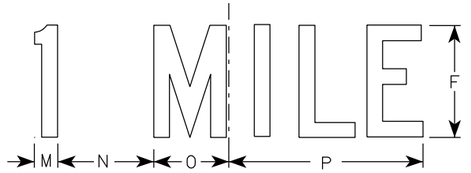
W20-1C



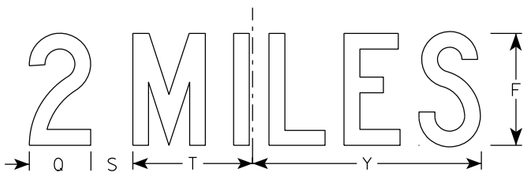
W20-1B



W20-1G



W20-1F



W20-1E

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

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

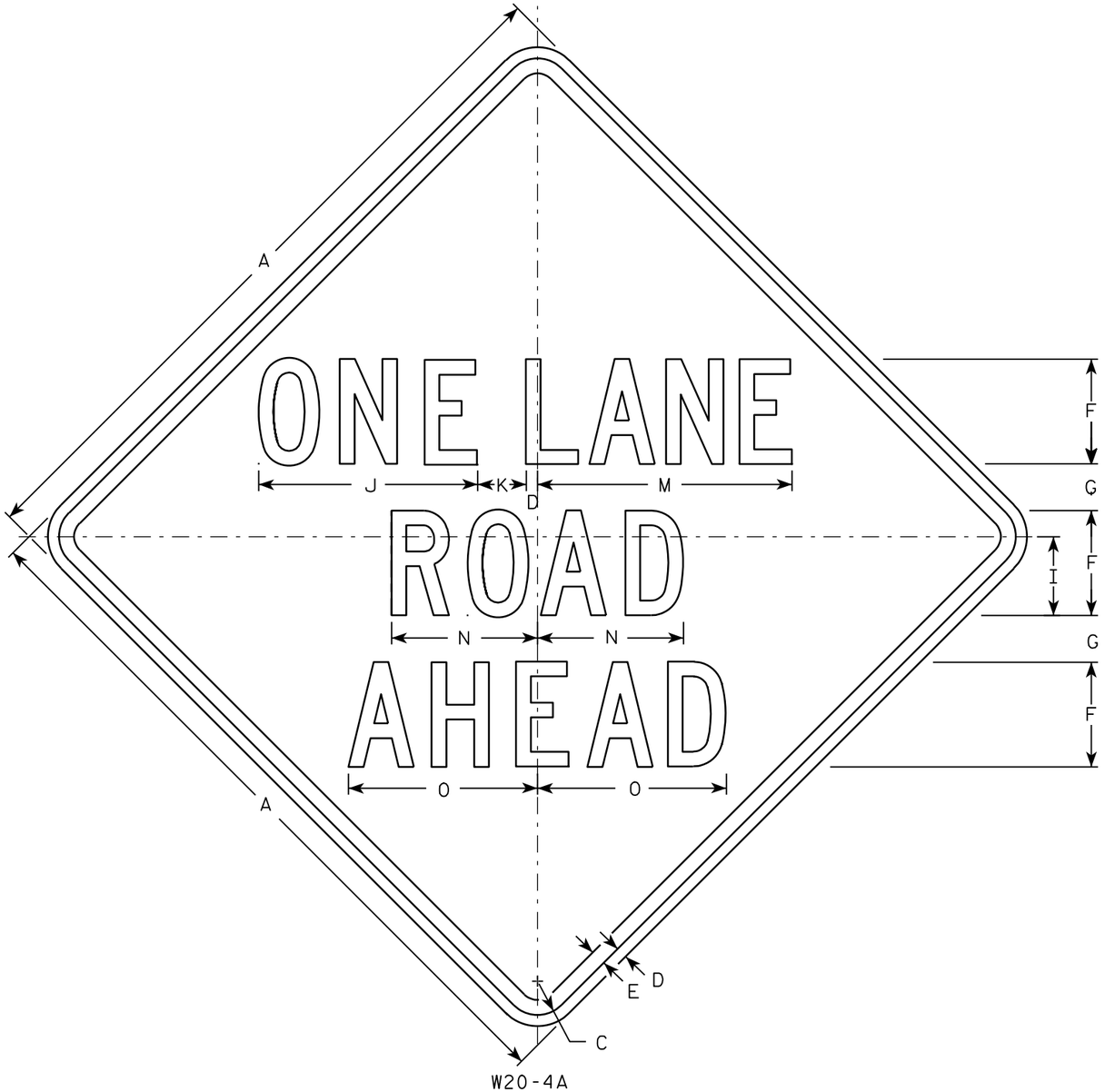
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

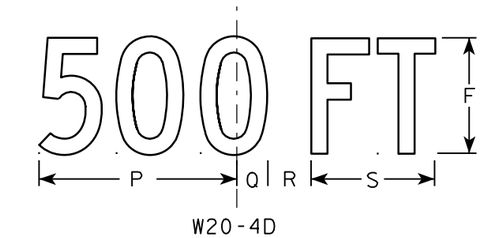
DATE 3/25/2020 PLATE NO. W20-1.11

PROJECT NO:

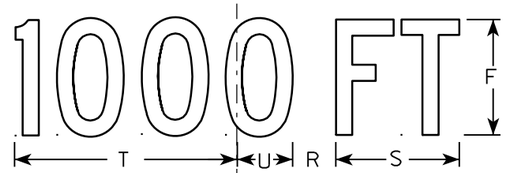
SHEET NO: 78 E



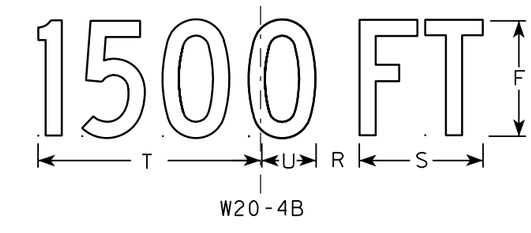
W20-4A



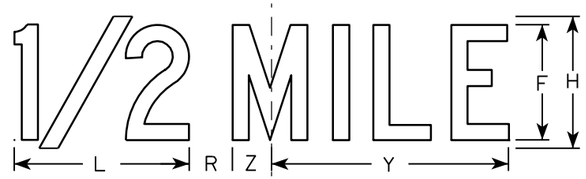
W20-4D



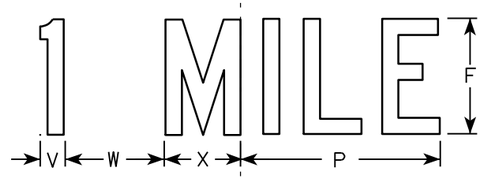
W20-4C



W20-4B



W20-4G



W20-4F

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.

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 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-4A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

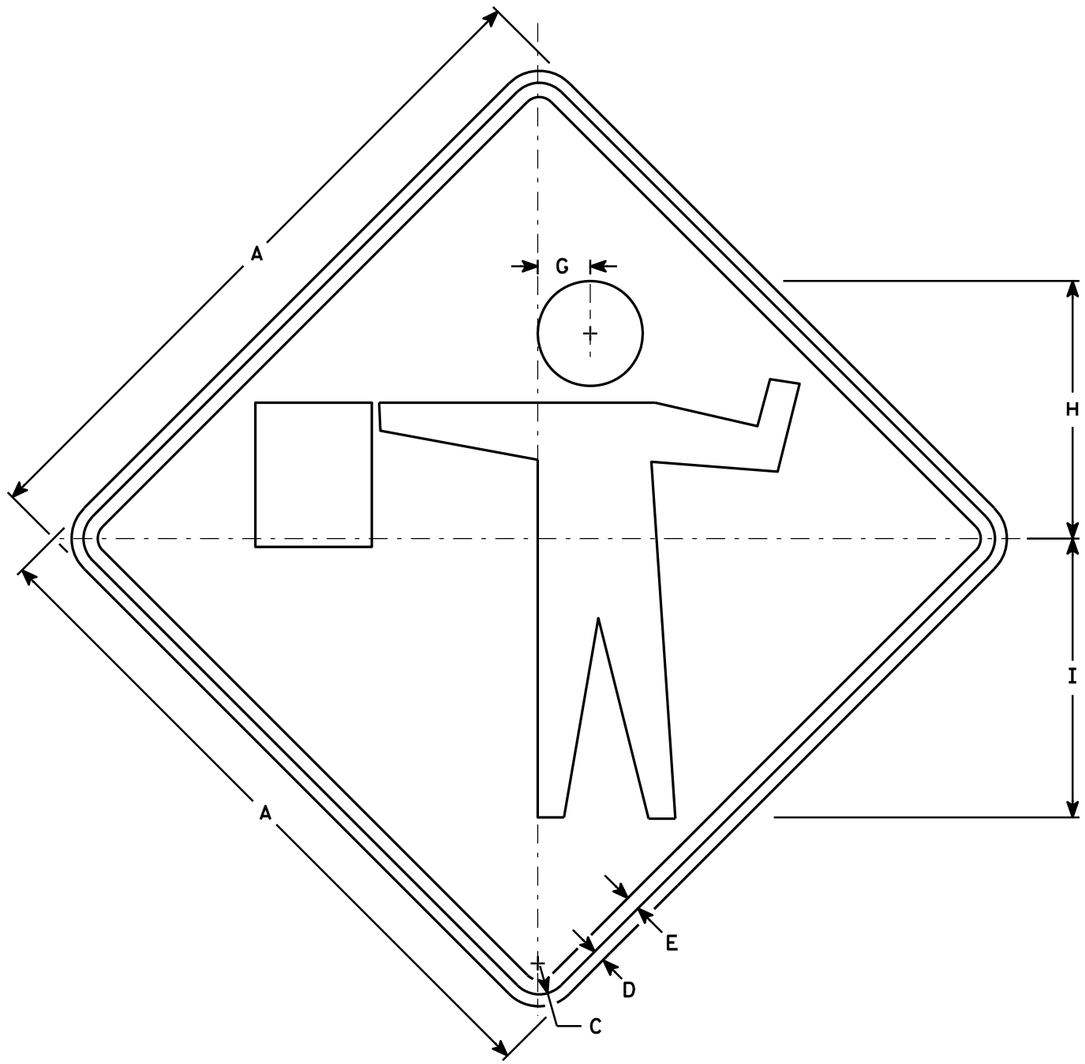
DATE 3/18/11 PLATE NO. W20-4.9

PROJECT NO:

SHEET NO: 79 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W204.DGN PLOT DATE : 18-MAR-2011 12:11 PLOT BY : mscj9h

WISDOT/CADDS SHEET 42



W20-7A

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. 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	36		1 5/8	5/8	3/4		2 3/4	13 1/2	14 5/8																		9.00
2S	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
2M	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
3	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
4	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
5	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00

STANDARD SIGN
W20-7A

WISCONSIN DEPT OF TRANSPORTATION

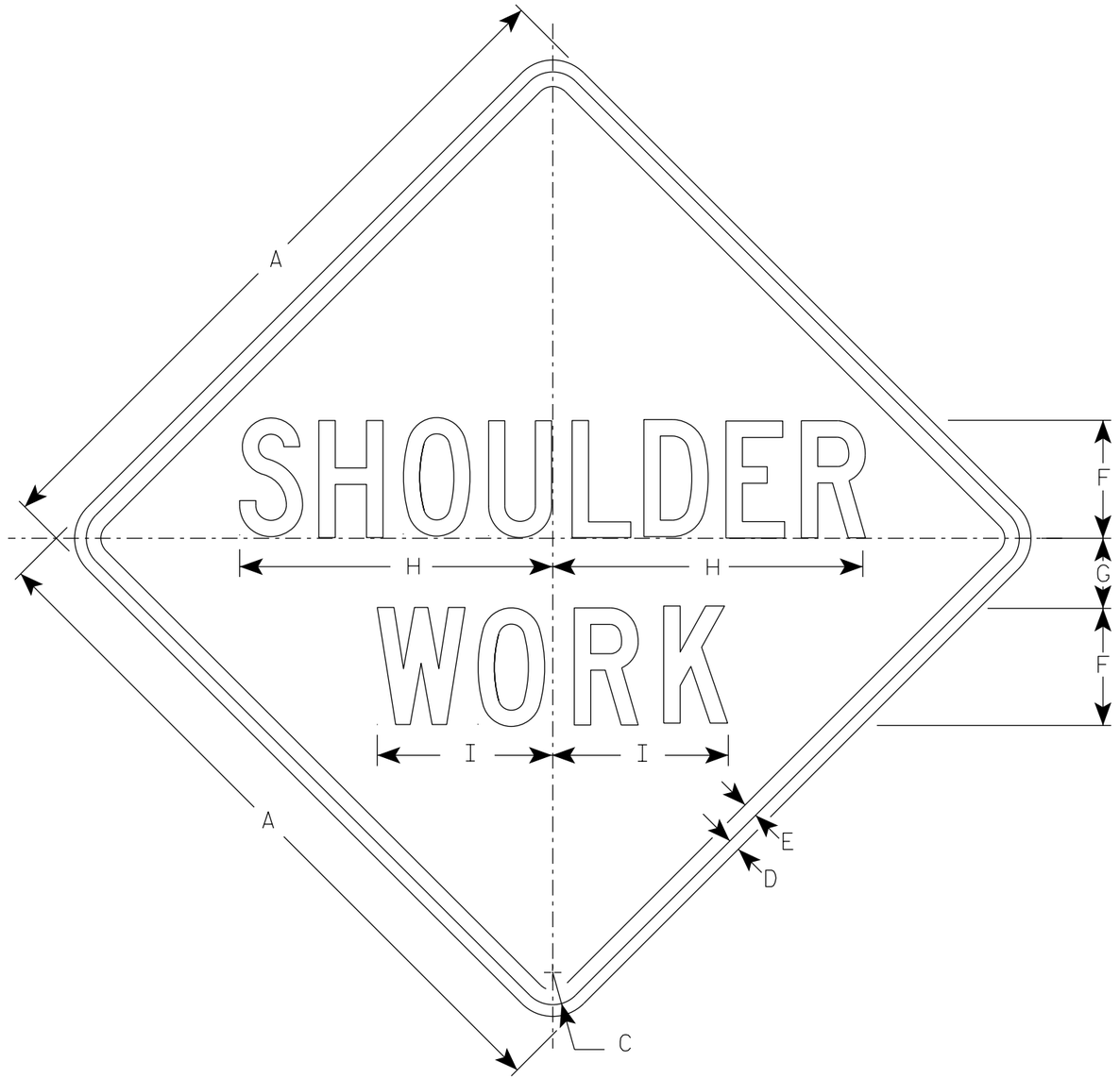
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-7A.5

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 80 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W207A.DGN PLOT DATE : 18-MAR-2011 13:14 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 7.945391:1.000000 WISDOT/CADDS SHEET 42



W21-5

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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	3 1/2	16	9																		9.0
2S	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
2M	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
3	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
4	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
5	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0

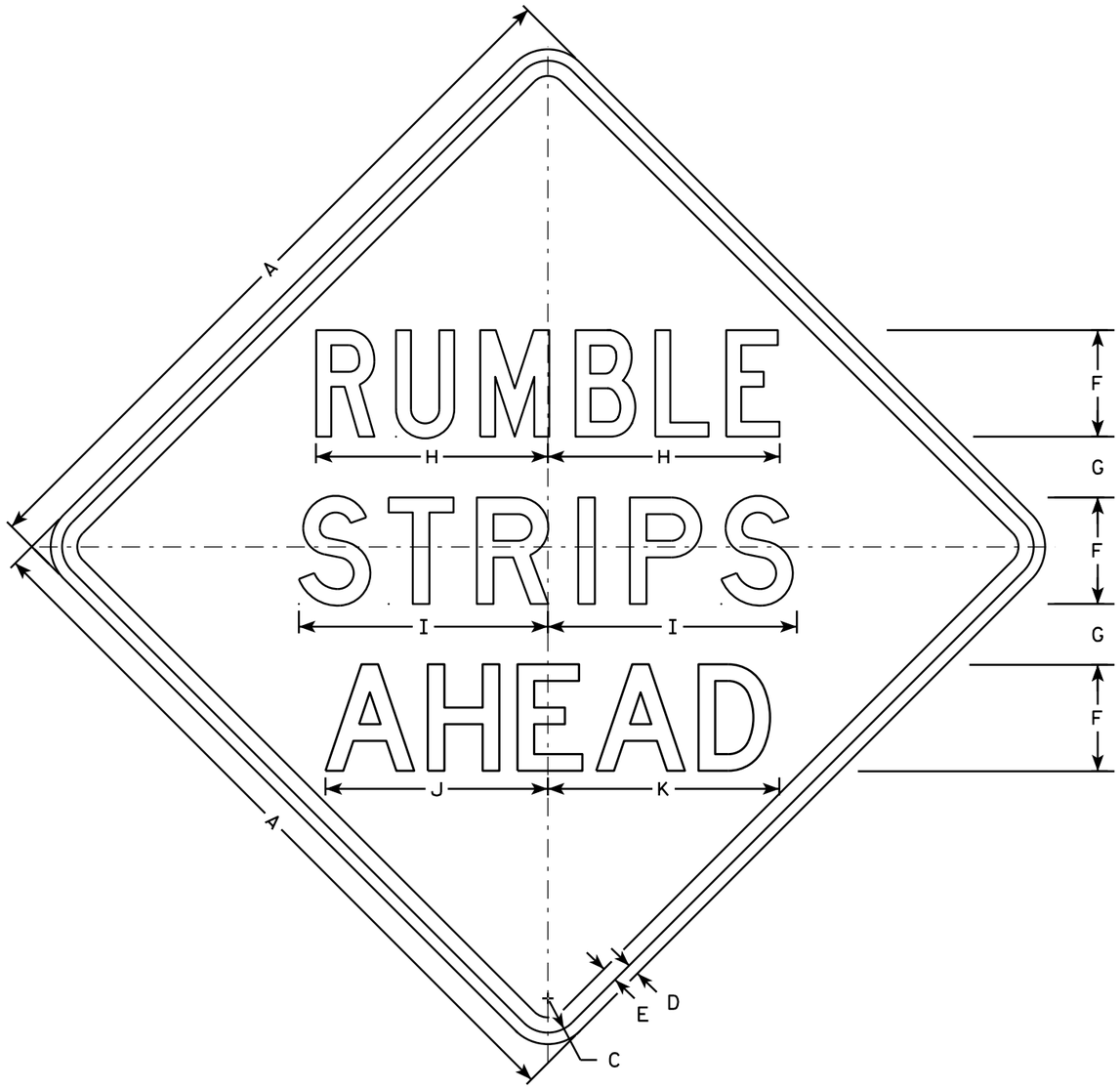
STANDARD SIGN
W21-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/30/2020 PLATE NO. W21-5.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 81 E



W21-65

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series C
   Lines 2 and 3 are Series D

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

STANDARD SIGN

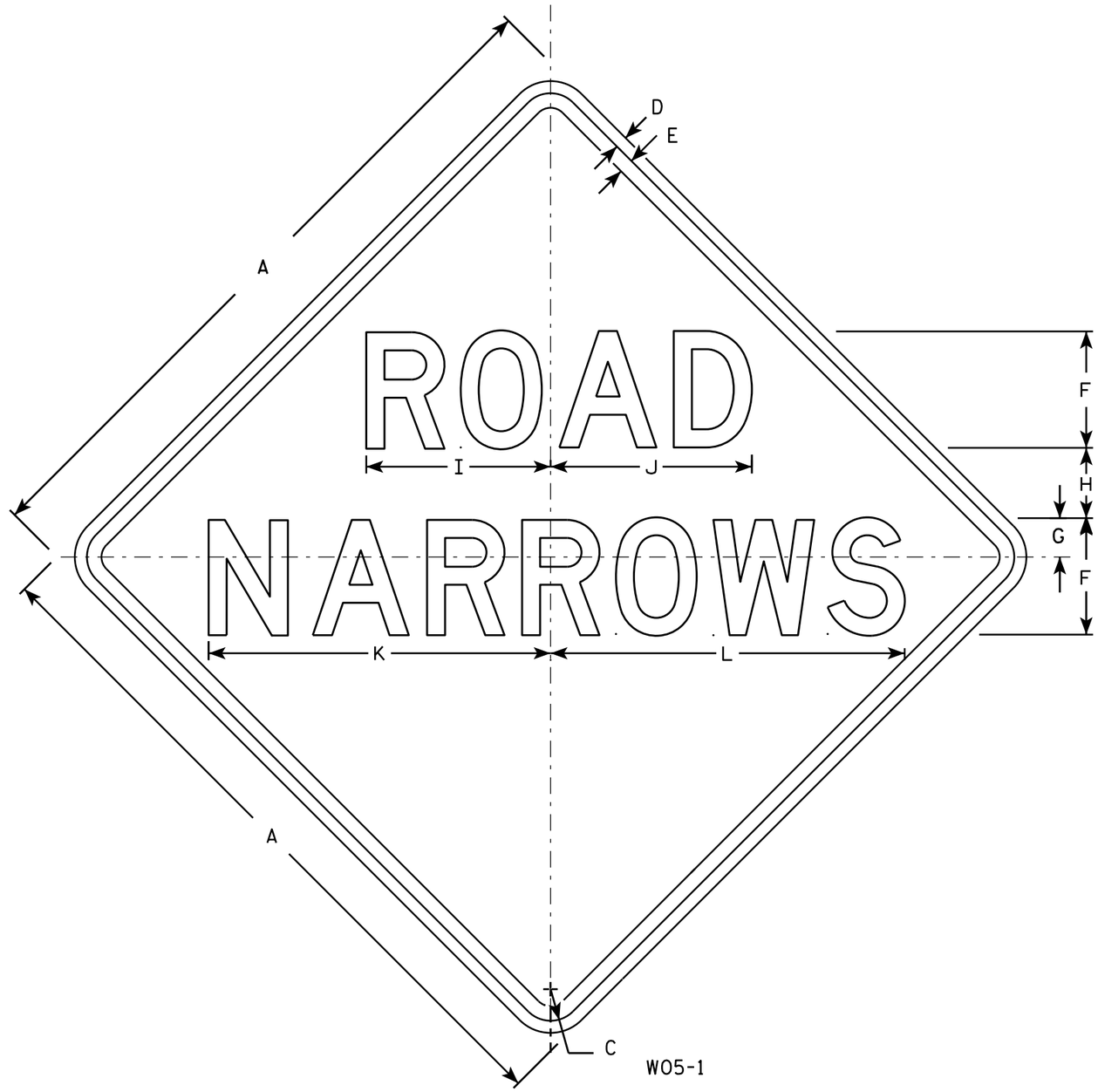
W21-65

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/28/14 PLATE W21-65.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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 - D
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	36		1 5/8	5/8	3/4	6	2	3 1/2	9 1/2	10 3/8	17 5/8	18 1/4															9.0
2S	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
2M	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
3	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
4	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
5	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0

STANDARD SIGN
W05-1

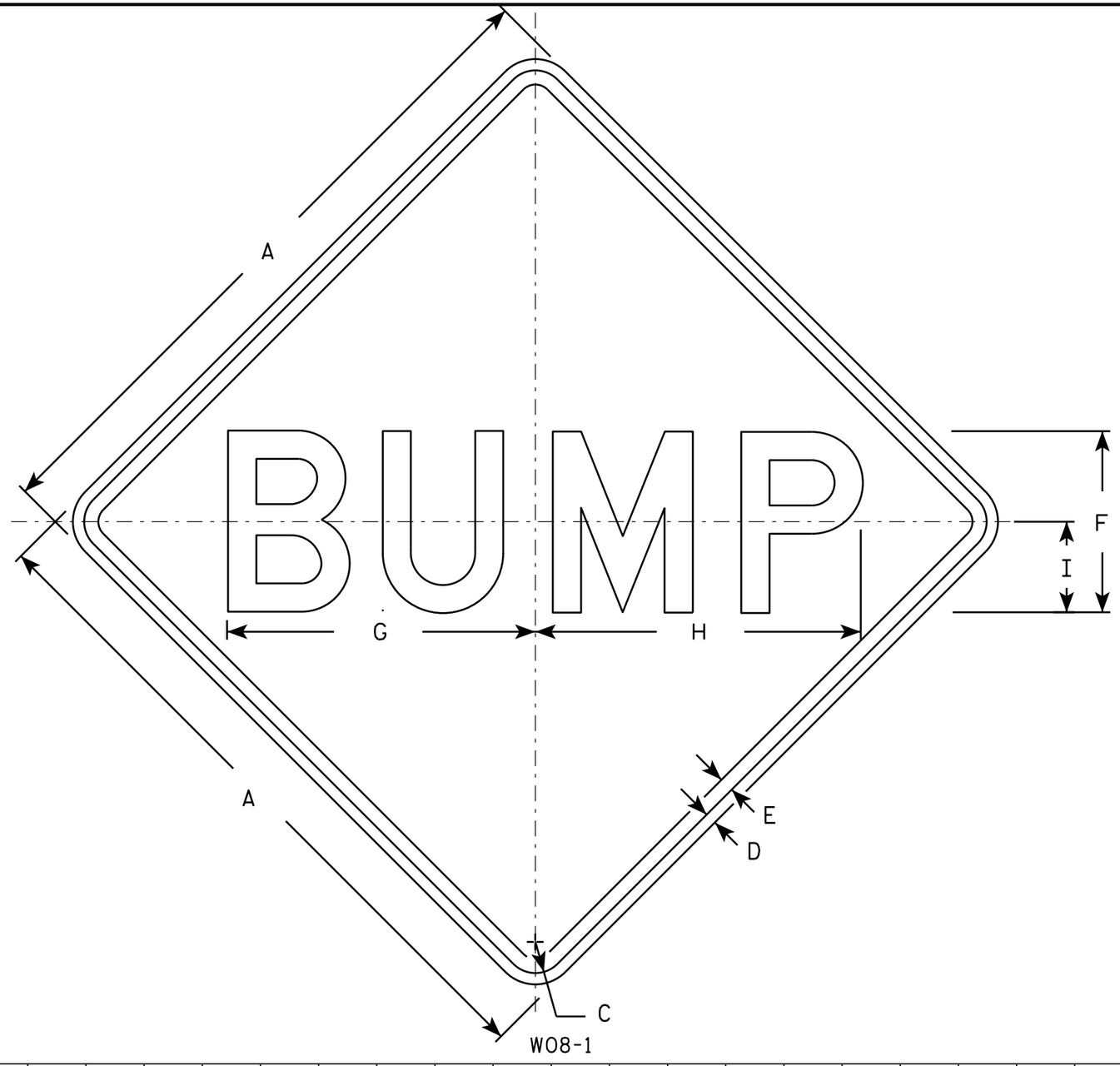
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE No. W05-1.1

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W051.DGN PLOT DATE : 20-NOV-2013 11:56 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.810445:1.000000
WISDOT/CADDS SHEET 42



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 - D
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	36		1 5/8	5/8	3/4	10	16 7/8	17 7/8	5																		9.0
2S	48		2 1/4	3/4	1	12	20 3/8	21 5/8	6																		16.0
2M	48		2 1/4	3/4	1	12	20 3/8	21 5/8	6																		16.0
3	48		2 1/4	3/4	1	12	20 3/8	21 5/8	6																		16.0
4	48		2 1/4	3/4	1	12	20 3/8	21 5/8	6																		16.0
5	48		2 1/4	3/4	1	12	20 3/8	21 5/8	6																		16.0

STANDARD SIGN
W08-1

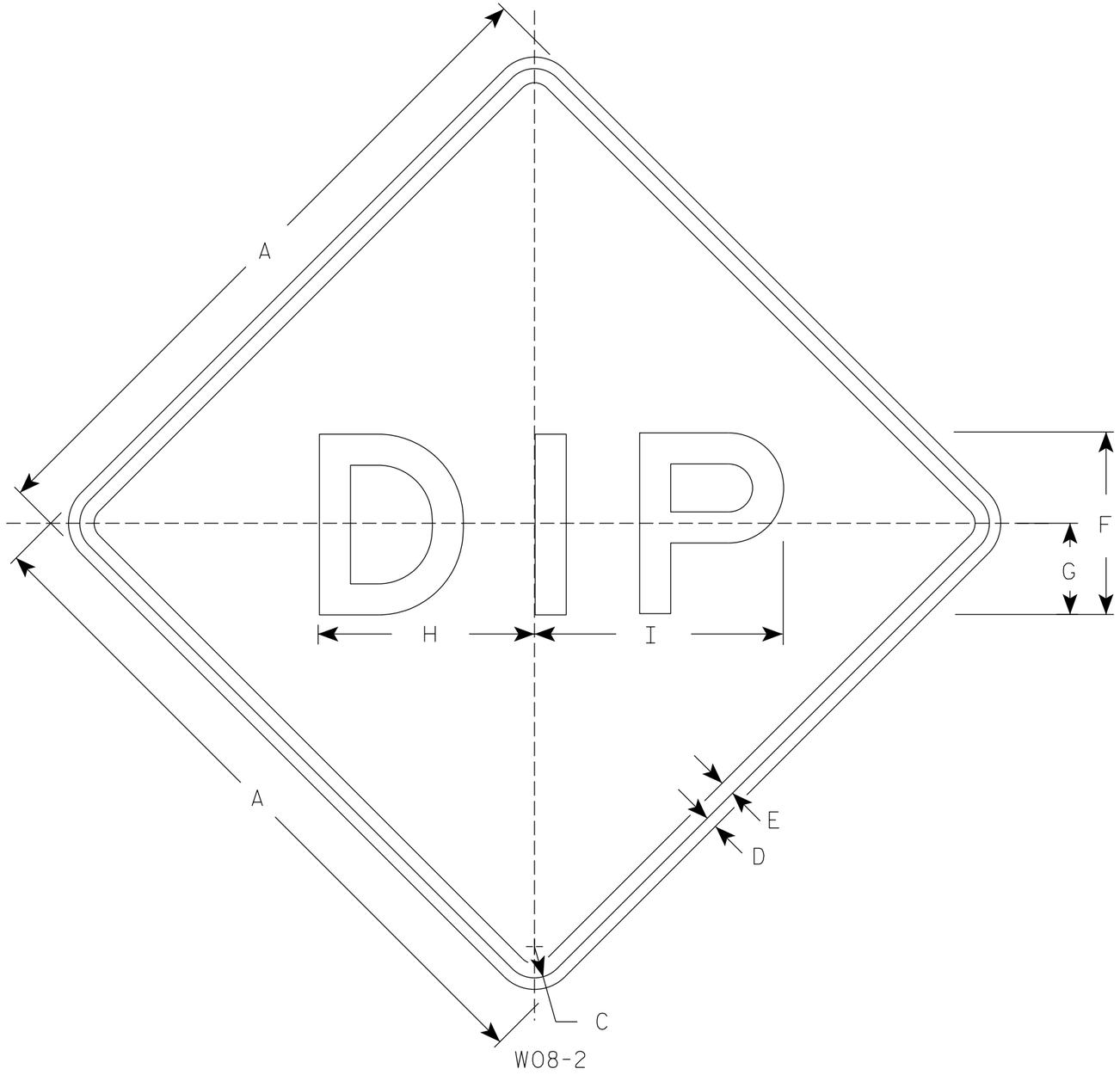
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 184 W08-1.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W081.DGN PLOT DATE : 20-NOV-2013 12:24 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.688833:1.000000 WISDOT/CADDS SHEET 42



W08-2

NOTES

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

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

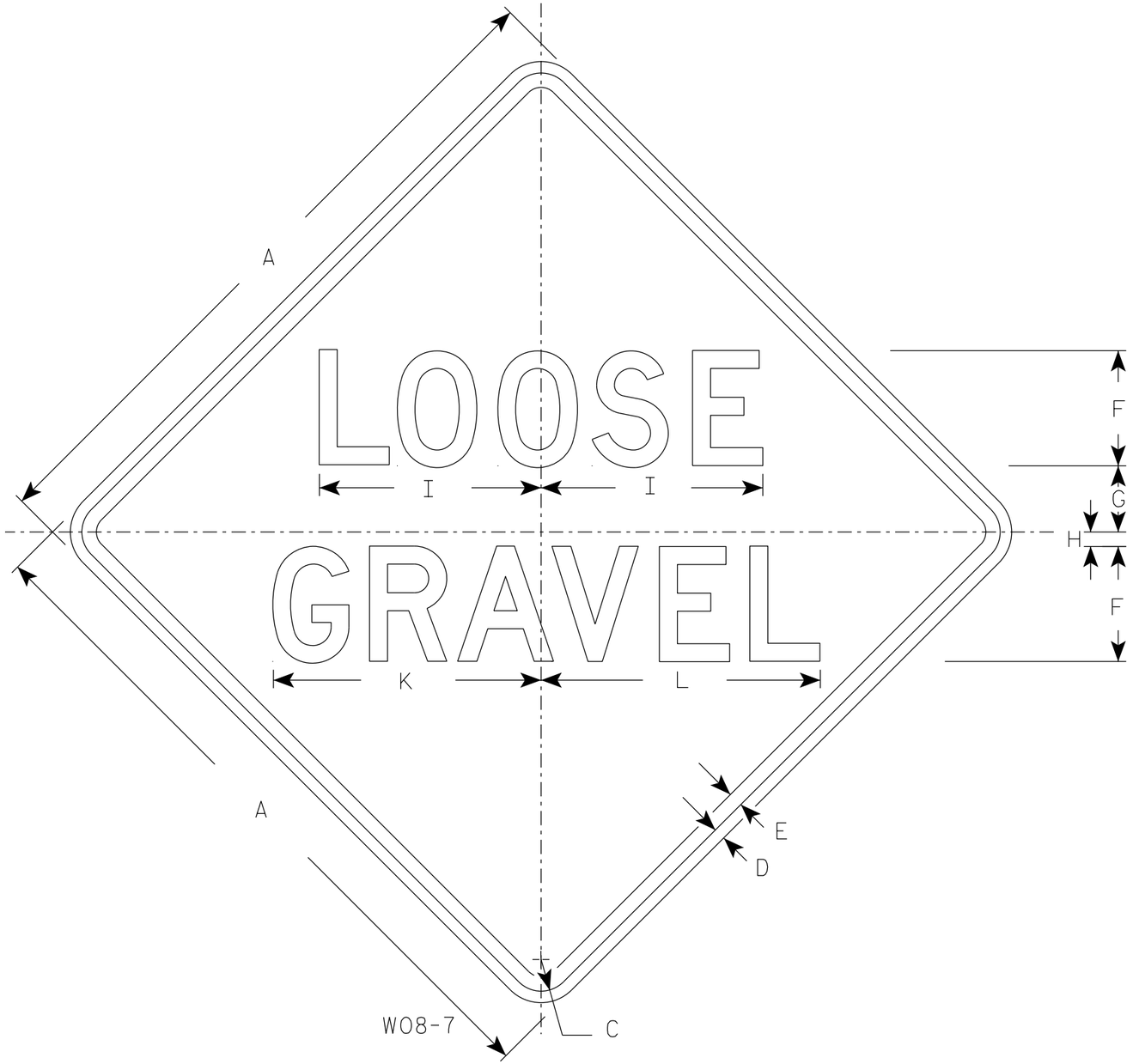
STANDARD SIGN
W08-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/7/19 PLATE NO. W08-2.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 85 | E



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
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	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
2S	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
2M	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
3	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
4	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
5	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0

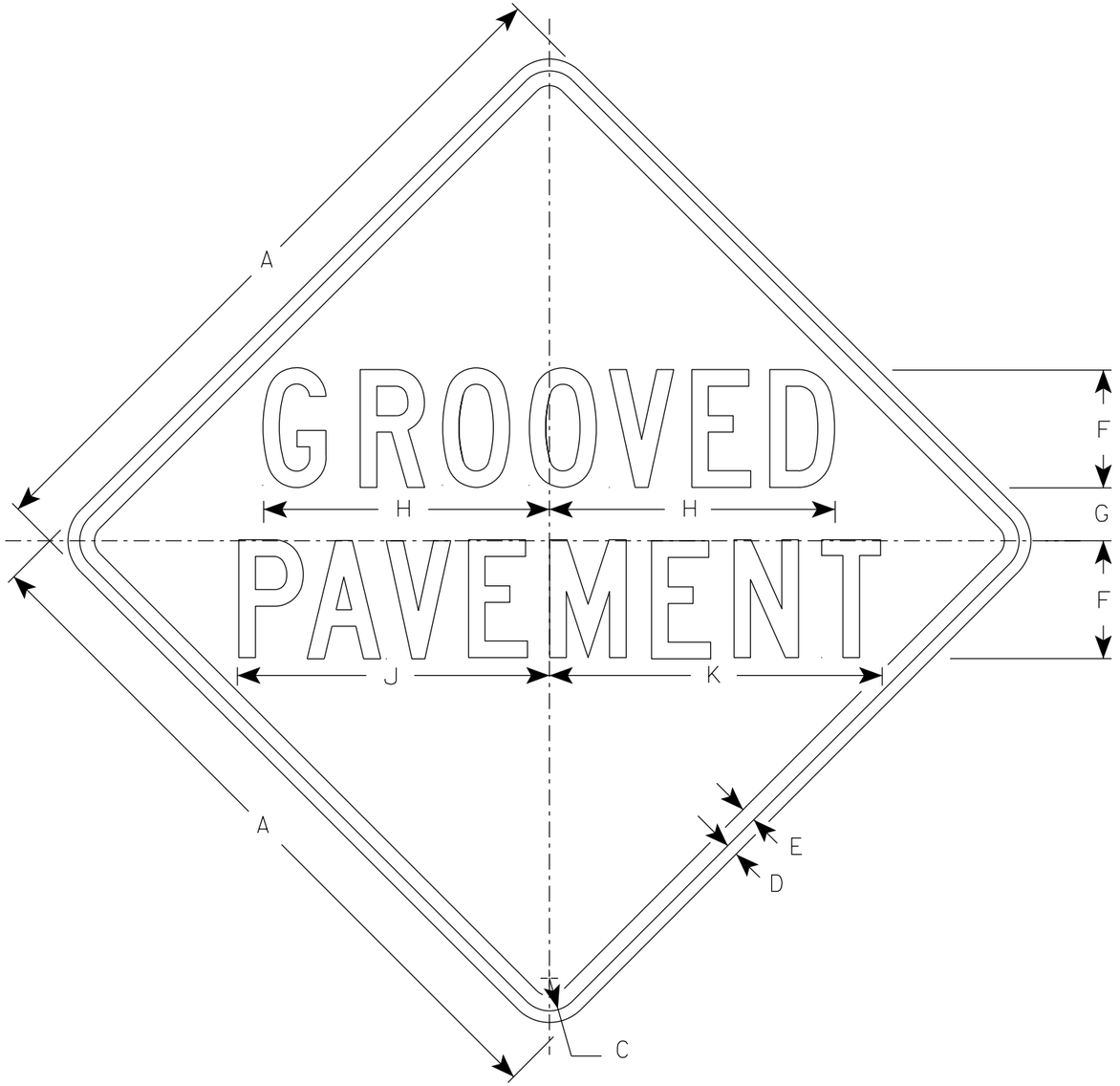
STANDARD SIGN
W08-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/16/2020 PLATE NO. W08-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



W08-15

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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	2 5/8	14 1/2		15 7/8	17																9.0
2S	48		2 1/4	3/4	1	8	3 1/2	19 3/8		21 1/4	22 5/8																16.0
2M	48		2 1/4	3/4	1	8	3 1/2	19 3/8		21 1/4	22 5/8																16.0
3	48		2 1/4	3/4	1	8	3 1/2	19 3/8		21 1/4	22 5/8																16.0
4	48		2 1/4	3/4	1	8	3 1/2	19 3/8		21 1/4	22 5/8																16.0
5	48		2 1/4	3/4	1	8	3 1/2	19 3/8		21 1/4	22 5/8																16.0

STANDARD SIGN
W08-15

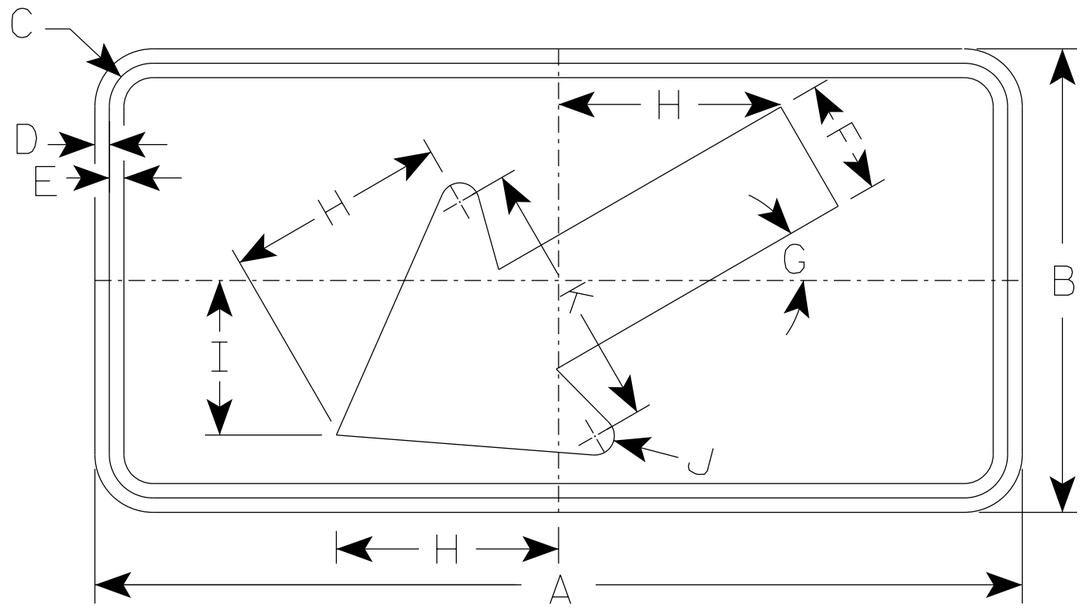
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/16/2020 PLATE NO. W08-15.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 87 | E

7



W016-7L

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded but corners shall be rounded when base material is metal.
4. W016-7R is the same as W016-L except the arrow is reversed along the vertical centerline.

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	30	18	1 1/8	3/8	1/2	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
2S	48	24	1 3/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0
2M	48	24	1 3/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0
3	48	24	1 3/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0
4	48	24	1 3/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0
5	48	24	1 3/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0

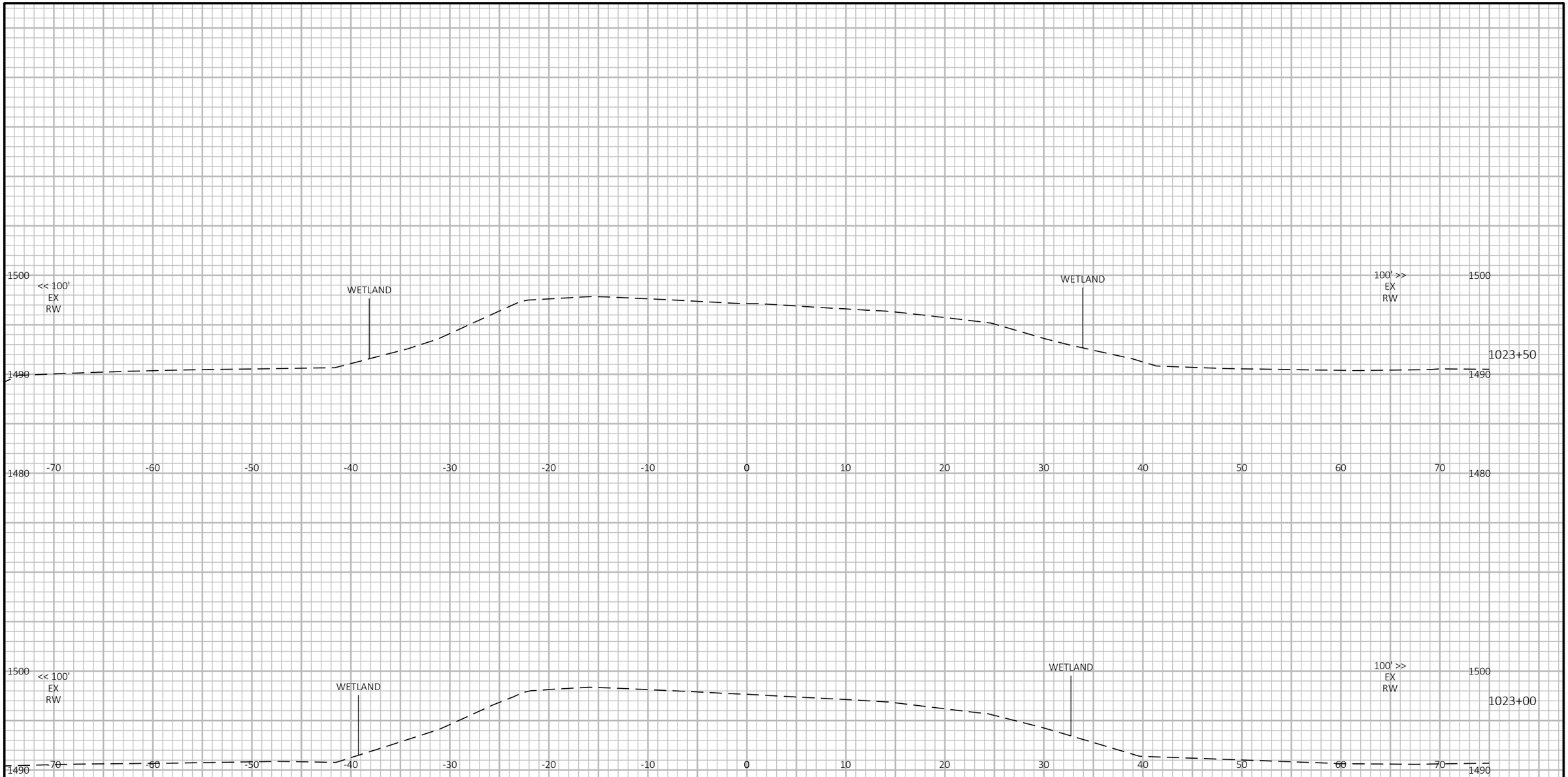
STANDARD SIGN
W016-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/2021 PLATE NO. W016-7.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 88	E



9

9

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000745 REPLACEMENT	SHEET 89	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - B-745

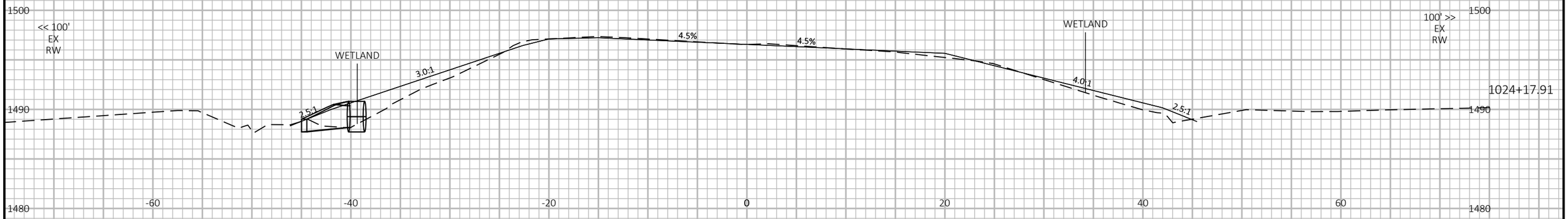
PLOT DATE : 12/4/2020 6:44 AM

PLOT BY : MAVES, EVAN A

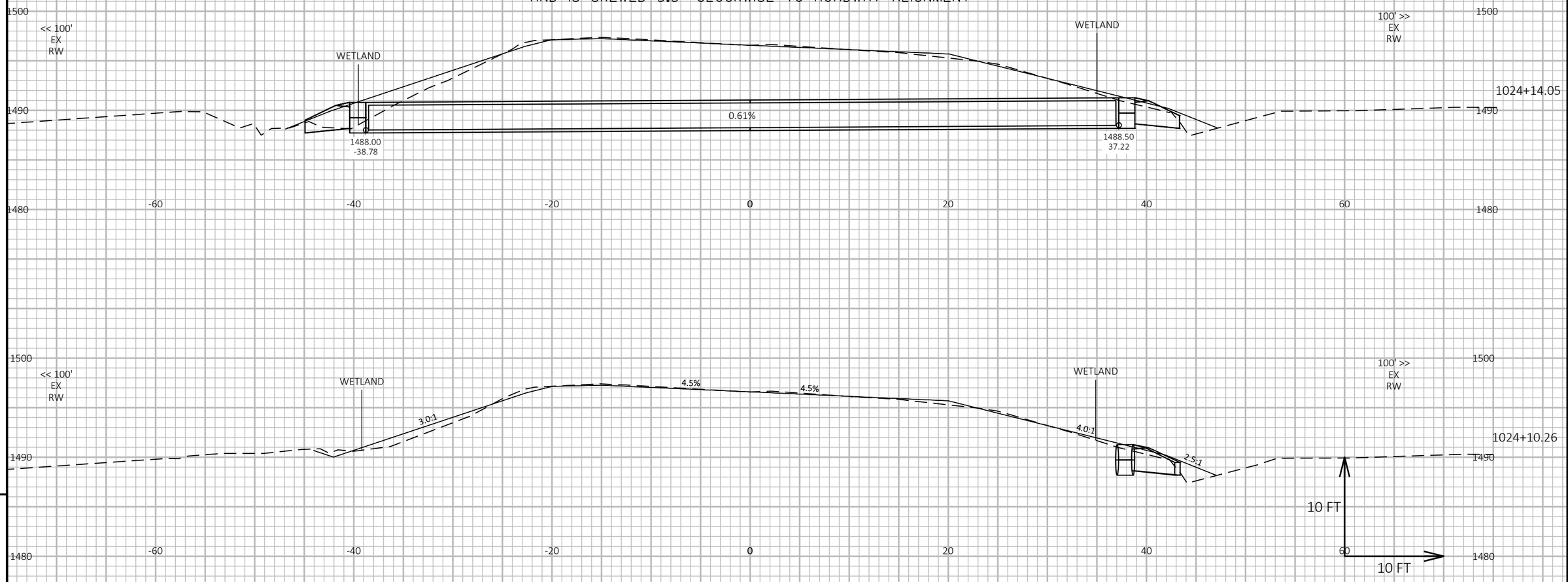
PLOT NAME :

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

WISDOT/CADDS SHEET 49



CROSS SECTION IS CUT ALONG THE CENTERLINE OF THE CULVERT PIPE
AND IS SKEWED 5.5° CLOCKWISE TO ROADWAY ALIGNMENT



9

9

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000745 REPLACEMENT	SHEET 90	E

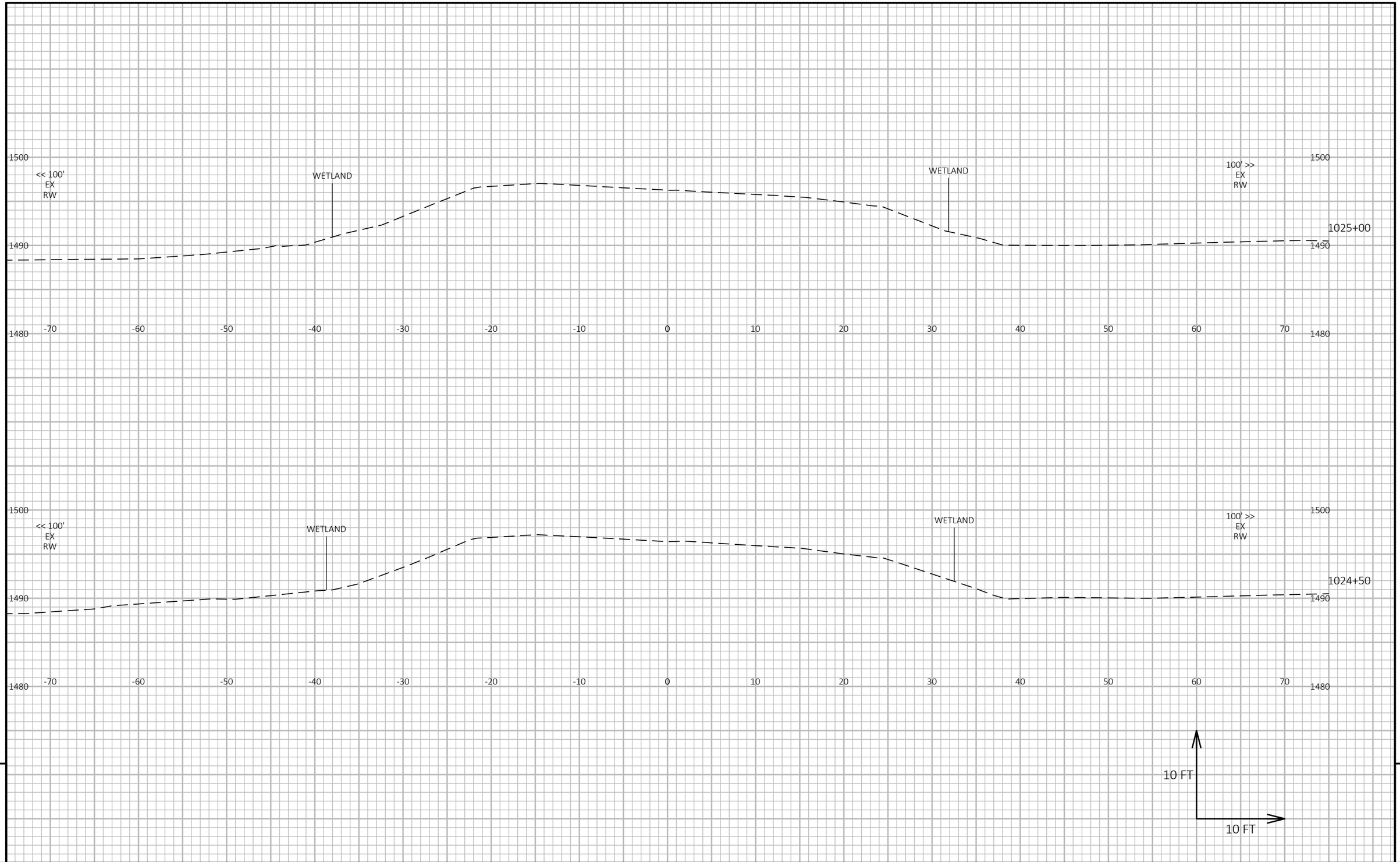
FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 745 (1)

PLOT DATE : 12/4/2020 6:44 AM

PLOT BY : MAVES, EVAN A

PLOT NAME :

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



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PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000745 REPLACEMENT	SHEET 91	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - A-745

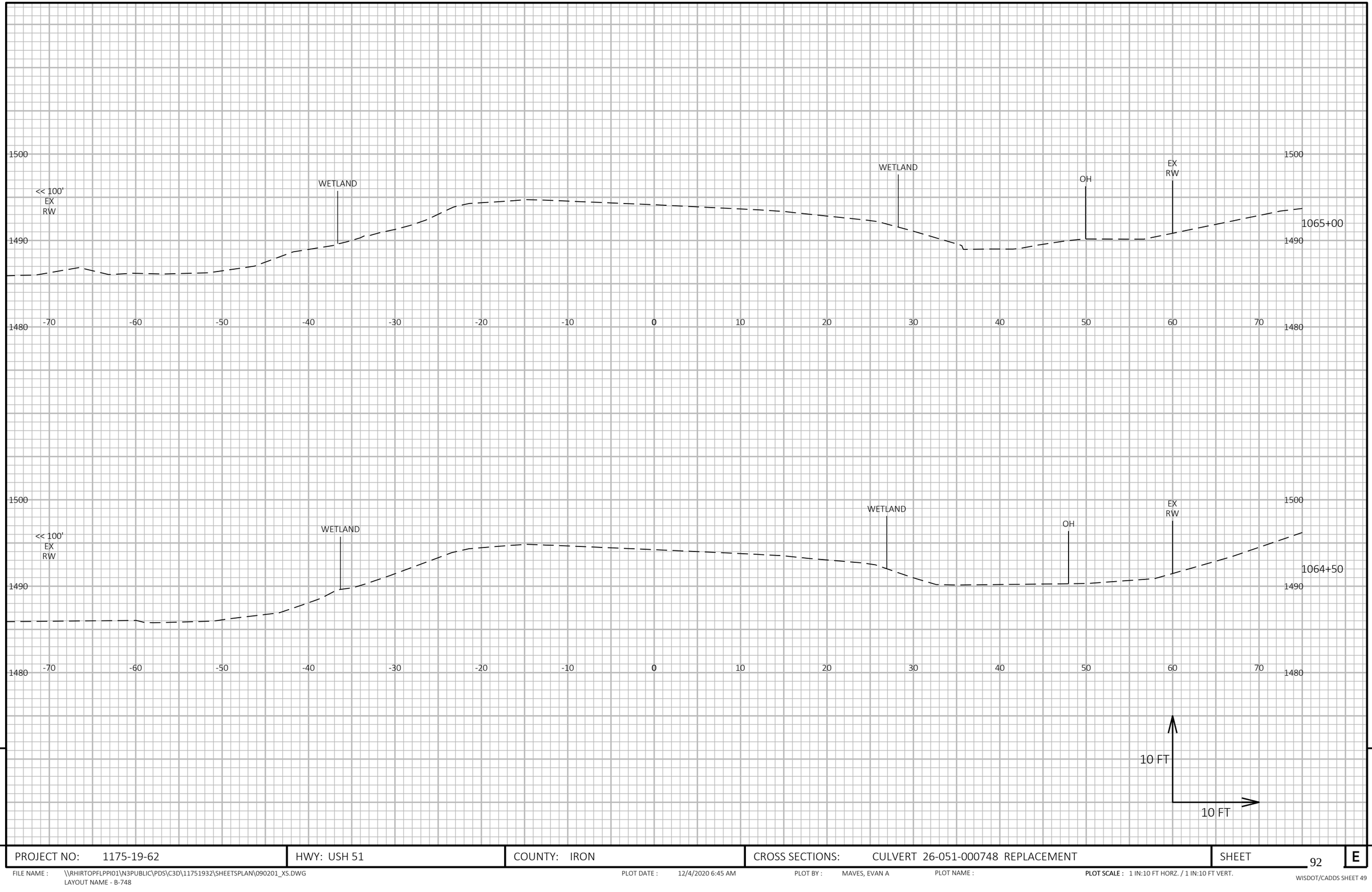
PLOT DATE : 12/4/2020 6:45 AM

PLOT BY : MAVES, EVAN A

PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000748 REPLACEMENT	SHEET 92	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - B-748

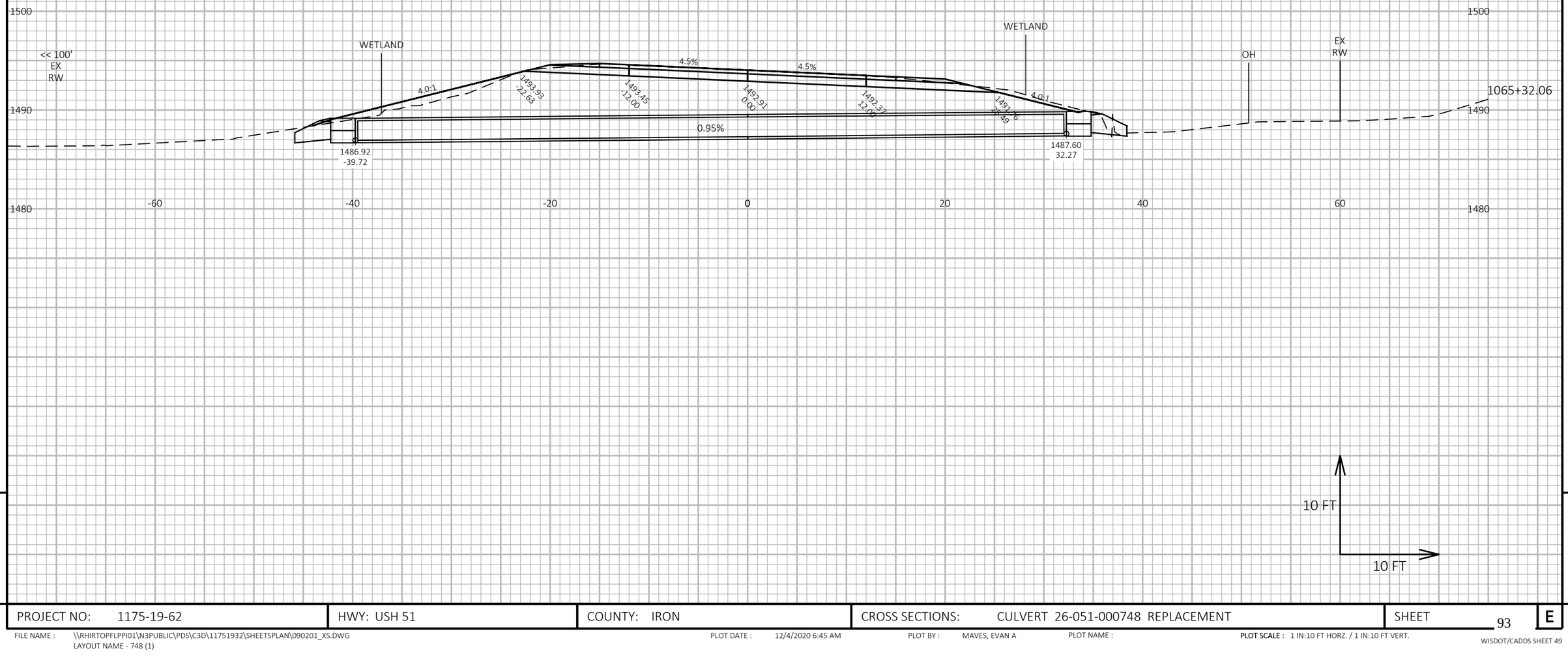
PLOT DATE : 12/4/2020 6:45 AM

PLOT BY : MAVES, EVAN A

PLOT NAME :

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

WISDOT/CADDS SHEET 49

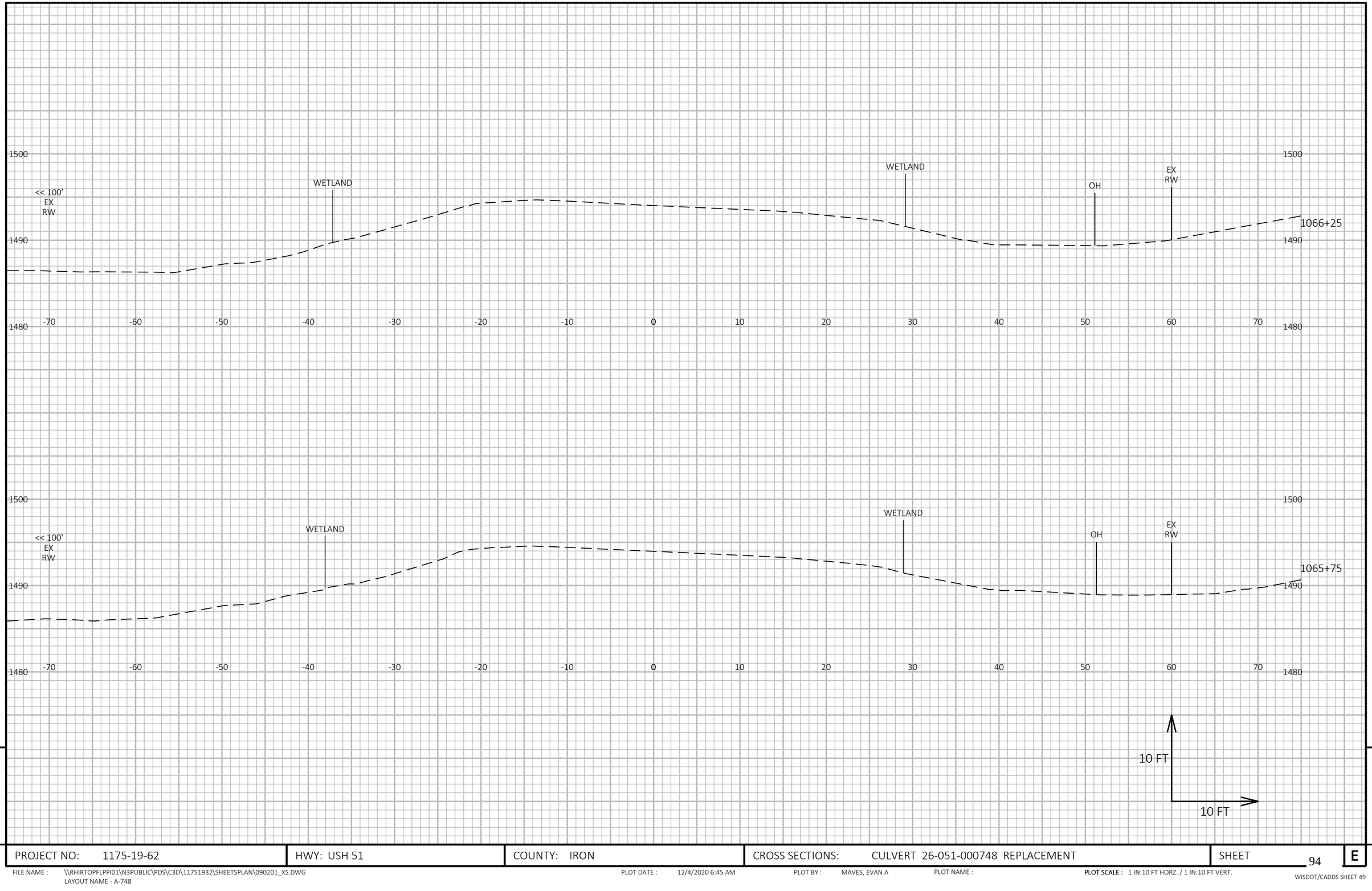


PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000748 REPLACEMENT	SHEET 93	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 748 (1)

PLOT DATE : 12/4/2020 6:45 AM PLOT BY : MAVES, EVAN A PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000748 REPLACEMENT	SHEET 94	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - A-748

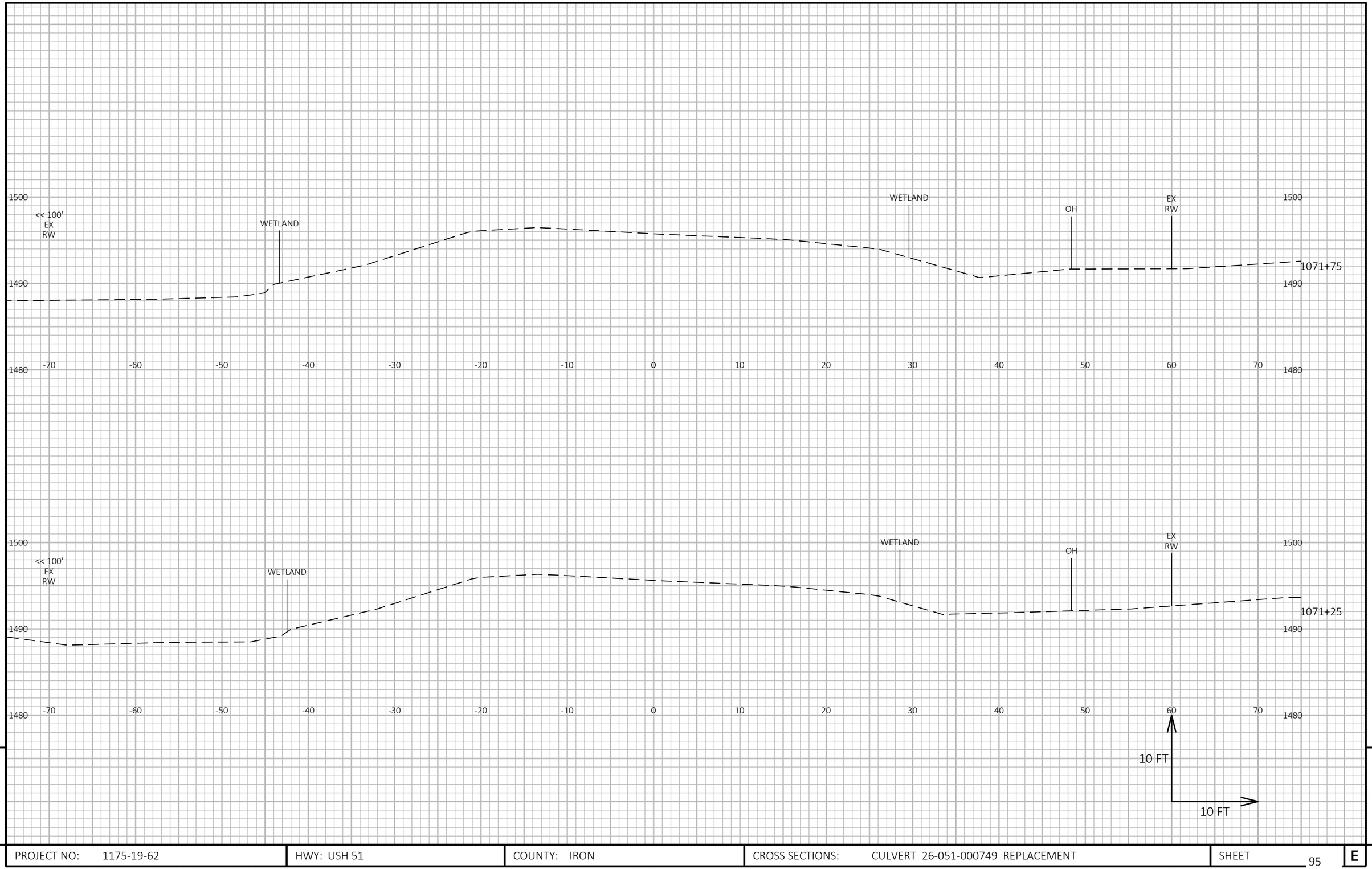
PLOT DATE : 12/4/2020 6:45 AM

PLOT BY : MAVES, EVAN A

PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000749 REPLACEMENT	SHEET 95	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - B-749

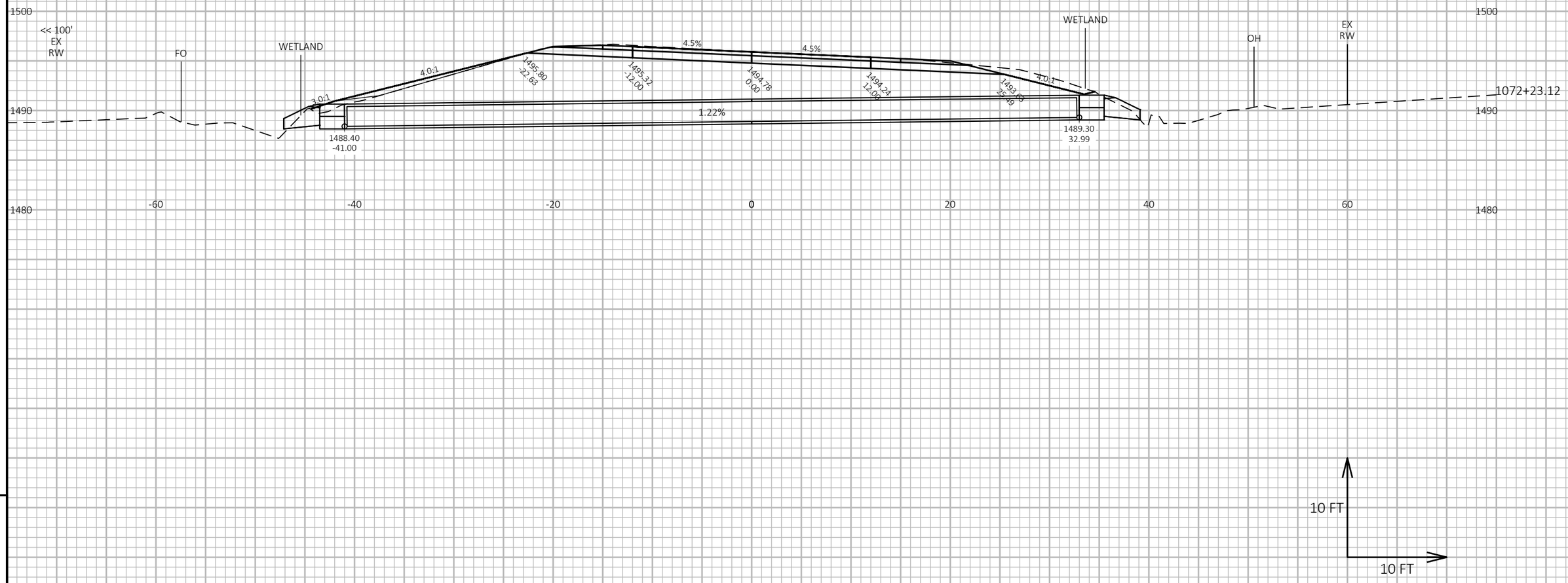
PLOT DATE : 12/4/2020 6:45 AM

PLOT BY : MAVES, EVAN A

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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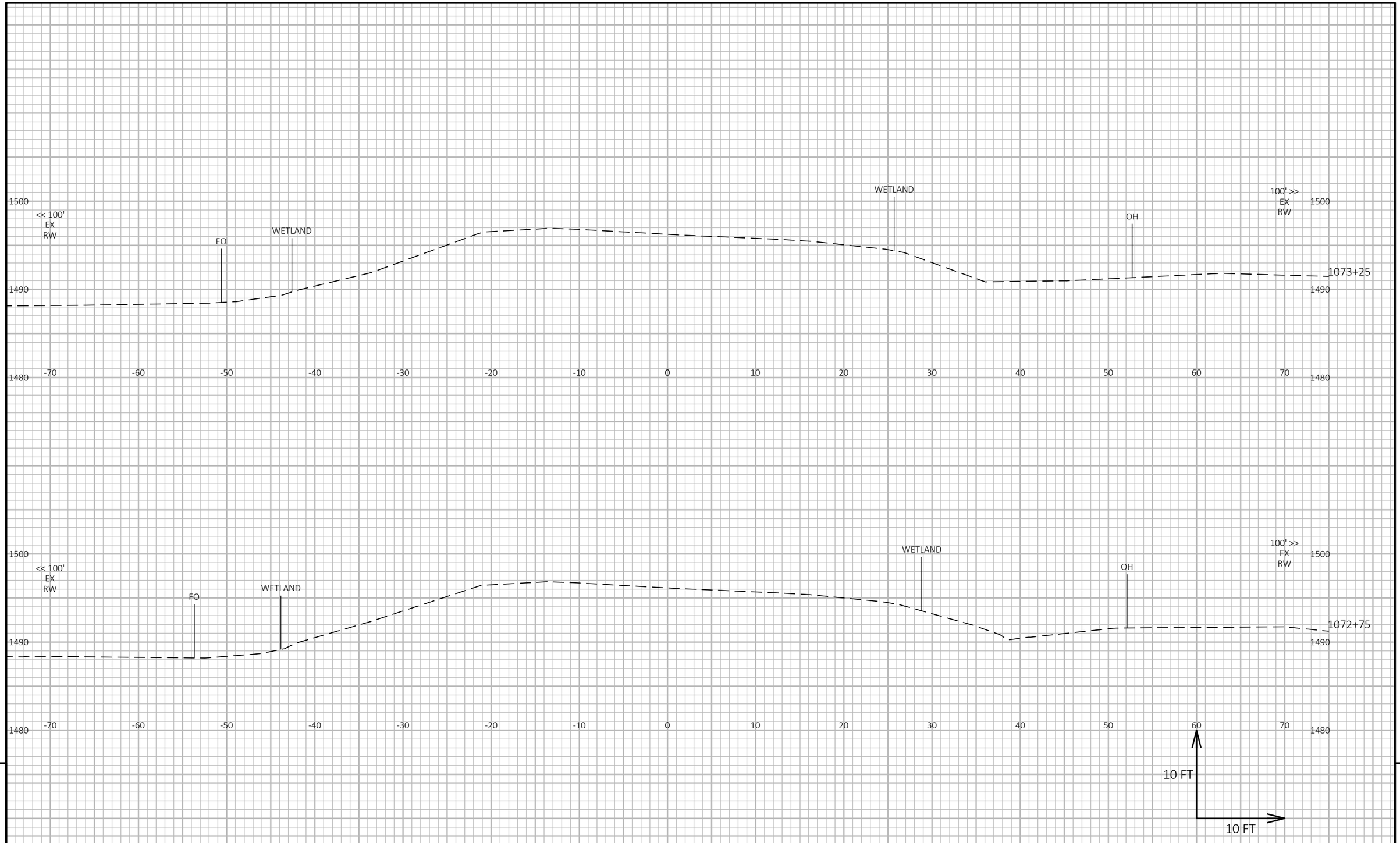
PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000749 REPLACEMENT	SHEET 96	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 749 (1)

PLOT DATE : 12/4/2020 6:45 AM PLOT BY : MAVES, EVAN A PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



9

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PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000749 REPLACEMENT	SHEET 97	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - A-749

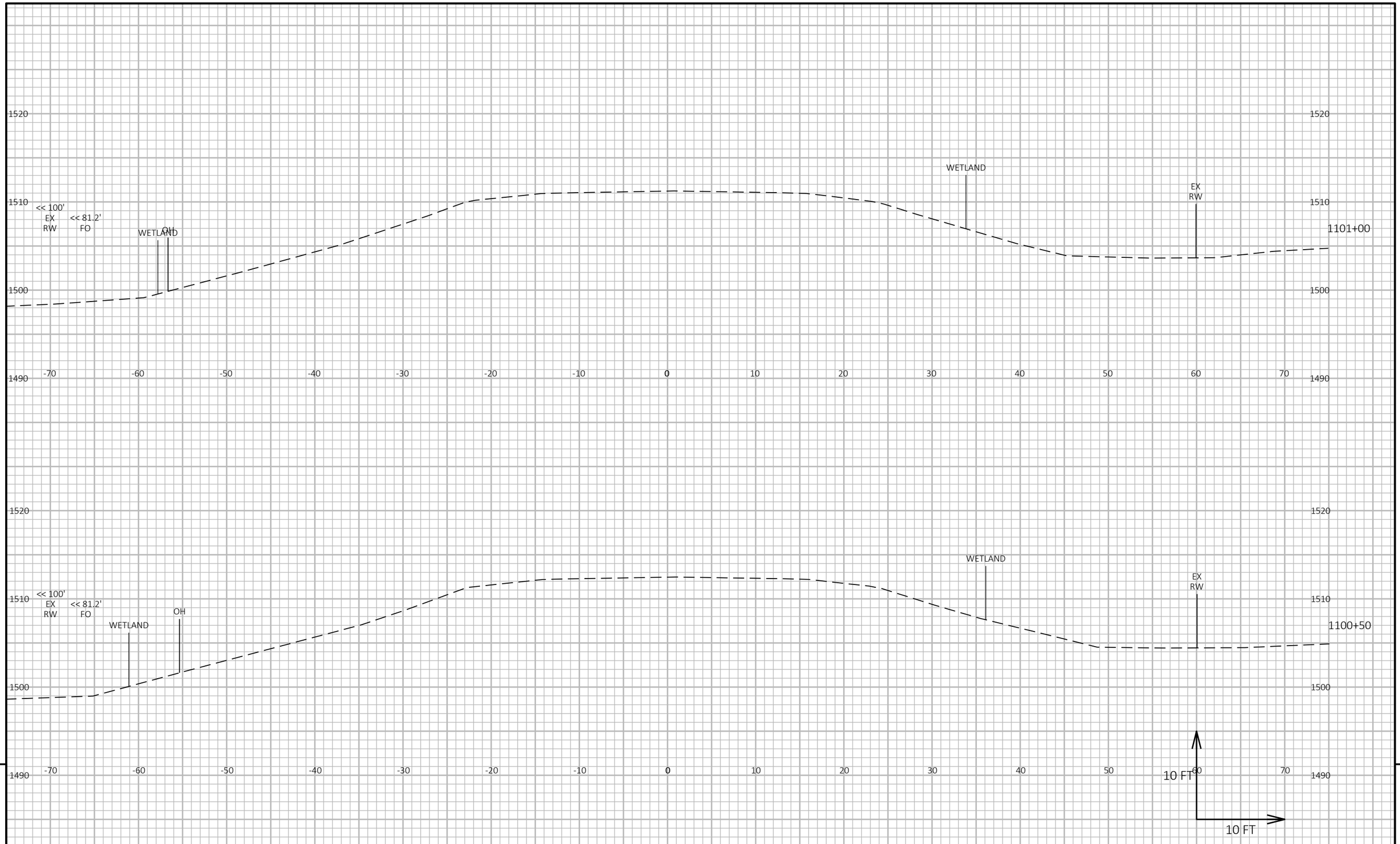
PLOT DATE : 12/4/2020 6:45 AM

PLOT BY : MAVES, EVAN A

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000751 REPLACEMENT	SHEET 98	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - B-751

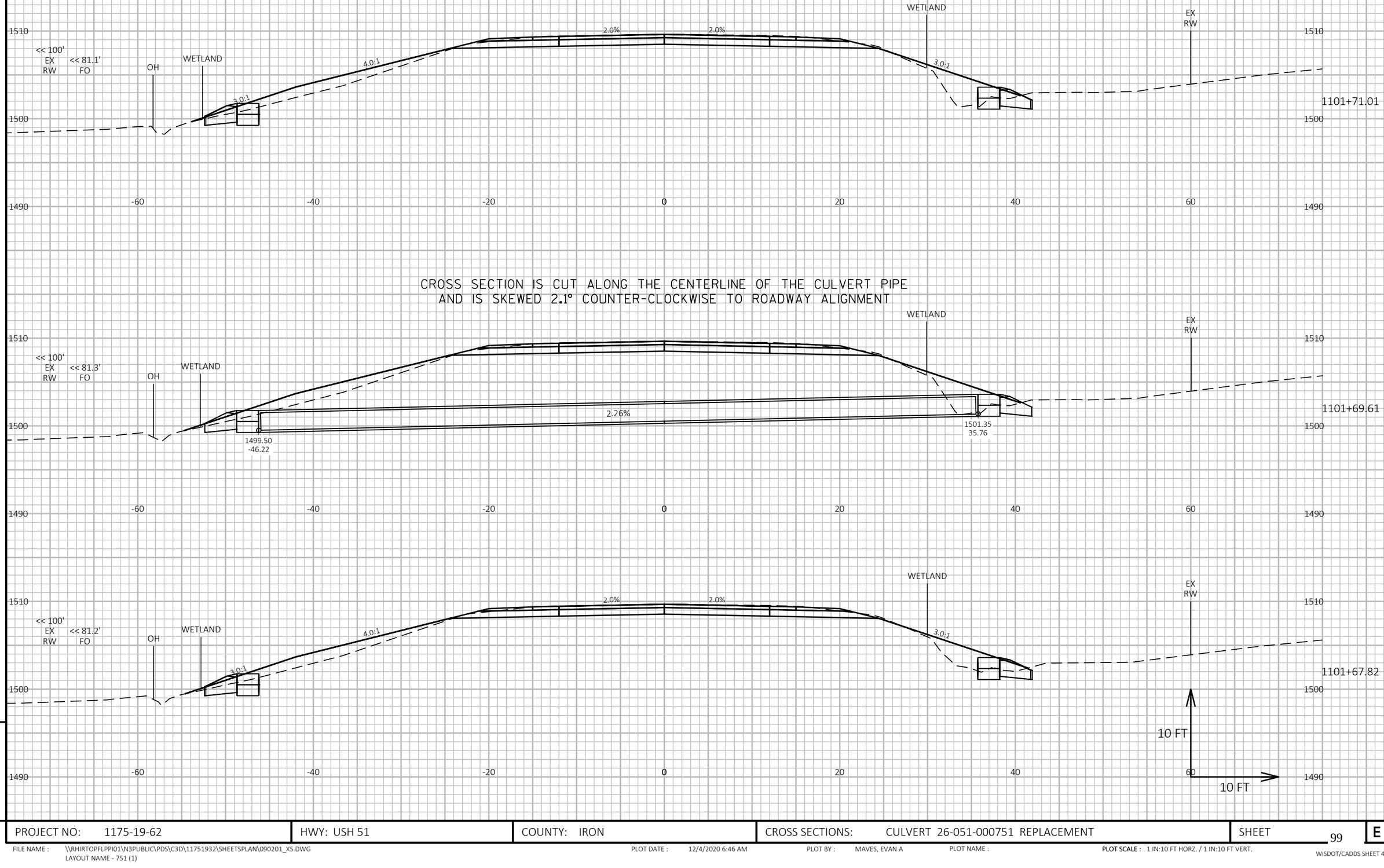
PLOT DATE : 12/4/2020 6:45 AM

PLOT BY : MAVES, EVAN A

PLOT NAME :

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

WISDOT/CADDS SHEET 49



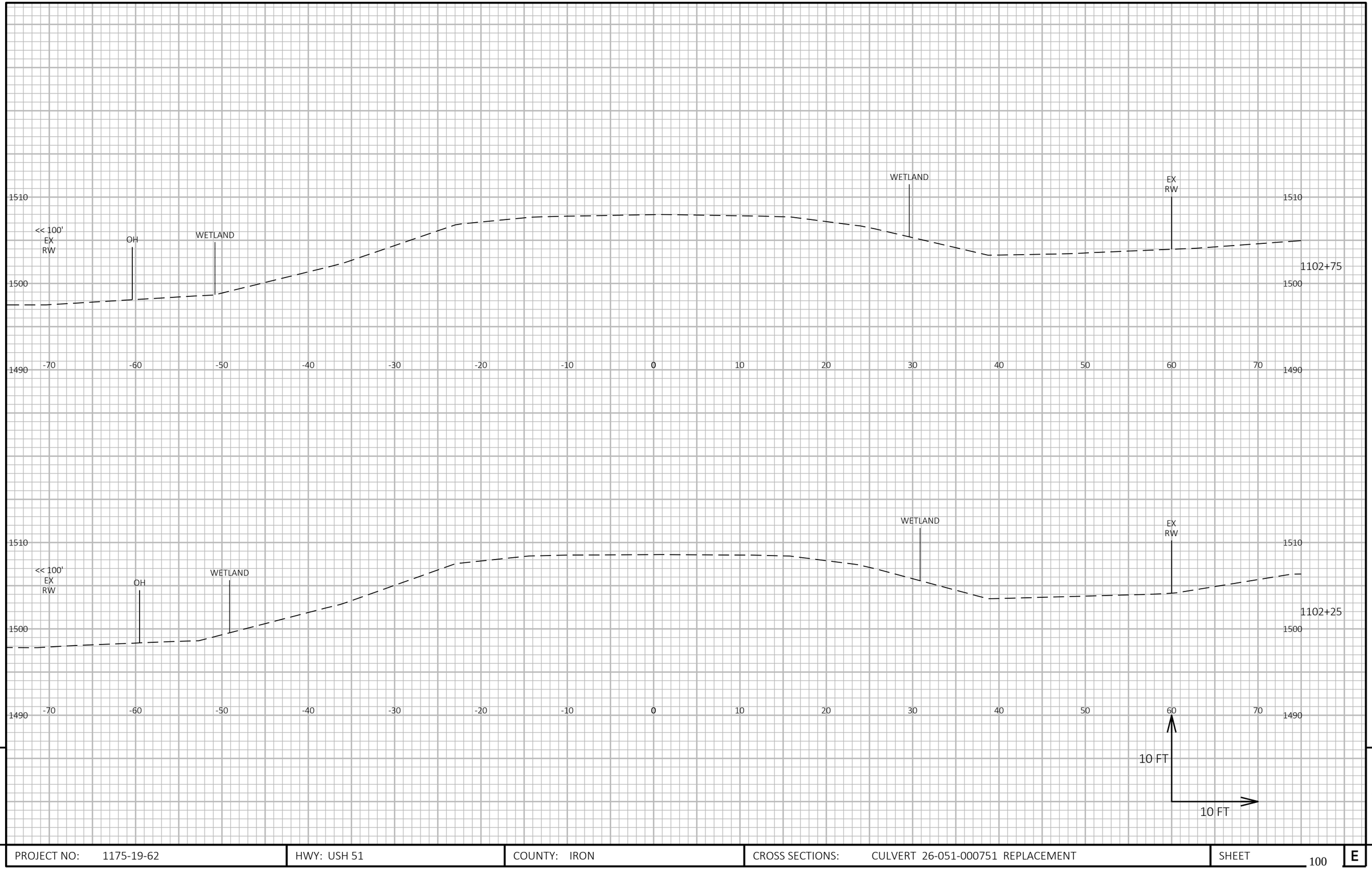
CROSS SECTION IS CUT ALONG THE CENTERLINE OF THE CULVERT PIPE
AND IS SKEWED 2.1° COUNTER-CLOCKWISE TO ROADWAY ALIGNMENT

9 9

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000751 REPLACEMENT	SHEET 99	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 751 (1)

PLOT DATE : 12/4/2020 6:46 AM PLOT BY : MAVES, EVAN A PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERT 26-051-000751 REPLACEMENT	SHEET 100	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - A-751

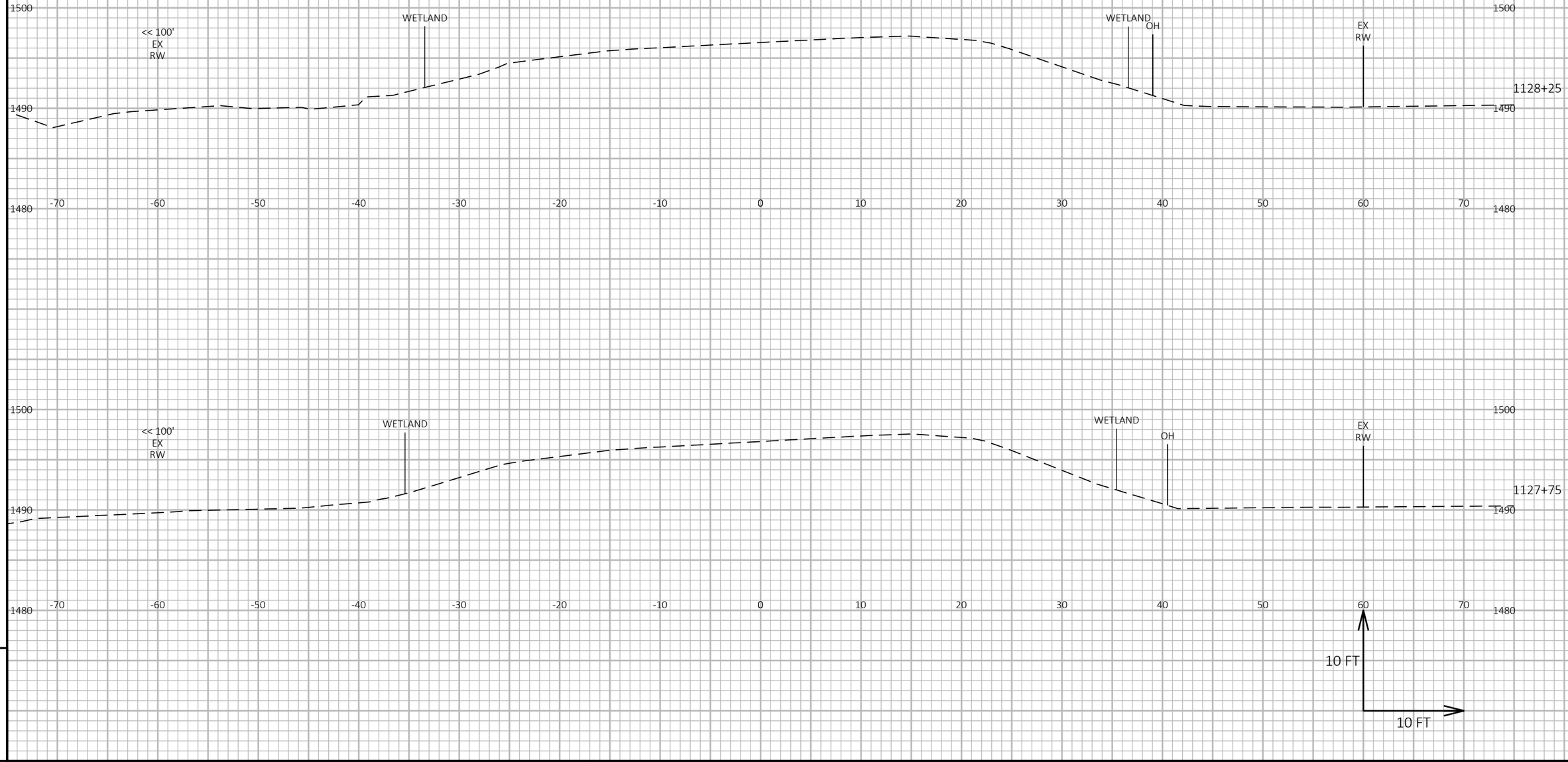
PLOT DATE : 12/4/2020 6:46 AM

PLOT BY : MAVES, EVAN A

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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9

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERTS 26-051-004441 & 26-051-000753 REPLACEMENT	SHEET 101	E

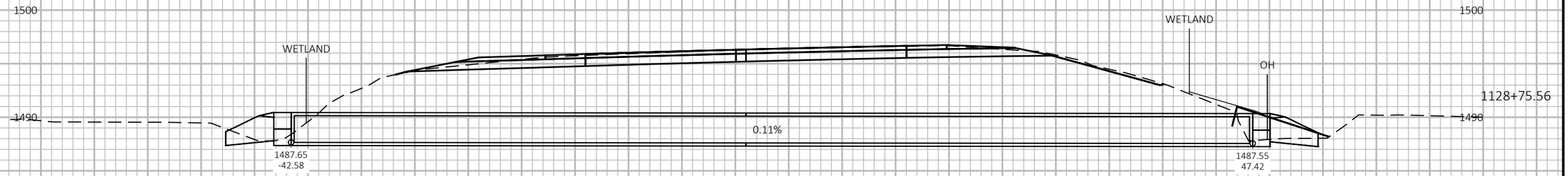
FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - B-753 & 4441

PLOT DATE : 12/4/2020 6:46 AM PLOT BY : MAVES, EVAN A PLOT NAME :

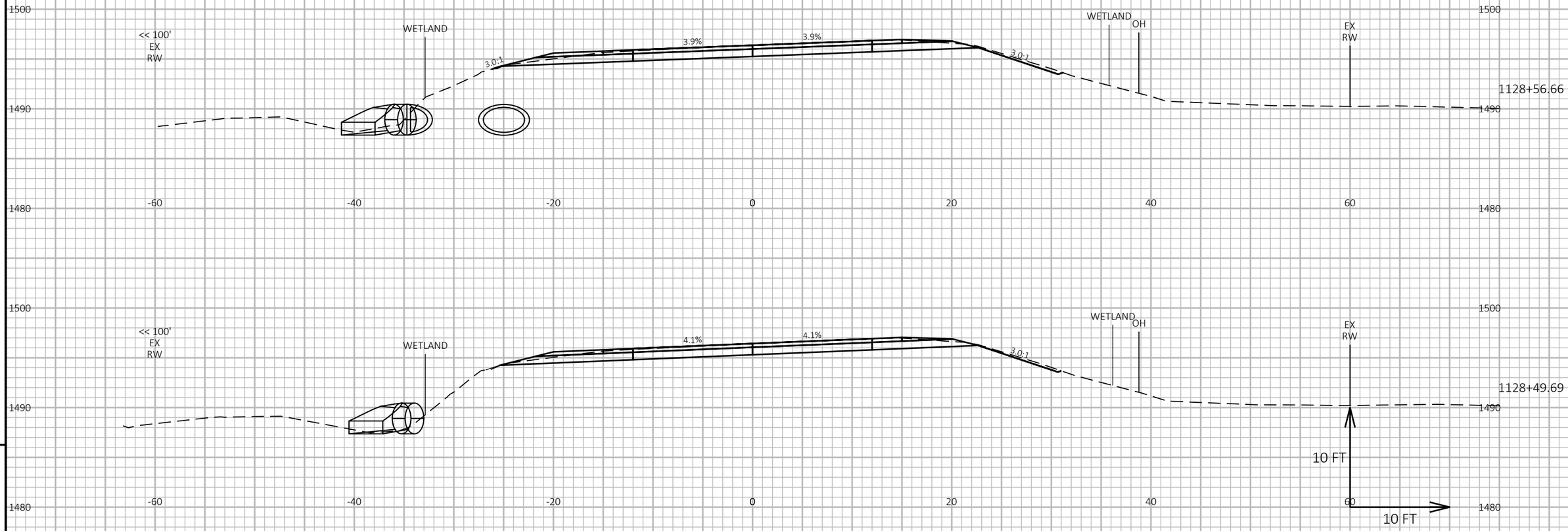
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

CROSS SECTION IS CUT ALONG THE CENTERLINE OF THE CULVERT PIPE
AND IS SKEWED 37.0° COUNTER-CLOCKWISE TO ROADWAY ALIGNMENT



1128+75.56

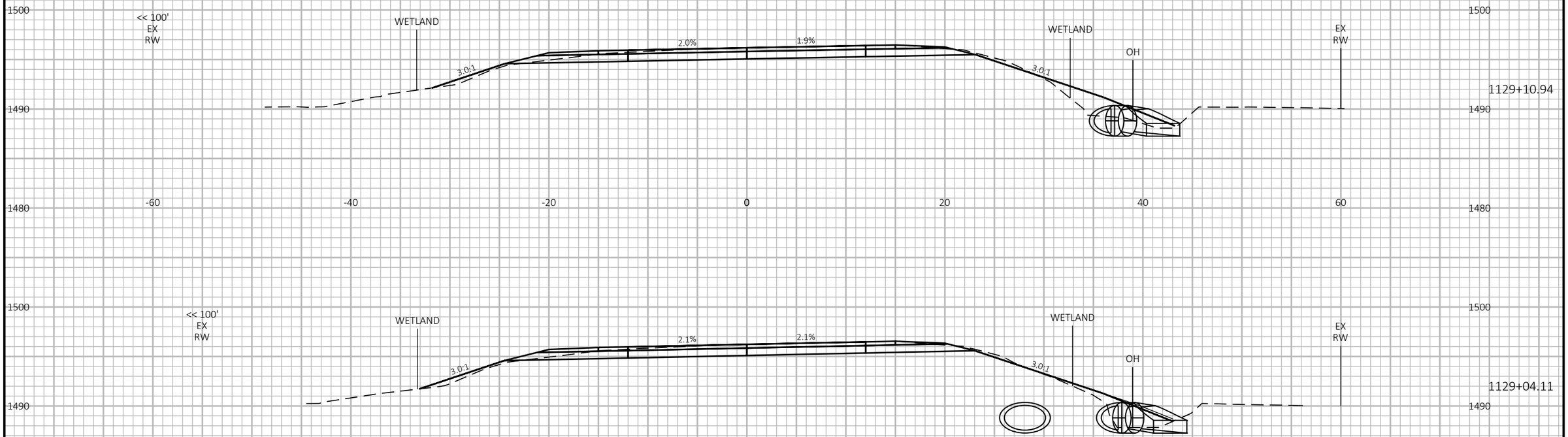


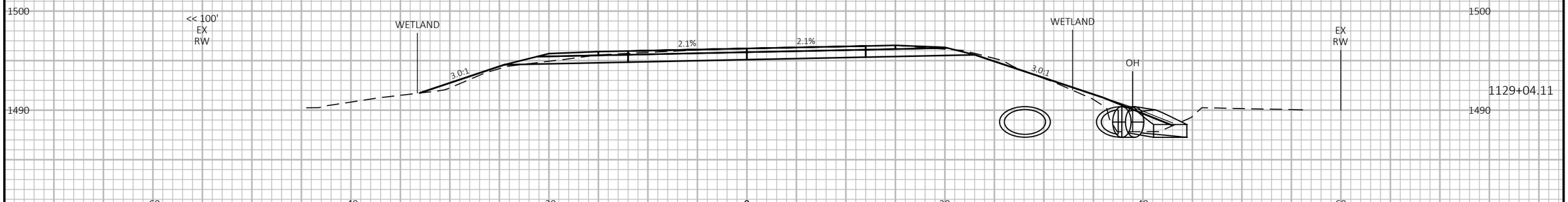
1128+56.66

1128+49.69

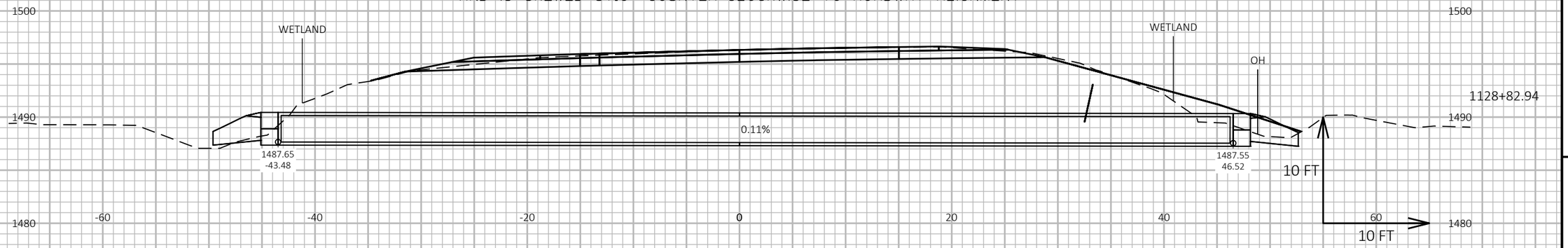
9 9

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERTS 26-051-004441 & 26-051-000753 REPLACEMENT	SHEET 102	E





CROSS SECTION IS CUT ALONG THE CENTERLINE OF THE CULVERT PIPE
AND IS SKEWED 37.0° COUNTER-CLOCKWISE TO ROADWAY ALIGNMENT



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9

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERTS 26-051-004441 & 26-051-000753 REPLACEMENT	SHEET 103	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 4441 & 753 (2)

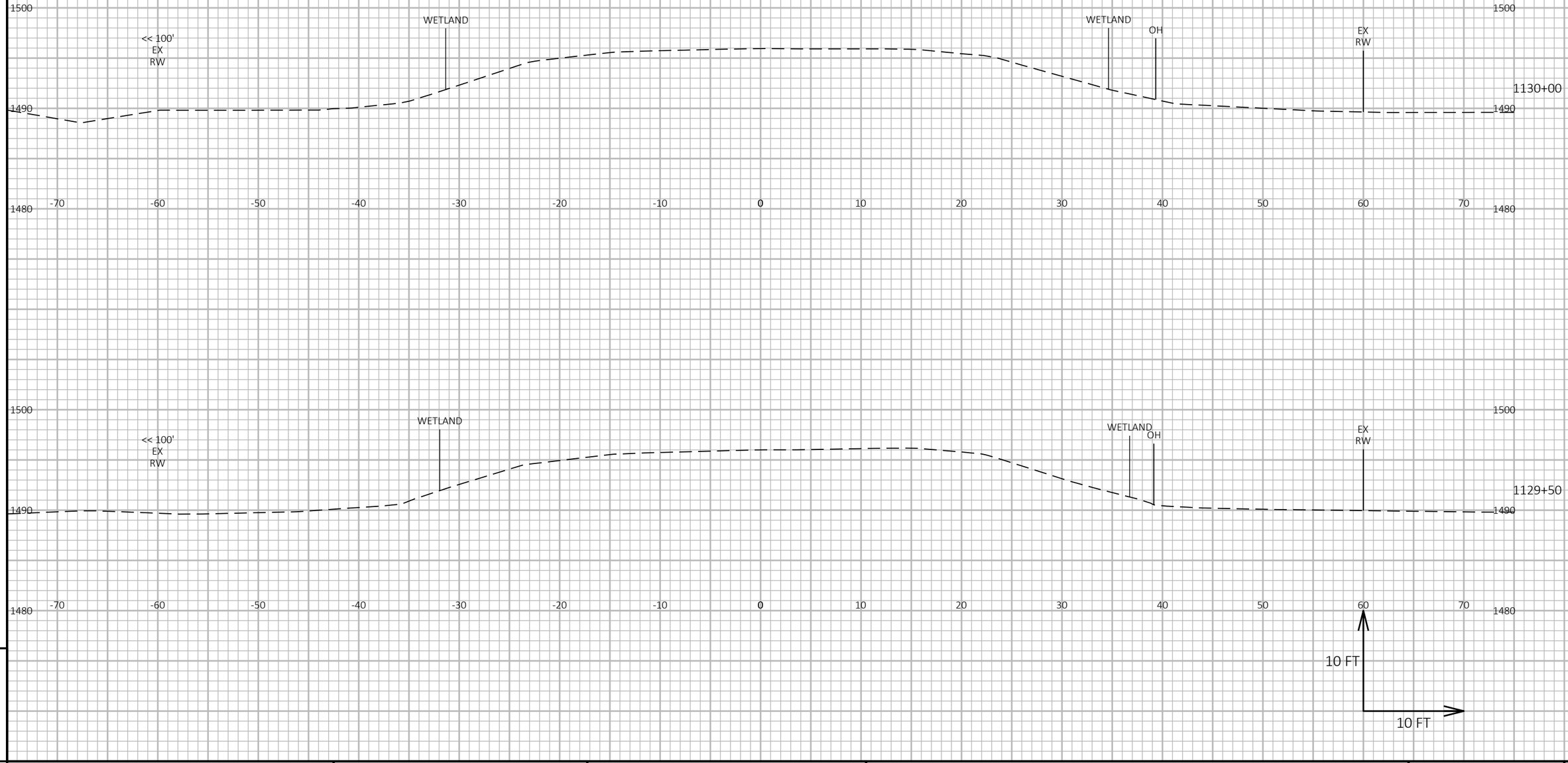
PLOT DATE : 12/4/2020 6:46 AM

PLOT BY : MAVES, EVAN A

PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1175-19-62	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: CULVERTS 26-051-004441 & 26-051-000753 REPLACEMENT	SHEET 104	E

FILE NAME : \\RHIRTOPFLPPI01\N3PUBLIC\PDS\C3D\11751932\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - A-753 & 4441

PLOT DATE : 12/4/2020 6:46 AM

PLOT BY : MAVES, EVAN A

PLOT NAME :

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

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov