

GRE
PROJECT ID:
WITH: N/A

9032-02-71

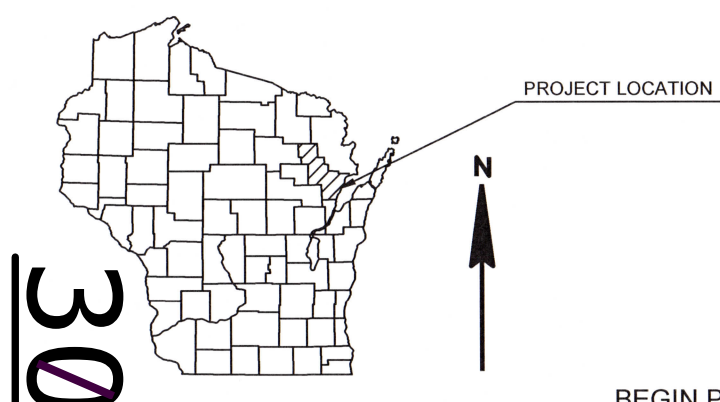
COUNTY:
OCONTO

FEBRUARY 2022

ORDER OF SHEETS

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

TOTAL SHEETS = 84



DESIGN DESIGNATION

A.A.D.T.	2022	=	3,040
A.A.D.T.	2042	=	3,370
D.H.V.	2040	=	421
D.D.		=	0.5
T.		=	5.8%
DESIGN SPEED		=	55 MPH
ESALS		=	410,000

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

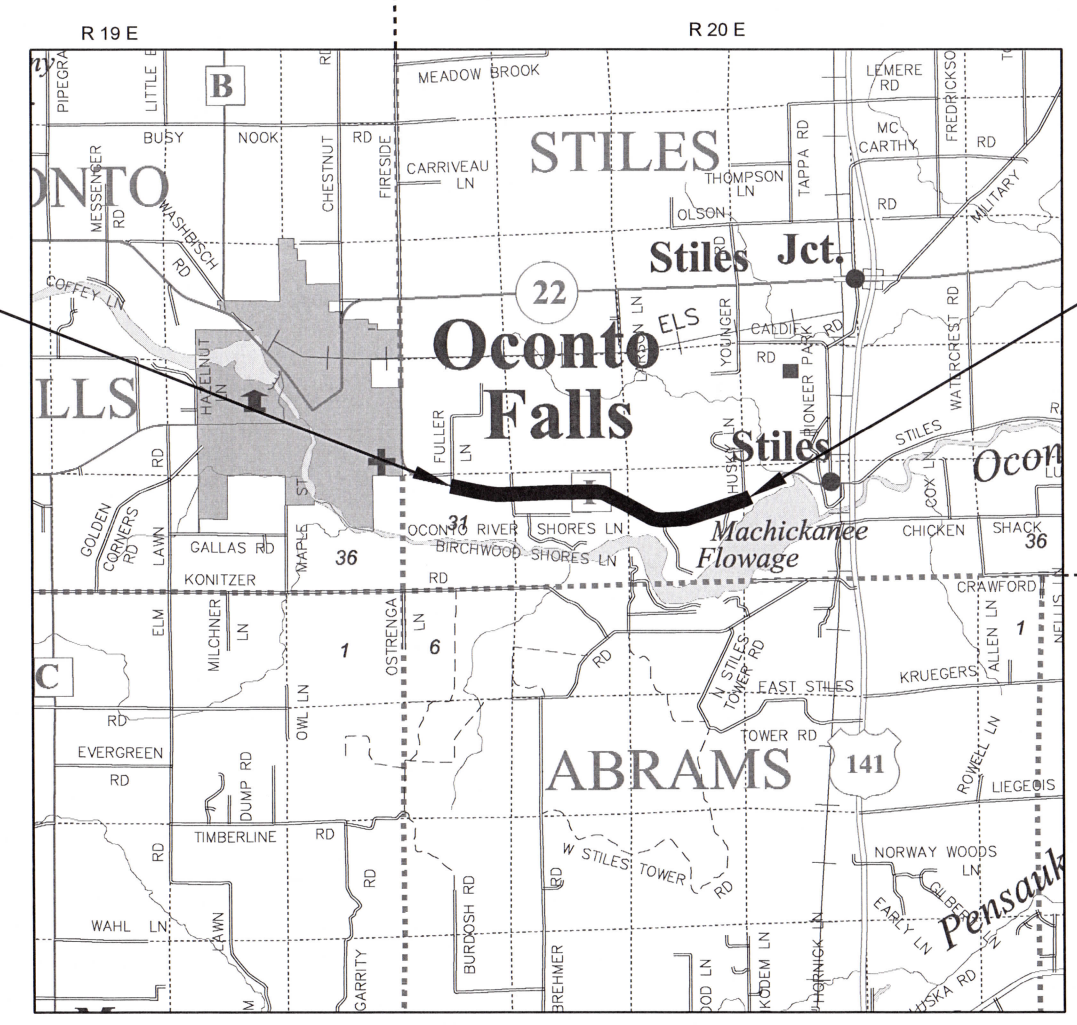
T STILES, CTH I

HUSKY LANE - FULLER LANE

CTH I

OCONTO COUNTY

STATE PROJECT NUMBER
9032-02-71



LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 2.661 Mi. (RURAL)

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9032-02-71	WISC 2022180	1

ACCEPTED FOR
OCONTO COUNTY

10/21/2021 *Brendon Hyatt*
DATE COUNTY HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY
AYRES

WISCONSIN
PHILLIP J. VERVILLE III
E36336
GREEN BAY, WI
PROFESSIONAL ENGINEER
10/19/21
(Date)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AYRES
Designer	AYRES
Project Manager	TIM VERHAGEN
Regional Supervisor	BRIAN EDWARDS

APPROVED FOR THE DEPARTMENT

DATE: 10/22/2021 *Vin Verlage*
(Signature)

E

GENERAL NOTES

THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

REFERENCE LINE REFERS TO ALIGNMENT AND STATIONING. CENTERLINE REFERS TO EXISTING ROADWAY CENTERLINE. REFERENCE LINE AND CENTERLINE ARE NOT COINCIDENTAL.

SAW CUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECTED TO ADJUSTMENT BY THE ENGINEER IN FIELD. THE LINE OF SUCH SAW CUTS WILL BE NEATLY DELINEATED THRU THE ASPHALT OR CONCRETE WITHOUT ANY DAMAGE TO THE REMAINING PORTION OF THE EXISTING PAVEMENT.

CURVE DATA IS BASED ON ARC DEFINITION.

EXACT LOCATION AND WIDTH OF ENTRANCES WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ENTRANCES ARE TO BE REPLACED IN KIND.

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

UTILITIES

* CHARTER COMMUNICATIONS
821 LINCOLN STREET
RHINELANDER, WI 54501
ATTENTION: MARK OLEJNICZAK
E-MAIL: mark.olejniczak@charter.com

TELEPHONE 715-525-2135

* OCONTO ELECTRIC COOPERATIVE
7479 REA ROAD
OCONTO FALLS, WI 54154
ATTENTION: JACK PARDY
E-MAIL: jpardy@ocontoelectric.com

TELEPHONE 920-373-8524

* CENTURYLINK
2425 MARY STREET
MARINETTE, WI 54143
ATTENTION: TIM KROEZE
E-MAIL: tim.kroeze@centurylink.com

TELEPHONE 920-219-0112

*-MEMBER OF DIGGERS HOTLINE



RUNOFF COEFFICIENT TABLE

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

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.81 ACRES
SOIL GROUP A

STANDARD ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC	NC	NORMAL CROWN
AC	ASPHALT CEMENT	PT	POINT OF TANGENCY
AGG	AGGREGATE	PC	POINT OF CURVATURE
ASPH	ASPHALT	PI	POINT OF INTERSECTION
BM	BENCH MARK	PE	PRIVATE ENTRANCE
C/L	CENTERLINE	R	RADIUS
CONC	CONCRETE	REM	REMOVE
CMP	CORRUGATED METAL PIPE	R/L OR RL	REFERENCE LINE
CR.	CREEK	RCCP	REINFORCED CONCRETE CULVERT PIPE
D	DEGREE OF CURVE	RCPSS	REINFORCED CONCRETE PIPE STORM SEWER
DHV	DESIGN HOUR VOLUME	R.O.	RUNOUT
ESALS	EQUIVALENT SINGLE AXIS LOADS	R/W	RIGHT-OF-WAY
EXIST	EXISTING	STA	STATION
FE	FIELD ENTRANCE	SE	SUPER ELEVATION
HYD	HYDRANT	SS	STORM SEWER
IP	IRON PIPE OR PIN	T	TANGENT
L	LENGTH OF CURVE	TEL	TELEPHONE
LC	LONG CHORD OF CURVE	TLE	TEMPORARY LIMITED EASEMENT
LR	LENGTH OF RUNOFF	T	TRUCKS
MH	MANHOLE	VC	VERTICAL CURVE
		W	WELL

PROJECT DESIGNER

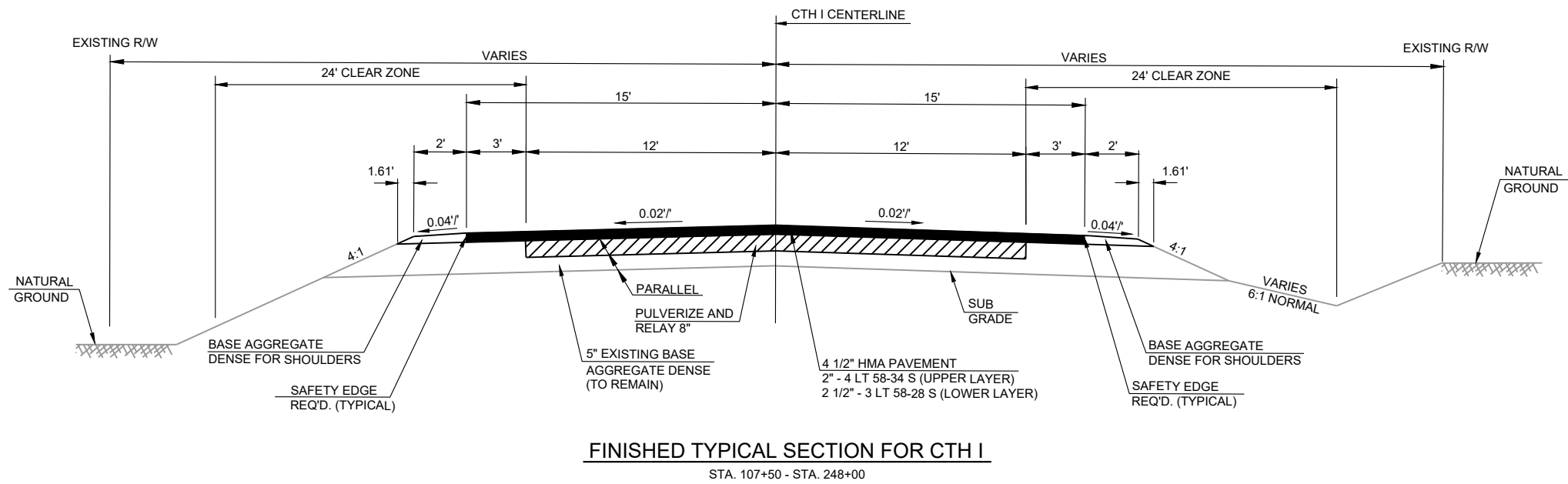
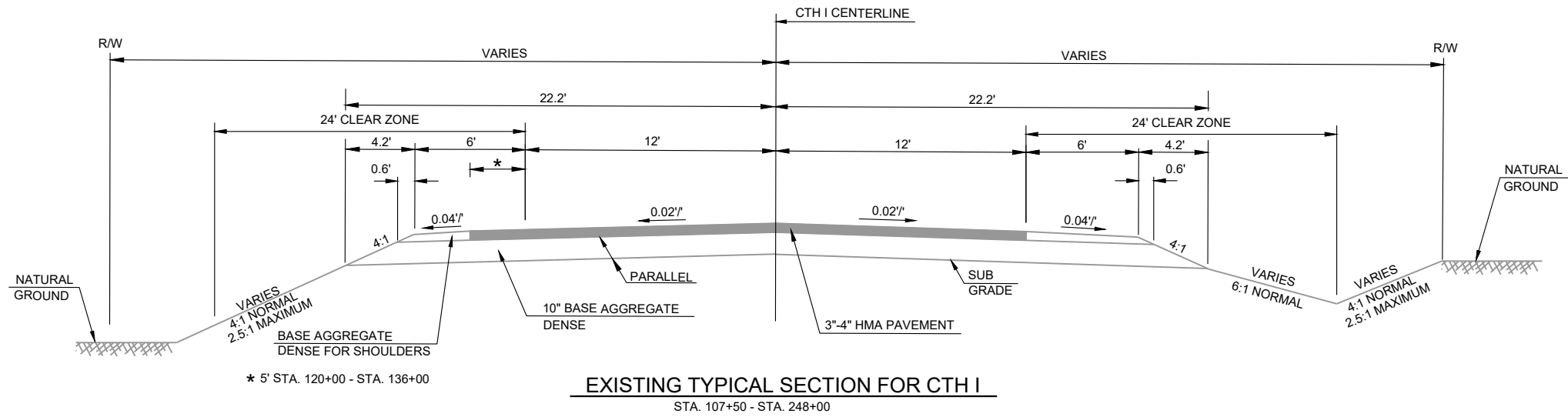
AYRES
3376 PACKERLAND DRIVE
ASHWAUBENON, WI 54115
ATTENTION: PHIL VERVILLE III
E-MAIL: vervillep@ayresassociates.com

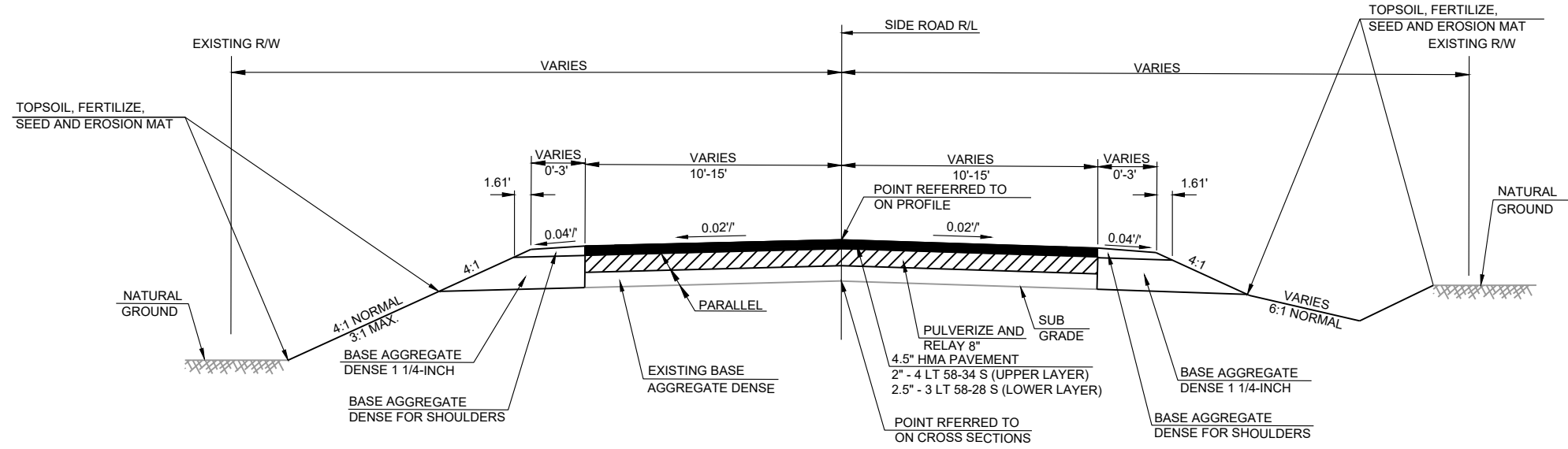
TELEPHONE 920-327-7822

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

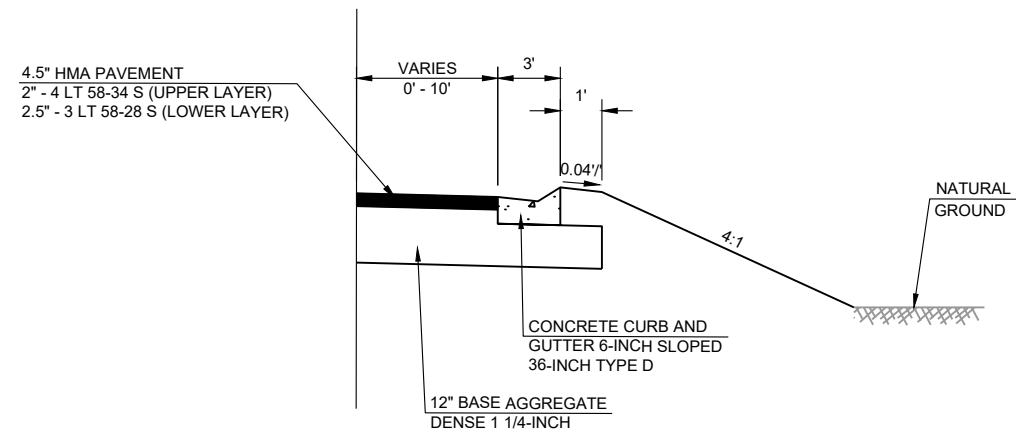
2984 SHAWANO AVENUE
PO BOX 10488
GREEN BAY, WI 54307-0448
ATTENTION: JIM DOPERALSKI JR.
EMAIL: james.doperalski@wisconsin.gov

TELEPHONE 920-412-0165

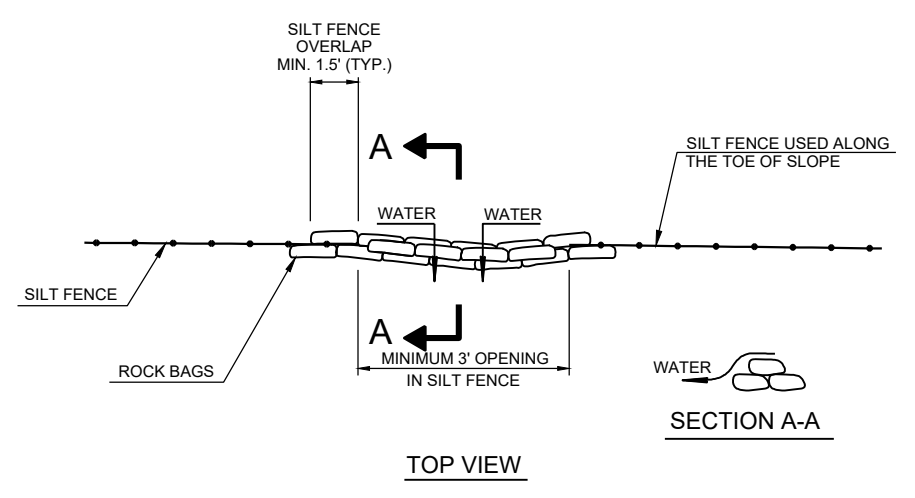
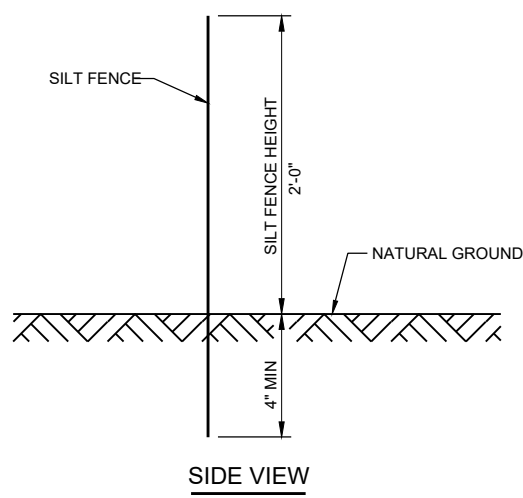
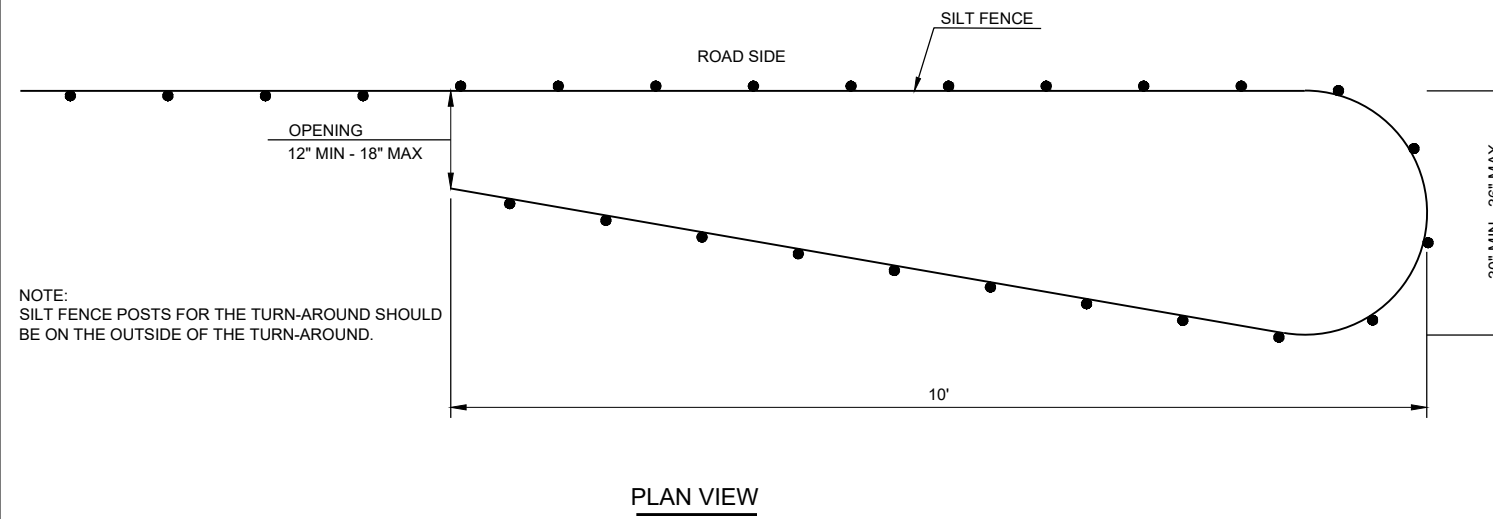
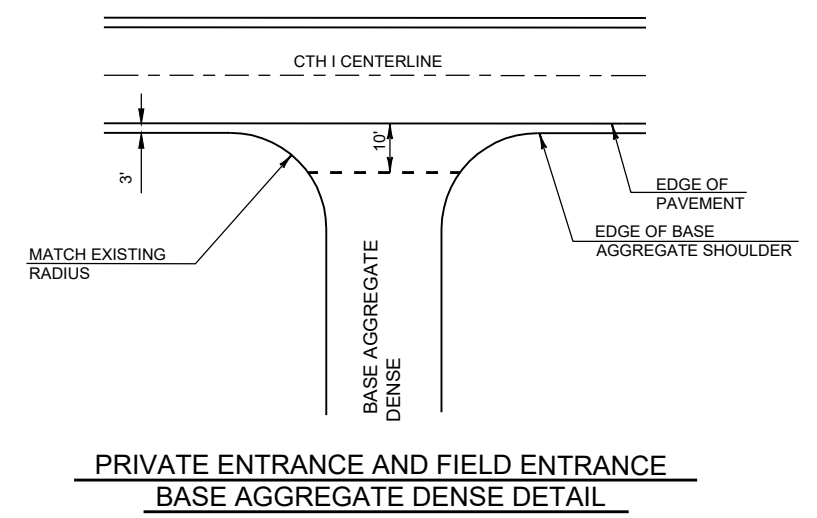
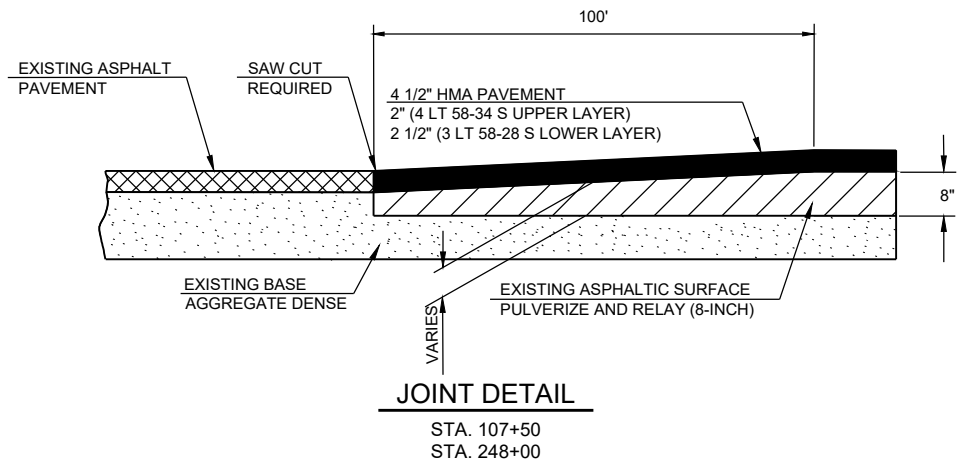
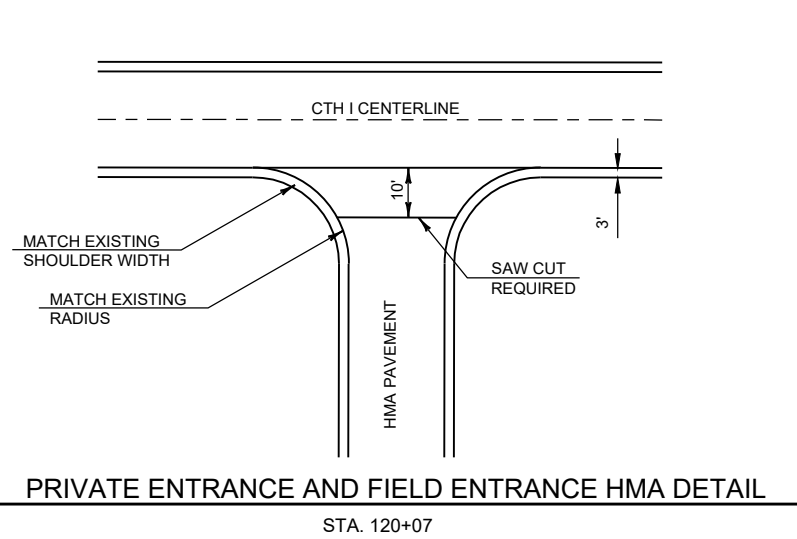




FINISHED TYPICAL SECTION FOR SIDE ROADS

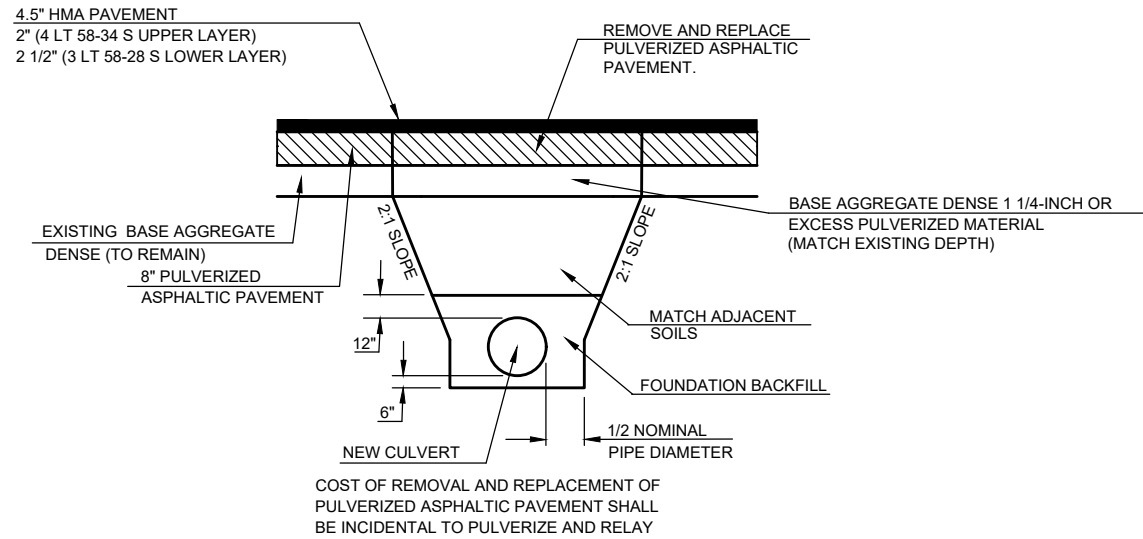


FINISHED TYPICAL SECTION FOR INTERSECTION CURB

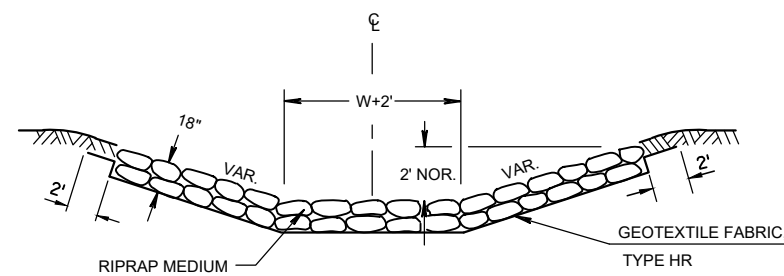
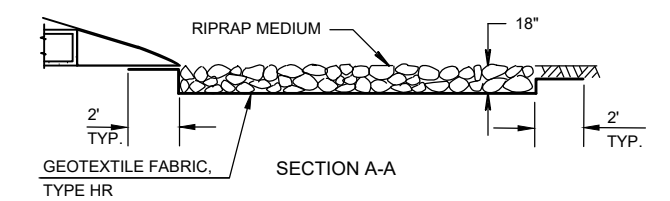
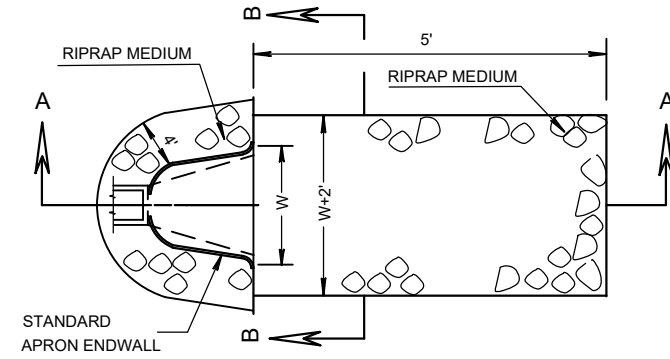


SILT FENCE TURN-AROUND DETAIL
(TO BE LOCATED AT ALL SILT FENCE ENDS)

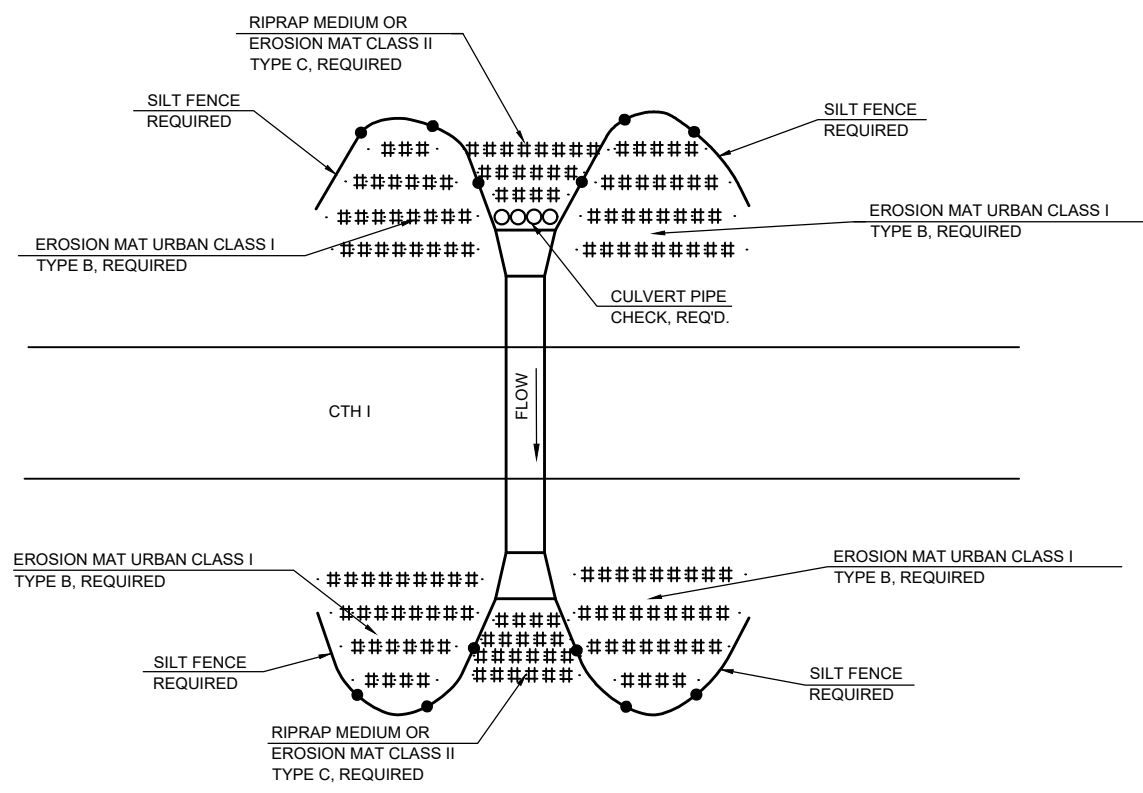
ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL
PAID AS ROCK BAGS



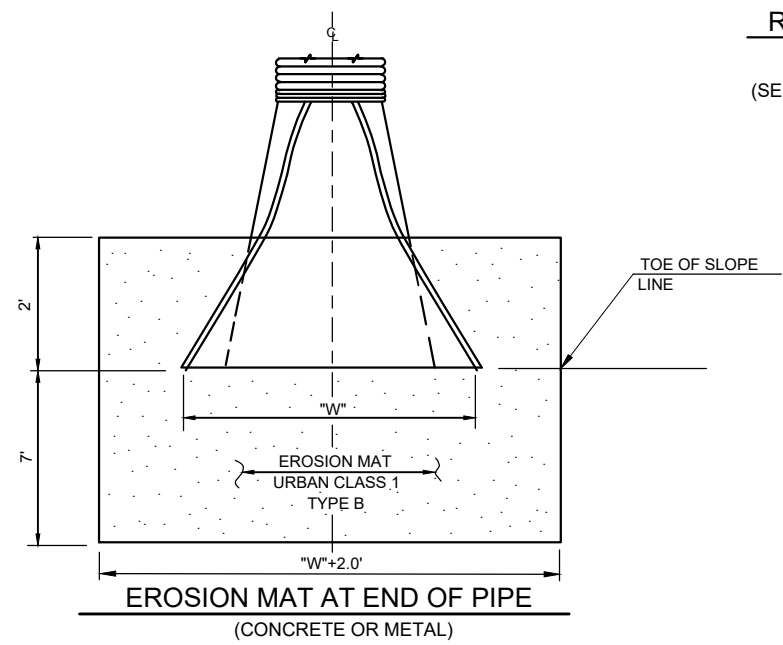
DETAIL FOR CULVERT REPLACEMENT IN PULVERIZE AREAS



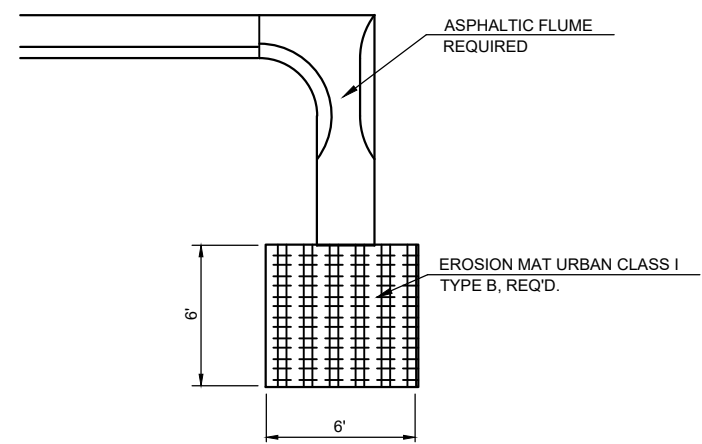
RIPRAP AND GEOTEXTILE DETAIL AT APRON ENDWALLS
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)



EROSION CONTROL DETAIL FOR CROSS PIPES



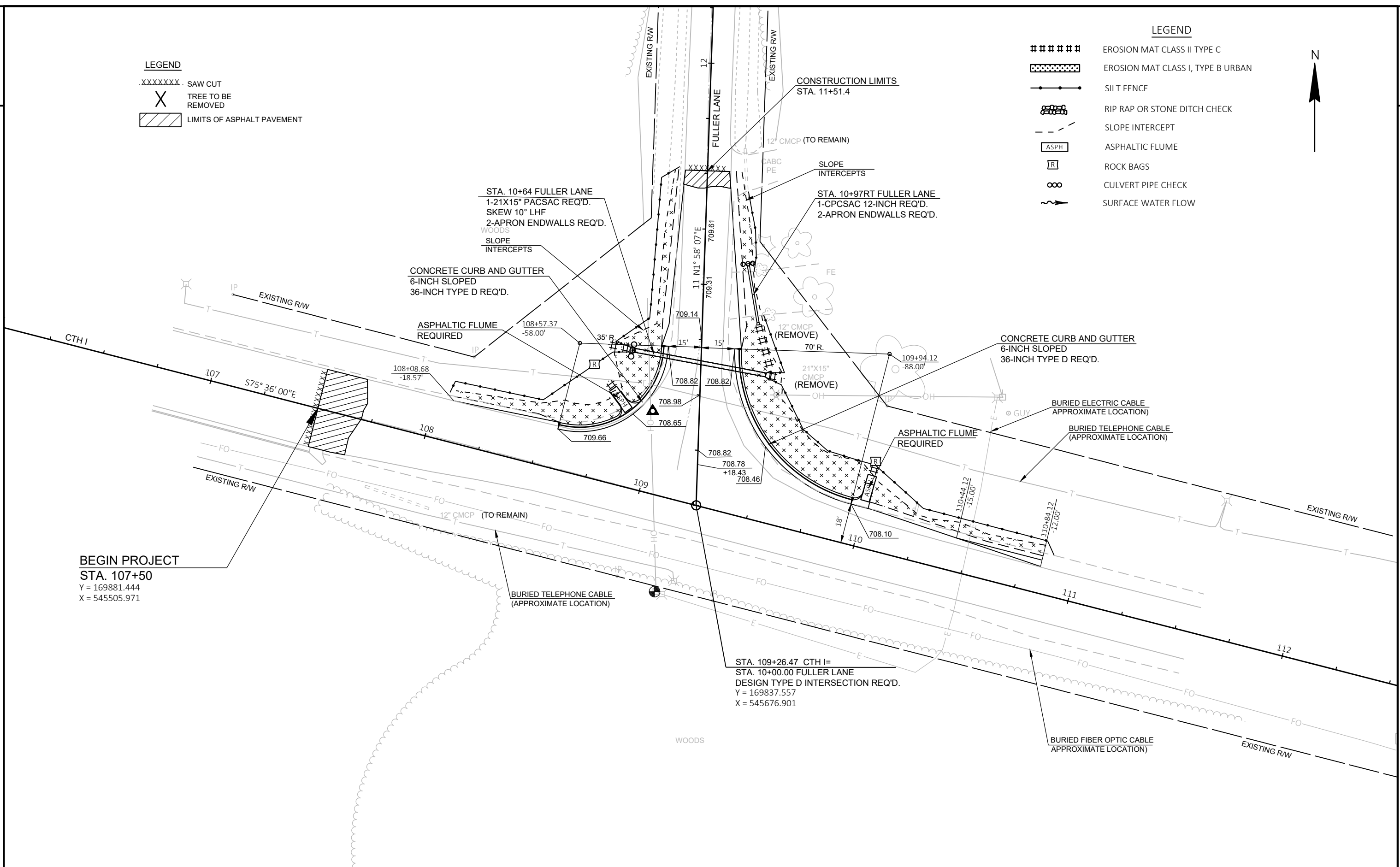
EROSION MAT AT END OF PIPE
(CONCRETE OR METAL)



EROSION MAT AT ASPHALTIC FLUME

LEGEND
 .XXXXXXXX. SAW CUT
 X TREE TO BE REMOVED
 [Hatched Box] LIMITS OF ASPHALT PAVEMENT

LEGEND
 ##### EROSION MAT CLASS II TYPE C
 [Dotted Box] EROSION MAT CLASS I, TYPE B URBAN
 [Line with dots] SILT FENCE
 [Stippled Box] RIP RAP OR STONE DITCH CHECK
 [Dashed Line] SLOPE INTERCEPT
 [ASPH Box] ASPHALTIC FLUME
 [R Box] ROCK BAGS
 [∞] CULVERT PIPE CHECK
 [Arrow] SURFACE WATER FLOW



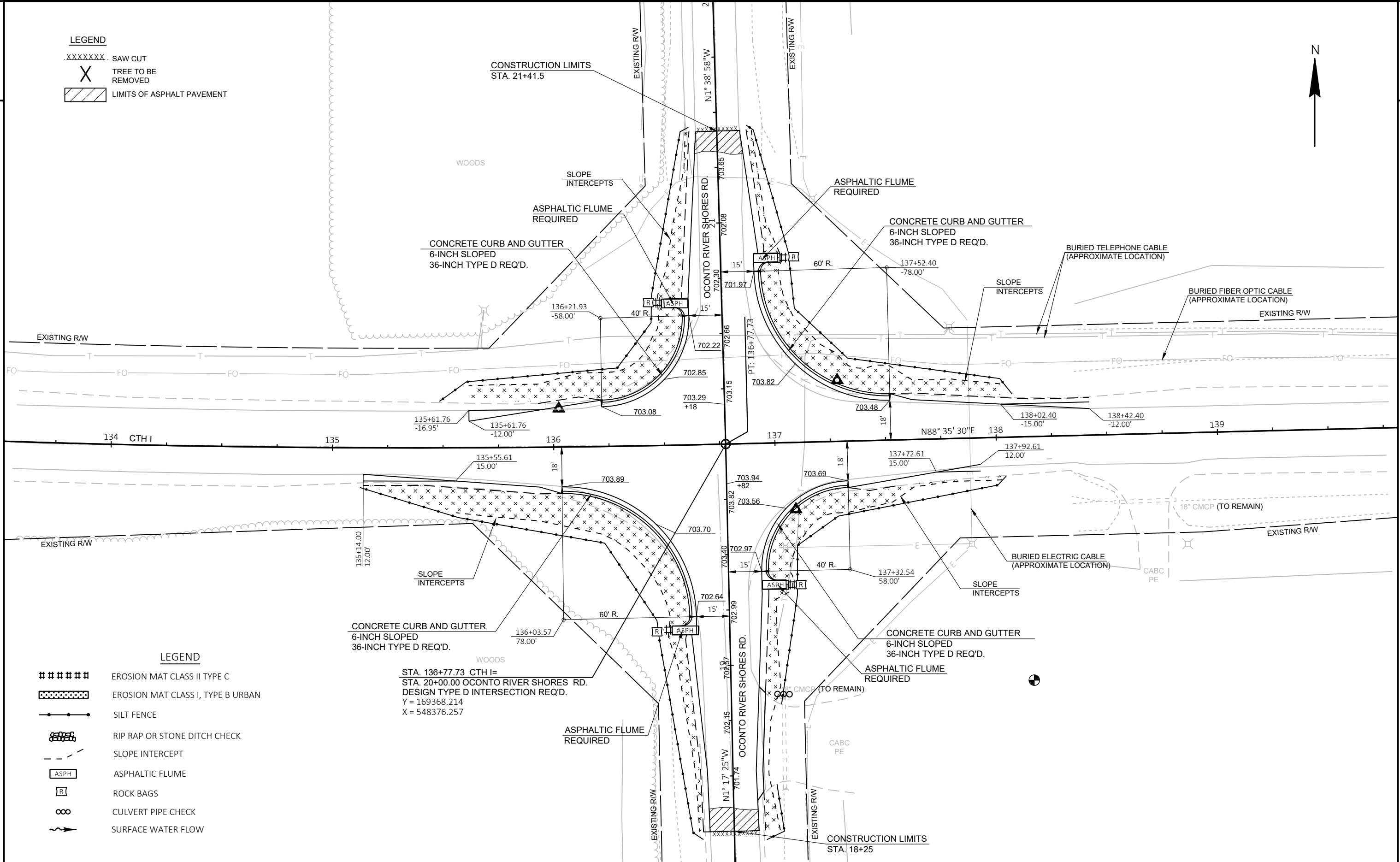
BEGIN PROJECT
STA. 107+50
 Y = 169881.444
 X = 545505.971

STA. 109+26.47 CTH I =
STA. 10+00.00 FULLER LANE
DESIGN TYPE D INTERSECTION REQ'D.
 Y = 169837.557
 X = 545676.901

LEGEND

- XXXXXXX SAW CUT
- X TREE TO BE REMOVED
- [Hatched Box] LIMITS OF ASPHALT PAVEMENT

N



LEGEND

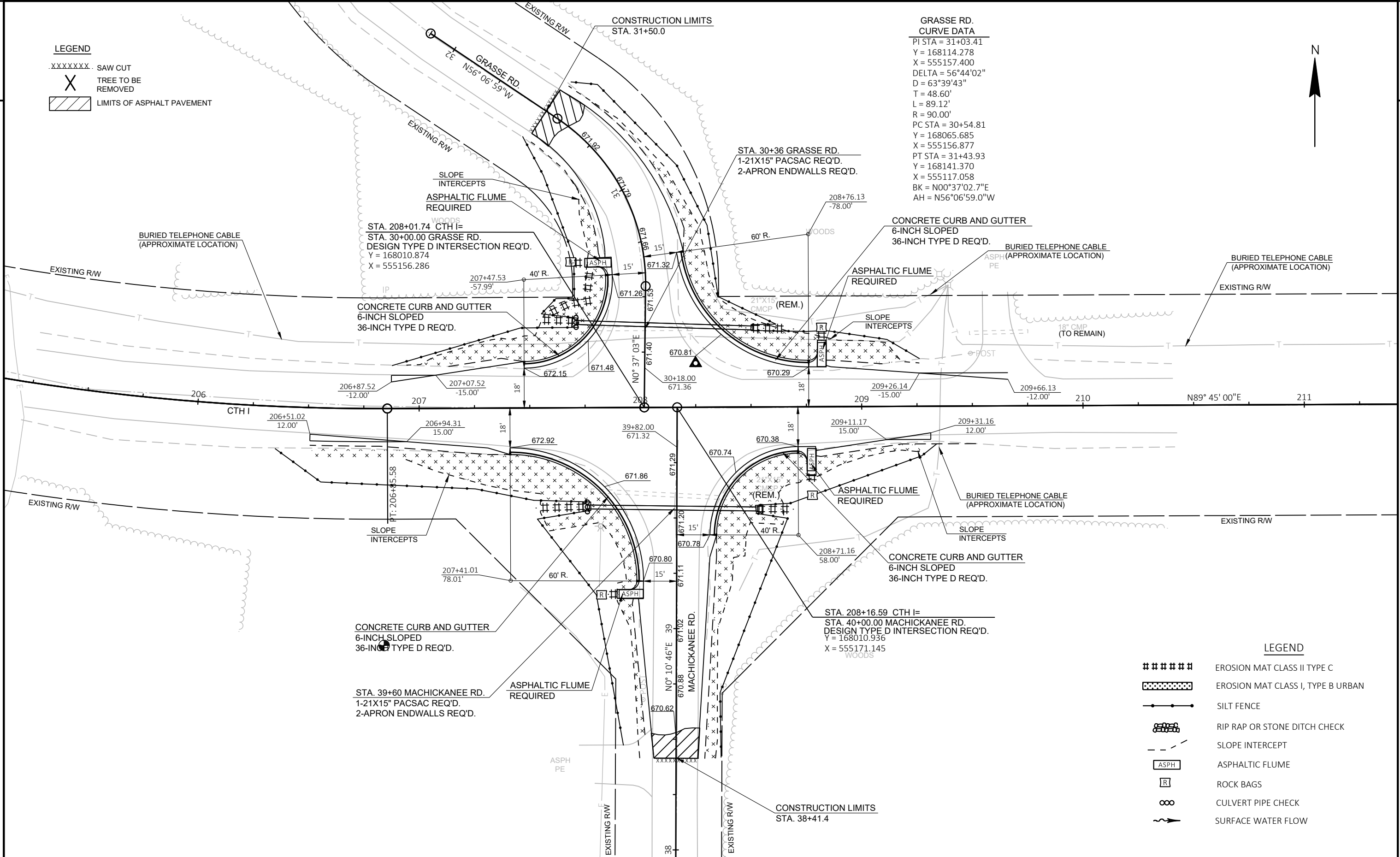
- ##### EROSION MAT CLASS II TYPE C
- [Dotted Box] EROSION MAT CLASS I, TYPE B URBAN
- [Line with dots] SILT FENCE
- [Stippled Box] RIP RAP OR STONE DITCH CHECK
- [Dashed Line] SLOPE INTERCEPT
- [ASPH] ASPHALTIC FLUME
- [R] ROCK BAGS
- [Circle with X] CULVERT PIPE CHECK
- [Wavy Line] SURFACE WATER FLOW

STA. 136+77.73 CTH I =
 STA. 20+00.00 OCONTO RIVER SHORES RD.
 DESIGN TYPE D INTERSECTION REQ'D.
 Y = 169368.214
 X = 548376.257

LEGEND

XXXXXXX SAW CUT
 X TREE TO BE REMOVED
 [Hatched Box] LIMITS OF ASPHALT PAVEMENT

GRASSE RD. CURVE DATA
 PI STA = 31+03.41
 Y = 168114.278
 X = 555157.400
 DELTA = 56°44'02"
 D = 63°39'43"
 T = 48.60'
 L = 89.12'
 R = 90.00'
 PC STA = 30+54.81
 Y = 168065.685
 X = 555156.877
 PT STA = 31+43.93
 Y = 168141.370
 X = 555117.058
 BK = N00°37'02.7"E
 AH = N56°06'59.0"W

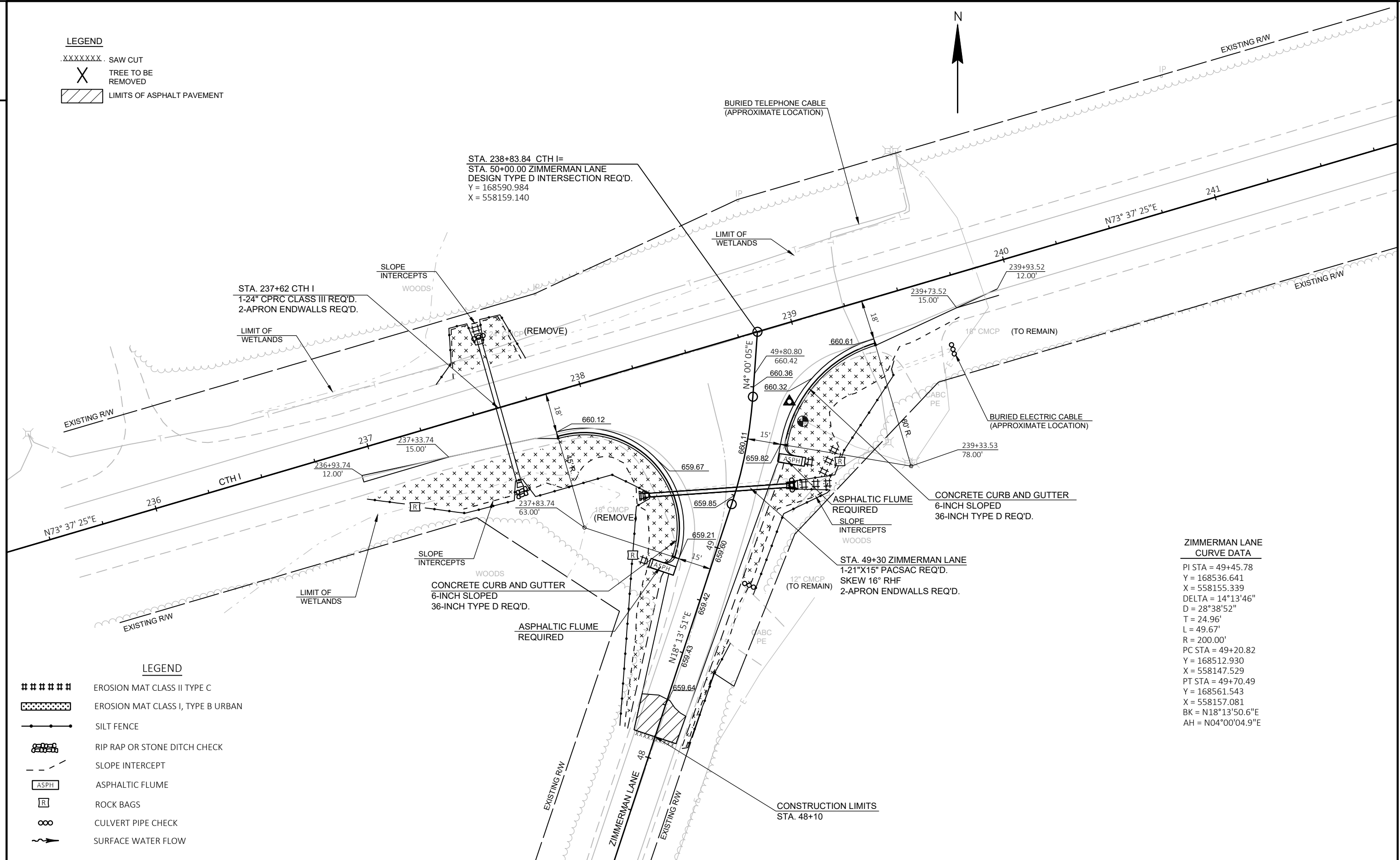


LEGEND

EROSION MAT CLASS II TYPE C
 [Cross-hatched Box] EROSION MAT CLASS I, TYPE B URBAN
 [Dashed Line] SILT FENCE
 [Stippled Area] RIP RAP OR STONE DITCH CHECK
 [Dashed Line] SLOPE INTERCEPT
 [ASPH Box] ASPHALTIC FLUME
 [R Box] ROCK BAGS
 [Circle with X] CULVERT PIPE CHECK
 [Wavy Arrow] SURFACE WATER FLOW

LEGEND

- .XXXXXXX. SAW CUT
- X TREE TO BE REMOVED
- [Hatched Box] LIMITS OF ASPHALT PAVEMENT



LEGEND

- [Hashed Box] EROSION MAT CLASS II TYPE C
- [Dotted Box] EROSION MAT CLASS I, TYPE B URBAN
- [Line with Dots] SILT FENCE
- [Rip Rap Symbol] RIP RAP OR STONE DITCH CHECK
- [Dashed Line] SLOPE INTERCEPT
- [ASPH Box] ASPHALTIC FLUME
- [R Box] ROCK BAGS
- [Culvert Symbol] CULVERT PIPE CHECK
- [Arrow] SURFACE WATER FLOW

ZIMMERMAN LANE CURVE DATA

PI STA = 49+45.78
 Y = 168536.641
 X = 558155.339
 DELTA = 14°13'46"
 D = 28°38'52"
 T = 24.96'
 L = 49.67'
 R = 200.00'
 PC STA = 49+20.82
 Y = 168512.930
 X = 558147.529
 PT STA = 49+70.49
 Y = 168561.543
 X = 558157.081
 BK = N18°13'50.6"E
 AH = N04°00'04.9"E

LEGEND

- XXXXXXX SAW CUT
- X TREE TO BE REMOVED
- [Hatched Box] LIMITS OF ASPHALT PAVEMENT

CONSTRUCTION LIMITS
STA. 61+69.6

BURIED ELECTRIC CABLE
(APPROXIMATE LOCATION)

BURIED TELEPHONE CABLE
(APPROXIMATE LOCATION)

STA. 60+80 HUSKY LANE
1-21"X15" PACSAC REQ'D.
2-APRON ENDWALLS REQ'D.

ASPHALTIC FLUME
REQUIRED
CONCRETE CURB AND GUTTER
6-INCH SLOPED
36-INCH TYPE D REQ'D.

245+44.10
-78.00'

LIMIT OF
WETLANDS

EXISTING R/W

PC: 243+94.32

244

N73° 37' 25"E
CTH 1

244+83.61
-12.00'

245

245+02.69
-15.00'

STA. 245+97.56 CTH I=
STA. 60+00.00 HUSKY LANE
DESIGN TYPE D INTERSECTION REQ'D.
Y = 168799.931
X = 558841.412

EXISTING R/W

62

HUSKY LANE

61

663.15 N1° 30' 45"W

15'

662.39

15'

661.57

661.82

661.82

661.99

661.82

661.82

662.07

18'

246

661.82

661.82

661.82

661.82

661.82

661.82

661.82

661.82

661.82

661.82

661.82

661.82

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661.82

661.82



SLOPE
INTERCEPTS

CONCRETE CURB AND GUTTER
6-INCH SLOPED
36-INCH TYPE D REQ'D.
ASPHALTIC FLUME
REQUIRED

LIMIT OF
WETLANDS

EXISTING R/W

246+86.16
-63.00'

247+76.76
-12.00'

247+40.62
-15.00'

EXISTING R/W

END PROJECT
STA. 248+00
Y = 168879.746
X = 559027.396

WOODS

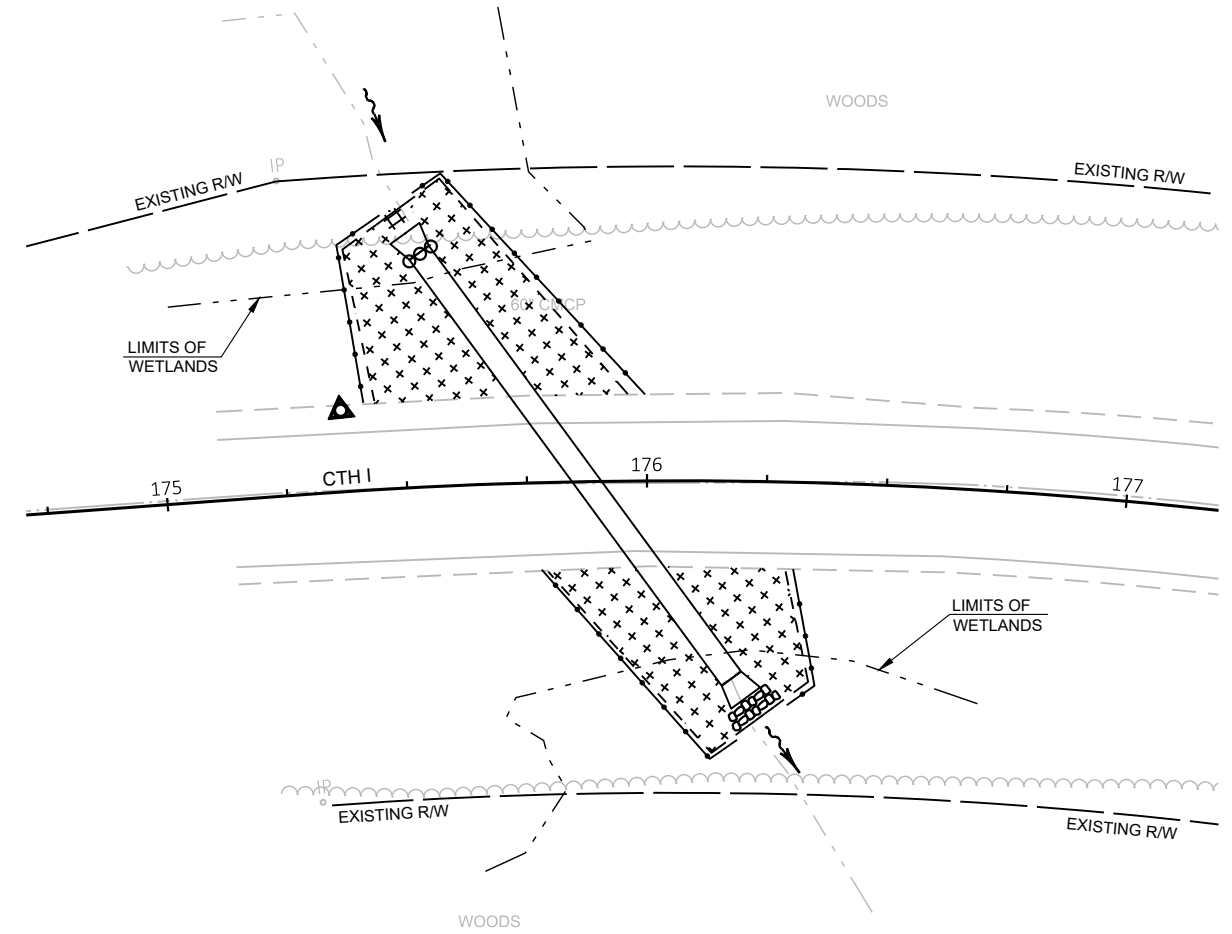
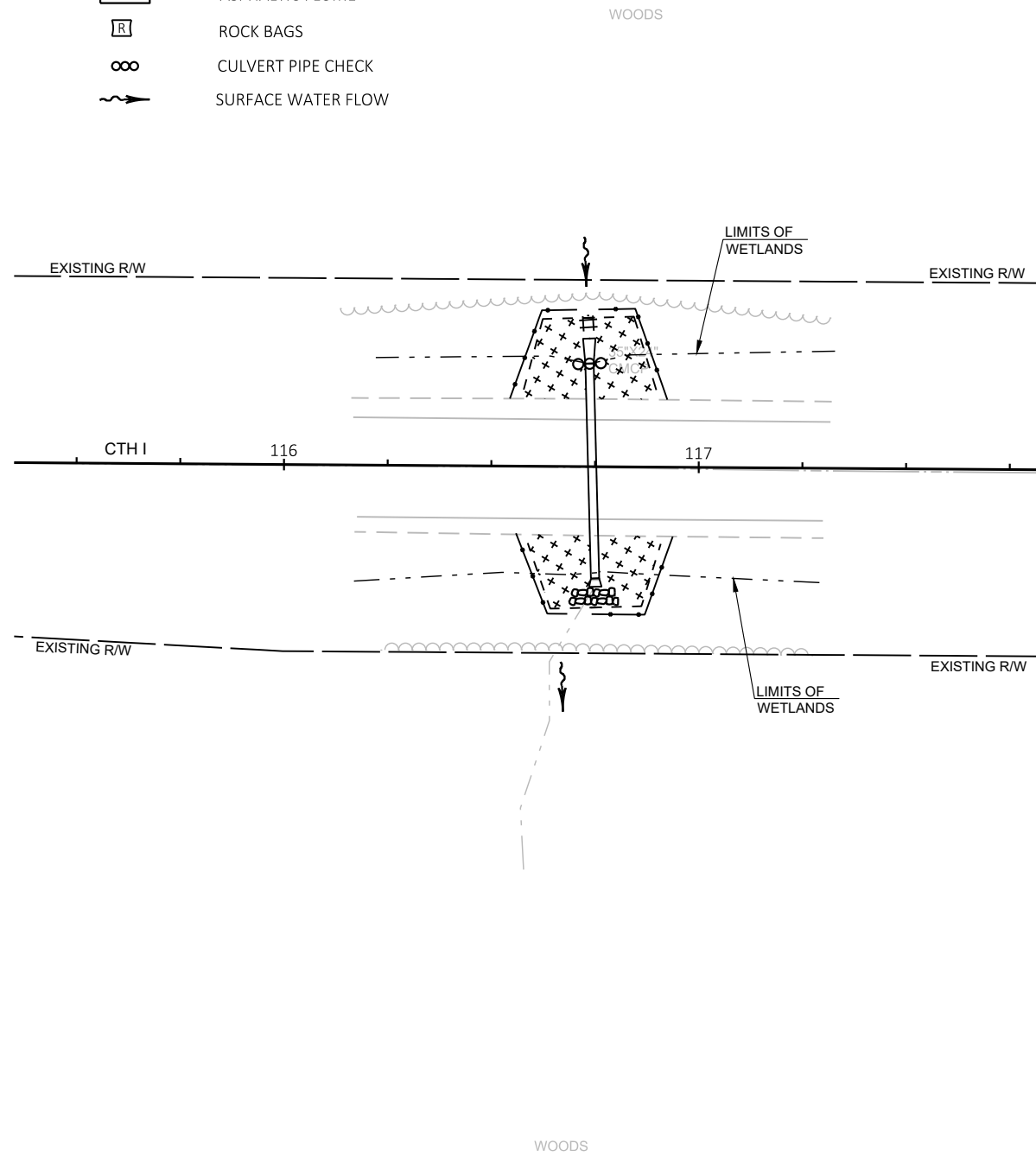
LIMIT OF
WETLANDS

LEGEND

- ##### EROSION MAT CLASS II TYPE C
- EROSION MAT CLASS I, TYPE B URBAN
- SILT FENCE
- ▨ RIP RAP OR STONE DITCH CHECK
- - - SLOPE INTERCEPT
- [ASPH] ASPHALTIC FLUME
- [R] ROCK BAGS
- ∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW

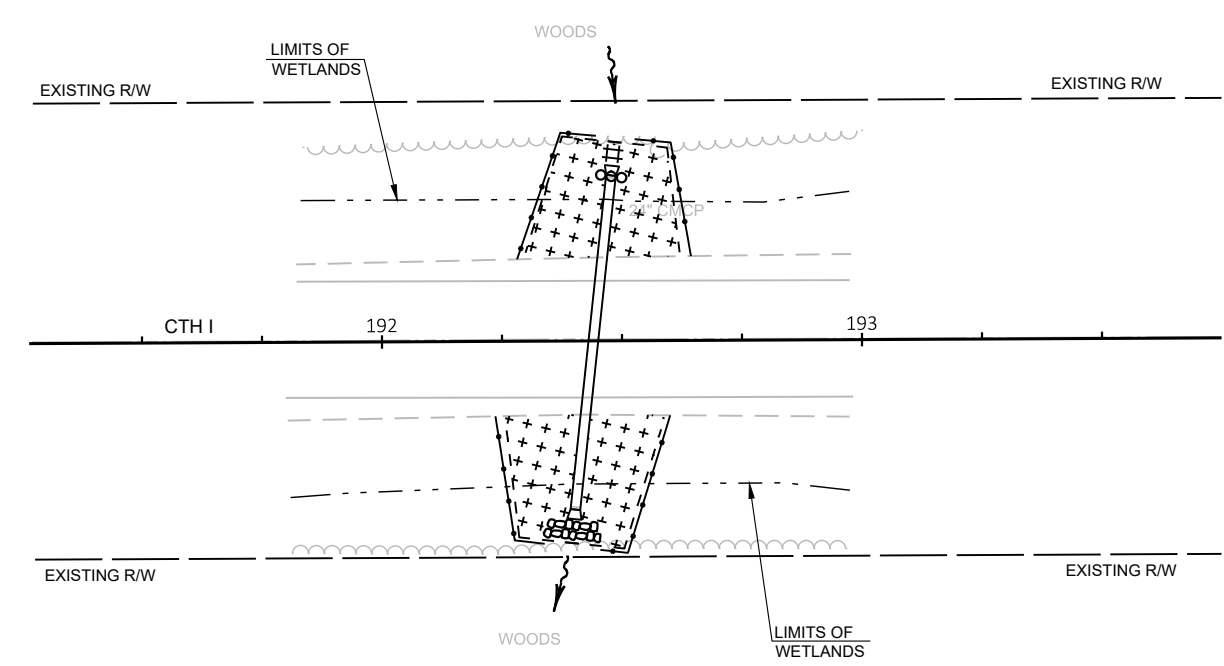
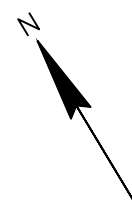
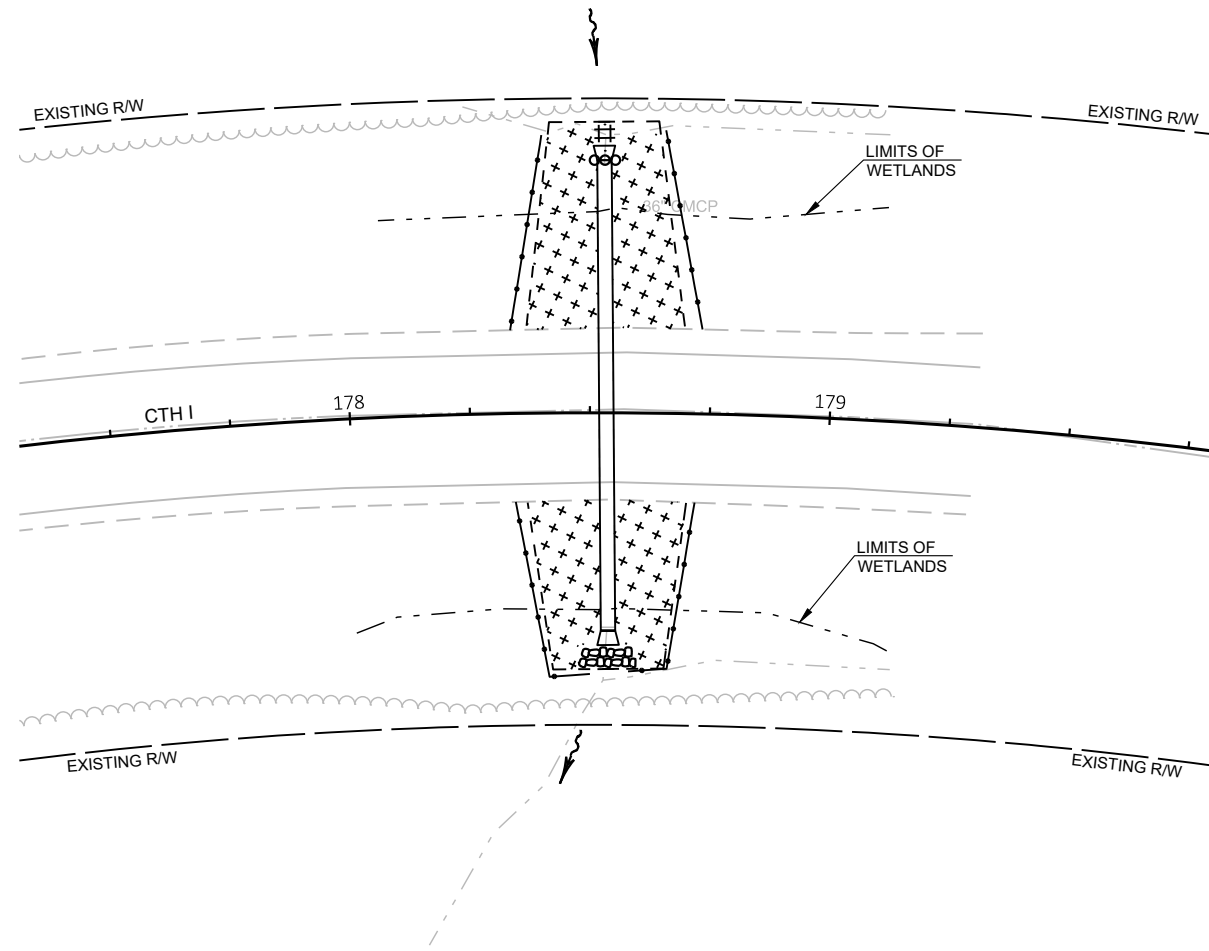
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- ASPH ASPHALTIC FLUME
- R ROCK BAGS
- ∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW



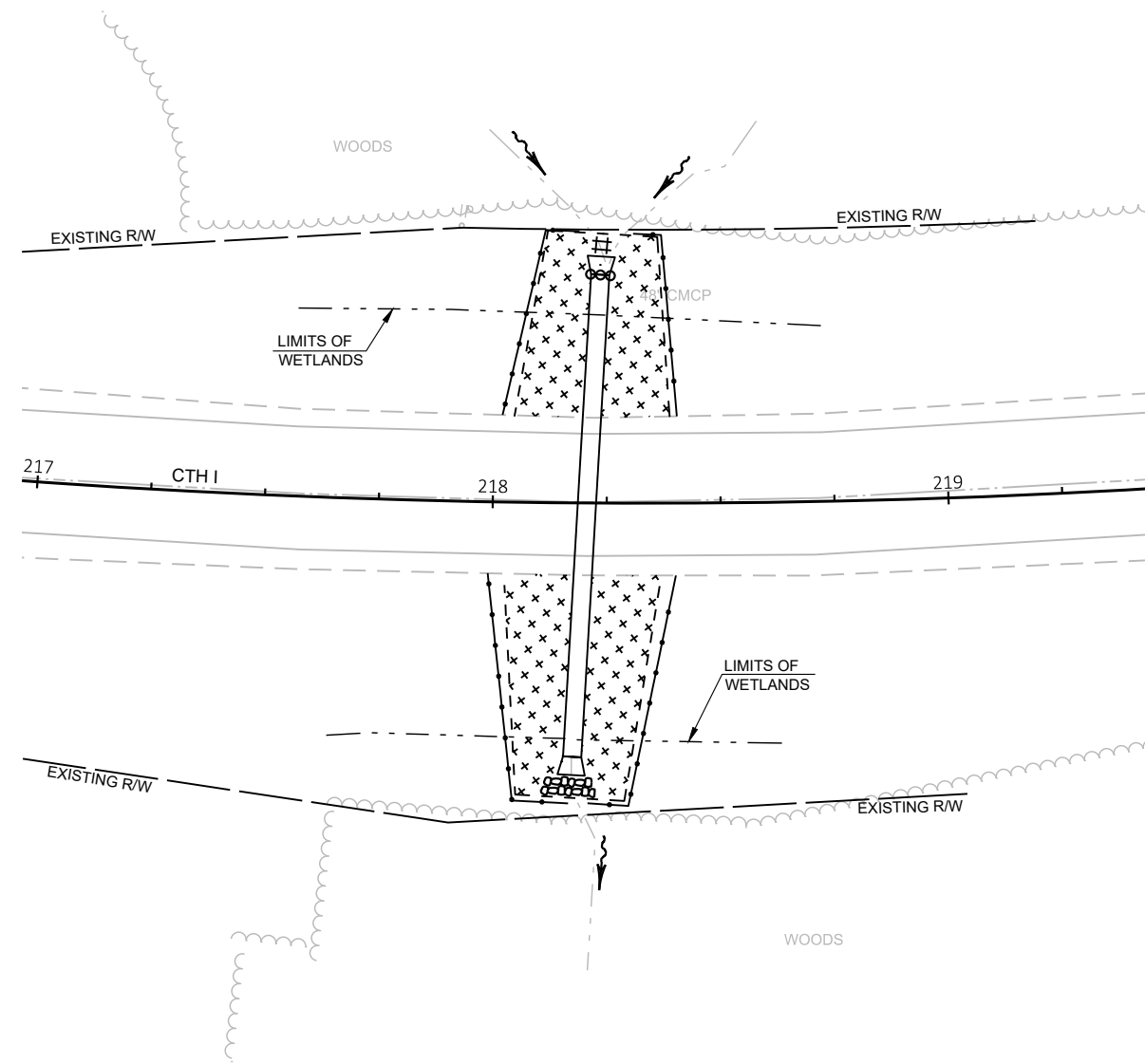
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- ∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW



Estimate Of Quantities

9032-02-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	6.000	6.000
0004	201.0205	Grubbing	STA	6.000	6.000
0006	203.0100	Removing Small Pipe Culverts	EACH	11.000	11.000
0008	203.0220	Removing Structure (structure) 01. 60" CMCP, STA 175+88	EACH	1.000	1.000
0010	204.0100	Removing Concrete Pavement	SY	50.000	50.000
0012	204.0110	Removing Asphaltic Surface	SY	550.000	550.000
0014	205.9016.S	Grading Shaping and Finishing Intersection (location) 01. Fuller Lane	EACH	1.000	1.000
0016	205.9016.S	Grading Shaping and Finishing Intersection (location) 02. Oconto River Shores Road South	EACH	1.000	1.000
0018	205.9016.S	Grading Shaping and Finishing Intersection (location) 03. Oconto River Shores Road North	EACH	1.000	1.000
0020	205.9016.S	Grading Shaping and Finishing Intersection (location) 04. Grasse Road	EACH	1.000	1.000
0022	205.9016.S	Grading Shaping and Finishing Intersection (location) 05. Machickanee Road	EACH	1.000	1.000
0024	205.9016.S	Grading Shaping and Finishing Intersection (location) 06. Zimmerman Lane	EACH	1.000	1.000
0026	205.9016.S	Grading Shaping and Finishing Intersection (location) 07. Husky Lane	EACH	1.000	1.000
0028	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	268.000	268.000
0030	213.0100	Finishing Roadway (project) 01. 9032-02-71	EACH	1.000	1.000
0032	305.0110	Base Aggregate Dense 3/4-Inch	TON	3,470.000	3,470.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,385.000	1,385.000
0036	325.0100	Pulverize and Relay	SY	43,840.000	43,840.000
0038	455.0605	Tack Coat	GAL	3,100.000	3,100.000
0040	460.2000	Incentive Density HMA Pavement	DOL	8,670.000	8,670.000
0042	460.5223	HMA Pavement 3 LT 58-28 S	TON	7,515.000	7,515.000
0044	460.5244	HMA Pavement 4 LT 58-34 S	TON	6,020.000	6,020.000
0046	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	70.000	70.000
0048	465.0315	Asphaltic Flumes	SY	112.000	112.000
0050	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	2.000	2.000
0052	521.1221	Apron Endwalls for Pipe Arch Steel 21x15-Inch	EACH	10.000	10.000
0054	521.6112	Culvert Pipe Corrugated Steel Aluminum Coated 12-Inch	LF	28.000	28.000
0056	521.6721	Pipe Arch Corrugated Steel Aluminum Coated 21x15-Inch	LF	342.000	342.000
0058	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	126.000	126.000
0060	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	92.000	92.000
0062	522.0148	Culvert Pipe Reinforced Concrete Class III 48-Inch	LF	106.000	106.000
0064	522.0160	Culvert Pipe Reinforced Concrete Class III 60-Inch	LF	108.000	108.000
0066	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	4.000	4.000
0068	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	2.000	2.000
0070	522.1048	Apron Endwalls for Culvert Pipe Reinforced Concrete 48-Inch	EACH	2.000	2.000
0072	522.1060	Apron Endwalls for Culvert Pipe Reinforced Concrete 60-Inch	EACH	2.000	2.000
0074	522.2324	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 24x38-Inch	LF	46.000	46.000
0076	522.2624	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch	EACH	2.000	2.000
0078	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	1,075.000	1,075.000
0080	606.0200	Riprap Medium	CY	15.000	15.000
0082	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9032-02-71	EACH	1.000	1.000
0084	619.1000	Mobilization	EACH	1.000	1.000
0086	624.0100	Water	MGAL	361.000	361.000
0088	628.1504	Silt Fence	LF	5,125.000	5,125.000
0090	628.1520	Silt Fence Maintenance	LF	10,250.000	10,250.000
0092	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0094	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000

Estimate Of Quantities

9032-02-71

Line	Item	Item Description	Unit	Total	Qty
0096	628.2008	Erosion Mat Urban Class I Type B	SY	4,125.000	4,125.000
0098	628.2027	Erosion Mat Class II Type C	SY	280.000	280.000
0100	628.7555	Culvert Pipe Checks	EACH	80.000	80.000
0102	628.7570	Rock Bags	EACH	240.000	240.000
0104	633.5200	Markers Culvert End	EACH	12.000	12.000
0106	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0108	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	11.000	11.000
0110	637.2230	Signs Type II Reflective F	SF	102.260	102.260
0112	638.2602	Removing Signs Type II	EACH	7.000	7.000
0114	638.3000	Removing Small Sign Supports	EACH	7.000	7.000
0116	642.5001	Field Office Type B	EACH	1.000	1.000
0118	643.0300	Traffic Control Drums	DAY	400.000	400.000
0120	643.0420	Traffic Control Barricades Type III	DAY	1,750.000	1,750.000
0122	643.0705	Traffic Control Warning Lights Type A	DAY	3,416.000	3,416.000
0124	643.0900	Traffic Control Signs	DAY	3,200.000	3,200.000
0126	643.1050	Traffic Control Signs PCMS	DAY	36.000	36.000
0128	643.5000	Traffic Control	EACH	1.000	1.000
0130	645.0120	Geotextile Type HR	SY	60.000	60.000
0132	646.1020	Marking Line Epoxy 4-Inch	LF	44,564.000	44,564.000
0134	648.0100	Locating No-Passing Zones	MI	2.660	2.660
0136	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	1,075.000	1,075.000
0138	650.6000	Construction Staking Pipe Culverts	EACH	11.000	11.000
0140	650.8000	Construction Staking Resurfacing Reference	LF	14,050.000	14,050.000
0142	650.9910	Construction Staking Supplemental Control (project) 01. 9032-02-71	LS	1.000	1.000
0144	690.0150	Sawing Asphalt	LF	475.000	475.000
0146	690.0250	Sawing Concrete	LF	22.000	22.000
0148	740.0440	Incentive IRI Ride	DOL	10,644.000	10,644.000
0150	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0152	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0154	SPV.0060	Special 01. Grading, Shaping, and Finishing Culvert Pipes and Endwalls	EACH	12.000	12.000

CLEARING AND GRUBBING

STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
175+35	-	175+90	CTH I, LT	1	1
192+25	-	192+75	CTH I, LT & RT	1	1
11+00	-	11+54	FULLER LANE, LT	1	1
48+10	-	48+75	ZIMMERMAN RD	1	1
60+50	-	61+70	HUSKY LN	2	2
			TOTALS	6	6

REMOVING PIPE CULVERTS

STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH	203.0220.01 REMOVING STRUCTURE (STA 175+88) EACH	REMARKS
116+74	CTH I	1	-	35"X24" CMCP, 52 FT
175+88	CTH I	-	1	60" CMCP, 110 FT
178+53	CTH I	1	-	36" CMCP, 96 FT
192+44	CTH I	1	-	24" CMCP, 68 FT
218+20	CTH I	1	-	48" CMCP, 106 FT
237+62	CTH I	1	-	24" CMCP, 66 FT
10+65	FULLER LANE	1	-	21"X15" CMCP, 60 FT
10+97	FULLER LANE, RT	1	-	12" CMCP, 26 FT
30+38	GRASSE ROAD	1	-	21"X15" CMCP, 44 FT
39+55	MACHICKANEE ROAD	1	-	21"X15" CMCP, 66 FT
49+28	ZIMMERMAN LANE	1	-	18" CMCP, 66 FT
60+80	HUSKY LANE	1	-	12" CMCP, 36 FT
TOTALS		11	1	

REMOVING CONCRETE PAVEMENT

REMOVING ASPHALTIC SURFACE

STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	REMARKS
197+25	CTH I, RT	50	CONCRETE DRIVEWAY
TOTAL		50	

STATION	TO	STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY	REMARKS
107+50	-	248+00	CTH I	550	ASPHALTIC DRIVEWAYS
TOTAL				550	

GRADING SHAPING AND FINISHING INTERSECTION

GRADING SHAPING AND FINISHING INTERSECTION										FOR INFORMATIONAL PURPOSES ONLY						
		205.9016.S.01	205.9016.S.02	205.9016.S.03	205.9016.S.04	205.9016.S.05	205.9016.S.06	205.9016.S.07								
		FULLER LANE	SOUTH	NORTH	GRASSE ROAD	MACHICKANEE	ZIMMERMAN	HUSKY LANE	CUT	UNEXPANDED	EXPANDED FILL	TOPSOIL	FERTILIZER	SEEDING MIXTURE	SEED	
STATION	TO	STATION	LOCATION	SHORES ROAD	SHORES ROAD	ROAD	LANE	ROAD	CY	FILL	(1.3)	SY	TYPE B	NO. 20	WATER	
				EACH	EACH	EACH	EACH	EACH					CWT	LB	MGAL	
10+15	-	11+51	FULLER LANE	1	-	-	-	-	50	60	78	360	0.2	10	4	
18+25	-	19+85	OCONTO RIVER SHORES ROAD NORTH	-	1	-	-	-	50	40	52	320	0.2	9	4	
20+15	-	21+42	OCONTO RIVER SHORES ROAD SOUTH	-	-	1	-	-	35	95	124	380	0.2	10	4	
30+15	-	31+48	GRASSE ROAD	-	-	-	1	-	55	90	117	300	0.2	8	3	
38+42	-	39+85	MACHICKANEE ROAD	-	-	-	-	1	55	70	91	385	0.2	10	4	
48+41	-	49+85	ZIMMERMAN LANE	-	-	-	-	1	65	50	65	495	0.3	13	6	
60+15	-	61+70	HUSKY LANE	-	-	-	-	1	45	125	163	500	0.3	14	6	
TOTALS				1	1	1	1	1	355	530	690	2,740	1.6	74	31	

BASE AGGREGATE DENSE

STATION	TO	STATION	LOCATION	*			REMARKS
				305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL	
107+50	-	248+00	CTH I	3,300	-	50	SHOULDERING
107+50	-	248+00	CTH I	-	650	10	FOR SUPERELEVATION CORRECTION
10+12	-	11+51	FULLER LANE	35	100	2	FOR UNDER CURB AND GUTTER
18+25	-	19+88	OCONTO RIVER SHORES ROAD	20	75	2	FOR UNDER CURB AND GUTTER
20+12	-	21+42	OCONTO RIVER SHORES ROAD	25	75	2	FOR UNDER CURB AND GUTTER
30+12	-	31+48	GRASSE ROAD	15	170	3	FOR UNDER CURB AND GUTTER
38+42	-	39+88	MACHICKANEE ROAD	25	105	2	FOR UNDER CURB AND GUTTER
48+41	-	49+88	ZIMMERMAN LANE	30	110	3	FOR UNDER CURB AND GUTTER
60+12	-	61+70	HUSKY LANE	20	100	2	FOR UNDER CURB AND GUTTER
UNDISTRIBUTED			DUST CONTROL	-	-	20	
TOTALS				3,470	1,385	96	

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PULVERIZE AND RELAY

STATION	TO	STATION	LOCATION	*	
				325.0100 PULVERIZE AND RELAY SY	624.0100 WATER MGAL
107+50	-	248+00	CTH I	39,500	237
10+12	-	11+51	FULLER LANE	620	4
18+25	-	19+88	OCONTO RIVER SHORES ROAD	725	4
20+12	-	21+42	OCONTO RIVER SHORES ROAD	560	4
30+12	-	31+48	GRASSE ROAD	455	3
38+42	-	39+88	MACHICKANEE ROAD	585	4
48+41	-	49+88	ZIMMERMAN LANE	740	5
60+12	-	61+70	HUSKY LANE	655	4
TOTALS				43,840	265

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

STATION	TO	STATION	LOCATION	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
				107+50
107+50	-	108+09	CTH I, LT	2
110+84	-	135+62	CTH I, LT	26
137+93	-	206+51	CTH I, RT	70
138+42	-	206+88	CTH I, LT	69
209+31	-	236+94	CTH I, RT	27
209+66	-	244+84	CTH I, LT	35
239+94	-	248+00	CTH I, RT	9
247+77	-	248+00	CTH I, LT	1
TOTAL				268

HMA PAVEMENT

STATION	TO	STATION	LOCATION	465.0315 ASPHALTIC FLUMES SY			
				TACK COAT GAL	HMA PAVEMENT 3 LT 58-28 S TON	HMA PAVEMENT 4 LT 58-34 S TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON
107+50	-	248+00	CTH I	2,815	6,800	5,450	70
10+15	-	11+51	FULLER LANE	40	100	80	-
18+25	-	19+85	OCONTO RIVER SHORES ROAD	41	105	85	-
20+15	-	21+42	OCONTO RIVER SHORES ROAD	36	90	70	-
30+15	-	31+48	GRASSE ROAD	37	95	75	-
38+42	-	39+85	MACHICKANEE ROAD	40	100	80	-
48+41	-	49+85	ZIMMERMAN LANE	50	120	95	-
60+15	-	61+70	HUSKY LANE	41	105	85	-
TOTALS				3,100	7,515	6,020	70

ASPHALTIC FLUMES

STATION	LOCATION	465.0315 ASPHALTIC FLUMES SY
108+85	CTH I, LT	7
109+97	CTH I, LT	7
136+00	CTH I, RT	7
207+72	CTH I, LT	7
208+75	CTH I, RT	7
208+80	CTH I, LT	7
19+20	OCONTO RIVER SHORES ROAD, LT	7
19+39	OCONTO RIVER SHORES ROAD, RT	7
20+62	OCONTO RIVER SHORES ROAD, LT	7
20+80	OCONTO RIVER SHORES ROAD, RT	7
39+17	MACHICKANEE ROAD, LT	7
39+37	MACHICKANEE ROAD, RT	7
48+87	ZIMMERMAN LANE, LT	7
49+48	ZIMMERMAN LANE, RT	7
60+59	HUSKY LANE, LT	7
60+70	HUSKY LANE, RT	7
TOTAL		112

PIPE ARCH CORRUGATED STEEL AND APRON ENDWALLS

STATION	LOCATION	521.1221 APRON ENDWALLS FOR PIPE ARCH STEEL 21X15-INCH EACH		521.6721 PIPE ARCH CORRUGATED STEEL ALUMINUM COATED 21X15-INCH LF		STEEL THICKNESS INCHES		INLET	OUTLET		
		INLET	OUTLET	INLET	OUTLET	INLET	OUTLET				
10+64.6	FULLER LANE	2		62		0.064		10+69.4, 31.6' LT	10+60.0, 29.7' RT	706.20	705.70
30+38	GRASSE ROAD	2		80		0.064		30+38.0, 31.3' LT	30+38.0, 48.7' RT	669.20	668.25
39+55	MACHICKANEE ROAD	2		78		0.064		39+55.0, 40.9' LT	39+55.0, 37.1' RT	668.35	666.60
49+28	ZIMMERMAN LANE	2		68		0.064		49+36.0, 24.5' RT	49+12.3, 38.5' LT	657.00	656.45
60+80	HUSKY LANE	2		54		0.064		60+80.0, 25.0' LT	60+80.0, 29.0' RT	658.90	659.10
TOTALS		10		342							

CULVERT PIPE CORRUGATED STEEL ALUMINUM COATED & APRON ENDWALLS

STATION	LOCATION	521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH EACH		521.6112 CULVERT PIPE CORRUGATED STEEL ALUMINUM COATED 12-INCH LF		STEEL THICKNESS INCHES	REMARKS
		INLET	OUTLET	INLET	OUTLET		
10+97	FULLER LN, RT	2		28		0.064	DRIVEWAY CULVERT
TOTALS		2		28			

CONCRETE PIPE AND ENDWALLS

STATION	LOCATION	522.0124	522.0136	522.0148	522.0160	522.1024	522.1036	522.1048	522.1060	522.2324	522.2624	633.5200	END OF PIPE STATION/OFFSET		END OF PIPE ELEVATION	
		CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS III 48-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS III 60-INCH LF	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 48-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 60-INCH EACH	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 24X38-INCH LF	ENDWALLS FOR APRON CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 24X38-INCH EACH	MARKERS CULVERT END EACH	INLET	OUTLET	INLET	OUTLET
116+74.0	CTH I	-	-	-	-	-	-	-	-	46	2	2	116+74, 21.8' LT	116+74, 24.2' RT	701.30	701.00
175+87.5**	CTH I	-	-	-	108	-	-	-	2	-	-	2	175+55, 48.6' LT	176+17, 39.7' RT	663.00	660.70
178+53.4	CTH I	-	92	-	-	-	2	-	-	-	-	2	178+53.4, 49.6' LT	178+53.4, 42.4' RT	665.50	663.60
192+44.0	CTH I	64	-	-	-	2	-	-	-	-	-	2	192+47.5, 31.5' LT	192+40.4, 32.1 RT	676.35	676.20
218+20.7**	CTH I	-	-	106	-	-	-	2	-	-	-	2	218+23.4, 50.9 LT	218+17.9, 55.0' RT	642.00	641.55
237+61.5	CTH I	62	-	-	-	2	-	-	-	-	-	2	237+61.5, 29.9 LT	237+61.5, 32.1 RT	653.90	653.75
TOTALS		126	92	106	108	4	2	2	2	46	2	12				

** CULVERT FLOW LINES ARE TO BE BURIED TO ALLOW FOR NATURAL STREAM BED IN CULVERT PIPE. USE END OF PIPE GRADES SHOWN.

CONCRETE CURB & GUTTER

STATION	TO	STATION	LOCATION	601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPED LF
108+57	-	108+97	CTH I, LT	68
109+25	-	109+94	CTH I, LT	92
136+04	-	136+63	CTH I, RT	91
136+22	-	136+62	CTH I, LT	60
136+92	-	137+33	CTH I, RT	60
136+92	-	137+52	CTH I, LT	91
207+41	-	208+01	CTH I, RT	92
207+47	-	207+88	CTH I, LT	62
208+17	-	208+76	CTH I, LT	83
208+31	-	208+71	CTH I, RT	60
237+84	-	238+29	CTH I, RT	94
238+79	-	239+33	CTH I, RT	65
245+44	-	246+02	CTH I, LT	73
246+40	-	246+86	CTH I, LT	84
TOTAL				1,075

		RIPRAP	
STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE TYPE HR SY
116+74	CTH I, RT	2	9
175+88	CTH I, RT	3	12
178+53	CTH I, RT	3	10
192+44	CTH I, RT	2	9
218+21	CTH I, RT	3	11
237+62	CTH I, RT	2	9
TOTALS		15	60

SILT FENCE

STATION	TO	STATION	LOCATION	628.1504	628.1520
				SILT FENCE LF	SILT FENCE MAINTENANCE LF
108+09	-	110+84	CTH I, LT	435	870
135+14	-	138+42	CTH I, LT	400	800
135+14	-	138+42	CTH I, RT	465	930
206+51	-	209+31	CTH I, LT	450	900
206+51	-	209+31	CTH I, RT	510	1,020
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236+90	-	239+40	CTH I, LT	95	190
236+90	-	239+40	CTH I, RT	460	920
60+20	-	60+70	HUSKY LN, RT	250	500
60+20	-	60+70	HUSKY LN, LT	265	530
192+00	-	193+00	CTH I, LT	55	110
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192+00	-	193+00	CTH I, RT	65	130
116+25	-	117+25	CTH I, LT	55	110
116+25	-	117+25	CTH I, RT	55	110
175+25	-	176+30	CTH I, LT	105	210
175+25	-	176+30	CTH I, RT	85	170
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178+00	-	179+00	CTH I, LT	85	170
178+00	-	179+00	CTH I, RT	80	160
217+75	-	218+50	CTH I, LT	80	160
217+75	-	218+50	CTH I, RT	105	210
UNDISTRIBUTED				1,025	2,050
TOTALS				5,125	10,250

EROSION MAT

STATION	TO	STATION	LOCATION	628.2027	628.2008
				EROSION MAT CLASS II TYPE C SY	EROSION MAT URBAN CLASS I TYPE B SY
108+09	-	110+84	CTH I, LT	35	325
135+14	-	138+42	CTH I, LT	10	310
135+14	-	138+42	CTH I, RT	10	370
206+51	-	209+31	CTH I, LT	35	265
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206+51	-	209+31	CTH I, RT	15	370
236+90	-	239+40	CTH I, LT	10	55
236+90	-	239+40	CTH I, RT	45	450
60+20	-	61+70	HUSKY LN, LT	20	480
192+00	-	193+00	CTH I, LT	10	40
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192+00	-	193+00	CTH I, RT	-	50
116+25	-	117+25	CTH I, LT	10	30
116+25	-	117+25	CTH I, RT	-	30
175+25	-	176+30	CTH I, LT	10	120
175+25	-	176+30	CTH I, RT	-	80
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178+00	-	179+00	CTH I, LT	10	75
178+00	-	179+00	CTH I, RT	-	70
217+75	-	218+50	CTH I, LT	10	70
217+75	-	218+50	CTH I, RT	-	110
UNDISTRIBUTED				50	825
TOTALS				280	4,125

MOBILIZATIONS EROSION CONTROL

STATION	TO	STATION	LOCATION	628.1905	628.1910
				MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
107+50	-	248+00	PROJECT	4	2
TOTALS				4	2

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 CULVERT PIPE CHECKS EACH
108+80	CTH I, LT	4
11+10	FULLER ROAD, RT	2
18+86	OCONTO RIVER SHORES, RT	3
48+90	ZIMMERMAN LN, RT	2
49+30	ZIMMERMAN LN, RT	4
60+80	HUSKY LN, LT	4
207+65	CTH I, LT	4
207+70	CTH I, RT	4
239+65	CTH I, RT	3
237+60	CTH I, LT	4
116+75	CTH I, LT	6
175+55	CTH I, LT	8
178+55	CTH I, LT	6
192+45	CTH I, LT	4
218+20	CTH I, LT	8
UNDISTRIBUTED		14
TOTAL		80

ROCK BAGS

STATION	TO	STATION	LOCATION	628.7570 ROCK BAGS EACH
108+09	-	110+84	CTH I, LT	24
135+14	-	138+42	CTH I, LT	24
135+14	-	138+42	CTH I, RT	24
206+51	-	209+31	CTH I, LT	24
206+51	-	209+31	CTH I, RT	24
236+90	-	239+40	CTH I, LT	24
236+90	-	239+40	CTH I, RT	24
244+85	-	247+75	CTH I, LT	24
UNDISTRIBUTED			PROJECT LIMITS	48
TOTAL				240

SIGNS

STATION	LOCATION	634.0614 POSTS WOOD 4X6-INCH X 14- FT EACH	634.0616 POSTS WOOD 4X6-INCH X 16- FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
170+25	CTH I, RT	-	1	8.5	-	-	W1-2R & W13-1P - 50 MPH
177+75	CTH I, LT	1	-	8.0	-	-	W1-6
178+60	CTH I, LT	1	-	8.0	-	-	W1-6
185+55	CTH I, LT	-	1	8.5	-	-	W1-2L & W13-1P - 50 MPH
196+20	CTH I, RT	-	1	8.5	-	-	W1-2L & W13-1P - 50 MPH
203+15	CTH I, RT	1	-	8.0	-	-	W1-6
204+35	CTH I, RT	1	-	8.0	-	-	W1-6
211+85	CTH I, LT	-	1	8.5	-	-	W1-2R & W13-1P - 50 MPH
	FULLER LANE	-	1	5.18	1	1	R1-1
	OCONTO RIVER SHORES ROAD	-	1	5.18	1	1	R1-1
	OCONTO RIVER SHORES ROAD	-	1	5.18	1	1	R1-1
	GRASSE ROAD	-	1	5.18	1	1	R1-1
	MACHICKANEE ROAD	-	1	5.18	1	1	R1-1
	ZIMMERMAN LANE	-	1	5.18	1	1	R1-1
	HUSKY LANE	-	1	5.18	1	1	R1-1
TOTALS		4	11	102.26	7	7	

TRAFFIC CONTROL SUMMARY

LOCATION	APPOXIMATE SERVICE DAYS	643.0300 TRAFFIC CONTROL DRUMS		643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0900 SIGNS		643.1050 SIGNS PCMS		REMARKS
		NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	
		ADVANCE WARNING										
CTH I, WEST PROJECT LIMITS	7	-	-	-	-	-	-	-	-	1	7	PLACE 7 CALENDAR DAYS BEFORE WORK BEGINS
CTH I, EAST PROJECT LIMITS	7	-	-	-	-	-	-	-	-	1	7	PLACE 7 CALENDAR DAYS BEFORE WORK BEGINS
CTH I, WEST PROJECT LIMITS FULLER LANE	82	-	-	6	492	12	984	8	656	-	-	BARRICADES AND SIGNS FOR MAINLINE CLOSURES (DETAIL C)
OCONTO RIVER SHORES RD	82	10	50	1	82	2	164	3	246	-	-	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES (DETAIL 4)
OCONTO RIVER SHORES RD	82	20	100	2	164	4	328	6	492	-	-	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES (DETAIL 4)
GRASSE RD	82	10	50	1	82	2	164	3	246	-	-	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES (DETAIL 4)
MACHICKANEE RD	82	10	50	1	82	2	164	3	246	-	-	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES (DETAIL 4)
ZIMMERMAN RD	82	10	50	1	82	2	164	3	246	-	-	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES (DETAIL 4)
HUSKY LANE	82	10	50	1	82	2	164	3	246	-	-	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES (DETAIL 4)
CTH I, EAST PROJECT LIMITS	82	-	-	6	492	12	984	8	656	-	-	BARRICADES AND SIGNS FOR MAINLINE CLOSURES (DETAIL C)
CROSS CULVERT PIPE REPLACEMENTS												
116+74	1	-	-	8	8	10	10	2	2	-	-	BARRICADES AND SIGNS FOR VARIOUS CLOSURES (DETAIL D)
175+88	3	-	-	8	24	10	30	2	6	2	6	BARRICADES AND SIGNS FOR VARIOUS CLOSURES (DETAIL D)
178+53	5	-	-	8	40	10	50	2	10	2	10	BARRICADES AND SIGNS FOR VARIOUS CLOSURES (DETAIL D)
192+44	1	-	-	8	8	10	10	2	2	-	-	BARRICADES AND SIGNS FOR VARIOUS CLOSURES (DETAIL D)
218+21	3	-	-	8	24	10	30	2	6	2	6	BARRICADES AND SIGNS FOR VARIOUS CLOSURES (DETAIL D)
237+62	1	-	-	8	8	10	10	2	2	-	-	BARRICADES AND SIGNS FOR VARIOUS CLOSURES (DETAIL D)
UNDISTRIBUTED		-	50	-	80	-	160	-	138	-	-	
TOTALS			400		1,750		3,416		3,200		36	

CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	650.5500 CURB GUTTER AND CURB & GUTTER LF	650.6000 PIPE CULVERTS EACH	650.8000 RESURFACING REFERENCE LF	650.9910.01 SUPPLEMENTAL CONTROL (9032-02-71) LS
107+50	-	248+00	CTH I	1,075	6	14,050	1
10+18	-	11+51	FULLER LANE	-	1	-	-
18+25	-	19+82	OCONTO RIVER SHORES ROAD	-	-	-	-
20+18	-	21+42	OCONTO RIVER SHORES ROAD	-	-	-	-
30+15	-	31+48	GRASSE ROAD	-	1	-	-
38+42	-	39+85	MACHICKANEE ROAD	-	1	-	-
48+41	-	49+85	ZIMMERMAN LANE	-	1	-	-
60+15	-	61+70	HUSKY LANE	-	1	-	-
TOTALS				1,075	11	14,050	1

MARKING

646.1020

MARKING LINE MARKING LINE
EPOXY 4-INCH EPOXY 4-INCH
YELLOW WHITE
LF LF

STATION	TO	STATION	LOCATION	YELLOW LF	WHITE LF	REMARKS
107+50	-	111+29	CTH I	474	621	CENTERLINE SKIPS, ONE WAY PASSING
111+29	-	117+85	CTH I	164	1,312	CENTERLINE SKIPS
117+85	-	136+49	CTH I	2,330	3,656	CENTERLINE SKIPS, ONE WAY PASSING
136+49	-	142+70	CTH I	155	1,055	CENTERLINE SKIPS
142+70	-	162+91	CTH I	2,526	4,042	CENTERLINE SKIPS, ONE WAY PASSING
162+91	-	169+83	CTH I	173	1,384	CENTERLINE SKIPS
169+83	-	178+04	CTH I	1,026	1,642	CENTERLINE SKIPS, ONE WAY PASSING
178+04	-	216+93	CTH I	7,778	7,519	DOUBLE YELLOW
216+93	-	226+27	CTH I	1,168	1,868	CENTERLINE SKIPS, ONE WAY PASSING
226+27	-	237+60	CTH I	283	2,266	CENTERLINE SKIPS
237+60	-	247+55	CTH I	1,244	1,698	CENTERLINE SKIPS, ONE WAY PASSING
247+55	-	248+00	CTH I	90	90	DOUBLE YELLOW
SUBTOTAL				17,411	27,153	
TOTAL				44,564		

SAWING

690.0150 690.0250
SAWING SAWING
ASPHALT CONCRETE
LF LF

STATION	LOCATION	ASPHALT LF	CONCRETE LF	REMARKS
107+50	CTH I	36	-	
197+25	CTH I, RT	-	22	
248+00	CTH I	28	-	
11+51	FULLER LANE	30	-	
18+25	OCONTO RIVER SHORES ROAD	22	-	
21+42	OCONTO RIVER SHORES ROAD	20	-	
31+48	GRASSE ROAD	24	-	
38+42	MACHICKANEE ROAD	22	-	
48+41	ZIMMERMAN LANE	20	-	
61+70	HUSKY LANE	20	-	
PROJECT	CTH I	253	-	ASPHALTIC DRIVEWAYS
TOTALS		475	22	

LOCATING NO-PASSING ZONES

STATION	TO	STATION	LOCATION	648.0100 LOCATING NO-PASSING ZONES MI
107+50	-	248+00	CTH I	2.66
TOTAL				2.66

GRADING, SHAPING, AND FINISHING CULVERT PIPES AND ENDWALLS

STATION	LOCATION	SPV.0060.01 GRADING, SHAPING, AND FINISHING CULVERT PIPES AND ENDWALLS EACH	FOR INFORMATIONAL PURPOSES ONLY			
			TOPSOIL SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEED WATER MGAL
116+74.0	CTH I	2	70	0.1	2	1
175+87.5	CTH I	2	210	0.1	6	2
178+53.4	CTH I	2	155	0.1	4	2
192+44.0	CTH I	2	100	0.1	3	1
218+20.7	CTH I	2	190	0.1	5	2
237+61.5	CTH I	2	65	0.1	2	1
TOTAL		12	790	0.6	22	9

BENCH MARKS

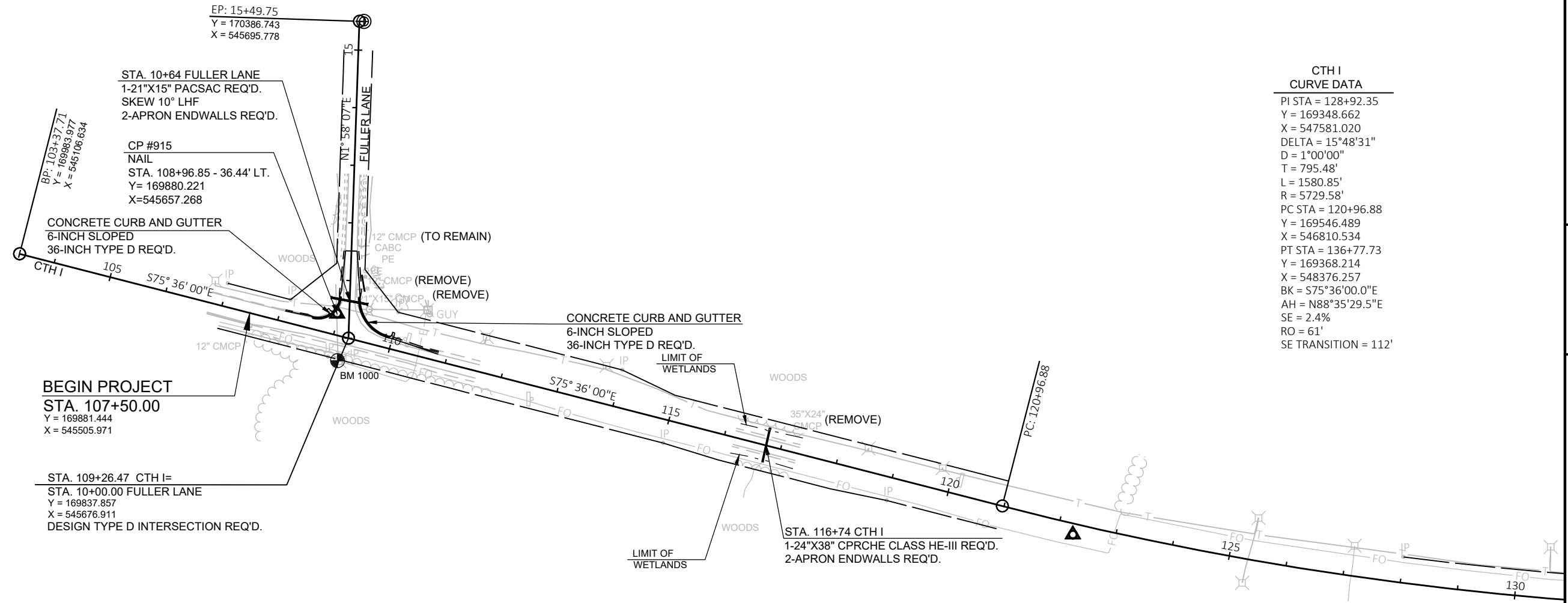
NO.	STATION	DESCRIPTION	ELEV.
1000	109+19	RR SPIKE IN PPOL #12T-A2D-1 - 42' RT	708.20

N



CTH I
CURVE DATA

PI STA = 128+92.35
 Y = 169348.662
 X = 547581.020
 DELTA = 15°48'31"
 D = 1°00'00"
 T = 795.48'
 L = 1580.85'
 R = 5729.58'
 PC STA = 120+96.88
 Y = 169546.489
 X = 546810.534
 PT STA = 136+77.73
 Y = 169368.214
 X = 548376.257
 BK = S75°36'00.0"E
 AH = N88°35'29.5"E
 SE = 2.4%
 RO = 61'
 SE TRANSITION = 112'

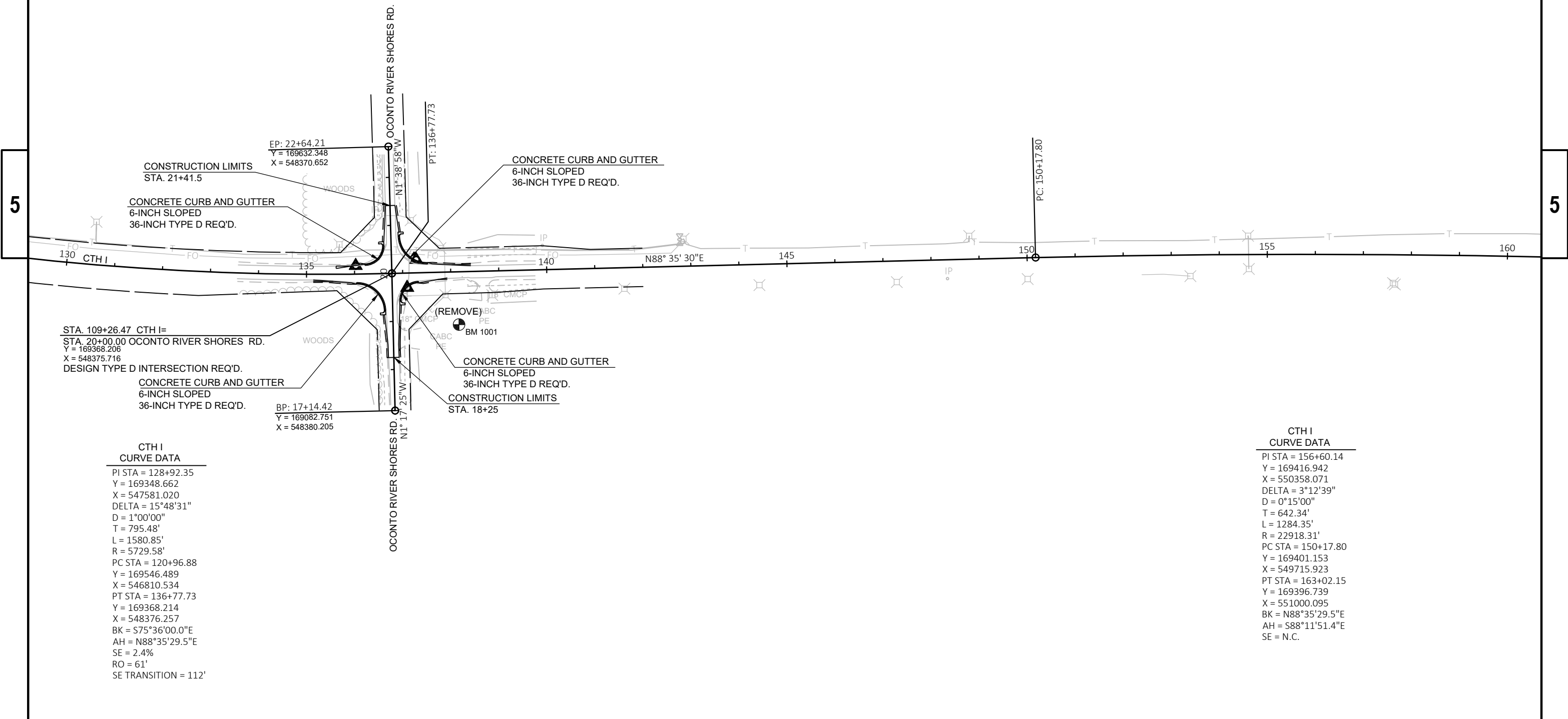


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5

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
1001	138+15	TOP OF WELL CASING - 110' RT	705.14



STA. 109+26.47 CTH I =
 STA. 20+00.00 OCONTO RIVER SHORES RD.
 Y = 169368.206
 X = 548375.716
 DESIGN TYPE D INTERSECTION REQ'D.

CTH I
 CURVE DATA

PI STA = 128+92.35
 Y = 169348.662
 X = 547581.020
 DELTA = 15°48'31"
 D = 1°00'00"
 T = 795.48'
 L = 1580.85'
 R = 5729.58'
 PC STA = 120+96.88
 Y = 169546.489
 X = 546810.534
 PT STA = 136+77.73
 Y = 169368.214
 X = 548376.257
 BK = S75°36'00.0"E
 AH = N88°35'29.5"E
 SE = 2.4%
 RO = 61'
 SE TRANSITION = 112'

BP: 17+14.42
 Y = 169082.751
 X = 548380.205

OCONTO RIVER SHORES RD.
 N1°17'25"W

OCONTO RIVER SHORES RD.
 N1°38'58"W

(REMOVE) ABC
 PE
 BM 1001

CONCRETE CURB AND GUTTER
 6-INCH SLOPED
 36-INCH TYPE D REQ'D.
 CONSTRUCTION LIMITS
 STA. 18+25

CONCRETE CURB AND GUTTER
 6-INCH SLOPED
 36-INCH TYPE D REQ'D.

CONSTRUCTION LIMITS
 STA. 21+41.5

CONCRETE CURB AND GUTTER
 6-INCH SLOPED
 36-INCH TYPE D REQ'D.

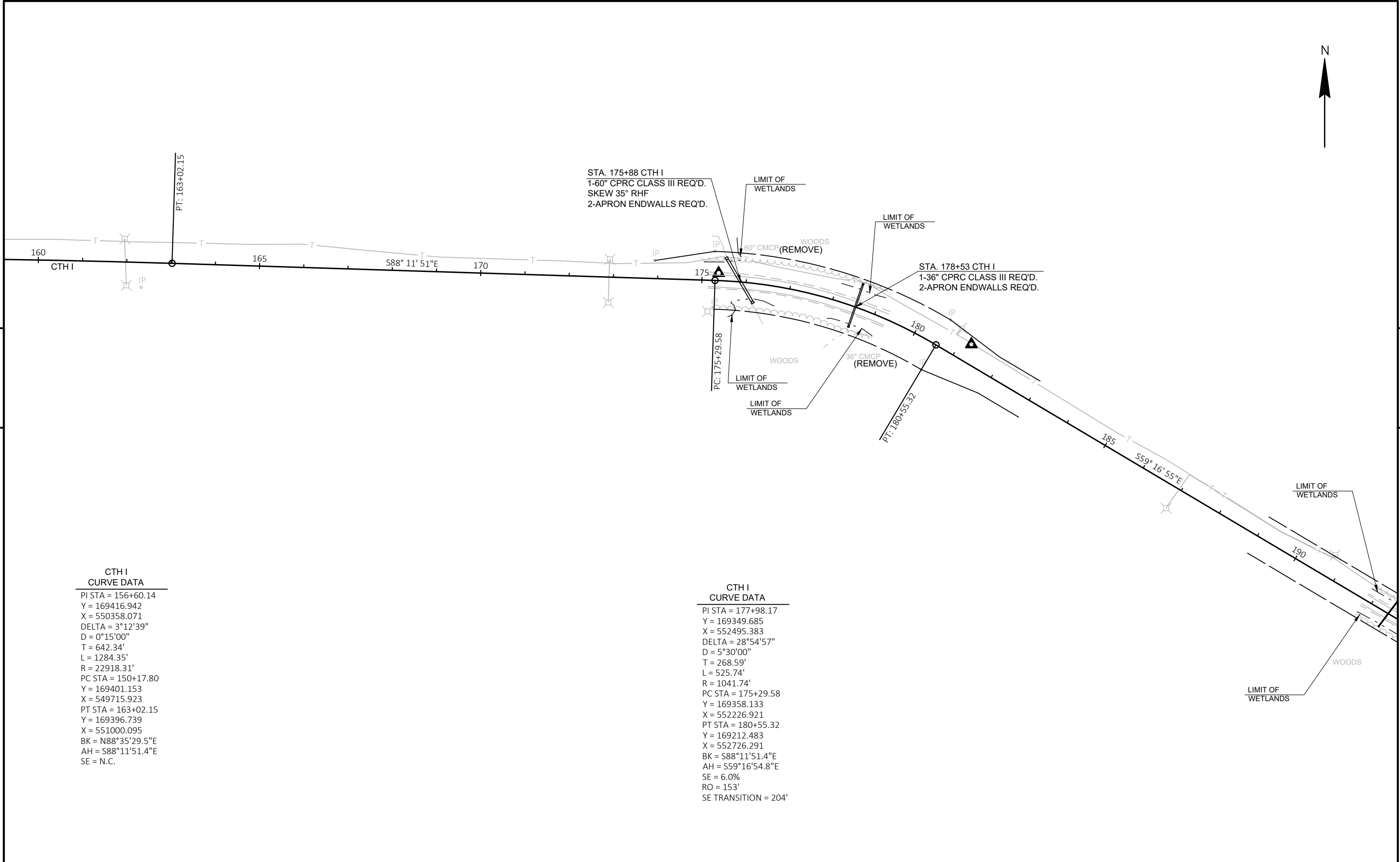
EP: 22+64.21
 Y = 169632.348
 X = 548370.652

PT: 136+77.73

PC: 150+17.80

CTH I
 CURVE DATA

PI STA = 156+60.14
 Y = 169416.942
 X = 550358.071
 DELTA = 3°12'39"
 D = 0°15'00"
 T = 642.34'
 L = 1284.35'
 R = 22918.31'
 PC STA = 150+17.80
 Y = 169401.153
 X = 549715.923
 PT STA = 163+02.15
 Y = 169396.739
 X = 551000.095
 BK = N88°35'29.5"E
 AH = S88°11'51.4"E
 SE = N.C.



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5

**CTH I
CURVE DATA**

PI STA = 156+60.14
 Y = 169416.942
 X = 550358.071
 DELTA = 3°12'39"
 D = 0°15'00"
 T = 642.34'
 L = 1284.35'
 R = 22918.31'
 PC STA = 150+17.80
 Y = 169401.153
 X = 549715.923
 PT STA = 163+02.15
 Y = 169396.739
 X = 551000.095
 BK = N88°35'29.5"E
 AH = S88°11'51.4"E
 SE = N.C.

**CTH I
CURVE DATA**

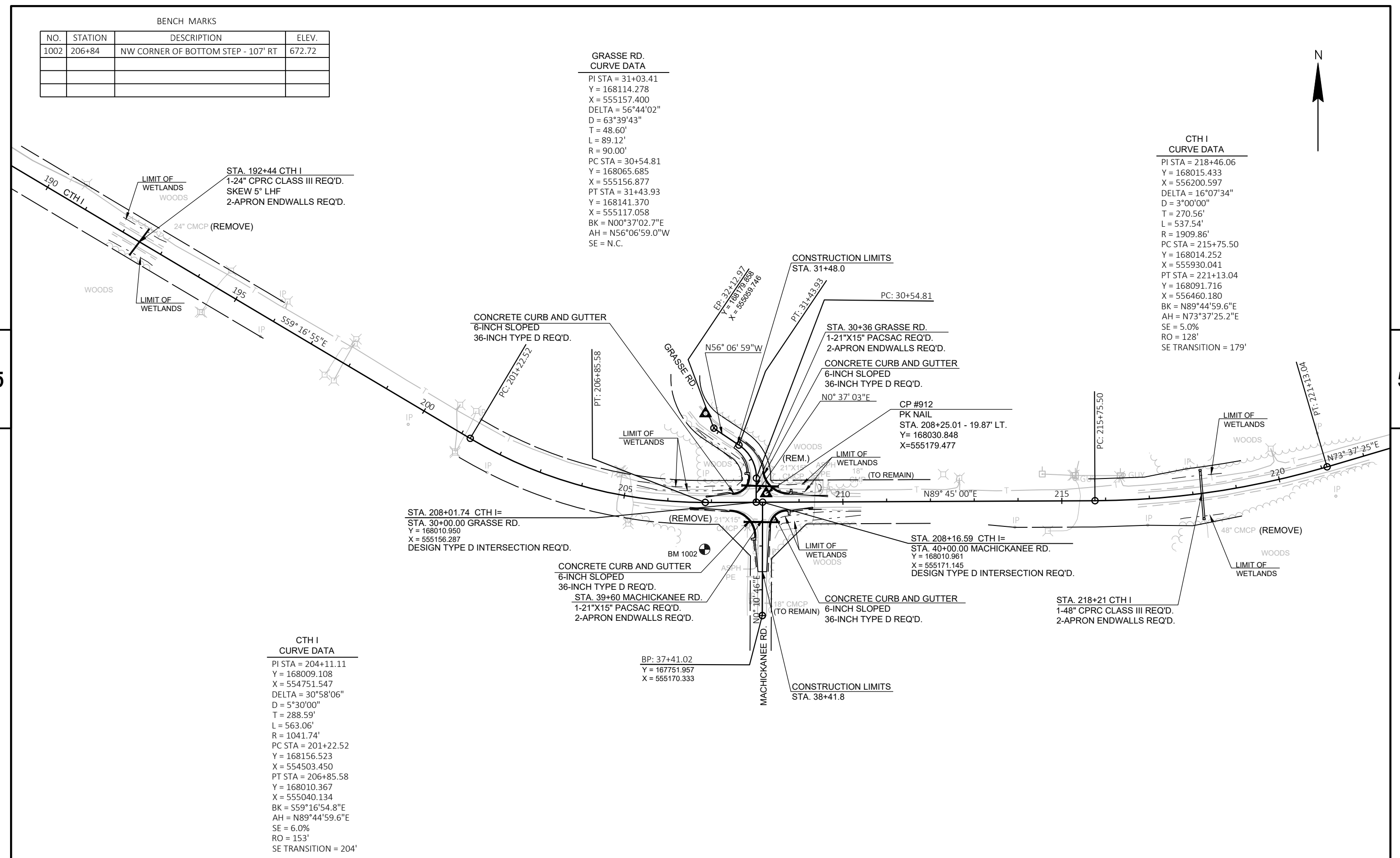
PI STA = 177+98.17
 Y = 169349.685
 X = 552495.383
 DELTA = 28°54'57"
 D = 5°30'00"
 T = 268.59'
 L = 525.74'
 R = 1041.74'
 PC STA = 175+29.58
 Y = 169358.133
 X = 552226.921
 PT STA = 180+55.32
 Y = 169212.483
 X = 552726.291
 BK = S88°11'51.4"E
 AH = S59°16'54.8"E
 SE = 6.0%
 RO = 153'
 SE TRANSITION = 204'

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
1002	206+84	NW CORNER OF BOTTOM STEP - 107' RT	672.72

**GRASSE RD.
CURVE DATA**
 PI STA = 31+03.41
 Y = 168114.278
 X = 555157.400
 DELTA = 56°44'02"
 D = 63°39'43"
 T = 48.60'
 L = 89.12'
 R = 90.00'
 PC STA = 30+54.81
 Y = 168065.685
 X = 555156.877
 PT STA = 31+43.93
 Y = 168141.370
 X = 555117.058
 BK = N00°37'02.7"E
 AH = N56°06'59.0"W
 SE = N.C.

**CTH I
CURVE DATA**
 PI STA = 218+46.06
 Y = 168015.433
 X = 555200.597
 DELTA = 16°07'34"
 D = 3°00'00"
 T = 270.56'
 L = 537.54'
 R = 1909.86'
 PC STA = 215+75.50
 Y = 168014.252
 X = 555930.041
 PT STA = 221+13.04
 Y = 168091.716
 X = 556460.180
 BK = N89°44'59.6"E
 AH = N73°37'25.2"E
 SE = 5.0%
 RO = 128'
 SE TRANSITION = 179'

**CTH I
CURVE DATA**
 PI STA = 204+11.11
 Y = 168009.108
 X = 554751.547
 DELTA = 30°58'06"
 D = 5°30'00"
 T = 288.59'
 L = 563.06'
 R = 1041.74'
 PC STA = 201+22.52
 Y = 168156.523
 X = 554503.450
 PT STA = 206+85.58
 Y = 168010.367
 X = 555040.134
 BK = S59°16'54.8"E
 AH = N89°44'59.6"E
 SE = 6.0%
 RO = 153'
 SE TRANSITION = 204'



5

5

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
1003	238+92	RR SPIKE IN LP - 45' RT	660.38
1004	245+89	RR SPIKE IN LP - 51' LT	661.60

CTH I
CURVE DATA

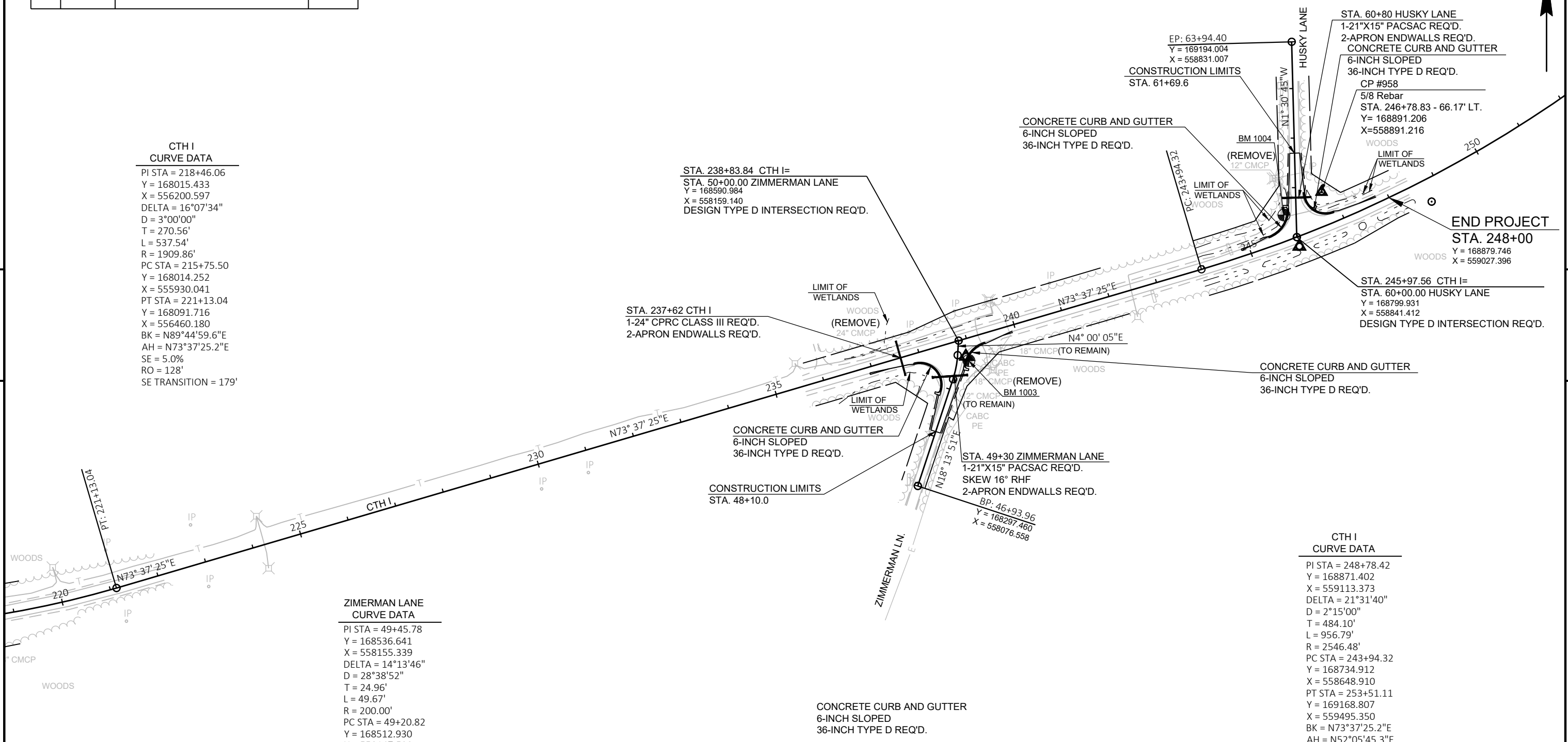
PI STA = 218+46.06
 Y = 168015.433
 X = 556200.597
 DELTA = 16°07'34"
 D = 3°00'00"
 T = 270.56'
 L = 537.54'
 R = 1909.86'
 PC STA = 215+75.50
 Y = 168014.252
 X = 555930.041
 PT STA = 221+13.04
 Y = 168091.716
 X = 556460.180
 BK = N89°44'59.6"E
 AH = N73°37'25.2"E
 SE = 5.0%
 RO = 128'
 SE TRANSITION = 179'

ZIMMERMAN LANE
CURVE DATA

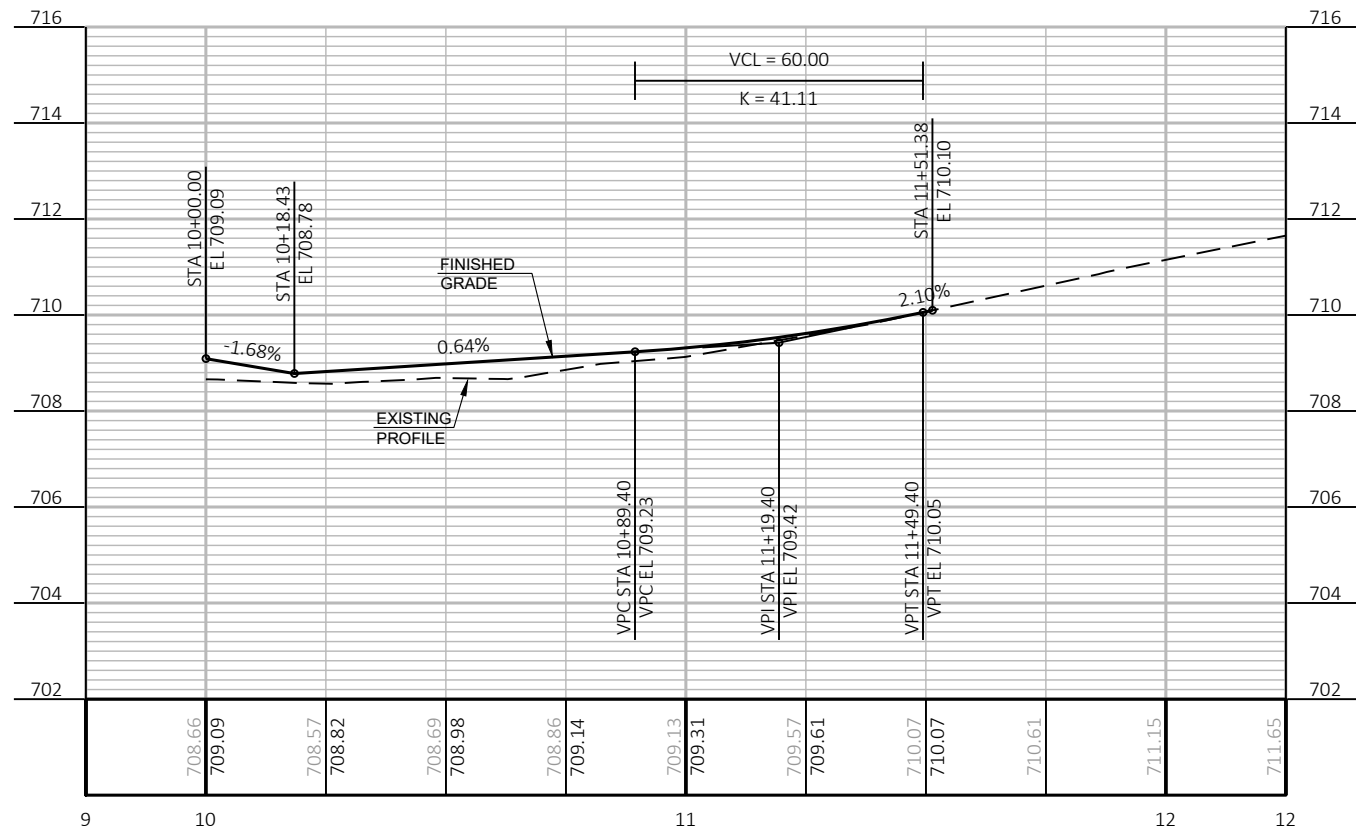
PI STA = 49+45.78
 Y = 168536.641
 X = 558155.339
 DELTA = 14°13'46"
 D = 28°38'52"
 T = 24.96'
 L = 49.67'
 R = 200.00'
 PC STA = 49+20.82
 Y = 168512.930
 X = 558147.529
 PT STA = 49+70.49
 Y = 168561.543
 X = 558157.081
 BK = N18°13'50.6"E
 AH = N04°00'04.9"E
 SE = N.C.

CTH I
CURVE DATA

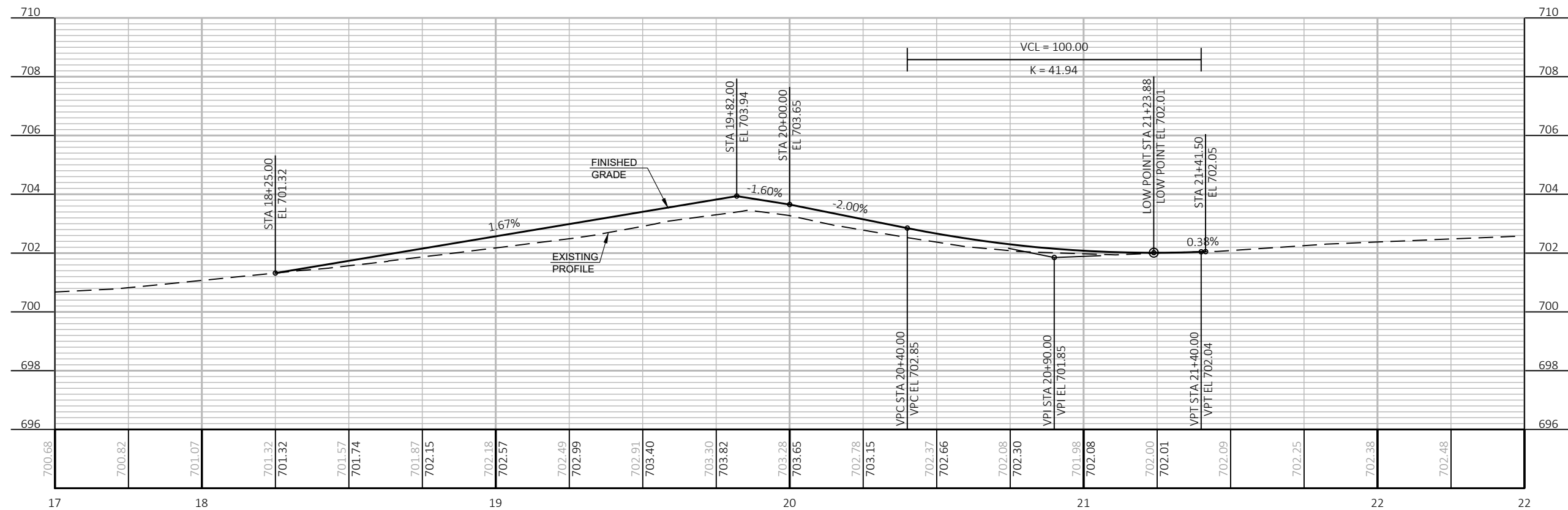
PI STA = 248+78.42
 Y = 168871.402
 X = 559113.373
 DELTA = 21°31'40"
 D = 2°15'00"
 T = 484.10'
 L = 956.79'
 R = 2546.48'
 PC STA = 243+94.32
 Y = 168734.912
 X = 558648.910
 PT STA = 253+51.11
 Y = 169168.807
 X = 559495.350
 BK = N73°37'25.2"E
 AH = N52°05'45.3"E
 SE = 4.3%
 RO = 110'
 SE TRANSITION = 161'



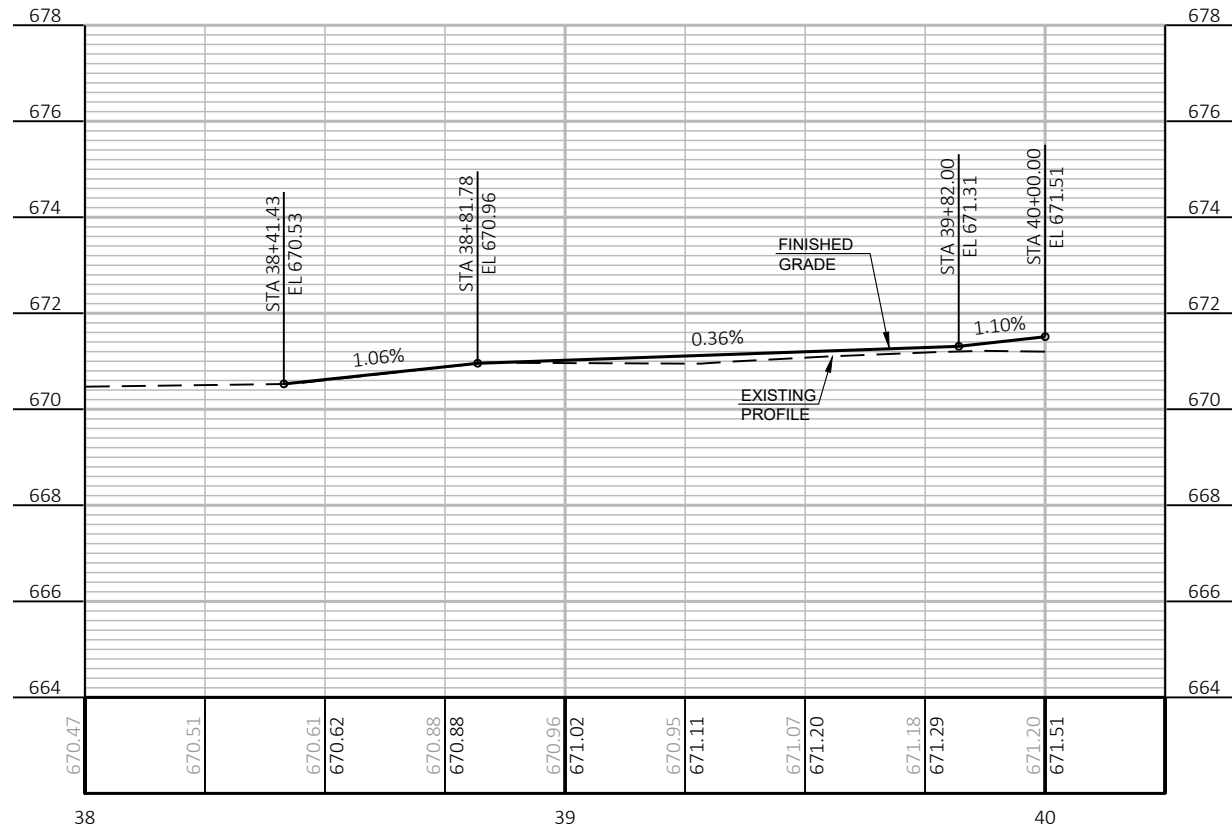
FULLER LANE PROFILE



OCONTO RIVER SHORES ROAD PROFILE

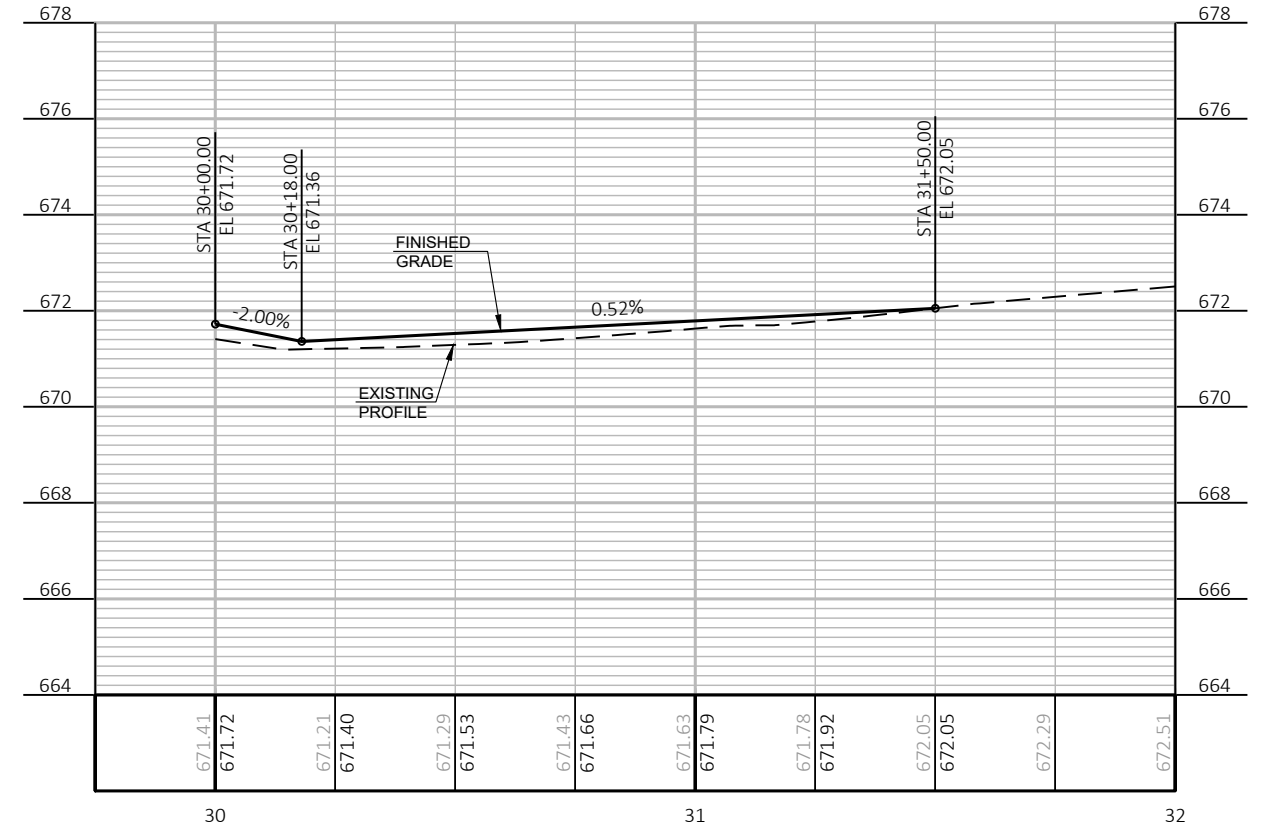


MACHICKANEE ROAD PROFILE



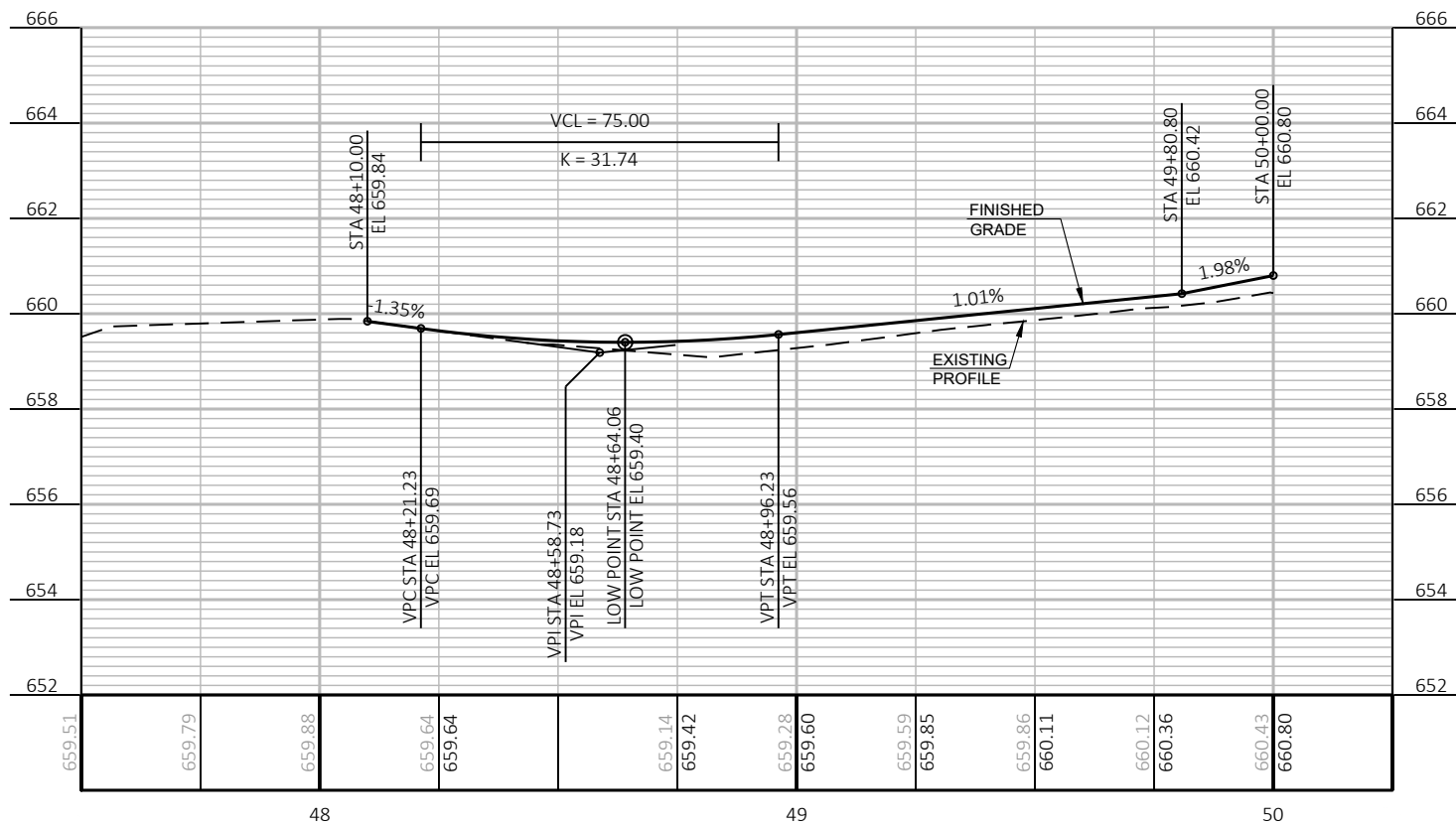
5

GRASSE ROAD PROFILE

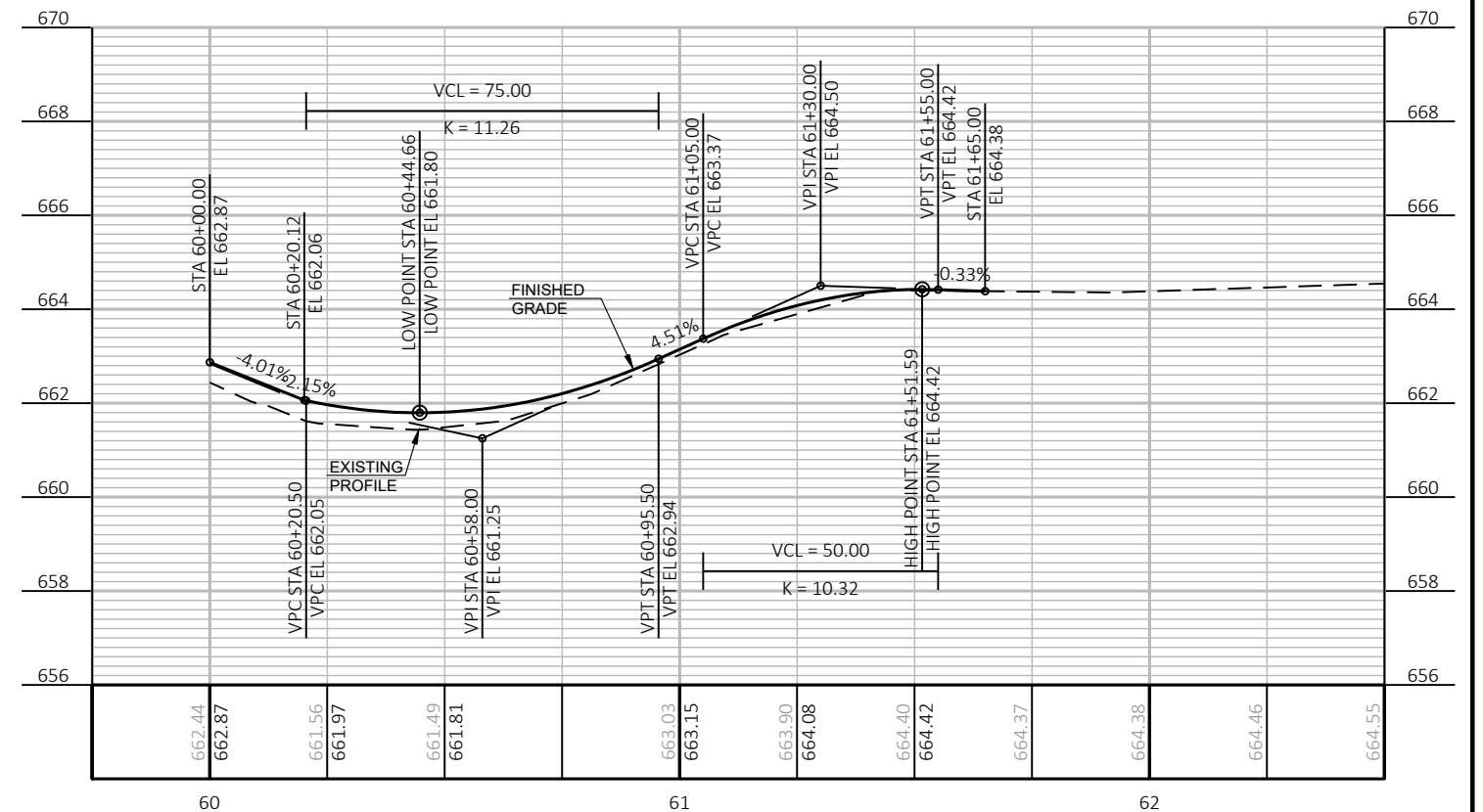


5

ZIMMERMAN LANE PROFILE



HUSKY LANE PROFILE



PROJECT NO: 9032-02-71

HWY: CTH I

COUNTY: OCONTO

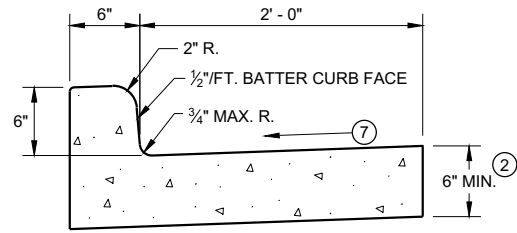
PROFILES

SHEET

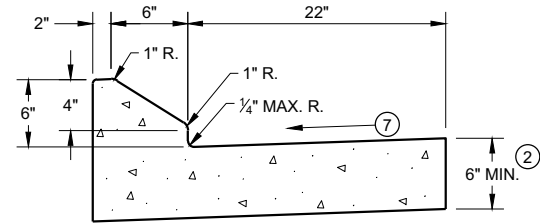
E

Standard Detail Drawing List

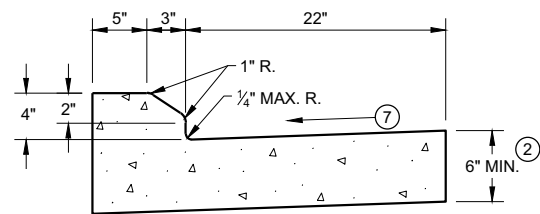
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)



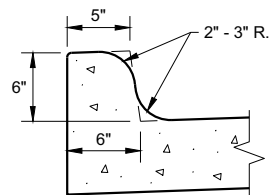
TYPES A¹ & D



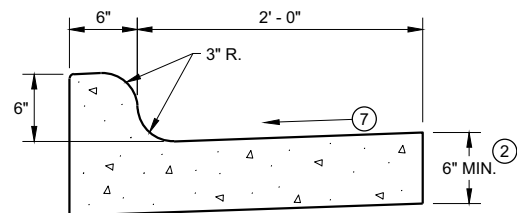
6" SLOPED CURB TYPES G¹ & J



4" SLOPED CURB TYPES G¹ & J

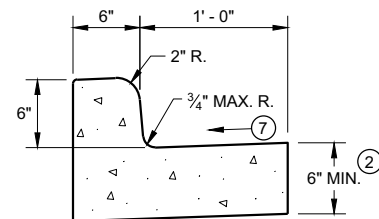


TYPES K¹ & L
(OPTIONAL CURB SHAPE)



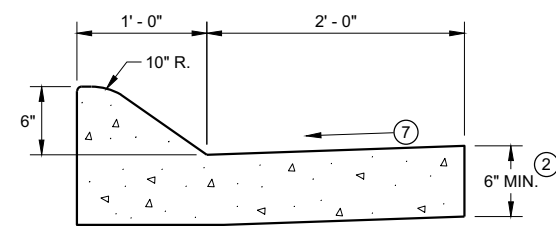
TYPES K¹ & L

CONCRETE CURB AND GUTTER 30"

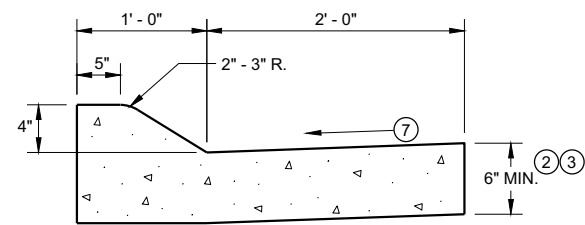


TYPES A¹ & D

CONCRETE CURB AND GUTTER 18"

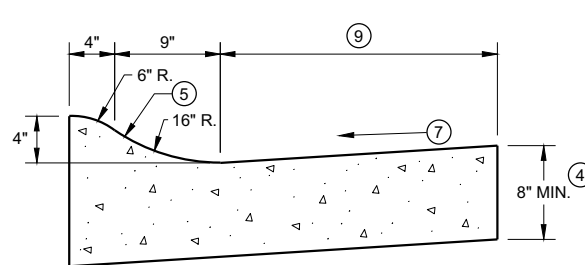


6" SLOPED CURB TYPES A¹ & D



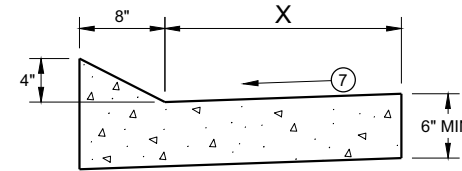
4" SLOPED CURB TYPES A¹ & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R¹ & T

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

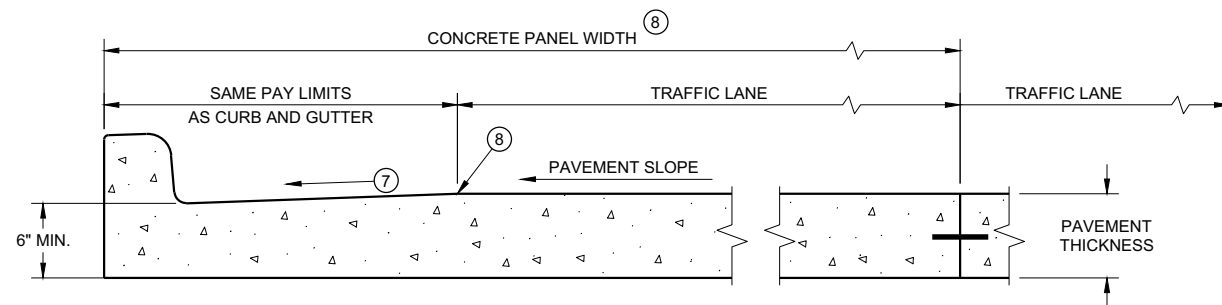


TYPES TBT & TBTT¹

CONCRETE CURB AND GUTTER

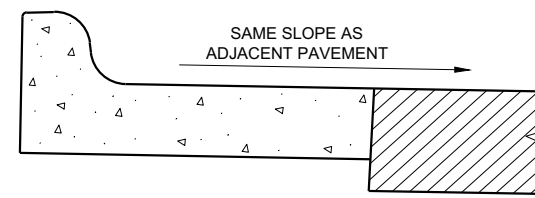
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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 GUTTER⁶
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

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

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

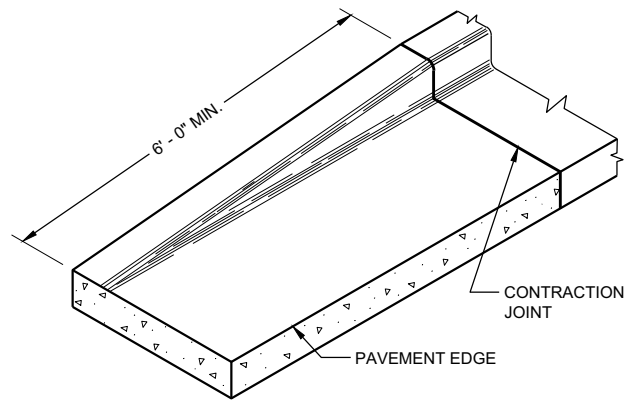
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

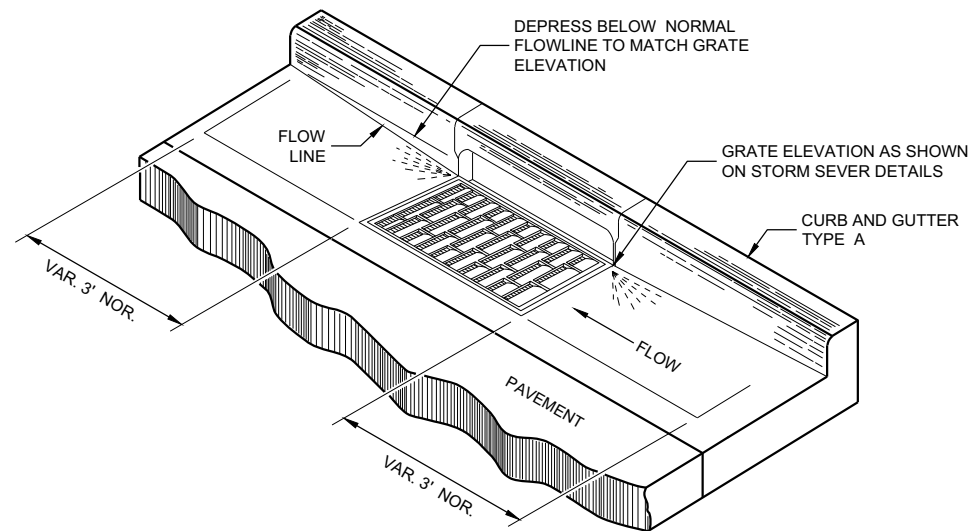
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH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

6

6



END SECTION CURB AND GUTTER



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

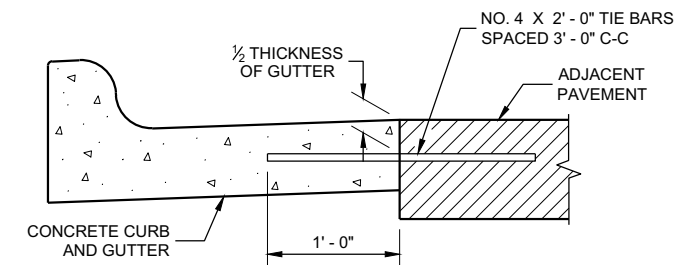
GENERAL NOTES

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

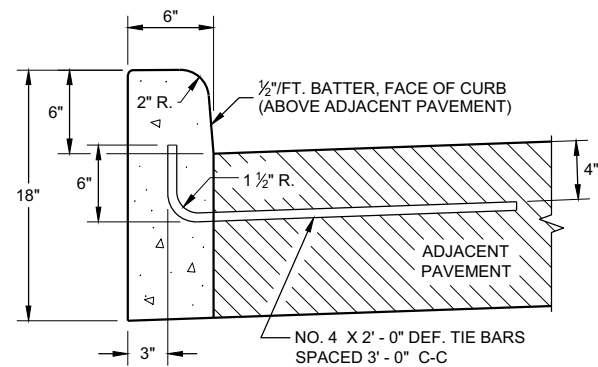
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

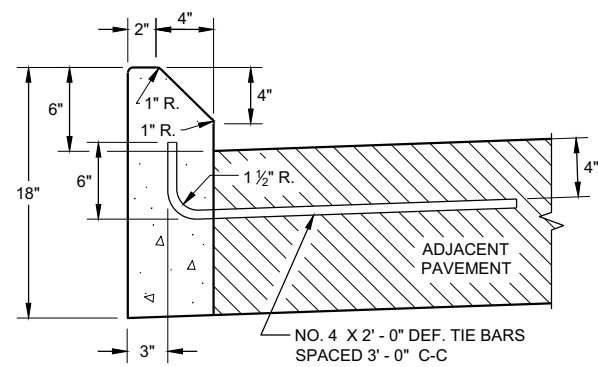
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION ①

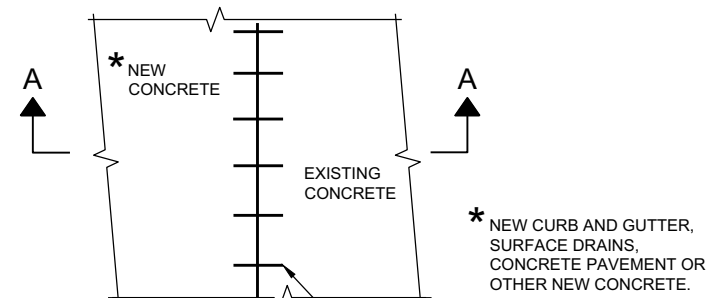


TYPES A ① & D

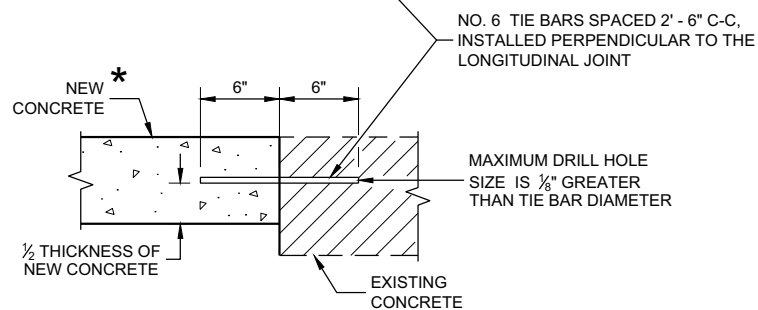


TYPES G ① & J

CONCRETE CURB

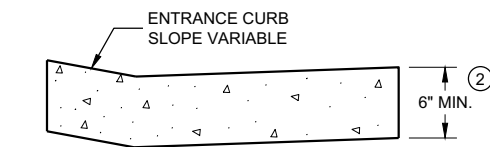


PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB ⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

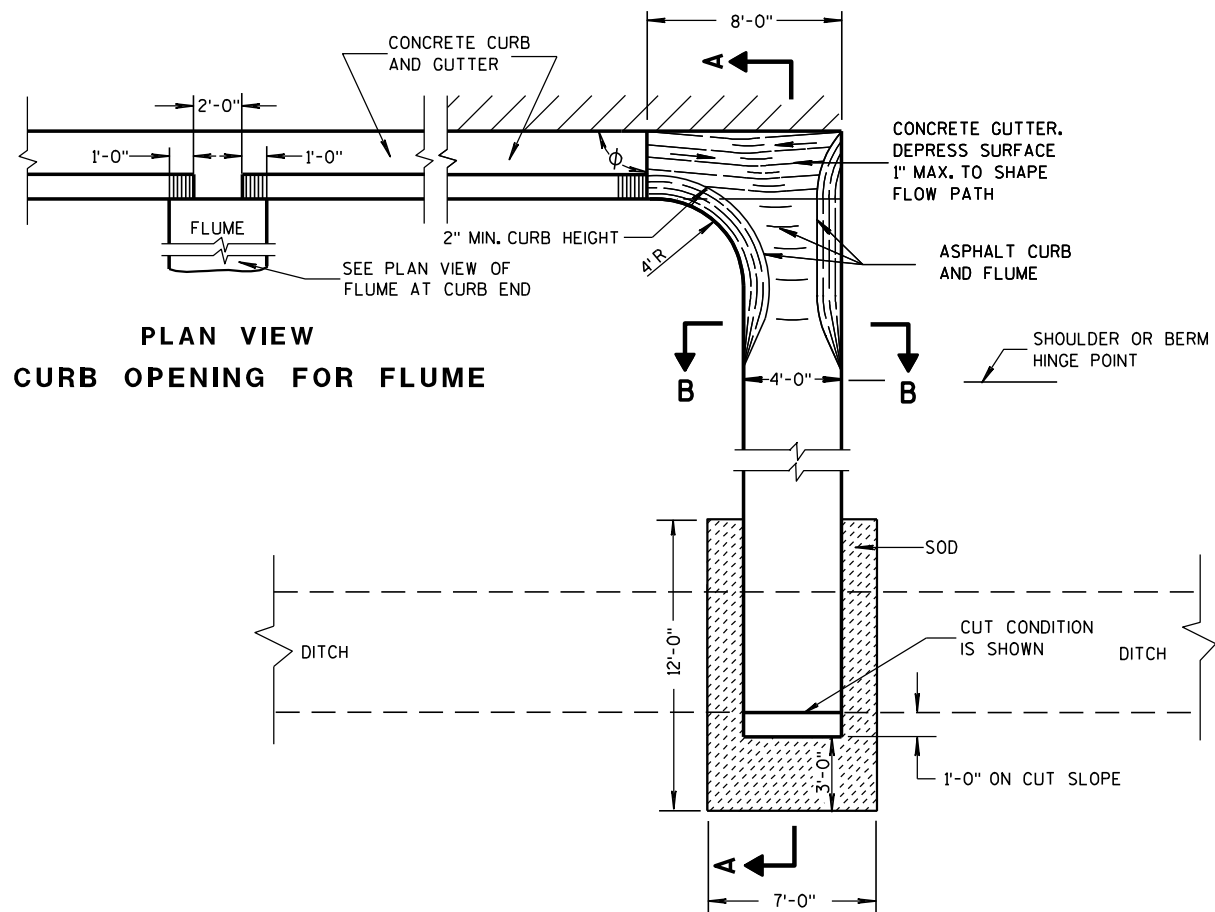
APPROVED
February 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

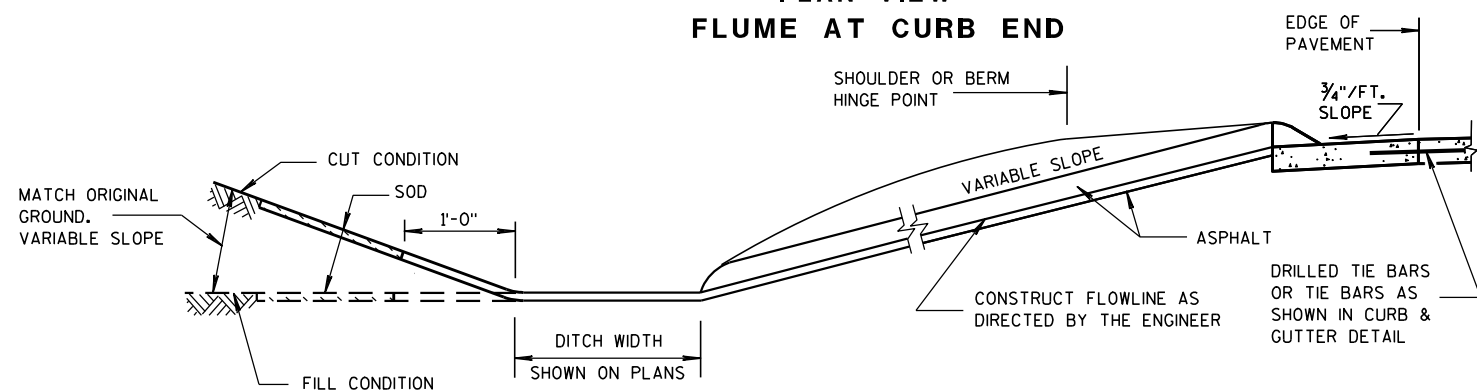
ASPHALTIC FLUME

NOTE: TAPER CURB ENDS TO GUTTER IN 1'-0"

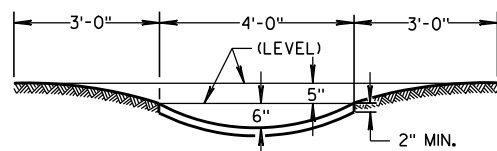
INCREASE ϕ FROM RIGHT ANGLE TO BEST FIT FIELD CONDITIONS



PLAN VIEW FLUME AT CURB END



SECTION B-B



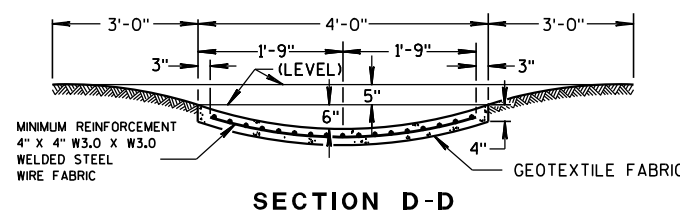
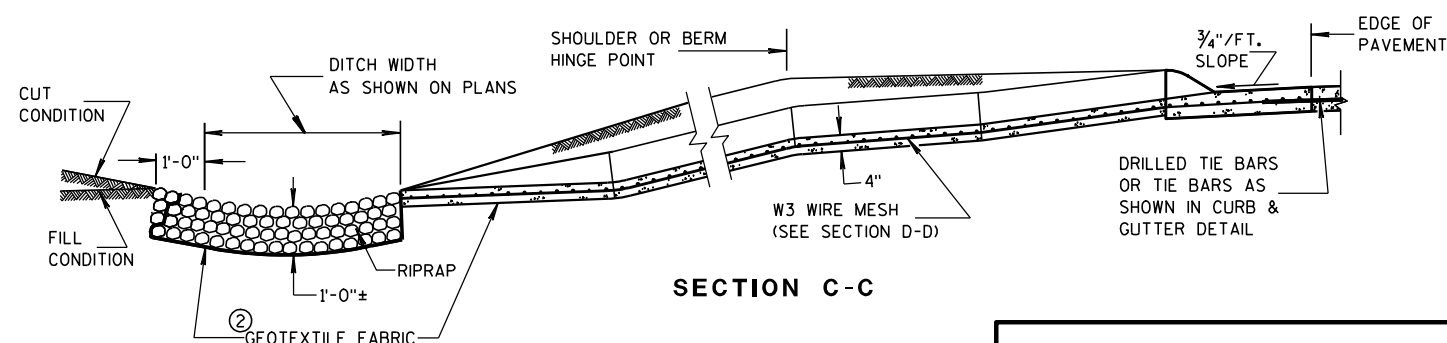
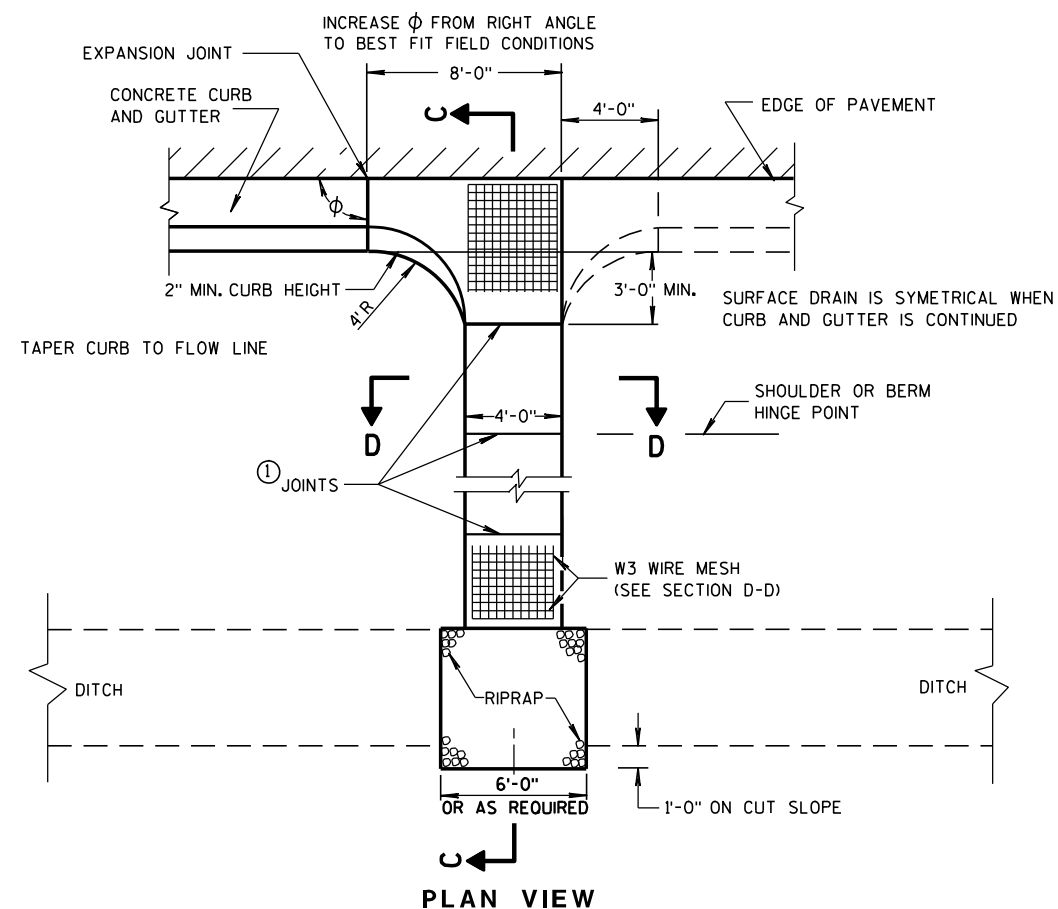
GENERAL NOTES

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 1/8 TO 1/4 INCH WIDE BY 1 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



CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

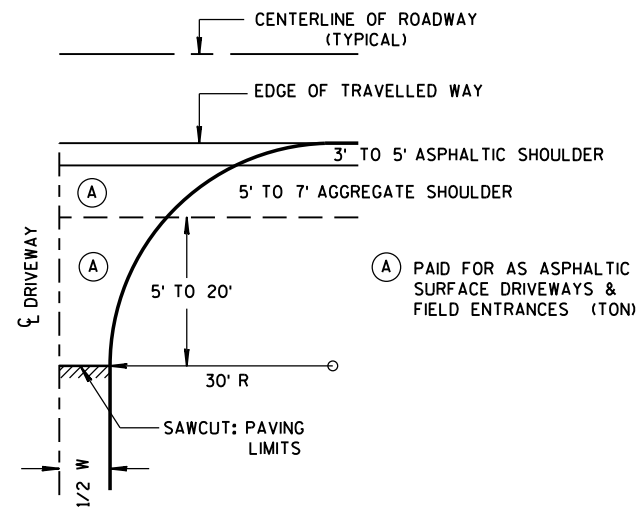
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

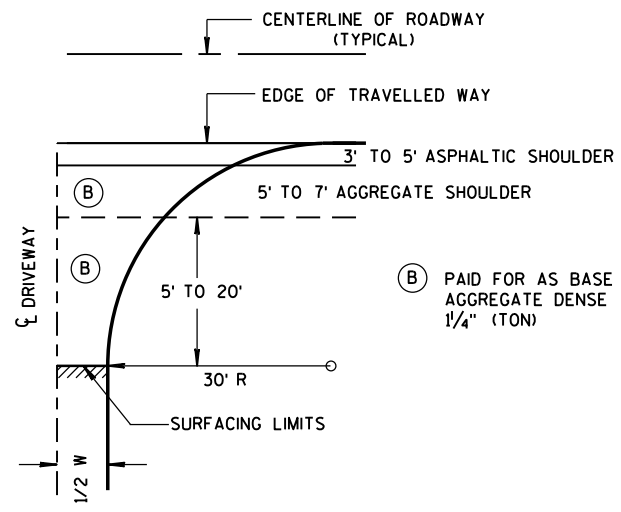
GENERAL NOTES

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

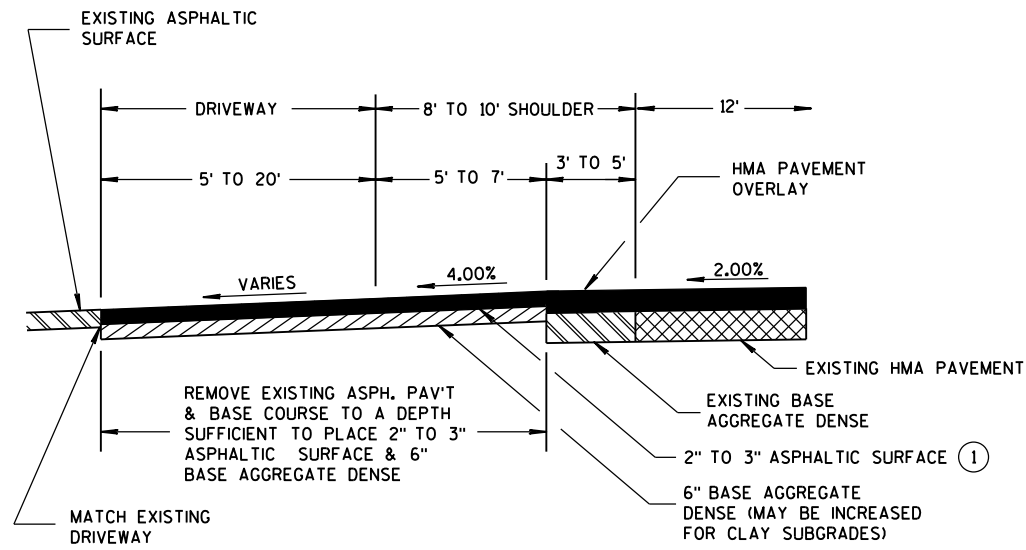
W MIN. = 16'
W MAX. = 24'



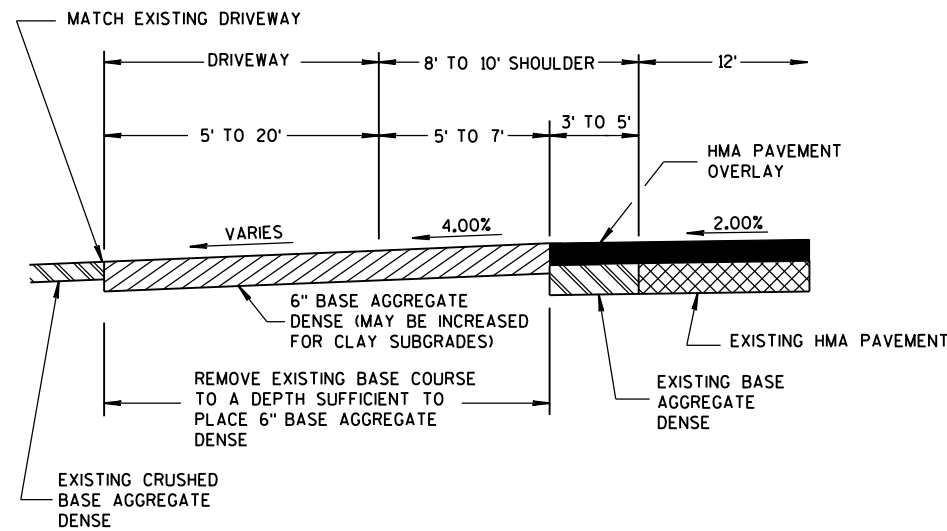
**PLAN VIEW
HALF SECTION**



**PLAN VIEW
HALF SECTION**



**PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS**



**PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS**

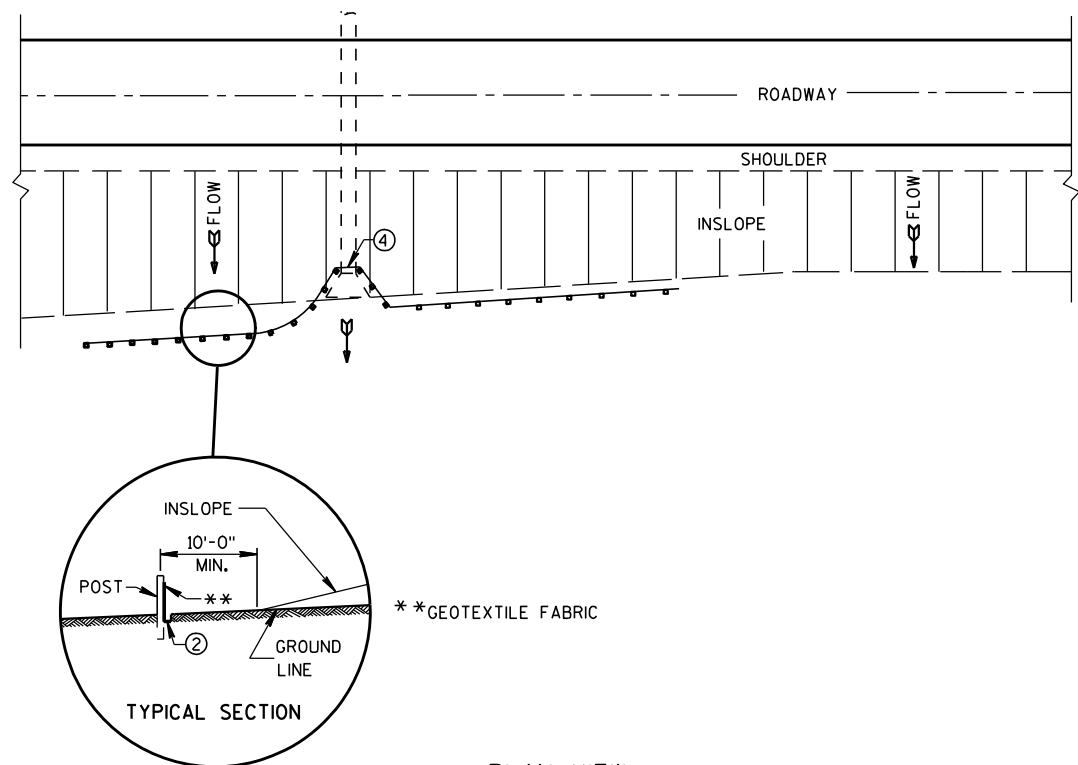
6

6

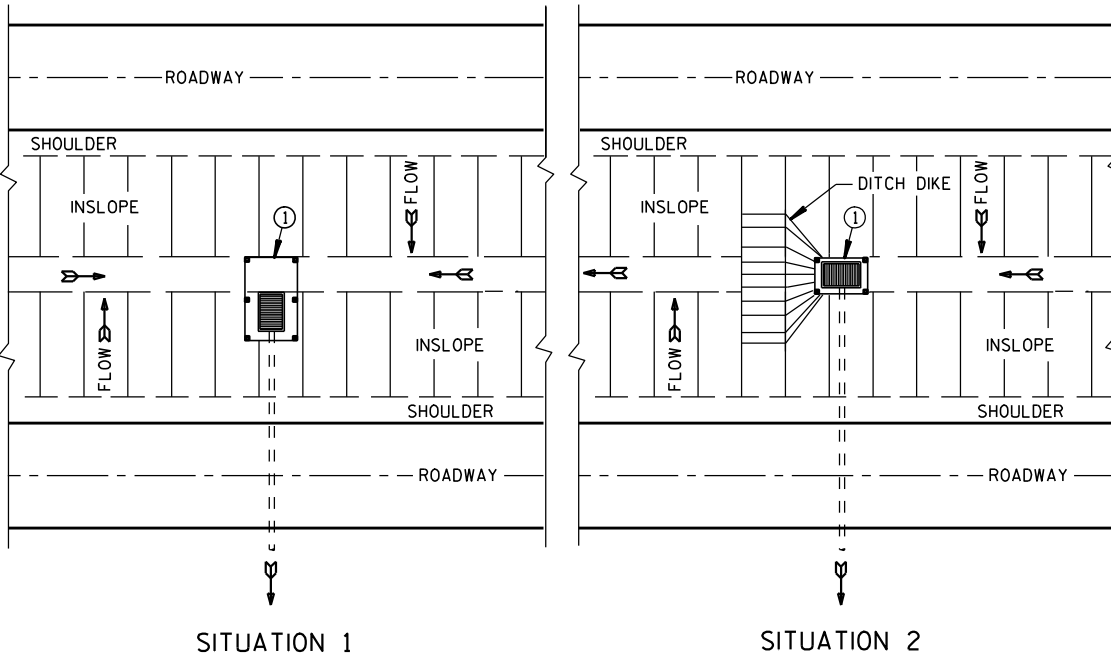
S.D.D. 8 D 22-1

S.D.D. 8 D 22-1

DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December, 2016	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
DATE	
FHWA	



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

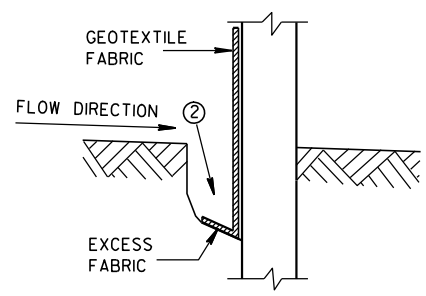


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

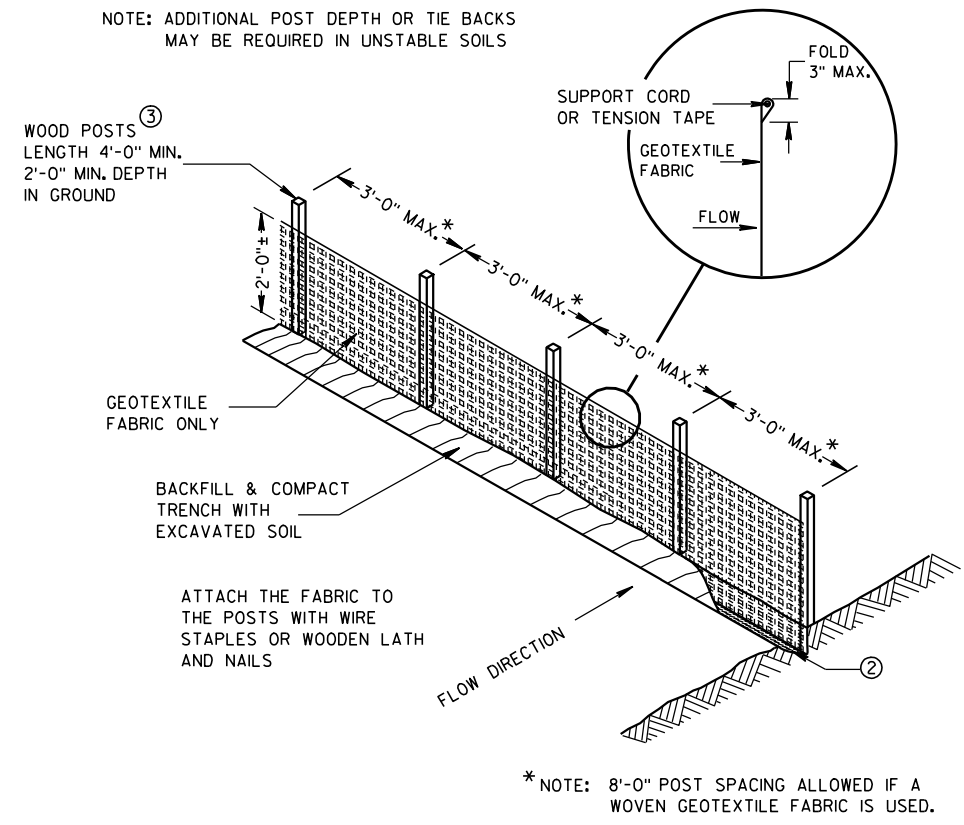
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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 1 1/8" X 1 1/8" 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.

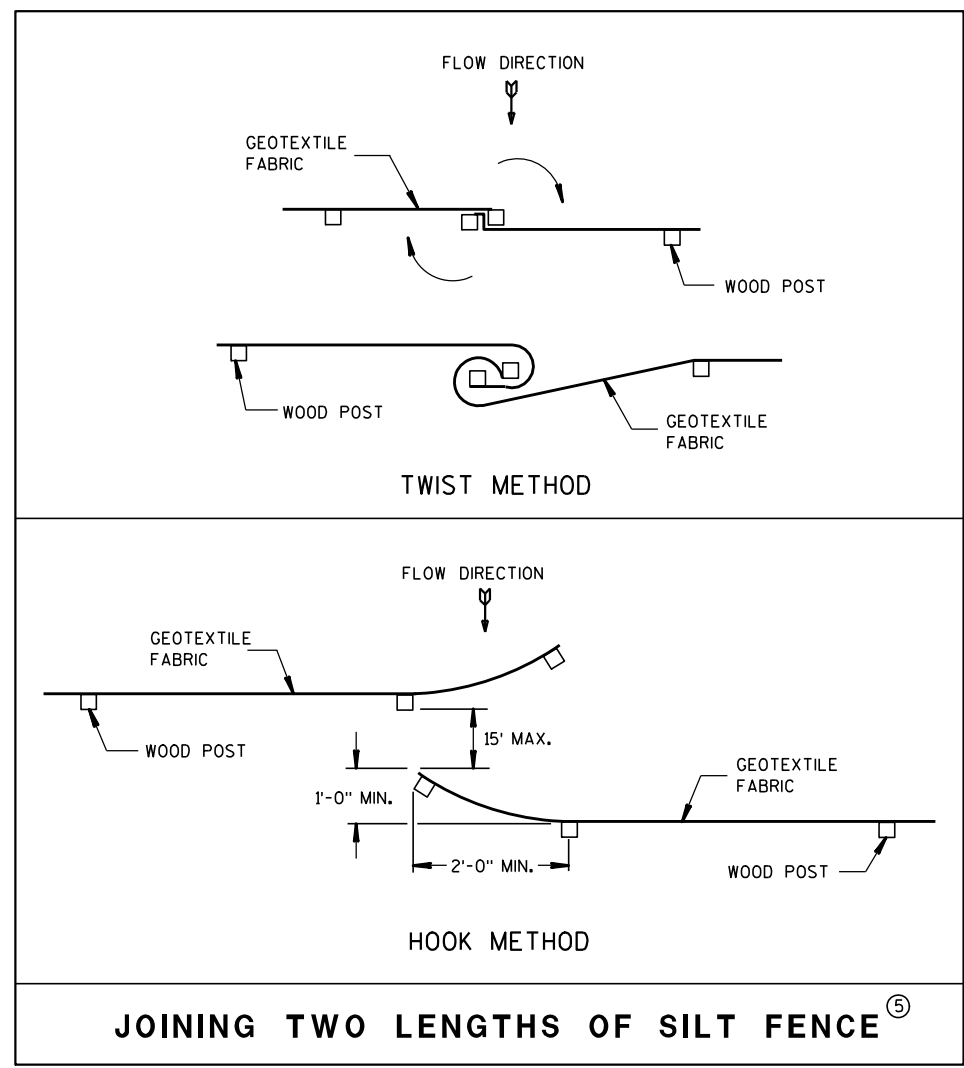


TRENCH DETAIL

6

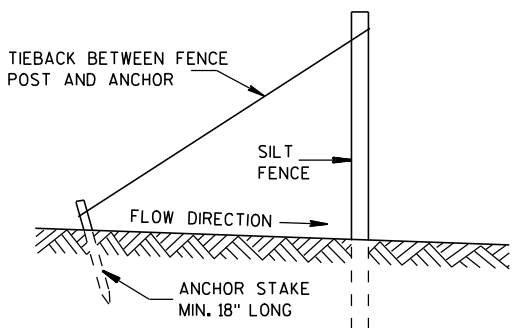


SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤

6

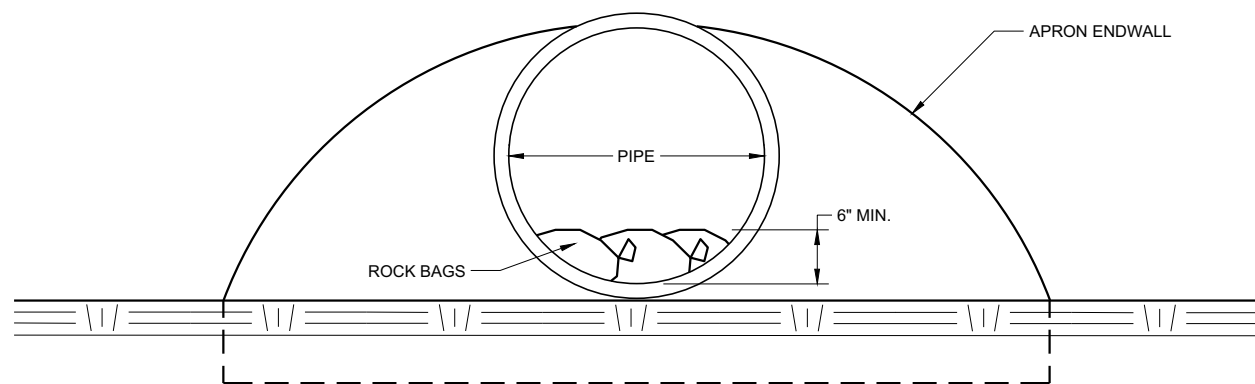


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

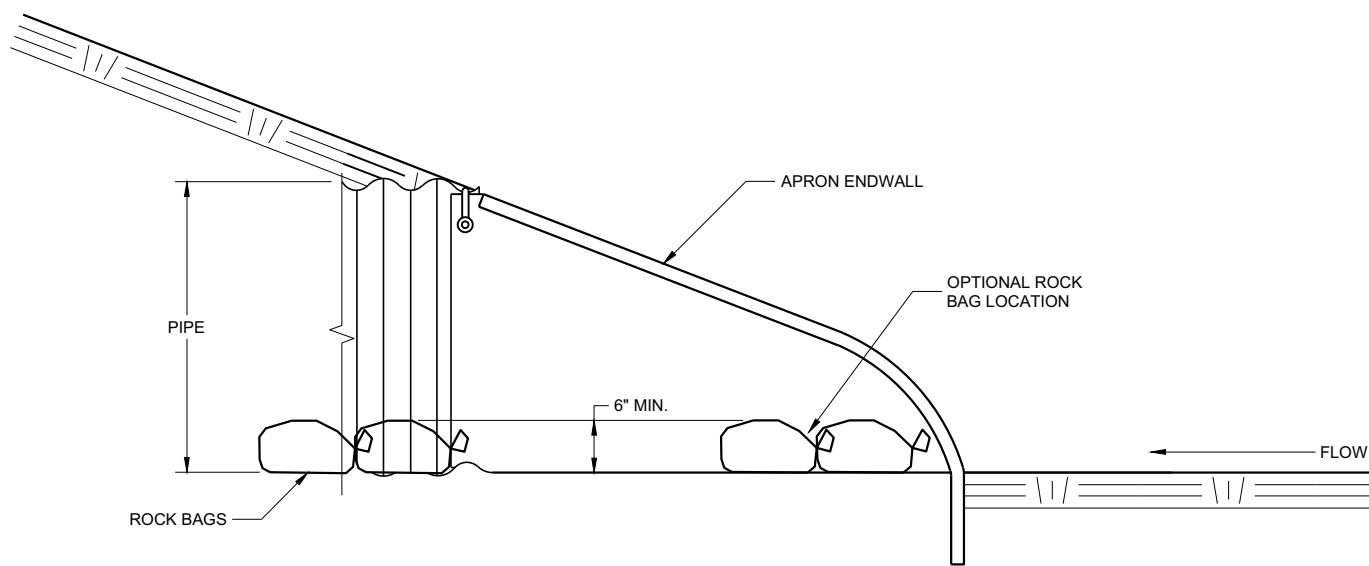
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

S.D.D. 8 E 9-6

S.D.D. 8 E 9-6



END VIEW



SIDE VIEW

CULVERT PIPE CHECK
 (INSTALL ON INLET END ONLY)

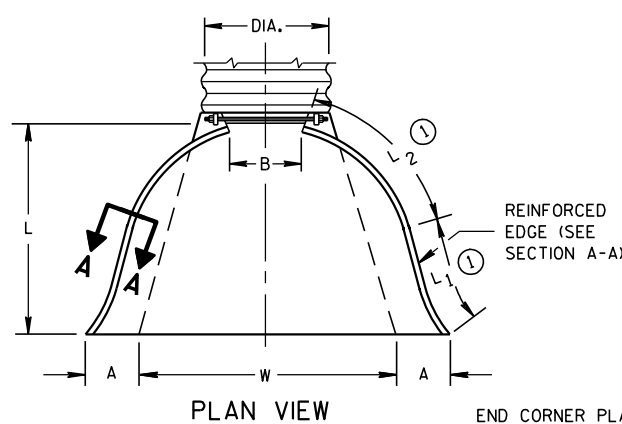
CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGINEER
<small>FHWA</small>	

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	L2	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	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

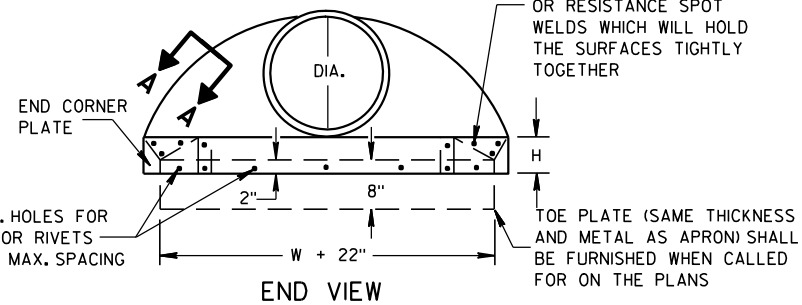
* EXCEPT CENTER PANEL SEE GENERAL NOTES

REINFORCED CONCRETE APRON ENDWALLS									
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE	
	T	A	B	C	D	E	G		
12	2	4	24	48 1/8	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 1/2 to 1	
60	6	30-35	60	39	99	96	5	2 to 1	
66	6 1/2	30-35	72-78	21-27	99	102	5 1/2	2 to 1	
72	7	30-35	78	21	99	108	6	2 to 1	
78	7 1/2	30-35	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	

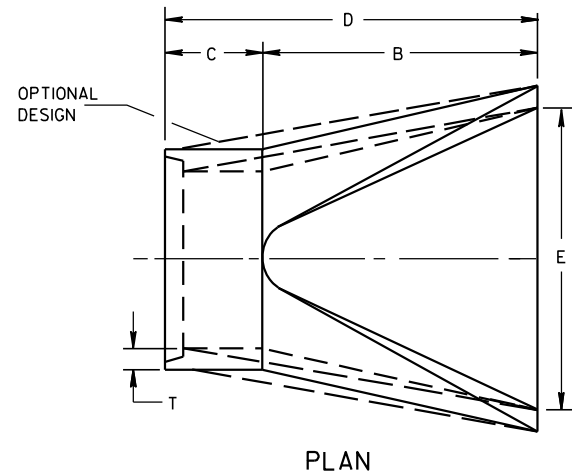
* MINIMUM
** MAXIMUM



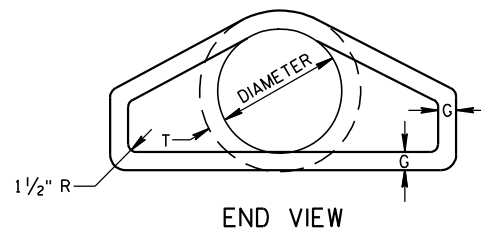
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



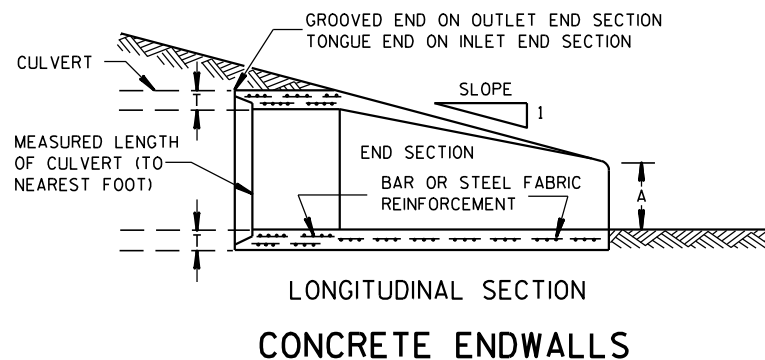
SIDE ELEVATION
METAL ENDWALLS



PLAN

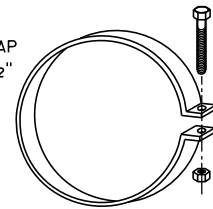


END VIEW

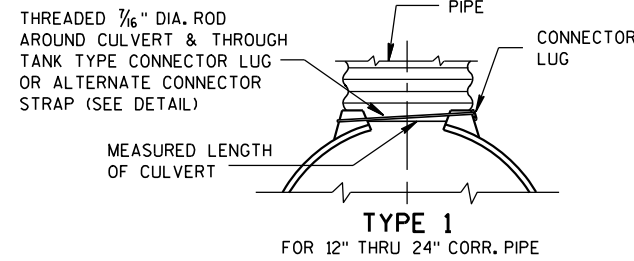


LONGITUDINAL SECTION
CONCRETE ENDWALLS

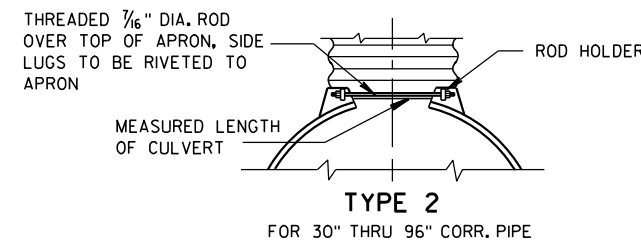
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



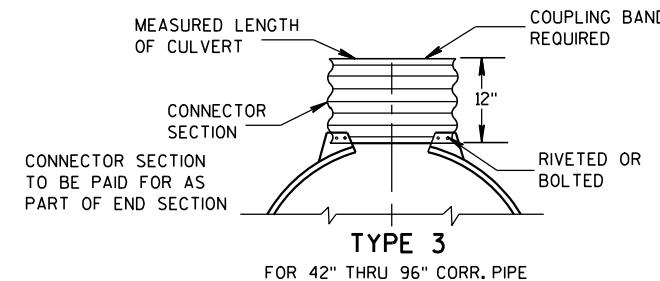
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



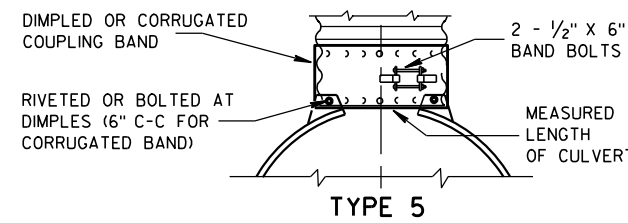
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

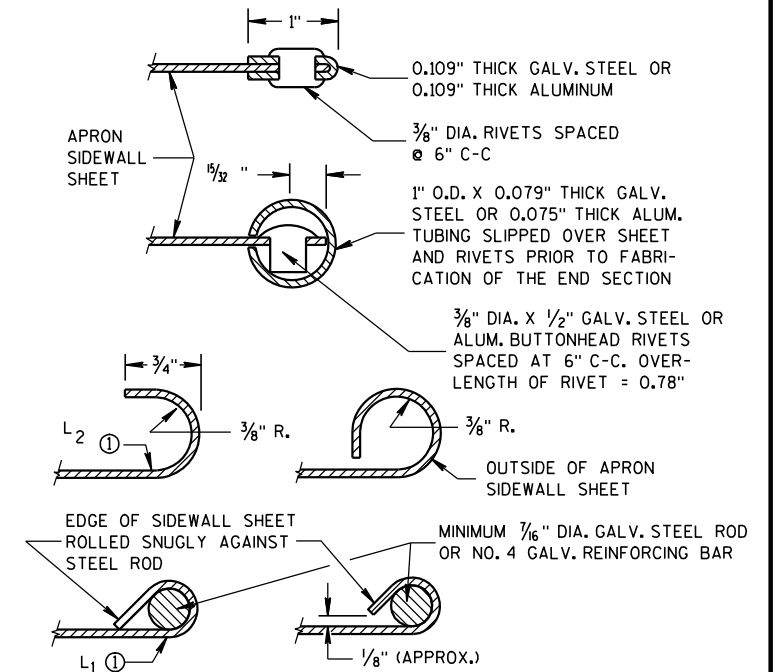
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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 VICE 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.

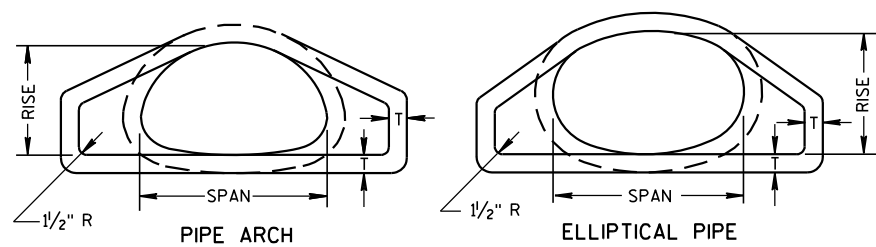
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

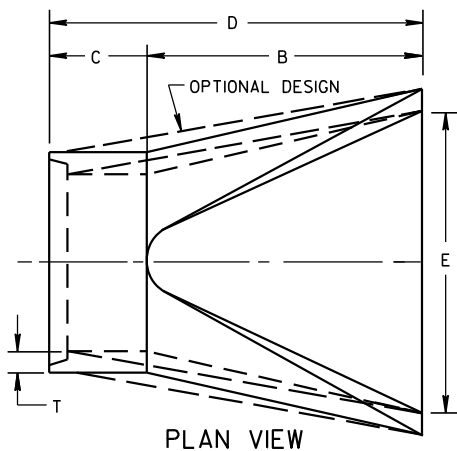
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

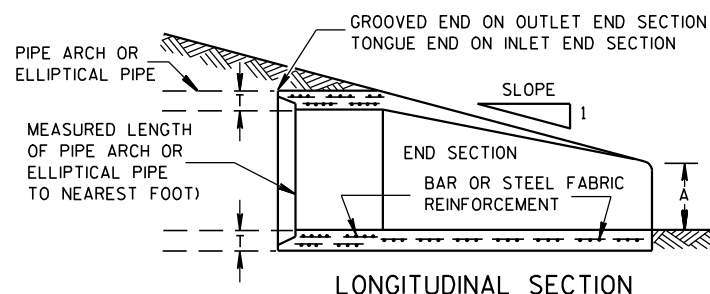
APPROVED
11/30/94 DATE /S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



END VIEW

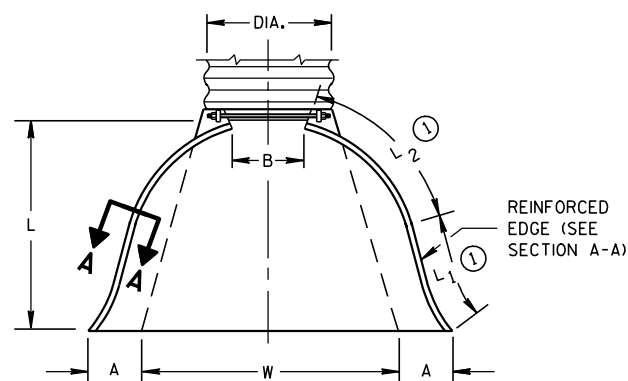


PLAN VIEW



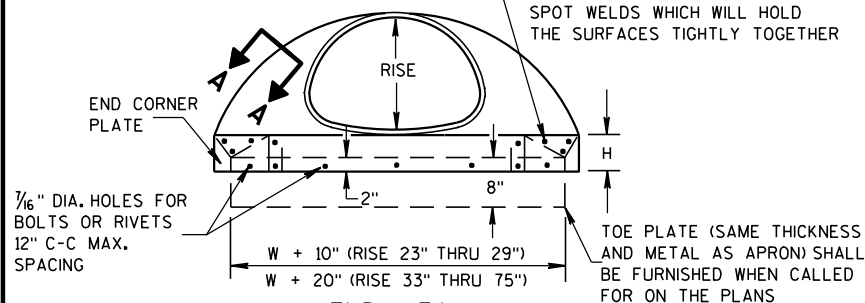
LONGITUDINAL SECTION

CONCRETE ENDWALLS

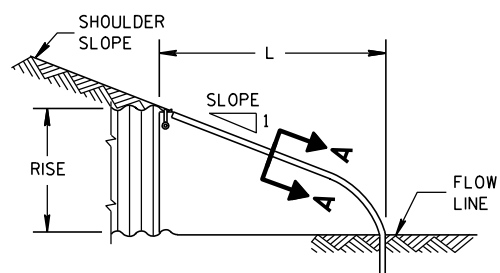


PLAN VIEW

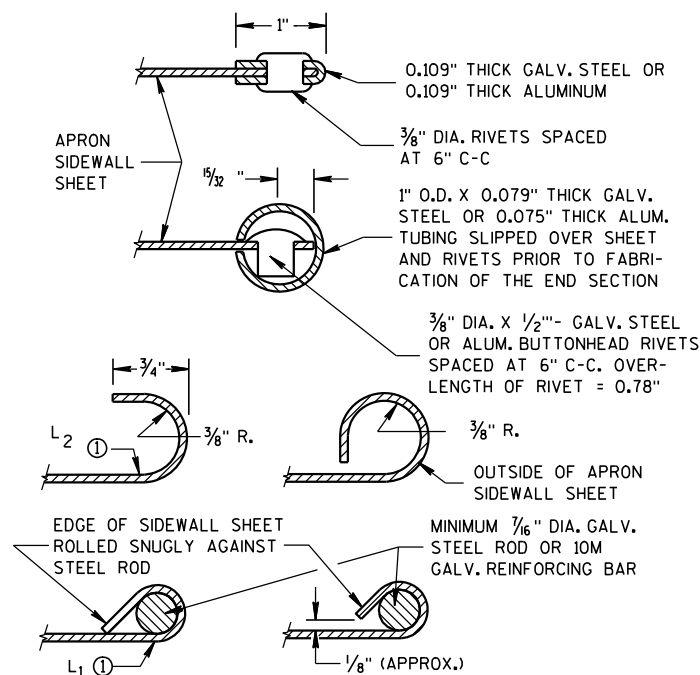
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW



SIDE ELEVATION
METAL ENDWALLS



SECTION A-A

2- 2/3" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 (±1")	L2 (±1")	W (±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 (±1")	L2 (±1")	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED. * EXCEPT CENTER PANEL SEE GENERAL NOTES

REINFORCED CONCRETE PIPE ARCH										
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)									APPROX. SLOPE
	**SPAN	**RISE	T	A	B	C	D	E		
24	29	18	3	8 1/2	39	33	72	48	3 to 1	
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1	
36	44	27	4	11 1/8	60	36	96	72	3 to 1	
42	51	31	4 1/2	15 1/8	60	36	96	78	3 to 1	
48	58	36	5	21	60	36	96	84	3 to 1	
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1	
60	73	45	6	31	60	36	96	96	3 to 1	
72	88	54	7	31	60	39	99	120	2 to 1	
84	102	62	8	28 1/2	83	19	102	144	2 to 1	

REINFORCED CONCRETE ELLIPTICAL PIPE										
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)									APPROX. SLOPE
	**SPAN	**RISE	T	A	B	C	D	E		
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1	
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1	
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1	
42	53	34	5	15 3/4	60	36	96	78	2 1/2 to 1	
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1	
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1	
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1	

**NOMINAL SIZE

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH 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 ARCH 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 77" X 52" THROUGH 112" X 75" 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.

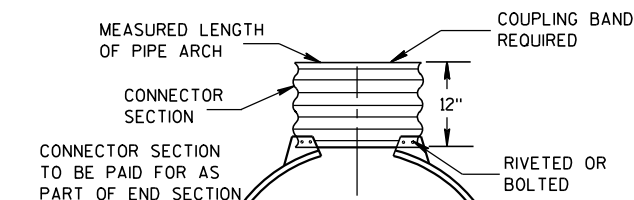
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.



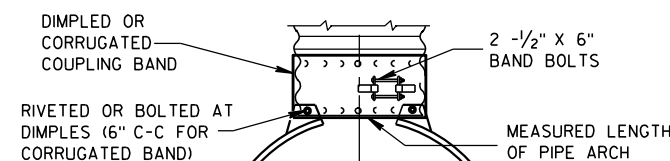
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHES

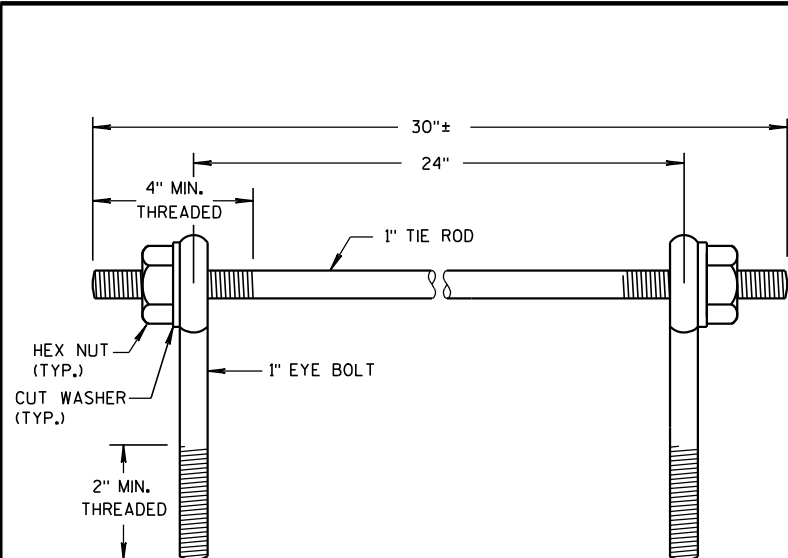
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

**APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPE**

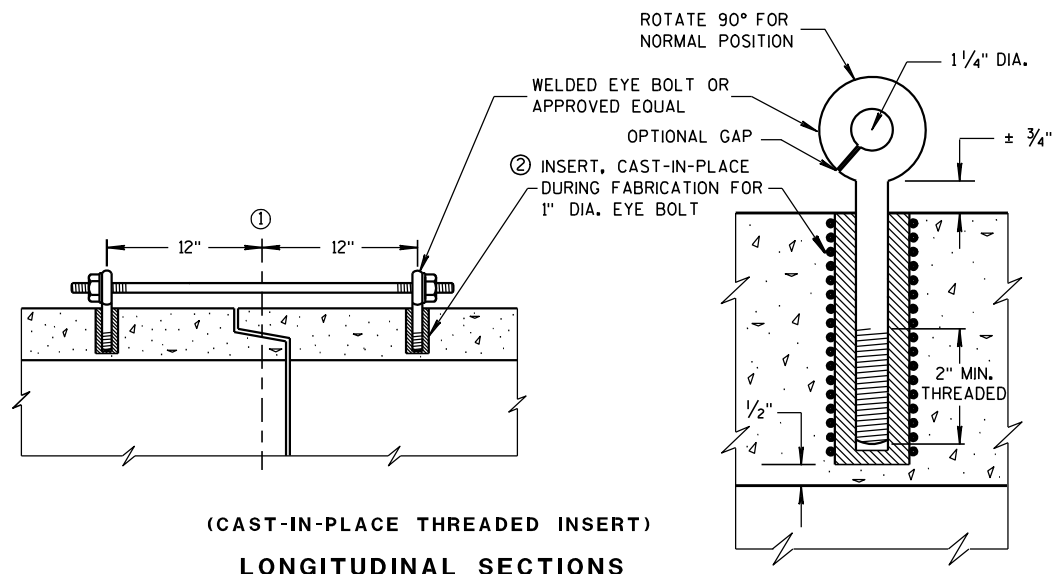
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



EYE BOLTS AND TIE ROD

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



(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

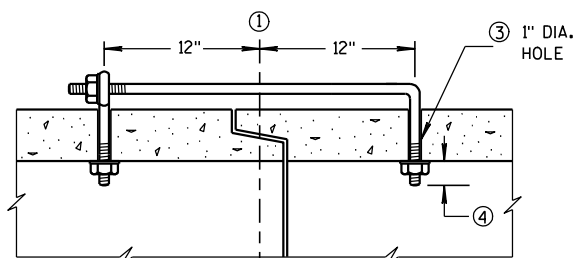
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

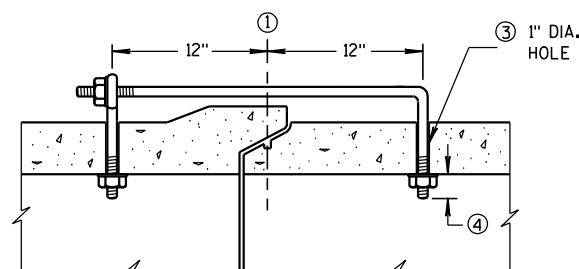
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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

- ① ϕ 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 ϕ 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

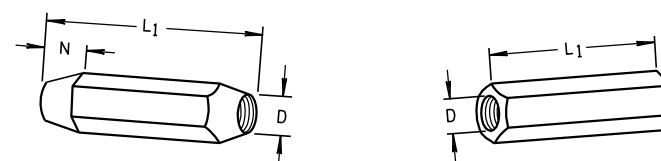
EYE BOLT DIMENSION TABLE

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"	

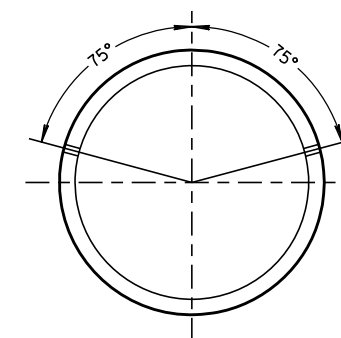
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L1	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 1/6

DIMENSIONS SHOWN ARE IN INCHES

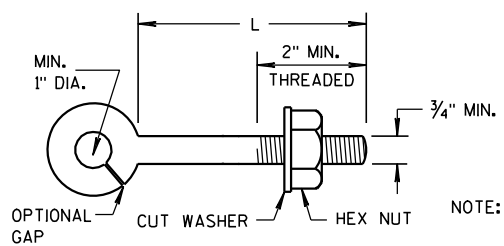


TAPERED PLAIN
RIGHT AND LEFT THREADS
SLEEVE NUTS



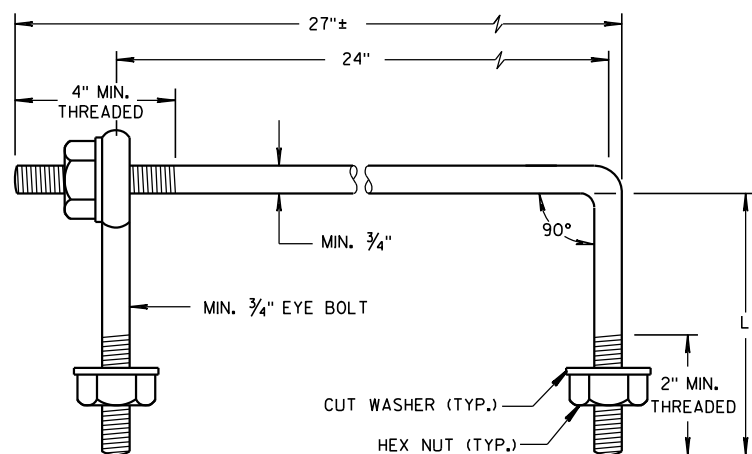
PLACEMENT OF (2) CAST-IN-PLACE
INSERTS OR HOLES DURING FABRICATION
FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



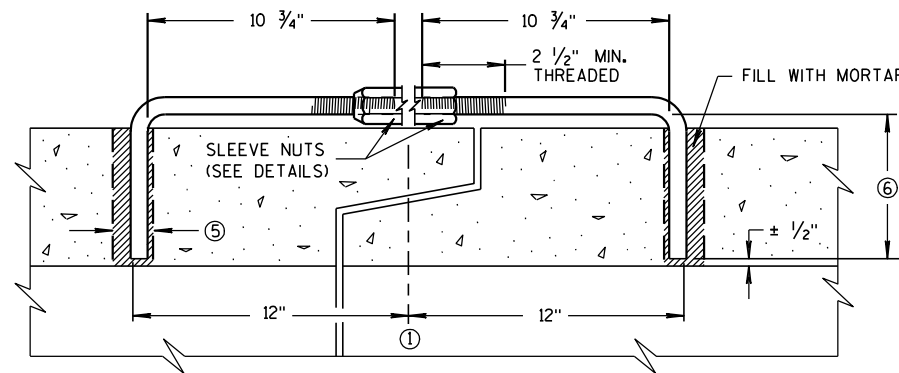
EYE BOLT

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



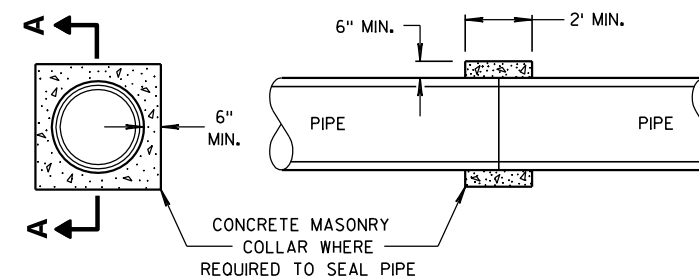
EYE BOLT AND TIE ROD

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)
EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



LONGITUDINAL SECTION

(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



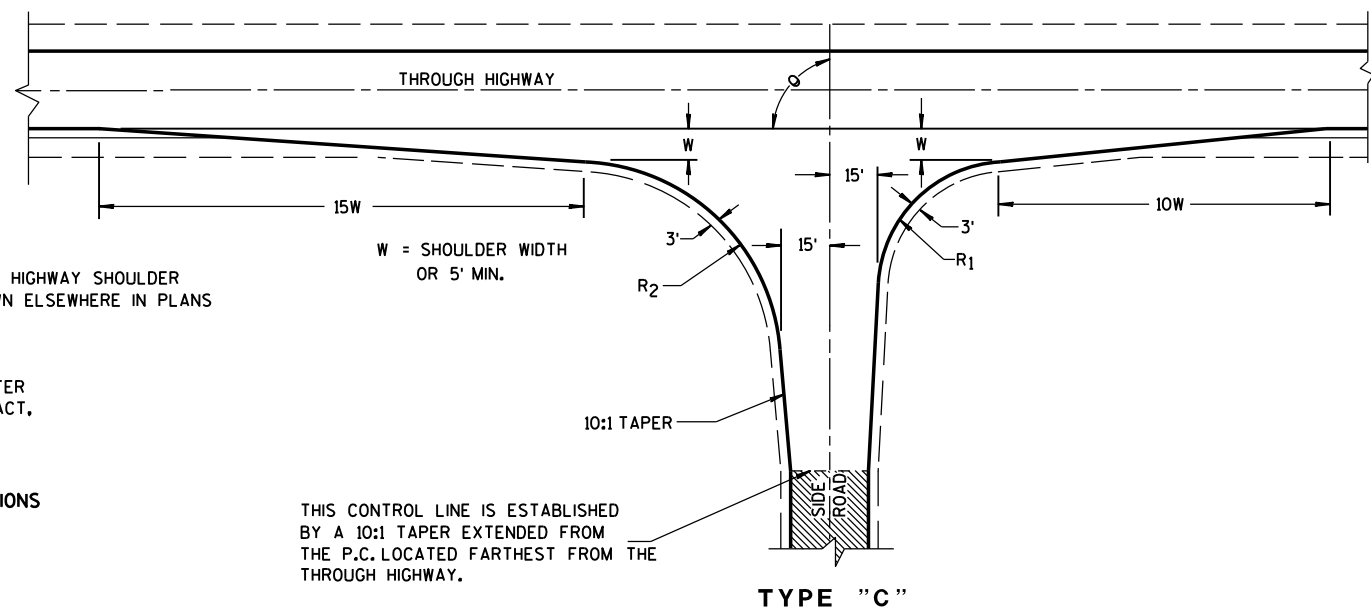
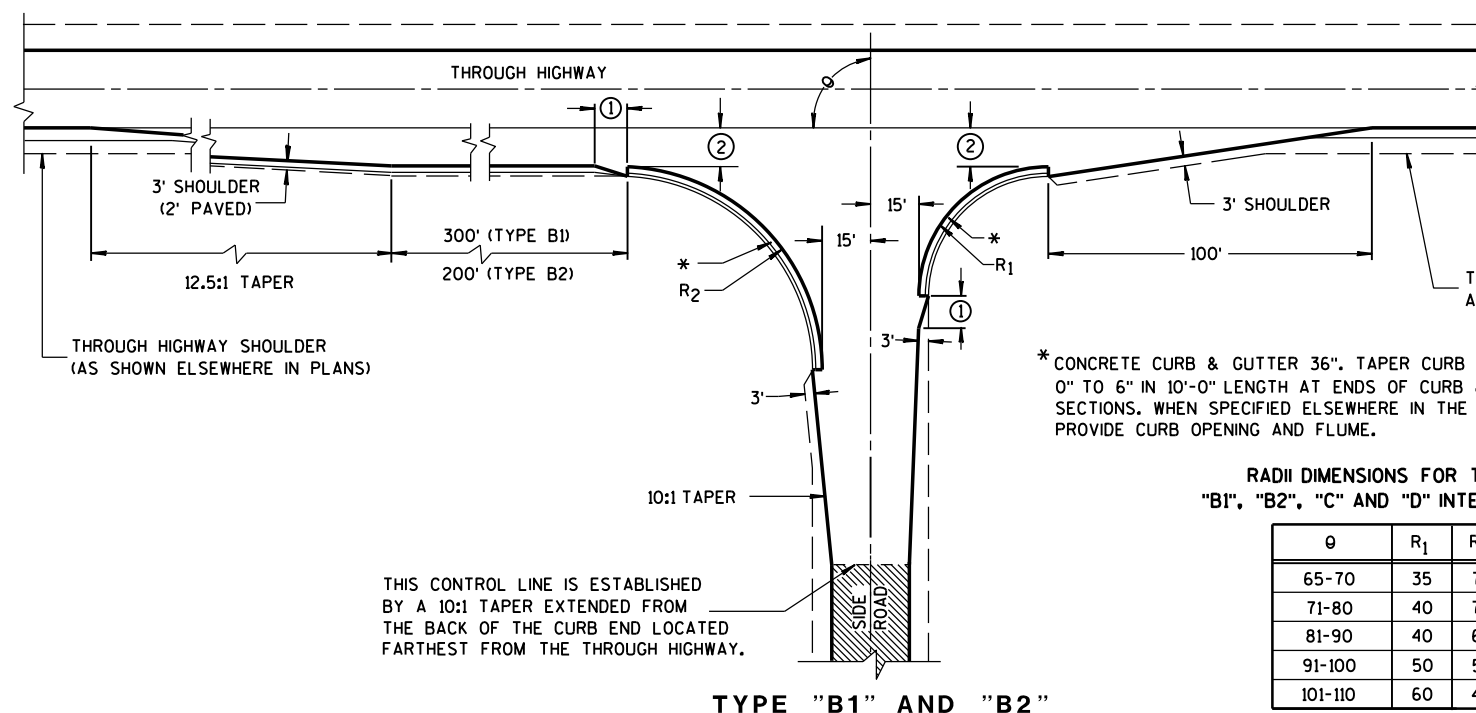
SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



GENERAL NOTES

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

SIDE ROAD SURFACING NOTE

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

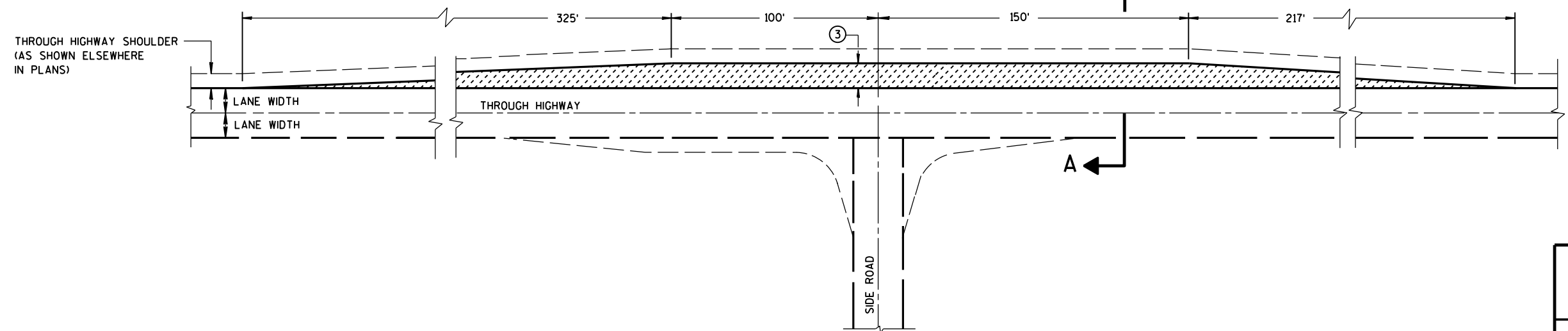
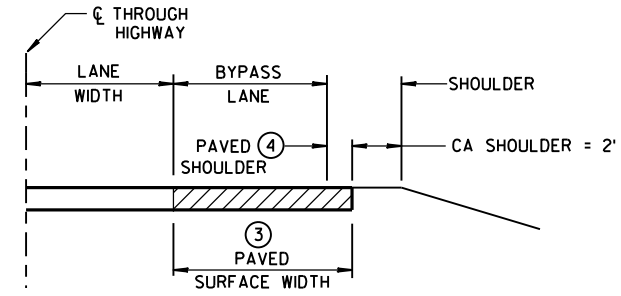
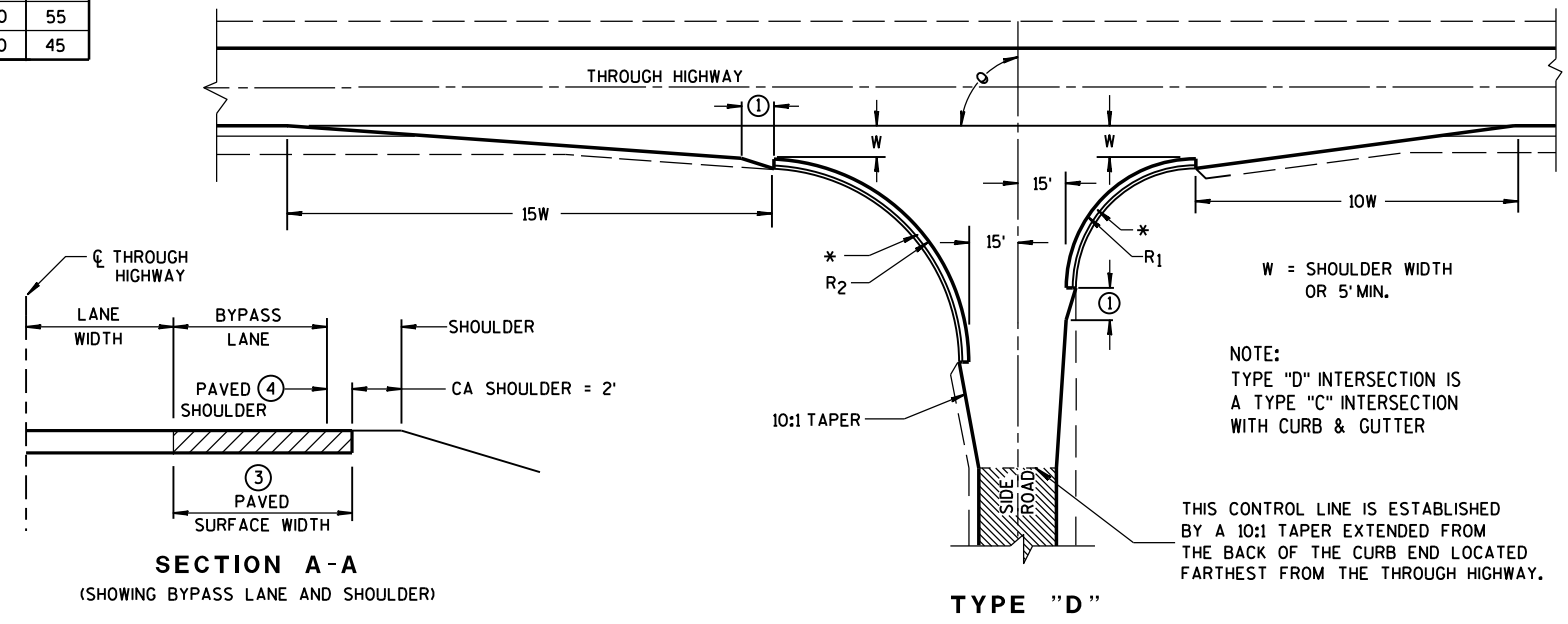
WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

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

EXISTING PAVED SURFACE

BYPASS LANE

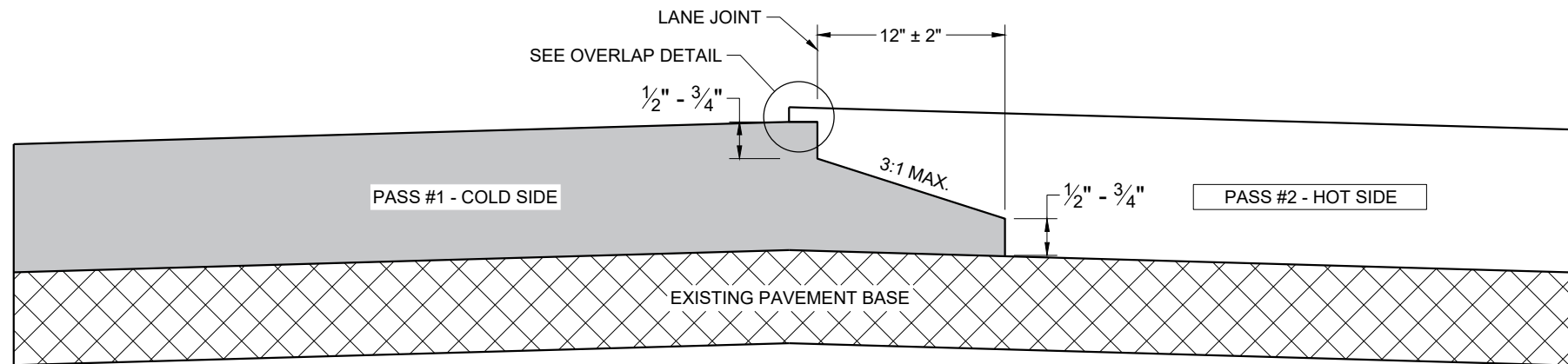
- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.
- **10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



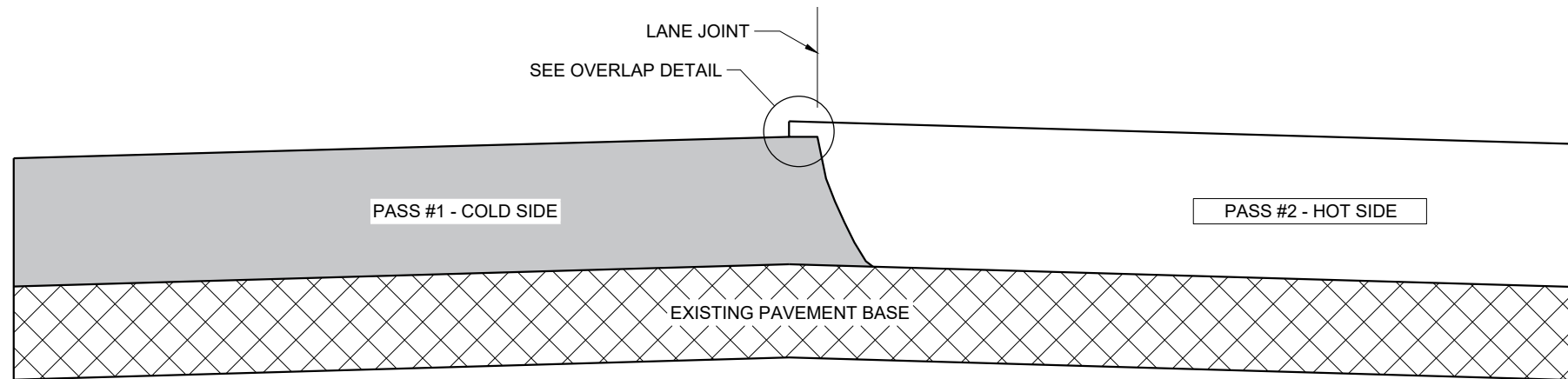
TEE INTERSECTION BYPASS LANE DETAIL

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

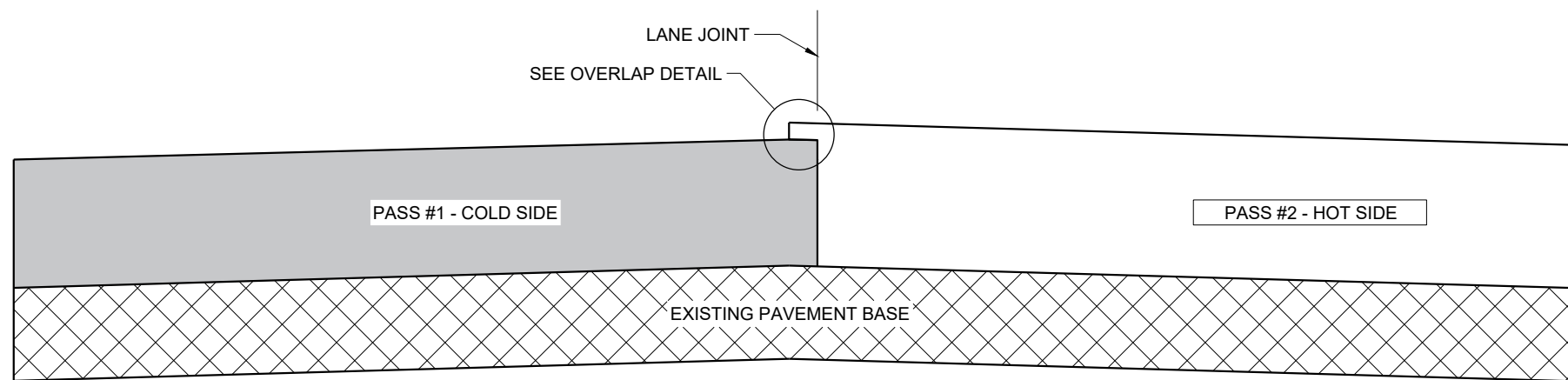
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)**

GENERAL NOTES

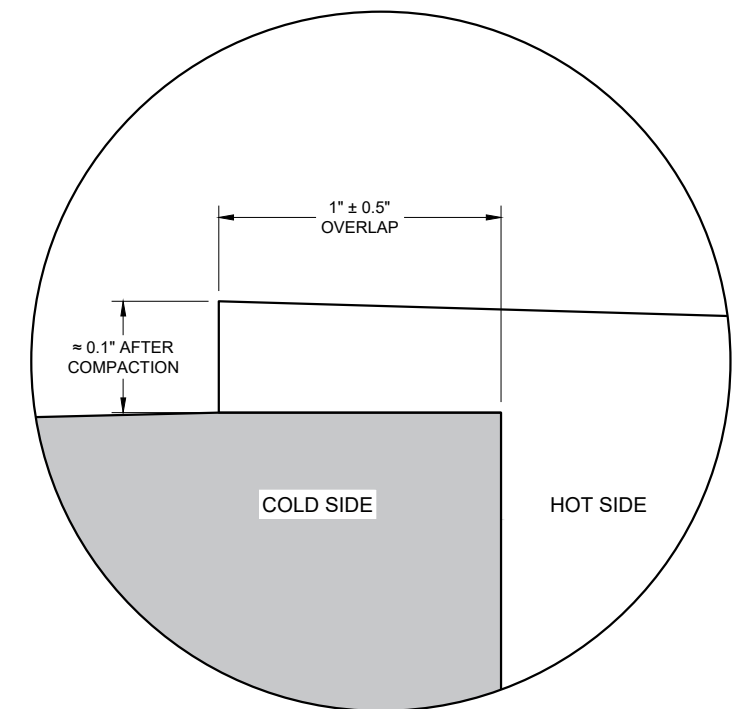
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ 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

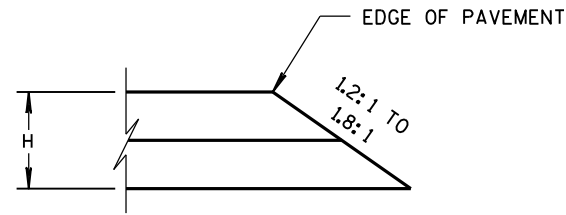
SDD 13C19 - 03

SDD 13C19 - 03

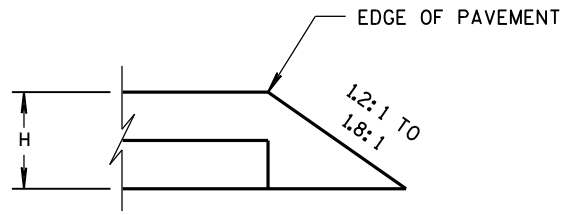
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

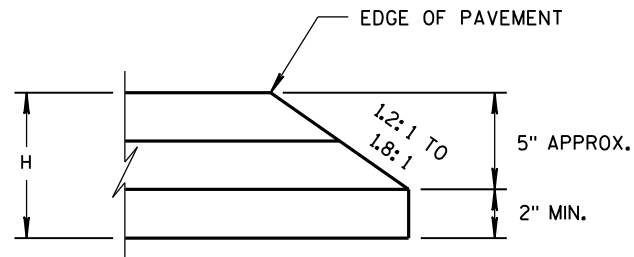
APPROVED
November 2020 DATE /S/ Steven Hefel
HMA PAVEMENT ENGINEER
FHWA



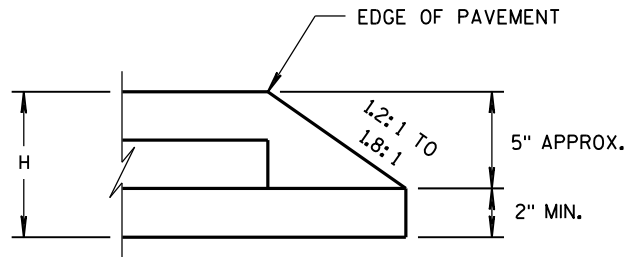
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

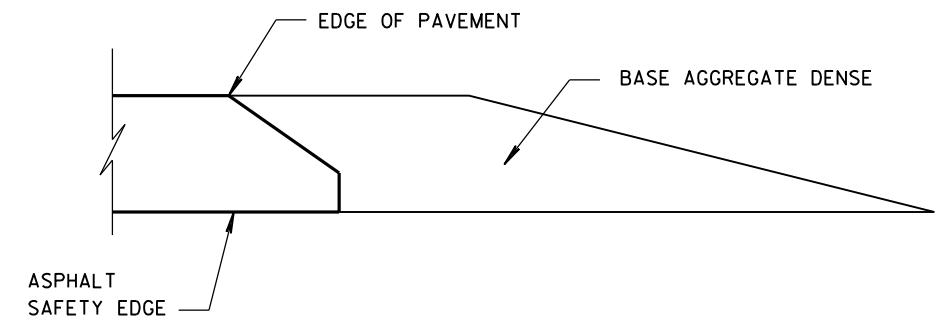


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

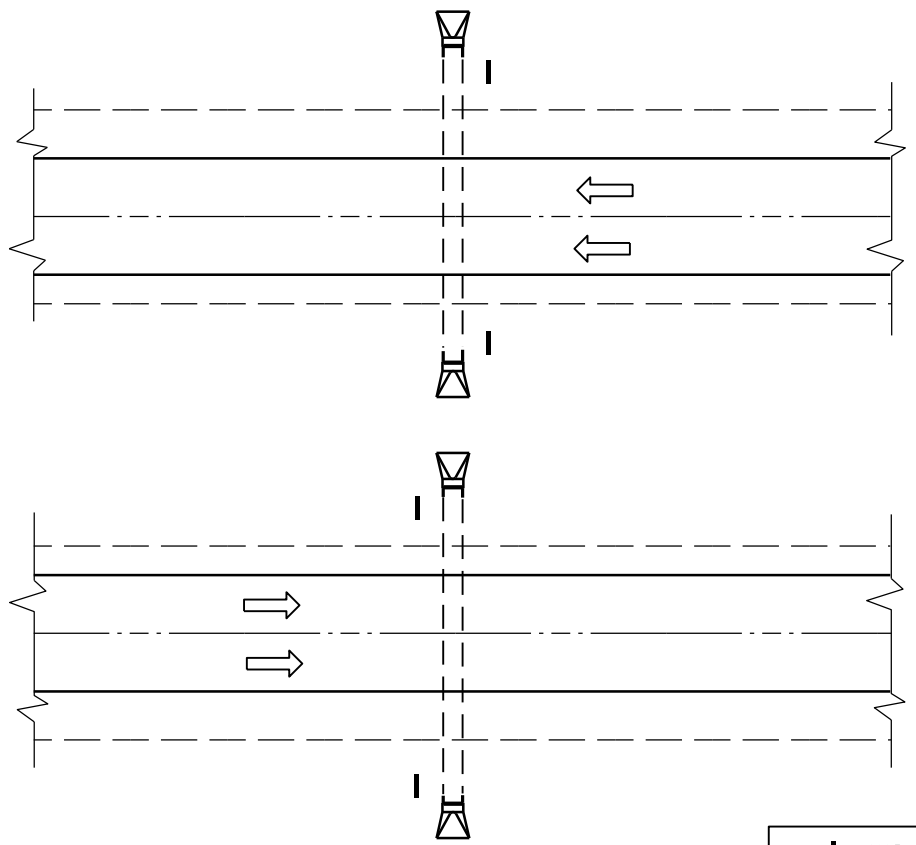
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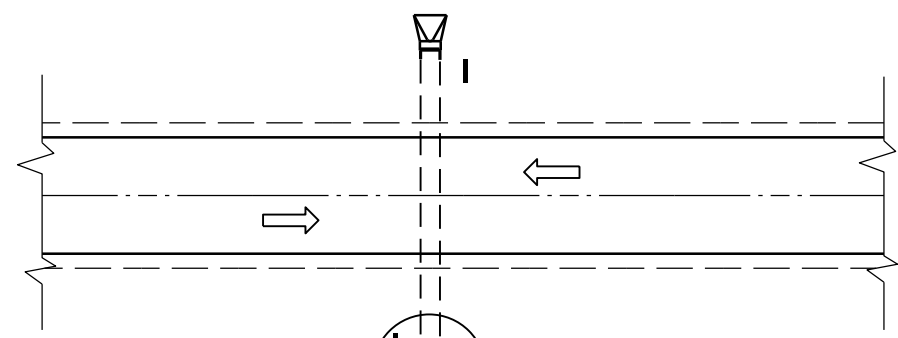
S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

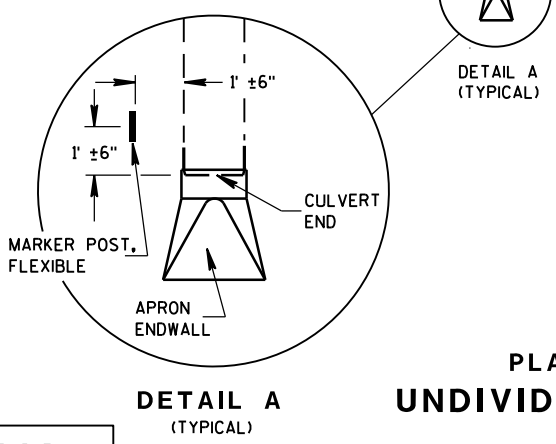
SAFETY EDGE _{SM}	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



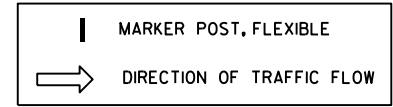
PLAN VIEW
DIVIDED HIGHWAY



PLAN VIEW
UNDIVIDED HIGHWAY

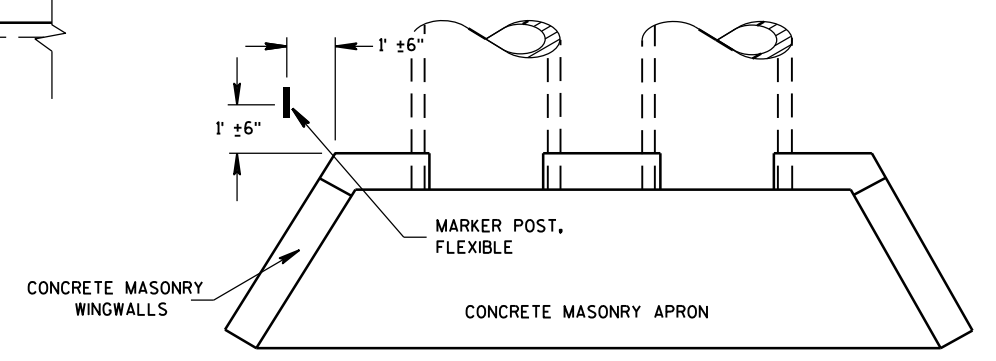


DETAIL A
(TYPICAL)



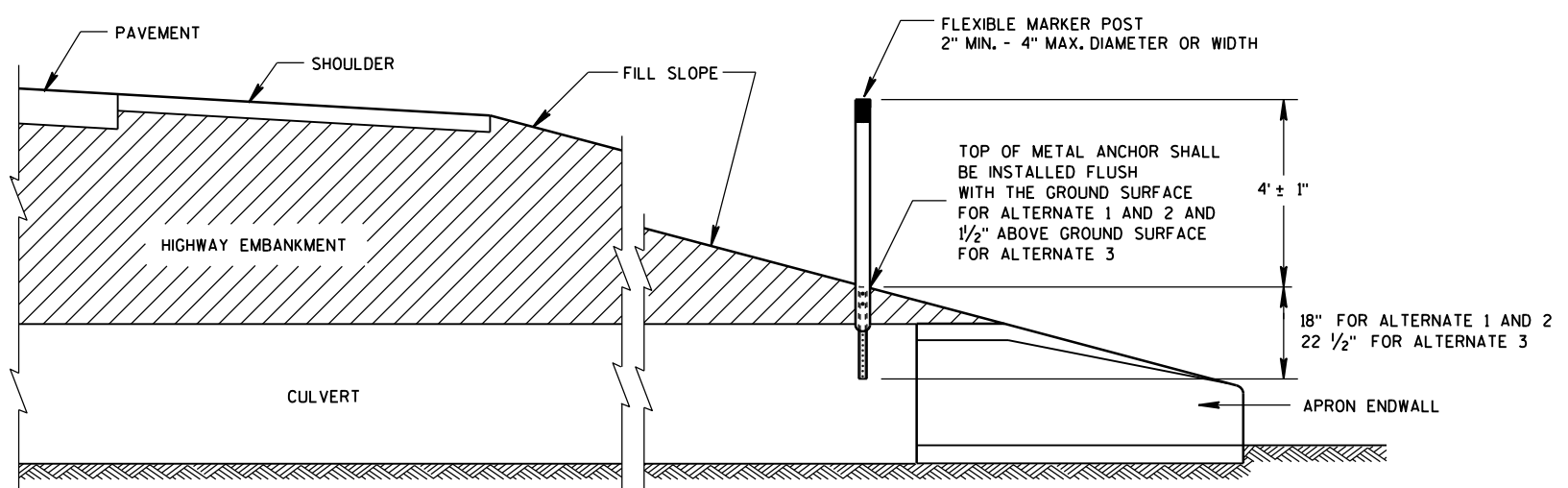
GENERAL NOTES

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**

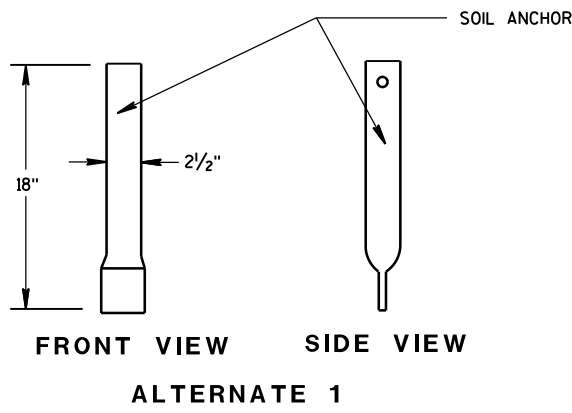
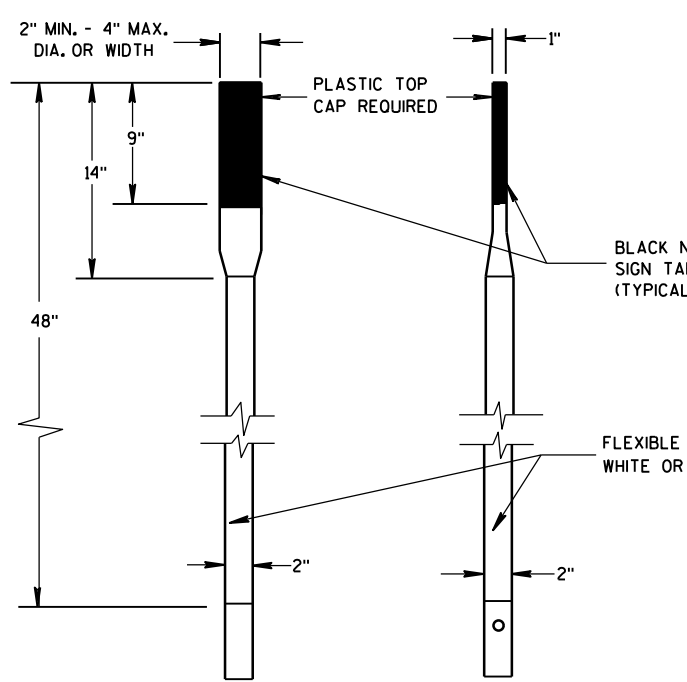
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

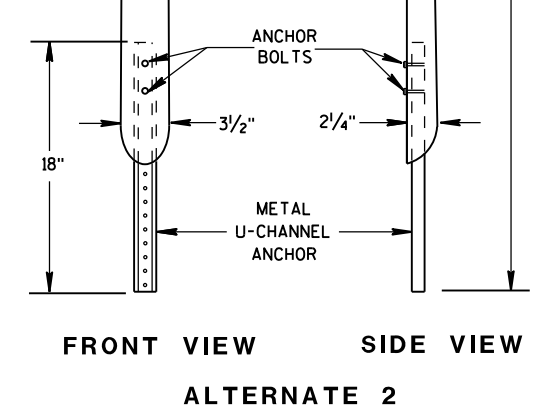
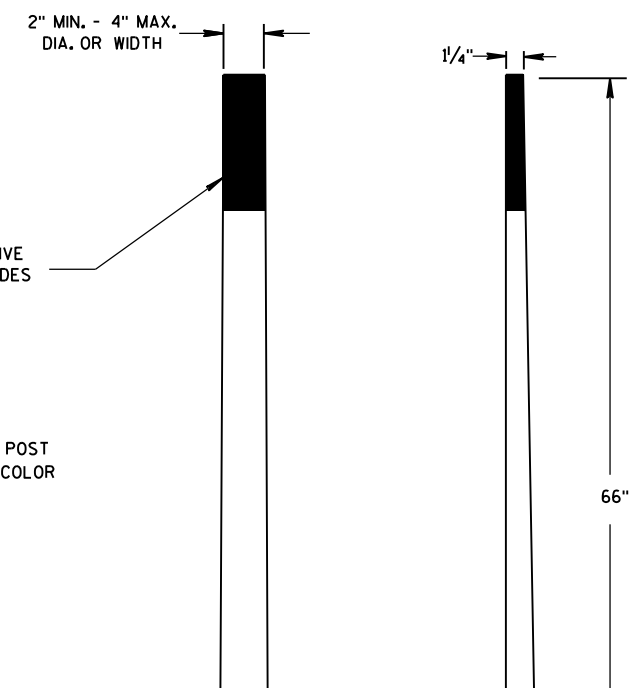
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S.D.D. 15 A 3-2a

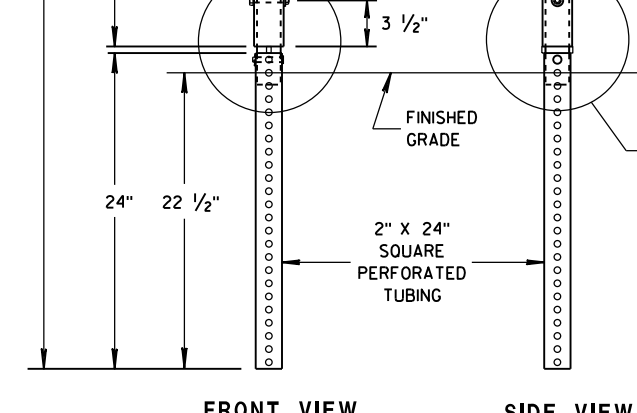
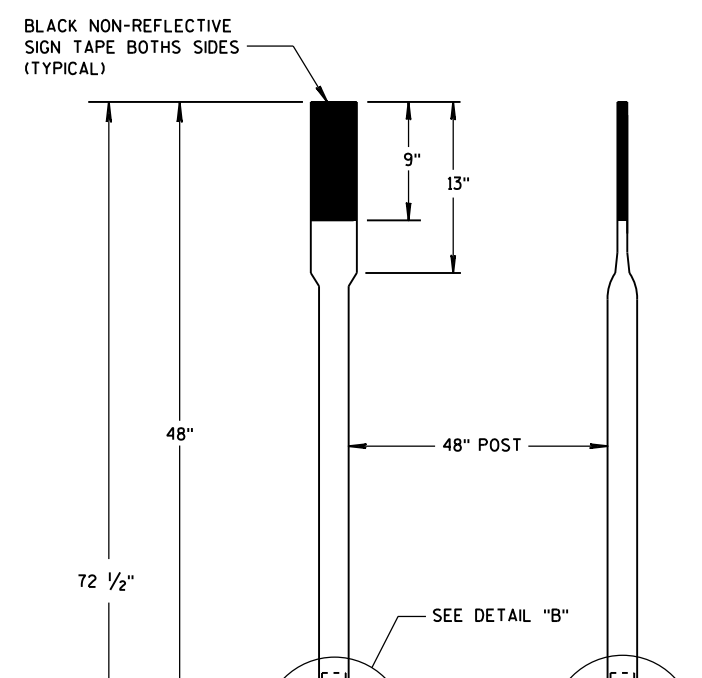
S.D.D. 15 A 3-2a



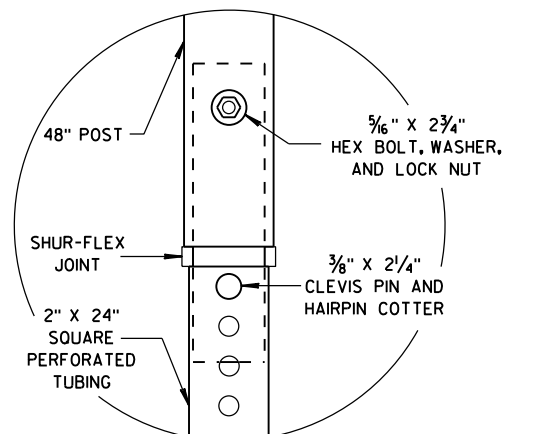
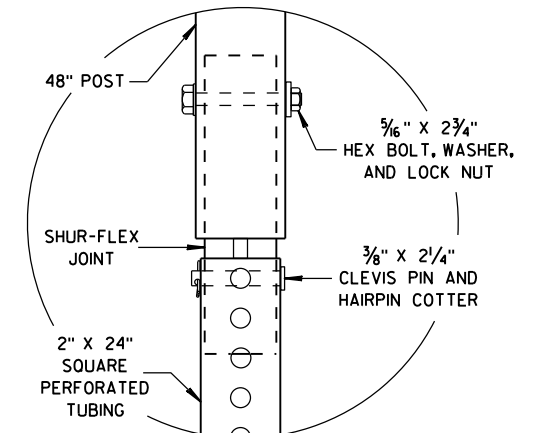
FRONT VIEW SIDE VIEW
ALTERNATE 1



FRONT VIEW SIDE VIEW
ALTERNATE 2

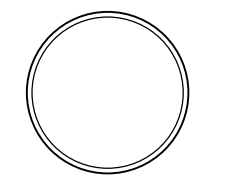


FRONT VIEW SIDE VIEW
ALTERNATE 3

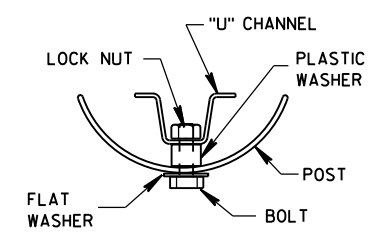


DETAIL B

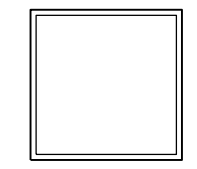
DETAIL C



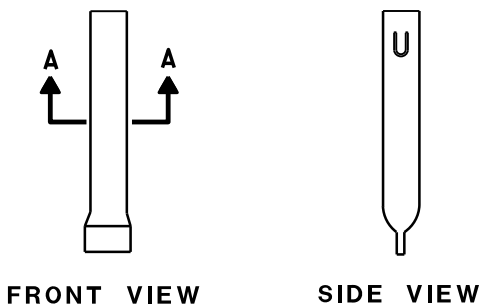
SECTION A-A



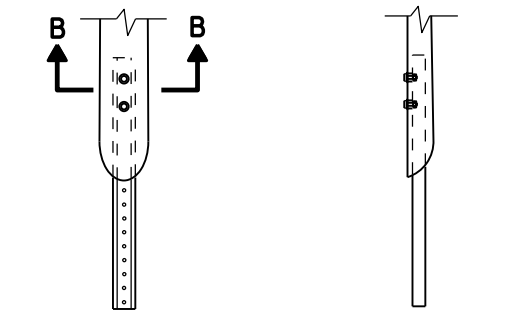
SECTION B-B



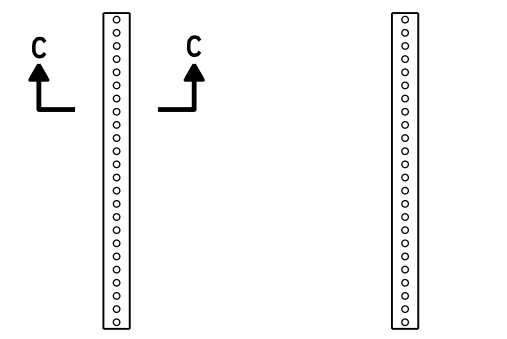
SECTION C-C



FRONT VIEW SIDE VIEW
ALTERNATE 1



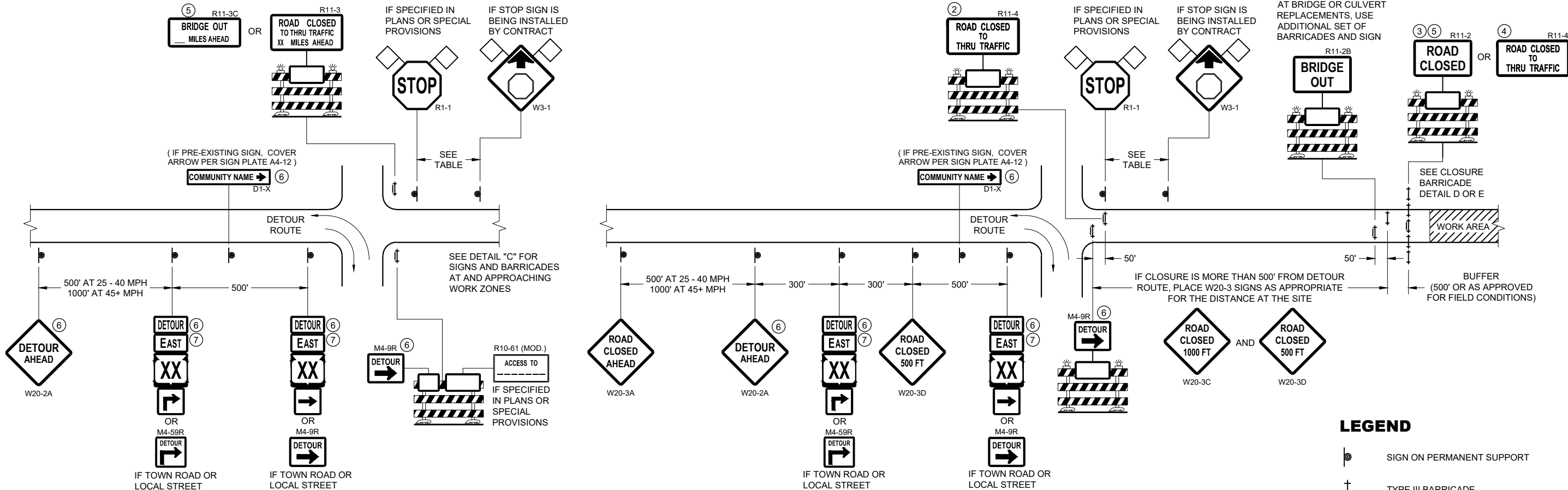
FRONT VIEW SIDE VIEW
ALTERNATE 2



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 OF DESIGN
FHWA	



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

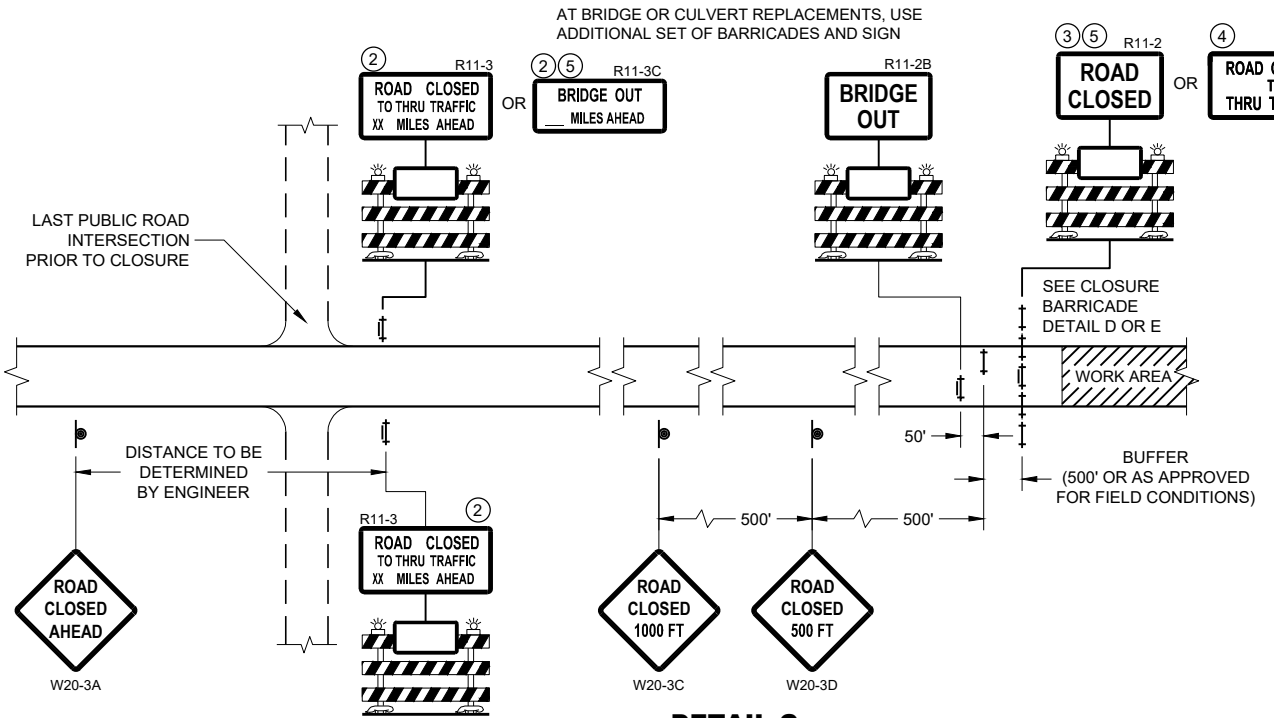
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

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

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

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



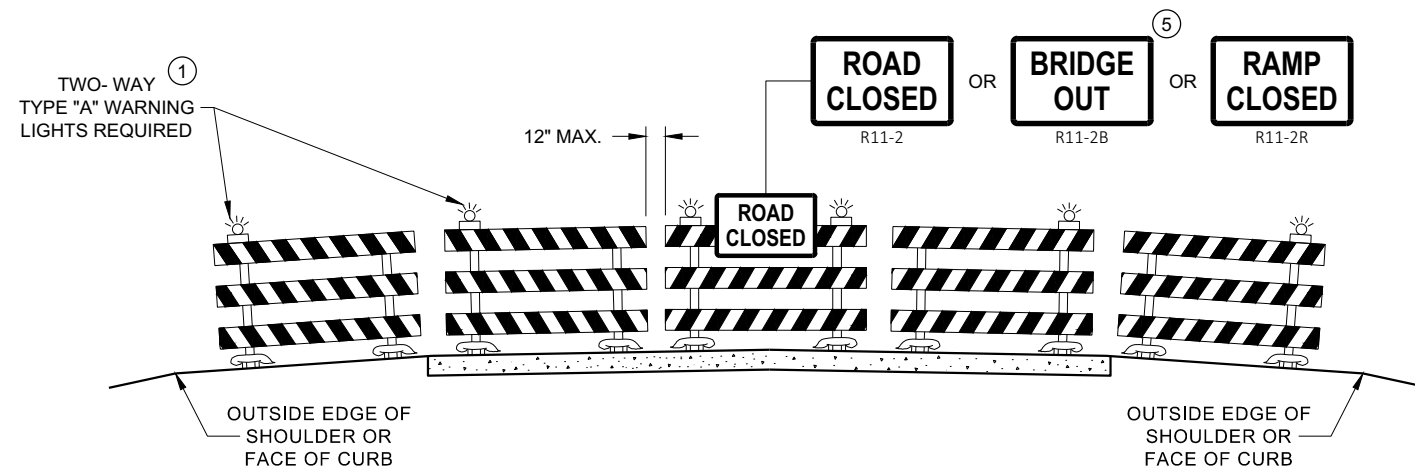
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

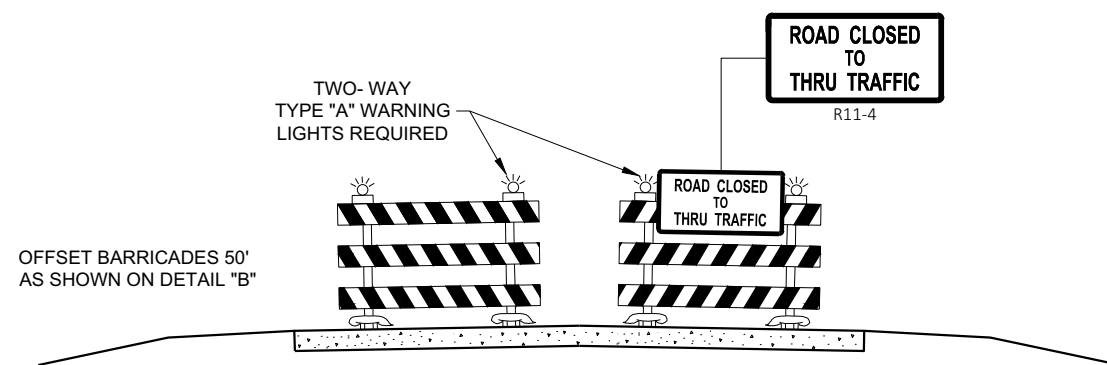
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



**DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW**



**DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

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

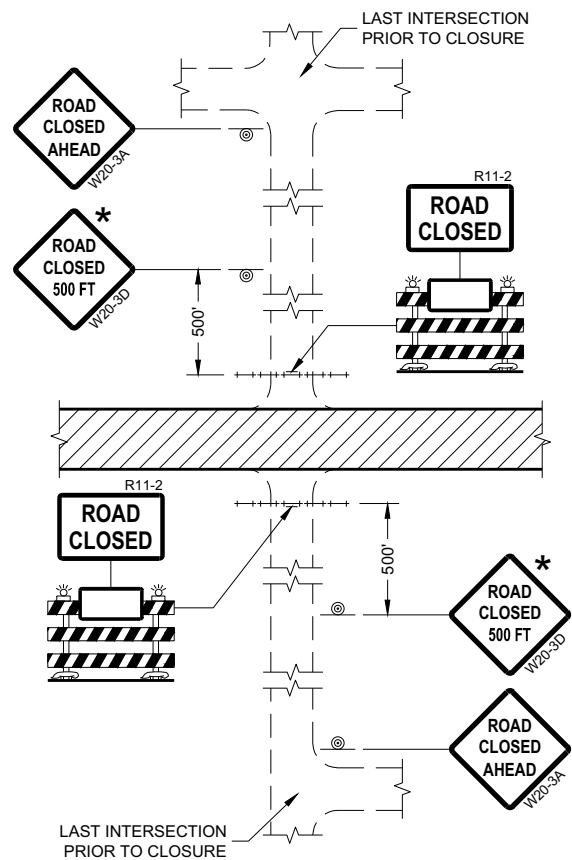
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

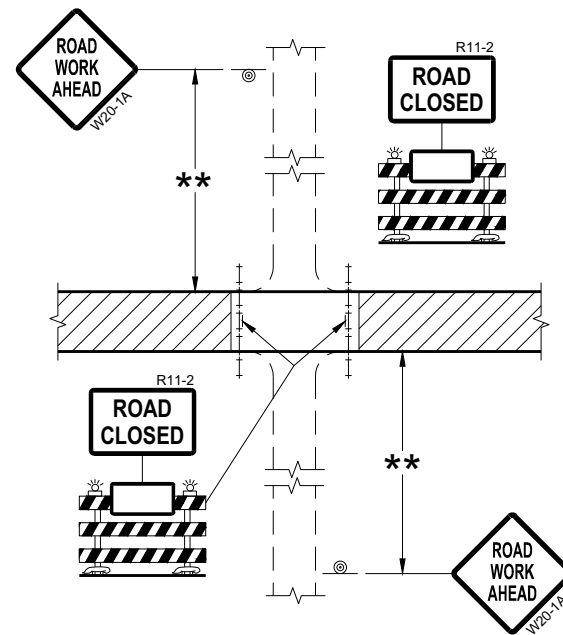
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

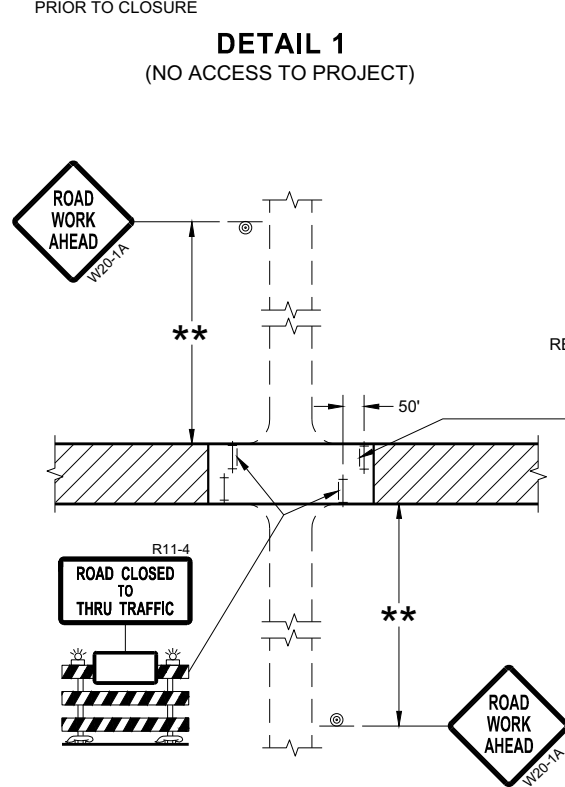
FHWA



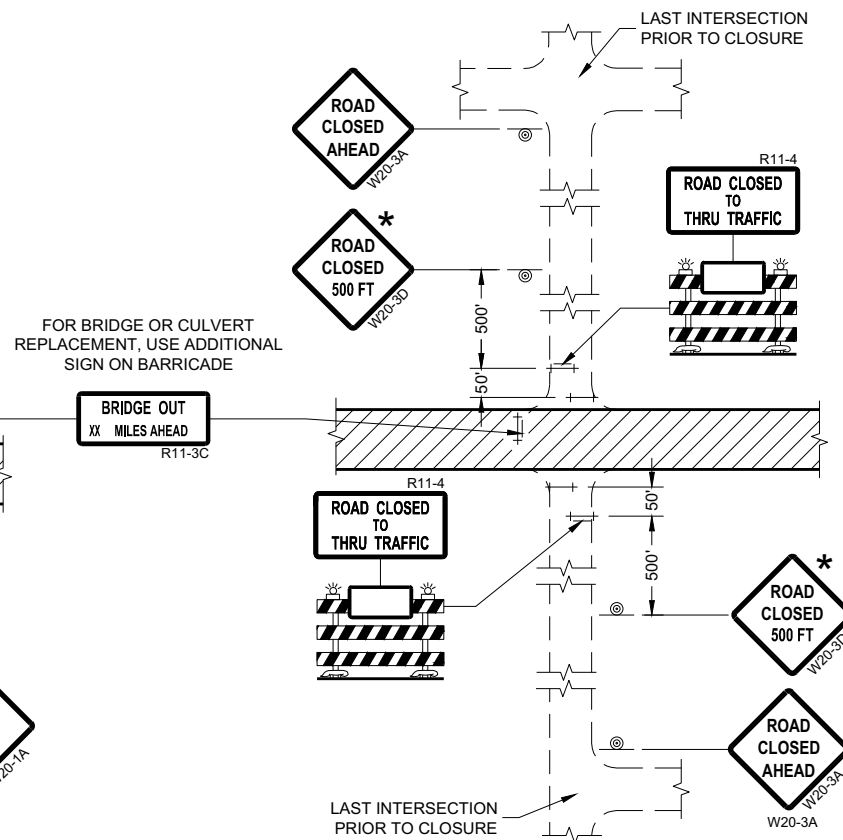
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

LEGEND

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

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

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.

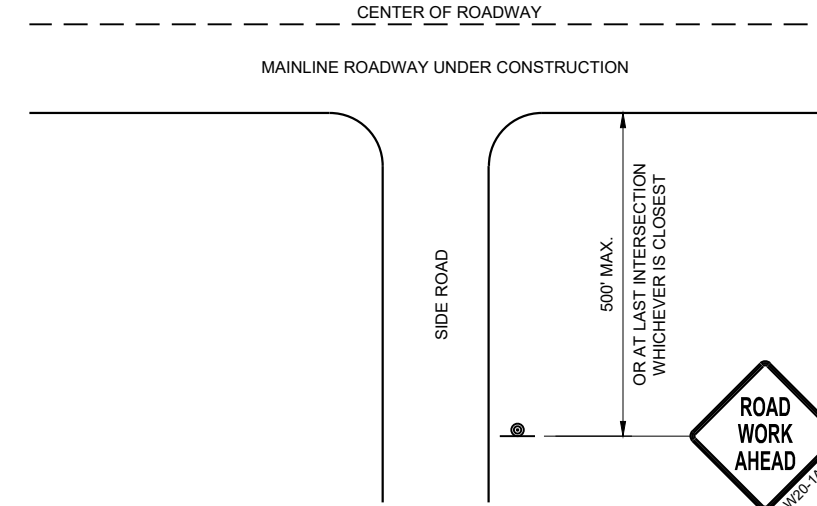
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

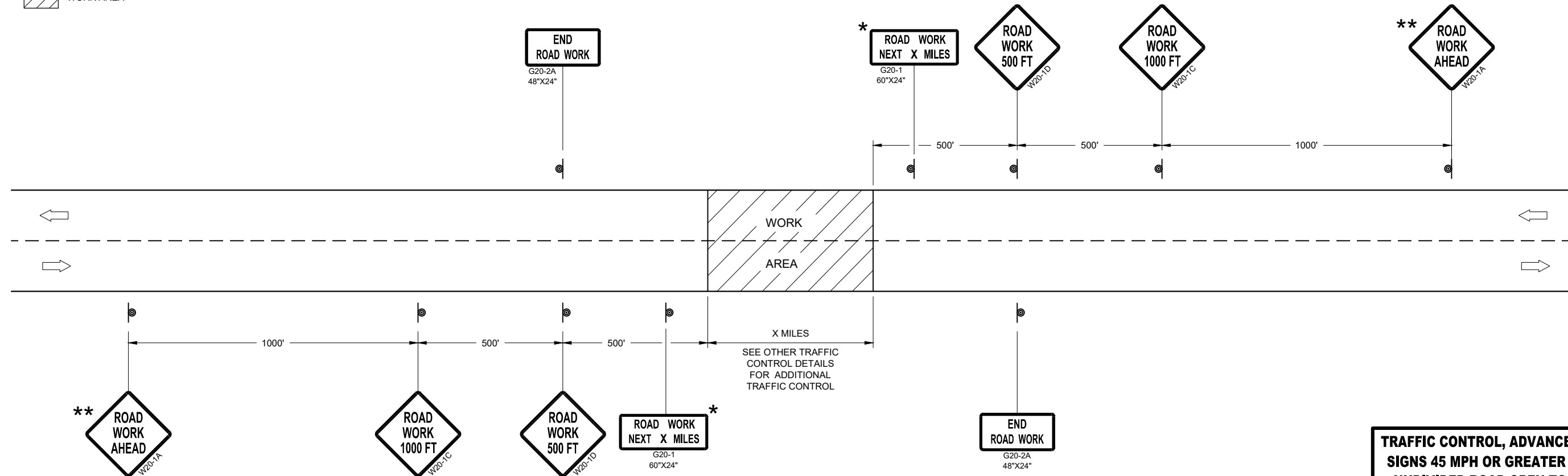
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL



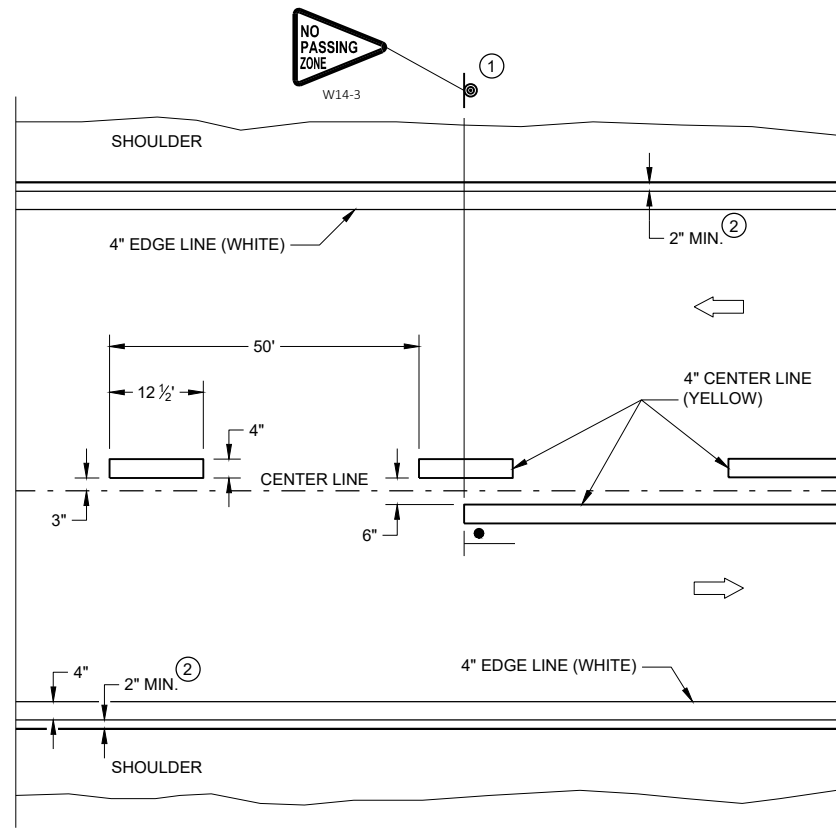
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

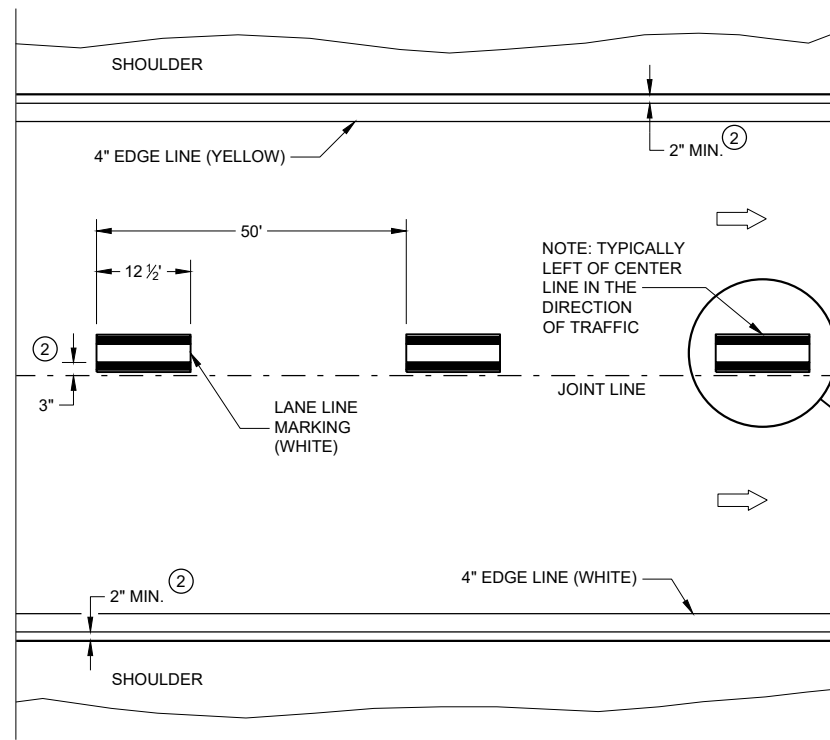
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE July 2018 /S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

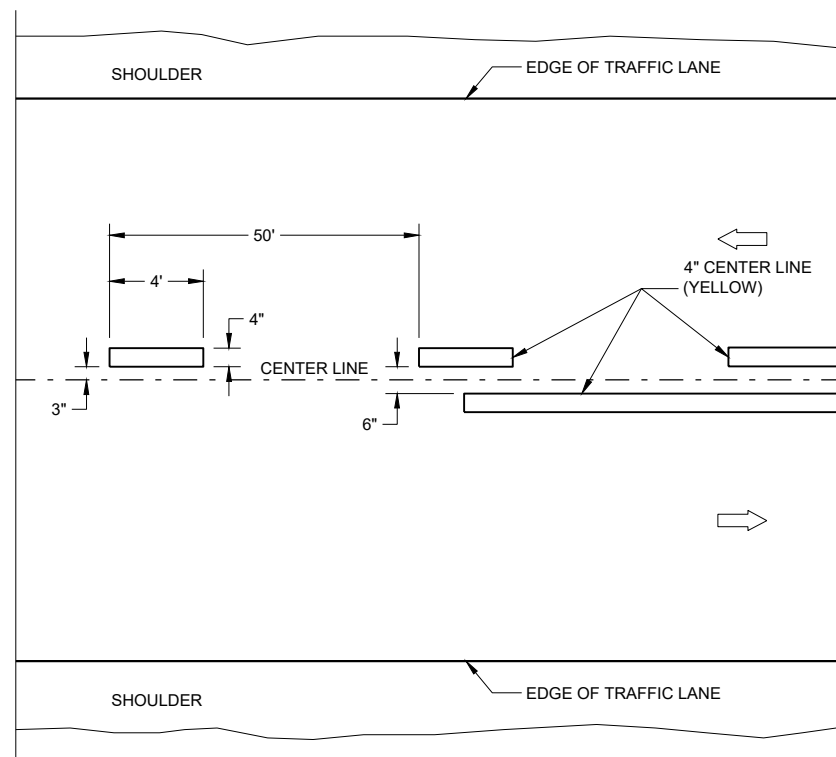


TWO WAY TRAFFIC

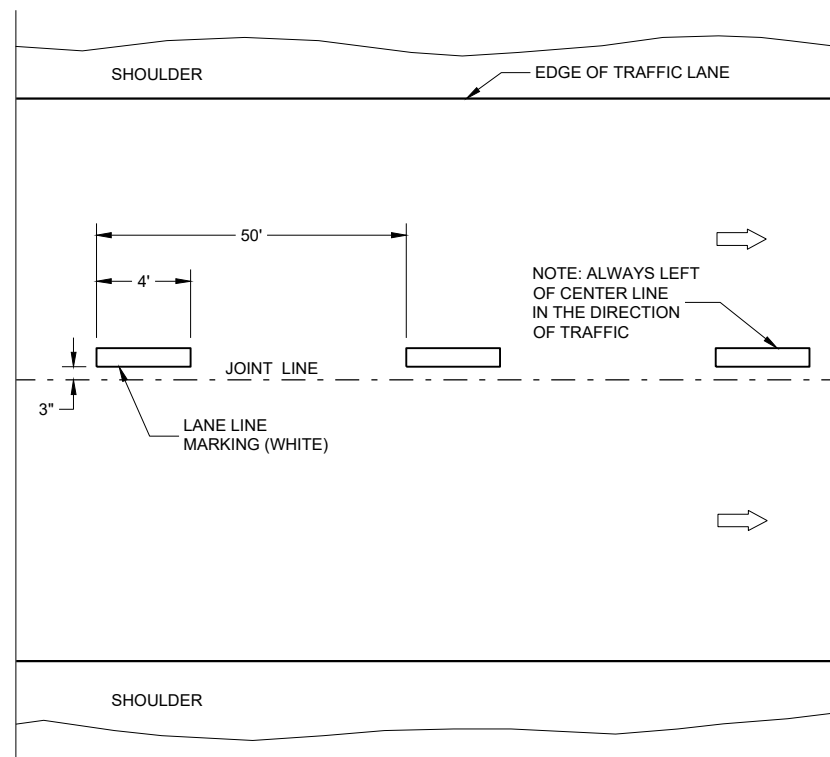


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

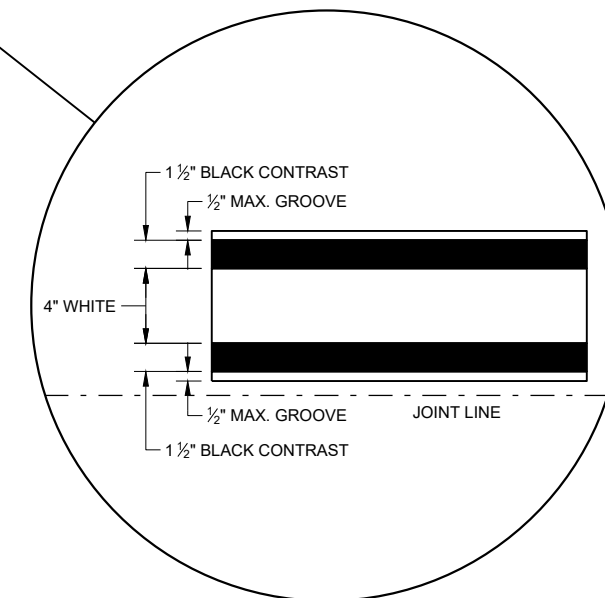
GENERAL NOTES

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

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

LEGEND

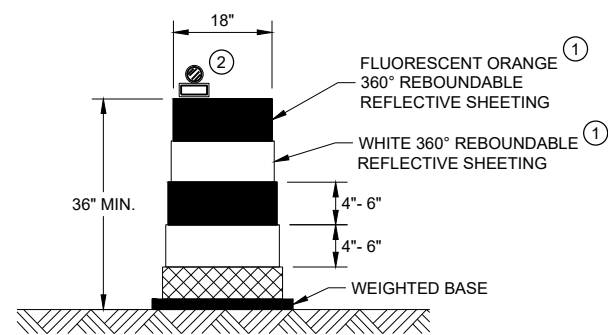
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



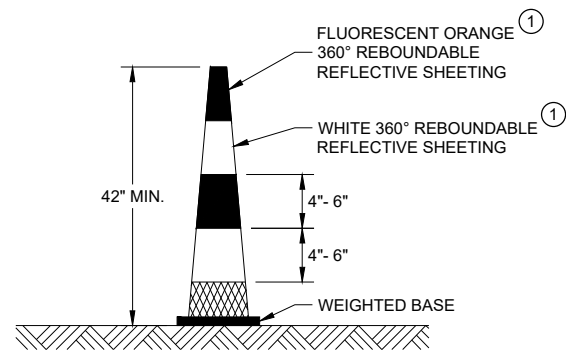
**LONGITUDINAL MARKING
(MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

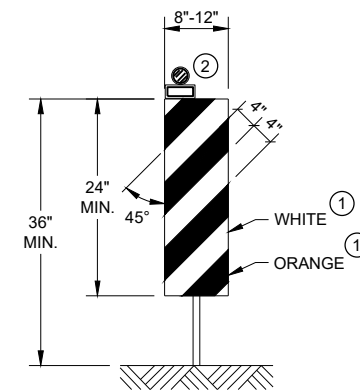


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

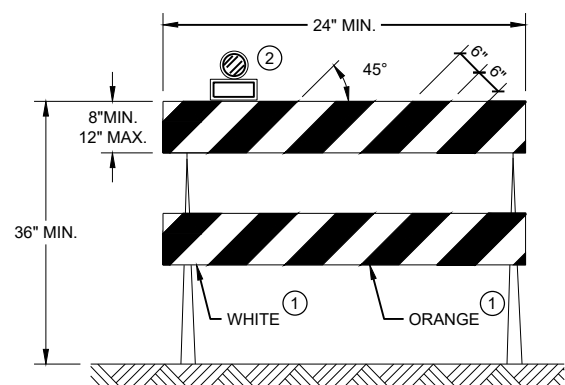


VERTICAL PANEL

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

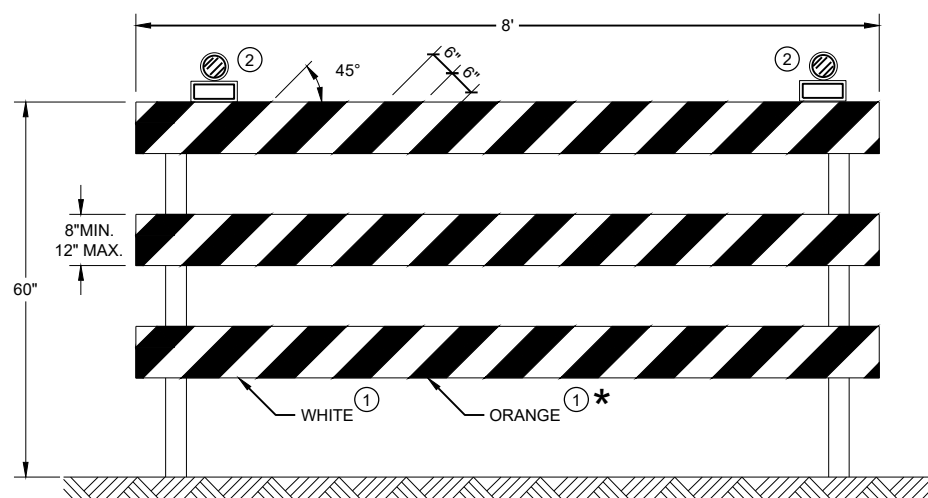
GENERAL NOTES

- 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.



TYPE II BARRICADE

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








TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	

LEGEND

-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

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

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

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

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

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

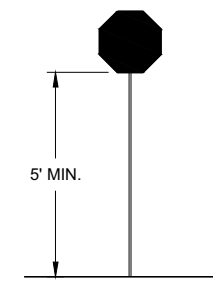
WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

- FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.
- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
 - ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.



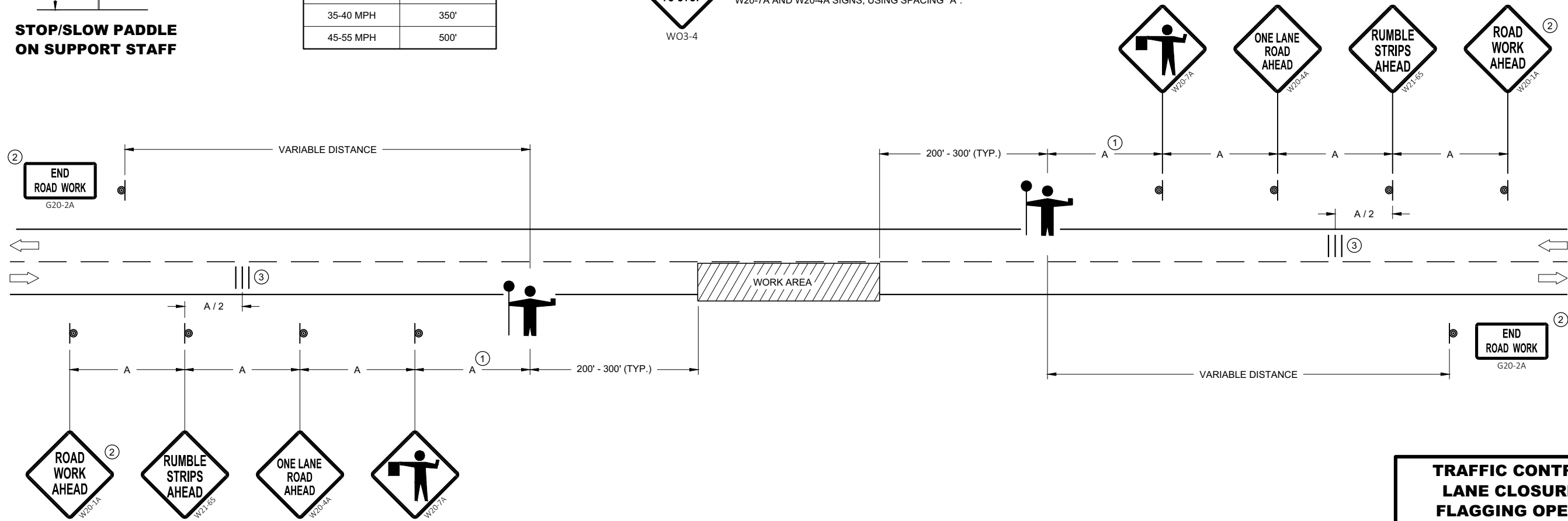
STOP/SLOW PADDLE ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



USE OF W03-4 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
DATE May 2019 /S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA





6

6

SDD 15C12 - 07

SDD 15C12 - 07

LEGEND

- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

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

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

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

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

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

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

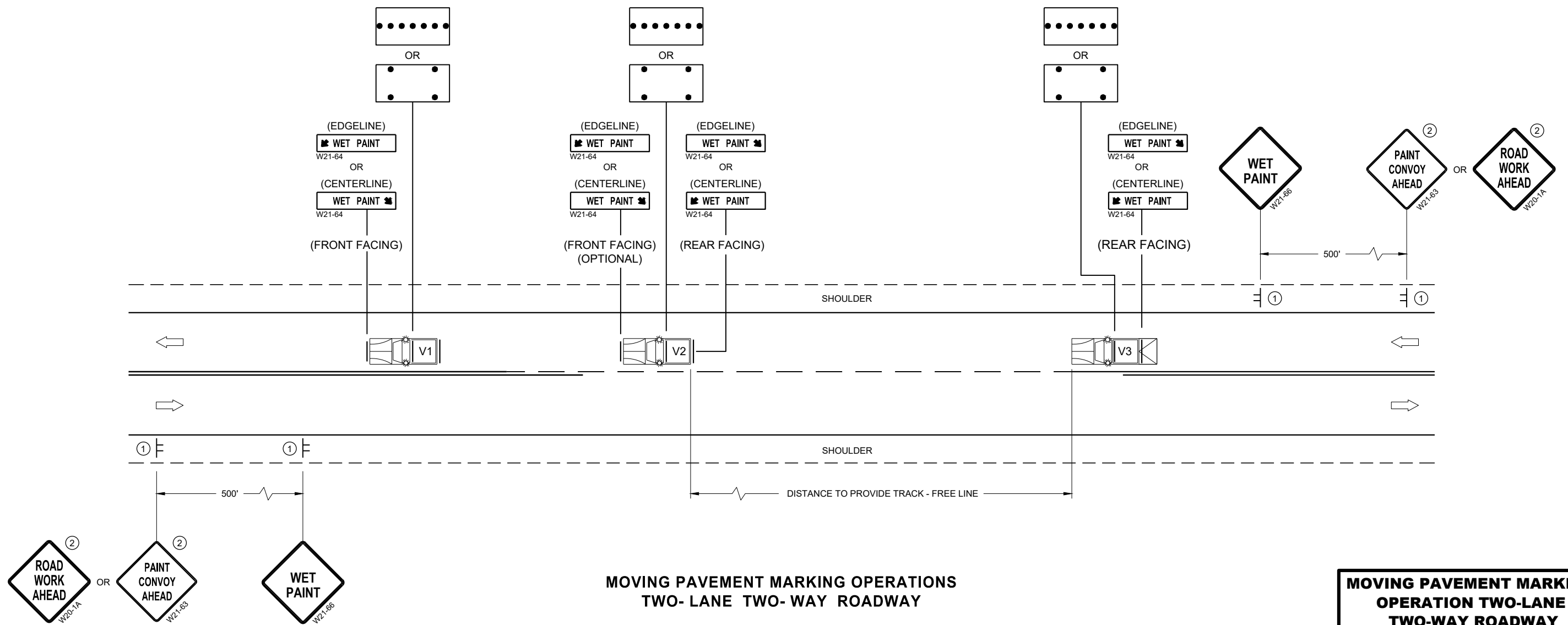
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

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

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.

6

6



**MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY**

SDD 15C19 - 06a

SDD 15C19 - 06a

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	

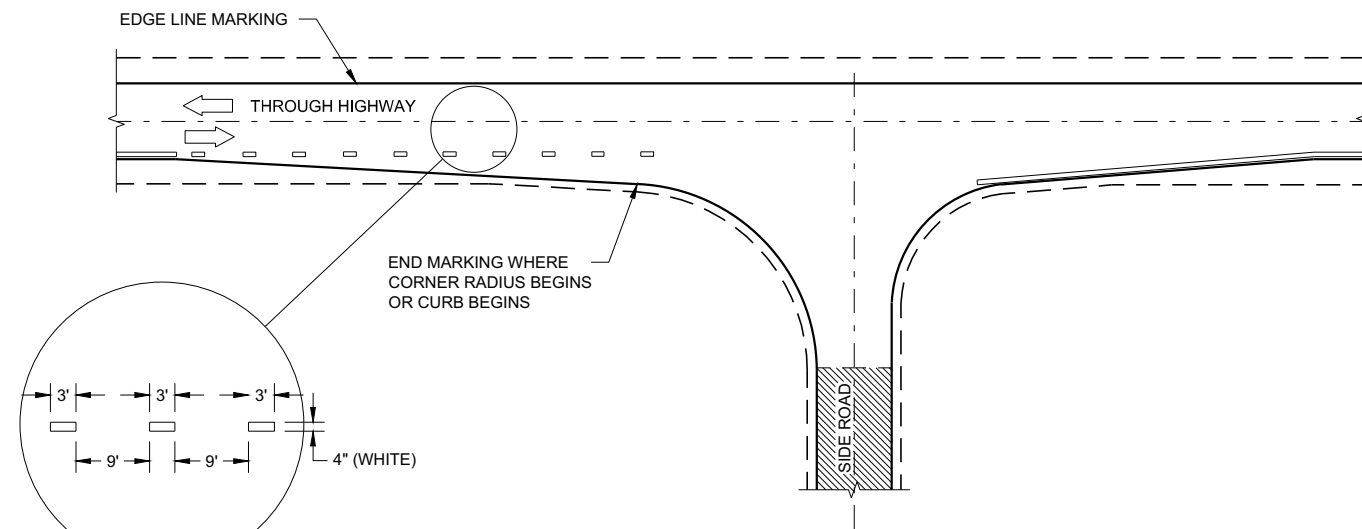
GENERAL NOTES

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

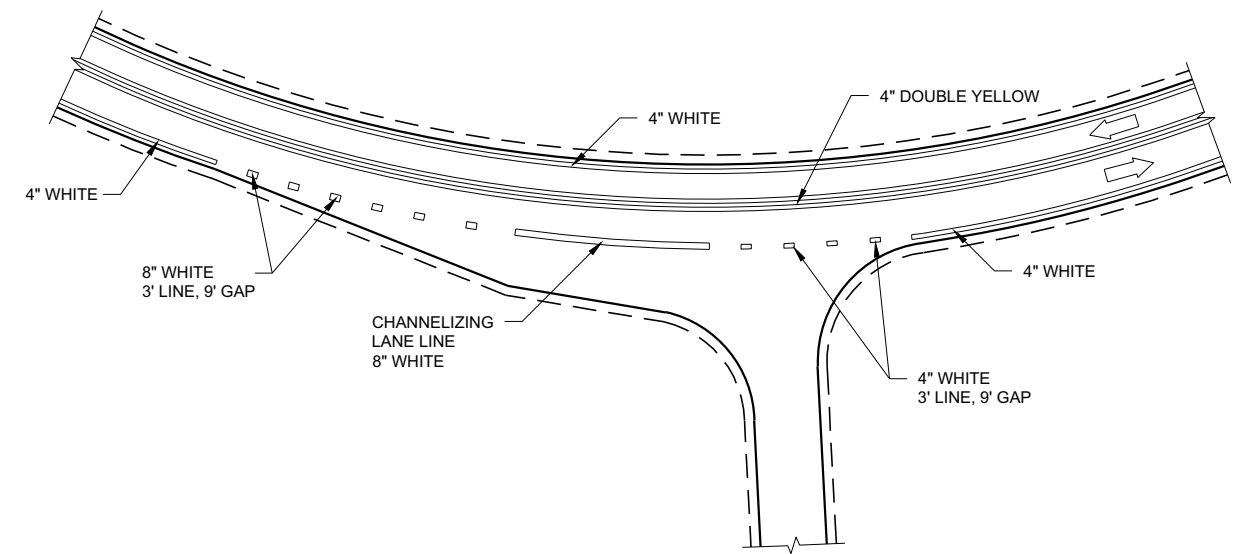
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

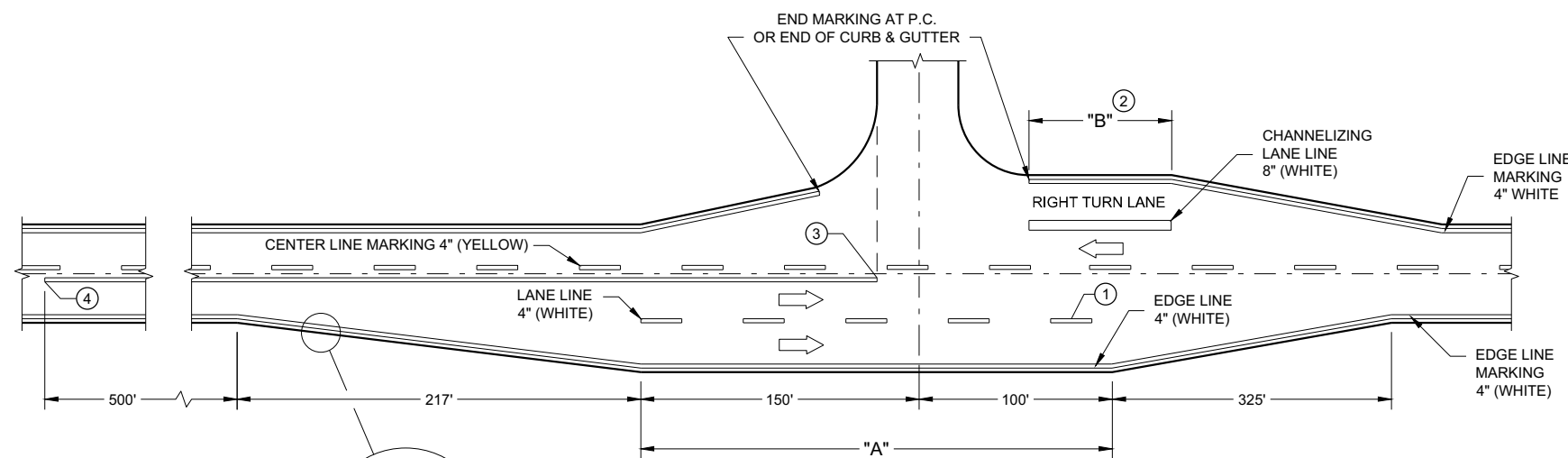
➡ DIRECTION OF TRAVEL



MINOR INTERSECTION



INTERSECTION ON OUTSIDE OF CURVE



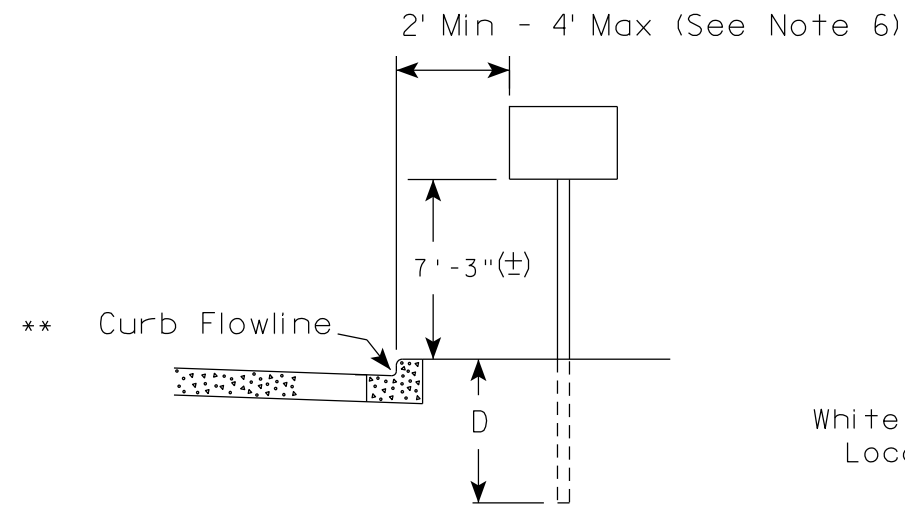
**MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)**

**PAVEMENT MARKING
(INTERSECTIONS)**

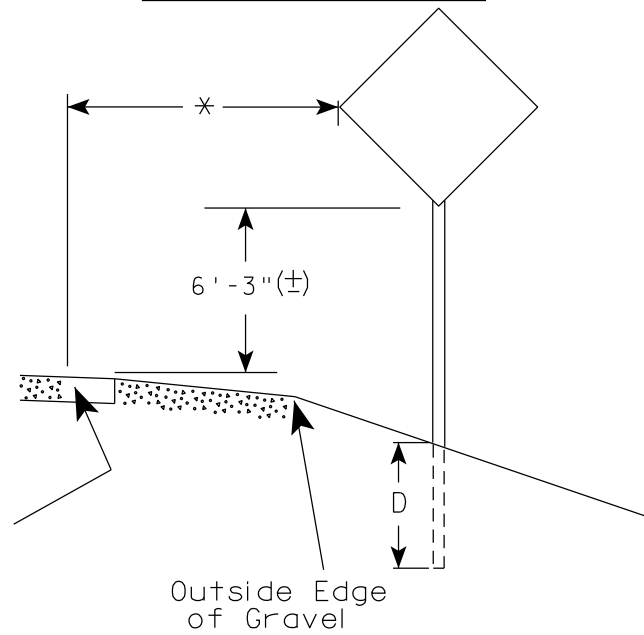
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

URBAN AREA

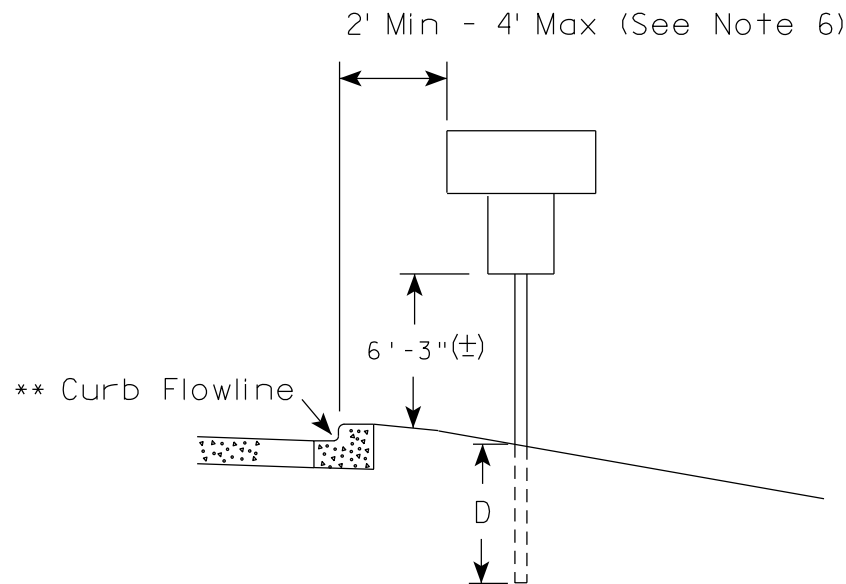
RURAL AREA (See Note 2)



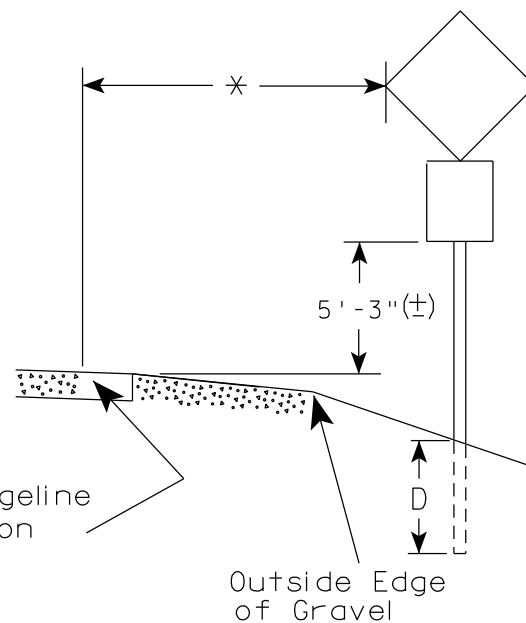
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

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 directed by the 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.

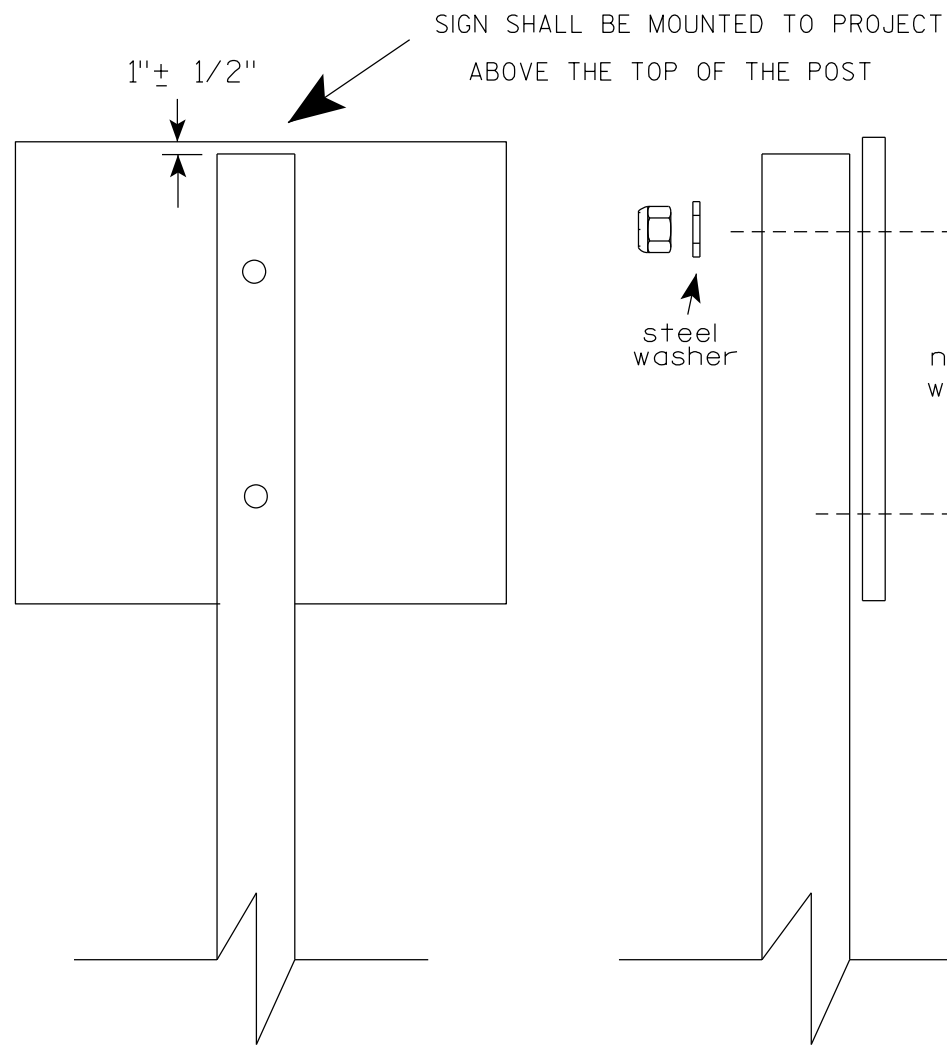
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

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



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

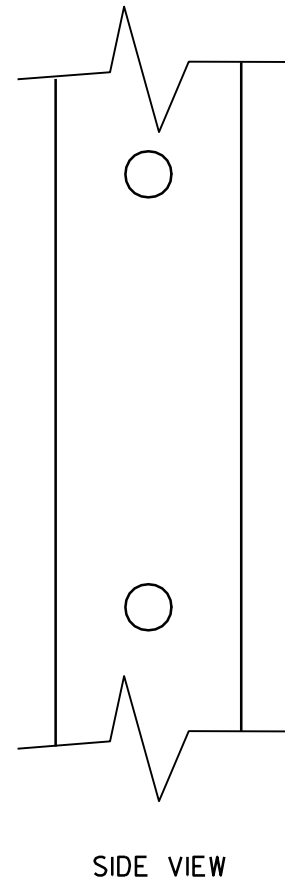
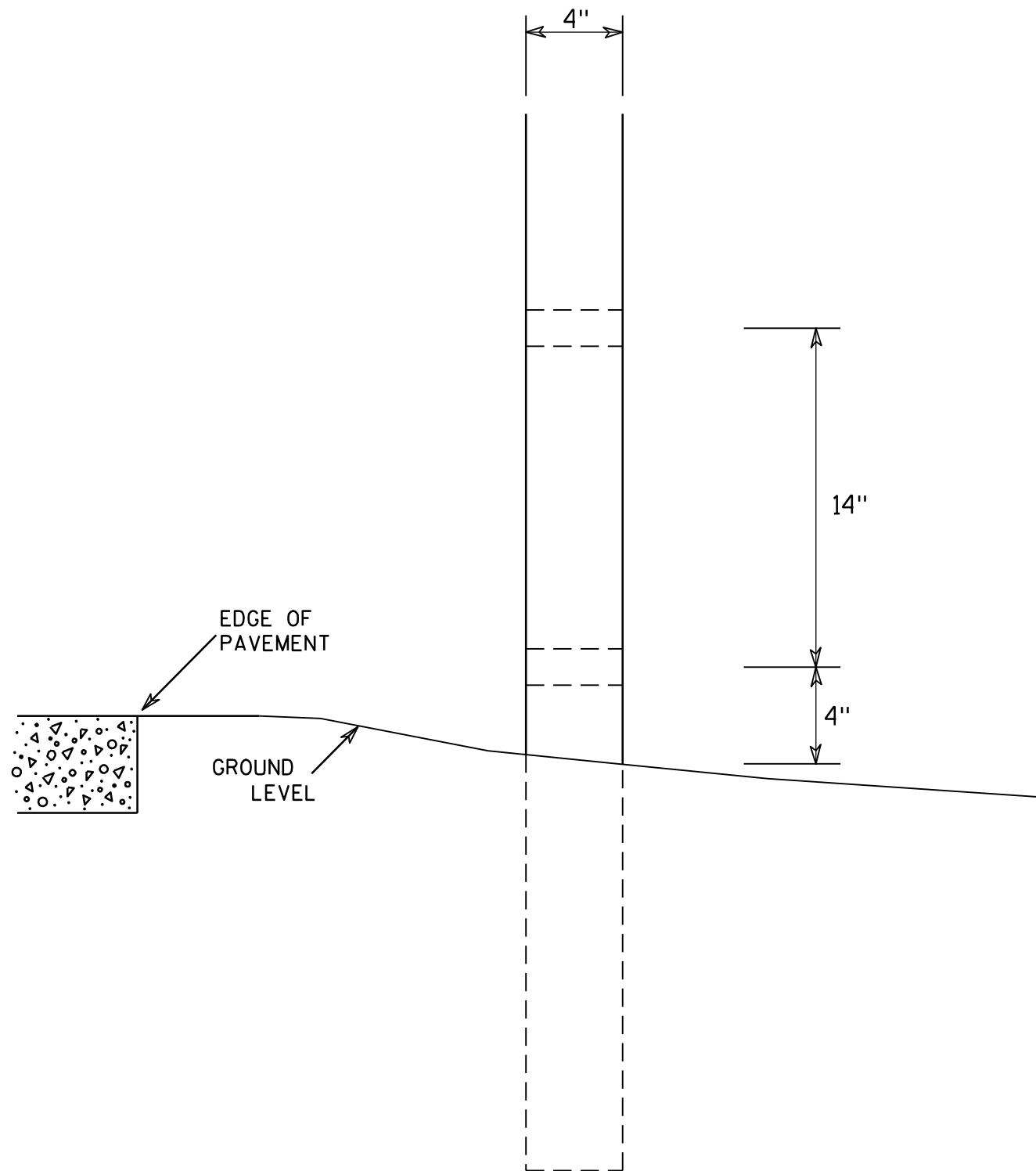
- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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 - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (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 $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " 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	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

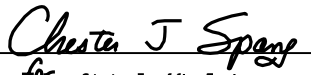


GENERAL NOTES

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

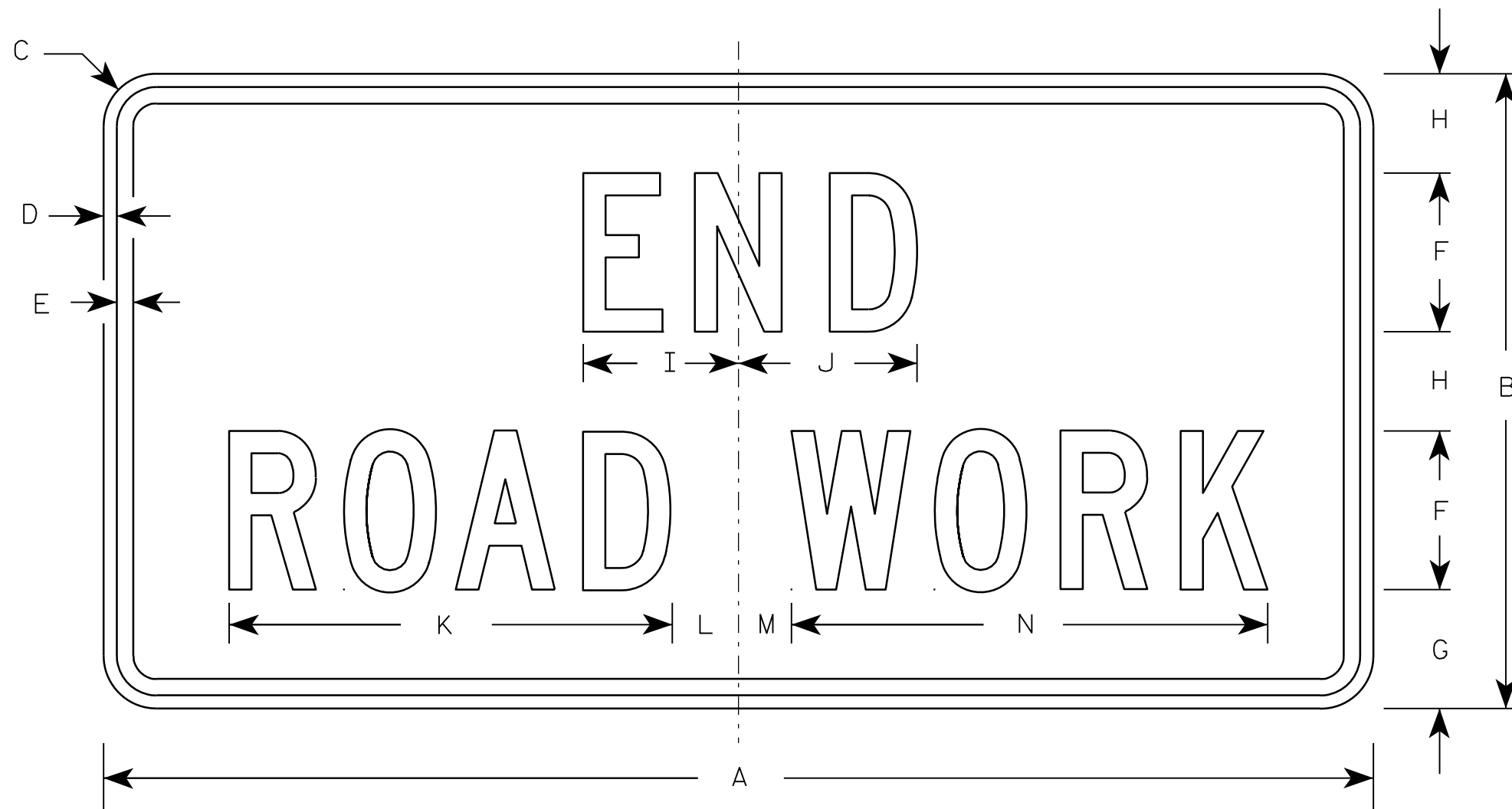
7

7

4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	 <small>for State Traffic Engineer</small>
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

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.



G20-2A

7

7

Metric equivalent for this sign is:

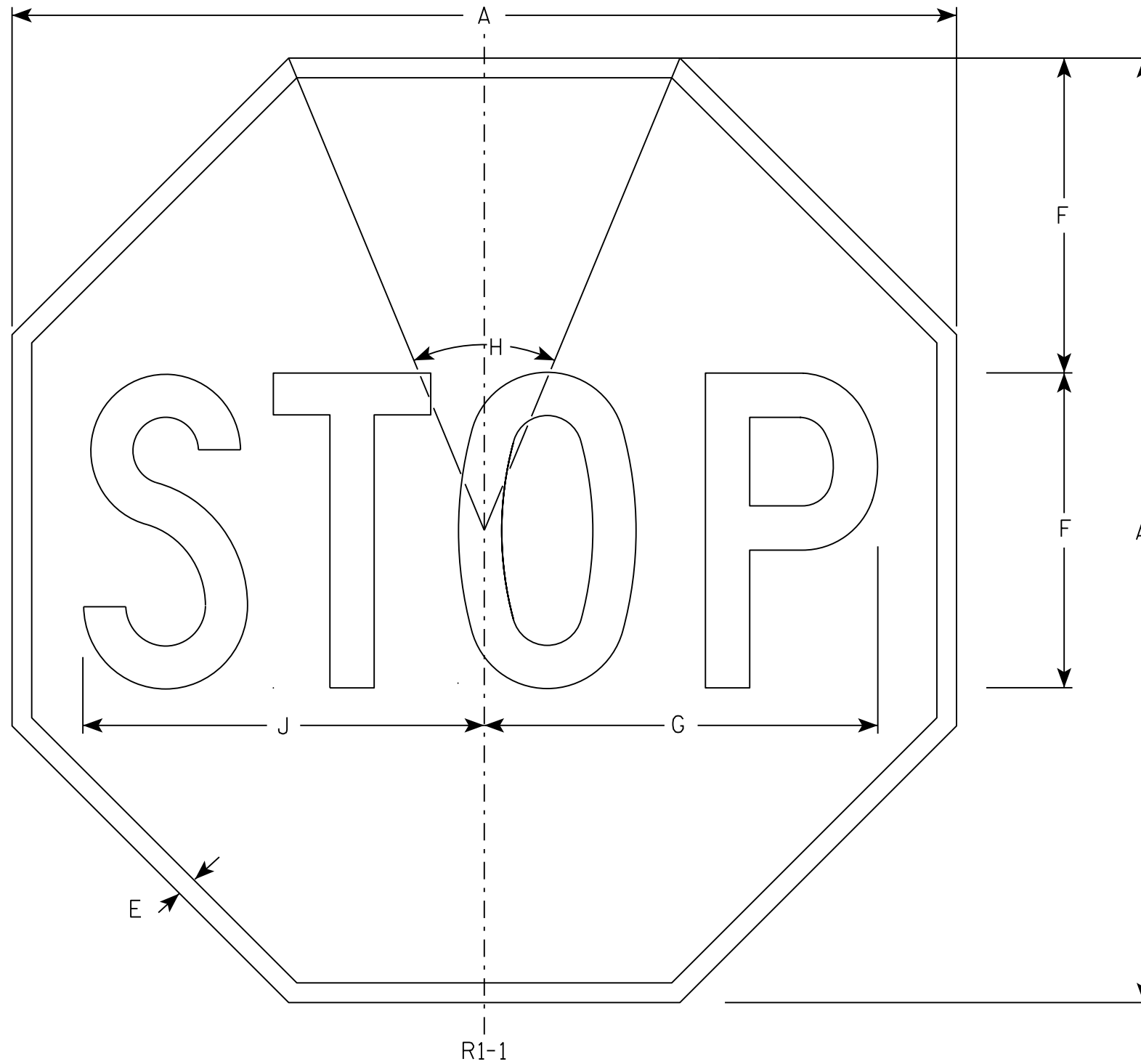
SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

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 sq. m.
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	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/30/09	PLATE NO. G20-2A.8

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Red
Message - White
3. Message Series - C



R1-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

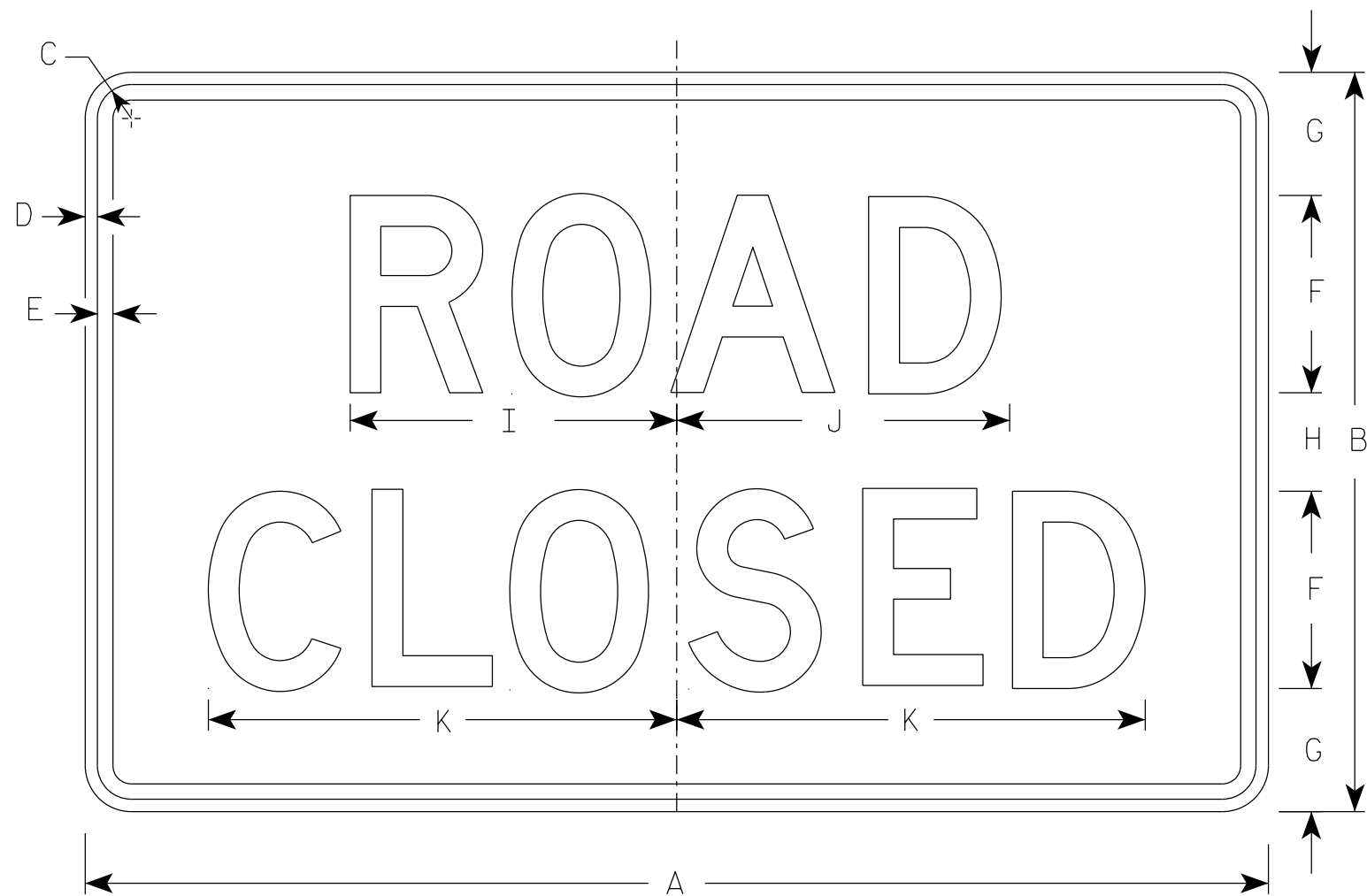
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

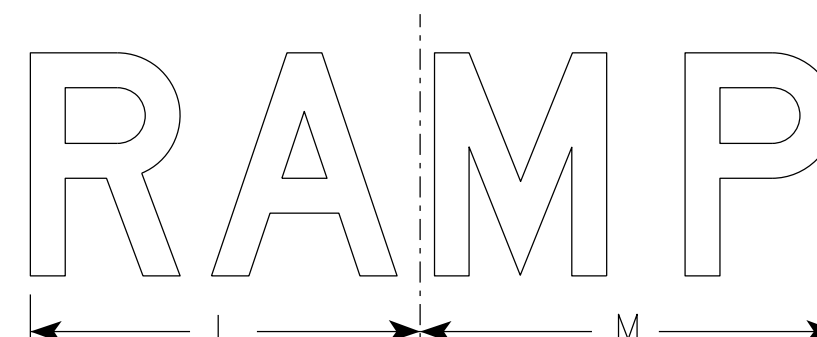
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

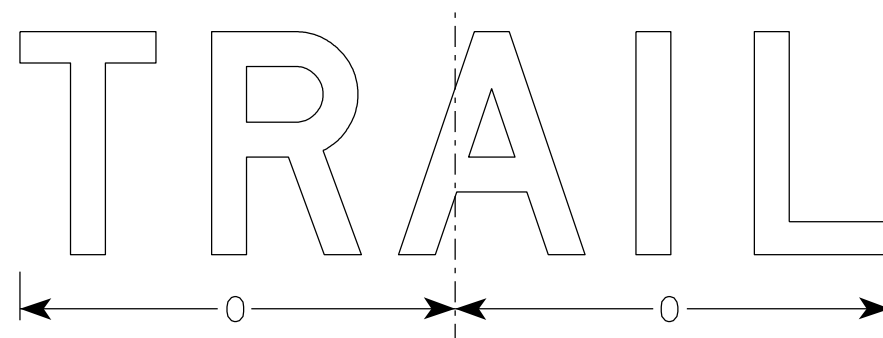
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



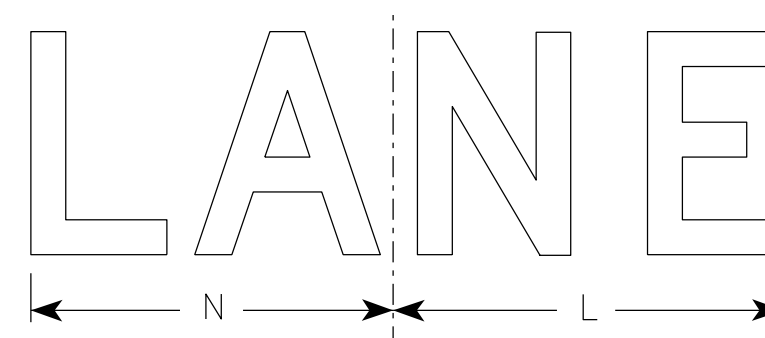
R11-2



R11-2R



R11-2T



R11-2L

NOTES

1. Sign is Type II - Type H Reflective
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.

7

7

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	15 5/8												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	15 5/8												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	15 5/8												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	15 5/8												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	15 5/8												10.0

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

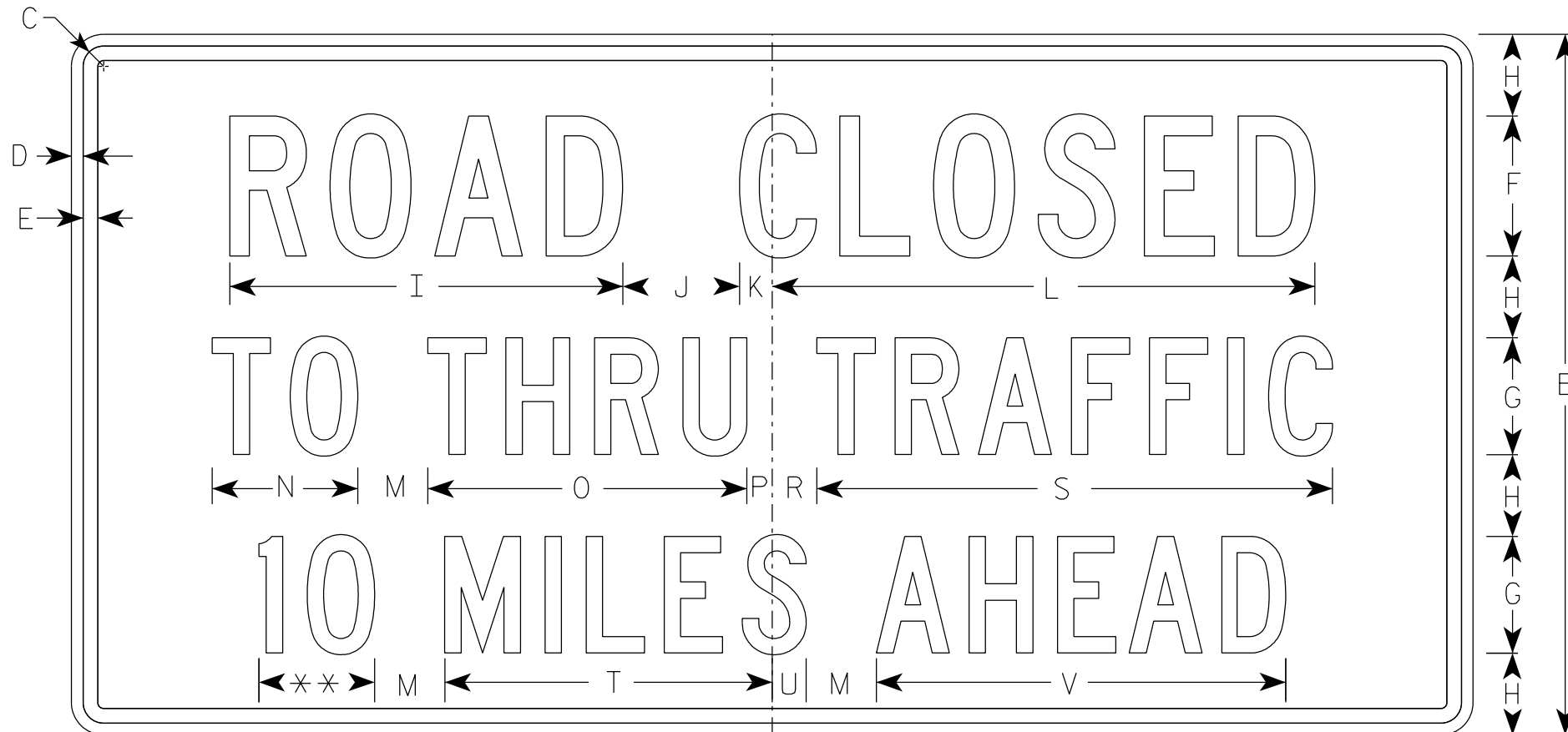
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

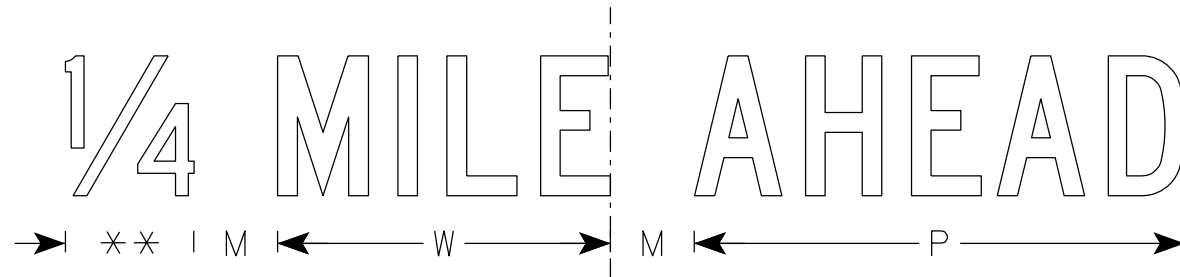
NOTES

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



R11-3

** See Note 5



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/4	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8			4.5	
2S	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8			12.5	
2M	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8			12.5	
3																											
4																											
5																											

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

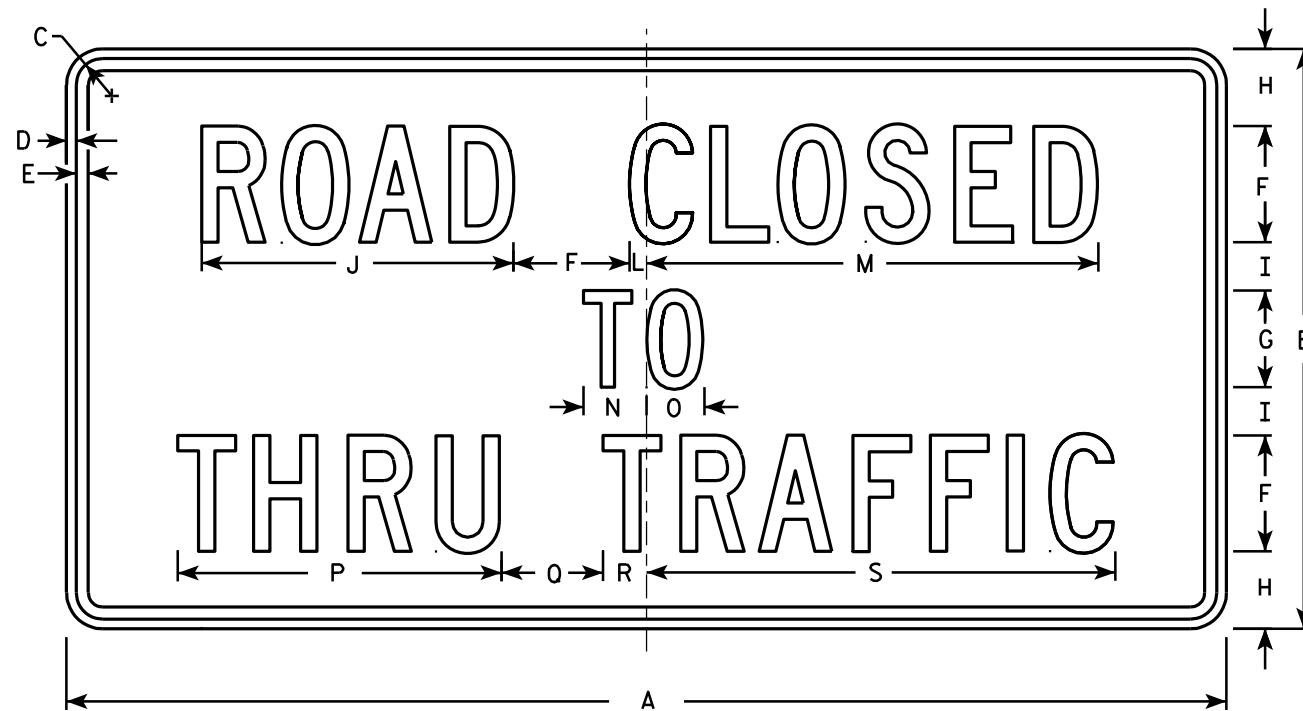
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/14/2021 PLATE NO. R11-3.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

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 - 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.



R11-4

7

7

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	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

STANDARD SIGN
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

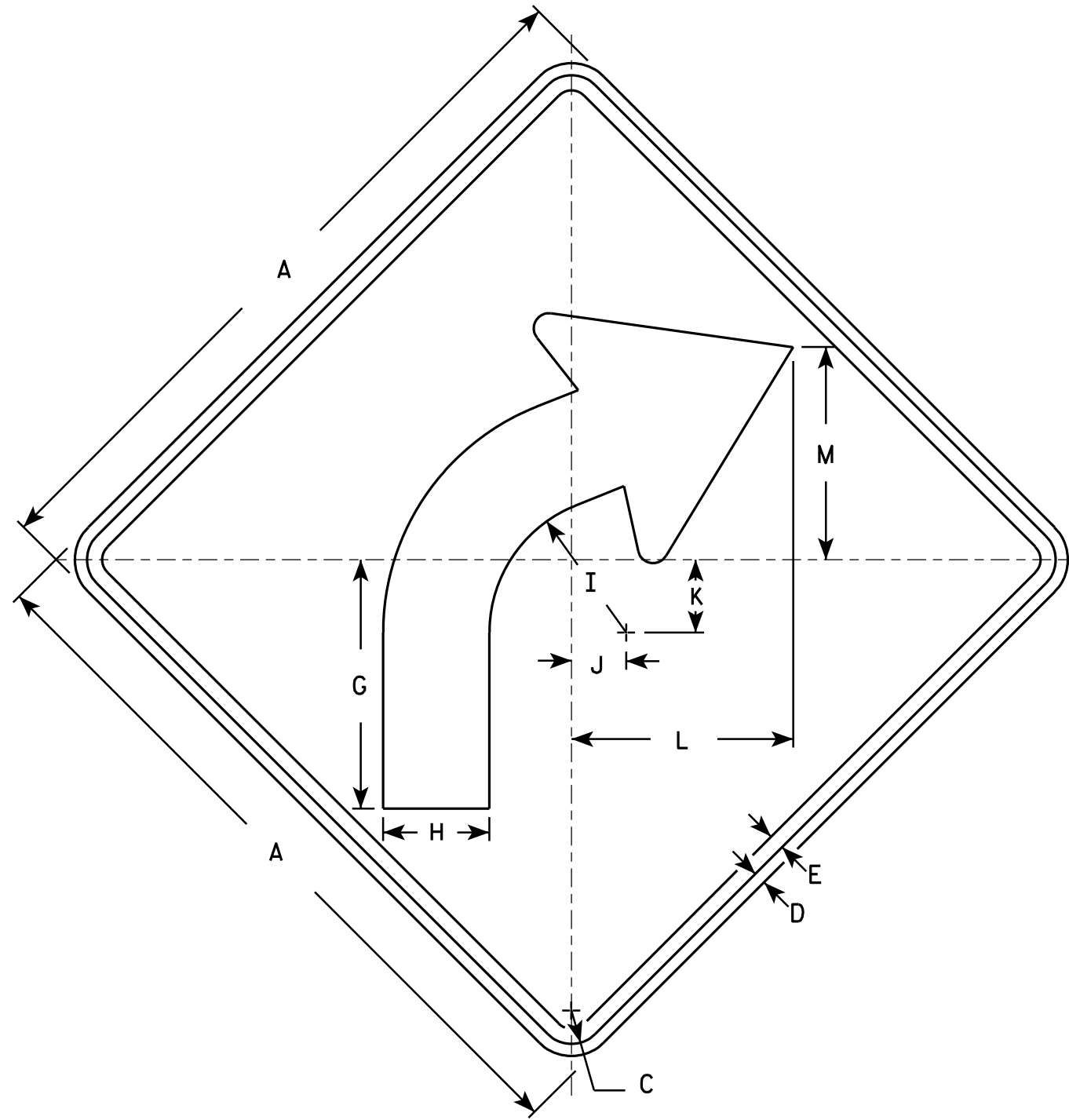
APPROVED *Matthew R. Raush*
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-4.3

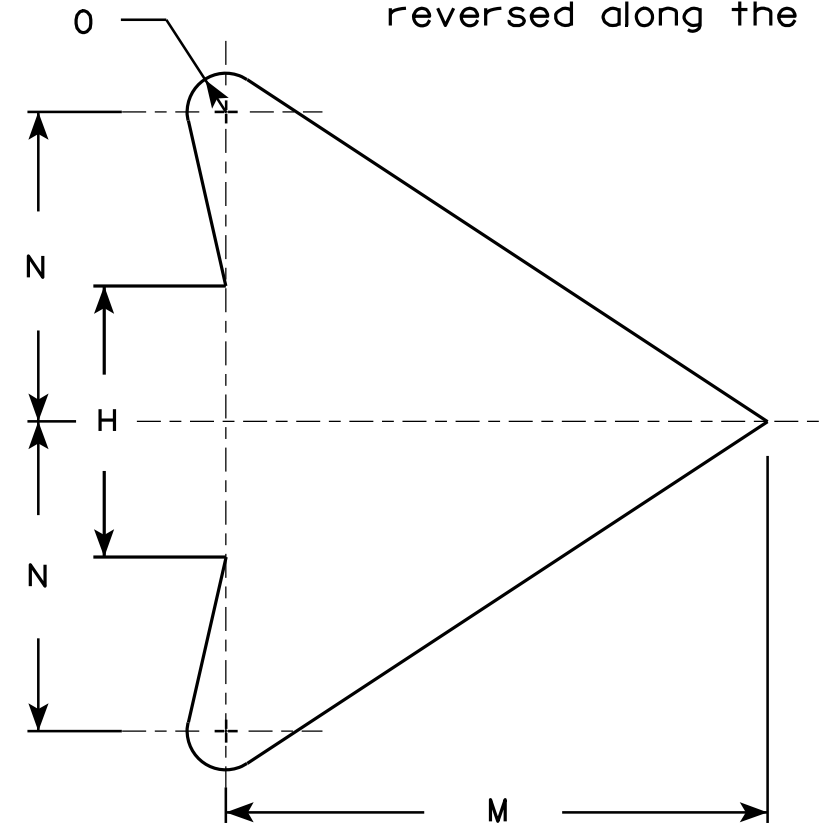
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
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.
4. W1-2L is the same as W1-2R except the arrow is reversed along the vertical centerline.



W1-2R



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
3	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
4	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
5	48		2 1/4	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

STANDARD SIGN
W1-2

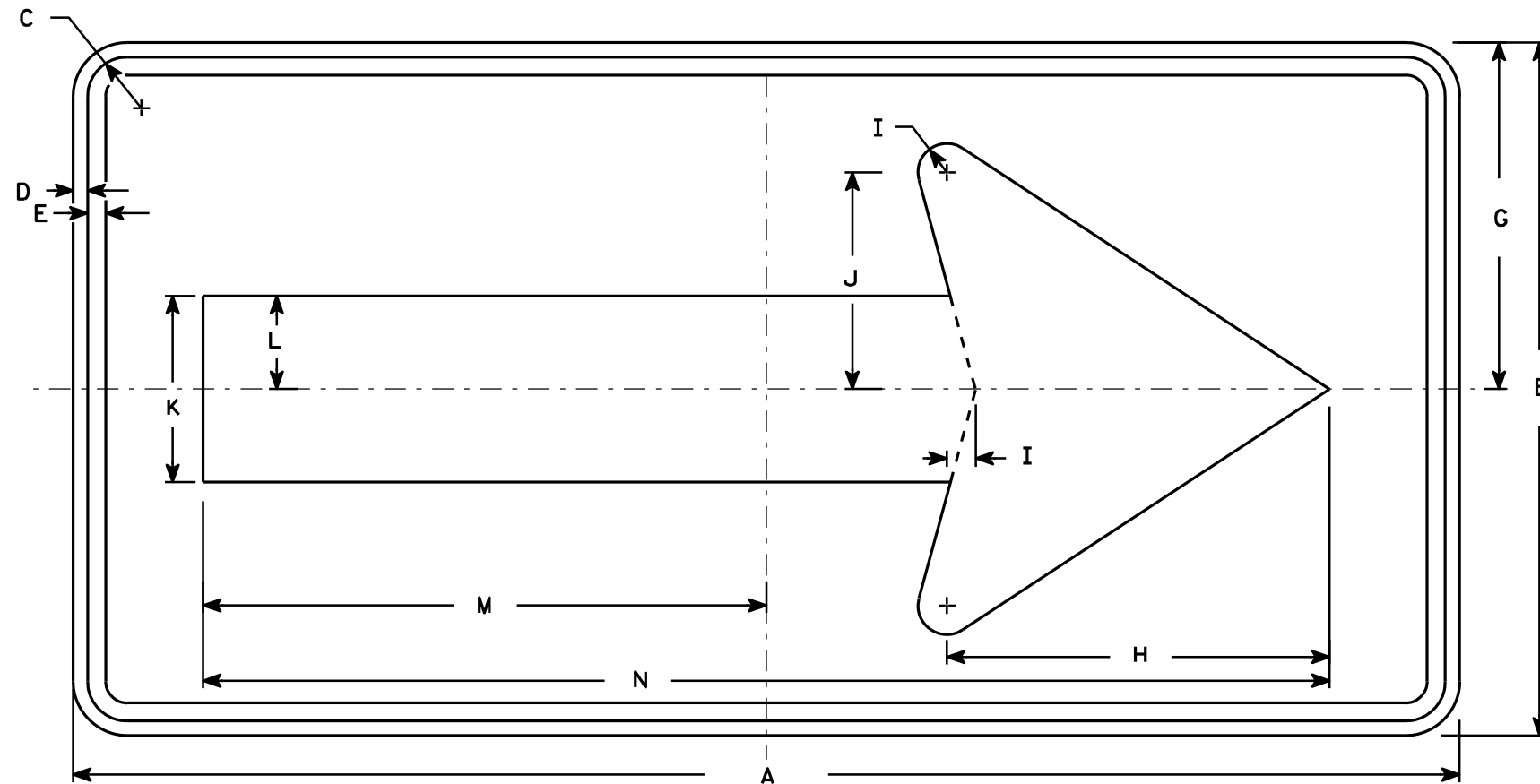
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
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.



W1-6

7

7

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	18	1 1/8	3/8	3/8		9	10	3/4	5 5/8	4 3/4	2 3/8	14 5/8	29 1/4													4.5
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	96	48	2 1/4	3/4	1		24	26 1/2	2	15	13	6 1/2	39	78													32.0

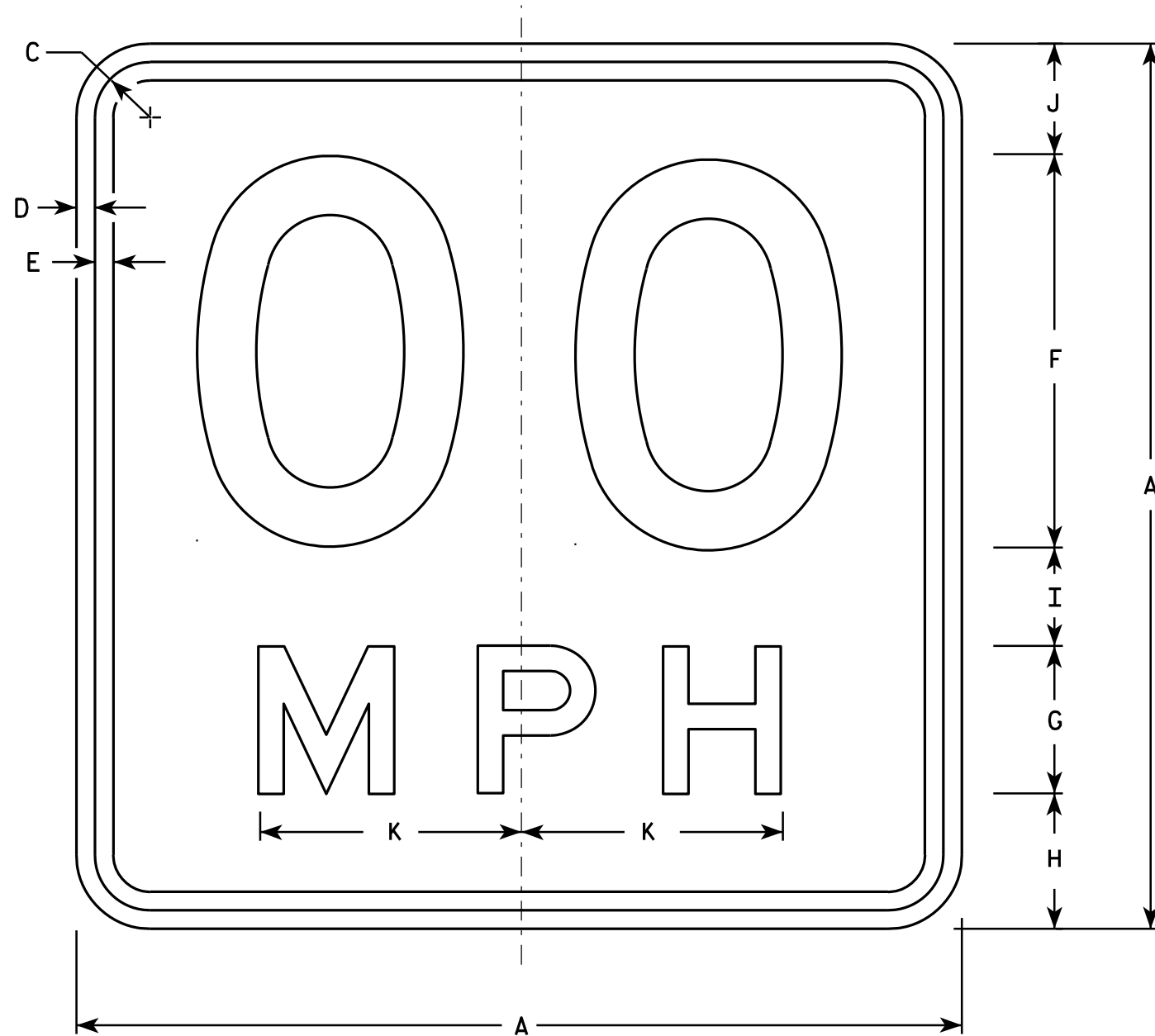
STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-6.8

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO:

HWY:

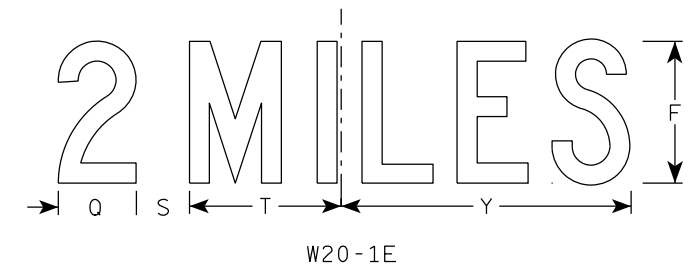
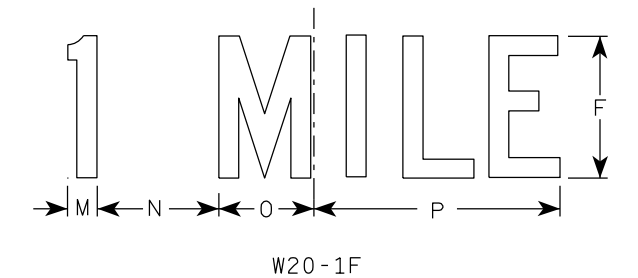
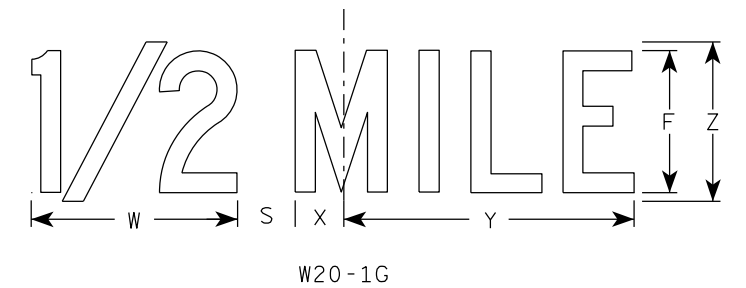
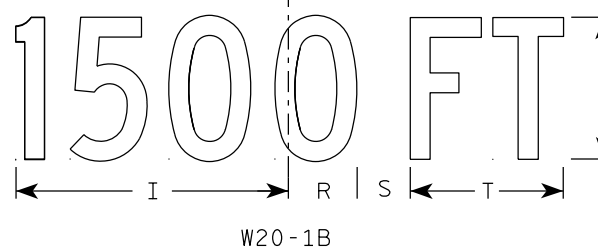
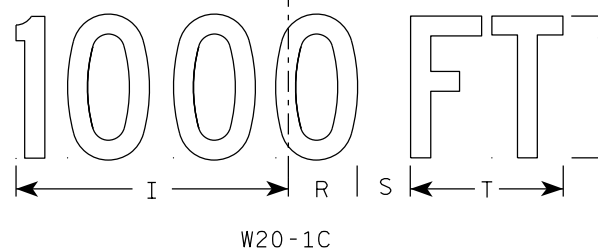
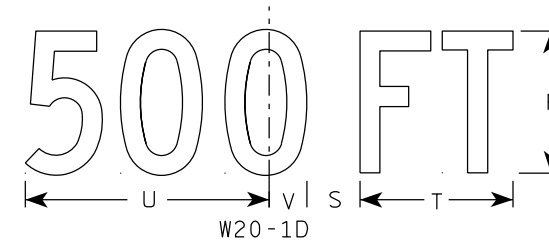
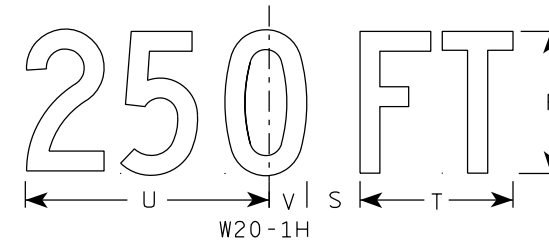
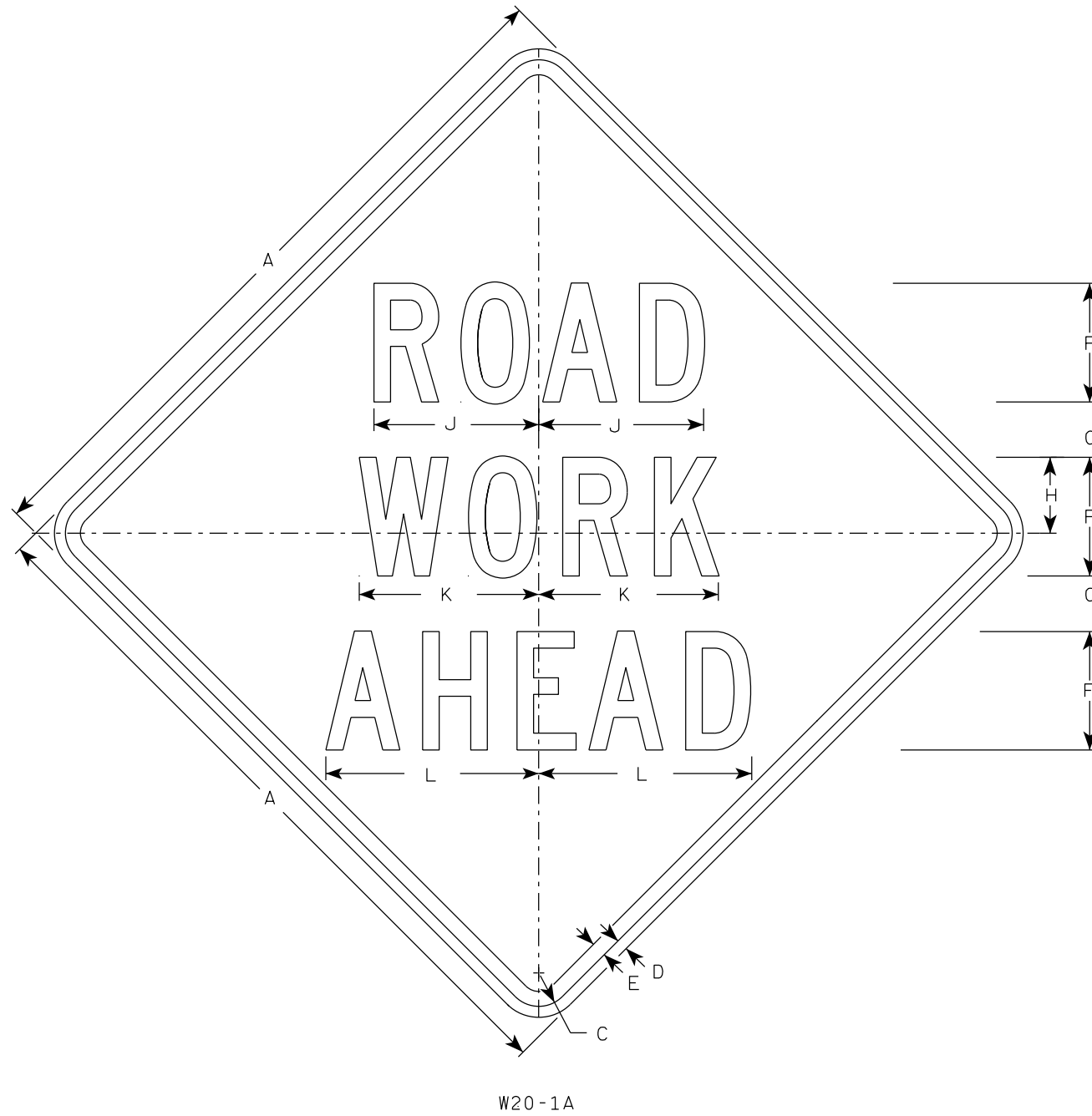
COUNTY:

SHEET NO:

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

W20-1C

W20-1B

W20-1G

W20-1F

W20-1E

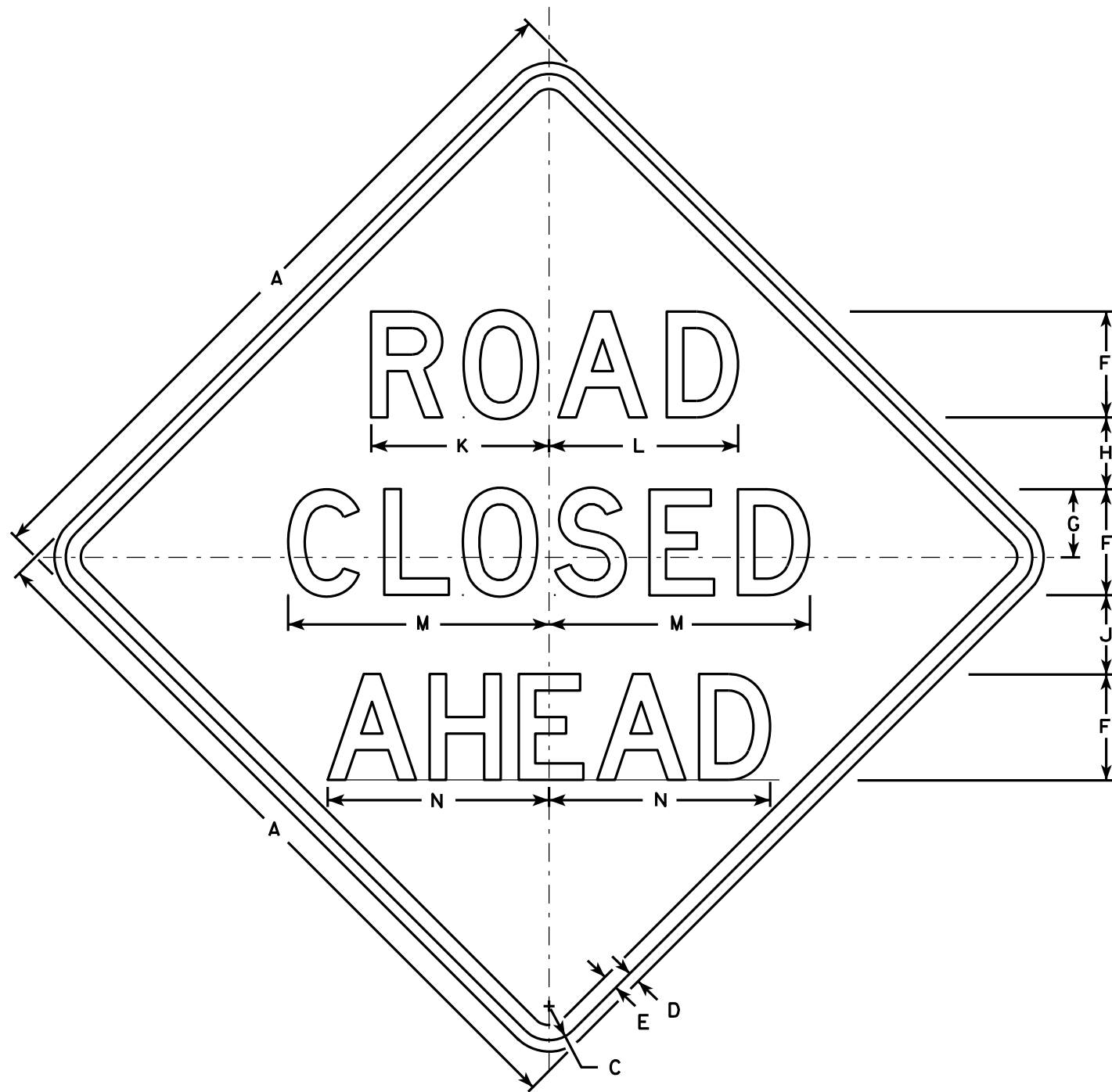
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8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

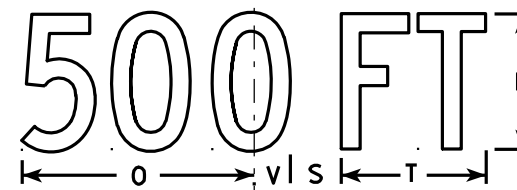
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

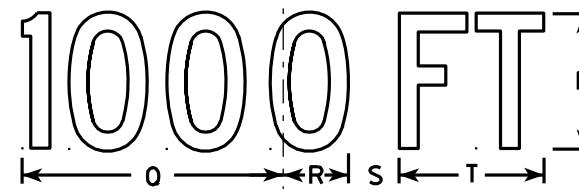
DATE 3/25/2020 PLATE NO. W20-1.11



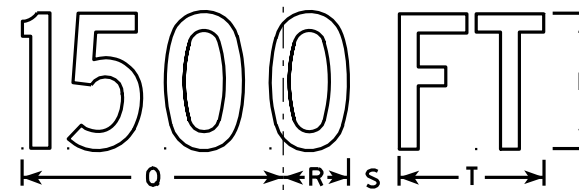
W20-3A



W20-3D



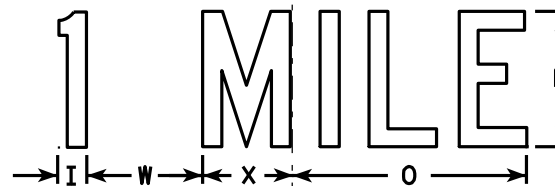
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

7

7

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 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

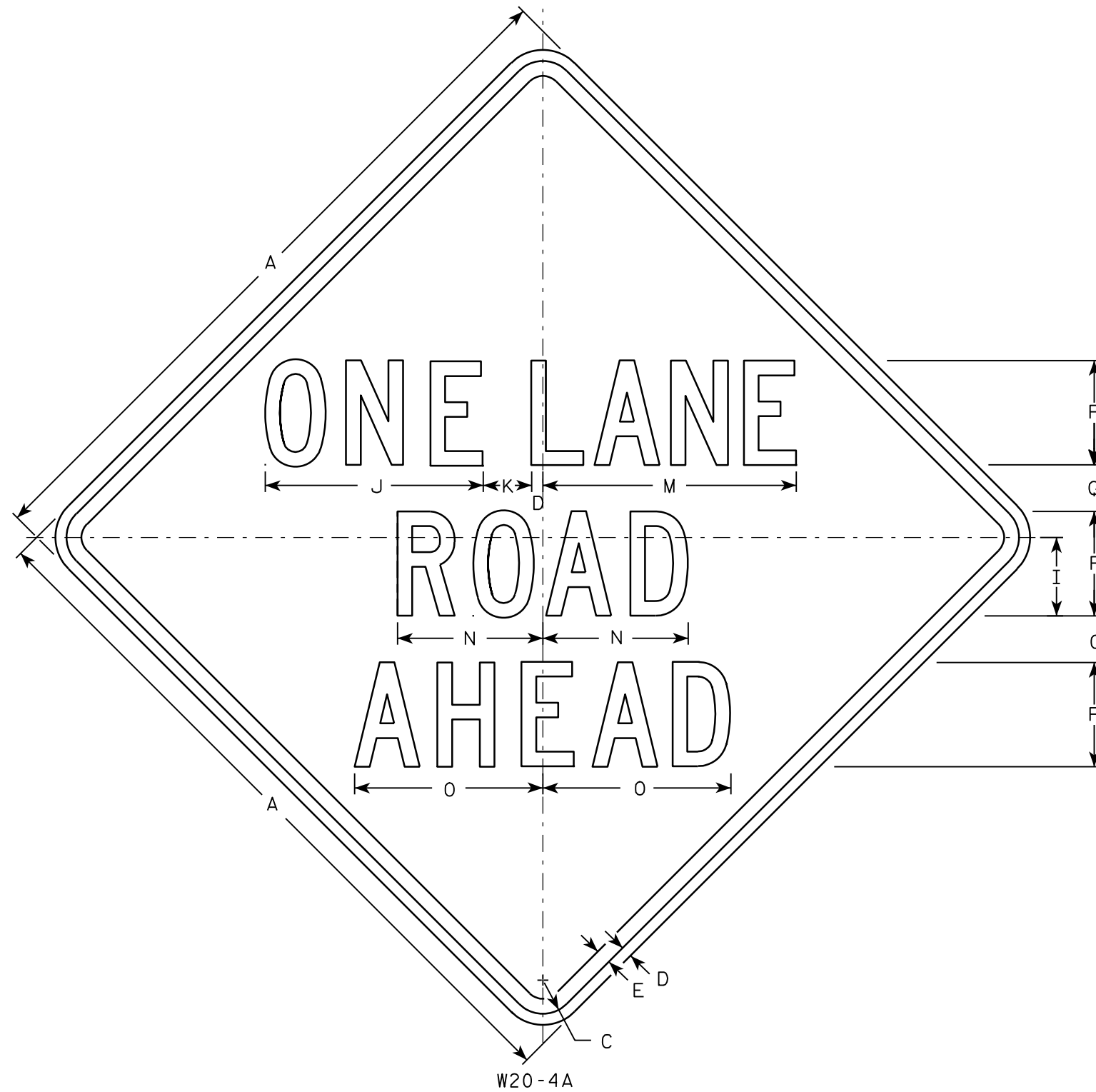
STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

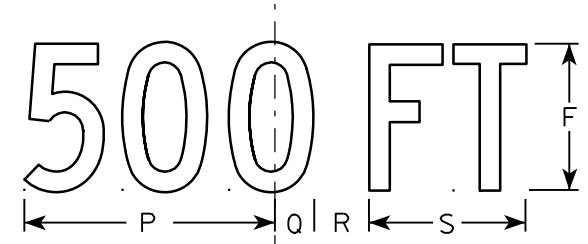
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

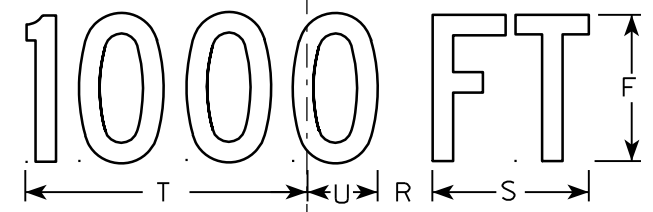
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



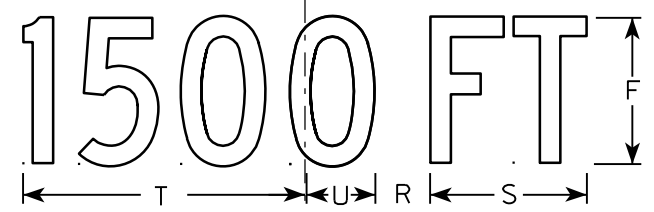
W20-4A



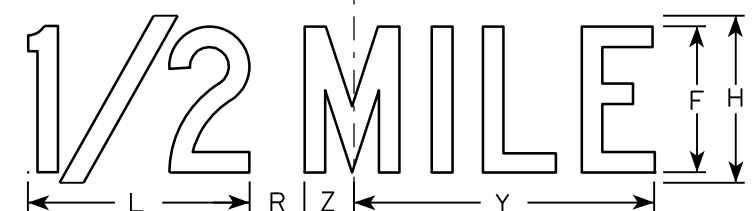
W20-4D



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.

7

7

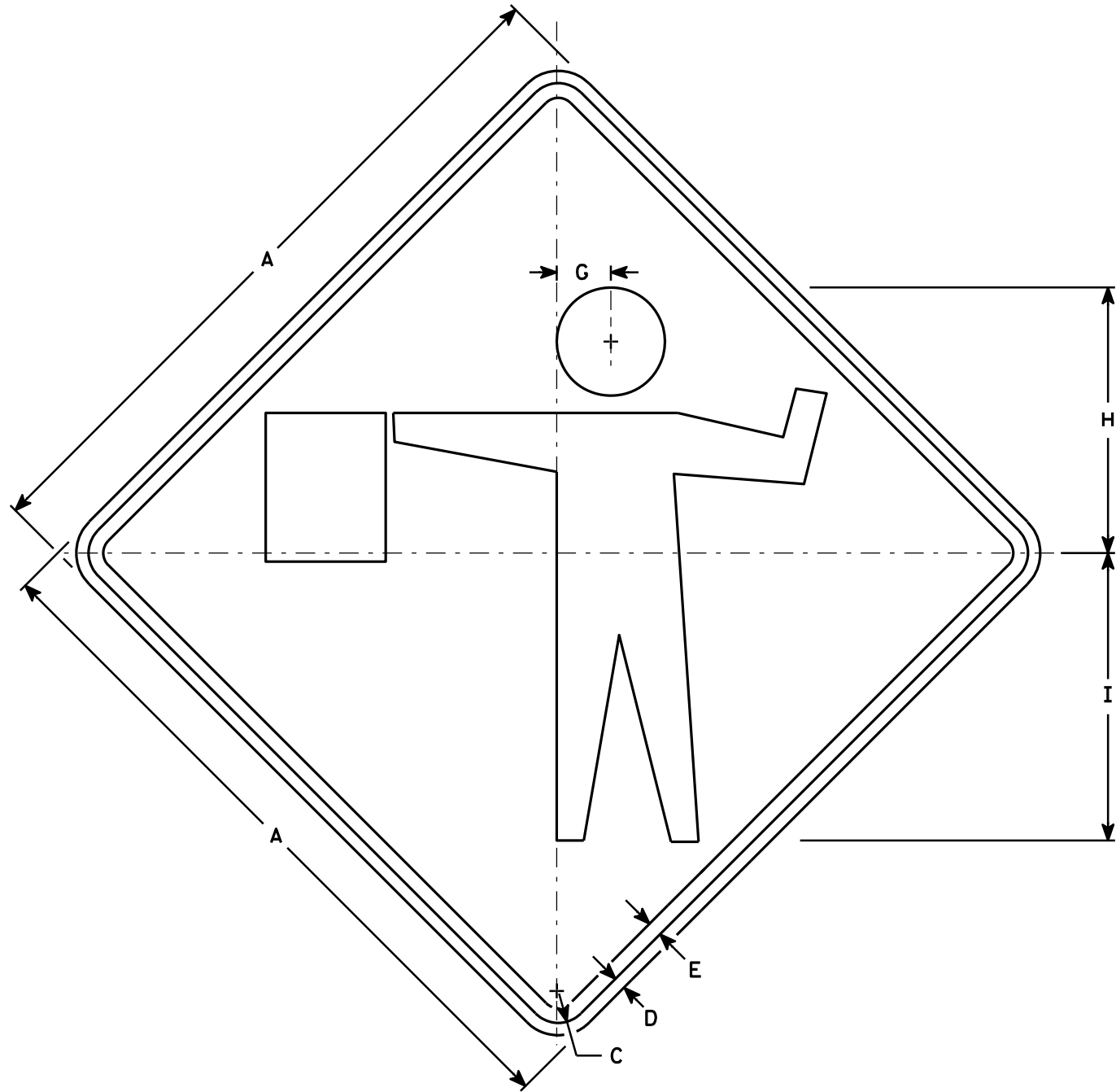
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 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



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.

7

7

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

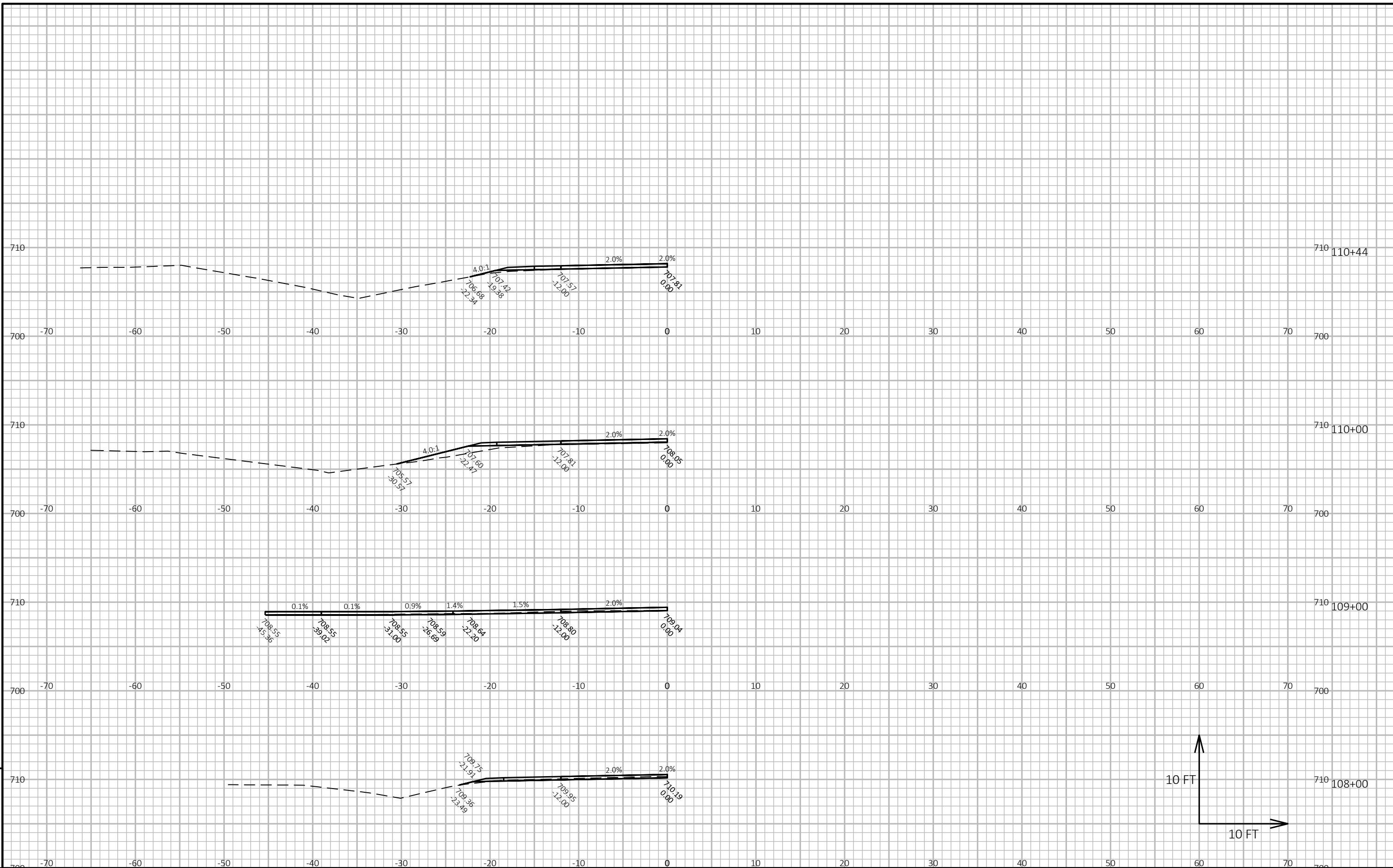
STANDARD SIGN
W20-7A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

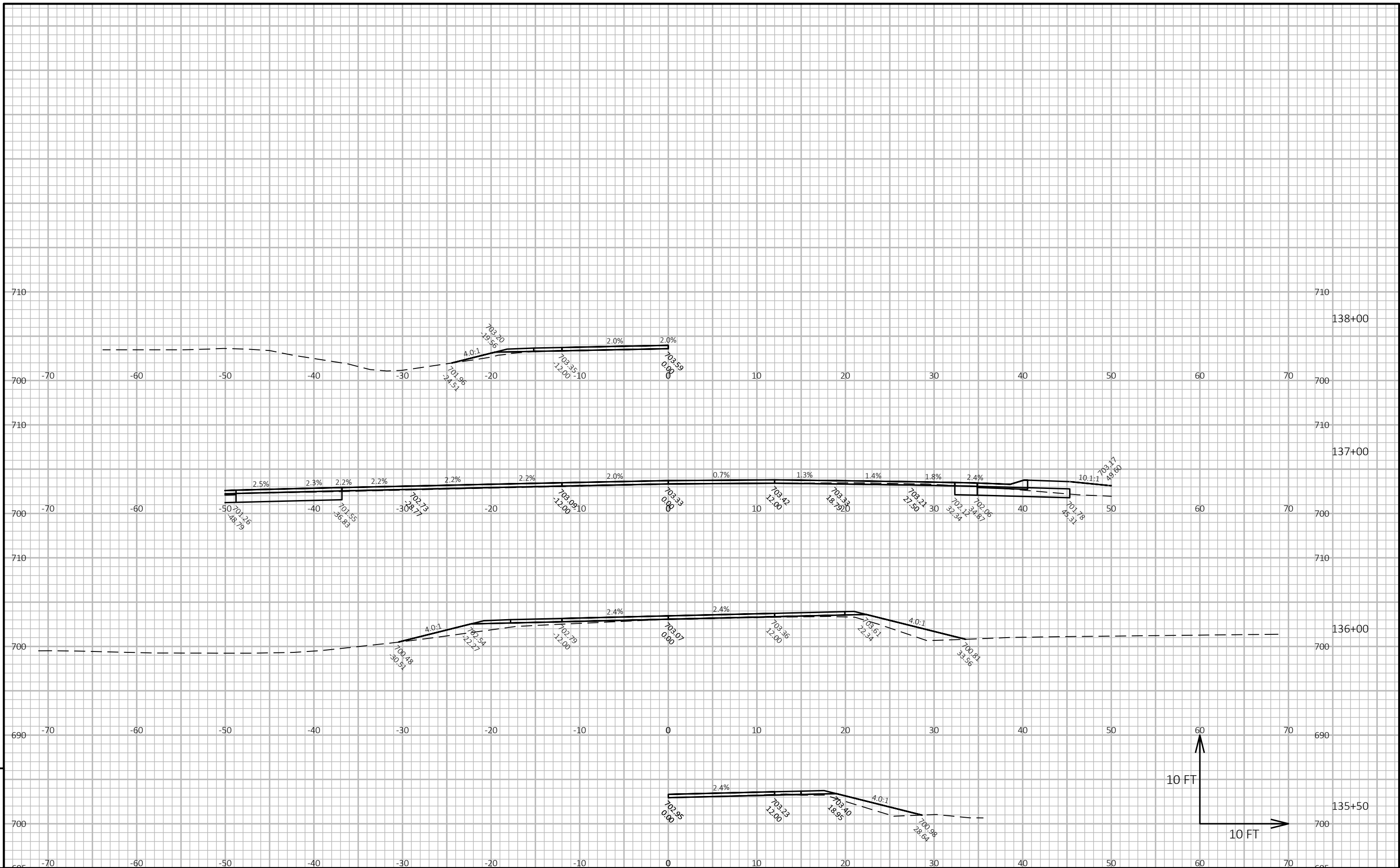
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



9

9

PROJECT NO: 9032-02-71	HWY: CTH I	COUNTY: OCONTO	CROSS SECTIONS: CTH I	SHEET	E
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PROJECT NO: 9032-02-71

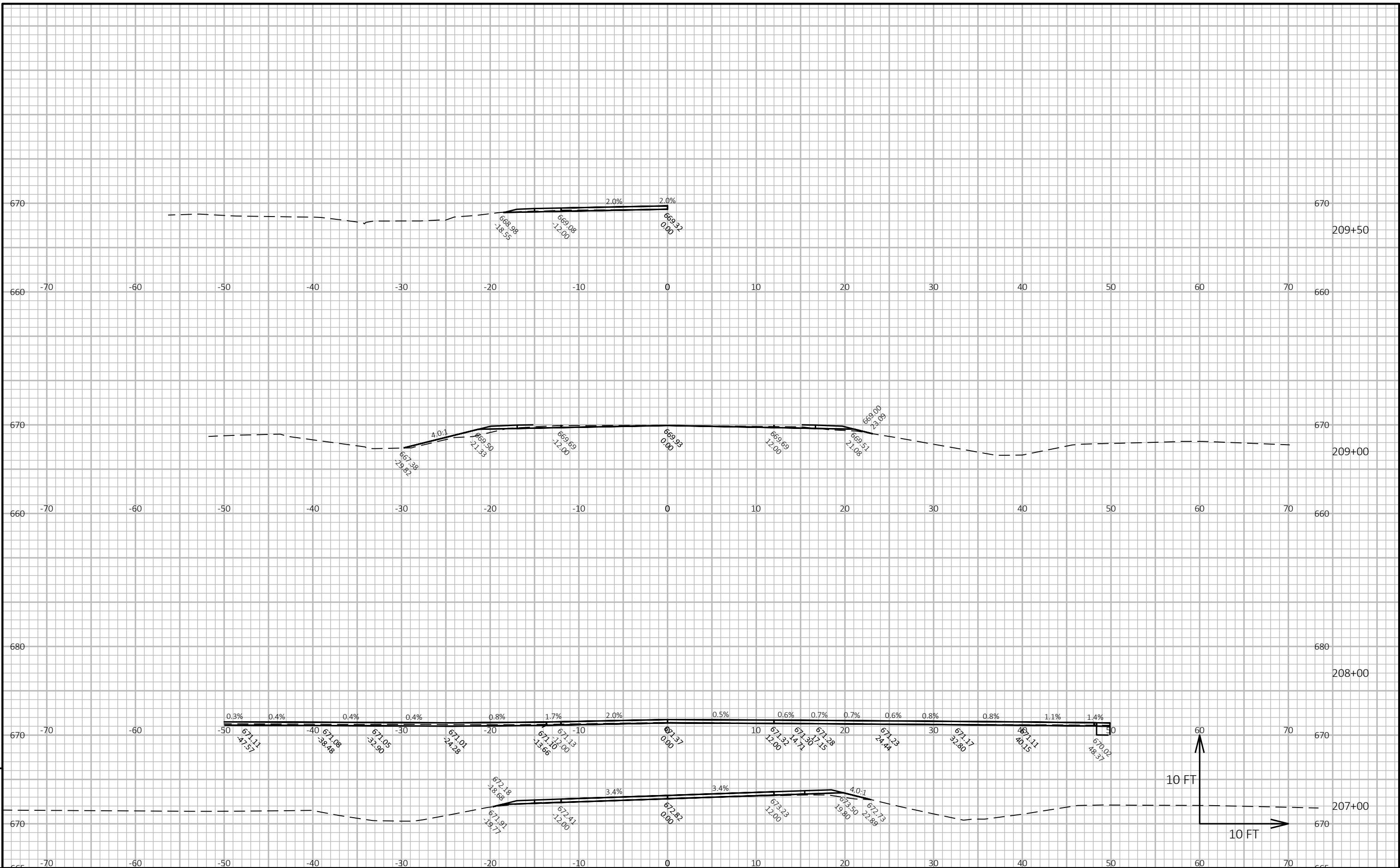
HWY: CTH I

COUNTY: OCONTO

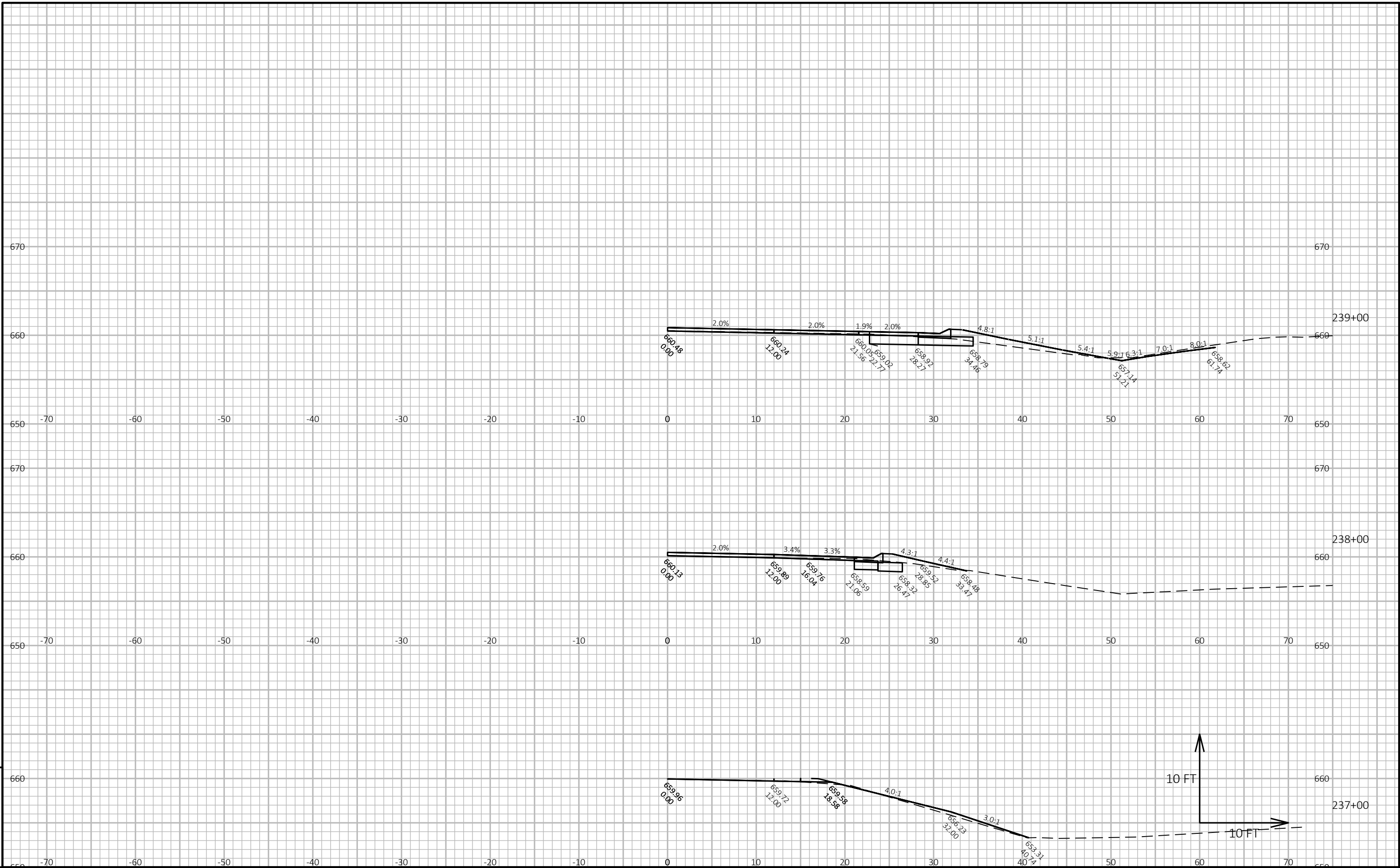
CROSS SECTIONS: CTH I

SHEET

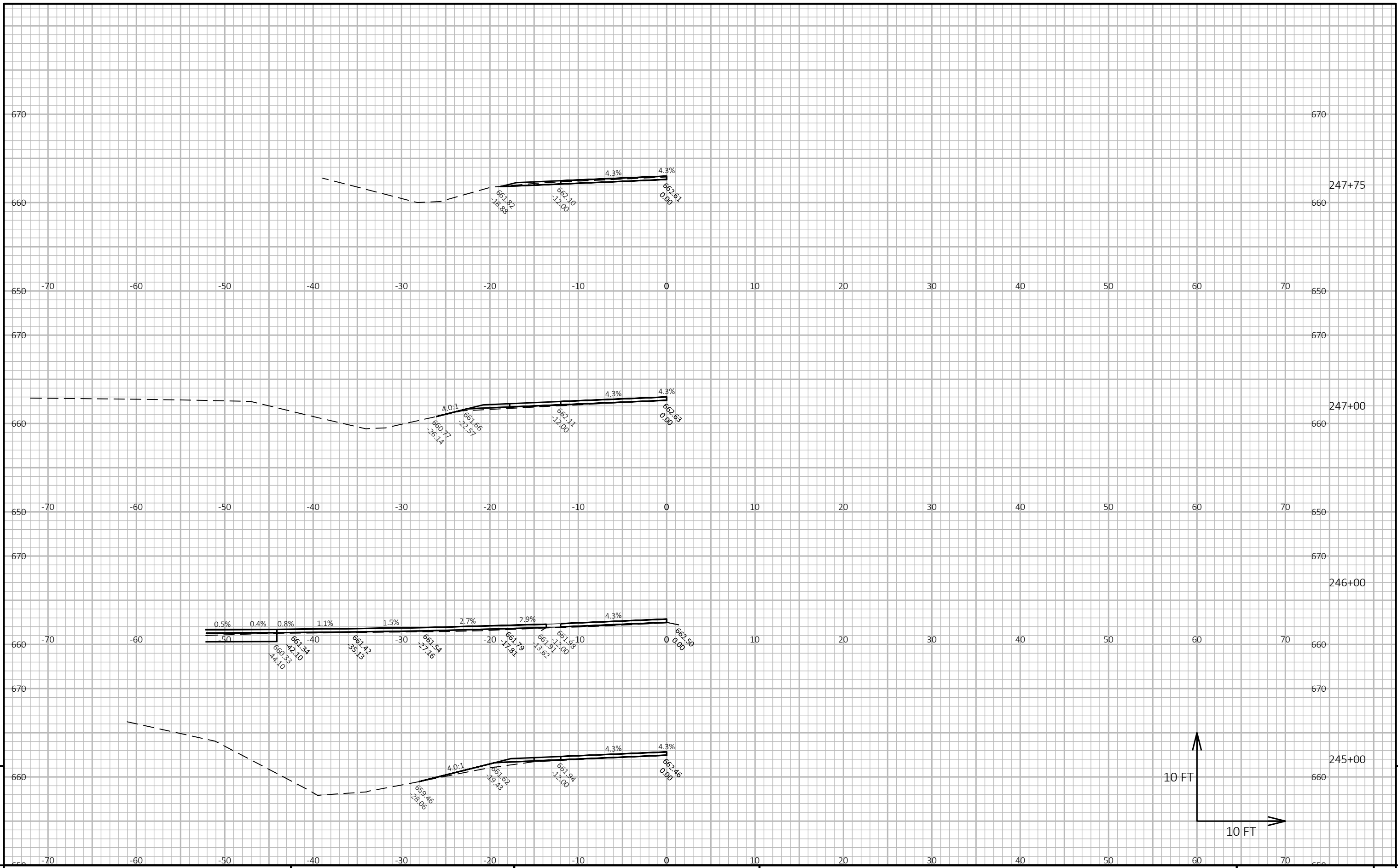
E



PROJECT NO: 9032-02-71 HWY: CTH I COUNTY: OCONTO CROSS SECTIONS: CTH I SHEET E



PROJECT NO: 9032-02-71 HWY: CTH I COUNTY: OCONTO CROSS SECTIONS: CTH I SHEET 9



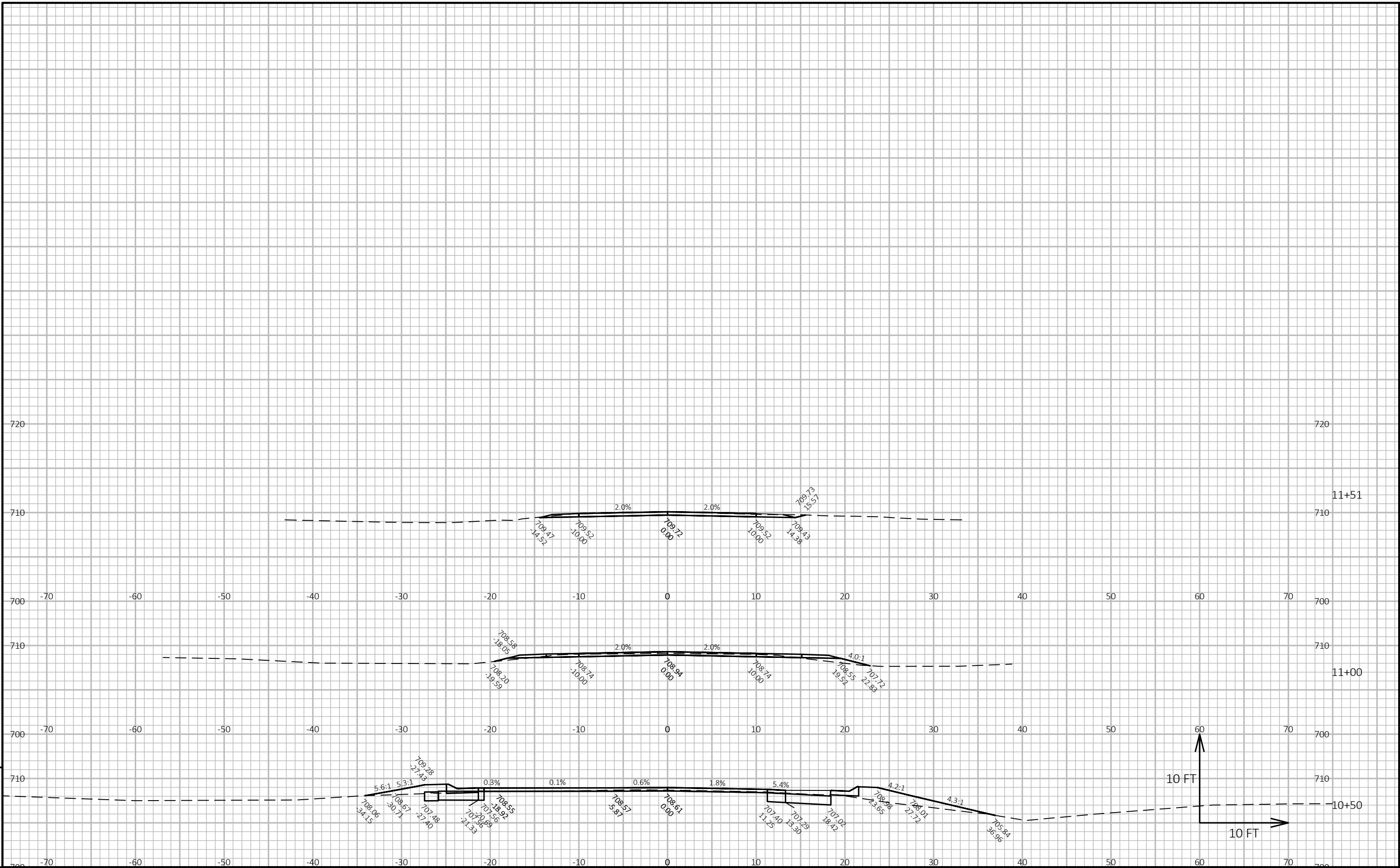
9

9

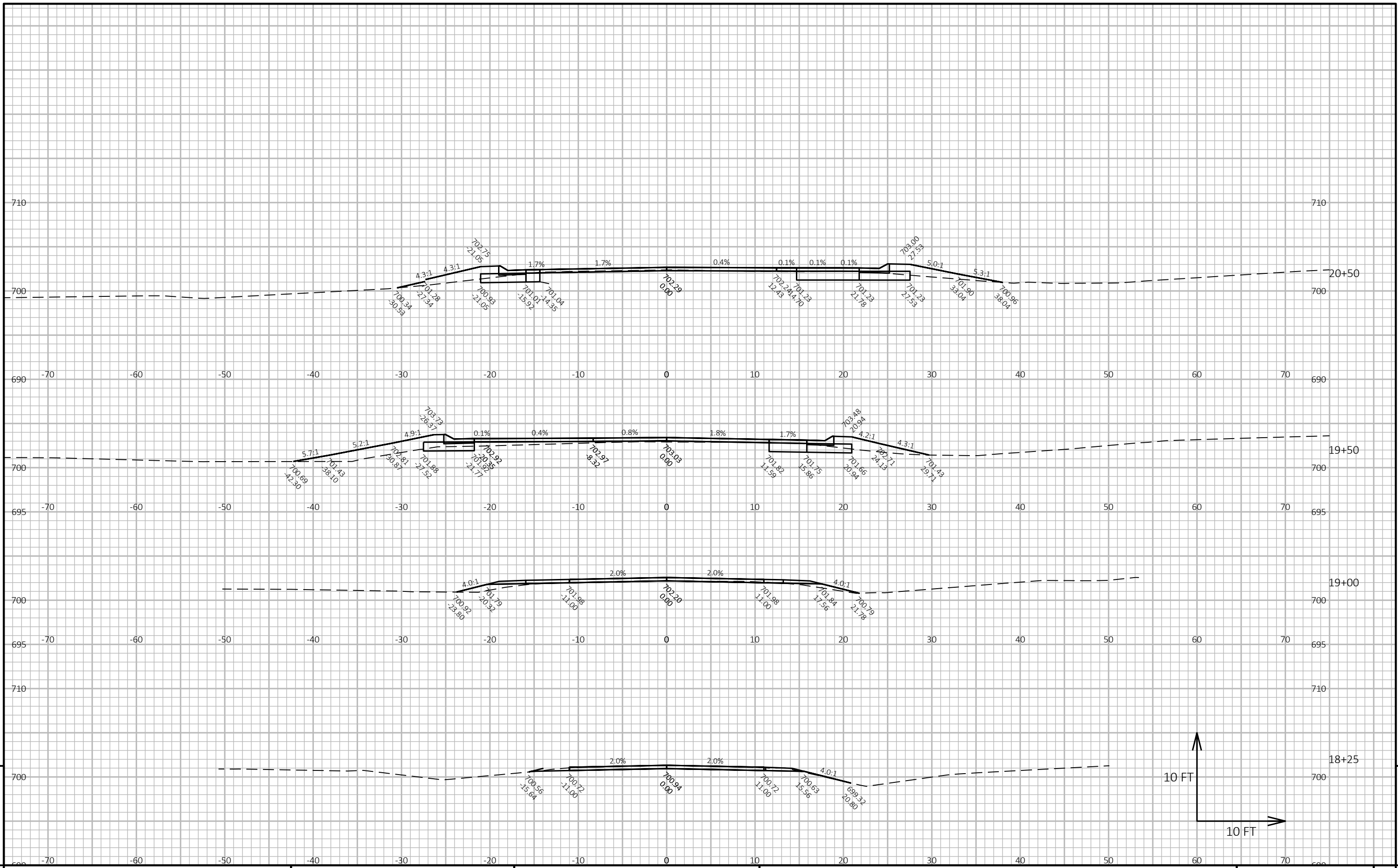
PROJECT NO: 9032-02-71 HWY: CTH I COUNTY: OCONTO CROSS SECTIONS: CTH I SHEET E

FILE NAME : I:\45450492 OCONTO CTH I\C3D\SHEETSPLAN\090201 XS.DWG PLOT DATE : 11/1/2021 11:45 AM PLOT BY : VERVILLE, PHILLIP PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090205 xs



PROJECT NO: 9032-02-71 HWY: CTH I COUNTY: OCONTO CROSS SECTIONS: FULLER LN SHEET E

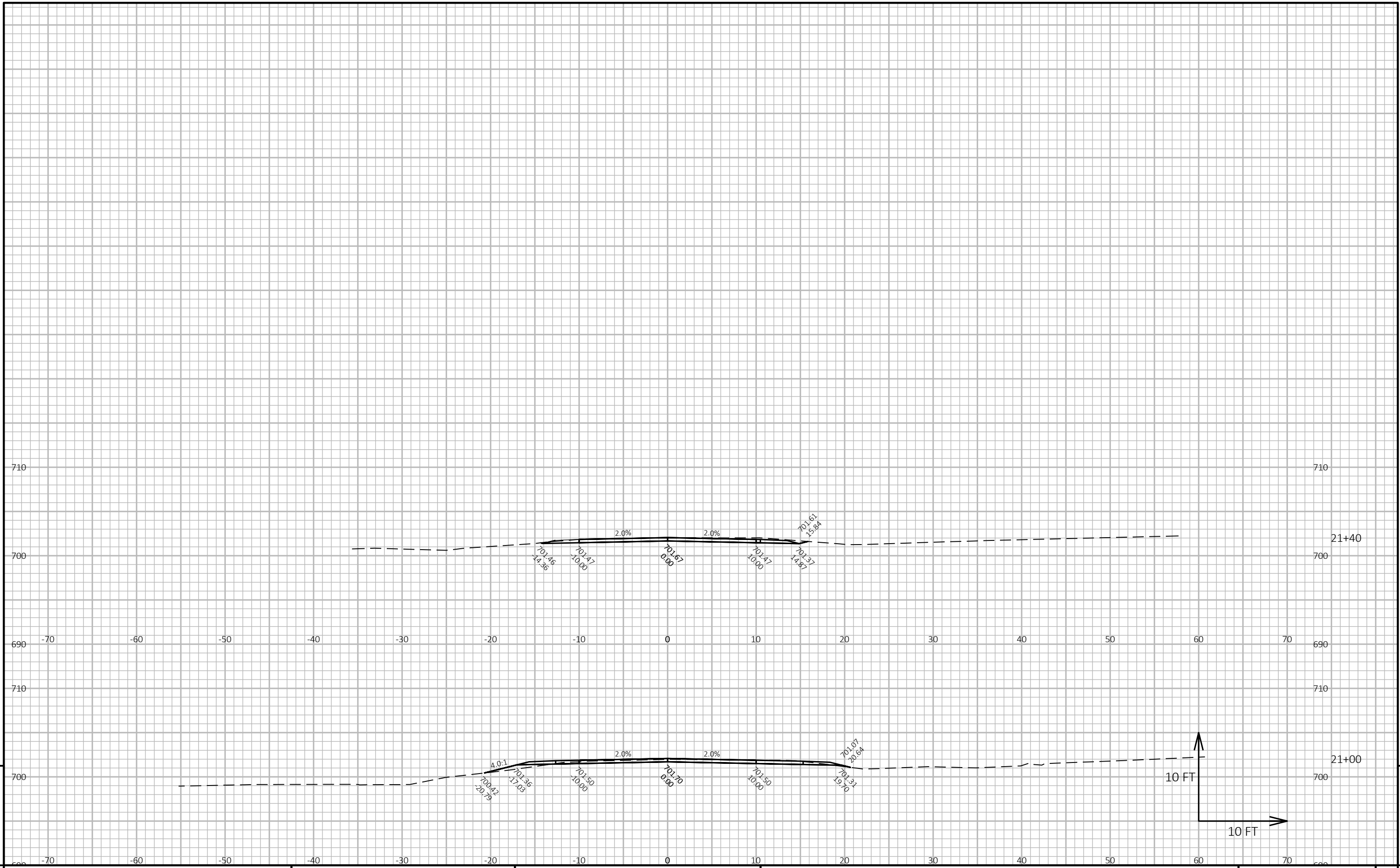


9

9

PROJECT NO: 9032-02-71 HWY: CTH I COUNTY: OCONTO CROSS SECTIONS: OCONTO RIVER SHORES RD SHEET E

FILE NAME : I:\45450492 OCONTO CTH \C3D\SHEETPLAN\090201 XS.DWG PLOT DATE : 11/1/2021 11:45 AM PLOT BY : VERVILLE, PHILLIP PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



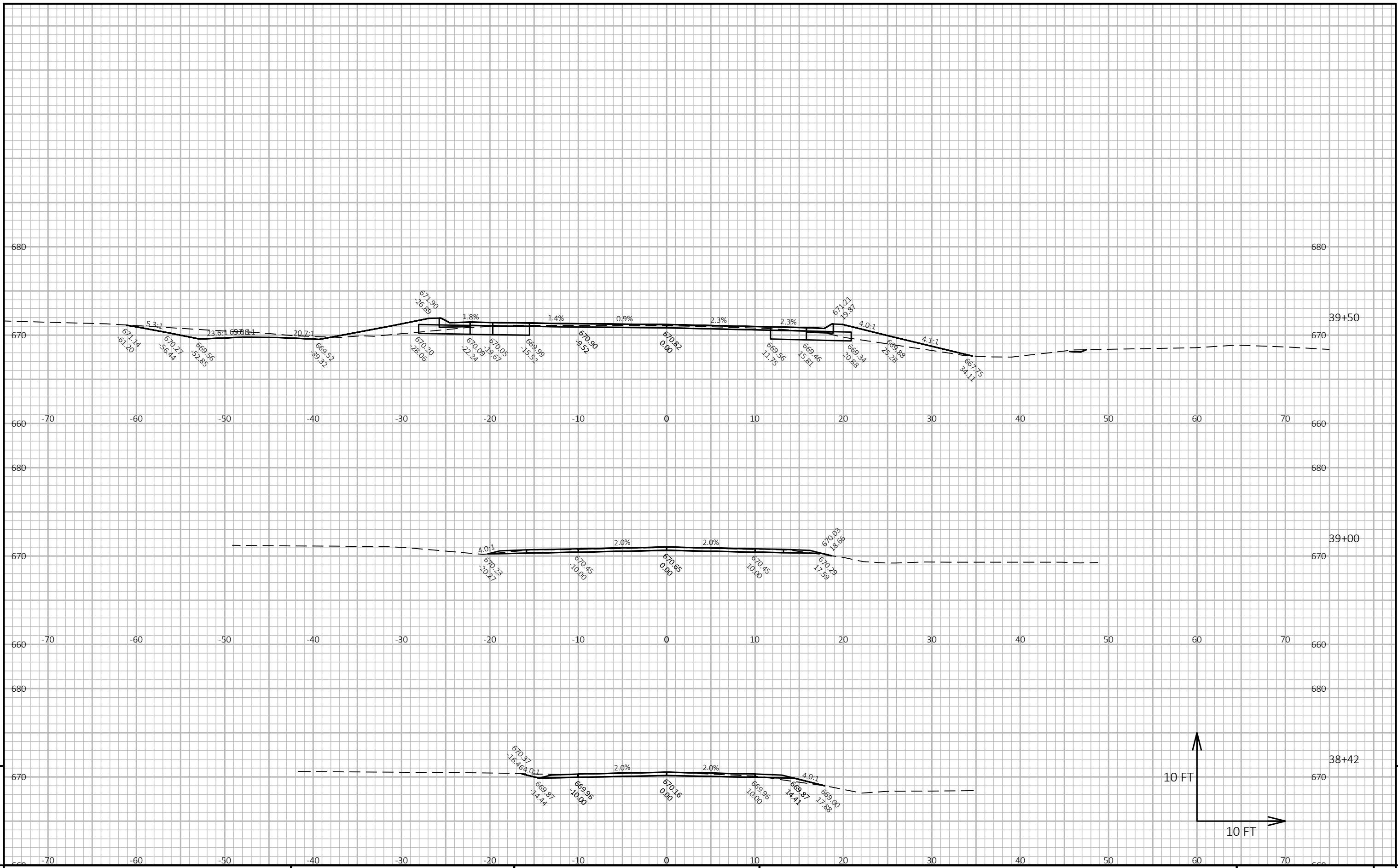
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9

PROJECT NO: 9032-02-71 HWY: CTH I COUNTY: OCONTO CROSS SECTIONS: OCONTO RIVER SHORES RD SHEET E

FILE NAME : I:\45\450492 OCONTO CTH I\C3D\SHEETSPLAN\090201 XS.DWG PLOT DATE : 11/1/2021 11:45 AM PLOT BY : VERVILLE, PHILLIP PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090208 xs



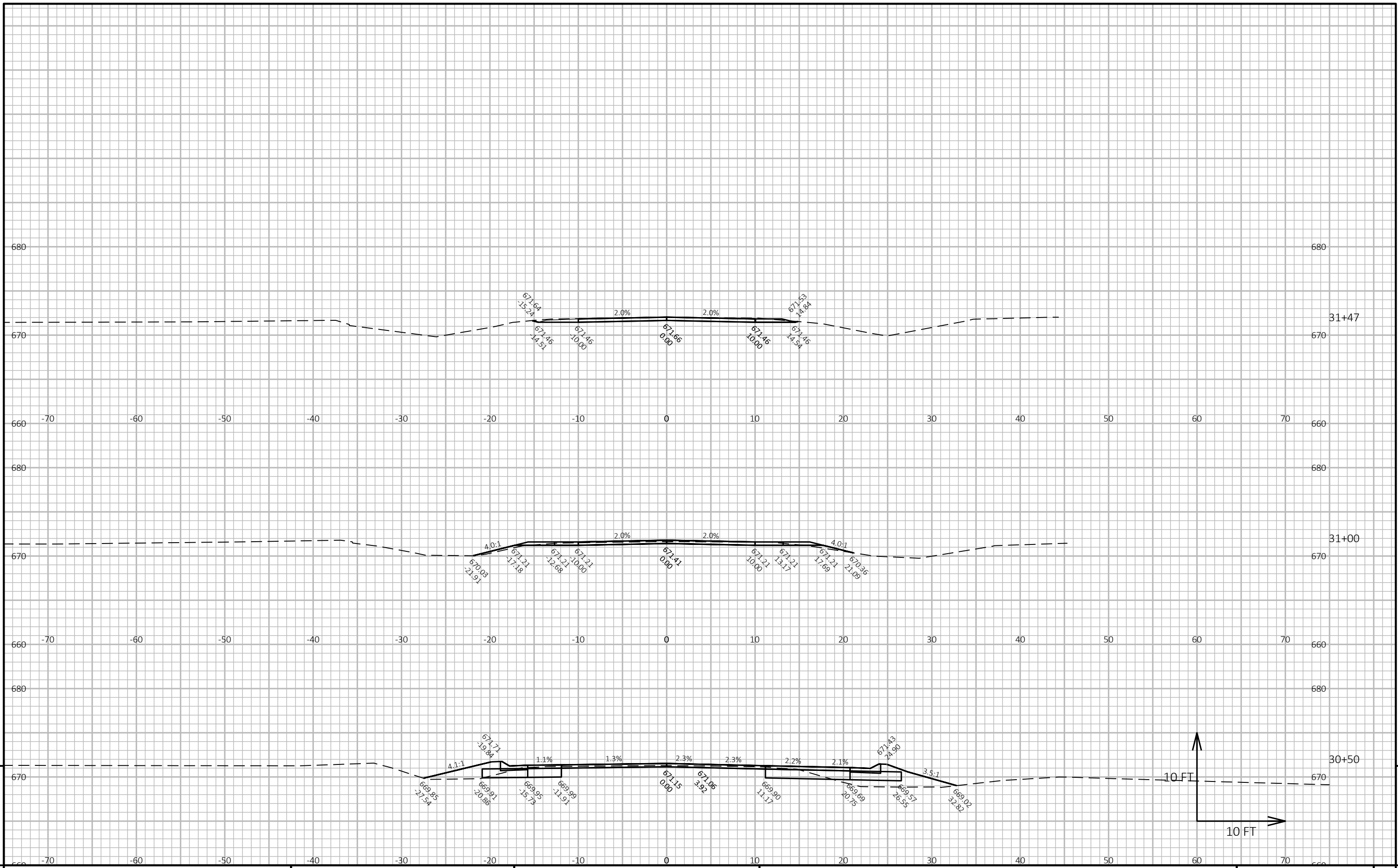
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PROJECT NO: 9032-02-71 HWY: CTH I COUNTY: OCONTO CROSS SECTIONS: MACHICKANEE RD SHEET E

FILE NAME : I:\45\450492 OCONTO CTH I\C3D\SHEETSPLAN\090201 XS.DWG PLOT DATE : 11/1/2021 11:46 AM PLOT BY : VERVILLE, PHILLIP PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090209.xs

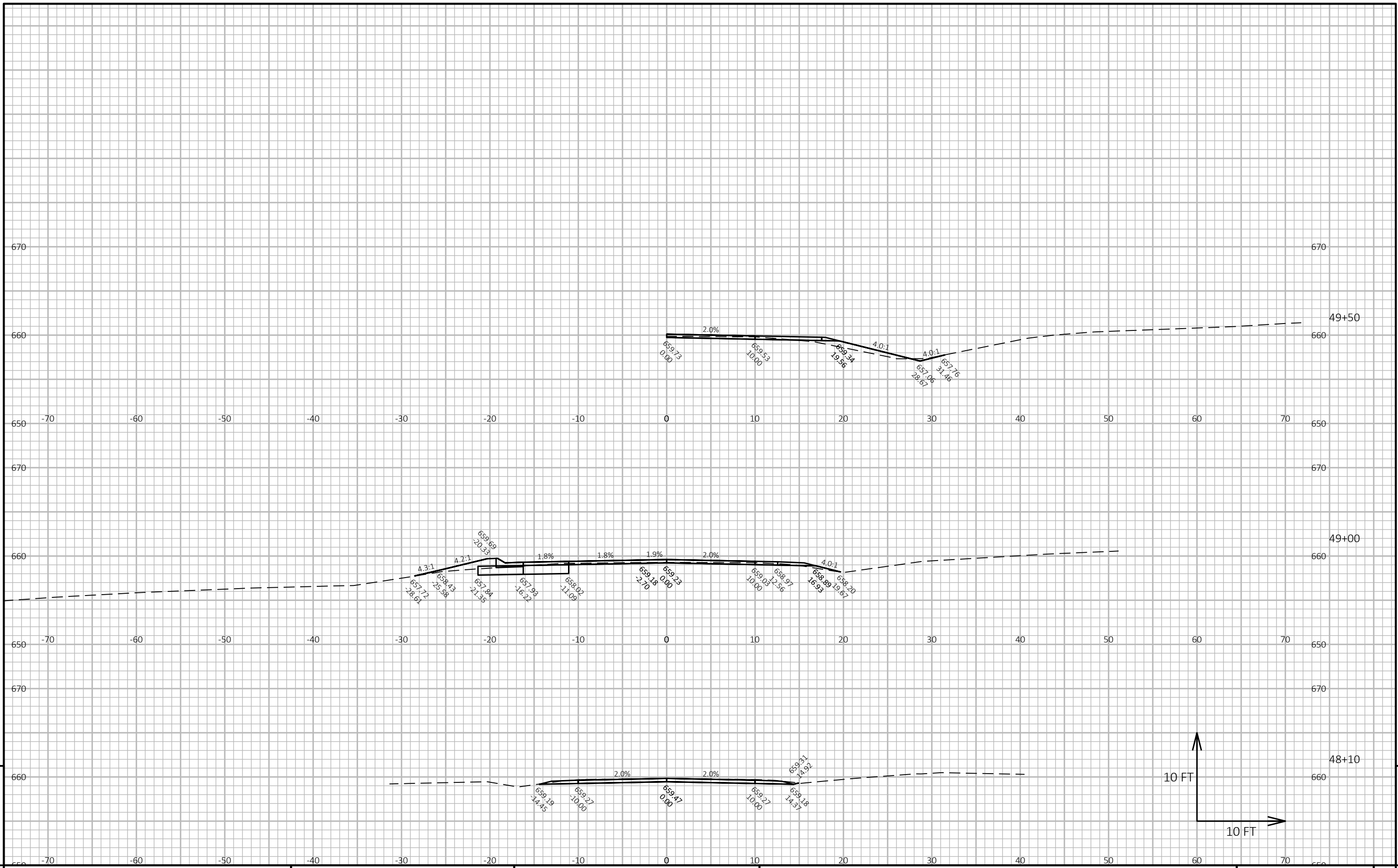


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PROJECT NO: 9032-02-71 HWY: CTH I COUNTY: OCONTO CROSS SECTIONS: GRASSE RD SHEET E

FILE NAME : I:\45\450492 OCONTO CTH \C3D\SHEETSPLAN\090201 XS.DWG PLOT DATE : 11/1/2021 11:46 AM PLOT BY : VERVILLE, PHILLIP PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADDs SHEET 49



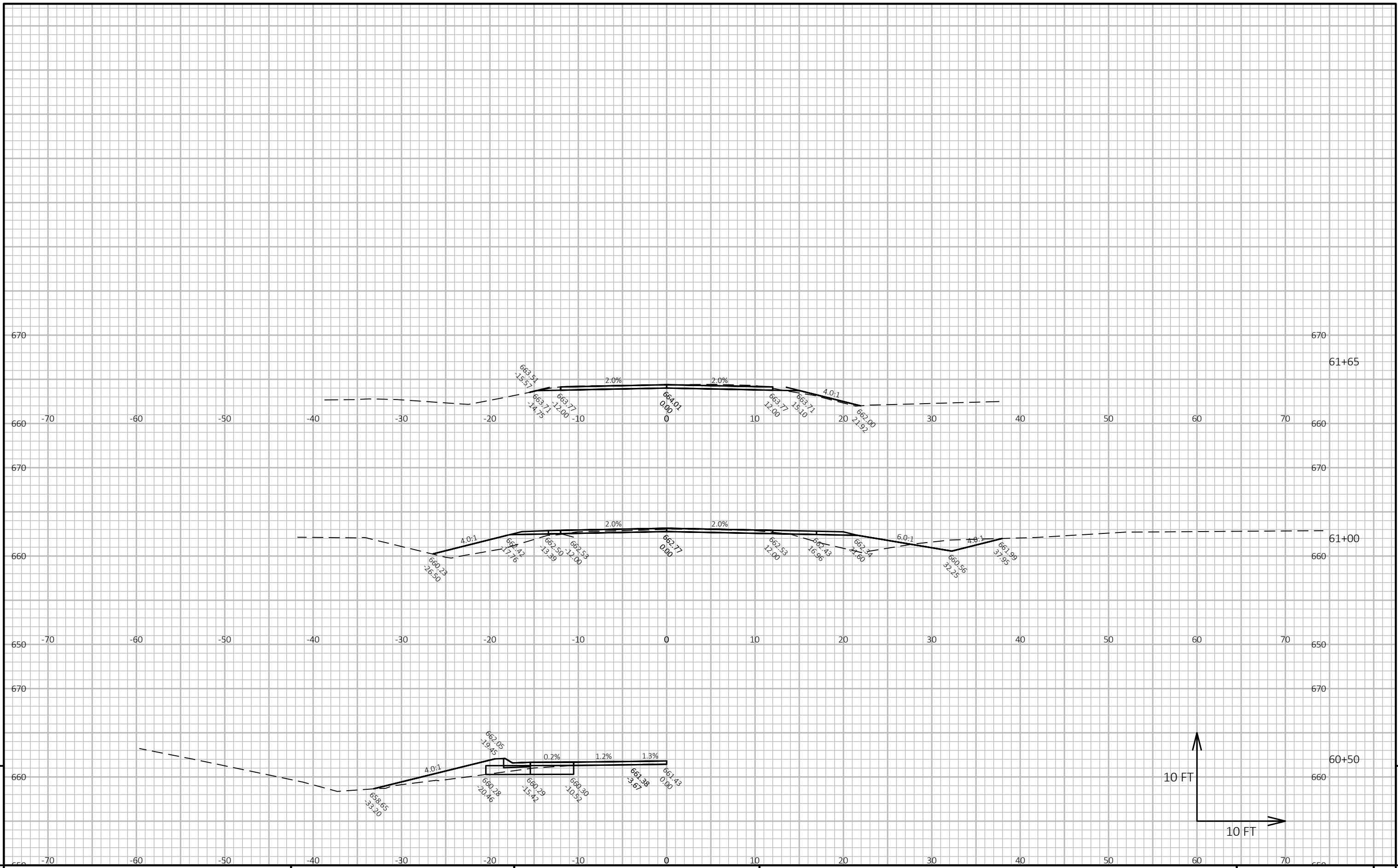
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PROJECT NO: 9032-02-71 HWY: CTH I COUNTY: OCONTO CROSS SECTIONS: ZIMMERMAN LN SHEET E

FILE NAME : I:\45\450492 OCONTO CTH \C3D\SHEETSPLAN\090201 XS.DWG PLOT DATE : 11/1/2021 11:46 AM PLOT BY : VERVILLE, PHILLIP PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090211 xs



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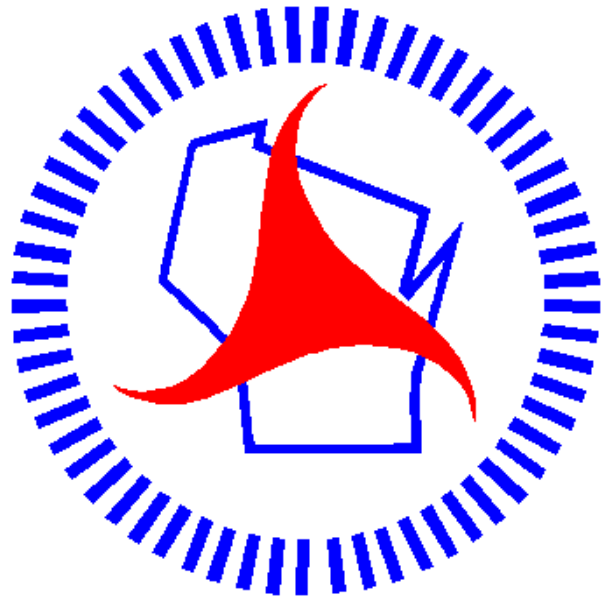
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PROJECT NO: 9032-02-71	HWY: CTH I	COUNTY: OCONTO	CROSS SECTIONS: HUSKY LN	SHEET	E
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FILE NAME : I:\45\450492 OCONTO CTH \C3D\SHEETSPLAN\090201 XS.DWG PLOT DATE : 11/1/2021 11:46 AM PLOT BY : VERVILLE, PHILLIP PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090212 xs

Notes



Wisconsin Department of Transportation

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