GRE

MAY 2021

PROJECT ID: 9190-26-71

WITH: 9190-27-71

COUNTY: OCONTO

ORDER OF SHEETS

TOTAL SHEETS = 96

35

N

DESIGN DESIGNATION

A.A.D.T.	(2021)	= 4,600
A.A.D.T.	(2041)	= 6,000
D.H.V.		= 700
D.D.		= 60/40
T.		= 10.2
DESIGN SPEED		= 55 MPH
ESALS		= 1,600,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

- ELECTRIC (E)
- OVERHEAD UTILITY (OH)
- 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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9190-26-71	WISC 20121359	1

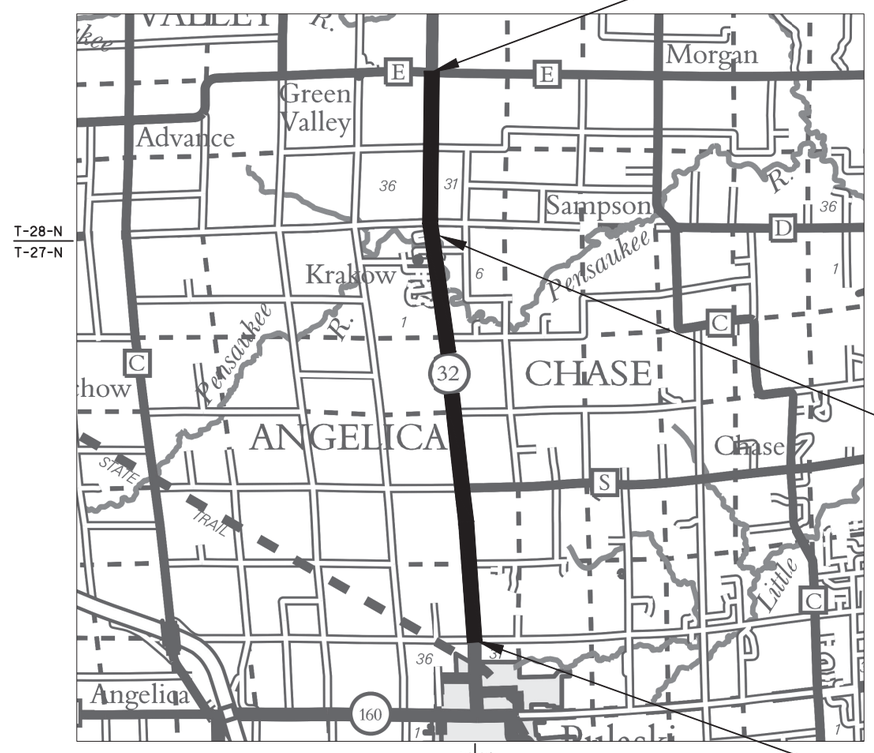
PULASKI - STH 22

PULASKI NVL - CTH E

STH 32

OCONTO COUNTY

STATE PROJECT NUMBER
9190-26-71



END PROJECT
STA 438+77

B-58-130
EXCEPTION TO NET CENTERLINE LENGTH
STA 319+98.10 TO STA 322+00.00

BEGIN PROJECT
STA. 39+91
Y=105,717.93
X=513,040.27

LAYOUT
SCALE 0 2 MILES

TOTAL NET LENGTH OF CENTERLINE = 7.516 MI.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	JSD
Designer	J. SPIELMACHER
Project Manager	A. FULCER
Regional Examiner	NORTHEAST REGION
Regional Supervisor	D. SEGERSTROM

APPROVED FOR THE DEPARTMENT

DATE: 3/18/2021 Andrew D. Fulcer (Signature)

E

GENERAL NOTES

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.

NEW PAVEMENT, BEAM GUARD, AND OTHER FACILITY LOCATIONS GIVEN IN THESE PLANS ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD PRIOR TO PLACEMENT OR INSTALLATION.

THE EXACT LOCATIONS AND DIMENSIONS OF ALL EROSION CONTROL ITEMS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE EXACT LOCATION FOR BUTT JOINTS AND SAW CUTS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

DNR LIAISON

JIM DOPERALSKI
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
2984 SHAWANO AVENUE
GREEN BAY, WI 54313-6727
(920) 412-0165
JAMES.DOPERALSK@WISCONSIN.GOV

NE REGION SURVEY CONTACT

CORMAC MCINNIS
DEPARTMENT OF TRANSPORTATION
NORTHEAST REGION
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920) 492-5638
CORMAC.MCINNIS@DOT.WI.GOV

UTILITIES

MATT GUNDERSON
CENTURYLINK - COMMUNICATION LINE
212 CHURCH AVE
CASCO, WI 54205
(920) 837-2344
MATT.GUNDERSON@CENTURYLINK.COM

DALE WAGNER
KRAKOW SANITARY DISTRICT - SEWER
P.O. BOX 171
KRAKOW, WI 54137
(920) 671-9308, (920) 899-3381
KRAKOWSANITARY@YAHOO.COM

RICK VINCENT
NORTHEAST TELEPHONE COMPANY LLC - COMMUNICATION LINE
450 SECURITY BLVD
P.O. BOX 19079
GREEN BAY, WI 54307-9079
(920) 617-7316, (920) 660-6644
RICK.VINCENT@NSIGHT.COM

JACK PARDY
OCONTO ELECTRIC COOPERATIVE - ELECTRICITY
7479 REA RD
OCONTO FALLS, WI 54154
(920) 846-2816, (920) 373-8524
JPARDY@OCONTOELECTRIC.COM

ANDREW HEIGL
ASTREA - COMMUNICATION LINE
P.O. BOX 885
IRON MOUNTAIN, MI 49801
(906) 221-7536, (906) 774-6621
ANDY.HEIGL@ASTREACONNECT.COM

KENNETH J. VAN OSS
WE ENERGIES - ELECTRICITY
800 S LYNNDALE DR
APPLETON, WI 54914
(920) 380-3318
KENNETH.VAN-OSS@WE-ENERGIES.COM

HEATHER DEUTH
WE ENERGIES - GAS/PETROLEUM
800 S LYNNDALE DR
APPLETON, WI 54914
(920) 242-5633
HEATHER.DEUTH@WE-ENERGIES.COM

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

2

N

BEGIN PROJECT 9190-26-71
STA 39+91

S CHASE RD
DEER DR
YUREK RD
CTH S
MIDDLE DR
VANDORNICK RD
32
GOHR RD
LAKE SANDIA RD
CENTER ST
MAIN ST
HOFF ST
TOWN LINE RD
DUDZIK RD
FUNK RD
SCHROEDER RD
CTH E (MORGAN RD)
CTH E (ADVANCE RD)

EXCEPTION TO NET CL LENGTH
STA 319+98 TO STA 322+00

END PROJECT 9190-26-71
STA 438+77

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\020201_PO.DWG
LAYOUT NAME - Plan 1 IN 0.5 MI
PLOT DATE : 3/30/2020 10:41 AM
PLOT BY : SPIELMACHER, JOHN P
PLOT NAME :
PLOT SCALE : 1 IN:0.5 MI
WISDOT/CADDS SHEET 42

2

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
NA	NA	38+11	0	7.1	11.7	
NA	NA	39+11	100	9.3	11.9	
10.4	NA	40+11	200	11.6	13.6	
10.8	10.8	41+11	300	11.4	14.2	11.8
10.2	10.5	42+11	400	10.8	13.2	11.2
10.3	10.3	43+11	500	10.6	13.3	11.1
9.7	8.7	44+11	600	10.6	13.1	10.5
9.1	9.2	45+11	700	9.3	12.7	10.1
8.3	9.1	46+11	800	11.1	11.7	10.0
7.3	10.3	47+11	900	11.5	10.9	10.0
6.9	9.6	48+11	1,000	11.0	11.0	9.6
7.2	9.3	49+11	1,100	11.0	10.1	9.4
7.6	8.8	50+11	1,200	10.5	10.7	9.4
7.8	9.2	51+11	1,300	10.7	11.5	9.8
7.6	9.4	52+11	1,400	12.0	11.4	10.1
7.4	9.7	53+11	1,500	12.5	11.7	10.3
6.9	10.2	54+11	1,600	12.4	11.8	10.3
7.5	9.4	55+11	1,700	10.8	11.2	9.7
7.2	8.2	56+11	1,800	9.9	12.1	9.3
8.7	7.1	57+11	1,900	10.1	11.4	9.3
9.4	6.9	58+11	2,000	10.8	11.5	9.7
10.3	7.8	59+11	2,100	9.8	11.2	9.8
10.5	6.1	60+11	2,200	11.3	10.6	9.6
10.3	6.5	61+11	2,300	10.5	11.2	9.6
9.5	7.8	62+11	2,400	11.2	10.9	9.9
9.1	7.5	63+11	2,500	11.0	11.7	9.8
9.2	7.7	64+11	2,600	11.3	11.4	9.9
8.4	7.2	65+11	2,700	10.7	11.4	9.4
7.9	8.3	66+11	2,800	11.1	10.9	9.6
8.6	8.9	67+11	2,900	10.9	11.0	9.8
9.8	10.3	68+11	3,000	10.2	11.0	10.3
8.6	10.4	69+11	3,100	9.3	10.8	9.8
8.0	10.6	70+11	3,200	9.6	11.3	9.9
8.8	10.2	71+11	3,300	11.2	10.8	10.2
8.7	10.1	72+11	3,400	9.6	10.2	9.6
8.8	9.4	73+11	3,500	9.3	10.9	9.6
8.7	10.2	74+11	3,600	9.7	10.3	9.7
7.8	9.1	75+11	3,700	10.5	10.6	9.5
9.3	9.0	76+11	3,800	10.5	11.5	10.1
8.7	9.9	77+11	3,900	9.5	9.8	9.5
9.4	9.8	78+11	4,000	9.0	10.3	9.6
9.6	9.3	79+11	4,100	8.9	10.2	9.5
10.6	9.9	80+11	4,200	8.5	9.7	9.7
10.2	11.4	81+11	4,300	8.1	8.5	9.5
10.0	10.8	82+11	4,400	8.1	9.4	9.6
9.6	8.7	83+11	4,500	8.6	9.7	9.1
10.0	9.0	84+11	4,600	8.8	8.6	9.1
9.7	9.5	85+11	4,700	10.4	8.0	9.4
10.4	9.8	86+11	4,800	9.6	8.5	9.6
9.7	8.9	87+11	4,900	8.0	8.8	8.8
9.1	8.4	88+11	5,000	8.1	8.9	8.6
9.6	7.7	89+11	5,100	9.6	8.2	8.8
10.0	7.5	90+11	5,200	10.3	8.7	9.1
9.5	7.5	91+11	5,300	7.6	8.8	8.4
9.1	7.8	92+11	5,400	8.8	8.4	8.5

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
8.3	8.7	93+11	5,500	8.8	9.2	8.7
8.4	9.5	94+11	5,600	7.8	9.0	8.7
8.1	8.4	95+11	5,700	9.2	8.7	8.6
7.4	8.7	96+11	5,800	9.1	7.7	8.3
6.2	7.8	97+11	5,900	9.1	8.5	7.9
7.1	7.4	98+11	6,000	9.2	8.5	8.1
7.5	7.2	99+11	6,100	9.9	8.6	8.3
7.1	8.8	100+11	6,200	11.5	8.0	8.9
9.0	7.2	101+11	6,300	10.4	8.1	8.7
9.3	8.1	102+11	6,400	9.4	8.6	8.8
9.4	8.1	103+11	6,500	9.2	7.9	8.6
9.1	7.7	104+11	6,600	9.6	7.9	8.6
9.6	8.1	105+11	6,700	9.4	7.9	8.8
9.6	8.5	106+11	6,800	10.3	9.0	9.4
8.2	8.8	107+11	6,900	9.1	8.8	8.7
7.8	8.5	108+11	7,000	9.9	7.8	8.5
8.0	8.2	109+11	7,100	9.2	7.9	8.3
9.0	8.5	110+11	7,200	8.7	8.2	8.6
8.5	9.5	111+11	7,300	8.7	7.9	8.6
7.9	9.5	112+11	7,400	9.1	8.7	8.8
7.6	9.4	113+11	7,500	8.6	9.5	8.8
8.5	8.9	114+11	7,600	8.7	10.2	9.1
9.0	8.2	115+11	7,700	7.2	11.3	8.9
8.4	8.1	116+11	7,800	8.3	12.0	9.2
8.3	8.1	117+11	7,900	8.6	12.2	9.3
8.6	8.3	118+11	8,000	9.2	12.3	9.6
7.8	7.6	119+11	8,100	9.6	12.4	9.3
8.1	8.2	120+11	8,200	9.4	13.8	9.9
8.1	8.4	121+11	8,300	9.3	13.7	9.9
7.9	8.2	122+11	8,400	8.6	12.6	9.3
7.8	7.2	123+11	8,500	9.5	9.9	8.6
8.8	7.0	124+11	8,600	9.0	9.0	8.4
8.6	6.8	125+11	8,700	9.4	9.8	8.7
7.9	6.8	126+11	8,800	9.3	10.0	8.5
8.2	6.7	127+11	8,900	8.3	9.5	8.2
8.7	9.3	128+11	9,000	9.3	10.5	9.4
10.3	9.0	129+11	9,100	9.1	12.5	10.2
9.4	8.7	130+11	9,200	8.5	12.2	9.7
9.4	8.0	131+11	9,300	8.7	12.6	9.7
8.1	8.0	132+11	9,400	9.7	12.1	9.5
8.3	8.9	133+11	9,500	10.8	10.7	9.7
8.5	9.1	134+11	9,600	10.4	10.3	9.6
7.6	8.9	135+11	9,700	10.6	10.7	9.4
7.4	9.1	136+11	9,800	9.7	10.5	9.2
7.3	10.3	137+11	9,900	11.0	9.9	9.6
8.2	9.6	138+11	10,000	10.4	9.6	9.4
8.4	10.4	139+11	10,100	11.1	10.6	10.1
9.0	11.1	140+11	10,200	11.6	11.8	10.9
9.8	10.5	141+11	10,300	12.0	11.4	10.9
8.5	10.0	142+11	10,400	11.8	11.0	10.3
8.2	10.0	143+11	10,500	11.1	10.5	9.9
9.4	9.9	144+11	10,600	10.2	10.7	10.1
8.9	10.0	145+11	10,700	9.6	9.1	9.4
8.4	10.2	146+11	10,800	9.2	8.2	9.0
8.2	10.3	147+11	10,900	7.8	8.1	8.6

2

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	GROUND PENETRATING RADAR LOG - STA 38+11 - 147+11	SHEET 4	E

FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\020301_TS.DWG PLOT DATE : 3/21/2019 8:16 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
9.4	10.2	148+11	11,000	9.1	8.6	9.3
9.9	10.4	149+11	11,100	9.2	7.9	9.3
8.8	11.2	150+11	11,200	8.5	8.2	9.2
10.3	9.8	151+11	11,300	7.3	9.3	9.2
11.5	8.0	152+11	11,400	7.2	8.6	8.8
11.0	7.6	153+11	11,500	7.3	9.5	8.8
10.4	8.4	154+11	11,600	7.1	9.2	8.8
9.4	8.9	155+11	11,700	6.8	9.2	8.6
9.6	8.0	156+11	11,800	7.7	9.8	8.8
9.4	8.5	157+11	11,900	7.4	9.2	8.6
8.9	9.7	158+11	12,000	8.0	7.7	8.6
8.9	10.2	159+11	12,100	7.7	8.6	8.8
9.4	9.6	160+11	12,200	7.4	9.3	8.9
9.1	9.3	161+11	12,300	7.5	9.4	8.8
8.3	9.1	162+11	12,400	7.9	8.2	8.3
8.4	10.5	163+11	12,500	7.9	9.9	9.2
8.4	9.5	164+11	12,600	7.5	10.5	9.0
9.6	11.3	165+11	12,700	7.0	10.0	9.5
8.4	11.3	166+11	12,800	8.0	9.1	9.2
8.2	10.5	167+11	12,900	7.6	8.9	8.8
8.5	10.1	168+11	13,000	8.0	9.2	8.9
8.3	9.9	169+11	13,100	8.5	9.1	9.0
8.1	10.1	170+11	13,200	7.9	8.1	8.6
8.3	10.4	171+11	13,300	7.6	9.1	8.8
8.3	10.1	172+11	13,400	8.1	10.1	9.1
8.0	10.1	173+11	13,500	9.4	10.0	9.4
9.2	10.0	174+11	13,600	10.3	9.7	9.8
9.3	9.2	175+11	13,700	8.6	9.1	9.0
7.4	8.3	176+11	13,800	8.2	8.5	8.1
7.7	8.7	177+11	13,900	8.7	7.6	8.2
8.1	9.7	178+11	14,000	9.5	8.3	8.9
8.2	10.2	179+11	14,100	9.1	8.3	9.0
9.5	9.3	180+11	14,200	9.8	10.9	9.9
10.0	9.1	181+11	14,300	10.8	10.9	10.2
10.2	8.9	182+11	14,400	11.8	10.7	10.4
9.8	9.2	183+11	14,500	9.9	9.9	9.7
10.1	10.7	184+11	14,600	8.5	11.9	10.3
10.4	10.1	185+11	14,700	8.2	12.4	10.2
10.3	10.7	186+11	14,800	9.4	10.1	10.1
10.7	9.4	187+11	14,900	8.6	9.1	9.5
10.3	10.1	188+11	15,000	9.9	8.5	9.7
9.7	10.0	189+11	15,100	9.8	8.3	9.5
9.4	10.4	190+11	15,200	9.4	8.0	9.3
9.0	9.6	191+11	15,300	10.8	8.1	9.4
9.7	9.2	192+11	15,400	9.5	9.5	9.5
10.0	9.6	193+11	15,500	8.4	9.5	9.4
9.7	9.4	194+11	15,600	8.5	8.5	9.0
9.5	9.9	195+11	15,700	8.0	9.1	9.1
9.9	10.3	196+11	15,800	7.5	7.9	8.9
10.0	10.2	197+11	15,900	8.9	9.1	9.5
9.6	9.3	198+11	16,000	8.8	8.7	9.1
9.5	8.3	199+11	16,100	7.4	8.6	8.5
9.9	8.3	200+11	16,200	8.7	8.3	8.8
11.2	8.7	201+11	16,300	8.5	8.8	9.3
10.4	8.5	202+11	16,400	9.5	8.0	9.1

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
10.6	8.6	203+11	16,500	10.6	7.8	9.4
10.2	8.8	204+11	16,600	9.5	7.6	9.0
9.7	9.4	205+11	16,700	10.5	8.1	9.4
8.5	9.8	206+11	16,800	9.9	7.4	8.9
7.8	10.1	207+11	16,900	9.2	7.4	8.6
7.9	9.2	208+11	17,000	8.9	7.1	8.3
8.9	9.5	209+11	17,100	8.6	6.5	8.4
8.7	9.4	210+11	17,200	7.4	7.3	8.2
9.6	9.8	211+11	17,300	6.7	6.5	8.2
10.0	10.4	212+11	17,400	6.5	5.4	8.1
9.2	9.9	213+11	17,500	7.4	5.3	7.9
9.2	9.9	214+11	17,600	7.4	5.4	8.0
10.2	9.7	215+11	17,700	9.8	6.1	8.9
9.4	9.8	216+11	17,800	10.2	5.5	8.7
9.1	11.2	217+11	17,900	9.6	5.7	8.9
10.1	8.3	218+11	18,000	8.8	6.8	8.5
10.0	7.8	219+11	18,100	8.1	7.8	8.4
10.0	8.4	220+11	18,200	8.0	8.8	8.8
10.4	9.7	221+11	18,300	8.3	7.8	9.0
11.6	8.4	222+11	18,400	8.0	7.6	8.9
11.9	9.1	223+11	18,500	7.9	7.3	9.1
10.9	9.6	224+11	18,600	7.8	7.7	9.0
11.2	10.6	225+11	18,700	7.3	7.5	9.2
10.5	9.9	226+11	18,800	6.8	7.6	8.7
10.9	9.4	227+11	18,900	7.3	8.3	9.0
10.6	10.1	228+11	19,000	8.1	8.8	9.4
11.5	10.9	229+11	19,100	8.6	8.9	10.0
10.5	10.9	230+11	19,200	7.3	8.5	9.3
10.4	9.9	231+11	19,300	8.6	7.5	9.1
10.0	9.5	232+11	19,400	7.9	8.1	8.9
9.2	8.6	233+11	19,500	8.3	9.4	8.9
8.7	9.4	234+11	19,600	8.5	9.1	8.9
9.1	8.5	235+11	19,700	10.6	8.5	9.2
8.8	9.1	236+11	19,800	10.7	8.5	9.3
9.9	10.0	237+11	19,900	11.2	10.0	10.3
9.1	9.7	238+11	20,000	10.4	9.0	9.5
8.8	10.6	239+11	20,100	9.2	8.8	9.3
8.8	10.1	240+11	20,200	7.9	9.1	9.0
9.2	10.4	241+11	20,300	7.3	8.9	8.9
8.7	10.4	242+11	20,400	8.3	9.2	9.1
9.2	7.8	243+11	20,500	9.4	9.1	8.9
10.2	9.6	244+11	20,600	8.1	8.8	9.1
10.0	9.9	245+11	20,700	7.6	9.0	9.1
10.4	10.0	246+11	20,800	7.5	10.0	9.5
10.8	9.7	247+11	20,900	7.2	9.9	9.4
11.1	9.0	248+11	21,000	8.3	10.1	9.6
10.4	8.7	249+11	21,100	7.8	10.1	9.3
10.2	8.4	250+11	21,200	8.2	9.6	9.1
10.0	7.0	251+11	21,300	8.4	9.0	8.6
10.9	8.5	252+11	21,400	7.9	8.9	9.0
11.0	9.7	253+11	21,500	7.0	8.0	8.9
11.1	10.0	254+11	21,600	5.8	7.6	8.6
10.8	9.7	255+11	21,700	6.8	8.1	8.8
10.2	9.4	256+11	21,800	5.8	8.2	8.4
11.4	10.3	257+11	21,900	7.0	8.2	9.2

2

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	GROUND PENETRATING RADAR LOG - STA 148+11 - 257+11	SHEET 5	E

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
11.2	10.5	258+11	22,000	7.4	8.1	9.3
11.3	9.5	259+11	22,100	7.5	7.8	9.0
10.9	9.2	260+11	22,200	7.9	8.0	9.0
10.2	8.3	261+11	22,300	7.9	8.9	8.8
10.3	9.5	262+11	22,400	8.5	8.7	9.2
9.9	7.2	263+11	22,500	8.0	8.5	8.4
10.7	8.9	264+11	22,600	7.9	8.1	8.9
9.1	8.5	265+11	22,700	8.8	8.1	8.6
9.5	8.4	266+11	22,800	8.7	7.3	8.5
9.4	10.1	267+11	22,900	7.3	7.0	8.4
8.7	8.9	268+11	23,000	6.8	8.0	8.1
9.2	9.1	269+11	23,100	8.6	8.1	8.7
9.8	9.3	270+11	23,200	7.5	8.0	8.6
9.2	9.0	271+11	23,300	8.4	9.0	8.9
10.1	9.6	272+11	23,400	8.8	9.2	9.4
9.0	10.1	273+11	23,500	8.1	9.3	9.1
7.8	10.0	274+11	23,600	7.3	10.0	8.8
6.5	8.9	275+11	23,700	7.5	9.9	8.2
7.4	9.6	276+11	23,800	7.4	9.5	8.5
7.4	8.9	277+11	23,900	6.6	7.6	7.6
7.6	7.9	278+11	24,000	6.2	7.6	7.3
8.4	7.5	279+11	24,100	7.0	8.3	7.8
8.8	7.7	280+11	24,200	8.5	9.3	8.6
9.0	6.7	281+11	24,300	9.9	9.8	8.9
8.8	6.8	282+11	24,400	10.0	9.3	8.7
7.4	8.4	283+11	24,500	9.7	9.6	8.8
7.7	8.1	284+11	24,600	10.1	10.5	9.1
8.0	9.0	285+11	24,700	11.2	11.4	9.9
7.9	8.7	286+11	24,800	10.8	10.6	9.5
7.8	7.6	287+11	24,900	9.5	10.5	8.9
8.5	7.5	288+11	25,000	9.0	8.6	8.4
9.5	8.1	289+11	25,100	9.5	9.2	9.0
9.3	10.0	290+11	25,200	9.0	8.6	9.2
8.4	10.5	291+11	25,300	8.9	8.4	9.1
8.1	10.8	292+11	25,400	9.0	9.0	9.2
8.2	11.6	293+11	25,500	9.6	8.9	9.6
8.8	8.7	294+11	25,600	10.2	9.0	9.1
7.6	9.9	295+11	25,700	9.5	8.8	8.9
7.3	11.4	296+11	25,800	10.0	9.7	9.6
8.1	11.3	297+11	25,900	10.1	9.2	9.7
8.6	11.5	298+11	26,000	8.8	7.8	9.2
8.3	11.1	299+11	26,100	8.0	8.2	8.9
8.2	11.0	300+11	26,200	8.0	8.3	8.9
8.6	10.3	301+11	26,300	8.5	7.4	8.7
9.8	11.1	302+11	26,400	9.7	8.0	9.6
9.9	11.3	303+11	26,500	9.2	7.6	9.5
9.7	10.9	304+11	26,600	9.2	8.3	9.5
9.5	11.6	305+11	26,700	8.1	9.4	9.6
8.9	11.4	306+11	26,800	8.3	9.4	9.5
9.6	9.7	307+11	26,900	8.3	8.8	9.1
8.6	8.1	308+11	27,000	8.0	7.0	7.9
10.5	9.0	309+11	27,100	6.9	7.8	8.6
9.9	10.2	310+11	27,200	6.9	8.7	8.9
9.7	10.1	311+11	27,300	8.2	7.8	8.9
10.2	9.8	312+11	27,400	6.5	6.6	8.3

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
9.9	10.9	313+11	27,500	8.5	6.4	8.9
9.9	10.0	314+11	27,600	8.9	7.6	9.1
9.8	14.7	315+11	27,700	7.7	6.2	9.6
8.8	9.4	316+11	27,800	6.3	6.1	7.7
9.9	9.2	317+11	27,900	7.5	7.7	8.6
10.2	7.3	318+11	28,000	8.7	8.3	8.6
13.2	7.6	319+11	28,100	9.7	7.8	9.6
12.4	6.3	320+11	28,200	10.5	7.7	9.2
12.3	8.5	321+11	28,300	10.6	8.8	10.0
12.2	8.7	322+11	28,400	8.6	9.0	9.6
12.2	9.6	323+11	28,500	9.0	8.1	9.7
12.1	8.5	324+11	28,600	11.4	8.1	10.0
11.6	8.7	325+11	28,700	9.6	8.2	9.5
11.2	8.6	326+11	28,800	9.6	8.1	9.4
13.7	8.8	327+11	28,900	7.2	8.0	9.4
9.6	8.7	328+11	29,000	6.7	6.6	7.9
8.3	6.9	329+11	29,100	7.5	8.2	7.7
8.8	7.4	330+11	29,200	9.9	7.3	8.3
8.6	6.7	331+11	29,300	9.9	7.6	8.2
9.1	8.2	332+11	29,400	9.0	8.6	8.7
8.3	9.5	333+11	29,500	8.8	8.8	8.8
8.0	7.9	334+11	29,600	8.3	7.6	7.9
8.5	7.6	335+11	29,700	8.1	8.2	8.1
8.3	7.8	336+11	29,800	8.6	9.0	8.4
8.7	8.3	337+11	29,900	9.3	9.4	8.9
8.2	8.4	338+11	30,000	10.1	8.8	8.9
9.0	8.8	339+11	30,100	8.3	9.6	8.9
8.5	8.5	340+11	30,200	8.0	10.0	8.7
8.1	9.6	341+11	30,300	8.1	9.1	8.7
7.9	9.3	342+11	30,400	8.5	8.4	8.5
9.3	8.7	343+11	30,500	7.8	8.7	8.6
8.3	9.2	344+11	30,600	8.2	7.9	8.4
8.6	9.5	345+11	30,700	8.9	7.4	8.6
8.9	10.0	346+11	30,800	8.6	7.0	8.6
8.9	10.3	347+11	30,900	8.2	7.2	8.7
9.4	9.9	348+11	31,000	8.2	7.7	8.8
10.3	9.6	349+11	31,100	8.2	7.7	9.0
10.2	9.2	350+11	31,200	8.0	8.0	8.9
10.5	10.1	351+11	31,300	7.7	8.1	9.1
10.4	9.6	352+11	31,400	9.3	7.9	9.3
10.3	8.3	353+11	31,500	9.6	8.9	9.2
9.4	8.4	354+11	31,600	9.2	9.0	9.0
8.7	9.0	355+11	31,700	7.5	8.0	8.3
8.9	9.1	356+11	31,800	7.5	7.6	8.3
8.7	9.8	357+11	31,900	6.9	8.2	8.4
8.9	10.2	358+11	32,000	6.5	7.8	8.4
8.9	10.4	359+11	32,100	6.8	7.6	8.4
8.6	10.1	360+11	32,200	7.7	7.8	8.5
8.9	9.4	361+11	32,300	6.9	8.1	8.3
8.8	9.3	362+11	32,400	9.1	9.9	9.3
7.6	8.9	363+11	32,500	9.9	10.7	9.2
9.8	10.6	364+11	32,600	9.2	11.1	10.2
12.5	10.9	365+11	32,700	9.6	11.3	11.1
11.7	10.4	366+11	32,800	8.7	10.9	10.4
11.1	10.0	367+11	32,900	9.0	11.0	10.3

2

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
11.6	9.5	368+11	33,000	9.3	10.5	10.2
11.1	10.2	369+11	33,100	9.7	10.7	10.4
9.4	9.7	370+11	33,200	10.4	11.6	10.3
8.6	8.4	371+11	33,300	11.0	10.1	9.5
8.8	7.9	372+11	33,400	10.1	8.9	8.9
9.0	9.0	373+11	33,500	9.0	8.2	8.8
8.9	9.6	374+11	33,600	9.8	10.2	9.6
8.5	9.5	375+11	33,700	10.4	9.0	9.4
9.0	8.6	376+11	33,800	10.0	8.6	9.1
8.8	10.2	377+11	33,900	8.7	7.8	8.9
8.9	8.9	378+11	34,000	7.8	8.4	8.5
10.1	7.2	379+11	34,100	8.0	9.7	8.7
10.4	8.6	380+11	34,200	8.0	9.3	9.1
7.7	8.6	381+11	34,300	8.0	9.2	8.4
7.9	9.6	382+11	34,400	9.4	8.4	8.8
8.4	9.3	383+11	34,500	8.5	8.0	8.5
8.1	10.2	384+11	34,600	8.7	6.6	8.4
7.9	11.4	385+11	34,700	8.0	5.8	8.3
8.3	10.9	386+11	34,800	8.5	6.2	8.5
8.2	9.0	387+11	34,900	8.0	7.7	8.2
9.0	8.8	388+11	35,000	8.6	8.4	8.7
8.2	9.2	389+11	35,100	8.8	8.6	8.7
8.0	9.8	390+11	35,200	8.5	9.3	8.9
7.9	8.9	391+11	35,300	9.1	9.2	8.7
8.7	8.2	392+11	35,400	8.8	8.5	8.5
7.8	8.4	393+11	35,500	9.1	8.7	8.5
8.5	8.8	394+11	35,600	9.0	9.1	8.8
8.1	9.0	395+11	35,700	9.2	9.3	8.9
7.5	8.8	396+11	35,800	8.8	8.4	8.4
8.0	8.4	397+11	35,900	8.5	9.7	8.6
8.3	8.9	398+11	36,000	9.2	10.5	9.2
8.7	8.5	399+11	36,100	9.2	11.6	9.5
8.3	9.7	400+11	36,200	9.0	11.1	9.5
8.5	8.0	401+11	36,300	11.2	10.2	9.5
8.1	9.0	402+11	36,400	12.8	11.2	10.3
7.9	9.6	403+11	36,500	11.9	11.7	10.3
7.4	9.6	404+11	36,600	11.5	10.7	9.8
9.5	9.3	405+11	36,700	10.1	11.3	10.1
9.6	9.7	406+11	36,800	9.9	10.1	9.8
8.7	9.1	407+11	36,900	8.5	9.9	9.1
7.9	9.3	408+11	37,000	9.0	9.3	8.9
7.5	8.8	409+11	37,100	9.0	9.8	8.8
8.0	8.5	410+11	37,200	8.9	9.4	8.7
7.7	7.5	411+11	37,300	9.8	9.7	8.7
7.3	7.7	412+11	37,400	9.6	9.3	8.5
7.4	9.9	413+11	37,500	9.8	9.7	9.2
7.3	9.3	414+11	37,600	9.8	12.3	9.7
7.4	9.7	415+11	37,700	9.9	11.5	9.6
8.4	7.8	416+11	37,800	11.7	12.0	10.0
9.0	7.7	417+11	37,900	10.0	11.2	9.5
9.4	7.3	418+11	38,000	10.9	10.5	9.5
9.8	8.5	419+11	38,100	9.6	10.5	9.6
9.7	9.3	420+11	38,200	9.1	11.4	9.9
9.5	9.6	421+11	38,300	9.0	10.3	9.6
8.9	9.1	422+11	38,400	9.1	10.0	9.3

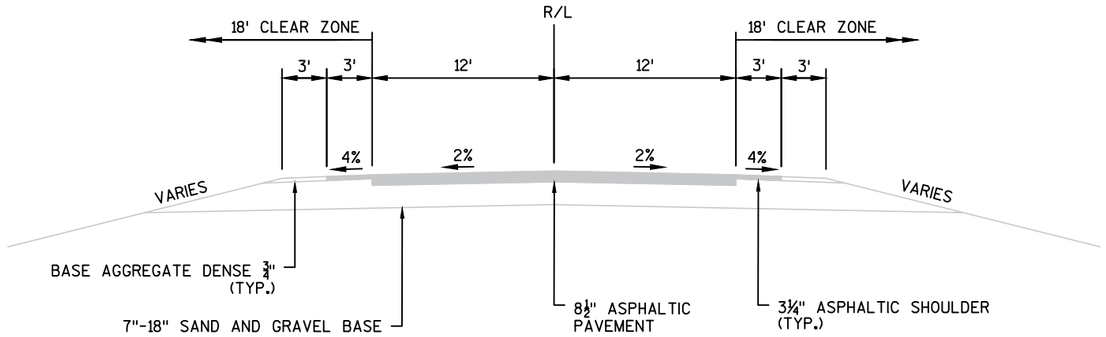
ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
8.8	9.2	423+11	38,500	10.9	10.4	9.8
9.8	10.8	424+11	38,600	10.3	10.7	10.4
10.2	10.9	425+11	38,700	9.9	10.6	10.4
10.0	11.1	426+11	38,800	10.5	9.8	10.3
9.5	10.9	427+11	38,900	9.9	9.9	10.1
9.8	10.9	428+11	39,000	11.0	10.4	10.5
9.5	10.6	429+11	39,100	10.6	10.6	10.3
9.4	8.5	430+11	39,200	9.9	10.8	9.6
9.8	8.3	431+11	39,300	8.7	10.0	9.2
10.0	9.0	432+11	39,400	8.7	10.5	9.5
8.6	8.7	433+11	39,500	8.2	9.8	8.8
9.2	9.7	434+11	39,600	8.0	10.2	9.3
8.7	9.3	435+11	39,700	7.5	9.5	8.8
8.6	10.0	436+11	39,800	7.8	8.7	8.7
9.2	9.7	437+11	39,900	8.2	8.4	8.9
10.8	10.6	438+11	40,000	8.7	9.5	9.9

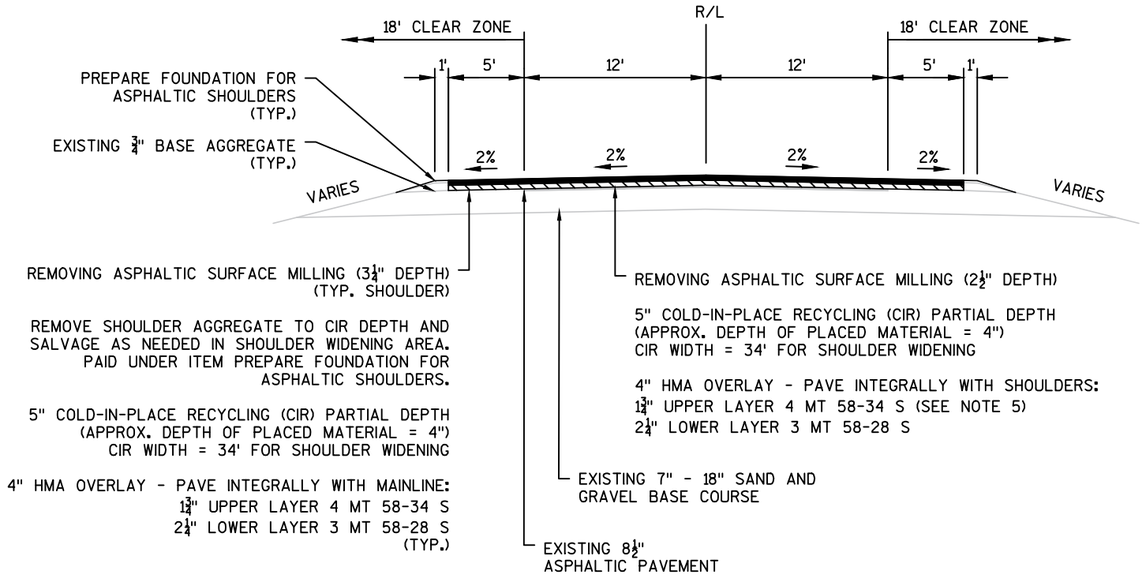
2

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	GROUND PENETRATING RADAR LOG - STA 368+11 - 438+11	SHEET 7	E

FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\020301_TS.DWG PLOT DATE : 3/21/2019 8:40 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



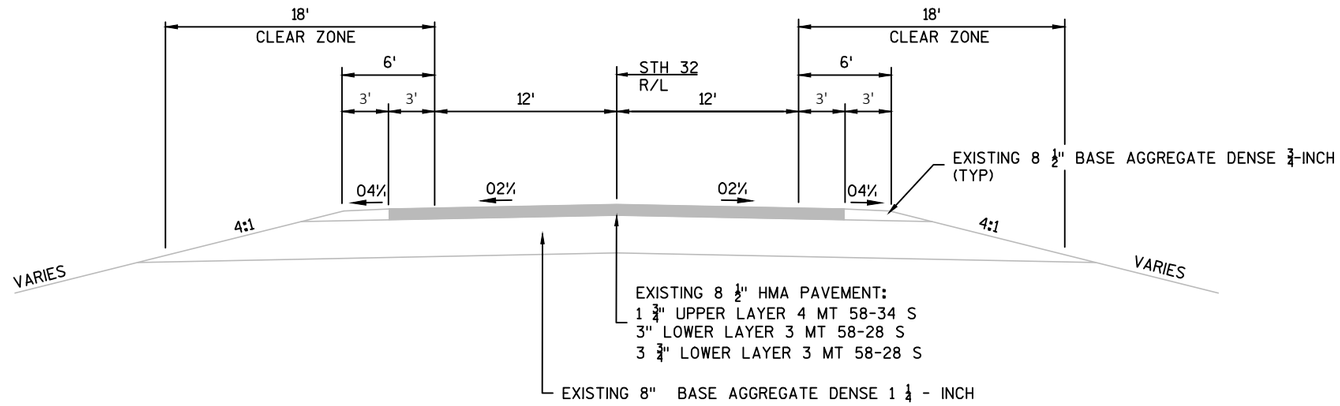
EXISTING TYPICAL CROSS SECTION FOR STH 32
STA 39+94 - 317+71
STA 322+00 - 438+77



NOTES:
1. PLACE MILLINGS FROM SHOULDERS ALONG TRAVEL LANES TO INCORPORATE INTO CIR PROCESS.
2. SALVAGED SHOULDER AGGREGATE IS NOT TO BE INCORPORATED INTO CIR PROCESS DUE TO DELETERIOUS MATERIALS SUCH AS WEEDS.
3. NET INCREASE IN STH 32 FINISH ℄ PROFILE = -2.5" -5" +4" +4" = +0.5"
4. SEE INTERSECTION MILLING AND PAVING DETAIL FOR PROPOSED ℄ PROFILE TRANSITION THROUGH INTERSECTIONS.
5. UPPER LAYER VARIES FROM 1¾" TO 2" BETWEEN STA 316+50.84 - STA 317+71 TO ACCOUNT FOR PROFILE CORRECTION. SEE PLAN AND PROFILE SHEET FOR ADDITIONAL INFORMATION.

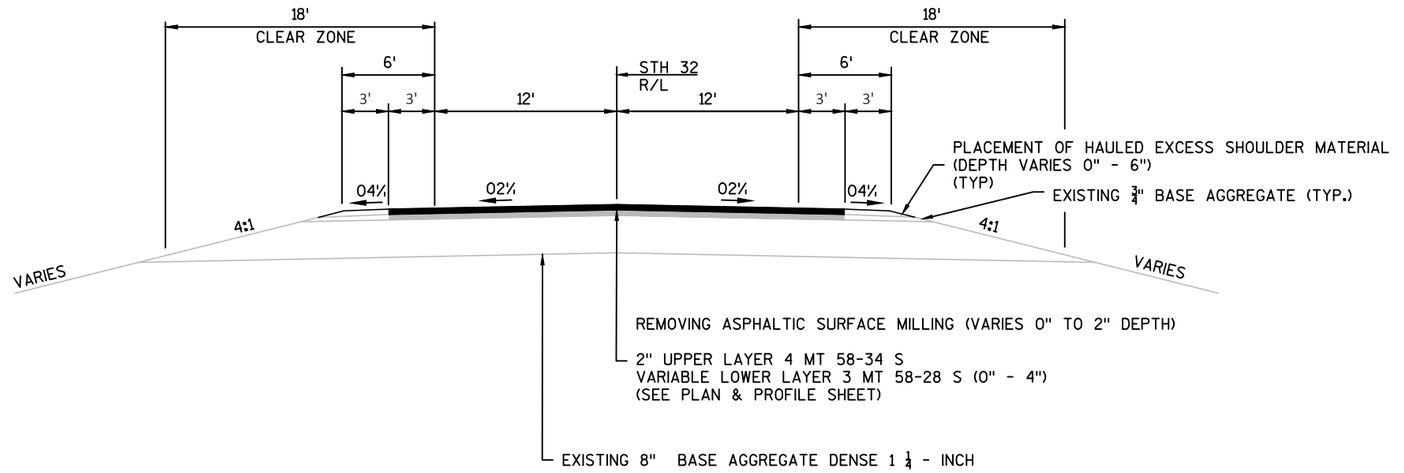
PROPOSED TYPICAL CROSS SECTION FOR STH 32
STA 39+94 - 317+71
STA 322+00 - 438+77

2



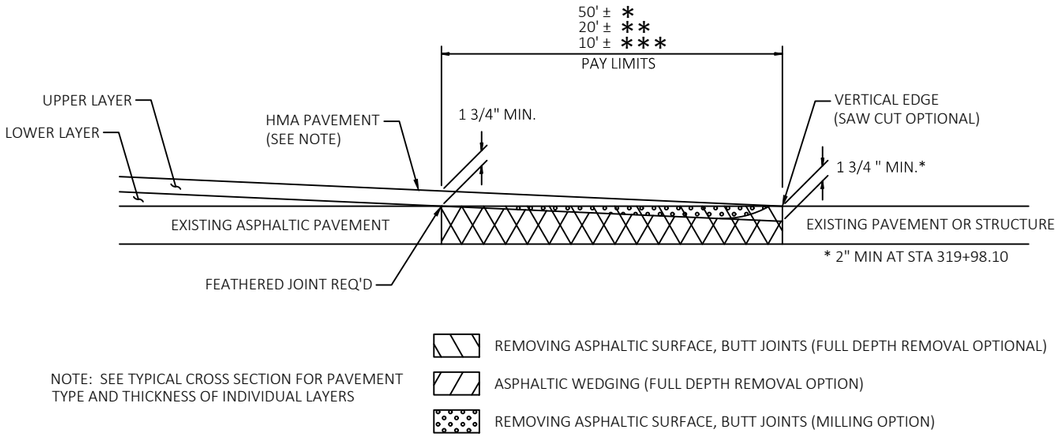
EXISTING TYPICAL CROSS SECTION FOR STH 32 PROFILE CORRECTION

STA 317+71 - 319+98.10



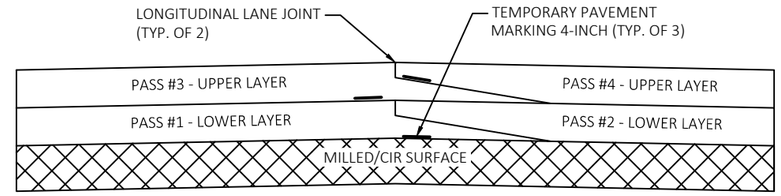
PROPOSED TYPICAL CROSS SECTION FOR STH 32 PROFILE CORRECTION

STA 317+71 - 319+98.10

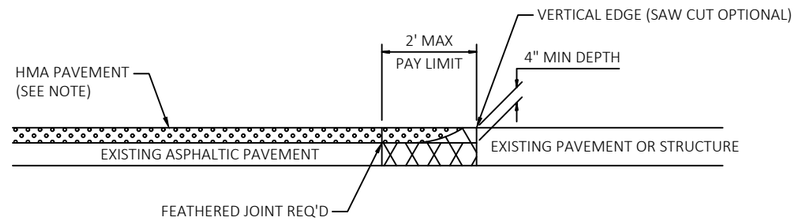


BUTT JOINT DETAIL FOR NON MILLED ASPHALTIC PAVEMENTS (PROFILE CHANGE)

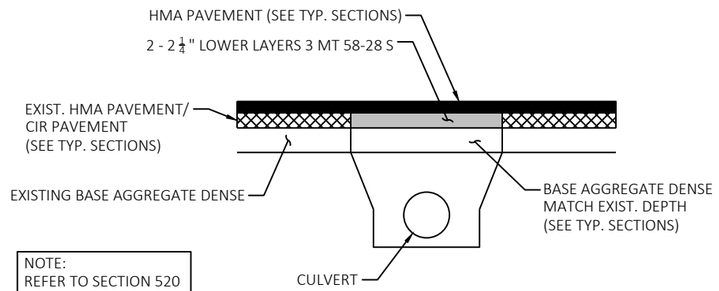
* MAINLINE
** SIDEROADS
*** PRIVATE ENTRANCES AND WAYSIDE INTERIOR



PAVEMENT MARKING DETAIL FOR TAPERED OVERLAPPING JOINTS IN HMA PAVEMENTS

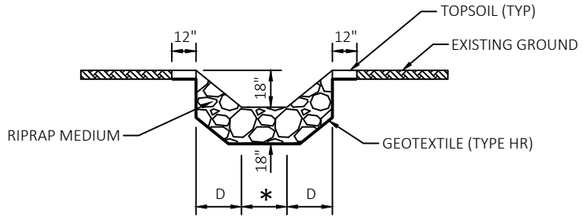


BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)



PAVEMENT AT CULVERT REPLACEMENTS

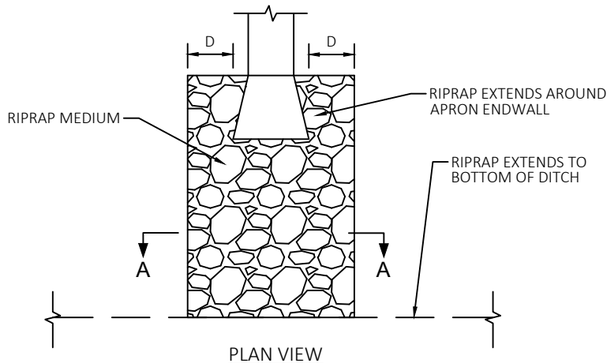
2



SECTION A-A

* APRON ENDWALL WIDTH

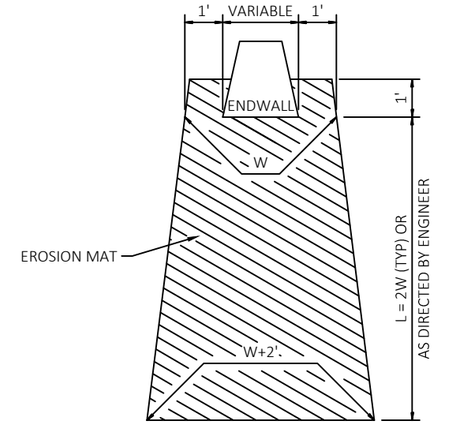
D = PIPE DIAMETER



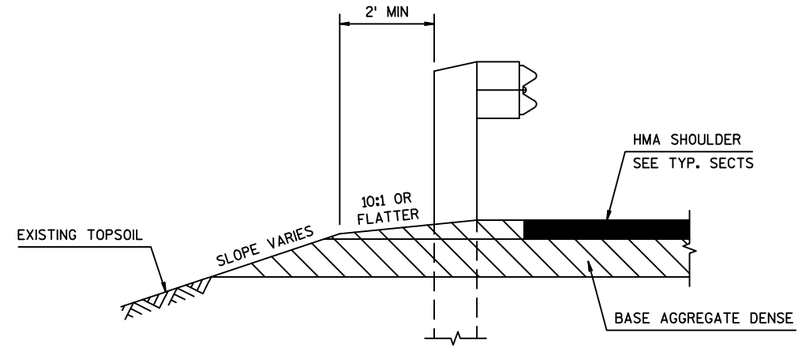
PLAN VIEW

RIPRAP TREATMENT AT CULVERT OUTFALLS

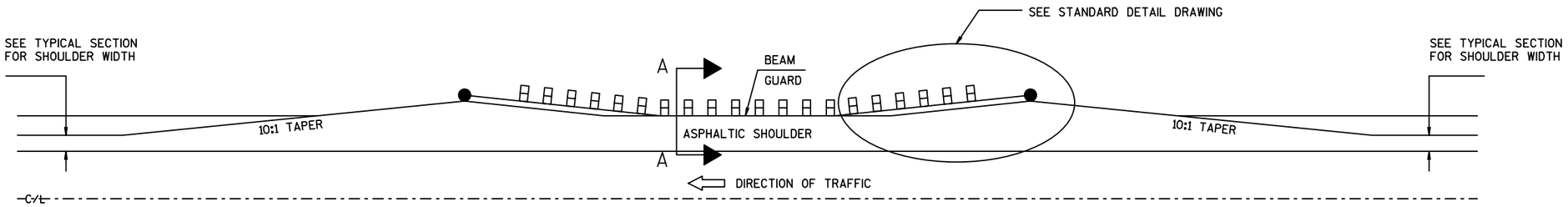
STA 293+75



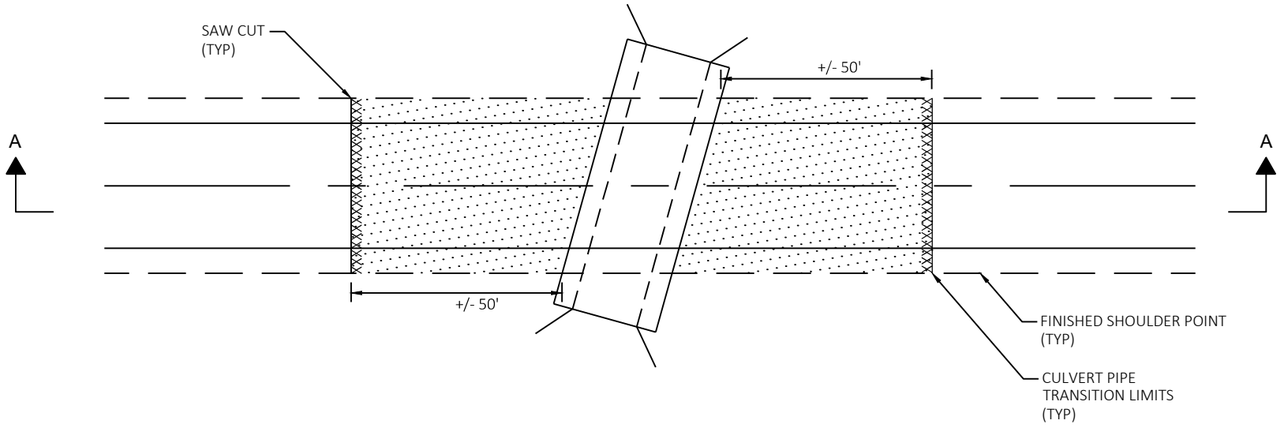
EROSION MAT TREATMENT AT CULVERTS

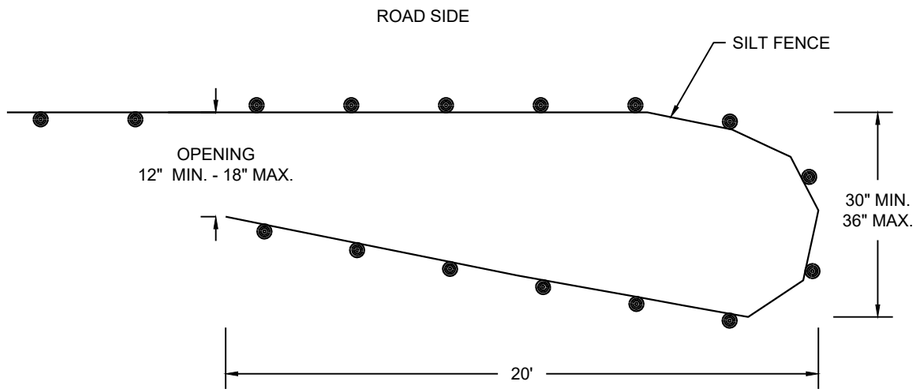


SECTION A-A



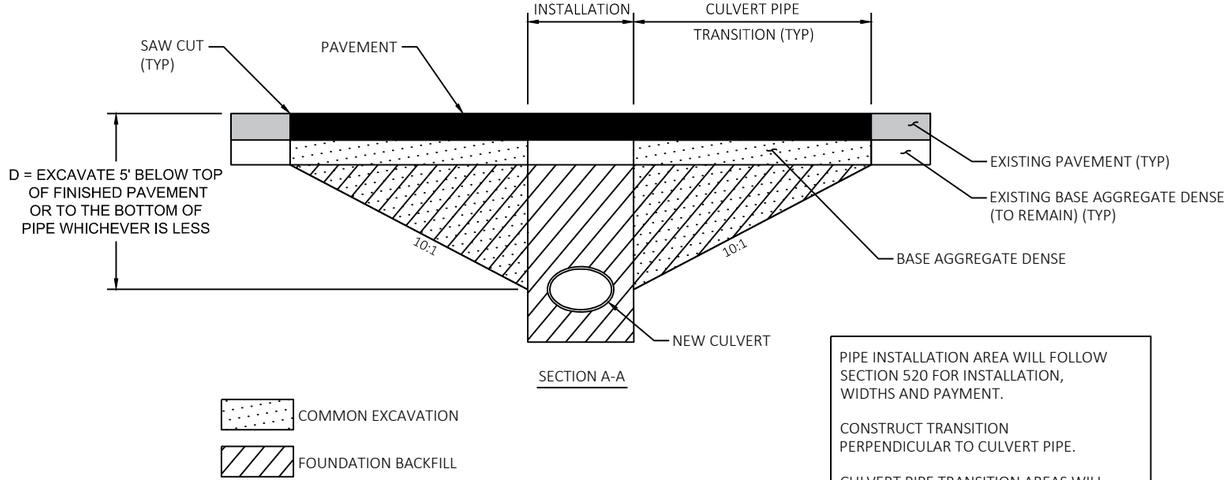
DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD





NOTE:
TURTLE TURNAROUNDS ARE INSTALLED TO REDIRECT TURTLES AWAY FROM THE CONSTRUCTION ZONE.
POSITION SILT FENCE POSTS PRIOR TO THE TURNAROUND PER SDD 8E9 SILT FENCE.
POSITION TURNAROUND AREA POSTS ON THE OUTSIDE OF THE TURNAROUND.

TURTLE TURNAROUND



PIPE INSTALLATION AREA WILL FOLLOW SECTION 520 FOR INSTALLATION, WIDTHS AND PAYMENT.

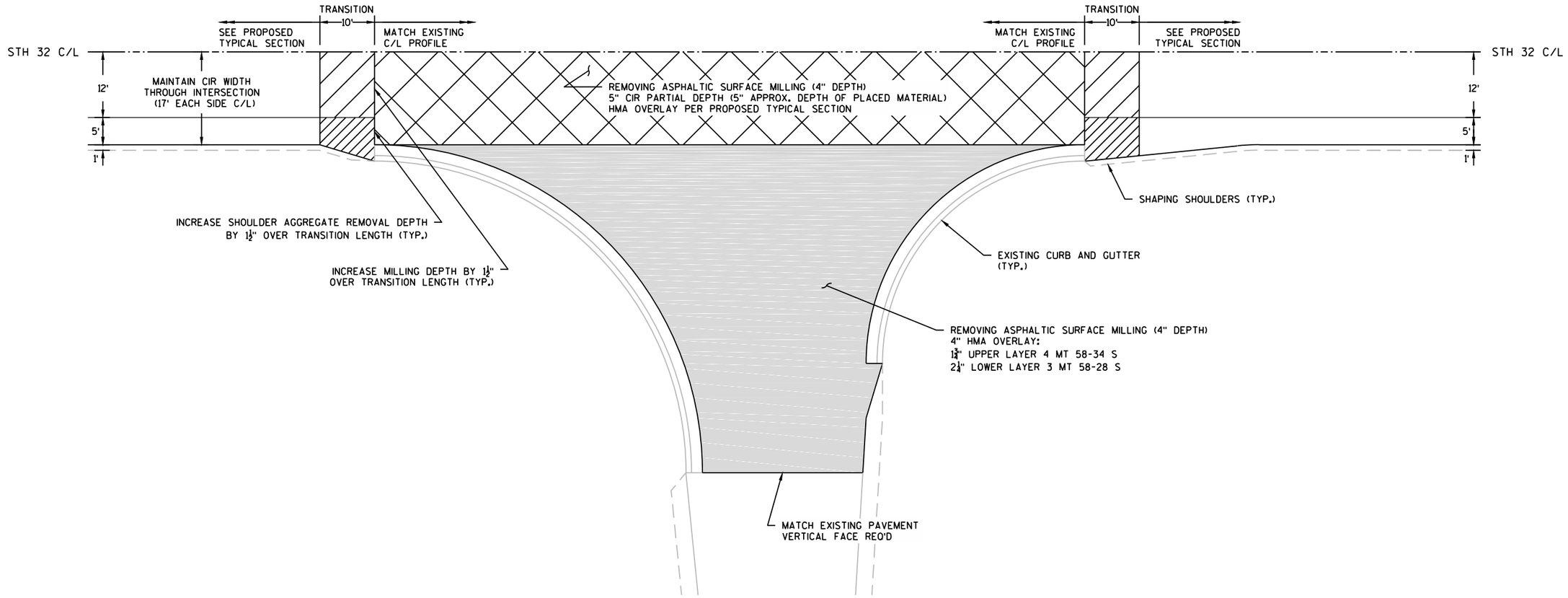
CONSTRUCT TRANSITION PERPENDICULAR TO CULVERT PIPE.

CULVERT PIPE TRANSITION AREAS WILL BE PAID BY COMMON EXCAVATION & SPV FOUNDATION BACKFILL.

PAVEMENT SAW CUT TO BE PERPENDICULAR TO ROADWAY ALIGNMENT.

NEW CULVERT PIPES WITH TRANSITION

STA 145+65 STH 32
STA 65+47 CTH S
STA 228+40 STH 32



INTERSECTION MILLING & PAVING DETAIL

(ALL TYPE 'D'/'D' MOD. EXCEPT TYPE 'B' AT CTH E)

DEER DRIVE/SOUTH CHASE ROAD
YUREK ROAD
MIDDLE DRIVE/CTH S
VANDORNICK ROAD
GOHR ROAD
LAKE SANDIA DRIVE
CENTER STREET
MAIN STREET
HOFF STREET
TOWN LINE ROAD/DUDZICK ROAD
FUNK ROAD/SCHROEDER ROAD
CTH E (ADVANCE ROAD/MORGAN ROAD)

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	INTERSECTION MILLING & PAVING DETAIL	SHEET 13	E

FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\021001_CD.DWG
LAYOUT NAME - 021101
PLOT DATE : 5/2/2019 9:45 AM
PLOT BY : SPIELMACHER, JOHN P
PLOT NAME :
PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

2

2

R/W

POST

44+00

45+00

46+00

47

STH 32

R/W

POST

SIGN

R/W

80+00

81+00

82+00

STH 32

R/W

LEGEND

EROSION MAT CLASS II TYPE B

SILT FENCE

SLOPE INTERCEPT

TEMPORARY DITCH CHECK

CULVERT PIPE CHECK

SURFACE WATER FLOW

WHITE RIDGE CIRCLE

R/W

123+00

124+00

125+00

STH 32

MIDDLE DR

145+00

146+00

147+00

STH 32

CTH S

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	EROSION CONTROL STA 43+00 - STA 148+00	SHEET 14	E

2

2

R/W

156+00

157+00

158+00

STH 32

R/W

227+00

228+00

229+00

230+00

STH 32

R/W

250+00

251+00

252+00

253+00

254+00

255+00

STH 32

GOHR RD

SIGN

R/W

R/W

LEGEND

- EROSION MAT CLASS II TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	EROSION CONTROL STA 156+00 - STA 255+00	SHEET 15	E

FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022021-ec

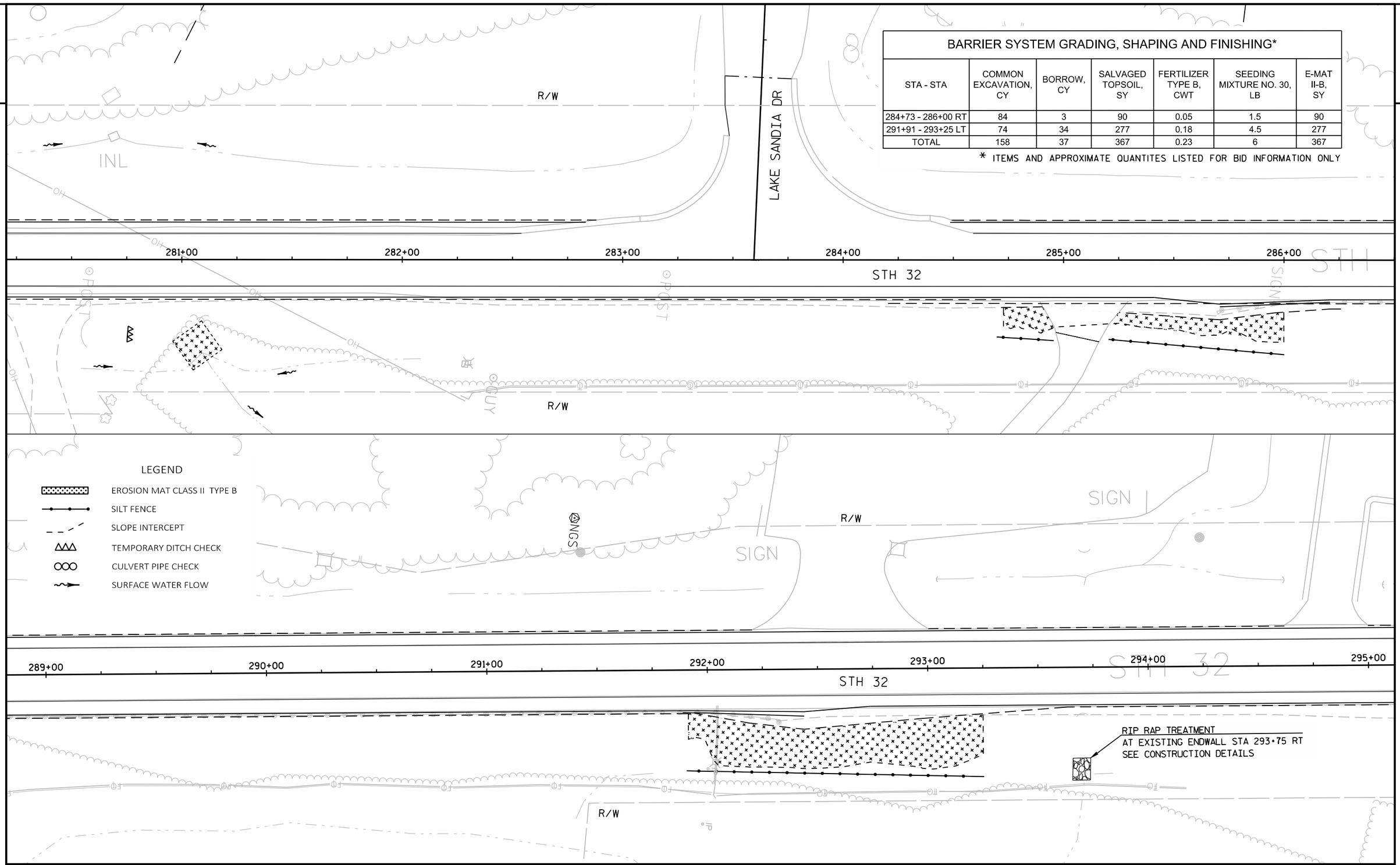
PLOT DATE : 12/10/2019 1:35 PM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

BARRIER SYSTEM GRADING, SHAPING AND FINISHING*

STA - STA	COMMON EXCAVATION, CY	BORROW, CY	SALVAGED TOPSOIL, SY	FERTILIZER TYPE B, CWT	SEEDING MIXTURE NO. 30, LB	E-MAT II-B, SY
284+73 - 286+00 RT	84	3	90	0.05	1.5	90
291+91 - 293+25 LT	74	34	277	0.18	4.5	277
TOTAL	158	37	367	0.23	6	367

* ITEMS AND APPROXIMATE QUANTITES LISTED FOR BID INFORMATION ONLY



PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	EROSION CONTROL STA 281+00 - STA 295+00	SHEET 16	E

2

R/W

339+00 340+00 341+00

STH 32

R/W

SIGNS

R/W

352+00 353+00 354+00 355

STH 32

R/W

R/W

347+00 348+00 349+00

STH 32

R/W

436+00 437+00

STH 32

CTH E

R/W

R/W

LEGEND

- EROSION MAT CLASS II TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	EROSION CONTROL STA 339+00 - STA 437+00	SHEET 17	E

FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022023-ec

PLOT DATE : 12/10/2019 1:38 PM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:40 FT

9190-26-71

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	6.000	6.000
0004	204.0110	Removing Asphaltic Surface	SY	564.000	564.000
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	629.000	629.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	139,752.000	139,752.000
0010	204.0150	Removing Curb & Gutter	LF	151.000	151.000
0012	204.9060.S	Removing (item description) 01. Apron Endwalls	EACH	5.000	5.000
0016	205.0100	Excavation Common	CY	629.000	629.000
0018	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 9190-26-71	LS	1.000	1.000
0022	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	772.000	772.000
0024	211.0700.S	Prepare Foundation for CIR Base Layer (project) 01. 9190-26-71	EACH	1.000	1.000
0028	211.0800.S	Base Repair for CIR Layer	CY	500.000	500.000
0030	213.0100	Finishing Roadway (project) 01. 9190-26-71	EACH	1.000	1.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	640.000	640.000
0036	305.0504.S	Hauling Excess Shoulder Material	CY	175.000	175.000
0038	327.1000.S	CIR Asphaltic Base Layer	SY	149,918.000	149,918.000
0040	455.0605	Tack Coat	GAL	22,041.000	22,041.000
0042	455.0770.S	Asphalt Stabilizing Agent	TON	754.000	754.000
0044	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	2.000	2.000
0046	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	2.000	2.000
0048	460.2005	Incentive Density PWL HMA Pavement	DOL	24,340.000	24,340.000
0050	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	32,227.000	32,227.000
0052	460.2010	Incentive Air Voids HMA Pavement	DOL	37,925.000	37,925.000
0054	460.6223	HMA Pavement 3 MT 58-28 S	TON	21,197.000	21,197.000
0056	460.6244	HMA Pavement 4 MT 58-34 S	TON	16,728.000	16,728.000
0058	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	93.000	93.000
0060	465.0315	Asphaltic Flumes	SY	5.000	5.000
0062	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	66,650.000	66,650.000
0064	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	32,490.000	32,490.000
0066	509.0500	Cleaning Decks	SY	40.000	40.000
0070	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	6.000	6.000
0072	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	2.000	2.000
0076	520.3530	Culvert Pipe Class III-B 30-Inch	LF	152.000	152.000
0078	520.3536	Culvert Pipe Class III-B 36-Inch	LF	62.000	62.000
0080	520.8700	Cleaning Culvert Pipes	EACH	1.000	1.000
0082	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	2.000	2.000
0084	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	1.000	1.000
0086	521.1042	Apron Endwalls for Culvert Pipe Steel 42-Inch	EACH	1.000	1.000
0090	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	16.000	16.000

9190-26-71

Line	Item	Item Description	Unit	Total	Qty
0092	522.0127	Culvert Pipe Reinforced Concrete Class III 27-Inch	LF	16.000	16.000
0094	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	4.000	4.000
0096	524.0627	Apron Endwalls for Culvert Pipe Salvaged 27-Inch	EACH	2.000	2.000
0100	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	151.000	151.000
0102	606.0200	Riprap Medium	CY	10.000	10.000
0104	614.0010	Barrier System Grading Shaping Finishing	EACH	2.000	2.000
0106	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	2.000	2.000
0108	614.0400	Adjusting Steel Plate Beam Guard	LF	914.000	914.000
0112	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9190-26-71	EACH	1.000	1.000
0116	619.1000	Mobilization	EACH	0.500	0.500
0118	624.0100	Water	MGAL	7.000	7.000
0122	625.0500	Salvaged Topsoil	SY	569.000	569.000
0126	628.1504	Silt Fence	LF	294.000	294.000
0128	628.1520	Silt Fence Maintenance	LF	294.000	294.000
0130	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0132	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0134	628.2023	Erosion Mat Class II Type B	SY	569.000	569.000
0136	628.7504	Temporary Ditch Checks	LF	113.000	113.000
0138	628.7555	Culvert Pipe Checks	EACH	31.000	31.000
0140	629.0210	Fertilizer Type B	CWT	0.160	0.160
0144	630.0130	Seeding Mixture No. 30	LB	46.000	46.000
0146	630.0500	Seed Water	MGAL	13.000	13.000
0148	633.5200	Markers Culvert End	EACH	19.000	19.000
0154	642.5001	Field Office Type B	EACH	0.500	0.500
0156	643.0300	Traffic Control Drums	DAY	112.000	112.000
0158	643.0900	Traffic Control Signs	DAY	2,156.000	2,156.000
0160	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0162	643.5000	Traffic Control	EACH	0.500	0.500
0164	645.0120	Geotextile Type HR	SY	20.000	20.000
0166	646.1020	Marking Line Epoxy 4-Inch	LF	15,491.000	15,491.000
0168	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	79,368.000	79,368.000
0170	646.3040	Marking Line Grooved Wet Ref Epoxy 8-Inch	LF	175.000	175.000
0176	649.0105	Temporary Marking Line Paint 4-Inch	LF	17,489.000	17,489.000
0178	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	8,745.000	8,745.000
0180	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	151.000	151.000
0182	650.6000	Construction Staking Pipe Culverts	EACH	5.000	5.000
0184	650.8000	Construction Staking Resurfacing Reference	LF	39,684.000	39,684.000
0186	650.9910	Construction Staking Supplemental Control (project) 01.	LS	1.000	1.000

9190-26-71

Line	Item	Item Description	Unit	Total	Qty
		9190-26-71			
0190	690.0150	Sawing Asphalt	LF	980.000	980.000
0192	740.0440	Incentive IRI Ride	DOL	14,946.000	14,946.000
0194	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	2,500.000	2,500.000
0196	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	3,280.000	3,280.000
0198	SPV.0035	Special 01. Foundation Backfill	CY	315.000	315.000
0200	SPV.0180	Special 01. Polyester Polymer Concrete Overlay	SY	378.000	378.000

3

REMOVING SMALL PIPE CULVERTS AND APRON ENDWALLS

STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH	204.9060.S REMOVING APRON ENDWALLS EACH	690.0150 SAWING ASPHALT LF	PIPE SIZE/ TYPE	ENDWALL TYPE	REMARKS
45+20	STH 32	1	---	---	24-INCH CPRC	CONCRETE MASONRY	1 - 8' SECTION LT & RT
81+12	STH 32	1	---	---	27-INCH CPRC	RC	1 - 8' SECTION LT & RT
145+65	STH 32	1	---	60	30-INCH CPCM	METAL	--
65+47	CTH S	1	---	60	30-INCH CPCM	METAL	--
156+93	STH 32	---	2	---	24-INCH	CONCRETE MASONRY	ENDWALLS ONLY
228+40	STH 32	1	---	60	36-INCH CPCM	METAL	--
252+80	STH 32	---	1	---	18-INCH	METAL	N ENDWALL ONLY
280+92	STH 32	---	1	---	42-INCH	METAL	ENDWALL RT ONLY
339+80	STH 32	1	---	---	30-INCH CPCM	---	1 - SECTION LT & RT
437+53	STH 32	---	1	---	24-INCH CPCM	METAL	N ENDWALL ONLY
	TOTAL	6	5	180			

ASPHALTIC DRIVEWAYS

STATION	LT/RT	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	690.0150 SAWING ASPHALT LF	DWY
42+75	RT	STH 32	21	4	31	PE
42+80	LT	STH 32	25	4	40	CE
62+95	LT	STH 32	18	3	27	CE
94+65	LT	STH 32	30	5	35	PE
153+20	LT	STH 32	14	2	21	PE
204+20	LT	STH 32	16	3	23	PE
215+40	RT	STH 32	21	4	34	PE
246+50	RT	STH 32	18	3	28	PE
248+75	RT	STH 32	17	3	27	PE
269+25	RT	STH 32	16	3	24	PE
273+30	LT	STH 32	17	3	26	PE
285+00	RT	STH 32	56	9	22	PE
292+50	LT	STH 32	40	7	65	CE
294+75	LT	STH 32	19	3	29	CE
295+75	LT	STH 32	18	3	28	CE
298+00	RT	STH 32	23	4	37	CE
299+00	RT	STH 32	25	4	40	CE
315+00	RT	STH 32	29	5	43	CE
316+00	RT	STH 32	29	5	44	CE
317+15	RT	STH 32	24	4	37	CE
323+60	RT	STH 32	11	2	16	PE
338+25	RT	STH 32	16	3	26	PE
342+25	RT	STH 32	19	3	30	PE
377+25	RT	STH 32	30	5	47	CE
430+75	RT	STH 32	13	2	20	PE
		TOTAL	564	93	800	

MATCH EXISTING ASPHALT THICKNESS (3" ASSUMED FOR QUANTITY CALCULATIONS)
SAWCUT 5' BEYOND SHOULDER OR AS DIRECTED BY ENGINEER

ALL ITEMS CATEGORY 0010

REMOVING ASPHALTIC SURFACE SUMMARY - ROADWAY

STATION	LOCATION	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING LANES SY	SHOULDERS SY	INTERSECTIONS SY	REMARKS
39+91	STH 32	133	---	---	---	BEGIN PROJECT
40+63	STH 32	11	192	---	785	S CHASE RD / DEER DR
93+54	STH 32	5	14,110	3,527	406	YUREK RD
123+65	STH 32	5	8,029	2,007	405	WHITE RIDGE CIRCLE
146+56	STH 32	11	6,109	1,527	1,101	CTH S / MIDDLE DR
199+56	STH 32	5	14,133	3,533	393	VANDORNICK RD
252+54	STH 32	5	14,128	3,532	339	GOHR RD
283+60	STH 32	5	8,283	2,071	431	LAKE SANDIA RD
299+25	STH 32	5	4,173	1,043	454	CENTER ST
316+06	STH 32	5	4,483	1,121	373	MAIN ST
319+98	STH 32	133	1,046	261	---	EXCEPTION TO NET CL - BEGIN
322+00	STH 32	133	---	---	---	EXCEPTION TO NET CL - END
325+69	STH 32	5	984	246	317	HOFF ST
333+19	STH 32	11	2,000	500	769	DUDZIK RD / TOWN LINE RD
385+24	STH 32	11	13,880	3,470	750	SCHROEDER RD / FUNK RD
437+28	STH 32	11	13,877	3,469	996	CTH E / CTH E
438+77	STH 32	133	397	99	---	END PROJECT
		629	105,824	26,408	7,519	
	TOTAL	629		139,752		

REMOVING CURB & GUTTER

STATION	OFFSET	TO	STATION	OFFSET	LOCATION	204.0150 LF	REMARKS
145+74.79	21.7' RT	-	65+89.6 CTH S	15.0' RT	STH 32 RT	96	CULVERT REPLACEMENT
65+55.9 CTH S	15.0' LT	-	147+6.29	21.9' RT	S CHASE RD RT	55	CULVERT REPLACEMENT
					TOTAL	151	

PREPARE FOUNDATION FOR ASPHALTIC PAVING 9190-26-71

STATION(S)	LOCATION	211.0100 LS
438+77 - 794+31	STH 32 INTERSECTIONS	1
	TOTAL	1

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

STATION(S)	LOCATION	211.0400 STA
39+92 - 438+77	STH 32	772
	TOTAL	772

BASE REPAIR FOR CIR PAVEMENT

LOCATION	211.0800.S CY	REMARKS
PROJECT	500	UNDISTRIBUTED
TOTAL	500	

3

HMA SUMMARY - ROADWAY

STATION	TO	STATION	LOCATION	327.1000.S CIR ASPHALT BASE LAYER SY	455.0605 TACK COAT GAL	455.0770.S ASPHALT STABILIZING AGENT TON	460.6223 HMA PAVEMENT PAVEMENT 3 MT 58-28 S TON	460.6244 HMA PAVEMENT PAVEMENT 4 MT 58-34 S TON	REMARKS
39+91	-	40+63	STH 32	272	148	5	141	112	STA'S INCL. S CHASE RD / DEER DR INTS.
40+63	-	93+54	STH 32	19,989	2,855	98	2,728	2,167	STA'S INCL. YUREK RD INT.
93+54	-	123+65	STH 32	11,375	1,649	57	1,576	1,252	STA'S INCL. WHITE RIDGE CIRCLE INT.
123+65	-	146+56	STH 32	8,655	1,366	47	1,305	1,037	STA'S INCL. CTH S / MIDDLE DR INTS.
146+56	-	199+56	STH 32	20,022	2,858	98	2,731	2,169	STA'S INCL. VANDORNICK RD INT.
199+56	-	252+54	STH 32	20,015	2,850	98	2,722	2,163	STA'S INCL. GOHR RD INT.
252+54	-	283+60	STH 32	11,734	1,703	58	1,627	1,292	STA'S INCL. LAKE SANDIA RD INT.
283+60	-	299+25	STH 32	5,912	891	31	852	676	STA'S INCL. CENTER ST INT.
299+25	-	319+98	STH 32	7,832	1,149	39	1,097	872	STA'S INCL. MAIN ST INT.
319+98	-	322+00	STH 32	---	---	---	---	---	EXCEPTION TO NET CL
322+00	-	325+69	STH 32	1,394	240	8	229	182	STA'S INCL. HOFF ST INT.
325+69	-	333+19	STH 32	2,833	504	16	421	383	STA'S INCL. DUDZIK RD / TOWN LINE RD INTS.
333+19	-	385+24	STH 32	19,663	2,858	98	2,733	2,169	STA'S INCL. SCHROEDER RD / FUNK RD INTS.
385+24	-	438+77	STH 32	20,222	2,971	101	2,805	2,254	STA'S INCL. CTH E / CTH E INTS.
---	-	---	VAR.	---	---	---	231	---	CROSS CULVERT REPLACEMENTS
			TOTAL	149,918	22,041	754	21,197	16,728	

ASPHALTIC RUMBLE STRIPS 2-LANE RURAL

STATION	TO	STATION	LOCATION	465.0425 SHOULDER TYPE 1 LF	465.0475 CENTER LINE LF	REMARKS
40+63	-	93+54	STH 32	9,030	4,290	S CHASE RD / DEER DR - YUREK RD
93+54	-	123+65	STH 32	4,870	2,410	YUREK RD - WHITE RIDGE CIRC
123+65	-	146+56	STH 32	3,630	1,690	WHITE RIDGE CIRC - CTH S / MIDDLE DR
146+56	-	199+56	STH 32	9,750	4,900	CTH S / MIDDLE DR - VANDORNICK RD
199+56	-	252+54	STH 32	9,700	4,900	VANDORNICK RD - GOHR RD
252+54	-	283+60	STH 32	5,360	2,710	GOHR RD - LAKE SANDIA RD
283+60	-	299+25	STH 32	1,820	600	LAKE SANDIA RD - CENTER ST
299+25	-	316+06	STH 32	2,810	1,280	CENTER ST - MAIN ST
316+06	-	325+69	STH 32	---	---	MAIN ST - HOFF ST
325+69	-	333+19	STH 32	460	150	HOFF ST - DUDZIK RD / TOWN LINE RD
333+19	-	385+24	STH 32	9,260	4,610	TOWN LINE RD - SCHROEDER RD / FUNK RD
385+24	-	438+77	STH 32	9,960	4,950	SCHROEDER RD / FUNK RD - CTH E / CTH E
			TOTAL	66,650	32,490	

ASPHALTIC FLUMES

STATION	OFFSET	465.0315 SY	REMARKS
145+75 STH 32	21.7' RT	5	SE QUAD STH 32 / CTH S
TOTAL		5	

PWL MIXTURE TABLE

THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT:

LOCATION	STATION	BID ITEM	MIXTURE USE:	UNDERLYING SURFACE:	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR: MIXTURE ACCEPTANCE	QUALITY MANAGEMENT PROGRAM TO BE USED FOR: DENSITY ACCEPTANCE
12 FOOT DRIVING LANE	39+94 - 319+98, 322+00 - 438+77	4 MT 58-34 S	UPPER LAYER	3 MT 58-28 S	11,200	1 3/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
12 FOOT DRIVING LANE	39+94 - 319+98, 322+00 - 438+77	3 MT 58-28 S	LOWER LAYER	CIR PAVEMENT	14,200	2 1/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
5 FOOT SHOULDER	39+94 - 317+71, 322+00 - 438+77	4 MT 58-34 S	UPPER LAYER	3 MT 58-28 S	4,700	1 3/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
5 FOOT SHOULDER	39+94 - 317+71, 322+00 - 438+77	3 MT 58-28 S	LOWER LAYER	CIR PAVEMENT	5,900	2 1/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
3 FOOT SHOULDER	317+71 - 319+98	4 MT 58-34 S	UPPER LAYER	3 MT 58-28 S	20	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
3 FOOT SHOULDER	317+71 - 319+98	3 MT 58-28 S	LOWER LAYER	CIR PAVEMENT	20	VAR. 0-4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
INTERSECTIONS	VAR.	4 MT 58-34 S	UPPER LAYER	3 MT 58-28 S	1,000	1 3/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
INTERSECTIONS	VAR.	3 MT 58-28 S	LOWER LAYER	MILED EXIST. HMA SURFACE	800	2 1/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
CULVERT REPLACEMENTS	VAR.	3 MT 58-28 S	LOWER LAYER	BASE AGGREGATE	230	4 1/2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE BY ORDINARY COMPACTION; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE

STATION(S)	LOCATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0504.S HAULING EXCESS SHOULDER MATERIAL CY	624.0100 WATER MGAL	REMARKS
145+65	STH 32	200	---	2	CULVERT REPLACEMENT
65+47	CTH S	250	---	3	CULVERT REPLACEMENT
228+40	STH 32	190	---	2	CULVERT REPLACEMENT
316+51 - 319+98	STH 32	---	25	---	PROFILE ADJUSTMENT
39+92 - 438+77	STH 32	---	150	---	GRAVEL CEs, FEs, PEs (92 TOTAL)
	TOTAL	640	175	7	

ALL ITEMS CATEGORY 0010

CULVERT PIPE SUMMARY

STATION	EXIST. INLET ELEV.	EXIST. DISCH. ELEV.	PROP'D INLET ELEV.	PROP'D DISCH. ELEV.	PROP'D SLOPE	205.0100 EXCAV. COMMON CY	520.1030 AEW FOR CP 30-INCH EACH	520.1036 AEW FOR CP 36-INCH EACH	520.3530* CP CLASS III-B 30-INCH LF	520.3536* CP CLASS III-B 36-INCH LF	520.8700 CLEANING CULV. PIPES EACH	521.1018 AEW FOR CP STEEL 18-INCH EACH	521.1024 AEW FOR CP STEEL 24-INCH EACH	521.1042 AEW FOR CP STEEL 42-INCH EACH	522.0124 CP RC CLASS III 24-INCH LF	522.0127 CP RC CLASS III 27-INCH LF	522.1024 AEW FOR CPRC 24-INCH EACH	524.0627 AEW FOR CP SLVGD 27-INCH EACH	633.5200 MARKERS CULV. END EACH	SPV.0035.01 FOUNDATION BACKFILL CY	REMARKS
45+20	802.64	802.49	802.65	802.49	0.30%										16		2		2		
81+12	801.53	800.99	801.53	800.99	1.08%											16		2	2		
99+02	---	---	---	---	---						1								1		
123+19 LT	---	---	---	---	---							1							1		WHITE RIDGE CIR
145+65	798.50	798.45	798.50	798.33	0.30%	115	2		56										2	43	
65+47 CTH S	797.86	797.64	797.86	797.57	0.30%	221	2		96										2	110	
156+93	---	---	---	---	---												2		2		
228+40	788.76	788.26	788.76	788.26	0.81%	293		2		62									2	162	
252+80 RT	---	---	---	---	---							1							1		GOHR RD LT
280+92 RT	---	---	---	---	---									1					1		
339+80	---	---	---	---	---		2												2		
437+53 RT	---	---	---	---	---								1						1		MORGAN RD LT
					TOTAL	629	6	2	152	62	1	2	1	1	16	16	4	2	19	315	

*NOTE:
FOR CORRUGATED STEEL OPTION
METAL THICKNESS IN INCHES = 0.079

CURB & GUTTER

STATION	OFFSET	TO	STATION	OFFSET	601.0557 CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D LF	REMARKS
145+75 STH 32	21.7' RT	-	65+90 CTH S	15.0' RT	96	SE QUAD STH 32 / CTH S
65+56 CTH S	15.0' LT	-	147+06 STH 32	21.9' RT	55	NE QUAD STH 32 / CTH S
				TOTAL	151	

BEAM GUARD SUMMARY

STATION	LOCATION	614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING* EACH	614.0370 STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL EACH
285+71	STH 32 RT	1	1
292+44	STH 32 RT	1	1
	TOTAL	2	2

*ESTIMATED QUANTITES FOR ITEM 614.0100 LISTED ON EROSION CONTROL PLAN SHEETS (FOR BID INFORMATION ONLY)

RIPRAP & GEOTEXTILE FABRIC SUMMARY

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY
293+75	STH 32 RT	10	20
	TOTAL	10	20

ADJUSTING STEEL PLATE BEAM GUARD

STATION	TO	STATION	LOCATION	614.0400 LF
286+21	-	291+94	STH 32 RT	573
317+75	-	319+89	STH 32 RT	214
318+62	-	319+89	STH 32 LT	127
			TOTAL	914

ALL ITEMS CATEGORY 0010

EROSION CONTROL SUMMARY

STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	628.1504 SILT FENCE DELIVERED LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY E.C. EACH	628.2023 EROSION MAT CLASS II TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIX. NO. 30 LB	630.0500 SEED WATER MGAL
45+20	STH 32 LT/RT	25	---	---	---	---	25	---	2	0.02	5	0.6
81+12	STH 32 LT/RT	20	---	---	---	---	20	---	3	0.01	4	0.4
123+19	STH 32 LT / WHITE RIDGE CIRCLE	20	---	---	---	---	20	---	2	0.01	4	0.4
124+25	STH 32 LT / WHITE RIDGE CIRCLE	20	---	---	---	---	20	---	---	0.01	4	0.4
145+65	STH 32 LT/RT	30	---	---	---	---	30	---	3	0.02	5	0.7
146+00	STH 32 RT / CTH S LT	40	---	---	---	---	40	---	---	0.03	7	0.9
146+75	STH 32 RT / CTH S RT	30	---	---	---	---	30	---	---	0.02	5	0.7
156+93	STH 32 LT/RT	20	---	---	---	---	20	10	2	0.01	4	0.4
228+40	STH 32 LT/RT	50	---	---	---	---	50	---	3	0.03	9	1.1
252+00	STH 32 RT / GOHR RD LT	---	---	---	---	---	---	---	2	---	---	---
252+80	STH 32 RT / GOHR RD RT	10	---	---	---	---	10	10	---	0.01	2	0.2
280+92	STH 32 RT	30	---	---	---	---	30	10	---	0.02	5	0.7
284+75	STH 32 RT - BEAM GUARD GRADING	---	100	100	---	---	---	---	---	---	---	---
291+85	STH 32 RT - BEAM GUARD GRADING	---	135	135	---	---	---	---	---	---	---	---
339+80	STH 32 LT/RT	35	---	---	---	---	35	20	---	0.02	6	0.8
348+00	STH 32 RT	50	---	---	---	---	50	10	---	0.03	9	1.1
348+67	STH 32 LT	---	---	---	---	---	---	---	6	---	---	---
353+35	STH 32 RT	30	---	---	---	---	30	10	---	0.02	5	0.7
354+00	STH 32 LT	30	---	---	---	---	30	10	---	0.02	5	0.7
436+90	STH 32 RT / CTH E LT	---	---	---	---	---	---	---	2	---	---	---
437+50	STH 32 RT / CTH E RT	15	---	---	---	---	15	10	---	0	3	0.3
---	PROJECT	---	---	---	6	2	---	---	---	---	---	---
	SUBTOTAL	455	235	235	6	2	455	90	25	0.13	37	10
	UNDISTRIBUTED	114	59	59	---	---	114	23	6	0.03	9	3
	TOTAL	**569**	**294**	**294**	**6**	**2**	**569**	**113**	**31**	**0.16**	**46**	**13**

PAVEMENT MARKING SUMMARY

STATION	TO	STATION	646.1020 MARKING LINE EPOXY 4-INCH YELLOW CL SKIP LF	646.1020 MARKING LINE EPOXY 4-INCH YELLOW CL SOLID LF	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH WHITE EDGELINE SOLID LF	646.3040 MARKING LINE GROOVED WET REF EPOXY 8-INCH WHITE CHANNELIZING SOLID LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH YELLOW CL SKIP LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH YELLOW CL SOLID LF	649.0120 TEMPORARY MARKING LINE EPOXY 4-INCH YELLOW CL SKIP LF	649.0120 TEMPORARY MARKING LINE EPOXY 4-INCH YELLOW CL SOLID LF	REMARKS
39+91	-	93+54	1,341	---	10,726	---	858	---	429	---	S CHASE RD / DEER DR - YUREK RD
93+54	-	123+65	753	---	6,022	---	482	---	241	---	YUREK RD - WHITE RIDGE CIRCLE
123+65	-	146+56	573	475	4,582	---	367	950	183	475	WHITE RIDGE CIRCLE - CTH S / MIDDLE DR
146+56	-	199+56	1,325	422	10,600	---	848	844	424	422	CTH S / MIDDLE DR - VANDORNICK RD
199+56	-	252+54	1,325	935	10,596	---	848	1,870	424	935	VANDORNICK RD - GOHR RD
252+54	-	283+60	777	1,864	6,212	---	497	3,728	248	1,864	GOHR RD - LAKE SANDIA RD
283+60	-	299+25	391	---	3,130	---	250	---	125	---	LAKE SANDIA RD - CENTER ST
299+25	-	316+06	420	---	3,362	---	269	---	134	---	CENTER ST - MAIN ST
316+06	-	319+98	98	---	784	---	63	---	31	---	MAIN ST - BEGIN EXCEPTION TO NET CL
322+00	-	325+69	92	738	738	---	59	1,476	30	738	END EXCEPTION TO NET CL - HOFF ST
325+69	-	333+19	188	1,136	1,500	---	120	2,272	60	1,136	HOFF ST - DUDZIK RD / TOWN LINE
333+19	-	385+24	1,301	---	10,410	---	833	---	416	---	DUDZIK RD / TOWN LINE RD - SCHROEDER RD / FUNK RD
385+24	-	438+77	1,338	---	10,706	175	856	---	428	---	SCHROEDR RD / FUNK RD - CTH E / CTH E
			9,921	5,570	79,368	175	6,349	11,140	3,175	5,570	
		TOTAL	**15,491**		**79,368**	**175**	**17,489**		**8,745**		

ALL ITEMS CATEGORY 0010

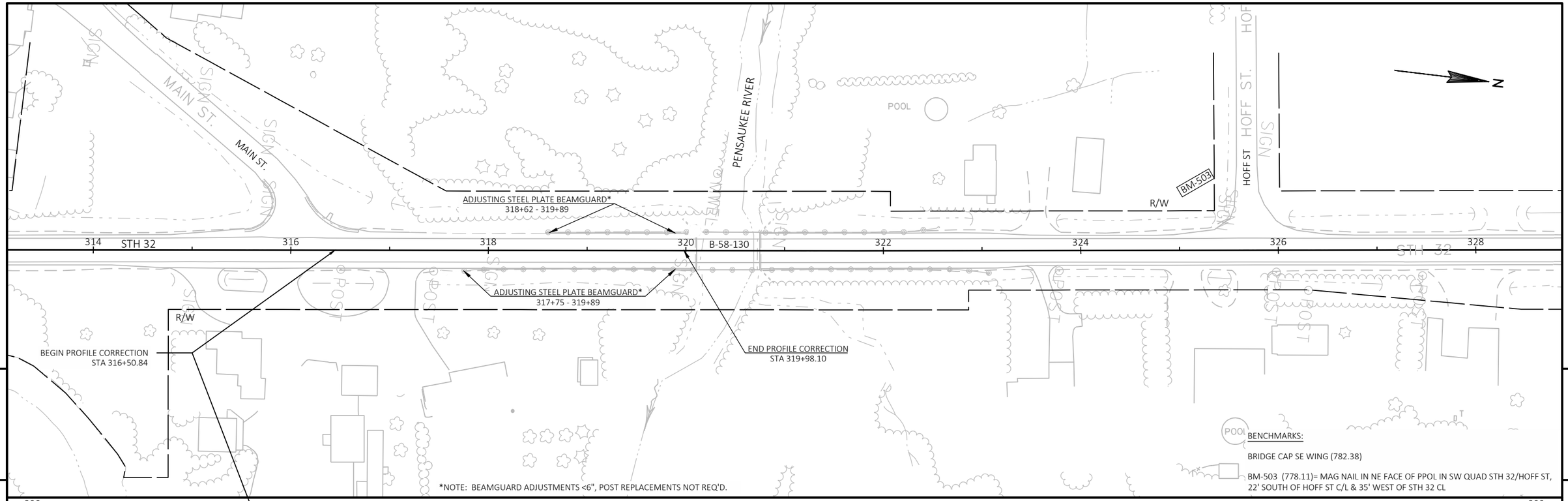
TRAFFIC CONTROL SUMMARY

STH 32 STATION	LOCATION	APPROX. SERVICE PERIOD DAYS	643.0300 DRUMS NO. IN SERVICE	643.0300 DRUMS DAYS	643.0900 SIGNS NO. IN SERVICE	643.0900 SIGNS DAYS	643.1050 PCMS NO. IN SERVICE	643.1050 PCMS DAYS
39+91	S PROJECT LIMITS	7	---	---	---	---	1	7
39+91	S PROJECT LIMITS	77	---	---	5	385	---	---
40+63	S CHASE RD / DEER DR INT.	77	---	---	2	154	---	---
45+20	CULVERT WORK	1	8	8	---	---	---	---
81+12	CULVERT WORK	1	8	8	---	---	---	---
93+54	YUREK RD	77	---	---	1	77	---	---
99+02	CULVERT WORK	1	8	8	---	---	---	---
123+65	WHITE RIDGE CIRCLE INT.	77	---	---	1	77	---	---
145+65	CULVERT REPLACEMENT	2	---	---	---	---	---	---
146+56	CTH S / MIDDLE DR INT.	77	---	---	2	154	---	---
146+56	CULVERT REPLACEMENT	2	8	16	---	---	---	---
156+93	CULVERT WORK	1	8	8	---	---	---	---
199+56	VANDORNICK RD INT.	77	---	---	1	77	---	---
228+40	CULVERT REPLACEMENT	2	8	16	---	---	---	---
228+92	CULVERT WORK	1	8	8	---	---	---	---
252+54	GOHR RD INT.	77	---	---	1	77	---	---
252+80	CULVERT WORK	1	8	8	---	---	---	---
283+60	LAKE SANDIA RD INT.	77	---	---	1	77	---	---
285+71	BEAMGUARD WORK	1	8	8	---	---	---	---
292+44	BEAMGUARD WORK	1	8	8	---	---	---	---
293+70	RIP RAP PLACEMENT	1	8	8	---	---	---	---
299+25	CENTER ST INT.	77	---	---	1	77	---	---
317+71	MAIN ST INT.	77	---	---	1	77	---	---
325+69	HOFF ST INT.	77	---	---	1	77	---	---
333+19	DUDZIK RD / TOWN LINE RD INT.	77	---	---	2	154	---	---
339+80	CULVERT WORK	1	8	---	---	---	---	---
385+24	SCHROEDER RD / FUNK RD INT.	77	---	---	2	154	---	---
437+53	CULVERT WORK	1	8	8	---	---	---	---
438+77	CTH E / CTH E INT.	77	---	---	7	539	---	---
438+77	N PROJECT LIMITS	7	---	---	---	---	1	7
		TOTAL	**112**		**2,156**		**14**	

CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	650.5500 CURB GUTTER CURB & GUTTER LF	650.6000 PIPE CULVERTS EA	650.8000 RESURFACING REFERENCE LF	650.9910 SUPPLEMENTAL CONTROL (PROJECT) LS
39+91	-	319+98	STH 32			28,007	
45+20	-	45+20	STH 32		1		
81+12	-	81+12	STH 32		1		
145+65	-	145+65	STH 32		1		
145+75	-	146+34	STH 32	96			
145+93	-	146+89	STH 32		1		
146+67	-	147+06	STH 32	55			
228+40	-	228+40	STH 32		1		
322+00	-	438+77	STH 32			11,677	1
			TOTAL	**151**	**5**	**39,684**	**1**

ALL ITEMS CATEGORY 0010



PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	PLAN AND PROFILE: STH 32	SHEET 26	E

FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\050102_PP.DWG
LAYOUT NAME - 050202_pp

PLOT DATE : 3/31/2020 12:23 PM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

5

SECTION CORNER
MONUMENT

BEGIN PROJECT 9190-26-71
STA 39+91

PI STA = 40+46.16
Y = 105772.960
X = 513044.557
DELTA = 3°43'19"
D = 0°33'05"
T = 337.64'
L = 675.04'
R = 10391.68'
PC STA = 37+08.52
PT STA = 43+83.56
SE = RC
RO = 175'

DEER DR

S CHASE RD

BUTT JOINT REQ'D

STA 45+20
REPLACE 1-8' PIPE SECTION LT & RT
CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH
ENDWALL REQ'D, LT & RT

STH 32

R/W

60+00.00 MATCH LINE

5

SECTION CORNER
MONUMENT

STA 81+12
REPLACE 1-8' PIPE SECTION LT & RT
CULVERT PIPE REINFORCED CONCRETE CLASS III 27-INCH
SALVAGED ENDWALL REQ'D, LT & RT

STH 32

R/W

60+00.00 MATCH LINE

90+50.00 MATCH LINE

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 27	E

5

SECTION CORNER
MONUMENT

STA 99+02
CLEANING CULVERT PIPES
(EXIST. 24-INCH CPRC)

BUTT JOINT REQ'D

PI STA = 120+20.40
Y = 113736.546
X = 512629.749
DELTA = 2°24'05"
D = 0°30'32"
T = 236.05'
L = 472.03'
R = 11261.88'
PC STA = 117+84.35
PT STA = 122+56.38
SE = RC
RO = 175'

N

R/W

95 100 105 STH 32 110 115 120

R/W

SECTION CORNER
MONUMENT

90+50.00 MATCH LINE

121+00.00 MATCH LINE

5

YUREK RD

SONGS

BUTT JOINT REQ'D

WHITE RIDGE CIRCLE

STA 123+19
EXISTING 18-INCH CPCM
TO REMAIN
ENDWALL REQ'D, LT

R/W

125 130 135 STH 32 140 145 150

R/W

STA 145+65
REMOVE EXISTING 30-INCH CPCM
CULVERT PIPE CLASS III-B 30-INCH REQ'D
ENDWALL REQ'D, LT & RT

SECTION CORNER
MONUMENT

MIDDLE DR

BUTT JOINT REQ'D

REMOVING CURB & GUTTER
CONCRETE CURB & GUTTER
6-INCH SLOPED 36-INCH
TYPE D (SEE NOTE)

N

R58'

R37'

ASPHALTIC FLUME

SONGS

CTH S STA 65+47
REMOVE EXISTING 30-INCH CPCM
CULVERT PIPE CLASS III-B 30-INCH REQ'D
ENDWALL REQ'D, LT & RT

BUTT JOINT REQ'D

CTH S

NOTE: MATCH EXISTING CURB AND GUTTER FLOW LINE

151+50.00 MATCH LINE

121+00.00 MATCH LINE

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 28	E

FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050201_PN - 050202-PN

PLOT DATE : 4/15/2020 9:22 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : **********

WISDOT/CADDS SHEET 44

5

151+50.00 MATCH LINE

182+00.00 MATCH LINE

SECTION CORNER MONUMENT

N

STH 32

155 160 165 170 175 180

R/W

R/W

STA 156+93
EXISTNG 24-INCH CPRC
TO REMAIN
ENDWALL REQ'D, LT & RT

182+00.00 MATCH LINE

212+50.00 MATCH LINE

SECTION CORNER MONUMENT

N

STH 32

185 190 195 200 205 210

R/W

R/W

BUTT JOINT REQ'D

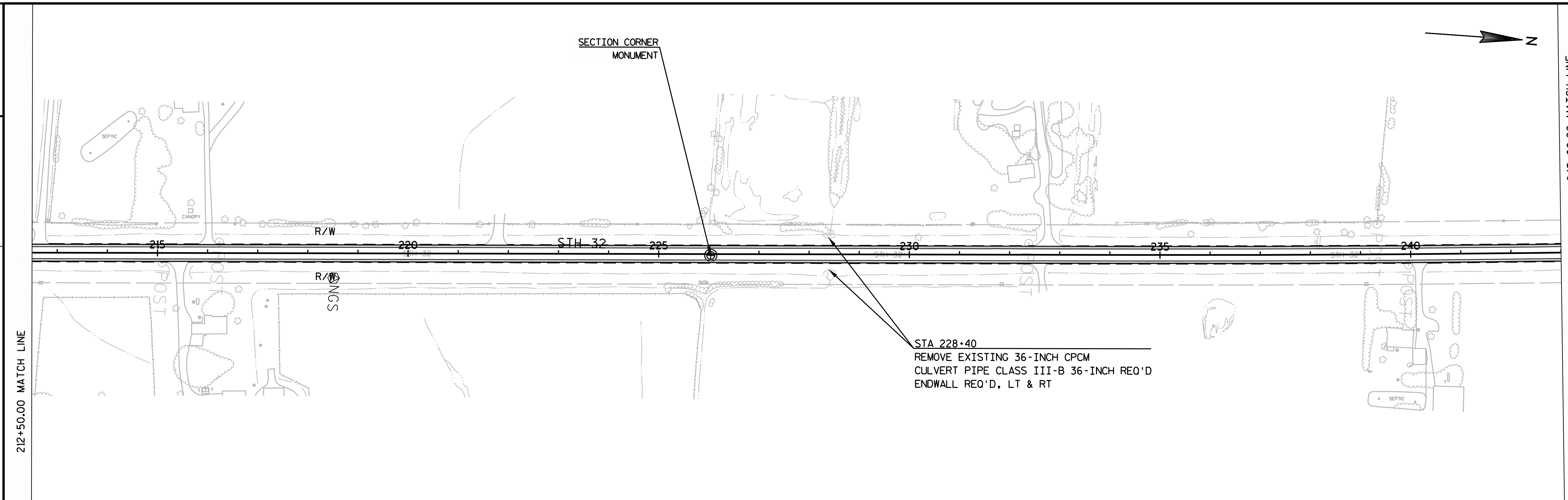
VAN DORNICK RD

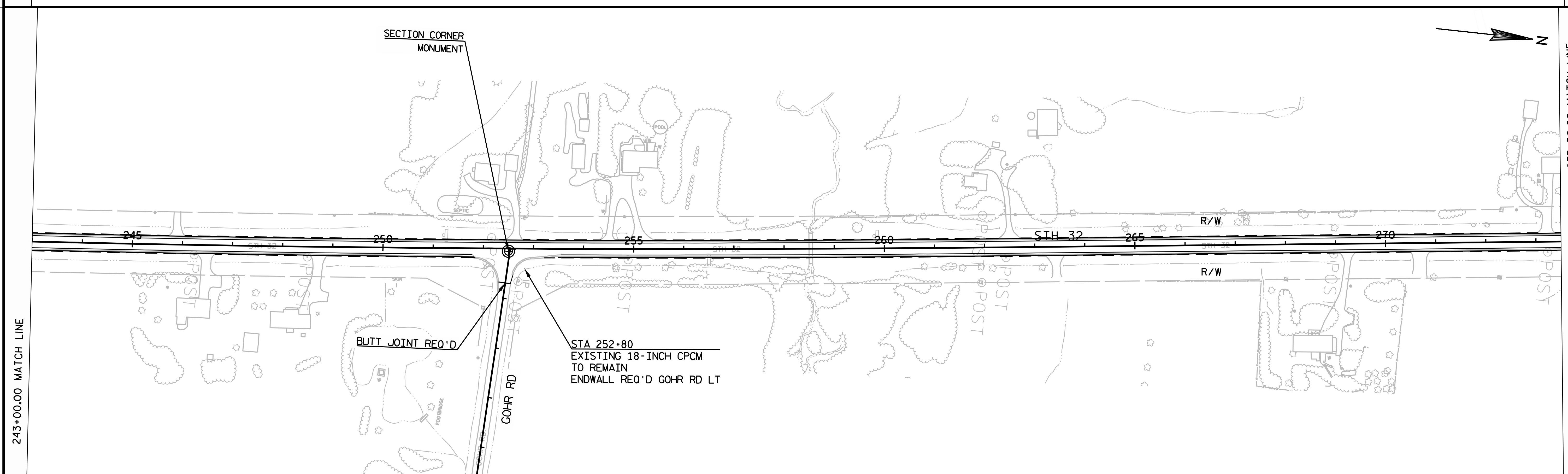
PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 29	E

FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050201_PN - 050203-PN

PLOT DATE : 4/15/2020 9:23 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : **********

5





5

PROJECT NO:9190-26-71	HWY:STH 32	COUNTY:OCONTO	PLAN	SHEET 30	E

273+50.00 MATCH LINE

304+00.00 MATCH LINE

5

STA 280+92
EXISTING 42-INCH CPCM
TO REMAIN
1 ENDWALL REQ'D RT

LAKE SANDIA DR

CENTER ST

TONY ST.

JULIUS ST

R/W

275 280 285 STH 32 290 295 300

R/W

ADJUSTING STEEL PLATE BEAMGUARD
STA 286+21 RT - 291+94 RT

STA 285+71 RT
BEAMGUARD EAT REQ'D

STA 292+44 RT
BEAMGUARD EAT REQ'D

SECTION CORNER
MONUMENT

SI (TYP.)

BUTT JOINT REQ'D

STA 293+70
EXIST 30-INCH CPCM
SEE EROSION CONTROL PLAN
FOR REQ'D WORK

BUTT JOINT REQ'D

NOTE:
PROFILE ADJUSTMENT REQ'D STA 316+50.84 - STA 319+98.10
SEE PLAN & PLOT SHEET

EXCEPTION TO NET ℄ LENGTH
STA 319+98.10 TO STA 322+00
BUTT JOINT REQ'D (2)

PI STA = 332+94.80
Y = 134912.924
X = 510633.163
DELTA = 9°41'38"
D = 1°32'48"
T = 314.14'
L = 626.79'
R = 3704.64'
PC STA = 329+80.66
PT STA = 336+07.45
SE = 0.037'/'
RO = 175'

SECTION
CORNER
MONUMENT

HOFF ST

TOWN LINE RD

MAIN ST.

ADJUSTING STEEL PLATE BEAMGUARD
STA 318+62 - 319+89

RIVER

R/W

305 310 STH 32 315 320 325 330

R/W

ADJUSTING STEEL PLATE BEAMGUARD
STA 317+75 - 319+89

B-58-130

PENSAUKEE

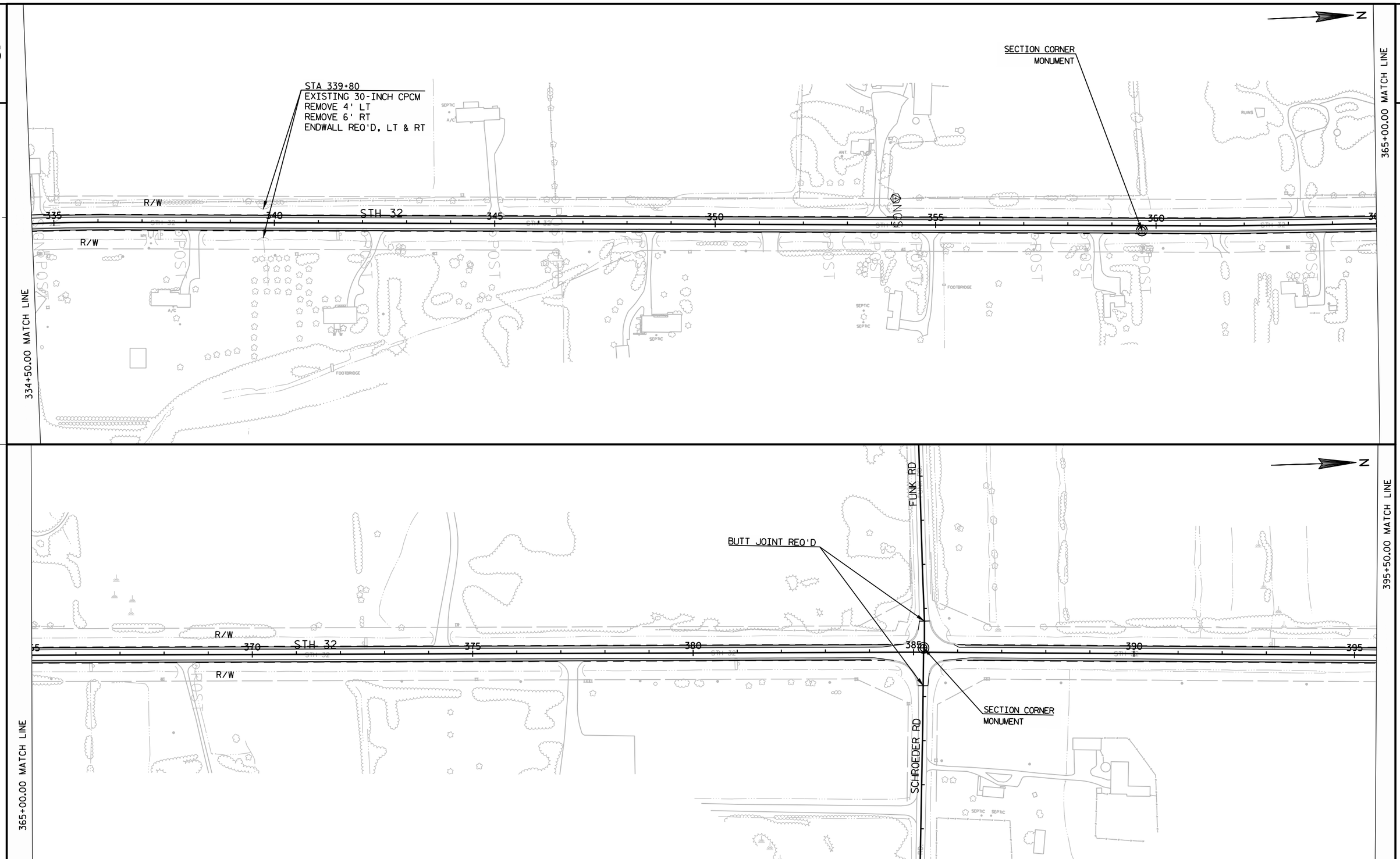
DUDZIK RD

BUTT JOINT REQ'D

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 31	E

FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050201_PN - 050205-PN

PLOT DATE : 4/15/2020 9:24 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : **********



5

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 32	E

5

N

SECTION CORNER
MONUMENT

R/W

STH 32

400 405 410 415 420 425

R/W

395+50.00 MATCH LINE

426+00.00 MATCH LINE

CTH E
(ADVANCE RD)

END PROJECT 9190-26-71
STA. 438+77

BUTT JOINT REQ'D

R/W

STH 32 430 435

R/W

SECTION CORNER
MONUMENT

STA 437+53
EXISTING 24-INCH CPCM
TO REMAIN
ENDWALL REQ'D, MORGAN RD LT

CTH E
(MORGAN RD)

426+00.00 MATCH LINE

PROJECT NO: 9190-26-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 33	E

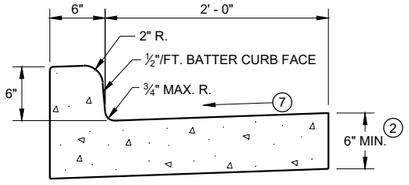
FILE NAME : N:\PDS\C3D\91902600\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050201_PN - 050207-PN

PLOT DATE : 4/15/2020 9:25 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : **********

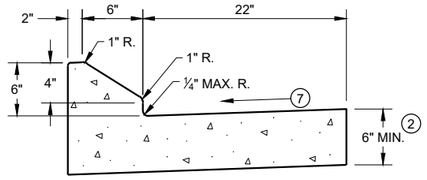
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

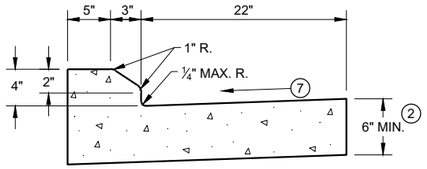
08D01-21A	CONCRETE CURB & GUTTER
08D01-21B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A10-02A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
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)
15C08-20B	PAVEMENT MARKING (TURN LANES)
15C08-20C	PAVEMENT MARKING (TURN LANES)
15C11-08B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES



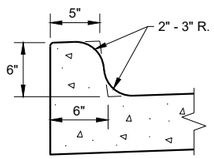
TYPES A[1] & D



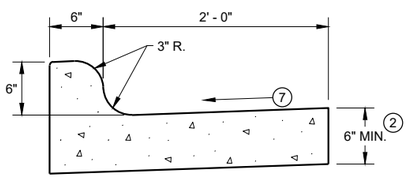
6" SLOPED CURB TYPES G[1] & J



4" SLOPED CURB TYPES G[1] & J

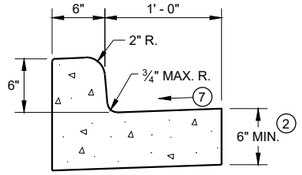


TYPES K[1] & L
(OPTIONAL CURB SHAPE)



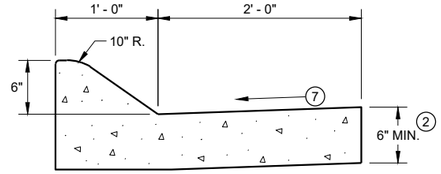
TYPES K[1] & L

CONCRETE CURB AND GUTTER 30"

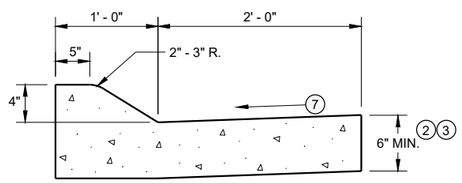


TYPES A[1] & D

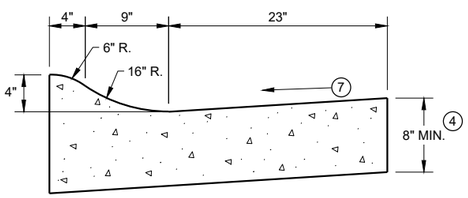
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A[1] & D



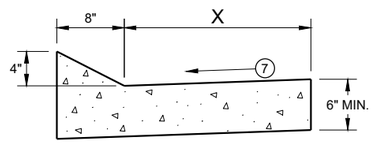
4" SLOPED CURB TYPES A[1] & D



4" SLOPED CURB TYPES R[1] & T[5]

CONCRETE CURB AND GUTTER 36"

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

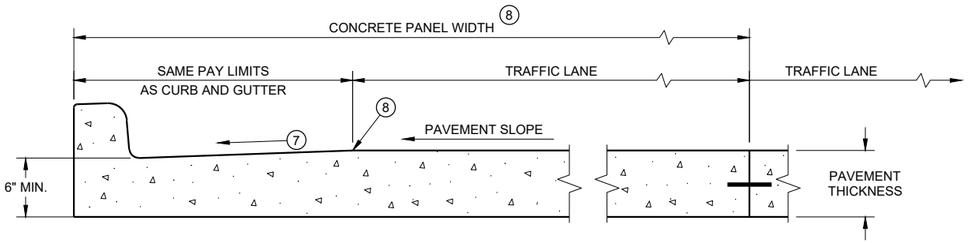


TYPES TBT & TBTT[1]

CONCRETE CURB AND GUTTER

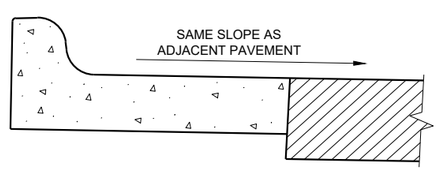
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

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

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

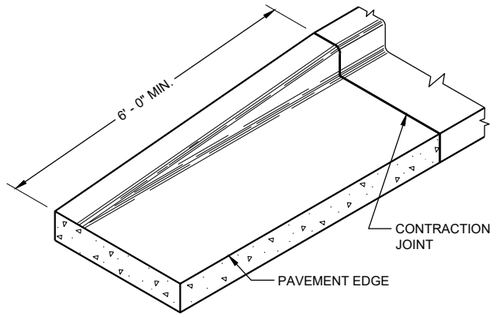
1. TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
2. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
3. USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH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

CONCRETE CURB AND GUTTER

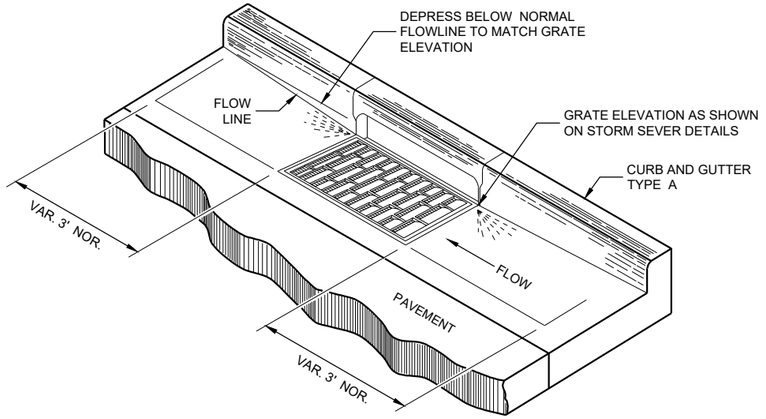
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D01 - 21a

SDD 08D01 - 21a



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

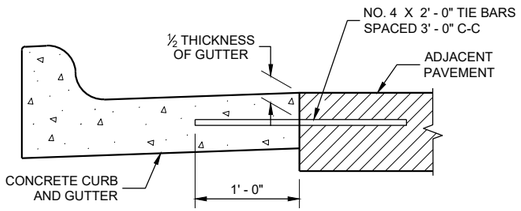
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

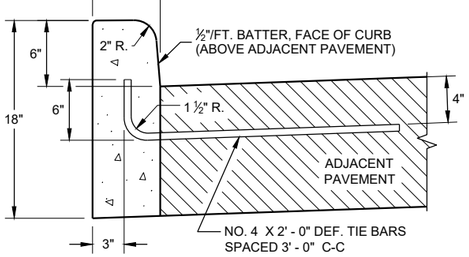
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

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

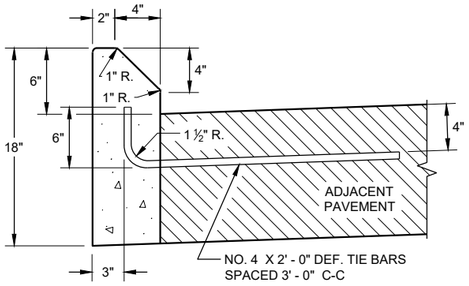
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

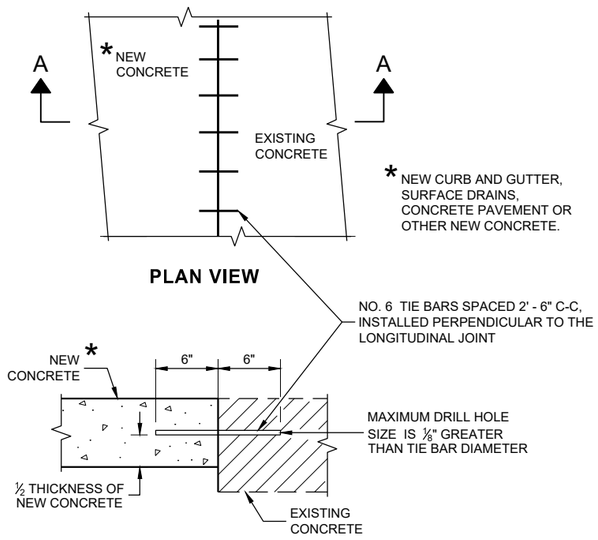


TYPES A (1) & D



TYPES G (1) & J

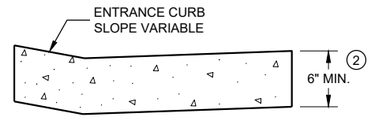
CONCRETE CURB



PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

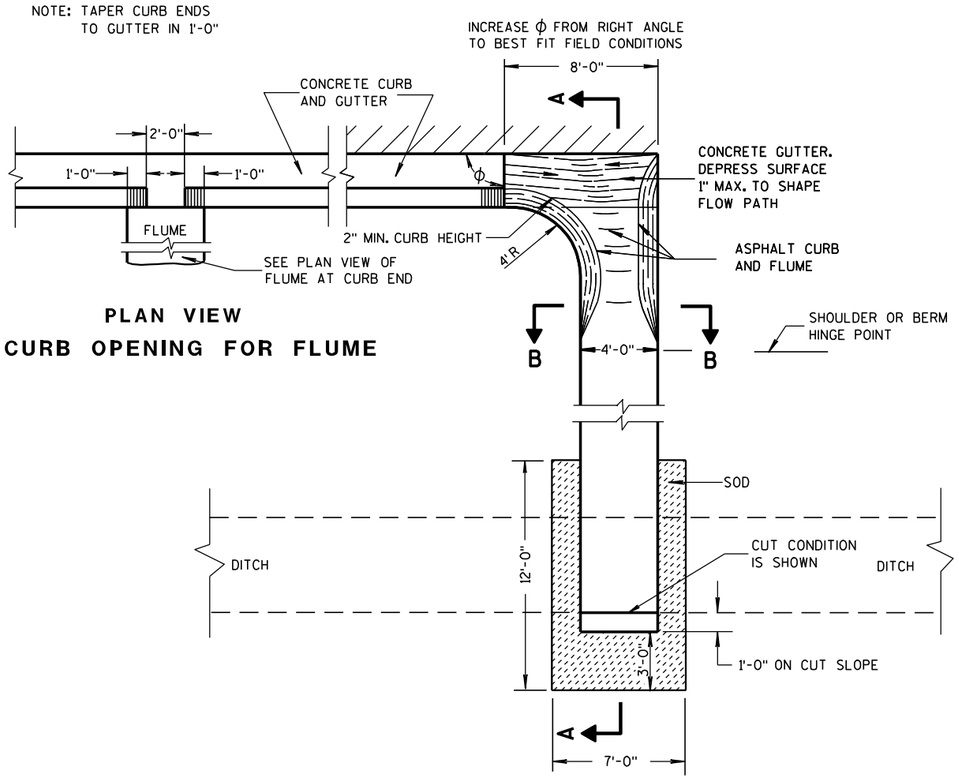
APPROVED
February 2020 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

6

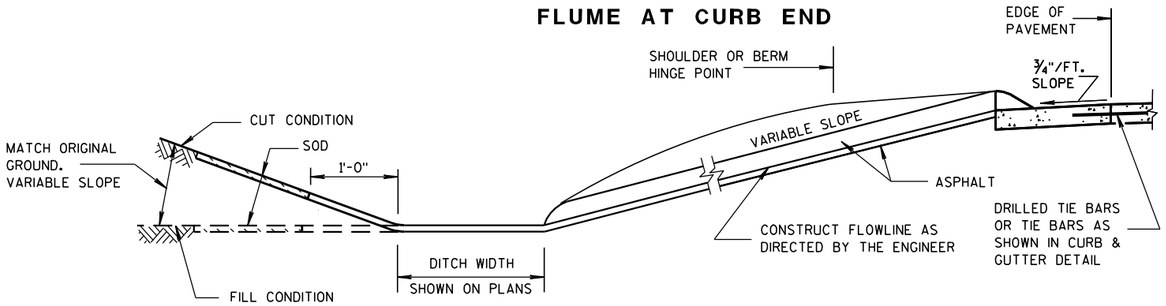
SDD08D01 - 21b

ASPHALTIC FLUME

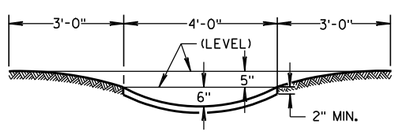


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

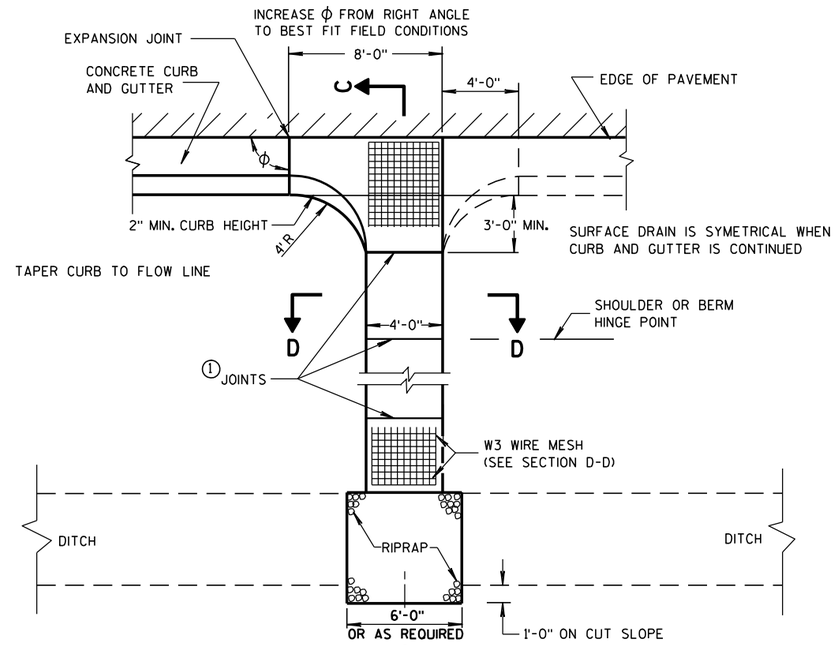
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

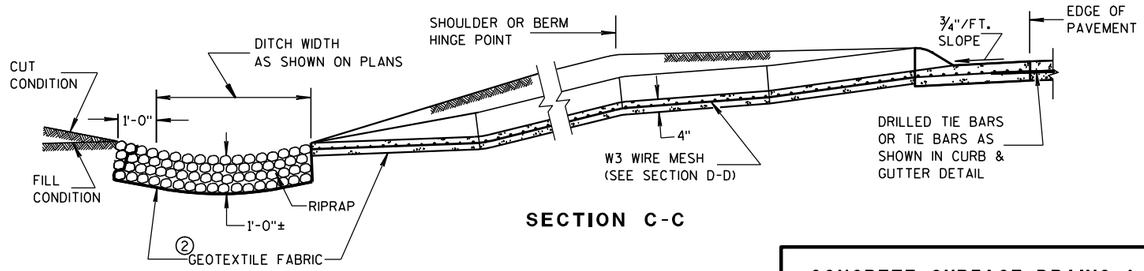
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

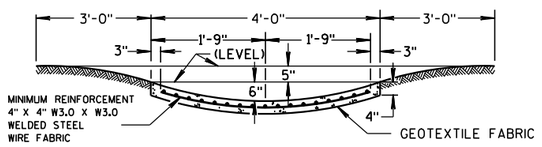
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

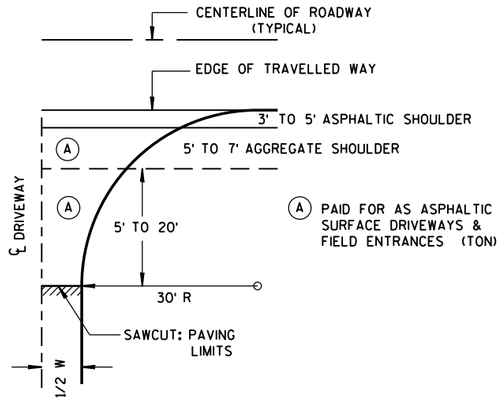
APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
37
MENT
FHWA

6

S.D.D. 8 D 4-5

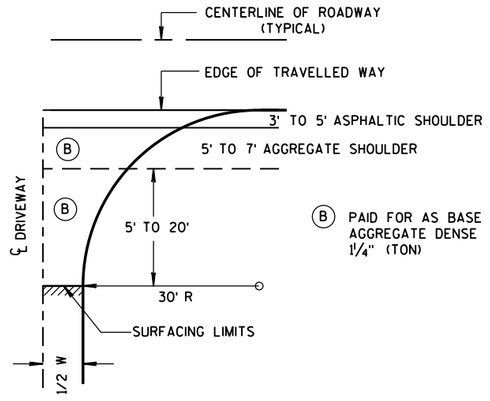
6

S.D.D. 8 D 4-5



PLAN VIEW
HALF SECTION

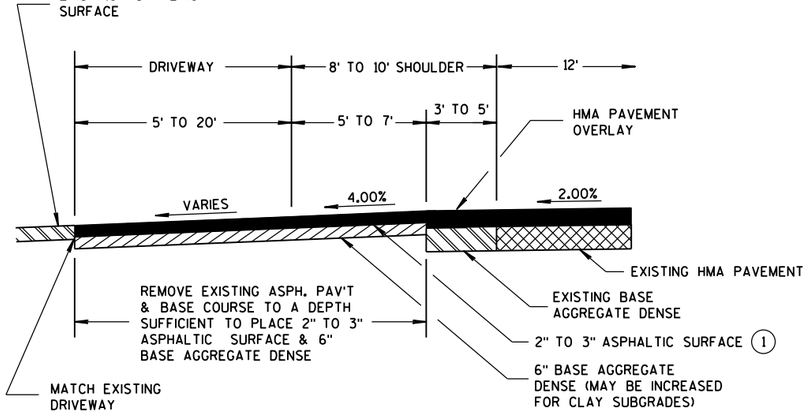
W MIN. = 16'
W MAX. = 24'



PLAN VIEW
HALF SECTION

GENERAL NOTES

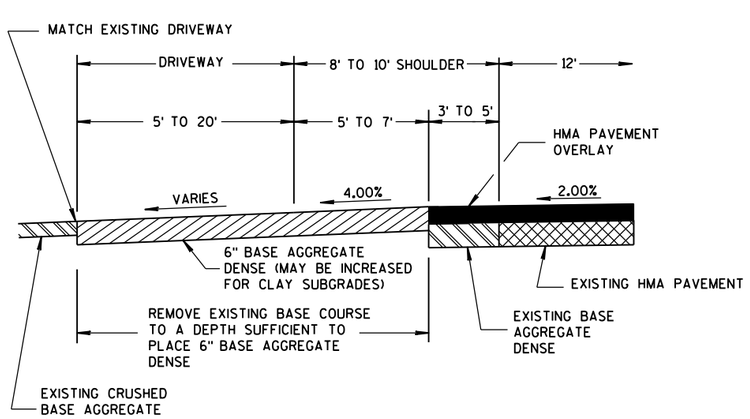
(1) DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.



PROFILE VIEW

RURAL ENTRANCE WITH ASPHALTIC SURFACE

RESURFACING PROJECTS



PROFILE VIEW

RURAL ENTRANCE WITH AGGREGATE SURFACE

6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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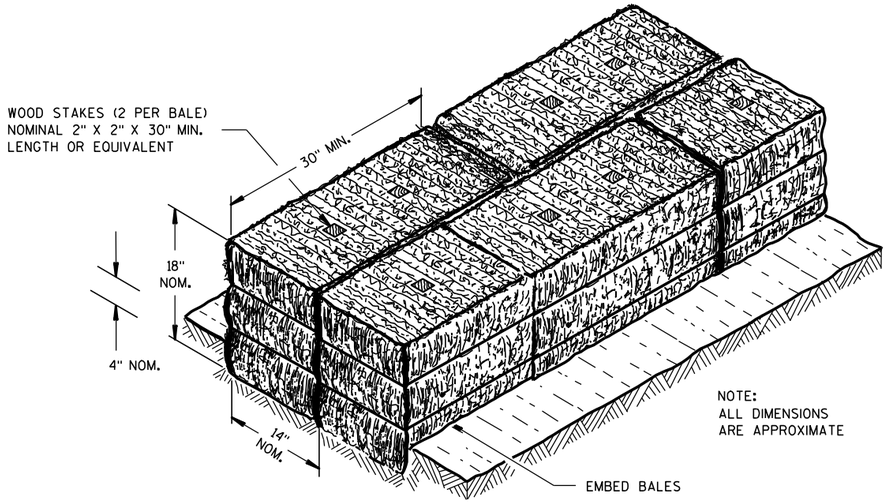
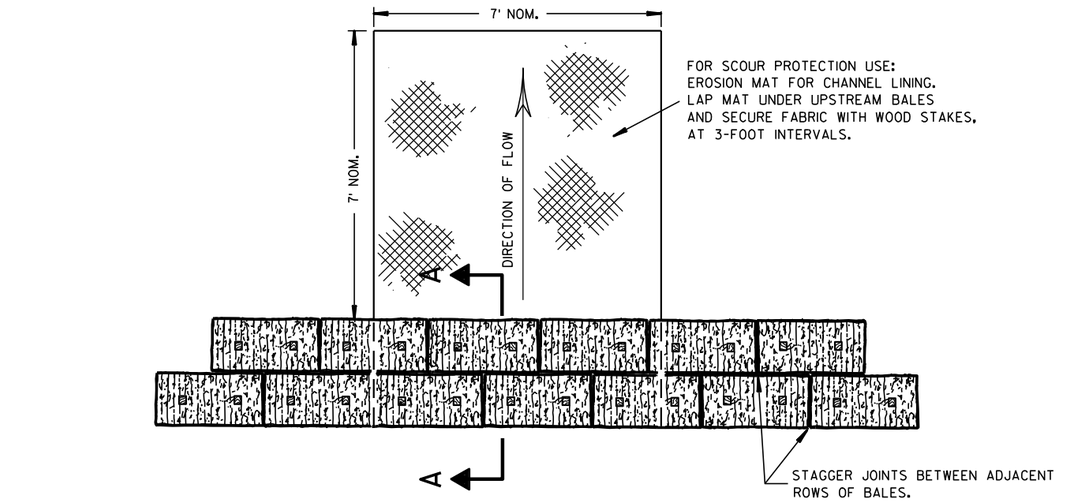
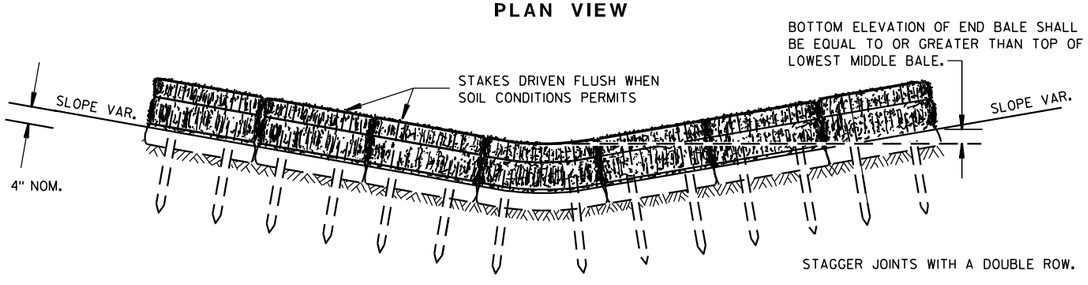
S.D.D. 8 D 22-1



SECTION A-A



PLAN VIEW



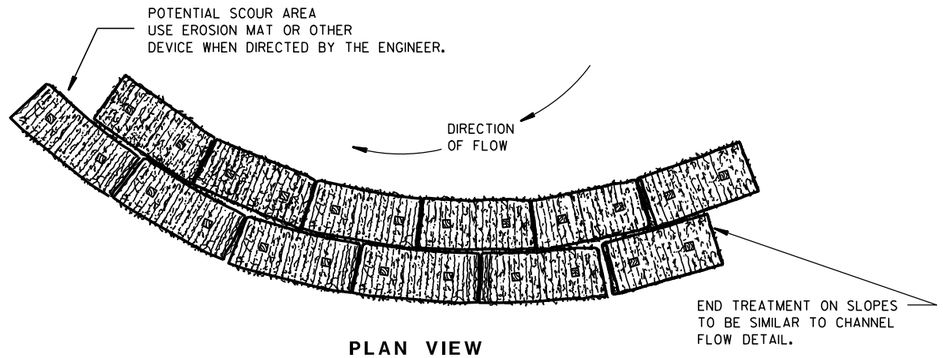
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

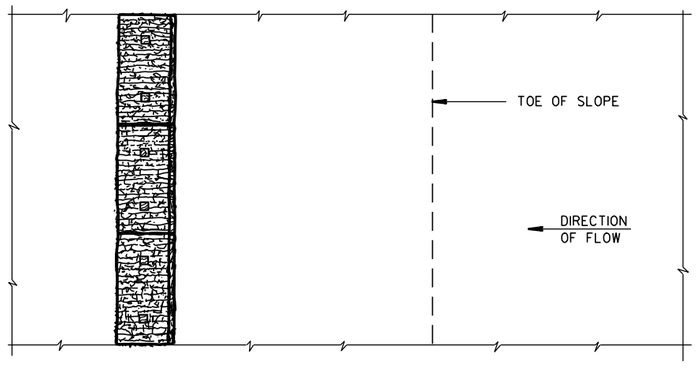
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

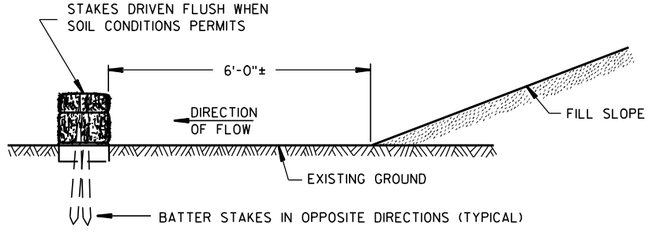


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

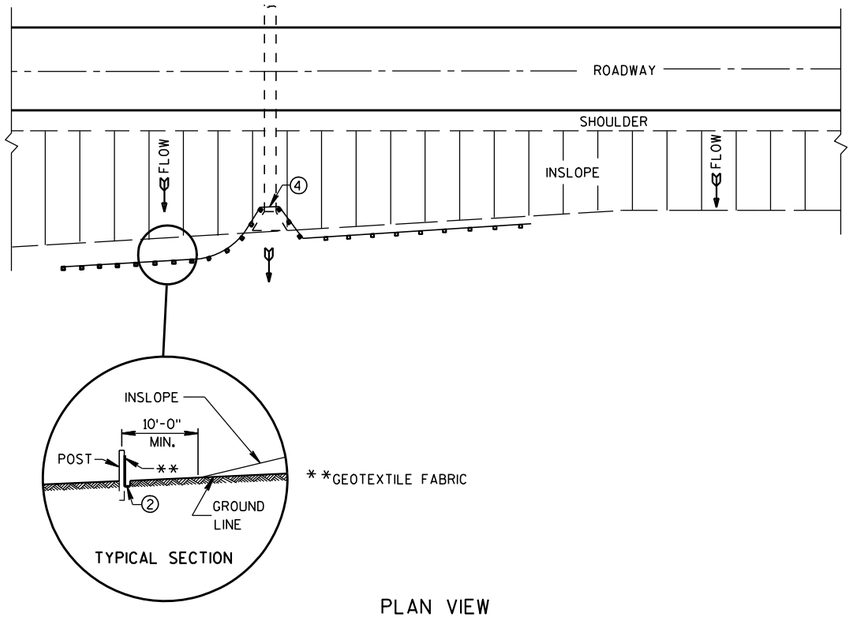
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

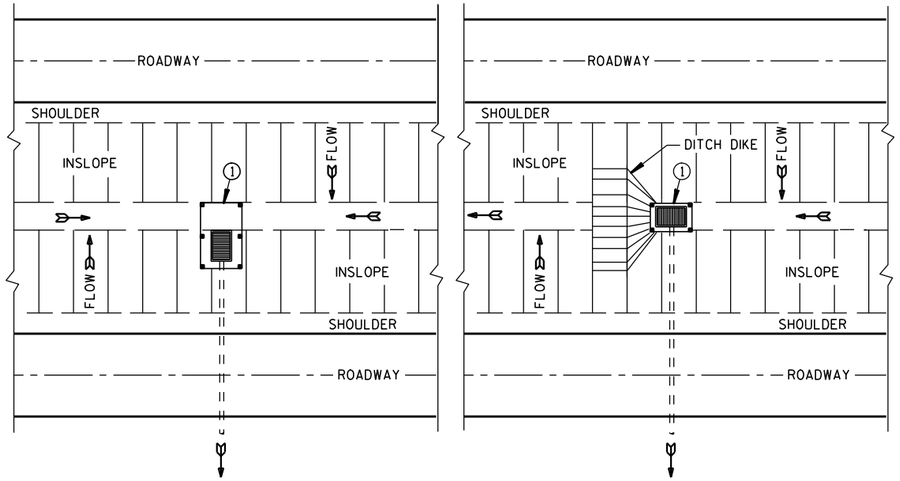
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



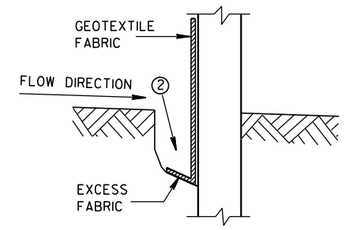
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

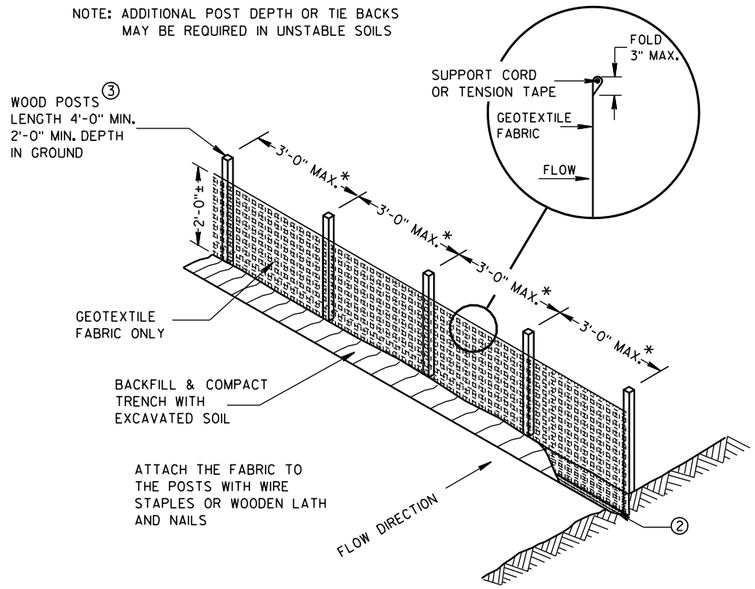
GENERAL NOTES

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

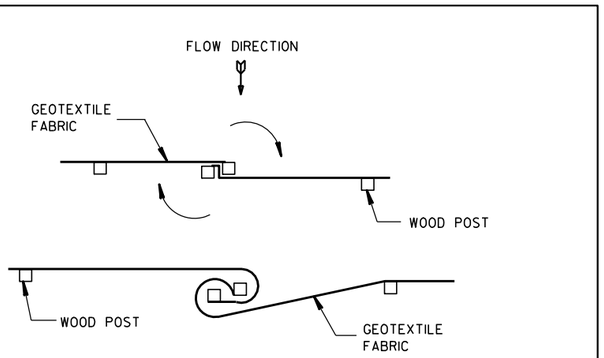
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



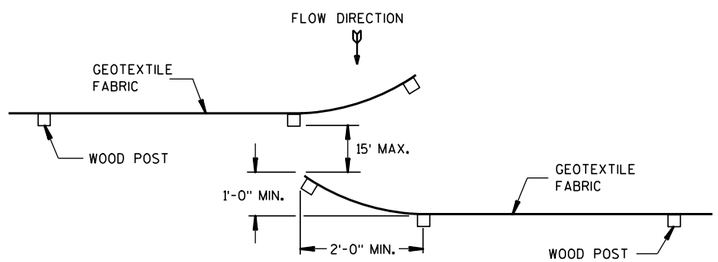
TRENCH DETAIL



SILT FENCE

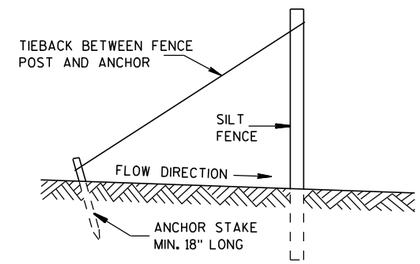


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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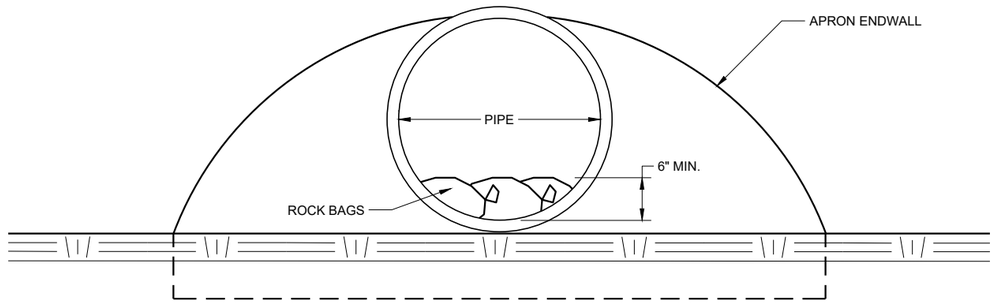
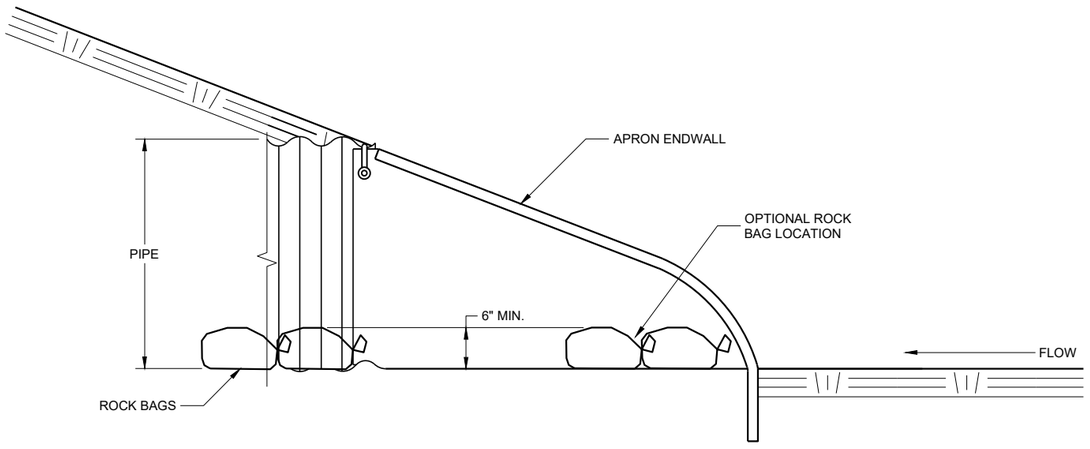
S.D.D. 8 E 9-6



END VIEW



SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

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

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SDD 08E15 - 01

METAL APRON ENDWALLS

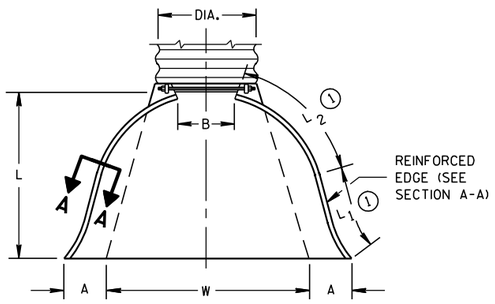
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 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

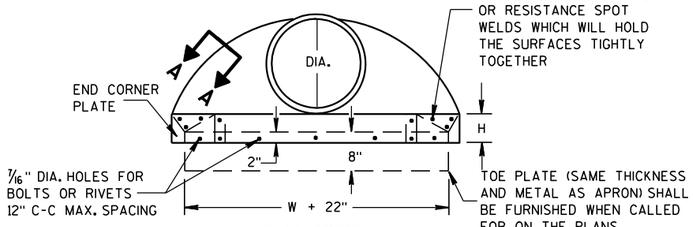
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
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

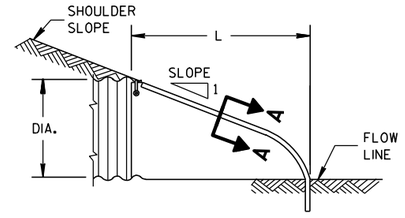
*MINIMUM
**MAXIMUM



PLAN VIEW

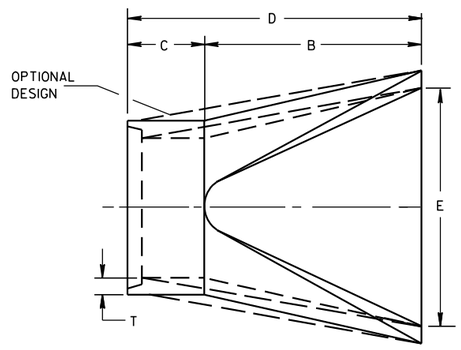


END VIEW

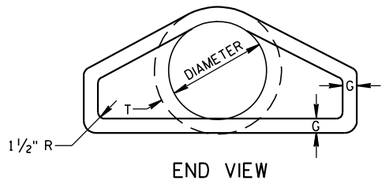


SIDE ELEVATION

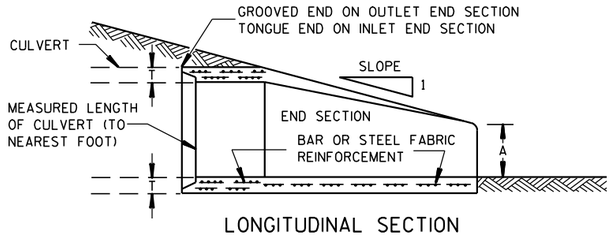
METAL ENDWALLS



PLAN

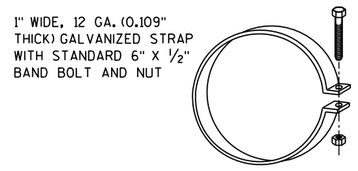


END VIEW



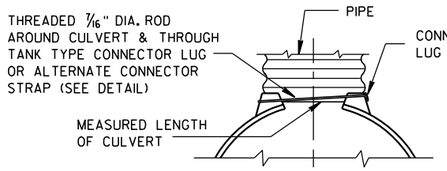
LONGITUDINAL SECTION

CONCRETE ENDWALLS

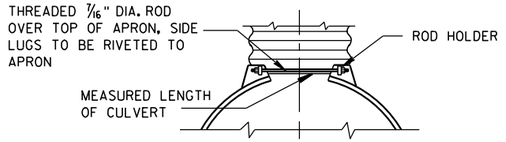


ALTERNATE FOR TYPE 1 CONNECTION

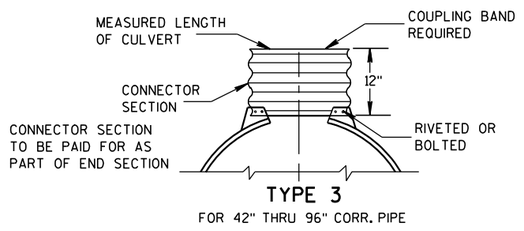
END SECTION CONNECTOR STRAP



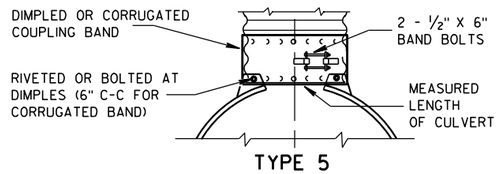
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

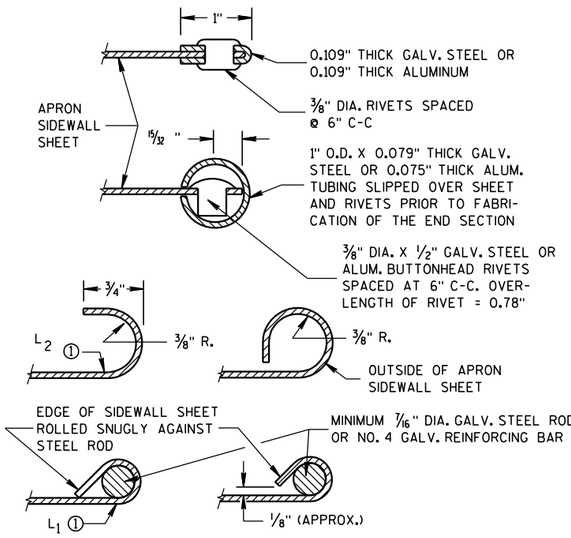
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

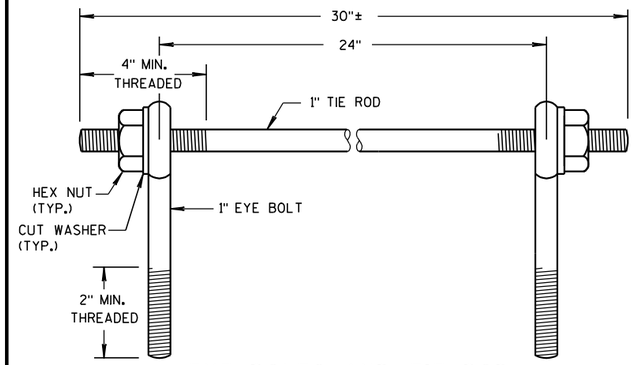
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

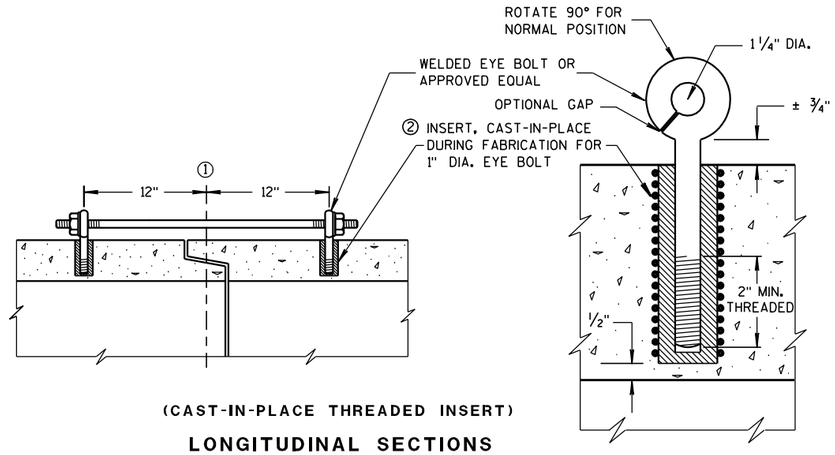
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

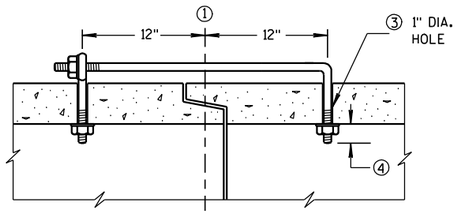
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

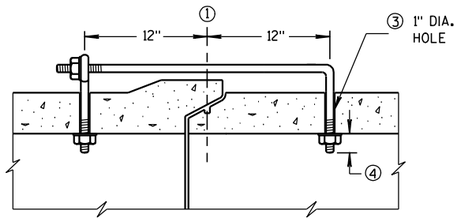
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

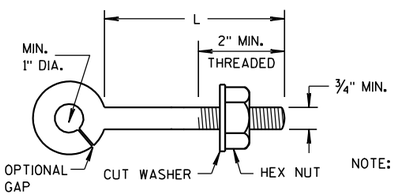


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

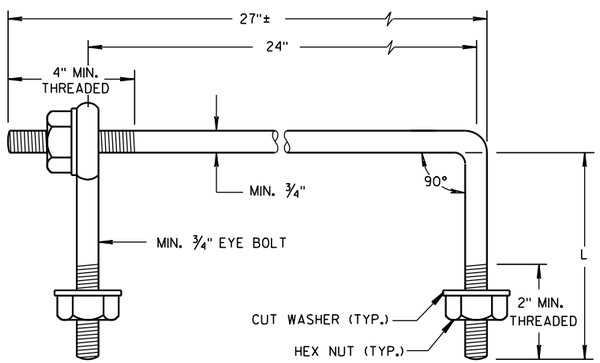
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

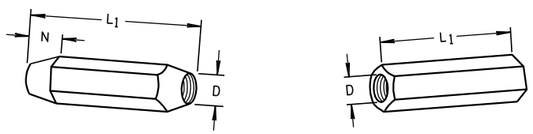
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

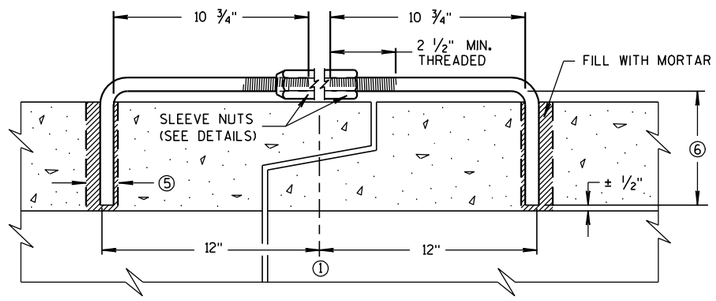
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

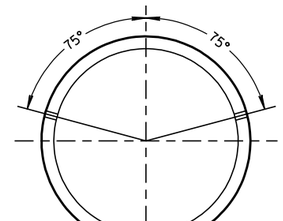
SLEEVE NUTS



LONGITUDINAL SECTION

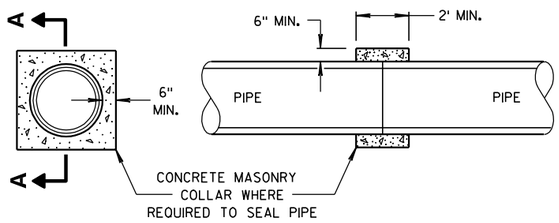
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

6

S.D.D. 8 F 4-7

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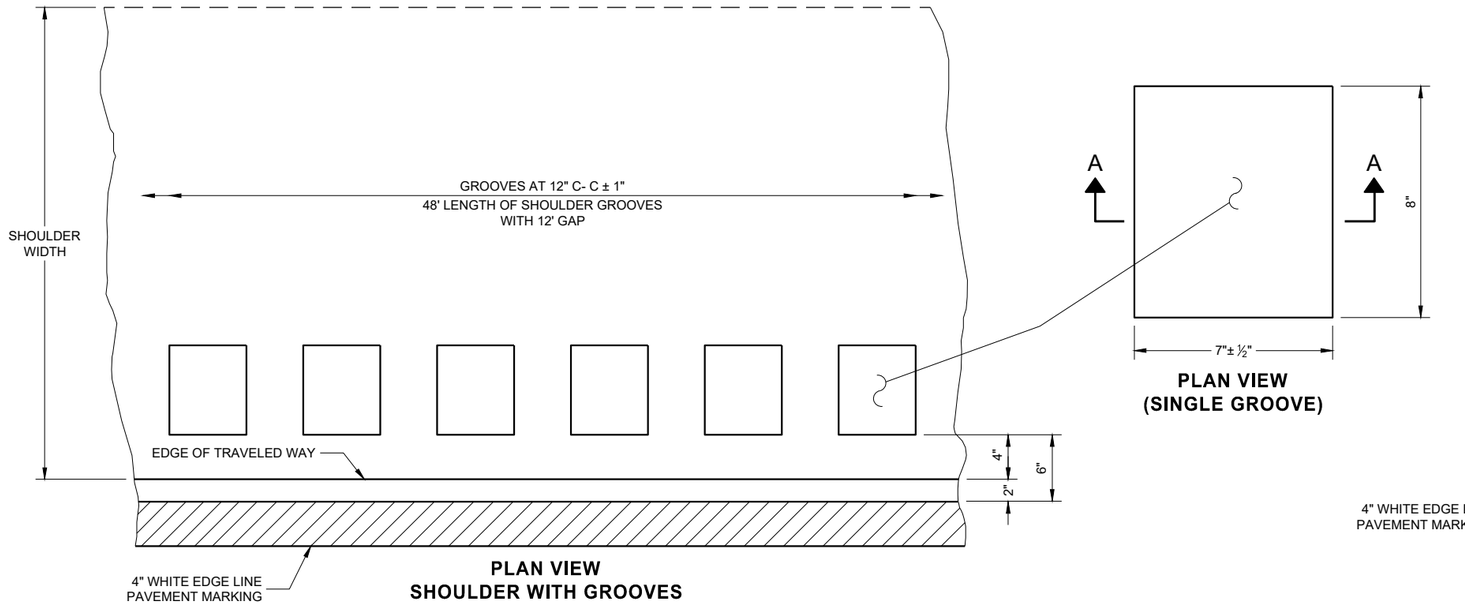
S.D.D. 8 F 4-7



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

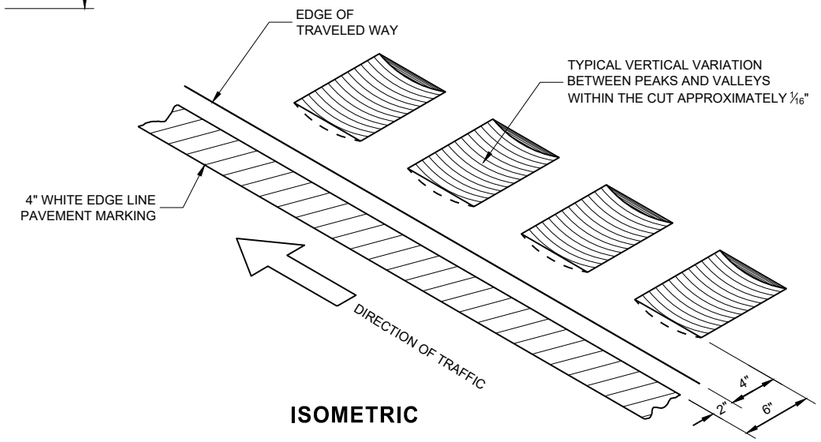
PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

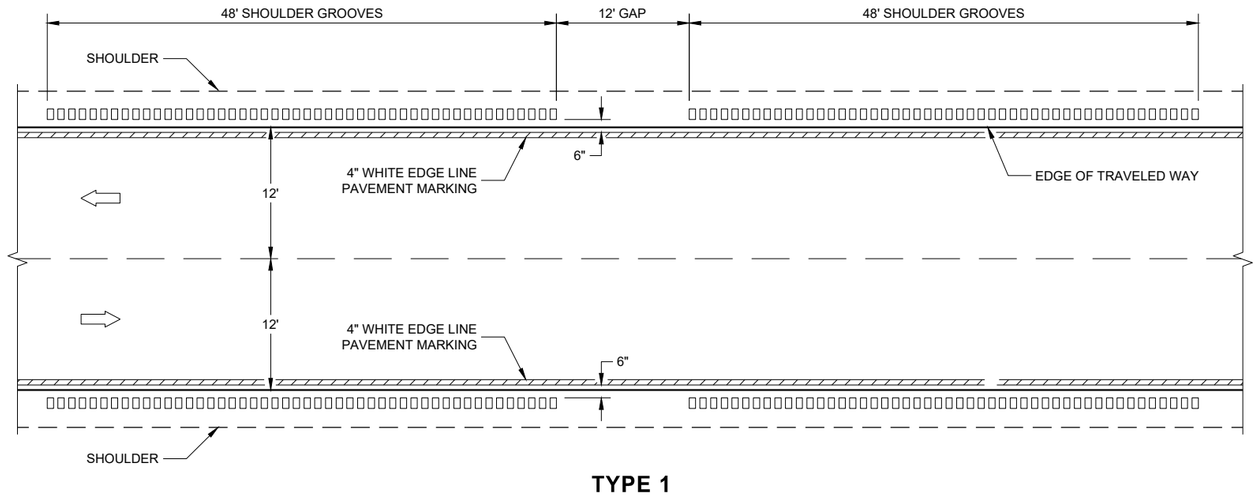
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

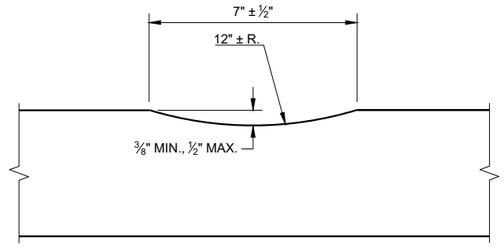
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC

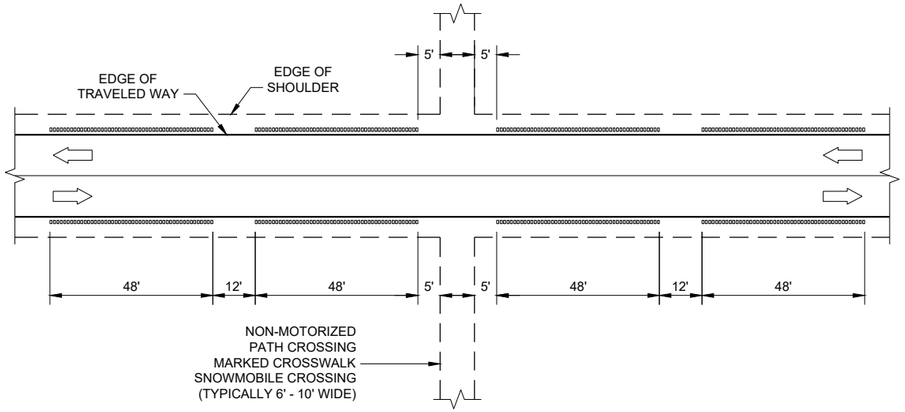


TYPE 1
2 - LANE SHOULDER RUMBLE STRIP

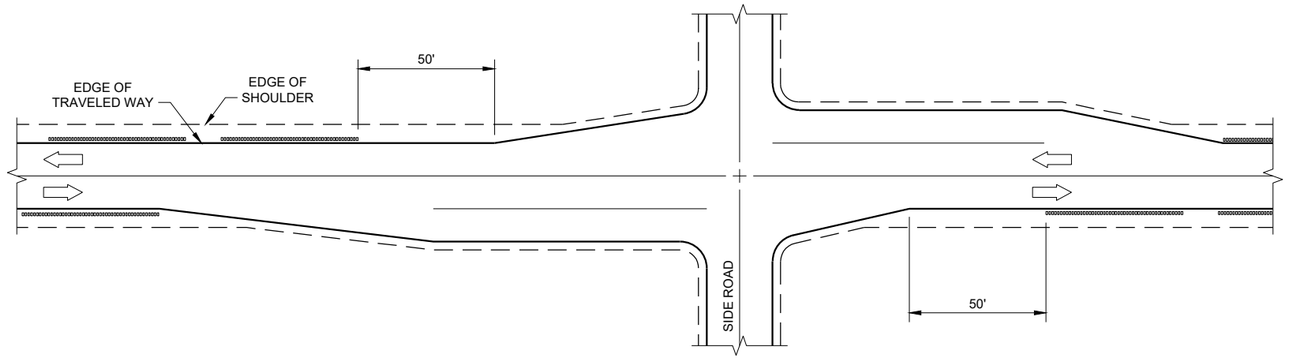


SECTION A - A

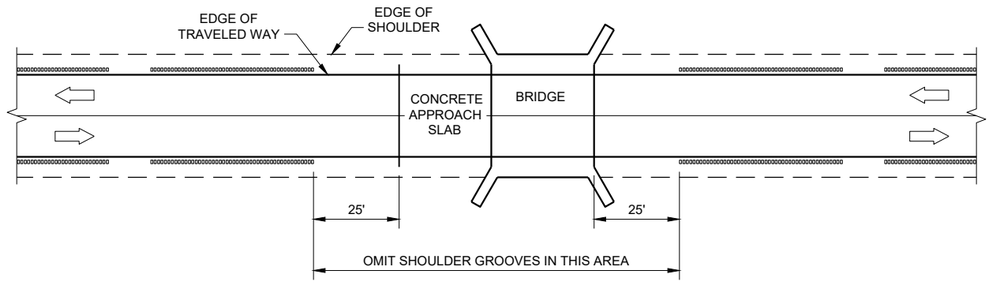
2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING



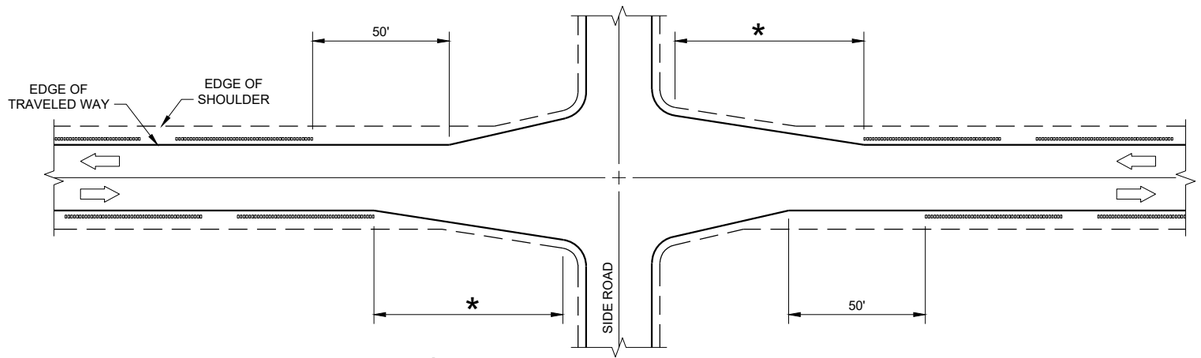
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



SHOULDER GROOVES AT RIGHT TURN LANE

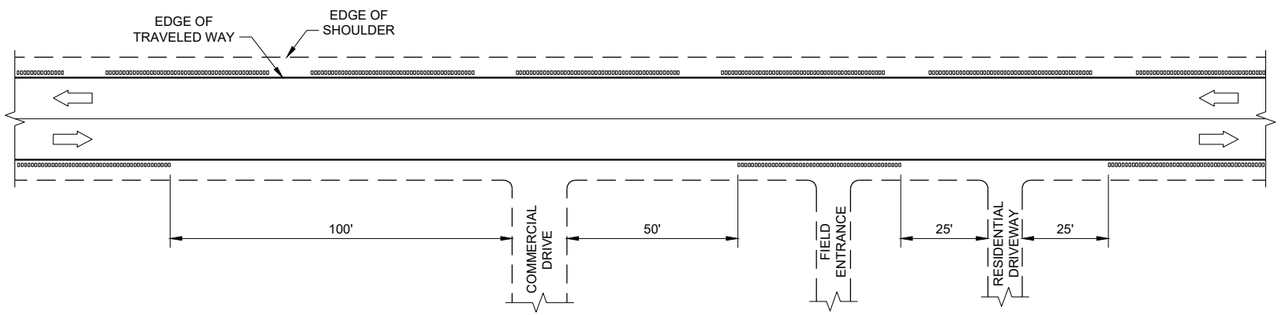


SHOULDER GROOVES AT BRIDGES



* GREATER OF 100' OR APPROACH TAPER LENGTH

SHOULDER GROOVES AT INTERSECTIONS WITH APPROACH TAPER



SHOULDER GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

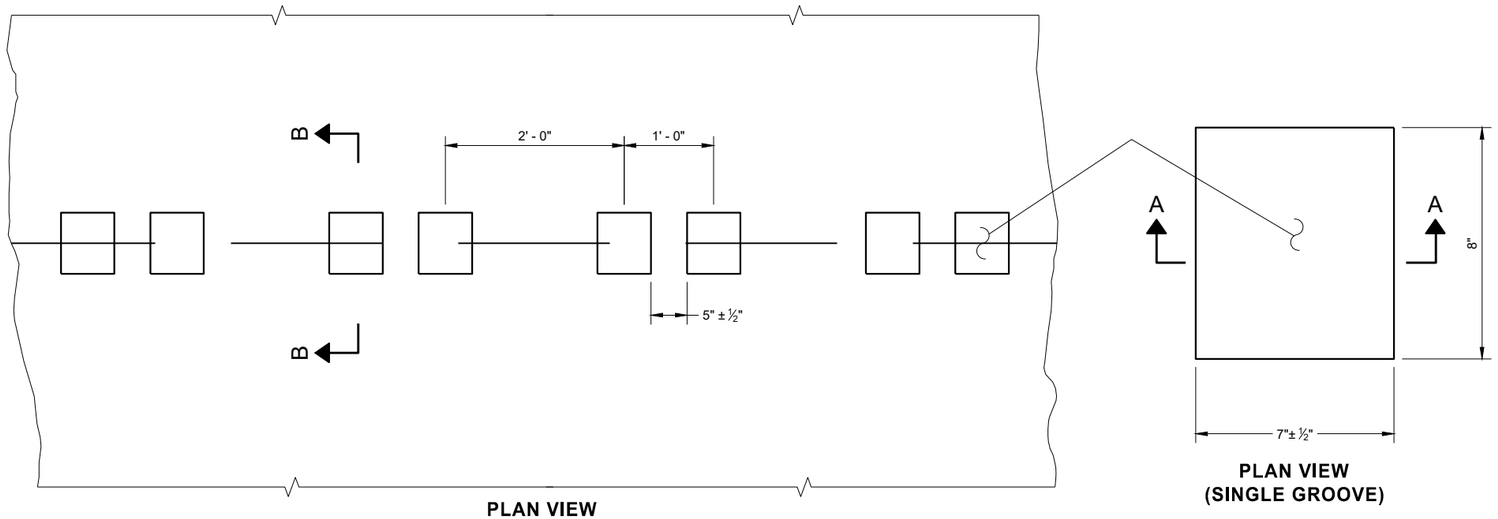
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 13A10 - 02c



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

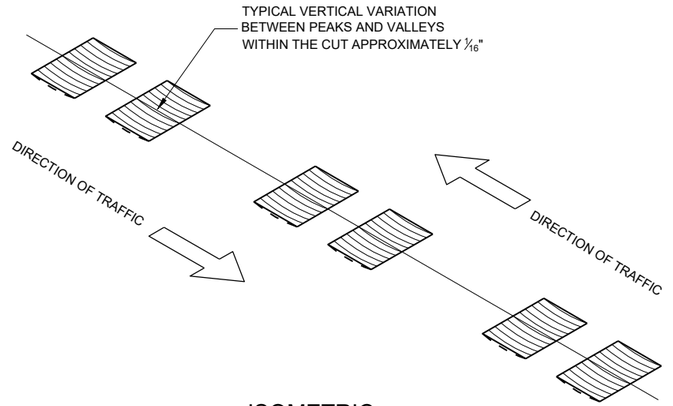
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

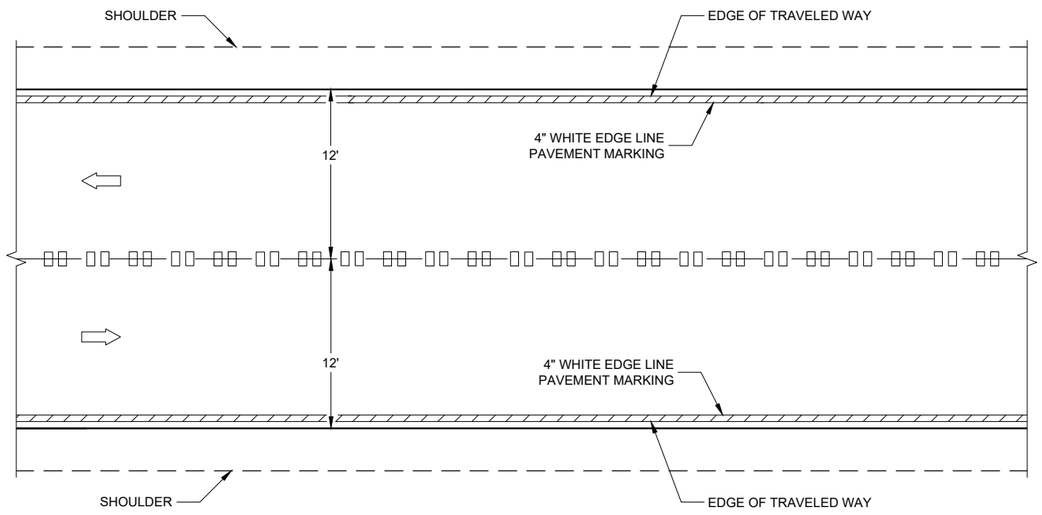
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

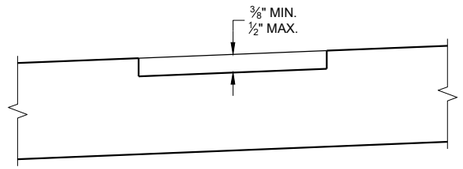
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



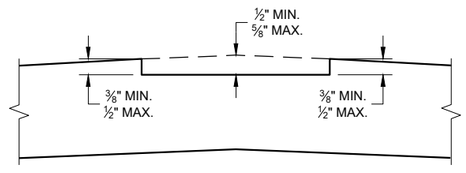
ISOMETRIC



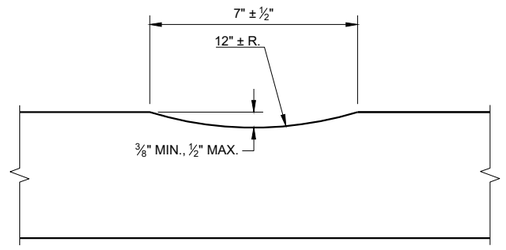
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



SECTION B - B
CROWNED ROADWAY



SECTION A - A

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

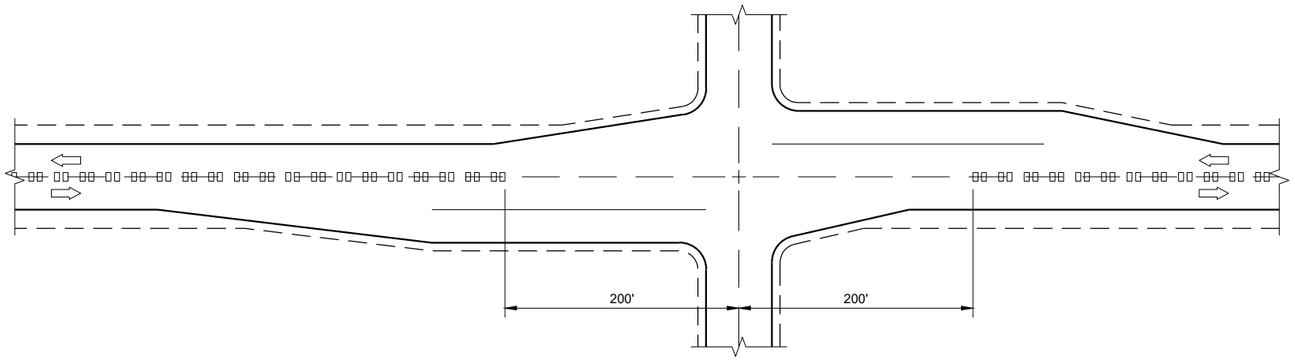
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

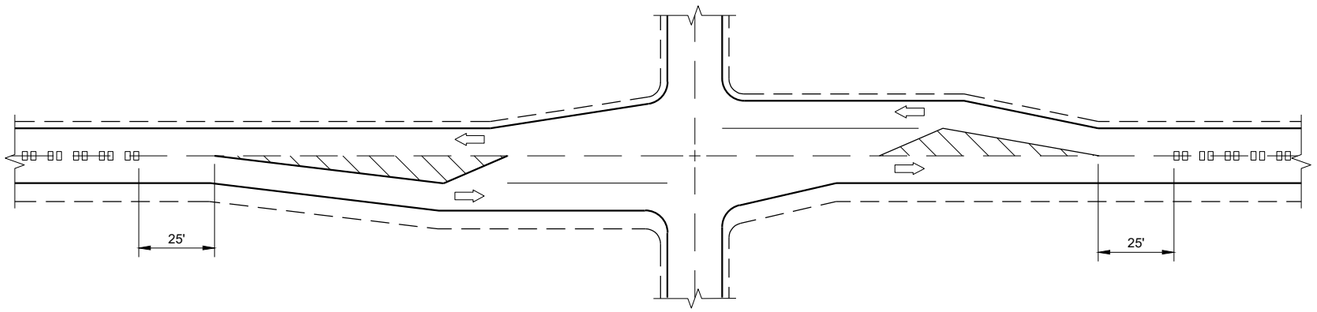
SDD 13A11 - 03a

6

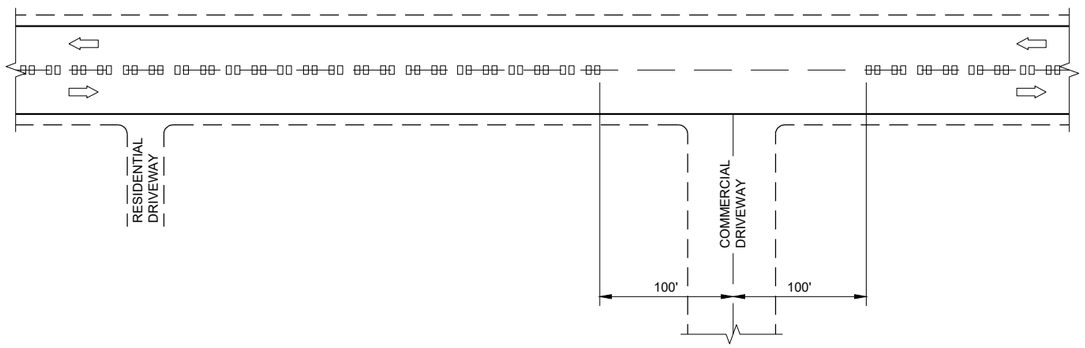
SDD 13A11 - 03a



CENTERLINE GROOVES AT INTERSECTIONS



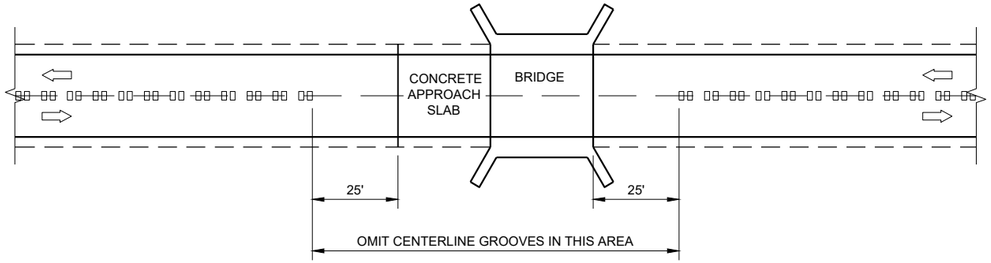
CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



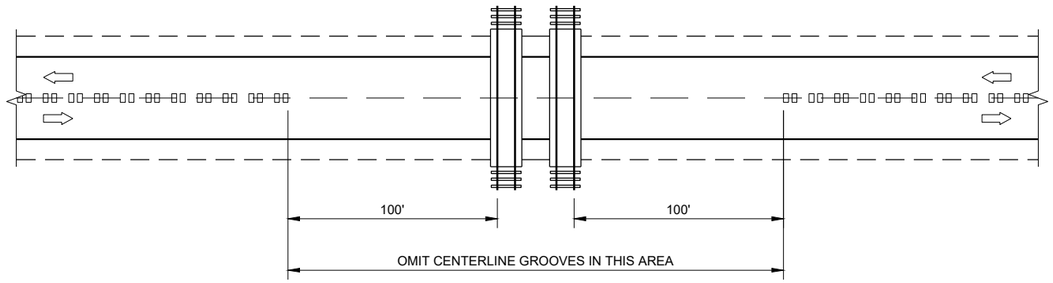
CENTERLINE GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

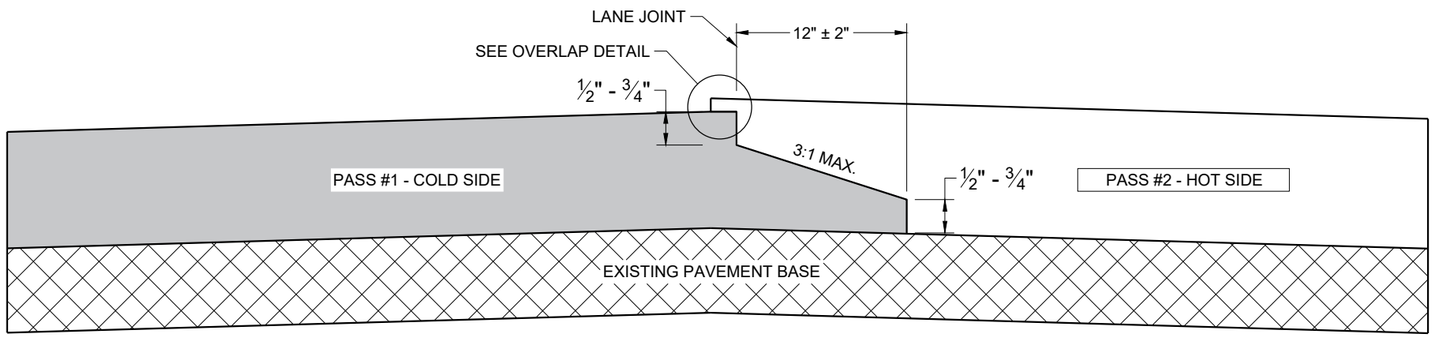
2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

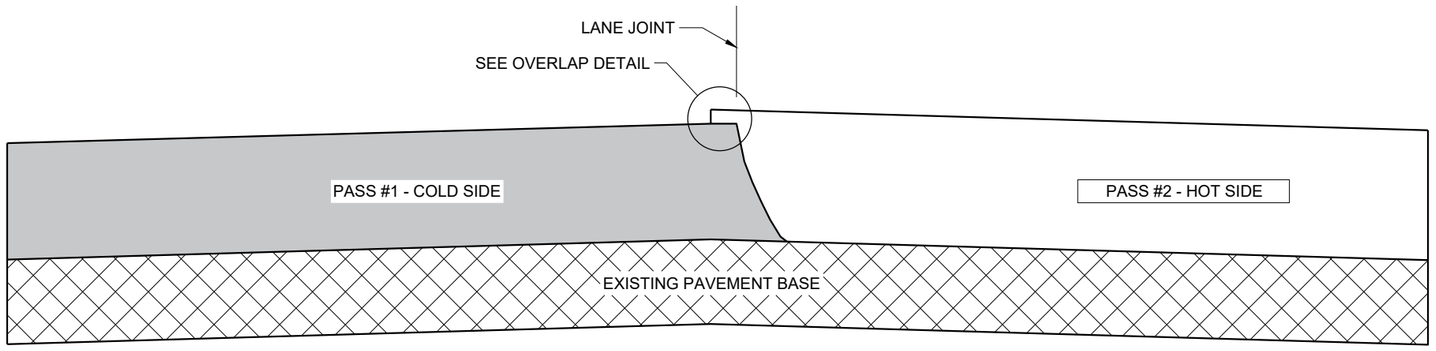
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

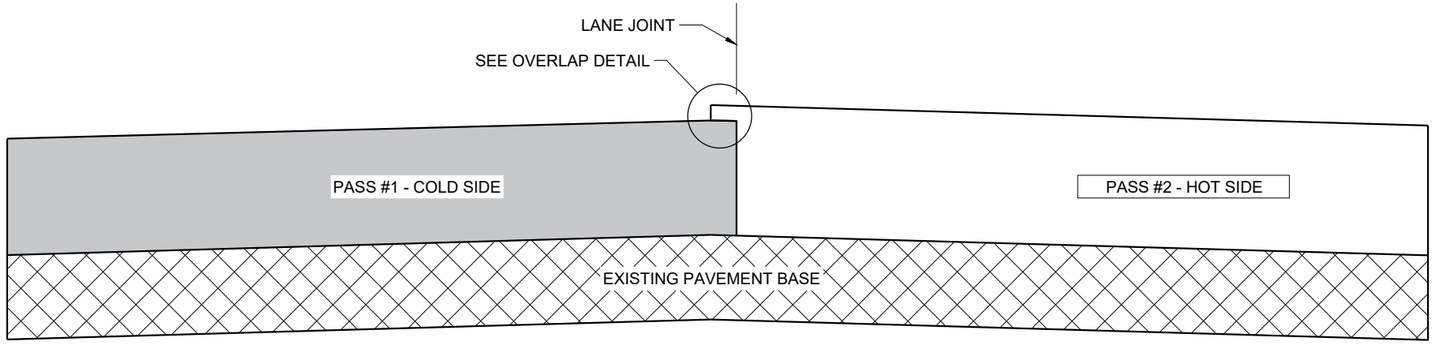
6
SDD 13A11 - 03b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

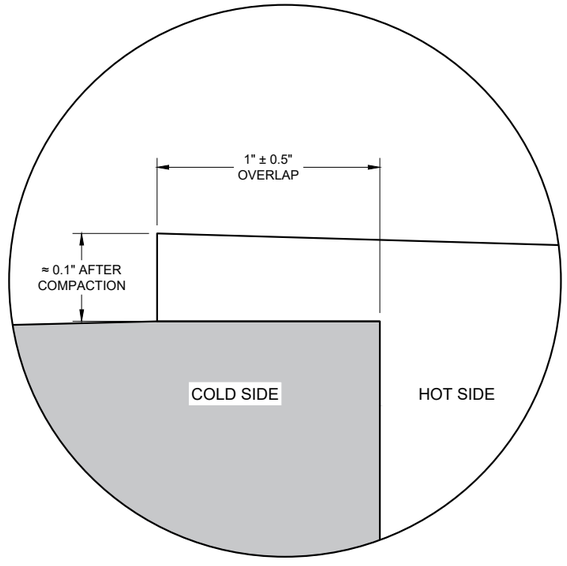
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

6

SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

GENERAL NOTES

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

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

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

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

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

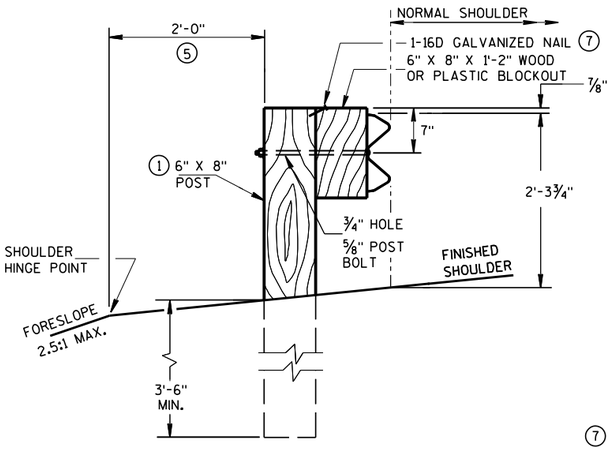
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

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

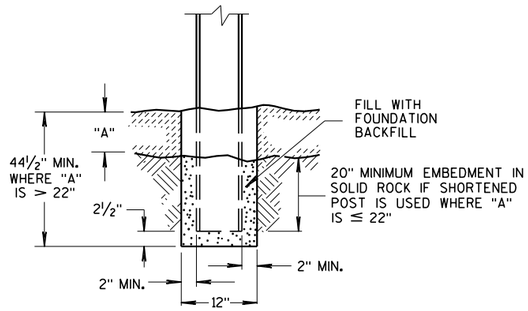
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

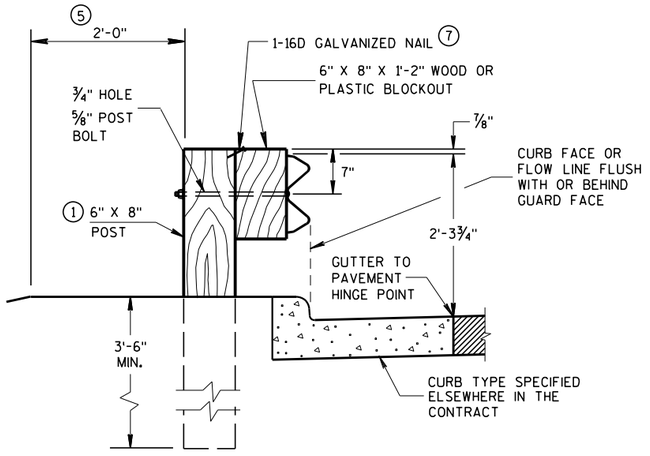
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



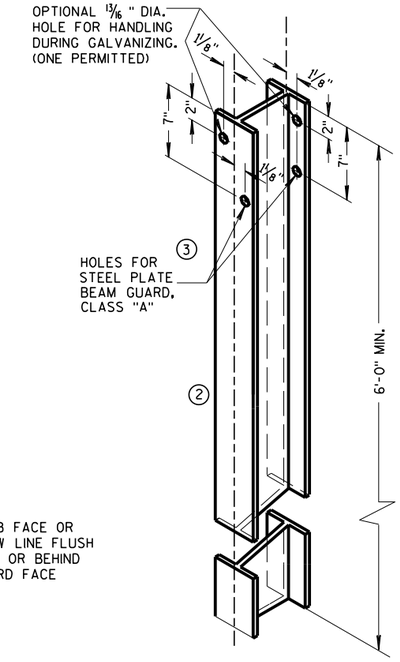
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



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

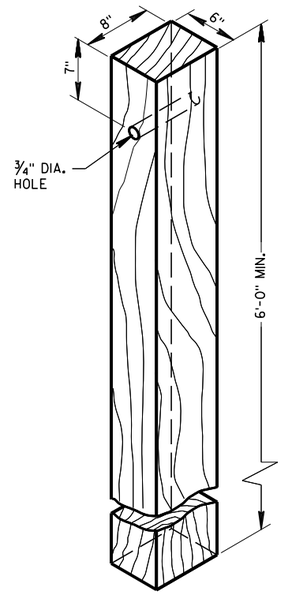


END VIEW
LOCATED ALONG A CURBED ROADWAY

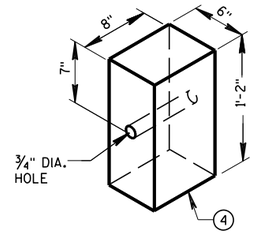


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

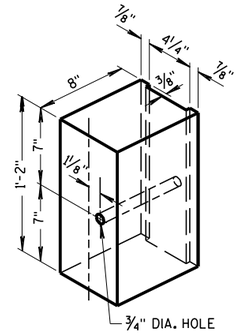
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



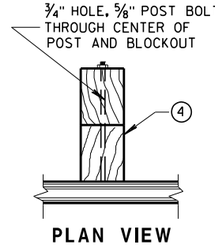
WOOD POST
(6"X8") NOMINAL



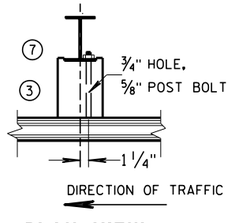
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



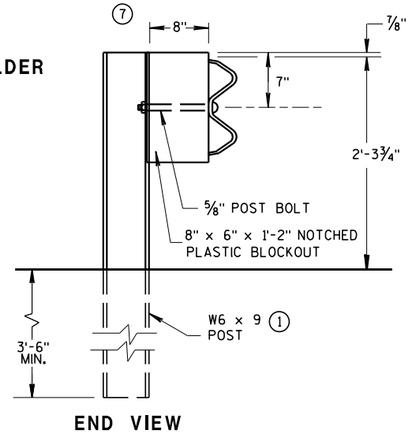
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



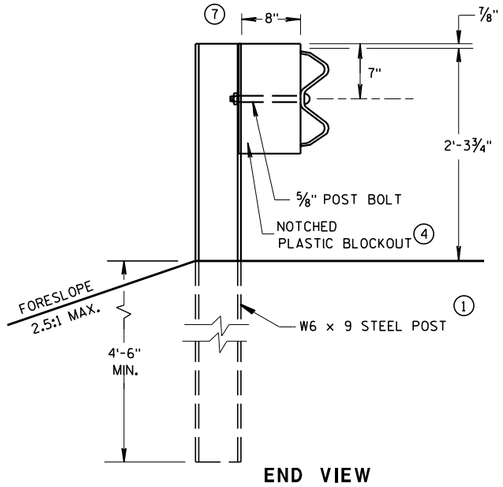
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



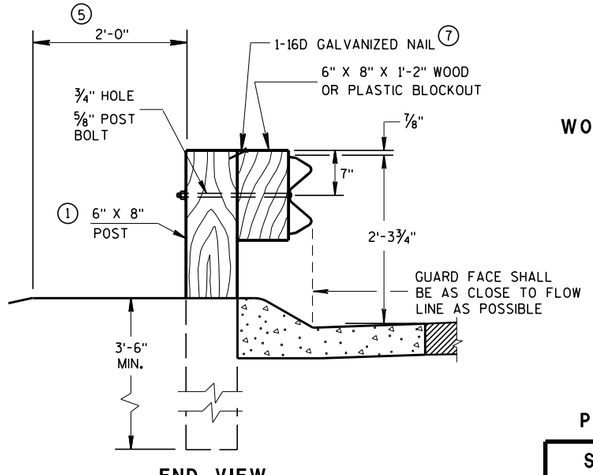
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



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



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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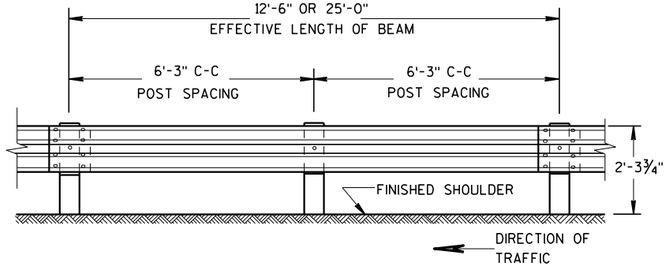
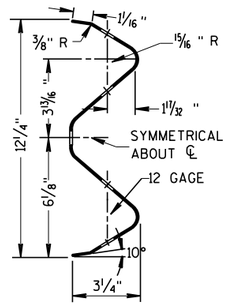
S.D.D. 14 B 15-11a

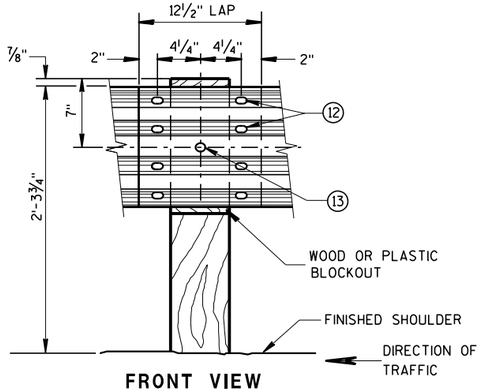


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

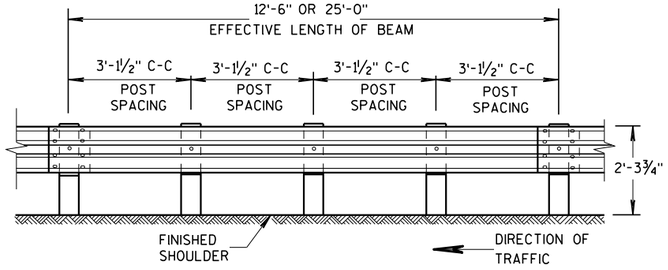
GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

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

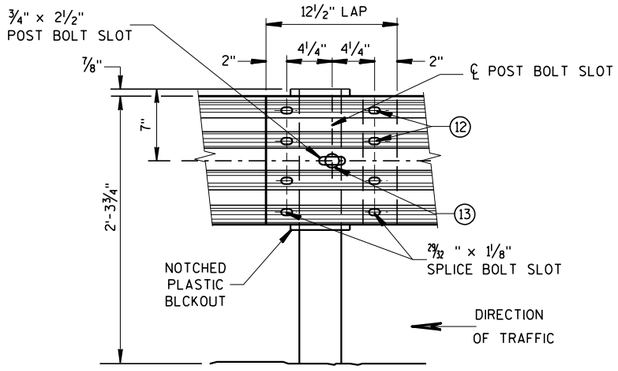
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) ⅝" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH ⅝" DIA. F844 FLAT WASHER UNDER NUT.



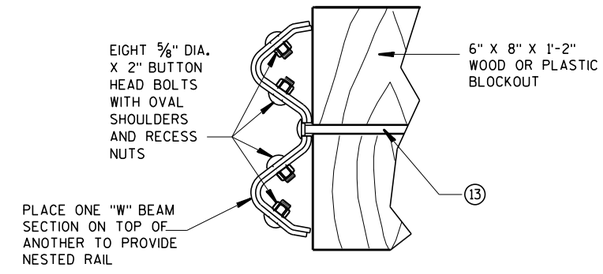
FRONT VIEW

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



FRONT VIEW

BEAM SPLICE AT STEEL POST

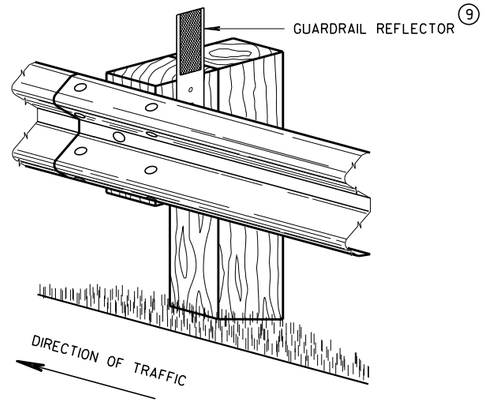


NESTED W BEAM (NW)

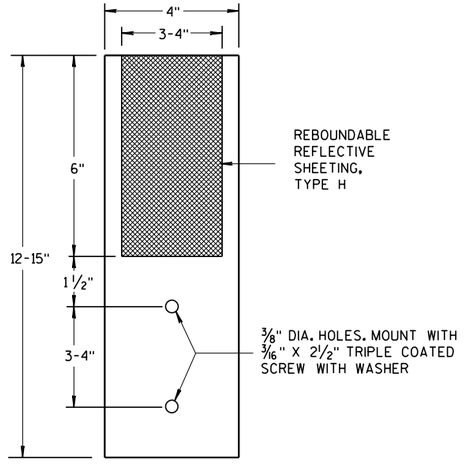
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

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



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



4"x 12" GUARDRAIL REFLECTOR

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

STATE OF WISCO 50
DEPARTMENT OF TRANSPORTATION

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

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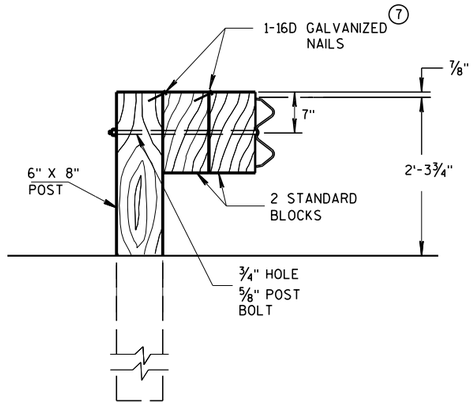
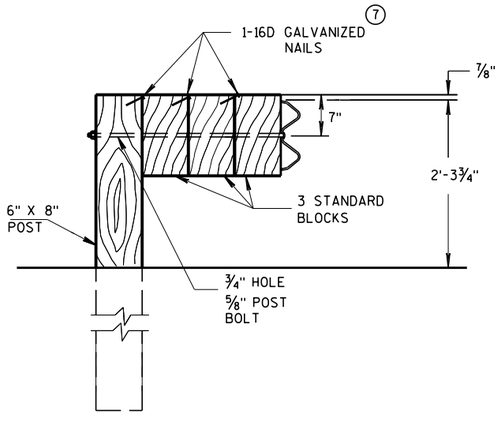
S.D.D. 14 B 15-11b



DETAIL FOR DOUBLE BLOCKS

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

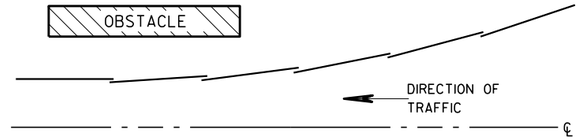


DETAIL FOR TRIPLE BLOCKS

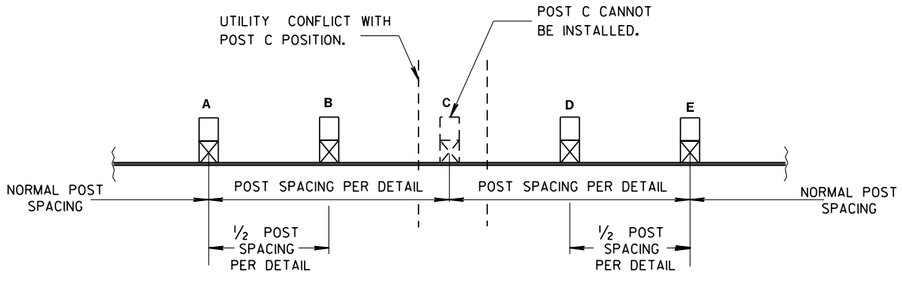
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

BILL OF MATERIALS

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

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

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

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

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

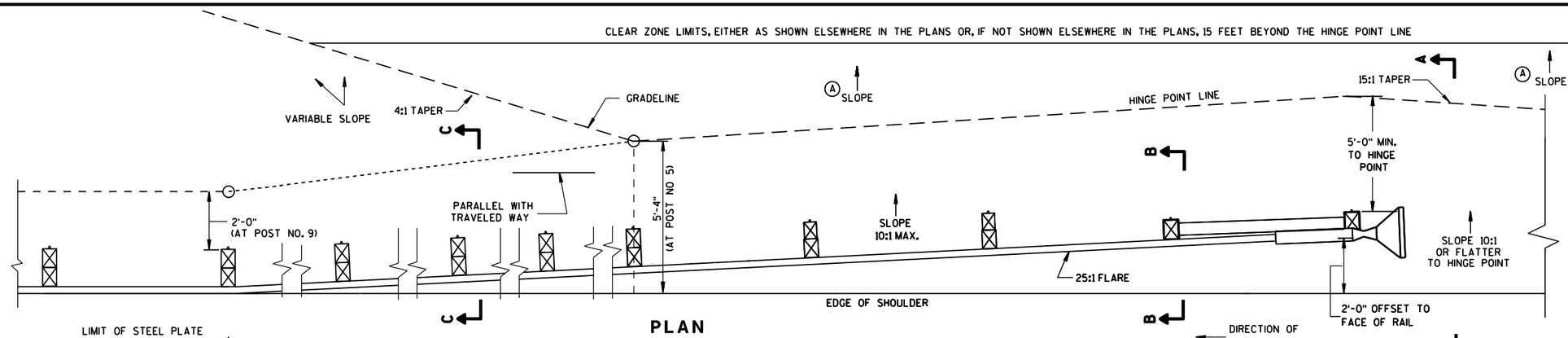
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

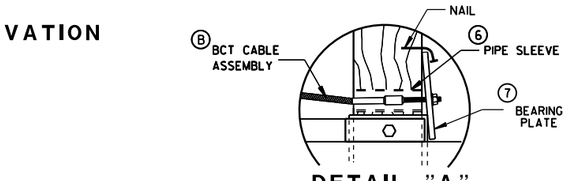
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

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

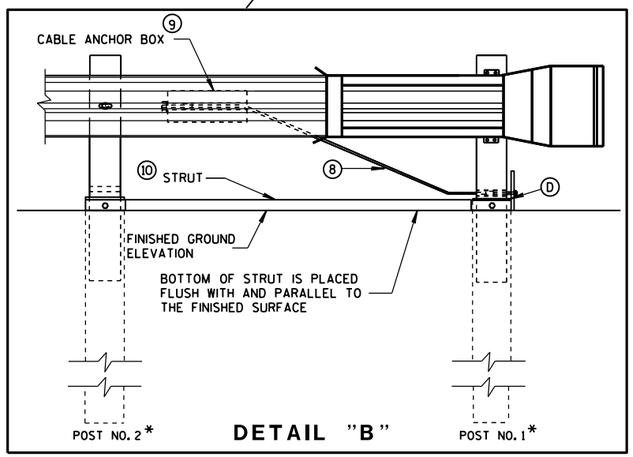
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

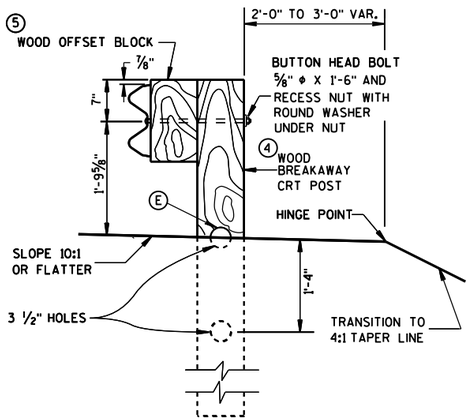




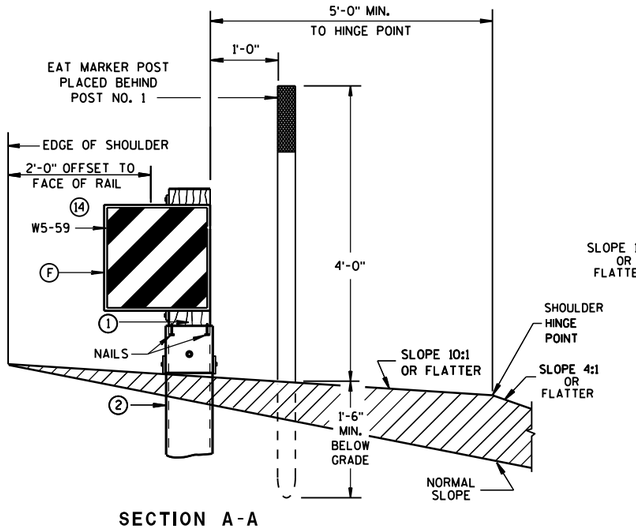
DETAIL "A"



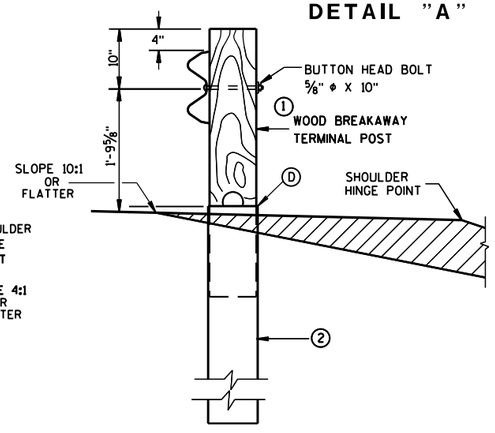
DETAIL "B"



SECTION C-C
TYPICAL AT POST NOS. 6, 8



SECTION A-A
TYPICAL AT POST NO. 1*



SECTION B-B
TYPICAL AT POST NO. 2*

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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

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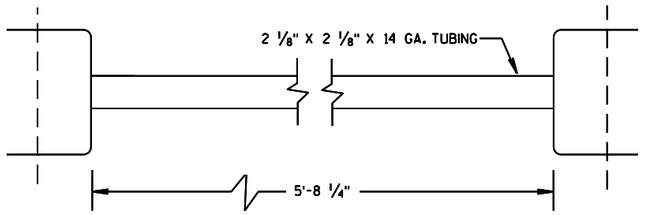
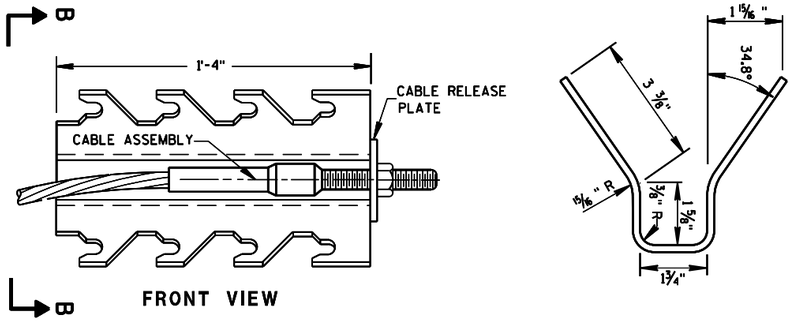
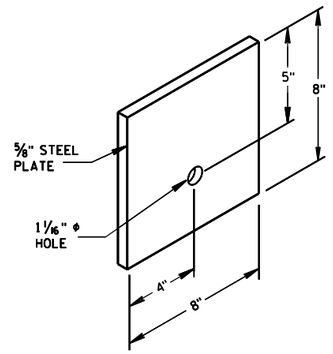
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL



⑨ CABLE ANCHOR BOX



⑦ STEEL BEARING PLATE

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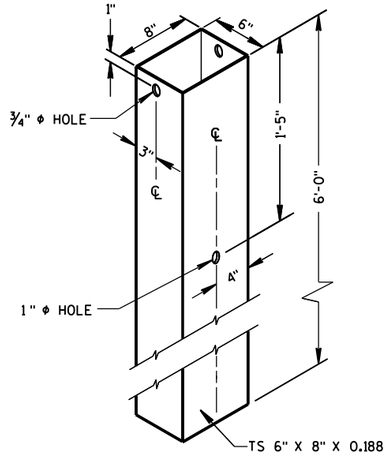
S.D.D. 14 B 24-9b

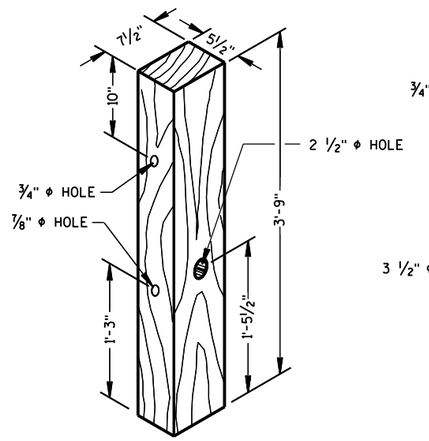
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

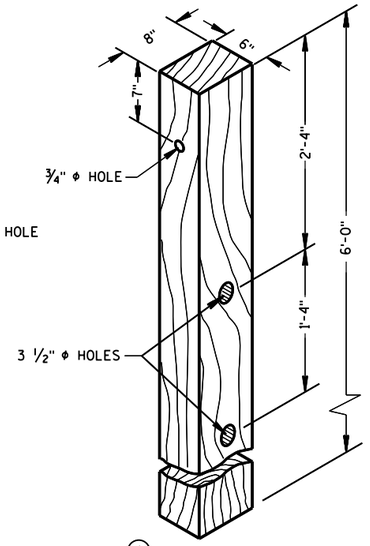
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



② 72" STEEL TUBE
(POSTS NO. 1-2



① TERMINAL POST

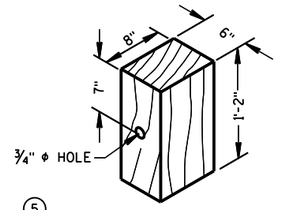


④ CRT POST
(POSTS NO'S 5-8

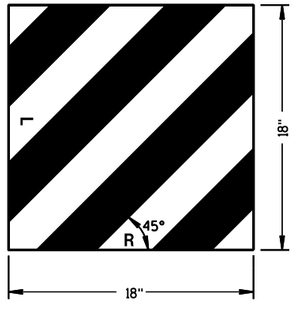
WOOD BREAKAWAY POSTS

GENERAL NOTES

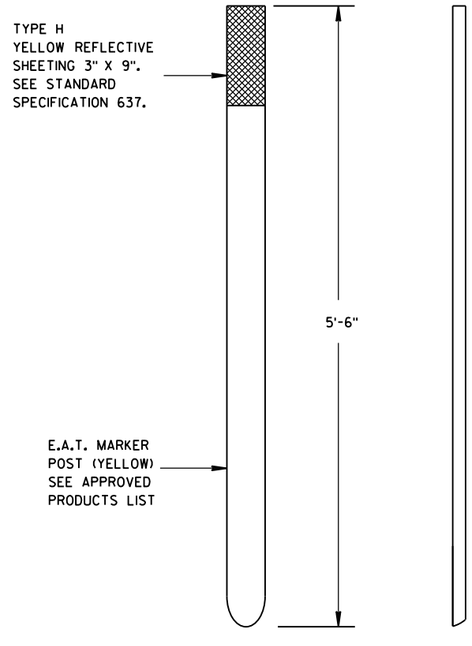
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



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



⑭ REFLECTIVE SHEETING DETAILS



E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

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

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

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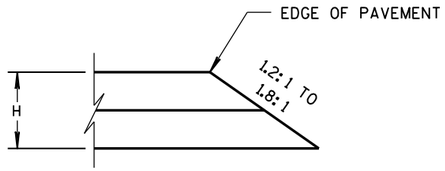
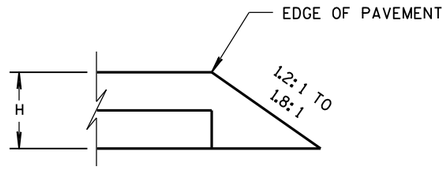
S.D.D. 14 B 24-9c



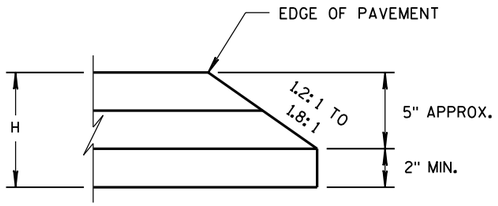
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



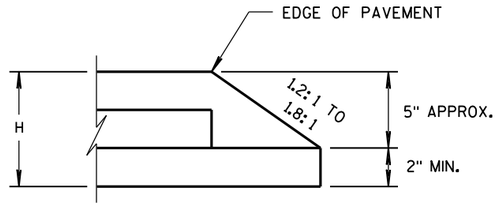
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

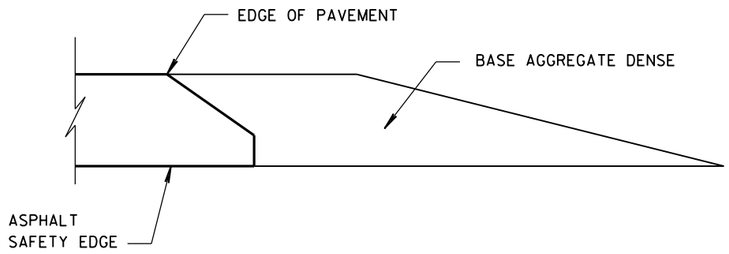
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

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S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

SAFETY EDGE SM

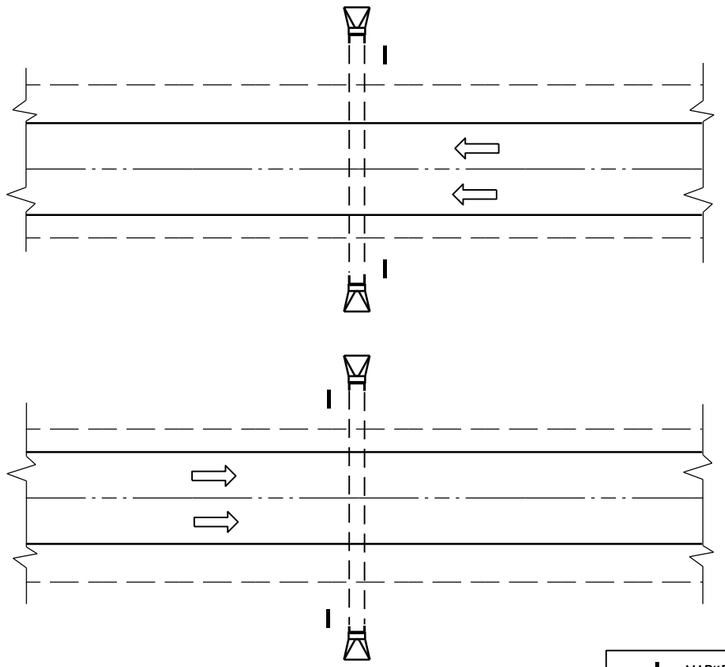
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

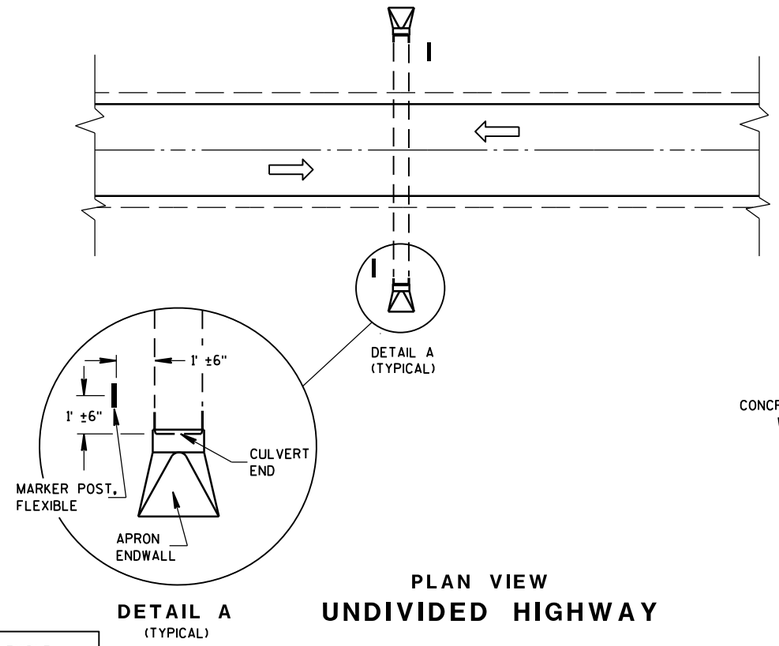
/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

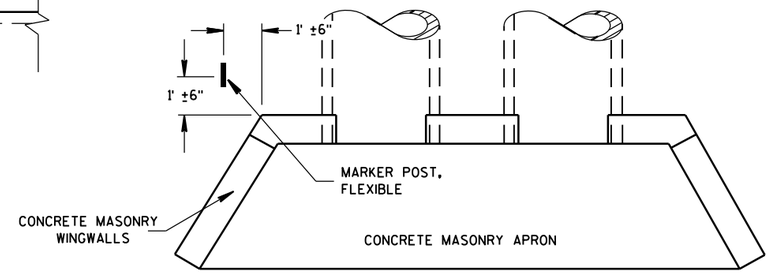
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

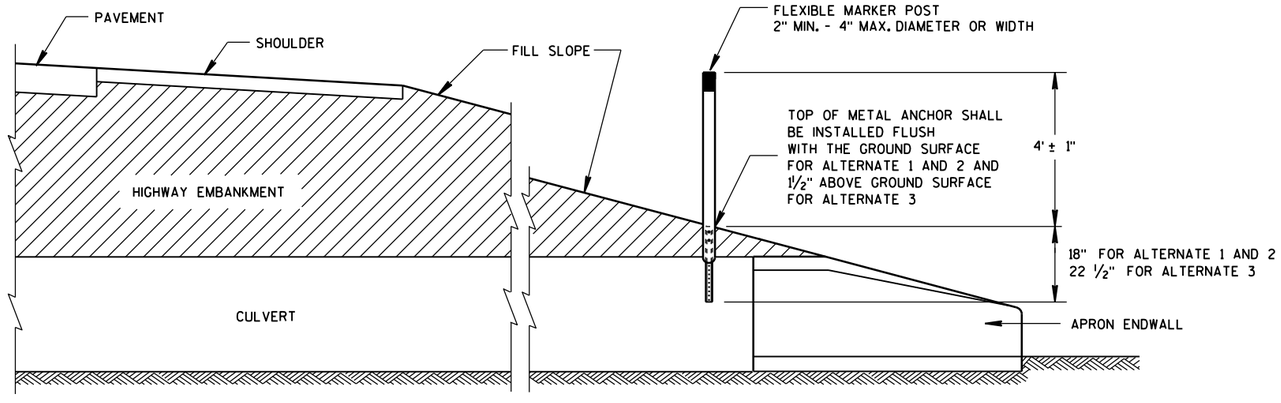
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



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

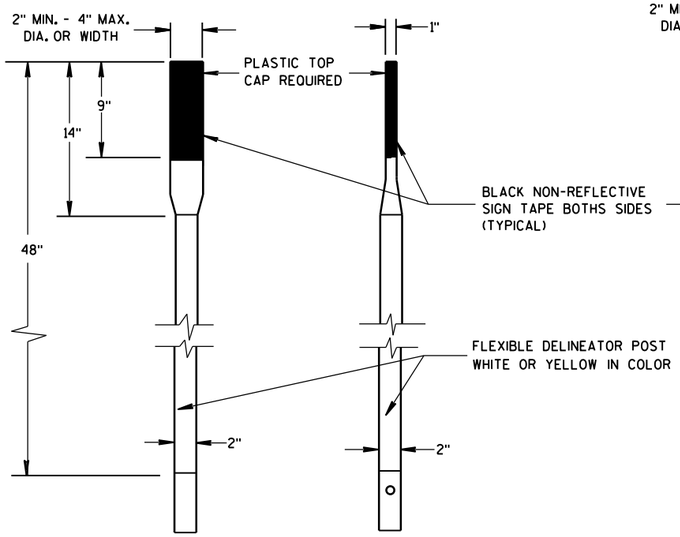
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

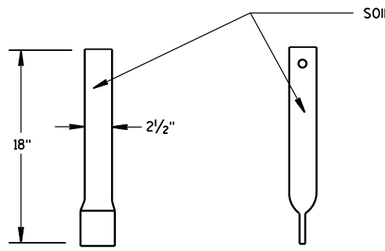
6

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

6

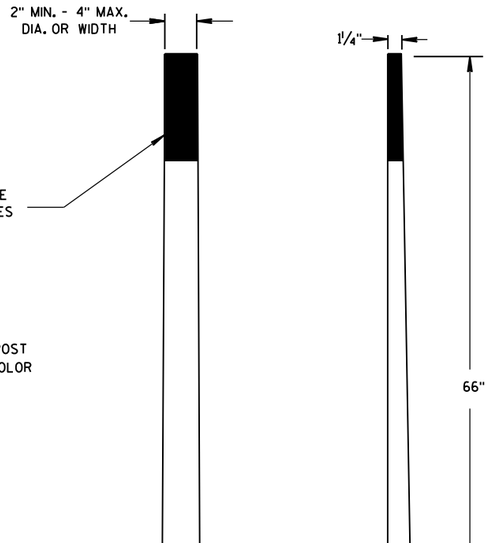
S.D.D. 15 A 3-2a





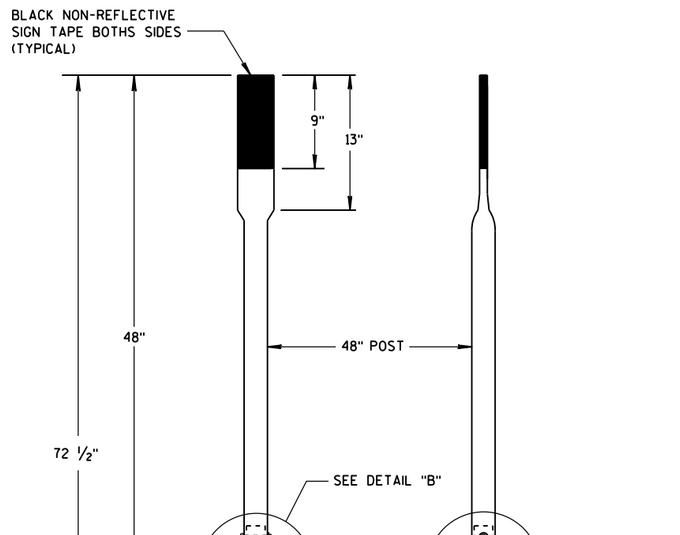
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

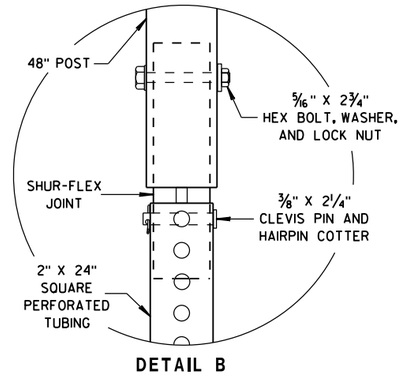
ALTERNATE 2



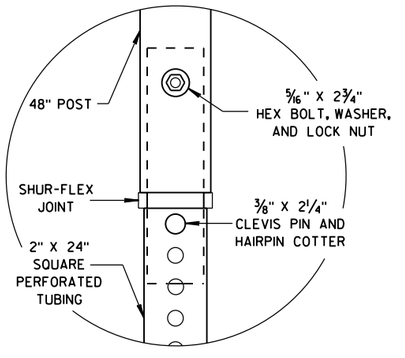
FRONT VIEW SIDE VIEW

ALTERNATE 3

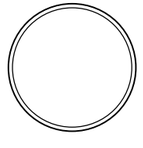
FLEXIBLE MARKER POSTS



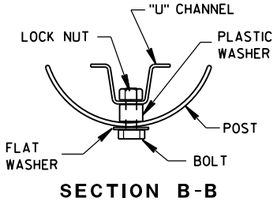
DETAIL B



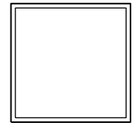
DETAIL C



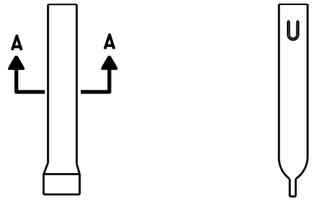
SECTION A-A



SECTION B-B

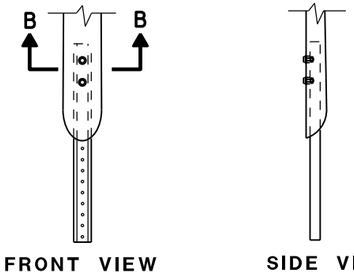


SECTION C-C



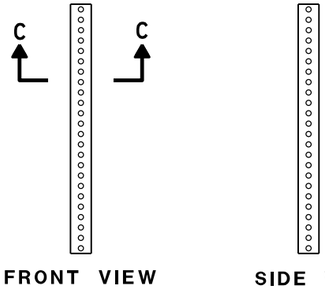
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2



FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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

6

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

GENERAL NOTES

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

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

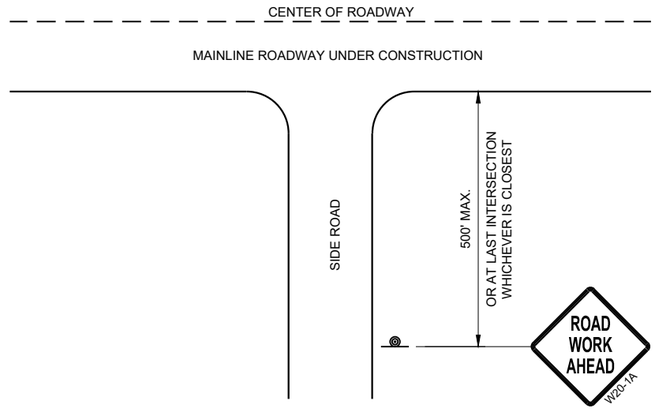
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

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

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



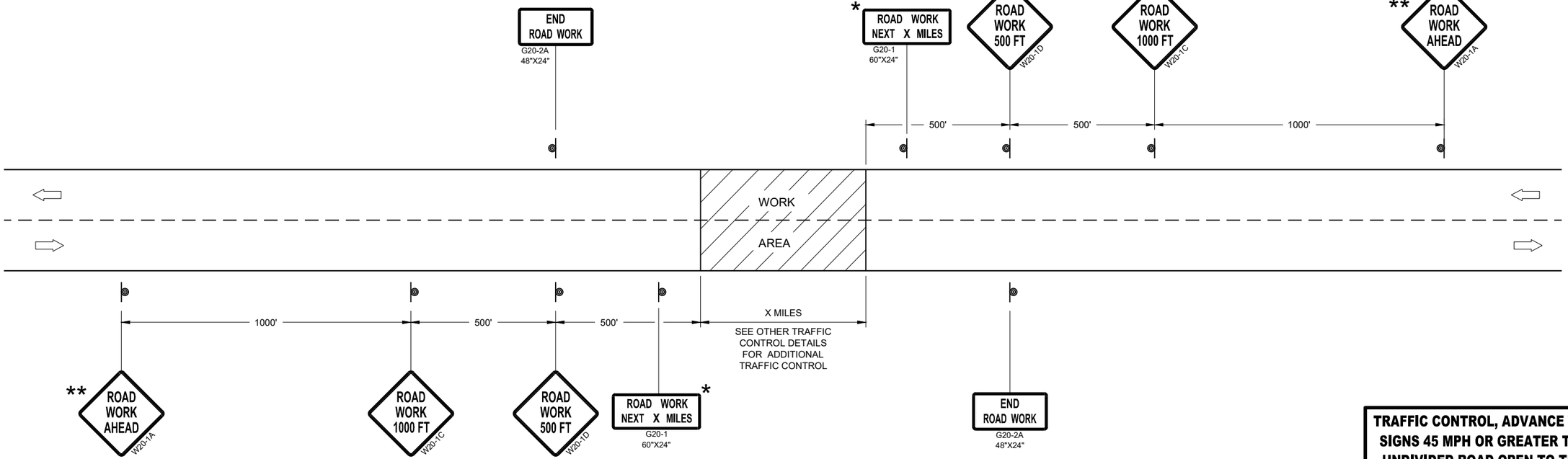
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

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.

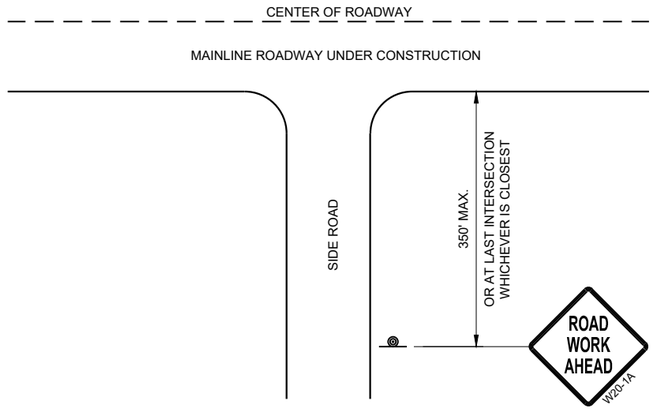
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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.



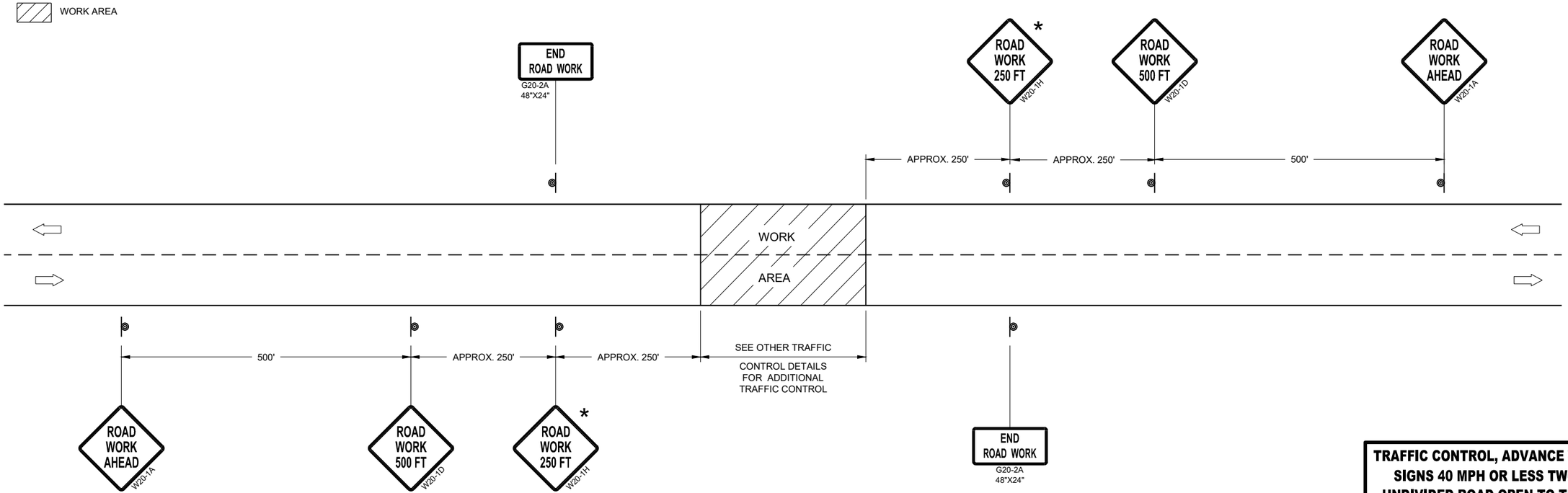
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

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 TRAFFICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

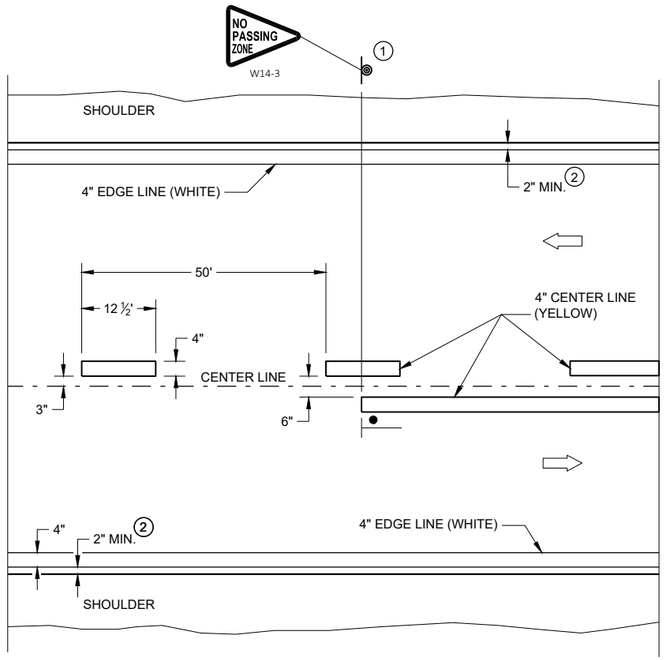
APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

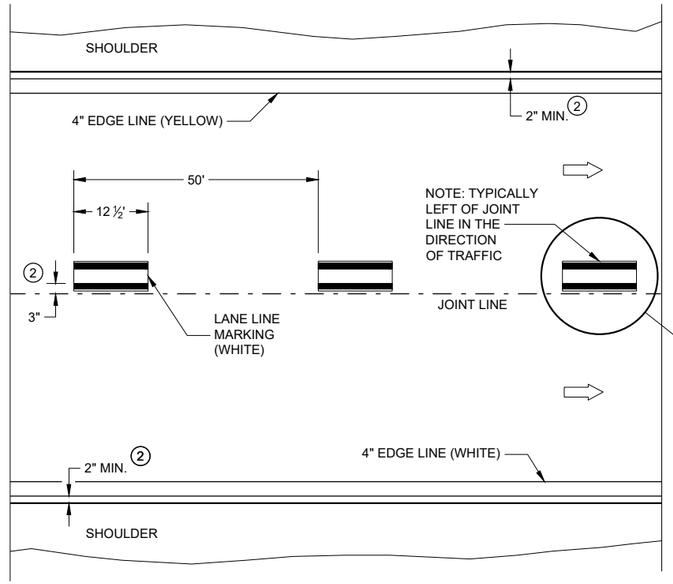
FHWA

6

SDD 15C05 - 05

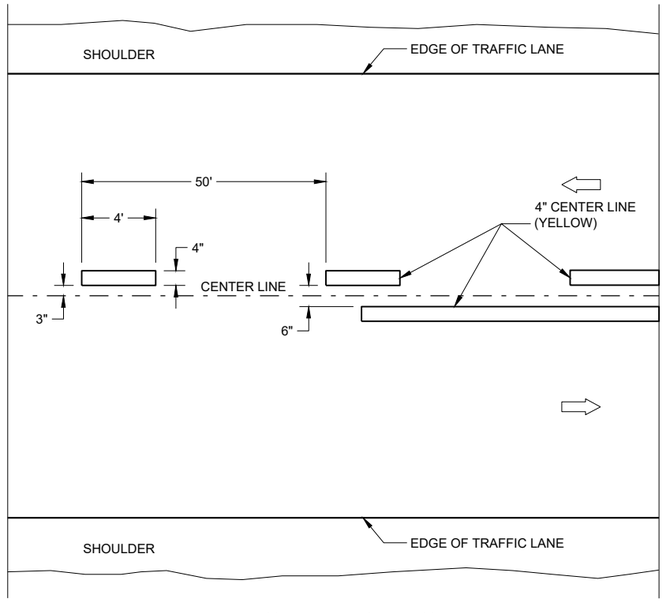


TWO WAY TRAFFIC

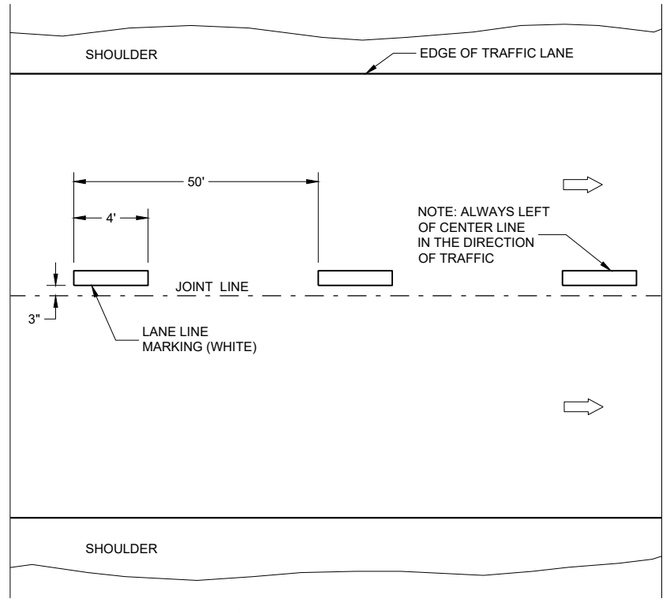


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

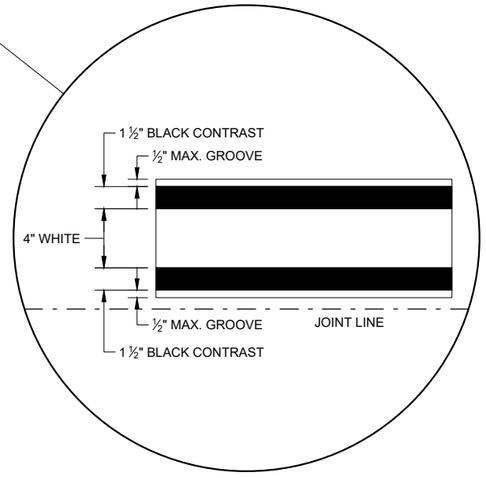
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

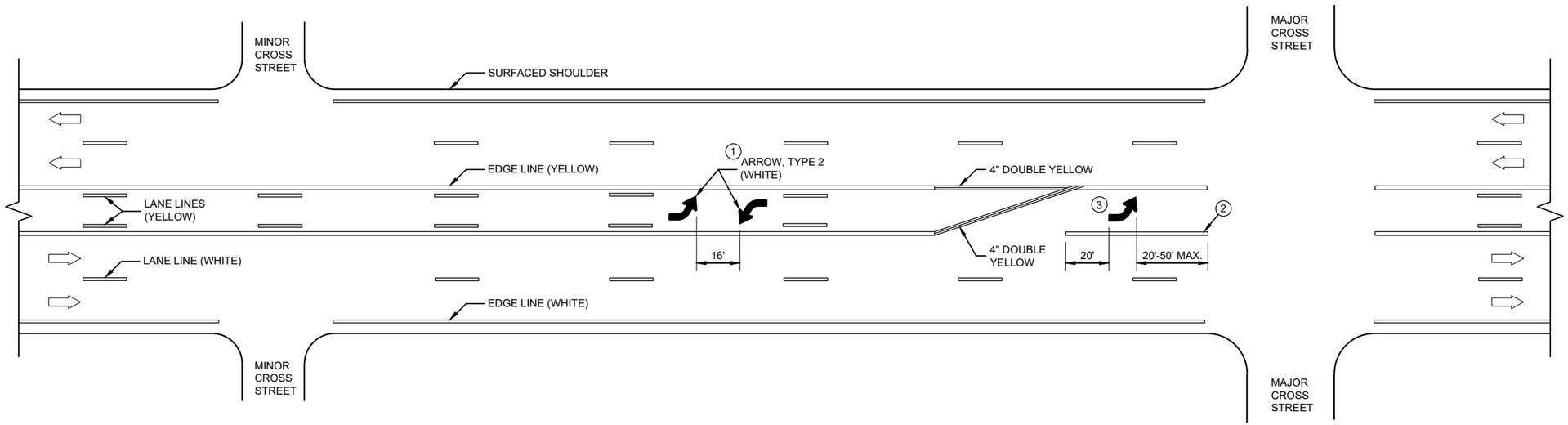
SDD 15C08 - 20a

SDD 15C08 - 20a

GENERAL NOTES

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

DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

6

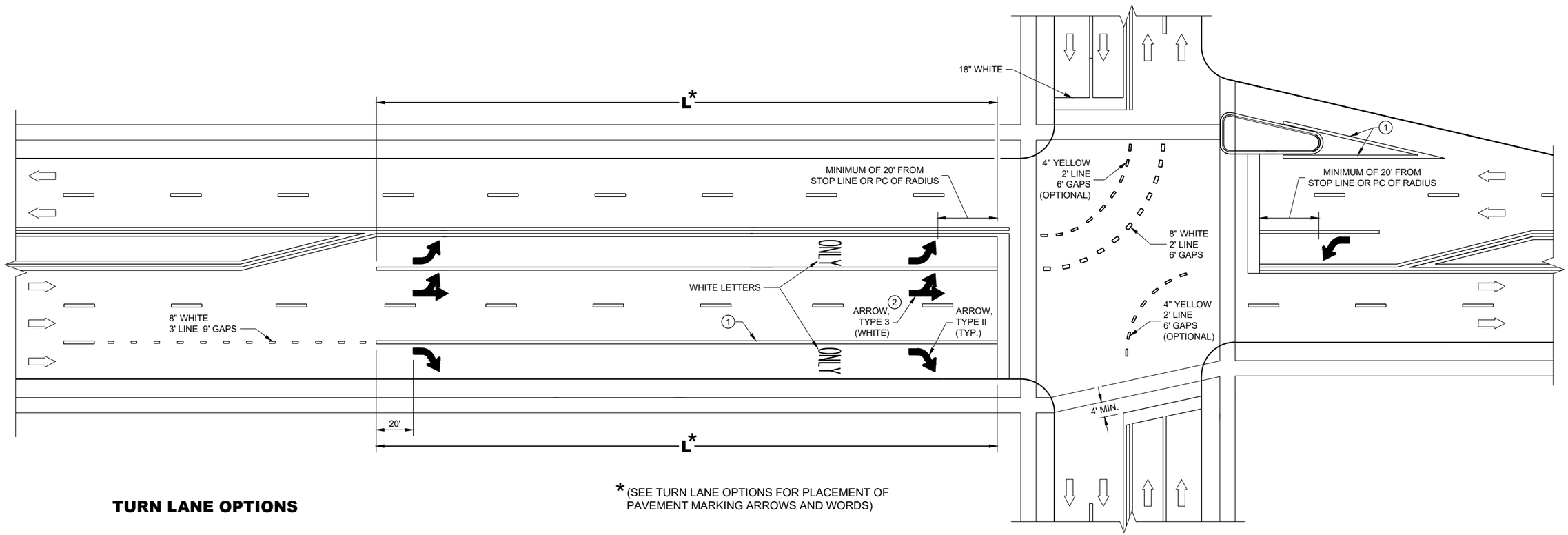
SDD 15C08 - 20b

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

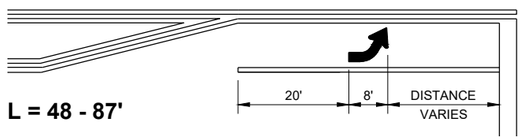
SDD 15C08 - 20b



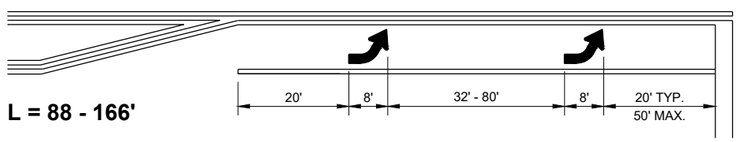
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

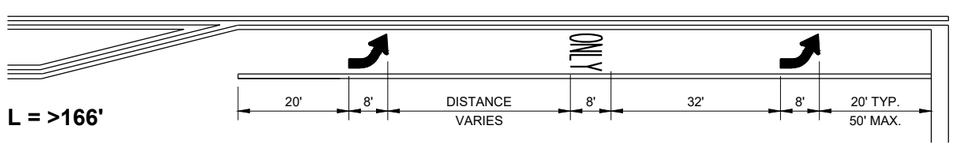
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

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

DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

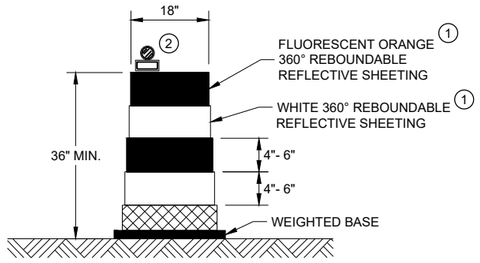
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

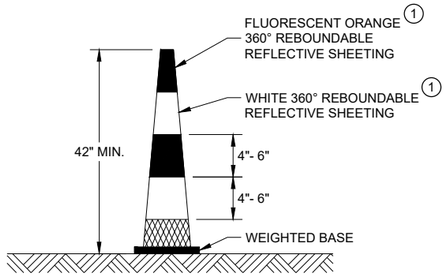
SDD 15C08 - 20c

GENERAL NOTES

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

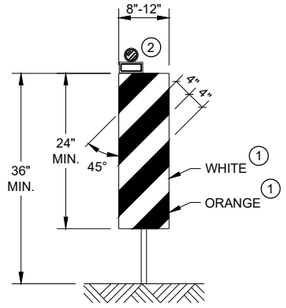


DRUM



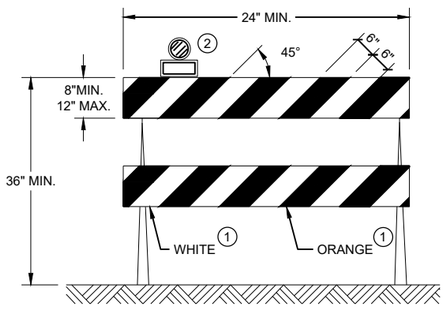
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



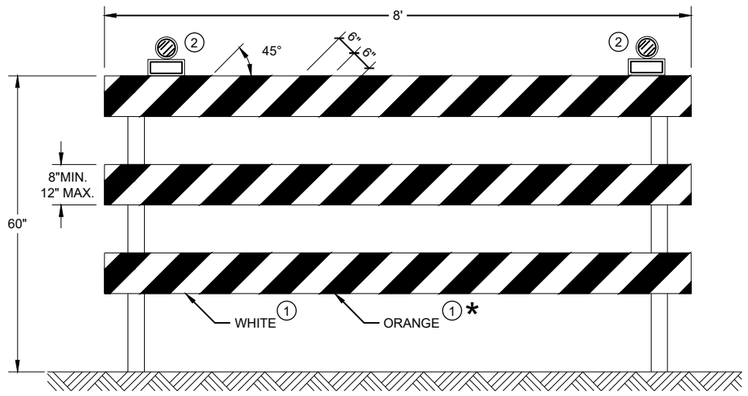
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C11 - 08b

6

SDD 15C11 - 08b

LEGEND

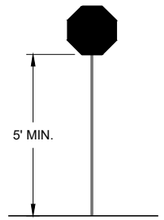
SIGN ON PORTABLE OR PERMANENT SUPPORT

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.

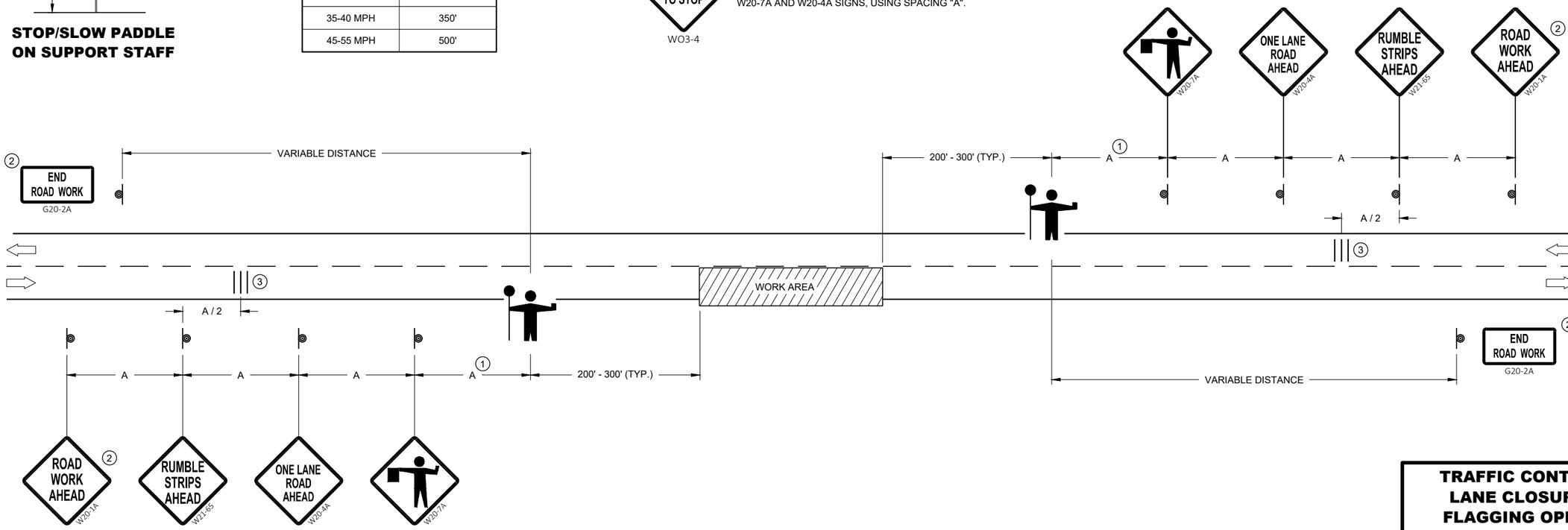
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

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 ENGINEER

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.

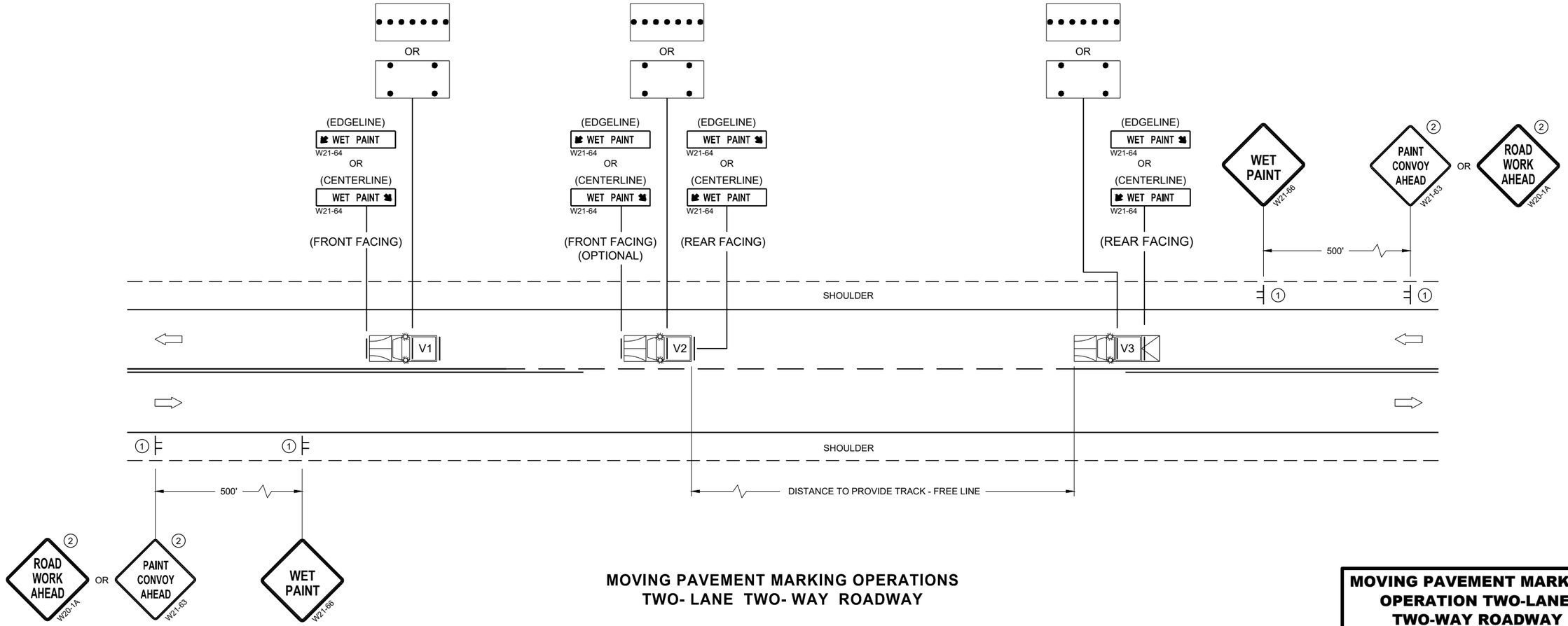
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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 18" FOR WET PAVEMENT MARKING .

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

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



MOVING PAVEMENT MARKING OPERATIONS TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15C19 - 06a

SDD 15C19 - 06a

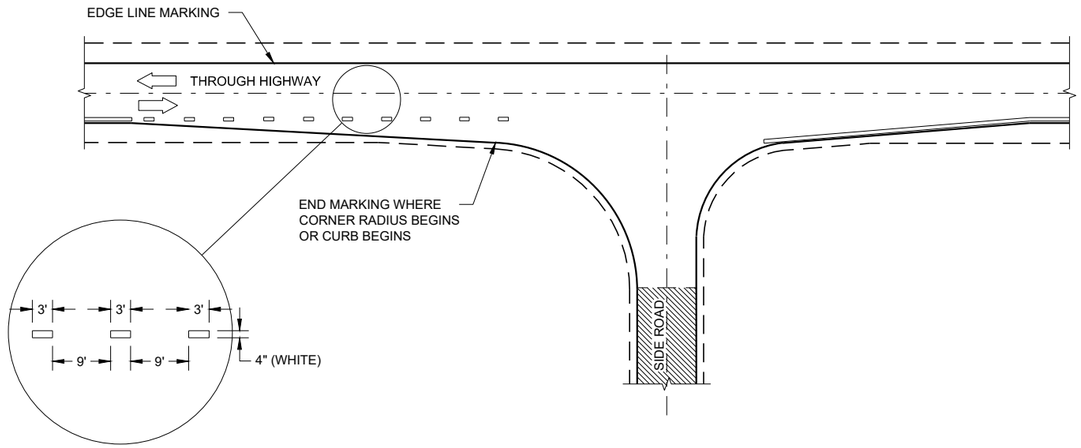
GENERAL NOTES

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

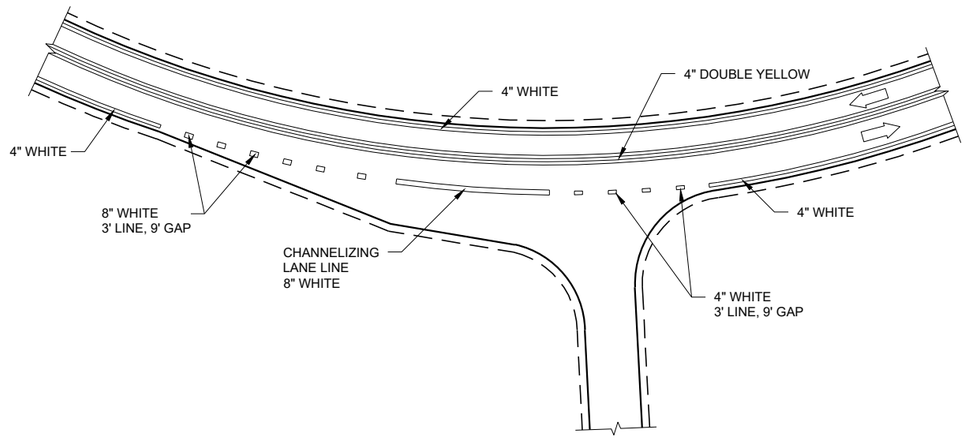
1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

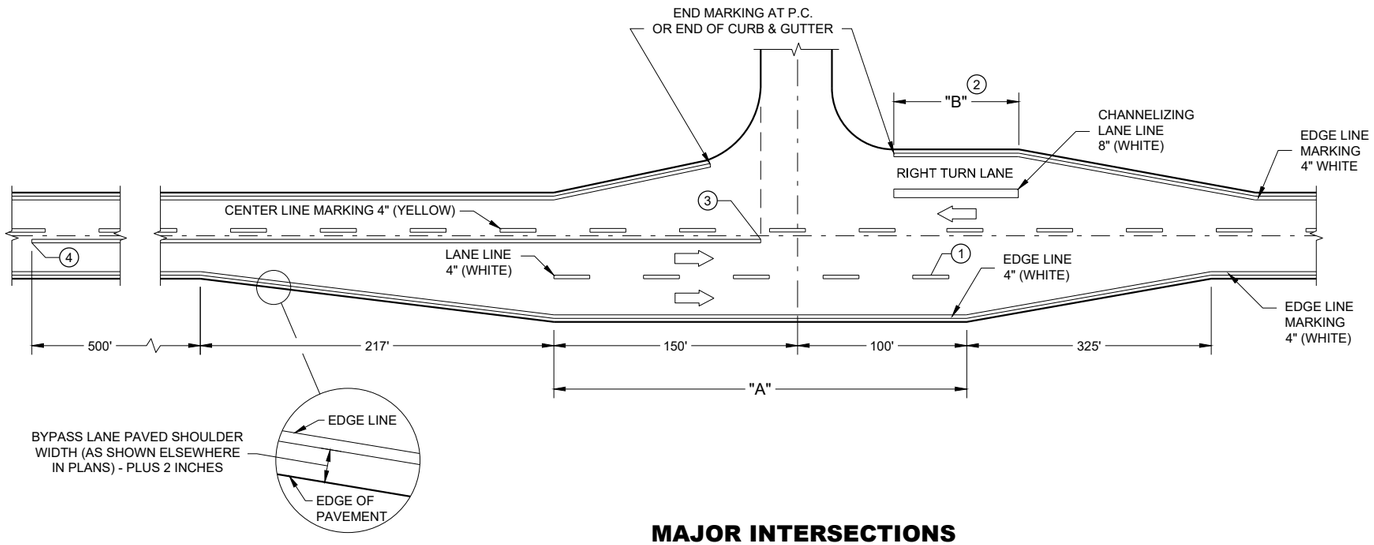
DIRECTION OF TRAVEL



MINOR INTERSECTION



INTERSECTION ON OUTSIDE OF CURVE



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

PAVEMENT MARKING (INTERSECTIONS)

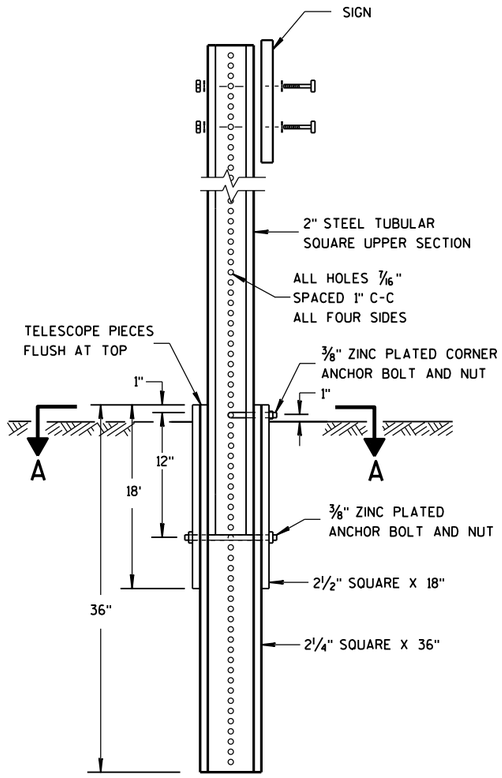
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

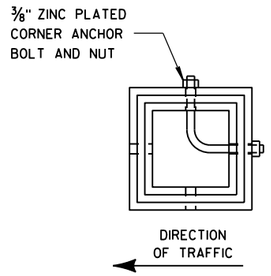
SDD 15C35 - 04a

6

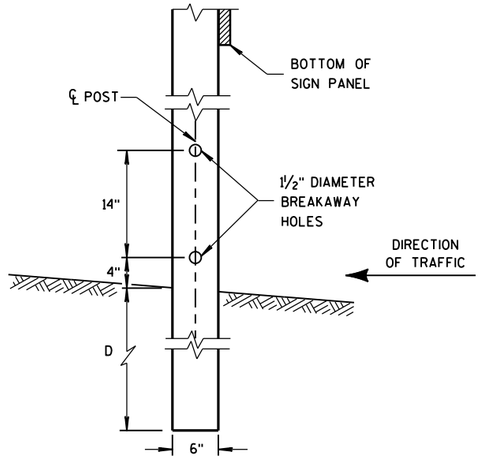
SDD 15C35 - 04a



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



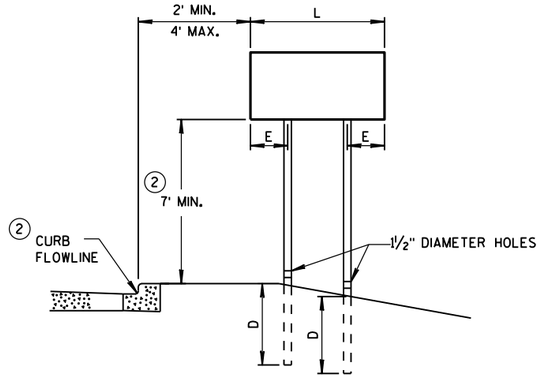
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

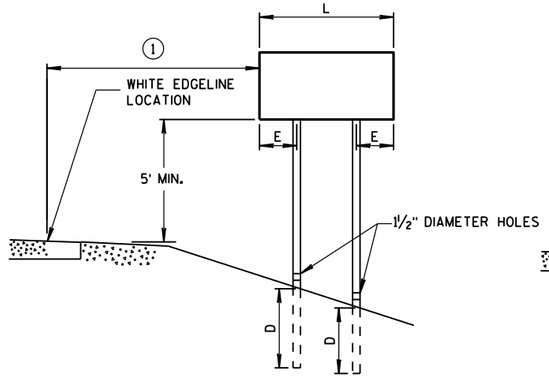
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

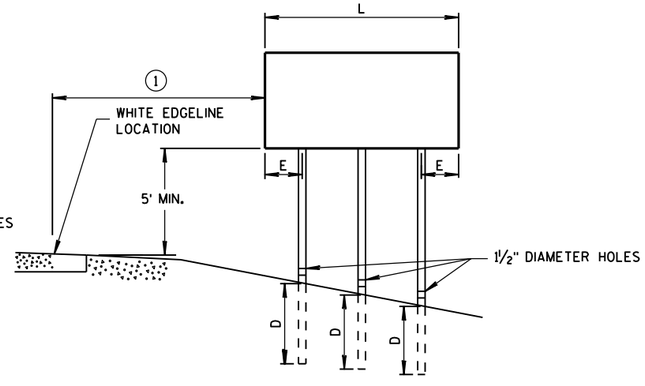
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

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

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

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

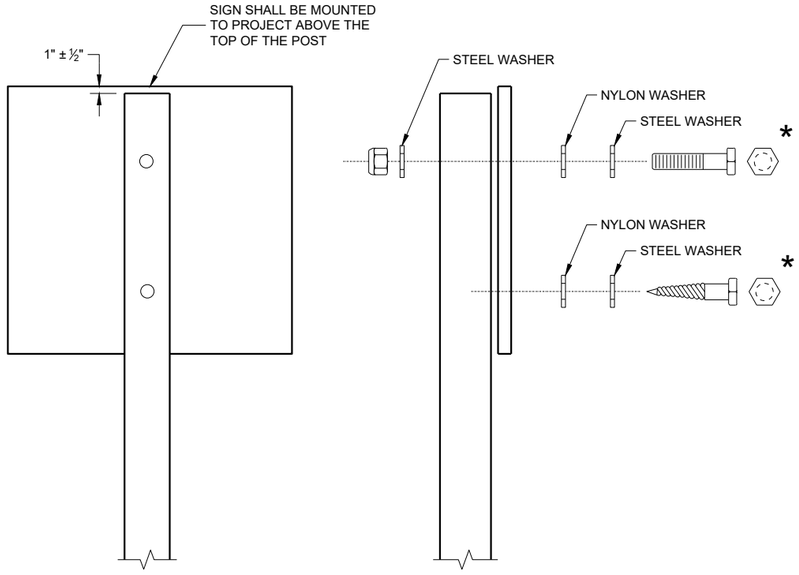
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



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

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

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

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

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

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

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

6

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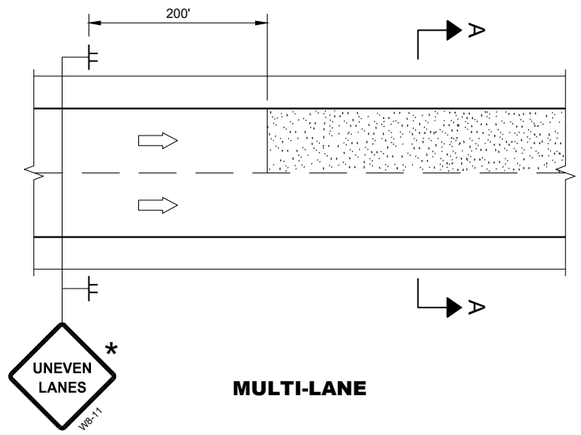
SDD 15D38 - 02b

SDD15D38 - 02b

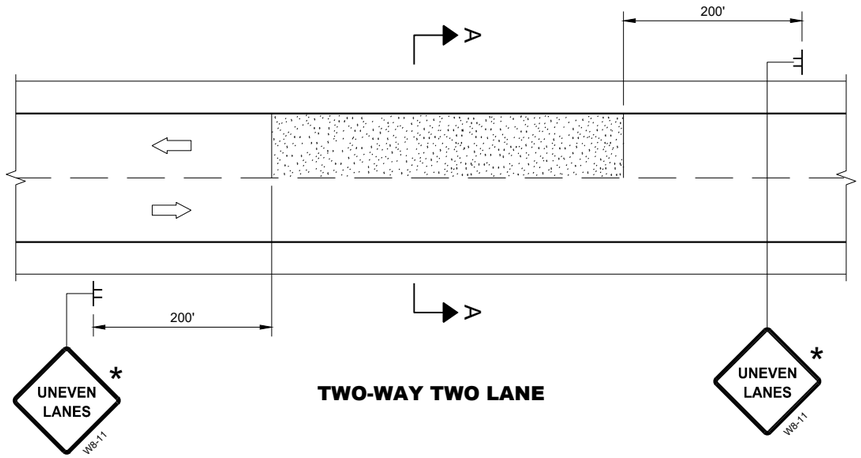
ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



MULTI-LANE



TWO-WAY TWO LANE

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

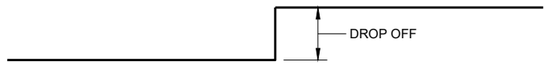
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

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

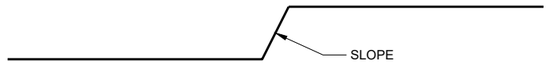
LEGEND

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

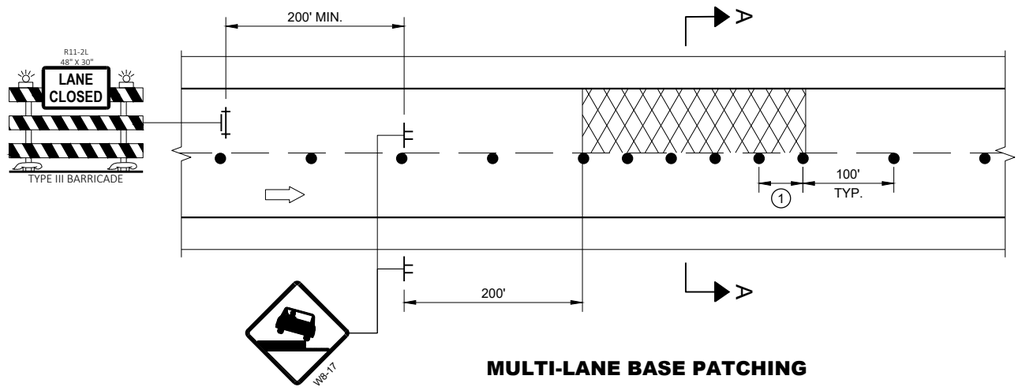


SECTION A - A

OR

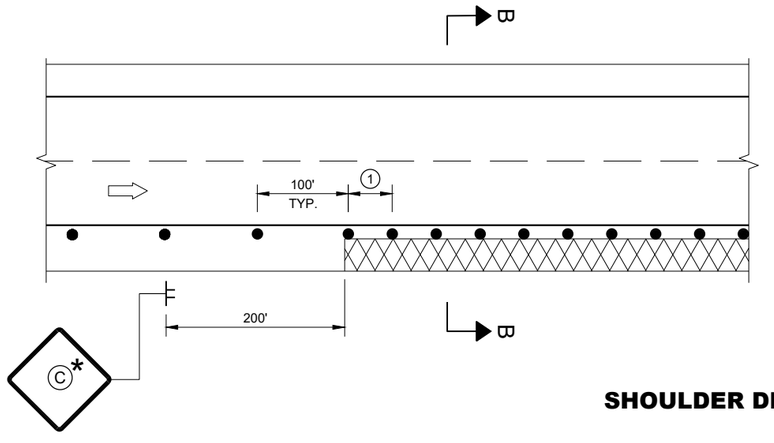


SECTION A - A

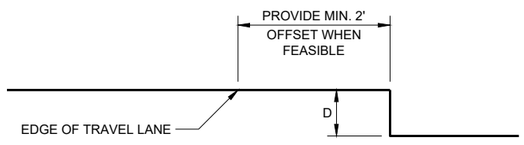


MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B - B

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

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15D39 - 02

GENERAL NOTES

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

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

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

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

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

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

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

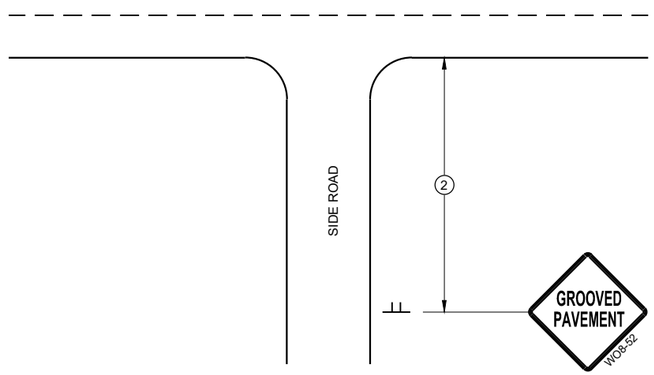
(1) PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

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

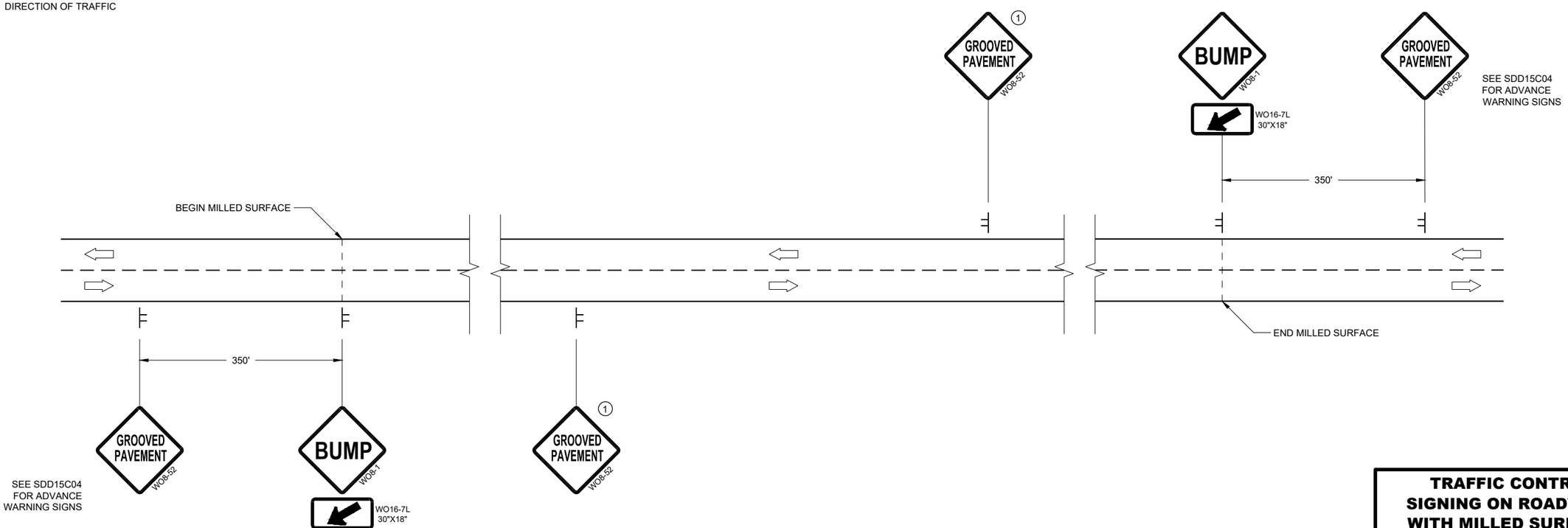
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

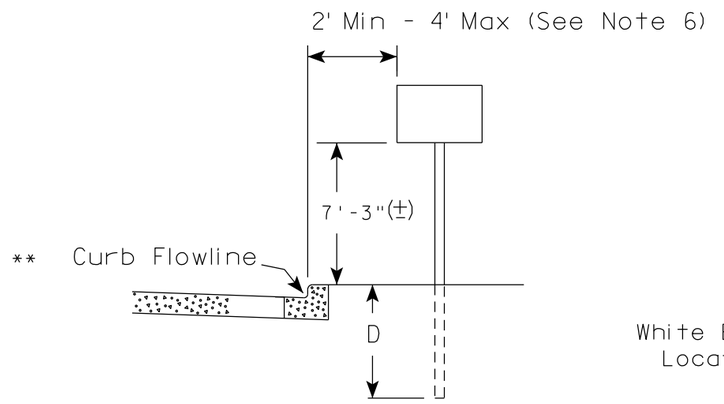
APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

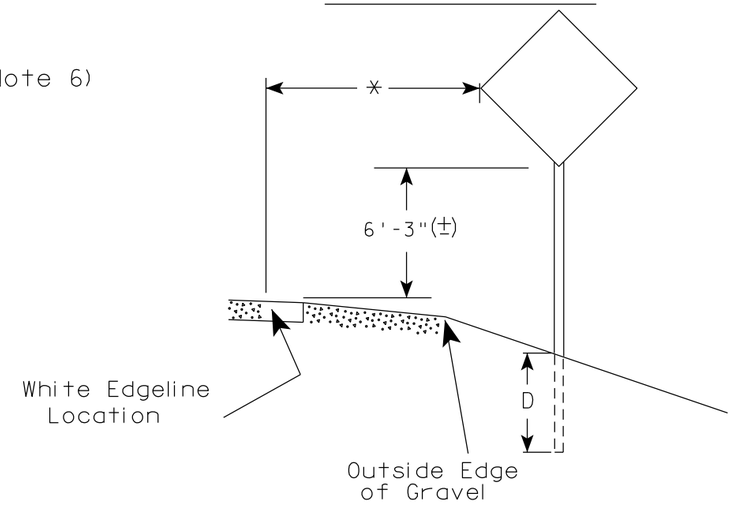
FHWA

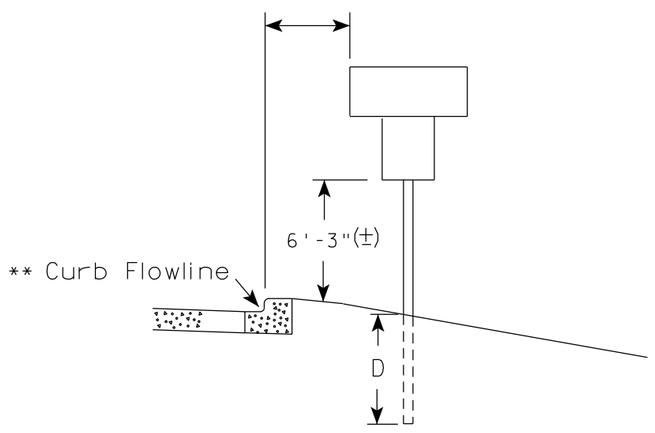
6
SDD 15D44 - 02

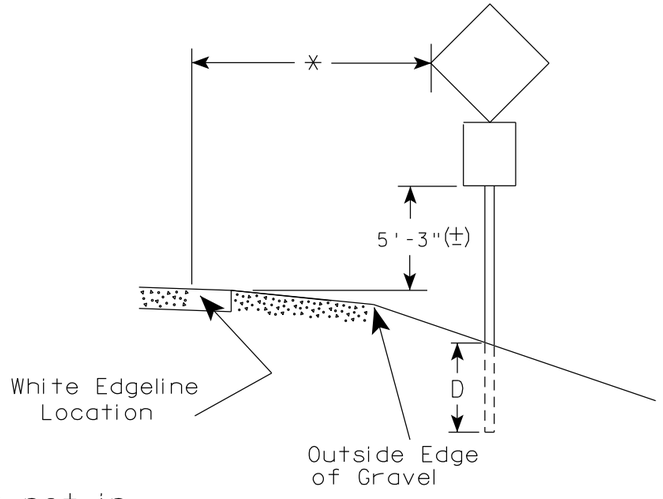
URBAN AREA



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.

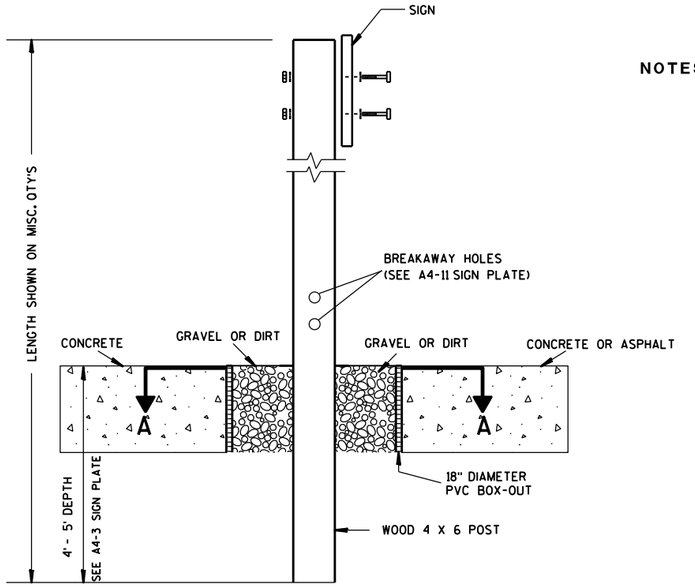
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

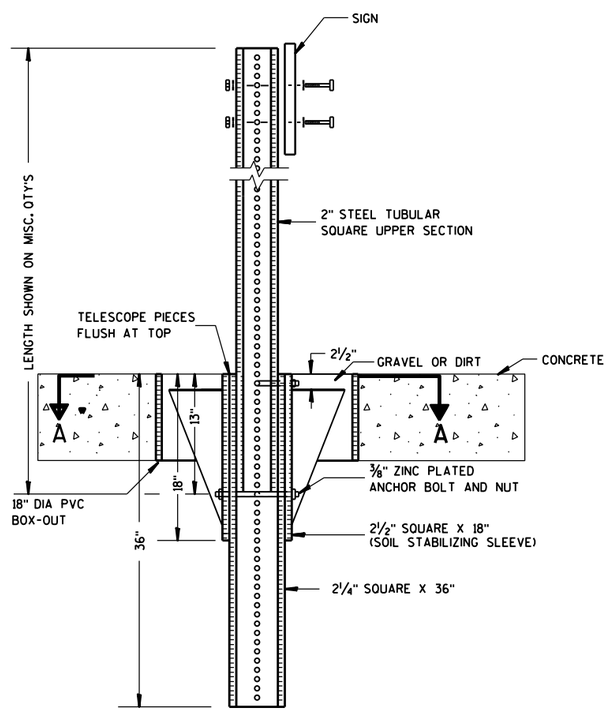
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 71	E



ELEVATION VIEW

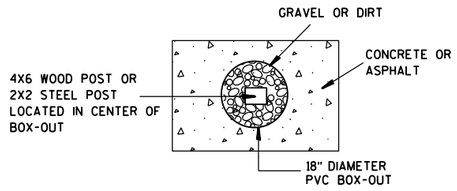
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

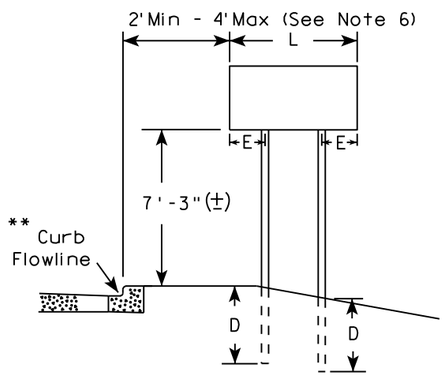
APPROVED Matthew R Rauch
for State Traffic Engineer

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

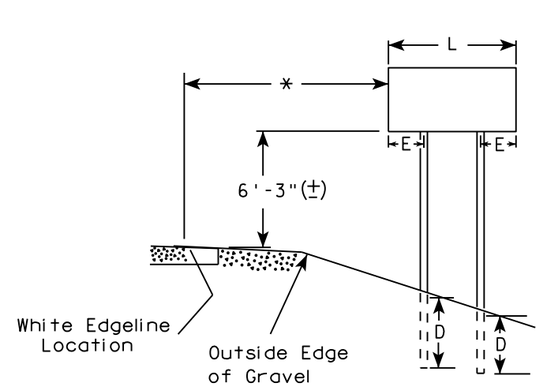
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

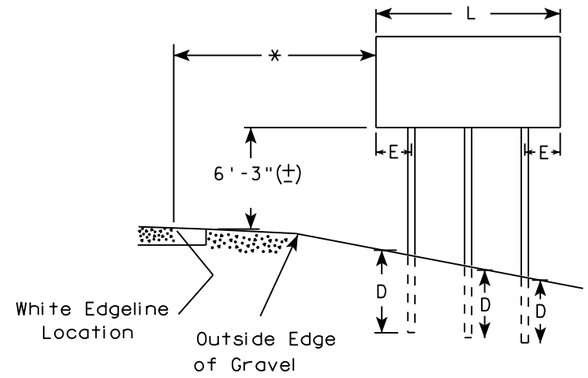
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

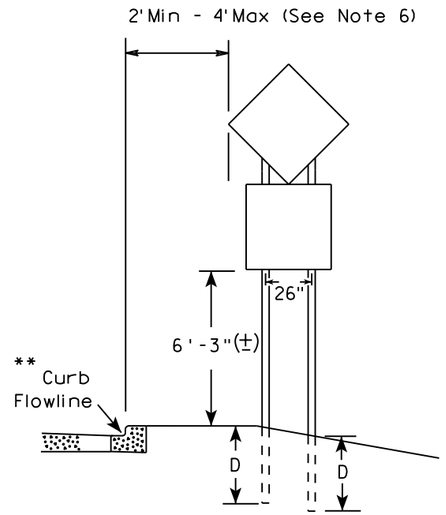
URBAN AREA



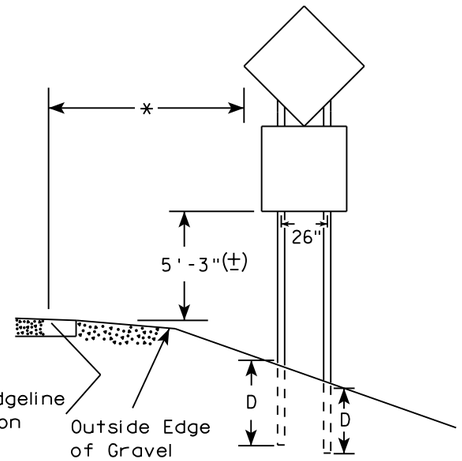
RURAL AREA (See Note 3)







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'

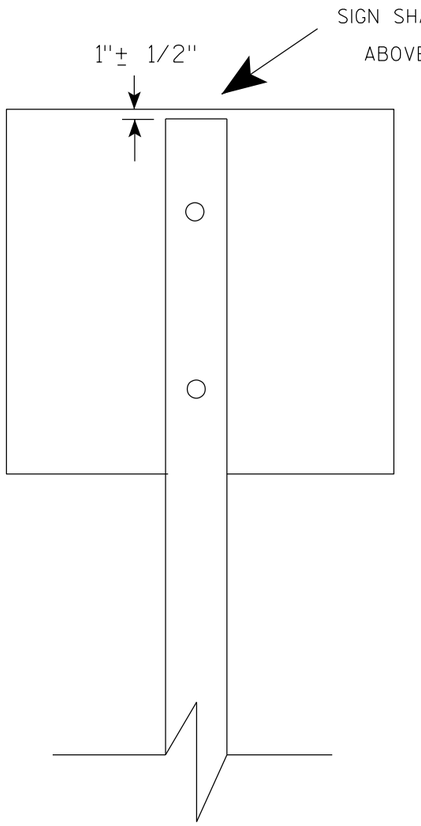
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

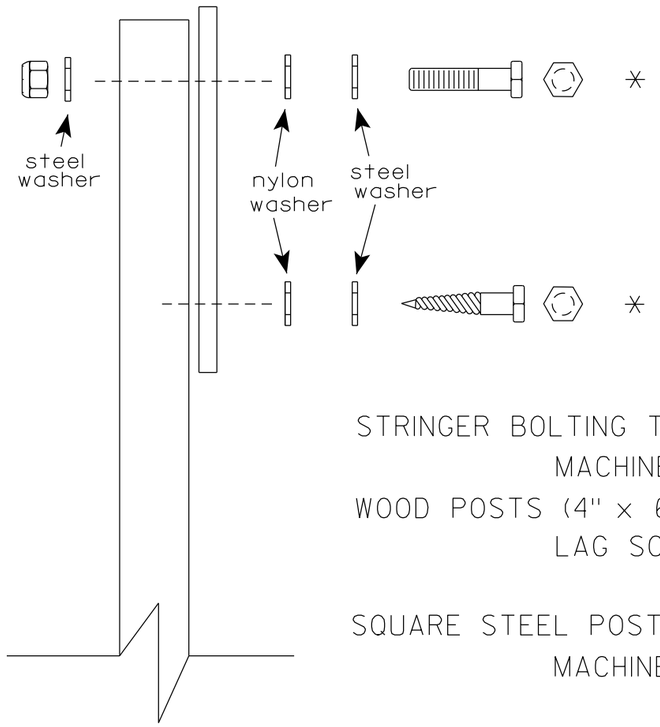
WISCONSIN DEPT OF TRANSPORTATION

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

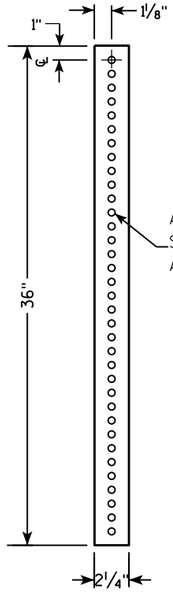
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

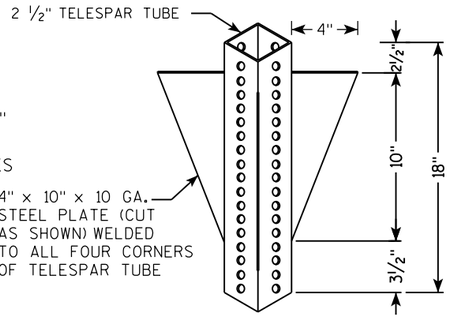
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

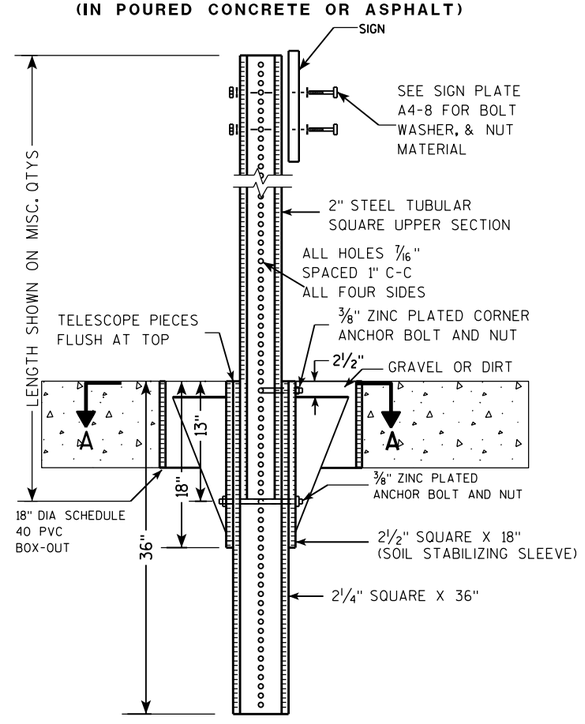
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



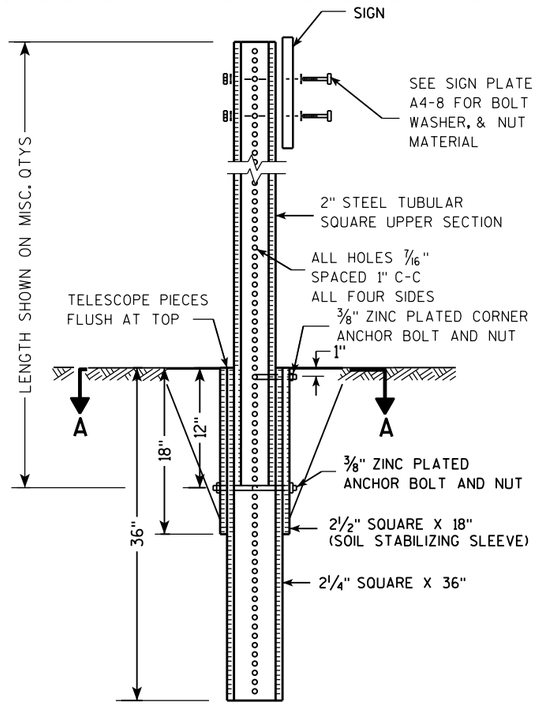
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

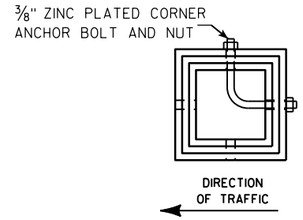


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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

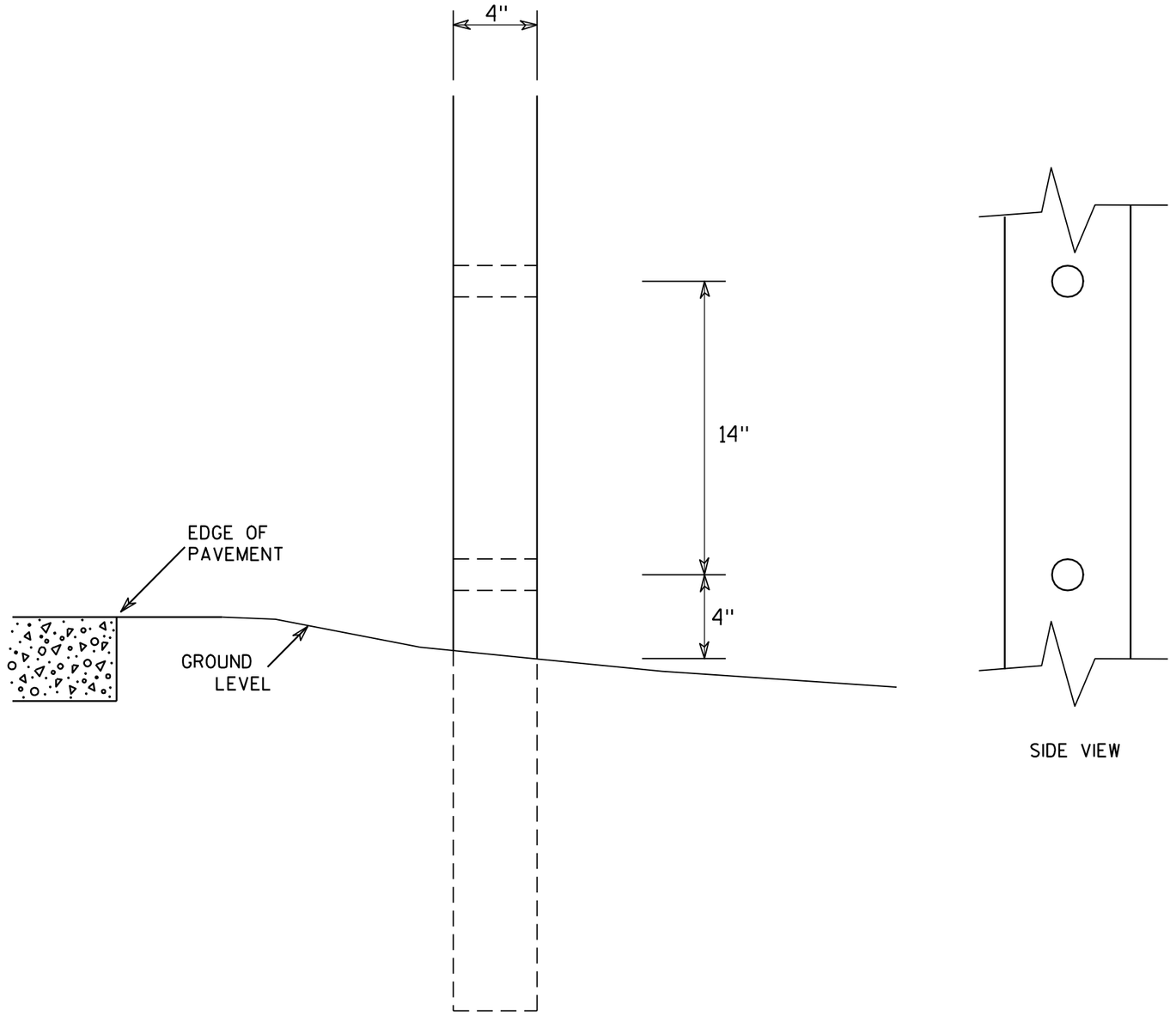
APPROVED Matthew R Rauch
for State Traffic Engineer

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

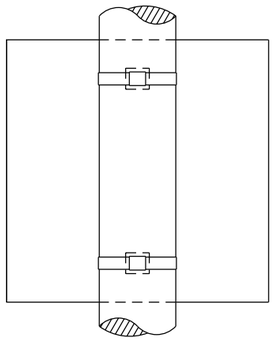
APPROVED Chester J Spang
for State Traffic Engineer

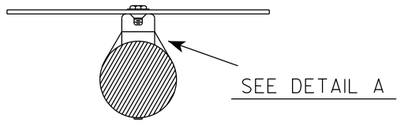
DATE 3/27/97 PLATE NO. A4-11.2

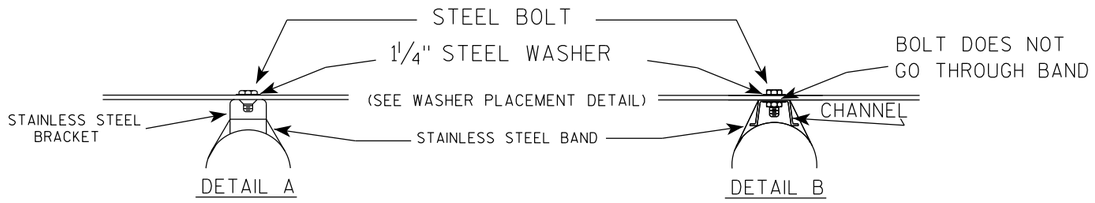
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 76	E

BANDING

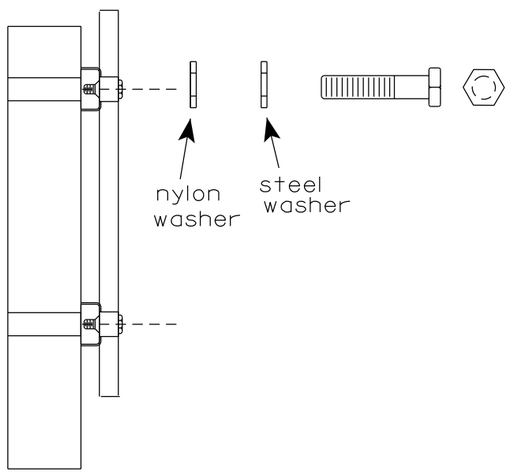
SINGLE SIGN







WASHER PLACEMENT

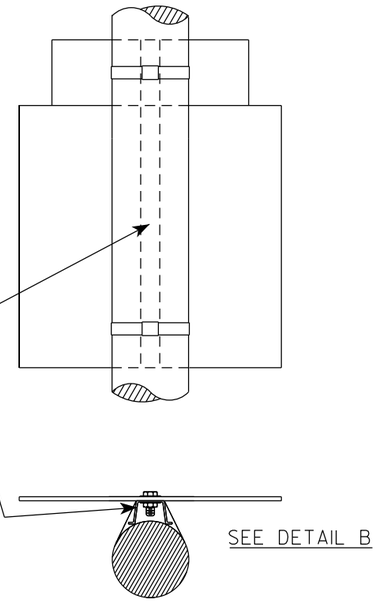


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

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

"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

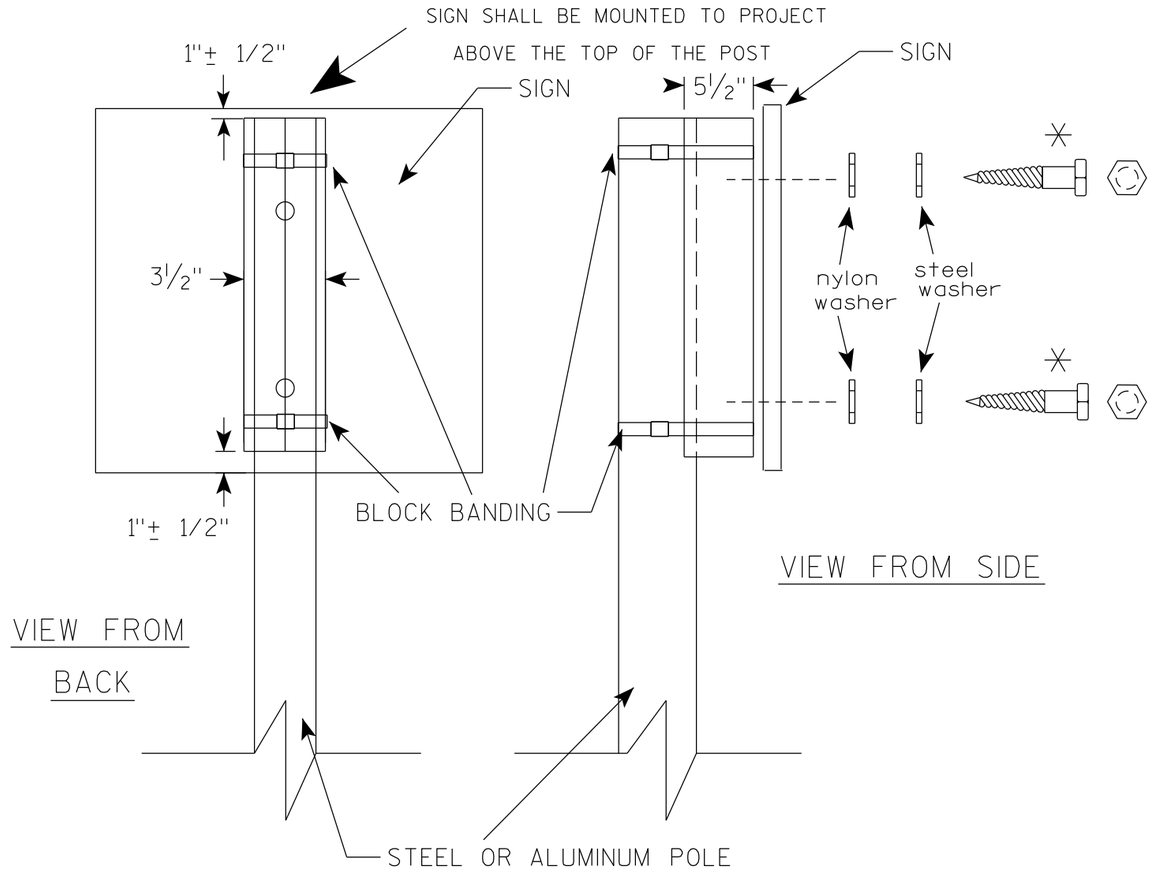
WISCONSIN DEPT OF TRANSPORTATION

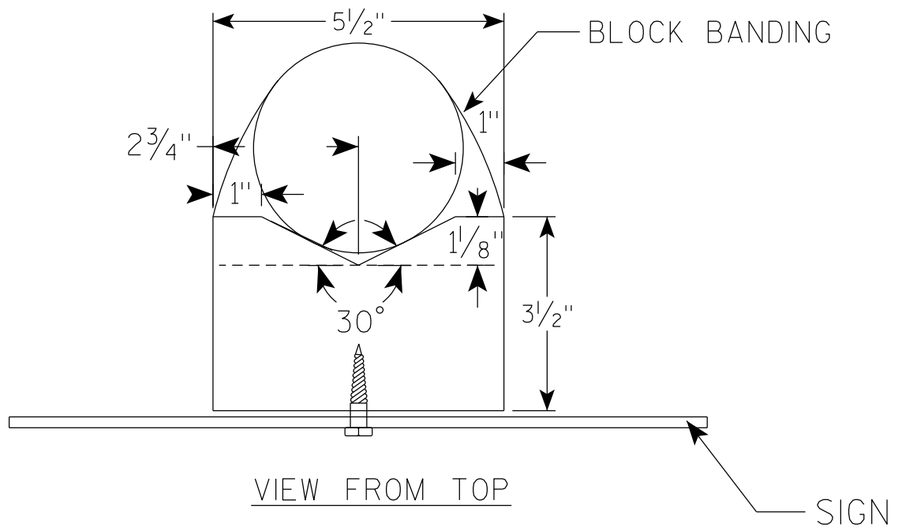
APPROVED Matthew R Rauch
for State Traffic Engineer

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

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

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





GENERAL NOTES

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

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

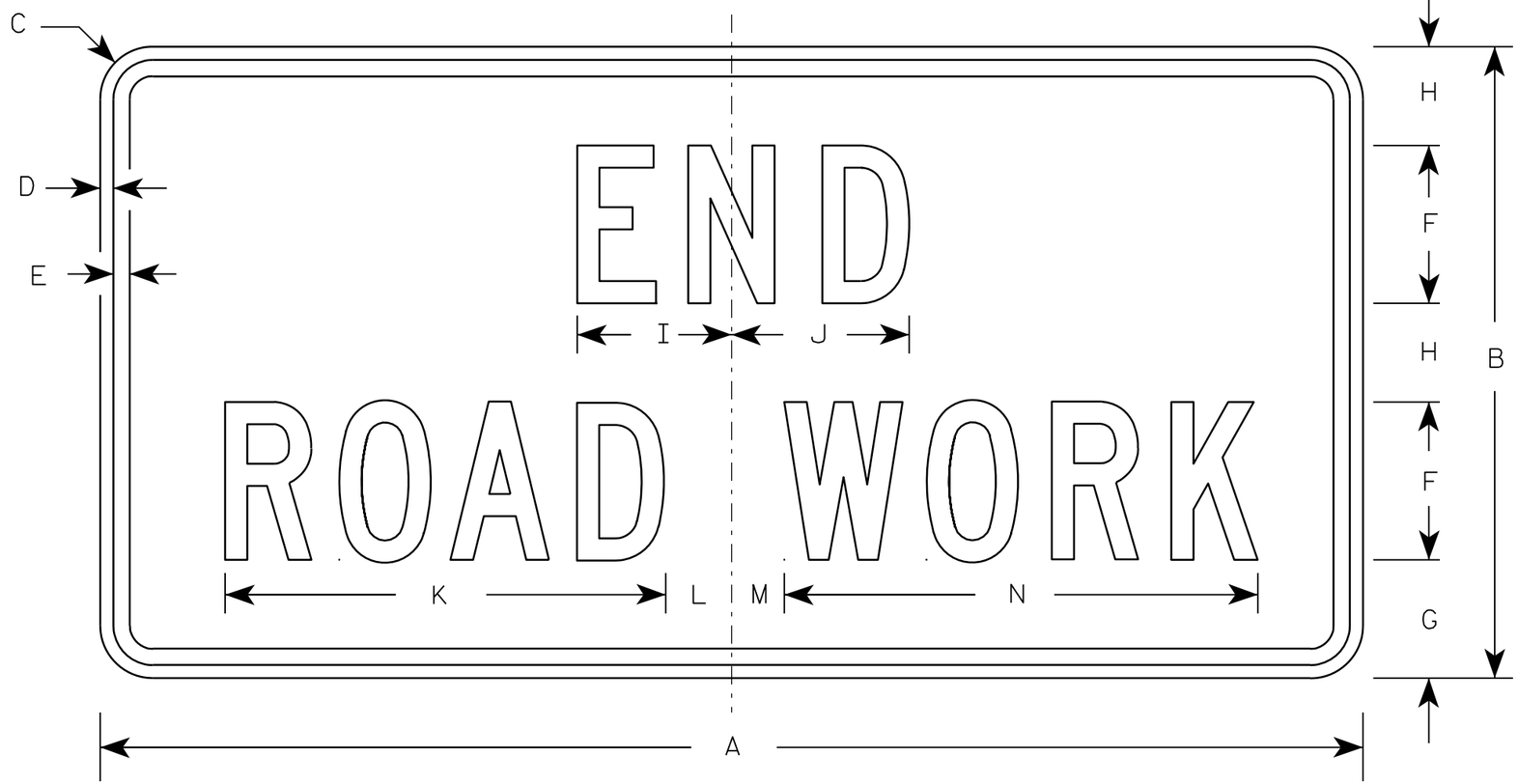
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:

SHEET NO: 78 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

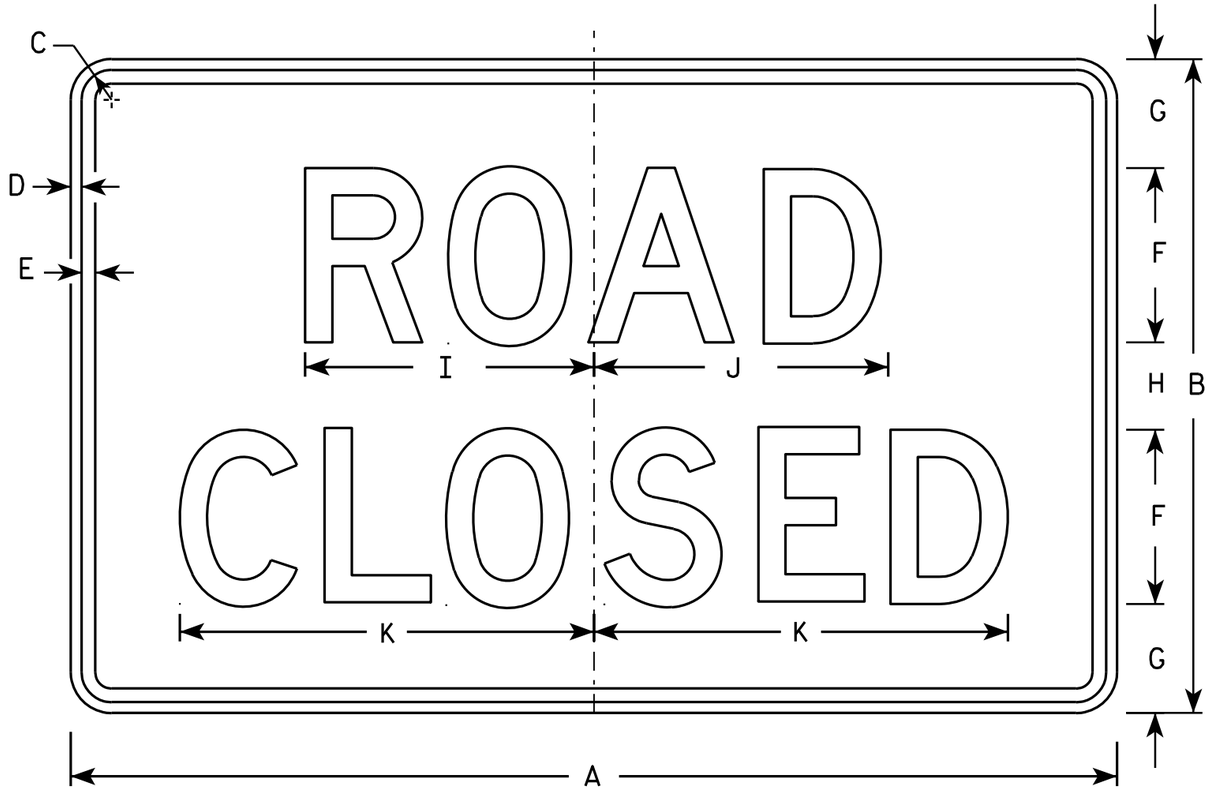
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

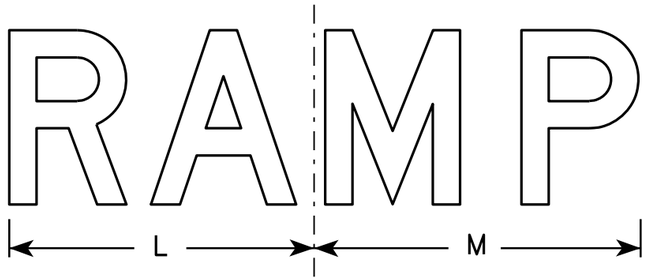
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 79	E



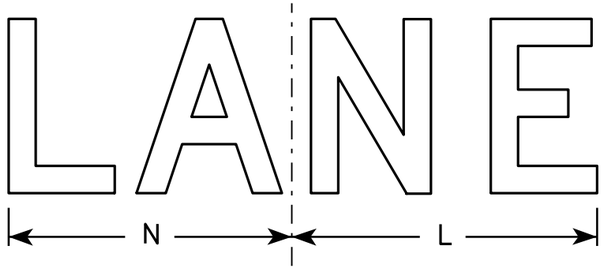
R11-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - 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.
5. Modify the message as required.



R11-2R



R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0

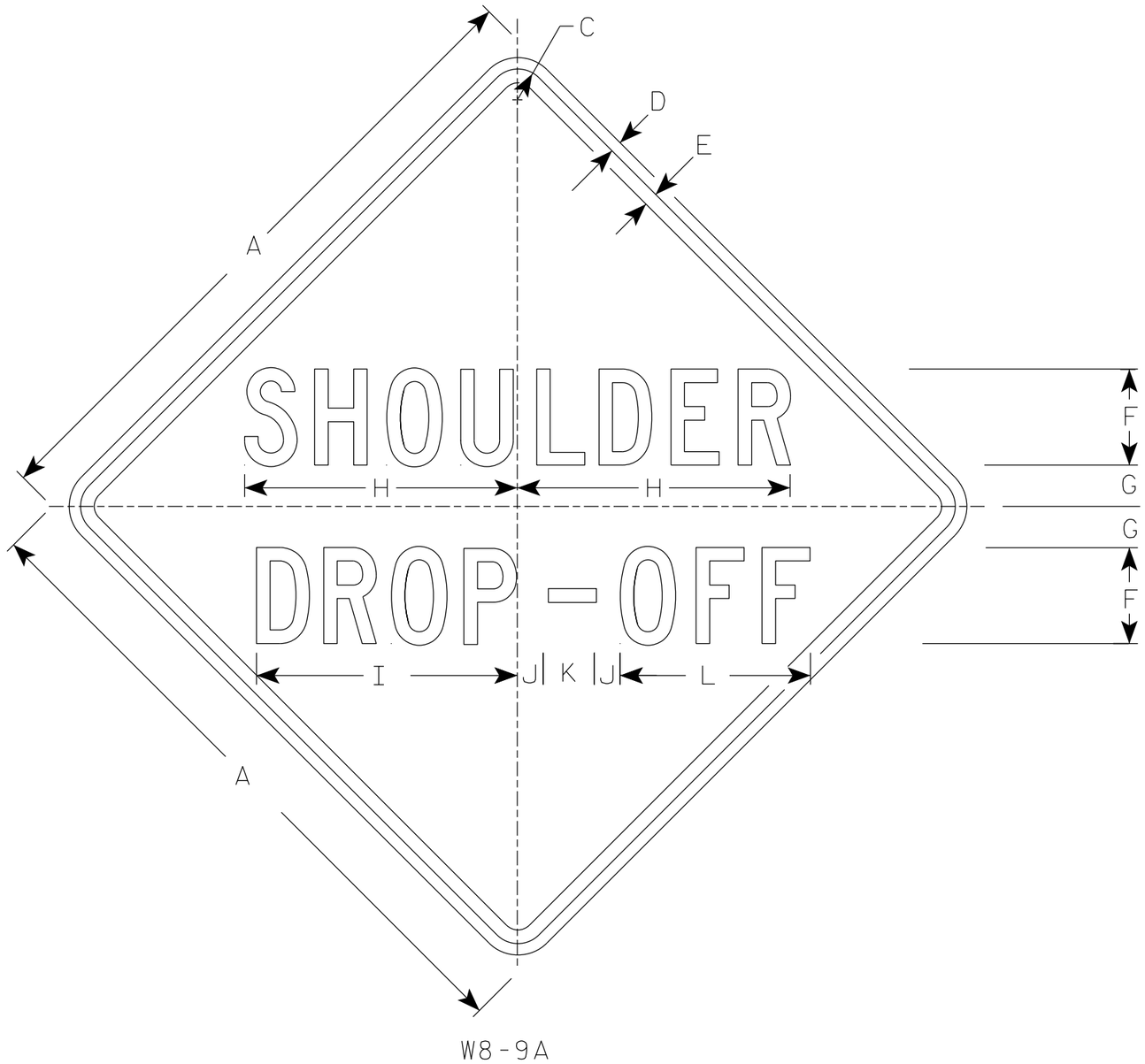
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

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



W8-9A

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	5	2	14 7/8	14	7/8	2 1/2	9 3/4															9.0
2S	48		2 1/4	3/4	1	7	3	19 7/8	19	1 7/8	3 3/4	13 7/8															16.0
2M	48		2 1/4	3/4	1	7	3	19 7/8	19	1 7/8	3 3/4	13 7/8															16.0
3	48		2 1/4	3/4	1	7	3	19 7/8	19	1 7/8	3 3/4	13 7/8															16.0
4	48		2 1/4	3/4	1	7	3	19 7/8	19	1 7/8	3 3/4	13 7/8															16.0
5	48		2 1/4	3/4	1	7	3	19 7/8	19	1 7/8	3 3/4	13 7/8															16.0

STANDARD SIGN
W8-9A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/16/2020 PLATE NO. W8-9A.4

PROJECT NO:

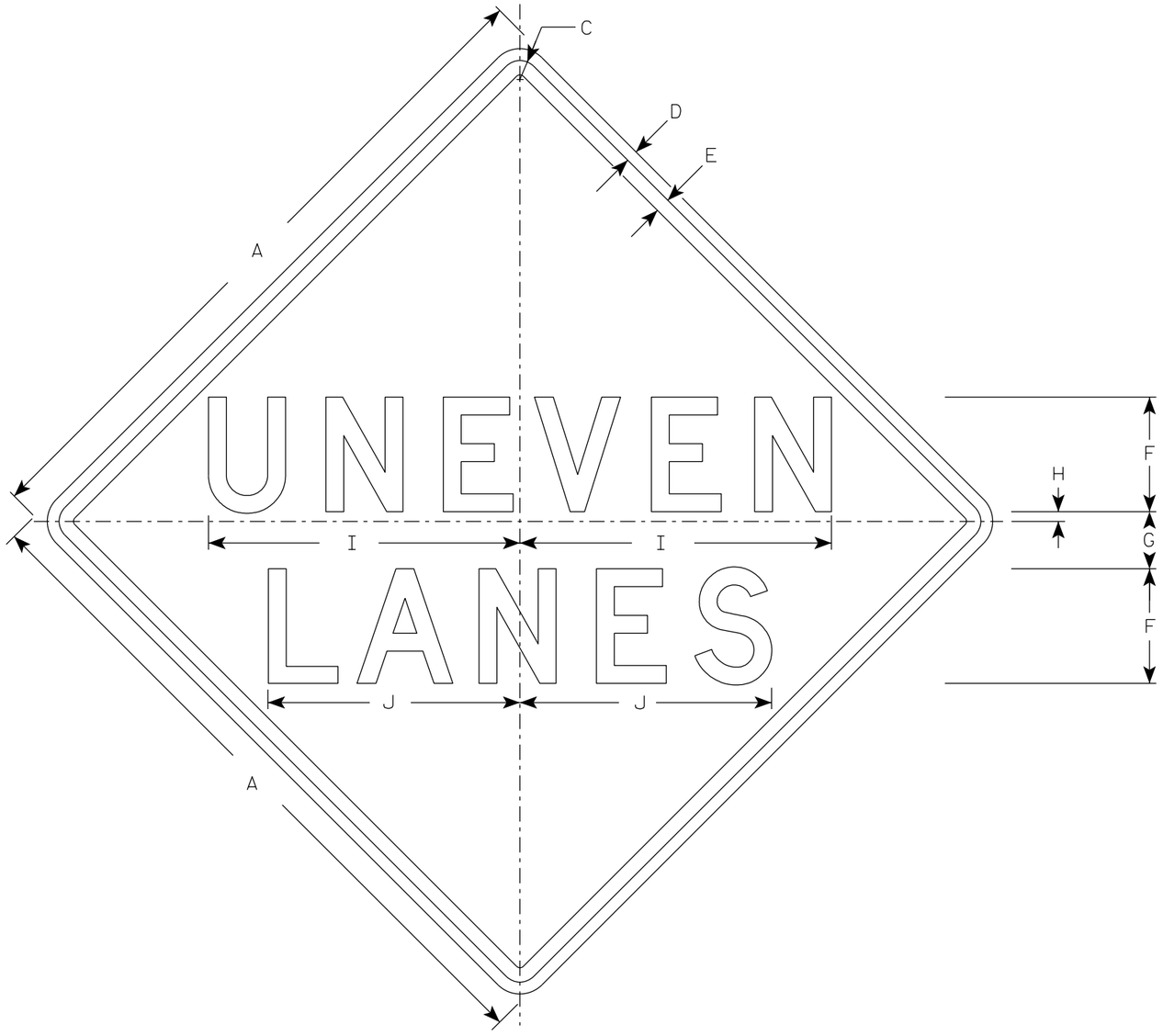
SHEET NO: 81 E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W89A.dgn PLOT DATE : 16-APRIL 2020 PLOT BY : dotc4c

WISDOT/CADDS SHEET 42

7

7



W8-11

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	3	1/2	16 3/8	13 1/4																	9.0
2S	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
2M	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
3	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
4	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
5	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0

STANDARD SIGN
W8-11

WISCONSIN DEPT OF TRANSPORTATION

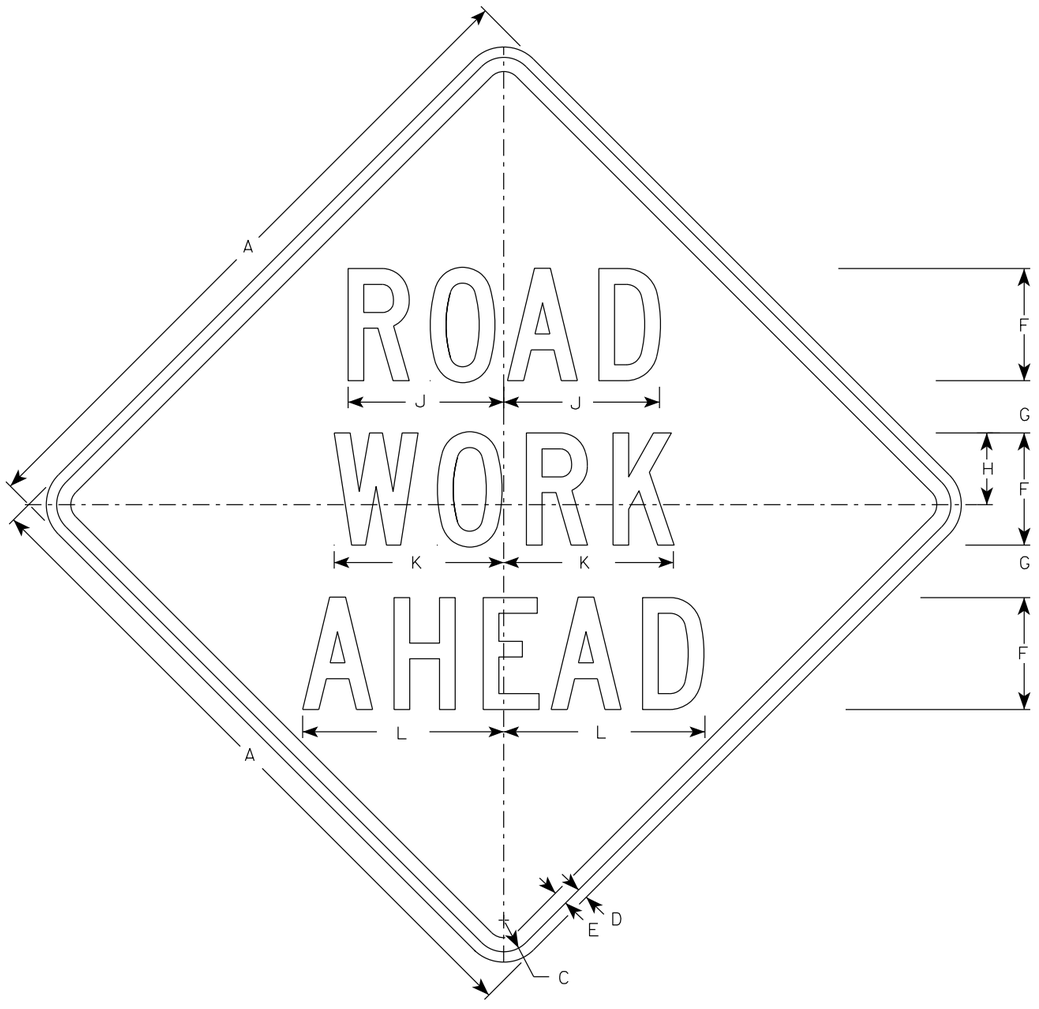
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/20/2020 PLATE NO. W8-11.5

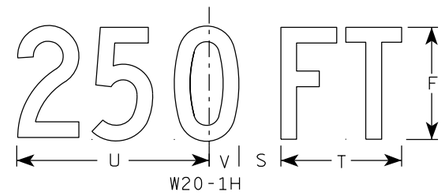
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W811.dgn PLOT DATE : 20-APRIL 2020 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

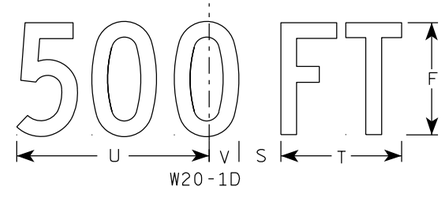
7



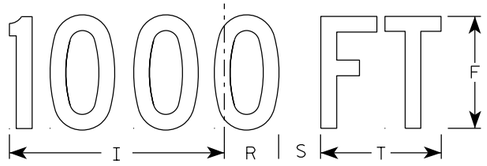
W20-1A



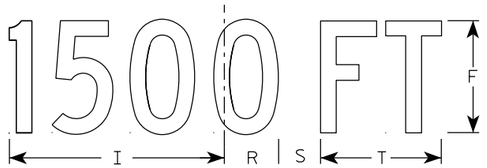
W20-1H



W20-1D



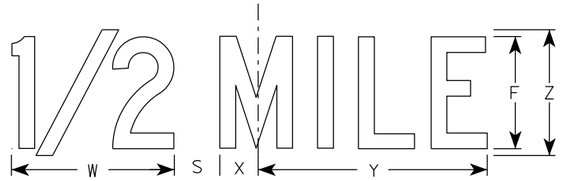
W20-1C



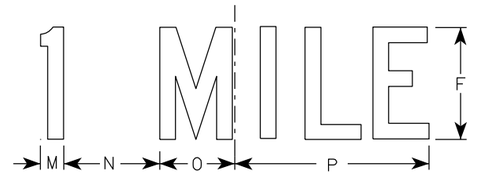
W20-1B

NOTES

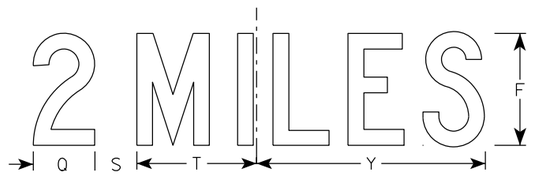
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



W20-1F



W20-1E

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

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

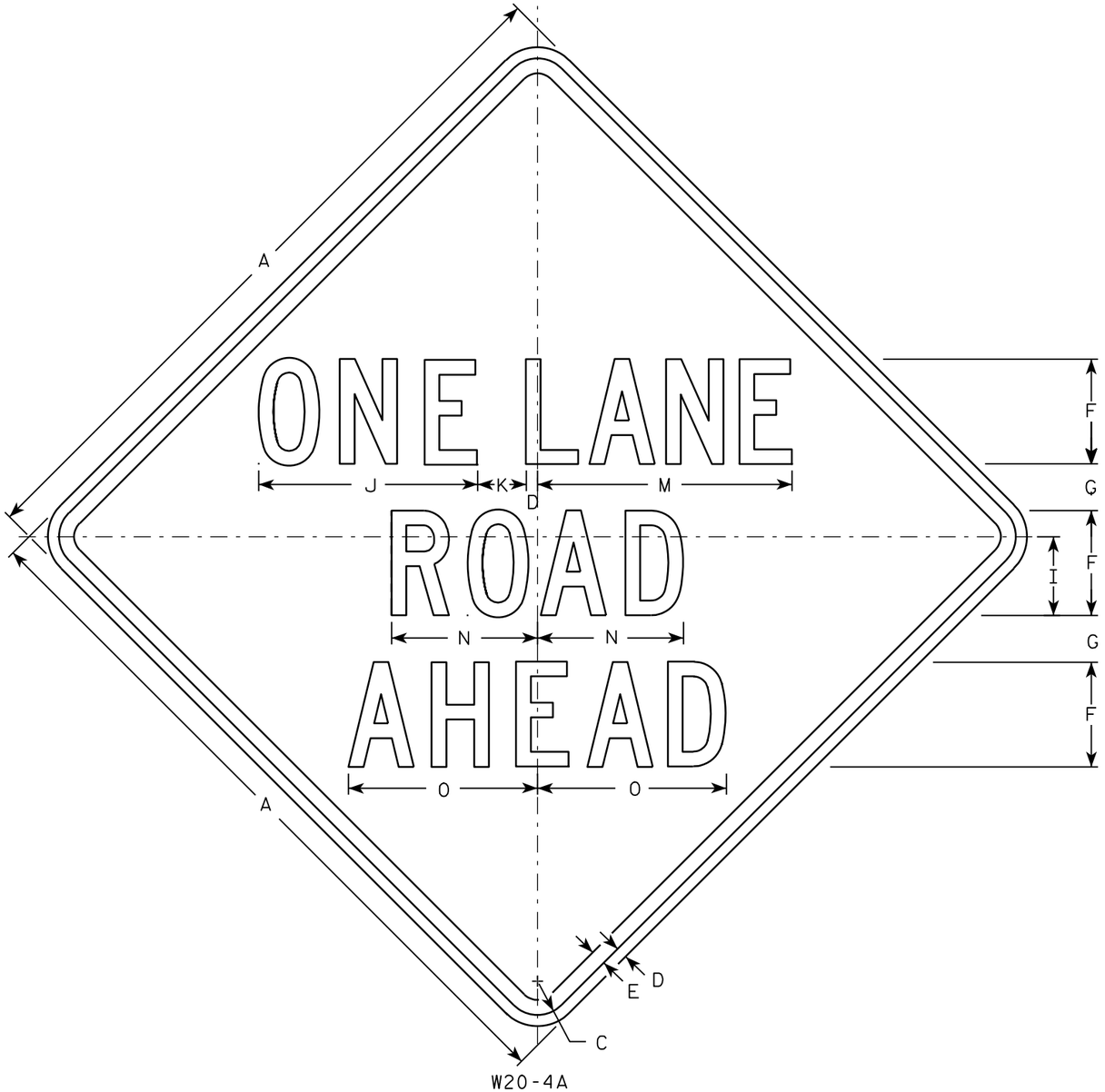
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

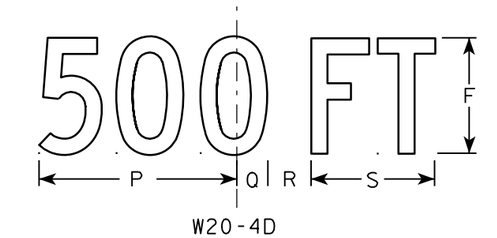
DATE 3/25/2020 PLATE NO. W20-1.11

PROJECT NO:

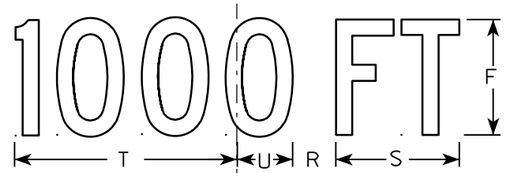
SHEET NO: E



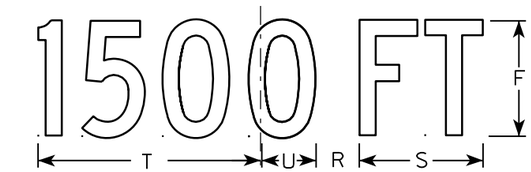
W20-4A



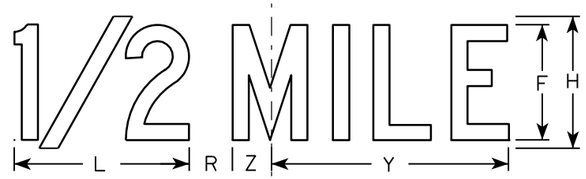
W20-4D



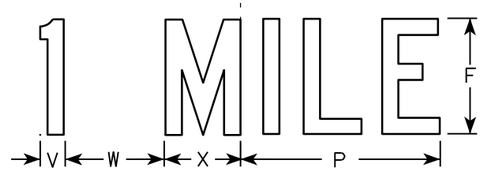
W20-4C



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

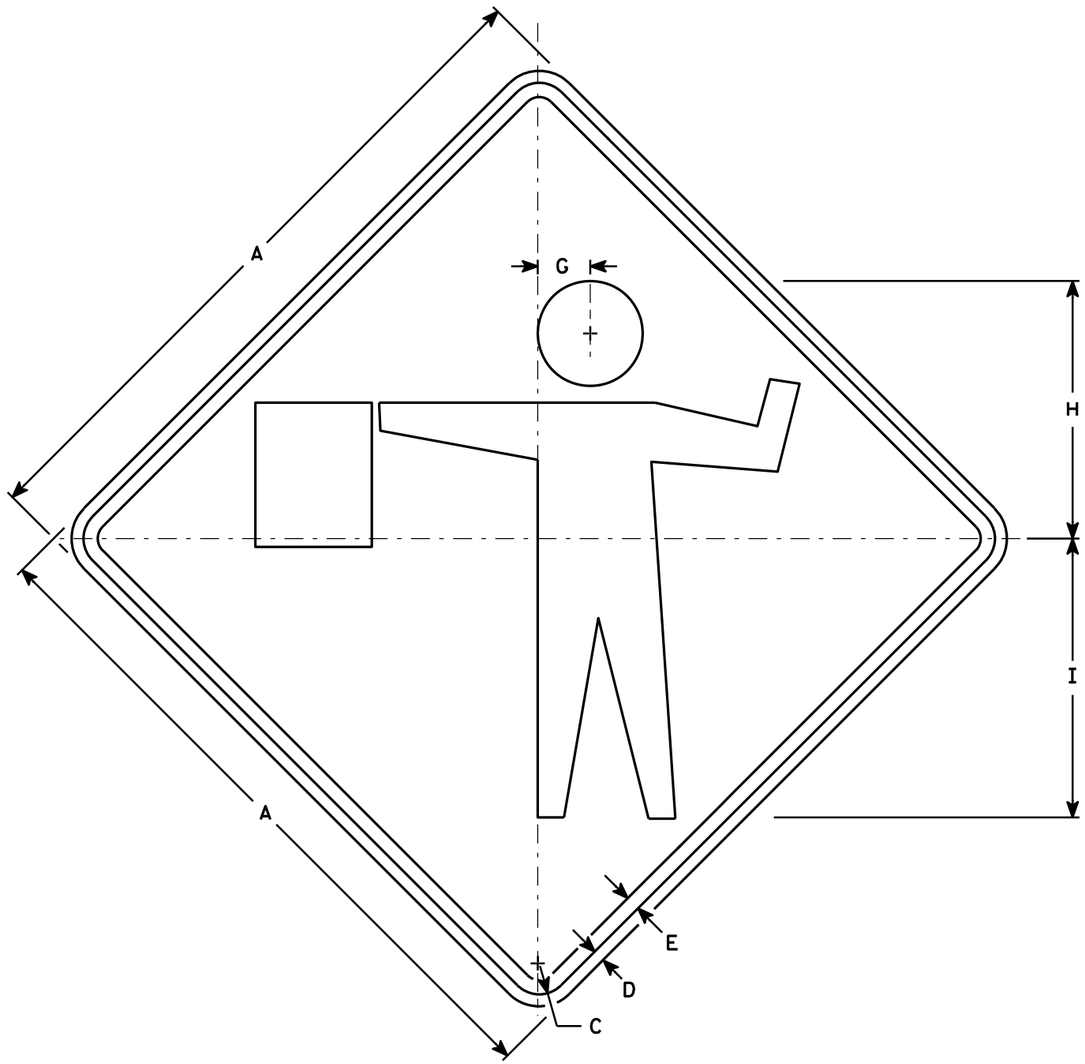
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 84 E



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

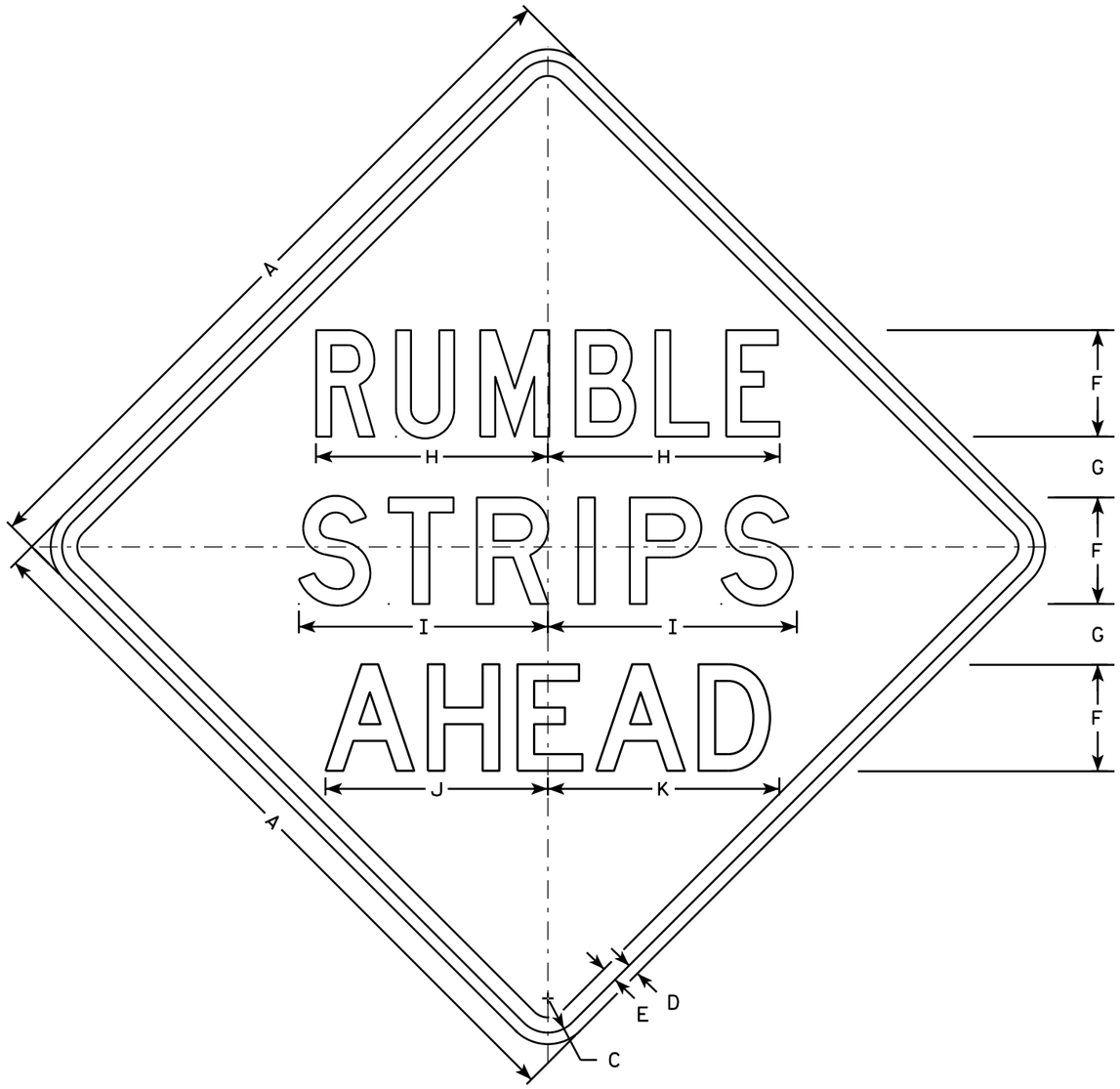
APPROVED Matthew R Rauch
for State Traffic Engineer

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

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



W21-65

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

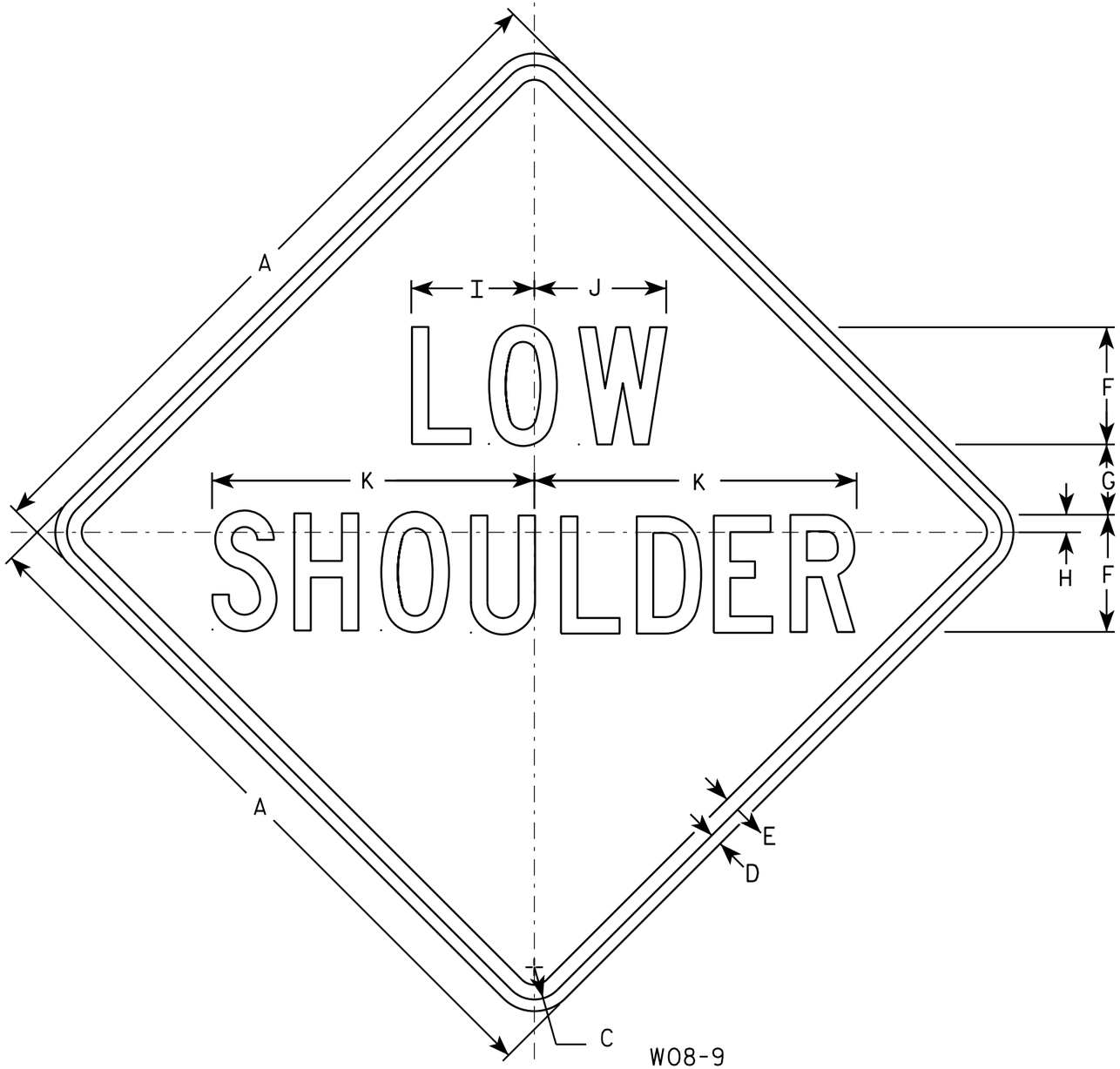
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/28/14 PLATE W21-65.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W2165.dgn PLOT DATE : 28-MAY-2014 13:24 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 9.729210:1.000000 WISDOT/CADDS SHEET 42



W08-9

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	6	3 1/2	1	6 1/4	6 3/4	16 1/2																9.0
2S	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
2M	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
3	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
4	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
5	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0

STANDARD SIGN
W08-9

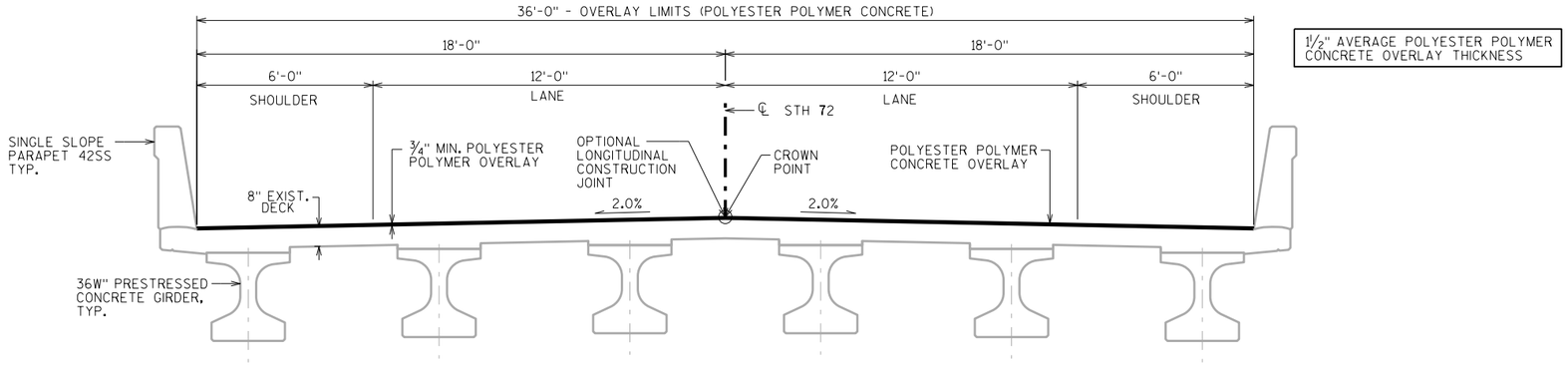
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W08-9.1

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

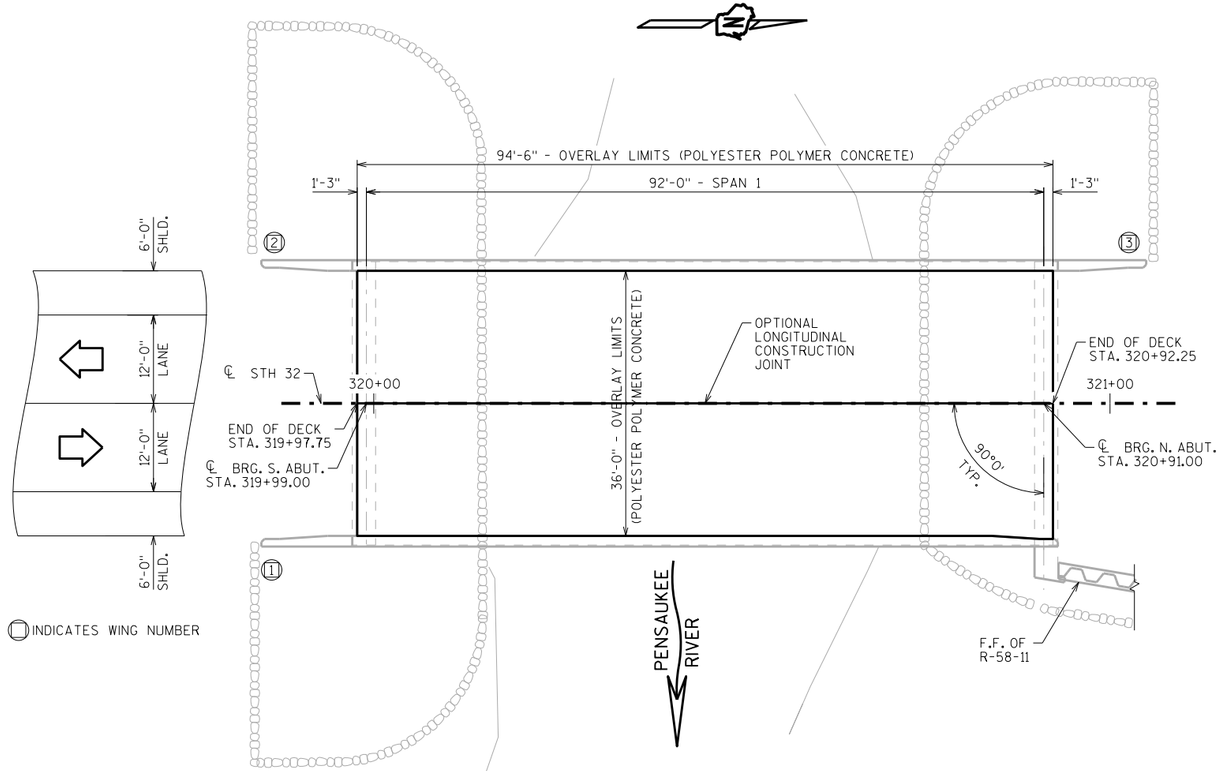
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W089.DGN PLOT DATE : 20-NOV-2013 14:06 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.755110:1.000000
WISDOT/CADDS SHEET 42



1½" AVERAGE POLYESTER POLYMER CONCRETE OVERLAY THICKNESS

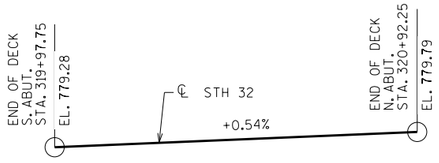
CROSS SECTION THRU ROADWAY

LOOKING NORTH



PLAN

SINGLE SPAN - 36W" PRESTRESSED CONCRETE GIRDERS



PROFILE GRADE LINE

STATE PROJECT NUMBER

9190-26-71

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.05
OPERATING RATING FACTOR: RF = 1.36
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMESIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

A MAXIMUM OF ¾-INCH OF CONCRETE SHALL BE REMOVED AT BOTH ENDS OF DECK UNDER THE BID ITEM "CLEANING DECKS" TO FACILITATE THE MINIMUM ¾" POLYESTER POLYMER OVERLAY.

THE POLYESTER POLYMER OVERLAY SHALL BE PLACED TO MEET THE PROFILE GRADE LINE SHOWN ON THE PLANS.

SHOT BLASTING, OVERLAY PRIME COAT, AND DECK SURFACE PREPARATIONS ARE INCLUDED IN THE BID ITEM "POLYESTER POLYMER CONCRETE OVERLAY".

OVERLAY CONSTRUCTION JOINTS SHALL BE APPROVED BY THE ENGINEER, AVOID PLACING LONGITUDINAL JOINTS NEAR WHEEL PATHS, WHEN REQUIRED, PLACE LONGITUDINAL JOINTS AT LANE LINES OR IN THE MIDDLE OF THE LANE, WHEEL PATHS DURING TEMPORARY TRAFFIC STAGING NEED NOT TO BE CONSIDERED.

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
*	509.0500	CLEANING DECKS	SY	40
	SPV.0180	POLYESTER POLYMER CONCRETE OVERLAY	SY	378

* THE QUANTITY FOR CLEANING DECKS IS AN APPROXIMATION, ACTUAL QUANTITY SHOULD BE DETERMINED BY THE FIELD ENGINEER.

TRAFFIC VOLUME

STH 32

ADT = 3,400 (2041)
R.D.S. = 55 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN

STRUCTURE DESIGN CONTACTS:

MAXWELL KULICK (608) 261-6108
DOMINIQUE BECHLE (608) 261-8205

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED DMB 3/17/21
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-58-130

STH 32 OVER PENSAUKEE RIVER

COUNTY	TOWN
SHAWANO	ANGELICA

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
MJK	AA	MJK	AA

POLYESTER POLYMER CONCRETE OVERLAY

SHEET 1 OF 1

88

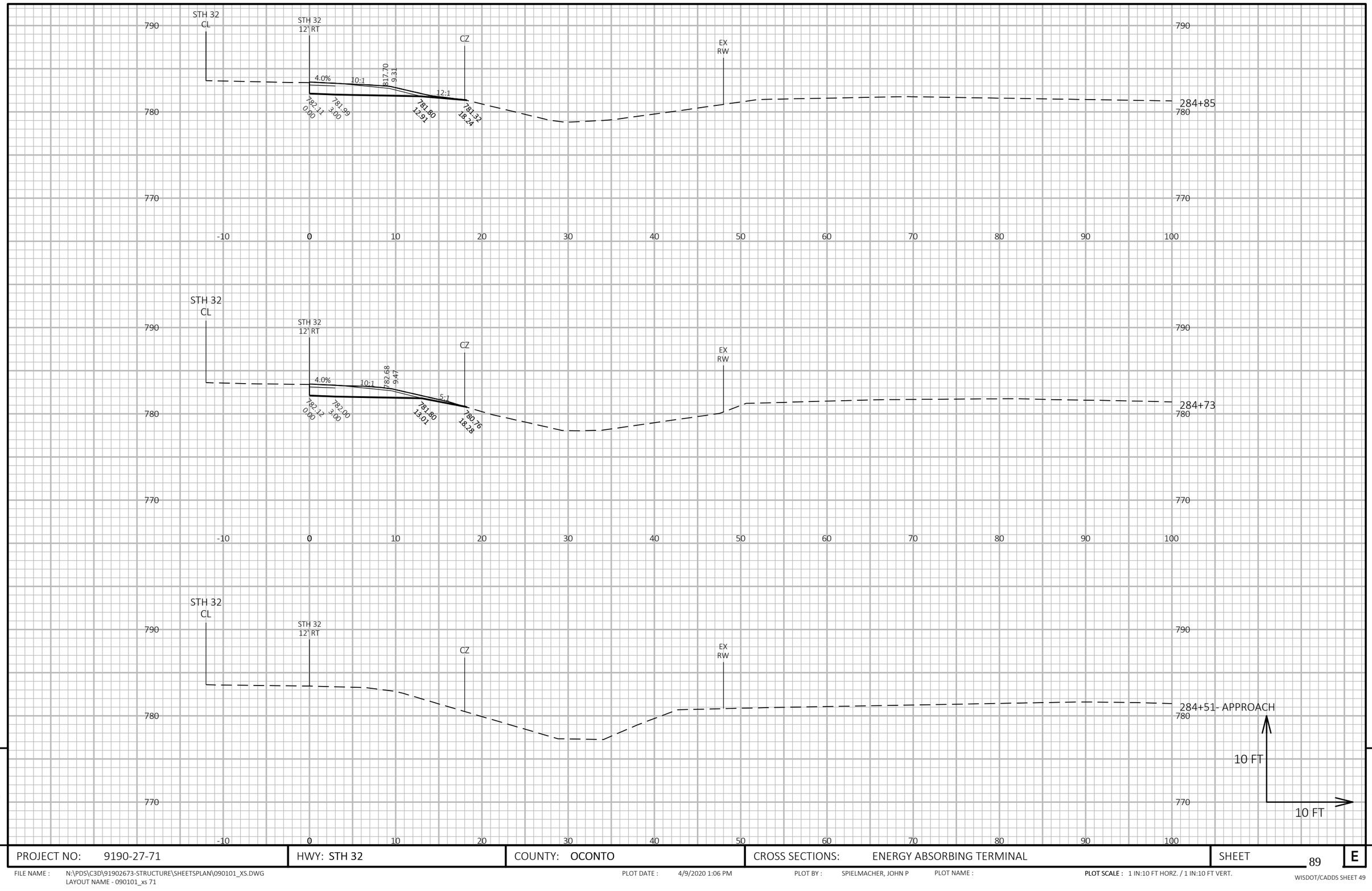
I.D. 9190-26-00E

DATE: APRIL 2020

SCALE = 10.00

8

8

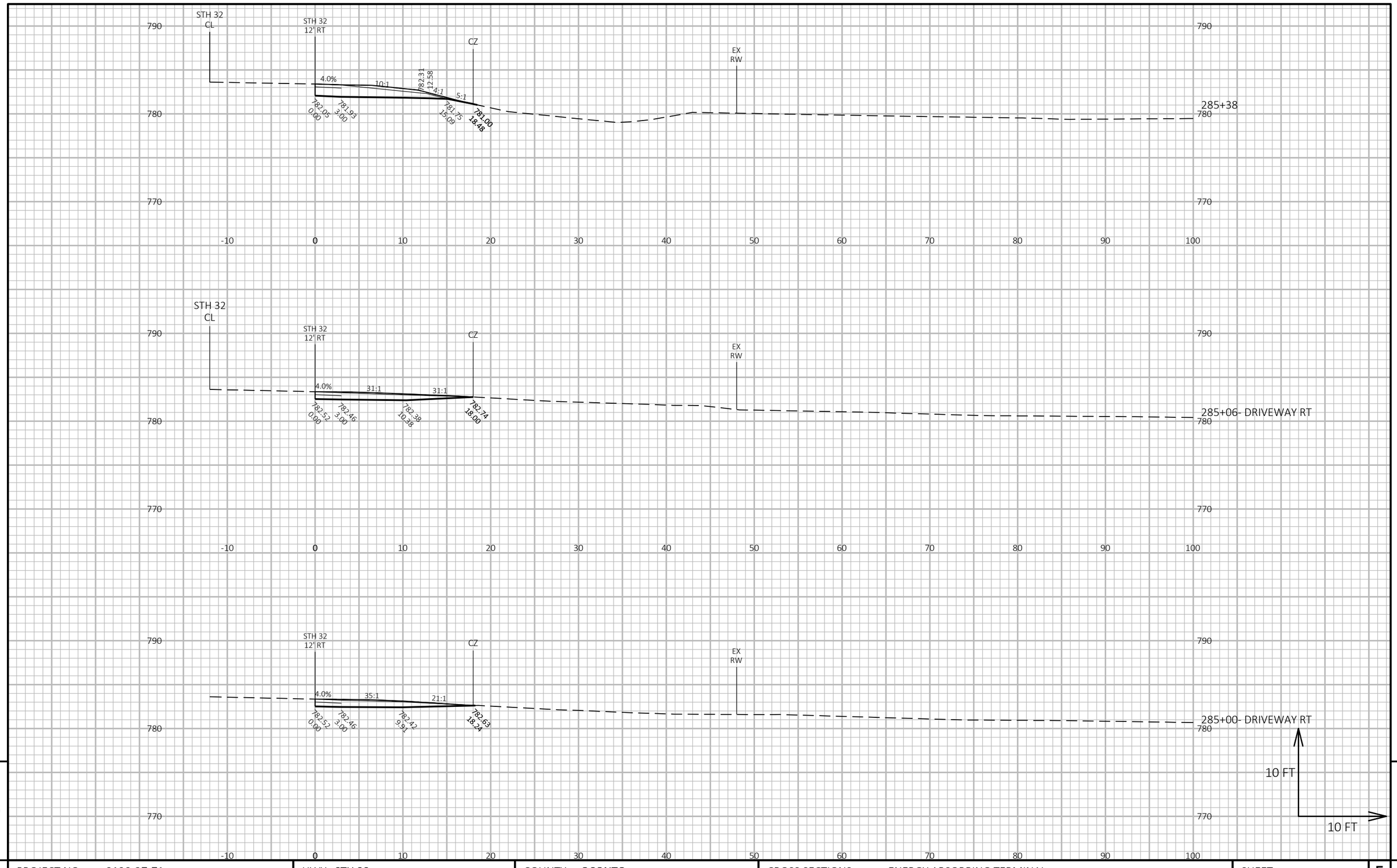


PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINAL	SHEET 89	E

FILE NAME : N:\PDS\C3D\91902673-STRUCTURE\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - 090101_xs 71

PLOT DATE : 4/9/2020 1:06 PM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



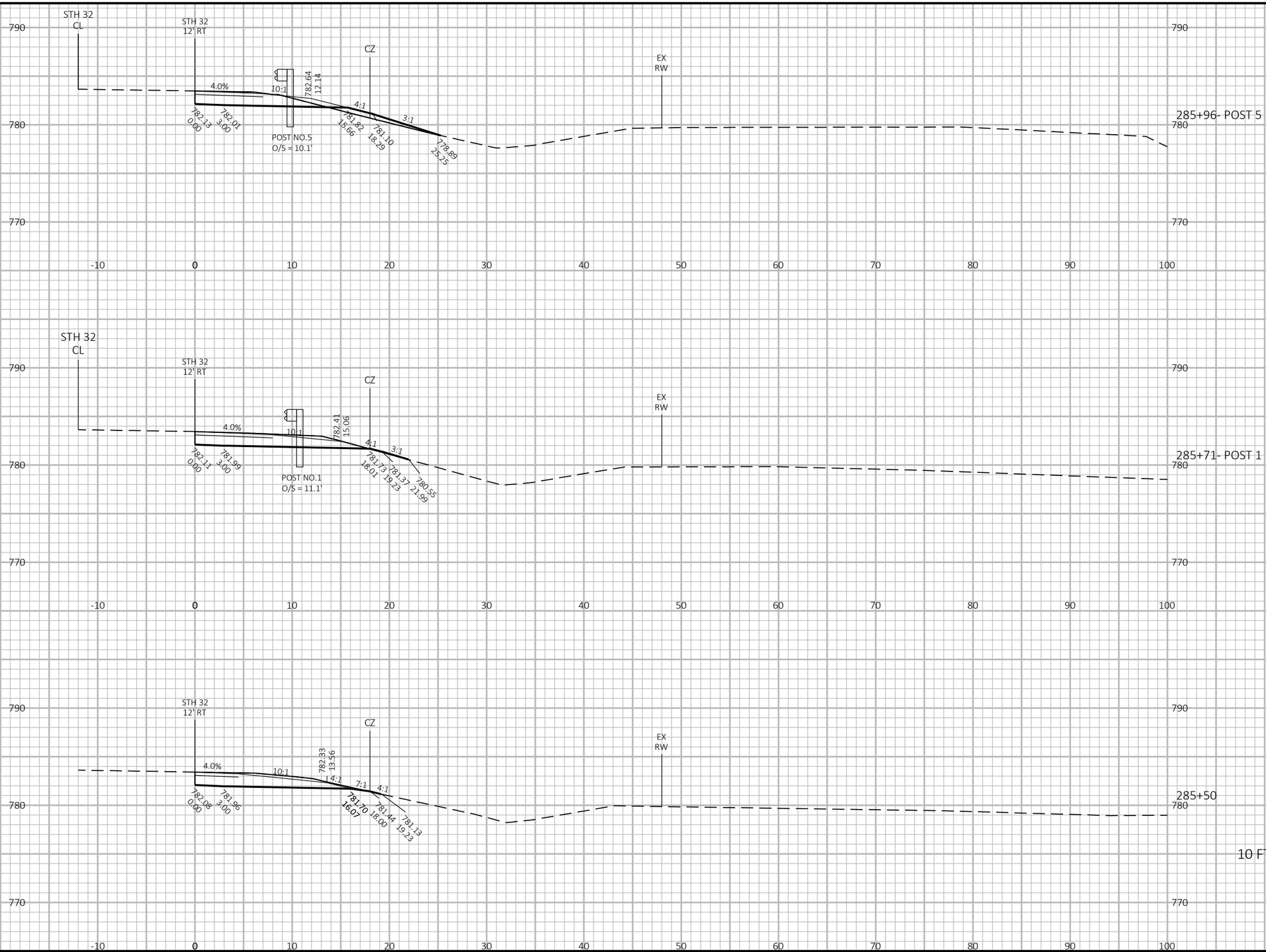
9 9

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINAL	SHEET 90	E

FILE NAME : N:\PDS\C3D\91902673-STRUCTURE\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - 090102_xs 71

PLOT DATE : 4/9/2020 1:06 PM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

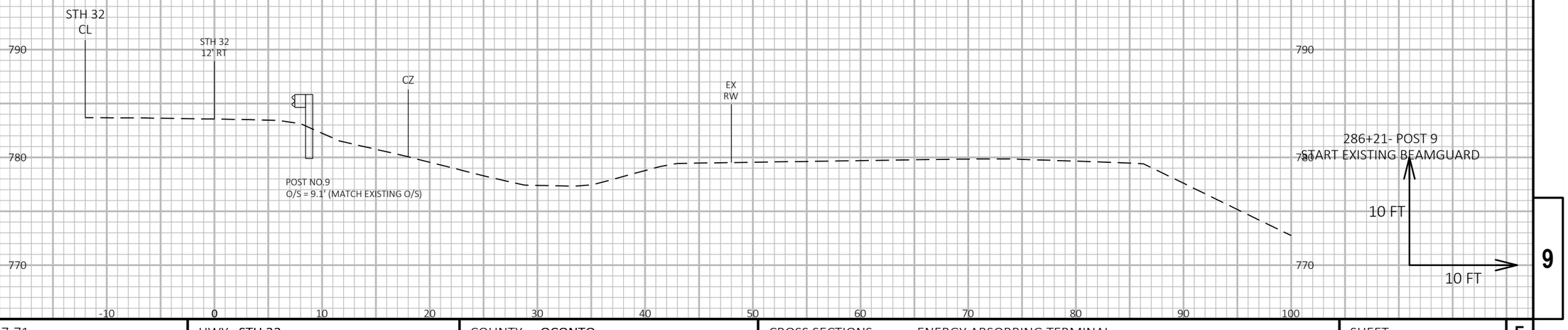
9

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINAL	SHEET 91	E

FILE NAME : N:\PDS\C3D\91902673-STRUCTURE\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - 090103_xs 71

PLOT DATE : 4/9/2020 1:07 PM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

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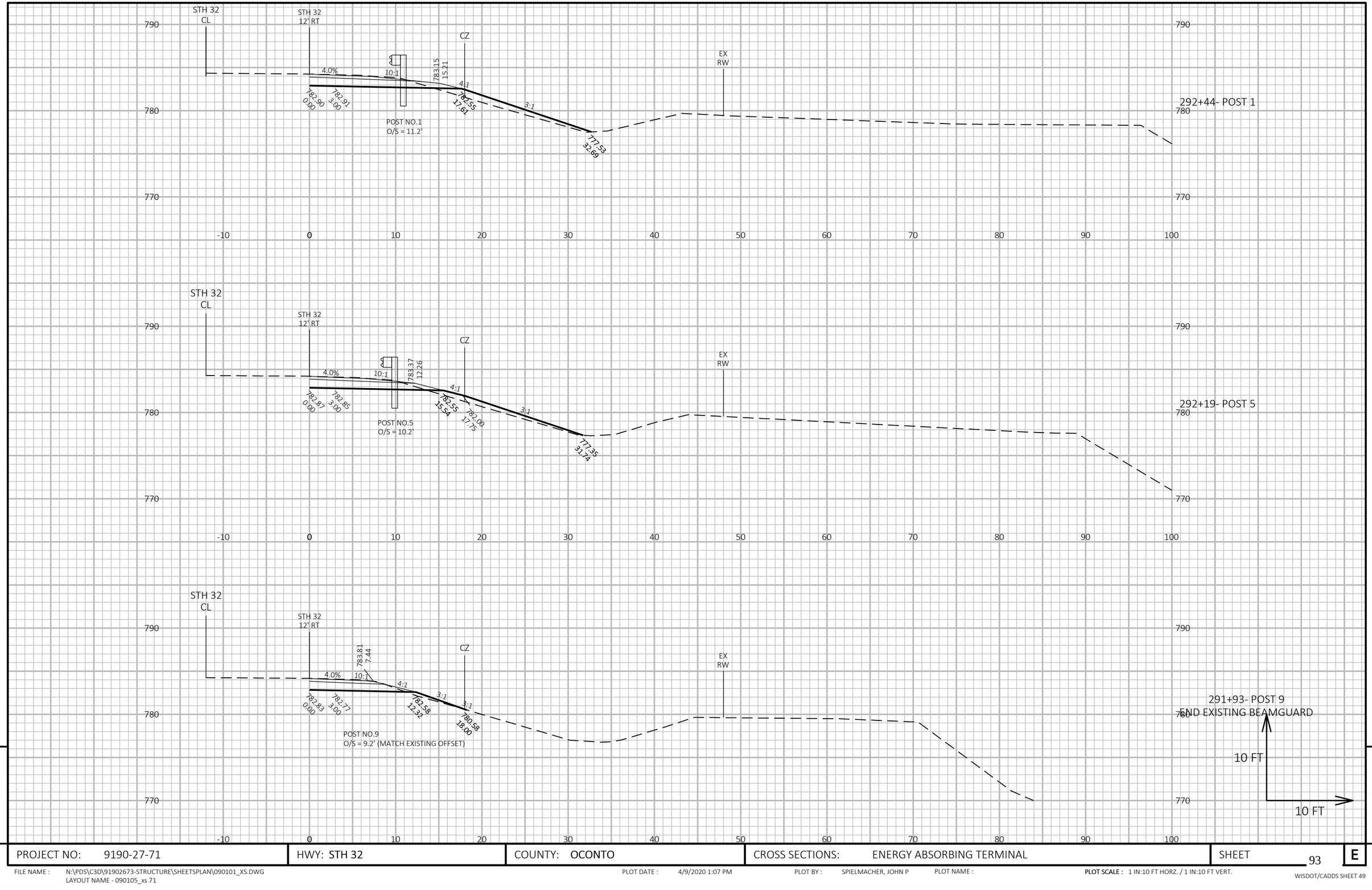
PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINAL	SHEET 92	E

FILE NAME : N:\PDS\C3D\91902673-STRUCTURE\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - 090104_xs 71
PLOT DATE : 4/9/2020 1:07 PM
PLOT BY : SPIELMACHER, JOHN P
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINAL	SHEET 93	E

FILE NAME : N:\PDS\C3D\91902673-STRUCTURE\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - 090105_xs 71

PLOT DATE : 4/9/2020 1:07 PM

PLOT BY : SPIELMACHER, JOHN P

PLOT NAME :

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

WISDOT/CADDS SHEET 49

9

9

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINAL	SHEET 94	E

FILE NAME : N:\PDS\C3D\91902673-STRUCTURE\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - 090106_xs 71

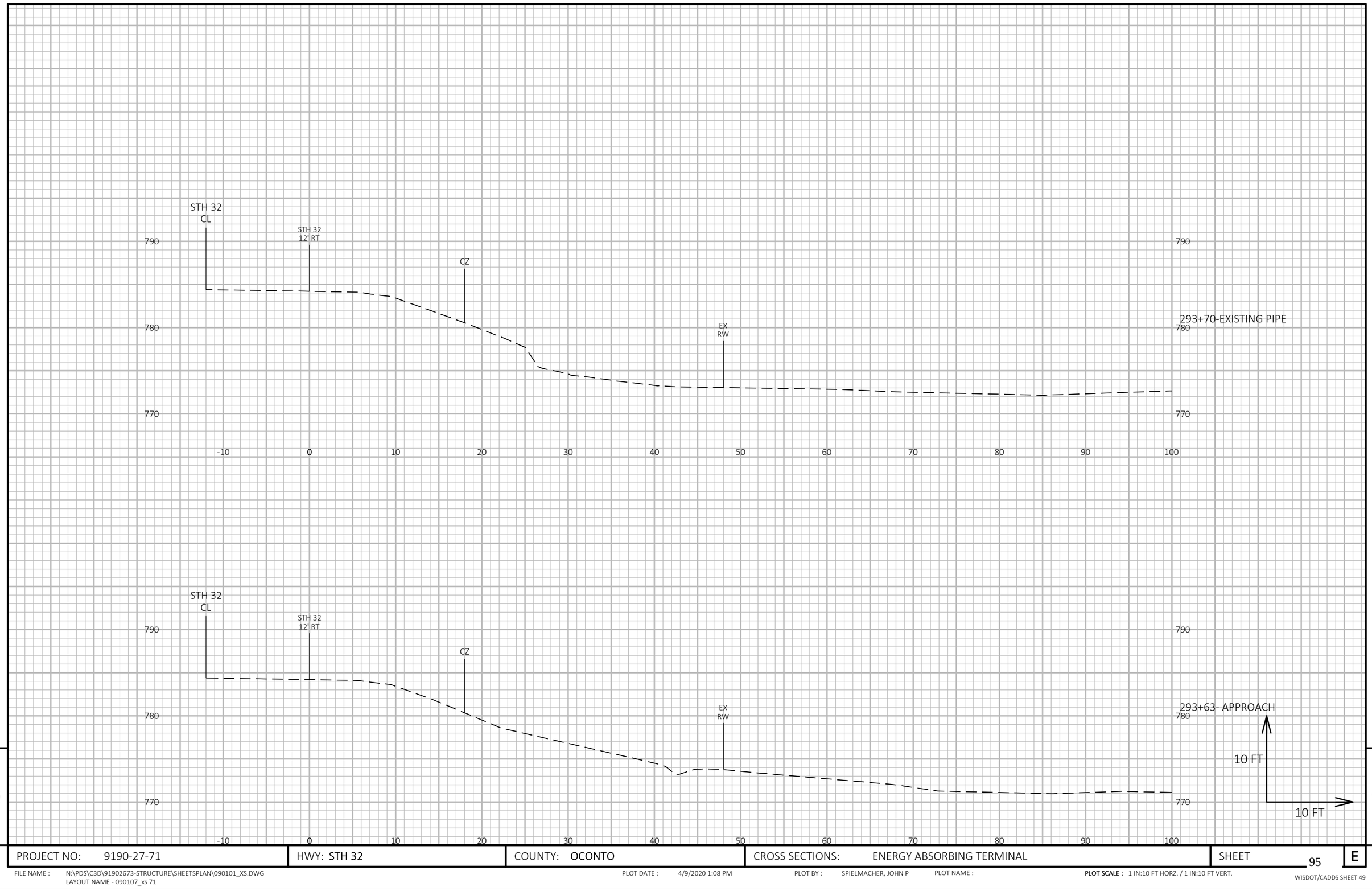
PLOT DATE : 4/9/2020 1:08 PM

PLOT BY : SPIELMACHER, JOHN P

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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9

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINAL	SHEET 95	E

FILE NAME : N:\PDS\C3D\91902673-STRUCTURE\SHEETSPLAN\090101_XS.DWG
LAYOUT NAME - 090107_xs 71

PLOT DATE : 4/9/2020 1:08 PM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

GRE

MAY 2021

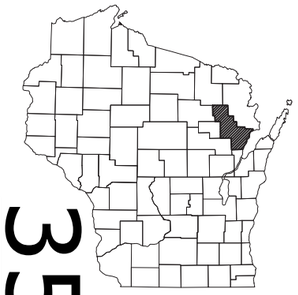
PROJECT ID: 9190-27-71

WITH: 9190-26-71

COUNTY: OCONTO

ORDER OF SHEETS

TOTAL SHEETS = 98



35

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DESIGN DESIGNATION

A.A.D.T.	(2021)	= 2,600
A.A.D.T.	(2041)	= 3,700
D.H.V.		= 410
D.D.		= 60/40
T.		= 9.1
DESIGN SPEED		= 55 MPH
ESALS		= 1,600,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

- ELECTRIC (E)
- OVERHEAD UTILITY (OH)
- 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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9190-27-71	WISC 2021360	1

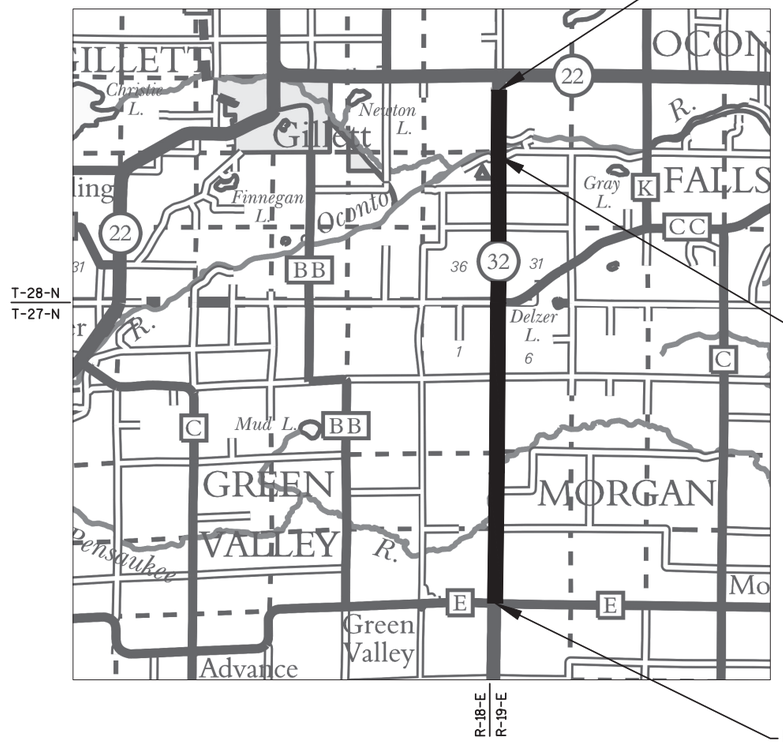
PULASKI - STH 22

CTH E - STH 22

STH 32

OCONTO COUNTY

STATE PROJECT NUMBER
9190-27-71



END PROJECT
STA. 794+31

B-42-126
EXCEPTION TO NET CENTERLINE LENGTH
STA 752+42 - STA 754+95

BEGIN PROJECT
STA. 438+77
Y=145,487.92
X=511,060.66

LAYOUT
SCALE 0 2 MILES

TOTAL NET LENGTH OF CENTERLINE = 6.686 MI.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	JSD
Designer	J. SPIELMACHER
Project Manager	A. FULCER
Regional Examiner	NORTHEAST REGION
Regional Supervisor	D. SEGERSTROM

APPROVED FOR THE DEPARTMENT

DATE: 3/18/2021 Andrew D. Fulcer (Signature)

E

GENERAL NOTES

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.

NEW PAVEMENT, BEAM GUARD, AND OTHER FACILITY LOCATIONS GIVEN IN THESE PLANS ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD PRIOR TO PLACEMENT OR INSTALLATION.

THE EXACT LOCATIONS AND DIMENSIONS OF ALL EROSION CONTROL ITEMS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE EXACT LOCATION FOR BUTT JOINTS AND SAW CUTS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

DNR LIAISON

JIM DOPERALSKI
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
2984 SHAWANO AVENUE
GREEN BAY, WI 54313-6727
(920) 412-0165
JAMES.DOPERALSK@WISCONSIN.GOV

NE REGION SURVEY CONTACT

CORMAC MCINNIS
DEPARTMENT OF TRANSPORTATION
NORTHEAST REGION
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920) 492-5638
CORMAC.MCINNIS@DOT.WI.GOV

UTILITIES

MATT HISCHKE
ANR PIPELINE CO - GAS/PETROLEUM
NORTH 4956 OAKCREST DRIVE
BONDUEL, WI 54107(715) 460-4042, (715) 758-3345
MATTHEW_HISCHKE@TRANSCANADA.COM

CHRIS DAILEY
ATC MANAGEMENT, INC. -
ELECTRICITY-TRANSMISSION
W234 N2000 RIDGEVIEW PARKWAY COURT
PO BOX 47
WAUKESHA, WI 53187-0047
(262) 506-6884
CDAILEY@ATCLLC.COM

MATT GUNDERSON
CENTURYLINK - COMMUNICATION LINE
212 CHURCH AVE
CASCO, WI 54205
(920) 837-2344
MATT.GUNDERSON@CENTURYLINK.COM

JACK PARDY
OCONTO ELECTRIC COOPERATIVE - ELECTRICITY
7479 REA RD
OCONTO FALLS, WI 54154
(920) 846-2816
JPARDY@OCONTOELECTRIC.COM

ANDREW HEIGL
ASTREA - COMMUNICATION LINE
PO BOX 885
IRON MOUNTAIN, MI 49801
(906) 221-7536, (906) 774-6621
ANDY.HEIGL@ASTREACONNECT.COM

HEATHER DEUTH
WE ENERGIES - GAS/PETROLEUM
800 S LYNNDALE DRAPPLETON, WI 54914
(920) 242-5633
HEATHER.DEUTH@WE-ENERGIES.COM

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

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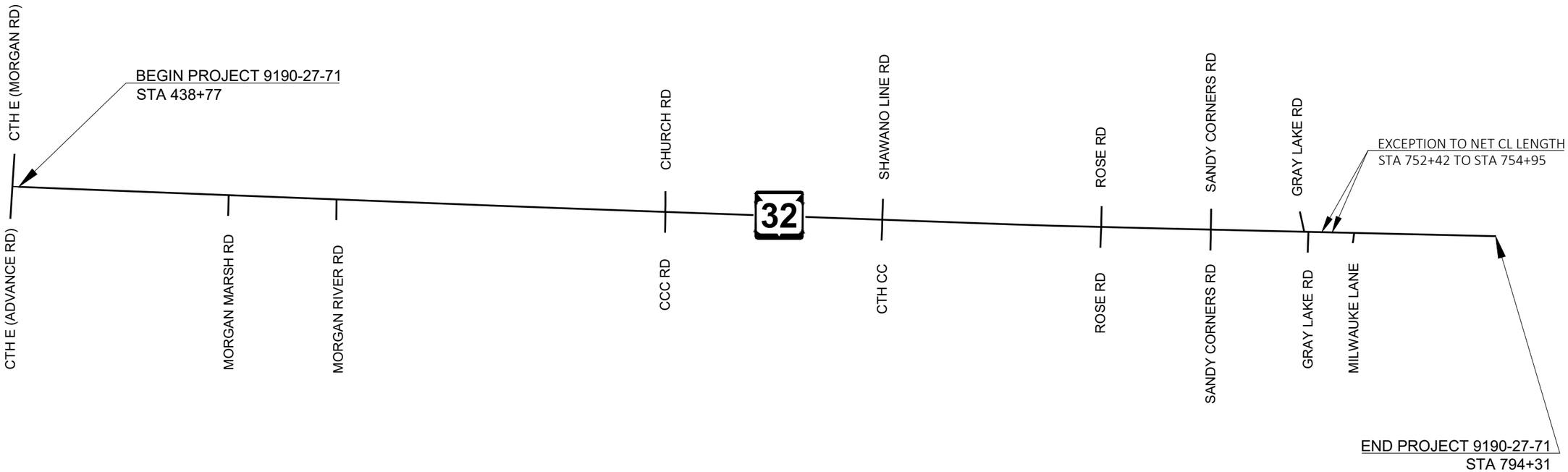


PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	PROJECT OVERVIEW	SHEET 3	E

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
10.1	11.7	439+11	40,100	8.9	9.2	10.0
9.4	11.6	440+11	40,200	8.7	8.1	9.4
10.5	12.4	441+11	40,300	7.3	9.1	9.8
10.9	12.2	442+11	40,400	7.9	9.4	10.1
11.9	11.4	443+11	40,500	8.5	9.7	10.3
12.3	10.9	444+11	40,600	8.3	9.9	10.3
11.6	11.5	445+11	40,700	8.6	9.2	10.2
12.8	11.4	446+11	40,800	9.9	8.2	10.6
11.7	11.9	447+11	40,900	10.5	7.7	10.5
10.2	11.4	448+11	41,000	10.2	8.2	10.0
9.9	11.2	449+11	41,100	10.2	8.3	9.9
10.5	10.8	450+11	41,200	9.8	8.7	9.9
10.7	10.6	451+11	41,300	9.8	9.1	10.1
10.6	11.5	452+11	41,400	9.1	9.4	10.2
10.4	12.5	453+11	41,500	9.4	9.0	10.3
10.3	12.3	454+11	41,600	8.6	8.8	10.0
10.8	11.6	455+11	41,700	8.2	8.6	9.8
10.3	8.7	456+11	41,800	9.2	9.2	9.4
10.2	9.7	457+11	41,900	9.2	9.2	9.6
11.5	9.6	458+11	42,000	9.5	9.4	10.0
10.4	9.0	459+11	42,100	10.8	9.2	9.8
9.6	9.5	460+11	42,200	10.4	9.4	9.7
9.2	8.1	461+11	42,300	10.0	8.2	8.9
9.6	8.8	462+11	42,400	8.6	9.4	9.1
9.4	7.9	463+11	42,500	9.0	9.8	9.0
9.8	8.0	464+11	42,600	9.8	10.8	9.6
9.9	8.9	465+11	42,700	10.1	11.3	10.0
9.5	8.2	466+11	42,800	8.6	8.9	8.8
9.9	11.2	467+11	42,900	7.4	8.8	9.3
7.7	8.0	468+11	43,000	8.0	10.5	8.5
8.0	7.5	469+11	43,100	9.9	10.0	8.9
8.0	7.7	470+11	43,200	10.4	9.7	8.9
7.8	7.0	471+11	43,300	9.2	9.7	8.4
7.4	7.5	472+11	43,400	9.0	9.2	8.3
8.3	7.5	473+11	43,500	8.1	9.4	8.3
8.1	7.9	474+11	43,600	8.6	8.9	8.4
8.3	8.1	475+11	43,700	8.5	8.8	8.4
8.9	8.5	476+11	43,800	9.3	7.8	8.6
8.3	8.6	477+11	43,900	7.4	10.8	8.8
8.5	7.4	478+11	44,000	10.1	12.3	9.6
7.7	8.1	479+11	44,100	10.6	11.2	9.4
8.7	7.7	480+11	44,200	10.8	10.0	9.3
8.5	8.2	481+11	44,300	9.7	11.9	9.6
7.7	8.1	482+11	44,400	9.9	11.7	9.4
7.5	7.5	483+11	44,500	10.8	11.2	9.2
8.6	8.0	484+11	44,600	9.9	11.1	9.4
8.9	6.7	485+11	44,700	10.9	12.3	9.7
9.4	7.8	486+11	44,800	10.1	12.9	10.0
7.7	7.4	487+11	44,900	8.9	11.1	8.8
8.2	7.4	488+11	45,000	8.6	10.6	8.7
8.9	7.4	489+11	45,100	8.4	11.0	8.9
9.1	8.8	490+11	45,200	11.1	10.9	10.0
9.2	9.2	491+11	45,300	11.0	10.7	10.0
9.8	9.7	492+11	45,400	10.9	10.3	10.2
11.1	11.1	493+11	45,500	10.2	11.1	10.9

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
11.0	10.4	494+11	45,600	9.1	11.0	10.4
11.1	10.2	495+11	45,700	9.4	10.3	10.2
10.8	9.9	496+11	45,800	9.1	9.7	9.9
9.4	10.6	497+11	45,900	9.9	9.3	9.8
8.0	9.7	498+11	46,000	10.6	8.8	9.2
7.7	9.0	499+11	46,100	10.6	9.2	9.1
8.8	9.8	500+11	46,200	9.6	9.9	9.5
8.9	10.6	501+11	46,300	9.1	10.0	9.7
8.1	9.8	502+11	46,400	9.5	10.2	9.4
8.3	9.8	503+11	46,500	10.3	9.8	9.5
8.5	10.2	504+11	46,600	10.2	10.2	9.8
9.5	11.2	505+11	46,700	8.6	10.3	9.9
10.3	11.5	506+11	46,800	8.5	10.2	10.1
10.8	10.9	507+11	46,900	8.4	9.8	10.0
9.4	10.5	508+11	47,000	10.9	10.1	10.2
10.7	10.0	509+11	47,100	11.2	11.0	10.7
10.8	10.4	510+11	47,200	10.6	10.7	10.6
10.0	9.4	511+11	47,300	9.2	10.5	9.8
9.9	9.5	512+11	47,400	9.3	10.0	9.7
9.0	8.4	513+11	47,500	10.1	10.0	9.4
9.6	7.5	514+11	47,600	8.6	10.3	9.0
8.8	8.8	515+11	47,700	7.8	9.5	8.7
8.8	9.6	516+11	47,800	9.0	9.4	9.2
9.9	10.8	517+11	47,900	8.3	8.1	9.3
9.0	10.5	518+11	48,000	7.7	7.2	8.6
10.1	9.7	519+11	48,100	7.4	7.3	8.6
9.9	9.3	520+11	48,200	7.8	8.0	8.7
10.8	9.2	521+11	48,300	8.2	8.2	9.1
10.9	9.6	522+11	48,400	7.4	8.5	9.1
10.4	10.2	523+11	48,500	8.2	8.8	9.4
9.1	9.6	524+11	48,600	7.8	8.0	8.6
8.6	9.3	525+11	48,700	7.7	8.5	8.5
9.9	10.0	526+11	48,800	7.0	9.2	9.0
10.6	7.7	527+11	48,900	8.5	8.3	8.8
10.0	9.4	528+11	49,000	9.8	8.5	9.4
9.6	9.0	529+11	49,100	8.9	9.0	9.1
10.2	9.0	530+11	49,200	8.2	8.4	9.0
9.3	9.1	531+11	49,300	8.6	9.0	9.0
8.4	8.6	532+11	49,400	9.5	10.1	9.1
8.7	7.6	533+11	49,500	10.3	10.0	9.2
8.7	8.4	534+11	49,600	9.6	9.9	9.2
8.9	10.1	535+11	49,700	8.9	11.6	9.9
9.8	9.7	536+11	49,800	8.9	13.1	10.4
9.0	9.4	537+11	49,900	9.6	13.5	10.4
7.1	9.0	538+11	50,000	11.0	12.1	9.8
9.8	9.7	539+11	50,100	11.9	13.8	11.3
8.3	9.9	540+11	50,200	12.8	13.2	11.1
9.1	9.5	541+11	50,300	12.9	13.3	11.2
9.3	9.6	542+11	50,400	14.1	13.4	11.6
9.6	9.5	543+11	50,500	13.9	12.8	11.5
9.1	9.9	544+11	50,600	14.6	13.8	11.8
8.3	9.3	545+11	50,700	15.8	14.5	12.0
9.6	9.2	546+11	50,800	13.0	15.0	11.7
7.9	9.1	547+11	50,900	11.0	14.7	10.7
8.7	9.4	548+11	51,000	8.9	14.4	10.4

2

2

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
8.9	8.5	549+11	51,100	8.8	14.4	10.1
9.4	8.8	550+11	51,200	8.9	14.7	10.4
9.9	9.3	551+11	51,300	8.9	13.4	10.4
8.6	9.5	552+11	51,400	8.5	11.4	9.5
7.3	8.4	553+11	51,500	8.6	8.4	8.2
7.2	8.9	554+11	51,600	7.8	8.0	8.0
8.1	9.4	555+11	51,700	8.8	8.0	8.6
9.7	8.7	556+11	51,800	8.4	8.7	8.9
9.4	8.1	557+11	51,900	9.2	8.9	8.9
9.3	8.0	558+11	52,000	9.3	9.5	9.0
9.7	8.9	559+11	52,100	8.6	9.3	9.1
9.4	9.3	560+11	52,200	8.7	8.2	8.9
8.9	11.0	561+11	52,300	10.0	7.6	9.4
8.9	8.2	562+11	52,400	9.1	7.4	8.4
9.7	9.3	563+11	52,500	9.0	10.0	9.5
8.9	7.3	564+11	52,600	9.5	8.1	8.5
9.7	7.5	565+11	52,700	8.7	7.2	8.3
8.0	7.2	566+11	52,800	10.4	6.8	8.1
7.9	7.6	567+11	52,900	9.7	7.8	8.2
7.2	9.0	568+11	53,000	10.2	8.5	8.7
6.5	8.7	569+11	53,100	9.1	7.5	8.0
7.7	8.3	570+11	53,200	8.5	9.3	8.5
7.8	8.1	571+11	53,300	6.2	9.5	7.9
9.6	7.8	572+11	53,400	8.6	7.9	8.5
9.6	7.1	573+11	53,500	9.2	7.6	8.4
8.7	8.7	574+11	53,600	9.0	6.5	8.2
8.3	9.7	575+11	53,700	9.9	7.0	8.7
11.0	8.5	576+11	53,800	9.8	7.2	9.1
12.0	8.0	577+11	53,900	8.9	7.4	9.1
11.6	8.5	578+11	54,000	9.1	7.4	9.1
10.1	8.8	579+11	54,100	9.3	8.3	9.1
10.2	9.1	580+11	54,200	9.3	8.3	9.2
9.2	9.0	581+11	54,300	8.5	8.4	8.8
8.6	9.5	582+11	54,400	8.4	8.9	8.8
9.3	10.1	583+11	54,500	8.7	9.1	9.3
9.1	9.6	584+11	54,600	9.2	9.7	9.4
9.7	10.3	585+11	54,700	11.3	9.7	10.2
10.6	10.6	586+11	54,800	10.4	9.7	10.3
10.5	10.7	587+11	54,900	9.0	9.4	9.9
10.1	9.3	588+11	55,000	9.5	9.5	9.6
9.6	9.4	589+11	55,100	9.4	9.9	9.5
10.2	9.2	590+11	55,200	8.1	8.7	9.0
9.9	11.4	591+11	55,300	7.6	8.5	9.4
9.4	10.7	592+11	55,400	8.1	8.4	9.1
9.4	8.8	593+11	55,500	8.2	9.8	9.0
8.4	8.9	594+11	55,600	10.6	10.0	9.5
10.6	9.4	595+11	55,700	9.1	8.4	9.4
11.3	10.0	596+11	55,800	7.5	9.5	9.6
10.0	10.0	597+11	55,900	7.2	9.5	9.2
8.7	8.8	598+11	56,000	7.9	8.7	8.5
8.8	10.0	599+11	56,100	6.7	9.1	8.7
9.1	11.4	600+11	56,200	7.0	8.4	9.0
9.2	9.6	601+11	56,300	7.2	8.8	8.7
8.5	9.3	602+11	56,400	7.8	8.6	8.6
9.2	9.8	603+11	56,500	8.9	8.2	9.0

ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
9.9	9.0	604+11	56,600	9.0	8.2	9.0
10.2	9.6	605+11	56,700	9.1	8.2	9.3
9.3	10.5	606+11	56,800	9.6	8.2	9.4
9.2	10.9	607+11	56,900	9.4	8.3	9.4
10.2	9.0	608+11	57,000	9.2	7.8	9.1
10.0	9.5	609+11	57,100	9.5	6.4	8.8
9.2	9.4	610+11	57,200	9.1	7.4	8.8
9.5	8.0	611+11	57,300	9.2	7.3	8.5
9.3	8.2	612+11	57,400	9.5	7.1	8.5
10.8	9.4	613+11	57,500	9.6	7.6	9.4
11.9	9.4	614+11	57,600	9.3	7.2	9.4
11.6	10.4	615+11	57,700	8.4	6.8	9.3
10.7	10.2	616+11	57,800	9.7	6.0	9.1
11.1	9.2	617+11	57,900	10.3	6.7	9.3
10.8	10.3	618+11	58,000	9.9	6.5	9.4
11.4	10.2	619+11	58,100	9.6	6.2	9.3
9.5	9.8	620+11	58,200	9.4	7.2	9.0
11.0	9.7	621+11	58,300	9.4	7.1	9.3
10.1	9.4	622+11	58,400	8.5	6.6	8.6
8.9	8.9	623+11	58,500	8.2	6.3	8.0
9.8	9.3	624+11	58,600	8.9	8.0	9.0
10.2	10.6	625+11	58,700	10.3	7.1	9.5
9.9	12.4	626+11	58,800	10.5	6.1	9.7
10.0	12.5	627+11	58,900	9.8	6.2	9.6
10.2	11.8	628+11	59,000	9.7	8.7	10.1
10.3	11.4	629+11	59,100	10.3	10.7	10.7
10.5	11.1	630+11	59,200	10.5	9.7	10.4
9.8	11.3	631+11	59,300	9.5	10.1	10.2
9.4	11.6	632+11	59,400	10.3	9.9	10.3
8.7	12.3	633+11	59,500	10.2	10.8	10.5
9.3	12.1	634+11	59,600	10.7	10.9	10.8
9.5	11.6	635+11	59,700	11.0	10.1	10.5
9.7	11.3	636+11	59,800	10.7	9.9	10.4
10.9	9.9	637+11	59,900	11.0	9.1	10.2
10.0	9.3	638+11	60,000	10.2	10.0	9.9
9.6	9.6	639+11	60,100	10.9	11.4	10.4
9.8	8.2	640+11	60,200	10.4	10.7	9.8
9.8	6.8	641+11	60,300	9.1	9.5	8.8
9.5	6.2	642+11	60,400	9.6	9.3	8.7
9.7	7.1	643+11	60,500	10.3	8.6	8.9
9.8	7.8	644+11	60,600	11.3	8.5	9.3
10.2	8.2	645+11	60,700	11.4	8.3	9.5
10.4	7.7	646+11	60,800	11.0	8.8	9.4
11.4	9.9	647+11	60,900	10.6	8.8	10.2
11.3	9.9	648+11	61,000	11.1	9.2	10.4
11.1	10.0	649+11	61,100	11.0	10.9	10.7
11.3	10.0	650+11	61,200	10.8	10.4	10.6
11.6	9.0	651+11	61,300	10.4	10.8	10.4
11.2	9.2	652+11	61,400	9.7	10.4	10.1
11.4	10.4	653+11	61,500	9.9	9.6	10.3
11.1	10.2	654+11	61,600	10.4	10.3	10.5
11.2	10.4	655+11	61,700	10.1	11.2	10.7
11.7	10.3	656+11	61,800	11.3	11.1	11.1
11.3	11.5	657+11	61,900	10.3	11.5	11.2
10.6	9.3	658+11	62,000	9.6	10.8	10.0

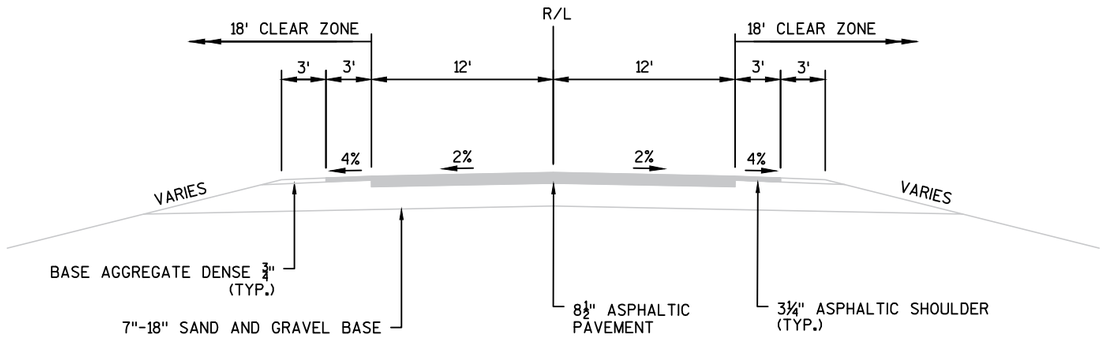
2

2

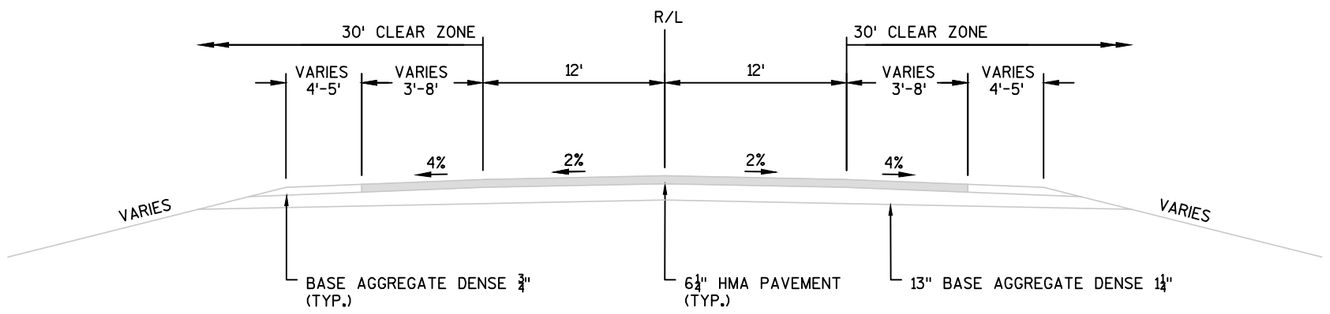
ABBREVIATION KEY: DMI = DISTANCE MEASURING INSTRUMENT; LWP = LEFT WHEEL PATH; RWP = RIGHT WHEEL PATH

SB RWP - Approx. HMA Thickness (in)	SB LWP - Approx. HMA Thickness (in)	Approximate Station	DMI Distance (ft)	NB LWP - Approx. HMA Thickness (in)	NB RWP - Approx. HMA Thickness (in)	Approximate Average Roadway HMA Thickness (in)
10.7	9.1	659+11	62,100	9.5	9.8	9.8
10.7	9.3	660+11	62,200	12.8	9.8	10.6
11.5	9.6	661+11	62,300	12.1	10.3	10.9
10.6	11.2	662+11	62,400	11.2	9.5	10.6
11.5	10.6	663+11	62,500	8.8	9.4	10.1
11.2	11.9	664+11	62,600	9.1	8.7	10.2
11.3	11.4	665+11	62,700	8.7	8.8	10.1
12.1	11.4	666+11	62,800	7.9	7.8	9.8
13.5	12.0	667+11	62,900	8.1	7.9	10.4
12.9	11.8	668+11	63,000	9.2	7.4	10.3
12.0	11.8	669+11	63,100	10.0	7.7	10.4
11.6	11.9	670+11	63,200	9.7	8.1	10.3
11.5	11.3	671+11	63,300	9.7	9.5	10.5
10.7	11.1	672+11	63,400	9.6	9.4	10.2
11.8	10.2	673+11	63,500	9.7	9.3	10.2
10.1	9.9	674+11	63,600	10.4	8.4	9.7
9.7	9.2	675+11	63,700	9.1	10.0	9.5
9.8	9.4	676+11	63,800	10.2	10.7	10.0
9.6	9.2	677+11	63,900	8.8	10.8	9.6
9.4	8.1	678+11	64,000	7.9	10.3	8.9
9.8	8.0	679+11	64,100	9.2	9.9	9.2
9.9	8.6	680+11	64,200	9.2	9.8	9.3
8.1	11.6	681+11	64,300	7.9	9.2	9.2
8.0	8.6	682+11	64,400	8.6	9.0	8.5
9.4	8.1	683+11	64,500	10.7	8.1	9.1
10.9	9.0	684+11	64,600	8.8	7.8	9.1
9.9	9.0	685+11	64,700	7.7	8.6	8.8
10.1	9.6	686+11	64,800	9.1	8.7	9.4
9.9	9.9	687+11	64,900	9.5	8.2	9.4
8.7	9.9	688+11	65,000	9.6	8.4	9.1
7.4	9.9	689+11	65,100	7.9	8.8	8.5
8.8	10.1	690+11	65,200	10.2	9.3	9.6
9.3	10.0	691+11	65,300	10.0	9.6	9.7
8.1	10.1	692+11	65,400	9.2	10.3	9.4
8.2	9.1	693+11	65,500	8.4	10.3	9.0
8.4	8.0	694+11	65,600	8.2	10.7	8.8
8.3	8.8	695+11	65,700	8.7	10.0	8.9
7.6	8.9	696+11	65,800	10.0	9.7	9.1
7.6	7.5	697+11	65,900	9.7	10.0	8.7
8.0	7.6	698+11	66,000	10.1	9.6	8.8
9.2	7.5	699+11	66,100	9.4	8.5	8.6
9.4	9.6	700+11	66,200	8.1	9.6	9.2
9.4	9.1	701+11	66,300	8.6	10.0	9.3
9.3	8.8	702+11	66,400	9.3	10.4	9.4
8.2	8.7	703+11	66,500	9.1	10.3	9.1
8.8	8.8	704+11	66,600	9.5	9.6	9.2
8.7	9.6	705+11	66,700	8.6	8.7	8.9
9.7	10.0	706+11	66,800	8.3	9.0	9.2
9.9	9.6	707+11	66,900	8.2	9.6	9.3
9.1	9.7	708+11	67,000	8.9	9.5	9.3
9.4	10.4	709+11	67,100	8.9	10.2	9.7
10.2	10.4	710+11	67,200	9.6	9.0	9.8
9.3	9.9	711+11	67,300	10.3	8.3	9.5
10.5	9.5	712+11	67,400	10.6	9.0	9.9
11.9	9.0	713+11	67,500	10.1	8.6	9.9
11.6	10.2	714+11	67,600	9.8	7.9	9.9
10.3	11.0	715+11	67,700	10.1	7.1	9.6
10.0	10.7	716+11	67,800	10.7	7.2	9.6
10.6	10.6	717+11	67,900	10.0	7.9	9.8
10.4	10.7	718+11	68,000	10.6	8.1	9.9
9.4	10.4	719+11	68,100	10.5	8.8	9.8
9.6	10.1	720+11	68,200	9.7	9.0	9.6
11.0	10.2	721+11	68,300	10.2	8.6	10.0
12.1	11.2	722+11	68,400	9.4	8.8	10.4
10.1	10.7	723+11	68,500	10.2	8.7	9.9
10.4	10.2	724+11	68,600	9.1	7.9	9.4
11.1	10.3	725+11	68,700	9.3	8.2	9.7
10.2	9.7	726+11	68,800	10.3	7.6	9.5
10.2	6.8	727+11	68,900	9.7	7.9	8.6
10.1	9.4	728+11	69,000	10.2	8.7	9.6
11.4	10.8	729+11	69,100	8.4	7.1	9.4
10.8	11.0	730+11	69,200	6.6	8.3	9.2
10.6	11.7	731+11	69,300	8.7	9.5	10.1
10.7	10.6	732+11	69,400	9.0	9.5	9.9
10.7	10.6	733+11	69,500	9.2	9.2	9.9
10.8	11.6	734+11	69,600	8.1	7.7	9.6
11.5	10.4	735+11	69,700	7.5	6.7	9.0
11.8	10.1	736+11	69,800	7.5	9.2	9.6
11.5	10.9	737+11	69,900	7.5	11.1	10.3
10.3	10.5	738+11	70,000	8.7	10.4	10.0
10.6	11.0	739+11	70,100	8.4	9.9	10.0
11.3	11.3	740+11	70,200	7.0	11.4	10.3
10.5	12.1	741+11	70,300	8.6	12.0	10.8
10.6	13.2	742+11	70,400	9.2	12.4	11.4
11.6	12.3	743+11	70,500	8.3	12.6	11.2
12.1	12.0	744+11	70,600	8.0	12.6	11.1
12.4	9.8	745+11	70,700	8.0	12.7	10.7
12.0	10.2	746+11	70,800	8.0	13.9	11.0
10.9	10.5	747+11	70,900	8.6	12.1	10.5
11.3	11.0	748+11	71,000	7.2	11.9	10.4
12.0	10.8	749+11	71,100	6.8	11.1	10.1
11.7	9.7	750+11	71,200	7.1	11.7	10.0
12.8	10.0	751+11	71,300	7.6	11.3	10.4
11.6	10.5	752+11	71,400	8.2	11.6	10.5
10.0	9.6	753+11	71,500	7.6	10.9	9.5
9.5	10.7	754+11	71,600	6.6	10.4	9.3
9.2	10.8	755+11	71,700	6.3	11.2	9.4
11.0	11.4	756+11	71,800	6.9	11.3	10.2
11.3	8.9	757+11	71,900	8.4	11.8	10.1
10.7	9.6	758+11	72,000	8.6	12.6	10.4
10.1	8.6	759+11	72,100	9.0	13.2	10.2
11.5	9.6	760+11	72,200	8.9	12.9	10.7
11.0	8.7	761+11	72,300	8.2	13.2	10.3
9.2	8.8	762+11	72,400	8.1	13.5	9.9
9.6	10.3	763+11	72,500	8.6	13.9	10.6
9.8	9.4	764+11	72,600	8.7	14.0	10.4
10.1	10.1	765+11	72,700	8.3	13.1	10.4
9.4	9.1	766+11	72,800	8.5	14.0	10.3
10.5	8.6	767+11	72,900	5.7	14.3	9.8
10.8	9.8	768+11	73,000	6.4	14.4	10.3
10.4	8.0	769+11	73,100	7.5	14.8	10.2
9.4	9.2	770+11	73,200	8.9	15.1	10.6
8.4	9.5	771+11	73,300	9.2	14.2	10.3

2



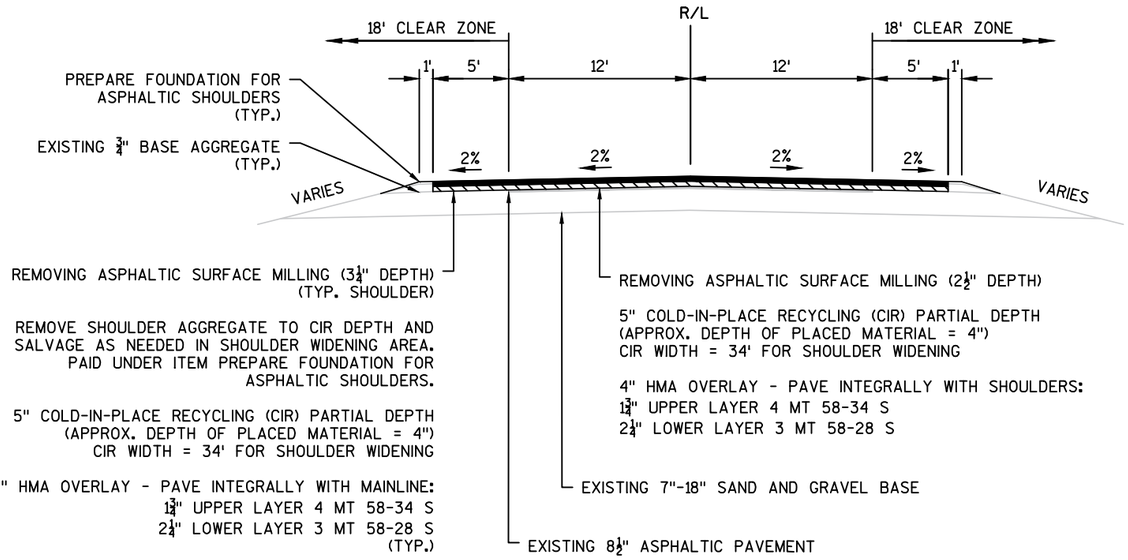
EXISTING TYPICAL CROSS SECTION STH 32
STA 438+77 - STA 749+73
STA 754+95 - STA 794+31



EXISTING TYPICAL CROSS SECTION STH 32
(B-42-126 APPROACHES)
STA 749+73 - STA 752+42
STA 754+95 - STA 758+14

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	TYPICAL SECTIONS	SHEET 7	E

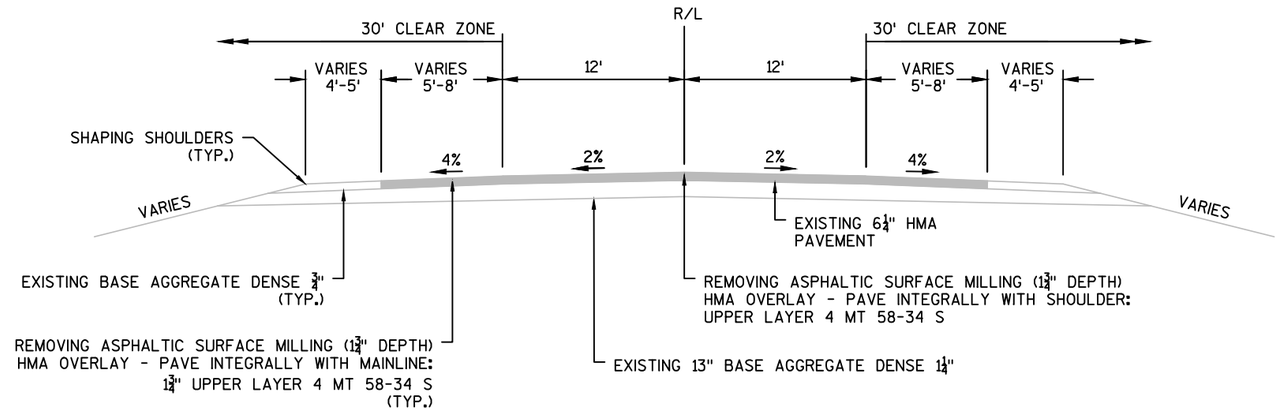
2



NOTES:
1. PLACE MILLINGS FROM SHOULDERS ALONG TRAVEL LANES TO INCORPORATE INTO CIR PROCESS.
2. SALVAGED SHOULDER AGGREGATE IS NOT TO BE INCORPORATED INTO CIR PROCESS DUE TO DELETERIOUS MATERIALS SUCH AS WEEDS.
3. NET INCREASE IN STH 32 FINISH ℄ PROFILE = -2.5" -5" +4" +4" = +0.5"
4. SEE INTERSECTION MILLING AND PAVING DETAIL FOR PROPOSED ℄ PROFILE TRANSITION THROUGH INTERSECTIONS.

PROPOSED TYPICAL CROSS SECTION STH 32

STA 438+77 - STA 749+73
STA 754+95 - STA 794+31

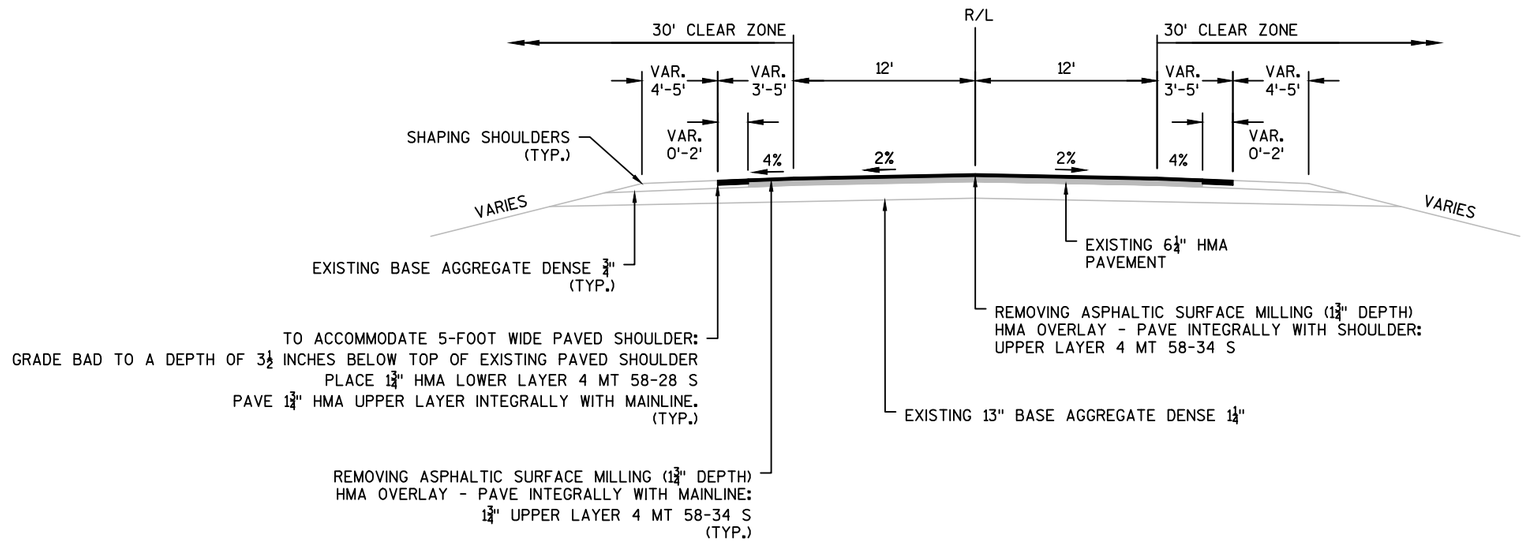


PROPOSED TYPICAL CROSS SECTION STH 32

(B-42-126 APPROACHES)

STA 751+34 - STA 752+42, STA 754+95 - STA 757+03 LT

STA 751+15 - STA 752+42, STA 754+95 - STA 755+96 RT



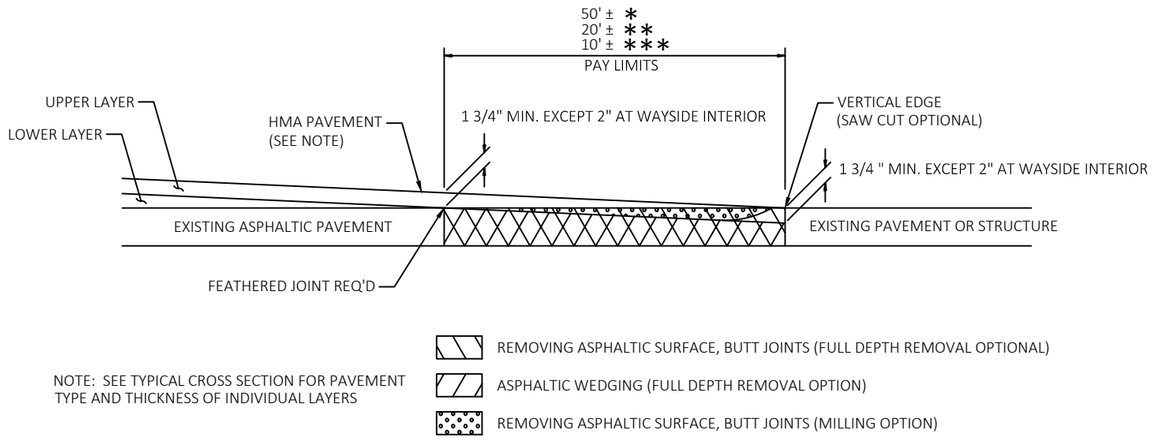
PROPOSED TYPICAL CROSS SECTION STH 32

(B-42-126 APPROACHES)

STA 749+73 - STA 751+34, STA 757+03 - STA 758+14 LT

STA 749+73 - STA 751+15, STA 755+96 - STA 758+14 RT

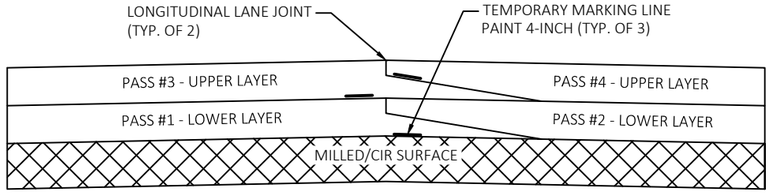
PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	TYPICAL SECTIONS	SHEET 9	E



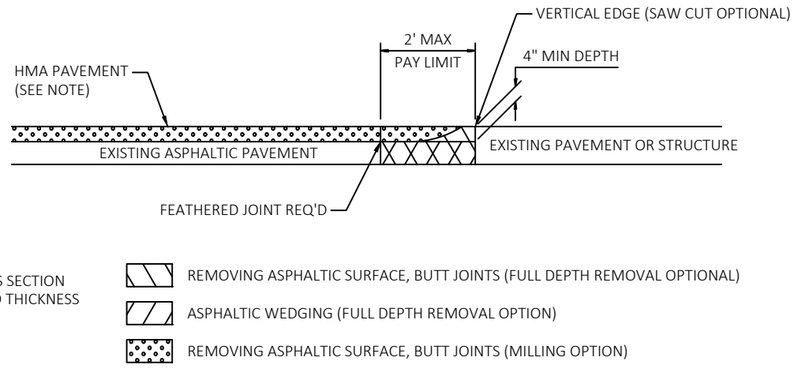
NOTE: SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

BUTT JOINT DETAIL FOR NON MILLED ASPHALTIC PAVEMENTS (PROFILE CHANGE)

* MAINLINE
** SIDEROADS
*** PRIVATE ENTRANCES AND WAYSIDE INTERIOR

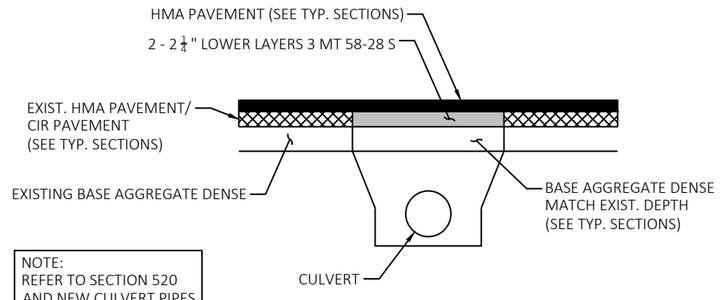


PAVEMENT MARKING DETAIL FOR TAPERED OVERLAPPING JOINTS IN HMA PAVEMENTS



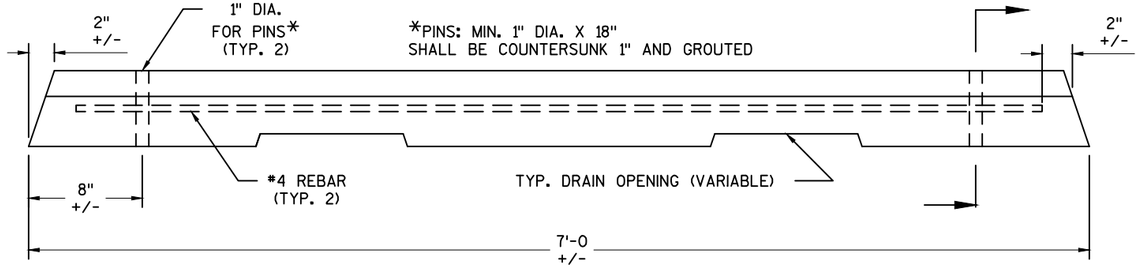
NOTE: SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

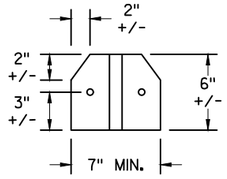
BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)



NOTE:
REFER TO SECTION 520 AND NEW CULVERT PIPES WITH TRANSITION DETAIL FOR PIPE INSTALLATION

PAVEMENT AT CULVERT REPLACEMENTS

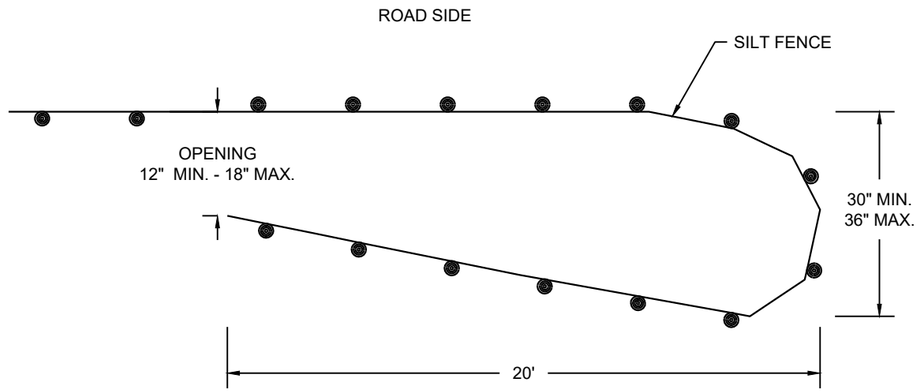




SECTION VIEW

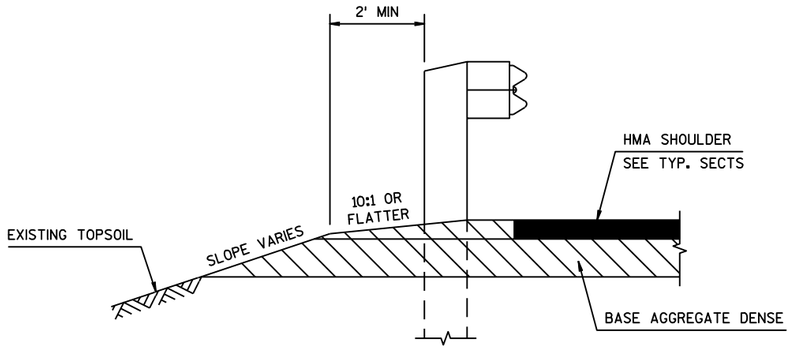
CONCRETE CURB PRECAST

NOTE:
A COMMERCIALLY AVAILABLE PRODUCT OF SIMILAR DIMENSIONS MAY BE SUBSTITUTED

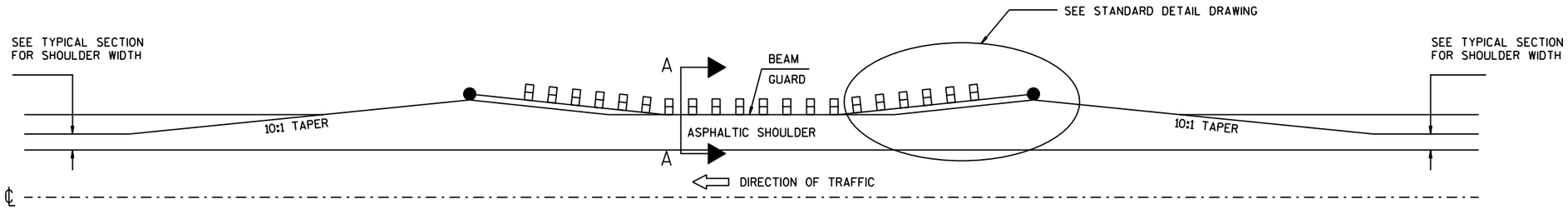


NOTE:
TURTLE TURNAROUNDS ARE INSTALLED TO REDIRECT TURTLES AWAY FROM THE CONSTRUCTION ZONE.
POSITION SILT FENCE POSTS PRIOR TO THE TURNAROUND PER SDD 8E9 SILT FENCE.
POSITION TURNAROUND AREA POSTS ON THE OUTSIDE OF THE TURNAROUND.

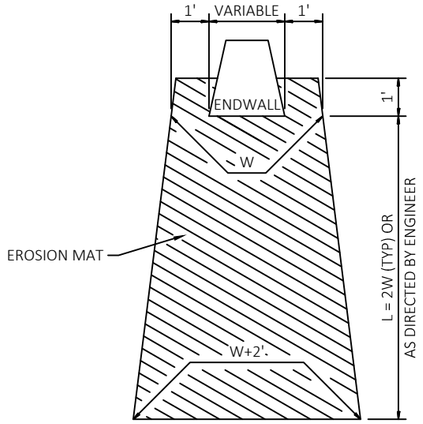
TURTLE TURNAROUND



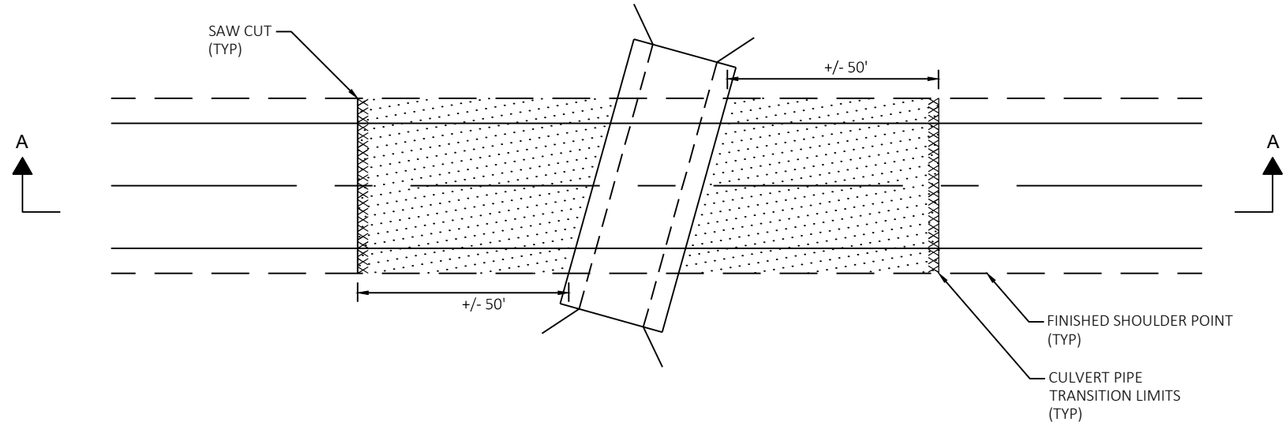
SECTION A-A

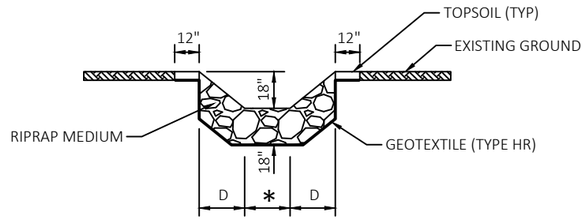


DETAIL FOR ASPHALTIC SHOULDER AT GUARDRAIL

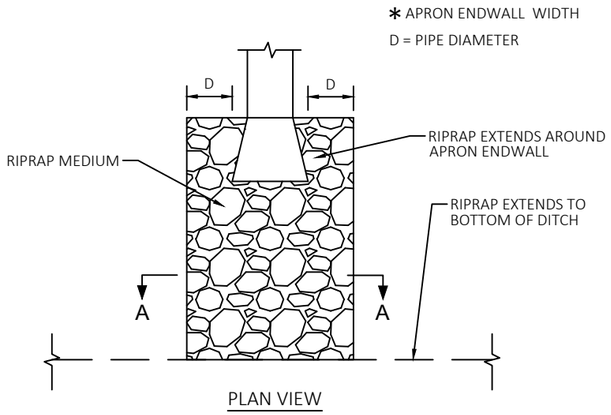


EROSION MAT TREATMENT AT CULVERTS





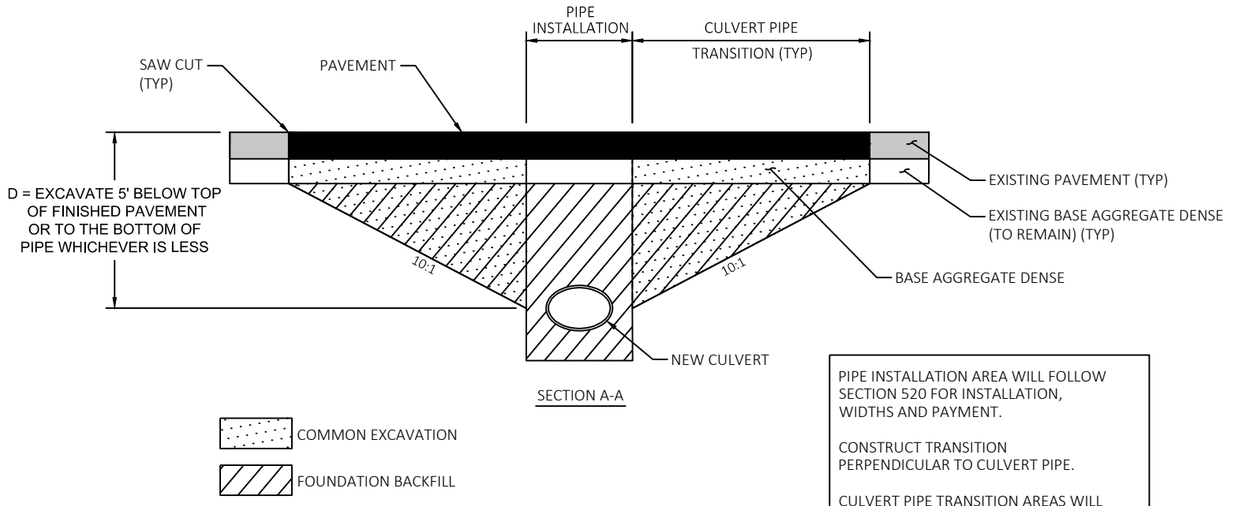
SECTION A-A



PLAN VIEW

RIPRAP TREATMENT AT CULVERT OUTFALLS

STA 580+10, STA 585+30



SECTION A-A

COMMON EXCAVATION

FOUNDATION BACKFILL

PIPE INSTALLATION AREA WILL FOLLOW SECTION 520 FOR INSTALLATION, WIDTHS AND PAYMENT.

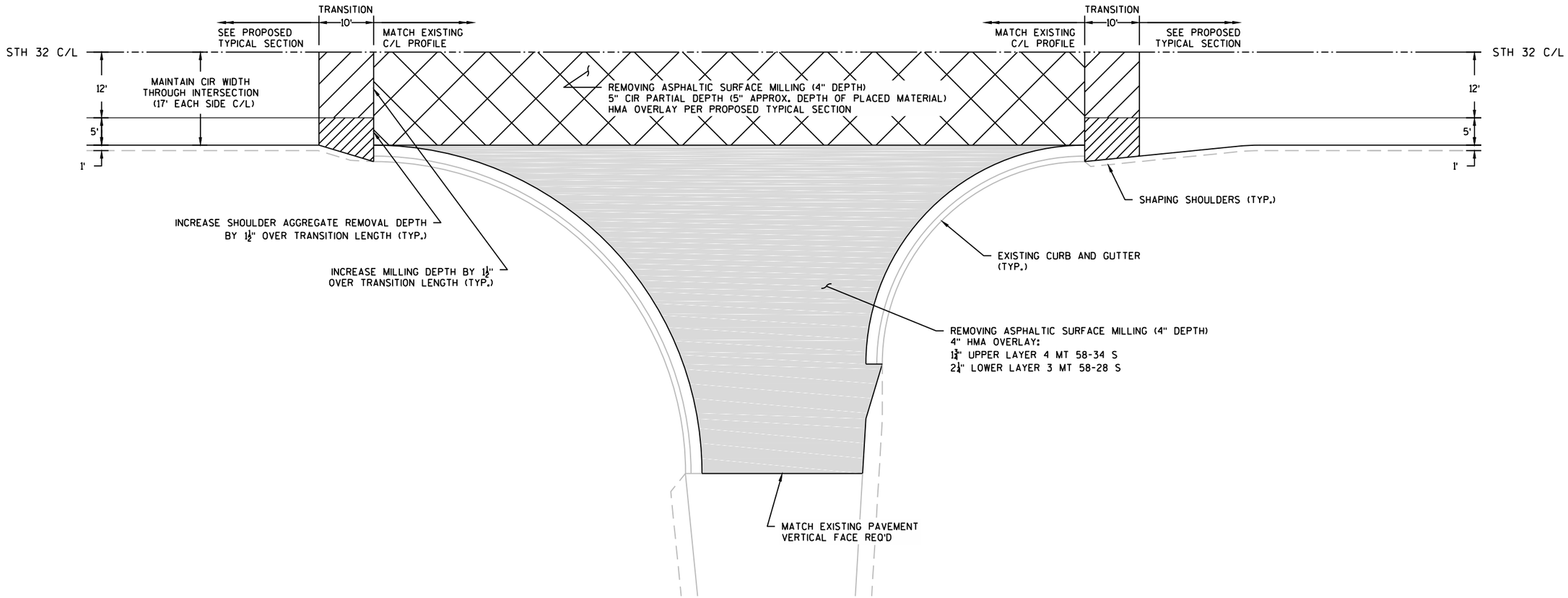
CONSTRUCT TRANSITION PERPENDICULAR TO CULVERT PIPE.

CULVERT PIPE TRANSITION AREAS WILL BE PAID BY COMMON EXCAVATION & SPV FOUNDATION BACKFILL.

PAVEMENT SAW CUT TO BE PERPENDICULAR TO ROADWAY ALIGNMENT.

NEW CULVERT PIPES WITH TRANSITION

STA 678+50 STH 32



INTERSECTION MILLING & PAVING DETAIL

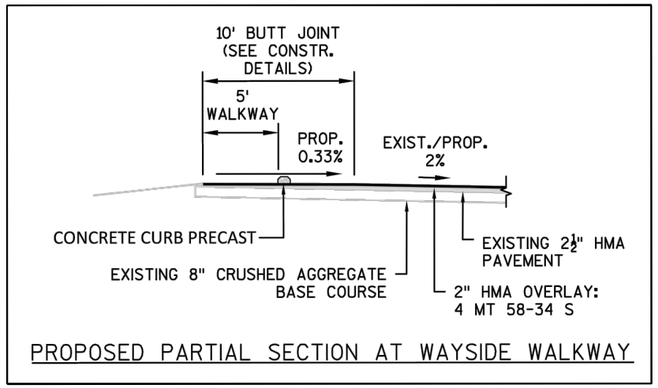
(ALL TYPE 'D')

MORGAN MARSH ROAD
MORGAN RIVER ROAD
CHURCH ROAD/CCC ROAD
SHAWANO LINE ROAD/CTH CC
ROSE ROAD
SANDY CORNERS ROAD
GRAY LAKE ROAD (WEST AND EAST)
MILWAUKEE LANE
DEER DRIVE/SOUTH CHASE ROAD

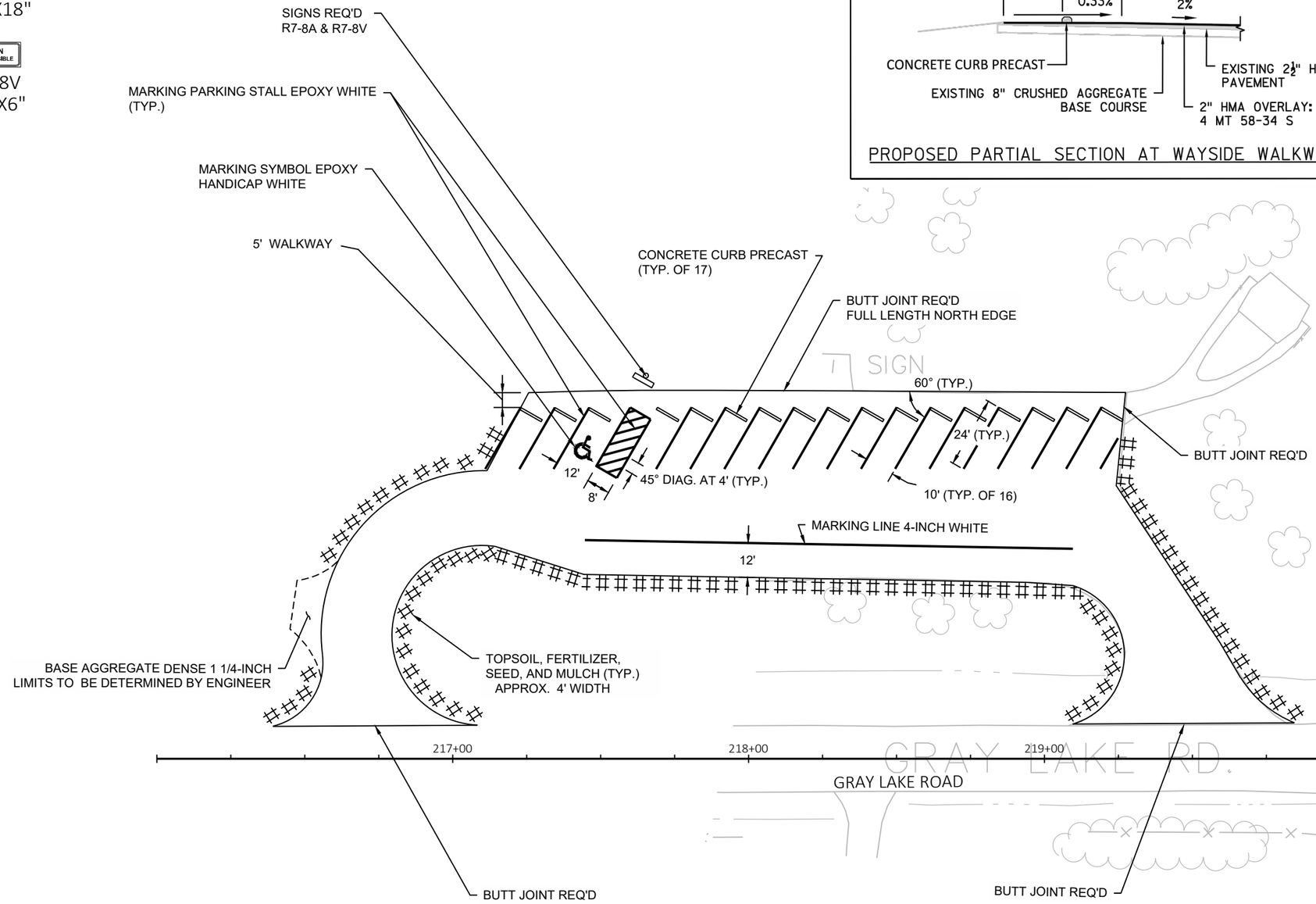
R7-8A
12"X18"

R7-8V
12"X6"

NOTE:
VAN ACCESSIBLE STALL (STRIPED AS "NO PARKING") ADJACENT TO HANDICAP STALL DOES NOT RECEIVE CONCRETE CURB PRECAST.



PROPOSED PARTIAL SECTION AT WAYSIDE WALKWAY



2

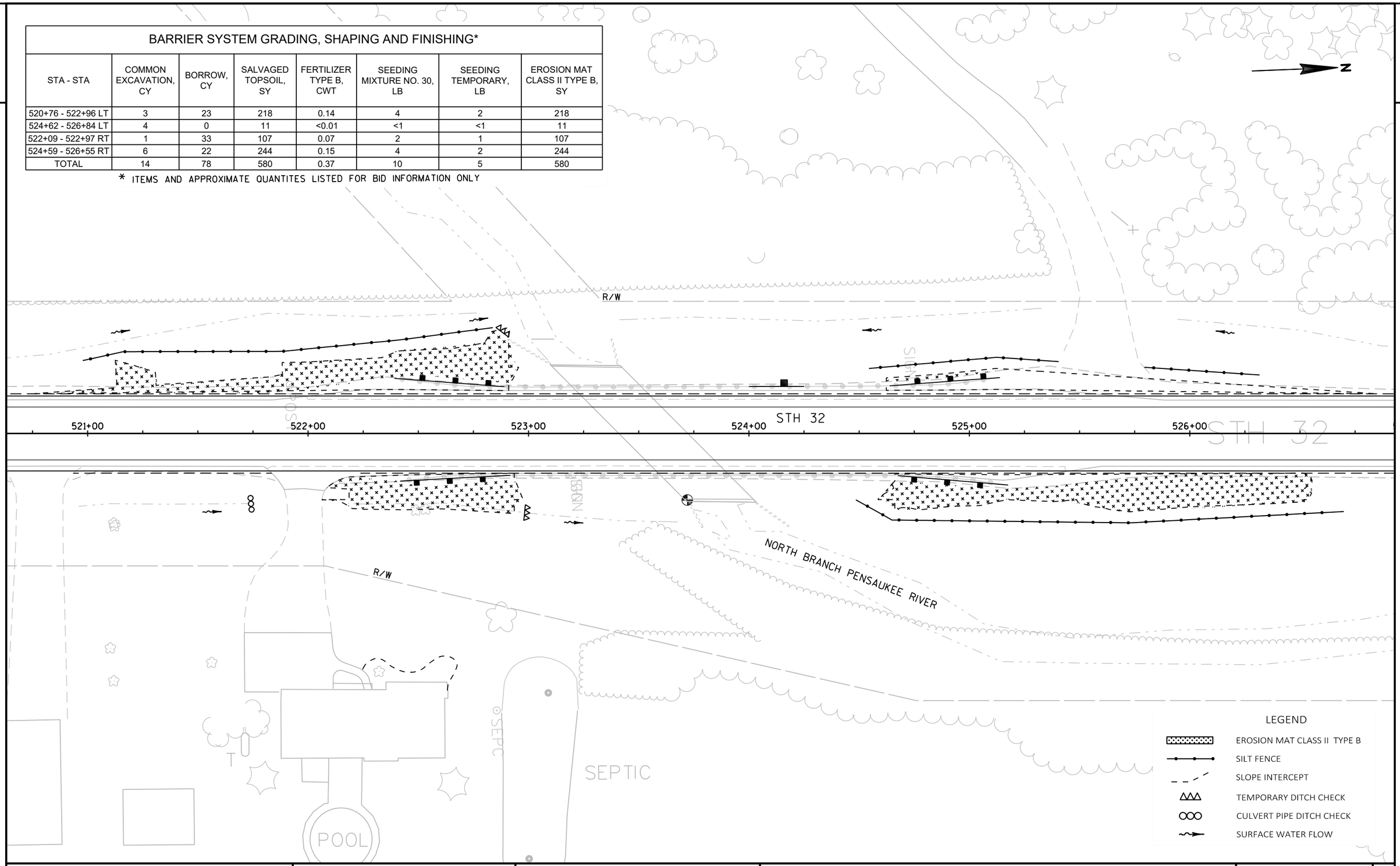
PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	PLAN DETAIL - GRAY LAKE RD WAYSIDE	SHEET 14	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 021201_pd
PLOT DATE : 3/19/2021 7:17 AM
PLOT BY : SPIELMACHER, JOHN P
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

BARRIER SYSTEM GRADING, SHAPING AND FINISHING*

STA - STA	COMMON EXCAVATION, CY	BORROW, CY	SALVAGED TOPSOIL, SY	FERTILIZER TYPE B, CWT	SEEDING MIXTURE NO. 30, LB	SEEDING TEMPORARY, LB	EROSION MAT CLASS II TYPE B, SY
520+76 - 522+96 LT	3	23	218	0.14	4	2	218
524+62 - 526+84 LT	4	0	11	<0.01	<1	<1	11
522+09 - 522+97 RT	1	33	107	0.07	2	1	107
524+59 - 526+55 RT	6	22	244	0.15	4	2	244
TOTAL	14	78	580	0.37	10	5	580

* ITEMS AND APPROXIMATE QUANTITES LISTED FOR BID INFORMATION ONLY



2

2

N

R/W

STH 32

580+00 581+00 582+00 583+00 584+00 585+00

RIP RAP TREATMENT
AT ENDWALL STA 580+10 RT
SEE CONSTRUCTION DETAILS

R/W

RIP RAP TREATMENT
AT ENDWALL STA 585+30 RT
SEE CONSTRUCTION DETAILS

W

W

T

LEGEND

- EROSION MAT CLASS II TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- TEMPORARY DITCH CHECK
- CULVERT PIPE DITCH CHECK
- SURFACE WATER FLOW

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	EROSION CONTROL STA 580+00 - STA 585+00	SHEET 16	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022004-ec

PLOT DATE : 3/11/2019 11:10 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

R/W

STH 32

STH 32

600+00 601+00 602+00 603+00 604+00 605+00 606+00

R/W

LEGEND

- EROSION MAT CLASS II TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- TEMPORARY DITCH CHECK
- CULVERT PIPE DITCH CHECK
- SURFACE WATER FLOW

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	EROSION CONTROL STA 600+00 - STA 606+00	SHEET 17	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022005-ec

PLOT DATE : 3/11/2019 11:10 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

513+00 STH 32 514+00 515+00 STH 32 516+00 517+00 518+00

MORGAN RIVER RD

167+00

R/W

R/W

SIGNS

LEGEND

- EROSION MAT CLASS II TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- TEMPORARY DITCH CHECK
- CULVERT PIPE DITCH CHECK
- SURFACE WATER FLOW

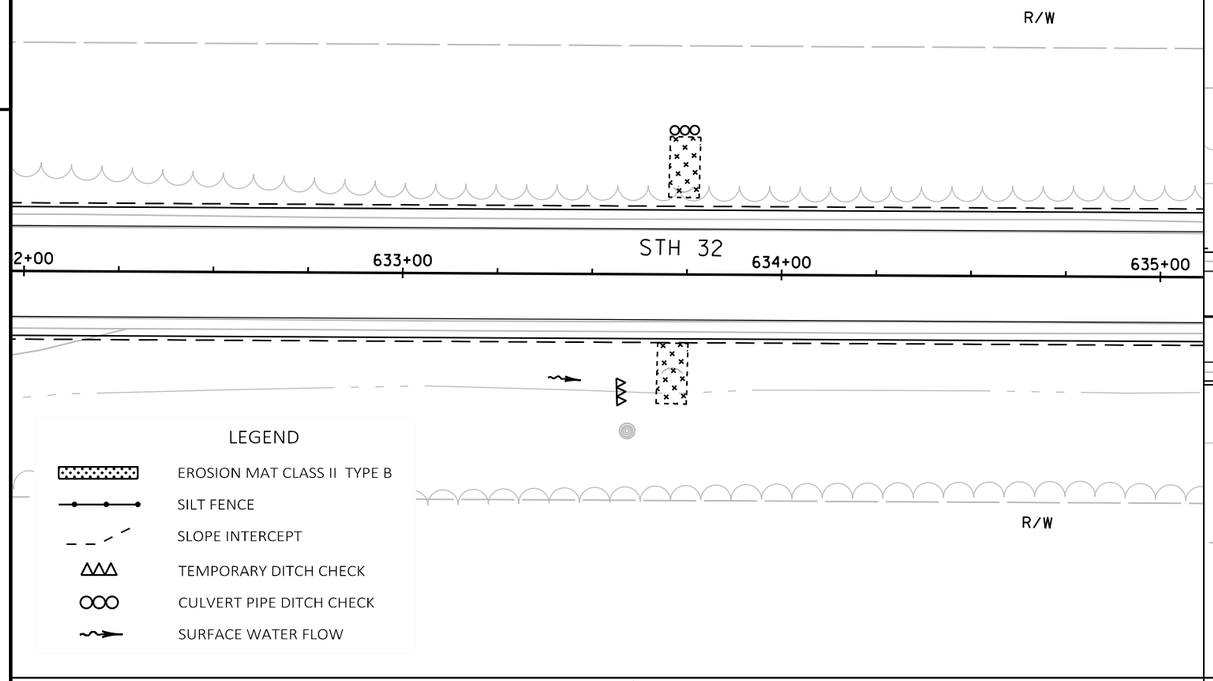
R/W

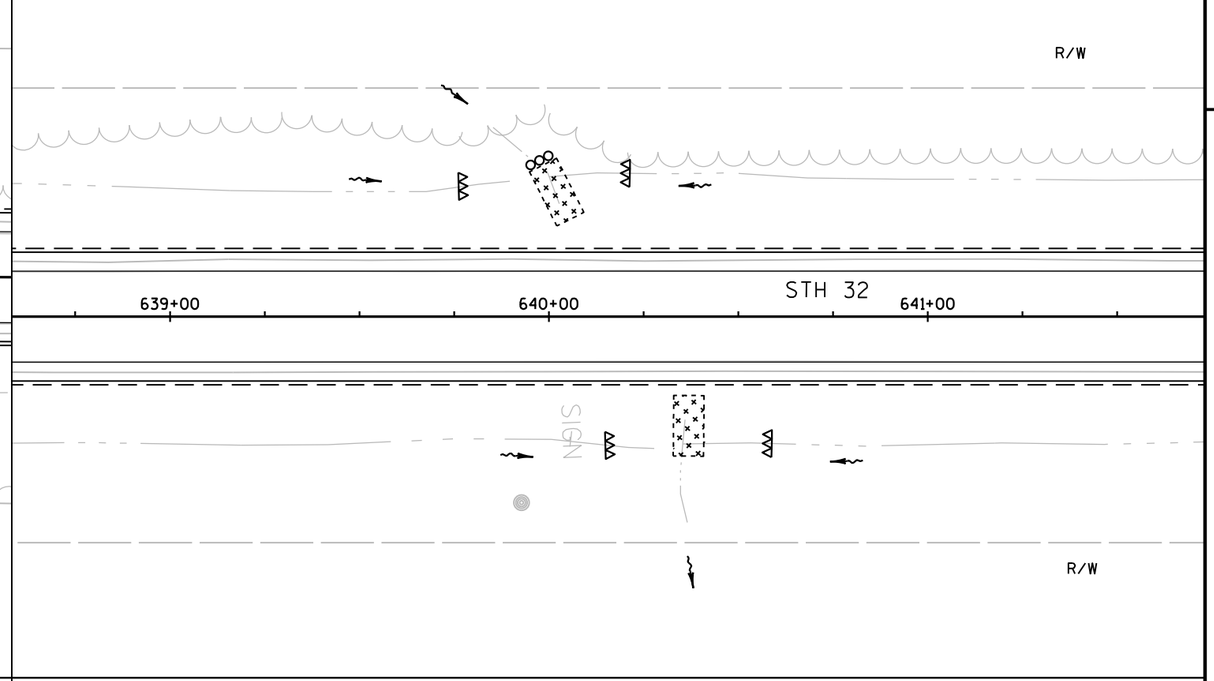
0 617+00 618+00 619+00 620+00 621+00 STH 32 622+00

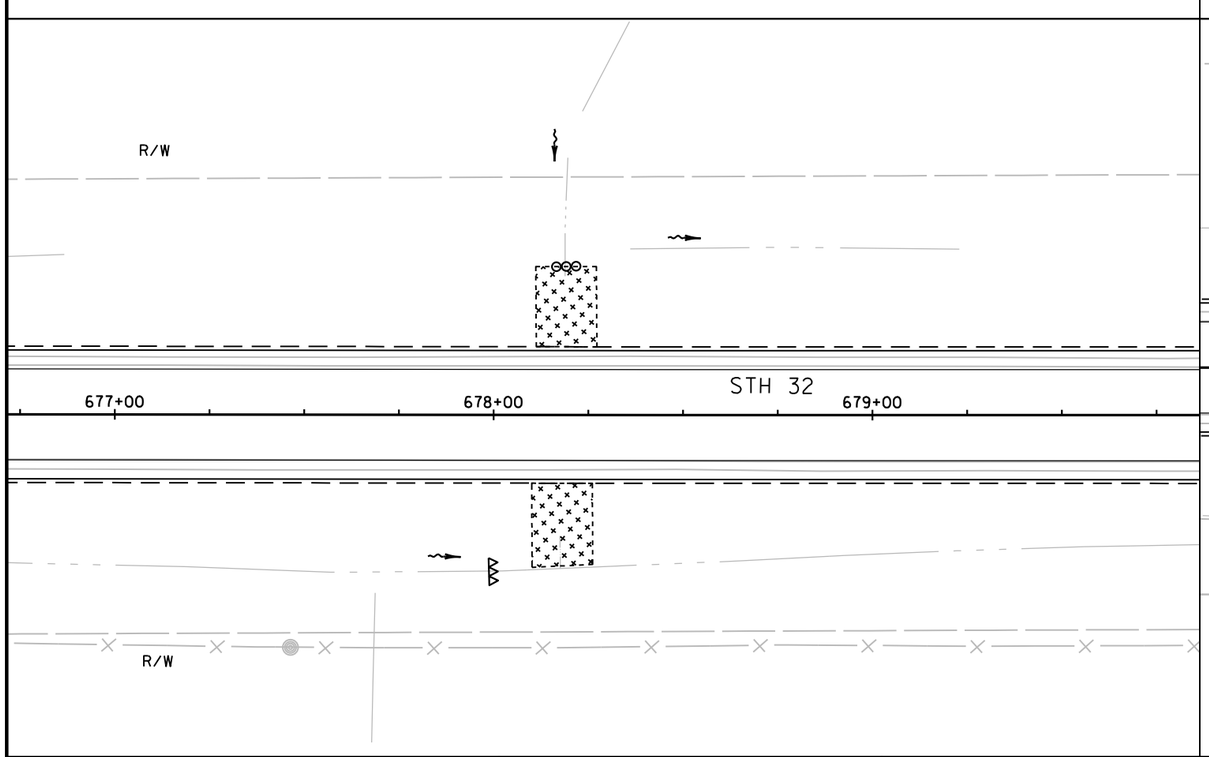
R/W

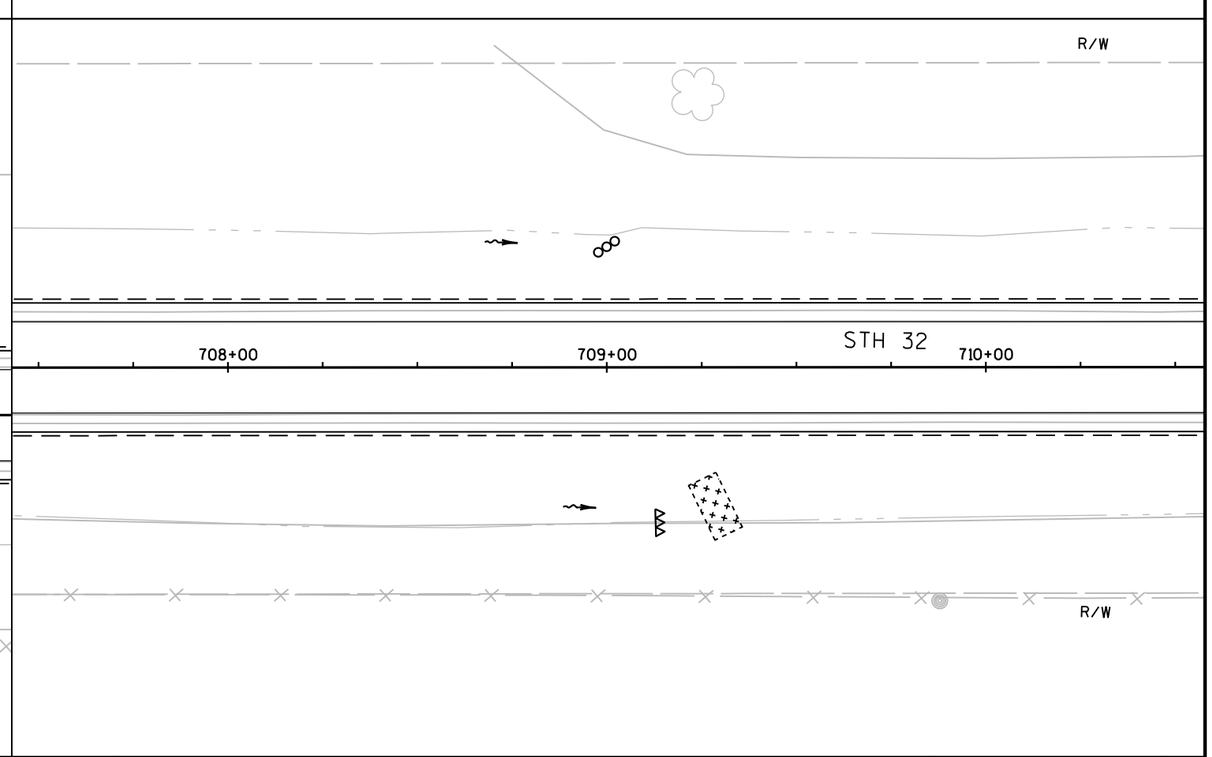
PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	EROSION CONTROL STA 513+00 - STA 622+00	SHEET 18	E

2









2

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	EROSION CONTROL STA 632+00 - STA 710+00	SHEET 19	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022011-ec

PLOT DATE : 3/11/2019 11:11 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 42

9190-27-71

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	4.000	4.000
0004	204.0110	Removing Asphaltic Surface	SY	166.000	166.000
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	951.000	951.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	121,877.000	121,877.000
0012	204.9060.S	Removing (item description) 01. Apron Endwalls	EACH	5.000	5.000
0014	204.9060.S	Removing (item description) 02. Parking Blocks	EACH	18.000	18.000
0016	205.0100	Excavation Common	CY	293.000	293.000
0020	211.0100	Prepare Foundation for Asphaltic Paving (project) 02. 9190-27-71	LS	1.000	1.000
0022	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	714.000	714.000
0026	211.0700.S	Prepare Foundation for CIR Base Layer (project) 02. 9190-27-71	EACH	1.000	1.000
0028	211.0800.S	Base Repair for CIR Layer	CY	500.000	500.000
0032	213.0100	Finishing Roadway (project) 02. 9190-27-71	EACH	1.000	1.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	870.000	870.000
0036	305.0504.S	Hauling Excess Shoulder Material	CY	200.000	200.000
0038	327.1000.S	CIR Asphaltic Base Layer	SY	133,567.000	133,567.000
0040	455.0605	Tack Coat	GAL	19,403.000	19,403.000
0042	455.0770.S	Asphalt Stabilizing Agent	TON	668.000	668.000
0044	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	2.000	2.000
0046	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	2.000	2.000
0048	460.2005	Incentive Density PWL HMA Pavement	DOL	21,685.000	21,685.000
0050	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	28,241.000	28,241.000
0052	460.2010	Incentive Air Voids HMA Pavement	DOL	33,520.000	33,520.000
0054	460.6223	HMA Pavement 3 MT 58-28 S	TON	18,660.000	18,660.000
0056	460.6244	HMA Pavement 4 MT 58-34 S	TON	14,860.000	14,860.000
0058	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	27.000	27.000
0062	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	63,885.000	63,885.000
0064	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	31,323.000	31,323.000
0068	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	4.000	4.000
0070	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	2.000	2.000
0074	520.3524	Culvert Pipe Class III-B 24-Inch	LF	202.000	202.000
0076	520.3530	Culvert Pipe Class III-B 30-Inch	LF	66.000	66.000
0084	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	10.000	10.000
0088	521.3124	Culvert Pipe Corrugated Steel 24-Inch	LF	10.000	10.000
0098	601.0199.S	Concrete Curb Precast	EACH	17.000	17.000
0102	606.0200	Riprap Medium	CY	5.000	5.000
0104	614.0010	Barrier System Grading Shaping Finishing	EACH	4.000	4.000
0106	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	4.000	4.000
0108	614.0400	Adjusting Steel Plate Beam Guard	LF	328.000	328.000

9190-27-71

Line	Item	Item Description	Unit	Total	Qty
0110	614.0951	Replacing Guardrail Rail and Hardware	LF	25.000	25.000
0114	618.0100	Maintenance And Repair of Haul Roads (project) 02. 9190-27-71	EACH	1.000	1.000
0116	619.1000	Mobilization	EACH	0.500	0.500
0118	624.0100	Water	MGAL	9.000	9.000
0120	625.0100	Topsoil	SY	375.000	375.000
0122	625.0500	Salvaged Topsoil	SY	656.000	656.000
0124	627.0200	Mulching	SY	375.000	375.000
0126	628.1504	Silt Fence	LF	825.000	825.000
0128	628.1520	Silt Fence Maintenance	LF	825.000	825.000
0130	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0132	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0134	628.2023	Erosion Mat Class II Type B	SY	619.000	619.000
0136	628.7504	Temporary Ditch Checks	LF	181.000	181.000
0138	628.7555	Culvert Pipe Checks	EACH	54.000	54.000
0140	629.0210	Fertilizer Type B	CWT	0.650	0.650
0142	630.0120	Seeding Mixture No. 20	LB	10.000	10.000
0144	630.0130	Seeding Mixture No. 30	LB	12.000	12.000
0146	630.0500	Seed Water	MGAL	21.000	21.000
0148	633.5200	Markers Culvert End	EACH	16.000	16.000
0150	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	1.000	1.000
0152	637.2210	Signs Type II Reflective H	SF	2.000	2.000
0154	642.5001	Field Office Type B	EACH	0.500	0.500
0156	643.0300	Traffic Control Drums	DAY	112.000	112.000
0158	643.0900	Traffic Control Signs	DAY	1,800.000	1,800.000
0160	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0162	643.5000	Traffic Control	EACH	0.500	0.500
0164	645.0120	Geotextile Type HR	SY	8.000	8.000
0166	646.1020	Marking Line Epoxy 4-Inch	LF	15,255.000	15,255.000
0168	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	70,712.000	70,712.000
0170	646.3040	Marking Line Grooved Wet Ref Epoxy 8-Inch	LF	115.000	115.000
0172	646.5220	Marking Symbol Epoxy	EACH	1.000	1.000
0174	646.8320	Marking Parking Stall Epoxy	LF	535.000	535.000
0176	649.0105	Temporary Marking Line Paint 4-Inch	LF	11,462.000	11,462.000
0178	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	8,634.000	8,634.000
0182	650.6000	Construction Staking Pipe Culverts	EACH	4.000	4.000
0184	650.8000	Construction Staking Resurfacing Reference	LF	35,301.000	35,301.000
0188	650.9910	Construction Staking Supplemental Control (project) 02. 9190-27-71	LS	1.000	1.000
0190	690.0150	Sawing Asphalt	LF	437.000	437.000

9190-27-71

Line	Item	Item Description	Unit	Total	Qty
0192	740.0440	Incentive IRI Ride	DOL	13,372.000	13,372.000
0198	SPV.0035	Special 01. Foundation Backfill	CY	162.000	162.000

3

REMOVING SMALL PIPE CULVERTS AND APRON ENDWALLS

STATION	LOCATION		203.0100 REMOVING SMALL PIPE CULVERTS EACH	206.9060.S.01 REMOVING APRON ENDWALLS EACH	690.0150 SAWING ASPHALT LF	PIPE SIZE/ TYPE	EXIST ENDWALL TYPE	REMARKS
515+20	STH 32	RT	---	2	---	24-INCH CPCM	METAL	MORGAN RIVER RD
579+75	STH 32		1	---	60	24-INCH CPCM	METAL	---
585+05	STH 32		1	---	60	24-INCH CPCM	METAL	---
601+58	STH 32		---	---	---	24-INCH CPCM	NONE	INFO ONLY
620+94	STH 32	RT	1	---	---	24-INCH CPCM	CONC. MASONRY	1 - 10' SECTION RT
633+73	STH 32		---	2	---	24-INCH CPCM	CONC. MASONRY	---
640+20	STH 32		---	---	---	24-INCH CPCM	NONE	INFO ONLY
678+50	STH 32		1	---	60	30-INCH CPCM	CONC. MASONRY	---
709+02	STH 32	RT	---	1	---	24-INCH CPCM	METAL	ENDWALL RT ONLY
	TOTAL		4	5	180			

ASPHALTIC DRIVEWAYS

STATION	LT/RT	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	690.0150 SAWING ASPHALT LF	DWY
520+75	RT	STH 32	16	3	25	PE
522+00	RT	STH 32	17	3	25	PE
543+50	RT	STH 32	28	5	44	PE
656+75	LT	STH 32	15	2	24	PE
662+60	RT	STH 32	15	2	24	PE
724+25	RT	STH 32	41	7	66	CE
727+00	RT	STH 32	19	3	28	CE
750+00	RT	STH 32	17	3	21	CE
		TOTAL	166	27	257	

MATCH EXISTING ASPHALT THICKNESS (3" ASSUMED FOR QUANTITY CALCULATIONS)
SAWCUT 5' BEYOND SHOULDER OR AS DIRECTED BY ENGINEER

PREPARE FOUNDATION FOR ASPHALTIC PAVING 9190-27-71

STATION(S)	LOCATION	211.0100 LS
438+77 - 794+31	STH 32 INTERSECTIONS & GRAY LAKE WAYSIDE	1
	TOTAL	1

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

STATION(S)	LOCATION	211.0400 STA
438+77 - 794+31	STH 32	714
	TOTAL	714

BASE REPAIR FOR CIR PAVEMENT

LOCATION	211.0800.S CY	REMARKS
PROJECT	500	UNDISTRIBUTED
TOTAL	500	

REMOVING ASPHALTIC SURFACE SUMMARY - ROADWAY & WAYSIDE

STATION	TO	STATION	LOCATION	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING LANES SY	SHOULDERS SY	INTERSECTIONS SY	REMARKS
438+77	-	93+54	STH 32	133	---	---	---	BEGIN PROJECT
489+35	-	123+65	STH 32	5	13,488	3,372	327	MORGAN MARSH RD
515+32	-	146+56	STH 32	5	6,925	1,731	322	MORGAN RIVER RD
594+49	-	199+56	STH 32	11	21,112	5,278	654	CHURCH RD / CCC RD
646+68	-	252+54	STH 32	11	13,917	3,479	658	SHAWANO LINE RD / CTH CC
699+36	-	283+60	STH 32	11	14,048	3,512	659	ROSE RD (W)/(E)
725+74	-	299+25	STH 32	11	7,035	1,759	469	SANDY CORNERS RD (W)/(E)
748+20	-	316+06	STH 32	5	5,989	1,497	305	GRAY LAKE RD (W)
749+23	-	317+71	STH 32	5	275	69	330	GRAY LAKE RD (E)
752+69	-	325+69	STH 32	133	923	231	---	B-42-126 BEGIN
754+67	-	333+19	STH 32	133	---	---	---	B-42-126 END
760+23	-	385+24	STH 32	5	1,483	371	299	MILWAUKEE LN
794+31	-	438+77	STH 32	133	9,088	2,272	----	END PROJECT
216+39	-	217+08	W GRAY LK RD LT	58	---	---	---	W WAYSIDE ENTRANCE
217+26	-	219+27	W GRAY LK RD LT	223	---	---	---	N WAYSIDE EDGE
219+10	-	219+84	W GRAY LK RD LT	67	---	---	---	E WAYSIDE ENTRANCE
				951	94,283	23,571	4,023	
				951		121,877		

WAYSIDE SIGNS AND PARKING BLOCK SUMMARY

LOCATION	SIGN CODE	W X H	204.9060.S.02 REMOVING PARKING BLOCKS EACH	601.0199.S PARKING BLOCK CONCRETE EACH	634.0612 POSTS WOOD 4X6-INCH X 12-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	REMARKS
WAYSIDE	R7-8A	12" X 18"	---	---	1	1.5	FACES HANDICAP STALL
WAYSIDE	R7-8V	12" X 6"	---	---	---	0.5	MOUNT BELOW R7-8A
WAYSIDE	---	---	18	17	---	---	NO BLOCK WHERE STRIPED NO PARKING
TOTAL			18	17	1	2.0	

BASE AGGREGATE SUMMARY

STATION(S)	LOCATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0504.S HAULING EXCESS SHOULDER MATERIAL CY	624.0100 WATER MGAL	REMARKS
579+75	STH 32	290	---	3	CULVERT REPLACEMENT
585+05	STH 32	310	---	3	CULVERT REPLACEMENT
678+50	STH 32	270	---	3	CULVERT REPLACEMENT
438+77 - 794+31	STH 32	---	100	---	GRAVEL CEs, FEs, PEs (61 TOTAL)
749+73 - 752+42	STH 32	---	---	---	B-42-126 APPROACH
754+95 - 758+14	STH 32	---	---	---	B-42-126 APPROACH
---	GRAY LAKE RD	---	100	---	WAYSIDE
	TOTAL	870	200	9	

ALL ITEMS CATEGORY 0010

3

HMA SUMMARY - ROADWAY & WAYSIDE

STATION	TO	STATION	LOCATION	327.1000.S CIR ASPHALT BASE LAYER SY	455.0605 TACK COAT GAL	455.0770.S ASPHALT STABILIZING AGENT TON	460.6223 HMA PAVEMENT 3 MT 58-28 S TON	460.6244 HMA PAVEMENT 4 MT 58-34 S TON	REMARKS
438+77	-	489+35	STH 32	19,108	2,675	96	2,556	2,030	---
489+35	-	515+32	STH 32	9,811	1,419	49	1,356	1,077	STA'S INCL. MORGAN MARSH RD INT.
515+32	-	594+49	STH 32	29,909	4,232	150	4,043	3,212	STA'S INCL. MORGAN RIVER RD INT.
594+49	-	646+68	STH 32	19,716	2,852	99	2,724	2,164	STA'S INCL. CHURCH RD / CCC RD INTS.
646+68	-	699+36	STH 32	19,901	2,878	100	2,750	2,184	STA'S INCL. SHAWANO LINE RD / CTH CC INT.
699+36	-	725+74	STH 32	9,966	1,487	50	1,421	1,129	STA'S INCL. ROSE RD INTS.
725+74	-	748+20	STH 32	8,485	1,253	42	1,198	951	STA'S INCL. SANDY CORNERS RD INTS.
748+20	-	749+23	STH 32	389	97	2	93	74	STA'S INCL. GRAY LAKE RD (W) INT.
749+23	-	752+69	STH 32	1,307	229	7	219	174	STA'S INCL. GRAY LAKE RD (E) INT.
752+69	-	754+67	STH 32	---	---	---	---	---	B-42-126
754+67	-	760+23	STH 32	2,100	294	11	281	223	---
760+23	-	794+31	STH 32	12,875	1,844	64	1,762	1,400	STA'S INCL. MILWAUKEE LN INTS.
---	-	---	VAR.	---	---	---	258	---	CROSS CULVERT REPLACEMENTS
216+39	-	219+84	V GRAY LK RD L	---	141	---	---	241	WAYSIDE
			TOTAL	133,567	19,403	668	18,660	14,860	

ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL

465.0425 TYPE 1 - LT

STATION	TO	STATION	LOCATION	LF
439+53	-	447+21	STH 32	768
448+05	-	449+70	STH 32	165
451+73	-	473+83	STH 32	2,210
474+94	-	495+87	STH 32	2,093
496+90	-	502+28	STH 32	538
503+16	-	510+67	STH 32	751
511+64	-	525+11	STH 32	1,347
526+07	-	529+49	STH 32	342
530+33	-	533+09	STH 32	276
534+01	-	536+86	STH 32	285
538+87	-	567+64	STH 32	2,877
568+51	-	593+04	STH 32	2,453
595+44	-	596+32	STH 32	88
597+10	-	645+20	STH 32	4,810
647+44	-	656+37	STH 32	893
657+21	-	686+17	STH 32	2,896
687+13	-	697+90	STH 32	1,077
700+13	-	724+23	STH 32	2,410
726+95	-	729+81	STH 32	286
730+88	-	739+68	STH 32	880
740+68	-	746+70	STH 32	602
749+35	-	752+17	STH 32	282
755+20	-	794+31	STH 32	3,911
			SUBTOTAL	32,240
			TOTAL	63,885

465.0425 TYPE 1 - RT

STATION	TO	STATION	LOCATION	LF
439+53	-	488+19	STH 32	4,866
490+83	-	499+20	STH 32	837
500+10	-	503+17	STH 32	307
504+10	-	514+16	STH 32	1,006
516+79	-	520+36	STH 32	357
522+46	-	532+35	STH 32	989
533+35	-	542+90	STH 32	955
543+98	-	566+58	STH 32	2,260
567+50	-	582+05	STH 32	1,455
582+87	-	593+47	STH 32	1,060
59629	-	62670.00	STH 32	3,041
62763	-	64594.00	STH 32	1,831
64843	-	66218.00	STH 32	1,375
66300	-	69121.00	STH 32	2,821
69215	-	69862.00	STH 32	647
700+87	-	719+79	STH 32	1,892
720+52	-	722+83	STH 32	231
727+79	-	748+03	STH 32	2,024
755+20	-	759+16	STH 32	396
761+36	-	794+31	STH 32	3,295
			SUBTOTAL	31,645

PWL MIXTURE TABLE

THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT:

LOCATION	STATION	BID ITEM	MIXTURE USE:	UNDERLYING SURFACE:	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12 FOOT DRIVING LANE	438+77 - 749+73, 758+14 - 794+31	4 MT 58-34 S	UPPER LAYER	3 MT 58-28 S	9,800	1 3/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
12 FOOT DRIVING LANE	438+77 - 749+73, 758+14 - 794+31	3 MT 58-28 S	LOWER LAYER	CIR PAVEMENT	12,400	2 1/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
5 FOOT SHOULDER	438+77 - 749+73, 758+14 - 794+31	4 MT 58-34 S	UPPER LAYER	3 MT 58-28 S	4,100	1 3/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
5 FOOT SHOULDER	438+77 - 749+73, 758+14 - 794+31	3 MT 58-28 S	LOWER LAYER	CIR PAVEMENT	5,200	2 1/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
VAR. 3-8' SHOULDER	749+73 - 752+42, 754+95 - 758+14	4 MT 58-34 S	UPPER LAYER	3 MT 58-28 S	500	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
VAR. 0-2' SHOULDER	749+73 - 752+42, 754+95 - 758+14	3 MT 58-28 S	LOWER LAYER	CIR PAVEMENT	260	VAR. 0-4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
INTERSECTIONS	VAR.	4 MT 58-34 S	UPPER LAYER	3 MT 58-28 S	430	1 3/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
INTERSECTIONS	VAR.	3 MT 58-28 S	LOWER LAYER	MILED EXIST. HMA SURFACE	540	2 1/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
WAYSIDE	716+39 - 719+84 LT GRAY LAKE ROAD	4 MT 58-34 S	UPPER LAYER	MILED EXIST. HMA SURFACE	240	2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE
CULVERT REPLACEMENTS	VAR.	3 MT 58-28 S	LOWER LAYER	BASE AGGREGATE	260	4 1/2"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE BY ORDINARY COMPACTION; NOT ELIGIBLE FOR INCENTIVE OR DISINCENTIVE

ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE

465.0475

STATION	TO	STATION	LOCATION	LF
439+28	-	449+50	STH 32	1,022
451+50	-	487+35	STH 32	3,585
491+35	-	513+32	STH 32	2,197
517+32	-	536+60	STH 32	1,928
538+60	-	592+49	STH 32	5,389
596+49	-	644+68	STH 32	4,819
648+68	-	697+36	STH 32	4,868
701+36	-	723+25	STH 32	2,189
728+00	-	746+15	STH 32	1,815
755+20	-	758+22	STH 32	302
762+22	-	794+31	STH 32	3,209
			TOTAL	31,323

ALL ITEMS CATEGORY 0010

CULVERT PIPE SUMMARY

STATION	LOCATION		EXIST./ PROP'D INLET ELEV.	EXIST./ PROP'D DISCH. ELEV.	EXIST./ PROP'D SLOPE	205.0100 EXCAVATION COMMON CY	520.1024 AEW FOR CP 24-INCH EACH	520.1030 AEW FOR CP 30-INCH EACH	520.3524 CP CLASS III-B 24-INCH LF	520.3530 CP CLASS III-B 30-INCH LF	521.1024 AEW FOR CP STEEL 24-INCH EACH	521.3124 CP CORRUGATED STEEL 24-INCH LF	633.5200 MARKERS CULVERT END EACH	SPV.0035.01 FOUNDATION BACKFILL CY	REMARKS
515+20	STH 32	RT	---	---	---						2		2		MORGAN RIVER RD
579+75	STH 32		789.62	788.05	1.51%		2		104				2		
585+05	STH 32		784.24	781.32	2.97%		2		98				2		
601+58	STH 32		---	---	---						2		2		
620+94	STH 32	RT	786.27	785.65	1.00%						1	10	1		1 - 10' SECTION RT
633+73	STH 32		---	---	---						2		2		
640+20	STH 32		---	---	---						2		2		
678+50	STH 32		796.27	796.08	0.30%	293		2		66			2	162	
709+02	STH 32		---	---	---						1		1		
					TOTAL	293	4	2	202	66	10	10	16	162	

FINISHING SUMMARY

STATION	LOCATION	606.0100 RIPRAP MEDIUM CY	625.0100 TOPSOIL SY	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	628.2023 EROSION MAT CLASS II TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEED MIX NO. 20 LB	630.0130 SEED MIX NO. 30 LB	630.0500 SEED WATER MGAL	645.0120 GEOTEXTILE TYPE HR SY	REMARKS
515+20	STH 32	---	---	30	---	30	0.02	---	0.5	0.7	---	
579+75	STH 32	2.5	---	115	---	115	0.1	---	2.1	2.6	4	
585+05	STH 32	2.5	---	115	---	115	0.1	---	2.1	2.6	4	
601+58	STH 32	---	---	30	---	30	0.0	---	0.5	0.7	---	
620+94	STH 32	---	---	55	---	55	0.0	---	1.0	1.2	---	
633+73	STH 32	---	---	30	---	30	0.0	---	0.5	0.7	---	
640+20	STH 32	---	---	60	---	30	0.0	---	1.1	1.3	---	
678+50	STH 32	---	---	60	---	60	0.0	---	1.1	1.3	---	
709+02	STH 32	---	---	30	---	30	0.0	---	0.5	0.7	---	
---	W GRAY LAKE RD	---	300	---	300	---	0.2	8	---	6.7	---	WAYSIDE
---	UNDISTRIBUTED	---	75	131	75	124	0.13	2	2	3	---	
	TOTALS	5	375	656	375	619	0.65	10	12	21	8	

BEAM GUARD SUMMARY

STATION			LOCATION	614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING* EACH	614.0370 STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL EACH	614.0400 ADJUSTING STEEL PLATE BEAM GUARD LF	614.0951 REPLACING GUARDRAIL RAIL AND HARDWARE LF	REMARKS
520+76	-	522+96	STH 32 LT	1	1	---	---	
522+96	-	524+62	STH 32 LT	---	---	166	---	
524+00	-	524+25	STH 32 LT	---	---	---	25	DAMAGED RAIL
524+62	-	526+84	STH 32 LT	1	1	---	---	
522+09	-	522+97	STH 32 RT	1	1	---	---	
522+97	-	524+59	STH 32 RT	---	---	162	---	
524+59	-	526+55	STH 32 RT	1	1	---	---	
			TOTAL	4	4	328	25	

ALL ITEMS CATEGORY 0010

*ESTIMATED QUANTITES FOR ITEM 614.0100 LISTED ON EROSION CONTROL PLAN SHEETS (FOR BID INFORMATION ONLY)

EROSION CONTROL

STATION	LOCATION	628.1504 SILT FENCE DELIVERED LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1905 MOBILIZATIONS EMEGENCY EROSION CONTROL EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
514+50	STH 32	---	---	---	---	10	---
515+20	STH 32	---	---	---	---	15	4
520+76	STH 32	190	190	---	---	10	3
522+09	STH 32	---	---	---	---	10	---
524+59	STH 32	220	220	---	---	---	---
524+69	STH 32	140	140	---	---	---	---
579+75	STH 32	50	50	---	---	10	4
585+05	STH 32	60	60	---	---	10	4
601+58	STH 32	---	---	---	---	10	4
604+50	STH 32	---	---	---	---	10	4
620+94	STH 32	---	---	---	---	---	4
633+73	STH 32	---	---	---	---	10	4
640+20	STH 32	---	---	---	---	40	4
678+50	STH 32	---	---	---	---	10	4
709+02	STH 32	---	---	---	---	10	4
---	UNDISTRIBUTED	165	165	6	2	36	11
	TOTALS	**825**	**825**	**6**	**2**	**181**	**54**

TRAFFIC CONTROL SUMMARY

STH 32 STATION	LOCATION	APPROX. SERVICE PERIOD DAYS	643.0300 DRUMS NO. IN SERVICE	643.0300 DRUMS **DAYS**	643.0900 SIGNS NO. IN SERVICE	643.0900 SIGNS **DAYS**	643.1050 PCMS NO. IN SERVICE	643.1050 PCMS **DAYS**
438+77	S PROJECT LIMITS	7	---	---	---	---	1	7
438+77	CTH E / CTH E INT.	72	---	---	7	504	---	---
489+35	MORGAN MARSH RD	72	---	---	2	144	---	---
515+20	CULVERT WORK	1	8	8	---	---	---	---
515+32	MORGAN RIVER RD	72	---	---	1	72	---	---
515+20	CULVERT WORK	1	8	8	---	---	---	---
579+75	CULVERT REPLACEMENT	2	8	16	---	---	---	---
585+05	CULVERT REPLACEMENT	2	8	16	---	---	---	---
594+49	CHURCH RD / CCC RD	72	---	---	2	144	---	---
601+58	CULVERT WORK	1	8	8	---	---	---	---
620+94	CULVERT REPLACEMENT	2	8	16	---	---	---	---
633+73	CULVERT WORK	1	8	8	---	---	---	---
640+20	CULVERT WORK	1	8	8	---	---	---	---
646+68	SHAWANO LINE RD / CTH CC	72	---	---	2	144	---	---
678+50	CULVERT REPLACEMENT	2	8	16	---	---	---	---
699+36	ROSE RD (W)/(E)	72	---	----	1	72	---	---
709+02	CULVERT WORK	1	8	8	---	---	---	---
725+74	SANDY CORNERS RD (W)/(E)	72	---	---	2	144	---	---
748+20	GRAY LAKE RD (W)	72	---	---	1	72	---	---
749+23	GRAY LAKE RD (E)	72	---	---	1	72	---	---
760+23	MILWAUKEE LN	72	---	---	1	72	---	---
794+31	N PROJECT LIMITS	72	---	---	5	360	---	---
794+31	N PROJECT LIMITS	7	---	---	---	---	1	7
	TOTAL			**112**		**1,800**		**14**

ALL ITEMS CATEGORY 0010

3

PAVEMENT MARKING SUMMARY

STATION	TO	STATION	646.1020 MARKING LINE EPOXY 4-INCH YELLOW CENTERLINE SKIP LF	646.1020 MARKING LINE EPOXY 4-INCH YELLOW CENTERLINE SOLID LF	646.1020 MARKING LINE EPOXY 4-INCH WHITE EDGELINE SOLID LF	646.1040 MARKING LINE GROOOVED WET REF EPOXY 4-INCH WHITE EDGELINE SOLID LF	646.3040 MARKING LINE GROOOVED WET REF EPOXY 8-INCH WHITE CHANNELIZING SOLID LF	646.5220 MARKING SYMBOL EPOXY HANDICAP WHITE EACH	646.8320 MARKING PARKING STALL EPOXY WHITE LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH YELLOW CL SKIP LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH YELLOW CL SOLID LF	649.0120 TEMPORARY MARKING LINE EPOXY 4-INCH YELLOW CL SKIP LF	649.0120 TEMPORARY MARKING LINE EPOXY 4-INCH YELLOW CL SOLID LF	REMARKS
438+77	-	489+35	1,265	---	---	10,116	115	---	---	809	---	405	---	BEGIN PROJECT - MORGAN MARSH RD
489+35	-	515+32	649	---	---	5,194	---	---	---	416	---	208	---	MORGAN MARSH RD - MORGAN RIVER RD
515+32	-	594+49	1,979	---	---	15,834	---	---	---	1,267	---	633	---	MORGAN RIVER RD - CHURCH RD / CCC RD
594+49	-	646+68	1,305	---	---	10,438	---	---	---	835	---	418	---	CHURCH RD / CCC RD - SHAWANO LINE RD / CTH CC
646+68	-	699+36	1,317	---	---	10,536	---	---	---	843	---	421	---	SHAWANO LINE RD / CTH CC - ROSE RD (W)/(E)
699+36	-	725+74	660	---	---	5,276	---	---	---	422	---	211	---	ROSE RD (W)/(E) - SANDY CORNERS RD (W)/(E)
725+74	-	748+20	562	---	---	4,492	---	---	---	359	---	180	---	SANDY CORNERS RD (W)/(E) - GRAY LAKE RD (W)
748+20	-	749+23	26	---	---	206	---	---	---	16	---	8	---	GRAY LAKE RD (W) - GRAY LAKE RD (E)
749+23	-	752+69	87	---	---	692	---	---	---	55	---	28	---	GRAY LAKE RD (E) - B-42-126
752+69		754+67	50	---	396	---	---	---	---	---	---	---	---	B-42-126
754+67		760+23	139	---	---	1,112	---	---	---	89	---	44	---	B-42-126 - MILWAUKEE LN
760+23	-	794+31	852	---	---	6,816	---	---	---	545	---	273	---	MILWAUKEE LN - END PROJECT
562+10	-	794+31	---	5805	---	---	---	---	---	---	5805	---	5805	NO PASSING
---	-	---	---	---	165	---	---	1	535	---	---	---	---	WAYSIDE
			8,889	5,805	561	70,712	115	1	535	5,657	5,805	2,828	5,805	
		TOTAL		15,255		70,712	115	1	535	11,462		8,634		

CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	650.6000 PIPE CULVERTS EA	650.8000 RESURFACING REFERENCE LF	650.9910 SUPPLEMENTAL CONTROL (PROJECT) LS
438+77	-	752+42	STH 32		31,365	
579+75	-	579+75	STH 32	1		
585+05	-	585+05	STH 32	1		
620+94	-	620+94	STH 32	1		
678+50	-	678+50	STH 32	1		
754+95	-	794+31	STH 32		3,936	1
			TOTAL	4	35,301	1

ALL ITEMS CATEGORY 0010

5

5

CTH E (ADVANCE RD)

BEGIN PROJECT 9190-27-71
STA. 438+77

R/W

SIGN

440 STH 32 445 450 455 460

BUTT JOINT REQ'D

SECTION CORNER MONUMENT

N

465+00.00 MATCH LINE

CTH E (MORGAN RD)

LITTLE PENSAUKEE RIVER

FOOTBRIDGE

RUINS

SEPTIC

A/C

SECTION CORNER MONUMENT

BUTT JOINT REQ'D

470 STH 32 475 480 485 490

R/W

R/W

MORGAN MARSH RD

465+00.00 MATCH LINE

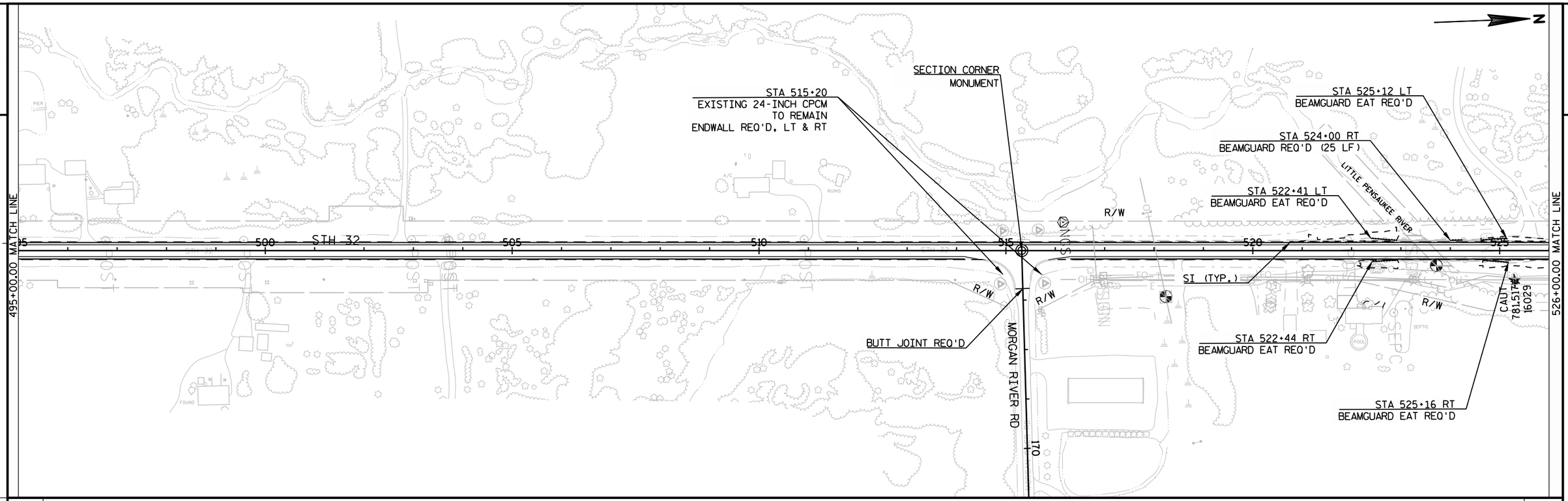
495+00.00 MATCH LINE

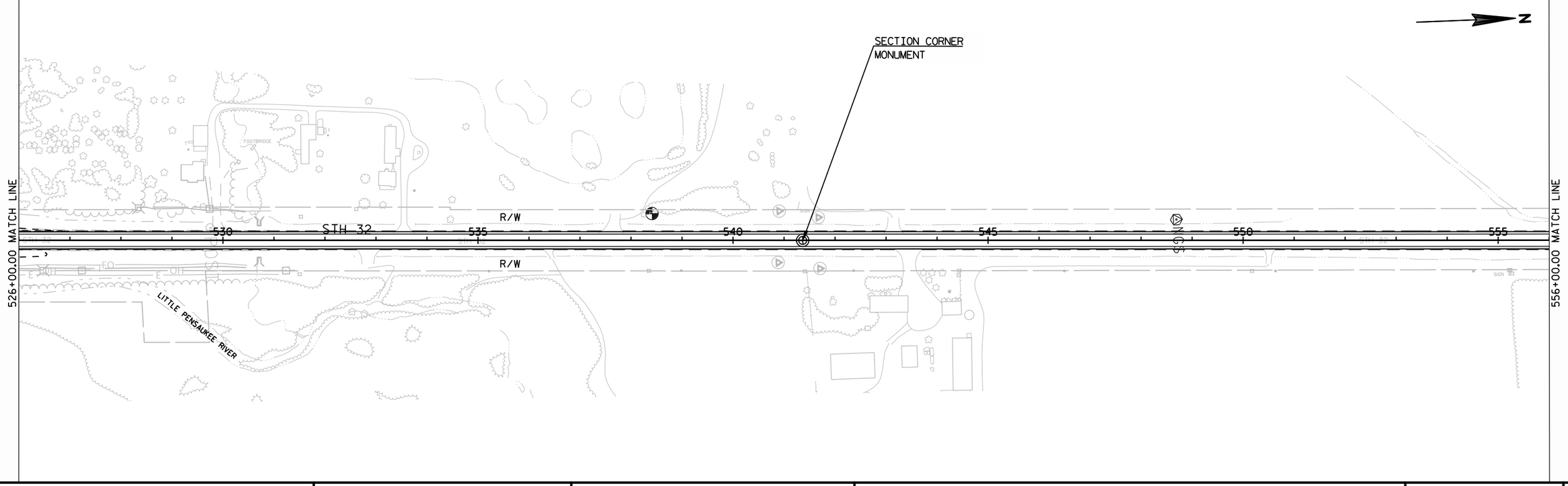
PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 28	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050201-PN

PLOT DATE : 3/5/2019 8:22 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44





PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 29	E

5

5

556+00.00 MATCH LINE

587+00.00 MATCH LINE

N

560 565 570 575 580 585

STH 32

STA 579+75
REMOVE EXISTING 24-INCH CPCM
CULVERT PIPE CLASS III-B 24-INCH REQ'D
ENDWALL REQ'D, LT & RT

STA 585+05
REMOVE EXISTING 24-INCH CPCM
CULVERT PIPE CLASS III-B 24-INCH REQ'D
ENDWALL REQ'D, LT & RT

SECTION CORNER
MONUMENT

587+00.00 MATCH LINE

617+25.00 MATCH LINE

N

SECTION CORNER
MONUMENT

CHURCH RD

175

BUTT JOINT REQ'D

R/W

R/W

590 595 600 605 610 615

STH 32

R/W

R/W

SIGNS

BUTT JOINT REQ'D

CCC RD

180

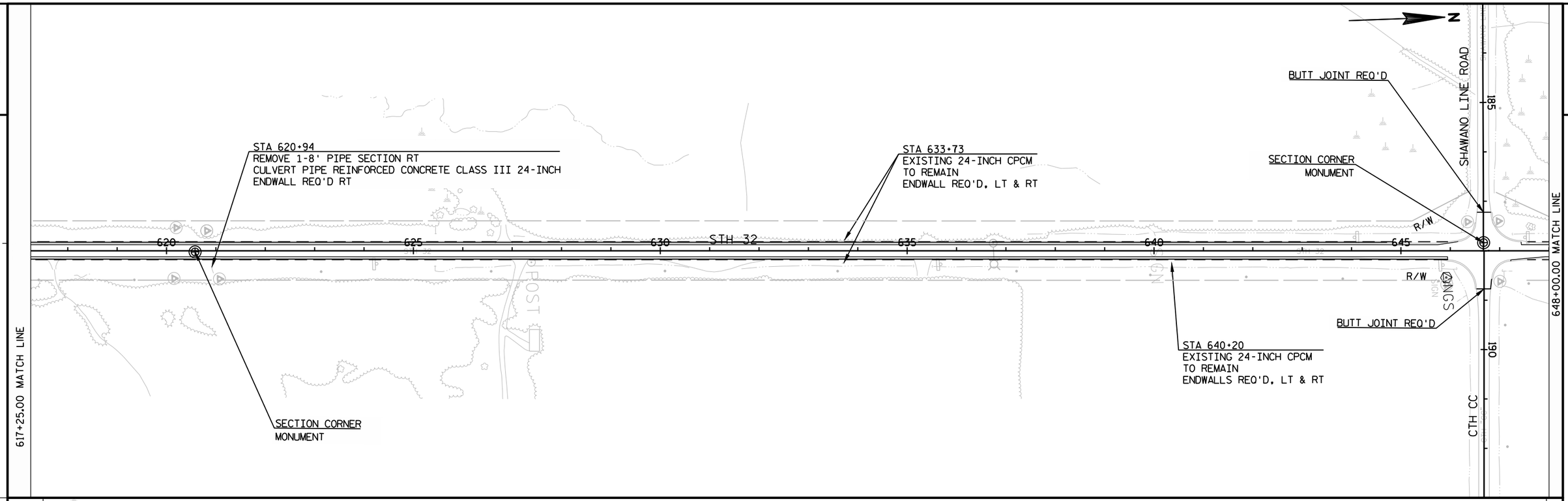
STA 601+58
EXISTING 24-INCH CPCM
TO REMAIN
ENDWALL REQ'D LT & RT
TRIM LINER TO MATCH SLOPE
INCIDENTAL TO WORK

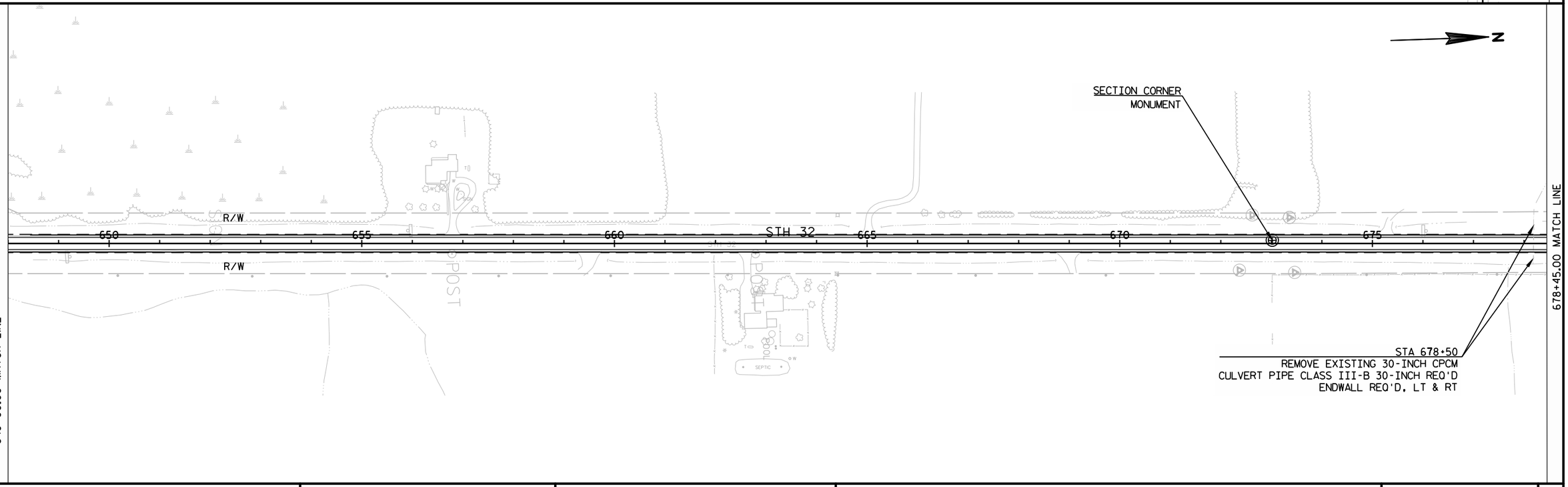
PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 30	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050203-PN

PLOT DATE : 3/5/2019 8:22 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : **********

WISDOT/CADDS SHEET 44


N
STA 620+94
REMOVE 1-8' PIPE SECTION RT
CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH
ENDWALL REQ'D RT
SECTION CORNER
MONUMENT
STA 633+73
EXISTING 24-INCH CPCM
TO REMAIN
ENDWALL REQ'D, LT & RT
STA 640+20
EXISTING 24-INCH CPCM
TO REMAIN
ENDWALLS REQ'D, LT & RT
BUTT JOINT REQ'D
BUTT JOINT REQ'D
SECTION CORNER
MONUMENT
R/W
R/W
620
625
630
635
640
645
STH 32
SHAWANO LINE ROAD
CTH CC
185
190
617+25.00 MATCH LINE
648+00.00 MATCH LINE
POST
KINGS


N
SECTION CORNER
MONUMENT
STA 678+50
REMOVE EXISTING 30-INCH CPCM
CULVERT PIPE CLASS III-B 30-INCH REQ'D
ENDWALL REQ'D, LT & RT
R/W
R/W
650
655
660
665
670
675
STH 32
648+00.00 MATCH LINE
678+45.00 MATCH LINE
POST
SEPTIC

5

5

N

678+45.00 MATCH LINE

680 685 690 STH 32 695 700 705

R/W

R/W

R/W

R/W

ROSE ROAD

195

200

ROSE ROAD

SECTION CORNER
MONUMENT

BUTT JOINT REQ'D

BUTT JOINT REQ'D

SIGNS

STA 709+02
EXISTING 24-INCH CPCM TO REMAIN
ENDWALL REQ'D RT

709+27.50 MATCH LINE

709+27.50 MATCH LINE

N

SECTION CORNER
MONUMENT

BUTT JOINT REQ'D

BUTT JOINT REQ'D

SANDY CORNERS RD (W)

SANDY CORNERS RD (E)

710 715 720 STH 32 725 730 735

R/W

R/W

POST

POST

PIER

SEPTIC

SEPTIC

SEPTIC

SEPTIC

SIGN

SIGN

739+40.00 MATCH LINE

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 32	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050205-PN

PLOT DATE : 3/22/2021 10:20 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : **********

WISDOT/CADDS SHEET 44

5

739+40.00 MATCH LINE

GRAY LAKE RD (W)

220

GRAY LAKE RD (E)

225

R/W

OCONTO RIVER

BUTT JOINT REQ'D

BUTT JOINT REQ'D

745 750 755 STH 32 760 765

R/W

R/W

R/W

R/W

MILWAUKEE LANE

770+00.00 MATCH LINE

5

N

N

770+00.00 MATCH LINE

775 STH 32 780 785 790

R/W

R/W

END PROJECT 9190-27-71
STA. 794+31

BUTT JOINT REQ'D

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	PLAN	SHEET 33	E

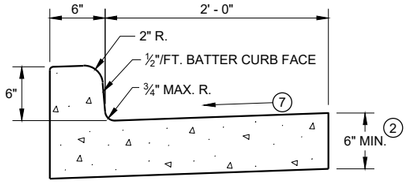
FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\050201_PN.DWG
LAYOUT NAME - 050206-PN

PLOT DATE : 3/5/2019 8:23 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : **********

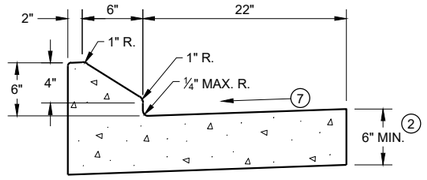
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

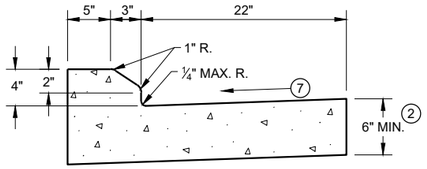
08D01-21A	CONCRETE CURB & GUTTER
08D01-21B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A10-02A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
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
15C07-15A	PAVEMENT MARKING SYMBOLS
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C08-20B	PAVEMENT MARKING (TURN LANES)
15C08-20C	PAVEMENT MARKING (TURN LANES)
15C11-08B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES



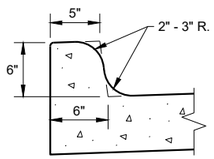
TYPES A[1] & D



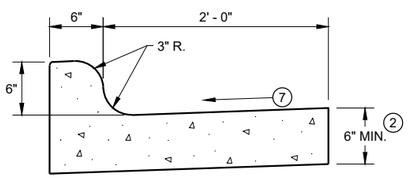
6" SLOPED CURB TYPES G[1] & J



4" SLOPED CURB TYPES G[1] & J

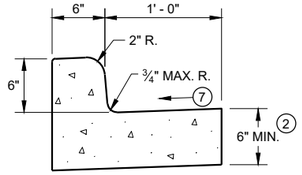


TYPES K[1] & L
(OPTIONAL CURB SHAPE)



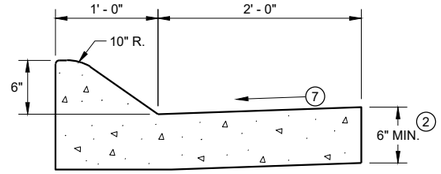
TYPES K[1] & L

CONCRETE CURB AND GUTTER 30"

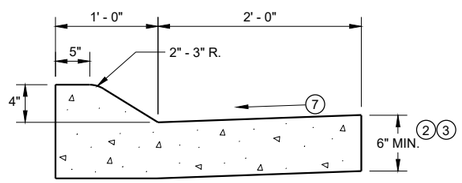


TYPES A[1] & D

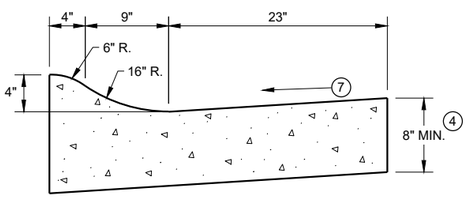
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A[1] & D



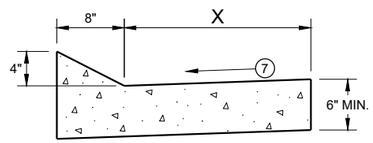
4" SLOPED CURB TYPES A[1] & D



4" SLOPED CURB TYPES R[1] & T[5]

CONCRETE CURB AND GUTTER 36"

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

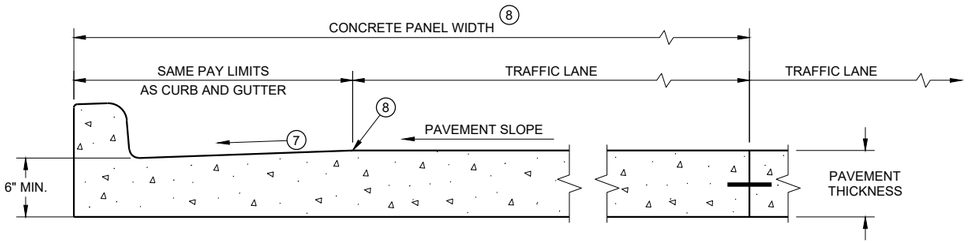


TYPES TBT & TBTT[1]

CONCRETE CURB AND GUTTER

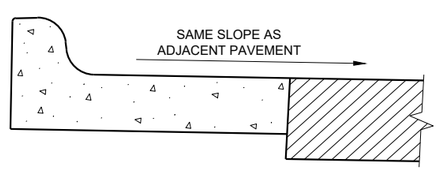
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

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

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

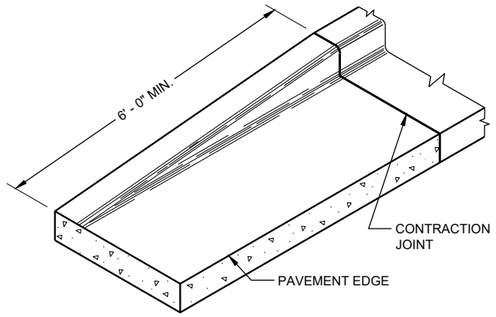
1. TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
2. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
3. USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH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

CONCRETE CURB AND GUTTER

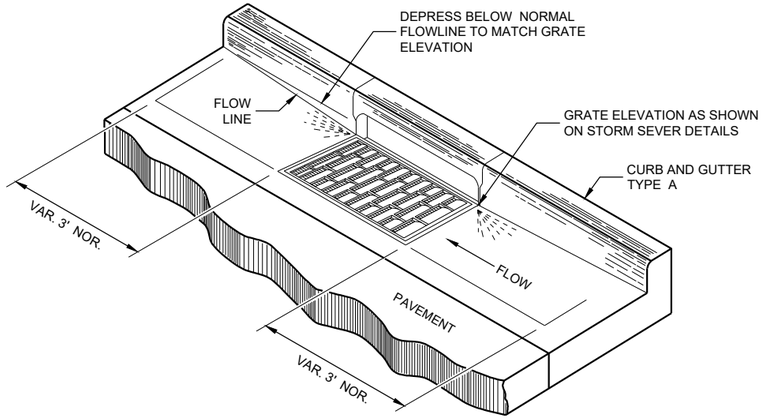
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D01 - 21a

SDD 08D01 - 21a



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

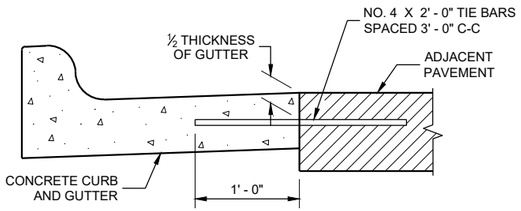
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

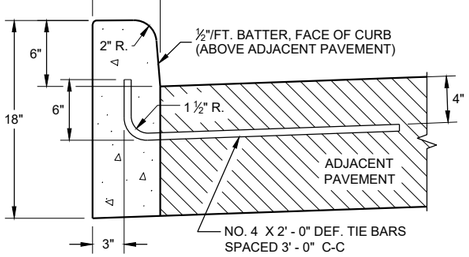
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

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

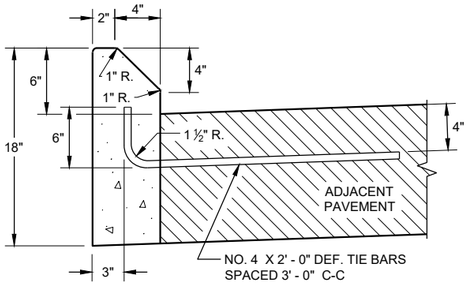
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

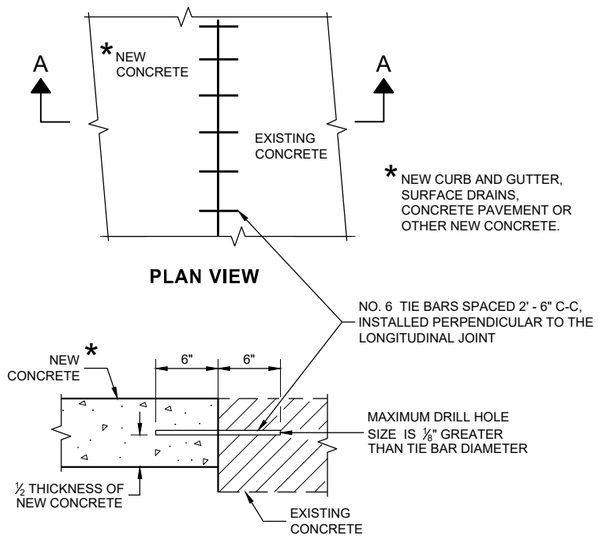


TYPES A (1) & D



TYPES G (1) & J

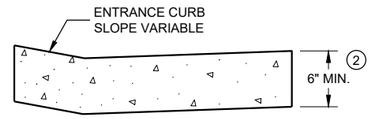
CONCRETE CURB



PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

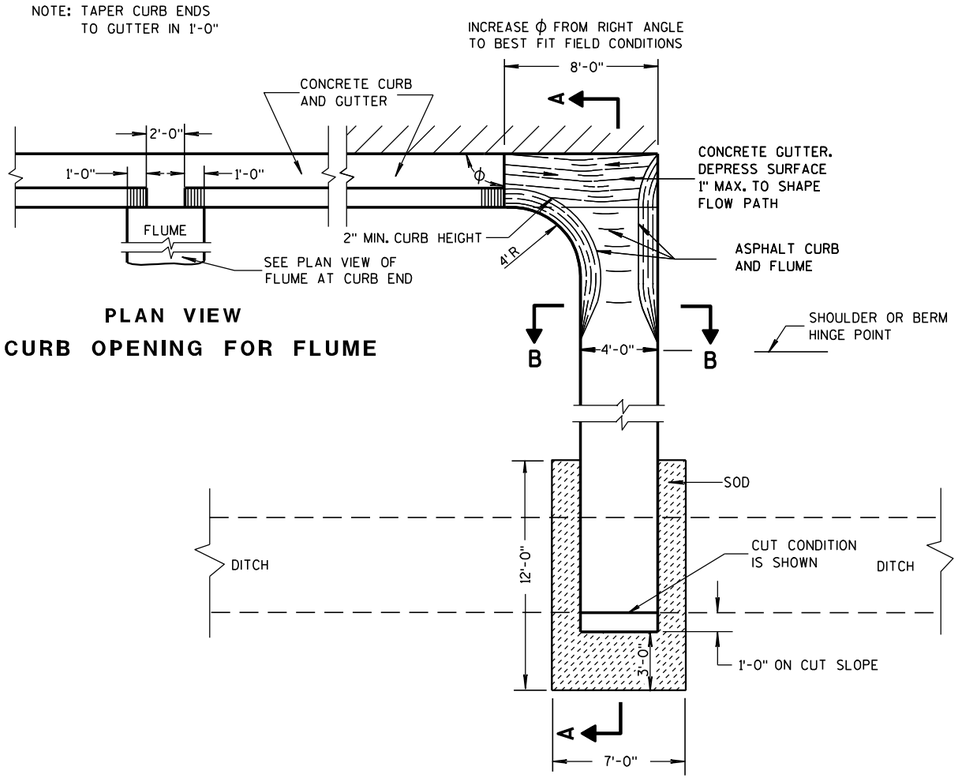
APPROVED
February 2020 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

6

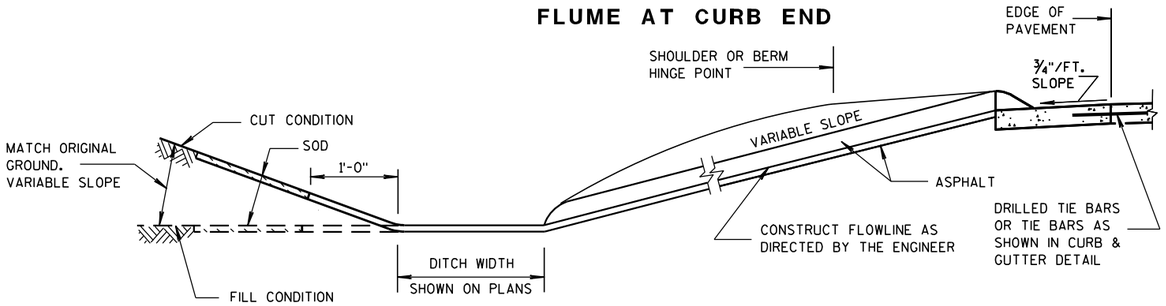
SDD08D01 - 21b

ASPHALTIC FLUME

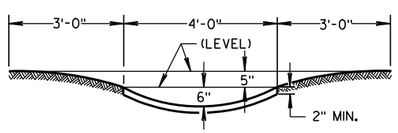


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

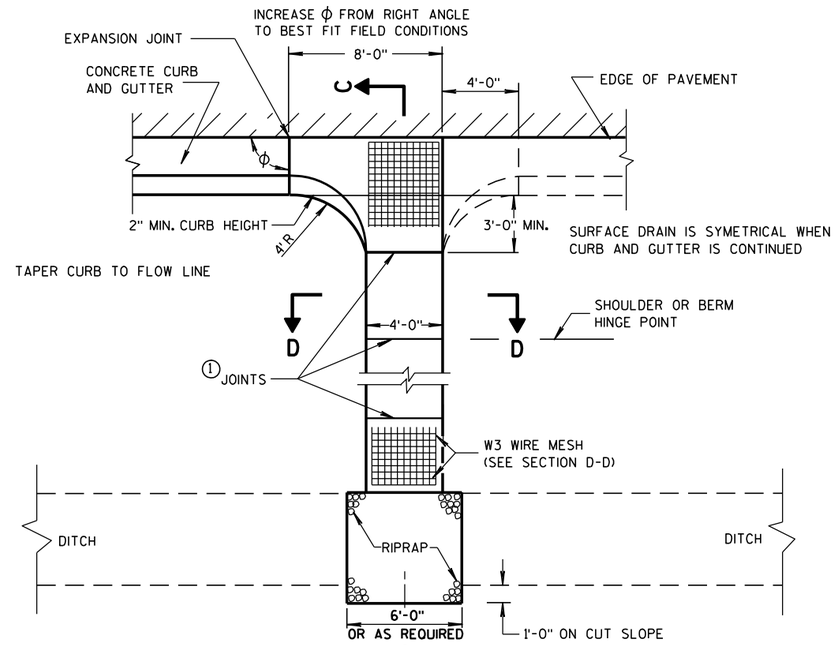
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

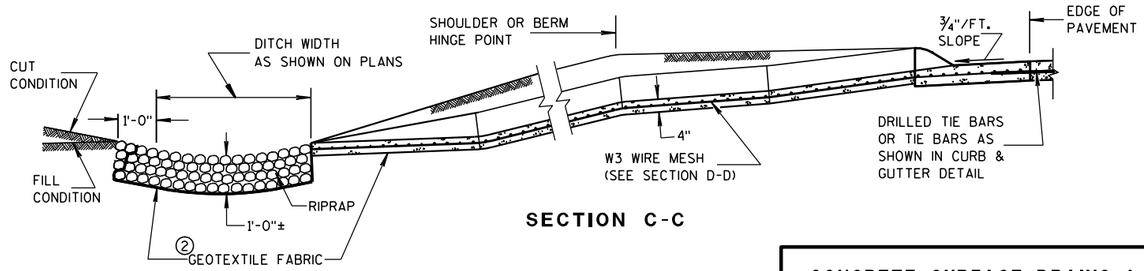
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

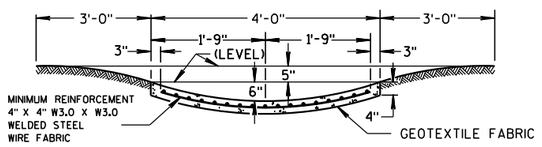
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
37
MENT
FHWA

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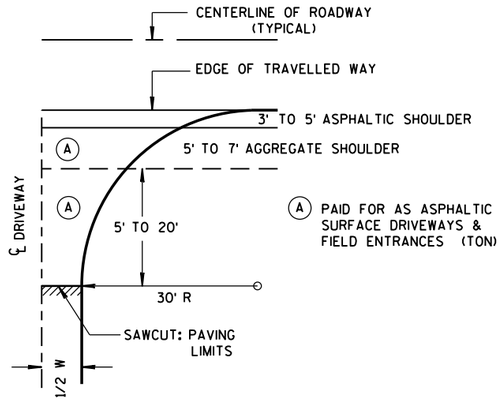
S.D.D. 8 D 4-5

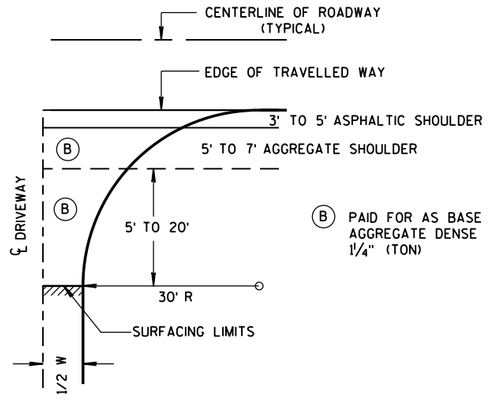
6

S.D.D. 8 D 4-5



PLAN VIEW
HALF SECTION

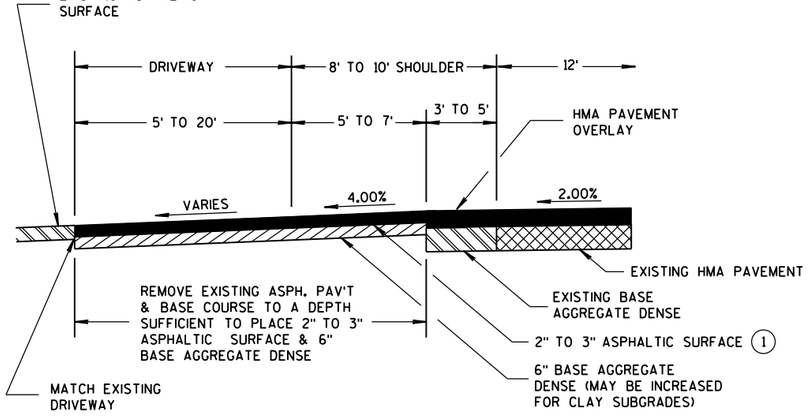
W MIN. = 16'
W MAX. = 24'



PLAN VIEW
HALF SECTION

GENERAL NOTES

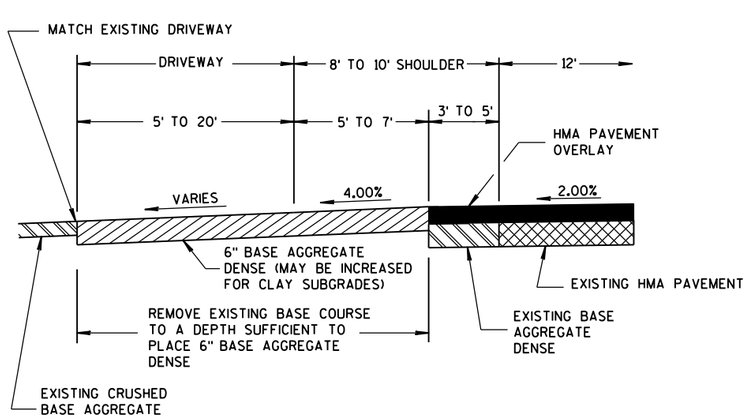
(1) DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.



PROFILE VIEW

RURAL ENTRANCE WITH ASPHALTIC SURFACE

RESURFACING PROJECTS



PROFILE VIEW

RURAL ENTRANCE WITH AGGREGATE SURFACE

6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

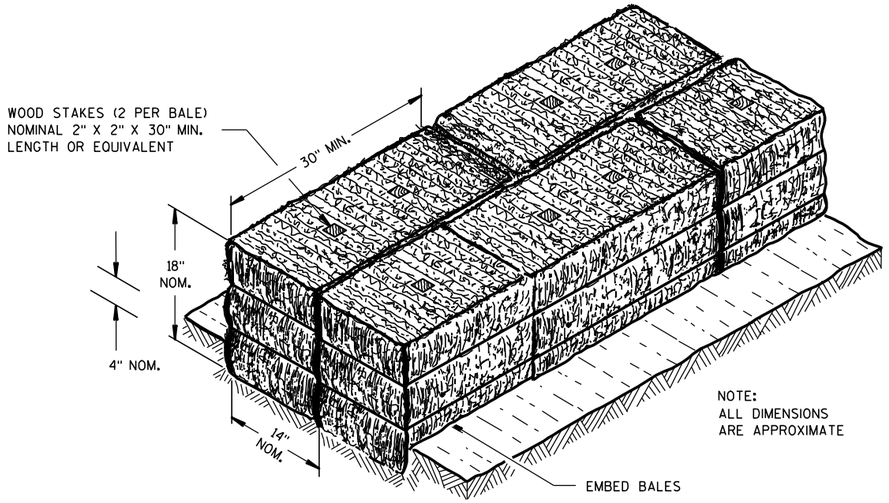
DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

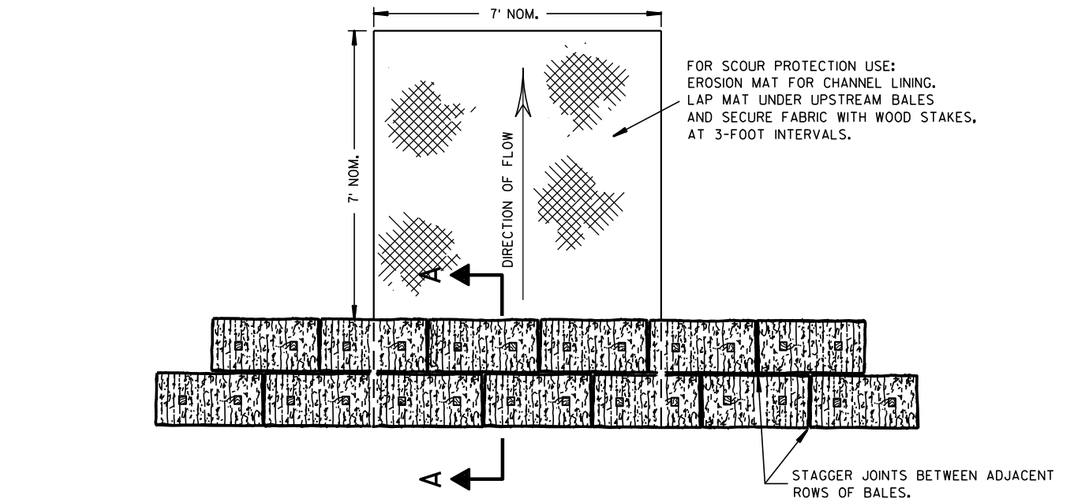
APPROVED
December, 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERV
ENT
FHWA

6

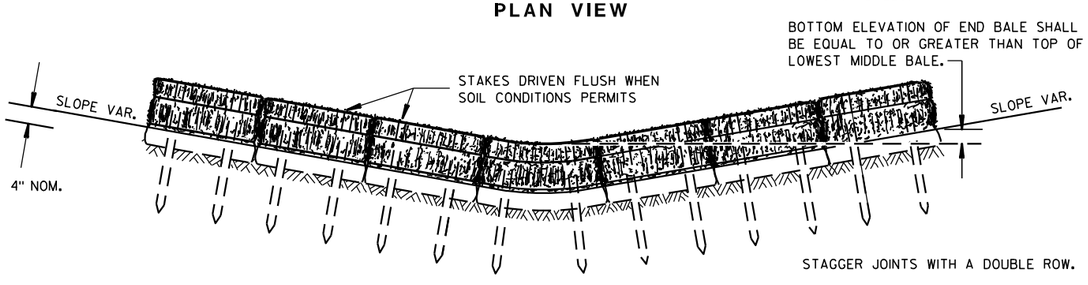
S.D.D. 8 D 22-1



SECTION A-A



PLAN VIEW



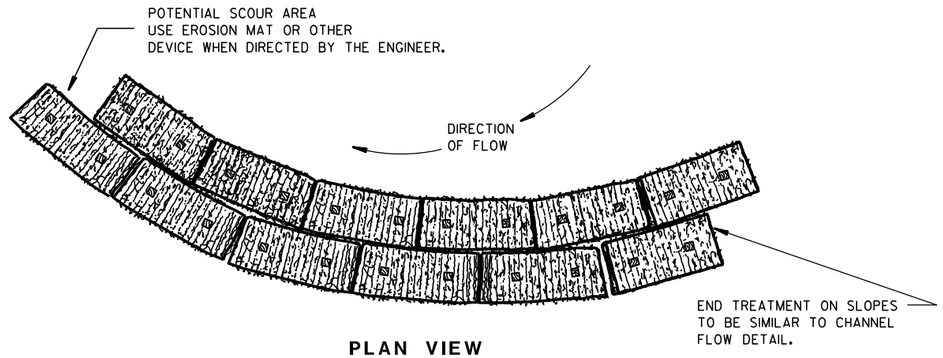
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

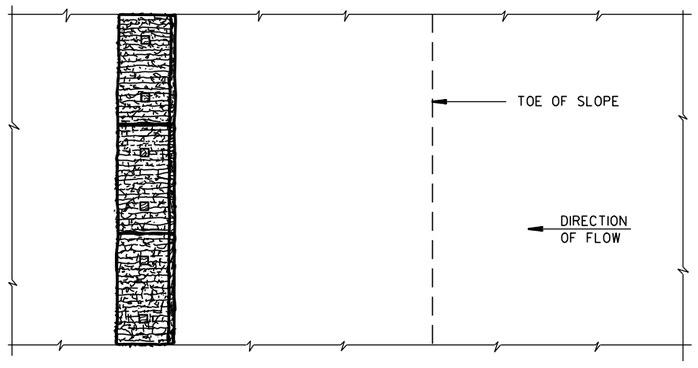
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

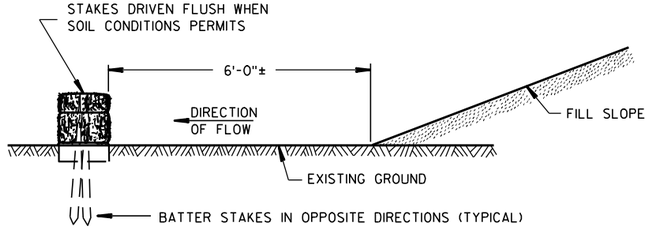


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

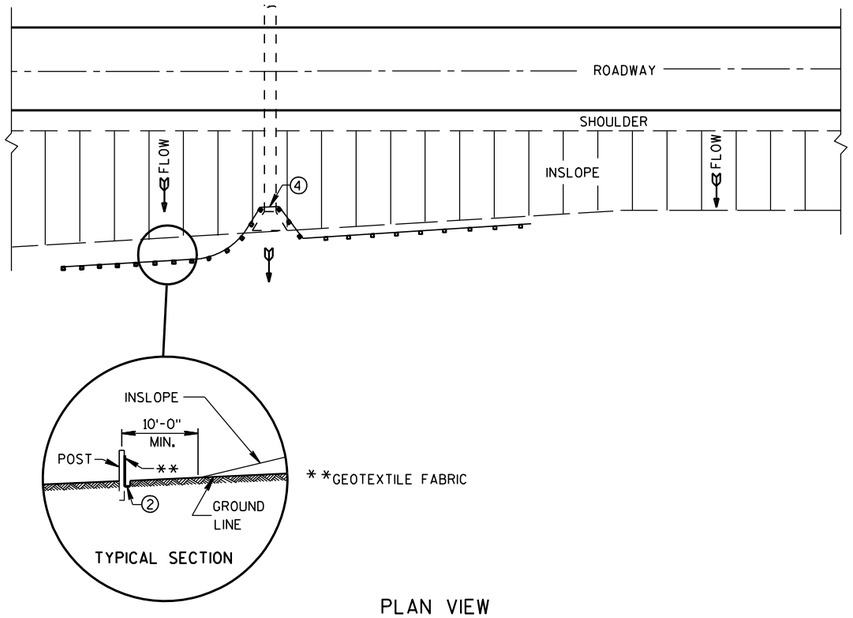
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

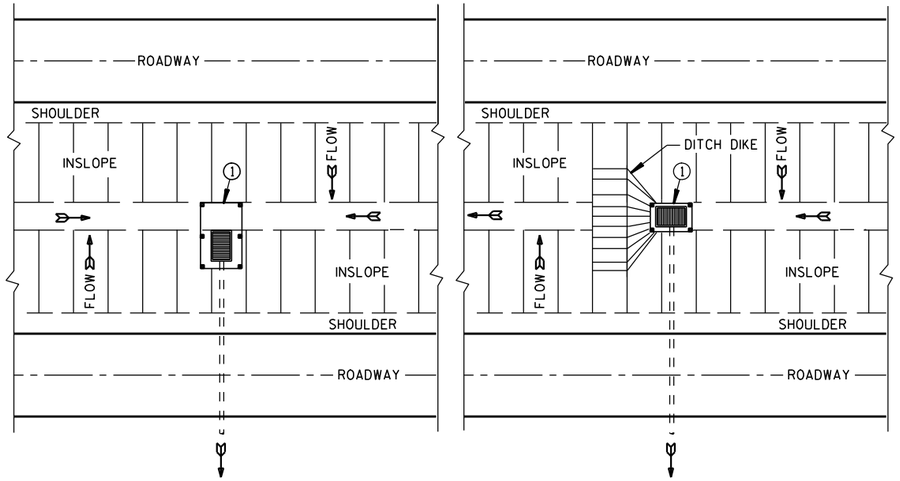
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



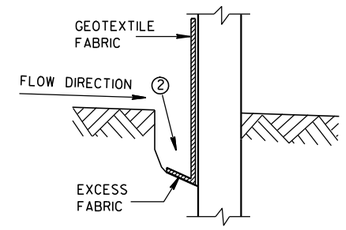
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

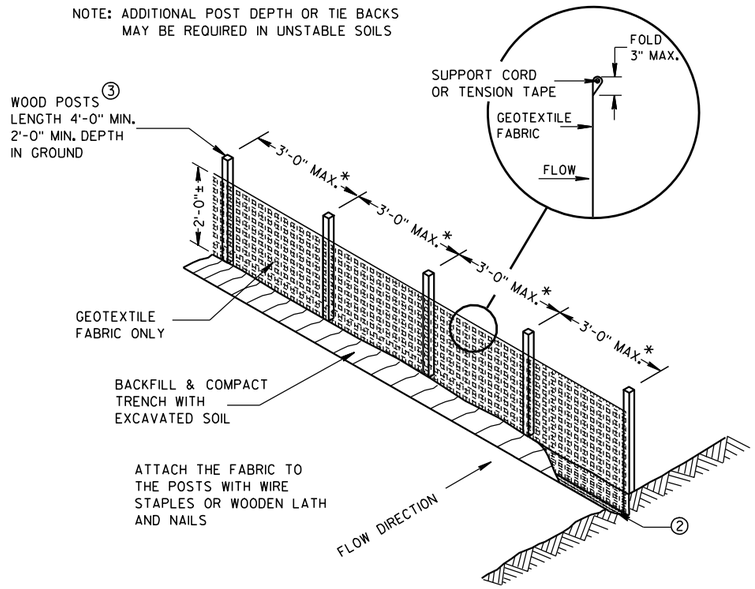
GENERAL NOTES

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

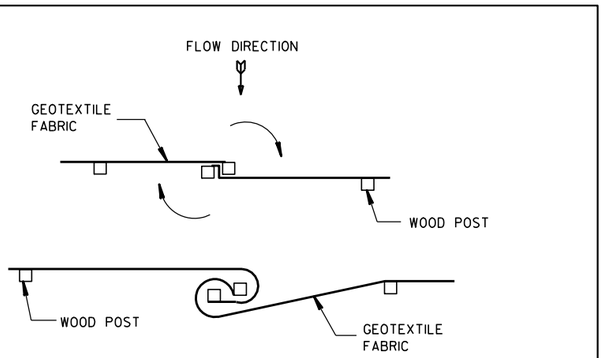
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



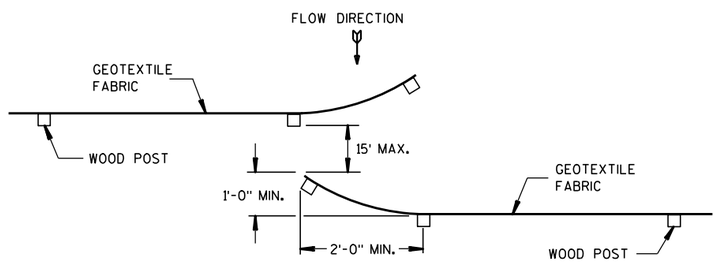
TRENCH DETAIL



SILT FENCE

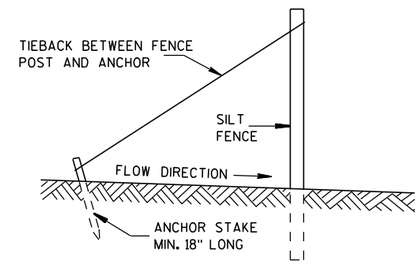


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

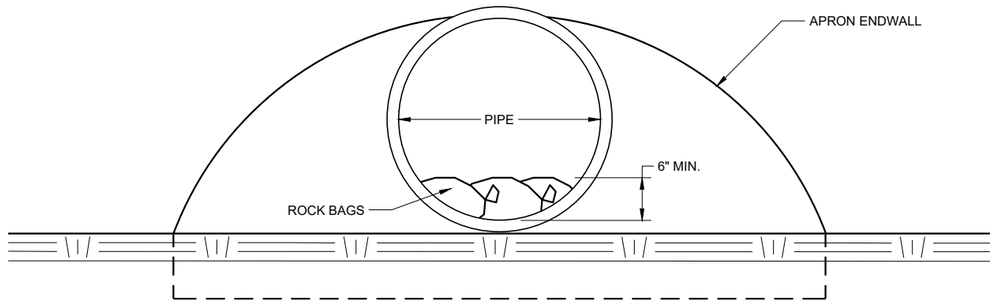
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

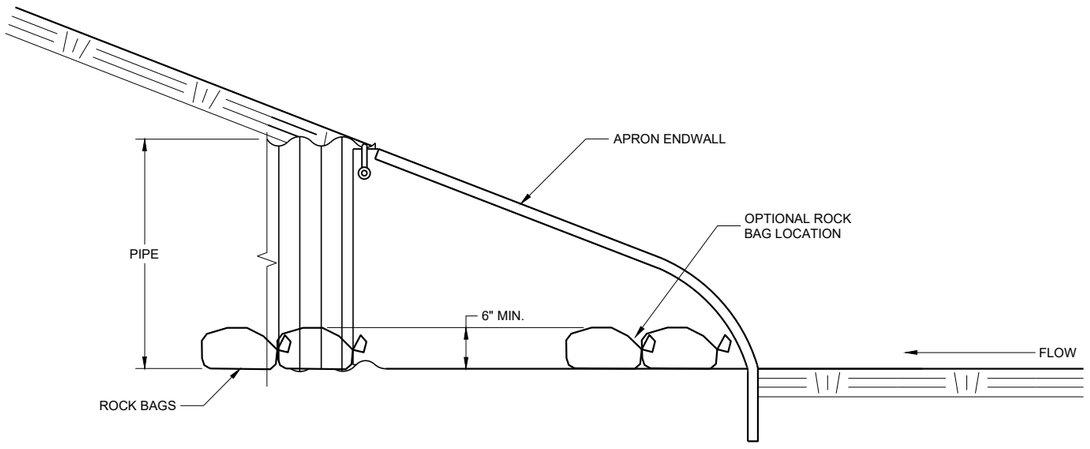
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



END VIEW



SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

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

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SDD 08E15 - 01

METAL APRON ENDWALLS

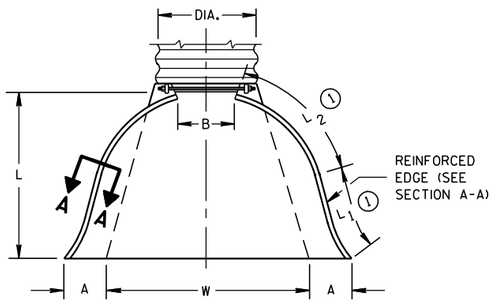
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 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

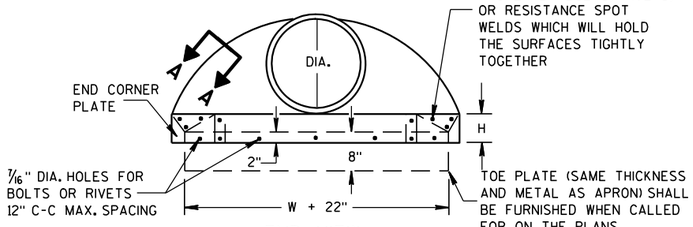
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
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

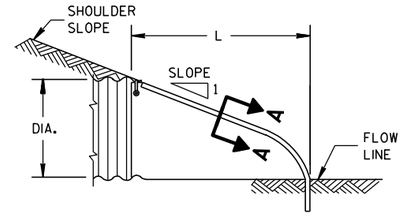
*MINIMUM
**MAXIMUM



PLAN VIEW

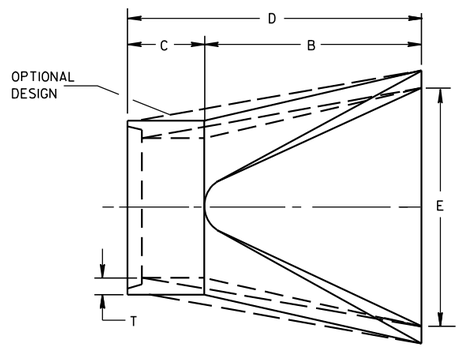


END VIEW

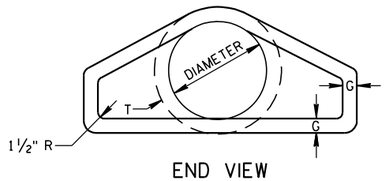


SIDE ELEVATION

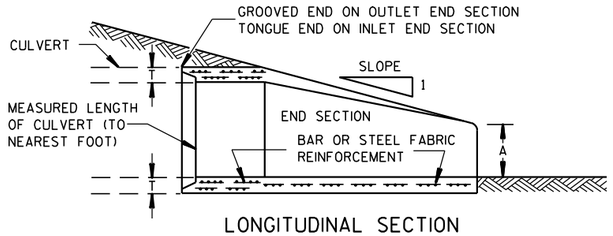
METAL ENDWALLS



PLAN

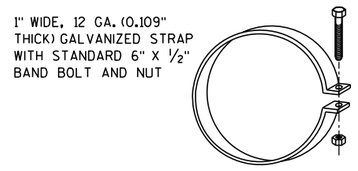


END VIEW



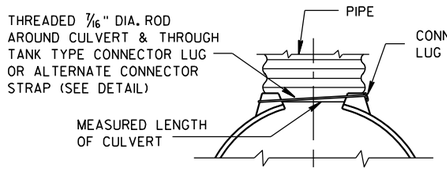
LONGITUDINAL SECTION

CONCRETE ENDWALLS

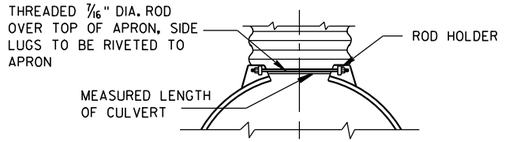


ALTERNATE FOR TYPE 1 CONNECTION

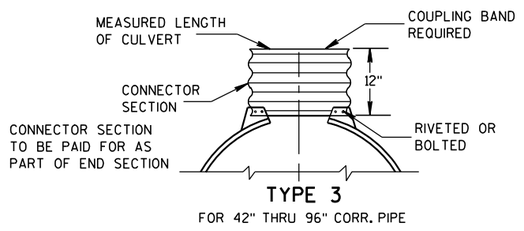
END SECTION CONNECTOR STRAP



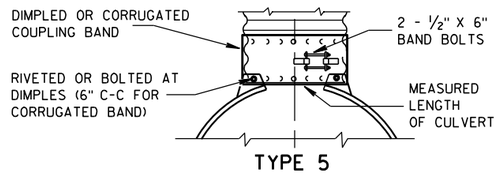
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

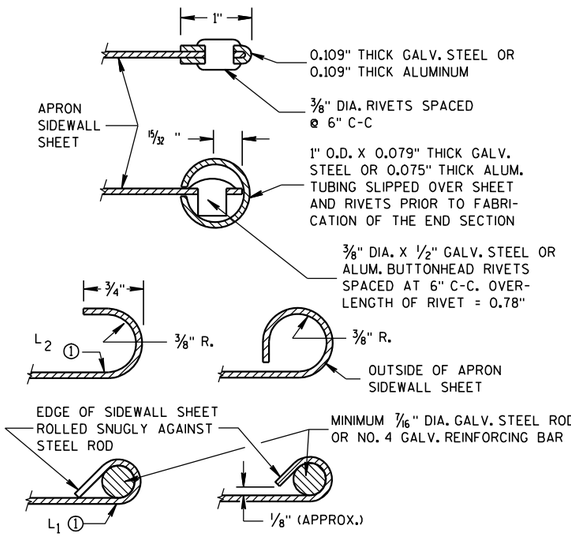
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

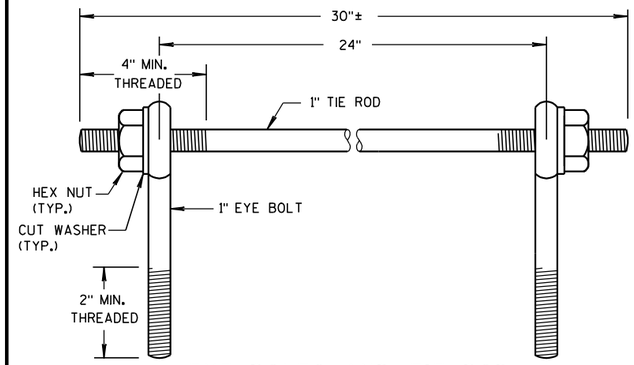
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

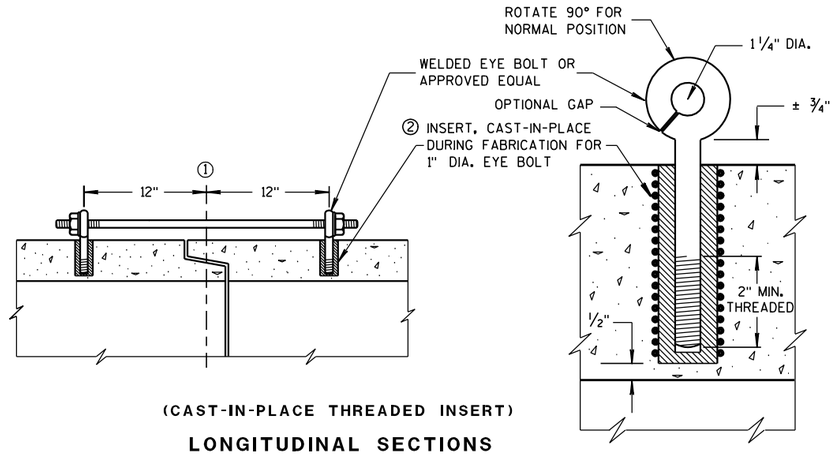
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

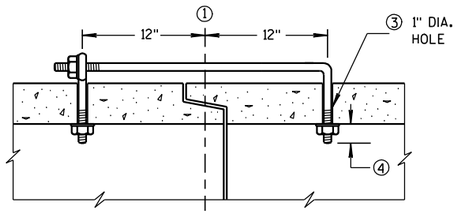
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

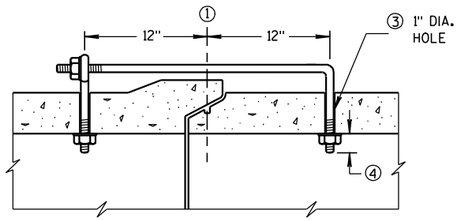
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

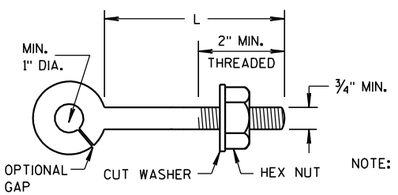


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

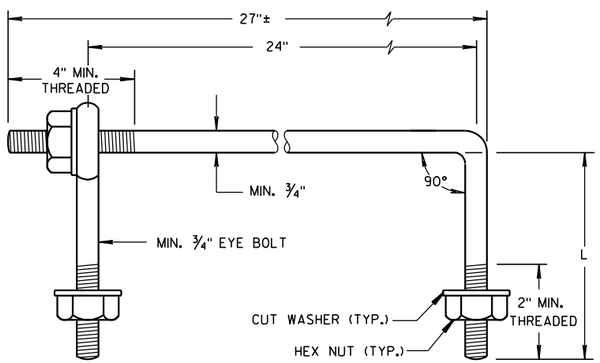
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

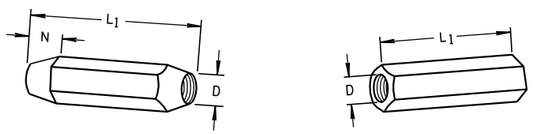
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

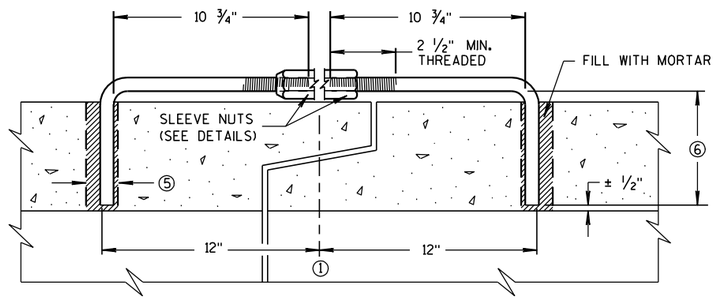
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

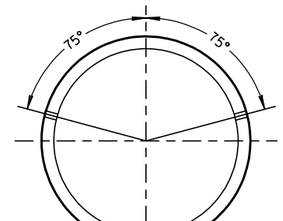
SLEEVE NUTS



LONGITUDINAL SECTION

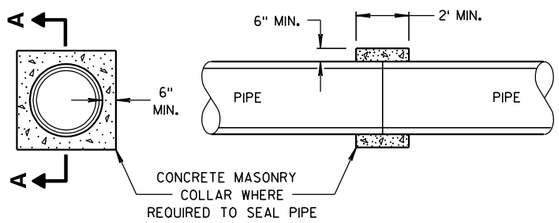
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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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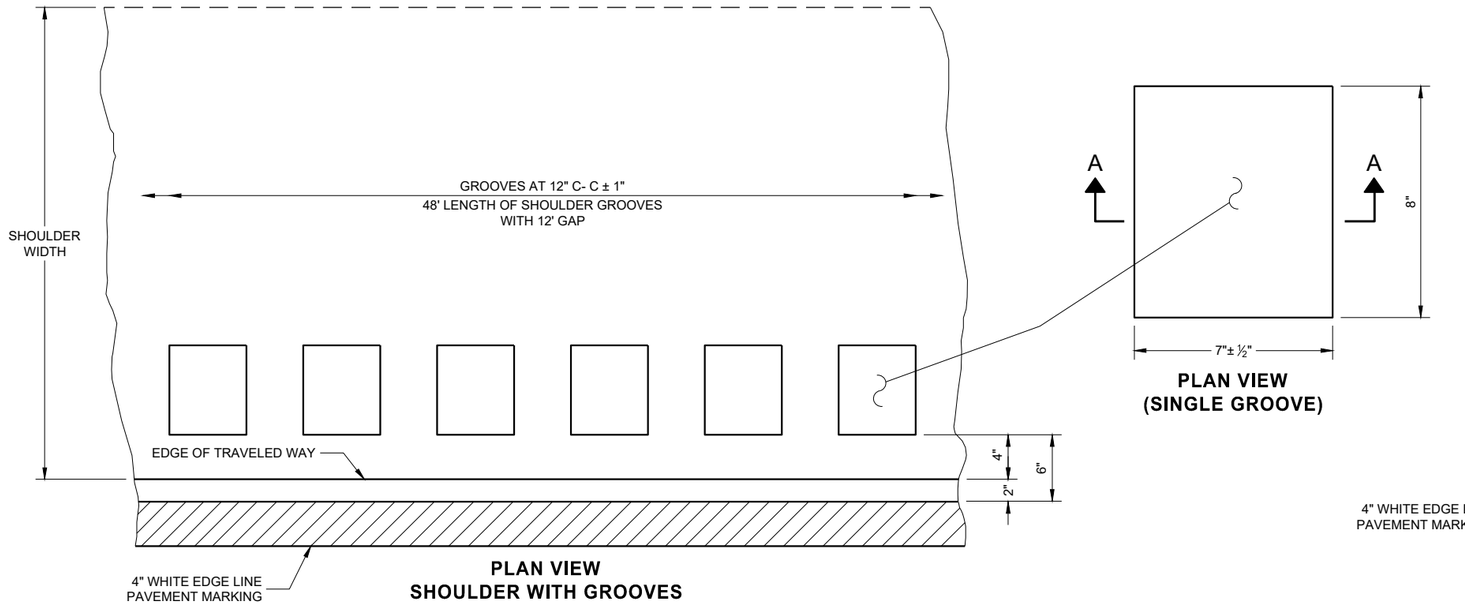
S.D.D. 8 F 4-7

6

S.D.D. 8 F 4-7



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

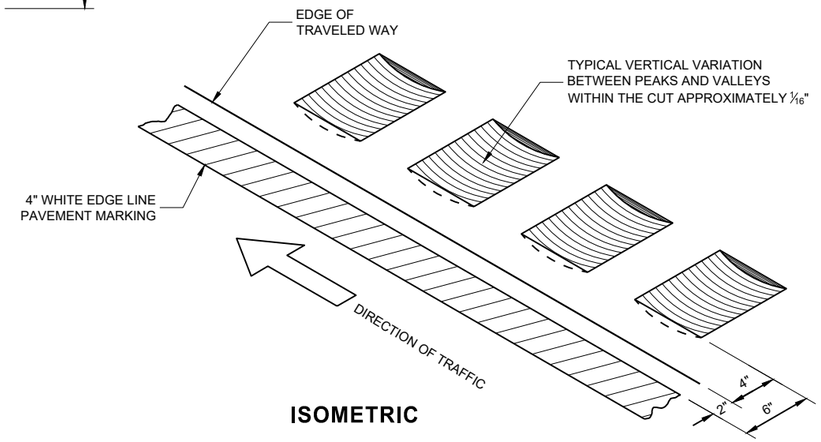
PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

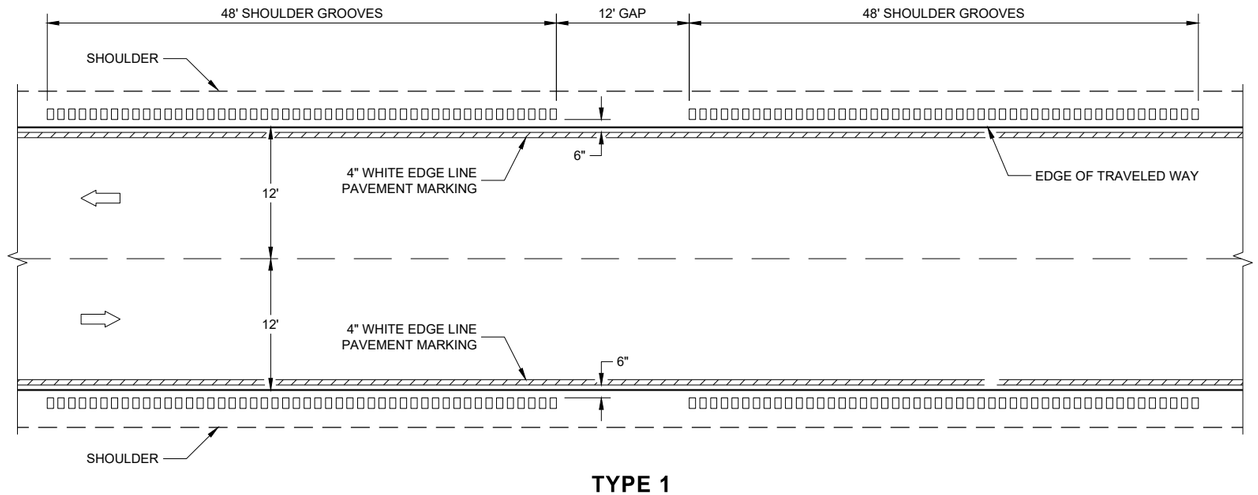
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

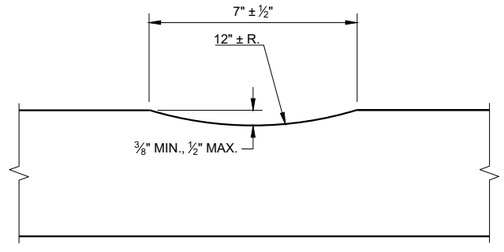
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC

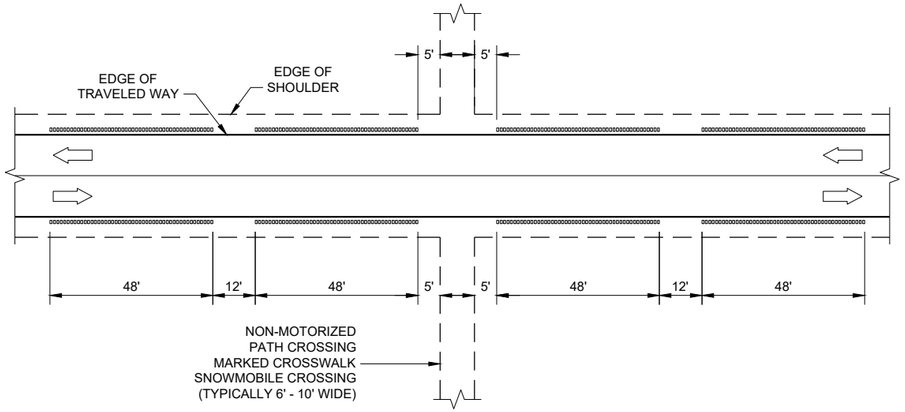


TYPE 1
2 - LANE SHOULDER RUMBLE STRIP

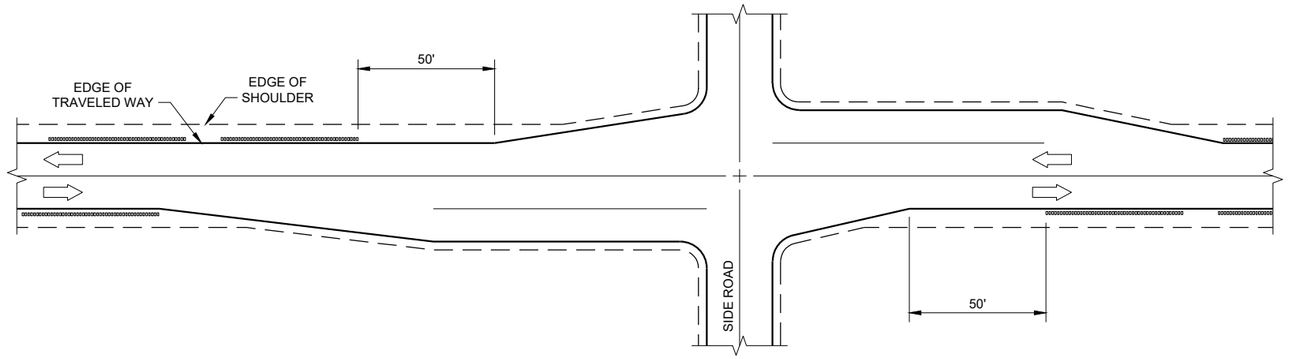


SECTION A - A

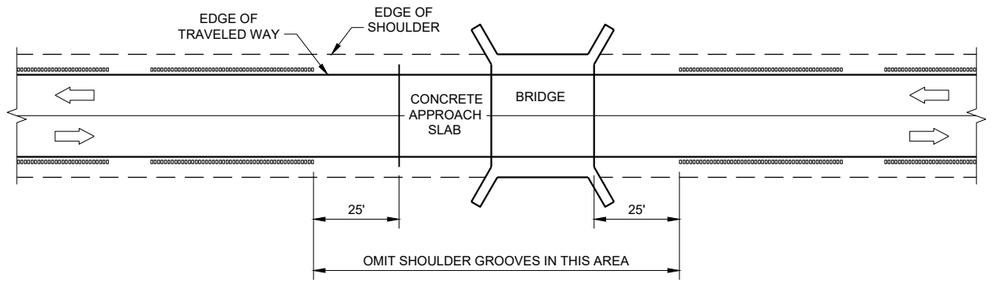
2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING



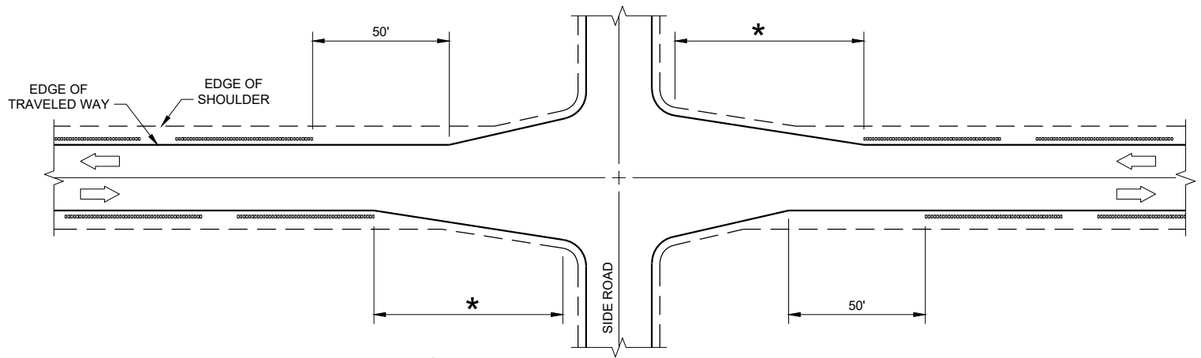
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



SHOULDER GROOVES AT RIGHT TURN LANE

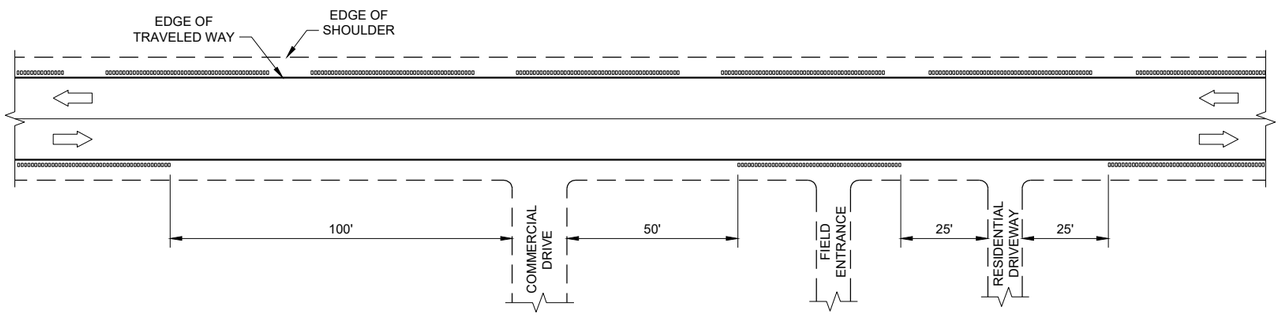


SHOULDER GROOVES AT BRIDGES



* GREATER OF 100' OR APPROACH TAPER LENGTH

SHOULDER GROOVES AT INTERSECTIONS WITH APPROACH TAPER



SHOULDER GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

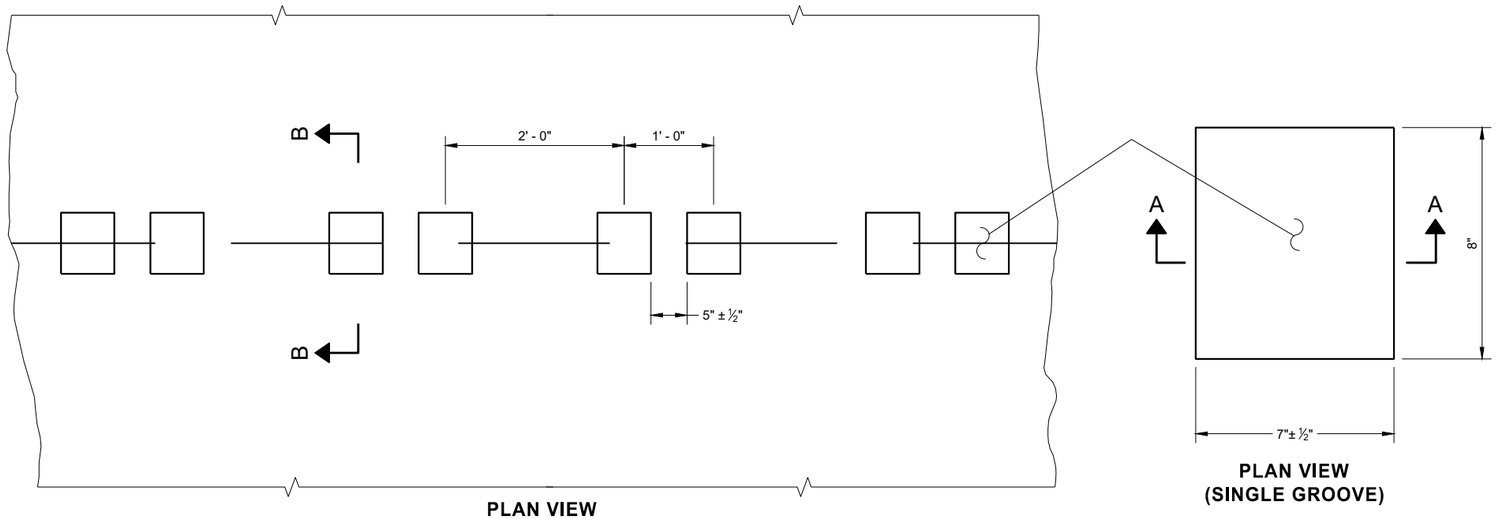
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 13A10 - 02c



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

GENERAL NOTES

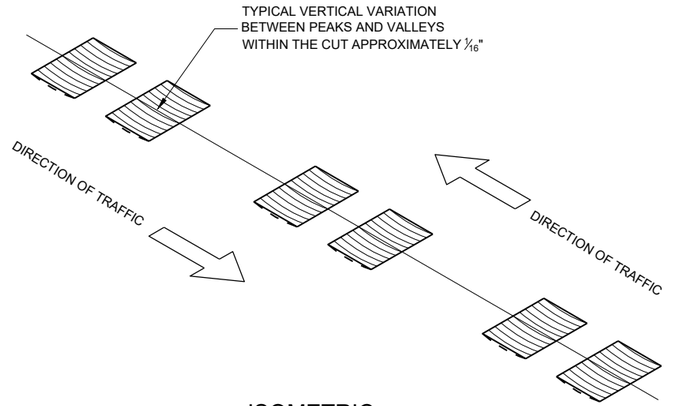
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

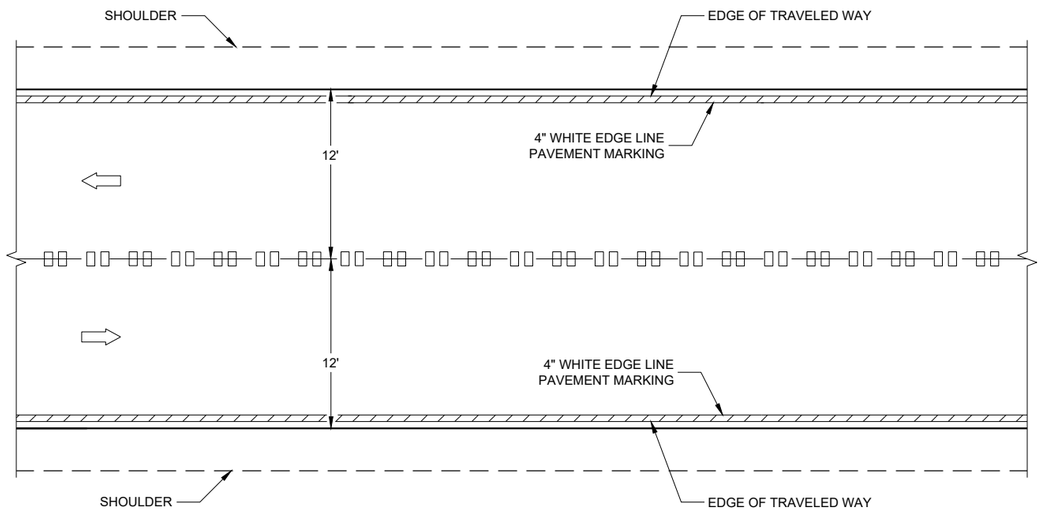
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

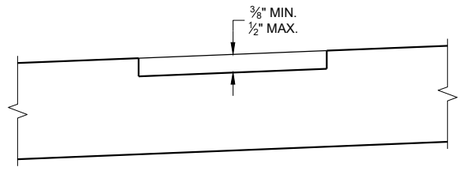
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



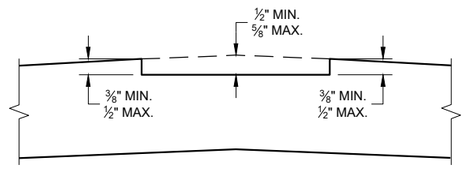
ISOMETRIC



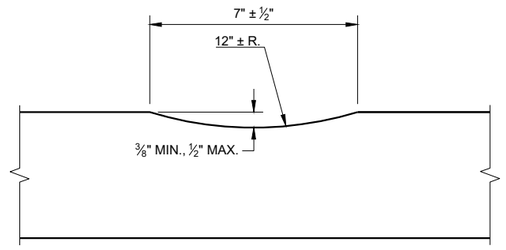
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



SECTION B - B
CROWNED ROADWAY



SECTION A - A

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

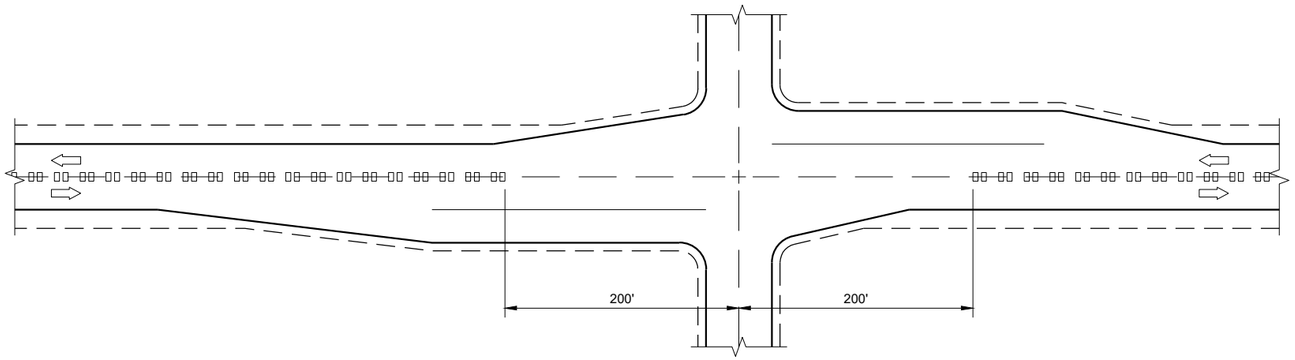
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

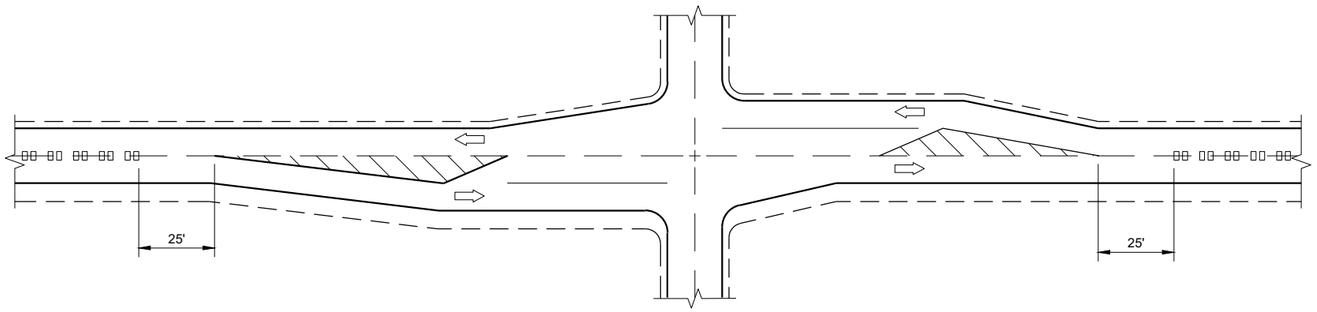
SDD 13A11 - 03a

6

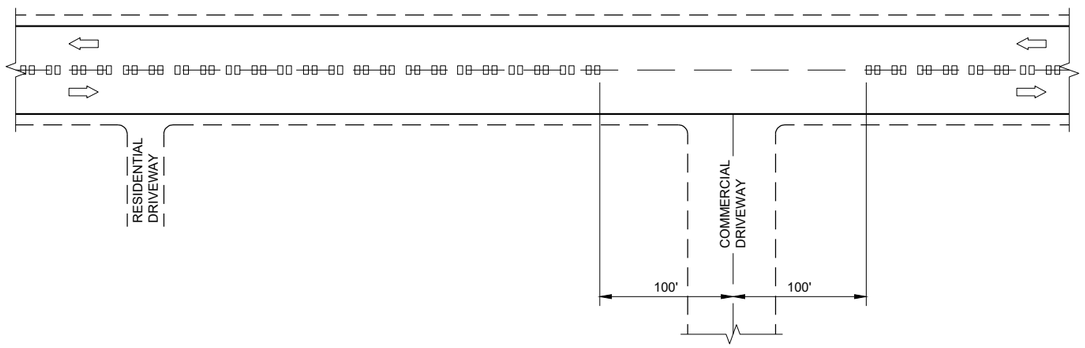
SDD 13A11 - 03a



CENTERLINE GROOVES AT INTERSECTIONS



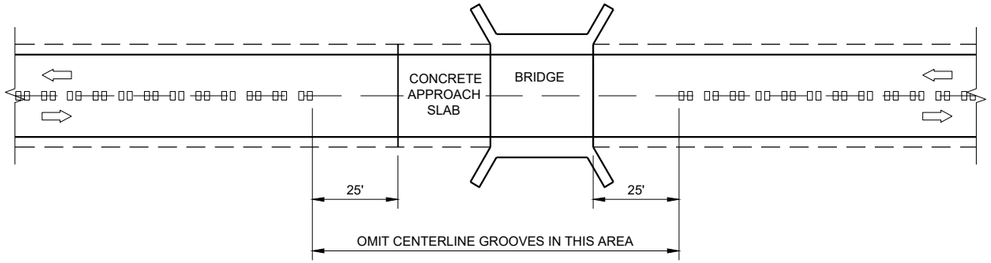
CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



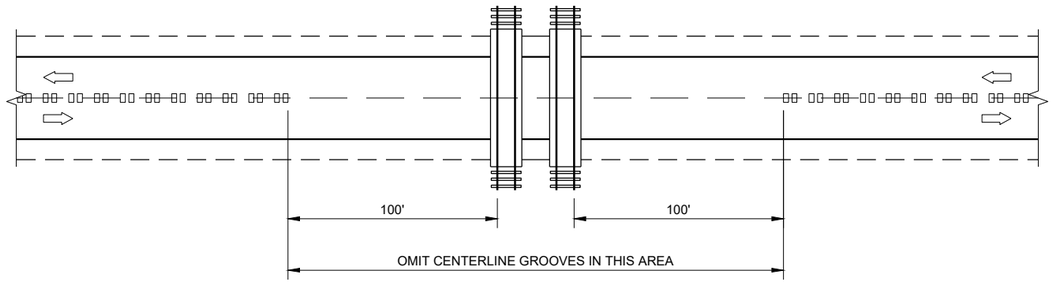
CENTERLINE GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

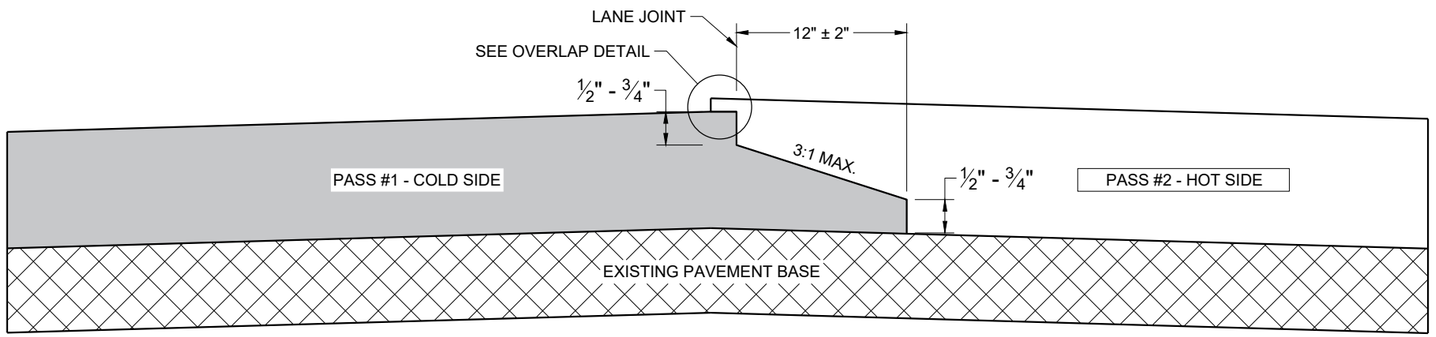
2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

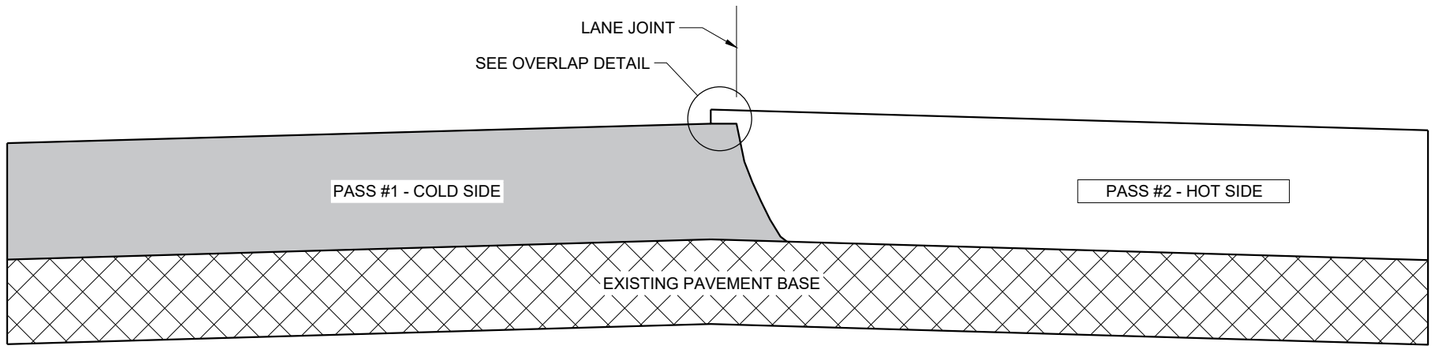
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

FHWA

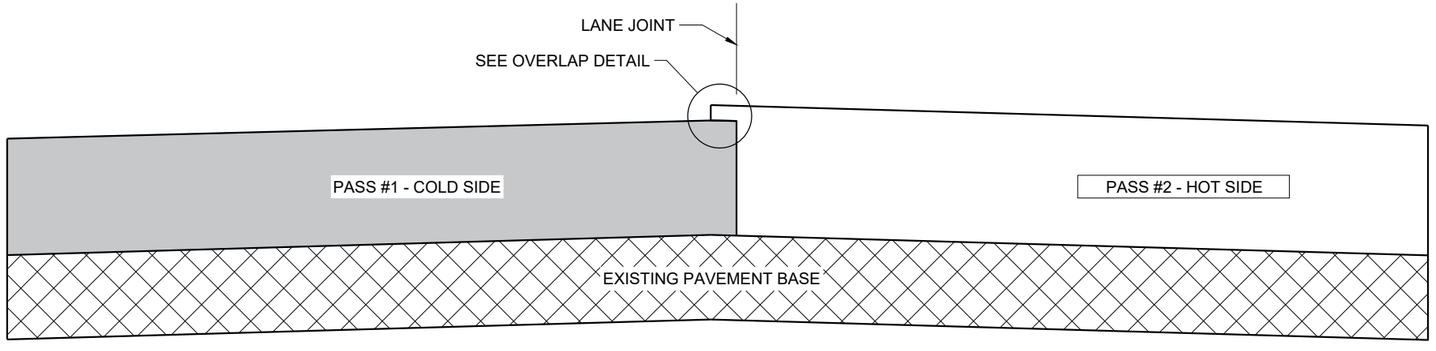
6
SDD 13A11 - 03b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

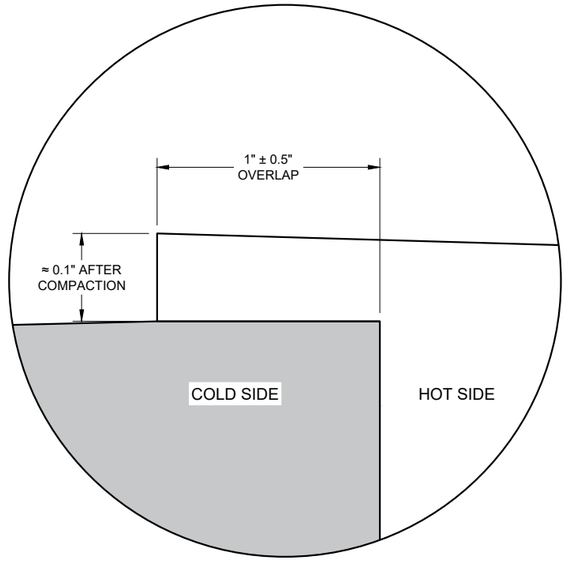
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

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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

GENERAL NOTES

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

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

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

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

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

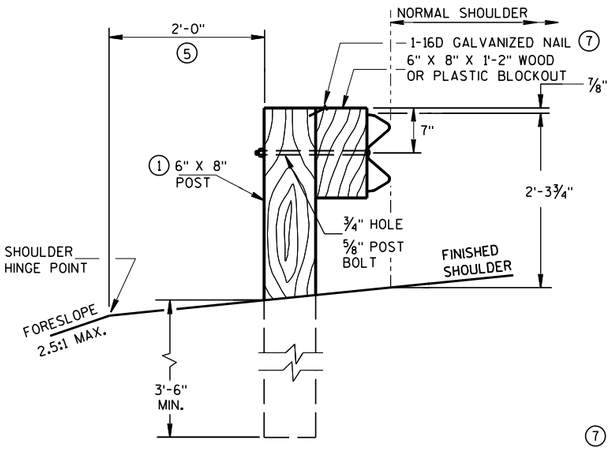
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

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

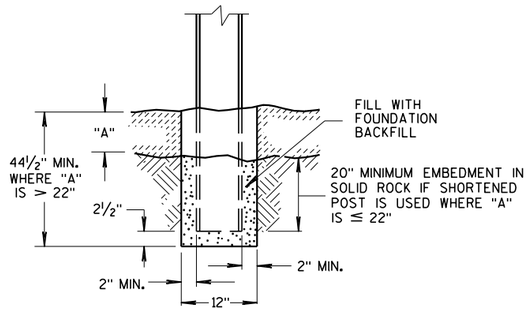
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

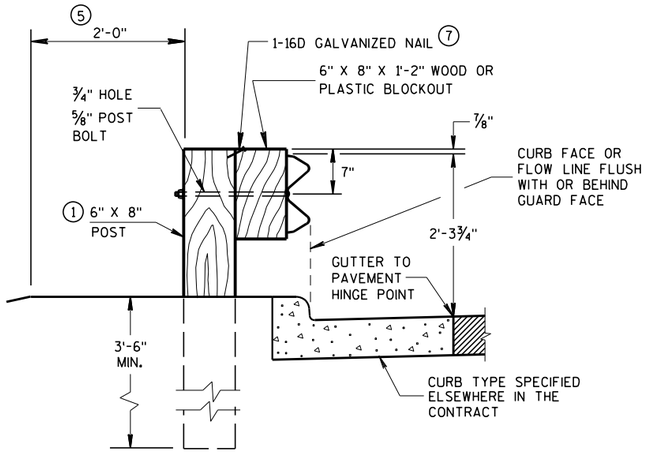
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



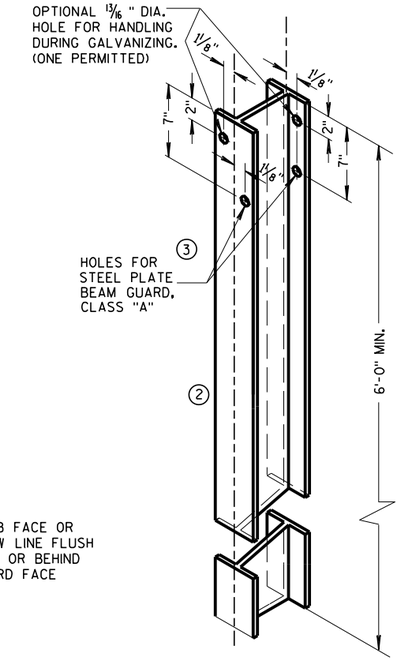
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



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

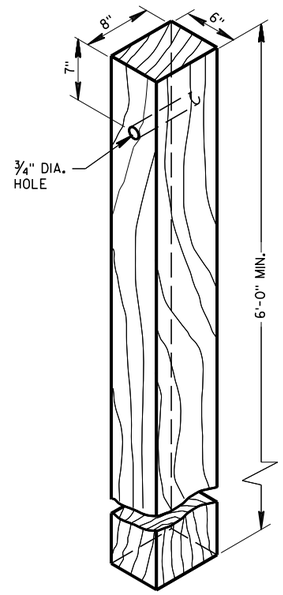


END VIEW
LOCATED ALONG A CURBED ROADWAY

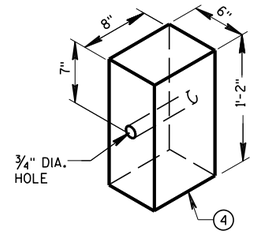


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

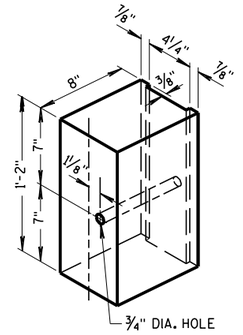
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



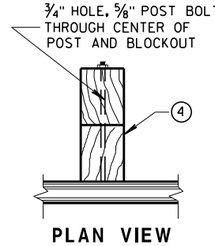
WOOD POST
(6"X8") NOMINAL



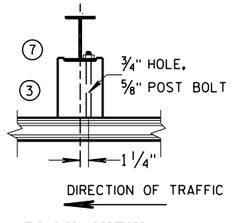
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



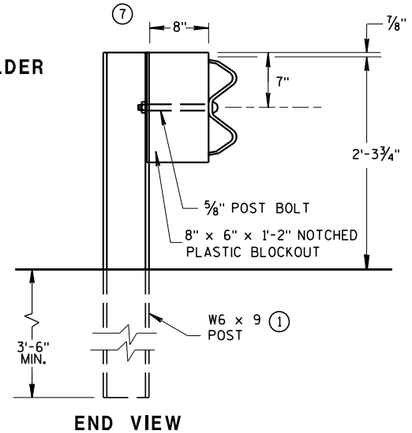
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



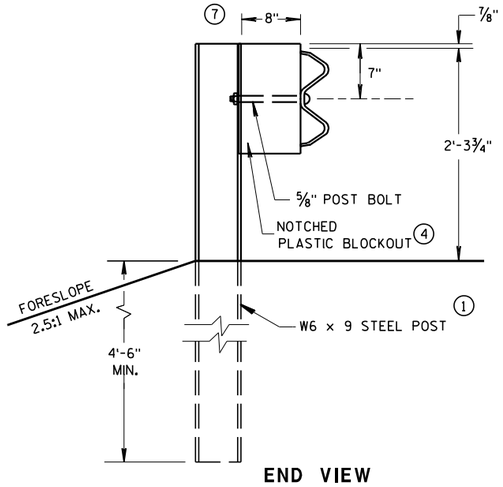
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



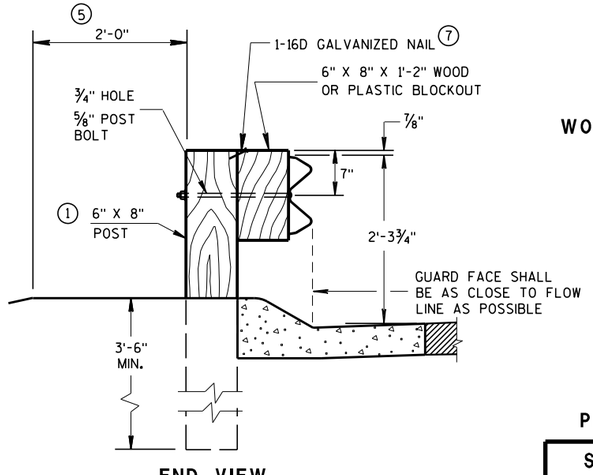
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



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



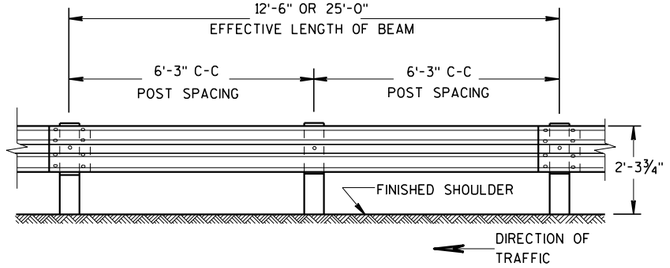
END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

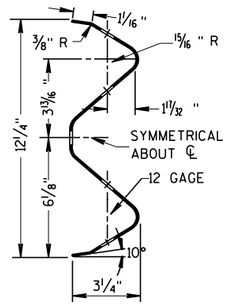
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

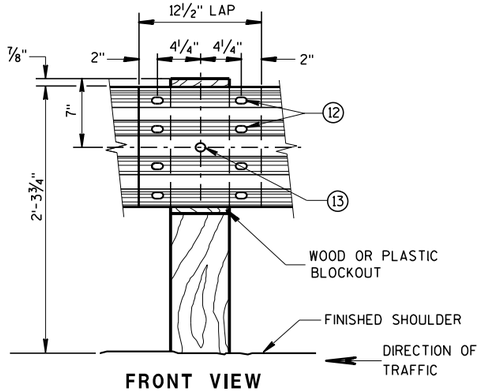


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

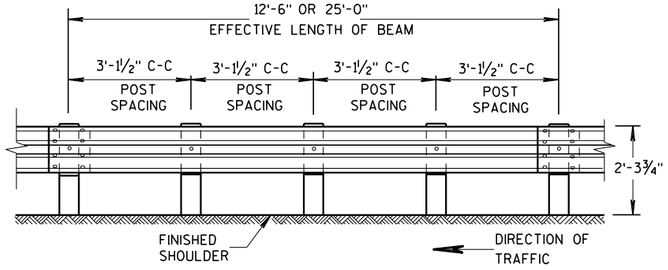
GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

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

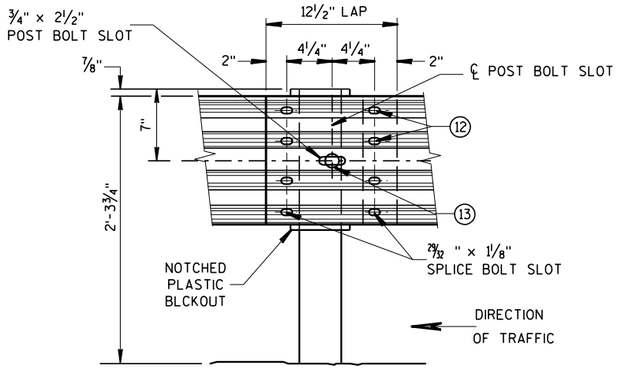
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) ⅝" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH ⅝" DIA. F844 FLAT WASHER UNDER NUT.



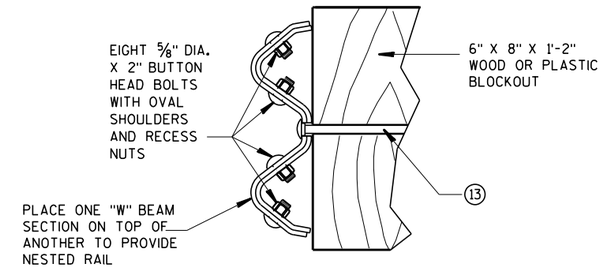
FRONT VIEW

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



FRONT VIEW

BEAM SPLICE AT STEEL POST

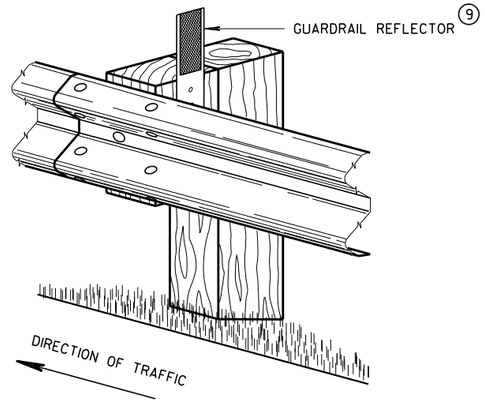


NESTED W BEAM (NW)

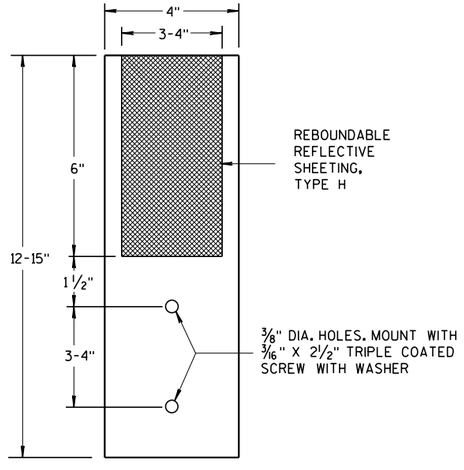
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

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



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



4"x 12" GUARDRAIL REFLECTOR

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

STATE OF WISCO 50
DEPARTMENT OF TRANSPORTATION

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

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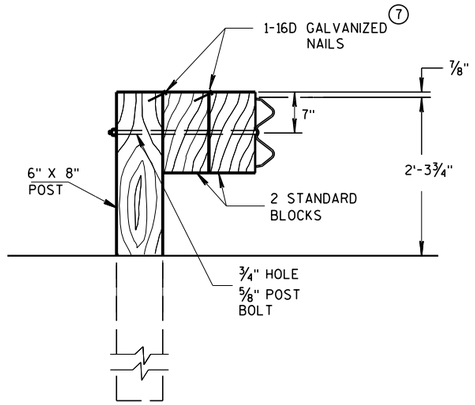
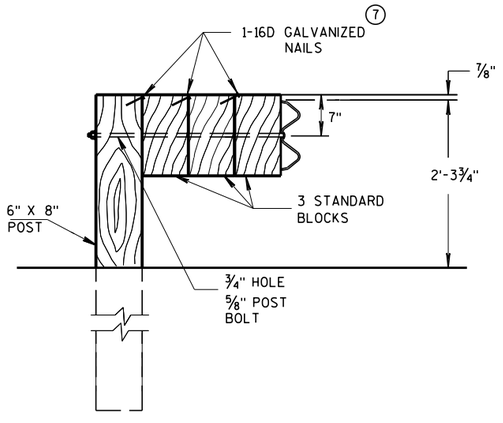
S.D.D. 14 B 15-11b



DETAIL FOR DOUBLE BLOCKS

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

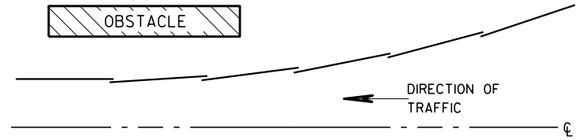


DETAIL FOR TRIPLE BLOCKS

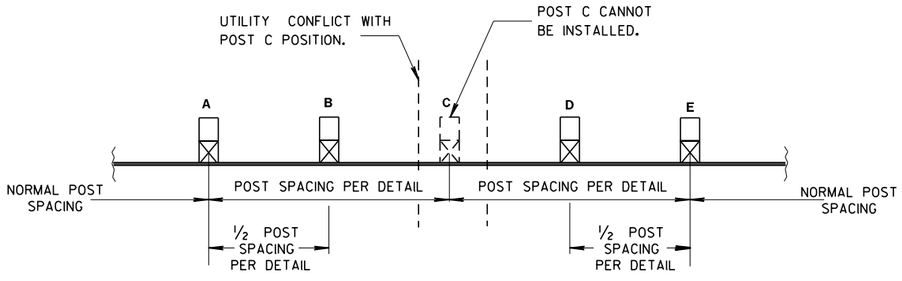
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

BILL OF MATERIALS

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

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

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

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

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

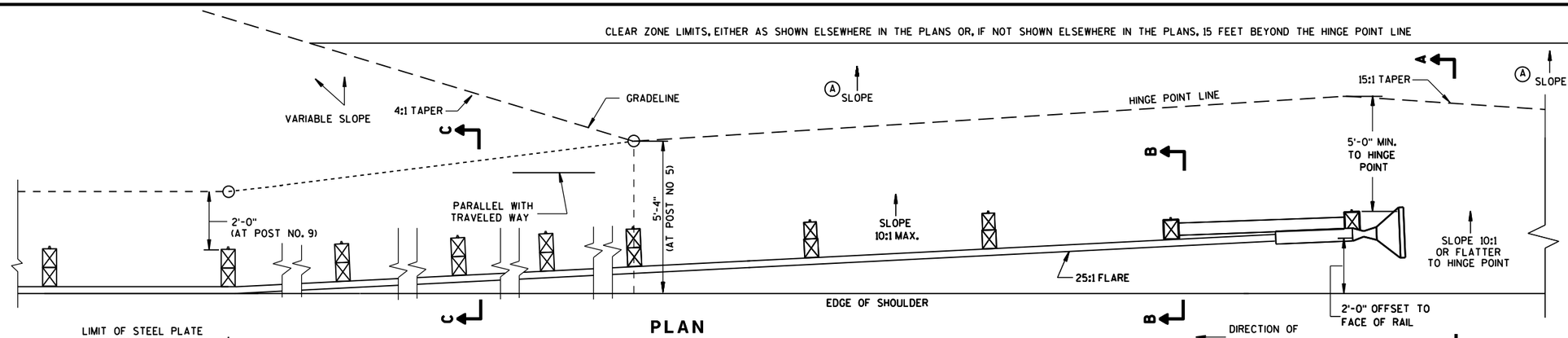
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

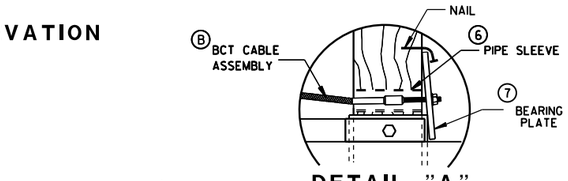
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

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

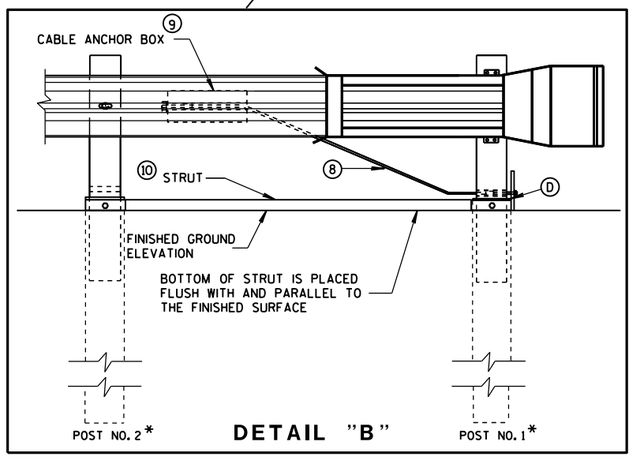
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

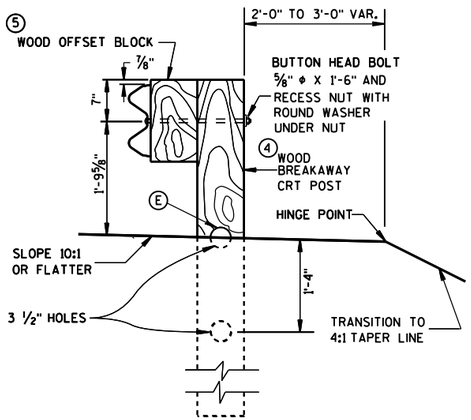




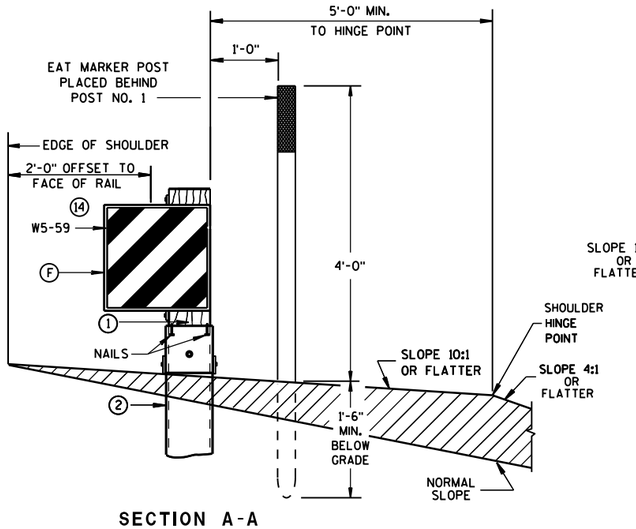
DETAIL "A"



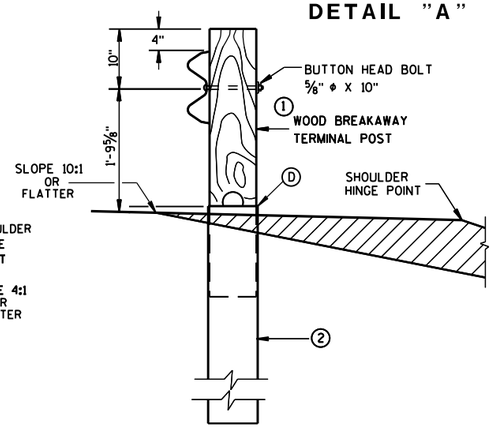
DETAIL "B"



SECTION C-C
TYPICAL AT POST NOS. 6, 8



SECTION A-A
TYPICAL AT POST NO. 1*



SECTION B-B
TYPICAL AT POST NO. 2*

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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

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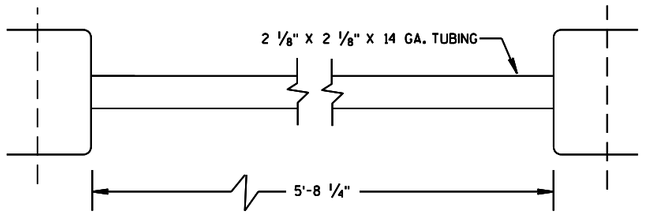
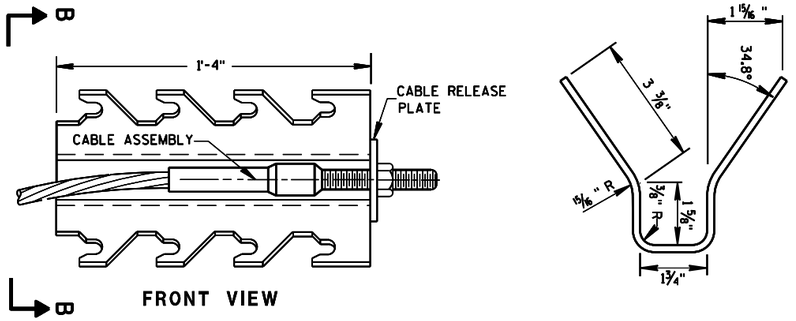
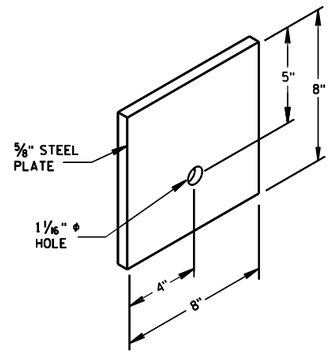
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL



⑨ CABLE ANCHOR BOX



⑦ STEEL BEARING PLATE

6

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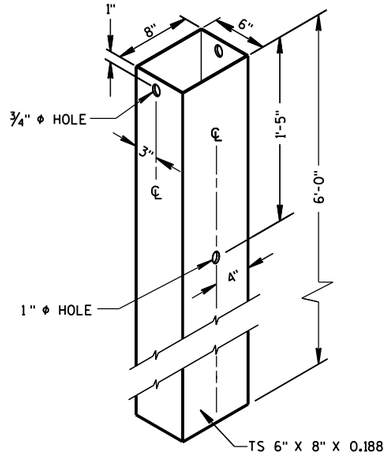
S.D.D. 14 B 24-9b

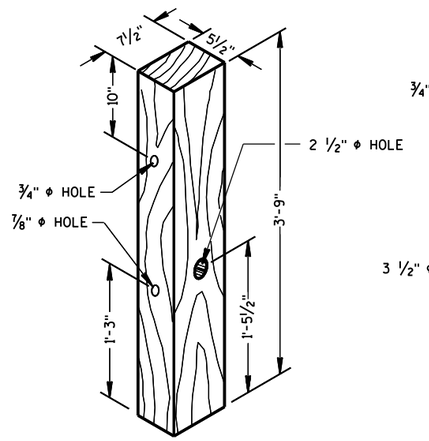
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

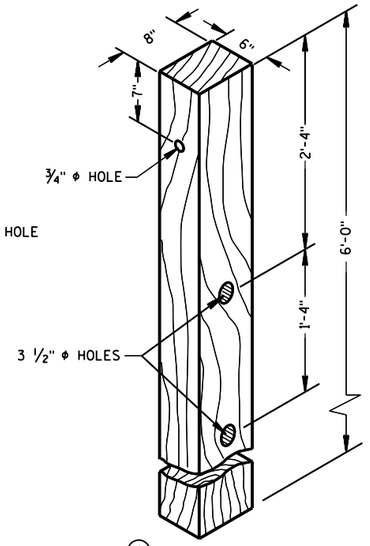
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



② 72" STEEL TUBE
(POSTS NO. 1-2



① TERMINAL POST

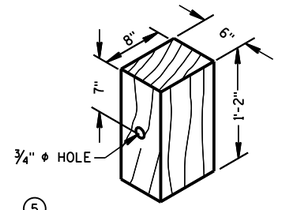


④ CRT POST
(POSTS NO'S 5-8

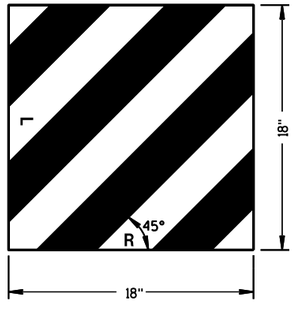
WOOD BREAKAWAY POSTS

GENERAL NOTES

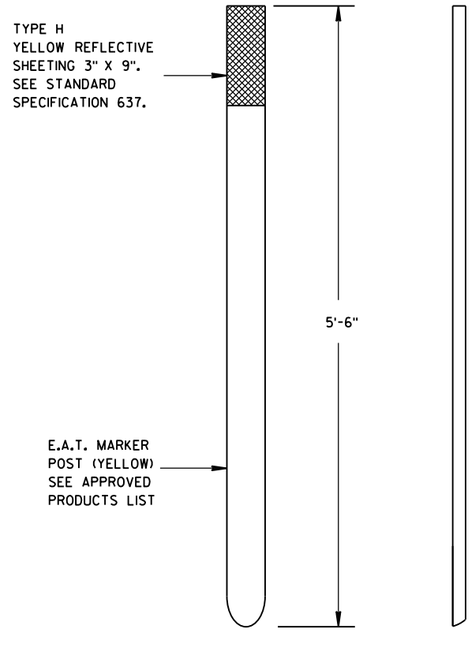
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



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



⑭ REFLECTIVE SHEETING DETAILS



E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

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

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

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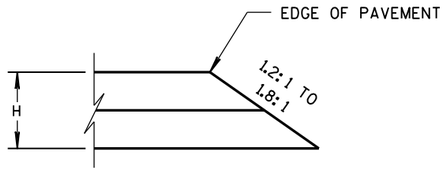
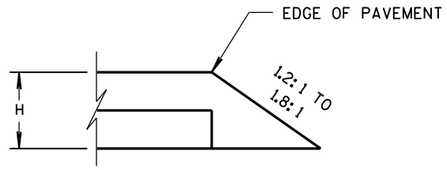
S.D.D. 14 B 24-9c



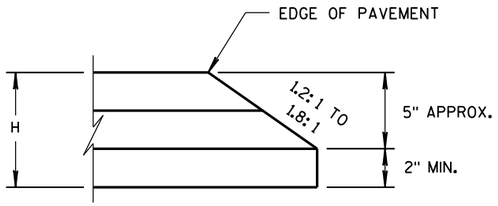
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



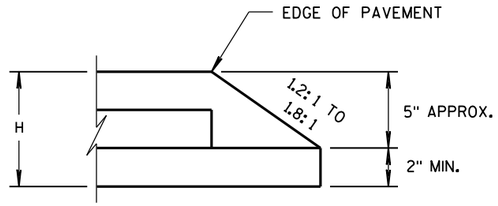
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

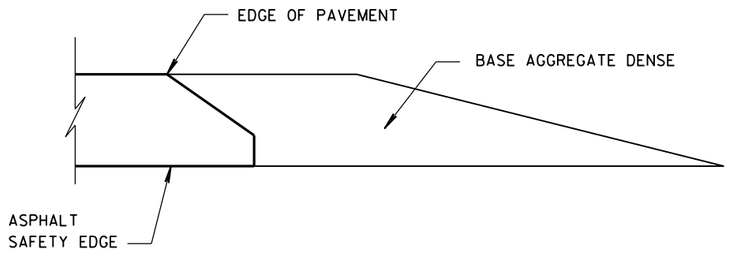
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

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S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

SAFETY EDGE SM

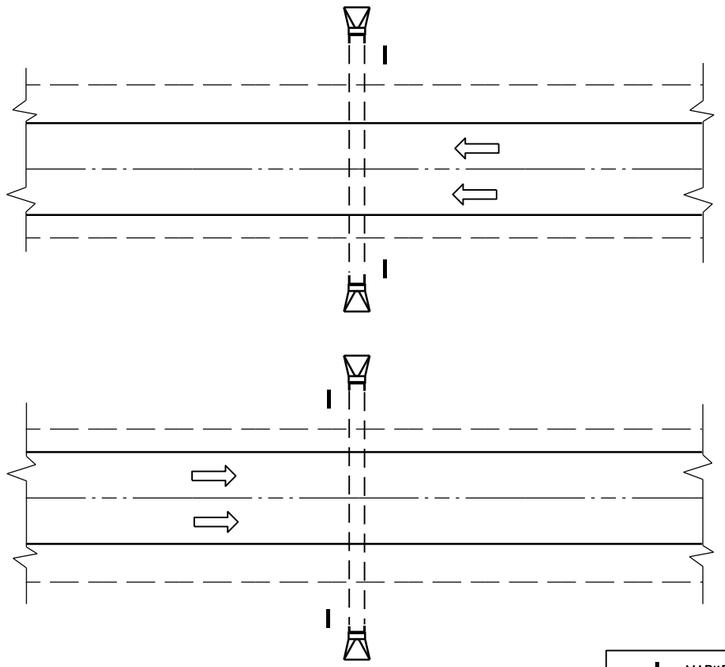
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

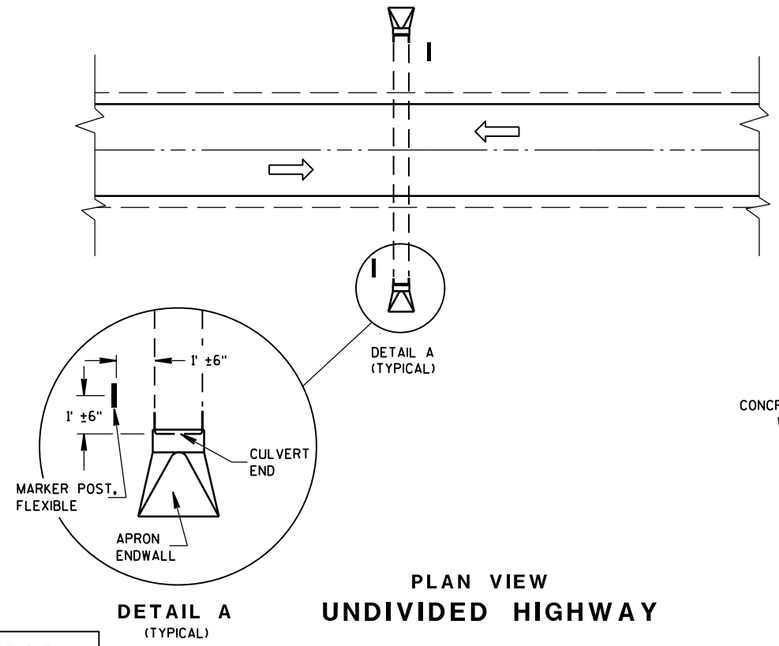
/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

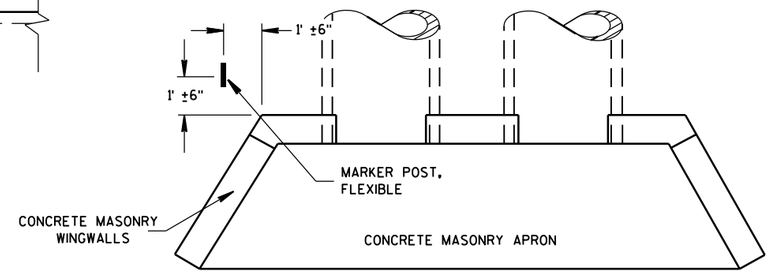
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

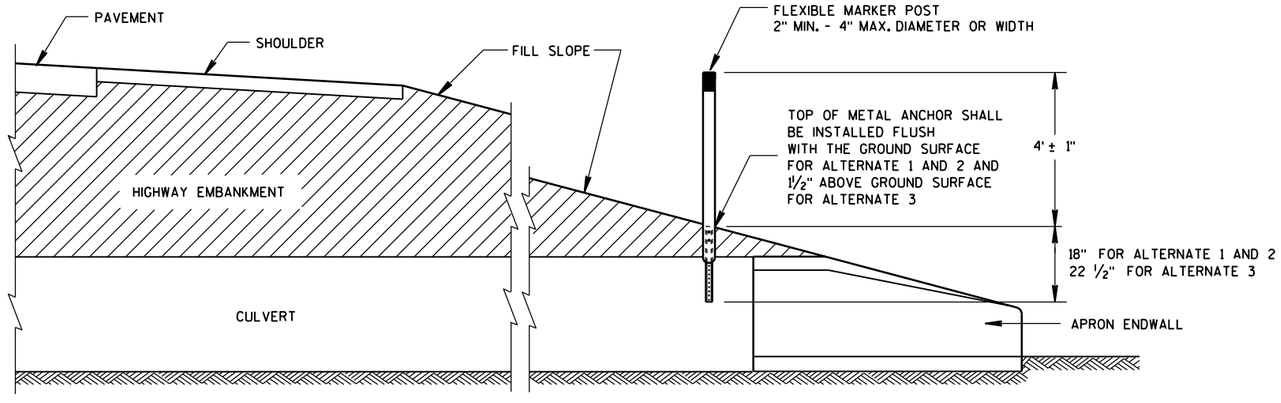
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



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

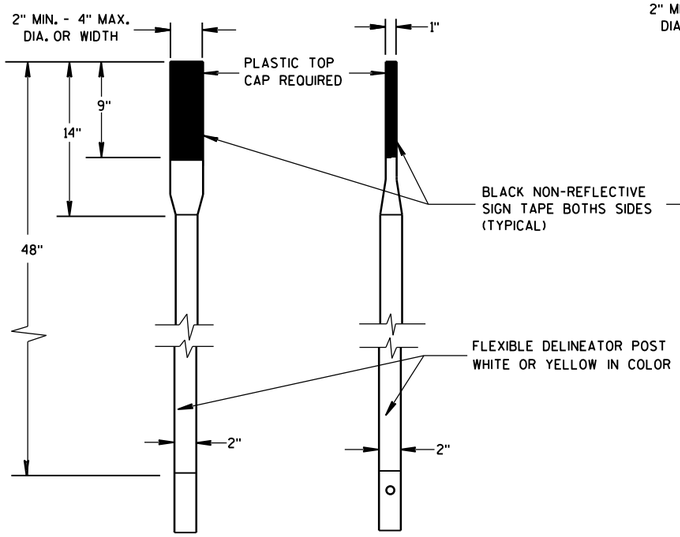
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

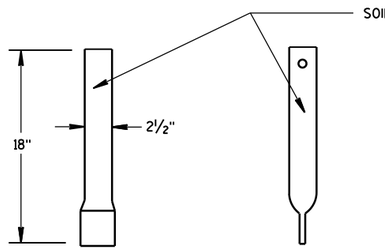
6

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

6

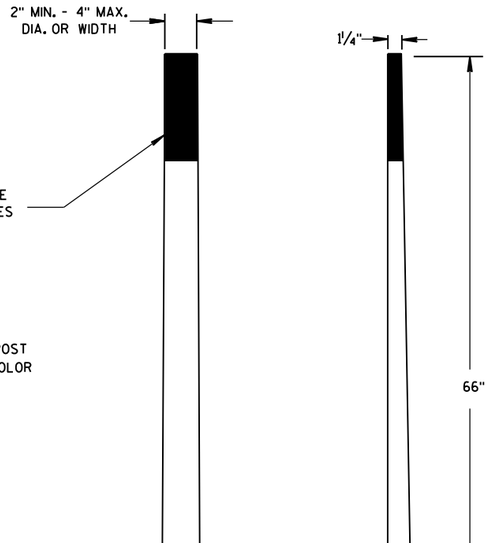
S.D.D. 15 A 3-2a





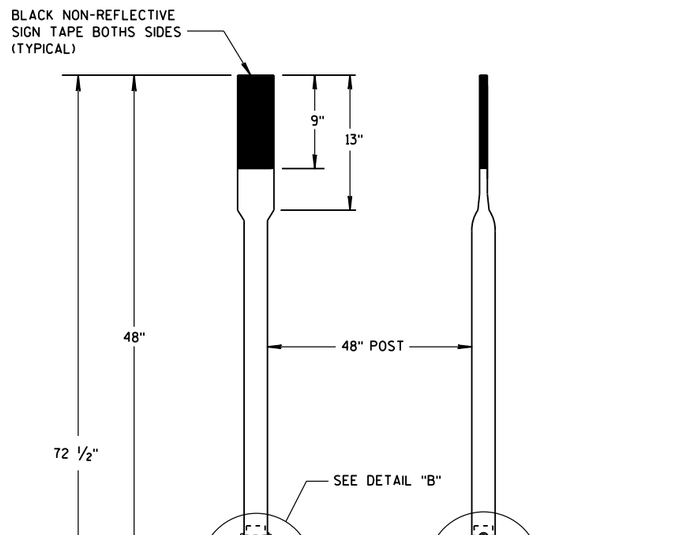
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

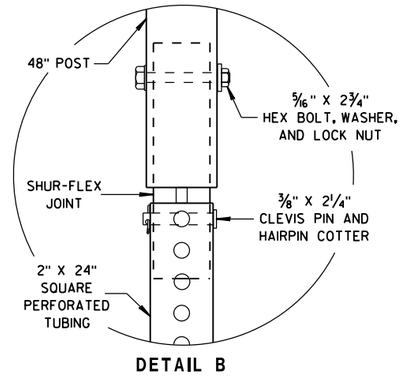
ALTERNATE 2



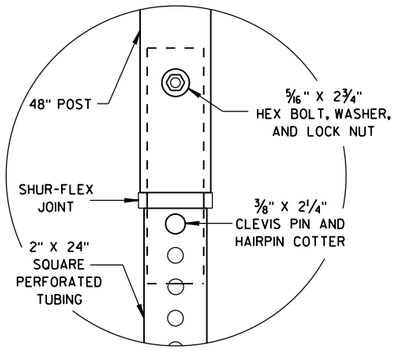
FRONT VIEW SIDE VIEW

ALTERNATE 3

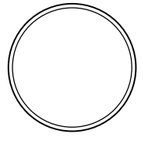
FLEXIBLE MARKER POSTS



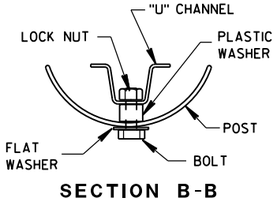
DETAIL B



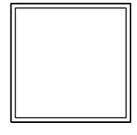
DETAIL C



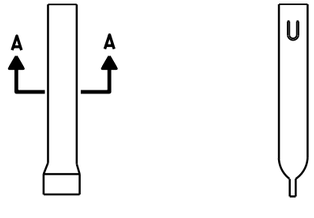
SECTION A-A



SECTION B-B

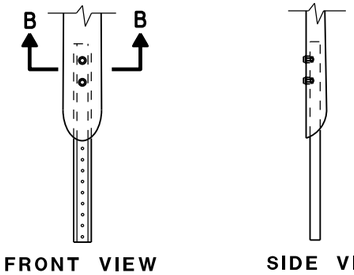


SECTION C-C



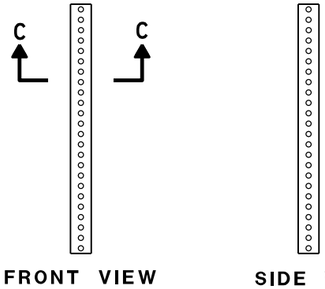
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2



FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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

6

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

GENERAL NOTES

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

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

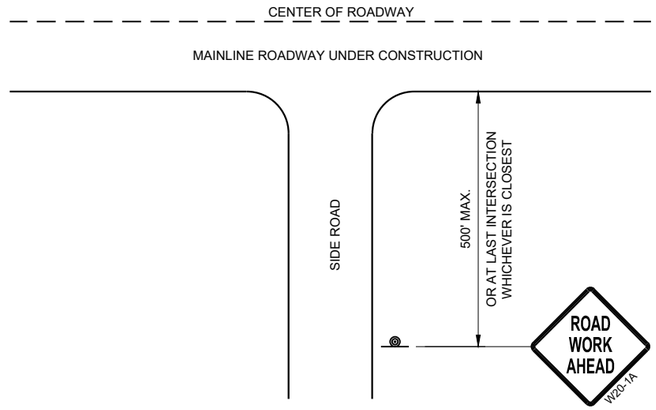
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

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

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



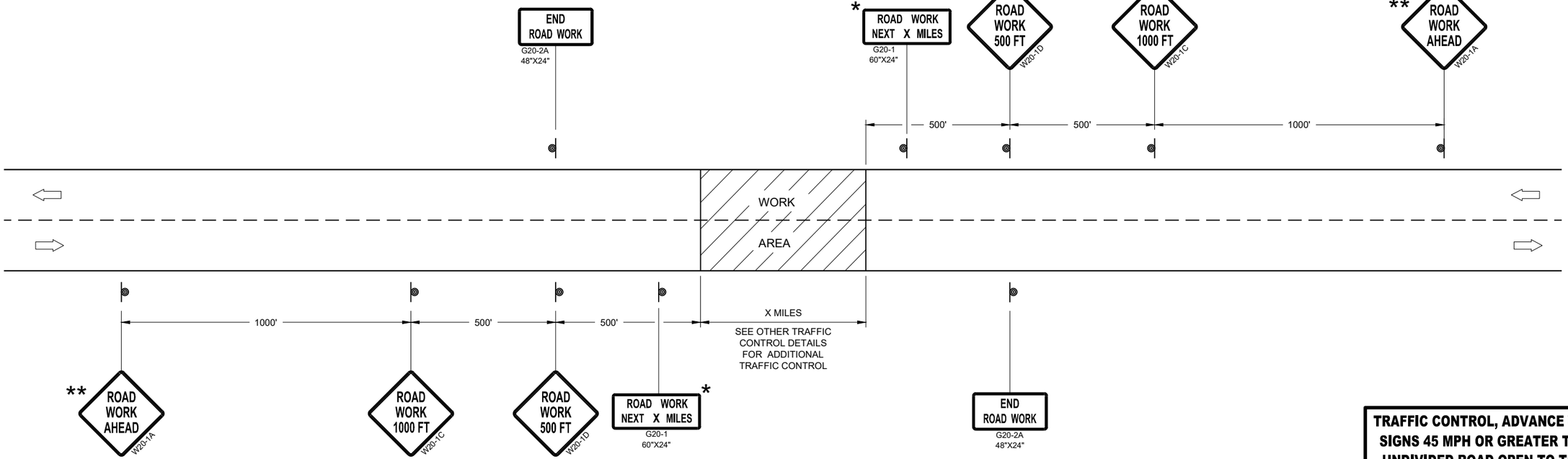
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

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.

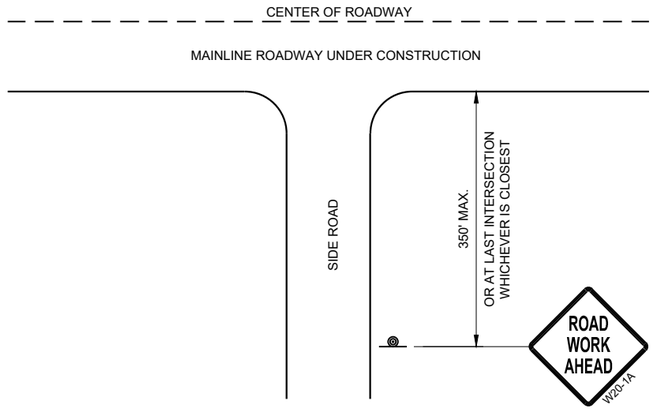
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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.



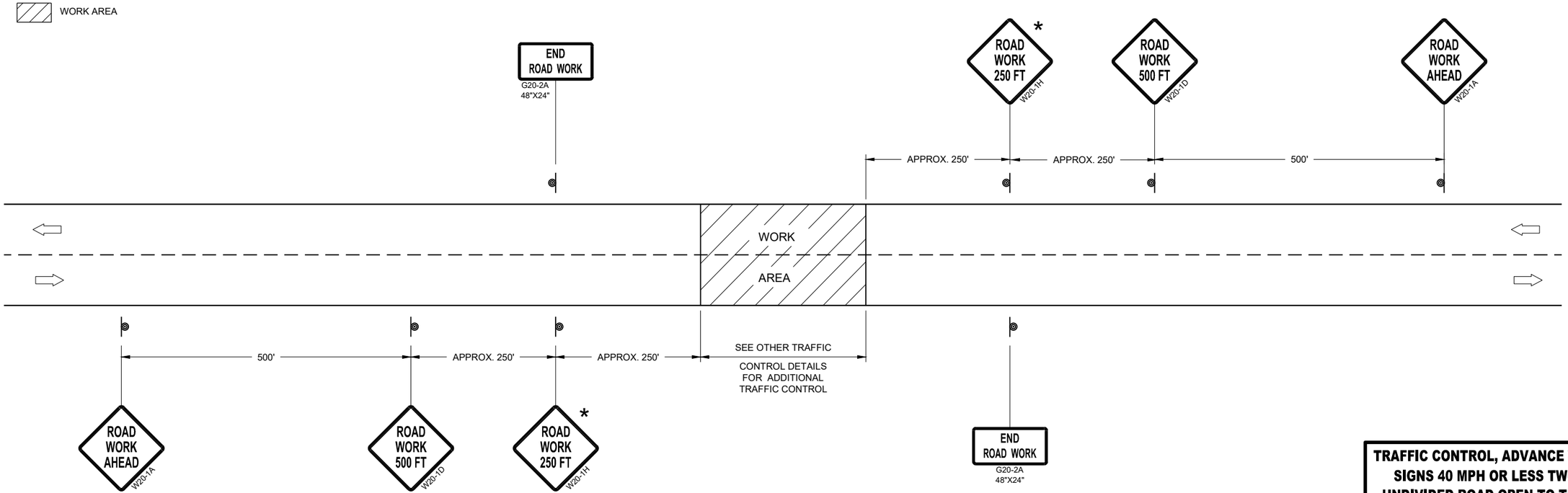
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

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 TRAFFICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

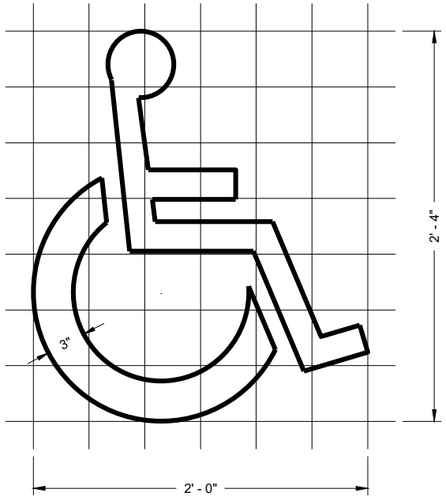
FHWA

6

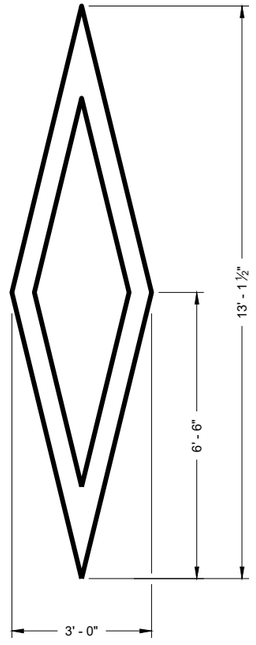
SDD 15C05 - 05

GENERAL NOTES

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



HANDICAP SYMBOL



PREFERENTIAL LANE SYMBOL

6

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SDD 15C07 - 15a

SDD 15C07 - 15a

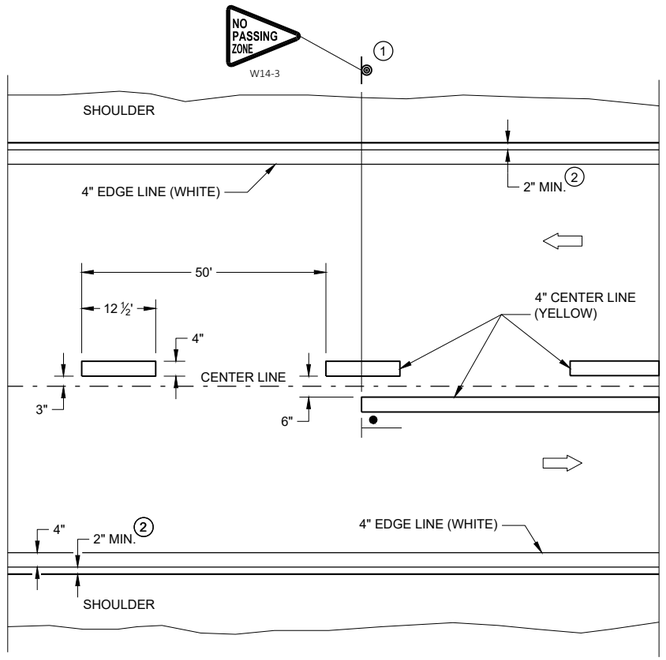
PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

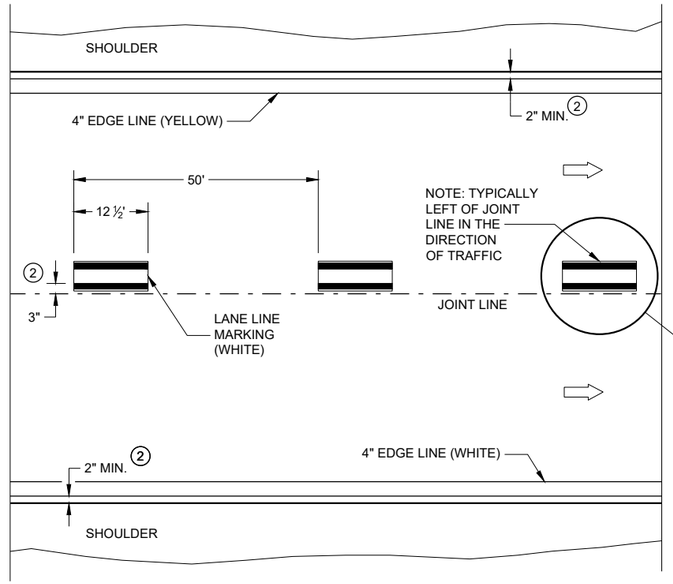
APPROVED
November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

FHWA

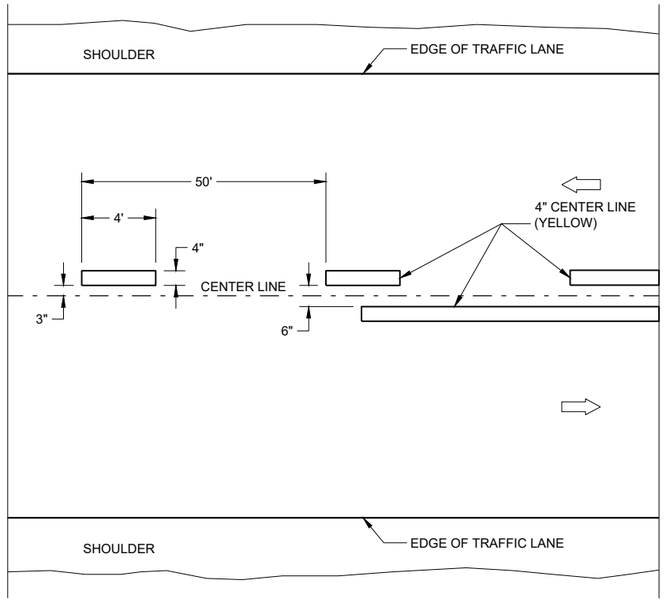


TWO WAY TRAFFIC

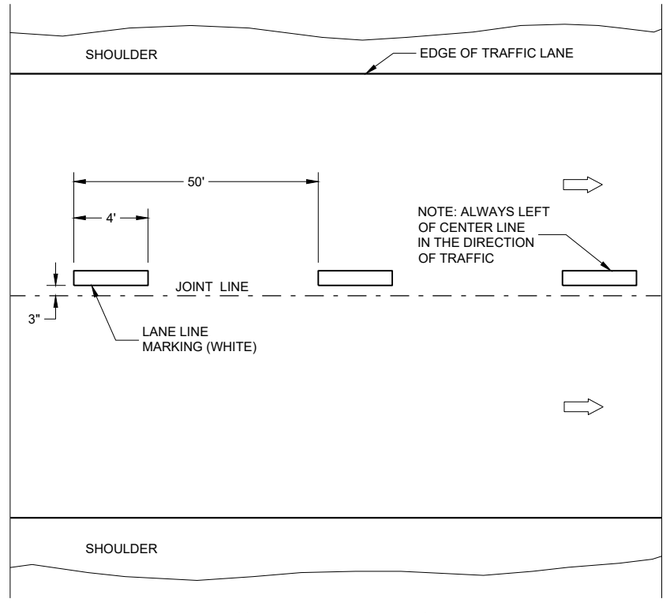


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

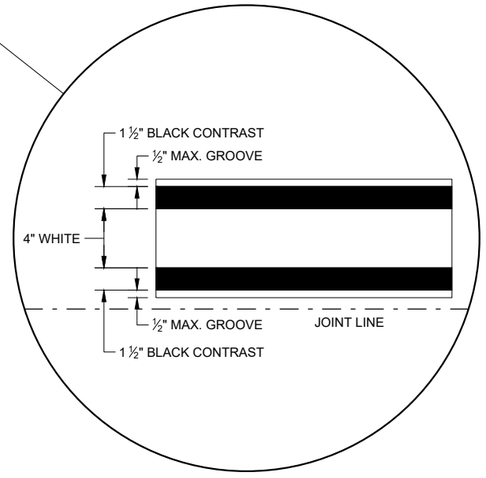
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

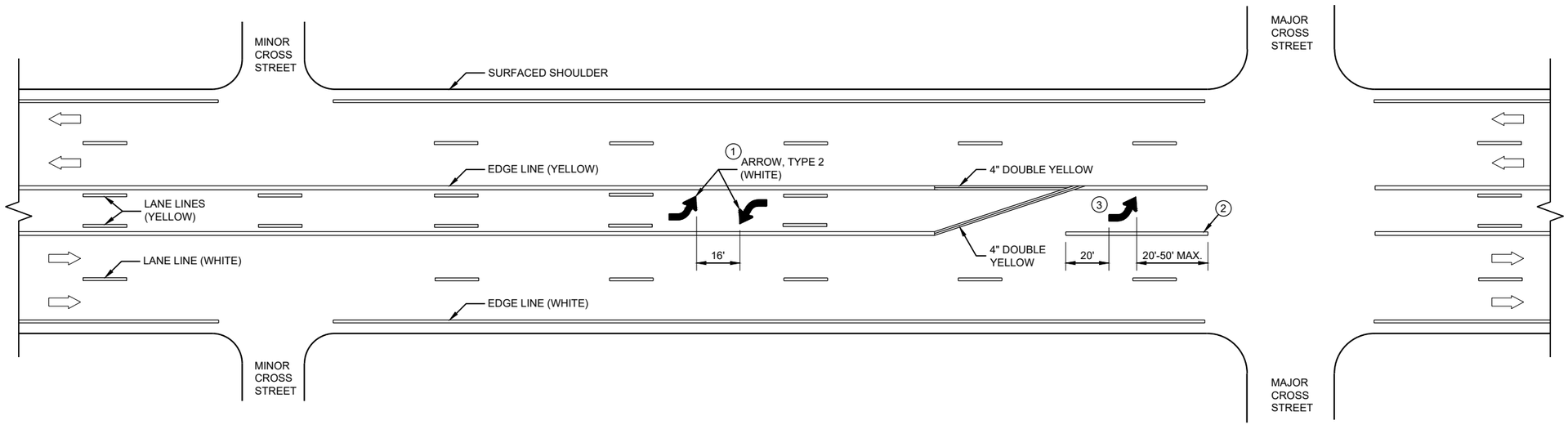
SDD 15C08 - 20a

SDD 15C08 - 20a

GENERAL NOTES

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

DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

6

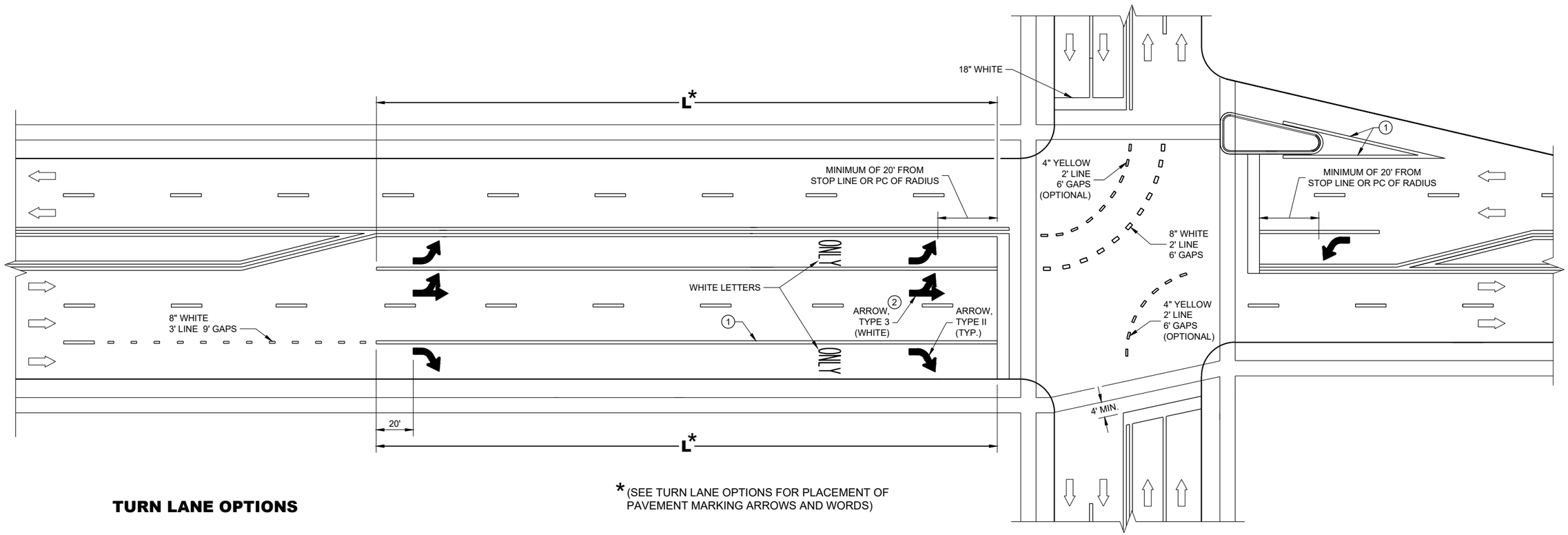
SDD 15C08 - 20b

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

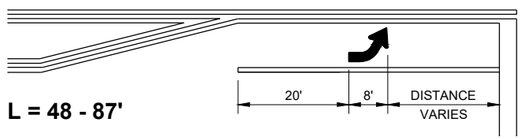
SDD 15C08 - 20b



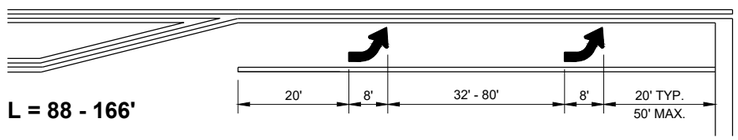
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

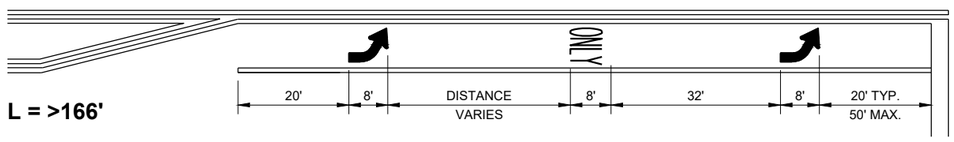
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

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

DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

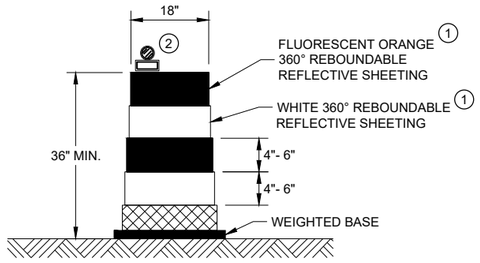
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

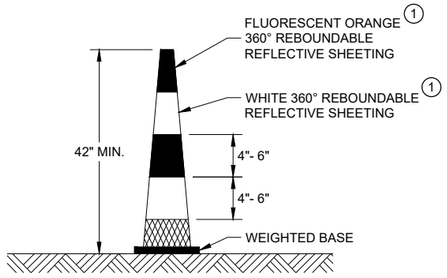
SDD 15C08 - 20c

GENERAL NOTES

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

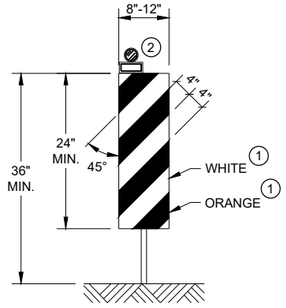


DRUM



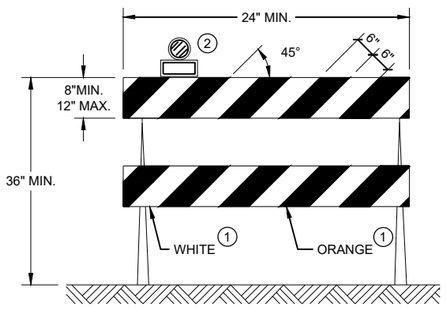
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



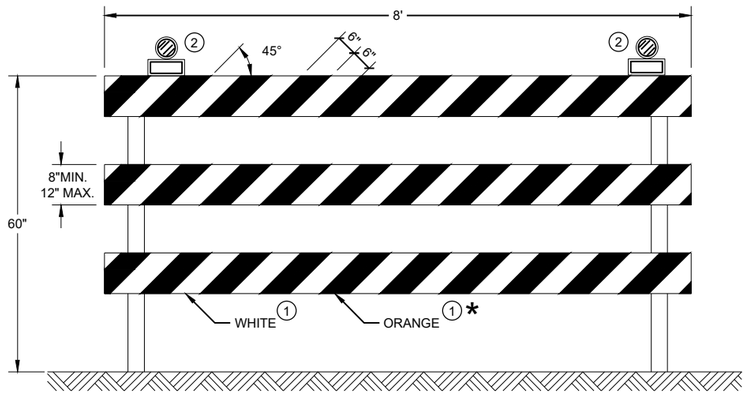
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

6

SDD 15C11 - 08b

6

SDD 15C11 - 08b

LEGEND

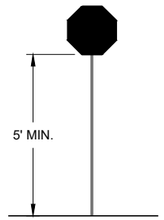
SIGN ON PORTABLE OR PERMANENT SUPPORT

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.

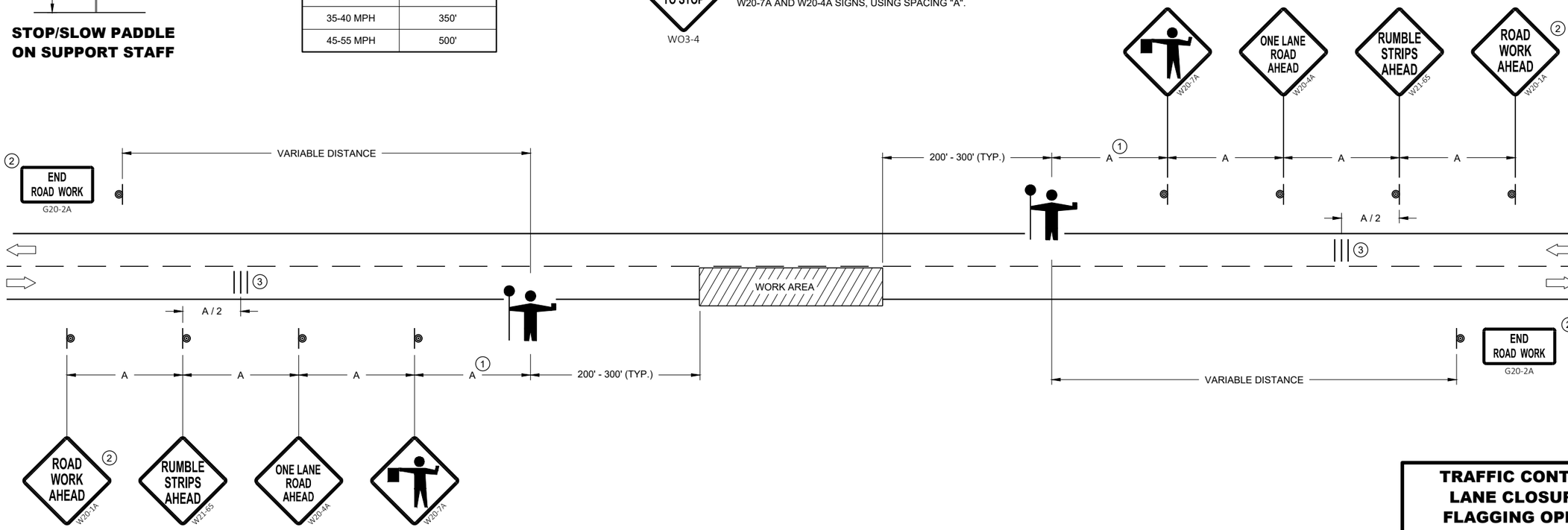
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

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.

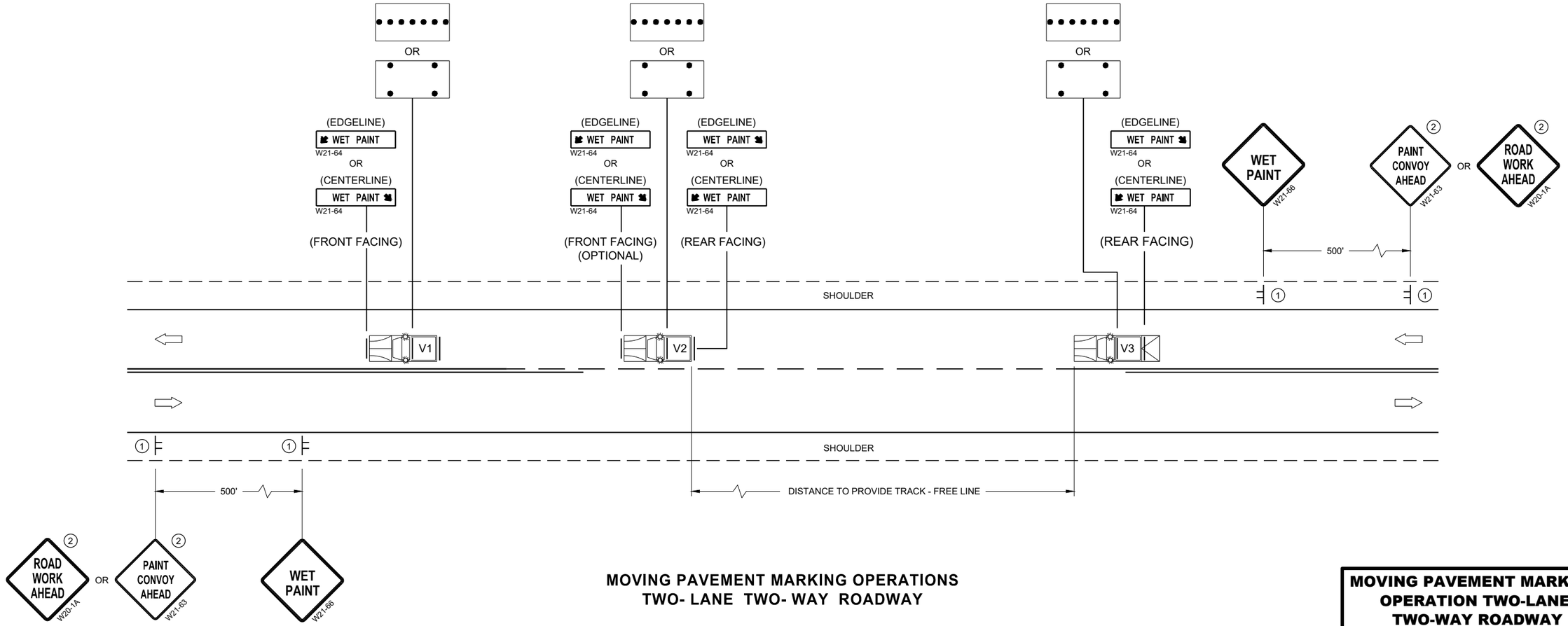
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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 18" FOR WET PAVEMENT MARKING .

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

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



MOVING PAVEMENT MARKING OPERATIONS TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15C19 - 06a

SDD 15C19 - 06a

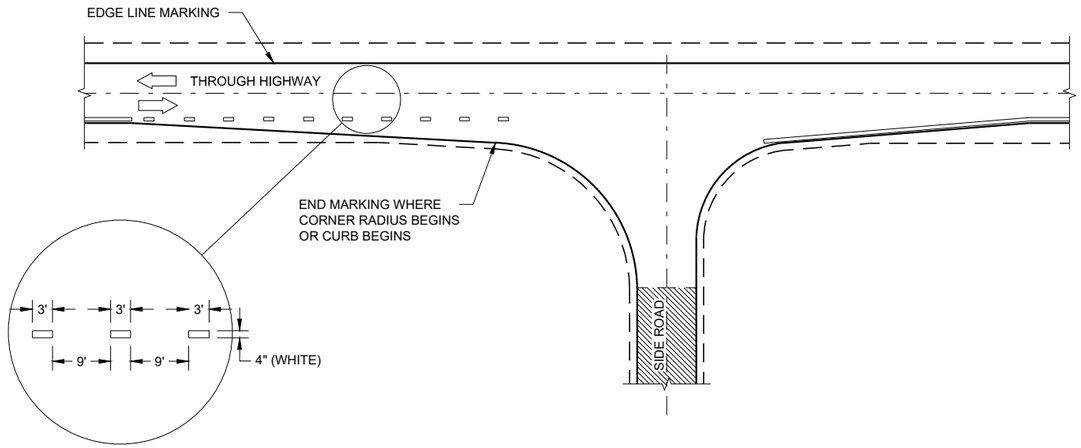
GENERAL NOTES

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

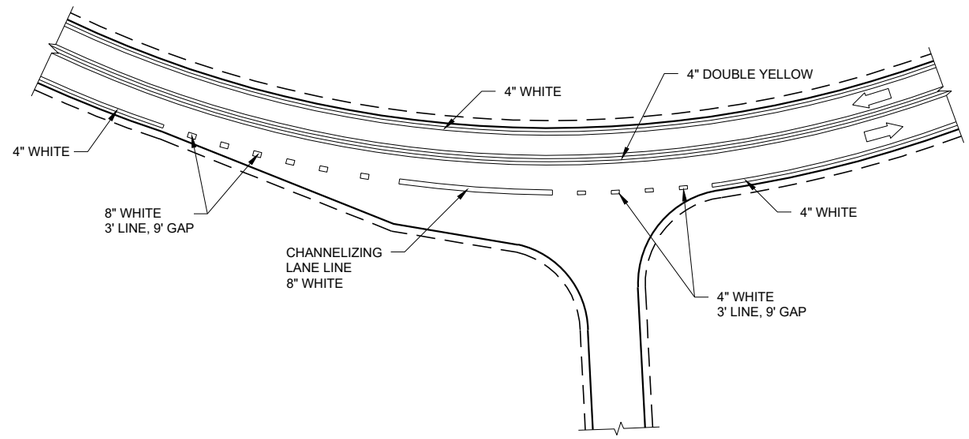
1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

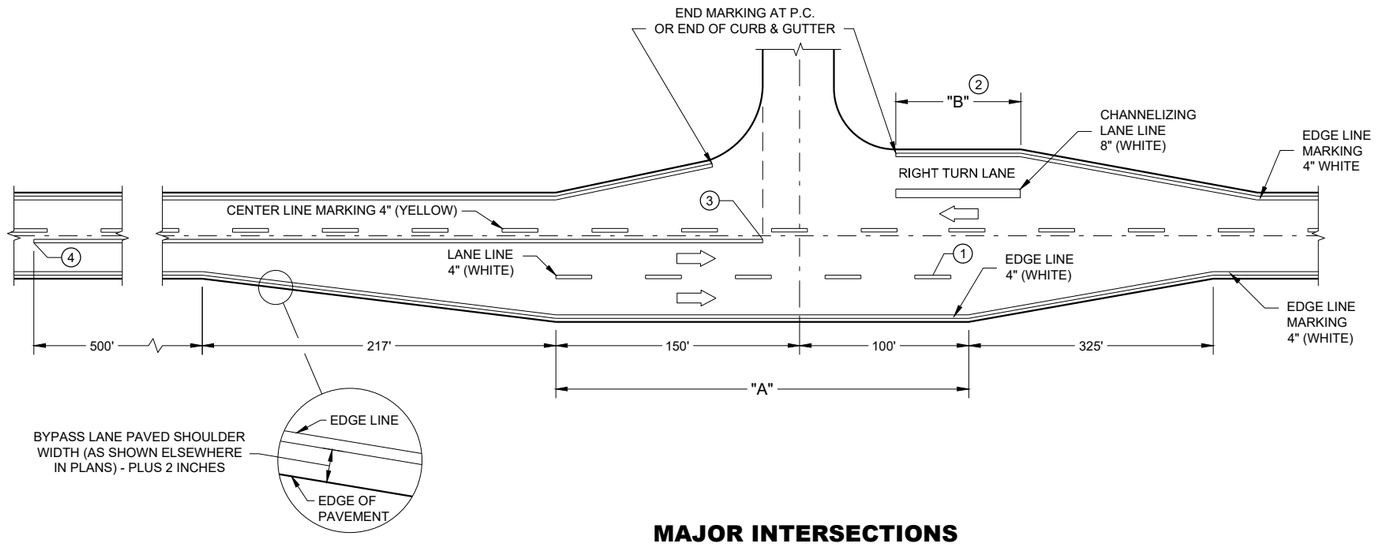
DIRECTION OF TRAVEL



MINOR INTERSECTION



INTERSECTION ON OUTSIDE OF CURVE



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

PAVEMENT MARKING (INTERSECTIONS)

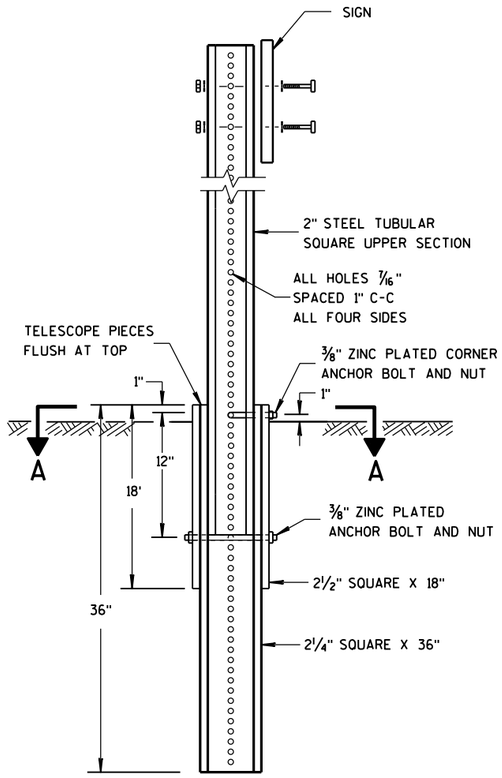
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

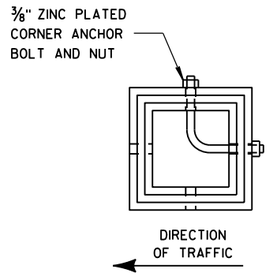
SDD 15C35 - 04a

6

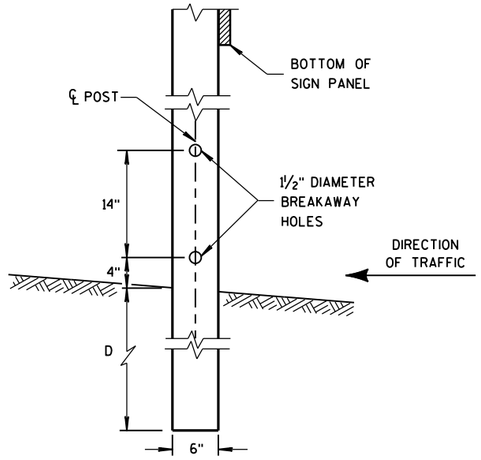
SDD 15C35 - 04a



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



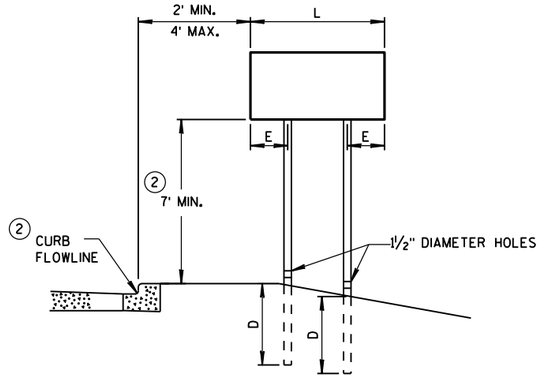
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

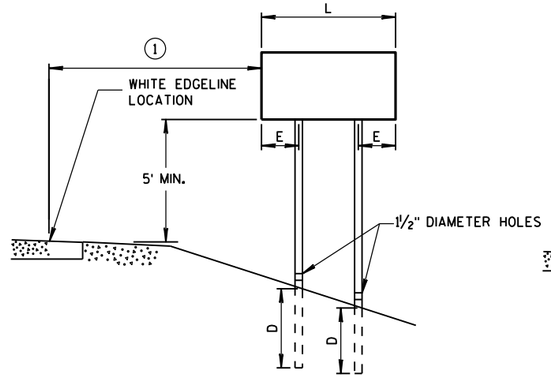
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

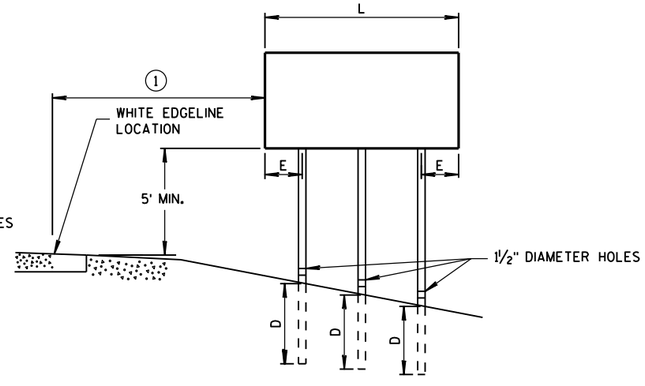
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

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

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

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

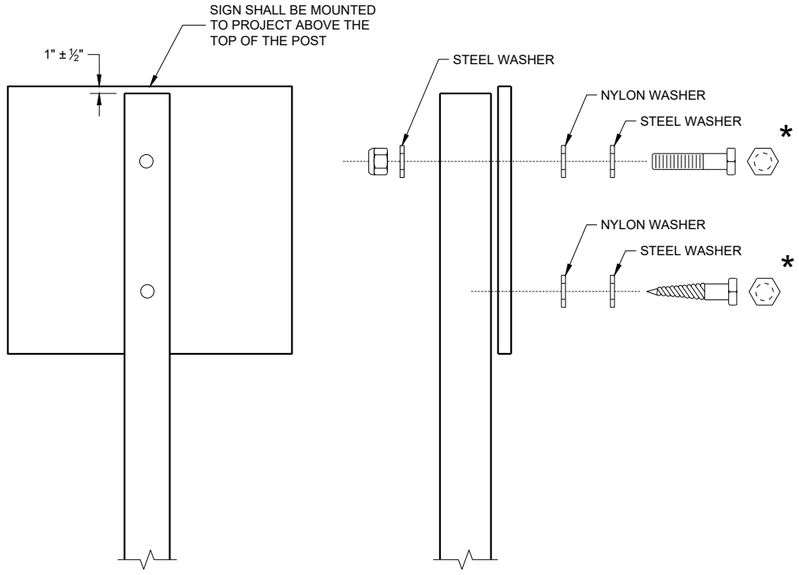
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



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

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

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

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

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

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

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

6

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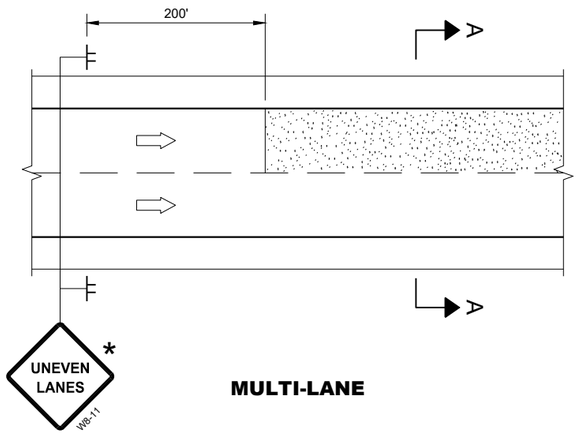
SDD 15D38 - 02b

SDD 15D38 - 02b

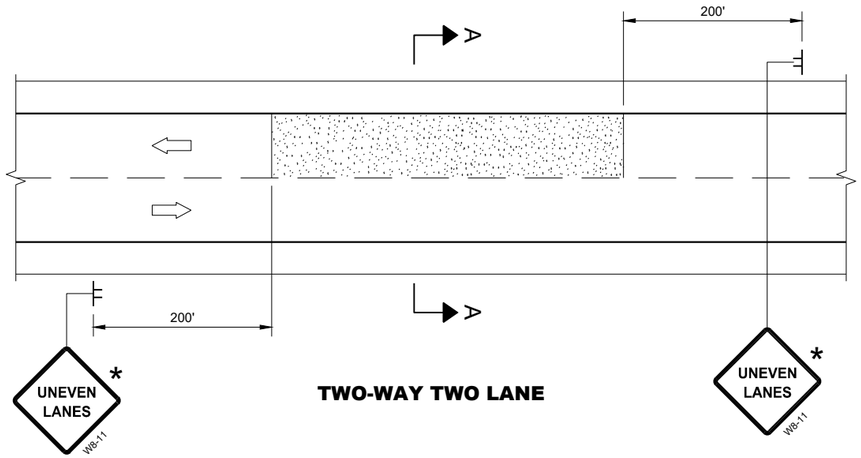
ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

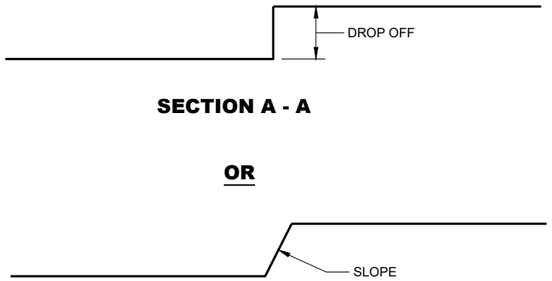
APPROVED
June 2017
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA



MULTI-LANE

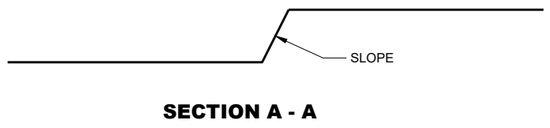


TWO-WAY TWO LANE

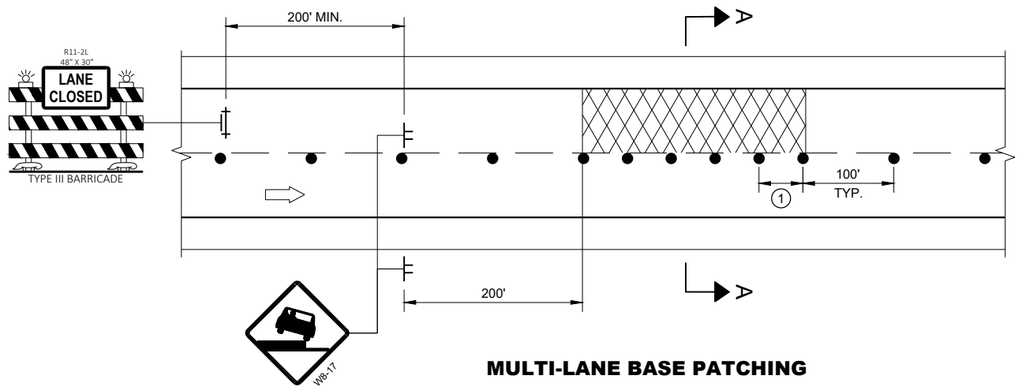


SECTION A - A

OR



SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

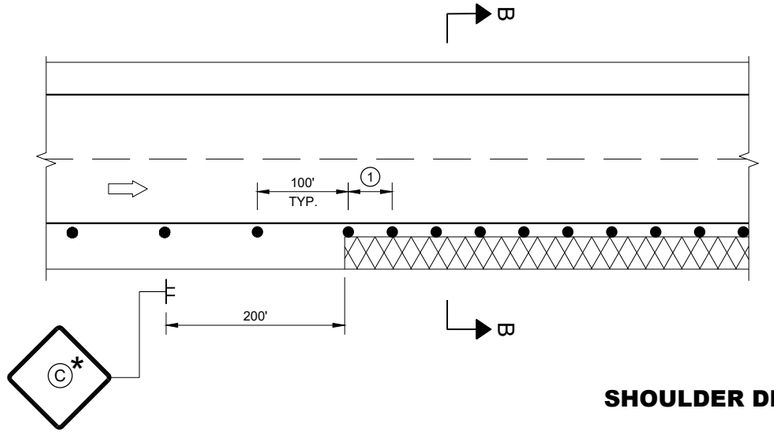
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

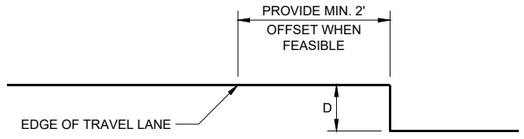
(1) USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

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



SHOULDER DROP-OFFS



SECTION B - B

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

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15D39 - 02

GENERAL NOTES

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

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

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

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

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

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

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

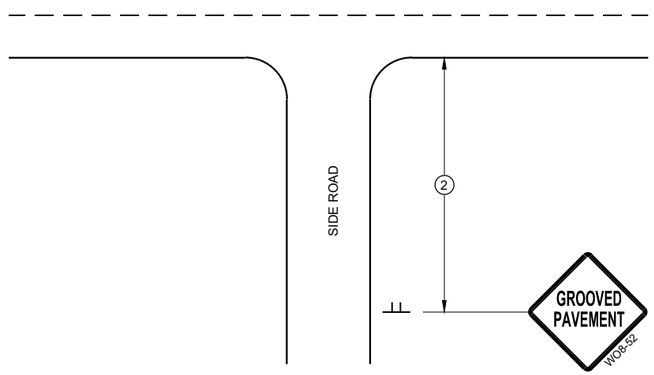
(1) PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

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

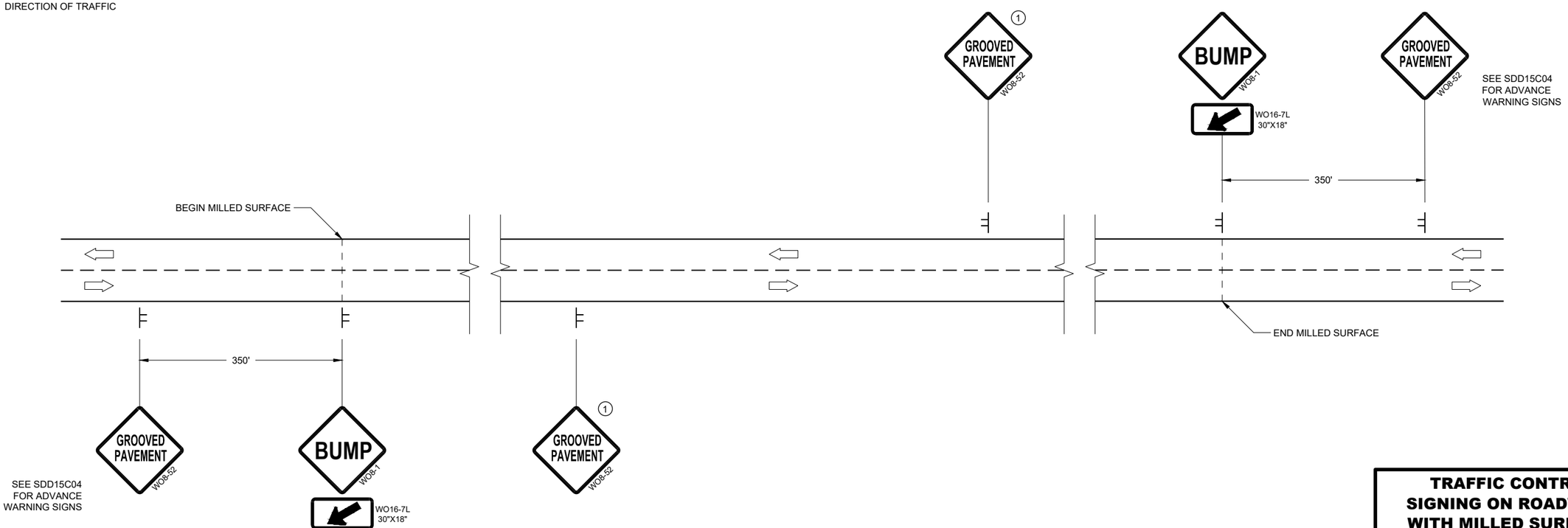
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

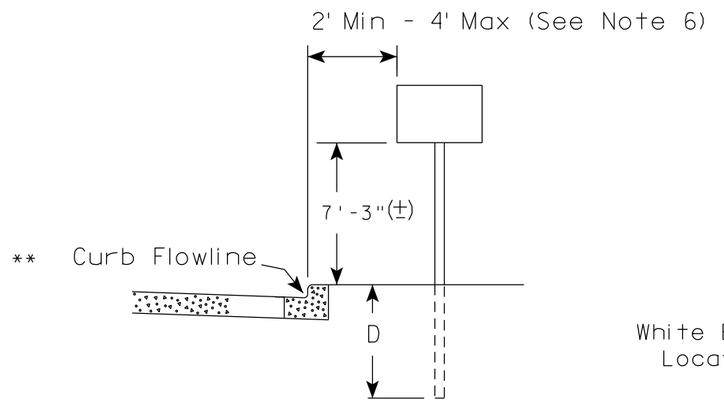
APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

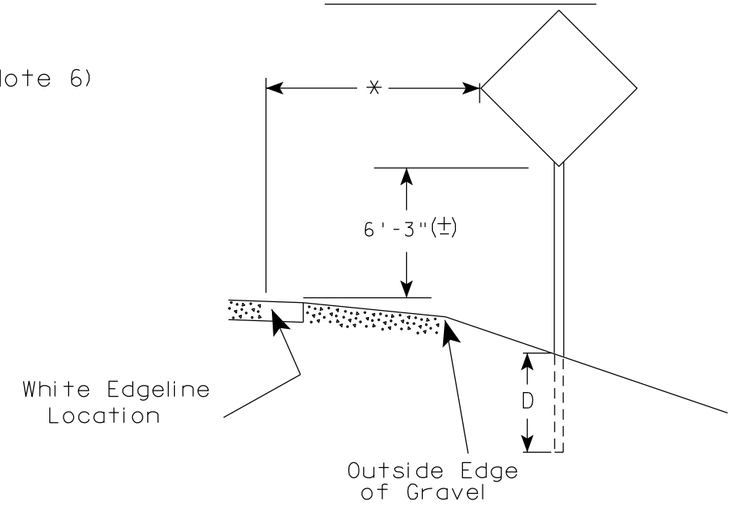
FHWA

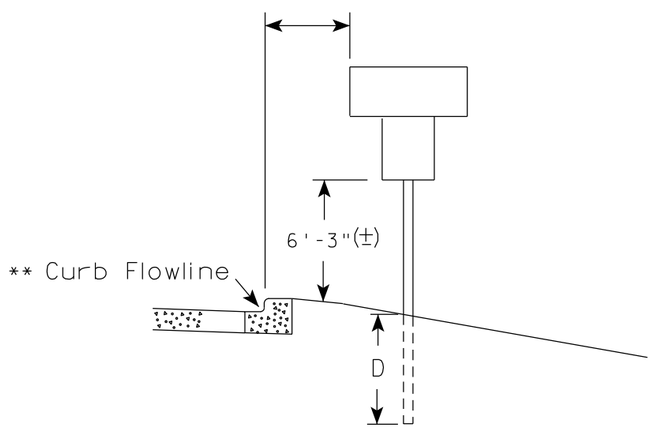
6
SDD 15D44 - 02

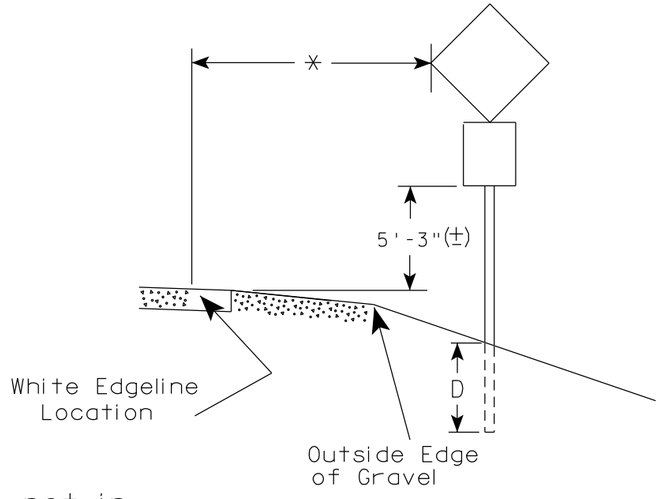
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

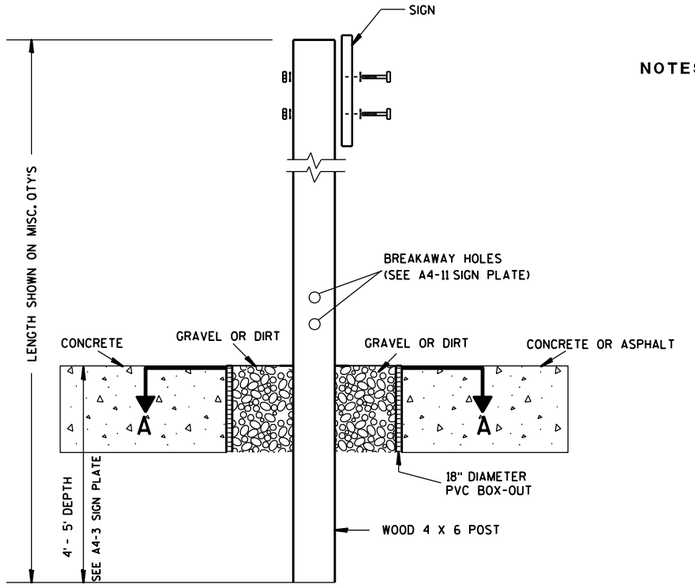
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

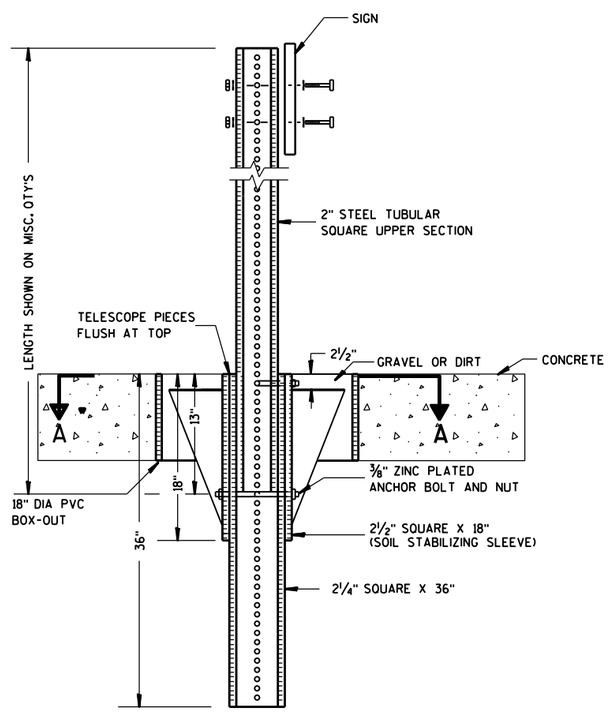
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 72	E



ELEVATION VIEW

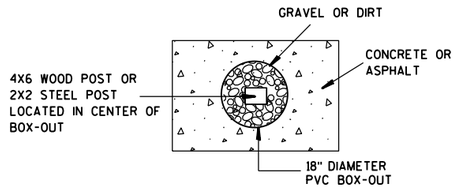
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

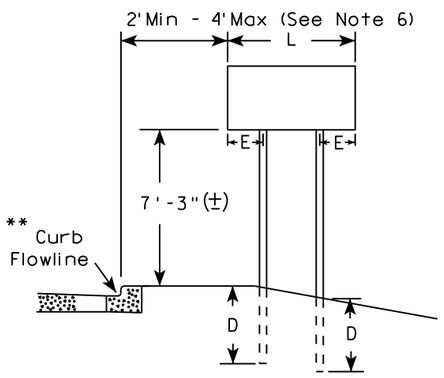
APPROVED Matthew R Rauch
for State Traffic Engineer

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

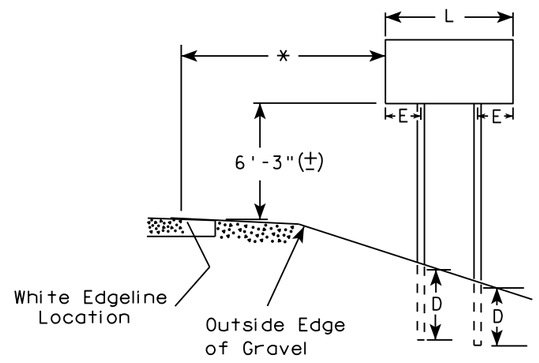
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

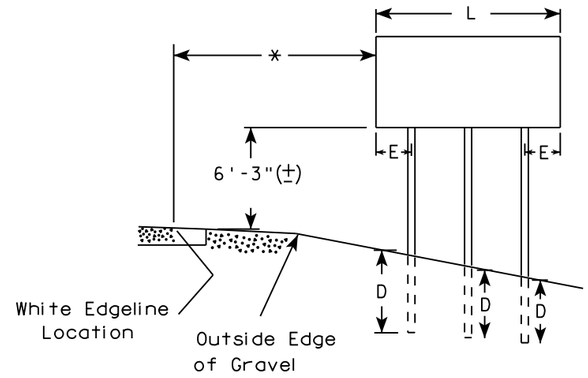
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

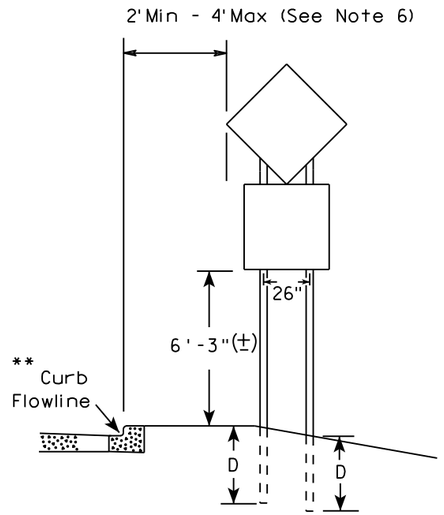
URBAN AREA



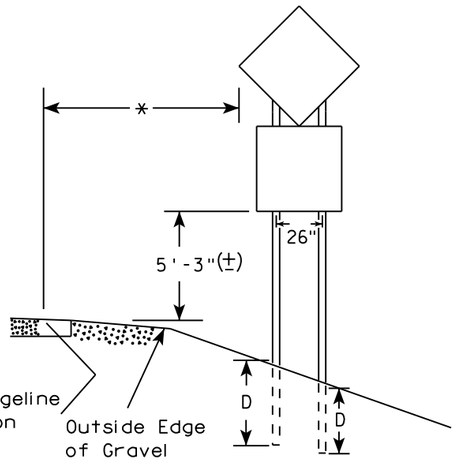
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

GENERAL NOTES

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

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

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

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

POST EMBEDMENT DEPTH

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

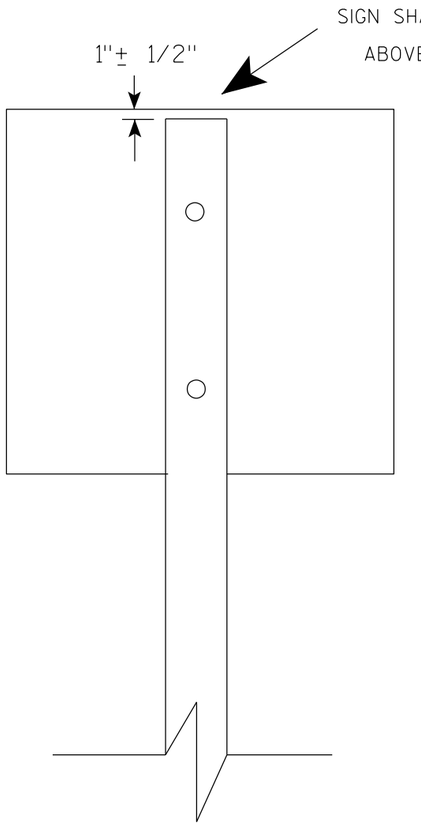
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

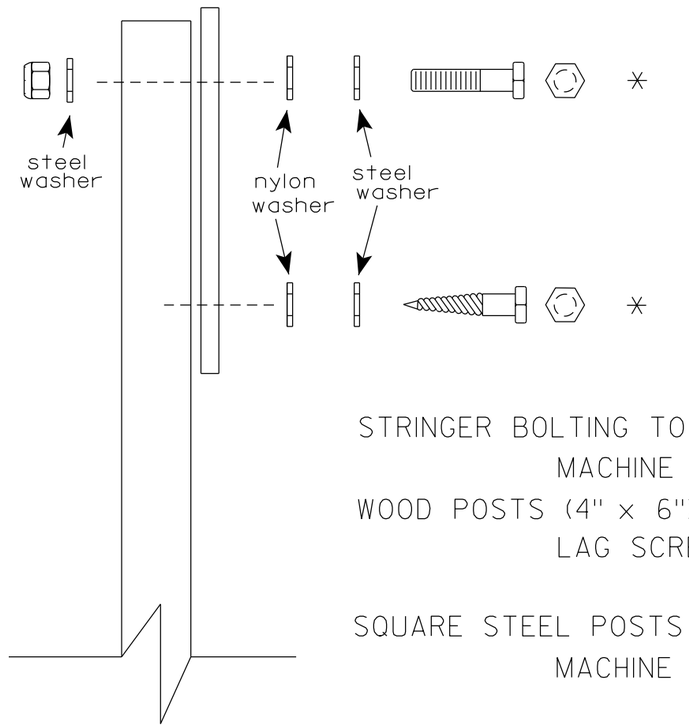
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

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





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

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

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

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

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

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

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

ATTACHMENT OF SIGNS TO POSTS

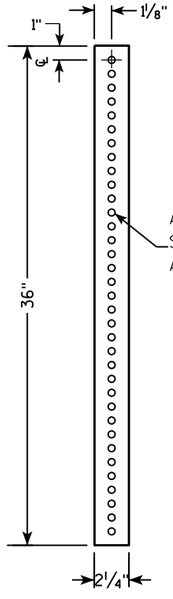
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

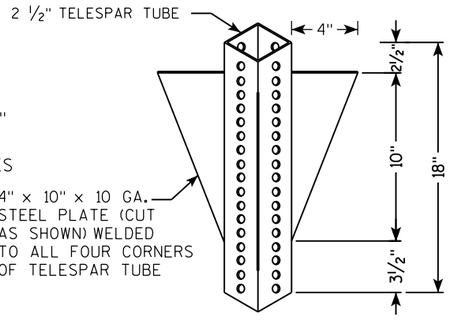
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

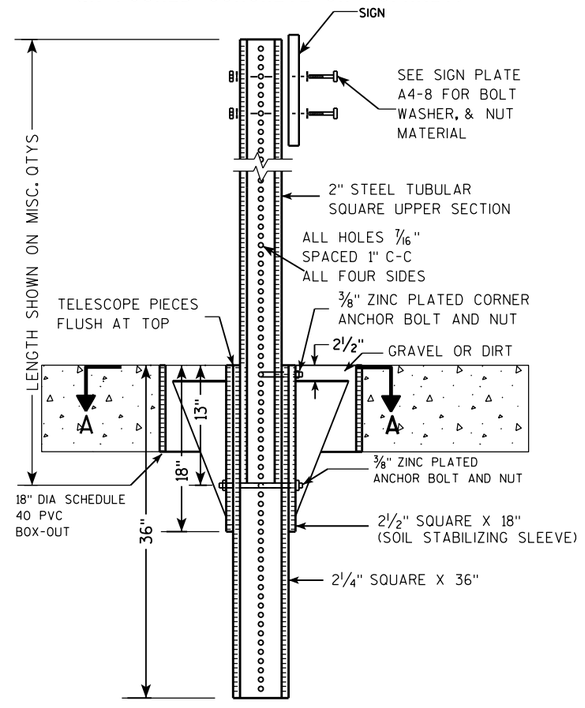
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



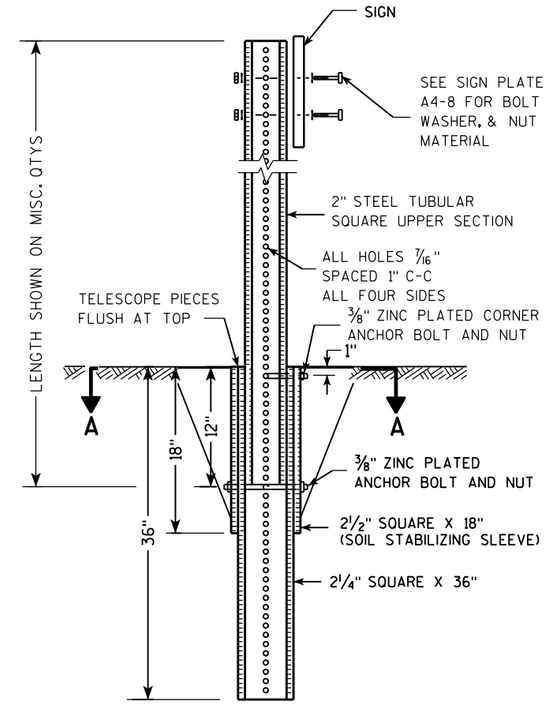
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

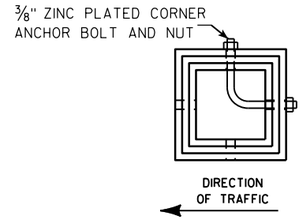


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

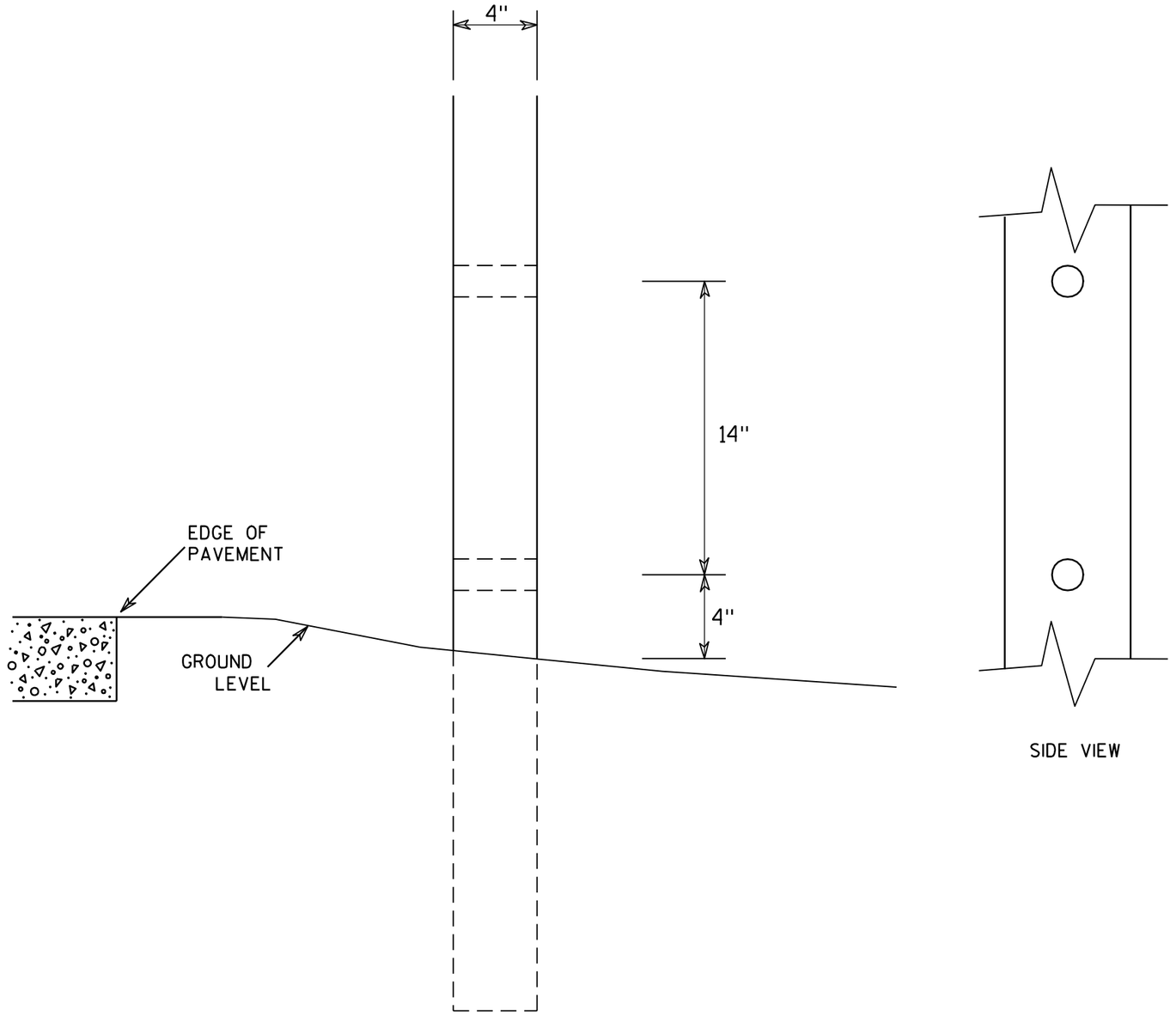
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 76 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



SIDE VIEW

GENERAL NOTES

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

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4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

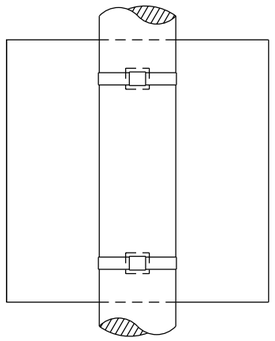
APPROVED Chester J Spang for State Traffic Engineer

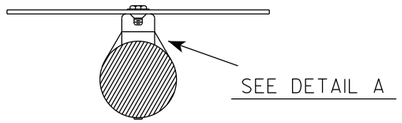
DATE 3/27/97 PLATE NO. A4-11.2

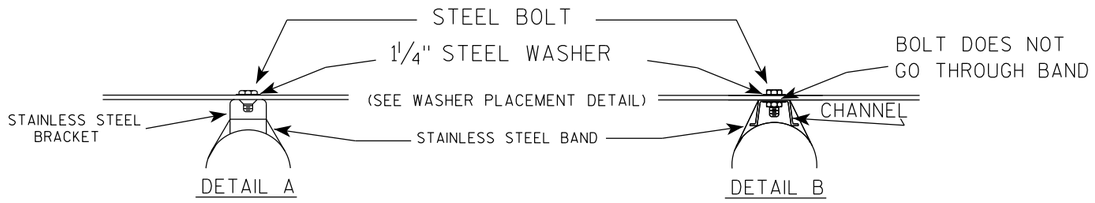
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 77	E

BANDING

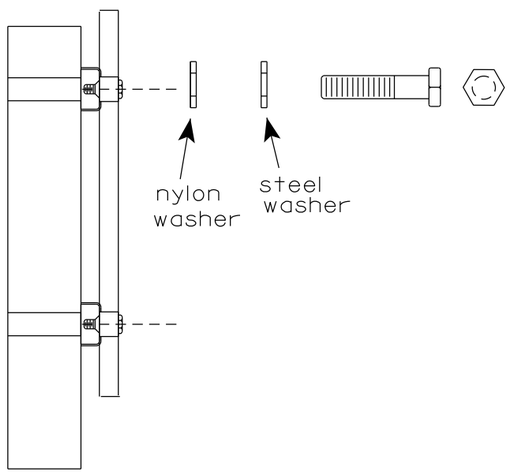
SINGLE SIGN







WASHER PLACEMENT

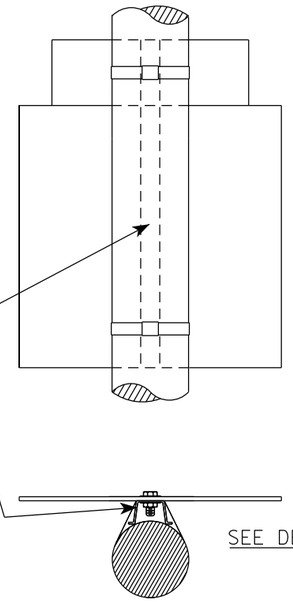


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

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

"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

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

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

7

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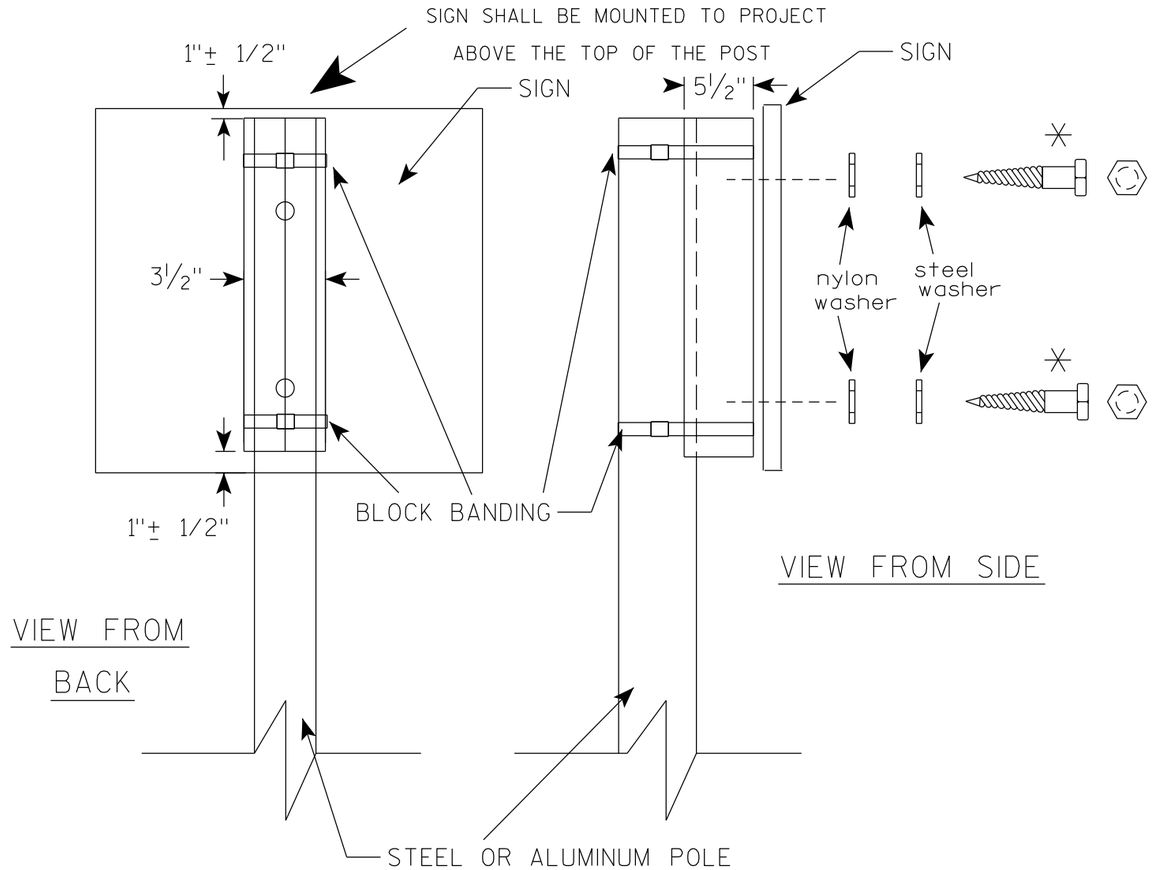
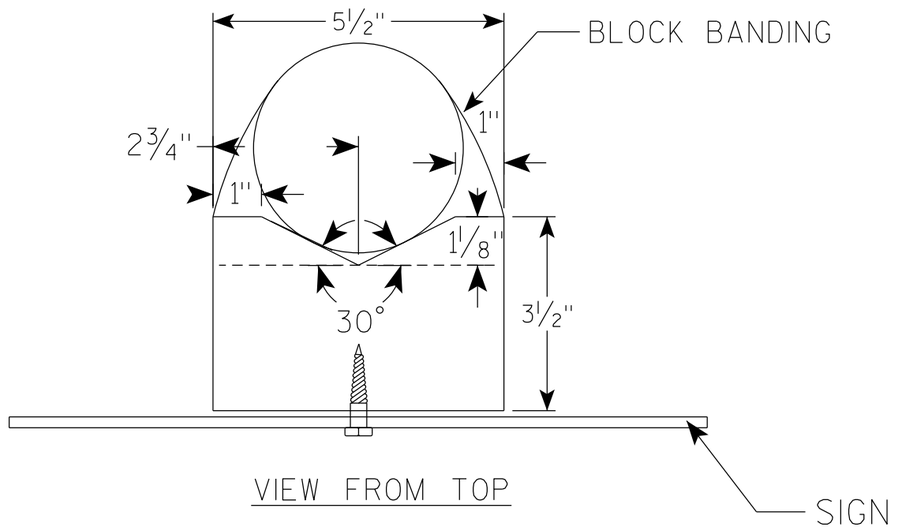




GENERAL NOTES

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

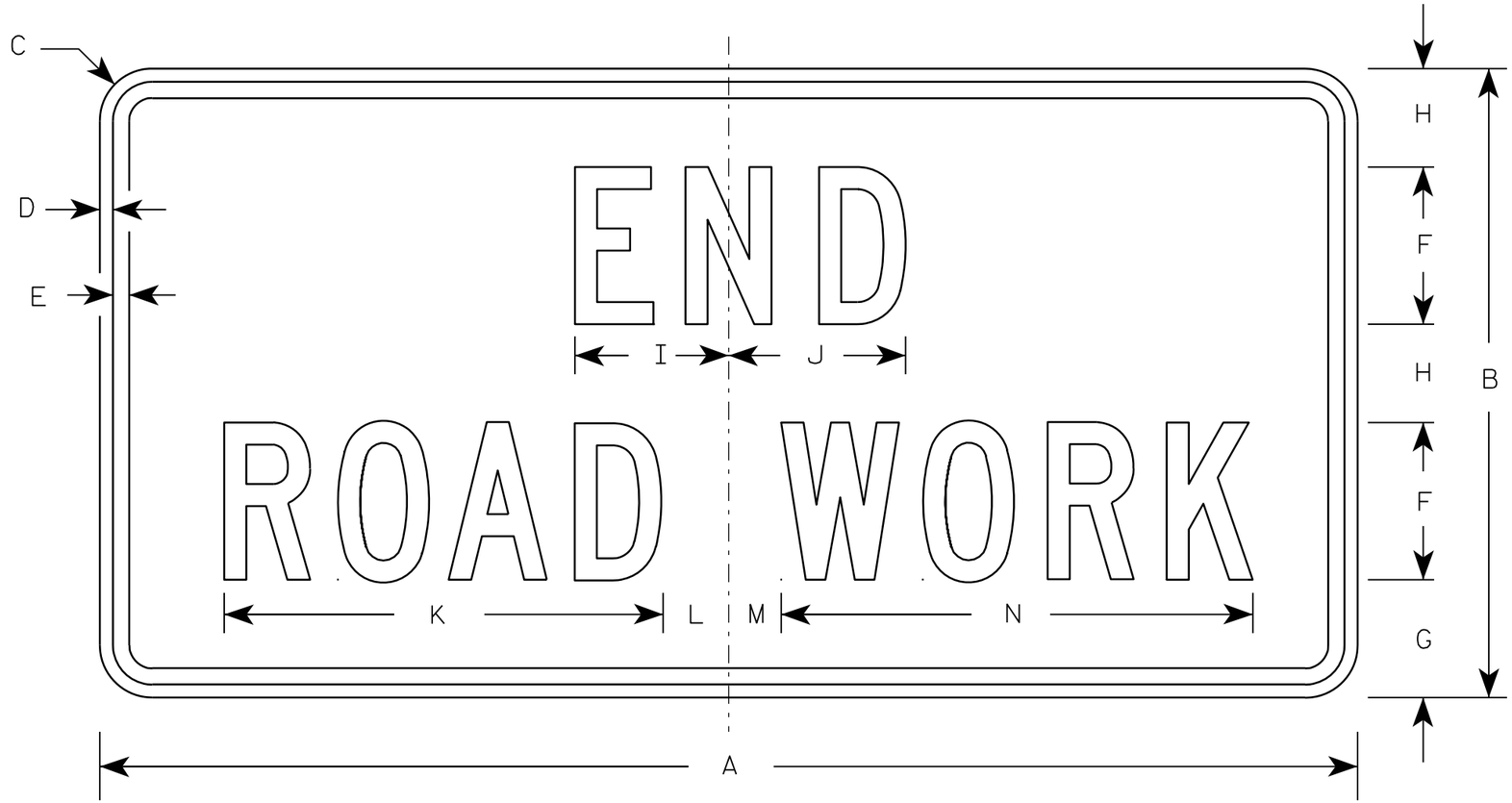
✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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



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

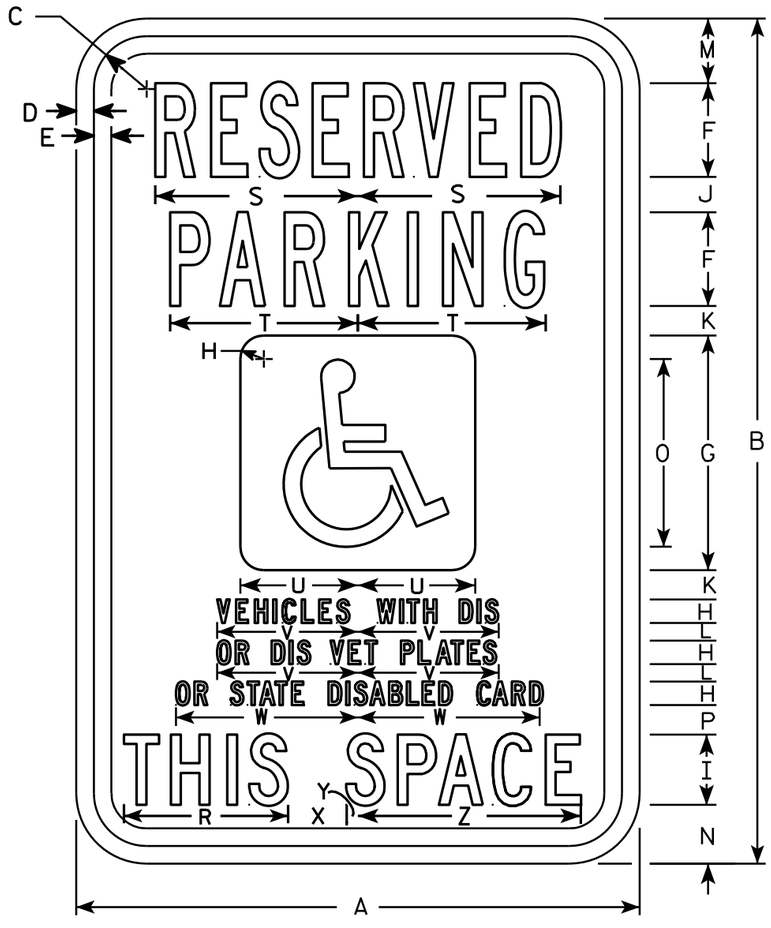
STANDARD SIGN
G20-2A

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: 80	E



R7-8A

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Sign is white Type H Reflective; paraplegic background is blue.
   Message - Legend and border are green; paraplegic symbol is white
3. Message Series - Lines 1 & 2 are Series B
   Lines 3, 4, 5 & 6 are 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																											
2S	12	18	1 1/8	3/8	3/8	2	5	1/2	1 1/2	3/4	5/8	3/8	1 3/8	1 1/4	4	5/8		3 1/2	4 3/8	4	2 1/2	3	3 7/8	1 1/4	1/4	4 3/4	1.5
2M	18	24	1 1/8	3/8	1/2	3	6	3/4	2	7/8	5/8	1/2	1 7/8	2	5	3/4		4 5/8	6 1/2	5 3/8	3	4 1/2	5 7/8	1 1/2	1/4	6 3/8	3.0
3	18	24	1 1/8	3/8	1/2	3	6	3/4	2	7/8	5/8	1/2	1 7/8	2	5	3/4		4 5/8	6 1/2	5 3/8	3	4 1/2	5 7/8	1 1/2	1/4	6 3/8	3.0
4																											
5																											

STANDARD SIGN
R7-8A

WISCONSIN DEPT OF TRANSPORTATION

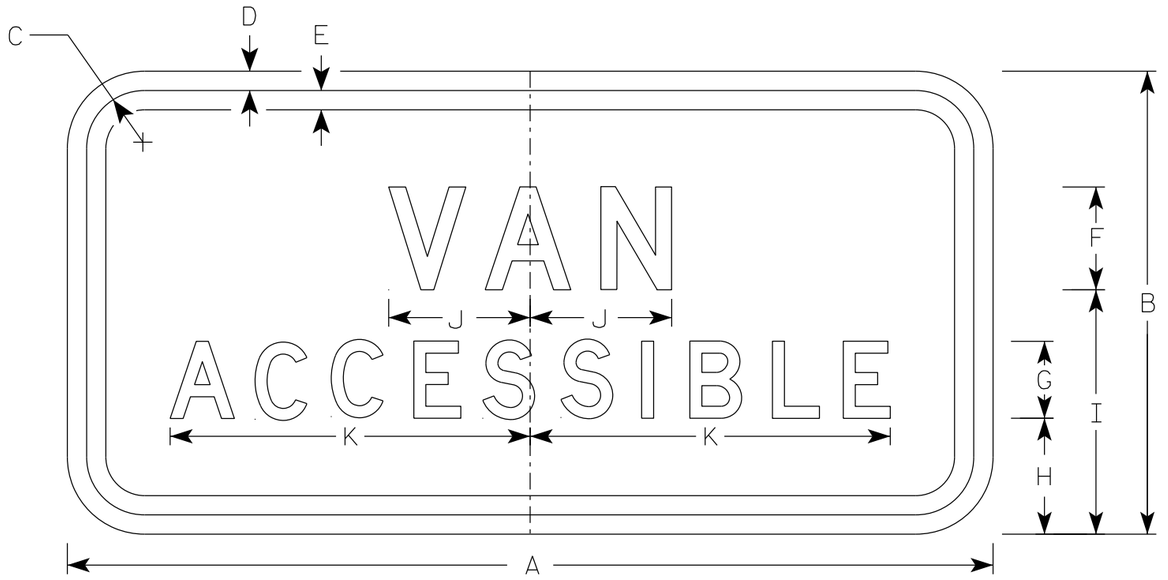
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/25/2011 PLATE NO. R7-8A.6

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

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Green
3. Message Series - D



R7-8V

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	6	1 1/8	3/8	3/8	1 1/2	1	1 3/8	3 1/8	2	4 1/4																0.50
2M	18	9	1 1/8	3/8	3/8	2	1 1/2	2 1/4	4 3/4	2 3/4	7																0.75
3	18	9	1 1/8	3/8	3/8	2	1 1/2	2 1/4	4 3/4	2 3/4	7																0.75
4																											
5																											

STANDARD SIGN
R7-8V

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/11/18 PLATE NO. R7-8V.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 82 E

7

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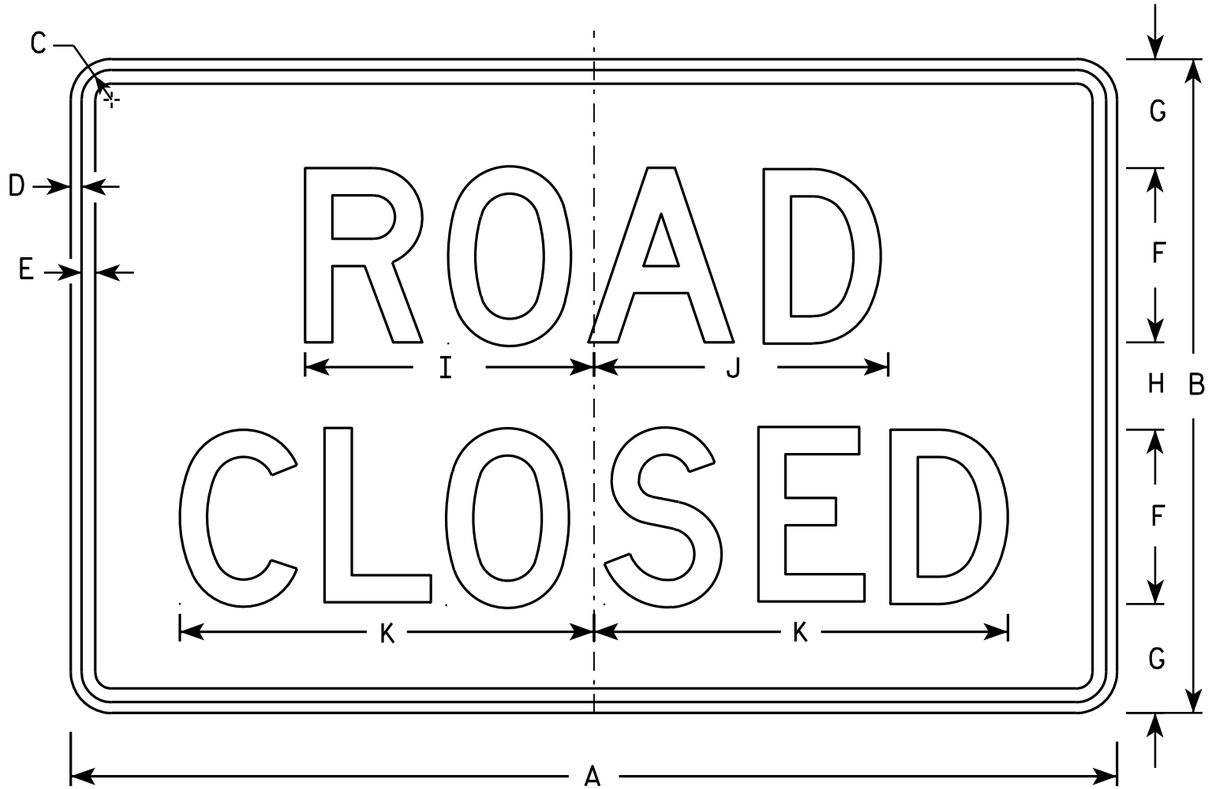
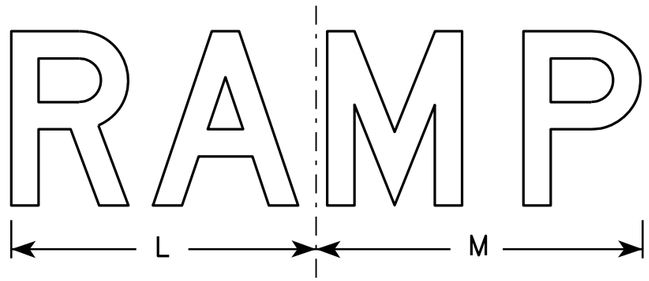


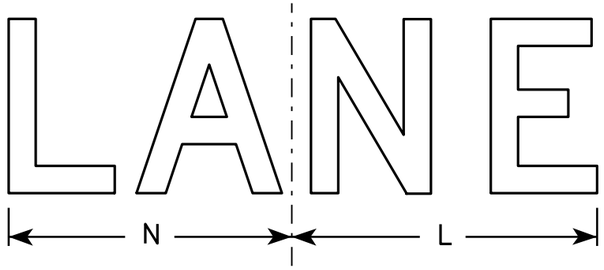
R11-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - 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.
5. Modify the message as required.



R11-2R



R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0

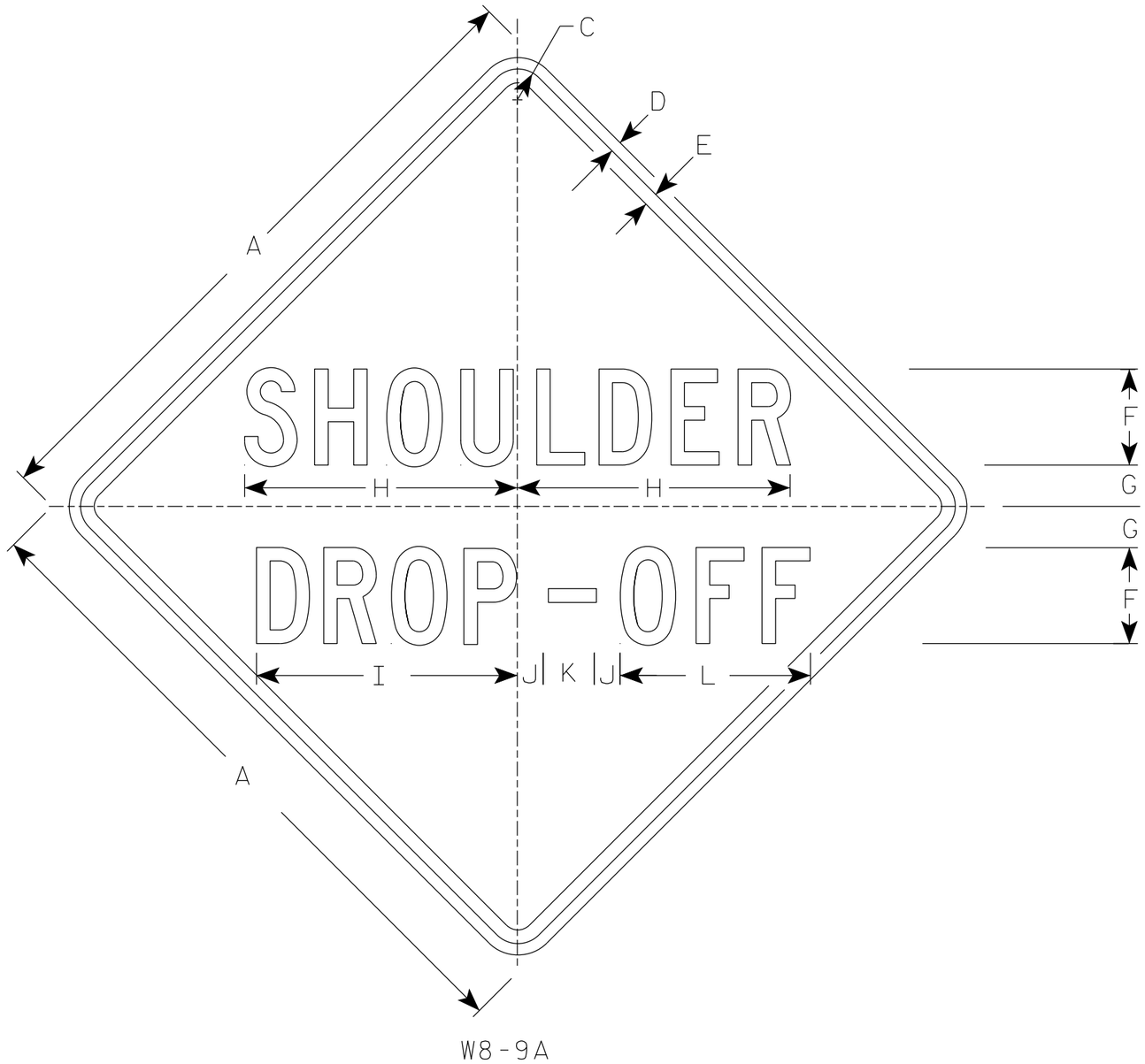
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 83	E



W8-9A

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	5	2	14 7/8	14	7/8	2 1/2	9 3/4															9.0
2S	48		2 1/4	3/4	1	7	3	19 7/8	19	1 7/8	3 3/4	13 7/8															16.0
2M	48		2 1/4	3/4	1	7	3	19 7/8	19	1 7/8	3 3/4	13 7/8															16.0
3	48		2 1/4	3/4	1	7	3	19 7/8	19	1 7/8	3 3/4	13 7/8															16.0
4	48		2 1/4	3/4	1	7	3	19 7/8	19	1 7/8	3 3/4	13 7/8															16.0
5	48		2 1/4	3/4	1	7	3	19 7/8	19	1 7/8	3 3/4	13 7/8															16.0

STANDARD SIGN
W8-9A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/16/2020 PLATE NO. W8-9A.4

PROJECT NO:

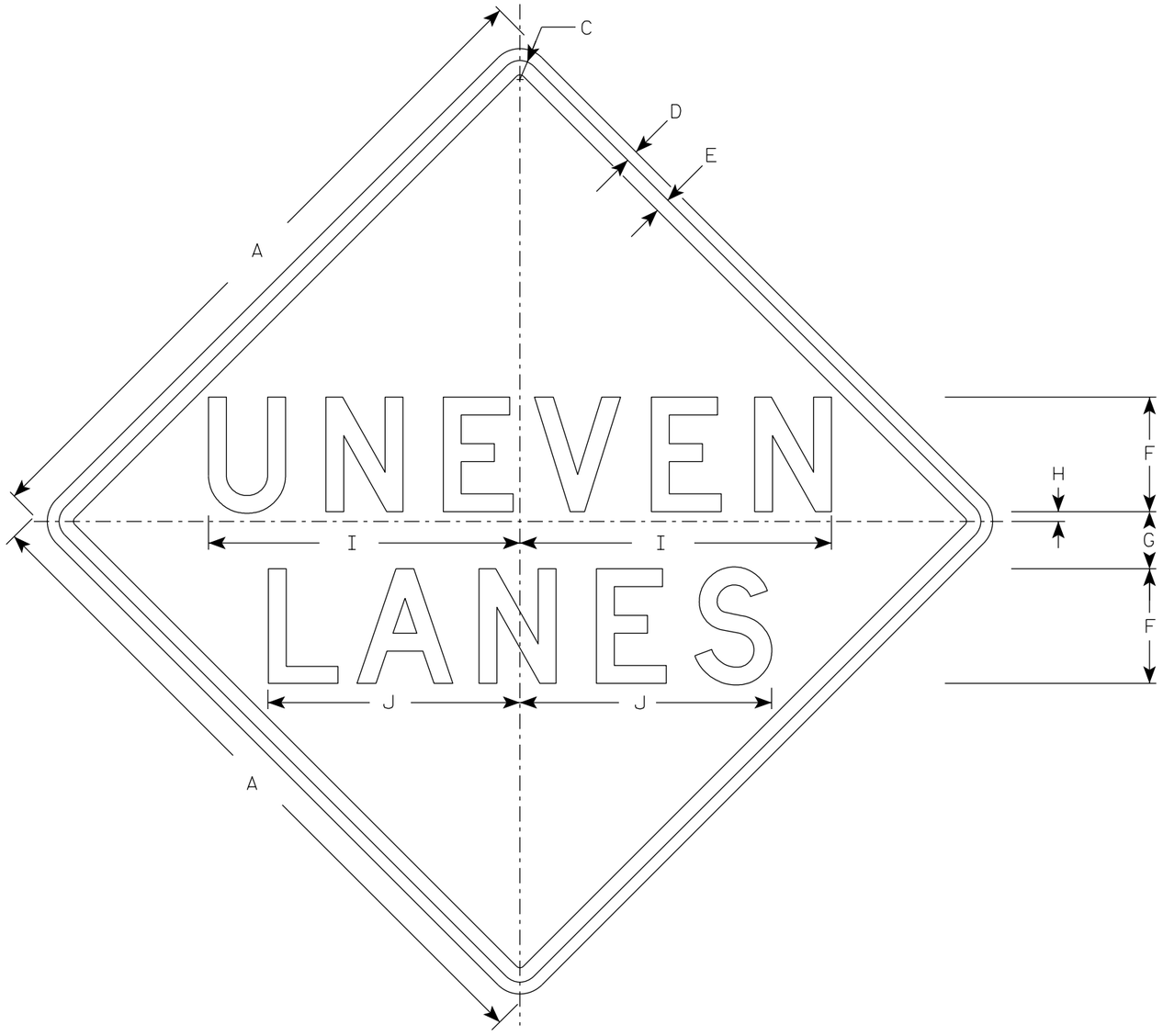
SHEET NO: 84 E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W89A.dgn PLOT DATE : 16-APRIL 2020 PLOT BY : dotc4c

WISDOT/CADDS SHEET 42

7

7



W8-11

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	3	1/2	16 3/8	13 1/4																	9.0
2S	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
2M	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
3	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
4	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0
5	48		2 1/4	3/4	1	8	4	1	21 3/4	17 5/8																	16.0

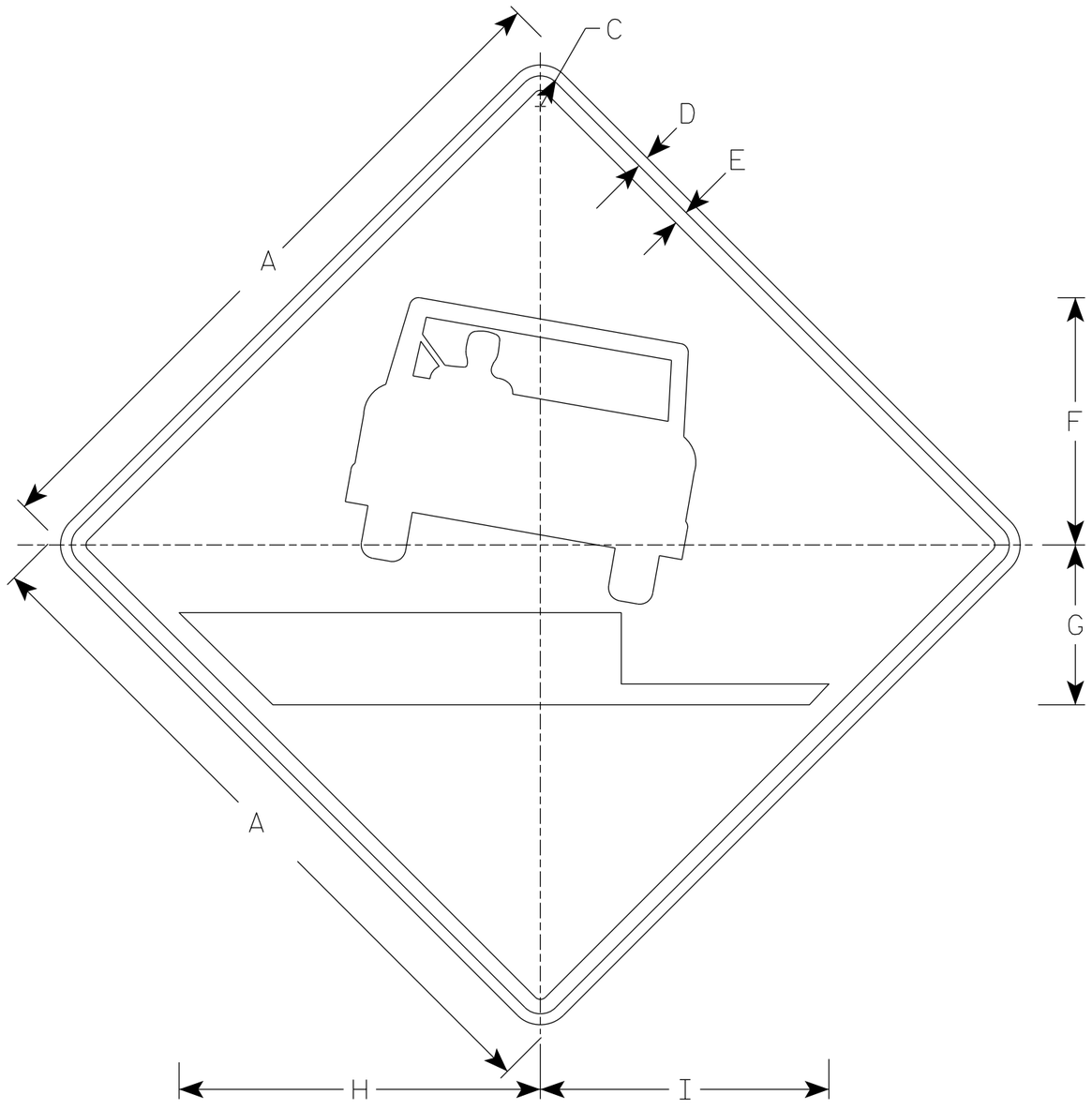
STANDARD SIGN
W8-11

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/20/2020 PLATE NO. W8-11.5

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



W8-17

NOTES

1. Sign is Type II - Type F Reflective
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	12 3/4	8 1/4	18 5/8	14 7/8																		9.0
2S	48		2 1/4	3/4	1	17	11	24 7/8	19 7/8																		16.0
2M	48		2 1/4	3/4	1	17	11	24 7/8	19 7/8																		16.0
3	48		2 1/4	3/4	1	17	11	24 7/8	19 7/8																		16.0
4	48		2 1/4	3/4	1	17	11	24 7/8	19 7/8																		16.0
5	48		2 1/4	3/4	1	17	11	24 7/8	19 7/8																		16.0

STANDARD SIGN
W8-17

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

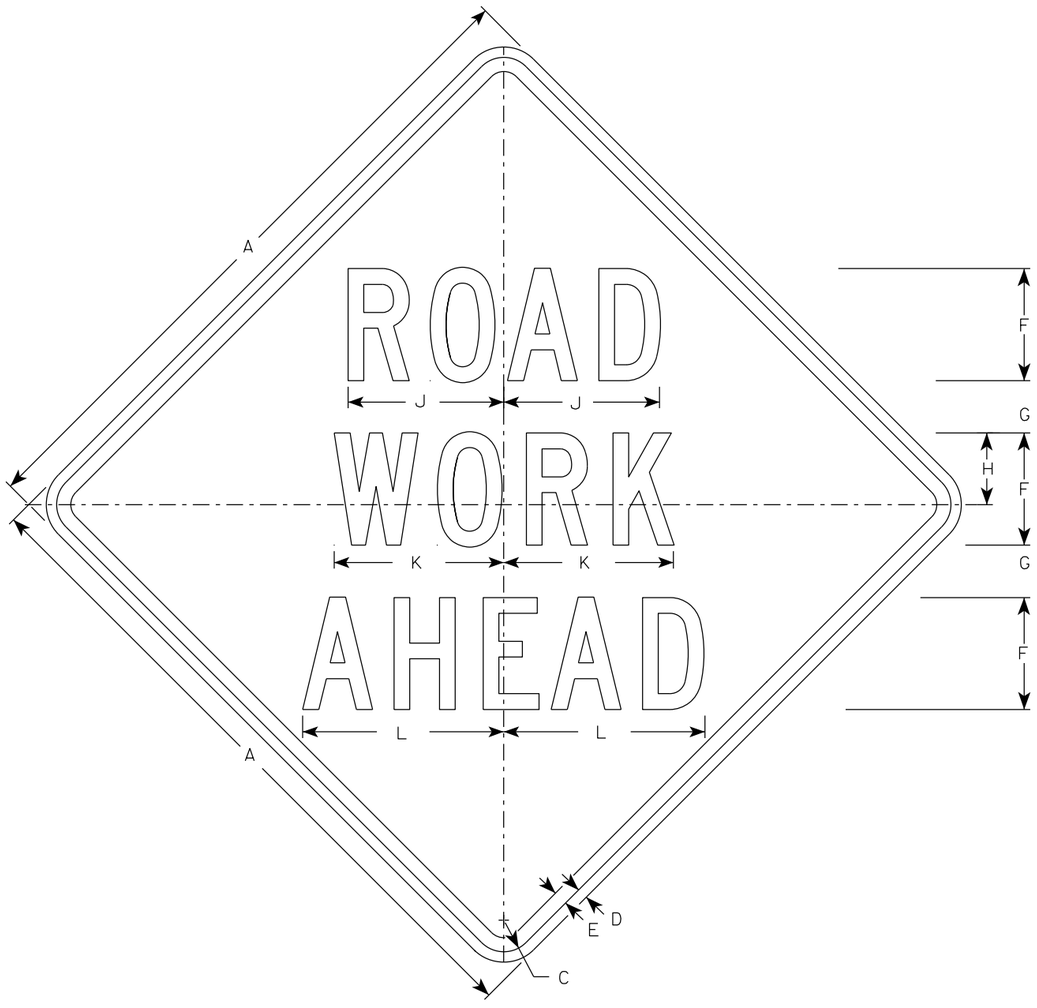
DATE 4/16/2020 PLATE NO. W8-17.2

PROJECT NO:

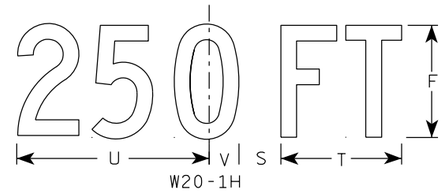
SHEET NO: 86 E

NOTES

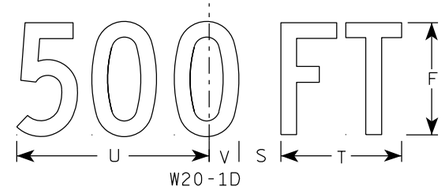
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1A

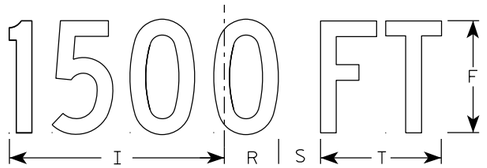


W20-1H

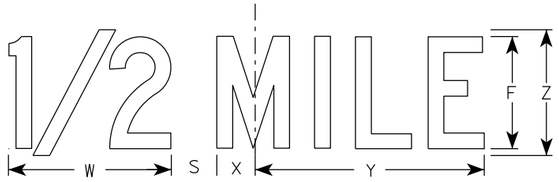


W20-1D

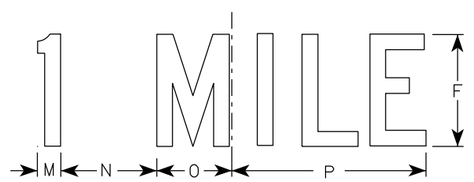
W20-1C



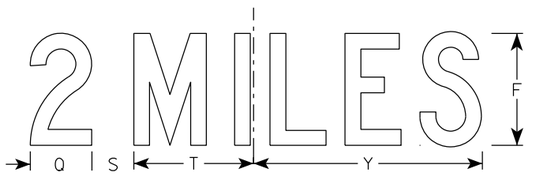
W20-1B



W20-1G



W20-1F



W20-1E

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

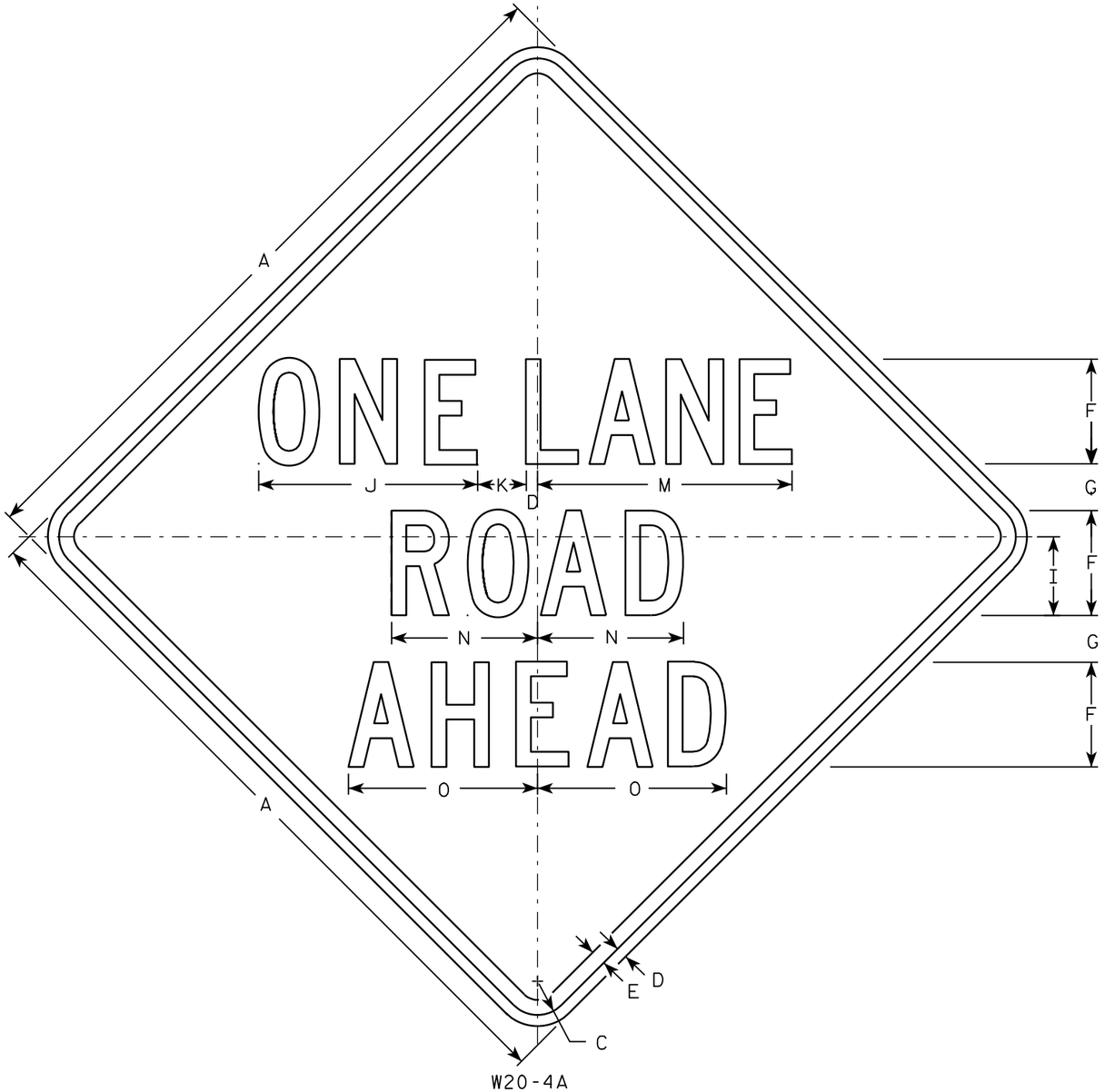
SHEET NO: E

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

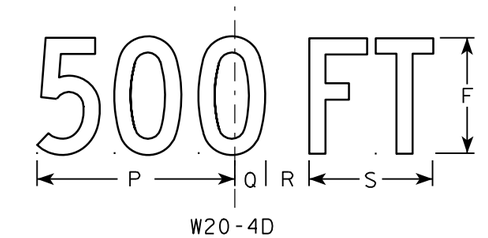
WISDOT/CADDS SHEET 42

7

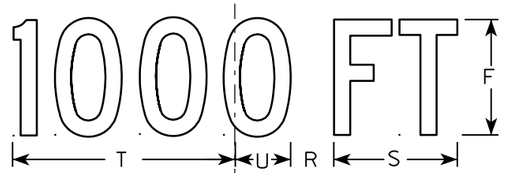
7



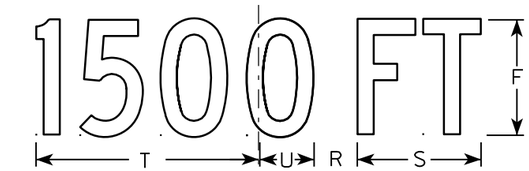
W20-4A



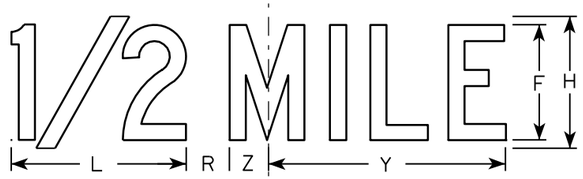
W20-4D



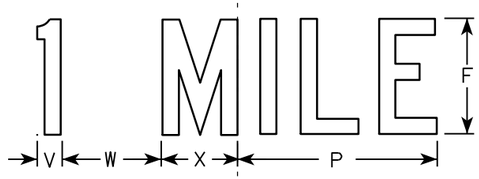
W20-4C



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

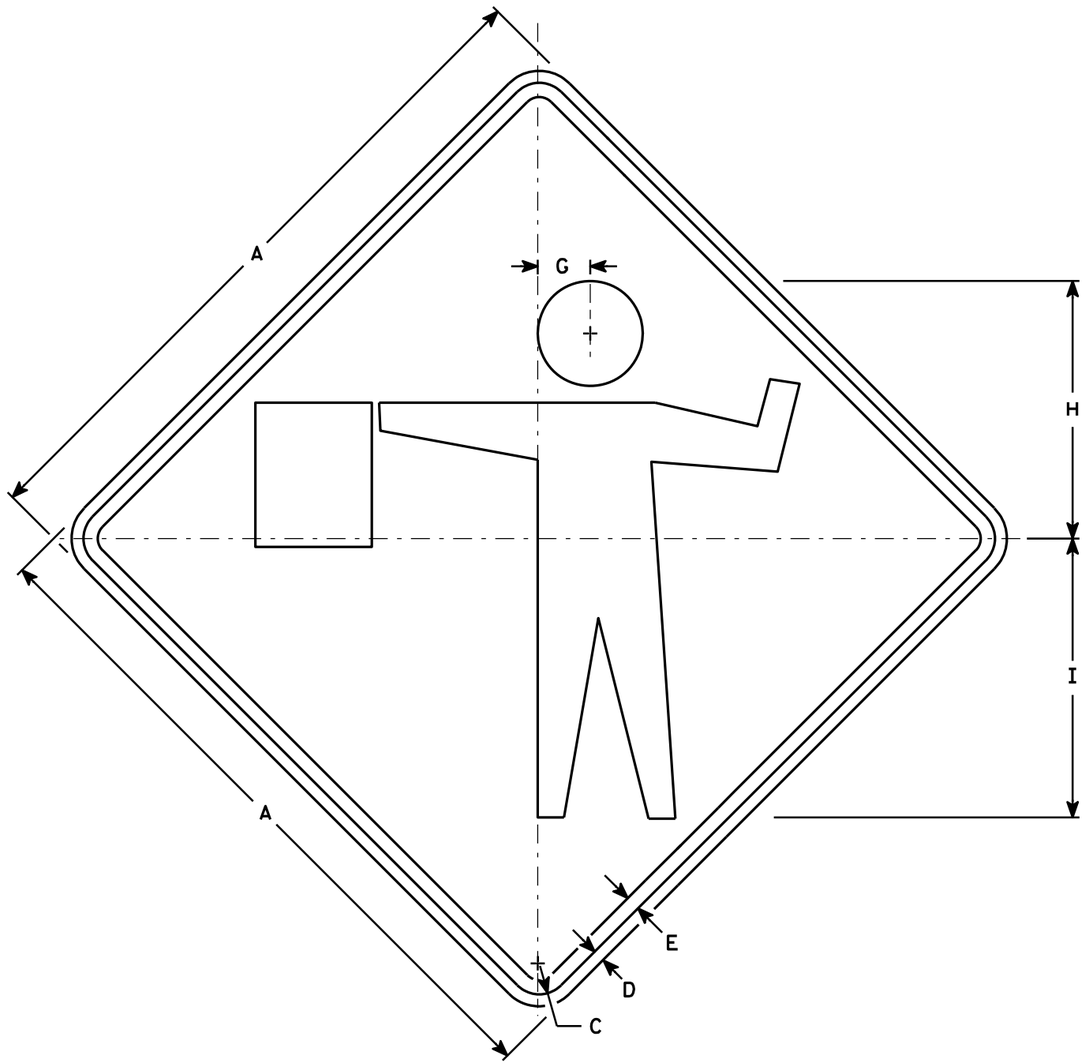
DATE 3/18/11 PLATE NO. W20-4.9

PROJECT NO:

SHEET NO: 88 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

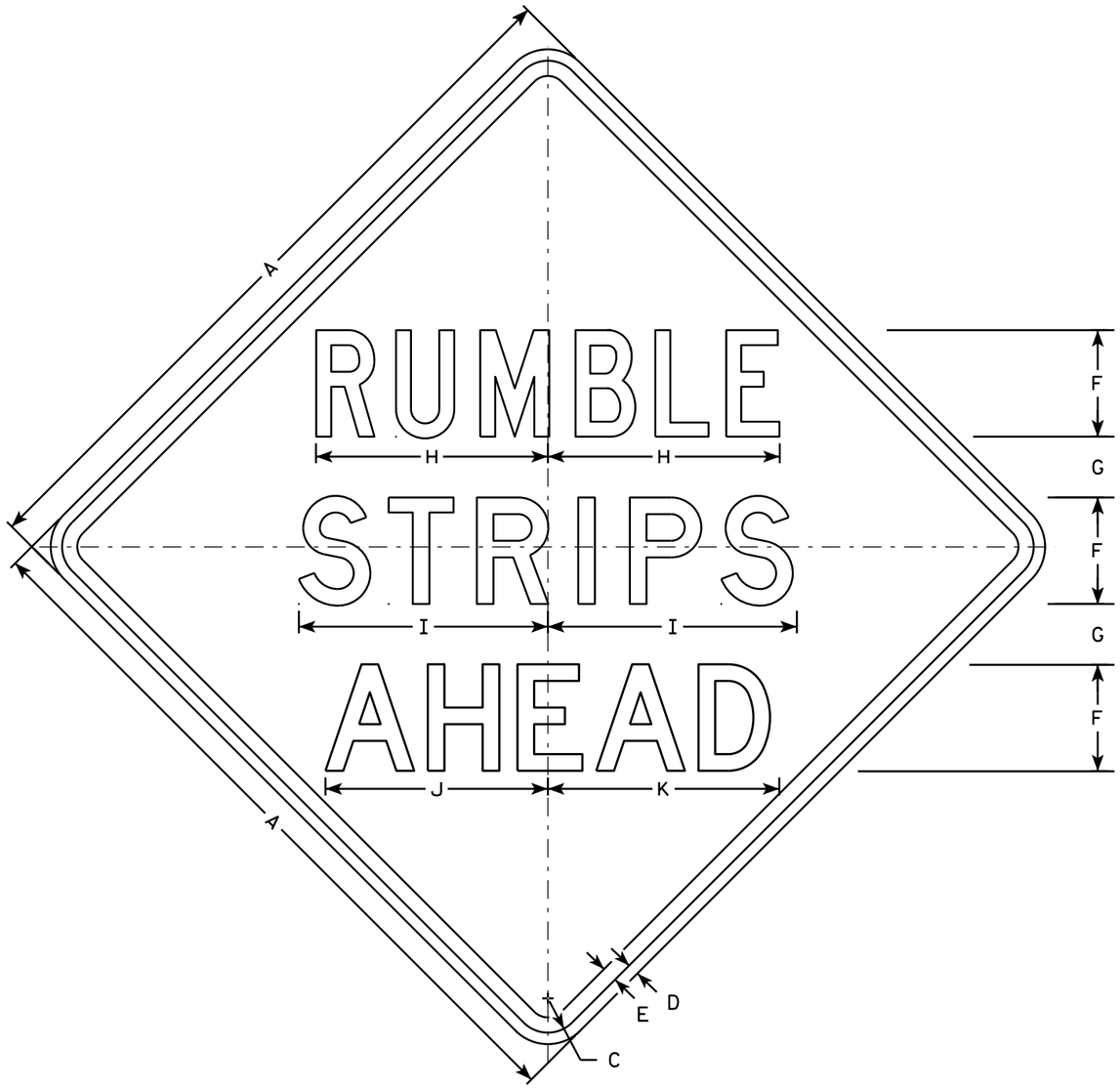
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 89 | 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



W21-65

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

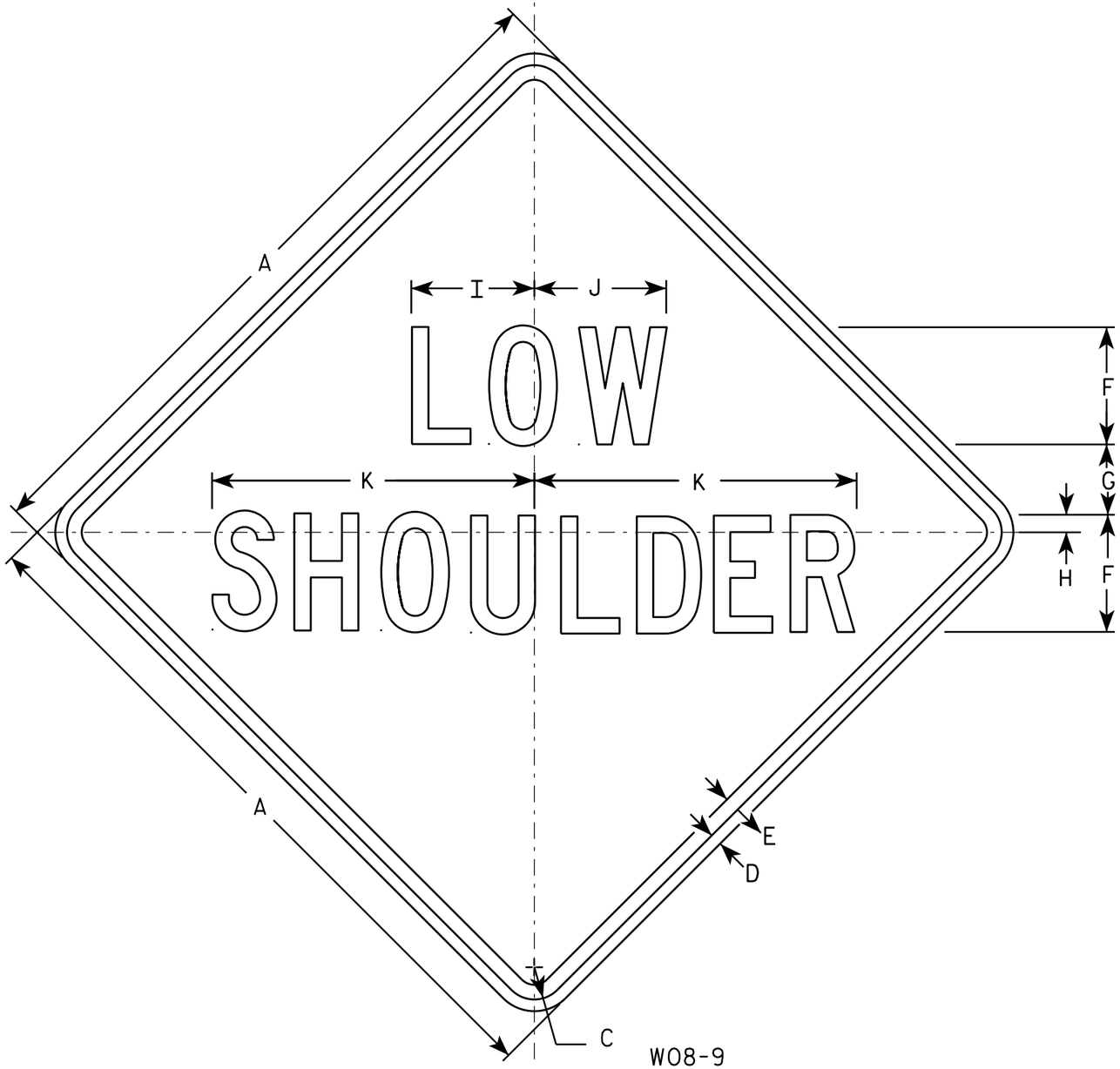
W21-65

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/28/14 PLATE 90 W21-65.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



W08-9

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	6	3 1/2	1	6 1/4	6 3/4	16 1/2																9.0
2S	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
2M	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
3	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
4	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
5	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0

STANDARD SIGN
W08-9

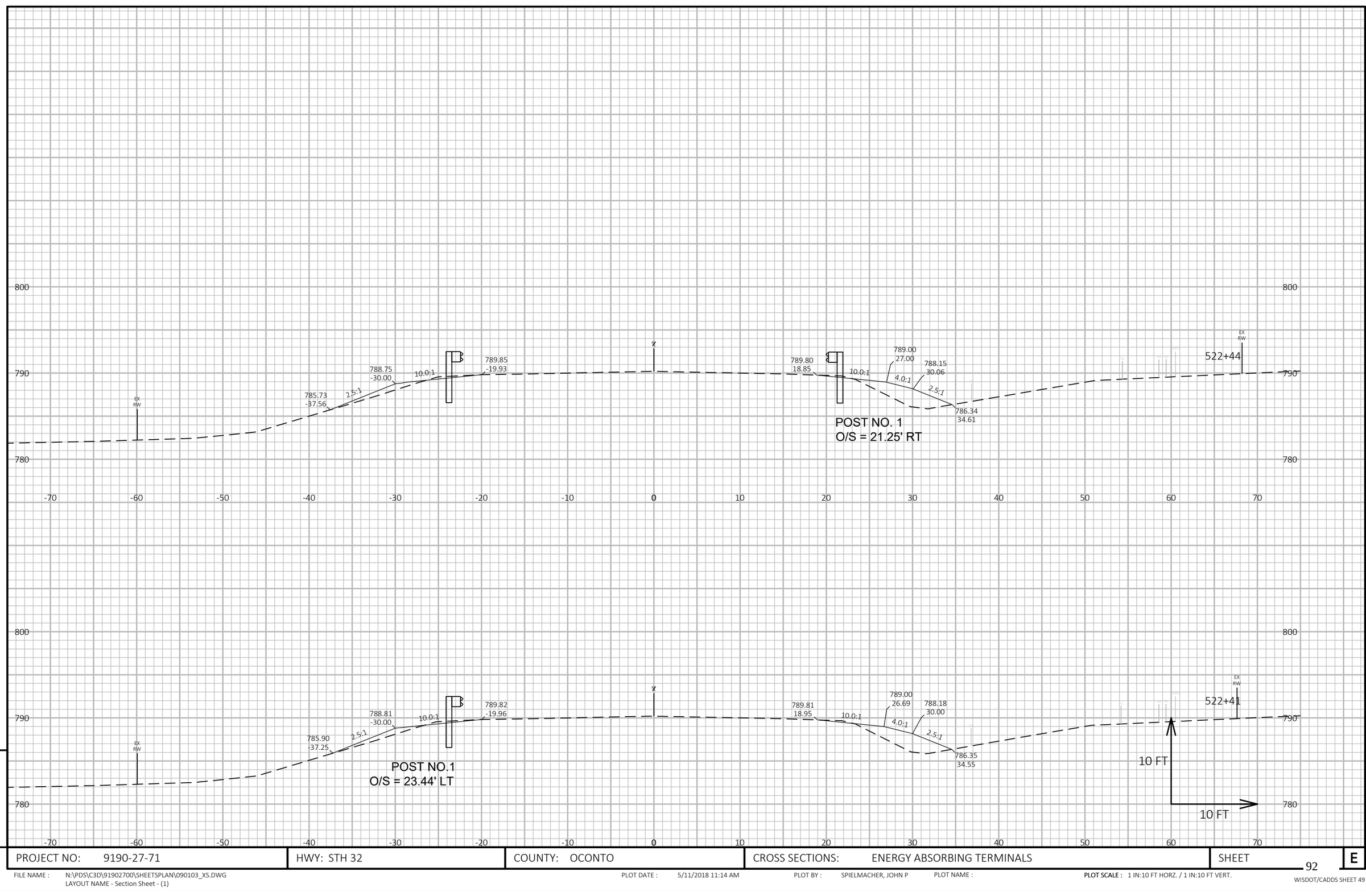
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W08-9.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W089.DGN PLOT DATE : 20-NOV-2013 14:06 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.755110:1.000000
WISDOT/CADDS SHEET 42



9

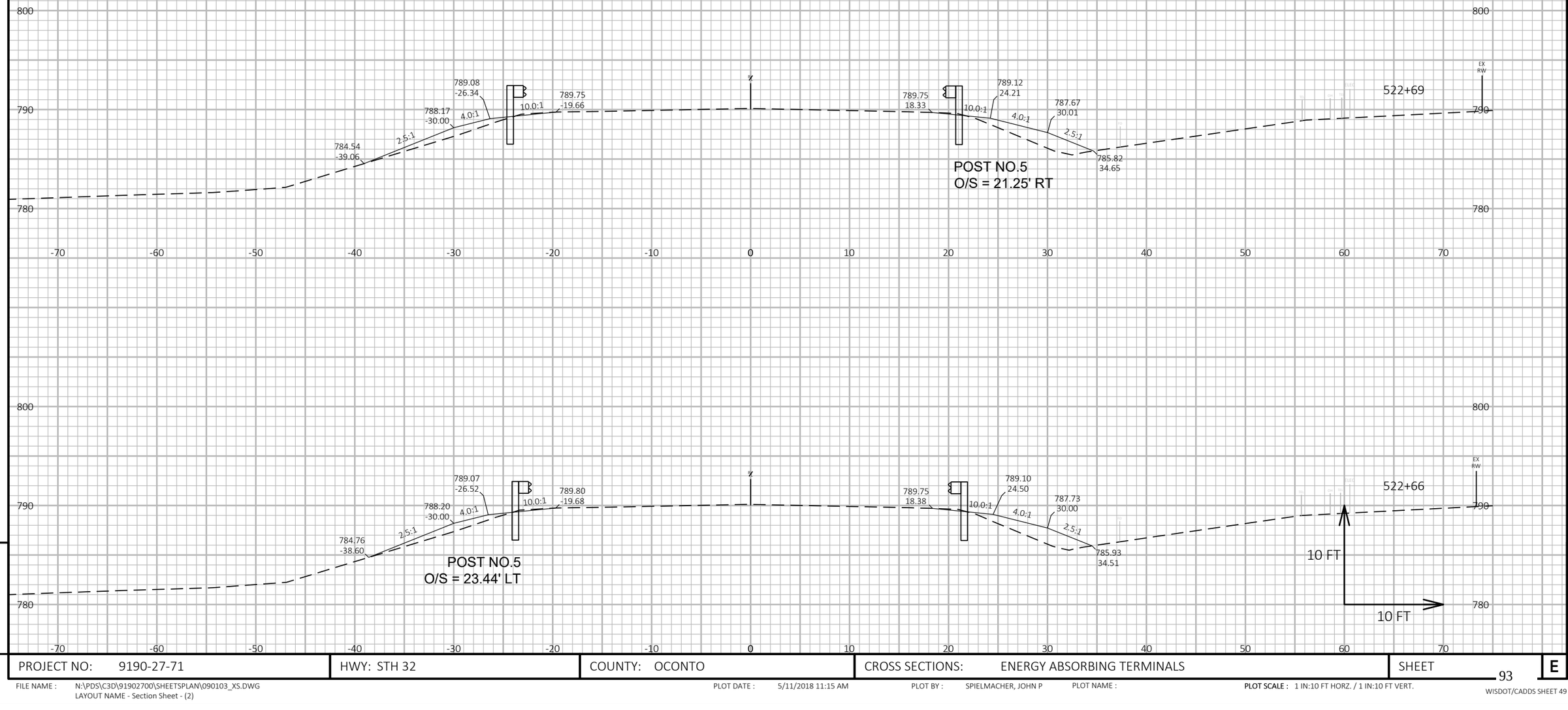
9

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINALS	SHEET	E

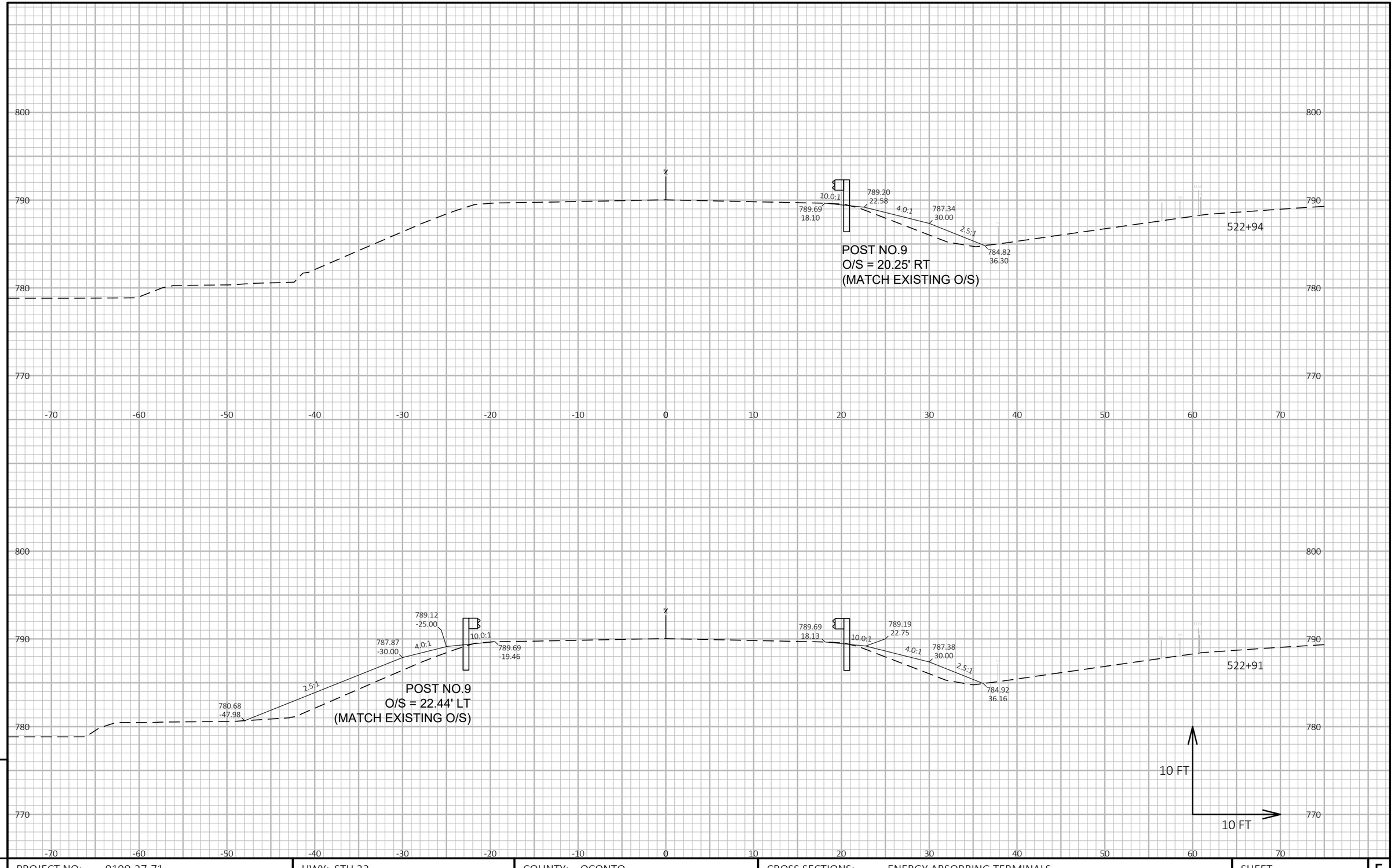
FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\090103_XS.DWG
LAYOUT NAME - Section Sheet - (1)

PLOT DATE : 5/11/2018 11:14 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINALS	SHEET 93	E

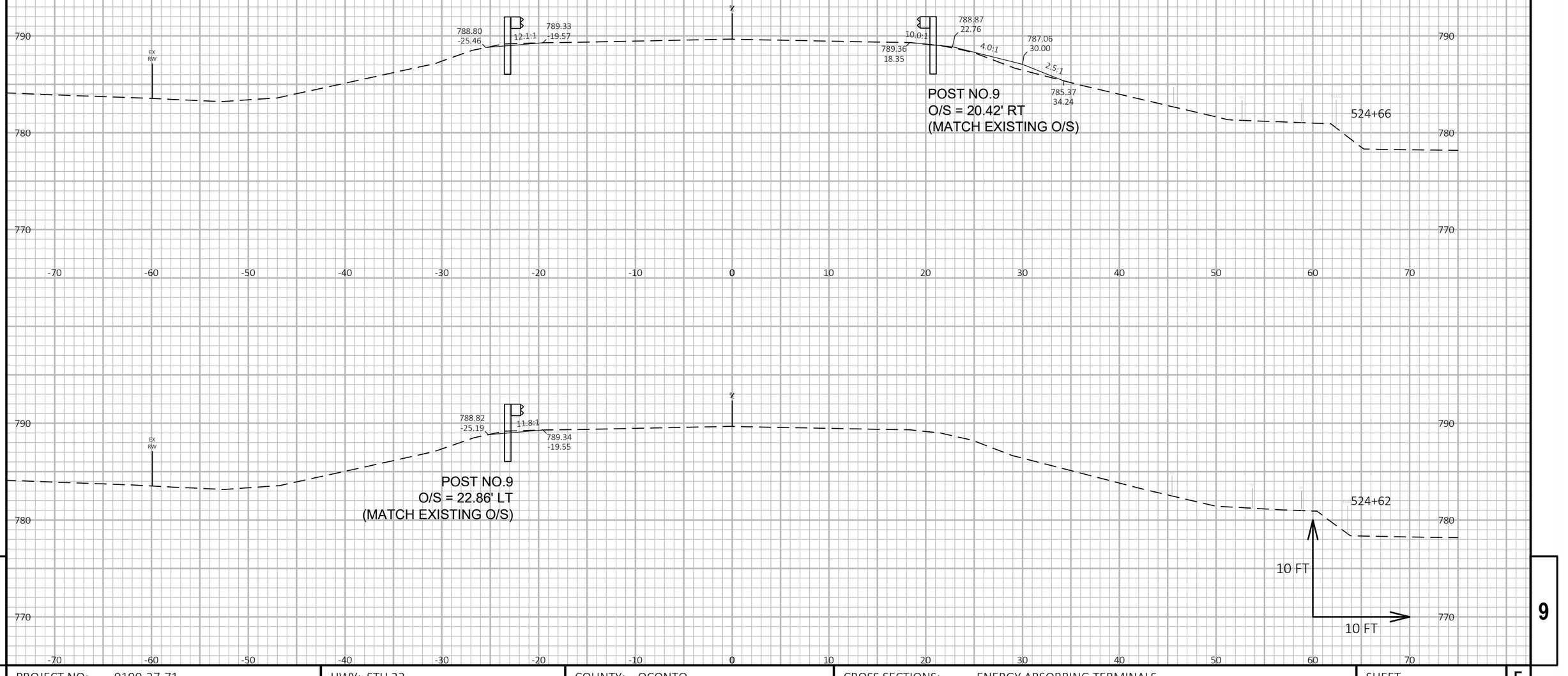


9	PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINALS	SHEET 94	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\090103_XS.DWG
LAYOUT NAME - Section Sheet - (3)

PLOT DATE : 5/11/2018 11:15 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

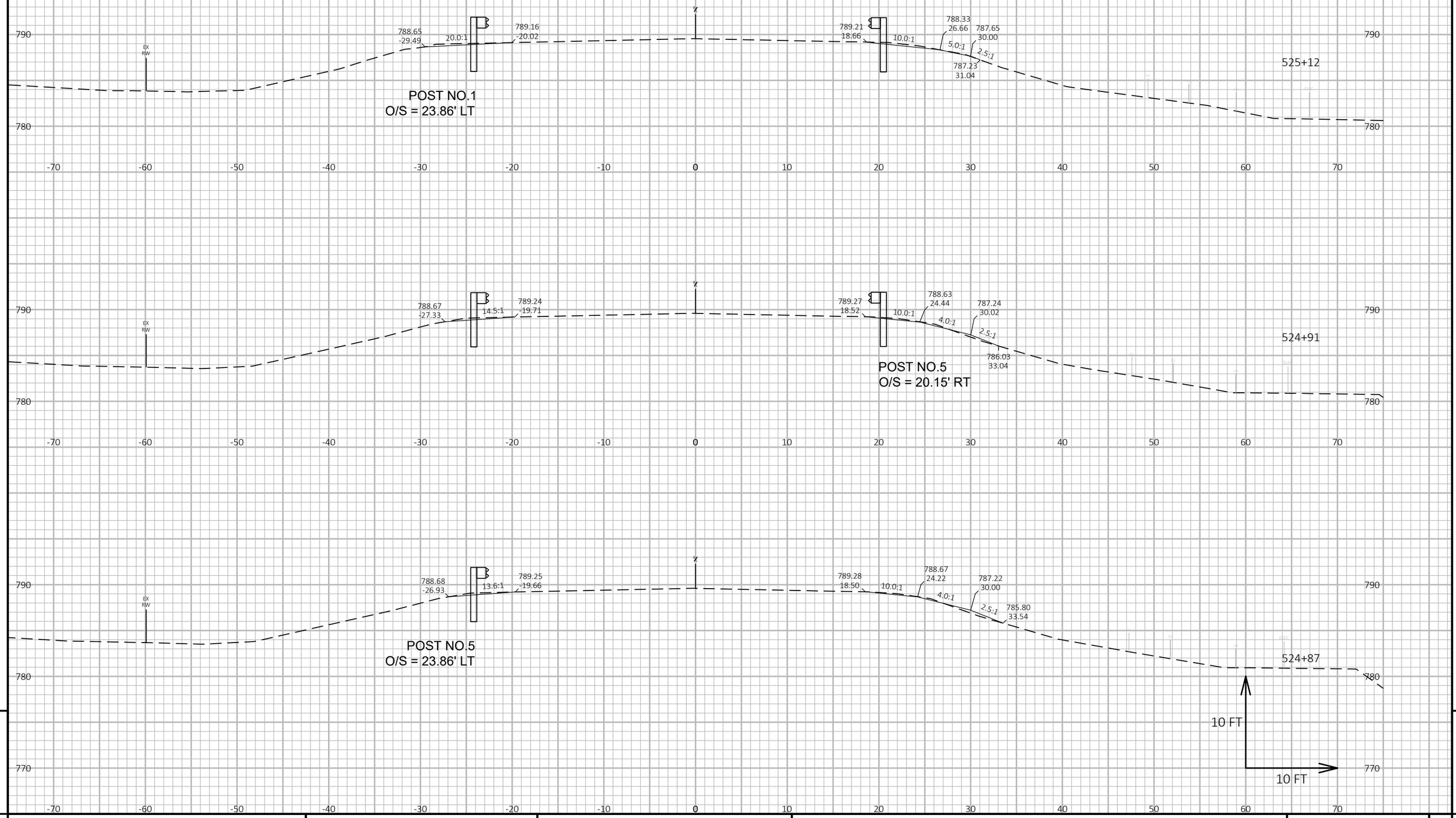
WISDOT/CADDS SHEET 49



PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINALS	SHEET	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\090103_XS.DWG
LAYOUT NAME - Section Sheet - (4)

PLOT DATE : 5/11/2018 11:15 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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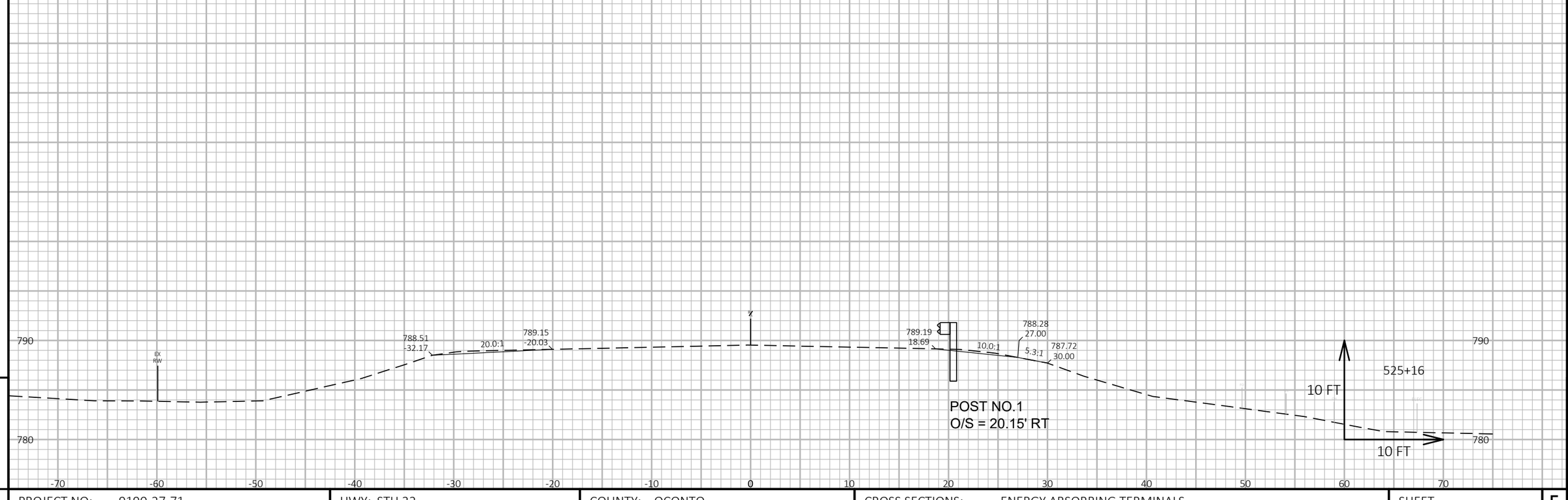
PROJECT NO: 9190-27-00	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINALS	SHEET 96	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\090103_XS.DWG
LAYOUT NAME - Section Sheet - (5)

PLOT DATE : 5/11/2018 11:15 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 9190-27-71	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: ENERGY ABSORBING TERMINALS	SHEET	E

FILE NAME : N:\PDS\C3D\91902700\SHEETSPLAN\090103_XS.DWG
LAYOUT NAME - Section Sheet - (6)

PLOT DATE : 5/11/2018 11:15 AM PLOT BY : SPIELMACHER, JOHN P PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

Wisconsin Department of Transportation

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